

GuideStar



September, 2013

Volume 31, #9

At the September 6 Meeting

Exploration of Mars...

And the Search for Life

Dr. Everett Gibson (NASA)

The search for life beyond the Earth has been like searching for the Holy Grail. Discovery of life beyond the Earth would be one of the greatest scientific discoveries possible. Mars offers an excellent opportunity for life to have developed during its early evolution. The missions to Mars have had the goal of discovering the requirements for life: water, carbon, energy transfer processes and a geologically active planet. Martian samples in the form of meteorites from Mars are available for study in laboratories on Earth. These Martian samples have been delivered to the Earth as "poor man's space probes". The secrets hidden within the Martian meteorites along with recent discoveries from automated rovers exploring the surface of Mars will be the focus of the presentation

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



The Houston Astronomical Society is a member of the Astronomical League.

Highlights:

Carroll Iorg—Astronomical League Prez	6
Texas 45—A Winner	9
Nominations for 2014	9
Kid's Outreach and Star Parties	10
The Weakest Solar Cycle in 100 Years	12
Size Matters, So Does Dark Energy	14
Gamma Delphini	15
Parking at UH for HAS Meetings	16

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 last page for directions to the location.

Novice meeting: 7:00 p.m.

"Astronomical League—What is it and what does it do? — Amelia Goldberg"

See page 10 for more information

General meeting: 8:00 p.m

See last page for directions 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 Pellerin C:713-598-8543
 Vice Pres: Vacant
 Secretary: Bill Flanagan.....
 Treasurer: Don Selle
 Past President: Gordon Houston

Directors at Large

Greg Barolak H:281-467-5780
 Mark Holdsworth..... H:713-478-4109
 Mike Rao..... 832-689-4584
 John Haynes..... H:802-363-8123
 Brian Cudnik..... H:832-912-1244

Committee Chairpersons

Audit Scott Mitchell H:281-293-7818
 Education..... Debbie Moran.....
 Field Tr./Obsg Steve Fast..... 713-898-2188
 Novice Debbie Moran
 Observatory Mike Edstrom
 Program Brian Cudnik..... H:832-912-1244
 Publicity Mike Rao 832-689-4584
 Telescope..... John Haynes..... H:802-363-8123
 Welcoming..... Vacant
 Membership Steve Fast..... 713-898-2188

Ad-Hoc Committee Chairpersons

Texas Star Party ... Steve Goldberg H:713-721-5077
 AL Awards Doug McCormick
GuideStar Bill Pellerin C:713-598-8543
 Outreach Alan Rossiter H:713-660-9503
 Webmaster Jeffery McLaughlin
 Email: webmaster@astronomyhouston.org
 By-Laws Review ... Scott Mitchell H:281-293-7818
 Urban Observing .. Mike Rao 832-689-4584

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
 Associate.....\$6
 Sustaining\$50
 Student\$12
 Honorary..... N/C

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: 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.

Table of Contents

3	.....President's Message
4	.....September/October Calendar
5	.....Observations of the Editor
6	.....Carroll Iorg - Astronomical League Prez
9	.....Texas 45 -- a Winner.....Nominations for 2014
10	.....Kid's Outreach and Star Parties.....Astronomical League - Novice Preso
11	.....Observatory Corner
12	.....The Weakest Solar Cycle in 100 Years
14	.....Size Matters, So Does Dark Energy
15	.....Gamma Delphini
16	.....Parking at UH for HAS Meetings

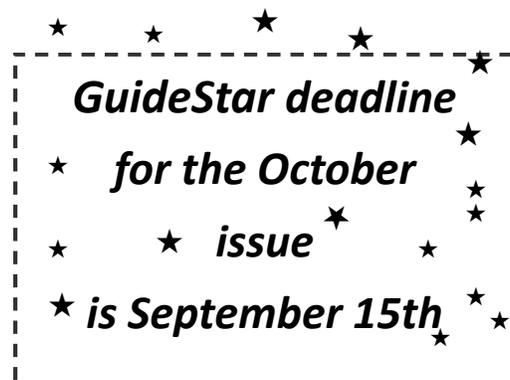
Other Meetings...

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

Fort Bend Astronomy Club meets the third Friday of the month at 8:00 p.m. at the Houston Community College Southwest Campus in Stafford, Texas
http://www.fbac.org/club_meetings.htm.
 Novice meeting begins at 7:00 p.m., regular meeting begins at 8:00 p.m. Website:
<http://www.fbac.org>

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

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



President's Message

by Bill Pellerin, President

What's Going on with the HAS?

