

The Skyscraper

Vol. 34 no. 7

The monthly publication of



Amateur Astronomical Society
of Rhode Island

47 Peepoad Road
North Scituate, RI 02857

www.theskyscrapers.org

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See back page for directions to
Seagrave Observatory.

Submissions

Please submit items for the newsletter by
July 15 to Jim Hendrickson, 1 Sunflower
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The Skyscraper

July 2007

Members Cookout & July Meeting

SATURDAY, JULY 7TH AT SEAGRAVE OBSERVATORY

JOHN KOCUR TO PRESENT ARIZONA TRIP HIGHLIGHTS

3:30pm Solar Observing and Visiting

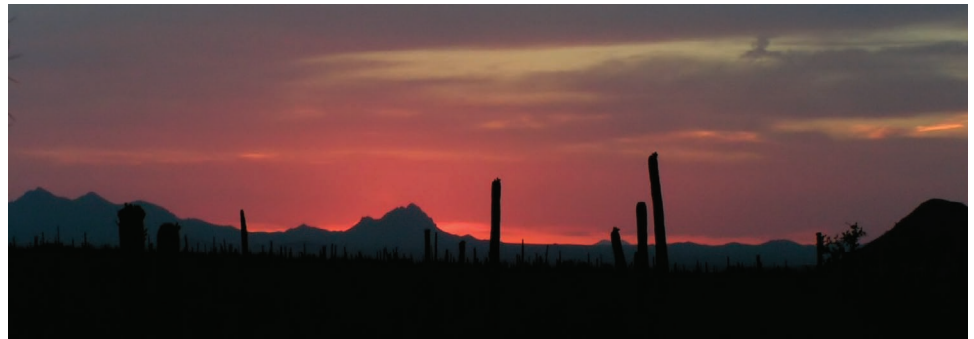
Menu: Sirloin Burgers/ Cheese Burgers • Deichmacher Hot Dogs •
Veggie Burgers • Potato and Pasta Salad • Fresh Garden Salad • Chips •
Chilled Watermelon • Soda/Coffee/Water

\$7 adults, \$3 children under 12;

7:30pm Featured Speaker: John Kocur "Arizona Trip Highlights"

8:30pm Abbreviated Business Meeting

8:45pm Refreshments & Observing



JULY 2007

7
SATURDAY

3:30PM **Members Cookout**
Seagrave Observatory

7:30PM **Monthly Meeting**
Seagrave Observatory

14
SATURDAY

8:00PM **Public Observing Night**
Seagrave Observatory,
weather permitting

21
THURSDAY

8:00PM **Public Observing Night**
Seagrave Observatory,
weather permitting

26
THURSDAY

7:30PM **Executive Committee
Meeting**
Seagrave Observatory,
members welcome

28
SATURDAY

8:00PM **Public Observing Night**
Seagrave Observatory,
weather permitting

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President's Message

Glenn Jackson, President

Many of the Skyscraper's members pursue a multitude of hobbies, but we all share one common passion - Astronomy.

What a great time of the year to fulfill your passion. There are many astronomy-related activities that you can be a part of this Summer into Fall.

July 7 - Skyscrapers will have their annual summer cookout starting at 3pm. A small fee of \$7 will be charged to cover the cost of hamburgers, hotdogs, fruit/potato salads and soda. This is a family event and children are welcome. This is one of the most popular Skyscraper events of the year; normally 60-70 members attend. **Dolores Rinaldi, Hospitality Chairperson**, is organizing this event. Member **John Kocur** will be the featured speaker. He will present the highlights of the Arizona trip of which twelve members of Skyscrapers participated.

July 28 - Want to play with your telescope? On Saturday July 28th we have been invited to participate in Side Walk Astronomy at the Providence Water Fire. **Joe Sarandrea, Member-at-Large**, is organizing this event. This is a joint venture with the Astronomical Society of Southern New England.

