

The Observer

The Official Publication of the Lehigh Valley Amateur Astronomical Society

<https://lvaas.org/>

<https://www.facebook.com/lvaas.astro>

February 2023

Volume 43 Issue 02





A couple reminders for our general membership this month:

The Northeast Astronomy Forum (NEAF) is on for this year and scheduled for April 15th and 16th. It is a premier astronomy event where thousands of astronomers, from amateurs to professionals, gather together to share and enjoy the hobby. There will be many vendors, talks, shows, and demonstrations so plan for an interesting weekend! More details can be found at www.neafexpo.com . Previous ticket purchases will be honored. If planning to attend both days, please note that accommodations are getting scarce so act soon!

Access to Pulpit Rock is not yet completely closed as of 1/29, however, extreme caution is advised. If it is at or below freezing, the steep section of road leading up there can be slick with ice and impassible. Anyone visiting the Rock under these conditions should park at the lot before the gate or, at the very least, exit the vehicle and walk the rest of the way up before the steep section. 4x4 off-road vehicles have been unable to make it up with even as little as ¼” of snow, so do not risk it.

Our society has been asked to assist in a number of events this year. DaVinci will be hosting an event to come out and view the sun for the annular eclipse, and has invited us to help out. Sam Murphy, a senior at the Lehigh Valley Academy Science Honor Society, has also asked for our help in their fundraiser. If you would like to help in either of these events please contact Education Director Blaine Easterwood, or myself. Contact information can be found on the Contacts page of our website.

Amazon is shutting down the Smile program, which donates a small amount to LVAAS (if chosen by the user) so get your purchases in now!

If you have taken any pictures of the comet, consider submitting them for the Society's newsletter! Email France with your jpegs at editorlvaas@gmail.com. Requirements for photo size are at the end of this newsletter.

We are always looking for volunteers to help the Society run smoothly, and the Light Pollution Abatement and the Development Director positions are currently open. Those who would like to help out are encouraged to do so. Feel free to email myself or another board member if interested.

Lastly, our Holiday party will be held at DaVinci Science Center again for 2023! The board decided on 12/09/2023, which is the date of our December General Meeting.

Ad Astra!

Mike Huber



MegaMeet 2022 at Pulpit Rock Astronomical Park Image courtesy of Mike Huber

Minutes from the LVAAS General Meeting – January 8, 2023

The January 8, 2023 LVAAS General Meeting was conducted in Room 130 of the Trumbower Science Building at Muhlenberg College, and electronically using an on-line service, with about 50 people in attendance. Director Michael Huber opened the meeting at 3:05 p.m. by introducing the speaker, Eric Loch. The January 2023 General Meeting was recorded.

Today's General Meeting's presentation was "Everything You Ever Wanted to Know About Cherry Springs, But Were Afraid to Ask" by society member Eric Loch. Eric has served on the Cherry Springs Dark Sky Fund Board and as Director of LVAAS Public Relations Committee. Eric discussed how Cherry Springs State Park is a black area on a light pollution map located in Potter County, PA. In 2000 it was designated as a Dark Sky Park. It is geared to the Amateur Astronomer. The Astronomy Park is mostly accessible throughout the year; the exceptions being 2 major Star Parties, which require early registration, and an annual Woodsman's Show in October. There is power available in the Astronomy Field. Eric stressed that visual observing is excellent there, making it possible to see dark sky objects that can only be seen at such a dark site. He recommended you take ALL of your equipment and be ready for winter conditions. Be aware of the rules before you go, and pay particular attention to not having any white or bright red lights, including from your vehicle. The Cherry Springs Dark Sky Fund/Association is a "Friends" group that accepts donations with a mission to make the Park more enjoyable. The cost of staying overnight is \$15 per individual, or you can get a Galaxy Pass that is \$60 for an entire year. After a 10 minute break, the Business portion of the meeting began.

Membership: Rich Hogg

2nd Readings

Brett White

Gregg Heimer

Raymond Atkinson

1st Readings

Loretta Nemchik

Paul Tracy

Andy Matzelle

Aimee Frasier

Art Lukoff

Pulpit Rock Observatories – Frank Lyter

- Anyone interested in being oriented on any of the telescopes should contact Frank or Ron Kunkel. We are also looking for volunteers to help with maintenance projects including the long term 40" telescope project. The 40" telescope is currently disassembled and being prepped for painting. Everyone expressed how good it was to see Frank back with us today.

