Saguaro Astronomy Club

SACnews

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Inside This Issue

The Hobby Within the Hobby

By Rick Tejera

One thing I've noticed over the years, is how when one begins the pursuit of a hobby, they tend to find other hobbies that on the face of thing look totally unrelated, but in fact add to the enjoyment of the original hobby. Astronomy is no different. One look at a photo of a large astronomy gathering will quickly reveal the biggest hobby within our hobby. Camping. Some might argue photography and they could well make a good case. But I'd venture to guess that imagers have a garage full of camping gear as well as cameras & CCD's. When I started in astronomy, the last thing I thought I'd be buying to help me pursue the hobby was a tent. But two tents later here I am. I've noticed this year we have several new members who have become quite active in participating in club activities. In this vein, and with 5 Mile meadow coming up, I'll offer some advice on things about camping I learned the hard way. Hopefully, it will make the hobby within the hobby more enjoyable instead of a just a means to keep from freezing after you're done observing!

Accommodations: Like I said earlier, the last thing I thought I'd buy for astronomy was a tent. But after a night at Sentinel that turned out to be less than spectacular, I decided to call it a night early and head home at 0200. I joke now that I drove home after 0200 once, emphasis on once. Since that drive (which I'll admit I was probably lucky I didn't kill myself or someone else) I've adopted the 0100 policy. If I plan to stay out past 0100, I stay the night. The question is where to stay? Quite a few club members have Pick-up trucks or station wagons and they lay out bedding in the bed or back of the vehicle and sleep there. I slept in my Saturn (God rest it's soul) once, again emphasis on once. IF you're comfortable and can get some sleep in the back of your vehicle that would be the most economical way to go. If not, then an investment in a tent is necessary. A few things I found out about buying a tent. First, most tents will say how many it sleeps on the box. Subtract two from that number, one if you're real close friends. The first tent I bought allegedly slept three. Three Small kids maybe, two adults, but like I said, you'd need to be good friends to make that work. Fortunately it was just me so a tent that slept three would work.

Second, the dimensions they give are somewhat "exaggerated" My 3 person tent was 7' by 7', at least that's what the box said. I'm 5' 9" and my head and feet would both be touching the walls of the tent. I measured it and found the floor was a bit over 6 'square. Allowing for the slope of the walls, I'm probably about as tall a person that would fit comfortably in there. The tent poles were 7' apart though, go figure.

Third: Can the tent be set up by one person? My first tent: no problem. My current polyester dwelling: Just barely. Make sure you don't get too much tent or you'll have problems in the field if no one is around to lend a hand.

Fourth: How much room does it take up when not in use? Not the biggest issue, but a consideration if you've got a smaller vehicle and lots of Astro stuff. When I had the Saturn, I was pretty much at the limit

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NASA Space Place

Not a Moment Wasted

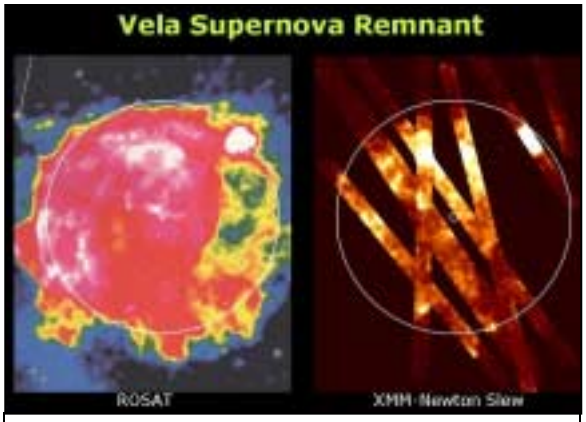
by Dr. Tony Phillips

The Ring Nebula. Check. M13. Check. Next up: The Whirlpool galaxy.

You punch in the coordinates and your telescope takes off, slewing across the sky. You tap your feet and stare at the stars. These Messier marathons would go much faster if the telescope didn't take so long to slew. What a waste of time!

Don't tell that to the x-ray astronomers.

"We're putting our slew time to good use," explains Norbert Schartel, project scientist for the European Space Agency's XMM-Newton x-ray telescope. The telescope, named for Sir Isaac Newton, was launched into Earth orbit in 1999. It's now midway through an 11-year mission to study black holes, neutron stars, active galaxies and other violent denizens of the Universe that show up particularly well at x-ray wavelengths.



The image on the left is the Vela Supernova Remnant as imaged in X-rays by ROSAT. On the right are some of the slew images obtained by XMM-Newton in its "spare" time.

For the past four years, whenever XMM-Newton slewed from one object to another, astronomers kept the telescope's cameras running, recording whatever might drift through the field of view. The result is a stunning survey of the heavens covering 15% of the entire sky.

