# A General Catalogue of Herbig-Haro Objects

**2. Edition**

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http://casa.colorado.edu/hhcat

## Abstract

A catalogue of all known Herbig-Haro objects is presented. For each object is given its HH number, previous designations if any, a position, the most probable energy source, and the region and distance. Additionally, extensive notes give a brief description of each object with detailed references to the literature. The catalogue will be updated as developments in the field require.



This catalogue will not be published in any journal. It is only available through the WWW at http://casa.colorado.edu/hhcat

Reference to this catalogue should be done as follows:

Reipurth, B.: 1999, *A general catalogue of Herbig-Haro objects*, 2. edition, http://casa.colorado.edu/hhcat

# Introduction

Two catalogues of Herbig-Haro objects have previously been published. George Herbig's *A draft catalog of Herbig-Haro objects* from 1974 gave positions, finding charts and a brief description of all 43 objects known up to that time. This was followed by *A working catalogue of Herbig-Haro objects* by von Hippel, Burnell, Williams (1988), which gave positions, proper motions, radial velocities and spectral information for 89 HH objects or groups of HH knots, although more HH objects were known at the time. Since then the increasingly common use of large-field CCD detectors with interference filters have caused an almost explosive development in the discovery rate of HH objects, which now number more than 400 objects.

In the days when discoveries of HH objects were rare and only few people worked in the field it was possible to assign consecutive HH numbers to the objects as they became known. This has long since become impossible, and lacking some sort of coordinating facility, newly discovered HH objects have been given a great variety of names (e.g. S140/HH3, GGD 34, N2264 HH 14-4, RNO 40E, WSB 47, Re 4 head, GN20.18.3/HH, Th 28, HHG33.3+0.2).

Some years ago I was approached by Dr. M.-C. Lortet of the IAU Nomenclature Committee, who asked me if something could be done to bring order to this wild growing subject. After some hesitation I embarked upon a survey of the entire literature on Herbig-Haro flows with the aim to produce a complete catalogue of all known HH objects, and the result was the first edition of *A General Catalogue of Herbig-Haro Objects*, published electronically in 1994. The present second edition has been greatly expanded over the intervening 5 years. The philosophy of this catalogue is closer to that of Herbig's 1974 catalogue than to that of the von Hippel, Burnell, Williams 1988 catalogue. The present catalogue contains three parts. First, a table listing for each object an HH number, any previous designations, a position, identification of a suspected driving source, the name of the general region of the object, and a distance estimate. Second, a note section where each object is briefly described and extensive references, as complete as possible, are given to the literature. Third, a section with references, where also the title is listed, to help give a first idea about the content of a paper. The catalogue is thus less a source of information, and more a tool to find information.

All known HH objects accepted as such now have an HH number, in continuation of the already existing HH numbers assigned by Herbig and others. In most cases this is a great improvement over previous designations. In a few cases well known and beloved names have been sacrificed, with regret, for the sake of the larger vision of having once and for all a single nomenclature system that gives a complete description of an increasingly important class of astrophysical objects. When an object had to be renamed, a special effort was made to find a number that, whenever possible, was somehow related to the previous name. Thus RNO 40 and 43 are now HH 240 and 243, Th 28 is HH 228, M16-HH1 is HH 216, the M42 objects HH 1-10 are HH 201 - 210, GGD34 is HH 234, etc. Hopefully any transition difficulties will be shortlived.

## What is an HH object (and what is not)?

In the course of this work, the question has inevitably arisen a number of times whether a certain object should or should not be included in the catalogue. While it is impossible to make very strict rules for what to include, at least a set of guidelines have been set up. HH objects are small-scale shock regions intimately associated with star forming regions. They generally have characteristic spectra which set them apart from photo-ionized regions. The best way to unequivocally identify a nebulous object in a star forming region as an HH object is to take a spectrum. Increasingly, however, a simpler technique is used, namely to take CCD images through a [SII] interference filter and through either a similar slightly blue- or red-shifted filter that avoids the [SII] lines or through a red broadband filter around 0.9 or 1.0 $\mu$m that transmits only few and weak HH lines. If the object observed appears strongly in the [SII] filter, but not in the other filter then it is virtually certain that the object is an HH object. However, this method becomes questionable if applied in regions away from molecular clouds and known star formation activity.

Another technique, pioneered by Solf, is to place a long slit on a young star at a variety of position angles. Very short HH flows, that would be difficult to see in a direct image where the brightness of the star could swamp it, will appear clearly after elimination of the stellar continuum. I have used the guideline that such flows that extend more than an arcsecond from a star, and which could thus in principle be studied morphologically using proper coronagraphic techniques, are included in the catalogue. Stars with HH emission lines but no appreciable extent have not been included.

With the advent of infrared imaging detectors, many HH objects have been found to emit significantly in $H_2$ and [FeII], with roughly similar morphologies at optical and infrared wavelengths. A number of molecular hydrogen objects have been detected in embedded molecular outflows with no optical counterparts. While it seems probable that these objects differ from ordinary HH objects only in the amount of extinction along the line-of-sight, much work on the infrared properties of HH flows remains to be done before it can be justified to expand the definition of HH objects to include all objects only detected in the infrared. However, for the first edition of this catalogue, this rule was relaxed for a few objects with additional strong morphological support for classification as an HH flow. Thus, HH 121 and HH 211, which are well collimated bipolar flows, located in regions of star formation and up to now only detected at infrared wavelengths, were included (two more objects, HH 212 and HH 288, which were first discovered as infrared objects, have subsequently been found to have some optical bona fide HH components). In hindsight, it must be recognized that it was not a good idea to make such exceptions, and consequently no further purely infrared emitting objects have been included in this HH catalogue.

In recent years an increasing number of shocked regions have been found in association with evolved stars. Kinematically and morphologically these objects do not appear to differ much from Herbig-Haro objects, but spectroscopically they are rather different because the shocks occur in highly processed material. From the point of view of hydrodynamics and shock physics these objects are undoubtedly as interesting as HH flows and supernova remnants and other supersonic flows. However, the most important aspect of the Herbig-Haro phenomenon is arguably the unique insights which it has provided into the processes that lead to the formation of stars. For

this reason it was felt that HH flows should remain strictly as a star formation phenomenon, as it was originally defined by Herbig and Haro. Thus, this catalogue does not contain any objects which arise from evolved stars.

### Electronic publishing

Electronic publishing has two major advantages. Firstly, it allows instantaneous and worldwide distribution without the long delays inherent in normal publishing. Secondly, it allows easy up-dating as often as required. It was originally foreseen that new versions of this catalogue would be made available of the order of once a year. However, in practice it has turned out to be so time consuming to keep track of the greatly expanding literature on HH objects, that five years have passed between the first and second version of the catalogue. I will continue to update the catalogue as the need arises and time permits. New versions will be announced in the *Star Formation Newsletter*.

The literature listed in this second edition is complete for papers published before 1 March 1999.

A limitation of the present catalogue is the absence of images of the various HH objects. However, work is rapidly progressing on a web-based version which includes images of each HH object. The next version of this catalogue will be an illustrated and fully linked web version.

