
Skyguide

2018 - I

created by:

Robert Zebahl

www.faint-fuzzies.de

in cooperation with:

René Merting

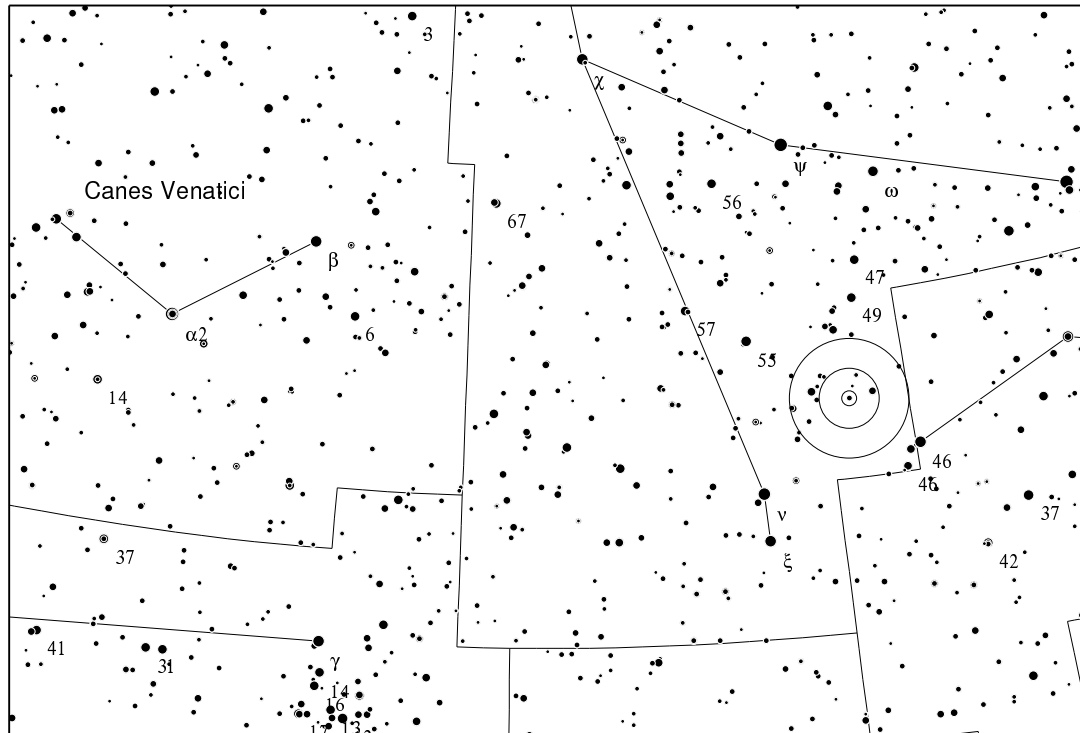
www.freunde-der-nacht.net

Skyguide - A Short Introduction

The Skyguide should mainly give you some suggestions for own observations and will briefly describe 5 objects annually for every season. It contains easy as well as difficult objects, which are sorted by ascending difficulty. How difficult an object is, depends on several factors, especially quality of sky, aperture of the used telescope and the experience of the observer.

For each object the most important information are given and if applicable a [DSS](#) image (Digitized Sky Survey). In addition you will find a chart, created by the free software [Cartes du Ciel](#) (Skychart), to get an overview of where the object is located. This chart shows stars down to a magnitude of about 8.0 mag. Telrad rings (0.5°, 2°, 4°) on the chart mark the position of the object. But basically I recommend creating your own finder charts. The visual descriptions are mainly based on own observations and only serve as a reference point.

