

N.Z. DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH.



APIA OBSERVATORY,
APIA, WESTERN SAMOA.

ANNUAL REPORT
FOR
1931.

*Issued under the authority of the Rt. Hon. G. W. FORBES,
Minister of Scientific and Industrial Research.*

WELLINGTON.
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1933.

9th January, 1933.

Sir,—

I have the honour to present herewith the Annual
Report of the Apia Observatory for the year 1931.

E. MARSDEN,
Secretary,
Department of Scientific and Industrial Research.

The Right Hon. G. W. FORBES,
Minister of Scientific and Industrial Research.

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Clerks (recruited locally)	R. Stanley; R. Lafitaga; Siaosi; A. Rasmussen

CO-ORDINATES of TRANSIT PIER

Latitude	13° 48' 26" South
Longitude	171° 46' 30" or 11h.27m.6s. West of Greenwich
Altitude	Two metres above mean sea level

TIME STANDARDS

Magnetism and Seismology	Greenwich Mean Time
Meteorological Records	Standard time of Western Samoa. This is 11h.30m slow on G.M.T. and 2m.54s. slow on true local time.
Atmospheric Electricity	Zone time 11h. slow on G.M.T.

APIA OBSERVATORY, SAMOA

Report for the year 1931

Introduction

The following pages contain the results of observations in terrestrial magnetism, seismology, meteorology and atmospheric electricity made at Apia Observatory during the year 1931. The report on atmospheric electricity also contains the results for the previous year 1930 which had been withheld pending revision.

The observations in terrestrial magnetism and seismology were made by Mr P.W.Glover who also prepared the corresponding tables of numerical values. The preparation of the tables of meteorological elements is due to Mr K.C.Sanderson who returned to the Observatory in February 1931 after having been away in New Zealand for four months on sick leave. Mr Sanderson was also in charge of the observations in atmospheric electricity. The revision of the tables for 1930 in atmospheric electricity was performed by Mr H.B.Sapsford who succeeded Mr Sanderson on his retirement at the end of the year.

The tide gauge was maintained in operation throughout the year in the hut used for the electrometer at the Lagoon Station and copies of hourly tabulations of the records were sent month by month to the Coast and Geodetic Survey at Washington, D.C., U.S.A. Some measurements of upper winds were made during the year by means of pilot balloons.

MAGNETIC REPORT, 1931



Explanation

This is the eleventh report which has been presented since the Observatory was placed under the control of the Government of New Zealand. The arrangement of the tabular matter remains the same as in previous years.

The instrumental equipment also remains the same, namely the Tesdorpf magnetometer No.2025 for the absolute determination of D and H, the Schulze earth inductor for the absolute determination of I, and the set of Eschenhagen variometers by Toepfer for the continuous photographic registration of D, H and Z. The Tesdorpf magnetometer is in bad condition. In most positions one of the verniers is clear of the scale on which it should be superimposed, and the optical system is so poor that only in a very good light can the magnet scales be seen in the eyepiece. The vertical force variometer was out of action throughout the year.

Diurnal variations on international quiet days have been adjusted for non-cyclic change in the manner described in the Report for 1928-29.

The diurnal variations of D and H on international quiet days have been analyzed harmonically by the 12-ordinate process for each month. References to previously published harmonic analyses of the diurnal variations of magnetic elements at Apia may be found in the magnetic report for 1930.

In the tables of hourly values the quantities given are the means over the Greenwich Mean Hours 0-1, 1-2, 23-24, and these hourly periods are in all cases referred to by the hours specifying the commencements of the periods.

The measurement of the magnetograms during 1931 was carried out by a method of direct scaling similar to the method described by McFarland⁺ in 1926. Compared with the older method in which the ordinates were first measured in millimetres and afterwards converted into magnetic units, the method of using a specially prepared scale is much more expeditious.

⁺W.N. McFarland, "Direct Scaling of Absolute Magnetic Values" *Terrestrial Magnetism*, vol.31, no.2, 1926 June.

Description

The mean value of H derived from the all-days results is 35171 γ . This is 24 γ less than the corresponding mean for 1930 (January to June) which was itself 14 γ less than the mean for 1929. For the international quiet days results, the mean value of H is 35175 γ . This is a decrease of 38 γ on the mean for 1930 (January to June).

The mean value of D deduced from the all-days results is E.10°35.2'; and from the international quiet days results it is E.10°35.3'. In each case these represent an increase of E.1.0' on the mean values for 1930 (January to June) which were both in excess of the 1929 values by E.0.7'.

The mean value of I, derived from absolute observations is -30°09.3'. Combining this result with the all-days mean of 35171 γ for H we obtain as the all-days mean value of Z -20434. This is 6 γ greater than the corresponding mean for 1930 (January to June) which was 11 γ in excess of the mean for 1929.

The Z variometer was out of action throughout the year; hence no further data for the vertical force can be included in this report.

Table 1 - Annual Mean Values of Magnetic Elements
1905 - 1931



Authorities

1905-11 Königliche Gesellschaft zu Göttingen - Annual Reports
 1912-20 Summary of Magnetic Observations - Wellington, N.Z., 1927
 1921-25 Department of External Affairs, Wellington, N.Z.
 1926-30 " " Scientific and Industrial Research,
 Wellington, New Zealand

Year	All Days			International Days		
	D	H	Z	D	H	Z
	East	γ	γ	East	γ	γ
1905	9° 37.0'	35 675	19 935	-	-	-
1906	38.5	655	977	-	-	-
1907	40.1	637	20 010	-	-	-
1908	41.9	614	036	-	-	-
1909	43.9	587	086	-	-	-
1910	45.6	550	110	-	-	-
1911	48.4	527	191	-	-	-
1912	49.7	493	226	9° 49.7'	35 495	20 225
1913	52.0	457	277	51.9	462	276
1914	53.9	424	312	53.9	428	312
1915	9 57.0	386	331	57.0	394	332
1916	10 00.0	359	342	10 00.0	365	341
1917	3.2	338	371	3.2	349	371
1918	6.1	315	380	6.2	326	381
1919	8.5	289	392	8.6	299	393
1920	11.2	273	413	11.3	282	413
1921	10.7	257	414	10.7	265	412
1922	13.6	241	421	13.7	249	421
1923	16.3	248	440	16.2	250	441
1924	19.2	249	453	19.2	253	453
1925	22.8	239	453	22.9	246	453
1926	26.1	216	446	26.2	228	449
1927	29.5	223	432	29.5	232	-
1928	32.1	225	-	32.1	235	-
1929	33.5	209	418	33.6	221	417
1930	34.2	195	428	34.3	213	427
1931	35.2	171	434	35.3	175	-

Table 2 - MONTHLY MEAN VALUES of MAGNETIC ELEMENTS, 1931



<u>All Days</u>	D	H	X	Y
	E 10°+	35000γ+	34000γ+	6400γ+
January	36.18'	201.2	600	77
February	36.39	182.4	581	76
March	35.82	174.9	575	69
April	34.71	172.6	575	57
May	34.96	181.7	583	61
June	35.01	174.6	576	61
July	34.93	164.4	566	58
August	35.00	173.7	575	60
September	34.96	172.8	575	60
October	34.96	154.9	556	56
November	35.00	152.8	555	57
December	34.79	144.7	545	53
YEAR	35.23	170.9	572	62

International
Days

January	36.06	207.1	606	77
February	36.19	193.3	593	76
March	35.93	181.1	581	71
April	34.73	162.4	565	55
May	34.92	187.5	589	62
June	35.02	186.7	588	63
July	34.99	168.3	570	59
August	35.06	176.3	578	62
September	34.92	183.4	585	61
October	35.01	163.1	565	58
November	34.88	159.2	561	56
December	34.89	138.2	540	52
YEAR	35.30	175.5	577	63

TABLE 3 - DIURNAL VARIATION of D - ALL DAYS, 1931



G.M.T.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
0- 1	1.95	1.80	1.31	-0.35	-0.96	-0.58	-0.74	-0.66	-0.33	1.09	1.49	1.60
1- 2	2.16	2.23	1.50	0.05	-0.05	0.14	0.07	0.50	0.48	1.26	1.66	1.93
2- 3	1.90	1.97	1.13	0.58	1.00	0.81	0.79	1.21	1.06	1.23	1.47	2.03
3- 4	1.42	1.44	0.72	0.89	1.44	0.85	0.69	1.09	1.07	0.85	1.07	1.84
4- 5	0.90	0.79	0.26	0.69	1.04	0.29	0.25	0.66	0.68	0.70	0.93	1.34
5- 6	0.74	0.48	0.11	0.51	0.31	-0.02	0.06	0.29	0.46	0.73	1.00	1.15
6- 7	0.70	0.74	0.38	0.39	0.14	-0.14	-0.06	0.05	0.33	0.63	0.94	0.94
7- 8	0.67	0.79	0.46	0.25	-0.08	-0.17	-0.11	-0.09	0.21	0.39	0.69	0.71
8- 9	0.47	0.57	0.34	0.07	-0.19	-0.28	-0.18	-0.20	-0.08	0.09	0.40	0.44
9-10	0.18	0.36	0.20	-0.01	-0.23	-0.44	-0.25	-0.27	-0.09	-0.10	-0.05	0.16
10-11	-0.02	0.18	0.08	-0.01	-0.29	-0.49	-0.29	-0.25	-0.28	-0.24	-0.20	-0.06
11-12	-0.12	0.11	0.13	-0.03	-0.23	-0.35	-0.23	-0.32	-0.32	-0.34	-0.29	-0.21
12-13	-0.15	0.02	0.18	0.00	-0.09	-0.24	-0.14	-0.25	-0.32	-0.35	-0.29	-0.32
13-14	-0.19	0.07	0.23	0.09	0.01	-0.03	0.03	-0.06	-0.07	-0.32	-0.19	-0.27
14-15	-0.09	0.02	0.25	0.20	0.18	0.10	0.17	0.22	0.04	-0.14	-0.12	-0.17
15-16	-0.15	0.05	0.24	0.27	0.36	0.34	0.35	0.43	0.29	-0.13	-0.12	-0.11
16-17	-0.19	-0.01	0.17	0.39	0.50	0.58	0.50	0.58	0.47	0.00	-0.21	-0.14
17-18	-0.80	-0.43	-0.15	0.47	0.60	0.63	0.73	0.74	0.63	-0.33	-0.92	-0.95
18-19	-1.99	-1.71	-0.94	0.35	0.81	0.89	1.03	0.97	0.47	-1.17	-1.83	-2.07
19-20	-2.59	-3.03	-2.08	-0.36	0.44	0.77	0.82	0.40	-0.29	-1.59	-2.46	-3.00
20-21	-2.88	-3.41	-2.38	-1.01	-0.43	0.07	0.08	-0.50	-0.91	-1.57	-2.31	-2.89
21-22	-2.18	-2.69	-1.87	-1.39	-1.21	-0.62	-0.89	-1.45	-1.28	-1.14	-1.45	-1.98
22-23	-0.69	-0.74	-0.67	-1.21	-1.53	-1.06	-1.44	-1.63	-1.43	-1.12	-0.21	-0.72
23-24	0.97	0.53	0.45	-0.72	-1.55	-1.13	-1.36	-1.48	-0.83	0.68	0.90	0.67

TABLE 4 - DIURNAL VARIATION of H - ALL DAYS, 1931



G.M.T.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
						Y						
0- 1	27.8	32.6	24.8	18.5	7.8	6.6	13.1	14.2	18.3	18.1	21.9	24.9
1- 2	22.8	27.5	18.6	9.2	5.0	4.1	10.5	9.0	9.5	11.3	15.8	17.7
2- 3	14.6	18.3	13.2	2.4	0.5	1.7	6.9	4.0	1.6	4.1	6.2	7.8
3- 4	3.3	5.5	5.2	-2.8	-4.3	-3.1	1.5	-3.9	-6.0	-4.2	-2.4	-0.8
4- 5	-4.2	-3.5	-2.8	-7.4	-8.1	-5.9	-2.7	-9.0	-9.2	-9.0	-6.9	-7.7
5- 6	-8.2	-9.4	-8.1	-7.9	-8.0	-7.5	-4.8	-10.6	-10.7	-10.3	-8.4	-9.0
6- 7	-8.1	-11.2	-9.4	-8.1	-9.0	-7.8	-6.7	-11.6	-8.5	-10.0	-9.2	-6.2
7- 8	-9.2	-10.6	-9.4	-9.6	-10.2	-9.3	-8.0	-13.2	-9.4	-9.8	-9.2	-8.3
8- 9	-11.3	-10.4	-8.0	-10.6	-9.5	-9.2	-9.6	-12.8	-9.2	-9.5	-8.4	-7.1
9-10	-12.0	-9.6	-8.8	-11.0	-8.7	-10.4	-10.7	-10.3	-10.8	-8.4	-8.4	-7.3
10-11	-11.9	-9.3	-9.2	-10.8	-8.0	-9.7	-11.1	-11.0	-11.2	-7.4	-9.2	-7.7
11-12	-11.8	-9.8	-10.2	-9.5	-6.2	-7.9	-11.2	-9.7	-10.5	-6.6	-9.4	-6.3
12-13	-11.1	-9.4	-8.8	-8.3	-5.7	-7.3	-9.5	-7.6	-8.8	-4.9	-6.5	-3.9
13-14	-10.9	-9.3	-8.5	-8.4	-4.2	-6.0	-7.7	-7.0	-7.9	-3.3	-6.3	-5.1
14-15	-10.5	-8.8	-7.5	-6.2	-3.4	-3.7	-6.7	-6.2	-6.7	-3.9	-6.1	-4.8
15-16	-9.7	-8.1	-7.8	-5.4	-2.1	-1.2	-6.1	-4.1	-5.4	-2.7	-5.7	-5.6
16-17	-8.8	-6.9	-7.2	-4.0	-0.3	1.9	-3.5	-2.2	-3.8	-1.9	-5.9	-6.0
17-18	-10.1	-8.7	-7.8	-1.9	2.6	4.8	-0.8	0.7	0.0	-2.5	-7.6	-7.8
18-19	-10.7	-10.7	-9.4	0.5	6.7	9.4	4.2	6.1	4.0	-3.2	-7.1	-9.2
19-20	-6.8	-9.3	-7.2	4.2	8.8	13.3	9.5	11.2	9.0	-0.2	-1.8	-5.2
20-21	3.3	-2.1	2.6	9.0	11.8	13.8	10.9	15.9	14.1	8.3	7.3	2.0
21-22	17.3	10.8	15.5	16.6	15.2	14.1	11.5	18.2	18.1	14.6	15.8	12.4
22-23	30.3	22.7	22.6	24.6	16.2	11.8	14.7	19.9	21.1	20.5	23.5	21.4
23-24	34.6	30.5	27.1	26.1	12.2	8.6	15.9	19.6	21.3	21.7	27.1	24.0

TABLE 5 - DIURNAL VARIATION of D, INTERNATIONAL DAYS, 1931



G.M.T.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
	values in γ											
0- 1	2.55	2.57	0.85	-0.30	-0.86	-0.66	-0.95	-0.99	-0.06	1.54	1.99	1.70
1- 2	2.55	2.76	1.29	0.10	0.18	0.04	0.35	0.60	0.89	1.46	2.14	1.93
2- 3	2.04	2.15	1.30	0.82	1.09	0.68	1.01	1.35	1.19	1.07	1.91	1.92
3- 4	1.29	1.31	0.92	1.20	1.31	0.78	0.86	1.36	0.93	0.26	1.27	1.95
4- 5	0.45	0.54	0.54	0.96	0.81	0.00	0.60	0.79	0.58	0.17	0.92	1.34
5- 6	0.50	0.36	0.47	0.58	0.34	-0.11	0.16	0.30	0.21	0.36	1.08	1.02
6- 7	0.52	0.83	0.73	0.38	0.16	-0.14	-0.02	0.05	0.17	0.51	0.99	0.65
7- 8	0.49	0.75	0.67	0.33	0.02	-0.19	-0.16	-0.01	0.13	0.34	0.67	0.34
8- 9	0.36	0.57	0.64	0.13	0.01	-0.20	-0.16	-0.20	0.02	0.07	0.52	0.42
9-10	0.18	0.20	0.52	0.03	0.01	-0.23	-0.16	-0.17	-0.07	-0.12	-0.02	0.16
10-11	0.03	0.05	0.34	0.01	0.01	-0.26	-0.21	-0.22	-0.13	-0.13	0.03	-0.01
11-12	0.07	0.07	0.23	0.05	0.00	-0.19	-0.13	-0.27	-0.11	-0.14	-0.17	-0.22
12-13	-0.03	0.06	0.26	0.09	0.00	-0.09	-0.15	-0.26	0.00	-0.19	-0.30	-0.44
13-14	-0.04	0.00	0.31	0.11	0.02	-0.02	-0.03	-0.17	0.03	-0.12	-0.29	-0.26
14-15	-0.05	0.00	0.26	0.09	0.15	0.32	0.03	0.00	0.17	0.11	-0.11	-0.17
15-16	-0.03	-0.04	0.32	0.11	0.27	0.49	0.26	0.19	0.41	0.14	0.00	-0.19
16-17	-0.18	-0.06	0.16	0.31	0.33	0.66	0.50	0.46	0.66	0.29	-0.06	-0.45
17-18	-1.01	-0.90	-0.23	0.33	0.44	0.67	0.68	0.61	0.73	-0.02	-0.83	-1.07
18-19	-2.19	-2.37	-1.31	0.14	0.56	0.87	1.00	0.99	0.75	-0.91	-2.11	-2.18
19-20	-3.07	-3.59	-2.39	-0.56	0.20	0.75	0.82	0.48	-0.51	-1.50	-3.24	-3.10
20-21	-2.87	-3.90	-2.68	-1.36	-0.55	-0.02	0.12	-0.69	-1.22	-1.99	-3.02	-2.92
21-22	-2.25	-2.43	-1.98	-1.56	-1.29	-0.69	-0.98	-1.40	-1.55	-1.94	-1.85	-1.73
22-23	-0.81	-0.31	-0.88	-1.26	-1.65	-1.24	-1.75	-1.59	-2.03	-0.39	-0.45	0.20
23-24	1.21	1.48	0.21	-0.64	-1.50	-1.23	-1.79	-1.38	-0.83	0.92	0.96	1.29
A - a	2.52	2.22	0.83	1.19	1.31	1.04	1.22	1.63	1.32	1.73	2.44	2.37
A - b	5.62	6.66	3.98	2.76	2.96	2.02	2.80	2.95	3.22	3.53	5.38	5.03
B - a	0.04	0.21	0.26	0.32	0.56	1.13	1.21	1.26	0.88	0.48	0.30	0.27
B - b	3.14	4.65	3.41	1.89	2.21	2.11	2.79	2.58	2.78	2.28	3.24	2.93
N	± 0.24	± 0.09	± 0.44	± 0.01	± 0.04	± 0.04	± 0.02	± 0.11	± 0.06	± 0.25	± 0.13	± 0.38

TABLE 6 - DIURNAL VARIATION of H - INTERNATIONAL DAYS, 1931

International
Seismological
Centre

G.M.T.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ
0 - 1	30.4	34.8	26.5	19.7	7.6	9.1	11.3	15.4	17.8	18.8	28.2	29.4
1 - 2	24.1	28.1	21.0	9.4	4.4	5.0	11.7	14.4	12.9	9.5	21.2	17.2
2 - 3	11.7	19.3	15.4	4.2	3.2	0.7	10.8	10.2	5.4	0.0	10.4	5.0
3 - 4	-2.1	2.5	3.8	-0.3	1.3	-4.2	1.6	3.8	-2.4	-7.1	-2.0	-5.7
4 - 5	-9.4	-6.3	-0.8	-2.9	0.3	-6.5	-3.7	-1.1	-7.2	-10.8	-8.0	-6.9
5 - 6	-10.8	-10.3	-3.6	-4.6	-0.8	-6.1	-6.2	-3.5	-9.4	-11.1	-10.1	-9.2
6 - 7	-10.6	-11.9	-4.8	-5.7	-1.8	-6.9	-7.4	-5.6	-9.3	-11.0	-11.1	-11.4
7 - 8	-11.2	-13.0	-5.9	-7.5	-2.7	-6.7	-8.8	-5.8	-10.2	-10.9	-11.0	-10.2
8 - 9	-12.8	-13.6	-6.5	-8.0	-3.2	-7.3	-8.4	-5.4	-10.4	-10.8	-10.6	-6.9
9 - 10	-12.1	-12.6	-6.7	-9.0	-3.8	-7.4	-8.8	-7.4	-11.4	-9.2	-10.0	-6.6
10 - 11	-11.6	-12.7	-7.7	-9.3	-5.7	-6.2	-9.3	-8.3	-11.3	-6.9	-10.8	-7.8
11 - 12	-10.0	-14.2	-10.1	-8.9	-5.6	-7.1	-8.8	-8.1	-10.9	-6.8	-10.2	-7.5
12 - 13	-11.4	-14.0	-11.1	-8.2	-5.2	-6.4	-8.6	-7.1	-9.7	-6.9	-9.8	-5.7
13 - 14	-12.7	-13.4	-11.3	-8.9	-6.4	-6.3	-7.8	-7.5	-7.9	-6.0	-12.0	-5.4
14 - 15	-12.0	-10.4	-10.5	-9.1	-5.9	-4.9	-6.6	-7.7	-8.1	-4.7	-11.0	-6.1
15 - 16	-11.4	-9.4	-8.9	-9.0	-4.9	-4.0	-5.3	-7.0	-6.4	-2.6	-9.8	-6.3
16 - 17	-10.4	-9.2	-9.3	-7.4	-4.1	-2.1	-3.6	-6.8	-4.1	-3.2	-10.2	-6.5
17 - 18	-12.8	-9.0	-10.1	-5.1	-2.3	0.1	-0.8	-4.8	-2.3	-4.1	-9.4	-7.2
18 - 19	-11.3	-10.0	-12.6	-3.1	1.1	5.8	3.5	-1.0	0.5	-3.6	-8.1	-9.0
19 - 20	-4.7	-4.8	-9.4	0.0	3.5	10.2	8.1	1.9	4.0	1.7	3.3	-7.7
20 - 21	7.9	8.4	-2.6	6.3	6.7	12.3	9.9	5.7	14.1	11.6	10.4	0.5
21 - 22	23.9	15.6	14.6	16.9	9.1	14.8	11.6	9.2	21.2	20.7	22.0	14.3
22 - 23	39.4	28.8	22.6	24.8	11.5	13.9	13.4	14.8	24.3	27.0	31.8	28.1
23 - 24	41.5	33.7	29.4	27.2	10.6	11.3	14.5	18.4	22.1	27.3	34.2	33.4
R	54.3	59.0	42.0	36.5	17.9	22.2	23.8	26.7	35.6	38.4	46.2	44.8
N	±1.0	±2.6	±2.6	±1.7	±6.8	±1.1	±1.9	±7.1	±2.2	±2.7	±5.2	±5.3

TABLE 7 - DIURNAL VARIATION of X, INTERNATIONAL DAYS, 1931

G.M.T.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
0 - 1	25 ^Y	29 ^Y	24 ^Y	20 ^Y	9 ^Y	10 ^Y	13 ^Y	17 ^Y	18 ^Y	16 ^Y	24 ^Y	26 ^Y
1 - 2	19	22	18	9	4	5	11	13	11	7	17	13
2 - 3	8	15	13	3	1	- 1	9	7	3	- 2	7	1
3 - 4	- 5	0	2	- 3	- 1	- 6	0	1	- 4	- 7	- 4	- 9
4 - 5	-10	- 7	- 2	- 5	- 1	- 6	- 5	- 3	- 8	-11	-10	- 9
5 - 6	-11	-11	- 4	- 6	- 1	- 6	- 6	- 4	-10	-12	-12	-11
6 - 7	-11	-13	- 6	- 6	- 2	- 7	- 7	- 6	- 9	-12	-13	-12
7 - 8	-12	-14	- 7	- 8	- 3	- 6	- 8	- 6	-10	-11	-12	-11
8 - 9	-13	-15	- 8	- 8	- 3	- 7	- 8	- 5	-10	-11	-11	- 8
9 -10	-12	-13	- 8	- 9	- 4	- 7	- 8	- 7	-11	- 9	-10	- 7
10-11	-11	-13	- 8	- 9	- 6	- 6	- 9	- 8	-11	- 7	-11	- 8
11-12	-10	-14	-10	- 9	- 5	- 7	- 8	- 7	-11	- 6	-10	- 7
12-13	-11	-14	-11	- 8	- 5	- 6	- 8	- 7	- 9	- 6	- 9	- 5
13-14	-12	-13	-12	- 9	- 6	- 6	- 8	- 7	- 8	- 6	-11	- 5
14-15	-12	-10	-11	- 9	- 6	- 5	- 7	- 8	- 8	- 5	-11	- 6
15-16	-11	- 9	- 9	- 9	- 5	- 5	- 6	- 7	- 7	- 3	-10	- 6
16-17	-10	- 9	- 9	- 8	- 5	- 3	- 4	- 8	- 5	- 4	-10	- 6
17-18	-11	- 7	- 9	- 6	- 3	- 1	- 2	- 6	- 4	- 4	- 8	- 5
18-19	- 7	- 5	-10	- 3	0	4	- 1	- 3	- 1	- 2	- 4	- 5
19-20	1	2	- 5	1	3	9	7	1	5	5	9	- 2
20-21	13	16	2	9	8	12	9	7	16	15	16	6
21-22	28	20	18	19	11	16	13	12	24	24	25	17
22-23	40	29	24	27	14	16	17	17	28	27	32	27
23-24	39	28	25	28	13	13	18	21	23	25	32	30
Range	53	44	37	37	20	23	27	29	39	39	45	42

TABLE 8 - DIURNAL VARIATION of γ , INTERNATIONAL DAYS, 1931

G.V.T.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
0-1	31	32	13	1	-7	-5	-7	-7	3	19	25	23
1-2	30	33	17	3	3	1	6	9	11	16	25	23
2-3	23	25	16	9	12	7	12	15	13	11	21	20
3-4	13	14	10	12	13	7	9	14	9	1	12	19
4-5	3	4	5	9	8	-1	5	3	5	0	8	12
5-6	3	2	4	5	3	-2	1	2	0	2	9	9
6-7	3	6	6	3	1	-3	-2	-1	0	3	8	4
7-8	3	5	6	2	0	-3	-3	-1	-1	1	5	1
8-9	1	3	5	0	-1	-3	-3	-3	-2	-1	3	3
9-10	0	0	4	-1	-1	-4	-3	-3	-3	-3	-2	0
10-11	-2	-2	2	-2	-1	-4	-4	-4	-3	-3	-2	-1
11-12	-1	-2	0	-1	-1	-3	-3	-4	-3	-3	-4	-4
12-13	-2	-2	1	-1	-1	-2	-3	-4	-2	-3	-5	-5
13-14	-3	-3	1	-1	-1	-1	-2	-3	-1	-2	-5	-4
14-15	-3	-2	1	-1	0	2	-1	-1	0	-2	-3	-3
15-16	-2	-2	2	-1	2	4	2	1	3	-2	-2	-3
16-17	-4	-2	0	2	3	6	4	3	6	-3	-3	-6
17-18	-13	-11	-4	2	4	7	7	5	7	-1	-10	-12
18-19	-24	-26	-15	1	6	10	11	10	8	-10	-23	-24
19-20	-32	-37	-26	-6	3	9	10	5	-4	-15	-32	-33
20-21	-27	-38	-27	-13	-4	2	3	-6	-10	-18	-29	-29
21-22	-13	-22	-17	-13	-11	-4	-8	-12	-12	-16	-15	-15
22-23	-1	2	-5	-8	-15	-10	-15	-13	-16	1	13	7
23-24	20	21	7	-1	-13	-10	-15	-11	-4	14	19	19
A - a	33	31	13	14	14	11	16	19	16	22	30	28
A - b	52	71	44	25	28	17	27	28	21	37	57	56
B - a	1	4	2	4	7	14	15	14	5	2	3	2
B - b	26	44	33	15	21	20	23	23	24	17	30	30

TABLE 9 - HARMONIC CONSTANTS - INTERNATIONAL DAYS



	R ₁	R ₂	R ₃	a ₁	a ₂	a ₃
<u>Horizontal force</u>	γ	γ	γ	°	°	°
January	20.2	12.7	5.7	104	119	145
February	21.1	11.2	4.3	101	103	113
March	15.5	8.9	4.7	84	100	115
April	13.5	6.8	3.3	105	128	153
May	7.4	2.4	0.9	106	161	192
June	10.2	3.9	0.3	132	162	162
July	11.7	2.6	0.9	115	119	18
August	11.3	4.3	0.9	100	115	96
September	15.3	6.2	2.2	119	136	153
October	13.7	8.9	4.0	126	130	153
November	18.2	11.1	3.9	106	121	140
December	13.7	11.4	6.0	105	111	128
<u>Declination</u>	minutes of arc					
January	1.38	1.27	0.86	25	51	87
February	1.51	1.41	1.07	13	50	96
March	1.07	0.85	0.59	351	34	86
April	0.55	0.69	0.30	338	347	14
May	0.39	0.74	0.52	320	333	345
June	0.18	0.54	0.50	225	316	359
July	0.18	0.80	0.62	273	319	341
August	0.24	0.89	0.62	324	330	352
September	0.40	0.89	0.62	321	345	20
October	0.65	0.75	0.65	19	38	93
November	1.43	1.09	0.81	16	42	97
December	1.48	1.04	0.64	22	47	104

$$y = R_1 \sin (x + a_1) + R_2 \sin (2x + a_2) + R_3 \sin (3x + a_3)$$

Table 10 - Hourly Values of D for January 1931

G.M.T.

D = 10°E + scripta in tenths of minutes of arc

DAY.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean.	Maximum. H. M.	Minimum. H. M.	Range	
1	358	365	366	366	367	370	370	370	369	364	360	360	360	360	361	361	360	352	340	340	332	330	331	348	370	358			
2	381	385	385	374	367	365	369	365	365	364	363	363	361	361	362	360	358	350	339	339	330	340	349	375	361				
3	381	378	370	365	360	365	365	367	365	362	362	362	361	360	360	362	359	350	340	340	328	333	350	372	359				
4	388	390	389	380	373	370	370	368	367	364	360	359	360	360	361	360	360	349	340	340	339	339	353	373	363				
5	389	394	390	580	377	373	370	369	368	364	363	360	360	360	360	360	360	350	338	338	323	317	341	373	361				
6	390	396	390	380	370	362	363	365	366	363	360	359	359	359	360	359	359	343	330	330	320	329	353	380	360				
7	399	399	392	381	371	370	370	368	365	364	362	361	360	360	359	359	359	350	333	333	320	323	360	383	362				
8	390	396	390	379	367	364	365	367	367	363	360	362	360	360	360	359	359	351	344	344	336	328	331	347	360				
9	358	370	373	370	370	372	377	379	374	370	364	360	360	360	360	360	360	349	338	338	335	346	357	375	361				
10	376	380	375	370	373	370	370	370	362	360	360	360	363	360	360	360	360	350	350	340	377	339	360	379	363				
11	389	380	370	362	360	360	361	364	362	361	360	360	360	360	360	360	361	360	360	350	350	330	340	351	359				
12	366	379	384	383	379	373	370	370	365	360	359	359	359	359	360	364	360	360	360	345	340	343	340	366	362				
13	370	360	363	370	372	370	370	369	368	363	364	362	360	360	360	360	360	353	353	340	335	350	355	362	360				
14	366	366	366	370	370	369	365	360	360	360	360	353	357	357	356	350	353	350	350	340	340	343	350	371	358				
15	373	377	373	370	366	368	364	363	364	365	361	361	360	360	364	354	355	351	339	339	339	348	346	361	359				
16	369	377	391	390	389	390	390	389	379	370	365	363	361	361	364	365	360	350	350	344	347	352	371	382	370				
17																													
18																													
19	422	419	410	400	390	384	380	379	375	370	369	369	369	370	373	373	373	367	354	350	350	355	372	386	377				
20	389	384	380	381	370	380	361	367	368	360	359	359	360	360	360	360	362	360	360	342	324	320	356	400	362				
21	411	409	399	389	371	364	370	370	369	367	365	362	361	360	361	360	361	359	359	348	339	320	355	359	364				
22	370	380	385	380	374	369	368	366	364	360	355	354	354	356	360	361	361	353	337	337	322	317	368	384	360				
23	389	388	383	380	367	360	364	366	364	362	360	360	360	360	360	359	360	354	340	340	329	323	341	362	359				
24																													
25	390	400	399	392	384	371	370	370	369	364	360	360	360	359	359	358	359	359	359	359	340	326	328	340	363				
26	367	378	379	380	380	375	372	373	376	372	367	365	361	361	359	359	359	359	359	350	340	359	372	383	366				
27	382	384	384	375	369	369	370	369	369	365	364	362	362	360	364	365	364	364	357	340	330	340	342	350	361				
28	360	370	371	372	370	370	370	367	355	357	359	359	362	360	360	360	360	360	360	340	330	333	378	382	361				
29	380	370	360	350	353	355	362	364	363	363	364	363	360	359	362	362	361	360	360	349	340	342	370	376	360				
30	384	380	380	376	369	369	368	364	363	363	361	361	360	360	360	359	355	355	347	333	330	345	361	380	362				
31	390	381	370	362	355	360	364	361	362	360	360	360	360	360	360	360	360	349	340	340	340	356	370	380	361				
Mean	381	383	381	376	371	369	369	369	367	364	362	361	360	360	361	360	360	360	354	342	336	333	340	355	371	362			



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Table 11 - Hourly Values of D for February 1931

G.M.T.

