

# Saguaro Astronomy Club



# SACnews

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## How Fast Can You See?

By Richard Harshaw

How fast can you see? Not how far, but how fast?

The SAC Deep Sky Database (Version 8.00) now lets you know the answer to that!

First, kudos to the guilty—the people who collated and assembled what is arguably the finest deep sky observing database for amateur astronomers on the planet: Steve Coe, Bob Erdmann, Dr. Harold Corwin, Brian Skiff, Stephen Michael Schimpf, Bill Anderson, A. J. Crayon, David Federicksen, Jack Jones, Jay LeBlanc, Matt Luttinnen, Peter Argenziano, Paul Lind and Paul Dickson. Thanks, folks, for a great resource!

Now for the “seeing fast” part. Recently, I was laid up for almost a month due a strep infection in my right leg. I had nothing to do but sit on the sofa with my leg propped up watching TV. That lasted about 30 minutes. Then I decided to get my laptop out and use it to collect data on radial velocities, distances, and galaxy types (using the De Vaucouleurs system) for the galaxies and quasars in our database. I used the NASA Extragalactic Database (found at <http://nedwww.ipac.caltech.edu/forms/byname.html>) for my data source.

The result is an updated Version 8.00 showing radial velocities, distances, and more explicit galaxy types.

I don't know about you, but to me it is fascinating to observe a galaxy like NGC 37 and realize that every second I am looking at its pale sheen, the expansion of the universe is putting 6,071 miles between it and me—almost the distance from Phoenix to Rome! In the time it would take me to seriously observe and note NGC 37, it will have moved as far from me as the earth-moon distance—15 TIMES!

For the record, the fastest thing in Version 8.00 is, of course, a quasar—3C 345, being pulled away from us by the expansion of space at 177,717 km/sec! (It is 3,370 megaparsecs, or 11 billion light years, away). But at magnitude 16, you'll need a hefty piece of optical glass to see it. At the other end of the scale, the fastest approaching galaxy is NGC 244, heading towards us at 368 km/sec, and only 0.64 megaparsecs (2 million light years) away. (Gee—at that pace, it will be here in about 1.1 billion years!)

I also count 48 galaxies with active nuclei (what astronomers class as AGNs)—galaxies that probably have feeding black holes at their cores—as well as 80 starburst galaxies (galaxies undergoing intense star formation, usually following an interaction with another nearby galaxy).

This new Version 8.00 database exists in Excel format (Excel 2003 or later required) and uses Excel's powerful filters and lookup features to make a very user friendly “queryable” database. It exists in two versions—one without graphs, and the other with graphs (the graphs show the value of the Hubble Constant for the SAC DS 8.00 galaxies—it turns out to be 60.9, compared to a generally accepted 73, due no doubt to the selection effect of being mostly nearby galaxies).

The plain version (no graphs) is 4,109 MB in size; the graphical version runs 6,833 MB. If you'd like a copy of either database, send an email to rharshaw2@cox.net and I'll attach it to my reply.

Good hunting, folks! (Joe Goss, how fast can you see???)

# NASA Space Place

## Tracking Wildlife from Space by Patrick Barry

It's 10 o'clock, and do you know where your Oriental Honey Buzzard is?

Tracking the whereabouts of birds and other migrating wildlife across thousands of miles of land, air, and sea is no easy feat. Yet to protect the habitats of endangered species, scientists need to know where these roving animals go during their seasonal travels.

Rather than chasing these animals around the globe, a growing number of scientists are leveraging the bird's-eye view of orbiting satellites to easily monitor animals' movements anywhere in the world.

The system piggybacks on weather satellites called Polar Operational Environmental Satellites, which are operated by the National Oceanic and Atmospheric Administration (NOAA), as well as a European satellite called MetOp. Sensors aboard these satellites pick up signals beamed from portable transmitters on the Earth's surface, 850 kilometers below. NOAA

began the project—called Argos—in cooperation with NASA and the French space agency (CNES) in 1974. At that time, scientists placed these transmitters primarily on buoys and balloons to study the oceans and atmosphere. As electronics shrank and new satellites' sensors became more sensitive, the transmitters became small and light enough by the 1990s that scientists could mount them safely on animals. Yes, even on birds like the Oriental Honey Buzzard.

“Scientists just never had the capability of doing this before,” says Christopher O'Connors, Program Manager for Argos at NOAA.

Today, transmitters weigh as little as 1/20th of a pound and require a fraction of a watt of power. The satellites can detect these feeble signals in part because the transmitters broadcast at frequencies between 401 and 403 MHz, a part of the spectrum reserved for environmental uses. That way there's very little interference from other sources of radio noise.

