

MONTHLY OBSERVER'S CHALLENGE

Compiled by:

Roger Ivester, North Carolina

&

Sue French, New York

March 2023

Report #170

NGC 2841, Galaxy in Ursa Major

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:

William Herschel discovered NGC 2841 on the night of March 9th, 1788 with his 18.7-inch, speculum-metal reflector. His handwritten journal reads: *Very bright. Large bright nucleus with chevelure and branches; and milky nebulosity about 6' or 7' long. 3' or 4' broad.* His son John Herschel logged NGC 2841 on February 17, 1831. In his *Observations of Nebulae and Clusters of Stars, made at Slough*, he described it as: "Very bright; very much extended; very suddenly much brighter in the middle; angle of position 150.8; comes up to a nucleus, a star 10.11 magnitude; has 2 stars not involved 11th and 12th magnitude, and a third 10th magnitude perpendicular to the axis of the nebula."

Lawrence Parsons, the 4th Earl of Rosse included this galaxy in the *Observations of Nebulae and Clusters of Stars made with the Six-foot and Three-foot Reflectors at Birr Castle, from the year 1848 up to about the year 1878.*

1849, Feb. 20. "In general appearance very much like Neb. in Andromeda, following edge perhaps sharp, extensive to south."

1850, Dec 5. "Nucleus a little nearer following edge than centre."

1852, Jan.20. "Gradually very much brighter in the middle, 2 stars in north preceding end of which the brighter seems to be on the edge of the nebula."

1860, Mar. 23. "Pretty bright, nucleus a little to the south. I think there is a southern part of detached nebulosity which seems to have a connexion with the other."

Uwe Glahn: Observer from Germany



Object: NGC 2841 "Flame Nebula"

Telescope: 27" f/4.2 Newton

Magnification: 132×

NELM fst 6.5+

Seeing: II-III

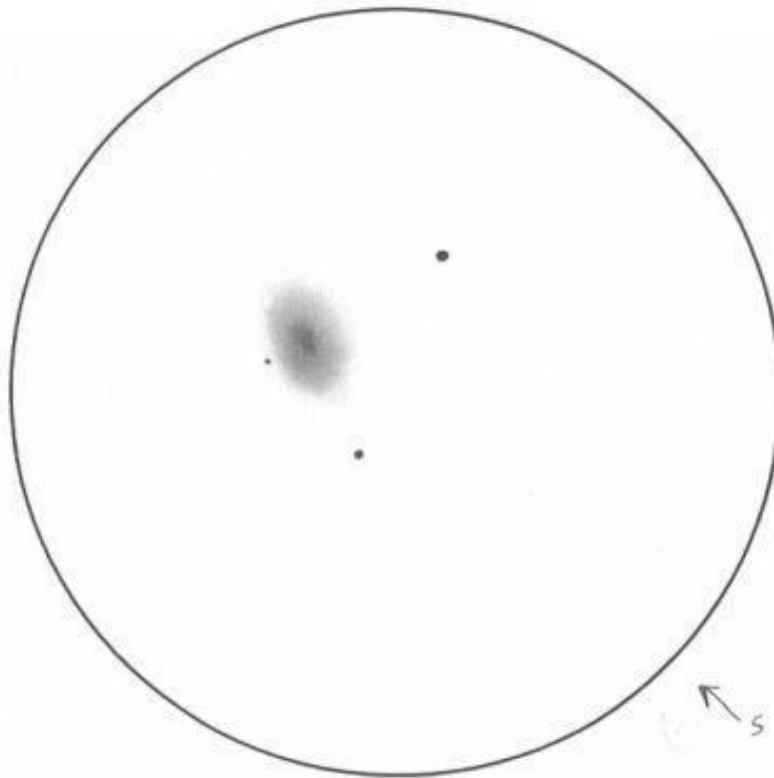
Location: Sudelfeld

Sketch Follows.

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



Jaakko Saloranta: Observer from Finland



Observer: Jaakko Saloranta
Location: Rajakylä, Vantaa, Finland
Instrument: Newton 203/1200
Magnification: 196
Field: 16
Lim. Mag.: 5.8
Seeing: 3
Visuality: 3

