

List of Easy Double Stars for Winter and Spring

☺ = easy ☹ = not too difficult ☹☹ = difficult but possible

1. **Sigma Cassiopeiae** (STF 3049). 23 hr 59.0 min +55 deg 45 min ☹

This system is tight but very beautiful. Use a high magnification (150x or more).

Primary: 5.2, yellow or white

Secondary: 7.2 (3.0"), blue

2. **Eta Cassiopeiae** (Achird, STF 60). 00 hr 49.1 min +57 deg 49 min ☺

This is a multiple system with many stars, but I will restrict myself to the brightest one here.

Primary: 3.5, yellow.

Secondary: 7.4 (13.2"), purple or brown

3. **65 Piscium** (STF 61). 00 hr 49.9 min +27 deg 43 min ☹

Primary: 6.3, yellow

Secondary: 6.3 (4.1"), yellow

4. **Psi-1 Piscium** (STF 88). 01 hr 05.7 min +21 deg 28 min ☺

This double forms a T-shaped asterism with Psi-2, Psi-3 and Chi Piscium. Psi-1 is the uppermost of the four.

Primary: 5.3, yellow or white

Secondary: 5.5 (29.7), yellow or white

5. **Zeta Piscium** (STF 100). 01 hr 13.7 min +07 deg 35 min ☺

Primary: 5.2, white or yellow

Secondary: 6.3, white or lilac (or blue)

6. **Gamma Arietis** (Mesarthim, STF 180). 01 hr 53.5 min +19 deg 18 min ☺

"The Ram's Eyes"

Primary: 4.5, white

Secondary: 4.6 (7.5"), white

7. **Lambda Arietis** (H 5 12). 01 hr 57.9 min +23 deg 36 min ☺

Primary: 4.8, white or yellow

Secondary: 6.7 (37.1"), silver-white or blue

8. **Gamma Andromedae** (Almach, STF 205). 02 hr 03.9 min +42 deg 20 min ☹

Use a high magnification (150x or more) to fully appreciate this double.

Primary: 2.3, yellow or orange

Secondary: 5.0 (9.8"), blue

9. **Iota Trianguli** (STF 227). 02 hr 12.4 min +30 deg 18 min ☹

Primary: 5.3, yellow

Secondary: 6.7 (3.8"), bluish-green

10. **Eta Persei** (Miram, STF 307). 02 hr 50.7 min +55 deg 54min ☹

The glare of the primary star can cause problems.

Primary: 3.8, very yellow

Secondary: 8.5, very blue

11. **STF 331** in Perseus. 03 hr 00.9 min +52 deg 21 min ☺
STF 331 forms a triangular asterism with Tau and Gamma Persei.
Primary: 5.2, white
Secondary: 6.2 (11.9"), blue
12. **32 Eridani** (STF 470). 03 hr 54.3 min -02 deg 57 min ☺
Primary: 4.8, yellow
Secondary: 5.9 (6.9"), blue or green
13. **1 Camelopardalis** (STF 550). 04 hr 32.0 min +53 deg 55 min ☺
Primary: 5.8, white or yellow-white
Secondary: 6.8 (10.6"), silver grey
14. **55 Eridani** (STF 590). 04 hr 43.6 min -08 deg 48 min ☺
The two stars are nicely equal.
Primary: 6.7, light yellow
Secondary: 6.8 (9.3"), light yellow
15. **118 Tauri** (STF 716). 05 hr 29.3 min +25 deg 09 min ☺
Primary: 5.8, yellow
Secondary: 6.7 (4.7"), yellow or blue
16. **Delta Orionis** (Mintaka, STFA 14). 05 hr 32.0 min -00 deg 18 min ☺
The right-most star in the Belt of Orion, the glare of the main star can cause problems.
Primary: 5.8, yellow-white
Secondary: 6.8 (10.6"), purple or blue
17. **Lambda Orionis** (Meissa, STF 738). 05 hr 35.1 min +09 deg 56 min ☺
The head of Orion, within the star cluster Collinder 69. This is a famous multiple star system, but I will only deal with the two main stars here. Use a high magnification (150x); the companion appears almost squashed against the primary.
Primary: 3.5, yellow-white
Secondary: 5.5 (4.2"), blue-violet
18. **Sigma Orionis** (STF 762). 05 hr 38.7 min -02 deg 36 min ☺
A multiple system of which I only deal with D and E. Just below the Belt and near the famous Horsehead Nebula. The three stars form a fish-hook shape. STF 761 is close by.
Primary: 3.8, white or yellow-white
Secondary (D): 6.6 (12.9"), white
Secondary (E): 6.3 (41.5"), white
19. **Zeta Orionis** (Alnitak, STF 774). 05 hr 40.7 min -01 deg 57 min ☺
The left-most star in Orion's Belt. Also close to the Horsehead Nebula.
Primary: 1.8, yellow
Secondary: 3.7 (2.30"), yellow
20. **Gamma Leporis** (H 6 40). 05 hr 44.5 min -22 deg 27 min ☺
Primary: 3.6, yellow
Secondary: 6.3 (95.0"), red