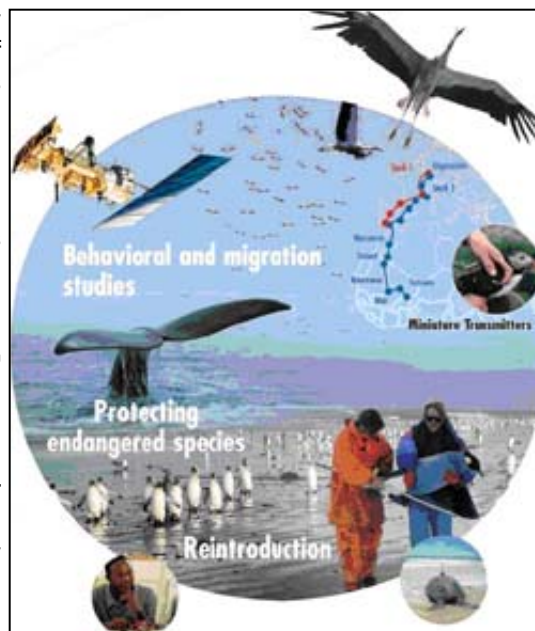
“Argos is being used more and more for animal tracking,” O'Connors says. More than 17,000 transmitters are currently being tracked by Argos, and almost 4,000 of them are on wildlife. “The animal research has been the most interesting area in terms of innovative science.”

For example, researchers in Japan used Argos to track endangered Grey-faced Buzzards and Oriental Honey Buzzards for thousands of kilometers along the birds' migrations through Japan and Southeast Asia. Scientists have also mapped the movements of loggerhead sea turtles off the west coast of Africa. Other studies have documented migrations of wood

storks, Malaysian elephants, porcupine caribou, right whales, and walrus, to name a few.

Argos data is available online at [www.argos-system.org](http://www.argos-system.org), so every evening, scientists can check the whereabouts of all their herds, schools, and flocks. Kids can learn about some of these endangered species and play a memory game with them at [spaceplace.nasa.gov/en/kids/poes\\_tracking](http://spaceplace.nasa.gov/en/kids/poes_tracking).

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



*The ARGOS program tracks the whereabouts of endangered migrating animals via miniature transmitters on the animals and the POES satellites in orbit.*

## A You Man Enough to Be A Girl Scout?

By Rick Tejera

As most of you know, I've been a volunteer with the Girl Scouts for several years. A few weeks back Der Komandant (Steve Dodder) received an e-mail from a Troop leader who was looking for some help running an astronomy program during their encampment.

Given my background & familiarity with the Girl Scout programs, I offered to take the lead in organizing the event. As usual several members stepped up with offers to participate as well. I've been in contact with the troop leader and plans are under way to make the event a fun experience for the girls (And Volunteers). I'll be passing more details as things develop.

Now for the real purpose of this article: After receiving a second request from another troop leader to help at their encampment, I thought we ought to develop an outreach program for scouting programs (both Girls & Boys). I bounce this off of Steve and he was very enthusiastic in his support.

With this in mind, my first step would be to get a special section on the website for scout leaders, where they could

- a. Troll for information about astronomy suitable for various age groups.
- b. Find suggested activities that would meet badge requirements and
- c. Find information about active programs where we would participate as well.

Step A is probably the easiest to get going. In that vein I'm going to ask you all to dig around and forward me

articles & websites that are suitable for kids that would foster interest in astronomy & space exploration.

Once I've collected the data I'll work with Peter to make it available on the web site.

I've already got some ideas for step B, including Making a Planisphere & Sundial. How to create a scale Solar System, among others. Again, please share any ideas you may have with me and I'll incorporate them.

Step C is the most ambitious. Taking what I learn from the two upcoming events, I hope to develop programs that will fit seamlessly into the scouting organizations requirements. The ideal scenario would be to have scout leaders browse through available programs for the various age groups and to be able to then just contact us and request we help with "the Juniors Sky Search Badge" or "a Brownie Encampment" event.

Detail of what we would be able to offer and what the leaders would need to do to assist would be right there on the website.

If you're interested in helping me work this project, please don't hesitate to offer.

As a dad and former Boy Scout, I realize the positive effect Scouting programs have on kids. They are worthwhile organizations and we should eagerly offer our assistance to those dedicated leader who volunteer their time to the kids.

## Monthly Trivia Question

Who was the first person to fly in space twice?

Last Months Answer: Who was the youngest person to fly in Space?

A month shy of his 26th birthday, Gherman Titov remains to this day the youngest person to fly in. Born in the Altai Region of the Soviet union, he trained as a pilot at the Stalingrad Military Institute before his recruitment to the Soviet Cosmonaut program. His

day-long flight aboard Vostok 2 in 1961 made him an instant celebrity, and the Kremlin sent him on world wide tours. From 1962 he retrained as a test pilot alongside some of the other cosmonauts, and led the team training to fly the planned Spiral pace plane. However the space-sickness he suffered aboard Vostok 2, coupled with a tendency to clash with his superiors, meant that he never flew in space again. He died of a heart attack in 2000 at the age of 65.



## Call For Observations—Taurus

By A.J. Crayon

It wasn't clear how successful the request for naked eye and binocular views of the Pleiades would be. It seems that with the naked eye all observers turning in results saw six stars.