August 3 - Our Monthly Meeting will feature **Dr. Jim Jackson** from Boston University. His presentation is the Galactic Ring Survey. Following his presentation and a short business meeting, we will have several of our telescopes open for member viewing.

August 10-12 - The annual Stellafane Convention is being held in Springfield VT. This is the premier event in New England. If you have never been, this should be your year. There are twelve plus members already signed up to go. If you have attended in the past, I hope to see you there for what again promises to be a great weekend.

August 18 - **John Briggs** will join us on August 18th for a very special Spectroscopy Workshop. This will be the first opportunity that many members have had to see our historic multi-prism spectroscope made by John Browning of London, a famous 19th century instrument maker. John plans on demonstrating this instrument to develop a spectrum of Jupiter.

September 14-16 - Looking ahead to September 14-16th, it is not too early to make reservations for the Black Forest Star Party at Cherry Springs State Park, Pennsylvania. Cherry Springs is an Astronomy dedicated State Park. If Pennsylvania is too far a ride, there is the Connecticut Star Party in Ashford, CT the same weekend.

Closer to home and every Saturday night is Skyscraper's Public Viewing Night at Seagrave Observatory. This past weekend, June 23rd, all four Seagrave telescopes were open and 3 members had their own telescopes set up; all in all 14 skyscrapers spent a great evening under the stars. Thanks to **Ted Ferneza** for organizing this event.

Come join us - pursue your Passion - and enjoy the camaraderie!



Venus, the Moon, and Saturn (right to left). June 18, 2007. Photo by Dan Lorraine.

Skyscrapers Participation in SMART Program

Dave Huestis

On Sunday, May 20, 2007, Donna Gaumond, Kathy Cyr, and Dave Huestis participated in a program at Bryant University called S.M.A.R.T - Science and Math are Really Terrific.

This program is designed to introduce Girl Scouts in grades K-12 from across Rhode Island and Southeastern Massachusetts to various topics of Math, Science, Engineering, and Technology. These interactive workshops influence about 800 girls!

During the day the girls rotated from one learning "station" to another, each session lasting only 25 minutes. My station was designed for grades 3-5, and I presented a total of seven times during the day. My deepest respect and admiration to those teachers out there who accomplish this routine five days a week. My voice luckily held out to the end, but I was exhausted by late afternoon!

I chose a topic I was most familiar with, the northern lights. The title at my station was "The Science and Beauty of the Northern Lights." I gave each group a quick introduction as to the cause of the northern lights. I showed them some pictures of displays, told them about the colors and shapes, and asked them to paint a display using the water colors, brushes and paper provided.

While they were busy rendering their displays, I continued to fill in more details about the northern lights. Before they left my station I handed a fact sheet about the northern lights, as well as provided them information about the Skyscrapers organization, including our public open nights and our availability to host star parties for groups. I think we will see an increase in the number of Girl Scouts visiting Seagrave in the near future.

The girls learned a great deal about the northern

lights in the brief time we shared. And, they also produced some great works of art and science using the paints provided, which they were able to take home with them.

Hopefully they will be fortunate to see a real northern lights in the coming years.

I look forward to participating in this wonderful program next year.

At another learning station Donna and Kathy exposed the different aged girls to the universe through a Power Point presentation and discussion. The girls showed their enthusiasm by sharing what they already knew and bombarding Donna and Kathy with questions along with some asked by the adults accompanying them. Lively discussions ensued around topics such as the Deep Impact Mission, recent discoveries concerning the planets and the demotion of Pluto to a dwarf planet.

Both Donna and Kathy felt like Skyscrapers was well received by both the Girl Scouts and the parents who attended. The eagerness of the participants showed that no matter what the age, the high interest in the subject overshadows the abstractness of the topic. The children left with a copy of places to get more information concerning astronomy.

One of the resources cited was Donna Gaumond's website for her students (Donna is a third grade teacher at the Metcalf School in Exeter/West Greenwich) which includes the power point as well as many other links. The girls were told to sign in as 'other' if they visited the site. As of today, the site has been visited 184 times! We can foresee future female members of Skyscrapers that may have attended the workshop!



