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SUPPLEMENT

# Astrometry of minor planets made at the Skalnaté Pleso Observatory in the year 2002

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**Abstract.** The paper presents the results of position determinations of minor planets carried out at the Skalnaté Pleso Observatory in the year 2002. 109 CCD observations of 21 minor planets are given together with the list of reference stars.

**Key words:** astrometry – asteroids

## 1. Introduction

The presented paper is a continuation of the previous papers which gave the results of positional CCD observations of minor planets obtained at the Skalnaté Pleso Observatory (the last paper of this series: Neslušan, 2003) and contains the observations made in the year 2002.

The reference stars were selected from the USNO-A2.0 Star Catalog (Monet et al., 1998).

The reduction was made using the method of plate constants within computer program *Astrometrica* (Raab, 1993).

A total of 109 accurate positions of 21 minor planets are given. A list of reference stars and a list of collaborators are included, too. The list of collaborators informs about their share in exposing, measuring, and reducing the positions.

## 2. Positions of minor planets

The data have been arranged according to serial numbers of minor planets. The individual columns of the table contain the following:
N – serial number of observation,
MP – number of minor planet (if unnumbered, yet, the preliminary designation is given in parentheses),
Date U.T. – date and time of the middle of the exposure,
$R.A._{2000}$ – right ascension for equinox 2000.0 (in h,m,s),
$Decl._{2000}$ – declination for equinox 2000.0 (in $^{\circ}$,$'$, $''$),
d$\alpha$ – the mean residual in R.A. in arc seconds,
d$\delta$ – the mean residual in Decl. in arc seconds.

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| N | MP | Date U.T. | | $R.A._{2000}$ | $Decl._{2000}$ | d$\alpha$ | d$\delta$ |
|---|---|---|---|---|---|---|---|
| 1 | 587 | 2002 Jan. | 15.69789 | 03 30 46.96 | +52 57 21.8 | 0.3 | 0.3 |
| 2 | 587 | 2002 Jan. | 15.71037 | 03 30 47.26 | +52 57 09.3 | 0.3 | 0.3 |
| 3 | 587 | 2002 Feb. | 4.78446 | 03 48 45.98 | +47 40 16.4 | 0.2 | 0.2 |
| 4 | 587 | 2002 Feb. | 4.79354 | 03 48 46.66 | +47 40 08.7 | 0.1 | 0.2 |
| 5 | 1362 | 2002 Jan. | 9.92541 | 11 09 13.37 | +20 37 26.3 | 0.1 | 0.1 |
| 6 | 1362 | 2002 Jan. | 9.93921 | 11 09 13.25 | +20 37 33.2 | 0.2 | 0.1 |
| 7 | 1362 | 2002 Feb. | 3.83784 | 10 59 38.10 | +24 26 49.6 | 0.2 | 0.3 |
| 8 | 1362 | 2002 Feb. | 3.84789 | 10 59 37.74 | +24 26 55.8 | 0.2 | 0.3 |
| 9 | 1362 | 2002 Apr. | 3.91981 | 10 19 51.97 | +30 05 51.7 | 0.3 | 0.3 |
| 10 | 1362 | 2002 Apr. | 3.93880 | 10 19 51.54 | +30 05 52.1 | 0.2 | 0.3 |
| 11 | 1362 | 2002 May | 1.84806 | 10 16 38.06 | +29 28 26.2 | 0.3 | 0.2 |
| 12 | 1362 | 2002 May | 1.86446 | 10 16 38.19 | +29 28 22.4 | 0.2 | 0.3 |
| 13 | 1620 | 2002 Jan. | 3.68471 | 00 40 00.13 | +23 43 30.5 | 0.2 | 0.1 |
| 14 | 1620 | 2002 Jan. | 3.69240 | 00 40 00.92 | +23 43 31.8 | 0.2 | 0.1 |
| 15 | 1620 | 2002 Jan. | 3.69979 | 00 40 01.66 | +23 43 32.5 | 0.2 | 0.1 |
| 16 | 1620 | 2002 Jan. | 4.68625 | 00 41 44.55 | +23 45 34.0 | 0.1 | 0.3 |
| 17 | 1620 | 2002 Jan. | 4.69876 | 00 41 45.81 | +23 45 36.0 | 0.1 | 0.2 |
| 18 | 1620 | 2002 Jan. | 7.73189 | 00 47 06.97 | +23 52 44.6 | 0.2 | 0.3 |
| 19 | 1620 | 2002 Jan. | 7.77553 | 00 47 11.61 | +23 52 50.8 | 0.3 | 0.3 |
| 20 | 1620 | 2002 Jan. | 8.70056 | 00 48 51.10 | +23 55 16.4 | 0.2 | 0.3 |
| 21 | 1620 | 2002 Jan. | 8.71637 | 00 48 52.78 | +23 55 19.2 | 0.1 | 0.1 |
| 22 | 1620 | 2002 Jan. | 16.70782 | 01 03 37.96 | +24 20 39.3 | 0.3 | 0.3 |
| 23 | 1620 | 2002 Jan. | 17.72818 | 01 05 34.16 | +24 24 23.5 | 0.2 | 0.1 |
| 24 | 1620 | 2002 Jan. | 17.74792 | 01 05 36.47 | +24 24 28.3 | 0.2 | 0.2 |
| 25 | 1620 | 2002 Jan. | 18.73295 | 01 07 29.32 | +24 28 11.3 | 0.3 | 0.2 |
| 26 | 1620 | 2002 Jan. | 18.75550 | 01 07 31.97 | +24 28 16.1 | 0.2 | 0.2 |
| 27 | 1627 | 2002 Jan. | 8.78193 | 08 20 24.90 | +15 52 12.5 | 0.1 | 0.3 |
| 28 | 1627 | 2002 Jan. | 8.80385 | 08 20 23.32 | +15 52 20.4 | 0.2 | 0.3 |
| 29 | 1627 | 2002 Jan. | 9.80146 | 08 19 10.82 | +15 58 28.7 | 0.3 | 0.3 |
| 30 | 1627 | 2002 Jan. | 9.81493 | 08 19 09.81 | +15 58 33.2 | 0.2 | 0.1 |
| 31 | 1943 | 2002 Jan. | 8.82307 | 08 04 57.27 | +01 30 02.0 | 0.1 | 0.2 |
| 32 | 1943 | 2002 Jan. | 8.83726 | 08 04 55.87 | +01 29 50.6 | 0.2 | 0.2 |
| 33 | 1943 | 2002 Jan. | 9.82190 | 08 03 20.93 | +01 16 28.7 | 0.3 | 0.2 |
| 34 | 1943 | 2002 Jan. | 9.83648 | 08 03 19.47 | +01 16 16.9 | 0.3 | 0.2 |
| 35 | 1943 | 2002 Feb. | 3.82466 | 07 15 48.88 | −02 24 27.2 | 0.1 | 0.1 |
| 36 | 1943 | 2002 Feb. | 3.83056 | 07 15 48.20 | −02 24 28.0 | 0.1 | 0.2 |
| 37 | 1943 | 2002 Feb. | 5.78647 | 07 12 22.45 | −02 29 52.1 | 0.1 | 0.3 |
| 38 | 1943 | 2002 Feb. | 5.79310 | 07 12 21.69 | −02 29 52.9 | 0.1 | 0.2 |
| 39 | 1943 | 2002 Mar. | 13.87803 | 06 52 06.85 | −00 29 09.0 | 0.3 | 0.2 |
| 40 | 1943 | 2002 Mar. | 13.88523 | 06 52 07.11 | −00 29 06.5 | 0.2 | 0.1 |
| 41 | 4563 | 2002 Apr. | 4.80147 | 07 36 09.87 | +21 57 45.2 | 0.2 | 0.2 |
| 42 | 4563 | 2002 Apr. | 4.82122 | 07 36 10.82 | +21 57 43.9 | 0.1 | 0.1 |
| 43 | 5534 | 2002 Jan. | 17.80142 | 06 57 13.48 | +36 58 36.6 | 0.1 | 0.1 |
| 44 | 5534 | 2002 Jan. | 17.80936 | 06 57 13.03 | +36 58 35.1 | 0.1 | 0.1 |
| 45 | 6797 | 2002 Apr. | 4.80147 | 07 35 15.33 | +21 53 04.5 | 0.2 | 0.1 |
| 46 | 6797 | 2002 Apr. | 4.82122 | 07 35 15.99 | +21 53 02.9 | 0.1 | 0.1 |

