



The Prairie Astronomer

January, 2010

Volume 51, Issue #1

The Official Newsletter of the Prairie Astronomy Club

PAC Program

Next meeting: Tuesday, January 26th. Program is at 8pm.

“Learn how to use your telescope.” Did you receive a new telescope for the holidays, birthday or just your own purchase? Would you like some help learning how to use it? Or have you been thinking of buying a telescope and could use some advice? The Prairie Astronomy Club can help.

In This Issue

What to view in February, Focus on Constellations, Board meeting report, Future PAC Observing sites, Extraterrestrial life survey, Rick Johnson’s Observatory Update.

Featured Photo

From Ed Woerner, a former PAC member.

“The picture was taken from our place in Salalah, in Oman. We are at 17 degrees north latitude, and 55 degrees east. Local time is GMT+4. I used my 6-inch f/6 Newtonian. The shot was taken through our digital camera, just by holding it up to the eyepiece. I use a homemade filter made from Baader brand solar film. It transmits about 1/10,000 of the total light. The film explains the color of the sun in the picture.”

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



Club Business

The December 2009 meeting of the Prairie Astronomy Club was held 7:30pm at Hyde Observatory. President Dan Delzell called the meeting to order. A welcome and an introduction of visitors was made. Upcoming events and activities were announced.

They include: Next PAC meeting: Tuesday, January 26th 7:30pm Program: How to use Your Telescope January PAC Star Parties: Friday, January 8th & January 15th Location: TBA PAC Board Meeting: Tuesday, January 12th Scooters 84th & Van Dorn Agenda: February, March, April programs 2010 Club Goals 2010 Social Events

An invitation to attend the board meeting was extended to all members. Club observing chair, Jim Kvasnicka gave the Current Sky & Observing Report for January. Bob Leavitt presented the results of the annual club audit. The audit report is in the December PAC newsletter. There were no audit findings. Thanks were extended to Bob Leavitt, Dale Bazan, and Bob Kacvinsky for conducting the audit.

Treasurer Bob Kacvinsky presented a financial report. As of 12/20/2009 the amounts in the club accounts was \$40,460.33. Dan displayed some astrophotos taken by long time club member Rick Johnson. Club members wishing to receive Rick's observatory updates are invited to contact Rick at wa0cky@arvig.net.

Volunteer opportunities were presented to the club. Jack Dunn spoke a few minutes about the Mid States Regional Astronomical League convention which PAC is hosting June 4, 5, and 6th. There will be many opportunities for club members to be involved. We adjourned the business meeting and had our program: "The Latest Software for Your Computer and Phone" Respectfully submitted by Dan Delzell on behalf of Brett Boller.

PAC Board Meeting January 12, 2010

Present: Dan Delzell, President, Jason Noelle, Vice President, Steve Lloyd, 2nd VP, Program Chair Bob Kacvinsky, Treasurer, Jack Dunn, Publicity Chair, Mark Dahmke, Media Chair, Jim Kvasnicka, Observing Chair, Dave Churilla, Outreach Coordinator. Absent: Brett Boller, Secretary.

We reviewed the November PAC meeting. Everyone agreed that it was a success. Jack did a great job publicizing the meeting which resulted in a standing room only turnout. The group also commended the speakers: Brian Sivill, Jim Kvasnicka and Bob Kacvinsky. Things to improve: Sticking to the publicized start time, making sure terms are defined and not letting the meeting go over a time limit. Thanks to the club members who ran the deck and answered the visitor's questions.

We planned the January PAC meeting, "How to use your Telescope". Dan will ask Brian to again share parts of the program he's been presenting and Jason Noelle will be talking about using a star charts. We'd like to give a brief presentation on a topic, then have mentors work with those who bring a telescope and have hands-on application. The program will start right at 8:00pm.

Program Topics for February, March and April: The February meeting will a presentation by Jim Kvasnicka and Dave Churilla: Observing Clubs and Planning An Observing Session. Jack Dunn has arrange for Jack Gabel, a researcher studying black holes and quasars to be a speaker for the March Meeting. The April meeting is tentatively scheduled to be a video presentation.

