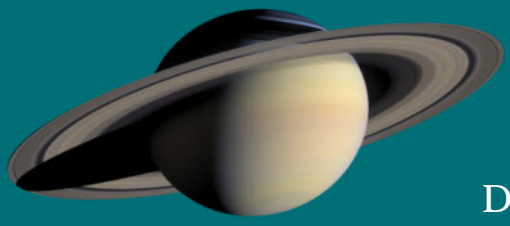

The Prairie Astronomer

December, 2007 Volume 48, Issue #12

The Official Newsletter of the Prairie Astronomy Club

PAC Program

Jack Dunn will finish the story of Clay Anderson's flight aboard the International Space Station (with pictures).

A new 12 minute video about the Webb Space Telescope.

Note: the meeting date has been moved to Wednesday, December 26th.

In This Issue

Recent Observations, Dave Knisely, What to View in December.

Featured Astrophoto

Comet Bennett, by Earl Moser. This photo was taken on arch 29th, 1970. It's a five minute exposure using a 135mm lens at f2.8.

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

Saturn image courtesy NASA.

Recent Observations—Dave Knisely

DATE: October 9th, 2007, 0630 to 0935 hrs UTC.
LOCATION: Rockford Lake, Nebraska: 40.227N, 96.581W, 1383ft (422m) elev.
INSTRUMENTS: NexStar 9.25 inch f/10 SCT: 59x, 98x, 168x, 245x, 297x, 480x, 744x. Orion 100mm f/6 refractor: 15x, 25x.
CONDITIONS: Clear, Temp. 52 deg. F. wind calm.
UNAIDED-EYE ZENITH LIMITING MAGNITUDE: 6.7 SEEING (above 45 deg. altitude): 1" arc (Antoniadi II).

OBJECTS OBSERVED: "Heart" Nebula IC 1805/NGC 896, "Baby" Nebula LBN 667 (associated with open clusters IC 1848 and Collinder 34), NGC 1027, NGC 7635, NGC 281, IC 289, NGC 1501, NGC 1360, NGC 1398, NGC 1385, NGC 1371, M42, IC 434, Sh2-276, IC 2177, IC 405.

OBSERVATIONS: After getting off work at 11 p.m., I had a bite to eat and then loaded all my equipment into the van to head out to Rockford Lake to check out some objects that I had missed last month. I had a nice spot near a picnic table, which enabled me to set up my eyepiece boxes, my laptop, and some other things outside the van for once. The conditions were superb, so I knew I would be out for several hours. I had a new tiny digital voice recorder (Olympus VN-2100) to try out, as my old minicassette recorder has seen better days and has long ago needed to be retired.

At our first Nebraska Star Party 15 planning meeting, we had decided on the theme, /**/"Lose Your Heart to the Stars!" with the T-shirt displaying the rather obscure "Heart Nebula" IC 1805 in Cassiopeia. I had seen it in my 10 inch a number of years ago, but only parts of it were glimpsed, so I decided to track it down in both the NexStar and my 100mm rich-field refractor to see if I could get a decent look at it. It isn't too far from the huge open cluster Stock 2, so I had little trouble getting the refractor onto the right field. Without a filter, only the central star cluster (Collinder 26) could be seen with perhaps a hint of nebulosity in the area. The cluster is rather oval in form with perhaps 20 bright stars visible in the refractor in a very rich starfield, along with the nice open cluster NGC 1027 showing up well off to the northeast. Once I put the DGM Optics NPB filter in, all that changed. The cluster was now enveloped in an oval area of dim haze that ran eastward from the group before broadening and splitting into two very dim diffuse ribbons of light that curved northward and southward. The northward ribbon was the smaller one, and curved back westward before abruptly fading, while the southern one was considerably longer, running south before curving back around and going north again (the south side of the "heart"). Unlike images, these ribbons did not quite completely enclose the cluster, but they were partially circling it, making the whole nebula around 1.6 degrees by perhaps 1.3 degrees in size. There was another faint patch all by itself to the northwest (NGC 896), but is almost appeared separate from the rest of the complex and was a bit brighter than all but the very central portion of the "heart".

