

THE MERIDIAN

Newsletter of the
Quad Cities Astronomical
Society
www.qcas.org



JULY 2017

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

Hi all!

First, I apologize that this issue is out so late... just not enough time in the day for everything! It would be great if someone volunteered to take over this publication... think about it a bit!

So... a few words about events:

05/27/17 – Open House at the Jens-Wendt Observatory... yep, we got weathered out again, so we cancelled!

06/03/17 – Menke Observatory Public Open House... weather prevented the scheduled guests from attending... Craig and I met Dr. Mitchell out at the observatory, and did a bit of computer controlled practicing.

06/19/17 – Society Meeting... held as scheduled.

06/24/17 – Open House at the Jens-Wendt Observatory... wow, great membership attendance! Thank you!!!

07/15/17 – Menke Observatory Public Open House... Hope the weather holds and you all can attend!

07/17/17 – Society Meeting... Our next meeting.

07/29/17 – Open House at the Jens-Wendt Observatory... our next public night.

08/12/17 – SAU/QCAS Perseid Meteor Shower Party... Unfortunately, I am thinking of cancelling this event. After filling out appropriate forms, I still have not heard back from the park and recreations folks...

08/21/17 – Solar Eclipse... YES!!!

08/21/17 – Society Meeting... Cancelled due to the solar event... if in town, stop by the Putnam to give Dale a hand.

08/26/17 – Open House at the Jens-Wendt Observatory

09/18/17 – Society Meeting

Clear Skies!
Jeff

Last Society Meeting Minutes

Date/Time Location

6:30 PM on Monday, June 19th
Bettendorf Public Library

Attendance (10 in attendance)

Jeff Struve, Craig Cox, Robert Mitchell, Dana Taylor, Alan Sheidler, Jim Rutenbeck, Paul Levesque, Mike Dannenfeldt

Guests – Byron Davies, Don Robinson

Presentations

Outings

- Alan advised that PAC had an outing on May 30
- Jim Rutenbeck did a bit of viewing in S. Dakota... there was a full moon so not much to report he also did a bit of viewing in Wisconsin, mainly viewed Jupiter and Saturn.

New Gear and First Lights

- Dana Taylor advised that he purchased an 8" MAK for eclipse. The purchase included a tele compressor/reducer to change the scope to an F6.5... he will put his Nikon D750 full frame dsr and piggy back his Nikon D90 w/300mm telephoto, and use his drone with go-pro camera for the solar eclipse. Dana also brought in an exhaust fan interlock that he made by 3d printer for use in shutting off the fan when we open the roll of roof building.
- Craig talked about ordering new and shorter trusses for his dob... to help reduce the problems with lack of in-focus.
- Jim Rutenbeck talked a bit about his escapades with the 8" refractor he got from the clubs house cleaning.

Astro Suggestions and Tips

- Jeff Struve talked about using 2 short dovetails to build a mechanism to hold 2 cameras onto a single mount rather than buying a dual saddle.
- Jim Rutenbeck talked about working with a camera tripod head that only tilts about 30 degrees and to reverse the direction of the scope so it will reach the Meridian.
- Byron Davies talked about his Hypertuned Cg5 mount and the benefits of this modification.
- Paul Levesque was in New England a couple weeks ago... they are selling an Eclipse Magazine.

Main Presentation

- Dana Taylor gave a great talk filling us in on the January Star Trek Cruise.... Lots of celebrities were in attendance... Hey Dana... nice Spock ears!

Treasurers Report

- Matt reports that we have \$4278.93 as of today
- Please check with your places of employee to see if they have grant programs that we can take advantage of... We have utilized collecting funds from MidAmerican Energy, 3M, and potentially Verizon... funds are needed to advance the direction of the club!

Review of Minutes

The May Minutes as per the June Meridian were approved.

Old Business

8/12 – Meteor Shower Party

- Waiting for reply from the Park Board. Last 2017 QCAS public event

8/21 – Eclipse

- Need help at the Putnam
- Cancel Society Meeting

9/22-9/24 – Eastern Iowa Star Party

- Need to start preparing now; trying to get guest speaker to talk about meteor/asteroid impacts; not doing bunks this time; how to do donations for raffle?; Explore Scientific promotion? Grand prize?

Bylaws

- Matt and Jeff almost done reviewing them, will send general email about revisions; currently have newly elected president and Board take over immediately, should have a transition period.

Website

- Matt still working on it

New Business

06/21 – Menke Undergrad Summer Research Institute Party

- Robert, Jeff, Craig

07/25 – PV Girl Scouts

- Jeff and Craig will attend

11/20 – Annual dinner meeting.

- We are considering the Chinese Palace on Elmore or the Pizza Ranch in Bettendorf; both have a variety of food items to choose from. In either case, everyone goes Dutch.
- This is Thanksgiving week: change to better time for people?

