

THE MERIDIAN

Newsletter of the
Quad Cities Astronomical
Society

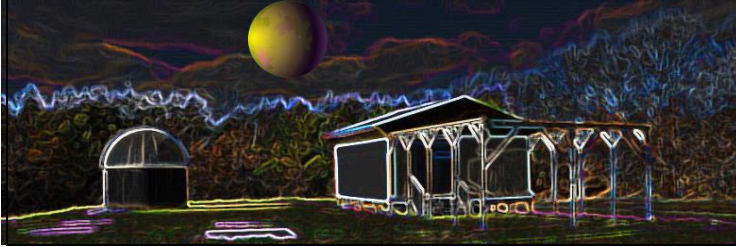
www.qcas.org



AUGUST 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!

Time sure fly's when you are having fun! It's the end of July already! Before ya know it, the Meteor Shower Party and the Solar Eclipse will be behind us... 1 more meeting before the Eastern Iowa Star Party... then its election time and our November Dinner Meeting... then we are into Christmas and the New Year... wow!

So... a few words about events not to be missed!:

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

08/12/17 – SAU/QCAS Perseid Meteor Shower Party... We are back on! Thanx to Ian, we will hold it at Pleasant Valley High School in the lower West parking lot... About 8pm – Midnite... Bring family, friends and lawn chairs! Map below!

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 to be held at Saint Ambrose University in McCarthy Room 105...

09/22-24/17 – Eastern Iowa Star Party

09/30/17 – Open House at the Jens-Wendt Observatory

Things are shaping up for us... and making a little more sense in our scheduled outings... EISP is a must, and a Messier Marathon seems very appropriate for our amateur astronomer events, and now with PV in the mix, we can hold an annual Meteor Shower Party there, and Astronomy Day at Bettendorf High... great public events supporting our high schools!

Don't miss out on opportunities to be part of these fine activities!

Clear Skies!
Jeff

Last Society Meeting Minutes

Date/Time Location

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

Attendance (12 in attendance)

Jeff Struve, Robert Mitchell, Mike Ombrello, Alan Schiedler, Jim and Jan Rutenbeck, Craig Cox, Paul Levesque, Don Robinson, and Mike Dannenfeldt

Guests – Byron Davies, Barry Garrels,

Presentations

Outings

- 06/21 – Menke Undergrad Summer Research Institute Party - Robert, Jeff, Craig attended, but the weather won out. No guests were present; we took advantage of the time to discuss solar eclipse logistics.
- 06/24 – QCAS Open... went well, we had 8 in attendance... ended up a bit cloudy.
- 07/15 – Menke Public Open – 20 to 25 guests attended; We had clear skies until 11:00pm; Jeff, Craig, Don, Byron, Mike brought scopes; Jeff and Mike practiced with Mallincam and DSLR for upcoming solar eclipse, testing exposure levels, parallel mount, secondary camera for Robert.
- 7/07 and 7/14 – PAC Club Observation Sessions
- 7/15 – PAC at Niabi Zoo – PAC had approximately 200 guests in attendance! Great job Alan!

Astro Suggestions and Tips

Byron has a hyper tuned Celestron mount... he advised that he had to do a bit more tweaking on it to get it loosened up to run a bit more smoothly.

Publicity

- Paul gave the highlights of a meeting he, Jeff, Robert, and Mike O. met with Alma Gaul of the QC Times. The article will be published on 8/21

Main Presentation

- Jim Rutenbeck gave a great presentation on Star parties he's been to including EISP, Okie-Tex, Astro-Fest, Winter Party (Florida Keys), Nebraska and others...
- Jan brought brownies! Thanx for the munchies!

Treasurers Report

- Matt was absent but advised we had \$4,203.59 in our account. We purchased shingles for the block house and paid for 3 more months of library meeting room fees since then.
- 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 June Minutes as per the July Meridian were approved.

Old Business

8/12 – Meteor Shower Party

- Waiting for reply from the Park Board. Last 2017 QCAS public event – Maybe PVHS? Maybe Riverdale Park?
- As of this writing, we will be meeting at Pleasant Valley High School in the lower West parking lot for this event. It will be held from approximately 8:00 PM – Midnight. The school will be shutting off the security lights for the event. We could use a few volunteers to help direct traffic and make and set up directional signs advising to turn off headlights and pointer signs for where to park, and where to walk for the event.

8/21 – Eclipse

- Need help at the Putnam to assist Dale
- Cancel August Society Meeting as it is the same day as the eclipse.

9/22-9/24 – Eastern Iowa Star Party

- Need to start preparing now; trying to get guest speakers to talk about meteor/asteroid impacts, Hawkeyes in Space, and Star Lore; not doing bunks this time; discussed how to do donations for raffle; Explore Scientific promotion? Grand prize from them?

