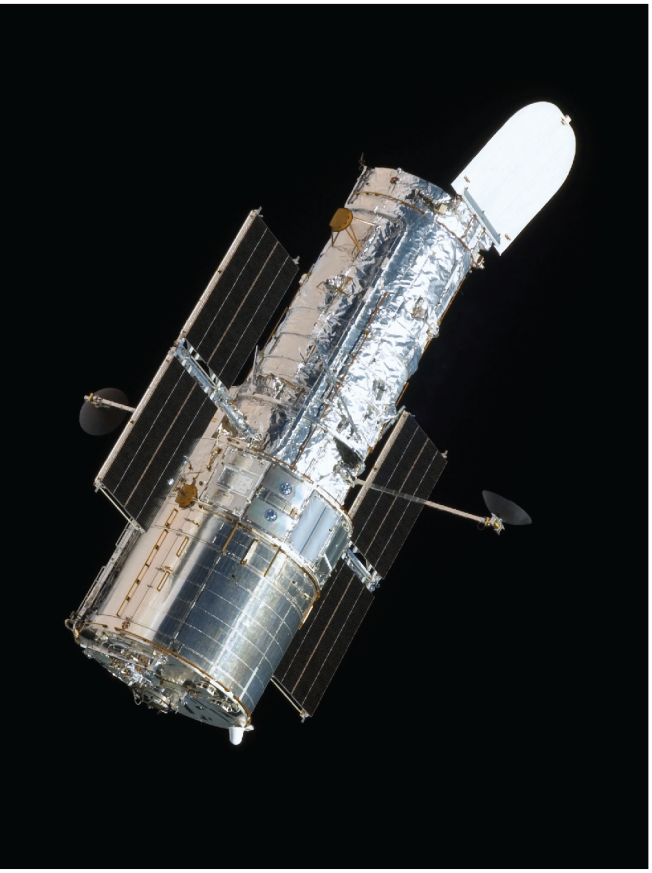
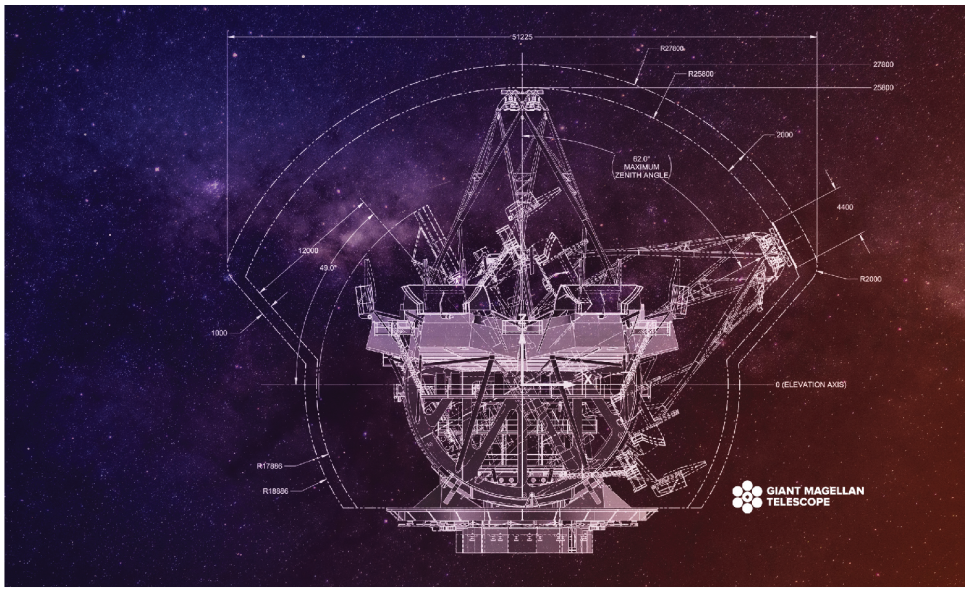
FEBRUARY 2018

★ HOUSTON ASTRONOMICAL SOCIETY ★

GUIDESTAR

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





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FEBRUARY 02, 2018 - GENERAL MEETING

NEW WINDOWS INTO THE UNIVERSE: FROM COSMIC DAWN TO TODAY

Kim-Vy Tran | Professor at Texas A&M University's Department of Physics & Astronomy

Since Galileo's time, our ability to study the universe has been driven by our ability to collect light from distant objects. Due to tremendous technological advances in the last few decades, we can now study the most distant galaxies known in the universe. In addition to seeing fainter objects at higher resolution, we can also view the universe at many different wavelengths ranging from gamma rays to radio waves. Dr Kim-Vy Tran will highlight the major advances that have been made with instruments such as the Keck telescopes and Hubble Space Telescope, and discuss why we need to continue pushing our limits by developing and building new observatories like the Giant Magellan Telescope.