- There have been some changes in our roster of officers and other leadership positions. Mike Edstrom, who previously occupied the VP position was voted to be Observatory Chairman at the August meeting. This means that **we will be voting to elect a new VP role at the September meeting**. Thanks to Mike for all the work he has done as VP and for taking on the observatory job serving the members of the HAS.
- **The November meeting is the 'annual meeting'** of the organization, at which the election for officers and elected committee leaders for 2014 will be held. We will introduce our nominating committee at the September meeting. Your suggestions are always welcomed by the nominating committee. If you want to volunteer to serve the membership of the HAS by becoming an officer, board member, or committee leader please let the leadership team know. See page 9 of this issue for more information.
- **Thanks to Amelia Goldberg** who was our Astronomical League coordinator for many years. The HAS is a member club in the Astronomical League and Amelia has been reviewing submissions for AL awards and presenting those awards at the monthly meetings. Doug McCormick, an AL Master Observer, has taken on the job of AL coordinator. Thanks to Doug for adding this to his portfolio of duties.
- **Last month's meeting with Fritz Benedict as our speaker was a great one.** I've know Fritz for several years and every time I've heard him speak it has been great. Thanks to Brian Cudnik for arranging this presentation.
- Remember — **the October, 2013 HAS meeting will not be held at our usual time and place.** The All Clubs meeting on October 11 will constitute our October meeting. October 12 is the Astronomy Day event at the George Observatory. If you haven't already volunteered to help with this, see www.astronomyday.net to sign up. This is the biggest outreach event of the year and your contribution of your time and effort will help make the event the big success that it has always been.
- **Committee to develop recommendations for remembering Bob Rogers** and others who have contributed in significant ways to the HAS observing site is continuing its work and will have a recommendation to the board in the near future. Once the board has approved a recommendation the plan will be presented to the membership.

Parking — Read this...

We can continue to park in the lot across Cullen from the Science and Research Building. The spaces are marked 'Faculty' but are available to us from 6:30 p.m. to 10 p.m. on our meeting night.

I have contacted UH Parking and they have confirmed that these spaces are available to us. See the map showing the available parking spaces on the next-to-last page of this *GuideStar*.

You can pay to park in the parking garage near our usual spot. This costs \$3.00. The visitor parking entrance is the one farthest from Cullen Boulevard.

Cheers,

..Bill Pellerin

President

Observations... of the editor

by Bill Pellerin, GuideStar Editor

Fall Begins, September 22

While we're always late to the party for cooler weather, the official start of fall, in the northern hemisphere, is on September 22 at 3:44 p.m. our time. You know the drill. This is the day the Sun, heading south, crosses the equator and, after that, stays into the southern hemisphere until next spring. It is also the equinox, the day of equal night time and day time and it means for the next six months our nights will be longer than our days. Perfect for us night people.

The Sun will be in Virgo as it crosses the equator at RA 12h 00 m 00 sec and DEC 00 deg 00 min 00 sec.

We can also start thinking about the winter constellations showing up late at night. And jackets, earmuffs, hand warmers, etc. Get ready for it.

Perseid Meteors—Media Hype

I didn't see a lot of Perseid meteor observations on the list server. There were some, but not many. It's always amusing to me how much hype these events get from the news media. They commonly show pristine dark sky photos with a meteor streaking across the sky. Very few people have that experience or access to that experience. Even under the best of circumstances, short of a meteor storm, there are only some meteors and the best show is at an inconvenient time, very early in the morning. The other event that gets a lot of hype is a full moon near perogee. Yes, it's slightly bigger than other full moons but the images they show are ones taken with a long camera lens or a telescope, and these instruments make the moon look positively huge (which it does not).

This kind of hype sets people up for disappointment, in my opinion. Most astronomical events are relatively subtle (eclipses are not subtle) and require some knowledge about the events to be enjoyed.

The Georgian Star

I've almost finished a book that's been on my shelf for a while. It's called *The Georgian Star — How William and Caroline Herschel Revolutionized Our Understanding of the Cosmos* by Michael D. Lemonick. The book is now available in hardback from Amazon at \$9.95 (original price \$23.95). Michael Lemonick was the science writer for *Time* magazine and was responsible for several significant articles in that magazine.

This book has a bit of a different take on the Herschels than other books I've read. The author is quite complementary about the

work they did and the enthusiasm and effort they donated as amateur (and later paid) astronomers. He also tells about some of the odd ideas that were held by William including his speculations about other beings residing on other planets.

The title of the book derives from the discovery of the planet we now call Uranus in 1781. The Herschels wanted to call the planet the Georgian Star after king George III, although as we now know that name didn't stick. William was able to secure funding for his 40 foot (length) telescope from the King, and more funding when that money ran out. The telescope turned out to be something of a failure. Hard to manage and control, with its one-ton mirror and subject to optical problems owing to temperature variations.

This book is a good read if you want to know the basic history of the Herschels, only 171 pages long.

Until next time...

clear skies and new moons!

..Bill

Just Looking

A GuideStar Interview by Clayton L. Jeter

Carroll Iorg—AL President



For this month, I tracked down our Astronomical League's President, Carroll Iorg, at Friday night's "Texas Giveaway" TSP-2013. He is now the third A.L. president that I have interviewed....Robert Gent and Terry Mann were in recent years.

Look up "Public Outreach" in Wikipedia and you'll have a good chance of seeing his name within its text. Carroll is spreading the word as our current Astronomical League's president.

Let's see what Carroll has to say about his astronomy, and ours. Here's Carroll...

The Carroll Iorg bio...

Carroll became interested in astronomy during Halley's return and his first telescope was a "Comet Catcher"

A 8" Meade Reflector followed, and he currently has an 11" Celestron that doesn't get nearly enough use with my League responsibilities.

Carroll grew up on a farm with excellent nightly views of the Milky Way, but he didn't appreciate it fully at the time.

He was drafted early to run for office in my local club, including a couple of terms as president in the early '90s and chairing the ALCon for the Astronomical League in 1994 and 2005.