10/14 – PAC Trip to Yerkes

- Alan advised that QCAS was invited and to watch for an email for details and registration.

Bylaws

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

Website

- Matt still working on it

New Business

07/25 – PV Girl Scouts

- Jeff and Craig will attend
- At the event we were basically clouded out, the 40 – 50 guests did enjoy talking about astronomy... Craig showed views of Vega midway through the program, and toward the end he was able to show Jupiter. Jeff kept his dob trained on a radio tower's flashing lights... which oddly enough rose to questions about why the lights, and what the wires were for and why all the metal bars... Jeff also discussed why the trip to Aurora and not staying locally or staying closer to home where totality was... Jeff also gave a demo of what the eclipse would look like in Davenport vs Aurora... We also advised the girls and parents of the August 12th Meteor Shower Party... all in all a very fun and productive experience for all!

11/20 – Annual dinner meeting.

- We are considering the Chinese Palace on Elmore. Relocate Observatory to Menke
- WREEC is good to go... need to talk to Sherman Park
- QC Times Interview – Paul brought everyone up to date on the details of the interview

Next Society Meeting

Date/Time Location

6:30 PM on Monday, September 18th
105 McCarthy Hall, St. Ambrose University
(Corner of Gaines and Lombard)

September Presentation

At our September 18th meeting, Christian Allen will be giving a talk on weather... should be quite informative as he does a lot of great work on his Facebook page, QC Weather...

Presentations for future meetings include Tom Field on Spectroscopy and the RSpec software, and Carl Wenning on the Astronomical League. Contact Jim Rutenbeck or Jeff Struve if you'd like to make a presentation.

Other Business

- 9/22 EISP Update
- Amendment to extend current term thru December Elections
- November Banquet Meeting

Last Board Meeting Minutes

Date/Time Location

6:30 PM on Thursday, July 3rd
The Village Inn on Elmore and 53rd in Davenport, IA

Attendance

CANCELLED

Agenda

Things to do – Open Items

- 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.
- 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

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 8/12 Meteor Shower Party
- Discuss the 8/21 Solar Eclipse
- Discuss extending the term of current officers
- Discuss Elections and the November Dinner
- Discuss the bylaws
- Society meeting relocation
- QCAS Observatory relocation
- Discuss re-roofing the Block House
- Discuss the new web site

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.

Member Spotlight ... by Robert Mitchell

I want to say I was in third grade when astronomy entered my life, because I'm pretty sure my dream was to become a baker up through second grade. That was until I heard I'd have to get up at five in the morning every day to start work. Yeah, I don't think so. Still, the idea didn't go away completely. I taught myself how to cook during graduate school, and I never stopped.

Getting back on topic, in third grade (probably), I found two books in our tiny elementary school library, one on the planets and one on the constellations. I don't remember what the planet book was called, but the other was "Find the Constellations" by H. A. Rey, of Curious George fame. Long story short, I was hooked for life. Astronomer became my new dream job. Combine it with a natural talent for math and an obsession with Star Trek, and I was pretty much on a one-way trip to geekdom.

If you want to be a professional astronomer, chances are you're going to start with a degree in physics, and I don't think there were ever more than three or four physics majors at any time in the entire student body at St. Michael's College. Which is good: small classes, personalized attention from the professors, we really get to know each other's strengths and weaknesses. Then graduate school at Rensselaer Polytechnic, and suddenly I'm just another student on the Master's assembly line. Two years to get mine and then . . . let's just say they screwed up my financial aid and I ended up having to take two years off. But the University of Oklahoma turned out a lot better. Five more years and one Ph.D. later, St. Ambrose beckoned.

Along with the new position in St. Ambrose's physics department came the directorship of the Menke Observatory. Suddenly, I had three big telescopes to play with and take care of, and here I'd spent most of my life as a theoretical astronomer. All of my research in grad school was about graphical analysis of previously published data and computer modeling. I'd rarely even touched a telescope in years.

Then a man named Wayne Jens came to St. Ambrose and invited me to join the Quad Cities Astronomical Society. With their help, I slowly became an observational astronomer. Soon, I was hosting star parties at Menke, bringing my 6" Hardin reflector to QCAS star parties, hosting public viewing of Mercury and Venus transits, experimenting with stellar spectroscopy, and planning a live webcast of a total solar eclipse. Even when life looked darkest – in the figurative sense, I mean – I always knew astronomy would be part of my life in some way, but I never thought it would become this BIG a part.

