

The Skyscraper

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the monthly publication of



The Amateur Astronomical Society of Rhode Island

47 Peepload Road
North Scituate, RI 02857

www.theskyscrapers.org

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The Skyscraper

November 2003

November Meeting

Friday, November 7, 7:30pm at Seagrave Observatory

Our speaker for November's meeting will be William (Bill) Herbst, John Monroe Van Vleck Professor of Astronomy at Wesleyan University in Middletown Ct. He has been doing some very exciting research on a star designated : KH 15D. This is a unique star that has the potential to tell us a lot about how stars and planets form, including our own solar system. The title of his talk will be: KH 15D, A baby star that Plays Peek-a-boo.

Lunar Eclipse Observing

Saturday, November 8, 6:30pm at Seagrave Observatory

Seagrave Memorial Observatory will be open on Saturday November 8th to observe the total lunar eclipse. Partial eclipse starts around 6:30 pm with totality beginning around 8:00 pm and lasting for 25 minutes. Weather permitting; this will be the second total eclipse that we've been able to observe from the observatory this year.

Skyscrapers Calendar

Public observing is held every Saturday at Seagrave Observatory.

November 7 7:30pm November Meeting at Seagrave Observatory
Friday

November 8 6:00pm Public Observing Night & Lunar Eclipse at
Saturday Seagrave Observatory

November 15 7:00pm Public Observing Night at Seagrave
Saturday Observatory

November 22 7:00pm Public Observing Night at Seagrave
Saturday Observatory

November 29 7:00pm Public Observing Night at Seagrave
Saturday Observatory

President's Message

Dan Lorraine, President

Even though the weather was not that cooperative, Skyscrapers had another very successful AstroAssembly. The event started with seven talks on Friday evening under the tent and included a wide range of topics from historical to building your own telescope. Approximately 50 people were in attendance on Friday evening, the most we've ever had. Saturday also featured some exceptional talks and a display of antique telescopes in the meeting hall presented by members of the Antique Telescope Society. Some of the highlights were a 4 1/2" Brashear refractor from the turn of the century that I was lucky enough to observe Mars through on Friday evening; a 4" nickel plated Alvan Clark refractor from the late 1800's; and my favorite, the Russell Porter Garden Telescope from 1923. These instruments were really a treat and added a lot to the AstroAssembly experience this year! Our annual banquet and keynote speaker, Dr. John Mustard from Brown University who spoke on the recent and upcoming unmanned probes exploring Mars, capped off Saturday. I have received many positive comments about AstroAssembly this year including one that claimed "it was the best AstroAssembly in decades." I would like to thank all of those Skyscrapers, too numerous to name here, that contributed their time and sweat to make this year's event so successful. And special thanks to Bob Horton for his vision, making AstroAssembly a little different and a little more memorable than most!

Looking forward, Seagrave Memorial Observatory will be open on Saturday November 8th to observe the total lunar eclipse. Partial eclipse starts around 6:30 pm with totality beginning around 8:00 pm and lasting for 25 minutes. Weather permitting; this will be the second total eclipse that we've been able to observe from the observatory this year.

Sometime this winter we will be making the trek again to Van Vleck Observatory to observe the Planet Saturn through the 20" Alvan Clark refractor. Over 20 members went down last time to

view Mars and we all had a great time (see photos on the web site).

Skyscrapers is in the process of coordinating a joint trip with the Astronomical Society of Greater Hartford to the Museum of Natural History in New York City to visit the Hayden Planetarium and the newly renovated and only recently opened Hall of Meteorites, which boasts the largest display of its type in the world. We will charter a bus and the cost (assuming 50 people go from both clubs) will be around \$25 plus admission to the museum and planetarium. We're targeting February or early March for this trip.

A few other trips that may be of interest to you that are now in the planning stages is a weekend trip to the Hartness House Inn in Springfield Vermont (see www.hartnesshouse.com). The Hartness House is the former governor's mansion and now a full service, historic country inn offering 42 rooms, all with private bath, modern amenities, and a fine dining restaurant in a beautifully restored 1903 country estate. The Hartness House also has a very unique 10" Brashear refractor where observations are made from a fully enclosed and heated viewing station that is accessed from the main building through an underground tunnel. Springfield Vermont is where the amateur telescope movement was spawned, spearheaded by Russell W. Porter and Albert Ingalls of Scientific American. The Inn also has a very nice telescope museum that features some really great artifacts from this period in time, including a Porter Garden Telescope. If you think you may be interested, please see Bobby Horton.

