



The Astronomical League's Double Star Club



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by **John Wagoner**

American Association of Amateur Astronomers

Introduction

Welcome to the Astronomical League's Double Star Club. The purpose of the double Star Club is to introduce observers to 100 of the finest double and multiple stars in the heavens. You don't need a large, expensive apochromatic refractor to view the objects on this list, since a small refractor, a Newtonian reflector, or a Schmidt-Cassegrain will do just fine. All objects on this list were observed with a three-inch refractor using between 75x and 150x. This program is meant to allow you to enjoy a different aspect of our wonderful hobby, and not to test your equipment.

Double star observing can be very forgiving. You don't need the darkest skies, the clearest skies, or even a moonless night to observe many of these objects. Some can be observed from your backyard under moderate light pollution, some can be observed under less than transparent skies, and some can even be observed with the moon up. However, as usual in astronomy, the best results can be obtained under optimum conditions. The point is, always try for the best conditions, but if you don't have them, don't worry about it. You can still enjoy this program

Rules and Regulations

To qualify for the AL's Double Star Certificate and pin, you need only be a member of the Astronomical League, either through an affiliated club or as a Member-at-Large, and observe the 100 selected objects on the included list. Any telescope may be used, but one with an objective of 60mm diameter or larger is recommended. To record your observations, you may use the log sheet provided, or one with similar information. If you use your own log sheets, they should include: object, date, and a drawing of the double or multiple system. Yes, I said a drawing of the double star. Now, before you panic, how hard is it to draw two dots in the box provided, with the size of the dot indicating magnitude, and the distance between the dots representing separation! I have given you a line for a description, but this is optional and not required. I have included this so that if you are inspired by any one double star, you can write down your thoughts or feelings for later reference.

To receive your Double Star Certificate and pin, simply send your observations along with your name, address, phone number, and club affiliation, either to your club's Awards Coordinator for verification, or to: *Mike Benson, AL Binocular Coordinator, 2116 Crystal Dr., Nashville, TN 37210-3333. Phone (615) 883-6571. E-mail: ocentaurus@aol.com.* Upon verification of your observations, your certificate will be forwarded either to you or your club's Awards Coordinator, as you choose.

If you need to become a member of the Astronomical League as a Member-at-Large, contact *Jackie Beucher, AL Executive Secretary, 11305 King Street, Overland Park, KS 66210-3421. (913) 469-0135. E-Mail: M31@sky.net.*

You may also join **The American Association of Amateur Astronomers, The Internet Astronomy Club**, which is a member society of the Astronomical League. Join on-line at our web page: **www.AsroMax.com**. Or send a check for \$20 (\$25 family) for each membership to: **AAAA, P.O. Box 7981, Dallas, TX 75209-0981. E-Mail: aaaa@AstroMax.com.**

AAAA Members: If you have completed an AL observing project, submit your observations directly to the AAAA for certification. Be sure to send COPIES only. Do NOT send original photographs or observing logs.

The List

All objects are listed in Right Ascension order so that you can view them as they rise, and so that you can properly plan your observing sessions to make the most use of your time. Information provided on each object includes: a check box, object to be observed, Right Ascension, Declination, magnitudes of the component stars, separation, and position angle from the primary star in the double or multiple system. When listing the object to be observed, in order to simplify things, I have given the proper constellation name rather than use the traditional possessive form of the name. I realize that 100 objects out of many thousands in the heavens are only a small representation of what can be seen, and I have probably missed a few of your favorite doubles. If so, let me know which objects you recommend, and if there is enough interest, then just maybe we will have a second double star club. Until then, good luck, clear skies, and good observing.

Plano, TX. - May 1, 1995

The Double Star List (Epoch 2000)