Kim-Vy Tran's research focuses on how galaxies form and evolve. To study the properties of galaxies over cosmic time, Dr. Tran combines observations from space-based facilities such as the Hubble Space Telescope and Spitzer Space Telescope with observations from ground-based facilities such as the Magellan (Chile) and the Keck (Hawaii) telescopes. She and her research team connect observations of galaxies in the distant universe to understand how galaxies like our own Milky Way formed.

Dr. Tran earned her PhD in Astronomy and Astrophysics from the University of California in Santa Cruz.

ABOUT THE COVER

GIANT MAGELLAN TELESCOPE:
http://www.gmto.org/gallery/#/lightbox&slide=1

HUBBLE SPACE TELESCOPE:
https://www.nasa.gov/mission_pages/hubble/story/index.html

KECK TELESCOPES IN HAWAII
BY: Bob Wiesner

VLA IN NEW MEXICO
BY: Bob Wiesner

CALENDAR

FEBRUARY 2	7:00 p.m.	HAS Novice Meeting, U of H
	8:00 p.m.	HAS General Meeting, U of H
FEBRUARY 7	9:54 a.m.	Last Quarter Moon
FEBRUARY 10		Prime Night, Dark Site
FEBRUARY 15	3:05 p.m.	New Moon
FEBRUARY 23	2:09 a.m.	First Quarter Moon
MARCH 1	6:51 p.m.	Full Moon
MARCH 2	7:00 p.m.	HAS Novice Meeting, U of H
	8:00 p.m.	HAS General Meeting, U of H
MARCH 9	5:20 a.m.	Last Quarter Moon
MARCH 11	2:00 a.m.	Daylight Savings Time Begins
MARCH 17	8:12 a.m.	New Moon
		Prime Night, Dark Site
MARCH 20	11:15 a.m.	Equinox
MARCH 21	7:00 p.m.	VSIG Meeting, Mendenhall Center
MARCH 24	10:35 a.m.	First Quarter Moon
MARCH 31	7:37 a.m.	Full Moon

FOR THE LATEST INFORMATION ON CLUB EVENTS, GO TO
ASTRONOMYHOUSTON.ORG

OTHER MEETINGS

JOHNSON SPACE CENTER ASTRONOMICAL SOCIETY | jscas.net
Meets in the Lunar and Planetary Institute on the 2nd Friday of each month.

FORT BEND ASTRONOMY CLUB | fbac.org/club_meetings.htm.
Meets the third Friday of the month at 8:00 p.m. at the Houston Community College Southwest Campus in Stafford, Texas.

NORTH HOUSTON ASTRONOMY CLUB | astronomyclub.org
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.

BRAZOSPORT ASTRONOMY CLUB
Meets the third Tuesday of each month at the Brazosport planetarium at 7:45 p.m. The Brazosport planetarium is located at 400 College Boulevard, Clute, TX, 77531. For more information call 979-265-3376.

HAS MEETINGS

All meetings are at the University of Houston Science and Research building. See the last page for directions to the location and more information.

NOVICE MEETING
7:00 P.M. room 117 Science & Research 1 Bldg

GENERAL MEETING
8:00 P.M room 117 Science & Research 1 Bldg

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 or a conflict with other events at the University of Houston.

BOARD OF DIRECTORS MEETING
The Board of Directors Meeting is held on dates and at locations scheduled by the board. Information provided to GuideStar will be published. The meetings are open to all members of the Society in good standing. Attendance is encouraged.

Houston Astronomical Society

GuideStar_HAS

STARLINE
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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.

Like many members of HAS, I have been interested in astronomy and science in general for most of my adult life. In 2002, I had finally gotten to that point, career well in hand and family almost grown, where I started to change my outlook on life. It was time to start thinking about a little more favorable work life balance, and to develop a hobby based on my personal interests, one that would challenge me to continue to learn and grow. I was fortunate that my neighbor at the time was then President of HAS. Because of him I joined and have been an active member ever since.

Others come to amateur astronomy via different pathways. Some get involved because a parent is an amateur astronomer who enjoys sharing their hobby. Others are parents who get involved to support a child who has a strong interest in space and astronomy and end up getting hooked themselves. Still others are those interested kids who have grown into young adults and continue to participate in an awesome hobby where they are encouraged and challenged to learn more about our universe and where we fit in it.

