

Double Doubles July/August

ID	Name	RA	Dec	Const.	Mag 1	Mag 2	Sep	Pos.Angle	Spectral	Notes
Lyr 1	STF2382+STF2383 (3'.4 apart)	The most famous double double. A wonderful combination of four almost identical white stars, forming a genuine multiple system. Circumpolar.								
WDS18443+3940	STF2382, IDS18410+3934, BDS8783, ADS11635, BD+39 03509	18:44:20	+39:40:14	Lyr	5.2	6.1	2.2	346	A4V F1V	RA PM:11, Dec PM:61, AB. First: 1777 45deg 4. Last: 2010 346deg 2.2. #Obs: 587. Note Code: OD. AB: H 2 5. STF2383CD: H 2 6. Refs: MacEvoy, B. private communication, 2010. A: eps 1 Lyr = 4 Lyr AB: A premature orbit has been computed. [STFA37] AB,CD: See ADS for notes of components. AB and CD form the physical quadruple eps Lyrae, separation 208". The observed small RV variations in each pair are probably merely scatter due to the very poor lines. BD: SHY 307. Bayesian analysis by Shaya & Olling (2011) indicates very high (near 100%) probability pair is physical.
WDS18443+3940	STF2383, IDS18410+3934, BDS8785, ADS11635	18:44:17	+39:37:17	Lyr	5.2	5.4	2.3	79	A8Vn F0Vn	RA PM:8, Dec PM:54, CD. First: 1777 180deg 2. Last: 2010 79deg 2.3. #Obs: 599. Note Code: O. [STF2382] AB: H 2 5.
Lyr 2	STF2470+STF2474 (10' apart)	Second excellent "double double" in Lyra. Very nice at 50X and 100X. The two doubles are separated by just 10' and have parallel orientations.								
WDS19088+3446	STF2470, IDS19051+3436, BDS9073, ADS12093, BD+34 03437	19:08:45	+34:45:37	Lyr	7	8.4	13.8	269	B5V	Very nice at 50X and 100X. Yellow/yellow, easily resolved pair. RA PM:0, Dec PM:-3, AB. First: 1824 272deg 13.1. Last: 2010 269deg 13.8. #Obs: 53. Note Code: D. B is BD+34 3436. A is a spectroscopic binary.
WDS19091+3436	STF2474, IDS19054+3426, BDS9078, ADS12101	19:09:04	+34:36:00	Lyr	6.8	7.9	15.5	263	G1V	Very nice at 50X and 100X. White/white, easily resolved pair. RA PM:56, Dec PM:191, AB. First: 1823 260deg 17.1. Last: 2010 263deg 15.5. #Obs: 68. Note Code: ZDV. B is BD+34 3438. Companion is physical according to Raghavan et al. AB: NLTT 47474/47473
Lyr 3	SHJ289+STF2487+STF2481 (7' & 31' apart)	Three doubles in the same field. Two wide pairs that do not stand out very well in the very rich field forming a right angle triangle with a nice orange star. The narrow double 34' to the SW is split by a hair at 51x which shows the wide doubles better than 100x. Circumpolar								
WDS19135+3902	SHJ289, IDS19101+3852, BDS9141, BD+38 03488	19:13:29	+39:02:16	Lyr	8	8.7	39.1	55	Ap	Slightly unequal white, yellowish pair, wide at 51x. Follow the line of these two, towards the SW to find the narrow yellow double STF2481. White/yellow pair. Too widely separated at 100X better at 50X against a very rich field. RA PM:-5, Dec PM:3, AB. First: 1823 58deg 40.4. Last: 2010 55deg 39.1. #Obs: 29. Note Code: D. B is BD+38@3489. H 5 42. Refs: MacEvoy, B. private communication, 2010
WDS19138+3909	η Lyr, 20 Lyr, STF2487, IDS19104+3858, BDS9144, ADS12197, BD+38 03490	19:13:45	+39:08:46	Lyr	4.4	8.6	28.5	79	B2.5IV	A brilliant white star with a much fainter bluish companion, wide at 51x. White/blue pair, too widely separated at 100X better at 50X against a very rich field. RA PM:-2, Dec PM:-1, AB. First: 1777 90deg 26. Last: 2010 79deg 28.5. #Obs: 65. Note Code: D. eta Lyr = 20 Lyr. B is BD+38@3491. A is a spectroscopic binary. AB: H 4 2.
