

# THE MERIDIAN

Newsletter of the  
Quad Cities  
Astronomical Society

[www.qcas.org](http://www.qcas.org)



**FEBRUARY 2018**

**QCAS Mission Statement:**

To stimulate an interest in the science of astronomy in the Quad Cities Area, to nurture an ongoing desire by Quad Cities Astronomical Society members to study the cosmos and to provide members of our community opportunities to experience the beauty and joy of Astronomy.



## Presidents Greeting:

I know that this is the February issue; however, since it is still January, and the January Meridian was sent out in December, I feel it appropriate to again wish you all a very prosperous, and most of all happy New Year.

As we accomplished quite a bit last year... new Bylaws, cleaning out the block house and finding homes for all of the forgotten items it housed, designing our public outreach, modifying meeting time, place, and format, another successful EISP, our first annual Meteor Shower Party, Annual Solar Day, and Annual Banquet events, the solar eclipse, and last but very much not least, continued partnership with PAC, Pleasant Valley High School, and Bettendorf High School... we have a pretty hefty set of plans for 2018!

I maybe should have said <sup>van</sup>Hyfte plans as Steve wants to continue fixing up the 20" Newt... those at the last Society meeting heard the details... and in plans, we are hoping to have plans drawn up for a new roll off roof building. We are thinking a 24' X 32' structure which would house both the 20" and 16" Newts, as well as have piers/pads for members to set up on and leave up over weekend stints. The primary goal is to get plans, material list, and artist renditions put together in order to try to obtain funding. My prospective benefactor passed away early in December, so we are kinda shooting for my next thoughts for collecting \$\$\$...

Along with a renewed 20" Newt, and forging ahead with relocating to Menke, we hope to have a new website up and running... the devil is in the details when it comes to all of this, but we are on it!

We still are planning on our 4 main events... 2 public, and 2 for amateur astronomers only... this year. These would be the April Solar Day event at Bettendorf High School and the August Meteor Shower Party at Pleasant Valley High School for the public, and the March Messier Marathon and Eastern Iowa Star Party for amateur astronomers. We are planning a mini event for QCAS only... in memory of Wayne Jens, I thought we could set up 1 or 2 scopes on June 21<sup>st</sup>, in town for solar viewing....

We still will have our public nights, but they will be geared more for our members to get together to spend a bit of time under the stars doing a little astronomy in a unified fashion... this should be a bit educational and provide everyone with a varied experience!

In an email or two, and in a Meridian or two, and in a meeting or two, I asked for suggestions as to what types of presentations you'd be interested in having at meetings... keep the ideas coming!

Ok.... I rambled enough... on with 2018!

Clear skies, Jeff

## **Last Society Meeting Minutes:**

### **Date/Time Location**

6:30 PM on Monday, January 15<sup>th</sup>, 2018  
105 McCarthy, St. Ambrose University, Davenport, IA

### **Attendance** (9 in attendance)

Jeff Struve, Robert Mitchell, Paul Levesque, Alan Sheidler, Ken Boquist, Craig Cox, Matt Neilssen, Ian Spangenberg, Steve VanHyfte

### **Presentations**

#### New Gear

- Lunt Zoom Eyepiece – Craig Cox
- Red/White Headlamp/Flashlight – Alan Sheidler
- Celestron NexStar 130mm for PVHS – Ian Spangenberg
- Celestron Vixen 55mm Fluorite Refractor – Steve VanHyfte
- Hotech SCT Collimator – Jeff Struve
- “Observing and Measuring Visual Double Stars” – Jeff Struve
- American Girl, Luciana Vega Doll – Jeff Struve

#### Member Outings

- 01/09/18 Adler Planetarium – Jeff Struve
- 01/13/18 Ken Boquist continued working on Astronomical League certifications

#### Announcements

- Mark Roberts, Education Coordinator, Clinton County Conservation is posting our 2018 calendar on line.
- Win 10 update KB4056892 – ASCOM driver conflict
- 1/20 and 2/17 are public nights at Jens Wendt Observatory, pending weather

#### Main Presentation

Jeff Struve presented a 15 minute presentation he put together about the Moon. This presentation, as the previous one presented on Binary Star Systems, is designed to be also used to kick off public events on those topics.