Relocate Observatory to Menke

- Need to meet with the WREEC for their input.

Next Society Meeting

Date/Time Location

6:30 PM on Monday, July 17th
The Bettendorf Public Library

June Presentation

At our July 17th meeting, Jim Rutenbeck will give a talk on the various star parties he has attended.

Presentations for future meetings include Christian Allen on weather forecasting the QCA, and Carl Wenning on the Astronomical League. Contact Jim Rutenbeck or Jeff Struve if you'd like to make a presentation.

Other Business

- 8/12 Meteor Shower Party
- 8/21 Solar Eclipse
- 9/22 EISP Prep
- November Banquet Meeting

Last Board Meeting Minutes

Date/Time Location

6:30 PM on Thursday, June 5th
The Village Inn on Elmore and 53rd in Davenport, IA

Attendance

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

Mike Ombrello – Present

Agenda

Primary Topics

- Make Paul Levesque Publicist?
 - Yep! – Do we make it a position or just an assignment?
 - Not an elected position
- Facilities
 - 5/10 Meeting with SAU about moving Jens-Wendt to Menke
 - Paula McNutt Dean of Arts and Science and Cook dean of affairs
 - All see win/win...
 - Game Plan
 - TT Wapsi – Extra acre of ground
 - TT Clinton County (not sure of order)
 - Business Plan
 - Architect and Engineer (SAU Students?)
 - Money - Legal
 - Contractors
 - Society meetings at SAU
 - Rooms hold 50-100 people... same building but may have to move from room to room
 - Re-roof Block House or wait for potential move to Menke
 - Matt & Craig will go out to see if the building leaked
 - Will make recommendation for a temp and also for a permanent fix
 - \$121 at Menards for shingles
 - 3/3 present voted for shingles pending Matt's formal approval for quorum
 - \$318 at Menards for metal
 - Gopher tunnels
 - Not sure if anything can be done
 - Inventory
 - Do an inventory of the Roll Off Building
 - Afternoon of maybe practice solar then inventory then public open 6/24
 - Buy a generic laser collimator
 - Matt purchased a \$60.00 collimator for the clubs scopes

- Interview Wayne Jens
 - Letter sent on 6/05 to assisted living
 - Robert, Craig and Jeff to do interview
- Open Houses
 - Send out email reminder and blind copy everyone
 - 6/24 Jens-Wendt Observatory
 - 7/15 Menke Observatory
 - 7/21 and 7/22 rain date SAU Undergrad Summer Research Institute at Menke QCAS to help
 - 7/25 PV Girl Scout Twilight Camp
 - Craig, Jeff, Mike... offer to club
- 8/12 Meteor Shower Party
 - Still shooting for the soccer field
 - ~~Food Truck~~
 - Kid friendly but not kid oriented
 - Handouts include astronomy etiquette
 - Restrooms unlocked
 - ~~Sound System and Power Point (via Dr. Mitchell)~~
 - Paul and SAU publicize
 - ~~Radio, TV, Newspaper advertising if possible~~
 - July 3 deadline for the event
- 9/22 EISP
 - Same as last year
 - No lodge
 - Add swap meet
 - Go ahead and advertise
 - Figure out a fee
 - Explore Scientific Row
- Documentation re-write
 - Trifold
 - Astronomy Etiquette
 - Membership Application
 - Sherman Park/Menke Map
 - Large sign and yard signs
 - Bylaws
- Web Site Update
 - Preference Center
 - Need Content
 - May be ready for demo in July
- Eclipse
 - Center on and track Sun
 - Safer tracking rate
 - Easier set up... might not see the moon
- Treasurers Report
 - \$250 from 3M via Jim R
 - Balance \$4438.93
- 8/12 Meteor Shower Party
 - Radio, TV, Newspaper advertising if possible.
 - Food wagon ok.
 - Slide show for back up if cloudy... music ok... advertise for public to check the web for cancellation notice
- 8/21 Solar Eclipse
 - Dr. Mitchell is lead
 - Robert sent out an application form for a Solar Eclipse Expo meeting in June to be held in St. Louis
 - Robert will ck with SAU for trip funding
 - How much memory is needed to store the whole event as video?
 - Dale will preside at the Putnam, SAU personnel will preside at SAU
 - Reschedule 8/21 Society meeting
- 9/22 EISP
 - Same as 2016
 - Encourage a swap meet
 - No bunk house
 - Review surveys to further modify the event
- Dues/Membership
 - Jeff modified the application forms – Maybe instead, just use the modified trifold, info/calendar/courtesy/membership form.
 - Let's start using the membership cards as receipts
 - We will talk about fees when we review Bylaws
- Bylaws Rewrite
 - Discuss the standing committees
 - Review the Mission Statement
 - Jeff and Matt will review and edit the Bylaws. The rewrite will be reviewed and edited by the Board. The final draft will be sent to the membership for review. The Society will vote on acceptance at the Society Meeting that is at least 30 days post the sending to the Society
- Misc
 - Block House Inventory
 - We need to go through gear stored in the dome and in (and under) the roll off roof building.
 - Other
 - Discuss moving our Society Meetings to SAU.
 - Discuss a High School Ambassador Program
 - Club Projects
 - Learn PixInsight
 - Build a Poncet Mount for the club dob
 - Convert the 20" scope into a truss system

