



The Night Sky

The Newsletter of
The Astronomy Club of Akron

www.acaoh.org

Volume 35 Number 11

November 2013

Next Meeting: Friday - November 22, 2013 - 8:00 PM - Kiwanis

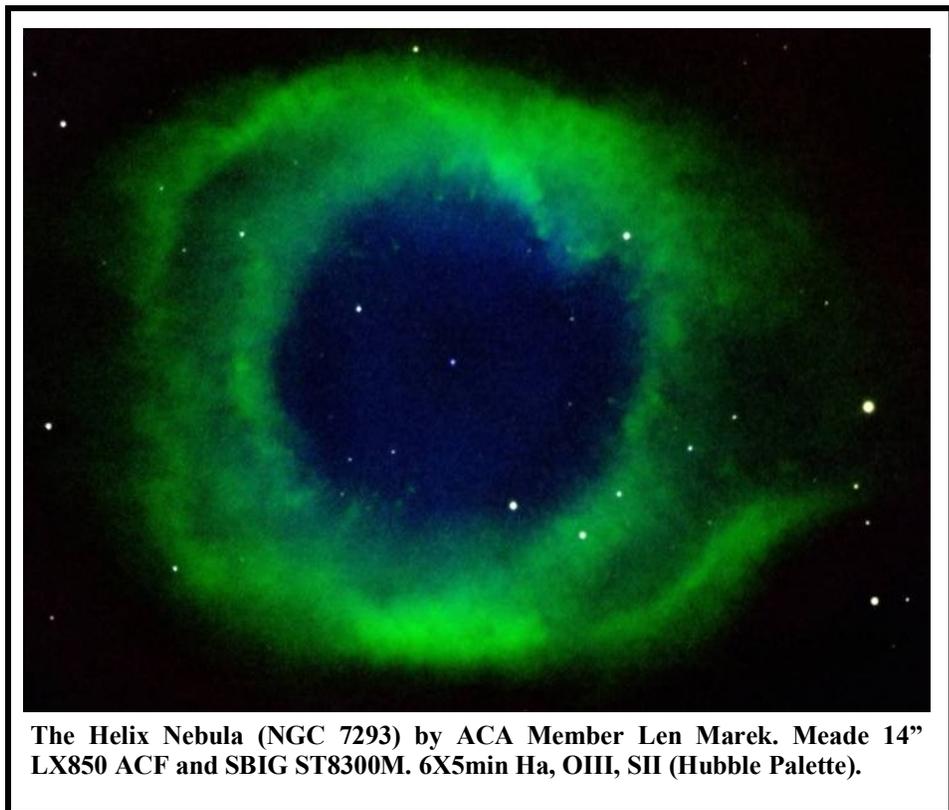
The President's Column

By Gary Smith

Hello to all fellow sky watchers and aficionados of the celestial sphere. November has always been challenged to give a special performance for residents of the northern latitudes. The temperature after sundown is a bit chilly and most of us have already searched the closets for our Winter clothes.

Well, the November of 2013 will not disappoint. The very bright object in the southwest at sundown is the magnificent planet Venus. A combination of special circumstances allows Venus to reach a brightness of -4.6 magnitude. Venus has very thick clouds that are highly reflective of the sunlight. It has an average distance of 0.723 AU's from the Sun. At close approach the Earth-Venus distance is only 26 million miles (0.28 AU's). It is common for Venus to become bright enough to cast shadows in dark areas on moonless nights.

The King of the Planets, Jupiter will make its appearance on the eastern horizon at about 11pm. The importance of Jupiter has become greater as time has passed. The Galileo spacecraft and mission that reached Jupiter in 1995 cost an estimated 3 billion dollars. Its instruments and cameras recorded images and data that were very much



The Helix Nebula (NGC 7293) by ACA Member Len Marek. Meade 14" LX850 ACF and SBIG ST8300M. 6X5min Ha, OIII, SII (Hubble Palette).

appreciated by amateur astronomers and planetary scientists and are still being studied today.

