

A CATALOGUE OF BRIGHT NEBULOSITIES IN OPAQUE DUST CLOUDS

C. BERNES

Stockholm Observatory, Sweden

Received October 7, 1976

A catalogue containing data on regions where bright nebulosities are seen associated with opaque dust clouds has been compiled. Such nebulosities can be regarded as possible indicators of recent or still active star formation in the clouds. The catalogue may serve as a finding list for infrared and radio searches for obscured protostellar and stellar objects. It is based on a survey of photographic sky atlases, giving an almost complete sky coverage.

Key words: catalogue – bright nebulosities – dark clouds

1. INTRODUCTION

The catalogue contains data on 160 bright nebulosities seen in or at the edges of well-defined dark clouds with an opacity class, as defined by Lynds (1962), of at least 4. Some data are also given on the clouds where these nebulosities are found.

The presence of emission or reflection nebulae or other bright nebulosities, such as Herbig-Haro objects, in a dark cloud may be an indication of recent or possibly still active star formation. Searches in these regions at infrared and radio wavelengths for obscured protostellar or stellar objects and compact HII regions may therefore be fruitful. Understanding of the structure of these clouds should be facilitated by the facts that they typically are relatively nearby and at least to some extent are optically visible. Furthermore, since in general they are located away from the galactic equator (from a few degrees up to, and in some cases exceeding, 20°), confusion with more distant galactic infrared or radio sources is not likely to become a major problem.

2. THE SURVEY

The National Geographic Society – Palomar Observatory Sky Survey (red and blue plates), the Whiteoak extension (red plates) and those plates of the ESO (B) atlas (blue plates) that were available in September 1976 have been examined. The latter include all parts of the southern hemisphere not covered by the Palomar survey or the Whiteoak extension, with the exception of the area south of $\delta = -82^\circ.5$, the band between $\delta = -77^\circ.5$ and $\delta = -82^\circ.5$ from $\alpha = 0^h$ to $\alpha = 14^h$ and from $\alpha = 20^h$ to $\alpha = 24^h$, and a single $5 \times 2^\circ$ area at $\alpha = 5^h40^m$, $\delta = -46^\circ.5$. Thus about 99% of the sky has been examined, and since the remaining parts are located at fairly high galactic latitudes, it is not very likely that additional objects of this type will be found there.

Most of the objects found are reflection nebulosities. Emission nebulae have been excluded unless they are associated with reflection nebulosity or are clearly embedded in or otherwise physically connected to a dark cloud. The catalogue cannot be regarded as complete for nebulosities smaller than one arcmin. However, all Herbig-Haro objects in Herbig's (1974) catalogue that are clearly visible on the Palomar plates and are associated with opaque clouds have been included.

Positions of nebulae and clouds have been measured with an accuracy of about one minute of arc.

3. THE CATALOGUE

Columns 2–10 in the catalogue give data on the bright nebulosities, while columns 11–18 contain data on the dark clouds in which these objects are seen.

Column 1: Running number.

Column 2: Galactic longitude of nebulosity.

Column 3: Galactic latitude of nebulosity.

Column 4: Right ascension (1950.0) of nebulosity.

Column 5: Declination (1950.0) of nebulosity.

Column 6: Angular dimensions of nebulosity (minutes of arc).

First and second numbers refer to dimensions in the (equatorial) north-south and east-west directions, respectively. A cross (†) indicates that the object is clearly elongated in a direction not coincident with the north-south or east-west directions. In these cases the two numbers refer to the dimensions along the long and short axes. For approximately circular objects the diameter is given.

Column 7: Brightness of nebulosity.

An arbitrary scale has been used, where 1 corresponds to a faint and 4 to a very bright object. The figure refers to the brightest part of the nebulosity. The letter (B or R) indicates that the brightness classification has been based on the appearance on a blue or on a red plate, respectively. In the cases where both blue and red plates have been studied, the plate where the object appears brightest has been chosen. Parentheses indicate that only one plate type has been available. Since the appearance of an object is dependent on photographic conditions, such as the different plate qualities and emulsion characteristics of the three sky atlases, these brightness estimates may not be comparable from plate to plate.

