Houston Astronomical Society

GuideStar

May, 2009

At the May 1 meeting...

Sounds of the Universe: Acoustic Astronomy

Dr. Fiorella Terenzi

Brevard Community College

Look at the stars. Can't you hear them? Dr. Fiorella Terenzi, is an astrophysicist, musician and professor of astronomy at Brevard Community College, Florida. Through Dr. Terenzi's ground breaking research we can now listen to the cosmos. This entertaining, informative multimedia lecture includes sounds from radio galaxies, pulsars, the Sun, Saturn, Earth, big bang, quasars and an x-ray black hole. Learn what sounds can tell us about the Universe, and hear the instrumental harmonies created with the help of celestial bodies as we extend our human senses into the cosmos. Dr.Terenzi brings to life an ACOUSTIC UNIVERSE where each celestial object is now recognized thru its acoustic signature.

More information inside this issue.

Highlights:

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.
Gordon Houston (HAS) -- The Impact of Solar Weather

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.

Officers & Past President

President: Bill Leach.....H: 281-893-4057
Vice Pres: Ken Miller.....H: 936-931-2724
Secretary: Open
Treasurer: Bill Flanagan.....H:713-699-8819
Past President: Steve Sartor.....

Additional Board Members

Steve Goldberg.....713-721-5077
Don Pearce.....713-432-0734
Doug McCormick.....
Alan Grissom.....
John Missavage.....

Committee Chairpersons

Audit.....Tom Blocker.....
Education.....Richard Nugent.....
Field Tr./Obsg.....Mike Edstrom.....281-347-7267
Novice.....Justin McCollum.....
Observatory.....Bob Rogers.....281-460-1573
Program.....Brian Cudnik.....
Publicity.....John Missavage.....
Telescope.....Bram Weisman.....
Welcoming.....Susan Bruneni.....

Ad-Hoc Committee Chairpersons

Historian.....Leland Dolan.....713-688-0981
Librarian.....Peggy Gilchrist.....281-443-8773
Logo Mds Sales.....Judy Dye.....281-498-1703
Long Range Plan.....Bill Leach.....281-893-4057
Parliamentarian.....Kirk Kendrick.....281-633-8819
Publ. Star Party.....Richard Nugent.....713-524-1993
Rice U. Coord.....Matt Delevoryas.....713-666-9428
Schedule Obs'v't'y.....Steve Goldberg.....713-721-5077
Texas Star Pty.....Steve Goldberg.....713-721-5077

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.

Table of Contents

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.....713-432-0734
Lunar & Planetary.....John Blubaugh.....713-921-4275

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: www.jscas.net

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-mailbill.leach@nhmccd.edu. Web site: www.astronomyclub.org

May/June

Calendar:

Photo by Scott Mitchell

Date	Time	Event
May		
1	3:44 p.m.	Moon at first quarter
	7:00 p.m.	HAS Novice Meeting, U of H
	8:00 p.m.	HAS General Meeting, U of H
6		Eta Aquarid meteors peak
8	11:01 p.m.	Full Moon
16		HAS Booth @ Live Oak Festival, Columbus, TX
17	2:27 p.m.	Moon at last quarter
23		Prime Night, Columbus Observing Site
		All Clubs Star Party, Columbus Observing Site
24	7:11 p.m.	New Moon
27	7:30 p.m.	HAS Board of Directors Meeting
		Houston Chronicle Building, Downtown Houston
31	10:22 p.m.	Moon at first quarter
June		
5	4:00 p.m.	Venus at greatest elongation west
	7:00 p.m.	HAS Novice Meeting, U of H
	8:00 p.m.	HAS General Meeting, U of H
6		Evening Lunar Occultation of Antares
7	1:12 p.m.	Full Moon
13	7:00 a.m.	Mercury at greatest elongation west
15	5:15 p.m.	Moon at last quarter
20		Prime Night, Columbus Observing Site
21	12:46 a.m.	Summer Solstice
22	2:35 p.m.	New Moon
	11:00 p.m.	Pluto at opposition
29	6:28 a.m.	Moon at first quarter

Send calendar events to Doug McCormick - skygazer10@sbcglobal.net

***GuideStar* deadline for the June issue is May 15**

Check the web site:

www.astronomyhouston.org
Webmaster: Kay McCallum
kaym@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 kaym@mcclibrary.net.

