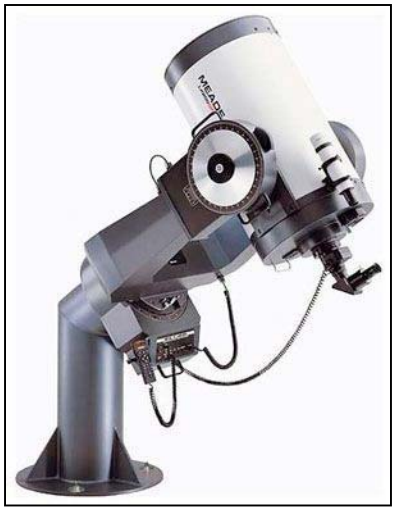
The High Desert Observer

The Bulletin of the Astronomical Society of Las Cruces

July, 2007

President's Message



Since our last meeting, a new opportunity has been presented to the ASLC. Jim Murphy of NMSU's Astronomy Department is offering us a 16-inch LX-200 telescope through Rich Richins. The Society has a long history of public outreach, primarily through public observing. This opportunity could enhance our ability to attract the public to our events.

The discussion has been fast and furious on the ASLC's Board of Directors and Astro-Imager's e-mail lists about this opportunity. The leading proposal put forward has been to site this telescope in an observatory at the Leesburg State Park, which will give us a much darker site than we would get if we sited it in the near Las Cruces area

One problem is with the telescope itself. We have been told that the Right Ascension and Declination drive motors are both burned out and need to be replaced. Exactly how much this will cost is not known at this time. And there are suggestions to take the OTA off the Meade mount and put it on Paramount ME. The scope was manufactured around 1995. LX200s built then suffered from some mirror flop. Tom installed a system to stabilize the mirror, but we could simply pull the mirror all the way back and add a separate focuser to the scope. NMSU is talking about a permanent loan rather than an outright donation. If the telescope is only on permanent load and we put a substantial amount of money into repairs, NMSU might (very unlikely) want the telescope back and our repair expenses would be lost.

The State Park site would present minor restrictions (we would have to do a monthly star party, and pay park fees to use the scope), but it would give us some measure of security compared to purchasing and securing land for building an observatory. The State Park would also have an interest in maintaining this facility and would provide the concrete pad for the pier/observatory. The facility will likely be located in the group camping area, but we would have access in and out at all hours. Details have yet to be negotiated, but we will ask that appropriate lighting would be employed by the park in the vicinity of the observatory, and that the park would also provide liability insurance for the facility, relieving us of that burden.

We have only a finite amount of resources, both time and money, that we can to put into this project. The expenditure of those resources needs to be balanced with the return that we expect to get on the Observatory. Can the proposed observatory support public outreach, deep sky imaging, and even scientific projects? Will it get us additional members? Will it allow us to reach more of the public? Will it get used on a regular basis? Will Las Cruces and its light pollution engulf the site in a few years? These are questions that you, the membership, will have to answer.

I am sure there will be a lot of discussion on this project at the next meeting, so we hope that you will attend and give us your input help the Society determine if we should accept this proposal and how best to utilize it. Remember that we will also be discussing the purchase of a Personal Solar Telescope (PST) for our

outreach activities. If we are to go forward with the 16-inch, we should probably not purchase the PST. Clear Skies! Bert.

This Month's Observer

Next Meeting

Our next meeting will be held on Friday, July 27th (fourth Friday of the month) at the usual place and time (DABCC, room 77, 7:30 pm). For this month's program, Bill Stein will present a talk entitled 'Applied Astronomy: A Berkeley and IU Astronomer in the DoD World". Bill will talk about his 34-year career with the Department of Defense and highlight a few programs where he used his professional astronomical background."

The Imagers Group (Contact: Rich Richins) will meet prior to the monthly meeting at 7 pm and will compare their results of the George Hatfield Digital Processing Challenge. The "Astro Tidbits" Group (contact: Nils Allen) will meet again in August prior to the monthly meeting. Anyone is welcome to attend these special interest groups.

