



SACnews

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Thunderbird Public Starwatch

Photo's by Jack Jones

The Thunderbird Public Starwatch at Thunderbird park in Glendale was again a huge success. We had over 25 telescopes and plenty of guest to look through them. Here are a few images by Jack Jones, to whom we owe a huge

thank you for his role in working with Glendale to arrange for the porta-potty & shuttle buses. Without his efforts the event would not have as successful. Thanks Jack.



Left: Jeff Hopkins (rear) watches as a young fellow gets a look at the moon through Jeff's Dob.



Right: A guest gives Marge Williams' new Coronado H α Solar Scope a test run.

Below: A look down the Telescope line. We had scopes ranging in size from 60mm to 20"



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Who Wants to be a Daredevil?

By Patrick L. Barry and Dr. Tony Phillips

When exploring space, NASA naturally wants to use all the newest and coolest technologies—artificial intelligence, solar sails, onboard supercomputers, exotic materials.

But “new” also means unproven and risky, and that could be a problem. Remember HAL in the movie “2001: A Space Odyssey”? The rebellious computer clearly needed some pre-flight testing.

Testing advanced technologies in space is the mission of the New Millennium Program (NMP), created by NASA’s Science Mission Directorate in 1995 and run by JPL. Like the daredevil test pilots of the 1950s who would fly the latest jet technology, NMP flies new technologies in space to see if they’re ready for prime time. That way, future missions can use the technologies with much less risk.

Example: In 1999, the program’s Deep Space 1 probe tested a system called “AutoNav,” short for *Autonomous Navigation*. AutoNav used artificial intelligence to steer the spacecraft without human intervention. It worked so well that elements of AutoNav were installed on a real mission, Deep Impact, which famously blasted a crater in Comet Tempel 1 on July 4, 2005. Without AutoNav, the projectile would have completely missed the comet.

Some NMP technologies “allow us to do things that we literally could not do before,” says Jack Stocky, Chief Technologist for NMP. Dozens of innovative technologies tested by NMP will lead to satellites and

space probes that are smaller, lighter, more capable and even cheaper than those of today.

Another example: An NMP test mission called Space Technology 9, which is still in the planning phase, may test-fly a solar sail. Solar sails use the slight pressure of sunlight itself, instead of heavy fuels, to propel a spacecraft. Two proposed NASA missions

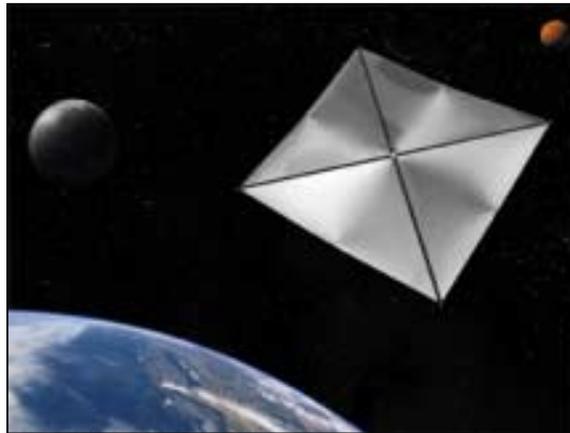
would be possible only with dependable solar sails—L1 Diamond and Solar Polar Imager—both of which would use solar sails to fly spacecraft that would study the Sun.

“The technologies that we validate have future missions that need them,” Stocky says. “We try to target [missions] that are about 15 to 20 years out.”

A menagerie of other cool NMP technologies include ion thrusters, hyperspectral imagers, and miniaturized electronics for spacecraft navigation and control. NMP focuses on technologies that have been proven in the laboratory but must be tested in the extreme cold, vacuum, and high radiation environment of space, which can’t be fully recreated in the lab.

New NMP missions fly every year and one-half to two years, taking tomorrow’s space technology for a daredevil test drive.

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



Artist's rendering of a four-quadrant solar sail propulsion system, with payload. NASA is designing and developing such concepts, a sub-scale model of which may be tested on a future NMP mission.