Column 8: Type of nebulosity.

e = emission nebula

hh = Herbig-Haro object

r = reflection nebula

These classifications follow those made in the references mentioned in the explanations to column 9. Where such information was not available, the classification is either based on morphology and/or colour or, in a few cases, omitted.

Column 9: Identification of nebulosity.

The objects are denoted by their numbers in the following references:

vdB = van den Bergh (1966)

vdBH = van den Bergh and Herbst (1975)

DG = Dorschner and Gürtler (1963)

Haro = Haro (1953)

HH = Herbig (1974) and Strom *et al.* (1974) (Herbig-Haro objects)

S = Sharpless (1959)

In the cases where an object was not found in any of these references, the following catalogues were also searched:

Ced = Cederblad (1946)

Mü = Münch (1955)

A catalogue number in parenthesis indicates that the object as defined in the present catalogue is only a part of the object described in the reference.

Column 10: NGC/IC number of nebulosity.

Parentheses indicate that the object as defined in the present catalogue is only a part of the NGC/IC object. A few nebulosities are also designated by Messier (M) numbers.

Column 11: Position of nebulosity in cloud.

E = the nebulosity is located at the edge of the cloud

C = the nebulosity is seen in the centre of an approximately circular cloud

O = all other cases

It should be realized that these are two-dimensional descriptions of three-dimensional regions.

- Column 12: Galactic longitude of cloud.
 Column 13: Galactic latitude of cloud.
 Column 14: Right ascension (1950.0) of cloud.
 Column 15: Declination (1950.0) of cloud.
 Column 16: Angular dimensions of cloud (minutes of arc). See explanations to column 6.
 Column 17: Opacity of cloud.

The scale used corresponds to that defined by Lynds (1962), which runs from 1 to 6, where 6 denotes the highest opacity. However, Lynds' classifications of the individual clouds have not been followed. In some cases where the obscuration is different in different parts of the cloud, an opacity range is given.

- Column 18: Identification of cloud.

The clouds are identified by their number(s) in the Lynds (L) catalogue. In the cases where a cloud was not found in this reference, the following lists were also searched:

B = Barnard (1927)

CG = Hawarden and Brand (1976) and Sandqvist (1976) (cometary globules)

SL = Sandqvist and Lindroos (1976)

In a few cases other more common designations are also given. Parentheses indicate that the cloud as defined in the present catalogue is only a part of the cloud described in the reference.

ACKNOWLEDGEMENTS

The author is indebted to Dr. Aage Sandqvist for continuous support and advice, and to Drs. Andris Lauberts and Richard M. West for help with the ESO plates.

REFERENCES

- Barnard, E.E.: 1927, *A Photographic Atlas of Selected Regions of the Milky Way, I*, Carnegie Institution of Washington.
 Bergh, S. van den: 1966, *Astron. J.* **71**, 990.
 Bergh, S. van den and Herbst, W.: 1975, *Astron. J.* **80**, 208.
 Cederblad, S.: 1946, *Lund Medd.* II, no. 119.
 Dorschner, J. and Gürtler, J.: 1963, *Astron. Nachr.* **287**, 257.
 Haro, G.: 1953, *Astrophys. J.* **117**, 73.
 Hawarden, T.G. and Brand, P.W.J.L.: 1966, *Monthly Notices Roy. Astron. Soc.* **175**, 19P.
 Herbig, G.H.: 1974, *Lick Obs. Publ.* 658.
 Lynds, B.T.: 1962, *Astrophys. J. Suppl.* **7**, 1.
 Münch, L.: 1955, *Bol. Obs. Tonantzintla Tacubaya*, 2, **13**, 28.
 Sandqvist, Aa.: 1976, *Monthly Notices Roy. Astron. Soc.* **176**, P.
 Sandqvist, Aa. and Lindroos, K.P.: 1976, *Astron. & Astrophys.*
 Sharpless, S.: 1959, *Astrophys. J. Suppl.* **4**, 257.
 Strom, S.E., Grasdalen, G.L. and Strom, K.M.: 1974, *Astrophys. J.* **191**, 111.