Sifting through the data, ESA astronomers have found entire clusters of galaxies unknown before anyone started paying attention to "slew time." Some already-known galaxies have been caught in the act of flaring—a sign, researchers believe, of a central black hole gobbling matter from nearby stars and interstellar clouds. Here in our own galaxy, the 20,000 year old Vela supernova remnant has been expanding. XMM-Newton has slewed across it many times, tracing its changing contours in exquisite detail.

The slew technique works because of XMM-Newton's great sensitivity. It has more collecting area than any other x-ray telescope in the history of astronomy. Sources flit through the field of view in only 10 seconds, but that's plenty of time in most cases to gather valuable data.

The work is just beginning. Astronomers plan to continue the slew survey, eventually mapping as much as 80% of the entire sky. No one knows how many new clusters will be found or how many black holes might be caught gobbling their neighbors. One thing's for sure: "There *will* be new discoveries," says Schartel.

Tap, tap, tap. The next time you're in the backyard with your telescope, and it takes off for the Whirlpool galaxy, don't just stand there. Try to keep up with the moving eyepiece. Look, you never know what might drift by.

See some of the other XMM-Newton images at **http://sci.esa.int** . For more about XMM-Newton's Education and Public Outreach program, including downloadable classroom materials, go to **http://xmm.sonoma.edu**. Kids can learn about black holes and play "Black Hole Rescue" at The Space Place, **http://spaceplace.nasa.gov/**, under "Games."

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of what I could cram in there when packing for a two-nighter. I often joked with my wife that as long as I had the Saturn, I couldn't get a bigger telescope. (Now she jokes that since I don't have any money, I still can't get a bigger telescope).

You may also want to replace the tent stakes that come with the tent with something a bit more durable. The pegs that are coming with tents these days are woefully small and get literally bent out of shape pretty quickly. You can replace them with much better quality stakes for about $1.00 per stake.

Whatever you buy please set it up in the backyard before you had out. Better to figure out the nuance of getting it set up at your leisure with out having to worry about if you'll figure it out before bedtime.

Bedding: This probably obvious, but the ground is hard and not so smooth. It does not make for the most comfortable mattress. The same can be said for the back of a pick up or station wagon. Enter the air mattress. They are pretty inexpensive and come in a range of sizes to suit. Make sure your will fit in whatever you're sleeping in. Again my old twin size barley fit in my old tent. Gave it a noticeable bulge on either end (this was the 7'x7' tent mind you). Also, make sure you have something to inflate it. I personally prefer an electric pump that runs off 12v. The original pump that came with my current mattress was one that charged up from an AC adapter. After several uses the battery would no loner hold a charge suitable to fully inflate the mattress. I now have one that will plug into a 12v socket from my car or booster battery and it has yet to fail.

Sleeping bags: Even though this is Arizona, places like Cherry Rd & 5 Mile Meadow can get quite cold, even in summer. (For a more detailed article on staying warm see the January 2003 issue of SACnews: http://www.saguaroastro.org/content/SACNEWS/sac2003/sn0103.pdf) Two years ago, we were at 5MM on the solstice, and Thad recorded a low temperature of 25 degrees. Plan for it. Spend a bit more on a quality sleeping bag with a temperature rating at least 10 degree lower than what you expect to encounter. You won't regret it. Make sure it's large enough for you to be comfortable. If you're like me a bit of wiggle room is appreciated. One thing I can't stand is to feel swaddled. I've seen folk zip two identical bags together to give them some extra tossing & turning space. Don't forget to bring a pillow and maybe an extra blanket, just in case. Bottom line; this is the one area where you don't want to skimp. Get good quality merchandise, Not only will you be more comfortable, but it last a lot longer as well.

Sustenance: The really dark sight we observe from are quite a ways away from civilization, thus it's prudent to plan on what you'll live on while there. First & foremost is water. Staying hydrated is essential. Bring plenty of fresh water, more than you'll expect you'll use. I've got a collapsible 5 gallon water jug that is easy to transport and easy to store when I'm not using it. I also bring some 12oz bottles that I keep in my cooler for a cold refresher. A cooler for drinks & other perishables is a must have. I just bought a new larger 5 day cooler. I love it. It still had ice in it two days after getting home from the messier marathon. The hint here is get one that is well insulated.

If you're like me, canned goods & sandwiches lose their appeal rather quickly. IF I'm going to be somewhere for a two-nighter, I like to eat well. I have a Coleman camp stove/grill combination. I love it. I'll plan a menu for the trip and get my groceries the night before. I've made chicken, Steak & Ka-bobs, among other things. Eggs & bacon for breakfast sure beats a box of dry cereal. I'll also get some side dishes, such as rice or noodles to go along with the main course. I'll usually pack something less "gourmet intensive (read canned)" for lunch. Remember to pack items such as meats well so they don't leak their juices into your cooler (Yech!) Also keep them separated in the cooler from other foods. I'll double wrap my meats & perishables in to Ziploc bags with the seals on opposite ends to ensure they don't leak.

