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# Skyguide

2019 - III

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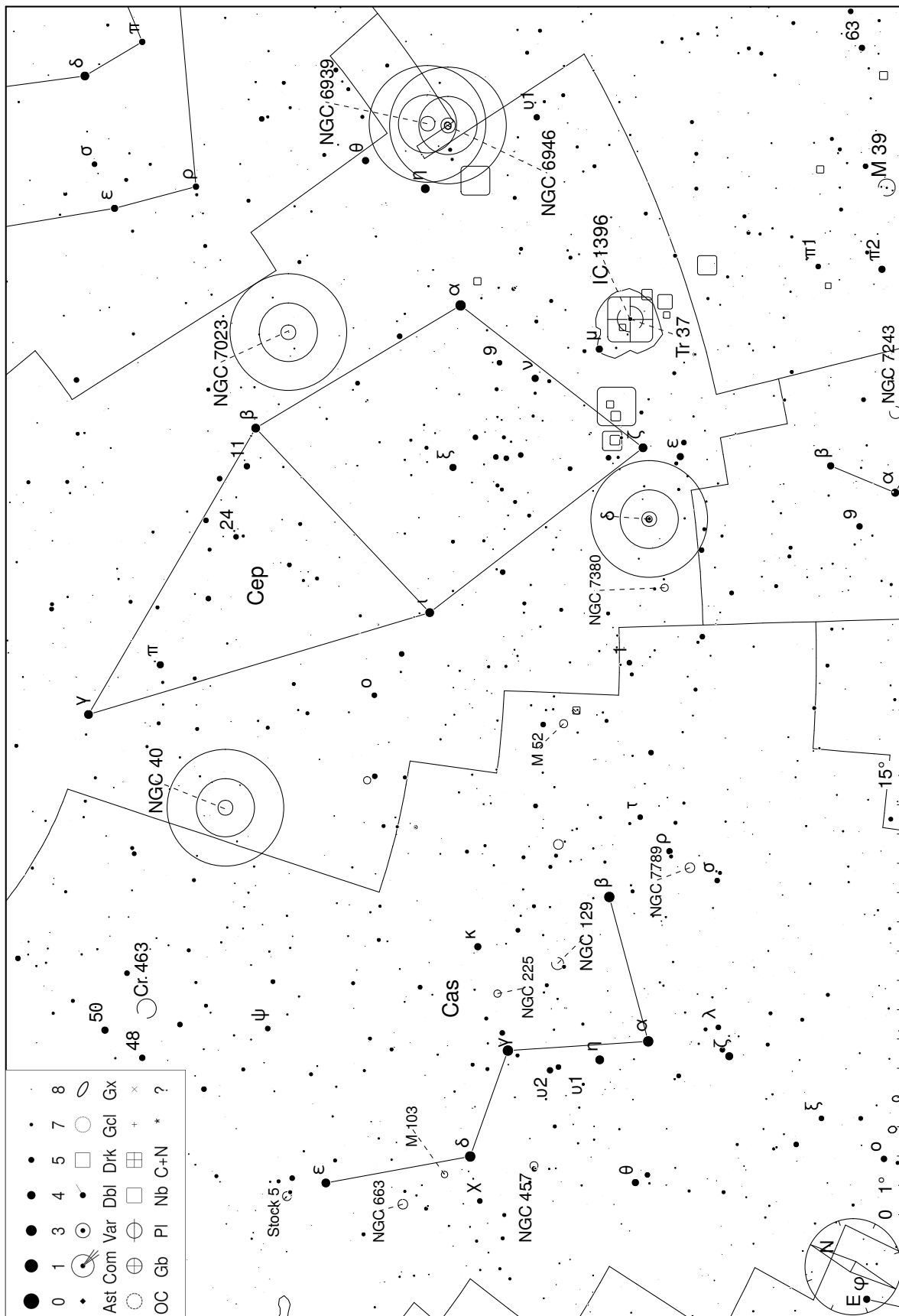
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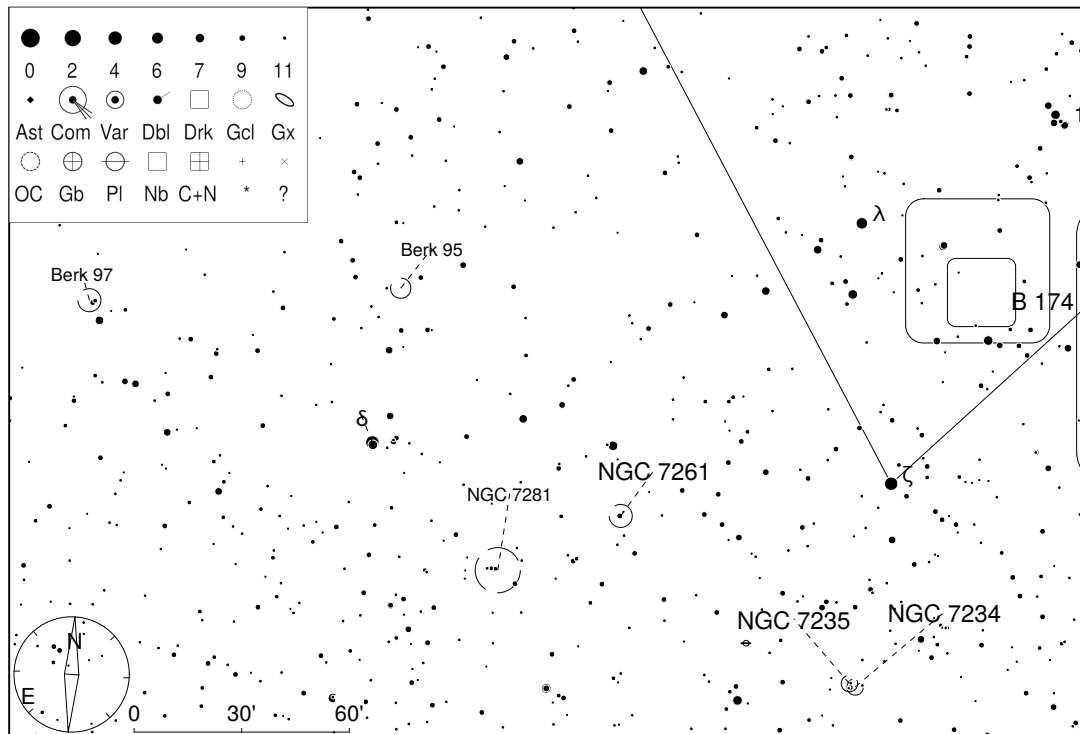
# Skyguide - A Short Introduction

