

## North Star Newsletter

May 2011

Volume XI No. 5

### NHAC General Meeting

April 22, 2011

#### NOVICE PROGRAM

“Equipment - Binoculars and Telescopes“

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
- Show and Tell



#### FEATURED SPEAKER

Aaron Clevenson

“Backyard Radio Astronomy”

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

☆☆

# THANK YOU!

☆☆



Steve Grimsley gave a very interesting and comprehensive presentation on astrophotography at the March General Meeting. Steve, a geophysicist by vocation, is an avid astronomer and photographer by avocation. He shared with the club his experience in using a digital SLR camera with his refractor telescopes to produce a great variety of deep sky images. Thank you Steve!!





# 2011 NHAC OFFICERS



## 2011 Elected Officers

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“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:





## NEW MEMBERS



### Welcome New Members!

We would like to extend a warm welcome to all new members that have joined in 2011. We are currently working on a new and updated 'New Member Folder' and will have to those you in the not too distant future. If you haven't come to a star party yet, we hope you will soon. It's a great way to get to know each other as well as do some good observing.

#### Welcome to:

- Buddy Curtsinger
- Bill Edwards
- Mark, Christine, Meagan, Michelle and Mark II Fondren
- Clark and Dylan Gwozdecki
- Joshua Hobough
- Michael Kramer
- David Lambert
- Eric and Gay Lynn Ruppert
- Bill and Fallie Shepard

If you have joined this year and your name is not on this list, please contact Mary Moore by email at [treasurer@astronomyclub.org](mailto:treasurer@astronomyclub.org).

## News and Tidbits

### Got a Favorite Piece of Equipment?

If you have a favorite piece of equipment, a novel way of solving a problem, or a shortcut for making observing easier, bring it to the monthly meeting for the “**Show-And-Tell**” segment. Each presentation should take about 3 - 5 minutes and all ideas are welcome. Please submit your idea to Program Committee Chair, George Marsden at [program@astronomyclub.org](mailto:program@astronomyclub.org) before the next meeting so that he can reserve a spot for your presentation.

### 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](http://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 information and registration go to their website at: [www.okie-tex.com/index.php](http://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](http://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](http://www.twitter.com/NHAC_Info)

# What Constellations Are Up Tonight?

by Sue Wheatley

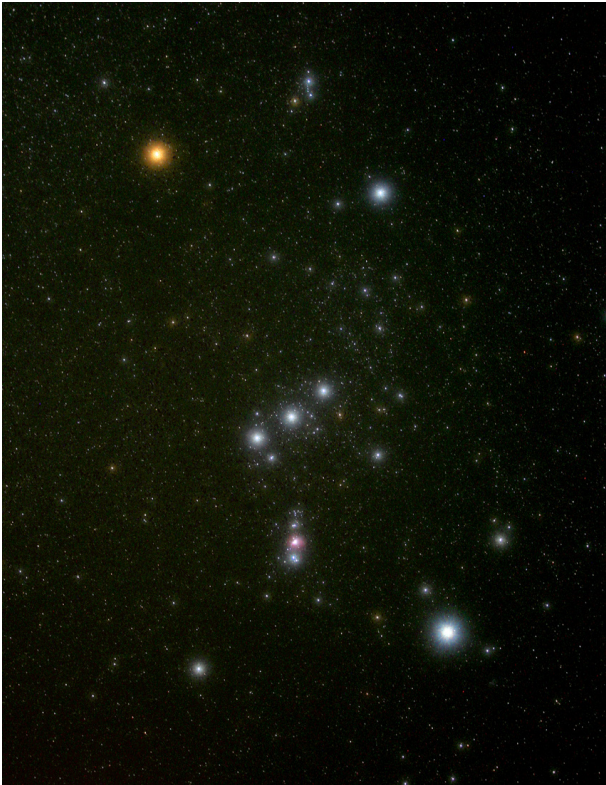


Image credit: <http://apod.nasa.gov>

It has been cloudy for a month. The one good observing night was the night you had a birthday party to go to. So while you were gone, the constellations were chugging along, and now they are in a different part of the sky than when you last looked.

But you want to go out observing tomorrow, and you don't want to waste time trying to figure out what to look at. Time for the **"Cheat Sheet"** (see *page 8*).

Every object has an address, just like a street address. The streets are laid out in nice east-west and north-south lines. Astronomers call the north-south lines "Right Ascension" (R.A.) and the east-west lines "Declination" (Dec). So we can say, the star Sirius is at 06 45 R.A. and -16 43 Dec. This is like saying, "Sirius lives at house -16 43 on 06 45th street."

When we are trying to decide what is visible, we only have to worry about the R.A. because the R.A streets come up in the east, move over our heads and set in the west, one after the other. Near Houston, we aren't going to see many objects between -40 and -90 Dec.

For what addresses will be visible, find the month, the approximate date and time, and let the Cheat Sheet (*page 8*) do the rest.

