

GuideStar

February, 2008

At the February 1 meeting...

Recent Missions and Results in Solar Physics

Gary Kilper

Gary is a 4th year graduate student at Rice University.

The closest star to us is the Sun. If we understand how the Sun works we can understand a lot about how stars work. Not only that, our Sun is the source of heat, light, and energy for all of us on planet Earth.



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HAS Web Page:

<http://www.AstronomyHouston.org>

See the *GuideStar's* Monthly Calendar of Events to confirm dates and times of all events for the month, and check the Web Page for any last minute changes.

Schedule of meeting activities:

All meetings are at the University of Houston Science and Research building. See the inside back cover for a map to the location.

Novice meeting: 7:00 p.m.
"Catching very thin moons"
Don Pearce

Site orientation meeting: 7:00 p.m.
Classroom 121

General meeting: 8:00 p.m.
Room 117

See last page for a map
and more information.

The Houston Astronomical Society

The Houston Astronomical Society is a non-profit corporation organized under section 501 (C) 3 of the Internal Revenue Code. The Society was formed for education and scientific purposes. All contributions and gifts are deductible for federal income tax purposes. General membership meetings are open to the public and attendance is encouraged.

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Don Pearce.....	713-432-0734
John Missavage.....	
Clayton Jeter	
Bram Weisman.....	

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Program.....	Brian Cudnik.....
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Telescope	Bram Weisman.....
Welcoming.....	Paul & Kay McCallum
	Open

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Librarian.....	Peggy Gilchrist..... 281-443-8773
Logo Mds Sales.....	Judy Dye
Long Range Plan.....	Bill Leach..... 281-893-4057
Parliamentarian	Kirk Kendrick
Publ. Star Party	Richard Nugent
Rice U. Coord.....	Matt Delevoryas
Schedule Obs'v'ty	Steve Goldberg
Texas Star Pty.....	Steve Goldberg

Special Interest Groups & Help Committees

These are now listed on the inside of GuideStar (not every month). See the Table of Contents

Advisors

Dr. Reginald DuFour, Rice Univ.
Dr. Lawrence Pinsky, U. of H.
Dr. Lawrence Armendarez, U. of St. Thomas

Dues and Membership Information

Annual Dues:Regular	\$36.00
Associate	\$6.00
Sustaining	\$50.00
Student	\$12.00
Honorary	None

All members have the right to participate in Society functions and to use the Observatory Site. Regular and Student Members receive a subscription to *The Reflector*. Regular, Student, and Honorary Members receive *The GuideStar*. Associate Members, immediate family members of a Regular Member, have all membership rights, but do not receive publications. Sustaining members have the same rights as regular members with the additional dues treated as a donation to the Society. *Sky & Telescope* and *Astronomy* magazines are available to members at a discount.

Membership Application: Send funds to address shown on outside cover of GuideStar. Attention - Treasurer, along with the following information: Name, Address, Phone Number, Special Interests in Astronomy, Do you own a Telescope? (If so, what kind?), and where you first heard of H.A.S.

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Special Interest Group Listing

Any member who wants specific information on a SIG listed below may call the listed individual. Also, see the "Ad Hoc Committee Chairpersons" on the inside front cover and the "Special Help Volunteers" listing (not in every issue).

Advanced.....	Bill Leach..... 281-893-4057
Comets	Don Pearce
Lunar & Planetary.....	John Blubaugh

Other Meetings...

Fort Bend Astronomy Club meets the third Friday of the month at 8:00 p.m. at the First Colony conference Center. Novice meeting begins at 7:00, regular meeting begins at 8:00. Web site: <http://www.fbac.org>

Johnson Space Center Astronomical Society meets in the the Lunar and Planetary Institute on the 2nd Friday of each month. Web site: <http://www.ghg.net/cbr/jscas/>

North Houston Astronomy Club meets at 7:30 p.m. on the 4th Friday of each month in the Teaching Theatre of the Student Center at Kingwood College. Call 281-312-1650 or E-mail bill.leach@nhmccd.edu. Web site: www.astronomyclub.org

February/March Calendar:



Photo by Scott Mitchell

Date	Time	Event	Photo by Scott Mitchell
<hr/>			
February			
1	6:00 a.m.	Venus 0.59deg. North of Jupiter	
	7:00 p.m.	HAS Novice Meeting, U of H	
	8:00 p.m.	HAS General Meeting, U of H	
2		Prime Night, Columbus Observing Site	
6	9:44 p.m.	New Moon	
8		Alpha Centaurid Meteors Peak	
13	9:33 p.m.	Moon at First Quarter	
20	9:29 p.m.	Full Moon	
		Total lunar Eclipse (evening)	
24	3:00 a.m.	Saturn at Opposition	
27	3:00 a.m.	Mercury 1.1deg North-Northwest of Venus	
28	8:19 p.m.	Moon at Last Quarter	

March

5	2:12-3:25p.m.	Moon occults Venus in daylight (times approximate)
7	11:14 a.m.	New Moon
	7:00 p.m.	HAS Novice Meeting, U of H
	8:00 p.m.	HAS General Meeting, U of H
8		Prime Night, Columbus Observing Site
9	2:00 a.m.	Daylight Savings Time Ends (move clocks forward 1 hour)
14	5:45 a.m.	Moon at First Quarter
19	11:48 p.m.	Spring or Vernal Equinox
21	1:39 p.m.	Full Moon
27	7:30 p.m.	HAS Board Meeting, Houston Chronicle Building
29	4:48 p.m.	Moon at Last Quarter Star Party at Columbus Observing Site

Send calendar events to Doug McCormick

*GuideStar deadline
for the March
issue
is February 15*

*Check the web site:
www.astronomyhouston.org
Webmaster: Kay McCallum
KayMcCallum@MccLibrary.net*

The Houston Astronomical Society Web page has information on the society, its resources, and meeting information.

