

**ANNUAL REPORT OF THE UNION OBSERVATORY  
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**26½-inch Grubb Visual Refractor.-** The double-star survey of the Southern Hemisphere is still in progress.

The year's work comprises:-

3177 measures of double stars (including the 9-inch measures)  
583 new pairs discovered.

Observations of the satellites, Mimas and Enceladus of Saturn were continued for Professor Georg Struve (Neubabelsberg). Observing conditions were not very favourable and only 22 measures of Mimas and 39 of Enceladus were obtained.

Some experimental work on double-star photography was carried out during the year and 29 plates, with multiple exposures, were taken of suitable double stars.

The year 1929, like 1928, was not a favourable one with respect to nights of good definition.

The formation of a card catalogue to include all measures of double stars south of  $-19^{\circ}$  is in progress.

**Franklin-Adams Star Camera .-** During the year 1218 plates were obtained with this instrument, distributed as follows:-

Minor planet regions and star maps	255 plates
Variable star regions	915 "
Comets	48 "

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

Comet 1929 c (Forbes) was observed photographically from 1929 August 3 to 1929 October 8. An unsuccessful search was made in October and December for Comet 1909 IV., which is expected to pass through perihelion in 1930 April.

Towards the end of the year an additional 10-inch photographic telescope was added to the Franklin-Adams mounting. The new lens, made by Messrs. Cooke, Troughton & Simms Ltd., has a focal length of 92 inches and is mounted in a metal tube.

Mr. H. van Gent of the Leiden Observatory has continued to use the Franklin-Adams star camera throughout the year for the photographic investigation of variable stars.

***Occultations of Stars by the Moon*** .- The programme of the last few years has been maintained. Predictions are made graphically for the disappearances, at about first quarter, of all stars in the Moon's way for which positions are given in the A.G. Catalogues; for those stars for which the elements are given in the Nautical Almanac, predictions are made by Dr. Comrie's semi-graphical process, and as far as possible the occultations of all such stars are observed.

During the year 1929 the number of occultations observed was 152.

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

	s	"
1929.1	10.6	5.8
.4	12.6	6.9
.6	11.2	6.1
.9	10.4	5.7

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.

Dr. J. Moir of Auckland Park, Johannesburg, who rendered valuable assistance in the observation of occultations, died on 1929 March 30.

***Time Service*** .- Throughout the year, time has been taken from the rhythmic signals sent out from Rugby, England, at 10h U.T.

***9-inch Grubb Refractor*** .- This telescope is now used mainly for observations of occultations of stars by the moon, eclipses of the satellites of Jupiter, and measures of the wider double stars. One night a week is set apart for visitors and, during 1929, 1677 visitors availed themselves of the privilege.

***Union Observatory Circulars, etc*** .- During the year Circulars Nos. 78, 79, and 80 were issued, and the MSS. of Circular No.81 was forwarded to the Government printer.

Of the Southern Star Maps, 47 were issued with these Circulars, and the present state of the project is therefore:-

Maps already issued

366

Maps in hands of Government printer	21
Maps still to be prepared	169
Total	<hr/> 556

*Miscellaneous* .- During the meeting of the British Association in South Africa in 1929 July-August, about 200 of the members, including many astronomers, visited the Observatory. It is interesting to record that the telegram announcing the discovery of Comet 1929 c (Forbes) was received whilst a large party of the British Association members was at the Observatory and that the Astronomer Royal assisted in the confirmation of the discovery.