NIGHTFALL
Huachuca Astronomy Club of Southeastern Arizona

HAC MEETING: Friday, November 6, 2009

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

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

HAC ELECTIONS & General Meeting

Star Party Corner

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

Participation is the Lifeblood of the Club!

This will be my last Star Party Corner for awhile; it's been a fun ride these past 5 years and I'm taking a break to concentrate on my Model Ship business. I'll be hanging around and if you all wish it, I'll take a seat on the board in an advisory capacity. I would like to thank all of you for the confidence you placed in me over the years. I have had a great time being your V.P. and Coordinator and I hope that you have enjoyed some of the special events Teresa and I have had out at RGO, namely the Messier Marathons, C-Row events and Club Christmas parties. As you all know, RGO has had an open door policy and that will continue. We are just not going to go to the extent of past years on coordinating massive events, but to come out and spend an evening under the night sky, sure, we're always here.

In turning over the Star Party coordinator position to the soon-to-be "General" James Taylor, someone in whom I have the utmost confidence that he'll whip you all into a regiment of well-disciplined astronomers, "Ten Hut". Ya better have those scopes lined up straight. Anyway, James will bring a new and fresh attitude to when and where you meet and what goes on at those monthly outings. It's sure to be fun!

October's Star Party schedule included the annual HAC member star party and picnic held on Saturday, October 17, at JBO. Although the turnout for the dinner was less than in previous years, the conversation and food were great. Thanks, Dave and Cheryl. This makes 8 in a row doesn't it?! Dave had Big Blue up and running with Bob Kepple and Glen Sanner supplying the outside optics. As the evening progressed there were a few more late arrivals; all in all a pleasant evening with everyone having a great time. The following Friday was the Public Star Party, again at JBO. I was unable to attend so I got the report from Rich who was able to make it. There was a large turnout of both HAC members and public observers. The weather was good and the seeing was reported to be great that night. Rich says that he was showing the entire Veil nebula in his 102 mm refractor with a wide angle 50mm eyepiece which drew lots of attention from the public attendees. Dave gave everyone some spectacular last of the season looks at the Sagittarius showpieces and Jupiter too, a befitting end to the summer observing season.

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President's Perspective

Wayne Johnson "Mr. Galaxy"

Congrats to Doug and Jean Snyder for having a picture of the crescent moon on KOLD news the other night! Don't forget to attend our November meeting. It is election time and it should be a fierce battle at the polls. This meeting is our annual business meeting and I want to try something different this year. I will need your help because, if you read the last newsletter or an earlier email I sent to HACList, I am hoping that everyone who has a club associated task will make a short report on their activities for the past year of 2009. It would be nice if these were written up in Word or Powerpoint so that Del can incorporate the information onto our HAC Website for future reference.

