



Bulletin Werkgroep Zon

januari 1991

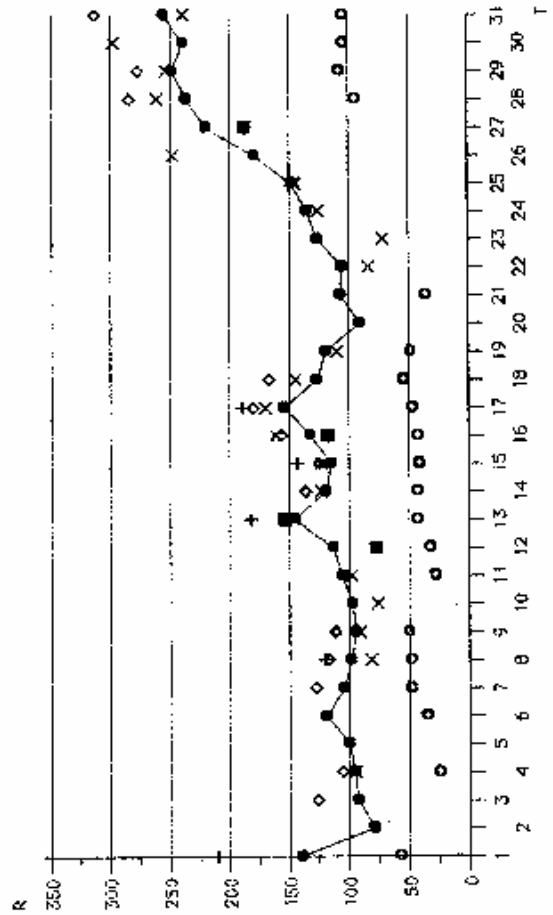
NWWS Werkgroep Zon. Sekretar: Ieet. Veewenburg 36, 2804 WZ Gouda, tel. 01820-39082.

Zonnewetkenggetallen.

Daag	SIDC	Bais	Idemb	Lamm	W3100	Zijle
1	139	167	146	55		
2	79	181	884	9	0/0	8
3	93	54	173	891	7	0/0 10
4	95	71	53	173	892	11
5	100	56	52	178	890	6
6	119	47	52	184	894	9
7	105	40	55	204	898	17
8	99	118	83	49	121	57
9	94	112	91	50		6
10	97	124	58	230	894	36
11	106	163	54	212	904	50
12	113	208	53	207	897	24
13	145	252	55	197	898	23
14	119	235	50	192	899	9
15	114	227	49	196	899	13
16	133	236	50	192	903	7
17	154	168	49	207	901	26
18	127	160	50	202	896	91
19	119	113	50	199	893	14
20	91	77	50	204	897	9
21	107	62	52	203	903	29
22	106	91	53	221	901	59
23	137	136	53	226	899	15
24	135	191	54	244	902	25
25	149	234	57	267	892	181
26	179	275	58	283	895	32
27	230	348	58	303	906	138
28	237	377	60	327	909	97
29	248	408	60	353	913	48
30	239	520	66	367	910	190
31	256	510	--	357	--	121

SIDC: J.A. Idenburg (Zwitserl.)
 H. Balster: D. Jannink, p = 9 mm

B. van Stoelen
 W.A. Zijema, 60 mm



Sunspot Index

Date Center

SUNSPOT BULLETIN

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

1991 JANUARY R:IM = 136.9

Date R: PPSI 600 2600 COS XPI XI AK SEA

31	96	75	50	184	866	11	0/0	9	
1	139	67	53	186	885	13	0/0	8	
2	79	59	52	181	884	9	0/0	9	
3	93	54	53	173	891	7	0/0	10	
4	95	71	53	173	892	11	0/0	7	
5	100	56	52	178	890	6	0/0	6	
6	119	47	52	184	894	9	0/0	4	
7	105	40	55	204	898	17	0/0	3	
8	99	63	60	214	901	57	3/0	10	
9	94	84	59	215	892	6	0/0	9	
10	97	124	58	230	894	36	1/0	11	Ten(0511)+sid
11	106	163	54	212	904	50	3/0	7	T(0649);Ib(1524)+Ten
12	113	208	53	207	897	24	0/0	19	9sc(0151)
13	145	252	55	197	898	23	0/0	12	
14	119	235	50	192	899	9	0/0	4	
15	114	227	49	196	899	13	0/0	4	
16	133	236	50	192	903	7	0/0	8	
17	154	168	49	207	901	26	1/0	14	Ib(1457)+Ten
18	127	160	50	202	896	91	2/0	15	sf(1403)+Ten
19	119	113	50	199	893	14	0/0	4	
20	91	77	50	204	897	9	0/0	7	
21	107	62	52	203	903	29	2/0	4	T(0004)+an(0013)
22	106	91	53	221	901	59	4/0	4	
23	137	136	53	226	899	15	0/0	7	ssc(2030)
24	135	191	54	244	902	25	1/0	30	sn(0319)+r+T(0945)+II
25	149	234	57	267	892	181	4/1	21	+IV+sid;ssc(2030)
26	179	275	58	283	895	32	0/0	13	sf(0631)+T+II+IV+swf
27	230	348	58	303	906	138	0/1	22	Ib(1439)+T+IV+sid
28	237	377	60	327	909	97	5/0	6	ln(0133)+T
29	248	408	60	353	913	48	1/0	4	
30	239	520	66	367	910	190	4/1	4	2b(0849)+T+sid
31	256	510	--	357	--	121	1/1	12	p(1130);pca(2300)

For 27 to 31 Jan. highest daily mean of flux on 2600 Mhz for the cycle.

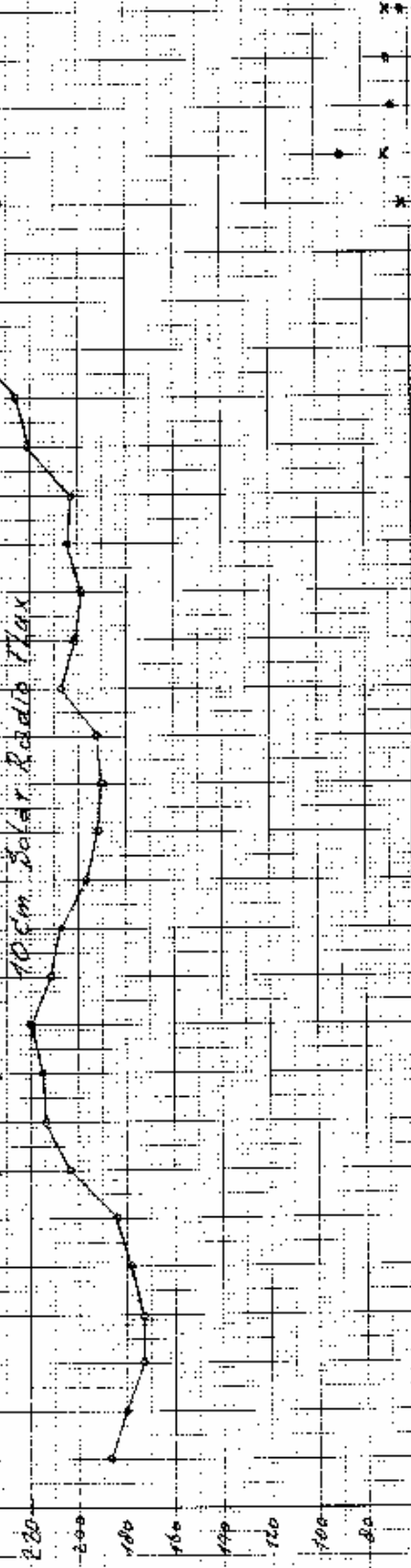
R:IM: provisional international sunspot-numbers from the S.I.D.C.
 PPSI: prompt photometric sunspot-index from the S.I.D.C. in 10-5 w.m-2; the quantity to subtract from the mean solar constant.
 600: 600 Mhz solar flux from Numain station (Belgium).
 2600: 2600 Mhz solar flux from Ottawa (origin: Ursigrams).
 COS: thousands of the cosmic ray counts (origin: Ursigrams).
 XPI: 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 atmospheric from Uccle & Humain (Belgium).
 Remark: sid(sudden ionospheric disturbance); ssc(sudden storm commencement); mgst(magnetic storm); sfo(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); glc(ground level event); neutron event)

January 1991
100 AK

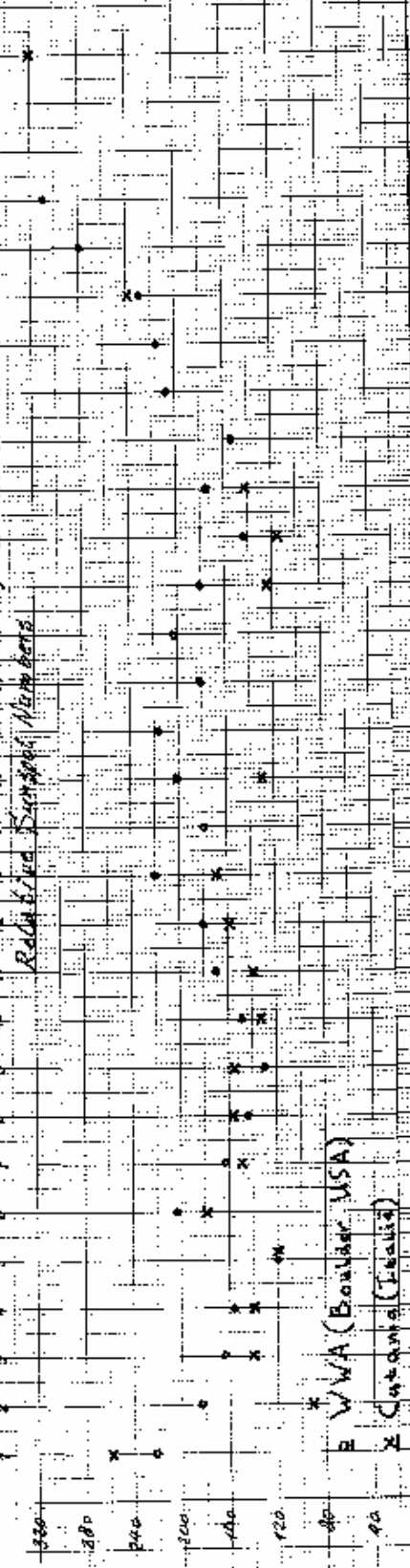
GEOMAGNETIC AX INDEX



10cm Solar Radio Flux



Reduced Sunspot Numbers



* WWA (Boulder, USA)

z CNEC (Ferdin)

200 Rmax = 256

200 Jan 31

100 Rmin = 79

100 Jan 2

100 R_i = 136.9



Bulletin Werkgroep Zon februari 1991

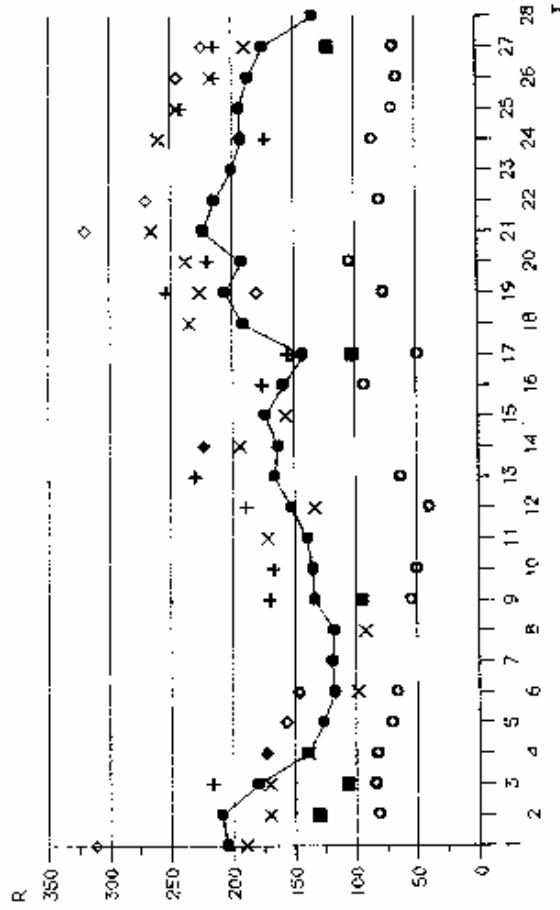
NMWS Werkgroep Zon. Sekretariaat: Veerendaalweg 36, 2804 WZ Gouda, tel: 01820-39082.

