



# **November, 1999**

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*At the November 5 meeting...*

## ***Astronomical Optics...***

***Roger Ceragioli of the University of Arizona Mirror Lab will discuss spin-casting of large mirrors, and adaptive optics secondary mirrors.***

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***Houston Astronomical Society***

# ***GuideStar***

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**Starline - 281-568-9340**

Houston Astronomical Society presents *Starline* -- a recorded message of Society events and astronomical happenings. This service is updated regularly, so call often to keep up-to-date on Society functions, new comets and more.

**H.A.S. Web Page: <http://spacsun.rice.edu/~has>**

**Schedule Changes & Up-To-Date Information**

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

**Observatory Site Telephone: 409-732-8967**

# ★★★★★ *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 and past president ★★★★★★★★★★

President: Don Pearce H: 713-432-0734	Treasurer: Bill Flanagan H: (713) 699-8819
Vice Pres: Kirk Kendrick H: 281-391-3834	
Secretary: Matt Delevoryas H: 713-795-0808	Past-President: Allen Gilchrist H: 281-558-1190

## ★★★★★★★★★ Additional Board Members ★★★★★★★★★★

Jay Levy ..... 281-992-2708	Liaison responsibility
Bill Leach ..... 713-863-8335	Field Trip and Observing, Program
Bill Molinare ..... 713-664-3261	Observatory, Welcoming
Bill Pellerin ..... 713-880-8061	Education, Telescope
Barbara Wilson ..... 281-933-1289	Audit, Publicity (shared)
Mike Dye ..... 281-498-1703	Novice, Publicity (shared)
	Observatory Director

## ★★★★★★★★★ Committee Chairpersons ★★★★★★★★★★

Audit ..... Orv Wiens ..... 281-391-2995	Program ..... Scott Mitchell ..... 713-461-3020
Education ..... Bill Leach ..... 713-863-8459	Publicity ..... Michael Cubstead ..... 713-307-0270
Field Tr./Obsg. .... Kenneth Drake ..... 281-367-1592	Telescope ..... Clayton Jeter ..... 281-383-1337
Novice ..... Sancho/Spore ..... 281-379-4726	Welcoming ..... Marg Nunez ..... 713-529-2549
Observatory ..... Michael Dye ..... 281-498-1703	

## ★★★★★★★★★ Ad-Hoc Committee Chairpersons ★★★★★★★★★★

Historian ..... Leland Dolan ..... 713-529-0403	Publ. Star Party ..... Marg Nunez ..... 713-529-2549
Librarian ..... Peggy Gilchrist ..... 281-558-1190	Rice U. Coord. .... Matt Delevoryas ..... 713-795-0808
Logo Mds Sales ..... Judy Dye ..... 281-498-1703	Schedule Obs'v't'y ..... Steve Goldberg ..... 713-721-5077
Long Range Plan ..... Don Pearce ..... 713-432-0734	Texas Star Pty ..... Steve Goldberg ..... 713-721-5077
Parliamentarian ..... Kirk Kendrick ..... 281-391-3834	

## ★★★★★★★ Special Interest Groups & Help Committees ★★★★★★★★

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

## ★★★★★★★★★ Advisors ★★★★★★★★★★

Dr. Reginald DuFour, Rice Univ.	Dr. Lawrence Pinsky, U. of H.
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## ★★★★★★★★★ Dues and Membership Information ★★★★★★★★★★

Annual Dues: Regular .... \$33.00	Student ..... \$5.00
Associate .... \$5.00	Honorary ..... None
Sustaining . \$50.00	

All members have the right to participate in Society functions and to use the Observatory Site. Regular and Student Members receive a subscription to *The Reflector*. Regular, Student, and Honorary Members receive *The GuideStar*. Associate Members, immediate family members of a Regular Member, have all membership rights, but do not receive publications. Sustaining members have the same rights as regular members with the additional dues treated as a donation to the Society. *Sky & Telescope* mag \$29.95/year, *Astronomy* mag \$29/year -- see club treasurer.

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

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***Call the Starline, 281-568-9340 for updates and changes***

## **Welcome to New Members!**

The H.A.S. welcomes the following new members during September:

Mathias J. Ceaser, Jr., Mark K. Mulrooney, Don Murrmann,  
Steven D. Tanner

## **Special Interest Group Listing**

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

Advanced ..... Bill Flanagan ..... 713-699-8819  
Comets ..... Kenneth Drake ..... 281-367-1592  
Lunar & Planetary ..... John Blubaugh ..... 713-921-4275  
Occultations & Grazes ... Wayne Hutchison ..... 713-827-0828  
Advanced ..... Bill Leach ..... 713-863-8459

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## *The President's Message*



It occurred to me, as I wandered around the George Observatory grounds during Astronomy Day, that “never have so many owed so much to so few” (to slightly misquote Winston Churchill). What I am speaking about, of course, is that the great majority of HAS functions are planned, organized, and carried out by a small cadre of people, especially for an organization as large as we are.

In particular, Mike and Judy Dye have contributed well beyond the call of duty. It is time for others, particularly relatively newer members who have been members for six months or more, to step up and carry some of the load. Hopefully, in the next millennium these burdens will be more equitably spread around.