During Spring Break in Arizona three years ago, I had the chance to visit the Lowell Observatory in Flagstaff, and see the very telescope that Clyde Tombaugh used to discover Pluto. No, I didn't get to look through it. It's not designed to look through with your eyes, it's only set up to expose photographic plates. But that evening, I went back to the observatory for one of their weekly star parties, and was amazed at how much of the sky you could see, even with the city right there. Flagstaff has strict ordinances about nighttime lighting, which means that its nighttime sky is as dark as at Menke or Sherman Park. Throw in a day trip to Meteor Crater, and it was a week I'll never forget. My only regret is not visiting Kitt Peak, but with the time I had left, it was either that or the Grand Canyon...

What's next for me? I've got an American Astronomical Society conference on my calendar for January, and hoping I'll have enough new research to present. That's the trouble with teaching full-time, it doesn't leave you nearly as much time as you'd like for research, or a lot of other things, for that matter. At least AAS conferences let me get out of my routine and travel once in a while, for pleasure as well as business. The January 2020 conference is in Hawaii.

Keck Observatory, here I come...



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/1xuYsSu>) 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/1xuYsSu>).



The only safe way to look directly at the un eclipsed 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 un eclipsed 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.



NOT IN
QC
AREA

- If you are within the path of totality (<http://bit.ly/1xuYsSu>), 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!*

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

Submitted Articles:

TOTAL SOLAR ECLIPSE NEWS BITS

By Paul Levesque

- The use of solar panels to generate electricity has increased exponentially in recent years, so it should come as no surprise that a total eclipse might strain the power grid a bit. By one estimate, 9,000 megawatts of electricity could be wiped out during the August 21 solar eclipse, enough to power 7 million homes:
 - <https://www.bloomberg.com/news/articles/2017-07-14/a-solar-eclipse-could-wipe-out-9-000-megawatts-of-power-supplies>
- It's well known that an experiment performed during a total eclipse on May 29, 1919, proved that Albert Einstein was right when he said that light could be bent by gravity. But some questions have been raised about the data gathered during that experiment, so, during the August 21 solar eclipse, some will once again try to replicate the historic experiment first performed nearly a century ago:
 - <https://www.livescience.com/59940-solar-eclipse-einstein-theory-of-general-relativity.html>
- Astronomy is one of the few sciences which benefits greatly from the contributions of amateurs, and amateur astronomers will be busy on August 21 gathering data that will be input into scientific studies. It's believed that this eclipse will be the most studied ever:
 - <http://www.thenewstribune.com/news/local/article163369458.html>
- Many schools will be in session on August 21, and school districts in the path of the eclipse are handling the big event in different ways. Some plan to close entirely that day; some are delaying dismissal for the day until the eclipse is over; some will remain in session and allow their students to view the eclipse during the school day; and some will bus students to a better viewing location:
 - http://www.emissourian.com/local_news/saint_clair/lone-dell-r-xiv-school-district-to-close-for-eclipse-security/article_dd195c77-fe92-5ce3-9498-1057abd05119.html
 - <http://www.ajc.com/news/local/marietta-extending-school-minutes-during-solar-eclipse-for-safety/uBOW9jjNz6guk6FkASq0WO/>
 - <http://www.tennessean.com/story/news/local/williamson/2017/07/18/franklin-students-view-solar-eclipse-school/487721001/>
 - http://www.argusobserver.com/news/board-ok-s-busing-students-to-view-eclipse/article_a8c0b22e-715b-11e7-be9c-bbcae54b0e4f.html
- It's being billed as the "Great American Eclipse," and nothing's more American than making a few bucks. Though economists don't have reliable estimates yet of the economic impact of the eclipse, some individuals seem sure to cash in, including those who are renting rooms for \$2,500 a night and up:
 - <http://www.latimes.com/business/la-fi-solar-eclipse-business-20170725-story.html>
- One company in Tennessee is sure to enjoy a profitable 2017, as it expects to manufacture and ship up to 40 million pairs of eclipse glasses this year:
 - <http://www.wsmv.com/story/35968693/tn-company-manufacturing-millions-of-glasses-for-eclipse-watching>
- Making money is a big part of the American experience; unfortunately, so are traffic jams. Expect both for the August 21 eclipse. Eclipse tourists are being warned to leave early and plan for heavy traffic, especially on rural roads that are usually lightly traveled:
 - https://www.washingtonpost.com/news/capital-weather-gang/wp/2017/07/25/no-firm-travel-plans-for-the-solar-eclipse-heres-what-to-expect-if-you-wing-it/?hpid=hp_hp-more-top-stories-2_eclipse-travelplans-1110pm%3Ahomepage%2Fstory&utm_term=.8f9ad98c2db5
- Baseball remains the national pastime, and it will be part of the Great American Eclipse. The Salem-Keizer (Oregon) Volcanoes, a Class A minor league team playing in a ballpark right in the path of totality, will begin their game on August 21 at 9:35 a.m., an unusual start time for a Monday. The game will also feature what's billed as professional baseball's first-ever eclipse delay, at about 10:17 a.m. when totality begins. Not surprisingly, the game is expected to be a sellout.
 - <http://www.oregonlive.com/sports/index.ssf/2017/07/salem-keizer-volcanoes-solar-e.html>
- Oregon also happens to be a state with legalized marijuana, and both marijuana shops and liquor stores in the state are stocking up now in anticipation of record demand on and before August 21. It's traditional among some to open a bottle of champagne after a successful eclipse viewing; perhaps this year will bring new traditions involving other mind-altering substances:
 - <http://www.kgw.com/news/eclipse/eclipse-creating-record-demand-for-oregon-liquor-marijuana/459535936>
- A number of couples plan to recite their wedding vows during the total eclipse, including this betrothed twosome from Missouri who used a photo of the "diamond ring effect" on their wedding invitations. Now that's a cute idea!
 - <http://www.kansascity.com/news/local/article161469563.html>
- Marriages can lead to babies, and one hospital in Carbondale, Illinois – the lucky spot on the map that will experience two total eclipses within seven years – will give "eclipse baby" bibs to any child born there on August 21. That's cute, too!
 - http://thesouthern.com/news/healthcare/memorial-hospital-plans-special-gift-for-babies-born-aug/article_e0bcf5cc-0248-5391-8c31-c0eeab70ec95.html
- The astrology column that still appears in some newspapers is really just an advice column. In that vein, this astrologer sees the eclipse as a "cosmic shift" providing an opportunity to cultivate your work skills, enhance your personal relationships, improve your diet, and begin a new exercise regimen. Just one question: Isn't it *always* a good time to do those things?
 - <https://www.wellandgood.com/good-advice/astrological-significance-of-total-solar-eclipse/slide/5/>
- Finally, leave it to some astrologers to spoil all the fun. This "Astrology Insider" applies "traditional rules" to conclude that the August 21 eclipse portends "increased aggressiveness, damage to property, misfortune of people in powerful positions, significant protests, (and) agricultural and economic issues," all of it lasting for the next five years. Oh well, enjoy the eclipse anyway!
 - <https://theastrologyinsider.wordpress.com/2017/06/15/the-american-solar-eclipse-august-2017/>



