

June 2007

HAC's 25th  
Anniversary Year!



HAC web page <http://hacastronomy.com>

**HAC MEETING: Saturday, June 2, 2007 & Friday, June 29, 2007**

7 pm, Cochise College, Sierra Vista, Rm. 305A/B

PLUS our monthly Show-N-Tells, upcoming event details, refreshments & NEW Exciting Door Prizes!

**6/2 Speaker & Topic:**

**Alan Binder**

Designing a  
17th century telescope

**6/29 Speaker and Topic:**

**Lucas Macri**

Scientific Observation through  
Hubble Telescope

## Star Party Corner

Keith Mullen, Star Party Coordinator (520) 366-0049 email: [repogazer@msn.com](mailto:repogazer@msn.com)

*Participation is the Lifeblood of the Club!*

Lazy days and warm nights is what we expect from May, with many opportunities to get out and observe, what we got was wind, wind and some more howling nasty wind. The Member Star Party at Palominas Star Haven Observatory will be remembered more for wild Rich Swanson's jeep rides through the surrounding countryside than for any Astronomical Observing which didn't happen. On the other hand, the wind relented just enough for a good night at JBO for the Public/Member Star Party on Friday the 18<sup>th</sup>. We entertained a dozen plus of the public with Scott Schneeweis' 14", Rich Swanson's 6" and I had the 11" out there, and of course Dave wooed them with Big Blue showing some spectacular views of Omega Centauri and other distant objects. We did throughout the month get in a few nights of outreach at RGO especially Mrs. Delgado's 3<sup>rd</sup> grade class from Greenway Elementary School. One thing to note was the absence of HAC members other than the old standbys at any of these events. What happened to the participation that was catching on? It seems to have slumped back to the old pattern of, "Oh well, there's always next month.". People, it just doesn't work that way!

### June Star Party Schedule

Saturday, June 9<sup>th</sup> Public Star Party being held at JBO. Scopes, we need some scopes out there. Public Star Parties are for HAC members too!

Friday, June 15<sup>th</sup> Finds us back at JBO for the Member Star Party. Dave and Gary Myers have the C-14 up and waiting in the old roll-off observatory for you to use. This C-14 still has tack sharp optics so come out and take it for a spin. This might be our last chance before the monsoons settle in, so make an effort to get out to JBO and share an evening with some of your other club members.

### President's Perspective

I've mentioned the next big club event, our 25<sup>th</sup> Anniversary Dinner to be held on the very special date of 7/7/7, a couple times in past articles. I hope three times is the charm for the fence-sitters! Helen Patterson has completed making arrangements at the Arizona Folklore Museum in Ramsey Canyon with a well-known local caterer. It's a beautiful location and if you haven't been there yet this dinner is a good excuse to see what the place looks like. Our featured guest speaker is David Levy, who was one of the very first speakers when HAC was first established by David Patterson. Save the date; it's easy to remember and we hope to see you there! There is room for only 70 people and about 40 of those places are already taken. Don't miss a most enjoyable time! It's rumored that Keith has found some door prizes to make it worth your while...

I just got back from a very wet time at the Texas Star Party, where I saw about half a dozen fellow HACers in attendance. We actually had one or two good nights of viewing, heard a few informative talks, and bought some items from the vendors, but I left after the second night of cloudy wetness. You would think that I would learn, but being the eternal optimist that I am, a few other HAC members and I will be searching for clear skies in Big Bear, CA at the SAS and RTMC conferences the week before Memorial Day. More than likely we'll have to settle for a few informative talks and buying some items from the vendors, but the trip is always enjoyable no matter the weather.

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### Dollar\$ & Cent\$ - Tim Doyle

The Club has a checkbook balance (mid May) of \$4,451.76 This amount does not reflect what we have taken in for our 25th Anniversary Dinner. We still have club T-shirts XXL & medium (\$10) sweatshirts Hooded and non-hooded. XL, XXL, available at \$15 & \$25. (This is below our cost.)

#### **Those of you who are getting the club discount on Sky & Telescope Magazine.**

**The procedure has changed!!!**

Send your payment directly to Sky & Telescope Magazine. You should note the correct payment (\$32.95) should show on the renewal slip. I will receive a membership list to verify everyone's club status to continue the discount. Those of you who are new members or don't currently get our club discount must come to me to sign up or start a new subscription. Those of you with Astronomy magazine must still come to me with a check made out to the magazine to renew.

