



JANUARY 2021

Volume XXI Number 1

OBSERVE - LEARN - SHARE

CONTENTS

-
- 1 Upcoming Events
 - 2 Monthly Meetings
 - 3 Club News
 - 4 Astronomical League - The Foundations of Imaging
 - 6 Observing Notes from Drako's Room
 - 8 Dark Site Information
 - 9 Insperity Observatory
 - 10 About NHAC
 - 11 Calendar, Membership, Officers
 - 12 Affiliations

UPCOMING EVENTS

-
- Jan 9
NHAC Star Party @ O'Brien Site
- Jan 22
Novice and General Meeting (Zoom)
- Feb 6
NHAC Star Party @ O'Brien Site
- Feb 19
Novice and General Meeting (Zoom)

MONTHLY MEETINGS

The **Novice and General Meetings** for January will be on Friday, January 22. The Novice Meeting will start at 6:30 P.M. and the General Meeting will start at 7:30 P.M. Both will be on Zoom.

Novice Meeting

The Novice Meeting will feature Dr. Bruce Pollard (President, NHAC) discussing "Winter Skies and 2021 Highlights".

General Meeting

The General Meeting will feature coauthor Robert Brayton (Vice President NHAC) , Cr.Photog., CPP, presenting the new Astronomical League program, "The Foundations of Imaging" (astroleague.org/content/foundations-imaging-observing-program). This AL program is for astronomers who desire to photographically capture the beautiful and fascinating objects in the night sky. This short presentation will cover the "big picture" (pun intended) of astrophotography, and explain the requirements and standards for submission so you can earn your certificate and pin while learning new skills.

Bonus Extra

Did you get new telescope equipment in 2020? Following Robert's presentation, the Zoom floor will be opened for Questions and Answers primarily for new telescope owners. Questions submitted by [email](#) will be answered first, so get your questions emailed today!

As always, please check your email and the [NHAC Website](#) for further details and updates.

CLUB NEWS

2021 NHAC Board Elections

The 2021 NHAC Executive Board was elected during the December general meeting.

The 2021 Board is:

President - Bruce Pollard
 Vice President – Robert Brayton
 Secretary - Rusty Hill
 Treasurer – Joana Tan Gramajo
 Program Chair – Susan Pollard
 Membership Chair – Hagen Miller
 Observation Chair – James Billings
 Astronomical League Coordinator – Aaron Clevenson
 Webmaster – Jamie Martin
 Newsletter – Open
 Past President – Carlos Gramajo

We welcome news, photos, comments and contributions for the newsletter. Please send them to newsletter@astronomyclub.org by the 10th of each month.

The latest issue of "What's Up, Doc" by Aaron Clevenson is at [What's Up, Doc?](#)

NHAC Outreach

The calendar at the [NHAC Website](#) will show dates and information about planned outreach events. These are generally held outdoors and are weather dependent. These events are good opportunities for Club members to introduce visitors to the wonders in the sky. Typically, one or more Club members assist at each event. Watch for emails from Aaron Clevenson to announce the events and please help out when you can!

Astronomical League

The North Houston Astronomy Club has been an affiliate of the Astronomical League since the Club's inception in 1999. NHAC members are automatically enrolled in the League and can participate in the League's observing programs according to their time and interests.

Information about a new imaging program will be shared during this month's NHAC General Meeting on January 22. There is also an article about the new program on page 4 in this issue of North Star.

Aaron Clevenson serves as the NHAC Astronomical League Coordinator. He can be contacted at aaron@clevenson.org.

ASTRONOMICAL LEAGUE - THE FOUNDATIONS OF IMAGING

By Robert Brayton

The internet is replete with resources for astronomers and astrophotographers, and the local astronomy club is indispensable, especially for beginners. That said, however dedicated you are to your craft, there may be times when you feel like you have run out of interesting things to observe or image. That is where the [Astronomical League](#) shines. Beyond the wonderful monthly magazine, *The Reflector*, the AL has over 70 programs for total beginner to seasoned experts, that cover every area of interest to astronomy enthusiasts.