Columbus Field Trips 2009

Mike Edstrom
Field trip/Observing committee chair

The schedule is as follows:

-May 23 - All clubs BBQ

-September 19 - Annual picnic / all clubs/BBQ

-October 17 - All clubs BBQ

-December 19 – HAS Observing

Observations... of the editor

by Bill Pellerin, GuideStar Editor

The Texas Star Party, 2009, is over

I'll probably finish this issue of the *GuideStar* after the Texas Star Party. This means that I'll be able to include some early TSP information in the issue.

By the time you read this, the TSP will be over. If you weren't not there, all you'll be able to do is hear about what a great time everyone else had.

Blog-like TSP information.

4/18 (Saturday) -- can't finish packing my car. It's pouring rain and the packing has to be done outside. I may be obliged to head out on Sunday morning, which will put us at the TSP site later than I'd planned on. It can't be helped.

The rain quit, and we made it to our night-over in Kerrville on Saturday, but later than we would have liked.

4/19 (Sunday) We arrived at the Prude Ranch at 2:30 p.m., signed in, unpacked, and set up the telescope. The east side of the north field was crowded. Who knows why.

Observing was excellent Sunday, and I stayed out until about 3:00 a.m. (Monday). The temperature got to 37 degrees at night, and I had to bundle up in my ski suit to keep warm. I worked through most of John Waggoner's list (except for the objects that don't come up until 4:00 a.m.)

4/20 (Monday) -- Another clear day at the Prude Ranch, carrying over to a clear night. Excellent observing! I completed John's list by staying up to 4:00 a.m. or so. Good list, late night.

4/21 (Tuesday) -- The weather holds for us and we're able to observe. Having completed John's list, I was observing some objects from a Sue French article in the March, 2009 *Sky and Telescope* magazine. I also was observing some double stars using the Double Star Atlas book that I received just before leaving for the TSP. There was quite a bit of time spent looking through OP (other people's) telescopes and catching up with folks that I haven't seen in a while.

4/22 (Wednesday) -- Vendors were generally late getting to the TSP because the North East Astronomy Forum happened on the 18-19. By the time they got to TSP, there was pent-up demand for stuff and a bit of a feeding-frenzy in the vendor area.

Some vendors didn't make the trip to TSP this year (notably TeleVue), but the ones that did were well supplied and made the event enjoyable.

There was a very nice evening lecture by Fritz Benedict (McDonald Observatory) on extraterrestial life. Clouds socked in the observing for this night.

4/23 (Thursday) -- The daytime lectures included an impromptu lecture by Doug Dawn on the meteors associated with the February, 2009 fall (seen on TV). Doug stepped in for another speaker who couldn't make it to the TSP.

Jack Newton showed us some beautiful images that he'd captured at the evening meeting.

More clouds!

4/24 (Friday) -- The swap meet at the vendor area replaced the daytime talks. There was some stuff offered up for sale, but fewer buyers this year.

The Friday night talk was by astronaut Don Pettit. He talked about imaging from the ISS. This talk was an update to a talk he gave to the HAS.

4/25 (Saturday) -- I left the TSP Saturday morning so I'm not able to report on events from Saturday. I had to be at work early Monday morning, so I needed a day at home to unwind from the trip.

I'll see you at the HAS meeting on Friday, May 1.

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

..Bill

Observatory Corner

By Bob Rogers, Observatory Chairman

Hello everyone.

I hope that everyone had a great time at TSP this year. I had everyone in my thoughts out there. Looks like everyone had good weather for the first half of TSP. I missed being out there with everyone, but thought it would be best to stay home this year for more healing on my foot. Hopefully, I will make it for next year's TSP.

On March 28th, Mike Edstrom, the HAS Field Trip and Observing Chairman held the March Madness Messier Marathon for all the clubs at the HAS Observing site. There were hamburgers and hot dogs served to everyone that attended. HAS member Alan Wilson invited students from the British School of Houston to the site in which 8 students, 2 siblings, 4 parents and 1 teacher attended. I received a letter from the students and all of them thanked HAS for a wonderful time of looking through the Observatory and field telescopes. The total headcount for the Star party was 46. The next scheduled All Clubs Star Party is May 23rd. I hope to see everyone out there.

