



# the EYEPIECE



the FORT WAYNE ASTRONOMICAL SOCIETY • PO Box 11093 • Fort Wayne, IN 46855

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FWAS Web page: <http://fortwayneastronomicalsociety.com>

## GENERAL MEETING

Visitors Welcome

Tuesday Evening, August 16, 7:30 PM\*

Waynedale Public Library, 2200 Lower Huntington Rd,  
Fort Wayne, IN 46819

## 100 Years of Astronomical Discovery

by Jon Thomas  
Celebrating the centennial of  
Acadia National Park

General Meetings are held the third Tuesday of each month,  
7:30pm. Check our web site for location.

## Great Discoveries

In recent years John Thomas has served as a docent "astronomer in residence" at Acadia National Park.

In commemoration of the Acadia National Park centennial, Jon's talk highlights a few of the most significant discoveries about our universe over the last 100 years. What made Einstein an overnight celebrity? What did Hubble really do? What makes the Sun and the stars tick? Yes parents, your children are indeed all star material! Where is most of the universe? Believe it or not, we all witnessed the leftover of the start of things! Does Mars really have water? Has another Earth been found?. See you at the Waynedale Library, Tuesday August 16th.

After the meeting you are invited to join the group that meets for continuing discussions at a restaurant to be selected at the meeting.

## Calendar Events Aug-Sep

Scheduled events for the next two months: Free public observing at Jefferson Township Park every clear Saturday for 2 hours, starting 1 hour after sunset, April - November.

### August

General Meeting Tuesday, Aug 16

Board Meeting Tuesday, Aug 23

### September

General Meeting Tuesday, Sep 20

Board Meeting Tuesday, Sep 27

## Deep Sky Star Parties

Deep Sky observing events are scheduled for FWAS members and their guests to observe the fainter objects in the sky from a location away from city lights. These events are closed to the general public to allow members to plan observing and photography projects that will be undisturbed.

This year we have not yet selected a site. Until we do you are invited to come to JTP for observing. If you have suggestions for a site contact Bob Crider at 747-0774.

Observing times are scheduled for Fridays near the new moon each month. This year the remaining dates are:  
**Sep 2 & 30, Oct 28, Nov 25.**

## Public Star Parties

The public observing season started in April. We will need trained volunteers to run the Richard Johnston (RJ) Telescope. **If you wish to participate, with the RJ scope, with your own telescope or without a scope, contact Bob Crider at 747-0774. to get on his volunteer list.** This is a great way to contribute to our community service.

Current events are:

**Fri, Aug 12 at JTP Perseid Meteor Shower watch.**

**Fri Sep 23 at Evergreen Park, Huntington, check with Bob Crider for details.**

**Tues Oct 4, Foster Park Golf Clubhouse, 7:30 p.m.** Fort Wayne Trails night bike ride & star party, 70 People.

**Sat Oct 15 Bluffton Halloween Hayride, Check with Larry Clifford, 824-2655, for details.**

## Star\*Quest Update

By Gene Stringer

The outer skin and roof have been installed on the observatory building, and insulation of the control room is in progress. Remaining tasks are installing of wall board in the control room and internal plywood in the observing wings; installing of the winch system for the roll-off roofs; finishing of the electrical wiring.; installing doors, heat pump and ventilation screens. The contractor, Robert Koors, is projecting the end of his work by the end of August.

I will be scheduling a meeting of the Construction Support Team shortly to schedule the remaining tasks (see the July issue of the Eyepiece).

## Board Meeting Highlights

- The Board met on 26 July in Phil Hudson's office.
- Treas reported current holdings of \$3,675 for General operations and \$48,677 for S\*Q.
- The S\*Q Observatory is under construction.
- Pre-planning for 2017 solar eclipse.
- The next board meeting will be on Tuesday, 23 Aug., at 7:30 p.m. in Phil Hudson's office.

### FWAS OFFICERS

President: Larry Clifford 824-2655  
Vice-President: Phil Hudson 484-7000  
Secretary: Gene Stringer 489-8135  
Treasurer: Dave Wilkins 444-3070

#### APPOINTED POSITIONS

Observatory Director: Open  
Star\*Quest Project Manager: Gene Stringer 489-8135  
Star\*Quest Treasurer: Dave Wilkins 444-3070

### EDITORIAL STAFF

Eyepiece editor, Gene Stringer, 489-8135  
Distribution, Gene Stringer 489-8135 & Phil Hudson 484-7000

Submissions to the Eyepiece are cheerfully accepted by E-mail (preferred) or on CD or other media, or on paper. Submissions may be edited

## Perseid Meteor Outburst

This year the Perseids are expected to put on the best show since 2009. Instead of the usual 80 or so per hour at their peak, there could be up to 200 per hour.

We are inviting a group of interested stargazers and the public to meet at Jefferson Township Park on **Thursday, 11 August after 10 p.m.** in the parking lot next to the Star\*Quest observatory. Bring lawn chairs, lounges and blankets, and plan to stay late into the early morning hours.