#### Treasurers Report

- Balance - \$4624.38
- Matt emailed out a 2017 Recap regarding our finances.
- We still need to do a complete inventory.
- Jeff Struve worked with Matt Neilssen to complete the log in process to accept a donation from Verizon, Matt’s employer.
- Don’t forget membership dues! \$20 per individual and \$10 per each family member! – Deadline is March 31<sup>st</sup>.

#### Review of Minutes

The December Minutes as per the January Meridian were approved.

#### Old Business

- The doors at McCarthy Hall are kept locked when school is not in session. These dates are as follows: January 15, May 21, June 18, July 16, and December 17... On those meeting dates, the doors will be open from 6:30 PM and locked again at 7:15 PM. If you are running late, and need access after 7:15, text Jeff at 309-737-0206 and we’ll send someone to let you in. We hold a brief social/Open Discussion time from 6:30 until the meeting starts at 7:00 PM. If you otherwise find the doors locked, on for Society Meetings if the doors are locked when you arrive.

- Future Society meeting presentations requested:
  - George Bailey
    - Measure double stars – position, angle, separation
    - Measuring variable stars – magnitude
  - Ken Boquist
    - Local weather forecasting for astronomical viewing
  - Ian Spangenberg
    - Black Holes
    - Orbital Mechanics (He can give the presentation in March)
- March 16 – 18, 2018 is our Messier Marathon at Menke Observatory... please plan to attend!
- Discussed relocating the Jens Wendt Observatory to the Menke Observatory site. We feel that a 24' X 32' structure will meet our needs in housing the 20" and 16" Newt's as well as additional pads/piers for member use.
- September 7 – 9, 2018 is the EISP... speakers are shaping up!
- Steve VanHyfte brought up doing a bit of work on our 20" Newtonian:
  - Drive cover replacement
  - Fix focuser flip mirror to work properly
  - Primary mirror is binding – repair
  - Adjust the altitude for proper polar aligning

#### **New Business**

- Future Presentations:
  - February Meeting - American Astronomy Convention by Dr. Mitchell
  - March Meeting - Orbital Mechanics by Ian Spangenberg
  - Future Meeting - Weather Forecasting by Christen Allen
  - Future Meeting – Alan Sheidler has a number of presentations that he had previously used for other activities
  - (Matt to supply Dry Erase Markers for use on the white boards)



## **Next Society Meeting:**

### **Date/Time Location**

6:30 PM on Monday, February 19<sup>th</sup>, 2018  
105 McCarthy Hall, St. Ambrose University, Davenport IA

### **February Presentation**

Dr. Mitchell will give a presentation on his participation in the American Astronomy Convention

Presentations for future meetings include orbital mechanics by Ian Spangenberg, Christian Allen on weather forecasting the QCA, Jeff Struve on the RSpec Spectroscopy software, Carl Wenning on the Astronomical League, and Alan Sheidler on topics to be agreed upon. Contact Jim Rutenbeck or Jeff Struve if you'd like to make a presentation.

### **Other Business**

- 20" Newt Refurb
- Observatory Relocation
- New Web Site

## **Last Board Meeting Minutes:**

### **Date/Time Location**

Thursday, January 4<sup>th</sup>, 6:30 PM to 8:30 PM  
Village Inn – Elmore, Davenport

### **Attendance**

Jeff Struve – Present  
Craig Cox – Present  
Robert Mitchell – Present  
Matt Neilssen – Absent  
Dana Taylor – Absent  
Jim Rutenbeck – Absent

### **GUESTS**

Steve VanHyfte - Present

### **Agenda**

- February Board Meeting date change
  - Move to Thursday, February 8<sup>th</sup>
- Administrative
  - Main agenda topics for 2018
    - New Website
    - Moving Jens Wendt Observatory to the Menke site
  - Treasurer Report
    - Verizon donation offered
    - Membership dues not received by March 31<sup>st</sup> result in membership lapse
    - We need to do a complete inventory of items owned
    - Balance \$4469.38
  - Trifolds
    - Jeff to try to have drat ready for the February Board meeting
  - Membership Registration/Renewal Forms
    - Jeff have ready for Feb Board Meeting
  - Membership Cards
    - Use current until they run out