| N | MP | Date U.T. | | $R.A._{2000}$ | $Decl._{2000}$ | d$\alpha$ | d$\delta$ |
|---|---|---|---|---|---|---|---|
| 47 | 14593 | 2002 Dec. | 14.06732 | 08 21 48.55 | +26 43 53.4 | 0.2 | 0.2 |
| 48 | 14593 | 2002 Dec. | 14.08014 | 08 21 48.31 | +26 43 58.1 | 0.2 | 0.1 |
| 49 | 16965 | 2002 Sep. | 10.84347 | 23 42 23.47 | +01 22 49.1 | 0.3 | 0.3 |
| 50 | 16965 | 2002 Sep. | 10.84900 | 23 42 23.14 | +01 22 48.8 | 0.3 | 0.3 |
| 51 | 16965 | 2002 Sep. | 10.85721 | 23 42 22.66 | +01 22 48.2 | 0.3 | 0.3 |
| 52 | 16965 | 2002 Nov. | 28.74847 | 23 16 56.10 | +02 10 41.6 | 0.3 | 0.2 |
| 53 | 16965 | 2002 Nov. | 28.76014 | 23 16 56.67 | +02 10 44.9 | 0.3 | 0.3 |
| 54 | 16965 | 2002 Dec. | 14.68666 | 23 31 52.41 | +03 51 30.7 | 0.2 | 0.1 |
| 55 | 16965 | 2002 Dec. | 14.69956 | 23 31 53.29 | +03 51 37.9 | 0.2 | 0.1 |
| 56 | 17209 | 2002 Aug. | 30.89081 | 21 45 19.47 | −00 13 40.4 | 0.2 | 0.1 |
| 57 | 17209 | 2002 Aug. | 30.90361 | 21 45 18.73 | −00 13 42.0 | 0.3 | 0.2 |
| 58 | 17209 | 2002 Sep. | 4.81926 | 21 41 03.12 | −00 25 53.3 | 0.3 | 0.2 |
| 59 | 17209 | 2002 Sep. | 10.82575 | 21 36 16.63 | −00 42 28.4 | 0.1 | 0.2 |
| 60 | 17209 | 2002 Sep. | 10.83404 | 21 36 16.27 | −00 42 29.8 | 0.2 | 0.2 |
| 61 | 17209 | 2002 Oct. | 2.80671 | 21 25 02.89 | −01 43 29.6 | 0.2 | 0.2 |
| 62 | 17209 | 2002 Oct. | 2.81531 | 21 25 02.72 | −01 43 29.9 | 0.1 | 0.2 |
| 63 | 35107 | 2002 Jul. | 8.96713 | 01 19 25.36 | +22 48 36.9 | 0.1 | 0.2 |
| 64 | 35107 | 2002 Jul. | 8.98078 | 01 19 30.44 | +22 48 23.0 | 0.1 | 0.2 |
| 65 | 35107 | 2002 Jul. | 9.95576 | 01 25 29.05 | +22 30 46.0 | 0.1 | 0.3 |
| 66 | 35107 | 2002 Jul. | 16.03808 | 02 02 24.76 | +20 23 17.4 | 0.3 | 0.3 |
| 67 | 35107 | 2002 Jul. | 16.04794 | 02 02 28.30 | +20 23 03.5 | 0.1 | 0.1 |
| 68 | 35107 | 2002 Jul. | 16.05396 | 02 02 30.39 | +20 22 55.2 | 0.3 | 0.3 |
| 69 | 35107 | 2002 Jul. | 18.05292 | 02 14 24.73 | +19 35 14.6 | 0.2 | 0.2 |
| 70 | 35107 | 2002 Jul. | 18.05637 | 02 14 26.00 | +19 35 09.9 | 0.2 | 0.2 |
| 71 | 36236 | 2002 Nov. | 3.86104 | 03 40 05.14 | +55 54 09.1 | 0.1 | 0.1 |
| 72 | 36236 | 2002 Nov. | 3.86687 | 03 40 03.34 | +55 53 54.2 | 0.1 | 0.1 |
| 73 | (2002 AB5) | 2002 May | 8.89618 | 13 16 15.66 | −07 04 22.7 | 0.3 | 0.3 |
| 74 | (2002 AB5) | 2002 May | 8.91273 | 13 16 15.08 | −07 04 29.2 | 0.2 | 0.2 |
| 75 | (2002 AJ29) | 2002 Jul. | 5.96339 | 19 20 00.98 | +09 48 42.1 | 0.0 | 0.0 |
| 76 | (2002 AJ29) | 2002 Jul. | 5.97208 | 19 20 00.28 | +09 48 37.5 | 0.1 | 0.1 |
| 77 | (2002 AJ29) | 2002 Jul. | 10.92416 | 19 14 18.23 | +08 49 24.3 | 0.2 | 0.1 |
| 78 | (2002 AJ29) | 2002 Jul. | 10.93082 | 19 14 17.58 | +08 49 19.4 | 0.2 | 0.2 |
| 79 | (2002 CW134) | 2002 Apr. | 4.88009 | 12 26 26.94 | −18 42 41.5 | 0.2 | 0.1 |
| 80 | (2002 CW134) | 2002 Apr. | 4.89546 | 12 26 26.05 | −18 42 49.6 | 0.2 | 0.2 |
| 81 | (2002 CX11) | 2002 May | 7.86309 | 14 52 16.15 | +17 37 10.8 | 0.2 | 0.3 |
| 82 | (2002 CX11) | 2002 May | 7.88126 | 14 52 16.01 | +17 37 14.0 | 0.2 | 0.3 |
| 83 | (2002 GH1) | 2002 May | 6.88611 | 10 54 24.31 | +42 09 34.3 | 0.2 | 0.2 |
| 84 | (2002 GH1) | 2002 May | 6.90141 | 10 54 27.55 | +42 09 39.3 | 0.2 | 0.3 |
| 85 | (2002 HU11) | 2002 Jul. | 5.93154 | 18 53 21.29 | +05 23 13.4 | 0.2 | 0.1 |
| 86 | (2002 HU11) | 2002 Jul. | 5.93640 | 18 53 21.98 | +05 22 44.3 | 0.3 | 0.2 |
| 87 | (2002 HU11) | 2002 Jul. | 10.91093 | 19 07 13.07 | −03 57 52.6 | 0.1 | 0.1 |
| 88 | (2002 HU11) | 2002 Jul. | 10.91316 | 19 07 13.47 | −03 58 09.6 | 0.1 | 0.1 |
| 89 | (2002 KH3) | 2002 Aug. | 27.78738 | 00 02 31.74 | +36 53 20.6 | 0.1 | 0.2 |
| 90 | (2002 KH3) | 2002 Aug. | 27.79848 | 00 02 31.58 | +36 53 16.2 | 0.2 | 0.1 |
| 91 | (2002 KH3) | 2002 Aug. | 27.80737 | 00 02 31.46 | +36 53 13.4 | 0.1 | 0.1 |
| 92 | (2002 KH3) | 2002 Aug. | 29.85856 | 00 01 45.61 | +36 39 44.1 | 0.1 | 0.1 |

| N | MP | Date U.T. | $R.A._{2000}$ | $Decl._{2000}$ | d$\alpha$ | d$\delta$ |
|---|---|---|---|---|---|---|
| 93 | (2002 KH3) | 2002 Aug. 29.87411 | 00 01 45.31 | +36 39 34.2 | 0.1 | 0.1 |
| 94 | (2002 KH3) | 2002 Aug. 31.84034 | 00 00 53.60 | +36 23 32.5 | 0.2 | 0.2 |
| 95 | (2002 KH3) | 2002 Aug. 31.85536 | 00 00 53.13 | +36 23 24.7 | 0.2 | 0.2 |
| 96 | (2002 KH3) | 2002 Sep. 10.77076 | 23 55 11.51 | +34 19 48.8 | 0.2 | 0.1 |
| 97 | (2002 KH3) | 2002 Sep. 10.78176 | 23 55 11.09 | +34 19 38.2 | 0.3 | 0.1 |
| 98 | (2002 RP120) | 2002 Oct. 1.03494 | 03 54 41.31 | +15 14 46.6 | 0.3 | 0.2 |
| 99 | (2002 RP120) | 2002 Oct. 1.04389 | 03 54 39.79 | +15 14 55.2 | 0.3 | 0.2 |
| 100 | (2002 RP120) | 2002 Nov. 3.88435 | 01 39 30.70 | +22 37 12.5 | 0.2 | 0.1 |
| 101 | (2002 RP120) | 2002 Nov. 3.89081 | 01 39 28.95 | +22 37 14.6 | 0.2 | 0.1 |
| 102 | (2002 RP120) | 2002 Dec. 9.67134 | 23 48 16.55 | +22 31 07.5 | 0.1 | 0.1 |
| 103 | (2002 RP120) | 2002 Dec. 9.68281 | 23 48 15.39 | +22 31 05.9 | 0.1 | 0.3 |
| 104 | (2002 RP120) | 2002 Dec. 11.70238 | 23 45 01.10 | +22 28 29.8 | 0.1 | 0.2 |
| 105 | (2002 RP120) | 2002 Dec. 11.72381 | 23 44 59.09 | +22 28 28.2 | 0.1 | 0.2 |
| 106 | (2002 RP120) | 2002 Dec. 14.67472 | 23 40 42.90 | +22 25 30.9 | 0.3 | 0.1 |
| 107 | (2002 RP120) | 2002 Dec. 14.68098 | 23 40 42.44 | +22 25 31.6 | 0.3 | 0.1 |
| 108 | (2002 RP120) | 2002 Dec. 26.69975 | 23 28 05.20 | +22 25 52.3 | 0.2 | 0.2 |
| 109 | (2002 RP120) | 2002 Dec. 26.71244 | 23 28 04.62 | +22 25 52.9 | 0.2 | 0.2 |

## 3. Reference stars

The individual columns of the table contain the following:
N − serial number of the observation in agreement with the Section 2,
Numbers of reference stars in the USNO-A2.0 Star Catalog,
$\Delta\alpha$ − the O−C difference in R.A. in arc seconds,
$\Delta\delta$ − the O−C difference in Decl. in arc seconds.