### A cooperative effort

New bona fide Herbig-Haro objects will, as they appear in the literature, continue to be included in the catalogue. But if you have found a new HH object, you may consider to contact me when you are in the final stages of writing your paper, to find out what is the next available HH number. Unless waived, all such information will be treated as confidential and will not appear in new versions of the catalogue until your paper is accepted. New HH objects are continuously having numbers reserved this way, so *please do not simply take the next apparently free HH number as this could cause grave confusion.* With a collaborative effort among the workers in the Herbig-Haro community it will be possible to establish this catalogue and its future expanded editions as a tool that will make our work easier. Your cooperation in this matter is highly appreciated.

While a major effort has been invested in making the references to work on individual objects as complete as possible, it is inevitable that some important references could be missing. Certainly not all papers mentioning a given object should be listed, and an estimate of relevance has been applied to all papers. For a little known object even a single poor observation can be helpful, but it could be irrelevant for very well studied regions like L1551. So no universal rule of inclusion can be made. If you feel that a useful reference is missing, please send an e-mail to me at *reipurth@casa.colorado.edu*.

### Accuracy of positions

The positions listed in the catalogue are taken from the literature and are as such very heterogeneous. An effort has been made to take the best available positions, but in some cases

the positions are rather approximate. The equinox is 1950 and proper motions have not been considered. The goal has been to give positions that will allow an observer to point a telescope and take a CCD image and be sure that the object or an important part of it is in the field. For more details on positions, the reader must consult the references listed.

**Acknowledgements**

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Boulder, Colorado 1 May 1999 Bo Reipurth

# Catalogue of Herbig-Haro Objects

| HH | Other designation | $\alpha_{1950}$ | $\delta_{1950}$ | Suspected source | Region | Dist [pc] |
|---|---|---|---|---|---|---|
| 161 | LkH$\alpha$ 198B/HH | 0 08 48.9 | +58 32 45 | LkH$\alpha$ 198-B | Cassiopeia | 950 |
| 164 | LkH$\alpha$ 198 jet | 0 08 47.5 | +58 32 48 | LkH$\alpha$ 198 | Cassiopeia | 950 |
| 162 | V376 Cas/HH | 0 08 49.8 | +58 33 27 | V376 Cas | Cassiopeia | 950 |
| 461 | | 0 08 52.0 | +58 31 35 | LkH$\alpha$ 198-B | Cassiopeia | 950 |
| 288 | | 0 34 18.6 | +63 47 45 | IRAS00342+6347 | Cassiopeia | 2000 |
| 163 | AFGL4029 jet | 2 57 36.0 | +60 17 22 | AFGL 4029 | IC1848A | 2200 |
| 280 | | 3 20 40.5 | +30 07 22 | | Perseus | 300 |
| 267 | | 3 20 58.3 | +30 49 53 | | L1448 | 300 |
| 268 | | 3 21 17.6 | +30 37 36 | | L1448 | 300 |
| 193 | | 3 21 48.1 | +30 44 22 | | L1448 | 300 |
| 194 | | 3 21 54.1 | +30 37 09 | | L1448 | 300 |
| 196 | | 3 22 08.9 | +30 38 46 | | L1448 | 300 |
| 195 | | 3 22 10.4 | +30 36 28 | | L1448 | 300 |
| 197 | | 3 22 32.3 | +30 34 32 | | L1448 | 300 |
| 277 | | 3 23 00.1 | +30 28 51 | | L1448 | 300 |
| 278 | | 3 23 55.1 | +30 15 32 | | Perseus | 300 |
| 317 | | 3 24 07.3 | +30 01 34 | | L1455 | 300 |
| 279 | | 3 24 14.5 | +30 06 51 | | Perseus | 300 |
| 423 | | 3 24 30.9 | +30 05 30 | | L1455 | 300 |
| 318 | | 3 24 40.5 | +30 03 54 | | L1455 | 300 |
| 422 | | 3 24 43.9 | +30 01 15 | | L1455 | 300 |
| 338 | | 3 25 07.3 | +31 09 22 | | NGC 1333 | 220 |
| 351 | | 3 25 13.0 | +30 40 09 | | NGC 1333 | 220 |
| 339 | | 3 25 25.5 | +31 04 25 | | NGC 1333 | 220 |
| 340 | | 3 25 39.7 | +30 55 19 | | NGC 1333 | 220 |
| 13 | | 3 25 42.1 | +30 56 47 | | NGC 1333 | 220 |
| 14 | | 3 25 44.4 | +30 50 56 | | NGC 1333 | 220 |
| 341 | | 3 25 44.8 | +30 59 16 | | NGC 1333 | 220 |
| 334 | | 3 25 46.0 | +31 12 19 | | NGC 1333 | 220 |
| 342 | | 3 25 46.5 | +31 00 29 | | NGC 1333 | 220 |
| 343 | | 3 25 49.1 | +30 55 02 | | NGC 1333 | 220 |
| 426 | | 3 25 49.3 | +30 42 07 | | NGC 1333 | 220 |
| 350 | | 3 25 49.6 | +30 54 22 | | NGC 1333 | 220 |
| 12 | | 3 25 52.1 | +31 09 51 | SVS 12 | NGC 1333 | 220 |
| 15 | | 3 25 53.5 | +30 57 43 | | NGC 1333 | 220 |
| 344 | | 3 25 56.2 | +31 02 57 | | NGC 1333 | 220 |
| 11 | | 3 25 59.0 | +31 05 35 | SVS 13 | NGC 1333 | 220 |
| 10 | | 3 25 59.8 | +31 05 28 | SVS 13 | NGC 1333 | 220 |
| 8 | | 3 26 00.7 | +31 05 19 | SVS 13 | NGC 1333 | 220 |
| 9 | | 3 26 00.9 | +31 05 35 | SVS 13 | NGC 1333 | 220 |
| 7 | | 3 26 02.5 | +31 05 10 | SVS 13 | NGC 1333 | 220 |
| 16 | | 3 26 02.8 | +30 58 52 | | NGC 1333 | 220 |
| 333 | | 3 26 06.1 | +31 15 51 | | NGC 1333 | 220 |
| 345 | | 3 26 09.6 | +31 03 08 | | NGC 1333 | 220 |
| 6 | | 3 26 07.0 | +31 08 23 | | NGC 1333 | 220 |
| 347 | | 3 26 10.2 | +31 05 04 | | NGC 1333 | 220 |
| 335 | | 3 26 12.0 | +31 12 45 | | NGC 1333 | 220 |
| 352 | | 3 26 13.1 | +30 49 46 | | NGC 1333 | 220 |