This month Roger Ceragioli of the University of Arizona Mirror Lab will discuss state-of-the-art telescope mirrors.

Clear skies and le croissant lunaire

*Don Pearce*

# ***Houston Astronomical Society***

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***Meeting Notice  
For Friday, November 5, 1999***

## ***Roger Ceragioli***

Roger Ceragioli works for the University of Arizona Mirror Lab, and he will discuss their work in making 6 to 8 meter state-of-the-art telescope mirrors via spin-casting, and adaptive optics secondary mirrors.

(Thanks to Warren Wundt  
for being the contact person on this!)

### **Schedule of meeting activities:**

**Novice meeting: ..... 7:00 p.m.**

Jose Sancho and Susan Spore began a new year of novice programs in January. This year the Novice committee will work with you to complete the Messier list. Please bring your Messier (and any other) observation records with you to the June meeting.

**Site orientation meeting: ..... 7:00 p.m.**

**General meeting: ..... 8:00 p.m.**

**See the inside back cover for more information.**

# Nov./Dec. Calendar:



*Date Time Event*

## November

5		HAS Club Meeting
	7:00 p.m.	Novice Presentation - U of H
	8:00 p.m.	General Membership Meeting U of H
6		Prime Night-Columbus
7	9:53 p.m.	New Moon
12		Taurid meteors peak: often fireball-producing.
13		Members Observatory Night-Columbus
15	3:15 p.m.	Transit of Mercury across extreme northern limb of sun. See Ottewell's <i>Astronomical Calendar 1999</i> p.45 for details.
16	3:03 a.m.	First Quarter Moon
	7:30 p.m.	Advanced SIG Mtg. Rice Univ., contact Bill Leach, 713-863-8459
17	5 to 7 p.m.	Leonid meteor shower (predicted peak). 1999 possible storm year.
21	6:12 p.m.	Lunar occultation of Mu Ceti (mag. 4.3)
23	1:05 a.m.	Full Moon
24	11:41 p.m.	Lunar occultation of Chi2 Orionis (mag. 4.6)
25	9:44 p.m.	Lunar occultation of Zeta Geminorum (mag. 3.7-4.1, Cepheid with a period of 10.15 days).
29	5:20 p.m.	Moon at Third Quarter

## December

3		HAS Club Meeting
	7:00 p.m.	Novice Presentation - U of H
	8:00 p.m.	General Membership Meeting U of H
4		Prime Night-Columbus
7	4:32 p.m.	New Moon
11		Members Observatory Night-Columbus
14	5:00 a.m.	Geminid meteor shower peaks
	7:30 p.m.	Advanced SIG Mtg. Rice Univ., contact Bill Leach, 713-863-8459
15	6:50 p.m.	First Quarter Moon
22	1:45 a.m.	Winter Solstice. Winter begins.
	11:32 a.m.	Full Moon
29	8:05 a.m.	Moon at Last Quarter

Send calendar events to [JBlubaugh@aol.com](mailto:JBlubaugh@aol.com) or call 713-921-4275.

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# ***Nominations for HAS***

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*by Michael Dye, Nominating Committee Chairman*

First I want to thank all the members of the Nominating Committee for their help in putting this years slate of nominees together.

**President:** Don Pearce

**Vice Pres.:** Barbara Wilson

**Secretary:** Bill Leach Matt Delevoryas

**Tresury:** Gene Horr

**Director:** George Dolson Jay Levy  
Warren Wundt Manuel Cruz  
Debbie Moran Howard Leverenz  
Dana Lindstrom Larry Patchell  
Bill Flanagan

**Observatory:** Michael Dye

**Audit:** Gary Hlivko Orville Wiens

**Education:** Richard Nugent

**Field Trip  
& observing** Ken Drake Michael Cubstead

**Novice:** John Garza, III

**Program:** Margaret Nunez

**Publicity:** Maura White Mark Egan

**Telescope:** Clayton Jeter

**Welcoming:** Bill Leach

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# ***Candidate Statements***

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## **Debbie Moran: Candidate for Director**

I have had a lifelong interest in astronomy and have been a member of HAS since 1980. I enjoy staying involved and have served two years as treasurer of HAS, about six years as Education Chair, six years as treasurer of the Astronomical League, and three years as exhibit organizer for Astronomy Day. I also volunteer at the George Observatory operating the 36-inch telescope. My job as a violinist in the Houston Symphony has unfortunately made me less visible than I would like at membership meetings (including the November meeting!), but should not prevent me from attending most board meetings or working behind the scenes on behalf of the Society.

## **Jay E. Levy: Candidate for Director**

It has been a privilege serving the Society this last year as a Director at Large. This year's Board has accomplished a lot. We have maintained a strong infrastructure that has helped further the enjoyment of astronomy to all members. We have tried and have been successful recruiting and keeping new members, which is vital in keeping the Society vibrant and growing. But our work is not complete. There is the ever-present battle against light pollution at the site. We have come up with some innovative possible solutions and continuity will help in the follow through. Please allow me to be a part of the solution as well as tackling further problems the Society may encounter during the coming year.