Another reason for the importance of Jupiter is that NASA mission planners are looking at the system for sites to explore with both unmanned and manned missions. The radiation belt around Jupiter has eliminated Io, Europa, and Ganymede from immediate consideration. This leaves Calisto as a promising site for a future manned mission.

The Andromeda Galaxy (M 31) has already been discussed. But I would like to say the months of November and December have performed well by raising M31 to our observers meridian. At this position in the sky along with a clear dark moonless sky the Andromeda Galaxy is spectacular.

(Con't Page 4)

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October Treasurer's Report

By Glenn Cameron

10/1/2013 Through 10/31/2013

Checking Beginning Balance	\$2,861.01
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Income

Dues	150.00
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Donations	278.00
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50/50 Raffle	28.00
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PreciseParts Refund	180.00
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Total Income	\$636.00
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Expenses

Observatory Expenses	-429.24
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Newsletter Expenses	-31.76
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Metisentry Web Hosting	-45.00
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Speakers Dinner	-19.22
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Total Expenses	-\$525.22
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Income Less Expenses	\$110.78
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Checking Ending Balance	\$2,231.84
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Savings Beginning Balance	\$2,500.56
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Earned Interest	0.11
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Savings Ending Balance	\$2,500.67
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Petty Cash Beginning Balance	\$59.55
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	0.00
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Petty Cash Ending Balance	\$59.55
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Petty Cash	59.55
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Savings	2,500.67
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Checking	2,231.84
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Grand Total	\$4,792.06
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*Article by Glenn Cameron
ACA Treasurer.*

SWAP & SHOP



For Sale:

Meade LX80 mount, tripod, and one counterweight. Includes Autostar and battery box power supply. Also includes cigarette lighter power cable. Works fine. I'm selling because I upgraded to an LX80 mount. I don't want to ship this thing so local pickup is necessary.

Asking: \$400

Contact: Glenn R. Cameron

Phone: 330-737-1472

Email: glenn@cameronclan.org



For Sale:

22mm Orion Epic ED-2 ED Eyepiece
25mm Orion Epic ED-2 ED Eyepiece

Asking: \$35 each or \$65 for both

Contact: Glenn Cameron

Phone: 330-737-1472

Email: glenn@cameronclan.org



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:

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:

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

Advertise in the Swap n Shop!
Send a picture of your item and relevant information
to the newsletter editor:
truemartian@aol.com

PRESIDENT'S COLUMN CON'T

The constellation of Triangulum is rather small and dim and would not be of interest to most people except for the fact that it hosts the Triangulum Galaxy (M33) also known as the Pinwheel Galaxy. M33 is a spectacular galaxy that was probably discovered before 1654 by Italian astronomer Hodierna. He lists it as a cloud-like nebulosity or obscuration. When William Herschel compiled his catalogue of nebula, he was careful not to include the objects on the Messier Catalog. However M33 is an exception and Herschel cataloged it as H V-17 in 1784. The galaxy is the third largest member of the local group of galaxies, of which the Milky Way and M31 are members. It is also important because it was discovered to have Cepheid Variable stars much the same as the Andromeda Galaxy. This was at the core of Hubble's evidence that "spiral nebulae" were actually galaxies that resided at great distances and not part of the Milky Way Galaxy as proposed by astronomer Harlow Shapley.

The year 1960 was important for the constellation of Triangulum. Astronomers Sandage and Matthews identified 3C48 as a radio source that matched with a visible object. It was called a quasi-stellar radio source or quasar. Quasars were the top astronomical mystery of the 1970's. Quasars are point-like objects just as are stars. However the estimated energy output of a quasar is enormous, thus the astronomers of the day thought them to be something other than a star. This became a puzzle that challenged all astronomers and for a while it appeared to be unsolvable.