In the OIII filter, the detail in IC 1805 gained a little contrast, but not quite as much nebulosity was seen. What was seen appeared somewhat fainter overall, so the NPB filter was the "filter of choice" for this object. Interestingly enough, the H-Beta filter also showed the nebula, although not quite as well as in the OIII filter.

In the NexStar, I was more impressed with what I could see with the NPB filter on "the Heart". The central star cluster was quite pretty, now showing perhaps 30 to 40 stars, while the nebulosity showed more definite outlines. The central part of the nebula and its extension to the east were the brightest parts of the nebula and looked like a two-branched tree trunk in the "notch" of the heart. While somewhat dim, this section was fairly detailed with some light and dark patches visible. The two "branches" of the outer ribbons at the "notch" of the heart became considerably fainter as one followed them outward, but could be seen for some distance even in the limited one

Club Events

PAC Club Meeting
Wednesday, December 26, 2007
7:30pm @ Hyde Obsv.

Club Star Party
Friday, January 04, 2008

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

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

Next newsletter submission deadline: January 19th.

Club Telescopes - Checkout Policy

To check out one of the club telescopes, contact Cassie Edmund at 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

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.

Club Business

Minutes of the November PAC Meeting

Pesident Brian Sivill called the meeting to order. We had 2 guests.

The next PAC meeting will be Wednesday Dec. 26, 2007 to avoid conflict with the Christmas Holiday.

Dr. Phil Plait, "The Bad Astronomer" was at UNL on Friday Nov. 2 for a talk on the moon hoax.

The astronomy seminar class was held on Friday Nov. 8 at Hyde.

The next PAC star party will be held on Friday Dec. 7 at the farm.

Bob Leavitt reviewed the November 8th astronomy seminar. We had a good turnout with 20 people, 16 adults and 4 children.

Observing Chair, Jim Kvasnicka reviewed upcoming observing targets for the month of December.

Brian noted the rapidly expanding club inventory of telescopes and equipment. There was a short debate on the best use of these items.

The club audit was completed on Nov. 17 by a commitee composed of Lee Taylor, Jim Kvashnicka, Steve Lloyd, and Lee Thomas. A report will be issued to the president on the outcome before the next meeting.

Treasurer's Report: no treasurer's report for this month.

Lee Thomas did take orders and payment for the 2008 Ottwell calendars and RASC Handbooks.

The meeting was adjourned to the program of Dr. Martin Gaskell on instrumentation for the new generation of extremely large telescopes.

Respectfully submitted by,

Lee Taylor

Observing: What to View in December -- Jim Kvasnicka

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

Quadrantid Meteor Shower

The Quadrantid Meteor Shower will peak around 12:40 AM CST on January 4th. This is a brief but intense shower. In some past years more than 100 per hour were visible. Look to the northeast between the handle end of the Big Dipper and the head of Draco.

Comet 8P/Tuttle

Expected to be brightest around the start of January at 6th magnitude. May be able to see it with your naked eye. On December 31st it should past next to M33. See the page 74 in the January Sky and Telescope for a finder chart.

Planets

Mercury: Low in the afterglow of sunset starting the second week in January in the sw.

Mars: Well above the eastern horizon at nightfall. Mars shines at magnitude -1.5 at the start of January but dims a whole magnitude by month's end. The planet's disk decreases in size from 15.3" to 12.2".

Saturn: Rises around 9:00 pm in Leo for early January at magnitude 0.6. The rings which attained a minimum tilt of 6.6° on December 15th will start to open up.

Venus and Jupiter: Both are in the morning sky continuing to move closer to each other. On January 31st they are separated by just 1.2° and the following day, February 1st by just 0.6°.

Uranus and Neptune: Difficult to see low in the twilight.

January Messier List

M33: Large face on spiral galaxy in Triangulum with a low surface brightness.
M103: Small open cluster in Cassiopeia.
M52: Rich open cluster in Cassiopeia.
M76: The Little Dumbbell. Planetary nebula in Perseus.
M34: Large and bright open cluster in Perseus.
M74: A face on spiral galaxy with low surface brightness in Pisces. Difficult to find.
M77: Small faint galaxy in Cetus.
Last Month: M2, M15, M29, M31, M32, M39, M110
Next Month: M1, M35, M36, M37, M38, M42, M43, M45, M78, M79

NGC Objects

NGC 1514: Planetary nebula in Taurus.
NGC 1647: Open cluster in Taurus.
NGC 1746: Open cluster in Taurus.
NGC 1931: Emission/Reflection nebula in Auriga. Haze surrounding 4 close stars.
NGC 2392: Eskimo Nebula in Gemini.

