



FOCUS

Vol. 63, No. 6, June 2018

DELAWARE ASTRONOMICAL SOCIETY

**Next Meeting – Tuesday, June 19th, 2018 at 8pm
at the Mt. Cuba Astronomical Observatory**

Meeting Topic: DAS Summer Activities and other Mini-Talks

Speakers: Various DAS Members



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From the President **Rob Lancaster**



DAS Members,

We had an excellent Dinner Meeting this year thanks to Jeff Lawrence and his folks for tirelessly toiling away in the kitchen, thanks to our speaker Preston Smith for giving us his excellent presentation on “Traveling With Your Scope,” and thanks to our volunteers who stepped up to make the night extra special. Unfortunately, the weather has not been too cooperative for astronomy-related activities in the last couple of weeks. Sometimes people call this submarine observing, since we might as well be trying to observe from underwater (we are in a sense, under water)! Let’s hope that we get more clear skies ahead going in to the summer.

The weather has not, however, put a damper on our progress on the Sawin-area improvements. The plans are getting finalized and we are almost ready to do the concrete portion. If you did not hear in my other email or at the special board meeting in May, the DAS sidewalk area in front of the door and the Sawin pad observing area are going to be expanded at the same time as the pouring of the new pad for the domes. The added space will be really helpful in accommodating more observers

to be able to use the pad at the same time. The concrete pouring should be happening in the next couple of weeks. Even after the concrete hardens, there will still be quite a lot of work done this summer getting the pods up and running and fully operational. Please stay tuned; we could really use your help in this process.

Also, please remember that even though our monthly meetings do not continue into July and August, our club activities do continue. These activities include our Astrophotography Special Interest Group meetings, our Book Club meetings, our Astronomy Workshops, and all of our summer outreach events. Please consider volunteering at or participating in some of these events. They really are a lot of fun and we really appreciate all you do for the club!

Thank you,

Rob Lancaster
DAS President

DAS Board Election Results

Nico Carver

Horsehead Nebula
Photo by Nico Carver

This year, as with all DAS “even-numbered” years, the elections were held in May for President, Vice-President, Treasurer, and Secretary (odd-numbered years are for the Board Members at Large elections). The election was not competitive, but we still had fairly good turn-out with 40% of our members casting a ballot.

Here are the elected board members who will serve from July 1, 2018 - July 1, 2020:

- President: **Rob Lancaster**

The President is the chief executive officer and presides at meetings of the Society, appoints chairpersons of any and all standing committees, acts as ex officio member of standing committees, implements all decisions voted by the Board of Directors and the general membership.

- Vice-President: **Jeff Lawrence**

The Vice-President assists the President in all duties and, in the President’s absence, assumes such duties as President.

- Secretary: **Bill McKibben**

The Secretary takes minutes of all meetings of the Board of Directors for review at the next following Board of Directors’ meeting, carries on all business correspondence on behalf of the Society.

