



GENERAL MEETING

Visitors Welcome

Tuesday Evening, September 19, 7:30 PM

Tecumseh Public Library

1411 E State Blvd, Fort Wayne, IN 46805

Great American Eclipse Observing Report

Laura Ainslie, Moderator

Tell everyone about what you saw.

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

October

General Meeting Tuesday, Oct 17

Board Meeting Tuesday, Oct 24

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 you are invited to come to the **Star*Quest Observatory (S*QO)** for observing times, scheduled for Fridays near the new moon each month. The remaining dates this year are: **Sep 15 , Oct 20, Nov 17.**

Public Star Parties

We need trained volunteers to run the Richard Johnston (RJ) Telescope at S*QO. **If you wish to participate, with the RJ scope, with your own telescope or without a scope, contact Mark Anderson (260)416-4094, to get on his volunteer list.** This is a great way to contribute to our community service. Current events are:

Fri Sep 22 at Evergreen Park in Huntington

Sat Oct 14 Blufton Pumpkin Roll. Contact Larry Clifford at (260)824-2655 for time and place.

TBT at S*QO, Cancer Research & Mental Health funds

Star*Quest Update

by Gene Stringer

We continue to have record attendance on clear Saturday evenings, We have permission from the Park to extinguish some of the security lighting that has been bothering us.

The leak in the well of the RJ scope has been fixed (we think). We still have construction support activities to complete:

3. Install Red Lighting (Leader Alan Paries)

5. Landscaping (Leader Laura Ainslie)

8. Plan, procure and install observatory equipment (Leader: Gene Stringer)

An additional task includes an update of the Sky Wizard for the HC scope,

If you have not already volunteered and/or wish to support any of the above tasks please contact the task leader or Gene Stringer at (260)489-8135 or email at : genestringer@mac.com to volunteer.

Eclipse of the Century?

We know you're dying to tell everyone about what you saw on August 21st. (Or even possibly on August 31st. Astronomy really won't come to a screeching halt when the moon moves away from the sun.) So bring your memories, bring your pictures, bring your thumb drive with your PowerPoint presentation. Did you get clouded out? Your family and friends may not cry with you, but we will. Honest.

Laura Ainslie, CEN*, has been haunting eclipse websites and will tell us about The Next Big Eclipse Event... which may not be what you're expecting.

Hope to see everyone there.

*Certified Eclipse Nut, as of 1979. And you people thought I was just a moonie. :)

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 Sep-Oct

Scheduled events for the next two months:

Saturday Public star gazing at Star*Quest Observatory, Jefferson Township Park April Thru November. (Observatory is available for members to use, except for scheduled observing events)

September

General Meeting Tuesday, Sep 19

Board Meeting Tuesday, Sep 26

Board Meeting Highlights

- Board met on Tues, 22 Aug, in Phil Hudson's office.
- Treas reported current holdings of \$3,814 for General operations and \$3,874 for S*Q
- Discussed possibility of acquiring a radio telescope from Northrop HS.
- The next board meeting will be on Tuesday, 26 Sep at 7:30 p.m. in Phil Hudson's office.

FWAS OFFICERS

President: Larry Clifford 824-2655
 Vice-Pres: Laura Ainslie (260)740-9162
 Secretary: Gene Stringer 489-8135
 Treasurer: Julie Kaufman (260)579-1777

APPOINTED POSITIONS

Observatory Director: Mark Anderson
 (260)416-4094
 Web Master: Sarah Suraci 797-2776
 Star*Quest Project Manager: Gene Stringer 489-8135
 Star*Quest Treas: Julie Kaufman
 (260)579-1777

EDITORIAL STAFF

Eyepiece editor, Gene Stringer, 489-8135
 Membership: Sara Harper 444-4042
 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 for space or style.

Nine Ways Cassini-Huygens Matters

1. NASA's Cassini spacecraft and ESA's Huygens probe expanded our understanding of the kinds of worlds where life might exist.

