



The Night Sky

The Newsletter of
The Astronomy Club of Akron

www.acaoh.org

Volume 35 Number 8

August 2013

SUMMER BREAK! NO MEETING AT KIWANIS THIS MONTH.

The President's Column

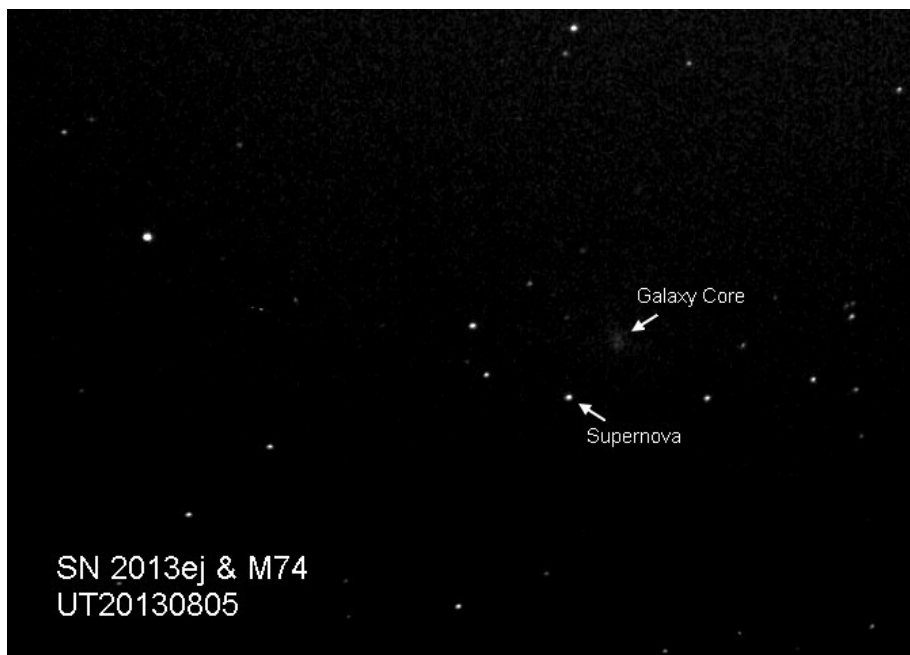
By Gary Smith

Hello to all fellow members of the ACA. The month of August is upon us and we have been given the gift of warm shirt sleeve weather in which to pursue our favorite hobby of star gazing. However, the changing weather has played havoc with our best attempts to predict clear skies for our star parties. I am very much hoping that August will reverse our fortunes.

The Year 2013 has been alive with excitement for the astronomical community. The reports and articles in the venerable Sky & Telescope and Astronomy Magazines, and the website Space.com have served to keep us well informed of current astronomical events. Comet Pan-Starrs did give a good performance but it favored the audience that resided south of the equator.

For those of us who are interested in the important field of radio astronomy, the country of China will place the finishing touches on the world's largest radio telescope in the last part of 2016. The Five Hundred Meter Aperture Spherical Telescope (FAST) resembles the world famous Arecibo radio telescope but will be larger. It will also benefit from various advancements in radio telescope engineering. The Arecibo

SUPERNOVA IN GALAXY M74!



Supernova SN 2013 ej, August 5, 2013, By ACA member Jason Shinn. On July 25th a supernova was discovered in Messier galaxy 74, the second faintest object in the Messier catalogue. Here you can just make out the core of the galaxy. The supernova itself has outshone its host galaxy by magnitudes. Meade LXD55 w/Canon Digital Rebel. 2X 30sec exp unguided, ISO 1600.

telescope is 305 meters in diameter with a fixed shape spherical dish. Essentially the Arecibo telescope points to zenith and the sky drifts across its focus. The FAST telescope differs because its spherical shape is adjustable and will allow its focus to range 40 degrees away from zenith in all directions. The drawback is the effective diameter is reduced to 300 meters when observing the sky at 40 degrees from its zenith. The single

greatest advantage of radio telescopes is they can link. Radio telescopes placed in different places over the globe can combine their data to achieve a "baseline" that is nearly equal to the diameter of the Earth.

