

MONTHLY OBSERVER'S CHALLENGE

Compiled by:

Roger Ivester, North Carolina

&

Sue French, New York

February 2024

Report #181

NGC 1579, Star forming region in Perseus

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 1579 is a lovely reflection/emission nebula and star-forming region found 4.7° east of the California Nebula's eastern tip. This complex and intriguing deep-sky is sometimes called the Northern Trifid for its resemblance to the Trifid Nebula in Sagittarius. It was discovered by William Herschel with his 18.7-inch speculum-metal reflector on the night of December 27, 1788. His handwritten discovery journal simply describes it as: *pretty bright, considerably large, much brighter in the middle. Stands nearly in the center of a trapezium of stars* [8th to 9th magnitude].

Credit: ESA/Hubble & NASA Acknowledgement: Bruno Conti. The Trifid of the North is a large, dusty region that is currently forming new stars. These stars are very hot and therefore appear to be very blue. During their short lives they radiate strongly into the gas surrounding them, causing it to glow brightly. Many regions like the Trifid of the North — named H II regions — are clumpy and strangely shaped due to the powerful winds emanating from the stars within them. H II regions also have relatively short lives, furiously forming baby stars until the immense winds from these bodies blow the gas and dust away, leaving just stars behind.

Uwe Glahn: Observer from Germany



Object: NGC 1579 "Northern Trifid Nebula" (Sh 2-222)

