NORTH HOUSTON ASTRONOMY CLUB

North Star Newsletter

April 2011 Volume XI No. 4

NHAC General Meeting

March 25, 2011

Novice Program

"Messier Marathon (4/2/2011), and Log Books"

By Aaron Clevenson

6:30 - 7:15 in CLA 221, The Cosmic Forum

Main Presentation

Beginning at 7:30 in CLA Teaching Theater

Featuring:

- NHAC news and announcements
- "What's Up Doc?" by Aaron Clevenson
- "Professor Comet Report" by Justin McCollum

Featured Speaker

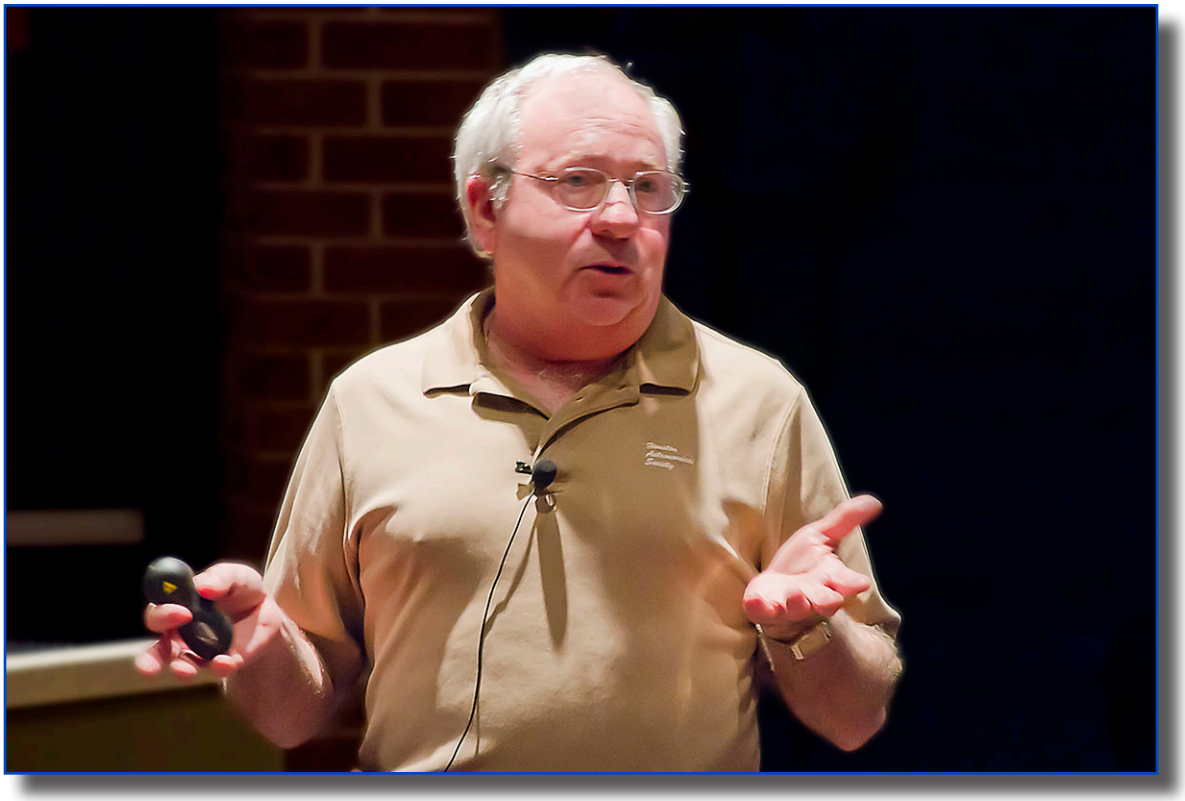
Steve Grimsley

"Astrophotography - Plain and Simple"

Inside This Issue

The Deadline for submissions for the May 2011 newsletter is April 15, 2011.

Thank You!



Steve Goldberg, a well-known Texas amateur astronomer, explained the rare opportunities for dark-sky observing in West Texas at the Texas Star Party (TSP) during his presentation at the February general meeting.

2011 NHAC Officers

2011 Elected Officers

President
Bruce Pollard
president@astronomyclub.org

Vice President
Aaron Clevenson
vicepresident@astronomyclub.org

Secretary
Alan Wilson
secretary@astronomyclub.org

Treasurer
Mary Moore
treasurer@astronomyclub.org

Editor
Jamie Martin
newsletter@astronomyclub.org

Webmaster
Ed Knapton
webmaster@astronomyclub.org

ALCOR
Jim Barbasso
alcor@astronomyclub.org

Observation Committee Chairperson
Frank Martens
observation@astronomyclub.org

Membership Committee Chairperson
Bruce Pollard/Stuart Davenport
membership@astronomyclub.org

Program Committee Chairperson
George Marsden
program@astronomyclub.org

"It is the chiefest point of happiness that a man is willing to be what he is."
Desiderius Erasmus (1466 - 1536)

NHAC is a proud member of:

Night Sky Network NASA

Astronomical League

ida International Dark-Sky Association

News and Tidbits

Special Club Rate Magazine Subscriptions

Club rates for personal subscriptions to ASTRONOMY and SKY & TELESCOPE magazines save about 25% over the normal subscription costs. Each magazine has its own procedure to subscribe based upon initiating the order through the club treasurer.