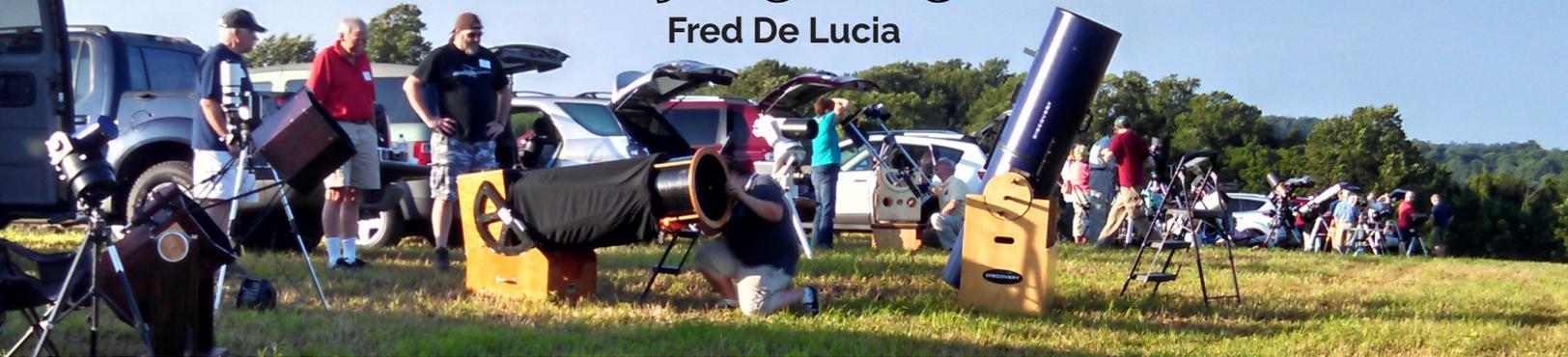
- Treasurer: **Bob Trebilcock**

The Treasurer collects, disburses, and keeps records of the funds of the Society, reports the financial status of the Society at each Board of Directors’ meeting.

Thank you to all who participated in the elections process and congratulations to the new DAS board!

Friday Night Lights

Fred De Lucia



On July 13 the Natural Lands' Friday Night Lights event is scheduled with NO rain date. Every year it's been a sell-out with hundreds of attendees enjoying live music, tasty treats, craft beer, local wines and views through our telescopes.

This is the 8th annual Friday Night Lights at the ChesLen Preserve and once again the Natural Lands has invited the local astronomy clubs to participate. In return the clubs set up telescopes to share views and talk astronomy with the attendees. Since alcohol is served at this event no one under 21 can be admitted and pets are not allowed.

In past years we had from 16 to 34 telescope volunteers plus their guests who shared views, s'mores and other treats with many of the up to 800 attendees. Natural Lands is working with two bands for the music. Victory will be pouring the beer and Borderland will be pouring the wine. Dos Gringos Mexican Kitchen food truck will be on site.

I'll have more details as we get closer to the event which is from 8-11PM on Friday July 13. Doors open at 7:30PM, but the Natural Lands asks that all scope

volunteers be on site no later than 7PM to avoid traffic congestion.

A 1% illuminated Moon sets that night at 9PM, and, of course, we can stay observing after the event ends under ChesLen's reasonably dark 5.5 Naked Eye Limiting Magnitude skies. I'll be posting a "call" on the DAS Yahoo Group in the upcoming weeks for volunteers. You can email me now at fredworld@verizon.net to let me know if you want to help, and be sure to mention if you're bringing a guest and their name.

As in the past, admission is free for the telescope volunteer and one guest. Everyone gets 2 drink tickets, too.

If anyone can commit this early, that'd be great. Let me know. I'll keep a list of volunteers as usual. Feel free to spread the word among our club members and have them contact me at fredworld@verizon.net if there are any questions.

Thanks for your help.
Clear, dark and steady skies.
Fred

Photos from the May Dinner Meeting

Photos by Tom Harding and Nico Carver



Photos from the May Dinner Meeting

Photos by Tom Harding and Nico Carver



May 2018 AP-SIG Meeting Report

Bill Hanagan

NGC 2264
3 hour 50 minute exposure
Scope: Stellarvue SV70
Camera: Atik 383L+ OSC
Photo by Mark Mitchell

The Astro-Photography Special Interest Group (AP-SIG) met on Saturday, May 26 at Rick Spencer's home about 5 miles northwest of the Fairhill Natural Resources Area. Rick once again provided a sumptuous selection of Indian takeout food for dinner. Thanks for hosting Rick, and for the great Indian food!

Despite being a holiday weekend and being clouded out, a total of 9 AP-SIG members attended. The group gathered after dinner on Rick's deck for the photo below. Appearing from left to right and front to back are Dana Wright, Bill Hanagan, Mark Mitchell, Rob Greybill, Rob Lancaster, An Yu, Nico Carver, Ron Worden, and Rick Spencer.

After dinner, I gave the special topic presentation on Matching Telescope Focal Length to Camera Pixel Size for Astro-Imaging.