Bertrand Laville: Observer from France

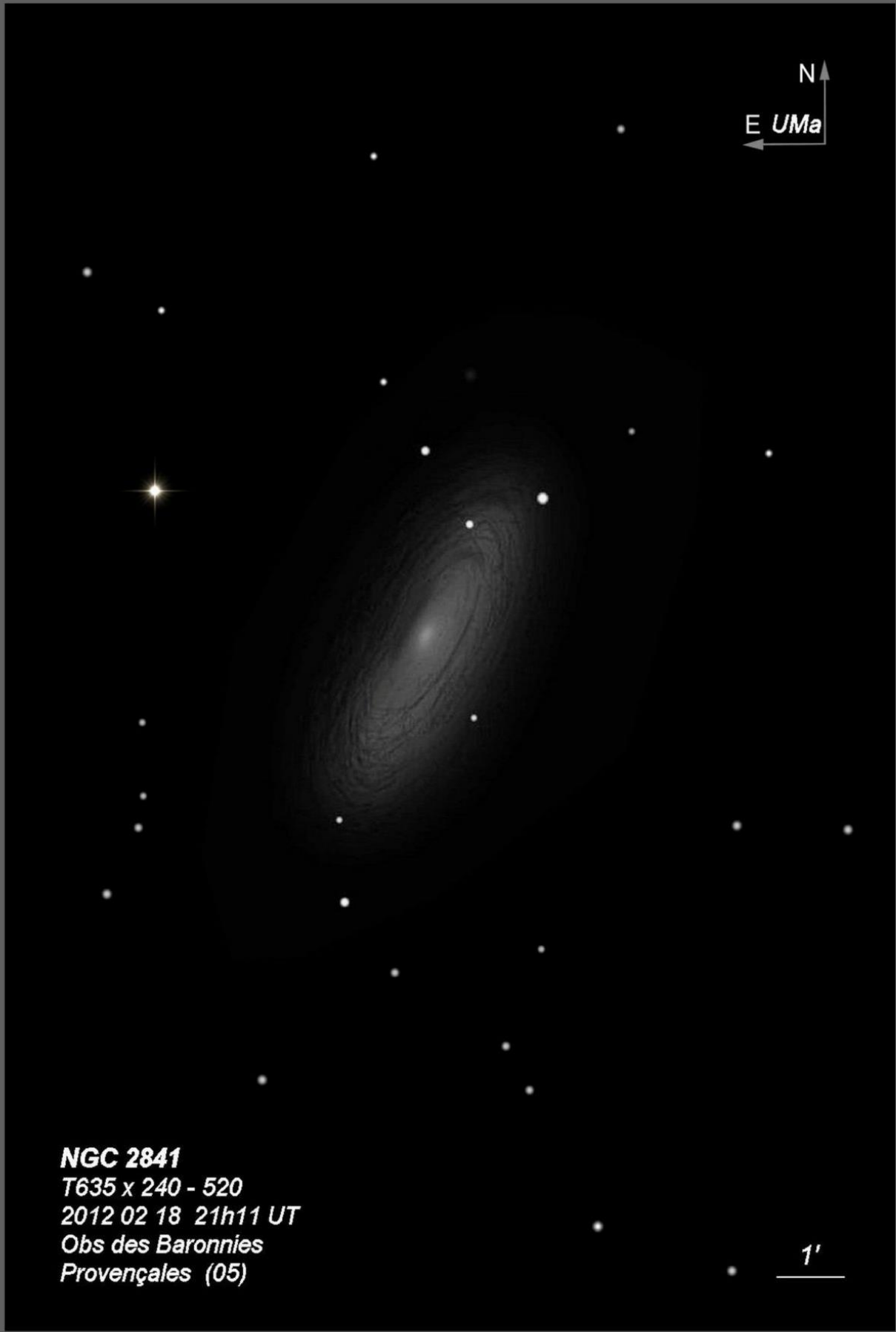


<i>Date of sighting:</i>	Feb 18, 2012 01:30 UT
<i>Duration of observation:</i>	70 mins
<i>Viewing location:</i>	Observatory of the Baronnies Provençales
<i>Instrument :</i>	TN 635 Dobsonian Obsession
<i>Main eyepiece:</i>	Tele Vue Ethos 21mm
<i>Magnification:</i>	240×

The galaxy is already visible with a 31mm Nagler giving 101×

It is very beautiful with the 13mm Ethos at 240 ×x. Elongated, a/b ~ 3, bright, soft edges.

Sketch follows.



NGC 2841
T635 x 240 - 520
2012 02 18 21h11 UT
Obs des Baronniees
Provençales (05)

1'

T254 mm

June 12, 1999, Chabottes, Southern Alps, beautiful day, calm, clear sky, SQMZ 21.3, alt 32°

140 x Meade SWA 18mm

The galaxy is quite bright: it is seen ~6 to 8' x 3 to 4'.

In fact, the halo is made up of an outer part, very pale, which goes from 6 to 8', and from 3' to 4', and which makes the limits very blurred. The central condensation is pronounced, and abrupt, of m12.5v. The stellar core, of m11.5v, is barely visible on the shiny background.

Sketch Follows.

© B Laville



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

Mircea Pteancu: Observer from Arad, Romania



Affiliated with Hungarian Astronomical Assoc., Romanian Society for Cultural Astronomy, “Galaxis” Astronomy Club, moderator on *astronomy.ro* forum.

<https://observoergosum.blogspot.com/>

<https://www.astronomy.ro/forum>

I observed galaxy NGC 2841 with a 250-mm Dobsonian reflector, and was easy to locate using Sky Safari.

This galaxy was easily seen at 48 \times , appearing elongated, with the axis being oriented NNW-SSE. When increasing the magnification to 171 \times , and with averted vision, the galaxy appeared grainy, or mottled, with a bright core and a faint surrounding oval halo.

An interesting feature noticed by myself and my friend Armand, who assisted me in locating the galaxy, and we could see some faint structure.

The galaxy NGC 2841 was well visible in an Omegon 20 \times 80mm tripod mounted binocular. Just the elongated core was discerned but the mag 13 was not visible.

Sketch Follows.