Zaaknummers (tabel 1)

Dag	SIDC	Bals	Idenb.	Jann.	VS	Sto.	Zijle
1	209	312	198			93	178
2	209	171	81			49	156
3	190	171	84			216	103
4	140	174	140			82	174
5	127	158				70	
6	117	147	38			89	117
7	119						
8	118					92	
9	134					54	170
10	136					50	168
11	140					172	
12	153					134	39
13	166					63	231
14	163					194	224
15	173					158	

Dag	SIDC	Bals	Idenb.	Jann.	VS	Sto.	Zijle
16	159					93	178
17	142					149	49
18	191					235	
19	201					181	227
20	192					238	104
21	223					320	266
22	214					270	
23	200						80
24	192					250	86
25	194					246	69
26	187					248	65
27	175					225	190
28	134					140	67
29	134					140	67
30	134					140	67
31	134					140	67

(X) J.A. Idenburg (Zwitser.)
 (O) D. Jaminik, d = 9 mm
 (H) H. Balster
 (B) B. van Slooten
 (W.A.) W.A. Zijlstra, d = 60 mm



Sunspot Index Data Center

SUNSPOT BULLETIN

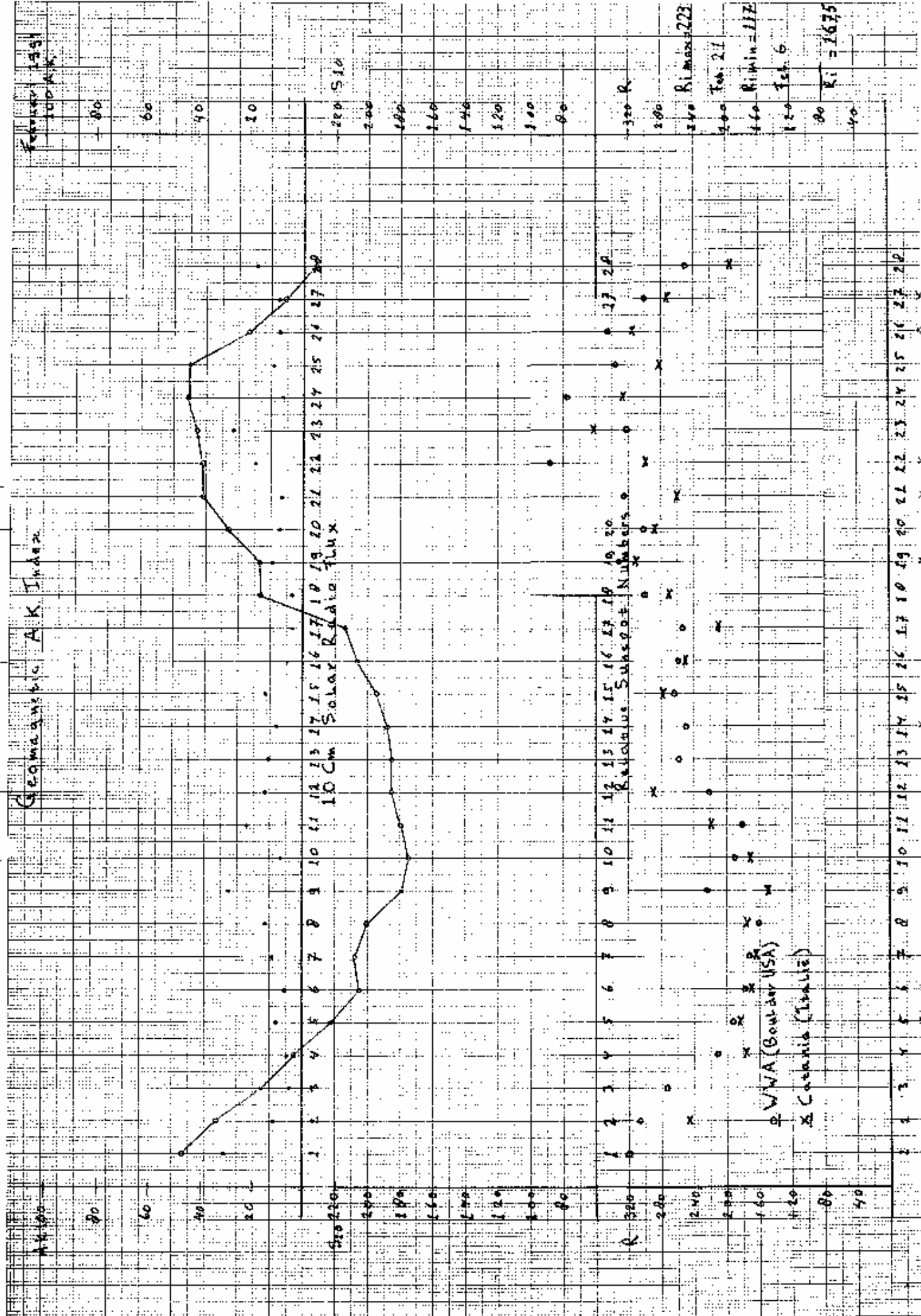
S.I.D.C. SUMMARY OF THE URSIGRAMS

1991 FEBRUARY R'IN = 167.5

Date	R'	PPGI	60D	2800	COS	XFI	XI	AK	SEA
31	256	510	61	357	898	121	1/1	12	1150 2b(0153)+II+IV+T+sid p(1130)psa(2200) L(1540)
1	205	427	61	314	885	31	3/0	30	1357 ssc(1843); L(1540)
2	209	320	59	293	884	89	7/0	11	1545
3	180	224	62	265	887	73	4/0	5	1050
4	140	154	56	245	890	12	6/0	6	1042 In(1044);ssc(2219)
5	127	135	56	232	892	10	0/0	10	
6	117	95	51	205	897	84	8/0	7	Ten(0646);In(1457)+Ten If(1454)+T+sid;sn(2118) +T+sid
7	119	93	50	208	802	28	5/0	12	1449 If(0915);sf(1553) +T+sid
8	118	95	46	200	902	14	3/0	14	1552 sf(0629)+T;P(0915);sf(1553) +T+sid
9	134	118	47	179	903	5	0/0	28	
10	135	128	50	175	901	6	0/0	8	
11	140	110	46	180	901	21	1/0	21	
12	153	120	44	185	900	8	0/0	14	
13	166	106	47	185	901	13	0/0	13	
14	163	81	48	189	898	23	1/0	10	1230 2b(1229)
15	173	75	48	194				12	0/0
16	159	63	47	207	908	15	0/0	6	1333
17	142	57	49	214	911	19	1/0	4	
18	191	147	51	267	910	37	4/0	4	In(0722)
19	206	144	53	267	914	45	3/0	12	
20	192	186	57	265	910	25	1/0	9	
21	223	244	54	302	910	15	0/0	8	
22	214	270	57	302	900	16	0/0	8	
23	200	317	57	306	896	22	1/0	27	1625
24	192	302	58	311	897	20	0/0	8	1139+1606
25	194	253	56	310	899	137	2/1	12	1600 3n(0806)+T+sid;p(1210)
26	187	230	56	274	901	9	0/0	9	
27	175	171	56	251	906	24	0/0	9	
28	134	150	--	233	910	9	0/0	18	

High activity during 1 to 10 period and on the end of the month.

R',R'IN: provisional international sunspot-numbers from the S.I.D.C.
 PPGI: 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.
 60D: 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); sis(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); g1e(ground level event); neutron event)





Date R (PPSI 600 2800 COS XFI XI AK SEA

Table with columns: Date, PPSI, 600, 2800, COS, XFI, XI, AK, SEA. Contains sunspot index data for March 1991.

High flares activity. Probably decreasing phase of the second maximum of the cycle. R(1), R(2): 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: Ursigrama). COS: thousands of the cosmic ray counts (origin: Ursigrama). XFI: X-flares index from the S.I.D.C. (origin: Ursigrama). XI: X-flares index from the Ursigrama (X-flares/X-flares). Ak: planetary geomagnetic index from Wingst (Germany from Ursigrama). SEA: sudden enhancements of atmospheric disturbance; SSC: sudden storm commencement; Remarks: sid(sudden ionospheric disturbance); sf(solar flare effect); 1-2-3-(class of flares); mgst(magnetic storm); rfc(radio-frequency burst); p(proton flare); p(proton event); glg(ground level event); neutron event).

Bulletin Werkgroep Zon maart 1991

NWS Werkgroep Zon. Sekretariaat: Ysebaertweg 36, 2804 WZ Gouda, tel: 01820-39082.

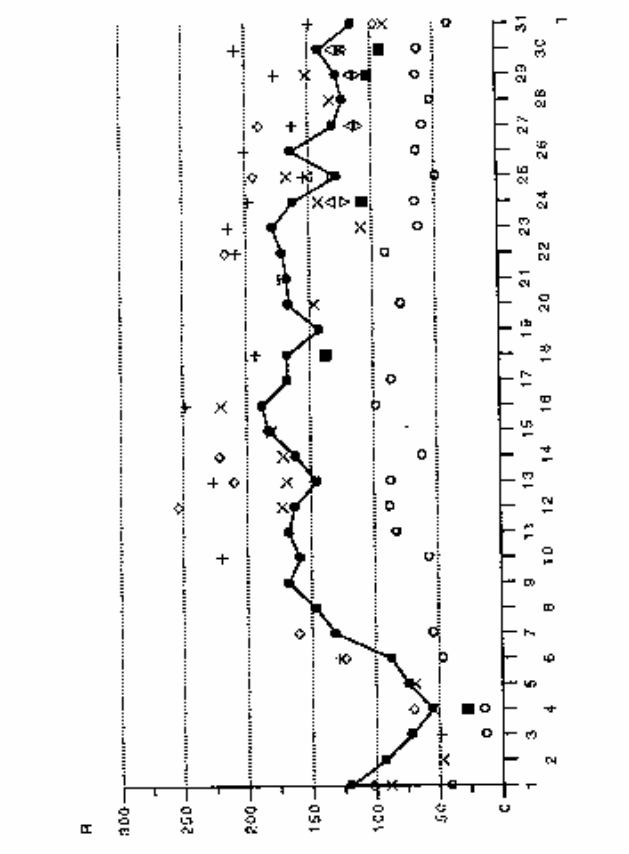


Zonnewetstekeningen 1991

Table with columns: Dag, SIDC, Bels, Idenb, mm, 80, 152, nmm, 80, 152, nmm, Zelle. Contains sunspot data for March 1991.

Ampl. mm.: 11, 17, 23, 5, 5, 17, 5. Schelder.: 0.81, 1.11, 2.53, 1.32, 1.15, 0.93, 1.49. Spreiding.: 0.15, 0.30, 0.00, 0.12, 0.11, 0.10, 0.27.

Legend: [] SILC; [X] J.A. Idenburg (Zwitsert); [] A. Wisk, 80 mm fluoit; [] B. van Slooten; [] K. Beikler; [] D. Jannink, d - 8 mm; [] A. Mak, 152 nmm; [] W.A. Zijlstra, 60 mm.



Geomagnetic A K Index

March 1991
10xAK

AK100

80
60
40
20

Station

800
600
400
200
00

R 320
200
100
00

WUA (Gander USA)
Columbus (Japan)