If R.A. 13 is overhead, you certainly can see west as far as R.A. 11, and as far east as R.A. 15 ... maybe further if you don't have trees. Remember, we are talking about Central Standard Time.

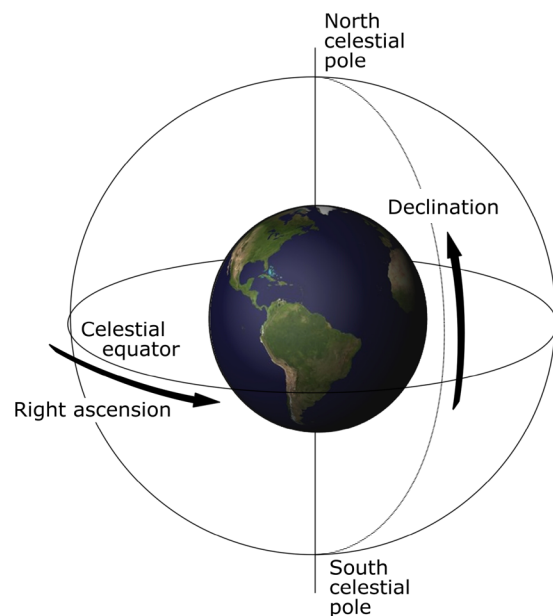


Image credit: <http://www.lcogt.net>

*continued on page 8*

## WHAT CONSTELLATIONS ARE UP TONIGHT?

*continued from page 7*

This Cheat Sheet isn't perfect, but it beats going outside and looking for something in Orion (at R.A. 06) and discovering it has already set and now Scorpius (R.A. 16) is overhead.

## CHEAT SHEET

### What Right Ascension (R.A.) Is Overhead Tonight?

DATE	8:00 PM	MIDNIGHT	4:00 AM
Jan 5	3	7	11
Jan 20	4	8	12
Feb 4	5	9	13
Feb 20	6	10	14
Mar 7	7	11	15
Mar 22	8	12	16
Apr 7	9	13	17
Apr 22	10	14	18
May 7	11	15	19
May 22	12	16	20
Jun 7	13	17	21
Jun 22	14	18	22
Jul 7	15	19	23
Jul 22	16	20	0
Aug 7	17	21	1
Aug 22	18	22	2
Sep 7	19	23	3
Sep 21	20	0	4
Oct 6	21	1	5
Oct 21	22	2	6
Nov 6	23	3	7
Nov 21	0	4	8
Dec 6	1	5	9
Dec 21	2	6	10

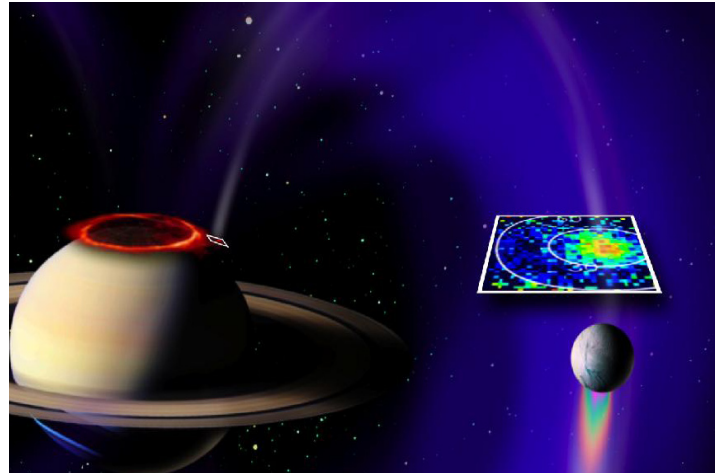


# Cassini Sees Saturn Electric Link With Enceladus

by Jia-Rui Cook and Dwayne Brown

NASA is releasing the first images and sounds of an electrical connection between Saturn and one of its moons, Enceladus. The data collected by the agency's Cassini spacecraft enable scientists to improve their understanding of the complex web of interaction between the planet and its numerous moons. The results of the data analysis are published in the journals *Nature*

Scientists previously theorized an electrical circuit should exist at Saturn. After analyzing data that Cassini collected in 2008, scientists saw a glowing patch of ultraviolet light emissions near Saturn's north pole that marked the presence of a circuit, even though the moon is 240,000 kilometers (150,000 miles) away from the planet.



*Image Credit: NASA/JPL/JHUAPL/University of Colorado/Central Arizona College/SSI*

The patch occurs at the end of a magnetic field line connecting Saturn and its moon Enceladus. The area, known as an auroral footprint, is the spot where energetic electrons dive into the planet's atmosphere, following magnetic field lines that arc between the planet's north and south polar regions.

"The footprint discovery at Saturn is one of the most important fields and particle revelations from Cassini and ultimately may help us understand Saturn's strange magnetic field," said Marcia Burton, a Cassini fields and particles scientist at NASA's Jet Propulsion Laboratory in Pasadena, Calif. "It gives us the first visual connection between Saturn and one of its moons."

