

New Suspected Common Proper Motion Pairs

Massimiliano Martignoni

Stazione Astronomica Betelgeuse (SAB)
Via Don Minzoni 26/d
20020 Magnago (Milano)
Italy
massimiliano.martignoni@alice.it

Abstract: This article describes the identification of 21 new suspected pairs of stars with common proper motion. We provide position measurements and proper motion values using data from UCAC3 catalog (Zacharias et al., 2010).

Introduction

During the analysis of CCD images taken with the purpose of photometry of variable stars and of astrometry of minor planets of our solar system, we have serendipitously identified 21 new suspected pairs of common proper motion stars not previously reported by observers and not included in the last edition of the Washington Visual Double Star Catalog (Mason et al., 2001).

Analysis

In order to search for new pairs of common proper motion stars we analyzed images collected during the years 2003-2011 with the instruments of the “Stazione Astronomica Betelgeuse (SAB)” located in Magnago, Italy (a Schmidt-Cassegrain 0.20m-f/10.0 telescope equipped with a KAF401E CCD camera). For each suspected pair identified, we checked the UCAC3 catalog in order to establish a similarity in the proper motion of the components.

In Table 1, for each pair of stars with suspected common proper motion, are reported provisional designation, epoch, position (R.A. and Dec.) and magnitude as measured with the software Astrometrica

(Raab, 2011), proper motion in right ascension (pm RA) and proper motion in declination (pm DE) for components as derived from UCAC3 catalog, separation and position angle derived as described by Buchheim (2008).

Table 2 shows the images of fields containing the suspected common proper motion pairs; the orientation is north up and east left.

References

- Buchheim R.K., 2008, “CCD Double-Star Measurements at Altimira Observatory in 2007”, *JDSO* **4**, 27.
- Mason B.D. et al., 2001, “The Washington Visual Double Star Catalog (WDS), Version 2010-07-03”, *A.J.* **122**, 3466.
- Raab H., 2011, *Astrometrica* (Version 4.6.6.391), <http://www.astrometrica.at>.
- Zacharias N. et al., 2010, “Third U.S. Naval Observatory CCD Astrograph Catalog (UCAC3)”, *A.J.* **139**, 2184.

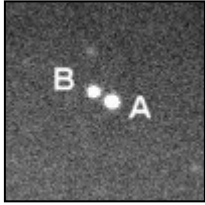
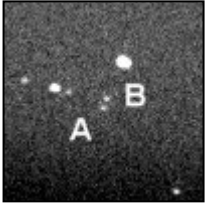
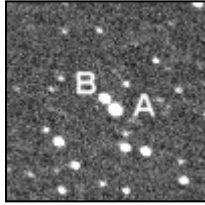
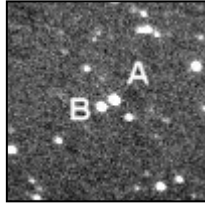
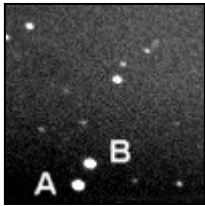
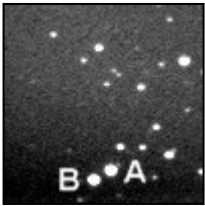
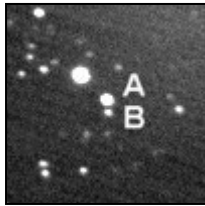
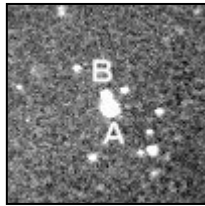
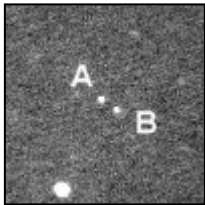
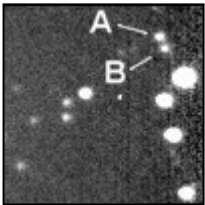
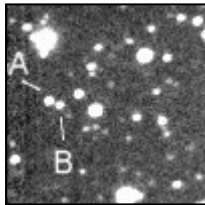
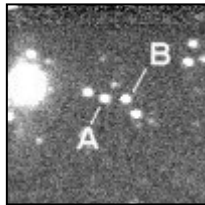
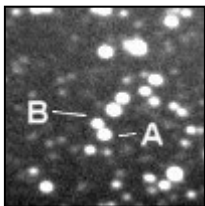
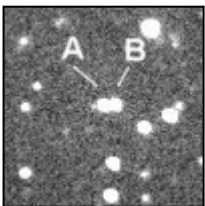
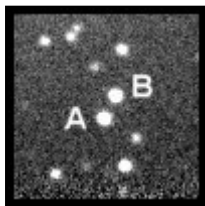
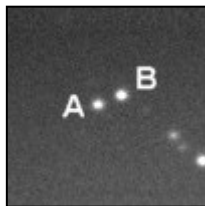
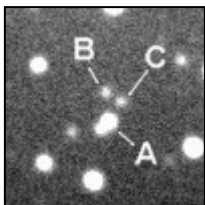
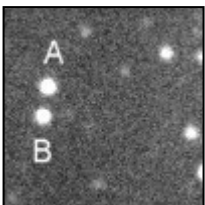
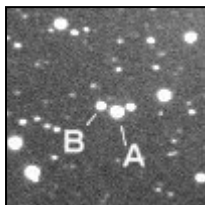
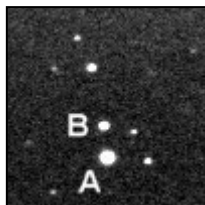
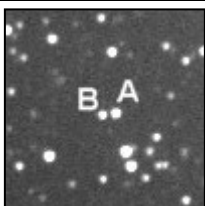
New Suspected Common Proper Motion Pairs

