
Skyguide

2019 - IV

created by:

Robert Zebahl

www.faint-fuzzies.de

in cooperation with:

René Merting

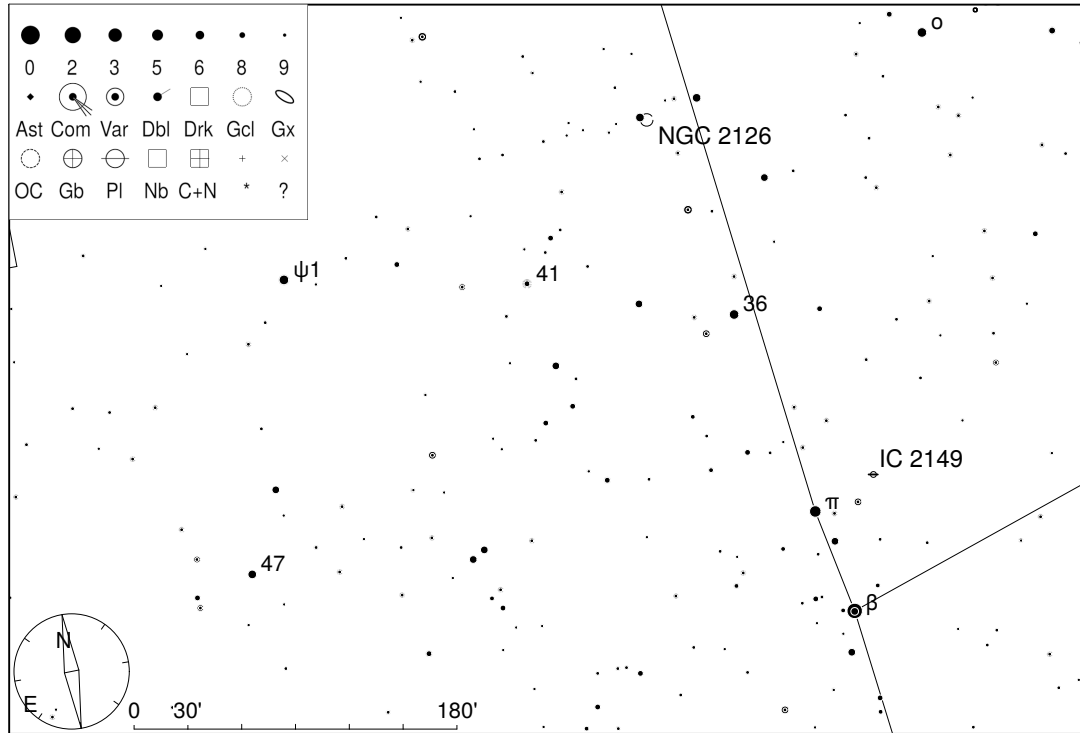
www.freunde-der-nacht.net

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.

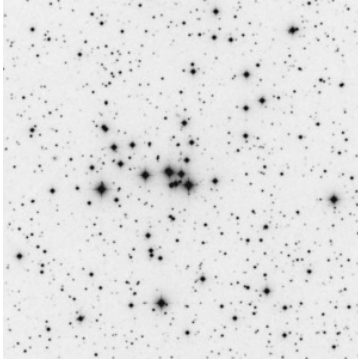
Constellation	Aur
Coordinates	06h11m36.59s / +48°42'39.60"
Brightness	6.16 mag / 6.86 mag
Angular Distance	7.5"
Position Angle	358°
Year	2017



The fairly bright double star 41 Aurigae is easy to find and shows two stars with a relatively small difference in brightness. At an angular distance of 7.5 arcseconds a small telescope is sufficient for observation, even from the city. If you own large binoculars, you can also try this double star. A tripod is strongly recommended. In a small refractor with 55mm aperture it is already separable at a magnification of 25x, whereby both components are still quite close together.

