

ANNUAL REPORT OF THE UNION OBSERVATORY

1917

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

Instrumental Equipment. - This remains unchanged.

9-inch Refractor (Mr. Innes). Measurements of double stars have been continued upon the usual lines, and the eclipses of Jupiter's satellites have been regularly observed. Miscellaneous observations were also made.

2.5/8-inch Talcott Telescope (Mr. Worsell).- This has been used for the time-service.

Franklin-Adams Star Camera.(Mr. Wood).- A few photographic observations of minor planets have been obtained during the year, and selected regions of the sky have been photographed for purposes of reproduction.

Twin-Telescope (Mr. Worsell).- Photographs of comet 1917 a (Mellish) and a few others were taken. A selected list of variable stars has been under observation.

Blink Microscope.- Work with this instrument has been almost continuous. The Greenwich Zone of $+66^\circ$ has now been searched, with the exception of a few regions for which no pairs of plates are available. The Sydney Zone of 53° has been done, and considerable progress with Zone -55° . A fine series of plates from the Cape Zone -45° has been blinked. By kind permission of H.M. Astronomer at the Cape, Mr. Wood spent the month of October there selecting early chart plates and taking repeat plates; in all he brought back 93 pairs of plates, which are now being blinked. A large number of proper motions have already been found. Amongst those that have been reduced to the arc of a great circle are the following stars:-

C.P.D.	Mag.	1875		Dec.		Centenial Proper Motion	
		h	m	°	"	"	°
Anon.	12.5	6	1.8	-55	19	70	towards 243
4033	9.0	10	54.2	-55	17	50	" 270
77	9.0	0	16.8	-55	12	57	" 185
Anon.	10.5	2	46.2	-53	40	53	" 345
"	12.5	4	5.9	-53	43	124	" 63
672	8.2	4	12.7	-53	48	99	" 69

Anon.	12.0	8	6.8	-52	37	82	"	316
3156	9.1	10	12.4	-51	52	64	"	90
5750	9.2	12	57.8	-51	45	116	"	224
9317	9.6	16	2.2	-52	35	55	"	200
9929	9.6	20	33.1	-53	7	108	"	180
1588	9.8	7	30.5	-45	1	55	"	322
3978	9.9	9	39.8	-45	11	72	"	224
9704	9.2	19	14.7	-45	18	81	"	185

Time-Service, Meteorological and Seismological Observations. These have been continued, but in November a slight reduction in the meteorological observations was made; the readings of the Earth-thermometers, for which there are now thirteen years' complete records, have been discontinued, and one of the several rain-gauges put out of commission.

Staff. Mr. H.E. Wood returned from voluntary military in Cerman East Africa in February, and has suffered at times from Malaria. Mr. E.L. Johnson also returned in January, but almost linmediately afterwards volunteered for the Royal Flying Corps, and left in April. He is now on military service in Europe. The work of the Observatory has been necessarily restricted.

Observatory Circulars. Nos. 36 to 40 were issued during the year, and No.41 is in the hands of the Government printer. The chief contents of the circulars issued are as follows:- No.36, variation of latitude 1910-1914, and observations of the R Corona Australis region; No.37, measures of Southern double stars, Melbourne and Cape proper motion stars found with the blink microscope, and a list of about 170 variable stars, with their range of magnitude and periods (as far as possible), found near Corona Australis by the blink method; No. 38 contains the first of the projected series of maps of the Southern sky, a second map was issued with Circular No.38, and others are in the hands of the Government printer; No.39 contains 38 sets of measures of place for Eros (433) extending over a fortnight, and the blink proper motions for 39 pairs of Cape plates along Zone -45° ; No.40 contains the results of the work on Proxima Centauri, namely, its parallax $=0''.784$ and its centennial proper motion $=385''.2$ towards $282^{\circ}.9$ and place observations of the bright comet 1917 a (Mellish).

Miscellaneous. Desk work has included work on the literal and numerical development of the perturbing functions required in Hansen's theory of Jupiter and Saturn, and some progress has been made in preparing eclipse-tables for Jupiter's Satellites I. and II., but the latter work has been delayed by Professor de Sitter's illness and the slowness of communication with Holland.

1918 January 8.