A note to everyone, the gate combination at the Observatory site was changed on April 4th, 2009. If you still have not received the new combination and you are currently up to date on your dues and have taken the site orientation since joining HAS, then contact me at siteworkerbob@hotmail.com to get the new combination.

If you have a Randalls card, and have not done so, please have it coded for the Houston Astronomical Society. Our number is #6618. The Society gets 1 percent of the gross sales that members spend at Randalls. Randalls totals up the amount spent each quarter and will send us a check if the amount goes over $2,500.00, otherwise the total roles over to the next quarter or zeros out at the end of the calendar year. So please link your Randalls card to the Houston Astronomical Society so that the society can benefit from this Randalls program. Our number is #6618. This is very easy to do, just go to the Courtesy Booth and tell the person there what you want to do.

If you have any suggestions or thoughts for the site, let me know.

Thanks,

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

Dr. Fiorella Terenzi

Speaker for May HAS meeting

Internationally renowned astrophysicist, author and recording artist, Dr. Fiorella Terenzi has a doctorate in physics from the University of Milan. In research at the Computer Audio Research Laboratory, University of California, San Diego, she pionereed techniques to convert radio waves from galaxies into sound - released by Island Records on her acclaimed CD "Music from the Galaxies". Her award-winning CD-ROM "Invisible Universe" and best-selling books "Heavenly Knowledge", "Musica Dalle Stelle", "Der Kosmos ist weiblich" weaves astronomy and music, science and art into a tapestry for the senses. She has appeared on CNN, The Wall Street Journal, People, Time, Glamour and lectured at UCSD, Stanford, MIT.

Wall Street Journal "Now, thanks to FiorellaTerenzi, an astrophysicist and musician, stargazers can peek through a telescope, glance at the Milky Way and listen to the cosmos. ... Initially, Dr. Terenzi kept acoustic astronomy to herself. But now she turned performer, and Earth people are tuning in."

Time Magazine: Another practitioner on the rise is Italian astrophysicist, Fiorella Terenzi, who has been described as a cross between Madonna and Carl Sagen. Terenzi has used radio telescopes to intercept radio waves from a galaxy 180 million light-years away, them fed them into a computer, applied a sound-synthesis program to convert her data into music and produced "Music From the Galaxies". Result: part New Age, part Buck Rogers sound track, played on an oscilloscope.

See the February, 2008* GuideStar *for Clayton Jeter's interview with Dr. Terenzi.

Prof. Fiorella TerenziScience Dept
Brevard Community College
Cocoa Florida 32922 USA
www.fiorella.com

Just Looking

A *GuideStar* Interview by Clayton L. Jeter

Al Nagler - TeleVue

Of course you have heard of Al Nagler! I bet you have seen him at various star parties in the past. It's like you're expecting him to be there with all of his new TeleVue scopes, eyepieces, and astronomy gizmos… and he is! Along with many different ocular designs of his, this fella did the astronomy

Al Nagler photo from the Oct 1972 issue of Sky and

community right when he introduced his "Nagler" design. I remember the first time I saw a photo of him…it was an ad of his in one of those astronomy magazines. In this image (superimposed) was a miniature Al Nagler standing next to one of his own eyepieces. I still grin when I see the ad.

The first TeleVue eyepiece I bought was in 1986. It was the well talked about, Nagler 20mm type 2. The views through my old 10" f 6 Meade Research Series reflector were astounding with this eyepiece. Since those days (nights), I have bought many TeleVue eyepieces and prize each one. I'm now looking forward to my first Ethos, the newest TeleVue design (by Paul Dellechiaie, working with Al for many years at TeleVue).

I know that all of you here in our society are biting at the bit to ask Al a question or two. It's a real privilege to ask for you.

Meet Al Nagler…

The Al Nagler Bio…
(*courtesy of the TeleVue website and Al*)

There are two experiences I haven't yet tried but always dreamt about. Maybe you could try. One, get involved with a local charity and offer moon views for a good cause. Two, get a tape recorder and capture a steady stream of ecstatic expressions and joyous expletives as people view Saturn for the first time. It's even better if you can do it on SATURNday, SUNday, or MOONday. And for those of you who are timid about sidewalk astronomy, don't take it personally when people ignore you, or try to keep their kids away from "strange people". There are always enough to have the spark to appreciate what you are offering. For passersby who will inevitably ask, "Why are you doing this?" I found the perfect answer: "BECAUSE YOU'RE HERE!" There will be a long pause. Their next response is likely to make you want to do even more sidewalk astronomy.

