

March 2007

HAC's 25th
Anniversary Year!



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

+++ HAC MEETING: THIS Saturday, March 3, 2007 +++

Speaker: Adam Block, Astro-Imager

Title: "Making Every Pixel Count in Astronomical Images"

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

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

Star Party Corner

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

Participation is the Lifeblood of the Club!

“NO MORE, NO-GO”

With Wayne talking about shuffling back to Buffalo and the rest of us digging out from under the deepest Sierra Vista snowfall in years, this frost bite winter kept coming after us. But, we prevailed with a string of well staffed and attended Star Parties. It started with a group of Bisbee girl scouts coming to RGO in hopes of earning their astronomy badges, 16 in all, with some parents in tow were treated to lectures by Doug Snyder, Wayne Johnson and Scott Schneeweis while Bob Kepple and I tended to the scopes and observing portion of the evening, we learned they all passed the quiz and got their badges. The next evening luck was again with us for a few hours of decent observing as 23 members Converged on Bob and Barb Kepple's DSO for the Members Monthly Star Party. This was the first of the New "NO MORE, NO-GO" Star Parties, meaning we don't cancel them any longer for inclement weather, if there is one scheduled, it goes on as scheduled as a Members chat session or show and tell, whatever, they're ON! The following Friday found over 30 visiting JBO for the Public Star Party where Doug Snyder and I displayed some rather old but unique equipment given to us to help find homes for (more on this on page 3) while Dave thrilled another of Kim Rogalski's college classes with spectacular views on Big Blue.

March Star Party Schedule

Thursday March 1st Outreach Star Party at Huachuca Oakes Camp, the second of several scheduled there this spring.

Saturday March 10th- Public Star Party at JBO, let Dave swing Big blue around to some of the upcoming spring objects, bring your scope and stay awhile too!

Saturday March 17th Combines the Monthly Members Star Party with the Messier Marathon, this months event will be held at Keith and Teresa Mullen's RGO and weather permitting will be another "All Nighter" like last years. We are planning on having different categories of Certificates available this year compared to last years only Certificate of Achievement and Merit, to see one, you'll have to earn one. As we did last year, there will be a Breakfast Club meal served to any and all who are still at the eyepiece at sun-up. There is still room for suggestions on how and what we do that evening, so if you have an idea, call me at 366-0049 and together we can maybe Shake thing up some more!

Monday March 26th. Outreach Star Party at the Pueblo Del Sol Elementary school, we could Use a few more volunteers for this event; call Jeanne Herbert at 366-5690 to volunteer.

Thursday March 29th. Outreach Star Party at Meyers School on Base, we need help here too, call Jeanne Herbert at 366-5690 to volunteer, any type or size of scope would be appreciated.

PRESIDENT'S PERSPECTIVE
Wayne Johnson

Believe it or not, the weather is starting to improve and it is time to shake off the dust of our own individual telescopes, and stop depending solely on our more than gracious observatory owners, though I am happy to see and hear of the large numbers of members and guests in attendance at our star parties! We have depended on others to find interesting objects for us and have gazed in wonder through the eyepiece at what our hosts have found. Now, however, it is time for many of us to put some of the skills we have "learned" from our teachers and their telescopes and apply ourselves to using our own instruments to see what we can find for ourselves in the sky. There is a huge feeling of accomplishment in locating some special object in the sky through your own telescope, be it the moon with its wondrous craters, a star that for all appearances seems to be single to the unaided eye only to appear double or multiple (or perhaps even a planet!) through the eyepiece, or one of the multitude of "invisible" nebulae in the sky that turn out to be newborn or dying stars or small to vast star systems in our own galaxy or turn out to be galaxies themselves at unimaginable distances outside of our Milky Way. You can put your observing skills to practice at the HAC's annual Messier Marathon, which is rapidly approaching and is a fun

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Dollar\$ & Cent\$

by Tim Doyle

The Club Checkbook balance as of (mid February) is \$3,488.19.

Club T-shirts: we still have XXL & Medium Sweatshirts available for \$10 & \$15. (below cost)

We would like to **Welcome** our newest members...
Dale & Carolyn Willey and David Reinert.

I would like to ask all to look at their mailing label, you should have the date of Jan 08 included. If you don't either I have made a mistake or you are letting your membership lapse. Please see me or call me 378-5121.

Outreach Biz

by Jeanne Herbert

Mark your calendars...

March 1st, April 26th, May 3rd and May 10 at the Huachuca Oaks Camp Site in Hereford. We've been invited to Science Camp to share our love of the night sky with all its wonder and awe. The Science Campers are 3rd through 6th grade and will be in groups of 10 for observing and hearing tales about the night sky. These Thursday evening events will last about 2-2 1/2 hours.