For side dishes, I have a camping cookware set that works well, packs up into a box less than 1 foot cubed. Don't forget cooking utensils (I have a bar-b-que utensil set my wife gave me for Father's day a few years back). And also remember plates & eating utensils, condiments & anything else you may want to make dinner something more than cold meat on two slices of bread.

Remember, you'll have to clean up, so bring some scrub sponges & plenty of paper towels. Also have some trash bags with you so you can properly dispose of your trash.

For libations, I prefer juices & iced tea, although I will bring a few sodas as well. For a warm pick-me-up, I've got a coffee percolator and I'll get a few one pot pack of my favorite brew (French Vanilla). I'll make pot in the morning to wake me up, and again before nightfall. The latter pot gets poured into a thermos so I don't have to light up the stove in the dark. You'd be surprised how bright the flame can be. Again, seems obvious, but don't forget a coffee mug, I've seen it happen.

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Last Call For Observations–The M101 Mystery

By A.J. Crayon

As indicated in the introduction to the following observations, the only real mystery of the Messier Catalog is the identity of M102. Specifically, is it a duplicate observation of M101 or is it another galaxy somewhere nearby. Messiers observing friend Pierre Méchain observed it and sent in the results during the spring of 1782. Messier, to our knowledge, never observed this object, at least there are no known records of an observation. However, Messier added the observation to his own personal copy of the catalog and was described as follows.

> *(Méchain) `Nebula between the stars Omicron of Boötes & Iota of the Dragon [Draco]: it is very faint; near it is a star of the sixth magnitude.'*
> *(Handwritten position added by Messier in his personal copy: 14h 40m, +56.)*

About two years after the entry Méchain sent a letter and retracted his discovery, claiming the observation was an error, a duplicate observation of M101, and a star chart error (this is a long story in itself). His retraction of the discovery includes the following.

> *I will add only that No. 101 & 102 on the p. 267 of the Connoissance des tems [for] 1784 are nothing but the same nebula, which has been taken for two, by an error in the [sky] charts.*

However there are some doubts about the retraction as both Messier and Méchain were both very careful observers and not prone to superfluous mistakes. It is, not necessarily obvious, that both observations are of the same object, although we don't know much about observing conditions. What kind of telescopes that were used is probably available but not easily found.

Other possibilities include the actual description of the location. The similarity between the Greek letters omicron (**ο**) and theta (**θ**), as first suggested by Admiral William Smyth in his Bedford Catalog of 1844. If this were the case then M102 could be a member of a small group of galaxies that include NGC5866 and NGC5907, although Smyth proposed the fainter NGC5879. Other possibilities included NGC5905 that was not on our list.

Finally, the fact that NGC5866 is north of star SAO29407 a magnitude 5.25 star by a little more than a degree, makes this a prime candidate.

I certainly hope I got all the NGC numbers correct. For reference see, http://seds.lpl.arizona.edu/messier/m/m102d.html for additional information.

The tally: Charlie Whiting says no to M102 being a duplicate observation of M101 and settles in on NGC5899; as does Rick Rotramel. Although not stated in my notes I propose consideration of NGC5907 as another possible candidate. Then why do the SAC Messier Catalog and the All Arizona Messier Marathon use NGC5866 for M102? The simple answer is, it was the popular selection when these decisions were made. And. And. And. It is still the more popular selection.

Enough of this discussion, let's get on to the observations!

M101

8" F6 Newtonian; Charlie Whiting: M 101 is a large round object, almost as big as the moon. Although its integrated magnitude is 8.2, its surface brightness is a low 14.0 mag/sq arc-min. Since all my observations for this "M 102 mystery" report were from my Glendale backyard, where the limiting visual magnitude at the zenith is 4.0 at best, I was not surprised that this object was almost impossible to see. At **38X** and **60X** I could sometimes catch a glimpse of a tiny core. At other moments I caught a glimpse of spiral structure. The visions only lasted a second or two. There is a 7th mag star about 1-degree WNW of the center of M 101. Méchain's clues were "it is very faint" and "near it is a star of the sixth magnitude." Méchain's instruments were probably not as good as our modern telescopes. But his skies were probably much darker. I wondered if my better instrument operating in my poorer skies would make my observations roughly equal to Méchain's. In the UK it is popular that M 102 was a duplicate observation of M 101. M 101 is certainly very faint, and it has a nearly 6th mag star near it. However, M 101 is considerably larger than any of the other candidates. I vote "no" to M 102 being a duplicate of M 101.

8" f6, Dobsonian, 61X; Rick Tejera: Seen as round, gradually brighter to middle, noticeably brighter to the SE. At **81X** it is larger & more uniformly round Bright spot in NW near central core, which appeared more stellar like. At this power it get brighter to the middle much more sharply than at **60X**.