Director of Education - Blaine Easterwood

- An informal poll was taken regarding how many members took advantage of visiting the DaVinci Center during the Annual Christmas Party and announced that we have that location again for the 2023 Christmas Party.
- There are many Astronomical Events in 2023, most notably the eclipse in October. We are planning to do two events in conjunction with The DaVinci Center in the Spring and again on October 14, the day of the annular solar eclipse. We plan solar observing along with other activities, possibly including nighttime activities.

South Mountain Maintenance – Bill Dahlenburg

- Bill reminded new members who are not familiar with the South Mountain Observatories that he is usually there on Saturday mornings from 9 a.m. until about noon if you would like to get oriented to those facilities, or to access the Library, where full members can check out books. If it is a clear morning, the solar scope is usually available to view the sun. Please email Bill using his contact information on our website beforehand to confirm that someone will be there.

Star Party Coordinator – Bill Dahlenburg

- Star Parties will be resuming on March 25, 2023. New members are invited to help out even if you have little experience. We will assist you in setting up a telescope so that you can help our guests wishing to see celestial objects.

Director Comments - Mike Huber

- We do have a couple of leadership positions that are open. The vacancies are listed on the website. If you are interested in any of those positions you can contact Mike.
- Feel free to join any of the committees that already have a director if you feel like you would be able to contribute
- Thanks to Prof. Brett Fadem for sponsoring us to use the facilities at Muhlenberg College.

Next General Meeting:

- The meeting was adjourned at approximately 4:30 p.m. Our next General Meeting is scheduled for Sunday February 5, 2023 at 3 p.m.; to be again held in Room 130 of the Trumbower Science Building at Muhlenberg College.

Via Sandy Mesics, Programs Chairperson

Upcoming LVAAS General Meeting Speakers

February: Gary DeLeo on "A History of Lunar Observation and Exploration"

March: Roxanne Kamin, topic TBA

April: Anna Baum, Lehigh U. Grad student, topic TBA

May: Joshua Pepper, Lehigh U. faculty. Topic TBA

I'm always looking for leads on speakers, and **it would be great if we had more members come forward to present a talk!** Please contact me at astrosandy@gmail.com

Via France Kopy, Editor

This is **your** society, and **your** newsletter! All society members are welcome and encouraged to submit images and astronomy-related articles of interest for publication in *The Observer*. I will be happy to work with you to achieve the best possible presentation of your material, so even if you've never considered writing before, there's simply no excuse! Starting is the hardest part, as any writer will tell you. Choose something that interests you and dive in! Please contact me editorlvaas@gmail.com to discuss. Thanks for supporting *The Observer*!

Via Dave Moll and Rich Hogg

"PA Communities Try To Preserve Darkness":

<https://www.spotlightpa.org/statecollege/2023/01/pennsylvania-wilds-light-pollution-potter-cameron/>

Via Earl Pursell, UACNJ Liason

There are a few **2023 UACNJ Astronomy Calendars** remaining. Cost is \$16, cash or check.

You can get your calendar at our General Meetings at Muhlenberg College where Earl will have them available in February and March. They will also be available at South Mountain on Saturday mornings until gone.

(Please text or call first: 845-480-1728) Thanks for supporting your local astronomy clubs!

Via Bill Dahlenburg, Star Party Coordinator

LVAAS is always looking for volunteers to help out with **Star Party** activities. Anyone willing to help will be trained on running the telescopes. Training is easy. Planetarium shows are: 6 p.m. for kids, 7 p.m. Presentation, 8 p.m. Planetarium Show for adults. **Our next Star Party will be March 25, 2023.**

Additionally, if anyone is interested in helping with or taking over the organization of LVAAS Star Parties, please let Bill Dahlenburg know: sm_maintenance@lvaas.org

Via Earl Pursell, UACNJ Liason:

UACNJ provides free public programs on-site at our Observatory in Jenny Jump State Forest from April through October on Saturday evenings.

During the off-season (November through March) UACNJ is now presenting an on-line astronomy-related presentation that begins at 8 p.m. You can tune in by visiting us at our [YouTube channel](#), or visit uacnj.org.



Cover: Imager, Jamie Elovski: The Heart Nebula

Taken over the month of October, this image uses 201 light frames with a total exposure of 4 min each. This adds up to a total exposure time of 13 Hours, 24 Minutes. All Light frames were taken from Center Valley in my backyard. The images were captured with a Redcat 51 and a ASI533MC Pro.