- Jens Wendt Observatory Relocation to the Menke site
  - Revamp 20" (Steve VanHyfte) – Mirror cell revamp to 18 point (we are 9 point), Mirror edge support, Flip mirror, Replace the drive cover – Tentative completion date, July 14<sup>th</sup> Public Open
  - Roll off Roof Building – 24' X 32'
  - Piers for 16" and 20" Newtonians and room for tripod mounted scopes
  - Poured floor – Expansion joints to eliminate vibrations
  - Roll off Roof building to be frame, Dome Building to be concrete block for aesthetically matching the current structures – have a warm room for PC remote control?
  - 6' walls with an additional 18" wall built onto roof for head room when roof is closed
  - Additional electrical capacity
  - Additional pads w/electricity outside
  - Make sure Wi-Fi band width is sufficient
  - Dr. Mitchell will check for the Menke Roll Off Building plans and see if their Engineering Class will take on drawing prints and materials list for our building.
- Web Site
  - 2018
    - Treasurer Info (Board Member Access)
    - Minutes
    - Applications
    - Links
    - Approved budget of up to \$2500.00 for web site less picture gallery
- 2018 Calendar
  - March, Friday 16 – Sunday 18 is the Messier Marathon
  - April, Sat 21 – Astronomy Day w/evening Public Night – BHS
    - BHS is on board!
  - August ,Sat 11 – Meteor Shower Party w/Constellations and Mars – PVHS
    - PVHS is on board... may hold the event at the Jr. High... better location
  - September 7-9 EISP
    - Dr. Siperia – Honorarium - \$100
    - Dr. Anderson Honorarium - \$200
    - 3<sup>rd</sup> speaker? – Student \$75
    - Charge \$25 for EISP
  - 03/14/18 (Wed) – Sherman Park requested event for the Iowa Association of Naturalists Statewide Workshop – Placed on 2018 calendar
  - Public Nights
    - Lights Off Signs and Parking Area Signs
      - Craig will investigate
    - Canned Presentations
      - Board approved the idea
      - Jeff has 2 presentations totally automated and ready for use
  - Add SAU Menke Nights to the calendar



## Next Board Meeting:

### **Date/Time Location**

Unless otherwise noted, Board Meetings will be held on the 1<sup>st</sup> Monday of the month at 6:30 PM at the Village Inn Restaurant on Elmore and 53<sup>rd</sup> in Davenport, IA. Please notify Jeff Struve if you plan on attending so seating arrangements can be made. Ordering from the menu is Dutch treat.

The February Board Meeting will be held on Thursday, February 8th

### **Agenda**

- New documents
  - Trifold
  - Application Form
  - Membership Renewal Form
  - Membership Cards
- Observatory Relocation
- Discuss the new web site

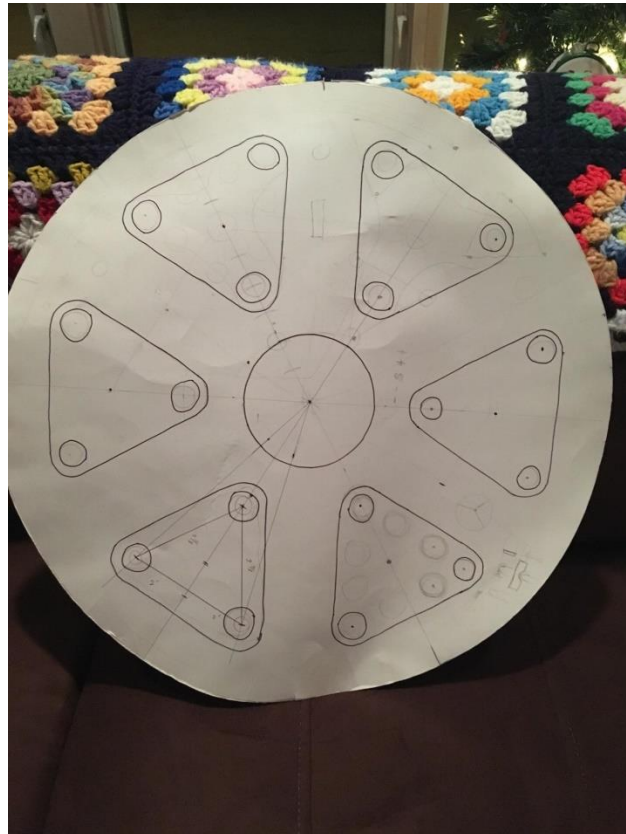
### **New Business**

- Discuss work to be done on the 20"
- Discuss continued inventory
- Discuss selling our heavy fiberglass step ladder and replacing it with an aluminum ladder for use in the roll off roof building.

