The Prairie Astronomer

February, 2012 Volume 53, Issue #2

The Official Newsletter of the Prairie Astronomy Club

February Program

"Update on Curiosity – the Study of Mars"
By Jack Dunn

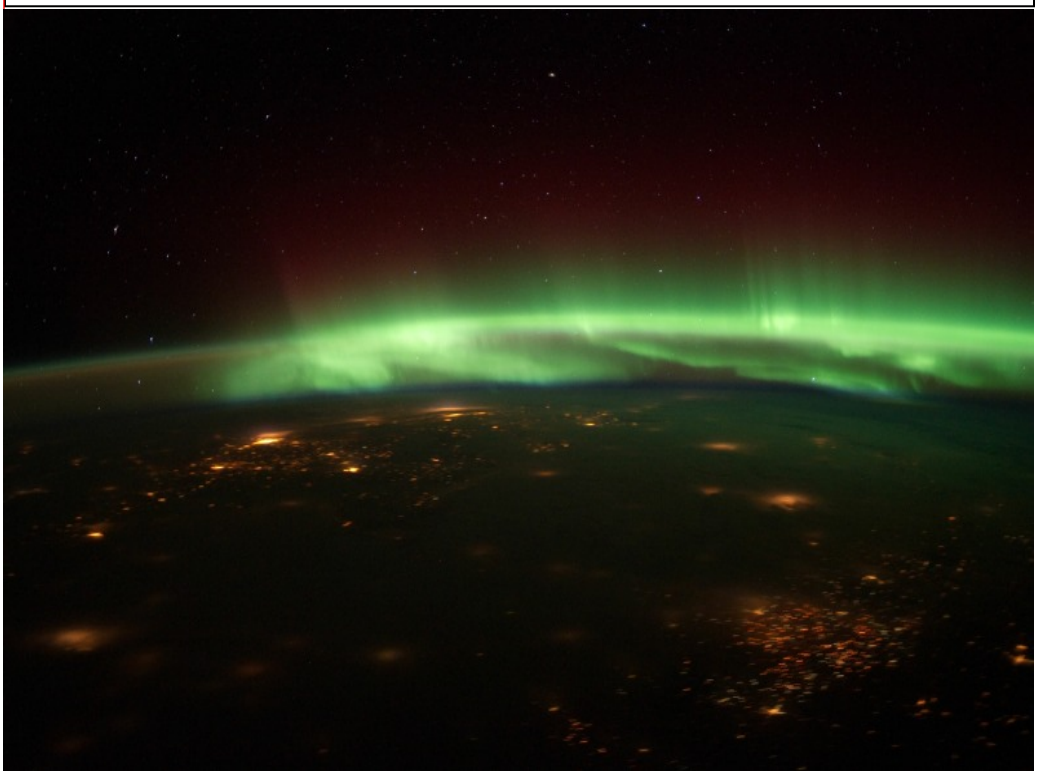
Jack will be presenting a collection of video material to update us on Mars exploration that will focus in on the plans for Curiosity as well as some of the science it will study on Mars.

In This Issue:

In this image taken on Jan. 25, 2012, the Aurora Borealis steals the scene in this nighttime photograph shot from the International Space Station as the orbital outpost flew over the Midwest. The spacecraft was above south central Nebraska when the photo was taken. The image, taken at an oblique angle, looks north to northeast.

Image Credit: NASA

Featured Photo



Astronomy Day - Kris Gainsforth

Welcome to 2012! Since we finally got the cold of winter, it got me thinking about April, where the weather is warm and the biggest day of astronomy comes to town. I'm excited to see all the people that come in and find out what things we do.

So here's the big thing: WE NEED COMITTED VOLUNTEERS FOR ASTRONOMY DAY! Last year we had some members that committed and were not able to meet them. We handled okay, but we were stretched thin at a few stations, and we got backed up at a few.

This spring, I want to let everyone that has not volunteered in the past that no matter how you feel about your knowledge or skills, WE NEED YOU! The biggest thing about public service is being accommodating, friendly, and patient. If you have these skills, you are wanted for Astronomy Day and other opportunities. I am not very skilled on the technical aspects, but I know that the public appreciates anyone who knows a little bit and has confidence.

If you have a specific station that you want to work for Astronomy Day, please let Dan, Dave, or myself know. Many of the stations are coming back. We are also looking at new opportunities for new stations every year. If anyone has a good idea, contact Dan, Dave or me. If there is anyone that can float around for multiple stations, we want you also.

I want to thank everyone that does volunteer to come out and show the public that we have many different aspects to the hobby and science. Call me at 402-304-1570 or e-mail me at krisguy@krisguy.com when you are ready to volunteer for our Astronomy Day.