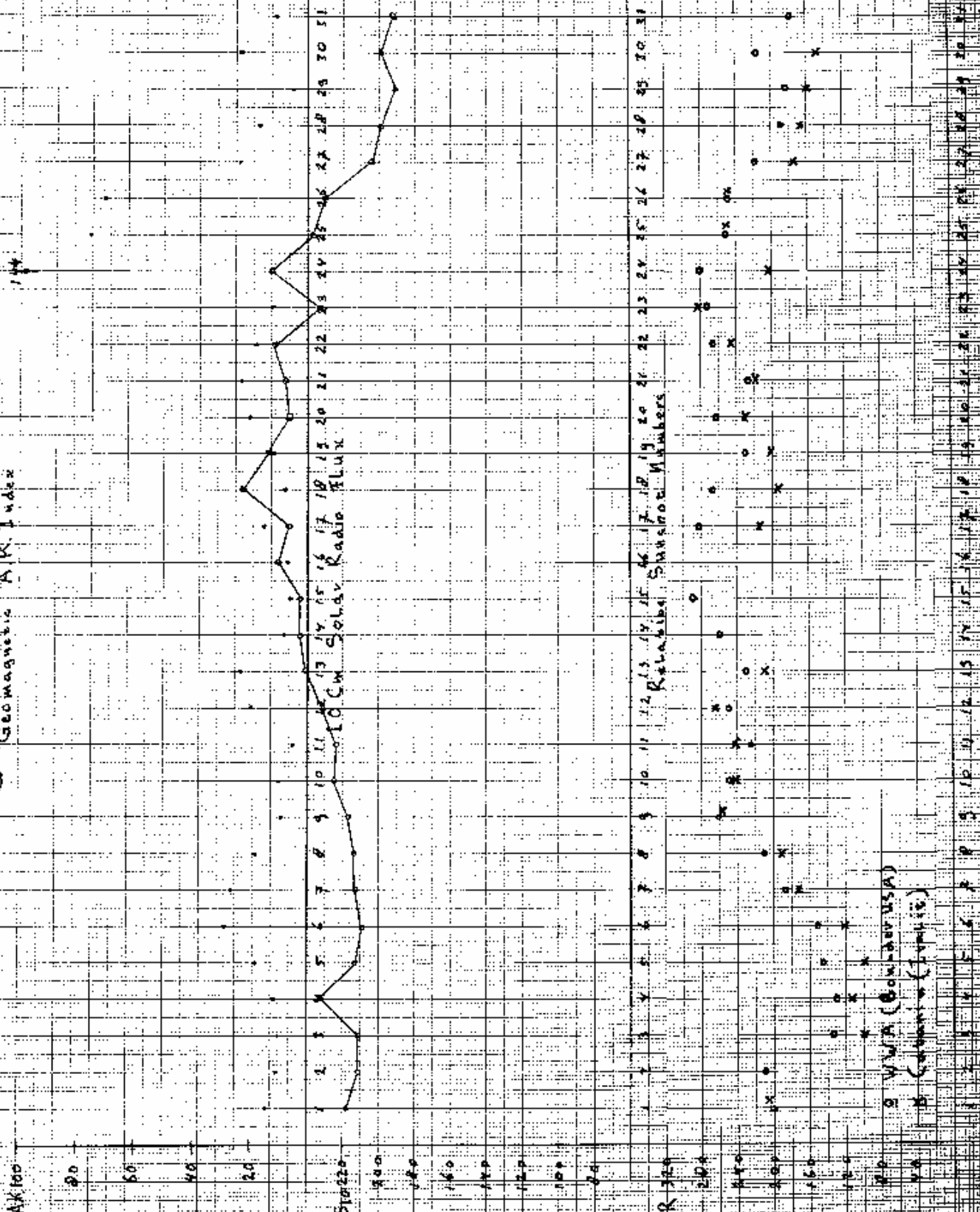
144

80
60
40
20
00

800
600
400
200
00

320
200
100
00

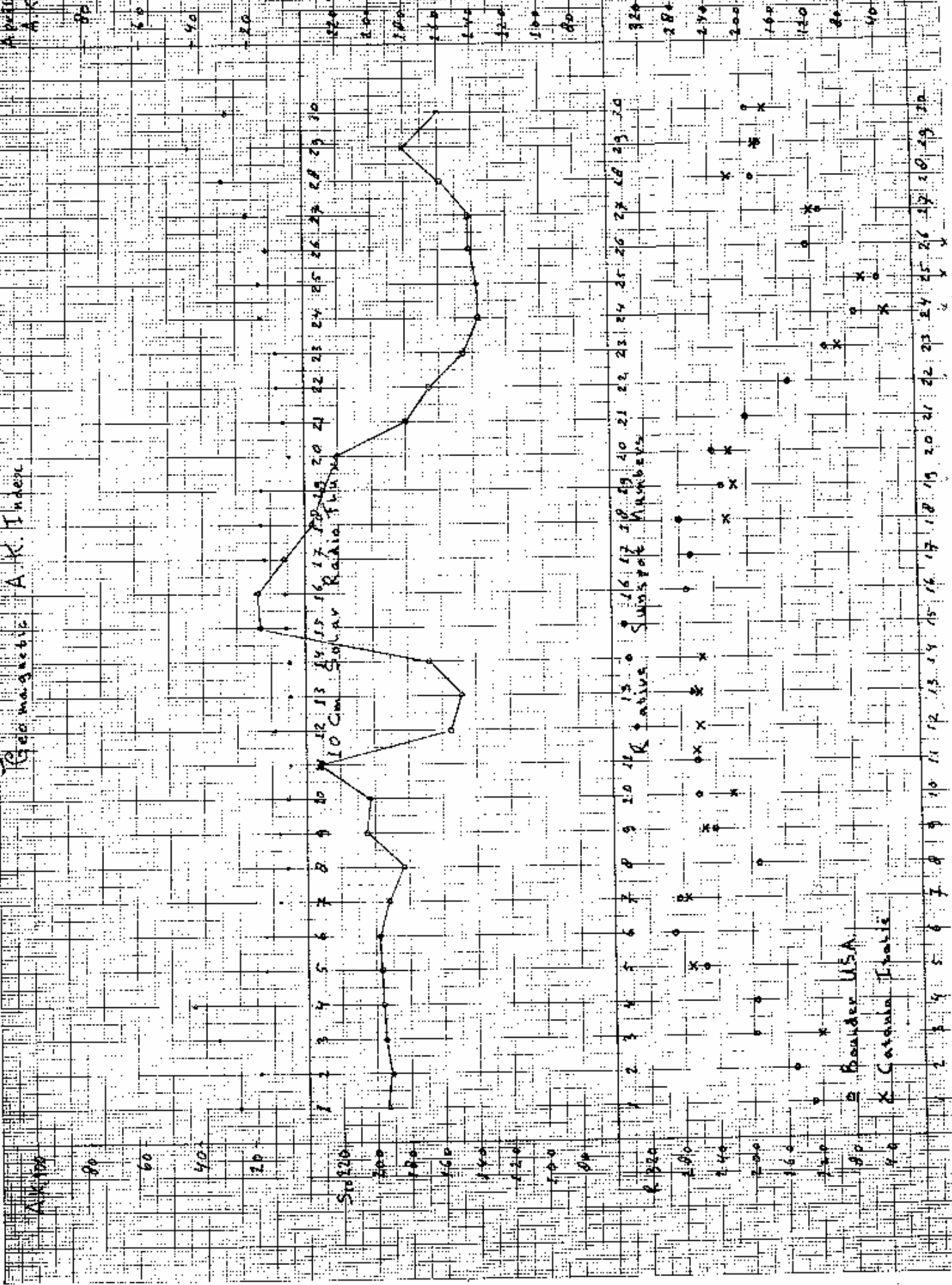
R 320
200
100
00



Geo. magnetic A.K. Index

April 1954
A.K. 130

AM 175



924 R
234 Ri max 227
200 April 22 815
160 Ri min 33
110 April 24
60 Ri = 139.9
40

Boulder USA
X Catania Italy



Bulletin Werkgroep Zon

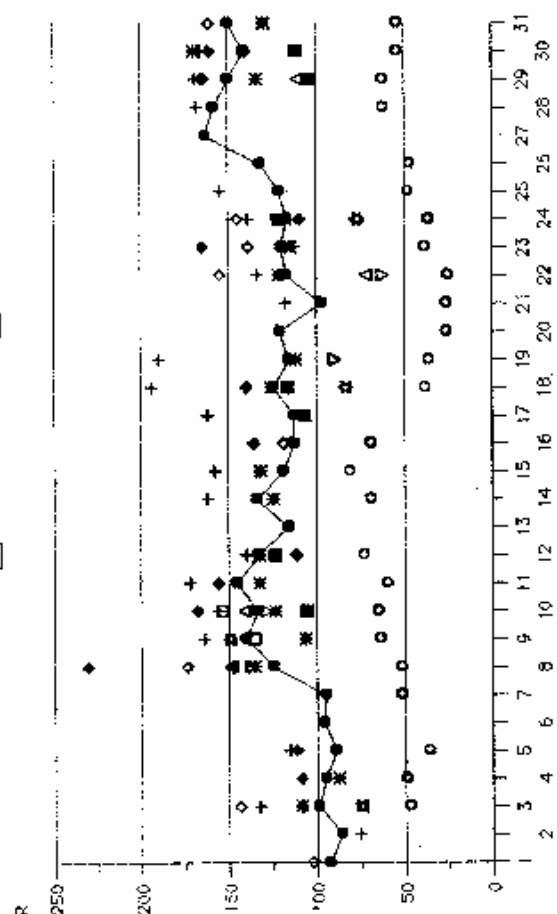
mei 1991

NHWS Werkgroep Zon. Sekretariaat: Veerburg 36, 2804 WZ Gouda, tel. 01820-39082.

Zonnevlekkenstatistiek

Day	Bals	Bus	Jann	ink	8 jnk	13	Schei	13	Schei	13	14	15	16	17
1	103													
2														
3	144	109	47	75	75	133								
4		86	49			109								
5		36				112	116							
6														
7		52												
8	174	136	52	149	138	231	148							
9		107	64	150	149		164							
10		124	65	141	129	168	166	106	154					
11		133	60			156	172		168					
12		133	73			112	140	124						
13						30	140	170	54					
14		125	69						162					
15		132	81						156					
16	179								136					
17									162	107				

SIDC: [] E.F. Bus [] A. Raak, 60 mm fluorit [] B. van Slooten
 H. Balster [] D. van Hark, 127 mm [] W.A. Zijlstra, 60 mm
 [] A. Scholten [] W.A. Zijlstra, 100 mm



Sunspot Index

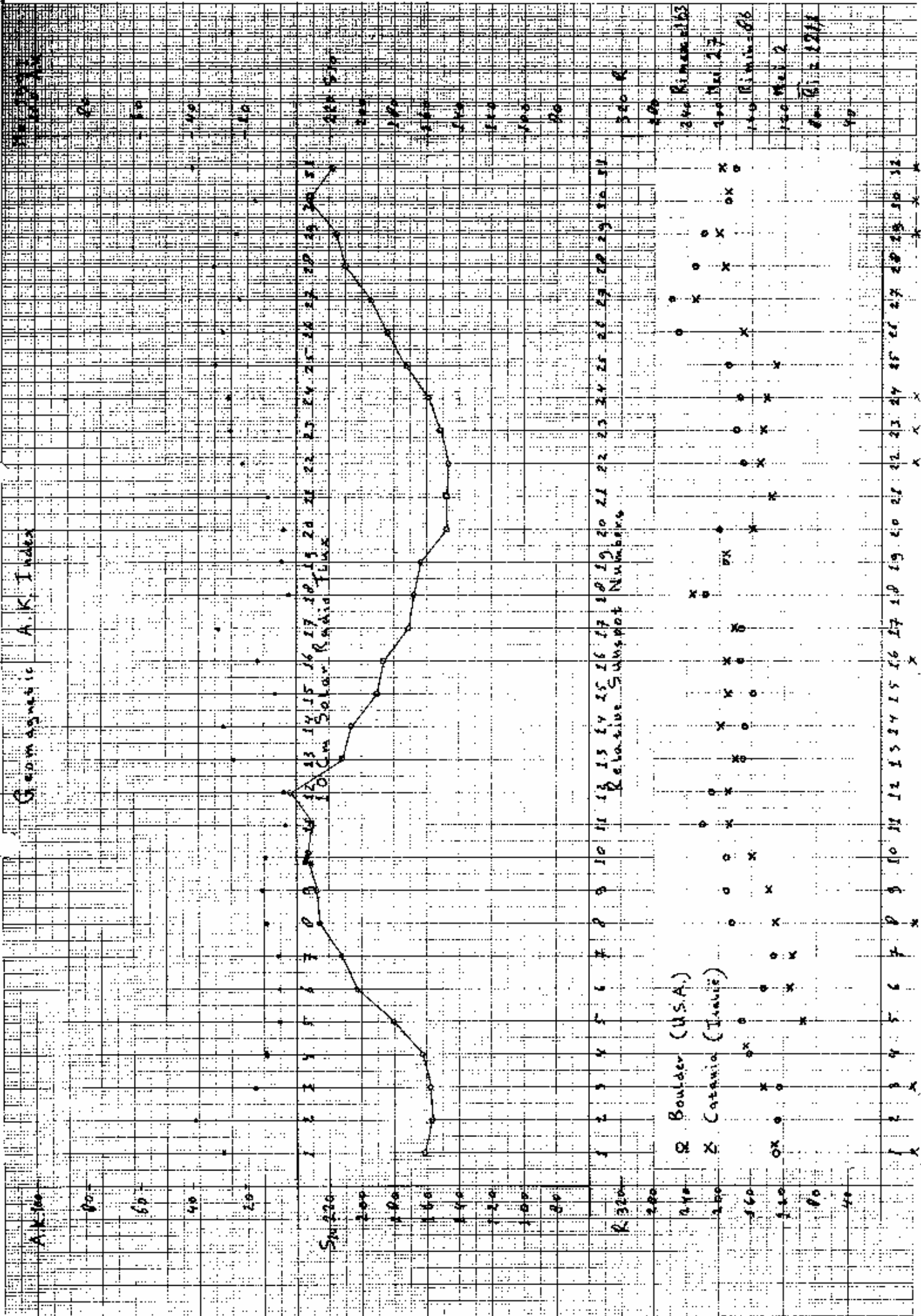
SUNSPOT BULLETIN

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

1991 MAY RIM = 121.1

Date	R	I	PPSI	600	2800	CO6	XFI	XI	AK	SEA	MAG
30	116	91	45	160	868	16	0/0	26			
1	93	79	46	162	861	7	0/0	26			0825+61(1202)
2	86	60	47	157	859	4	0/0	39			61(0537)
3	99	63	47	158	856	13	0/0	16			61(0604)
4	95	78	47	163	857	9	0/0	12			
5	89	112	50	181	868	22	1/0	6			
6	96	173	54	203	863	16	0/0	7			1658
7	95	238	55	213	862	36	2/0	8			1035
8	125	283	58	226	858	35	1/0	12			
9	140	286	60	228	856	16	0/0	13			1200
10	134	277	68	234	858	23	1/0	12			
11	145	256	59	231	867	58	4/0	4			1318
12	133	282	63	244	861	26	2/0	5			1732
13	116	277	56	212	850	6	3/0	24			0857 X(0103);T(0235)p(0300)
14	134	227	49	207	850	3	0/0	28			M0650
15	119	193	50	191	853	18	0/0	8			
16	113	152	65	187	864	20	1/0	15			0646 2041 2b(0642)+r+ii+iv;
17	113	102	51	171	874	34	1/0	30			
18	125	85	56	168	872	122	3/1	5			2b(0437)+ii+iv+sid+T
19	116	72	50	164	854	21	1/0	6			1944
20	121	74	48	148	855	3	0/0	5			
21	97	65	50	148	843	8	0/0	11			1223
22	117	78	47	147	853	11	0/0	21			0018
23	120	67	42	152	870	9	0/0	25			
24	117	67	44	159	868	8	0/0	26			
25	121	113	43	173	871	7	0/0	31			1410 (0608);(s1(0791))?
26	132	185	46	184	858	10	0/0	28			
27	163	213	50	194	856	53	2/0	22			1b(1016);SEA(1512)
28	158	265	53	210	833	87	9/0	32			9f(1206);X2b(2399)+T
29	150	208	69	216	814	160	4/1	22			1214
30	141	200	52	231	821	41	3/0	16			1126
31	150	181	--	219	813	56	4/0	40			1651 1039 p(1225);2b(1653)

R.I.R.I.M: 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).
 CO6: 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 atmospheric radioactivity from Uccle & Humain (Belgium).
 MAG: magnetic events from Dourbes station (Royal Meteorological Institute Belgium).
 Remarks: sid(sudden ionospheric disturbance); esc(sudden storm commencement);
 magst(magnetic storm); sfl(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); glg(ground level event); neutron event)





Bulletin Werkgroep Zon

NWS Werkgroep Zon - Sekretariaat: Veermanburg 36, 2804 WZ Bando, tel: 01820-39082.