Continued …

Our HAS editor of the GuideStar, Bill Pellerin with Al Nagler at TSP-2005

Just Looking... from previous page

"When my father took me to the Hayden Planetarium in 1948, I was injected with the astronomy bug. My interest was piqued with a 3-inch Skyscope reflector, a fine $30 instrument with a cardboard tube and pipe fitting legs.

"Since high school in 1952, I've been excited about telescope making, but also visual observing and astrophotography. Telescope making was merely a means to an end in order to accomplish the other activities. I learned about telescope making from the classical ATM books and from friends at the Junior Astronomy Club at the Hayden Planetarium.

"A critical area of help was the Scientific Techniques Lab at Bronx High School of Science, where Mr. Charles Cafarella worked with me on a 350-pound, 8-inch f/6.5 Newtonian built over several years. I bought the 8-inch mirror kit from "Precision Optics" on 163rd Street in the Bronx, an optometrist who sold mirror kits as a sideline. Having little money, I made a wooden hexagonal tube and the mount was made from pipe fittings. In fact, I still have it!

"That scope earned me a micrometer as a shop award at graduation. A few years later, I wrote an article on its construction for Mechanix Illustrated. The $80 fee was the first money I ever made in astronomy. It also started me off on my optical design career at Farrand Optical Company from 1957 to 1973.

"Most exciting and encouraging throughout my life has been my annual pilgrimage to Stellafane, where in 1958 my 8-inch received 3rd prize in mechanical excellence. Years later, I rebuilt the scope into a 12-inch f/5.3 and received 1st prize for Newtonians at the 1972 Stellafane.

"It wasn't until much later that I developed an interest in refractors, conceived originally as test instruments for my eyepieces, and have an 8-inch aperture scope for my own use. The f/10, 4-element folded design with an 8-foot wooden tube was dubbed the "snake coffin" by my friends.

"Like all amateurs, I have had my share of unusual situations. Once a policeman considered arresting me for carrying a coffin illegally in a car when I was on the way to meet my observing buddies with my wooden hex tube 8-inch Newtonian in my first car--a Checker cab. Another time, when coming home from observing with my friends, my Checker cab threw a connecting rod on a country road. I went for help, a frozen hulk in my old brown mohair coat, hunching along the side of the road. A police car screamed to a halt and an officer with a flashlight told me how lucky I was since at first glance he was considering shooting a stray bear. Memories like these are treasured additions to the satisfactions that come from amateur astronomy.

"One of the things that always excited me about astronomy is bringing it to the public, and especially to children. I also love the experience and camaraderie of attending star parties."

"I'm constantly surprised and awed by the fabulous views friends show me at star parties. Indeed, I have had a number of "goosebump" astronomical experiences. One was getting out of the car at Ayers Rock in Australia during a trip to see Halley's Comet in 1986. I looked up and saw, for the first time, a totally new and different astronomical universe. The Milky Way was so brilliant it was beyond my imagination.

Another "goosebumper" was at the Texas Star Party where I got my first glimpse of Omega Centauri through an 18-inch telescope using my 13 mm eyepiece. Yet another was once finding a comet next to M-1. I was awfully excited to say the least until I checked *Sky and Telescope* and noticed the recommendation to see a comet one degree away from M-1 on that very night."

"I still love telescopes as both hobby and business. I have worked on eyepieces, telescopes and viewing devices with two major goals: to make astronomy as easy and versatile as possible to encourage, rather than discourage, newcomers, and secondly, to provide a visual experience as close to a "spacewalk" as possible by obtaining the widest, sharpest, highest contrast views. I am deeply gratified that my work has enhanced the pleasure and growth of the hobby. I think amateur astronomy is the best hobby in the universe."

The Al Nagler interview…

Clayton: Al, it is a great pleasure having you here with us for this informative and fun interview. I know for a fact that the HAS membership will savor your thoughts and advice on amateur astronomy optics. We know you cater to the amateur, but do you supply the professional too? In what degree?

