



HAC MEETING: Friday, October 2, 2009

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

PLUS our monthly Show-N-Tells, upcoming event details, refreshments & Door Prize!

Speaker: Club Members

Topic: How to buy a Telescope

STAR PARTY CORNER

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

Participation is the Lifeblood of the Club!

Saturday, October 17th, 5 PM: HAC Member Star Party and Annual Picnic at JBO

Please contact Cheryl Healy @ 378-0981 to RSVP and potluck dish you are bringing.

Friday, October 23rd, 6 PM: Public Star Party at JBO

HAC 2009/2010 Slate

Officers

Wayne Johnson	President
James Taylor	Vice President
Bob Gent	Secretary
Bob Kepple	Treasurer

HAC 2009/2010 Slate

Directors

Del Gordon
Keith Mullen
Glen Sanner
Rich Swanson



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

President's Perspective

Wayne Johnson "Mr. Galaxy"

All HAC members,

HAC offers as a public service a tutorial on what to look for when using or buying a telescope for people new to astronomy or current members who are looking to upgrade their current instrument. Please let friends and relatives know about this informative meeting which is timed to occur before the Christmas shopping season so that future buyers know what questions to ask about the equipment before they make the big purchase. We plan to give a basic PowerPoint presentation which will be followed by several members showcasing their telescopes so that everyone can see a real live telescope and also get introduced to several pieces of ancillary equipment that make it easier to operate their telescope.

I realize the content of the rest of this message is early and intended for the November General Meeting, which is our annual HAC business meeting, but I just wanted to give those people responsible for the below duties time to prepare a PowerPoint slide (or two) for that meeting. Basically, since we're going to have elections and presentations from these different departments, the Deep Sky Guys during the first part of the meeting, will be the only "astronomy" that night. The second part will be the Business meeting consisting of the outline shown below.

I would like the November General Meeting to be an annual highlights night. Members who have had certain responsibilities during the year (you know who you are!) should give a short (about 2-5 minutes) annual report of their activities. The reports don't need to be anything fancy, but if you can make a page or two in PowerPoint, that would make it easier for Del to post on the webpage. I've covered most of the activities that I can think of, if there are others, please let me know. I didn't include officer reports, per se, because most club officers have additional responsibilities that go along with the office. I have also included sample concerns/questions for each category. Hopefully, the person in charge will have better insight into their task. If there are some items that can be combined, let me know that also.

- 1) ALCOR (number and type of AL awards given, number of named asteroids given to club members) Dave Healy
- 2) Deep Sky Guys (synopsis of talks given for the year) Bob Kepple, Glen Sanner
- 3) Meeting attendance (how many on avg, high/low attendance, no. of guests, should we not have meetings in July and August?) Keith Mullen, Wayne Johnson
- 4) Meeting snacks (how much spent, how much made, is it worthwhile to continue?) Tim Doyle
- 5) Speakers (highlights from past speakers, the past few years the president has been responsible for that task) Wayne Johnson
- 6) Pre-meeting dinners (this has been our honorarium for a number of years, attendance is going down, Helen Patterson retiring, should we continue or should we pay a cash honorarium to our speaker instead?) Wayne Johnson
- 7) Newsletter (Teresa is retiring at end of 2009, need new editor, highlights, how much spent, change of distribution from mail to email, can Newsletter be absorbed into the HAC website, training a new newsletter editor, etc.) Teresa Mullen
- 8) Webpage (Del is retiring in a year, needs an assistant who will take over, highlights for 2009, how much spent, how

(Continued on page 3)

Huachuca Astronomy Club P.O. Box 922 Sierra Vista, AZ 85636 <http://hacastronomy.com> email: mrgalaxy@juno.com

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

President: Wayne Johnson, mrgalaxy@juno.com ; **Vice President:** Keith Mullen, 520.366.0049/ repogazer@msn.com

Treasurer: Bob Kepple: 366-0490/ astrocards@aol.com; **Secretary:** Bob Gent 378-2915; **Past President:** Doug Snyder

Star Party Coordinator: Keith Mullen, repogazer@msn.com;

Outreach Events Coordinator: Rich Swanson, 803-7298 or telegeek-64@cox.net

Loaner Scopes: Bob Gent 378-2915; Newsletter Editor: Teresa Mullen, edugazer1@yahoo.com / 366-0049

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.

Travels on the Celestial Sphere

Cassiopeia, the Queen

By Bob Kepple & Glen Sanner

NGC 7789 is one of the finest open clusters in the constellation of Cassiopeia.

Cassiopeia (Kass-ee-oh-PEE-ah), the Queen forms a familiar “W” or “M” pattern in the autumn skies above the pole star Polaris. Since it resides in the Milky Way it is rich in star clusters, and nebulae but is also garnished with an assortment of planetary nebulae, double stars and a few galaxies. In Greek mythology, Cepheus and Cassiopeia were the king and queen of Ethiopia and the parents of Princess Andromeda. Cassiopeia is depicted sitting on her throne, however, half the time, she is upside down and in danger of sliding off the chair.