Solar panels in the path of totality will briefly go dark on August 21, which could put a strain on the power grid.



Eclipse viewing glasses are selling like hotcakes, and some schools will issue them free of charge to students.



One marijuana shop in Oregon will offer a special "Moon Puppies" strain in celebration of the eclipse. Hey, whatever turns you on...



Babies born in a Carbondale hospital on August 21 will get cute "eclipse baby" bibs.



Let's hope you don't believe in astrology, because this astrological chart for the August 21 total eclipse predicts all sorts of bad things.

After a run of more than 2000 years, the famous rock group the Perseids, which visits the Earth every year in August, seems to be tiring out.

"We've seen a lot of attrition over the last few decades, it's true" remarked Swift Tuttle, who founded the group.

"Constantly touring the solar system is a tough lifestyle – at the end of it, our members just tend to burn out."

Observers have remarked that over the last few years, the group's shows have become less spectacular, fueling speculation that the end of its run may be near.

"That's an exaggeration." said Tuttle in response, "There will always be a core group that will carry on. Watch and see!"



QCAS Broadcast from Aurora, NE Info:

Of course we will be live at the Putnam, but it sounds like we will be shown at the Eastern Iowa Observatory, the TCAA Observatory, potentially St Ambrose University, Augustana College, the Bettendorf Library and Museum, and CNN may be using our feed for their live eclipse updates... COOL!

http://www.youtube.com/channel/UCntLNG_Of_ESA_wH-GW2Busg

Aurora, NE Solar Eclipse Broadcast and Imaging Rig



Meteor Shower Viewing Party Saturday, August 12

This is a joint Quad Cities Astronomical Society / Pleasant Valley High School Astronomy Club Event

While the annual Perseid Meteor Shower can be viewed from any relatively dark location, this event also provides:

- The opportunity to learn some constellations
- The opportunity to view Jupiter, Saturn, double stars, star clusters and nebula through telescopes if skies cooperate.

Although meteor rates are hard to predict, 80 per hour at a dark site in early morning hours is typical. We can expect fewer for this event, but we can also be surprised!

Location: Pleasant Valley High School
604 Belmont Rd, Bettendorf, IA 52722
Enter the parking lot on the west side of the school.

Time: Dusk (about 8:30 PM) until ?

Please bring a lawn chair.

Other reminders:

You may wish to bring insect repellent.
Late evening temperatures may be cool and a sweater or jacket may be appropriate.

This event is cancelled if it is cloudy that night.

Baker's Tips!

