



# The Night Sky

The Newsletter of  
The Astronomy Club of Akron  
www.acaoh.org

Volume 38 Number 9

September 2016

Next Meeting: Friday - September 23, 2016 - 8:00 PM - New Franklin

## The Presidents Column

By Cathy Loboda

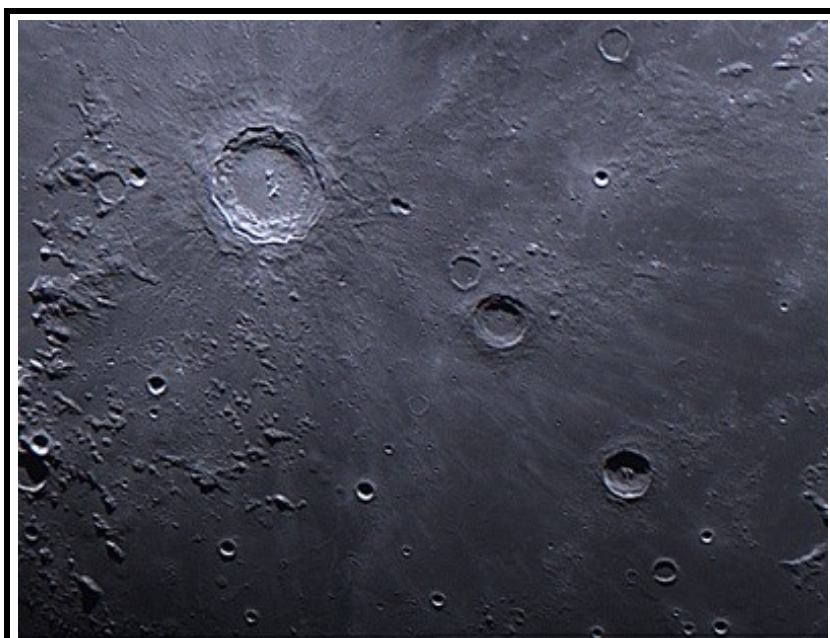
In last month's issue of The Night Sky, I spoke of Headlands International Dark Sky Park located in Emmet County, Michigan at the northwest tip of the lower peninsula. As amazing as this park is, the efforts put forth to attain International Dark Sky Park status is equally amazing. This month I want to share a bit of what it takes to apply for Dark Sky Park status.

The process of achieving Dark Sky Park status is long and rigorous. The Emmet County Board of Commissioners gave constant support to a group of county citizens and officials who spent years pursuing the designation by the International Dark Sky Association.

The group compiled a 75 page application that included the region's and the park's amenities. Also included in the application was an intricate inventory of each light fixture on the property and its output. Making the application process even more difficult is attaining the required sponsorship of an International Dark-Sky Association [IDA] member who is knowledgeable in astronomy. Luckily for the Emmet County committee, Patrick Stonehouse, who discovered Comet 1998 H1 from his home observatory, lives in the neighboring county of Cheboygan. Stonehouse was willing to provide a letter of recommendation to the IDA on the committee's behalf. This letter was then backed by 20 letters of support from state and local leaders crossing the arts, recreation, government, and chamber of commerce, among others. Oh, and there is more. The IDA requires applicants to prove community outreach and support for protecting the night sky. There is also an annual report submitted to the IDA addressing the park's facilities, lighting, scheduled events, programs, and outreach.

The application process for Headlands took four years. On May 9, 2011, Headlands was awarded the prestigious Dark Sky Park designation. Designation comes in one of three tiers: gold, silver, and bronze. Headlands achieved the high silver tier, with the opportunity for advancement to gold tier upon replacement of nonconforming light fixtures within the park.

Also awarded the silver tier designation of International Dark Sky Park was Ohio's only International Dark Sky Park: Geauga Observatory Park in Montville Township.



Took this image of the Moon with the 14" Meade at f/8 and the ZWO ASI120MC camera. Mind you it was turbulent. I can't imaging how it would have looked had it been a calm night. Image by ACA member Leonard Marek.