Treasury Report and Membership Update - Bob Kacvinsky

February Treasurer Report:

The audit committee of Bob Leavitt and Dale Bazan, successfully reviewed and approved our club books as of 12/31/2011. Thanks for their time and help with this annual requirement. Our current balances are:

3 CDs current values:	$29,696.97
Savings Bank of West	$ 7,388.39
Checking Bank of West	$ 2,488.98
Total Balances	$39,574.34

Current paid members: 57

New members in January: Dean and Merrith Baughman

Karen Hartman

Please be sure to welcome our newest members to the Club.

Member Dues Reminders:

February 1	March 1	April 1
Nathan Filipi	Jason Noelle	Brett Boller
Dan Kincheloe	Jim Atkins	
Jeff Pieper		

Dues are $30 for Individual; $35 Family; and special $10 Student Membership. Dues can be paid at Chapter meetings or mailed to PAC, PO Box 5585, Lincoln, NE 68505. Renewals paid prior to the due date receive a 10% ($27 & $31.50 respectively) discount. We appreciate everyone's help in keeping our club membership dues correct.

Club Events

Newsletter submission deadline, March 15, 2012

PAC Meeting
Tuesday February 28, 2012 7:30pm @Hyde Observatory
Program: Mars Exploration Update

PAC Meeting
Tuesday March 27, 2012 7:30pm @Hyde Observatory
Program: "Vulanoids" by Dr. Nathaniel Cunningham

PAC Meeting
Tuesday April 24, 2012 7:30pm @Hyde Observatory
Program: Space Law by Steve Rook

2012 PAC Star Party Dates - Dates in bold are closest to the new moon

January		**Jan 20th**
February	Feb 17th	**Feb 24th**
March	Mar 16th	**Mar 23rd**
April	Apr 13th	**Apr 20th**
May	May 11th	**May 18th**
June	Jun 15th	**Jun 22nd**
July	Jul 13th	**Jul 20th**
NSP	**July 15-20**	
August	Aug 10th	**Aug 17th**
September	Sep 7th	**Sep 14th**
October	Oct 5th	**Oct 12th**
November	Nov 9th	**Nov 16th**
December	Dec 7th	**Dec 14th**

Lunar Party Dates:

Apr 27th
May 25th

Jul 27th

Aug 24th
Sep 21st

Internet Links of Interest

http://www.spacenews.com/commentaries/111111-guest-blog-apollo-spirit-alive-and-well.html

http://www.thespacereview.com

http://www.thespacereview.com/article/1945/1

http://space.flatoday.net/

http://www.spaceportamerica.com/

http://spacerefpress.com/2011/09/first-issue-of-space-quarterly-magazine-released.html

http://www.nasaspaceflight.com/

http://www.spacex.com

ON THE NET

PAC:
www.prairieastronomyclub.org

PAC E-Mail:
info@prairieastronomyclub.org

NSP:
www.nebraskastarparty.org

NSP E-Mail:
info@nebraskastarparty.org

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/March Observing: What to View--Jim Kvasnicka

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

Planets

Venus and Jupiter: The two form a spectacular pair in the west all month. At the start of March Jupiter is 11º to the upper left of Venus. On March 12th the distance is reduced to 3º.

Mercury: The lowest of the three bright planets in the west. .

Mars: Reaches opposition to the Sun on March 3rd. The fire colored Mars shines at -1.2 in south central Leo.

Saturn: Rises about 4 hours after sunset to start the month but only an hour by the end of March.

Uranus and Neptune: Both are too close to the Sun to observe.

Messier List

M41: Open cluster in Canis Major.

M44: The Beehive Cluster in Cancer.

M46/M47: Open clusters in Puppis.

M48: Open cluster in Hydra.

M50: Open cluster in Monoceros.

M67: Open cluster in Cancer.

M81/M82: Galaxy pair in Ursa Major.

Last Month: M1, M35, M36, M37, M38, M42, M43, M45, M78, M79

Next Month: M40, M65, M66, M95, M96, M105, M106, M108, M109

NGC and Other Deep Sky Objects

NGC 2451: Large open cluster in Puppis.

NGC 2539: Open cluster in Puppis.

NGC 3242: The Ghost of Jupiter, planetary nebula in Hydra.

NGC 3621: Galaxy in Hydra.

Double Star Club List

Epsilon Canis Major: Bright white and bluish white stars.

Delta Geminorum: Wasat, Yellow and pale red pair.

Alpha Geminorum: Castor, White primary with a yellow secondary.

