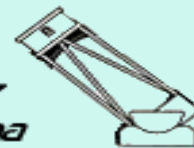


NIGHTFALL

Huachuca Astronomy Club of Southeastern Arizona



HAC MEETING: Friday, April 10, 2009

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

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

Speakers: Richard Greenberg

Topic: "Unmasking Europa"

STAR PARTY CORNER

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

Participation is the Lifeblood of the Club!

March couldn't make up its mind weather wise on whether to be hot/cold, windy or calm so we lost a couple of good chances at outreach events. The public S.P. at JBO on the 21st was marginal at best with a sucker hole sliding by now and again, but surely not what we like to see. On Saturday the 28th conditions improved and we saw 21 members and a few guests gather at RGO for the monthly member S.P. and Messier Marathon. Rich and I tried several different combinations of camera and scope until we decided to go with the 6" refractor and Stella Cam II for the video portion of the Marathon. We had a good many individual scopes too. Bob K. and Glen, Bob G. and Doug, Calvin Hoyt had his DOB out and Steve and Jeanne both had a Celestron with them, so there was no lack of optical power there. The Stella Cam worked nicely on those M Objects and several members snuggled up on the observatory to watch the evening's activities swing by.

By 1:00 a.m. we had 70 M's in the bag and decided to take a break until 3:00 a.m. We snacked down and everyone took a nap or softly chatted until we decided to finish up and grab what was left of the elusive Messier. What we found when we got back outside were clouds everywhere. We tried to finish up but fatality set in and we turned our vengeance on Teresa, Jeanne and Breakfast. Now those two can really put on a spread when they want to and by 5:00 am all 10 of the hearty crew were stuffed and talking about better numbers next year. Certificates of Merit will be awarded to Rich Swanson, Myself and Michael Drury, both Steve and Jeanne Herbert, Bob Kepple and Glen Sanner, Calvin Hoyt and Jessie Rossman, who is a student of Kim Rogalski. Teresa and Jeanne along with rich will receive secondary awards for extra efforts

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STARIZONA
ADVENTURES IN ASTRONOMY & NATURE

Official Donor of the Huachuca Astronomy Club Door Prizes!!!

President's Perspective

Wayne Johnson

We continue to progress into 2009, the International Year of Astronomy (IYA2009). It's hard to believe that 1/4 of the year is already gone, and I want to continue to alert all of you of different astronomical activities available not only in our local community but also in our global community. Because a large and growing number of our membership has access to the Internet it is a good idea for everyone to be aware of these activities so that they can participate in them or else make others aware of astronomical events as they learn of them. Some of the participation is as benign as watching a TV program on the history of the telescope, but much preferred is physical participation in our projected Sidewalk Astronomy activities at the Mall of Sierra Vista (and hopefully other similar venues) along with our continuing Star Parties and Outreach Events. We are having our annual Astronomy Day event on May 2nd at Veteran's Park, which I hope Keith will highlight in his article and at our upcoming General Meeting. We need you to help, not only by bringing a telescope, but by bringing yourselves, your family and your friends and co-workers. This is our big public event of the year and many members of the public look forward to us putting on the event. It would be nice to see members start making a more concerted effort to come see the stars with us. The more you participate, the more you enjoy the activities we do.

One of the rapidly approaching IYA 2009 events is the "100 Hours of Astronomy" world-wide extravaganza, which will be kicked off at Philadelphia's Franklin Institute. The science center is hosting the exclusive world exhibit "Galileo, the Medici and The Age of Astronomy" demonstration, and will kick off both the exhibit and "100 Hours of Astronomy" on 2 April with a LIVE international interactive web streaming event. The Franklin's Galileo exhibit features one of only two remaining telescopes that Galileo trained on the night skies 400 years ago. This is the first time the telescope has ever left Italy.

Another group participation event is Project ASTRO's "Globe at Night" project in which observers are asked to look at the constellation Orion with their unaided eyes from their backyards (or during a star party) and determine from charts available on the web which image best matches what is seen in the sky. It is a way for citizen scientists, amateur astronomers, to feed back to the professional astronomers at the National Optical Astronomical Observatory (NOAO = Kitt Peak) in Tucson how light pollution is affecting their view of the sky. This is a very valuable project to help make us aware of the deleterious effects light pollution can have on our skies. It is very instructive to have several copies of the Orion maps available and go to several locations and compare how different Orion appears as seen from a dark site to a place overwhelmed by streetlights.