Carroll was chair of Mid-States region for many years, and chaired three to four regional conventions.

He was the awards coordinator for the League for eight or nine years when then-VP Bob Gent went to Europe for the IDA and left me to handle that part of the VP duties; the next VP asked me to continue handling the awards programs for the League.

Carroll served League VP for four years, and is now serving in his second term as president.



The Carroll Iorg interview...

Clayton: It's truly great, Carroll, to have you here for a chat about you and your astronomy. Let's get to it...

You said you became involved in astronomy as Comet Halley was inbound back in 1985 (me too). Can you explain how that comet sparked all this interest in you? About when did you first observe it? Did you use your Celestron "Comet Catcher" to view it with?

Carroll: I tried to see it with my "Comet Catcher," but it wasn't meant to happen. Even though the view in other telescopes wasn't as spectacular as I thought it would be, this was what got me interested in the hobby.

Clayton: How did you fall into becoming our A.L. president? Can you describe to our readers a day in the life of Carroll Iorg as the president of the Astronomical League? I know you're a busy man, but do you have time to even observe?

Carroll: The time I spent as Awards Coordinator convinced me that my leadership skills could serve the League well.

One of my main goals that developed as I was considering the position of vice president and then president was improving the "customer service" aspect of the League, including improving the turnaround time in getting certificates and pins back to members and also communicating more with individual societies.

(Continued on page 7)

(Continued from page 6)

The League's National Observing Awards Coordinators have been key in assembling a strong team of observing award program administrators. The ALCor "What's Up With the Astronomical League" newsletter has been a positive step in improving the communication.

As far as a typical day as League president, the short answer is there is a good deal of variety to the position. Today it might be a phone call from someone who has found something he or she thinks is a meteorite and requests a source for verification. Tomorrow it might involve someone who didn't get a *Reflector* because the membership information hasn't yet been provided to the League's national office by the society's ALCor — perhaps a new member. Occasionally members will inquire as to when they will be getting an observing award certificate and pin. (See comments elsewhere regarding the great improvement in the timeliness of our customer service regarding observing awards.)

Sometimes members of the general public will ask about something they saw in the sky that they can't identify. Or perhaps a TV reporter will wake me up early in the morning for an interview regarding the asteroid that landed in Russia.

Yes, it is often difficult to schedule blocks of time for observing while serving as League president.

Clayton: I am an avid A.L. observing program groupie. I have completed 7 programs and currently working on the Comet and Planetary Nebula lists. These programs keep me out of the living room recliner and outside peering into an eyepiece. Have you worked on any yourself? Which programs...got a favorite?

Carroll: For the past 20 + years of League service, which includes regional leadership in addition to my personal jobs, often my telescope observing time has been limited. My observing award programs involvement includes the Messier, Meteor and Outreach programs.

Clayton, you are representative of many of our members who enjoy and actively participate in our observing programs. At this year's council meeting at ALCon 2013 we added three more observing programs, making a total of almost 40 programs. There is something interesting to observe for many different parts of astronomy. We are still developing the League's Imaging program, which will be important for the members whose passion is astrophotography.

Clayton: The A.L. seems to be very proactive in public outreach. Explain how that work is being accomplished?

Carroll: The outreach awards program has been one of our most popular ones in recent years. Also Astronomy Day activities are an important part of taking outreach to the public. An added bonus is that societies who enter the annual Astronomy Day competition are eligible for top prizes for their groups, sponsored by the

League, *Sky & Telescope* and the American Astronomical Society.

Clayton: Do you see any signs of the younger generation becoming interested in amateur astronomy?

Carroll: I am positive about the interest of the youth in amateur astronomy. One pertinent example of this is from my participation in the Venus Transit activities and seeing firsthand the pride exhibited by youth in taking their own photos of a "filtered" sun and being so excited to show their friends what they had created and then emailing their photos to other friends. We must meet the younger generation where they "live," not necessarily where we as adults think they should be. Often these "places" are in the world of computers, cell phones and social media.

Clayton: I met you at TSP-2013 ... was this your first Texas Star Party? How about other parties around the country?

Carroll: Yes, the 2013 TSP was a first for me. It was a most positive experience. I met some great amateur astronomers, some for the first time, but many I have known for several years. My star party visits have included Okie-Tex, Stellafane, Great Plains and Heart of America. In 2010, the League scheduled an "observing" ALCon at Bryce Canyon. Other major star parties such as the Winter Star Party, the Oregon Star Party and the Nebraska Star Party are still on my list to attend.

While we're talking about special observing events, the League has already made preliminary plans to schedule ALCon 2017 a few days before the total solar eclipse that occurs on August 21, 2017. Center line locations include Casper, Wyoming, which is where Astrocon 2017 (as ALCon will be referred to that year) will be held that year in conjunction with the solar eclipse. We have just confirmed Fred Espanek, Mr. Eclipse, as the keynote speaker for that national convention.

(Continued on page 8)

(Continued from page 7)

Clayton: What's your attraction to the night skies? Got a favorite object?

Carroll: It is tough to narrow this down, but my favorites include Jupiter and its fascinating moons, Saturn with its spectacular rings, and the constellation Orion with its very special Orion Nebula.