March 26th at Pueblo del Sol Elementary School & **March 29th** at General Myers School (Ft. Huachuca) for 2 nights of viewing with elementary students and their parents. This is a school wide event bringing forth the opportunity to spark imaginations and enthusiasm of amateur astronomy!

Everyone (beginner to veteran) are needed out there with your scope or bino's to share your passion with these youngsters and parents.

Call 366-5690 or see me at the meeting for more information and to sign up! Thanks in advance!

Editors Notes...

As the new Editor I'd like to say THANK YOU for your Praise and Support!

☺ *HAPPY St. PATRICK'S DAY 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;

Treasurer: Tim Doyle 378-5121; Secretary: Jeanne Herbert, 366-5690

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

Outreach Events Coordinator: Jeanne Herbert, jeanne_hrbt@yahoo.com / 366-5690 (early evenings);

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

About the Speaker ...

Adam Block will bring his expertise as an imager and teacher to the Saturday, March 3, 2007 Huachuca Astronomy Club meeting in a special version of his well-known "Making Every Pixel Count in Astronomical Images" workshop. He will start from scratch and show us how to produce stunning images from average Astro-photos.

Adam was the Lead Observer for Public Programs at Kitt Peak National Observatory for nine years, and has recently established a business called the **Caelum Observatory** to promote public outreach in astronomy and offer premier access to the universe for the amateur community. His experience has been translated into a series of videos that have been named a Hot New Product for 2007 by *Sky and Telescope* magazine.

The Clothes Line...

"New Sweatshirts Have Arrived"
"For those members at the February meeting who specifically informed me that they wanted the new style sweatshirts (not t-shirts!), I will have them at the March meeting, plus a very few extra. The 3 styles are 1) hooded, no zipper; 2) crewneck, no hood, no zipper; 3) hooded and with zipper. The HAC design on the back matches the design on the t-shirts. The cost is \$30 each, regardless of style. These are quality sweatshirts." Thanks, Doug

"Vintage Telescopes For Sale"

An astronomer in Bisbee is selling two vintage telescopes and he is very eager to get these telescopes to a 'caring' home, preferably local. There are photographs of these two telescopes on the home page of the club's website.

One of the telescopes is an early 80's version Celestron C8 with pristine optics and a working tracking drive. This scope is an 8", f/10 Orange Tube model and comes with an 'AccuTrack' Drive Speed Control. Also included are several Celestron eyepieces (Kellner's) and of course the tripod as well as the original storage trunk for the telescope.

The second telescope is a 5", f/15 Singlet Lens Refractor which features a stainless steel OTA. The length of this tube is about 6 ft. It comes with a high pier and best of all, a Byers 58 German Equatorial Mount (dual axis). This Bisbee astronomer also has numerous other items for sale, including a rolling wood cabinet used to store all of the associated refractor parts. Serious offers can be presented to either Keith Mullen or Doug Snyder (520.366.5788)

Monoceros, the Unicorn

By Bob Kepple

This month gives us a last chance to observe some of winter's celestial gems before they are gone for another year. Spring is galaxy season, so we'll devote an article to galaxies next month. Every one looks at M42, the Orion Nebula, which is understandable because it is so easy to find and deserves attention because it is such a fine object, but the poor Rosette Nebula is neglected because it lies among the faint stars of constellation Monoceros. Most people can not readily sort out Monoceros without a star chart but it harbors quite a few objects worth finding. Monoceros lies between the bright stars of Orion to the west, Procyon in Canis Minor to the east, and Sirius which resides in Canis Major to the south. This month there is no accompanying star chart because most people have GOTO scopes or digital setting circles. Individuals that star hop already have star charts to aid in star hopping so I feel that the three to four hours required to make a star chart is redundant and I have better things to do. *Objects are rated from one to five asterisks; the more asterisks the brighter and more interesting the object.*

*****NGC 2237-39 Emission Nebula dia. 80'x60' 06h32.3m +05°03'

The **Rosette Nebula** is one of the most overlooked of the large emission nebulae. This nebula is an easy object in 10x50 binoculars on a clear, dark night. Even without a filter its wreathlike annularity is visible in a wide-angle eyepiece through larger scopes, however, adding a UHC or an O-III filter turns this object into a real showpiece, even in small scopes

William Herschel discovered the nebula and assigned a different numbers to each portion that he saw as independently visible. Hence the brightest segments of the Rosette have the NGC numbers 2237, 2238, 2239, and 2246, though the whole object is customarily designated NGC 2237. The apparent size of the Rosette is astonishing: it is over one degree in diameter and therefore covers an area four times that of a full moon (be sure to observe this object without the moon present, it needs a dark sky to be fully appreciated).

