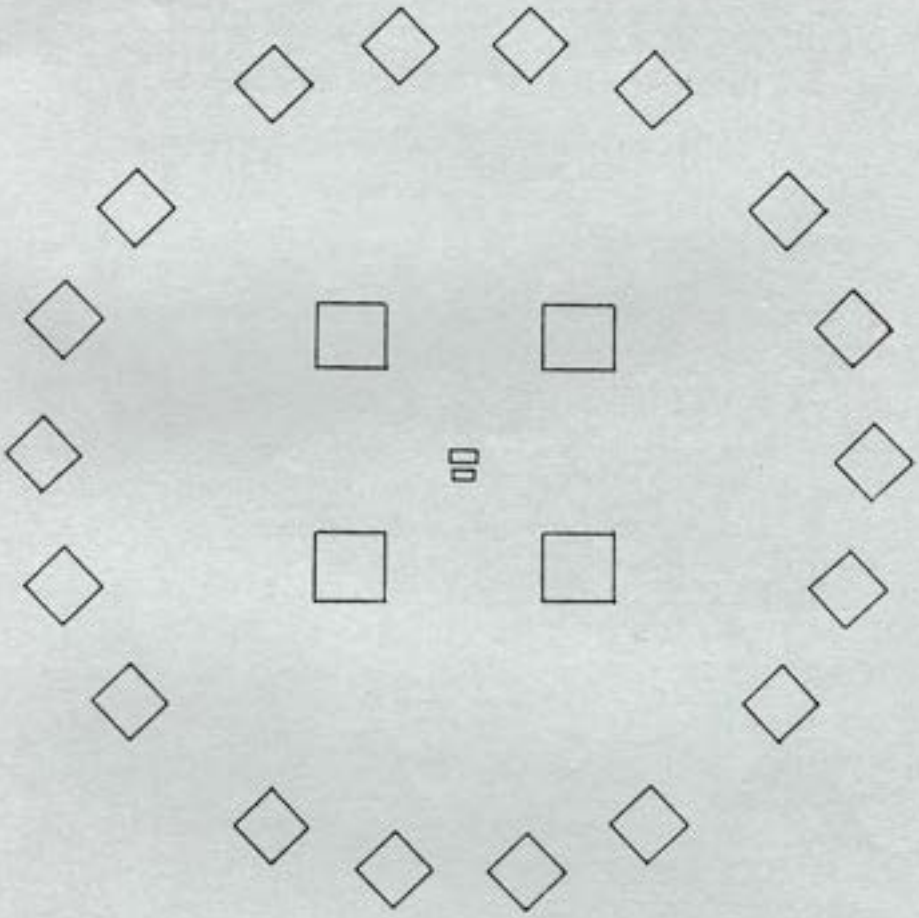

# HOUSTON ASTRONOMICAL SOCIETY NEWSLETTER

The HOUSTON ASTRONOMICAL SOCIETY is a non-profit corporation organized under Section 501 (C) 3 of the Internal Revenue Code. It was formed for educational and scientific purposes. All contributions and gifts are deductable from federal income taxes. The General Membership meetings are open to the Public and attendance is encouraged.

OFFICERS, BOARD MEMBERS, etc. of the HOUSTON ASTRONOMICAL SOCIETY

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11315 Dorrance Lane
Stafford, TX 77477
498-4756

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438-7252

Vice. Pres. - Fred Garcia
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447-5806

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782-6360

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11807 McClain Blvd.
Houston, TX 77071
728-1796

Committee Chairpersons:

| | | |
|---|---|---|
| Activities - | John Chauvin, | 664-2305 |
| Audit - | Frank Harvey, | 468-3573 |
| Field Trip/Observing - | Paul Sventek, | 933-2367 |
| Novice - | Peter Nolan, | 463-8110 |
| Observatory - | Allan Parker, | 782-6360 |
| Program - | Phil Bradley, | 667-4583 |
| Publicity - | Joel Breazeale, | 926-4532 |
| Telescope - | John Busch, | 391-7530 |

| | | |
|---|---|---|
| Librarian - | Tom Blocker, | 498-0341 |
| Welcoming - | Rene Scandone, | 965-7929 |
| Technical Aids - | Dan Morrell, | 447-5675 |

Special Interests Groups:

| | | |
|---|---|---|
| Astrophotography - | Logan Rimes, | 681-5397 |
| Computers/Photometry - | Paul Sventek, | 933-2367 |
| Lunar & Planetary - | Phil Bradley, | 667-4583 |
| Variables/Solar/Multiples/Comets/Deep Sky - | Peter Nolan, | 463-8110 |

Advisors:

Dr. Reginald DuFour, Advisory Director.
Prof. Leon Graves, U. of H. Faculty Advisor.

Dues & Membership Information:

Annual Dues - Regular - $30.00
Associate - 3.00
Student - 17.50
Honorary - None

All members receive the right to participate in club functions and to the use of the Observatory Site. Regular and Student Members receive a subscription to Sky & Telescope. Regular, Student and Honorary Members receive the NEWSLETTER.