NGC 2841 / Glx / UMa
SW Classic 250P
Dobsonian

171x
TS 7mm
UWA
Field 28'



Feb. 21, 2023
Semplac Point
NGC 2841:
elongated,
hazy patch,
dia. 2.5'.
Surface seem
grainy with
averted vision?
Bright, elonga-
ted core
toward S-SE.
Mircea Pteancu
Arad/RO

Galaxis, SRPAC, MCsE

Phil Orbanes: Observer from Massachusetts

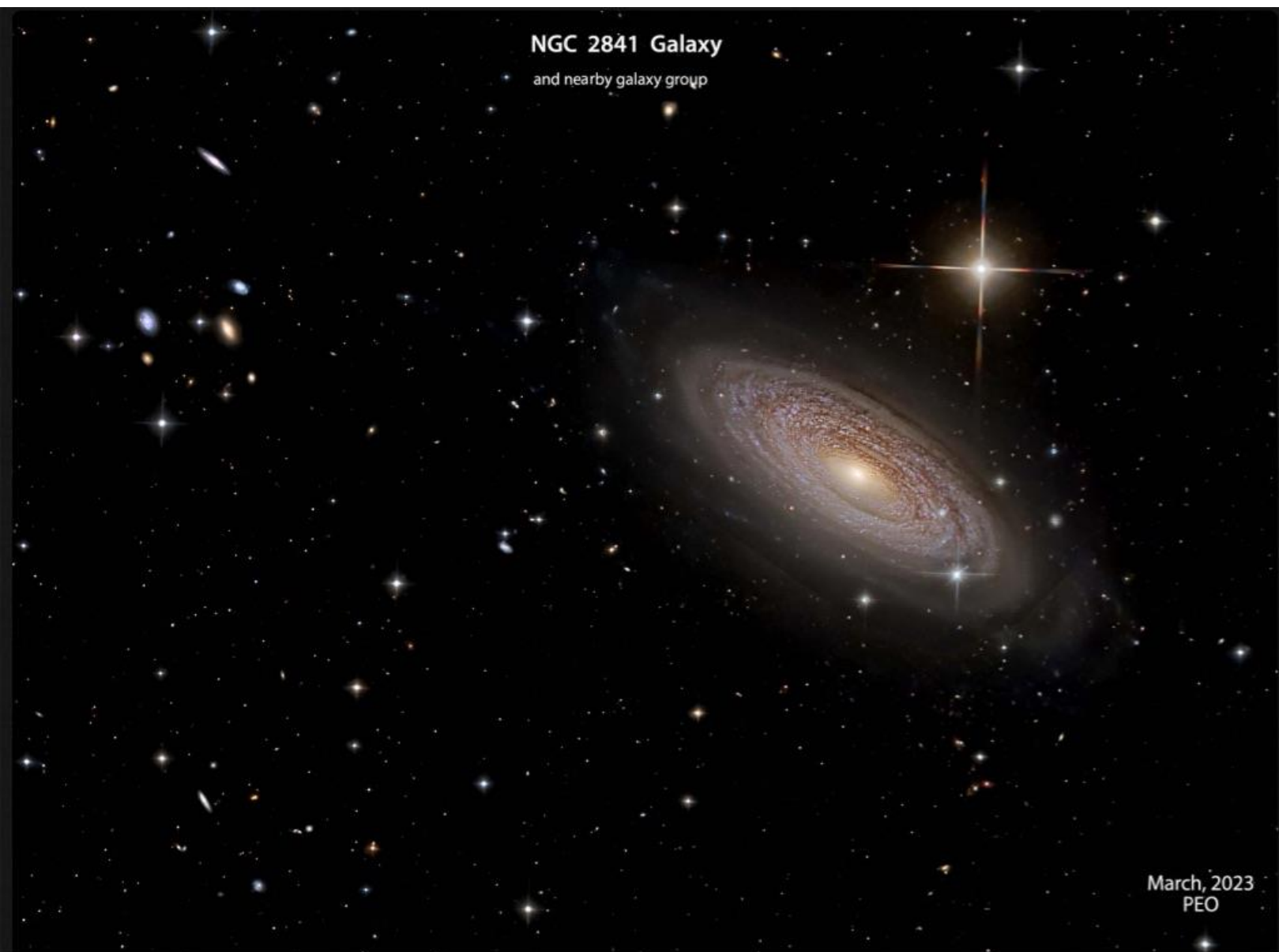
Here is my photo of galaxy NGC 2841 and surrounds.

NGC 2841 is an unbarred spiral, in Ursa Major, whose arms are discontinuous and rather patchy (giving rise to its description as a “flocculent” galaxy).

It is 10th-magnitude, much smaller than the Milky Way, and lies 46 million light-years from us.

There is an interesting, and far more distant, galaxy group on the left, which I decided to leave in when cropping the image.

My RBGHa photo includes about 6 hours of imaging per channel with my 14-inch PlaneWave reflector and FLI 16803 CCD camera. It was processed in PixInsight and Photoshop and benefited nicely from the new Blur XTerminator sharpening process in Pix.



Larry McHenry: Observer from Pittsburgh, Pennsylvania

<http://stellar-journeys.org>



Spiral galaxy **NGC 2841** is located in the spring constellation of Ursa Major – ‘The Great Bear’.

This 46 million light-years distant deep-sky object is an archetype of ‘SA’ class galaxy called “flocculent”, which means it doesn’t have well-defined spiral arms, but instead the arms appear tightly-wound, patchy and broken. This look is due to intense, active star formation occurring within the arms.

NGC 2841 (H1 205) was discovered on the night of March 9th, 1788 by William Herschel using his 20 ft. reflector, at his home in Slough, near Windsor Castle.

Video-Capture/EAA:

02/13/2023, (wide-field) from Big Woodchuck Observatory backyard in Pittsburgh, PA, using an 8-inch SCT optical tube @ f6.3 on a GEM mount, with a CMOS color camera and broadband filter, 180-second guided exposure, live-stacked for 30 minutes.

Images And Details Follow.