The Rosette Nebula is estimated to be 4,900 light years away. Hence its true diameter is 90 light years. The "central hole's about 30 light years across. Within this "hole" is the nebula's involved open cluster, NGC 2244, whose young super-hot O-type stars provide the ultra violet radiation which fluoresces the nebula's gas. Calculations of how long it would

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Backyard Astronomer by Neal Galt

What's up? An eastern coast lunar eclipse on March 3, 2007. Not worth our time.....all over by the time the moon rises in Arizona. Much better one is scheduled for August 28th, 2007. Venus is that bright one over the western horizon after sunset. It'll get so bright by July that I'll get UFO reports weekly! Don't bother with the telescope...YET! Try after May 1, 2007 and through July. Much better views. You've got to see Saturn in a good sized scope. The rings are well exposed and Saturn is about as close as it gets. More astronomers became astronomers because someone showed them Saturn than any other single thing (according to The Backyard Astronomer). Jupiter is in quadrature, don't let that BIG word mess with you. Just know that right now is the best time to see the eclipses of the Jovian moons, the shadows and transits. It's all in the angle....and right now the angle is the correct one. Mars and Mercury...BLAH! Too close to the morning (eastern) horizon! Plus....who's up? Only Doug.

The Delta Leonid shower (2/25/2007) may be OK for a few slow moving dim meteors. The Virginids might give us a few slow moving BRIGHT shooting stars at any time during early March.

Hey...it was a really great public star party at Dave's on 2/16/2007.....but, we need more members there to help with the public...and LEARN how to help! Show up...views through Dave's 32" scope are amazing and Soooooo convenient. Only a two step ladder is ever needed. Others with scopes do such a great job relating to the "Greatest Show from Earth!" and showing all those delightful views as seen through medium sized scopes.

Thanks to everyone.



"A view of Saturnian Moons" by Glen Sanner

Bob Kepple, Lou Behrman (fellow amateur from Philly) and myself observed Saturn Tuesday Feb 13th about 1AM. We had a very nice view of the planet with the 22" at Desert Starlight Observatory. We were able to observe 7 moons of the planet with clarity and may well have been able to see an 8th moon (Mimas) if we would have been willing to stay up until about 3AM with the help of Guide 8 (project Pluto software) the following day I was able to determine which moons were seen by there relative positions the night before.

The observation:

Hyperion (hi-peer-ee-en) was the western most moon about 10 Saturn-radii from the center of Saturn at magnitude 14.2. Discovered in 1848, Hyperion, in Greek mythology was a Titan, the son of Gaea and Uranus and the father of Helios. It is heavily cratered and irregular in shape (potato shaped). This moon was the most difficult to see this evening. Rhea was the next easterly seen moon at magnitude 9.7 about 6 Saturn-radii from Saturn's center. Rhea, in Greek mythology was named after the sister and wife of Chronus. She was also the mother of Demeter, Hades, Hera, Hestia, Poseidon and Zeus. Rhea was discovered in 1684 and is 950 miles in diameter and the second largest Saturnian moon. Iapetus (eye-Ap-i-tus) was next easterly seen at magnitude 10.9 about 5 Saturn-radii from Saturn's center. Iapetus in Greek mythology was a Titan who was the son of Uranus and the father of Prometheus and Atlas. The moon was discovered in 1671 and is 907 miles in diameter. Tethys (TEE-this) was next easterly at magnitude 10.2 about 3.5 Saturn-radii from the center of Saturn. Tethys was a Titaness and sea goddess, both sister and wife of Oceanus. Discovered in 1684 it is 652 miles in diameter. Enceladus (en-SELL-ah-dus) was next easterly at magnitude 11.7 about 3 Saturn-radii from the center of Saturn. Enceladus was a Greek Titan defeated in battle by Athena and buried under Mt. Etna. Enceladus has the highest albedo of any known object in the Solar System, reflecting almost all of the sunlight it receives. It is 311 miles in diameter and was discovered in 1789. Titan was next seen about 5 Saturn-radii NE of the center of Saturn. It is at magnitude 8.3 and very easily seen due to its size and brightness. It is the second largest moon in the Solar System, discovered by Christian Huygens in 1655. It has a diameter of 3200 miles and is larger in diameter than Mercury but not as massive. Dione (dy-OH-nee) was the most easterly seen moon at magnitude 10.3. She was a Titaness and the mother of Aphrodite. Discovered in 1684 by Cassini, Dione is 696 miles in diameter. It is an icy world with a rocky core. The planet Saturn was seen at magnitude 0.0 and is 8.2 AU from Earth, light travel time 1 hr 08m 12.6sec. Elongation from the Sun 176.91 degrees, it is in the constellation Leo and is 20.17" in diameter. All of the material in this article was taken from sources on the internet. You can find this material at the following addresses:

