



FOCUS

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DELAWARE ASTRONOMICAL SOCIETY

Next Meeting – Tuesday, January 15th, 2018 at 8pm
at the Mt. Cuba Astronomical Observatory

MEETING TOPIC: *Member Mini-Talks*

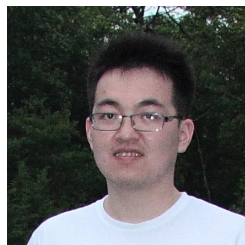
The next meeting of the DAS will feature mini-talks from your fellow members including:

Rick Spencer: “An Introduction to an Introduction to an Introduction to Special Relativity”

An Yu: “Ancient Chinese Astronomy”

Fred DeLucia: “My Visit to the Leviathan Telescope”

Greg Lee: “What’s Up?”



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From the President

Rob Lancaster

I hope everyone's holiday break was both peaceful and relaxing. Mine was neither with multiple trips to visit relatives both my wife and I caught the head cold that has been going around. But at the same time, I enjoyed the time that I spent with my relatives and got a nice break from the daily routine. And we just got over the cold this past weekend, so now I'm feeling better too. Once I am sure that I am over the cold, I will be fully ready to go back out in the cold and capture more astrophotos!



The DAS also has returned from its two-week hiatus due to our Astronomy Workshops falling on major holidays. We just had our first Astronomy Workshop since the break and our first Book Club meeting. This month, we will be having our Astrophotography Special Interest group meeting on the weekend of January 18th – 19th on the topics of Plate Solving and Imaging the Lunar Eclipse. Speaking of that, on the evening of January 20th going in to the morning of the 21st, there will be a lunar eclipse! Be sure to brave the cold and check it out, at least for a few minutes.

At our upcoming meeting this month, we will be having a series of member talks, which should be really great. Hopefully if you wanted to speak at the meeting, you already let Jeff know about it. Nico and I will also be sharing the information from the member survey that we took over the last few weeks. Because this is your club, we would really like to be sure that we are doing what is best to serve your interests. We want to be sure your voices are heard. And as always, the meeting will be followed by some snacks and social time as well as possible visual observing if it is clear outside.

Thank you,

Rob Lancaster
DAS President

Astrophotography Special Interest Group

Bill Hanagan

The December 2018 AP-SIG meeting took place early enough that the report on it appeared in the December FOCUS, rather than in this issue of the FOCUS.

Photographing the January 20 / 21 Lunar Eclipse

A total lunar eclipse will begin late on Sunday, January 20 and continue into the early hours of Monday, January 21 as summarized below.

January 20

10:33 PM—Start of Partial Eclipse

11:41 PM—Start of Total Eclipse

January 21

12:12 AM—Maximum Eclipse

12:43 AM—Totality ends

1:50 AM—Partial Eclipse Ends



As seen from northern Delaware, the moon will maintain an altitude of at least 61 degrees for the entire eclipse. Photographing the upcoming lunar eclipse is an excellent way to get started in astro-photography and a worthwhile endeavor in its own right. If you would like to learn more, we'll be talking about this during the January 18 / 19 AP-SIG meeting.

The January 18 / 19 AP-SIG Meeting

The January AP-SIG meeting is scheduled for the weekend of January 18 / 19 at MCAO and the Sawin Observatory. Anyone interested in astrophotography, from curious beginner to expert, is welcome to attend! The exact date and time of the meeting depends on the weather and will be announced via DAS Yahoo group email and by direct mail to the AP-SIG members. The current plan for the January meeting is to hold a computer workshop for astro-imagers. Rob Lancaster will give us some tips on how to get plate solving to work in your choice of image acquisition software and Nico Carver will demonstrate how to use Sequence Generator Pro. I'll be presenting a survey of image acquisition software and I'll demonstrate BackyardEOS for the DSLR users in the group.

Following the presentations, we'll try to work through any difficulties you may have using your own image acquisition software, especially plate solving. So, be sure to bring your imaging laptop and camera along.

FOR BEGINNERS, I'll also briefly go over how to photograph the upcoming January 20 / 21 lunar eclipse.

As usual, we'll also take a look at everyone's most recent photos. When you come, be sure to bring a USB memory stick with your astrophotos and any related project materials that you would like to show the group. Even if some of your photos have imperfections, it's a good idea to bring them with you to promote the discussion of image acquisition and processing techniques.

The exact time, location, and other details of the AP-SIG meeting will be announced a couple of days ahead of the meeting via the DAS Yahoo Group email list and by direct email to AP-SIG members.