12 Lyncis: Close pair of yellow-white stars.

19 Lyncis: White pair.

38 Lyncis: White primary with a yellow secondary.

Zeta Cancri: Yellow and pale yellow stars.

Iota Cancri: Yellow and pale blue pair.

Focus on Observing Clubs

Binocular Messier Program

The beginning observer will find that it doesn't take an expensive telescope to enjoy astronomy. The Astronomical League now offers four observing programs for binoculars.

Binocular Messier Program
Deep Sky Binocular Program
Southern Skies Binocular Program
Binocular Double Star Program

The Binocular Messier Program is the most popular binocular program. The Binocular Messier Program is for the beginner as well as the experienced amateur astronomer. All it takes is a pair of binoculars, no matter what the size.

To qualify for the Binocular Messier Certificate you need to observe 50 or more Messier objects using only binoculars. Any 50 of the 110 Messier objects may be observed. Any pair of binoculars may be used, but those with objectives between 20mm and 80mm are recommended. Your observing logs should include: the name of the object; date and time; an estimate of the seeing conditions; the size and power of your binoculars used; and a brief comment or description of what you observed.

When you complete the Binocular Messier Program you will need to submit a copy of your observing logs to me for review. If the logs are accurate and complete I will submit your name to the Binocular Messier Program chair for approval. The chair will forward to me your certificate and pin that I will present to you at our monthly PAC meeting.

If you have any questions regarding the Binocular Messier Program or need help getting started please ask me and I would be glad to assist you.

Binocular Messier Program Awardees from PAC

Ron Veys, Dave Brokofsky, Jim Kvasnicka

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.

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 telescope 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 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:
Checked Out

13 inch Truss Dobsonian:
Available

Program Chair Minute - Dave Churilla

Our January Program was our annual "Learn How to Use Your Telescope" seminar. This year we had nearly an overflowing crowd (the telescopes actually DID overflow out onto the Deck) with many PAC members having to give up their seats to guests. I counted 20 telescopes and I know I missed a few that were on the deck. Lee Taylor said he estimated about 75 people (members and guests) and that certainly is a reasonable guess. So I would say the night was a huge success.

Thanks to everyone who stayed and helped out. Our guests got a lot of hands on help with their telescopes. I had many compliments from people about the program, the one-on-one help and the enthusiasm and expertise of the club members helping them. Some are considering joining the club.

This month's PAC Meeting will be on Tuesday, February 28th. As usual we'll have a short business meeting at 7:30 PM which will include Observing Chair Jim Kvasnicka's Observing Report followed by the evening's program, "Update on Curiosity – the Study of Mars", by Jack Dunn. Jack will be presenting a collection of video material to update us on Mars exploration that will focus in on the plans for Curiosity as well as some of the science it will study on Mars. And as a preview you don't want to miss March's Program. We'll have guest speaker Assistant Professor of Physics. Nathaniel Cunningham of Nebraska Wesleyan University give a program about Mercury (see description below).

Upcoming programs:

Mar 2012: ***Guest Speaker Dr. Nathaniel Cunningham "Mercury"*** In March we have the privilege of having Nathaniel Cunningham, Assistant Professor of Physics from Nebraska Wesleyan University give a talk on Vulanoids, difficult-to-observe asteroids that have yet been detected but which could orbit stably inside the orbit of Mercury. Cunningham was recently mentioned in an article in the Lincoln/Journal Star (http://journalstar.com/news/local/education/wesleyan-team-works-on-pluto-study/article_a87d564a-441f-5c31-aff8-d7fb8215d6b8.html). I think his program will be very fascinating.

Apr 2012: ***Space Law by Steve Rook*** Steve Rook a soon to be graduate of the University of Nebraska College of Law, will give a presentation on some of the current aspects of space & astronomy and how they relate to the law.

May 2012: ***Near Star Party:*** I will set up my telescope at 6:30 PM until 8 PM for anyone who would like to view the sun in H-Alpha. Anyone who would like to join me with their telescope is welcome to do so. With the sun being quite active this should be a great opportunity (I know, I've jinxed it now) for everyone to experience the H-Alpha Filter. This will be only a star party so come casual, bring a lawn chair, and enjoy the evening. We'll go until about 8 PM when everyone can adjourn to the observatory for the PAC business meeting. If the weather is cloudy we'll have our normal meeting and I'll give a short presentation.

June 2012: ***BBQ Social (tentative)*** We will have our June Social again this year. At this point Chef Cajon Bob has graciously agreed to smoke more pork for the BBQ pulled pork sandwiches. There will be a nominal fee (likely $5 like last year). We'll let you know more as we get closer.