### Secondary Topics

- Intro to Spectroscopy class
- PixInsight meetings/class

Steve's template for the remounting of the mirror on the 20"



## **Member Spotlight:**

- None this month – Subject Member Needed!

## **Submitted Articles:**

# HoTech advanced CT laser collimator

Fri Mar 11, 2016

Submitted by Ian Todd

**Magazine Verdict:** 5/5



Take your time with this accessory and you won't be disappointed

The HoTech advanced CT laser collimator fills a niche in the collimating arsenal that is normally dominated by equipment for Newtonian telescopes – being designed with Cassegrain telescopes in mind. Any telescope mirror can suffer from slight slippage, where the optical axis fall out of alignment, known as miscollimation. Compared to Newtonians, this is less of a problem in compound telescopes, but nonetheless the optics can occasionally become misaligned, leading to degraded performance. This is where this laser collimator comes into its own.

At first glance, this accessory doesn't look like your everyday laser collimator – it doesn't slot into the focuser like the ones designed for use with Newtonians for a start. Instead it is made up of a laser target display that sits in front of a compound telescope, a fine adjustment adaptor to attach this target to a tripod, and a 1.25- or 2-inch reflector mirror that slots into the focuser at the back of the telescope to be collimated. Also included are a soft carry case and a 3V CR123 lithium battery to power the laser.

In principle, the collimator is simple to operate. Indeed, once set up it does make collimating a compound telescope relatively easy. However, the devil is in the detail, and great care does need to be taken in the initial setting up of the target display in relation to the telescope's optical axis. This really came to light when we performed our initial collimation on a borrowed early model 8-inch Schmidt-Cassegrain.

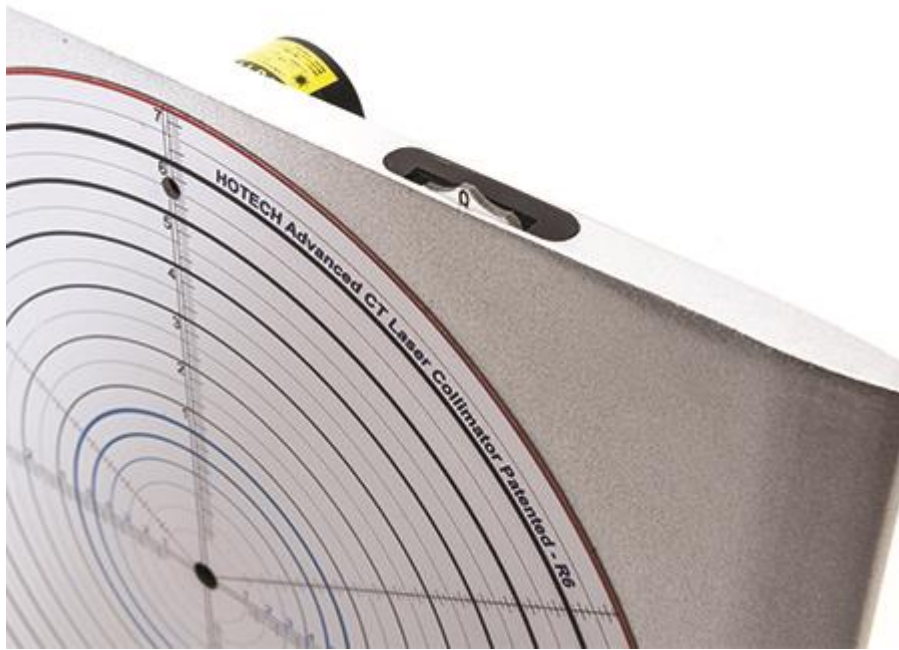
### **Target acquired**

We deliberately threw out the scope's collimation and then used the collimator to realign the mirror. It looked to be successful, but when we performed a star test we found all of the stars to be comet shaped. The solution was two-fold: first we needed to co-align the target and telescope. The second consideration was that if you primarily image with your setup, then you need to collimate with the rear reflector in the focuser, but if you mainly use it for visual observing you need to collimate with your star diagonal attached and the rear mirror installed in that instead. The quality of your star diagonal will also affect the accuracy of the collimation, so it's worth investing in a good one.

