

ANNUAL REPORT OF THE UNION OBSERVATORY

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Director Mr. R.T.A. Innes
(Union Astronomer)

This observatory appears in previous years as the Transvaal Observatory. When the union of the four colonies of South Africa took place, the two observatories maintained by the Colonial Governments (the Transvaal Observatory at Johannesburg and the Natal Observatory at Durban) and the four meteorological services of the four colonies passed under the control of the Minister of the Interior. It was decided that a separate meteorological branch should be formed as from 1912 April 1 under the Minister for Lands. Mr. Nevill retired from the Natal Observatory on pension in March, and Mr. Hodgson, his chief assistant, died a few weeks earlier; and the Government decided to close the observatory at Durban. The fine 8-inch Grubb refractor there with its accessories has been accepted by the Corporation of Durban; the 4-inch refractor has been loaned to the Natal University College at Maritzburg.

The Transvaal Observatory was then re-named the Observatory of the Union of South Africa, and the officer in charge the Union Astronomer. Three assistants were transferred to the new meteorological branch; amongst these was Mr. G.W. Cox, who had measured a considerable number of double stars.

The Union Observatory is to maintain its first-order meteorological station, which, it is believed, is the only one of its kind in the Union at the moment. Daily records are telegraphed to the Meteorological Services at Bulawayo, Cape Town, and Lourenco Marques.

The changes referred to above caused an interruption to the usual work of the Observatory.

Instrumental Equipment. - During the year this was increased by the arrival of the Zeiss stereo-comparator. Several trials indicate that star and planet places can be quickly measured with an accuracy equal to that of meridian observations. It is hoped to publish a description of this instrument in the course of the next twelve months. The building for the 26-inch refractor is practically ready to receive the telescope, but the glass disks for the lenses have not yet been cast.

Circular No.13, of the Transvaal Observatory and No.1 of the Union Observatory were distributed in 1912, and Nos. 2 and 3 are in print.

9-inch Refractor - Measurements of double stars commenced in 1911 were continued. Measures of 213 pairs (5 new) of which 56 are less than 1".0 distance, will appear in Circular No.4. The phenomena of Jupiter's Galilean Satellites were numerously observed. It is satisfactory to record that these observations made here since 1908 are to be compared both with Dr. de Sitter's theory (Proceedings, Amsterdam Academy, March 1908) and Professor Sampson's Tables. Dr. de Sitter is carrying out the comparison with his theory, whilst Mr. Gutesmann of the Bureau des Longitudes, Paris, is making the comparison with the tables.

All comets while south of the Sun's declination were observed when possible with both the 9-inch refractor and the Franklin-Adams star camera. The results have been published in either the *Astronomische Nachrichten* or the Observatory Circulars. The ephemeris for the expected return of Holmes's Comet was not sent direct to the observatory, and in consequence the Comet was not looked for until too late. The observatory staff is too small to let it look for work, but especial attention is always given to requests sent us for observations.

Latitude observations (2 $\frac{5}{8}$ -inch telescope) have been maintained by Messrs. Worsell, van der Spuy and Simpkins under the direction of Mr. W.M. Worsell. Dr. Albrecht has published the observations made between 1910 March 22 and 1911 November 13 in a supplement to the report of the International Latitude Service.

All the Franklin-Adams charts of the southern hemisphere with two exceptions have been obtained and transmitted to the Astronomer Royal. Other long-exposure plates, after partial examination here, have been sent to Mr. Hinks, to aid him in his researches on the distribution of nebulae.

This observatory has been asked to assist in the regular observation of minor planets by taking charge of the zones south of -9° Dec., and numerous plates have been taken by Mr. H.E. Wood. As quickly as these plates can be measured, the results are published. In addition to a crop of new minor planets, measures of the interesting planets Eros, Neutor, Achilles, and Hector were obtained; and also, on plates of 1911, some measures of MT. Orbits of several new planets have been calculated by Mr. Wood.

The time-service has been extended to Natal. One of the mean time clocks from the Natal Observatory has been put up in the Telegraph Department of the Durban Post Office as a reserve; but in ordinary course, the signal from the Observatory drops the time-ball on the Bluff at noon.

Seismological observations have been continued on the usual lines.