Ron Worden showed us some of his recent images of M1 and several other objects. Rob Lancaster told us about his new DSLR, a Canon EOS 80D, and discussed a relatively new way to look at ISO in DSLRs dubbed "ISO Invariance". Mark Mitchell showed a recent image he produced of Jupiter as well as a stunning high resolution image of the Moon. Nico Carver showed us his new Stellarvue 4-element imaging refractor (SVQ86) and presented a beautiful new image of the Blue Horsehead Nebula produced from data acquired with his full-frame DSLR at the spring Delmarva Stargaze held at Trap Pond.

In addition to hosting the May meeting, Rick Spencer showed us an image of Jupiter that he processed on-the-fly during the meeting with some advice from Mark and Nico.

The photo below was taken in Rick's living room, where we used his flat panel TV for the presentations.

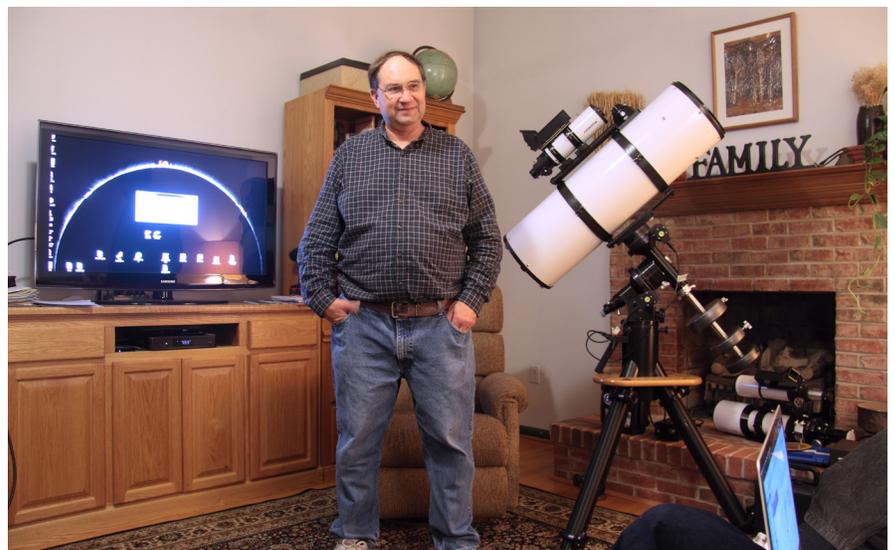


October 2017 AP-SIG Meeting Report

Bill Hanagan

I missed reporting on the October 2017 AP-SIG meeting due to the disruption of the FOCUS late in 2017 and early in 2018, and then the report did not get into the February and March issues of the FOCUS, so I'm including it here.

The October AP-SIG meeting was held on-site at Bob and Beth Trebilcock's home, which is a short distance east of US Route 202 and north of the Delaware state line. Bob appears in the two photos below giving us a run-down on his imaging equipment.



Bob and Beth provided “Barbecued Hamburgers” for dinner along with the delectable spread seen to the right.

After dinner, I gave the special topic presentation titled Cooled Deep-Sky Astro-Imaging Cameras Part 1—CCD and CMOS Sensor Characteristics.

After the photo presentations and Q&A part of the meeting, the group posed below for a photo. Appearing from front to back and left to right are Bill Hanagan, Dave Hockenberry, Rob Greybill, Nico Carver, Rob Lancaster, Dana Wright, Bob Trebilcock, and Ron Worden.



Woodside Farm Creamery Outreach Events in 2018

Jeff Lawrence



- | | |
|------------------------------|---|
| Friday, June 22: | 7:30 – 9:00 (rain date Saturday) |
| Saturday, July 21: | 2:00 – 4:00 solar (no rain date) |
| Friday, August 17: | 7:00 – 9:00 (no rain date) |
| Friday, September 14: | 6:00 – 8:00 (rain date Saturday) |
| Friday, October 12: | 6:00 - 8:00 (rain date Saturday) |

Summer 2018 AP-SIG Meetings

Bill Hanagan

AP-SIG meetings this summer are tentatively scheduled for Saturday June 16, Saturday July 14, the weekend of August 10 / 11, and the weekend of August 31 / September 1.

As usual, the exact time, location, and other details for these meetings 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.