Thank you for your consideration.

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# ***Fourth Quarter Total Occultations***

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*By Matt Delevoryas*

There are six interesting occultations by the Moon during the remainder of the fourth quarter of 1999. Here's the information for these events as seen from Houston (times are CST, except for October 29):

- October 29: Nu Geminorum (mag. 4.1) reappears from behind the dark limb of the 74% illuminated waning gibbous moon after 1:35 AM CDT 66° counterclockwise from the south cusp, moon 38° up, azimuth 87°. (Disappears before 12:33 AM 86° counterclockwise from north cusp, moon 25° up, azimuth 80°.) This star is multiple (ADS 5103 = WDS 06290+2013, although the WDS list of ADS correspondences erroneously indicates WDS 06289+2013) with all secondary components over one minute away, except one; the A-a pair is believed to be the spectroscopically known pair with a period of 11.7 years components 4.3 and 6.0, average 0.05" apart, probably 270° currently.
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- November 21: Mu Ceti (mag. 4.3) disappears behind the dark limb of the 97% illuminated waxing gibbous moon after 6:12 PM 77° counterclockwise from the north cusp, moon 20° up, azimuth 90°. (Reappears before 7:08 PM 56° clockwise from north cusp, moon 31° up, azimuth 96°.) This star has been reported in occultations to be binary, but (as of 1989) it has yet to be resolved by speckle interferometry, and there is doubt about its duplicity.
  - November 25: Chi<sup>2</sup> Orionis (mag. 4.6) reappears from behind the dark limb of the 94% illuminated waning gibbous moon after 12:43 AM 38° counterclockwise from the south cusp, moon 68° up, azimuth 110°. (Disappears before 11:41 PM on the 24th, 72° clockwise from south cusp, moon 55° up, azimuth 97°.) This is purported to be an occultation double, components 5.5 and 5.5, 0.02" at 178° in 1975, but it does not appear in the Washington Double Star catalog.

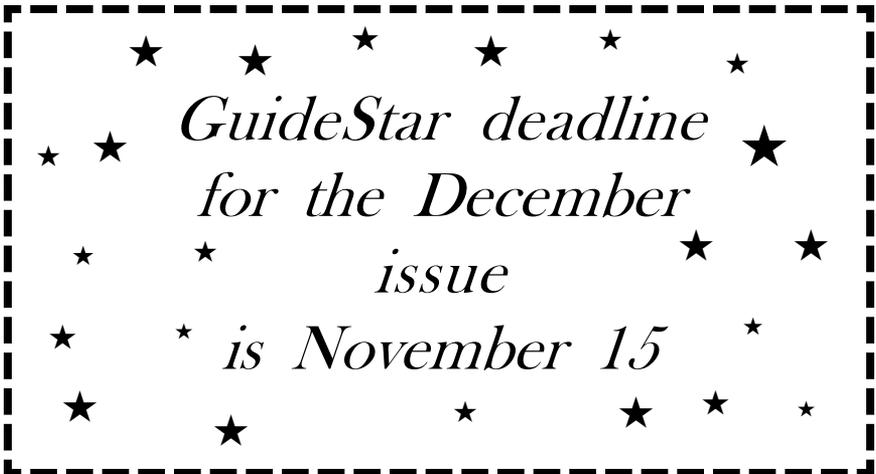
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## ***Fourth Quarter Occultations... from previous page***

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- November 25: Zeta Geminorum (mag. 3.7-4.1, cepheid with period 10.15d) reappears from behind the dark limb of the 87% illuminated waning gibbous moon before 10:43 PM 79° clockwise from the north cusp, moon 29° up, azimuth 82°. (Disappears after 9:44 PM 49° counterclockwise from north cusp, moon 18° up, azimuth 76°.) This is a multiple star (ADS 5742 = WDS 07041+2034), with separations of tens of seconds, but the A component is thought to be an occultation double, magnitudes 4.5 and 4.5, 0.1" at 90° as of 1973.
- December 12: Mars (mag. 0.9) reappears from behind the bright limb of the 20% illuminated waning crescent moon after 11:35 AM 61° clockwise from the north cusp, moon 10° up, azimuth 118°. (Disappears before 10:31 AM, before moonrise.) Yes, this is daylight, but it sounds worth getting out a telescope.
- December 24: Delta Cancri (mag. 4.2) reappears from behind the dark limb of the 91% illuminated waning gibbous moon after 11:58 PM Christmas eve, 41° counterclockwise from the south cusp, moon 49° up, azimuth 96°. (Disappears before 11:04 PM 58° clockwise from south cusp, moon 37° up, azimuth 89°.) This is a double star (ADS 6967 = WDS 07041+2034), with separation of more than a half minute, but the A component is thought to be an occultation double.



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# *Observatory Corner*

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*By Michael B. Dye Observatory Chairman*



This months' Observatory Corner article as opposed to last months' article is a lot more fun to write. To explain, when I signed on to Chair the Nominating Committee, the Annual Picnic Committee and co-chair the Astronomy Day Committee, I had not worked out the time frames involved. It turns out that the Nominating Committee had to be complete on the 1st of October at the General Meeting, the Annual Picnic on the 2nd Saturday of the month (8th), and Astronomy Day on the third

Saturday (16th). I was just a bit pressed to get everything to come together. In fact some members were a bit concerned that I might be a bit overstressed.

