



The Night Sky

The Newsletter of
The Astronomy Club of Akron

www.acaoh.org

Volume 34 Number 9

September 2012

Next Meeting: Friday, September 28, 2012 8:00 PM

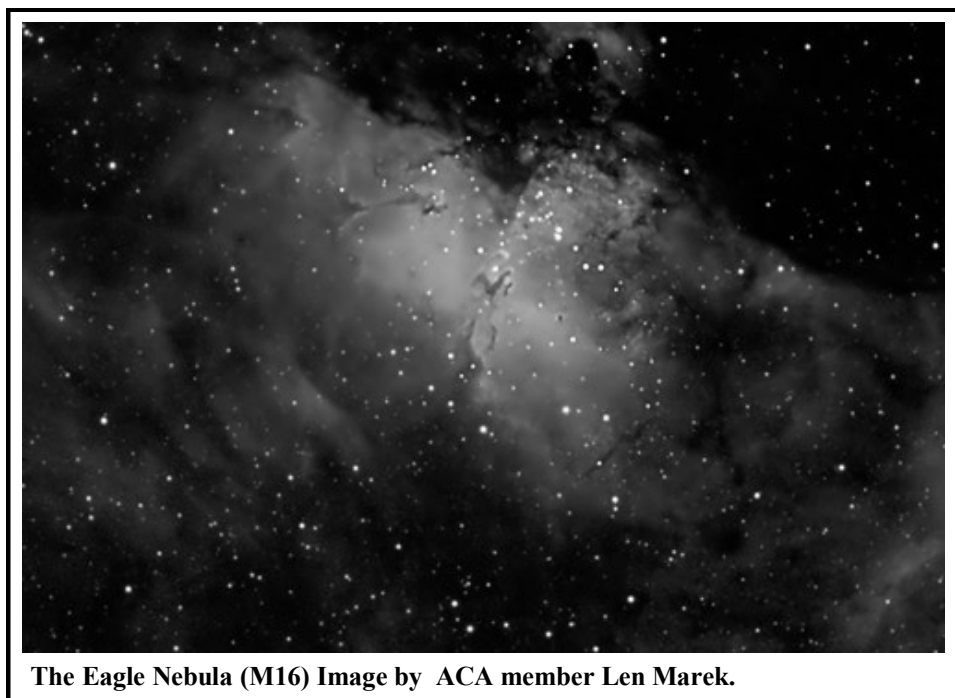
***** IMPORTANT NOTICE OF CHANGE OF VENUE *****

The September general membership meeting will be held at the Tudor House Franklin Center in Portage Lakes State Park. See page 5 for directions.

The President's Column

By Gary Smith

The first half of the 1800's was a golden era for the science of astronomy. The telescope had arrived in the era's of Galileo and Newton and many talented opticians had since improved on both the size of the optic and the quality of the optic. The science academies and rulers of different countries were in competition with each other. Funds were made available for larger and more powerful telescopes along with their observatories. Although the priorities did vary from observatory to observatory, the search for new planets was always at the top of the list. Between 1801 to 1807 four objects were discovered. The first was CERES discovered by Giuseppe Piazzi in 1801. The second was PALLAS discovered by Heinrich Olbers in March of 1802. The third was JUNO discovered in Sept. 1804 and the fourth was VESTA discovered in March of 1807. At this time in history both their diameters and distances were unknown. All four objects were placed in the category of minor planet. Eventually more information was determined about



The Eagle Nebula (M16) Image by ACA member Len Marek.

these minor planets. Ceres is roughly round in shape with an average diameter of 590 miles (approx distance between Cleveland and Columbia, South Carolina). Pallas is not so round in shape with a diameter of 330 to 351 miles (depending on where it is measured). Juno is not so round in shape with a diameter of 124 to 199 miles (depending on where it is measured). Vesta is roughly round in shape with an average diameter of

326 miles (approx distance between Cleveland and Indianapolis).

