



The Prairie Astronomer

The Official Newsletter of the Prairie Astronomy Club

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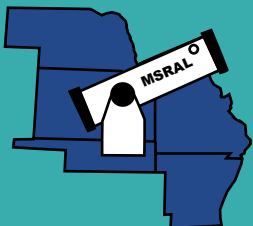
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November Program:

Every holiday season people ponder buying telescopes as gifts, for their children, for their family or for friends. The few designs found in most department stores offer little information and clerks are rarely knowledgeable. Buying on the internet or home shopping channels without any help doesn't inspire confidence. What if you had a chance to have help in making that purchase?

The Prairie Astronomy Club offers this assistance this month at its regular meeting at Hyde Observatory on November 25th with a session on "how to buy a telescope." Experienced amateurs will provide examples of both the good and bad purchases and lots of helpful hints.



The Prairie Astronomy Club
presents:
How to Buy a Telescope!
Tuesday, November 25
7:30pm
Hyde Observatory

Night Sky Network



The Prairie Astronomer is published monthly by the Prairie Astronomy Club, Inc. Membership expiration date is listed on the mailing label. Membership dues are: **Regular \$30/yr, Family \$35/yr.** Address all new memberships and renewals to: **The Prairie Astronomy Club, Inc., PO Box 5585, Lincoln, NE 68505-0585.** For other club information, please contact one of the club officers listed to the right. Newsletter comments and articles should be submitted to: **Mark Dahmke, P. O. Box 5585, Lincoln, NE 68505** or mark@dahmke.com, no less than ten days prior to the club meeting. The Prairie Astronomy Club meets the last Tuesday of each month at Hyde Memorial Observatory in Lincoln, NE.

Meeting Minutes

October 28, 2014 Meeting minutes

Dan Delzell called the meeting to order. We had 3 new visitors.

The next meeting will be November 25, the program being our "How to buy a telescope" for those interested in doing so.

Jim Kvasnicka provided an observing report for the upcoming month and upcoming star parties. We had very good turnout for the star party at the Moser farm, a fitting honor to Earl Moser, an early club member and former officer.

Bob provided a treasurer's report. Our accounts remain stable, consistent with our non-profit status.

Ron Veys reported that Leona Barratt, Earl Moser's daughter, had collected a fund for a club memorial to Earl. The total presented to the club was \$450. Several ideas were discussed, including a telescope for checkout to members, and a sundial, similar to the one at Wesleyan University. A committee will be formed to study these options.

Brian Sivill made a request on behalf of Hyde Observatory for PAC members who aren't already volunteers to consider contributing their time to

volunteering. If you're interested contact Brian or Dan Delzell.

Tom Miller gave a presentation on his observatory and how it could be adapted to become a remote observatory for club use. There was considerable review of the idea, and discussion about how to proceed. A committee will be formed consisting of Brian Sivill, Brett Boller and one other to tour Tom's observatory, research ideas and report back to the club next month.

Officers for 2015

Elections were held for club officers for the upcoming year. The nominees from last month were:

President: Jim Kvasnicka
Vice Pres: Brett Boller
2nd VP: Dave Churilla
Secretary: Lee Taylor
Treasurer: John Reinert

There were no more nominations. Nominations were closed. Dan made a motion to elect nominees by acclamation seconded and the motion passed without objection.

Adjourn to the program on the Rosetta mission to Comet 67P/Churyumov-Gerasimenko.



NGC 4643 by Rick Johnson. Located in central Virgo about 77 million light-years distant.

*14" LX200R @ f/10, L=4x10'
RGB=2x10', STL-11000XM,
Paramount ME.*

[Full size image](#)

ANNUAL MEMBERSHIP

REGULAR MEMBER - \$30.00 per year. Includes club newsletter, and 1 vote at club meetings, plus all other standard club privileges.

FAMILY MEMBER - \$35.00 per year. Same as regular member except gets 2 votes at club meetings.

STUDENT MEMBER - \$10.00 per year with volunteer requirement.

If you renew your membership prior to your annual renewal date, you will receive a 10% discount.

Club members are also eligible for special subscription discounts on Sky & Telescope Magazine.