| HH | Other designation | $\alpha_{1950}$ | $\delta_{1950}$ | Suspected source | Region | Dist [pc] |
|---|---|---|---|---|---|---|
| 17 | | 3 26 14.7 | +31 08 17 | | NGC 1333 | 220 |
| 5 | | 3 26 14.8 | +31 02 34 | | NGC 1333 | 220 |
| 346 | | 3 26 16.0 | +31 05 10 | | NGC 1333 | 220 |
| 4 | | 3 26 18.6 | +31 09 41 | | NGC 1333 | 220 |
| 348 | | 3 26 19.9 | +31 03 17 | | NGC 1333 | 220 |
| 18 | | 3 26 21.0 | +30 57 21 | | NGC 1333 | 220 |
| 336 | | 3 26 30.1 | +31 09 08 | | NGC 1333 | 220 |
| 349 | | 3 26 30.7 | +31 03 16 | | NGC 1333 | 220 |
| 353 | | 3 26 32.2 | +31 19 56 | | NGC 1333 | 220 |
| 368 | | 3 27 19.2 | +30 20 43 | | Barnard 1 | 220 |
| 369 | | 3 27 22.3 | +30 18 11 | | Barnard 1 | 220 |
| 370 | | 3 27 28.3 | +30 17 31 | | Barnard 1 | 220 |
| 427 | | 3 27 33.1 | +30 11 43 | | Barnard 1 | 220 |
| 371 | | 3 27 41.2 | +30 20 45 | | Barnard 1 | 220 |
| 372 | | 3 27 41.2 | +30 19 13 | | Barnard 1 | 220 |
| 428 | | 3 27 42.4 | +30 27 51 | | Barnard 1 | 220 |
| 429 | | 3 28 42.4 | +30 59 50 | | Barnard 1 | 220 |
| 430 | | 3 29 21.7 | +31 14 32 | | Barnard 1 | 220 |
| 356 | | 3 29 59.8 | +31 16 39 | | Barnard 1 | 220 |
| 431 | | 3 30 09.2 | +30 59 04 | IRAS03301+3057 | Barnard 1 | 220 |
| 432 | | 3 30 27.5 | +30 59 41 | | Barnard 1 | 220 |
| 433 | | 3 30 43.7 | +30 54 55 | IRAS03304+3100 | Barnard 1 | 220 |
| 211 | | 3 40 48.2 | +31 51 28 | | IC 348 | 300 |
| 366 | | 3 43 49.7 | +32 36 05 | B5 IRS1 | B5 | 350 |
| 367 | | 3 43 57.9 | +32 33 05 | B5 IRS3 | B5 | 350 |
| 462 | | 3 50 46.8 | +38 01 46 | IRAS03507+3801 | Perseus | 350 |
| 362 | | 4 01 20.5 | +26 12 31 | | L1489 | 140 |
| 361 | | 4 01 32.4 | +26 13 35 | | L1489 | 140 |
| 360 | | 4 01 40.5 | +26 10 51 | | L1489 | 140 |
| 463 | PP13S jet | 4 07 20.9 | +38 00 03 | PP13S | L1473 | 350 |
| 464 | | 4 07 22.4 | +37 59 52 | PP13N | L1473 | 350 |
| 465 | | 4 07 22.4 | +38 00 47 | PP13N | L1473 | 350 |
| 220 | CW Tau jet | 4 11 11.3 | +28 03 27 | CW Tau | Taurus | 140 |
| 156 | CoKu Tau-1 jet | 4 15 45.4 | +28 13 14 | CoKu Tau-1 | Taurus | 140 |
| 390 | | 4 16 36.1 | +27 08 42 | IRAS04166+2706 | Taurus | 140 |
| 391 | | 4 16 51.7 | +27 02 16 | IRAS04169+2702 | Taurus | 140 |
| 392 | | 4 17 49.8 | +26 52 46 | | Taurus | 140 |
| 355 | | 4 18 48.1 | +19 43 40 | T Tauri | Taurus | 140 |
| 157 | Haro 6-5B jet | 4 18 56.4 | +26 50 36 | Haro 6-5B | Taurus | 140 |
| 155 | HH 1555 | 4 19 01.9 | +19 25 05 | T Tauri | Taurus | 140 |
| 276 | | 4 19 02.8 | +26 50 25 | | Taurus | 140 |
| 255 | Burnham's Nebula | 4 19 04.2 | +19 24 55 | T Tau-S | Taurus | 140 |
| 300 | | 4 22 21.7 | +24 16 32 | IRAS04329+2436 | B18 | 140 |
| 159 | DG Tau B jet | 4 23 58.4 | +25 59 00 | DG Tau B | Taurus | 140 |
| 158 | DG Tau jet | 4 24 01.0 | +25 59 35 | DG Tau | Taurus | 140 |
| 410 | | 4 25 11.6 | +24 12 25 | Haro 6-10 | Taurus | 140 |
| 31 | | 4 25 14.4 | +26 11 04 | IRAS04248+2612 | B218 | 140 |
| 184 | Haro 6-10/HH | 4 26 21.9 | +24 26 29 | Haro 6-10 | Taurus | 140 |
| 414 | | 4 26 28.4 | +24 33 22 | IRAS04264+2433 | Taurus | 140 |
| 412 | | 4 26 46.1 | +24 30 40 | Haro 6-10 | Taurus | 140 |
| 413 | | 4 26 51.1 | +24 31 42 | IRAS04264+2433 | Taurus | 140 |