Telescope: 27" f/4.2 Newton

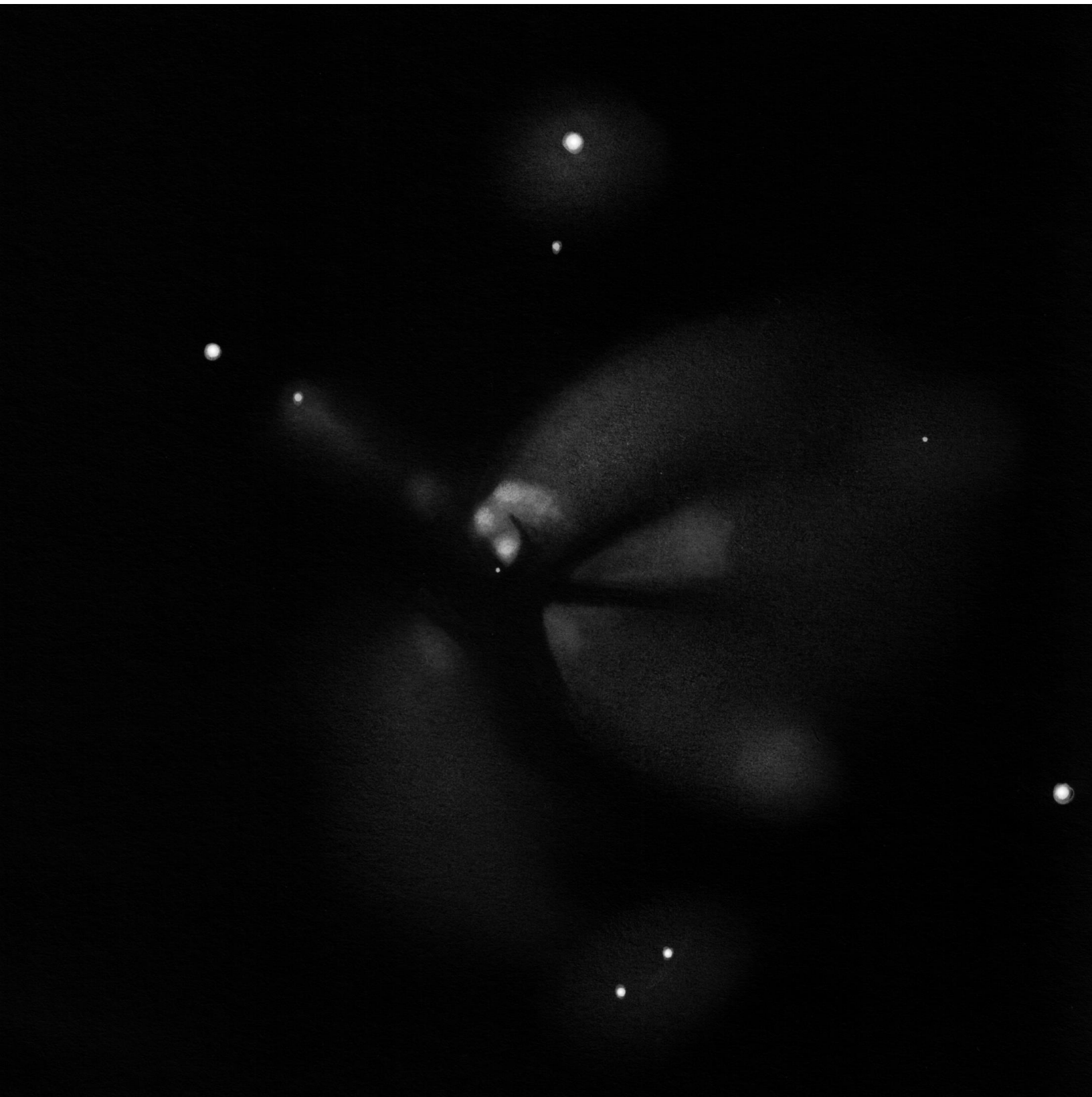
Magnification: 293× - 419×

NELM fst 6m5+

Seeing: III

Location: Sudelfeld

Sketch Follows.



Mario Motta: Observer from Massachusetts



This is my image of diffuse nebula NGC 1579 located in Perseus. I initially had some difficulty with this one. I took it in NB filters, but essentially no sulfur signal and a very weak O111, so the color was very poor. I then took RGB, but again...very weak as well, and poor definition, as well. I then processed with Ha as red, and used B and G for color, and came out much better.

Image follows

Taken with my 32-inch f/6.5 telescope, for about 1.5 hours Ha, 40 min each R and G, processed in Pix.



This is my image of diffuse nebula NGC 1579 located in Perseus, which is the February challenge object. I initial had some difficulty with this one. I took it in NB filters, but essentially no sulfur signal and a very weak O111, so the color was very poor. I then took RGB, but again...very weak as well, and poor definition, as well. I then processed with Ha as red, and used B and G for color, and came out much better.

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Phil Orbanes: Observer from Massachusetts

This nebula is a star forming region with both emission and reflection types. It is lit by a massive central star several times the size of our sun. If not for the nebula's prominent dust lanes, it would appear much brighter.

"1579" spans about three light years and lies relatively close to us at 2100 light years.

Often referred to the "Northern Trifid" due to its resembles in appearance to the Trifid Nebula in Sagittarius.

I used my 14-inch Planewave and RGBHa filters and took several hours of images with each, mainly back in 2017. The following image was processed in both Pixinsight and Photoshop.

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Image Follows



2017,2024
PEO

Larry McHenry: Observer from Pittsburgh, Pennsylvania

<http://stellar-journeys.org>



NGC 1579 (also known as SH2-222) is located in the fall constellation of Perseus – ‘The Hero’.

The H II star forming nebula is about 2100 light-years distant and around 3.5 ly in diameter. Shrouded inside the nebula is a young star cluster estimated to be only 500,000 years old.

NGC1579 was discovered on the night of December 3rd, 1788 by William Herschel using his 20 ft reflector at his home in Slough, near Windsor Castle. Herschel described the nebula as “Considerably bright, considerably large, much brighter to the middle”.

Video-Capture/EAA:

On 09/22/2022, from the Black Forest Star Party at Cherry Springs, Pa.

Using an 8-inch SCT optical tube @ f/6.3 on a GEM mount, with a CMOS color camera and narrowband filter, 3 minute guided exposure, EAA live-stacked for 15 minutes.

Image follows.



Using EAA techniques, the roundish dusty nebulosity of NGC 1579 is located in a rich star field.

Known as the Northern Trifid, NGC 1579 somewhat resembles its southern namesake; M20, having several dark lanes that bisect the red H II nebula, along with a hint of blue reflection around several of the brighter stars. A pretty observation!

