The Proper Motion of Sirius.

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Sirius.—The brightest star in the sky—lies within the zones allotted to the Nizamiah Observatory, Hyderabad, for the Astrographic Catalogue.

Plate No. 396 was exposed on 1914 December 21 (= 1914·969) with centre at approximately R.A. 6^h 44^m, Decln. $-17°$; exposures 15 min. and 8 min.

On this plate Sirius is near the edge and consequently considerably out of focus, the images consisting in a dark ring or halo within which is a dark circular disc with bright centre. The inner edge of the halo is clearly defined its diameter being about 6'·15" the outer edge shades off too imperceptibly to be accurately measured. The halos and dark discs formed by the two exposures overlap but the central white spots are separated and easily measureable. The symmetry of the halos and discs afford ·evidence that the object glass of the 8-inch telescope with which the plate was taken is sensibly free from tilt.

The position of the star (for 1900·0) given in the Washington A. G. Catalogue is—

R. A. 6^h 40^m 45^s ·56 Decln. 16° 34' 44" O. S.
or in " Standard Co-ordinates " referred to the above plate centre

$$\xi' = 3·6354 \qquad \eta' = 7·9657$$

while those obtained from the plate are

$$\xi' = 3·5996 \qquad \eta' = 8·0270$$

the difference $\Delta\xi' = -·0358 \qquad \Delta\eta' = +·0613$ is due to Proper Motion.

These differences are equivalent to $-0·716$ secs. and $-18"$·39 in R.A. and Decln. respectively.

Taking the Proper Motion and Orbital Motion from the Nautical Almanac we find

		Decln.
Proper Motion R.A.	—·558 secs.	—18·07
Orbital Motion	—·140	— 0·32 (for 1915·0)
	—·698	—18·39

as compared with —·716 secs. —18"·39 obtained above : the difference is less than the unit of measurement.

The total number of stars measured on the plate is 477, which is 3·9 times the number in the corresponding region. of Schonfeld's Map.