Bob Horton's newly completed backyard observatory, housing his home-built 12" f/4.8 Newtonian.

Chew on This

By Diane K Fisher

The Mars robotic rovers, Spirit and Opportunity, are equipped with RATs, or Rock Abrasion Tools. Their purpose is to abrade the surface patina off the Mars rocks so that the alpha x-ray spectrometer can analyze the minerals inside the rocks, rather than just on the surface.

But future robotic missions to Mars will be asked to go even further below the surface. Scrapers and corers will gather rock samples of substantial size, that, in order to be analyzed by a spectrometer, will need to be crushed into a fine powder.

Crushing rocks on Mars? Now there's a problem that brings to mind a multitude of possible approaches: Whack them with a large hammer? Squeeze them until they explode? How about just chewing them up? It was with this latter metaphor that the planetary instrument engineers struck

pay dirt—so to speak.

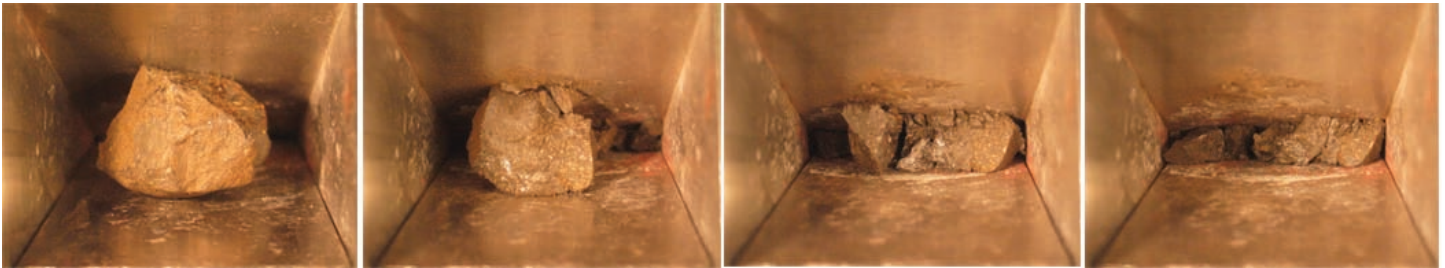
Thanks to NASA's Planetary Instrument Definition and Development Program, a small group of NASA engineers came up with the Mars Rock Crusher. Only six inches tall, it can chew the hardest rocks into a powder.

The Mars Rock Crusher has two metal plates that work sort of like our jaws. One plate stays still, while the other plate moves. Rocks are dropped into the jaw between the two plates. As one plate moves in and out (like a lower jaw), rocks are crushed between the two plates. The jaw opening is larger toward the top and smaller towards the bottom. So when larger rocks are crushed near the top, the pieces fall down into the narrower part of the jaw, where they are crushed again. This process repeats until the rock particles are small enough to fall through a slit where the two plates are closest.

Engineers have tested the Mars Rock Crusher with Earth rocks similar to those expected to be found on Mars. One kind of rock is hematite. The rusted iron in hematite and other rocks help give Mars its nickname "The Red Planet." Another kind of rock is magnetite, so-called because it is magnetic. Rocks made by volcanoes are called basalts. Some of the volcanoes on Mars may have produced basalts with a lot of a mineral called olivine. We call those olivine basalts, and the Rock Crusher chews them up nicely too.

Visit www.jpl.nasa.gov/technology to read the latest about other NASA technologies for exploring other planets and improving life on this one.

This article was written by Diane K. Fisher and provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



Looking down on the jaws of the Mars Rock Crusher, we see a magnetite rock get crushed into smaller and smaller particles.

Observing Meteors May Be Hazardous to Your Health

The John Euart story was presented to Dave Huestis by John's daughter Kathryn

Now, who would agree with a statement like that? After all, what could be more rewarding or relaxing than selecting a favorite chair or chaise and going out on a warm summer's night to look for "shooting stars" and perhaps seeing a fireball or two. Well, listen to my story.