Double Stars

118 Tauri: White and yellow pair.
Chi Tauri: White and blue stars.
42 Piscium: Easily separated orange primary and blue secondary.
77 Piscium: A nice wide pair of yellowish stars.
Alpha Geminorum: Castor. Brilliant white star with a dull lilac secondary.

Challenge Object

PK 205 + 14.1: The Medusa Nebula or Abell 21 in Gemini. Impressive in large aperture with OIII filter.

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.

Recent Observations, continued.

degree field of view in my 40mm Konig. The nearby nebula NGC 896 was fairly interesting, as although it was faint, it did show a little detail. It is basically three irregular patches of somewhat different shape that are partially separated by dark lanes with some very faint outlying nebulosity and a few involved stars. Indeed, it reminded me a little of the way the Trifid looks sometimes, although this object lacked the symmetry of M20.

My next target was pretty NGC 1027 right next to the "Heart" nebula. In the NexStar 9.25, it was a very nice group of perhaps 40 stars roughly circular in shape with a prominent 7th magnitude star at the center. The group reminds me a little of the Tau Canis Majoris cluster, except that the size (roughly 20' arc) is much larger and the stars are not so tightly packed.

Back on nebulae, I hit the "Baby Nebula" LBN 667 associated with the star clusters IC 1848 and Collinder 34. In the 100mm f/6 tefractor (15x), it appear almost like an elongated star cloud with the two concentrations of stars at the plotted locations of the two clusters and only a hint of nebulosity. The NPB filter really brought the nebula out as an elongated region 1.6 degrees by 0.7 degrees that was a little easier to see than the "Heart" was. The edges were not as bright as the middle, but this may have been due to the large number of faint stars along the axis of the nebula. There is a bit of a notch in the northern side closer to the east end that marked the "head" of the baby, but the rest of the nebula was rather diffuse. In the OIII filter, the nebula was a bit fainter but showed more detail, with the notch showing up more easily, along with some other faint dark detail. The H-Beta filter also showed the nebulosity, but not as well as in the OIII or the NPB filter.

The NexStar only showed much brightness along the middle of the nebula, although the "notch" could still be seen, and in this case, the NPB provided a better view. The whole area is worth panning around through, as the star fields are quite rich.

NGC 7635, the "Bubble" nebula was my next destination for the NexStar 9.25. Surprisingly, at 59x I could see the nebula without a filter as a small faint oval puff around and just north of a star which was maybe 9th magnitude or so (a 7th magnitude star lay about five or six arc minutes to the southwest). The NPB filter made it larger and revealed a fainter outer haze that extended a little to the north and south, as well as showing the "V" shaped patch just north of the central star. Indeed, with the NPB filter, the "V" shaped patch was fully imbedded in the fainter outer haze. There was no hint of the "bubble" shape, so as I usually do, I tried a little more power. At 98x with the NPB filter, there was visibly more detail. The main hazy patch around the 9th magnitude star was more oval, and the eastern end showed a bit of a faint curved "hook" on it, curving towards the south. The other end of the oval appeared somewhat pointed, but was so diffuse that is was difficult to discern much in the way of any curvature to it. The "V" shaped patch appeared faintly and perhaps a bit on the lumpy side, but not much other detail was apparent.

NGC 281 "the Pacman" Nebula, was shown well in the 100mm f/6, but other than a quick look, I switched to the NexStar to get a better look at it.

With the NPB filter and 59x, it was a large wonderfully detailed nebula in a somewhat sparse open cluster with a 9th magnitude central star. It has an oval section around the star and a large broad hook-like section extending from the eastern end down south and southwest, giving the impression of Pacman's "mouth". There is a lot of dark patch and lane-like detail in this object, and the filter really helped bring it out. However, for the greatest contrast, I used the OIII filter to see the multiple fine short dark streaks that seem to run out from the edges of the "mouth", although overall, I still liked the view in the NPB probably the best.