21. **Epsilon (8) Monocerotis** (STF 900). 06 hr 23.8 min +04 deg 36 min ☺

Primary: 4.4, white

Secondary 6.4 (12.1"), blue or lilac

22. **Beta Monocerotis** (STF 919). 06 hr 28.8 min -07 deg 02 min ☺

This is perhaps one of the best (and easiest) triple star systems after Mizar, William Herschel described it as "one of the most beautiful sights in the heavens". B and C are very close to each other (3") and the three stars form a fish-hook pattern.

Primary: 4.6, white

Secondary (B): 5.0 (7.1"), white

Secondary (C): 5.4 (9.7"), white

23. **145 (Gould) Canis Majoris** (HJ 3945). 07 hr 16.6 min -23 deg 19 min ☺

Sometimes called the "Winter Albireo". One reason it is overlooked is its complicated name, 145 Canis Majoris is a Gould number not a Flamsteed number and HJ 3945 (or *h* 3945) confuses people. It deserves to be better known.

Primary: 5.0, yellow

Secondary: 5.8 (26.4"), blue

24. **k Puppis** (H 3 27). 07 hr 38.8 min -26 deg 48 min ☺

Another double bedevilled by its name. It is often mistakenly called Kappa Puppis (as in the Astronomical League list) and could be confused with K Puppis. Having a William Herschel code number does not help either. Despite being so far south, it is surprisingly easy to find.

Primary: 4.4, white

Secondary: 4.6 (10.2"), white

25. **n Puppis** (H N 19). 07 hr 34.3 min -23 deg 28 min ☺

This is n Puppis, not Eta Puppis, a seemingly baffling confusion which can be traced back to the rather elaborate n in the old-style Norton Atlas which could be mistaken for eta. Can be found as Eta Puppis in the Celestron handset list of double stars. The double Howe 18 is close by.

Primary: 5.8, yellow

Secondary: 5.9, yellow

26. **38 Geminorum** (STF 982). 06 hr 54.6 min +13 deg 11 min ☺

Primary: 4.8, yellow-white

Secondary: 7.8 (7.1"), purple

27. **Alpha Geminorum** (Castor, STF 1110). 07 hr 34.6 min +31 deg 53 min ☺

This is probably the most difficult pair in this list, but a "must-see" double. Use the highest magnification your telescope will bear (at least 120x).