CHK	OBJECT	R.A.	Dec.	MAGS	Separation	PA
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[]	Eta Cassiopeia	00 49.1	+57 49	3.4,7.5	12"	307
[]	65 Pisces	00 49.9	+27 43	6.3,6.3	4.4"	297
[]	Psi 1 Pisces	01 05.6	+21 28	5.6,5.8	30"	159
[]	Zeta Pisces	01 13.7	+07 35	5.6,6.5	23"	63
[]	Gamma Aries	01 53.5	+19 18	4.8,4.8	7.8"	0
[]	Lambda Aries	01 57.9	+23 36	4.9,7.7	37"	46
[]	Alpha Pisces	02 02.0	+02 46	4.2,5.1	1.7"	50
[]	Gamma Andromeda	02 03.9	+42 20	2.3,5.5	9.8"	63
[]	Iota Triangulum	02 12.4	+30 18	5.3,6.9	3.9"	71
[]	Alpha Ursa Minor	02 31.8	+89 16	2.0,9.0	18.4"	218
[]	Gamma Cetus	02 43.3	+03 14	3.5,7.3	2.8"	294
[]	Eta Perseus	02 50.7	+55 54	3.8,8.5	28.3"	300
[]	Struve 331	03 00.9	+52 21	5.3,6.7	12.1"	85
[]	32 Eridanus	03 54.3	-02 57	4.8,6.1	6.8"	347
[]	Chi Taurus	04 22.6	+25 38	5.5,7.6	19.4"	24
[]	1 Camelopardalis	04 32.0	+53 55	5.7,6.8	10.3"	308
[]	55 Eridanus	04 43.6	-08 48	6.7,6.8	9.2"	317
[]	Beta Orion	05 14.5	-08 12	0.1,6.8	9.5"	202
[]	118 Taurus	05 29.3	+25 09	5.8,6.6	4.8"	204
[]	Delta Orion	05 32.0	-00 18	2.2,6.3	52.6"	359
[]	Struve 747	05 35.0	-06 00	4.8,5.7	35.7"	223
[]	Lamda Orion	05 35.1	+09 56	3.6,5.5	4.4"	43
[]	Theta 1 Orion	05 35.3	-05 23	6.7,7.9,5.1,6.7	8.8",13",21.5"	31,132,96
[]	Iota Orion	05 35.4	-05 55	2.8,6.9	11.3"	141
[]	Theta 2 Orion	05 35.4	-05 25	5.2,6.5	52"	92
[]	Sigma Orion	05 38.7	-02 36	4.0,7.5,6.5	12.9",43"	84,61
[]	Zeta Orion	05 40.8	-01 57	1.9,4.0,9.9	2.4",58"	162,10
[]	Gamma Lepus	05 44.5	-22 27	3.7,6.3	96"	350
[]	Theta Auriga	05 59.7	+37 13	2.6,7.1	3.6"	313
[]	Epsilon Monoceros	06 23.8	+04 36	4.5,6.5	13.4"	27
[]	Beta Monoceros	06 28.8	-07 02	4.7,5.2	7.3"	132
[]	12 Lynx	06 46.2	+59 27	5.4,7.3	8.7"	308
[]	Epsilon Canis Major	06 58.6	-28 58	1.5,7.4	7.5"	161
[]	Delta Gemini	07 20.1	+21 59	3.5,8.2	6.8"	211
[]	19 Lynx	07 22.9	+55 17	5.6,6.5	14.8"	315
[]	Alpha Gemini	07 34.6	+31 53	1.9,2.9	2.2"	171
[]	Kappa Puppis	07 38.8	-26 48	4.5,4.7	9.9"	318
[]	Zeta Cancer	08 12.2	+17 39	5.6,6.0	5.9"	89
[]	Iota Cancer	08 46.7	+28 46	4.2,6.6	30"	307
[]	38 Lynx	09 18.8	+36 48	3.9,6.6	2.7"	229
[]	Alpha Leo	10 08.4	+11 58	1.4,7.7	177"	307
[]	Gamma Leo	10 20.0	+19 51	2.2,3.5	4.4"	122
[]	54 Leo	10 55.6	+24 45	4.5,6.3	6.5"	110
[]	N Hydra	11 32.3	-29 16	5.8,5.9	9.2"	210
[]	Delta Corvus	12 29.9	-16 31	3.0,9.2	24.2"	214
[]	24 Coma Berenices	12 35.1	+18 23	5.2,6.7	20.3"	271
[]	Gamma Virgo	12 41.7	-01 27	3.5,3.5	3.6"	293
[]	32 Camelopardalis	12 49.2	+83 25	5.3,5.8	21.6"	326
[]	Alpha Canes Venatici	12 56.0	+38 19	2.9,5.5	19.4"	229
[]	Zeta Ursa Major	13 23.9	+54 56	2.3,4.0,4.0	14.4",709"	152,71

The Double Star List (Epoch 2000)

