

# QUARTERLY BULLETIN ON SOLAR ACTIVITY

Published by the Eidgen. Sternwarte in Zürich

with financial support from UNESCO

## I. SUNSPOTS

### Sunspot Relative-Numbers and Sunspot-Areas

Co-operating Observatories for Sunspot Relative-Numbers R: Arcetri, Arosa, Athens, Beirut, Bucarest, Catania, Herstmonceux, Ikoma-Nara, Istanbul, Kandilli, Kiev, Kislovodsk, Locarno, Madrid, Manila, Potsdam, Quezon City, Roma-Monte Mario, San Miguel, Santiago, Seoul, Skalnaté Pleso, Tashkent, Tokyo, Tortosa, Trieste, Uccle, Wrocław, Zürich.

The Sunspot-Areas A are based upon measurements made at Catania  $A_C$ , Roma-Monte Mario  $A_R$ , and at Locarno and Zürich (combined values)  $A_Z$ . The apparent total area of the umbra plus penumbra is uncorrected for foreshortening and expressed in millionths of the solar disk.

1966	January				February				March			
	R	$A_C$	$A_R$	$A_Z$	R	$A_C$	$A_R$	$A_Z$	R	$A_C$	$A_R$	$A_Z$
1	22	111	144	—	7	0	—	2	25	53	143	73
2	21	70	96	66	11	32	57	13	11	58	109	52
3	20	64	64	49	21	117	—	77	14	48	—	21
4	17	54	48	30	17	101	—	204	20	11	—	23
5	11	22	—	4	19	196	516	—	15	—	—	37
6	0	0	0	0	17	143	—	281	15	80	—	31
7	7	5	0	4	17	127	334	251	12	63	159	49
8	13	0	0	4	14	122	302	179	11	32	111	45
9	13	5	—	4	12	91	—	152	15	74	140	49
10	0	—	—	—	12	63	207	92	14	53	168	35
11	0	0	—	—	14	42	—	53	10	32	67	22
12	0	0	0	—	11	22	—	16	0	0	—	0
13	17	64	0	61	18	80	—	—	7	5	0	6
14	30	105	512	—	14	64	—	—	0	0	0	0
15	40	—	—	827	16	74	271	95	10	—	207	132
16	58	595	—	670	13	127	255	143	26	392	398	423
17	51	647	—	656	19	170	—	—	44	—	1112	1087
18	64	838	—	776	24	203	293	180	53	1474	1627	1453
19	68	721	1150	705	29	149	—	—	60	1677	1947	1439
20	64	610	—	552	39	223	—	226	54	1565	—	1458
21	58	450	—	—	42	346	—	—	50	1401	1686	1577
22	52	346	397	—	50	446	655	414	52	1104	1540	1150
23	42	—	537	415	55	371	680	—	40	—	1114	909
24	44	498	557	497	45	413	495	346	31	965	890	858
25	37	—	—	385	39	351	373	287	24	673	891	781
26	23	—	—	—	40	239	467	—	18	430	382	391
27	17	—	343	194	36	175	364	134	10	138	—	131
28	16	117	200	147	33	164	334	—	12	96	—	147
29	21	95	127	80					35	281	575	422
30	28	112	207	80					44	881	1114	783
31	19	47	76	28					52	1072	1684	1521
Mean	28.2	223	235	271	24.4	166	374	166	25.3	469	698	487

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1966	April				May				June			
	R	$A_C$	$A_R$	$A_Z$	R	$A_C$	$A_R$	$A_Z$	R	$A_C$	$A_R$	$A_Z$
1	64	1655	1654	1878	50	302	509	381	71	467	488	310
2	58	—	—	1999	52	361	547	430	74	371	573	293
3	74	1724	2147	2085	57	473	464	351	41	227	241	147
4	74	—	1726	2008	61	400	401	352	60	352	347	142
5	59	1274	2046	1696	43	270	306	291	48	285	—	119
6	63	1188	1535	1269	32	255	356	—	47	—	223	134
7	70	1088	1152	992	29	223	223	169	40	137	245	94
8	65	1008	—	876	17	69	—	80	35	144	245	191
9	49	627	—	—	8	58	—	42	33	371	—	275
10	37	430	—	495	0	0	0	0	25	388	375	216
11	29	372	668	421	14	0	0	5	43	203	382	304
12	27	222	303	219	14	11	0	15	34	456	652	224
13	24	—	—	173	23	11	76	29	34	493	477	330
14	29	212	350	182	50	106	—	89	31	270	398	298
15	29	424	—	252	46	159	—	156	22	217	—	162
16	35	594	—	—	47	—	—	287	40	160	239	144
17	40	636	516	238	35	218	255	228	46	413	652	371
18	40	520	557	261	28	107	128	92	40	519	563	298
19	30	372	319	230	35	207	220	106	36	535	524	—
20	41	340	471	—	58	556	990	325	42	318	382	302
21	44	—	—	222	80	870	1449	1511	33	223	318	279
22	56	—	—	273	72	1262	1254	746	35	360	429	246
23	69	547	690	437	68	1066	1126	837	62	572	577	287
24	58	1162	936	723	68	939	1054	678	66	563	587	227
25	61	886	942	—	64	912	949	529	80	637	—	444
26	54	546	531	361	70	583	882	517	82	596	650	310
27	40	334	398	346	66	796	1043	865	76	492	420	213
28	40	—	—	225	60	615	945	674	52	191	226	195
29	48	249	483	275	42	478	701	623	47	181	407	279
30	53	355	347	325	56	287	519	314	55	265	516	187
31					58	—	315	161				
Mean	48.7	699	889	710	45.3	400	566	363	47.7	359	428	242