The position of each reference star in the field of other reference stars is determined within the used method of plate constants. $\Delta\alpha$ and $\Delta\delta$ are the differences between observed (O) and calculated (C) coordinates. Except of a common measurement error, these differences are caused by an inaccuracy of position of a given star in the catalog and by the time shift between the catalog and considered epochs.

| N | Number of star | $\Delta\alpha$ | $\Delta\delta$ | Number of star | $\Delta\alpha$ | $\Delta\delta$ |
|---|---|---|---|---|---|---|
| 1 | A 1425.04375838 | +0.4 | −0.0 | A 1425.04376528 | −0.2 | +0.2 |
| | A 1425.04373376 | +0.4 | −0.5 | A 1425.04372507 | −0.2 | +0.3 |
| | A 1425.04368128 | +0.1 | +0.1 | A 1425.04367813 | −0.2 | +0.0 |
| | A 1425.04369012 | +0.5 | −0.7 | A 1425.04367584 | +0.1 | +0.4 |
| | A 1425.04371309 | −0.3 | +0.2 | A 1425.04372677 | −0.4 | +0.0 |
| 2 | A 1425.04375838 | +0.3 | −0.1 | A 1425.04376528 | +0.2 | −0.2 |
| | A 1425.04373376 | −0.0 | −0.1 | A 1425.04372507 | −0.4 | +0.6 |
| | A 1425.04368128 | +0.2 | +0.0 | A 1425.04367813 | −0.2 | −0.0 |
| | A 1425.04369012 | +0.5 | −0.8 | A 1425.04367584 | +0.1 | +0.3 |

| N | Number of star | $\Delta\alpha$ | $\Delta\delta$ | Number of star | $\Delta\alpha$ | $\Delta\delta$ |
|---|---|---|---|---|---|---|
| | A 1425.04371309 | −0.3 | +0.2 | A 1425.04372677 | −0.3 | +0.1 |
| 3 | A 1350.03902212 | +0.2 | −0.1 | A 1350.03901935 | −0.1 | +0.1 |
| | A 1350.03890156 | −0.1 | +0.0 | A 1350.03884211 | +0.2 | −0.1 |
| | A 1350.03899222 | −0.6 | +0.7 | A 1350.03896976 | +0.3 | −0.6 |
| | A 1350.03905218 | +0.2 | −0.2 | A 1350.03885305 | −0.1 | +0.0 |
| 4 | A 1350.03902212 | +0.1 | −0.1 | A 1350.03901935 | −0.1 | +0.1 |
| | A 1350.03890156 | +0.0 | −0.0 | A 1350.03884211 | −0.0 | +0.1 |
| | A 1350.03899222 | −0.3 | +0.3 | A 1350.03896976 | +0.1 | −0.5 |
| | A 1350.03905218 | +0.2 | +0.1 | A 1350.03885305 | +0.1 | +0.1 |
| 5 | A 1050.06439108 | −0.1 | −0.3 | A 1050.06439839 | +0.1 | +0.2 |
| | A 1050.06437285 | −0.3 | +0.0 | A 1050.06437258 | +0.4 | +0.1 |
| | A 1050.06438131 | −0.0 | +0.1 | A 1050.06437771 | −0.1 | −0.2 |
| | A 1050.06438457 | +0.0 | +0.1 | | | |
| 6 | A 1050.06439108 | −0.4 | −0.2 | A 1050.06439839 | +0.3 | +0.1 |
| | A 1050.06437285 | −0.4 | +0.0 | A 1050.06437258 | +0.5 | +0.1 |
| | A 1050.06438131 | +0.0 | +0.0 | A 1050.06437771 | −0.0 | −0.2 |
| | A 1050.06438457 | −0.0 | +0.1 | | | |
| 7 | A 1125.06221042 | −0.1 | +0.4 | A 1125.06220514 | +0.5 | −0.6 |
| | A 1125.06221665 | −0.0 | −0.1 | A 1125.06220352 | −0.0 | −0.1 |
| | A 1125.06220800 | −0.2 | +0.1 | A 1125.06219941 | −0.2 | +0.3 |
| 8 | A 1125.06221042 | −0.2 | +0.4 | A 1125.06220514 | +0.3 | −0.8 |
| | A 1125.06220352 | +0.1 | −0.0 | A 1125.06219941 | −0.3 | +0.1 |
| | A 1125.06221727 | −0.1 | +0.0 | A 1125.06221842 | +0.0 | −0.1 |
| | A 1125.06220314 | +0.2 | +0.4 | | | |
| 9 | A 1200.06497159 | +0.1 | +0.3 | A 1200.06495042 | +0.3 | +0.0 |
| | A 1200.06495446 | −0.4 | −0.4 | A 1200.06497123 | +0.1 | +0.1 |
| | A 1200.06497045 | −0.4 | −0.5 | A 1200.06497210 | +0.2 | −0.1 |
| | A 1200.06496068 | +0.4 | +0.6 | A 1200.06496030 | −0.3 | +0.0 |
| 10 | A 1200.06497159 | −0.0 | +0.3 | A 1200.06495042 | −0.2 | +0.3 |
| | A 1200.06497123 | +0.2 | +0.2 | A 1200.06497045 | −0.4 | −0.5 |
| | A 1200.06497210 | −0.0 | −0.0 | A 1200.06496068 | +0.2 | +0.3 |
| | A 1200.06496030 | +0.3 | −0.4 | A 1200.06495058 | +0.0 | −0.3 |
| 11 | A 1125.06079251 | +0.2 | +0.0 | A 1125.06078202 | −0.3 | −0.2 |
| | A 1125.06077274 | +0.0 | +0.4 | A 1125.06078171 | +0.3 | +0.0 |
| | A 1125.06077565 | −0.7 | −0.0 | A 1125.06076508 | +0.3 | +0.1 |
| | A 1125.06076707 | +0.0 | −0.3 | | | |
| 12 | A 1125.06078336 | −0.3 | −0.2 | A 1125.06077274 | +0.1 | +0.2 |
| | A 1125.06076913 | +0.1 | −0.4 | A 1125.06077024 | +0.2 | +0.3 |
| | A 1125.06077565 | −0.4 | +0.4 | A 1125.06078171 | +0.0 | −0.4 |
| | A 1125.06079251 | +0.3 | +0.2 | | | |
| 13 | A 1125.00244845 | −0.1 | −0.0 | A 1125.00243483 | +0.6 | −0.2 |
| | A 1125.00242928 | −0.2 | +0.1 | A 1125.00242320 | −0.3 | +0.2 |
| | A 1125.00242453 | +0.1 | −0.0 | A 1125.00243866 | +0.1 | −0.0 |
| | A 1125.00245171 | −0.1 | −0.1 | A 1125.00245299 | +0.2 | +0.1 |
| | A 1125.00245792 | −0.2 | +0.1 | | | |
| 14 | A 1125.00244845 | −0.0 | −0.1 | A 1125.00243483 | +0.6 | −0.3 |