14.5-inch f5.2, at 140X; AJ Crayon: very larger, very bright and irregularly round face on spiral galaxy with 2 arms visible. There were 3 Milky Way stars involved. The galaxy is about 1/2 the field size of 35'. The galaxy has a large brighter center and is surrounded by a slightly fainter halo with stellarings scattered about.

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There are two detectable arms one from the south that winds 90deg around to the east ends with nice large glow. The other arm flows from the north and winds 45deg around to the west and is not as prominent. Oh, by the way there is an 8th mag star to the north.

NGC5899

8" F6 Newtonian; Charlie Whiting: There's a 6.2 mag star about 12' NW. So far, that's the brightest clue-star. Its integrated mag is 12.5 and its surface brightness is 12.2. At **160X**, this galaxy is a pretty small and pretty dim cloud of gray. In spite of the statistics, it appeared to be a little brighter and a little larger than NGC 5879, but not as bright as 5866. It is southeast of an 11th and 12th mag pair of stars. Whereas 5866, 5879, 5907 and 5908 are clustered relatively close together, 5899 is all alone. Of the clustered 4, the best choice is 5866 because it is the biggest and the brightest. But if Méchain was searching the area around 5866 he might have just as easily come across 5879 or 5908.

8" f6, Dobsonian, 81X; Rick Tejera: Noted as Slightly Elongated about 2-1 NW-SE. Sharp stellar nucleus, Southern arm seemed rounder than the northern one, which seemed to taper to point. Both arms were bright to the edge.

NGC5908

8" F6 Newtonian; Charlie Whiting: I could just barely detect a small gray patch at **120X**. This object is about 1/2 the size of NGC 5866. NGC 5908 is bracketed by a triangle of 11th, 12th and 13th mag stars. To the ESE about 1/2-degree away is a 7.3 mag star. I am amazed that I could even see this galaxy. Its integrated mag is 12.8 and its surface brightness is 13.0 mag/sq arc-min. At **160X** it has a very much brighter and stellar nucleus. The nucleus being so bright made it harder to visualize the shape and size of the halo. In the same eyepiece FOV is NGC 5905. However 5905's surface brightness is a paltry 15.6 mag/sq arc-min, way too dim for me to see. My choice for M 102 is 5899. Its has the best clue-star, and I have a hunch that its brightness is just about right for Méchain's instrument and sky conditions.

14.5-inch f5.2, at 140X; AJ Crayon: there are two galaxies in the field of view, **NGC5908** and, to the northwest, **NGC5905** with six 9th mag stars between. Considerably small, faint and very elongated in a southeastern position. It is 12th magnitude and 4'X1' and is located just inside a right triangle of stars. **NGC5905** is also considerably small, faint and round with a small suddenly brighter middle. It is also near, actually outside, an obtuse triangle of stars.

NGC5907

8" F6 Newtonian; Charlie Whiting: This galaxy is highly elongated at 12 x 1 arc-min. Although its integrated mag is 11.1, its surface brightness is 13.5 mag/sq arc-min, which is too dim for me to see. I tried very hard to see it, but it was a no show. Finally, at **160X**, with a black towel over my head and the eyepiece, and by nudging the telescope back and forth in RA using the motorized slow motion control, I detected a small streak of nebulosity. The galaxy is south of an 8-star cluster of 12th and 13th mag stars. There is a 7.5 mag star about 1/2-degree to the SW of the center of its expected position. I don't think that this is what Méchain observed because the visible portion of it would have been too small to notice. You really have to work to find this object.

8" f6, Dobsonian, 61X; Rick Tejera: Elongated 6-1 N-S. Brighter in the middle, which is most likely NGC 5906. Soft seeing, could not make out detail seen in previous observations.

14.5-inch f5.2, at 140X; AJ Crayon: this very edge-on galaxy is bright, very very elongated in a southeasterly position; it is 10'X1' with a considerable brighter middle that is slightly to the northeast side. The spiral arms have some very slightly brighter spots towards the ends and the arm to the northwest appears very slightly brighter than the other. There is a faint star near the nucleus.

16" f4.4 Newtonian, 200X; Rick Rotramel: G - L, fB, edge-on with dust lane, has a brighter oblong nucleus.

NGC5879

8" F6 Newtonian; Charlie Whiting: At **120X**, this galaxy was a very small and very dim patch of gray, barely at the threshold of visibility. It is west of an 11th and 12th mag pair of stars. There's a 7.5 mag star only 7' away to the NW. Its integrated magnitude is 12.2 and its surface brightness is 12.2-mag/sq arc-min, dimmer in both respects than NGC 5866. Its size is 3.9'x1.4', or about 1/2 as big as NGC 5866. It is harder to see than NGC 5866, but still easier to see than M 101.

