

From the President

By President Rick Morales

Summer is just around the corner. The summer night sky can be seen around midnight. And, there are other events coming our way. Golden State Star Party (GSSP) is scheduled for July 10 and our own Star-B-Q is scheduled for July 17. The Star-B-Q event goes back 25 years. It was a way to thank all the people who were involved in the founding of the FPOA, including other astronomical associations like AANC, the many individuals who came to the Peak with hammers in hand anxious to drive a few nails and put up a wall, nail down some sheeting, roofing, cedar shingles on exterior walls, sheetrock on interior walls...and the list goes on. All that effort was done by volunteers and the work that we still do at the Peak is an all-volunteer effort. We still drive nails and screws to hold things in place. We still paint and repair and fix and align our building and the equipment inside it. We still conduct Saturday evening public programs and we still don't charge a dime for our effort.

A few weeks ago, we staged our first work party for the year. I would like to thank Holly Garcia, Chris Angelos, Rob Hawley, Loren Dynneson, Dave Samuels and little Leah Samuels, Sebastian from State Parks for contributing their time and effort.

After the work party was done, we sat down inside the observatory for our monthly board meeting. Including me, there were only three board members present, plus Rob Hawley (who is not a board member). We typically have been able to form a quorum to conduct normal business but this time we didn't have enough board members present to do so. When the board is fully staffed, there is enough redundancy to cover those times when things come up. There are times throughout the year when one or more board members cannot attend for various personal reasons - this is fine and understandable. This brings me to an important point. At the Star-B-Q, we will be holding our annual election of board members.

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FPOA Programs 2010

Saturday Evening Programs

Jun 5,12,19 Jul 3,10,17,31 Aug 7,14
Sept 4,11 Oct 2,9,16

Solar Programs

Jun 19, Jul 17, Aug 14, Sept 11, Oct 2

Board Meetings

Jun 19, July 17, Aug 14, Sept 11,
Oct 2, Nov 13

Star-B-Q July 17th more at www.fpoa.net

Please check <http://www.fpoa.net/schedule.html>
for changes or updates to this schedule.

Fremont Peak Observatory LCROSS Impact Party

By Dave Samuels

On Oct. 9, 2009, NASA steered two parts of the LCROSS probe into the Cabeus A crater near the lunar South Pole and impacted the lunar surface around 04:31:19 AM PDT (that's 4 AM Friday morning). The goal was to impact an area on the moon with the spent 2nd stage (the size of a small bus) where the sun never shines in hopes of testing how much water could be found there. Following 4 minutes behind, the shepherding LCROSS spacecraft was to dive through the plume with sensitive instruments to analyze the dust for water. NASA predicted a bright impact flash and a 10 km high mushroom shaped plume that would be visible from Earth with large telescopes. They asked for people to try to capture images and submit them to NASA. It is believed that over ten thousand people, including school age children, got up early in the morning to watch the event live on TV. Many made the trek to watch it live on a good telescope - either on their own or on a large telescope at an observatory.

Fremont Peak Observatory was listed as one of the official public Impact Party locations on the NASA LCROSS web site. *Continued on page 2*

There are nine seats on the board and three are elected each year.

This year, we have one other board member who, because of work-related travel, has resigned early from the board in order to make a vacancy for another member who can be more active. So, we will have four positions up for election this year; three 3-year positions and one 1-year position. If you have ever thought about joining a board of an astronomical organization such as ours, where we all volunteer our time to produce regular public astronomy programs, and you are willing to, on occasion, roll up your sleeves and paint and hammer and fix and align and hang out with a good crowd, consider running for a seat on the board of the FPOA. You can contact us at: info@fpoa.net and we will be happy to put your name on the ballot.

There are other ways you can help our organization. We can always use more volunteers to help with our public programs. We would love to have members give astronomy presentations to the visiting public and/or set up a telescope (yours or ours) outside the observatory and lead people on a tour through the night sky and/or move the Challenger around the observatory and answer questions about what's out there.

And don't forget about the 25th Annual Star-B-Q - July 17, 2010, which began as a joint AANC and FPOA collaboration and still functions that way. FPOA was established on January 1, 1985. We began fund-raising that same year. We got a windfall donation from Celestron that summer at the Riverside Telescope Makers conference. We broke ground the fall of 1985. Construction was started in the wet Spring and completed in August of 1986 and the Challenger saw first light. The first Star-B-Q might have been that summer. Join us!! It ought to be another great event. We have great sponsors who will be donating thousands of dollars in prizes for the raffle. In each of the past several years, raffle grand prize winners have won very nice telescopes donated by Celestron, Orion, and Scope City. Sponsors for this year's event are Orion Telescopes, Scope City, and Vixen Telescopes.