We must thank Dave and Cheryl Healy for again hosting the 8th Annual HAC Picnic at their house. Everything went very well, the food and the company was wonderful, and even the weather held off until we were _almost_ ready to quit! We had about two dozen people in attendance for the potluck and several members brought their telescopes for use after dinner. Bob Gent wrote a nice report on HACList highlighting the observations people made with their telescopes. I hope it appears elsewhere in the newsletter. I _tried_ to write a report about observations made with Dave's monster 32-inch telescope (aka Big Blue) in response to his report from a different perspective. Unfortunately, my email account decided to fail, after I had spent over an hour composing the article, as I sent the message and it got lost in the netherworld of lost emails. I hope it doesn't happen this time because I tried to reconstruct that original message. Anyway, Dave started off the night of observing by setting his telescope on an easy and fun object, Albireo, the blue and gold double star in Cygnus to allow people to get dark adapted. We then proceeded to the wonderful globular cluster, M15, known as "the fly on the horse's nose", in Pegasus, which is a great object for beginner and veteran observers alike. However, it has a very challenging planetary nebula, Pease 1, involved in it. Calvin Hoyt, who is working on objects for his Astronomical League observing list wanted to see if we could detect it. After increasing the magnification to about 400x and using an Oxygen III (O-III) filter to increase the contrast of the planetary, we _think_ we detected it. Two other challenging planetary nebulae were also seen in Dave's scope. We had to decrease the power, but still needed the O-III filter to help detect them. The first was Jones 1, which was a large textured object, while the second, Sharpless 1-47, was mid-sized and a little more subtle. After the crowd had died down, I asked Dave to point to the galaxy, NGC 670, in the constellation Triangulum. I had observed this galaxy the previous night at home with my 25-inch Dob and thought I had seen a little pin-prick of light on occasion where my reference images didn't show anything. I was hoping to find a supernova (SN) in Dave's 32-inch, but Big Blue didn't reveal anything there. Rats, I thought, I hate it when that happens, and it happens all too often! However, we did observe a recently discovered SN in the nice integral sign type barred spiral galaxy, NGC 7479, in Pegasus. It was about 15th magnitude and obvious. Aperture has its advantages because the supernova would have been a challenge in my 13-inch. Finally, we looked at Stephan's Quintet and NGC 7331. We could detect all five members of the Quintet, while the observers outside Dave's dome weren't sure whether they could or not. An interesting thing to note about this group is that the Hubble Space Telescope just took an image of the cluster which highlighted the fact that one of the Quintet's members is actually much closer to us than the other four members, something that is not obvious, even in the 32-inch. After stretching our eyeballs on Stephan's Quintet we wanted one final, fairly easy object. That turned out to be the nice spiral galaxy, NGC 7331, which was only a couple degrees away. Its spiral arms were evident and there were several fainter companions (known as the Fleas) nearby. At that time, the clouds decided to take over the sky and we felt a few sprinkles. Anyway, we had a great time and we even had some visitors from New York State, courtesy of John Messina, come join us in our observations.

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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 .***

Travels on the Celestial Sphere

Pisces, the Fishes

Bob Kepple and Glen Sanner

The last couple of months we have tried to give both small scope owners and those with larger scopes something special to look at. We are continuing that format this month by showing you of a few double stars as well as two galaxies which can be seen in smaller apertures. If you have a larger scope, two galaxies groups will satisfy any desire you have for ancient photons. Of course large scopes will also appreciate the objects listed for small scopes too. If you have a small scope that doesn't mean you shouldn't try to see the fainter objects for large scopes, you may surprised at what you can see.

The 383 Galaxy Group presents and interesting row of Galaxies for larger telescopes.

Small Scope Objects:

35 Piscium Double Star Spectral Type F0 m6.0, 7.6, Separation 11.6", P.A. 148°, R.A. 00h15.0m, Dec. +08°49' 35 Piscium is a very nice double with stars of white and blue.

51 Piscium Double Star Spectral Type A0 m5.7, 9.5, Separation 27.5", P.A.83°, R.A. 00h32.4m, Dec. +06°57' This is a fine wide pair of blue-white and greenish stars.

55 Piscium Double Star Spectral Type K0 m5.4, 8.7, Separation 6.5", P.A. 194°, R.A. 00h39.9m, Dec. +21°26' 55 Piscium is a fine pair with a yellow-orange primary and a blue secondary.

Psi-one = 74 Piscium Double Star Spectral Types A2 & A0 m5.6, 5.8, Separation 30.0", P.A. 159°, R.A. 01h05.6m, Dec. +21°28' Psi-one is a nice wide pair of blue and white stars.

NGC 7537 Galaxy Type SAbc: Size 1.9' x 0.5', Magnitude 13.2v, SB 13, R.A. 23h14.6m, Dec. +04°30'

NGC 7541 Galaxy Type SB(rs)bc:pec II Size 3.1' x 1.0', Magnitude 11.7v, SB 12.8, R.A. 23h14.7m, Dec. +04°32'

NGC 7537 and NGC 7541 form a nice close pair of galaxies. The brighter and larger galaxy is NGC 7541 which has a mottled non-uniform halo extending 3'x1.0' WNW-ESE. NGC 7537, lying 2.5' SW of 7541, has a small, bright core with its halo extended 1.2'x0.5' ENE-WSW.