STARLINE - 661-6180.

Editor: John Chauvin

COVER: Telescope pads at HAS observing site. Drawn by Laurel Preston.

CALENDAR OF EVENTS:

| | | | |
|---|---|---|---|
| March 4, | Friday, | 6 PM. | Informal pre-meeting dinner. Location information on rear cover. |
| | | 7:15 PM. | Novice group meeting. See Page 7. |
| | | 8 PM. | General Membership Meeting. Location information on rear cover. |
| March 8, | Tuesday, | 7:30 PM. | Variable Star, Etc. SIG meeting. |
| March 12, | Saturday, | - - - | Field trip to observatory site. |
| March ? - ? | - - - | - - - | Lunar & Planetary Conf. See Page 12. |
| March 18, | Friday, | 8 PM. | Lunar & Planetary - Astrophotography SIG meeting. See Meeting Notice, P 2. |
| March 19, | Saturday, | - - - | Field trip to observatory site. |
| March 21, | Monday, | Evening | Two grazes, see details below. |
| March 24, | Thursday, | 6:30 PM. | Director's meeting. Details on inside back cover. |
| April 1 - 3 | Friday - Sunday | | Space Industrialization Conference. Details forthcoming. |
| April 4, | Monday, | 5:50 AM | Graze (in morning), see details below. |
| April 16, | Saturday, | 8:40 PM. | Graze, see details below. |
| April 23, | Saturday, | TBA | Astronomy Day. See Page 4. |
| May 7 - 13, | All week | - - - | West Texas Field Trip. See Art Ciampi for details. |
| May 20, | Saturday, | 23:57 CDT | Pallas Occultation of a mag. 4.7 star. See Page 5. |
| June 8 - 12, | Wed - Sun. | - - - | Texas Star Party. Details on Page 3. |

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## FOUR UPCOMING GRAZING OCCULTATIONS

If there is enough interest, I will lead expeditions to four grazes during March and April.

On March 21, Monday evening, there will be two grazes in one night. The first one is an 8.6 magnitude star at 7:50 PM CST through southern Houston. The second will be 6.9 magnitude 2 Geminorum near Woodville at 10:20 PM CST, 90 miles northeast of Houston. There may trouble moving a large expedition in this amount of time, in which case it would be better to do only the second more favorable graze.

On April 4, Monday morning at 5:50 AM CST there will be a graze of 70 B. Sagittarii near El Campo, 85 miles southwest of Houston. It is 6.4 magnitude and occurs in twilight.

On April 16 at 8:40 PM CST Saturday evening (note - SATURDAY evening!!!) there will be a graze of 6.9 magnitude SAO 76767 near Victoria, 125 miles southwest of Houston. The moon will be 16% sunlit waxing. I will arrange car pools for those interested; let's take advantage of this favorable weekend graze.

Please let me know if any of these interest you. Also contact me if you want to be placed on a list to receive notices of future grazes. Starline may have notices of additional grazes found through more comprehensive computer runs. I can be reached at 486-8153 weekdays and 554-6962 nights and weekends; my address is 2846 Mayflower, Webster, TX 77598.

Don M. Stockbauer

HOUSTON ASTRONOMICAL SOCIETY

Art Ciampi
11315 Dorrance Lane
Stafford, Texas 77477
*Please reply to:* 713 498-4756

MEETING NOTICE

The March meeting of the Houston Astronomical Society will be held on Friday evening the 4th at 8PM in room 117 of the Science and Research Building of the University of Houston.

Our speaker for the evening will Dr. Greg Loumis of the University Of Texas. Dr. Loumis will discuss, Pulsating Stars.

The pre-meeting dinner will be held at the Holiday Inn located at the Wayside exit of the Gulf Freeway at 6 PM the evening of the meeting.

The field trips for March are scheduled for the 12th and the 19th at the Observatory site. For further information call STARLINE.

SPECIAL NOTICE: PROPOSED BY-LAWS REVISION
At the February meeting of the Board of Directors the following revision was proposed:

> Regular membership dues will be increased to $35 per year, and student dues be increased to $20 per year.

This revision will be discussed and voted upon at the March meeting.

Call STARLINE at 661-6100 for field trip, astronomical, or Society information 24 hours each day, 7 days each week.

If you would like pay your dues; $30 for regular membership, and $17.50 for student membership, you can send them to: Bob Garza, 5710 Arncliffe, Houston, Texas, 77088.

The Novice Group will meet at 7:15 the evening of the meeting in room 116 (directly across the hall from 117). The topics for discussion will Zenini and Solar Observing.

SPECIAL INTEREST GROUPS:

1. The Lunar and Planetary-Astrophotography Group will meet on Friday the 10th at Houston Photo Lab, 4530 w 34th Suite A at 8 PM.

2. The Variable Star, Solar etc.(VARSOL) will meet at Bobby Williams, 919 Heights Blvd., at 7:30 on March 8.

* There four special interest groups: Astrophotography, Computers-Instrumentation, Lunar and Planetary, and VARSOL (Variable Star, Solar, etc.). These groups are open to all members. New members are always welcome. Call Phil Bradley at: 667-4553 for further information.

