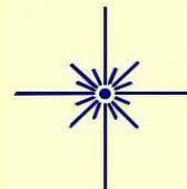




The Guide Star

Newsletter of the Amateur Astronomers Association of Pittsburgh Inc
Founded June 9, 1929 by Chester B. Roe and Leo J. Scanlon
Website: 3ap.org



October 2010

Volume 44, No. 10

AAAP General Meeting

Friday, October 8th 2010, 7:30 pm
Carnegie Science Center

October's Featured Speaker:

Jeffrey Newman ,
Assistant Professor, University of Pittsburgh

Topic: New Views of the Distant Universe

The last 15 years have seen a revolution in the study of distant galaxies, thanks to new telescopes both on the ground and in space that have allowed us to obtain better images using a much broader range of types of light than were ever available to us before.

In this talk, Prof. Jeffrey Newman will describe how these new telescopes - ranging from the massive Keck Observatory in Hawaii to the Hubble Space Telescope and beyond - are helping us to understand how galaxies like our own Milky Way formed and evolved over time.

This talk will culminate in a description of CANDELS, the largest project ever granted HST time (totaling more than two months over the next three years).

Jeffrey Newman is Assistant Professor of Physics and Astronomy at the University of Pittsburgh. His research focuses on the evolution of both galaxies and the Universe over the last 10 billion years.

He is a member of the executive committee of the AEGIS (All-Wavelength Extended Groth International Survey) collaboration and U. Pittsburgh's representative to the LSST (Large Synoptic Survey Telescope) board.

A recent article covering Professor Newman and his work appeared in the Pittsburgh Post -Gazette on 16 March 2010:

“International Study to Analyze Galaxy Formation”

<http://www.post-gazette.com/pg/10075/1043108-115.stm>

Upcoming in November :

The monthly AAAP general meeting to be held Friday evening, November 12th, 2010 will feature the annual Kevin J. Brunelle Astrophotography Contest. Members in attendance can vote to decide the winning submissions in three categories.

I. Astronomical images taken with optics of focal length no greater than 150mm. Here's last year's winning image submitted by Mark Arelt.



II. Astronomical - longer than 150mm. Last year's winner was by Bill Snyder.



III. Images of atmospheric phenomena. Last year's winner was by Mark Arelt.

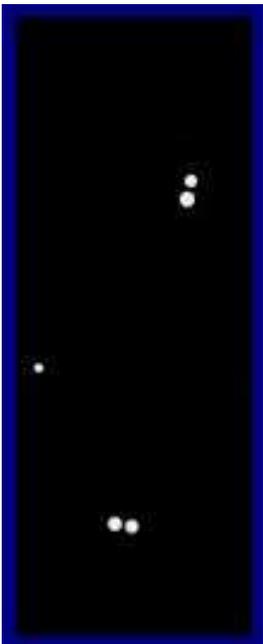


The AAAP is fortunate to have a number of talented imagers in its ranks. This is an ideal occasion to see and appreciate their work.

Similarities

It may be that we're hardwired to see resemblance, to search for pattern and to find symmetry pleasing or even beautiful.

Similarities between astronomical objects can be far-fetched: Herschel thought the object that came to be known as NGC 3242 looked like Jupiter. So, he called a whole class of nebulae planetaries (after planet). NGC 3242 is also called "the ghost of Jupiter" although it's plain to any observer that it's blue-green, dimmer and a third smaller than Jupiter in apparent diameter. Lesson: Even unfortunate names may catch on.



Or similarities can be conspicuous. Epsilon Lyrae, the famous "double double", is a showpiece at any star party. The two main components, epsilon 1 and 2 are easily split in finders or binoculars. Although separated by over 3 minutes of arc, they are actually orbiting one another. But the real payoff is that each in turn, consists of a pair of white stars, with roughly the same magnitudes and separations. (epsilon 1 components = 5.0, 6.1, separation = 2.1 seconds; epsilon 2 components = 5.3, 5.4, separation = 2.4 seconds).

Although, once split, the position angles of the individual components don't match, so much similarity in one field of view is just too darned obvious and attractive to pass up. Besides, epsilon 1 and 2 make great test cases for small to moderate apertures.