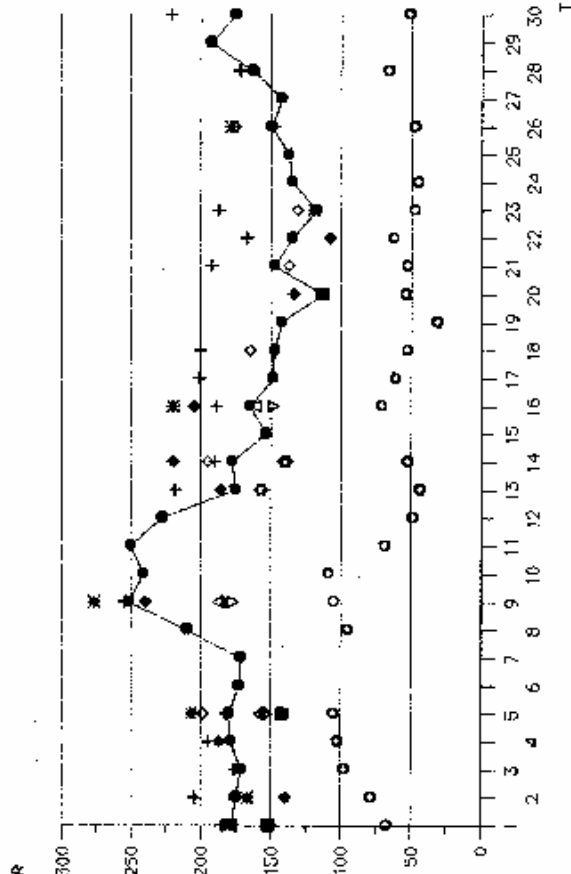
juni 1991

Zonnevlekgetallen:

Day	8a	9a	10a	11a	12a	13a	14a	15a	16a
1	179	67							
2	157	71							
3	96								
4	103								
5	207	105	159	154					
6									
7									
8	95								
9	276	105	187	177	240	258			
10	119								
11	69								
12	49								
13	44	159	156	186	219				
14	195		53	141	139	230	190		
15									
16	220	71	161	149	205	189			

Day	8a	9a	10a	11a	12a	13a	14a	15a	16a
17			61						261
18	185		52						200
19			31						
20			54						114
21	137		52						193
22			62						199
23	131	120	47						197
24			45						
25									
26	176	179	48						149
27									
28			66						175
29									
30			51						121
31									17

● SuC
 ○ A. Balzer
 □ C.P. Bus
 ▽ D. Jankak, 9 mm
 A. Mak, 60 mm fluort
 A. Mak, 127 mm
 A. Schehan
 + B. van Slooier
 ■ W.A. Zijlstra, 60 mm



Sunspot Index

Data Center

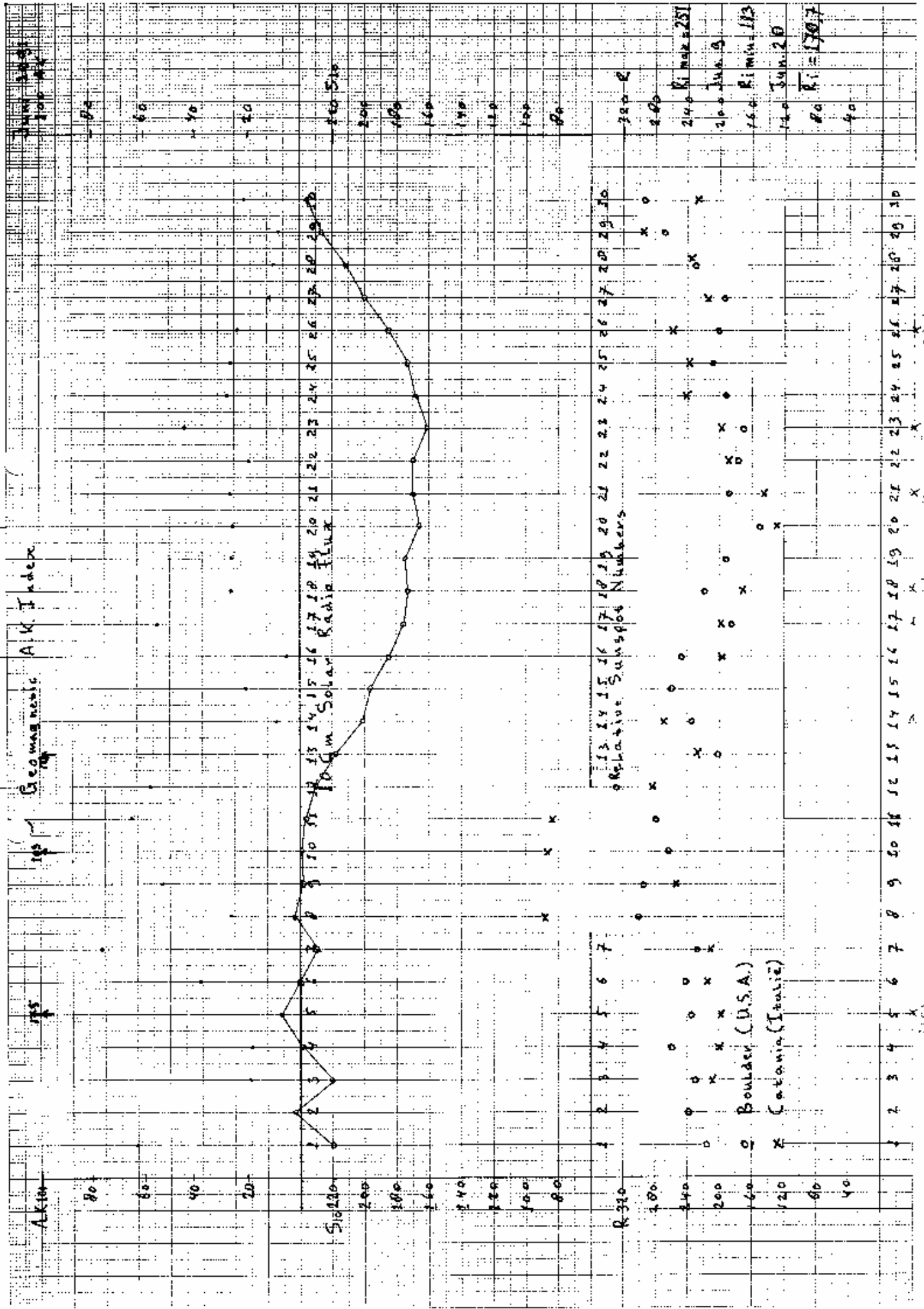
SUNSPOT BULLETIN

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

1991 JUNE R'IN = 170.7

Date	R'I	PPSI	600	2800	COS	XPI	XI	AK	SEA	MAG
31	150	181	--	219	813	56	4/0	40	1651	1039
1	177	144	58	220	785	154	3/1	63	1458	
2	175	138	104	243	792	29	4/0	48	0741	
3	171	123	53	220	790	19	1/0	19		
4	179	156	567	239	781	126	2/1	19	1535	P3b+efe(0337)+IV;F
5	180	193	53?	251	740	51	3/1	145		
6	172	239	57	240	749	144	4/1	38	1731	2355
7	171	242	57	230	748	41	3/0	27	1322	Sb(0058)+T;p(2255)
8	210	322	53	243	743	11?	0/1?	27	1322	3b(0025);mgst(2227)
9	251	357	--	238	717	160	4/1	53	1300	3b(0134);mgst(0039)
10	241	294	51?	239	711	66	5/0	103	1350	1716
									1652	
11	250	298	--	236	713	142	5/1	65	1156	
										T(0128)+II+IV;3b(0156)
										pca(1420);p(0245)
12	228	254	54?	230	729	45	4/0	57	1125	1012
13	175	192	50	218	643	54	6/0	112		F(1900);p(2400)
14	177	135	51	207	634	74	6/0	9		0017
15	154	85	66	197	709	123	1/1	21	0813	sac(0110);T(2327)
										p(0820);p(2340)
										P3b(0810)+II+IV;
										2b(3015);pca(0409)
16	165	61	43	185	712	19	2/0	5		
17	149	57	44	177	736	34	4/0	55		1018
18	148	71	42	173	743	11	0/0	27		efe(0346);pca(2300)
19	143	82	42	175	766	15	0/0	26		p(0015)
20	113	85	41	166	789	14	2/0	26		
21	147	78	43	170	805	19	1/0	27		
22	135	71	43	170	818	13	0/0	20		
23	117	60	45	161	812	19	1/0	43		
24	135	54	44	168	804	31	0/0	29		
25	137	74	44	173	808	9	0/0	27		
26	150	81	43	185	803	2	0/0	24		
27	143	102	47	200	819	12	1/0	12		
28	162	151	49	211	813	27	2/0	10		
29	192	173	--	227	813	15	1/0	8	1546	
30	175	154	--	236	808	99	2/0	22	1554	0116

Very high activity during the first half of June (secondary maximum?)
 R'I,R'IN: 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 Ottawa (origin: Ursigrams).
 2800: 2800 Mhz solar flux from Humain station (Belgium).
 COS: thousands of the cosmic ray counts (origin: Ursigrams).
 XPI: X-flares index from the S.I.D.C. (origin: Ursigrams).
 XI: X-flares index from the Ursigrams (N-flares/X-flares).
 Ak: planetary geomagnetic index from Wingat (Germany from Ursigrams).
 SEA: magnetic enhancements of atmospherics from Uccle & Humain (Belgium).
 MAG: magnetic events from Dourbes station (Royal Meteo. Institute Belgium).
 Remarks: sid:(sudden ionospheric disturbance); sac:(sudden storm commencement); mgst:(magnetic storm); sfa:(solar flare effect); s-1-s-4:(class of flares); II-IV radio-burst; I: ten cm radio-burst; F:(proton flare); P:(proton event); gl:(ground level event); neutron event); si:(sudden impulse); F:(Forbush)





Bulletin Werkgroep Zon

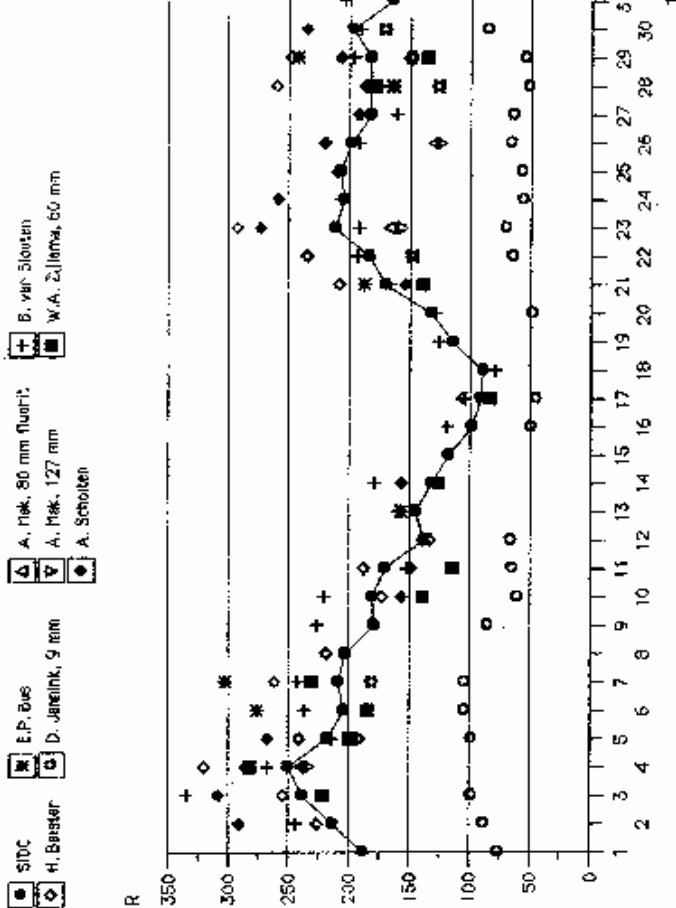
juli 1991

MWWS Werkgroep Zon. Sekretariaat: Veerendaalweg 36, 2804 WZ Gouda, tel: 01820-39082.

Zonnevlekkengetallen

Day	Bas	Bus	PK 8	PK 13	Schrijfsloot	Zij 6	
1	76					80	
2	226	88		291	244	127	
3	254	94		309	335	129	
4	321	240	234	265	260	139	
5	241	361	196	191	258	215	200
6	276	105			237	185	
7	262	303	104	183	181	242	231
8	219					211	
9		86				226	
10	174	50			158	221	139
11	186	64			159	153	114
12	134	66			139		
13		158			161		
14					157	179	126
15							
16		50			119		
17	107	46			105	84	

+ B. van Slooten
 * W.A. Scholten, 60 mm
 A. Flak, 80 mm fluorit
 A. Flak, 127 mm
 A. Scholten
 E.P. Bus
 D. Jaremk, 9 mm
 H. Baaster
 al.dev. 0.70 0.15 0.55 0.15 0.16 0.13 0.12 0.17