One of my favorite celestial objects for 2013 is Comet ISON. It is approx 3.5 AU from the Earth and 2.5 AU from the sun.

(con't page 4)

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July Treasurer's Report

By Glenn Cameron

7/1/2013 Through 7/31/2013

Checking Beginning Balance	\$2,548.01
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Income

Magazine Subscriptions	34.00
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Dues	220.00
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Donations	60.00
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Solar Party Hot Dog Roast	78.00
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Total Income	\$392.00
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Expenses

Magazine Subscriptions	-34.00
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Web Hosting	-45.06
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Total Expenses	-\$79.00
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Income Less Expenses	\$313.00
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Checking Ending Balance	\$2,861.01
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Savings Beginning Balance	\$2,500.24
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Earned Interest	0.11
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Savings Ending Balance	\$2,500.35
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Petty Cash Beginning Balance	\$49.41
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Solar Party Hot Dog Roast	10.60
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Petty Cash Ending Balance	\$60.01
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Petty Cash	60.01
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Savings	2,500.35
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Checking	2,861.01
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Grand Total	\$5,421.37
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*Article by Glenn Cameron
ACA Treasurer.*

The ACA wishes to welcome our newest member:
Dale Woodling
 We look forward to seeing you at all club functions!

“Two possibilities exist: Either we are alone in the universe or we are not. Both are equally terrifying.”
 —Arthur C. Clark

Astronoquiz
 By Marissa Fanady



The last quiz question I left you with was an easy multiple choice question. The question was, what was the exact year, month, and day that the United States put the first human on our closest neighbor the moon?

The choices I gave you were:

- A. August 12, 1959
- B. July 20, 1969
- C. May 10, 1970
- D. June 21, 1968

Many of you got the correct answer which is B. July 20, 1969 congratulations! Everyone who was lucky enough to be alive for this historic moment are, in my eyes, extremely fortunate people. You got to witness mans first, of hopefully

many, visits to a new world. So what do we have to look forward to now? Mars! Right now scientists and private companies are in the great race to the red planet! Before you know it the world will be watching the Mars landing on television. Tune in to next months newsletter for an all new Astronoquiz question!

Article by ACA member Marissa Fanady.

SWAP & SHOP



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:
15mm Ultra-Wide Angle Eyepiece
 Asking: \$40
 Contact: Lew Snodgrass
 Phone: 330-819-4886
 Phone: 330-867-4800 Ask for Lew.
 Email: chrply@aol.com



For sale:
Televue Radian 12 mm Eyepiece

- Excellent condition.

Asking: \$180 (cash)
 Contact: Fred Fry
 Email: riverfry@gmail.com



For Sale:
22mm Orion Epic ED-2 ED Eyepiece
25mm Orion Epic ED-2 ED Eyepiece
 Asking: \$40 each or \$70 for both
 Contact: Glenn Cameron
 Phone: 330-737-1472
 Email: glenn@cameronclan.org



For Sale:
Televue Radian 18 mm Eyepiece

- Excellent condition.

Asking: \$180 (cash)
 Contact: Fred Fry
 Email: riverfry@gmail.com

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 Send a picture of your item and relevant information to the newsletter editor:
 truemartian@aol.com

President's Column Con't

The comet will make its closest approach to the sun on November 28, 2013 and this is the day of its projected greatest brilliance. Its current speed relative to the sun is 59,200 mph. Every day that goes by brings an increase in speed and a decrease in distance.

As Comet ISON makes its approach to the inner solar system it will be monitored by a collection of space based probes and satellites that have cameras. Later this month, it will first be greeted and photographed by the HiRISE camera onboard the Mars Reconnaissance Orbiter. The HiRISE is a reflecting telescope with a 19.6 inch diameter mirror that is constructed as an f/24 camera. The MRO will take a series of images from late August until Comet ISON makes its close approach to Mars in October 2013 at a distance of only 0.07 AU's. I will be very interested in comparing the quality of the HiRISE photos with the Hubble Space Telescope photos. Between now and November the HiRISE camera is closer to Comet ISON but the diameter of the HiRISE primary mirror is 19.6 inches and the Hubble's is 94 inches.