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## August Treasurer's Report

By Nick Mihiylov

8/1/2016 Through 8/31/2016

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<b>Checking Beginning Balance</b>	<b>\$585.01</b>
<b>Income</b>	
Membership Dues	40.00
Membership Dues	45.00
<b>Total Income</b>	<b>\$85.00</b>
<b>Expenses</b>	
<b>Total Expenses</b>	<b>-0.00</b>
<b>Income Less Expenses</b>	<b>-\$85.00</b>
<b>Checking Ending Balance</b>	<b>\$670.01</b>
<hr/>	
<b>Savings Beginning Balance</b>	<b>\$2,565.96</b>
Earned Interest	0.04
<b>Savings Ending Balance</b>	<b>\$2,566.00</b>
<hr/>	
<b>Petty Cash Beginning Balance</b>	<b>\$50.00</b>
	0.00
<b>Petty Cash Ending Balance</b>	<b>\$50.00</b>
<hr/>	
Petty Cash	50.00
Savings	2,566.00
Checking	670.01
<b>Grand Total</b>	<b>\$3,286.01</b>

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*Article by Nick Mihiylov  
ACA Treasurer.*

# SWAP & SHOP



## FOR SALE:

### Orion Sirius 40mm Plossl

Asking: \$25

Contact: Glenn Cameron

Phone: 330-737-1472

Email: glenn@cameronclan.org

## FOR SALE:



### Televue Radian 12 mm Eyepiece

- Excellent condition.

Asking: \$180 (cash)

Contact: Fred Fry

Email:

riverfry@gmail.com

## FOR SALE:



### Televue Radian 18 mm Eyepiece

- Excellent condition.

Asking: \$180 (cash)

Contact: Fred Fry

Email:

riverfry@gmail.com

## FOR SALE:

### Celestron CPC Deluxe 800 HD Telescope with tripod.

Accessories:

- Celestron 1.25" eyepiece and filter kit.
- Tele Vue nebula filter.
- Celestron UHC/LPR filter.
- Celestron 15mm 1.25" 82 degree wide field eyepiece.
- Stellarvue 1.25" Dielectric Diagonal.
- Stellarvue 1.25" erecting prism.
- Celestron power tank and dew shield.
- Astrozap sun filter.
- Celestron AC adaptor.
- JMI custom hard shell case for telescope.

All 8 months old, brand new condition.

Asking: \$2200

Contact: Jim Hall

Phone: 330-268-8695

## FOR SALE:



### Pentax XW 20mm Eyepiece

- Excellent condition.
- Small mark on 1.25" barrel.
- Always used in a compression clamp.

Asking: \$220 (cash)

Contact: Fred Fry

Email: riverfry@gmail.com

## FOR SALE:

### Celestron NexStar 8i computerized to go 8" F/10 Schmidt-Cassegrain

Focal length 2032 mm with 406x highest useful power.

Includes:

- GPS module.
- Five multicoated Plössl eyepieces.
- 2X Barlow lense.
- Seven filters.
- A/C adaptor.
- Night vision flash.
- Celestron star pointer.

All rarely used and in new condition.

Cost \$1,689 new.

Asking: Best Offer

Contact: Nick Bade

Email: nb@tribco.com

Phone: 216-486-2000 weekdays and

440-585-8687 evenings and weekends.

## Advertise in the Swap n Shop!

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editor:

speedymissy@yahoo.com

## The Presidents Column Con't

The circumstances surrounding Geauga Observatory Park's application for designation of International Dark Sky Park was quite different than that of Headlands. Geauga Observatory Park was awarded a provisional certification as a silver tier Dark Sky Park in October 2008, prior to the park's actual construction. This was the first time IDA awarded such a designation.

