

ANNUAL REPORT OF THE UNION OBSERVATORY

1931

Director Mr. H.E. Wood, M.Sc. (Union Astronomer)

26½-inch Grubb Visual Refractor.- The year's work comprises:

Double Stars - 2925 measures of double stars (including the 9-inch measures) :
30 new pairs discovered.

Photographs of Double Stars.- 136 plates with multiple exposures.

Saturn's Satellites - 5 measures of Mimas; 6 measures of Enceladus.

Eros, 1930-31 Opposition - 77 measures of position; 89 measures of the elongation of Eros.

Photometry - 149 plates of clusters and variables.

Franklin-Adams Star Camera.- During the year, 1084 plates were obtained with this instrument, distributed as follows:-

| | | |
|------------------|------------------------------------|-------------|
| Short-Focus Lens | Minor planet regions and star maps | 247 plates. |
| | Variable star regions | 517 " |
| | Comets | 30 " |
| Long-Focus Lens | Eros plates | 186 " |
| | Photometry | 84 " |
| | Minor planets | 21 " |

Comet Encke 1931 a was photographed on June 14 and observed up to July 17. Unsuccessful attempts were made to photograph the return of Comet Schorr 1918 III and Comet Neujmin 1913 III.

Photographs of Eros were taken with the long-focus lens from 1930 December 21 until 1931 May 17. One series was taken on the meridian with ordinary plates, and a second series through a yellow filter on yellow sensitive plates on the meridian. and also at large hour-angles east and west. The measurement of the plates is in progress.

240 measured positions of minor planets have been forwarded to the Astronomisches Rechen-Institut.

Occultations of stars by the Moon.- The programme of the last few years has been maintained without alteration, and 167 occultations were observed during the year.

The results of the year's observations are as follows:-

| | s | " |
|--------|------|-----|
| 1931.2 | 9.8 | 5.4 |
| .4 | 10.6 | 5.8 |
| .6 | 9.9 | 5.4 |
| .9 | 9.0 | 4.9 |

The second column indicates the time by which the Moon has arrived too early at any longitude, and the third column the distance the Moon is ahead of its tabular longitude.

A series of 47 occultations, observed by Mr. G.E. Ensor of Pretoria, has been reduced and the results forwarded to Professor E.W. Brown.

Union Observatory Circulars.- During the year Circulars Nos.84 and 85 were distributed. 35 southern star maps were issued with these Circulars. Zones -22° , -28° , -34° are now completed, and the two maps required to complete Zone -40° are now in the hands of the Government printer.

The present state of the project is as follows:-

| | |
|---|------------|
| Maps already issued | 423 |
| Maps in the hands of Government printer | 18 |
| Maps still to be prepared | 115 |
| Total | <u>556</u> |

Miscellaneous.- Professor E. Hertzsprung, of Leiden Observatory, was at the observatory from 1930 December 2 to 1931 May 19.

Mr. H. van Gent, of Leiden Observatory, continued to use the Franklin-Adams star camera for the photographic investigation of variable stars until 1931 August 30 when he returned to Leiden.

The number of visitors to the observatory during the year has been 1230.