For ASTRONOMY magazine, write your check to NHAC (or pay in cash) for $34 (or $60 for 2 years). The Treasurer then validates your membership by writing a club check for the same amount to the magazine and sending them your address. Renewals must also be processed through the club. Please save your renewal documents for this process.

For SKY & TELESCOPE, pay the club $33 (or $32.95 if by check). As above, we write a club check to validate your membership and start your subscription. SKY & TELESCOPE renewals are processed directly by the subscriber.

Be sure to include a clearly printed name and address sheet for any new subscriptions

Upcoming Star Parties

The **Texas Star Party** will be held May 29 - June 5, 2011 at the Prude Ranch near Fort Davis, Texas. For more information and registration go to their website at: **www.texasstarparty.org**

The **Okie-Tex Star Party** will be held September 24 - October 2, 2011 at Camp Billy Joe in the Black Mesa Area of Oklahoma. For more informaton and registration go to their website at: **www. okie-tex.com/index.php**

The 28th Annual **Eldorado Star Party** will be held October 24 - 30, 2011 at the X Bar Ranch Nature Retreat in Eldorado, Texas. For more information and registration go to their website at **www.texasstarparty.org/eldorado.html**

Remember to check out the North Houston Astronomy Club Facebook and Twitter pages:

http://www.facebook.com/NorthHoustonAstronomyClub

http://www.twitter.com/NHAC_Info

Logbooks for Lazy Observers

by Sue Wheatley

There is nothing worse than writing down information about an object only to have to transfer it all later onto a master log sheet, which is what you have to submit for any Astronomical League award.

You may think, "Oh, I won't write anything down. I'll just look at M38." But in the future you may say, "I know I've seen all the Messiers. Why didn't I write them down so I could at least get a Messier certificate and pin for all that work?" Do you really want to observe M38 again just to get the required information?

There are logbooks, spreadsheets, 3-ring binders, etc. for recording observations. These all work, if you don't mind copying things over and over. I don't like writer's cramp, and I don't want to lug a computer into the field for a spreadsheet.

I suggest a pack of 3x5 cards. For each object you observe, jot down the object's name on the top line of the card, and any other names it may have (some of them have 3 or 4 names. Ugh!) On the other lines write: site, date, time, constellation, RA and Dec, magnification, moon phase, a brief description, binocs or scope used, and eyepiece. A little circular sketch is a good idea because some of the newer clubs want sketches as well as descriptions. Sketches can be a couple of stars... a lopsided smudge... nothing fancy. Descriptions are exactly what you see, not what you wish you had seen. For one Herschel object, I wrote: "Looks like a crooked Q-tip" and no one complained.

Magnification is a requirement for almost all awards. Look at your scope. Somewhere, usually on the mirror housing, it will say f/ something; for example, f/1900 mm. Divide 1900 by the number on your eyepiece (32mm for example) and you get about 60x magnification.

I don't find magnification of much use myself. I am more interested in the field of view. For example, if I am looking for an open cluster that is 15' across, and I know my eyepiece's field is 50' across, then any open cluster that fills half my eyepiece is the wrong cluster. To find an eyepiece's field of view, type telescope "field of view" calculator into Google, and choose any website that calculates this for you.

Warning: Many sites seem to say "degree" when they mean "minute". So you will get an f/1900 mm scope with a 32mm eyepiece as 52 degrees instead of 52 minutes.

Moon phase is becoming a requirement in the newer clubs. Personally, I can't figure out why. Write it down anyway. I use www.Google.com and type in "Current Moon Phases", which brings up Google's own moon page, an image, and some words like "Waning Crescent," which is all the Astronomical League wants anyway. By using 3x5 cards, you can arrange them any way you want. If you decide to work on your Messier certificate, you can pull those cards, xerox them, and you are done. (If you don't put any information on the back of the 3x5, you won't have to xerox the back of the card). No need to rewrite anything! Yea!