Large Scope Objects

NGC 383 Galaxy Group

The NGC 383 Galaxy Group is also known as Arp 331 (in Halton Arp's catalog of peculiar galaxies). The brighter members form a nice row or chain of eight galaxies spanning 15 minutes of sky. The NGC 383 Galaxy Cluster is but one of several galaxy groups making up one of the largest galaxy clusters in our sky, the Perseus-Pisces Supercluster which spans over 40' of sky and lies at a distance of 250 million light years (talk about ancient photos)! Considering its distance, the Perseus-Pisces Supercluster is one of the largest known structures in the universe. The eight galaxies making up the row are listed in order rather than right ascension:

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Regarding the recent Orionid meteor "shower", I was out the peak's night - twice! I poked my head out about 11pm and noticed how nice it was so I got out my 13-inch Dob and wandered around the sky looking at galaxies mostly in the Pegasus/Pisces area and wrapped it up with M31 and M33 a little after midnight when I noticed that Orion was just rising and remembered about the Orionids. I didn't notice much, or any, meteoritic activity at that time and went to bed. I set my alarm for 3am and eventually got up and went outside about 4am to see if there was any Orionid activity. I still had my telescope set up and after sitting around for about 15 minutes with only minor meteor activity I decided the night was still nice for telescope observing. I observed the M81 group in Ursa Major, several galaxies in Leo, the Orion nebula, and Saturn (which, strangely enough, looked a lot like the Saturn Nebula with its edge-on rings). While I was looking around to see what else there was to observe through the telescope I saw a couple very nice Orionids. One was about -2 magnitude at 4:35am near the Beehive and Mars and the other was a brighter bolide, but it was near the eastern horizon in Coma Berenices at 4:50am. The people in AZ Sky Village on the NM border probably got a good view of that one! I saw a fair number of faint meteors, but it seemed like half of them were sporadics. I finally went to bed about 5:30am, just in time for the 6am alarm to go to work! I had a very nice night, and saw the Geigenschein in Pisces and the very prominent Zodiacal Light as dawn was approaching.

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NGC 379 Galaxy Type S0 Size 1.5' x 0.8', Magnitude 12.9v, SB 12.9, R.A. 01h07.3m, Dec. +32°31'
NGC 380 Galaxy Type E2 Size 1.3' x 1.1', Magnitude 12.5v, SB 12.8, R.A. 01h07.3m, Dec. +32°29'
NGC 383 Galaxy Type SA0-: Size 2.0' x 1.7', Magnitude 12.4v, SB 13.6, R.A. 01h07.4m Dec. +32° 25'
NGC 382 Galaxy Type E: Size 0.3' x 0.3', Magnitude 13.2v, SB 10.5, R.A. 01h07.4m Dec. +32°24'
NGC 387 Galaxy Type ? Size 0.1' x 0.1', Magnitude 15?, SB ?, R.A. 01h07.5m, Dec. +32°23'
NGC 386 Galaxy Type ? Size 0.2' x 0.2', Magnitude 15?, SB ?, R.A. 01h07.5m, Dec. +32°21'
NGC 385 Galaxy Type SA0-: Size 1.3' x 1.0', Magnitude 13.0v, SB 13.1, R.A. 01h07.4m, Dec. +32° 19'
NGC 384 Galaxy Type E3 Size 1.1' x 0.8', Magnitude 13.1v, SB 12.8, R.A. 01h07.4m Dec. +32°18'

The brightest galaxy in the group is NGC 383 having a bright core with a round 2' diameter halo while NGC 382 appears as a faint spot 40" to its SW. NGC 380, located 5' NNW of 383, is the next brightest galaxy with a circular halo and a brighter core. NGC 379, lying 3' N of 383, is somewhat elongated 1' x 0.75' N-S with a brighter core. The next brightest galaxies, lying 5' and 7' south of NGC 383, are NGC 385 and NGC 384 which appear as a pair of nearly identical faint spots of light both somewhat elongated N-S with very faint stellar cores. NGC's 387 and 386 are extremely faint spots of light 2' SE and 4' SSE of NGC 383 respectively. Be sure to check out this very nice row of galaxies for larger apertures or astrophotographers.