Since the discovery of the minor planets many generations of astronomers and astronomy students have wondered just what is it like to be on the surface of Ceres, Pallas, Juno, or Vesta. Let us fast forward to the 21st century and take this question out of the hands of Jules Verne or H.G.Wells. (con't page 5)

OFFICERS 2012 – 2014

President

Gary Smith

Phone: 330-633-9873 E-mail: rlphsmth8@gmail.com

Vice President

Anthony Scarpitti

E-mail: ascarpitti2@neo.rr.com

Treasurer

Glenn Cameron

E-mail: glenn@cameronclan.org

Secretary

Juan Contreras

E-mail: jeconbar@hotmail.com

Assistant Secretary/Treasurer

Ann Ferrell

E-mail: annhagemaster@sbcglobal.net

Observatory Director

Ron Kalinoski

Phone: 330-837-5848

ACA Webmaster

Dave Jessie

E-mail: DJessie@neo.rr.com

Publications Secretary - Editor, Night Sky Newsletter

Jason Shinn

Phone: 330-685-5382 E-mail: truemartian@aol.com

Trustee

Lewis Snodgrass

E-mail: CHRPLY@aol.com

Trustee

John Shulan

Phone: 330-836-0800 E-mail: john@shulans.com

Statutory Agent

Mark Kochheiser

Phone: 330-882-3713 E-mail: mkochheiser@neo.rr.com

OTAA Representative

Lou Poda

August Treasurer's Report

By Glenn Cameron

8/1/2012 Through 8/31/2012

Checking Beginning Balance	\$4,381.27
----------------------------	------------

Income

Dues	80.00
------	-------

Donations	20.00
-----------	-------

Magazine Subscriptions	34.00
------------------------	-------

Total Income	\$134.00
---------------------	-----------------

Expenses

Magazine Subscriptions	-34.00
------------------------	--------

Total Expenses	-\$34.00
-----------------------	-----------------

Income Less Expenses	\$100.00
-----------------------------	-----------------

Checking Ending Balance	\$4,481.27
-------------------------	------------

Savings Beginning Balance	\$6,435.47
---------------------------	------------

Earned Interest	0.27
-----------------	------

Savings Ending Balance	\$6,435.74
-------------------------------	-------------------

Petty Cash Beginning Balance	\$49.81
------------------------------	---------

Postage	-0.90
---------	-------

Petty Cash Ending Balance	\$48.91
----------------------------------	----------------

Petty Cash	48.91
------------	-------

Savings	6,435.74
---------	----------

Checking	4,481.27
----------	----------

Grand Total	\$10,965.92
--------------------	--------------------

Article by Glenn Cameron
ACA Treasurer.

SWAP & SHOP



For Sale:

22mm Orion Epic ED-2 ED Eyepiece

25mm Orion Epic ED-2 ED Eyepiece

Asking: \$40 each

Contact: Glenn Cameron

Phone: 330-737-1472

Email: glenn@cameronclan.org



For Sale:

Pentax 20X60 PCF WP Binoculars

- Porro-prism.
- Magnification: 20X.
- Objective: 60mm.
- Apparent FOV: 44°.
- Exit Pupil: 3mm.
- Eye Relief: 21mm.
- Waterproof.
- Nitrogen filled body.
- Includes Pentax N - Binocular tripod adapter.

Asking: \$140 for all.

Contact: Glenn Cameron

Phone: 330-737-1472

Email: glenn@cameronclan.org



For sale:

15mm Ultra-Wide Angle Eyepiece

- 2 inch barrel
- FOV: 80°
- Eye Relief: 20mm

Asking: \$40

Contact: Lew Snodgrass

Phone: 330-819-4886

Phone: 330-867-4800

Ask for Lew.

Email: chrply@aol.com

YOUR AD COULD BE HERE!

YOUR AD COULD BE HERE!

