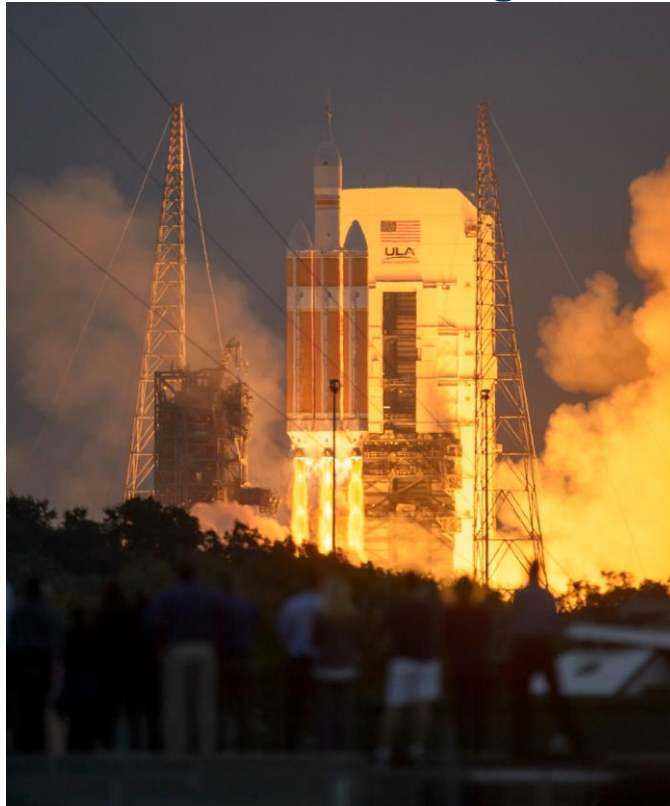


NASA Launches First Orion Deep-Space Capsule in Historic Test Flight



Credit: NASA/Bill Ingalls

A Delta 4 Heavy rocket carrying NASA's Orion spacecraft lifts off from Cape Canaveral Air Force Station at 7:05 a.m. EST, Dec. 5, 2014, in Florida. Launch was postponed one day because of technical glitches and weather.

Continued on Page 6

Inside this Issue.....

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- 6 – Orion Launch cont..
- 7 – EAS Business – Minutes

The EAS newsletter, Observer, is published monthly. Anyone wishing to contribute articles or photos may mail them to the club's PO Box: EAS, PO Box 3474, Evansville, IN 47733, or e-mail them to the editor at:

dasiceman@yahoo.com

The **Evansville Astronomical Society (EAS)** is a non-profit organization fully incorporated in the state of Indiana. It has, as its primary goal, the advancement of amateur astronomy. Founded in 1952, the society seeks to:

- 1... maintain adequate facilities for its members and the public in order to extensively study the skies and
- 2... promote an educational program for those who wish to learn more about the science of Astronomy.

Meetings are held the third Friday of each month, except June, when the annual EAS picnic is held. The society also sponsors monthly Open House events during the warmer seasons that afford the public an opportunity to tour the observatory.

EAS 2014 Officers and Contacts

President – Scott Conner
812-.604.7164
ssconner24@gmail.com

Vice President – Tony Bryan

Secretary – Charleen Kaelin
812.303.1711

Treasurer – Ted Ubelhor

Counselors
Michael Borman
Kent Brenton
Ken Harris

Webmaster – Michael Borman

Program Director
Tony Bryan

News editor – David Kube
dasiceman@yahoo.com

For more information about the EAS or directions to the Observatory, please visit the club's web page:

www.evansvilleastro.org



Local Events and Information

EAS Schedule Update:

Please remember the regular monthly meeting for December will be held at the Observatory 7:30pm on Friday, December 19th, 2014.

EAS Update:

Please note that dues for the New Year began on July 1st. If you have not submitted yours please mail them to the club's PO box: EAS, PO box 3474, Evansville, IN 47733, or contact an officer. Single Membership \$35 and Family \$40

EAS Update:

Please note that the upcoming meeting in December will be our Pot Luck and Astronomy Quiz.

EAS Update:

Please note that the Astronomy Calendars are available. Contact our Treasurer Ted Ubelhor if Interested.