Ultimately, the foundation for Observatory Park began with a donated telescope in 2002 and the acquisition of 500 acres of land. Then in 2008, nationally known Nassau Observatory (which was moved to Geauga County from Cleveland in 1957 due to light pollution) was acquired with its 280 acres from Case Western Reserve University for \$915,000. The park now boasts 1,117 acres of land with less than 20% of developed acreage. The mission is to "preserve, conserve, and protect...the identified rare species and flora on the property and the Cuyahoga River watershed which feeds into the Lake Erie basin."

Science professionals from numerous universities, the Great Lakes Science Center, and the Cleveland Museum of Natural History worked in collaboration with local astronomy clubs and school districts to create the park's design and programs. Observatory Park encourages its visitors to connect with "the natural world, from ground to galaxies." Upon the park's completion in 2011, a 53 page application for permanent International Dark Sky Park status was submitted and permanent status was awarded.

Currently, the United States is home to 29 of 39 worldwide International Dark Sky Parks. Perhaps as you travel, you and your families can make plans to visit a number of the parks listed and experience the awe of our dark night skies.

### International Dark Sky Parks in the United States

Big Bend National Park, Texas  
Black Canyon of the Gunnison National Park, Colorado  
Blue Ridge Observatory and Star Park, North Carolina  
Canyon Lands National Park, Utah  
Capitol Reef National Park, Utah  
Capulin Volcano National Monument, New Mexico  
Chaco Culture National Historical Park, New Mexico  
Cherry Springs State Park, Pennsylvania  
Clayton Lake State Park, New Mexico  
Copper Breaks State Park, Texas  
Dead Horse Point State Park, Utah  
Death Valley National Park, California  
Enchanted Rock State Natural Area, Texas  
Flagstaff Area National Monument, Arizona  
Gauga Observatory Park, Ohio  
Goblin Valley State Park, Utah  
Goldendale Observatory Park, Washington  
Grand Canyon National Park, Arizona  
Grand Canyon-Parashant National Monument, Arizona  
Great Basin National Park, Nevada  
Headlands, Michigan  
Hovenweep National Monument, Utah  
Kissimmee Prairie Preserve State Park, Florida  
National Bridges National Monument, Utah  
Oracle State Park, Arizona  
Pickett CCC Memorial State Park & Pogue Creek Canyon State Natural Area, Tennessee  
Staunton River State Park, Virginia  
UBarU Camp and Retreat Center, Texas  
Weber County North Fork Park, Utah

*Article By Cathy Loboda  
ACA President*

## The Kiwanis Rose Remembrance Day Sale

We generally have our monthly business meetings at the Portage Lakes Kiwanis Civic Center on Portage Lakes Drive. In the past, we have accumulated a very respectable rose order at our September meeting to help support the Kiwanis on their yearly fund-raising venture. The ACA gets the benefit of having the Kiwanis Civic Center for our meetings at zero expense, and for that we are extremely grateful. Once again, the Kiwanis needs the Civic Center for their own use while the Rose Remembrance Day business is occurring and, hence, our move to New Franklin City Hall, 5611 Manchester Rd, Akron, OH 44319 for our Sept 23, 2016 meeting. We will not be accumulating an order as we have done in the past, but we should still help the Kiwanis by purchasing roses online or by phone, as detailed on the ACA Webpage. Roses will be delivered (but only in Summit County) on Oct 1, 2016.

BE SURE to indicate your involvement with the ACA (ASTRONOMY CLUB of AKRON) so that they're aware of our team support. How do you do that?

- If ordering by phone, simply tell them that the "Akron Astronomy Club" is the sales organization when you place your order.
- If ordering online (it is very simple to do), at the very bottom of the last page of the process, there's a "SOLD BY" drop-down menu. Click on the down-arrow to the right of the "Sold By:" box and click on the "Akron Astronomy Club"

It's a win-win-win...the Kiwanis will receive the donation, the ACA will get credit for your purchase and you'll get a dozen gorgeous roses for that special someone. OK, now - go out there and purchase these beautiful roses!!! Tell your family and friends and ask them to give the ACA credit, too. The more, the merrier! Please see the ACA Webpage for complete details.