With discoveries at Saturn's moons Enceladus and Titan, Cassini and Huygens made exploring "ocean worlds" a major focus of planetary science. Insights from the mission also help us look for potentially habitable planets -- and moons -- beyond our solar system.

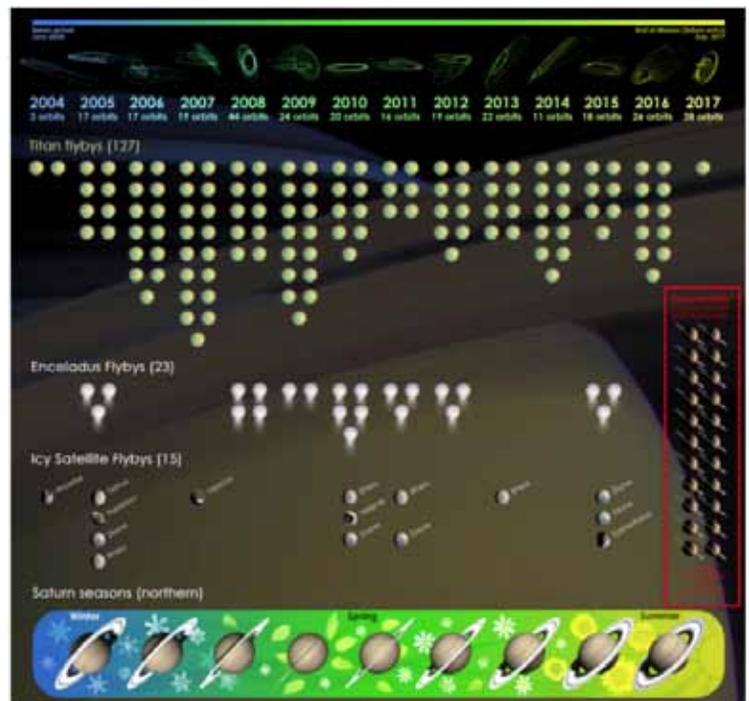
2. At Saturn's largest moon, Titan, Cassini and Huygens showed us one of the most Earth-like worlds we've ever encountered, with weather, climate and geology that provide new ways to understand our home planet.

Titan is 10 times farther from the sun than Earth and much colder, but Cassini showed it to be the only other place in our solar system with stable liquid on its surface and a kind of "hydrological" cycle involving methane rather than water.

3. Cassini is, in a sense, a time machine. It has given us a portal to see the physical processes that likely shaped the development of our solar system, as well as planetary systems around other stars.

Cassini has provided a brief glimpse into deep time in the Saturn system. The rings, for example, are a natural laboratory for processes that form planets -- a mini solar system, if you will. They show us how objects clump together and break apart. And in the ripples we can read the history of impacts into the rings. We also see "propeller" features that obey the same physical processes that form planets.

Cassini at a Glance



This graphic summarizes Cassini's 13 years orbiting Saturn, with moon flybys grouped into columns for each phase of the mission. The Grand Finale orbits appear as Saturn flybys in 2017. This list of icy satellite flybys includes three additional close encounters (Phoebe, Helene and Epimetheus) not included in the official tally of 12 "targeted" flybys. At bottom, Saturn's northern hemisphere seasons are indicated from 2004 to 2017.

4. The length of Cassini's mission has enabled us to observe weather and seasonal changes, improving our understanding of similar processes at Earth, and potentially those at planets around other stars.
5. Cassini revealed Saturn's moons to be unique worlds with their own stories to tell.
Planet-size Titan and diminutive Enceladus stood out in Cassini's in-depth survey of Saturn's moons. But the mission showed that every moon in the Saturn system is a unique character with its own mysteries, and many of Saturn's satellites are related in surprising ways.
6. Cassini showed us the complexity of Saturn's rings and the dramatic processes operating within them.
7. Some of Cassini's best discoveries were serendipitous. What Cassini found at Saturn prompted scientists to rethink their understanding of the solar system.
8. Cassini represents a staggering achievement of human and technical complexity, finding innovative ways to use the spacecraft and its instruments, and paving the way for future missions to explore our solar system.
9. Cassini revealed the beauty of Saturn, its rings and moons, inspiring our sense of wonder and enriching our sense of place in the cosmos.