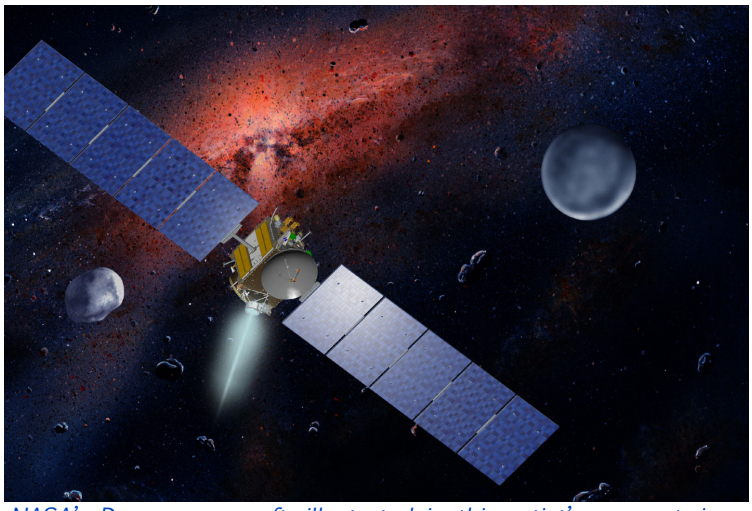
With the 3x5 card method, one observation can fulfill several club requirements. M107 is a Messier object, but it is also a Herschel 400 object, and a Globular Cluster object, but those two Clubs call it NGC 6171 (that's why you put all the object's aliases on your 3x5 card). One observation; fulfill three observing club requirements!

Even if you decide never to observe a full list of objects for an award, the cards will cut down the chances of looking at the same object over and over. And there are too many different objects in the sky to waste your time staring at objects you have already seen.

Clarification of a confusing word used by the Astronomical League. Club means Award." You got a Messier Club certificate" means, "You got a Messier Award."

Dawn Opens its Eyes, Checks its Instruments

After a hibernation of about six months, the framing cameras on board NASA's Dawn spacecraft have again ventured a look into the stars. The spacecraft also powered up its visible and infrared mapping spectrometer, which investigates surface mineralogy, and the gamma ray and neutron detector, which detects elemental composition. The reactivation prepares the instruments for the May approach and July arrival at Vesta, Dawn's first port of call in the asteroid belt.



NASA's Dawn spacecraft, illustrated in this artist's concept, is propelled by ion engines. Image credit: NASA/JPL

"Last week, we gently 'woke up' Dawn's three science instruments, which typically spend most of their time sleeping during the three-and-a-half-year journey to Vesta," said Robert Mase, Dawn project manager at NASA's Jet Propulsion Laboratory, Pasadena, Calif. "This activity confirms that Dawn is on track for the first close examination of one of the last unexplored worlds of the inner solar system."

The framing camera activities were led by scientists from the Max Planck Institute for Solar System Research in Katlenburg-Lindau, Germany. "The camera system is working flawlessly. The dry run was a complete success," said Andreas Nathues, lead investigator for the framing camera, based at the Institute.

The international team of Dawn scientists and engineers in Germany and the United States spent three days interacting with the camera system, confirming the excellent health of the mechanical and electrical components and updating the software.

In the months to come, the camera system will provide images needed to navigate the spacecraft to its rendezvous with Vesta, and will begin to image the asteroid's surface. These early images on approach will be the start of a campaign to systematically map Vesta's surface in detail and will provide tantalizing clues as to its mineralogical composition. In addition, the framing cameras will search for moons in Vesta's vicinity and look for evidence of past volcanic activity.

The full release on the framing camera from Max Planck is available at: http://www.mps.mpg.de/en/aktuelles/pressenotizen/pressenotiz_20110321.html.

The Dawn mission to Vesta and Ceres is managed by the Jet Propulsion Laboratory, a division of the California Institute of Technology in Pasadena, for NASA's Science Mission Directorate, Washington. The Dawn mission is part of the Discovery Program managed by NASA's Marshall Space Flight Center in Huntsville, Ala. UCLA is responsible for overall Dawn mission science. The framing cameras have been developed and built under the leadership of the Max Planck Institute for Solar System Research, Katlenburg-Lindau, Germany, with significant contributions by DLR German Aerospace Center, Institute of Planetary Research, Berlin, and in coordination with the Institute of Computer and Communication Network Engineering, Braunschweig. The framing camera project is funded by the Max Planck Society, DLR, and NASA. The visible and infrared mapping spectrometer was provided by the Italian Space Agency and is operated by Italy's National Institute for Astrophysics in collaboration with Galileo Avionica, where it was built. The gamma ray and neutron detector was built by Los Alamos National Laboratory and is operated by the Planetary Science Institute, Tucson, Ariz.

NHAC Monthly Star Parties

Come on out for Socializing and Stargazing!