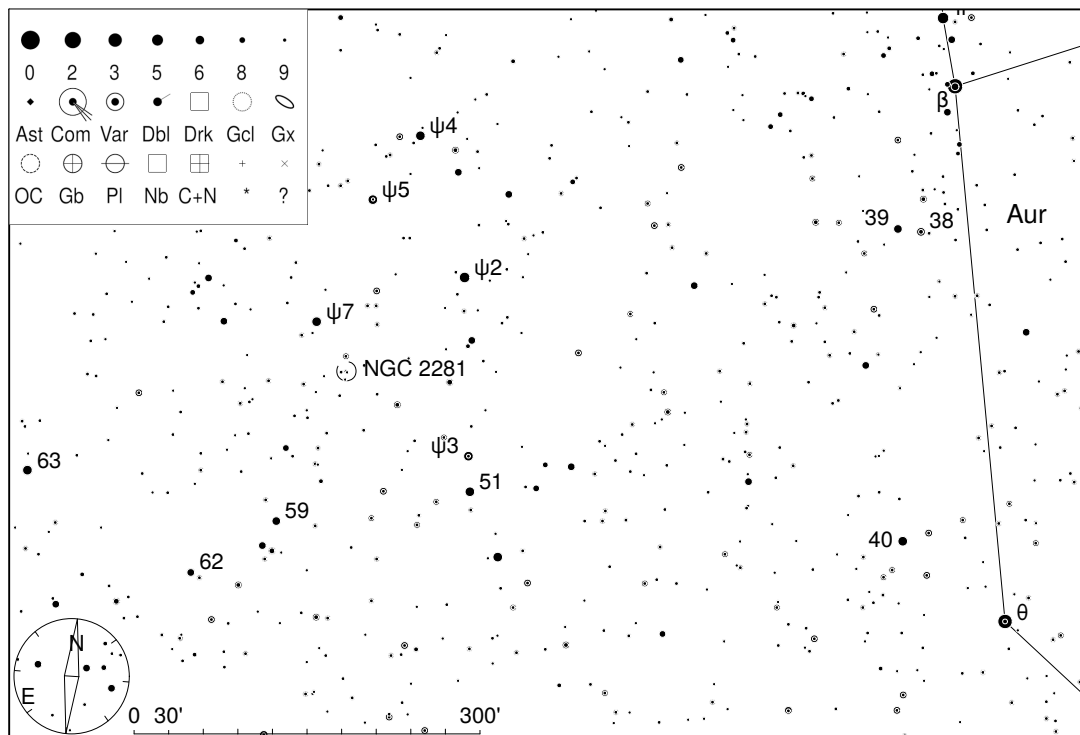
Constellation	Aur
Coordinates	05h59m43.24s / +37°12'45.90''
Brightness	2.6 mag / 7.2 mag
Angular Distance	4.2''
Position Angle	305°
Year	2017

In addition to double stars with similarly bright components, there are also those whose difference in brightness is very large. Among double star observers this is often a challenge, because the fainter component is outshined or even lies only as a brightening in the diffraction ring of the brighter primary component. Usually high magnifications are necessary. In the case of theta Aurigae the difference in brightness is more than 4 magnitudes, but it is a nice entry into the observation of uneven double stars. The angular distance is large enough that with some patience it can be successfully observed with a telescope with an aperture of 70mm. At a magnification of 133x the companion appears as a small, faint star. The observation of double stars, especially of very uneven pairs, is always worth a look.