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.

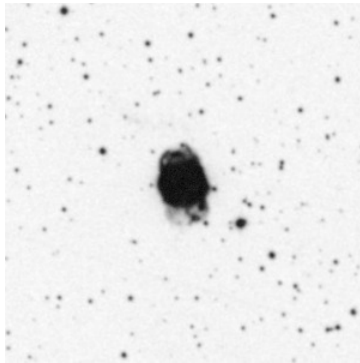
For each object the most important information are given and if applicable a [DSS](#) image (Digitized Sky Survey). In addition you will find a chart, created by the free software [Cartes du Ciel](#) (Skychart), to get an overview of where the object is located. This chart shows stars down to a magnitude 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.



<b>Constellation</b>	Cep
<b>Coordinates</b>	22h29m10.25s / +58°24'54.70"
<b>Brightness</b>	4.21 mag / 6.11 mag
<b>Angular Distance</b>	40.9"
<b>Position Angle</b>	192°
<b>Year</b>	2016

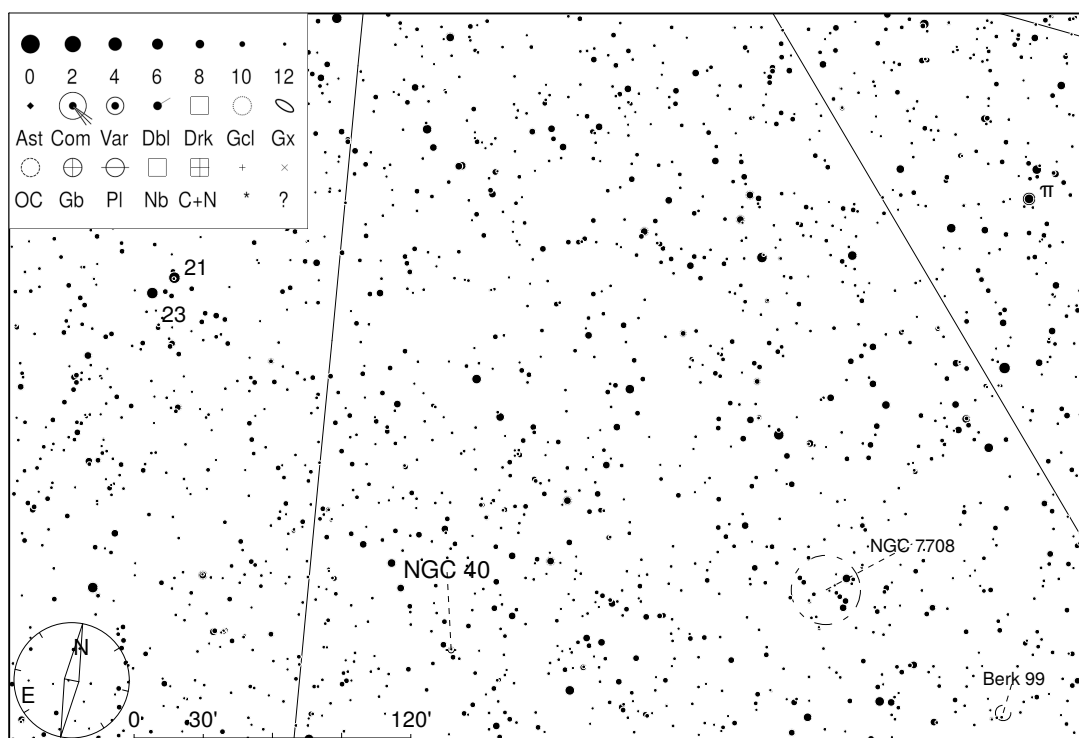


Delta Cephei is a bright double star with a large angular distance, so a small pair of binoculars is sufficient for observation. The primary component itself is a variable, whose brightness varies between 3.49 and 4.36 mag with a period of about 5.4 days. In addition to the separation of the double star, it would also be possible to create a light curve within a short period of time. Due to the low amplitude, the estimates should be as accurate as possible. In a small instrument, the difference in brightness and color is clearly visible. The primary component appears slightly orange, the fainter one rather blueish.

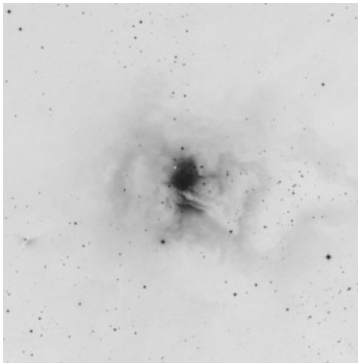


**Constellation** Cep  
**Coordinates** 00h13m01.01s / +72°31'19.09"  
**Brightness** 11.46 mag  
**Size** 1.2×0.8'

DSS II (blue) - 5.0×5.0'