Resolution to move CD: Bob Kacvinsky has been researching CD rates and made the recommendation we move one of our CDs from Bank of the West to Cornhusker Bank to get a better return for the club. Bob made the motion and Steve Lloyd seconded. The board voted unanimously to follow Bob's recommendation.

Astronomy Day is April 24th. Steve Lloyd will be working to set up volunteers from the club for the event . More information as the day approaches.

2010 Socials: We'd like to plan some social events for the club. The first, a "bad movie" night, is tentatively scheduled for February 26th. Plan on attending. Jeers and heckling welcome. More information coming. Next board meeting will be in early March. Time and date TBD

Respectfully submitted by Dan Delzell.

Club Events

Newsletter submission deadline, February 14, 2010

PAC Club Meeting

Tuesday, February 23, 2010 7:30pm @ Hyde Obsv.

Topic: The Astronomical League provides many different observing programs (clubs). These programs are designed to provide a direction for your observations and to provide a goal. Join us at our February Club program and learn about the variety of observing opportunities.

PAC Club Meeting

Tuesday, March 30, 2010 7:30pm @ Hyde Obsv.

Speaker: Jack Gabel, topic will be black holes and quasars.

2010 PAC Star Party Dates

February	5 th & 12 th
March	5 th & 12 th
April	9 th & 16 th
May	7 th & 14 th
June	4 th & 11 th
July	2 nd & 9 th
August	6 th & 13 th
September	3 rd & 10 th
October	1 st & 8 th
November	Oct 29 th & 5 th
December	3 rd & 10 th

2010 PAC Lunar Party Dates

April 23rd, May 21st, June 18th, July 16th, September 17th, October 15th, November 12th

Astronomy Day 2010 is April 24th.

2010 Convention of the Mid-States Region Astronomical League

(MSRAL) June 4th, 5th, 6th at UNL

Nebraska Star Party

August 8th – 13th Merritt Reservoir South of Valentine, NE

Volunteer Activities

Astronomy Day – April 24th

Spring Creek Prairie Twilight on the Tallgrass – September (date not set)

Homestead National Monument Halloween on the Prairie – Sat. before Halloween

Hyde Observatory on Saturday nights

Additional volunteer events will occur when they are scheduled

ON THE NET

PAC:

www.prairieastronomyclub.org

PAC E-Mail:

info@prairieastronomyclub.org

NSP:

www.nebraskastarparty.org

NSP E-Mail:

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OAS

www.OmahaAstro.com

Hyde Observatory

www.hydeobservatory.info

Panhandle Astronomy Club

Panhandleastronomyclub.com

PAC-LIST: You may subscribe to the PAC listserv by sending an e-mail message to: 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

To post messages to the list, send to the address

pac-list@prairieastronomyclub.org

PAC can also be found on Twitter and Facebook.

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



February Observing: What to View--Jim Kvasnicka

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

Planets

Venus and Jupiter: Both are low in the WSW just after sunset. Jupiter continues to get lower and Venus higher until they pass each other. On February 16th the two planets are just 0.5° apart.

Neptune: In conjunction with the sun.

Uranus: Very low in the evening twilight.

Mars: Comes into view in the east just after twilight. It gets dimmer and smaller for the month. On February 4th Mars passes 3° north of M44, the Beehive Cluster.

Mercury: Look for Mercury above the southeast horizon before sunrise. It will disappear after the second week of February.

Saturn: Rises at 9:30 pm to start February at magnitude 0.7 in Virgo.

Vesta: At opposition on February 17th and shines at magnitude 6.1 in Leo.

February Messier List

M1: The Crab Nebula, Supernova Remnant in Taurus.

M35: Open cluster in Gemini.

M36/37/38: Trio of open clusters in Auriga.

M42: The Great Orion Nebula.

M43: Small region of nebulosity next to M42.

M45: The Pleiades in Taurus.

M78: Emission nebula in Orion.

M79: Class V globular cluster in Lepus.

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

Next Month: M41, M44, M46, M47, M48, M50, M67, M81, M82, M93

NGC and Other Deep Sky Objects

NGC 2244: Open cluster in Monoceros. Bright with nebulosity.