At the August 1932 meeting the Skyscrapers were looking forward to the total eclipse of the sun in New England on August 31 st. Professor Smiley was leading a group from Brown University to a location in southern Maine. Several Skyscrapers were going to assist in making observations. Franklin Snow Huddy,

a new member who eventually was elected president, was an expert amateur radio operator with excellent equipment. He was going to receive time signals by short wave direct from Washington, D.C. During the course of the meeting Professor Smiley remarked that a meteor shower called the Perseids would be visible in mid-August and suggested that the members might like to observe them, taking half-hourly counts of the number seen. My father and I decided that was what we would do.

We left our houses in Providence about midnight, drove to the top of Neutaconkanet Hill in western

Providence, parked the car on the exit road and walked out to a knoll overlooking the city with a good view of the sky. We started our count at 1:00 AM and ended at 3:30 A.M. We saw 110 meteors. In the last hour from 2:30 to 3:30 we were seeing on average a meteor a minute. It was interesting to see them gradually from east to west as the Earth rotated. The problem was that as the night wore on it got colder and colder. We were wearing business suits and warm cloth topcoats but we finally had to go to the car and stuff newspapers up our backs to get some measure of warmth.

At the September meeting there was much discussion about the eclipse which was wiped out by an errant cloud seconds before totality. It was so close that a person down at the edge of the meadow where the viewing site was located would have seen totality. I know because I was there. I should have stayed in Portland. President Crawford asked if any members had observed the Perseids. One member reported seeing one meteor. Another member reported seeing one meteor. When I arose and gave our report they were flabbergasted. I was asked to give a talk on meteors which I did. Maribelle Cormack invited me to talk at the Roger Williams Park Museum. Walter Wakefield of the Worcester, Massachusetts invited me up there. My brother and I went there by jitney on a snowy night. There were few cars on the road that night.

Franklin Huddy became interested in meteors and wanted to photograph a meteor trail with his German Leica camera. His father owned a summer estate on Absoloma Hill east of Chepachet. So one night Franklin and his wife, my father and I drove out to the estate. I was using an old portrait camera with cut film. We did not succeed in catching any meteor trails but Franklin's star trails of Orion were excellent. I think the shower was the Orionids.

It was cold that night. We drove home at dawn. Franklin confided in me at our next meeting that while driving home he had almost fallen asleep at the wheel. He thought it was caused by fumes from a faulty exhaust system.

We tried again to photograph meteor trails. Harry MacKnight who later became President of Skyscrapers joined us. Another shower came along and Franklin wanted to meet us out at Absoloma Hill. We left our house about 11:30, drove out the road to the estate but found the entrance closed by a heavy chain between two stone posts. We parked the car at the side of the road to wait for Franklin. Before long we heard shouts from a house several hundred feet up the road on the opposite side. A dog was barking and lights were on. We put our dome light on to show we meant no harm. After waiting a while and having

some coffee we decided Franklin was a no show and drove off. When I next saw him he apologized for not coming. I told him about the disturbance at the house up the road. He said that was the caretaker and he had orders to shoot first and ask questions afterward. Rather disconcerting news.

Later my father and I began plotting location, duration and time of viewing meteor trails. This was done to the second on charts furnished to us by the President of the American Meteor Society. He was successful in plotting the heights of two meteors using our observations and those furnished by a man in upper New York state. It is interesting to note that the over one hundred meteor count and the height observation mentioned in twenty-five years of Skyscraping were never credited to us.