Note: This article was downloaded and edited from NASA's web site:

<https://saturn.jpl.nasa.gov/mission/grand-finale/why-cassini-matters/>

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!



Cassini Says Goodbye

By Teagan Wall

On September 15th, the Cassini spacecraft will have its final mission. It will dive into the planet Saturn, gathering information and sending it back to Earth for as long as possible. As it dives, it will burn up in the atmosphere, much like a meteor. Cassini's original mission was supposed to last four years, but it has now been orbiting Saturn for more than 13 years!

The spacecraft has seen and discovered so many things in that time. In 2010, Cassini saw a massive storm in Saturn's northern hemisphere. During this storm, scientists learned that Saturn's atmosphere has water vapor, which rose to the surface. Cassini also looked at the giant storm at Saturn's north pole. This storm is shaped like a hexagon.

NASA used pictures and other data from Cassini to learn how the storm got its six-sided shape.

Cassini also looked at some of Saturn's moons, such as Titan and Enceladus. Titan is Saturn's largest moon. Cassini carried a lander to Titan. The lander, called Huygens, parachuted from Cassini down to the surface of the moon. It turns out, Titan is quite an exciting place! It has seas, rivers, lakes and rain. This means that in some ways, Titan's landscape looks a bit like Earth. However, its seas and rivers aren't made of water—they're made of a chemical called methane.

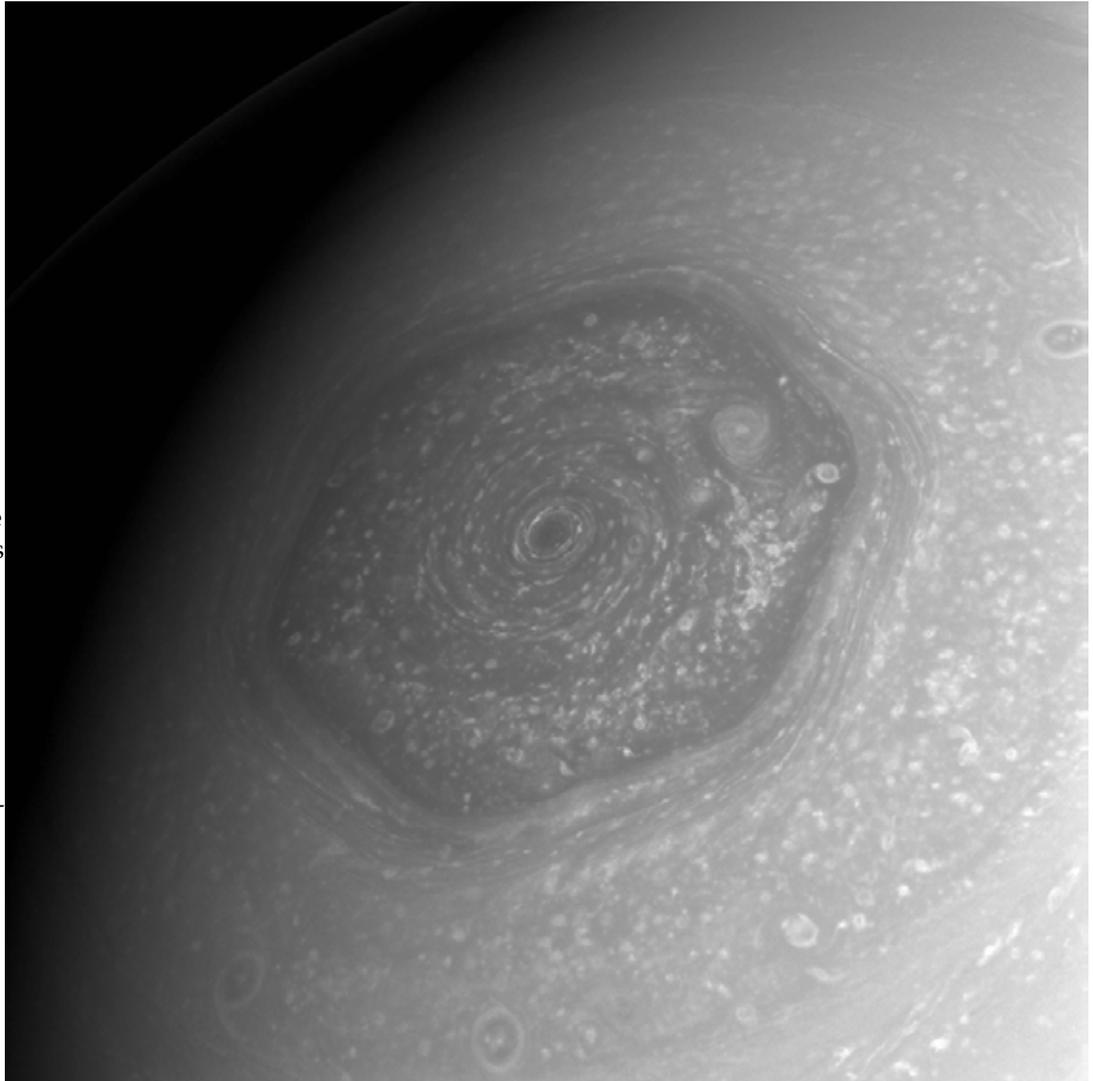
Cassini also helped us learn that Saturn's moon Enceladus is covered in ice. Underneath the ice is a giant liquid ocean that covers the whole moon. Tall geysers from this ocean spray out of cracks in the ice and into space, like a giant sneeze. Cassini flew through one of these geysers. We learned that the ocean is made of very salty water, along with some of the