| HH | Other designation | $\alpha_{1950}$ | $\delta_{1950}$ | Suspected source | Region | Dist [pc] |
|---|---|---|---|---|---|---|
| 411 | | 4 27 14.9 | +24 36 14 | Haro 6-10 | Taurus | 140 |
| 393 | | 4 27 48.6 | +24 34 59 | | Taurus | 140 |
| 256 | GH 1 | 4 27 59.5 | +17 52 41 | L1551 IRS 5 | L1551 | 140 |
| 257 | GNG 17 | 4 28 07.0 | +17 54 17 | L1551 IRS 5 | L1551 | 140 |
| 258 | GH 2-8 | 4 28 11.0 | +17 57 07 | L1551 IRS 5 | L1551 | 140 |
| 28 | | 4 28 13.2 | +17 56 58 | L1551 IRS 5 | L1551 | 140 |
| 259 | SH 229 group | 4 28 20.3 | +17 57 38 | L1551 IRS 5 | L1551 | 140 |
| 265 | GNG 25 | 4 28 21.0 | +18 05 35 | | L1551 | 140 |
| 264 | GNG 4 | 4 28 24.6 | +17 59 52 | | L1551 | 140 |
| 102 | S239 | 4 28 25.3 | +18 00 57 | | L1551 | 140 |
| 263 | SH 214, GNG 3 | 4 28 29.5 | +18 01 24 | | L1551 | 140 |
| 260 | GNG 1 | 4 28 33.1 | +18 00 31 | L1551 IRS 5 | L1551 | 140 |
| 29 | | 4 28 33.2 | +18 00 00 | L1551 IRS 5 | L1551 | 140 |
| 261 | SH 219/220 | 4 28 36.1 | +18 00 30 | L1551 IRS 5 | L1551 | 140 |
| 154 | L1551 IRS5 jet | 4 28 39.9 | +18 01 39 | L1551 IRS 5 | L1551 | 140 |
| 30 | | 4 28 43.6 | +18 06 03 | HH 30 IRS | L1551 | 140 |
| 150 | HL Tau jet | 4 28 44.5 | +18 07 36 | HL Tau | L1551 | 140 |
| 153 | HL Tau H$\alpha$ jet | 4 28 45.4 | +18 07 16 | | L1551 | 140 |
| 151 | HL Tau VLA1 jet | 4 28 45.6 | +18 07 45 | HL Tau VLA1 | L1551 | 140 |
| 152 | XZ Tau jet | 4 28 46.1 | +18 07 35 | XZ Tau | L1551 | 140 |
| 454 | | 4 28 48.8 | +18 01 57 | L1551-NE | L1551 | 140 |
| 266 | GNG 24 | 4 28 58.2 | +18 10 28 | | L1551 | 140 |
| 262 | GH 9/10 | 4 29 07.1 | +18 05 03 | L1551 IRS 5 | L1551 | 140 |
| 319 | Haro 6-19 | 4 29 39.4 | +24 15 27 | | Taurus | 140 |
| 286 | | 4 29 47.6 | +18 10 18 | | L1551 | 140 |
| 394 | | 4 30 12.5 | +22 48 53 | IRAS04302+2247 | Taurus | 140 |
| 467 | | 4 30 31.2 | +24 14 12 | | B18 | 140 |
| 466 | | 4 30 33.7 | +24 15 17 | GK Tau | B18 | 140 |
| 468 | | 4 30 35.9 | +24 15 28 | | B18 | 140 |
| 123 | | 4 32 31.7 | −14 19 17 | L1642-2A | L1642 | 125 |
| 378 | | 4 32 39.6 | +54 32 07 | IRAS04327+5432 | Camelopardalis | ? |
| 230 | DO Tau jet | 4 35 24.2 | +26 04 55 | DO Tau | Taurus | 140 |
| 233 | | 4 35 30.9 | +26 04 45 | HV Tau | Taurus | 140 |
| 192 | | 4 36 43.4 | +25 57 37 | | L1527 | 140 |
| 395 | | 4 37 04.8 | +25 40 56 | IRAS04369+2539 | Taurus | 140 |
| 408 | | 4 38 34.7 | +25 50 44 | Haro 6-33 | Taurus | 140 |
| 231 | DP Tau jet | 4 39 34.3 | +25 10 00 | DP Tau | Taurus | 140 |
| 386 | UY Aur jet | 4 48 35.7 | +30 42 14 | UY Aur | Auriga | 140 |
| 229 | RW Aur jet | 5 04 37.7 | +30 20 14 | RW Aur | Auriga | 140 |
| 114 | | 5 15 00.7 | +07 12 39 | IRAS05155+0707 | L1589 | 470 |
| 328 | | 5 15 13.4 | +07 12 47 | | L1589 | 470 |
| 329 | | 5 15 58.6 | +07 05 12 | | L1589 | 470 |
| 115 | | 5 16 03.7 | +07 02 21 | IRAS05155+0707 | L1589 | 470 |
| 240 | RNO 40 | 5 17 13.8 | −05 54 45 | IRAS05173−0555 | Orion | 470 |
| 241 | RNO 40-E | 5 17 31.3 | −05 55 23 | IRAS05173−0555 | Orion | 470 |
| 190 | | 5 27 27.5 | +33 45 38 | | AFGL 5142 | 470 |
| 58 | | 5 28 22.7 | −04 11 44 | | Orion | 470 |
| 176 | | 5 28 38.3 | +12 08 43 | HK Ori | $\lambda$ Ori | 470 |
| 179 | | 5 29 14.5 | +12 33 16 | IRAS05295+1247 | $\lambda$ Ori | 470 |
| 244 | | 5 29 24.0 | +12 43 55 | IRAS05295+1247 | $\lambda$ Ori | 470 |

| HH | Other designation | $\alpha_{1950}$ | $\delta_{1950}$ | Suspected source | Region | Dist [pc] |
|---|---|---|---|---|---|---|
| 243 | RNO 43 | 5 29 39.0 | +12 51 12 | IRAS05295+1247 | $\lambda$ Ori | 470 |
| 245 | RNO 43-N | 5 29 44.3 | +12 56 05 | IRAS05295+1247 | $\lambda$ Ori | 470 |
| 59 | | 5 29 52.0 | −06 31 09 | | Orion | 470 |
| 60 | | 5 30 11.4 | −06 28 50 | | Orion | 470 |
| 83 | Re 17 | 5 31 05.4 | −06 31 39 | HH 83 IRS | L1641 | 470 |
| 84 | Re 18 | 5 31 45.3 | −06 35 58 | HH 83 IRS | L1641 | 470 |
| 295 | | 5 32 09.1 | −05 06 13 | IRAS05329−0505 | OMC-3 | 470 |
| 131 | | 5 32 18.9 | −08 30 03 | | Orion | 470 |
| 331 | | 5 32 40.4 | −05 02 42 | | OMC-3 | 470 |
| 269 | | 5 32 41.7 | −05 25 38 | | M42 | 470 |
| 201 | M42-HH1 | 5 32 44.0 | −05 23 48 | | M42 | 470 |
| 202 | M42-HH2 | 5 32 44.0 | −05 24 40 | | M42 | 470 |
| 205 | M42-HH5 | 5 32 44.4 | −05 22 18 | | M42 | 470 |
| 206 | M42-HH6 | 5 32 45.0 | −05 22 32 | | M42 | 470 |
| 207 | M42-HH7 | 5 32 45.2 | −05 22 43 | | M42 | 470 |
| 401 | HH1/2-NW | 5 32 45.8 | −06 31 32 | HH 1/2 VLA1 | L1641 | 470 |
| 208 | M42-HH8 | 5 32 46.3 | −05 24 15 | | M42 | 470 |
| 209 | M42-HH9 | 5 32 46.4 | −05 23 40 | | M42 | 470 |
| 323 | HH 33X | 5 32 46.5 | −06 19 35 | | L1641 | 470 |
| 322 | | 5 32 46.8 | −06 21 45 | | L1641 | 470 |
| 210 | M42-HH10 | 5 32 48.0 | −05 22 34 | | M42 | 470 |
| 357 | | 5 32 48.3 | −05 08 03 | | OMC 3 | 470 |
| 44 | | 5 32 48.5 | −05 12 19 | | NGC 1976 | 470 |
| 407 | | 5 32 50.5 | −06 01 32 | | L1641 | 470 |
| 33 | | 5 32 51.5 | −06 19 35 | HH 34 IRS | L1641 | 470 |
| 293 | | 5 32 53.6 | −05 03 08 | | OMC-3 | 470 |
| 40 | Haro 9a | 5 32 54.5 | −06 20 16 | HH 34 IRS | L1641 | 470 |
| 203 | M42-HH3 | 5 32 54.8 | −05 26 51 | | M42 | 470 |
| 385 | | 5 32 55.0 | −05 09 13 | | OMC 2/3 | 470 |
| 204 | M42-HH4 | 5 32 55.2 | −05 27 06 | | M42 | 470 |
| 294 | | 5 32 55.2 | −05 05 55 | IRAS05329−0505 | OMC 2/3 | 470 |
| 384 | | 5 32 57.7 | −05 11 16 | | OMC 2/3 | 470 |
| 85 | Re 20 | 5 32 58.2 | −06 22 15 | HH 34 IRS | L1641 | 470 |
| 383 | | 5 32 58.7 | −05 09 45 | | OMC 2/3 | 470 |
| 126 | Re 21 | 5 33 00.5 | −06 24 39 | HH 34 IRS | L1641 | 470 |
| 287 | | 5 33 01.9 | −05 07 08 | | OMC 2/3 | 470 |
| 34 | | 5 33 03.7 | −06 28 53 | HH 34 IRS | L1641 | 470 |
| 45 | | 5 33 06.3 | −04 52 43 | | NGC 1977 | 470 |
| 173 | | 5 33 08.7 | −06 34 53 | | L1641 | 470 |
| 134 | | 5 33 10.1 | −06 32 10 | | L1641 | 470 |
| 324 | | 5 33 14.0 | −06 20 25 | | L1641 | 470 |
| 330 | | 5 33 14.2 | −05 06 34 | | L1641 | 470 |
| 86 | Re 25 | 5 33 14.3 | −06 38 04 | HH 34 IRS | L1641 | 470 |
| 222 | Orion Streamers | 5 33 15.6 | −06 24 54 | HH 222 VLA | L1641 | 470 |
| 87 | Re 26 | 5 33 17.2 | −06 39 21 | HH 34 IRS | L1641 | 470 |
| 88 | Re 27 | 5 33 18.0 | −06 39 46 | HH 34 IRS | L1641 | 470 |
| 310 | | 5 33 22.2 | −05 37 56 | | L1641 | 470 |
| 326 | | 5 33 23.2 | −06 33 55 | | L1641 | 470 |
| 127 | Re 28 | 5 33 24.4 | −07 02 08 | | L1641 | 470 |
| 325 | | 5 33 24.5 | −06 31 10 | | L1641 | 470 |

