

Public Clocks.—The Government Buildings clock was checked daily at 9 h. The rate of this clock is subject to erratic changes, and the error occasionally exceeds half a minute. The question of an automatic control from the Observatory is under consideration. During 1937 the maximum errors observed were 25 sec. fast and 61 sec. slow. On April 7 the clock was overhauled and reset by the Post and Telegraph Department. It was again adjusted on April 26.

The General Post Office clock was checked at 9 h. daily by observing the first stroke of the hour broadcast by station 2YA. The maximum errors observed during 1937 were 6 sec. fast and $9\frac{1}{2}$ sec. slow.

A synchronous electric clock was checked daily at 9 h. and 15 h. The maximum variation in the readings during 1937 was 21 sec. This variation was observed over a period of seventy days, which was the longest uninterrupted run of the clock during the year.

ASTRONOMY.

Apart from the time service, the official astronomical work of this Observatory is practically confined to solar observations and observations of occultations of stars by the moon. Other astronomical work, however, is carried out by Mr. Thomsen, in collaboration with the New Zealand Astronomical Society. This Observatory also makes provision for Mr. M. Geddes to carry out aurora and other astronomical observations in Southland.

Solar Observations.—During 1937 a total of 101 observations of sunspots was made with the 5 in. refractor of the Wellington Philosophical Society's Observatory. These observations are normally carried out by Mr. Thomsen, but during his absence at the solar eclipse in May and June the work was carried on by the Acting-Director. Results of the sunspot observations are sent to Zurich, and reports are published by the Solar Section of the New Zealand Astronomical Society. Reports of particularly active groups are also supplied to the local press.

Occultations.—Observations of occultations have been carried out by officers of this Observatory with the assistance of voluntary observers of the New Zealand Astronomical Society and in co-operation with the Wellington City Observatory. Occultations have also been observed at New Plymouth by the local astronomical society. During 1937 conditions for observing were not good, and consequently the number of observations was small. In order to facilitate the carrying-out of occultation observations, Mr. Thomsen keeps the 4 in. telescope and a chronometer at his residence. The New Zealand occultation observations are sent to the Computing Section of the British Astronomical Association.

Auroral Work.—The photographic recording of auroræ has been carried on in Southland under the direction of Mr. M. Geddes, assisted by Mr. D. C. Berry, of Invercargill. The two observing-stations are located at Winton and Invercargill respectively, giving a base line of about twenty miles. The installation of wireless as a better means of communication between the two stations has been proceeded with, and should be completed early in 1938. Better communication will result in a larger number of simultaneous photographs for the determination of the heights of auroræ. In the matter of establishing better communication, assistance given by the Radio Emergency Corps of the New Zealand Amateur Transmitters is gratefully acknowledged. During 1937 a number of important auroræ were recorded, and a total of 532 single photographs were taken, including 79 simultaneous sets. The working-up of these observations involves a considerable amount of labour, but a start has been made with the work. Reports of the aurora observations are published in the *Journal of the New Zealand Astronomical Society*, and Mr. Geddes also reports direct to Professor Störmer.

Solar Eclipse of June 8, 1937.—The expedition organized and led by Mr. C. W. B. Michie to observe the total solar eclipse of June 8, 1937, at Canton Island included Mr. I. L. Thomsen, of this Observatory, as official representative. The Department of Scientific and Industrial Research also made arrangements to enable Mr. M. Geddes to join the expedition. The expedition left Auckland by mail-steamer for Suva on May 14, and was conveyed thence to Canton Island in one of His Majesty's ships. Twelve days were spent on the island in preparation for the eclipse, which was observed under favourable conditions. After the eclipse, the expedition returned to New Zealand by way of Samoa. The results of observations of this eclipse appear to be very satisfactory. Preliminary reports have already been published in the *Journal of the New Zealand Astronomical Society* and elsewhere, while more detailed reports are still in course of preparation. The nine corona plates taken at Canton Island have been deposited at the Observatory by Mr. Michie.

Other Astronomical Work.—Other astronomical work carried out during the year included observations of the moon, Jupiter, Saturn, star clusters, and the zodiacal light, by Mr. Thomsen, the results of which have been published in the *Journal of the New Zealand Astronomical Society*. Mr. Thomsen gave lectures in astronomy at Wellington College and the Teachers' Training College. He also computed an ephemeris for Comet Finsler, which was well observed in the Northern Hemisphere.

A study of the spectrum observations of the eclipse of December 14, 1936, made by Mr. B. E. Stonehouse, was completed and published in the *Journal of the New Zealand Astronomical Society*.

Besides auroral work, Mr. Geddes has carried out other astronomical work, mainly solar observations, with the 5 in. refractor which he has on loan from this Observatory. Reports of his work are published in the *Journal of the New Zealand Astronomical Society*.