The Shoreline Observer



The Shoreline Amateur Astronomical Association Newsletter

Celestial Highlights: February

- Feb 2th New Moon Feb 11th First Quarter Moon
- Feb 18th Full Moon
- Feb 24th Last Quarter Moon

Macatawa Bay School Planetarium

Club Meeting: Friday, February 11 @ 7:00 PM

Topic: PARK TOWNSHIP "Deep Sky Objects" run through

Guest Speaker... Michael Sissing & Students from HNT

Refreshments: Russ Hills

Board Meeting: Wednesday February 2 2011

@ 6:00 PM at Herrick District Library

Upcoming SAAA Events...

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Welcome to the new members

In the January meeting we had 2 members join.

Doug M.

I teach at West Ottawa High School so I have students in my astronomy class grades 10 through 12. It is an elective course and both sections of it I teach are at full capacity.

Glen H,

Glen is a long time resident of Holland.

He runs a successful computer repair business.

Welcome them both!

Fun Facts

Dr. Eugene Shoemaker's love for the moon was so much that after his death, his ashes were scattered over the moon by the Lunar Prospector spacecraft in 1999.

SAAA Meeting Minutes - January 2011

We did not hold a separate Board meeting in January. These items were discussed at the regular monthly meeting on January 14th, 2011.

Old Business Items

Treasury Report:

We set the agenda for the Feb. 14th Park Township program. We discussed what the club could present at the March 19th

Southwest Symphony Orchestra, and came up lacking. **Upcoming Events:**

February 11th SAAA regular meeting: Macatawa Bay Planetarium at 7:00 PM.

Michael Sissing from Holland New Tech school will join us.

February 14th (Valentine's Day) Park Township Program: Macatawa Bay Planetarium 7:00 to 8:30 PM.

Members will present a Deep Sky Objects PowerPoint and a Planetarium show, and lead visitors in creating a Planisphere and a Big Dipper Clock.

Journey 4-H Outdoor Challenge: Late January or February, 2011 No updates were discussed.

March 4th and 5th Messier Marathon: Which location?

March 11th SAAA regular meeting: Macatawa Bay Planetarium at 7:00 PM.

March 19th Southwest Symphony Orchestra: has invited SAAA to participate in pre-concert activities for their presentation of "Holst: The Planets". Russ will contact them to see if we are an appropriate fit for this event.

Black River School Earth Science Program: Date TBD. We discussed bringing a Stellarium presentation to the school.

New Business Items

Russ reviewed the redesigned the <u>www.holland-saaa.org</u> website. Two new visitors came to the meeting, and signed up as paying members. Was this a result of the redesigned website and "Friends of SAAA" contact list?

Members agreed to add a PayPal link to accept cash donations to the Club

Russ presented photos of the Fox Park observatory in Eaton County, west of Lansing.

http://www.eatoncounty.org/Departments/ Eaton County Parks Recreation/ Fox Park Public Observatory.htm

Members were in favor of re-establishing a partnership with Ottawa County Parks to provide community outreach, and to possibly develop a future observing site at Hemlock Crossings County Park.

We discussed buying a supply of twelve hats at \$10 each. Robin is currently taking orders for clothing and other items with our club logo, but only through January 21st.

Prior to the meeting, Russ presented a draft of proposed changes to our club bylaws. Frank, Martha, and Larry will make further reviews and recommendations, to ensure that they match current policies.

George Miller – Secretary

January 20, 2011

Strange or What? Part I

Mystery Green Blob In Space Captured By Hubble (PICTURE) (SETH BORENSTEIN, AP) WASHINGTON --The Hubble Space Telescope got its first peek at a mysterious giant green blob in outer space and found that it's strangely alive.

The bizarre glowing blob is giving birth to new stars, some only a couple million years old, in remote areas of the universe where stars don't normally form. The blob of gas was first discovered by a Dutch school teacher in 2007 and is named Hanny's Voorwerp (HAN'nee's-FOR'-vehrp). Voorwerp is Dutch for object. NASA released the new Hubble photo Monday at the American Astronomical Society meeting in Seattle. Parts of the green



blob are collapsing and the resulting pressure from that is creating the stars. The stellar nurseries are outside of a normal galaxy, which is usually where stars live.