Iota Cassiopeiae, Triple Star, Spec. A5, AB: Mags 4.6, 6.9, Separation 2.5”, PosAng 230°

AC: Mag 8.4, Separation 7.2”, PosAng 114° RA 02^h29.1^m, Dec +67°24’

Iota is one of the loveliest triple stars in the sky! A brilliant white primary is attended by yellow and blue companions. The AB pair orbit each other in about 840 years while the C component shows no definite orbital mo-

(Continued on page 4)

much made by Amazon referrals, number of users, is there a way to make the website easier for the general membership to make contributions, can the Newsletter be absorbed into the website, etc.) Del Gordon

9) HACList/HACBOD (number of users, worthwhile to keep, another method of communication needed?) Doug Snyder

10) Treasury (money in/money out, starting balance, ending balance, new members, lost members, etc.) Bob Kepple

11) Outreach (number and 12) Member and public star parties (number of activities/hosts, type of activity (scopes, astro-photo, using DS Guys material for guided tour of the Sky), attendance by members and guests, etc.) Keith Mullen

13) Dining Under the Stars (highlights, number of volunteers, etc) Bob Gent

14) HAC Trips (highlights, number participating) Wayne Johnson

15) Dark sky activities (contact with SV P&Z and Board of Supervisors, etc.) Bob Gent

16) Patterson Observatory activities (activities, plans, docent training, etc.) Bob Gent

17) Telescope Loaner program (new person needed to revitalize this activity?) Bob Gent

18) HAC Library (report on contents and any use, how to improve usage of this resource) Howard Day

19) Publicity (report on what sources are contacted and how successful each source is, are there better ways to do publicity? people mentioning club meetings to friends or co-workers?) Jim Taylor

19) Other highlights: Sidewalk astronomy activities, observing parties in the park or associated with other organizations, C-Row at the Mullens, etc. (Bob Gent, Rich Swanson, Keith Mullen)

20) Of course, there will be time for members questions and comments during each function's report and overall at the end.

As you can see there is a surprising number of activities in HAC and maybe a few others that we could do and perhaps others that I don't know of, or have forgotten. Let the HAC Board members know your thoughts.

(Continued from page 3)

tion. The close AB pair may be a test for your optics but the AC pair have a comfortable separation.

**Messier 52, NGC 7654, Open Cluster 100 stars, Tr Type I 2 r,
Diameter 12', Magnitude 6.9v, Brightest Star 8.22v, RA 23^h24.2^m, Dec +61°35'**

M52 is a fine, bright object in small telescopes. This rich compressed cluster, discovered by Charles Messier in 1774, lies about 3,900 light years away and is about 15 light years in diameter. An 8-inch scope will show some 80 stars while 12-inch scopes bring the count to over 150 stars.

In a low power eyepiece you will see the less distinct somewhat triangular-shaped open cluster **Czernik 43** lying in the same field to the SE. It is as large as M52 but much more spread out with the point of the triangle to the NNE. An 8-inch scope will discern over 50 stars.

Look for **NGC 7635, the Bubble Nebula**, lying a little more than half a degree to the SW. This is definitely a large scope object but you may see it in 12-inch and smaller scopes with a UHC filter. Its nebulosity which surrounds an 8th magnitude star is quite faint, small, and very diffuse. In my 22-inch Dobsonian it was quite nice with a UHC filter. A 7th magnitude star lying nearby to the SW also shows nebulosity around it.

**NGC 7789, Open Cluster 300 stars, Tr Type II 1 r,
Diameter 15', Magnitude 6.7v, Brightest Star 10.7v, RA 23^h57.0^m, Dec +56°44'**

NGC 7789, one of the major omissions from Messier's catalog, was discovered in the late eighteenth century by Caroline Herschel in England. Its several hundred 11th magnitude and fainter stars are uniformly spread over half a degree of sky. The cluster is estimated to be about 5,900 light years from us which translates into a 43 light year diameter. NGC 7789 is old for an open cluster and could be about two billion years old but far younger than any globular cluster. 4 to 6-inch scopes will show an extremely rich concentration of faint stars about 15' in diameter. 8-inch scopes may discern over a hundred stars embedded in a hazy background. 12-inch scopes will resolve at least 150 stars.

**NGC 281, Emission Nebula and Open Cluster Tr Type III 1 m,
Diameter 4', Magnitude 7.4p, Brightest Star 9.0p, RA 00^h52.8^m, Dec +56°37'**

NGC 281, is another object for larger telescopes but 12-inch scopes with a UHC filter should detect the nebulosity. The cluster has several dozen stars surrounded by a maple leaf of nebulosity fanning out to the north. The periphery is irregular with dark lanes dividing it on the north side while a faint narrow patch extends to the south. This emission nebula is a beautiful object in 20-inch scopes on transparent nights.