Jul 2012: ***NSP 2012 Update*** Get Jason your photos from NSP and we'll enjoy an evening of looking at the fun everyone had at NSP.

Aug 2012: ***Space Update*** Jason Noelle will give a program – subject yet to be determined.

Sep 2012: ***Fun With Astronomy*** The PAC Executive Board will put together a short collection of fun, humorous clips about space and astronomy. You don't want to miss the fun.

I'll try to keep you apprised of upcoming programs so you can plan to attend.

The members of the PAC Executive Committee work together to plan the monthly PAC Programs. Our goal for the programs is to provide a good mix of information, entertainment (including time to visit with one another), and to make them relevant for all experience levels as well as to hit all interests in astronomy. In addition we want to get club members involved with giving presentations as there is a lot of expertise in different areas that we all could benefit from. So we would love to have your comments and suggestions concerning what you would like see in our programs. Call me at 402-467-1514 or email me at weber2@inebraska.com.

Challenge Observing Objects for February/March

Each month I will have two objects, one for the more seasoned observer and one for the beginning observer. Each object I hope will challenge you just a little bit. I will provide you with a little bit of information about the object. It is your job to find it and if you would write a little report or draw what you see. The first person to report back on each object will have their report published in the next issue of the newsletter. Happy Hunting!

Advanced Object

NGC 2452

Discovered Feb 1, 1837 by John Herschel. It's a 12th-magnitude planetary nebula in Puppis

Beginner Object

NGC 2266

It lies about 11,000 light-years distant in the constellation Gemini and is a galactic cluster. With an age of about 1 billion years, NGC 2266 is old for a galactic cluster. Meaning, this particular cluster lies several thousand light years above the galactic plane. It has a apparent magnitude of 9.5 and is about 6 arc-minutes in diameter.

White House asks for brutal planetary NASA budget cuts - Phil Plait the Bad Astronomer

The White House has released its Presidential budget request for fiscal year 2013 today, including the budget for NASA, and as usual there is some good news and some bad. But the good news is tepid, and the bad news is, well, pretty damn bad. I can lay some of this blame at NASA's feet — a long history of being over budget and behind schedule looms large — but also at the President himself. Cutting NASA's budget at all is, simply, dumb. I know we're in an economic crisis (though there are indications it's getting better), but there are hugely larger targets than NASA. If this budget goes through Congress as is, it will mean the end of a lot of NASA projects and future missions.

The President's FY13 budget for NASA is $17.7 billion in total. This is marginally less than last year. In most cases, the budget for science is stable, with a lot of missions getting modest increases. After perusing the individual budgets, it looks to me that most missions that are getting reductions are either ones that have been up a while and are winding down, ones near launch that are built and ready to go and therefore costs are smaller than during development, or ones that have had launch delays (due to tech issues with the launch systems).

Overall, astrophysics, Earth science, and Heliophysics (Sun studies) did OK. Again, some individual missions got increases and some decreases, but in general the budgets are stable. Funding for commercial spaceflight got a massive increase, more than doubling last year's $400M budget. I'm all for that, as of course is the Commercial Spaceflight Federation. I've been vocal about that, and I think handing off launch and other capabilities to commercial ventures is a good way for NASA to save money in the long run. Some cuts didn't make sense to me. Education, for example, drops from $136M to $100M. Why? That money funds a vast amount of educational outreach — and I should know; I was funded by this for several years when I was at Sonoma State University creating educational materials for various NASA satellites. That funding does a huge amount of good for schoolkids, and cutting it is a mistake.

And it gets worse. A lot worse.

The bad news for Mars

However, planetary exploration has gotten creamed. Its budget overall drops from $1.5 billion to $1.2, a very deep cut that doesn't just threaten but destroys near-future Mars exploration as well as future big grand missions to the outer planets in the tradition of Voyager, Cassini, and others.There's no easy way to say this: these cuts are devastating. The President's request for just Mars exploration is $361 million, a crippling $226M drop in funding over the FY12 estimate, a 38.5% cut.

Read that again: a 38.5% cut. This will effectively halt the new exploration of Mars. It means pulling out of planning the ExoMars mission with the European Space Agency — effectively cancelling the mission, which will not make the Europeans happy — and also halting planning on a 2016 mission. There is still funding for the MAVEN mission scheduled for launch next year, but at reduced levels.