On the occasion of another shower my father and I decided to observe in our own backyard. The Milky Way could be seen overhead in Providence in those days. We were busily engaged in observing when I thought I saw movement on the property next door. I stooped to silhouette the area against the dim background lighting and sure enough there was someone on the property wearing what appeared to be a hat with a visor on it. The figure slowly approached and I said in a low voice to my father "We have company." The figure halted at the fence separating the properties and a voice with a rich brogue asked "What's up?" I answered brightly, "We're observing meteors officer" for indeed it was one of Providence's finest. He replied "What's them?" I invited him over to have a look. He vaulted the fence and I showed him what we were doing. When I was done he said to me "You're lucky you didn't get shot." I thought that was an odd remark when I heard a sound behind me. I turned and here was his backup officer who had come through our property intending to head us off at the pass if we tried to escape. After they left we picked up our charts, folded the table and went in the house.

So to summarize, the first time we observed, as they say in Texas, "we like to froze", later we were almost involved in what could have been a serious automobile accident, and we were almost shot at on two different occasions. When Skyscrapers acquired Seagrave most observing was done on that pastoral, peaceful, protected private property, but you know I do not remember any shower as good as that first Perseid shower.

John L. Euart, one of the group of founding members. Born 12/04/1910; died 04/14/2003

June Meeting Notes

Joel Cohen, Acting Secretary

June 1, 2007, Seagrave Observatory

Meeting Start - 7:35pm

Steve Hubbard introduced the featured speaker. Lisa Kaltenegger, Harvard Smithsonian Center for Astrophysics, spoke on "Good Planets Are Hard To Find" regarding the search for planets similar to Earth, which may support life. Current search is within 75 light years of Earth.



Spacecraft Voyager gives the first image of a habitable planet, Earth, from a distance and thereby becomes the model for data comparison. Thermal emissions are studied and no known indicators yet for life based on elements other than carbon.

Secretary's Report - In suspense

Treasurer's Report - Accepted as published

Upcoming Speakers - July Cookout Dave Huestis special presentation on 75th Anniversary Year

AstroAssembly - Kathy Siok reminded us the date is September 28th and 29th. • The church hall is no longer available and the Smithfield Sportsmen's Club will be the venue for the evening banquet and presentation.

75th Anniversary Events - Kathy thanked Dolores for the arrangements

for the festivities at Café in Coventry. • Apparel and hats with embroidered logos are now available for purchase on the web site. • Order forms will be available at the Cookout.

Star Parties Update - Regional Home School group was here and made a donation. • The Warwick Public Schools ALAP program is expected to have 60-70 guests here on Saturday June 9th and any additional members to help would be appreciated.

Trustee's Report - The Loan A Dome is back in place and power is available.

Thanks Byron. • Bob Horton, Dave Huestis and Rick Lynch have worked on the new display in the Ante Room of the Clark. • There will be a work party to clean up the grounds for the Cookout on June 16th.

Librarian - The library is about full, please borrow something

Historian's Report - Dave Huestis has copies of Monthly Sky calendars. • Alan Ford, returning member, has donated a copy of the 25th Anniversary Book. • Mrs. Newmarker's estate has donated additional items of historical note which will be incorporated into the archives. • Dave showed the official Proclamation Document from the State of Rhode Island Legislature honoring Skyscrapers on the occasion of the 75th Anniversary.

New Business - (6-1-07) Motion by Jack Szelka: Move to spend up to \$300 for the purchase of picnic tables. • (6-1-07) Motion by Rick Lynch: Move to purchase a back up bulb for the LCD projector. • No new applications for membership were received

Old Business - Laurent Brolec was unanimously accepted as a new member. • Motion: (4-6-07) Move to accept the 2007-2008 budget as presented by President Dave Huestis and Vice President Glenn Jackson and unanimously approved by the executive board. • Motion passed Unanimously

Good of the Organization - Dolores Rinaldi suggested we use time available on the Public Access TV Channel to promote Skyscrapers

Presidential Announcements - Thanks to Donna Gaumont, Kathy Cyr and Dave Huestis for the Girl Scout Workshop Day. • E-Board meeting is scheduled for June 28th 7:30pm • Stellafane pre-registration is available at a discounted admission. Black Forest Star Party in Pennsylvania is September 14-16. • Spectroscopy workshop with John Briggs is August 18th at 4pm