Want your astronomy work and name on the Internet for the whole world to see? Have some neat equipment? Pictures in film, CCD, hand drawings or video format are all welcome on the page. Do you have an idea to improve the page? I'm listening. Send me Email at KayMcCallum@MccLibrary.net.

Publicity Suggestion Box

I welcome any suggestions that any member has to offer. It doesn't matter how trivial you think your idea may be. All input will be reviewed and welcomed.

Let's grow.

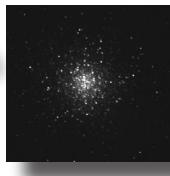
Please drop me a note at the following address.

it.jdm0@yahoo.com

John Missavage- HAS Publicity Chair

Observations... of the editor

by Bill Pellerin, GuideStar Editor



Almost....

In addition to this item every month, I write the 'Shallow Sky Object of the Month' item. About mid month I start thinking about what object I can write about for the next *GuideStar*. This month, I thought about it for a while and came up with 'Castor' -- a very nice double star in Gemini.

I have access to the old *GuideStar* issues on my computer or on the HAS site, but I had not been keeping a list of the 'Shallow Sky' objects that I've already written about, and I decided that I ought to make a list to assure that I don't duplicate any objects. Guess what; if you look in the May, 2007 issue, your find that my 'Shallow Sky' object is -- Castor. Oops. I can't do *that* one again. So, we'll look at the Hyades cluster this month.

New Books..

I got a new book called ***Understanding Variable Stars*** by John R. Percy. The book, written by a college professor at the University of Toronto, represents something beyond a beginner's introduction to the subject of variable stars. If you're really, really, interested in this subject, the book will take you as far down the path of understanding as you'd care to go. On page xx, in the Preface, the author gives credit to our member Thomas R. Williams for reading the book's content and providing 'useful comments'.

Another new book that I've almost finished is called ***The World Without Us***, by Alan Weisman. My interest in this book was peaked when Time Magazine picked it as its non-fiction book of the year. The subject matter is intriguing. It is a speculation (sometimes called a 'thought experiment') about what would happen to the Earth if humans were to disappear at once. There is a discussion of Houston and the Gulf Coast that begins on page 134 and describes what would happen to the petrochemical plants nearby without the constant care of humans.

The book is fascinating, in general, but I found some of the detailed descriptions of various flora and fauna incomprehensible. Without a field guide to such things the significance of the animals and plants the author describes is lost on me. If you can get through all of this, you'll find some very interesting discussions about technology, buildings, and other human-made infrastructure that are worth your trouble. Don't worry, though. The writing is intended for a general audience and you'll always get the point that the author wants to make even if you don't understand the details.

The Texas Star Party

Is it too early to begin planning for the 2008 Texas Star Party. No, it isn't! The TSP this year will be in June (see www.texasstarparty.org for details), and is always a lot of fun. Last year wasn't a good year for observing, and we still had fun. This year we should plan for clear

skies every night. I always go to the TSP with the following in mind:

- Stay up late enough to see the Milky Way high overhead. This year's TSP is later in the year, so the Milky Way will rise earlier. It's absolutely magnificent. This is (for me) a visual observing event. Objects in the eyepiece look as good as they're ever going to look.
- Complete John Wagoner's observing list. John's list is not intended as a challenge list, it's intended to showcase some outstanding deep sky objects under the superb west Texas skies. I can easily complete the list with my 4" refractor.
- See the latest in astronomy equipment. Last year was a banner year for new stuff -- the new TeleVue Ethos eyepiece, and the new Obsession Ultra Compact. Vendor presentations were added to the agenda last year, and they were *great*.
- Attend astronomy lectures -- there are always great talks at the TSP. This alone, is worth the trip.
- Vendors and the Great Texas Giveaway. With all the latest stuff, at special prices and prizes to give away on Friday and Saturday night.

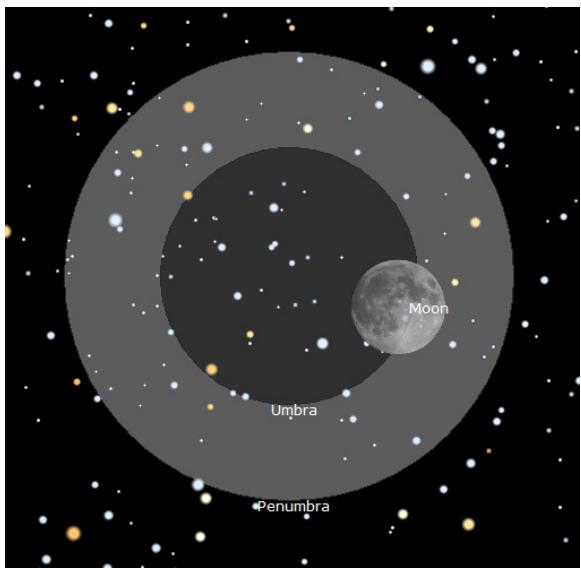
***Until next time...
clear skies and new moons!***

..Bill

billpellerin@sbcglobal.net

February's Total Lunar Eclipse

by Leland A. Dolan



The relationship between the earth's shadow and the moon at 8:30 p.m. on 2/20/08

From TheSky v6

On the evening of Wednesday, February 20th, the Full Moon passes through Earth's shadow (the umbra), which is surrounded by a less-dark shadow, the penumbra. As the Partial Eclipse begins, the Moon is just entering the umbra, although its disk is already immersed in the penumbra. The penumbra varies greatly in brightness from nearly that of the full moon, to what appears to be "pitch black" at the edge of the umbra. As the Partial phase progresses, the umbra sweeps across the entire moon until the moon is fully immersed in the umbra. This marks the beginning of Totality, at which time the Moon appears a "coppery orange" hue. At Maximum Eclipse, the Moon is usually darkest. Then, the previous events take place in reverse order.

The accompanying table lists the Time (in CST), the Phase of the eclipse, the Altitude, and Azimuth of the Moon and the Compass Point. The "compass point" is essentially the same as the azimuth, but easier for non-mathematicians to understand, and thus assist observers in choosing a location to set up their telescopes so that the view is not blocked by buildings, trees, or those obnoxious street lamps. Happy Observing!