Constellation UMa
Coordinates 11h03m20.19s / +35°58'11.57"
Brightness 7.52 mag

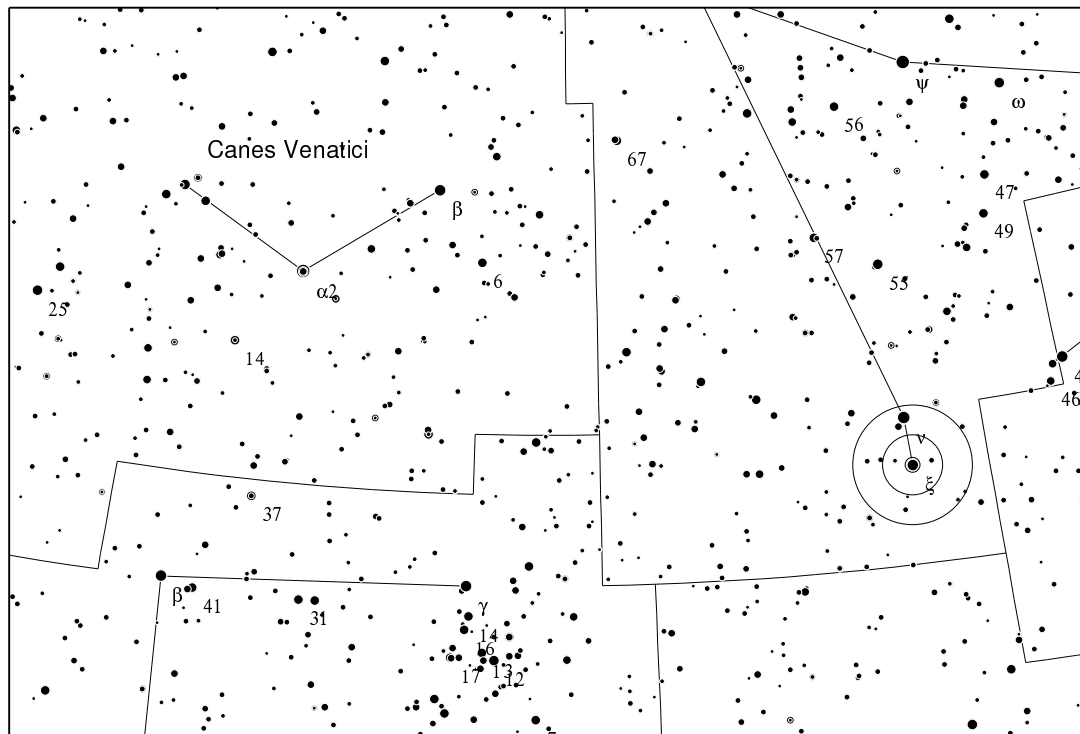


Lalande 2118 is visually not the most interesting object, but with some background knowledge this might change. At least this star with a distance of about 8.3 light years is the sixth next known star to the sun. It is a red dwarf. Its luminosity is just 1/40 compared to the sun, the mass less than half of the sun. The diameter of Lalande 21185 is about 0.4 times of the sun, which was measured by the Palomar Testbed Interferometer. This star was also intensively examined for potential planets. Red dwarfs are basically not visible to the unaided eye from earth due to their low luminosity, but Lalande 21185 is bright enough to easily observe it with binoculars.

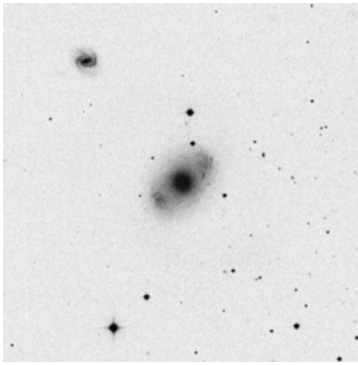
Xi UMa (53 UMa, Alula Australis)

**

Constellation	UMa
Coordinates	11h18m10.90s / +31°31'45.00"
Brightness	4.33 mag / 4.8 mag
Angular Distance	1.9"
Position Angle	164°
Year	2017