SUNSPOT INDEX

SUMMARY OF THE URSIGRAMS

1991 JULY R.I.M. = 174.1

Date R: PPSI 600 2800 COS XFI XI AK SEA MAG

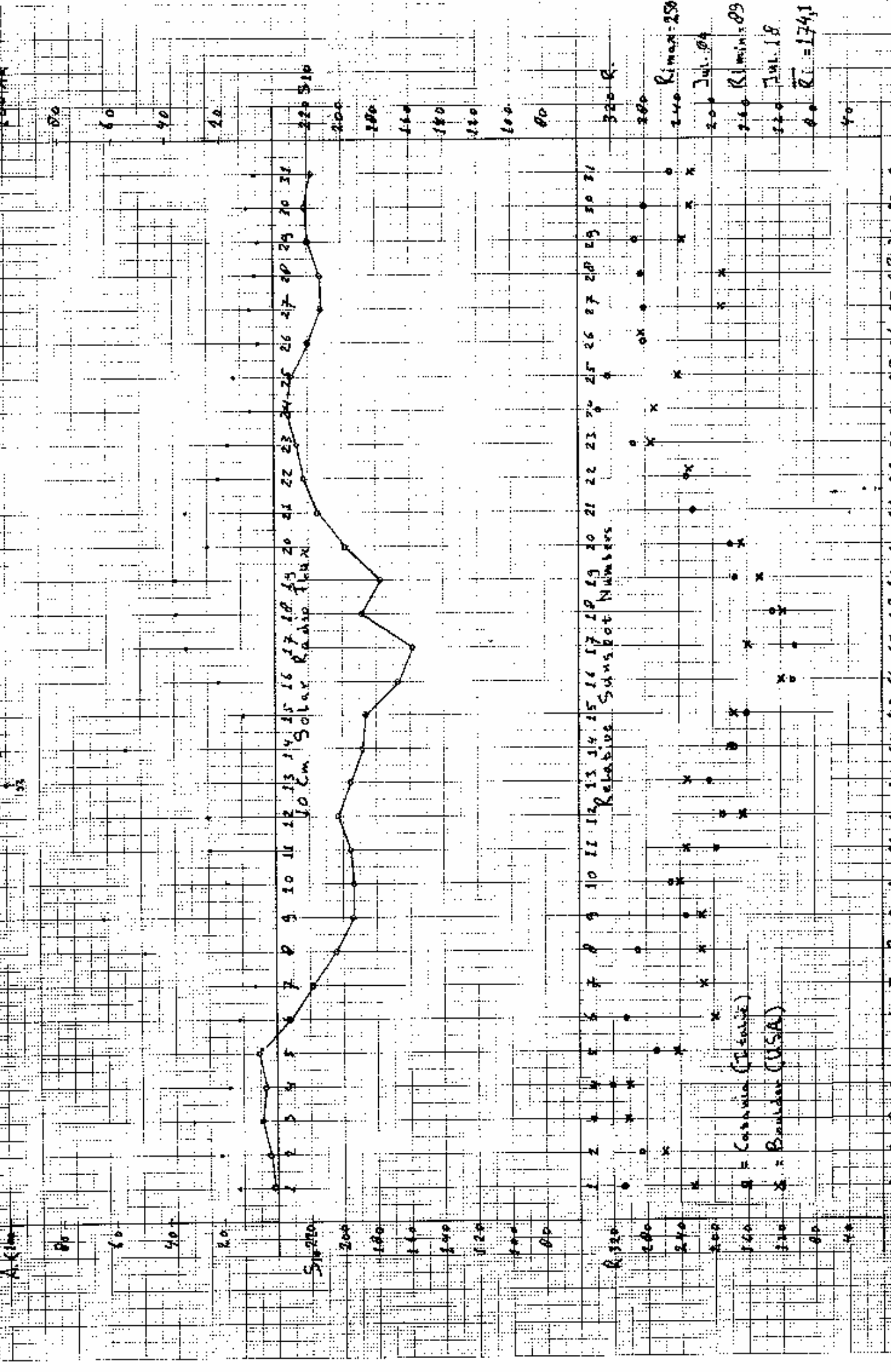
30	175	154	236	808	39	2/0	22	1554(0116	ln(0241)+T+IV+sid
1	189	193	51	242	40	2/0	14	{0755 P(0755)}	
2	219	168	54	244	27	2/0	21		
3	238	169	53	249	37	2/0	31		
4	250	163	54	247	24	0/0	18	(2015)	
5	217	186	54	231	734	4/0	6	2b(0837)+T	
6	304	173	55	239	745	2/0	14	1736 1526	2b(1799)+T
7	309	181	55	219	752	--	--	P(0195)+T:P(0455)	
8	203	159	51	204	748	11	0/0	1636	
9	179	160	50	194	700	20	1/0	54	
10	181	173	50	194	735	30	1/0	16	2n(1202)+T:(0640)
11	170	193	49	196	748	20	2/0	24	3b(0928):P(0240-1155)
12	228	169	47	203	8437	13	0/0	25	0924
13	146	191	47	196	733	24	1/0	108	T+X(1831)
14	132	152	46	189	731	50	3/0	56	
15	117	138	44	186	745	8	1/0	14	
16	98	104	43	167	752	6	0/0	21	1423 1600 ssc
17	91	98	43	159	768	123	1/1	33	2b(0619):ln(2106)
18	89	97	44	189	789	5	0/1?	34	1427 1445 ln(1425):ssc(1445)
19	114	47	--	178	796	25	1/0	37	1722 1906 ssc
20	192	74	--	199	782	115	0/1	25	2n(0135)+T
21	171	115	--	215	772	13	0/0	32	
22	184	177	--	223	762	119	0/1	22	3cm(0915):2b(0946)+sid
23	212	227	--	227	763	32	1/0	18	1939
24	205	269	--	233	772	27	0/0	9	
25	207	336	--	239	773	13	0/0	15	
26	199	337	--	220	786	17	0/0	6	
27	183	297	--	213	782	17	0/0	9	
28	189	228	--	213	783	12	0/0	7	
29	182	205	--	220	794	18	1/0	6	1511
30	197	180	--	222	800	40	2/0	10	T(0857):ln(0705)+3cm
31	165	165	--	219	805	443	2/1	8	2b(0045):ln(2247)+T

R.I.R.ln: 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: Ursigrans).
 COS: thousands of the cosmic ray counts (origin: Ursigrans).
 XI: X-flares index from the S.I.D.C. (origin: Ursigrans).
 AK: planetary geomagnetic index from Wingst (Germany from Ursigrans).
 SEA: sudden enhancements of atmospherics from Uccie & Humain (Belgium).
 MAG: magnetic events from Dourbes station (Royal Meteor. Institute Belgium).
 Remarks: sid(sudden ionospheric disturbance); ssc(sudden storm commencement); mgst(magnetic storm); sse(solar flare effect); s-1-2-3-4(class of flares); II-TV radio-burst; T(ten cm radio-burst); P(proton flare); P(proton event); glc(ground level event); sl(sudden impulses); F(forbush)

A. Clim

Geomegnetoid A.K. Index

July 1991



$R_{max} = 250$
 $R_{min} = 09$
 $R_{Jul. 18}$
 $R_{Jul. 18} = 174$

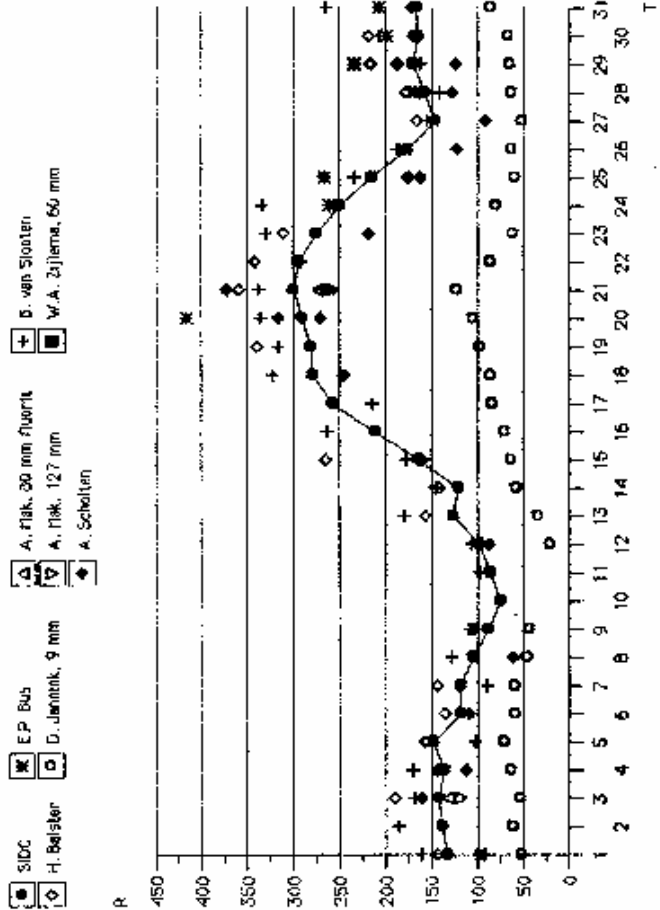


Bulletin Werkgroep Zon augustus 1991

NWWS Werkgroep Zon, Sekreteriar: Veerenburg 36, 2804 WZ Gouda, Tel. 01820-39082.

Zonnevlekkergetallen.

Day	Bals	Bus	Janu	Ik	S	Ik	S	Sch	S	S	Zij	b
1	143	52	99	97				247			324	
2		52		99							318	
3	190	53	132	120	161	170		316	337	272		
4		63		124	274	257	374	338	266			
5	157	72		87								
6	137	56		61				220	331			
7	144	60		262	81				335			
8		46		268	50			179	234	164		
9	105	44		181	64			123	189			
10				27	166	51			156	92		
11				28	179	169	63		126	143		
12	99	22		29	216	295	65		186	163	125	
13	158	34		30	220	200	66		172	207	165	
14	143	57		31		208	86			266	174	
15	265	63	166	159				4	14	30	9	
16		72		0.85	0.84	2.75	1.12	1.9	1.05	0.91	1.26	
17		85		0.05	0.10	0.65	0.13	0.12	0.19	0.17	0.25	



Sunsport Index BULLETIN

S.I.D.C. SUMMARY OF THE URSIGRAMS
1991 AUGUST R.I.N. = 175.5

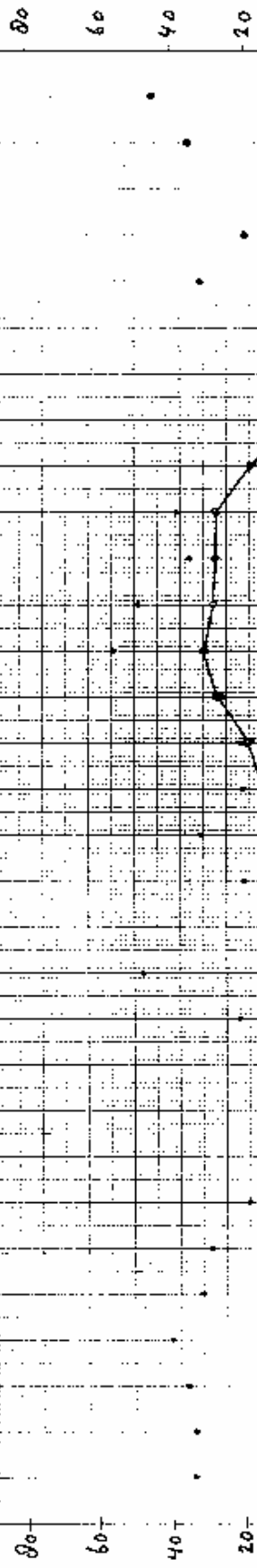
Date R	PPSI	600	2800	COS	XFI	XI	AK	SEA	MAG
31	165	55	53	219	805	143	2/1	6	2b(0045);10(2247)+I
1	132	178	56	225	812	28	3/0	34	1440
2	138	200	59	207	798	119	0/1	33	2b(1510)+SEA+T;T(2152)
3	143	235	56	213	800	43	4/0	36	2b(0306)
4	136	203	54	193	813	21	1/0	40	1b(0321)+T;2b(2213)
5	148	180	52	174	812	28	1/0	32	1n(1812)
6	119	114	50	167	797	26	1/0	29	2046
7	120	94	50	165	802	20	1/0	19	
8	106	65	48	159	808	9	C/0	13	
9	69	82	48	150	824	4	C/0	12	
10	75	62	43	142	819	1	C/0	13	
11	66	60	43	139	824	2	C/0	22	0259
12	96	59	42	147	824	8	0/0	48	2353 sfe?(1439)
13	125	74	42	155	---	11	0/0	12	
14	122	89	44	175	822	10	0/0	20	
15	144	129	48	215	825	10	0/0	32	
16	212	222	50	254	824	24	2/0	21	0618
17	257	295	52	271	813	34	1/0	32	1936
18	279	384	53	284	815	36	1/0	37	1250 1633 SEA(1439)
19	280	414	54	290	782	14	0/0	56	
20	291	395	53	285	794	34	1/0	49	1213 0600 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	
26	177	134	52	210	828	19	4/0	9	1421
27	147	151	53	196	830	23	1/0	32	P(1740)
28	157	171	50	190	813	21	1/0	20	1557
29	171	189	49	195	821	32	1/0	14	
30	166	242	50	196	815	25	1/0	25	
31	167	242	49	196	815	17	1/0	45	

Typical post maximum activity.

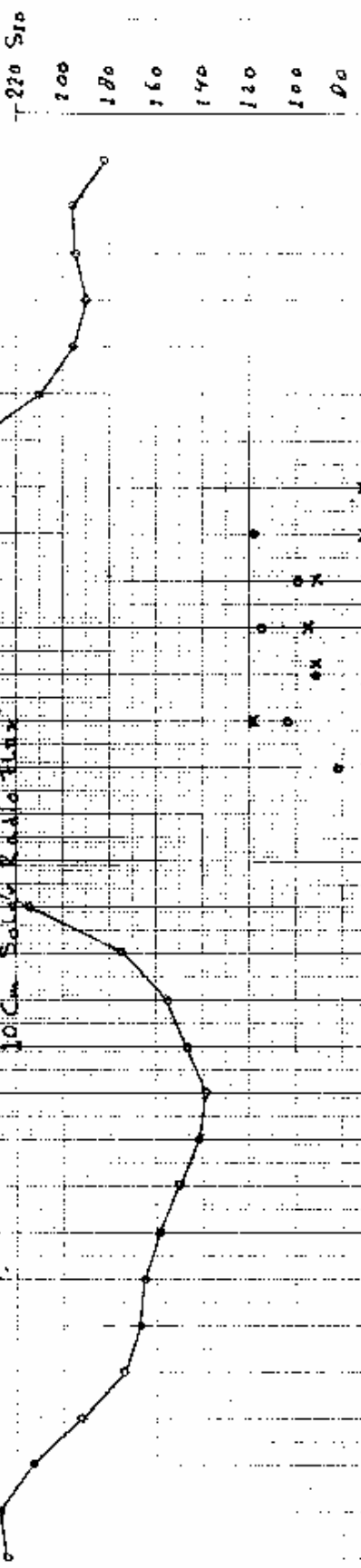
R, I, R: provisional international sunspot-numbers from the S.I.D.C.
 PPSI: prompt photometric sunspot-index from the S.I.D.C. in 10-5 w.m-2: the quantity to subtract from the mean solar constant.
 600: 600 Mhz solar flux from Humain station (Belgium).
 2800: 2800 Mhz solar flux from Ottawa (origin: 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 Meteor. Institute Belgium).
 Remarks: sid(sudden ionospheric disturbance); ssc(sudden storm commencement); mgst(magnetic storm); sft(scalar flare effect); s-1-2-3-(class of flares); II-IV radio-burst; T(ten cm radio-burst); P(proton flare); P(proton event); gte(ground level event); neutron event); si(sudden impulse); F(Forbush)

Augustus 1991
100 A.K.