And for July of 2004 Skyscrapers return to White Mountain in California for 3 or 4 nights of astronomical observations approximately 10,000+ feet above sea level. The last group of intrepid Skyscrapers that went said that these were the best skies they've ever seen.

More to come ... please check the web site for more details as they become available!

Leonid Meteor Shower Back to Normal and November's Total Lunar Eclipse

David A Huestis, Historian

During the first two weeks of November, the Earth encounters dusty meteor streams left behind by periodic Comet Encke's passages through the inner solar system. One crosses the Earth's orbit on or about the 5th while the second occurs on or about the 12th. These meteors plunge through our atmosphere at around 27-29 kilometers per second, sometimes producing brilliant fireballs that blaze across the sky.

Unfortunately the Full Moon occurs on the 8th this year, so the number of meteors seen will be severely reduced. Perhaps five or so per hour may be observed on the peak nights if you shield yourself from direct moonlight.

For meteor observing a Full Moon can be quite a detriment to watching "burning rocks" fall from the sky, but November's Full

Moon will undergo a total eclipse very similar to that which we experienced back in May. The only difference will be that this one will start soon after sunset and will be finished before midnight, and also totality will be quite short, only 25 minutes.

This total lunar eclipse will begin at 5:15 pm as the Moon slides into the light penumbral shadow of the Earth. Only as the Moon slides deeper into the shadow will a keen-eyed observer see a subtle shading of the lunar surface. Just prior to the Moon entering the Earth's dark umbral shadow at 6:32 pm (partial phase begins) one should notice that the moonlight looks somewhat subdued at the left edge of the lunar disk.

The Moon will be moving eastward in our sky when it encounters the Earth's shadow. Therefore, watch for the shadow to sweep across the lunar surface from left to right.

Totality begins at 8:06 pm and lasts only 25 minutes, ending at 8:31 pm. Last May's totality lasted twice as long. Because the Moon will be just barely within the dark umbral shadow projected into space by the Earth, my prediction is that the Moon will remain visible and quite bright during totality. I believe it will be even brighter than during May's event.

It will be interesting to see if the Moon's surface assumes any unusual colors or hues. I suspect it won't. The light will still be subdued, like being seen through fog or haze.

When totality ends, the outgoing partial phase begins. It's like watching the ingoing partial phase in reverse. The outgoing partial phase will last until 10:04 pm when the Moon will move out of the umbral shadow. The penumbral phase, which then begins, is hardly noticeable at all, especially since you've been staring at bright moonlight. The eclipse finally ends at 11:22 pm when the Moon completely exits the Earth's shadow.

If you have binoculars or a telescope, this lunar eclipse is the time to put them to good use. The more optical aid an observer uses, the more detail one will discern. However, don't despair if you don't have access to expensive equipment. Mother Nature

provided you with a pair of the most valuable observing tools -- your eyes! Use them to follow the progress of this beautiful event. Also, this total lunar eclipse occurs on a Saturday night, which is a public observing night at Seagrave Observatory. Visit with us and get some great looks through our contingency of telescopes.

Just after mid-month, our old and dear friend the Leonid meteor shower pays a visit to the environs of us earthbound astronomers. Unfortunately no major or minor meteor storms are predicted this year. Thus, we can expect the normal peak rate to be about 30 Leonids per hour on the night of November 17-18. (However, an alert has been issued for possible fireballs on the night of November 16- 17 and 19-20.) One small problem will certainly reduce the peak rate down to about 15 to 20 per hour -- the last quarter Moon will reside right in the middle of Leo's body that night.

Remember, the Leonids are the swiftest of all the meteor showers, hitting our atmosphere at a blazing 44 miles per second. They are green and blue in coloration and usually bright. Also, two years ago many bright fireballs were reported. Some even left long persistent dust trains high in the sky.

I'm sure glad many of you had an opportunity to observe the fantastic display two years ago. I know you and I will never forget the night when the sky was full of shooting stars.

Let's hope November's skies are cloud-free so we may enjoy the beautiful astronomical events Mother Nature has planned for us.

Visit Seagrave Observatory, the home of Skyscrapers, Inc., on the web at www.theskyscrapers.org for further information.

Keep your eyes to the skies.