The Heart Nebula is an [emission nebula](#) located in the [constellation of Cassiopeia](#), around 7,500 light years away from Earth. It has an apparent magnitude of 18.3 and an absolute magnitude of 6.5. More:

<https://theplanets.org/nebula-facts/heart-nebula/>

LVAAS General Meeting ~ Open to the Public
Sunday, February 05 at 3 p.m. at Muhlenberg College
Trumbower Science Building, Room 130, and on Zoom

**"A History of Lunar Observation
and Exploration"**

presented by

Gary DeLeo

Emeritus professor of Physics, Lehigh University



As a child of the 1950's and 60's, Gary has been awed by the observations and explorations of our nearest solar-system neighbor, the Moon. He will describe the evolution of our understanding of the Moon, beginning long before he was born, going through centuries of telescopic observations, and through missions to explore the surface of the Moon. Gary will include facts, and some fiction, both insightful and fanciful. He will bring us up to date on recent robotic missions and, hopefully, a human return to the Moon.

Professor Gary DeLeo was a member of the Lehigh University faculty in the Department of Physics for forty years before retiring at the end of 2019. He received his PhD from the University of Connecticut with a specialty in theoretical solid-state physics. He has served as Associate Dean in the College of Arts and Sciences, and as Chair and Associate Chair of the Department of Physics. His passion for astronomy – a field that he has followed closely for about fifty years – led to his change in research area to astrophysics, with a focus on binary stars. Professor DeLeo has run a significant number of science outreach programs, and he is the recipient of seven teaching awards and honors.

<https://www.muhlenberg.edu/media/contentassets/pdf/about/PrintCampusMap-1.pdf> (building #5)

Please see also <https://www.muhlenberg.edu/directions/> for help finding the campus.

Prospective new members who wish to attend the meeting should email membership@lvaas.org



Peter Detterline's
Night Sky Notebook
FEBRUARY 2023





StarWatch

What's Green, Flies, and Has a Tail?

What's green, flies, and has a tail? Could it be comet C/2022 E3 (ZTF)? And you thought that it might be a green-eyed cat named Emerald leaping over a sofa while chasing a phantom green laser beam. Yes, there is a comet in the morning sky at present, and it is already binocular, and may even become a faint naked eye object by early February; so it's time to begin thinking about viewing it sometime after the moon is full on February 5. That should be when the comet is at its brightest and in the evening sky right after dusk. * Comet names in the 21st century, like C/2022 E3 (ZTF), can be quite a disappointment. A century ago, this comet would have been simply named after its co-discoverers, Frank Masci and Bryce Bolin and called Comet Masci-Bolin, like Hale-Bopp became known, when it was discovered on July 23, 1995 by Alan Hale and Thomas Bopp (d. 2018). Timewise, Alan Hale saw it first, followed less than an hour later by Thomas Bopp. Comet Hale-Bopp also has a more official name, C/1995 O1. * Today, it is usually the telescope, camera, or the observing program that gets the credit for a comet's discovery because they are almost always imaged electronically and then discovered via a computer program before being verified by humans, in this case Bryce Bolin and Frank Masci. * Let's first dissect the name of this soon-to-be-seen comet to understand it better. The letter "C" stands for the fact that this interloper takes over 200 years to orbit the sun. In fact, the last time it came around Sol may have been about 50,000 years ago when Neanderthals and Cro-Magnon men and women were traversing about the European and Asian landscapes or this may be the first time the comet has entered the

inner solar system, pushed inward from the Oort Cloud by the gravity of some long passed star that came within a few light years of our sun. The letters A, B, C, D, E, etc. stand for half months. The first half of January is listed as "A," the second half of January "B," and so on. The E3 means that it was the third comet discovered during the first half of March (E). The discovery year was 2022 and the (ZTF) stands for the Zwicky Transit Facility which has a large digital wide-field of view camera located at the Palomar Observatory in southern California. It records the entire Northern Hemispheric sky every two days as it looks for transient phenomena like asteroids and comets that might strike our planet, as well as supernovae. * I first observed C/2022 E3 (ZTF) on the morning of January 16 just before moonrise. It certainly was not spectacular from a suburban locale and not green because of its faintness, but it was visible. My rule of thumb is that if I find something faint, then I have to go back and find it numerous times to verify its authenticity. I performed that experiment four times, and as my eyes became better adapted to my suburban backyard conditions, I was able to delineate a short, stubby tail. C/2022 E3 (ZTF) was closest to the sun on January 12, and it will be closest to Earth on February 1. It may be a faint binocular object right now, but keep those green fingers crossed because comets normally brighten more significantly after perihelion, and certainly as they approach Earth. I'm hoping that it will be an easy binocular target by early February. Stay tuned for more information in subsequent *StarWatch* articles if this comet blossoms. Ad Astra!