Club Telescopes

To check out one of the club telescopes, contact Cassie Spale. If you keep a scope for more than a week, please check in once a week, to verify the location of the telescope and how long you plan to use it. The checkout time limit will be two weeks, but can be extended if no one else has requested use of a club scope.

100mm Orion refractor:
Available

10 inch Meade Dobsonian:
Available

13 inch Truss Dobsonian:
Available

PAC Star Party Dates

Dates in bold are closest to the new moon

2014 Star Party Dates

Nov 14, **21**, Dec 12, **19**

2015 Star Party Dates

Jan 16,**23**, Feb 13,**20**
Mar 13,**20**, Apr 10,**17**
May 8,**15**, Jun 12,**19**
Jul 10,**17**, NSP **Jul12-17**
Aug 7,**14**, Sep 4,**11**
Oct **9**,16, Nov 6,**13**
Dec 4,**11**

Lunar Party Dates

Mar 27, Apr 24, Jul 24, Aug 21 (Lunar party dates are tentative, sites to be determined.)

PAC E-Mail:

info@prairieastronomyclub.org

PAC-LIST:

To subscribe send a request to PAC. To post messages to the list, send to the address:

pac-list@prairieastronomyclub.org

Events

PAC Meeting
Tuesday November 25th,
2014 @Hyde Observatory

PAC Meeting
Tuesday December 30th,
2014 @Hyde Observatory

PAC Meeting
Tuesday January 27th, 2015
@Hyde Observatory

PAC Meeting
Tuesday February 24th, 2015
@Hyde Observatory

Newsletter submission
deadline December 15, 2014

Links

PAC: www.prairieastronomyclub.org

Night Sky Network: <https://nightsky.jpl.nasa.gov/>

CafePress (club apparel) www.cafepress.com

www.hydeobservatory.info

www.nebraskastarparty.org

www.OmahaAstro.com

Panhandleastronomyclub.com

www.universetoday.com/

www.planetary.org/home/

<http://www.darksky.org/>

NGC4603 Credit: NASA



Moving Forward—Jim Kvasnicka

The newly elected PAC Board met on Thursday, November 6th. We discussed several topics and looked at what we need to do to keep the club moving forward.

The first topic of discussion was the upcoming programs. Our November program will be “How to Buy a Telescope”. Dan Delzell will be presenting the program. The Board discussed the various media options to publicize the meeting. The December will be our holiday gathering for PAC members and families. We still need to finalize the date and location. Larry Stepp will be back in December and we still need to determine a date that he will be available. We will make the details known once we have them. January will be “How to Use Your Telescope”. We are looking into future programs and we welcome any ideas and suggestions by club members.

We discussed the \$450 Earl Moser memorial and possible uses for it. Nothing has been finalized as we are looking into different options and the costs.

We talked about club goals. The number one goal for the club has been and will continue to be outreach. Outreach is the best format to teach the public about astronomy and to get recognition for our club. We also discussed increasing our club membership. To do this we need to do a better job of promoting the club to the public. There has been focus in the past to have more involvement by youth and area schools. We will continue to make this a focus.

PAC will continue to work with OAS at selected outreach events. The collaboration between the two clubs is critical for the promotion of amateur astronomy.

We will work on all these things and welcome input from the club members. Our overall goal for the club is to keep it moving forward.



“Orion” by Beth Jenckes

This photo of Orion was taken at Merritt Reservoir October 26, 2014 and is her first photograph of the night sky. Exposure time was 30 seconds. Beth said that she got started in astrophotography from “A Beginner’s Guide to Astrophotography” by Jerry Lodrigus.
<http://www.astropix.com/BGDA/BGDA.HTM>



December Observing—Jim Kvasnicka

This is a partial list of objects visible for the upcoming month.

Planets

Venus: A few degrees above the SW horizon at magnitude -3.9.

Mercury: Very low in the evening twilight after December 8th.

Mars: In the southwest at magnitude 1.1 with a disk 5" wide.

Neptune: In Aquarius at magnitude 5.7.

Uranus: In Pisces at magnitude 5.7.

Jupiter: Rises around 10 pm to start the month and by 8 pm to end the month. It is located in Leo at magnitude -2.4 with a disk 43" wide.