| N | Number of star | $\Delta\alpha$ | $\Delta\delta$ | Number of star | $\Delta\alpha$ | $\Delta\delta$ |
|---|---|---|---|---|---|---|
| | A 1125.00242928 | −0.3 | +0.1 | A 1125.00242320 | −0.3 | +0.2 |
| | A 1125.00242453 | +0.0 | −0.0 | A 1125.00243866 | +0.2 | −0.0 |
| | A 1125.00245171 | −0.2 | −0.1 | A 1125.00245299 | +0.2 | +0.0 |
| | A 1125.00245792 | −0.2 | +0.2 | | | |
| 15 | A 1125.00244845 | −0.0 | +0.0 | A 1125.00243483 | +0.6 | −0.3 |
| | A 1125.00242928 | −0.2 | +0.1 | A 1125.00242320 | −0.4 | +0.1 |
| | A 1125.00242453 | +0.1 | −0.1 | A 1125.00243866 | +0.2 | +0.0 |
| | A 1125.00245171 | −0.1 | −0.1 | A 1125.00245299 | +0.2 | +0.0 |
| | A 1125.00245792 | −0.3 | +0.1 | | | |
| 16 | A 1125.00253859 | −0.0 | −0.2 | A 1125.00253320 | +0.0 | −0.1 |
| | A 1125.00252848 | −0.0 | +0.5 | A 1125.00252852 | +0.2 | −0.5 |
| | A 1125.00254100 | −0.2 | +0.2 | A 1125.00256911 | +0.1 | −0.2 |
| | A 1125.00256465 | −0.1 | +0.2 | | | |
| 17 | A 1125.00253859 | −0.0 | −0.1 | A 1125.00253320 | +0.0 | −0.1 |
| | A 1125.00252848 | −0.1 | +0.4 | A 1125.00252852 | +0.3 | −0.4 |
| | A 1125.00254100 | −0.3 | +0.2 | A 1125.00256911 | +0.2 | −0.2 |
| | A 1125.00256465 | −0.1 | +0.2 | | | |
| 18 | A 1125.00287062 | −0.0 | −0.3 | A 1125.00287285 | −0.2 | +0.1 |
| | A 1125.00287517 | +0.3 | −0.2 | A 1125.00286244 | −0.0 | −0.1 |
| | A 1125.00285110 | −0.2 | +0.1 | A 1125.00283761 | +0.6 | −0.5 |
| | A 1125.00283832 | −0.5 | +0.2 | A 1125.00285786 | +0.0 | +0.6 |
| 19 | A 1125.00287062 | −0.1 | −0.3 | A 1125.00287285 | −0.2 | +0.0 |
| | A 1125.00287517 | +0.3 | −0.2 | A 1125.00286244 | −0.1 | +0.0 |
| | A 1125.00285110 | −0.2 | +0.0 | A 1125.00283761 | +0.6 | −0.6 |
| | A 1125.00283832 | −0.5 | +0.2 | A 1125.00285786 | +0.1 | +0.7 |
| 20 | A 1125.00295431 | −0.1 | +0.1 | A 1125.00295745 | +0.1 | −0.1 |
| | A 1125.00294234 | +0.5 | −0.1 | A 1125.00293321 | −0.4 | +0.3 |
| | A 1125.00293731 | −0.2 | +0.1 | A 1125.00294754 | +0.0 | −0.3 |
| | A 1125.00292535 | −0.0 | +0.8 | A 1125.00292396 | +0.3 | −0.8 |
| | A 1125.00294462 | −0.2 | −0.2 | A 1125.00295865 | +0.1 | +0.2 |
| 21 | A 1125.00293731 | +0.2 | −0.1 | A 1125.00293321 | −0.2 | +0.2 |
| | A 1125.00295865 | −0.0 | −0.0 | A 1125.00295745 | +0.0 | −0.1 |
| | A 1125.00294462 | +0.0 | +0.2 | A 1125.00292820 | −0.1 | −0.0 |
| | A 1125.00291803 | +0.4 | −0.2 | A 1125.00291887 | −0.3 | +0.1 |
| 22 | A 1125.00365783 | −0.2 | −0.6 | A 1125.00364497 | +0.4 | +0.3 |
| | A 1125.00363820 | +0.1 | +0.2 | A 1125.00362414 | −0.6 | −0.4 |
| | A 1125.00363471 | +0.3 | +0.4 | A 1125.00364686 | −0.1 | +0.1 |
| | A 1125.00365431 | +0.4 | −0.4 | A 1125.00366793 | −0.6 | +0.2 |
| | A 1125.00366978 | +0.2 | +0.2 | A 1125.00366212 | +0.0 | +0.0 |
| 23 | A 1125.00372078 | +0.2 | +0.2 | A 1125.00372082 | +0.1 | −0.0 |
| | A 1125.00374949 | +0.3 | +0.3 | A 1125.00372577 | −0.2 | +0.0 |
| | A 1125.00373562 | −0.3 | −0.3 | A 1125.00375596 | +0.0 | −0.2 |
| | A 1125.00376815 | +0.2 | +0.1 | A 1125.00376035 | −0.3 | −0.1 |
| 24 | A 1125.00372078 | +0.4 | +0.2 | A 1125.00372082 | −0.1 | −0.0 |
| | A 1125.00374949 | +0.3 | +0.4 | A 1125.00372577 | −0.0 | +0.0 |
| | A 1125.00373562 | −0.5 | −0.3 | A 1125.00375596 | +0.0 | −0.3 |
| | A 1125.00376815 | +0.1 | +0.1 | A 1125.00376035 | −0.2 | −0.1 |

| N | Number of star | $\Delta\alpha$ | $\Delta\delta$ | Number of star | $\Delta\alpha$ | $\Delta\delta$ |
|---|---|---|---|---|---|---|
| 25 | A 1125.00384632 | +0.6 | −0.2 | A 1125.00384420 | −0.6 | +0.1 |
| | A 1125.00381103 | −0.2 | −0.6 | A 1125.00381381 | +0.1 | +0.2 |
| | A 1125.00382028 | +0.0 | −0.0 | A 1125.00383754 | −0.2 | +0.1 |
| | A 1125.00384177 | +0.1 | −0.1 | A 1125.00381716 | +0.2 | +0.6 |
| 26 | A 1125.00381103 | −0.3 | −0.1 | A 1125.00381381 | +0.3 | +0.4 |
| | A 1125.00383754 | +0.1 | −0.2 | A 1125.00384177 | +0.4 | −0.2 |
| | A 1125.00381716 | +0.3 | +0.0 | A 1125.00384990 | −0.1 | +0.2 |
| | A 1125.00384633 | +0.0 | +0.2 | A 1125.00383638 | −0.4 | −0.1 |
| | A 1125.00382517 | −0.2 | −0.3 | | | |
| 27 | A 1050.05681446 | +0.4 | −0.1 | A 1050.05681227 | −0.3 | −0.3 |
| | A 1050.05684293 | −0.0 | −0.0 | A 1050.05680613 | −0.0 | +0.4 |
| | A 1050.05684295 | −0.0 | −0.2 | A 1050.05684956 | +0.0 | +0.3 |
| | A 1050.05678963 | +0.0 | +0.4 | A 1050.05678988 | −0.0 | −0.4 |
| 28 | A 1050.05681446 | +0.3 | −0.1 | A 1050.05681227 | −0.3 | −0.3 |
| | A 1050.05684293 | −0.1 | −0.0 | A 1050.05680613 | +0.2 | +0.4 |
| | A 1050.05684295 | +0.1 | −0.3 | A 1050.05684956 | −0.1 | +0.3 |
| | A 1050.05678963 | −0.0 | +0.5 | A 1050.05678988 | −0.1 | −0.5 |
| 29 | A 1050.05671912 | −0.1 | +0.2 | A 1050.05674866 | +0.2 | +0.3 |
| | A 1050.05674282 | +0.3 | +0.3 | A 1050.05675199 | −0.1 | −0.1 |
| | A 1050.05673576 | −0.2 | −0.2 | A 1050.05670324 | −0.1 | −0.1 |
| | A 1050.05669688 | +0.4 | +0.3 | A 1050.05672564 | −0.5 | −0.7 |
| 30 | A 1050.05671912 | −0.7 | +0.2 | A 1050.05674866 | +0.1 | +0.3 |
| | A 1050.05674282 | +0.1 | +0.1 | A 1050.05675199 | −0.2 | −0.2 |
| | A 1050.05673576 | +0.1 | −0.1 | A 1050.05670324 | +0.0 | +0.0 |
| | A 1050.05669688 | +0.1 | +0.0 | A 1050.05672301 | +0.5 | −0.2 |
| 31 | A 0900.05699751 | +0.2 | +0.3 | A 0900.05700255 | −0.3 | +0.0 |
| | A 0900.05701392 | −0.1 | −0.1 | A 0900.05700328 | −0.0 | +0.3 |
| | A 0900.05697529 | +0.2 | −0.2 | A 0900.05692391 | −0.2 | +0.2 |
| | A 0900.05693807 | +0.1 | −0.2 | A 0900.05702220 | +0.1 | −0.3 |
| 32 | A 0900.05699751 | +0.1 | +0.1 | A 0900.05700255 | −0.1 | +0.1 |
| | A 0900.05701392 | −0.3 | +0.2 | A 0900.05700328 | +0.1 | +0.1 |
| | A 0900.05697529 | +0.3 | −0.3 | A 0900.05692391 | −0.2 | +0.3 |
| | A 0900.05693807 | +0.1 | −0.2 | A 0900.05702220 | +0.1 | −0.2 |
| 33 | A 0900.05677868 | +0.1 | −0.1 | A 0900.05678349 | +0.1 | −0.0 |
| | A 0900.05677662 | −0.7 | −0.2 | A 0900.05676630 | +0.6 | +0.2 |
| | A 0900.05673254 | −0.2 | +0.0 | A 0900.05670142 | +0.3 | +0.3 |
| | A 0900.05670227 | −0.4 | −0.5 | A 0900.05672747 | +0.2 | +0.2 |
| 34 | A 0900.05677868 | +0.1 | −0.1 | A 0900.05678349 | +0.0 | +0.0 |
| | A 0900.05677662 | −0.7 | −0.1 | A 0900.05676630 | +0.6 | +0.1 |
| | A 0900.05673254 | −0.3 | +0.2 | A 0900.05670142 | +0.4 | +0.2 |
| | A 0900.05670227 | −0.4 | −0.6 | A 0900.05672747 | +0.1 | +0.3 |
| 35 | A 0825.04394842 | +0.3 | −0.0 | A 0825.04389132 | −0.3 | +0.0 |
| | A 0825.04387315 | +0.0 | −0.1 | A 0825.04383762 | −0.0 | +0.0 |
| | A 0825.04382712 | +0.1 | +0.2 | A 0825.04402237 | −0.0 | +0.2 |
| | A 0825.04404264 | −0.1 | −0.1 | A 0825.04407926 | +0.1 | +0.1 |
| | A 0825.04395517 | −0.0 | −0.3 | | | |

