

Measurements of 40 Neglected Stars - Report of December 2023

Joseph L. Carro

Cuesta College, San Luis Obispo, California

Abstract

The position angles and separations of 40 neglected double stars were measured from photographs taken remotely. A neglected star is defined as a star which has at least one component with 10 or fewer measurements. The double stars were selected from the Washington Double Star Catalog, which is published by the United States Naval Observatory. When possible, comparisons were made with published data. The photographs were taken at the Open University located on the Canary Islands, Spain. The WDS data was current as of 1 November 2023. The data analyses were done by the author.

This research made use of the SIMBAD database operated by CDS, in Strasbourg, France, and the Washington Double Star Catalog maintained by the United States Naval Observatory.

Data about the Open University site

The observatory is in the Canary Islands, Spain at a latitude of 28 ° 17 '59 "N, a longitude of 16 ° 30' 30" W, and an altitude of 2,360 meters. on the island of Tenerife. The telescope is a 17" f/6.8 corrected Dall-Kirkham Astrograph equipped with an FLI Proline KAF-0900 CCD camera with broadband and narrow band filters mounted on a GM-4000.

Methodology

The photographs were reduced by the author using SKY X version 10.5.0 build 13479, a product of Bisque Software. Several factors, namely ambient temperature, humidity, wind, and visibility were not reported by the observatories. Not all photographs were useful, and the number of possible measurements for each star is reported. A literature search was performed for each star and the data sources were reported.

Report

The information included in this report consists of the WDS identifier, the constellation code, the discoverer code, the components, the position angle with standard deviation and standard error of the mean, the separation with standard deviation and standard error of the mean, the number of measurements, and the date of the most recent measurement. When no calculations were possible, the term "na" was used.

WDS/Constellation	Code/Component	PA / SD/ SEM	Sep / SD/ SEM	# of Obs	Date
08111+6952 UMA ¹	TDS 5604 AB	324.01/0.51/0.3	2.4/0.11/0.07	3	2023.9095
WDS		325	2.3	1	1991

08138+6306 UMA	LDS 2564 AB	112.59 na	245.1 na	1	2023.8658
WDS		113	244.5	10	2016
	RAO 60 BC	37.39	12.6	1	2023.8658
GAIA DR2 v3		36.76	12.78		2018
JDSO (Knapp) ³		36.652	12.833		2018
WDS		37	12.9	8	2015

08147+6326 UMA ¹	LDS 2565 AB	256.54 na	4.7 na	1	2023.8685
GAIA DR2 v3		256.14	4.77		2018
WDS		256	4.8	5	2016

WDS/Constellation	Code/Component	PA / SD/ SEM	Sep / SD/ SEM	# of Obs.	Date
08158+6023 UMA	STF 1192 AD	193.7 na	98.6 na	1	2023.8685
WDS		194	98.4	4	2015

08160+6907 UMA ¹	LDS 1674 AB	289.48 na	99.1 na	1	2023.8685
JDSO (Curelaru, +)		289.7	98.66		2011.780
WDS		290	98.8	8	2015

08167+6808 UMA ¹	LDS 2567 AB	103.51 na	5.6 na	1	2023.8685
GAIA DR2 v3		103.95	5.45		2018
WDS		104	5.4	5	2015

08169+6435 UMA ¹	LDS 2570 AB	92.35 na	35.1 na	1	2023.8685
WDS		93	35.4	8	2015

08188+6806 UMA	LDS 2571 AB	47.56 na	6.4 na	1	2023.8685
GAIA DR2 v3		48.15	6.33		2018
WDS		49	6.2	7	2015

08204+6549 UMA ¹	MLB 1072 AB	114.02 na	8.3 na	1	2023.8685
GAIA DR2 v3		114.38	8.35		2018
JDSO (Knapp)		114.272	8.407		20187
WDS		114	8.4	8	2015

08207+6236 UMA ¹	LDS 2573 AB	79.07 na	13.1 na	1	2023.8685
GAIA DR2 v3		78.77	12.94		2018
WDS		79	12.9	7	2015

08236+6757 UMA ¹	LDS 2275 AB	246.45 na	20.1 na	1	2023.8685
WDS		248	19.7	7	2015

08239+6610 UMA ¹	GAT 1 AB	94.45/0.58/0.34	4.3/0.05/0.03	3	2023.9425
GAIA DR2 v3		92.60	4.2		2018
JDSO (Gatewood, +)		93.45	4.030		2012.079
WDS		93	4.2	4	2015