The AP-SIG is very good at helping beginners improve their images, so don't be shy about bringing imperfect images along to get some advice on how to take even better images. If you are not an AP-SIG member you can always come to the meeting to see what goes on and sign up later.



Greg Lee, Lionel Sandell and I revisited the SOS (Steelmantown Observing Site) location of the SJAC (South Jersey Astronomy Club) on Sunday, January 6. For information on our previous excursion to this site, see the May 2018 Focus on page 3. As we did last time, a stop at the local diner fueled us for the observing session.

Greg had his 10" Hardin Newtonian Dob, a frequent eye-catcher at DAS outreach, along with his stand mounted 20x80 binoculars (his 16" Explore Scientific was undergoing some necessary modifications in his shop). Lionel brought his 16" f/4.2 Teeter Telescope and I had my 18" f/4.0 StarStructure.



Our near 5PM arrival at the gate greeted us with an inability to unshackle the combination lock with the new 2019 combination. After several attempts carefully scrolling the numbers ended in failure to undo the shackle, we tried the 2018 combination, which worked. The euphony of the tumblers engaging and the pop/click of the shackle opening officially kicked off the session.

This time out we were the only guests on site. We set up at the southerly end of the field. The "seeing" was estimated by Lionel as a Pickering 3 or 4. Yep, pretty bad. So, essentially it was a night for galaxies and a couple of comets under skies that were clear and had a best SQM-L reading of 5.94 NELM.

Mars was a roiling blobby mess, lacking in any detail. Planetary nebulae were fine at lower powers and acceptable up to about 200x. The Horsehead was barely a dim silhouette of an ill-defined thumb. One of my favorite high power objects, the Blue Snowball (NGC 7662), had hardly a darkened center at 447x and was nothing like the stunner views of previous recent sessions that I reported on earlier in this publication at powers up to 1100x+ (see Focus November 2018 page 3).

However, the night wasn't a total loss. Hickson 10 in Andromeda, a group of 4 galaxies, two of which (NGC 529 and NGC 536) are easy picks in my scope at 13.1 and 13.2 magnitude, respectively, and at 300x, were pleasantly positioned at 3 o'clock and 9 o'clock in my Nagler 7mm Type 6 eyepiece. The other two galaxies at 15th mag and about 1 arc minute in size were invisible.

Comet 46p/Wirtanen, the periodic visitor to our solar system of every 5.4 years, is a thrill to see in any field of view. Use

your naked eye at a dark site or wide field binoculars or through a telescope at various powers. It's HUGE, bright at 5-6th magnitude and its greenish tint is easy at 210x. The other comet I observed was 64P/Swift-Gehrels, much smaller, much dimmer at 11th mag but very detectable in telescopes.

Jack Goodwin couldn't make the session but he was there in spirit texting me. He suggested NGC 2419, the Intergalactic Wander as a target. It was on my observing list and at his prompting I slewed to its position in Lynx. At 200,000 light years away this possibly extra-galactic globular cluster was captured by the Milky Way. Considering that the Large Magellanic Cloud, a satellite galaxy of the Milky Way, is 40,000 light years closer, one can readily understand the moniker for NGC 2419.



Two objects were well worth dwelling on:

- 1) Hubbel's Variable Nebula (NGC 2261) can, by some, be mistaken for a comet. Illuminated by the star R Mon the nebula's gas and dust fans out from the star.
- 2) IC 342 is a galaxy only 8 million light years away but is dimmed considerably when observing it because it's viewed through the dust of the Milky Way. It's a nice face-on spiral that awaits a session at a darker site and a more transparent night. I finished off the night with a close-in view of NGC 2158, the dense, dim, open cluster alongside M35 in Gemini about 6000 light years further away than M35.

After that everything was packed up and was back home by 2AM.

Image Sources: NGC 226 - Hubbel Space Telescope; IC 342 - Igor Peshenko ; NGC 2419 - APOD/Bob Franke

Photo by AP-SIG Member Mark Mitchell



Technical information

Target: M1, the Crab Neb in Taurus (NGC 1952). (Mag 8.4, 420 x 290", 6500 ly away)
Date: 12-26-18 and 01-05-19
Location: Hockessin, Delaware
Telescope: ED127 0.8x FE, f6
Mount: Vixen SXP, guided, no dither.
Camera: Atik 460ex
Temperature: 2 - 4 and 6 - 9 °C cooled to -15
Filter: LRGB, Ha, O3, S2
Exposure: About 2h 55m altogether.
Software: DSS, Photoshop CC 2019.

