



Deepsky Beauties February 2011



All objects in this article can be observed underneath a dark sky with telescopes with a maximum of 8 inch (20cm). Most objects can already be observed with smaller telescopes or binoculars.

This month we will discuss some double stars. Double stars are two (or more) stars that revolve around each other. We call the separate stars in a double star system components. The brightest star in a system is called the primary star. The fainter star(s) companion(s).

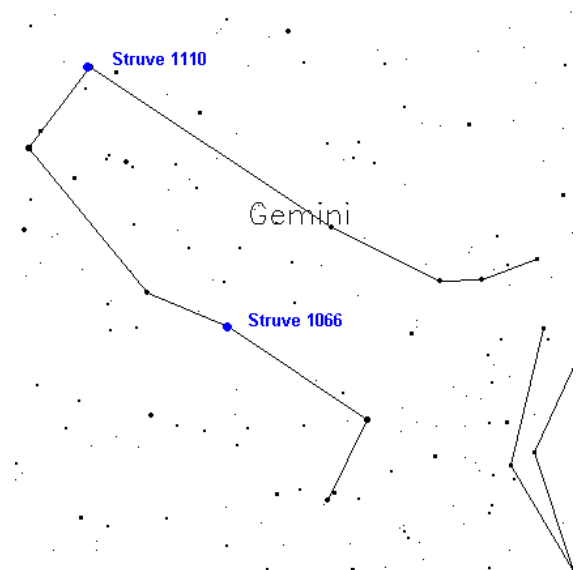
Visual binaries are stars that, seen from earth, can be split in a telescope or binocular. With the unaided eye you see one star; with a telescope you'll notice two or more stars. If these stars actually revolve around each other, we call them physical double stars. If it only looks (seen from earth) that two stars are close to one another, but are actually located far from each other and aren't revolving around each other, then we call them optical binaries.

The brightest star in a system is called component A. The second brightest star component B. If there are more stars in a system they will be further indicated as component C or D.

Let's begin with constellation Gemini, the twins. The two well known stars in Gemini are Castor and Pollux. **Castor** is actually a double star which is also known as Struve 1110. This beautiful binary is already visible through small telescopes. We see two blue/white stars, separated at a

distance of 6 arc seconds. At 72 arc seconds south east of the pair, we find a faint star of magnitude 9, also known as Castor C. This star revolves around the two brighter stars.

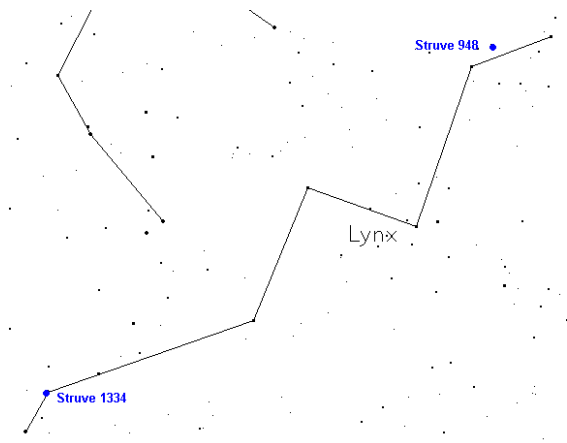
Another nice double star in Gemini is **Struve 1066**. Here we see a large contrast in brightness between both stars. We see a yellow primary and a red/purple companion of magnitude 3.6 and 8.2. Both stars are separated from each other by 6 arc seconds.



Then we'll jump to the Lynx where we find another two beautiful double stars. Let's begin with **Struve 948**. This is a nice triple star system, consisting of a pale blue, a yellowish and orange star. You can find Struve 948 in the head of the Lynx.

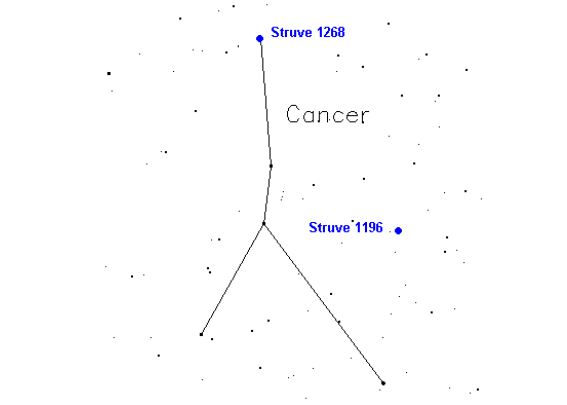


Struve 1334 is also a nice double star in the Lynx. Both stars have subtle colours. The primary is pale blue, its companion greenish. The stars are separated at a distance of 2.6 arc seconds. You'll find Struve 1334 in the tail of the Lynx.



We'll move on the Cancer. **Struve 1196** is a triple star system. The A and B components form a tight double. C is located a bit further from the pair and is the faintest star in the system. All three stars appear yellow. Small telescopes reveal component A and C, B is too close to the primary star to detect it with aperture smaller than 6 inch.

