

MY TITLE HERE

DRAFT: MARCH 25, 2019

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A Dissertation Presented to the
Graduate Faculty of the

University of Virginia

in Candidacy for the Degree of

Doctor of Philosophy

Department of Astronomy

University of Virginia
May 20XX

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May XX, 20XX

ABSTRACT

TODO: put your abstract here

ACKNOWLEDGEMENTS

TODO: Put your acknowledgements here

Here's my dedication

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CHAPTER 1

INTRODUCTION

1.1 FIRST SECTION

Blah blah blah (Galilei, 1610).



Figure 1.1: Long caption

CHAPTER 2

HERE'S CHAPTER 2!

2.1 THIS IS A SECTION

Blah blah blah

2.1.1 This is a subsection

Blah blah blah

CHAPTER 3

CHAPTER WITH TABLES!

3.1 SECTION WITH TABLES

Blah blah blah here comes a table.

Table 3.1: HMSFR Sample

| Name | Alias | RA (J2000) (hh:mm:ss) | Decl. (J2000) (dd:mm:ss) | Parallax (mas) | V (km s ⁻¹) | Refs. |
|---------------|-------------|--------------------------|-----------------------------|-------------------|----------------------------|-------|
| G015.03−00.67 | M 17 | 18:20:24.81 | −16:11:35.3 | 0.505 ± 0.033 | 22 ± 3 | 10 |
| G016.58−00.05 | | 18:21:09.08 | −14:31:48.8 | 0.279 ± 0.023 | 60 ± 5 | 4 |
| G023.00−00.41 | | 18:34:40.20 | −09:00:37.0 | 0.218 ± 0.017 | 80 ± 3 | 11 |
| G023.44−00.18 | | 18:34:39.19 | −08:31:25.4 | 0.170 ± 0.032 | 97 ± 3 | 11 |
| G023.65−00.12 | | 18:34:51.59 | −08:18:21.4 | 0.313 ± 0.039 | 83 ± 3 | 12 |
| G023.70−00.19 | | 18:35:12.36 | −08:17:39.5 | 0.161 ± 0.024 | 73 ± 5 | 7 |
| G025.70+00.04 | | 18:38:03.14 | −06:24:15.5 | 0.098 ± 0.029 | 93 ± 5 | 4 |
| G027.36−00.16 | | 18:41:51.06 | −05:01:43.4 | 0.125 ± 0.042 | 92 ± 3 | 10 |
| G028.86+00.06 | | 18:43:46.22 | −03:35:29.6 | 0.135 ± 0.018 | 100 ± 10 | 4 |
| G029.86−00.04 | | 18:45:59.57 | −02:45:06.7 | 0.161 ± 0.020 | 100 ± 3 | 6 |
| G029.95−00.01 | W 43S | 18:46:03.74 | −02:39:22.3 | 0.190 ± 0.019 | 98 ± 3 | 6 |
| G031.28+00.06 | | 18:48:12.39 | −01:26:30.7 | 0.234 ± 0.039 | 109 ± 3 | 6 |
| G031.58+00.07 | W 43Main | 18:48:41.68 | −01:09:59.0 | 0.204 ± 0.030 | 96 ± 5 | 6 |
| G032.04+00.05 | | 18:49:36.58 | −00:45:46.9 | 0.193 ± 0.008 | 97 ± 5 | 4 |
| G033.64−00.22 | | 18:53:32.56 | +00:31:39.1 | 0.153 ± 0.017 | 60 ± 3 | 1 |
| G034.39+00.22 | | 18:53:18.77 | +01:24:08.8 | 0.643 ± 0.049 | 57 ± 5 | 13 |
| G035.02+00.34 | | 18:54:00.67 | +02:01:19.2 | 0.430 ± 0.040 | 52 ± 5 | 2 |
| G035.19−00.74 | | 18:58:13.05 | +01:40:35.7 | 0.456 ± 0.045 | 30 ± 7 | 14 |
| G035.20−01.73 | | 19:01:45.54 | +01:13:32.5 | 0.306 ± 0.045 | 42 ± 3 | 14 |
| G037.43+01.51 | | 18:54:14.35 | +04:41:41.7 | 0.532 ± 0.021 | 41 ± 3 | 2 |
| G043.16+00.01 | | 19:10:13.41 | +09:06:12.8 | 0.090 ± 0.007 | 10 ± 5 | 15 |
| G043.79−00.12 | OH 43.8−0.1 | 19:11:53.99 | +09:35:50.3 | 0.166 ± 0.005 | 44 ± 10 | 2 |
| G043.89−00.78 | | 19:14:26.39 | +09:22:36.5 | 0.121 ± 0.020 | 54 ± 5 | 2 |