CHK	OBJECT	R.A.	Dec.	MAGS	Separation	PA
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[]	Kappa Bootes	14 13.5	+51 47	4.6,6.6	13.4"	236
[]	Iota Bootes	14 16.2	+51 22	4.9,7.5	38"	33
[]	Pi Bootes	14 40.7	+16 25	4.9,5.8	5.6"	108
[]	Epsilon Bootes	14 45.0	+27 04	2.5,4.9	2.81"	339
[]	Alpha Libra	14 50.9	-16 02	2.8,5.2	231"	314
[]	Xi Bootes	14 51.4	+19 06	4.7,7.0	6.9"	332
[]	Delta Bootes	15 15.5	+33 19	3.5,8.7	105"	79
[]	Mu Bootes	15 24.5	+37 23	4.3,7.0	108"	171
[]	Delta Serpens	15 34.8	+10 32	4.2,5.2	3.9"	178
[]	Zeta Corona Borealis	15 39.4	+36 38	5.1,6.0	6.3"	305
[]	Zi Scorpius	16 04.4	-11 22	4.8,7.3	7.6"	51
[]	Struve 1999	16 04.4	-11 27	7.4,8.1	11.6"	99
[]	Beta Scorpius	16 05.4	-19 48	2.6,4.9	13.6"	21
[]	Kappa Hercules	16 08.1	+17 03	5.3,6.5	2.8"	12
[]	Nu Scorpius	16 12.0	-19 28	4.3,6.4	4.1"	337
[]	Sigma Corona Borealis	16 14.7	+33 52	5.6,6.6	6.2"	233
[]	16/17 Draco	16 36.2	+52 55	5.4,6.4,5.5	3.4,90"	108,194
[]	Mu Draco	17 05.3	+54 28	5.7,5.7	2.0"	42
[]	Alpha Hercules	17 14.6	+14 23	3.5,5.4	4.7"	107
[]	Delta Hercules	17 15.0	+24 50	3.1,8.2	8.9"	236
[]	36 Ophiuchus	17 15.3	-26 36	5.1,5.1	4.4"	154
[]	Sigma Ophiuchus	17 18.0	-24 17	5.4,6.9	10.3"	355
[]	Rho Hercules	17 23.7	+37 09	4.6,5.6	4.1"	316
[]	Nu Draco	17 32.2	+55 11	4.9,4.9	62"	312
[]	Psi Draco	17 41.9	+72 09	4.9,6.1	30.3"	15
[]	40/41 Draco	18 00.2	+80 00	5.7,6.1	19.3"	232
[]	95 Hercules	18 01.5	+21 36	5.0,5.1	6.3"	258
[]	70 Ophiuchus	18 05.5	+02 30	4.2,6.0	2.8"	72
[]	Epsilon Lyra	18 44.3	+39 40	5.0,6.1,5.2,5.5	208",2.6",2.3"	357,173,94
[]	Zeta Lyra	18 44.8	+37 36	4.3,5.9	44"	150
[]	Beta Lyra	18 50.1	+33 22	3.4,8.6	46"	149
[]	Struve 2404	18 50.8	+10 59	6.9,8.1	3.6"	183
[]	Otto Struve 525	18 54.9	+33 58	6.0,7.7	45"	350
[]	Theta Serpens	18 56.2	+04 12	4.5,5.4	22.3"	104
[]	Beta Cygnus	19 30.7	+27 58	3.1,5.1	34.4"	54
[]	57 Aquila	19 54.6	-08 14	5.8,6.5	36"	170
[]	31 Cygnus	20 13.6	+46 44	3.8,6.7,4.8	107",337"	173,323
[]	Alpha Capricornus	20 18.1	-12 33	3.6,4.2	378"	291
[]	Beta Capricornus	20 21.0	-14 47	3.4,6.2	206"	267
[]	Gamma Delphinus	20 46.7	+16 07	4.5,5.5	9.6"	268
[]	61 Cygnus	21 06.9	+38 45	5.2,6.0	28"	146
[]	Beta Cepheus	21 28.7	+70 34	3.2,7.9	13.3"	249
[]	Struve 2816	21 39.0	+57 29	5.6,7.7,7.8	11.7",20"	121,339
[]	Epsilon Pegasus	21 44.2	+09 52	2.4,8.4	142"	320
[]	Xi Cepheus	22 03.8	+64 38	4.4,6.5	7.7"	277
[]	Zeta Aquarius	22 28.8	-00 01	4.3,4.5	1.8"	266
[]	Delta Cepheus	22 29.2	+58 25	3.9,6.3	41"	192
[]	8 Lacerta	22 35.9	+39 38	5.7,6.5	22.4"	186
[]	94 Aquarius	23 19.1	-13 28	5.3,7.3	12.7"	350
[]	Sigma Cassiopeia	23 59.0	+55 45	5.0,7.1	3"	326

THE ASTRONOMICAL LEAGUE'S DOUBLE STAR CLUB LOG

Object	Date	Time	N
Instrument	Seeing	Power	
Description			

Object	Date	Time	N
Instrument	Seeing	Power	
Description			

Object	Date	Time	N
Instrument	Seeing	Power	
Description			

Object	Date	Time	N
Instrument	Seeing	Power	
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Object	Date	Time	N
Instrument	Seeing	Power	
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Object	Date	Time	N
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Object	Date	Time	N
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Description			

Object	Date	Time	N
Instrument	Seeing	Power	
Description			

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