D = 10°E + scripta in tenths of minutes of arc

DAY.	D = 10°E + scripta in tenths of minutes of arc																								Mean.	Maximum. H. M. γ	Minimum. H. M. γ	Range
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
1	380	380	380	380	371	370	370	369	369	365	360	360	360	360	360	360	360	350	332	320	330	350	371	390	362			
2	402	392	380	369	360	366	360	360	360	359	360	360	360	362	362	362	362	354	339	331	333	349	369	389	362			
3	400	399	390	379	369	363	365	368	363	363	362	361	360	360	361	361	361	349	330	320	320	340	362	335	360			
4																												
5	376	390	394	387	380	368	366	370	370	369	368	364	360	360	360	360	363	354	339	323	323	319	354	370	364			
6																												
7	399	394	389	374	364	363	369	369	363	360	359	359	360	360	360	360	364	343	339	338	338	339	348	369	363			
8	379	379	381	382	380	372	369	388	368	367	366	364	361	360	360	360	359	359	359	344	350	325	336	353	363			
9	369	372	372	369	365	360	363	369	369	368	364	364	362	362	362	362	362	362	353	335	366	339	359	380	363			
10	395	400	394	383	373	364	366	367	365	363	361	361	361	360	360	360	349	327	319	314	329	345	362	362	360			
11	369	370	370	366	364	363	369	366	364	363	362	363	362	363	363	363	363	351	334	325	323	337	355	359	358			
12	364	367	360	355	349	353	355	353	351	350	350	350	350	350	350	349	348	340	329	322	320	334	362	379	350			
13	394	402	402	399	390	380	379	378	378	378	378	375	375	369	363	363	366	359	344	334	330	330	363	389	372			
14	400	406	400	392	388	389	383	381	378	378	370	368	363	370	370	370	370	367	349	334	350	343	396	389	375			
15	399	399	390	386	383	370	374	375	370	366	361	365	362	365	365	368	370	368	350	338	332	345	360	380	369			
16	382	380	380	389	383	380	380	377	374	370	371	370	369	369	369	369	367	362	348	330	330	348	363	340	367			
17	410	402	390	380	373	371	377	375	372	372	368	367	367	369	369	368	370	360	349	339	340	349	365	383	370			
18	400	400	396	388	380	378	378	371	374	371	370	370	370	370	370	370	370	362	349	335	330	344	359	376	370			
19	388	390	387	380	370	377	379	380	376	373	370	370	370	369	369	370	369	360	340	327	325	331	361	380	367			
20	390	394	390	380	373	373	380	380	378	371	370	370	370	369	369	369	370	363	350	333	330	340	365	389	369			
21	398	394	387	379	372	370	378	376	375	371	369	369	369	369	369	369	369	361	349	332	330	350	366	380	369			
22	395	400	396	389	373	370	378	377	372	372	372	370	370	370	370	370	372	369	350	335	329	355	349	370	369			
23	332	380	380	370	366	364	367	369	369	368	368	364	363	364	364	361	361	360	349	335	329	334	349	370	360			
24	380	388	387	379	369	365	359	369	370	363	366	360	360	359	359	370	366	370	365	358	340	340	340	348	364			
25	359	374	381	384	380	375	369	370	369	369	369	369	368	388	368	368	365	369	369	349	330	339	354	362	366			
26	362	369	373	371	369	364	369	369	369	369	365	363	364	362	365	369	369	360	357	340	330	330	348	359	361			
27	365	370	373	370	369	365	369	370	366	369	369	365	367	362	360	363	360	359	349	330	319	314	321	322	357			
28	343	350	350	355	354	360	365	370	369	367	366	367	364	361	362	360	360	360	350	335	325	330	348	335	356			
29																												
30																												
31																												
Mean	382	386	384	378	372	369	371	372	370	367	366	365	364	365	364	364	364	360	347	354	350	337	357	369	364			



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Table 12 - Hourly Values of D for March 1931

G.M.T.

D = 10°E + scripta in tenths of minutes of arc

DAY.	Hourly Values																								Mean.	Maximum.		Minimum.		Range.
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		H. M.	γ	H. M.	γ	
1	380	388	388	380	368	360	368	369	369	365	360	360	362	367	367	364	362	360	360	360	339	338	349	366	373	365				
2	586	582	571	567	560	568	567	566	558	560	560	562	563	563	563	563	560	551	542	531	540	559	569	579	362					
3	590	589	574	564	560	566	566	565	563	563	563	563	563	563	563	560	560	552	535	530	540	558	580	583	362					
4	589	587	580	571	567	568	569	570	568	566	568	564	564	565	565	562	560	550	529	510	510	528	339	362	359					
5	573	580	580	570	566	566	569	563	563	560	560	560	563	565	565	566	565	560	544	534	539	555	370	380	363					
6	394	398	385	374	368	368	369	369	369	367	362	367	366	366	366	366	363	360	360	340	340	350	360	376	367					
7																														
8																														
9																														
10																														
11	370	569	568	569	568	569	570	570	570	569	568	568	568	568	568	567	566	566	558	543	540	548	559	572	364					
12	379	580	579	575	570	568	570	573	572	569	567	567	569	569	569	570	569	564	554	548	539	545	559	578	367					
13	389	385	379	370	569	564	570	570	570	569	565	568	568	564	566	567	563	560	550	539	533	547	559	570	565					
14																														
15	389	387	379	576	570	570	570	568	567	564	563	563	564	565	568	565	567	564	559	540	535	544	549	561	365					
16	375	380	380	378	370	365	368	368	367	367	367	360	361	361	364	365	364	368	370	550	541	551	537	564	563					
17	371	379	376	371	369	369	369	369	368	364	365	362	362	363	363	363	365	360	349	538	539	540	548	552	561					
18	363	369	360	360	364	360	363	369	369	370	365	365	367	367	367	368	368	362	345	535	534	543	552	562	561					
19	370	380	376	369	365	370	370	370	370	569	569	566	569	569	567	564	564	562	554	539	530	540	557	571	563					
20	380	380	374	370	569	570	572	372	372	370	369	568	568	568	566	566	567	568	563	551	543	543	558	564	566					
21																														
22																														
23																														
24	357	358	351	348	339	330	331	346	343	340	344	348	349	350	350	349	343	343	334	329	329	539	541	550	344					
25																														
26	356	359	349	347	341	340	343	343	342	346	346	349	348	348	348	349	349	349	340	329	520	538	545	545	545					
27	350	342	342	347	346	346	350	350	349	343	343	349	349	349	350	349	350	349	340	555	551	552	549	545	545					
28	350	352	350	350	349	350	351	348	348	343	343	347	348	348	348	348	348	349	348	547	529	529	539	545	545					
29	345	350	360	360	352	344	348	348	348	345	345	346	347	347	345	349	349	349	349	540	559	540	539	540	546					
30	341	343	349	348	346	349	350	349	349	349	348	347	348	345	348	349	350	350	349	559	554	528	535	542	545					
31																														
Mean	371	373	369	365	361	359	362	363	362	360	359	359	360	361	361	361	360	357	349	337	354	339	351	363	358					



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Table 13 - Hourly Values of D for April 1951

D = 10°E + scripta in tenths of minutes of arc

G.M.T.

DAY.	Hourly Values																								Mean.	22	23	Maximum.		Minimum.		Range
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	H.				M.	H.	M.		
1	360	355	352	349	352	350	350	349	349	348	348	349	349	349	350	350	349	349	340	354	335	337	340	341	347							
2	347	352	355	349	344	349	348	348	346	347	345	345	347	347	349	350	350	349	349	349	333	338	339	343	346							
3	349	352	350	349	344	346	349	347	348	347	346	347	347	347	348	348	348	349	345	336	330	332	339	345	345							
4	339	340	339	339	340	345	349	347	346	346	345	347	347	347	349	349	349	349	342	339	337	342	350	345	345							
5	357	359	359	359	355	349	349	349	345	343	347	346	346	348	349	345	349	349	348	336	329	327	333	340	346							
6	342	343	349	350	349	353	350	349	349	349	347	347	347	348	349	350	350	350	349	337	328	323	329	338	345							
7	340	343	349	349	349	350	350	348	347	343	343	346	346	348	349	349	349	349	348	339	329	329	330	336	345							
8	336	343	349	350	348	349	348	347	341	345	343	343	346	348	349	346	348	348	351	340	333	329	338	340	345							
9	342	346	353	359	360	354	350	345	341	342	344	344	344	343	346	350	354	354	348	339	327	330	334	338	345							
10	339	342	351	358	358	353	349	343	344	343	342	342	342	340	343	347	349	348	348	335	328	327	330	337	344							
11	338	345	352	359	358	356	350	349	349	348	349	349	349	349	349	349	349	349	349	348	347	347	341	347	346							
12	342	350	355	360	359	353	350	349	349	348	348	348	348	346	348	348	348	348	343	348	347	347	341	347	346							
13	349	350	356	367	359	358	352	346	348	348	349	349	349	349	349	349	349	349	349	338	332	333	339	349	349							
14	349	350	359	360	359	353	350	349	347	348	346	346	346	349	349	349	349	349	349	359	323	330	330	332	347							
15	338	345	352	359	358	356	350	349	349	349	349	349	349	349	349	350	354	354	354	345	324	321	324	336	346							
16	342	350	351	349	349	350	350	349	349	348	348	347	347	348	349	349	350	350	350	342	334	330	332	337	346							
17	343	348	353	359	356	355	349	348	354	354	343	347	346	346	347	350	350	350	350	350	354	343	341	348	349							
18	357	358	363	368	359	354	349	349	349	349	349	349	349	349	350	352	352	352	353	349	341	342	340	345	351							
19	345	349	350	353	350	349	347	346	346	346	347	348	348	348	350	351	351	351	359	350	340	337	341	347	349							
20	343	342	345	349	350	349	340	340	339	333	339	339	339	349	349	350	350	350	351	348	359	337	341	347	345							
21	350	352	359	359	352	350	349	345	347	349	349	349	349	348	349	349	350	350	352	343	332	334	339	343	348							
22	344	349	352	355	353	350	349	345	343	343	344	344	343	347	350	349	349	349	345	339	337	325	337	342	347							
23	345	349	356	359	359	352	350	349	349	349	349	349	350	350	350	351	351	351	340	337	337	325	350	358	348							
24	346	344	346	358	354	350	352	350	350	350	350	350	353	353	353	353	353	353	350	349	349	330	333	338	348							
25	339	341	346	353	353	346	350	350	350	349	350	350	352	350	352	354	354	357	360	357	343	343	332	350	349							
26	336	343	357	361	365	356	349	348	349	349	349	349	350	350	350	352	352	352	356	356	348	336	336	336	349							
27	340	347	353	359	360	357	353	350	350	350	350	350	352	352	352	353	353	353	351	343	331	324	322	325	347							
28	330	344	362	368	360	358	357	350	349	350	349	350	356	352	355	356	356	357	353	345	330	325	327	330	349							
29	330	343	360	364	363	357	353	350	350	349	350	350	351	351	351	351	351	351	354	347	337	330	330	338	349							
30	350	357	362	366	359	358	355	352	349	348	348	349	349	350	350	351	351	351	351	353	345	338	338	346	352							
31	344	348	353	356	354	352	350	348	347	347	347	347	348	348	349	349	350	350	351	345	337	333	335	340	347							
Mean																																



International Seismological Centre

Table 15 - Hourly Values of D for June 1931

G.M.T.

D = 10°E + scripta in tenths of minutes of arc

DAY.	D = 10°E + scripta in tenths of minutes of arc																								Mean.	Maximum.		Minimum.		Range.		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		H. M.	Y	H. M.	Y			
11	340	351	358	355	352	349	343	345	346	334	335	339	340	346	349	353	353	356	356	358	359	353	355	353	350	349						
22	349	358	370	369	352	347	349	347	349	349	348	349	349	349	350	350	352	353	357	360	358	353	347	340	333	352						
3	353	343	356	365	365	358	356	348	350	350	348	349	349	349	349	350	352	352	352	353	353	353	349	339	350	350						
4	349	358	361	360	353	349	348	348	349	348	348	349	349	349	350	353	356	357	360	360	357	349	340	334	337	351						
5	345	349	360	367	359	350	349	347	349	347	347	349	350	350	353	353	357	357	360	360	358	350	348	344	343	351						
6	350	358	360	367	360	353	350	347	349	347	346	349	349	349	350	352	356	356	358	360	352	343	329	329	349	349						
7	354	343	352	360	355	350	349	348	349	348	349	349	350	350	350	358	360	360	360	369	368	360	349	340	333	351						
8	337	348	359	360	352	349	349	339	344	339	339	340	344	349	349	351	353	358	359	359	359	349	340	340	340	349						
9	346	356	359	359	350	345	343	340	347	339	340	347	349	349	353	353	358	359	363	363	359	348	340	338	330	349						
10	330	332	339	343	350	350	348	347	348	348	348	345	348	348	353	354	359	360	360	361	360	359	345	332	331	348						
11	334	340	357	359	356	350	349	341	345	342	342	343	346	346	350	350	357	358	358	361	360	355	348	340	358	349						
12	335	341	351	351	348	348	347	346	347	346	346	347	348	348	350	350	352	353	355	359	356	349	339	329	347	347						
13																																
14																																
15																																
16	340	350	360	359	350	349	348	348	349	349	349	349	349	350	353	355	356	355	359	360	359	354	347	339	336	350						
17	337	342	350	359	350	349	349	349	348	348	348	348	349	349	350	355	359	359	360	360	360	352	349	340	338	350						
18																																
19	349	358	362	360	356	350	349	347	346	346	346	346	346	346	350	351	353	354	359	363	356	356	350	346	352							
20	349	352	357	359	355	349	349	347	347	345	345	347	349	349	350	354	352	352	355	358	357	350	346	343	341	351						
21	340	344	343	349	352	349	349	347	344	345	345	344	346	346	349	350	356	357	360	360	361	358	353	349	343	350						
22	347	349	359	357	349	350	348	347	346	343	343	346	349	350	350	351	355	355	359	359	347	344	339	337	340	348						
23	355	367	367	358	350	348	348	347	347	347	347	347	349	349	351	353	353	355	358	351	351	349	340	339	341	351						
24	348	353	357	352	350	347	347	344	349	345	345	349	349	350	350	352	352	355	345	345	353	338	335	339	348	348						
25	350	354	358	355	349	348	349	347	347	346	346	347	350	350	352	355	355	355	356	356	354	344	336	336	338	349						
26	356	359	360	356	350	349	348	347	347	345	345	347	348	348	349	358	361	363	370	369	369	358	354	350	348	354						
27	350	359	359	356	350	349	349	347	347	345	345	347	344	344	349	353	360	353	359	356	356	350	336	339	351	354						
28	359	364	369	363	350	349	348	345	347	342	342	347	346	350	350	352	356	357	362	359	359	357	346	348	348	352						
29	350	359	369	363	350	349	348	348	347	345	345	347	348	349	349	351	357	363	362	354	354	357	346	347	348	352						
30	341	352	360	360	355	354	349	348	347	345	345	347	348	349	349	351	357	363	361	354	354	344	344	338	351	349						
31																																
Mean	344	351	358	359	353	350	349	348	347	346	345	347	348	350	351	353	356	356	359	359	358	351	344	339	338	350						



Table 17 - Hourly Values of D for August 1931

D = 10°E + scripta in tenths of minutes of arc

DAY.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean.	Maximum. H. M.	Minimum. H. M.	Range.		
1	335	349	353	353	352	351	349	348	348	349	347	348	349	349	353	356	357	358	362	357	346	330	322	319	348					
2	330	358	359	363	357	350	349	349	348	349	349	349	350	350	350	356	356	355	356	356	348	322	325	330	348					
3	336	349	357	361	355	352	348	347	341	340	348	347	350	350	353	358	358	358	359	353	338	328	331	330	348					
4	345	352	357	359	354	349	348	348	348	349	350	350	350	350	351	356	357	358	360	360	350	340	338	331	351					
5	349	346	359	357	351	350	349	350	349	349	349	349	349	349	351	347	347	360	360	355	348	328	323	319	348					
6	330	349	362	359	356	350	349	350	350	351	349	349	350	350	353	357	357	359	360	359	349	335	330	334	350					
7	340	359	367	360	353	352	349	348	346	344	340	341	346	346	352	352	359	359	352	353	347	346	341	346	350					
8	350	361	366	360	359	353	354	349	348	343	339	333	339	348	348	357	356	356	359	357	350	329	328	338	349					
9	350	363	377	369	360	358	353	350	350	346	343	340	343	348	343	354	353	353	359	359	349	339	330	329	351					
10	340	362	369	352	359	350	350	349	349	349	349	349	349	349	352	353	356	359	359	352	339	328	323	328	349					
11	340	350	363	365	358	353	348	343	345	343	350	350	345	348	350	351	355	356	363	363	357	349	345	348	351					
12	349	358	366	368	361	356	351	349	348	348	348	345	345	346	349	350	353	355	359	359	347	340	337	338	351					
13	340	348	367	368	360	366	353	350	350	349	348	348	347	348	349	350	353	356	356	359	340	330	329	333	350					
14	346	350	359	364	359	355	350	350	349	349	349	349	349	349	350	352	356	356	359	359	343	339	338	340	351					
15	340	348	350	354	356	350	352	350	350	349	349	347	348	348	350	349	355	355	356	362	345	330	330	334	349					
16	338	348	350	354	356	357	350	349	349	349	349	350	339	349	358	358	358	360	365	365	345	337	330	331	349					
17	342	347	352	358	357	353	351	351	349	349	347	347	345	345	349	351	356	358	365	365	363	356	338	327	329	349				
18	343	363	368	368	362	356	356	356	349	350	349	349	349	349	350	353	352	355	355	359	340	329	322	320	350					
19	336	357	359	369	362	359	356	350	349	349	349	347	349	349	353	353	356	356	359	359	350	330	327	326	350					
20	334	360	370	362	363	360	354	353	350	348	350	336	343	346	348	357	353	353	359	355	345	346	346	350	352					
21	352	360	366	364	353	349	350	346	347	345	345	346	346	349	350	353	357	357	356	350	340	336	336	346	350					
22	351	356	359	358	358	355	353	351	352	350	350	350	349	349	355	355	357	358	360	353	349	345	349	353	353					
23	359	368	370	368	360	357	357	353	350	347	347	347	347	347	351	356	358	358	360	360	342	338	330	332	352					
24	330	344	352	355	349	340	339	339	340	343	345	346	349	350	356	360	358	360	367	367	359	349	345	340	349					
25	349	356	358	355	352	350	350	349	348	346	345	347	349	349	353	357	359	360	360	355	342	333	330	330	348					
26	337	340	347	349	349	348	349	348	345	348	348	347	349	349	354	356	358	360	360	360	355	350	339	338	349					
27	345	348	356	355	350	350	350	348	344	340	347	343	349	349	353	352	353	357	357	357	349	339	339	342	348					
28	353	359	368	361	358	351	349	350	350	350	350	350	352	351	353	353	356	356	360	360	351	346	338	337	352					
29	345	362	370	368	359	356	351	350	350	350	350	350	351	352	354	354	357	357	361	361	360	349	350	357	362					
30	367	360	377	372	359	350	349	349	349	349	348	349	350	351	354	354	357	358	361	361	360	351	350	358	362					
31	343	355	362	361	357	350	349	349	348	348	348	349	350	351	354	354	357	360	366	366	363	351	339	326	355					
Mean	343	355	362	361	357	353	351	349	348	347	347	347	347	347	352	354	356	357	360	354	345	337	334	335	350					

Table 18 - Hourly Values of D for September 1931

D = 10°E + scripta in tenths of minutes of arc

G.M.T.

DAY.	Hourly Values																								Mean.	Maximum. H. M. γ.	Minimum. H. M. γ.	Range
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
1	353	348	352	355	348	349	350	347	346	348	340	347	349	350	352	353	354	360	352	352	356	344	340	331	332	343		
2	340	350	354	355	357	352	352	350	349	350	350	352	352	350	352	354	356	357	358	358	353	350	340	341	339	351		
3	355	359	367	364	359	356	355	353	350	348	348	349	349	349	349	354	359	361	367	367	359	348	340	339	341	353		
4	355	348	367	368	361	357	352	348	346	356	356	349	349	350	352	354	360	360	360	363	343	343	340	338	340	353		
5	345	350	350	350	350	348	349	346	343	343	346	349	349	350	352	352	352	354	354	353	340	334	328	340	340	346		
6	352	367	373	370	356	353	350	348	339	339	340	336	348	347	350	353	353	353	353	356	348	338	341	340	348	350		
7	352	350	362	366	362	353	349	347	350	348	349	348	348	352	350	353	353	353	353	353	340	339	330	336	349	349		
8	527	336	350	358	360	360	366	354	350	347	348	348	348	349	347	349	355	353	353	352	359	354	348	334	329	350		
9	330	338	350	358	358	356	353	349	343	343	340	340	340	346	349	350	353	358	358	358	350	345	340	330	330	347		
10	337	344	361	367	360	356	353	350	343	343	340	345	346	348	349	352	353	358	358	355	350	343	336	340	350	350		
11	347	352	361	359	352	350	351	350	349	349	349	349	349	350	350	352	352	352	358	355	346	335	328	328	328	348		
12	333	350	359	359	353	350	350	350	350	349	348	348	349	350	350	354	354	355	355	359	358	357	359	358	353	352		
13	356	360	362	356	350	350	353	353	350	349	349	347	341	349	350	349	353	349	357	357	350	342	337	339	339	350		
14	340	349	362	359	358	355	355	352	350	339	340	340	340	348	348	350	353	359	359	358	348	348	340	346	347	350		
15	348	353	363	350	355	349	345	347	340	340	342	342	344	347	348	349	353	355	355	355	347	339	330	324	330	346		
16	340	359	368	369	360	364	357	342	343	340	340	340	340	340	348	352	352	352	352	358	350	349	340	339	340	350		
17	343	358	363	363	358	353	349	349	348	343	343	344	348	349	350	354	353	359	359	358	344	336	329	329	339	349		
18	350	360	360	361	358	351	352	349	348	347	348	348	348	348	350	352	355	358	358	355	346	331	330	321	335	349		
19	350	353	359	360	359	359	358	350	349	349	348	348	349	352	355	358	358	359	359	355	340	340	338	339	348	352		
20	339	349	362	372	370	368	360	346	348	348	348	347	349	350	353	358	355	352	352	349	344	334	328	332	339	350		
21	356	365	360	364	358	353	349	350	350	349	349	349	350	353	354	354	355	356	356	350	343	344	339	338	345	351		
22	351	362	361	360	358	353	353	349	350	349	349	348	349	349	350	356	357	355	355	340	333	333	333	337	340	350		
23	353	359	365	361	359	353	351	344	346	346	346	348	348	348	348	349	356	357	357	343	343	343	340	352	351	351		
24	359	359	359	359	360	359	352	349	349	348	348	347	346	349	349	349	350	352	352	348	345	344	344	347	356	351		
25	365	367	360	358	355	352	351	349	349	346	346	347	348	348	349	352	354	355	355	348	333	331	328	330	338	349		
26	343	349	349	349	349	353	353	350	348	349	349	349	350	350	353	352	358	358	358	352	336	329	332	338	349	348		
27	360	366	368	360	355	350	352	350	349	349	349	349	349	350	352	353	358	357	357	348	338	338	339	326	349	351		
28	353	359	363	356	349	349	353	350	349	351	350	350	349	350	350	353	356	350	350	343	338	328	328	340	348	348		
29	352	359	355	353	350	353	356	352	353	349	349	349	343	346	343	353	354	351	351	343	338	335	336	349	349	348		
30	346	354	360	360	356	354	353	349	349	347	346	346	346	349	349	353	354	351	351	343	338	337	337	349	349	348		
31	346	354	360	360	356	354	353	349	349	347	346	346	346	349	349	353	354	351	351	343	338	337	337	349	349	348		
Mean	346	354	360	360	356	354	353	349	349	347	346	346	346	349	350	353	354	356	356	354	347	341	337	335	341	350		



Table 19 - Hourly Values of D for October 1931

G.M.T.

D = 10°E + scripta in tenths of minutes of arc

DAY.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean.	Maximum. H. M.	Minimum. H. M.	Range
1	357	366	368	363	359	356	350	350	349	350	349	349	349	350	357	353	354	353	343	345	343	333	338	343	351			
2	352	361	362	359	354	353	352	353	349	346	343	343	349	347	349	353	353	350	350	343	340	337	349	353	350			
3	359	369	370	363	359	357	350	353	349	349	349	349	348	349	353	349	350	350	343	338	338	339	349	359	352			
4	363	366	365	358	353	357	349	353	349	348	348	348	348	348	348	346	343	339	329	332	335	337	347	359	349			
5	368	371	377	368	353	359	345	350	340	342	342	340	335	349	348	348	349	349	339	339	332	330	330	337	348			
6	348	357	363	362	361	358	357	357	348	348	348	347	345	347	349	349	349	349	348	340	338	339	348	353	350			
7	334	359	358	359	360	358	356	351	349	348	348	343	341	346	349	349	351	351	350	343	343	343	341	344	349			
8	346	349	348	347	349	353	351	351	348	349	349	349	349	349	349	350	353	353	350	340	340	349	355	363	349			
9	363	362	358	354	353	352	352	352	349	349	349	349	349	349	353	352	356	349	339	339	334	339	352	356	350			
10	356	353	353	350	349	356	354	354	349	349	349	349	349	349	352	353	352	349	339	329	329	329	343	359	348			
11	365	366	363	350	352	353	353	353	349	349	349	349	349	349	352	353	353	349	337	329	318	319	335	356	348			
12	359	362	365	359	358	358	357	357	350	349	349	349	348	348	345	347	345	345	341	335	329	329	330	331	348			
13	349	349	359	362	366	361	359	355	349	349	349	346	345	348	348	350	349	349	338	334	340	343	352	359	350			
14	366	364	365	363	360	360	353	353	350	349	349	347	345	345	348	349	349	350	339	330	334	339	346	359	351			
15	362	363	363	359	356	359	349	358	348	344	344	344	342	342	349	349	350	349	340	339	340	343	349	360	351			
16	371	372	369	361	360	360	359	358	350	349	349	348	345	348	349	349	349	352	348	342	330	323	323	348	351			
17	359	363	369	369	375	369	360	353	349	346	345	343	347	345	351	350	354	354	345	343	349	353	361	352	354			
18	358	359	356	358	358	354	355	353	350	346	342	347	343	343	349	350	359	359	339	350	337	348	359	363	350			
19	362	358	350	352	357	356	350	351	347	340	348	349	349	349	350	352	354	350	336	330	330	340	350	360	349			
20	367	361	360	355	353	358	353	351	350	350	349	350	350	354	358	353	349	349	330	323	323	333	344	349	349			
21	352	353	358	353	352	358	353	353	346	340	340	348	353	350	352	351	352	352	329	320	323	329	345	346	346			
22	358	369	359	356	349	346	352	353	347	349	349	350	351	353	352	353	357	350	339	334	333	345	352	360	351			
23	362	363	359	354	353	357	353	353	352	353	349	348	349	349	349	353	351	351	352	353	340	349	359	369	351			
24	370	363	356	350	352	356	351	350	349	349	349	349	349	348	349	349	347	339	335	332	335	343	356	374	350			
25	379	376	366	353	349	353	357	353	349	349	349	349	349	349	349	349	350	350	339	333	336	339	358	372	352			
26	373	368	362	358	352	353	352	352	351	350	350	350	349	349	349	349	352	352	340	332	323	323	339	359	349			
27	369	373	369	363	358	353	356	357	349	343	343	340	339	339	340	342	345	345	332	332	335	345	348	350	349			
28	351	351	349	349	355	359	359	359	356	353	353	346	346	346	349	349	347	347	327	327	329	340	359	369	349			
29	376	372	367	359	357	359	353	357	353	349	349	353	323	311	311	310	323	337	333	329	329	342	360	367	345			
30	368	368	377	379	378	373	358	353	343	339	339	337	347	342	359	339	342	342	336	324	324	338	346	353	350			
31	353	352	357	356	354	351	354	353	349	349	349	343	347	343	349	347	347	347	331	329	334	344	358	363	348			
Mean	361	362	362	358	357	357	356	354	351	349	347	346	346	346	348	348	340	346	338	334	334	338	348	356	350			



Table 20 - Hourly Values of D for November 1931

D = 10°E + scripta in tenths of minutes of arc

G.M.T.

DAY.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean.	Maximum. H. M.	Minimum. H. M.	Range.
1	364	363	362	359	359	359	357	357	352	349	349	348	348	349	350	353	349	344	333	329	336	341	352	362	351			
2	362	359	357	353	355	358	353	353	352	349	349	348	349	349	349	348	349	340	337	339	348	339	359	369	351			
3	372	375	369	363	358	359	357	357	353	349	346	346	347	347	348	349	348	338	330	324	327	337	349	359	350			
4	366	363	363	359	363	367	360	355	351	345	339	343	343	347	349	348	348	338	332	330	331	339	353	362	350			
5	367	366	363	361	367	375	375	362	353	348	346	343	347	347	348	348	343	349	333	352	339	343	349	359	352			
6																												
7																												
8	369	372	367	360	359	355	358	352	355	347	344	346	343	340	344	338	347	335	329	326	328	340	357	371	349			
9	370	372	373	369	365	364	360	368	353	350	352	349	349	349	348	352	353	349	339	339	328	333	340	351	353			
10	359	363	365	367	363	366	360	357	363	349	349	349	349	349	349	353	356	349	339	329	332	342	353	367	353			
11	369	367	365	355	358	358	358	358	357	352	344	346	343	347	349	349	349	343	332	323	323	335	354	361	350			
12	369	373	369	359	359	359	353	353	353	349	349	346	347	347	348	348	350	349	338	329	329	339	349	356	351			
13	363	367	369	368	368	363	359	359	356	353	347	347	349	349	349	349	357	351	339	332	337	349	359	361	353			
14	359	362	362	358	354	359	359	358	353	349	348	347	347	349	356	349	353	349	345	334	334	335	346	357	351			
15	359	358	358	358	358	362	360	358	358	353	349	348	347	347	347	349	348	344	336	327	338	346	347	359	351			
16	363	363	356	353	356	359	359	358	354	353	353	349	348	353	349	349	350	342	331	319	322	340	340	355	349			
17	359	359	353	350	356	356	356	355	353	353	353	350	349	353	351	349	348	341	333	333	333	336	349	359	349			
18	365	369	365	359	357	353	349	349	347	348	348	349	349	349	352	349	346	339	333	329	336	345	359	369	351			
19	369	369	358	349	349	353	357	356	353	349	345	349	349	349	349	348	343	333	325	323	333	339	357	363	349			
20	360	359	358	358	359	360	355	353	350	349	349	349	349	353	349	349	343	333	325	322	324	343	346	354	348			
21	370	367	359	358	353	358	358	354	355	350	349	350	349	348	349	349	346	338	328	319	326	339	356	369	350			
22	379	377	374	365	359	358	358	357	353	350	349	349	348	348	349	350	349	338	318	309	313	327	347	360	349			
23	372	379	379	369	359	359	359	359	355	350	349	348	348	349	349	350	349	335	313	303	299	307	325	339	346			
24	349	357	359	359	359	359	359	358	353	349	349	348	348	349	349	349	349	344	339	332	334	339	349	359	350			
25	369	372	369	369	368	369	364	359	357	352	349	348	347	347	347	348	347	339	322	320	309	323	347	357	350			
26																												
27	367	375	378	373	370	369	369	362	359	349	348	347	347	347	349	348	347	340	339	330	323	332	340	347	352			
28	353	362	366	363	359	362	359	359	355	340	349	344	343	343	346	349	348	338	330	321	325	332	343	356	348			
29	361	363	367	364	359	359	359	357	355	349	349	349	349	348	348	348	349	342	337	326	319	323	339	358	349			
30	369	369	369	360	358	358	358	353	353	349	349	346	342	343	347	349	349	341	326	306	302	317	329	354	346			
31																												
Mean	365	367	365	361	359	360	359	357	354	349	348	347	347	348	349	349	348	341	332	325	327	335	348	359	350			



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Table 21 - Hourly Values of D for December 1931

G.M.T.

