

Measurements of Neglected Double Stars: November 2019 Report

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Abstract: This article presents measurements of 26 neglected double stars. The stars were selected from the Washington Double Star Catalog published by the United States Naval Observatory. The photographs were taken by remote telescopes. The measurements were done by the author.

Methodology

Photographs were taken using telescopes operated by the Open Science Observatory located in the Canary Islands near the west coast of Africa. Those telescopes are located at an elevation of 2,300 meters on the island of Tenerife. The Open Science Observatory has a corrected Dall-Kirkham telescope with an aperture of 420mm, and a focal length of 2,940mm. The camera used most frequently at the Open Sciences Observatory was a ProLine KAF-16803. The methods used to calibrate those instruments are unknown to this author.

The photographs were analyzed by the author using the programs SKY X, a product of Software Bisque. After accumulating the photographs, averages were calculated for the position angles and separations. All of the star patterns were compared with the data from Washington Double Star catalog. The results are listed in the table, which contain averages of measurements.

Report

The following information was reported for each star: the WDS code with constellation, the discoverer code with component, the position angle, the separation, the number of measurements, and the date of the last observation.

The column headings are: WDS number/Con = Washington Double Star identifier/Constellation code, DC = Discovery Code and components, PA = position angle, Sep = Separation, Mts = number of measurements, and Date = the last observation date.

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References

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WDS/ Con	DC/Com	PA	Sep	Mts	Date
00014+4758 And	TDS 1250 AB	288.71	1.1	4	2019.7616
Tycho 2		290	0.99		1991.77
WDS		290	1.0	1	1991

WDS/ Con	DC/Com	PA	Sep	Mts	Date
00027+3433 And	TDS 1266 AB	143.86	0.6	4	2019.7616
Tycho 2		143	0.54		1991.58
WDS		143	0.5	1	1991

WDS/ Con	DC/Com	PA	Sep	Mts	Date
00066+2901 And	STT 549 AB	260.05	193.6	2	2019.7616
JDSO (Arnold)		258.8	187.63		2012
Tycho 2		257.9	184.6		1991.6
WDS		260	192.5	21	2015
00066+2901 And	ENG 1 A,CD	200.34	139.7	2	2019.7616
WDS		200	141.9	14	2013
00066+2901 And	BU 1338 CD	210.70	3.3	2	2019.7616
GAIA DR2		210.26	3.15		2018
WDS		210	3.1	13	2015

WDS/ Con	DC/Com	PA	Sep	Mts	Date
00066+4503 And	TDS 1297 AB	21.23	1.9	3	2019.7616
GAIA DR2		19.31	1.97		2018
Tycho 2		24	2.03		1991.62
WDS		19	2.0	2	2015

WDS/ Con	DC/Com	PA	Sep	Mts	Date
05499+2259 Tau	POU 789 AB	251.21	12.4	3	2019.6055
JDSO (Gulick)		251.3	12.7		2016
WDS		251	12.7	14	2017
05499+2259 Tau	ARN 91 AC	132.12	112.4	3	2019.6055
WDS		132	112.0	13	2015

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WDS/ Con	DC/Com	PA	Sep	Mts	Date
07453-0026 Mon	HJ 767 AB	163.98	21.2	3	2019.7014
JDSO (Arnold)		163.8	22.22		2007.915
JDSO (Carro)		163.33	214.3	3	2018
JDSO (Nugent)		163.08	20.8		2016.173
WDS		163	20.8	15	2016
07453-0026 Mon	SIN 31 AE	27.70	27.8	3	2019.7014
WDS		27	28.4	6	2016
07453-0026 Mon	SIN 31 AG	164.16	31.6	3	2019.7014
WDS		164	31.4	1	1989
07453-0026 Mon	SIN 31 AI	359.74	107.1	3	2019.7014
WDS		1	107.5	1	1989
07453-0026 Mon	SIN 31 AJ	73.48	169.3	3	2019.7014
WDS		74	168.8	4	2015
07453-0026 Mon	SIN 31 AK	63.86	179.7	3	2019.7014
WDS		65	179.4	1	1989

WDS/ Con	DC/Com	PA	Sep	Mts	Date
18436+1207 Her	HJ 1338 AB	189.27	11.5	3	2019.6055
GAIA DR2		189.65	11.50		2018
WDS		190	11.5	15	2015

WDS/ Con	DC/Com	PA	Sep	Mts	Date
20161+1537 Del	CHE 255 AB	216.44	24.6	3	2019.6055
JDSO (Berkó)		212.27	10.51		2008.773
WDS		212	25.5	5	2008

WDS/ Con	DC/Com	PA	Sep	Mts	Date
20171+1604 Del	CHE 270 AB	102.86	16.1	3	2019.6740
GAIA DR2		102.87	15.9		2018
JDSO (Berkó)		103.01	15.87		2008.773
WDS		103	15.9	11	2015

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WDS/ Con	DC/Com	PA	Sep	Mts	Date
20172+0504 Aql	BAL 2965 AB	134.24	17.3	3	2019.6055
GAIA DR2		103.24	14.35		2018
WDS		103	14.4	7	2015

WDS/ Con	DC/Com	PA	Sep	Mts	Date
20173+1443 Del	CHE 275 AB	332.13	30.4	3	2019.6055
JDSO (Berkó)		330.04	31.54		2008.778
WDS		330	31.5	11	2015

WDS/ Con	DC/Com	PA	Sep	Mts	Date
20177+2025 Sgr	J 2308 AB	282.72	37.0	3	2019.6055
JDSO (Bertoglio)		281.9	37.8		2007.5729
WDS		282	37.0	6	2015
20177+2025 Sgr	J 2308 AC	283.89	42.5	3	2019.6055
JDSO (Bertoglio)		283.8	42.6		2007.5729
WDS		284	42.7	5	2015
20177+2025 Sgr	J 2308 BC	296.51	5.7	3	2019.6055
JDSO (Bertoglio)		296.1	5.67		2007.5729
WDS		297	5.7	9	2013

