

August
2007



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

HAC MEETING: Friday, August 24, 2007

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

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

Speaker: HAC President, Wayne Johnson

**Topic: Everything you wanted to know about Mirror Making,
but were afraid to Ask.**

Star Party Corner

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

Participation is the Lifeblood of the Club!

The July Public Star Party was weathered out and the Member Star Party at SOLO turned out to be a social session; way to go HACers — we don't cancel Members Star Parties over a few clouds — so there's not much to talk about for July. On the other hand, I have been thinking about the remaining Star Parties (November and December). They will be awarded during the September meeting. I'm going to pull out all the observatories that have already been picked this year and pull from those that have been unpicked so far. This may even up the score somewhat. Another change is the way I'm going to pick next year's Messier Marathon. I believe it's time to open it up and have the members vote on where it should be held. So any member feeling that his observatory, yard or property would be adequate to facilitate the Marathon will have a chance to host it. We will put all the available locations on a sheet and have the membership vote on it. The winner will be responsible to coordinate and host the entire event as they see fit!

August Star Party Schedule

Saturday, August 11: Public Star Party at JBO; I think most of you still haven't seen the newly cleared viewing area there! Let's show Dave some participation and get out there with a scope.

Friday, August 17: Member Star Party back up at Gary Myers' Desert Coyote Observatory. Gary will have the 30" ready for all comers that night.

President's Perspective

A great big THANK YOU to all who attended the 7/7/07 dinner and thanks to all (especially Helen Patterson and Keith/Teresa Mullen) who made the event one to remember for a long time!

The AZ Folklore Preserve was a wonderful location for our event, and the weather timed it just right by pouring during the middle of the event: clear before and done by the time we were. The volunteers from the AFP helped everything run smoothly and we appreciate their assistance.

The food was great, though we have to discuss with the cake decorator that we are not the Huachuca "Astrology" Club! I hope those who didn't win astronomical prizes, but won leftovers instead, enjoyed their meals the second time around; Arlene and I did!

It was great to hear the memories from our past presidents! I think it helps members associate faces with names and helps us understand what happened and who did what to make our club the great organization it is today. I especially enjoyed HAC Founder David Patterson's reminiscences, but each president had a story to tell. I just wish I had had a video recorder for the event!

Of course, what can you say about David Levy, our guest speaker? His talks are always informative and inspirational. Thanks, David and Wendee, for spending our special day with us, you made it an even more memorable time!

We wrapped up the event with about a dozen door prizes that Keith was able to round up from various vendors. Some people walked away with very nice prizes. Congratulations to them!

I wouldn't mind having a semi-formal event like this every year as a complement to Dave Healy's star-gazing potluck, which is also most enjoyable. However, there is something about seeing people dressed up nicely (rather than just against the cold!) and actually seeing their faces (and sometimes their better halves), something that is not usually done in a star party setting. Is there any feedback one way or the other? Hold it every five years, etc.?

Clear skies (what's that?),

Wayne (aka Mr. Galaxy), your resident president

Dollar\$ & Cent\$

Tim Doyle

The Club has a Checkbook balance (mid July) of \$4671.79. This amount reflects the 25th anniversary dinner July 7th.

We still have club T-shirts XXL & medium (\$10) sweatshirts hooded and non-hooded. XL, XXL, available at \$10 & \$20 (this is below our cost).

Outreach Biz

Jeanne Herbert

Since there are no scheduled outreach events in the near future I would like to take this opportunity to thank all of you that have helped out in the past months. You know who you are! The sharing of your time and knowledge with the children involved in these events is wonderful for me to watch and is appreciated immensely.

Thank you!!

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_hrbt@yahoo.com / 366-5690 (early evenings);

Loaner Scopes: Gary Myers 432-4433; Newsletter Editor: Teresa Mullen, nightfall@hacastronomy.com / 366-0049

About the 8/24 Topic and Speaker ...

Very few people nowadays make the optics for their telescopes. Most buy a completed telescope and a few will buy the parts and assemble them. This talk/demonstration will concentrate on what is involved with grinding and polishing a mirror (not lens) for a standard reflecting (or Newtonian) telescope. There will be a few mirror blanks available for attendees to get a feel for what the art and science of making a mirror is like.

Wayne Johnson (aka Mr. Galaxy) is the current president of HAC and has been involved in amateur astronomy since the age of five. He ground and polished his first mirror at age 13 using paper delivery money to purchase the mirror blank from Edmund Scientific. Mr. Galaxy has several mirrors to his credit and led mirror making classes for many years at astronomy clubs in Southern California.