## 2ND ANNUAL TEXAS STAR PARTY

Have you ever been to a star party with 400 other people? Can you imagine the number and different types of telescopes? Would you like to meet other astronomers, both amateur and professional? Would you like to attend workshops and lectures on astrophotography, galaxies, telescope making, observing techniques? Would you like to breath fresh, clean, mountain air? Then the Texas Star Party is for YOU! The air is located at Ft. Davis, Texas, just 12 miles from McDonald Observatory. You can breath the air from June 8th thru 12th. The location is the 3500-acre Prude Ranch. They have facilities to handle camping, RVs, bunk houses, family cabins, and now hotel-type rooms with daily maid service. For the non-astronomer, there is horseback riding, swimming pool, historic towns, sightseeing trails, and plain ol' relaxing atmosphere.

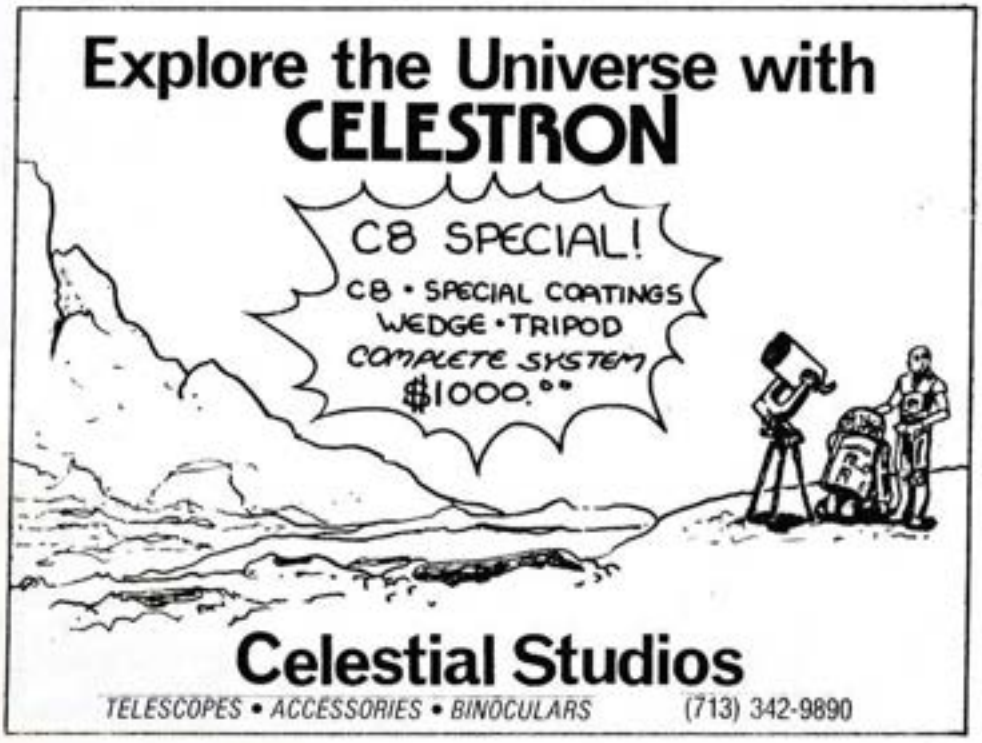
The activities include daily tours to McDonald, afternoon speakers (so you can observe all night without missing interesting lectures), workshops, vendor's selling everything from telescopes to books, and just plain, good conversation with other astronomers.

How can you beat anything like this? What does it cost, you ask? How about all five days, including gas, meals, registration- under $300. (Sorry, but that does not include any telescopes, eyepieces or anything else you buy from the vendors).

Is it fun, you ask? Just ask any of the 20 people who went last year.

Where can I get more information, you ask? Contact either Steve Goldberg at 721-5077, or David Clark, 2709 Colonial Dr., Carrollton, Tx, 75007, (214)242-4908. For those of you that went last year, you will be receiving a packet in the mail.

Submitted by Steve Goldberg

ASTRONOMY IS GREAT! WE KNOW IT, BUT HOW DO WE TELL THE REST OF HOUSTON? ANSWER: BY PARTICIPATING IN **ASIRONOMY DAY**, OF COURSE.

- WHEN: APRIL 23 OR 30, 1983
- WHERE: RICE UNIVERSITY

HOW CAN YOU HELP? START BY CALLING 729-4726, AND OVERWHELM ME WITH YOUR IDEAS AND ENTHUSIASTIC DESIRE TO PARTICIPATE ON ONE OF OUR COMMITTEES. WE HAVE AN EXCITING LIST OF ACTIVITIES AND EXHIBITS PLANNED, AND THESE MAY JUST INCLUDE A PET IDEA OR PROJECT OF YOURS, SOMETHING YOU'VE BEEN ITCHING TO CREATE OR SHOW OFF. PERHAPS YOU WOULD BE WILLING TO DISPLAY YOUR EQUIPMENT OR STAFF ONE OF OUR EXHIBITS.