An Historic 8¼" Alvan Clark Returns to it's Former Glory

Allen Hall

I can remember my first visit to Seagrave Observatory in N. Scituate, Rhode Island as clearly as though I'd been there yesterday. The year was 1971, and I had just turned fourteen years old. I was always very interested in amateur astronomy, and in fact had already accumulated six years of experience examining the heavens with my small Tasco telescope. For those of you who don't remember, 1971 was a very important year for astronomers. August of that year marked one of the closest approaches of Mars to the Earth in many years. It was going to be a whopping 24.8 arc seconds in diameter, and I couldn't wait to see it!

At the time I had an old Unitron 2.4" refractor. The previous year I had worked all summer pitching hay at "Old Man Schofield's" farm to raise the \$75 purchase price. Knowing that I was in for a special treat as Mars was, and still is one of my most favorite objects to observe, I found myself longing for a little more aperture. I mentioned my desire to find a larger telescope to my father, and he promptly recalled being taken to a small observatory in N. Scituate, RI when he was young. The wheels began to turn in my head. I instantly had visions of the possibilities. Wow, a large telescope I wondered who owned it. Would it be possible for me to be at the eyepiece during the upcoming opposition? My excitement grew when my father said

that he would try to find out if the place was still there. This was early in June of that year.

Unfortunately, about two weeks before my birthday in June, I fell ill and had to be taken to the hospital. Sometime during the first day or two, my mother came to visit and she brought great news. She had stopped at the Town Hall in Scituate and had found out that in fact the observatory was still there, and even better she had the address of the people who owned it. My mother said that I should write them a letter, and if it was all right with the people at the observatory, my father would take me there for a visit on my birthday.

I couldn't wait to get started. The words had never flowed so easily from my pen. The people who owned the telescope were a "company", called "Skyscrapers Inc." Not knowing at the time that Skyscrapers, Inc. was in fact the Amateur Astronomical Society of RI, I addressed my letter to the "Head Astronomer", and asked if it would be OK with him, if I could help out with the observing session for the upcoming Mars opposition.

I was in the hospital for about 10 days, lamenting the possibility of having to spend my birthday there. One night, as I fell asleep, I remember quite vividly looking out the window of my room, and there in the East was Mars, rising slowly out of the trees. It was brilliant, and the color was incredible, a truly memorable sight. That was the last image my eyes beheld that evening as I drifted off to sleep.

The next day my mother came in with a letter addressed from Skyscrapers. I couldn't wait to tear it open. As I read the letter I learned that Skyscrapers was in fact a society of amateur astronomers. They wrote that they would be "very happy" to have me come for a visit on my birthday, but that I should come on the day before, a Saturday, as they had scheduled a public observing night for that date. The doctor came in that same morning and said, "Everything is fine, you should be able to leave today." At those words, I learned what it was like to fly!

Saturday June 19, 1971 arrived with great promise, as the sky was crystal clear. The whole day seemed to drag along as I eagerly awaited the coming evening. Finally, it was time to head out, and my father packed me into the car and off we went. Seagrave Observatory is on Peepoad Road in N. Scituate, RI, and I lived in Cumberland, so the drive over took about 30 minutes. As we headed out onto the country roads I remember staring out the window, up at the sky, just to make sure that it was still clear.

We arrived at Seagrave Observatory early in the evening and we pulled into the small grass covered parking lot. When I climbed out of the car my first order of business was to look up and check out the sky. The stars were incredible, and even though it was still early in the evening the overwhelming beauty of the country sky froze me in my tracks. Peepoad Road was aptly named; peepoads could be heard making quite a loud chorus in the nearby woods, and I could now see the observatory turret-shaped dome, peeking from behind a small row of trees. The red lights in the dome confirmed the presence of astronomers actively examining the heavens.

Of course it was very dark and we had a hard time walking, so we were moving slowly, kind of feeling our way along. Suddenly, I heard a deep voice reach down from an observing deck that went part way around the circular brick observatory building.

"Hello, who's there?", a voice called. As I looked up I could make out the shadowy figure of a tall man silhouetted by the red dome lights shining through the doorway. My father replied, "Hello, I'm Roger Hall and this is my son Allen."

The voice responded, "Ahhhh, you must be the young man who wrote us that very eloquent letter a few weeks ago. I'll meet you down stairs in the anteroom."