Al: Not much at this point, but we have supplied NP127 optics sets for military reconnaissance and an NP127 to Lincoln Labs for their test bench for adaptive optics research. Some of our eyepieces have been

Continued ...

Just Looking... from previous page

used in military simulator and commercial ophthalmological instruments.

Clayton: I have learned that there is no perfect eyepiece. Many designs offer a plus/minus on its particular performance. But…if you had to pick one design that worked for the masses, which would you suggest?

Al: If you mean for public viewing, our Plössls or Radian. I actually came up with the concept of the "Pupil Guide" doing sidewalk astronomy in front of my local diner. I noticed that because of the large eye lens and bright neighborhood, people (not familiar with scopes) had trouble finding Saturn. The "Pupil Guide" gives a centered 1/3" hole to peer into, and the Instajust makes it easy to both see the whole field while blocking out stray light. For the "masses" of amateur astronomers, why not Ethos? Our eyesight is 140° so why not a comfortable 100° with all optical and ergonomic issues optimized (sorry about the cost, but quality, consistency and innovative R&D always come at a price.).

Clayton: You must have dozens of different telescope designs to choose from. Do you have a home observatory in which to use them? How's the light pollution in your home town?

Al: I used to observe from my driveway, but years of encroaching light pollution meant finding dark sky sites. Our club sites are OK, but after experiencing TSP and WSP (where I get my annual "Omega" fix) and Stellafane or Cherry Springs, PA -- I prefer star parties where I can use a large variety of scopes, like the Dobs of Barbara Wilson or Larry Mitchell. Of course, I always have an NP101 or NP127 handy.

Clayton: From the first perceived idea of the Ethos eyepiece design to its production start, what is the time span? Also, I recently read somewhere that in the future, the observer will use an eyepiece that will show text in its field of view, indicating which object you are looking at. Is this really feasible? Sounds like Buck Rogers' technology!

Al: It took us over a year after David's initial concept.

Regarding text in an eyepiece field, using beamsplitters and projection techniques, it's certainly possible (I used to design aircraft heads up displays). But after our struggling for maximum throughput and contrast, why diminish the view and ruin your dark adaptation?

Clayton: Tell us about your work in astrophotography. I bet you have seen lots of changes in that technology since the 1950's, can you still remember your first astrophoto?

Al: When I worked at Farrand, I adapted a 76mm f/0.87 recon lens for 35mm and did astrophotography with Kodachrome ASA 10! I considered doing a sky survey, but the film was not held flat enough to be consistently sharp. I set up my 12" f/5.3 Newt for imaging with tracking through a hole in the diagonal feeding a Barlow and guiding eyepiece (see 1972 Stellafane Photo) and did a variety of deep sky work, mainly from my driveway. My lunar eclipse photos appeared in 1968 Sky & Telescope and Encyclopedia Americana. After a hand tracked 80-minute Double-Cluster photo using ASA 100 Plus-X, where I got 3-arc-second star images, I decided my astrophotography would be limited to special events, like Hale-Bopp and Hyakutake.

Clayton: Are any of your family members interested in your pursuit for observing faint fuzzies in the night sky? Do they observe too?

Al: Well, David, like me, gets his jollies at star parties, and has also pulled many all-nighters at TSP.

Clayton: I have trekked to many TSP's, Okie Tex, and various other star parties around the country. Can you describe observing at the oldest…Stellafane?

Al: As you know it's a shrine for me, and sharing observing and gathering with friends and family is very special, especially since I started going around 1956. Skies there are still good and it still inspires me. I hope they continue to keep it non-commercial, so youngsters can get excited showing their creations without the attention of attendees being drawn away. (Sorry for the soapbox, but hey, it was my childhood dream to win a prize at Stellafane).

Clayton: Besides TSP and Stellafane, what big name star parties have you attended in years past? Is there one you recommend to visit?

Al: WSP, Okie-Tex (darkest I've seen in U.S.) Cherry Springs, RTMC, Table Mountain, Star-Fest Astro Fest and one in Japan with rock bands and fireworks. Every star

Continued ...

Just Looking... from previous page

party has its special pleasures, so just go when you can.

Clayton: As a young boy, who inspired you the most in the astronomy community?