The fall and winter sky brings another celestial favorite into view. The Pleiades (M45) are a wonder to behold. Also called the Seven Sisters. It is an open star cluster containing middle-aged hot B-type stars in the constellation of Taurus. It is one of

the nearest star clusters to us and many will say it is the most spectacular stellar cluster in the sky. The approximate distance is 440 light years. The Pleiades is a prominent celestial object for the unaided eye, binoculars, small telescope, and large telescope as well. The B-type stars are hot and are inside a reflection nebula which heavily influences their appearance. This is an example where wide-field and low magnification win the observing contest. A newer study places the age at 100 million years. The fate of the Seven Sisters is that they will separate and spread apart in response to the influences of the gravitational environment in which they reside. Some of the Pleiades stars are rapid rotators rotating at velocities of 150-300 km/sec. This rapid rotation results in an equatorial diameter that is larger than the polar diameter. Alpha Aquilae (Altair) is another rapid rotator. This rapid rotation can be detected from its spectra because it shows broadened and diffuse spectral absorption lines. The most prominent example of the rapid rotation is the star Pleione. In mythology Pleione was an Oceanid creature of Mount Kyllene in Arkadia. She was one of the three thousand daughters of the Titans Oceanus and Tethys.

One of the most famous of the Messier objects the Crab Nebula (M1) located in the eastern part of the constellation of Taurus. It is a supernova remnant and pulsar wind nebula. M1 has a history that is unmatched by any other object in the Sky. On July 4, 1054 Arab, Chinese, and Japanese astronomers recorded the appearance of a "guest star". At the peak of its luminosity it may have been four times as bright as the planet Venus. It remained visible in the daytime for 23 days and visible in the night sky for 653 days. Today M1 is what remains of a star that went supernova. It is a star that exploded with an energy release that is equal to the energy release of the Sun over its entire lifetime. The violence of the

explosion expels much or all of the stars material at a velocity of up to 10% of the speed of light. The explosion is the force that drives a shockwave into the surrounding stellar media, sweeping up an expanding shell of dust and gas called a supernova remnant.

The Crab Nebula can be located by first finding Alpha Tauri, Aldebaran which is the fourteenth brightest star in the sky. Many of the bright stars of Taurus form a large letter "V". Follow the side of the "V" in which the red giant star Aldebaran lies to the end of that line and you find the third magnitude star Zeta Tauri. The nebula is located one degree to the NW of Zeta Tauri and is 8.4 magnitude in brightness.

The Crab Nebula is one of the most heavily studied objects located outside of the solar system. The core of the M1 remnant is PSRB0531+21 (the Crab Pulsar) which is a relatively young neutron star. The diameter of the neutron star is estimated at 10 to 15 miles. Its density defies the imagination. A sugar cube size piece of neutron star placed on the surface of the Earth would rapidly sink to the core of the planet. A soup can size of neutron star material equals the mass of our Moon. The Crab Pulsar (neutron star) spins at approx. 30 times a second. In 1948 a researcher discovered the Crab Nebula was radiating the strongest radio waves of any celestial object. The work of Jocelyn Bell in the 1960's linked rapidly rotating neutron stars that is highly magnetized and emits a beam of electromagnetic radiation.

The November sky offers both treasures and riches that cannot be priced. These rewards are for all who look up into their night sky.

*Article by Gary Smith,
ACA President.*

Observatory Report

By Ron Kalinoski



We have come to the end of the observing season. Unfortunately, our last two scheduled star parties were canceled due to weather conditions. If weather conditions become favorable, we will plan more impromptu star parties. At our September membership meeting, members voted to purchase arborvitae trees to screen car lights from the observatory grounds. Efforts were made to secure a donation/discount from Home Depot which did not

come to fruition. As a result, time ran out to get the trees planted this year. I'll continue to follow up with Home Depot to see if they would like to donate trees for this project. Also approved at our September membership meeting was an Astro-Physics MaxBright diagonal. My plan was to purchase the trees this autumn and purchase the diagonal next spring. Since the trees are on hold until spring, I'll purchase the diagonal within the next couple of weeks. 2013 has really been an amazing year. Of course the main issue the club faced in 2013 was replacement of the observatory telescope. All the e-mails, the excitement at the April & May membership meetings, the historic vote, the purchase and accelerated