### Outreach Biz-Jeanne Herbert

At this time the only outreach event scheduled is July 21 for a group of Cub Scouts . This is a morning event -- 7 to 12:30 -- at Veteran's Memorial Park. The boys will be working on their belt loops. Belt loop requirements include 1) demonstrating how to focus a simple telescope or binoculars; 2) drawing a diagram of our solar system; and 3) demonstrating knowledge of vocabulary words having to do with astronomy. Several volunteers will be needed for this event. Call Jeanne at 366-5690 to say you'll do it!!

**Huachuca Astronomy Club** P.O. Box 922 Sierra Vista, AZ 85636 <http://hacastronomy.com> , email: [mrgalaxy@juno.com](mailto:mrgalaxy@juno.com)  
Yearly Membership: Individual: \$25; Family: \$35; Military: \$20; student:\$10 (with restrictions)  
President: Wayne Johnson, [mrgalaxy@juno.com](mailto:mrgalaxy@juno.com) ; Vice President: Keith Mullen, 520.366.0049 or [repogazer@msn.com](mailto:repogazer@msn.com)  
Treasurer: Tim Doyle 378-5121; Secretary: Jeanne Herbert, 366-5690  
Star Party Coordinator: Keith Mullen, [repogazer@msn.com](mailto:repogazer@msn.com)  
Outreach Events Coordinator: Jeanne Herbert, [jeanne\\_hrbt@yahoo.com](mailto:jeanne_hrbt@yahoo.com) / 366-5690 (early evenings);  
Loaner Scopes: Gary Myers 432-4433; Newsletter Editor: Teresa Mullen, [nightfall@hacastronomy.com](mailto:nightfall@hacastronomy.com) / 366-0049

**About the 6/2 Speaker...**

Alan Binder will talk about designing a 17th century telescope and then describe the surprising observations made through it at the Saturday, June 2nd meeting. Dr. Binder will also have a couple of his books (on different topics) available for sale at the meeting. Alan has also invited members of the club to come to his house to view the actual telescope (it's too big to move around easily) and view through it. Maybe we could carpool to his place sometime when people make a Starizona run!

**About the 6/29 Speaker...**

Lucas Macri, from NOAO, who will describe observations through the Hubble Space telescope to help determine a good value for the Hubble Constant which in turn enables astronomers to measure distances more accurately in our universe. It should be intriguing to see how it's done

*(Continued from page 2)*

It looks like we are going to continue having excellent talks coming our way for the rest of the year at the HAC general meetings. Alan Binder will talk about designing a 17th century telescope and then describe the surprising observations made through it at the Saturday, June 2nd meeting. Dr. Binder will also have a couple of his books (on different topics) available for sale at the meeting. Alan has also invited members of the club to come to his house to view the actual telescope (it's too big to move around easily) and view through it. Maybe we could carpool to his place sometime when people make a Starizona run!

Remember, June has two general meetings! The second June meeting (Friday, June 29) will begin our Friday series of meetings for the rest of 2007. Maybe we'll even see the elusive Butch and Neil. Will Neil give a Backyard Astronomer talk? Will it be done in Power Point??! Stay tuned and see what happens! Our featured speaker that night is Lucas Macri, from NOAO in Tucson. He will describe observations through the Hubble Space telescope to help determine a good value for the Hubble Constant which in turn enables astronomers to measure distances more accurately in our universe. It should be intriguing to see how it's done!

As always, if you have suggestions or questions about HAC, feel free to contact me or talk to any of our board members.

Clear Skies!

Wayne (aka Mr. Galaxy), your resident president

[mrgalaxy@juno.com](mailto:mrgalaxy@juno.com) / hm 520-586-2244

### Club Patch

Orders are being taken for Huachuca Astronomy Club patches designed by Bob Kepple (see below). Cost to members is just \$1.50 per patch. Order several -- the patch would look fantastic on your hat, sweatshirt, jacket, backpack!

Contact Jeanne and Steve Herbert at 366-5690 or [jeanne\\_hrbt@yahoo.com](mailto:jeanne_hrbt@yahoo.com) to place your order now!!