Notes: The image shown here has O3 added to the blue and Ha and S2 added to the red. It also uses a large pseudo luminance layer made from everything, but I don't think that added much. Colors were popped with a selective color layer. An attempt to shrink the stars using a "manual" technique didn't work very well, and right now my StarShrink plug in is not working in Photoshop 2019cc. I have not processed this in PixInSight yet. This object has three different colored areas when processed in narrowband.

November 1 is past--time to renew DAS Dues!

Delaware Astronomical Society 2019 annual membership dues were due November 1.

Dues remain \$30 for the 2019 calendar year.

If you haven't already paid your 2019 dues there are several payment options:

- 1) You can bring cash, check or money order for \$30 made out to DAS to the Tuesday meeting November 20. I will be available at the meeting to collect any payments.
- 2) You can use your PayPal account to send payment to DASmtcuba@gmail.com
- 3) You can pay with PayPal using the link below; you don't need to have an account with PayPal, just a credit card.

https://www.paypal.com/cgi-bin/webscr?cmd=_s-xclick&hosted_button_id=NDGKG4CWCX8GU

- 4) You can mail payment to:

Robert Trebilcock
DAS Treasurer
3823 Rotherfield Lane
Chadds Ford, PA 19317

1/15/19 DAS Board Meeting Agenda

1. Review of Minutes from Last Meeting—Bill McKibben
2. Treasurer's Report—Bob Trebilcock
3. Groups.io transition—Rob Lancaster
4. Plans for newly donated telescopes—Jeff Lawrence
5. Plans for loaner telescopes—Jeff Lawrence
6. Survey for members, The Results—Rob Lancaster

MCAO Volunteers Needed

Hello. I would like to introduce myself. My name is Kim Green and I am the secretary at the Mount Cuba Astronomical Observatory. This year we have increased our field trip activity, we have added many additional Public and Family Nights and we added children's programs to our calendar. The community has requested these programs and we are doing our best to accommodate. With that being said, we are looking for volunteers to help out. We are desperately in need of people who are available to help during our day time led trips. But we would also love to have some evening help as well. So keep an eye out for future emails from me. If you are interesting in helping out please contact me at 302-654-6407 or email me at KimGreenMCAO@gmail.com.



DAS Loaner Equipment

The DAS has several telescopes that are designated for loan to members. Our advice to new members is to take any of these telescope out on loan so you can learn the advantages and disadvantages of the various designs.

- 80mm Celestron Refractor with a NexStar GOTO mount. (On loan from Bill McKibben)
- Meade ETX 90mm Special Edition
- Bushnell Voyager 4" tabletop scope (AstroScan clone)
- Three Dobsonian scopes: two with 6" aperture, one with 8" aperture. This style scope is very easy for beginners.
- Meade 8" LX-10 Telescope: This 8" Meade LX-10 Schmidt Cassegrain Telescope (SCT) is a good loaner if you have any thoughts about buying an SCT telescope on a GoTo fork mount.



Procedure for DAS Members to Sign Out Loaner Equipment

Jack Goodwin

1. **Inform:** Please inform DAS Observatory Chair via e-mail -- this is currently how all loaner equipment is being logged/tracked. (email below)
2. **Borrower email to include:**
 - a. Your name and contact information (cell #, email, home number, etc.)
 - b. Date equipment borrowed
 - c. Description of all equipment being borrowed
 - d. Estimated return date for each component borrowed
 - e. List any damaged/missing components (if applicable)
3. **Damage:** If the equipment is damaged while you are borrowing the equipment, please notify the DAS Observatory Chair in a timely manner.
4. A **sign out log** will be posted in the near term to compliment the email notification.

NOTE: Currently DAS Loaner equipment is **only available for loan to current DAS members.** (Which is a great excuse to join DAS)

Thank you,
Jack Goodwin,
DAS Observatory Chair
Jack_Goodwin@yahoo.com
610-457-2945 (cell)

DAS AMATEUR TELESCOPE MAKING SPECIAL INTEREST GROUP

Bill Hanagan

The DAS Amateur Telescope Making (ATM) Special Interest Group (SIG) is made up of DAS members who get together to work on their own as well as club related telescope making projects. We get together at times and locations appropriate for whatever projects are currently underway.