Star-B-Q is a Pot Luck / Barbeque with the FPOA providing hamburgers and hot dogs and maybe some other meaty foods, soft drinks, paper plates, plastic utensils, cups, napkins, gas grills, etc.

Attendees are asked to bring a food dish to share (suggestions are salads, pastas, desserts) and don't

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We had around 50 guests at the moment of impact

The preparations that we made were as follows: Several months before the event Brian Day, LCROSS Education Lead from NASA Ames Research Center, was the guest speaker at the annual Star-B-Q, where he spoke to the crowd and gave a technical workshop afterward to those who were interested in participating. A month before the event, Ron Dammann and I did a couple of dry-runs using my Watec 902H2 Ultimate 60 fps low-light security camera to ensure that we could reach focus and properly orient the image. Such tests are always necessary given the limited FOV at high magnification and 1/2" camera sensor. We also experimented with the idea of using a Barlow lens (7300mm focal length), and ruled that out because it was just too much focal length for this project on this telescope mount. Also, I tracked the impact site on my TEC140 5 1/2" APO refractor using the SBIG ST-10XME and Watec cameras with a 4x PowerMate (yielding 4262mm f/28.0 - about the same FOV as the Challenger). I did this every night for almost a week to ensure that I was going to be able to easily locate the impact crater site on the Challenger telescope. I purchased a distribution amplifier and dozens of couplers and lots of coax cable.

The evening of the impact, we ran the main camera into a KIWI video time inserter - so every frame would have the GPS time accurately recorded with each frame - and from there, into the distribution amp. Outputs went to (1) TiVo, and from there, to the video projector in the adjacent classroom. The TiVo was going to allow us to rewind and examine things in slow motion or freeze frame without disturbing the continued recording in case anybody in the room saw something. (2) Output 2 went to an LCD TV/Monitor in the observatory for monitoring and tracking. (3) Output 3 went to an HD recorder brought by Chris Angelos. (4) Output 4 went to another recorder brought by another guest. (5) Output 5 went to my laptop to record through a Hauppauge video converter. (6) Output 6 went to my Sony mini-DV camcorder. I purchased lots of extra cables and connectors for "just in case" and we used all of them. Ron Dammann set up the SBIG ST-10XME on the Losmandy G11 Mount with an Ir filter mounted to my TEC140 w/ 4x Powermate. We drift-aligned and focused that system and set it up for automatic capture at full resolution of 3-5 frames per minute from 2:48 AM until about 4:46 AM (324 images total).

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CNN.com surprised me with a phone call the morning prior to the impact. They wanted to know a little about FPOA, what kinds of preparations we had made, what our expectations were, and how many people we expected, among other things. Of course, our expectation was to be able to see the impact flash and be able to track the plume and to be able to assist NASA by providing images to them from our vantage point. They also wanted to hear the problems we were facing with the park closure and imminent closure of the observatory. To our pleasure, they made mention of this in their articles.

As the evening progressed, a slow trickle of members and guests who had heard about our event started to arrive. Some were tired but you could tell by the look in their eyes that the excitement of witnessing such an event drove that away.

Usually when you look at video of the moon at high magnification, the seeing makes the surface undulate and move as if it is under water. On Oct 8/9, however the seeing from Fremont Peak that night was extremely steady - best I'd ever seen it. The moon was rock steady in the video for hours.

It was a friendly atmosphere out by the scopes where Ron Dammann and Al Smith had set up their scopes on the pads outside the observatory. They offered great views of Jupiter and other objects while waiting for the moon to rise behind the big oak tree. By 4 am, the moon was nearing the meridian and it was in the perfect position - everything was a GO!

Around 4 am, the observatory classroom bustled with energy as it filled to capacity. Everyone watched the live video of the crater on the projector screen - the GPS time counting rapidly toward the moment. 04:28:00 - everyone staring at the crater hoping to catch the initial flash in case the probes struck early. 04:30:00 - people are holding their breath and watching intently. 4:31:00 - watching... waiting... scanning... nothing. 4:31:18, 19, 20, 21... nothing. Let's wait a little longer - maybe we missing the flash, so let's watch for the plume, which was supposed to take about 30-90 seconds to blossom... nothing. More minutes pass... nothing. Continue to record and rewind the TiVo... nothing. Wait for the second probe... nothing.