8" f6, Newtonian, 100X; AJ Crayon: this galaxy has a 5'diam and is 12th mag, is pretty small, faint and is a little elongated in a northeast position. With averted vision it is irregularly round and has a gradually brighter middle. The field has a 7th mag star 10' west of northwest.

14.5-inch f5.2, at 140X; AJ Crayon: pretty bright, considerably elongated in an almost northerly position and pretty large. With averted vision this galaxy easily gets larger and brighter, 4'X'2 and 12th mag and has a much brighter elongated middle that is about 1/2 the galaxies width. There is a 7.5 mag star, SAO29427, just to the north of northwest.

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President's Message

By Rick Tejera

OK, not a lot of space this month, which is a good thing, as I don't have lot to say.

First, 5 Mile Meadow is on as of this writing, get your Observing lists ready, It should be a great two nights.

On Another note, Over the past year or so, I've noticed we've gotten a few new memebers who have become quite active in the hobby & Club activities. I'm really glad to see this as for the past few years it seemed new members would come and stay while and then go on to other things. I hope one of the reasons our newer members are getting involved is that we've made them feel welcome. This is an issue that has reared it 's head in the past. I know we're all willing to take the time to talk to a new person, but lets not wait for them to come to us. Take the time at the break during the meeting to introduce yourself and thank them for coming. As President, I try to do this, but don't always get the chance. Please help me out, It will pay dividends in a stronger and more vibrant club.

One last thing, remember this months meeting will be our sort of annual swap meet. Bring your unwanted Astro stuff to the meeting and some extra cash, and sell some stuff & buy some stuff. Till next month, Clear Skies.

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You may not find the need to become a camp gourmet, but please do make sure you have enough food that you won't find yourself getting hungry. Nothing will spoil a great night out than a growling stomach. It's also a good idea to have some snackage along for that point in the night where we all sit around someone's telescope and BS for a while.

Daytime Stuff: While most of our activity will be nocturnal, most people find it hard to sleep during daylight. Regardless of when I pack it in for the night, I'm usually up and about by 0900. IT can be a long time before night all, so plan on having something to occupy your time during the day. No doubt, a good portion of the day will be spent conversing about last night & the prospects for tonight and various other topics, but eventually folks will want some time away from the group. I bring a few book & magazines to read and also will try to do some Geocaching. If you don't know what that is or don't care, a hike might be a nice diversion. If you bring music, please make sure you have a headset. It'll be guaranteed someone will not have the same taste in tunes as you, not to mention, nature provides her own music. A trip to the nearest town (Clint's Well from 5MM) may be in order to replenish supplies & ice. Don't get caught short.

One last topic: OK, now to answer that age old question: Astronomers in the woods, Crappeth they not? Yes we do, so be prepared. For 5MM it's not a big issue as we will have a porta john there. If Porta John's are not your thing, remember the nearest porcelain is 17 miles away in Clint's Well. Porta john's looking better all the time, Huh? IF you find yourself heading out to a location where there are no facilities, be prepared to handle matters Caveman style. Trust me when I tell you, you don't want to forget TP. It ain't the most fun you'll have camping, but it beats the alternative. Believe it or not there is an entire book written on the subject of crapping in the woods; "How to Shit in the Woods: An Environmentally Sound Approach to a Lost Art" by Kathleen Meyer. Go to: http://www.amazon.com/gp/sitbv3/reader/ref=sib_dp_pt/002-9862765-5925634?%5Fencoding=UTF8&asin=0898156270 if you don't believe me. It's good for a laugh and oddly enough, you may learn something.

In closing, you don't need to be Daniel Boone to enjoy a night or two out, but it's nice to be comfortable & safe. See You at 5 Mile Meadow.

Monthly Trivia Question

What was the first word spoken from the surface of the moon, and who said it?

Answer next month

July 2006

SUN	MON	TUE	WED	THU	FRI	SAT
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Schedule of Events for July 2006

July 3rd	Moon at first quarter at 1137mst
July 3rd	Earth at Apehelion at 1609 mst, 1.0167 AU from the Sun
July 10th	Moon is full at 2002 mst.
July 14th	**SAC General Meeting at Grand Canyon University at 1930, Speaker TBA**
June 11th	Moon is full at 1103 mst.
July 17th	Moon at third quarter at 1213 mst.
July 22nd	**SAC Star Party at Cherry II, Sunset 1938, End Ast. Twilight 2117 Moonrise 0346**
July 24th	Moon is new at 2131 mst.