delivery of the telescope, pier cutting, telescope installation, and our open house for the 16" telescope that featured a solar party and cookout during the day & star party at night with clear skies and over a 100 attendees. Yes, the 16" telescope has generated a lot of excitement and has united the group to reach a common goal of providing members and the public with an astronomical instrument that has exceeded our expectations. And this instrument was funded primarily through the club's treasury with some help from donations made by individual members; a fact that allows the club to take full ownership of the task. All the pieces are in place for 2014 to be a spectacular year for the Astronomy Club of Akron; all we need is you to be there with us.

*Article by Ron Kalinoski,
ACA Observatory Director.*

An OTAA Convention Day for the ACA?

By Gary Smith, ACA President.

The OTAA stands for Ohio Turnpike Astronomers Association and was comprised of members from the area's astronomy clubs. This included the ACA, MVAS, CVAS, CAA, RAS, and BRAS. The activity of the OTAA has waxed and waned over the years, but it has left a legacy for its member clubs.

The OTAA Convention Day.

All of the astronomy clubs mentioned host an OTAA convention day once a year with the exception of the ACA. The most elaborate OTAA convention day is hosted by the Richland Astronomical Society and is called "Hidden Hollow". This past year it occurred on Oct. 3rd-6th and hosted guest speakers included some well known names in the field of Astronomy.

With the purchase and installation of our new 16 inch telescope this past summer, I think now is the perfect time for the ACA to plan an OTAA convention day for the summer of 2014! We have a very nice observatory with a brand new telescope. And the ACA is located in one of the most scenic of the Ohio State Parks. This past July is a perfect example of an ACA event that could have been given the next step. The day's activities included viewing the Sun with solar telescopes, radio astronomy with the ACA's resident radio astronomers, and a cook-out with the ACA's new propane grill. The evening's Event was a star party with the best attendance of the viewing season.

I propose the ACA host an OTAA convention day during the summer of 2014. It would be an opportunity to host an ordinary public event while at the same time, to have sent out Invitations to our neighboring astronomy clubs to come and visit. An OTAA convention event hosted by the ACA is a perfect chance to meet other amateur astronomers from our neighboring clubs. It would be difficult to over-estimate the reward from sharing stories and experiences with our fellow star gazers. Thanks much for reading!

Article by Gary Smith, ACA President.

**The ACA wishes to
welcome our newest
members:**

Jerry Mirman

Melissa Stahr

**We look forward to seeing
you at all club functions!**

NEW IMAGES (Page 6)

By Len Marek

Galaxy M33. RGB 5X5min each.