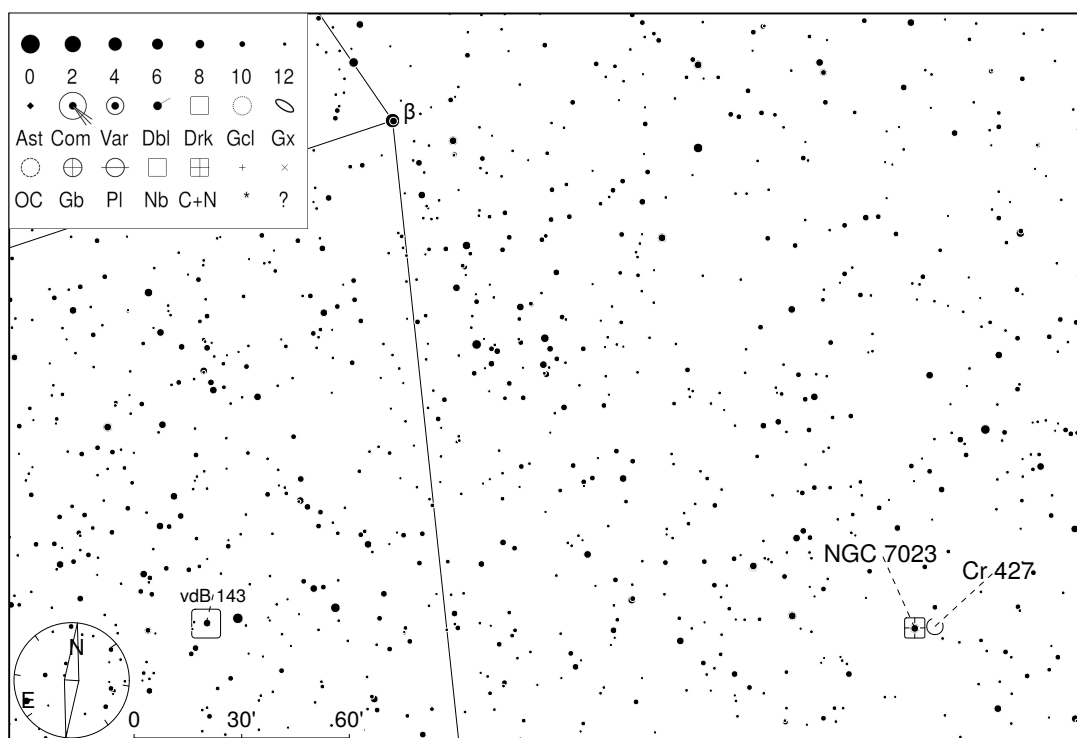


This planetary nebula is certainly not one of the brightest of its kind, but should still be reachable with a medium-sized instrument even under suburban conditions. Its central star has only about the size of the Earth, but due to its enormously high density the star reaches about 2/3 of the solar mass. With an 8 inch telescope, the nebula is an easy target under rural conditions and can be seen as a small disk even at low magnification. At medium magnification the 11.6 mag bright central star is also visible. With a 12 inch telescope the nebula already shows first details. Nebula filters can be helpful. At which aperture is the nebula visible under (sub-) urban conditions?

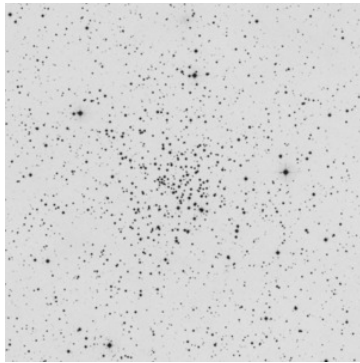