Video-Capture/EAA:

02/13/2023, (wide-field) from Big Woodchuck Observatory backyard in Pittsburgh, PA, using an 8-inch SCT optical tube @ f6.3 on a GEM mount, with a CMOS color camera and broadband filter, 180-second guided exposure, live-stacked for 30 minutes.



04/26/2022, (zoomed) from Calhoun County Park in West Virginia, using an 8-inch SCT optical tube @ f/6.3 on a GEM mount, with a CMOS color camera and broadband filter, 180-second guided exposure, live-stacked for 30 minutes.



Using EAA techniques: in the wide-field view, the circumpolar moderate bright oval galaxy stood out prominently from the surrounding star field, with a triangle of three small stars on the northwest edge, and an 8.5-mag field star about 10' to the west of the core. Using a higher resolution zoomed-view, the 'flocculent' nature of the galaxy became apparent.

I was able to observe great detail in the fragmented mottled/patchy knots and dark lanes in the inclined galaxy's spiral arms.

John Bishop: Observer from Massachusetts



On February 15, 2023, I observed NGC 2841, an unbarred spiral galaxy in Ursa Major. I observed with my 8.25 inch f/11.5 Dall-Kirkham reflector, on a motor-driven equatorial mount, without go-to. The observation was made from the ATMoB Clubhouse in Westford, Massachusetts. The sky was clear, except, as forecast, thin clouds rolled in at mid-evening for an hour or so. Transparency and seeing were fair. Temperatures had been unseasonably mild during the day, but dropped into the thirties (degrees F.) during the evening.

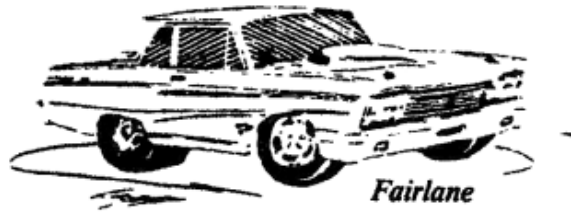
NGC 2841 was easy to find by starhopping. It lies just southwest of Theta Ursae Majoris, along an “L” formed by three field stars. In the eyepiece at 48x, NGC 2841 was directly visible as a small, bright, elongated halo with central brightening. As power was increased to 134x and above, the halo was much more extensive, with a concentrated bright core. The halo was patchy at higher power. At times the overall appearance of the galaxy was more circular than elongated. This may have been an effect of the seeing, or of the bright center visually dominating the fainter halo.

Luginbuhl and Skiff report surface brightness of 12.9 for NGC 2841. In the eyepiece, the galaxy seemed brighter to me than that number suggests. It was readily seen at low power.

Mike McCabe: Observer from Massachusetts



Sketch and details follow.



Observer's Challenge, March 2023

NGC 2841, The Tiger's Eye Galaxy in Ursa Major

March 19th, 10" F/5 Newtonian Reflector

The Tiger's Eye galaxy would be a new-to-me observation, and as with any new experience I wasn't quite sure what to expect. Pre-observation research presented a mixed bag. On one hand the specs looked average for a typical galaxy observing experience - a visual magnitude of 9.5 - 10.1, a surface brightness of 12.1 magnitude, and a medium size of 8' x 3'. On the other hand, a consultation with the Luginbuhl and Skiff handbook showed a description that called the galaxy 'easy' in a 60mm telescope. Really? I wouldn't be using a scope that small, but the idea that this target was visible in one made for promising prospects.

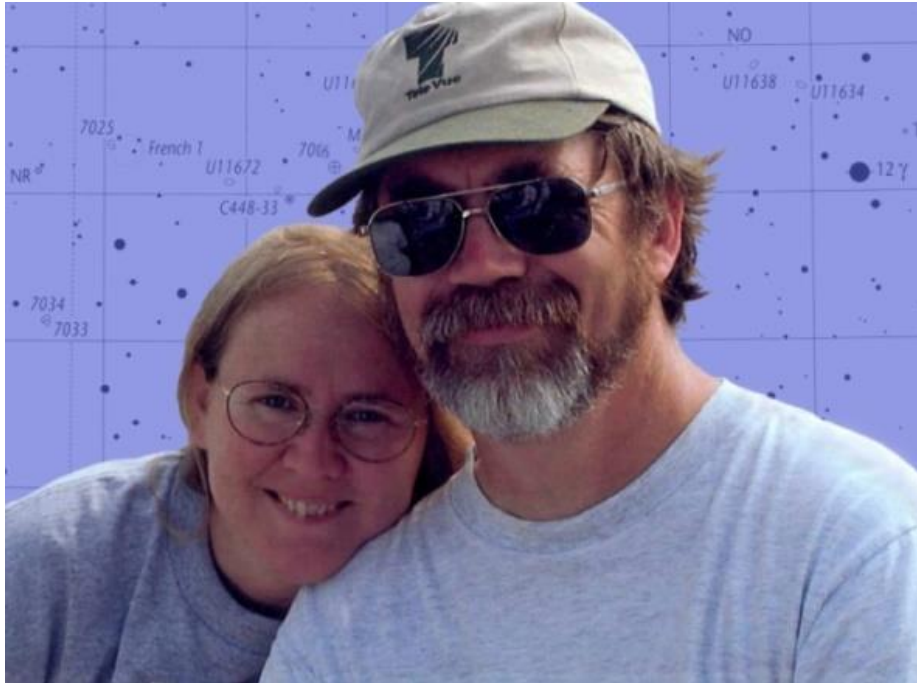
My experience with this galaxy was splendid. It was a super-easy star hop up the 'front legs' of the Great Bear, and it most definitely was readily visible in the initial low power view. Pushing the power up to 140x, the galaxy showed itself with a bright core with plenty of extended nebulosity, especially with averted vision. While any mottling in the spiral arm sections eluded my detection during this time looking, I dare say this was one of the more satisfying galaxy observations in my amateur astronomer experience. Based on this, I will be recommending this object as a target for my fellow astronomy club members for the month of April.