Things to do – Open Items

2017 Event calendar

- Advertisement/Public Notification
 - QCAS Web Site, QCAS Facebook, Davenport Parks and Rec Web Site will be our primary means of advertisement.
 - Paul Levesque has volunteered to do press release for TV, Radio, publications
- Public Nights
 - Make signs reminding public to shut off lights and park in the side lot...
 - Build trifold with info, membership form, and astronomy courtesy.



Next Board Meeting

Date/Time Location

Unless otherwise noted, Board Meetings will be held on the 1st Monday of the month at 6:30 PM at the Village Inn Restaurant on Elmore and 53rd 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.

Agenda

- Discuss the new web site
- Discuss the 8/12 Meteor Shower Party
- Discuss the 8/21 Solar Eclipse
- Discuss the bylaws
- Discuss re-roofing the Block House

New Business

- 2017 Biennial Report
- We need to talk to the caretaker at Menke Observatory about the club's access to the facility.
- Discuss selling our heavy fiberglass step ladder and replacing it with an aluminum ladder for use in the roll off roof building.

Secondary Topics

- Society meeting relocation
- PixInsight meetings



How to View the 2017 Solar Eclipse Safely

A solar eclipse occurs when the Moon blocks any part of the Sun. On Monday, August 21, 2017, a solar eclipse will be visible (weather permitting) across all of North America. The whole continent will experience a partial eclipse lasting 2 to 3 hours. Halfway through the event, anyone within a roughly 70-mile-wide path from Oregon to South Carolina (<http://bit.ly/1xuYxSu>) will experience a brief total eclipse, when the Moon completely blocks the Sun's bright face for up to 2 minutes 40 seconds, turning day into night and making visible the otherwise hidden solar corona — the Sun's outer atmosphere — one of nature's most awesome sights. Bright stars and planets will become visible as well.



Looking directly at the Sun is unsafe except during the brief total phase of a solar eclipse ("totality"), when the Moon entirely blocks the Sun's bright face, which will happen only within the narrow path of totality (<http://bit.ly/1xuYxSu>).



The only safe way to look directly at the uneclipsed or partially eclipsed Sun is through special-purpose solar filters, such as "eclipse glasses" (example shown at left) or hand-held solar viewers. Homemade filters or ordinary sunglasses, even very dark ones, are not safe for looking at the Sun. To date four manufacturers have certified that their eclipse glasses and hand-held solar viewers meet the ISO 12312-2 international standard for such products: Rainbow Symphony, American Paper Optics, Thousand Oaks Optical, and TSE 17.

- Always inspect your solar filter before use; if scratched or damaged, discard it. Read and follow any instructions printed on or packaged with the filter. Always supervise children using solar filters.
- Stand still and cover your eyes with your eclipse glasses or solar viewer before looking up at the bright Sun. After glancing at the Sun, turn away and remove your filter — do not remove it while looking at the Sun.
- Do not look at the uneclipsed or partially eclipsed Sun through an unfiltered camera, telescope, binoculars, or other optical device. Similarly, do not look at the Sun through a camera, a telescope, binoculars, or any other optical device while using your eclipse glasses or hand-held solar viewer — the concentrated solar rays will damage the filter and enter your eye(s), causing serious injury. Seek expert advice from an astronomer before using a solar filter with a camera, a telescope, binoculars, or any other optical device.
- If you are within the path of totality (<http://bit.ly/1xuYxSu>), remove your solar filter only when the Moon completely covers the Sun's bright face and it suddenly gets quite dark. Experience totality, then, as soon as the bright Sun begins to reappear, replace your solar viewer to glance at the remaining partial phases. *Keep glasses on!*



NOT IN
QC
AREA

An alternative method for safe viewing of the partially eclipsed Sun is pinhole projection. For example, cross the outstretched, slightly open fingers of one hand over the outstretched, slightly open fingers of the other. With your back to the Sun, look at your hands' shadow on the ground. The little spaces between your fingers will project a grid of small images on the ground, showing the Sun as a crescent during the partial phases of the eclipse.