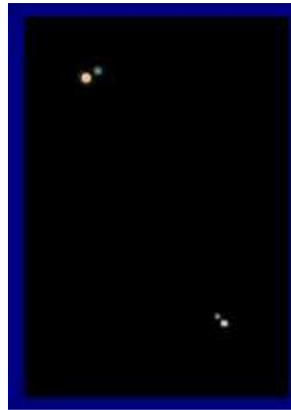
There are also astronomical similarities that are conspicuous but not well known. Also in Lyra, about a degree north of M57 and forming an isosceles triangle with gamma and beta Lyrae is STT 525 (525 in Otto Struve's double star catalog). It's a gold and blue pair, as gorgeous an object as you'd want. It immediately reminds an observer of Albireo.



Unfortunately, it's also "next door" (less than ten degrees) to Albireo, so it's often overlooked. It may be that if STT 525 weren't being "out shone" by its more famous neighbor in Cygnus, it would be one of the "star" doubles of the summer sky.



As it is, having two beautiful blue and gold pairs in the same general area is quite a luxury and invites telescopic comparison.



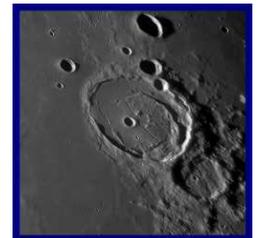
Gamma Delphini marks the nose of the dolphin and is justly famous. It's the top star in the sketch on the left.

It's a strikingly beautiful double whose components are separated by 10 seconds. So it's an easy split.

In a small refractor, the 4.5 primary appears yellow tending toward orange while the secondary is green in hue at mag 5.5. To be honest, descriptions of its colors vary wildly, but it's still a jewel.

But easily missed, only 13 minutes to the southwest is "the tiny 'Ghost Double' Struve 2725" whose components are dimmer at 7.6 and 8.4, but are similarly colored. It's as if there is a miniature copy of gamma in the same field of view. Very nice.

Lying on the lunar disk near the 2 o'clock position is crater Posidonius. It's roughly 95 kilometers in diameter. Its southern portion is anchored on a peninsula of highland material while its northern rim juts into Mare Serenitatis and Lacus Somniorum.



Lying on the lunar disk near the 8 o'clock position is crater Gassendi. It's roughly 110 kilometers in diameter. Its northern portion is anchored on a peninsula of highland material while its southern rim juts into Mare Humorum and Oceanus Procellarum.



Both craters are shallow and are filled with mare material. Their mare facing rims seem to descend into the mare basins so one might think molten mare material flowed over their walls but their rims remain intact and there's no evidence of breaches through which lava could have poured into their interiors.

Rather, it's thought that the tortured floors of both craters, laced with rilles, tell a story of mare material rising beneath their original floors, exerting pressure, lifting and cracking the surfaces and seeping in to flood and raise the level of their floors.

