November
2007

NIGHTFALL
Huachuca Astronomy Club of Southeastern Arizona

HAC Web Page: hacastronomy.com

HAC MEETING: Friday, November 23, 2007
Election Night

7 pm, Cochise College, Sierra Vista, Rm. 305A/B
PLUS our monthly Show-N-Tells, upcoming event details, refreshments & NEW Exciting Door Prizes!

Speaker: Steve Coe
Topic: Emission Nebulae

Star Party Corner

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

Participation is the Lifeblood of the Club!

October saw the fair weather return to the valley, although we didn't have a stellar Public Star Party we apparently did have a great HAC annual picnic. I missed this year's picnic due to a much awaited trip to the Okie-Tex star Party. Gary Myers, Bob Kepple and I had a great time enjoying the darkest skies I've ever seen. If any of you ever get the chance to attend Okie-Tex, I urge you to go. I asked Dave and Cheryl to give me some help on the article with a description of the picnic, and here's what Cheryl had to say: "Another food, fun and stargazing event! The HAC annual Picnic on October 13th had perfect, mild, clear weather, good food and dark skies. The chatter and cheer flowed on until observing time, and all the scopes found great objects, including such exotica as Einstein's Cross! Many, many thanks to all contributing chefs and helpers, and the faithful members who brought scopes. We missed all the members who were not there, and hope we can gather next year! By the way, who left the gray Tilley hat?" Cheryl Healy
Thanks, Cheryl, for that perfect description of an apparently perfect evening. Again some good participation from the membership resulting in a stellar event!

November Star Party Schedule

Saturday, Nov. 3rd Public/Member Star Party at JBO starting at 6:00. Please bring some scopes out this time, I'll have one there. Will you?

Friday, Nov. 9th Member Star Party finds it way back to Alkira Observatory, starting at 6:00. Hans Clahsen is clearing out the cobwebs and re-opening that wonderful observatory where we had one of the year's best Star Parties of the '06 season. Hans has made the move from a large aperture reflector to some mega binos so we all have to fill the void and show up with a telescope big or small just bring it with you. Don't forget that Hans and Joannie are among the best star Party hosts out there and you never know what kind of goodies will be present. Come and see for yourselves, I'll be there waiting with the roster taking attendance- you'll want your name on this one!

Saturday, Nov. 17th We don't have a location yet, but let's chime in on the HAC Yahoo Group and find a place to watch the Leonid meteor shower. They peak at 2100 hr. Any takers? Your back yard, pasture or driveway, be a participant and have the HAC over for the evening…

Reminder, the Annual Members Meeting and elections are Friday Nov. 23rd. Be there to elect your 2008 officers and board members.

President's Perspective

A note from the VP…

Saturday, November 3rd at JBO, Public/Member Star Party in which we promised several guests from Friday's General Meeting a large array of scopes to aide them in their decision to buy the right one. Ok folks, please don't let them down, let's get some scopes out there! We would like to see Refractor, Reflector, and Schmidt Cassegrain.

Friday, November 9th at AO (Alkira Observatory), our monthly member star party, we are focusing on a Bino Extravaganza! Bring yourself and your binos or a scope, and let's spend the evening together enjoying the night sky.

Keith Mullen, Vice President

Directions to both Observatories can be found on the HAC Astronomy web page.

Dollar$ & Cent$

Tim Doyle

The Club has a checkbook balance (mid October) of $3,483.92. With $102.24 in petty cash. WE NOW HAVE THE 2008 CALENDARS (from the Astronomical Society of the Pacific) AND OBSERVERS HANDBOOKS (The Royal Astronomical Society of Canada!!! They will cost $15 for the Calendars and $23 for the handbooks. Quantities are limited. If you missed the October 26th meeting e-mail me at tedoyle@cox.net to reserve one or tell you that you have missed out this year.
We still have two club T-shirts, medium $10 (this is below our cost) We will put these out on display at the next meeting by the refreshments so you can take a look at them.

Editors note…

If you would like to post an article in the HAC Newsletter send it to nightfall@hacastronomy.com

Happy Halloween Everyone!