My father and I opened the screen door to the small anteroom and stepped inside. This was a small office attached to the observatory. Inside, directly ahead was a narrow set of stairs that led up to the observing room. To my left was a small antique desk and leather chair. There were bookcases, filled with books on astronomy, to each side of the desk, and the whole room was bathed in a warm red light, which made you feel quite comfortable. Upon the desk there was a lamp, which also had a red light. This desk lamp was illuminating the latest issue of Sky & Telescope magazine. To the side of the magazine was a scratch pad, and an old silver pen and ink well, which I later learned had belonged to Frank Seagrave, the original owner of the observatory and grounds.

We were there only but a moment when I heard the heavy thud of footsteps on the old wooden stairs, coming down from the narrow stairway ahead of me. A tall elderly man emerged and he bent slightly to avoid hitting his head on the top of the short doorway. He extended a broad smile and welcoming hand to my father, and introduced himself as John Bacon, President of Skyscrapers. He then looked down at me with that same broad smile and said, "And you must be young master `Hall comma A"; I later learned that John Bacon humorously greeted everyone with their last name and first initial. I was in total awe and amazement; wow, a "REAL" astronomer!. "I bet you're anxious to see the telescope, so why don't we head up?" All I could muster was a quick nod.

As we climbed the darkened stairway, I could see the dim red light shining down from the observing room, and then I caught my first glimpse of the old telescope. and it was HUGE! Mr. Bacon led us up onto the observing deck and began to describe the telescope. "This is an 8" refractor", he said. "that was built in 1878 by a very famous craftsman named "Alvan Clark". As he was describing the instrument, I was amazed by the intricacy of the weight drive and gleaming brass setting circles. The mounting was set upon a rectangular shaped concrete pier that extended down through the floor into the basement. To the front side, the east facing side of the pier, I could see weights, which hung from a sprocket gear. The chain that connected them circled up to a beautiful flyball governor. The weights of the governor were silently spinning around, regulating the tracking of the telescope to keep it perfectly aligned with the sky. I was instantly struck by the magnificence of this old telescope, the

complexity of which seemed well beyond my grasp. I remember thinking to myself, "Wow, you have to be a very special kind of person to get to opportunity operate an instrument like this".

There were several people standing around the great refracting telescope, and one peering into the eyepiece. Mr. Bacon introduced me and my father to the rest of the people there, and as he did the gentleman at the eyepiece looked up and said, "Hello, I'm Roger Menard. I bet you'd like to take a look."

"What are you looking at?", I asked.

"Jupiter", he smiled.

I recall Jupiter being rather high in the sky that evening, close to the meridian, and yet being only 14 years old, I could not reach the eyepiece. My enthusiasm had to be restrained for yet another short time, as Mr. Menard wheeled a multi-stepped ladder over to the telescope. My impatience grew as he flipped up several of the upper steps to get them out of the way for viewing. "I'd better take one more look, just to make sure we're still centered," he said. "Yes, the seeing is very good tonight, you're in for a real treat."

Mr. Menard shone his tiny red flashlight onto the steps of the ladder and indicated that I should watch my step. As I climbed the first two or three steps, my mind had a vision of Jupiter as I had seen it in my small 2.4" refractor. Not knowing what to expect, I was quite unprepared for my first view through the great refractor. Jupiter looked like a basketball; it was HUGE! I instantly blurted out, "WOW, look at all the festoons," a comment which immediately cemented my relationship with all the other people in the room. From somewhere in the darkened room came a voice, "Can you make out the split in the Equatorial belts?"

"Yes, as clear as can be." I replied. I stared at the giant planet for what seemed to be an eternity. The image is still frozen in my mind as if I had taken a mental photograph. Suddenly I noticed the four Galilean moons, out towards the edge of the field. Mr. Bacon asked, "Do you know the names and can you identify them?"

"Well, I know the names of the four moons, Ganymede, Callisto, Europa and Io, but I can't tell which is which", I replied.

"Would you like to learn how to tell?", he asked.

My answer, "Sure, that would be great."