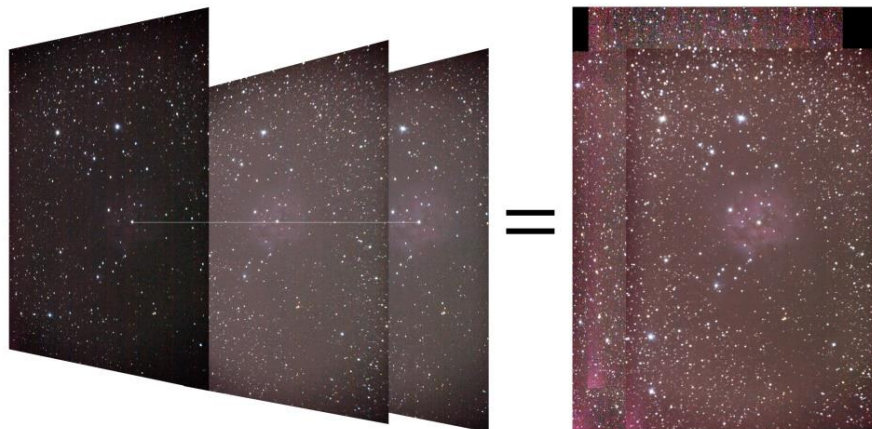
HOW IS IT DONE?

Astrophotography is the art of taking multiple photographs of dark sky objects, combining them (Stacking) to increase the signal-to-noise ratio, then fine tune the image using a software package like Photoshop.

1) Here are three images of the Cocoon Nebula. Notice how grainy or NOISY the images are due to taking long exposures.



2) The images are lined up and Stacked using Photoshop or any other astrophotography image stacking software. Stacking increases the good image pixels while reducing noise. The more images to stack, the better.



3) After additional software noise reduction techniques and fine tuning with Photoshop or other image software you have an image of the Cocoon Nebula:



The Great American Eclipse: Q-C astronomy clubs, others get ready for once-in-lifetime event

In case you haven't already heard, there is going to be a total eclipse of the sun on Aug. 21, and it is going to be a huge event because for the first time in nearly 100 years, the shadow will cross the United States from coast-to-coast.

During a total solar eclipse, the moon passes completely in front of the sun, blocking out all light except for the glow of the corona, or the sun's outer atmosphere. Depending on where you are in the U.S., you will see 50 to 100 percent total darkness, or totality.

The Quad-Cities will see 91.46 percent totality at about 1:14 p.m., with the eclipse beginning at about 11:48 a.m. and continuing to about 2:38 p.m., Jeff Struve, president of the Quad-Cities Astronomical Society, said. If it is a clear day, the effect will be an "eerie" cloudiness, he said.

People who follow astronomy made motel reservations for regions of "totality" more than a year ago, and libraries all over the country, including those in the Quad-Cities, have ordered stocks of special glasses so that patrons can safely view the eclipse at viewing parties. (A person should never look directly at the sun with the naked eye even during a partial eclipse because that could cause permanent damage.)

The Putnam Museum, Davenport, is hosting a free, special event in cooperation with the Quad-Cities Astronomical Society in which people can watch the total eclipse on the big screen as it is broadcast live from a site in Nebraska.

Robert Mitchell, a professor of engineering and physics at St. Ambrose University and a member of the society, will do the broadcast from Aurora, Nebraska, which is on the path of totality. He will use special filters so that the broadcast will be safe for people in the theater to watch, beginning at 11:30 a.m. and continuing until 1:30 p.m.

Accompanying him will be several other Quad-Citians, including Struve, who will provide live commentary. And society member Dale Hendricks will be in the Putnam, answering questions during the broadcast.

Other relatively nearby areas of totality will be in Missouri and southern Illinois, but Mitchell and the others decided on Nebraska because the chances are better of clear skies. And weather forecasting has a better probability of being accurate in that part of the country.

Weather is important because in the event of heavy clouds or rain, there will be little to see except that the sky will seem a little darker. That's not what they want.

So, if at 5 p.m. Aug. 20, the Nebraska forecast calls for cloudy skies on Aug. 21, the group will hop into their cars and drive to another location.

"We will go as far west as we need to go," Mitchell said. But he's well aware that if he decides to get on the road, so will thousands of other people.

"I've been to workshops (on the eclipse) where they were predicting horrible traffic conditions," Paul Levesque, a society member from Moline, said.

The group would have to change their plans based on the forecast rather than real-time conditions because real-time would be too late.

"You can't chase the eclipse," Levesque said. "It's traveling hundreds of miles per hour. It's traveling faster than the speed of sound."

On the day of the eclipse, "some people are predicting Facebook is going to explode," Mitchell said. He has heard of organizations that are trying to collect videos from people along the route with the intent of stitching them together in one big movie.