Primary: 1.9, greenish (or yellow). white

Secondary: 3.0 (4.8"), greenish (or yellow) white

28. **19 Lyncis** (STF 1062). 07hr 22.9 min +55 deg 17 min ☺

Primary: 5.8, yellow

Secondary: 6.7 (14.7"), blue

29. **Zeta Cancri** (Tegmen or Tegmine, STF 1196). 08 hr 12.2 +17:39 ☺
 There is a AB pair, but this is very tight.
 Primary: 4.9, yellow
 Secondary: 5.9 (6.2"), yellow (or reddish)
30. **Phi-2 Cancri** (STF 1223). 08 hr 26.8 min +26 deg 56 min ☺
 Although it is fairly tight and fairly dim, this is one of my favourite doubles. . Erroneously listed as Theta-2 Cancri in the Celestron handset list of double stars.
 Primary: 6.2, white
 Secondary: 6.2 (5.2"), white
31. **Iota Cancri** (STF 1268). 08h 46.7min +28 deg 46 min ☺
 Sometimes called the "Winter Albireo" (cf. HJ 3945), perhaps the "Spring Albireo" would be a better name.
 Primary: 4.1, yellow
 Secondary: 6.0 (30.5"), blue
32. **Gamma Leonis** (Algieba, STF 1424) 10 hr 20.0 min +19 deg 50 min ☺
 Both stars have a wonderful golden colour like a lion's mane. It is fairly tight so use a high magnification.
 Primary: 2.4, yellow
 Secondary: 3.6 (4.3"), yellow
33. **54 Leonis** (STF 1487). 10 hr 55.6 min +24 deg 45 min ☺
 Primary: 5.4, yellow or yellow-white
 Secondary: 6.3 (6.6"), blue
34. **Tau (84) Leonis** (STFA 19). 11 hr 27.9 min +02 deg 51 min ☺
 Primary: 5.1, yellow
 Secondary: 7.5 (89.4"), blue
35. **F Hydrae** (S 579). 08 hr 43.7 min -07 deg 14 min ☺
 Primary: 4.7, yellow
 Secondary: 8.2 (78.5"), blue
36. **Tau-1 (31) Hydrae** (HJ 1167). 09 hr 29.1 min -02 deg 46 min ☺
 Primary 4.6, yellow
 Secondary: 7.3 (67.5"), purple
37. **STF 1474** in Hydra. 10 hr 47.6 min -15 hr 16 min ☺
 Although it is fairly faint, this is a favourite of mine.
 Primary: 7.0, white
 Secondary: 7.6 (6.7"), white
38. **Gamma Crateris** (HJ 840). 11 hr 24.9 min -17 deg 41 min ☺
 Primary: 4.1, white
 Secondary: 7.9 (5.3"), red or grey

39. **Delta Corvi** (Algorab, SHJ 145). 12 hr 29.9min -16 deg 31 min ☺

Primary: 3.0, white or yellow-white

Secondary: 8.5 (24.6"), purple

39. **24 Comae Berenices** (STF 1657). 12 hr 35.1 min +18 deg 23 min ☺

Primary: 5.1, yellow

Secondary: 6.3 (20.1"), blue

40. **54 Virginis** (SHJ 161). 13 hr 13.4 min -18 deg 50 min ☺

A pair is which rather similar to Phi-2 Cancr.

Primary: 6.8, white

Secondary: 7.2 (4.0"), white

41. **Alpha Canes Venaticorum** (STF1692). 12 hr 56.0 min +38 deg 19 min ☺

Named Cor Caroli in 1660 in honour of the executed monarch Charles I, it is a favourite of mine although I can never decide what the colours are!

Primary: 2.9, white

Secondary: 5.5 (19.3"), blue

42. **32 (Hevelius) Camelopardalis** (STF 1694). 12hr 49.2 min +83 deg 25min ☺

Primary: 5.3, yellow or white

Secondary: 5.7 (21.4"), white or blue (or violet)

43. **STF 1520** in Ursa Major. 11 hr 16.1 min +52 deg 46 min ☺

This is little known, but a very nice double.

Primary: 6.5, yellow

Secondary: 7.8 (12.4"), blue

44. **Zeta Ursa Majoris** (Alcor-Mizar, STF 1744). 13 hr 23.9 min +54 deg 56 min ☺

The triple that everyone knows!

Primary: 2.2, white

Secondary (B): 3.9 (14.6"), white

Secondary (C, Alcor): 4.0 (706.1"), white

45. **Kappa Boötis** (STF 1821). 14 hr 13.5 min +51 deg 47 min ☺

Primary: 4.5, white

Secondary: 6.6 (13.6"), white or blue

46. **Iota Boötis** (STFA 26). 14 hr 16.2 min +51 deg 22 min ☺

Primary: 4.8, white

Secondary: 7.4 (38.8"), lilac

47. **Pi Boötis** (STF 1864). 14 hr 40.7 min +16 deg 25 min ☺

Primary: 4.9, white

Secondary: 5.8 (7.0"), white

48. **Xi Boötis** (STF 1888). 14 hr 51.4 min +19 deg 06 min ☺

Primary: 4.8, yellow

Secondary: 7.0 (5.7"), reddish-purple

49. **Mu-1 (51) Boötis** (Alkalurops, STFA 28). 15 hr 24.5 min +37 deg 23 min ☺

The secondary is itself double (STF 1938), but difficult to split.

Primary: 4.3, yellow

Secondary: 7.1 (108.0"), yellow or orange

50. **Zeta Coronae Borealis** (STF 1965). 15 hr 39.4 min +36 deg 38 min ☺

Primary: 5.0, bluish-white

Secondary: 5.9 (6.3"), greenish-white or blue

51. **Sigma Coronae Borealis** (STF 2032). 16 hr 14.7 min +33 deg 52 min ☺

Primary: 5.6, yellow

Secondary: 6.5 (7.1"), darker yellow

52 **Nu-1/Nu-2 Coronae Borealis** (STFA 29). 16 hr 22.4 min +33 deg 48 min ☺

I like the extremely wide doubles from the Second Dorpat Catalogue of W. Struve (STFA), especially when they are more or less equal like this one.