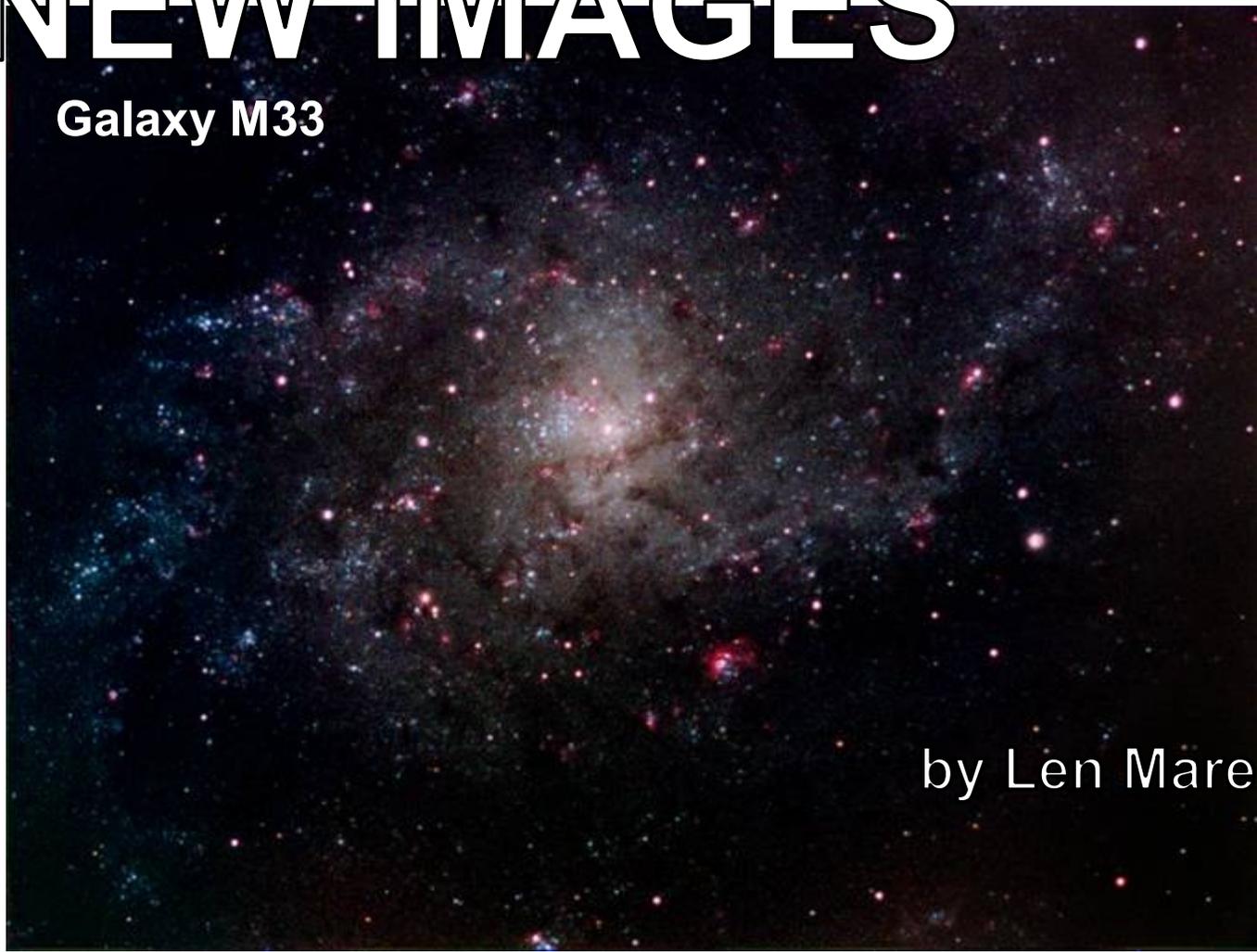
NEW IMAGES (Page 6)

By Bob Benedict

Uranus, Titania, Oberon. Here are two recent images of Uranus and moons taken on October 27th with a Canon T3i through a ES127 on an iOptron iEQ45 mount. The narrower view also used a Televue 2.5x Powermate. Each was 10, 20 second exposures.

NEW IMAGES

Galaxy M33



by Len Marek

**Uranus, Titania,
and Oberon**



by Bob Benedict

THE ASTRONOMY CLUB OF AKRON

DECEMBER 2013 ACTIVITIES CALENDAR

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 New Moon 00:22UT 	4 Moon at perigee (closest) at 10h UT.	5	6 Venus greatest illuminated extent at 19h UT.	7
8	9 First Quarter 15:12UT 	10	11	12	13 GEMINID METEOR SHOWER PEAKS.	14
15	16 Full Moon 9:28UT 	17	18	19	20 Moon at apogee (farthest) 00h UT.	21 THE DECEMBER SOLSTICE OCCURS AT 17h UT.
22	23	24 Last Quarter 13:48UT 	25 MERRY CHRISTMAS 	26	27	28
29	30	31	<p>AKRON, OH SUNRISE DEC 1 7:32AM EST DEC 30 7:51AM EST SUNSET DEC 1 6:21PM EST DEC 30 5:08PM EST</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: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

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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