Time CST	Phase of Eclipse	Moon's Alt.	Moon's Azi	Compass Point
7:43 PM	Partial Eclipse begins	20°	89°	E
9:01 PM	Total Eclipse begins	36°	100°	E
9:27 PM	Maximum Eclipse	41°	104°	ESE
9:51 PM	Total Eclipse ends	46°	108°	ESE
11:09 PM	Partial Eclipse ends	60°	129°	SE

It's Fiorella!

Last week our Publicity Chairperson, John Missavage mentioned to me about possibly interviewing Fiorella Terenzi. I thought, "Why didn't I think of that?" I quickly contacted her via email and within an hour I had her decisive reply... "Yes, that sounds wonderful". You might be thinking..."I'm not sure if I know her". But you will...



Fiorella Terenzi, a Brevard Community College astrophysicist and astronomy professor, motivates the next generation with "Acoustic Astronomy: Sounds of the Universe!"

Fiorella lectures around the country with her sounds from the Sun, Earth, Saturn, radio galaxies, an X-ray black hole, pulsars, quasars, and big bang. Each celestial object she uses brings to life an acoustical universe. While conducting research at the Computer Audio Research Laboratory at the University California, San Diego, Terenzi developed techniques to convert radio waves from galaxies into songs.

Terenzi's best-selling CD-Rom, "Invisible Universe," combines astronomy and music into an entertaining and enlightening voyage through the stars. She also has recorded a CD "Music from the Galaxies," and wrote the book "Heavenly Knowledge."

"In an effort to inspire and motivate the next generation of scientists, teachers, students and explorers, I am reaching out into the community with an inspirational message about the universe, our place in it, and new and exciting ways to use different senses in the human exploration effort," Terenzi said.

Terenzi comes from a family of speakers. Her husband, Russell Romanella, Director of Space Station Processing Directorate for NASA / Kennedy Space Center, also lectures. Fiorella, an astrophysicist, author and recording artist, has appeared with comedian Sinbad, musician Herbie Hancock, dancer Gregory Hines and TV host Dennis Miller. She has been featured on CNN, the Sci Fi Channel, National Public Radio Talk of the Nation, Weekend Edition and Science Friday, and Newsweek on Air, The Wall Street Journal, People, Time, Glamour, Associated Press and the Los Angeles Reader.

She earned her doctorate in physics from the University of Milan, has studied opera and composition at Conservatory G. Verdi, Corsi Serali and taught mathematics and physics at Liceo Scientifico, Milan.

The Fiorella Terenzi interview...

Clayton: Hi Fiorella, it's a pleasure to have you here for several questions about you and your love of astronomy. First, after reviewing your Bio... you seem to be very busy in your science career. When do you have time to look up at our universe?

Fiorella: I look up to the night sky every single night, even if for a few minutes, just to check the situation or to collect myself; some nights I just want to see the Space Station passing by. I also take my students on to the roof Observatory we have here at Brevard Community College. And every time I feel like looking up to a Universe that is filled with emotional wonder. After all these years doing science, looking up still lifts my spirits, raises my consciousness and deepens my understanding of humanity.

Clayton: How long have you been interested in astronomy? What sparked that interest?

Fiorella: All my life I have been interested in astronomy. It began in the countryside just outside of Milan, where my grandmother and I would go for walks at night and look at the stars. She believed that the stars have eyes to watch us. I remember feeling as if the stars were gazing back at me, as if a stellar heart was beating with mine. In those moments all of the loneliness I felt as a

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child disappeared. I felt at peace, an oneness with the Universe I had never felt before.

I often think of my first extraterrestrial gaze and how I was awestruck, feeling both like the center of the universe and like an invisible micro-dot, lost in incomprehensible space. At that time, I knew nothing of quasars and black holes or of radio telescopes and I was unaware that a time would come in my life that I would spend "peering" through one investigating the cosmos.

I only knew that the sky had suddenly opened up to me and I would never again be the same.

Clayton: How can you best describe your music within astronomy?
Are there other folks doing the same?

Fiorella: The technique I pioneered in 1988 at University of California, San Diego was a transformation into sound (not music yet) of radio galactic waves. What I called Acoustic Astronomy; it's basically an audiofication or if you prefer sonification of astronomical data.

The idea off listening to the stars is very old, it started with Pythagoras and Kepler looking for the "Music of the Sphere" then not very long ago, in about 1933, faint radio noises were found coming from the center of our galaxy. This science grew up and was called radio astronomy. Carl Janky heard the Milky Way's hiss!

In 1998, as part of my doctoral research in Physics, working at the University of California, San Diego, Center for Music Experiment, and at the University of Milan, I developed a way to transform galactic radiation into sound, using a computer music system. The basic process is to shift the very high frequency vibrations down to the human hearing range, to create for the first time a Sonorous Universe.

"Acoustic Astronomy" is the first experiment that allows us to transform radiation from deep space into something that we recognize as sound. It started by observing the close analogy between galactic radiation and musical notes -- both of which are decoded by intensity and frequency (or wavelength). The intensity represents how strong the signal is. A sound, for example grows louder with greater intensity, and softens with less intensity. Radiation waves striking Earth also occur in varying degrees of intensity. Frequency represents the cycles per second, or in simple terms, how many times the radiation goes back and forth in one second. This is measured in Hertz. One cycle-per-second equals 1 Hertz, 100 cycles equaling 100 Hertz and so on. In music, our familiar "A", that we tune all instruments to, vibrates at 440 Hertz.

The human voice range is from 27 to 4,186 hertz. The voices of the galaxy, however, are incredibly high. They range from one billion to one-thousand-billion of Hertz. To have galactic radia-

tion fall into the human hearing range, a mathematical reduction of the high frequency waves is required.