08239+6750 UMA ¹	LDS 2276 AB	227.51 na	12.3 na	1	2023.8685
WDS		231	12.0	6	2015

08244+6544 UMA ^{2,4}	LDS 2277 AB	48.37/0.09/0.06	14.8/0.01/0.006	3	2023.9425
GAIA DR2 v3		48.40	14.84		2018
JDSO (Knapp)		48.383	14.852		2018
WDS		48	14.8	6	2015

WDS/Constellation	Code/Component	PA / SD/ SEM	Sep / SD/ SEM	# of Obs.	Date
08259+6541 UMA	LDS 2278 AB	194.18/0.38/0.22	38.2/0.1/0.006	3	2023.9425
WDS		194	38.2	5	2015
	LDS 2278 BC	63.53/.0.23/0.13	4.2/0.2/0.11	3	2023.9425
GAIA DR2 v3		64.08	4.16		2018
WDS		64	4.2	5	2015

08266+6212 UMA ¹	LDS 2279 AB	330.71/1.08/0.62	9.9/0.17/0.1	3	2023.9507
GAIA DR2 v3		329.34	9.84		2018
WDS		329	9.8	7	2015

08278+6653 UMA ¹	LDS 2281 AB	116.27/0.12/0.07	12.4/0.06/0.03	3	2023.9425
GAIA DR2 v3		116.44	12.47		2018
WDS		116	12.5	9	2016

08287+6350 UMA	UC 1677 AB	111.57/0.48/0.28	15.3/0.31/0.18	3	2023.9425
WDS		112	15.1	9	2016

09227+7020 UMA	TDS 529 AB	342.38/0.13/0.07	0.8 na	3	2023.8233
GAIA DR2 v3		341.93	0.81		2018
Tycho2		337.9	0.815		1991
WDS		342	0.8	3	2015
	DAM 1609 AC	119.25/0.21/0.12	4.5/0.06/0.03	3	2023.8233
WDS		119	4.5	1	2015

09255+5055 UMA	TOI 1770 AB	32.39/0.07/0.04	4.9/0.06/0.03	3	2023.8575
WDS		32	4.9	1	2015

09327+5114 UMA	MTR 4 AB	16.21/0.06/0.04	11.7/0.1/0.06	3	2023.8233
WDS		16	11.7	1	2018

09593+4350 UMA	GIC 91 AB	88.36/0.52/0.30	22.9/0.17/0.10	3	2023.8548
JDSO (Knapp)		89.375	23.111		2018
WDS		89	23.1	9	2016

10084+6620 UMA	LDS 1235 Aa,Ab	166.21/0.17/0.1	3.7/0.05/0.03	3	2023.8233
WDS		167	3.6	3	2016

10269+6311 UMA ¹	TDS 7276 AB	131.83/0.46/0.23	2.7/0.13/0.06	4	2023.9397
WDS		133	2.7	1	1991

10339+4158 UMA	ES 1396 AB	190.11 na	5.6 na	1	2023.8795
GAIA DR2 v3		190.19	5.54		2018
JDSO (Schlimmer)		190.2	5.58		2180.340

WDS		190	5.6	11	2018
WDS/Constellation	Code/Component	PA / SD/ SEM	Sep / SD/ SEM	# of Obs.	Date
11055+4332 UMA	VBS 18 AB	124.12 na	32.6 na	2	2023.8236
JDSO (Knapp)		125.484	32.26727		2020
WDS		125	32.0	11	2017
11061+4253 UMA	GIC 97 AB	17.06 na	17.9 na	2	2023.8230
WDS		18	17.9	9	2016
	WND 25 AC	292.25 na	37.9 na	2	2023.8230
WDS		291	37.9	5	2015
	WND 25 BD	294.85 na	33.4 na	2	2023.8230
WDS		290	33.1	5	2015
	WND 25 CD	33.25 na	17.0 na	2	2023.8230
WDS		33	17.3	1	2016
11068+5214 UMA ¹	LDS 3028 AB	296.98 na	75.4 na	2	2023.9233
WDS		298	75.0	1	1960
11161+3329 UMA	GMZ 187 AB	116.02 na	4.4 na	2	2023.9233
WDS		116	4.5	1	2016
11282+3313 UMA ¹	SEI 524 AB	153.83 na	7.9 na	2	2023.9233
WDS		154	8.1	1	1894
11381+3246 UMA ³	ES 2285 AB	331.41/0.65/0.37	10.6/0.36/0.21	3	2023.9233
GAIA DR2 v3		332.23	10.70		2018
JDSO (Schlimmer)		331.2	10.78		2022.416
JDSO (Knapp)		331.476	10.776		2018
Tycho2		336.2	10.38		1991
WDS		332	10.7	19	2015
	SIN 65 AC	156.95/0.72/0.42	16.6/0.15/0.08	3	2023.9233
WDS		1596	16.8	1	1989
	SIN 65 AD	2.06/0.10/0.06	74.3/0.2/0.11	3	2023.9233
WDS		3	73.8	1	1989
11571+2855 UMA ¹	TDS 8136 AB	309.16/0.11/0.06	3.8/0.03/0.03	3	2023.9507
Tycho2		309.9	3.75		1991
WDS		310	3.8	1	1991
11590+2642 COM	UC2243 AB	168.31/0.08/0.05	44.7/0.1/0.06	3	2023.9425
WDS		169	44.4	10	2015
WDS/Constellation	Code/Component	PA / SD/ SEM	Sep / SD/ SEM	# of Obs.	Date