THE DIFFERENT COMMITTEES IN WHICH HELP IS NEEDED ARE:

TELESCOPE DISPLAYS
POSTERS, PHOTOGRAPHY AND SLIDES
COMPUTER DISPLAYS
STAR PARTIES- DAY AND NIGHT
SPEAKERS
FACILITIES
H.A.S. INFORMATION TABLE
WORKSHOPS
TELESCOPE CLINIC

IN ANY CASE WE NEED YOUR HELP, AND A LITTLE EFFORT FROM ALL OF US WILL ENSURE A SUCCESSFUL CLUB ENDEAVOR.

SO C'MON Y'ALL, GIVE ME A CALL.

Danny Horowitz

DANNY HOROWITZ
CHAIRMAN, ASTRONOMY DAY 1983

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SIRIUS, CANOPUS AND PROCYON

During early March, Sirius culminates at about 8:15 PM. If the horizon is low enough, Canopus can be seen just west of the meridian. As one travels north, Canopus appears lower in the sky, so that from the northern part of Oklahoma, Canopus is lost to atmospheric extinction. .

Latitude also plays a role in the rising times of Sirius and Procyon. The name Procyon is from the Greek, and means "before the dog." But does it? It does, if you are north of Houston, but from this latitude, both stars rise at almost the same time. South of this latitude, Sirius rises before Procyon.

Leland A Dolan

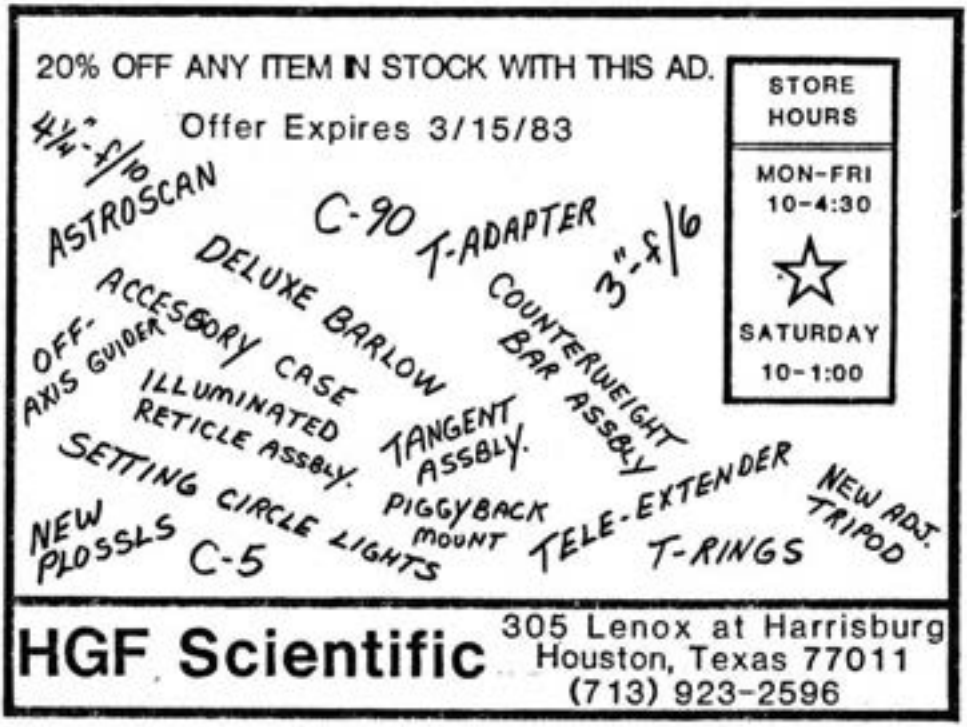
## ASTEROID SHADOW AIMS FOR HOUSTON

The single most astronomically significant event to involve Houston in 10 years will happen Saturday night May 28. Paul Maley will discuss the eclipse of a 4.7 magnitude star by the solar system's 2nd largest asteroid -- Pallas -- and how Houstonians can participate in its observation. Believe it or not only a 2-inch or larger telescope is needed, along with a tape recorder and digital watch (or WWV time signal receiver). Each person who observes will contribute a unique set of data different from that of any other. There will be no duplicity of data. Each timing when collected and put together will help form a precision two dimensional shape of the asteroid, provided enough observers can participate.

Maley also points out that any HAS members who know of other persons in the state who might wish to observe from their home town, should please call him at 4886871. We are actively seeking all persons who have even a remote interest in astronomy to try to latch on to a telescope or tripod mounted pair of binoculars and help man one of the fence lines that are being set up between Dallas and Corpus Christi at 20 mile intervals. Since the event takes place on a weekend it should provide a good opportunity to visit the beach or some part of Texas over this Memorial Day holiday. The star to be eclipsed is easily locatable on Norton's Star Atlas on Map 2 at Right Ascension 19h 16m, Declination +21.1 degrees just off the tail of Cygnus.

