

# The Prairie Astronomer

January, 2008

Volume 49, Issue #1

The Official Newsletter of the Prairie Astronomy Club

## PAC Program

Learn How to Use Your Telescope at the January Prairie Astronomy Club Meeting. Members of the Prairie Astronomy Club will provide help and advice on setting up and using telescopes, and how to get started observing the sky. Those who attend are invited to bring their own telescopes for instructions on their use. Members of the Astronomy Club will also have a number of telescopes of varying sizes to demonstrate their proper use.

## In This Issue

Rick's Observatory Report, photos from the December meeting.

## Featured Astrophoto

Please send your  
astrophotos to  
Mark Dahmke to  
be added to the  
PAC website and  
the newsletter.

Comet P8/Tuttle, by Rick Johnson.

"I took two sets of images, one tracking the comet and another tracking the stars as they were at the very end of the comet tracked images. I then subtracted the stars out of the one that tracked the comet (easy to do with a routine called sigma reject that ignores an object seen in only one frame as the stars didn't overlap from one frame to the next due to the comet's high speed). Then I subtracted out the comet from the image that tracked the stars. That was hard since the comet is big and thus overlaps itself from frame to frame. Sigma reject only dimmed it and got rid of the nucleus to a great extent. I won't bore you how that was done and still leave stars hiding behind the coma. A Photoshop expert would likely find it easy. I'm no expert so it took me two and a half bowl games to figure it out."



Saturn image courtesy NASA.