Other events planned for April include:

Dark Sky Observing at the Upham dark sky site, Saturday, July 14 (dusk)
ASLC MoonGaze at International Delights Café, Saturday, July 21 (dusk)

Please see the ASLC website for further information (http://www.aslc-nm.org)

Tones from the Deep

by Patrick Barry and Tony Phillips

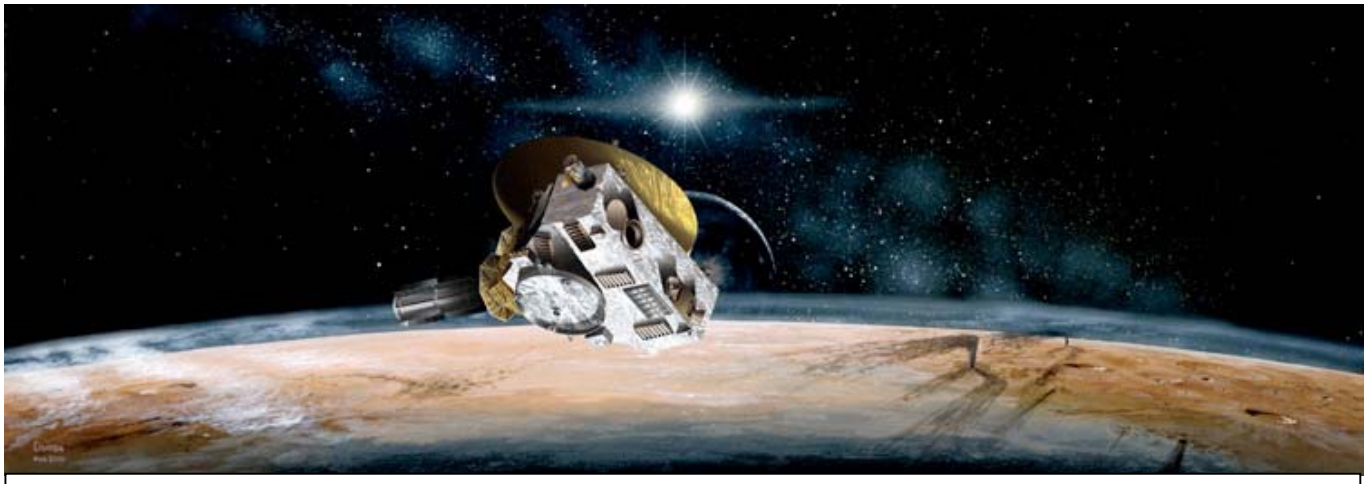
Now is an exciting time for space enthusiasts. In the history of the Space Age, there have never been so many missions "out there" at once. NASA has, e.g., robots on Mars, satellites orbiting Mars, a spacecraft circling Saturn, probes en route to Pluto and Mercury—and four spacecraft, the Voyagers and Pioneers, are exiting the solar system altogether.

It's wonderful, but it is also creating a challenge.

The Deep Space Network that NASA uses to communicate with distant probes is becoming overtaxed. Status reports and data transmissions are coming in from all over the solar system—and there's only so much time to listen. Expanding the network would be expensive, so it would be nice if these probes could learn to communicate with greater brevity. But how?

Solving problems like this is why NASA created the New Millennium Program (NMP). The goal of NMP is to flight-test experimental hardware and software for future space missions. In 1998, for instance, NMP launched an experimental spacecraft called Deep Space 1 that carried a suite of new technologies, including a new kind of communication system known as Beacon Monitor.

The system leverages the fact that for most of a probe's long voyage to a distant planet or asteroid or comet, it's not doing very much. There's little to report. During that time, mission scientists usually only need to know whether the spacecraft is in good health.



This artist's concept shows the New Horizons spacecraft during its planned encounter with Pluto and its moon, Charon. The spacecraft is currently using the beacon monitor system on its way to Pluto. *Credit: Johns Hopkins University Applied Physics Laboratory/Southwest Research Institute (JHUAPL/SwRI*

"If you don't need to transmit a full data stream, if you only need some basic state information, then you can use a much simpler transmission system," notes Henry Hotz, an engineer at NASA's Jet Propulsion Laboratory who worked on Beacon Monitor for Deep Space 1. So instead of beaming back complete data about the spacecraft's operation, Beacon Monitor uses sophisticated software in the probe's onboard computer to boil that data down to a single "diagnosis." It then uses a low-power antenna to transmit that diagnosis as one of four simple radio tones, signifying "all clear," "need some attention whenever you can," "need attention soon," or "I'm in big trouble—need attention right now!"