The first experimental "subject" was a galaxy invisible to our eyes that hides in the darkness, far away in the direction of Coma Berenices, between Virgo and Leo, under the handle of the Big Dipper. Galaxies we cannot see rarely earn beautiful names, and this one is known simply as radio galaxy UGC 6697. After it had traveled 180 million light years, the radiation from UGC 6697 was collected in huge radio and optical telescopes by staffs of researchers and astrophysicists. These radiations were turned into a radio photograph of the galaxy, forming an image. I decided to try to play them - to represent the same data in the acoustic domain.

Do we receive a musical signal from the stars or galaxies? Not exactly.

Natural radio waves from stars and galaxies are produced by the chaotic motion of high energy electrons: countless "particle collisions and accelerations" not synchronized with each other. Every celestial object emits radiation based upon its unique nature. If these signals are elaborated into sound rather than graphs, every star in the sonorous universe can be recognized based upon its special sound. Every kind of celestial radiation can be represented as a stream of numbers. To convert the radiations' frequencies and intensities to audible form, I needed a special computer sound synthesis program called "c-music", which I used to interpret the signal in terms of sound. After a variety of processing, this signal can be sent to a digital-to-analog converter and played through conventional loudspeakers or recorded onto digital tape or CD, to bring you the sound of UGC 6697 from 180 million light years away. Once you

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have the sound then music come as second step, as an artistic interpretation!.

Clayton: You developed techniques to convert radio waves from galaxies into songs. How is this possible?

Fiorella: My technique to compose songs using the sound of UCG 6697 is very simple because it is based on the intrinsic fabric of the sound. If you listen carefully the global sound of UGC 6697 is made by low and dark frequencies looping for all the duration of the sound. Upon this background, high and light frequencies appear, simulating a circular sound dynamic. The sound is very complex and is not regular. There are some interesting musical aspects to the galactic sounds. Some parts seem to be well tuned around B flat or D minor. We can observe new accords and harmonies, linked together following their special sidereal rules. I use all of these information in my songs and I also include vocals, lyrics and words.

The predominant micro tonality of the galaxy is another fascinating aspect that could be explored during research, by creating new scales. In fact, the galaxy itself can be used as a musical instrument if it is broken into fragments, or it can be associated with classical instruments to perform an orchestral style of song.

These galactic sounds originated 180 million years ago, before humanity even existed. Yet when we hear them, they can have a powerful impact on our minds. The galactic sounds can be relaxing and ethereal, but they also have the potential to provoke deep sensations, sometimes effecting us even when we do not consciously hear them.

Clayton: Do you own or use an astronomical telescope?

Fiorella: No, I don't. Just a binocular.

Clayton: Can you tell us about your book, "Heavenly Knowledge"? When did you have it published?

Fiorella: My book was published by Avon/HarperCollins in 1998. The title is "Heavenly Knowledge" with subtitle "Seeking wisdom in the Universe". In my book I explore astronomy as a metaphor for human relationships and humanity's place in the Universe. The book, covered on ABC Radio, NPR Talk of The Nation, BBC Radio, and The Sci-Fi Channel, has been translated into Italian ("Musica Dalle Stelle" released by Sperling-Kupfer and bundled with her music CD "Galactically Yours") and German ("Der Kosmos ist weiblich" released by Goldmann/Bertelsmann).

Clayton: You told me that your husband Russell is very involved with NASA. Any chances of having him as a guest speaker here at the Houston Astronomical Society?

Fiorella: Yes, he would love it. He is a great special speaker. We share the same joy and excitement when we do outreach. Russell's talk focuses on the "NASA Vision for Space Exploration (VSE)", current and future NASA plans for the Space

Shuttle, the International Space Station, robotic exploration of the solar system, and humans return to the moon and on to Mars. His presentation has also a lot of videos, animation, and music linked to images. He makes a lot of jokes too and makes me work too, as when there are complex astrophysics questions, guess who's called in to answer them?

Clayton: Would you like to travel in space? Where to?

Fiorella: I would love to travel and work in space and I am applying to be a Astronaut with NASA.

Here's the announcement just in case some of you would like to apply!

"**NASA OPENS APPLICATIONS FOR NEW ASTRONAUT CLASS**" HOUSTON - NASA is accepting applications for the 2009 Astronaut Candidate Class. Those selected could fly to space for long-duration stays on the International Space Station and missions to the moon. "We look forward to gathering applications and then being able to select from the largest pool possible," said Ellen Ochoa, NASA's chief of Flight Crew Operations at the Johnson Space Center. "Continuing our impressive record in successfully carrying out challenging human space-flight missions depends on maintaining a talented and diverse astronaut corps."

To be considered, a bachelor's degree in engineering, science or math and three years of relevant professional experience are required. Typically, successful applicants have significant qualifications in engineering or science, or extensive experience flying high-performance jet aircraft. Teaching experience, including work at the kindergarten through 12th grade level, is considered qualifying. Educators with the appropriate educational background are encouraged to apply.

After a six-month period of evaluation

Continued ...

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and interviews, NASA will announce final selections in early 2009. Astronaut candidates will report to Johnson in the summer of 2009 to begin the basic training program to prepare them for future spaceflight assignments. NASA will accept applications through July 1, 2008. To apply visit: <http://www.usajobs.gov>

Getting back to your question, if I could fly to space I would probably like to visit a Supernova site, the space there is so enriched by different type of metal. Maybe I could find diamonds and emeralds for all my girlfriends! But I wouldn't mind visiting a resort vacation on Saturn rings for some good ice skating there!

Clayton: How and where can we get a copy of your best-selling CD-Rom, "Invisible Universe"?

Fiorella: Since it's out of print, try Amazon.com or ebay.com. "Invisible Universe" was an amazing cd rom that the Voyager Company produced way back in 1995. It blends astronomy and music into an entertaining and enlightening voyage through the stars. It features more than 400 objects as you would see them in multi-wavelenght, with History and Data. And movies, songs, guided tour and star maps. I created and provided the content for the whole "Invisible Universe" CD-Rom. It won the SIGCAT Award for "Most Creative Application of Multimedia in Higher and Adult Education".