A solar eclipse is one of nature's grandest spectacles. By following these simple rules, you can safely enjoy the view and be rewarded with memories to last a lifetime. More information:

eclipse.aas.org eclipse2017.nasa.gov

This document does not constitute medical advice. Readers with questions should contact a qualified eye-care professional. v.170210

Kockadoodle



Member Spotlight

Things that make you go hmmm... by Jeff Struve

In trying to pin point when I first became interested in astronomy, I'm thinking it had to be between the end of the Mercury Space program and the Gemini Space Program... more specifically the rebroadcasting of JFK's famous comments on sending a man to the moon...

I'm recalling having a lot of fun with Estes and Century model rockets... building a larger than available (at that time through those companies) single stage model rocket, using 3 D size propellant capsules... and launching what the local newspaper dubbed as "Astro Mouse" up over a thousand foot.. he was successfully retrieved by Alcoa personnel from the roof of their factory. I also remember saving up hard earned lawn mowing money to purchase the "Cam-Rock"... another single stage rocket that when the ejection charge went off, the camera payload would take a single pic of the ground as the parachute opened... unfortunately, on the maiden voyage, the parachute didn't work... the camera hit the gravel road pretty hard thus ending my career in rocketry... as with NASA, budgetary restraints were critical...

As preparations were being made to land on the moon, I wanted to take a closer look at where we might land... so the yard and snow removal earnings were socked away until I saved enough for my first telescope... I don't recall the make or model... it was probably something like a Jason or Tasco... you know the ones... the beautiful big box with all of the planets shown in full, larger than life color... the scope had to be of 600 power if not a million! I was on my way!

As I recall, as tradition holds, it was what seemed like months before I could take it out for its first run... probably a week or so... and of course my first target was the moon... not bad, but I was thinking that I would see a lot more... more like standing in a crater and seeing the mountain side... after spending a few minutes, I decided to point the scope at a really bright star... and this star ended up being Saturn. Yep, I could see the white blurry sphere surrounded by a white blurry oval...it was quite discouraging having to try to keep the planet in the FoV... and trying to keep vibration from the flimsy mount and tripod was next to impossible... that night was my first and last night looking through a telescope for many years...

Over the next few years, my space interests mainly involved clipping newspaper and magazine articles, watching TV shows such as Fireball XL5, Dr. Who, and Star Trek... and listening to a kinda late night radio broadcast, "The World Tomorrow" by Garner Ted Armstrong... in retrospect, this was kind of a religious based program, but did talk quite a bit about the 'future'... ancient technology and knowledge and other fringe kinda tings...

Fast forward to 2009... I decided that I should give astronomy another shot... did a bit of research and bought through the Adler Planetarium in Chicago, my first real telescope... an Orion 12" Push-To, Truss Dob... of course being a newbie, this was on the condition that the Adler folks put it together and train me how to use it... this scope remains my main visual scope.

After about 2 months and quite a few emails of inquiry, the scope came in, was assembled, and ready for me to pick up at the planetarium. I could hardly wait! But wait I did... not to pick it up, but to actually get it out for its first trial run.

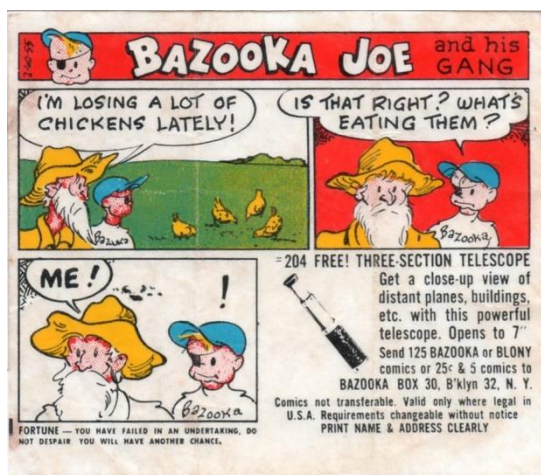
I definitely remember first light... alignment went perfectly, and so on to the tour function... Andromeda Galaxy... so I pushed the scope till the arrows zeroed out...and to my amazement... but a bit of dismay, I found my first faint fuzzy....I had a bit of flash back to my early years with that department store scope... but hey, this is not just the moon or a planet... it was a galaxy, so ok, maybe this ain't so bad after all... I pressed the tour button again... but must have hit the back button, and the Wild Duck Cluster was next... what a revelation!

This was the object that had me hooked.... I stayed out all night looking at every object in the tour... some, of course, I never did find, but this was incredible! Where would I be today if my scope 40 years earlier was this scope instead of that department store disaster?

Now for the editorial part of my story.... I didn't plan on being in the spot light... I kinda wanted to wait until I ran out of member volunteers... this seems to have happened sooner than I'd hoped... this being said, my questioned posed in the previous paragraph was kinda not meant to be rhetorical...