As I mentioned in passing a month or two ago, Public Television (PBS) will celebrate the 400th anniversary of Galileo's first use of the telescope. I wanted to remind you again, since it is early next month, that PBS will air the special, hosted by Neil Degrasse Tyson, on April 10, at 10:00 p.m. Pacific Time. Check program listings; I leave it to you to find PBS on your television, but it is channel 6 out

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Yearly Membership: Individual: \$25; Family: \$35; Military: \$20; Student: \$10 (with restrictions)

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This issue of Nightfall can also be found on-line at hacastronomy.com. Click 'Newsletter' link. There is much more information about astronomy and our HAC activities on our club web site. *To join the HAC-LIST, send an email to haclist-subscribe@yahoogroups.com .

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of Tucson. I just watched a fun interview by clueless PBS talk show host Tavis Smiley who interviewed astrophysicist Neil Degrasse Tyson to promote the upcoming Telescope Anniversary documentary. However, most of the interview was about Dr. Tyson discussing his new controversial book, "The Pluto Files: The Rise and Fall of America's Favorite Planet." You may watch this interview at <http://www.pbs.org/kcet/tavissmiley/archive/200902/20090213.html> .

I haven't had a chance to catch a set of astronomy videos which are apparently making the rounds on YouTube, but I have it on good word that they're not too bad. I'll let you be the judge; please let us know what you think. The series of YouTube videos "Welcome to the Universe", is produced by Andromedas-Wake, a young astrophysicist in the UK. The second video deals with the history of astronomy from Hipparchus to Galileo and has now been posted at: <http://www.youtube.com/watch?v=ju0aSRgCntA> .

Also recommended is the newest and best of several popular videos showing size comparisons of celestial objects. It is supposed to be an excellent four minute production by a guy named Nixxon18, which many stargazers will enjoy: "Planets, Stars, Nebulas, Galaxies"

<http://www.youtube.com/watch?v=2FwCMnyWZDg> .

The same author, Nixxon18, has also produced a video featuring a dazzling array of colorful deep sky objects, <http://www.youtube.com/watch?v=I3D0AAFKcbQ> .
See you under the stars.

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involved in this event; awards will be presented at the meeting on April 10th.

April Star Party schedule:

Friday April 17th is Public Star Party night at JBO, starting at 7:30 p.m. This might be your first chance to see Omega Centauri this year, grab a scope and meet Rich and the gang out there.

Saturday April 25th is the members star Party and with so many anticipating attending Texas Star Party we have cancelled this event. See you on May 2nd.

A note on Astronomy day May 2 2009: It looks like we have the volunteers we need to pull it off, but the scope count is way low, how about a few more of you jumping in and bringing along a scope. Call me at 366-0049 to volunteer. Event hours are 4-11 p.m. at the Ball Diamond at Veterans Park, Pizza will be served to all those who volunteer to show up and help.

Advanced Raffle ticket sale for Star B.Q. Raffle

It is time to dig out that Celestron and get it shinning for the C-Row star B.Q. held on Friday and Saturday June 19 and 20, 2009. Reduced price raffle tickets will go on sale at the April Meeting, prices will be 6 tickets for \$5.00, 12 tickets for \$10.00 or a whopping savings of 25 tickets for \$19.00, this is a members discount only and will be only available during the April meeting, after that, raffle ticket prices will be 1 for \$1.00, the first place prize is a new Celestron CPC-800 GPS scope, a \$2,000.00 value.

Travels on the celestial sphere

Corvus, the Crow

Bob Kepple and Glen Sanner

This month we survey the Spring constellation Corvus, the Crow. Corvus is a small constellation with 184 square degrees of sky that ranks only 70th in sky area among the 88 constellations. Corvus contains a fair number of interesting objects despite its small area. Since antiquity this constellation has been marked as a bird, either a "Crow," or "Raven." The bird is sometimes pictured as pecking the tail of the serpent "Hydra." In Greco-Roman legend Apollo sent Corvus with Crater, "The Cup," to fetch pure water for a sacrifice to Jupiter. It would seem that Corvus dallied in a Fig tree until the fruit ripened, finally returning with the water in the Cup and clutching the serpent, "Hydra" in his claws. Apollo would have none of this and punished the bird by placing it along with the cup in the heavens.

Corvus is easily found in the southern sky as a trapezoid of evenly bright stars southwest of Spica. Corvus has a number of interesting double stars, two of them that may be considered showpiece doubles are Delta Corvi and Struve 1669.