SUPPLEMENT



| N | Number of star | $\Delta\alpha$ | $\Delta\delta$ | Number of star | $\Delta\alpha$ | $\Delta\delta$ |
|---|---|---|---|---|---|---|
| 36 | A 0825.04394842 | +0.3 | −0.0 | A 0825.04389132 | −0.4 | +0.1 |
| | A 0825.04387315 | +0.1 | −0.2 | A 0825.04383762 | +0.1 | +0.1 |
| | A 0825.04382712 | +0.0 | +0.2 | A 0825.04402237 | +0.0 | +0.2 |
| | A 0825.04404264 | −0.1 | −0.1 | A 0825.04407926 | +0.0 | +0.1 |
| | A 0825.04395517 | +0.1 | −0.4 | | | |
| 37 | A 0825.04229442 | −0.0 | +0.3 | A 0825.04231258 | −0.1 | −0.6 |
| | A 0825.04231461 | +0.0 | +0.2 | A 0825.04222579 | +0.1 | +0.3 |
| | A 0825.04215908 | −0.2 | −0.5 | A 0825.04219943 | +0.1 | +0.2 |
| | A 0825.04216908 | +0.1 | +0.2 | | | |
| 38 | A 0825.04231258 | +0.1 | −0.2 | A 0825.04234980 | +0.1 | −0.3 |
| | A 0825.04237626 | −0.1 | +0.2 | A 0825.04234624 | −0.1 | +0.1 |
| | A 0825.04215078 | +0.1 | +0.2 | A 0825.04215908 | −0.2 | −0.3 |
| | A 0825.04222579 | −0.1 | +0.4 | A 0825.04231461 | +0.2 | +0.0 |
| | A 0825.04241890 | −0.1 | +0.0 | A 0825.04222449 | −0.0 | −0.1 |
| 39 | A 0825.03372522 | +0.2 | −0.2 | A 0825.03361019 | −0.3 | +0.1 |
| | A 0825.03361312 | +0.3 | +0.4 | A 0825.03367972 | −0.2 | −0.4 |
| | A 0825.03379091 | −0.1 | +0.0 | A 0825.03380288 | +0.1 | −0.1 |
| | A 0825.03383381 | +0.3 | +0.1 | A 0825.03384503 | −0.5 | +0.3 |
| | A 0825.03374806 | +0.3 | −0.2 | | | |
| 40 | A 0825.03372522 | +0.1 | −0.1 | A 0825.03361019 | −0.2 | +0.0 |
| | A 0825.03361312 | +0.2 | +0.3 | A 0825.03367972 | −0.2 | −0.3 |
| | A 0825.03379091 | −0.1 | +0.1 | A 0825.03380288 | +0.1 | −0.1 |
| | A 0825.03383381 | +0.3 | +0.1 | A 0825.03384503 | −0.3 | +0.1 |
| | A 0825.03374806 | +0.1 | −0.1 | | | |
| 41 | A 1050.05270821 | −0.1 | +0.1 | A 1050.05270210 | +0.0 | −0.2 |
| | A 1050.05268522 | +0.3 | −0.2 | A 1050.05268451 | +0.3 | +0.2 |
| | A 1050.05273659 | +0.0 | −0.1 | A 1050.05267041 | −0.7 | −0.3 |
| | A 1050.05266707 | +0.4 | +0.2 | A 1050.05270473 | −0.1 | +0.1 |
| | A 1050.05267275 | +0.1 | −0.1 | A 1050.05269107 | −0.2 | +0.3 |
| 42 | A 1050.05274350 | +0.0 | −0.0 | A 1050.05273922 | +0.1 | +0.0 |
| | A 1050.05270473 | −0.2 | −0.0 | A 1050.05268791 | +0.2 | −0.0 |
| | A 1050.05268451 | −0.0 | +0.0 | A 1050.05268522 | +0.2 | −0.3 |
| | A 1050.05269864 | −0.3 | +0.3 | A 1050.05273576 | +0.0 | −0.1 |
| 43 | A 1200.05282505 | +0.1 | −0.0 | A 1200.05277686 | −0.2 | +0.3 |
| | A 1200.05275730 | +0.0 | −0.2 | A 1200.05270884 | +0.1 | +0.1 |
| | A 1200.05271489 | +0.1 | −0.1 | A 1200.05275453 | −0.1 | +0.0 |
| | A 1200.05276894 | +0.1 | +0.1 | A 1200.05279497 | −0.2 | +0.2 |
| | A 1200.05281666 | +0.2 | −0.2 | | | |
| 44 | A 1200.05282505 | +0.1 | +0.0 | A 1200.05277686 | −0.1 | +0.2 |
| | A 1200.05275730 | −0.0 | −0.1 | A 1200.05270884 | +0.1 | +0.1 |
| | A 1200.05271489 | +0.1 | −0.3 | A 1200.05275453 | −0.1 | +0.1 |
| | A 1200.05276894 | +0.0 | +0.2 | A 1200.05279497 | +0.0 | −0.0 |
| | A 1200.05281666 | −0.0 | −0.2 | | | |
| 45 | A 1050.05259814 | +0.0 | +0.1 | A 1050.05259921 | +0.1 | +0.0 |
| | A 1050.05259359 | −0.4 | −0.1 | A 1050.05260625 | +0.3 | +0.1 |
| | A 1050.05263375 | −0.0 | +0.0 | A 1050.05263777 | −0.4 | +0.3 |
| | A 1050.05262367 | +0.2 | −0.1 | A 1050.05264086 | +0.1 | −0.3 |

| N | Number of star | $\Delta\alpha$ | $\Delta\delta$ | Number of star | $\Delta\alpha$ | $\Delta\delta$ |
|---|---|---|---|---|---|---|
| 46 | A 1050.05259814 | −0.1 | +0.1 | A 1050.05259921 | +0.1 | −0.2 |
| | A 1050.05260625 | −0.1 | +0.1 | A 1050.05263375 | −0.0 | +0.0 |
| | A 1050.05263777 | −0.1 | +0.1 | A 1050.05262367 | +0.1 | −0.0 |
| | A 1050.05264086 | +0.1 | −0.2 | | | |
| 47 | A 1125.05600282 | +0.3 | +0.2 | A 1125.05599190 | −0.0 | −0.2 |
| | A 1125.05597802 | −0.1 | +0.3 | A 1125.05596781 | +0.1 | −0.4 |
| | A 1125.05598225 | −0.2 | +0.2 | A 1125.05599954 | +0.5 | +0.0 |
| | A 1125.05601319 | −0.4 | −0.2 | | | |
| 48 | A 1125.05600282 | +0.2 | +0.1 | A 1125.05599190 | −0.0 | −0.1 |
| | A 1125.05597802 | −0.1 | +0.2 | A 1125.05596781 | +0.1 | −0.2 |
| | A 1125.05598225 | −0.2 | +0.1 | A 1125.05599954 | +0.4 | +0.0 |
| | A 1125.05601319 | −0.3 | −0.1 | | | |
| 49 | A 0900.20472396 | +0.3 | +0.4 | A 0900.20470617 | −0.1 | −0.1 |
| | A 0900.20471244 | −0.4 | −0.4 | A 0900.20471259 | +0.5 | +0.5 |
| | A 0900.20472816 | +0.1 | +0.1 | A 0900.20472908 | −0.3 | −0.3 |
| | A 0900.20472743 | −0.0 | −0.1 | | | |
| 50 | A 0900.20472396 | +0.3 | +0.3 | A 0900.20470617 | −0.1 | −0.1 |
| | A 0900.20471244 | −0.4 | −0.5 | A 0900.20471259 | +0.5 | +0.6 |
| | A 0900.20472816 | +0.1 | +0.1 | A 0900.20472908 | −0.4 | −0.2 |
| | A 0900.20472743 | +0.1 | −0.2 | | | |
| 51 | A 0900.20472396 | +0.3 | +0.3 | A 0900.20470617 | −0.1 | −0.1 |
| | A 0900.20471244 | −0.4 | −0.5 | A 0900.20471259 | +0.5 | +0.6 |
| | A 0900.20472816 | +0.1 | +0.1 | A 0900.20472908 | −0.3 | −0.2 |
| | A 0900.20472743 | +0.0 | −0.2 | | | |
| 52 | A 0900.20364934 | −0.2 | +0.5 | A 0900.20365114 | +0.6 | −0.0 |
| | A 0900.20362913 | −0.1 | +0.1 | A 0900.20364645 | −0.2 | −0.4 |
| | A 0900.20362798 | +0.1 | −0.0 | A 0900.20364884 | −0.4 | −0.1 |
| | A 0900.20363841 | +0.2 | +0.0 | | | |
| 53 | A 0900.20364934 | −0.3 | +0.4 | A 0900.20365114 | +0.6 | −0.1 |
| | A 0900.20362913 | −0.1 | −0.2 | A 0900.20364645 | −0.1 | −0.5 |
| | A 0900.20362798 | +0.1 | +0.0 | A 0900.20364884 | −0.4 | −0.1 |
| | A 0900.20363841 | +0.2 | +0.4 | | | |
| 54 | A 0900.20428150 | +0.3 | −0.0 | A 0900.20429974 | −0.1 | −0.2 |
| | A 0900.20427717 | +0.1 | −0.1 | A 0900.20430836 | −0.1 | −0.1 |
| | A 0900.20430704 | +0.1 | +0.3 | A 0900.20426973 | −0.3 | +0.1 |
| 55 | A 0900.20427098 | +0.0 | +0.2 | A 0900.20429492 | −0.5 | +0.2 |
| | A 0900.20430263 | +0.1 | +0.0 | A 0900.20430853 | +0.2 | −0.1 |
| | A 0900.20428082 | +0.0 | −0.3 | A 0900.20427717 | +0.1 | −0.1 |
| 56 | A 0825.19393593 | +0.3 | −0.1 | A 0825.19390898 | −0.1 | +0.1 |
| | A 0825.19390961 | −0.1 | +0.0 | A 0825.19393181 | +0.2 | −0.0 |
| | A 0825.19396413 | +0.1 | −0.2 | A 0825.19396872 | −0.5 | +0.4 |
| | A 0825.19397367 | +0.3 | +0.0 | A 0825.19395793 | −0.2 | −0.2 |
| 57 | A 0825.19393593 | +0.3 | −0.2 | A 0825.19396413 | −0.1 | +0.0 |
| | A 0825.19396872 | −0.4 | +0.3 | A 0825.19397367 | +0.5 | −0.3 |
| | A 0825.19395793 | −0.4 | +0.3 | A 0825.19391349 | −0.2 | +0.1 |
| | A 0825.19393613 | +0.2 | −0.1 | | | |

