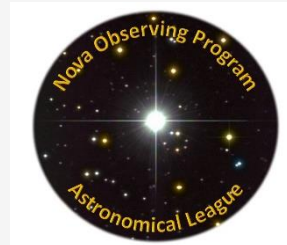


# Nova Observing Program

## Nova Observing Program Coordinator

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## Introduction

Welcome to the Astronomical League's Nova Observing Program, which encourages locating, observing, sketching and/or imaging of Novae, Supernovae, and Dwarf Novae. It involves the use of online resources of the American Association of Variable Star Observers (AAVSO) and provides valuable scientific data for astronomers and researchers.

A Nova is caused by a nuclear explosion on the surface of a star within a binary star system, resulting in the sudden appearance of a "new" star which slowly fades over weeks or months. Novae are a fairly common occurrence within our galaxy. Some are recurrent, with many years between outbursts. They can appear anywhere in the sky but are most often discovered not far from the galactic center in Sagittarius.

Quick View of Requirements	
Nova Observing Program	
Uses Eyes	
Uses Binoculars	
Uses Telescopes	Yes
Must be an AL Member	Yes
Date Deadline for Submission	
Minimum Instrument Size	
Manual Observations Required	
Go-To Telescopes Allowed	Yes
Remote Telescopes Allowed	
Number of Observations	50 / 100
Option for Imaging	
Special Equipment Required	
Equipment Must Be Constructed	
Observations Must Be Submitted to an On-Line Database	Yes

A Supernova occurs during the final stages of a massive star's life, causing it to be destroyed in a final gigantic explosion. Supernovae are of various types, and are immensely bright, but much rarer than novae. In our galaxy, the last one directly observed was recorded in 1604 (known as Kepler's Supernova). But they do occur in distant galaxies. Supernovae generate so much energy that they can briefly outshine their parent galaxies.

A Dwarf Nova is a type of cataclysmic variable star, with lower luminosity than regular novae. Typically, a white dwarf primary star pulls material from a red dwarf secondary. This forms an "accretion disk" which then explodes, causing bright outbursts on a semi-regular basis. Examples of Dwarf Novae include U Gem, SS Cyg, Z Cam, SU UMa. Rarely, Dwarf Novae can erupt into full-fledged Novae, as V392 Per did in April 2018, becoming Nova Persei 2018.

Novae, Supernovae, and Dwarf Novae can all become bright enough to be observed and/or imaged with amateur telescopes. Observations involve estimating the magnitude in comparison to ordinary stars of fixed brightness. For those amateurs with CCD equipment, photometric methods may be used to measure the intensity of the Nova.

Because most of the AAVSO procedures are the same, you are encouraged to pursue the Astronomical League's Variable Star Observing Program concurrently while pursuing this Observing Program. The Nova Observing Program will require some patience, as opportunities for observing can be sporadic, especially for northern observers. On the other hand, you don't need the darkest or clearest skies, or even a moonless night to observe many of the brighter Novae.

## Rules and Regulations

To qualify for the AL's Nova Observing Program certifications, you need to be a member of the Astronomical League, either through an affiliated club or as a Member-at-Large, and complete these observing requirements:

1. Silver certificate: 50 total observations of at least five different object, with at least one object chosen from each of the three classes (Nova, Supernova, Dwarf Nova), and a minimum of two observations of each object.
2. Gold certificate and **pin**: 100 total observations (including those for the Silver Certificate) of at least ten different objects, with at least two objects from each of the three classes (Nova, Supernova, Dwarf Nova), and a minimum of two observations of each object.
3. Observations must include the object name/designation, estimated magnitude, your location including latitude and longitude, and the date and time (UT). All observations must also be submitted to AAVSO using their regular reporting facilities (WebObs or file upload). Click here for a detailed [description of AAVSO reporting](#).
4. If observing visually, one field sketch is required of each object. Include at least four other stars in the field of view and identify at least two. Indicate magnitudes of the comparison stars used, and indicate North and either East or West on your sketch. Also indicate the ID of the AAVSO comparison chart used. For a Supernova within an external galaxy, also make a rough drawing of the galaxy, if visible. You may use the attached sketch log template ([PDF format](#), [Word format](#)), or a sketch log sheet of your own design that provides all of the required information.
5. If using a CCD or imaging, follow the AAVSO procedures for submission. Photometry requires more expensive equipment and is more time consuming but can yield precision results that are not reachable by visual observers. See the "[AAVSO Guide to CCD Photometry](#)" for more details.

Observation Requirements	
Nova Observing Program	
Object Name/Number	Yes
Observer's Latitude	Yes
Observer's Longitude	Yes
Observer's Location (City)	
Observer's Altitude	
Date of Observation (LT or UT)	Yes
Time of Observation (LT or UT)	Yes
Description of Object	
Sketch or Image of Object	Yes
Seeing	Yes
Transparency	Yes
Sky Conditions	
Size of Instrument Used	
Power/Magnification	
Filters Used	

A 6-inch telescope should be sufficient for observing most Novae and Dwarf Novae. Extragalactic Supernovae tend to be more difficult, so an 8 to 10-inch telescope may be required.

Optional: try using a nebula filter (O-III or other narrowband). Some galactic Novae may be Planetary Nebulae in the making. Does the Nova appear to gain brightness relative to other stars in the field? See this article for more

information: <http://www.skyandtelescope.com/observing/blink-a-nova-tonight100720150710>

## Resources:

- To get started, you should first register with AAVSO: [www.aavso.org/apps/register](http://www.aavso.org/apps/register) and request an Observer Code: [www.aavso.org/myrequestinitials](http://www.aavso.org/myrequestinitials)
- Download AAVSO comparisons charts using the Variable Star Plotter: [www.aavso.org/apps/vsp](http://www.aavso.org/apps/vsp)
- Detailed instructions for visual magnitude comparisons can be found in Chapter 3 of the AAVSO Visual Observing Manual: [www.aavso.org/visual-observing-manual](http://www.aavso.org/visual-observing-manual)
- You can find Alert Notices for recent Novae and Supernovae here as well as requests to re-observe older Novae: [www.aavso.org/aavso-alert-notice-for-observing-campaigns-and-discoveries](http://www.aavso.org/aavso-alert-notice-for-observing-campaigns-and-discoveries)
- Koji's List also contains recent galactic Novae: <https://asd.gsfc.nasa.gov/Koji.Mukai/novae/novae.html>
- A list of the latest and brightest Supernovae is available here: <http://www.rochesterastronomy.org/supernova.html>
- (Note: objects of type "CV" are not actual supernovae, and are removed periodically.)
- [Nova Observing Program Pin](#) image

## Submission for Certification

To receive your Nova Observing Program certification, mail or email a copy of your observation logs to the AL Nova Observing Program Coordinator. An AAVSO printout of your observations is acceptable, along with scans of your sketches if observing visually. Include your name, mailing address, email, phone number, and society affiliation. Also include your AAVSO Observer Code so submissions can be verified. Upon verification of your observations, your certificate (and pin for the Gold certification) will be forwarded either to you or your society's Awards Coordinator, whomever you choose.

Submission Requirements	
Nova Observing Program	
Observer's Name	Yes
Observer's Mailing Address	Yes
Observer's Club Affiliation	Yes
Observer's Phone Number	Yes
Observer's E-Mail Address	Yes
Information for Person to Send the Award To For Presentation	Yes

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