Anyone interested in astrophotography, from curious beginner to expert, is welcome to attend! But, if you're a visual observer, please note that while you're always welcome to come out to AP-SIG meetings to learn about imaging, the lighting conditions at our meetings are sometimes less than ideal for simultaneous visual observing because of the computers and cameras in use. 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.

June 16 AP-SIG Meeting Details

The June AP-SIG meeting will be at Mt. Cuba and the Sawin / SkyShed POD on Saturday, June 16 beginning at 7:30 PM. In anticipation of the upcoming favorable apparition of Mars, the special topic for the June meeting will be Planetary Imaging and Planetary Image Processing.

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 along to promote the discussion of image acquisition and processing techniques. Jupiter and Saturn are interesting subjects for several months every year, but in 2018 we also have a "favorable" apparition of Mars in terms of the angular size it will reach at opposition. Mars will be > 24 arc-seconds in size from July 23 through August 9, which is 97% of the size it reached during the last "favorable" apparition in 2003. Unfortunately, it will also be about 10 degrees lower in the sky as it crosses the Meridian. Even so, don't miss it! Mars won't get this large again for many years.

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.

Woodside Creamery - May 25th, 2018

Fred De Lucia

May 25, 2018 Woodside Creamery Telescope Night. DAS members Rob Lancaster, Jeff Lawrence, Greg Lee, Jim Chang, Mark Mitchell and Fred De Lucia thrilled ice cream customers with views of the Moon and Jupiter while those waiting in line for a view were entertained by Jack Goodwin and Amy Hornberger with Leo and Otto.



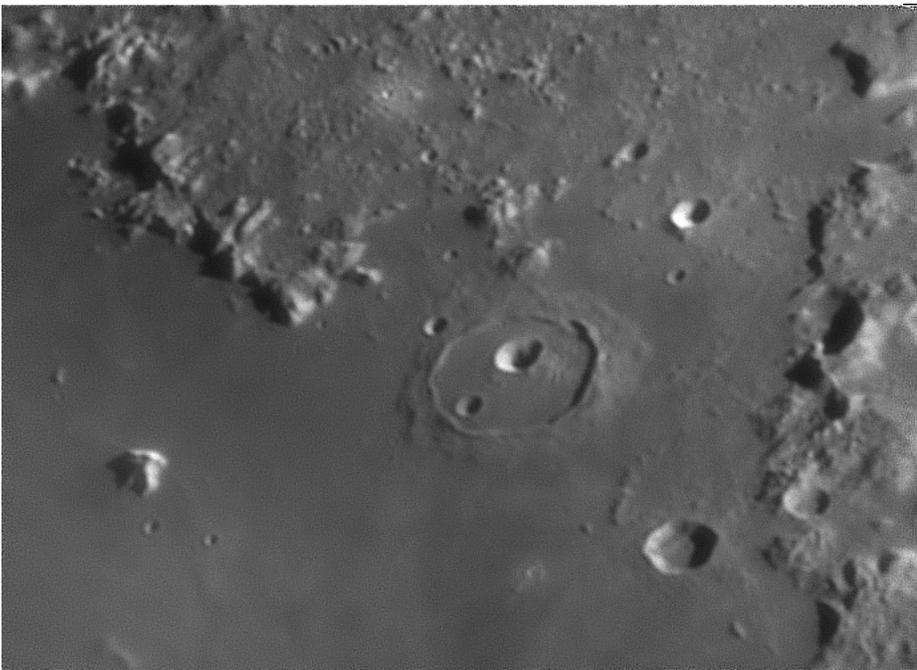
06/19/18 DAS Board Meeting Agenda

1. Review of Minutes from Last Meeting—Bill McKibben
2. Treasurer's Report—Diana Metzger
3. Approval of Scope donation—Rob Lancaster
4. Update to Contacts page—Nico Carver
5. Sawin Security, rekey and camera—Jack Goodwin
6. DAS Picnic—Amy Hornberger
7. Mount Cuba Work Days and Pods Project—Dave Groski

**WELCOME
NEW MEMBER
Ravi Clough
to the DAS!!**



Photo by AP-SIG Member Mark Mitchell



Technical information

Target: Moon. (Mag -10.7, 31.9', 1.25 light seconds, 8.5 days old)

Date: 5-23-18

Location: Hockessin, Delaware

Telescope: ED127 with 3X Barlow
f7.5 (f 22.5), theoretical optimum = f 18.75

Mount: Vixen SXP, unguided

Camera: QHY 5L II (my guidescope)

Temperature: Ambient = 65°F

Filter: IR cut

Exposure: Best 500 of 1000 frames

Software: FireCapture. AutoStakkert2.
Registax 6. Photoshop CC 2018.