SUPPLEMENT

| N | Number of star | $\Delta\alpha$ | $\Delta\delta$ | Number of star | $\Delta\alpha$ | $\Delta\delta$ |
|---|---|---|---|---|---|---|
| 58 | A 0825.19352374 | +0.4 | +0.2 | A 0825.19351886 | −0.3 | −0.5 |
| | A 0825.19352230 | +0.4 | +0.1 | A 0825.19356240 | +0.3 | +0.2 |
| | A 0825.19356616 | −0.3 | −0.1 | A 0825.19357013 | −0.2 | −0.0 |
| | A 0825.19350293 | −0.3 | +0.1 | | | |
| 59 | A 0825.19306495 | −0.0 | +0.1 | A 0825.19306109 | −0.0 | −0.3 |
| | A 0825.19307759 | +0.0 | +0.4 | A 0825.19310853 | −0.2 | −0.1 |
| | A 0825.19311865 | +0.2 | −0.1 | A 0825.19312388 | −0.1 | +0.0 |
| 60 | A 0825.19306495 | +0.0 | +0.1 | A 0825.19306109 | −0.1 | −0.3 |
| | A 0825.19307759 | +0.1 | +0.4 | A 0825.19310853 | −0.3 | −0.2 |
| | A 0825.19311865 | +0.4 | +0.0 | A 0825.19312388 | −0.2 | −0.0 |
| 61 | A 0825.19196455 | +0.1 | −0.0 | A 0825.19195513 | +0.0 | +0.1 |
| | A 0825.19196736 | −0.2 | −0.0 | A 0825.19197525 | +0.2 | −0.3 |
| | A 0825.19197241 | −0.5 | −0.3 | A 0825.19195051 | +0.2 | −0.1 |
| | A 0825.19197563 | +0.3 | +0.5 | A 0825.19193678 | −0.1 | +0.1 |
| 62 | A 0825.19196455 | +0.2 | +0.1 | A 0825.19195513 | +0.0 | +0.1 |
| | A 0825.19196736 | +0.0 | −0.2 | A 0825.19197525 | +0.1 | +0.1 |
| | A 0825.19197241 | −0.0 | −0.5 | A 0825.19195051 | −0.1 | +0.0 |
| | A 0825.19197563 | −0.2 | +0.3 | A 0825.19193678 | +0.0 | −0.0 |
| 63 | A 1125.00446271 | +0.0 | −0.0 | A 1125.00447227 | −0.0 | +0.0 |
| | A 1125.00446566 | +0.1 | −0.1 | A 1125.00445323 | −0.3 | +0.4 |
| | A 1125.00444591 | −0.0 | −0.2 | A 1125.00444721 | +0.4 | −0.3 |
| | A 1125.00444123 | −0.2 | +0.1 | | | |
| 64 | A 1125.00446271 | +0.0 | +0.1 | A 1125.00447227 | −0.0 | −0.0 |
| | A 1125.00446566 | +0.1 | −0.1 | A 1125.00445323 | −0.2 | +0.4 |
| | A 1125.00444591 | −0.0 | −0.1 | A 1125.00444721 | +0.4 | −0.4 |
| | A 1125.00444123 | −0.2 | +0.1 | | | |
| 65 | A 1125.00478819 | −0.3 | +0.6 | A 1125.00478938 | +0.2 | −0.5 |
| | A 1125.00475644 | −0.2 | −0.4 | A 1125.00475470 | +0.2 | +0.3 |
| | A 1125.00479346 | +0.1 | −0.1 | A 1050.00390678 | +0.0 | +0.1 |
| 66 | A 1050.00561766 | +0.3 | +0.2 | A 1050.00561383 | −0.9 | +0.8 |
| | A 1050.00562292 | +0.2 | −0.4 | A 1050.00562041 | −0.3 | +0.5 |
| | A 1050.00561621 | +0.0 | −0.4 | A 1050.00560409 | +0.2 | −0.1 |
| | A 1050.00561525 | +0.5 | −0.1 | A 1050.00560254 | −0.0 | −0.2 |
| | A 1050.00562521 | −0.0 | −0.2 | | | |
| 67 | A 1050.00558552 | −0.0 | +0.0 | A 1050.00562041 | +0.1 | −0.1 |
| | A 1050.00561660 | −0.0 | +0.0 | A 1050.00558564 | +0.1 | −0.1 |
| | A 1050.00561383 | −0.2 | +0.4 | A 1050.00562406 | +0.1 | −0.2 |
| 68 | A 1050.00561525 | +0.4 | −0.3 | A 1050.00561766 | +0.0 | −0.3 |
| | A 1050.00561383 | −0.5 | +0.8 | A 1050.00562041 | −0.1 | +0.2 |
| | A 1050.00562292 | +0.3 | +0.1 | A 1050.00561621 | −0.2 | −0.6 |
| | A 1050.00560409 | −0.2 | +0.4 | A 1050.00560199 | +0.5 | −0.4 |
| | A 1050.00560480 | −0.1 | +0.0 | | | |
| 69 | A 1050.00617229 | −0.5 | −0.1 | A 1050.00615487 | +0.1 | +0.3 |
| | A 1050.00615230 | −0.1 | +0.2 | A 1050.00615476 | +0.2 | −0.5 |
| | A 1050.00617040 | −0.1 | +0.0 | A 1050.00618554 | +0.3 | +0.1 |
| 70 | A 1050.00617229 | −0.4 | −0.2 | A 1050.00615487 | +0.1 | +0.3 |
| | A 1050.00615230 | −0.1 | +0.2 | A 1050.00615476 | +0.2 | −0.4 |

