

ANNUAL REPORT OF THE UNION OBSERVATORY

JOHANNESBURG

1959

(Director, Dr W. S. Finsen, Union Astronomer)

STAFF

Dr W. H. van den Bos was a guest astronomer throughout the year, with the assistance of a Research Grant from the South African Council for Scientific and Industrial Research. Mr P. C. Seligmann, Senior Professional Officer in charge of the Time Service, resigned on April 30. Mr W. J. F. Nel, Library Assistant, resigned on January 31. Mr D. J. Smuts was appointed Assistant Professional Officer on May 1, Mr D. Grinker assumed duty as Clerical Assistant on May 30 and Mr G. C. Sherry was re-appointed Library Assistant on June 3. Three professional posts remained vacant at the end of the year.

The following assisted as demonstrators on public nights and in various other ways, and their help is gratefully acknowledged: Messrs H. C. Lagerweij, I. R. H. Brickett, J. Botham, A. Johnston, J. Vollmer, M.D. Overbeek, P. C. Seligmann, W. Bell and C. N. Williams.

ASTRONOMICAL RESEARCH

With the 26½-inch refractor 3728 micrometer measures of double stars were obtained. The principal observers were van den Bos (3230 measures in 358 hours on 119 nights), Knipe (465 measures in 120 hours on 43 nights) and Smuts (31 measures in 12 hours on 6 nights). The telescope was also used by Finsen with his eyepiece interferometer for 345 hours on 238 nights. The interferometer survey of all stars between + 20° and - 75° declination, to magnitude 6.5, was completed during the year. Altogether, 8073 examinations were made of 5551 stars, yielding 46 new close pairs, many of which already show considerable orbital motion.

The Franklin Adams Telescope at Hartbeespoort was used by Mr Bruwer and Mr J. Wolterbeek Muller of the Leiden Southern Station. Bruwer obtained 177 plates of minor planet and comet fields on 21 nights; Wolterbeek Muller obtained 49 plates and in addition took 5 comet plates for Bruwer. With the 3½-inch *f*/5.6 cameras mounted on the 9-inch and Franklin Adams telescopes 5 plates were taken by Bruwer and Knipe for various purposes.

With the 9-inch and 6/7-inch refractors 60 occultations were observed by Smuts, Botham, Knipe and Grinker; predictions for the fainter stars were supplied by Lagerweij. These telescopes were also used by Botham and Brickett on 22 nights for physical observations of Jupiter, Saturn and Mars. The 9-inch was also used by Knipe on 30 nights for photo-electric photometry, mainly of eclipsing variables, and 1247 readings were obtained.

Bruwer took 11 test plates with the Markowitz Moon Camera. Seligmann, van Delen and Finsen kept watch for artificial satellites and Botham for meteors on a few nights. At the Union Observatory preparations were made to obtain cinematographic and photoelectric records of the occultation of Regulus by Venus on 7th July but clouds interfered; a number of visual observations were obtained at Hartbeespoort and elsewhere.

TIME SERVICE

During the second half of the year the Time Service was practically unstaffed and routine maintenance was shared by non-specialist members of the staff.

Part of the electronic equipment has been modified for transistor operation with a view to making the installation more completely independent of power interruptions.

PUBLICATIONS

Union Observatory Circular No. 118 and twelve Time Service bulletins were issued during the year. The following papers appeared in other journals:-

- W.H. van den Bos: The Orbit of B 780, *Journal des Observateurs*, **42**, 79.
The Orbit of A 519, *Journal des Observateurs*, **42**, 93.
W.S. Finsen: The Orbit of ϕ 316, *Journal des Observateurs*, **42**, 81;
New Double Stars (IX-XIII), *MNASSA.*, **18**, 31, 56, 114 and
150.