The point is that no matter how we become amateur astronomers, we all share a couple of things in common. We all are novices when we start out, and we are all interested in doing astronomy because it engages our minds, and captures our imaginations.

When getting started in astronomy, the challenges we face can seem a bit daunting and the learning curve can seem pretty steep. Learning how to set up and use a telescope, knowing what can be observed on any given night, and how to find it by star hopping can seem so difficult. Rest assured however that with a bit of help practice, and perseverance you can master these skills.

Just being a member of HAS however is not enough. You need to be committed and open to actively learning new things. Don't be shy about asking for help. Most HAS members, if asked, are happy to provide advice and assistance, or point you in the direction of useful resources for learning. When you do ask for help however, please be mindful of the other members time and respectful of their equipment.

Being a part of an active astronomy club like HAS can make a world of difference in how you experience astronomy. HAS has a number of programs and organized events specifically for new astronomers, which are planned and staffed by HAS members who volunteer their time to help our less experienced members learn and become active members of our astronomy community. Seek these out and get involved in them. Once you learn, volunteer to share your newfound knowledge, and help others up the learning curve you just climbed.

As I write this letter, our annual HAS Leadership Team planning meeting is still a week in the future. One of the main topics we will be working on at this meeting is what new novice training programs we might initiate, and how we can make all our training programs and events more easily accessible to our newest members.

Keep on the lookout, as we will communicate any changes or new programs to our members. And if you have any comments about our novice astronomer training, what you would like to see HAS do, where we have gaps, or what we could be doing better, don't be shy. Let me know what you think at president@astronomyhouston.org.

Don Selle
HAS President

OBSERVATORY TRAINING SCHEDULE FOR 2018

The HAS Observatory Committee has set training dates for the Observatory. They are as follows:

MARCH 3RD	**AUG 11TH**
MAY 19TH	**OCT 20TH**

If any of these dates are rained out, then the dates will be the following weekend for each date. Training will be done on the use of the Observatory, F5 telescope, and the C14 on the listed dates. Separate training on "The Bob", the RC Astroimaging system will be announced soon. You must take the general training before you can register for the upcoming "Bob" training.

To be eligible for these training sessions the following requirements must be met. They are specified in the Observatory Operator Guide. You can request a copy of the Guide by sending an email request to the Observatory Director Chris Ober at chriso@astronomyhouston.org and a PDF copy will be mailed to you.

Prerequisite Requirements for students:

A. Must be at least 16 years of age or older.
B. Must be a Society member in good standing with all dues paid.
C. Have full knowledge of all general site rules and have completed the general site orientation.
D. Must have been a Society member for at least 6 months.
E. Will be required to execute an observatory building use agreement which is a contract of limited liability covering all rules, regulations, and requirements governing the use of observatory building facilities. Members under 18 years of age must have a parent or guardian execute the agreement on behalf of a minor user that is 16, or 17 years of age.

The training will start at 2:00 PM with teaching sessions, then after a break for dinner. Students will return at sundown to demonstrate competence in these areas:

A. Understanding of the burden of responsibility for the facility
B. How to Document "as found condition and as left condition" of the observatory
C. Proper use of Startup and Shut down of the telescopes
D. Use of emergency procedures

Each student should print and bring a copy of the Observatory Operators Guide with them to the class.

The classes are scheduled on or near a full moon to minimize the impact on the observing field. The sessions will be conducted even with the cloudy skies; the backup dates will be utilized only in the event of or threat of rain on a primary night. This would preclude the opening of the roof and training emergency procedures.
Your RSVP will be accepted on a first come basis as the training sessions are limited to six students per session. More sessions can be added based on the need.
To reserve your spot please send an email request for training to our Observatory Director at chriso@astronomyhouston.org

THE DARK SITE

The gate code for the Dark Site will change on March 3rd. That's earlier than usual. To get access, you must

1) pay your dues and
2) take the webinar and the accompanying test.

Once you pass the test, the new combination will be emailed to you. So, take it as soon as you can so your access doesn't get disrupted.

SOFTLIGHTHOUSTON.COM SHOWS HOW WE CAN CREATE BETTER CITIES

HAS member Debbie Moran has a website dedicated to changing the way we illuminate the night outside our homes and on our streets. At http://softlighthouston.com/ her page starts out with a clear proposition – Better home lighting and Better street lighting Equals Better Cities. The site goes on to give some good information about why glare is so bad for our night and what we can do about it. Dimming the light (taking out the blue) can actually increase visibility. Of course, one of the primary benefits to dimmer city lights would be to reveal more of the beautiful, night sky filled with stars.