Want to advertise your item in the Astronomy Club of Akron's newsletter? Send details and photos to the ACA publications secretary:

truemartian@aol.com

SPACE PROBES

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

CASSINI
CURIOSITY
DAWN
GALILEO
HUYGENS
LUNA
LUNOKHOD

MAGELLAN
MARINER
MESSENGER
NEW HORIZONS
OPPORTUNITY
PIONEER
RANGER

ROSETTA
SOJOURNER
SPIRIT
VENERA
VIKING
VOYAGER

President's Column Con't

Thanks to the ingenuity of the people at NASA and the JPL and please also give credit to the American taxpayer, enter the DAWN Spacecraft. The DAWN Spacecraft launched on September 27, 2007 and flew toward the planet Mars, but only to use it for a gravity assist to boost its velocity. DAWN then proceeded to its target of the minor planet Vesta. DAWN achieved an orbit around Vesta on July 16, 2011. DAWN has been in orbit around Vesta for over a year. The images taken of Vesta are readily available over the Internet. The dream of Giuseppe Piazzi has been realized.

Now this is the part that describes how science fiction has been turned into science fact. The DAWN spacecraft was launched from Cape Canaveral on a Delta II Rocket which propelled it to a speed of 25,600 mph. Although a remarkable achievement, this has been done before. The really remarkable feature of DAWN is that it has a totally new propulsion system. The Ion Propulsion System is similar to an ordinary chemical rocket propulsion system in that they both produce thrust. And this is where the similarity ends. The Ion Drive Engine is essentially an electric engine as opposed to a chemically propelled engine. The following is a brief

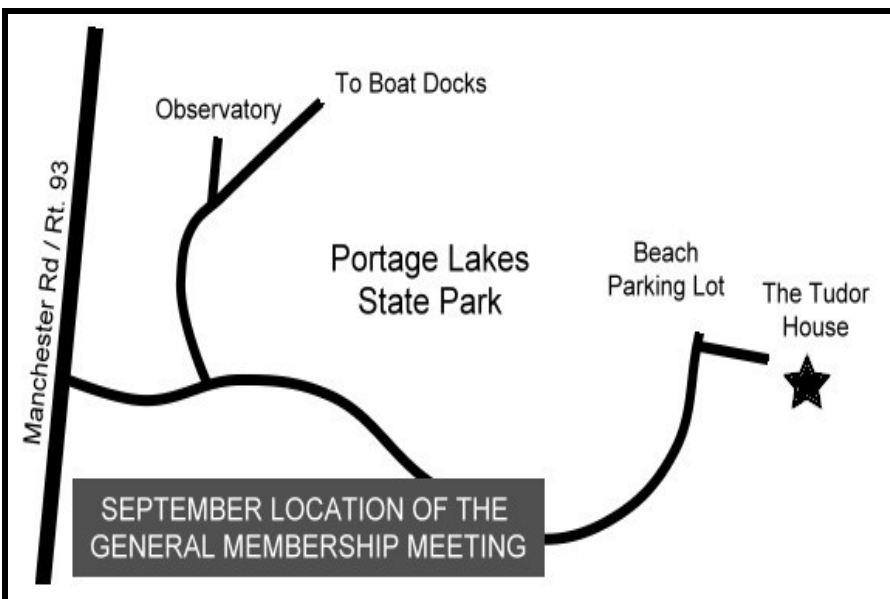
description of the secret behind the Ion Drive Engine. It starts with the solar panels. The special photosensitive material on the panel will produce 1/2 volt of electricity when exposed to sunlight. This is nothing new. Solar panels have been around for years. This very low voltage is stepped up to much higher voltage using transformers. Again this is not new. But what is new is this higher voltage is used to strip the outermost 1 or 2 electrons from the Xenon fuel, transforming the neutral Xenon atom into a charged Xenon ion. The positively charged Xenon ion is attracted **TOWARD** but not **TO** a pair of electrically charged grids (also powered by the higher voltage). The structure of the grid is important. The voltage applied to the grid is important. The result is that the charged Xenon ion is strongly accelerated thru the pair of charged grids and exits the Ion Drive Engine thru its exhaust. This produces Thrust.