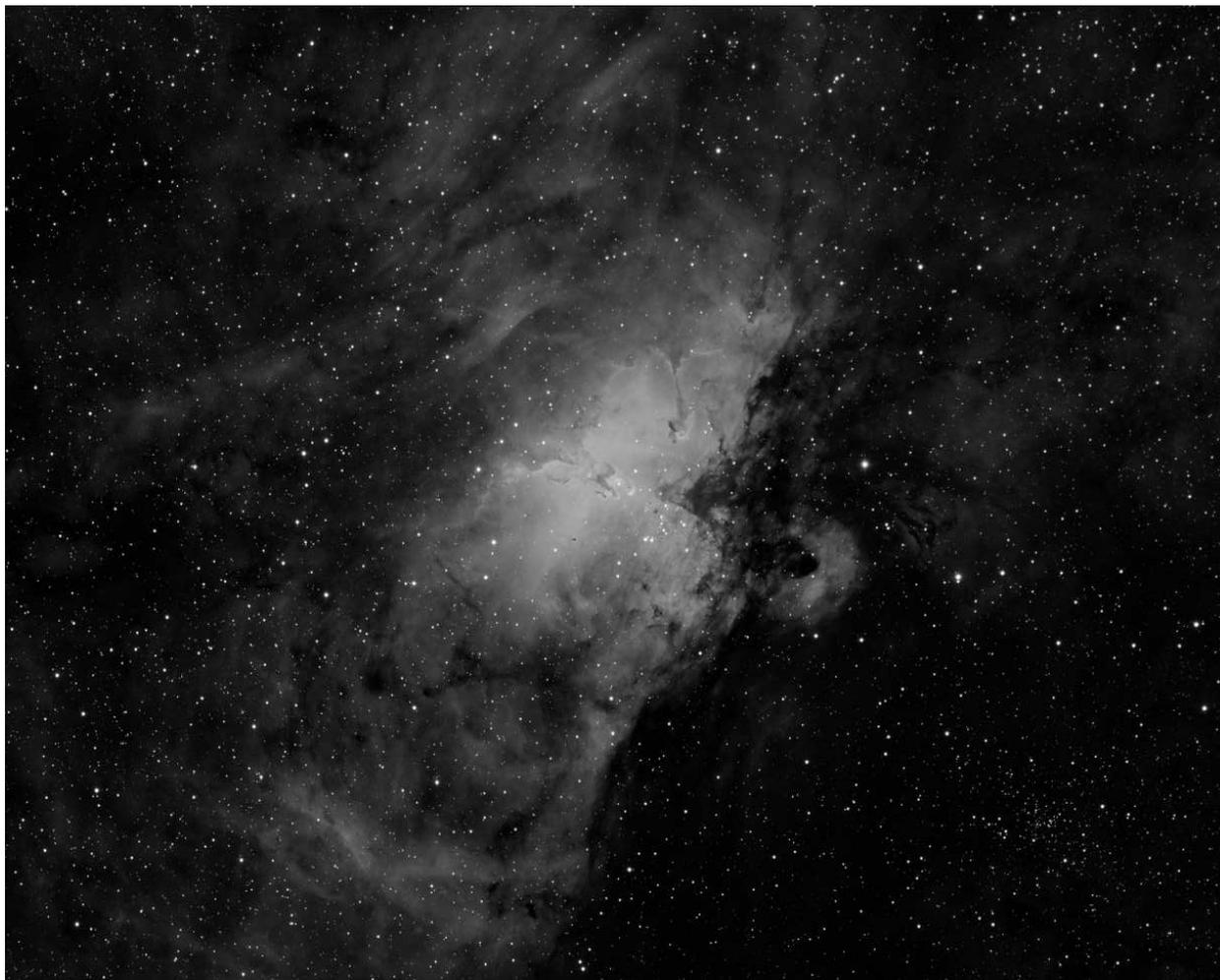
Thus, Posidonius and Gassendi are the finest examples of Class III FFCs or Floor Fractured Craters, craters whose interiors have been lifted from beneath by rising mare material. Both craters have smaller, younger craters astride their rims completing their resemblance.

They add a sense of balance to the lunar surface.

- GS Editor

(epsilon Lyrae, STT 525, gamma Delphini sketches -John Cheng)

From an AAAP Imager



North is to the right in this breathtaking portrait of Messier 16 captured by Nathan Brandt. He used a Takahashi FSQ-106ED astrograph, an Apogee U8300 CCD camera and a Baader Ha Filter atop an Atlas Mount.

About the object

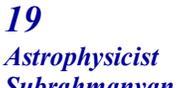
Called “one of the great masterworks of the heavens” by Robert Burnham, Messier 16 in Serpens actually consists of two components, NGC6611, the bright open cluster discovered by de Cheseaux in 1746 and the diffuse nebula IC 4703 positively identified photographically by E.E. Barnard in 1895.*

Known as the Eagle Nebula, it contains “the Pillars of Creation” made famous by an HST image. These structures were given the name “elephant trunks” by cosmologist Fred Hoyle. They are sprinkled with Bok globules and are the site of continuing star formation. Some stars in the object are estimated to be less than a million years old.

North of the profusion of Messier objects in Sagittarius, M16 is an easy find. The cluster is conspicuous in binoculars. It fits inside a normal finder field along with Messier 17 and 18. Using a nebula filter, like an Orion Ultrablock or a Lumicon UHC, enhances the nebulosity for a visual observer even using small apertures.