**Constellation** Cep  
**Coordinates** 21h01m36.90s / +68°09'48.00"  
**Brightness** 6.8 mag  
**Size** 18.0×18.0'

DSS II (red) - 18.0×18.0'

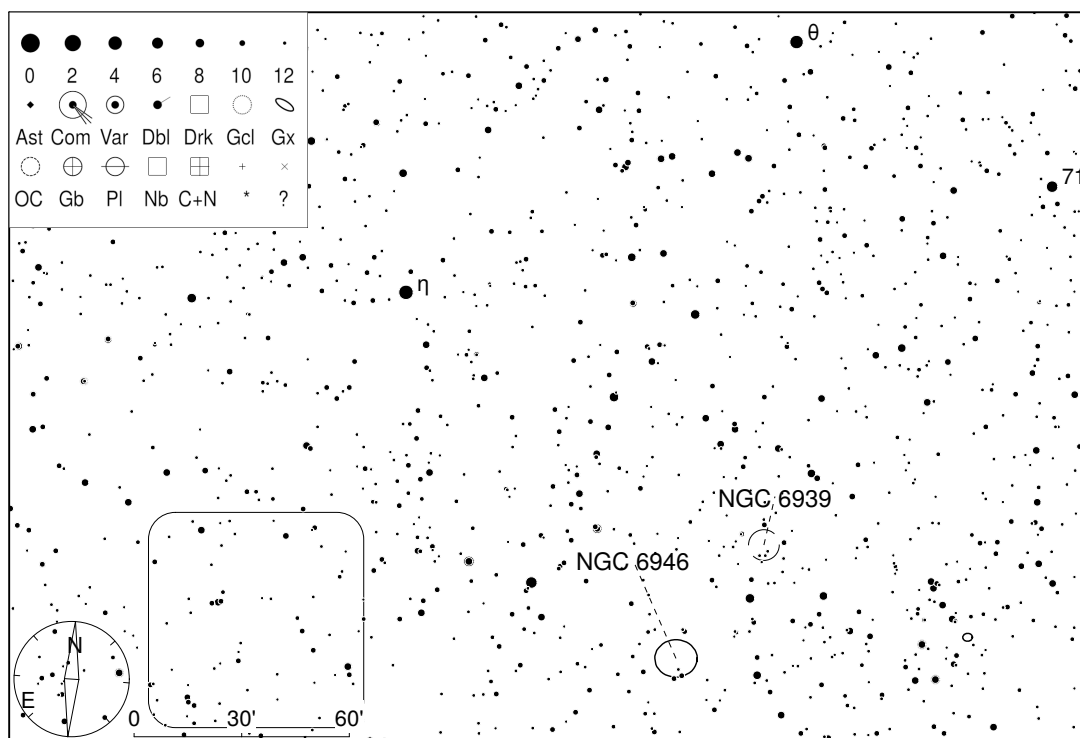


The Iris Nebula is probably one of the most impressive reflection nebula and shows countless structures on photographs. The nebula is surrounded by dark clouds of dust, which can be seen in photographs as well as visually indirectly. Under rural skies with 8 inch aperture the bright central star is easily visible at low magnification. It is conspicuous that there are no brighter stars in the immediate vicinity. A closer look reveals a small halo around the central star. High magnifications are very helpful and show first structures of the nebula. Since it is predominantly a reflection nebula with small emission parts, nebula filters are probably not beneficial. What does the nebula reveal with a 4 inch telescope?