The peak of the outburst is expected on the night of Thursday, 11 August, but the Moon will interfere until it sets at about 1 a.m. August 12. After that the viewing should be the best, weather permitting. The current forecast calls for 60% thundershowers on Thursday & Friday, so plan to check our website Clear Sky Chart, or call Gene Stringer at 403-1489 for confirmation.

For more details check the following web site:  
<http://www.space.com/32868-perseid-meteor-shower-guide.html>

## Fall Viewing Targets

By Gene Stringer

I particularly like the observing books of Steven James O'Meara, and have suggested some viewing targets from those books in past articles (see Eyepiece issue of May 2010). Of particular interest to me is his book *Hidden Treasures* (Cambridge University Press 2007, available on Amazon, \$30.33). In this book he has chosen 109 + 20 objects which as a group will not be found elsewhere. Other authors have published books on the Messier and Caldwell objects, and unlike those objects all the targets that O'Meara has chosen can be found with a telescope of only 4" aperture. Furthermore, the "Hidden Treasure"

(HT) objects are of varied types: 38 open star clusters, 35 galaxies, 14 planetary nebulae, eight globular star clusters, eight bright nebulae, one dark nebula, one star of high-proper-motion, and four officially recognized asterisms. Most of the objects are more than 10° above the southern horizon from our latitude (41° north). I offer here a few of the Fall objects, but you should look them up in O'Meara's book, because he devotes several pages to each: Numbered consecutively by RA as Hidden Treasures (HT)

HT NGC# Type Const. RA/Dec Mag. Name

**81 6369 PN Oph 17h 29m 20.7s/-23° 45' 35" 11.4** *Little Ghost Nebula* Dim 58" x 34" Dist: 2,00 - 5,000 ly. A beautiful ringed planetary ... lies in a significant black lagoon (Barnard's dark cloud , B77), just north of the famous Pipe Nebula (B78).

**89 6544 GC Sag 18h 07.3m/ -25° 00' 7.5** *Starfish Cluster* Diam 4.6' Dist: 8,800 ly. " One of those easy to see objects all but lost in the crowd of bright clusters and nebulosities that populate the Milky Way's hub around M8..."

**90 6572 PN Oph 18h 12m 06.6s/ 06° 51' 13" 7.3** *Emerald Eye Planetary* Dim: 16" x 13" Dist: 4,800 ly. " Wilhelm von Struve ... described it as one of the most curious objects in the heavens - 'it being a star surrounded by bright green ellipse of fuzzy light'..."

**3 281 EN Cas 00h 52.8m/ 56° 37' 7.8(neb)** *Pacman Nebula* Dim: 35' x 30', Dist: 9.400 ly (Approx). Discovered by Edward Emerson Barnard in 1881. "Seeing the ghostly form of NGC 281 among the rich stellar folds of the Cas-siopeia Milky Way must have bordered on the spiritual for Barnard, a man of strong religious conviction."

**78 6210 PN Her 16h 44m 29.8s/ 23° 48' 8.4** *Turtle Nebula* Dim: 48' x 8', Dist: 3,600 ly. Discovered by Friedrich G. W. von Struve in 1827. "Very bright, equal to a star of 8 or 8.9 magnitude...It's hard to believe that a planetary nebula .. brighter than M57 the Ring Nebula, went unnoticed by not only Messier, Mechain and their contemporaries, but also by the great William Herschel..."

**97 Collinder 399 Asterism Vul 19h 26.2m/+20° 06' 3.5** *Brocchi's Cluster, Coathanger* Dim 90.0' Dist 424 ly. A favorite object for binoculars, revealing a conspicuous line of six stars (east-west) with a southward dipping hook. " The Coathanger has a magical charm that can bring novices into a lasting relationship with the night sky with just one look."

Your viewing pleasure will be enhanced greatly if you take the trouble to read O'Meara's comments. He gives an in-depth description of all aspects of each object. I wish you clear skies and good seeing as you embark on your Fall quest.

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## Venus and Jupiter prepare for their close-up this August

By Ethan Siegel

As Earth speeds along in its annual journey around the Sun, it consistently overtakes the slower-orbiting outer planets, while the inner worlds catch up to and pass Earth periodically. Sometime after an outer world—particularly a slow-moving gas giant—gets passed by Earth, it appears to migrate closer and closer to the Sun, eventually appearing to slip behind it from our perspective. If you've been watching Jupiter this year, it's been doing exactly that, moving consistently from east to west and closer to the Sun ever since May 9th.

On the other hand, the inner worlds pass by Earth. They speed away from us, then slip behind the Sun from west to east, re-emerging in Earth's evening skies to the east of the Sun. Of all the planets visible from Earth, the two brightest are Venus and Jupiter, which experience a conjunction from our perspective only about once per year. Normally, Venus and Jupiter will appear separated by approximately  $0.5^\circ$  to  $3^\circ$  at closest approach. This is due to the fact that the Solar System's planets don't all orbit in the same perfect, two-dimensional plane.