Although the eclipse is still a month away, Struve, who is helping with the broadcast to the Putnam, "is on pins and needles."

"What if it doesn't work?" he said. "You only get one chance. What if we lose the network or if our computer doesn't boot up? All you can do is prepare as much as you can and then let it run and enjoy yourself."

In Moline, members of the Popular Astronomy Club will be at the public library with a mobile observatory equipped to directly observe the sun, part of a viewing party from 11 a.m. to 3 p.m.

What is the attraction of a total eclipse, deep space?

What is so special about seeing a total eclipse that you're willing to take time off from work to travel hundreds of miles and spend hundreds of dollars to see something that lasts two minutes?

Jeff Struve, president of the Quad-Cities Astronomical Society, opened his laptop computer. "This will show you why we're going," he said.

He clicked a few keys and up popped an image of the sun, totally blocked by the moon, with only its corona, the outermost part of the sun's atmosphere, glowing like a round diamond ring in the darkness of space.

"It's beautiful," he said.

And if you don't grasp that, then words won't explain it.

Paul Levesque, from Moline, grew up in New England, with the 1972 hit song "You're So Vain" by Carly Simon playing in his head. The tune was about an unnamed, self-absorbed lover who, among other things, "flew (his) Learjet up to Nova Scotia to see the total eclipse of the sun."

The haunting words and melody referencing an eclipse in 1970 planted an interest for Levesque that grew through the years.

About a year ago, he realized he would be near a total eclipse said, "Holy cow! I've got to see it! It's a bucket list thing. I cannot miss this."

He is traveling to Missouri for his brush with totality, although he's not saying exactly where. "I'm psyched about it," he said.

"It's like a spiritual thing. It touches you. I mean, the sun goes dark in the middle of the day! What the heck? How is that even possible?"

Robert Mitchell, physics professor at St. Ambrose University, got hooked on astronomy when he found two books — one on constellations and one on planets — in his elementary school library.

"It just clicked with me," he said.

Although he's all about science, he finds it "the most incredible coincidence that the distance of our moon and the distance of our sun are just right so that their apparent sizes are almost exactly the same (from Earth) even though the sun is 400 times as big as the moon and is 400 times as far away."

It is those relative distances and sizes that make the eclipse possible.

"It's coincidental. Or is it?" he said.

In addition to teaching, Mitchell is director of the university-owned Menke Observatory at the Wapsi River Environmental Education Center near Dixon.

What is it about deep space that attracts you?

Mike Ombrello, of East Moline, came to his interest in space through photography. One of his nighttime photos happened to capture the Milky Way, the galaxy that includes Earth, "and the next thing you know, I bought a telescope," he said.

"Since then, I've been photographing deep space objects."

Looking through a telescope, you can see things that seem like make-believe because you have never seen anything like them before. You see great galaxies with literally billions and billions of stars and great nebula, or gas dust, flaring forth.

You can hardly believe these things exist because when you look at the sky with your naked eye, you can't see them. So you wonder if the telescope is playing tricks. But no, those things are real. They exist. And Ombrello takes pictures of them.

He says his equipment isn't especially expensive, but he's able to capture nebula, the nearby galaxy called Andromeda, that appears as a big whirlpool, and many other objects.

This has led to more exploration and learning.

"I never knew where the Milky Way was or how to find it," he said.

Now astronomy and peering into space is something of an addiction.

"I can't wait for it to get dark enough to see something else," he said.

Alan Sheidler, president of the Popular Astronomy Club, grew up on a farm in Ohio in the 1960s. There wasn't much light pollution so he could see lots of interesting things in the night sky and, with the Kennedy Administration space program in full gear, "science was king."

Those two elements combined to spur his interest, and he received an inexpensive telescope as a present from his parents for better viewing.

Then one sunny day when he was in late grade school, he and his brother were playing in the barn when they noticed something unusual. They noticed the sun pouring through a knothole in the barn siding at just the right angle that it cast an image on the opposite wall.

"We could see a circle of light on the other side of the barn," Sheidler recalled. "We looked at it in closer detail and realized we had a perfect image of the sun. The knothole was like a pinhole viewer.

"We got a piece of paper and held it up and we could see sunspots on the sun. We tracked this over a series of weeks, and we could see the spots move. We had a solar observatory in the barn with knotholes."

Eventually the brothers weren't satisfied with the knotholes that existed, so they got a hand drill and made new ones, allowing them to have viewings at different times of the day or year.

They didn't tell their dad until years later. He just smiled, Sheidler said.

Sheidler retired from Deere & Co. in product development about a year ago, so he's had more time to pick back up on astronomy. He's traveling to Missouri to see the eclipse.