That makes these "very lonely newborn stars" that are "in the middle of nowhere," said Bill Keel, the University of Alabama astronomer who examined the blob.

The blob is the size of our own Milky Way galaxy and it is 650 million light years away. Each light year is about 6 trillion miles. The blob is mostly hydrogen gas swirling from a close encounter of two galaxies and it glows because it is illuminated by a quasar in one of the galaxies. A quasar is a bright object full of energy powered by a black hole.

Story continues below

The blob was discovered by elementary school teacher Hanny van Arkel, who was 24 at the time, as part of a worldwide Galaxy Zoo project where everyday people can look at archived star photographs to catalog new objects.

Van Arkel said when she first saw the odd object in 2007 it appeared blue and smaller. The Hubble photo provides a clear picture and better explanation for what is happening around the blob.

"It actually looked like a blue smudge," van Arkel told The Associated Press. "Now it looks like dancing frog in the sky because it's green." She says she can even see what passes for arms and eyes. Since van Arkel's discovery, astronomers have looked for similar gas blobs and found 18 of them. But all of them are about half the size of Hanny's Voorwerp, Keel said.

http://www.huffingtonpost.com/2011/01/11/hannys-voorwerp-green-blob -hubble_n_807298.html

HISTORY OF THE ASTONOMICAL LEAGUE

The SAAA is one of the 276 societies that make up the Astronomical League (AL). We belong to it, pay annual dues but, how much do we know about it? Here is a little information taken from the AL **Astro Notes No 4**.

The beginning of the Astronomical League dates back to 1939 when members of eleven amateur astronomical societies met in the American Museum of Natural History in New York City. Similar meetings followed in Pittsburgh, 1940, Washington D.C., 1941, and Detroit, 1946. At the last meeting, final plans laid the foundation for a permanent organization constituting a nation-wide federation of societies.

The following convention took place in Philadelphia, July 4, 1947. There, the federation came into being: Bylaws were adopted, officers were elected, and, in due course, the name **Astronomical League** was selected. Shortly thereafter, the organization was incorporated as a non-profit organization under the laws of the District of Columbia.

The Bylaws begin with a statement of purpose and objectives for the Astronomical League. Recognizing that changing times may require shifting focus, a strategic planning committee constantly reviews these objectives for relevancy to amateur astronomy today. The overall focus remains: to promote the science of astronomy. Our current mission statement continues in the masthead, above.

Membership in the Astronomical League consists primarily of astronomical societies located throughout the United States. Currently, more 276 societies, representing over 15,000 individual members, are affiliated. In addition, many amateur astronomers have joined the League as individuals.

In order to effectively serve this geographically disperse group, the Astronomical League is divided into geographic **regions**. The boundaries of the ten regions are chosen to permit clubs to participate in regional meetings without traveling long distances. This also permits societies within a given region to address concerns which may be local to their area. The boundaries are somewhat flexible, shifting from time to time to accommodate the needs and desires of the local groups.

The Astronomical League is primarily a volunteer organization. National and regional officers and the chairs of all standing and ad hoc committees donate their time to help the organization pursue its mission.

The affairs of the Astronomical League are administered by five officers who are elected by vote of the members. The officers are: President, Vice-President, Secretary, Treasurer, and Executive Secretary. The first three officers serve two-year terms while the latter two officers serve three-year terms. The terms are staggered so that continuity may be maintained as new officers are elected.

The Council is in charge of all business of the Astronomical League and directs its policies. The 25 Council members are the five national officers plus the Chairman and Representative from each of the ten regions. These two regional officers, together with other officers who administer a region, are elected by members within each region. While Council conducts routine business of the League, any change to the By-Laws or any fundamental change in policy must be approved by vote of the full membership.