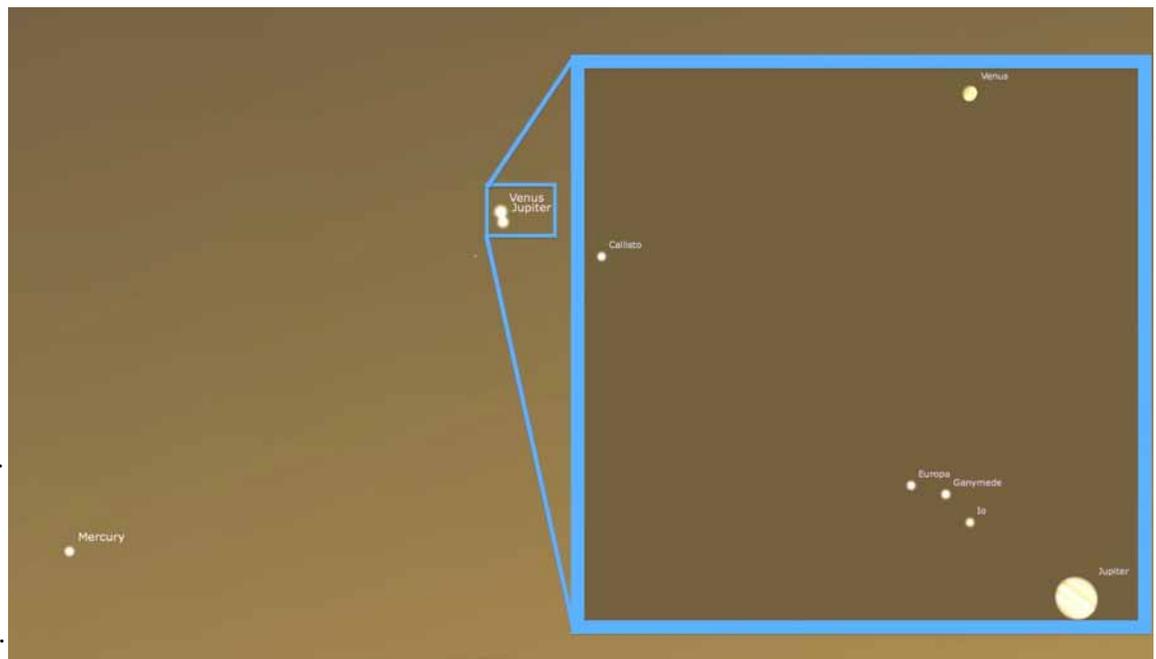
But this summer, as Venus emerges from behind the Sun and begins catching up to Earth, Jupiter falls back toward the Sun, from Earth's perspective, at the same time. On August 27th, all three planets—Earth, Venus and Jupiter—will make nearly a perfectly straight line.

As a result, Venus and Jupiter, at 9:48 PM Universal time,

will appear separated by only 4 arc-minutes, the closest conjunction of naked eye planets since the Venus/Saturn conjunction in 2006. Seen right next to one another, it's startling how much brighter Venus appears than Jupiter; at magnitude -3.80, Venus appears some eight times brighter than Jupiter, which is at magnitude -1.53.

Look to the western skies immediately after sunset on August 27th, and the two brightest planets of all—brighter than all the stars—will make a dazzling duo in the twilight sky. As soon as the sun is below the horizon, the pair will be about two fists (at arm's length) to the left of the sun's disappearance and about one fist above a flat horizon. You may need binoculars to find them initially and to separate them. Through a telescope, a large, gibbous Venus will appear no more distant from Jupiter than Callisto, its farthest Galilean satellite.

As a bonus, Mercury is nearby as well. At just  $5^\circ$  below and left of the Venus/Jupiter pair, Mercury achieved a distant conjunction with Venus less than 24 hours prior. In 2065, Venus will actually occult Jupiter, passing in front of the planet's disk. Until then, the only comparably close conjunctions between these two worlds occur in 2039 and 2056, meaning this one is worth some special effort—including traveling to get clear skies and a good horizon—to see!



*Image credit: E. Siegel, created with Stellarium, of a small section of the western skies as they will appear this August 27th just after sunset from the United States, with Venus and Jupiter separated by less than 6 arc-minutes as shown. Inset shows Venus and Jupiter as they'll appear through a very good amateur telescope, in the same field of view.*



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**August Night Sky:** The first event we have in August that all budding astronomers can look forward to is the Perseids Meteor Shower. This meteor shower starts around 17 July and continues on until 24 August. The shower hits its peak on 12th and 13th. If you would like to see some constellations this August, why not try and spot the circumpolar constellations. These constellations are brilliant for young and budding astronomers to learn, as they are always in the sky and you can see them on a clear night.  
[Circumpolar Chart](#) Jupiter lowering in West at sunset, Mars and Saturn in the South. New Moon; 18th, Full Moon; 29th.

Next General Meeting:  
Tuesday, August 16, 7:30 pm

**WAYNE DALE LIBRARY**

2200 Lower Huntington Rd, Fort Wayne, IN 46819

*\*Program:\**

## 100 Years of Astronomical Discovery

by Jon Thomas

Saturday Night Stargazing  
at Jefferson Township Park  
every clear Saturday night  
starting 1 hour after sunset and  
continuing for 2 hours.  
April through November