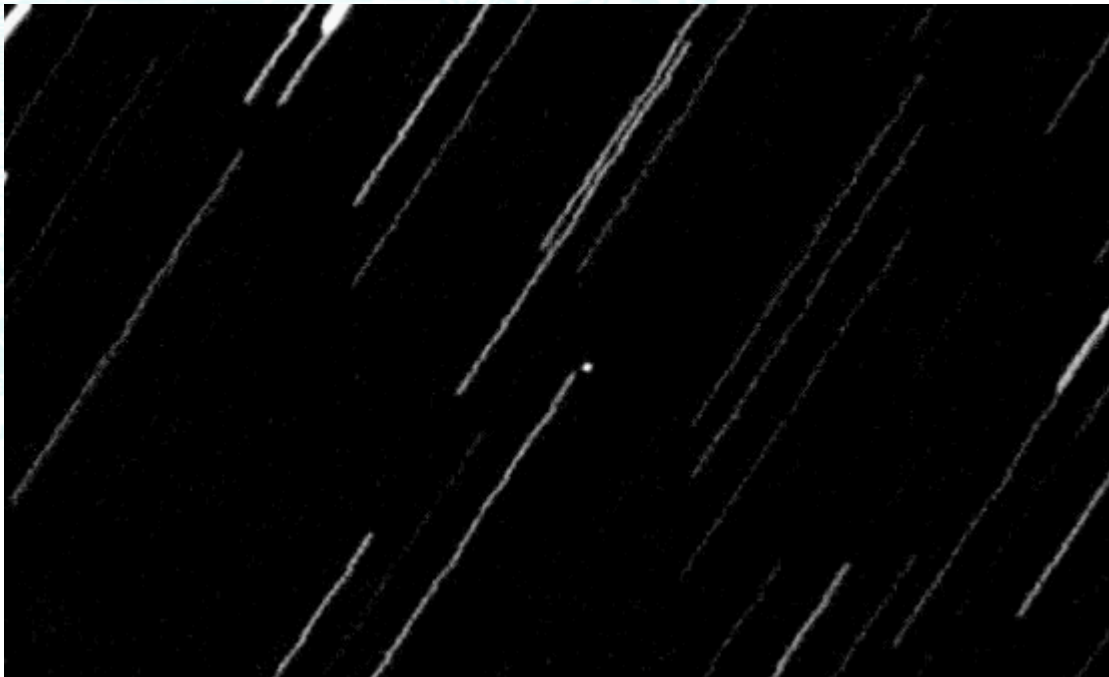
# The Prairie Astronomer

## NEWSLETTER

### Observatory Update—Rick Johnson

On Jan. 10 a tiny rock was spotted headed for us. It got no press. On the 13th it passed by at about the Moon's distance from us, closer than predicted by nearly 100,000 km. If it hit it would have made a hole about like the meteor crater outside Winslow Arizona. It snowed the 13th so I couldn't get a shot of it. Last night it finally cleared but my power was going on and off like it does each clear night of late. The power company is powerless to fix it. But I put a super heavy duty UPS on the observatory and that carried the load for the few seconds power would go out every 17 minutes. They came like clockwork at that interval. Actually they come like the inverse of cricket chirps. The colder the closer together the outages. You can tell the temp by timing the outage. Crickets chirp slower with cold, the power goes out faster with cold.

Anyway, finding this guy was difficult. I'd uploaded the orbital elements into my software from the Minor Planet Center just 12 hours earlier. This put it toward the northeast end of Bootes. Nothing was there. I checked the MPC again and they had new elements putting it toward the east center of the constellation. Again nothing. But I was tracking the stars and this guy was faint (about 18th magnitude). Normally this is well within my range but that's for an asteroid out in the asteroid belt moving slowly in the sky. It would stay on a pixel for nearly a minute before moving on to the next one. But this guy was moving 0.6" per second. One pixel is 0.5" so it was on one for less than one second! I changed to tracking the asteroid and there it was. Centering was difficult as each time you center something you have to turn off tracking non star objects. By the time I'd get it turned on (several menus deep plus there's a delay before it takes effect for some reason) it would be well off center down to the lower left. Finally I estimated where it would be in one minute and centered on that spot. Then took 10 one minute shots. This is the result. It's the dot in the center that doesn't appear to be moving. I reduced the image size to 1.5" per pixel to help it stand out.



## Club Events

PAC Club Meeting  
Tuesday, January 29, 2008  
7:30pm @ Hyde Obsv.

Club Star Party  
Friday, February 8, 2008

PAC Club Meeting  
Tuesday, February 26, 2008  
7:30pm @ Hyde Obsv.

Club Star Party  
Friday, March 7, 2008

Nebraska Star Party: July 27th -August 1st, 2008

Next newsletter submission deadline: February 16th.

## Club Telescopes - Checkout Policy

To check out one of the club telescopes, contact Cassie Edmund at [ccggymnast1@aol.com](mailto:ccggymnast1@aol.com). If you keep a scope for more than a week, please check in with Cassie 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.



## ON THE NET

**PAC:**  
[www.prairieastronomyclub.org](http://www.prairieastronomyclub.org)

**PAC E-Mail:**  
[info@prairieastronomyclub.org](mailto:info@prairieastronomyclub.org)

**NSP:**  
[www.nebraskastarparty.org](http://www.nebraskastarparty.org)

**NSP E-Mail:**  
[info@nebraskastarparty.org](mailto:info@nebraskastarparty.org)

**OAS**  
[www.OmahaAstro.com](http://www.OmahaAstro.com)

**Hyde Observatory**  
[www.hydeobservatory.info](http://www.hydeobservatory.info)

**NEB-STAR**  
[www.neb-star.org](http://www.neb-star.org)

**PAC-LIST:** You may subscribe to the PAC listserv by sending an e-mail message to: [imailsrv@prairieastronomyclub.org](mailto:imailsrv@prairieastronomyclub.org). In the body of the message, write "Subscribe PAC-List your-email-address@your-domain.com"

For example:  
Subscribe pac-list  
[me@myISP.com](mailto:me@myISP.com)

To post messages to the list, send to the address

[pac-list@prairieastronomyclub.org](mailto:pac-list@prairieastronomyclub.org)

Buy club apparel through the club website. Shirts, hats, mugs, mouse pads and more.





# The Prairie Astronomer

## NEWSLETTER

### Club Business

President Brian Sivill called the meeting to order. 14 members present, 1 guest.