Dues for each member society are based on the membership of that society and provide the primary revenue for activities of the Astronomical League. Other income derives from sale of publications, sale of League memorabilia, advertising, annual conventions and contributions.

Each Region is organized similar to the national body. While basic, common functions within the regions are specified in the national by-laws, each region has its own by-laws to specify its day-to-day operation. Regional activities are supported by proceeds from regional conventions and assistance from the parent organization as specified in the By-Laws.

Recognizing that communication is the "glue" that binds any organization; our By-Laws provide that the Astronomical League publish a periodic newsletter. Named the **REFLECTOR**, our newsletter is published quarterly and distributed to our entire membership of 15,000+. Each issue contains news of League business, activities of member clubs, reports of activity committees and other items of general astronomical interest.

In 2003, The Astronomical League achieved the long-sought goal of a permanent, National Office. Finally, we had a central location for communications, file storage and general operations, and we hired our first employee, an office manager. The National Office is located at 9201 Ward Parkway, Suite 100, Kansas City, MO 64114.

Author's note: I have been a member of the AL since 1975 when I joined the Milwaukee Astronomical Society. There I had the honor of meeting Edward Halbach who was one of the originators of the AL and a driving force behind the American Association of Variable Star Observers (AAVSO). Ed served as chairman of the infant AL until the first elections where held.

I have served as North Central Region Vice Chairman and Chairman and currently am a Trustee of the Astronomical League Trust Fund. The trustees are charged with maximizing the return of funds donated to the Trust. Any member can submit a request of funds from the Trust to finance a program that will benefit all members of the AL. The trustees evaluated all requests and grant funds to those meeting the Trust's criteria as long as funds are available. Many of the league's observing programs are financed by the Trust. Unfortunately, the current economical situation makes it hard to derive significant returns from the safe investments held by the Trust so that the trustees have been unable to fund few programs lately. Let's hope that things improve in the future. So, next time you attend a regional or national AL convention, please consider contributing a little to the Trust Fund when the hat is passed around.

Submitted by Frank Roldán

January 2011

Thank you Jim

When I attended my first meeting of the SAAA in late 2007 and saw the energy, enthusiasm, and dedication that President Jim Reier brought to the organization I knew I had come to the right place to reconnect with organized amateur astronomy. This small group was excited about observing and reaching out to the general public.

In the last three years Jim has spearheaded many public programs at the planetarium; observing in downtown Holland and at county parks, as well as special events for



brownies, girl and boy scouts and area schools. These have been successful thanks, again, to Jim's dedication and love for astronomy.

Jim, we are all truly thankful for all you have done for the SAAA as President and for your continued dedication to our organization.

Frank Roldán, Vice President, on behalf of all members of the SAAA

Jim thank you for making the change over easy.

And for all the help you have given me

Russ



Welcome in Russ

I have been very interested in astronomy from a very early age. When I was in elementary schools the local juniorcollege had a 13 week summer special. I never missed one of those presentations and after that time I was hooked.

Growing up and as a young adult I had several of the mass market department store telescopes. I can clearly remember my first view of the Saturn rings I was in awe and once again I was hooked for life.

About six years ago I got my first real telescope a Meade DS2130AT 4.5 inch scope. The first time I saw the Great Orion nebula with this was around midnight I was so excited I ran in and got my wife out of bed. And like the trooper she is, despite the snow, she got up trudged through the snow and looked through the eyepiece said "that is very nice now I'm going back to bed!" When I brought that scope home I though WOW that is a big telescope. That scope lasted just a few months before aperture fever set in.

My next scope was a Celestron StarHopper 10 inch. Oh I love this scope. It just fits across the back seat of the car. What great views it gives.

After pushing it around the night skies for a couple of years I though I would try out a GOTO.

So I bought a small Celestron StarSeeker 80mm.

What a blast to use. But it just made me want a better mount.

So here comes the CG5 ...

Then the cameras ...

Then guide scopes....

The I20MM...

The Orion StarBlast 4.5 Imaging Reflector Optical Tube

Then the Astro Hut...