Delta Corvi Mags 3.0, 9.2; Sep 24.2"; P.A. 214°; Spec. AO; RA 12h 29.9m Dec -16° 31'

Delta Corvi is a fine double star with a brilliant white primary and a faint pale blue secondary.

Struve 1669 Mags 6.0, 6.1; Sep. 5.4"; P.A. 311°; Spec. F5; R.A. 12h 41.3m Dec -13° 01'

Struve 1669 is a very nice equally bright yellow pair.

NGC 4361 Mag 10.9; Dia 45"; Cen. star mag 13.18; Type 3a+2; RA 12^h24.5^m Dec -18°48'



The Ring-Tail Galaxies (NGC 4038-39) are a visually interesting pair of colliding galaxies in Corvus.

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Space Place Partner Column

Apollo Upgrade

The flight computer onboard the Lunar Excursion Module, which landed on the Moon during the Apollo program, had a whopping 4 kilobytes of RAM and a 74-kilobyte “hard drive.” In places, the craft’s outer skin was as thin as two sheets of aluminum foil.

It worked well enough for Apollo. Back then, astronauts needed to stay on the Moon for only a few days at a time. But when NASA once again sends people to the Moon starting around 2020, the plan will be much more ambitious—and the hardware is going to need a major upgrade.

“Doing all the things we want to do using systems from Apollo would be very risky and perhaps not even possible,” says Frank Peri, director of NASA’s Exploration Technology Development Program.

So the program is designing new, more capable hardware and software to meet the demands of NASA’s plan to return humans to the moon. Instead of staying for just a few days, astronauts will be living on the Moon’s surface for months on end. Protecting astronauts from harsh radiation at the Moon’s surface for such a long time will require much better radiation shielding than just a few layers of foil. And rather than relying on food and water brought from Earth and jettisoning urine and other wastes, new life support systems will be needed that can recycle as much water as possible, scrub carbon dioxide from the air without depending on disposable filters, and perhaps grow a steady supply of food—far more than Apollo life-support systems could handle.

Next-generation lunar explorers will perform a much wider variety of scientific research, so they’ll need vehicles that can carry them farther across the lunar surface. ETDP is building a new lunar rover that outclasses the Apollo-era moon buggy by carrying two astronauts in a pressurized cabin. “This vehicle is like our SUV for the Moon,” Peri says.

The Exploration Technology Development Program is also designing robots to help astronauts maintain their lunar outpost and perform science reconnaissance. Making the robots smart enough to take simple verbal orders from the astronauts and carry out their tasks semi-autonomously requires vastly more powerful computer brains than those on Apollo; four kilobytes of RAM just won’t cut it.

The list goes on: New rockets to carry a larger lunar lander, spacesuits that can cope with abrasive moon dust, techniques for converting lunar soil into building materials or breathable oxygen. NASA’s ambitions for the Moon have been upgraded. By tapping into 21st century technology, this program will ensure that astronauts have the tools they need to turn those ambitions into reality.

Learn more about the Exploration Technology Development Program at www.nasa.gov/directorates/esmd/aboutesmd/acd/technology_dev.html. Kids can build their own Moon habitat at spaceplace.nasa.gov/en/kids/exploration/habitat.

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

Caption:

The Chariot Lunar Truck is one idea for a vehicle equal to the lunar terrain. Each of the six wheels pivot in any direction, and two turrets allow the astronauts to rotate 360°.



This time IT'S for Real

Last June I called the club to arms to support what I called C-ROW Star B.Q.! It was a Celestron-only B.B.Q. and Star Party where a handful of Celestron's employees flew out and spent the afternoon and evening. If memory serves me there were somewhere around 40 HAC members all toting some size of Celestron telescope and, I've been told, we all really enjoyed ourselves. That event, my friends, was the prologue to what is coming June 19 and 20, 2009. What we had was 3 of Celestron's Department Managers and a home-style B.B.Q. before the monthly member star party. What we have coming this year are those same three managers, plus a few more managers, the C.E.O. of Celestron (Joe Lupica), and a truckload of new and fancy astronomical products. These products having a retail value in the thousands of dollars and all of it stays here when they go home.

Huachuca Astronomy Club has been selected to present to the astronomical community a new and exciting concept of amateur hobbyist gathering to enjoy their hobby -- it's called a Themed Star Party! This year it's for real. Two days in length, seeded with internationally known speakers and a product display by one of the planet's largest optical manufacturers with demonstrations of state-of-the-art astronomical toys and gadgetry. Combine these things with a visit from our local astronomy shop, Starizona, and Infinitees Astronomy Apparel selling t-shirts and other apparel printed especially for this event, topped off with a car sized B.B.Q pit and a host of astronomy club officers from across the country.