| HH | Other designation | $\alpha_{1950}$ | $\delta_{1950}$ | Suspected source | Region | Dist [pc] |
|---|---|---|---|---|---|---|
| 327 | | 5 33 24.6 | −06 37 20 | | L1641 | 470 |
| 316 | | 5 33 28.1 | −06 06 44 | | L1641 | 470 |
| 41 | Haro 3a | 5 33 34.1 | −05 04 40 | IRAS05329−0505 | L1641 | 470 |
| 308 | | 5 33 34.4 | −06 02 15 | | L1641 | 470 |
| 309 | Re 33 | 5 33 36.2 | −05 51 37 | | L1641 | 470 |
| 42 | Haro 4a | 5 33 37.3 | −05 06 31 | IRAS05329−0505 | L1641 | 470 |
| 128 | Re 31 | 5 33 40.7 | −05 06 28 | IRAS05329−0505 | L1641 | 470 |
| 307 | | 5 33 41.0 | −06 06 05 | | L1641 | 470 |
| 306 | Re 34 | 5 33 41.5 | −06 10 36 | | L1641 | 470 |
| 129 | Re 32 | 5 33 43.3 | −05 05 59 | IRAS05329−0505 | L1641 | 470 |
| 299 | | 5 33 43.3 | −06 21 49 | | L1641 | 470 |
| 296 | | 5 33 45.2 | −06 19 12 | | L1641 | 470 |
| 3 | Haro 10a | 5 33 45.8 | −06 44 53 | | L1641 | 470 |
| 61 | | 5 33 47.4 | −07 08 51 | | L1641 | 470 |
| 62 | | 5 33 47.5 | −07 12 51 | | L1641 | 470 |
| 145 | | 5 33 48.5 | −06 48 11 | | L1641 | 470 |
| 297 | | 5 33 49.3 | −06 18 22 | | L1641 | 470 |
| 303 | Re 35/36 | 5 33 52.7 | −06 21 24 | IRAS05338−0624 | L1641 | 470 |
| 1 | Haro 11a | 5 33 54.5 | −06 46 57 | HH 1/2 VLA1 | L1641 | 470 |
| 298 | | 5 33 55.4 | −06 23 40 | | L1641 | 470 |
| 144 | | 5 33 55.4 | −06 47 56 | HH 1/2 VLA2 | L1641 | 470 |
| 35 | | 5 33 56.6 | −06 43 40 | V380 Ori | L1641 | 470 |
| 146 | | 5 33 56.8 | −06 50 10 | | L1641 | 470 |
| 305 | Re 37/38/39 | 5 33 57.0 | −06 17 32 | | L1641 | 470 |
| 148 | | 5 33 57.4 | −06 45 03 | | L1641 | 470 |
| 147 | | 5 33 56.9 | −06 46 46 | IRAS05339−0646 | L1641 | 470 |
| 2 | Haro 12a | 5 33 59.7 | −06 49 04 | HH1/2 VLA1 | L1641 | 470 |
| 304 | Re 41/42 | 5 34 10.6 | −06 16 42 | | L1641 | 470 |
| 301 | Re 43 | 5 34 12.7 | −06 23 04 | | L1641 | 470 |
| 130 | Re 45 | 5 34 20.1 | −06 51 43 | V380 Ori | L1641 | 470 |
| 36 | | 5 34 20.7 | −06 46 01 | | L1641 | 470 |
| 63 | | 5 34 21.0 | −04 27 45 | | Orion | 470 |
| 302 | Re 44 | 5 34 22.0 | −06 22 25 | | L1641 | 470 |
| 285 | AFGL5157/HH5 | 5 34 30.5 | +31 57 17 | | AFGL 5157 | 1800 |
| 281 | AFGL5157/HH1 | 5 34 32.8 | +31 58 28 | | AFGL 5157 | 1800 |
| 282 | AFGL5157/HH2 | 5 34 33.5 | +31 58 19 | | AFGL 5157 | 1800 |
| 292 | | 5 34 33.7 | −06 35 12 | BE Ori | L1641 | 470 |
| 283 | AFGL5157/HH3 | 5 34 34.8 | +31 58 11 | | AFGL 5157 | 1800 |
| 403 | | 5 34 36.7 | −05 54 40 | | L1641 | 470 |
| 284 | AFGL5157/HH4 | 5 34 38.3 | +31 57 51 | | AFGL 5157 | 1800 |
| 404 | | 5 34 48.7 | −05 45 49 | | L1641 | 470 |
| 402 | HH1/2-SE | 5 34 52.0 | −07 02 24 | HH 1/2 VLA1 | L1641 | 470 |
| 405 | Re 46 | 5 34 57.7 | −05 45 20 | | L1641 | 470 |
| 406 | | 5 35 11.7 | −05 41 05 | | L1641 | 470 |
| 89 | Re 47 | 5 35 21.9 | −06 47 47 | | L1641 | 470 |
| 64 | | 5 35 22.3 | −07 07 12 | | L1641 | 470 |
| 289 | | 5 35 38.5 | −01 45 55 | IRAS05355−0146 | Ori-I-2 | 470 |
| 43 | Haro 14a | 5 35 45.4 | −07 11 04 | HH 43 IRS1 | L1641 | 470 |
| 183 | | 5 35 52.6 | −07 04 06 | V883 Ori | L1641 | 470 |
| 38 | | 5 35 56.5 | −07 13 18 | | L1641 | 470 |
| 449 | | 5 36 17.5 | −07 14 22 | Haro 4-249 | L1641 | 470 |