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Moravian University Astronomy - astronomy.org also facebook.com/StarWatchAstro/

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A Brief History of The Observer

By Sandy Mesics

In the previous issue, we covered the history of The Observer from 1957 through 1985. In this issue, we continue in 1985, with Gary Becker as the editor.

June's issue appears to be the first one produced using a personal computer. In September 1986, the Society purchased a new mimeograph machine to replace the manually operated machine that had been in use. The system utilized stencils which could be cut with a computer printer. Morris Reppert was the printer. Again in 1989, the topic of advertising in *The Observer* was again brought before the Board of Governors. The Board allowed an advertising insert in the publication, as a separate item, for a cost of \$35.



Gary Becker was elected Director in 1993, so editorial duties passed to Rick Hunter. Rick introduced a new masthead and typography. Rick became Director in 1995, and editorial duties passed to Kate McKee. As Director, Rick initiated the "Ad Astra" column while Kate introduced very professional design changes. During her tenure, Kate also ran the Red Shift, and created the first LVAAS web page. She left in August 1995 when she relocated to Detroit. Meanwhile, the prolific Rodger Gordon returned to writing articles for *The Observer* in 1993.

The Observer		
PUBLICATION OF THE LEHIGH VALLEY AMATEUR ASTRONOMICAL SOCIETY		
Volume XXXIII, Number 3		March, 1993
1957	IN THIS ISSUE	1993
CLOUDS IN THE PLANETARIUM SKY	PAGE 2
STARBOUND	PAGE 2
NEW LVAAS PUBLICITY BROCHURE	INSERT PAGES

Tom Roginski, the next editor, maintained the editorial and design excellence inaugurated by McKee. Rodger Gordon continued to contribute his Observer's Corner columns. The March 1995 issue was unique in that it was a tribute to Rev. Ernie Andrews on the occasion of his death. The eight-page issue contained seven pages of reminiscences of the very beloved former Director and life member.



The Observer

★★★★ The Official Publication of the Lehigh Valley Amateur Astronomical Society ★★★★★

Website: <http://www.lvaas.org>
Telephone: 610 797-3476

November 1997
Volume 37 Issue 11

Jennifer Dryer brought a new look to the Observer when she became editor in October 1997. This look incorporated a new masthead, slick typography, photographs, use of clip art, and creative layouts. At the time she was also LVAAS Secretary. In November 1999, *The Observer* featured a new masthead, the “Meteor” design by Adam Jones. Dryer continued as editor for six years until she relocated away from the Lehigh Valley. Director Bob Bukovsky complemented her in his February 2003 Ad Astra column: “During her six years as Editor Jen has consistently delivered the highest quality product and moved *The Observer* into the first rank of club newsletters. She always took care to ensure that *The Observer* was readable, informative, on topic and well organized and she handled the myriad of detail involved in its production and distribution with consummate skill. Her creative imagination, attention to detail and willingness to put a lot of hard work into the publication has served LVAAS well. The professional approach she brought to production of *The Observer* made it eagerly awaited by all who receive it; and we hope she will take the time to share some of her expertise with her successor.”



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April, 2006
Volume 46 Issue 4

I just happened to be Jen’s successor. I took the reins in March 2003, and did not make many changes, as I felt the design and content of the publication was excellent. I was editor until January 2006, when I was elected Director. Bernie Gardner became editor in January 2006, and she continued until December 2008.

In January 2009, Gwyn Fowler became the youngest editor of *The Observer*. She inaugurated a new masthead and continued the publication until she entered her senior year of high school. Christine Mohr took over in September 2010, and, you guessed it, inaugurated a new masthead.