Now you have to be asking, what's all this mean to us, the HAC? It means we are stepping into the forefront of astronomy clubs like ourselves all striving to be noticed and accepted as leaders in the art of having it all when we come to meeting. Folk, it just doesn't get any better! How many of us drive thousands of miles just to attend such an event, paying huge gas bills to see and do what we will be doing here. And best yet, all the proceeds that always go to that "Other Club" will be staying here. The future of our club notoriety lies in the balance. Will we step up to the plate and take a swing at the greatest opportunity ever afforded us? I say "Yes, we will," and all it takes is for you to show up and let it happen. Dig out those Celestron telescopes if you have one, or that Meade or Orion or Obsession, No Dave, we don't expect to see the 32" OGS out here, but you and your C-8 will do nicely. All the work has been done and all it requires is that the entire HAC membership come out and spend the day showing the Astronomical Community that we ARE the leaders when it comes to having the Biggest and Baddest Star Party a local club has ever thrown. THIS TIME IT'S FOR REAL!

Keith Mullen

HAC V.P.

C-ROW Coordinator

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NGC 4361 is a very nice planetary nebula also known also numbered as PK294+43.1. It is easily seen with a bright central star embedded in a 35" diameter central concentration and an outer halo extending perhaps twice that diameter.

Corvus has twelve galaxies brighter than 12th magnitude highlighted by two pairs of interacting galaxies and a few solitary galaxies. The brighter objects may be considered eye candy and if you have the aperture "faint fuzzies" abound in groups known as Abell galaxy clusters in (i.e. Abell 1426 and Abell 1450.) The following objects are presented by right ascension order:

NGC 4024: Type SB(sr)O°; Size 1.7' x 1.4'; Mag 11.9; SB 12.7; RA 11h 58.5m Dec. -18°21'

This galaxy lies within an equilateral triangle of 10th and 11th magnitude stars. In small scopes it has an oval halo with a bright stellar nucleus. 16-inch aperture reveals a halo extended 1.5' x 1.25' NE-SW.

NGC 4033: Type SA:O₊; Size 2.2' x 1.1'; Mag 11.8; SB 12.6; RA 12h 00.6m Dec. -17°51'

Through 8-inch scopes, this galaxy reveals a stellar nucleus within a bright core and a halo elongated 1.5' x 0.5' NE-SW with tapered ends. The halo grows to 2' x .75' with a 16-inch instrument.

NGC 4038: Type SB?(s)m pec; Size 5.4' x 3.9'; Mag 10.5; SB 13.7; RA 12h01.9m Dec. -18°52'

NGC 4039: Type IB:(s)m pec; Size 5.4' x 2.5'; Mag 10.3v; SB 13.0; RA 12h01.9m Dec. -18°53'

These interacting galaxies are known as "the Ring-Tail Galaxy," or "the Antennae Galaxies." Lying 6' SSE of a 9th magnitude star, NGC 4038 and NGC 4039 appear as a single coma-shaped object concave to the WSW. NGC 4038, the northernmost galaxy, is the larger and brighter object appearing as a crescent-shaped segment curling to the south as it joins NGC 4039 which is extended 3' x 1.5' NE-SW. With larger aperture telescopes more detail and texture may be seen. This pair is also known as Arp 244 labeled by Halton Arp of cosmological controversy fame. The Ring-Tail Galaxies lies at a distance of 65 million light years. Photos of these dancing partners show two arcs leading away from their centers. Perhaps, our Milky Way and the Andromeda galaxy, which are headed for a collision in 1.5 billion years, may appear similar to the Ring-Tail.

NGC 4782: Type E/SO pec; Size 1.8' x 1.7'; Mag 11.7v; SB 12.8; RA 12h54.6m Dec -12°34'

NGC 4783: Type SO pec; Size 1.8' x 1.7'; Mag 11.5v; SB 12.6; RA 12h54.6m Dec -12°33'

Through a 16-inch telescope at 150x the interacting galaxies, NGC 4782-83, appear as two round spots forming a figure-8. Both are fairly bright with 1.5' halos having concentrated centers. NGC 4782 is slightly brighter and larger. Smaller scopes will show two diffuse but distinct N-S nodules. If we could view these two with x-ray vision we would see a very bright x-ray bridge between them. Also look for NGC 4792 lying 8' NE. It is a faint evenly concentrated 45" x 15" streak.



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*All makes and models of telescopes are welcome.