Saturn: Starts the month rising about an hour before the Sun in the east.

Meteor Showers

The Geminids: Peaks on two nights, December 13-14 and 14-15. The moon rises around midnight.

Messier List

M2: Class II globular cluster in Aquarius.

M15: Class IV globular cluster in Pegasus.

M29: Open cluster in Cygnus.

M31: The Andromeda Galaxy.

M32: Companion galaxy to M31.

M39: Open cluster in Cygnus.

M110: Companion galaxy to M31.

Last Month: M27, M30, M56, M57, M71, M72,

M73

Next Month: M33, M34, M52, M74, M76, M77, M103

NGC and other Deep Sky Objects

IC 405: The Flaming Star Nebula in Auriga.

NGC 1980: Emission nebula south of M42 the Orion Nebula.

NGC 2169: The 37 Cluster in Orion.

NGC 2237-39: The Rosette Nebula in Monoceros.

NGC 2244: Open cluster within the Rosette Nebula.

NGC 2264: The Christmas Tree Cluster in Monoceros.

Double Star Program List

Eta Cassiopeiae: Yellow and red colored pair.

Sigma Cassiopeiae: Yellow and light blue stars.

Theta Aurigae: Bright white and pale blue pair.

1 Camelopardalis: White primary with a pale blue secondary.

32 Camelopardalis: Equal white pair.

Gamma Ceti: White primary with a pale yellow secondary.

Chi Tauri: White primary with a pale blue secondary.

118 Tauri: White and yellow stars.

Challenge Object

B33: The Horsehead Nebula. Use a 12 inch or larger telescope with an H-Beta filter.

NGC Objects—Jim Kvasnicka

The 37 Cluster

NGC 2169

NGC 2169 is a 5.9 magnitude open cluster in Orion. It was discovered by Giovanni Battista Hodierna around 1654. NGC 2169 is 3,600 light years away and has an apparent size of 7 arc minutes. The cluster contains around 30 stars with seventeen of them shining at magnitude 7.5-12.

NGC 2169 is a really neat cluster to look at. The stars in the cluster form the number 37 giving the cluster its name.

The 37 Cluster is a fun cluster to show people

because of its distinctive shape that is so recognizable.

NGC 2169 is part of the Herschel 400 list.



Minutes from the PAC Board Meeting, Thursday November 6, 2014

President Jim Kvasnicka called the meeting to order.

Present:

Jim Kvasnicka, President
Brett Boller, VP
Dave Churilla, 2nd VP, Program Chair
Lee Taylor, Secretary
John Reinert, Treasurer
Dan Delzell, Outreach Coordinator
Mark Dahmke, Newsletter Editor

Jim asked about programs beyond January. Nothing is planned thus far.

The December program will feature Larry Stepp. This will be on Dec. 30 at either Hyde or Mueller planetarium.

The November program will be the 'How to Buy a Telescope'. Jim asked about a publicity person for getting news out about programs and future programs beyond the January meeting. Mark and Lee will get contact information and information on the meeting out to the press. We will be trying to get catalogs and information sheets about purchasing equipment from reputable sources, Orion, Astronomics, etc.

Ideas were discussed for future programs.

Audit:

Dan volunteered to help with the audit. Jim will ask Mike Kearns to help as well.

Earl Moser memorial:

Ideas for use of the \$450 for a memorial to Earl Moser were discussed.

Items included a telescope, a bench at Hyde, or a sundial. We will investigate costs, etc. for such things and report at a later date.

John asked for clarification on the distinction(s) between PAC and Hyde. The only significant connection being that PAC reserves Hyde each month for its meetings.

Club goals:

Increase membership:

Brett redesigned the club flyer. We discussed assigning greeters at meetings.

Jim asked about responsibility for placing new members on the Night Sky Network (NSN). This falls to the Treasurer.

We discussed having new member packets available when new members join.

Mark recommended using Dropbox to place the packet and other information in one easy location for members to access.

Dave inquired about having information for joining easily accessible on the website. Mark said the information was there.

We discussed having a monthly 'member profile' in the newsletter to let members get to know one another.