D = 10°E + scripta in tenths of minutes of arc

DAY.	D = 10°E + scripta in tenths of minutes of arc																								Mean.	Maximum.		Minimum.		Range.	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		H. M.	γ	H. M.	γ		
1	372	380	385	376	362	357	358	354	349	349	348	348	348	348	349	350	352	343	336	323	323	329	339	339	359	351					
2	373	373	373	366	359	358	359	358	352	349	345	340	339	339	349	349	349	339	329	321	326	329	329	342	357	349					
3	363	369	369	367	367	361	359	359	358	349	343	340	339	339	349	349	349	339	329	317	319	328	340	352	348						
4	358	362	368	369	369	362	358	358	349	349	343	343	339	349	349	340	344	336	329	325	323	351	335	355	348						
5	365	369	369	359	356	354	353	349	344	339	342	342	339	349	340	343	349	338	323	318	319	330	339	350	345						
6	361	369	369	369	359	359	359	356	349	349	348	343	343	349	349	350	349	338	321	313	320	339	351	366	349						
7	375	378	375	372	363	359	356	355	352	349	345	342	344	346	349	349	345	329	317	313	324	338	349	359	349						
8	363	363	355	351	352	353	352	352	349	349	349	349	349	346	346	347	341	329	315	312	320	335	350	366	346						
9	372	371	369	363	359	356	358	358	354	349	348	349	349	349	349	349	346	330	320	312	311	329	349	369	349						
10	378	372	369	364	360	362	355	348	348	339	340	344	344	348	348	349	341	329	319	309	318	327	339	351	347						
11	361	363	362	368	363	360	359	358	353	349	343	348	348	348	349	349	349	339	323	316	321	333	342	352	349						
12	357	360	360	359	359	359	358	358	352	348	347	339	339	343	349	352	348	339	329	323	328	339	362	373	350						
13	378	376	373	370	374	359	355	352	346	349	348	348	349	349	349	349	351	349	333	322	318	319	329	345	349						
14	359	360	362	362	359	358	356	356	350	351	351	349	349	349	350	349	352	350	341	330	329	337	343	351	350						
15	353	353	357	356	350	353	349	352	349	346	347	349	349	348	349	351	351	344	337	327	319	319	329	348	345						
16	359	367	369	369	362	360	354	353	353	349	348	348	348	349	350	351	355	353	343	335	329	330	340	350	351						
17	354	360	369	375	372	365	359	356	356	353	349	349	350	349	349	349	353	349	337	329	330	337	347	352	352						
18	359	357	357	359	357	358	352	352	350	350	349	347	347	348	350	350	353	350	340	333	329	338	347	359	350						
19																															
20																															
21																															
22	360	362	361	358	357	357	355	355	350	349	347	344	346	342	342	342	346	339	320	309	312	328	349	369	346						
23	369	372	375	369	359	357	351	350	352	350	349	346	346	346	349	349	349	359	320	308	300	310	319	333	345						
24	352	362	369	369	365	359	359	353	353	350	348	346	346	343	346	346	343	337	321	306	307	314	326	339	345						
25	359	370	372	375	369	361	359	356	348	343	344	347	347	347	347	347	347	340	325	313	310	318	326	343	346						
26	363	363	363	366	362	359	356	351	350	348	344	342	342	347	348	348	343	339	328	317	319	326	350	347	347						
27	365	370	370	368	360	357	353	352	350	349	349	347	347	346	347	347	347	347	328	321	323	340	355	370	350						
28	373	372	373	369	363	359	354	350	349	350	348	347	347	343	340	339	339	329	304	301	305	329	346	359	345						
29	359	372	379	372	359	353	350	350	349	339	338	339	339	339	339	339	334	328	319	313	319	328	340	359	345						
30	364	368	368	370	369	363	359	358	349	349	343	339	339	335	339	339	339	329	312	309	309	324	342	359	346						
31	368	369	371	367	363	359	358	358	351	349	345	343	343	343	340	339	339	329	320	312	309	327	351	340	347						
Mean	364	367	368	366	361	359	357	355	352	349	347	346	345	345	346	347	347	338	327	318	319	328	341	355	348						



Table 22 - Hourly Values of H for January 1931

II = 35000γ + scripta

G.M.T.

DAY.	Hourly Values (H)																								Mean.	Maximum. H. M. γ	Minimum. H. M. γ	Range.
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
1	218	210	195	187	188	193	195	197	194	191	187	189	188	189	190	191	189	191	193	195	201	207	203	209	195			
2	212	204	195	191	185	182	183	187	189	187	187	189	189	187	187	188	187	184	187	198	207	217	235	239	196			
3	251	217	201	187	183	187	189	188	188	189	187	188	184	184	185	185	185	181	180	183	197	224	246	254	197			
4	247	233	219	205	194	191	193	195	194	194	195	189	190	189	189	187	187	183	185	195	209	224	247	263	204			
5	227	247	231	215	203	195	192	189	190	192	192	195	195	196	197	197	196	193	195	205	220	242	251	255	209			
6	252	243	233	222	212	206	204	203	200	198	197	201	205	204	201	201	202	199	198	203	211	229	253	267	214			
7	255	255	235	218	204	199	199	200	200	202	203	204	203	203	203	204	203	200	200	205	218	232	251	253	214			
8	247	240	230	213	206	205	203	201	201	201	203	201	201	201	203	204	204	203	206	216	227	243	243	248	215			
9	235	222	214	205	205	212	200	200	200	199	194	193	193	189	195	199	198	196	193	203	218	227	235	224	206			
10	214	217	211	209	201	191	200	195	181	177	176	179	186	186	185	187	189	187	185	183	187	202	210	217	194			
11	222	215	215	199	192	191	191	188	184	185	185	187	187	191	197	199	197	195	195	197	200	204	209	213	197			
12	210	207	224	218	209	201	199	196	195	191	189	191	193	193	192	192	193	192	195	208	228	237	235	204				
13	228	223	227	211	209	205	203	199	200	199	194	188	189	189	190	192	193	191	189	195	225	230	233	205				
14	231	226	224	219	213	208	202	201	200	195	193	195	195	195	196	197	198	198	200	204	231	243	239	209				
15	223	219	215	207	202	196	199	198	195	197	199	204	198	200	194	193	197	199	199	200	211	230	251	261	208			
16																												
17																												
18																												
19																												
20	210	207	202	191	180	173	171	175	177	181	180	176	176	177	177	175	179	178	174	172	177	193	215	236	186			
21	254	252	236	216	198	183	185	187	179	180	182	184	186	186	186	185	184	183	179	177	184	197	222	232	197			
22	229	225	215	202	198	181	180	180	180	183	182	183	185	186	186	188	190	188	179	176	190	218	250	231	195			
23	227	218	208	204	195	188	191	192	189	187	187	191	192	189	189	188	190	188	185	187	191	198	217	240	197			
24																												
25	258	257	244	231	215	205	205	203	198	201	201	203	203	204	204	205	213	214	214	211	204	202	195	187	211			
26	197	197	193	189	182	173	163	163	159	155	165	170	174	178	178	179	183	185	187	185	195	240	259	251	187			
27	242	237	222	206	197	194	193	191	190	189	191	192	192	190	190	193	191	187	182	187	204	215	210	211	200			
28	215	214	195	179	182	182	183	183	175	176	178	182	187	185	185	186	187	189	185	185	203	205	244	240	192			
29	228	217	204	191	189	195	197	197	199	197	195	191	177	180	185	185	181	181	183	183	191	195	208	214	194			
30	213	211	206	199	195	193	193	190	187	187	194	191	190	190	190	191	196	195	199	208	221	249	243	203				
31	228	213	218	201	191	193	193	192	193	191	191	190	189	189	189	189	190	188	188	193	211	225	235	236	201			
Mean	229	224	216	205	197	193	193	192	190	189	189	190	190	190	191	192	192	191	191	194	205	219	232	236	201			



Table 25 - Hourly Values of H for April 1931

G.M.T. 35000γ + scripta

DAY.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean.	Maximum. H. M. γ	Minimum. H. M. γ	Range											
1	174	164	165	160	157	154	154	153	154	154	154	154	154	149	153	153	149	148	145	158	167	172	179	187	159														
2																																							
3																																							
4																																							
5																																							
6																																							
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25																																							
26																																							
27																																							
28																																							
29																																							
30																																							
31																																							
Mean	191	182	175	170	165	165	165	163	162	162	162	163	164	164	166	167	169	171	173	177	182	189	197	199	199	188													



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Table 26 - Hourly Values of H for May 1931

G.M.T.

35000γ + scripta

DAY.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean.	Maximum. H. M.	Minimum. H. M.	Range.		
1	198	195	190	188	184	189	189	189	190	190	187	190	190	190	191	192	193	198	203	206	208	213	221	215	196					
2	210	200	184	189	190	183	175	179	180	185	187	188	188	188	188	188	189	194	201	207	210	215	217	216	194					
3	211	209	205	199	197	192	184	178	175	171	172	176	179	183	185	188	188	190	195	197	202	207	209	208	192					
4	204	200	195	189	181	177	178	175	179	181	181	184	185	187	187	186	188	189	191	192	194	200	205	206	189					
5	203	201	197	190	187	186	181	178	175	171	167	166	170	178	175	179	182	186	189	190	193	194	194	194	184					
6	190	189	189	189	187	193	194	177	161	166	161	159	168	173	172	173	177	179	183	184	187	190	193	191	180					
7	190	200	190	151	127	130	140	149	148	143	149	165	152	154	156	157	160	161	163	161	160	166	164	158	158					
8																														
9																														
10																														
11	169	163	153	146	143	148	149	150	155	155	159	168	167	168	170	172	175	178	184	188	189	185	188	180	167					
12	174	180	184	179	174	166	160	162	166	165	166	169	175	175	176	180	184	190	190	189	187	190	187	178	177					
13	172	168	164	166	165	167	167	163	160	165	171	170	170	172	180	183	187	190	193	193	194	194	181	163	175					
14	157	148	145	130	120	132	134	142	150	153	155	158	158	165	168	168	168	171	175	179	184	190	189	185	159					
15																														
16	177	175	165	156	157	158	157	145	152	160	162	164	164	165	165	164	165	170	174	176	180	185	188	180	167					
17																														
18	176	168	163	160	157	155	153	152	160	162	165	162	162	167	170	173	172	172	174	177	181	188	182	177	168					
19	175	167	158	157	160	164	164	164	164	164	168	173	173	174	174	176	179	182	188	191	197	200	202	198	175					
20	194	184	177	176	178	179	177	175	175	179	179	175	180	183	181	182	182	184	187	186	191	194	196	191	183					
21																														
22	191	192	192	186	185	183	182	182	182	182	181	183	184	182	183	185	186	188	190	187	189	192	198	203	187					
23	200	196	196	196	193	190	190	189	189	189	187	188	189	189	191	192	193	194	197	203	207	212	217	217	196					
24	215	216	214	217	202	197	195	193	192	192	190	190	188	189	192	193	194	198	202	205	207	212	216	217	201					
25	215	215	212	205	200	197	194	193	193	191	192	191	191	190	191	189	191	193	195	196	204	209	211	212	199					
26																														
27																														
28	174	169	167	169	172	175	175	175	175	175	174	173	174	174	174	176	178	182	189	195	200	201	199	193	179					
29	191	190	186	183	183	183	184	184	186	186	187	187	183	178	172	172	176	180	190	194	197	200	197	188	186					
30	182	182	182	182	178	177	178	180	181	181	182	181	183	182	181	184	183	185	191	195	195	195	200	198	185					
31																														
Mean	189	187	182	177	174	174	173	172	172	173	174	175	176	177	178	180	181	184	188	191	193	197	198	194	182					



Table 27 -- Hourly Values of H for June 1931

35000γ + scripta

G.M.T.

DAY.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean.	Maximum, H. M. γ	Minimum, H. M. γ	Range.	
1	176	183	185	175	151	132	150	148	147	152	130	126	133	140	145	150	156	160	152	155	158	162	162	162	153				
2	154	168	166	163	156	160	154	157	164	163	167	167	170	170	169	171	169	173	177	183	187	187	189	190	170				
3	189	192	195	187	178	171	165	164	167	165	164	164	168	171	173	174	175	175	176	180	184	189	195	192	177				
4	185	177	172	170	172	173	172	173	173	173	173	173	175	175	177	179	182	184	190	198	201	205	202	193	181				
5	+																												
6	187	185	193	197	191	186	183	174	168	166	170	172	173	172	176	178	179	181	184	188	190	191	190	189	182				
7	182	178	178	181	181	179	178	175	172	170	173	171	169	170	173	173	176	178	183	188	188	183	177	170	177				
8	168	168	170	168	172	168	167	167	167	168	169	170	173	174	176	176	180	189	193	193	180	180	178	169	174				
9	154	140	131	109	099	089	100	105	108	108	111	123	128	130	135	139	144	147	152	155	158	160	159	161	131				
10	160	158	157	154	148	144	136	125	129	132	136	145	151	155	160	161	167	173	182	186	190	192	190	182	159				
11	175	158	138	132	140	150	147	145	155	157	157	158	153	156	159	161	167	173	182	189	191	192	188	173	162				
12	160	154	155	158	160	166	158	164	159	147	154	158	158	165	166	168	170	170	176	183	187	185	175	165	165				
13	163	169	170	164	157	154	157	163	170	171	170	170	166	166	168	170	172	177	184	191	193	195	194	188	173				
14	181	174	169	165	167	174	174	176	173	172	173	174	175	174	175	176	177	180	183	186	187	188	187	183	177				
15	+																												
16	195	193	189	180	177	177	177	177	177	178	180	180	181	181	182	182	183	185	192	196	200	202	201	202	186				
17	200	199	195	190	187	188	188	187	185	186	187	186	186	186	188	188	191	193	198	203	204	209	210	210	193				
18	+																												
19	204	203	198	193	188	184	182	179	175	173	170	174	175	178	182	182	182	184	189	192	194	198	202	206	187				
20	212	204	194	189	184	183	181	178	174	175	177	178	180	180	182	181	183	185	189	190	187	186	186	188	185				
21	190	191	189	184	185	183	185	178	177	174	174	175	174	174	178	182	186	194	198	196	195	198	205	204	186				
22	200	198	198	193	188	184	175	165	165	166	170	179	173	171	172	174	180	182	185	192	198	188	178	180	181				
23	190	193	192	187	183	178	176	171	169	170	167	168	167	172	177	178	182	184	185	188	186	186	186	185	180				
24	187	187	184	182	178	178	177	175	174	170	169	170	170	171	174	175	178	180	185	192	191	190	196	203	181				
25	199	194	190	187	182	182	180	181	181	179	181	179	179	180	181	183	184	187	192	193	194	193	193	191	186				
26	190	190	189	187	185	185	185	184	183	180	179	178	178	180	181	203	212	211	215	220	210	205	182	172	191				
27	173	171	166	161	164	163	162	165	169	160	157	153	162	163	165	173	181	179	183	186	185	178	170	165	169				
28	166	149	156	149	161	162	170	167	159	154	164	170	163	162	164	165	169	173	180	179	169	160	160	155	164				
29	167	168	163	157	158	156	162	158	160	158	161	172	167	167	166	167	168	171	178	184	188	191	191	190	169				
30	186	182	178	169	163	162	163	163	165	166	168	168	170	170	171	172	172	176	184	187	192	192	188	187	175				
31																													
Mean	181	179	176	171	169	167	167	165	165	164	165	167	167	169	171	174	177	179	184	188	188	189	186	183	175				



International
Seismological
Centre

Table 28 -- Hourly Values of H for July 1931

G.M.T.

35000γ + scripta

DAY.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean.	Maximum. H. M.	Minimum. H. M.	Range.	
1	195	194	191	186	178	171	164	162	166	167	167	164	159	161	163	164	167	167	175	182	183	181	192	192	175				
2	188	184	178	167	157	153	154	156	155	154	156	155	156	157	158	159	160	163	163	169	177	179	183	189	166				
3	190	187	178	168	164	162	160	160	162	160	158	161	163	162	160	162	165	168	173	179	180	180	183	183	169				
4	184	186	184	176	165	158	155	155	156	155	157	159	161	163	165	167	170	175	175	180	181	178	173	173	169				
5	175	175	176	174	171	165	161	157	156	154	154	156	157	158	159	161	163	167	167	174	180	181	181	180	167				
6	179	177	173	166	161	159	158	155	154	156	157	160	162	163	164	165	167	172	178	186	188	187	184	179	169				
7	177	178	176	168	165	166	166	166	165	164	163	162	163	163	165	167	169	169	175	179	181	181	183	187	171				
8	185	183	181	179	177	169	156	147	144	147	147	146	148	155	157	160	163	167	179	179	175	171	180	187	166				
9	173	168	156	146	146	150	152	158	153	162	155	142	141	148	149	148	150	150	157	163	167	176	176	157	153				
10	170	166	164	158	155	156	156	151	148	136	141	142	144	143	144	146	147	149	153	157	161	163	164	167	153				
11	168	161	149	159	153	146	144	151	145	142	145	149	151	151	151	152	155	155	161	169	174	171	180	180	157				
12	179	163	158	153	152	150	147	145	147	150	152	152	155	155	155	151	152	152	152	167	169	171	176	178	157				
13	176	175	176	171	165	161	157	152	139	132	131	141	147	152	153	144	156	159	164	170	173	173	169	159	159				
14	170	170	175	163	160	160	159	154	158	157	157	158	158	159	160	163	164	165	167	170	172	173	177	183	165				
15	185	188	186	177	167	159	157	160	160	161	158	157	156	158	159	161	163	167	171	175	177	184	189	169	169				
16	186	182	182	174	167	164	164	163	160	158	159	160	161	163	164	166	167	170	170	179	177	177	182	184	170				
17	183	182	179	182	187	192	191	181	174	153	143	143	151	157	158	155	169	170	167	167	164	159	163	161	169				
18	151	153	143	141	143	146	146	147	137	137	143	140	141	142	143	146	148	154	160	167	169	170	171	176	151				
19	158	148	150	147	141	145	148	150	155	159	159	158	163	163	162	163	166	166	171	177	184	186	182	180	161				
20	181	178	171	163	159	160	160	158	158	152	156	159	160	162	164	165	166	167	171	174	174	175	191	192	167				
21	177	175	171	170	162	160	158	156	155	154	153	153	155	157	158	158	161	164	169	174	175	176	179	180	164				
22	177	175	171	170	162	160	158	156	155	154	153	153	155	157	158	158	161	164	169	174	175	176	179	180	164				
23	177	175	171	170	162	160	158	156	155	154	153	153	155	157	158	158	161	164	169	174	175	176	179	180	164				
24	177	175	171	170	162	160	158	156	155	154	153	153	155	157	158	158	161	164	169	174	175	176	179	180	164				
25	177	175	171	170	162	160	158	156	155	154	153	153	155	157	158	158	161	164	169	174	175	176	179	180	164				
26	177	175	171	170	162	160	158	156	155	154	153	153	155	157	158	158	161	164	169	174	175	176	179	180	164				
27	177	175	171	170	162	160	158	156	155	154	153	153	155	157	158	158	161	164	169	174	175	176	179	180	164				
28	177	175	171	170	162	160	158	156	155	154	153	153	155	157	158	158	161	164	169	174	175	176	179	180	164				
29	177	175	171	170	162	160	158	156	155	154	153	153	155	157	158	158	161	164	169	174	175	176	179	180	164				
30	177	175	171	170	162	160	158	156	155	154	153	153	155	157	158	158	161	164	169	174	175	176	179	180	164				
31	177	175	171	170	162	160	158	156	155	154	153	153	155	157	158	158	161	164	169	174	175	176	179	180	164				
Mean	177	175	171	170	162	160	158	156	155	154	153	153	155	157	158	158	161	164	169	174	175	176	179	180	164				



Table 29 - Hourly Values of H for August 1931.

35000γ + scripta

G.M.T.

DAY.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean.	Maximum. H. M. γ	Minimum. H. M. γ	Range	
1	190	191	186	175	170	171	171	169	168	167	168	168	171	173	172	174	177	180	189	194	199	199	198	198	180				
2	193	190	183	176	172	171	169	171	172	171	170	170	171	173	175	176	178	176	183	187	187	185	188	193	178				
3	200	208	199	180	166	158	144	143	147	138	147	147	156	162	166	167	171	174	179	182	185	191	198	199	171				
4	194	189	184	179	178	177	172	167	165	168	169	169	173	176	176	177	180	182	185	186	186	190	196	201	180				
5	201	193	183	168	167	175	175	177	177	174	173	177	177	180	180	182	182	183	188	192	193	188	180	174	181				
6	178	181	178	171	165	165	167	170	172	172	170	173	172	173	174	177	181	185	190	193	196	201	206	217	180				
7	219	214	206	198	198	190	182	178	175	170	157	148	157	159	168	171	169	170	178	188	192	193	195	196	182				
8	180	167	167	167	164	162	155	149	153	166	153	148	143	147	154	158	165	172	180	178	183	183	185	186	165				
9	172	168	166	164	162	158	155	158	156	156	159	159	161	161	159	160	163	167	172	178	181	183	184	177	166				
10	177	172	169	149	132	122	115	123	144	157	147	142	150	157	153	155	160	166	175	179	177	176	174	173	156				
11	171	169	164	160	161	161	163	165	166	164	164	165	162	161	159	158	157	166	170	173	183	187	192	192	168				
12	196	174	169	164	163	164	165	164	164	165	168	168	167	168	169	166	170	170	174	179	184	139	192	191	173				
13	188	181	173	167	159	150	156	158	155	161	160	158	160	164	162	164	164	166	172	177	185	187	191	191	169				
14	188	179	168	165	168	170	169	166	167	169	173	173	169	168	167	174	180	185	192	200	204	20	191	191	169				
15	184	174	162	154	152	146	147	150	158	166	165	167	172	168	173	174	169	168	169	177	184	187	180	173	167				
16	177	178	178	176	171	168	165	163	160	158	155	157	164	162	164	166	167	168	172	172	176	181	183	193	170				
17	195	197	191	182	175	174	170	168	172	169	170	169	171	173	173	177	177	176	177	179	180	184	190	200	179				
18	200	190	194	178	166	164	167	169	169	167	161	155	158	165	172	177	182	183	184	191	197	206	206	197	179				
19	184	181	177	170	170	161	162	152	145	152	143	157	167	162	159	169	170	170	170	167	171	175	181	183	167				
20	181	183	175	167	160	162	160	143	148	156	167	177	170	162	165	162	164	168	175	179	183	188	187	184	169				
21	180	175	173	173	172	172	171	171	170	170	170	170	170	169	168	180	170	175	183	187	188	187	189	189	180				
22	191	191	192	176	170	168	170	167	165	174	174	170	167	166	170	170	175	179	188	193	198	200	199	197	180				
23	166	167	160	138	114	125	133	133	129	138	150	162	165	166	158	167	167	169	175	185	191	189	197	197	160				
24	192	175	164	155	155	160	163	160	161	164	155	158	162	163	163	167	168	172	177	187	191	199	193	191	171				
25	182	177	173	170	165	167	168	162	168	169	169	167	168	165	164	171	174	176	181	191	203	203	197	196	176				
26	173	166	167	165	163	164	160	157	146	147	156	161	165	163	164	166	164	166	173	181	187	191	193	195	168				
27	192	178	177	177	166	161	163	163	164	167	168	170	170	171	171	172	174	176	184	192	197	194	196	193	177				
28	187	187	187	180	173	169	169	171	173	174	175	177	178	178	178	180	180	184	192	201	208	217	227	228	186				
29	217	203	187	180	180	178	176	168	167	170	172	175	177	178	180	181	182	188	193	202	207	207	208	204	187				
30	188	183	178	170	165	163	162	161	161	163	163	164	166	167	167	170	171	174	184	192	199	192	194	193	177				
31	188	183	178	170	165	163	162	161	161	163	163	164	166	167	167	170	171	174	184	192	199	192	196	204	187				
Mean	188	183	178	170	165	163	162	161	161	163	163	164	166	167	167	170	171	174	180	185	190	192	194	193	174				



International
Seismological
Centre

Table 30 - Hourly Values of H for September 1931

35000r + scripta

G.M.T.

DAY.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean.	Maximum. H. M.	Minimum. H. M.	Range.
1	199	185	185	182	168	174	176	166	162	162	168	170	171	172	174	173	174	178	187	193	204	207	209	210	181			
2	206	201	193	181	177	176	176	176	177	178	178	179	180	181	182	183	185	188	192	196	203	207	210	209	188			
3	205	199	194	193	192	197	200	198	200	186	180	179	181	178	177	185	186	189	185	200	201	207	212	204	193			
4	206	189	163	146	152	140	144	147	147	160	157	140	137	147	155	154	156	162	172	174	168	171	173	174	160			
5	170	168	158	145	151	154	162	164	157	163	162	162	168	167	167	168	171	179	178	178	180	180	178	181	167			
6	190	184	172	156	156	160	161	160	166	143	138	144	144	144	153	156	158	164	174	180	179	175	171	184	163			
7																												
8																												
9	169	162	161	155	148	133	137	145	145	141	141	149	153	152	152	152	154	156	161	170	180	185	182	177	157			
10	168	168	165	157	150	153	159	158	155	155	154	150	150	149	152	156	159	163	174	185	190	195	202	203	165			
11	200	190	174	163	159	160	161	160	161	155	161	160	161	160	159	160	163	173	184	192	197	201	205	204	173			
12	194	170	169	169	168	167	168	169	170	167	164	168	171	167	177	170	166	169	176	181	185	190	193	196	174			
13	194	190	184	180	170	168	167	163	164	162	170	172	172	170	169	169	169	172	181	192	200	206	206	205	179			
14	204	199	191	178	170	170	168	164	158	160	159	165	167	165	165	166	172	176	178	186	192	197	205	208	178			
15	197	184	171	154	160	163	165	162	153	141	154	148	144	148	152	158	153	157	158	164	176	184	186	195	164			
16	181	148	138	140	135	143	147	139	148	144	145	150	153	164	163	159	159	163	167	171	177	178	167	154	156			
17	149	154	159	147	137	127	142	140	142	142	139	152	153	152	154	155	158	161	168	172	175	177	179	181	155			
18																												
19	197	192	180	175	174	170	167	166	162	158	156	156	159	167	166	168	173	176	179	180	180	181	180	179	173			
20	178	182	179	176	180	180	181	179	178	174	171	170	173	176	175	181	188	192	186	181	172	173	186	180	179			
21	166	155	154	148	151	150	155	158	158	160	160	163	171	167	167	167	169	170	175	176	176	176	187	190	165			
22	185	180	162	155	149	150	158	162	165	165	164	164	164	168	168	171	174	179	185	188	191	187	188	201	172			
23	210	203	192	183	174	166	166	166	168	168	167	170	170	169	171	180	176	178	180	182	186	190	198	204	180			
24	197	182	176	173	166	148	147	145	144	156	156	162	167	170	170	166	168	173	174	175	180	185	191	195	169			
25	196	194	189	182	177	177	177	168	179	179	175	171	167	167	170	171	172	174	174	178	186	193	190	192	179			
26	190	183	164	160	162	165	165	166	162	158	161	162	164	166	166	168	169	172	175	179	184	184	198	189	172			
27	191	164	149	144	151	153	153	157	164	166	164	165	170	171	172	171	174	178	181	184	192	197	202	196	171			
28	189	185	182	178	173	172	175	171	172	170	174	175	175	176	178	179	180	180	178	180	188	200	209	207	181			
29	204	199	193	183	175	172	174	176	178	180	179	181	181	179	177	180	182	184	191	199	225	257	259	255	192			
30	224	212	212	201	191	188	186	188	183	181	165	157	163	160	155	155	156	160	161	173	180	184	188	187	180			
31																												
Mean	191	182	174	167	164	162	164	163	164	162	162	164	164	165	166	167	169	173	177	182	187	191	194	194	173			





Table 32 - Hourly Values of H for November 1931

35000γ + scripta

G.M.T.

DAY.	35000γ + scripta																								Mean.	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	Minimum H. M.	Range.
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23																										
1	161	154	146	143	140	137	137	136	133	131	137	137	138	141	142	142	141	142	141	139	150	162	165	169	144																									
2	169	163	157	155	151	144	142	138	145	143	140	139	138	140	141	141	140	141	138	131	139	145	155	162	145																									
3	167	163	158	147	144	139	138	135	140	134	136	138	139	139	140	140	139	140	138	148	157	151	153	157	145																									
4	155	145	138	132	130	121	155	129	114	112	111	120	129	133	133	131	130	129	133	133	145	154	160	165	134																									
5	163	159	151	141	139	155	147	151	128	122	125	143	141	144	144	144	143	144	144	144	153	158	162	164	146																									
6																																																		
7																																																		
8	174	168	151	139	126	131	120	129	138	156	129	135	140	134	136	135	134	130	130	130	130	126	138	142	136																									
9	139	137	130	125	138	137	137	145	145	143	145	150	144	145	138	137	138	143	143	143	150	155	160	163	143																									
10	157	155	149	140	132	128	128	131	133	138	138	138	138	138	139	139	139	139	139	139	150	155	165	174	142																									
11	174	171	165	159	149	143	142	143	141	147	140	140	143	140	138	138	138	140	144	144	154	167	179	186	151																									
12	188	181	166	156	149	146	146	146	147	147	148	149	149	150	151	152	151	149	149	156	167	178	185	183	158																									
13	193	192	186	180	173	168	165	162	167	164	159	158	155	154	155	156	154	155	158	162	175	188	194	186	170																									
14	185	180	163	155	147	148	147	147	147	149	156	166	161	153	160	159	159	159	155	159	172	183	191	194	162																									
15	187	180	170	160	151	150	152	150	145	142	145	157	160	150	151	148	148	149	145	149	151	165	160	163	155																									
16	154	157	155	145	140	147	149	147	148	146	143	145	153	158	152	147	146	146	140	140	147	144	160	166	149																									
17	159	154	149	139	139	137	137	138	141	145	144	146	152	154	153	155	147	147	140	139	147	144	160	166	149																									
18	163	165	155	146	142	137	130	145	144	142	144	151	148	142	143	144	144	144	140	139	151	151	160	159	147																									
19	171	163	144	145	144	145	145	145	148	149	147	151	147	147	148	146	146	145	145	151	160	168	168	173	149																									
20	167	155	145	143	138	140	145	143	145	145	142	141	145	149	147	146	146	143	145	145	149	164	168	170	150																									
21	180	174	162	152	147	150	154	152	153	152	151	150	150	154	154	153	153	152	164	164	175	188	197	198	161																									
22	196	188	176	163	156	153	153	153	154	155	152	152	150	151	153	154	153	154	156	165	178	193	201	202	165																									
23	196	188	178	166	160	156	156	157	158	156	156	158	159	159	159	162	162	160	160	160	165	175	196	202	167																									
24	196	177	167	160	155	151	148	147	150	150	150	149	149	151	155	157	157	158	168	168	181	196	206	207	164																									
25	204	198	187	176	172	162	162	160	158	157	156	155	152	159	161	163	163	174	191	191	201	206	224	231	177																									
26																																																		
27	165	152	139	129	132	129	125	132	138	137	136	135	136	137	137	137	137	138	138	140	140	159	161	172	140																									
28	174	166	159	146	143	138	140	143	143	140	148	147	142	141	142	140	140	145	154	154	165	177	190	199	153																									
29	195	187	174	161	149	147	147	149	149	148	148	150	152	152	150	150	150	150	154	163	172	179	187	189	160																									
30	186	181	174	159	152	149	143	146	146	146	145	149	146	147	150	150	154	154	156	163	172	180	188	192	159																									
31																																																		
Mean	175	169	159	150	146	144	144	144	144	144	143	146	147	147	147	147	147	147	146	151	160	169	176	180	153																									

Table 33 - Hourly Values of H for December 1931

G.M.T.

35000γ + scripta

DAY.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean.	Maximum. H. M. γ	Minimum. H. M. γ	Range	
1	195	189	179	172	158	154	154	147	142	144	146	148	156	161	155	142	140	140	137	139	146	154	161	171	155				
2	170	158	145	143	144	146	146	145	139	138	139	147	161	150	148	153	149	149	150	154	154	150	170	177	150				
3	165	155	150	141	135	132	136	136	143	145	135	146	147	146	143	145	145	144	140	138	149	140	158	167	145				
4	166	161	153	142	139	144	144	144	148	138	137	150	142	141	149	147	147	149	136	149	146	154	163	166	148				
5	165	158	145	140	137	142	144	142	142	144	139	138	151	152	141	142	139	135	136	146	146	166	171	180	148				
6	180	168	155	159	132	136	136	138	139	141	138	144	151	144	136	132	132	134	135	137	137	163	165	169	146				
7	170	164	151	142	136	139	139	139	138	145	140	140	138	136	138	139	140	139	139	147	164	172	186	189	149				
8	181	164	149	139	134	139	145	146	146	145	147	148	147	146	145	143	144	145	150	163	179	194	199	194	155				
9	186	176	165	155	149	148	147	148	149	154	153	147	149	148	149	151	148	148	149	160	163	170	183	187	158				
10	186	176	160	152	146	144	145	145	151	139	132	130	132	135	136	137	135	134	135	140	148	162	176	181	148				
11	185	175	162	154	149	146	143	146	148	145	146	151	154	158	157	160	157	154	151	141	149	169	168	163	155				
12	164	160	144	132	126	131	132	133	134	135	134	146	149	139	139	136	140	139	131	130	139	150	162	174	141				
13	174	166	155	145	142	142	142	140	140	142	144	142	144	147	153	149	149	142	139	145	147	160	170	175	150				
14	177	173	163	155	150	144	142	141	141	141	142	145	150	148	146	144	146	144	142	142	142	147	156	158	149				
15	164	164	158	149	142	136	137	136	140	143	145	141	142	144	144	144	145	142	143	145	145	150	164	167	147				
16	169	166	161	153	146	144	144	147	147	145	142	144	146	146	150	152	152	148	144	140	142	150	157	162	150				
17	162	155	149	153	151	139	140	149	149	148	142	143	148	150	147	149	152	153	155	153	162	171	177	173	153				
18	170	165	153	145	143	144	145	146	146	146	146	145	146	147	148	147	149	148	153	162	172	172	178	174	154				
19																													
20																													
21																													
22																													
23																													
24																													
25																													
26																													
27																													
28																													
29																													
30																													
31																													
Mean	170	162	153	144	137	136	138	136	138	137	137	138	141	140	140	139	139	137	135	140	147	157	166	169	145				



SEISMOLOGICAL SUMMARY, 1931

This summary deals with the determination of the epicentres of the more important earthquakes recorded at the Apia Observatory. It is supplementary to the quarterly seismological bulletins which were issued during the year.