A K100

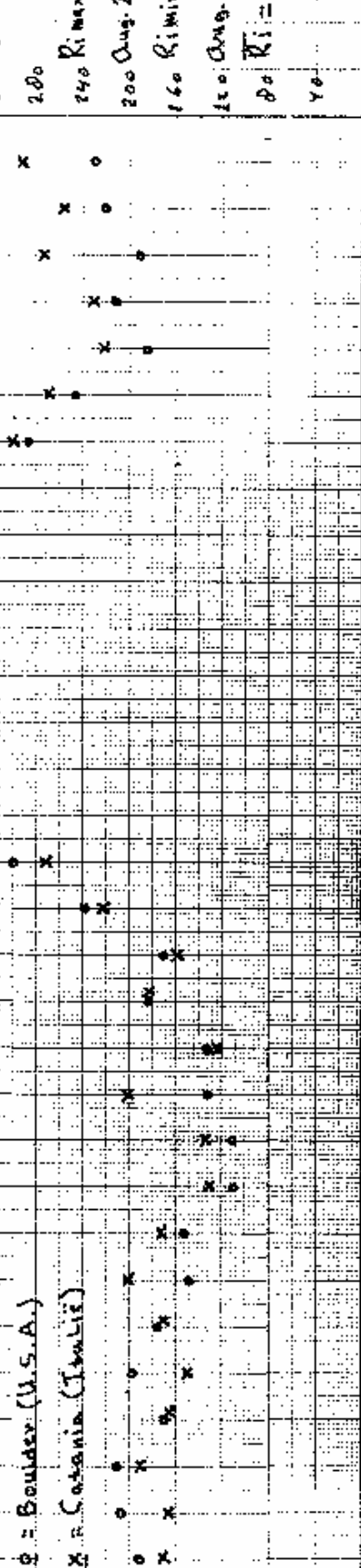


S10 220



220 S10

R 320



320 R

Geo Magnetic A.K. Index

Station Suspect Numbers

300
280
240 Ri max = 300
200 Aug. 21
160 Ri min = 75
120 Aug. 10
80 Ri = 1755
40

2 = Boulder (U.S.A.)
X = Catania (Italy)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

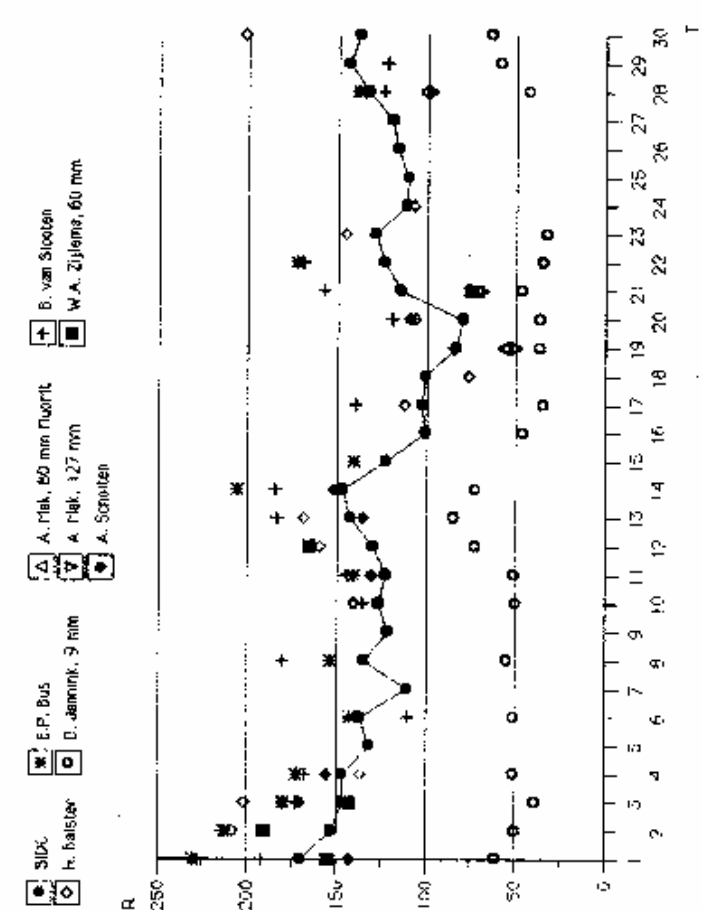


Bulletin Werkgroep Zon. september 1991

Rijswijk Werkgroep Zon. Sekretariaat: Veendamweg 36, 2804 WZ Gouda. Tel: 01820-39062

Zonnevlekkengetallen.

Day	Bals	Bus	Juni	PK 8	PK 13	Schad	W50e	Zij 6
1	230	61						143
2	208	213	50					192
3	202	180	44					214
4	137	173	51					173
5		143	51					156
6		143	51					168
7		143	51					111
8		154	75					181
9		141	51					136
10	141	50						131
11	141	51						145
12	160	73						150
13	169	86						184
14	204	73						136
15	141							152
16		46						183



Sunspot Index

5 SUNSPOT BULLETIN

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

1991 SEPTEMBER R.I.N. = 125.3

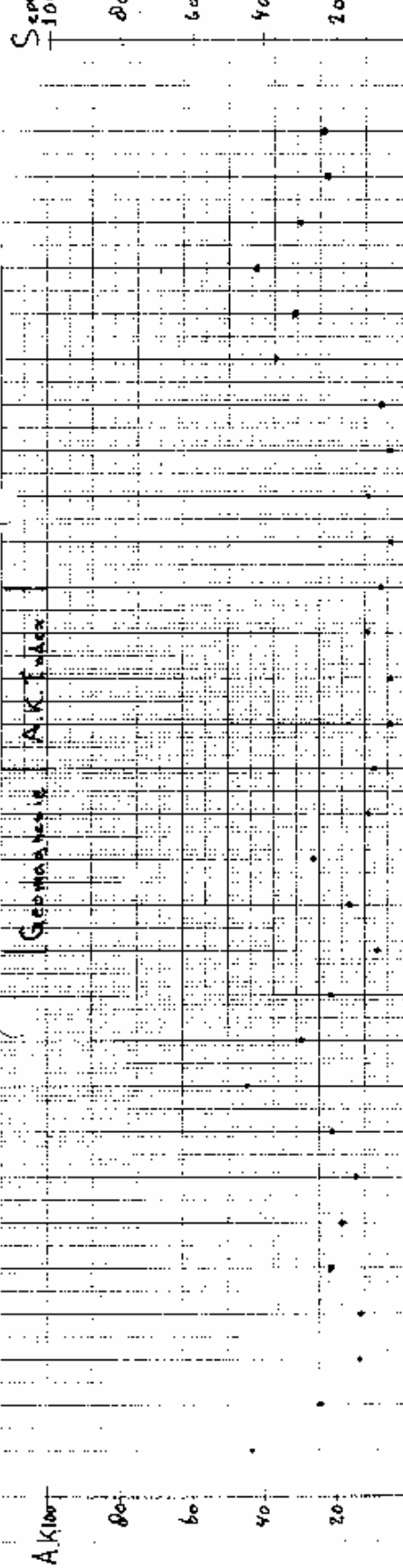
Date R I

600 2800 COS XFI XI AE SEA MAG

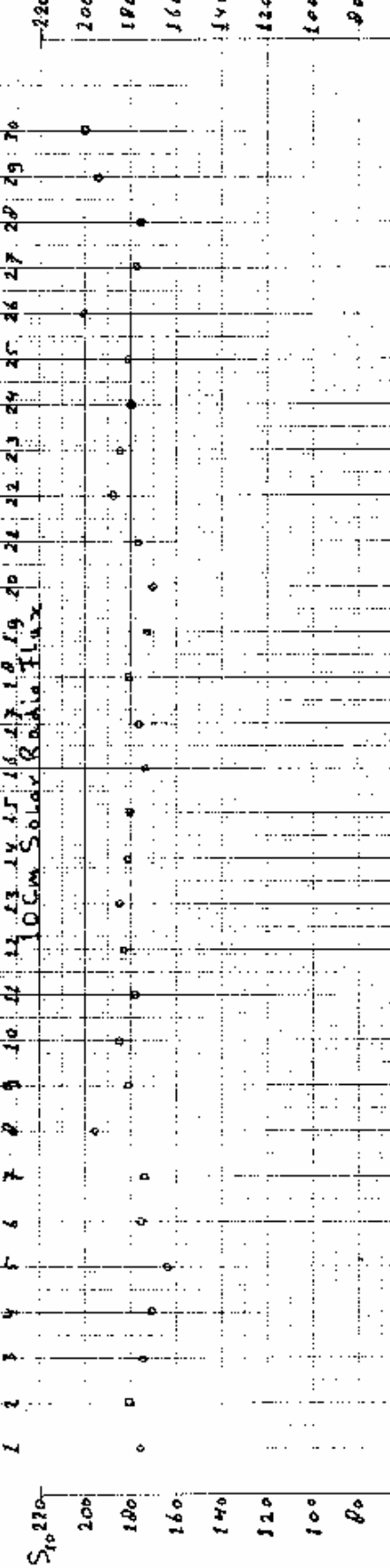
Date	R	I	600	2800	COS	XFI	XI	AE	SEA	MAG
31	167	242	49	196	615	17	1/0	45		
1	170	198	48	176	821	13	0/0	44		
2	153	127	47	181	819	19	0/0	25	1902	
3	147	123	43	175	824	31	0/0	14	1186	SEA(1426)
4	147	106	42	171	831	30	2/0	14	1186	1b(0107);1n(2200)+T
5	132	94	42	164	833	48	4/0	32		SEA(1000);1193;1220
6	137	85	42	176	840	17	0/0	19	0934	3b(1920)+T;SEA
7	111	87	42	174	---	158	4/1	15	0718	(1115;1251)
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	183	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	129	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		
25	111	120	50	181	862	16	0/0	37		1n(0750)+T
26	117	101	49	201	865	13	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	193	858	26	1/0	23	1516	
30	138	287	49	200	804	26	1/0	24		

R.I.R.I.: provisional international sunspot numbers from the S.I.D.C.
 PSI: 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 Huain station (Belgium).
 2800: 2800 Mhz solar flux from Ottawa (origin: Ursigrans).
 COS: thousands of the cosmic ray counts (origin: Ursigrans).
 XFI: X-flares index from the S.I.D.C. (origin: Ursigrans).
 XI: X-flares index from the Ursigrans (M-flares/X-flares).
 Ak: planetary geomagnetic index from Wüst (Germany from Ursigrans).
 SEA: sudden enhancements of atmospheric ionospheric from Uccle & Humain (Belgium).
 MAG: magnetic events from Dourbes station (Royal Natio. Institute Belgium).
 Remarks: sid(sudden ionospheric disturbance); ssc(sudden storm commencement); mgst(magnetic storm); ase(solar flare effect); s-1-2-3-4(class of flares); 1i-TV radio-burst; T(ten cm radio-burst); P(proton flare); p(proton event); gls(ground level event); neutron event); si(sudden impulse); F(Forbush)

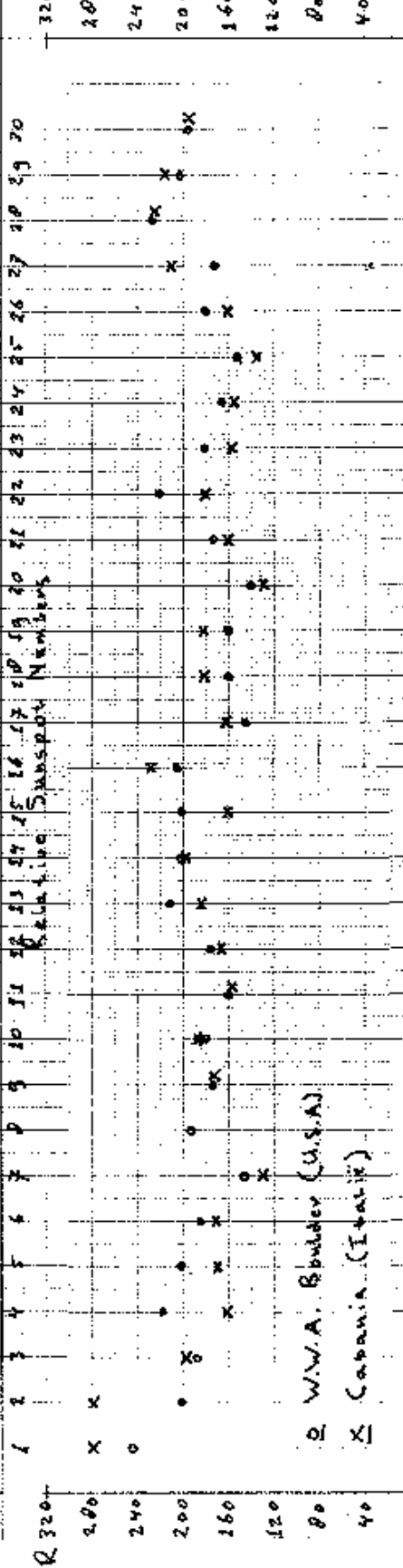
September 1991
100 AK



Georgina Vazir A.K. Index



100m Solar Radio Flux



Relative Sunspot Numbers

September 1991
100 AK

W.W.A. Boulder (U.S.A.)
X Capania (Italy)

320 R
200
240 Ri max = 170
200 Sept. 1
160 Ri min = 80
120 Sept. 20
80 Ri = 125.3
40

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30



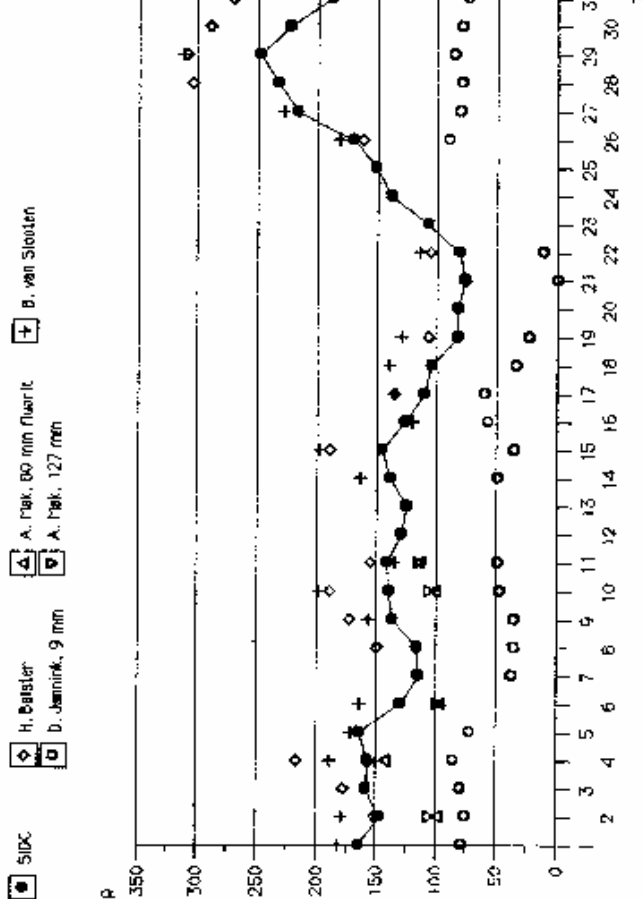
Bulletin Werkgroep Zon

oktober 1991

NVWS Werkgroep Zon, Sekerelaan, Veerburg 36, 2804 WZ Gouda, tel. 01820-39082.

