New Common Proper-Motion Pairs with R.A. Between 00h and 01h

Rafael Caballero

Agrupación Astronómica Hubble, Martos, Jaén, Spain
Email: rafacr@ucm.es

Abstract: This paper presents 37 new common proper-motion pairs. The new pairs have been obtained employing a semi-automatic procedure based on the inspection of images using the tool Aladin, completed with information obtained from the catalogs available at VizieR. All the pairs fulfill the Halbwachs criteria, employed to increase the probability of a physical bond between the two components.

Method

In previous papers such as Greaves (2004), new common proper-motion pairs (CPMPs in the rest of the paper) have been obtained from different astronomy catalogs available at VizieR. It was observed that in many cases the data obtained from the catalogs were not reliable, and therefore a final phase checking the existence of some image in Aladin (Bonnarel, et al., 2000) confirming the pairs data was requested.

Results

Table 1 shows the final list of 37 CPMP was obtained. For each pair we include:

The coordinates of the primary in the catalog.

The components, marked as AB in all the cases.

The visual magnitude V for both components.

The source of these data is shown in the two first characters of column 'Source'.

The epoch and astrometry data of the pair: position angle and separation. In all the cases the data have been obtain from the 2MASS catalog. The astrometry data was obtained from the coordinates in decimal format following Sinnott (1984). The separation is given in seconds and the position angle in degrees.

Columns 'PM RA' and 'PM DEC 'shows the proper movement of the two components in milliarcsecond/ year. The source of these data is shown in the last two characters of column 'Source'.

Finally column 'Notes' indicates the special situations.

Conclusions

Although many of the papers on new pairs follow the approach of first using the data catalogs and then checking the images, the converse procedure is also fruitful. This is the case for those pairs whose proper motion data, used to filter line-of-sight pairs, are obtained in different catalogs. The result is the list of 37 new CPMPs presented in this paper.

Acknowledgements

This research makes use of the ALADIN Interactive Sky Atlas and of the VizieR database of astronomical catalogues, all maintained at the Centre de Données Astronomiques, Strasbourg, France, and of the data products from the Two Micron All Sky Survey (2MASS), which is a joint project of the University of Massachusetts.

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Table 1 : Astrometric Measurements of the new pairs