| HH | Other designation | $\alpha_{1950}$ | $\delta_{1950}$ | Suspected source | Region | Dist [pc] |
|---|---|---|---|---|---|---|
| 469 | | 5 36 54.0 | −07 28 03 | Haro 4-255FIR | L1641 | 470 |
| 446 | | 5 36 54.9 | −02 35 05 | | $\sigma$ Ori | 470 |
| 470 | | 5 37 03.8 | −07 29 51 | Haro 4-255 | L1641 | 470 |
| 444 | | 5 37 09.0 | −02 32 56 | V510 Ori | $\sigma$ Ori | 470 |
| 445 | | 5 37 09.0 | −02 34 50 | A0976-357 | $\sigma$ Ori | 470 |
| 447 | | 5 37 38.1 | −02 35 05 | Haro 5-39 | $\sigma$ Ori | 470 |
| 65 | | 5 37 53.8 | −07 26 36 | Re 50 IRS | L1641 | 470 |
| 66 | | 5 37 55.0 | −02 04 04 | | L1630 | 470 |
| 67 | | 5 38 32.6 | −01 48 06 | | L1630 | 470 |
| 90 | Re 51 | 5 38 52.8 | −01 11 29 | HH 91 IRS | L1630 | 470 |
| 248 | N2023-HH2 | 5 38 55.6 | −02 24 30 | | NGC 2023 | 470 |
| 247 | N2023-HH1,4,5 | 5 39 00.9 | −02 18 52 | HH 247 star C | NGC 2023 | 470 |
| 249 | N2023-HH3 | 5 39 01.9 | −02 25 08 | | NGC 2023 | 470 |
| 68 | | 5 39 08.7 | −06 27 20 | | Orion | 470 |
| 69 | | 5 39 15.6 | −06 31 18 | | Orion | 470 |
| 91 | Re 52/53 | 5 39 25.9 | −01 15 01 | HH 91 IRS | L1630 | 470 |
| 92 | Re 54 | 5 39 48.9 | −01 19 52 | | L1630 | 470 |
| 93 | Re 55 | 5 40 23.8 | −01 27 08 | | L1630 | 470 |
| 94 | Re 56 | 5 40 56.3 | −02 34 14 | | L1630 | 470 |
| 212 | | 5 41 18.9 | −01 04 09 | | L1630 | 470 |
| 95 | Re 57 | 5 41 22.5 | −02 39 03 | | L1630 | 470 |
| 175 | | 5 42 03.0 | +09 09 00 | IRAS05417+0907 | B35 | 470 |
| 19 | | 5 43 16.0 | −00 06 20 | | NGC 2068 | 470 |
| 20 | | 5 43 21.5 | −00 04 14 | | NGC 2068 | 470 |
| 21 | | 5 43 22.0 | −00 05 36 | | NGC 2068 | 470 |
| 37 | SSWMW 18-37 | 5 43 22.2 | −00 06 39 | | NGC 2068 | 470 |
| 70 | | 5 43 28.7 | −00 06 43 | | NGC 2068 | 470 |
| 26 | | 5 43 31.1 | −00 15 42 | SSV 59 | NGC 2068 | 470 |
| 25 | | 5 43 33.2 | −00 14 31 | SSV 59 | NGC 2068 | 470 |
| 24 | | 5 43 36.1 | −00 11 02 | SSV 63 | NGC 2068 | 470 |
| 22 | | 5 43 40.3 | −00 06 36 | | NGC 2068 | 470 |
| 23 | | 5 43 40.9 | −00 04 37 | IRAS05436−0007 | NGC 2068 | 470 |
| 27 | | 5 43 49.4 | −00 14 45 | | NGC 2068 | 470 |
| 291 | | 5 44 02.9 | +20 58 48 | | CB 34 | 1500 |
| 290 | | 5 44 04.5 | +20 59 08 | | CB 34 | 1500 |
| 71 | | 5 44 46.1 | +00 39 43 | | L1630 | 470 |
| 471 | | 5 45 00.6 | +00 37 47 | LkH$\alpha$ 316 | L1630 | 470 |
| 472 | | 5 45 04.5 | +00 37 35 | | L1630 | 470 |
| 473 | | 5 45 06.2 | +00 36 59 | | L1630 | 470 |
| 474 | | 5 45 11.8 | +00 38 05 | | L1630 | 470 |
| 311 | | 5 47 13.6 | +02 53 01 | HH 111 VLA | L1617 | 470 |
| 110 | | 5 48 47.8 | +02 54 09 | | L1617 | 470 |
| 270 | | 5 48 52.8 | +02 55 22 | HH 270 IRS | L1617 | 470 |
| 111 | | 5 49 07.2 | +02 47 52 | HH 111 VLA | L1617 | 470 |
| 121 | | 5 49 09.7 | +02 47 58 | HH 111 VLA | L1617 | 470 |
| 116 | | 5 49 09.7 | +08 24 40 | IRAS05494+0820 | L1598 | 470 |
| 112 | | 5 49 14.4 | +02 59 47 | | L1617 | 470 |
| 117 | | 5 49 39.2 | +08 15 31 | IRAS05496+0812 | L1598 | 470 |
| 118 | | 5 49 40.0 | +08 09 34 | IRAS05496+0812 | L1598 | 470 |
| 113 | | 5 50 58.1 | +02 42 49 | HH 111 VLA | L1617 | 470 |
| 122 | | 5 52 03.2 | +01 43 26 | | L1622 | 470 |