5 Mile Meadow Star Party

It's time again for the 5 Mile Meadow Star Party. This year's event will be held on Fri & Sat. June 23rd & 24th.

If you haven't had the chance to head up, you really should try to make it. The skies are among the darkest & clearest you'll find. The site is about 130 miles north of Phoenix at an elevation of 6800'. There is plenty of room for all who want to come. Remember, it will be fire season, so no open flames. Gas grilles have been OK in the past. If the Forest ranger advise differently, we'll let you know.

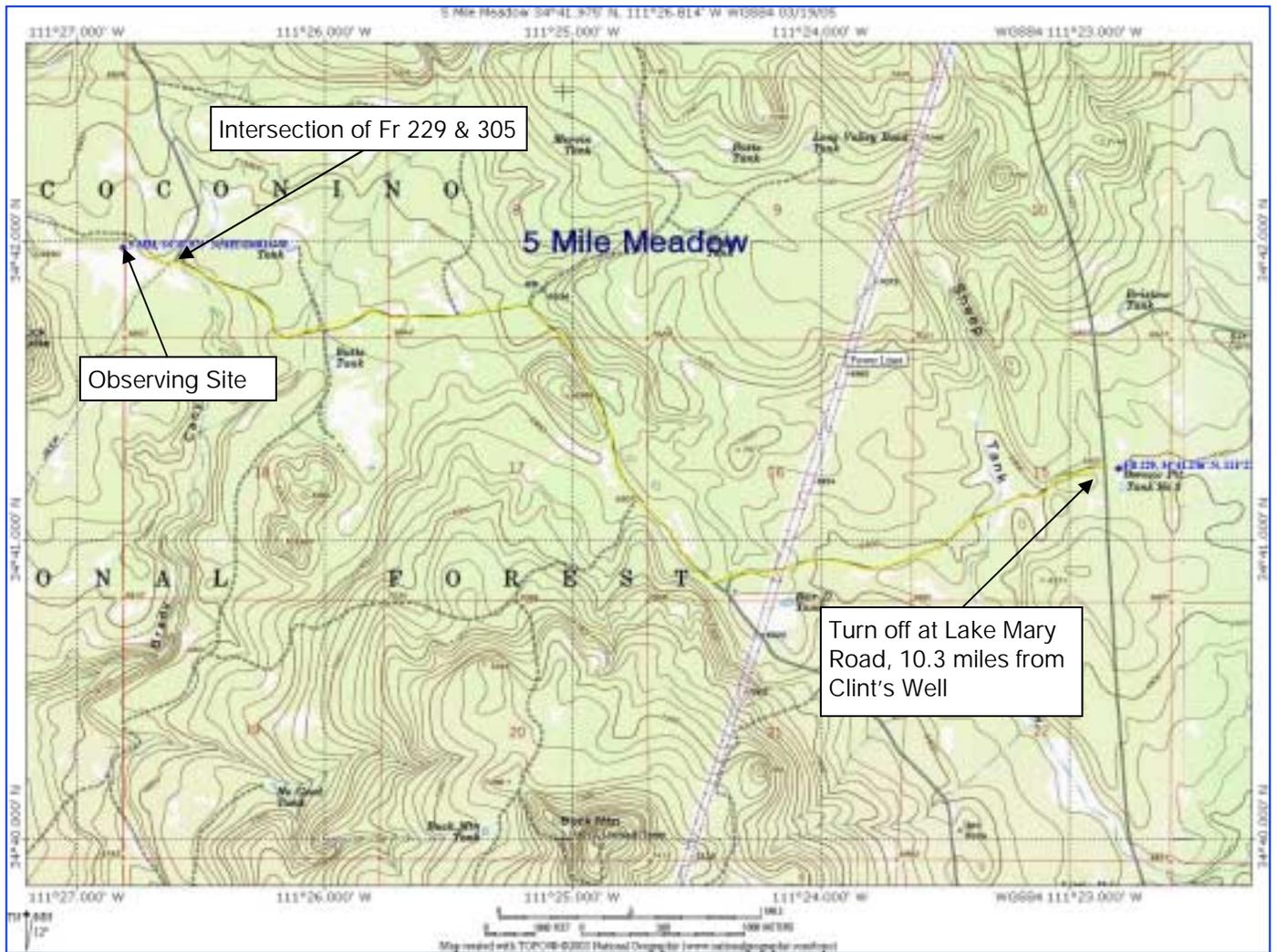
Even though it's the middle of June, temperatures will drop into the 30's at night, so bring appropriate clothes for observing into the wee hours.