TUBA

TOURING THE UNIVERSE THROUGH BINOCULARS ATLAS

You can find it here

http://www.philharrington.net/tuba.htm



All 1,100 deep-sky objects listed in the book are plotted, offering the most complete survey of the binocular sky ever published. Many of the objects are not shown on any other star atlas currently in print!

•

Zoom in and out to recreate the field of view through *your* binoculars.

•

Right click on one of the highlighted objects from the book and up pops a short listing of specifications, including location, magnitude, apparent size, etc.

•

Print charts (either **color** or **black-a** - your choice!) of any part of the sky. Hit the print button and you'll get a copy of the chart PLUS...

A listing of each object that appears plotted within it's borders, perfect for use outside.





Or select the multiple-chart option to create your own printed star atlas of the entire sky!

Shows the location of the Sun, Moon, and planets for any date that you choose.

Includes a help file on selecting binoculars as well as a listing of the twenty finest binocular sights in the sky.

System Requirements

The *TOURING THE UNIVERSE THROUGH BINOCU-LARS ATLAS* is designed to run on any IBM-compatible computer using any Windows operating system from Windows 95 through the latest <u>64</u> <u>-bit</u> Vista. Minimum requirements are a Pen-tium-75 with 16 MB of RAM and 5.25 MB of free hard-disk space. No Mac version is available.

Touring the Universe Through Binoculars remains the single most authoritative source for people who want to view the night sky with binoculars.

One of the nice feature is that the data base is a standard text file so you can add or change the listings to fit your needs.

This is also a very handy piece of software for the backyard telescope observer.

January 2011

Looking Up In January

Castor, the "twin" of Pollux in the constellation Gemini the Twins, is a prominent white star.



But did you know there are 3 sets of doubles in there? Even a fairly small telescope shows that Castor appears double, and in fact an even fainter star nearby also is part of the same system. To make it even more interesting, each of these three stars (Castor A, B and C) is double.

While we are talking about doubles , do you know about the <u>33 doubles</u> in Orion. What a wonderful night viewing session!

The Rosette Nebula NGC 2237 located 10° east of Betelgeuse present impressive cluster of stars and gaseous nebula.

Although the Rosette nebula is not very bright - it is much too faint to see with the naked eye - it is famous mainly because it is a striking circular shape resembling a flower.



Winter is a wonderful time to get your binoculars out.

It maybe to cold or there is to much snow on the ground to drag your telescope and gear out. But you can grab your binoculars step outside for a few minutes and enjoy the night sky. I keep mine by the back door.

Here are a couple of the highlights for you to enjoy!

The Double Cluster NGC 884 and NGC 869

NGC 884/869 are open clusters located 7600 light years away in the constellation of Perseus. Both clusters are located physically close to one another, only a few hundred light years apart. The clusters were first recorded by Hipparchus, but have likely been known since antiquity.

The Double Cluster is a favorite of amateur astronomers. These bright clusters are often photographed or observed with binoculars. Easy to find, the clusters are visible with the



unaided eye between the constellations of Perseus and Cassiopeia as a brighter patch in the winter Milky Way.

In binoculars the cluster appears as a beautiful assemblage of bright stars located in a rich star field. Dominated by bright blue stars the cluster also hosts a few orange stars that add to the visual interest. Both clusters together offer a spectacular low magnification view.

Be sure to spend some time with these 2 clusters!

January 2011

NASA'S Kepler Mission Discovers Its First Rocky Planet

NASA's Kepler mission confirmed the discovery of its first rocky planet, named Kepler-10b. Measuring 1.4 times the size of Earth, it is the smallest planet ever discovered outside our solar system.

The discovery of this so-called exoplanet is based on more than eight months of data collected by the spacecraft from May 2009 to early January 2010.

"All of Kepler's best capabilities have converged to yield the first solid evidence of a rocky planet orbiting a star other than our sun," said Natalie Batalha, Kepler's deputy science team lead at NASA's Ames Research Center in Moffett Field, Calif., and primary author of a paper on the discovery accepted by the Astrophysical Journal. "The Kepler team made a commitment in 2010 about finding the telltale signatures of small planets in the data, and it's beginning to pay off."