C. Bernes

Stockholms Observatorium
 S-13300 Saltsjöbaden (Sweden)

Catalogue

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
No.	l_{neb}	b_{neb}	a_{neb}	δ_{neb}	Dim.	Br.	Type	Identification	NGC/IC	Loc.	l_{cl}	b_{cl}	a_{cl}	δ_{cl}	Dim.	Op.	Identific.
1	1°30	21°00	16°31'34"	-15°42'	1'	1R	r	DG144		O	1°38	20°96	16°31'34"	-15°40'	8×45'	6	L43
2	1.36	20.95	16 31.7	-15 41	1×2	2R	r	DG145		O							
3	2.99	9.90	17 13.1	-21 00	2×1	1B	r	vdB110		E	3.06	9.92	17 13.2	-20 56	10×18	5-6	L100
4	3.82	-1.06	17 55.4	-26 11	1	1B	r			O							
5	3.98	-1.04	17 55.7	-26 02	2	1B	r			O	3.85	-1.07	17 55.5	-26 10	50×12†	4	L133
6	4.15	-1.05	17 56.1	-25 54	3	2B	r			O							
7	7.05	-2.14	18 06.6	-23 55	35×25	4R	e	S29/31/32	NGC6559, IC1274/1275/ 4685	O	7.02	-2.26	18 07.0	-24 00	90	3-5	L210/211/212/ 213/214/221/ 224/227/230/ 241/242/243
8	7.40	-1.81	18 06.1	-23 27	2×3	3B	r	DG148, vdB115	IC4684	E							
9	26.78	3.52	18 25.0	-3 53	3×2	3R	e	S62		O	27.09	3.40	18 26.0	-3 40	40×60	4	(L559)
10	28.80	3.45	18 29.0	-2 08	10×18	2R	e	S64		O	28.65	3.66	18 28.0	-2 10	120×90	3-4	(L559)
11	31.39	5.19	18 27.6	+0 58	4	1B	r			E							
12	31.59	5.35	18 27.4	+1 13	1×2	4R	r			O	31.57	5.37	18 27.3	+1 12	35×20	4-5	(L572)
13	31.64	5.24	18 27.9	+1 12	3×4	2B	r	DG152, vdB123		O							
14	37.54	3.02	18 46.6	+5 25	1	4R				O	37.48	3.02	18 46.5	+5 22	10	3-4	(L638)
15	46.04	-1.32	19 18.1	+10 56	<1	4R	hh	HH32		O	46.22	-1.34	19 18.5	+11 05	40×30	5-6	L673
16	46.31	-1.12	19 17.9	+11 16	1	1R	r			O							
17	53.55	0.02	19 28.1	+18 10	9×6	2R	e+r	DG159, S82		O	53.54	0.04	19 28.0	+18 10	18×15	4	L727
18	57.04	3.02	19 24.0	+22 40	6×4	3B	r	Ced 167		E	57.13	2.68	19 25.5	+22 35	18×45	3-4	L768
19	58.09	3.46	19 24.5	+23 48	1	2B	r			E	58.03	3.30	19 25.0	+23 40	4×30†	6	L778
20	73.48	1.02	20 10.6	+35 46	<1	4B	r			E	73.49	1.01	20 10.7	+35 46	2×1	6	
21	78.50	0.97	20 25.3	+39 52	2	3B	r			O	78.39	1.08	20 24.5	+39 50	25×90	3-4	L889
22	80.02	2.64	20 22.8	+42 04	<1	4R				O							
23	80.05	2.71	20 22.6	+42 08	4	4B	r	DG162, vdB131	(NGC6914)	O	80.00	2.69	20 22.5	+42 05	60×20	3-4	L897
24	80.16	2.70	20 23.0	+42 13	4×3	4B	r	DG163, vdB132	(NGC6914)	O							