In my opinion, part of this is the fault of NASA: Curiosity, the rover on its way to Mars right now, was well over budget. Even after all these years, NASA still has a hard time getting budgets right, which is frustrating. However, this particular cut in the budget is madness. It was fought mightily by NASA, but the Office of Management and Budget apparently ignored all the advice from scientists and managers at NASA, cutting the program anyway. Ed Weiler, who was the head of the NASA Science Mission directorate, quit in protest over these cuts. I've had my disagreements with Ed on budget specifics over the years, but he has been a big defender of NASA from government cuts. For him to quit over this is a pretty strong indicator of how bad it is.

Bill Nye, speaking on behalf of The Planetary Society, says it best:

The priorities reflected in this budget would take us down the wrong path. Science is the part of NASA that's actually conducting interesting and scientifically important missions. Spacecraft sent to Mars, Saturn, Mercury, the Moon, comets, and asteroids have been making incredible discoveries, with more to come from recent launches to Jupiter, the Moon, and Mars. The country needs more of these

robotic space exploration missions, not less.

He's right. The US has had an incredibly strong Mars program which has returned amazing science, as well as garnered enthusiastic public support. No other country has been able to do as well getting to Mars as we have. Of all the pieces of NASA to cut, this should be the very last one to see a reduction! It's maddening, bizarre, and simply dumb.

NASA chief Charles Bolden tried to spin all this positively, but I have a hard time seeing it that way. And it's hard to see how James Webb Space Telescope did not have an impact here. JWST is getting a large $109M (21%) increase as it gets nearer to completion. My thoughts on this are on record, for example here, here, and here. Basically, this mission on its own is taking the lion's share a big chunk of NASA's science funding, and if NASA's overall budget remains stable JWST must perforce siphon money from other missions. Administrator Bolden wouldn't specify what part of the budget would get cut to accommodate JWST, but given the massive slashing of Mars funding, well. That seems clear enough. [Update: It has been pointed out to me that the increase in JWST's budget is smaller than what was taken from Mars. True, but as I pointed out last year, an additional $500+ million was recently given to JWST. I was considering that as well when I wrote the above paragraph.] At some level the Mars rover Curiosity, currently on its way to Mars, must have played a role here too. It was also overbudget, though by a smaller total amount than JWST. But its impact has been significant. I'll note that I think JWST is far enough along to make sure it gets finished and launched, but the funding for it should be added to NASA's budget, not subtracted from other places. I'm not happy with the way JWST was handled (the amount it's over budget is staggering to say the least) and NASA really needs to gets its head in the game when it comes to figuring this stuff out.

But the thing is, we shouldn't even have to make these choices. We shouldn't have to choose between one ground-breaking scientific mission and another. The reason we do is because NASA's budget is so small in the first place. It really speaks volumes about where science and explorations stand as an American value.

Mind you, this budget is not set in stone. This is simply the President's request, which then goes to Congress. Over the past few years, Obama's request has been for increases, with Congress threatening to cut it. Now, however, this budget comes pre-cut to Congress. The news isn't all bad, though: some members of Congress have said this budget is not satisfactory (like Adam Schiff (D-Pasadena), whose district includes JPL), and will fight to make it better. The Planetary Society will be rallying its members to talk to their Congress critters and increase NASA's slice for science from 27.5% to a solid 30%, enough to re-fund Mars exploration.

My opinion hasn't really changed in years. NASA is a tiny, tiny part of the federal budget, far less than 1%. There are other places where money can be found, other places where cuts make more sense.

I've made this analogy before: if you have a hard drive full of 4 Gb movie files, you don't make room by deleting 100kB text files! You go after the big targets, which is far more efficient. Reducing NASA's budget for Mars exploration frees up 0.01% of the federal budget. That's it. One ten-thousandth of what we spend overall, a hundredth of a penny for every dollar. What does that mean in more understandable terms? Over the past few years, the rate of money spent in Afghanistan and Iraq is about 20 million dollars per hour. In other words, the amount of money being cut from Mars exploration is equal to what we were spending on the War on Terror in just 15 hours. You might want to read that again. For the cost of less than a single day on the War on Terror, we could have a robust and far-reaching program to explore Mars, look for signs of life on another planet, increase our overall science knowledge, and inspire a future generation of kids.

Our priorities on national spending could use some major overhauling. Science is the future. Our economy depends on many things, but science, engineering, and technology represent a huge portion of its support. It's simple: cutting back on science is cutting our future's throat. And this budget is reaching for the knife.

So I'm reaching for my keyboard. I'll be contacting my Senators and Representative. If you're an American citizen, I suggest you do the same.

The Bad Astronomer can be reached at http://blogs.discovermagazine.com/badastronomy/

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: **Jason Noelle at oegrad2002@yahoo.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.

FIRST CLASS MAIL

Next PAC Meeting
Tuesday
February 28, 2012
7:30 PM
Hyde Observatory