Announcements:

The next PAC meeting will be Tuesday January 29, 2008. The program will be the new telescope owner's workshop. Members are asked to bring their tools to help guests with their setups.

The next PAC star Party will be Friday Jan. 4, 2008 at Olive Creek. Olive Creek was chosen because access to the farm has been difficult.

The dates for NSP 15 are July 27- August 1, 2008.

Treasurer's report: RASC handbooks and Ottwell calendars are here and are being distributed by Lee Thomas.

Club Observing chair, Jim Kvasnicka gave a summary of the objects available for viewing for the coming month.

Adjourn to Larry Stepp's program on site selection for the 30-meter telescope.

Respectfully submitted by,

Lee Taylor

## Observing: What to View in February -- Jim Kvasnicka

### Total Eclipse of the Moon

On February 20, Wednesday night a total eclipse of the moon will occur which will be visible for our area.

**Penumbra first visible:** 7:05 p.m. CST

**Partial eclipse begins:** 7:43 p.m. CST

**Total eclipse begins:** 9:00 p.m. CST

**Mid-eclipse:** 9:26 p.m. CST

**Total eclipse ends:** 9:52 p.m. CST

**Partial eclipse ends:** 11:09 p.m. CST

**Penumbra last visible:** 11:45 p.m. CST

### Planets

**Mercury:** Goes through inferior conjunction on February 6<sup>th</sup>. Becomes visible in the morning sky around mid-month. On February 23<sup>rd</sup> it starts a five week run where it is within 3° of Venus.

**Mars:** Very high in the sky. Mars starts the month at magnitude -0.6 but loses half of its brightness by month end.

**Saturn:** Trails across the sky behind Regulus in Leo. Saturn will reach its maximum brightness by the end of the month at magnitude 0.2.

**Venus and Jupiter:** Both are in the morning sky. On February 1<sup>st</sup> Venus is just 0.6° to the upper left of Jupiter. This is the closest conjunction of the two planets that is observable until after 2014. Moderate magnification will fit both into the same FOV.

**Uranus and Neptune:** Unobservable for the month.

### February Messier List

**M1:** The Crab Nebula in Taurus.

**M45:** The Pleiades. Large open cluster in Taurus.

**M35:** Open cluster in Gemini.

**M36, M37, M38:** A series of open clusters in Auriga.

**M42, M43:** M42 is the great Orion Nebula; M43 is a small nebula next to M42.

**M78:** A small emission nebula in Orion.

**M79:** Small, dim globular cluster in Lepus.

**Last Month:** M33, M103, M52, M76, M34, M74, M77

**Next Month:** M41, M44, M46, M47, M48, M50, M67, M93

### NGC Objects

**NGC 1973:** Emission/reflection nebula in Orion. Near M42, often neglected.

**NGC 2169:** "37" Cluster. Open cluster in Orion.

**NGC 2194:** Open cluster in Orion.

**NGC 2237:** Rosette Nebula in Monoceros. Use a nebula filter.

**NGC 2264:** Christmas Tree Cluster in Monoceros.

### Double Stars

**30 Tauri:** Beautiful bluish-white and reddish stars.

**38 Geminorum:** Yellow and pale blue stars.

**20 Geminorum:** Equal pair of bright yellow and white stars.

**15 Geminorum:** Yellow and blue pair.

**Kappa Geminorum:** Brilliant orange-yellow primary with a faint bluish companion.

### Challenge Object

**NGC 2419:** The Intergalactic Wanderer. At 200,000 light years away the most distant Milky Way globular cluster for amateur telescopes. Very small and faint; Class II.

## ANNUAL MEMBERSHIP DUES

**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.**

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

## CLUB STAR PARTIES

Club star parties are held monthly on the Friday night nearest the new moon. Since they are held on private land, they are for club members and invited guests only. If you'd like to attend a star party, please contact one of the club officers. Check the club website members-only area for directions to the site.