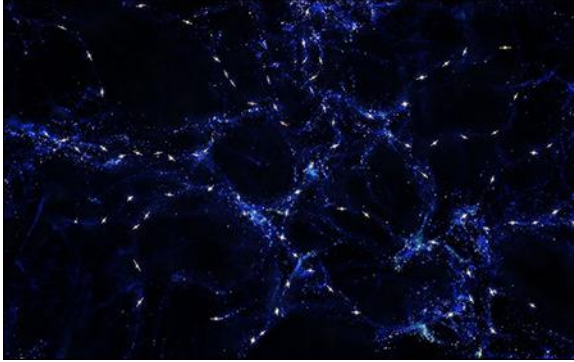
EAS Update:

EAS Update:

Telescopes and accessories for sale...

As mentioned in last month's issue, Mike Borman still has some excellent telescope equipment and imaging accessories for sale. Some of the gear has already been sold. If interested, go to Mike's web page. Here is the link: <http://www.mborman.org/forsale.htm>

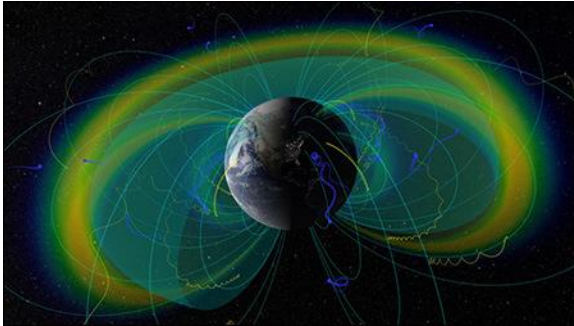
Spooky alignment of quasars across billions of light-years.



ESO/M. Kornmesser

New observations with the European Southern Observatory's Very Large Telescope (VLT) in Chile have revealed alignments of the largest structures ever discovered in the universe. A European research team has found that the rotation axes of the central supermassive black holes in a sample of quasars are parallel to each other over distances of billions of light-years. The team also has found that the rotation axes of these quasars tend to be aligned with the vast structures in the cosmic web in which they reside. Quasars are very active supermassive black holes at the nuclei of galaxies. These black holes are surrounded by spinning disks of extremely hot material that is often spewed out in long jets along their axes of rotation. Quasars can shine more brightly than all the stars in the rest of their host galaxies put together.

Star Trek-like invisible shield found thousands of miles above Earth.



NASA's Scientific Visualization Studio

A team led by the University of Colorado Boulder has discovered an invisible shield some 7,200 miles (11,600 kilometers) above Earth that blocks so-called "killer electrons," which whip around the planet at near-light-speed and have been known to threaten astronauts, fry satellites, and degrade space systems during intense solar storms. The barrier to the particle motion was discovered in the Van Allen radiation belts, two doughnut-shaped rings above Earth that are filled with high-energy electrons and protons, said Daniel Baker of CU's Laboratory for Atmospheric and Space Physics. Held in place by Earth's magnetic field, the Van Allen radiation belts periodically swell and shrink in response to incoming energy disturbances from the Sun.

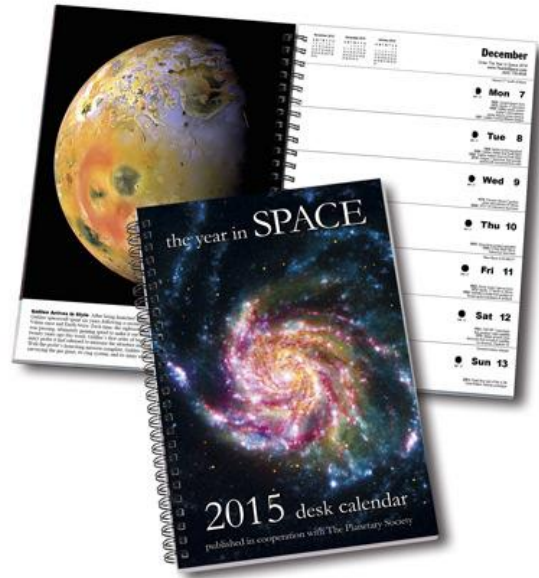
December offers hundreds of meteors.