Jim volunteered to attempt to reconnect with inactive members and bring them to meetings. We discussed several ways to draw members to meetings. One item we discussed is to shorten the meetings and programs to allow a social time after meetings.

We discussed several ideas to improve attendance, including changing the meeting night, different programs, starting the meeting earlier, etc. We talked about increasing our activities outside of meetings, such as robot astronomy, a balloon launch like Mike Sibbersen has done, or a class on building a telescope.

Recruiting youth: We talked about the need to attract parents with kids and working with schools, etc.

We talked about making contact with teachers, educators, etc. the members know was discussed. We talked about inviting them to Hyde for a specific night for them.

Dave suggested advertising PAC in local media. Taking advantage of whatever available, including paid advertisements in other publications, 'boost posting' on social media or a public star party. Mark volunteered to look into costs for social media. We discussed budgeting advertisements. We talked about promoting the club at Hyde, recalling Mark's slide show, which should still be somewhere.

Minutes, continued

Lee mentioned having an annual budget, we discussed having a rough one, though there is no requirement for one.

Dan asked about our ALCOR rep. Lee will look into that.

Our contacts on NSN were discussed and its functionality. We will remind everyone to keep their NSN contacts current.

Dan mentioned several budgeting issues including re-authorization of the reimbursement for observing site maintenance, etc.

Lee asked about accounting for club telescopes and accessories, Cassie was keeping track of those things. We will look at these things.

Mark asked about a printed and mailed copy of the roster as part of the audit process. We talked about bringing this part of the by-laws into the 21st century, and amending the by-laws to bring them up-to-date.

Brett asked about our Amazon account and looking into the credit we're getting there. He will look into that and report progress.

We discussed contributing to a new mural for Hyde, specifically, Brett's photo of the milky way from NSP. We'll look into costs and logistics for this.

Brett reported that he has yet to meet with Tom Miller about the remote observatory.

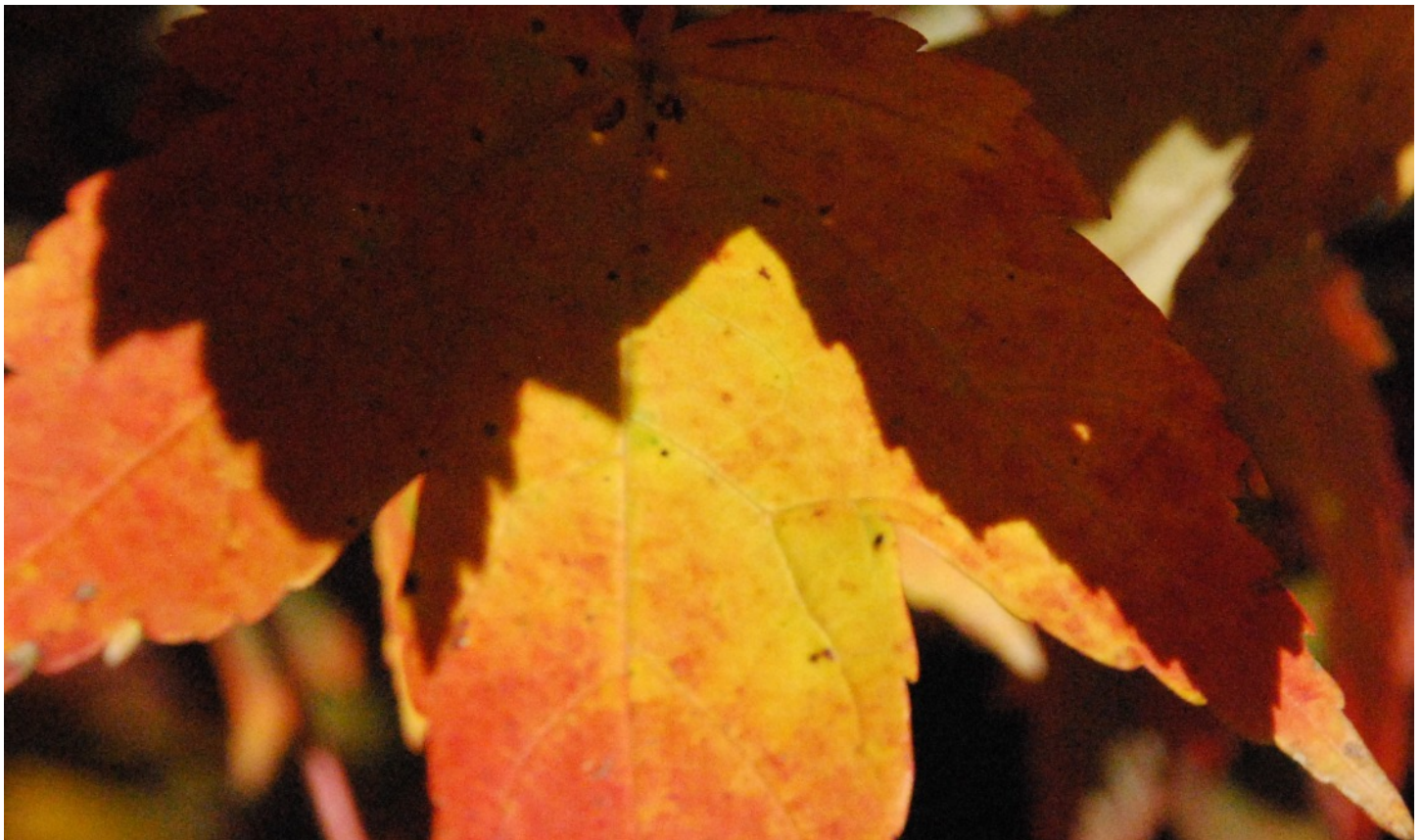
Jim asked about PAC representation at NSP meetings. Jim will look into this. We know Brian is active there, as is Eric Balcom.