| HH | Other designation | $\alpha_{1950}$ | $\delta_{1950}$ | Suspected source | Region | Dist [pc] |
|---|---|---|---|---|---|---|
| 396 | | 5 55 03.4 | +16 32 00 | G192.16-3.82 | Gemini | 2000 |
| 397 | | 5 55 30.7 | +16 32 31 | G192.16-3.82 | Gemini | 2000 |
| 273 | GGD17/HH3 | 6 10 18.3 | −06 10 56 | | L1646 | 830 |
| 272 | GGD17/HH2 | 6 10 21.9 | −06 10 30 | | L1646 | 830 |
| 271 | GGD17/HH1 | 6 10 23.9 | −06 12 10 | Bretz 4 | L1646 | 830 |
| 191 | | 6 11 47.6 | +13 50 36 | IRS2w | S269 | 4000 |
| 39 | | 6 36 21.8 | +08 54 11 | R Mon | Monoceros | 800 |
| 124 | | 6 38 17.0 | +10 17 58 | IRAS06382+1017 | NGC 2264 | 800 |
| 226 | N2264 HH11-6,7 | 6 38 17.2 | +09 42 42 | | NGC 2264 | 800 |
| 225 | N2264 HH14-4,5,6 | 6 38 17.7 | +09 47 09 | | NGC 2264 | 800 |
| 125 | | 6 38 20.3 | +09 50 28 | | NGC 2264 | 800 |
| 227 | | 6 57 07.9 | −04 41 58 | | S287 | 2100 |
| 160 | Z CMa jet | 7 01 22.5 | −11 28 36 | Z CMa | S296 | 1150 |
| 72 | | 7 18 04.5 | −23 56 45 | IRAS07180−2356 | L1660 | 1500 |
| 120 | Re 2 | 8 07 40.0 | −35 56 02 | CG30-IRS4 | Gum Nebula | 450 |
| 217 | GN08.15.9/HH | 8 15 59.0 | −35 43 26 | IRAS08159−3543 | Puppis | 3400 |
| 188 | Re 4 head | 8 19 28.9 | −49 25 12 | IRAS08194−4925 | Gum Nebula | 450 |
| 246 | | 8 19 45.7 | −49 29 59 | | Gum Nebula | 450 |
| 219 | | 8 21 09.4 | −41 59 05 | IRAS08211−4158 | Gum Nebula | 450 |
| 46 | | 8 24 17.1 | −50 50 34 | HH 46/47 IRS | Gum Nebula | 450 |
| 47 | | 8 24 22.8 | −50 50 00 | HH 46/47 IRS | Gum Nebula | 450 |
| 132 | | 8 33 40.4 | −40 28 28 | | Puppis | 950 |
| 73 | | 9 00 26.6 | −44 39 25 | | Vela | 700 |
| 74 | | 9 00 28.6 | −44 37 59 | | Vela | 700 |
| 133 | | 9 09 02.4 | −45 18 18 | | Vela | 700 |
| 75 | | 9 09 50.7 | −45 30 07 | | Vela | 700 |
| 171 | | 9 46 59.2 | −54 43 05 | | Vela | ? |
| 48 | | 11 03 01.9 | −77 01 55 | HH 48 IRS | Cha I | 150 |
| 49 | | 11 04 37.4 | −77 17 21 | Ced110-IRS4 | Cha I | 150 |
| 50 | | 11 04 39.7 | −77 16 44 | Ced110-IRS4 | Cha I | 150 |
| 51 | | 11 08 21.5 | −76 08 01 | | Cha I | 150 |
| 135 | | 11 10 05.9 | −58 30 14 | | Carina | 2700 |
| 136 | | 11 10 09.0 | −58 29 44 | | Carina | 2700 |
| 137 | | 11 11 49.0 | −60 36 17 | | Carina | 2200 |
| 138 | | 11 12 01.5 | −60 36 35 | | Carina | 2200 |
| 320 | | 11 58 58.8 | −64 51 29 | | Sa 136 | 200 |
| 321 | | 11 59 02.4 | −64 52 52 | IRAS11590−6452 | Sa 136 | 200 |
| 274 | | 12 49 38.7 | −76 50 51 | IRAS12496−7650 | Cha II | 165 |
| 52 | | 12 51 27.3 | −76 41 40 | IRAS12496−7650 | Cha II | 165 |
| 53 | | 12 51 34.6 | −76 41 17 | IRAS12496−7650 | Cha II | 165 |
| 54 | | 12 52 10.0 | −76 40 08 | IRAS12496−7650 | Cha II | 165 |
| 76 | | 14 56 32.9 | −62 52 20 | IRAS14563−6250 | Circinus | 1000 |
| 77 | | 14 56 42.9 | −62 55 53 | | Circinus | 1000 |
| 139 | | 14 56 51.6 | −63 04 59 | vBH 65a | Circinus | 1000 |
| 141 | | 14 59 14.9 | −63 12 09 | | Circinus | 1000 |
| 140 | | 14 59 15.3 | −63 11 05 | vBH 65b | Circinus | 1000 |
| 142 | | 14 59 17.6 | −63 10 41 | | Circinus | 1000 |
| 143 | | 14 59 19.6 | −63 11 51 | | Circinus | 1000 |
| 185 | | 15 39 50.6 | −33 59 46 | IRAS15398−3359 | Lupus 1 | 170 |
| 186 | Sz 68 jet | 15 42 01.4 | −34 08 08 | Sz 68 | Lupus 1 | 170 |
| 187 | HG object 1 | 15 42 07.2 | −34 08 11 | | Lupus 1 | 170 |

| HH | Other designation | $\alpha_{1950}$ | $\delta_{1950}$ | Suspected source | Region | Dist [pc] |
|---|---|---|---|---|---|---|
| 55 | | 15 53 18.7 | −37 42 12 | HH 55 IRS | Lupus 2 | 150 |
| 228 | Th 28 jet | 16 05 08.3 | −38 55 16 | Th 28 | Lupus 3 | 170 |
| 78 | | 16 05 51.3 | −38 57 10 | | Lupus 3 | 170 |
| 312 | | 16 22 54.7 | −24 14 01 | SR 4 | Ophiuchus | 160 |
| 418 | | 16 23 11.8 | −24 34 15 | | Ophiuchus | 160 |
| 313 | | 16 23 17.5 | −24 16 22 | VLA 1623 | Ophiuchus | 160 |
| 419 | C1 | 16 23 22.9 | −24 24 06 | | Ophiuchus | 160 |
| 314 | | 16 23 37.2 | −24 34 10 | | Ophiuchus | 160 |
| 79 | | 16 23 45.1 | −24 13 42 | | Ophiuchus | 160 |
| 224 | WSB 47 | 16 24 15.0 | −24 40 31 | | Ophiuchus | 160 |
| 416 | C4S | 16 24 41.2 | −24 42 39 | | Ophiuchus | 160 |
| 417 | | 16 25 24.4 | −24 21 25 | | Ophiuchus | 160 |
| 420 | C5 | 16 25 36.5 | −24 30 34 | | Ophiuchus | 160 |
| 56 | | 16 28 54.1 | −44 48 37 | Re 13 | Norma 1 | 700 |
| 57 | | 16 28 56.8 | −44 49 17 | V346 Nor | Norma 1 | 700 |
| 213 | Re 15/16 | 17 59 26.6 | −24 17 16 | | M8 | 1680 |
| 399 | | 17 59 26.7 | −23 04 04 | | M20 | 1680 |
| 180 | | 18 14 25.2 | −19 52 55 | | Sagittarius | 1700 |
| 216 | M16-HH1 | 18 16 05.1 | −13 53 03 | | NGC 6611 | 2300 |
| 80 | | 18 16 06.9 | −20 53 06 | IRAS18162−2048 | L291 | 1700 |
| 81 | | 18 16 07.5 | −20 52 23 | IRAS18162−2048 | L291 | 1700 |
| 476 | | 18 26 26.3 | +00 27 12 | | Serpens | 310 |
| 106 | | 18 26 46.4 | +01 12 15 | ESO H$\alpha$ 279 | Serpens | 310 |
| 477 | | 18 27 06.2 | +01 18 20 | | Serpens | 310 |
| 460 | | 18 27 06.4 | +01 16 20 | | Serpens | 310 |
| 107 | | 18 27 15.9 | +01 23 51 | ESO H$\alpha$ 279 | Serpens | 310 |
| 478 | | 18 27 24.2 | +01 13 35 | | Serpens | 310 |
| 458 | | 18 27 25.7 | +01 11 38 | SMM 3 | Serpens | 310 |
| 456 | | 18 27 26.9 | +01 09 10 | | Serpens | 310 |
| 457 | | 18 27 27.6 | +01 08 41 | | Serpens | 310 |
| 459 | | 18 27 30.3 | +01 12 39 | SMM 3 | Serpens | 310 |
| 455 | | 18 27 50.5 | +01 14 12 | PS 2 | Serpens | 310 |
| 108 | | 18 33 01.7 | −00 37 39 | IRAS18331−0035 | Serpens | 310 |
| 109 | | 18 33 04.5 | −00 36 50 | IRAS18331−0035 | Serpens | 310 |
| 172 | HHG33.3+0.2 | 18 51 32.7 | +00 28 52 | | Aquila | 500 |
| 82 | | 18 57 53.6 | −37 01 36 | S CrA | Cor.Austr. | 130 |
| 101 | | 18 58 12.3 | −37 07 17 | HH 100 IRS | Cor.Austr. | 130 |
| 96 | | 18 58 18.8 | −37 05 11 | HH 100 IRS | Cor.Austr. | 130 |
| 97 | | 18 58 23.3 | −37 04 21 | HH 100 IRS | Cor.Austr. | 130 |
| 100 | | 18 58 26.9 | −37 02 59 | HH 100 IRS | Cor.Austr. | 130 |
| 98 | | 18 58 30.4 | −37 01 57 | HH 100 IRS | Cor.Austr. | 130 |
| 104 | | 18 58 36.7 | −37 01 37 | R CrA | Cor.Austr. | 130 |
| 99 | | 18 58 43.1 | −36 59 01 | HH 100 IRS | Cor.Austr. | 130 |
| 223 | | 19 15 45.6 | +19 06 23 | IRAS19156+1906 | L723 | 300 |
| 332 | | 19 18 05.3 | +10 54 58 | | Aquila | 300 |
| 32 | | 19 18 07.9 | +10 56 21 | AS353A | Aquila | 300 |
| 250 | | 19 18 51.9 | +10 46 48 | IRAS19190+1048 | Aquila | 300 |
| 221 | | 19 26 37.5 | +09 32 24 | Parsamyan 21 | Aquila | 300 |
| 119 | | 19 34 25.8 | +07 27 24 | B335 IRS | B335 | 250 |
| 387 | V536Aql jet | 19 36 34.8 | +10 23 22 | V536 Aql | Aquila | 300 |
| 165 | 1548C27 jet | 19 40 48.0 | +23 17 09 | 1548C27 | Vulpecula | 2400 |