25	80.23	2.74	20 23.0	+42 18	4×3	4B	r		(NGC6914)	O							
26	88.38	1.42	20 57.5	+47 53	2	1B	r			E	88.37	1.45	20 57.3	+47 54	4×6	5	L958
27	90.16	-2.19	21 20.2	+46 42	1	1R	r			E	90.16	-2.19	21 20.2	+46 42	15×25	3-5	(L989)
28	90.25	-2.32	21 21.1	+46 40	2×1	3B	r			O							
29	90.32	2.67	20 59.6	+50 10	<1	2R				E	90.23	2.72	20 59.0	+50 08	6×20	6	L981
30	90.40	2.35	21 01.4	+50 01	2×3	4B	r	DG169		C							
31	90.44	2.17	21 02.4	+49 55	3×2	2B	r	DG171		E	90.41	2.45	21 01.0	+50 05	35×30	3-4	L984
32	90.52	2.27	21 02.3	+50 03	1	4B	r	DG170		E							
33	94.25	-5.45	21 50.7	+46 59	1	4B	r	vdB147		E							
34	94.39	-5.52	21 51.6	+47 01	12×11	4R	e	S125	IC5146	C	94.37	-5.50	21 51.4	+47 01	18×22	3-4	L1055
35	96.74	-15.14	22 32.5	+40 25	1×3	3B	r	(DG187)		O	96.73	-15.12	22 32.4	+40 26	4×8	4	
36	99.07	3.96	21 35.1	+57 17	<1	4B	r	vdB142	(IC1396)	O							
37	99.10	3.96	21 35.3	+57 18	1	3R			(IC1396)	O	99.01	4.01	21 34.5	+57 17	5×15	4-5	L1099/1105
38	102.43	15.95	20 36.0	+67 46	<1	1R				O	102.36	15.96	20 35.5	+67 43	5×22	5	L1152
39	104.06	14.19	21 01.0	+67 58	8	4B	r	DG167	NGC7023	C	103.96	14.11	21 01.0	+67 50	55×30	2-5	L1170/1172/ 1173/1174
40	105.40	9.89	21 41.8	+65 53	4×5	4B	r	DG176, vdB146	NGC7129	E	105.43	9.87	21 42.1	+65 53	15×8	3-4	L1181
41	105.44	9.94	21 41.7	+65 57	2	2B	r			E							
42	106.40	3.08	22 25.0	+60 58	1	2B	r			E	106.46	3.09	22 25.4	+61 00	12×7	4	L1195/1196
43	109.61	2.37	22 51.4	+61 53	5×4	2B	r	DG188, vdB155		E	109.62	2.50	22 51.0	+62 00	28×15	4	L1215/1216
44	110.18	2.62	22 54.9	+62 21	5×4	3R	e	(S155)		E	110.28	2.52	22 56.0	+62 18	15×20	4	(L1218)
45	110.26	11.37	22 12.2	+70 00	2	4B	r	DG179, vdB152		E	110.40	11.54	22 12.4	+70 13	27×9	4-5	(L1217)
46	111.29	9.44	22 33.7	+68 55	1	4B	r			O	111.29	9.41	22 33.9	+68 53	12×8	4	
47	111.36	19.72	21 02.2	+76 52	3×2	1B	r			E	111.72	20.13	21 00.0	+77 23	65×30	3-4	L1228
48	112.40	20.61	21 00.2	+78 11	1	2R				C	112.40	20.61	21 00.1	+78 11	6×7	4	
49	126.65	-0.78	1 19.8	+61 36	4×6	3R	e	S187		C	126.63	-0.77	1 19.6	+61 37	30×20	3-5	L1317
