

SEPTEMBER 2018

★ HOUSTON ASTRONOMICAL SOCIETY ★

GUIDESTAR

FOSTERING THE SCIENCE AND ART OF ASTRONOMY
THROUGH PROGRAMS THAT SERVE OUR MEMBERSHIP
AND THE COMMUNITY



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September 14, 2018, 7:00PM

HAS General Meeting Is Part Of All Clubs At HMNS

September 7th would be the normal meeting time for the Houston Astronomical Society. But, **we are not having a meeting this month at our normal date, time or location.**

We will be meeting as part of the annual All Clubs Meeting which will be held on **September 14th at 7:00pm at HMNS as part of Astronomy Day kickoff.** The meeting will be held at the Houston Museum of Natural Science's WT and Louise J. Moran Lecture Hall, 1 Hermann Circle Drive.

The Keynote Speaker will be Dr. C. Renee James who will be talking about **"Things that Go Bump in the Universe: Cosmic Implosions, Explosions, and Collisions, and the Challenges They Pose"**



C. Renee James, Ph.D.

Dr. C. Renee James has been part of the physics faculty at Sam Houston State University since 1999. Her primary classroom duty is teaching introductory astronomy for non-science majors, something that she does with great enthusiasm. She has twice been nominated for the University's Excellence in Teaching Award, and her unique teaching methods earned her a Gold Star award from NASA's IGES for inspiring uses of Hubble in Education.



The Astronomy Day event is always a good event to plan to attend. Unfortunately, it's been cancelled twice over the last 3 years including last year because of Hurricane Harvey. This year, Astronomy Day 2018 is planned to be held on Saturday, September 15th at the George Observatory.

The area astronomy clubs participate in putting on the event. These include, the Houston Astronomical Society, Fort Bend Astronomy Club, Johnson Space Center Astronomical Society, Astronomical Society of Southeast Texas, The Insperity Observatory at Humble ISD, and the North Houston Astronomy Club.

Events will be going on between 3:00pm to 10pm. Events will be for adults and kids. Activities will range from solar observing, observing at night, seminars on purchasing and using telescopes. Astronomy Day starts with the Regional Meeting the night before. See General Meeting in this issue for information on this month's Regional Meeting.

You can find out more information at <http://www.astronomyday.net/index.html>

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HAS Board Meeting

HAS Board meetings are scheduled regularly. All members are invited to attend these meetings, but only board members can vote on issues brought before the board. Meetings are held at the Trini Mendenhall Community Center (1414 Wirt Road) at 6:30 p.m. on the date specified the calendar.

Excavation Begins on Giant Magellan Telescope Site in Chile

14 August 2018

The University of Texas at Austin's McDonald Observatory today shared in announcing the start of hard rock excavation for the Giant Magellan Telescope's (GMT's) massive concrete pier and the foundations for the telescope's enclosure on its site at Las Campanas Observatory in Chile. McDonald Observatory is a founding partner of the international collaboration building the GMT, which will be the world's largest telescope when completed in the next decade.

The excavation work will be performed by Minería y Montajes Conpax (known as Conpax), a construction services company that has previously performed site work for other observatories in Chile. Using a combination of hydraulic drilling and hammering, the excavation work is expected to take about five months to complete. Excavation is a key step towards the construction of the GMT, which is expected to see first light as early as 2024.

"The University of Texas at Austin is proud to be a partner in the Giant Magellan Telescope, and welcomes this key milestone of the beginning of telescope construction," said Dr. Taft Armandroff, Director of McDonald Observatory and Vice Chair of the GMT Board of Directors.

The 25-meter diameter GMT, expected to have a final weight of about 1,600 metric tons, will comprise seven 8.4-meter mirrors supported by a steel telescope structure that will be seated on the concrete pier. It will be housed inside a rotating enclosure that will measure 65 meters (about 22 stories) tall and 56 meters wide. As well as working on the enclosure and telescope pier foundations, Conpax will excavate a recess in the summit rock for the lower portion of the mirror coating chamber and foundations for a utility building and tunnel on the summit.

"With the start of construction of the permanent buildings on the site, the GMT is showing tangible progress towards completion," said Dr. James Fanson, GMT Organization Project Manager. "We are delighted that Conpax is carrying out this important work."

The most challenging part of their work on the summit will be to excavate the solid rock of the mountain top to a depth of 23 feet (7 meters) to hold the concrete for the telescope pier. Much of this work will be done with a hydraulic rock hammer and jack hammer to ensure that the integrity of the solid bedrock below the pier is undamaged. "In total, we expect to remove 5,000 cubic meters or 13,300 tons of rock from the mountain and will need 330 dump truck loads to remove it from the summit," Fanson said.