Debbie has been working to propose these types of changes in the city of Houston. She also works with the International Dark Sky Association (www.darksky.org). Visit her site and get involved.

TEXAS ASTRONOMERS WILL LEAD EARLY STUDIES WITH $8 BILLION JAMES WEBB SPACE TELESCOPE

27 November 2017 | AUSTIN, Texas

NASA's James Webb Space Telescope, the powerful successor to the Hubble Space Telescope, is expected to launch in 2019 after decades of development. Now the agency has announced the scientists who will use the $8 billion telescope first, testing its instruments to prove it's in good working order. Steven Finkelstein, an associate professor of astronomy at The University of Texas at Austin, leads one of the chosen Early Release Science projects as principal investigator.

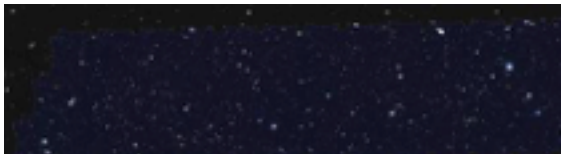
"This will be the first time anyone has had access to this brand new telescope that is in some ways 100 times better than Hubble," Finkelstein said. "This telescope will reveal enormous truths the moment we turn it on."
Finkelstein leads the Cosmic Evolution Early Release Science (CEERS) Survey. CEERS is a continuation of his work with the Hubble Space Telescope, studying the youngest galaxies in the early universe to understand how fast stars formed in these early galaxies and how galaxies evolve over time. The CEERS team is made up of 105 astronomers from 10 countries and includes researchers from 28 U.S. universities.

Finkelstein and the CEERS team will combine his new Webb Telescope study with his previous Hubble studies by focusing on some of the same regions of sky in a new light — literally. Webb will study the universe in infrared light, whereas Hubble specializes mostly in optical light (the kind of light our eyes can see). Using Webb, Finkelstein said, "we will discover the most distant galaxies ever seen — galaxies that were literally invisible to Hubble." He explained that Webb will see galaxies as they existed 13.4 billion years ago, when the universe was less than 3 percent of its current age.

The CEERS proposal was one of just 13 selected from more than 100 submitted to NASA for early access to Webb. CEERS was selected based on the importance of the science it will do, as well as the fact it will use multiple instruments on the telescope and test many different modes of observing. In short, CEERS will put the Webb through its paces.

The project will be carried out in the telescope's first five months of operation. The data Finkelstein's team collects will be made available immediately to other scientists around the world. "We'll be working hard to rapidly produce usable data products for the astronomy community," he said.
In all, UT Austin astronomers are involved in five of the telescope's 13 early release science programs. In addition to Finkelstein's leadership of CEERS, UT astronomers are taking important roles as co-investigators on three other projects: Hubble Postdoctoral Fellow Brendan Bowler and assistant professor Adam Kraus in a project that will image planets around other stars, research scientist Kristen McQuinn in a project to study populations of stars, and McDonald Postdoctoral Fellow Justin Spilker in a project to study galaxies that exhibit an optical effect called gravitational lensing. Several more UT astronomers, including many graduate students, are collaborators on early Webb projects.

A full-sized model of the James Webb Space Telescope is seen in Austin during the South by Southwest festival in 2013. This and other images are available from the JWST image gallery.



A Hubble Space Telescope view of the field that CEERS will survey. This field has been imaged by several surveys with Hubble, including AEGIS and CANDELS. A larger version (133Mb) of this image is available;

Steven Finkelstein is an associate professor in the Department of Astronomy at The University of Texas at Austin. (Credit: Steven Finkelstein)

— END —

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STARDATE.ORG/MAGAZINE

ASTERISMS – DOLIDZE 17

by Steve Goldberg

ASTERISM: a grouping of stars that form a recognizable pattern.

CONSTELLATION: Orion

RIGHT ASCENSION: 05h 22m 24.0s

DECLINATION: +07° 07' 00"

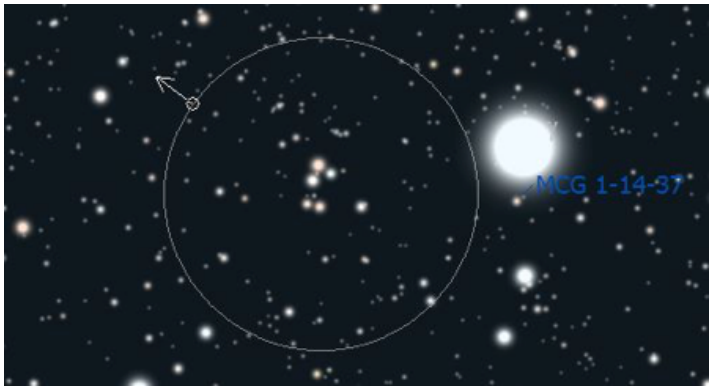
MAGNITUDE: 7 to 8

SIZE: 13' (minutes)

This asterism, Dolidze 17, in Orion contains 5 stars in a unique pattern. It is located at the shoulders of Orion right next to star Bellatrix (Gamma γ).