Tony Rowell

The annual Geminid meteor shower, which peaks the night of December 13 and the morning of the 14th, is typically one of the best of the year. The Geminid shower generally features bright meteors, and, unlike most showers, it's fairly rich before midnight. In 2014, the Last Quarter Moon occurs December 14, something observers will need to keep in mind when planning their viewing. The Geminids are so named because if you trace all the meteor trails backward, they would converge within the boundaries of the constellation Gemini the Twins. This point, called the radiant, lies approximately 3° northwest of the 1st-magnitude star Castor.

**2015 Astronomy Calendars Available
for Members – Note from our Treasurer Ted Ubelhor**
Please Note that there is a limited supply.



Desk Calendar – Retail price - \$17.95 **Evansville Astronomical Society Special Price** - \$12.00

Wall Calendar – Retail Price \$12.99 **Evansville Astronomical Society Special Price** - \$7.00

Contact Ted Ubelhor for more details

January 2015

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16 Reg Meeting 7:30pm	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Generated by FreeHTMLCalendar.com Copyright © 2011 John Dalbey.

Up and Coming Events 2014

Regular Meeting – Friday, December 19th, 2014 @ 7:30pm @ Observatory

Potluck and Astronomy Quiz at the December Meeting

Regular Meeting – Friday, January 16th, 2014 @ 7:30pm @ Observatory

Moon Phases

First Quarter	Full Moon	Third Quarter	New Moon
January 26 th , 2015	January 4 th , 2015	January 13 th , 2015	January 20 th , 2015

Moon Phases courtesy of Time and Date.com

***NASA Launches First Orion Deep-Space Capsule
in Historic Test Flight, continued from Page 1***

CAPE CANAVERAL, Fla. — It's the test flight NASA has been waiting for. After a scrapped launch attempt Thursday (Dec. 4), NASA's new Orion capsule, designed to help deliver humans to deep space destinations like Mars someday, has just launched on its rigorous first test flight.

First space capsule in 40 years



Credit: By Karl Tate, Infographics Artist

A United Launch Alliance Delta 4 Heavy rocket (the most powerful rocket currently flying from Earth) roared to life, launching the unmanned Orion space capsule from a pad here at Cape Canaveral Air Force Station at 7:05 a.m. EST (1205 GMT) today (Dec. 5). The prototype spacecraft is now embarking on a series of tests in orbit before its planned splashdown in the Pacific Ocean at about 11:30 a.m. EST (1630 GMT), 4.5 hours after leaving the planet.

"We're actually excited about this particular step on our journey to the Red Planet, to Mars," NASA Administrator Charles Bolden told members of the press Wednesday (Dec. 3), before launch. "It is a journey. I don't want people to get focused on the destination. This is a journey."

This morning's launch was originally scheduled for 24 hours earlier, but several issues — including a boat downrange of Cape Canaveral, strong ground-level winds and the failure of several "fill and drain" valves on the Delta 4 Heavy to close all the way — pushed things back a day.

Today's flight, called Exploration Flight Test-1 (EFT-1), marks the first time a spacecraft built for humans will travel out of low-Earth orbit in more than 40 years, and the excitement about the history-making flight is palpable at Kennedy Space Center, which is next door to Cape Canaveral. About 27,000 spectators were expected to watch the launch Thursday from the NASA center's grounds, with thousands more expected to observe from the beaches and other viewing sites along Florida's Space Coast here, NASA officials said. Officials aren't yet sure how many viewers came back for the launch Friday. "The launch itself was just a blast to see how well the rocket did," Mark Geyer, NASA's Orion program manager, said after launch. "It was exciting to see it as it went up into space. Being here at launch, being near a rocket that big, you just kind of feel it."

Orion — built for NASA by Lockheed Martin — looks somewhat like the capsules flown during NASA's Apollo moon landing program, which took humans to the moon for the first time. The feeling on the ground is also somewhat reminiscent of launches during the space agency's shuttle era, the last time humans flew to space from U.S. soil.

EAS MEETING for November 21st, 2014

I have not received any minutes to publish at the time of this notice.