This wrapped up our agenda for this meeting, meeting adjourned.

Respectfully submitted by,
Lee Taylor

"Maple Leaf Eclipse"

Photo by John Reinert, taken 10/23/2014 17:43 CDT.



Philae in Idle Mode

From the [Rosetta Blog](#) (11/15/2014):

With its batteries depleted and not enough sunlight available to recharge, Philae has fallen into 'idle mode' for a potentially long silence. In this mode, all instruments and most systems on board are shut down.

"Prior to falling silent, the lander was able to transmit all science data gathered during the First Science Sequence," says DLR's Stephan Ulamec, Lander Manager, who was in the Main Control Room at ESOC tonight.

"This machine performed magnificently under tough conditions, and we can be fully proud of the incredible scientific success Philae has delivered."

ESA_Rosetta_Philae_CIVA_FirstPanoramic_woLanderContact was lost at 00:36 UTC / 01:36 CET, not long before the scheduled communication loss that would have happened anyway as Rosetta orbited below the horizon.

From now on, no contact would be possible

unless sufficient sunlight falls on the solar panels to generate enough power to wake it up.

The possibility that this may happen was boosted this evening when mission controllers sent commands to rotate the lander's main body, to which the solar panels are fixed. This may have exposed more panel area to sunlight.

The next possible communication slot begins on 15 November at about 10:00 UTC / 11:00 CET. The orbiter will listen for a signal, and will continue doing so when its orbit enables communication visibility in the future.

However, given the low recharge current available from the solar cells, it is considered unlikely that contact with Philae will be established in the coming days.

The hugely successful Rosetta mission will continue, as the spacecraft tracks comet 67P/C-G on its journey to the Sun. Rosetta is the first spacecraft to rendezvous with and orbit a comet and has already returned incredible scientific data.



From the Department of Historical Documents



Rick Johnson, Harlan Franey, Pete Schultz, Earl Moser, October 26, 2007



Jack Dunn, from January of 1971, taken the day before the Apollo 14 launch.

From Jack Dunn:

Dr. Lueninghoener is at left, then Pete Schultz and Tom Carroll. This was at the MSRAL held in Lincoln in 1970 at Wesleyan.

Pete Schultz was then a grad student at the University of Texas. Pete said he drove up from Texas to attend and remembers bringing along large Lunar Orbiter photographs to show.