[http://www.seasky.org/solar system/sky3g5.html](http://www.seasky.org/solar_system/sky3g5.html) <http://www.calsky.com/cs.cgi> <http://en.wikipedia.org>



Huachuca Astronomy Club, 2007 Messier Marathon by Keith Mullen, Messier Marathon Coordinator

It's again time to pay homage to Charles Messier, thanking him for including those 110 objects in his "don't go there" catalogue. Now While Masseur Messier seemingly thought little of these celestial fuzzies, we find them the most wonderful telescopic objects in the heavens. Why do we get all worked up every March when over the course of a few nights, all 110 of these objects are observable to those who endure an entire night, (Yeah, from Sun-down to Sun-up) behind an eyepiece?

This year like last, the Messier Marathon falls on the same night as the Members Star Party, this year, it's Saturday night March 17th (St. Patty's Day) through Sunday morning March 18th and is being held at Keith & Teresa's RepoGazer Observatory (RGO). Being the monthly members Star Party, everyone is encouraged to come out with your scope and enjoy the evening. For those of you interested in attempting to observe all 110 objects, we highly recommend that you arrive at least an hour before sunset to have the needed time to get your equipment set up and make all the preparations required to have a successful Marathon. Timing is critical and following a certain observational sequence is key to being able to locate those objects between the evening and morning twilight periods. Sunset on Saturday the 17th is 6:30 pm local time with astronomical twilight being 7:51 pm, while Twilight on Sunday morning the 18th arrives at 5:06 am with sun-up coming at 6:27 am and old Mr. Moon shows it's face at 6:16 am. As an added attraction there will be an occultation of Pluto Sunday morning, afterwards breakfast will be served (continental style) to any brave soul still up and at it whether duct taped to the eyepiece or actively searching for that last and hard to locate M-30!

Sequence sheets will be provided along with snacks and hot drinks, even a resting and warming area for when that middle of the night pause in the action arrives and M's are scarce for a few hours. RULES, there ain't no rules, find them any way you can, use GO-TO, Star hop, peek over your shoulder at where Bob and Glen's scopes are pointed, just find as many as you can. Certificates will be awarded to those who attempt or complete the Marathon. I would like some suggestions on some different categories of locating techniques, like trying to get a digital shot of each through the eyepiece, or try a team Marathon, or even adding a planetary marathon (I think 5 planets may be available) anything to mix it up and add to the evenings enjoyment, so give me a call at (520) 366-0049 and tell me what you think!

Presidents perspective continued from page 1

event for all to participate. I'm sure there is more information in Keith's article giving details about the event. If you haven't already, start practicing your observing now! Get familiar with the location and appearance of individual Messier objects through your telescope. What helps me ingrain the object in my mind is finding out information about the object: what type of object it is, how far away it is, and is there anything unique about it. Our committee of one (Helen Patterson, so far!) for the upcoming HAC 25th Anniversary celebration has surveyed a number of venues in Sierra Vista and has decided that the event will be held at the Arizona Folklore Preserve in Ramsey Canyon. We are planning to have it on the 7th of July this year (that's right – 7/7/07 – an easy date to set aside for an enjoyable evening of good food, a good speaker, and good prizes!). It's not too early to start planning to attend this fun event. If you know of former members who might be interested in attending, please let them know about it, the facilities can only hold 70 people. Clear skies, your resident President, Wayne (aka Mr. Galaxy)

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take the radiation pressure from these O type stars to clear out the “hole” in the Rosette Nebula suggest that the stars began shining less than half a million years ago, quite young considering that the best estimate of the Universe’s age is some 15 billion years. Star-formation is probably still occurring within this complex. As you observe the Rosette you can see bright nebulosity silhouetted against thin, dark strands of dust and tiny opaque “globules,” the latter very likely contracting into protostars. The initial “push” to get dust clouds in the complex to begin gravitational contraction into globules, and ultimately into protostars, could come either from the radiation pressure upon such clouds from the O stars of NGC 2244 or from the outward expansion of the relatively hot Rosette Nebula itself into surrounding cool material.