I also love observing comets. Hopefully Comet ISON will be a naked-eye object around Thanksgiving this year. Comet brightness can't be predicted with certainty, so we'll see. A bright comet would be a welcome observing object for amateurs, but also an object that excites the public would be a welcome event for increasing interest in the hobby and science in general.

Clayton: How would you like to see your own astronomy grow? Are you interested in astrophotography?

Carroll: My goal is to do more planetary observing. I have a tremendous appreciation for astrophotography, which takes a good deal of time and expertise to create such beautiful masterpieces, but this is something I will probably not pursue personally.

Clayton: I'd like to know a little about your current Celestron C-11 ... is this a go-to? Where do you observe?

Carroll: Yes, my telescope is a go-to. My local society has a dark-sky location that has adequate dark skies for more serious observing.

Clayton: Seems every time I receive a current copy of the *Reflector*, I take note of new clubs that have joined the League. Is the membership in the U.S. actually growing in numbers?

Carroll: Yes, we have had a steady growth in society membership over the past several months. The recession of the past few years seems to have affected the membership numbers of many hobbies, including the League's, but our membership continues to improve in the last several quarters. Currently we have over 15,000 members in societies, plus several hundred at-large memberships.

We have had several recent inquiries from foreign societies that would like to have membership in the League, and we plan to start a trial program to begin this new venture.

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

Carroll: Start out with a good pair of binoculars or a small four-inch or so aperture telescope. Often new people to astronomy become discouraged when they see the large-aperture telescopes at public events, which cost several thousand dollars, and believe they have to spend that much to get a decent telescope. In our societies, we need to emphasize starting with an affordable instrument that will provide decent views of the brighter objects, then they can always move up if "aperture fever" overtakes them as it does many of us amateur astronomers.

Clayton: Is there an email address that you have that a Houston Astronomical Society member could contact you for an additional ques-

tion or two?

Carroll: Sure: president@astroleague.org is the best way to contact me.

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

Carroll: Clayton, thanks for allowing me to share my thoughts with your membership. I enjoyed it. Who knows, I just may be able to drop by the Houston area in the next few months. I would love to visit your group.

Clayton: Clear skies always,

Carroll: Best wishes and thanks for you and your society's longtime support for the Astronomical League.

Clayton is an avid SCT visual observer and a longtime member of the Houston Astronomical Society. Contact him at: stonebloke@gmail.com

And the Winner is...

HAS Texas 45

By Rene Gedaly

The HAS Texas 45 observing program has its first awardee: Steve Fast, HAS Field Trip & Observing Chair. Steve viewed all 60 objects on the list using the star-hopping method which, in addition to bragging rights, qualifies him for a gold level certificate and pin modeled after the HAS logo. Presenting the award at the September general meeting is HAS President, Bill Pellerin. Asked how he was able to complete the list so quickly, Steve replied

When the list came out, Clayton and I joked about racing to be first. I could feel him breathing down my neck the whole time. In fact, he was out at the site when I finished, and I decided I better get it done that night or he would beat me.

Hearty congratulations, Steve. As for the rest of us, we can feel free to take our time; the pins are waiting for us.

Getting started on the Texas 45 and use SkyTools? Maybe you've

wondered if there's a way to track your progress without confusing your Texas 45 logs with other logged observations. Well, wonder no more. Check out the procedure in the Forums under Texas 45. A big thanks goes to the Goldbergs, Steve for testing every step of the procedure, providing edits along the way, and Amelia for suggestions on making the log sheet easier to cross-reference and annotate. Any remaining errors are my own.

RENE GEDALY

PROGRAM COORDINATOR

HAS TEXAS 45

Get involved running your society

Nominations Being Taken for 2014

Nominations are now being taken for all positions of the Houston Astronomical Society: officers, directors-at-large, and standing committee chairpersons. Those running for office must have been a member of HAS since one year before January 1, 2014. Terms run for one year, January 1, 2014 through December 31, 2014.

The officers of the society are president, vice president, secretary and treasurer. Five directors-at-large join the officers of the society to compose the board of directors.

The standing committees of HAS are:

- Telescope Committee
- Field Trip and Observing Committee
- Program Committee
- Publicity Committee
- Novice Committee
- Audit Committee
- Observatory Committee
- Education Committee
- Welcoming Committee

Known vacancies at this time are telescope committee chair, publicity committee chair, education committee chair, welcoming committee chair, and one director-at-large position.

Please contact any member of the nominating committee to nominate yourself, nominate someone else, or to get more information. If you would like to participate in one of the standing committees rather than run for office, let one of us know that, too.

At the October general meeting, the nominating committee will nominate at least one person for each office and standing committee chair position. Elections will be held at the annual meeting of the society in November. Please see the bylaws for specific information.

Make this the year you decide to get involved running our great organization.