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 or repogazer@msn.com
Treasurer: Tim Doyle 378-5121; **Secretary**: Jeanne Herbert, 366-5690
Star Party Coordinator: Keith Mullen, repogazer@msn.com
Outreach Events Coordinator: Jeanne Herbert, jeanne_hrbrt@yahoo.com / 366-5690 (early evenings)
Loaner Scopes: Gary Myers 432-4433; Newsletter Editor: Teresa Mullen, nightfall@hacastronomy.com / 366-0049

Huachuca Astronomy Club
Sky Calendar, November, 2007

01 Th (Last Quarter Moon 1418 hrs.

03 Sa HAC Public Star Party
Occultation of Regulus
(look for details in Sky & Tel Mag.)

05 Mo S. Taurid meteors pk 1500 hrs.

09 Fr ● New Moon 1603 hrs.

11 Su Dbl Shadow Tran.;J; 2020 hrs.

12 Mo N. Taurid meteors pk 1400 hrs.

17 Sa) First Quarter Moon 1532 hrs.
Leonids meteors pk 2100 hrs

18 Mo Dbl Shadow Tran.; J; 1115hrs.

23 Fr HAC Meeting/ Election

24 Sa Full Moon 0730 hrs.

Outreach Biz
Jeanne Herbert

October saw one outreach event-The Huachuca Oaks Baptist Camp hosted an evening for a Girl Scout Troop from Sierra Vista with high hopes of earning their Astronomy badge. The girls learned about some constellations, various types of telescopes and managed to view Jupiter and its moons in spite of the cloud cover. A huge **THANK YOU** goes to Rich, Wayne, Doug, Dave, and Andrew for making this event memorable. At this point there are no outreach events scheduled for November.

Nominating Committees
Slate of Candidates

Officers

Wayne Johnson– President

Keith Mullen– Vice President

Jeanne Herbert– Secretary

Bob Kepple– Treasurer

*Doug Snyder– Past President

Board of Directors

Hans Clahsen

Del Gordon

Teresa Mullen

Rich Swanson

Additional Candidates may be nominated from the floor on the night of the election.

*Immediate Past President is a default office , and not contested.

Backyard Astronomer
Neal Galt

What's UP...

Jupiter is all but a lost cause now. It's much too low for effective observations. By the end of November it will be setting less than an hour after sunset.
Mars is the up and coming target. Always a small guy, but when it does come in for a close encounter, that's when you must see it. Won't be this close again until 2016.....will you be here? December 18th will be the closest date for us. Make a note to look at the full moon rising on December 23rd. Bright and reddish Mars will be right next to it. Should make for an interesting sight.
Saturn will be rising around midnight during November. The ring system is certainly getting thin. On the 15th of December they will be closed to about 6 degrees.
Venus will start to get closer to the horizon after its highest point on October 28th.
Yep...you can see Mercury over the eastern horizon. Best date will be November 8th.
Meteors streaking through the sky? The Leonids may provide a surprise or two. In 2001, many of us were part of the count that reached 3400 between the hours of 3 -4 AM. That was a sight I will never forget. Divide 3400 by 60 minutes.....that's more than 56 per minute.....just about one per second. And I think we missed a few hundred or so. This year could be a normal 60 per hour in the early morning hours, OR there are a few wizards out there who claim that between 10 - 12 PM on the 17th we could get an outburst!
Uranus and Neptune are good objects in a telescope with some aperture. At the next star party, ask to see them....note the "Blue!"

"Trick or Treat!" Anyone got any diet candy?

A purposed amendment to the

CONSTITUTION
of the Huachuca Astronomy Club
of Southeastern Arizona, Inc.

Article IV BOARD OF DIRECTORS, OFFICERS AND ELECTIONS:

Section II: All Board members of the club must be 18 years of age or older. Elected Board Members shall hold office for a term of one year beginning on December 1st. & until their successors are elected or qualified. An ex-officio member may remain on the Board for one or more terms.

The above Article will be changed to read as follows:

Article IV BOARD OF DIRECTORS, OFFICERS AND ELECTIONS:

Section II: All Board Members of the club must be 18 years of age or older. Elected Board Members shall hold office for a term of two years, beginning on December 1st. and until their successors are elected or qualified. Two of the four positions will be elected each year for a two-year term. An ex-officio member may remain on the Board for one or more terms.