We set up the target display again and spent at least 45 minutes lining it up as accurately as we could with the telescope's optical axis. We did this by adjusting the tripod's height and position carefully. We have to emphasise that this is the most critical step – if the target display is not aligned properly with the telescope then it can affect the result of the collimation, as we discovered.

We diligently followed the instructions supplied and, once happy that everything was set up and the target display aligned, we once again made small adjustments to the secondary mirror. When we were happy with the position of the lasers back on the target we again took the telescope outside for another star test. This time it was spot on, the focused stars being sharp points of light, while the intra and outer focus cones of light were concentric.

The collimator is designed for use with compound telescopes that have apertures of at least 7.5 inches, but we also used it successfully with our 7-inch Maksutov. So long as the three laser beams can pass into and back out of the front of the telescope without being impeded, it should work, though we did feel our 7-inch Maksutov was probably close to the smallest scope it could collimate. When everything is followed carefully to the letter and particular attention is paid to the initial setup stage, this accessory does its job brilliantly.



### **An effective process**

The Advanced CT Laser Collimator works by creating three parallel beams of light that simulate the path of light from a distant star. This means you can collimate your scope indoors or in daylight – in other words, in the absence of a real star – without cloud or atmospheric distortion affecting the process.

Not only that, but the target can be placed only a few feet away. Usually the length of the telescope tube will work, but a little farther does help to improve the accuracy. Starlight passes through the scope, reflects off the back of the reflector mirror at the focuser end, and returns to project the three beams onto the target display. The target has concentric circles as guides and the aim is to adjust the collimation until the three returning beams all fall on the same concentric circle, ensuring the optical axis is truly aligned.

Being able to perform this collimation of your scope indoors is a great advantage. Once we got the knack of setting it up we found it a breeze to collimate our instruments.

**Target display** - The target display is machined from a solid block of aerospace-grade aluminium, hardened and anodised to give a rigid unit. At the front is a series of concentric circles with a graded scale, allowing you to position the returning laser beams accurately.

**Mode selector** - The mode selector gives a range of options: Mode 0 is off, Mode 1 turns the crosshair laser on, Mode 2 turns the crosshair laser and alignment lasers on, while Mode 3 turns both of those and the target backlight on. This final mode is for night usage.

**Rear Schmidt-Cassegrain 1.25- or 2-inch reflector mirror** - When purchasing the collimator you specify which rear reflector mirror you require for your setup. This mirror slots into the focuser and reflects the three laser beams back to the target display. The outer surface also has a reticule on it and allows you to see the laser positions.

**Fine adjustment tripod adaptor** - The fine adjustment adaptor allows much closer control of aiming the target lasers squarely at the telescope, so that they fall back on the target display. Sideways and horizontal positioning with the tripod is performed first, then fine adjustments can be made using the adaptor.

**Target display lasers** - The lasers provide the three parallel beams (simulating the light path of a distant star), a crosshair and a diffuse cone of light. The crosshair and light cone help you to obtain co-alignment of the target and telescope, which is vital for accurate collimation.

*This review originally appeared in the November 2014 issue of BBC Sky at Night Magazine. All prices correct at time of going to press.*

### **Gallery**

- None this month – Subject Member Needed!



## For Sale – Wanted

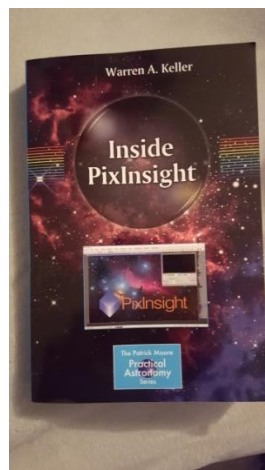
### For Sale:

- A gentleman by the name of Jerry Hansen is selling his telescope, filters, and other associated equipment. If you are interested in finding out more about it, please let me know and I will send you his contact information so you can find out more and negotiate directly with him (if interested). It looks like a nice unit. Thanks. Al Sheidler. [ADSheidler@gmail.com](mailto:ADSheidler@gmail.com)