Kepler's ultra-precise photometer measures the tiny decrease in a star's brightness that occurs when a planet crosses in front of it. The size of the planet can be derived from these periodic dips in brightness. The distance between the planet and the star is calculated by measuring the time between successive dips as the planet orbits the star.

Kepler is the first NASA mission capable of finding Earth-size planets in or near the habitable zone, the region in a planetary system where liquid water can exist on the planet's surface. However, since it orbits once every 0.84 days, Kepler-10b is more than 20 times closer to its star than Mercury is to our sun and not in the habitable zone.

Kepler-10 was the first star identified that could potentially harbor a small transiting planet, placing it at the top of the list for ground-based observations with the W.M. Keck Observatory 10meter telescope in Hawaii.

Scientists waiting for a signal to confirm Kepler-10b as a planet were not disappointed. Keck was able to measure tiny changes in the star's spectrum, called Doppler shifts, caused by the telltale tug exerted by the orbiting planet on the star.

"The discovery of Kepler-10b, a bona fide rocky world, is a significant milestone in the search for planets similar to our own," said Douglas Hudgins, Kepler program scientist at NASA Headquarters in Washington. "Although this planet is not in the habitable zone, the exciting find showcases the kinds of discoveries made possible by the mission and the promise of many more to come," he said.

"Our knowledge of the planet is only as good as the knowledge of the star it orbits," said Batalha. Because Kepler-10 is one of the brighter stars being targeted by Kepler, scientists were able to detect high frequency variations in the star's brightness generated by stellar oscillations, or starquakes. "This is the analysis that really allowed us to pin down Kepler-10b's properties.," she added.

"We have a clear signal in the data arising from light waves that travel within the interior of the star," said Hans Keldsen, an astronomer at the Kepler Asteroseismic Science Consortium at Aarhus University in Denmark. Kepler Asteroseismic Science Consortium scientists use the information to better understand the star, just as earthquakes are used to learn about Earth's interior structure. "As a result of this analysis, Kepler-10 is one of the most well characterized planet-hosting stars in the universe next to our sun," Kjeldsen said.

That's good news for the team studying Kepler-10b. Accurate stellar properties yield accurate planet properties. In the case of Kepler -10b, the picture that emerges is of a rocky planet with a mass 4.6 times that of Earth and with an average density of 8.8 grams per cubic centimeter -- similar to that of an iron dumbbell.

"This planet is unequivocally rocky, with a surface you could stand on," commented team member Dimitar Sasselov, of the Harvard-Smithsonian Center for Astrophysics in Cambridge and a Kepler coinvestigator.

"All of Kepler's best capabilities have converged for this discovery," Batalha said, "yielding the first solid evidence of a rocky planet orbiting a star other than our sun."

Ames manages Kepler's ground system development, mission operations and science data analysis.



NASA's Jet Propulsion Laboratory in Pasadena, Calif., managed Kepler mission development.

Ball Aerospace and Technologies Corp. in Boulder, Colo., developed the Kepler flight system and supports mission operations with the Laboratory for Atmospheric and Space Physics at the University of Colorado in Boulder. The Space

Telescope Science Institute in Baltimore archives, hosts and distributes the Kepler science data.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Getting Started

If you have been to one of our star parties you have seen the wide array of equipment we use and you look at the equipment some club members own, and are overwhelmed as to how to get started. The great thing about our hobby is you can start simple and add on.

One item an amateur must possess is a good pair of binoculars. It does not matter the size, although 7x35 or 10x50 are the most common sizes used. 7x35 show a larger area of the sky than 10x50, which magnify more. Either size would be a good choice to own.

I often use my 10x50 binoculars to find the star field I wish to swing my telescope to. So, purchasing a good set of binoculars is a nice starting purchase to get into our hobby.

