

The Prairie Astronomer

June, 2007

Volume 48, Issue #6

The Official Newsletter of the Prairie Astronomy Club

PAC Program

At the June PAC Meeting: Jack Dunn will talk about ISS, Clay Anderson, and his trip to Florida to see the shuttle launch.

In This Issue

Clayton Anderson. observing highlights, Saturn's moons Tethys and Dione.

Featured Astrophoto

While not an astrophoto, I thought it would be appropriate to use Jack Dunn's photo of the launch of Atlantis, with Nebraskan Clay Anderson on board.

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



The Prairie Astronomer

NEWSLETTER

Clayton Anderson

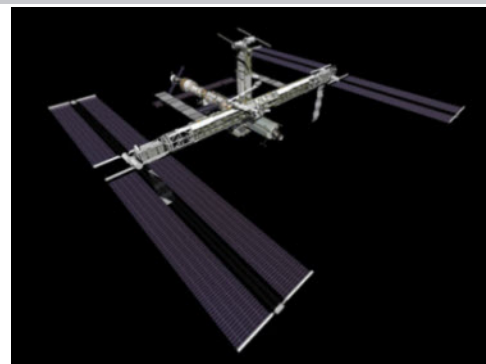
Nebraska's first astronaut, NASA Astronaut Clayton Anderson joined the International Space Station Expedition 15 crew Sunday, June 10, 2007, replacing Flight Engineer Suni Williams. Anderson arrived at the station as a member of Space Shuttle Atlantis' STS-117 crew. Atlantis docked to the station at 3:36 p.m. EDT. He and Williams officially swapped crews when his custom-made seat liner was swapped out in the Soyuz spacecraft docked to the station. Williams is wrapping up a six-month stay aboard the station. She will return to Earth on Atlantis, which is slated to undock June 17. Anderson is scheduled to leave the station this fall.



Clayton was born February 23, 1959 in Omaha, Nebraska. He considers Ashland, Nebraska to be his hometown. Married to the former Susan Jane Harreld of Elkhart, Indiana. They have two children; a son, Clayton Cole and a daughter, Sutton Marie. His mother, Alice J. Anderson, resides in Ashland, Nebraska. His

father, John T. Anderson, is deceased. Her parents are Jack and Mary Harreld of Bella Vista, Arkansas. Recreational interests include officiating College and High School basketball; participation in all sports; coaching youth sports; flying; reading; writing music; playing the piano/organ and vocal performance. As an undergraduate he competed on the football, basketball and track teams.

Clayton graduated from Ashland-Greenwood High School, Ashland, Nebraska, 1977; received a bachelor of science degree (Cum Laude) in Physics from Hastings College, Nebraska in 1981 and a master of science degree in Aerospace Engineering from Iowa State University in 1983.



ISS configuration upon completion of the STS-117 mission.



Astronaut Clayton C. Anderson, Expedition 15 flight engineer, salutes as he dons a training version of the Extravehicular Mobility Unit (EMU) space suit prior to being submerged in the waters of the Neutral Buoyancy Laboratory (NBL) near the Johnson Space Center. Photo from NASA website.



The International Space Station's new S3/S4 truss and solar arrays are viewed from Space Shuttle Atlantis' robotic arm. Image credit: NASA TV

Club Events

PAC Club Meeting
Tuesday, June 26, 2007
7:30pm @ Hyde Observatory

Club Star Party
Friday, July 06, 2007

Nebraska Star Party
July 15-20
Merritt Reservoir, Valentine, Nebraska

Mahoney Star Party
Friday, July 13, 2007

PAC Club Meeting
Tuesday, July 31, 2007
7:30pm @ Hyde Observatory

Club Star Party
Friday, August 10, 2007

Mahoney Star Party
Friday, August 10, 2007

Club star parties: July 6, August 10, Sept 7, Oct 12, Nov 9, Dec 7.

Mahoney star parties: July 13, August 10, Sept 14.

Club Telescopes - Checkout Policy

To check out one of the club telescopes, contact Brian Sivill or nanoamps@windstream.net. If you keep a scope for more than a week, please check in with Brian 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

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

NEB-STAR
www.neb-star.org

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

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



The Prairie Astronomer

NEWSLETTER

Club Business

Secretary's Report

Ron Veys called the meeting to order. Attendance: 18 PAC members and one visitor. Ron discussed upcoming club events:

- * The next club star party will be held Friday, June 15 at the farm.
- * The next Mahoney Star Party will be Friday, June 15.
- * The next club meeting will be Tuesday, June 26.
- * The 14th annual Nebraska Star Party will take place July 15 – 20, 2007.
- * Hyde Observatory is open from 7:00 – 11:00 pm on Saturdays.