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November 2009
Volume 49 Issue 11

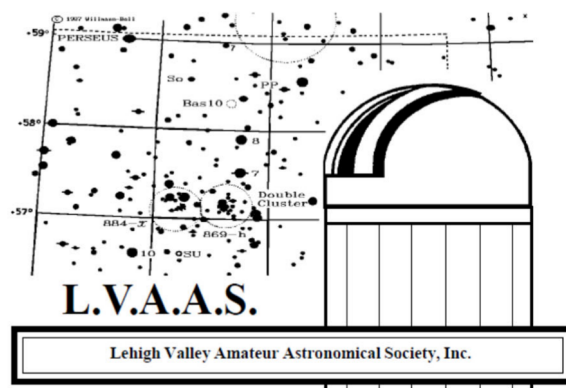
The April 2013 issue was the last hard copy issue that was mailed to members. Since that date, the newsletter has been in electronic format. For many years, The Observer was printed by TIW Technology in Easton, courtesy of Bob Mohr. The new electronic format would be less labor intensive,

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February, 2011
Volume 51 Issue 02



and allow for full color graphics while being more economical to produce, since the Society was no longer paying for postage. But there was concern that all members would not be able to access it electronically. In the May 2013 *Observer* we read, “Any members who do not have access to a computer should inform an executive member of the board, who [will] make arrangements for that person to receive a specially printed hard copy by regular mail.”

In April 2014, France Kopy became editor. She was the first editor to capitalize on the all-digital format options that were now available. The issues now included high resolution astroimages, most of them taken by LVAAS members, links to a monthly video by Peter Detterline, recurring columns by Gary Becker and me, the Director’s Ad Astra column, as well as articles and photos on LVAAS activities and public outreach. Frances tirelessly stays abreast of LVAAS happenings and makes sure they are covered in *The Observer*.

Up until 2016, *The Observer* was only available to Society members. France suggested that it be made available to all via the website. The Board of Governors polled the membership, who agreed that *The Observer* should “go public.” This necessitated some changes to the bylaws, which were also approved by the membership, and the June 2016 *Observer* was the first issue to debut to a world-wide readership.

For over 50 years, the *Observer* has been the voice and the chronicle of the Lehigh Valley Amateur Astronomical Society. It has been edited by 24 different individuals who each have brought their unique talents and efforts to the publication. It is an amazing fact that a monthly newsletter produced by volunteers has endured and flourished for so many years.

Editors of the Observer

Year	Editor
1958 (Satellite)	Walter Leight, Ed Gilmore, Earl Bodder
April 1961-Oct. 1966 (Observer)	Richard H. Trumbore
Oct. 1966-March 1967	Curtis Rinsland
April 1967-Dec. 1967	Richard H. Trumbore
Jan. 1968	E.C. Machin
Feb. 1968-July 1968	John A. Jones
Aug. 1968-Jan 1973	George Maurer
Feb. 1973-Jun. 1978	Gary A. Becker
July 1978- April 1981	Joseph J. Schmidt Jr.
May 1981	Bob Wallace
June 1981-Jan. 1983	Bill MacHose
Feb. 1983-June 1983	Deb Ettien
July 1983	Ken Schmidt
Aug. 1983-April 1985	Helen Rogusky
May 1985-Dec. 1992	Gary A. Becker
Jan. 1993-Dec. 1994	Rick Hunter
Jan. 1995-Sept. 1995	Kate McKee
Oct. 1995-Sept. 1997	Tom Roginsky
Oct. 1997-Feb. 2003	Jennifer Dryer Detterline
March 2003-Dec. 2005	Sandra Mesics
Jan. 2006-Dec. 2008	Bernie Gardiner
Jan. 2009-August 2010	Gwyn Fowler
Sept. 2010- March 2014	Chris Mohr
April 2014 – Present (Nov. 2022)	Frances Kopy

NATURAL vs ENHANCED COLOR IN ASTROIMAGES

BY: Dave Moll

Although I no longer do astroimaging myself, I still try to keep in touch with trends, equipment, technology, and general “goings-on” regarding the subject. A source of great pleasure to me is seeing the work that LVAAS’ imagers are doing, as published in The Observer and on the Astroimaging “Buzz”. I am delighted with the level of activity and the ever-improving talents of our imagers! Often, the “Buzz” list generates lively discussions about different aspects of astroimaging. One recent discussion centered around the question “What should the color(s) of my astroimage be?” As I had weighed in on this subject many times before, I also replied to the list with my thoughts on the subject. I will attempt to expand on that subject here.