The month of August will bring a virtual panorama of famous celestial objects. The bright planet Venus is currently the third brightest object in the sky. Venus gets as bright as -4.6 magnitude and is very visible low on the western horizon for approx 90 minutes after sunset for the entire month. Venus is one the four terrestrial planets of the solar system and has a diameter that is only 5% less than Earth's. Its mass is .815 that of Earth and its volume is .866 that of Earth. But here the similarity ends. The concentration of CO₂ in Earth's atmosphere is 0.0387%. The concentration of CO₂ in the Venusian atmosphere is greater than 96%. The atmospheric pressure at the surface of Venus is 92 times that of Earth's and

its surface temperature is approx 863 degrees F. The common metal Lead melts at 621.5 degrees Fahrenheit.

The Summer Triangle is the dominant asterism of the August sky. The three stars of the Summer Triangle are:

1. Vega (alpha Lyrae). It is the fifth brightest star in the sky. It is larger (2.1 solar mass) and hotter (between 8000 to 10000 K) than the sun. It is also only 25 light years distant from the sun.
2. Deneb (alpha Cygni). It is the 19th brightest star in the Sky. It is a blue-white super giant star and is one of the most remarkable of the bright stars that populate our night sky. Its distance is difficult to determine, but is guesstimated at 2600 light years. Its luminosity is estimated at 1/5 million times more luminous than our sun.
3. Altair (alpha Aquilae). It is the 12th brightest star in the sky with a distance of 16.7 light years from the sun. It is 1.79 solar masses and 10.6 solar luminosity. Its most unusual characteristic is that it is a very rapidly rotating object. The sun rotates once every 25 days at its equator. Altair rotates once every 8.9 hours at its equator. This rapid rotation causes Altair to become oblate. Its equatorial diameter is approx 20% greater than its polar diameter.

The August Sky is also rich in Messier Objects. M13 is the Great Globular Cluster in Hercules. To find M13, first find the Keystone in the constellation of Hercules. M13 is located along a line drawn between the NW and SW stars of the Keystone. It is considered to be the finest globular cluster of stars in the northern celestial hemisphere. It is 23 arc minutes across and contains approx 300,000 stars. It is a good binocular object and easily seen in small telescopes.

M3 is a fine globular cluster in

Canes Venatici (Latin for the hunting dogs). It is considered to be a close runner-up to M13. It is found by drawing a line between Arcturus and Cor Caroli (alpha Canum Venaticorum). The cluster is one of the largest and brightest in our sky. It contains approx 1/2 million stars and is about 34,000 light years distant. It is estimated to be 8 billion years old. M3 is one of the best studied globular clusters in astronomy. The studies reveal that it has a comparatively large number of variable stars. The first record of its discovery was by Charles Messier in 1764.

M57 is the Ring Nebula in the constellation Lyra. It is located between the two stars that form the southern line of the parallelogram when drawn between beta and gamma Lyrae. The Ring Nebula is a planetary nebula (although it has nothing to do with planets). It is visible in binoculars under good seeing but only as an object. The appearance of a silvery gray smoke ring requires an 8 inch or larger telescope. This is an example where a larger telescope will show more details. And when a modest priced camera is attached, M57 will show colors. This ringed shaped nebula was formed by a red giant star that expelled a shell of ionized gas into space. This red giant star was in its final stage of evolution before becoming a white dwarf star.

M27 is the famous Dumbbell Nebula in the dim constellation Vulpecula. It is found by drawing a line from Albireo to the small circlet of stars in the dim constellation Delphinus. It is the first planetary nebulae to be discovered (1764). Charles Messier described it as an oval nebula without stars. This planetary nebula is the most impressive object of its kind in the sky, as the diameter of its luminous body is nearly 8 arc minutes (1/4 the diameter of the moon). It is also one of the brightest with an apparent visual magnitude of 7.4.