### September Astronomical Events

Day Hour(UT)

1 09 NEW MOON Eclipse  
2 13 Ceres stationary  
2 17 Mercury 6°S. of Moon  
2 17 Neptune at opposition  
2 22 Jupiter 0° .4S. of Moon Occn.  
3 11 Venus 1° .1S. of Moon Occn.  
6 19 Moon at apogee  
8 21 Saturn 4°S. of Moon  
9 12 FIRST QUARTER  
9 14 Mars 8°S. of Moon  
13 00 Mercury in inferior conjunction  
15 20 Neptune 1° .2S. of Moon Occn.  
16 19 FULL MOON Penumbra Eclipse  
17 23 Venus 3°N. of Spica  
18 17 Moon at perigee  
18 17 Uranus 3°N. of Moon  
21 10 Mercury stationary  
21 23 Aldebaran 0° .2S. of Moon Occn.  
22 14 Equinox  
23 10 LAST QUARTER  
26 03 Pluto stationary  
26 07 Jupiter in conjunction with Sun  
28 20 Mercury greatest elong. W.(18°)  
29 11 Mercury 0° .7N. of Moon Occn.

### October Astronomical Events

Day Hour(UT)

1 00 NEW MOON  
3 17 Venus 5°S. of Moon  
4 11 Moon at apogee  
6 08 Saturn 4°S. of Moon  
8 02 Pallas stationary  
8 12 Mars 7°S. of Moon  
9 05 FIRST QUARTER  
11 04 Mercury 0° .9N. of Jupiter  
13 06 Neptune 1° .2S. of Moon Occn.  
15 11 Uranus at opposition  
16 02 Uranus 3°N. of Moon  
16 04 FULL MOON  
17 00 Moon at perigee  
19 07 Aldebaran 0° .3S. of Moon Occn.  
21 05 Ceres at opposition  
22 19 LAST QUARTER  
26 04 Venus 3°N. of Antares  
27 16 Mercury in superior conjunction  
28 10 Jupiter 1° .4S. of Moon  
30 08 Venus 3°S. of Saturn  
30 18 NEW MOON  
31 19 Moon at apogee

*Information Credited,  
Her Majesty's Nautical Almanac Office,  
United Kingdom Hydrographic Office.  
US Naval Observatory.*



## September 23, 2016 - General Membership Meeting



**Speaker:** Gary Kader; Director - Burrell Memorial Observatory; Dept. of Physics & Astronomy; Baldwin Wallace University.

**Presentation:** "Copernicus to Newton: 150 years that changed the World" Mr. Kader will discuss how the Renaissance revolutionized pursuits and about the group of men whose discoveries launched what ultimately would become known as science.

**About our speaker:** Mr. Kader last spoke to our membership at the Portage Lakes Kiwanis Civic Center on Friday October 23, 2015 when his topic was "The Harvard Computers - The Women Who Launched 20th Century Astronomy". An article appeared in the Nov 1, 2010 Plain Dealer about the Baldwin Wallace observatory, the Warner & Swasey refracting telescope with a 13 3/8 inch objective, and

Gary Kader: "Baldwin-Wallace College houses a little-known gem: a refracting telescope"

### **New Alternate Meeting Location!!!**

New Franklin City Hall  
5611 Manchester Road  
Akron, OH 44319

### **Where is New Franklin City Hall?:**

- 1) It's on Manchester Road, the same road as the entrance to Portage Lakes State Park.
- 2) It's ONE MILE south of the PLSP entrance we use to get to the Observatory..
- 3) It's on the North East corner of the Manchester Road / Center Road intersection.
- 4) It's BEHIND the New Franklin Fire Station.
- 5) Enter the parking lot from either Manchester Road or Center Road.