These simple tones are much easier to detect from Earth than complex data streams, so the mission needs far less of the network's valuable time and bandwidth, Hotz says. After being tested on Deep Space 1, Beacon Monitor was approved for the New Horizons mission, which is currently on its way to Pluto, beaming back a simple beacon as it goes.

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

Minutes, June 2007 ASLC Meeting

Call to Order:

Bert Stevens, Astronomical Society of Las Cruces (ASLC) President, called the meeting to order at 7:35 pm., 22 June 2007, Rm. 77, Dona Ana Community College.

Secretary's Report:

The minutes of the May general meeting were presented as published in the *High Desert Observer* (HDO), the ASLC newsletter. Janet Stevens moved that the minutes be accepted as submitted, Vince Dovydaitis seconded. The minutes were accepted by those present by voice vote. There was not an additional secretary's report.

Treasurer's Report:

The treasurer reported the financial standing of the Club remains essentially unchanged. There was not an additional treasurer's report.

Committee Reports:

Observatory Committee:

Vince Dovydaitis and Bill Stein gave an update on the committee's efforts to date. There has been no additional discussion with the New Mexico State University Astronomy Department regarding a Meade 16" telescope being made available to the Club. There has been significant difficulty contacting Astronomy Department faculty members to arrange a meeting to continue the discussions. Both Vince and Bill hope to report more progress at next month's meeting.

There were no additional standing committee reports.

Old Business:

There following old business was discussed:

1.) Coronado (or equivalent) PST: Janet Stevens continues to obtain quotes from multiple PST vendors. It was suggested by the president, and accepted by those present, that the purchase issue continue to be tabled for the time being.

2.) X-Prize Cup Expo: to date, an ASLC member has not volunteered to coordinate the Club's participation in this year's event at Holloman Air force Base (HAFB) near Alamogordo.

3.) Renaissance Art Faire: a volunteer to coordinate the Club's participation in this year's event is needed.

There was no additional old business discussed.

New Business:

The following new business was discussed:

1.) Janet Stevens announced she had received the Astronomical League 2007 candidate slate and ballot for election of officers. Two (2) positions are open: AL secretary (one candidate, John Goss) and AL executive secretary (two candidates, Tammy Plotner and Jeffrey Soper). Bert Stevens read the biographies of the candidates for the executive secretary position (also available in the *Reflector* quarterly journal). After a period of discussion, it was decided the Club would cast its votes for John Goss and Tammy Plotner, AL secretary and executive secretary, respectively.

There was no additional new business discussed.

Announcements:

The following announcements were made:

1. George Hatfield announced the M101 Challenge from the ASLC-Imagers group for the month of July. He had a CD with data for those that were interested. Bert Stevens recommended that all Club members with sufficient Internet bandwidth participate in this group. Contact Steve Barkes, group moderator, for access.

2. Extra copies of the *Reflector* journal were available on the information table in the back of the meeting room.

3. Three (3) members are needed to form the nominating committee for the 2008 officer's candidate slate.

4. The position of auditor will be added to the positions on the Board of Directors.

5. A board meeting will be held between the June and July general meetings.

6. Nils Allen announced the availability of a new monthly astro-publication, *Astronomy Technology Today.* It's a little different and appears to be a good deal at an introductory price of $1 per issue. He's waiting to examine the 2nd issue before he forms a definitive opinion about it.

7. This month's MoonGaze will take place at International Delights Café on 22 June beginning at dusk, weather permitting.

There were no additional announcements made.

The business portion of the meeting was suspended at 7:55 pm without a motion to adjourn.

General Announcements:

There were no general announcements presented.

Observations:

There were no observational reports.

Presentation:

The program for this month's meeting was presented by Ashley Ruiter. Ms. Ruiter, a Phd. candidate in the NMSU Astronomy Department, outlined her intentions for her doctoral dissertation project, which is, in effect, three projects, all of which center around white dwarf binary systems in the hope of detecting gravitational waves. The idea of gravity waves is now a century old, a consequence of Einstein's space-time theory, but as yet, no hint that they truly exist has been detected. Two large observing programs are being built to detect gravity waves, LIGO and LISA. LIGO, a ground-based gravity interferometer, came on-line a year ago. LISA, a similar space-based instrument, won't be launched any earlier than 2015. In preparation for LISA, Ms. Ruiter is modeling the evolution of white dwarf binaries, stellar systems that may be the progenitors of Type Ia supernovae and which offer the best hope of detecting gravity waves as they in-spiral. This presentation was recorded for playback via the Internet. Other meeting presentations can also be seen on the web at http://www.aics-research.com/lectures/aslcnm/.