Determining the distance of any planetary nebula is difficult as it is a shell of diffuse gas that is moving rapidly. The distance of 1200 light years is a commonly accepted figure. The dumbbell nebula is readily seen in binoculars and small telescopes. The rate of expansion of the shell of gas is rapid and it is thought to be a younger planetary nebula. The central star in the nebula is a white dwarf with an estimated diameter of 0.055 solar masses which is the largest diameter of any known white dwarf star.

The dim constellation of Vulpecula contains one of the most remarkable groupings of stars in the sky. Brocchi's Cluster has the popular name of the Coathanger or Collinder 399. The Coathanger is made of 10 stars

ranging from 5th to 7th magnitude which form a conspicuous "coat hanger", a straight line of six stars with a hook of four stars on the south side. It is usually found by drawing a line from Altair to Vega. Start at Altair and travel 1/3 the distance northward and you will find the Coathanger. Under good seeing conditions on a moonless night, the Coathanger will appear as an unresolved patch of light by the unaided eye. It is best viewed with binoculars or a telescope capable of a wide field of view under low magnification. Its width is approx 1 degree. The newly marketed Ethos eyepiece made by Televue might allow a telescope of conventional design to view the full width of the Coathanger. In the 1920's the American amateur astronomer

Dalmiro Brocchi sketched it in a finder chart for AAVSO. Since then the Coathanger has been popularly known in this country as Brocchi's Cluster. The distances of the ten stars range from 200 to 1100 light years. The most recent studies of the proper motions of the Coathanger's stars indicate that they are not related. After a few tens of thousands of years in the future, the proper motions of each of the members of the Coathanger will change the shape from the Coathanger to something else.

The August sky hosts a myriad of celestial wonders. Each is a marvel that is free for the taking.

*Article by Gary Smith,
ACA President.*

Observatory Report

By Ron Kalinoski



What a great time we had at our July 13th star party for "First Light" of the 16" observatory telescope. Over 100 people showed up for the star party with clear skies all evening.

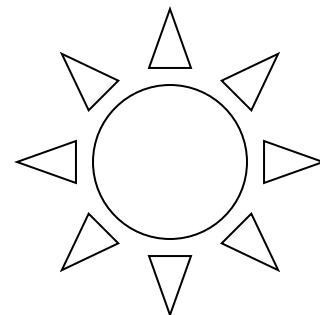
The first object the public viewed was a five day old Moon. The response from the public was awesome. Many of the people never looked through a telescope before. The next object viewed was Saturn; a fabulous view of the rings tilted at 20 degrees inclination. Cassini Division & ring shadow on disk were visible. The line for viewing the Moon and Saturn took us well into the evening observing session. We changed out the eyepiece and fitted the telescope with the 31mm Nagler. Finally, the time came to slew to M13; to see if there was going to be any noticeable difference, any upgrade of image quality from the 14" observatory telescope. My first response was "Wow, that's sweet"!

Yes, a step change in image quality; definitely incredible. Every member that looked through the 16" telescope quickly responded with amazement and confirmation 30% more light and 15% better resolution produces a significantly better image. Even one non-member from our impromptu group commented there was more "star glow" in the center of the Great Hercules Cluster. John Shulan called it a "religious experience." Yes, we viewed God's creation up close and personal that night. Definitely impressive. John Crilly was out to the star party to "observe" the observing session. We got him over to the eyepiece to observe M13 and John liked what he saw. Fantastic! The ring nebula was the next object viewed through the 16" telescope with evermore stunning results. The richness of the image in the eyepiece was one club members have never seen before. This telescope dominates on deep sky objects. We continued down the observing list with Cat's Eye Nebula & Albireo. The last object we viewed was The Wild Duck Cluster, M11, a beautiful open star cluster filling the field of view with about

200 stars. We really made a hit with the observing public, that's what we're all about!

Our August 3rd star party was no less impressive as we explored new objects not yet viewed with the 16" telescope. Venus was our "early bird special" viewed just off the horizon at dusk. Open cluster NGC6633 looked crisp & bright. We were able to resolve stars down to the core of globular cluster M80, located near Antares. The observatory telescope worked well. There are a few issues we need to address; those will be resolved in time.