Mark these dates on your calendar for future NHAC Star Parties at The White Eagle Lodge:

April 2, 2011
April 30, 2011
May 7, 2011
June 4, 2011
July 2, 2011
July 30, 2011
August 27, 2011
September 24, 2011
October 22, 2011
November 26, 2011
December 17, 2011

**These dates are tentative and subject to change.*

Rules and Directions are available online at www.astronomyclub.org

Elementary My Dear Watson!

By: Aaron Clevenson, VP Education

There are a lot of chemical elements out there is the Universe. Naturally occurring ones go from very light Hydrogen (1 proton) up to heavyweight Uranium (92 protons) and possibly a few more. Some are man-made (we are up to 118 protons when I last checked). But (to quote the Beatles regarding Eleanor Rigby), "Where do they all come from?"

Hydrogen and Helium (2 protons) are pretty much everything that was generated in the Big Bang, 13.7 billion years ago. There were trace amounts of Lithium (3 protons) and Beryllium (4 protons) too, but we can pretty much ignore them. Everything else is made in stars. In the words of Carl Sagan, "We are the stuff of stars."

Stars, once they reach the main sequence, will sit there and quietly cook their hydrogen into helium. This is nuclear fusion. When they begin to run low on helium, if they are big enough, they will continue to fuse elements into heavier elements. Basically the cores heat up enough for helium atoms to fuse together and also with heavier elements. In this way, a large star can cook elements up to Iron (26 protons) and a little bit of Nickel (28 protons).

During the relatively short time that these heavier elements are being made and the core of the star is very hot and under high pressure, there is another process called Slow Neutron Capture that happens in the core of the star. During this process neutrons are added to atoms, and elements are formed up to Bismuth (83 protons).

Then during a large star's climactic conclusion as a Supernova, another process occurs called Rapid Neutron Capture. This is the time when more neutrons are added to atoms and we create elements all the way up to Uranium (92 protons). Also during this time particles and atoms are flying around with so much energy that they sometimes collide and produce the other smaller elements that we see. These elements are not part of the star's normal fusion process.

Everything we see (and don't see) in our daily lives is made up of these elements. Without Supernovae to spread these elements, we would have nothing but stars and gas giant planets. The Universe would be a rather boring place. But of course, we would not be here to see it either.

If you have any questions that you would like answered, please send me an email, to: aaron@clevenson.org and I'll see what I can do.

The Administaff Observatory at Humble ISD

The Administaff Observatory at Humble ISD, 2505 S. Houston Ave., Humble, TX 77396 281-641-STAR

Upcoming Public Nights at the Observatory*

April 8, 2011 @ 7:45 pm
May 13, 2011 @ 8:15 pm
June 10, 2011 @ 8:30 pm

**Dates and times are subject to change.*

Refreshment Committee Chairman Needed

Your hungry club members need YOU! Yes, YOU!!

Have you been thinking about getting more involved with the club, but weren't quite sure what to do? Well, this would be a great way to help out! We are looking for someone to be in charge of the meeting refreshments each month.

Your job would be to see that the refreshments are ordered, picked up and delivered to the meeting each month. They would need to be set up prior to the meeting and taken down after the meeting. You would also need to see that all of the necessary utensils were kept on hand.

As Chairman, you may choose to delegate this monthly, or handle it yourself with a few bodyguards. :)

Position: Availabile immediately

Salary: We will pay you on Tuesday for the hamburger today

Satisfaction: Priceless

Contact board@astronomy.club.org

We need YOU!!

Step on up!!

About NHAC

The North Houston Astronomy Club (NHAC), was formed for educational and scientific purposes, for people of all races, creeds, ethnic backgrounds and sex, for the primary purpose of developing and implementing programs designed to increase the awareness and knowledge of astronomy, especially for those living near the north side of Houston Texas.

NHAC is a non-profit organization dedicated to providing the opportunity for all individuals to pursue the science of astronomy, by observing in a dark-sky site, learning the latest technology, and sharing their knowledge and experience. Thus, our "Observe-Learn-Share" motto.

North Houston Astronomy Club is Sponsored by:

LONE STAR COLLEGE KINGWOOD

Membership Benefits

- Loaner telescopes
- Borrow from the NHAC "Library"
- Observe from Dark Sky Observing Sites
- Learn from experienced amateur astronomers
- Share your knowledge at club hosted picnics and star parties
- Discount magazine subscriptions (contact our Treasurer)
- Includes membership in the Astronomical League
- The quarterly Astronomical League magazine "Reflector"
- Eligibility for NHAC Executive Board

www.astronomyclub.org
www.nhac.info

North Houston Astronomy Club

c/o Bill Leach
Physics Dept.
Lone Star College - Kingwood
20000 Kingwood Drive
Kingwood, Texas 77339
www.astronomyclub.org
www.nhac.info

Observe - Learn - Share