The monthly meeting concluded at 8:40 pm.

Respectfully submitted by John McCullough, Secretary

Tales of Two Solstice Star Parties

Summer Solstice at Good Sam

I recently moved my father into the Good Samaritan University Terrace Senior Facility. The folks there have been so kind that I decided to return the favor and offered to do a Summer Solstice star party for them. I wasn't sure how many people would stay up late - especially on the longest day of the year. However, I was very pleasantly surprised. My younger daughter and I arrived around a half hour before sunset, and were immediately greeted by several on-lookers. We set up in a grassy location between buildings that afforded a pretty good view of the ecliptic. As soon as I could get my ED80 pointed at the Moon, people were lining up to take a look. The skies remained clear and calm throughout the evening, and the group of around 25 had a good time looking at Venus, Saturn and Jupiter through the C11.

The group was so enthusiastic that I promised to come back for Fall Equinox to do another event. I suspect that there are many seniors in our city's various senior communities who would enjoy an evening of Moon and bright planet gazing, but just can't get out at night to attend events such as one of our Moongazes. If you're so inclined and can spare a couple of hours some evening, I highly encourage you to treat the senior in our community to an evening with the stars.

Gila Star Party

Patience was rewarded at the first Gila Star Party. Following a great pot-luck dinner and some music and storytelling, the group of around 30 headed out to the Visitors Center parking lot to view the night sky's wonders. Five astronomers/telescopes awaited them. However, as darkness fell, the skies were mostly cloudy with only a sucker hole here and there. Even the sucker holes were hazy at best - a condition that was further compromised by the first quarter moon. Nevertheless, the group patiently waited and viewed what the sky would offer. Around 11 pm, the clouds began to slowly dissipate, and the crowd (most of whom still remained) were treated to some really nice views. By midnight, the sky was completely clear and transparent. The few brave souls remaining were treated to the splendors of the Southern Milky Way.

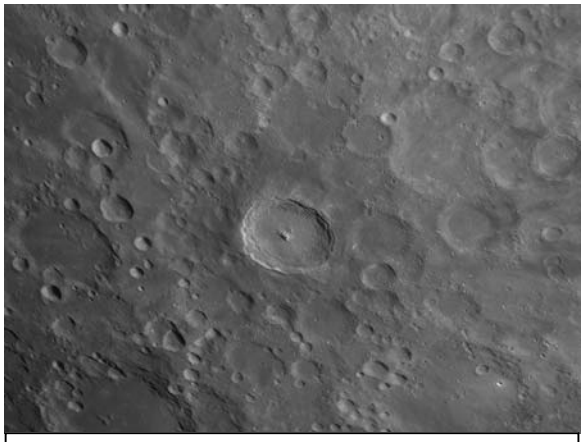
The next day, my daughter and I were treated to an archeoastronomy tour of the area by Bob Dragon. While I'm not a total believer that every scratch on a rock has some sort of ceremonial or cosmic relevance, there are some objects whose appearance and position must be the result of an cosmic alignment or annual occurrence or unusual phenomena. It was a most illuminating tour. Many thanks to Bob and the park service for orchestrating the event.

- *Rich Richins*

August Issue HDO

Articles for the August issue should be to Rich Richins (substitute editor for July/August) by Saturday, August 9. Material should be sent as email (rrichins@zianet.com) or as an attached Microsoft Word document. If you have any questions about submitting something to the HDO, please don't hesitate to contact Rich (532-5365 or via email). Thanks in advance! George Hatfield, Editor, ASLC Newsletter.

Recent Images (see more images at the ASLC Gallery - http://aslc-nm/Gallery)



Tycho - by Tony Gondola

The Pelican Nebula - by George Hatfield

ASTRONOMICAL SOCIETY of Las Cruces
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ASLC - Sharing the Universe
With Our Community for Over
50 Years