The Annual Picnic worked. The weather was great. The sun was shining and everything looked great. Ed Szczepanski did a great job cooking the Hamburgers and Hot Dogs. Members who came brought lots of stuff to eat along with the meat. Plenty of food was had by all. Mary Lockwood supplied the annual Pinata, which was broken after numerous swings and hits by wooden sticks. Candy all over the place. The problem was that we only had about 40 members turn out for the food. We had enough for at least twice that many. It seems that the weather in Houston was bad, and a lot of members thought that the weather at the Site was also bad. It wasn't. The only problem came about 9 PM, when out of the East came the blackest clouds you would hope not to see. The rain came lightly and left about one hour later. By then most of the observers had left. The diehards later told me that the sky did not clear off. Oh well the Picnic itself was great.

The next item on my list of October Commitments was Astronomy Day. First off I would like to thank my wife, who made all the phone calls to try and get members of Fort Bend Astronomy Club and the Houston Astronomical Society to volunteer to help at the George Observatory. Even though we started out slow, Judy reports that we filled two parking lots and a part of a third. The event was well attended and some of the other

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## ***Observatory Corner... from previous page***

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volunteers also said it went over well. At least it didn't rain. Well actually it did, but that was about 3:30 or 4:00, it quit and left. The viewing was great, well good.

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

I am running an informal poll. If you have an opinion on whether the Society should provide some sort of computers for controlling the Observatory Telescopes and maybe for CCD processing. Also any other ideas in the same category. Please contact me at [mbdye@aol.com](mailto:mbdye@aol.com) or 281-498-1703.

Please buy HAS Logo merchandise and help me get some my den back. As a result of an Auto problem last month, we were unable to bring the Logo Merchandise to the September meeting. It took only large amounts of money to solve the Auto problem. Now I no longer have even a den because I had to clean out the garage to get both autos in same. Most of the stuff stored in the garage in now in the Den. I did however through out a large amount of junk. Anyway we still have very nice HAS Logo thermal mugs, T-shirts and other nifty stuff (including some very nice pictures). All at very reasonable prices. We are running a special on the Thermal Mugs this month, \$5.00 each or two for \$10.00 (same as last month). I have three cases of these suckers in my Den. Please buy some. I have Girl Scout Cookies scheduled to fill the Den sometime in late February to early March and I need the room. Come and see Judy at the Logo Table at the next General Meeting and buy lots of good stuff.

**Please fill out the appropriate log form when you use the site.** Remember we use these forms as attendance records.

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## *Other Meetings...*

**Brazosport Astronomy Society** meets at 7:00 p.m. on the 2nd Thursday of each month in the Planetarium of the fine Arts Center at Brazosport College. Call Steve Lamb for program details (409) 297-3984

**Fort Bend Astronomy Club** meets the third Friday of the month at 8:00 p.m. at the First Colony conference Center. Novice meeting begins at 7:00, regular meeting begins at 8:00. Web site: <http://rampages.onramp.net/~binder/>

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

**North Houston Astronomy Club** (formerly Northside Astronomical Society) 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](mailto:bill.leach@nhmccd.edu).

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## *HAS Web Page*

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

The address is: <http://spacsun.rice.edu/~has>

Want your astronomy work and name on the Internet for the whole world to see? Have some neat equipment? Pictures in film, CCD, hand drawings or video format are all welcome on the page. Do you have an idea to improve the page? I'm listening. Send me Email at [goldberg@sccsi.com](mailto:goldberg@sccsi.com). (You can click on my name on the HAS home page). Or, you can call me, Steve Goldberg (WebMaster), at 713-721-5077.

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# ***Observatory Duty Roster***

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by Michael B. Dye, Observatory Chairman

This is the duty list for November, December of 1999 and January 2000. If you are listed in this roster, please be sure to contact your supervisor for any information that you may need and the date and time to be at the site. You may change from site duty to open house or from open house to site duty by pre-arrangement with the Site Supervisor for that month. Changes between months require Observatory Chairman coordination.

**November Supervisor ..... Dana Lambert ..... 281-933-4627**  
Jean-Marc Follini ..... Site  
Fred Garcia ..... Members Observatory Night 11-13-99  
John Garza III ..... Site  
Clifton Goldman ..... Members Observatory Night 11-13-99  
David Granadino ..... Members Observatory Night 11-13-99  
Michael Gumler ..... Site  
David Herlinger ..... Site  
Robert Menius ..... Site

**December Supervisor ..... Kirk Kendrick ..... 281-391-3834**  
Larry Mitchell ..... Members Observatory Night 12-11-99  
John Mitscherling ..... Site  
Jeff Moore ..... Site  
Debbie Moran ..... Site  
Ben Negy Jr. .... Members Observatory Night 12-11-99  
Johnny Norris ..... Members Observatory Night 12-11-99  
Margaret Nunez ..... Site  
Ralph Overturf, Jr. .... Site

**January Supervisor ..... TBA ..... TBA**  
Don C. Pearce ..... Site  
Michael D. Peters ..... Site  
Sim Picheloup ..... Members Observatory Night 01-xx-00  
Leonard W. Raif ..... Site  
Glenn L. Ray ..... Members Observatory Night 01-xx-00  
Mike Reynolds ..... Site  
Henry Schneider ..... Site  
Carl Sexton ..... Members Observatory Night 01-xx-00

Please remember that Site work can be done anytime and does not have to be done just before Members Observatory Night. Contact your Site Supervisor for details. Names are selected for Site Duty using the current Alphabetical listing for Observatory Key Holders. If any member knows of a conflict please call me before your name is listed.