Clayton: How do envision your work in astronomy through the next 10 years?

Fiorella: I wouldn't mind to receive a Grammy Music Award for my songs while orbiting around our Planet in the International Space Station or while working in our "Lunar Base! Otherwise for my next 10 years I would keep doing what I am doing now, empowering young mind, teaching, being a role model for all girls out there and working developing music and arts projects. A TV show is one of my goals too – it would be really great to do something in this medium!

Clayton: How can we keep the science of astronomy pumped-up in our youngster's minds?

Fiorella: I always try to portray a glamorous, fashionable and fun scientist. I believe that the conventional stereotype we have created of a scientist (aka Albert Einstein-ish caricature) is not working with girls. They just don't find that look appealing and therefore science too. My lessons are also, based on a unique blend of science and art, knowledge and emotion--a concept I call "Emotional Learning," since it is based on the 4 "E's: Entertain, Educate, Enlighten, and Enthrall. When you are engaged on these multiple levels, learning finds an emotional home, and it is remembered forever. To learn is to grow, and the result is not only personal fulfillment, success in life but also the enrichment and elevation of humankind. Perhaps, there is

another "E" which belongs among the four "E's:" EMPOWER. Education empowers us. It is the most powerful springboard for opening our minds and our hearts and guiding us to a greater understanding and appreciation of the universe and our place in it. It is when we understand that we possess the power to act.

Clayton: Thanks Fiorella for taking the time to share your interest and thoughts with us for our monthly HAS newsletter, the *GuideStar*. We wish you luck with all of your astronomy interests and music. Please come visit our society when in the Houston area, we'd love to see you and your husband. Clear skies, always.

Remember --

All HAS memberships are due for renewal in January. Pay your 2008 dues now!! Our membership year now corresponds to the calendar year.

Mail your dues to the address on the last page of this *GuideStar* or bring your payment to the meeting.

The Hyades Star Cluster

Object: The Hyades Star Cluster

Class: Open Cluster

Magnitude: .5

R.A.: 4 h, 27 m, 34 s

Dec: +16 degrees, 55 minutes, 58 seconds

Distance: 151 ly

Constellation: Taurus

Size: 330' (5.5 degrees)

Optics needed: Naked eye, binoculars, or a wide-field telescope

Why this object is interesting.

If you've wondered what an open cluster would look like up close, take a look at the Hyades, the closest open cluster. In space, close is a relative matter, but the Hyades at 151 light years is considerably closer than the nearby Pleiades, at 440 light years.

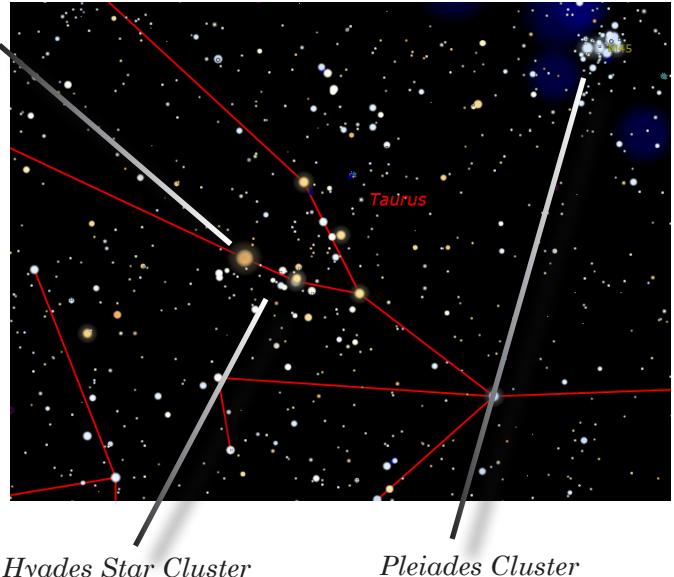
The cluster has been recognized as such for over 2700 years, but it's not identified as a Messier object, probably because it is so dispersed that it is unlikely to be confused for a comet (Messier's purpose in creating his list in the first place was to identify objects that could incorrectly be called a comet). The 150 or so stars that make up the cluster are estimated to have begun their stellar career about 790 million years ago.

Most of the stars in the cluster are class G (similar to our Sun) or K (slightly redder than our Sun). When observing the cluster look for color differences among the stars and see what you can pick out. Aldebaran, the bright star shown in the accompanying diagram is not part of the cluster, but is considerably closer to us (see below).

You'll recognize the Hyades region by the 'V' shaped collection of stars forming the head of Taurus the bull. The most prominent star in the area is Aldebaran, which is not a part of the cluster, but is about 70 light years away. Its bright red glow is said to identify an eye of the bull.

The Hyades are associated with rain in Greek legend and in ancient Greek meteorology. The rising of the Hyades cluster was supposed to signify the beginning of the rainy season. Like the Pleiades cluster (also known as the 7 sisters), the Hyades cluster represented a collection of sisters. Some also say that the Hyades are sisters of the Pleiades, all of which indicates a very large family, indeed.

Aldebaran



Hyades Star Cluster

Pleiades Cluster

Map from
TheSky v6.0

Aldebaran

Aldebaran, the follower (because it follows the Pleiades with a later rise time), is a K5 (reddish) star that is now completed its hydrogen fusing phase and is in its helium fusing phase. The star has grown to a diameter that is 53 times the diameter of the Sun and shines at a magnitude of .85. Remember, the lower the number, the brighter the star. Compare the brightness of Aldebaran with that of Betelgeuse. Betelgeuse normally shines at .58 magnitude, but it's variable. Recent observations from the AAVSO web site put the star at between .3 and 1.0 magnitude, quite a bit of uncertainty.

ADVANTAGE Telescope Repair



- Hot scope tune-ups
- Ultra optic cleaning



"Clayton Jeter did a great job for us. Our C-8 was unusable, but after Clayton's restoration on it, the optics were crystal clear and the mechanism worked flawlessly."