A red flashlight is the second must have item. Either a red LED light, or red cellophane rubber banded over the front of a regular flash light will work. Red light does not affect your night vision as much as a white light will. Once your eyes become night adapted, the red light will help keep them in this desired state.

Third is a notebook and a pen or pencil. This is to record your observations. I prefer a pencil, for I can draw items I see a lot easier than with a pen.

Last, some form of star charts. These can be either a formal star atlas, or printed star charts from a computer star charting program.

Starting our hobby in this way will allow you to determine if this is your cup of tea. If it is not, you have a nice pair of binoculars to use outdoors for other hobbies, like bird watching.

Oval Office

volunteers



The club needs your help.

Would you like to broaden your horizons?

Learn something new?

Do you have a hidden talent?.

We need volunteers in so many areas that no matter what your talent is we can and put it to use.

We need writers and editor-in-chief for this newsletter.

Writers for the website.

We need volunteers to do short 10 minutes presentations at club meetings.

We need volunteers to take home night sky network Kit and learn about them.

And use the night sky network kit at public outreach activities, give presentations at meetings.

We need people to help with the outreach. Whether you have a telescope or not we can use your help.

So please think about Volunteering for something.

Russ

Strange or What? Part 2

NASA authorities report that an unknown object approaching the Earth from deep space is almost certainly artificial in origin rather than being an asteroid. Object 2010 KQ was detected by the Catalina Sky Survey in Arizona earlier this month, and subsequently tracked by NASA's asteroid-watching service, the Near-Earth Object Program headquartered at the Jet Propulsion Laboratory in California.

Observations by astronomer S J Bus, using the NASA-sponsored Infrared Telescope Facility in Mauna Kea, Hawaii, indicate that 2010 KQ's spectral characteristics do not match any of the known asteroid types, and the object's absolute magnitude (28.9) suggests it is only a few meters in size.

The mysterious artificial object has apparently made a close pass by the Earth, coming in almost to the distance of the Moon's orbit, and is now headed away again into the interplanetary void. The object has used no propulsion during the time NASA has had it under observation. However the spacewatch experts believe that it must have moved under its own power at some point, given its position and velocity.

"The orbit of this object is very similar to that of the Earth, and one would not expect a object to remain in this type of orbit for very long," said Paul Chodas, at JPL.

The experts believe that the object must be a spacecraft, or part of one-likely to be a booster stage from an interplanetary mission of the past, now drifting back to Earth and out again. The next visit will probably be 2036, at which time there's a small chance that



2010 KQ will crash into the atmosphere and burn up.

The NASA graphic above shows the trajectory of the near-Earth object known as 2010 KQ, which the space agency said is likely a spent rocket stage that escaped the Earth-moon system years ago, and not an asteroid.

Casey Kazan via The Register. Image Credit: P. Chodas/NASA/JPL

http://www.dailygalaxy.com/my_weblog/2010/05/nasa-could-approaching -space-object-be-artificial.html This next article appeared a little over a week ago. Could climate change really be the cause?



Global warming

blamed for melting the horizon as sun comes

up 48 hours too soon

Scientists claim to have discovered more evidence of global warming after the sun rose two days early in Greenland, apparently because melting glaciers have lowered the horizon.

The polar night usually ends on January 13, but this year residents of Ilulissat, the third largest settlement in Greenland, were surprised to see dawn arrive just before 1pm on January 11 after six weeks of perpetual darkness.

Astronomers have ruled out the possibility of the early dawn being a result of a shift of the earth's axis and Thomas Posch, of the Institute for Astronomy of the University of Vienna, says a change in the horizon is "by far the most obvious explanation".

According to to the National Climatic Data Centre in North Carolina, 2010 was the warmest year on record and a separate report from the World Meteorology Organisation found that temperatures in Greenland were 3C above average last year.

However, not everyone accepts the explanation that melting glaciers are to blame. Message-boards are full of posts from conspiracy theorists blaming everything from chemtrails to a build-up of methane in the atmosphere or a shift in the earth's axis.

