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— 11 —

# CHARTS AND MICROMETRICAL MEASURES

OF

# NEBULÆ,

MADE IN THE YEARS 1884, 1885, and 1886,

BY

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# INTRODUCTION.

THE charts and micrometrical measures of nebulae contained in this publication were made during the years 1884, 1885, and 1886, with the eleven-inch refractor. They are for the most part of objects south of the equator, many so low as to be beyond the reach of European observers. A power of 90 was employed altogether, giving a field of 15' in diameter. Into one side of the field was inserted a mica scale divided to half minutes of arc. Short zones taken with this furnished the ground-work of the charts. The fainter stars were afterwards put in by eye. Each chart comprises 30' in declination, and about two minutes in right ascension. The faintest stars depicted are eleventh or twelfth magnitude. No attempt was made to do more than to give the general appearance of the nebulae as seen with a low power.

The micrometrical measures were made with the filar micrometer, except in a few designated cases, when the ring was used. As the observatory at that time possessed no meridian circle, the comparison stars were selected from the catalogues in hand. It thus happened that in a few cases it was necessary to go so far in declination as to materially lessen the accuracy of the results. I would have revised these cases before publishing, but for the condition of the revolving dome, which practically prohibits the use of the equatorial. In 1887 the new meridian circle was mounted, and it seemed best to delay the printing of this work until the comparison stars, so far as appeared necessary, could be re-observed. Two of the brighter nebulae were also observed with the circle.

The resulting positions have all been compared with those given in Dr. Dreyer's New General Catalogue. The numbers of the old General Catalogue have been retained, except in the single instance where the nebula was not found in that catalogue. A number of discrepancies, confined, however, to the more southern nebulae, were brought to light. The following table gives those cases where the difference amounts to more than half a minute of arc:

G. C.	$\Delta a$	$\Delta \delta$	G. C.	$\Delta a$	$\Delta \delta$
67	5.	0'.6	1911	...	0'.5
361	...	0.7	2570	...	2.6
645	...	1.2	2586	...	1.5
714	21	0.5	2720	...	1.6
828	4	5.5	3477	...	0.9
1841	...	0.8	4270	...	0.7

A few of the measures were made by Mr. H. C. Wilson. Mr. P. Isham has rendered some assistance in preparing for publication, having computed the precessions and revised the manuscript.

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