Your nominating committee:

Rene Gedaly, chair, rsgedaly@comcast.net
 John Hanes, henry_v_1598@yahoo.com
 Clayton Jeter, stonebloke@gmail.com
 Debbie Moran, deb-biemoran@earthlink.net
 Bram Weisman, (832) 338-9499

October-December 2013**Kids Outreach and Public Star Parties***By Alan Rossiter***Event: Fathers & Flashlights****Leader:** Alan Rossiter**Type:** Urban Overnight Camp for Kids & Dads. Numerous organized activities.**Date:** Saturday, 10/5/2012**Time:** 8:00 PM - 9:30 PM (tentative)**Location:** West University Little League Field (University Blvd @ Auden Street)**Time:** 6:30 PM – 10:00 PM**Location:** Houston Arboretum, 4501 Woodway Drive**Event: Camp for All / Candlelighters****Leader:** Bram Weisman**Type:** Observing – Kids from MD Anderson and Texas Childrens'. Dinner provided.**Date:** Fridayday, 10/11/2013**Time:** 6:00 PM – 10:00 PM**Location:** Camp for All near Brenham, TX**Name: The Houston Arboretum ISON Comet watching****Leader:** Bill Flanagan**Type:** Mostly Adults – Arboretum Members. An evening at the Arboretum. Food & Drink!**Date:** Saturday MORNING, 12/14/2013**Time:** 5:00 – 8:00 AM**Location:** Houston Arboretum, 4501 Woodway Drive

Details – especially times – are subject to change

Name: The Houston Arboretum Hunter's Moon Party**Leader:** Bill Flanagan**Type:** Mostly Adults – Arboretum Members. An evening at the Arboretum. Food & Drink!**Date:** Thursday, 10/17/2013 (tbc)**Novice Presentation September, 2013****Astronomical League—Amelia Goldberg***By Amelia Goldberg*

If you are a member of the Houston Astronomical Society, and we hope you are, you are also a member of the Astronomical League. You are eligible to receive all the benefits of the AL membership including the *Reflector* magazine and all the observing programs. At this meeting, or long-time AL coordinator, Amelia Goldberg will tell us about the AL, what it is and what it does. She will also talk about the AL observing programs.

If you can't wait, check out the Astronomical League's web site at www.astroleague.org.

Observatory Corner

By Mike Edstrom, Observatory Committee Chairman

Hello,

We have new neighbors at the dark site, Square Mile Energy has a permit to drill a well within about a ¼ mile of the dark site. The access road is across from the Oakridge entrance gate. They have been clearing the land and should start placing equipment soon which includes a large lighting system including at the entrance gate. Once they drill the well and if they find oil they will put a station in place that will not require major lighting so I am hoping this process will be finished by the end of the year or sooner we will keep you updated as we see progress.

Now to dark site business, as you may know I have been elected to try to fill a very large set of shoes left by the untimely death of my good friend Bob Rogers. I have called a mid-year meeting of the Observatory Committee on Saturday September 7th at 2 pm. The committee will be reviewing projects that were assigned at the annual meeting in January. We will also be looking at new responsibilities for sub committees and their leaders. Our goal will be to provide a "Best in Class" observing site to all the members of HAS.

As a safety reminder please read the sign posted on the side of the metal building at the Dark Site which has directions to the hospital and contact information for the sheriff's department it also has the address to the site in case of a medical emergency.

I would like to remind you that we need to continue filling out log reports at the site so I can give this information to the Fondren Family. The property is on a 99 year lease and part of the lease agreement is that HAS needs to report every year to the Fondren Family that the property is being used. The log reports are located in the box in the middle of the field. Just open the cover, fill out the report and then slide it into the slot that is in the inside of the cover and then close the box. It is very important that everyone fill out a log report so that we are showing that the observing site is being used. Your help on this is very much appreciated.

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% of the gross sales that member spends at Randalls. Randalls totals up the amount spent each quarter and will send us a check if the amount goes over \$2,500, otherwise the total rolls over to the next quarter and 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. 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, please let me know.

Thank you,

Mike Edstrom

medst22531@msn.com

The Weakest Solar Cycle in 100 Years

By Monica Young, *Sky and Telescope*, www.skyandtelescope.com

Scientists are struggling to explain the Sun's bizarre recent behavior. Is it a fluke, or a sign of a deeper trend?

The Sun is acting weird. It typically puts on a pageant of magnetic activity every 11 years for aurora watchers and sungazers alike, but this time it overslept. When it finally woke up (a year late), it gave the weakest performance in 100 years.

What's even weirder is that scientists, who aren't usually shy about tossing hypotheses about, are at a loss for a good explanation.

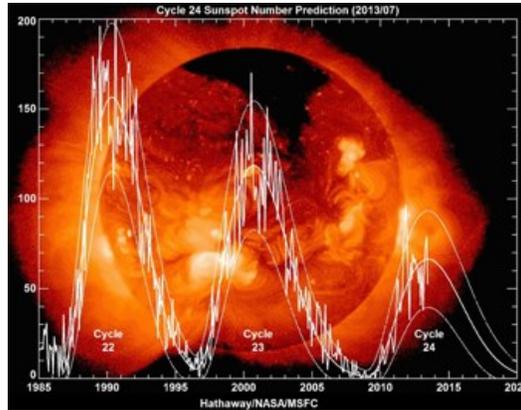
Three scientists, David Hathaway (NASA / Marshall Space Flight Center), Giuliana de Toma (High Altitude Observatory), and Matthew Penn (National Solar Observatory) presented possible explanations at this month's meeting of the American Astronomical Society's Solar Physics Division, but their results sparked a lively debate rather than a scientific consensus.