Al: While no one individual, joining the Junior Astronomy Club at the Hayden Planetarium, and reading books like Olcott and Putnam's Field Book of the Skies covering binocular and telescope viewing, with constellation mythology, and treatises like "Why Study Astronomy" was most inspiring. Later, my shop teacher in High School (now 93) who helped me build my Newt, and Earl Brown, Sky & Telescope "Gleanings Editor" who was project manager at Farrand and hired me, were certainly inspirations.

Clayton: I know you're not going to give away any new secrets about future products at TeleVue, but how about telling us what's "Hot" right now?

Al: **Might try reading some Ethos reviews. I just love to see fellow amateurs come up with descriptions of their experiences that make this such a joyous journey.**

Clayton: Do you have any helpful advice to pass on to observers just starting out in astronomy?

Al: Observe, read, join a club, share and mentor. Even starting-out, do sidewalk astronomy. You'll have great experiences and will contribute to spreading all the positive attributes of the hobby.

Clayton: Is there an email address that you have where Houston Astronomical Society members could contact you for an additional question or two?

Al: Sorry, no public e-mail, but phone calls and letters are welcome.

Clayton: Thanks Al for taking the time to share your interest and thoughts with us for our monthly HAS newsletter, "The Guide Star". We wish you luck with all of your astronomy interests and especially those wonderful eyepieces you keep pumping out. It's been a real pleasure chatting with you. Please come visit our society when in the Houston area, we'd love to see you. Clear skies, always.

Al: Thanks for the opportunity, Clayton. And clear skies to you too. -- Al

Remember --

All HAS memberships are due for renewal in January. It's time to pay your 2009 dues!! Our membership year corresponds to the calendar year.

If you've missed a dues payment in the past, there's no extra cost for late payment, and the organization appreciates your support.

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

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.

itjdm0@yahoo.com

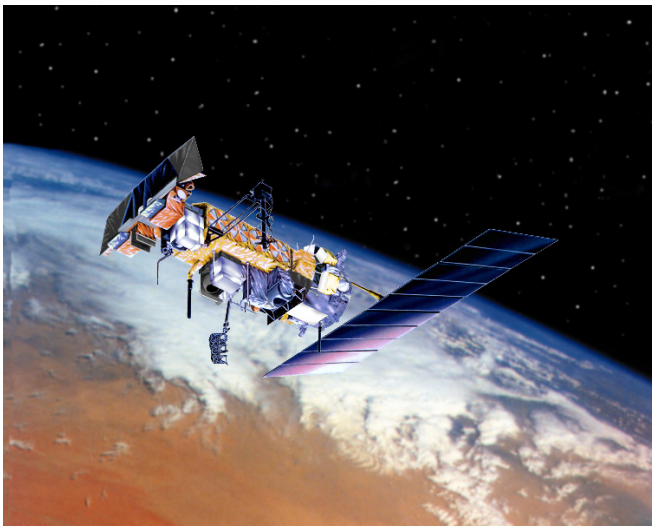
John Missavage- HAS Publicity

The Swiss Army Knife of Weather Satellites

Spotting volcanic eruptions, monitoring the health of crops, pinpointing distress signals for search and rescue teams.

It's not what you might expect from a weather satellite. But these are just a few of the abilities of NOAA's newest polar-orbiting weather satellite, launched by NASA on February 6 and turned over to NOAA for full-time operations on February 26.

Formerly called NOAA-N Prime and now renamed NOAA-19, it is the last in its line of weather satellites that stretches back almost 50 years to the dawn of the Space Age. Over the decades, the abilities of these Television Infrared Observation Satellites (TIROS) have gradually improved and expanded, starting from the grainy, black-and-white images of Earth's cloud cover taken by TIROS-1 and culminating in NOAA-19's amazing array of capabilities.



The new NOAA-19 is the last and most capable in the long line of Television Infrared Observation Satellites (TIROS).

"This TIROS series has become quite the Swiss army knife of weather satellites, and NOAA-19 is the most capable one yet," says Tom Wrublewski, NOAA-19 Satellite Acquisition Manager at NASA's Goddard Space Flight Center in Greenbelt, Maryland.