Observer: Mark L. Mitchell. markm2315@comcast.net

Notes: The central feature is Cassini, a flooded crater with two craters from subsequent strikes in the central plain called Cassini A and B. Lunar observers sometimes use their ability to see the irregularities in the floor of Cassini as a measure of telescope resolution and seeing. The crater is 57 km across, or about the distance from Mt. Cuba to Camden, New Jersey. The mountain range to the west-north-west is the lunar alps. The pentagonal crater to the south-east is Theaetetus (a friend of Plato), and the isolated mountain to the west is Mons Piton (2250 m high). A small crater at about 11 o'clock has a ring of bright material around it showing lighter colored ejecta from lower layers of crust material.

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)

Photos by AP-SIG Member Ron Worden



Technical Information:

Target : M101 (NGC5457)
Constellation: Ursa Major
Right Ascension: 14h 03m 12.6s
Declination: +54° 20' 57"
Distance: ~21m ly
Apparent magnitude: 7.86
Apparent size: ~170,000 ly 28'.8x26'.9
Date: 05/21/2018
Location: Snobie Observatory/Lincoln Control Center.
Bear, Delaware W75° 40' 43.04" N39° 34' 39.7"
Telescope: Meade 10" SCT + Meade 6.3 Focal Reducer 1575mm FL
Mount: Losmandy G11 Guided with Dithering
Cameras: SBIG ST2000 + ZWO174 autoguider(+/-2 arcsec)
Temperature: 64°F cooled to -20°C
Filters: L,Sii,Ha,Oiii
Exposure: 13LFs-4x300sec subs + 9x600sec subs (1 hr. 50m)
Software: PixInsight
Frame: 19.4x25.8 arcmin
Calibration with: 50 bias frames, 10 dark frames
Observer: Ron Worden

Technical Information:

Target : M51 (NGC 5194) The Whirlpool Galaxy. Small companion NGC 5195
Constellation: Canes Venatici
Right Ascension: 13h 29m 52.7s
Declination: +47° 11' 43"
Distance: ~23 mly
Apparent magnitude 8.4
Apparent size: 11'.2 x 6'.9
Diameter: 60,000 ly
Date: 04/20/2018
Location: Snobie Observatory/Lincoln Control Center.
Bear, Delaware W75° 40' 43.04" N39° 34' 39.7"
Telescope: Meade 10" SCT + Meade 6.3 Focal Reducer 1575mm FL
Mount: Losmandy G11, Guided with Dithering
Cameras: : SBIG ST2000 + SSAG autoguider(+/-2 arcsec)
Temperature: 45°F cooled to -20°C
Filters: L,Sii,Ha,Oiii
Exposure: 15LFs--9x600sec subs + 6x300sec subs(2.0 hrs.)
Software: PixInsight
Frame: 19.4x25.8 arcmin
Calibration with: 50 bias frames, 10 dark frames
Observer: Ron Worden



Photo by AP-SIG Member Nico Carver



Technical Information

Object: IC4592; IC4601; “Blue Horsehead Nebula”

Description: IC4592 is a large reflection nebula that I captured here with a Stellarvue SVQ86 refractor, a Canon 5D mk3 camera, and my Orion Atlas mount. It was captured at the Delmarva Stargaze in May 2018.

Processed in PixInsight and Photoshop.