41.98n, -70.90w

M.T.M.

Sue French: Observer from New York



105mm f/5.8 refractor

Seeing: fair. Transparency: fair. The aurora was not too bright.

At 17 \times , the galaxy is an easily visible oval that leans northwest with an 8½-magnitude golden star to the east. Boosting the magnification to 87 \times , NGC 2841 shows a small, round, bright core, and there's an 11th-magnitude star just off the galaxy's northern tip. At 127 \times , the galaxy appears 4' long and one-third as wide. There was a faint aurora.

10-inch f/6 reflector

Seeing: fair. Transparency: good.

44 \times : The galaxy displays a faint oval halo around a large, bright, oval core and a small, brighter round nucleus. The galaxy runs SE \times S - NW \times N. There's an 11th-magnitude star at the northerly end and a 8½-magnitude star about 5' distant at position angle 60° from the nucleus.

118 \times : NGC 2841 spans about 6' \times 2½' with the halo and outer core slightly mottled. The 11th-magnitude star at the galaxy's northerly end now rests just barely within the halo, and there's a faint star deeper in the halo about 1½' north-northwest of the nucleus. Together, the nucleus plus the brightest part of the inner halo look almost bar-like, and there's a subtle darkening along the western side that hints at a dusty lane adorning the galaxy's spiral arms.

171 \times : I catch occasional glimpses of a star-like point in the nucleus.

Glenn Chaple: Observer from Massachusetts



NGC 2841 Galaxy in Ursa Major (Magnitude 9.2, Size 8.1' X 3.5')

As a result of his systematic sky sweeps made during the latter part of the 18th century, William Herschel discovered some 270 galaxies in Ursa Major. One of the brightest - at magnitude 9.2 and a definite “Messier miss” - is the spiral galaxy NGC 2841. Herschel discovered it on the night of March 9, 1788. Unaware of its true nature, he identified it as a very large nebula (Class I in his *Catalogue of Nebulae and Clusters of Stars*) and wrote, “Very bright, large, very much extended 151 degrees, very suddenly much brighter in the middle, equals a star of 10th magnitude.”

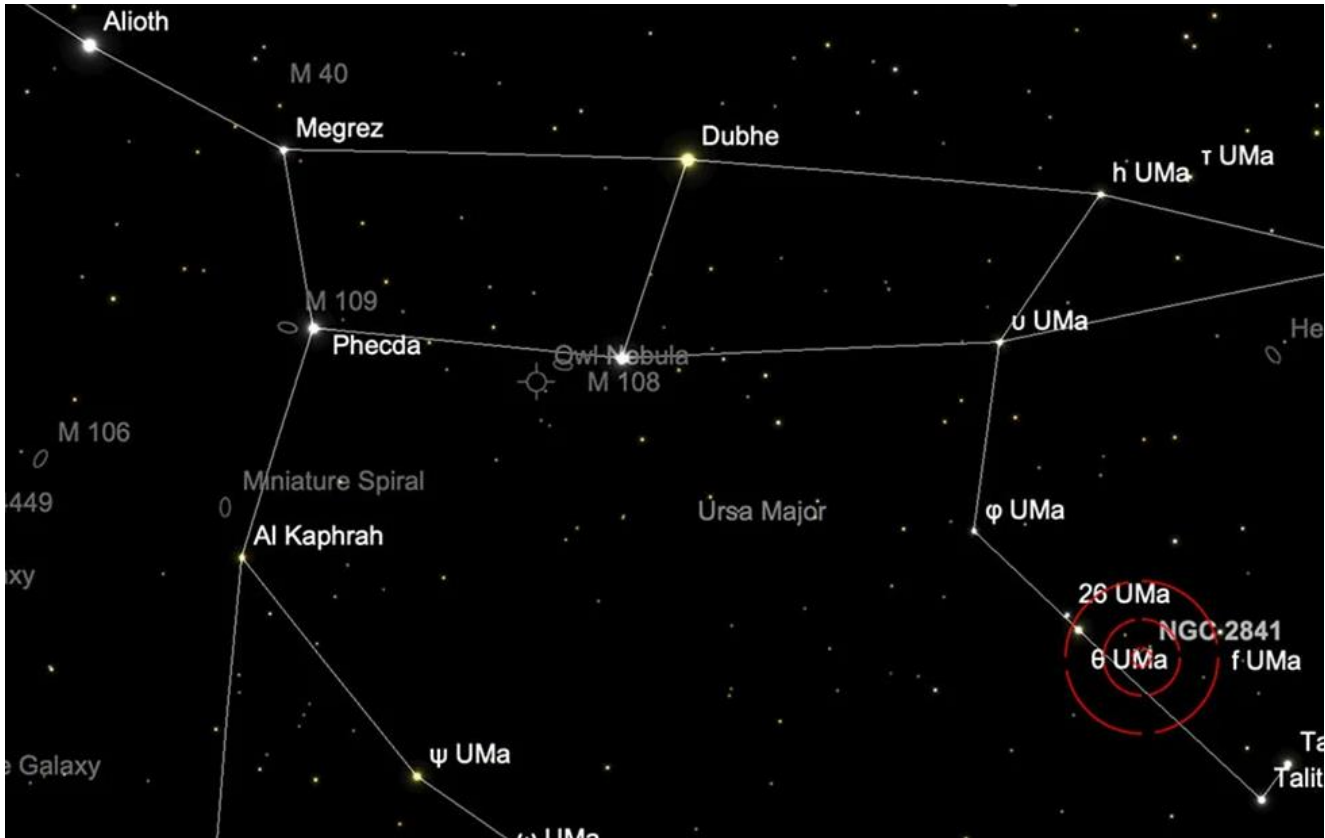
NGC 2841 is located about 2 degrees west-southwest of the 3rd magnitude star theta (θ) Ursae Majoris at the 2000.0 coordinates, RA 9^h22^m02.7^s and Dec +50°58'35.3". Star-hoppers can work their way from theta to NGC 2841 by referring to the accompanying finder charts.