He also has made trips to areas of "dark sky," such as Arizona, the Big Island in Hawaii and the outback of Australia.

"That is the most amazing sky I've ever seen because there is zero light," he said of Australia. "You'd swear there are clouds in the sky. But it's the Milky Way.

"We have no idea what we're missing here," he said.

Davenport, IA Eclipse Stellarium Simulation



Aurora, NE Eclipse Stellarium Simulation



Gallery

July 25th PV Girl Scouts at Riverdale Heights



For Sale – Wanted

For Sale:



Celestron C10N \$275.00



Orion Apex 127mm \$225.00



Meade ETX90 with Tripod \$400.00

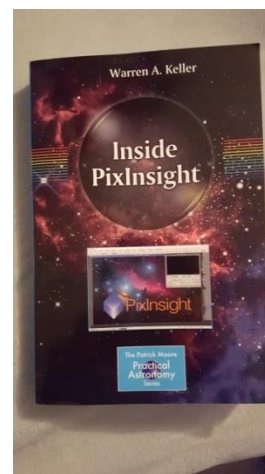


Celestron CG5 Advance GT \$350.00

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



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

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!

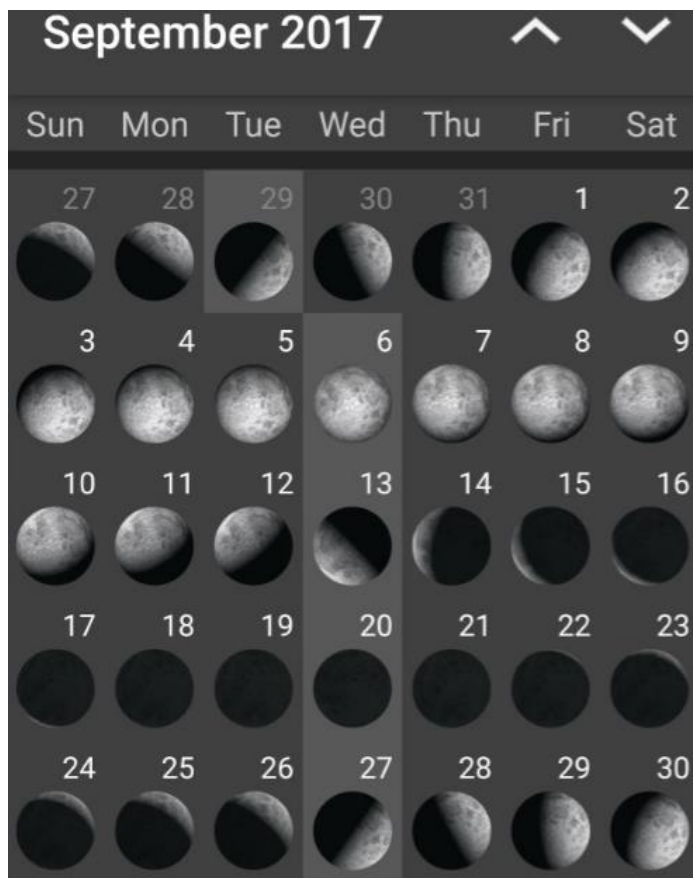
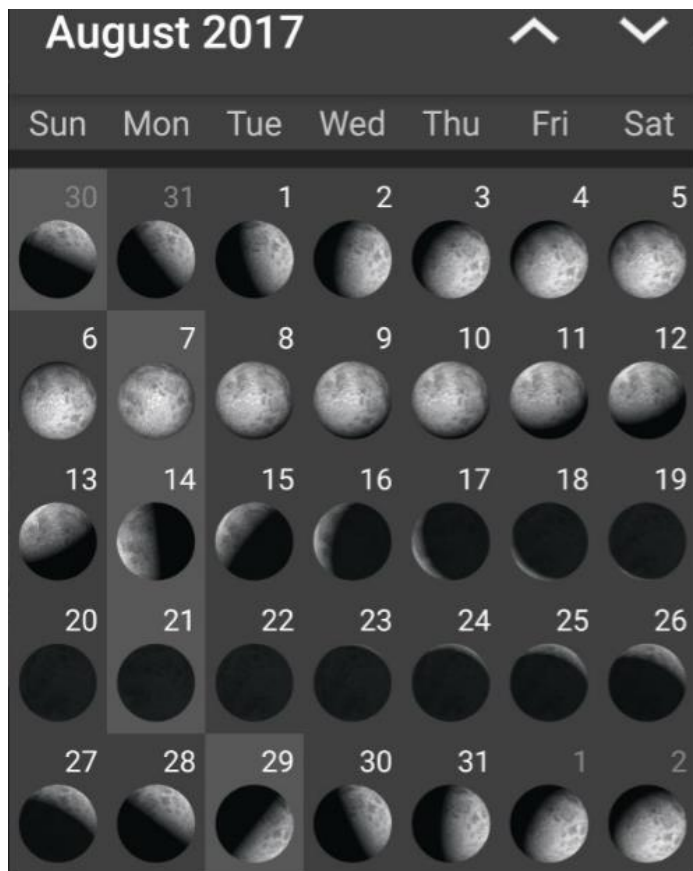
Also.... Drop an email, text, or make a phone call or two... members want to get together outside of normal club events to discuss and work on our hobby!