*Article by Ron Kalinoski,
ACA Observatory Director.*



STAR NAMES

Z T R F R Z M O M B A R Y J A U E S L P
G U U O S W G D E L L I E D Z P I K O J
C Y B A C Z Z T A L O G D N M R R L G J
B A I E H L E Y G P B E P F I I A D L Y
B P S D N L A D D C E L O U M R Z U A X
H K P T G E A R I M N N S D I Y V A T S
Y L V E O K L M B B E G T S L F Y P R U
A P U W B R B G O O D H E N O Y C O R P
G S C E K P D S E F N A R A B E D L A X
E J N W E O J C U N D U I L S M U L U W
V E Q N C S T C A L U M O M E K A U Z K
D G O J P A A N R N U B R A H A C X C C
Q G C F F O H O A J O G I J C I G Z I K
S E C A L B I R E O C P E N A L F U Y Q
I K L H F R B I Q B W S U R P E B J N H
X U K E P N A B U H T K R S E H U Z H L
S W C D A L T A I R K A G M L S O Y Y N
N E E E I P L B W Z T A R P L G E M M A
W Y W O B P U W Y P X N K E A R A T U Z
T R B H O I B V R Y O M R Q X L U G Z O

ALBIREO
ALCOR
ALDEBARAN
ALGOL
ALTAIR
BETELGEUSE
CANOPUS
CAPELLA
CASTOR
DENEBO

DENEBO
FOMALHAUT
GEMMA
MIRA
MIZAR
POLARIS
POLLUX
PROCYON
REGULUS
RIGEL

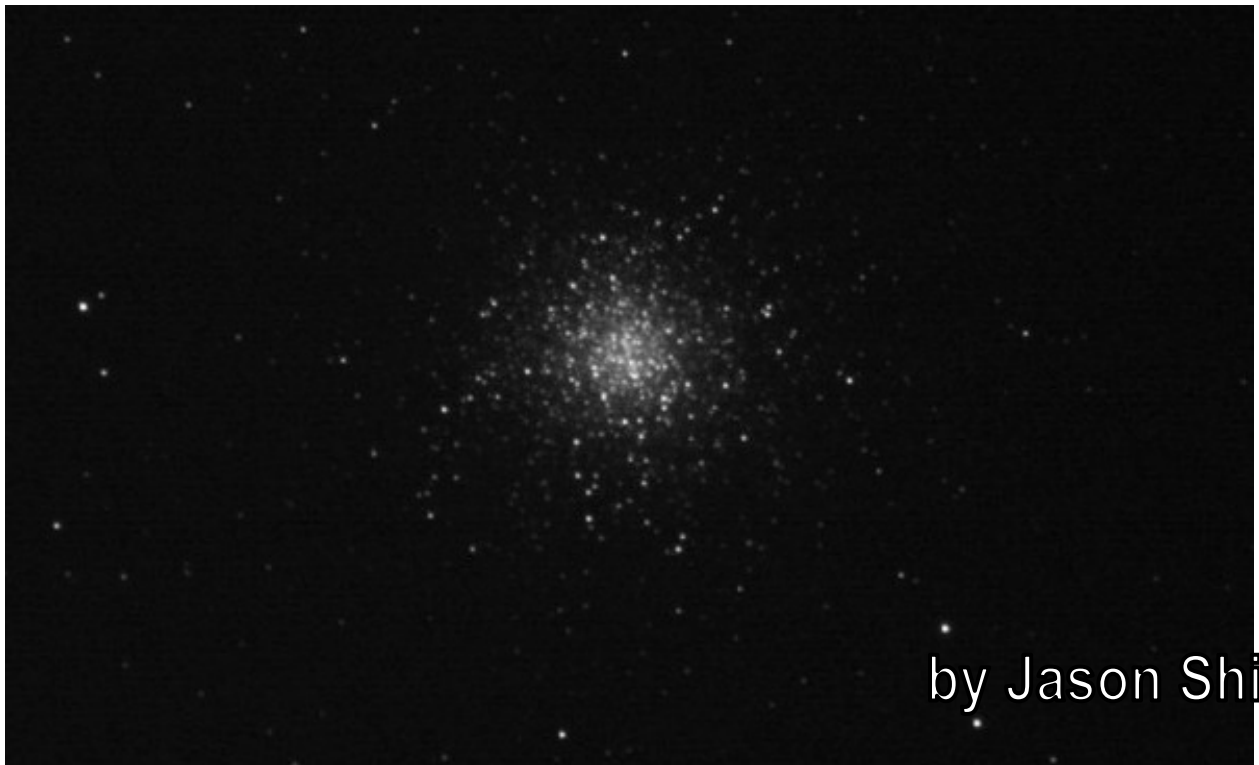
SADR
SAIPH
SHELIAK
SIRIUS
SULAFAT
THUBAN
VEGA
YED POSTERIOR
YED PRIOR
ZUBENELGENUBI