Zonnewaakengstatistiek

Day	Beis	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	76												
2	152	75	99	106	180								140
3	178	79											129
4	217	85	142	154	189								
5	72												
6													114
7	37												
8	150	36											
9	173	35											
10	190	47	101	106	199								193
11	156	48	115	115	136								229
12													
13													312
14													
15	189	36											
16	57												
17	136	61											



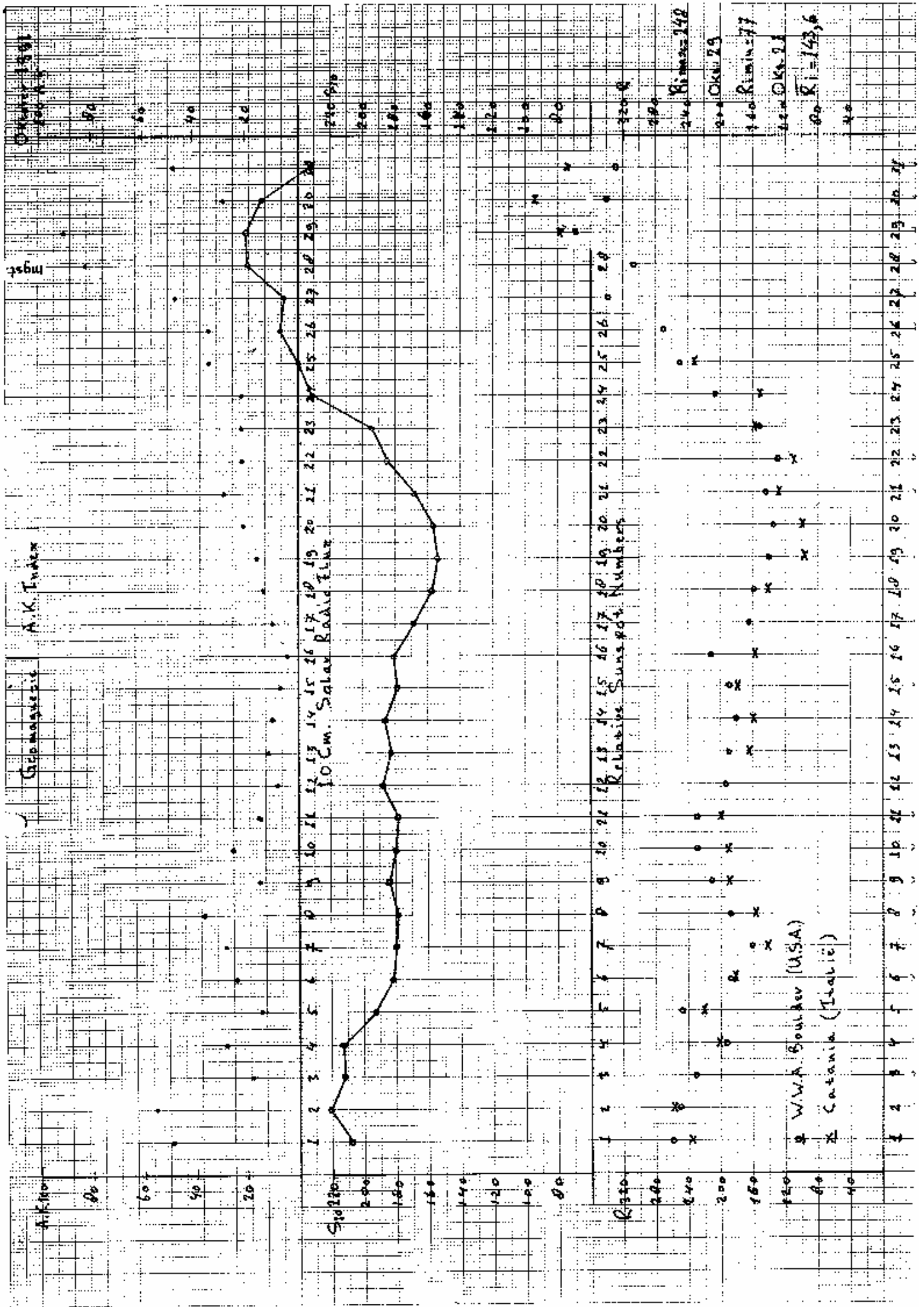
Sunspot Index
SUMSPDT

S.I.D.C. SUMMARY OF THE URSIGRAYS
1991 OCTOBER
R.I.M. = 149.6

Date	R	P	F	S	B	600	2800	COS	XFI	XI	AK	SEA	MAG
30	138	287	49	200	804	26	1/0	24					
1	165	297	47	208	869	58	3/0	49					
2	147	299	48	221	847	23	1/0	55					
3	159	243	48	212	846	59	3/0	17	1311				ln(2359)
4	158	218	44	213	868	35	2/0	25					
5	165	192	47	193	851	27	1/0	14					
6	129	117	46	182	849	13	0/0	24					
7	115	68	47	180	856	14	0/0	28					1358
8	116	34	49	179	863	15	0/0	37					1825
9	137	40	51	184	867	11	1/0	15					
10	140	50	50	180	865	12	0/0	25					
11	141	63	49	179	869	9	0/0	15					
12	129	84	49	188	874	7	2/0	8					
13	125	93	49	183	876	11	3/0	12					
14	138	101	52	187	879	44	6/0	10					2347
15	145	93	52	179	880	36	2/0	7	3n(1791)				
16	126	77	51	161	874	15	0/0	4					
17	111	77	49	169	875	14	0/0	10					1330
18	105	51	46	158	867	6	0/0	13					
19	82	33	44	154	864	0	0/0	16					
20	83	11	43	157	869	5	0/0	21					
21	77	13	44	168	872	3	0/0	28					
22	81	20	44	185	873	26	2/0	22					
23	107	61	43	194	874	6	0/0	22					
24	138	135	49	231	875	204	8/1	22					
25	152	228	51	240	881	24	3/0	34					
26	171	228	48	251	875	138	2/1	34					
27	217	300	118	249	876	244	2/2	47					
28	234	310	48	271	890	93	7/0	90					
29	248	297	48	272	886	42	3/0	90					
30	223	269	50	262	810	132	1/1	16	0914				
31	188	246	45	232	820	20	1/0	48					

Reactivation on the last days of October after a sudden decrease during September.

R.I.M.: 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: Ursigrays).
 COS: thousands of the cosmic ray counts (Origin: Ursigrays).
 XFI: X-flares index from the S.I.D.C. (Origin: Ursigrays).
 XI: X-flares index from the Ursigrays (N-flares/X-flares).
 AK: planetary geomagnetic index from Wingat (Germany from Ursigrays).
 SEA: sudden enhancements of atmospheric from Uccle & Humain (Belgium).
 MAG: magnetic events from Doubes station (Royal Meteor. Institute Belgium).
 Remarks: sid(sudden ionospheric disturbance); asc(sudden storm commencement) mgst(magnetic storm); sfc(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); gl(ground level event); ni(sudden impulse); F(Forbush).



Station 148

Rimini 77

Catania (Italy)

Station 148

Rimini 77

Catania (Italy)

Station 148

Rimini 77

Catania (Italy)

Station 148

Rimini 77

Catania (Italy)

Station 148

Rimini 77

Catania (Italy)

Station 148

Rimini 77

Catania (Italy)



Bulletin Werkgroep Zon

november 1991

NVWS Werkgroep Zon, Sekretariaat: Veennburg 36, 2804 WZ Gouda, tel: 01820-39082.

Zonnevlekgetallen.

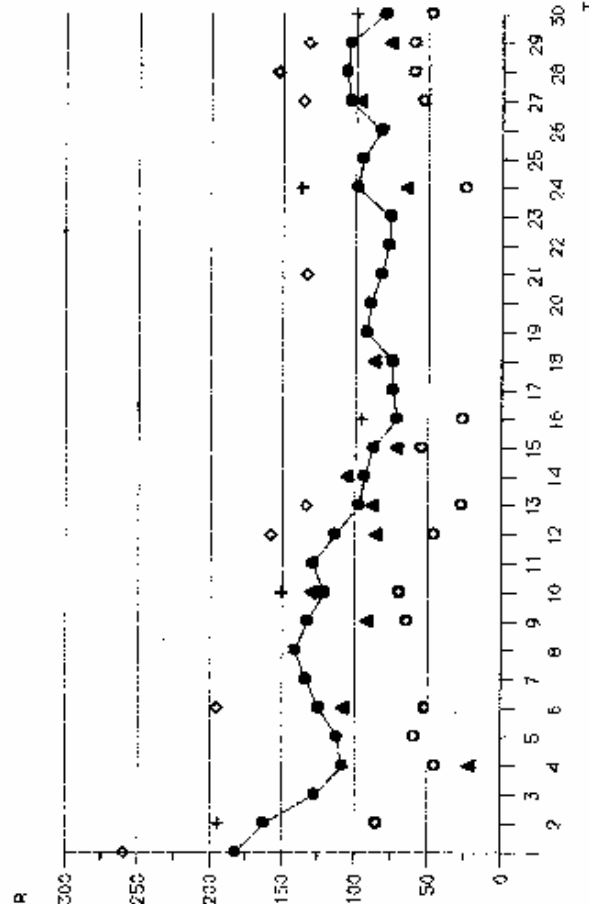
Day	Beob	Gene	Jann	Schell	VS100
1	260		85		195
2				88	
3					
4		23	45		
5			60		
6	196	109	53		
7					
8		92	65		
9		130	70	151	
10					
11		136	98	54	
12	159	66	46		
13	134	83	76		
14	106				
15	72	55			
16			27		96

Day	Beob	Gene	Jann	Schell	VS100
17					
18			88		
19					
20					
21	134				
22					
23					
24		66	25	138	
25					
26					
27	136	98	54		
28	154		60		
29	133	79	60		
30			48	81	100
observed	8	12	15	11	5
k	0.70	1.46	2.23	0.99	0.73
st.dev.	0.05	0.01	0.67	0.04	

Aanvulling A. Scholten.

5 Oktober, R = 107; 11 oktober, R = 106; k = 1.42; st. dev. = 0.12.

● SDC
 ○ H. Balster
 □ B. van Slonken
 + B. van Slonken
▲ A. Grienewegen
 ◆ A. Scholten



unsport Index



Data Center

SUMSPOT BULLETIN

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

1991 NOVEMBER R1W = 106.1

Date	R1	PPSI	600	2800	COS	XFI	XI	AK	SEA	MAG
31	188	246	45	232	820	20	1/0	48		0908
1	189	293	46	230	810	33	1/0	102	1137 (gradual)	
2	163	160	44	218	836	41	3/0	33	1147	1b(0623)+T;1b(1610)+T
3	127	72	43	186	843	--	-/-	16		
4	109	49	43	177	862	8	2/0	34		sb(2204)+T
5	113	96	46	176	866	24	1/0	24		sb(0445)+T;T(2355)
6	125	121	49	187	873	36	3/0	16	1227	
7	134	123	48	194	881	12	0/0	14		
8	141	119	46	200	844	43	1/0	118	0647	1b(1652)+T+Auroras
9	132	124	48	197	826	147	2/1	116	1534	1b(1531)+T
10	121	164	50	195	845	39	3/0	27		1n(0115)+T;1n(2004)+T
11	129	162	56	198	850	18	1/0	28	1751	
12	114	212	52	192	851	6	0/0	11		
13	98	193	47	181	854	5	0/0	15		
14	94	169	47	184	858	9	0/0	18		
15	68	132	46	173	860	105	0/1	--		3b(2233)+II+T
16	73	87	47	166	858	5	0/0	24		
17	75	58	47	165	861	43	3/0	18		2b(0153)+II+T;2b(1830)
18	75	51	45	163	870	17	1/0	24		
19	93	47	44	158	872	16	0/0	53	0421	
20	90	49	44	153	855	19	1/0	26		3b(0051)+II,IV+T
21	82	58	42	145	860	1	1/0	68	bps	(1706+2130)
22	78	45	42	139	--	--	-/-	44		
23	76	50	42	135	862	7	0/0	33		
24	99	47	41	130	868	7	0/0	16		
25	95	46	41	131	883	4	0/0	15		
26	83	55	43	144	884	8	0/0	7		
27	104	89	43	153	892	9	0/0	8		
28	106	92	42	155	901	5	0/0	12		
29	104	114	42	161	901	13	0/0	17		1b(0842)
30	80	99	44	168	882	19	3/0	16		

= From Humain station only.