RA DEC		Mags.	Date	PA	Sep.	PM RA	PM DEC	Source	Notes
00 01 06.67 +19 52 24.82	AB	15.99 17.95	1998.88	158.40	8.42	-035-063	-036-064	G,G|P,P	
00 02 16.53 -42 22 45.86	AB	16.03 17.74	2000.68	221.50	11.84	+072-014	+070-023	N,N|P,P	
00 05 55.38 -61 04 13.37	AB	14.65 16.08	2000.57	24.68	19.95	+539+025	+506+037	S,G|R,M	(1)
00 06 19.13 +68 51 07.79	AB	12.71 14.31	1999.79	209.64	19.53	+054-007	+050-010	G,G|P,P	
00 07 48.35 +58 00 50.30	AB	14.10 17.52	1998.97	320.28	8.61	+203-010	+204+021	G,L|U,L	
00 10 01.04 -50 28 13.18	AB	11.50 16.00	1999.79	83.93	21.04	-122-066	-119-063	T,S|P,P	
00 10 15.72 +05 25 37.57	AB	15.54 15.83	2000.90	107.88	9.45	+054-170	+054-170	G,G|L,U	
00 12 09.10 +29 35 45.18	AB	12.20 16.15	1997.80	150.95	12.49	+090-043	+082-038	G,G|N,N	
00 12 47.81 -33 29 28.31	AB	14.90 16.75	1998.87	358.72	19.08	+057-032	+058-032	G,G|P,P	
00 13 08.02 +51 29 47.93	AB	14.65 16.80	1998.85	1.00	5.93	+248+014	+250+050	G,G|N,N	
00 13 29.57 +38 07 30.88	AB	13.73 16.26	1998.83	78.86	10.30	+015-154	+018-152	G,G|P,P	
00 17 00.74 +69 29 24.73	AB	11.15 16.32	1999.75	17.78	30.57	+093+015	+091+010	G,G|P,P	
00 19 38.96 +64 56 59.06	AB	12.53 13.09	2000.45	12.45	24.72	+073+015	+070+007	G,G|P,P	
00 21 01.81 +18 27 06.17	AB	15.35 16.47	1998.75	309.20	3.19	-125-109	-125-109	L,L|L,L	
00 22 48.27 -50 09 16.54	AB	16.64 17.16	1999.76	260.61	36.41	+078+002	+084-001	N,N|P,P	
00 24 08.46 -41 47 46.56	AB	14.53 16.45	2000.01	121.82	29.02	+063-056	+068-062	G,G|P,P	
00 24 49.63 +68 34 42.40	AB	13.92 14.41	1992.74	14.40	3.30	+416+027	+416+027	N,N|L,L	(2)
00 25 03.02 -17 20 59.41	AB	15.73 17.39	1998.60	273.79	8.28	-001-054	-011-055	N,N|I,I	
00 27 29.04 +46 08 02.59	AB	15.82 18.98	1998.84	304.49	14.94	-067-019	-070-023	G,G|P,P	
00 27 49.15 +29 38 29.15	AB	14.73 17.91	1997.81	214.33	17.69	-076-056	-082-062	G,G|N,N	
00 32 24.42 +70 10 32.73	AB	13.35 13.65	2000.76	253.67	16.39	+046-018	+046-020	G,G|N,P	
00 32 24.88 +50 19 13.85	AB	11.96 15.05	1998.85	98.03	12.00	-159-050	-157-053	G,G|P,P	
00 33 34.27 +36 05 15.55	AB	13.37 19.26	1998.92	345.73	42.38	+157-006	+157-006	G,L|U,L	
00 33 59.06 -43 37 34.74	AB	16.42 17.39	1999.70	289.12	7.67	+022-137	+011-138	G,G|P,P	
00 34 08.11 +57 09 35.46	AB	17.38 18.57	1999.86	43.43	15.41	+074+004	+073+003	G,G|T,T	
00 34 17.79 +27 34 00.15	AB	16.32 18.33	1998.02	322.26	38.28	+177+057	+177+051	G,G|P,P	
00 35 10.51+42 19 44.85	AB	13.48 ?	1998.84	123.09	5.44	+152+014	+152+014	G,?|U,L	(3)
00 35 15.06 +82 25 18.53	AB	14.73 17.37	1999.82	313.48	7.30	+074-018	+067-021	G,G|P,P	
00 37 18.07 +75 36 23.12	AB	10.03 17.08	1999.81	148.22	34.11	-131-073	-127-075	G,G|P,P	
00 40 14.28 +67 00 54.66	AB	15.58 18.82	1999.86	353.68	43.75	+067-007	+072-011	G,G|P,P	
00 42 47.23 +82 29 25.53	AB	14.56 18.46	1999.82	174.62	44.16	+071+010	+072+011	G,G|P,P	
00 48 03.09 +09 58 24.58	AB	13.76 16.9	2000.75	47.90	10.38	+008-071	+010-065	G,G|P,P	
00 51 24.03 +26 35 32.43	AB	15.97 18.37	1997.83	117.51	5.67	+185+064	+185+063	G,L|P,L	
00 54 42.20+58 28 38.91	AB	13.05 18.00	1998.97	230.56	3.46	-104-109	-104-109	H,H|L,L	
00 57 16.25 +64 29 37.12	AB	14.52 18.52	1994.70	42.50	37.85	+083-032	+087-037	G,G|P,P	
00 57 51.49 -56 32 23.15	AB	16.61 17.44	1999.80	54.65	38.58	+143+052	+144+052	G,G|P,P	
00 58 41.09 +16 44 05.44	AB	13.84 14.03	2000.79	264.27	6.51	+256-079	+253-080	G,N|P,L	

Format of the “Source” column: UV | XY where U identifies the catalog used to obtain the magnitude of the A component, V the catalog to obtained the magnitude of the B component, X the catalog used to get the PM of the A component and Y the catalog to obtain the proper movement of the B component, where:

G: GSC2.3 (Lasker et al., 2008)
H: Red magnitude from GSC2.3
I: The Initial Gaia Source List (IGSL) (Smart, 2013)
L: LSPM (Lepine+ 2005)
M: Sample of low mass stars with mu>0.1"/yr (Deacon+, 2007)
N: NOMAD (Zacharias+ 2005)
P: PPMXL (Roeser+ 2010)
R: Revised Luyten Half-Second Catalogue (Bakos+ 2002)
S: SPM4.0 (Girard+, 2011)
T: Tycho Input Catalogue, Revised version (Egret+ 1992)
U: UCAC4 (Zacharias+, 2012)
T: URAT1 (Zacharias+, 2015)

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Notes column:

1. A is LHS 1018
2. B distance: 43.2 pc according to “new high proper motion stars (-90<DE←47) “(Subasavage+, 2005)
3. Red magnitude from NOMAD
4. Only magnitude for A available in the VizieR catalogs

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