The date of September 5, 2012 is very significant for the DAWN Spacecraft and for spaceflight in general. DAWN received the command to restart its ion engines and break orbit. This has never been done before. DAWN is in the process of using the Thrust from the Ion Engine to propel the spacecraft in an ever widening spiral pattern away

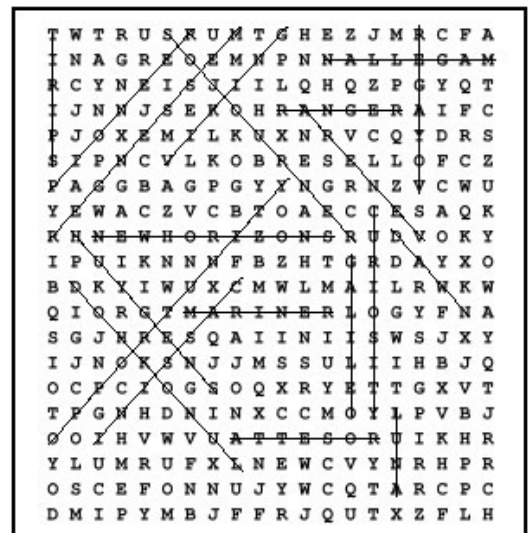
from Vesta. It will then travel to the minor planet Ceres. It is due to arrive in February 2015. It is conceivable that the same could have been done using typical chemical rockets. But there would have been penalties to pay. Both the size and weight of the spacecraft would have increased dramatically in order to contain the necessary rocket fuel. The chemical rocket can achieve a large amount of Thrust but only for periods of seconds or minutes. The Ion Drive Engine produces only a small amount of Thrust but can operate continuously for months or even years. Both engines are constrained by the amounts of their fuels. The chemical rocket consumes fuel at a tremendous rate. The Ion Engine uses fuel at a very miserly rate and therein lies the difference.

February 2015 will bring the fulfillment of generations of astronomers, of planetary scientists, and many astronomy enthusiasts. For the first time a space probe will have orbited two of the four minor planets using a state of the art camera. These two minor planets will yield their secrets to the DAWN spacecraft. DAWN has turned a chapter of science **Fiction** into science **Fact**.

*Article by Gary Smith,
ACA President.*



Solution to puzzle on page 4.



Observatory Report

By Ron Kalinoski



ACA held an outreach program on August 12th helping Boy Scout Troops 155 & 160 acquire their astronomy merit badge. We had a large turnout of about 75 attendees. The skies

opened up toward the end of the classroom work and we were able to show the scouts the heavens with six telescopes set up on the observatory grounds. ACA also held an impromptu solar party on Sunday August 26th. The Sun was very active in Hydrogen-alpha showing incredible detail on limb and disk. Two hydrogen-alpha filter telescopes and two white light filter telescopes were set up for the solar party. The best free coffee in Akron brewed throughout the event. Our impromptu star parties will be starting back up this month. With early sunsets and cooler evening temperatures, this is the perfect time to get out to one of these events to see the night sky. Autumn hosts an awesome display of globular clusters and planetary nebulae. The Great Hercules Cluster,



Rick Burke teaches astronomy to Boy Scout Troops 155 & 160. Image by Jason Shinn, ACA Publications Secretary.

M92, and M15 are must see globular clusters. There is an array of planetary nebulae available to view displaying different features that make comparisons interesting. Cat's Eye Nebula and Blinking Nebula mysteriously appear and disappear leaving only the bright central star to view. What is happening? Does the nebula really disappear? What causes it to reappear? Blue Flash Nebula and Blue Snowball Nebula offer an eerie

appearance, while Ring Nebula resembles a smoke ring situated in a rich star field. If you haven't been out to a star party lately, you will soon have an opportunity to view some of heaven's most exciting celestial objects.