The Mid-States Regional Convention of the Astronomical League, planned for June 8 – 9 in Omaha, was canceled due to insufficient advance reservations.

John Johnson discussed NSP plans and encouraged PAC members to send in their reservations. He noted that the reservation fee goes up June 1.

Jim Kvasnicka gave the Observing Chairman's report. There was a good turnout for the May star party and we're hoping for the same in June.

Bob Leavitt attended the Mahoney Star Party in May. He reported that a good-sized crowd was on hand. There were 7 scopes from Omaha and 1 (Bob's) from Lincoln.

Some club members participated in the International Sidewalk Astronomy Night on May 19 by setting up telescopes in their neighborhoods.

Jack Dunn reported that the new Full-Dome system is working well at Mueller Planetarium. He mentioned that an article had been written about it in the Journal-Star.

Treasurer's report: Lee Thomas reported the following account balances:

CD-1 \$16,835.26
CD-2 \$3,726.07
CD-3 \$5,108.45
PAC Checking Account \$2,319.75
PAC Savings Account \$9,057.54
Total \$37,047.07

Jim Kvasnicka reviewed upcoming observing highlights for the month of June.

The meeting was adjourned to the program. Jim Kvasnicka gave a presentation on observing programs of the Astronomical League. Shawn Langan gave a talk on the Behlen Observatory observing programs and on their outreach programs.

Submitted by,
Bob Leavitt

Observing: What to View in July -- Jim Kvasnicka

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

Planets

Venus: Reaches peak magnitude in mid July at magnitude -4.7. Venus starts July with Saturn just 0.8° to its upper right. In early July Venus still shines high and stays up after dark, but each week it sinks lower and sets earlier.

Saturn: Starts July 0.8° from Venus. Saturn will pull away from Venus as the month goes on. On July 16th and 17th the crescent Moon passed between the two planets.

Jupiter: Magnitude -2.5 in southern Ophiuchus at night-fall. Antares is just 5° below it. Early evening is the best time to observe Jupiter in July.

Neptune: 8th magnitude in Capricornus.

Uranus: 6th magnitude in Aquarius.

Mars: Rises in the east-northeast a little before 2:00 am at the start of July. By July's end it rises by 1:00 am with the Pleiades to the left.

Mercury: Becomes a morning object the latter half of July. Mercury can be seen 10° above the east-northeast horizon a half hour before sunrise.

July Messier List

All the objects on the July list are globular clusters except one.

M3: This globular cluster in Canes Venatici is one of the brightest objects in the sky.

M53: Another globular cluster in Canes Venatici.

M5: A big bright globular cluster in Serpens Caput as nice as M3.

M68: This globular cluster in Hydra appears as a round fuzzy patch. A large telescope is needed to resolve any stars.

M83: A face on spiral galaxy in Hydra.

M4: A big bright globular cluster in Scorpius near Antares. Look for the bright stars crossing the center.

M80: Small globular cluster in Scorpius. Looks like a comet.

Last Month: M58, M59, M60, M84, M86, M87, M88, M89, M90, M91, M98, M99, M100

Next Month: M6, M7, M8, M9, M10, M12, M19, M20, M21, M23, M62, M107

NGC Objects

NGC 5634: The only globular cluster in Virgo. Small and not very bright.

NGC 5907: The Splinter Galaxy. Edge on galaxy with dust lanes in Draco.

NGC 6229: The third globular cluster in Hercules.

NGC 6369: Little Ghost. Planetary nebula in Ophiuchus.

NGC 6633: Large and bright open cluster in Ophiuchus. 65 stars scattered over a $50' \times 25'$ area.

Continued on next page.

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 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.

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NEWSLETTER

Observing, continued from last page.

Double Stars

Alpha Herculis: Beautiful double star with an orange primary and a greenish secondary.

Delta Herculis: White and bluish-purple stars.

56 Herculis: Orange and blue stars.

70 Ophiuchi: Yellow-orange star with a reddish companion.

Xi Scorpii: Yellow and light blue stars. Struve 1999 is just S of Xi Scorpii and consists of two orange stars. Both double stars will fit in the same FOV.

Challenge Object

NGC 5053: Faint, very loose globular cluster in Coma Berenices. Located 1° SE of M53. Requires large aperture to resolve. Class XI.

Cassini Finds Saturn Moons are Active

Saturn's moons Tethys and Dione are flinging great streams of particles into space, according to data from the Cassini mission to Saturn. The discovery suggests the possibility of some sort of geological activity, perhaps even volcanic, on these icy worlds.