We had to change the location of this month's meeting due to the Kiwanis Civic Center, our normal meeting location, being used for Kiwanis' business. We should be back at the Kiwanis Civic Center for next month's meeting. Watch for announcements prior to the next meeting.

Please note that we ALWAYS encourage the public to attend ANY of our events, including meetings. Come and enjoy the lecture and talk to us about astronomy!

## **Meteorite Of The Month**

By Marissa Fanady

I realize that it has been quite some time since I've featured a meteorite in the newsletter. As my condition progresses it gets a bit tougher to keep up on everything so I bounce back and forth between this and an astronomy object of the month. Typically I choose the astronomical objects more often because well we are an astronomy club after all; keeping meteorites on the down low just makes it that much more of a special treat I think. Since it has been a while I decided to feature a meteorite; and not just any meteorite...this time I choose a lunar meteorite! Yes you read that correctly, in this issue you're going to learn about a meteorite from the moon. Folks I give you NWA (Northwest Africa) 8687, a Lunar Troctolite meteorite from my personal collection. My specimen is 1.42g and it is my largest piece of the moon. Continue reading and I'll tell you everything about this precious gem that I could dig up, how many lunar meteorites we've discovered so far, the difference between a moon rock and a moon meteorite, and how we know when a meteorite is from the moon.

Ok first things first, what exactly is a troctolite? Well they are rocks made up of magnesium and iron; these are intrusive rocks, like lava after it cools and hardens into new rocks. Since they have undergone heating and cooling they mix and crystallize with other surrounding minerals and therefore consists of various amounts of olivine, plagioclase, and minor pyroxene. Armed with this information scientists think that lunar troctolites formed early in the moons history when lava oceans were flowing. We see the evidence of this past in the dark areas on the moon that we call "seas". This meteorite was found in Northwest Africa in 2014, so far only 563 grams have been found. Typically NWA meteorites are bought in Morocco or sold on ebay and most are found by nomads because they understand how expensive meteorites can become, especially if they can spot a rare type like a lunar or martian meteorite. Tons of meteorites come out of Africa so typically most NWAs remain unclassified, there's just too much material and not enough interest or funds for the scientists to classify them all. NWA 8687 has a high shock stage meaning that the meteorite has lots of cracks within the rock from previous collisions with other space rocks. This rock also has a low weathering grade so it hasn't been changed much by the earth's atmosphere. Laying in the dry desert gives meteorites the perfect environment to last thousands of years without weathering away and becoming one with the planet. Also, noted inside this meteorite are shock melt veins. These occur when a body is impacted and the force causes the rock to crack on the inside but the force is not strong enough to completely break it apart. Then the rock undergoes a heating process, like burning up from atmospheric friction, and some of the cracks become melted and fuse together again, further mixing and recrystallizing the meteorite. Some meteorites, like some Chelyabinsk samples, are only completely shock melting material and look totally different from meteorite samples. NWA 8687 has a beautiful fine grained pale green tan interior and the shock melt material is very fine. Some, like mine, have a bit of the lighter material on the moon and then there are some made up of completely lighter tan to white minerals. Currently there are 261 approved official lunar meteorites that have been discovered and more will come! The moon is constantly being bombarded by space debris, as evident by the craters left behind by these impacts, and with such a low gravity field material can easily escape the moon. Sometimes we get lucky and this material makes its way here for us to find and study. So...how do we know when a meteorite is from our closest celestial neighbor? Well simple, we've been there! Thanks to the Apollo missions we have walked on the moon and collected samples to return for further research to solve the mystery of how our natural satellite formed. By comparing these samples to meteorites we were able to match up the minerals and gases to discover that some meteorites match perfectly. Now, there is a big difference between moon meteorites and moon rocks. Lunar meteorites were blasted off of the moon and migrated here where they were burnt and transformed by heating and cooling from tumbling through the atmosphere. Anyone can hunt for, find and keep any lunar meteorite that they locate. But a moon rock is a different story...they are the samples that we returned from the Apollo missions and only NASA has ownership of these rocks. Owning a moon rock is illegal, some were actually stolen from NASA by their own scientists; the hunt is still on for these stolen samples. The only way to see a moon rock is to go to a NASA facility and hope some are on display or you can visit a museum that has one on loan from NASA. The Cleveland Museum of Natural History has one nicely displayed from the Apollo 12 mission I believe. But unfortunately you will never touch a moon rock...so we collectors turn to the next best thing, a lunar meteorite. Actually holding the moon in my hand while looking up gazing at our satellite is just the most incredible thing one can do in my book, in my mind I am on the moon. Anyone can own a piece of the moon and I'll gladly help anyone who would like to purchase their very own piece. But I will warn you, looking to get a piece large enough to handle will require a nice chunk of change! The very small samples are easily affordable but you can't touch them; if you do you risk losing/breaking your very small crumb. So I suggest that if you buy a small sample you should keep it in the case and just enjoy looking at your little gem!