Acquisition Dates: 05/20/18

Locations: Trap Pond State Park, DE

Optics: Stellarvue SVQ86

Mount: Orion Atlas EQ-G

Camera: Canon 5D Mark III

Guiding: ZWO ASI290MM Mini and Astromania 60mm guidescope

ISO: 800

SQM Reading: 20.5

Integration Total: 2.0 hours; 24x300”

Software:

Mount Control: EQMOD; Planetarium: Cartes Du Ciel; Acquisition:

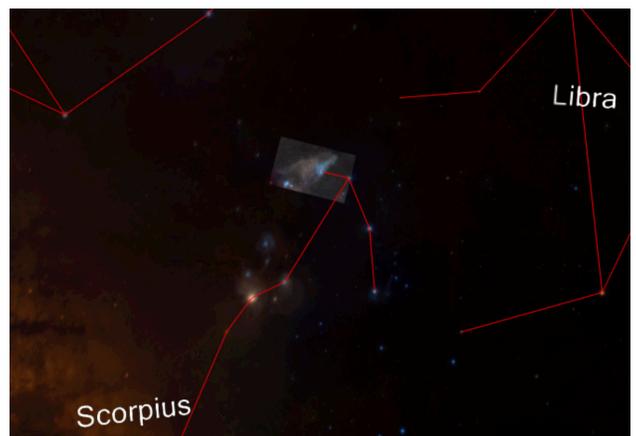
BackyardEOS; Guiding: PHD2; Polar Alignment: QHY Polemaster;

Processing: PixInsight 1.8.5 and Photoshop CS6

RA/DEC Center: 243.519; -19.335

Orientation (E of N): 194 degrees

Awards: AstrobIn Image of the Day, May 21, 2018; Stellarvue Stellarshot of the Week, May 23, 2018



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 field 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.

Astronomical League Dues

Astronomical League dues are due. Annual dues is \$7.50. Please send your check made payable to the AL to Diana Metzger, 604 Baldwin Lane, Wilmington, DE 19803.

For those who are new and are wondering what is the Astronomical League and why would I want to join. The Astronomical League (AL) is an umbrella organization of amateur astronomy clubs and societies. The mission is to promote the science of astronomy through encouraging public interest by local astronomy groups. Currently there are 65 observing programs from basic astronomy to the very challenging. If you are looking for something to do, the AL has a program for you. Your membership also includes The Reflector, a quarterly newsletter. The AL also keeps you updated on International Dark Sky Association.

If you have any questions, please contact me at klynnking@verizon.net.

Pocomoke River State Park Events

Come out and join the Delmarva Space Sciences Foundation as they support the Pocomoke River State Park move towards their goal of becoming IDA certified as an international dark sky location. The Foundation will be assisting with 3 of these events providing free telescope viewing of the night sky. Starting on June 1st, (Rain 8th) July 6th (Rain 20) and August 24th (Rain 31). Location: Pocomoke River State Park: Shad Landing, 3461 Worcester Hwy, Snow Hill, MD 2186 If you can help contact Ryan Goodwin at: ragoodwin08@yahoo.com

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.

DAS CONTACTS

Please Call Any of Us With Your Concerns or Problems

Officers:

President: Rob Lancaster -- RLancaste@gmail.com -- also, Webmaster

Vice-President: Jeff Lawrence -- Jeff@DelAstro.org -- (302) 668-8277 -- also, Program Chair

Secretary: Bill McKibben -- BillMcK21921@comcast.net

Treasurer: Diana Metzger -- (302) 290-2108 -- DMetzgerMD@gmail.com

Board Members at Large:

Bill Hanagan -- (302) 239-0949 -- hanaganw@verizon.net -- also, Astro-Photography Special Interest Group (AP-SIG) --Amateur Telescope Making Special Interest Group (ATM-SIG)

Amy Hornberger

Dave Groski

Standing Chairs:

Observatory: Jack Goodwin -- (610) 457-2945 -- Jack_Goodwin@yahoo.com

Education: Ted Trevorrow -- (302) 593-7949 -- edt750@verizon.net

Library: Maria Lavallo and Sue Bebon

Astronomical League Coordinator: K Lynn King -- klynking@verizon.net

Observing Chair: Greg Lee

Nominations Chair: Amy Hornberger -- ahornberger@gmail.com

Elections Chair: Nico Carver -- (302)353-2448 -- nicocarver@gmail.com -- also, interim FOCUS editor

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!**