These results appear in this week's issue of the journal *Nature*. The Cassini mission is a cooperative project of NASA, the European Space Agency and the Italian Space Agency.

The particles were traced to the two moons because of the dramatic outward movement of electrically charged gas, which could be mapped back to the moons' orbits in the magnetic environment of Saturn. Known as plasma, the gas is composed of negatively charged electrons and positively charged ions, which are atoms with one or more electrons missing. Because they're charged, the electrons and ions can become trapped inside a magnetic field.

Saturn rotates in just 10 hours and 46 minutes. This sweeps the magnetic field and the trapped plasma through space. Just like a child on a fast-spinning merry-go-round, the trapped gas feels a force trying to throw it outwards, away from the center of rotation.

Soon after the Cassini spacecraft reached Saturn in June 2004, its instruments revealed that the planet's hurried rotation squashes the plasma into a disc, and that great fingers of gas are being thrown out into space from the disc's outer edges. Hotter, more tenuous plasma then rushes in to fill the gaps.

Now, Jim Burch, team member of the Cassini Plasma Spectrometer at the Southwest Research Institute, San Antonio, Texas, and his colleagues have made a careful study of these events using the instrument. They have found that the direction of the ejected electrons points back towards Tethys and Dione. "It establishes Tethys and Dione as important sources of plasma in Saturn's magnetosphere," said Burch.

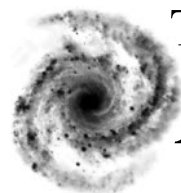
Until this discovery, the only moons of Saturn known to be active worlds were Titan and Enceladus. "This new result seems to be a strong indication that there is activity on Tethys and Dione as well," said Andrew Coates from the Mullard Space Science Laboratory, University College London, co-author and member of the Cassini Plasma Spectrometer team.

For more information, see the JPL website: <http://www.jpl.nasa.gov/news/news.cfm?release=2007-065>



Events Calendar

July 2007						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 	2 	3 	4 	5 	6 	7 
Sun: 17:58 - 09:01	Sun: 17:59 - 09:01	Sun: 18:00 - 09:01	Sun: 18:00 - 09:01	Sun: 18:01 - 09:01	Sun: 18:01 - 09:00	Sun: 18:02 - 09:00
Venus close to Saturn			Moon close to lot Aqr, SAO 164861		Club Star Party	Hyde Observatory Open to the Public
8 	9 	10 	11 	12 	13 	14 
Sun: 18:03 - 09:00	Sun: 18:03 - 08:59	Sun: 18:04 - 08:59	Sun: 18:05 - 08:59	Sun: 18:05 - 08:58	Sun: 18:06 - 08:58	Sun: 18:07 - 08:57
	Moon close to Mars				Mahoney Star Party; Venus close to Regulus	New Moon; Hyde Observatory Open to the Public
15 	16 	17 	18 	19 	20 	21 
Sun: 18:08 - 08:57	Sun: 18:08 - 08:56	Sun: 18:09 - 08:55	Sun: 18:10 - 08:55	Sun: 18:11 - 08:54	Sun: 18:12 - 08:53	Sun: 18:13 - 08:53
	Moon close to Regulus					Hyde Observatory Open to the Public
22 	23 	24 	25 	26 	27 	28 
Sun: 18:14 - 08:52	Sun: 18:14 - 08:51	Sun: 18:15 - 08:50	Sun: 18:16 - 08:49	Sun: 18:17 - 08:48	Sun: 18:18 - 08:47	Sun: 18:19 - 08:46
						Hyde Observatory Open to the Public
29 	30 	31 				
Sun: 18:20 - 08:46	Sun: 18:21 - 08:45	Sun: 18:22 - 08:43				
Full Moon		PAG Club Meeting				



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.

PRESIDENT:	Ron Veys (402) 486-1449 RVeys@southeast.edu
VICE PRESIDENT:	Brian Sivill (402) 325-0997 nanoamps@windstream.net
2nd VICE PRESIDENT (PROGRAM CHAIR):	Jack Dunn jdunn@spacelaser.com
SECRETARY:	Bob Leavitt (402) 488-5335 bob.leavitt@alltel.net
TREASURER:	Lee Thomas lleet@alltel.net
Club Observing Chair:	Jim Kvasnicka (402) 423-7390 jim.kvasnicka@pfizer.com
Outreach Coordinator:	Dave Churilla weber2@inebraska.com
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Next PAC Meeting
June, 26, 2007
7:30 PM