**Double & Multiple Stars**

By Bob Kepple & Glen Sanner

Double and Multiple Stars come in all sorts of colors, separations, and brightness and can be very fascinating. The wider pairs are well suited for small telescopes and the very widely separated pairs may even be seen with binoculars. I often observe double stars when deep-sky objects such as nebulae or galaxies may be not be at their best, especially when the moon is out or the night sky is a little hazy. It is interesting to note that there are more double and multiple stars than single stars in the universe. There are two types of double stars, *optical* pairs and *physical* pairs.

Optical pairs are simply stars that appear close because of their line of sight to us, one star, usually the fainter of the pair, may be much more distant than the other.

Physical pairs may be binaries or have a common proper motion. Binary stars are in actual orbit around each other with the more massive star exerting the most influence upon the other. Keep in mind that the sun has more gravitational influence than its entire solar system of planets. Binaries may be so close that they may take only hours or days to orbit each other, or they can be so far apart that the secondary star takes hundreds or even thousands of years to make an orbit. Stars that have a common proper motion (CPM) are traveling in space together and may once have been part of a star cluster but for some reason the gravitation influence that bound them to the group has decayed, perhaps by an encounter with another group that ejected the stars from their former group.

The brightest member of a double or multiple star is called the primary and is designated as the "A" component. The fainter member is called the secondary and is

(Continued on page 5)

How To Post a News Article to the HAC Web Site Del Gordon

It's your turn to share astronomy club news! Calling all aspiring journalists, astronomers, and anybody that wants to share club news; this is news about the News interface on the club's Web site. You may have noticed the Huachuca Astronomy Club (HAC) Web site (www.hacastronomy.com) has had a new look and feel for a few months. Part of this transition is to let you, the club member, have more control and participation in sharing information. The Web site has some new features that let you participate in the club's Web site without the wait of having a webmaster post your information. Some of these features include classifieds ads, a discussion forum, and news articles. *Nightfall* will occasionally include an article describing these features, to get you going on the Web site.

The News feature on the Web site allows club members to become "star" journalists, add news content, or just update their own observatory pages. All you need is an Internet connection, and a recent Web browser, such as Internet Explorer, Netscape, Safari, Firefox, and so on, to start adding content to the HAC Web site.

If you are interested, or would like to manage your observatory page on your own, we can get you started. You will first need a *login* name and *password*. A detailed user's guide is available that describes step-by-step how to add a news article, and it includes annotated diagrams and screen shots. Don't worry if you have problems, we can also support you over the phone, or provide a short training session to get you comfortable with the procedures.

The following general steps briefly explain the procedure to upload a news article to the HAC Web site. If you need more detailed procedures, please send e-mail to: webmgr@hacastronomy.com and request the document, "How To Post a News Article to the HAC Web Site." A Portable Document Format (PDF) file that contains detailed steps with annotated images will be sent to you. This PDF file will not be posted on the Web site for security reasons.

Step 1. News Account. First, you need an account name (also known as "Username") and password. If you are a HAC member, you may request a News account by sending e-mail to: webmgr@hacastronomy.com. Send your name and your street address (only used for member verification purposes).

Step 2. Log On. Once you have your account name and password, access the following URL with your Internet browser: <http://hacastronomy.com/news>

The news "Login" page will be displayed. You will see a page with a Username and Password prompt, such as the following (see Figure 1).

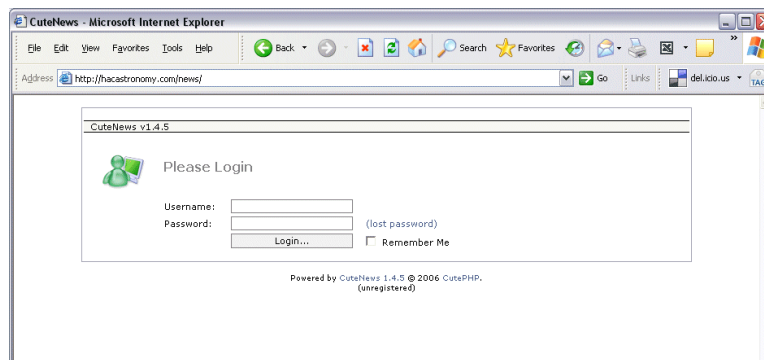


Figure 1. The HAC News Login Screen.

Enter your *username* and *password* into the text fields, and then select the **Login...** button. The "Welcome" home page then appears, similar to the following (see Figure 2).

Note: Do not use the "Remember Me" checkbox on public computers, or computers to which other people have access. This is a security precaution that helps prevent non-authorized user access.