50	130.13	11.52	2 26.0	+72 46	4×2†	2B	r	(DG9)		E	130.17	11.50	2 26.3	+72 44	6×7	5	L1340
51	156.79	-11.92	3 46.2	+38 49	7×3	2B	r	vdB24		O	156.87	-11.77	3 47.0	+38 53	35×40	3-4	L1442
52	157.40	-20.64	3 22.4	+31 33	4×1	2R	r	DG14, vdB12		E	157.48	-20.59	3 22.8	+31 33	8×16	4	
53	157.95	-21.45	3 22.1	+30 36	1	2R				O	158.04	-21.45	3 22.4	+30 33	20×30	4-5	L1448
54	157.98	-21.24	3 22.8	+30 45	2	1B	r	DG15, vdB13		E							L1452
55	158.27	-20.59	3 25.6	+31 07	1	1R	r			O							L1450/1452
56	158.29	-20.44	3 26.1	+31 13	7	4B	r	DG18, vdB17	NGC1333	O							L1450/1452
57	158.29	-20.51	3 25.9	+31 10	1	2R	hh	HH12		O							L1450/1452
58	158.36	-20.46	3 26.3	+31 10	<1	1R	hh	HH4		O							L1450/1452
59	158.36	-20.56	3 26.0	+31 05	1	2R	hh	HH7/8/9/10/11		O	158.55	-21.16	3 25.0	+30 30	150×100	3-5	L1450/1452
60	158.42	-20.56	3 26.2	+31 03	<1	2R	hh	HH5		O							L1450/1452
61	158.46	-20.79	3 25.7	+30 51	<1	1R	hh	HH14		O							L1452
62	158.50	-20.63	3 26.3	+30 57	<1	1R	hh	HH18		O							L1452
63	159.13	-20.91	3 27.7	+30 22	<1	2R	r			O							L1452
64	159.16	-21.84	3 25.2	+29 37	4×6	1B	r	DG16, vdB16		E							L1452/1455
65	160.33	-18.16	3 39.8	+31 50	1×2	1B	r	DG21		O							
66	160.41	-17.66	3 41.6	+32 10	1	3B	r	DG24		O	160.56	-18.19	3 40.5	+31 40	130×120	3-5	L1470/1472
67	160.49	-17.81	3 41.4	+32 00	9×7	4B	r	DG23, vdB19	IC348	E							
68	162.47	1.50	4 58.7	+44 12	2×1	1B	r	vdB32		O	162.72	1.49	4 59.5	+44 00	40×25	4	L1477
69	165.32	-8.79	4 27.6	+35 20	1×2	1B	r	DG35	IC2067	O	164.61	-8.58	4 26.0	+36 00	140×90	3-4	(L1478)
70	165.35	-9.01	4 26.9	+35 10	9×8	4R	e+r	DG34, S222	NGC1579	O							
71	168.24	-16.31	4 11.3	+28 05	3×2	1R	r			C	168.25	-16.25	4 11.5	+28 07	30×40	4-5	(L1495)
72	168.91	-15.58	4 15.7	+28 08	7	1B	r	DG29		O	168.58	-16.10	4 13.0	+28 00	80×130	4-5	L1495
73	169.28	-14.95	4 18.9	+28 18	4×2	2R	r	DG30, vdB27		E							
74	171.83	-15.67	4 24.0	+26 00	3×4	2R	r	DG32		O	171.74	-15.62	4 23.9	+26 06	15×25	5-6	(L1521)
75	171.88	-15.35	4 25.2	+26 11	1	1R	hh	HH31		E	171.85	-15.38	4 25.2	+26 13	8×30	5-6	(L1521)
76	172.49	-7.97	4 52.6	+30 29	3×6	3B	r	DG48, vdB31		E	172.37	-8.04	4 52.0	+30 32	15×30	4-6	L1517/1519