WDS19111+3847	STF2481, IDS19077+3837, BDS9114, ADS12145, BD+38 03466	19:11:08	+38:46:48	Lyr	8.4	8.3	4.6	20	G6V	Slightly unequal pair of yellow stars, nicely split at 90x. RA PM:-222, Dec PM:-95, A,BC. First: 1830 54deg 3.8. Last: 2010 20deg 4.6. #Obs: 244. Note Code: VD. Mt. Wilson spectral type of A is G4. A,BC triple solution. H 2 68 BC: P = 63.1y, a = 0.37", motion retrograde. Mt. Wilson spectral type of BC is K0. SE 2 is the np component of STF 2481 (van den Bos). The pair BC is 4.5" Nf star A (mag. 8.4, G5) and is in slow retrograde motion about it.
Sct 1	STF2391 + H650 (16' apart)	Nice pair of wide doubles with rich colours.								
WDS18487-0600	STF2391, IDS18433-0607, BDS8810, ADS11695, BD-06 04913	18:48:39	-06:00:15	Sct	6.5	9.6	38.4	332	A2II	Unequal yellow, white pair, wide even at 55x. RA PM:8, Dec PM:33, AB. First: 1829 333deg 37.9. Last: 2006 332deg 38.4. #Obs: 28. Note Code: D. AB: H 6 50. Refs: MacEvoy, B. private communication, 2010 (see http://www.handprint.com/ASTRO/index.html)
WDS18497-0555	H650, IDS18443-0602, BDS8827, ADS11719	18:49:41	-05:54:46	Sct	6.2	8.2	110.6	171	K1II	Super wide and unequal, but saved by the glorious bright orange of the primary. RA PM:12, Dec PM:-12, AC. First: 1833 169deg 99. Last: 2011 171deg 110.6. #Obs: 20. Note Code: D. H VI 50. C is BD-06@4923. A is a long-period spectroscopic binary.
Aql 1	STF2446+STF2449 (38' apart)	Colourful doubles, both close, but well resolved, at 51x. Rich field containing bright stars, one lying between the doubles.								
WDS19058+0633	STF2446, IDS19009+0624, BDS9021, ADS12029, BD+06 04014	19:05:48	+06:32:49	Aql	7	8.9	9.5	153	F5	Unequal, pale yellow, yellow pair, nicely split at 90x, in a rich field. Unequal double, yellowish primary. RA PM:8, Dec PM:-76, AB. First: 1825 156deg 9.7. Last: 2010 153deg 9.5. #Obs: 74. Note Code: VD. Mt. Wilson spectral types F3s and G5. AB: HJL 262. AB: H 3 108.
WDS19064+0709	STF2449, IDS19015+0700, BDS9028, ADS12037, BD+06 04021	19:06:23	+07:09:20	Aql	7.2	7.7	7.9	290	F2V	Slightly unequal pair of very pale yellow stars. The galaxy cluster Abell 53 is 17' SE of STF 2446. RA PM:9, Dec PM:42, AB. First: 1783 292deg 10.2. Last: 2009 290deg 7.9. #Obs: 76. Note Code: D. H 3 109. Refs: MacEvoy, B. private communication, 2010 (see http://www.handprint.com/ASTRO/index.html)
Aql 2	STF2545 & STF2547 (11' apart)	A wide angle eyepiece at approx 200x will resolve these two pairs, but they are not a very striking combination.								
WDS19387-1009	STF2545, IDS19332-1023, BDS9464, ADS12715, BD-10 05140	19:38:43	-10:09:24	Aql	6.8	8.5	4	326	A9III	Mildly unequal pair of yellowish stars, close at 215x. RA PM:2, Dec PM:-56, AB. First: 1825 316deg 4.5. Last: 2008 326deg 4. #Obs: 112. Note Code: D. AB: H 1 13. Refs: MacEvoy, B. private communication, 2010 (see http://www.handprint.com/ASTRO/index.html)
WDS19389-1020	STF2547, IDS19334-1034, BDS9469, ADS12725, BD-10 05143	19:38:56	-10:20:21	Aql	8.1	9.5	20.8	331	A0	Nondescript, mildly unequal white, bluish double, with a fainter third companion, almost in a line. RA PM:0, Dec PM:-9, AB. First: 1830 332deg 20.7. Last: 2007 331deg 20.8. #Obs: 30. Note Code: D. B is BD-10@5142.