20152+1357 DEL ⁴	J 3066 AB	333.69/0.55/0.31	4.5/0.1/0.06	3	2023.8411
GAIA DR2 v3		333.48	4.53		2018
JDSO (Knapp)		336.580	4.394		2018
WDS		333	4.5	6	2016
	J 3066 AC	215.66/1.03/0.60	9.4/0.15/0.08	3	2023.8411
GAIA DR2 v3		215.83	9.31		2018
WDS		216	9.3	4	2015

20155+1455 DEL ¹	BKO 544 AB	29.17 na	2.6 na	2	2023.7616
GAIA DR2 v3		29.41	2.59		2018
WDS		29	2.6	2	2015

20156+1526 DEL	HDS 2887 AB	244.54/1.01/0.58	4.9/0.06/0.03	3	2023.7616
Tycho2		243.8	4.72		1991
WDS		244	4.7	2	1991
	CHE 246 AC	85.19/0.09/0.05	`	3	2023.7616
GAIA DR2 v3		85.60	15.99		2018
JDSO (Nugent)		87.0	15.9		2017
WDS		87	15.9	11	2016
	CVP 1 AD	340.04/0.39/0.27	40.2/0.15/0.09	3	2023.7616
WDS		340	39.7	8	2016

20157+1508 DEL	CHE 249 AB	347.44/0.09/0.05	22.9/0.16/0.07	3	2023.8411
GAIA DR2 v3		348.37	22.81		2018
WDS		349	22.6	6	2018

20160+1510 DEL ¹	BKO 555 AB	201.49/0.53/0.30	4.6 na	3	2023.8411
GAIA DR2 v3		202.01	4.63		2018
WDS		202	4.6	4	2015

20166+1606 DEL ¹	CHE 263 AB	139.91/0.59/0.34	3.9/0.12/0.07	3	2023.8575
GAIA DR2 v3		139.58	3.96		2018
WDS		140	4.0	3	2015

20172+1553 DEL	CHE 273 AB	94.82/0.70/0.40	26.3/0.16/0.09	3	2023.8657
GAIA DR2 v3		94.48	26.78		2018
WDS		94	26.8	7	2015
	BKO 560 BC	200.26/0.67/0.39	1.8/0.06/0.03	3	2023.8657
GAIA DR2 v3		201.08	1.84		2018
WDS		199	1.4	1	2008

Notes

1. Stelle Doppie reported that the status of this pair is uncertain.
2. Stelle Doppie reported that this pair is not physical.
3. Knapp reported that this pair is "almost certainly optical".
4. Knapp reported that this pair is "probably optical".

WDS 09593+4350

Components AC, AD and BE could not be identified from two photographs taken with 90 second exposure each.

WDS 10084+6620, 11055+4332

Components AB could not be identified from two photographs taken with 30 second exposure each.

WDS 08120+6907, 08128+6306, 08155+6349, 08160+6907, 08211+6008, 08211+6008, 20155+1455, 20157+1457, 20157+1509, 20158+1510, 20161+1552, 20165+1601, 20232+0957, 20253+0847, 20254+0700, 20258+0818

No pairs were found in two photographs of 30 second exposure each.

WDS 11055+4332, 20157+1508, 20157+1508

Component AC could not be found in two photographs of 30 second exposure each.

WDS 10339+4158, 11381+3246

The values in GAIA for the components AB and AC are identical.

Components AC and AD could not be identified from two photographs taken with 60 second exposure each.

References

Curelaru, L., +, *Neglected Double Star Measurements*, JDSO, 2012, p204.

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Schlimmer, J., *Double Star Measurements Annual Report*, JDSO, 2018, p540

Tycho-2 Catalog as published on their website

Website of Stelle Doppie <http://stelledoppie.it/>