The epicentres have been deduced by the method of stereographic projection described by Dr Klotz. The data necessary to supplement the records from our Wiechert seismographs have been extracted from the various seismological publications issued by other observatories.

Seven earthquakes are considered here, four originating in the Solomon Islands, one near Timor, one in the New Hebrides and one off the east coast of North Island, New Zealand. The total number of shocks recorded during the year was 117 and 71 of these originated within nine degrees of Apia. Eleven shocks were reported felt by residents; eight of intensity R.F.2, two of intensity R.F.3 and one of intensity R.F.4. The epicentral distances of 31 shocks were indeterminate.

The same instruments have been in use as in previous years, namely a Wiechert horizontal seismograph of mass 1000 kg., and a Wiechert vertical seismograph of mass 180 kg.. Much trouble was occasioned in the early part of the year owing to rain water penetrating through cracks in the roof. An interruption occurred in May through the breaking of a spindle in the driving clock of the horizontal seismograph and again in August and September, when the vertical seismograph was overhauled. New parts were fitted to this instrument but the driving mechanism continues to give trouble. The contact clock for time-marking the seismograms has also given considerable trouble.



Table 34 - EPICENTRES OF PRINCIPAL EARTHQUAKES IN 1931

Date	Deduced Epicentre		Observed G.M.T. of		
	Locality	Latitude Longitude Distance 0 (G.M.T.)	P.	S.	
		h m s	h m s	h m s	
February 13	New Zealand	S 40° E 178° 27°.7	01 28 36	01 34 39	01 39 26
March 28	Timor	S 8° E 128° 59°.3	12 37 18	12 47 24	--
April 24	Solomon Is.	S 3° E 156° 33°.6	17 21 59	17 29 00	--
July 21	New Hebrides	S 21° E 170° 18°.8	03 35 57	03 40 24	03 43 57
October 3	Solomon Is.	S 12° E 160° 26°.6	19 13 06	19 19 00	19 23 37
October 10	Solomon Is.	S 9° E 160° 28°	00 19 32	00 25 40	--
November 20	Solomon Is.	S 10° E 164° 24°	14 16 34	14 22 02	14 26 17



METEOROLOGICAL REPORT FOR 1931Notes on Instruments

In all meteorological records the standard time of Western Samoa is used. This is $11\frac{1}{2}$ hours slow on Greenwich and 2m 54s slow on local time referred to the meridian of the Observatory and is the same as local time on the meridian of $172^{\circ} 30'$ west. Zone time is not used in Western Samoa.

PRESSURE

The barometer in use as standard is an instrument of Kew pattern (No. M.O. 2233) made by Messrs S. & A. Calderara and supplied by the Meteorological Office, London. The corrections for temperature, index error and gravity as well as the reduction to mean sea level are made by means of the Gold Slide and the readings are obtained in millibars.

The old barometer (Fuess No.1469) is no longer used. It was noticed during the year that some mercury had got loose inside the glass cover which surrounds the vernier and it seems possible that the instrument has at some period been badly jolted. The vacuum above the column of mercury still appears to be quite sound. It is understood that this barometer has not been moved from its peg in the clock room for many years.

The barograph by Messrs Jules Richard of Paris, Grand Model No.105444, was in use throughout the year. It is an aneroid barometer with a three fold magnification, i.e. a change of ordinate of three millimetres is equivalent to a change of pressure of one millimetre of mercury. The control readings of the mercury barometer were made every day at 9 a.m. and 3.30 p.m. and the barograms were scaled at the exact hours of civil time. The readings of the barograms are thus instantaneous values at these hours.

A non-cyclic correction was applied to the hourly differences from the mean. This correction was obtained in the following way. The pressure at midnight at the beginning of the month was subtracted from the pressure at midnight at the end of the month and the difference was divided by the number of days in the month. The number so obtained was then divided up proportionately throughout the twenty-four hours with the proviso that the correction to be applied to the reading at 12h (noon) should be zero. Morning and

afternoon corrections are thus equal in magnitude but opposite in sign.*

TEMPERATURE

The thermograph is set up in a double-louvred Stevenson screen about two metres above ground in an open grassy plot by the beach. The Stevenson screen itself has a wooden roof, but 35 centimetres above it is a second roof of thatch and the screen is further protected from direct radiation by two louvred walls on the east and west sides. This arrangement has been in use for many years. The thermograph was made by Messrs Short and Mason for the range of temperature experienced in Samoa (10° - 38° C). The scale is fairly open, one degree Centigrade being represented by four millimetres. The charts are changed once a week.

The following set of thermometers was in use during the year:-

Maximum	Casella No.4876	Dry bulb	Negretti No. M.O. 30290
Minimum	Casella No.4877	Wet bulb	Calderara No. M.O. 31106
Grass minimum	Casella No.9311 (NPL 25)		

The thermograph was controlled during 1931 by readings at 9 a.m. and 3.30 p.m. of the standard thermometer, No.652 by Messrs R. Fuess of Berlin, and also by the readings of the minimum thermometer. The maximum and minimum thermometers were read and set at 9 a.m. but the reading of the maximum is credited to the preceding day.

RAINFALL

Two raingauges are used, one of which is self-recording. Both gauges are of the Hellman-Fuess type having a diameter of 15.95 centimetres (=200 square centimetres cross section). The rim of the non-recording gauge is 65 centimetres above the ground and the rim of the recorder is at a height of 130 centimetres. The gauges are situated $4\frac{1}{2}$ metres apart in an open area shielded by coconut palm trees. The trees are ten metres high and thirteen metres distant on the west

*C.Chree, Terrestrial Magnetism, Vol.XXV, No.1, p.8, March 1920.

and south. The daily values of rainfall are taken from the non-recording gauge which is read every day at 9 a.m. Rainfall measured at 9 a.m. is credited to the preceding day.

HUMIDITY

The readings of the hair hygrometer were unreliable and the only measurements of relative humidity were those made at 9 a.m. and 3.30 p.m. by means of the wet bulb thermometer. The level of the water supplied to the wet bulb was so arranged that the water fell from the muslin in drops at intervals. The muslin was kept clean by this means and did not require such frequent changing as heretofore; but it was much interfered with by lizards.

SUNSHINE

The Observatory possesses a Campbell-Stokes sunshine recorder having a glass ball of slightly greenish tint. The diameter of the ball is five inches. The recorder is mounted on a platform on the extreme northern edge of the peninsula and the exposure is not satisfactory because the instrument is shielded by coconut palm trees which themselves grow to heights of twelve or fifteen metres or more.

EVAPORATION

The Piché evaporimeter used to measure the evaporation consists essentially of a graduated test-tube held mouth downward. A small disk of absorbent paper is clamped over the mouth and retains the water in the evaporimeter-tube. The paper disk extends as an annulus 1 centimetre wide outside the edge of the glass wall of the evaporimeter. The evaporation from the exposed paper ring is measured by the fall of water level in the tube.

The evaporimeter is mounted on a post of the porch on the north side of and facing the main office. The winds blow freely over the evaporating-paper with little obstruction. The paper is shielded from direct sunlight.

The numbers entered in the tables are the differences between the readings at 9 a.m. on successive days.

VISIBILITY

The visibility is determined from the following scale. All the objects are to the west of the Observatory, and for the greater part of the distance the seeing is over water. Fog (as defined by making an object invisible therein at a distance of 1,000 yards) did not occur at Apia, although occasionally in the early morning a thin haze was seen out to sea.

1. Very good - Exceptionally clear conditions. Light and dark areas sharply outlined on Island of Savai'i. The peak of Savai'i is forty miles distant.
2. Good - Outline of Savai'i seen clearly, with light and dark areas just distinguished thereon.
3. Fair - Outline of mountain-peaks on Savai'i visible and defined against sky.
4. Indifferent-Savai'i much obscured by haze, or only portions of it seen.
5. Poor - Savai'i invisible; red-roofed house on Faleula Point, four miles distant, visible.
6. Bad - Red-roofed house on Faleula Point, four miles distant, not visible.

CLOUDS

The amount of cloud in the sky at 9 a.m. and 3.30 p.m. is estimated in tenths. During spells of fine weather, frequently the only clouds visible are a ring of cumulus extending a few degrees above the horizon. These are generally recorded as covering one or two tenths of the sky, which is probably too high an estimate.

NOTES on the WEATHER of 1931

Pressure The average height of the barometer during the year was approximately the same as the normal value. It varied from normal in individual months and in January and February in particular the mean values were below the normal.

Temperature Except in December the average temperature in the Stevenson screen was persistently above the normal. The highest shade temperature of the year was 31.8 degrees Centigrade in April and the lowest was 18.9 degrees in July.

Rainfall The total rainfall of the year was in excess of the normal value by 294 millimetres. The months of February, April, May and June were wetter than usual and there was torrential rain in June which amounted to a total of 175 millimetres during one day of 24 hours. The greatest fall recorded in the course of one hour was 38.5 millimetres in March.

Sunshine The year as a whole showed a slight excess of sunshine compared with the normal.

Storms A cyclonic storm visited the Samoa Islands in mid-January. It approached from the east and moved slowly to a position to the north-west of Samoa, increasing in intensity, and then returned slowly on a south-easterly track. It was associated with gales in the eastern Samoa Islands which are reported to have caused damage to buildings and crops. The lowest reading of the barometer at Apia was 745 mm. and the highest gust of wind recorded at the Observatory was 44 miles per hour, though this is probably under-estimated.

Another storm occurred in February. A barometric depression of considerable extent developed to the north-west of Samoa about the middle of the month and travelled slowly south-west, remaining over the Fiji Islands for about six days. The wind rose to force 9 on the Beaufort scale. The plantations in Fiji are said to have suffered much damage.

An exceptionally intense cyclone passed over the Fiji group on the 1st and 2nd of March. Severe floods, wide-spread damage and considerable loss of life are said to have occurred. The cyclone moved away south-east, becoming less intense, and reached the Tonga Islands two days later.

Other depressions, less intense, occurred near the Fiji Islands in April and May.

Table 35

EXTREME VALUES, NORMALS, AND VARIATIONS THEREFROM OF METEOROLOGICAL ELEMENTS, 1931

	January	February	March	April	May	June	July	August	September	October	November	December	Year
Pressure													
Normal (mm.)	755.73	756.26	756.80	757.36	758.16	758.58	758.82	759.05	758.98	758.32	756.95	756.05	757.59
Variation 1931	-1.37	-2.13	+0.68	+0.11	+0.24	+0.43	+0.62	-0.50	+0.04	-0.09	-0.16	+0.71	-0.12
Maximum	759.4	758.1	759.7	760.5	761.4	761.7	762.1	761.4	761.0	760.8	760.4	759.6	762.1
Minimum	745.4	750.4	754.5	753.2	755.1	755.2	756.9	754.5	756.4	755.3	753.3	753.7	745.4
Temperature													
Normal (°C)	26.15	26.14	26.22	26.08	25.82	25.47	25.14	25.48	25.70	25.94	25.96	26.26	25.86
Variation 1931	+0.65	+0.61	+0.66	+0.46	+0.43	+0.14	+0.63	+0.54	+0.38	-0.07	+0.14	-0.39	+0.55
Maximum	30.8	31.2	31.4	31.8	31.6	30.0	30.4	30.3	30.9	31.0	31.3	31.5	31.8
Minimum	22.8	22.9	22.7	22.0	21.5	19.8	18.9	20.4	20.1	19.4	20.9	21.6	18.9
Greatest Daily Range	7.0	7.5	7.5	9.4	8.6	9.2	8.9	8.5	10.3	9.4	9.0	9.2	10.3
Rainfall													
Normal (mm.)	442	385	357	251	162	131	80	90	126	170	256	366	2816
Variation 1931	- 5	+122	-94	+154	+190	+140	+20	-39	+13	+42	-108	-158	+294
Sunshine													
Normal (hours)	142	153	172	188	197	197	204	223	218	204	175	158	2251
Variation 1931	+13	-12	-13	+17	-41	+ 9	+47	-11	+ 2	+17	+60	+13	+96

Note. -- Sunshine is corrected to equal months of thirty days.

Table 36 - PRESSURE: MONTHLY AND SEASONAL MEANS AND DIURNAL INEQUALITIES 1931

The departures in millimetres from the mean of the day are adjusted for non-cyclic change

Hour	-	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Month	Mean																								
January	754.56	+0.18	-0.05	-0.18	-0.13	+0.05	+0.43	+0.73	+0.87	+0.87	+0.70	+0.39	-0.02	-0.39	-0.67	-0.97	-1.13	-1.04	-0.79	-0.41	-0.04	+0.26	+0.45	+0.47	+0.35
February	754.13	+0.36	+0.09	-0.15	-0.20	-0.14	+0.08	+0.42	+0.70	+0.82	+0.70	+0.42	-0.01	-0.44	-0.77	-1.03	-1.17	-1.08	-0.81	-0.35	+0.06	+0.32	+0.64	+0.72	+0.66
March	757.48	+0.36	+0.19	0.00	-0.03	0.00	+0.11	+0.47	+0.80	+0.89	+0.78	+0.44	-0.03	-0.54	-0.88	-1.13	-1.23	-1.18	-0.83	-0.38	+0.06	+0.39	+0.57	+0.53	+0.52
April	757.47	+0.40	+0.25	+0.11	+0.05	+0.10	+0.39	+0.67	+0.93	+0.98	+0.91	+0.47	-0.12	-0.71	-1.14	-1.41	-1.40	-1.22	-0.85	-0.41	+0.06	+0.38	+0.53	+0.58	+0.54
May	758.40	+0.24	+0.11	-0.03	-0.08	-0.04	+0.14	+0.49	+0.83	+0.98	+0.92	+0.52	+0.08	-0.52	-0.95	-1.24	-1.27	-1.09	-1.75	-0.33	+0.12	+0.39	+0.50	+0.48	+0.43
June	759.01	+0.28	+0.12	-0.07	-0.09	-0.04	+0.14	+0.43	+0.76	+0.93	+0.88	+0.47	-0.03	-0.57	-0.95	-1.18	-1.17	-0.96	-0.65	-0.21	+0.14	+0.39	+0.48	+0.47	+0.47
July	759.44	+0.37	+0.23	+0.07	+0.03	+0.06	+0.21	+0.52	+0.81	+0.94	+0.83	+0.34	-0.11	-0.64	-1.05	-1.32	-1.33	-1.10	-0.66	-0.19	+0.17	+0.38	+0.44	+0.43	+0.46
August	758.55	+0.25	+0.06	-0.06	-0.11	-0.08	+0.07	+0.44	+0.75	+0.88	+0.95	+0.61	+0.14	-0.35	-0.80	-1.10	-1.16	-1.01	-0.70	-0.30	+0.02	+0.27	+0.39	+0.45	+0.34
September	759.02	+0.22	-0.02	-0.15	-0.16	-0.06	+0.23	+0.63	+0.84	+0.92	+0.85	+0.44	-0.04	-0.48	-0.87	-1.12	-1.24	-1.07	-0.69	-0.21	+0.11	+0.35	+0.49	+0.50	+0.48
October	758.23	+0.20	-0.03	-0.12	-0.10	+0.08	+0.38	+0.76	+0.95	+0.96	+0.79	+0.40	-0.09	-0.58	-0.93	-1.15	-1.26	-1.11	-0.72	-0.30	+0.05	+0.29	+0.52	+0.53	+0.45
November	756.79	+0.25	+0.02	-0.08	-0.04	+0.10	+0.43	+0.76	+0.88	+0.89	+0.63	+0.27	-0.18	-0.64	-0.93	-1.20	-1.25	-1.10	-0.74	-0.29	+0.08	+0.42	+0.60	+0.62	+0.56
December	756.76	+0.19	-0.01	-0.13	-0.14	0.00	+0.41	+0.74	+0.88	+0.87	+0.69	+0.33	+0.01	-0.32	-0.66	-1.00	-1.12	-1.01	-0.76	-0.57	-0.07	+0.19	+0.39	+0.48	+0.41
Year	757.47	+0.28	+0.08	-0.07	-0.09	0.00	+0.25	+0.59	+0.83	+0.91	+0.80	+0.42	-0.03	-0.51	-0.88	-1.15	-1.23	-1.08	-0.83	-0.31	+0.06	+0.54	+0.50	+0.52	+0.47
Wet Season (1930-31)	755.30	+0.22	-0.02	-0.18	-0.17	-0.04	+0.29	+0.59	+0.76	+0.83	+0.68	+0.39	-0.01	-0.44	-0.73	-1.02	-1.14	-1.03	-0.73	-0.31	+0.05	+0.35	+0.56	+0.58	+0.47
Dry Season	758.85	+0.29	+0.13	-0.02	-0.06	-0.03	+0.14	+0.47	+0.79	+0.93	+0.89	+0.49	+0.02	-0.52	-0.94	-1.21	-1.23	-1.04	-0.94	-0.26	+0.11	+0.38	+0.45	+0.45	+0.43



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Table 37 - PRESSURE: MONTHLY, SEASONAL AND ANNUAL MEANS OF HOURLY VALUES, 1931

From readings in millimetres at exact hours of civil mean time. 700 mm. + tabulated values

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Month																									
January	54.56	54.33	54.19	54.25	54.42	54.80	55.10	55.24	55.24	55.06	54.75	54.34	53.97	53.69	53.38	53.22	53.31	53.56	53.94	54.30	54.60	54.79	54.81	54.69	54.36
February	54.48	54.21	53.97	53.92	53.98	54.20	54.54	54.83	54.95	54.83	54.55	54.12	53.69	53.36	53.10	52.96	53.06	53.33	53.79	54.20	54.52	54.72	54.86	54.80	54.13
March	57.86	57.69	57.50	57.46	57.49	57.60	57.96	58.29	58.37	58.26	57.92	57.45	56.94	56.60	56.35	56.24	56.29	56.59	57.09	57.53	57.85	58.03	58.04	58.00	57.48
April	57.85	57.70	57.56	57.50	57.55	57.85	58.13	58.39	58.44	58.38	57.94	57.35	56.76	56.33	56.07	56.08	56.26	56.63	57.08	57.55	57.87	58.02	58.07	58.03	57.47
May	58.63	58.50	58.37	58.32	58.36	58.54	58.89	59.23	59.38	59.52	58.92	58.48	57.88	57.45	57.16	57.13	57.31	57.65	58.07	58.52	58.79	58.91	58.89	58.84	58.40
June	59.28	59.12	58.93	58.91	58.98	59.15	59.44	59.77	59.94	59.89	59.48	58.98	58.44	58.16	57.83	57.84	58.05	58.36	58.81	59.15	59.41	59.50	59.49	59.49	59.01
July	59.78	59.64	59.48	59.44	59.47	59.63	59.94	60.23	60.36	60.26	59.77	59.32	58.79	58.38	58.12	58.11	58.34	58.78	59.26	59.62	59.83	59.89	59.88	59.91	59.44
August	58.80	58.61	58.49	58.44	58.47	58.62	58.99	59.30	59.43	59.50	59.16	58.69	58.20	57.75	57.45	57.39	57.54	57.85	58.25	58.58	58.82	58.94	58.98	58.89	58.55
September	59.25	59.01	58.89	58.87	58.96	59.25	59.65	59.86	59.94	59.87	59.46	58.98	58.54	58.15	57.90	57.78	57.95	58.33	58.81	59.12	59.35	59.50	59.51	59.49	59.02
October	58.44	58.21	58.11	58.13	58.31	58.61	58.99	59.18	59.19	59.02	58.63	58.14	57.65	57.30	57.08	56.97	57.12	57.51	57.93	58.26	58.52	58.74	58.75	58.67	58.23
November	57.10	56.86	56.76	56.79	56.93	57.25	57.58	57.69	57.70	57.43	57.06	56.61	56.15	55.85	55.57	55.52	55.66	56.02	56.46	56.83	57.16	57.34	57.35	57.29	56.79
December	56.94	56.75	56.63	56.62	56.76	57.17	57.50	57.64	57.63	57.45	57.08	56.77	56.44	56.10	55.76	55.64	55.77	56.00	56.39	56.69	56.95	57.15	57.23	57.15	56.76
Year	57.75	57.55	57.41	57.39	57.47	57.72	58.06	58.30	58.38	58.27	57.89	57.44	56.95	56.59	56.31	56.24	56.39	56.72	57.16	57.53	57.81	57.97	57.99	57.94	57.47
Wet Season	55.52	55.28	55.12	55.12	55.26	55.29	55.89	56.07	56.13	55.98	55.70	55.50	54.88	54.58	54.28	54.17	54.28	54.68	55.00	55.36	55.66	55.87	55.90	55.8	55.50
Dry Season	59.12	58.97	58.82	58.78	58.81	58.99	59.31	59.63	59.78	59.74	59.33	58.87	58.33	57.93	57.64	57.62	57.81	58.16	58.60	58.97	59.21	59.31	59.31	59.28	58.85



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Table 38 - TEMPERATURE: MONTHLY AND SEASONAL MEANS AND DIURNAL INEQUALITIES, 1931

The departures in degrees centigrade from the mean of the day are adjusted for non-cyclic change

Hour	-	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Month	Mean																								
January	26.80	-1.10	-1.16	-1.58	-1.53	-1.60	-1.61	-1.04	-0.06	+0.61	+1.06	+1.48	+1.63	+1.44	+1.31	+1.18	+1.08	+0.98	+0.79	+0.36	+0.01	-0.21	-0.51	-0.62	-0.91
February	26.75	-1.30	-1.45	-1.63	-1.69	-1.70	-1.66	-1.03	+0.06	+0.93	+1.53	+1.88	+2.03	+1.58	+1.36	+1.36	+1.26	+0.86	+0.68	+0.26	-0.14	-0.44	-0.74	-0.96	-1.09
March	26.88	-1.64	-1.85	-1.96	-2.08	-2.20	-2.22	-1.40	+0.12	+1.29	+1.90	+2.11	+2.13	+2.07	+1.80	+1.75	+1.74	+1.45	+0.99	+0.30	-0.19	-0.63	-0.91	-1.18	-1.38
April	26.54	-2.13	-2.23	-2.39	-2.48	-2.56	-2.40	-1.50	+0.38	+1.84	+2.18	+2.29	+2.59	+2.64	+2.46	+2.20	+1.95	+1.44	+0.91	+0.30	-0.26	-0.70	-1.19	-1.54	-1.76
May	26.25	-1.59	-1.80	-1.86	-1.89	-1.94	-1.76	-1.05	+0.38	+1.38	+1.87	+2.03	+2.20	+2.26	+2.15	+1.85	+1.54	+0.81	+0.46	-0.07	-0.48	-0.81	-1.08	-1.22	-1.37
June	25.61	-1.74	-1.76	-1.84	-1.90	-1.97	-1.96	-1.51	+0.01	+1.51	+1.96	+2.38	+2.58	+2.53	+2.41	+2.15	+1.77	+1.12	+0.56	+0.09	-0.65	-1.00	-1.18	-1.52	-1.72
July	25.77	-1.81	-2.07	-2.22	-2.29	-2.21	-2.13	-1.44	+0.44	+1.74	+2.36	+2.71	+2.79	+2.68	+2.46	+2.11	+1.58	+0.90	+0.27	-0.32	-0.56	-0.93	-1.12	-1.41	-1.55
August	26.02	-1.59	-1.72	-2.00	-2.04	-2.05	-1.95	-1.19	+0.15	+1.37	+2.07	+2.40	+2.32	+2.30	+2.10	+1.89	+1.30	+0.66	+0.25	-0.08	-0.36	-0.65	-0.84	-1.16	-1.24
September	26.08	-2.07	-2.19	-2.38	-2.35	-2.42	-2.32	-1.19	+0.33	+1.80	+2.30	+2.65	+2.57	+2.55	+2.38	+2.26	+1.95	+1.07	+0.42	+0.03	-0.35	-0.80	-1.19	-1.41	-1.70
October	25.87	-2.09	-2.17	-2.35	-2.46	-2.51	-2.31	-1.05	+0.65	+2.12	+2.59	+2.66	+2.75	+2.74	+2.57	+2.14	+1.81	+1.24	+0.52	-0.01	-0.51	-1.04	-1.39	-1.76	-1.94
November	26.10	-2.43	-2.69	-2.68	-2.88	-3.04	-2.50	-0.99	+0.59	+1.77	+2.19	+2.71	+2.97	+2.79	+2.79	+2.51	+2.11	+1.59	+0.96	+0.30	-0.30	-0.65	-1.24	-1.53	-1.95
December	25.87	-1.39	-2.13	-2.22	-2.38	-2.47	-2.23	-0.93	+0.55	+1.57	+2.24	+2.06	+2.03	+2.24	+2.37	+2.25	+1.97	+1.31	+0.75	+0.18	-0.32	-0.78	-1.07	-1.44	-1.62
Year	26.21	-1.78	-1.93	-2.09	-2.16	-2.22	-2.09	-1.19	+0.30	+1.49	+2.02	+2.28	+2.38	+2.32	+2.16	+1.97	+1.67	+1.12	+0.64	+0.10	-0.34	-0.75	-1.04	-1.32	-1.52
Wet Season (1930-31)	26.82	-1.32	-1.41	-1.56	-1.69	-1.74	-1.64	-0.92	+0.12	+0.94	+1.38	+1.69	+1.83	+1.61	+1.54	+1.46	+1.29	+0.99	+0.72	+0.23	-0.17	-0.50	-0.77	-0.95	-1.13
Dry Season	25.91	-1.68	-1.84	-1.98	-2.03	-2.04	-1.95	-1.30	+0.35	+1.50	+2.07	+2.38	+2.47	+2.44	+2.38	+2.00	+1.55	+0.87	+0.39	-0.14	-0.51	-0.85	-1.05	-1.34	-1.47

Table 39 - TEMPERATURE: MONTHLY, SEASONAL AND ANNUAL MEANS OF HOURLY VALUES, 1931

Readings in degrees centigrade at exact hours of civil time

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Mean
Month																									
January	25.69	25.63	25.41	25.26	25.19	25.19	25.76	26.74	27.41	27.86	28.28	28.43	28.24	28.11	27.98	27.88	27.78	27.59	27.17	26.82	26.50	26.30	26.19	25.90	26.80
February	25.43	25.28	25.11	25.05	25.04	25.08	25.71	26.80	27.68	28.28	28.63	28.78	28.33	28.11	28.11	28.02	27.62	27.44	27.02	26.62	26.32	26.03	25.81	25.68	26.75
March	25.24	25.05	24.92	24.80	24.68	24.66	25.48	27.00	28.17	28.78	28.99	29.01	28.95	28.68	28.63	28.62	28.33	27.87	27.18	26.69	26.25	25.97	25.70	25.50	26.22
April	24.41	24.51	24.15	24.06	23.98	24.14	25.04	26.92	28.38	28.72	28.83	29.13	29.18	29.00	28.74	28.49	27.98	27.45	26.84	26.28	25.84	25.35	25.00	24.78	26.54
May	24.67	24.46	24.40	24.37	24.31	24.49	25.20	26.63	27.63	28.12	28.28	28.45	28.51	28.40	28.10	27.79	27.06	26.71	26.18	25.76	25.43	25.16	24.96	24.87	26.25
June	23.91	23.88	23.80	23.74	23.66	23.67	24.12	25.63	27.13	27.58	27.99	28.19	28.14	28.01	27.75	27.37	26.71	26.15	25.50	24.93	24.58	24.40	24.05	23.85	25.61
July	23.91	23.65	23.51	23.44	23.53	23.61	24.31	26.19	27.50	28.12	28.48	28.56	28.45	28.24	27.89	27.37	26.69	26.07	25.48	25.25	24.88	24.70	24.41	24.28	25.77
August	24.44	24.31	24.03	23.99	23.98	24.08	24.84	26.17	27.39	28.09	28.42	28.34	28.32	28.12	27.91	27.32	26.67	26.26	25.93	25.65	25.36	25.17	24.85	24.76	26.02
September	24.05	23.91	23.72	23.75	23.67	23.77	24.90	26.42	27.89	28.38	28.73	28.65	28.63	28.46	28.33	28.02	27.14	26.49	26.10	25.71	25.26	24.87	24.65	24.36	26.08
October	23.75	23.67	23.50	23.39	23.34	23.54	24.81	26.51	27.98	28.45	28.53	28.62	28.61	28.25	28.02	27.69	27.12	26.51	25.88	25.38	24.85	24.51	24.14	23.96	25.88
November	23.68	23.42	23.23	23.23	23.07	23.60	25.11	26.69	27.87	28.29	28.81	29.07	28.89	28.89	28.61	28.21	27.69	27.06	26.39	25.79	25.24	24.85	24.50	24.14	26.10
December	23.98	23.74	23.65	23.49	23.40	23.64	24.94	26.42	27.44	28.11	27.93	27.90	28.11	28.24	28.12	27.84	27.18	26.62	26.05	25.55	25.09	24.80	24.43	24.25	25.87
Year	24.43	24.28	24.12	24.05	23.99	24.12	25.02	26.51	27.71	28.23	28.49	28.59	28.53	28.38	28.18	27.89	27.33	26.85	26.31	25.87	25.47	25.18	24.89	24.69	26.21
Wet Season (1930-31)	25.50	25.40	25.26	25.12	25.08	25.18	25.90	26.93	27.76	28.20	28.50	28.65	28.42	28.35	28.27	28.11	27.80	27.54	27.05	26.64	26.32	26.04	25.87	25.68	26.82
Dry Season	24.23	24.07	23.93	23.89	23.87	23.96	24.62	26.15	27.41	27.98	28.29	28.39	28.35	28.19	27.91	27.46	26.78	26.30	25.77	25.40	25.06	24.86	24.67	24.44	25.91

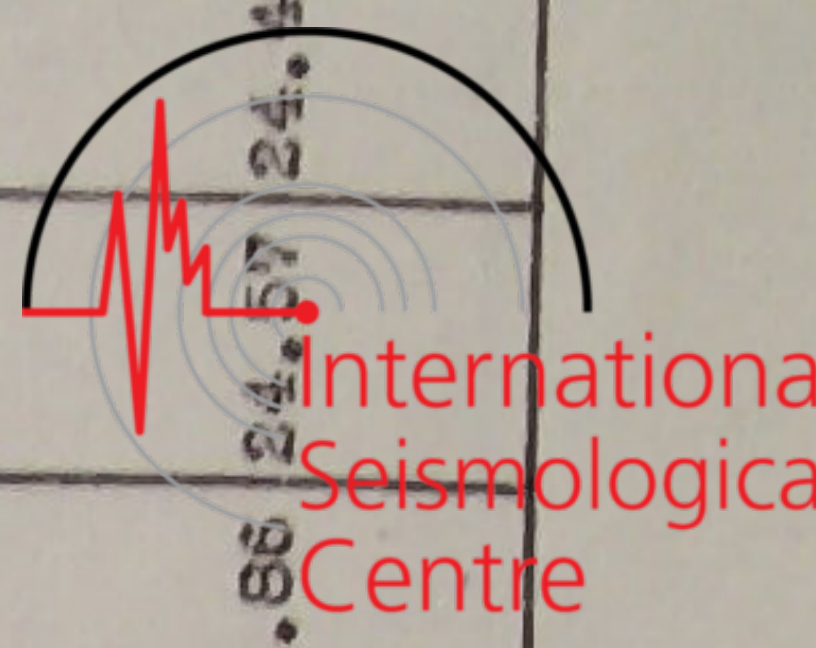


TABLE 40 - FOURIER COEFFICIENTS: DIURNAL VARIATION OF BAROMETRIC PRESSURE AND TEMPERATURE

Values of C_n , ϕ_n in the series $\sum C_n \sin(15nt^\circ + \phi_n)$, t being civil time (11h. 30m. slow on Greenwich), reckoning in hours from midnight. The seasonal means are derived from the following grouping of months. Wet - November, December, 1930; January and February 1931. Dry - May, June, July, August 1931.