That last idea has been pooh-poohed by Wolfgang Lenhardt, director of the department of geophysics at the Central Institute for Meteorology in Vienna, who explains: "The data of the earth's axis and rotation are monitored continuously and meticulously and we would know if that had happened... there would have been an outcry around the world."

However he does suggest one other possible explanation - that ice crystals in the air had refracted the sun's light creating a mirage, known as a sun-dog, which appeared above the horizon.

http://www.thefirstpost.co.uk/73759,news-comment,news-politics,climatechange-brings-sunrise-two-days-early-to-greenland

By Robin Hudson

Strange or What? Part 3

VANDENBERG AIR FORCE BASE, Calif. – The U.S. Air Force's secrecy-shrouded X-37B unmanned spaceplane returned to Earth early Friday after more than seven months in orbit on a classified mission, officials said.

The winged craft autonomously landed at Vandenberg Air Force Base on the California coast 130 miles northwest of Los Angeles,



base spokesman Jeremy Eggers said. "It's very exciting," Eggers said of the I:16 a.m. PST land-

ing. The X-37B was launched by an Atlas 5 rocket from Cape Canaveral, Fla., on April 22, 2010, with a

maximum mission duration of 270 days.

Also known as the Orbital Test Vehicle, the Boeing-built spacecraft was originally a NASA project before being taken over by the military.

The Air Force has not said whether it carried anything in its cargo bay, but insists the primary purpose of the mission was to test the craft itself.

"We are very pleased that the program completed all the onorbit objectives for the first mission," program manager Lt. Col. Troy Giese said in a statement.

"Today's landing culminates a successful mission based on close teamwork between the 30th Space Wing, Boeing and the Air Force Rapid Capabilities Office," Giese said.

The Air Force said it planned to launch a second X-37B, dubbed OTV-2, in spring 2011.

Officials have made public only a general description of the mission objectives: testing of guidance, navigation, control, thermal protection and autonomous operation in orbit, re-entry and landing.

However, the ultimate purpose of the X-37B and details about the craft have longed remained a mystery, though experts said the spacecraft was intended to speed up development of combatsupport systems and weapons systems.

The voyage culminated the project's long and expensive journey from NASA to the Pentagon's research and development arm and then on to the secretive Air Force Rapid Capabilities Office. Hundreds of millions of dollars have been spent on the X-37 program, but the current total hasn't been released.

While the massive space shuttles have been likened to cargohauling trucks, the X-37B is more like a sports car, with the equivalent trunk capacity.

Built by Boeing Co.'s Phantom Works, the 11,000-pound craft is 9 1/2 feet tall and just over 29 feet long, with a wingspan of less than 15 feet. It has two angled tail fins rather than a single vertical stabilizer.

From

http://news.yahoo.com/s/ap/20101203/ap_on_re_us/ us_mystery_spacecraft Is it a bird? No, it's definitely a plane: Nasa unveils extraordinary ideas for the aircraft of 2025

Nasa's Solar Flapper is an unconventional concept for a plane that



would use solar power and flapping of the aircraft's 'wings' to propel itself up and forward

Industrial designer Luigi Colani came up with this concept for Japan Airlines



To infinity and beyond: The 'Puffin' Personal Aircraft concept by Nasa bears more than a passing resemblance to Toy Story's Buzz Lightyear. It is targeted to reach speeds of more than 150mph with a range of about 50 miles

This futuristic 'flying saucer' design is not only space-age but ecofriendly too, designed by the CleanEra project, led by Etnel Straatsma



of Delft University of Technology in The Netherlands

Classified

Telescope 8 inch Reflector - \$225

Telescope: 8" Dobsonian reflector. This scope has an 8" primary mirror and a 1.25" secondary. The focal length is approximately 39" The scope has a very nice red dot finder with adjustable intensity dot. Also included is an oak observing box, lined, and has enough storage to hold all the stuff you need to take along. It comes with a nice set of eyepieces as well.