I see a lot of internet folks asking for recommendations as to what a good beginners scope would be... as you might have guessed from my story, had I not been introduced to astronomy with the toy that I purchased, I may have had a whole different vocation... so for me,, I believe an injustice occurred. I am sure that some may have experienced the same thing, but others may have had the opposite happen...

So.... What makes a good beginners scope? Many articles have been written... many sets of guidelines, and even more opinions are available... For me, a beginner deserves pretty fair optics, a stable mount... probably visual accurate tracking, and either push-to or go-to capabilities... does this mean that folks have to save up a bit, and need to have a certain level of certainty/desire to enter into the hobby Yep! But to me, that's ok, 'cause I feel that this is a serious hobby and should be treated as such... of course this is just my opinion... disagree? Send me an article for the Meridian! ;)



Submitted Article:

CCD or DSLR for AP?

Started by [Jeff Struve](#), 12/22, 08:26 AM
<http://www.cloudynights.com/topic/560536-ccd-or-dslr-for-ap/#entry7604175>

So... I have been using my SBIG ST8300c for AP for a number of years... I really like it for what it is...

Since then, I'm seeing a lot of progress made in DSLR's for AP...

So... all else the same, for AP, which is the better bang for the buck? (Keep in mind that you can cool a DSLR and modify it or purchase one of the modified units)... so which has less noise? Better sensitivity? More dependable? Easier to use? All other applicable AP requirements?

If we need a price point, maybe \$2500 - \$5000 USD...

Thanx!

BEST ANSWER SO FAR:

[Jon Rista](#)
Posted 12/22, 12:47 PM

There are a number of CMOS cameras out. CMOS differs from CCD in that the vast majority or all of the readout electronics are integrated onto the sensor itself (besides the obvious manufacturing process differences). These days, CMOS sensors have good Q.E. at 60-80%, have exceptionally low read noise often in the 2e- or lower range, some as little as 0.75e-, and have extremely high readout rates (in the range of hundreds of frames per second). The ultra low noise and high Q.E. generally means these cameras have higher dynamic range than most CCD cameras, and even the CMOS cameras with "only" 60% Q.E. have sensitivities that rival the 70% Q.E. Sony ICX sensors.

CMOS cameras also tend to have better characteristics for smaller pixels...higher FWC and lower read noise than CCD counterparts. This makes them ideal to pair with shorter scopes, however they can still often be binned (caveats) so they can also be used with longer scopes. CMOS cameras also tend to have other features like hardware ROI (region of interest), variable gain/offset, and other features that make them more versatile than CCD cameras. They can usually be used for planetary imaging purposes just as well as for DSO imaging purposes.

There are many advantages to CMOS these days, and in general the technology surpassed CCD from a noise and framerate standpoint years ago. CMOS cameras can be found in mono and color versions just like CCD cameras. CMOS cameras tend to be a lot more compact than the average CCD camera (exception being many of Atik's small, round cameras), and the smaller package size and lighter weight can be a bonus for portable imagers.

There are sometimes some drawbacks with CMOS sensors. The main one would be amp glows. Many of the smaller CMOS sensors have non-trivial amp glow. This can be corrected with identically matched darks and DISABLING dark optimization/dark scaling, however if the glows are more extreme (the case with some smaller Sony IMX sensors), they can add

more noise in the glow areas. Another potential drawback is some CMOS cameras are 12-bit, which is a bit too low for astrophotography. This isn't a huge issue, as you can recover bit depth by using shorter exposures at higher gain and stacking more frames, however it does require a bit of a paradigm shift in how you think about AP in general, as it goes against "conventional" thought that fewer longer exposures are better. Some imagers have a hard time grasping the concept and either can't or just don't want to acquire and stack 100+ frames.

The top two CMOS cameras out right now for DSO imaging are the ZWO ASI1600M* and the QHY163*. These two cameras both use the same Panasonic sensors, 4/3 format (same size as the KAF-8300), have pixels that are 3.8 microns in size, frame rates that can reach over 300fps with USB 3 (using the hardware ROI features that are also common to CMOS cameras), and can be used for planetary or DSO imaging. They support setpoint cooling down to -40C vs. ambient. Both cameras are pretty comparable. I would say ZWO has the better customer support, as they are very responsive on multiple sites, forums and other contact medium like Facebook. The QHY163 has a couple bonus features...namely a 128mb frame buffer on-camera that can help avoid issues with downloading frames, and a heated AR window that avoids dew in high humidity areas. Outside of those things, the two cameras and companies are quite comparable.