My first answer to the colors question has always been “Whatever looks good to YOU”. Now, having said that, I will tell you that I am no fan of the Hubble Palette. As most know, the Hubble Palette (H-P) was developed by researchers to provide more detail in images than a “natural” color assignment could provide. The unnatural H-P color assignments were originally developed sort of as a “PR tool”, but they are also very useful for scientific purposes. No offense intended here, but I personally consider images produced in the H-P to be somewhat of an “abomination of nature” when used for display purposes. But that’s just me. Whatever an imager does with color, if the effort pleases that imager, it is the right choice.

Back when I was imaging, I always tried to get my colors sort of close to the actual colors being generated by the ionized atoms in nebulae, as my eyes perceived them on my monitors and on my printers (more on this later). I don’t like **orange** Hydrogen Alpha ($H\alpha$ $H\alpha$ $H\alpha$!). But that’s just me, I’m a purist. Again, whatever looks good to the original imager is right.

Ionized gases in emission nebulae emit light in very specific colors. This is a law of physics. The various wavelengths (i.e., “colors”) of emission nebula light cannot be argued. The most common imaging wavelengths are:

$H\alpha$ (Hydrogen Alpha): 656.28 nm in air and 656.46 nm in vacuum



OIII (Oxygen III): 500.7 nm (primary)



OIII (Oxygen III): 495.9 nm (secondary)



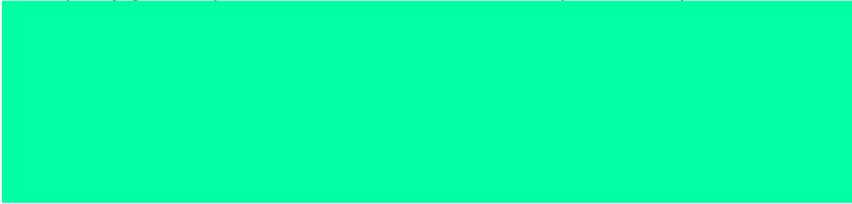
Wavelength

496 nm

Color:

rgb(0, 255, 192)

OIII (Oxygen III): 500.7 nm & 495.9 nm (blended)



SII (Sulfur II): 672 nm



Wavelength

710 nm

Color:

rgb(237, 0, 0)

(Swatches generated by: www.academo.org/demos/wavelength-to-colour-relationship/ , ,

CAVEAT: In the swatches above, the colors of these wavelengths were matched on MY monitor. Other monitors and printers almost always will be different, unless color calibrated {see below}. Indeed, the human eye is the most variable preceptor of color. “Color blindness” and other neurological anomalies will very often affect individual perception of color. The SII band shown here has been “tweaked” to 710nm to show some difference in color from the very close H α . This is a clear example of why alternate palettes are so useful in many situations.

Other narrowband filters may be used by some imagers, including hydrogen beta and nitrogen II. In more advanced imaging, there could be, and usually are, more channels. For instance, one choice for an alternate “Hubble Palette” assigns the following colors:

673nm ionized sulfur	White
658nm ionized nitrogen	Orange
656nm hydrogen alpha	Brown
502nm doubly ionized oxygen	Cyan
469nm ionized helium	Blue
373nm ionized oxygen	Violet

(above chart reproduced from: www.astronomymark.com/hubble_palette.htm
There is considerably more information on this at this link.

When folks are imaging with narrowband filters, they will usually collect three sets of exposures called sub-exposures, or “subs” with the three color channels and sometimes add a luminance “lum” exposure set (a combination of H α and OIII). The color channels’ pass-through bandwidth will be pretty much centered on the wavelengths noted above. During what is called “pre-processing”, the imager brings these sets of subs into a program such as Nebulosity, Astro Pixel Processor, PixInsight, Maxim DL, and the like and combines them into intermediate images. In later steps, “post-processing”, the imager assigns the pre-processed sets to a particular color channel in a program such as PhotoShop. Each color channel could be the natural color, or it could be pretty much anything else. As a result, the three color channels and the luminance data are combined into the final image. This is a very basic simplification of a very complicated process. Imagers, pardon me here if I have equated the building of the Great Pyramid of Cheops to tying my shoes.