Autumn's Star Clusters

By Bob Kepple & Glen Sanner

The typical globular is compact and spheroidal in shape with hundreds of thousands of stars but open clusters come in a wide variety of sizes, concentrations, textures, and star numbers. Some are so sparse and irregular that they hardly stand out against the star field while others are highly concentrated showpieces. Open clusters may be composed of bright stars while others may just be dim misty patches of unresolved stars, a factor of their distance from us in space. No matter what size telescope you use there are suitable star clusters for viewing. Below is a selection of interesting star clusters suitable for small and medium-size telescopes. Clusters are rated from five to one asterisks, the more asterisks the brighter or more interesting it is.
Tr Type = Trumpler Type
Roman numerals indicate: I. detached with a strong central concentration; II. Detached with a weak central concentration; III. Detached with no central concentration; IV. Not well detached from star field.
Second number indicates: 1. Small magnitude range; 2. Moderate magnitude range; 3. Large magnitude range.
Letters indicate: (p) Poor (less than 50 stars); (m) Moderately Rich (50-100 stars); (r) Rich (more than 100 stars); (n) Nebulosity associated with the cluster.

NGC 7510 Open Cl. 60* Dia. 4' Mag. 7.9v Tr Type II 2 m n $23^h11.5^m$ $+60^o34'$ Cepheus **
NGC 7510 is a beautiful, bright, rich cluster showing a couple dozen stars in small telescopes. It has a highly concentrated 4' diameter wedge of faint stars, its lucida (brightest star) lying at its eastern tip. In 12-inch telescopes thirty stars from 10^{th} to 12^{th} magnitude may be resolved within its arrowhead outline. Another thirty stars of 12^{th} to 14^{th} magnitude that fan northward double its star count. The cluster is framed within a 16' diameter equilateral triangle of 9^{th} magnitude stars.

NGC 7789 Open Cl. 300* Dia. 15' Mag. 6.7v Tr Type II 1 r $23^h57.0^m$ $+56^o44'$ Cassiopeia **
On a clear dark night, keen-eyed observers may spot NGC 7789 with the naked eye as a tiny, hazy patch. Small scopes will see a faint patch of unresolved stars against the star field. 8-inch scopes will resolve a hundred stars against a uniformly dense background glow. It takes a 12-inch telescope to fully appreciate this splendid cluster. It is large, rich, and fairly dense with at least 150 stars resolved. Its periphery blends into the field without a distinct edge. The cluster's brighter members are 11^{th} to 12^{th} magnitude and seem to be distributed in concentric rings.

NGC 457 Open Cl. 80* Dia. 13' Mag. 6.4v Tr Type I 3 r $01^h19.1^m$ $+58^o20'$ Cassiopeia **
NGC 457 is a beautiful cluster in small scopes showing a faint spray of stars sprinkled NNW of Phi Cassiopeiae a bright, lovely double having yellow and blues stars of 5.0 and 7.0 magnitude stars with a wide separation of 134 seconds of arc. 8-inch scopes will reveal forty stars with an arc of 11^{th} and 12^{th} magnitude stars curving through the center from either side of Phi Cas. 12-inch telescopes show a somewhat triangular-shaped group having three streams of stars protruding NNW, SW, and eastward from a moderately compressed center. At least fifty stars are visible with a red star at the northern edge contrasting nicely with the yellow and blue stars of Phi Cas.

M103 NGC 581 Open Cl. 25* Dia. 6' Mag. 7.4v Tr Type III 2 p $01^h33.2^m$ $+60^o42'$ Cassiopeia ***
In small scopes Messier 103 is an attractive cluster of moderately bright stars forming a distinct triangular arrangement, its three brightest stars marking the apex of its angles. This cluster should be called

(Continued on page 7)

Space Place Astronomy Club article

The Red (Hot?) Planet

by Patrick L. Barry

Don't let Mars's cold, quiet demeanor fool you. For much of its history, the Red Planet has been a fiery world. Dozens of volcanoes that dot the planet's surface stand as monuments to the eruptions that once reddened Mars's skies with plumes of glowing lava. But the planet has settled down in its old age, and these volcanoes have been dormant for hundreds of millions of years.

Or have they? Some evidence indicates that lava may have flowed on Mars much more recently. Images of the Martian surface taken by orbiting probes show regions of solidified lava with surprisingly few impact craters, suggesting that the volcanic rock is perhaps only a million years old.

If so, could molten lava still occasionally flow on the surface of Mars today?