| N | Number of star | $\Delta\alpha$ | $\Delta\delta$ | Number of star | $\Delta\alpha$ | $\Delta\delta$ |
|---|---|---|---|---|---|---|
| | A 1050.00617040 | −0.0 | −0.0 | A 1050.00618554 | +0.2 | +0.1 |
| 71 | A 1425.04452425 | +0.1 | −0.0 | A 1425.04452776 | +0.3 | −0.3 |
| | A 1425.04451899 | −0.2 | +0.2 | A 1425.04445777 | +0.1 | −0.2 |
| | A 1425.04445661 | +0.0 | −0.0 | A 1425.04450236 | −0.2 | +0.2 |
| | A 1425.04444401 | +0.0 | +0.1 | | | |
| 72 | A 1425.04452425 | +0.0 | −0.0 | A 1425.04452776 | +0.2 | −0.2 |
| | A 1425.04451899 | −0.2 | +0.2 | A 1425.04445777 | −0.0 | −0.1 |
| | A 1425.04445661 | +0.0 | −0.0 | A 1425.04450236 | −0.1 | +0.1 |
| | A 1425.04444401 | +0.0 | +0.1 | | | |
| 73 | A 0825.07954557 | −0.2 | −0.4 | A 0825.07955934 | +0.2 | +0.2 |
| | A 0825.07956167 | −0.2 | −0.2 | A 0825.07955978 | −0.3 | +0.2 |
| | A 0825.07956630 | +0.3 | −0.1 | A 0825.07954061 | −0.5 | −0.3 |
| | A 0825.07953946 | +0.5 | +0.3 | A 0825.07953842 | +0.4 | −0.3 |
| | A 0825.07953787 | −0.1 | +0.4 | | | |
| 74 | A 0825.07954557 | +0.1 | −0.3 | A 0825.07955934 | −0.0 | +0.2 |
| | A 0825.07956167 | −0.0 | −0.2 | A 0825.07955978 | −0.1 | +0.0 |
| | A 0825.07956630 | +0.1 | +0.1 | A 0825.07954061 | −0.3 | −0.3 |
| | A 0825.07953946 | +0.2 | +0.3 | A 0825.07953842 | +0.4 | −0.0 |
| | A 0825.07953787 | −0.4 | +0.2 | | | |
| 75 | A 0975.14581822 | −0.0 | +0.0 | A 0975.14583620 | +0.0 | +0.0 |
| | A 0975.14584660 | −0.1 | −0.0 | A 0975.14585414 | +0.0 | +0.0 |
| | A 0975.14583814 | +0.0 | −0.0 | A 0975.14583457 | −0.0 | +0.0 |
| 76 | A 0975.14581822 | −0.0 | −0.0 | A 0975.14583620 | +0.1 | +0.1 |
| | A 0975.14584660 | −0.2 | +0.0 | A 0975.14585414 | +0.1 | −0.1 |
| | A 0975.14583814 | −0.0 | +0.1 | A 0975.14583457 | +0.0 | −0.1 |
| 77 | A 0975.14395997 | −0.2 | +0.4 | A 0975.14399017 | +0.2 | −0.1 |
| | A 0975.14397732 | +0.5 | −0.4 | A 0975.14399683 | −0.5 | +0.1 |
| | A 0975.14384703 | +0.0 | −0.0 | A 0975.14384028 | +0.0 | −0.0 |
| | A 0975.14387781 | +0.0 | −0.0 | A 0975.14389445 | −0.3 | −0.1 |
| | A 0975.14397791 | +0.3 | +0.3 | A 0975.14403738 | −0.1 | −0.0 |
| 78 | A 0975.14395997 | −0.2 | +0.3 | A 0975.14399017 | +0.2 | −0.1 |
| | A 0975.14397732 | +0.5 | −0.4 | A 0975.14399683 | −0.5 | +0.1 |
| | A 0975.14384703 | −0.1 | +0.1 | A 0975.14384028 | +0.1 | −0.1 |
| | A 0975.14387781 | −0.0 | −0.0 | A 0975.14389445 | −0.2 | −0.1 |
| | A 0975.14397791 | +0.3 | +0.3 | A 0975.14403738 | −0.1 | −0.0 |
| 79 | A 0675.12053581 | +0.2 | −0.2 | A 0675.12052193 | −0.1 | −0.0 |
| | A 0675.12048917 | +0.1 | +0.0 | A 0675.12048475 | −0.2 | −0.0 |
| | A 0675.12050112 | −0.1 | +0.1 | A 0675.12051827 | +0.6 | −0.1 |
| | A 0675.12053786 | −0.4 | +0.0 | A 0675.12054665 | +0.1 | −0.0 |
| | A 0675.12054147 | −0.2 | +0.2 | | | |
| 80 | A 0675.12053581 | +0.1 | −0.2 | A 0675.12052193 | +0.3 | +0.3 |
| | A 0675.12048475 | −0.0 | −0.2 | A 0675.12050112 | −0.2 | +0.3 |
| | A 0675.12051827 | +0.4 | −0.1 | A 0675.12053786 | −0.2 | −0.2 |
| | A 0675.12054665 | +0.1 | +0.2 | A 0675.12054147 | −0.4 | −0.2 |
| | A 0675.12048782 | −0.1 | −0.0 | | | |
| 81 | A 1050.07319036 | +0.1 | −0.5 | A 1050.07318362 | −0.5 | +0.7 |

SUPPLEMENT

| N | Number of star | $\Delta\alpha$ | $\Delta\delta$ | Number of star | $\Delta\alpha$ | $\Delta\delta$ |
|---|---|---|---|---|---|---|
| | A 1050.07317299 | +0.2 | −0.1 | A 1050.07316656 | +0.1 | −0.1 |
| | A 1050.07319456 | −0.0 | −0.2 | A 1050.07320036 | +0.2 | +0.2 |
| 82 | A 1050.07319036 | +0.3 | −0.4 | A 1050.07318362 | −0.7 | +0.8 |
| | A 1050.07317299 | +0.2 | −0.2 | A 1050.07316656 | +0.1 | −0.1 |
| | A 1050.07319456 | +0.0 | −0.1 | A 1050.07320036 | +0.1 | −0.0 |
| 83 | A 1275.07817803 | +0.1 | −0.0 | A 1275.07817240 | −0.4 | −0.1 |
| | A 1275.07815502 | −0.1 | +0.3 | A 1275.07815219 | +0.2 | −0.4 |
| | A 1275.07814189 | +0.2 | +0.2 | A 1275.07815575 | −0.3 | −0.3 |
| | A 1275.07816745 | −0.2 | +0.2 | A 1275.07818101 | +0.4 | +0.1 |
| 84 | A 1275.07817803 | −0.2 | +0.0 | A 1275.07817240 | −0.0 | −0.3 |
| | A 1275.07815502 | −0.2 | +0.4 | A 1275.07815219 | +0.2 | −0.4 |
| | A 1275.07814189 | +0.3 | +0.1 | A 1275.07815575 | −0.6 | −0.0 |
| | A 1275.07816745 | +0.3 | −0.2 | A 1275.07818101 | +0.2 | +0.4 |
| 85 | A 0900.13679241 | −0.3 | −0.0 | A 0900.13678826 | +0.4 | −0.1 |
| | A 0900.13678544 | +0.1 | +0.2 | A 0900.13677167 | −0.3 | +0.1 |
| | A 0900.13676762 | +0.2 | −0.1 | A 0900.13673024 | +0.2 | −0.1 |
| | A 0900.13671682 | −0.1 | +0.1 | | | |
| 86 | A 0900.13679241 | −0.2 | −0.1 | A 0900.13678826 | +0.3 | −0.1 |
| | A 0900.13678544 | +0.1 | +0.1 | A 0900.13677167 | −0.6 | +0.3 |
| | A 0900.13676762 | +0.2 | −0.1 | A 0900.13673024 | +0.4 | −0.3 |
| | A 0900.13671682 | −0.3 | +0.2 | | | |
| 87 | A 0825.14483606 | −0.1 | −0.2 | A 0825.14482556 | +0.2 | +0.1 |
| | A 0825.14523117 | −0.0 | +0.0 | A 0825.14510783 | +0.0 | −0.0 |
| | A 0825.14479228 | +0.0 | −0.1 | A 0825.14480782 | −0.2 | +0.2 |
| 88 | A 0825.14483606 | +0.1 | −0.2 | A 0825.14482556 | +0.1 | +0.0 |
| | A 0825.14523117 | −0.0 | +0.0 | A 0825.14510783 | +0.0 | −0.0 |
| | A 0825.14479228 | +0.1 | −0.1 | A 0825.14480782 | −0.2 | +0.2 |
| 89 | A 1200.00024009 | +0.1 | +0.3 | A 1200.00023363 | −0.1 | −0.0 |
| | A 1200.00017533 | +0.1 | +0.1 | A 1200.00019729 | +0.1 | −0.2 |
| | A 1200.00021677 | −0.3 | +0.3 | A 1200.00023437 | +0.2 | −0.4 |
| | A 1200.00018589 | −0.0 | +0.0 | | | |
| 90 | A 1200.00024009 | +0.3 | +0.2 | A 1200.00023363 | −0.2 | −0.0 |
| | A 1200.00017533 | +0.2 | +0.0 | A 1200.00019729 | −0.2 | −0.1 |
| | A 1200.00021677 | −0.2 | +0.1 | A 1200.00023437 | +0.1 | −0.1 |
| | A 1200.00018589 | −0.0 | +0.0 | | | |
| 91 | A 1200.00024009 | +0.1 | +0.3 | A 1200.00023363 | −0.0 | −0.1 |
| | A 1200.00017533 | +0.1 | +0.1 | A 1200.00019729 | −0.1 | −0.1 |
| | A 1200.00021677 | +0.1 | −0.0 | A 1200.00023437 | −0.1 | −0.2 |
| | A 1200.00018589 | +0.0 | +0.0 | | | |
| 92 | A 1200.00014930 | −0.2 | +0.3 | A 1200.00011557 | +0.1 | −0.2 |
| | A 1200.00012057 | +0.2 | +0.1 | A 1200.00017364 | +0.0 | −0.2 |
| | A 1200.00018235 | +0.2 | −0.0 | A 1200.00014936 | −0.3 | +0.1 |
| 93 | A 1200.00014930 | −0.3 | +0.3 | A 1200.00011557 | +0.2 | −0.2 |
| | A 1200.00012057 | +0.0 | +0.0 | A 1200.00017364 | +0.1 | −0.2 |
| | A 1200.00018235 | +0.1 | −0.0 | A 1200.00014936 | −0.1 | +0.1 |
| 94 | A 1200.00009870 | −0.2 | −0.5 | A 1200.00006184 | +0.1 | +0.1 |