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1966	July				August				September			
	R	$A_C$	$A_R$	$A_Z$	R	$A_C$	$A_R$	$A_Z$	R	$A_C$	$A_R$	$A_Z$
1	49	159	337	159	78	1141	1208	974	44	700	1273	970
2	49	319	304	149	74	1187	1136	764	44	598	1018	678
3	54	308	306	154	72	519	984	556	25	398	620	430
4	53	392	615	248	68	371	894	411	18	137	226	169
5	48	642	1018	680	60	429	—	250	26	148	80	43
6	46	822	1082	1047	50	191	—	124	30	69	165	108
7	58	897	1499	1140	33	64	163	43	36	121	271	153
8	68	673	1095	815	13	10	—	8	38	101	277	190
9	60	602	923	678	13	0	—	3	39	232	417	266
10	65	298	255	240	0	0	0	0	37	339	591	356
11	52	267	318	235	16	16	41	13	42	441	624	400
12	62	376	528	176	36	207	199	60	38	318	443	151
13	56	181	343	188	30	244	222	159	33	286	222	216
14	42	138	319	234	37	144	248	237	35	489	526	507
15	34	265	408	331	41	217	403	208	38	726	890	667
16	48	392	476	373	40	248	—	—	57	981	1337	—
17	42	504	589	—	41	145	176	—	76	1235	2085	1290
18	49	589	706	—	39	91	220	50	83	1702	2542	2069
19	38	414	798	593	33	58	150	38	76	2292	—	2453
20	65	418	628	531	28	74	83	22	78	2361	2864	2265
21	55	397	663	610	22	10	—	8	89	2471	2681	2019
22	66	413	757	584	38	96	140	52	86	2255	2545	1942
23	56	690	986	612	65	271	500	380	71	1634	1909	1699
24	70	865	1092	741	71	858	1050	542	67	1553	1608	1347
25	67	923	1270	888	89	1375	1398	1207	68	1220	1431	957
26	74	1137	1590	1110	95	1506	1796	1191	54	791	777	436
27	65	1427	1606	1212	90	1158	1778	1455	48	737	541	430
28	70	1173	—	1219	84	1364	1390	1238	42	429	418	294
29	76	1178	1461	1220	89	1013	1401	1234	45	412	—	—
30	59	1358	1740	1234	76	1278	—	—	42	361	461	—
31	62	1148	1593	1150	66	11	1228	1048				
Mean	56.7	625	843	640	51.2	461	700	438	50.2	851	1030	834

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1966	October				November				December			
	R	$A_C$	$A_R$	$A_Z$	R	$A_C$	$A_R$	$A_Z$	R	$A_C$	$A_R$	$A_Z$
1	57	572	516	269	43	184	—	160	35	203	—	—
2	55	—	—	234	42	211	293	143	33	54	—	—
3	50	382	325	171	38	—	—	—	30	33	—	31
4	36	266	255	142	38	—	—	—	57	270	73	—
5	40	282	382	179	20	58	88	—	69	471	—	501
6	44	—	497	291	32	95	204	—	68	659	929	627
7	53	721	—	420	48	434	570	428	64	—	1025	838
8	48	530	550	384	55	928	801	673	88	986	1518	1003
9	44	482	550	—	59	1013	—	—	86	1411	2493	—
10	65	604	400	280	63	1325	—	1045	112	2397	3738	—
11	66	715	—	—	72	—	—	1223	125	2515	3976	—
12	64	971	789	—	80	1304	1973	1420	130	2083	4488	2637
13	72	1181	1088	850	68	1346	1766	1222	118	2010	—	—
14	64	1357	1413	1070	66	1183	1689	1208	113	1602	2838	—
15	60	1502	1639	—	66	997	1642	1212	107	1135	—	1311
16	70	1443	—	—	52	960	1330	865	116	806	1763	763
17	70	—	—	1480	59	715	1193	—	88	499	894	305
18	70	1586	1505	1222	57	—	1044	614	76	291	373	—
19	76	1601	1547	—	65	324	812	547	57	163	—	—
20	96	1614	1588	1083	74	531	754	414	46	42	—	—
21	91	1674	—	1173	77	562	1133	723	37	53	—	54
22	83	1343	1505	1149	78	—	—	770	34	84	—	85
23	75	1156	890	605	76	—	—	984	38	254	340	—
24	64	572	716	—	72	562	1165	—	45	312	573	—
25	50	491	—	216	74	519	1082	715	60	515	692	—
26	47	185	284	—	67	556	834	479	65	599	824	691
27	39	116	—	28	59	—	684	480	48	—	—	303
28	36	32	67	—	41	371	694	228	48	280	—	—
29	27	116	159	—	37	229	—	—	51	248	279	199
30	27	—	—	123	37	—	290	—	70	333	—	—
31	35	229	293	134	—	—	—	—	68	583	—	486
Mean	57.2	805	771	548	57.2	655	954	741	70.4	720	1577	656