

**ANNUAL REPORT OF THE REPUBLIC  
OBSERVATORY,**

**JOHANNESBURG**

**1962**

*(Director, Dr W. S. Finsen)*

**STAFF**

Mr N. van Delen resigned on January 31st and his post (Mechanician) remained vacant for the rest of the year. Mr S. W. Postma was appointed Assistant Professional Officer on 1st February.

The willing help of the following amateurs is again gratefully acknowledged: Messrs H. C. Lagerweij, J. H. Botham, J. Vollmer, I. R. H. Brickett, M.D. Overbeek and W. Bell.

**BUILDINGS**

Work on the new main building began in October. This building will provide badly needed accommodation for the time department and the library, in addition to offices, laboratories, dark-rooms and store-rooms. The 9-inch and 6/7-inch refractors will be transferred to domes on the roof.

**ASTRONOMICAL RESEARCH**

With the 26½-inch refractor 1002 micrometer measures were obtained by Knipe in 134 hours on 55 nights, and 178 measures by Postma in 79 hours on 50 nights, while Finsen used it with his eyepiece interferometer for 372 hours on 256 nights for the measurement of close pairs and the continuation of the interferometer survey.

The Franklin Adams telescope at Hartbeespoort was used by Bruwer and also by Mr J. Tinbergen of the Leiden Southern Station. Bruwer obtained 170 plates of minor planets and comet fields on 19 nights resulting in 218 minor planet and comet positions. Mr Tinbergen obtained 120 plates of variable star fields.

The 9-inch refractor was used by Knipe on 29 nights for photoelectric photometry, mainly of eclipsing variables, and 2019 readings were obtained. Knipe, Bruwer and Postma observed 19 occultations, mainly with the 9-inch and 6/7-inch

refractors; predictions for the fainter stars were again supplied by Lagerweij. These telescopes were also used by Botham for physical observations of Jupiter, Saturn and comet Humason.

### **TIME SERVICE**

The coordination of the ZUO time signals and standard frequencies with those of other stations was improved still further by increasing the stability of the GBR comparison receiver, and by the construction of a similar comparison unit for the 18 kc/sec transmissions from NBA. Hers devised a new electronic phase shifter drive unit which makes possible to adjust the ZUO frequency daily in steps of exactly one part in  $10^{10}$  over a range of - 100 to + 100 parts in  $10^{10}$ . Since 1962 November 1 the frequency of ZUO has been kept within  $\pm 5$  parts in  $10^{10}$  of both GBR and NBA at all times.

### **PUBLICATIONS**

Republic Observatory Circular No.121, the index to Volume 6 of Circulars of the Union Observatory, and twelve Time Service bulletins were issued during the year. The following papers appeared elsewhere.

- Finsen, W. S., The Role of the Interferometer in Double-Star Astronomy,  
*Pub. A.S.P.* **73**, 283, 1961.  
Botham, J. H., Jupiter and Saturn in 1961. *MNASSA.*, **21**, 52, 1962.