Jeff

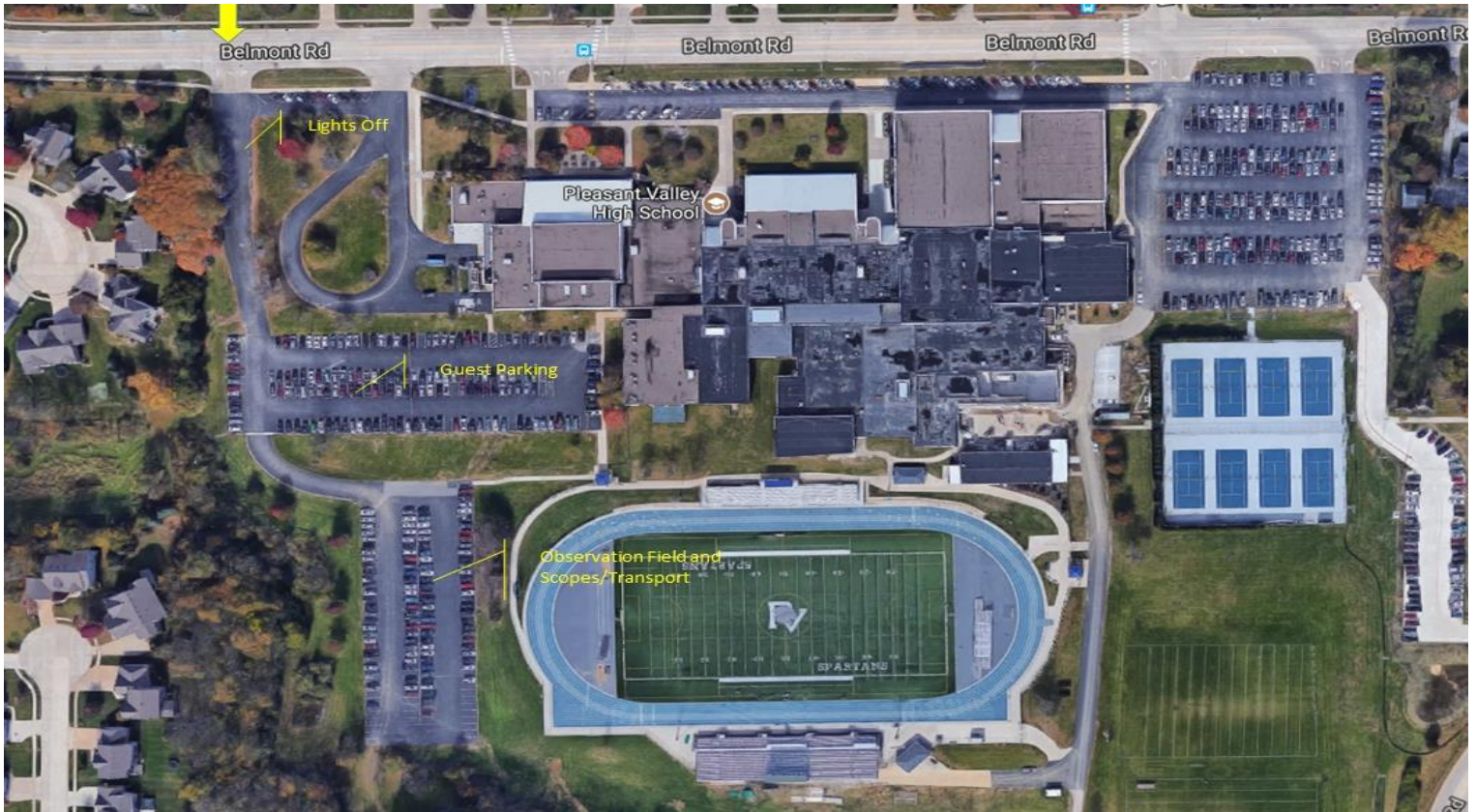
PS... A special thank you to Jim Rutenbeck, Robert Mitchell, Paul Levesque, John Baker, and Karl Adlon for their contributions to this newsletter!!

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
- 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 at SAU!
- 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



August 12th Pleasant Valley High School Meteor Shower Party
8:00 PM to Midnight **Volunteers Needed!**



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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