

# MONTHLY OBSERVER'S CHALLENGE

*Compiled by:*

*Roger Ivester, North Carolina*

*&*

*Sue French, New York*

**January 2024**

**Report #180**

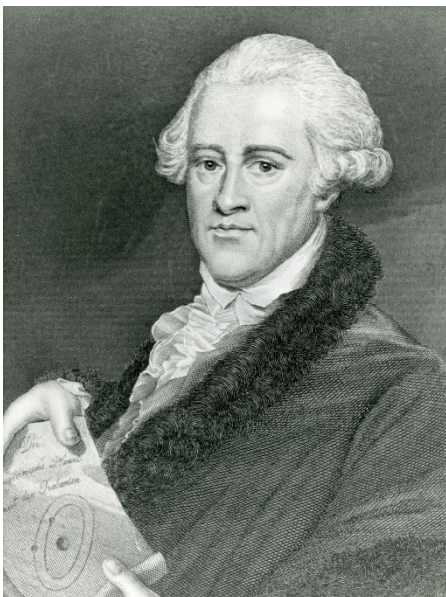
**NGC 936 and NGC 941, Galaxies in Cetus**

*Sharing Observations and Bringing Amateur Astronomers Together*

## **Introduction**

The purpose of the Observer's Challenge is to encourage the pursuit of visual observing. It's open to everyone who's interested, and if you're able to contribute notes and/or drawings, we'll be happy to include them in our monthly summary. Visual astronomy depends on what's seen through the eyepiece. Not only does it satisfy an innate curiosity, but it allows the visual observer to discover the beauty and the wonderment of the night sky. Before photography, all observations depended on what astronomers saw in the eyepiece, and how they recorded their observations. This was done through notes and drawings, and that's the tradition we're stressing in the Observer's Challenge. And for folks with an interest in astrophotography, your digital images and notes are just as welcome. The hope is that you'll read through these reports and become inspired to take more time at the eyepiece, study each object, and look for those subtle details that you might never have noticed before.

## **This month's target**



NGC 936 and NGC 941 were both discovered by William Herschel on the night of January 6, 1785 with his 18.7-inch speculum-metal reflector. His handwritten journal for NGC 936 reads: *Considerably bright, a chevelure of about 3 or 4' with a very bright nucleus.* Below this he describes NGC 941 as: *Very faint, considerably large it will just go into the field with the last.*

**Uwe Glahn:** Observer from Germany



Object: NGC 936

Telescope: 27" f/4.2 Newton

Magnification: 293× - 419×

NELM fst 7m0+

Seeing: III

Location: Winkelmoosalm

**Sketch Follows.**



You can see more of Uwe's sketches at <http://www.deepsky-visuell.de/>

**Bertrand Laville: Observer from France**



B Laville



**NGC 936 941**  
T254 x 185  
1999 01 09 19h10 UT  
Chabottes (05)

**Details follow**

## Object information

Object name: NGC 936 & NGC 941  
Type of object: Galaxy Duo  
Magnitude: (936) 11.10  
Right ascension: 02h 27m 34s  
Variation: 01° 09' 51" S  
Constellation: Cetus

## Observation Details

Date of observation:  
Jan 09, 1999 7:10 PM UT  
Duration of observation: 10 minutes  
Object position: Alt: 43.9°, Az: 187.8°  
Weather conditions : Windy, Mistral 80 kmh, clear sky, strong turbulence  
Observation conditions: SQM 21.4, mvlonZ ~ 6.5, T1.5, P1.5, S5/185  
Observation location: Chabottes les Auberts  
Instrument : TSC LX200/254 Meade  
Main eyepiece: Meade SWA 13.8mm  
Magnification: 184x

## NGC 936

x185 Meade SWA 13.8mm  
The galaxy is bright, seen V2-V3, slightly elongated halo a/b~1.5 to 2, D~3'x2'  
The center is concentrated, very contrasted, almost punctual. It seems that I suspect a dark band, at the NE limit (Note on 12 01 2000: false, does not appear on BT Atlas)

It's a beautiful object!

## NGC 941

x185 Meade SWA 13.8mm  
Nothing to do with NGC 936: the galaxy is only suspected, very difficult, VI5, like an extremely pale spot, slightly elongated NS (?), a/b~1.25 to 1.5? No CS seen.  
I only located it thanks to the precision centering done with NGC 936, located at 15'E. Star of m11 or 12v at 7'SW.  
It's a difficult object.

You'll find further details and more of Bertrand's sketches at: <http://www.deepsky-drawings.com/>

You can select what language you want to read, and see what the abbreviations mean.

**John Bishop: Observer from Massachusetts**



I observed NGC 936, a barred lenticular galaxy in Cetus, on January 14, 2024. I made this observation as part of a group of ATMob members using the Club's 25 inch Dob, at the Clubhouse in Westford, Massachusetts. The sky was clear, but seeing was poor. The air temperature was 22 degrees F. at 11:00 pm.

The 25-inch Dob is mounted in a roll-off roof observatory. The Dob was recently retrofitted with a tracking motor. One of the club's most experienced observers, Steve C., quickly located NGC 936 by star-hopping. Views were taken at about 350x and 650x. The tracking motor worked fairly well, thankfully, given the high magnification.