chemicals that living things need.

If there is life on Enceladus, NASA scientists don't want life from Earth getting mixed in. Tiny living things may have hitched a ride on Cassini when it left Earth. If these germs are still alive, and they land on Enceladus, they could grow and spread. We want to protect Enceladus, so that if we find life, we can be sure it didn't come from Earth. This idea is called planetary protection.

Scientists worry that when Cassini runs out of fuel, it could crash into Titan or Enceladus. So years ago, they came up with a plan to prevent that from happening. Cassini will complete its exploration by diving into Saturn—on purpose. The spacecraft will burn up and become part of the planet it explored. During its final plunge, Cassini will tell us more about Saturn's atmosphere, and protect the moons at the same time. What an exciting way to say goodbye!

To learn more about Saturn, check out NASA Space Place: <https://spaceplace.nasa.gov/all-about-saturn>



Caption: This image of the hexagonal storm on Saturn's north pole was taken by Cassini in 2013. Image credit: NASA/JPL-Caltech/Space Science Institute



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PROGRAM

The Great American Eclipse Observing Reports

Moderator: Laura Ainslie





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

September Night Sky: Mercury is brightest and easiest to spot in the morning sky from Sept. 6 to 20. Venus passes the much-fainter bluish star Regulus (in Leo, the lion) on the morning of Sept. 20, Venus and the star appear low in the east-northeast predawn sky, separated by only half a degree. This is an "off" year for Mars, dimming to about the brightness of the North Star. But next year in late July the Red Planet comes closer to Earth since 2003. Mars rises in the September morning sky after the 11th and teams up with Mercury on the morning of the 16th. Jupiter is sinking fast in the evening sky hidden behind the Sun in November. All month Saturn is well placed in the Southern sky, even for small telescopes of at least 30 power. Full Harvest Moon Sept 6th, New Moon the 20th.