6mm Orion ExplorerII 10mm Sirius Plossl 25mm Sirius Plossl 40mm Sirus Plossl 2X Orion Shorty Barlow Moon Filter Edmond star atlas Planisphere

If you are looking to find the "faint fuzzies" This scope will do the job. I have more pics if you are interested, I also can share much more info about the primary mirror and the scope construction if you are interested. This package is basically everything you need to start observing.



E:mail me and I will answer as many of your questions as I can. inventionworks@gmail.com

What's Up in the Sky

If you read this month's "What's Up in the Sky" you saw a summary of naked eye objects, Moon phases and constellations to enjoy. Here I will highlight some observations for the more serious amateur astronomer, some of which require special equipment and a commitment to endure cold temperatures and odd hours.

During the first half of February Venus gleams low in the southeast before dawn when the sky is still dark, around 7:00 a.m. Using binoculars or a small telescope, follow the planet's daily journey through the constellation Sagittarius and watch as it passes close to a number of famous Messier objects, usually targets for observing on warm summer evenings. On the 4th, look for Venus above and in line with the Trifid Nebula (M20) and the Lagoon Nebula (M8), the three being evenly spaced. On February 9th, the planet lies just below the asteroid Vesta and the star 21 Sagittarii with all three in an area about the size of a Full Moon. The next day notice how both Venus and Vesta have moved so they are now both in line with and to the lower left of the star. Also on these dates and for several thereafter, the planet, asteroid, and globular cluster M22 are all within the field of view of 10X50 binoculars.

The moons of Jupiter also put on a good show this month and can be observed in the early evening, but a pretty good telescope is necessary. For example, start observing a little after 8:00 p.m. and you will notice Europa very close to the planet. By 8:30 the moon has begun its transit across the planet's face. On the 9th as soon as it is dark enough to find Jupiter look for lo in transit and see if you can spot its shadow cast on Jupiter's cloud tops. There are many events such as these, as well as moons passing behind Jupiter or through its shadow, occurring all month. For a guide to planning your observing, go to <u>http://www.skyandtelescope.com/observing/</u> <u>objects/planets/38135094.html</u>, scroll down to "Phenomena of Jupiter's Moons, October 2010 – February 2011" and download this PDF file.

Also on the 9th, look for the star Algol in the constellation Perseus, nearly directly overhead. It is at minimum brightness from about 9 to 11 p.m. This happens again on the 12^{th} , but about three hours earlier.

If you are able to make one or more of these observations, please post them on our forum.

By Peter Burkey

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Astronomy Expo & Swap

Astronomy Expo & Swap

8th Annual

Saturday March 12, 2011 9:00 am – 4:00 pm

@ Holy Cross Lutheran Church, Livonia

Days Activities

Astronomy Discovery and Attendee Participation

10:00 am Astronomy 101 - G Hansen

11:00 am Binocular and Small Scope Observing - J Frisbie

Workshops – Free Form Q&A

1:00 pm Before Observing – Eyepiece, mirror, lens cleaning, Imaging and CCD

equipment, the GEM and AltAz tracking, electronics in Astronomy, reference books and star charts,

Solar filters, observing logs and software, what to take to star party & observing

2:00 pm Observing Site – Site etiquette, Go To Mounts, Using the Intelliscope,

Collimation how to, star hopping and session tips, imaging manipulation software, using scopes and

telescopes for maximum session rewards

Featured Subjects

10:00 am Starting off Right in Astronomy – T Trusock

11:30 am Einstein's Legacy – L Halstead

1:00 pm New Possibilities, ? New Neighbors – K Bjorkman

2:00 pm Panoramic Image of the Night Sky – A. Mellinger

Planetarium Lectures @ 10, 11, am & 1, 2 pm

Food Provided by Leda's Coney Island

(Pitas, salads, coneys, rice pudding, hot/cold drinks)

Admission: \$5 at the door.

Table Fee for Resellers: \$15 in advance or \$20 at the door.

Doors open at 8 AM for table/vendor set up.

Site Located at: 30650 Six Mile Rd, Livonia, 48152

Make checks payable to: FAAC P.O. Box 7527, Dearborn, MI 48121-7527

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