



the EYEPIECE



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

Volume: 57

Issue : 7

July 2016

Editor: Gene Stringer, 9609 Colsons Hill, Fort Wayne, IN 46825, (260) 489-8135

E-Mail: genestringer@mac.com

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

GENERAL MEETING

Visitors Welcome

Tuesday Evening, July 19, 7:30 PM*

Techumseh Public Library, 1411 East State Blvd. 46805

Show and Tell

by Members and Guests Themselves

Come and share your story...
and learn from other members

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

Yes, You!

Every now and then, the meeting centers around a show and tell where members and guests are invited to share their astronomical inventions, tricks and techniques, books, apps, and projects. Things that make the hobby of astronomy and star gazing more fun. Even sharing a disaster can be a learning experience to pass along. See you at the Techumseh Library, Tuesday July 19.

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 Jul-Aug

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.

July

General Meeting Tuesday, July 19

Board Meeting Tuesday, July 26

August

General Meeting Tuesday, Aug 16

Board Meeting Tuesday, Aug 23

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: Aug 5, 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:

Sat July 9, Gene Stratton Porter at Rome City, call call Larry Clifford at (260)824-2655 for details on time and place.

Star*Quest Update

By Gene Stringer

At this date the building framing is complete and completely enclosed with external plywood on sides and roofs. Vent ports are cut for the observing wings, providing sufficient daylight ambient light when the roll-off roofs are closed. Electricians are at work on the wiring. Inspection of the wiring and rail system are in process. Remaining work includes installation of plywood interior paneling, and external metal siding & roofs.

Issues in process now are:

- How to deal with bird nests in the rail system, which impedes the operation of the roll-off roofs.
- Installing cable & winch systems for the roll-off roof system as an alternate to the architect's original design.
- Installing an LED white-light alternative (in place of fluorescent tubes) in 4' overhead lamps in the control room.
- Provision for connecting a flat-panel TV monitor on the north wall of the observing room.
- Routing of two electric wire circuits external of the building through the conduits under the central external telescope pad. Plan is to place an electric multiple outlet box on a pylon 6' to 8' south of the pad. Extension cords from the pylon box to the external scope pads would be

Continued on Page 2

Board Meeting Highlights

- The Board met on 28 June in Phil Hudson's office.
- Treas reported current holdings of \$4,122 for General operations and \$62,376 for S*Q.
- The S*Q Observatory is under construction.
- Pre-planning for 2017 solar eclipse.
- The next board meeting will be on Tuesday, 26 July., 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

Juno Arrives at Jupiter

NASA's Juno Space Probe, launched on Aug 5, 2011, from Cape Canaveral, Florida, arrived in polar orbit around Jupiter on July 4, 2016., to begin its mission to improve our understanding of the solar system's beginnings by revealing the origin and evolution of Jupiter.

From a unique polar orbit, Juno will repeatedly dive between the planet and its intense belts of charged particle radiation, coming only about 3,000 miles (5,000 kilometers) from the cloud tops at closest approach.

Specifically, Juno will...

- Determine how much water is in Jupiter's atmosphere, which helps determine which planet formation theory is correct (or if new theories are needed)
- Look deep into Jupiter's atmosphere to measure composition, temperature, cloud motions and other properties
- Map Jupiter's magnetic and gravity fields, revealing the planet's deep structure
- Explore and study Jupiter's magnetosphere near the planet's poles, especially the auroras – Jupiter's northern and southern lights – providing new insights about how the planet's enormous magnetic force field affects its atmosphere.

It took five years for Juno to travel this far on its \$1.1 billion mission, and the spacecraft is to make 37 orbits around Jupiter over the next 20 months. After two large orbit passes each subsequent orbit will take about 14 days. First data will arrive on Aug 27.

https://www.nasa.gov/mission_pages/juno/main/index.html

Continued from Page 1
laid in shallow slit-troughs .

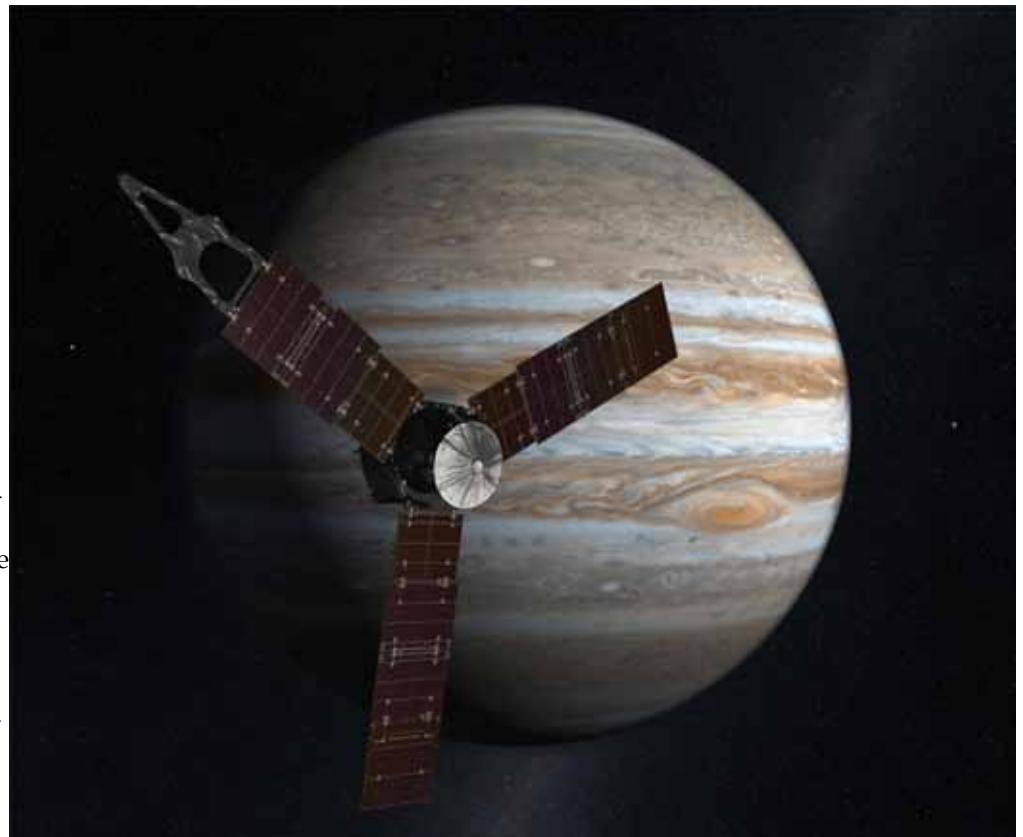
A Construction Support Team meeting was held on Thursday, June 30, for the planning and coordination of the remaining tasks in support of construction (see task list in the April issue of the Eyepiece):