My time at the eyepiece, on a rolling stepladder, was brief. NGC 936 was conspicuous, but smaller than I expected at this power in this massive telescope. The galaxy was "roundish", with a bright center, but unevenly bright overall. In the unsteady seeing, subtle brightness extended from the bright center in opposing directions, which suggested an oblong shape.



Larry McHenry: Observer from Pittsburgh, Pennsylvania

<http://stellar-journeys.org>



Barred lenticular galaxy NGC 936 is located in the late fall constellation of Cetus – “The Sea Monster”.

The galaxy is about 60 million light-years distant.

NGC936 was discovered on the night of January 6<sup>th</sup> 1785 by William Herschel using his 20-ft reflector at his home in Slough, near Windsor Castle.

#### **Video-Capture/EAA:**

October 11th 2023, from ORAS Observatory in Western PA.

Using an 8-inch SCT optical tube @ f/6.3 on a GEM mount, with a CMOS color camera and broadband filter, 3 minute guided exposure, EAA live-stacked for 30 minutes.

Using EAA techniques, the bright 10th mag oval shaped galaxy NGC 936 is located in a rich field that also contains several other small galaxies. NGC 941 lies about 12 arcminutes to the east (bottom of image) and fainter spiral PGC9394 to the SE.

A ring shaped spiral arm can be faintly seen within the face-on halo of NGC 936, containing brighter sections where the bar attaches to the galaxy’s core. The galaxy has been whimsically nicknamed the “Darth Vader Galaxy” due to its resemblance to a Star Wars tie-fighter.

**Image Follows.**



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**Sue French: Observer from New York**



Through my 105mm refractor at 17 $\times$ , NGC 936 is visible as a not-quite stellar point, handily pointed out by the long bar of an L-shaped pattern of four stars, magnitudes 9.2 to 10.8, that floats north of the galaxy. A magnification of 53 $\times$  shows a faint, roundish, 2-arcminute halo with a roughly  $\frac{1}{2}$ -degree core that brightens toward the center.

My 10-inch reflector at 90 $\times$  shows elusive NGC 941 sitting 12 $\frac{1}{2}$ ' east of its brighter companion arcminutes farther toward the east. Continuing  $\frac{1}{2}^\circ$  farther eastward, brings you to the edge-on galaxy NGC 955, which is easier to see.



**North is up.**

**Mario Motta:** Observer from Massachusetts



My notes and image of galaxies, NGC 936 and NGC 941, which required me to take twice, as I missed fainter galaxy, NGC 941 also in the same field.

The image was taken via my 32-inch  $f/6.5$  telescope, with Lum one hour, and RGB filters 45 min each. Total integration time is about three hours plus, and then processed in Pixinsight

The following photo: NGC 936 can be seen visually, and is very Interesting with a central large bar, surrounded by a larger halo, classified as a lenticular galaxy. Much smaller and fainter galaxy, NGC 941 is located to the left in the following image or east and is a classic spiral.

The galaxy pair is about 60 MLY away in Cetus.

**Image Follows.**



**Phil Orbanes:** Observer from Massachusetts

NGC 936 is a barred lenticular galaxy, located near the celestial equator in Cetus. It is about 60 million light-years from the solar system.

Thus, it is farther away than the Virgo cluster of galaxies. It has a prominent bar and relatively high surface brightness because it is quite smooth (and therefore stable). It also has a ring of stars rather than distinct arms. This has led some to nickname it the “Darth Vader Star-fighter” galaxy.

Given its distance and lack of hydrogen alpha content, I photographed NGC 936 exclusively with RGB filters and created an artificial luminance in Pixinsight. I also was able to enlarge my image without losing detail, thanks to the new processes in Pixinsight. Also visible in the background are several far more distant galaxies.

My photo includes many hours of imaging with my 14-inch Planewave reflector and FLI 16803 CCD camera.





**Dr. James R Dire:** Observer from Texas



NGC 936 is a rare, barred-lenticular galaxy in the constellation Cetus. The galaxy was discovered by William Herschel on January 6, 1785. Herschel classified it as a planetary nebula due to its round shape.

NGC 936 can be found approximately 6 degrees southwest of the binary star Gamma Ceti (components magnitude 3.5 and 6.2 separated by 2.3 arcseconds). It is also 4 degrees west-southwest of the much brighter galaxy Cetus A (M77). NGC 936 shines at magnitude 10.2 and is approximately 5.2 arcminutes in diameter.

NGC 936 is classified as a lenticular galaxy because it is a face on disk galaxy, but it has no discernable spiral arms. The core of the galaxy is bright and star-like in amateur telescopes. The bar runs nearly east-west. The galaxy has a ring structure whose diameter is the same as the bar. Both ends of the bar are notably brighter where the bar intersects the ring, than the sections between the ring and the galaxy's core. Beyond the ring is a faint circular halo.