NGC 507 Galaxy Group

The NGC 507 Galaxy Group, is another nice galaxy group in Pisces. NGC 507 is also listed in the Arp Peculiar Galaxy Catalog as Arp 229.

NGC 504 Galaxy Type S0 Size 1.6'x0.4', Magnitude 13.0v, SB 12.4, R.A. 01h23.5m, Dec. +33°13'
NGC 503 Galaxy Type E? Size 0.3'x0.25', Magnitude 14.1, SB ?, R.A. 01h23.5m, Dec. +33°21'
NGC 507 Galaxy Type SA(r)0° Size 4.1'x4.1', Magnitude 11.2v, SB 14.1, R.A. 01h23.7m, Dec. +33° 15'
NGC 508 Galaxy Type E0: Size 1.3'x1.3', Magnitude 13.1v, SB 13.5, R.A. 01h23.7m, Dec. +33°17'
IC 1690 Galaxy Type S0 Size 0.4'x0.3', Magnitude 14.9v, SB ?, R.A. 01h23.8m, Dec. +33°09'
MCG +05-04-048 Galaxy Type S? Size 0.4'x0.3', Magnitude 14.8v, SB ?, R.A. 01h23.9m Dec. +33° 19'

NGC 507, the brightest and largest of the group, lies 6' east of a very nice blue and gold double star. This cluster of six galaxies spans 14' and fits nicely in a medium to moderately high power eyepiece. The data is given above for these objects. NGC 507 has a round halo with a stellar nucleus at center. NGC 508, lying 2' north of NGC 507, is a small round spot of light. NGC 504, located 4' SW of NGC 507, is the next brightest galaxy in the group shining at 13th magnitude. It has a bright core inside a halo having a 3:1 elongation NE-SW. NGC 503 is a faint spot of light 5' NW of 507. IC 1690, also a faint spot of light, lies 7' SE of 507. MCG +05-04-048 is another faint spot of light near two 13th magnitude stars 5' NE of 507. NGC 494 is 10' WSW of 507 and is easily seen as a fairly bright galaxy. NGCs 495, 496, 499 form a nice trio an eyepiece field of view away to the NNW. Other galaxies can be seen in the surrounding area so make sure you hunt for these objects as well. Use Figure 24-19 on

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With that said, I'll be off; but remember that I've promised to return in a couple of years to try a shot at the big seat. I have ideas that will shake this club up like a Six Flags Roller Coaster, just let me build a couple of models first. Thank you!

Member Star Party: Saturday, Nov. 14, 2009 -- Location to be announced!

Leonids Meteor Watch: Monday, Nov. 16, 2009 at JBO. Starts at 6:00 p.m. with the best showers happening after midnight. We'll be there all night, come on out!

Public Star Party: Friday, Nov. 23, 2009 at JBO, 6:00 p.m. Let's finish the season with a big crowd for Dave.

Staring at Lightning

There's something mesmerizing about watching a thunderstorm. You stare at the dark, dramatic clouds waiting for split-second bursts of brilliant light — intricate bolts of lightning spidering across the sky. Look away at the wrong time and (FLASH!) you miss it.

Lightning is much more than just a beautiful spectacle, though. It's a window into the heart of the storm, and it could even provide clues about climate change.

Strong vertical motions within a storm cloud help generate the electricity that powers lightning. These updrafts are caused when warm, moist air rises. Because warmth and lightning are inextricably connected, tracking long-term changes in lightning frequency could reveal the progress of climate change.

It's one of many reasons why scientists want to keep an unwavering eye on lightning. The best way to do that? With a satellite 35,800 km overhead. At that altitude, satellites orbit at just the right speed to remain over one spot on the Earth's surface while the planet rotates around its axis — a "geostationary" orbit. NASA and NOAA scientists are working on an advanced lightning sensor called the Geostationary Lightning Mapper (GLM) that will fly onboard the next generation geostationary operational environmental satellite, called GOES-R, slated to launch around 2015.