A presentation and simulation is scheduled for the April HAS meeting at which Maley will distribute instruction sheets, star maps and other material. This is not an ordinary occultation event. It is of major importance, in that a coordinated extensive line of observers can define a high resolution silhouette of a minor planet almost 300 million miles distant!

Submitted by Paul Maley

## TWO EARLY AMERICAN AMATEUR ASTRONOMERS:

### David Rittenhouse (1732-1796)
### Nathaniel Bowditch (1773-1838)

It is a problem to identify amateur astronomers in an era where there were few professionals. In astronomy prior to roughly 1850 that is the historian's challenge. Nathaniel Bowditch and David Rittenhouse were clearly amateurs. They both sustained themselves with other vocational pursuits, and were never paid for their astronomical efforts. Both were self-educated men, and had careers outside astronomy that would be the envy of most men. Both made very substantial contributions to the progress of Astronomy as well, and would be remembered for that contribution if nothing else.

David Rittenhouse was born on a farm near Germantown, Pennsylvania on April 8, 1732. He was a bright child, but the opportunities for education were limited. His mother's cousin, Jacob Gorgas, was a frequent visitor to the farm and was one of the leading clockmakers of early Pennsylvania. David was fascinated by the clock mechanisms, and these discussions with Gorgas were influential in his decision to become a clockmaker. By age 16 he had completed his first clock and, over his father's objections, decided to commit himself to a career as a clockmaker.

Rittenhouse studied both navigation and surveying, and built sextants as well as clocks. He became an expert surveyor, and developed a good knowledge of the night skies. He was asked to participate in important surveys of political boundaries of the colonies. His role as a surveyor, as well as the quality of his clocks, soon came to the attention of the intellectual community in Philadelphia. He was elected to membership in the American Philosophical Society, which he served as Secretary, and later succeeded Benjamin Franklin as President. He was a close friend of Franklin, Thomas Jefferson, and many other notables of the Revolution. He served as Director of the U. S. Mint for George Washington from 1792 to 1795.

Astronomy was a lifelong avocation for Rittenhouse. One of his most important contributions was as an observer, and later computer, for the transit of Venus in 1769. Rittenhouse built an observatory, a clock, and several telescopes to observe the transit from his farm at Norritown. His efforts to construct, calibrate and prepare all this were exhausting (his health was never good), and in the excitement of the wait for first contact Rittenhouse fainted just as he signaled the event. He was revived, and made a successful observation and timing of the second contact some 17 minutes later. His most important contribution was really in the data reduction. His meticulous combination of the data from the three groups of observers from Philadelphia resulted in a value of 8.805 arc seconds for the solar parallax. This is favorably compared with the most recent, and generally now accepted value of 8.79405 arc seconds. Rittenhouse's handling of the "black-drop" effect in his observations was exemplary. His reported time for first contact was 1 minute 32 seconds earlier than that of the other observers, and was probably the most correct! Also, he was the only observer to comment on the strange diffraction of light at the moment of first contact. Neville Maskelyne, Astronomer Royal at the Greenwich Observatory, speculated this meant Venus had an atmosphere, which had not been suspected up to that time.

Rittenhouse discovered three comets, and was a prolific observer of lunar and solar eclipses, as well as of the satellites of Jupiter, and of Uranus after its discovery. His observations and calculations for the 1769 Venus transit were of such high quality that Maskelyne became a regular user of his data for longitude determinations. Rittenhouse was the only American observer recognized by the European astronomers at the time.

Rittenhouse's business as a clockmaker was a prosperous one. His clocks are still valued for their accuracy, as well as their antiquity. He was noted as a manufacturer of compasses, sextants and telescopes, as well as clocks. The construction of orreries was a preoccupation that spanned both his vocational and his avocational interests. The few orreries that were completed were noteworthy for both the accuracy with which they portrayed the Newtonian solar system, and for the beauty of the craftman-

Continued on Page 8

The Novice Section will meet before the general membership meetings in room 116 of the Science and Engineering Building at the University of Houston. The starting time will vary depending upon the topic for the meeting. The March meeting topic will be selection of a telescope, given by Dennis Zwicky. The meeting will begin at 7:15 pm. The schedule for the rest of the topics is:

| TOPIC | MONTH |
|---|---|
| POLAR ALIGNMENT AND SETTING CIRCLES | APRIL |
| PROJECTS FOR NOVICES | MAY |
| CONSTELLATION IDENTIFICATION | JUNE |
| GENERAL OBSERVING TECHNIQUES | JULY |
| CARE OF A TELESCOPE | AUGUST |
| INTRODUCTION TO ASTROPHOTOGRAPHY | SEPTEMBER |
| OCULAR COMPARISONS | OCTOBER |
| DEEP SKY OBSERVING | NOVEMBER |
| SOLAR OBSERVATIONS | DECEMBER |
| VARIABLE STARS | JANUARY 1984 |
| MULTIPLE STARS | FEBRUARY 1984 |
| LUNAR AND PLANETARY | MARCH 1984 |

The cycle will begin again with selection of a telescope in April, 1984. Please direct any questions you have to Peter Nolan, telephone 463-8110.