We will have a porta-potty for your convenience (and to make the Rangers happy!)

To get there: Take I=17 to SR 260, the General Cook trail. Head East on 260 for 34 Miles until you reach SR 87. Turn Left and take Sr 87 for 12 Miles to the little town of Clints Well. If you need ice or other supplies, this is the last chance to get them. Turn left on to Lake Mary road at Clints well and continue for 10.3 miles to FR 229. There is a small brown route sign marking the entrance to the road. From here follow the well maintained dirt road for 5 miles to the meadow, which is just past the intersection of FR305.

The map below details the last five miles on the dirt road.

Hope to see you there.



Last Call For Observations—Corvus

By A.J. Crayon

There is a lot to "crow" about for this month's observations so, without further a-do, let's get to them!

NGC4027

8" f6 Dobsonian, 60X; Rick Tejera: Noted as bright with stellar core and elongated N-S. Almost all of the elongation was to the south, fading gradually. Noted what would seem to be a star to the SW of the core, this is in fact **NGC4027A**.

8" f6 Newtonian, 160X; Charlie Whiting: This galaxy appeared as a gray blob. Elongated 3 to 2. They are aligned NW to SE, pretty faint and gradually brighter in the middle. Not stellar. It forms a triangle with two 13th mag stars to the north. Due south is **NGC4027A**. It was very small, very dim and must have a stellar core. A couple of days after my observation I did a Goggle search for **NGC4027**. I found a photo that showed a spiral arm to the north and an open space between it and the core. I think I saw that feature! But I did not trust my eye to let my brain understand what it was seeing.

14" f10, SCT, 150X; Joe Goss: Galaxy- Large, fairly bright, irregular oval shape, slightly brighter to center, star near NE edge. **NGC4027A** Galaxy- Very small, very faint, round, even brightness

16" f4.4, Newtonian; Rick Rotramel: G - pS, pF, and slightly oval, very nebulous, low surface brightness.

20" f5, Dobsonian, 95X and 285X; Jack Jones: Mag 11 galaxy. There is a hint of a spiral shape. For **NGC4027A**, it is a mag 15 galaxy, could be dimmer than that, very difficult wispy dot at Flatiron site.

NGC4038 and NGC4039

8" f6 Dobsonian, 71X; Rick Tejera: Noted as an amorphous spot. Using averted vision brings out detail of shape. You can note a V shape as NGC4039 comes into view.

8" f6 Newtonian, 160X; Charlie Whiting: Two galaxies merging, NGC4038 and NGC4039. They are each are brighter than NGC4027 and maybe just a little larger. Together they form a wedge shape that points north of east. Known as the Ringtail galaxy or as the Antenna. Neither galaxy has a stellar core, nor are they brighter in the middle.

14" f10, SCT, 150X; Joe Goss: Galaxy- Large, bright, elongated oval, brighter on E. end, forming a V with NGC4039. **NGC4039:** Galaxy- Large, bright, elongated oval, even brightness, forming a V with NGC 4038.

15" f/5, Dobsonian, 147X; Thad Robosson: Pair of galaxies whose fates are obviously intertwined. One appears fairly elongated and normally shaped, while the other seems to be nearly "comma" shaped. Neither

have notable cores visible.

16" f4.4, Newtonian; Rick Rotramel: G's - pL, pB, peculiar shaped, 2 sections (galaxies), one with a hole (dark nebula) in it. Neat! (My notes did not mention the tails.)

20" f5, Dobsonian, 95X and 285X; Jack Jones: Mag 11 galaxy. Burnham calls it the Ringtail galaxy, looks like a comma or fetus-shape. Two galaxies are colliding at a 45-degree angle, V pointing east.