... Jenni Malone with the Nature Discovery Center in Bellaire, TX.

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Membership Renewals...

Your membership is renewable on January 1 of each year.

Total yearly dues are \$36.

Your payment for 2008 is due as of January 1, 2008.

Magazine subscriptions can be renewed at any time and the renewal does not need to be synchronized with your HAS dues.

Membership in the Houston Astronomical Society is one of the great bargains in Astronomy. For a regular membership of \$36 you get the opportunity to support an active and growing organization, you get the monthly *GuideStar* newsletter, and you get access to the outstanding H.A.S. observing site near Columbus, Texas. (You must attend an orientation, given regularly, to use the site.) And, after two months of membership you can borrow, at no charge, one of the Society's loaner telescopes. It's the best deal in town, we think. Please renew your membership when it expires.

Encourage other astronomy enthusiasts to join the organization as well. It's a great group.

Thanks!

***Minutes
of the January, 2008 Meeting of the***

Houston Astronomical Society

The January, 2008 meeting of the Houston Astronomical Society was called to order on January 4th at 7:53 p.m. by HAS Vice President, Ken Miller.

Opening Announcements:

- Ken Miller introduced himself and welcomed everyone, including five new members, to the meeting.

Program

- Brian Cudnik introduced the featured speaker for the evening, Dr. Pat Reiff, Director of the Rice Space Institute, who gave her well-received presentation entitled, "Fifty Years in Space," which provided an insider's perspective on our nation's history in space. Upon concluding her presentation, Dr. Reiff entertained questions, and Brian presented her with a gift of appreciation from the society.

Announcements:

- Brian Cudnik provided information about a possible asteroid impact on Mars on January 30th. Brian will post more information on this event on the HAS list server.
- Field Trip/Observing Committee Chair, George Stradley, reminded everyone of the novice star party on January 26th. Novices were encouraged to take advantage of this opportunity to become familiar with the Columbus observing site. George asked those planning to attend to notify him via his email address posted on the HAS Website, www.astronomyhouston.org.
- Observatory Chair, Bob Rogers, announced that the annual meeting of the Observatory Committee will be held at the Columbus Site on January 12th at 2 p.m.
- Bob also solicited volunteers to work on the replacement of the north fence at the site on the weekend of January 19th. The boy scouts will be providing lunch and dinner for the fence repair volunteers on the 19th. Interested parties should contact Bob via the phone number in the GuideStar or his email address posted on the HAS Website, no later than January 16th.
- Bob encouraged members to assign their Randall's card to #6618, which will earn HAS 1% on their purchases. HAS has a similar benefit on Kroger cards. Check with the Kroger courtesy desk for the correct number.

- Finally, Bob announced that the Columbus site gate combination will be changing on March 1st. The new combination was distributed after the meeting to all members in attendance who have completed site orientation training and are current on their HAS dues. Bob will also be distributing the combination to qualified members after the February General Meeting. Qualified members who can't make the January or February meetings will receive their combinations via a mailing. Bob encouraged qualified members to try to receive their new combination at one of the meetings to keep costs of the mailing to a minimum.
- Awards Chair, Amelia Goldberg, presented Larry Wadle with the Astronomical League's Constellation Hunter certificate #55 and Double Star certificate #362 along with the pins for both observing awards.
- Steve Goldberg announced that registration is underway for the 2008 Texas Star Party. Those planning to attend should complete the registration form available on the TSP website, <http://www.texasstarparty.org> prior to the drawing held at the end of January.
- Allen Gilchrist pointed out the HAS Library at the back of the meeting room and noted the recent donation of a DVD-based astronomy course to the library by Kenneth Drake.
- Don Pearce gave the Comet Report, highlighting Comets 17P/Holmes, 8P/Tuttle, and 46P/Wirtanen. For more information on these comets and other comets of interest, see Don's Comet Corner on the HAS website.
- Erica Zatzkin announced a star party for the students of Kolter Elementary School in the Meyerland area on January 10th from 5:30 to 7:00 p.m. and solicited volunteers for the event.

Continued...

Minutes... from previous page

- Ken Miller announced that we still have an open club position, Welcoming Committee Chair. The primary duties of the Welcoming Committee are to welcome new members to HAS by distributing new member information packets at the general meetings. Ken requested anyone interested in filling this position to contact him after the meeting or at the email address listed for him on the HAS website.
- Ken also announced that HAS member dues are due each year in January. Treasurer Bill Flanagan was staying after the meeting for members wishing to pay at that time. Members wishing to renew their membership by mail may do so by mailing a check payable to HAS to the address listed on the last page of the *GuideStar*. The correct dues amounts are also listed in the *GuideStar*.
- Judy Dye announced that she has a teacher in Baytown interested in having a star party on February 17th. Interested members should contact Judy at the email address posted for her on the HAS Website.
- Judy also asked members interested in purchasing a 2008 Observer's Handbook through HAS Logo Sales to email her. These books are ordered on an as requested basis this year.
- Telescope Loaner Program Chair, Bram Weisman, introduced his co-chairs, Paul and Kay McCallum, and reviewed the details of the Loaner Telescope Program for new members.
- Bram also related that he makes the member name badges and requested members with name badge issues to contact him at the email address listed for him on the HAS Website.

Closing Announcements:

- Ken Miller pronounced the meeting adjourned at 9:28 p.m.

Logo Sales

In addition to all the other cool stuff that Judy Dye has available in Logo Sales, the 2008 "Observer's Guide" is available. This book is a must-have for planning your observing in 2008, so if you don't have your copy come to the meeting, see Judy and order one.

All checks should be made out to HAS for the correct amount, and mailed to Judy Dye, 12352 Newbrook, Houston TX 77072-3910. If there are any questions, please call. Our phone number is 281-498-1703.