Period	C1	ϕ_1	C2	ϕ_2	C3	ϕ_3	C4	ϕ_4
Wet Season	0.52	22°	0.63	159°	0.05	127°	0.02	9°
Dry Season	0.60	19°	0.69	155°	0.07	352°	0.07	278°
Y e a r	0.60	21°	0.67	158°	0.04	34°	0.03	287°
	BAROMETRIC PRESSURE							
Wet Season	1.72	240°	0.39	108°	0.26	11°	0.06	252°
Dry Season	2.24	247°	0.61	101°	0.23	18°	0.16	252°
Y e a r	2.28	244°	0.56	108°	0.29	18°	0.16	255°
	TEMPERATURE							



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Table 41

RAINFALL, 1931

Number of Days on which stated Amounts of Precipitation were recorded

Month	Amount of Rain (in millimetres)				Total (days)	Total rainfall mm.	Greatest fall in 24 hours mm.	Greatest fall in one hour mm.
	0.1- 0.9	1.0- 9.9	10.0- 24.9	25.0- 99.9				
	Over 100							
January	3	9	2	8	22	437	91.8	27.5
February	1	11	4	6	23	507	100.4	53.8
March	5	12	2	3	22	261	82.2	38.5
April	1	3	4	4	13	405	120.8	30.0
May	1	7	5	2	16	352	122.2	37.7
June	2	7	3	0	13	271	175.0	37.0
July	4	2	2	1	9	100	59.5	11.6
August	2	7	1	0	10	51	20.9	14.7
September	2	10	2	2	16	139	31.5	20.4
October	1	4	1	4	10	212	60.8	23.7
November	2	3	2	3	10	148	43.2	15.0
December	4	8	2	4	18	228	49.5	32.7
Year	28	83	30	37	182	3111	175.0	38.5

Table 42 - DURATION OF BRIGHT SUNSHINE, 1931: HOURLY, MONTHLY AND ANNUAL TOTALS

Aggregate duration of bright sunshine expressed in hours occurring between the exact hours of civil time

Hours	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	Totals	%
January	7.9	11.1	13.8	19.4	19.6	17.6	16.2	15.2	12.1	10.6	12.1	4.2	159.8	40
February	4.4	9.9	11.6	14.0	16.0	16.5	14.1	12.1	9.4	7.7	8.4	2.8	126.9	36
March	6.1	16.7	15.4	20.9	20.3	18.1	16.9	14.6	10.9	10.9	10.3	3.4	164.5	44
April	6.8	19.6	21.3	23.2	23.1	22.4	21.2	20.6	17.7	15.3	10.7	3.5	205.4	58
May	4.4	15.5	17.0	17.6	17.3	17.8	16.3	15.8	14.9	12.4	10.2	2.1	161.3	45
June	3.3	16.6	21.0	19.2	20.9	20.6	20.0	18.9	18.3	16.2	16.2	4.5	195.7	58
July	3.6	22.5	27.1	27.8	27.5	28.2	26.8	25.1	23.4	22.1	20.0	5.1	259.2	73
August	4.3	20.2	21.9	23.5	23.6	23.5	23.9	21.8	20.0	18.8	13.9	3.7	219.1	61
September	4.8	18.3	22.4	22.5	23.1	22.1	22.8	20.4	21.0	18.6	15.6	4.6	216.2	60
October	14.0	21.9	19.9	24.3	24.9	25.2	22.8	19.6	17.7	15.8	13.9	7.7	227.7	59
November	18.7	21.2	22.6	23.5	22.6	22.5	23.0	21.6	19.5	17.9	16.0	5.5	234.6	62
December	11.6	17.9	20.5	21.6	20.6	17.3	14.9	15.2	15.7	10.8	9.4	1.5	177.0	44
Totals	89.9	211.4	234.5	257.5	259.5	251.8	238.9	220.9	200.6	177.1	156.7	48.6	2347.4	Year
														53

Table 43 - WEATHER, 1931

(Clear days, more than 7 hours bright sunshine; cloudy days, less than 3 hours bright sunshine)

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Clear	12	6	8	16	11	16	24	17	18	20	22	12	182
Partly cloudy	9	13	16	9	11	9	6	11	9	7	5	12	115
Cloudy	10	9	7	5	9	5	1	3	3	4	5	7	68



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Table 44 - MONTHLY, SEASONAL AND ANNUAL MEANS OF HOURLY VALUES OF WIND VELOCITY IN MILES PER HOUR

Hour	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Mean
M o n t h																									
January	4.0	4.3	4.9	4.2	3.9	3.2	4.6	3.7	4.2	4.4	5.4	7.4	6.9	7.4	6.8	6.5	6.1	5.9	5.7	6.1	6.1	5.3	5.5	6.3	5.4
February	1.8	2.1	2.1	1.9	2.3	2.0	1.6	1.2	1.2	2.4	4.4	5.1	6.0	5.8	5.5	5.0	4.2	3.7	3.6	2.9	3.1	2.7	3.1	2.6	3.2
March	3.0	2.8	2.8	3.0	2.8	2.5	2.4	3.1	2.7	3.4	5.0	5.2	5.6	5.8	4.7	4.3	4.0	4.1	3.6	3.5	3.0	2.9	3.3	3.1	3.6
April	2.6	2.6	3.0	3.0	2.9	3.5	2.9	3.3	3.5	5.1	6.9	7.6	8.4	7.9	7.3	6.9	6.1	5.4	4.5	3.7	3.4	3.2	3.3	2.9	4.6
May	3.3	3.2	3.0	3.5	3.2	2.9	3.0	3.2	4.3	5.1	6.0	6.9	6.9	6.5	6.6	6.2	5.5	5.0	3.7	3.4	3.5	3.4	3.3	3.4	4.4
June	4.3	4.3	4.5	4.7	4.5	4.6	4.2	4.1	4.5	5.0	5.5	6.4	6.6	6.8	6.4	6.2	5.7	5.3	4.5	4.0	3.9	3.7	3.8	4.2	4.9
July	4.8	4.6	4.2	4.3	4.3	4.5	4.5	4.6	5.4	5.6	6.9	7.4	7.6	7.7	7.5	6.9	6.5	6.5	5.8	5.1	5.2	4.8	4.7	4.5	5.6
August	4.6	4.2	4.2	4.1	3.8	3.6	3.8	4.0	5.0	5.9	6.0	7.1	7.5	7.4	7.3	7.0	6.2	5.4	5.1	5.3	4.7	5.1	4.5	4.4	5.3
September	2.7	2.8	3.1	3.4	4.2	3.8	3.5	3.8	4.1	5.4	6.7	7.0	7.1	7.0	6.5	6.3	5.9	5.2	4.2	4.0	3.5	3.0	2.9	2.7	4.5
October	1.7	1.8	1.8	1.9	1.8	2.4	2.7	2.3	3.0	4.1	5.6	6.0	6.2	5.8	5.9	5.6	5.1	4.4	3.2	2.3	2.3	2.1	2.1	2.1	5.4
November	2.3	2.2	2.0	1.9	2.0	2.1	2.0	1.9	3.0	4.7	5.5	6.3	6.7	6.3	5.9	5.0	4.6	4.3	3.1	2.6	2.2	2.1	2.2	2.5	3.5
December	2.2	2.1	2.1	2.4	2.5	2.8	2.8	2.5	2.1	3.2	4.5	5.0	4.4	4.1	3.8	3.6	3.5	3.1	2.5	2.3	1.8	1.8	2.1	1.9	2.9
Y e a r	3.1	3.1	3.1	3.2	3.2	3.2	3.2	3.1	3.6	4.5	5.7	6.5	6.7	6.5	6.2	5.8	5.3	4.9	4.1	3.8	3.6	3.5	3.4	3.4	4.5
Wet Season (1930-31)	3.1	3.2	3.4	3.4	3.3	3.0	3.5	3.1	3.5	4.3	5.2	6.1	6.5	6.4	5.9	5.9	5.3	4.9	4.7	4.4	4.3	4.0	3.9	3.9	4.4
Dry Season	4.3	4.1	4.0	4.1	3.9	3.9	3.9	4.0	4.8	5.4	6.1	7.1	7.1	7.1	6.9	6.6	6.0	5.5	4.8	4.4	4.3	4.3	4.1	4.1	5.0



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Table 45.

PERCENTAGE FREQUENCIES OF WINDS FROM DIFFERENT DIRECTIONS, APIA OBSERVATORY, 1931

(This table is based on observations every four hours commencing at midnight)

Month	N	NE	E	SE	S	SW	W	NW	Calm	Variable	Number of observations
January	8	1	8	20	23	17	2	5	12	4	168
February	10	5	5	10	10	24	2	10	19	5	154
March	5	6	10	24	22	25	-	1	4	3	180
April	2	4	5	39	20	21	1	-	5	3	173
May	-	1	7	44	22	22	1	-	1	2	184
June	1	-	7	55	17	17	-	-	2	1	174
July	-	1	20	60	11	3	-	-	3	2	186
August	-	1	3	75	16	2	1	-	1	1	178
September	1	2	6	60	16	12	-	-	2	1	180
October	2	3	3	38	19	25	1	-	7	2	175
November	2	4	8	35	18	24	-	1	4	4	180
December	3	3	9	26	18	28	1	1	9	2	186
Y e a r	3	3	8	40	18	18	1	1	6	2	2118



Table 46
SUMMARY: MONTHLY WIND SPEED AND DIRECTION, 1931

Speed in miles per hour

M o n t h	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Mean speed for month	5.4	3.2	3.6	4.6	4.4	4.9	5.6	5.3	4.5	3.4	3.5	2.9	4.3
Speed and direction of greatest gust	44 SSE	33 NNW	31 NNE	31 NNE	28 ENE&ESE	30 ENE	26 ENE	31 E	28 SSW	29 N	31 E	28 NE	44 SSE
Greatest speed for one hourly period	22	18	12	23	15	17	13	15	15	21	22	16	23
Prevailing direction of wind	Calm 8-9a.m., S 8-9p.m.	Calm SSW	SE SSW	SE&ESE S	ESE SSE	SE S&SE	ESE SE	ESE ESE	ESE ESE	ESE SSW	ESE SSW	SE SSW	ESE SSW
Most frequent direction of wind	S	SSW	SSW	ESE	SE	SE	ESE	ESE	ESE	ESE	ESE (day) SSW (night)	SSW	ESE

Table 47 - THUNDER AND LIGHTNING, 1931



		Number of days with		Total
		Lightning only	Lightning and thunder	
January	..	3	4	7
February	..	1	1	2
March	..	3	1	4
April	..	2	1	3
May	..	5	2	7
June	..	1	1	2
July	..	2	0	2
August	..	2	0	2
September	..	6	2	8
October	..	1	4	5
November	..	2	2	4
December	..	5	8	13
Year	..	33	26	59

METEOROLOGICAL OBSERVATIONS.

APIA OBSERVATORY

9 a.m.

January 1931



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Day of Month.	CLOUD.			WEATHER.			WIND.		TEMPERATURE AND HUMIDITY.				UPPER CLOUD.							
	Low.	Medium.	High.	Amount of Low.	Total Amount.	Height of Base.	How Height was obtained.	Since previous Observation.	At Time.	Visibility.	Direction.	Force (Beaufort Scale).	Barometer reduced to M.S.L. (Millibars).	Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
1	Cu	-	Ci-Cu	1	2			b	2	ESE	1	1011.4	84.0	75.0	66	25.7				
2	Cu	-	-	2	2			d	3	NNE	1	1011.3	82.0	76.9	80	29.5				
3	Cu	-	Ci-St	4	6			bc	4	SE	2	1010.4	84.2	79.2	80	31.6				
4	Cu	-	Ci-Cu	2	7			bc	4	NNW	3	1008.8	80.0	77.9	91	31.9				
5	-	-	Ci-St	-	8			c	3	CAIM	0	1010.6	81.0	78.5	89	32.2				
6	St-Cu	-	-	10	10			od	6	SSE	2	1012.4	75.9	75.2	97	29.9				
7	Cu-Nb	-	Ci-Cu	5	6			bc	4	ESE	2	1009.8	83.0	78.0	80	30.5				
8	Cu	-	Ci-Cu	3	4			bc	4	E	1	1009.1	81.0	77.0	83	29.9				
9	Cu-Nb	-	-	10	10			od	5	ESE	3	1009.2	78.0	76.0	91	29.8				
10	Cu-Nb	A-St	Ci-Cu	5	10			og	5	WSW	1	1007.9	77.2	75.7	93	29.5				
11	St-Cu	-	-	7	7			bc	4	S	2	1004.9	83.9	77.0	73	28.6				
12	St-Cu	-	-	10	10			od	5	ESE	3	1004.4	78.2	77.3	95	31.2				
13	St	-	-	10	10			or	5	SE	3	1002.9	78.8	76.2	89	30.1				
14	Nb	-	-	10	10			org	6	VAR.	1	998.6	78.3	76.6	92	30.5				
15	St-Cu	A-St	-	8	10			o	5	SSE	3	1002.0	81.0	75.0	76	27.0				
16	St	-	-	10	10			od	5	CAIM	0	1002.9	80.5	77.2	86	30.7				
17	Cu	-	Ci-Cu	2	8			c	4	CAIM	0	1002.0	81.0	78.0	87	31.4				
18	Cu	-	Ci-Cu	2	8			c	4	CAIM	0	1004.8	83.0	76.9	76	29.0				
19	Nb	A-Cu	-	4	8			c	5	SSW	1	1006.3	82.4	77.7	81	30.2				
20	St-Cu	-	-	8	8			c	5	WNW	3	1005.4	82.3	77.9	82	30.2				
21	Cu	-	Ci-Cu	4	8			c	4	W	2	1004.6	81.2	78.9	90	32.2				
22	Cu	-	-	2	2			b	2	CAIM	0	1004.4	82.3	77.6	81	30.2				
23	Cu	-	Ci	2	9			c	4	NNW	2	1007.4	81.8	78.0	85	31.7				
24	Cu	-	Ci	2	8			c	3	CAIM	0	1008.7	81.0	78.8	90	33.0				
25	Cu	A-Cu	Ci	3	7			bc	4	NE	1	1008.7	82.4	78.5	84	31.0				
26	Cu	-	Ci	2	5			bc	3	E	2	1007.0	83.9	78.8	80	31.6				
27	St-Cu	A-Cu	-	6	9			c	4	CAIM	0	1008.2	81.4	77.3	83	29.9				
28	Cu	A-Cu	-	2	5			bc	4	ENE	2	1009.0	83.8	79.5	85	32.4				
29	Cu	-	-	2	2			b	2	CAIM	0	1009.7	83.0	77.0	76	29.0				
30	Nb	-	-	10	10			or	6	ENE	3	1009.9	79.9	78.5	94	32.6				
31	St	-	-	10	10			or	6	SSE	2	1010.9	73.9	73.9	100	28.7				
Means	-	-	-	5.1	7.4			-	4.2	--	1.5	1007.2	81.0	77.3	84.9	50.7				

APIA OBSERVATORY METEOROLOGICAL OBSERVATIONS. 3.30 p.m. January 1931

Day of Month.	CLOUD.			WEATHER.		Visibility.	WIND.		Barometer - reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.				UPPER CLOUD.		
	Low.	Medium.	High.	Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).		Dry Bulb (°).	Wet Bulb (°).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
1	Cu	-	Ci-St		bc	3	E	2	1007.1	84.2	77.0	72	28.6			
2	Nb	-	Ci-Cu		bc	3	SW	1	1009.3	82.5	78.0	82	31.3			
3	Nb	-	-		c	5	WSW	1	1007.1	78.7	76.3	89	30.1			
4	Cu-Nb	-	Ci		bc	4	NNW	3	1007.5	83.0	77.8	79	30.5			
5	St-Cu	-	-		c	4	ENE	2	1009.2	83.5	78.8	81	31.3			
6	St	A-St	-		c	1	CALM	0	1008.5	79.5	76.4	87	29.3			
7	Cu	A-Cu	-		bc	5	ESE	2	1007.3	84.5	79.7	81	32.8			
8	Cu	-	Ci-Cu		c	5	ESE	2	1006.7	83.1	78.1	80	30.5			
9	St-Cu	-	-		opg	6	SSE	1	1007.6	75.0	73.5	93	27.5			
10	Nb	A-St	-		cr	6	S	1	1005.0	77.0	75.2	92	28.8			
11	Cu	-	-		bc	4	SSE	3	1001.3	87.2	78.2	67	28.8			
12	Nb	-	-		orig	6	ESE	5	1002.4	78.0	77.2	97	31.2			
13	Cu	-	-		og	5	ESE	5	998.4	79.8	75.2	81	28.2			
14	Nb	-	-		o	6	SSW	3	993.3	79.3	76.3	87	29.3			
15	St-Cu	A-St	-		o	5	VAR.	2	1000.5	80.4	77.0	85	29.6			
16	St	-	-		od	6	N	2	1000.6	78.0	76.5	93	30.5			
17	Nb	-	-		o	5	CALM	0	1001.2	82.0	78.1	84	31.0			
18	-	-	Ci-Cu		c	5	N	1	1003.7	83.4	77.5	76	29.0			
19	St-Cu	-	Ci		o	5	WNW	2	1003.7	85.6	77.3	69	28.4			
20	Fr-Cu	-	-		bc	4	WSW	2	1003.0	86.8	79.0	71	30.3			
21	St-Cu	-	-		c	5	WNW	2	1001.6	81.8	79.5	91	33.3			
22	Cu	-	-		c	4	NNW	2	1003.2	82.5	80.1	90	34.4			
23	Cu	-	Ci-Cu		c	5	NNW	2	1006.1	83.5	80.0	86	32.9			
24	Cu-Nb	-	Ci-Cu		bc	4	CALM	0	1006.2	83.0	78.0	81	30.5			
25	Nb	-	Ci		cd	5	S	2	1005.9	80.0	77.6	89	31.1			
26	Nb	A-Cu	-		cr	5	SE	1	1005.2	76.8	75.8	96	30.2			
27	St-Cu	A-Cu	-		og	4	SSE	1	1006.2	84.4	79.1	79	30.9			
28	Cu-Nb	-	-		c	4	ESE	1	1007.2	84.5	79.4	80	32.8			
29	Cu-Nb	-	Ci-Cu		c	3	E	2	1006.8	86.0	80.0	77	32.3			
30	Cu	A-Cu	Ci-Cu		c	4	E	3	1007.1	85.5	79.7	78	32.3			
31	St	-	-		o	5	E	3	1006.5	80.8	77.0	84	29.9			
Means	-	-	-		-	4.5	-	1.9	1004.7	81.9	77.7	83.1	30.57			



International Seismological Centre

METEOROLOGICAL OBSERVATIONS.

January 1931



Day of Month.	Thermometers.				Rainfall (mm.)	Sunshine (hrs.)	Heat Integrator.	Evaporimeter.
	Maximum (°C)	Minimum (°C)	Gross Minimum (°F)	Black Bulb in vacuo (°F)				
1	30.0	22.1	67.0	142	-	10.3	1.25	6.3
2	29.9	23.2	-	144	-	7.3	1.75	3.0
3	30.2	23.7	72.4	139	-	5.6	.50	3.4
4	28.8	24.6	72.0	136	2.3	8.4	.50	4.6
5	30.0	23.4	72.8	143	82.0	5.5	1.00	2.5
6	28.7	23.7	-	148	0.9	0.0	.25	1.9
7	30.5	22.3	-	140	-	7.8	1.00	3.8
8	29.7	23.0	-	140	35.8	4.4	.50	2.3
9	28.4	24.5	74.3	149	43.7	1.8	0.00	2.1
10	29.5	23.5	72.1	149	5.6	2.8	.50	2.6
11	31.1	23.6	71.3	144	14.1	7.4	.75	5.2
12	28.7	23.5	75.0	131	21.0	1.0	0.00	3.9
13	27.8	24.5	73.8	84	27.2	0.0	.25	3.0
14	27.2	25.1	71.5	87	25.4	0.0	0.00	3.9
15	29.2	25.0	73.2	142	2.1	0.4	.25	3.0
16	28.4	25.2	74.7	134	31.1	1.2	.75	0.8
17	29.2	24.2	74.1	140	2.5	2.6	.25	1.9
18	30.8	24.6	73.5	144	-	7.4	1.00	3.2
19	30.2	24.2	72.0	146	0.2	8.9	1.25	3.8
20	31.1	25.3	75.2	153	-	10.3	1.25	3.4
21	28.8	25.4	75.3	144	1.6	6.1	.50	3.5
22	29.4	23.9	72.2	141	3.7	9.5	1.00	1.6
23	29.8	25.6	75.5	141	6.4	6.2	.25	2.5
24	29.3	25.0	74.4	145	8.4	7.9	1.00	2.4
25	29.2	24.5	-	143	-	5.2	.75	2.3
26	29.6	25.5	-	144	26.7	4.9	.75	2.1
27	29.5	24.3	73.8	152	0.5	5.1	1.25	2.8
28	31.2	24.4	-	145	-	9.0	1.00	3.5
29	30.9	23.4	71.0	144	3.9	8.3	.50	4.3
30	30.1	25.4	-	144	91.8	4.6	.25	3.5
31	27.2	23.5	72.4	138	6.5	0.0	.25	1.5
Means	29.5	24.2	73.0	139.3	443.4	5.2	0.66	3.1

METEOROLOGICAL OBSERVATIONS.

APIA OBSERVATORY

9 a.m. February 1931



Day of Month.	CLOUD.			WEATHER.		Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.			UPPER CLOUD.			
	FORM.			Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).		Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
	Low.	Medium.	High.													
1	Cu	-	Ci-Cu	9	10			0	1008.1	81.5	77.0	81	29.2			
2	Cu	A-Cu	-	3	4	bc		bc	1006.1	81.5	77.0	81	29.2			
3	Cu	-	-	3	3	bc		bc	1004.1	82.2	78.7	85	31.7			
4	Cu	-	-	8	8	c		c	1004.3	83.4	78.0	79	29.8			
5	Cu	-	-	9	9	c		c	1004.0	85.0	79.9	80	32.8			
6	Cu	A-Cu	Ci-Cu	1	9	c		c	1004.7	83.0	78.9	84	32.1			
7	Cu	A-St	-	4	10	c		c	1003.9	81.0	77.8	86	31.4			
8	Cu	-	Ci-Cu	7	9	c		c	1002.7	80.8	77.8	87	31.4			
9	St-Cu	-	Ci-Cu	4	7	bc		bc	1004.9	82.9	76.9	75	29.0			
10	Cu-Nb	A-Cu	-	3	10	o		o	1005.5	82.0	77.1	79	29.5			
11	St-Cu	A-St	-	5	10	o		o	1005.9	83.0	74.9	67	26.1			
12	Cu	A-St	-	2	10	o		o	1006.5	78.5	76.5	91	30.8			
13	Cu-Nb	-	-	10	10	org		org	1006.9	79.8	76.0	83	28.9			
14	St-Cu	A-St	-	8	10	o		o	1007.3	79.9	74.7	78	27.4			
15	Cu	A-Cu	Ci-Cu	3	8	c		c	1008.6	82.6	78.7	83	32.1			
16	Cu-Nb	A-Cu	-	3	7	bc		bc	1007.1	82.2	78.6	85	31.7			
17	St-Cu	A-St	-	8	10	o		o	1008.0	81.5	78.8	89	32.2			
18	Cu	A-St	-	2	10	o		o	1008.1	81.5	77.0	81	29.2			
19	Cu	A-Cu	-	2	8	c		c	1008.7	79.6	77.2	89	31.1			
20	St-Cu	-	-	10	10	op		op	1007.8	79.0	77.5	93	31.6			
21	Cu	-	Ci	1	3	bc		bc	1005.7	83.0	77.4	77	29.8			
22	Cu	-	Ci-Cu	2	7	bc		bc	1006.3	82.3	78.9	86	31.7			
23	-	A-Cu	Ci-Cu	-	8	c		c	1006.2	85.2	78.0	71	29.6			
24	Cu	-	Ci	2	7	bc		bc	1005.8	82.5	78.8	85	32.9			
25	Cu	-	Ci-Cu	3	7	bc		bc	1005.8	82.6	78.7	83	32.1			
26	Cu	-	Ci	2	8	c		c	1006.5	83.0	79.0	83	32.1			
27	Cu	A-Cu	-	6	9	c		c	1006.1	82.0	77.9	83	31.0			
28	Cu-Nb	A-St	-	7	10	op		op	1010.7	77.7	76.9	96	31.2			
29																
30																
31																
Means	-	-	-	4.7	8.2	--			1006.4	81.6	77.7	83	31.0			

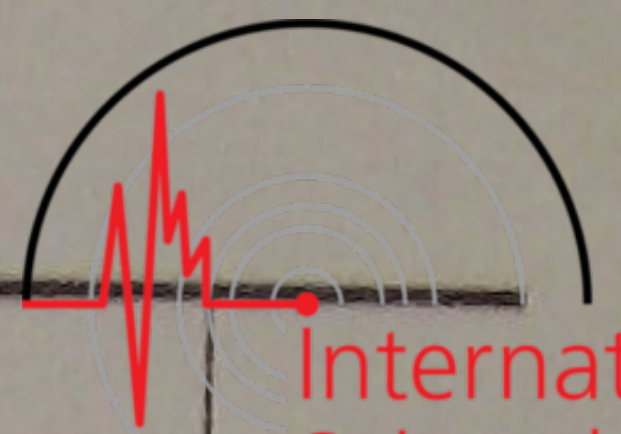


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Centre

Day of Month.	CLOUD.			WEATHER.			Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.				UPPER CLOUD.					
	Low.	Medium.	High.	Amount of Low.	Total Amount.	Height of Base.		How Height was obtained.	Since previous Observation.		At Time.	Direction.	Force (Beaufort Scale).	Dry Bulb (F.).	Wet Bulb (F.).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
1	Cu		Ci-Cu	8	9				c	5	W	2	85.0	79.8	80	32.8				
2	St-Cu			9	9				c	5	VAR.	1	82.3	78.0	82	30.2				
3	Cu			7	9				c	5	SE	1	84.9	78.8	75	31.2				
4	Cu			6	6				bc	4	ESE	2	86.7	80.0	73	32.7				
5	Cu		Ci-Cu	6	7				bc	4	ESE	2	87.7	82.0	77	36.3				
6	Cu-Nb			10	10				opg	4	E	1	78.0	75.2	87	28.5				
7	Cu-Nb		Ci-Cu	4	8				c	4	E	2	83.4	78.6	80	30.5				
8	Cu-Nb		Ci	7	8				c	5	NNW	2	81.7	79.0	89	33.3				
9	Nb			10	10				or	6	CALM	0	78.5	77.0	93	31.6				
10	Cu		Ci-Cu	2	10				c	4	ESE	2	84.1	77.7	74	29.3				
11	Cu-Nb			10	10				c	4	SE	2	83.4	78.0	77	29.8				
12	Cu	A-St	Ci-St	2	10				c	5	SSW	1	81.8	79.0	88	32.5				
13	Nb			10	10				org	6	N	4	78.0	76.9	95	31.2				
14	Nb			10	10				opg	6	NNE	5	79.0	76.7	89	30.1				
15	St			7	7				bc	5	NNW	3	84.0	80.0	83	33.2				
16	Cu	A-Cu	Ci-Cu	3	8				c	3	CALM	0	82.4	79.0	86	31.7				
17	St-Cu			10	10				c	5	W	1	78.2	76.4	92	29.8				
18	Nb			10	10				or	5	W	1	77.0	76.0	95	30.2				
19	Cu-Nb	A-St		8	9				c	6	E	1	80.8	77.0	83	29.9				
20	St-Cu			10	10				cd	5	S	1	82.0	78.0	83	31.0				
21	Cu-Nb		Ci	6	8				cp	4	NNW	2	83.4	78.4	79	30.5				
22	Nb		Ci	7	9				cp	4	WNW	3	83.3	79.0	85	31.3				
23	Cu-Nb			9	9				cp	5	W	3	81.0	79.0	91	33.0				
24	Cu-Nb			9	9				c	5	NNW	4	83.5	79.9	85	32.9				
25	Cu-Nb		Ci-Cu	6	9				c	5	NW	3	85.7	79.8	73	30.7				
26	Cu	A-St	Ci	4	8				c	6	NE	1	84.4	79.5	79	31.6				
27	St			10	10				org	6	NNW	5	77.5	76.3	94	30.2				
28	Cu-Nb			10	10				og	5	NNE	2	82.0	78.6	86	31.7				
29																				
30																				
31																				
Means				7.5	9.0					4.9	-	2.0	82.1	78.3	84	31.0				

METEOROLOGICAL OBSERVATIONS.

February 1931

International
Seismological
Centre

Day of Month.	Thermometers.				Rainfall (mm.)	Sunshine (hrs.)	Heat Integrator.	Evaporimeter.
	Maximum (°C)	Minimum (°C)	Gross Minimum (°F)	Black Bulb in vacuo (°F)				
1	30.6	23.2	70.3	143	15.1	5.3	.75	3.8
2	29.7	23.9	72.0	137	5.1	4.1	.50	2.1
3	30.9	24.3	72.7	141	0.3	5.5	.75	4.5
4	30.7	24.4	72.5	141	3.6	6.7	2.50	2.8
5	31.1	24.4	-----	132	-	5.5	1.50	3.4
6	30.0	25.6	75.3	139	19.5	2.9	1.25	1.5
7	29.9	24.2	73.2	136	-	3.6	1.00	3.3
8	29.2	25.1	75.2	138	1.4	5.9	2.00	3.4
9	29.3	23.8	-----	143	3.6	7.1	1.50	2.7
10	29.2	23.1	69.6	135	-	4.0	.75	5.4
11	31.2	25.8	75.0	132	3.7	1.7	.75	3.2
12	28.8	24.7	74.0	145	42.8	2.4	1.00	1.9
13	28.3	24.8	75.0	139	100.4	0.0	.00	0.8
14	28.4	23.2	-----	94	15.7	2.5	.25	3.2
15	29.2	24.6	-----	132	5.0	7.8	1.50	2.7
16	29.1	24.9	74.0	134	18.3	4.4	.75	2.2
17	27.8	25.2	-----	148	49.8	0.0	.00	0.5
18	29.7	24.1	74.0	148	43.0	3.8	.75	1.4
19	28.0	23.2	71.4	139	5.4	1.6	.50	1.3
20	29.2	24.5	73.5	139	1.6	2.4	.50	2.5
21	29.6	24.4	73.6	139	-	9.5	.75	4.4
22	29.9	24.4	-----	134	2.6	5.7	.75	4.1
23	30.7	25.0	74.6	133	1.3	7.5	.75	4.3
24	29.2	25.3	74.0	154	56.6	7.6	.25	2.6
25	30.4	22.9	73.0	154	-	7.7	.75	3.9
26	29.8	24.6	73.5	139	43.4	6.7	1.25	2.4
27	29.2	24.2	74.0	151	62.6	0.8	.75	0.7
28	28.4	23.6	-----	151	5.6	4.2	1.00	0.9
29								
30								
31								
					Total			
Means	29.5	24.3	73.3	138.9	506.4	4.5	.95	2.7

APIA OBSERVATORY

METEOROLOGICAL OBSERVATIONS.

9 a.m.

March 1931

Day of Month.	CLOUD.			WEATHER.		WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.			UPPER CLOUD.				
	Low.	Medium.	High.	Since previous Observation.	At Time.	Visibility.	Direction.		Force (Beaufort Scale).	Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
1	Cu	A-Cu	Cl		bc	2	CALM	0	1010.5	85.1	78.0	80	30.5			
2	St-Cu	-	-		or	4	S	1	1011.0	78.0	75.9	91	29.8			
3	Cu	-	Cl-Cu		bc	4	NNW	3	1010.2	82.8	79.4	86	32.9			
4	Cu	-	Cl		bc	4	WNW	2	1010.4	83.0	78.8	83	32.1			
5	Cu	-	Cl		bc	3	W	1	1011.0	82.1	77.1	80	29.5			
6	Cu	-	Cl-Cu		bc	3	ESE	2	1011.9	81.5	77.8	84	30.7			
7	Fr-Cu	A-Cu	Cl-Cu		c	5	SE	3	1012.1	82.0	76.7	79	28.7			
8	St	-	-		opg	4	SSW	1	1012.9	77.0	76.0	96	30.2			
9	St-Cu	A-Cu	-		c	5	SSE	1	1011.9	77.5	75.3	90	28.8			
10	Cu	-	Cl-Cu		c	3	CALM	0	1011.4	77.0	75.0	91	28.8			
11	Cu	-	-		c	3	CALM	0	1011.3	82.0	77.6	82	30.2			
12	Cu	-	Cl		bc	4	SE	2	1011.3	85.0	80.4	82	33.6			
13	Fr-Cu	-	Cl		bc	4	ESE	2	1010.9	85.5	79.8	79	32.0			
14	Cu	-	-		bc	4	ESE	1	1009.6	85.1	79.7	79	32.0			
15	Cu	A-Cu	Cl-Cu		bc	5	ESE	3	1011.2	85.2	80.0	80	32.8			
16	Cu	-	Cl-Cu		bc	3	ESE	1	1011.2	84.5	79.7	81	31.6			
17	Cu	A-Cu	Cl-Cu		bc	4	NE	1	1011.8	84.0	78.7	79	30.9			
18	Fr-Cu	-	Cl		b	2	NNW	2	1010.6	83.5	79.0	82	31.5			
19	Cu	-	Cl		b	3	CALM	0	1011.7	82.7	77.6	80	30.5			
20	Cu	-	Cl		bc	3	E	1	1011.3	83.8	78.4	78	30.9			
21	St-Cu	-	-		cg	5	SSW	1	1010.4	80.0	78.0	91	31.9			
22	Nb	-	-		or	6	NNW	1	1011.1	78.0	77.0	96	31.2			
23	Cu	A-Cu	Cl-Cu		c	3	E	1	1012.1	84.2	78.8	78	30.9			
24	Cu	-	Cl-Cu		b	3	E	1	1009.9	85.0	79.0	77	31.2			
25	St-Cu	A-St	-		cp	4	SSE	1	1010.4	80.3	78.6	93	32.6			
26	Cu	-	Cl-Cu		c	5	ESE	2	1009.3	83.8	79.0	81	31.6			
27	Cu	A-Cu	Cl-Cu		c	4	ESE	2	1010.3	83.9	78.0	76	30.1			
28	St	A-St	Cl-Cu		cg	4	CALM	0	1010.6	81.2	78.0	86	31.4			
29	Cu	-	Cl		b	2	ESE	2	1011.1	85.6	80.0	76	33.1			
30	Cu-Nb	-	Cl		bc	5	ESE	3	1010.7	85.0	79.7	79	32.0			
31	Cu	-	Cl		bc	5	ESE	3	1009.4	84.0	76.7	72	27.8			
Mean	-	-	-		-	3.8	-	1.4	1010.9	82.5	78.2	82	31.5			



International Seismological Centre

METEOROLOGICAL OBSERVATIONS.