**Constellation** Cep  
**Coordinates** 20h31m30.00s / +60°39'42.00"  
**Brightness** 7.8 mag  
**Size** 10.0×10.0'

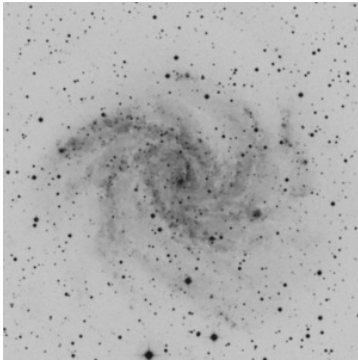
DSS II (blue) - 20.0×20.0'



With 1.6 billion years NGC 6939 is one of the oldest known star clusters. It is very rich and consists of rather faint members. Photographically and visually very attractive is the apparent neighbourhood to the galaxy NGC 6946 with an angular distance of almost 0.7 degrees. Under rural skies, the star cluster is already visible as a round nebula with a small pair of binoculars, with an 8 inch telescope it is partially resolvable.

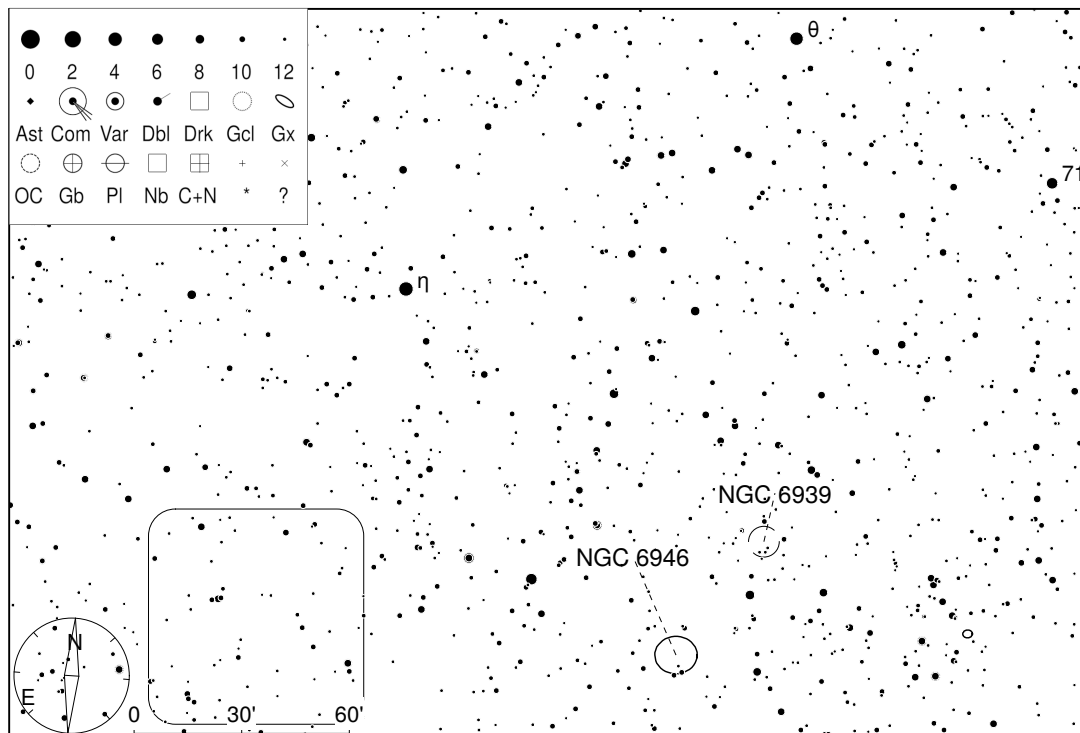
# NGC 6946 (UGC 11597, Arp 29, H 4.76, GLX Fireworks Galaxy)

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**Constellation** Cep  
**Coordinates** 20h34m52.33s / +60°09'13.24"  
**Brightness** 9.0 mag  
**Size** 11.5×9.8'

DSS II (blue) - 12.0×12.0'



This spiral galaxy is very similar to Messier 101, where you look at it virtually from above. Both galaxies are included in the Arp catalogue under the group 'Spiral galaxies with a pronounced arm'. Since NGC 6946 is located near our galactic plane, the light coming from it is dimmed by a lot of dust. However, an observation is worthwhile. Already in binoculars under rural skies it can be seen as a faint brightening. But also under suburban conditions it is well visible with medium-sized telescopes. With 12 inch aperture, the spiral structure is partially visible. What is visible under dark skies with 6 inch aperture?