Catalogue (*continued*)

(1) No.	(2) ℓ_{neb}	(3) b_{neb}	(4) α_{neb}	(5) δ_{neb}	(6) Dim.	(7) Br.	(8) Type	(9) Identification	(10) NGC/IC	(11) Loc.	(12) ℓ_{cl}	(13) b_{cl}	(14) α_{cl}	(15) δ_{cl}	(16) Dim.	(17) Op.	(18) Identific.
77	173°53	-13°67	4 ^h 35 ^m 5	+26°05'	2'	1 ^p	r			O	174°21	-13°79	4 ^h 37 ^m 0	+25°30'	120×60'	3-6	L1527/1532/ 1534, Heiles 2
78	174.01	-15.92	4 29.3	+24 16	1×2	1 ^p	r	DG37		O	174.05	-15.89	4 29.5	+24 15	35	4-5	L1529/1531
79	174.06	-13.70	4 36.9	+25 40	4×3	2 ^p	r	DG43	IC2087	O	174.21	-13.79	4 37.0	+25 30	120×60	3-6	L1532/1534, Heiles 2
80	174.07	-15.90	4 29.5	+24 14	2	1 ^p	r	DG38		O	174.05	-15.89	4 29.5	+24 15	35	4-5	L1529/1531
81	174.24	-15.71	4 30.6	+24 14	1	2 ^p	r	DG39		E	174.05	-15.89	4 29.5	+24 15	35	4-5	L1529/1531
82	174.68	-15.47	4 32.6	+24 04	1	1 ^p	r			O	174.71	-15.53	4 32.5	+24 00	18×25	4-6	L1535
83	175.74	-16.25	4 32.9	+22 47	1	3 ^p	r	DG41		O	175.47	-16.61	4 31.0	+22 45	40×80	3-4	L1536
84	176.22	-20.90	4 19.0	+19 25	1	3 ^p	e+r	DG31, vdB28, S238	NGC1554/1555	O	176.28	-20.89	4 19.2	+19 23	10×20	4	
85	178.87	-20.00	4 28.7	+18 06	< 1	4 ^p	hh	HH30		O							
86	178.89	-20.10	4 28.4	+18 01	3×5	2 ^p	e+hh	S239, HH29/102		C	178.88	-20.09	4 28.4	+18 02	25×35	4-6	L1551
87	178.92	-20.18	4 28.2	+17 57	< 1	3 ^p	hh	HH28		O							
88	191.42	-0.77	6 04.9	+18 41	2×1	4 ^p	r	DG87		E	191.53	-0.78	6 05.1	+18 35	28×10	4	L1574
89	192.64	-11.62	5 28.7	+12 07	6×4	3 ^p	e+r	Ced 51		O	192.14	-11.52	5 28.0	+12 35	70×60	2-5	L1577/1584
90	197.12	-10.24	5 42.7	+9 03	3×2	3 ^p	e+r	Ced 59		O	197.01	-10.32	5 42.2	+9 06	10×20	3-5	L1594/1596
91	201.32	0.32	6 28.4	+10 30	4	4 ^p	r	DG102	IC446	O							
92	201.42	0.32	6 28.6	+10 25	1	1 ^p	r			E							
93	201.49	0.39	6 29.0	+10 23	2	1 ^p	r	DG106, vdB79		O	201.40	1.00	6 31.0	+10 45	60×100	3-4	L1605/1607
94	201.67	0.69	6 30.4	+10 22	3	4 ^p	r	DG109, vdB82	NGC2247	O							
95	201.77	0.52	6 30.0	+10 12	5×3	4 ^p	r	DG108	NGC2245	E							
96	201.82	0.05	6 28.4	+9 56	22×20	3 ^p	r	DG103, vdB76/77/78	IC2169	O	201.64	0.03	6 28.0	+10 05	30×10	3-4	L1606
97	203.11	2.10	6 38.2	+9 45	35×20	4 ^p	e	(S273)	NGC2264	O	202.92	2.28	6 38.5	+10 00	130×40	3-4	
98	203.52	-24.71	5 04.4	-3 25	4×5	4 ^p	r	DG51, vdB33	NGC1788	E	203.49	-24.80	5 04.0	-3 26	10×8	4	L1616
99	204.77	-11.97	5 51.4	+1 39	2	4 ^p	r	vdB62		E	204.70	-11.82	5 51.8	+1 47	25×20	5-6	L1622
100	204.83	-14.00	5 44.4	+0 38	4×3	1 ^p	r			O							
101	205.18	-14.15	5 44.5	+0 16	7×9	4 ^p	r	DG81, vdB60	NGC2071	O							
102	205.33	-14.34	5 44.1	+0 03	12×15	4 ^p	r	DG78/79/80, vdB59	NGC2064/2067/ 2068, M78	O							
103	205.33	-14.57	5 43.3	-0 04	< 1	1 ^p	hh	HH20		O							
104	205.35	-14.61	5 43.2	-0 06	< 1	2 ^p	hh	HH19		O							
105	205.47	-14.58	5 43.5	-0 11	1	3 ^p	hh	HH24		O							
106	205.50	-14.60	5 43.5	-0 13	< 1	4 ^p	r			O							
107	205.54	-14.62	5 43.5	-0 16	< 1	1 ^p	hh	HH25/26		O							
108	205.96	-16.48	5 37.7	-1 30	5×4	3 ^p	r	DG72, vdB50	IC431	O							