If you are reading this, it is likely you have an interest in astrophotography. The AL has quite a few programs that, while they are called “observing” programs, they are also suited for imaging. For the less experienced imager, there is now a new program for 2020 called [Foundations of Imaging](#).

I was delighted to help with this project and hope that through it, many will be able to also enjoy the satisfaction of imaging the wonders of the universe.

The activities encompass solar system objects, and deep sky objects. The solar system activities will result in a total of 28 images of the sun, moon, and planets, dwarf planets, asteroids, comets, with options for eclipses, wide field, and occultations. The deep space objects activities result in 25 images of clusters, nebulae, and galaxies, with options for double stars, variables, and novae. The activities have required objects, and objects you choose at your discretion.

Experienced imagers will be relieved to know that past work is accepted, provided it meets the submission criteria. As this is a foundational program, images are not expected to be ready to hang in galleries, but there are guidelines that are designed to help imagers strive to achieve a minimum standard. This sentence shows the spirit of the Imaging Criteria Requirements:

The subject must be in-focus, clearly portrayed, without distracting artifacts (excessive noise, star bloat, highlights clipping, excessive vignetting, obvious gradients, collimation errors, hot pixels, etc.), and appear natural, that is, not too overprocessed.

See the [Program Requirements](#) for all the rules. The authors of the program are astronomy imagers themselves and realize that not everyone, especially at the foundational level, have access to all the equipment needed to image solar system objects and DSO. For that reason, you are not required to own the equipment used in your images. However, you must be the primary agent in the planning, setup, capture, and editing of each image.

One of the requirements that you may not be used to seeing is that, “stars should never be green.” This is mostly a problem when capturing narrowband nebulosity with multiband filters. With the advent of highly sensitive one-shot color (OSC) cameras, filter manufactures have designed multi-narrow bandpass

filters. Usually these filters pass Hydrogen-alpha, Oxygen III, and maybe a couple other spectral lines. Oxygen III and Hydrogen-beta lie halfway between blue and green. This works great for capturing the hydrogen and oxygen nebulosity, but it causes the stars to appear cyan (cyan is the color of mixing blue and green light). So, when editing narrowband images, be extra careful to not let any green (or cyan) into your stars.

In addition to the rules and requirements, there are three useful appendices to assist imagers in their exploration:

- [Appendix 1: Bright Solar System Objects](#)
- [Appendix 2: Deep Space Objects](#)
- [Appendix 3: Imaging Software](#)

As you journey through this program, you are encouraged to submit your best images to the Astronomy League *Reflector* magazine for publication to photoeditor@astroleague.org.

I hope that through this new program, many are able to also enjoy the satisfaction of imaging the wonders of the universe.

OBSERVING NOTES FROM DRAKO'S ROOM

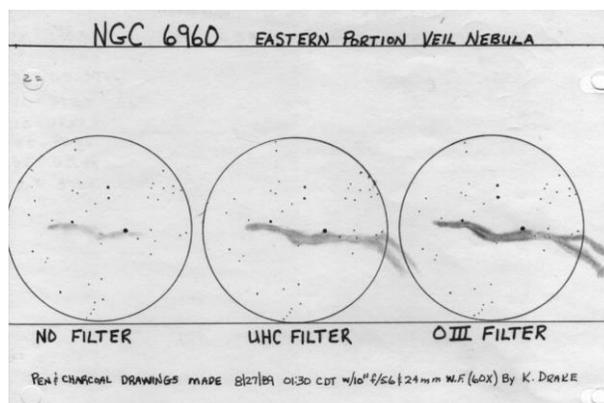
By Kenneth Drake

Enhance Your Observing with Line Filters

I first learned of extending my observing a couple of years after beginning my astronomical venture. I recall in the mid-80s, being approached by a guy wanting to look thru my 10" f/5.6 Dob. He had some finder charts made from the Atlas Stellarum and a handful of filters. It was a clear night at the Texas Star Party and together we hunted down several large obscure planetary nebulae. They were all completely unseen unless we inserted one of his filters into the eyepiece. This guy turned out to be Jack Marling, creator of Lumicon in 1979. He was testing his new line of OIII filters in making visible, possibly unseen objects in mid-sized scopes. Needless to say, I spent a few bucks that week as a budding amateur astronomer purchasing small pieces of tinted glass in round metal frames – aka, interference or line filters.