Submitted by Peter Nolan

**********

DID YOU KNOW that you can camp at the Observatory Site. The eastern side of the site has been cleared of underbrush and the trees are spaced well enough to provied access yet thick enough to provide shade and some protection. Power outlets are located along the edge of the cleared area for your use. A "Johnny of the spot" is on the western edge of the cleared area. Be sure you read and observe the site rules. All fires are to be in containers and are not to be burning after dark. Also, only dim red lights are allowed after dark. Be sure to remove ALL that you bring, including pop tops from cans. Remember the objective is astronomy. Be courteous, be fire conscious, be considerate and enjoy yourself.

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(Continued from Page 6)

ship involved. Rittenhouse studied many other sciences in addition to astronomy. His interests included experimental physics (pendulum experiments), geology, meteorology, and the interaction of the physical and physiological phenomena (illusions of physical relief). He was, in fact, a "classic observer" of the universe around him. He died in Philadelphia on June 26, 1796.

Nathaniel Bowditch is an interesting contrast to Rittenhouse in many ways. Bowditch was born in Salem, Massachusetts on March 26, 1773. Salem was a very active port, and at the end of the Revolution became a main port for the China trade. There was a tremendous profit involved in each successful voyage. Those who served on the crew for these ships could count on becoming independently wealthy. The tradition in Salem was that nearly every able young man would sail for China to earn his fortune. Bowditch followed that tradition at the age of 20 years. He made five voyages between 1795 and 1803, the last as the ship's master.

Long hours at sea gave Bowditch ample time to study. He taught himself six languages by reading and comparing six different translations of the New Testament. This allowed him to study his real love, mathematics, in the original languages of Newton, Leibnitz, Decartes, LaCroix and LaPlace. He learned navigation from J. H. Moore's New Practical Navigator, published in London in 1772. Bowditch found it to be full of errors, and began compiling a list of these. He published his own New American Practical Navigator in 1799. This book went through 60 subsequent editions. Bowditch retired from the sea in 1803, and took a position as the president of an insurance company. His actuarial skill was exceptional and the company prospered under his leadership. At age 50, he assumed the presidency of a second insurance company at a salary of $5,000 per year- that grand sum that would be the envy of most academics of the era. It is no wonder that he refused to accept a position offered to him as a professor at Harvard, and at other universities.

As an astronomical observer, Bowditch's record is less varied or significant than that of Rittenhouse. Bowditch observed meteors, and made a significant contribution to the theory of meteors after studying the giant meteorite of 1807. This fell to the ground in Weston, Connecticut, but was observed from all over New England. Bowditch gathered data for 8 years before publishing his analysis. He supported a hypothesis first advanced by a German, Ernst Chaldini, that meteors were of cosmic origin. Not many scientists of the era accepted that theory until Bowditch's analysis was published. He also published analyses of the meteor shower of November 25, 1819, and of a brilliant meteor that passed over Wilmington, Delaware on November 21, 1819. His observing logs and notebooks reflect an active interest in the sun, and in comets, with many observations of the comets of 1807, 1811 and 1819. In contract to Rittenhouse's very meticulous recording of every aspect of the appearance of an object, Bowditch was primarily interested in computing orbital elements for the objects observed, and his records are otherwise incomplete.

One of the major contributions Bowditch made to astronomy was his translation of LaPlace's Mécanique Céleste into English. He published this as a 4-volume set at his own expense, annotated with his corrections of LaPlace's errors, and, in many places, credits for the work of others that LaPlace had relied upon without proper citations. The availability of this work in English provided a boost of tremendous value to American astronomical education in the following years. Bowditch's impact on astronomy as a consequence was very substantial. He died in Boston on March 16, 1838.

Thus our first two amateurs included an observer, in the best tradition of contemporary amateur astronomy, and a theoretician, unusual by today's standards of amateur contribution. Next month I will highlight two early English amateur astronomers.

Tom Williams

1/31/83

HOUSTON ASTRONOMICAL SOCIETY
General Membership Meeting
February 4, 1983

The meeting was called to order by Art Ciampi at 8:03 p.m. in room 117 of the Science and Research Bldg. of the University of Houston.

Bob Garza, treasurer, reported $1709.61 in the general fund with $698 restricted.

Art Ciampi brought up the resolution that was passed at the Jan. Board meeting to revise the by-laws to increase dues from $30 to $35 for regular members and from $17.50 to $20 for student members. The resolution will appear in the next issue of the NEWSLETTER and will be voted on at the March meeting.

The speaker for the evening was Quinn Passey who talked about Earthcrossing Satellites and also Palomar Observatory.

After a 10 minute break, Field Trip chairman, Paul Sventek, reported that the monthly observing projects will appear in the NEWSLETTER. He talked about the Feb. and March projects.

Novice chairman, Pete Nolan, reported on the first 7:30 Novice meeting.