WDS/ Con	DC/Com	PA	Sep	Mts	Date
20181+1519 Del	CHE 290 AB	153.41	10.2	3	2019.6055
GAIA DR2		153.41	10.15		2018
JDSO (Berkó)		153.93	10.06		2008.778
WDS		153	10.1	11	2015

WDS/ Con	DC/Com	PA	Sep	Mts	Date
20183+1539 Del	CHE 293 AB	353.93	24.8	3	2019.6740
GAIA DR2		354.25	25.02		2018
OAG (Tobal)		174.1*	24.79		1982.559
JDSO (Berkó)		174.02*	25.06		2008.773
WDS		354	25.0	12	2015

If 180° is added to the values marked with an *, those values will be consistent with the WDS.

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WDS/ Con	DC/Com	PA	Sep	Mts	Date
20186+1444 Del	CHE 296 AB	23.40	28.2	3	2019.6055
GAIA DR2		23.83	29.64		2018
OAG (Tobal)		23.3	28.29		1982.559
JDSO (Berkó)		23.69	29.50		2008.778
JDSO (Knapp)		23.819	29.634		2017.304
WDS		24	29.6	13	2016

WDS/ Con	DC/Com	PA	Sep	Mts	Date
20186+1548 Del	CHE 295 AB	259.70	13.6	3	2019.6055
GAIA DR2		259.08	13.55		2018
OAG (Tobal)		263.2	16.13		1984.512
JDSO (Berkó)		259.89	13.69		2008.778
WDS		259	13.6	10	2015

WDS/ Con	DC/Com	PA	Sep	Mts	Date
20187+1551 Del	CHE 298 AC	137.70*	16.9	3	2019.6740
GAIA DR2		317.69	16.75		2018
OAG (Tobal)		137.1*	16.82		1984.512
JDSO (Berkó)		137.52*	16.71		2008.778
WDS		318	16.8	7	2016

If 180° is added to the values marked with an *, those values will be consistent with the WDS.

WDS/ Con	DC/Com	PA	Sep	Mts	Date
20188+1530 Del	TOB 319 AB	64.77	14.9	3	2019.6746
OAG (Tobal)		59.2	15.4		1984
JDSO (Berkó)		65.27	15.12		2008.778
WDS		65	15.0	9	2015
20188+1530 Del	CHE 299 AC	329.37	37.6	3	2019.6746
JDSO (Berkó)		328.84	37.21		2008.778
WDS		329	37.1	10	2015

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WDS/ Con	DC/Com	PA	Sep	Mts	Date
20189+1546 Del	CHE 301 AB	295.51	28.1	3	2019.6740
GAIA DR2		295.92	27.6		2018
OAG (Tobal)		295.4	27.57		1984.682
JDSO (Berkó)		295.71	27.91		2008.778
WDS		296	27.8	12	2015

WDS/ Con	DC/Com	PA	Sep	Mts	Date
20247+1443 Del	HJ 1508 AB	59.23	13.9	3	2019.6740
GAIA DR2		58.12	13.8		2018
OAG (Tobal)		57.7	13.54		1982.559
JDSO (Vollman)		58.72	13.57		2006.697
WDS		59	13.8	7	2016
20247+1443 Del	VLM 4 AC	152.25	17.4	3	2019.6740
GAIA DR2		152.29	13.8		2018
JDSO (Vollman)		153.31	13.83		2006.697
WDS		153	17.4	9	2016

WDS/ Con	DC/Com	PA	Sep	Mts	Date
20358+0508 Del	BAL 2968 AB	10.32	13.9	3	2019.6876
GAIA DR2		10.90	13.6		2018
WDS		11	13.5	11	2015

WDS/ Con	DC/Com	PA	Sep	Mts	Date
20484-1812 Cap	S 763 AB	293.48	15.8	3	2019.6520
GAIA DR2		293.76	15.55		2018
OAG (Tobal)		298.5	16.44		1992
JDSO (Arnold)		293.4	15.80		2012.577
Tycho 2		293.8	15.6		1991.54
WDS		293	15.8	44	2016

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WDS/ Con	DC/Com	PA	Sep	Mts	Date
21080+1338 Del	SLE 529 AB	345.28	8.1	3	2019.6740
GAIA DR2		345.40	7.96		2018
WDS		345	8.9	10	2015

WDS/ Con	DC/Com	PA	Sep	Mts	Date
21167+2819 Vul	MLB 574 AB	333.71	7.7	3	2019.6740
GAIA DR2		333.12	7.35		2018
WDS		333	7.4	9	2015

WDS/ Con	DC/Com	PA	Sep	Mts	Date
22069+3335 Peg	ES 385 AC	0.4	33.3	3	2019.6740
WDS		0	33.0	7	2015
22069+3335 Peg	TOB 225 AD	6.87	122.1		2019.6740
OAG (Tobal)		6.4	122.3		1982
WDS		7	121.8	9	2015

WDS/ Con	DC/Com	PA	Sep	Mts	Date
23232+1226 Peg	HJ 3188 AB	252.75	21.7	3	2019.6740
GAIA DR2		252.76	21.94		2018
JDSO (Nugent)		252.4	21.9		2014.805
Tycho 2		252.3	21.74		1991.61
WDS		253	21.9	16	2015
23232+1226 Peg	BU 1529 AC	264.08	126.9	3	2019.6740
WDS		257	126.9	4	2011