### M 45, the Pleiades

**Naked Eye;** Joe Goss: Able to see the following stars with direct and/or averted vision Alcyone, Atlas, Electra, Maia, Taygeta, and Merope

**Naked eye;** Dick Harshaw: have never been able to see all seven of the "sisters"-- just six of them. That seventh must be awful shy!

**Naked eye;** David Hofland: Not the best night, naked eye visibility ~mag 5 at best, Pleiades just past meridian high in W. Naked eye I can see only 6 stars and the familiar mini-dipper asterism.

**Naked eye;** Charlie Whiting: counted 6 stars with difficulty, 4 with ease.

**7X30 image stabilized binoculars;** David Hofland: counted at least 35 stars and nebulosity in the areas around Merope and Maia.

**7X50 binoculars;** Charlie Whiting: counted about 25 stars and also saw a lot of haze around a good portion of them.

**9X50 finder scope;** Charlie Whiting: The steady field was much easier to appreciate compared to the hand-held binoculars. I counted 45+ stars plus some haziness.

**10x50 binoculars;** Joe Goss: counted 20 stars with a very shaky view (getting too old to hold binoculars steady while looking overhead)

**12x80 finder scope;** Joe Goss: saw 30 + stars some with nebulosity around them, not sure all of them were in M45.

**14x70 binoculars;** Dick Harshaw: Totally stunning sight in the binoculars! The large FOV lets me get the entire cluster and its context in the view. No sign of the nebulosity.

**8" f6, Newtonian, 38X;** Charlie Whiting: could see large comas surrounding all of the very bright stars and some of the less bright stars, too. I assumed the comas were vdB 20, vdB 23 and the Merope nebula.

**11-inch SCT at 80x;** Dick Harshaw: The small FOV of a Schmidt is just too much to do this cluster justice! It sprawls way beyond the 40 min FOV, but I do pick up the nebulosity around Merope (almost like condensate on the eyepiece). I particularly like that little "chevron" of stars on the cluster's south side.

**14" SCT, 145x;** Joe Goss: FOV is less than .5 degree and saw nebulosity around the following stars Alcyone - vdB 23, Merope - vdB 22, and Electra - vdB 20.

**14.5" f/4.7 Dobsonian, 78x;** Paul Lind: The Merope

Nebula was spectacular. When Merope was centered, the nebula spanned half the 50 arc minute field. Other nebulosity's like vdB 20 and vdB 23 were uncertain because of scattered light around the stars.

**16" f4.4 Newtonian, 50x;** Rick Rotramel: OC - vL, vB, pRich, about 50 stars, bright blue nebulosity around several of the brightest stars, shaped like a mini Little Dipper. It is very pretty in a dark sky through the telescope.

**16" F4.5 Dobsonian, 55X;** Dave Hofland: the FOV is just a bit smaller than the cluster requiring just a little slewing around to get it all in, Multi-star Alcyone and its 3 companions in a tight triangle ~1-2' to its NW commands the central area with ~10 really bright stars surrounding. vdB 20 around Electra and vdB 23 around Alcyone noted in addition to the brighter nebulae around Merope and Maia. There are over 100 easily resolvable stars in total. Even on a poor visibility night an entertaining large bright cluster.

**18" f4.5, Dob, 55X;** Dan Gruber: What's stunning about this cluster is the brilliant, uniform blue-white color of the dozen or so brightest stars (mag 8 or brighter) and the fact that almost every one of them is surrounded by obvious nebulosity. Just NW of the brightest cluster star is a very small but distinct triangle of dimmer (mag 9) stars. There's also a long chain of dimmer (mag 9) stars extending S from the same cluster star. At **135X**, virtually all of the brighter stars have associated nebulas. The nebulas are uniform, with no obvious structure. The diameter of the visible nebulosity, generally 30" - 60", appears proportional to the brightness of the star. The nebulas are clearly visible without filters but become even more obvious, albeit smaller, using a UHC or OIII filter.

### vdB20

**11" f10, SCT, 127x,** Jimmy Ray: A fairly round reflection nebula surrounding the named star Electra. Appears slightly elongated on the east-west axis. Two very dim unidentified stars along the north "rim" of the visible nebulosity were seen.

**16" F4.5 Dobsonian, 55x;** Dave Hofland: ~10-15-diam nebulosity surrounding Electra in the Pleiades. I was not able to see this nebula with my 10" last month but with the 16" it is relatively easy to see with averted vision. Diffuse with unclear irregular edges, a fine texture is felt, like a texture in fabric more felt than seen, I got a sense that it was a tad elongated NW-SE, a bit fainter than vdB 23 around Alcyone.

*(Continued on page 5)*

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### vdB23

**11" f10, SCT, 127x, 40x,** Jimmy Ray: An oblong reflection nebula surrounding the named star Alcyone. Its widest northwest to southeast and has a brighter area of nebulosity running in an east - west direction. I would think that a lot more detail might be had using an eclipsing eyepiece to block out the parent star's light and will try this sometime in the future.