### **INSTRUCTION MANUAL 6", 8" & 10" STARFINDER REFLECTING TELESCOPES**



- New 2<sup>nd</sup> Addn "Inside PixInsight" by Warren Keller. \$30.00 – 1 left! Contact Jeff Struve at [PwrHsePro@aol.com](mailto:PwrHsePro@aol.com)



- iOptron ZEQ25 mount with battery style counterbalance weight - \$650.00 Contact Greg Weinberg at [DrHappyTooth@gmail.com](mailto:DrHappyTooth@gmail.com)



**Editor's Note:**

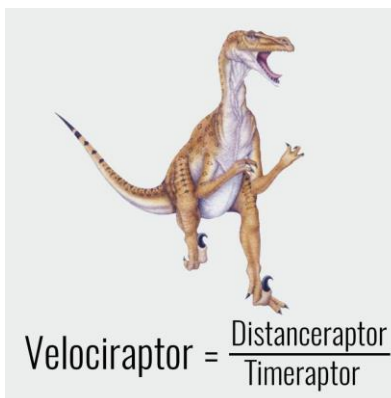
Please help improve the substance of our newsletter by submitting articles and pictures for publication. Variety is the spice of life... be spicy!

Types of articles that would really be interesting could include What's In the Sky This Month, equipment reviews, experiences you've had in astronomy, sketches you've drawn, trips you've taken to observatories or star parties, a high level overview of your favorite astronomer, movie, book or article reviews, list astronomy gear that you want to buy or sell, and of course pictures you've taken and how they were done...

If each member submitted 1 article per year we could have an incredibly varied and interesting newsletter... that is my challenge to you!

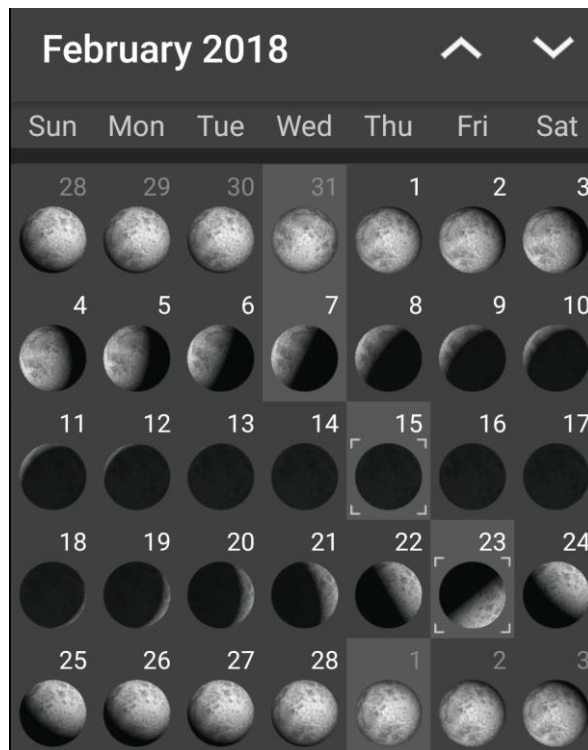
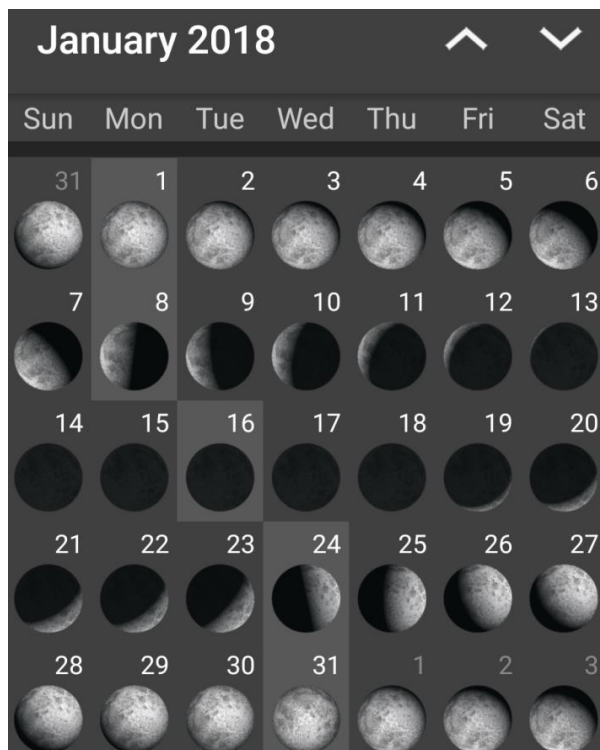
Also.... Drop an email, text, or make a phone call or two... members want to get together outside of normal club events to discuss and work on our hobby!