Primary: 5.4, yellow

Secondary: 5.6 (365.5"), yellow

Useful Resources

Books

Guy Consolmagno and Dan Davis, *Turn Left at Orion: Hundreds of Night Sky Objects to See in a Home Telescope - and How to Find Them* (Cambridge University Press, 2011). Amazon price: £20. A general detailed introduction to observational astronomy, but includes many double stars including some tricky and obscure ones.

Sissy Haas, *Double Stars for Small Telescopes* (Sky Publishing, 2008). Amazon price: £50 (out of print). Contains over 2,000 double stars, not all of which can be seen from Havering of course!

James Mullaney and Wil Tirion, *The Cambridge Double Star Atlas* (Cambridge University Press, 2009). Amazon price: £70 (out of print). Replaces the older version of the Norton star atlas, the new series of which no longer shows many double stars; it is very useful as an atlas and as a list of double stars.

James Mullaney, *Double & Multiple Stars, and How to Observe Them* (Springer, 2005). Amazon price: £23. It is a small book and does not have long lists of stars, but it is a good introduction in its own way (and at least it is still in print!).

R. W. Argyle (ed.), *Observing and Measuring Visual Double Stars* 2nd edition (Springer, 2012). Amazon price £32. More technical and advanced than the other three books.

T. W. Webb, *Celestial Objects for Common Telescopes*, volume 2, *The Stars* (Dover Publications, 1962). Amazon Price £44 (out of print). This is a reprint of the final 1917 edition of this classic with the star positions updated to Epoch 2000 in an index. Gives long lists of stars (mostly fairly dim Struve-STF doubles) in the great Victorian tradition. Check the data in it with the WDS database (see below).

Websites

The vast Washington Double Star Catalogue is the place for the latest data. All the data used in this list has been taken from this database:

<http://ad.usno.navy.mil/wds/>

However, it is easier to look up stars on the Simbad database, select the basic search option and then click through to the WDS data at the very bottom of the star's main screen. The Aladin Previewer which gives a photographic "snapshot" is also very useful, especially for multiple stars:

<http://simbad.u-strasbg.fr/simbad/>

The (American) Astronomical League has produced a list of 100 double stars as an introductory programme to double stars. Many of the stars on the list can be found in my list above, but some of them are difficult with smaller telescopes (e.g. Gamma Virginis, Porrima) and a few are not visible from Havering as they are too far south. But this list is a great place to start.

<http://www.astroleague.org/al/obsclubs/dblstar/dblstar2.html>

Once you have done the AL 100, a good list of doubles to see, but with some rather tricky (or dim) ones, is the "Top 200 most beautiful Double Stars". Are they the most beautiful, decide for yourself.

<http://users.compaqnet.be/doublestars/>

The Eagle Creek lists of doubles for each constellation should be an excellent resource, but I have found mistakes, especially in the magnitudes given, so use it with caution. It has a click-through link to the Simbad/WDS page for the star and offers a script for ETX tours.

<http://astronomy.eaglecreekobservatory.org/doubles/>

Jeremy Perez's Belt of Venus website, devoted to astronomical illustration, has many pictures of doubles, some of which I used in my talk.

<http://www.perezmedia.net/beltofvenus/>

The Japanese amateur astronomer Toshimi Taki has produced an atlas of double stars which is quite remarkable, but not always easy to use. He has exhaustively listed all double stars brighter than magnitude 6.75, something not done by Haas or Mullaney.

http://www.geocities.jp/toshimi_taki/atlas_dbl_star/dbl_star_atlas.htm

The free planisphere program Stellarium now links itself up to Simbad, so one can search for most double stars using the ** prefix required by Simbad (i.e. **STF or **HJ). Personally I think it is a brilliant program, despite one or two hitches in it (i.e. not selecting the star chosen via Simbad, but only slewing to it). It can be downloaded at:

<http://www.stellarium.org/>

The Star-splitter blog by Greg Stone and John Nanson discusses the more complex and interesting double and multiple stars, it is very well produced and is always illuminating:

<http://bestdoubles.wordpress.com/>

Peter J. T. Morris, 17 November 2013

With thanks to the Washington Double Star Catalogue and the Simbad database.