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NGC5866

8" F6 Newtonian; Charlie Whiting: I continued the hunt for M 102 by observing NGC 5866. In the USA this is probably the most popular choice. At **60X** and **120X,** NGC 5866 is on the baseline of a triangle formed by 8th, 9th and 10th mag stars. There's a 6.7 mag star about 1/2-degree to the NW. This object is more easily seen than M 101. Although its integrated magnitude of 10.8 is dimmer than M 101's 8.2, its surface brightness of 11.8 mag/sq arc-min is easier to see than M 101's 14.0 mag/sq arc-min. That this is an extended object was even detectable at low power. NGC 5866 is much smaller at 6.5 x 3.1 arc-min. However I could only see about 3 x 1 arc-min, probably only the core. NGC 5866 is partially bracketed by an 11th mag star to the NNW and a 12th mag star to the SW.

8" f6, Dobsonian, 61X; Rick Tejera: Elongated about 3-1 NW-SE. Framed nicely by a triangle of stars. The western end is a bit brighter that the eastern side. Seeing is soft so not able to discern much more than that.

16" f4.4 Newtonian, Rick Rotramel: G - pL, pB, oval, brighter in the middle. Pretty nice! My Pick for M102: NGC5866, since it is closest to Iota Draco (the "sixth" magnitude star?) and it's bright (like most Messier objects) !

Call for Observations

For July let's try Ophiuchus – again. It has lots of nice globular clusters, so let's look for some new stuff. While doing the globular clusters do some comparison of size, brightness and resolvability. First is **M12**, located almost 3° west of 12 Ophiuchi; about half way there you'll pass a nice three star arrangement of 8th mag stars. Be sure to notice it in your finder if you use the star hop method. Next is **IC4665**, a large bright naked eye open cluster a little more than one-degree north east of 3rd magnitude Cebalrai (beta Ophiuchi). Count the stars and estimate their brightness. We now start on a southerly tour of the constellation, beginning with **M62**, which is just across the border from Scorpius. There isn't any short hop from a bright star, so start with epsilon Scorpio and swing almost 5° north of northeast and you will easily sweep it up on your finder. On to **M19**, which should be an easy slew north for about 4°. Again, it should be visible in your finder. Next is **NGC6316**, which is just across the other side of the **Pipe Nebula's** end, otherwise it is 1.5° south of 36 Ophiuchi. Can you see the **Pipe Nebula** naked eye? Yes or no. Finishing off our southerly tour is **NGC6366**, which is 1° west of 4.5 magnitudes SAO141665. We now finish up with **NGC6633** way out on the western side near Serpens. This open cluster is a switch from globular clusters and we don't have any naked eye star to hop from, so use your binoculars and locate 5.7 magnitudes SAO123516 that is within a degree of the cluster.

Here is the constellation and objects for August. It is the desert denizen found as part of the SAC logo, Scorpius. I'm not sure why this one has been skipped for so long, perhaps due to its southerly declination? No more! Let's see what it has to offer. Naturally we will start with, and do all of the Messier entries, beginning with **M80** located 1.5° northwest from omicron Scorpii. If you star hop this one, take a gander at the Milky Way you traverse between the two. Next is easily located **M4**, in the same finder view of Antares and 1.3° to the west. Both of these globular clusters are easily seen in modest size finders. Next is a planetary nebula, **NGC6153**, and is quite a hop from our last object. So get ready for some fun here, it is 6.3° east of southeast from 3rd magnitude eta Lupi and is not visible in moderate sized finders. Now, going back to clusters find the magnificent **NGC6231**! It is a naked eye galactic cluster located about ½ degree north of zeta Scorpii. Can you detect the cluster without any optical aid? If you have binoculars available, or can borrow a pair please do, give this area a nice once over, you will be most happy to have done so. Moving on, towards the tail, find **M6**, about 5° north of northeast from Shaula, or lambda Scorpii. Finally, there's **M7**, a scant 3.8° southeast from M6. Both of these clusters are so large and bright you should be able to see them without any optical aid. Can you see them this way?

Again, because of the monsoon this time of year here is the list for an extra month in advance. While working on a globular cluster observing program, I did a number of them one night in Sagittarius and was struck by their varied size and magnitudes. So, I thought this would be a nice sequence for all to study and have, therefore, arranged them from the faint to very bright. Keep track of the number of stars you can resolve in each of these gems. The first to start with is magnitude 11.2 **Palomar 8**, at almost 5' that may be found a little more than 2° east-southeast from M25. Second is **NGC6558** and is located in the spout of the teapot. Its magnitude 9.3 and almost 4' should make it easier to spot. Next is **NGC6652** located almost 3° northeast from Kaus Australis, also known as epsilon Sagittarii. This globular is at magnitude 8.9 and is about 3.5' in diameter. Continuing on we go back near one of the earlier one, **NGC6569** in the spout of the teapot, is magnitude 8.7 and almost 6' in diameter. While here, check out NGC6558 again, only one-degree to the west. I missed this alignment during my observing sequence and need to go back and check them out again. The fifth in this

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Bits & Pisces– Minutes of the May 12th 2006 General Meeting

By Susan V. Pritchard

The May 12, 2006 meeting opened at 7:30 by President Rick Tejera, who welcomed all visitors and members. He invited the visitors to introduce themselves and sign the guest book and receive a copy of the SAC newsletter. He mentioned that the Thunderbird Public Star Party on May 6th was a great success—there were over 25 telescopes and at least 500 in attendance. The Glendale Parks Department provided the Port-a-John and shuttle bus rides to the parking lot, which eased the traffic congestion and light problem. He thanked all who brought their scopes. Paul Dickson gave the Treasurer's Report—the club has a total balance of $6096 in assets and no outstanding liabilities. Messier Marathon T-shirt sales brought in over $500.