Jeff



## **Calendar of Events – 2018**

01/04/18 – Board Meeting  
01/15/18 – Society Meeting  
01/20/18 – Public Night at Jens Wendt (Waxing Crescent 5:00 PM Intro to Spectroscopy and Double Stars Presentation)  
02/05/18 – Board Meeting  
02/17/18 – Public Night at Jens Wendt (Waxing Crescent 5:30 PM Intro to Imaging Presentation)  
02/19/18 – Society Meeting  
03/05/18 – Board Meeting  
03/14/18 – Sherman Park requested event for the Iowa Association of Naturalists Statewide Workshop  
03/16-18/18 – Messier Marathon  
03/19/18 – Society Meeting  
03/24/18 – Public Night at Jens Wendt (First Quarter 7:00 PM Orion and Other Nebulae Presentation)  
04/02/18 – Board Meeting  
04/16/18 – Society Meeting  
04/21/18 – Bettendorf High School Astronomy Day w/evening Public Night at Jens Wendt (Waxing Crescent 8:00 PM EAA Presentation)  
05/05/18 – Menke Public Open  
05/07/18 – Board Meeting  
05/19/18 – Public Night at Jens Wendt (Waxing Crescent 8:30 PM Presentation???)  
05/21/18 – Society Meeting  
06/04/18 – Board Meeting  
06/09/18 – Menke Public Open  
06/16/18 – Public Night at Jens Wendt (Waxing Crescent 8:30 PM Star Cluster Presentation)  
06/18/18 – Society Meeting  
06/21/18 – Wayne Jens Memorial Solar Observing Day  
07/02/18 – Board Meeting  
07/07/18 – Menke Public Open  
07/14/18 – Public Night at Jens Wendt (Waxing Crescent 8:30 PM Presentation???)  
07/16/18 – Society Meeting  
07/21/18 – Niabi Zoo w/PAC  
08/04/18 – Public Night at Jens Wendt (Last Quarter – 8:00 PM Planets Presentation)  
08/06/18 – Board Meeting  
08/11/18 – Pleasant Valley High School – Meteor Shower Party w/Constellations and Mars  
08/18/18 – Menke Public Open  
08/20/18 – Society Meeting  
09/06/18 – Board Meeting  
09/07-09/18 – Eastern Iowa Star Party  
09/15/18 – Menke Public Open  
09/17/18 – Society Meeting  
09/29/18 – Public Night at Jens Wendt (Waning Gibbous – 7:00 PM Moon Presentation)  
10/01/18 – Board Meeting  
10/13/18 – Public Night at Jens Wendt (Waxing Crescent 6:30 PM Andromeda and other Galaxies Presentation)  
10/15/18 – Society Meeting  
10/20/18 – Niabi Zoo w/PAC  
11/05/18 – Board Meeting  
11/10/18 – Public Night at Jens Wendt (Waxing Crescent 5:00 PM Presentation???)  
11/17/18 – Niabi Zoo w/PAC  
11/19/18 – Society Annual Dinner Meeting and Elections  
12/03/18 – Board Meeting  
12/15/18 – Public Night at Jens Wendt (1<sup>st</sup> Quarter 4:30 PM ISS, Satellites, Iridium Flares Presentation)  
12/17/18 – Society Meeting



**QCAS Correspondence:**

Please contact the society at: P.O. Box 3706, Davenport, IA, 52808.

Members are welcome and encouraged to submit articles for The Meridian. Submit any and all interesting items (via e-mail) to: [PwrHsePro@aol.com](mailto:PwrHsePro@aol.com) and/or [MitchellRobertC@sau.edu](mailto:MitchellRobertC@sau.edu)

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