Bright enough to be glimpsed in 7×50 binoculars as a 9th-magnitude “star” under dark-sky conditions, NGC 2841 is an easy target in small scopes. On the evening of May 3, 1976, I saw it as a hazy oval patch at 30× with a 3-inch f/10 reflector. In the same field less than a half degree north-northwest was a wide double star that I later identified as ARN 71 (magnitudes 6.2 +7.9, separation 231 arcseconds). Recently, I returned to NGC 2841 with a 10-inch, f/5 reflector. I saw the same oval patch that I had glimpsed with the 3-inch – this time much brighter and punctuated by a bright center. There was no hint of the surrounding spiral structure that appears in images of NGC 2841.

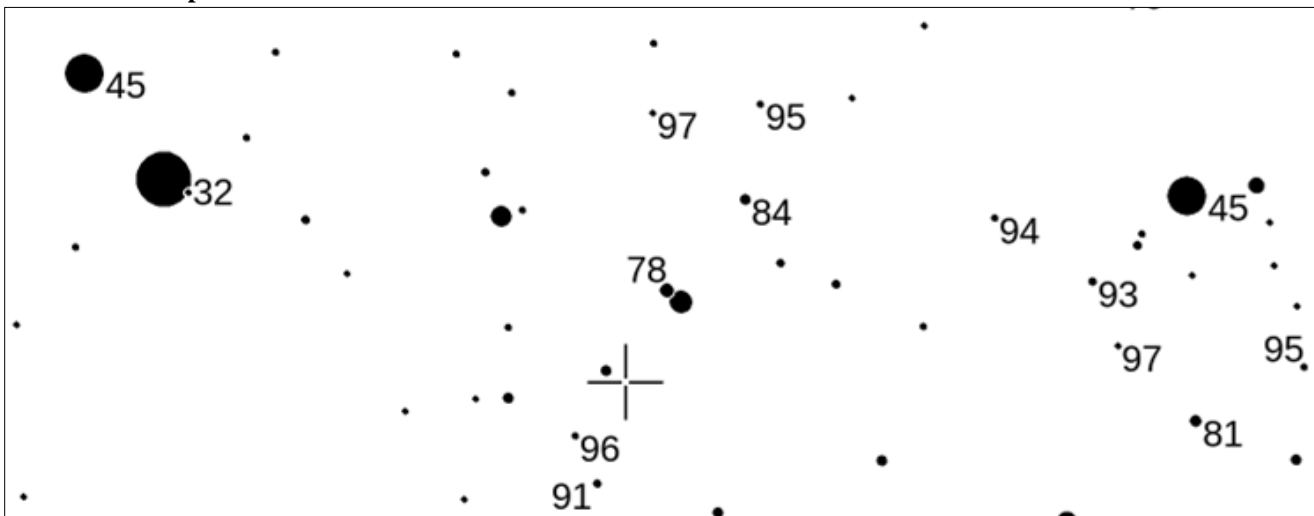
Red shift studies place NGC 2841 at a distance of some 46 million light-years. Its true diameter is around 150,000 light years.