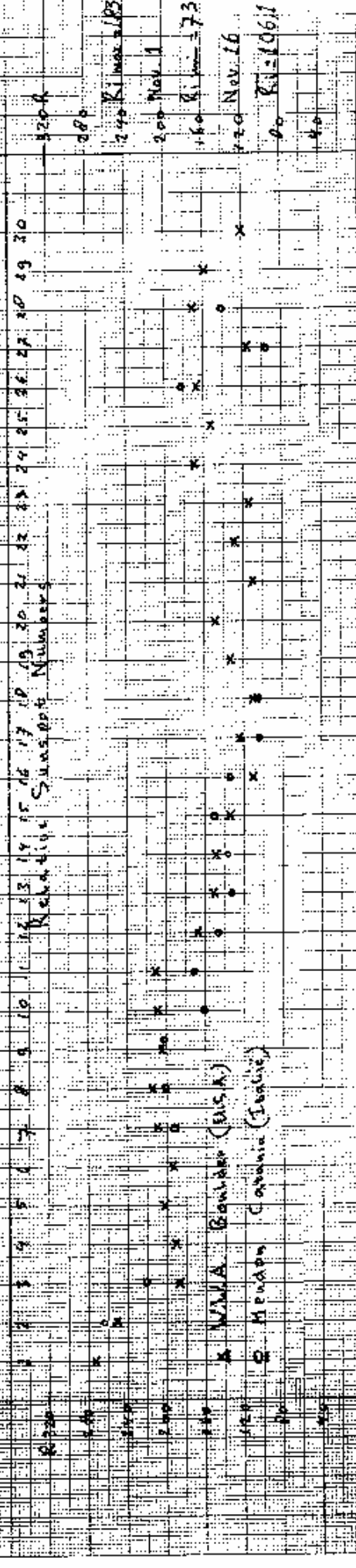
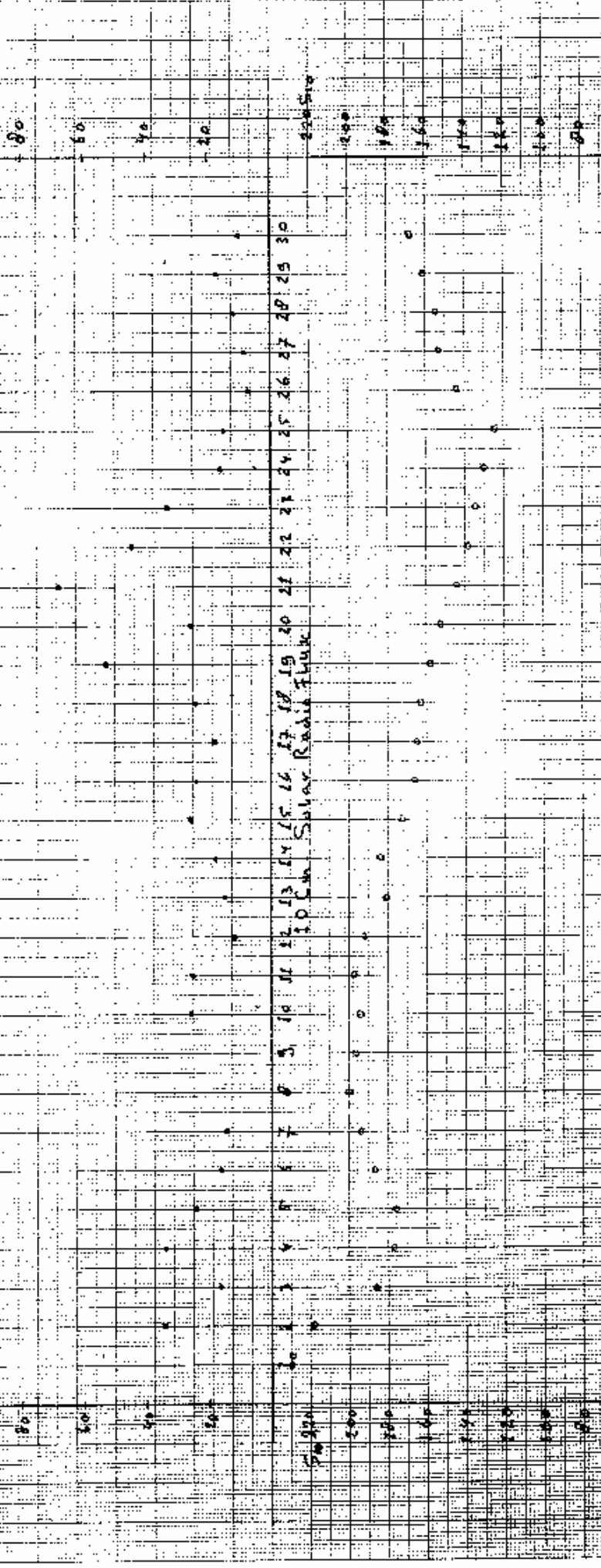
R1,R1X: provisional international sunspot-numbers from the S.I.D.C.
 PPSI: prompt photometric sunspot-index from the S.I.D.C. in 10-5 w.m-2: the quantity to subtract from the mean solar constant.
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 2800: 2800 Mhz solar flux from Ottawa (origin: Ursigrams).
 COS: thousands of the cosmic ray counts (origin: Ursigrams).
 XFI: X-flares index from the B.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 Meteor. Institute (Belgium).
 Remarks: bid(sudden ionospheric disturbance); ssc(sudden storm commencement); mgst(magnetic storm); sfl(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); glg(ground level event); neutron event); si(sudden impulse); F(Forbush)

Geomagnetic A.K. Index

1956

1956

November 1956



WMA Boulder (EUSA)

Mendon Canaan (Euslie)

240 K max = 183

200 Nov 1

160 K max = 73

170 Nov 16

00 K max = 10611

40



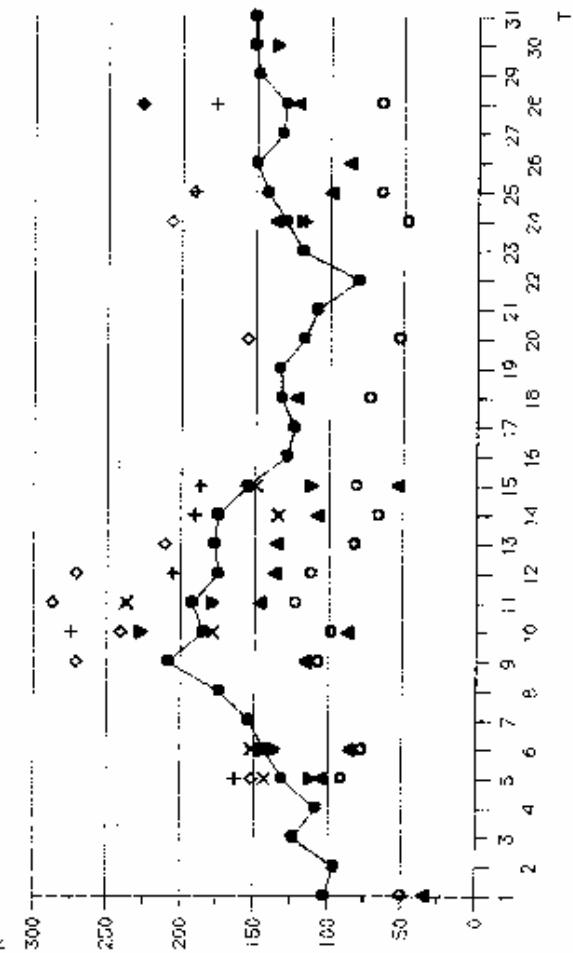
Bulletin Werkgroep Zon december 1991

AYWS Werkgroep Zon, Sekretariaat: Voornburg 36, 2804 WZ Gouda, tel: 01-620-39082.

Zonnewerkgroep Zon

Day	Bala	Groei	idenb.	Jann	Schol	vslou	Zans
1	35				50		
2							
3							
4							
5	153	105	144	91		164	112
6	106	86	152	78			137
7							
8	27	115		107			
9	241	88	179	99		275	227
10	268	147	206	122			179
11	271	136				206	
12	211	136		83			
13	109	135	66			191	
14	54	150	81	156	187	113	
15							
16							
17							

SIDC: H. Salster A. Graenerwegen D. Jahnink, 9 mm B. van Slonthen
 J.A. Idenburg A. Scheffen W.T. Zanstra



Sunspot Index

5 U N S P O T

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

1991 DECEMBER R: M = 141.4

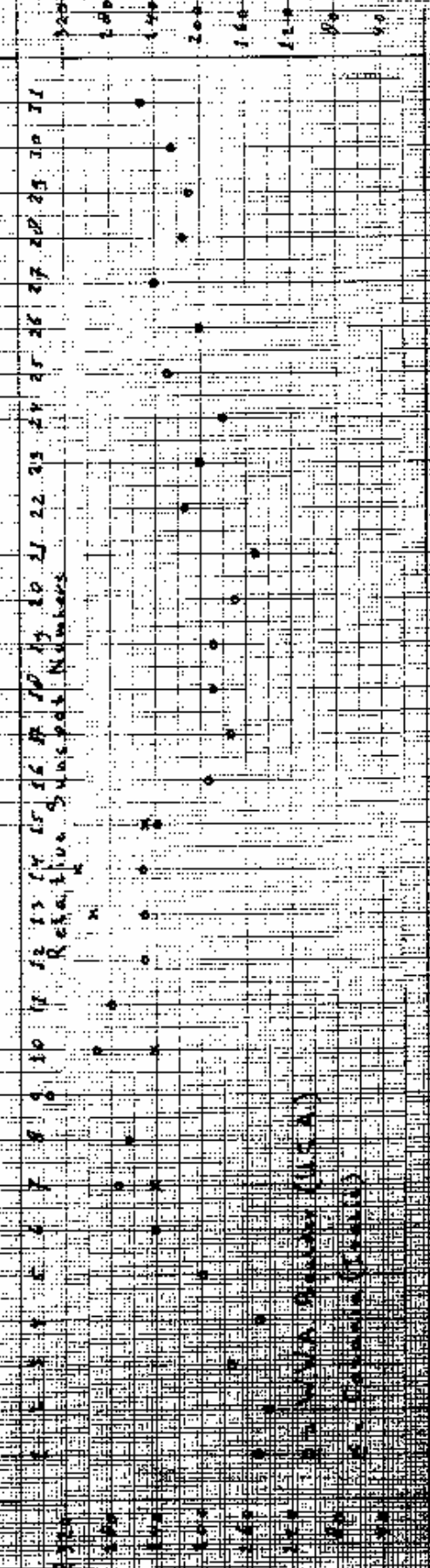
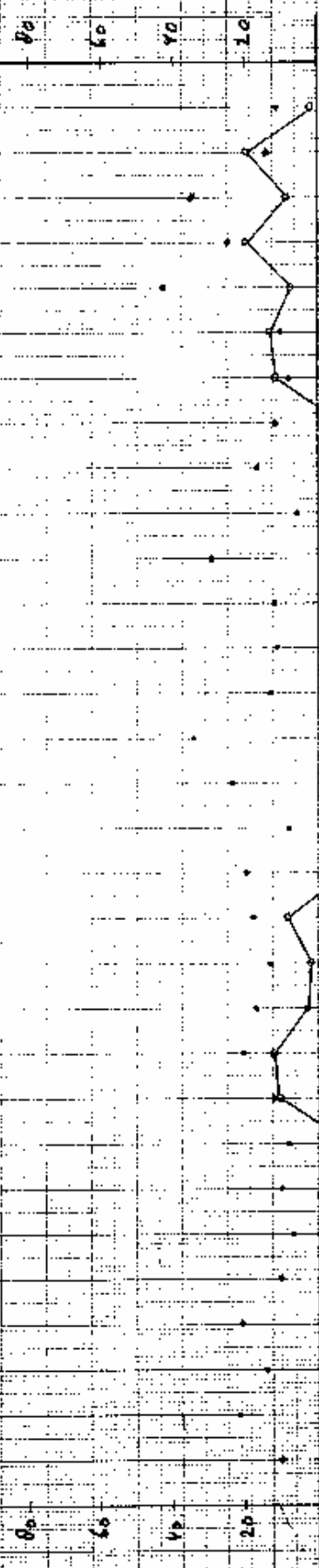
Date R: 1 PPSI 600 2800 COS XFI XI Ak SEA MAG

Date	R: 1	PPSI	600	2800	COS	XFI	XI	Ak	SEA	MAG
30	80	99	44	166	862	19	3/0	16		
1	102	75	45	172	875	16	3/0	10		
2	96	70	47	171	874	20	2/0	22		
3	124	71	44	183	869	108	0/1	14		2b(1631)+T
4	109	89	46	191	866	27	2/0	21	1604	
5	131	120	45	192	868	34	3/0	10	1147	
6	144	153	45	197	876	24	1/0	7		
7	154	176	44	209	878	22	0/0	10		
8	174	186	47	226	880	108	10/0	8		
9	209	275	49	257	875	93	12/0	12	1347	
10	185	256	53	260	862	77	4/0	21	1217	
11	193	266	52	245	861	33	2/0	18	1505	27Kz(0300)(0321)
12	175	238	55	243	860	36	2/0	13		2b(0348)+T
13	177	239	52	254	864	20	1/0	18	1557	
14	175	227	52	229	859	20	3/0	20		
15	155	208	47	213	862	46	4/0	8		5f(0456)
16	129	183	50	233	870	31	5/0	24	1201	5n(1922)+T
17	124	142	49	196	871	18	1/0	34		2b(0619)+T
18	133	106	49	195	884	7	1/0	13		
19	134	125	49	188	892	13	1/0	11		1b(0746)+T
20	117	105	46	198	867	103	0/1	12	1400	2b(1355)-11+1V+T
21	109	117	44	192	882	2	2/0	29		
22	80	150	47	223	883	21	2/0	6		2n(1647)+T
23	119	163	47	226	888	26	3/0	16	1802	2n(1032);2(2132)-T
24	130	239	45	230	886	133	3/1	12	1017	2(0305);2b(1012)+T
25	143	264	50	259	899	28	3/0	6		
26	150	298	54	261	904	59	6/0	10	1640	99c
27	132	300	47	252	987	27	4/0	(43)		T(0601;1106);5n(1715)
28	130	299	52	272	890	21	3/0	25		T+X(1225);3b(2107)+T
29	149	379	47	254	870	6	0/0	36	0209	99c
30	151	238	62	272	874	64	5/0	(10)		1b(1014);2b(2308)+T
31	151	165	--	243	873	21	4/0	12	1426	

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 11-IV radio-burst; T(ten cm radio-burst); P(proton flare); p(proton event); glc(ground level event); neutron event); si(sudden impulse); F(Forbush)

December 1941
100 A.K.

Geomagnetic A.K. Index



140 Kilmuir 209
Dec. 9
160 Kilmuir 80
D.L. 22
120
100 Kilmuir 141.4
60