Mr. Bacon lead me back downstairs to the desk in the anteroom and the copy of S&T that was sitting there. He flipped the pages open and came to page 397, which was the page that gave a brief description of the planets for the month of June. On the bottom right hand side of the page was a chart of Jupiter's satellites. I had seen this chart before, but had never learned how to use it. Mr. Bacon pulled a ruler from the one of the desk drawers and laid it across the chart. He said, "You see, you have to line up the ruler across the date and approximate time as it is identified here in this column, see ?" I immediately grasped the implications as my

mind jumped ahead to the pick up the curve for each moon's orbit and its intersection with the line drawn by the ruler. Europa was to the left; Io, Callisto, and Ganymede were to the right. Mr. Bacon seemed quite pleased, "That's it, now you've got it. Now you should be able to tell me which moons you're looking at. Let's go back up and do some more observing." As we climbed back up the stairs I asked, "Can we see M13?" Mr. Bacon replied, "So you know your Messier list, I'm sure that we'll be able to see M13 and probably M57 as well." I was a little disappointed however when I asked about Mars. Mr. Bacon said that Mars would be rising a little too late to be seen that evening, so I would have to come back next month.

So began my lifelong affiliation with Skyscrapers and Seagrave Memorial Observatory. Two months after my first visit I became the youngest member of Skyscrapers at the tender age of fourteen. The inspiration that the old telescope gave me, and the many mentors and friends who I met over the years, has set me squarely upon a path which has led to awe, wonder, and amazement. It has made me a true "Citizen of the Galaxy"!

Little did I know how intimately connected I would become with this grand old telescope as time went by.

Many years have passed since my fourteenth birthday; my life has taken me to many different places. For years I had lived in California, and only recently had I returned back to the East Coast. My wife and I finally settled in a small town in Connecticut, close enough for me to re-establish my membership with Skyscrapers. When I returned to see the old observatory, I was quite distressed by the fact that the Alvan Clark telescope had fallen into serious disrepair. Apparently, the weight drive had been stripped off sometime back in the seventies and a "new, modern" Mathis gear was installed on the telescope. Rather than machining the gear to fit the polar shaft, the shaft was machined to accept the gear. This modification destroyed the functionality of an old sector drive. Parts of the old drive were scattered all over, and some had been stolen, including the original flyball governor unit. Most of the parts were later recovered in the nearby woods; vandals had scattered them to the four winds. During this time the Right Ascension Circle had also been removed to make room for the new drive unit.

After making some inquiries, I was relieved to learn that most of the original parts had been saved, safely stored in the meeting hall. Unfortunately, the flyball governor was never recovered. I spoke to one of the trustees and managed to get the parts out of storage. Sadly, they were in very bad shape. Most of the drive parts were severely corroded. The sight of them looking so, saddened me and at that moment I decided do my best to get the old scope back together.

After securing permission to proceed with the project, Skyscrapers as a group began to set our goals for restoration. Working on an old historic instrument is not something to be taken lightly or irresponsibly. Much research went into all of our decisions before a single part was removed. Our purpose was not just to clean the parts, but to restore them as close as possible to

their original condition. Our goal at Skyscrapers was not to maintain any monetary antiquity value. Rather, we sought to evoke an emotional reaction, in not only our members but the general public as well, that would speak to the quality, craftsmanship and ingenuity of Alvan Clark. This was best accomplished, in our opinion, by presenting the telescope completely assembled with its original drive, and buffed and polished, so that all the beauty of the original instrument was restored. The 8" Clark at Seagrave Memorial Observatory would continue to be a "working" telescope. It is the main instrument for our public sessions and therefore it will receive a great deal of use. We don't think Alvan Clark or Frank Seagrave would be at odds with these goals at all.

As I began to disassemble the old telescope, I quickly realized that all of the brass components were covered by some type of lacquer. I later found out the coating was in fact a polyurethane based varnish, which I will always call the "Varnish From Hell". We simply could not leave the old varnish in place because twenty year old discolored varnish did not fit with our restoration goals, nor was it original to the telescope. This varnish also covered both the RA and DEC circles and their engravings. Now, normally it is extremely unwise to make any modifications to the finish where engravings are present. Unfortunately, after an exhaustive search, the only technique that I could apply was an aggressive removal of the varnish, which by necessity produced abrasion to the metal surfaces. These abrasions also had to be removed by buffing them out. This buffing process was impossible to accomplish without removing some of the material on the circle's engraving edges. I was VERY sensitive to the quality of the engravings and took the utmost care to preserve them. In fact less than five ten thousandths of an inch of material on the engraving edges were lost to this process, and in my opinion the trade off is one that had to be made in order to return the instrument to its original form, fit, finish and function. There are those who feel very strongly that "ANY" reduction of material is unacceptable. I understand this objection and have great respect for that point of view; we simply disagreed in this particular case. In fact, none of the original finish on this telescope remained. It had been stripped, painted and polished many times before.