Venu Venugopal: Observer from Massachusetts



One image, as following was taken with a Zwo Seestar 2-inch smart scope, 10 second stacks for 30 minutes (filename NGC-1579-Seestar.tif)



Both images as following, taken with an 8-inch f/4 Newtonian with L-Enhance (HO) and Sulfur filters an hour each, 3 minute sub-exposures.





Joseph Rothchild: Observer from Massachusetts



I observed NGC 1579, otherwise known as the “Northern Trifid”. It is an emission nebula in Perseus. I observed under dark skies on Cape Cod with my 10” reflector. I had not previously seen this object.

It was barely visible at 53 \times , but best seen with my 14 mm eyepiece at 102 \times . It was also seen, but dimmer at 179 \times . It did appear to have 3 lobes, one brighter than the other two. There appeared to be a star associated with each of the dimmer lobes, but I could not find them on my star chart. I also detected dark lanes between the lobes. I tried an NBP filter, but did not note any enhancement.

Dr. James R Dire: Observer from Texas



NGC 1579 is a bright nebula in the constellation Perseus. The nebula is six degrees west-northwest of the magnitude 2.6 star Iota Persei. NGC 1579 is approximately halfway between Iota Persei and the center of the California Nebula (NGC1499).

NGC1579 is measures 12.8 arcminutes in size. I could find no published magnitude estimate for the nebula. Published distance estimates put the nebula 2100 light-years away.

NGC 1579 resides in a star-forming region filled with gas and dust. Like many similar nebulae, NGC1579 contains emission, reflection and dark nebula. A series of dark dust lanes located in the glowing red emission regions of the nebula gives NGC 1579 a similar appearance to M21, the Trifid Nebula. Thus, NGC 1579 is sometimes called the Northern Trifid Nebula.

Most of the stars that have formed in NGC 1579 are hot blue and blue-white spectral class O and B stars. The light from these stars produces the reflection nebulae. The ultraviolet light from these stars excites the gas in HII regions producing the emission nebulae.

My image of NGC 1579 was captured with a William Optics 132mm f/7 Apo and an SBIG ST-4000XCM CCD camera from Bryan, Texas. I used a 1' field flattener and an Orion Skyglow filter which passes H-alpha, H-beta and O-III wavelengths. The exposure was 220 minutes. In the image, north is up and east to the left. The bright white star to the right of the nebula is a magnitude 7.4 spectral class A star. An orange-red, magnitude 8.2 K star resides on the lower right side of the image. The image captured stars down to 18th magnitude.



Sue French: Observer from New York



I had the pleasure of observing NGC1579 the Winter Star Party. The seeing there was excellent and transparency was fair. Using a 10-inch f/6 Newtonian reflector, I easily spotted the nebula at 44 \times . At 118 \times , several stars were seen in edges of the nebula appeared brighter in center, had an irregular shape, and spanned about 6 arcminutes. As the nebula rose higher in the sky, the view became quite nice.

Roger and Debbie Ivester: Observers from North Carolina



Debbie Ivester

10-inch f/4.5 Newtonian using an 11mm eyepiece for a 104× magnification.

This object was really difficult for me, appearing very faint, located just E of a brighter star. It's important to be able to recognize the cardinal points when making a deep-sky observation. I just center the object and when new stars enter the eyepiece field...this is east. I then, would very slightly nudge the scope north and then south, lifting my eye to look over the optical tube.

The nebula appeared to me as a faint cloudy haze, with an irregular shape. I could not see the dark lanes that are shown in photos, or discussed by others, but maybe this was due to freezing hands and my lack of patience.

Roger Ivester

10-inch f/4.5 reflector at a magnification of 104×x from my moderately light polluted suburban backyard.