Telescope chairman, John Bush, reminded members that the Society has telescopes that they can borrow.

Art Ciampi reported for the Lunar-Planetary group. The Feb. project is photographing Jupiter and Saturn. They are discussing Astrophotography techniques. Art also reported for the Astrophotography group. They are photographing the constellations using two exposure times; a short one for a naked eye view and a longer one to show stars to about 12th magnitude.

John Chauvin reported on the NEWSLETTER. He wants to name it and requested a contribution of something as a prize for a naming contest.

Observatory chairman, Allan Parker, showed slides of the observatory.

Steve Goldberg reported on the Texas Star Party. He will have handouts at the next meeting telling more about it.

Danny Horowitz talked about Astronomy Day. It will be April 23rd at Rice. He asked for volunteers for committees. Effort will get under way Feb. 16th to organize committees and set up goals as to what HAS wants to accomplish.

Steve Goldberg announced that he will order a series of books from the Astronomical League. They will sell for $2.50 each.

Slides, including some of the Lunar eclipse, were shown by different members.

The meeting adjorned at 10:54.

Attendance was 94.

Submitted by:
Amelia Parker
Amelia Parker
HAS Secretary

**********

These last seven lines are what we in the trade refer to as FILLER. The NEWSLETTER needs material to publish. Several people have stepped forward and are submitting material for inclusion in the newsletters. Others have offered to help in its actual production. In addition we need one or two paragraph articles, humor, etc. to provide even more information, to help eliminate fillers and to add a lighter tone to the NEWSLETTER. Cartoons are welcome.

# Finding Galaxies with (easily) visible dark dust lanes

Paul Sventek

Observing galaxies has never interested me to any great extent - "one fuzzy blob of light looks pretty much the same as the next." To get me away from observing my beloved variable stars, it's going to take some special aspect of deep sky objects. In preparing for writing this March Observing Project, I was scanning through Burnham's Celestial Handbook(s), and I came across several intriguing photographs and descriptions of galaxies with easily visible dark dust lanes. With some cool, crisp, and clear nights still possibly with us in March, I thought it most appropriate to try our luck finding these unique galaxies.

As last month, a detailed star chart will be available at the monthly general meeting covering the materials in this Project. The objects we will be considering are:

| | | | | | |
|---|---|---|---|---|---|
| Leo | 1) NGC3628 | 11h17.7m | +13°53' | | |
| Virgo | 2) NGC4594 | 12h37.3m | -11°21' | M104 | "Sombrero" |
| Coma Berenices | 3) NGC4826 | 12h54.3m | +21°57' | M64 | "Black Eye" |
| Centaurus | 4) NGC5128 | 13h22.4m | -42°45' | | "'Outer Limits'Galaxy" |

The positions above are epoch 1950, and the objects are listed in west-to-east order. March 1983 Field Trips are mid-month. Consequently, NGC3628 crosses the meridian (highest in sky and probably best seen) a little after midnight, and NGC5128 crosses the meridian around 2:15am. Objects 1-3 are easily seen earlier in the evening; I'm giving meridian transits so you can judge when viewing is the very best. NGC5128 is more illusive due to its deep southerly declination of -42°45'. Search for it an hour either side of meridian passage for best views.

Here are brief descriptions of these objects (direct references from Burnham are noted in quotation marks).

1) NGC3628 in Leo

This "10.3" magnitude galaxy perhaps is the least likely to reveal its dust lane. Its size is "12'x2'", and it appears "edge-on" - not unexpected considering its long and narrow dimensions. NGC3628 is located less than a degree north of M65 and M66, and the only reason why I suspect its dust lane might be glimpsed is it is prominent on the photograph in Burnham, Vol. II, p. 1074, showing M65, M66, and NGC3628.

2) NGC4594 in Virgo, M104

The Sombrero galaxy also is know as the "Dark Lane" galaxy. Burnham says,"the dark band is not exactly easy in a 10-inch aperature, though is has been glimpsed with instruments as small as 6-inch." NGC4594 is "8.2" magnitude and measures "7.0'x1.5'."

3) NGC4826 in Coma Berenices, M64

The Black Eye galaxy measures "7.5'x3.5'" and is "8.6" in magnitude. Burnham cogently describes the visibility of the dark dust mass in this galaxy - "The visibility of the dark mass is naturally a controversial point among observers, but it is definitely within the capabilities of a good 6 or 8-inch glass...The observation of such details requires very dark clear skies, and the observer must keep his eyes well dark-adapted. In the study of such things, the inter-galactic traveller may also temporarily ignore the usual rule against using high-power oculars on nebulae and galaxies; a somewhat higher magnification in this case may help to darken the field and increase the visibility of the 'black-eye' of M64."