I hit an interesting but faint planetary nebula IC 289 was not far from the "Baby" nebula, and was visible in the NexStar 9.25 as a small very dim disk next to an 11th magnitude star, although it was fairly obvious with the NPB

filter. At 169x, it showed a clear dim disk, and at 235x showed possible hints of annularity but no central star.

Over in Camelopardalis, I hit the somewhat easier and larger planetary nebula NGC 1501. This was definitely a winner, as even 59x showed its nice dim disk with a slightly darker middle. At 235x, it was very pretty as a nice annular form with noticeable patchyness in the ring plus a faintly glowing interior and a faint but obvious central star.

I had a good long look at M76, and with the NPB filter, the "little dumbell" nebula also looked just a bit like a barred spiral galaxy! The "peanut" showed very faint hints of tiny very faint arcs running off of the ends, and higher power really showed them fairly well. At 169x, I could see a tiny triangular patch just off the southern end, as well as hints of almost loop-like arcs on both sides of the dumbell.

I moved the scope down way south into Fornax for the big planetary NGC 1360. This is a real monster, as it is over seven arc minutes long by five wide. It was visible without a filter as a good size dim oval glow, but the NPB filter really brought it out smartly with a nice increase in contrast. The interior showed a little vague dark detail almost like some diffuse dimmer arcs, and the 11th magnitude central star stood out well. This one is a bit of a 'bone' to pick between me and the producers of Sky Atlas 2000.0, as it is left off of the 2nd edition of the atlas for some reason.

With Andromeda getting finally over to the western half of the sky, I went back for a quick look at the bright planetary nebula NGC 7662 and ended up really going to town on it. Low power immediately showed the objects bluish-green disk, but high power was where the action really was! I had the scope running from as much as 480x to as high as 744x and had a ball looking at it! The fainter more circular outer disk had a very bright patchy somewhat oval ring superimposed on it, and together, they made quite a sight. I thought I may have seen the central star at times, although the seeing was rather variable.

I went back down south to check out a couple of galaxies. NGC 1398 in Fornax appeared as a small faint oval area of haze with a noticeably brighter core region. At 168x, I could see a star-like nucleus in the brighter core and the core appeared somewhat elongated perpendicular to the long axis of the outer haze, and seemed as if it was made of two patches. The outer portions were rather diffuse, although there may have been some vague brightening towards the edge. The next galaxy I checked out was nearby NGC 1385, which was somewhat fainter than NGC 1398. It was oval in shape and higher power showed hints of possibly a bit of patchyness, but other than the slightly brighter middle, it didn't show much detail. I also looked at NGC 1371, and at 59x, it showed as a faint oval fuzzy patch with a gradually brighter middle. 168x did show a slightly brighter oval core with a central pip or faint star-like nucleus but not much else.

I had a brief look at M42 and the Horsehead with the NPB filter and was stunned at the amount of detail visible. I could have spent hours just on M42 alone, as there was an incredible amount of fine filamentary detail visible off of the northern and northeastern edges. The southern loop was visible without filters, but with the NPB was incredibly obvious. The Horsehead was instantly visible with averted vision at 59x in the NPB filter, and I could even see just a bit of the "snout". The H-Beta filter provided more contrast, but the NPB filter clearly held its own here. Indeed, I was just able to see the faint band of IC 434 and the tiny dark "notch" of the Horsehead itself using only my 100mm f/6 refractor at 25x using the H-Beta. I panned over Barnard's Loop in the 100mm f/6 at 11x with the H-Beta and could follow its faint band for many degrees without a lot of trouble. I spent a little time with the refractor on the "Seagull" nebula complex IC 2177. Here, the H-Beta filter provided the best overall view, showing it as a very dim irregular ribbon of light with another faint puff around a 7th magnitude star just west of it. It was nearly as nice in the NPB filter and not too bad in the OIII.

For a final target, I once again tried "the Flaming Star" nebula IC 405 in Auriga. This time, with the object quite high in the sky and with the H-Beta filter, I did see a very faint but large glow with a broad faint extension off the western side, very much similar to the outline form shown on the plot of the object in MEGASTAR. There was a little dew forming on the corrector plate of the NexStar, so at that point (and with Venus starting to annoy me in the east), I decided to pack it in.

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.

The Prairie Astronomer
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Next PAC Meeting
December 26, 2007
7:30 PM