**16" F4.5 Dobsonian, 55X;** Dave Hofland: ~15' diam nebula glowing around Alcyone in Pleiades. Requires AV but with AV is easily seen. Diffuse, unclear irregular edges, fine wispy texture. In the location of the three companion stars to the WNW the glare from these stars gives the nebula a notched appearance, the area is cleared out by those three stars, like the Trapezium in M42.

### NGC1514

**8" f6, Newtonian, 38X;** Charlie Whiting: found this PN midway between two 9<sup>th</sup> mag stars. The PN looks like it is a third 9<sup>th</sup> mag star. It is pretty bright. Star-like. It must be the central star. I switched to another eyepiece. It is not par-focal with the first. The 3 stars were out of focus. By observing them this way I could easily see that the central star was not as bright as the 2 border stars. Indeed, data says that the PN's central star is 9.5 magnitudes. At **120x** I could make out some of the halo. It is egg-shaped. The big end is west. The halo is evenly bright. It is a little over 1-arc minute wide.

**8-inch SCT at 83x,** suburban location; Dick Harshaw: Very faint and round. The central star (9m) can be seen with high powers, but then the nebula washes out. Looks pretty nice at lower powers. This is one nebula that benefits well from an O-III filter. I noted some scalloping along the SW edge). This is the nebula that convinced William Herschel (1790) that planetary nebulae had central stars that were integral parts of the nebula.

**11" f10, SCT, 127x,** Jimmy Ray: At first I didn't recognize this as a planetary nebula as it is very large and diffuse. Appears to have an annular division between the nebula itself and its central star. Averted vision affords the best view of this object.

**14" SCT, 145x;** Joe Goss: Planetary Nebula- Bright, fairly large, round, center star obvious, at **196x** with UHC filter- Bright, Large, slightly oval shape, nebulosity does not appear to radiate into the center star.

**10" F4.5 Dobsonian, 35X;** Dave Hofland: One of my favorite planetary nebulae. Easy to locate ~3 deg SE of Zeta Per, right on the line formed by Zeta and Atik, in the low power 55x view it appears stellar, a 9<sup>th</sup> mag star, the middle member in a line of three. The other two are ~8 mag, one 10' N the other 10" S. At **114x** with OIII filter really brings out the size and brightness of this

planetary nebula. The bright 9<sup>th</sup> mag central star is surrounded by a bright fuzziness with direct vision, with AV a wide 2'+ diam mottled irregular glow surrounds the star. I like it because it is easy to locate, a relatively large planetary nebula with visible texture in the shell and an easily visible central star, and because it responds so well to the OIII filter.

**18" f4.5, Dob, 209X;** Dan Gruber: This planetary nebula is midway between two mag 9 stars about 20' apart. It has a very bright central star, about mag 10, which almost overwhelms the nebula. The nebula becomes visible with UHC or OIII filter as a roughly circular glow 2' - 3' in diameter. There appears to be a "bite" out of the SW edge of the disk.

### Barnard 7

**8" f6, Newtonian, 38X;** Charlie Whiting: did a GoTo to B 7's coordinates, but wasn't too sure I was in the right spot because there just was just too few stars in the field to compare to the printed sky map. So I did a GoTo to the cluster NGC 1746, which lies on the east side of B 7. Then I found the cluster in the finder scope and star-hopped to the central area of the nebula. In the finder there is definitely a black void where the nebula is supposed to be. The black void is also present at low power (38x) in the telescope. And, I was right back where I started. There are only a few stars to the western side of the eyepiece view.

**14", SCT, 145x;** Joe Goss: Dark Nebula- I saw 4 stars in field of view. Battery failure as stars started drifting out of FOV.

**10" F4.5 Dobsonian, 35X;** Dave Hofland: An area of darkness with few stars to the northwest of Phi Tau, a 20' diam pool centered ~ 2 deg NW of Phi Tau, this pool is a portion of a ~10 deg long winding river of darkness that runs from SE to NW in the northern area of Taurus ~8 deg NE of the Pleiades. The "river" runs from B-7 in a SE direction passing just SW of Phi Tau.

**18" f4.5, Dob, 74X;** Dan Gruber: This dark nebula is very large, about 60' X 80' elongated E - W. It has an irregular boundary. The interior is very opaque, with just a few stars scattered across it.

### NGC1647

Brian Skiff has this one listed as questionable for naked eye visibility. Only Charlie Whiting and Dave Hofland tried but were not successful, maybe next time Charlie and Dave.

**7X30 image stabilized binoculars:** Dave Hofland: picked out 5<sup>th</sup> mag 97 Tau and then 6<sup>th</sup> mag HR 1517 a bit more than a degree W of 97 Tau. The cluster was seen in the as a dim glowing patch just N of HR1517 though I was not able to clearly resolve any of the stars.

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## President's Corner

### By Steve Dodder



I used to think I was up to speed on technology and its power. Not so much any more.

Email is turning out to be a double edged sword. And the amount of email one receives as the President of an organization such as SAC can be daunting.