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# ***A Visit With Tom and Tammy***

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*By John Chauvin*

Recently, my best and life long friend, David LeBlanc and his wife Ellen, retired and moved from New Orleans to Colorado Springs. I just returned from visiting them. Before I left, I realized that Tom and Tammy Arnold (past very active H.A.S. members) had moved near there about two years ago, and were opening an astronomy "bed and breakfast." Paul Sventek told me about their website, so I checked it out and e-mailed the Arnolds that I wanted to visit. The day after my arrival at the LeBlancs, I called Tom and asked if I could come and visit that day. Tammy was in Denver at a family gathering, but this was my only window. David & Ellen are also into astronomy, having gone to the Texas Star Party with me several times, so the three of us made the 25 mile drive to the Star Chaser Observatory.

The Arnold's place is located at the "end of the road" on a spread of five acres. We approached their recently completed 3 story home, a gorgeous structure, made mostly of naturally finished local cedar. The elevation is higher than 8000' and their property line is at the Pike National Forest. Tom greeted us from their large outside deck. I didn't realize that I was their first visitor from H.A.S.

They designed the home with the bed & breakfast in mind. The upper floor has two bedrooms for bed & breakfast guests. The middle floor is the main living area. The bottom floor has the basement, the garage and a part arranged as complete living quarters for Tom's mother when she visits.

Tom then took us to the observing area, located about 300 feet away from the "main house." Here they have an observatory, also built predominantly of the natural finish cedar. It has a roll off roof with fold down sides. There is a C-14 on a Byers mount, with a C-8 (piggy back or stand alone). These are fitted with an SBIG ST-6B & an ST-4. Some of the other equipment available includes a Filar Micrometer, CCD TV camera, BV Photometer, Olympus body camera, 11 x 80 Celestron binoculars, 10" dob and darkroom facilities. The computers, charting area and all other amenities are located in the observatory. The observing site is not yet complete, though the Arnolds will have this phase complete before winter. Their plans are to have it open by Thanksgiving. Work in progress includes additional observing pads with local power.

We walked the grounds, chatted a little longer and then reluctantly departed and wished Tom the best. If anyone is interested in more information on the Star Chaser Observatory, go to their web site at <http://www.starchaser-obs.com/>

While visiting the LeBlancs, I took advantage of many of the local activities which are described in the Arnold's web site. The Arnolds welcome other H.A.S. members as casual visitors or formal guests.

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# ***My Solar Eclipse***

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*By Jim Hackney*

After reading the article by Don Pearce in the September 1999 issue about the August 11, 1999 total solar eclipse in Europe, I thought I might write in about my experience. My wife and I had promised to visit some friends while they are on a work assignment in Basel, Switzerland. My wife really wanted to go during ski season, but I persuaded her to go such that we could visit and catch the total solar eclipse (a “once in a lifetime event”). So we left for Basel several days before eclipse time.

Mind you, neither we nor our friends in Basel had ever seen a total solar eclipse before. So I bought everyone solar eclipse glasses and some extra black polymer for my camera equipment. I took my automatic camera, video camera, and tripod.

The morning of the eclipse was cloudy, yea, even rainy. We tried to figure out where our best chances were along the center line. Our plan was to drive to Strasbourg, France, and then decide: east or west? We had heard a weather report that the farther north you were, the better, so instead of going to Germany, we went to France. Our target became a small town just about on the centerline of totality: Sarreguemines.

We got to the town around 10:00 am local time. Our plans were to see the town and then take off about 11:00 to a viewing spot. I believe the eclipse was due to start about 11:30, with totality around 12:30. We arrived at our spot along the side of the road about 11:10 and began to set up for lunch and viewing. Then the rain came. We packed up our equipment and lunch and sat in the car eating. At about 11:40 someone said, “the eclipse has started.” Of course, we couldn’t see it. Our chances of seeing it were not good.

A few minutes later the rain stopped, so I got out of the car and started setting up the equipment again. To the southwest, from which our weather was coming, a couple of holes broke in the clouds. About noon my wife said that she could see the partially eclipsed Sun. We had to play around with the eclipse glasses as the clouds often obscured the view so much that we couldn’t see the Sun through them. But I did start videotaping. I would tape for a few minutes and then shut it off for a few (preserving the battery).

*Continued...*

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## ***My Solar Eclipse... from previous page***

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We also took pictures of the eclipse and the crescents through the leaves. It should be remembered that we still did not have a really clear view. Clouds continued to cover and uncover the eclipse.