I imaged NGC 936 this month from the backyard of my home in Bryan, Texas using a Stellarvue 70mm f/6 apochromatic refractor. I used a 0.8x focal reducer/field flattener to give an effective focal ratio of f/4.8. I also employed an Orion Skyglow filter which passes only wavelengths around H-alpha, H-beta and O-III. The image was 120 minutes with an SBIG ST-4000XCM CCD camera. My mount was a Celestron CGEM II and I guided with the onboard guide chip in the SBIG camera taking 10-minute subframes. The final image was cropped and enlarged to see more detail in the galaxy. In the image, north is up and east to the left.

The cropped image is shown here along with a second image labeling NGC 936 and four other galaxies in the same field of view. NGC 936 is paired with NGC 941, a nearly face-on spiral galaxy of magnitude 12.5 measuring  $1.9 \times 1.3$  arc minutes. The centers of NGC 936 and 941 are separated by a mere 12 arc minutes but they are not interacting galaxies.

Near the left edge of the image is an edge-on spiral galaxy NGC 955. This galaxy is magnitude 12 and measures  $2.8 \times 0.8$  arcminutes. Below NGC 941 is a much fainter edge-on spiral galaxy named UGC 1945. UGC 1945 is magnitude 14.4 and measures  $1.8 \times 0.7$  arcminutes in size. The last galaxy labeled is UGC 1905, a magnitude 15.7 lenticular galaxy about 30 arcseconds in diameter. There are about a dozen other galaxies in the image that I could identify. They are indistinguishable from faint stars at this image scale.





NGC955

NGC941

NGC936

UGC1945

UGC1905

**Roger Ivester:** Observer from North Carolina



With a southerly declination of  $-01^{\circ}$  of which required me to overlook the town of Boiling Springs, I was not sure what to expect. However, the galaxy was pretty easy, but not very bright, due to a very low-surface-brightness, appearing mostly round with a subtle brightening in the center. My NELM was 4.9 when estimated overhead, from my suburban backyard.

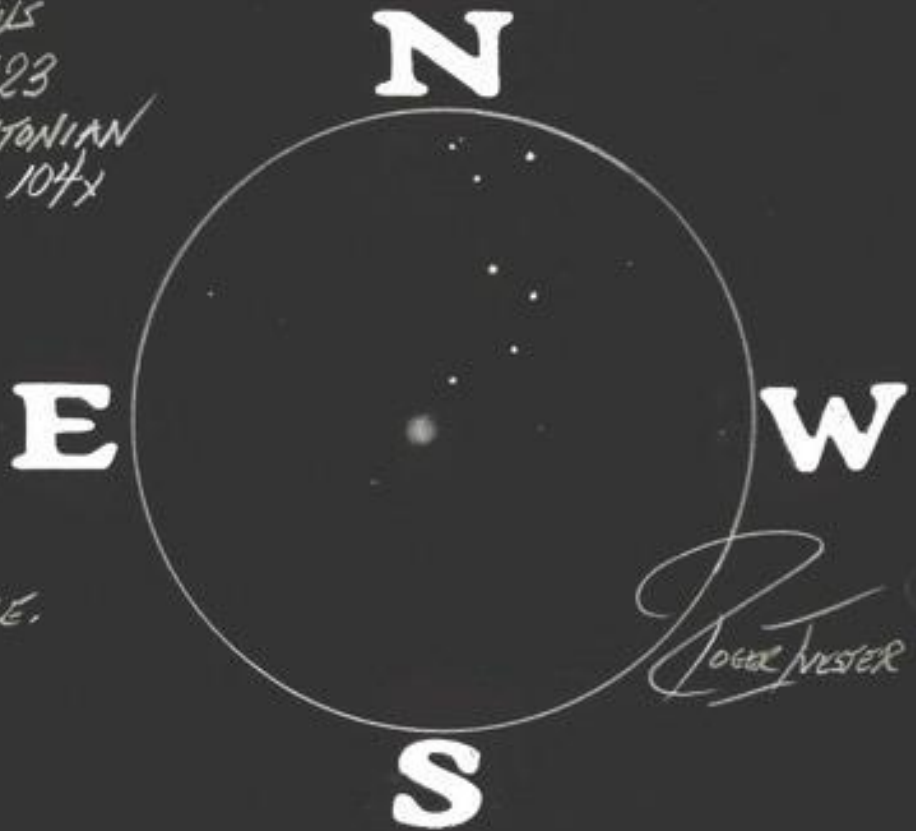
10-inch EQ Newtonian with a 104x magnification, which was used for my sketch. The one thing that was very helpful in locating this galaxy, was from “The Observing Handbook and Catalogue....” by Luginbuhl and Skiff: “Forming the period in a “?” asterism of four mag. 8.5 stars...”

**Sketch Follows**



NGC 936 - GALAXY - CETUS  
DATE: DECEMBER 2023  
TELESCOPE: 10-INCH NEWTONIAN  
SKETCH MAGNIFICATION: 104x  
FOV: 0.78°  
NELM: 4.9 @ ZENITH

Mostly Round, Very  
Low Surface Brightness,  
No Other Details Could  
Be Seen. However A  
Subtle Brightening Middle.



The following is the complete listing of all Observer's Challenge reports to-date.

<https://rogerivester.com/category/observers-challenge-reports-complete/>