**NWA 8687 lunar troctolite under a microscope. Note the lighter tan triangle material surrounded by the greener melt area and some very feint metal veins within the lighter material. Image by ACA member Marissa Fanady.**

Funny how meteorites from our closest neighbor tend to be pretty expensive when one might think that we should have a fair amount of material with this body being so close. But then again with the history behind the moon and how important it is for life on earth I'm not surprised at how precious this material is to us humans. Moon meteorites are definitely well worth way more than gold, without this beautiful perfectly placed object we might not be here. Thanks to the moon we have stability, a nice 24 hour day, our seasons, high and low tide, we enjoy beautiful eclipses, and so much more. The moon gave us balance. Even more important, the moon gave us the drive to venture out into space; to take that so very important first step in traveling amongst the stars. We owe the moon so much...who wouldn't want to have a piece of this truly amazing object?

*Article By Marissa Fanady  
ACA Publications Secretary*

## **ACA NEWS AND NOTES**

### **MARK YOUR CALENDARS**

Observatory Director Ron Kalinoski will have the ACA observatory open at 7:45 p.m. on September 24 for our scheduled star party, weather permitting. The event will feature planetary nebulae. We are soon coming upon the conclusion of this year's scheduled star parties. The remaining parties are October 1 at 7:30 p.m., and October 22 and 29 at 7:00 p.m. Check the ACA website for the updates as each date nears. Come out in support of the events and enjoy fellowship with the public and each other!

### **MEMBERSHIP**

The ACA Board and Treasurer Nick Mihiylov want to remind you that ACA's calendar year now begins in September when our monthly meetings resume. Please turn in your membership dues by or during the September 23rd meeting to ensure ACA has the financial support needed to continue serving Akron and its neighboring communities.

### **MEMBER FIELD TRIP**

ACA members are invited to tour the Allegheny Observatory in Pittsburgh on Friday, October 14th. Reservations for the two hour guided tour have been made with observatory staff. The tour begins at 8 p.m. with a film presentation followed by a guided walking tour of the building. The tour ends with opportunities to view the night sky's offerings through the observatory's 13" Fritz-Clark refractor telescope.....weather permitting, of course. Members on tour should remember to dress for the weather and wear comfortable shoes.

Since the tour ends at 10:00 p.m., ACA will contract transportation for members if there is interest. Research presently has transportation costs hovering in the \$40 per person vicinity. There is no cost for the observatory tour. Please email President Cathy Loboda at [cnloboda@aol.com](mailto:cnloboda@aol.com) before September 30th with the number in your family attending and if you will seek transportation with ACA. If you plan on providing your own transportation, please contact Cathy so car pools may be organized. Just a reminder: tours are not recommended for children under the age of 7.

The observatory, located in Riverview Park four miles north of downtown Pittsburgh, was built in 1861. The observatory is considered one of the major astronomical research institutions of the world and is owned by the University of Pittsburgh. Primarily used as a private research lab, the observatory is only open to the public through the tour program.