(Continued on page 6)

(Continued from page 3)

designated as the "B" component while any fainter companions are lettered as "C", "D," and so forth by decreasing brightness. In double star data the A component's magnitude is given first, then the B component's, then the separation between the stars in seconds of arc, and finally the direction (position angle) from the primary to the secondary. North is 0 degrees, east 90 degrees, south 180 degrees, and west 270 degrees. In a telescope with an inverted view, which is the case with most astronomical telescopes, south will be up. In multiple star data you may see "AB" which is the data for the primary and the second brightest star followed by "BC" which means that the additional data is the magnitude, separation, and position angle (PA) of the B and C components. These letters may also be followed by AC, AD, etc. if there are more components.

The best thing about observing double stars is their aesthetic appeal. I especially enjoy pairs that exhibit color. A close pair of equally-bright stars is a beautiful sight while other brightness combinations and separations give an endless variety. The glow of a minute star-spark of a faint component next to bright star is something that photographs simply cannot capture. Aperture plays a large part of what may be visible. Very close pairs, less than 2 arc seconds apart, may not be separated ("split") by telescopes with 2 or 3-inch of aperture but this is not a problem as there are thousands of wider pairs to observe. Often the small telescope shows better color rendition than a large scope because the light grasp of the larger instrument overwhelms the eye making the color impossible to see while at other times the larger scope is needed to detect subtle hues. So you see, there are doubles for any size telescope. After you find these examples I hope you will continue to look for more doubles. Most astronomy books give a list of the finer pairs. Star charts show a slash through the star to indicate that it is a double. The following are some of my favorites and are easy to find:

6 Beta Cygni Mags. 3.1, 5.1, Sep. 34.0", P.A. 54° RA 19^h30.7^m Dec +27° 58'

Albireo is a favorite for most observers and is first on the list because the absolute beginner will find it easy to locate at the foot of Cygnus, the northern cross (also known as the Swan). It has two of the most colorful stars in the heavens with a beautiful golden-yellow primary and a blue secondary. 50x to 75x is all that is needed on a small scope to see this fine pair.

12 Gamma Delphini Mags. 4.3, 5.1, Sep. 9.6", P.A. 268° RA 20^h46.7^m Dec +16° 07'

Gamma Delphini marks the nose of the Dolphin making this pair also easy to find. Here again you will find a yellow primary but look closely at the secondary – do you see blue or green? Most see blue or bluish but I always see the companion as green which is a very rare stellar color as most stars do not fall into the temperature range that emits green. Use 100x or more.

(Continued on page 7)

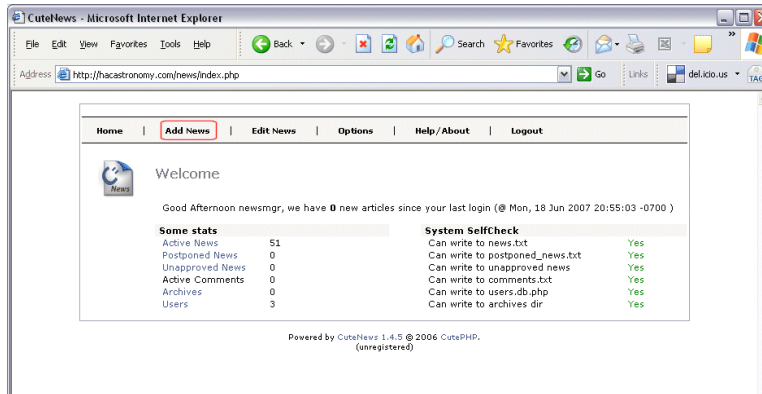


Figure 2. The “Welcome” Home Page for the HAC News Web Interface.

Step 3. Add News Text. At the top of the News page, you will see several options: *Home*, *Add News*, *Edit News*, *Logout*, and so on. To add a news article, select the **Add News** option. The Add News screen will be displayed.

Step 4. Add Pictures. (Optional) Adding pictures is optional. If you want to add pictures to a news article, select the **[insert image]** link on the right side.

Step 5. Edit the Article. (Optional) You may need to further edit the text to correct typos, move any image thumbnails, add smiley icons, and so on.

Step 6. Upload the News Article. When finished editing, select the **Add News** button. This function saves the news article to the Web server.

Step 7. View the Article. You can now view the news article on the Web. Select the appropriate URL with your Internet browser to view the updated Web page. Most news pages have predefined links. Usually, a specific news category has a specific page, or URL. For example, the following URL displays the “Club News” category:

<http://www.hacastronomy.com/newsfeed.php>

The observatories each have their own news feed page. For example, to access the JBO news, use the following URL:

<http://hacastronomy.com/jbofeed.php>

Or, use the HAC Web site’s menu system to view a news category: From the main menu, select, for example:

Observatories → Junk Bond Observatory

You may access the “Club News” by selecting from the main menu:


News & Events → Club News

Step 8. Update an Existing Article. (Optional) Many times, you may need to update an article later. Use your Internet browser and navigate back to the News interface URL:

<http://www.hacastronomy.com/news/index.php>

Select the “Edit News” link at the top of the page. The “Edit News” page will be displayed.