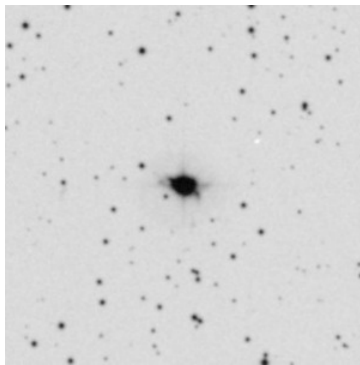


DSS I - 20.0×20.0'

Constellation Aur
Coordinates 06h48m17.00s / +41°04'42.00"
Brightness 5.4 mag
Size 15.0×15.0'

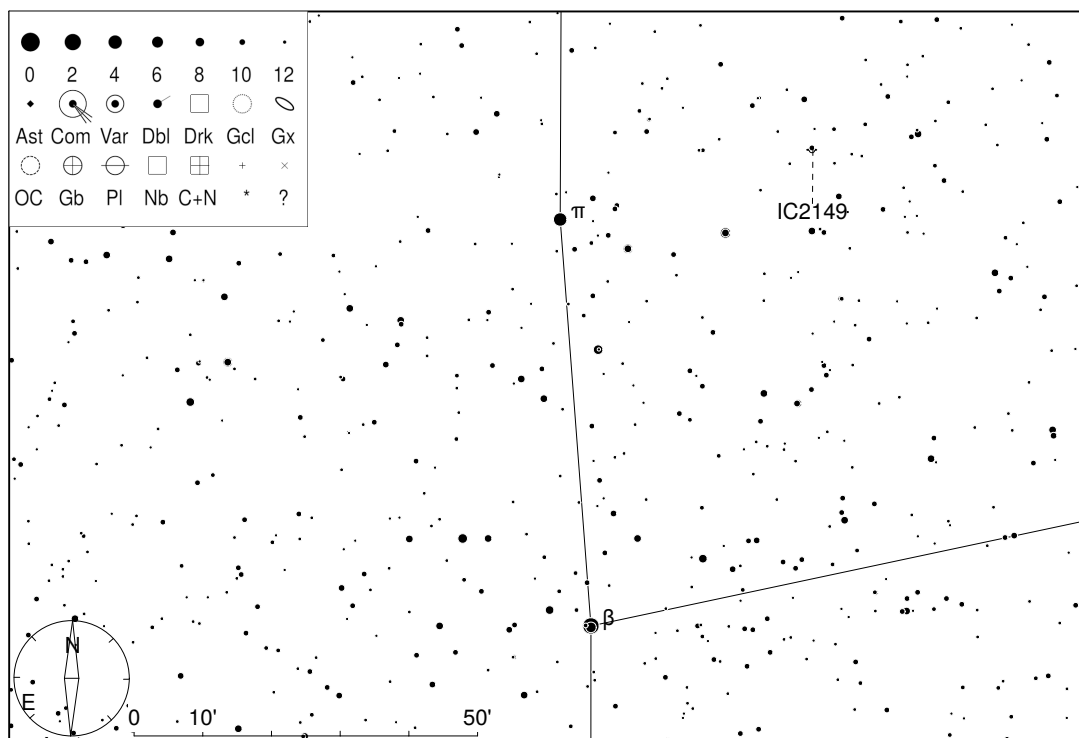


NGC 2281 is an approximately 300 million year old cluster which, according to an article published in 'Sterne und Weltraum' (12.2016, S68 f.), has already completed its second orbit around the center of the Milky Way and will probably dissolve completely. With an estimated number of 30 members it is rather poor but still stands out well from its surroundings. The brighter stars form with some imagination one half of a heart, which probably gave the cluster its nickname (Broken Heart). Under suburban conditions the cluster can be well seen with an aperture of 5 inches at low magnification.