You can see what these wavelengths look like on YOUR monitor at the referenced web site. Unless you have color-balanced (calibrated) your monitor with a SpyderX (<https://spyderx.datacolor.com/>) or some such monitor calibration tool, your monitor’s displayed colors for these wavelengths will not be correct to nature, but they will be close. Same for your printer; printers can also be color calibrated. Caveat: if you use tinted or shaded printer paper it will throw things off! Of course, this argument for the “purest color” can only be made in the theoretical. There are too many variables out there that will bear on what the color of your image should be, or how the colors are perceived. Also, the actual nebula color is never correct in “real life” because of the effects of intervening galactic dust, stars in the nebula, light pollution on Earth, and more. The various wavelengths of emission light are facts of physics, everything else regarding color is variably presented and/or variably perceived. Don’t lose any sleep over this. If you are an imager, whatever looks good to you is right.

This entire discussion so far has been about emission nebulae. Reflection nebulae are a horse of a different color, pun intended. Reflection nebula can very often be attributed to the color of the illuminating star, among other things. For instance, the striking Iris Nebula, (NGC 7023) in Cepheus, which appears as a stunning blue in normally processed images, is lit by its central hot, young star, SAO 19158. When I imaged the Iris, my reaction to this was “Yeah! Make it blue!”. My Iris rendition is available [here](#).

A bit of background to my discussion: I generated the four color swatches above using the referenced web site, and saved them. The swatches are attached. And brought them in to PhotoShop in individual layers. The swatches (from MY monitor) are attached. I then took the two OIII lines and blended them, as would be normal in emission nebulae spectra. I couldn’t find the actual intensity percentages of the two lines, so I went with 50-50. As noted above, the simple color generator in the link is not precise enough to differentiate between the 656 of H α and the 672 of SII, so I had to use 710nm to generate the deeper red of SII. Good enough for government work. If you are interested in all this drivel to the point that you actually want to do it yourself, do not use my color swatches. Do the exercise yourself from scratch, otherwise the result will not be indicative of the peculiarities of your computer setup. You can use the color swatches you produce to “balance” the colors to the real shades in nature, in your images as you see them. Or you can decide to make something more attractive to you. Totally your choice.

Repeat after me “Whatever looks good to the original imager is right.”

Even if you use the Hubble Palette...

Different Color Palettes from Varied Channel Combinations

by John Kmetz

Sh2-188 (Sharpless Catalog) is a planetary nebula found in Cassiopeia. It is estimated to be 700 light-years away, and 7500 years old. This nebula is thought to be a supernova remnant and has a somewhat symmetrical shell of gas expanding outward from the original stellar explosion.

Subframes of this target were obtained using a ZWO ASI 2600MM-P cooled monochrome camera with 6nm Ha, 6nm OIII, and 12nm SII Astronomik narrowband filters mounted on a Celestron 9.25 EdgeHD SCT telescope with a 0.7X Focal Reducer. Total integration time of all exposures was 18.3 hours.

Image 1 (next page, upper) was in SHO Hubble palette where Sulfur was in the R-red channel, Ha in the G-Green channel, and Oxygen in the B-Blue channel. Greenish hues were later removed using SCNR (Subtractive Chromatic Noise Reduction) in PixInsight to leave blue and golden final colors. Image 2 (next page, lower) was in standard HSO to RGB color palette. Ha was the strongest signal and therefore red or pinkish was the dominant hue. My eye tends to favor the pink over the other bluish Hubble palette here as a matter of taste. This nebula is sometimes called the Dolphin Nebula or the Shrimp Nebula, but in this case the final color scheme may influence what name the imager chooses to employ.

The Hubble Palette arose from processing images from the famous space NASA telescope still in orbit. The well-known "Pillars of Creation" image used this palette in 1995 to create a new way of viewing the frequencies of light captured by the onboard cameras, and is one of the top ten astronomy photos as viewed by the public. It should be noted that this color combination is considered a false color image as the colors assigned to the different RGB channels is not what the human eye perceives. Astronomers Jeff Hester and Paul Scowen of Arizona State University selected this scheme to provide a more dramatic effect and enhance various gaseous regions not well highlighted in true color.

Now that astrophotography has become more readily available to individual users with increased quality of equipment at more reasonable prices, this palette is of one of several choices used during processing to give an artistic boost to some celestial objects captured. For more information, please see the following write up by popular YouTube astroimaging artist Trevor Jones:

<https://astrobackyard.com/narrowband-imaging>.