With the help of some artificial intelligence software, a heat-sensing instrument currently orbiting Mars aboard NASA's Mars Odyssey spacecraft could be just the tool for finding active lava flows.

"Discovering such flows would be a phenomenally exciting scientific finding," says Steve Chien, supervisor of the Artificial Intelligence Group at JPL. For example, volcanic activity could provide a source of heat, thus making it more likely that Martian microbes might be living in the frosty soil.

The instrument, called THEMIS (for Thermal Emission Imaging System), can "see" the heat emissions of the Martian surface in high resolution—each pixel in a THEMIS image represents only 100 meters on the ground. But THEMIS produces about five times more data than it can transmit back to Earth.

Scientists usually know ahead of time which THEMIS data they want to keep, but they can't plan ahead for unexpected events like lava flows. So Chien and his colleagues are customizing artificial intelligence software called ScienceCraft to empower THEMIS to identify important data on its own.

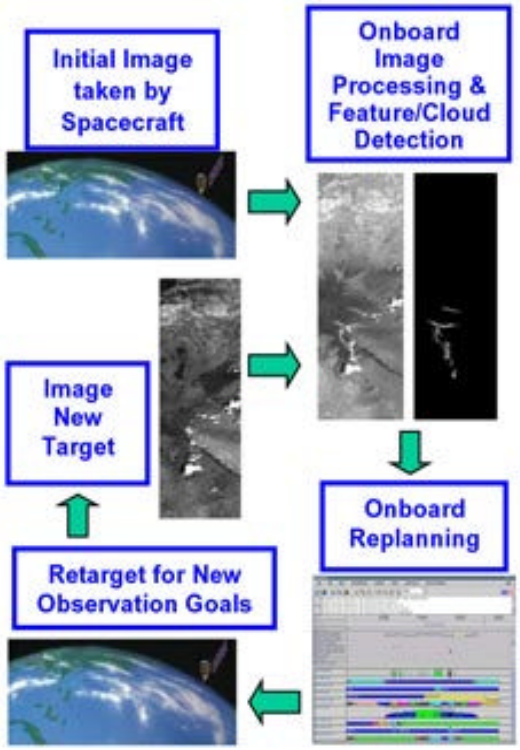
This decision-making ability of the ScienceCraft software was first tested in Earth orbit aboard a satellite called Earth Observing-1 by NASA's New Millennium Program. Earth Observing-1 had already completed its primary mission, and the ScienceCraft experiment was part of the New Millennium Program's Space Technology 6 mission.

On Odyssey, ScienceCraft will look for anomalous hotspots on the cold, night side of Mars and flag that data as important. "Then the satellite can look at it more closely on the next orbit," Chien explains.

Finding lava is considered a long shot, but since THEMIS is on all the time, "it makes sense to look," Chien says. Or better yet, have ScienceCraft look for you—it's the intelligent thing to do.

To learn more about the Autonomous ScienceCraft software and see an animation of how it works, visit http://ase.jpl.nasa.gov .

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



Caption:
Just as changing cloud patterns on Earth were identified using Earth Observing-1's Advanced Land Imager along with ScienceCraft software, the THEMIS instrument with ScienceCraft on the Mars Odyssey spacecraft can avoid transmitting useless images.

Note to editors:
This image may be downloaded at
http://spaceplace.nasa.gov/news_images/sciencecraft_process.jpg.

(Continued from page 5)

the "Christmas Tree Cluster." Its brightest star at 7.5 magnitude decorates the top of the tree while two more bright stars mark the bottom of the tree. 8-inch telescopes will resolve this splendid cluster with forty 8th to 12th magnitude stars covering a 6' area. 12-inch instruments will show over fifty stars. Look for Struve 131, a pretty pair of 6th and 9th magnitude stars lying to the SE and a lovely 10th magnitude red giant star nearby.

NGC 869 Open Cl. 200* Dia. 29' Mag. 5.3v Tr Type I 3 r $02^h19.0^m$ $+57^o09'$ Perseus ***
NGC 884 Open Cl. 115* Dia. 29' Mag. 6.1v Tr Type II 2 p $02^h22.4^m$ $+57^o07'$ Perseus ******* These two clusters are the famous Double Cluster in Perseus. They are quite visible to the naked eye and are a splendid sight in binoculars. These two clusters are exquisite in small telescopes as two distinct, highly resolved groups lying next to each other. If Messier added M45, the Pleiades, to his catalog, why did he not add these two fine objects? Was it because they were so obvious that he did not consider them as being confused as comets? 6 and 8-inch telescopes at low power will show two stunningly beautiful clusters containing over a hundred stars in each. Both groups are highly irregular with a wide mix of bright and faint stars having starless gaps between their clumps. NGC 869 is the richer of the two.