Adjournment - 58 Members in attendance

75th Anniversary Meeting
Mercedes Rivero-Hudec, Secretary
May 5, 2007, Cafe Romanzo
May's monthly meeting was very



Tycho/Clavius region. There are two images stitches together into a single combine image. Imager: The Imaging Source's - DBK 21AF04.AS FireWire Color Camera. Image: consists of two AVI files of 500 frames each, processed and stacked using Registax, and post-process in Photoshop 7.0, then stitched together using Canon image processing software. Telescope: 8" Meade LX200 f/6.3 SCT with 2x Barlow and 2" extension barrel. June 25. Photo by Tracey Haley.

special: it marked the beginning of a yearlong celebration of Skyscrapers' 75th anniversary!

Members gathered at 5:30pm at Romanzo Café in Coventry, RI for dinner. The 75th-Anniversary Planning Committee made the arrangements - Thank you to all the committee members!

Business meeting: A brief business meeting was called to order by President Huestis after dinner.

Old business: Pending motions to admit Mark Bronson (Canada), John Biafore, and Dave Rose into the membership were passed.

President's announcements: President Huestis introduced the recently elected Executive Committee.

The business meeting was adjourned and followed by two presentations. Member Gerry Dyck gave the first presentation, entitled "Skyscrapers at 75," which included slides about Seagrave Observatory and Skyscrapers and their activities - such as meetings, trips, outreach, photography; the musical theme of the presentation was Haydn's 75th symphony. Life-member William Penhallow, the monthly meeting's featured speaker, gave the second presentation entitled "Skyscrapers - A Historical Perspective," some of his personal memories over 60 years (1947-2007). The evening was a success and a great start to this year's celebration!

Outgoing president Dave Huestis gave incoming president Glenn Jackson a "certificate of appreciation" for his services to Skyscrapers as First VP. Glenn presented Dave with a beautiful framed picture of Smiley with a plaque commemorating Dave's 3 two-year terms as Skyscrapers president.

2006-2007 Secretary's note: I have enjoyed serving Skyscrapers the past three years. Thank you.

June 28th E-Board Meeting

Mercedes Rivero-Hudec, Secretary

Parking: Move stone wall toward club house • Parking lot attendants • Have neighbor donate surrounding land? • Officers and VIP park inside wall area • Car pooling from Scituate Community center • Meet at Community Center

Outreach Programs: Astronomy Day with Roger Williams Park • Program for International Year of Astronomy • Set up on green during spring function • Side Walk astronomy at Waterfire

WATERFIRE SIDEWALK ASTRONOMY JULY 28TH 2007: Volunteers needed contact Joe Sarandrea (jboss2@cox.net)

EXPANDING THE CLUB HOUSE AND SPACE CONSIDERATIONS: Committee volunteers needed contact Jerry Jeffrey (jrj01@cox.net)

ABBREVIATED MEETINGS: July 7th Cook Out trial run with abbreviated meeting and observing

EXTERMINATORANDBUDGETING FUNDS: Trustees need \$420 to cover the cost of extermination motion to be made at July 7th meeting

PARKING LOT COORDINATOR: Volunteers needed 2 for each meeting contact Jim Brenek (jbrenek@cox.net)

COOK OUT: On track for a successful event, details in newsletter

VOLUNTEERS NEEDED: ON-GOING ASSIGNMENT: Co-Chairman Hospitality contact Glenn Jackson (glenn.Jackson@cox.net)