Announcements: May 20th is the date scheduled for the SAC star party at Cherry Road; the next SAC meeting would be on June 9th; and June 17th is the date set for the June star party. The 5 Mile Meadow star party is still planned for June 23-24; at this time, there are no forest closures. A.J. Crayon called for observations and will email the list of objects to Rick Rotramel for the SAC list.

Jack Jones is the coordinator for SAC members to attend the Grand Canyon Star Party; Steve Dodder will be at the South Rim, while Jack and Margie Williamson will be at the North Rim—dates are June 17-24, 2006. Dean Keteleson will also be at the South Rim. Jack also reminded members that some Messier Marathon T-shirts are still available. Steve Dodder thanked everyone who attended the semi-annual Potluck Star Party held at Stonehaven Observatory in Maricopa on April 22. Unfortunately, the binocular chair wasn't ready for use, but Joe Orman did give his presentations of naked-eye objects; 12 people came and Steve thanked those who helped with the preparations—Rosie is recovering nicely and appreciated the help.

Gene Lucas said that Astronomy Day at the Arizona Science Center in downtown Phoenix on May 6th was very successful with over 1500 people. One telescope was set up during the day for solar viewing and several more for night viewing--Venus was visible, along with several good sunspot groups. He thanked those who helped at the display tables.

Steve Coe announced that the Double Star list will be put on the SAC website and thanked those who helped compile the data.

Show 'n Tell: Brian Vorndam, from Yuma, showed a great video of the recent solar eclipse and Jennifer Polakis presented an amusing collection of altered photos from her trip to Egypt for the eclipse. Gerry Ratteley attended the eclipse in Turkey and had some good pictures of his experiences there. Steve Coe had some photos taken of the recent comet in April.

After the break, Paul Lind introduced our own Tom Polakis, who gave a wonderful program on Sky Photography. The meeting adjourned at 10:00 pm and members went to the JB.'s restaurant at Northern and 35th Avenue for fellowship and food.

The next meeting will be on June 9, 2006, and the program will be a Swap Meet.

Respectfully submitted,
Susan V. Pritchard
Secretary, Saguaro Astronomy Club

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sequence is **NGC6624**, at magnitude 8.3 and 6', is located about 50' southeast from Kaus Meridionalis, better known as delta Sagittarii. Now move on to **NGC6723** located about 30' north of northeast from epsilon Corona Australis. This one is magnitude 7.3 and 11' in diameter. At this time, let me put a thought in your mind. We have gone from very faint to the very large and you might wonder why this last one isn't in the Messier Catalog? To see why it isn't check out the last globular cluster on this month's list **M22** tis pretty easy to find being about 2.5° northeast from Kaus borealis, or lambda Sagittarii. This one is magnitude 7.3 and 11' in diameter, one of the finest globular clusters. I hope you enjoy the tour and have an appreciation of the variety of these denizens of the deep.