NGC 2841 Finder Chart

Chart from deepskycorner.ch

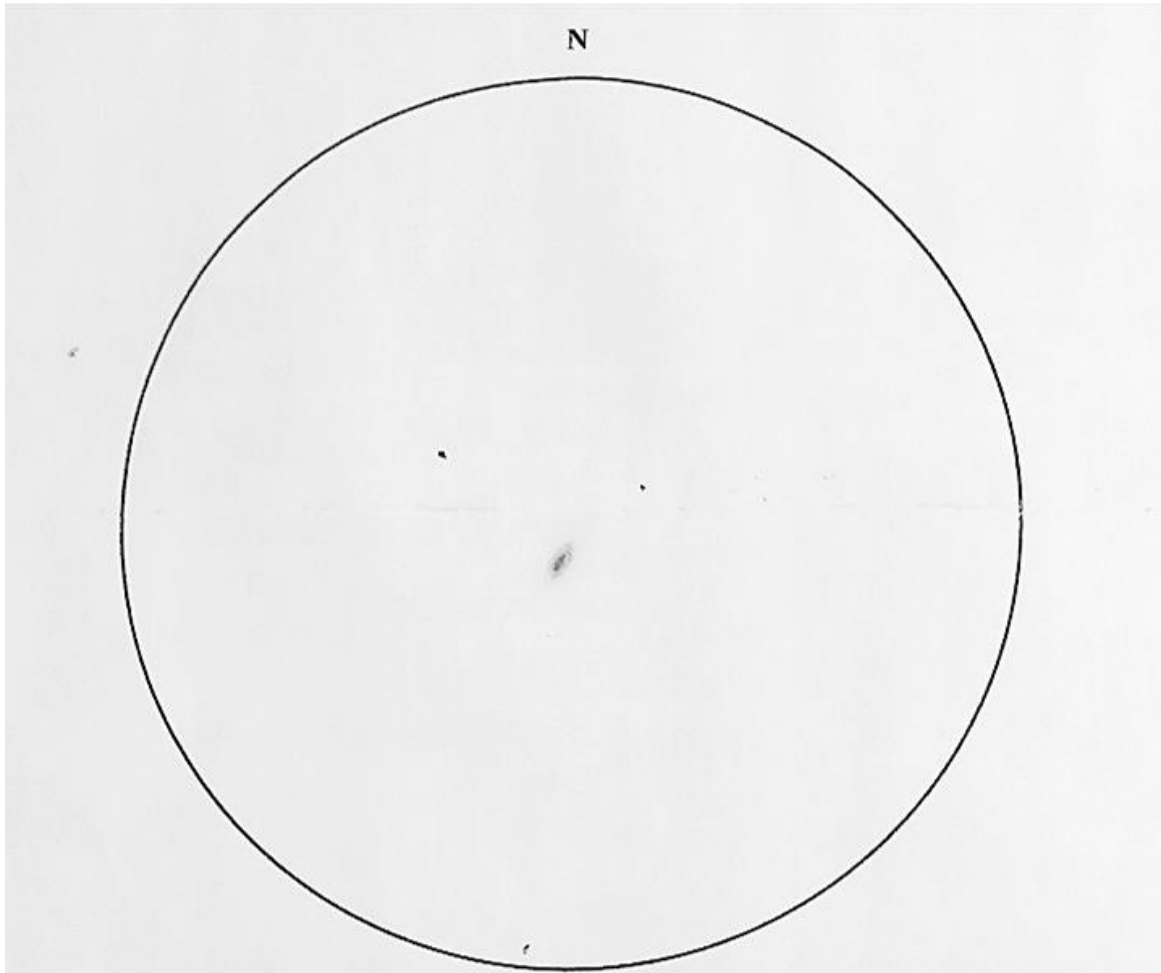


Finder chart from AAVSO Variable Star Plotter (VSP). Numbers indicate stellar magnitudes, decimals omitted. The magnitude 3.2 star is Theta (θ) Uma; the magnitude 4.5 star is 26 Uma. Stars shown to 10th magnitude in this 5 by 2 degree field. North is up



NGC 2841 Sketch

Glenn Chaple (ATMoB)



SUBJECT: NGC 2841

DATE/TIME: 2/14/2023
10:30 pm EST

TELESCOPE/EYEPIECE: 10-inch F/5 reflector/9mm Nagler

MAGNIFYING POWER: 141X

FIELD OF VIEW: 0.6°

NOTES:

Central nuclear area well-seen. Only a hint of surrounding spiral arms. Much sky glow; limiting magnitude ~4.5

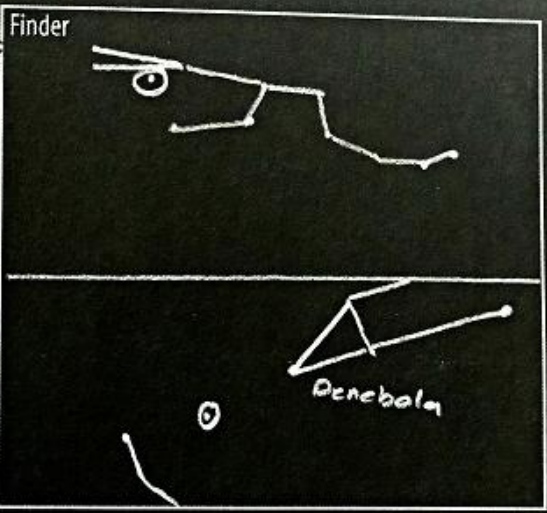
Anas Sawalha: Observer from Jordan



Astronomy Observation Record

Index:

Subject(s):	NGC 2841, M87		
Date:	16-7-23	Time:	
Location:	Knaifanah		
Instrument:	5" d/PS	Aperture:	5"
		Focal Length:	1000
Eyepieces/Magnifications:			
Conditions:	LG	Seeing:	6
Transparency:	S		



Notes:

NGC 2841
elliptical
relatively bright core
Elongated galaxy, relatively bright core
in the middle of a bar like structure
The core itself is protruding out the
bar in W-E direction



Mario Motta: Observer from Massachusetts



Image follows.