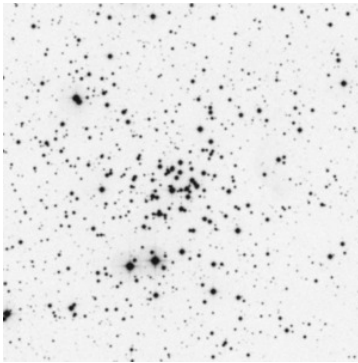


Constellation Aur
Coordinates 05h56m23.86s / +46°06'17.50"
Brightness 10.6 mag
Size 0.2×0.1'

DSS II (blue) - 5.0×5.0'

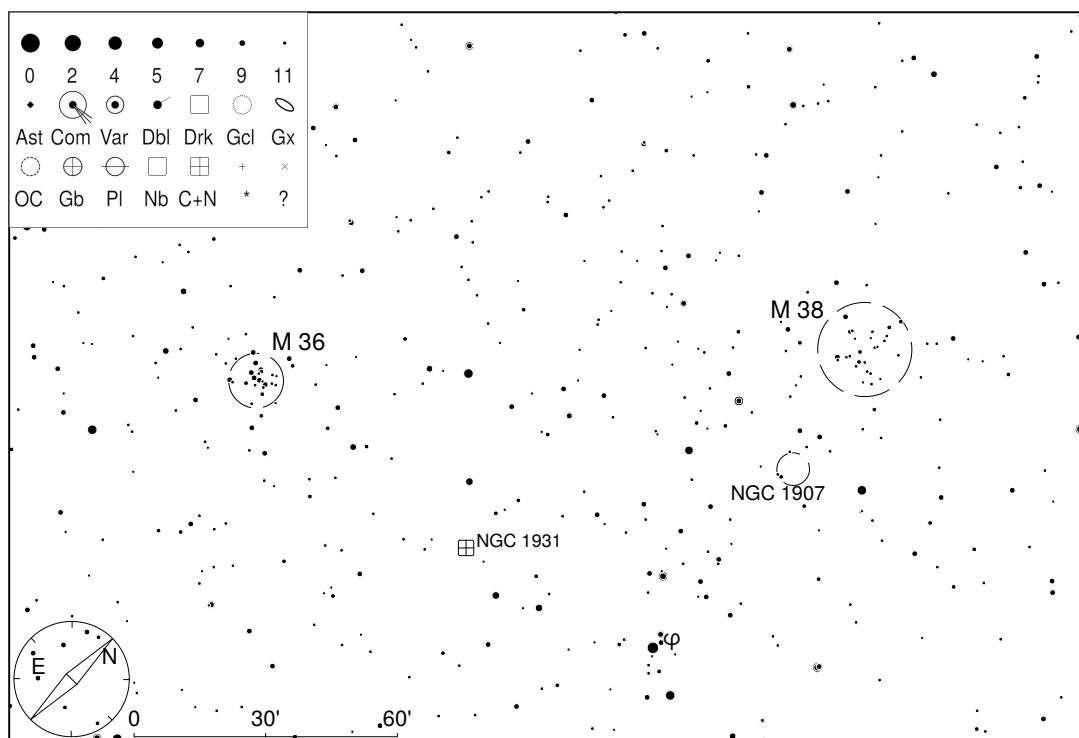


IC 2149 is the brightest planetary nebula in Auriga. The visual brightness of 10.6 mag results in a quite high surface brightness at the given angular size, so that the nebula can be observed well from the city with a medium aperture. Small magnification shows the nebula mostly stellar. Under urban conditions (Bortle 7) the slightly oval shape can be seen with an aperture of 8 inch and 150x magnification.



DSS II (blue) - 12.0×12.0'

Constellation Aur
Coordinates 05h28m05.00s / +35°19'30.00"
Brightness 8.2 mag
Size 7.0×7.0'



In close proximity to the well-known cluster Messier 38 is the much fainter cluster NGC 1907, which Trumpler classifies as II1m. Robert Julius Trumpler (02.10.1886 - 10.09.1956), a US-American astronomer from Switzerland, developed a scheme for the classification of open clusters, which usually consists of 3 specifications: A Roman number (I-IV) indicates concentration and contrast to the environment (low to high), the number (1-3) indicates the differences in brightness between the members (low to high) and a letter gives information about the number of members: p (poor), m (medium) or r (rich). Visually the cluster can already be observed with small 8x40 binoculars under dark skies and shows up as a small, apparent brightening.