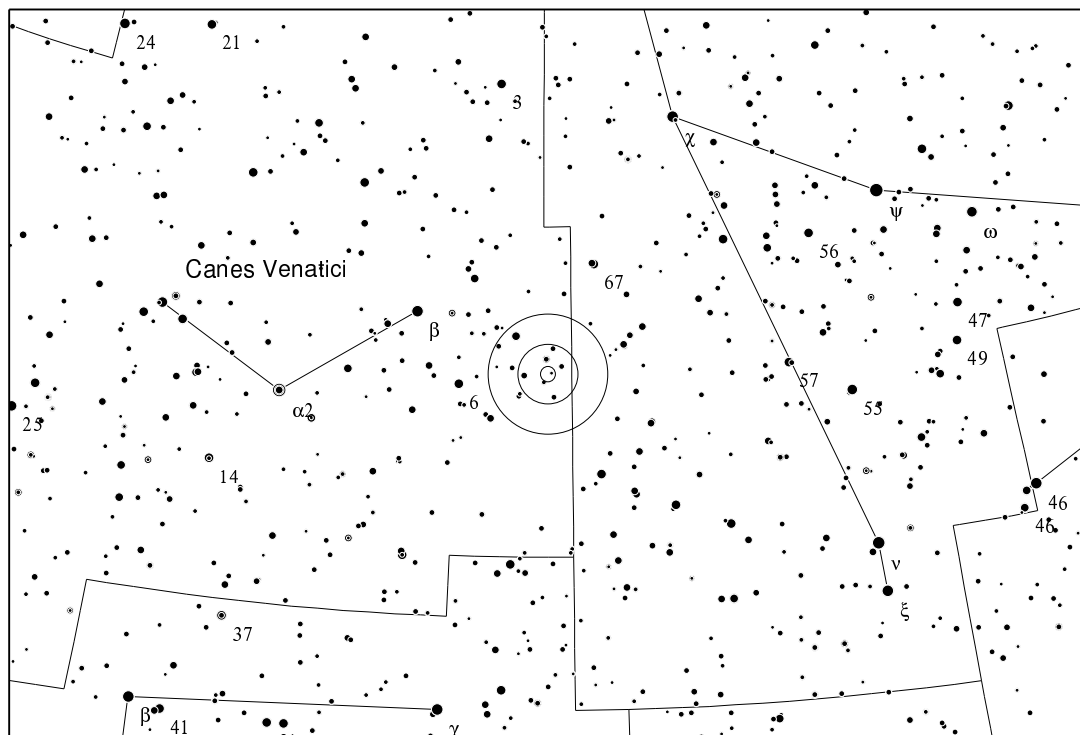


Xi UMa is a multiple star system with a distance of about 27 light years. The main components A and B are known as STF 1523. Both of these components are spectroscopic binaries, so visually not separable. For those kinds of binaries methods of spectroscopy are used. The period of the main components is nearly 60 years and appears elliptical relative to earth. The angular distance is between 1 and almost 3 arcseconds. Currently the angular distance is increasing and reaches its maximum approximately in the year 2030. Because both components are almost equally bright splitting this binary should also be possible with smaller telescopes. I will try this a 70mm refractor.

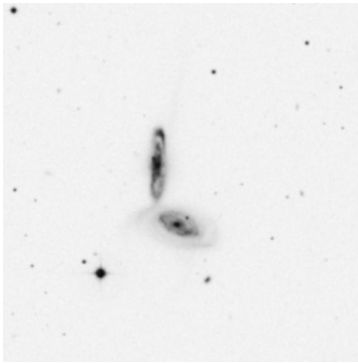


DSS I - 12.0×12.0'

Constellation	CVn
Coordinates	12h10m32.58s / +39°24'21.03"
Brightness	11.48 mag
Size	6.8×5.3'