Table 3.1 continued

Table 3.1: HMSFR Sample (continued)

| Name | Alias | RA (J2000) (hh:mm:ss) | Decl. (J2000) (dd:mm:ss) | Parallax (mas) | V (km s ⁻¹) | Refs. |
|----------------------------|-----------------|--------------------------|-----------------------------|-------------------|----------------------------|----------|
| G045.07+00.13 | | 19:13:22.04 | +10:50:53.3 | 0.125 ± 0.005 | 59 ± 5 | 2 |
| G045.45+00.05 | | 19:14:21.27 | +11:09:15.9 | 0.119 ± 0.017 | 55 ± 7 | 2 |
| G048.60+00.02 | | 19:20:31.18 | +13:55:25.2 | 0.093 ± 0.005 | 18 ± 5 | 15 |
| G049.19+00.33 | | 19:22:57.77 | +14:16:10.0 | 0.189 ± 0.007 | 67 ± 5 | 2 |
| G049.48+00.36 | W 51 IRS2 | 19:23:39.82 | +14:31:05.0 | 0.195 ± 0.071 | 56 ± 3 | 16 |
| G049.48+00.38 | W 51M | 19:23:43.87 | +14:30:29.5 | 0.185 ± 0.010 | 58 ± 4 | 17 |
| G052.10+01.04 | IRAS 19213+1723 | 19:23:37.32 | +17:29:10.5 | 0.251 ± 0.060 | 42 ± 5 | 18 |
| G059.78+00.06 | | 19:43:11.25 | +23:44:03.3 | 0.463 ± 0.020 | 25 ± 3 | 16 |
| G069.54+00.97 | ON 1 | 20:10:09.07 | +31:31:36.0 | 0.406 ± 0.013 | 12 ± 5 | 19,20,21 |
| G074.03+01.71 | | 20:25:07.11 | +34:49:57.6 | 0.629 ± 0.017 | 5 ± 5 | 21 |
| G075.29+01.32 | | 20:16:16.01 | +37:35:45.8 | 0.108 ± 0.005 | -58 ± 5 | 22 |
| G075.76+00.33 | | 20:21:41.09 | +37:25:29.3 | 0.285 ± 0.022 | -9 ± 9 | 21 |
| G075.78+00.34 | ON 2N | 20:21:44.01 | +37:26:37.5 | 0.261 ± 0.030 | 1 ± 5 | 23 |
| G076.38+00.61 | | 20:27:25.48 | +37:22:48.5 | 0.770 ± 0.053 | -2 ± 5 | 21 |
| G078.12+03.63 | IRAS 20126+4104 | 20:14:26.07 | +41:13:32.7 | 0.610 ± 0.030 | -4 ± 5 | 24 |
| G078.88+00.70 | AFGL 2591 | 20:29:24.82 | +40:11:19.6 | 0.300 ± 0.024 | -6 ± 7 | 25 |
| G079.73+00.99 | IRAS 20290+4052 | 20:30:50.67 | +41:02:27.5 | 0.737 ± 0.062 | -3 ± 5 | 25 |
| G079.87+01.17 | | 20:30:29.14 | +41:15:53.6 | 0.620 ± 0.027 | -5 ± 10 | 21 |
| G080.79+01.92 ^a | NML Cyg | 20:46:25.54 | +40:06:59.4 | 0.620 ± 0.047 | -3 ± 3 | 26 |
| G080.86+00.38 | DR 20 | 20:37:00.96 | +41:34:55.7 | 0.687 ± 0.038 | -3 ± 5 | 25 |
| G081.75+00.59 | DR 21 | 20:39:01.99 | +42:24:59.3 | 0.666 ± 0.035 | -3 ± 3 | 25 |
| G081.87+00.78 | W 75N | 20:38:36.43 | +42:37:34.8 | 0.772 ± 0.042 | 7 ± 3 | 25 |
| G090.21+02.32 | | 21:02:22.70 | +50:03:08.3 | 1.483 ± 0.038 | -3 ± 5 | 21 |