** Charles Messier is credited with the actual discovery of only 44 of the 110 objects listed in the Messier Catalogue.*

- GS Editor

Sun	Mon	Tue	Wed	Thu	Fri	Sat
<p>All times given are local.</p> <p>Details for AAAP Events can be found at: https://nightsky.jpl.nasa.gov/event-list.cfm?Club_ID=675&EventEra=Future</p>					<p>1 </p> <p>* Allegheny Observatory Open House (Sunset)</p>	<p>2 </p> <p>* MCPO PUBLIC S.P. (Sunset)</p>
3	4	5	6	7 	<p>8 </p> <p>* General Membership Meeting Science Ctr. 19:30</p>	9
10	11	12	13	14 	15	<p>16 </p> <p>* NEWO & MCPO PUBLIC S.P. (Sunset)</p> <p>*</p>
17	18	<p>19 </p> <p><i>Astrophysicist Subrahmanyan Chandrasekhar born 100 years ago. Discovered stellar mass limit that bears his name.</i></p>	20	21	22	<p>23 </p> <p>* NEWO & MCPO PUBLIC S.P. (Sunset)</p> <p>*</p>
24	25	26	27	28	29	<p>30 </p> <p>*</p>
<p>31 </p> <p>*</p>	<p>* October 16th and 23rd will see heightened levels of Jovian satellite events in prime time. Ideal for Star Party viewing. October 30th will see heightened levels begin in prime time and extend into the morning of the 31st.</p> <p>See descriptions on next page.</p>					

Some Celestial Highlights This Month

October *Mercury* is in the morning sky early in the month and comes to superior conjunction on the 17th
Venus, low in the west disappears into the evening twilight. *Mars* is low in the west at twilight all month. *Saturn* reappears as a morning object very low in the east. *Jupiter*, *Uranus* and *Neptune* rise in early evening and are well placed all night.

For those using programs to predict GRS transits, *Jupiter's System II* longitude is 152°. *Selenographic Colongitude* is 172.20° at 0h UT at beginning of the month. Add 12.2° each day.
 (All times below are local)

- 4 **Orionid Meteor activity** Oct 04-Nov 14
Our Moon occults magnitude 3.5 *omicron Leonis*
 immersion 05:08; emersion 05:47
- 16 19:04 *Ganymede* shadow transit ends
 19:05 *Europa* shadow transit begins
 20:04 *Io* disappears into occultation
 20:32 *Europa* transit ends
 21:49 *Europa* shadow transit ends
 22:56 *Io* reappears from eclipse
- 17 01:58 **Great Red Spot (GRS)** transits meridian
- 22 **Orionids Peak** will be hampered by the Moon
- 23 19:51 *Ganymede* transit ends
 20:06 *Europa* transit begins
 20:06 *Ganymede* shadow transit begins
 21:41 *Europa* shadow transit begins
At this point two shadows and a satellite are transiting
 21:49 *Io* disappears into occultation
 22:50 *Europa* transit ends
 23:06 *Ganymede* shadow transit ends
- 24 00:24 *Europa* shadow transit ends
 00:51 *Io* reappears from eclipse
 02:44 **Great Red Spot** transits Meridian
- 30 20:20 *Ganymede* transit begins
 22:25 *Europa* transit begins
 23:21 *Ganymede* transit ends
 23:36 *Io* disappears into occultation
- 31 00:10 *Ganymede* shadow transit begins
 00:17 *Europa* shadow transit begins
At this point two shadows and a satellite are transiting
 01:09 *Europa* transit ends
 02:46 *Io* reappears from eclipse
 03:00 *Europa* shadow transit ends
 03:08 *Ganymede* shadow transit ends
 03:30 **Great Red Spot** transits Meridian



A Welcome to Our New Members

Jacob Block
 Larry Chabal
 Paul D. Conley
 Robert Cyphert & Family
 Diane Flanigan
 Rachel Hittinger & Family
 Bob Jacobsen & Family
 James J. Knights & Family
 Brian J. Lopresti
 Colin Marks
 G. Thomas Piper
 Sue Romanowski
 John W. Wilson
 Julie A. Word

Guide Star Submissions

All AAAP members are encouraged to submit items to the club newsletter.

Articles, images, advertisements, observations, notices, book and software reviews...all are welcome.

Please remember, if a submission is time-sensitive and needs to be included in the coming issue, forward it as early as possible, but definitely before the 20th of the prior month.

Send submissions or questions to:

gseditor@3ap.org

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2. Send check to:

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To help insure inclusion in the next issue, please submit items as early as possible. Items received after the 20th day of the prior month will not be included.

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