A Weak and Weird Cycle

A well-behaved Sun flips its north and south magnetic poles every 11 years. A cycle starts when the field is weak and dipolar—basically, a giant bar magnet. But the Sun's rotation is faster at its equator than at its

poles, and this difference soon stretches the field lines like distended rubber bands around the solar surface. Frenetic

activity ensues, with magnetic tangles producing sunspots, prominences, and sometimes flares and plasma explosions. All of that dies



The Sun is currently at the peak of Cycle 24, the weakest cycle in 100 years.

Credit NASA/NSFC

down when the Sun-wide magnetic field lines finally snap into simpler configurations, re-establishing the dipole field and beginning the next cycle.

The Sun has been doing all of that, just to a lesser degree. "Not only is this the smallest cycle we've seen in the space age, it's the smallest cycle in 100 years," says Hathaway, who took part in the Solar Cycle 24 Prediction Panel back in 2007.

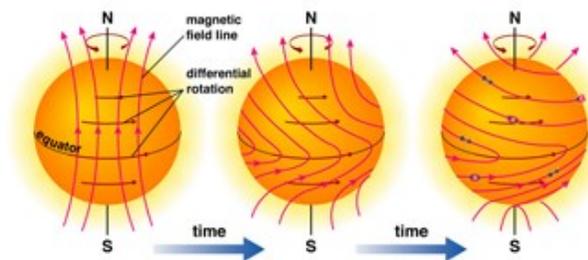
The panel members were split at the time on whether the next solar activity cycle would be strong or weak, but their middle-of-the-road estimate anticipated 90 sunspots as a peak value near August 2012. Instead, the peak sunspot number seems to be less than 70, and the maximum arrived later than expected. Cycle 24 should have peaked in 2012, 11 years after its last minimum in 2001, but the Sun overslept by a full year, waking up in 2013 instead.

And its waking has been asymmetric: the north pole has led the cycle since 2006, with the south pole lagging behind. "It's not uncommon to see hemispheres going out of phase . . . Usually this [asymmetry] lasts a year or so and then the hemispheres synchronize," de Toma explains. "We don't know why this is lasting for so long."

Explaining Weirdness

It's possible that, weak and weird as it is, Cycle 24 is still part of the Sun's normal variation, even if it's one of the weakest cycles yet recorded.

In fact, both Hathaway and de Toma think the 11-year cycle might be part of a larger one. Historical records show weak cycles at the turn of the 19th and 20th centuries, so it could be that the solar cycle tapers every 100 years or so in what's known as the Gleissberg Cycle. It's not easy to establish the existence of a cycle that turns over on

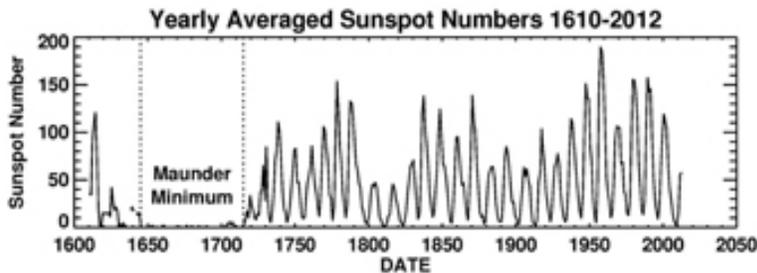


The Sun rotates faster at its equator, which stretches the magnetic field lines around the solar surface.

Credit: Addison Wesley

(Continued from page 12)

such a long timescale, and even Hathaway admitted, "Certainly I don't understand how it works."



Cycle 24 is the weakest cycle in 100 years. This might be part of a centennial tapering of magnetic activity known as the Gleissberg cycle.

D. Hathaway / NASA / MSFC

Doug Biesecker (NOAA), chair of the most recent prediction panel, says, "I remain highly skeptical . . . [Even] if you believe there is a 100-year cycle, then that still doesn't tell us why. Just that it is."

Penn offered another, more catastrophic option: the sunspot cycle might die altogether. His team uses sunspot spectra to measure their magnetic fields, and his data show a clear trend: the magnetic field strength in sunspots is waning.

"If this trend continues, there will be almost no spots in Cycle 25, and we might be going into another Maunder Minimum," Penn states. The first Maunder Minimum occurred during the second half of the 17th century. Almost no spots were seen on the Sun during this time, which coincided with Europe's Little Ice Age.

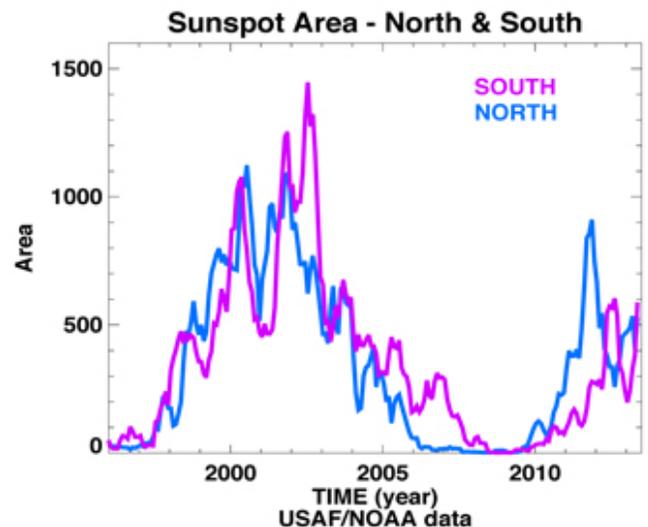
But Penn acknowledges that magnetic field measurements from other studies don't always see the same trend he sees. Some observations show that sunspots' magnetic field strength varies with the solar cycle, and others (including de Toma's) show that sunspots' magnetic fields aren't changing with time. De Toma was even able to reproduce Penn's results by excluding small sunspots, suggesting Penn's trend might result from the way his team selects the sunspots they measure.