The general range of activities of the ATM SIG includes all manner of telescope making including Newtonian mirror making, the testing of complete telescopes as well as individual optics, and the making of telescope accessories. In the past, we have made several Newtonian telescope mirrors from scratch and completed some mirrors that members brought in as works in progress, including one that was started in the mid-1960's! We've also made new telescope tubes, made secondary mirror holders, tested numerous telescope objectives, made wire spiders for Newtonian secondaries, and made many solar filters for telescopes and binoculars. We also completed the refiguring of the DAS 17.5" Newtonian mirror used in the Big Dob currently housed in the Sawin Observatory.



If you're interested in telescope making, feel free to email me and let me know what you're interested in doing at hanaganw@verizon.net and include your name, address, and phone number. I'm always glad to provide some guidance and information to other telescope makers.

How to Join the DAS Yahoo Group

DAS FORUM / E-MAIL SITE ON YAHOO

This is an e-mail service for use by DAS members and our astronomy enthusiast friends. To use this site, go to <http://groups.yahoo.com>. To join, you must have a Yahoo ID and password; if you don't, you can register on the DAS Yahoo Group site by following Yahoo's instructions. You can then begin the short process to "Join the group" upon clicking in that box. You must then register for the DAS group and add your profile by clicking on "add new profile" and completing the form.

When adding or editing your profile, you will need to enter your actual name in the "Real Name" box so you can be identified for approval of your application to join the DAS Yahoo Group, so other members will know to whom they are communicating (Note: you can elect to have your name and email address hidden from anyone other than members of the DAS Yahoo Group).

Finally, specify your desired email address for delivery of messages.

New Members Form

Please make checks payable to DAS, print out the following form and mail to:

Robert Trebilcock, DAS Treasurer, 3823 Rotherfield Lane, Chadds Ford, PA 19317

DAS Membership costs \$30 per year, which renews November 1st. We pro-rate membership based on when you join, as follows:

MONTH JOINED	COST	RENEWAL DUE
Jan-Feb	\$30	This November
March-May	\$20	This November
June-Aug	\$10	This November
Sept-Dec.	\$30	Next November

NEW MEMBERSHIP FORM

ITEM	COST	SUB-TOTAL
Membership	\$30/20/10	
Astronomy Magazine	\$34	
	TOTAL:	

Name _____

Email Address _____

Street Address _____

Phone Number _____

City _____ State _____

Zip _____

How did you hear about DAS? _____

For questions or concerns, contact Robert Trebilcock, DAS Treasurer at (610) 558-1637 (leave message) or by email to Trebilcock@aol.com



DAS CONTACTS

Please Call or Email Us with any Questions or for More Information about the DAS

Officers:

President: Rob Lancaster, rlancaste AT gmail DOT com

Vice-President: Jeff Lawrence, (302) 668-8277, jeff AT delastro DOT org

Secretary: Bill McKibben, billmck21921 AT gmail DOT com

Treasurer: Bob Trebilcock, trebilcock AT aol DOT com

Board Members at Large:

Bill Hanagan, (302) 239-0949, hanaganw AT verizon DOT com

Amy Hornberger, aehornberger AT gmail DOT com

Dave Groski, groski AT udel DOT edu

Standing Committee Chairs:

Observatory: Jack Goodwin, (610) 457-2945, Jack_Goodwin AT yahoo DOT com

Education: Ted Trevorow, (302) 593-7949, edt750 AT verizon DOT com

Library: Maria Lavallo and Sue Bebon

Observing: Greg Lee, (302)252-7806, greglee288 AT gmail DOT com

Publications: Nico Carver, (302)353-2448, nicocarver AT gmail DOT com

Other Positions:

Amateur Telescope Making Special Interest Group: Bill Hanagan, hanaganw AT verizon DOT com

Astronomical League Coordinator: K Lynn King, klynning AT verizon DOT net

Astro-Photography Special Interest Group (AP-SIG): Bill Hanagan, hanaganw AT verizon DOT com

Awards Chair: Amy Hornberger, aehornberger AT gmail DOT com

DAS Book Club Leader: Amy Hornberger, aehornberger AT gmail DOT com

Elections Chair: Nico Carver, nicocarver AT gmail DOT com

Programs Chair: Jeff Lawrence, jeff AT delastro DOT org

Webmaster: Rob Lancaster, rlancaste AT gmail DOT com

New Members

Please see the [How to Join page](#) on our website for methods to become a dues-paying member.

If you have any questions call any of the member representatives listed.

If you're just joining us for the first time, THANK YOU VERY MUCH, and WELCOME to the DAS! It's GREAT to have you with us!