NEW IMAGES



by Len Marek

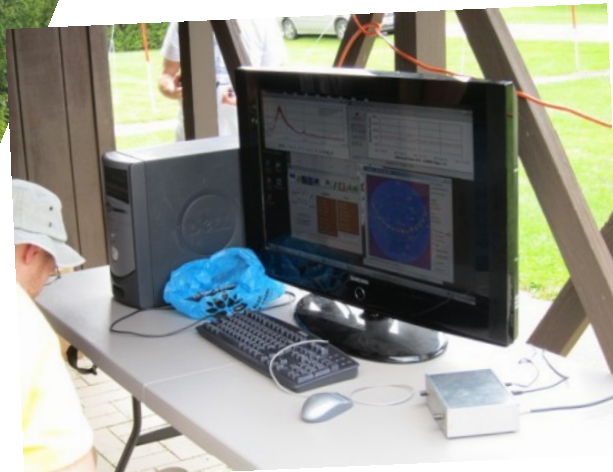
Pluto (arrow) over three nights, June 14,15,16 2013, north is up. Also in the image at top is Palomar 8 of the Palomar Survey of Dim Globular Clusters. Also of note, the middle frame shows Pluto's position dead center of two stars! Talk about a cosmic hole-in-one! Meade 14" f/8 ACF LX850 ota - SBIG ST8300M camera.



by Jason Shinn

Globular Star Cluster M13. August 5, 2013. Meade LXD55 w/Canon Digital Rebel. 8X 30sec exp unguided, ISO 1600.

SOLAR PARTY 2013



(top) Rick Burke and Dave Jessie bring their white light and H-alpha scopes to the solar party.





(middle) Jim Watson and Jason Shinn tuned in for radio emission from the sun as well.

(bottom) The observatory was open to reveal the brand new Meade 16" LX200 ACF.

by John Gasser

THE ASTRONOMY CLUB OF AKRON

SEPTEMBER 2013 ACTIVITIES CALENDAR

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5 New Moon 11:36UT 	6 STOW ASTRONOMY PUBLIC EVENT (www.stowastronomy.org)	7 ACA OBSERVATORY PUBLIC EVENT 7:30p Moon at apogee (farthest) at 9h UT.
8	9	10	11	12 First Quarter 17:08UT 	13 STOW ASTRONOMY PUBLIC EVENT (www.stowastronomy.org)	14
15 Moon at perigee (closest) at 17h UT.	16	17	18	19 Full Moon 11:13UT 	20 STOW ASTRONOMY PUBLIC EVENT (www.stowastronomy.org)	21
22 FALL EQUINOX OCCURS AT 20:44UT.	23	24	25	26	27 ACA MEMBERSHIP MEETING (KIWANIS) 8:00p Last Quarter 3:55UT Moon at apogee (farthest) 18h UT. 	28 ACA OBSERVATORY PUBLIC EVENT 7:00p
29	30	<p>AKRON, OH SUNRISE AUG 1 6:22AM EDT AUG 30 6:51AM EDT SUNSET AUG 1 8:42PM EDT AUG 30 8:02PM EDT</p>				

EST = UT - 5 hrs, EDT = UT - 4 hrs

The Night Sky

Newsletter of the Astronomy Club of Akron

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

www.acaoh.org

(PLEASE PRINT)

NAME: _____ PHONE: _____

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EMAIL ADDRESS: _____

Astronomy Club of Akron annual memberships renew in the month of May.

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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