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Vul 1	STF2455+STF2457 (25' apart)	Symmetrical arrangement of two unequal pairs that are very similar in brightness and separation, and that have mirror image position angles. An orange star lies almost exactly in between.								
WDS19069+2210	STF2455, IDS19026+2201, BDS9043, ADS12050, BD+21 03666	19:06:53	+22:10:21	Vul	7.4	9.4	9.4	29	F4IV	Unequal pair of yellow stars, nicely split at 90x. RA PM:-15, Dec PM:-73, AB. First: 1827 140deg 4. Last: 2010 29deg 9.4. #Obs: 230. Note Code: LD. Mt. Wilson spectral types F1s and B5. Relative motion is nearly rectilinear; possibly optical pair AB: Optical pair, based on study of relative motion of the components using the method of apparent motion parameters.
WDS19071+2235	STF2457, IDS19029+2226, BDS9045, ADS12053, BD+22 03594	19:07:08	+22:35:04	Vul	7.5	9.5	10.5	202	A7IV	Unequal pair of very pale yellow stars, nicely split at 90x. RA PM:16, Dec PM:29, AB. First: 1828 201deg 10.1. Last: 2009 202deg 10.5. #Obs: 51. Note Code: D.
Sgr 1	S715+S716 (6' apart)	Nice blue/white tight doubles, close together, in a very rich field. The open cluster NGC 6774 is located 25' to the North.								
WDS19177-1558	S715, IDS19119-1609, BDS9161, ADS12266, BD-16 05253	19:17:40	-15:58:02	Sgr	7.1	7.9	8.4	17	A3V	RA PM:27, Dec PM:-17, AB. First: 1823 10deg 10. Last: 2007 17deg 8.4. #Obs: 51. Note Code: D.
WDS19181-1557	S716, IDS19124-1608, BDS9170, ADS12271, BD-16 05256	19:18:06	-15:57:13	Sgr	8.4	8.6	5.4	195	B9.5V	RA PM:12, Dec PM:5, AB. First: 1825 196deg 4.9. Last: 2004 195deg 5.4. #Obs: 48. Note Code: D. Appears to also be STN 46 (formerly at 19267-1557) with an RA error.
Sgr 2	S722+HJ599 (44' apart)	Nice combination of a tight equal white double, and a wide colourful double, that just fit in the fov of a Plossl at 50x.								
WDS19392-1654	S722, IDS19334-1708, BDS9468, ADS12728, BD-17 05699	19:39:13	-16:54:28	Sgr	7.2	7.4	10	236	A8III	Slightly unequal air of white stars, very close at 51x. RA PM:24, Dec PM:23, AB. First: 1794 232deg 10. Last: 2009 236deg 10. #Obs: 41. Note Code: D.
WDS19407-1618	ε1 Sgr, 54 Sgr, HJ599, IDS19350-1631, BDS9496, ADS12767, BD-16 05400	19:40:43	-16:17:35	Sgr	5.4	7.7	45.3	42		Bright, deep orange star with a fainter bluish secondary, wide at 50x. RA PM:69, Dec PM:-51, AC. First: 1827 40deg 40. Last: 2010 42deg 45.3. #Obs: 33. Note Code: D. 54 Sgr = e 1 Sag. Variable, and A is an occultation double.
Sge 1	H626 + HN84 (30' apart)	Lovely combination of colourful doubles, with a rich red star 24' to the NE, all in a very rich field.								
WDS19373+1628	ε Sge, 4 Sge, H626, IDS19328+1614, BDS9458, ADS12693, BD+16 03918	19:37:17	+16:27:46	Sge	5.8	8.4	87.2	82	G9III	Super wide, vivid yellow, bluish combination, bright and beautiful. RA PM:17, Dec PM:13, AB. First: 1781 82deg 91.9. Last: 2006 82deg 87.2. #Obs: 40. Note Code: D. H VI 26. STTA185. eps Sge = 4 Sge. B is BD+16@3919.
WDS19394+1634	HN84, IDS19349+1621, BDS9484, ADS12750, BD+16 03936	19:39:25	+16:34:16	Sge	6.4	9.5	29	301	K4Ib	Wide unequal copper-orange, blue pair, gorgeous at 51x. A wide pair of faint stars lies 13' to the North. RA PM:-1, Dec PM:-11, AB. First: 1796 302deg 28.2. Last: 2011 301deg 29. #Obs: 25. Note Code: D. B is BD+16@3935. BDS 9484, H 5 51 same star. A is a spectroscopic binary.