From a quality standpoint. These cameras are 12-bit cameras. That is not ideal, however I own the ASI1600MM-Cool, and when used properly and when stacking 100 or more frames, this isn't really an issue. The cameras have extremely low read noise and low dark current. At low gain, the cameras max read noise is $3.5e^-$. However these cameras are more ideally used at higher gain settings. For the most part, unity gain is the ideal place to start, which has around $1.55e^-$ read noise. For narrow band imaging or imaging with a high f-ratio scope, a gain around 190-200 has read noise around $1.33e^-$. This is lower than any CCD camera that I know of. For the most part, with a couple of exceptions from higher end CCD cameras like one or two QSI and FLI Sony ICX cameras, CCD cameras bottom out around $4-5e^-$, and older KAF/KAI sensors have $8e^-$, $10e^-$, $15e^-$ or more read noise.

Dark current on the ASI1600/QHY163 is around $0.006e^-/s$ @ -20C, and temperature stability is in the range of $\pm 0.1C$. Amp glows on these cameras are very low. Two slight bubbles to the top and bottom right, and an even fainter one around the upper left. They calibrate out fine if you use exposures of 600s or shorter. Very long exposures are not recommended with these cameras, as as you get beyond 600s, and longer than 900s, the glows can get pretty strong. As mentioned before, stacking more frames with these kinds of lower bit depth cameras is better regardless, so you shouldn't generally find yourself using exposures much longer than 300s anyway.

When it comes to sensitivity in general. Mono cameras, regardless of sensor type, will be more sensitive than OSC cameras. If you want sensitivity, hands down, no contest, you want a mono camera. Mono imaging is a little more expensive, and there is an increased post-processing load, however the quality differences vs. OSC cameras can be considerable. Mono cameras also bring narrow band imaging to the table, which is by far the best way to image in or near the city with light polluted skies. Mono LRGB imaging, even with LP, is more efficient particularly because of the L filter. You can guzzle down 3-4x as many photons per unit time with a mono+L than you can with an OSC. This is a key factor in overcoming LP, as it's all about signal when you have to overcome all the extra noise added by LP. OSC simply cannot compete with mono+L. Additionally, you can combine LRGB with an Ha filter and use the Ha filter for

even higher contrast "luminance" data in the city. You can also just do pure NB imaging in the city, with Ha+OIII for "bicolor" blends like HOO, or you can use SII+Ha+OIII for tricolor blends like SHO or HSO. With a variable gain camera like the ASI1600 or QHY163, you can use a higher gain with NB filters, and use very short exposures (I myself use 90-120 second NB subs @ Gain 200 on the ASI1600! 😊)

The variable gain is, IMO, one of the strengths of CMOS cameras. By varying the gain, you reduce read noise, and allow shorter exposures. Short exposures allow for very crisp, high resolution imaging even under poor skies, as short exposures allow the image to blur due to seeing and tracking error less per sub. By reducing read noise, you can improve the sensitivity of the camera for high f-ratio scopes, allowing more reasonable exposure lengths when imaging at f/8, f/10, etc. Conversely, if you have high LP, you can reduce the gain to allow you to get more reasonably long exposures with LRGB imaging (L filter particularly, I myself live in a red zone and I have to use Gain 0 on the ASI1600 to get up to even 60 second subs.) Variable gain allows you to tune the camera to the scope, and get optimal results with optimal exposure lengths (which for these kinds of cameras, IMO, are only a few minutes per exposure tops.)

Gallery

June 24th Public Night Pics:



We had a great membership turnout for our June Public Night... We only had 3 guests attend but they brought scopes... so that was really cool! We did have a handful of guests that had to cancel due to work commitment changes... go figure!

The evening was very nice temperature wise, but we battled clouds till between 9:00 PM and 10:00 PM... it was all good, as it gave us the opportunity to dust out some of the cob webs...

Craig manned the 20" and did show quite a few objects to those that made their way into the building...

The pic at the top left of the next page is a pic of Byron and his super CG equipped with an ES AR152... quite the beast! Unfortunately, I didn't get a pic of Clint and his better half, also guests, with their Vixen mount and 10" reflector... sorry about that!



Byron



Don



Dave



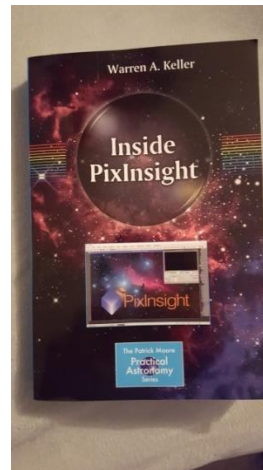
Robert



Jim

For Sale – Wanted

For Sale:



– New 2nd Addn “Inside PixInsight” by Warren Keller. \$30.00 – 1 left!
 Contact Jeff Struve at PwrHsePro@aol.com



Jeff's Rig



Celestron Omni XLT 120mm Refractor with soft case, 6X30 correct image finder, 1.25" diagonal, 25mm eyepiece... \$275.00
 Contact Wayland at Bauerwp@gmail.com

Various 1.00" OD and 1.25" OD tubing from previous telescopes or for telescopes I decided not to build:

- 1.25" OD
 Five, 72" long, 0.035" wall thickness, never used, (current new price: \$18.49), \$8 each
- One, 50" long, 0.035" wall thickness, painted blue, \$6
- 1.25" OD - from a mid-80s Sky Designs scope
 Eight, approx 1/16" wall, painted black, ends flattened, bolt at one end and hole at other, approx 44.75" center-to-center, \$7 each
- 1" OD
 Eight, approx 1/16" wall, painted black, one end flattened, bolt at flattened end and hole at other, approx 53" center-to-center, \$6 each
- Five, approx 38" long, unpainted, \$5 each
- One, approx 34.75" long, \$4
- One, approx 32.75" long, \$4

Contact Karl Adlon at KMJA79@yahoo.com



Celestron C10N \$275.00



Orion Apex 127mm \$225.00



Meade ETX90 with Tripod \$400.00



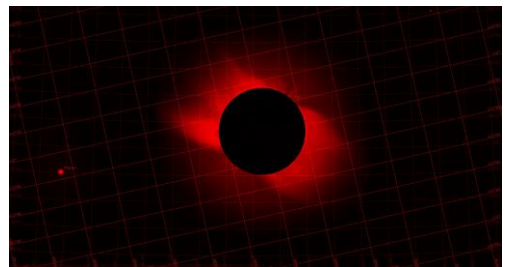
Celestron CG5 Advance GT \$350.00

The previous 4 listings are owned by a friend that lives in Princeton, IA who is liquidating the items from an estate. Craig and I went out and gave the items a once over and came to the pricing mentioned here:

- Celestron C10N \$275.00
- Orion Apex 127mm \$225.00
- Celestron CG5 Advance GT \$350.00
- Meade ETX90 with Tripod \$400.00

There are miscellaneous accessories as applicable for each item... You can contact Jeff or email the owner directly at PoppyLuvMama@YaHoo.com

Will we be able to see Regulus during the eclipse in the QCA?
How about in a location experiencing totality?



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 spicey!

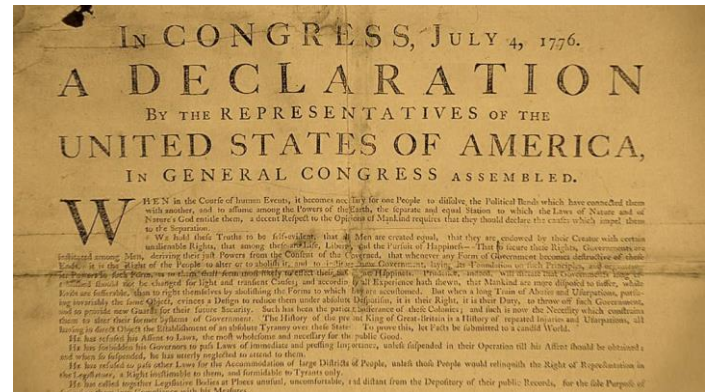
Types of articles that would really be interesting could include What's In the Sky This Month, equipment reviews, experiences you've had in astronomy, sketches you've drawn, trips you've taken to observatories or star parties, a high level overview of your favorite astronomer, movie, book or article 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!