Treasurer's Report

4/1/2007 - 6/19/2007

Jim Crawford, Treasurer

INFLOWS	
Uncategorized	\$7.52
Anniversaryinc donation	\$1,248.00
Collationdonation	\$35.00
TOTAL donation dues	\$35.00
Contributing	\$781.00
Family	\$620.00
Junior	\$10.00
Regular	\$960.00
Senior	\$100.00
TOTAL dues	\$2,471.00
magincome	
Astronomymaginc	\$162.00
skytelmagincome	\$296.55
TOTAL magincome	\$458.55
Starparty	\$112.00
TOTAL INFLOWS	\$4,332.07
OUTFLOWS	
Uncategorized	\$2,304.50
Anniversaryexp	\$254.12
Auto	
Fuel	\$20.00
TOTAL Auto	\$20.00
collation	\$150.00
Corporationfee	\$30.00
Meals & Entertrn	\$100.00
membersubscriptions	
Astronomymagexp	\$68.00
Skytelexp	\$263.60
Other membersubscriptions	\$126.95
TOTAL membersubscriptions	\$458.55
Misc	
	\$(1,765.16)
Portajohn	\$35.00
Postage and Delivery	\$29.20
Utilities	
Electric	\$28.36
Propane	\$425.15
TOTAL Utilities	\$453.51
TOTAL OUTFLOWS	\$2,069.72
OVERALL TOTAL	\$2,262.35

Minutes of the meeting Wed. July 6th. 3"
at Ladd Observatory.

The minutes of the June meeting were read and accepted.

The sec'y. was requested to put the address of the place of meeting on the notice cards.

The question of reading minutes at each meeting was discussed.

A program to enable each member to take part in the club work was discussed. Program committee should have something to guide them as to what members really wish.

The membership committee suggested two members whose names were voted on and accepted.

Mr. Donald Prentice and Mr. C.J. Simeon.

It was suggested that the Society be sectioned into groups interested in the various branches of astronomy, sections to hold separate meetings if desired.

It was suggested that there be monthly talk meetings and monthly action meetings; --- the former, to consist of a lecture and answering of questions; the latter, for actual work on making a telescope, for star observations, or visit to a telescope.

It was suggested that 10 - 15 minutes be devoted to informal questions, -vagueness in questions to be avoided.

A list of books on astronomy might be compiled for use of members, some member to keep in touch with a library and be ready to review these books.

Rev. Crawford recommended the July magazine Fortune- an article on "The New Cosmology" by Einstein(?) which is well illustrated. Also an article called "many Lights". Prof. Smiley recommended a book for juveniles, "The Stars of Sam."

Members voted on what they wished to take up at the meetings. Returns were tabulated. The majority wished to study constellations.

Suggestions made:

- Telescope making.
- Celestial photography.
- Variable stars.
- Plotting Meteor Trails.
- Minor planets and asteroids.
- Reading the sky.
- Reviewing astronomical books.

Rev. Crawford brought up an outfit which he uses in telescope making and gave a most instructive talk on the subject. He stressed good working conditions, a steady table, a room with an even temperature; floor sprinkled to avoid dust, canvas over table, old clothes, plenty of patience, a table at workable height, entire equipment assemble abrasives properly labeled, and not to work too long at a time.

The meeting adjourned and refreshments were served by Prof. and Mrs. Smiley.

Summer Double Stars: Scorpius

Glenn Chaple

Our summer double star adventure takes us to the southern skies and the constellation Scorpius. The region north and west of, and including, Antares contains a remarkable array of showpiece double and multiple stars. Data on magnitudes and separation were taken from the Washington Double Star Catalog.

Omega 1,2 Scorpii mags 4.0 and 4.3, sep 15 arcminutes

While waiting for your telescope to cool down, look for the naked eye pair omega 1,2 Scorpii, situated a degree south of beta Scorpii. These fourth-magnitude stars, about as far apart as the Mizar-Alcor pair in Ursa Major, are a nice sight in binoculars.

Beta Scorpii mags 2.6 and 4.5, sep 13.6"

One of my favorite double stars, beta is an easy split in a common 60mm refractor. Nice contrast between the white primary and its companion, which appears blue to blue-green.