To our surprise and luck a hole in the clouds big enough for extended observing opened up about 10 minutes before totality. So we got to see totality! To let you know how lucky we were, after about 30 seconds of totality the clouds once again covered the sun/moon. The only way we knew that the total eclipse was over was through another hole in the clouds (not near the eclipse) that went from “night” to blue sky, and rather quickly, in fact.

The interesting things about the eclipse to me were

- The corona was quite bright, but it did not extend very far from the sun. It was also fairly symmetrical, as was predicted.
- The transition from light (but somewhat subdued) sky to dark (and back) was much quicker than I thought.
- We were blessed (or lucky, depending on your point of view) to get to see it at all!

Someone else at the site had a relative in Hungary that he called right after the eclipse. The relative said that he had relatively clear sunny skies. Feeling so lucky and blessed, for the rest of our vacation my wife and I were reluctant to ask others that we met if they had seen totality. We did ask one couple from the Riverside Astronomers Club (California); from Austria they had indeed seen all totality, but they felt quite lucky, too.

Not all went well. Our still photos of the eclipse were a disaster (no pun intended). None of them came out well. I used the tripod for the video camera, and I apparently moved the still camera too much. But at least we still have the video and the memories.

How would I describe the total eclipse in a word? Exciting!

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## ***Star Party Volunteer Opportunities***

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I have two star parties in November for which we are seeking volunteers. One is in town at Rice school near Kirby and Braeswood on Thurs Nov 18 at 7pm. The other is two days later on Sat, Nov 20th at dusk in Brenham Texas, for Big Brothers and Sisters. Please contact me here or at 713-529-2549 to let me know if you will help.

I remember Mr Hudgins was the guy who first let me look at Saturn thru his telescope on Oct 31st 1965 (instead of candy.) Ive been hooked ever since. Won't you be "the guy" for some other kid and change his life?

Volunteer for a star party!  
Carpe Noctem,  
Marg Nunez

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## **FROM THE EDITOR...**

This is one of our larger *GuideStar* issues, primarily because your fellow members took the time to write an item. Thanks to all of you who contribute regularly and to those who can only contribute from time to time. Your work to make the *GuideStar* a better publication is appreciated!

We will be asking the membership to vote for officers and elected committee heads at our November meeting, so it's important that you come to the meeting. Having served on the nominating committee I am gratified by the number of members who have agreed to allow their name to be put in nomination for an office. As new committees are formed, new opportunities arise for each of us to make the organization better. Don't wait to be asked... contact the officers or committee heads and ask what you can do.

Last month's program (with SBIG) was excellent, and this month's promises to be very interesting as well. Kudos to our program committee for thier success at acquiring excellent speakers.

See you at the meeting!

*.. Bill Pellerin, GuideStar Editor*

# ***Comet C/1999 H1 Lee***

*By Matt Delevoryas*

Following is an ephemeris for Comet C/1999 H1 Lee, brought to you by the folks at Starline, with information provided by the IAU Circulars Committee. During the ephemeris, it is in Pegasus, moving from being a not so bright object transiting high in the south early in the night to a faint object high in the south-southwest evening sky. The elements are from MPC 35814, and the magnitude follows MPEC 1999-H06 (and subsequent Circulars). For elements, contact the Committee. For additional ephemerides, please contact Kenneth Drake, the Chairman of the HAS Comet SIG. The columns C-E and C-S give the comet-Earth and comet-Sun distances in a.u., and each line is for 0<sup>h</sup> UTC.

Date		J2000.0				B1950.0				Mag	C-E	C-S	
mmm	dd	Julian Date	RA	Dec	RA	Dec	Mag						
			h	m	deg	mi	h	m	deg	mi			
Oct	23	2451474.5	22	50.8	+24	24	22	48.4	+24	08	10.2	1.12	1.96
Oct	25	2451476.5	22	46.3	+22	24	22	43.8	+22	08	10.3	1.17	1.99
Oct	27	2451478.5	22	42.4	+20	34	22	40.0	+20	18	10.5	1.22	2.02
Oct	29	2451480.5	22	39.0	+18	51	22	36.6	+18	36	10.6	1.27	2.05
Oct	31	2451482.5	22	36.2	+17	17	22	33.7	+17	02	10.8	1.33	2.07
Nov	2	2451484.5	22	33.7	+15	51	22	31.3	+15	35	10.9	1.38	2.10
Nov	4	2451486.5	22	31.6	+14	31	22	29.2	+14	15	11.1	1.44	2.13
Nov	6	2451488.5	22	29.9	+13	17	22	27.4	+13	02	11.2	1.49	2.16
Nov	8	2451490.5	22	28.4	+12	10	22	25.9	+11	54	11.3	1.55	2.18
Nov	10	2451492.5	22	27.2	+11	07	22	24.7	+10	52	11.5	1.61	2.21
Nov	12	2451494.5	22	26.2	+10	10	22	23.7	+09	55	11.6	1.67	2.24
Nov	14	2451496.5	22	25.4	+09	17	22	22.9	+09	02	11.7	1.73	2.26
Nov	16	2451498.5	22	24.8	+08	28	22	22.3	+08	13	11.9	1.79	2.29
Nov	18	2451500.5	22	24.4	+07	44	22	21.9	+07	28	12.0	1.86	2.32
Nov	20	2451502.5	22	24.1	+07	02	22	21.6	+06	47	12.1	1.92	2.34
Nov	22	2451504.5	22	24.0	+06	24	22	21.5	+06	09	12.2	1.98	2.37
Nov	24	2451506.5	22	24.0	+05	49	22	21.5	+05	34	12.3	2.04	2.40
Nov	26	2451508.5	22	24.1	+05	16	22	21.6	+05	01	12.5	2.11	2.42
Nov	28	2451510.5	22	24.3	+04	46	22	21.8	+04	31	12.6	2.17	2.45
Nov	30	2451512.5	22	24.6	+04	19	22	22.1	+04	04	12.7	2.23	2.48
Dec	2	2451514.5	22	25.0	+03	53	22	22.5	+03	38	12.8	2.30	2.50
Dec	4	2451516.5	22	25.5	+03	30	22	22.9	+03	14	12.9	2.36	2.53

