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MEMOIRS

OF THE

Jun. 393

ROYAL ASTRONOMICAL SOCIETY



VOL. LI., 1892—95

LONDON
ROYAL ASTRONOMICAL SOCIETY
BURLINGTON HOUSE

1895

PRINTED BY
SPOTTISWOODE AND CO., NEW-STREET SQUARE
LONDON

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Index Catalogue of Nebulae found in the Years 1888 to 1894, with Notes and Corrections to the New General Catalogue. By J. L. E. DREYER, Ph.D.

[Received Jan. 10; read Jan. 11, 1895.]

THE *New General Catalogue* contains the places and descriptions of all the nebulae known at the end of the year 1887. In the following catalogue I have put together all the new nebulae of which the places and descriptions have been published since then and up to the end of 1894. Most of these objects are very faint and minute, and doubtless represent but a very small part of the innumerable host of similar objects which are within the reach of our largest telescopes, while not a few of those found with moderate-sized instruments will probably turn out to be nothing but two or three very faint stars close together. But although the majority of these new nebulae cannot compare in interest with those catalogued in earlier years, it seems useful to have their places readily accessible in an index catalogue, though the number of observers to whom this will be of use will naturally be a comparatively limited one.

The catalogue is arranged exactly like the *New General Catalogue*, and requires but little explanation. The names of the observers will be found in the second column. A high number in brackets, e.g. (3259), denotes the number of the *Astronomische Nachrichten*, where the account of the finding of the object is recorded. The other references are as follow :

B. is BIGOURDAN's second list, *Comptes Rendus*, March and April 1891. Numbers below 102 refer to his first list (*ibid.*, November and December 1887), a few objects from which are not in the *New General Catalogue*.

BURNHAM. See *Publications of the Lick Observatory*, vol. ii.

DENNING. *Monthly Notices*, vol. li. p. 96, and a privately communicated list, in which some of the positions in the printed list had been corrected.

ESPIN. See *Monthly Notices*, vol. liv. p. 327.

J. refers to M. JAVELLE'S two lists of 807 new nebulae found with the great equatorial of 30 inches aperture at the Nice Observatory (*Annales*, T. iv. and T. vi.). The positions are micrometrically determined.

KOBOLD. See *Astr. Nachr.*, No. 3184.

O. St. refers to the Publications of the Leander McCormick Observatory, Part 6 (southern Nebulae, micrometric observations).

PICKERING. See *Annals of Harvard College Observatory*, vol. xviii., where a list of objects discovered by photography is given.

Sf. refers to the list of objects found by Professor SAFFORD, and given in an appendix to the *New General Catalogue*. I have inserted them here (though found before 1888), as very few people ever think of referring to an appendix.

SPITALER. See *Astr. Nachr.*, Nos. 3167-68. The positions are micrometrically determined.

Sw. refers to Mr. LEWIS SWIFT'S four lists of nebulae found at the Warner Observatory, Rochester, N.Y.

VII. *Astr. Nachr.* 2859.

VIII. " " 2918.

IX. " " 3004.

X. " " 3094.

(X.) A few objects in *Monthly Notices*, vol. liii. p. 273.

The positions of these objects are generally reliable within one or two minutes of arc, but larger errors occur occasionally, and, as Mr. SWIFT rarely mentions whether he has seen other nebulae in the neighbourhood of the supposed new ones, it is generally very difficult to be certain that the latter are not identical with old ones. The absence of estimations of magnitudes and distances of the stars mentioned as being near the observed nebulae is also to be regretted.

THOME refers to some nebulae picked off the charts of the Cordoba Durchmusterung.

With regard to the descriptions of the objects it will be necessary for observers to bear in mind the aperture of the instrument with which each object has been found, as a comparison between the descriptions of the same nebula found by Mr. SWIFT with a 16-inch refractor, and by Dr. SPITALER with a 27-inch, or M. JAVELLE with a 30-inch, shows that the first-mentioned observer always describes it as much fainter than the others do, as is only natural.

Two clusters in MESSIER'S catalogue do not occur in the *New General Catalogue*, and may perhaps be mentioned here. They are (for 1860):

M. 25	18 ^h	23 ^m	17 ^s	109°	2'0	Cl of S st.
M. 48	8	6	54	91	32'1	Cl of S st.

I have inserted in the catalogue a few very extensive and diffused nebulosities detected by means of photography by Mr. BARNARD and Professor MAX WOLF. The fifty-two regions found by WILLIAM HERSCHEL to be more or less "affected with nebulosity" ought to be re-examined by means of photography. Their places are given in the *Phil. Trans.* for 1811, p. 275, and in AUWERS' catalogue of W. HERSCHEL'S nebulae (*Königsberger Beobachtungen*, xxxiv. p. 199).

At the end of the catalogue I have given some notes and corrections to the *New General Catalogue*, relating chiefly to objects the places of which have been more accurately determined during recent years. Much valuable work has been done in this direction by Dr. SPITALER and Mr. BURNHAM, but there are still many doubtful cases to be examined by the possessors of large telescopes, and it is much to be hoped that some of these may turn their attention from the finding of new "ceF, eS" nebulae to the less showy but more useful work of verifying the many old nebulae which require re-observation.