New Map Shows Frequency of Small Asteroid Impacts

A map released today by NASA's Near Earth Object (NEO) Program reveals that small asteroids frequently enter and disintegrate in the Earth's atmosphere with random distribution around the globe. Released to the scientific community, the map visualizes data gathered by U.S. government sensors from 1994 to 2013. The data indicate that Earth's atmosphere was impacted by small asteroids, resulting in a bolide (or fireball), on 556 separate occasions in a 20-year period. Almost all asteroids of this size disintegrate in the atmosphere and are usually harmless. The notable exception was the Chelyabinsk event which was the largest asteroid to hit Earth in this period. The new data could help scientists better refine estimates of the distribution of the sizes of NEOs including larger ones that could pose a danger to Earth.

Finding and characterizing hazardous asteroids to protect our home planet is a high priority for NASA. It is one of the reasons NASA has increased by a factor of 10 investments in asteroid detection, characterization and mitigation activities over the last five years. In addition, NASA has aggressively developed strategies and plans with its partners in the U.S. and abroad to detect, track and characterize NEOs. These

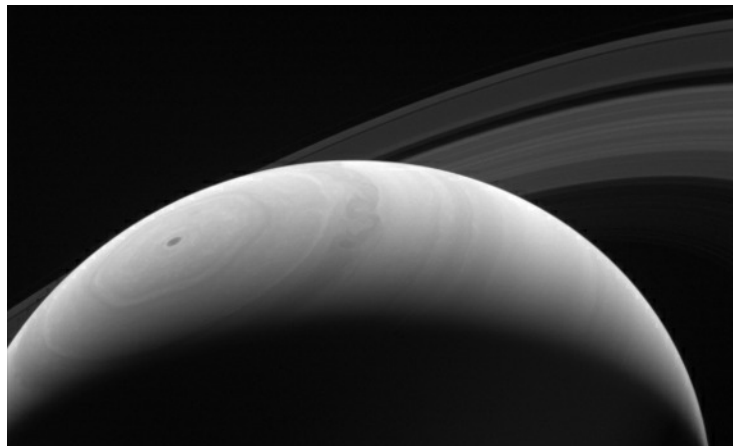
activities also will help identify NEOs that might pose a risk of Earth impact, and further help inform developing options for planetary defense.

The public can help participate in the hunt for potentially hazardous Near Earth Objects through the Asteroid Grand Challenge, which aims to create a plan to find all asteroid threats to human populations and know what to do about them. NASA is also pursuing an Asteroid Redirect Mission (ARM) which will identify, redirect and send astronauts to explore an asteroid. Among its many exploration goals, the mission could demonstrate basic planetary defense techniques for asteroid deflection.

For more information about the map and data, go to: <http://neo.jpl.nasa.gov>

For details about ARM, and the Asteroid Grand Challenge, visit: <http://www.nasa.gov/asteroidinitiative>