**NGC 457, Open Cluster 80 stars, Tr Type I 3 r, "The Owl Cluster"
Diameter 13', Magnitude 6.4v, Brightest Star 8.6v, RA 01^h19.1^m, Dec +58°20'**

NGC 457, is a fine bright cluster for small telescopes. The lovely yellow and blue double star Phi Cassiopeiae (mags 5.0, 7.0; Sep 134°; P.A. 231°) lies at its SE edge. In recent times the "Owl Cluster" has taken on a new identity. Since the movie E.T. amateurs are calling it the E.T. Cluster. Two bright stars at the SSE end form E.T.'s glowing eyes and a stream of stars extending NNW form its body. Two strings of stars extending E and W form the extra terrestrial's outstretched arms. This cluster is sure to delight kids and science fiction fans.

**Messier 103, NGC 581, Open Cluster 25 stars, Tr Type III 2 p,
Diameter 6', Magnitude 7.4v, Brightest Star 10.5v, RA 01^h33.2^m, Dec +60°42'**

M103 was discovered by Mechain in 1781 and later added to Messier's catalog. Its distance is some 9,200 light years and its true diameter is 15 light years. The area is rich in star clusters with NGC 663, NGC 654, and NGC 659 lying nearby. A pretty double, Struve 131, composed of 6th and 9th magnitude stars, (Sep. 28°; P.A. 145°) lies to the NW. Look for a lovely 10th magnitude red giant star to the SE.

Small telescopes will show an attractive triangular-shaped formation with its three brightest stars marking the edges of the triangle. 8-inch scopes will reveal over forty stars in the arrowhead. In 12-inch and larger scopes M103 is splendid with over sixty stars. As Christmas approaches referring to M103 as the Christmas Tree Cluster always impresses visitors to the observatory. The cluster's brightest star at 7.5 magnitude adorns the top to the tree. Just SE of center is a pretty red 9th magnitude star decorating the tree.

Now that the monsoon showers are over, get out there on these clear autumn nights and do some observing. We hope you will enjoy this month's selection of deep-sky objects. If you have a copy of The Night Sky Observer's Guide, open up to Chapter 10 and enjoy some more of Cassiopeia's treasures.

Spitzer, the Sequel

The Spitzer Space Telescope is getting a second chance at life.

The liquid helium “lifeblood” that flows through the telescope has finally run out, bringing Spitzer’s primary mission to an end. But a new phase of this infrared telescope’s exploration of the universe is just beginning.

Even without liquid helium, which cooled the telescope to about 2 degrees above absolute zero (-271°C), Spitzer will continue to do important research—some of which couldn’t easily be done during its primary mission. For example, scientists will use Spitzer’s “second life” to explore the rate of expansion of the universe, study variable stars, and search for near-Earth asteroids that could pose a threat to our planet.

“We always knew that a ‘warm phase’ of the mission was a possibility, but it became ever more exciting scientifically as we started to plan for it seriously,” says JPL’s Michael Werner, Project Scientist for Spitzer. “Spitzer is just going on and on like the Energizer bunny.”

Launched in August 2003 as the last of NASA’s four Great Observatories, Spitzer specializes in observing infrared light, which is invisible to normal, optical telescopes.

That gives Spitzer the power to see relatively dark, cool objects such as planet-forming discs or nearby asteroids. These objects are too cold to emit light at visible wavelengths, but they’re still warm enough to emit infrared light.

In fact, all warm objects “glow” with infrared light—even telescopes. That’s why Spitzer had to be cooled with liquid helium to such a low temperature. Otherwise, it would be blinded by its own infrared glow.

As the helium expires, Spitzer will warm to about 30 degrees above absolute zero (-243°C). At that temperature, the telescope will begin emitting long-wavelength infrared light, but two of its short-wavelength sensors will still work perfectly.

And with more telescope time available for the remaining sensors, mission managers can more easily schedule new research proposals designed for those sensors. For example, scientists have recently realized how to use infrared observations to improve our measurements of the rate of expansion of the universe. And interest in tracking near-Earth objects has grown in recent years—a task for which Spitzer is well suited.

“Science has progressed, and people always have new ideas,” Werner says. In its second life, Spitzer will help turn those ideas into new discoveries.

For kids, The Space Place Web site has a fun typing game using Spitzer and infrared astronomy words. Check it out at spaceplace.nasa.gov/en/kids/spitzer/signs.

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 “warm mission” of the Spitzer Space Telescope will still be able to use two sensors in its Infrared Array Camera (IRAC) to continue its observations of the infrared universe.