4) NGC5128 in Centuarus

The name 'Outer-Limits' galaxy is my own name for this object - how many times have you watched the TV show 'Outer Limits' and seen this galaxy as a background for the credits at the end of the show? NGC5128 rates magnitude "7.2" and measures "10'x8'". Burnham says NGC5128 "...appears as a luminous sphere about 10' in diameter, crossed by a prominent dark obscuring band." Although NGC5128 never gets higher than 17° from Columbus, Texas, this object is still worth a try. NGC5128 stands at -42°45' south; I have observed variables as far south as -38° with success into the 12th magnitude range with an 8" f/4 reflector.

One last point, please! The region between $\beta$ Leonis (denebola) and $\epsilon$ Virginis is known as the "Realm of the Nebulae." There are more galaxies packed here for amateur instruments than any other part of the sky! Point your telescope here and count how many galaxies you can find in one field of view... use low power and the largest scope you can commandeer at the field trip. A correct answer might be ten or more!

## THE DEDICATED AMATEUR

by John Wagoner

Here I sit on my stool
waiting like a silly fool
for the Sun to set and the Moon not rise
so that I can observe under clear, dark skies.

I set up my mount and wipe off the soot,
and drop my counterweight on my foot.
I scream and holler and dance about,
and curse this hobby while I sit and pout.

But I'm up again, hard at work,
and through a minor, trivial quirk
I happen to notice with a frown
I've strapped on my tube assembly upside down.

An adjustment here, a correction there,
I continue setting up without a care.
My optics all shine as if they are mint,
but the center of my mirror has a big thumbprint.

I collimate my optics to pinpoints of light,
but the object in my finder is clean out of sight.
I align my finderscope to the left and to the right
in hopes that I may locate an object in the night.

I tilt my polar axis right at true polar north,
and watch the object in my eyepiece as it wiggles back and forth,
Now a twist of a nut and a turn of a screw
and I'm dead on Polaris when I notice the dew.

I line up my eyepieces all in a row,
and set up my table when the wind starts to blow.
My mount is heavy and solid as a log.
Things are under control when in rolls the fog.

I know that I have a tough row to hoe
when I spread out my atlas and it begins to snow.
I realize bad weather is an astronomers bane,
but I hadn't expected the hurricane.

I pack up my gear and throw it in the van,
and drive away from the site as fast as I can.
My chances for observing in the future are bleak,
but as I look over my shoulder I say, "See ya next week."

reprinted from the
T.A.S. Spectrum
April 1982.

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The Houston Astronomical Society **WELCOMES** the following new members:

Len Frazier
Lance Borden
Walter Franz
Robert B. Freese
Sarah Marsden
William E. Darnell, Jr.

GENERAL NOTES:

The NEWSLETTER will include free SWAP SHOP listings for astronomy related items for the members in good standing. Submit the material by the 7th of the month.

The NEWSLETTER needs contributions of material and help in its production. See last month's issue (Page 4) for suggested areas for the material.

The Lunar & Planetary Conference is held in March. Details of the events are not avaialble as this goes to press. Call STARLINE (661-6180) for details.

Your comments on the NEWSLETTER are also suggested. We are not married to this format and it is expected to evolve. Let's have your ideas.

Stephen J Edberg, Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena, CA 91109, invites well equipped amateurs to consider participation in the International Halley Watch. The project involves professional and amateur astronomers worldwide. A descriptive folder about the undertaking is available from him for a long self addressed stamped envelope.

The NEWSLETTER still needs a "real" name. How about some benevolent benefactor digging out that old universally useable accessory such as an eyepiece, and donating it as a prize (taking the deduction) so there is some incentive for the members to suggest names.

STARLINE, the official Society phone, is being upgraded to have a clearer longer message. Hopefully this will be on line by the time members receive this issue. Call STARLINE, 661-6180, anytime 24 hours a day, 7 days a week for the latest imformation on activities, astronomical events and other items of interest.

Note that the MARCH Director's Meeting will be held on March 24. This is NOT the last Thursday of the month.

Map to the General Membership meeting location.




The regular general membership monthly meeting is usually held on the first Friday of the month in room 117 of the Science and Research building of the University of Houston. It starts at 8 PM.

A before meeting informal dinner is held at the Holiday Inn at the corner of Wayside and I-45. It starts at 6 PM.

The Board of Directors' monthly meeting is usually held on the last Thursday of the month at the Travel Lodge at 2828 S.W. Freeway (Westbound feeder road, just west of Kirby). The meeting is open to all members in good standing; attendance is encouraged. It is held in a dining room adjacent to the restaurant in the lobby. Optional dinner starts at 6:30.

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The HAS NEWSLETTER is published monthly by the Houston Astronomical Society in lieu of the former standalone meeting notice which is now included herein. The NEWSLETTER is sent via bulk rate mail to each of the members of the Society, other selected individuals and recent visitors to the General Membership meeting. All material for inclusion in the NEWSLETTER must be submitted camera ready, in an 8 1/2 X 14 format (margins included), by the 7th of the month for inclusion in the NEWSLETTER which will be mailed near the end of the same month. Bring the copy to the General Membership meeting and give it to John Chauvin (Editor) or mail it to 8522 Bluegate Dr., Houston, TX 77025. Phone 664-2305.

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