Although Marling made these filters mainstream with the introduction of the UHC in 1982, the H-beta in 1983, and then the OIII in 1985, amateur pioneers had been using the Henzl Daystar 300 since late 1978 to hunt down invisible planetary nebulae. Today, choosing filters can be a daunting task with over a hundred brands on the market. Optolong is one of the largest makers, along with Baader and Astronomik so there is a good chance many brands come from them. Also, DGM appears to be a household brand being made by Omega Optical in Vermont.

So why should these tools be included in your eyepiece box? It becomes a question of seen or not seen. Not long after I acquired both the UHC and the OIII from Lumicon, I decided to make a comparison on the Veil Nebula from the Dark Site. Image scan of drawings:



In this case, the enhancement is clear cut. The UHC makes a vast improvement over non-filtered. And what the OIII added was harder, brighter enhancement on the inner portions of the SNR (NGC 6960).

What, in effect these filters do is to reduce the skyglow caused by both mercury and sodium street lighting. As an added benefit, they very much darken the sky, so increase contrast much like using higher magnification. The UHC is more general purpose than the OIII as it has a broader bandwidth. So, it might prove better for some emission nebulae. Another very narrow band filter is the H-beta or Horsehead filter. There are ~50 objects that have a high h-beta emission. Three that are especially red dominant (bright at 6563 angstroms – h-alpha line) are Campbell's Star (Henize 2-438) best with H-beta, Henize 2-131 UHC & H-beta, and IC418 - best with OIII. Generally speaking, the narrower banded one of these filters is, the better to use them at low magnifications. One of the negative aspects of the newer LED street lighting is that they are much broader banded than the older Na and Hg lighting which lowers the effectiveness of these filters in light polluted areas.

So, I always recommend getting the UHC first. It will give you the biggest bang for the buck. I also recommend getting the 2-inch version unless the scope you use only has the 1 ¼" focuser. That way it will fit your 2" to 1 ¼" adapter as well as 2" diagonals and any 2" eyepiece you have. Remember low magnification screams for 2" eyepieces. The OIII would be next on my list as there are many objects that react better to it than the broader band UHC. Only then splurge on an H-beta. And really only in the 2" version for very low power views. What brand? I say stick with the major makers. Baader, Astronomik, DGM & the Gen 3 Lumicons from Farpont. I've personally found that my OIII from Baader has a slight edge over the OIII Gen 3 Lumicon and my hand-picked by Jack Marling 35-year-old OIII Lumicon with 96% @496nm & 97% @501nm & 0.5% @486nm.

Sources:

<https://farpontastro.com/>

<http://www.npbfilters.com/home.html>

<https://www.baader-planetarium.com/en/filters.html>

<https://www.astronomik.com/en/>

Kenneth (drako) Drake

drako_kenneth@suddenlink.net

281-543-0006

DARK SITE INFORMATION

If you are new to the club, Star Parties are especially for you. We, the members, are the reason we have observing Star Parties, and they are great occasions to get familiar with observing. We have 10" Dobsonian telescopes available at the Dark Site for your use. There will also be several other scopes available for all to try. And do bring a Binocular-- you can do lots of successful observing with nothing more.

NHAC Club Policy is that the focus of the Star Parties will be to give as much assistance as possible to new observers. For those who may not have been to the O'Brien Dark Site, it is just north of Dobbin, which is on Highway 105 west of Montgomery. It has reasonably dark skies and a great low horizon in all directions. The Owners, Tim and Wanda O'Brien, are very generous hosts, and they do turn off any outside lights which might bother us, if we remember to ask.

The specific Dark Site location is password protected. Any club officer can give you the password, but it is NOT FOR THE GENERAL PUBLIC!

Access to the Dark Site must be requested from the O'Brien's in advance via the NHAC email at least 24 hours in advance. It is only necessary for any 1 member to request access... access approved for any of us is access approved for all of us.