NGC 2264: The Christmas Tree cluster in Monoceros.

NGC 2362: Bright and impressive open cluster in Canis Major.

NGC 2392: The Eskimo Nebula in Gemini.

Double Star Club List

32 Eridani: Yellow and white stars.

55 Eridani: Yellow primary with a pale yellow secondary.

Gamma Leporis: Pair of yellow stars.

Epsilon Monocerotis: White primary with a pale yellow secondary.

Beta Monocerotis: Three bluish white stars.

Kappa Puppis: Equal pair of white stars.

Alpha Ursa Minoris: Polaris, Yellow-white primary with a yellow secondary.

N Hydrae: Equal yellow stars.

Challenge Object

J 900: Jonckee 900; bright star like planetary nebula in Gemini. May be listed as PK 194+2.1. Use an OIII filter and high power.

Focus On Constellations - Jim Kvasnicka

Auriga

Auriga the Charioteer is easy to locate with its bright star Capella, the 5th brightest star in the sky and its location above Orion and Gemini. Auriga has many open clusters in it because the Milky Way runs through it. Some well known open clusters are the three Messier objects in Auriga, M36, M37 and M38. Another open cluster NGC1893 is next to IC405, the Flaming Star Nebula. The constellation Auriga is best seen in February.

Mythology

Auriga is one of the oldest constellations and has always been associated with a charioteer in many cultures. According to one Greek myth, Hera had a son who was born lame. Disgusted, she threw him out of Heaven to Earth, where he became the famous lame smith, Hephaestus, who fashioned beautiful ornaments and armor for the gods. It is said that because he was lame he invented the chariot so that he might get around better.

Objects in Auriga Magnitude 12.0 and Brighter

Galaxies:

Open Clusters: M36, M37, M38, Cr62, NGC2281, NGC1857, NGC1893, NGC1664, NGC 1778, NGC1907, NGC1931, NGC2126, NGC2192, NGC1883, Basel4, King8, Berk19

Globular Clusters:

Planetary Nebulae: IC2149, PK169-0.1, PK173-5.1

Bright Nebulae: IC410, IC405

SNREM:

Dark Nebulae: B26-8, B29, B34

Named Stars: Capella (Alpha), Menkalinan (Beta), Al Anz (Epsilon), Haedi (Zeta), Hoedus II (Eta), Hassaleh (Iota)

Number of Auriga Objects in Various Observing Clubs

Messier Club: 3 objects

Double Star Club: 1 object

Herschel 400 Club: 6 objects

Globular Cluster Club: 0 objects

Open Cluster Club: 3 objects

Planetary Nebula Club: 1 object

Urban Club: 4 objects

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 Magazine.

Club Telescopes

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



PAC History Book Reminder–Mark Dahmke

If you'd like to contribute photos or a written history for the PAC history book, please send by the end of February. The goal is to have the book ready in time for MSRAL in June. Thanks!

Future PAC Observing Sites? – Mark Dahmke

Dave Knisely recently posted a comment to pac-list about a recent news item, which had to do with the discovery of more Martian meteorites that allegedly contain fossil remnants of biologic origin. He pointed out that the meteorites are thought to come from Eos Chasma.

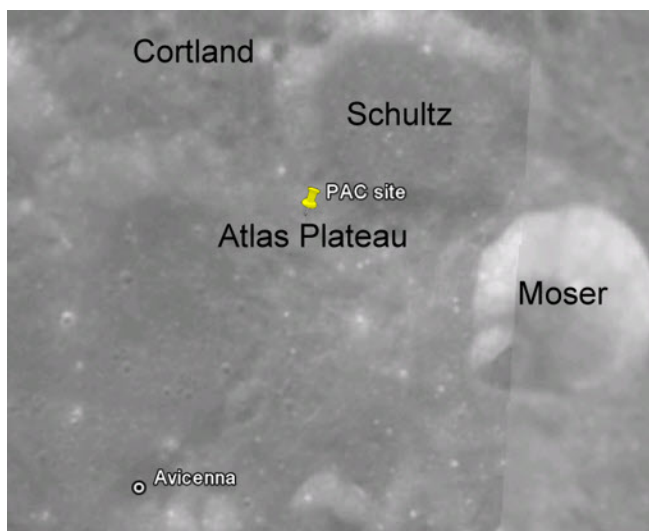
Dave went on to say: “It is kind of fun to use Google Earth and go to Mars to explore the Eos Chasma area being considered for the Mars Science Lab rover, but Google Earth/Mars still has an unusual bug. I put in a "stick-pin" marking for our club's Earth-bound observing site at "the farm", but when I went to Mars, I suddenly saw that the club *also* apparently has an observing site there (in a region of eastern Tharsis a little east of the huge Alba Paterra low volcanic complex)!! At least there isn't much light pollution there, but I don't know about all the dust getting on my mirrors (not to mention the cost of getting there).”