For instance, I got an email from a girl scout leader last month, inviting me to head a team of volunteers to attend a Girl Scout Retreat in Prescott. Two days in the woods talking to hundreds of kids about astronomy and showing them the sky at night. I accepted eagerly, but realized it was the weekend of Rosie and my annual Stone Haven Potluck/Star Party. I posted an email to the SAC board and Presto! Volunteers came out of the woodwork to fill in, and even coordinate the event! (Thanks Rick, Jenn, Chris, etc.)

A couple weeks later, and my cell phone rings with another Girl Scout leader talking about a similar event in September. Whoosh! Off goes another email and TADA!, Rick jumps in again.

The other edge of the sword casts a light on how interpersonal relations can go bad, due to the lack of expression and dryness of an email. I watched as a new neighbor built a house at the end of my street in Maricopa. All was well until the power was connected. There, on the side of his house were 3 huge "Light Bomb" dusk to dawn light fixtures, blaring up and out into the night sky. I could see a light dome over his house from my dome and decided to inform him of the trespass.

On my way to the well one day, I wrote a note on the back of a Stone Haven business card, "Hi Neighbor! Please give me a call. I'd like to talk about your outdoor lights.", and placed it on his address tag.

A couple days later, I get a call. I chatted about SHO, astronomy, and outdoor lighting-with the wife. She seemed very nice and appeared willing to work with me.

Her husband was somewhat less cooperative. I soon got an email from him saying that his lighting was inspected by the county and conformed to all codes. He'd be glad to turn them off if I gave some advanced notice, though.

I replied, pointing out that his lights were illegal, wasteful, disruptive and harmful to the natural environment we all enjoyed. These arguments were right out of the International Darksky Association guidelines, and their weight increased in order of mention. In other words, I said the lights were illegal, but moved quickly on to how much money it cost him to run them, then on to the disruption of my activities, then on to wildlife being affected, with a stronger argument each time.

His response took me by surprise. He threatened me with legal action, suggesting that my house and entire existence was in violation of local building codes, and I'd better get a lawyer.

I offered to promptly fix any code violations he could see from his house, and that affected his lifestyle. (Several "smilies" were included.)

He suggested I move to Vekol Valley, and that I should be glad he didn't erect a horse arena with floodlights. After threatening me with harassment charges when I called to ask him to turn off his lights when I went outside each night during a clear spell, I stopped communication, except to ask for his attorney's number. (I haven't got it.)

So, volunteerism is good. So is local advocacy, but you'd better have a plan for both, and especially keep your emails light hearted. The exchange with my neighbor has knocked me down a peg, but I'll know better in the future. (Anybody know a good lawyer?)

# April 2008

SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5 ● A A M M at Farnsworth Ranch
6	7	8 ATM Meeting 1930, Paul Lind's House	9	10	11 SAC Meeting, GCU 1930	12 ☽
13	14	15	16	17	18	19
20 ○	21	22	23	24	25	26 SAC Star Party at Saddle Moun- tain
27	28 ☾	29	30			

## Schedule of Events for April 2008

April 5th-6th	All Arizona Messier Marathon, Farnsworth Ranch
Apr. 5th	Moon is new at 2055mst.
Apr. 8th	ATM Sub group meeting at Paul Lind's house
Apr. 11th	SAC Meeting at Grand Canyon University at 1930, Speaker TBA
Apr. 12th	Moon at first Quarter at 1131mst.
Apr. 20th	Moon is full at 0325mst.
Apr. 26th	Star party at Saddle Mountain: Sunset 1911, Ast Twilight Ends: 2042, Moon-rise 0200.
Apr. 28th	Moon at Last Quarter at 0711mst.

## Future Planning

May 23-26th	Riverside Telescope Makers Conference. GOTO: <a href="http://www.rtmcastronomyexpo.org/">http://www.rtmcastronomyexpo.org/</a>
May 31st-Jun 1st	5 Mile Meadow Star Party

*(Continued from page 5)*

**8" f6, Newtonian, 38X**; Charlie Whiting: prepared for observing by printing out a star-map of the area surrounding an intended target, at a scale to show a 2-degree FOV. When I checked the Call for Observations, I read the suggestion to try to see this cluster naked eye. I tried but failed. I should have prepared a much larger scale map to use. Trying to locate the cluster in the sky by sighting along the telescope tube just doesn't work. There are 7<sup>th</sup> and 8<sup>th</sup> mag stars a little east of due south of the cluster. Those 2 stars plus several dim sparkles can be resolved in the **9x50** finder scope, along with a definite haze. At **38x** in the telescope this cluster is so large that it fills most of the eyepiece FOV. I did a rough count of 50 stars in the brighter level. There are probably almost 2 times that many dim stars in the dimmer level. There are lots of strings of stars. Several doubles. None of the stars exhibited any color.

**8-inch SCT at 65x**, suburban location; Dick Harshaw: Very rich and grainy scattering of 8m and fainter stars. Bright and evenly spread about, the brightest members are in the S area. Over 50 stars are visible, many of them multiple.