*Article by Ron Kalinoski,
ACA Observatory Director.*

PUBLISH YOUR ARTICLES AND IMAGES

THE NIGHT SKY NEWSLETTER IS LOOKING TO PUBLISH YOUR ARTICLES! SHARE YOUR THOUGHTS, EXPERIENCES, STORIES, OPINIONS, LATEST ASTRO-IMAGES, AND ADVICE WITH YOUR FELLOW AMATEUR ASTRONOMERS.

ARTICLES MUST BE SUBMITTED BY THE SIXTH OF EACH MONTH. ARTICLES MUST BE RELEVANT TO OUR FORUM. ALL TEXT FILES SHOULD BE SAVED IN PLAIN .txt OR .rtf FORMAT TO MINIMIZE IMPORT PROBLEMS. ALL IMAGES MUST BE SAVED IN .jpg FORMAT. SUBMIT YOUR ARTICLES VIA E-MAIL TO:

truemartian@aol.com

NEW IMAGES

(page 7)

By Rick Burke

(top) The Great Andromeda Galaxy (Messier 31) taken with a Tele Vue NP127is telescope and QSI 583 camera. 9 x 4 min Luminance and 6 x 4 min RGB exposures. Captured with ImagesPlus. Processed with ImagesPlus and Photoshop CS6.

(bottom) The Swan (or Omega) Nebula (Messier 17) taken with a Tele Vue NP127is telescope and QSI 583 camera. 6 x 10 min Hydrogen Alpha and 8 x 3 min RGB. Captured with ImagesPlus. Processed with ImagesPlus and Photoshop CS6

Shot at the Astroblast Star Party, August 18-19, 2012, near Franklin, PA.

NEW IMAGES

(page 8)

By Len Marek

The North America Nebula (NGC 7000) imaged using my Takahashi FSQ 106N mount along with the SBIG ST8300M camera and Astrodon True Balance Narrowband filters. The Zenithstar was used with the Orion SSAG for guiding using PHD guide software by Craig Stark.

NEW IMAGES



by Rick Burke




NEW IMAGES

A black and white astronomical image of a star-forming region, likely the Orion Nebula. The image shows a dense field of stars of various magnitudes, with several bright, prominent stars. The background is filled with intricate, glowing nebulae structures, including dark, shadowy regions and bright, wispy clouds of gas and dust. The overall appearance is that of a rich, multi-colored nebula, though rendered in grayscale.

by Len Marek

THE ASTRONOMY CLUB OF AKRON

SEPTEMBER 2012 ACTIVITIES CALENDAR

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1						
2	3	4	5	6	7 Moon at apogee (farthest) at 6h UT. STOW ASTRONOMY PUBLIC EVENT (www.stowastronomy.org)	8 Last Quarter 13:15 UT ACA OBSERVATORY PUBLIC EVENT 8:00p 
9	10	11	12 11	13	14 STOW ASTRONOMY PUBLIC EVENT (www.stowastronomy.org)	15 ACA OBSERVATORY PUBLIC EVENT 8:00p
OTAA Scenic Vista						OTAA BRAS
New Moon 2:09 UT	17	18	19 Moon at perigee (closest) at 3h UT.	20	21 STOW ASTRONOMY PUBLIC EVENT (www.stowastronomy.org)	22 First Quarter 19:41 UT SEPTEMBER EQUINOX AT 14:47 UT 
23	24	25	26	27	28 ACA MEMBERSHIP MEETING (TUDOR HOUSE) 8:00p	29
Full Moon 13:17 UT	30					
						

The Night Sky

Newsletter of the Astronomy Club of Akron

c/o Jason Shinn, Editor
1025C Hemlock Hills Dr.
Akron, OH 44313

The Astronomy Club of Akron
c/o Glenn Cameron
8019 Glendevan St. NW
Massillon, OH 44646-9018

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

Visit us on the Web at www.acaoh.org,