Table 3.1 continued

Table 3.1: HMSFR Sample (continued)

| Name | Alias | RA (J2000) (hh:mm:ss) | Decl. (J2000) (dd:mm:ss) | Parallax (mas) | V (km s ⁻¹) | Refs. |
|----------------------------|-----------------|--------------------------|-----------------------------|-------------------|----------------------------|------------|
| G092.67+03.07 | | 21:09:21.73 | +52:22:37.1 | 0.613 ± 0.020 | -5 ± 10 | 21 |
| G094.60-01.79 | AFGL 2789 | 21:39:58.27 | +50:14:21.0 | 0.280 ± 0.030 | -46 ± 5 | 18, 28 |
| G095.29-00.93 | | 21:39:40.51 | +51:20:32.8 | 0.205 ± 0.015 | -38 ± 5 | 28 |
| G097.53+03.18 | | 21:32:12.43 | +55:53:49.7 | 0.133 ± 0.017 | -73 ± 5 | 27 |
| G100.37-03.57 | | 22:16:10.37 | +52:21:34.1 | 0.291 ± 0.010 | -37 ± 10 | 28 |
| G105.41+09.87 | | 21:43:06.48 | +66:06:55.3 | 1.129 ± 0.063 | -10 ± 5 | 21 |
| G107.29+05.63 | IRAS 22198+6336 | 22:21:26.73 | +63:51:37.9 | 1.288 ± 0.107 | -11 ± 5 | 29 |
| G108.18+05.51 | L 1206 | 22:28:51.41 | +64:13:41.3 | 1.289 ± 0.153 | -11 ± 3 | 19 |
| G108.20+00.58 | | 22:49:31.48 | +59:55:42.0 | 0.229 ± 0.028 | -49 ± 5 | 28 |
| G108.47-02.81 | | 23:02:32.08 | +56:57:51.4 | 0.309 ± 0.010 | -54 ± 5 | 28 |
| G108.59+00.49 | | 22:52:38.30 | +60:00:52.0 | 0.398 ± 0.031 | -52 ± 5 | 28 |
| G109.87+02.11 | Cep A | 22:56:18.10 | +62:01:49.5 | 1.430 ± 0.080 | -7 ± 5 | 30 |
| G111.23-01.23 | | 23:17:20.79 | +59:28:47.0 | 0.288 ± 0.044 | -53 ± 10 | 28 |
| G111.25-00.76 | | 23:16:10.36 | +59:55:28.5 | 0.294 ± 0.016 | -43 ± 5 | 28 |
| G111.54+00.77 | NGC 7538 | 23:13:45.36 | +61:28:10.6 | 0.378 ± 0.017 | -57 ± 5 | 30 |
| G121.29+00.65 | L 1287 | 00:36:47.35 | +63:29:02.2 | 1.077 ± 0.039 | -23 ± 5 | 19 |
| G122.01-07.08 | IRAS 00420+5530 | 00:44:58.40 | +55:46:47.6 | 0.460 ± 0.020 | -50 ± 5 | 31 |
| G123.06-06.30 | NGC 281 | 00:52:24.70 | +56:33:50.5 | 0.355 ± 0.030 | -30 ± 5 | 32 |
| G123.06-06.30 | NGC 281W | 00:52:24.20 | +56:33:43.2 | 0.421 ± 0.022 | -29 ± 3 | 19 |
| G133.94+01.06 | W 3OH | 02:27:03.82 | +61:52:25.2 | 0.512 ± 0.010 | -47 ± 3 | 33, 34 |
| G134.62-02.19 ^a | S Per | 02:22:51.71 | +58:35:11.4 | 0.413 ± 0.017 | -39 ± 5 | 35 |
| G135.27+02.79 | WB 89-437 | 02:43:28.57 | +62:57:08.4 | 0.167 ± 0.011 | -72 ± 3 | 36 |
| G209.00-19.38 | Orion Nebula | 05:35:15.80 | -05:23:14.1 | 2.410 ± 0.030 | 3 ± 5 | 43, 44, 45 |

Table 3.1 continued

Table 3.1: HMSFR Sample (continued)

| Name | Alias | RA (J2000) (hh:mm:ss) | Decl. (J2000) (dd:mm:ss) | Parallax (mas) | V (km s ⁻¹) | Refs. |
|----------------------------|--------|--------------------------|-----------------------------|-------------------|----------------------------|-------|
| G211.59+01.05 | | 06:52:45.32 | +01:40:23.1 | 0.228 ± 0.007 | 45 ± 5 | 1 |
| G229.57+00.15 | | 07:23:01.84 | -14:41:32.8 | 0.221 ± 0.014 | 47 ± 10 | 28 |
| G232.62+00.99 | | 07:32:09.78 | -16:58:12.8 | 0.596 ± 0.035 | 21 ± 3 | 40 |
| G236.81+01.98 | | 07:44:28.24 | -20:08:30.2 | 0.298 ± 0.018 | 43 ± 7 | 28 |
| G239.35-05.06 ^a | VY CMa | 07:22:58.33 | -25:46:03.1 | 0.855 ± 0.057 | 20 ± 3 | 46,47 |
| G240.31+00.07 | | 07:44:51.92 | -24:07:41.5 | 0.212 ± 0.021 | 67 ± 5 | 28 |