**11-inch SCT at 98x**; Dick Harshaw: Fills the 32 min FOV; bright and loose, the double AG 111 dominates the center. I counted 53 stars. It is 144 million years old. The earliest spectral classes are B8 and B7. This one won't last long-- its stars are over 1.3 light years apart, while 1 light year is considered to be the minimum distance to keep stars gravitationally bound as they orbit the galaxy's nucleus. It lies 29,000 light years from the galactic center, and 500 light years south of its central plane.

**14", SCT, 70x**; Joe Goss: Open Cluster- Larger than FOV, Bright, fairly loose, rich in stars, chains and arc's of stars, many double and triple stars

**16" f4.4 Newtonian**, Rick Rotramel: OC - L, pB, pRich, about 75 stars.

**16" F4.5 Dobsonian, 114x**; Dave Hofland: tried to see this naked eye with none of us successful. The cluster is a large ~40' diam cluster of ~35 mostly 9-11 mag stars just to the N of HR 1517 and 7.5 mag HD30179. Sky tools places those two stars within the boundary of the cluster but I wonder if they are closer stars not actually involved.

**18" f4.5, Dob, 74X**; Dan Gruber: This open cluster is about 45' in diameter. It is irregular, sparse, and scattered. Most of the stars are in isolated groups of 2 - 4 stars. Each such group is 1' or 2' across and separated from neighboring groups by more than that. Some groups could be doubles or multiples, but any such would have large separations of 60" or more.

There are about 30 stars mag 10 - 11 and another dozen or so mag 12 - 13 in the cluster. There are several brighter (mag 9) stars near the S edge of the cluster.

### Call for Observations

April will find us in Ursa Major, for third time but there's much to see here in the way of galaxies. We will stay in the western part of the constellation, saving the eastern for another month. One of the western most galaxies is **UGC 4305** a rather moderate size irregular with a magnitude of 11.1. Next is **NGGC2681**, a Herschel 400 entry that is about ½ the size of the first entry but brighter at mag 10.3. See if you can spot something more than the brighter middle, don't forget to try a hood. The next 3 galaxies are all on the Herschel 400 list. First is **NGC2742**, a late type spiral galaxy. Its moderate size should display some nice detail. **NGC2768** could be the largest and is quite bright at magnitude 9.9. Try to ferret out as much detail as possible. The last **NGC2841** in addition to being a Herschel entry is also on the SAC list of the 110 Best NGC Objects. No wonder, it has the brightest magnitude at 9.2 is very elongated with some nice detail in its spiral arms. See if you can estimate the PA of elongation – without cheating. Then compare your results. Finally there's **NGC2850****NGC2880**, a rather large, late type spiral. What do you estimate its magnitude and surface brightness – again without cheating. Then compare your results.

What's a little different for May? Ursa Major again! This can be done because, as you know, there's much here for galaxy observers. All of the following will be found in the Bowl of the Big Dipper with magnitude range from 10.7 to 11.5 and all on the Herschel 400 list to boot. First is **NGC3610**, a roundish elliptical, followed by **NGC3613** another elliptical but not so roundish. In the same field is the next one, **NGC3619** a spiral galaxy just 15' away and faintest for this month. The remaining galaxies are all spirals, beginning with **NGC3898**, this one a about the largest of all. Another small slew will get you to **NGC3982**, a rather small barred spiral. The final selection is **NGC3998**, an S0 galaxy. Do you notice a morphological difference between this galaxy and the other spirals? About 3' to the west is companion **NGC3990**, at magnitude 13.5. Can you see this extra curricular galaxy? Also be certain to check for more than just a brighter middle on the spiral galaxies.

# Bits & Pisces, Minutes of January 18th, 2008 Board Meeting

## By Rick Tejera, For AJ Crayon



In attendance: Pres. Steve Dodder, Paul Dickson, Gene Lucas, Veep, Jennifer Polakis, Joe Goss, Treasurer Charlie Whiting, Jack Jones & Rick Tejera (filling in for Secretary AJ Crayon).

Steve brought up the topic of SAC hosting the North Rim Grand Canyon Star Party. HE indicated that He & Rosie would be willing to take the lead in organizing the event. He has been working with the Park rangers in charge and with TAAA Sponsors of the South Rim GCSP) to coordinate events, Including a link from the TAAA's GCSP website to ours & vice-versa. Steve will mention the idea at the general assembly following the board meeting and get feedback if we should participate.

The disposition of obsolete AV equipment was the first item of business discussed, in particular the slide projector. Gene Suggested the items be donated to Bill Dellingers for use in public outreach. Jenn motioned to do so and Charlie seconded. The motion passed unanimously.

Steve will also check on pricing for a banner to the North RIM GCSP and report back to the club for approval.

It was also decided to put the screen for sale on Craig's list for local sale as the meeting room at GCU has recently installed a permanent screen. Jack offer to handle this.

The final order of business as to report that the turnover of Banking authorizations from the Tejera Administration to the Dodder regime was under way and should be completed by February (*Ed note: this has been done, I can't get to the money anymore :))* .