NGC4033

8" f6 Newtonian, 160X; Charlie Whiting: This small galaxy floats in the middle of three 11th mag stars that form a narrow triangle near the edge of the eyepiece FOV. It is very much brighter in the middle, maybe a stellar core. It is elongated 3:2, aligned NE-SW.

14" f10, SCT, 150X; Joe Goss: Galaxy- Fairly small, bright, elongated 2x1, much brighter to center.

20" f5, Dobsonian, 95X; Jack Jones: Mag 11.7 galaxy. This has a curve to it, an arch-shaped galaxy.

NGC4361

8" f6 Dobsonian, 71X; Rick Tejera: First observation. Noted as very bright and round, did not try filter on this, although it was bright enough to show a brighter center gradually dimming to the edges. Second observation. Noted as very bright & large. Kind of irregular shaped almost with squared off corners. Using the O-III filter brings out 2 levels of brightness, a large bright central section and a slight less bright halo.

8" f6 Newtonian, 120X; Charlie Whiting: This is a fairly bright PN. It either has a central star or there's a star superposed on it. It did not respond well to filters. It was a little larger than NGC-2438 in M-46, and a little brighter. The "facts" appear to contradict my observation. Since I observed both objects within less than a 3-hour period, I suspect that observations are highly subject to the observer's impressions, or seeing/transparency changed slightly between the observations.

14" f10, SCT, 150X; Joe Goss: Planetary Nebula- Large, bright, irregularly round, gray/white color, central star bright and stands out.

15" f5, Dobsonian, 190X; Thad Robosson: Large and obvious. Has a prominent central star. Nebulosity is not uniformly round surrounding central star. UHC filter only serves to dim the central star and make the outside shape slightly more obvious. There appears to be a lightening in the middle, but disappears with UHC applied.

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16" f4.4, Newtonian, 200X; Rick Rotramel: PN - pL, fB, round, bright central star.

20" f/5 Dobsonian, 285X; Jack Jones: Mag 10.3 (photo) large planetary nebula. Central star brightest I've seen associated with a planetary, which looks like a star thru a dewed-up lens without filtering, and with UHC filter I still see the star bright with a darkening within the nebula on S side and tufts to N and S.

NGC4462

8" f6 Newtonian, 160X; Charlie Whiting: this is a pretty small, pretty faint galaxy. I saw no stellar nucleus. It was only gradually brighter in the middle. Elongated 3:1 aligned SE-NW.

14" f10, SCT, 150X; Joe Goss: Galaxy- Fairly large, fairly bright, elongated 3x1, slightly brighter to center.

20" f/5 Dobsonian, 95X; Jack Jones: Mag 12 galaxy. Small, elongated. Pretty normal galaxy relative to what I've already seen.

NGC4783

8" f6 Newtonian, 120X; Charlie Whiting: these 2 galaxies, **NGC4782** and **NGC4783**, overlap and look like one object. There are 2 middles. Both are gradually brighter in the middle and non-stellar. In the same FOV can also be seen **NGC4792** and **NGC4794**. The **NGC4782-3** pair is bigger and brighter than the **NGC4792-4** pair. **NGC4792/94**: At **120X** **NGC4794** appears to be brighter and larger than **NGC4792**. **NGC4794** seems to have a stellar core. **NGC4792** seems to be stellar. **4792** is very small and just barely at the threshold of visibility.

14" f10, SCT, 150X; Joe Goss: **NGC4782**: Galaxy- Fairly small, fairly bright, irregularly round, slightly brighter to center, just N of **NGC4783**. **NGC4783**: Galaxy- Fairly small, fairly bright, irregular oval shape, slightly brighter to center, just S of **NGC 4782**. **NGC4792**: Galaxy- Very small, very faint, irregular shape, even brightness. **NGC4794**: Galaxy- Small, faint, irregular oval shape, slightly brighter to center.