109	206.07	-16.34	5 38.4	-1 32	7	4 ^p	r	DG74, vdB51	IC432	O							
110	206.50	-16.28	5 39.4	-1 52	25	4 ^p	e	(S277)	NGC2024	O							
111	206.85	-16.54	5 39.1	-2 17	8	4 ^p	e+r	vdB52	NGC2023	O							
112	207.07	-16.26	5 40.5	-2 20	4×5	4 ^p	r	DG77, vdB57	IC435	E							
113	207.81	-19.67	5 29.7	-4 33	7	1 ^p	r	DG56, vdB44	IC420	E							
114	208.44	-19.11	5 32.8	-4 49	20×30	4 ^p	e+r	S279	NGC1973/ 1975/1977	O							
115	208.79	-19.06	5 33.6	-5 05	< 1	3 ^p	hh	HH41, Haro 3a		O							
116	208.82	-19.07	5 33.6	-5 07	< 1	2 ^p	hh	HH42, Haro 4a		O							
117	209.08	-19.51	5 32.5	-5 32	50	4 ^p	e+r	S281	NGC1976/1982, M42/43, Orion nebula	O							
118	209.88	-19.78	5 32.9	-6 20	< 1	3 ^p	hh	HH33/40, Haro 9a		O							
119	210.07	-19.81	5 33.1	-6 30	< 1	2 ^p	hh	HH34		O							
120	210.16	-19.60	5 34.0	-6 29	2	1 ^p	r			O							
121	210.39	-19.77	5 33.8	-6 45	< 1	4 ^p	hh	HH3, Haro 10a		O							
122	210.41	-19.72	5 34.0	-6 45	2	4 ^p	hh+r	(DG60), vdB46, HH35	NGC1999	O	210°76	-19°61	5 ^h 35 ^m 0	-7°00'	300×90'	4	L1641
123	210.43	-19.76	5 33.9	-6 47	< 1	4 ^p	hh	HH1, Haro 11a		O							
124	210.46	-19.67	5 34.3	-6 46	< 1	1 ^p	hh	HH36		O							
125	210.47	-19.75	5 34.0	-6 49	< 1	4 ^p	hh	HH2, Haro 12a		O							
126	210.62	-18.29	5 39.5	-6 17	1	4 ^p	r	vdB54		O							
127	210.98	-19.44	5 36.0	-7 06	5	4 ^p	r	DG69, Haro 13a	IC429/430	O							
128	211.03	-19.52	5 35.8	-7 11	< 1	4 ^p	hh	HH43, Haro 14a		O							
129	211.08	-19.51	5 35.9	-7 13	< 1	1 ^p	hh	HH38		O							
130	212.26	-19.37	5 38.4	-8 09	3×1	1 ^p	r			O							
131	212.28	-19.11	5 39.4	-8 03	1	2 ^p	r			O							
132	212.47	-19.00	5 40.1	-8 10	5×8	1 ^p	r	DG75/76, vdB55		E							
133	224.45	-2.36	7 01.8	-11 15	2×3	4 ^p	r	(DG115)	NGC2327	O	224.46	-2.45	7 01.5	-11 18	8×12	4	(L1657)
134	225.48	-2.56	7 03.0	-12 15	8	4 ^p	e+r	DG116, vdB94, S297		E	225.43	-2.65	7 02.6	-12 15	10×15	4	(L1657)
135	256.16	-14.06	7 17.9	-44 30	4×3	2 ^p	r			E	256.11	-14.12	7 17.5	-44 29	5×13	4-6	CG1
136	259.55	-16.47	7 12.8	-48 28	2	(2 ^p)	r			E	259.48	-16.46	7 12.7	-48 24	8×6	3-5	CG13
137	259.97	-0.06	8 33.7	-40 30	2	(3 ^p)	e+r	vdBH17a, Mii18	NGC2626	E	259.94	-0.04	8 33.7	-40 28	5×3	5	
138	267.65	-7.34	8 26.1	-50 59	1	(1 ^p)	r	vdBH16		E	267.66	-7.37	8 26.0	-51 01	6×12	4	
139	267.89	1.81	9 09.5	-45 21	2	(2 ^p)	r	vdBH29c		O							
140	267.92	1.79	9 09.5	-45 23	1	(1 ^p)	r	vdBH29b		O	267.91	1.80	9 09.5	-45 22	15×12	3-4	
141	268.03	1.81	9 10.0	-45 27	2	(3 ^p)	r	vdBH29a		E							
142	297.05	-14.92	11 08.5	-76 21	7×5	(3 ^p)	r		IC2631	O							
143	297.17	-15.69	11 05.0	-77 06	3×4	(2 ^p)	r	Ced 110		O	297.28	-15.53	11 08.0	-77 00	100×40	4-6	
144	297.38	-15.91	11 06.8	-77 23	12×8	(2 ^p)	r	Ced 111		O							
145	314.88	-5.14	14 45.2	-65 02	1	(3 ^p)	r	vdBH63		E	314.79	-5.12	14 44.4	-65 03	5×12	5	
146	316.44	21.21	13 54.4	-39 41	2×1	1 ^p	r			F	316.46	21.13	13 54.6	-39 45	20×8	3-5	CG12
147	316.48	21.14	13 54.7	-39 44	4×3	4 ^p	r		NGC5367	F							