Note that you may need to select the “Refresh” or “Reload” function on your Internet browser to see any changes. Select the

“Refresh” button () to ensure the Web page displays the latest data. From the browser’s main menu, you can also select the option:

View → Refresh

Step 9. Log Out. When you have finished using HAC News, please log out. Select the **Logout** button from the News home page to log out.

This ends the basic procedures for posting news articles on the HAC Web Site. Please remember that there is a detailed procedure with annotated diagrams available. If you have any questions or comments, please send e-mail to: hacmgr@hacastronomy.com. Now dust off your keyboard and get your HAC journalist fingers typing.

Backyard Astronomer – Neal Galt

What's up? Certainly not Mercury, Venus, or Saturn. They have gotten themselves lost in the solar glare as they change from one sky to another (morning and evening) You might be able to spot Venus in the morning sky before August is over, but for the most part all three planets are out of touch.

Jupiter is King of the evening sky. You can spot it halfway up the southern sky when the sun sets.

Mars is the coming king....but, you'll have to wait until November to see it well. Right now it is rising just after midnight and it's starting to brighten up as it gets closer to earth. By December it will be rising as the sun sets. But, only the months of November, December, and January will really give us good views of the red planet. The bigger the scope....the better, when it comes to seeing this tiny planet.

A morning eclipse of the Moon on 8/28/07. Be sure to check the HAC e-mails for news on this. Everyone will want to see this one, as it will be well positioned for Arizona.

Want to see a Meteor...a Shooting star? The evening of the 12th or the morning of the 13th will be your best shot. The Perseid meteor shower is usually very good with lots of bright members.

(Continued from page 5)

Xi Scorpii AC: Mags. 4.8, 7.3, Sep. 7.6", P.A. 51° RA 16^h04.4^m Dec -11° 22'

Xi Scorpii lies due north of the three stars forming the head of the Scorpion and about half way to Ophiuchus. The AB stars of Xi Scorpii are only 0.5" apart and are a very difficult split but the AC stars are easy with colors of yellow and blue. Look for Struve 1999, a deep yellow pair of magnitude 7.4 and 8.1 stars separated 11.6" apart. 100x will show both pairs in the same field.

64 Alpha Herculis Mags. 3.5, 5.4, Sep. 4.7", P.A. 107° RA 17^h14.6^m Dec +14° 23'

Ras Algethi marks the right (east) foot of the strongman, lying just north of Ophiuchus well away from the well-know keystone that forms the body of Hercules. This pair has a deep-yellow or orangish primary with a bluish secondary. Use about 150x.

20 Gamma Herculis AB: Mags. 3.8, 9.8, Sep. 41.6", P.A. 233° RA 16^h21.9^m Dec +19° 09'

BC: Mags. 9.8, 12.2, Sep. 84.7", P.A. 298

Move over to Hercules' other foot, Gamma Herculis which marks the left (west) foot. It is triple star with an unequally bright AB pair of pale yellow stars easily separated by small telescopes at 50x to 75x. The C component is a 12th magnitude star showing little color and lying twice as far away as the AB pair.



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Visit us on the web at <http://hacastronomy.com>

Volume 8 Issue 8, page 8 Teresa Mullen, Editor

(Continued from page 7)

4 Epsilon-1 Lyrae Mags. 5.4, 6.5, Sep. 2.6", P.A. 357° RA 18^h44.3^m Dec +39° 40'

5 Epsilon-2 Lyrae Mags. 5.1, 5.3, Sep. 2.3", P.A. 94° RA 18^h44.3^m Dec +39° 40'

Lying just east of Vega the fifth brightest star in the sky at 0.04 magnitude, Epsilon Lyrae is the famous double-double which is a test of your optics. If your small refractor is of good quality on a steady night you can separate or "split" these two pairs at about 150x. All four stars appear white or slightly yellowish.

Struve 2470 Mags. 6.6, 8.6, Sep. 13.4", P.A. 271° RA 19^h08.8^m Dec +34° 46'

Struve 2474 Mags. 6.7, 8.8, Sep. 16.2", P.A. 262° RA 19^h09.1^m Dec +34° 36'

Struve 2470 and Struve 2474 are Lyra's lesser-known double-double lying midway and east of the parallelogram that forms the Lyre's body. Use 100x and you should be able to sweep up these two pair. Struve 2470 has white and bluish-white stars while Struve 2474 has pale yellow stars.

If the monsoons give you a clear night, get out there and find these interesting doubles. If you enjoyed them, you can find many more double stars by using a good star chart or book. Part of this material was taken from *The Night Sky Observer's Guide* by the authors with permission from the publisher Willmann-Bell, Inc.