I too have noticed this software bug – Google Earth's place marker feature apparently doesn't have a “planet” descriptor, so all markers also show up on both the Moon and Mars.

On the Moon, the PAC site is at the edge of a crater named Avicenna. It lies on the far side of the Moon, just beyond the western limb on the northern rim of the Lorentz basin, and is named after the Persian physician Avicenna. This would appear to be an excellent observing site.

Therefore, I would like to recommend both as potential observing sites for consideration. So this is a message to anyone browsing through old club newsletters in preparation for the club's 100th (or perhaps 150th) anniversary: “go forth and claim these sites in name of the Prairie Astronomy Club.” Recommended place names commemorating founding club members and former club observing sites are shown below.

Lunar Observing Site, near Avicenna



Mars Observing Site, near Alba Paterra



When Will We Find Extraterrestrial Life?– Mark Dahmke

Recent announcements about water worlds, more Mars meteorites with possible signs of ancient life, oceans under the icy crusts of Saturnian moons and excess methane on Mars lead to the question: when will we have conclusive evidence of the existence of extraterrestrial life (either living or extinct)? The discovery of extrasolar Earth-analogs is imminent. Will the discovery of an oxygen-rich atmosphere be considered conclusive?

I thought it might be fun to do our own (completely unscientific) poll. If the day comes where we have definitive proof, we can look back on our results and see who came closest to predicting how and when we discover that we are not alone in the universe.

The first question is: where or how will extraterrestrial life be discovered?

- Oxygen rich atmosphere (or other characteristic of a biosphere that is not at chemical equilibrium) around an extra-solar planet
- Martian microbes found in a meteorite
- Extinct Martian microbes (any variety) in-situ
- Living Martian microbes (not related to Earth-life)
- Living Martian microbes (related to Earth-life)
- Signals of intelligent origin from another planet
- In an ocean of a moon in this solar system
- Evidence of a non-equilibrium biological signature in the atmosphere of Saturn or Venus
- A monolith (or other non-human artifact) discovered buried on the Moon
- When the aliens come to visit us.

The second question is: when will extraterrestrial life be discovered?

- In 2010 “The Year We Make Contact” (according to A. C. Clarke)
- 2011 – 2014
- 2015 – 2019
- 2020 – 2029
- 2030 – ?

Of course this all depends on your definition of “life.” My guess is that we really don’t have a clue as to what to look for, but for purposes of this exercise we will define it as have the properties of: metabolism and self-replication, or perhaps we can only say “we’ll know it when we see it.”

From the Newsletter Archives – January, 1967

Seven of our club members witnessed a grazing occultation of the Eta Leonis on Dec 31st at 3:45am. A chilly wind made viewing difficult. The wind also shook my scope a bit so I could not time it, the disappearance and reappearance. Rick [Johnson] saw the star disappear then a heavy fog rolled in and ended the whole thing. These grazing occultations are new to our club and quite interesting. I look forward to doing it again in warmer weather.
–Earl Moser.



Artwork courtesy NASA

You can participate in this survey online at <http://www.surveymonkey.com/s/R5P28QG> and the results will be published in the next newsletter.