The evolution of TIROS began in 1998 with NOAA-K. The satellites have carried microwave sensors that can measure temperature variations as small as 1 degree Celsius between Earth's surface and an altitude of 40 kilometers—even through clouds. Other missions have added the ability to track large icebergs for cargo ships, monitor sea surface temperatures to aid climate change research, measure the amount of ozone in Earth's protective ozone layer, and even detect hazardous particles from solar flares that can affect communications and endanger satellites, astronauts in orbit, and city power grids.

NOAA-19 marks the end of the TIROS line, and for the next four years it will bridge the gap to a new series of satellites called the National Polar-orbiting Operational Environmental Satellite System. NPOESS will merge civilian and military weather satellites into a single system. Like NOAA-19, NPOESS satellites will orbit Earth from pole to pole, circling the planet roughly every 100 minutes and observing every location at least twice each day.

NPOESS will have yet more capabilities drawn from its military heritage. Dim-light sensors will improve observations of the Earth at night, and the satellites will better monitor winds over the ocean — important information for ships at sea and for weather and climate models.

"A lot more capability is going to come out of NPOESS, improving upon the 161 various environmental data products we already produce today," Wrublewski says.

Not even a Swiss army knife can do that many things, he points out.

For more on the NPOESS, check out http://www.npoess.noaa.gov. Kids can find out about another NOAA satellite capability—tracking endangered migrating species—and play a fun memory game at http://spaceplace.nasa.gov/en/kids/poes_tracking.

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

.

Volunteer Opportunity!!!
Live Oak Festival – Columbus

The town of Columbus is holding its annual Live Oak Festival on **May 16.**

This is the city's Arts and Crafts festival with over 100 booths and 2,000+ attendees. Since the HAS is a member of the community, we should have a presence at the festival. We can hand out astronomy information, nightly sky charts, NASA photos, and information on light pollution from the International Dark-Sky Association. The focus of our booth would be to promote astronomy and help protect the night sky. And possibly have a solar scope to view the sun.

We are looking for volunteers to help gather material from *Sky and Telescope*, *Astronomy* magazine and NASA. This is similar to what we do for Astronomy Day. Also, we are **looking for people** to sit at the booth to handout the materials and answer questions.

If you would like to volunteer, please let us know at SGoldberg124@comcast.net.

Regards,

Steve & Amelia Goldberg

Chairman

Want Ads

Note to readers: The ads in the *GuideStar* appeared for several months and are no longer on the web site. Any new ads that are provided to the editor will published in future issues.

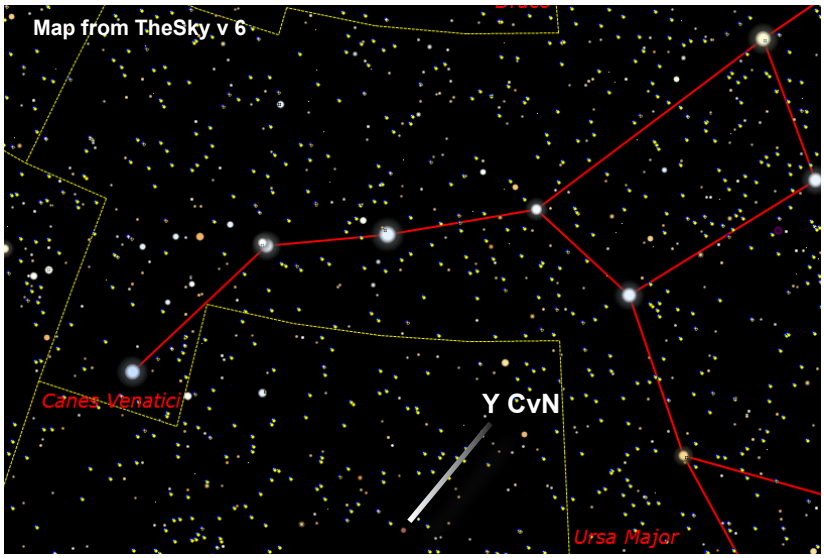
Email your ads to Kay McCallum, our Webmaster, at KayM@MccLibrary.net and to Bill Pellerin, GuideStar editor at billpellerin@sbcglobal.net

Shallow Sky Object of the Month

La Superba - Y CVn

by Bill Pellerin, GuideStar Editor

Object: La Superba - Y CVn
Class: Carbon Star
Magnitude: 4.8 to 6.3, 160 day period
R.A.: 12 h, 45 m, 08 s
Dec: 45 degrees, 26 minutes, 25 seconds
Distance: 710 ly
Constellation: Canes Venatici
Size: n/a
Optics needed: Small telescope / binocs



Why this object is interesting.