Steve Suggested that we look for a new webmaster as the post has taken up more time than Stan Has to devote to it. (*ed, Note,: Since this as discussed Peter Argenziano has accepted the post of SAC webmaster. Our thanks to Stan lark for his efforts and to Peter for taking on the responsibility*).

The meeting was adjourned and the attendees headed to the main assembly for the regular meeting.

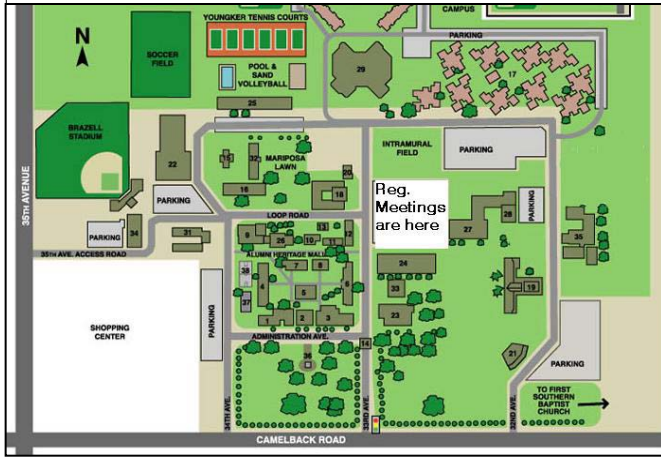
Jenn motioned that all board members have unmoderated access to post to SAC-Announce. The motion was seconded by Charlie and unanimously approved.

### Dark of the Moon Star Parties-2008

<i>Date</i>	<i>Sunset</i>	<i>Moonset</i>	<i>Twilight</i>	<i>Location</i>
<i>January 5th</i>	<i>1737</i>	<i>-</i>	<i>1905</i>	<i>Antennas</i>
<i>February 9th</i>	<i>1813</i>	<i>2113</i>	<i>1937</i>	<i>Antennas</i>
<i>March 8th</i>	<i>1835</i>	<i>2001</i>	<i>1957</i>	<i>Antennas</i>
<i>May 3rd</i>	<i>1915</i>	<i>-</i>	<i>2049</i>	<i>Cherry II</i>
<i>July 5th</i>	<i>1944</i>	<i>2157</i>	<i>2129</i>	<i>Cherry II</i>
<i>August 2nd</i>	<i>1927</i>	<i>2022</i>	<i>2103</i>	<i>Cherry II</i>
<i>August 30th</i>	<i>1857</i>	<i>-</i>	<i>2024</i>	<i>Cherry II</i>
<i>October 4th</i>	<i>1814</i>	<i>2125</i>	<i>1937</i>	<i>Antennas</i>
<i>November 1st</i>	<i>1742</i>	<i>2010</i>	<i>1906</i>	<i>Antennas</i>
<i>December 27th</i>	<i>1734</i>	<i>1748</i>	<i>1903</i>	<i>Antennas</i>

### General Meetings

7:30 p.m. at Grand Canyon University, Fleming Building, Room 105: 1 mile west of I-17 on Camelback Rd., North on 33rd Ave., Second building on the right.

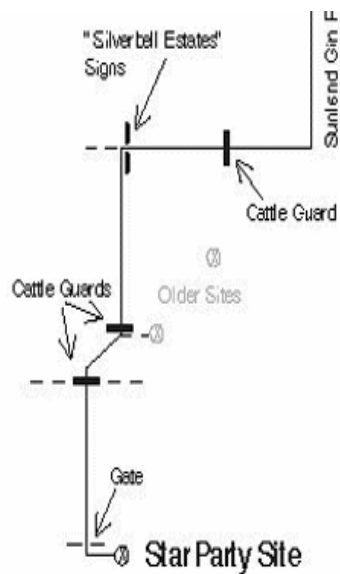
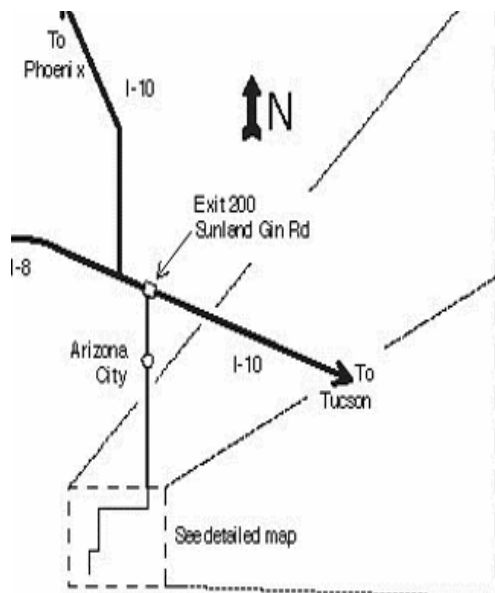


### Saddle Mountain Star Parties



I-10 west to Wintersburg Road, turn left from the offramp and then about 10 miles south to the "T" at Elliot Road, turn right (west) onto Elliot. Be careful of the dip and cattle guard along this road. After a few miles traveling on the blacktop, the road turns sharply right and becomes a dirt road. Keep going straight, do not make that sharp right turn, and be careful of two dips in the road. As you come out of the second dip there is a 45 degree turn to the right. So you turn away from the line of power poles onto a smooth dirt road. This happens about 0.3 miles from the pavement. Continue on this road for 0.6 miles and there is an opening in the birm on the left that I marked with rocks. It has room for lots of observers.