Someone said what we were all thinking, "that's it?! We got up and drove up here for that"? Someone's iPhone had the live NASA feed, where they were saying that ground based observatories were all reporting nothing. Palomar... nothing. Donn Mukensnabe called from atop Mauna Kea, Hawaii and reported nothing.

I have to say that initially I was disappointed. Figuring that the probes were to impact the moon at around 5,600 miles per hour, it didn't seem that it was nearly fast enough to do what NASA was predicting. It takes 23,000 mph to escape Earth's gravity to get to the moon. What happened to all that velocity? After all the preparation, I had hoped to capture something.

Looking back now, I had a real good time getting things prepared, testing new equipment on the Challenger and learning how to get good images from my TEC140 at high magnification. Working with Ron and sharing spectacular highly-magnified views of the moon with the public for all to see at the same time was really interesting and rewarding. We should be able to use this approach for other events in the future.

Mission Update from NASA 11/13/2009:

"Preliminary data from LCROSS indicates that the mission successfully uncovered water during the Oct. 9, 2009 impacts into the permanently shadowed region of Cabeus crater near the moon's south pole. The impact created by the LCROSS Centaur upper stage rocket created a two-part plume of material from the bottom of the crater. The first part was a high angle plume of vapor and fine dust and the second a lower angle ejecta curtain of heavier material. This material has not seen sunlight in billions of years."

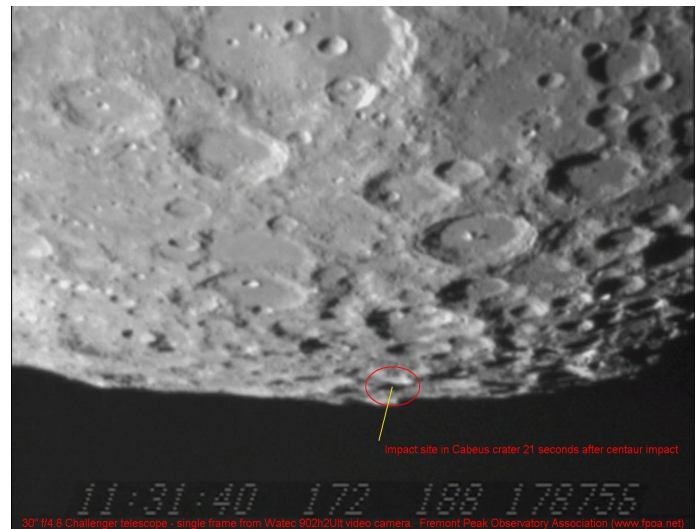


Image from Challenger around the time expected plume



forget the Astronomical Gastronomical contest where contestants bring food disguised as something astronomical. There will be a raffle for astronomical stuff prior to the evening talk - at least two telescopes will be awarded to lucky winners in addition to the other prizes. The talk will be delivered by a noted person in an astronomically related profession. These talks have always been well received.

I look forward to seeing you there.

Clear Skies,
Rick Morales

The Spring Work Party

By Dave Samuels

May 8 was the annual spring work party at the peak. Special thanks to all those who showed up ready to work and help us keep the site in good shape. Tasks accomplished were: Replacement and repair of the door casings in the classroom that had been chewed up by rats who wanted to move into the observatory - they tried but we successfully prevented that. Cut grass and weeds away from fence and surrounding areas. A big project was painting the fence. Thanks to Holly Garcia, Chris Angelos, Rob Hawley, Rick Morales, Loren Dynneson and to late-comers Dave Samuels and Leah Samuels. Thanks to Sebastian from State Parks for supplying the paint and some elbow grease.

Hartnell College Intern Program

By Ron Dammann

2010 is the fourth consecutive year that FPOA and Hartnell College have cooperated in the Hartnell College Astronomy Intern Program. Four new interns will be working on a research project in addition to helping out around the observatory on public nights. Hartnell has also commissioned Tim Castellano to head up the program from Hartnell's end this year. If you're up at the Peak, be sure to make these new members feel welcome.

EMAIL DELIVERY OF THE OBSERVER

Dear FPOA Members,

We have been delivering the Observer via email for the past several issues. This obviously saves the Association postal expenses, and assures the quickest delivery to you. However, several of you no longer have valid email addresses, due to ISP changes, moves, etc. If you would like to continue to receive, or begin to receive, notification of the Observer via email, please send your current email address to schedule@fpoa.net

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The Fremont Peak Observer is published four times a year (Winter, Spring, Summer, Fall). Articles from members are encouraged and should be emailed to tatamark@razzolink.com. Articles should be in plain text or MS Word format. Deadlines are Feb. 1, May 1, Aug. 1 and Nov 1, respectively.

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