Struve 1268 is also called the Winter Albireo because of its likeness with the double star in Cygnus. Through our telescopes we see indeed a striking double with an orange and a bright blue star. Observe this one with a binocular or small telescope.



We continue with constellation Orion, where we find some more nice double stars.

Rigel (Struve 668) is the brightest star in Orion and also a double star. Although Rigel B, with a magnitude of 6.8, is certainly not faint, it can be hard to split the star from the primary, Rigel A, with telescopes smaller than 15 cm. That's because Rigel A is more than 500 times as bright as B and outshines the star. In addition with the brightness, both stars are close to each other (10" separation). But underneath a dark sky with good conditions and a high magnification, both stars can be split in a 7cm telescope, but it will be a challenge. We see a blue white Rigel A and a blue Rigel B. The system is really nice because of the contrast in brightness!

Let's continue with **Struve 738**. This is a close double star of magnitude 3.5 and 5.5. With small telescopes this binary is not so easy to split. We see two blue stars of which the primary looks a bit bluer than its companion. Observe it with high magnifications.

Almost everyone has at least once observed the famous Trapezium in the heart of Orion. The Trapezium is a multiple star system, registered as **Struve 748**. Even during observing nights with bad conditions these stars are good visible. The stars are beautiful gems, lying at a greenish background. There are also several fainter companions that pop out of the nebula. The A, B, C and D components are easy to detect with small scopes. With higher magnifications and a larger telescope you'll notice also the E and F components.

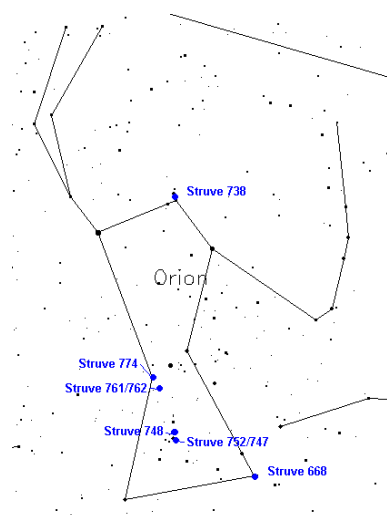
Struve 752 and **747** are visible in the same field of view and form a wide combo. The stars that are part of Struve 747 have a blue colour. The stars of Struve 752 appear also pale blue. Observe these two beauties with different magnifications.



Struve 762 is a really nice multiple system, consisting of three stars with a nice colour contrast. The system exists of a white, orange and blue star.

In the same field of view we'll find another double star: **Struve 761**. This one is located west of Struve 762.

At last we take a look at **Struve 774**. This is a bright blue/white double star with a third component that is relatively far away from the primary and secondary stars. The star that is closest to the A component can be hard to detect. If you don't see it, than try again on an observing night with better conditions. Struve 774 is in the same field of view as the Flame Nebula.



Enjoy these marvellous double's!

Demelza Ramakers (31 januari 2010)
www.everyoneweb.com/observingthenightsky

| Sterrenbeeld | Object | Magn. | Sep. | Positiehoeck | RA | Dec. |
|--------------|-----------|--------------------|---------------|---------------------|--------|---------|
| Gemini | Σ 1110 | 2.0, 2.8 | 6" | 59° | 07h35m | 31°53' |
| Gemini | Σ 1066 | 3.6, 8.2 | 6" | 227° | 07h20m | 21°59' |
| Lynx | Σ 948 | 5.4, 6.0, 7.1 | 1.7", 9" | 66° (ab), 308° (ac) | 06h46m | 59°27' |
| Lynx | Σ 1334 | 3.9, 6.1 | 2.6" | 226° | 09h19m | 36°48' |
| Cancer | Σ 1196 | 5.3, 6.3, 6.2 | 0.9", 6" | 68° (ab), 78° (ab) | 08h12m | 17°39' |
| Cancer | Σ 1268 | 4.1, 6.9 | 31" | 315° | 08h47m | 28°46' |
| Orion | Σ 668 | 0.3, 6.8 | 10" | 202° | 05h14m | -08°12' |
| Orion | Σ 738 | 3.5, 5.5 | 4" | 43° | 05h35m | 09°56' |
| Orion | Σ 748 | 6.6, 7.5, 5.1, 6.4 | 9", 13", 13" | - | 05h35m | -05°23' |
| Orion | Σ 752 | 2.9, 7.0 | 11" | 141° | 05h35m | -05°55' |
| Orion | Σ 747 | 4.8, 5.7 | 36" | 223° | 05h35m | -06°00' |
| Orion | Σ 762/761 | 3.7, 8.8, 6.6, 6.3 | 12", 13", 42" | 84°, 61° | 05h39m | -02°36' |
| Orion | Σ 774 | 1.9, 3.7, 8.5 | 2.5", 60" | 162°, 10° | 05h41m | -01°57' |