I have in the past, and will continue in the future, to apply one guiding test to all my restoration decisions. That is I ask myself, "How would Alvan Clark react to this decision, and would he be pleased with the results?" Being an award winning engineer, craftsman and machinist myself, I feel that I have a very good sense for how he would respond to many of my decisions.

And so... All of the brass parts were stripped of varnish using "Scotch-Brite" and elbow grease. This operation was followed by cleaning and polishing with Brasso. Once the parts were cleaned and polished, I gave them "light" buff on the buffing wheel to remove any introduced abrasions, and to restore a luster to their surfaces. Then I stripped the paint from the parts and castings, and cleaned them thoroughly to remove any remnants of stripper. After they were cleaned the surfaces were primed with a good metal primer, I gave them a thin coat of paint. That being said, some 135 hours later all of the varnish had been removed and the parts were cleaned, buffed, polished, painted,

and restored as close as possible to their original condition. Parts that were broken or missing were repaired or fabricated in my machine shop.

The telescope has now been re-assembled and I have fitted a small synchronous motor to power the Sector Drive until such time as I can complete the duplication of the old flyball governor. I anticipate that this will require several more months.

On July 12, Skyscrapers re-opened the telescope for public use at their annual member's cookout. Many of the older members could not recall when the telescope ever looked better. In fact many people hovered around the old 8" Clark for several hours, just staring at the beauty of the old instrument. This was exactly the effect we hoped to achieve. Now that most of the work has been completed, the Old 8" Clark at Seagrave Memorial Observatory will continue to inspire many more people, both young and old, to the hobby of amateur astronomy, as it did to me when I was a young lad of fourteen.

Oh to be so young....

Secretary's Report

Steve Hubbard, Acting Secretary

September Meeting

September 5, 2003

Introductions-Officers were introduced, new members and first time attendees were welcomed.

Secretary's Report-Secretary absent, no report

Treasurer's Report-As published in the Skyscraper

Trustees Report- a large pine tree behind the roll off roof housing the 16" was taken down. A push lawn mower was donated. A leak in the roof at the corner of the anteroom and staircase in the Seagrave building was fixed.

AstroAssembly Report- Bob Horton presented volunteer sheets for people to sign up and help. A general report of the event's status was given. All seems to be well in hand.

Historian's Report- No report, historian absent.

New Business- 3 new members were proposed for membership. A motion was made by Dolores Rinaldi that the club purchase a green laser pointer similar to the one that Jack Szelka recently purchased on Ebay. \$85.00 was requested, similar to the cost that Jack paid. The purpose of this is to help point out things in the night sky for people during public nights. Al Hall proposed that we look into a new ladder for use with the Clarke telescope. The old wooden one is falling apart. It was decided that Al would talk with Bob Howe about cost and where to get one, as he got one for the Patton scope before.

Old Business- Michael Koran was voted on and accepted into membership.

Good of the Organization- Al Hall invited the club members to a Mars observing night at the Van Vleck observatory at Wesleyan University in Middletown CT on the night of 9/20/03. Gerry Dyck presented his stereo viewer with pictures taken during a recent trip. Al Hall publicly thanked Jim Hendrickson for the fine job he has done with our web site. Kay Peterson initiated a discussion about a russian made telescope that one of her friends was left recently. A request was made to Bob Horton to have astroassembly sign up sheets posted on our web site. Bob will talk with Jim about this. Acting president and temporary supreme leader, Steve Hubbard presented 3 letters of thanks to the Skyscrapers. We received a thank you from Blithwald mansion for a star party held there and a \$50.00 donation. We received a letter of thanks for a donation of a telescope to a local camp for scouts. We received a letter of thanks from Scott Appleton, especially to Al Hall for helping him. He is leaving for Thailand to work as a missionary. All 3 letters were given to Al Hall by Steve Hubbard with a request that he scan them and send them to Jim for publication on the web site.

Ash Dome

Members of Skyscrapers disassemble the 15' Ash Dome at Raytheon and transport it for storage at Seagrave Observatory.



Sunspots

Dan Lorraine took this image of the sun on October 25 with a Nikon Coolpix 3100 hand-held at the eyepiece of his filtered 4" Celestron Refractor.



Directions to Seagrave 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**