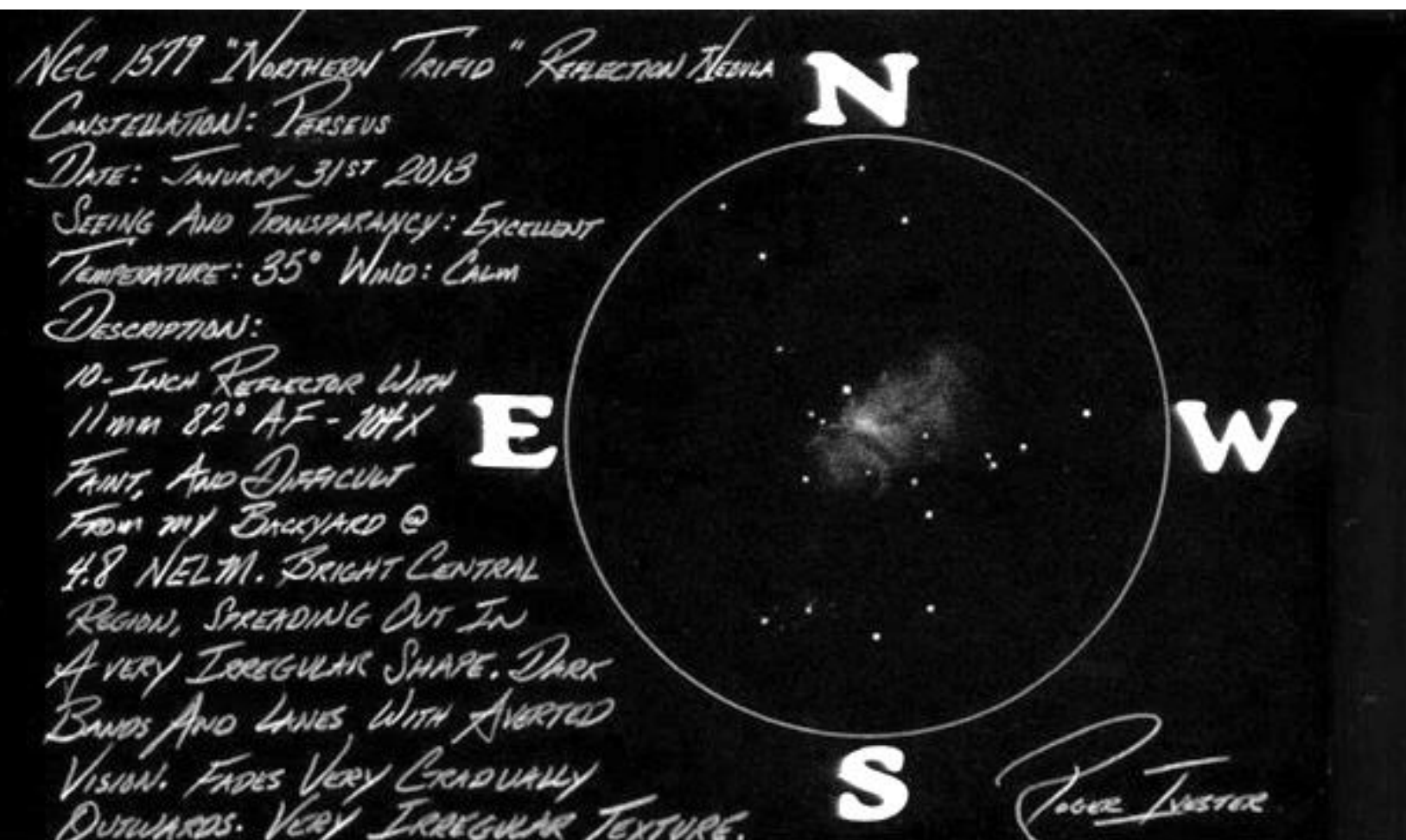
After two nights, and more than four hours during the months of December 2023 and January 2024. I made two sketches. However, I could never exceed or see the faint detail observed and sketched from my January 31st 2013 sketch. So, I'm showing this earlier sketch only.

The lack or inability to see this nebula as I did thirty years ago is due to increased light pollution from my backyard.

The nebula is faint and diffuse with a brighter oval shaped middle, oriented mostly E-W. At low magnification, the overall shape is mostly round with very low surface brightness.

When I first observed this object in January 1994, my notes say: "this nebula has the appearance of a very faint and low surface brightness galaxy."

The nebula is mottled and uneven, with at least two dark lanes which can be seen with averted vision. The brightest star in the field lies just to the west.



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

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