APIA OBSERVATORY

3.30 p.m.

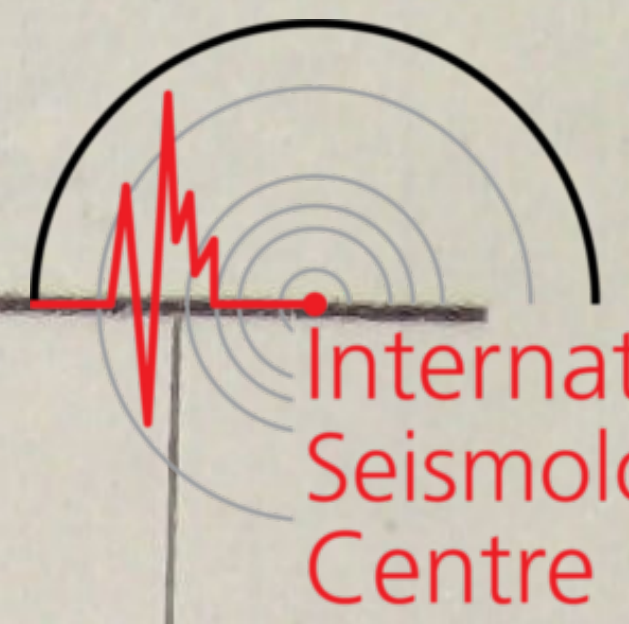
March 1931

Day of Month.	CLOUD.			WEATHER.		Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.				UPPER CLOUD.		
	Form.			Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).		Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
	Low.	Medium.	High.													
1	St-Cu	A-Cu	-	2	8		c	4	1008.5	80.8	78.3	89	32.2			
2	Cu-Nb	-	Ci-Cu	8	9		cg	5	1008.7	81.9	77.5	82	30.2			
3	Cu	-	Ci-Cu	3	8		c	5	1008.6	83.6	79.3	85	32.4			
4	St-Cu	-	-	8	8		c	4	1007.9	81.9	77.7	85	31.0			
5	St-Cu	-	-	9	9		c	3	1009.3	85.1	77.3	77	29.0			
6	St-Cu	-	-	10	10		c	5	1010.5	80.7	76.6	83	29.9			
7	St-Cu	-	-	10	10		c	5	1009.7	82.1	78.1	84	31.0			
8	St-Cu	-	Ci	7	9		c	4	1009.8	85.9	79.9	77	32.3			
9	Cu	-	Ci-Cu	3	6		bc	4	1008.6	84.1	79.0	80	31.6			
10	Cu	-	Ci-Cu	2	9		c	4	1008.3	84.0	78.9	80	31.6			
11	Cu	-	Ci-Cu	3	6		bc	4	1008.7	85.0	79.1	77	31.2			
12	St	-	-	10	10		c	4	1009.1	82.0	77.7	83	30.2			
13	St	-	Ci-Cu	5	7		bc	4	1007.7	85.1	79.9	80	32.8			
14	Cu	-	Ci-St	3	8		c	5	1007.2	87.0	80.9	77	33.5			
15	Cu-Nb	A-Cu	-	4	6		bc	5	1007.5	85.0	79.6	79	32.0			
16	Cu	-	Ci	4	7		bc	4	1008.8	84.6	79.4	80	32.8			
17	St-Cu	-	Ci-Cu	6	9		c	4	1009.6	84.9	79.0	77	31.2			
18	Nb	-	-	10	10		cg	5	1008.9	79.0	77.2	92	50.8			
19	Cu	-	Ci-Cu	7	8		c	4	1009.1	86.2	79.0	72	30.7			
20	Cu	-	Ci	1	8		c	5	1008.9	87.0	79.8	73	31.9			
21	St	-	-	10	10		c	5	1008.1	81.0	77.5	84	30.7			
22	St	-	-	10	10		c	5	1009.5	79.0	77.3	92	51.6			
23	Cu	-	Ci-Cu	2	7		bc	3	1008.3	85.4	78.7	81	31.5			
24	St-Cu	-	-	8	8		op	5	1007.8	80.0	78.3	95	32.6			
25	Cu	A-Cu	Ci-Cu	3	8		c	4	1006.2	86.0	80.1	77	32.3			
26	Cu	-	Ci-Cu	3	10		c	5	1006.7	84.8	78.7	77	31.2			
27	Cu	-	Ci-Cu	3	8		c	5	1007.5	87.0	80.7	76	32.7			
28	St	-	Ci-Cu	3	7		bc	4	1008.2	84.0	78.8	79	31.6			
29	Cu	-	Ci	4	6		bc	4	1008.3	86.0	80.3	78	35.1			
30	Cu	-	Ci-St	2	9		c	5	1007.1	84.8	79.1	78	32.0			
31	Cu	-	Ci	2	7		bc	5	1006.5	86.0	78.5	71	30.0			
Mean	-	-	-	5.3	8.2		--	4.4	1008.4	83.7	78.8	80	31.5			



METEOROLOGICAL OBSERVATIONS.

March 1931

International
Seismological
Centre

Day of Month.	Thermometers.				Rainfall (mm.)	Sunshine (hrs.)	Heat Integrator.	Evaporimeter.
	Maximum (°C)	Minimum (°C)	Gross Minimum (°F)	Black Bulb in vacuo (°F)				
1	29.9	24.8	74.0	130	5.6	4.0	1.00	2.1
2	28.6	24.0	--	146	20.3	1.0	.50	4.1
3	29.0	25.6	73.4	138	5.5	5.3	.50	3.0
4	30.5	24.2	74.0	147	-	8.4	.75	3.6
5	30.9	23.9	72.2	144	-	5.1	1.00	2.7
6	28.7	23.4	72.1	141	0.1	1.8	.25	2.2
7	29.7	22.7	--	142	46.7	2.2	.25	3.0
8	30.3	24.2	72.5	141	7.0	1.9	.50	2.8
9	29.2	23.2	71.9	141	1.8	1.4	.25	3.0
10	30.4	23.5	--	139	5.5	6.1	.50	3.0
11	30.7	23.2	72.0	141	12.2	7.7	1.00	3.5
12	31.1	23.9	72.4	151	-	6.2	1.00	3.5
13	30.8	24.0	72.3	148	-	9.5	.75	4.9
14	30.2	26.0	74.5	139	-	10.1	1.25	4.1
15	31.4	24.6	74.3	140	1.1	6.4	.75	4.0
16	30.6	24.6	73.2	138	-	8.2	1.00	3.1
17	29.9	24.5	72.7	154	-	6.5	1.25	2.7
18	29.3	24.3	72.0	146	9.6	5.6	.75	1.8
19	30.8	23.5	70.8	146	5.9	7.6	1.00	3.2
20	31.2	24.3	73.1	146	-	6.8	.75	4.3
21	27.9	25.2	75.3	137	3.3	0.0	.75	1.8
22	29.3	23.9	73.6	131	82.2	0.7	.50	2.3
23	29.6	24.8	74.2	144	31.9	3.4	.75	2.6
24	30.4	23.6	71.8	140	4.8	6.2	.25	2.8
25	30.5	25.0	75.3	144	6.3	5.6	.50	3.7
26	30.8	24.4	73.9	137	0.2	6.3	.50	4.6
27	30.6	23.9	71.8	144	-	3.3	.25	4.1
28	31.3	24.4	74.0	136	9.0	5.3	.75	2.4
29	30.4	24.6	73.2	144	0.8	9.0	2.25	3.7
30	30.2	24.8	74.0	140	0.6	3.9	--	3.4
31	30.7	23.9	71.6	147	0.2	9.0	1.00	5.1
Means	30.2	24.2	73.1	142.0	11.9	5.5	.75	3.3



APIA OBSERVATORY

METEOROLOGICAL OBSERVATIONS.

9 a.m.

April 1931

Day of Month.	CLOUD.			WEATHER.		Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.			UPPER CLOUD.			
	Low.	Medium.	High.	Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).		Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
1	Cu				bc	4	E	2	1007.9	86.0	79.4	75	31.5			
2	St				op	5	CALM	0	1008.0	77.8	76.9	96	31.2			
3	Cu-Nb				c	5	E	2	1007.6	82.0	78.9	88	32.5			
4	St-Cu				orrg	6	N	6	1010.1	79.0	76.6	89	30.1			
5	St				o	4	CALM	0	1012.3	80.0	76.5	85	29.6			
6	Nb				or	6	CALM	0	1012.8	76.4	75.6	97	29.2			
7	Cu				b	4	ESE	2	1013.0	83.1	78.0	80	30.5			
8	Cu				bc	4	CALM	0	1012.5	82.7	75.6	72	27.5			
9	Cu				bc	3	CALM	0	1012.0	83.5	78.3	79	31.6			
10	Cu				o	5	SE	2	1012.8	84.0	79.5	82	30.9			
11	Cu				c	2	ESE	2	1012.1	84.3	78.7	78	30.2			
12	St				org	6	VAR.	1	1012.1	76.6	75.5	96	32.1			
13	Cu-Nb				c	2	SSE	1	1012.1	83.2	78.9	83	33.6			
14	Cu				bc	5	SE	3	1012.4	81.3	78.0	86	31.4			
15	Cu				bc	5	SE	3	1011.1	83.0	77.0	76	29.0			
16	Cu				b	4	ESE	3	1011.8	84.1	78.0	76	30.1			
17	Cu-Nb				bc	4	ESE	3	1012.6	84.8	78.8	77	31.2			
18	Fr-Cu				b	4	ESE	3	1012.3	84.5	77.0	71	28.9			
19	Fr-Cu				b	4	SE	2	1010.5	84.1	76.2	69	27.1			
20	Cu				bc	5	SE	2	1008.8	84.0	75.9	69	27.1			
21	Cu				b	5	CALM	0	1007.9	85.0	77.0	76	29.0			
22	Cu				b	4	SE	2	1008.5	85.2	78.2	73	29.6			
23	Cu				b	5	SE	3	1008.8	85.0	78.2	74	30.4			
24	Cu				bc	4	N	1	1009.5	82.0	74.0	69	25.1			
25	Cu				b	4	ESE	1	1010.7	85.3	75.9	68	26.8			
26	Cu				b	3	ESE	1	1012.9	84.8	79.0	78	33.1			
27	Fr-Cu				b	2	ESE	3	1012.9	84.2	78.8	78	30.9			
28	Cu				bc	4	ESE	3	1012.4	85.0	79.4	79	32.0			
29	Cu				b	5	ESE	2	1012.2	84.1	75.9	69	27.1			
30	Cu				b	5	E	3	1011.7	84.8	78.5	76	30.4			
31																
Meas						4.3	-	1.8	1011.1	82.9	77.5	78	29.8			

METEOROLOGICAL OBSERVATIONS.

APIA OBSERVATORY

3.30 P.M.

Apr 11 1931

Day of Month.	CLOUD.			WEATHER.		Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.			UPPER CLOUD.			
	FORM.			Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).		Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
	Low.	Medium.	High.													
1	Cu-Nb	A-St	-	6	10		c	5	1005.9	81.2	78.5	89	32.2			
2	St	-	-	10	10		o	5	1004.4	81.0	79.3	93	33.7			
3	St	-	-	9	9		o	5	1004.6	81.0	78.2	88	31.4			
4	Nb	-	-	10	10		o	5	1008.1	80.6	76.0	81	29.2			
5	St	-	-	9	9		op	4	1009.1	84.7	79.1	79	32.0			
6	Nb	A-St	-	7	10		cr	5	1011.1	76.6	76.3	98	30.9			
7	St-Cu	-	-	10	10		c	5	1010.6	84.0	77.0	73	28.6			
8	Cu	-	-	9	9		c	5	1009.2	84.0	78.0	76	30.1			
9	Cu-Nb	-	Ci-Cu	5	9		c	4	1009.2	84.0	78.9	80	31.6			
10	Cu	A-St	Ci-Cu	2	9		c	5	1009.5	85.0	78.0	73	29.6			
11	St	-	-	10	10		o	5	1009.3	83.0	78.6	82	31.3			
12	St	-	-	10	10		o	4	1008.9	82.2	77.9	82	30.2			
13	St-Cu	-	Ci-Cu	8	9		c	4	1009.6	82.9	78.3	82	31.3			
14	Cu-Nb	-	Ci-Cu	3	7		bc	5	1009.1	84.0	79.0	80	31.6			
15	Cu	-	-	1	1		b	4	1008.5	85.8	77.9	70	29.2			
16	Cu-Nb	-	Ci	3	4		bc	5	1008.6	85.2	79.1	77	31.2			
17	Cu	-	Ci-Cu	6	8		c	5	1009.9	83.4	77.7	77	29.8			
18	Cu	-	-	3	3		bc	5	1009.0	84.8	78.1	74	30.4			
19	Cu	-	-	2	2		b	4	1007.2	86.0	77.6	68	28.4			
20	Cu	-	Ci	2	8		c	5	1005.2	86.1	75.5	62	25.5			
21	Cu-Nb	-	Ci	3	7		bc	5	1004.8	87.1	80.6	75	32.7			
22	Cu	-	-	3	3		bc	5	1005.6	86.5	80.7	78	33.5			
23	St-Cu	-	-	4	4		bc	5	1005.9	86.0	78.9	75	30.7			
24	Cu	-	Ci	2	8		c	5	1005.5	85.0	77.1	70	28.1			
25	Cu	-	Ci-Cu	2	3		bc	4	1007.8	85.5	78.5	73	29.6			
26	Cu	-	-	7	7		bc	5	1010.0	85.0	79.2	77	31.2			
27	Cu	-	Ci	2	2		b	4	1009.1	85.0	79.0	77	31.2			
28	Cu	-	Ci	3	3		bc	5	1009.4	85.0	78.8	76	31.2			
29	Cu	-	Ci	1	1		b	4	1009.6	85.3	78.0	72	28.9			
30	Cu	A-Cu	Ci-Cu	4	8		c	4	1008.4	85.0	79.1	77	31.2			
31																
Means				5.2	6.8		--	4.5	1008.1	84.0	78.3	77	30.6			



International
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METEOROLOGICAL OBSERVATIONS.

April 1931



Day of Month.	Thermometers.				Rainfall (mm.)	Sunshine (hrs.)	Heat Integrator.	Evaporimeter.
	Maximum (°C)	Minimum (°C)	Gross Minimum (°F)	Black Bulb in vacuo (°F)				
1	31.8	24.3	72.6	154	9.0	4.4	.50	2.9
2	29.1	24.3	-	118	38.7	0.4	.00	2.3
3	29.7	24.0	74.2	141	20.0	1.5	.75	3.6
4	27.8	24.6	-	135	0.7	0.0	.00	2.7
5	29.5	23.9	-	141	120.8	5.8	1.00	2.6
6	28.7	23.0	-	138	99.0	0.0	.25	0.7
7	30.0	22.2	68.7	143	--	5.9	.75	2.3
8	30.0	22.6	69.4	149	--	5.0	1.00	2.9
9	30.2	23.2	69.4	159	25.3	7.1	1.75	2.1
10	30.5	24.4	73.5	148	--	5.8	.25	4.6
11	30.0	22.7	68.0	147	34.5	6.3	?	3.3
12	29.0	23.6	73.1	119	12.8	0.0	.25	2.4
13	30.6	24.0	72.6	148	11.1	4.2	.75	2.9
14	30.4	23.4	71.1	147	--	6.1	.50	4.7
15	30.7	24.6	69.7	142	8.0	10.6	.25	5.9
16	30.8	24.2	-	143	22.4	9.6	.50	5.1
17	30.1	23.9	71.1	154	2.6	6.1	.25	4.6
18	30.2	22.5	67.8	142	--	11.0	1.75	4.3
19	30.3	22.7	68.0	140	--	10.8	1.00	5.0
20	30.9	22.8	68.0	141	--	8.8	1.00	3.7
21	31.4	22.0	68.0	151	--	8.5	1.25	4.4
22	30.8	25.3	73.5	145	--	10.5	.75	5.4
23	30.3	25.2	73.5	141	--	10.9	.75	4.4
24	30.0	22.0	-	141	--	9.9	1.75	4.4
25	30.0	22.0	68.0	141	--	10.8	1.00	4.2
26	30.7	23.5	71.0	142	--	8.5	1.75	4.0
27	30.1	22.8	69.4	140	--	11.1	.50	3.9
28	30.7	23.9	71.5	148	--	7.9	.75	4.3
29	30.5	22.0	67.0	145	--	10.2	.50	5.6
30	30.7	22.8	70.0	145	--	7.7	.50	4.4
31					Total			
Means	30.2	23.4	70.4	142.9	404.9	6.8	.76	3.8

Day of Month.	CLOUD.			WEATHER.		Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.				UPPER CLOUD.		
	FORM.			Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).		Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
	Low.	Medium.	High.													
1	Cu	-	Ci		bc	5	ESE	2	1011.3	83.7	78.1	78	30.9			
2	Cu	-	Ci		b	5	E	3	1011.7	84.5	78.6	77	31.2			
3	Cu	A-Cu	-		bc	4	SE	1	1012.1	83.8	78.2	78	30.9			
4	St	A-St	-		cd	4	SE	1	1012.0	77.6	75.3	90	29.0			
5	Cu	-	Ci		bc	4	ESE	2	1011.8	84.0	76.6	71	27.8			
6	Cu	-	-		b	3	ESE	2	1012.0	84.4	75.8	68	26.4			
7	St-Cu	-	-		c	6	VAR.	1	1010.6	78.0	75.7	90	29.0			
8	Cu	-	-		b	4	SE	1	1009.8	83.8	76.8	73	28.6			
9	Cu	A-Cu	-		c	5	ESE	2	1011.5	84.0	78.0	76	30.1			
10	Cu	-	Ci		b	4	ESE	2	1011.3	86.0	79.9	77	32.3			
11	St-Cu	-	-		c	6	ESE	3	1012.9	83.0	78.5	82	31.3			
12	Cu	-	Ci		c	5	ESE	3	1010.9	83.0	78.0	80	30.5			
13	Cu	-	Ci-St		c	5	ESE	2	1010.4	82.0	77.9	84	31.0			
14	Cu	A-Cu	-		c	5	VAR.	1	1011.5	78.8	77.6	95	32.3			
15	Cu	-	Ci-Cu		c	5	VAR.	1	1012.7	82.6	79.0	86	32.9			
16	Cu	A-Cu	-		cjp	5	SE	2	1015.0	82.2	77.2	80	29.5			
17	Cu	A-Cu	-		c	4	SSE	2	1014.0	81.0	76.0	80	28.4			
18	Cu	-	Ci-Cu		bcp	5	ESE	4	1013.1	80.5	77.9	89	32.2			
19	Nb	-	-		org	6	SW	2	1015.2	76.6	75.2	93	29.5			
20	Cu-Nb	-	-		bcjp	5	ESE	3	1012.8	84.3	78.7	78	30.9			
21	Nb	-	-		cp	4	E	3	1012.3	83.0	77.8	80	30.5			
22	Cu	A-Cu	Ci-St		c	4	CALM	0	1012.0	78.9	76.8	91	30.8			
23	Nb	-	-		ojp	6	SE	4	1013.2	77.3	75.8	93	29.5			
24	Cu	-	-		b	3	ESE	2	1013.6	82.9	76.5	74	28.3			
25	Cu	-	-		b	4	ESE	2	1012.4	82.9	74.6	68	25.4			
26	St	A-St	-		c	4	ESE	3	1011.6	80.2	77.0	86	30.3			
27	Nb	-	-		or	6	SE	2	1013.2	76.0	74.7	94	28.5			
28	St-Cu	A-St	-		cp	5	S	1	1013.8	78.0	76.8	95	31.2			
29	Cu	-	-		bc	4	W	1	1013.9	79.5	75.2	86	28.6			
30	Cu	-	-		bc	4	ENE	1	1012.4	81.2	75.3	76	27.0			
31	Cu	-	-		b	3	ESE	3	1011.9	82.0	75.2	73	26.5			
Meas	-	-	-		-	4.6	--	2.0	1012.4	81.4	76.9	81	29.2			



International Seismological Centre



APIA OBSERVATORY METEOROLOGICAL OBSERVATIONS. 3.30 P.M. May 1931

Day of Month.	CLOUD.			WEATHER.			Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.				UPPER CLOUD.		
	Low.	Form.		Since previous Observation.	At Time.	Direction.		Force (Beaufort Scale).	Dry Bulb (°F).		Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio	
		Medium.	High.														Amount of Low.
1	Cu	-	Cl		bc	E	2	1007.9	86.5	79.7	74	31.9					
2	Cu	A-Cu	Cl-St		bc	ESE	3	1008.7	85.6	79.4	76	32.3					
3	Cu	-	Cl-St		bc	E	2	1008.9	84.0	78.7	79	30.9					
4	Cu	A-Cu	Cl		c	ESE	3	1007.8	84.0	78.0	76	30.1					
5	Cu	-	Cl		bc	ESE	2	1009.2	85.7	76.7	66	27.7					
6	Cu	-	Cl		b	ESE	3	1008.9	85.0	77.3	71	28.9					
7	Cu	-	Cl-Cu		c	SSE	1	1007.3	81.4	77.5	83	29.9					
8	Cu	-	Cl		b	ENE	2	1007.0	85.4	77.5	70	28.1					
9	St	-	-		o	E	3	1009.1	84.5	77.3	72	29.6					
10	St	-	-		o	ESE	2	1008.4	83.0	77.5	78	29.8					
11	St-Cu	A-St	-		c	SE	1	1010.0	82.8	77.0	76	28.0					
12	Nb	-	Cl		cr	ESE	3	1008.0	84.8	79.0	77	31.2					
13	Nb	-	-		or	E	3	1008.2	84.0	79.2	80	31.6					
14	Cu	-	Cl		bc	ESE	3	1008.2	85.2	80.1	84	34.4					
15	St-Cu	-	-		c	ESE	1	1010.9	82.9	76.9	76	29.0					
16	Cu	A-Cu	Cl-Cu		c	ESE	3	1012.2	83.2	76.6	74	28.5					
17	Cu	-	Cl		c	ESE	3	1011.8	81.0	76.8	83	29.9					
18	Cu-Nb	A-Cu	-		bcjp	ESE	3	1010.4	81.2	78.2	87	31.4					
19	Nb	A-St	-		org	SE	4	1010.2	79.4	75.5	85	28.6					
20	Nb	-	-		org	ESE	3	1010.4	78.0	76.2	92	29.8					
21	Cu-Nb	-	-		o jr	SE	2	1010.0	79.7	77.6	91	31.9					
22	Cu	A-Cu	Cl		c	SE	2	1009.2	82.0	77.4	82	30.2					
23	St-Cu	A-St	-		c	SE	2	1010.5	78.7	75.0	84	28.6					
24	Cu	-	-		bc	ESE	3	1010.0	83.5	76.8	74	28.5					
25	Cu	A-Cu	-		c	E	3	1009.3	83.0	76.6	74	28.5					
26	St	-	-		c	ESE	3	1008.9	82.8	77.2	78	29.8					
27	Cu	A-Cu	Cl-St		c	ESE	2	1009.6	79.2	75.0	82	27.9					
28	Cu	A-St	-		c	ESE	1	1010.9	79.8	75.4	81	28.2					
29	Cu	-	-		bc	ESE	2	1010.4	82.5	75.9	74	28.5					
30	Cu	A-Cu	-		bc	ESE	3	1009.6	83.3	76.7	74	28.5					
31	Cu	-	-		bc	ESE	3	1008.6	83.8	77.0	74	28.6					
Means	--	-	-		-	-	2.5	1009.4	82.8	77.3	78	29.7					

METEOROLOGICAL OBSERVATIONS.

May 1931

International
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Day of Month.	Thermometers.				Rainfall (mm.)	Sunshine (hrs.)	Heat Integrator.	Evaporimeter.
	Maximum (°C)	Minimum (°C)	Gross Minimum (°F)	Black Bulb in vacuo (°F)				
1	30.8	23.7	70.1	148	-	7.7	.50	3.6
2	30.9	23.0	--	144	-	8.7	1.25	4.2
3	31.0	23.7	70.5	144	2.2	6.5	.25	3.4
4	30.1	23.6	73.7	143	-	3.9	1.00	3.5
5	30.2	22.0	68.1	145	-	10.7	1.00	5.0
6	30.1	21.5	66.2	142	-	11.0	.50	3.6
7	29.0	23.6	70.1	142	3.5	0.7	.50	1.6
8	30.1	22.4	71.8	140	-	10.4	1.25	3.6
9	31.6	23.1	69.5	145	-	4.9	.25	4.5
10	31.1	23.9	71.8	139	14.8	4.7	?	4.0
11	28.9	24.9	75.4	125	-	-	.00	2.9
12	30.3	23.9	70.8	142	-	5.3	.25	4.2
13	29.7	25.8	75.0	135	13.7	3.3	.25	2.4
14	30.3	23.3	70.9	142	0.3	5.5	.25	3.7
15	28.7	25.1	77.9	120	-	0.4	.25	3.2
16	29.2	25.9	75.4	141	2.5	3.3	.00	3.3
17	29.4	24.6	72.0	150	3.8	2.3	.25	3.5
18	29.8	25.1	75.0	149	14.6	6.6	.00	2.7
19	29.2	24.4	74.3	126	6.9	-	.25	2.0
20	29.4	23.0	70.7	133	78.3	4.2	.25	1.6
21	29.3	23.7	73.6	139	122.2	6.3	.00	1.4
22	28.7	22.7	71.4	135	23.3	1.6	.25	1.9
23	28.8	24.0	72.5	135	4.9	0.9	.25	1.5
24	29.5	22.2	66.8	143	-	9.4	.25	3.5
25	29.5	22.0	66.7	140	-	8.8	.50	3.9
26	29.4	22.8	69.8	140	15.3	7.4	.25	3.1
27	26.7	23.3	70.9	140	39.1	-	.00	1.1
28	26.9	23.5	71.7	138	6.7	0.5	.00	1.3
29	29.9	23.9	70.0	148	-	7.8	2.50	3.1
30	29.8	23.1	69.5	138	-	8.5	1.00	4.6
31	29.8	24.6	71.0	139	2.8	10.3	?	4.0
Means	29.6	23.6	69.1	139	354.9	5.2	.58	3.9

METEOROLOGICAL OBSERVATIONS.

APIA OBSERVATORY

9 a.m.

June 1931

Day of Month.	CLOUD.			WEATHER.		Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.			UPPER CLOUD.			
	Low.	Medium.	High.	Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).		Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
1	Cu	-	Ci-St		bc	4	E	3	1011.5	77.5	82.0	82	22.5			
2	Cu	-	Ci-St		c	4	VAR.	1	1011.2	76.7	79.0	90	23.1			
3	St-Cu	-	Ci		c	5	ESE	3	1010.9	79.0	83.6	82	24.1			
4	Cu	-	-		b	5	ESE	3	1012.0	76.1	82.9	73	21.0			
5	Nb	-	-		or	6	ENE	4	1010.8	76.0	77.7	91	22.6			
6	Cu	-	Ci-St		c	4	CALM	0	1009.8	77.2	81.0	84	22.7			
7	Cu	-	-		o	5	ESE	3	1011.6	77.0	82.0	80	22.4			
8	St-Cu	-	Ci-St		o	5	SE	3	1014.2	74.5	80.0	77	20.7			
9	St-Cu	A-St	-		o	5	SE	2	1015.3	73.8	78.4	81	20.2			
10	St-Cu	A-St	-		og	5	SE	3	1014.7	75.4	78.3	87	21.4			
11	Nb	-	-		ortg	6	VAR.	1	1013.1	74.2	75.0	97	21.3			
12	St-Cu	-	-		cp	4	ESE	2	1013.8	75.1	76.6	93	21.8			
13	Cu	-	Ci		bc	5	ESE	2	1013.9	78.0	81.8	85	25.5			
14	Cu	-	-		bc	5	SE	1	1013.8	77.3	82.5	79	22.3			
15	Cu	-	Ci		b	4	SE	1	1013.6	76.0	81.0	80	21.6			
16	Cu	-	-		b	5	ESE	2	1013.6	78.3	82.6	83	23.3			
17	Cu	-	-		b	5	ESE	3	1014.0	77.6	83.7	76	22.9			
18	Cu	-	-		b	3	ESE	2	1014.1	76.3	81.9	78	21.4			
19	Cu	-	-		b	3	ESE	2	1013.4	74.3	80.6	75	19.7			
20	St-Cu	-	-		bc	5	CALM	0	1013.6	74.7	77.5	88	21.4			
21	St-Cu	A-St	-		c	4	SE	2	1013.4	72.8	78.3	77	19.2			
22	St-Cu	A-Cu	-		c	4	ESE	2	1013.1	75.0	80.6	78	20.7			
23	Cu	A-Cu	Ci-Cu		c	5	ESE	3	1013.2	76.6	82.4	77	22.1			
24	St-Cu	A-Cu	-		c	4	ESE	2	1014.5	75.3	81.3	76	20.5			
25	Cu	-	-		b	4	SSW	1	1014.5	76.4	81.6	79	21.5			
26	Cu	-	Ci		b	3	SE	2	1014.0	74.0	82.5	71	20.1			
27	Cu	-	Ci		b	4	ESE	2	1013.4	72.5	80.3	69	18.6			
28	Cu	-	-		b	4	ESE	2	1012.6	71.0	79.2	67	17.1			
29	Cu	-	Ci		b	4	S	1	1012.3	73.7	81.3	70	19.4			
30	Cu	-	Ci		bc	5	CALM	0	1011.3	75.0	79.0	85	21.1			
31																
Means						4.5	-	1.9	1013.0	75.6	80.5	80.3	21.5			



International
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METEOROLOGICAL OBSERVATIONS.

APIA OBSERVATORY

3.30 p.m.

June 1931



International
Seismological
Centre

Day of Month.	CLOUD.			WEATHER.		Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.			UPPER CLOUD.			
	FORM.			Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).		Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
	Low.	Medium.	High.													
1	Cu	-	Cl		bc	4	ESE	3	1008.7	84.0	79.0	80	24.0			
2	Cu	-	Cl		c	5	ESE	2	1008.7	80.8	77.1	84	22.7			
3	Cu	A-Cu	Cl		c	5	ESE	3	1008.8	82.0	78.7	87	24.4			
4	Cu	-	Cl-St		c	5	ESE	2	1010.1	83.0	76.2	73	21.0			
5	St-Cu	A-Cu	Cl		c	5	ESE	1	1008.0	81.0	78.2	88	23.8			
6	St-Cu	A-Cu	-		cjp	5	NNW	1	1006.9	82.0	79.0	88	24.5			
7	St-Cu	-	-		c	4	ESE	3	1009.5	81.2	74.6	74	20.4			
8	St-Cu	A-St	-		o	5	SE	2	1012.4	78.0	72.8	78	19.3			
9	Cu-Nb	A-St	-		o	5	ESE	3	1012.2	80.0	75.0	79	20.8			
10	St-Cu	A-St	-		ojr	5	ESE	3	1011.3	78.9	76.8	91	23.2			
11	Nb	-	-		orrg	6	NW	1	1011.6	74.1	73.0	95	20.5			
12	Cu	-	Cl		bc	5	ESE	2	1010.9	83.2	79.0	83	24.2			
13	Cu-Nb	-	Cl-Cu		c	5	ESE	3	1011.3	83.2	78.5	81	24.1			
14	Cu	-	Cl-Cu		bc	5	ESE	3	1011.3	83.8	78.5	79	23.9			
15	Cu	-	Cl		b	5	ESE	1	1011.5	84.0	77.8	79	23.1			
16	Cu	-	-		b	4	ESE	3	1011.1	83.6	78.2	78	23.0			
17	Cu	-	-		b	5	ESE	2	1011.4	84.6	78.7	77	23.7			
18	Cu	-	-		b	3	ESE	3	1011.1	83.3	75.7	71	20.8			
19	Cu	-	-		b	3	NNW	2	1010.1	82.3	75.8	74	20.4			
20	Cu	A-Cu	-		c	5	SE	2	1010.6	81.0	75.0	80	20.8			
21	St-Cu	A-Cu	-		bc	4	VAR.	2	1010.4	81.0	73.9	72	18.8			
22	St-Cu	-	-		c	5	ESE	2	1010.4	82.0	76.0	76	21.3			
23	Cu	A-Cu	Cl-St		b	5	E	3	1010.6	82.6	76.2	74	21.1			
24	Cu	A-Cu	-		c	4	ESE	2	1011.8	82.0	75.5	73	19.6			
25	Cu	-	Cl		b	5	ESE	2	1010.7	84.0	77.0	73	21.8			
26	Cu	-	Cl		bc	5	ESE	3	1010.0	82.0	75.6	74	21.1			
27	Cu	-	Cl-St		bc	4	ESE	2	1010.7	80.8	72.4	66	17.7			
28	Cu	-	-		b	4	ESE	2	1009.8	82.0	72.2	61	17.0			
29	Cu	-	Cl-St		b	5	ESE	2	1009.2	83.0	75.7	71	20.9			
30	Nb	-	-		or	4	S	2	1009.2	81.7	75.7	76	21.3			
31																
Mean						4.6	-	2.2	1010.3	81.8	76.2	77.8	21.6			

METEOROLOGICAL OBSERVATIONS.