Another word of caution came from Hathaway, who notes that the Maunder Minimum might have been a catastrophic event rather than a gradual trend. "Many of my colleagues are poring over historical records to find out . . . what did lead up to the Maunder Minimum?" he says. "New observations suggestion that the cycle before the Maunder Minimum wasn't particularly small."

Regardless of what's causing the Sun's strange behavior, Hathaway and Penn, who are both in the solar prediction business, anticipate

that Cycle 25, expected to peak in 2024, will be the weakest yet.

Penn's prediction is based on the weakening magnetic field he sees within sunspots; Hathaway's are instead based on measurements of the Sun's polar field and the meridional flow, the flow of magnetic flux from the Sun's equator to the poles. A stronger flow would help strengthen weak fields, but meridional flows have been completely absent in Cycle 24 so far. We might have a long wait ahead of us to see if and when the Sun recovers.



Penn's research shows that sunspots' magnetic field strength is declining over time. Sunspots can only form if the magnetic field is greater than around 1,500 Gauss, so if the trend continues, we could be headed for a time where no spots appear on the Sun's surface.

Credit: M. Penn

This content distributed by the

AAVSO Writer's Bureau

Size Does Matter, But So Does Dark Energy

By Dr. Ethan Siegel

NASA Space Place

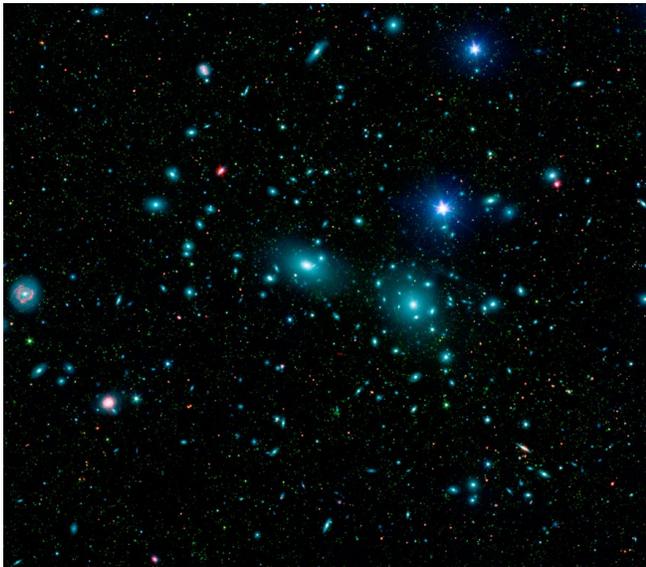
Here in our own galactic backyard, the Milky Way contains some 200-400 billion stars, and that's not even the biggest galaxy in our own local group. Andromeda (M31) is even bigger and more massive than we are, made up of around a trillion stars! When you throw in the Triangulum Galaxy (M33), the Large and Small Magellanic Clouds, and the dozens of dwarf galaxies and hundreds of globular clusters gravitationally bound to us and

our nearest neighbors, our local group sure does seem impressive.

Yet that's just chicken feed compared to the largest structures in the universe. Giant clusters and superclusters of galaxies, containing thousands of times the mass of our

entire local group, can be found omnidirectionally with telescope surveys. Perhaps the two most famous examples are the nearby Virgo Cluster and the somewhat more distant Coma Supercluster, the latter containing more than 3,000 galaxies. There are millions of giant clusters like this in our observable universe, and the gravitational forces at play are absolutely tremendous: there are literally quadrillions of times the mass of our Sun in these systems.

The largest superclusters line up along filaments, forming a great cosmic web of structure with huge intergalactic voids in between the galaxy-rich regions. These galaxy filaments span anywhere from hundreds of millions of light-years all the way up to more than a billion light years in length. The CfA2 Great Wall, the Sloan Great Wall, and most recently, the Huge-LQG (Large Quasar Group) are the largest known ones, with the Huge-LQG -- a group of at least 73 quasars -- apparently stretching nearly 4 billion light years in its longest direction: more than 5% of the



Digital mosaic of infrared light (courtesy of Spitzer) and visible light (SDSS) of the Coma Cluster, the largest member of the Coma Supercluster. Image credit: NASA / JPL-Caltech / Goddard Space Flight Center / Sloan Digital Sky

observable universe! With more mass than a million Milky Way galaxies in there, this structure is a puzzle for cosmology.

You see, with the normal matter, dark matter, and dark energy in our universe, there's an upper limit to the size of gravitationally bound filaments that should form. The Huge-LQG, if real, is more than double the size of that largest predicted structure, and this could cast doubts on the core principle of cosmology: that on the largest scales, the universe is roughly uniform everywhere. But this might not pose a problem at all, thanks to an unlikely culprit: dark energy. Just as the local group is part of the Virgo Supercluster but recedes from it, and the Leo Cluster -- a large member of the Coma Supercluster -- is accelerating away from Coma, it's conceivable that the Huge-LQG isn't a single, bound structure at all, but will eventually be driven apart by dark energy. Either way, we're just a tiny drop in the vast cosmic ocean, on the outskirts of its rich, yet barely fathomable depths.