Small scopes will show a 25’ diameter cluster of at least three dozen 6th to 12th magnitude stars embedded in traces of nebulosity. Medium sized instruments will show several dark lanes snaking across the faint, annular glow of nebulosity surrounding the bright open cluster NGC 2244. The fifteen brightest cluster stars fall along two NW-SE parallel rows, but some fifty stars may be seen. The bright star at the SE side of the cluster is 12 Monocerotis (m5.8), a fine star with yellow color that contrasts well with the bluish O type stars of the group, but this star is only a foreground object and is not involved with the Rosette Complex. The use of a UHC or an O-III filter is a must. These filters enhance the nebula considerably and bring out fine details of glowing streaks, swirls of nebulosity, and dark lanes. Two dark globules in the western and northern sections are especially noticeable. Observe the Rosette the next night you spend at the telescope, you owe it to yourself if you haven’t looked at this object recently.

****NGC 2261 Emission & Reflection Nebula dia. 3.5’x1.5’ 06h39.2m +08°44’

Hubble’s Variable Nebula is a peculiar nebula enveloping the erratic variable star R Monocerotis. William Herschel first observed this object in 1783, and the variability of the associated star was noted by Schmidt in 1861, but it was Edwin Hubble who noted the Nebula’s variability from a series of photographs made in 1916. By the way, photographs of this object were the first to be made through the 200-inch Hale Telescope at Mt. Palomar in 1949.

The variations in brightness, shape, and detail of the nebula seem to be caused by shadows cast through it by dense dust clouds drifting near its illuminating star, R Monocerotis (this always sounds like some dreaded disease). In the eyepiece the nebula has the appearance of a comet, with the star forming the comet’s nucleus. The southern edge of the nebula fans outward to the north appearing as the comet’s tail. Hubble’s Variable Nebula is believed to be an outlying member of the huge NGC 2264 nebulous complex centered about 3,000 light years away. NGC 2261 is about 3 light years long and 1.5 light years wide. R Monocerotis has the luminosity of 80 stars the size of our own sun. The features in the nebulosity change unpredictably and without regard to the light variations of R.

NGC 2264 *Emission Nebula & ****Open Cluster dia. 35’x15’ 06h41.1m +09°53’

The **Christmas Tree Cluster** is a large, bright cluster easily visible in finder scopes and binoculars. When viewed at low power in normal inverting astronomical telescopes, with south up, its shape resembles a Christmas tree. However, I feel that M103 in Cassiopeia forms a better Christmas Tree. NGC 2264 spans half a degree and contains 20 bright stars and another hundred or so fainter stars. At the base of the tree lies the brightest star in the group, 5th mag. variable star 15-S Monocerotis, a visual pair with an 8.5 mag. companion 3” away in position angle 213 degrees. The cluster is embedded in an extensive but tenuous nebulosity which may be glimpsed with larger scopes on a clear, dark night using filters. The cluster is nice in small scopes but the nebulosity needs a large scope at low power to appreciate its faint wispy streaks. At the south edge lies the famous “Cone Nebula,” a beautiful object on photos but very difficult to detect visually. See if you can find it.

The cluster spans some 20 light years and lies about 3,000 light years away. It therefore is a foreground of the Rosette complex to the south, but is nearly twice as far from us as the nebulae and super-giant blue stars in the Belt and Sword of Orion.

*****NGC 2323 M50 Open Cl. dia. 16’ mag. 5.9 Brightest star 7.8 07h03.2m -08°20’

Messier 50 is the finest cluster in Monoceros, visible in binoculars and small telescopes as a bright, large, irregularly round concentration of stars. It seems to have been first seen by G. D. Cassini some time before 1711, but Charles Messier rediscovered on April 5, 1772 while observing the comet of that year. M50 lies about 2,900 light years away and is 14 light years in diameter with the luminosity of some 6,400 suns. Small scopes will show about 50 stars in a 20’ area, its central concentration shaped like a blunt arrowhead pointing north. In medium-size instruments it is a truly splendid assemblage of bright stars in a rich star field. 150 stars from 8th to 14th magnitude are visible over a 25’ diameter area. The center is a rich, heart-shaped concentration offset by a starless void to the north. The cluster’s lucida is a reddish-orange 7.8 mag. star lying in the southern part. From the cluster’s eastern edge a stream of stars may be seen stretching to the SE.

I have only talked about four of Monoceros’ best objects, but there are many more fine open clusters, emission and reflection nebulae, planetary nebulae, and double stars in this constellation. If you own a copy of *The Night Sky Observer’s Guide, Vol. 1* or other observing guides, use them to observe the many fine celestial gems hidden among the faint stars of Monoceros.