Table 1: Analysis Results

Design.	Epoch	R.A.			Dec.			Mag.	UCAC3 pmRA mas/ yr	UCAC3 pmDE mas/ yr	Sep. (Rho) "	P.A. (Theta) °
		h	m	s	°	'	"					
MMA 010A	2010.81	21	44	5.3	-4	12	14.3	12.4	-6.8	-20.5	20.21	60.01
MMA 010B		21	44	6.5	-4	12	4.2	13.1	-21.2	-13.6		
MMA 011A	2008.89	0	46	47.7	37	7	41.7	15.8	-20.2	7.2	9.47	340.06
MMA 011B		0	46	47.4	37	7	50.6	15.9	-21.2	10.5		
MMA 012A	2008.89	3	34	49.2	43	56	28.3	12.8	-14.3	-6.2	14.97	42.71
MMA 012B		3	34	50.2	43	56	39.3	13.9	-18.4	-8.4		
MMA 013A	2008.89	3	35	18.4	43	54	23.1	13.9	-18.7	-14.1	14.36	117.36
MMA 013B		3	35	19.5	43	54	16.5	14.2	-23.2	-10.3		
MMA 014A	2011.11	6	53	59.8	48	14	46.2	12.9	-8.5	-12.9	22.90	331.89
MMA 014B		6	53	58.7	48	15	6.4	13.1	-6.6	-12.7		
MMA 015A	2011.11	6	7	26.0	44	19	7.8	12.4	-8.6	-5.0	18.11	118.71
MMA 015B		6	7	27.5	44	18	59.1	12.5	-10.4	-2.8		
MMA 016A	2007.55	18	41	17.8	28	43	44.0	12.8	-3.2	-6.4	12.19	6.82
MMA 016B		18	41	17.9	28	43	56.1	15.3	-3.8	-6.9		
MMA 017A	2007.79	1	36	38.0	54	14	41.9	9.1	6.9	-9.4	12.05	193.89
MMA 017B		1	36	37.7	54	14	30.2	12.2	7.3	-8.6		
MMA 018A	2007.79	23	33	43.8	48	47	44.1	14	-2.7	-8.4	17.41	53.72
MMA 018B		23	33	45.3	48	47	54.4	14.1	-4.7	-11.6		
MMA 019A	2003.68	18	31	2.9	40	54	53.8	15.6	-5.8	6.8	11.17	201.42
MMA 019B		18	31	2.5	40	54	43.4	15.9	-7.9	10.8		
MMA 020A	2003.59	20	15	41.6	53	15	48.5	15.5	-13.2	-4.9	11.09	244.93
MMA 020B		20	15	40.5	53	15	43.8	16	-10.6	-3.7		
MMA 021A	2003.70	19	20	4.2	46	55	50.2	15.2	13.6	12.2	18.98	266.98
MMA 021B		19	20	2.4	46	55	49.2	15.2	13.5	10.9		
MMA 022A	2003.70	20	2	44.2	22	56	20.7	14	-21.0	19.9	11.39	30.63
MMA 022B		20	2	44.6	22	56	30.5	14.6	-27.1	13.6		
MMA 023A	2003.77	22	39	9.0	46	48	49.3	13	-8.2	37.5	9.44	270.00
MMA 023B		22	39	8.1	46	48	49.3	13.4	6.7	39.0		
MMA 024A	2003.96	6	7	26.1	51	3	43.6	14.4	-7.3	-5.3	22.67	334.12
MMA 024B		6	7	25.1	51	4	4.0	14.5	-8.4	-4.3		
MMA 025A	2003.98	6	2	37.6	72	52	13.1	15	7.5	-26.3	20.69	293.95
MMA 025B		6	2	33.3	72	52	21.5	14.8	6.7	-20.3		
MMA 026A	2004.11	7	12	6.0	17	21	2.3	14.1	12.7	33.8	26.99	4.56
MMA 026B		7	12	6.2	17	21	29.2	15.6	15.5	32.7		
MMA 026A	2004.11	7	12	6.0	17	21	2.3	14.1	12.7	33.8	20.83	326.64
MMA 026C		7	12	5.2	17	21	19.7	15.7	21.3	29.6		
MMA 027A	2004.11	7	12	24.4	17	23	50.2	14.3	21.1	27.2	26.92	171.13
MMA 027B		7	12	24.7	17	23	23.6	14.4	32.1	25.8		
MMA 028A	2011.70	18	49	38.4	19	52	53.8	12.4	-8.8	-27.8	13.90	70.68
MMA 028B		18	49	39.3	19	52	58.4	14.2	-8.3	-25.2		
MMA 029A	2011.72	22	9	16.8	17	59	45.2	12.7	-14.0	-11.2	25.30	7.13
MMA 029B		22	9	17.0	18	0	10.3	14.8	-17.3	-11.9		
MMA 030A	2011.76	22	28	0.3	48	8	5.6	13.8	-21.8	-27.7	10.89	96.86
MMA 030B		22	28	1.4	48	8	4.3	14.7	-20.0	-26.9		

New Suspected Common Proper Motion Pairs

Table 2: Identification Charts

			
MMA010	MMA011	MMA012	MMA013
			
MMA014	MMA015	MMA016	MMA017
			
MMA018	MMA019	MMA020	MMA021
			
MMA022	MMA023	MMA024	MMA025
			
MMA026	MMA027	MMA028	MMA029
			
MMA030			