Judy Ann Dye

Want Ads

For Sale: 17.5" Newtonian

Perfect for imaging or visual star parties. 17.5" f4.5 Newtonian telescope with highly accurate microprocessor-controlled, step-ter-based alt-az drive system with focal plane rotator. Designed and built by Andy Saulietis and the owner. Accepts ST4-compatible inputs for autoguiding. Mechanical and calibration work done by the owner to optimize system accuracy for autoguided CCD imaging. Original 1981 Coulter mirror refigured to smooth 1/8th-wave surface by Sky Optical in late 80's. Primary and secondary recoated with enhanced coatings group by PAP in early 90's. Optics in excellent condition. 80mm f5 finder. Breaks down to numerous major pieces for transport. With modest effort, can be a traveling scope, but better as a semi-permanent observatory. See my website for many images made with this system over the last decade.

Price negotiable. For pickup/delivery, maybe can meet you half-way. Call 281-482-5190 or E-mail Al Kelly.

For Sale: Celestron Nexstar 8

Like New Condition...Celestron Nexstar 8, Used only 2 times in back yard. Some extras include Solar filter, 1 1/4" star diagonal, 40 mm multi-coated nexstar plossel, 8-24 mm Z00 eyepiece, variable polarizing filter, 2X multicoated Barlow. \$ 850.00 Jack DeNina, Willis, Texas 936-856-0704, jjack9485@cs.com

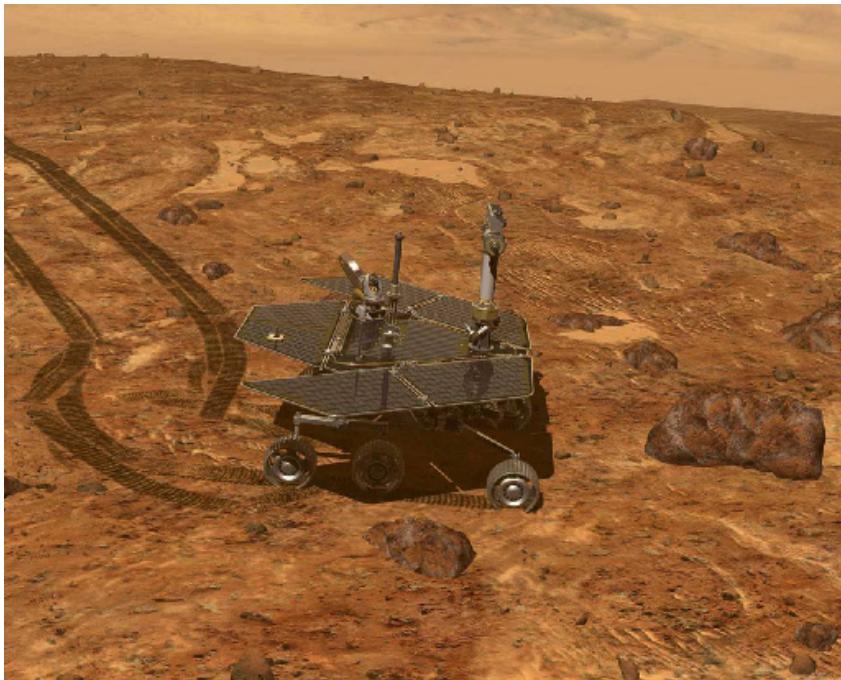
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No Mars Rock Unturned

By Patrick L. Barry

NASA's Space Place

Imagine someday taking a driving tour of the surface of Mars. You trail-blaze across a dusty valley floor, looking in amazement at the rocky, orange-brown hillsides and mountains all around. With each passing meter, you spy bizarre-looking rocks that no human has ever seen, and may never see again. Are they meteorites or bits of Martian crust? They beg to be photographed. But on this tour, you can't whip out your camera and take on-the-spot close-ups of an especially interesting-looking rock. You have to wait for orders from headquarters back on Earth, and those orders won't arrive until tomorrow. By then, you probably will have passed the rock by. How frustrating!



Are these rocks of any scientific interest? With the new AEGIS software, the Mars Rovers, Spirit and Opportunity, will be able to judge for themselves whether a scene is worth a high-resolution image.

(Artist's rendering.)

That's essentially the predicament of the Spirit and Opportunity rovers, which are currently in their fourth year of exploring Mars. Mission scientists must wait overnight for the day's data to download from the rovers, and the rovers can't take high-res pictures of interesting rocks without explicit instructions to do so.

However, artificial intelligence software developed at JPL could soon turn the rovers into more-autonomous shutterbugs.

This software, called Autonomous Exploration for Gathering Increased Science (AEGIS), would search for interesting or unusual rocks using the rovers' low-resolution, black-and-white navigational cameras. Then, without waiting for instructions from Earth, AEGIS could direct the rovers' high-resolution cameras, spectrometers, and thermal imagers to gather data about the rocks of interest.

"Using AEGIS, the rovers could get science data that they would otherwise miss," says Rebecca Castaño, leader of the AEGIS project at JPL. The software builds on artificial intelligence technologies pioneered by NASA's Earth Observing-1 satellite (EO-1), one of a series of technology-testbed satellites developed by NASA's New Millennium Program.

AEGIS identifies a rock as being interesting in one of two ways. Mission scientists can program AEGIS to look for rocks with certain traits, such as smoothness or roughness, bright or dark surfaces, or shapes that are rounded or flat.

In addition, AEGIS can single out rocks simply because they look unusual, which often means the rocks could tell scientists something new about Mars's present and past.

The software has been thoroughly tested, Castaño says, and now it must be integrated and tested with other flight software, then uploaded to the rovers on Mars. Once installed, she hopes, Spirit and Opportunity will leave no good Mars rock unturned.

Check out other ways that the Mars Rovers have been upgraded with artificial intelligence software at nmp/TECHNOLOGY/infusion.html#sciencecraft.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Observatory Corner

By Bob Rogers, Observatory Chairman



Hello everyone.

I hope that everyone had a safe and wonderful New Year celebration.