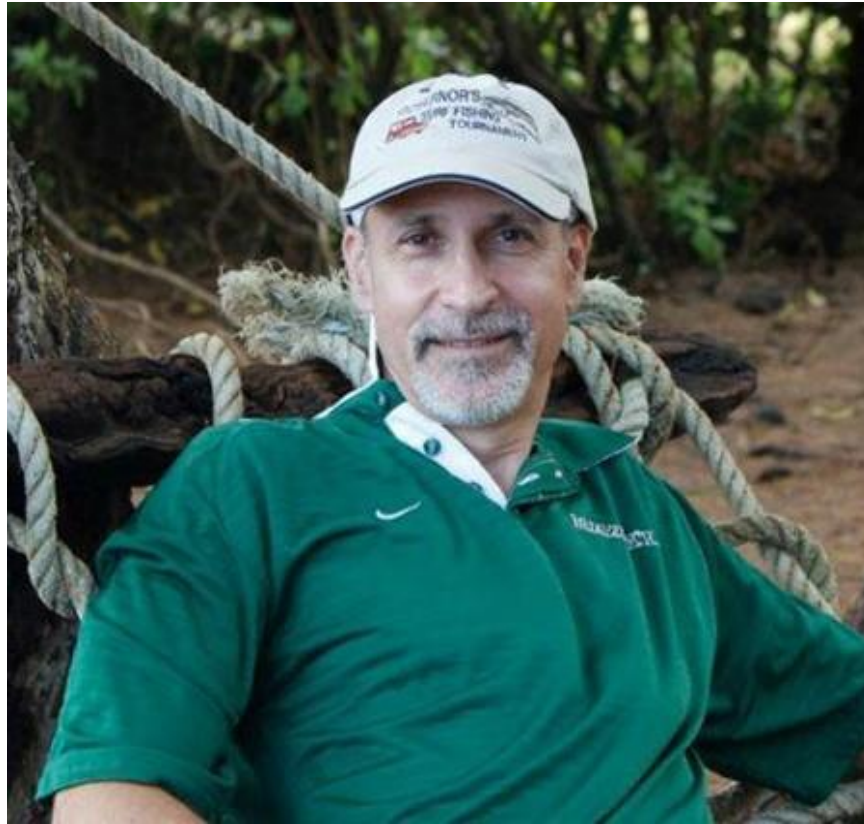


Taken from Gloucester with my 32 inch F6.5 scope, with ZWO ASI6200 camera.

1 hours of Lum, then 45 min each of R/G/B filters.

This Galaxy is in Ursa Major, 30 MLY away. It is an SAa galaxy, tight spiral no bar. (? flocculent type maybe from appearance)

James Dire: Observer from Illinois



NGC 2841 is a ninth magnitude spiral galaxy in Ursa Major. The galaxy is located on the west edge of the constellation near the Great Bear's front legs, which are far from the Big Dipper asterism. The galaxy lies two degrees southwest of the 3rd magnitude star Theta Ursae Majoris.

NGC 2841 is midway between face-on and edge on. The galaxy measures 6.9×3.3 arcminutes in size. NGC2841 has galaxy classification SBb. This means it is a barred spiral with an intermediate size galactic bulge. The spiral arms are very tightly wound. The galaxy lies 53 million light years away.

NGC 2841 is about 50% bigger than the Milky Way. The galaxy has prominent dust lanes, but has a lack of HII regions – those bright red glowing regions of gas so prevalent in the Milky Way.

NGC 2841 lies very close to the eighth-magnitude star HD80566. In an eight-inch telescope, the core of the galaxy appears star-like and slightly fainter than HD80566. The galactic disk appears as a faint elongated smudge around the core. The spiral arms are not resolved.

My image of NGC 2841 was captured using an eight-inch Ritchey-Chrétien Cassegrain telescope with 0.8x focal reducer/field flattener to yield f/6.4. The exposure was 130 minutes using a SBIG ST-2000XCM CCD camera. The brightest star in the image is HD80566. There is an 11th –magnitude star on the very northwest edge of the galactic disk (a foreground object in our galaxy). Note the galaxy's tightly wound spiral arms and the dust lanes on the side closest to HD50566.

There is a small, faint galaxy on the lower left side of the image. This galaxy is magnitude 15.4 PGC26572. This tiny galaxy measures 1.1×0.9 arcminutes in size. It lies 370 million light-years away, much farther than NGC 2841.



Mark Helton: Observer from Massachusetts



Celestron C8 full 2032mm
Ioptron HEM44EC mount
ZWO 533 MCPRO CAMERA
Twenty 300 sec images processed in PIXINSIGHT and Adobe PS

Roger Ivester: Observer from North Carolina



NGC 2841 - Galaxy in Ursa Major

Date: March 14, 2023

Telescope: 10-inch f/4.5 Equatorially Mounted Newtonian

Sketch Magnification: 208×

Field of View: 0.39°

NELM: 4.8

In May 1999, I spent many hours over four nights, estimating the magnitude of a supernova which allowed me to become very familiar with this galaxy, even 24 years later.

On the night of March 14, 2023, I went back to NGC 2841, from the same location, under similar conditions, and using the same telescope. The galaxy is elongated, with a brighter core, which to me, has always been offset toward the SE. A bright magnitude 8.5 star, lies about 25' toward the SE.

Just off the SW edge, lies a mag 13.5 star, and to the NW a mag 11.1 star, and to the N lies a mag 13.8 star. Under excellent conditions, and with averted vision, to the NNE lies a 14.2 star, but only at a magnification of 290×

Overall, this galaxy has low surface brightness, bright core, with a very thin and dim elongated halo.

Sketch Follows.

NGC 2841 - GALAXY - VRSA MAJOR
DATE: 7 MARCH 14, 2023
TELESCOPE: 10-INCH NEWTONIAN
SKETCH MAGNIFICATION: 208X
FOV: 0.39°
VELM: 4.8

ELONGATED, BRIGHTER CORE
BRIGHTS 8.5 25' TO NE.
OVERALL LOW SURFACE
BRIGHTNESS WITH VERY
DIM AND THIN ELONGATED HALO.
CENTRAL REGION, BRIGHT AND
ELONGATED ALSO. BUT WELL CONCENTRATED.



May 1999, I made the following estimates of supernova 1999by:

May 10th: 13.3

May 15th: 13.4

May 19th: 13.9

May 20th: 14.2

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

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