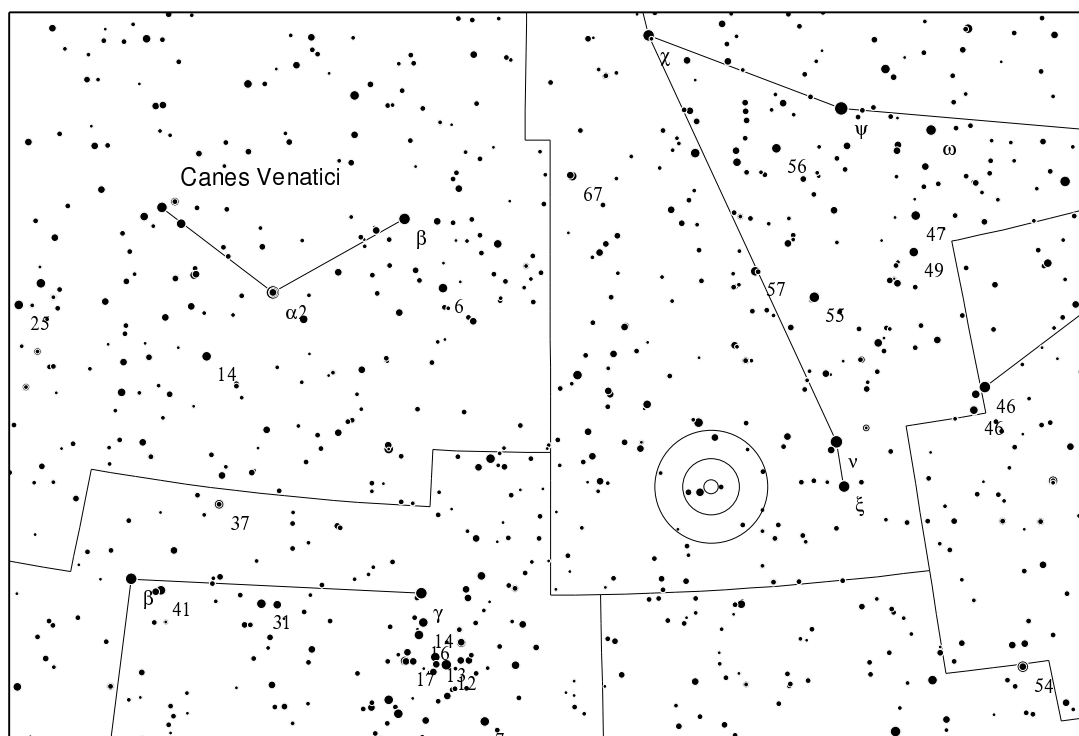


NGC 4151 (UGC 7166) is interesting for observers and photographers. Besides the bright core and an inner spiral arm the galaxy shows also more extensive spiral structures, which are almost invisible on the DSS image. But for photographers these might be a good target. In the center of the galaxy is a massive black hole. Also the X-ray radiation originating from the galaxy was examined. Visually the differences in brightness in the inner ring structure are very interesting. Telescopes with at least 8 inch aperture should show these details, but for the galaxy itself smaller telescopes should be also sufficient.

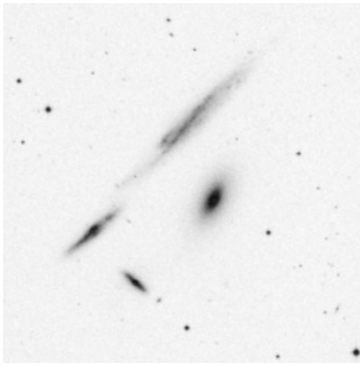


DSS II (blue) - 8.0×8.0'

Constellation	UMa
Coordinates	11h39m42.00s / +31°55'30.00"
Members	NGC 3786 (12.3 mag, 2.1×1.1')
	NGC 3788 (12.5 mag, 2.1×0.7')