The Observatory Committee had their yearly meeting at the site on January 12, 2008. In attendance were Bob Rogers, Allen Gilchrist, Kirk Kendrick, Ed Fraini, Ken Miller and Steve Goldberg. The Committee decided to proceed with the planned projects for 2008. These projects are replacing the North fence and recessing the two gates, building a concrete form and pouring the concrete for the tractor shed, changing the combination to the site on March 1st, doing away with the monthly Members Observatory night (except for the All Clubs Star Parties and the HAS Picnic), redoing the control motors for the C-14 telescope from stepper to servo motors. This will make the C-14 a lot more user friendly to everyone. The C-14 upgrade will allow the telescope to run with or without a computer. Also, Kirk Kendrick has offered to build computer benches in the Telescope room and book shelves in the Chart room to improve the working area in the Observatory. I'm also planning to send Donation letters in the spring to the Membership to recoup some of the cost of these projects. I will keep everyone posted on the progress of these projects.

Important notice - the gate combination to the HAS Observing site will be changed on March 1st. In order to get the new combination, you must have attended a Site Orientation Class since joining HAS and have your 2008 dues paid. I will be passing out the new combination at the February and March meetings to those that have met these requirements. Bill Flanagan will be providing me with an updated database of members that have paid their dues and have taken the Site Orientation class.

Some dates of interest here for everyone. George Stradley, our Field Trip and Observing Chairman, has set the following 2008 Field Trip Schedule –

- March 29th for an All Clubs Field Trip
- May 24th for a Novice Party
- June 28th for an All Clubs Field Trip
- August 23rd for a Novice Party
- September 27th for the All Clubs Field Trip /HAS Picnic
- October 25th for a HAS General Membership – Ken Miller's Ranch.

Keep an eye out on the Web site and here at the Observatory Corner for future updates for these Field Trips.

For those of you who have my email address at ghg.net – take note that GHG is going out of business on April 1, 2008. My email address will no longer be active after January. Please change to my other email address – siteworkerbob@hotmail.com.

If you have any suggestions or thoughts for

**Thanks,
Bob Rogers
Observatory Chairman
281-460-1573
siteworkerbob@hotmail.com**



Projects for the month of February

- Recess the entrance/exit gates to complete the North fence replacement project.
- Building a concrete form and pouring concrete for the Tractor shed.

General Membership Meeting

The Houston Astronomical Society holds its regular monthly General Membership Meeting on the first Friday of each month, unless rescheduled due to a holiday. Meetings are in Room 117 of the Science and Research Building at the University of Houston. A Novice Presentation begins at 7:00 p.m.. The short business meeting and featured speaker are scheduled at 8:00 p.m. Also typically included are Committee Reports, Special Interest Group Reports, current activity announcements, hardware reviews, an astrophotography slide show by members and other items of interest. Parking is NOW across from Entrance 14, by the stadium.

Board of Directors Meeting

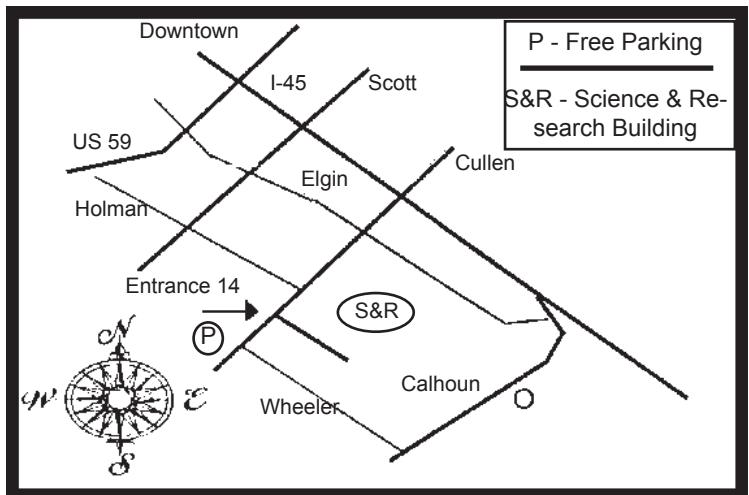
The Board of Directors Meeting is held on dates scheduled by the board at 7:00 p.m. at the University of St. Thomas. Information provided to GuideStar will be published. The meetings are open to all members of the Society in good standing. Attendance is encouraged.

GuideStar Information

The H.A.S. *GuideStar* is published monthly by the Houston Astronomical Society. All opinions expressed herein are those of the contributor and not necessarily of Houston Astronomical Society. The monthly Meeting Notice is included herein. *GuideStar* is available on the HAS web site to all members of H.A.S., and to persons interested in the organization's activities. Contributions to *GuideStar* by members are encouraged. Electronic submission is helpful. Submit the article in text, MS-Word format via email BillPellerin@sbcglobal.net. Copy must be received by the 15th of the month for inclusion in the issue to be available near the end of the same month. Or, bring copy to the General Membership Meeting and give it to the Editor, or phone to make special arrangements.

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Houston Astronomical Society Meeting Meeting on February 1, 2008

7:00 Novice & Site Orientation

8:00 General Meeting

University of Houston

Houston Astronomical Society

P.O. Box 20332 • Houston, TX 77225-0332



The Houston Astronomical Society welcomes you to our organization. The HAS is a group of dedicated amateur astronomers, most of whom are observers, but some are armchair astronomers. The benefits of membership are:

- Access to our 18 acre observing site west of Houston -- a great place to observe the universe!
- A telescope loaner program -- borrow a HAS telescope and try observing for yourself!
- A monthly novice meeting, site orientation meeting, and general meeting with speakers of interest.
- Opportunities to participate in programs that promote astronomy to the general public (such as Star Parties at schools)
- A yearly banquet with a special guest
- A yearly all-clubs meeting for Houston area organizations
- Meet other amateurs and share experiences, learn techniques, and swap stories

**You're invited to attend our next meeting.
You'll have a great time.**