Learn about the many ways in which NASA strives to uncover the mysteries of the universe:

<http://science.nasa.gov/astrophysics/>. Kids can make their own clusters of galaxies by checking out *The Space Place's* fun galactic mobile activity:

<http://spaceplace.nasa.gov/galactic-mobile/>

Shallow Sky Object of the Month

Gamma Delphini

Object: Gamma (γ) Delphini
Class: Easy double star
Constellation: Delphinus
Magnitude: 4.3 / 5.1 (combined magnitude 3.9)
R.A.: 20 h 47 m 20 s
Dec: 16 deg 10 min 46 sec
Size/Spectral: F7 / K1 ; 9.2 arc seconds
Optics needed: Small telescope

Why this is interesting

This month, we get to find the small constellation Delphinus, we find an asterism within the constellation, and we get to find a nice and easy-to-see double star within that constellation. It's something of a three-fer. Three observations in one.

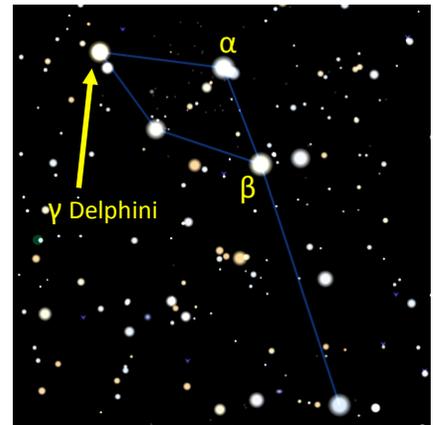
First, let's find the constellation. Find Cygnus the Swan, and move south from there about 25 degrees. Altair (in Aquila) is southwest of Delphinus and Pegasus is east.

The constellation name means 'the dolphin' and it looks a bit like a dolphin jumping out of the water, so it's easy to pick out. There are no really bright stars in this constellation so you'll have to be in semi-dark, at least, skies to see it. The third brightest star is our ultimate destination, Gamma Delphini shines at magnitude 3.8 and the other nearby Alpha and Beta stars are only slightly brighter. The small four sided asterism which includes this stars is called Job's Coffin.

The double was easy for me to see with 68x magnification (7 mm eyepiece in a 480 mm f/l telescope) in my 3" refractor. If I double the magnification the view doesn't improve. Having said all that the brighter star looks more yellow than the dimmer star to me, and the opposite should be true. What colors do you see?

For the double star, astronomers call the two stars Gamma¹ (the F7 star—yellow/white) and Gamma² (the K1 star—orange), and who are we to argue. Color and temperature are the same thing and the F7 star is hotter than the K1 star. Remember the Hertsprung-Russell diagram where stars, from hottest to coolest are labeled OBAFGKM.

The Gamma star pair is 110 light years from us and the angular separation indicates that the stars are separated by 16 ly. The period of orbit is 3249 years and the current position angle is 266 degrees. The position angle is measured from the brighter star to the dimmer one, with north being 0 degrees, east being 90 degrees and so on. For this star pair, the secondary star is southwest of the primary (>180 degrees and <270 degrees). To get this right in your telescope know



*Finder chart for Gamma Del
 Star chart generated by TheSkyX ©
 Software Bisque, Inc. All rights re-
 served. www.bisque.com*

which way is north and which direction is east (or west) in the eyepiece.

Wait, there's more. There may be a planet around Gamma², smaller than Jupiter with an orbit around 1.4 Earth years and a distance from the star of 1.5 AU. Some of the work on identifying this planet was done at the UT McDonald Observatory near Fort Davis, TX.

And even more. The constellation includes the deep sky objects NGC6891, a planetary nebula (mag 10.5) and the globular cluster NGC6934 (mag 9.8). Don't look for these objects *within* the constellation. The planetary is about 4 degrees 39 minutes west and a little north of the tail star of the dolphin and the globular is about 4 degrees south of the tail star. The tail star's official name is Deneb Dulfum (tail of the dolphin, I presume).

Parking at the University of Houston Main Campus

For the monthly Houston Astronomical Society Meeting

The large-scale map at the right shows the location of the 15F parking lot, on the west side of Cullen Boulevard.

The detail map (below) was provided by the University of Houston Parking department to define the area 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.



From Google Maps



Houston Astronomical Society

P.O. Box 20332

Houston, TX 77225-0332

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.

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.

Editing & Production: Bill Pellerin,

713-880-8061

Email: BillPellerin@sbcglobal.net

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

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 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.

Houston Astronomical Society

Meeting on Friday, September 6, 2013

7:00 Novice Meeting, room 116 Science & Research 1 Bldg

8:00 General Meeting, room 117 Science & Research 1 Bldg

University of Houston

Directions to meeting:

From I-45 going south (from downtown)

- exit at Cullen Boulevard
- turn right on Cullen
- turn right into the parking lot (past the parking garage)
- 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 into the parking lot (past the parking garage)
- Science and Research is across the street (2nd building back)

Parking:

There is Free Parking. **See Parking map and detailed information on parking on the preceding page.**