| N | Number of star | $\Delta\alpha$ | $\Delta\delta$ | Number of star | $\Delta\alpha$ | $\Delta\delta$ |
|---|---|---|---|---|---|---|
| | A 1200.00005064 | +0.2 | +0.2 | A 1200.00007662 | −0.2 | −0.3 |
| | A 1200.00010470 | −0.0 | +0.0 | A 1200.00011632 | +0.5 | +0.3 |
| | A 1200.00010718 | −0.3 | +0.1 | | | |
| 95 | A 1200.00009870 | −0.1 | −0.3 | A 1200.00006184 | −0.1 | +0.1 |
| | A 1200.00005064 | +0.3 | +0.0 | A 1200.00007662 | −0.5 | −0.0 |
| | A 1200.00010470 | +0.3 | −0.3 | A 1200.00010718 | +0.1 | −0.0 |
| | A 1200.00010845 | −0.0 | +0.5 | | | |
| 96 | A 1200.20099960 | +0.2 | −0.0 | A 1200.20104343 | +0.1 | +0.2 |
| | A 1200.20105794 | +0.5 | −0.2 | A 1200.20104489 | −0.2 | −0.2 |
| | A 1200.20100143 | +0.0 | +0.0 | A 1200.20103516 | −0.4 | −0.1 |
| | A 1200.20105497 | −0.2 | +0.3 | | | |
| 97 | A 1200.20099960 | +0.1 | +0.0 | A 1200.20104343 | +0.3 | +0.2 |
| | A 1200.20105794 | +0.4 | −0.2 | A 1200.20104489 | −0.5 | +0.1 |
| | A 1200.20100143 | +0.1 | −0.0 | A 1200.20103516 | −0.5 | −0.1 |
| | A 1200.20105497 | +0.1 | +0.0 | | | |
| 98 | A 1050.01066679 | +0.6 | −0.4 | A 1050.01068940 | −0.1 | +0.1 |
| | A 1050.01068989 | −0.3 | −0.1 | A 1050.01068455 | +0.7 | +0.0 |
| | A 1050.01067945 | −0.3 | +0.2 | A 1050.01067288 | −0.2 | −0.1 |
| | A 1050.01066889 | +0.1 | −0.1 | A 1050.01066282 | +0.0 | +0.1 |
| | A 1050.01066093 | −0.5 | +0.3 | | | |
| 99 | A 1050.01066679 | +0.5 | −0.5 | A 1050.01068940 | −0.1 | +0.1 |
| | A 1050.01068989 | −0.3 | +0.2 | A 1050.01068455 | +0.6 | −0.1 |
| | A 1050.01067945 | −0.3 | +0.1 | A 1050.01067288 | +0.0 | −0.4 |
| | A 1050.01066889 | +0.1 | +0.0 | A 1050.01066282 | −0.1 | +0.2 |
| | A 1050.01066093 | −0.4 | +0.4 | | | |
| 100 | A 1125.00548500 | +0.0 | +0.1 | A 1125.00547676 | +0.1 | −0.0 |
| | A 1125.00544838 | −0.4 | +0.1 | A 1125.00546081 | −0.3 | +0.2 |
| | A 1125.00548691 | +0.0 | −0.0 | A 1125.00550053 | −0.2 | −0.0 |
| | A 1125.00545558 | +0.6 | −0.3 | A 1125.00549294 | +0.1 | −0.0 |
| 101 | A 1125.00548500 | +0.0 | +0.1 | A 1125.00547676 | +0.2 | −0.1 |
| | A 1125.00544838 | −0.4 | +0.1 | A 1125.00546081 | −0.3 | +0.1 |
| | A 1125.00548691 | −0.0 | −0.1 | A 1125.00550053 | −0.3 | +0.0 |
| | A 1125.00545558 | +0.6 | −0.3 | A 1125.00549294 | +0.2 | +0.0 |
| 102 | A 1125.19946183 | −0.2 | +0.0 | A 1125.19949535 | +0.1 | −0.0 |
| | A 1050.20797674 | −0.2 | +0.0 | A 1050.20796783 | +0.2 | −0.0 |
| | A 1050.20795597 | −0.1 | +0.3 | A 1050.20795368 | −0.0 | −0.5 |
| | A 1125.19942827 | +0.0 | +0.2 | A 1125.19944797 | +0.2 | +0.1 |
| 103 | A 1125.19946183 | −0.2 | +0.0 | A 1125.19949535 | +0.1 | +0.1 |
| | A 1050.20800441 | +0.1 | +0.2 | A 1050.20797674 | −0.5 | −0.6 |
| | A 1050.20796783 | +0.1 | −0.2 | A 1050.20795597 | +0.0 | +0.5 |
| | A 1050.20795368 | +0.1 | −0.2 | A 1125.19942827 | +0.1 | +0.3 |
| | A 1125.19944797 | +0.1 | −0.1 | | | |
| 104 | A 1125.19928709 | +0.1 | −0.6 | A 1125.19930983 | −0.1 | +0.4 |
| | A 1050.20784725 | +0.0 | +0.1 | A 1050.20784583 | −0.0 | −0.1 |
| | A 1050.20780600 | +0.2 | +0.1 | A 1050.20780165 | −0.2 | −0.1 |
| | A 1125.19924603 | −0.2 | +0.2 | A 1125.19925289 | +0.2 | +0.0 |

| N | Number of star | $\Delta\alpha$ | $\Delta\delta$ | Number of star | $\Delta\alpha$ | $\Delta\delta$ |
|---|---|---|---|---|---|---|
| 105 | A 1125.19928709 | −0.1 | −0.5 | A 1125.19930983 | +0.0 | +0.4 |
| | A 1050.20784725 | +0.2 | +0.0 | A 1050.20784583 | −0.1 | −0.1 |
| | A 1050.20780600 | +0.1 | +0.1 | A 1050.20780130 | −0.2 | −0.1 |
| | A 1125.19925289 | +0.1 | +0.3 | | | |
| 106 | A 1050.20755134 | −0.3 | +0.3 | A 1050.20754675 | +0.4 | −0.2 |
| | A 1050.20754725 | +0.4 | −0.2 | A 1050.20757743 | +0.3 | +0.0 |
| | A 1050.20757905 | +0.0 | −0.1 | A 1050.20757050 | +0.0 | +0.0 |
| | A 1050.20756584 | −0.4 | +0.1 | A 1050.20754565 | −0.3 | +0.2 |
| | A 1050.20755486 | −0.2 | −0.1 | | | |
| 107 | A 1050.20753448 | −0.0 | −0.2 | A 1050.20753895 | +0.2 | +0.4 |
| | A 1050.20753456 | −0.2 | −0.3 | A 1050.20754565 | +0.3 | +0.1 |
| | A 1050.20756063 | −0.2 | +0.1 | A 1050.20758717 | +0.6 | −0.1 |
| | A 1050.20757899 | −0.4 | +0.0 | A 1050.20757743 | −0.3 | −0.1 |
| 108 | A 1050.20678588 | +0.3 | +0.3 | A 1125.19819542 | +0.0 | −0.2 |
| | A 1050.20682233 | +0.2 | +0.1 | A 1050.20682049 | −0.4 | −0.2 |
| | A 1050.20682299 | −0.1 | −0.1 | A 1050.20680598 | +0.3 | +0.1 |
| | A 1050.20677846 | +0.1 | +0.2 | A 1050.20677199 | −0.2 | −0.4 |
| | A 1050.20677455 | −0.2 | +0.0 | | | |
| 109 | A 1050.20678588 | +0.3 | +0.3 | A 1125.19819542 | +0.0 | −0.2 |
| | A 1050.20682233 | +0.2 | +0.1 | A 1050.20682049 | −0.4 | −0.2 |
| | A 1050.20682299 | −0.0 | −0.0 | A 1050.20680598 | +0.2 | +0.1 |
| | A 1050.20677846 | +0.1 | +0.3 | A 1050.20677199 | −0.2 | −0.4 |
| | A 1050.20677455 | −0.2 | +0.0 | | | |

## 4. List of collaborators

| Name | Exposures | Measurements | Reductions |
|---|---|---|---|
| G. Červák | 10 | 10 | – |
| M. Husárik | 35 | 35 | – |
| M. Jakubík | 3 | 3 | – |
| M. Kamenický | 12 | 12 | – |
| L. Neslušan | 1 | 1 | 109 |
| P. Rychtarčík | 48 | 48 | – |

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## References

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