Observatory Update—Rick Johnson

Arp 194 is also known as UGC 06945, a galaxy pair; and USGC U434, a triple galaxy. It is a bit under a half billion light-years away in the southeast corner of Ursa Major. Arp classed it under Galaxies (not classifiable as S or E), material ejected from nuclei. I just see a typical tidal disruption of interacting galaxies that has time to create star knots as gravity tries to pull the parts back together again. The more interesting question is whether the northern galaxy is one or two galaxies. The UGC lists it as one with the core coordinates of the upper apparent core. The USGC calls the system a triple but defines one of them two seconds of arc north of the lower "core" in the northern galaxy where Arp's image and mine show nothing at all but the very northern edge of that core. Arp's photo in blue light greatly diminishes the red cores so the upper galaxy doesn't show even one obvious core but the knots in the bridge between the northern complex and southern galaxy show very well. Arp's comment on these doesn't help much saying: "Outer material connected by thin filament to very hard nucleus." Apparently he is hung up on the likely incorrect idea of the southern galaxy's core ejecting the knots. To me it's an interesting study in how three interacting galaxies create tidal arms that then further evolve. However you look at it, this is an interesting group. I typed the above before looking to see if Hubble had imaged it. Somehow I missed the fact it had in January 2009. Turns out most of my guesses above were rather accurate.

Hubble took a great image of this pair last January -- see link below. It showed there's no connection at all between the two northern galaxies and the lower. The knotty tail is well in front of the southern galaxy. Much as the extended arm of M51 lies in front of its companion. Though in this case it isn't known if this southern member is even involved in the tidal distortions of the two northern galaxies. They alone may be sufficient to account for all the tidal features. In any case Hubble clearly shows the northern galaxy is made up of two members and shows the star like knot in the southwest corner in my image is yet another rather normal looking galaxy, apparently seen through or in front of Arp 194. Though NED shows no galaxy at its position. The Hubble text puts the pair at 600 million light-years, not 500 and says it is in Cepheus. I know the latter to be in error. In fact Cepheus is opposite it in the sky! So I don't trust the stated distance either as it is mentioned in the same sentence. At least the telescope operators knew where it was when they took the images.

The rather large and bright disk galaxy 2 minutes below Arp 194 is the IR strong galaxy SDSS J115751.32+362123.1. It really is rather large as its red shift puts it three times further away than Arp 194 at 1.5 billion light-years. A similar disk galaxy is east and a bit south of Arp 194. It, SDSS J115809.07+362215.0, too is a strong IR emitting galaxy also at 1.5 billion light-years. So these two are likely members of the same group.

A much smaller round red galaxy is north of Arp 194 above and some left of a bright orange star. It is SDSS J115758.80+362646.3 and only 1 billion light-years distant.

The large galaxy on the western side of the image is the Scd galaxy UGC 06929 at 300 million light-years.

On the western edge, above center is the galaxy cluster MaxBCG J179.19695+36.45132. NED puts it at 1.6 billion light-years centered on the IR galaxy SDSS J115647.26+362704.7. NED lists it as having 14 members. No diameter is given however. There's yet another galaxy cluster, MaxBCG J179.22805+36.56235, in the upper right corner at 2.1 billion light-years. It is centered on the IR galaxy SDSS J115654.73+363344.5 at the same distance. It is listed as having 14 members. Again, no size is given. Between these two clusters is the center of ZwCl 1154.2+3646, a cluster with some 133 members in a 20 minute circle. So it encompasses both of the other clusters and more. It's center is the just left of the center of the label I put in the annotated image. It's position in NED is only approximate so this is the best I can do.

Arp's image http://nedwww.ipac.caltech.edu/level5/Arp/Figures/big_arp194.jpeg

Hubble images: <http://hubblesite.org/newscenter/archive/releases/2009/18/image/a/>

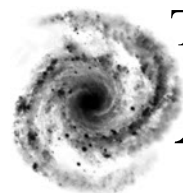
Wider angle view but lower resolution. Uses the full WFPC2 frame <http://heritage.stsci.edu/2009/18/original.html>



14" LX200R @ F/10, L=6x10, RG=3x10, B=2x10 (clouds ruined one blue), STL-11000XM, Paramount ME

Crop at 0.75" per pixel





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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FIRST CLASS MAIL

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{MM:RENEWALDATE}

Next PAC Meeting
TUESDAY
January 26, 2010
7:30 PM
Hyde Observatory