| HH | Other designation | $\alpha_{1950}$ | $\delta_{1950}$ | Suspected source | Region | Dist [pc] |
|---|---|---|---|---|---|---|
| 365 | | 19 41 12.0 | +23 22 46 | 1548C27 | Vulpecula | 2400 |
| 214 | GN20.18.3/HH | 20 18 21.3 | +37 00 43 | IRAS20183+3700 | Cygnus | 1000 |
| 425 | | 20 18 46.0 | +41 12 06 | V1318 Cyg | Cygnus | 1000 |
| 475 | | 20 22 53.9 | +42 05 40 | | Cygnus | 2000 |
| 166 | AFGL 2591 jet | 20 27 36.0 | +40 01 16 | | IC 1318 | 2000 |
| 376 | | 20 35 36.0 | +67 43 58 | IRAS20359+6745 | L1152 | 500 |
| 375 | | 20 38 43.2 | +67 50 39 | IRAS20386+6751 | L1157 | 440 |
| 315 | | 20 45 04.2 | +67 52 23 | PV Cep | Cepheus | 500 |
| 215 | | 20 45 23.3 | +67 46 36 | PV Cep | L1158 | 500 |
| 415 | | 20 45 34.2 | +67 49 25 | | Cepheus | 500 |
| 199 | | 20 55 52.8 | +77 20 44 | IRAS20582+7724 | L1228 | 300 |
| 200 | | 20 56 11.3 | +77 19 45 | HH 200 IRS | L1228 | 300 |
| 381 | | 20 56 42.8 | +52 17 18 | IRAS20568+5217 | Cygnus | ? |
| 382 | | 20 56 52.3 | +52 05 39 | | Cygnus | ? |
| 380 | | 20 57 39.7 | +52 22 31 | | Cygnus | ? |
| 389 | | 20 59 32.2 | +50 09 56 | V1331 Cyg | Cygnus | 550 |
| 424 | | 20 59 59.3 | +49 40 00 | LkH$\alpha$321B | Cygnus | 550 |
| 421 | | 21 00 16.9 | +49 39 45 | LkH$\alpha$321 | Cygnus | 550 |
| 198 | RNO 129 | 21 00 24.0 | +78 11 00 | | Cepheus | 300 |
| 218 | V645Cyg/HH | 21 38 10.6 | +50 00 43 | V645 Cyg | Cygnus | 3500 |
| 103 | | 21 41 15.8 | +65 49 55 | | NGC 7129 | 1000 |
| 232 | GGD 32, GM2-32 | 21 41 18.0 | +65 50 42 | | NGC 7129 | 1000 |
| 242 | HL14 jet | 21 41 29.9 | +65 52 50 | | NGC 7129 | 1000 |
| 238 | N7129/HH3 | 21 41 31.4 | +65 51 55 | | NGC 7129 | 1000 |
| 237 | N7129/HH2 | 21 41 33.3 | +65 51 37 | | NGC 7129 | 1000 |
| 239 | N7129/HH4 | 21 41 35.2 | +65 52 51 | | NGC 7129 | 1000 |
| 236 | N7129/HH1 | 21 41 50.2 | +65 53 52 | | NGC 7129 | 1000 |
| 167 | LkH$\alpha$234 jet | 21 41 57.6 | +65 53 07 | LkH$\alpha$ 234 | NGC 7129 | 1000 |
| 105 | | 21 42 12.9 | +65 54 00 | | NGC 7129 | 1000 |
| 234 | GGD 34, GM2-34 | 21 42 20.6 | +65 54 50 | | NGC 7129 | 1000 |
| 235 | GGD 35, GM2-35 | 21 42 33.5 | +65 54 38 | | NGC 7129 | 1000 |
| 379 | | 21 42 59.1 | +47 18 55 | IRAS21432+4719 | Cygnus | ? |
| 354 | | 22 06 01.6 | +58 57 11 | IRAS22051+5848 | L1165 | 750 |
| 251 | S140/HH1 | 22 17 57.4 | +63 17 50 | | S140 | 900 |
| 252 | S140/HH2 | 22 18 01.1 | +63 17 32 | | S140 | 900 |
| 253 | S140/HH3 | 22 18 08.4 | +63 16 38 | | S140 | 900 |
| 254 | S140/HH4 | 22 18 12.7 | +63 16 09 | | S140 | 900 |
| 363 | | 22 26 35.0 | +68 45 39 | IRAS22266+6845 | L1221 | 200 |
| 398 | LkH$\alpha$233 jet | 22 32 28.3 | +40 24 32 | LkH$\alpha$ 233 | Lacerta | 880 |
| 149 | | 22 34 22.0 | +75 01 32 | IRAS22343+7501 | L1251 | 300 |
| 373 | | 22 35 55.9 | +74 59 40 | | L1251 | 300 |
| 374 | | 22 36 33.6 | +74 51 54 | | L1251 | 300 |
| 364 | | 22 37 13.5 | +74 57 29 | | L1251 | 300 |
| 189 | L1251 HH1-2-3 | 22 37 33.7 | +74 55 02 | IRAS22376+7455 | L1251 | 300 |
| 168 | GGD 37 | 22 54 04.8 | +61 45 59 | HW 2 | Ceph A | 700 |
| 169 | GGD 37-NE | 22 54 35.8 | +61 46 33 | HW 2 | Ceph A | 700 |
| 174 | | 22 54 59.3 | +61 45 39 | HW 2 | Ceph A | 700 |
| 377 | | 23 01 08.4 | +61 25 53 | IRAS23011+6126 | Ceph E | 700 |
| 170 | MWC 1080/HH | 23 15 14.8 | +60 34 19 | MWC 1080 | Cassiopeia | 2200 |
| 358 | | 23 22 42.2 | +73 56 06 | | L1262 | 180 |
| 359 | | 23 24 30.7 | +74 05 57 | | L1262 | 180 |