M34 NGC 1038 Open Cl. 60* Dia. 35' Mag. 5.2v Tr Type II 3 m $02^h42.0^m$ $+42^o47'$ Perseus **** Messier 34 is truly a small telescope object. It is best viewed at low power as it spans over half a degree. Its brighter members are irregularly, and loosely concentrated toward center with numerous pairs visible. The fainter stars are scattered about the periphery and blend into the star field. 8-inch scopes will show at least 80 stars. Near center is double star h1123, a 20 second wide pair of white 8.5 magnitude stars.

NGC 1245 Open Cl. 200* Dia. 10' Mag. 8.4v Tr Type III 1 r $03^h14.7^m$ $+47^o15'$ Perseus **** Small telescopes will show a faint, round misty patch framed by a thin triangle of 8th to 9.5 magnitude stars pointing NE, the brightest star lying to the south. An 8-inch scope may resolve about fifty faint stars in a 10 minute diameter area. It takes a 12-inch telescope to fully appreciate this fine, rich cluster. At this aperture seventy-five 12.5 to 14th magnitude stars may be resolved, many of them forming short arcs, and chains. At center is an irregular void.

NGC 1502 Open Cl. 45* Dia. 7' Mag. 5.7v Tr Type II 3 p $04^h07.7^m$ $+62^o20'$ Camelopardalis **** NGC 1502 is a nice cluster that stands out well in an interesting star field. In small scopes it appears bright but small and fairly rich with a moderately compressed somewhat triangular-shaped outline. Medium-sized telescopes will reveal over three dozen stars surrounding double star Struve 485, a wide pair of 7th magnitude stars. If you look through your viewfinder (or binoculars) you cannot help but stumble upon a beautiful 2.5 degree long rivulet of 8th magnitude stars NW of NGC 1502, this is called Kemble's Cascade, a moniker given to it by Walter Scott Houston in honor of Lucien Kemble, a Canadian amateur astronomer (both are now deceased). For those with GOTO or digital setting circles, you may want to see NGC 1502, a neat little planetary nebula lying not too far away.

M38 NGC 1912 Open Cl. 100* Dia. 21' Mag. 6.4v Tr Type III 2 m $05^h28.7^m$ $+35^o50'$ Auriga *** In small scopes Messier 38 is a glorious object containing twenty 9th magnitude stars and another fifty from 10th to 12th magnitude in a 20' area. It is irregular and somewhat elongated with a 9th magnitude star near the center. Many double stars and several starless lanes are visible. In medium and large scopes the periphery seems to increase the count to over 150 stars. At lower powers NGC 1907, a companion cluster lying to the south adds interest to the view. NGC 1907 is a very nice compact cluster

(Continued on page 8)

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(Continued from page 7)

of 30 stars making a fine contrast to the looser, irregular outline of M38. I always like these "two fors" whether it's clusters or galaxies.

M37 NGC 2099 Open Cl. 150* Dia. 20' Mag. 5.6v Tr Type II 1 r $05^h52.4^m$ $+32^o33'$ Auriga *****

Through small scopes Messier 37 is a fine, rich 20' diameter open cluster showing at least 75 stars appearing similar in brightness. A lone bright star standing out near center is a foreground star and not a true member. Medium and larger scopes may resolve well over 200 stars from 9^{th} to 12.5 magnitude, some are arranged in clumps and strings with dark voids here and there.

We hope you enjoy this month's selection of open clusters. The main thing is that you get out there and observe.

HAC Job Positions Open
for the up coming year beginning
December 1,2007

Refreshments Coordinator(s)

To provide an assortment of beverages and snacks at the monthly general meetings. This appointment can be as simple or elaborate as you want to make it. Find a buddy to share the snack-licious fun!

Publicity Director

To provide newspapers and radio stations with upcoming HAC events. These contacts are already established and a list will be provided.

These Appointments are set on an annual basis to coincide with the Elections.

Contact any Officer or Board Member
to inquire about the positions.