Las Campanas Observatory, located in the southern Atacama Desert of Chile and owned by the Carnegie Institution for Science, is one of the world's premier astronomical sites, known for its clear, dark skies and stable airflow, producing exceptionally sharp images. With its unique design, the GMT will produce images that are 10 times sharper than those from the Hubble Space Telescope in the infrared region of the spectrum and will be used by astronomers to study planets around other stars and to look back to the time when the first galaxies formed.

In the past year, the GMT project has cast the fifth primary mirror segment at the Richard F. Caris Mirror Lab at the University of Arizona, announced a new partner for the project with Arizona State University, and awarded design-build contracts for the telescope mount.

Partners in the GMT project include Arizona State University, Astronomy Australia Ltd., The Australian National University, Carnegie Institution for Science, Fundação de Amparo à Pesquisa do Estado de São Paulo, Harvard University, Korea Astronomy and Space Science Institute, Smithsonian Institution, Texas A&M University, The University of Texas at Austin, University of Arizona, and University of Chicago.



Hard rock excavation has begun for the Giant Magellan Telescope's massive concrete pier and the foundations for the telescope's enclosure at Las Campanas Observatory in Chile. More than 13,000 tons of rock will be removed. Credit: GMT Organization



This artist's concept of the Giant Magellan Telescope shows the telescope and enclosure as they will appear when completed at Las Campanas Observatory in Chile's Atacama Desert. (Credit: GMT Organization)



The Giant Magellan Telescope, against the southern Milky Way, as it will appear when completed. Credit: Todd Mason/Mason Productions and GMT Organization

Courtesy of the **University Of Texas**
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Stardate.Org/magazine

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This article is provided by NASA Space Place. With articles, activities, crafts, games, and lesson plans, NASA Space Place encourages everyone to get excited about science and technology. Visit spaceplace.nasa.gov to explore space and Earth science!

A Trip Through the Milky Way

By Jane Houston Jones and Jessica Stoller-Conrad



Caption: This illustration shows how the summer constellations trace a path across the Milky Way. To get the best views, head out to the darkest sky you can find. Credit: NASA/JPL-Caltech

Feeling like you missed out on planning a last vacation of summer? Don't worry—you can still take a late summertime road trip along the Milky Way!

The waning days of summer are upon us, and that means the Sun is setting earlier now. These earlier sunsets reveal a starry sky bisected by the Milky Way. Want to see this view of our home galaxy? Head out to your favorite dark sky getaway or to the darkest city park or urban open space you can find.

While you're out there waiting for a peek at the Milky Way, you'll also have a great view of the planets in our solar system. Keep an eye out right after sunset and you can catch a look at Venus. If you have binoculars or a telescope, you'll see Venus's phase change dramatically during September—from nearly half phase to a larger, thinner crescent.

Jupiter, Saturn and reddish Mars are next in the sky, as they continue their brilliant appearances this month. To see them, look southwest after sunset. If you're in a dark sky and you look above and below Saturn, you can't miss the summer Milky Way spanning the sky from southwest to northeast.

You can also use the summer constellations to help you trace a path across the Milky Way. For example, there's Sagittarius, where stars and some brighter clumps appear as steam from a teapot. Then there is Aquila, where the Eagle's bright Star Altair combined with Cygnus's Deneb and Lyra's Vega mark what's called the "summer triangle." The familiar W-shaped constellation Cassiopeia completes the constellation

trail through the summer Milky Way. Binoculars will reveal double stars, clusters and nebulae all along the Milky Way.

Between Sept. 12 and 20, watch the Moon pass from near Venus, above Jupiter, to the left of Saturn and finally above Mars!

This month, both Neptune and brighter Uranus can also be spotted with some help from a telescope. To see them, look in the southeastern sky at 1 a.m. or later. If you stay awake, you can also find Mercury just above Earth's eastern horizon shortly before sunrise. Use the Moon as a guide on Sept. 7 and 8.

Although there are no major meteor showers in September, cometary dust appears in another late summer sight, the morning zodiacal light. Zodiacal light looks like a cone of soft light in the night sky. It is produced when sunlight is scattered by dust in our solar system. Try looking for it in the east right before sunrise on the moonless mornings of Sept. 8 through Sept 23.

You can catch up on all of NASA's current—and future—missions at www.nasa.gov

About The Guidestar

Member Projects Spotlight

We want to spotlight the astronomical projects and observations that you are working on.