June 1931

International
Seismological
Centre

Day of Month.	Thermometers.				Rainfall (mm.)	Sunshine (hrs.)	Heat Integrator.	Evaporimeter.
	Maximum (°C)	Minimum (°C)	Gross Minimum (°F)	Black Bulb in vacuo (°F)				
1	29.2	24.9	-	136	6.1	7.3	.50	2.5
2	29.3	23.0	73.0	138	5.5	3.6	.75	2.4
3	29.0	25.2	-	131	0.0	2.9	.25	3.1
4	28.8	26.4	79.7	136	15.8	5.7	1.50	3.5
5	28.2	25.0	77.2	133	7.6	3.1	.25	1.9
6	28.2	23.4	70.7	136	8.5	5.5	.50	0.8
7	29.0	24.1	-	141	0.0	4.4	.25	3.3
8	26.9	24.1	71.3	113	0.0	1.3	.25	2.9
9	27.7	24.4	71.4	144	21.4	0.0	0.00	2.0
10	27.0	23.8	73.2	111	23.2	0.0	.25	1.8
11	26.0	23.8	79.0	109	175.0	0.0	.25	0.8
12	28.5	22.0	78.5	133	2.0	7.4	.25	1.8
13	29.5	24.5	73.0	137	0.0	7.4	0.00	3.6
14	30.0	24.4	71.5	136	0.0	10.3	1.25	2.7
15	29.2	21.3	-	136	0.0	10.7	1.25	2.3
16	29.4	22.8	68.6	133	0.0	10.5	.75	2.0
17	29.9	24.4	70.8	135	0.0	9.9	.75	4.4
18	28.8	21.6	66.0	132	0.0	9.8	.75	3.4
19	29.2	21.2	65.2	136	0.4	10.8	1.50	3.0
20	28.4	22.0	66.5	142	0.0	4.2	.25	2.5
21	29.3	20.8	63.6	142	0.0	3.4	.25	2.7
22	29.0	21.6	66.7	141	0.0	5.8	.25	3.1
23	28.8	22.1	67.5	138	0.8	8.5	.75	3.8
24	29.2	22.8	69.0	145	1.5	3.3	.50	3.4
25	30.0	22.4	68.0	136	0.0	10.5	.75	4.6
26	28.4	22.7	69.0	135	0.0	10.8	.25	4.6
27	28.0	21.8	63.9	139	0.0	10.6	.50	5.3
28	27.5	20.0	-	135	0.0	10.4	.50	3.7
29	29.0	19.8	61.6	132	0.0	10.5	.75	3.4
30	28.6	22.0	67.4	139	0.0	7.1	1.00	3.5
31								
Means	28.7	22.9	62.9	134.3	267.8	6.5	0.57	3.0

APIA OBSERVATORY METEOROLOGICAL OBSERVATIONS.

9 a.m. July 1931

Day of Month.	CLOUD.			WEATHER.		Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.			UPPER CLOUD.		
	Low.	Medium.	High.	Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).		Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.
1	Cu	-	-		b	3	ESE	2	1012.5	80.8	73.2	70	18.7		
2	Cu	-	Ci		bc	4	ESE	2	1012.9	80.9	75.1	77	20.6		
3	Cu	A-St	-		c	4	CALM	0	1013.4	80.5	75.5	80	20.8		
4	Cu	-	-		b	4	ESE	2	1013.8	82.7	76.7	84	22.6		
5	Cu-Nb	A-St	-		op	5	ESE	4	1014.9	79.5	74.7	81	21.0		
6	Cu	-	-		b	4	ESE	3	1014.2	81.9	74.8	72	20.2		
7	Cu	-	Ci-Cu		b	4	ESE	2	1013.4	81.8	74.2	70	19.4		
8	Cu	-	Ci-St		c	4	ESE	3	1013.5	84.1	76.0	69	20.7		
9	Cu	-	Ci-St		b	5	ESE	4	1011.7	83.5	76.2	71	20.9		
10	Cu	-	Ci-Cu		c	5	ESE	2	1013.5	81.0	76.1	80	21.6		
11	Cu	-	-		b	4	ESE	2	1012.8	78.8	70.4	66	16.4		
12	Cu	-	-		b	4	ESE	3	1013.7	78.7	68.8	60	14.8		
13	St-Cu	-	-		bc	4	E	1	1015.5	73.7	68.8	78	16.7		
14	Cu	-	-		b	5	E	3	1014.6	78.8	71.7	71	18.1		
15	Cu	-	-		b	5	ENE	2	1014.0	80.2	74.1	75	19.8		
16	Cu	-	-		b	4	ENE	2	1014.1	81.5	73.7	69	19.3		
17	Cu	-	Ci		bc	4	SE	1	1014.3	78.5	72.5	75	19.1		
18	Cu	-	Ci		c	5	ENE	2	1012.6	81.2	75.7	78	21.4		
19	St-Cu	A-Cu	Ci-Cu		c	4	E	1	1013.6	78.0	75.0	78	21.4		
20	Cu	-	Ci		b	4	ENE	3	1014.4	82.4	76.3	76	21.3		
21	Cu	-	Ci		bc	5	E	3	1014.5	82.0	76.9	80	22.4		
22	Cu	-	Ci		bc	5	ESE	3	1013.5	82.0	74.8	71	20.2		
23	Cu	-	-		b	5	ESE	2	1012.5	83.0	78.0	80	23.1		
24	Cu	-	-		bc	5	ESE	2	1012.6	83.5	78.8	81	24.1		
25	Cu	-	-		b	5	ESE	2	1014.4	83.0	77.6	78	23.0		
26	Cu	-	-		b	4	SW	1	1013.4	79.4	74.0	77	19.9		
27	St-Cu	-	-		of	6	S	1	1013.1	75.0	74.0	96	21.2		
28	Cu	-	Ci		bc	5	ESE	2	1012.4	79.9	72.0	68	17.8		
29	Cu	-	-		b	4	SE	2	1012.5	82.3	75.3	72	20.2		
30	Cu	-	-		bc	6	ESE	3	1014.0	82.7	77.9	81	23.2		
31	Cu	-	-		bc	5	ESE	3	1014.1	82.5	76.4	76	21.3		
Means	-	-	-		-	4.5	-	2.2	1013.6	80.8	74.7	75.5	20.4		



APIA OBSERVATORY METEOROLOGICAL OBSERVATIONS.

3.30 p.m.

July 1931

Day of Month.	CLOUD.			WEATHER.		Visibility.	WIND.		TEMPERATURE AND HUMIDITY.				UPPER CLOUD.			
	FORM.			Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).	Barometer reduced to M.S.L. (Millibars).	Dry Bulb (F.).	Wet Bulb (F.).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
	Low.	Medium.	Hgh.													
1	Cu	-	Cl-Cu	4	4	bc	4	E	2	1009.5	83.5	75.6	69	20.0		
2	Cu	-	-	3	3	b	5	ESE	3	1009.8	83.0	77.0	76	22.0		
3	Cu	A-Cu	Cl	2	8	c	5	ESE	2	1011.3	83.0	78.5	82	23.3		
4	Cu	-	Cl	2	2	b	4	ESE	2	1012.1	84.0	79.0	80	24.0		
5	Cu	-	-	7	7	c	5	ESE	3	1011.9	82.2	77.7	82	23.3		
6	Cu-Nb	-	Cl	4	4	bcjr	5	ESE	3	1011.4	82.7	76.9	77	22.1		
7	Cu	-	Cl	3	3	b	6	ESE	3	1010.6	84.0	75.2	67	19.7		
8	Cu	-	Cl	2	6	bc	5	ESE	3	1010.0	84.0	77.4	75	21.9		
9	Nb	-	-	10	10	or	6	E	3	1009.9	77.3	76.6	97	23.6		
10	St-Cu	-	-	8	8	c	5	E	2	1010.2	83.3	76.0	71	20.9		
11	Cu	-	Cl	1	3	b	5	ESE	2	1009.4	81.3	70.9	60	15.6		
12	Cu	-	Cl-Cu	1	6	bc	5	ESE	3	1011.1	80.0	68.9	57	14.5		
13	Cu	-	Cl	3	3	bc	4	SSE	2	1012.2	79.0	72.8	75	19.0		
14	St-Cu	-	-	9	9	c	4	ENE	3	1011.4	81.0	72.0	64	17.6		
15	Cu	-	Cl	1	1	b	6	ENE	3	1011.8	81.9	73.9	68	19.2		
16	St-Cu	-	Cl-Cu	6	7	c	5	ENE	3	1012.6	82.0	73.7	68	19.1		
17	Cu	-	Cl	1	5	bc	6	ENE	3	1011.3	81.9	76.0	76	21.3		
18	Cu	-	Cl-Cu	2	3	b	5	ESE	3	1010.8	83.0	76.7	75	21.9		
19	Cu	-	Cl-Cu	3	5	bc	4	ESE	3	1011.3	83.0	76.3	73	21.1		
20	Cu-Nb	-	Cl	4	8	c	5	ENE	3	1012.0	82.9	77.6	79	23.0		
21	Cu	-	Cl	1	8	c	6	ESE	3	1012.1	82.1	76.6	78	22.2		
22	Cu	-	-	4	4	bc	5	ESE	2	1010.0	83.3	76.9	74	21.9		
23	Cu	-	-	2	2	b	5	ESE	2	1009.4	83.5	77.5	76	22.9		
24	Cu-Nb	-	-	10	10	ojr	6	ESE	2	1009.9	82.6	78.3	83	23.3		
25	Cu	-	Cl	2	3	b	5	ESE	2	1011.6	84.0	77.6	75	22.6		
26	Nb	-	-	9	9	cr	5	NW	1	1010.1	81.7	75.8	76	21.3		
27	St-Cu	-	-	9	9	cg	5	VAR.	1	1009.6	79.8	74.2	77	19.9		
28	St-Cu	-	-	8	8	c	5	ESE	2	1009.2	82.7	75.4	71	20.1		
29	Nb	-	-	9	9	cp	6	ESE	4	1010.1	80.8	76.6	82	22.6		
30	Cu	-	-	2	2	b	6	ESE	3	1011.4	84.0	77.8	76	22.8		
31	Cu	-	-	4	4	bc	5	ESE	3	1011.5	84.3	77.9	75	22.7		
Means	-	-	-	4.4	5.6	-	5.1	-	2.5	1010.8	82.3	75.9	74.6	21.5		



International Seismological Centre

METEOROLOGICAL OBSERVATIONS.

July 1931



Day of Month.	Thermometers.				Rainfall (mm.)	Sunshine (hrs.)	Heat Integrator.	Evaporimeter.
	Maximum (°C)	Minimum (°C)	Gross Minimum (°F)	Black Bulb in vacuo (°F)				
1	29.1	21.8	64.7	139	-	10.6	.25	4.0
2	28.8	22.5	67.9	132	-	10.3	.75	3.6
3	29.7	22.3	67.8	140	-	5.2	.50	2.4
4	29.1	22.3	68.3	139	0.5	2.7	.50	3.1
5	28.9	24.5	73.5	140	1.5	5.1	.50	3.9
6	28.6	24.2	71.3	134	0.6	9.5	0.00	5.3
7	29.6	23.4	69.4	137	-	9.9	.50	5.7
8	30.4	23.5	68.2	139	-	8.8	.50	5.3
9	29.9	25.6	68.6	140	59.5	4.4	0.00	3.0
10	29.7	23.5	--	143	-	4.4	.50	3.7
11	27.4	22.3	64.2	135	-	10.2	.25	5.6
12	27.9	20.8	63.4	140	-	10.0	.75	5.9
13	27.2	21.4	62.9	139	1.3	10.6	.50	4.1
14	27.3	21.2	66.7	136	-	7.6	.25	5.0
15	28.6	19.7	63.9	142	-	10.4	.25	5.8
16	28.7	19.9	61.7	144	-	8.7	.50	4.9
17	27.1	18.9	61.7	135	-	9.8	.25	3.5
18	28.4	21.5	67.7	136	22.2	9.4	.25	3.8
19	29.3	21.6	70.4	142	-	8.5	.50	5.6
20	29.2	23.2	70.5	132	0.3	8.9	.25	5.2
21	28.9	24.7	68.7	133	-	7.0	.25	5.5
22	28.8	23.5	68.3	136	-	9.1	.25	4.3
23	29.7	24.6	72.3	128	-	9.6	.50	5.4
24	30.1	24.5	73.6	139	-	5.6	.50	4.6
25	30.2	24.5	72.5	136	-	10.4	.75	4.5
26	28.6	21.0	75.6	142	13.8	7.5	.50	3.3
27	27.1	22.2	67.9	136	-	0.7	.25	3.6
28	29.6	23.5	68.0	147	-	8.0	.50	6.2
29	29.8	24.0	71.3	141	0.2	8.9	.25	5.0
30	29.4	24.6	72.8	136	-	10.3	.50	6.0
31	29.5	24.8	72.0	136	-	9.1	.25	6.5
Means	28.9	22.8	68.5	137.9	99.9	8.4	.40	4.7

METEOROLOGICAL OBSERVATIONS.

APIA OBSERVATORY

9 a.m.

August 1931



Day of Month.	CLOUD.			WEATHER.		WIND.		TEMPERATURE AND HUMIDITY.				UPPER CLOUD.								
	Low.	Medium.	High.	Amount of Low.	Total Amount.	Height of Base.	How Height was obtained.	Since previous Observation.	At Time.	Visibility.	Direction.	Force (Beaufort Scale).	Barometer reduced to M.S.L. (Millibars).	Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
1	Cu	-	-	4	4				bc	5	ESE	3	1014.0	82.6	76.9	77	22.1			
2	Cu	-	Ci-Cu	2	7				c	4	ESE	2	1014.4	82.9	75.6	71	20.9			
3	St-Cu	-	Ci-Cu	5	7				c	5	ESE	3	1013.8	82.0	76.8	79	22.3			
4	St-Cu	-	-	5	5				bc	5	ESE	3	1013.3	82.0	77.6	82	23.3			
5	Cu	-	-	2	2				b	5	ESE	2	1011.4	82.6	76.7	76	22.0			
6	St-Cu	-	-	10	10				od	5	ESE	2	1009.0	81.5	77.9	85	23.6			
7	St-Cu	-	-	10	10				o	6	E	1	1009.7	77.0	74.6	89	21.5			
8	St-Cu	-	-	10	10				c	3	WNW	1	1012.3	79.0	74.1	79	20.1			
9	St-Cu	-	-	5	5				bc	5	ESE	3	1014.7	80.0	74.0	75	19.8			
10	Cu	-	-	2	2				b	4	ESE	2	1014.9	81.0	73.8	71	19.5			
11	Cu	-	-	3	3				bc	5	ESE	2	1013.5	81.8	74.0	69	19.3			
12	Cu	-	-	2	2				b	4	ESE	2	1013.0	80.4	75.0	77	20.7			
13	Cu	A-St	-	3	10				o	6	ESE	2	1013.5	78.0	73.0	79	19.4			
14	Cu	-	Ci	3	4				bc	6	ESE	2	1013.5	83.0	76.8	79	22.0			
15	St-Cu	-	-	7	7				c	5	ESE	3	1012.5	80.6	75.7	80	21.6			
16	Cu	-	-	3	3				bc	5	ESE	3	1011.1	81.7	77.3	82	22.5			
17	Cu	-	-	2	2				b	5	ESE	3	1011.3	81.0	75.0	76	20.5			
18	Cu	-	-	1	1				b	5	ESE	3	1011.2	82.0	75.0	72	20.2			
19	Cu	-	-	4	4				bc	5	ESE	2	1010.0	83.4	77.0	74	21.9			
20	Cu	-	-	1	1				b	5	ESE	2	1009.4	83.5	78.4	80	25.1			
21	St-Cu	A-Cu	-	2	10				o	5	ESE	3	1010.5	80.3	76.9	85	22.8			
22	Cu	A-Cu	-	8	9				c	4	CALM	0	1012.9	80.8	75.3	78	20.7			
23	Cu	-	-	6	6				bc	4	ESE	3	1013.9	81.8	75.5	75	21.2			
24	Cu	-	-	1	1				b	4	ESE	1	1013.9	81.9	71.9	61	17.3			
25	Cu	-	Ci-Cu	4	7				c	5	ESE	2	1012.0	81.0	73.2	69	18.6			
26	Cu	-	Ci-Cu	5	9				c	5	ESE	2	1012.1	82.0	76.6	78	22.2			
27	Cu	-	-	4	4				bc	5	E	1	1012.2	82.0	77.5	81	23.3			
28	Cu	-	Ci-St	3	9				c	4	S	1	1013.0	80.0	75.7	82	21.7			
29	Cu	-	-	7	7				c	5	ESE	3	1013.3	81.9	76.7	79	22.3			
30	Cu	-	-	8	8				cp	5	ESE	2	1014.4	81.0	76.8	82	22.6			
31	St-Cu	A-Cu	-	2	8				o	5	ESE	2	1014.1	83.0	78.0	80	23.1			
Means	-	-	-	4.3	5.7				-	4.8	-	2.1	1012.5	81.3	75.8	77.4	21.4			

METEOROLOGICAL OBSERVATIONS.

APIA OBSERVATORY

3.30 P.M.

August 1931



International
Seismological
Centre

Day of Month.	CLOUD.			WEATHER.		WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.			UPPER CLOUD.								
	Low.	Medium.	High.	Amount of Low.	Total Amount.	Height of Base.	How Height was obtained.		Since previous Observation.	At Time.	Visibility.	Direction.	Force (Beaufort Scale).	Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed : Height Ratio.
1	St-Cu	-	Ci-St	7	10				o	6	ESE	4	82.2	77.5	81	23.2				
2	Cu-Nb	A-Cu	-	6	7				cp	5	ESE	3	83.1	76.5	74	21.1				
3	St-Cu	-	Ci-St	5	9				c	5	SE	2	79.4	75.7	84	21.9				
4	Cu	-	-	5	5				bc	6	ESE	3	83.6	76.8	74	21.8				
5	Cu	-	-	2	2				b	6	ESE	2	84.8	78.5	76	22.8				
6	St-Cu	A-St	-	8	10				o	5	WSW	1	79.5	76.7	88	23.0				
7	Cu-Nb	-	-	10	10				op	5	SSW	1	77.3	75.8	93	22.6				
8	Cu	A-Cu	-	4	9				c	4	ESE	2	82.0	76.0	76	21.3				
9	St-Cu	-	-	7	7				c	5	ESE	2	79.0	73.5	77	19.9				
10	Cu	-	-	3	3				bc	5	ESE	3	82.0	76.0	80	21.6				
11	Cu	-	-	4	4				bc	6	ESE	3	80.2	75.8	81	21.7				
12	Cu	-	-	3	3				bc	6	ESE	3	82.0	74.8	71	20.2				
13	Cu	A-St	Ci-St	4	10				o	6	ESE	3	80.0	74.3	76	19.9				
14	Cu	-	-	7	7				c	6	ESE	3	83.7	76.9	74	21.8				
15	Cu	-	-	3	3				bc	5	ESE	3	83.2	76.6	74	21.9				
16	Cu-Nb	-	-	7	7				c	5	ESE	3	81.3	77.5	84	23.5				
17	Cu	-	-	2	2				b	5	ESE	3	82.5	75.3	71	20.2				
18	Cu	A-Cu	-	5	4				bc	5	ESE	2	84.0	76.7	72	21.7				
19	Cu	-	-	2	2				b	6	ESE	1	84.5	77.9	75	22.7				
20	Cu	-	Ci-Cu	1	7				c	5	ESE	2	84.2	79.7	82	25.0				
21	St-Cu	-	-	10	10				o	5	ESE	2	84.9	79.7	80	24.8				
22	Cu	A-Cu	-	2	3				b	4	ESE	3	83.0	77.8	79	23.1				
23	Cu	-	Ci-	5	4				bc	4	ESE	3	84.3	76.2	69	20.7				
24	Cu	A-Cu	-	2	3				b	5	ESE	3	80.5	72.6	68	18.5				
25	Cu	-	Ci-Cu	6	9				c	5	ESE	2	82.0	74.7	71	20.1				
26	Cu	A-St	-	7	9				c	5	E	2	81.7	76.1	78	21.4				
27	St-Cu	A-St-	-	3	9				c	3	SE	1	81.0	76.7	82	22.5				
28	Cu	-	Ci	2	4				bc	4	ESE	3	84.3	77.8	75	22.7				
29	Cu	-	-	2	2				b	3	ESE	3	83.9	77.9	76	22.9				
30	Cu-Nb	-	-	10	10				ogjp	5	ESE	4	83.0	78.2	81	23.2				
31	Cu	-	Ci	3	4				bc	5	ESE	3	83.8	77.0	74	21.8				
Means	-	-	-	4.5	6.0				-	5.0	-	2.5	82.3	76.5	77.3	21.9				

METEOROLOGICAL OBSERVATIONS.

August 1931



Day of Month.	Thermometers.				Rainfall (mm.)	Sunshine (hrs.)	Heat Integrator.	Evaporimeter.
	Maximum (°C)	Minimum (°C)	Gross Minimum (°F)	Black Bulb in vacuo (°F)				
1	29.0	25.8	76.0	141	0.3	5.9	.25	5.6
2	29.9	24.2	-	139	3.6	6.2	.25	5.3
3	29.3	24.1	70.4	139	20.9	3.4	.00	4.2
4	28.9	23.7	74.3	140	0.6	9.3	.50	9.4
5	29.7	24.1	73.1	137	-	9.6	.25	4.7
6	26.9	24.7	74.1	137	1.1	1.5	.25	1.2
7	26.5	22.2	69.3	144	6.5	4.0	.50	3.0
8	29.1	23.6	71.3	140	-	1.4	.25	7.0
9	28.5	24.4	70.8	143	-	7.9	.50	6.3
10	29.2	24.2	-	139	-	10.6	.50	6.7
11	28.0	23.8	69.4	139	-	9.5	3.75	4.4
12	28.7	23.4	-	139	-	10.1	3.25	5.1
13	28.4	20.8	66.0	130	-	0.4	.25	5.1
14	29.5	24.0	69.4	142	-	10.2	.75	5.0
15	29.1	21.6	67.7	138	-	9.7	.50	10.6
16	29.2	23.3	70.7	133	2.6	6.9	.50	4.7
17	28.7	23.3	70.5	136	-	9.2	.50	7.3
18	29.5	23.4	69.5	135	-	8.3	.50	6.2
19	29.5	24.3	73.2	135	-	9.2	1.00	4.8
20	30.3	22.2	68.4	137	-	8.5	.50	4.0
21	29.9	24.1	-	139	-	3.6	.50	3.4
22	29.6	22.2	68.2	134	-	6.9	.75	5.2
23	29.9	22.6	68.2	136	-	10.4	.50	-
24	27.5	22.7	-	138	-	11.1	.50	9.5
25	28.9	20.4	66.1	126	-	9.0	.75	7.5
26	29.4	23.1	61.5	129	-	6.1	.50	6.0
27	28.8	22.9	70.5	129	8.8	4.0	.25	2.7
28	29.7	22.3	70.5	136	-	5.4	.50	6.0
29	29.5	23.0	72.0	131	2.9	7.9	.50	6.2
30	29.8	24.0	72.9	126	3.6	5.2	.50	5.0
31	29.9	24.4	74.6	135	-	7.7	.50	8.0
Means	29.1	23.3	70.3	136.2	50.9	7.1	.66	5.8

METEOROLOGICAL OBSERVATIONS.

APIA OBSERVATORY

3.30 p.m.

September 1931

Day of Month.	CLOUD.			WEATHER.		Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.			UPPER CLOUD.			
	Form.	Amount of Low.		Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).		Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
		Low.	Medium.													
1	Cu	-	Ci	1	5	6	ESE	3	1011.3	83.8	77.3	75	21.9			
2	Cu	-	-	1	5	5	ESE	2	1010.3	84.0	76.2	70	20.7			
3	Cu	A-St	-	1	5	5	ESE	2	1010.2	83.3	78.0	79	23.0			
4	Cu	-	-	bc	5	4	ESE	2	1012.0	85.2	79.0	76	23.6			
5	Cu	-	-	bc	5	4	ESE	3	1011.9	84.4	78.2	76	22.8			
6	Cu	-	Ci-St	bc	5	6	ESE	2	1011.1	84.3	78.0	75	22.8			
7	Cu	A-Cu	Ci-St	c	8	5	ESE	4	1011.4	82.0	76.7	79	22.3			
8	Cu	A-St	-	c	9	3	ESE	3	1011.5	81.3	75.6	79	21.5			
9	Cu	-	-	bc	4	6	ESE	2	1011.5	83.6	76.8	74	21.8			
10	Cu	-	-	b	1	6	ESE	3	1010.2	84.4	78.4	76	22.9			
11	Cu	A-Cu	-	bc	5	5	ESE	3	1010.5	84.7	77.3	71	21.6			
12	Cu	-	-	b	1	5	ESE	3	1010.8	84.0	77.1	73	21.8			
13	Cu	-	-	b	1	5	ESE	3	1010.6	83.6	75.1	68	19.8			
14	Cu	-	Ci	bc	5	5	E	3	1009.7	84.0	77.0	73	21.8			
15	St-Cu	-	-	c	8	4	N	2	1009.1	85.0	76.8	75	22.0			
16	Cu	-	-	c	8	5	SE	1	1009.2	78.5	75.5	87	22.2			
17	St-Cu	-	Ci-Cu	c	9	5	ESE	3	1010.0	82.5	77.0	78	22.2			
18	Cu	-	Ci-St	c	8	5	ESE	2	1009.1	82.8	77.8	80	23.1			
19	Cu-Nb	-	-	og	10	5	SE	1	1009.3	81.6	78.0	86	25.6			
20	Cu-Nb	A-St	-	c	9	4	ENE	1	1009.6	82.0	77.6	82	23.5			
21	Cu	-	Ci-St	b	2	5	ESE	3	1009.1	84.8	78.9	77	23.7			
22	Cu	-	Ci	bc	4	5	ESE	2	1010.3	85.3	79.7	79	24.7			
23	Cu	-	Ci	bc	4	5	ESE	3	1009.1	85.3	78.0	74	25.5			
24	Cu	A-St	Ci-Cu	c	9	5	ESE	2	1009.5	84.8	76.0	67	20.5			
25	Cu	A-St	Ci-St	c	9	5	ESE	2	1009.4	83.7	76.7	73	21.8			
26	Cu	A-Cu	Ci-Cu	bc	4	4	N	3	1010.3	82.8	77.7	80	25.1			
27	Cu-Nb	-	-	c	9	6	ESE	3	1011.3	79.8	77.0	88	25.0			
28	St-Cu	A-St	-	og	10	4	ESE	2	1011.1	79.6	76.3	86	22.1			
29	Nb	A-St	-	ogr	10	5	ESE	1	1011.9	78.3	74.7	85	21.2			
30	Cu	A-St	Ci-St	o	10	4	S	1	1010.8	82.9	74.1	66	19.0			
31	-	-	-	-	6.0	4.9	-	2.3	1010.4	83.0	77.1	77.0	22.2			



International
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METEOROLOGICAL OBSERVATIONS.

September 1931



Day of Month.	Thermometers.				Rainfall (mm.)	Sunshine (hrs.)	Heat Integrator.	Evaporimeter.
	Maximum (°C)	Minimum (°C)	Gross Minimum (°F)	Black Bulb in vacuo (°F)				
1	29.7	24.0	74.2	128	-	10.3	.50	7.3
2	29.8	20.8	--	135	-	9.9	.75	6.5
3	30.1	21.7	69.3	134	6.4	7.6	.25	6.0
4	30.1	23.6	72.7	130	-	9.6	.25	5.0
5	29.8	22.8	71.7	131	-	10.3	.50	8.1
6	30.4	25.7	72.5	140	29.0	4.9	.25	5.7
7	28.5	23.0	72.3	143	-	5.8	.50	5.0
8	29.2	22.5	70.8	129	1.3	3.9	.25	5.4
9	28.7	24.0	72.3	137	1.8	7.8	.25	8.4
10	30.2	25.0	76.6	151	2.2	9.5	.50	4.4
11	30.0	24.5	74.4	139	-	9.1	.50	4.5
12	30.0	22.6	70.4	139	-	11.0	.50	5.9
13	29.7	20.3	65.9	139	-	11.0	.50	6.8
14	30.4	20.1	65.9	139	-	10.1	.75	5.4
15	30.2	21.4	68.6	130	0.6	8.0	.50	4.2
16	29.2	22.1	70.3	140	11.0	4.8	.50	3.8
17	29.4	23.0	71.5	145	3.1	6.8	.25	5.1
18	29.2	22.8	71.8	142	31.5	3.8	.50	3.3
19	29.2	23.6	73.2	139	9.2	2.9	.25	2.0
20	28.7	23.5	72.8	127	-	8.7	1.25	2.9
21	29.9	22.9	71.3	139	2.5	9.0	.50	4.7
22	30.9	23.1	72.0	141	0.1	10.1	.50	5.2
23	30.7	24.3	72.5	129	-	9.4	.50	4.9
24	30.5	23.2	71.8	97	8.0	4.8	.00	6.1
25	29.3	20.8	--	130	-	3.1	.75	3.6
26	30.0	22.7	71.0	137	-	8.5	.50	6.1
27	29.9	23.3	72.4	147	7.3	9.1	1.00	4.6
28	27.5	23.3	72.7	-	24.1	0.1	-	-
29	27.4	23.7	73.6	-	1.0	1.9	-	-
30	29.8	22.0	70.0	-	-	4.4	-	-
31					Total			
Means	29.6	22.9	71.6	135	139.1	7.2	.49	5.2

APIA OBSERVATORY METEOROLOGICAL OBSERVATIONS.

9 a.m.

October 1931



International Seismological Centre

Day of Month.	CLOUD.			WEATHER.		Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.				UPPER CLOUD.		
	FORM.			Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).		Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
	Low.	Medium.	High.													
1	Cu	A-Cu	Ci-Cu		c	4	NW	1	1013.9	80.0	74.2	76	19.8			
2	Cu	A-Cu	Cl		bc	3	ESE	2	1013.1	85.3	75.7	71	20.8			
3	St-Cu	-	-		c	4	CAIM	0	1012.6	81.8	75.0	73	20.3			
4	St-Cu	-	-		c	5	CAIM	0	1013.2	79.8	73.7	75	19.8			
5	St-Cu	A-Cu	-		bc	4	VAR.	2	1012.4	80.0	71.0	64	16.9			
6	Cu	-	-		bc	4	ESE	2	1011.8	80.8	70.0	58	15.9			
7	Cu	-	-		b	5	SE	2	1010.4	80.2	69.1	57	15.0			
8	-	A-St	-		o	5	SE	1	1011.6	81.0	72.4	66	17.7			
9	Nb	A-St	-		cr	5	CAIM	0	1011.3	79.9	76.3	85	22.0			
10	Cu	A-Ci	-		bc	4	WSW	1	1012.3	80.0	74.5	77	20.3			
11	Cu	-	-		b	3	CAIM	0	1012.4	79.7	73.4	74	19.0			
12	Cu	-	Ci-St		b	4	E	2	1013.3	83.8	77.4	75	21.9			
13	Cu	-	Cl		b	4	ESE	2	1014.2	84.5	78.3	76	22.8			
14	Cu	-	-		b	4	E	3	1014.0	82.8	77.9	80	23.1			
15	Cu	-	Ci-Cu		b	5	ESE	1	1012.1	85.0	78.6	75	23.5			
16	Cu	-	-		b	5	SE	1	1010.7	84.0	77.0	73	21.8			
17	Cu	A-Cu	Ci-Cu		bc	4	ExS	3	1011.7	84.0	78.0	76	22.9			
18	Cu	-	Ci-St		c	5	ESE	1	1011.4	82.6	78.2	82	23.3			
19	Cu	-	-		b	5	ESE	2	1009.5	84.0	78.3	77	23.0			
20	Cu	-	-		b	5	ESE	2	1010.1	85.0	79.2	78	23.7			
21	Cu	-	-		b	4	ESE	3	1011.9	85.5	78.0	71	22.4			
22	Cu	A-Cu	-		bc	5	ExS	2	1013.2	84.0	77.2	74	21.8			
23	Cu	-	-		b	4	ESE	3	1010.5	85.0	78.8	76	23.6			
24	Cu-Nb	-	-		og	6	ESE	1	1009.3	82.0	77.0	80	22.4			
25	Nb	-	-		orrb	6	S	2	1011.0	74.7	73.9	97	21.3			
26	St-Cu	-	-		c	5	ESE	1	1011.9	84.5	79.2	79	23.9			
27	Cu	A-Cu	Cl		c	5	CAIM	0	1013.2	81.4	77.8	85	23.6			
28	St-Cu	A-Cu	-		bc	4	CAIM	0	1013.2	83.3	77.6	77	23.0			
29	Cu	A-Cu	-		bc	4	NNE	1	1012.8	82.0	75.3	73	20.3			
30	Cu	-	-		b	3	ESE	2	1012.1	85.2	78.2	73	22.6			
31	Cu	A-Cu	Ci-Cu		b	4	ESE	3	1012.0	82.4	76.8	78	22.2			
Means	-	-	-		-	4.4	-	1.5	1012.0	82.3	76.1	75.2	21.3			

METEOROLOGICAL OBSERVATIONS.