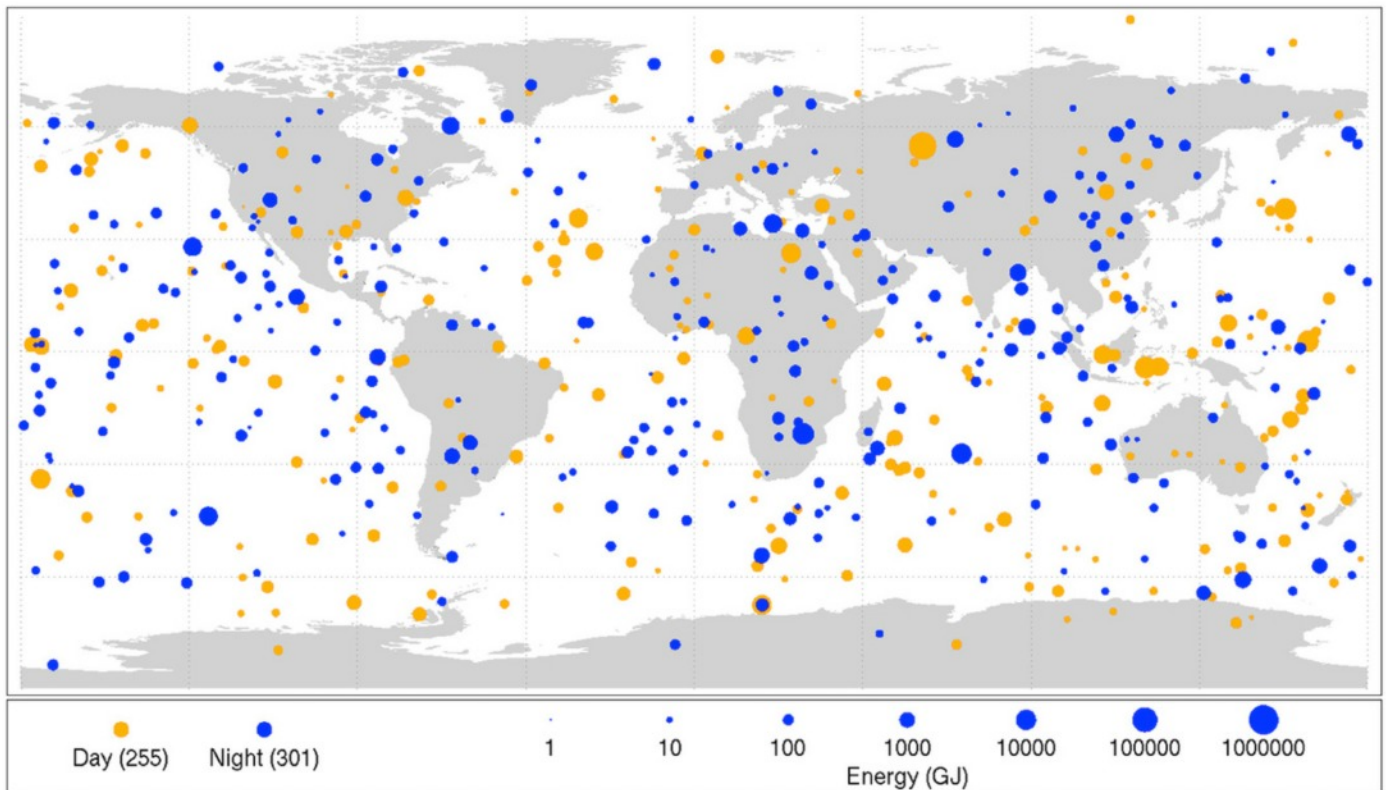
NASA's Jet Propulsion Laboratory, Pasadena, California, manages the Near-Earth Object Program Office for NASA's Science Mission Directorate in Washington. JPL is a division of the California Institute of Technology in Pasadena.



A new day dawns on Saturn as the part of the planet seen here emerges once more into the Sun's light. With an estimated rotation period of 10 hours and 40 minutes, Saturn's days and nights are much shorter than those on Earth. This view looks toward the sunlit side of the rings from about 25 degrees above the ringplane. The image was taken with the Cassini spacecraft wide-angle camera on Aug. 23, 2014 using a spectral filter which preferentially admits wavelengths of near-infrared light centered at 939 nanometers. The view was acquired at a distance of approximately 1.1 million miles (1.8 million kilometers) from Saturn and at a Sun-Saturn-spacecraft, or phase, angle of 127 degrees. Image scale is 67 miles (108 kilometers) per pixel.

Bolide Events 1994–2013

(Small Asteroids that Disintegrated in Earth's Atmosphere)



This diagram maps the data gathered from 1994-2013 on small asteroids impacting Earth's atmosphere to create very bright meteors, technically called "bolides" and commonly referred to as "fireballs". Sizes of red dots (daytime impacts) and blue dots (nighttime impacts) are proportional to the optical radiated energy of impacts measured in billions of Joules (GJ) of energy, and show the location of impacts from objects about 1 meter (3 feet) to almost 20 meters (60 feet) in size. Image Credit: Planetary Science.



Orion just before sunrise, by Mark Dahmke. This photo was taken with an 8mm Rokinon fish-eye lens and Nikon D600. F/4.5, 13 seconds. Location, Hana, Maui.



Amateur Astronomy —
A Hobby as Big as the
Universe

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FIRST CLASS MAIL

Next PAC Meeting
TUESDAY
November 25, 2014
7:30 PM
Hyde Observatory