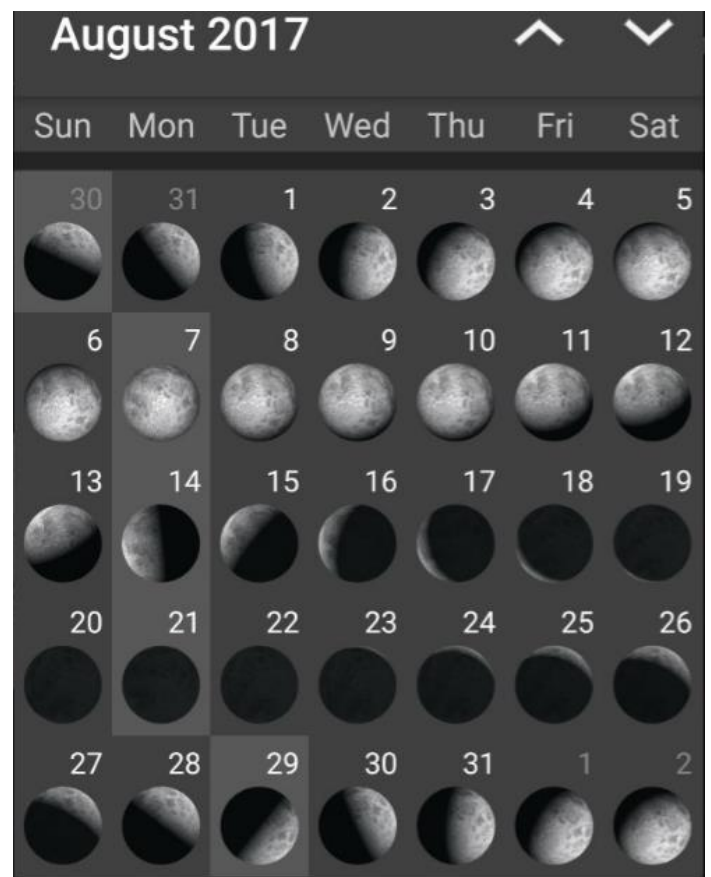
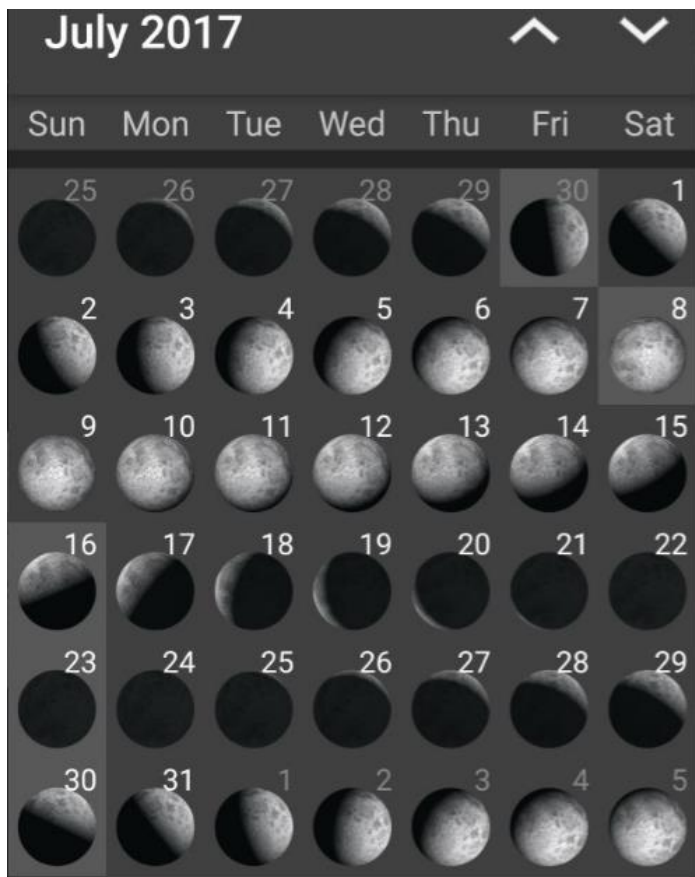
Jeff

PS... A special thank you to Clint, Byron, Don, Dave, Robert, Jim, and Craig for your help at the June Public Night!



2017 Calendar of Events

- 01/16/17 – Society Meeting
- 01/28/17 – Open House at the Jens-Wendt Observatory
- 02/18/17 – Menke Observatory Scouts Tour
- 02/20/17 – Society Meeting
- 02/25/17 – Open House at the Jens-Wendt Observatory
- 03/18/17 – Open House at the Jens-Wendt Observatory
- 03/20/17 – Society Meeting
- 03/24-25/17 – Messier Marathon at Menke Observatory
- 04/01/17 – Hawkeyes in Space Field Trip
- 04/17/17 – Society Meeting
- 04/21/17 – Assist PAC at the Putnam Museum
- 04/29/17 – Astronomy Day
- 04/29/17 – Open House at the Jens-Wendt Observatory
- 05/13/17 – Menke Observatory Public Open House
- 05/15/17 – Society Meeting
- 05/27/17 – Open House at the Jens-Wendt Observatory
- 06/03/17 – Menke Observatory Public Open House
- 06/19/17 – Society Meeting
- 06/24/17 – Open House at the Jens-Wendt Observatory
- 07/15/17 – Menke Observatory Public Open House
- 07/17/17 – Society Meeting
- 07/29/17 – Open House at the Jens-Wendt Observatory
- 08/12/17 – SAU/QCAS Perseid Meteor Shower Party
- CANCELLED?
- 08/21/17 – Solar Eclipse
- 08/21/17 – Society Meeting CANCELLED
- 08/26/17 – Open House at the Jens-Wendt Observatory
- 09/18/17 – Society Meeting
- 09/22-24/17 – Eastern Iowa Star Party
- 09/23/17 – Menke Observatory Public Open House
- 09/30/17 – Open House at the Jens-Wendt Observatory
- 10/16/17 – Society Meeting
- 10/28/17 – Open House at the Jens-Wendt Observatory
- 11/18/17 – Open House at the Jens-Wendt Observatory?
- 11/20/17 – Society Meeting – Annual Dinner
- 12/16/17 – Open House at the Jens-Wendt Observatory?
- 12/18/17 – 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 and/or MitchellRobertC@sau.edu

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