Xi Scorpii magnitudes 4.9 and 7.3, separation 7.5 arcseconds

Struve 1999 Scorpii mags 7.5 and 8.0, sep 11.8"

This is a beautiful "double-double" for small scopes. Separated by just 5 minutes of arc, the two pairs are a dazzling sight at 60X. The primary to xi Scorpii is a close binary with a 45.7 year orbital period. Current separation from the mag 5.2 companion is about one arcsecond, so you'll need a large telescope, optimum seeing, and a magnifying power of 200X or more.

Nu Scorpii mags 4.2 and 6.6, sep 40.8"

Small-scope owners using 50X will see a wide pair, but wait! If the seeing is good and you "jack up" the power to 120X, you'll spot a 7.2 magnitude star just 2.4" from the fainter component. The 4.2 mag primary isn't alone, but you'll need a 6-inch scope and 150X to bridge the 1.2" gap separating it from its 5.3-mag partner.

Sh 225 Scorpii mags 7.4 and 8.1, sep 46.9"

Sh 226 Scorpii mags 7.6 and 8.3, sep 12.8"

This little-known "double-double" was brought to my attention by the Mexican amateur astronomer Juan G. Hernandez back in the days when I wrote a double star column for Deep Sky Monthly. To find these two pairs, look 3 degrees north of the globular cluster M80.

Sigma Scorpii mags 2.9 and 8.4, sep 20.0"

Easily found just 2 degrees east and slightly north of Antares, this pretty duo is well-seen in small scopes at 50-75X. Try averted vision if the 8th mag companion proves elusive.

Alpha Scorpii (Antares) mags 1.0 and 5.4, sep 2.5"

Our final double star offers a stern challenge, due to its closeness and the difference in magnitude between its component stars. Though not as difficult as Sirius, Antares will require a good 6-inch scope and near-perfect seeing conditions. Most observers report a striking color contrast between the ruddy primary and its greenish companion



This was taken through my homemade 8 inch diameter reflecting telescope using a Meade LPI digital astronomy camera on a Meade LXD 75 computerized GOTO mount and a Gateway Laptop computer. This mosaic photograph is composed of 15 images. Each of these 15 master images is comprised of approximately 50 to 80 stacked images. So the camera recorded about 1000 images. I stitched the 15 master photos together using Autostitch software and enhanced sharpness and contrast. Use you zoom and pan to see many fine features such as crater rays, crater shadows, and subtle color variations. Exposure was set at 0.0028 seconds, image capture minimum quality set at 70%, auto color on, auto combine on. Total time to capture (1.5 hrs), and process (1.5hrs) this image = 3 hours total. June 29, 2007. Photo by John Kocur.

Directions to Seagrave Memorial Observatory

From the Providence area:

Take Rt. 6 West to Interstate 295 in Johnston and proceed west on Rt. 6 to Scituate. In Scituate bear right off Rt. 6 onto Rt. 101. Turn right onto Rt. 116 North. Peeptoad Road is the first left off Rt. 116.

From Coventry/West Warwick area:

Take Rt. 116 North. Peeptoad Road is the first left after crossing Rt. 101.

From Southern Rhode Island:

Take Interstate 95 North. Exit onto Interstate 295 North in Warwick (left exit.) Exit to Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.

From Northern Rhode Island:

Take Rt. 116 South. Follow Rt. 116 thru Greenville. Turn left at Knight's Farm intersection (Rt. 116 turns left) and follow Rt. 116. Watch for Peeptoad Road on the right.

From Connecticut:

- Take Rt. 44 East to Greenville and turn right on Rt. 116 South. Turn left at Knight's Farm intersection (Rt. 116 turn left) and follow Rt. 116. Watch for Peeptoad Road on the right.
- Take Rt. 6 East toward Rhode Island; bear left on Rt. 101 East and continue to intersection with Rt. 116. Turn left; Peeptoad Road is the first left off Rt. 116.

From Massachusetts:

Take Interstate 295 South (off Interstate 95 in Attleboro.) Exit onto Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.



47 PEEPTOAD ROAD
NORTH SCITUATE, RI 02857