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# ***Comet 10P/Tempel 2***

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*By Matt Delevoryas*

Following is an ephemeris for Comet 10P/Tempel 2, brought to you by the folks at Starline, with information provided by the IAU Circulars Committee. During the ephemeris, it is in Microscopium, passing through Pisces Austrinus from the 12th to the 24th, reaching Aquarius, an evening object moving from southerly to southwesterly. The elements are from MPC 27082, and the magnitude follows MPC 33135. For elements, contact the Committee. For additional ephemerides, please contact Kenneth Drake, the Chairman of the HAS Comet SIG. The columns C-E and C-S give the comet-Earth and comet-Sun distances in a.u., and each line is for 0<sup>h</sup> UTC.

Date	Julian	J2000.0			B1950.0			Mag	C-E	C-S
		RA	Dec	RA	Dec					
mm dd	Date	h m	deg mi	h m	deg mi	deg mi	deg mi			
Oct 24	2451475.5	20 28.9	-30 41	20 25.8	-30 51	10.1	1.16	1.55		
Oct 29	2451480.5	20 44.6	-30 03	20 41.5	-30 14	10.3	1.21	1.57		
Nov 3	2451485.5	21 00.0	-29 16	20 57.0	-29 28	10.5	1.25	1.58		
Nov 8	2451490.5	21 15.2	-28 23	21 12.2	-28 36	10.7	1.30	1.60		
Nov 13	2451495.5	21 30.0	-27 24	21 27.1	-27 37	10.9	1.36	1.62		
Nov 18	2451500.5	21 44.4	-26 19	21 41.6	-26 33	11.1	1.41	1.64		
Nov 23	2451505.5	21 58.5	-25 09	21 55.7	-25 24	11.4	1.47	1.66		
Nov 28	2451510.5	22 12.2	-23 56	22 09.4	-24 11	11.6	1.52	1.69		
Dec 3	2451515.5	22 25.5	-22 40	22 22.7	-22 55	11.8	1.59	1.71		

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## ***A Quick Observation***

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*by Bill Pellerin, GuideStar Editor*

I went out and ran a couple of miles at 5:30 this morning (10/20/99). The sky was beautifully clear with Jupiter heading down in the west, followed closely by Saturn. Venus was shining boldly above the eastern horizon. Just west of the zenith was the Pleiades (a beautiful naked eye object).

To the south was Sirius (and the last, elusive double star I need to complete the AL Double Star List.. Epsilon Cma).

I love these observations.... clear skies, no equipment needed. What a way to start the day!

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## ***The 1996 Leonids Were a Bumper Crop But, what about this year?***

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*By Leland A. Dolan*

For people in the Western half of the North America during the early hours of November 17, 1966, the Leonids provided a “pyrotechnic” meteor storm, unrivaled in this century. I must confess to having slept through the better part of that shower, though I still managed to see a “pretty good” show in the pre-dawn twilight. The Leonids have a reputation of performing such spectacles three times each century. However, the anticipated Leonid storms of 1899-1900 and 1933 failed to live up to expectations. It has now been 33 years since the last Leonid meteor storm, and the question arises, “will we see a repeat performance this November?”

I won't go into great detail explaining why the Leonids, which are visible each November 17-18, produce these “big shows” at roughly thirty-three year intervals. The November issue of *Sky & Telescope* magazine covers this adequately. For beginners, I would especially recommend “SkyWise” on page 116, written in “comic strip” format with easy-to-understand illustrations. However, I wish to add this: think of any comet (in this case Tempel-Tuttle) as a huge chunk of dry ice with particles of dust, sand and gravel embedded in it. As sunlight warms and evaporates the frozen gases, these small particles (known as “meteoroids”) are set free, each to orbit the sun in orbits similar to that of the comet. It is when the Earth crosses this orbit that a meteor shower occurs. Since they are moving in parallel when they encounter Earth's atmosphere, it looks as though they are moving away from a fixed point in the sky, which we call the “radiant”. This is merely an illusion of perspective. In the most active of meteor showers, the Perseids of August, meteoroids are fairly well distributed around the orbit. But, the Leonids are clumped into a “swarm” with a 33-year period. In order for a Leonid storm to occur, the swarm must cross Earth's orbit at the same time Earth reaches this crossing.