The auroral footprint measures approximately 1,200 kilometers (750 miles) by less than 400 kilometers (250 miles), covering an area comparable to California or Sweden. At its brightest, the footprint shone with an ultraviolet light intensity far less than Saturn's polar auroral rings, but comparable to the faintest aurora visible at Earth without a telescope in the visible light spectrum. Scientists have not found a matching footprint at the southern end of the magnetic field line. Jupiter's active moon Io creates glowing footprints near Jupiter's north and south poles, so scientists suspected there was an analogous electrical connection between Saturn and Enceladus. It is the only known active moon in the Saturn system with jets spraying water vapor and organic particles into space. For years, scientists used space telescopes to search Saturn's poles for footprints, but they found none.

"Cassini fields and particles instruments found particle beams aligned with Saturn's magnetic field near Enceladus, and scientists started asking if we could see an expected ultraviolet spot at the end of the magnetic field line on Saturn," said Wayne Pryor, a lead author of the *Nature* study released today, and Cassini co-investigator at Central Arizona College in Coolidge, Ariz. "We were delighted to find the glow close to the 'bull's-eye' at the center of our target."

In 2008, Cassini detected a beam of energetic protons near Enceladus aligned with the magnetic field and field-aligned electron beams. A team of scientists analyzed the data and concluded the electron beams had sufficient energy flux to generate a detectable level of auroral emission at Saturn. A few weeks later, Cassini captured images of an auroral footprint in Saturn's northern hemisphere. In 2009, a group of Cassini scientists led by Donald Gurnett at the University of Iowa in Iowa City, detected more complementary signals near Enceladus consistent with currents that travel from the moon to the top of Saturn's atmosphere, including a hiss-like sound from the magnetic connection. That paper was published in March in *Geophysical Research Letters*.

The water cloud above the Enceladus jets produces a massive, ionized "plasma" cloud through its interactions with the magnetic bubble around Saturn. This cloud disturbs the magnetic field lines. The footprint appears to flicker in these new data, so the rate at which Enceladus is spewing particles may vary.

"The new data are adding fuel to the fire of some long-standing debates about this active little moon," said Abigail Rymer, the other lead author of the *Nature* study and a Cassini team scientist based at the Johns Hopkins University Applied Physics Laboratory in Laurel, Md. "Scientists have been wondering whether the venting rate is variable, and these new data suggest that it is."

# NHAC Monthly Star Parties

## Come on out for Socializing and Stargazing!

April 30th and May 7th are two consecutive weekend opportunities for you to come out to our dark site, mingle with other club members, and do some observing! Those of you who are participating in the Novice classes that are held before each General Meeting should bring your April and May Observation Lists - this is a great way to find your missing constellations.

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

**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](http://www.astronomyclub.org)



# What is your Meteor IQ?

*By: Aaron Clevenson, VP Education*

These are 10 questions to see what you know about meteors? Before you peek at the answers, see how many you know...



## Meteors, Meteorites, and Meteoroids...

1. What is the name of this object when it is sitting on the ground?
2. What is the name of this object when it is flying through interplanetary space?
3. What is the name of this object when it is flying through the atmosphere?
4. What is the typical size of these objects that we see flying through the atmosphere?
5. These objects are just small asteroids. What is the smallest size of an asteroid?
6. How big does one of these objects need to be to make it to the ground?
7. What is a radiant of a Meteor Shower?
8. What is the source of the material that we see in most major Meteor Showers?
9. What do we call large super-bright Meteors?
10. Is there any record of someone being hit and killed by a meteor?

## Answers to the Meteor IQ Test:

1. A Meteorite is in your site. When you can hold it in your hand, it is called a meteorite.
2. Meteoroids are in the void. When in space, they are called Meteoroids.
3. Meteors – soar. When we see them flying through the atmosphere they are called Meteors.
4. The majority of Meteors that we see are objects the size of a grain of sand.
5. Anything below 100 meters (yes, the size of a football field) is called a Meteoroid.
6. To make it to the ground, a Meteoroid must start its travels through our atmosphere bigger than the size of a marble.
7. The Radiant for a Meteor Shower is the point in the sky from which all of the Meteors seem to originate. This is an optical illusion. They are not really originating there.
8. Most major Meteor Showers are dust left in the path of passing comets. When the Earth flies through this dust, we see it as a Meteor Shower.
9. Large, super-bright Meteors are called Bolides. They are often also referred to as Fireballs
10. There is no record of anybody being killed by a meteor. A woman was hit on the leg, and a cow was killed by one.

# The Administaff/Insperity Observatory at Humble ISD



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

## Upcoming Public Nights at the Observatory\*

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:* Available immediately

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

*Satisfaction:* Priceless

Contact [board@astronomy.club.org](mailto: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:*



### 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](http://www.astronomyclub.org)  
[www.nhac.info](http://www.nhac.info)

## North Houston Astronomy Club

c/o Bill Leach

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[www.astronomyclub.org](http://www.astronomyclub.org)

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Observe - Learn - Share