Y CVn is a carbon star, which, among other things means that it is red, very red. You will notice the color immediately as soon as you see it. You'll be able to see it easily, since it's reasonably bright.

If you were at the April HAS Novice Meeting you heard a discussion of carbon stars by Alicia Tristan, and now is a good opportunity to get outdoors and see a good example of one. Y CVn will be high in the northern sky this time of year, and easy to spot. I observed it in my 4" refractor at the Texas Star Party and I can report that it stood out among all the other stars in the area by its color. The only star that I've seen that I'd say is more red is Hind's Crimson Star (see the January, 2007 *GuideStar* for more information on this star).

These stars are both variables, and the degree of 'redness' depends on where the star is in its variable cycle. The lower the brightness, the more rich the color.

Y CVn is a star in late life. It has completed fusing hydrogen to helium and it is now fusing helium to carbon. The carbon resides near the core of the star, and is surrounded by both hydrogen and helium shells. As in most stars the outer layers of the star are moving heat to the surface via convection (a 'boiling' pattern we're all familiar with).

This convection 'dredges up' some of the carbon from the core and brings it to the exterior of the star. When it does, the carbon forms a shell around the star, limiting the light that can escape and scattering the blue light (so what's left is the red that we see).

This shell acts as a blanket around the star causing it to get hotter. As it does, the shell is, ultimately, burned off, the star gets brighter, and a new shell starts to form. This accounts for the variability in brightness (and color) that we see.

The surfact temperature of this star is about 2800 Kelvin, which makes it one of the cooler stars in the night sky. Much of its energy goes into radiation in the infrared part of the spectrum. Taking this energy into account, this is a very bright object, we just can't see light from all the wavelengths. Y CVn is a big star with a radius of about 2 AU which means that if it were at the location of the Sun, the surface of the star would extend past the orbit of Mars.

The name 'La Superba' was attached to this star by Father Angelo Secchi, an Italian astronomer at the Pontifical Gregorian University in the mid 1800's.

Membership Renewals...

Your membership is renewable on January 1 of each year.

Total yearly dues are $36.

Your payment for 2009 is due as of January 1, 2009.

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!

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

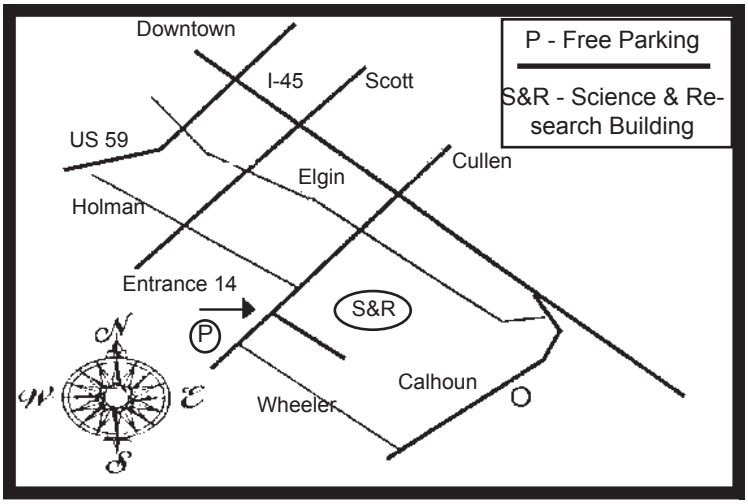
The Board of Directors Meeting is held on dates scheduled by the board at 7:00 p.m. at the Houston Chronicle office, downtown. Information provided to GuideStar will be published. The meetings are open to all members of the Society in good standing. Attendance is encouraged.

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 iinterested 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.

Editing & Production: Bill Pellerin, 713-880-8061; FAX: 713-880-8850;
Email: BillPellerin@sbcglobal.net

Advertising: Advertisers may inquire concerning ad rates and availability of space.



Houston Astronomical Society

Meeting on Friday, May 1

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.