### **ACA Membership Picnic**

ACA's Annual Membership Picnic was held August 21 at Big Oaks Pavilion, Portage Lakes State Park. Members in attendance enjoyed good company, good food, and a good time. A special thank you goes to Ann Ferrell for taking over ACA's responsibility for providing meat, paper product, and drinks. A number of board members had family obligations that took them away at the last minute. In true ACA fashion, Ann stepped up to help without hesitation. Thanks, Ann!

### **Meeting Refreshments**

The ACA Board is asking for volunteers to provide simple refreshments for our monthly meetings. This break between speaker and membership meeting is a valuable time to chat with the speaker or friends as we refresh and build bonds.

We will need 8 volunteers to commit to one monthly meeting in order to cover our meeting calendar year. Contact President Cathy Loboda at [cnloboda@aol.com](mailto:cnloboda@aol.com) to volunteer.

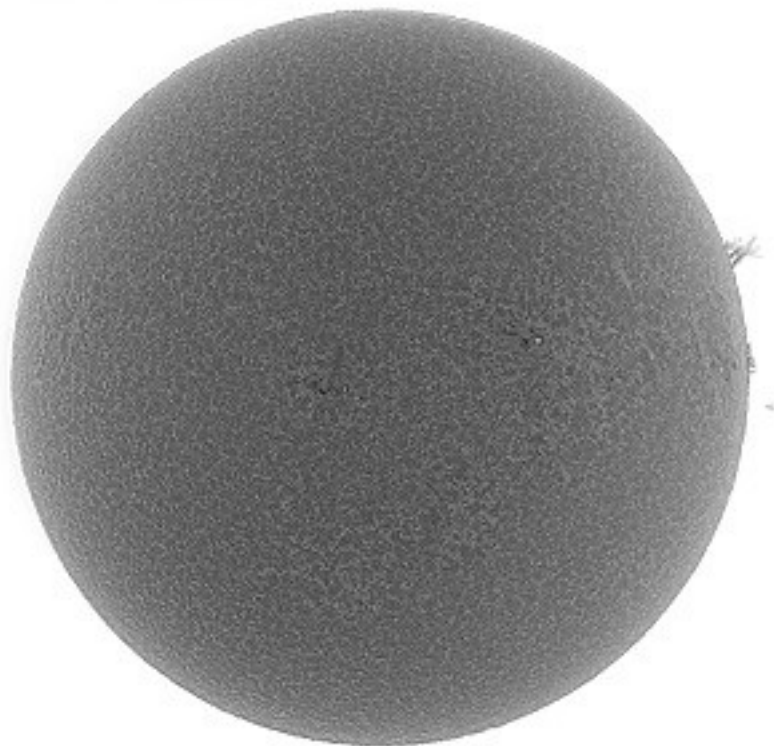
### **ACA Board Meeting**

The ACA board will meet on Sunday, September 18th. If you have any ideas or concerns you want the board to address, please email President Cathy Loboda at [cnloboda@aol.com](mailto:cnloboda@aol.com) so it may be placed on the meeting agenda.



# Member Photos

More of Lenny's amazing photos, and he calls this just playing around!



# The Night Sky

Newsletter of the Astronomy Club of Akron

c/o Marissa Fanady, Editor

443 Fernwood Ave.

Tallmadge OH, 44278

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## The Astronomy Club of Akron

c/o Nick Mihiylov

13495 Mogadore Avenue NW

Uniontown, Ohio 44685-9347

Yes! I want to become a member of the Astronomy Club of Akron

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

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EMAIL ADDRESS: \_\_\_\_\_

**Astronomy Club of Akron** annual memberships renew in the month of September.

ADULT (ages 18 and older) \_\_\_\$30.00

JUNIOR (ages 12 to 17) \_\_\_\_\_\$15.00

ADDITIONAL ADULT member \_\_\_\$15.00

FAMILY MEMBERSHIP \_\_\_\_\_\$40.00

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