Even if the above conditions are met, and Earth experiences another meteor storm, does that mean it will be visible from the Houston area? Not necessarily, since the sky must be dark and the radiant must be above the

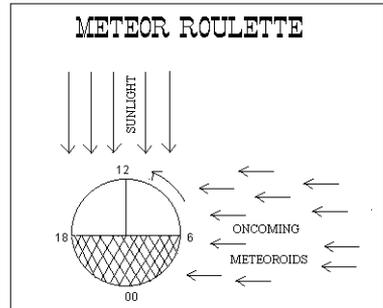
*Continued...*

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## ***Leonids... from previous page***

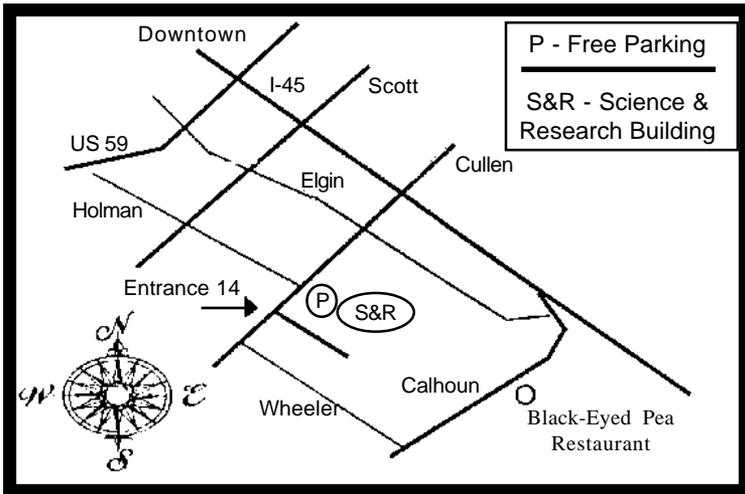
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horizon. I have created a diagram labeled “Meteor Roulette”, showing Earth rotating counterclockwise, surrounded by a 24-hour clock which remains stationary, and has the hours displayed in reverse order. Here, Earth is encountering the Leonid swarm, and Houston might be anywhere around the edge of the disk. Consider Earth at any time, divided into four quadrants: the upper-left “UL” (where it is afternoon), upper-right “UR” (morning daylight), lower-left “LL” (evening), and lower-right “LR” (between midnight and dawn). If Houston is in the UL, or the UR quadrant, it is daytime. In the LL quadrant, it is evening, but the radiant is still below the horizon so the meteors are not hitting this side of earth. But, if Houston happens to be in the LR quadrant, it’s past midnight, and you’ll see the shower that results from the collision of tiny meteoroids with our upper atmosphere at speeds of 45 miles per second.



Judging from the diagram, it appears there is only one chance in four that Houstonians will be in the (favored) LR quadrant. Most likely, another part of the world will see the spectacle this year. Even if there is a less-than-25% chance of seeing the Leonid storm, is that an excuse to catch up on your sleep? Don't let that discourage you for getting out in the wee hours, provided the weather is clear. In the January 1966 issue of *Sky & Telescope*, the most optimistic for the November 1966 Leonids had as many as 100 meteors per hour. Instead, we got more like 10,000 per hour. If possible, get some sleep in the evening hours, since the radiant won't rise until about moonset, at 12:41 a.m. CST. The higher the radiant, the more meteors should be visible. You have about five hours of dark skies, although a gradual brightening occurs following astronomical twilight at 5:24 a.m. But, with the start of nautical twilight (5:53 a.m.) the sky will brighten rapidly and soon you lose all but the brightest meteors, so that by civil twilight (6:24 a.m.) only those of zero magnitude, or brighter are visible. The sun rises at 6:48 a.m., and except for a brilliant fireball, the shower is over.

Anyway, don't be discouraged by predictions. Even if there isn't a meteor storm, you will still see a few very fast meteors during an hour under dark skies. Happy observing!



### General Membership Meeting

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

### Board of Directors Meeting

The Board of Directors Meeting is held on dates scheduled by the board at 7:00 p.m. in Room 106 of the Space Science Building at Rice University. Call StarLine for Board Meeting information. 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 sent via bulk rate mail to Regular, Student, and Honorary Members of H.A.S., selected individuals and recent visitors to the General Membership Meeting. Contributions to *GuideStar* by members are encouraged. Electronic submission is helpful. Submit the article in ASCII text, MS-Word (preferred), or WordPerfect format on an IBM format floppy or via AOL (BILLP10566). Mail copy to the address shown on the outside cover or to the editor at 256 East 5th Street, Houston, TX 77007. Copy must be received by the second Friday of the month for inclusion in the issue to be mailed near the end of the same month. Or, bring copy to the General Membership Meeting and give it to the Editor, or phone to make special arrangements.

Editing & Production: Bill Pellerin, 713-880-8061; FAX: 713-880-8850;

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