Catalogue (continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
No.	l_{neb}	b_{neb}	α_{neb}	δ_{neb}	Dim.	Br.	Type	Identification	NGC/IC	Loc.	l_{cl}	b_{cl}	α_{cl}	δ_{cl}	Dim.	Op.	Identific.
148	339 ^o 17	16 ^o 08	15 ^h 42 ^m 0	-34 ^o 08'	1'	(4R)	r			O	339 ^o 15	15 ^o 95	15 ^h 42 ^m 3	-34 ^o 15'	20×30'	5-6	(B228), SL13
149	339.52	9.34	16 05.3	-39 00	12×7	1B	r			O	339.62	9.25	16 06.0	-39 00	12×60	4-6	SL14
150	344.64	-4.25	17 18.2	-44 05	1	(2B)	r	vdBH87		E	344.64	-4.27	17 18.3	-44 06	3×6	5	
151	349.85	-3.52	17 30.5	-39 22	1	1B	r	vdBH91		E	349.84	-3.57	17 30.7	-39 24	15×18	2-4	
152	351.65	0.52	17 18.7	-35 37	2×3	(1R)	r			E	351.72	0.57	17 18.7	-35 32	7×10	5	B257, SL33
153	351.70	0.63	17 18.4	-35 31	2	(1R)	r			E							
154	352.89	17.04	16 22.5	-24 20	25×30	3B	r	DG138, vdB105	IC4603	C	352.97	16.95	16 23.0	-24 20	120×200	3-6	L1680/1681/ 1686/1687/ 1688/1690/ 1692/1696/ 1704, ρ Oph complex
155	353.69	17.68	16 22.6	-23 20	70	2B	r	DG139, vdB106	IC4604	E							
156	355.52	20.83	16 17.4	-19 57	15×18	4B	r	DG134/135, vdB102/103	IC4601	E	355.67	20.60	16 18.5	-20 00	30×45	3-5	L1719
157	359.83	-17.80	18 58.1	-37 06	1	(1R)	r			E	359.84	-18.10	18 59.5	-37 12	18×55 ⁺	5-6	SL40/41, R CrA complex
158	359.90	-17.84	18 58.4	-37 03	1	(2R)	hh	HH100		O							
159	359.92	-17.85	18 58.5	-37 02	1	(4R)	e+r	Ced 165c	NGC6729	O							
160	359.97	-17.77	18 58.2	-36 58	4	(4R)	r	Ced 165b	NGC6726/6727	O							