## **HUACHUCA ASTRONOMY CLUB 25TH ANNIVERSARY PARTY**

**07/07/07 AT 5:00 P.M.**

**ARIZONA FOLKLORE PRESERVE  
RAMSEY CANYON ROAD**

**GUEST SPEAKER: DAVID LEVY  
EXCITING DOOR PRIZES**

**TICKETS ARE \$25.00 PER PERSON**

**CONTACT Helen Patterson**

### DINNER MENU

**ROAST TOP SIRLOIN  
LEMON CHICKEN  
PARSLEY POTATOES  
GREEN BEANS ALMANDINE  
RICE PILAF  
ROSEMARY CARROTS  
DINNER ROLLS  
DESSERT  
COFFEE & ICED TEA**

### **Stargazing with Binoculars Hans Clahsen**

It is amazing how many visitors to our star parties or club meetings express an interest in the heavens. Then come the negatives. "I cannot afford one of these fancy telescopes" etc. etc. How did most of us start in this hobby? Binoculars! It is mindboggling how much you can see through a nice pair of binos. Of course little opera glasses will not do. More powerful ones are certainly no longer expensive. In the picture below is a pair of 15X70 Barska (famous brand name) which were bought right here in Sierra Vista for only \$59.00. (Retail cost is \$199.00)

Another problem often mentioned by newcomers is the fact that a pair like this cannot be held steady, looking up. A very simple solution is the much used Bino Box (see picture below). They are available commercially on the Internet but at a cost of more than \$300. No good if you are new to Astronomy. The Huachuca Astronomy Club makes a working model available for the minimal cost of only \$32.50. You supply your favorite binos and a mirror of your choice. A mirror (9"x8") can be purchased from any local glass shop for around four dollars.

Now you have a very powerful way of looking at the stars (and hundreds of satellites) for a lot less than a hundred dollar bill. You can sit comfortably on a chair, looking down into the binos and have no worries about getting a stiff neck or falling on your back. The mirror of course reverses the image which is of no consequence; but so do most telescopes.

Now, there is no longer a valid excuse not to enjoy the beautiful dark skies of South Eastern Arizona. Join the rest of us and be an Astronomer since cost is no longer a deterrent.



## The Ions of Dawn - by Patrick L. Barry

This summer, NASA will launch a probe bound for two unexplored worlds in our solar system's asteroid belt—giant asteroids Ceres and Vesta. The probe, called Dawn, will orbit first one body and then the other in a never-before-attempted maneuver.

It has never been attempted, in part, because this mission would be virtually impossible with conventional propulsion. “Even if we were just going to go to Vesta, we would need one of the largest rockets that the U.S. has to carry all that propellant,” says Marc Rayman, Project System Engineer for Dawn at JPL. Traveling to both worlds in one mission would require an even bigger rocket.

This is a trip that calls for the *unconventional*. “We’re using ion propulsion,” says Rayman.

The ion engines for the Dawn spacecraft proved themselves aboard an earlier, experimental mission known as Deep Space 1 (DS1). Because ion propulsion is a relatively new technology that’s very different from conventional rockets, it was a perfect candidate for DS1, a part of NASA's New Millennium Program, which flight-tests new technologies so that missions such as Dawn can use those technologies reliably.

“The fact that those same engines are now making the Dawn mission possible shows that New Millennium accomplished what it set out to,” Rayman says.

Ion engines work on a principle different from conventional rockets. A normal rocket engine burns a chemical fuel to produce thrust. An ion engine doesn't burn anything; a strong electric field in the engine propels charged atoms such as xenon to very high speed. The thrust produced is tiny—roughly equivalent to the weight of a piece of paper—but over time, it can generate as much speed as a conventional rocket while using only about 1/10 as much propellant.

And Dawn will need lots of propulsion. It must first climb into Vesta's orbit, which is tilted about 7 degrees from the plane of the solar system. After studying Vesta, it will have to escape its gravity and maneuver to insert itself in an orbit around Ceres—the first spacecraft to orbit two distant bodies. Dawn's up-close views of these worlds will help scientists understand the early solar system.

“They're remnants from the time the planets were being formed,” Rayman says. “They have preserved a record of the conditions at the dawn of the solar system.”

Find out about other New Millennium Program validated technologies and how they are being used in science missions at <http://nmp/TECHNOLOGY/infusion.html>. While you're there, you can also download “Professor Starr’s Dream Trip,” a storybook for grown-ups about how ion propulsion enabled a scientist’s dream of visiting the asteroids come true. A simpler children’s version is available at <http://spaceplace.nasa.gov/en/kids/nmp/starr>.

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

Caption:

*Artist’s rendering of Dawn spacecraft, with asteroids. Largest are Vesta and Ceres. Credits: Dawn spacecraft—Orbital Sciences Corporation; background art—William K. Hartmann, courtesy UCLA.*

Note to editors:

*This image may be downloaded from [http://spaceplace.nasa.gov/news\\_images/dawn\\_vesta\\_ceres.jpg](http://spaceplace.nasa.gov/news_images/dawn_vesta_ceres.jpg)*