Images of Sh2-188 courtesy of John Kmetz



FEBRUARY

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			01	02	03	04
Full Moon 05 General Meeting - 3:00 PM Muhlenberg	06	07	08	09	10	11
Super Bowl Sunday 12	Last Quarter Moon 13	14	15	16	17	18
Deadline for submissions to the Observer 19	New Moon 20	21	22	23	24	25
LVAAS Board of Governors Meeting 26	First Quarter Moon 27	28				

MARCH

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			01	02	03	04
05	06	Full Moon 07	08	09	10	11
General Meeting - 3:00 PM Muhlenberg 12	13	Last Quarter Moon 14	15	16	17	18
Deadline for submissions to the Observer 19	20	New Moon 21	22	23	24	Star Party 25
LVAAS Board of Governors Meeting 26	27	First Quarter Moon 28	29	30	31	

Sky Above 40°33'58"N 75°26'5"W Friday, February 3, 2023 00:00 UTC



Your Sky was implemented by John Walker in January and February of 1998. The calculation and display software was adapted from Home Planet for Windows. The GIF output file generation is based upon the ppmtogif module of Jef Poskanzer's pbmplus toolkit, of which many other components were used in creating the images you see here.

ppmtogif.c - read a portable pixmap and produce a GIF file

Based on GIFENCOD by David Rowley

Lempel-Zim compression based on "compress"

Modified by Marcel Wijkstra

Copyright © 1989 by Jef Poskanzer.

Customize Your Sky at <http://www.fourmilab.ch/yoursky/>

2023 LVAAS EVENT CALENDAR

Contributed by Bill Dahlenburg

2023 LVAAS Event Calendar											
	Sundays			Saturday			Multi-Day Weekends Scouts at Pulpit R.	Moon Phase			
	General Meeting time	location	Board meeting	Astro- Imaging	Star Parties	Scouts at S. Mountain		New	1 st	Full	3 rd
January	8	3:00 PM Muhlenberg	29	no meeting	no meeting		no camping	21	28	6	14
February	5	3:00 PM Muhlenberg	26	no meeting	no meeting		no camping	20	27	5	13
March	12	3:00 PM Muhlenberg	26	no meeting	25		no camping	21	28	7	14
April	2	7:00 PM S.M.	30	22	29			20	27	6	13
May	7	7:00 PM S.M.	21	20	27			19	27	5	12
June	11	7:00 PM S.M.	25	10	24			18	26	3	10
July	8	5:00 PM S.M.	30	15	22			17	25	3	9
August	12	7:00 PM Pulpit	27	19	26			16	24	1 & 30	8
September	10	7:00 PM S.M.	24	9	23			14	22	29	6
October	8	7:00 PM S.M.	29	14	21			14	21	28	6
November	12	2:00 PM S.M.	26	11	18			13	20	27	5
December	9	2:00 PM ?	17	16	no meeting		no camping	12	19	26	5

July, Aug & Dec are Saturday meetings with rain date on Sunday
 Jan, Feb & March meetings are at Muhlenberg College
 August meeting is at Pulpit Rock
 December meeting / Holiday Party (TBD)

NEAF 4/15 – 4/16
 Mega Meet 5/19 – 5/21
 CSSP 6/15 – 6/18
 Stellafane 8/17 – 8/20
 BFSP 9/15 – 9/17 ??

Publishing images is a balancing act!

When preparing your images for publication in The Observer, please consider the following guidelines:

Put the quality in:

- ▶ Considering the "print" size of the image, make sure you have at least 150 pixels/inch.
- ▶ Use a reasonably good quality for the JPEG compression ratio.

But watch the "waistline"!

- ▶ Don't go too much above 200 pixels/inch max.
- ▶ Use the lowest JPEG quality that still looks good!
- ▶ Shoot for <300KB for a 1/2 page image or <600KB for a full page.

Tip: If you're not Photoshop-savvy, you can re-size and compress undemanding images ("human interest" not astroimages), with an online tool such as:

<https://www.ivertech.com/freeOnlineImageResizer/freeOnlineImageResizer.aspx>. It will also tell you the pixel size and file size of your original, even if you don't download the processed copy.

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LVAAS members please feel free to submit ads for astronomy equipment you have for sale, and additionally you may sponsor a maximum of three ads from non-members per year. Please submit your finished ad as a PDF, with pictures and text. Every attempt will be made to include submissions in a timely manner.

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