### All Arizona Messier Marathon



Take I-10 to exit 200 (Sunland Gin Road). From here it is about 29 miles to the site. Turn right (south) after exiting the freeway. After about 15 miles, the pavement ends and about one mile further, the road turns sharply to the west. After another four miles, the main road will turn south just after the "Silverbell Estates" signs. Three miles past the signs, the road will veer off to the west, and five miles further, the road will pass through a gate. Turn left immediately after the gate and continue for another 2/3 of a mile, driving over a fence. The site is to the right.

## SAC Membership Services

**Membership**— Memberships are for the calendar year and are pro-rated for new members as follows: Jan– Mar: 100%; Apr– Jun: 75%; Jul-Sep: 50%; Oct-Dec; 25%.

- \$28.00 Individual Membership
- \$42.00 Family Membership
- \$14.00 Newsletter Only
- \$10.50 Nametag for members, Pinned Clasp
- \$12.50 Nametag for members, Magnetic Clasp  
(will be mailed to address below)

### Magazine Subscription Services

The following magazines are available at a discount to club members. Check the magazines you wish to subscribe to or renew, and pay the club treasurer. Please allow 3-4 months for the order to be processed.

- Sky & Telescope \$33.00/yr
- Astronomy \$34.00/yr
- Astronomy \$60.00 for 2 Years

Please Print

**Make Check Payable to : SAC**

Name: \_\_\_\_\_

**Bring completed form to a meeting or mail it with your remittance to:**

Address: \_\_\_\_\_

**SAC Treasurer  
c/o Charlie Whiting  
4526 W Purdue Ave  
Glendale, AZ 85302**

City: \_\_\_\_\_ St: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Check here if this is an update of information already on file.

E-Mail: \_\_\_\_\_

### SAC on the Internet

**SAC has several E-mail mailing lists. To subscribe, send an email to the email address and put **Subscribe** in the subject box.**

**SAC-Announce@freelists.org:** SAC-Announce is a mailing list for just club announcements. Typically 3-5 messages per month.

**SAC-Forum@freelists.org:** SAC-Forum is a general discussion mailing list. Topics should be related to Astronomy or SAC

**SAC-Board@freelists.org:** SAC-Board is a mailing list for discussions of club business. If you'd like to see how the club is run (or not run), or have a question about the club, this is the list to read. Typically month to month matters are discussed.

**AZ-Observing@freelists.org:** AZ-Observing while not a Sac list, is well attended by SAC members. This is the list to with observing places around Arizona. Find out where people are going and what they saw.

### Printed Newsletter

SAC can save a lot of money if you download the PDF version of the newsletter. PDF files are readable by both PC's and Macs. When the newsletter is published, a message will be sent to the address indicated above with the URL of the newsletter. Check the box below if you don't have access to the internet or if you prefer a printed copy.

Please send me a hard Copy of the newsletter

# SAGUARO ASTRONOMY CLUB

March 2008

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*Videmus Stellae*



## SAC Schedule of Events 2008

### SAC Meetings

January 18th, 2008	July 11th, 2008*
February 22nd, 2008	August 15th, 2008
March 21st, 2008	September 12th, 2008
<b>April 11th, 2008*</b>	October 10th, 2008*
May 16th, 2008*	November 14th, 2008
June 13th, 2008*	Holiday Party, TBA

\* *Rescheduled Meeting Date*

### Future Planning

<b>April 5th, 2008</b>	<b>All Arizona Messier Marathon</b>
May 30th-June 1st, 2008	5 Mile Meadow Star Party
November 28th-30th, 2007	Autumn Stargaze

### SAC Star Parties

Date	Sunset	Astronomical Twilight Ends	Moonrise	Site
Jan 5th, 2008	1737	1905	0608	A
Feb 2nd, 2008	1824	1929	0507	S
Mar 1st, 2008	1829	1952	0346	S
<b>Apr 26th, 2008</b>	<b>1911</b>	<b>2042</b>	<b>0100</b>	<b>S</b>
May 3rd, 2008	1915	2049	0401	A
Jun 28th, 2008	1945	2130	0142	C
Jul 26th, 2008	1935	2113	0021	C
Aug 23rd, 2008	1903	2033	2303	C
Sep 27th, 2008	1815	1938	0455	S
Oct 25th, 2008	1747	1910	0432	S
Nov 22nd, 2008	1726	1853	0331	S
Dec 12th, 2008	1730	1859	0128	S

S= Saddle Mountain; C= Cherry Road; A=Antennas