The asterism comprises of 6 stars. Three that form a triangle and the other 3 form a straight line next to the triangle.
The bright start to the right is Bellatrix (Gamma γ).

The circle is the eyepiece view of a 10" telescope with a 40mm eyepiece giving a 1.5 degree Field of View (FOV).



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 writting guidelines.

EDITING & PRODUCTION:
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THE GUIDESTAR IS THE WINNER OF THE
2012 ASTRONOMICAL LEAGUE
MABEL STERNS
NEWSLETTER AWARD

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:
  - o Full page = 6.875"w x 9"h
  - o Half page = 6.875"w x 4.25" h
  - o 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')

HOUSTON ASTRONOMICAL SOCIETY

P.O. Box 800564
Houston, TX 77280-0564

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

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. 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.

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.

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)

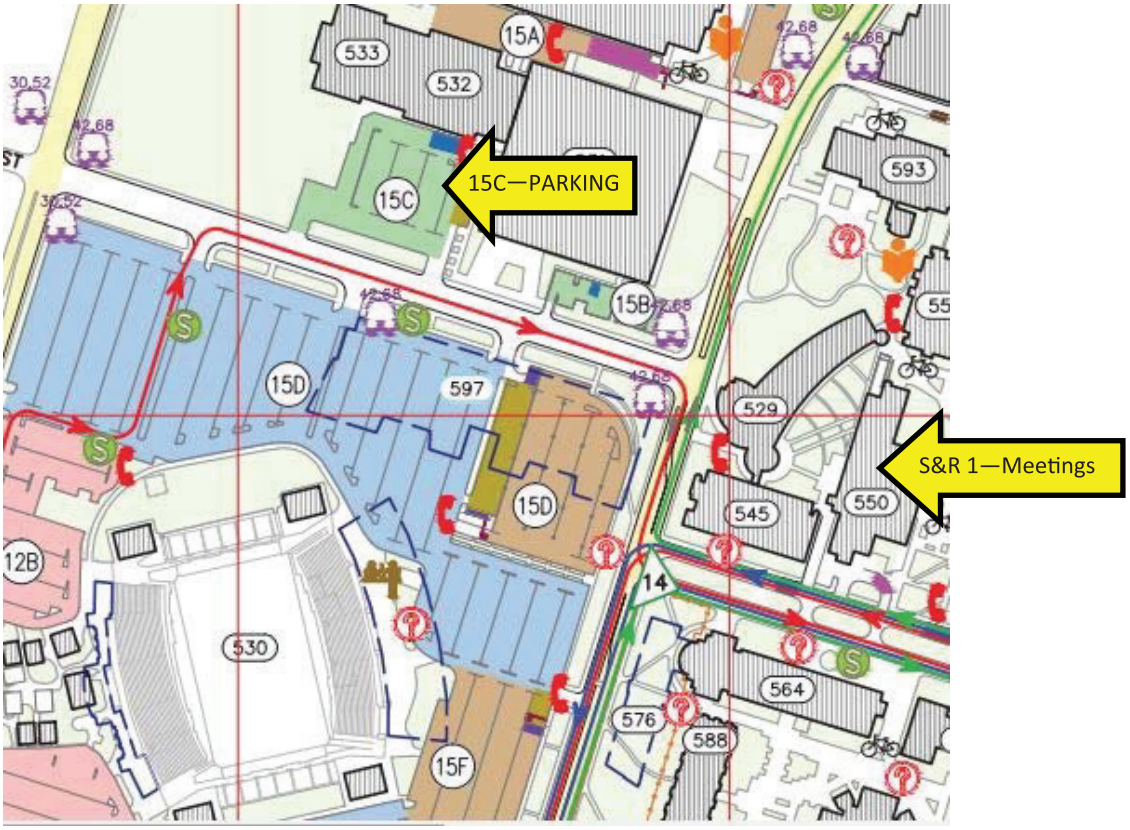
From I-45 going north (from NASA/Galveston)

- 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.