Send us an email at guidestar@astronomyhouston.org and tell us. Whether it be a specific research project in astronomy that you're working on, an astro league observing program, an astrophotography project, or something else, let us know so we can let the rest of the society know.

GuideStar Advertising Policies

Personal advertisements

- Members in good standing of the Houston Astronomical Society (HAS) may request that an ad be placed in the GuideStar for personal items (for sale or wanted).
- Items offered for sale must be of interest to amateur astronomers.
- No more than two telescopes may be advertised within any calendar year.
- Ads will not run for more than 3 consecutive months
- Ads will be run on a space-available basis.
- Ads must be provided to the editor in electronic format (email, text file) by the 15th of the month preceding the month-of-issue.

Commercial advertisements

- Advertisement sizes:
 - * Full page = 6.875" w x 9" h
 - * Half page = 6.875" w x 4.25" h
 - * Quarter page = 3.31" w x 4.25" h (allows for column gutter)
- Commercial advertisements will be run in the GuideStar at the following fee schedule:

Size	One time	One quarter (3 consecutive months)
Full page	\$100.00	\$250.00
Half page	\$50.00	\$125.00
Quarter page	\$25.00	\$62.50

- Artwork provided must be in electronic format (image file, PDF, etc.) and must be in the correct proportions to fit the space provided. Contact editor with questions.
- Artwork may be in color or in black and white.
- Items or services advertised must be of interest to amateur astronomers
- Payment for advertisements must be done in advance (pay to the 'Houston Astronomical Society')

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, unformatted MS-Word format via email GuideStar@astronomyhouston.org. 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. **Contact the editor for writing guidelines.**

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The GuideStar is the winner of the
**2012 Astronomical League
Mabel Sterns Newsletter award**

About The Houston Astronomical Society

Welcome 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. Access to meeting videos on the HAS web site.
- Opportunities to participate in programs that promote astronomy to the general public (such as Star Parties at schools)
- 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! 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. The GuideStar, the monthly publication of the Houston Astronomical Society is available on the web site. 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

You can join (or renew at the organization web site, www.astronomyhouston.org). Click the 'Join HAS' Tab. Send funds to address shown on last page 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.

Event Notification or Cancellation

HAS uses RAINEDOUT.NET to communicate late breaking updates about our various events. . Message delivery is via text messaging and e-mail. There are several ways to subscribe. If you would like to receive these notices via text messaging directly to your phone, subscribe to any of the sub-groups which interest you.

RainedOut notices will also automatically be sent to our e-mail list. Note that regular e-mail list conversations are not part of RainedOut communications and will not be sent to your phone as part of this service. Instructions to sign up for the e-mail list (a great way to keep your finger on the pulse of the club) are found here:

<http://www.astronomyhouston.org/about/email-list>.

Houston Astronomical Society

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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.

Check the Website

astronomyhouston.org

The HAS website not only has news and information about our society, but also a variety of features to manage your membership and connect with other club members.

Current members can post photos, trade gear, pay dues, manage discount magazine subscriptions, swap stories in the forum, and more.

Questions about the site? Need a hand to get your account set up? Contact webmaster@astronomyhouston.org.

The HAS web site is the winner of the 2012 Astronomical League award for excellence

To receive text messages, send any or all of the following (one at a time) to 84483

OUTREACH Public Outreach Events

STARPARTY Members only star Parties

URBAN Urban Observing Events

MEETINGS HAS Meetings

You will receive a confirmation message back for each successful enrollment.

For more information, please visit www.RainedOut.net.

Parking At The University Of Houston Main Campus

Directions to meeting

From I-45 going south (from downtown)

- exit at Cullen Boulevard
- turn right on Cullen
- turn right on Holman Street; the parking lot is past the Hoffeinz Pavilion
- Science and Research is across the street (2nd building back)

From I-45 going north (from NASA/Galveston)

- exit at Cullen Boulevard
- turn left on Cullen
- turn right on Holman Street; the parking lot is past the Hoffeinz Pavilion
- Science and Research is across the street (2nd building back)

Parking at the University of Houston Main Campus

For the monthly Houston Astronomical Society Meeting the map below shows the location of the 15C parking lot, west of Cullen Boulevard on Holman Street.

The map is from the University of Houston web site and identifies the lot that is available for parking while attending the Houston Astronomical Society monthly meeting. This parking is available from 6:30 p.m. until 10:00 p.m. on the Friday night of the HAS meeting (usually the first Friday of the month).

This parking is free. If you get a notice from the UH campus police on the night of the meeting, call the UH Security office and let them know that this area has been made available on HAS meeting night by the Parking Department.