^a Red supergiants

References — (1) BeSSeL Survey unpublished; (2) Wu et al. (2014); (4) Sato et al. (2014); (6) Zhang et al. (2014); (7) Sanna et al. (2014); (10) Xu et al. (2011); (11) Brunthaler et al. (2009); (12) Bartkiewicz et al. (2008); (13) Kurayama et al. (2011); (14) Zhang et al. (2009); (15) Zhang et al. (2013); (16) Xu et al. (2009); (17) Sato et al. (2010); (18) Oh et al. (2010); (19) Rygl et al. (2010); (20) Nagayama et al. (2011); (21) Xu et al. (2013); (22) Sanna et al. (2012); (23) Ando et al. (2011); (24) Moscadelli et al. (2011); (25) Rygl et al. (2012); (26) Zhang et al. (2012b); (27) Hachisuka et al. (2015); (28) Choi et al. (2014); (29) Hirota et al. (2008); (30) Moscadelli et al. (2009); (31) Moellenbrock et al. (2009); (32) Sato et al. (2008); (33) Xu et al. (2006); (34) Hachisuka et al. (2006); (35) Asaki et al. (2010); (36) Hachisuka et al. (2009); (40) Reid et al. (2009); (43) Sandstrom et al. (2007); (44) Menten et al. (2007); (45) Kim et al. (2008); (46) Choi et al. (2008); (47) Zhang et al. (2012a)

APPENDIX A

HERE'S MY APPENDIX!

Blah blah blah appendix.

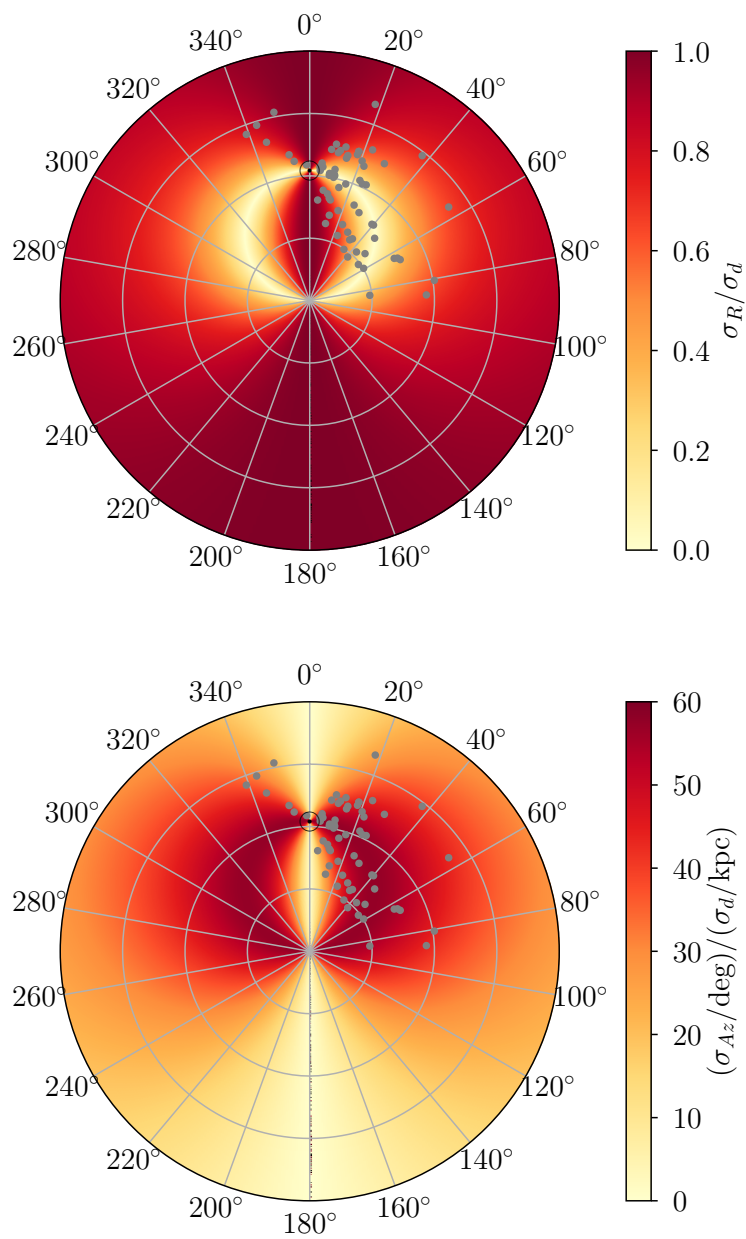


Figure A.1: Long caption

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BIOGRAPHICAL SKETCH

Here's my biographical sketch

CURRICULUM VITAE

Here's my CV