On our NHAC web site, click on "Observing" then select "O'Brien Dark Site". Scroll down to the O'Brien Dark Site information and look for the "detailed directions" link. You will need to enter the password. There are maps as well as directions. It is well worth the drive, which is about 6- or 7-minutes driving time north of Dobbin off of State Highway 105 west of Montgomery.

Star Parties are routinely scheduled for the Saturday on, just before, or just after the New Moon throughout the year. This is to provide the best opportunity for dark skies.

INSPERITY OBSERVATORY



Public Night at the Insperity Observatory – February 5, 2021

Due to pandemic precautions, attendance is limited, by reservation only, and viewing will be video observations through the telescopes. Watch for emails with reservation announcements.

The Observatory has a 6" Takahashi refractor, a 16" Meade Schmidt-Cassegrain, and a 20" Plane Wave telescope. Each is computer controlled, and provides an awesome view of the sky. This can be a great opportunity to see a new or favorite object in a large telescope.

The Observatory is about 3/4 of a mile south of Will Clayton Parkway on S. Houston Ave, just north of Rankin Road in Humble, in the back part of the Jack Fields Elementary School on the East side of S. Houston Ave. The address is:

Jack Fields Elementary School
2505 S. Houston Ave.
Humble, TX 77396

For more information, the Observatory phone number is 281-641-STAR and the web site is <https://www.humbleisd.net/observatory>. Dates and times are subject to change.

ABOUT NHAC

The North Houston Astronomy Club (NHAC) is a not-for-profit organization established in 1999 for educational and scientific purposes, for people of all races, creeds, ethnic backgrounds and sex. Our primary purpose is to develop and implement programs to increase the awareness and knowledge of astronomy, especially for those living near the north side of Houston, Texas.

NHAC is dedicated to providing an opportunity for people to pursue the science of astronomy, to observe in a dark-sky site, to learn the latest technology, and to share their knowledge and experience, thus our "Observe-Learn-Share" motto.

Public meetings are normally held each month on the fourth Friday. In the months of October, November and December they are usually rescheduled for the third Friday of each month, so as to not conflict with the Annual All Clubs meeting, Thanksgiving, or Christmas.

The benefits for membership include:

- Loaner telescopes after being a member for 6 months.
- Opportunity to observe from dark sky observing sites.
- Learn from experienced observers.
- Astronomy Magazine subscriptions at a discount.
- Astronomical League membership, with its many observing programs.
- Subscription to the Astronomical League magazine "Reflector".
- Access to the NHAC library
- Discounts on purchases at Land, Sea and Sky. Be sure to identify yourself as an NHAC member.

More information at the [NHAC Website](#)

Check out our [Facebook page](#).

Our mailing address is:

North Houston Astronomy Club
Post Office Box 5043
Kingwood, TX 77335-5043

NHAC is sponsored by:



CALENDAR. MEMBERSHIP. OFFICERS

NHAC General Calendar			
	Executive Board Meeting	Star Party	Monthly Meetings
January 2021		Jan 9	Jan 22
February 2021		Feb 6	Feb 19
Dates and times are subject to change. Star parties are weather permitting.			

Membership

Memberships run from January 1 through December 31.

Full year dues are:
 Students \$10
 Individuals \$30
 Family Groups \$40

Membership applications and dues payments can be made at the NHAC website at:
[NHAC Website](#)

2021 NHAC Executive Board

President	Bruce Pollard - email
Vice-President	Robert Brayton - email
Secretary	Rusty Hill - email
Treasurer	Joana Tan - email
Program Chair	Susan Pollard - email
Membership Chair	Hagen Miller - email
Observation Chair	James Billings - email
Astronomical League Coordinator	Aaron Clevenson - email
Webmaster	Jamie Martin - email
Newsletter Editor	Open - email
Past President	Carlos Gramajo

AFFILIATIONS

NHAC is a member of:



The Astronomical League

<https://www.astroleague.org/>



Night Sky Network

<https://nightsky.jpl.nasa.gov/>



INTERNATIONAL DARK-SKY ASSOCIATION

International Dark Sky Association

<https://www.darksky.org/>