APIA OBSERVATORY

3.30 P.M.

October 1931

Day of Month.	CLOUD.			WEATHER.		Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.			UPPER CLOUD.			
	FORM.			Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).		Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
	Low.	Medium.	High.													
1	St-Cu	-	-	6	6	9	bc	ESE	2	1010.7	84.3	76.2	69	20.7		
2	St-Cu	-	-	8	8	9	c	ESE	3	1010.1	82.6	75.5	72	21.0		
3	Nb	-	Ci-Cu	8	8	9	cr	SE	3	1009.9	80.0	75.4	81	21.0		
4	St-Cu	-	-	7	7	7	c	N	2	1009.8	81.3	74.0	71	19.4		
5	St-Cu	-	Ci-Cu	2	2	2	b	SW	2	1009.1	81.3	71.1	60	16.6		
6	St-Cu	-	-	5	5	5	bc	SSW	2	1008.3	81.8	69.8	55	14.7		
7	St-Cu	-	-	8	8	8	c	ESE	3	1007.3	79.0	69.2	61	15.4		
8	St-Cu	A-St	-	9	9	10	c	ESE	2	1008.0	80.0	73.6	74	19.6		
9	Nb	A-St	-	8	8	9	cjr	WNW	2	1008.7	80.2	75.4	80	20.9		
10	Cu	-	-	3	3	3	b	NNW	2	1009.9	81.2	75.0	75	20.5		
11	Cu	-	-	3	3	3	b	ESE	3	1009.6	83.4	76.8	74	21.9		
12	St-Cu	-	Ci	8	8	8	c	ESE	2	1001.2	82.8	77.8	80	23.1		
13	Cu	A-Cu	Ci	2	2	2	c	ESE	3	1011.1	85.1	78.3	74	22.6		
14	Cu	-	Ci	4	4	5	bc	ESE	2	1010.2	84.5	79.7	81	24.9		
15	Cu	A-Cu	-	1	1	2	b	ESE	2	1008.4	84.5	78.0	75	22.7		
16	Cu	A-Cu	Ci	1	1	2	b	ESE	1	1008.4	87.2	79.8	72	24.1		
17	Cu	A-St	-	2	2	8	c	SSE	2	1009.4	83.7	77.8	76	22.9		
18	Cu	-	Ci-St	3	3	8	c	ENE	1	1008.5	83.0	78.2	78	23.0		
19	St-Cu	A-St	-	7	7	10	cjp	ESE	2	1007.4	82.0	77.0	80	22.4		
20	St-Cu	-	-	4	4	4	bc	ESE	2	1008.6	85.4	79.3	77	23.7		
21	St-Cu	-	Ci	2	2	2	b	ESE	2	1009.7	86.7	79.0	71	23.2		
22	St-Cu	-	Ci-Cu	3	3	7	c	CALM	0	1009.8	83.0	77.8	79	23.1		
23	Cu	-	Ci-Cu	3	3	4	bc	ESE	3	1007.0	84.6	77.7	75	22.6		
24	Nb	-	-	10	10	10	or	VAR.	2	1006.8	76.8	75.8	96	22.7		
25	Nb	-	-	10	10	10	or	NNE	5	1010.1	78.0	75.8	90	22.4		
26	St-Cu	A-St	-	3	3	10	o	CALM	0	1010.9	77.0	75.3	92	21.8		
27	St-Cu	A-St	-	3	3	9	c	CALM	0	1010.8	82.2	77.0	79	22.5		
28	St-Cu	-	Ci-Cu	3	3	8	c	CALM	0	1010.7	82.8	76.3	74	21.1		
29	Cu-Nb	-	Ci-Cu	5	5	6	bcjr	CALM	0	1010.2	80.0	77.3	88	23.0		
30	Cu	A-Cu	Ci	2	2	4	bc	ESE	1	1010.3	85.2	77.9	72	22.5		
31	St-Cu	-	-	4	4	.4	bc	ESE	3	1009.8	82.4	78.0	82	23.3		
Mean	-	-	-	4.7	6.5	6.5	-	-	1.9	1009.4	82.3	76.3	76.2	21.6		



International
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METEOROLOGICAL OBSERVATIONS.

October 1931

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Day of Month.	Thermometers.				Rainfall (mm.)	Sunshine (hrs.)	Heat Integrator.	Evaporimeter.
	Maximum (°C)	Minimum (°C)	Gross Minimum (°F)	Black Bulb in vacuo (°F)				
1	30.3	22.7	70.8	131	-	5.5	.50	5.3
2	30.5	21.4	68.5	148	-	7.5	.50	5.3
3	29.2	22.1	64.6	131	-	4.0	.25	3.6
4	29.1	22.4	--	112	-	6.7	1.00	4.6
5	29.6	23.3	--	140	-	8.9	1.25	5.3
6	28.6	19.5	63.6	138	-	10.3	.50	5.9
7	28.1	19.7	63.2	141	-	7.9	1.50	7.6
8	28.8	19.4	64.4	138	13.5	4.6	1.00	4.5
9	28.9	22.3	71.2	143	1.5	4.5	.50	2.5
10	28.8	22.9	69.0	140	-	11.3	2.00	1.1
11	50.0	21.2	--	127	-	11.2	1.25	5.6
12	29.4	21.8	69.0	124	-	7.5	.50	4.9
13	30.9	23.3	70.3	138	9.2	9.6	1.25	4.6
14	29.9	23.0	71.0	139	-	10.6	1.00	4.0
15	30.3	22.8	71.6	144	-	10.2	1.25	6.3
16	30.9	23.6	71.0	140	-	11.1	1.50	6.4
17	30.3	23.1	72.1	140	26.8	6.6	.25	4.7
18	29.9	23.2	72.6	137	-	7.2	1.50	4.6
19	30.3	22.8	70.8	126	8.6	6.6	.25	5.0
20	30.9	23.6	73.4	121	-	9.9	1.00	9.1
21	31.0	26.3	78.0	136	-	11.1	.75	6.6
22	30.0	24.4	73.7	142	-	9.2	1.50	5.1
23	30.2	24.0	72.4	124	5.3	10.7	.50	7.6
24	28.8	24.0	74.0	119	60.8	0.0	.25	1.5
25	29.4	23.0	72.8	130	32.1	0.1	.00	2.9
26	29.7	22.8	72.4	129	53.8	0.9	.25	1.2
27	28.6	22.0	72.4	138	0.3	2.1	.75	2.3
28	29.2	23.7	72.2	132	-	7.6	1.25	3.6
29	30.1	22.4	69.8	144	-	8.1	1.25	4.3
30	30.3	21.9	69.2	134	-	9.0	.50	7.1
31	29.4	24.0	--	138	0.3	7.2	?	6.4
Means	29.7	22.7	70.5	134	212.2	7.3	1.89	4.8



Day of Month.	CLOUD.			WEATHER.			WIND.		TEMPERATURE AND HUMIDITY.				UPPER CLOUD.							
	Low.	Medium.	Hgh.	Amount of Low.	Total Amount.	Height of Base.	How Height was obtained.	Since previous Observation.	At Time.	Visibility.	Direction.	Force (Beaufort Scale).	Barometer reduced to M.S.L. (Millibars).	Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
1	Nb	-	-	10	10				ogp	5	CALM	0	1009.0	77.0	76.0	96	22.7			
2	St-Cu	-	-	10	10				og	5	ESE	1	1008.0	81.4	76.2	79	21.6			
3	Nb	-	-	10	10				ot	6	SW	2	1007.0	80.0	75.7	82	21.7			
4	Cu	A-Cu	-	1	3				bc	3	E	1	1007.8	83.3	74.9	67	19.8			
5	Cu	-	Ci	2	4				bc	3	ENE	1	1010.3	84.3	76.5	70	20.7			
6	St-Cu	-	-	7	7				bc	4	ESE	3	1010.3	84.8	78.5	76	22.8			
7	St-Cu	-	-	10	10				op	4	SE	3	1008.8	79.0	75.8	86	22.1			
8	St-Cu	A-Cu	-	3	9				c	4	ESE	3	1008.9	83.8	76.8	73	21.8			
9	St-Cu	-	-	3	3				bc	4	ESE	3	1008.1	84.7	77.3	71	21.6			
10	Cu	-	-	3	3				bc	5	ESE	3	1009.3	85.3	75.9	64	20.4			
11	Cu	-	Ci-St	1	3				bc	5	ESE	3	1008.0	85.0	77.9	73	22.6			
12	St-Cu	-	Ci-St	6	9				c	5	ESE	3	1008.1	83.3	76.5	73	21.0			
13	St-Cu	A-St	-	4	9				c	5	SE	2	1007.2	82.5	76.2	75	21.2			
14	Cu-Nb	A-Cu	Ci-St	4	9				c	4	ESE	2	1007.5	85.0	76.3	67	20.5			
15	St-Cu	-	-	7	7				bc	5	SE	2	1005.6	85.0	76.8	69	21.5			
16	Nb	-	-	10	10				orig	6	ESE	2	1006.5	78.0	75.0	91	22.4			
17	St-Cu	A-Cu	-	8	10				og	5	ESE	1	1008.1	84.0	78.9	80	24.0			
18	St-Cu	-	Ci-Cu	3	6				bc	5	E	1	1008.0	83.8	76.3	71	20.8			
19	Cu	A-Cu	-	2	3				bc	4	ESE	1	1006.9	85.3	78.6	74	23.5			
20	Cu	-	Ci-St	2	6				bc	5	ESE	3	1007.3	85.6	79.0	75	23.5			
21	Cu	A-Cu	-	5	8				c	4	ESE	1	1007.3	84.5	77.1	71	21.6			
22	Cu	-	Ci	4	6				bc	4	SSE	2	1006.2	83.8	74.5	65	18.9			
23	Cu	-	Ci-Cu	3	4				bc	5	SSW	2	1005.8	80.2	73.9	74	19.7			
24	St-Cu	-	-	4	4				bc	3	NW	2	1005.6	82.3	74.7	70	20.1			
25	St-Cu	-	-	8	8				c	3	WNW	2	1006.3	82.5	75.7	73	21.0			
26	Cu	-	-	2	2				b	5	ESE	2	1006.5	84.2	76.1	69	20.7			
27	St-Cu	-	Ci	7	8				c	4	SSE	1	1006.8	86.8	74.7	57	18.9			
28	St-Cu	-	-	9	9				c	4	ESE	2	1007.6	85.2	77.0	69	21.5			
29	St-Cu	-	-	7	7				bc	4	SW	2	1006.2	84.5	74.7	63	19.5			
30	Cu	A-Cu	Ci-St	4	6				bc	4	SSW	2	1004.8	87.8	76.1	58	19.9			
Means	-	-	-	5.3	6.8				-	4.4	-	1.9	1007.5	83.4	76.3	72.7	21.3			

METEOROLOGICAL OBSERVATIONS.

November 1931



Day of Month.	Thermometers.				Rainfall (mm.)	Sunshine (hrs.)	Heat Integrator.	Evaporimeter.
	Maximum (°C)	Minimum (°C)	Gross Minimum (°F)	Black Bulb in vacuo (°F)				
1	28.6	23.2	73.7	126	36.6	3.5	.00	2.9
2	29.2	22.4	68.7	132	-	5.6	.50	4.6
3	28.7	22.8	68.6	123	2.4	7.3	.50	6.0
4	29.7	21.3	68.6	137	11.4	11.4	1.25	8.3
5	29.4	22.2	70.0	133	-	11.4	1.00	2.5
6	30.0	22.0	68.2	140	-	10.5	.50	5.0
7	30.5	22.9	68.4	145	30.0	9.0	.00	3.8
8	29.2	21.6	69.5	144	-	1.7	--	4.4
9	29.7	21.7	69.8	142	-	10.0	--	6.8
10	30.3	22.0	68.2	142	-	11.3	.50	6.5
11	30.4	22.5	70.3	137	0.2	7.5	.50	6.5
12	30.4	23.0	72.0	130	-	4.2	.25	5.4
13	31.0	22.2	69.7	138	1.0	1.5	.25	6.6
14	30.6	22.7	70.2	125	-	7.3	.25	6.3
15	30.4	23.4	70.8	152	15.2	9.7	.50	4.9
16	30.0	22.4	72.3	131	43.2	1.7	.25	3.4
17	29.5	24.5	71.5	136	-	0.8	.25	3.3
18	29.9	22.8	70.0	135	-	7.3	1.00	4.2
19	30.3	22.1	68.7	142	-	10.1	.75	4.4
20	31.1	23.4	70.3	127	-	10.5	.50	5.6
21	30.9	23.0	70.0	146	-	9.0	2.00	5.9
22	29.8	22.8	68.8	138	7.6	10.9	1.75	5.6
23	30.6	22.0	70.6	139	-	10.3	1.50	6.0
24	28.1	21.2	65.5	134	-	11.4	1.50	6.0
25	30.0	22.3	65.1	137	-	9.7	2.00	4.6
26	29.9	20.9	65.7	140	-	11.4	1.25	7.9
27	31.1	23.6	67.0	142	-	9.4	1.00	5.9
28	30.7	22.4	70.5	124	-	1.6	.75	5.2
29	29.5	23.2	68.0	124	-	9.1	1.50	5.0
30	31.3	22.8	68.5	147	-	9.5	1.75	4.6
31					Total			
Means	30.0	22.5	69.3	136	147.6	7.8	.85	5.3

METEOROLOGICAL OBSERVATIONS.

APIA OBSERVATORY

9 a.m. December 1931



Day of Month.	CLOUD.			WEATHER.		WIND.		TEMPERATURE AND HUMIDITY.				UPPER CLOUD.							
	Low.	Medium.	High.	Total Amount.	Height of Base.	How Height was obtained.	Since previous Observation.	At Time.	Visibility.	Direction.	Force (Beaufort Scale).	Barometer reduced to M.S.L. (Millibars).	Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
1	Cu	-	Ci	2		bc		bc	4	NE	1	1007.5	81.3	74.4	72	19.5			
2	St-Cu	A-St	-	10		o		o	4	N	1	1008.6	80.5	73.3	72	18.8			
3	St-Cu	-	-	10		og		og	5	SE	1	1010.1	80.5	75.0	77	20.7			
4	St-Cu	A-St	-	9		c		c	4	SE	1	1010.7	81.3	72.0	63	17.5			
5	St-Cu	A-Cu	Ci	7		bc		bc	3	ESE	1	1011.2	83.2	76.0	72	20.9			
6	Cu	-	Ci-Cu	4		bc		bc	4	ESE	2	1010.1	84.2	78.0	76	22.8			
7	Cu	A-St	Ci	4		bc		bc	4	ESE	2	1010.2	79.9	78.9	96	25.1			
8	St-Cu	A-Cu	-	9		c		c	4	CALM	0	1011.0	80.9	74.8	76	20.5			
9	Cu	-	Ci	2		b		b	3	ESE	1	1011.1	84.7	78.2	75	22.7			
10	St-Cu	-	Ci	2		bc		bc	4	ESE	2	1010.1	84.3	77.8	75	22.7			
11	Cu-Nb	-	Ci-St	9		c		c	4	NW	1	1010.1	82.3	76.4	77	21.3			
12	Cu	-	Ci-St	6		bc		bc	4	ESE	2	1008.9	83.9	77.3	75	21.9			
13	Cu	-	Ci-Cu	3		bc		bc	3	ESE	1	1009.0	84.0	77.7	75	22.8			
14	Cu	-	-	3		bc		bc	3	ESE	1	1010.2	80.7	75.7	80	21.6			
15	Cu	A-Cu	Ci-Cu	3		bc		bc	3	ESE	1	1010.7	82.9	76.8	73	21.8			
16	Cu-Nb	-	-	10		ogd		ogd	4	SSE	1	1011.4	79.0	74.1	79	20.1			
17	St-Cu	-	-	7		bc		bc	5	SE	2	1009.6	82.1	73.3	67	19.1			
18	St-Cu	A-Cu	Ci-St	7		bc		bc	4	ESE	2	1008.4	84.0	73.2	60	17.8			
19	Nb	-	-	10		or		or	6	ESE	2	1010.3	74.7	72.8	91	20.2			
20	St-Cu	-	Ci-St	10		or		or	5	SSE	2	1011.7	76.3	74.0	91	20.9			
21	Cu	-	-	2		b		b	4	CALM	0	1011.9	79.5	75.3	82	21.7			
22	Cu	-	Ci	7		bc		bc	3	E	2	1010.8	83.6	77.8	77	22.9			
23	Nb	A-St	-	10		org		org	2	SSE	1	1012.5	75.4	74.0	96	21.2			
24	Cu-Nb	-	-	9		cjr		cjr	5	E	1	1011.5	81.6	77.1	82	22.5			
25	Cu	-	Ci-St	4		bc		bc	5	ESE	3	1009.8	84.0	78.0	76	23.9			
26	-	-	Ci	7		bc		bc	2	CALM	0	1008.6	78.5	74.1	81	20.2			
27	Cu	-	-	2		b		b	4	N	1	1009.2	80.9	75.9	80	21.6			
28	Cu	-	-	2		b		b	3	NE	1	1009.0	81.0	75.6	78	21.4			
29	St-Cu	-	-	3		bc		bc	3	CALM	0	1007.9	81.4	76.7	81	22.4			
30	Cu	-	-	2		b		b	4	ESE	1	1007.7	83.0	77.6	78	23.0			
31	Cu	-	Ci	2		b		b	2	ESE	1	1007.7	84.2	77.0	72	21.7			
Means				3.7	5.8				3.8		1.2	1009.9	81.4	75.8	77.6	21.3			



Day of Month.	CLOUD.			Amount of Low.	Total Amount.	Height of Base.	How Height was obtained.	WEATHER.		Visibility.	WIND.		Barometer reduced to M.S.L. (Millibars).	TEMPERATURE AND HUMIDITY.				UPPER CLOUD.		
	FORM.							Since previous Observation.	At Time.		Direction.	Force (Beaufort Scale).		Dry Bulb (°F).	Wet Bulb (°F).	Relative Humidity (%).	Vapour Pressure (Millibars).	Type observed.	Direction whence coming.	Speed: Height Ratio.
	Low.	Medium.	High.																	
1	Nb	-	Ci-St	8	9			cpr	3	3	WSW	2	1005.6	83.0	75.3	67	20.1			
2	St-Cu	A-St	-	8	10			ogd	5	5	WSW	1	1007.0	81.0	74.3	73	19.6			
3	St-Cu	A-St	-	2	10			o	4	4	CALM	0	1007.8	79.5	76.1	85	22.0			
4	St-Cu	-	Ci-St	5	7			bc	4	4	ESE	1	1008.3	86.0	78.7	72	23.3			
5	Cu	A-Cu	Ci	2	8			c	4	4	ESE	3	1008.7	84.5	77.7	74	22.6			
6	Cu	A-Cu	-	2	5			bc	4	4	ESE	4	1008.5	87.0	79.1	70	23.1			
7	St-Cu	A-Cu	-	2	7			bc	5	5	CALM	0	1008.3	79.0	75.5	85	22.0			
8	St-Cu	-	Ci-St	8	10			ojr	4	4	ENE	1	1008.7	82.0	77.0	80	22.0			
9	St-Cu	-	Ci-St	4	7			c	4	4	SE	1	1008.1	84.5	77.9	78	22.7			
10	Cu-Nb	A-St	Ci-St	4	9			cjp	5	5	ESE	2	1007.9	84.8	78.2	75	22.7			
11	St-Cu	A-Cu	Ci-St	2	8			c	4	4	CALM	0	1008.3	82.9	76.5	74	21.1			
12	Cu	-	Ci-Cu	2	6			bc	4	4	ESE	2	1007.0	84.0	78.2	77	22.9			
13	Cu-Nb	-	Ci-Cu	5	6			bc	4	4	E	2	1007.5	84.0	77.8	76	22.8			
14	St-Cu	-	Ci-St	3	4			bc	3	3	E	1	1008.0	83.7	75.9	70	20.7			
15	Cu-Nb	-	-	9	9			cjr	4	4	SSW	1	1008.4	81.0	76.0	80	21.6			
16	St-Cu	A-St	-	8	9			c	5	5	SSE	1	1008.8	82.0	74.3	70	19.3			
17	St-Cu	-	-	7	7			bc	4	4	SE	1	1006.9	84.0	73.6	61	18.7			
18	Cu	A-St	-	5	10			ojr	4	4	SE	3	1005.7	78.3	75.4	87	21.4			
19	Nb	-	-	10	10			oj	5	5	NNW	3	1007.7	77.0	73.0	83	19.7			
20	St-Cu	-	-	9	9			c	5	5	ESE	1	1009.0	81.5	76.6	80	22.4			
21	Cu	-	-	1	1			b	4	4	ESE	2	1008.9	84.9	78.7	76	23.6			
22	St-Cu	-	Ci-Cu	2	9			c	4	4	ESE	1	1008.4	84.7	78.8	77	23.7			
23	St-Cu	-	Ci-Cu	8	9			c	3	3	ESE	2	1009.6	85.0	76.8	75	22.0			
24	St-Cu	-	-	9	9			c	4	4	ENE	2	1008.9	81.0	77.7	86	23.6			
25	Cu	A-St	Ci-St	4	9			c	4	4	ESE	2	1007.7	84.8	78.0	74	22.6			
26	Cu	-	Ci-St	5	8			c	5	5	NNW	2	1006.6	82.0	76.8	79	22.3			
27	Cu	-	Ci	4	8			c	4	4	N	2	1006.8	83.0	77.0	76	22.0			
28	Nb	-	-	10	10			or	5	5	S	1	1007.3	79.8	76.7	87	22.9			
29	Cu	-	Ci-St	5	7			bc	3	3	CALM	0	1005.9	84.7	78.0	74	22.7			
30	Cu	-	-	9	9			c	3	3	NE	1	1005.2	84.8	78.2	75	22.7			
31	Cu	A-St	Ci	2	8			c	5	5	S	1	1004.9	83.8	77.8	76	22.9			
Means	-	-	-	5	8			-	4	4	-	1	1007.6	82.8	76.8	76	22.0			

METEOROLOGICAL OBSERVATIONS.

December 1931



Day of Month.	Thermometers.				Rainfall (mm.)	Sunshine (hrs.)	Heat Integrator.	Evaporimeter.
	Maximum (°C)	Minimum (°C)	Gross Minimum (°F)	Black Bulb in vacuo (°F)				
1	31.3	22.3	69.0	143	1.7	8.5	1.75	3.9
2	29.0	22.6	71.8	131	-	0.0	.50	4.1
3	26.9	23.0	72.0	132	25.5	0.0	.00	1.6
4	30.0	22.7	71.6	131	-	3.5	1.25	3.5
5	30.3	22.5	69.7	124	-	6.0	1.00	5.7
6	31.5	23.6	71.5	123	3.9	9.3	.75	6.4
7	31.3	24.0	72.0	144	16.8	4.0	.50	2.5
8	29.5	23.0	71.2	125	2.4	2.4	1.00	3.5
9	30.8	23.4	71.5	137	0.2	8.6	1.00	4.3
10	30.9	22.5	69.6	146	-	7.3	.75	4.7
11	30.0	24.3	72.4	143	-	5.0	1.00	3.6
12	29.8	22.4	68.8	143	1.1	7.2	.75	3.9
13	30.8	21.6	67.9	139	-	7.8	.75	4.2
14	29.7	22.3	69.0	136	-	9.9	1.50	4.9
15	30.1	22.0	69.6	132	0.2	5.7	.75	3.9
16	28.4	22.9	70.4	149	-	2.2	.25	4.8
17	31.0	22.2	68.5	141	-	6.4	.50	6.9
18	29.7	22.8	-	140	38.6	6.7	.50	4.8
19	28.1	22.3	-	140	4.6	0.0	.00	4.5
20	28.7	22.4	-	135	15.5	1.4	.25	3.1
21	30.6	22.3	69.9	138	-	10.2	1.25	5.1
22	29.8	22.0	67.9	139	49.5	5.9	.25	5.5
23	28.7	22.0	70.4	140	8.1	1.6	.25	3.3
24	30.9	22.6	70.8	144	0.2	5.8	.75	4.0
25	31.2	23.4	-	137	45.8	6.5	.25	4.4
26	27.8	22.1	72.0	138	0.8	8.0	1.25	4.0
27	30.0	22.7	-	152	6.0	8.7	1.00	2.0
28	28.9	22.2	70.0	142	7.3	5.5	.75	2.2
29	29.5	23.5	71.0	159	-	6.1	1.25	3.0
30	29.6	23.2	70.3	159	-	9.0	1.00	2.7
31	30.2	23.2	70.4	135	1.6	7.8	1.25	2.7
Means	29.8	22.7	70.3	139	229.8	5.7	.77	4.0

Atmospheric Electricity - 1930-31

The programme of work in atmospheric electricity during 1930 and 1931 was carried on in collaboration with the Department of Terrestrial Magnetism, Carnegie Institution, Washington, D.C., U.S.A. as in former years.

Continuous records of the gradient of electric potential in the atmosphere have been obtained at two stations. The Land Station is situated in the grounds of the Observatory and the Lagoon Station is a small hut erected over the shallow waters of the lagoon inside the coral reef at a distance of about half a kilometre from the shore.

The instruments employed are Benndorf electrometers fitted with ionium collectors. The values of the potential gradient in volts per metre have been based on reduction factors of 1.00 and 0.63 for the Land and Lagoon stations respectively and these factors have been checked from time to time by absolute determinations carried out at Watson's Island in the lagoon which is laid bare at low tide.

In order to obtain absolute observations during the complete range of the tide experimental determinations were carried out during 1931 using a stretched wire on a raft. These experiments showed that there is a tendency for the reduction factor for the Lagoon Station to vary with the rise and fall of the tide. In order to confirm this future absolute determinations will be performed using the raft anchored near a small platform which was constructed in December, 1931 in the lagoon about half way between the Land and Lagoon stations. The platform is much easier of access than Watson's Island.

The following classification of days has been adopted:-

- (a) Days during which no negative electricity occurs are days of character 0
- (b) Days during which negative electricity occurs over periods of less than three hours are days of character 1
- (c) Days during which negative electricity is recorded for more than three hours are of character 2
- (d) If for any reason the record fails during a continuous period of more than three hours the day is not classified.

TABLE 48 - Monthly Values, Atmospheric Electric Potential
Land Station, 1930



Month	Electric Character of Day			Number of days not classified	Mean Potential Gradient: Days of Character 0	Number of hours of Negative Potential recorded
	0	1	2			
Jan.	0	17	8	6	-	73.0
Feb.	3	7	6	12	104.3	50.7
Mar.	5	13	2	11	93.6	29.6
Apr.	8	6	2	14	87.5	23.0
May	10	14	0	7	93.3	24.4
June	11	3	3	13	95.2	23.5
July	7	2	0	22	93.0	6.1
Aug.	11	3	0	17	130.5	0.9
Sep.	12	4	0	14	120.7	4.8
Oct.	17	5	1	8	125.3	12.9
Nov.	6	7	4	13	97.4	36.2
Dec.	3	3	2	23	93.2	17.4
YEAR	93	84	28	160	103.1	302.5

Table 49 -Monthly Values, Atmospheric Electric Potential

Land Station, 1931

Month	Electric Character of Day			Number of days not classified	Mean Potential Gradient: Days of Character 0	Number of hours of Negative Potential recorded
	0	1	2			
Jan.	1	12	1	17	89.4	20.8
Feb.	2	9	4	13	78.5	57.3
Mar.	4	14	3	10	98.1	50.6
Apr.	12	8	1	9	97.8	19.3
May	10	12	3	6	110.8	29.4
June	12	3	3	12	107.9	16.7
July	16	4	1	10	114.1	9.5
August	10	3	0	18	104.2	3.2
Sep.	9	10	2	9	117.5	15.8
Oct.	9	11	2	9	102.5	25.8
Nov.	12	3	4	11	112.6	23.6
Dec.	4	15	6	6	117.5	58.7
YEAR	101	104	30	130	104.2	330.7

Table 50 - MONTHLY, SEASONAL AND ANNUAL MEANS OF POTENTIAL GRADIENT, 1930

For days without Negative Electricity at the Apia Land Station

Tabular values are the average values expressed in volts per metre, using reduction factor 1.00 for successive periods of one hour, civil reckoning, 165th meridian, mean time west (27m 06s fast on local time). The Seasonal Means are derived from the following grouping of months - Wet:- November, December 1929; January, February 1930. Dry:- May, June, July, August 1930.

Month	No. of days	Days																								
		0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Means
January	0																									
February	3	54	59	64	68	66	71	82	152	145	156	152	152	136	121	112	110	100	102	113	142	103	82	93	77	104.6
March	5	53	57	57	44	50	66	72	163	217	141	97	87	99	83	82	87	96	93	112	156	93	98	71	66	93.6
April	8	55	59	63	72	68	79	81	157	173	112	101	91	85	84	76	81	82	75	93	111	97	73	68	67	87.5
May	10	57	56	52	58	57	59	68	129	143	143	99	94	91	86	83	81	78	91	151	181	136	93	81	69	93.3
June	11	65	60	61	55	56	66	69	119	159	148	117	112	105	102	101	93	91	99	134	133	105	90	75	69	95.2
July	7	82	77	66	65	65	70	80	125	141	114	111	101	103	97	92	88	89	96	106	117	93	87	86	79	93.0
August	11	115	108	106	123	107	115	146	205	225	145	131	127	123	112	109	102	107	109	125	171	161	155	119	105	130.5
September	12	97	89	86	81	86	88	114	164	199	154	135	132	125	116	111	114	121	118	124	155	144	129	112	105	120.7
October	17	96	99	94	92	94	105	120	185	169	150	139	131	151	129	124	120	119	118	127	149	166	141	111	98	125.5
November	6	70	69	57	48	43	49	75	175	139	121	115	108	108	103	103	108	95	95	100	124	175	106	78	76	97.5
December	3	87	85	97	92	55	61	78	126	140	124	93	72	80	83	85	71	74	101	103	133	139	99	89	70	95.2
Year	93	75.7	74.4	73.0	72.5	67.9	75.4	89.5	154.5	168.2	137.1	117.3	109.7	107.8	101.5	98.0	95.9	95.6	99.7	117.1	142.9	128.8	103.0	89.4	80.1	103.1
Wet	18	88.0	88.7	85.3	86.7	87.0	97.3	137.7	204.0	173.3	136.3	124.0	123.0	111.0	101.3	97.0	96.0	89.3	95.7	112.3	141.7	119.3	108.0	107.0	98.5	112.8
Dry	39	79.7	75.3	71.3	75.3	71.3	77.5	90.7	119.5	167.0	137.5	114.5	108.5	105.5	99.3	96.3	91.0	91.3	98.7	129.0	150.5	123.7	101.5	90.3	80.5	103.0



International Seismological Centre

Table 51 - MONTHLY, SEASONAL AND ANNUAL MEANS OF POTENTIAL GRADIENT 1931

For days without Negative Electricity at the Apia Land Station

The tabular values are the average values expressed in volts per metre, using reduction factor 1.00 for successive periods of one hour, as indicated, civil reckoning, 165th meridian, mean time west (27m 06s fast on L.M.T.). The seasonal means are derived from the following grouping of months:-
 Wet:- November, December 1930; January, February 1931. Dry:- May, June, July and August 1931.

Month	No. of days	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	Means
January	1	62	68	56	50	50	62	68	162	208	118	112	93	93	106	93	87	81	99	143	87	62	50	42	89.4	
February	2	76	66	52	63	56	49	59	102	120	52	86	73	69	78	83	92	94	104	104	104	104	76	66	78.3	
March	4	60	58	65	68	82	88	104	122	168	101	90	97	98	86	94	97	111	164	168	85	93	78	98.3		
April	12	64	73	69	75	71	74	84	152	156	116	105	104	97	98	89	91	93	106	141	128	110	84	75	97.7	
May	10	73	67	71	70	70	75	80	152	204	157	158	126	127	123	106	98	89	127	165	137	116	95	76	110.9	
June	12	77	66	66	70	71	73	84	166	224	185	137	113	106	100	93	91	91	107	145	160	109	85	76	107.9	
July	16	89	82	84	76	87	95	100	152	153	142	134	129	122	115	107	110	108	119	145	138	124	109	119	114.3	
August	10	80	83	83	85	84	86	91	127	153	124	116	111	105	97	96	101	101	110	114	127	119	108	100	104.5	
September	9	94	90	95	99	93	100	120	195	132	158	129	117	107	105	101	104	101	143	159	133	122	104	102	117.5	
October	9	77	82	87	86	77	82	126	187	172	123	110	93	88	116	113	81	82	82	122	106	102	96	90	102.5	
November	12	102	92	90	85	87	103	174	221	167	138	112	107	94	90	88	86	98	118	143	123	111	93	96	112.6	
December	4	106	123	106	87	75	91	153	249	187	117	96	89	93	79	94	91	85	101	147	149	120	108	183	117.5	
Year	101	80.0	79.2	76.8	76.2	75.3	81.7	103.6	165.6	174.5	125.9	113.7	105.4	100.3	98.1	96.7	93.5	95.1	93.7	109.7	159.3	150.0	107.0	91.7	92.5	104.3
Wet 1930-31	17	73.7	72.0	65.5	63.3	50.5	54.7	69.5	141.3	151.7	103.7	101.5	89.7	88.5	86.7	90.5	87.5	84.7	92.3	99.0	126.0	126.3	92.7	73.3	63.5	69.5
Dry	48	79.7	74.5	76.0	75.3	78.0	82.7	88.7	149.3	163.5	152.0	131.3	119.7	115.0	108.7	104.0	101.5	100.5	96.7	115.7	142.3	140.5	117.0	99.3	92.7	109.4