"GLM will give us a constant, eye-in-the-sky view of lightning over a wide portion of the Earth," says Steven Goodman, NOAA chief scientist for GOES-R at NASA's Goddard Space Flight Center. Once GLM sensors are flying on GOES-R and its sister GOES-S, that view will extend 18,000 km from New Zealand, east across the Pacific Ocean, across the Americas, and to Africa's western coast. With this hemisphere-scale view, scientists will gather an unprecedented amount of data on how lightning varies from place to place, year to year, and even decade to decade. Existing lightning sensors are either on the ground — which limits their geographic range — or on satellites that orbit much closer to Earth. These satellites circle the Earth every 90 minutes or so, quickly passing over any one area, which can leave some awkward gaps in the data.

Goodman explains: "Low-Earth orbit satellites observe a location such as Florida for only a minute at a time. Many of these storms occur in the late afternoon, and if the satellite's not overhead at that time, you're going to miss it."

GLM, on the other hand, won't miss a thing. Indeed, in just two weeks of observations, GLM is expected to gather more data than NASA's two low-Earth orbiting research sensors did in 10+ years. Space Place Partners' Article October 2009

The new data will have many uses beyond understanding climate change. For example, wherever lightning flashes are abundant, scientists can warn aircraft pilots of strong turbulence. The data may also offer new insights into the evolution of storms and prompt improvements in severe weather forecasting.

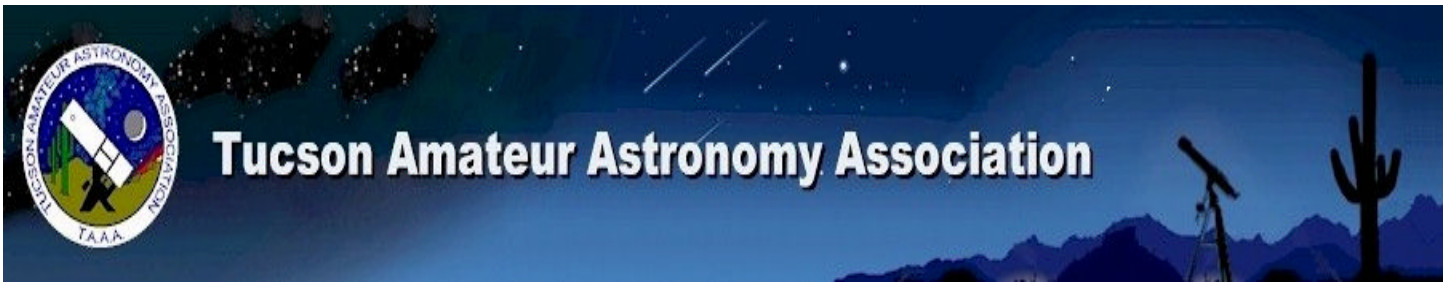
Staring at (FLASH!) Did you miss another one? The time has come for GLM.

Want to know how to build a weather satellite? Check the "how to" booklet at scijinks.gov/weather/technology/build_satellite.

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 Geostationary Lightning Mapper (GLM) on the next generation of GOES satellites will detect the very rapid and transient bursts of light produced by lightning at nearinfrared wavelengths. This image was taken from the International Space Station and shows the Aurora Australis and lightning.



Mark Your Calendars for ALCon 2010

The Tucson Amateur Astronomy Association, the International Dark-Sky Association, and the Astronomical League will be jointly hosting the annual convention of the League from June 24 until 26, 2010 at the Tucson Hilton East in Southern Arizona.

Noted astronomer and comet discoverer, David Levy will be one of the many outstanding speakers. With Kitt Peak National Observatory and other world class destinations, there will be many exciting tour opportunities.

The League will be holding its annual awards banquet, and it will present major national awards during the conference. Among other prestigious awards, the National Young Astronomer Award will be presented.

In addition, astronomy vendors from across the USA will display their latest products. We also expect leaders in IDA's dark sky movement to participate. Keith Schlottman, VP of TAAA, and Bob Gent, Past President of the Astronomical League, are the event's co-chairs. Please mark your calendars and stay tuned for additional updates.