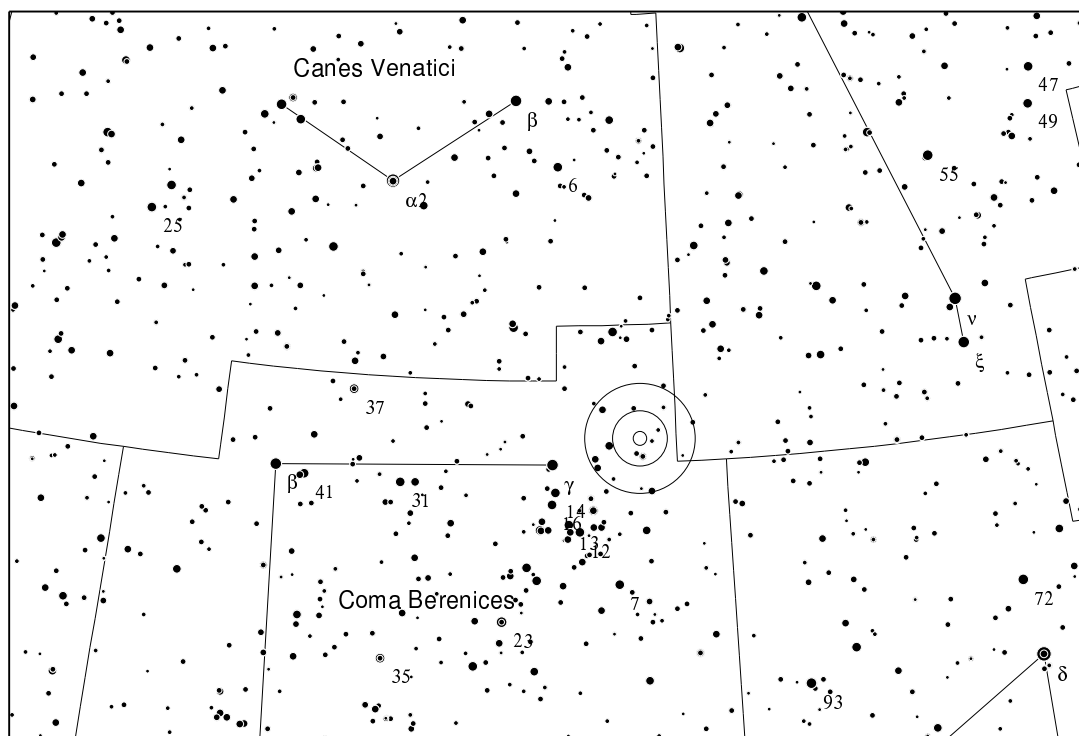


During my visual 'sky survey' I stumbled in spring 2013 over this galaxy pair. The northern one is NGC 3788, which shows a pretty long but also faint tail towards north. Both galaxies can be easily observed under rural skies (Bortle 4) with 8 inch aperture and appear as elongated brightenings, which are nearly touching each other almost at right angles. NGC 3788 appears obviously elongated, whereby NGC 3786 appears more oval. Both galaxies in this arrangement offer a pleasing view to me.



DSS II (blue) - 8.0×8.0'

Constellation	Com
Coordinates	12h12m22.00s / +29°11'09.00"
Members	NGC 4169 (12.3 mag, 1.8×0.9')
	NGC 4173 (12.7 mag, 5.0×0.7')
	NGC 4174 (13.6 mag, 0.8×0.3')
	NGC 4175 (13.4 mag, 1.8×0.4')



Hickson 61 is somehow similar to Arp 294, but offers 4 galaxies. The name 'The Box' comes from the arrangement of the galaxies. The difficulty of the galaxies of Hickson 61 are very different. The lenticular galaxy NGC 4169 is the brightest member and with an overall visual magnitude of 12.3 mag a bit easier than Arp 294. It is most obvious at first glance and can be directly seen under rural skies (Bortle 3-4) with 8 inch aperture and higher magnification. More difficult are NGC 4174 and NGC 4175, but still not challenging for an experienced observer. NGC 4173 is the largest but also faintest member. With some patience and experience this galaxy can be seen with 8 inch aperture under Bortle 3 skies.