# The Prairie Astronomer

## NEWSLETTER

### Observatory Update, continued.

The other object for this update is the barred spiral galaxy NGC 1169 and its "friends". I'd spotted this galaxy on many web photos taken with wide angle lenses of Comet Holmes. It showed as a faint yellowish blob on these photos. I decided to see what it looked like. This is taken through the Milky Way's dust lane that blocks light from most distant galaxies. It is rather surprising to find any in this part of the sky. In fact it is often called the "Zone of Avoidance". Galaxies don't avoid this area, they just can't be seen through it. Apparently there's a hole in the dust in this zone that allows this guy and many more distant ones through. The clue there's still a lot of dust is the yellow color. Spiral galaxies normally have very blue arms caused by the newly formed hot blue stars that make up the arms. But Milky Way dust scatters most of the blue light preventing it from reaching us and turning the galaxies toward the red end of the spectrum. Note this has nothing to do with "Red Shift". This is the same scattering of blue light that causes our sun to appear orange or red at sunset. Seen through a lot more atmosphere the blue light is scattered away turning it red. All the galaxies in this photo have nearly the same yellow-orange color indicating the dust is pretty much the same density and of the same particle size all across the image.

All galaxies in this image are distant. Closest, of course, is NGC 1169 at 100 million light years. I like the 4 to the upper right. 3 are nice thin spirals and 1 a face on spiral. The three thin guys from bottom to top are UGC 02496 at 300 million light years, LEDA 213150 at 528 million light years and LEDA 213153 at an unknown distance. I found no info on the distance to any of the others. The face on in this group of apparently unrelated galaxies is LEDA 213151

The barred spiral just above and left of 1169 is AGC 130456. Above it near the top is AGC 130457

The only other one I bothered to look up is the one at the far right below center. It has a mouthful of a name HFLLBZOA K547. HFLLBZOA stands for Hav, Ferguson, Lahav, Lynden, Bell Zone of Avoidance Galaxies.

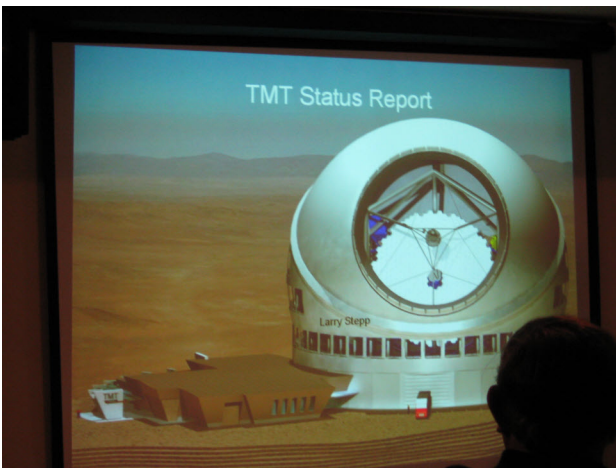




The Surprise Guest Speaker at the December PAC Meeting was former club member Larry Stepp.

Larry Stepp is the Telescope Department Head for the TMT project, responsible for the overall design and functionality of the 30-meter telescope. Before joining the TMT project office, Larry was a senior engineering manager at the National Optical Astronomy Observatory in Tucson, where he worked on AURA's design for the Giant Segmented Mirror Telescope, as well as the optics for the Gemini telescopes, the WIYN 3.5-meter telescope, and earlier large telescope concepts.

See the TMT website for an audio interview with Larry. <http://www.tmt.org/news/interviews.html>



Photos by Jack Dunn.





**THE** *Prairie  
Astronomy  
Club*

Amateur Astronomy --  
A Hobby as Big as the Universe

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, PO Box 80266, Lincoln, NE 68501 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.

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<b>VICE PRESIDENT</b>	Cassie Etmund
<b>2nd VICE PRESIDENT (Program Chair)</b>	Jack Dunn jdunn@spacelaser.com
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**Next PAC Meeting  
January 29, 2008  
7:30 PM**