4. Painting & sealing (sealing of the concrete floor is completed by the contractor)
 5. Install Lamps (Alan Pareis)
 6. Install RJ Telescope
 7. Install HC Telescope
 8. Install Floor Tiles.
 9. Plan & install signs.
 10. Landscaping (Laura Ainslie)
- Additional tasks for support of the Star*Quest Project are:

1. Recognition of donors and past members.
2. Procure & install observatory furniture.
3. Procure & Install electric/electronic equipment.

Thanks to all volunteers who have contributed their efforts on the Construction Support Team If you wish to get on my list of volunteers please call me, Gene Stringer, at 489-8135.

We have received and paid five requests for payments to the contractor, Robert Koors Custom Builders. According to the information supplied by the contractor costs are within his budget.



This article is provided by **NASA Space Place**. With articles, activities, crafts, games, and lesson plans, NASA Space Place encourages everyone to get excited about science and technology. Visit spaceplace.nasa.gov to explore space and Earth science!



Hubble's Bubble lights up the interstellar rubble

By Ethan Siegel

When isolated stars like our Sun reach the end of their lives, they're expected to blow off their outer layers in a roughly spherical configuration: a planetary nebula. But the most spectacular bubbles don't come from gas-and-plasma getting expelled into otherwise empty space, but from young, hot stars whose radiation pushes against the gaseous nebulae in which they were born. While most of our Sun's energy is found in the visible part of the spectrum, more massive stars burn at hotter temperatures, producing more ionizing, ultraviolet light, and also at higher luminosities. A star some 40-45 times the mass of the Sun, for example, might emit energy at a rate hundreds of thousands of times as great as our own star.

The Bubble Nebula, discovered in 1787 by William Herschel, is perhaps the classic example of this phenomenon. At a distance of 7,100 light years away in the constellation of Cassiopeia, a molecular gas cloud is actively forming stars, including the massive O-class star BD+60 2522, which itself is a magnitude +8.7 star despite its great distance and its presence in a dusty region of space. Shining with a temperature of 37,500 K and a luminosity nearly 400,000 times that of our Sun, it ionizes and evaporates off all the molecular material within a sphere 7 light years in diameter. The bubble structure itself, when viewed from a dark sky location, can be seen through an amateur telescope with an aperture as small as 8" (20 cm).

As viewed by Hubble, the thickness of the bubble wall is both apparent and spectacular. A star as massive as the one creating this bubble emits stellar winds at approximately 1700 km/s, or 0.6% the speed of light. As those winds slam into the material in the interstellar medium, they push it outwards. The bubble itself appears off-center from the star due to the asymmetry of the surrounding interstellar medium with a greater density of cold gas on the "short" side than on the longer one. The blue color is due to the emission from partially ionized oxygen atoms, while the cooler yellow color highlights the dual presence of hydrogen (red) and nitrogen (green).

The star itself at the core of the nebula is currently fusing helium at its center. It is expected to live only another 10 million years or so before dying in a spectacular Type II supernova explosion.



Image credit: NASA, ESA, and the Hubble Heritage Team (STScI/AURA), of the Bubble Nebula as imaged 229 years after its discovery by William Herschel.



Fort Wayne Astronomical Society
P.O. Box 11093
Fort Wayne, IN 46855

This Issue is Available in color on the Web



Fort Wayne Astronomical Society, Inc. 1959
P.O. BOX 11093 • FORT WAYNE, IN 46855 • USA
FortWayneAstronomicalSociety.com

[StarQuest Observatory Donations](#)

[Next General Meeting](#)

[Newsletters](#)

[About our Society](#)

[Public & Group Observing](#)

[Newsstand](#) [Store](#)

[Want to Join?](#)

[Our Favorite Links](#)

[Officers and Contacts](#)

[Clear Sky Chart](#)

[Star Charts](#)

[Member Library](#)

[Buying First Telescope](#)

Night Sky Network



like us on
Facebook

Next General Meeting:
Tuesday, July 19, 7:30 pm

TECUMSEH LIBRARY

1411 East State Blvd. 46805

Program:

Show and Tell

by Members and Guests

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



July Night Sky: Throughout July you can find three easy-to-spot planets adorning the evening sky. Soon after the Sun sets, look for Jupiter shining brightly well up in the Southwest. NASA spacecraft called Juno has finally reached Jupiter and is going into orbit around it. In the South is very obvious Mars. The Red Planet is very obvious, yet it's only half as bright now as it was in late May. To the left of Mars are two obvious stars. The brighter one, on top, is Saturn, and the one below is the star, Antares. New moon the 4th. Full moon the 19th.