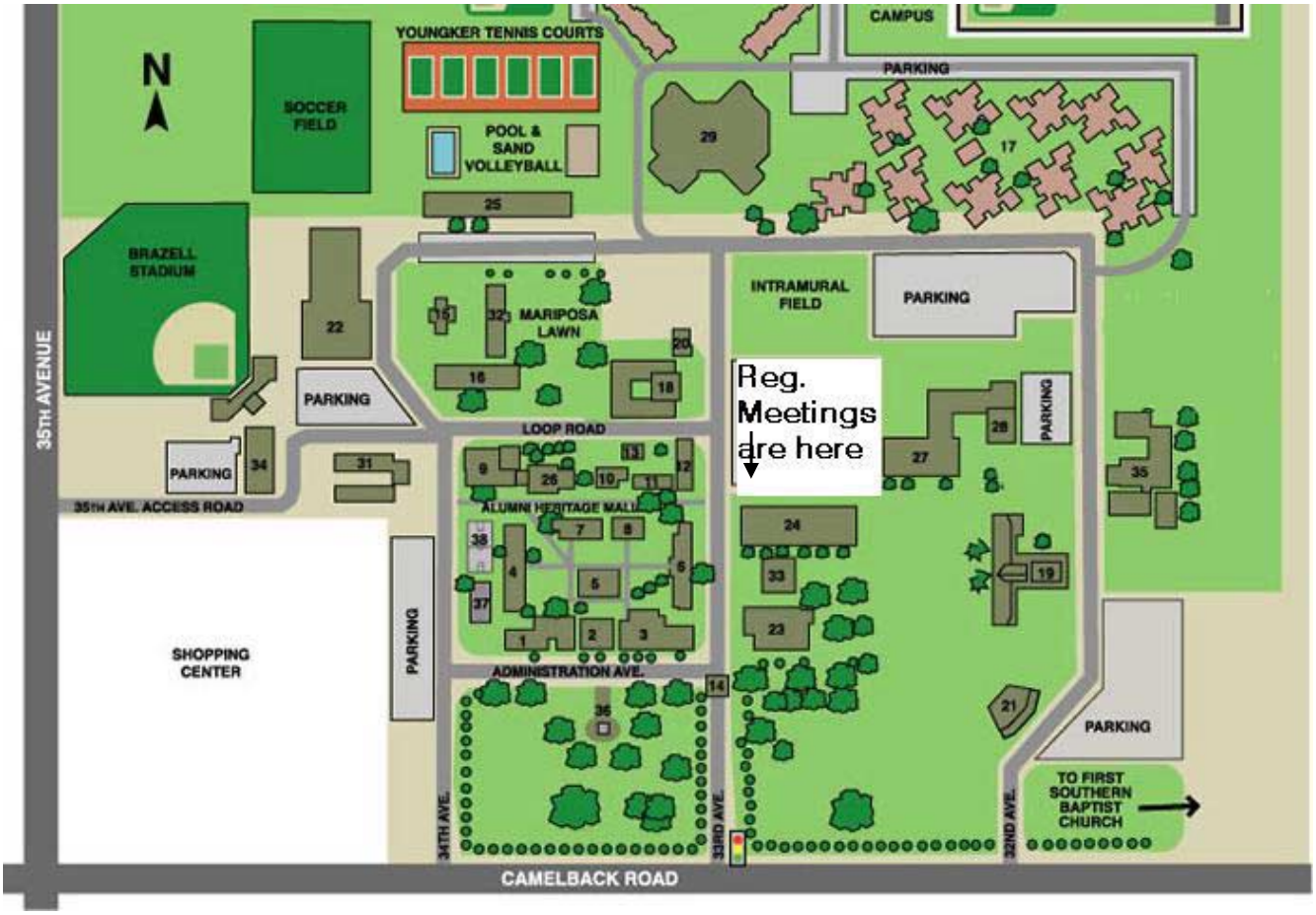
SAC Meeting and Observing Sites

Cherry Rd. Star Parties

Take I-17 north to the Cherry Rd exit. Turn west (left) and continue on Cherry Rd for about 5 miles. Turn Left on the dirt road just past the sign that says Cherry 6. Note you turn in the direction Opposite the arrow on the sign. The site is 3/4 down the road on the left.

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.



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
- ☐ $12.00 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

Name:_____

Address:_____

City:_____ **St:**_____ **Zip:**_____

Phone:_____

E-Mail:_____

Make Check Payable to : SAC

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

SAC Treasurer
c/o Paul Dickson
7714 N 36th Ave
Phoenix, AZ 85051-6401

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

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 your prefer a printed copy.

☐ **Please send me a hard Copy of the newsletter**

SAGUARO ASTRONOMY CLUB

June2006

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SAC Schedule of Events 2006

SAC Meetings

January 13th, 2006	July 14th, 2006
February 10th, 2006	August 11th, 2006
March 10th, 2006	September 8th, 2006
April 14th, 2006	October 6th, 2006
May 12th, 2006	November 3rd, 2006
June 9th, 2006	December: TBA

ATM & Astro-Imaging Group Meetings

January 10th, 2006	July 11th, 2006
February 7th, 2006	August 8th, 2006
March 7th, 2006	September 5th, 2006
April 11th, 2006 ?	October 3rd, 2006
May 9th, 2006	November 7th, 2006
June 6th, 2006	December 5th, 2006

SAC Star Parties

Date	Sunset	Astronomical Twilight Ends	Moonrise	Site
Jan 21st, 2006	1752	1919	0044	F
Feb 18th, 2006	1818	1942	2335	F
Mar 18th, 2006	1842	2005	2230	F
Apr 22nd, 2006	1908	2037	0347	F
May 20th, 2006	1928	2108	0157	C
Jun 17th, 2006	1943	2129	0029	C
Jul 22nd, 2006	1938	2117	0346	C
Aug 19th, 2006	1911	2042	0240	C
Sep 16th, 2006	1854	1958	0135	C
Oct 14th, 2006	1759	1921	0033	F
Nov 11th, 2006	1723	1850	2316	F
Dec 16th, 2006	1725	1854	0449	F

F= Flat Iron; C= Cherry Road