15" f5, Dobsonian, 87X; Thad Roboson: **NGC4782-3** - Both fairly obvious-appearing as a fuzzy double star of sorts. They are close enough to one another to visually overlap. The cores of both are readily apparent. **NGC4792** - Is somewhat obvious to the east of **4782-3**. No details readily visible except for a faint halo that gives it away as a galaxy. **NGC4794** - Is only visible as a galaxy with extreme averted vision. Nucleus is not exceptionally difficult, but halo is quite faint.

20" f/5 Dobsonian, 95X and 285X; Jack Jones: Mag 11.5 galaxy. **NGC4782/83**, looks like "Eyes"-type close-double galaxy. Can also be called, two buttons, a star

between them slightly to the W. **NGC4792**: Mag 15 galaxy. Much easier than **4027A**, but Megastar lists it as mag 16! These two, with **4782/3** is the start of a nice galaxy chain headed southward in a wide curve, **4836**, **38**, **55**, **91**, **99**, **56** and **4902**. **NGC4794**: Mag 14.5 galaxy. Small. Bracketed between two 13-mag stars. A trio (or quad) in the low-power eyepiece is **4792** and **4782/3**. Getting close to Virgo, good galaxy hunting area.

Call for Observations

For June we're going to divert from the normal constellation selection and follow a different path. For this we will study the only outstanding unsolved mystery of the Messier Catalog and that is, is **M102** a duplicate observation of **M101** or not, and if not, what are the likely candidates? The short story is there isn't enough information to make a correct decision; at least not with the information available. Our assignment is to go out and observe **M101** and a number of other galaxies that are thought to be **M102** and report your results. To start with we must observe **M101**, a magnificent face on spiral galaxy, which Méchain described as,

*101. 13h 43m 28s (208d 52' 42")
+55d 24' 25"*

(March 27, 1781) 'Nebula without star, very obscure & pretty large, of 6 or 7 minutes [of arc] in diameter, between the left hand of Boötes & the tail of the great Bear [Ursa Major]. It is difficult to distinguish when one lits the [graticule] wires.' (diam. 7')

For the observation of **M102**, wherever it is, Méchain described **M102** as,

(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.)

In all of your observations, look for the 6th magnitude star. Where is it? Remember, though, this is a visual observing estimating the magnitude of a star. Could it be off by a magnitude or so?

So much for the introduction, now let's move on to the objects for us to study. We start with the obvious **M101**. The NGC candidates are a selection of the brighter galaxies in the area. The first galaxy takes us into Boötes, is mag 12.5 **NGC5899**. Magnitude 12.8, **NGC5908** follows. The third is magnitude 11.1 **NGC5907** a late type spiral. Second to last **NGC5879** another spiral galaxy at magnitude 12.2. Finally, the last

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President's Message

By Rick Tejera



First, I'd like to apologize for getting this issue out late. Unfortunately, there's been a lot going on at home and work the past month. With Sue back working outside the home, we've had to rearrange things that were arranged. Hopefully once school lets out, There'll be more time, Hopefully.

Anyway, moving on. We just finished hosting two public star parties & one school event. The Public Star Party at Dreamy Draw Park found only myself, Dave Fredericksen & Dwight Bogan with scopes but in spite of the low turnout of scopes we were able to show a lot of interested folks some nice objects. I got a bit of a surprise when I was asked when "The Talk" was going to be. No one had told me about a talk. Good thing I've never met a conversation I don't like. I just whipped out the green laser and gave the folks a 50 Cent tour of the night sky. I showed them how to use constellations everyone knows (Ursa Major & Orion) to find other Constellations (the old Arc to Arcturus gig). As usual I had a good time.

Although I was unable to attend, Jeff Hopkins reported that the Garden Lakes School Star party also went well. He, Jack Jones & Al Stiewing treated about 50 folks, mostly students to views of the planets & a few deep Sky objects and some double stars. Thanks, guys. We

been doing Garden Lakes for several years now, and they are always appreciative of our efforts and have been fine hosts. Hopefully, I'll be able to make it next time out.

Finally, the Spring Thunderbird Starwatch was again a great success. We had 25 Telescopes and I'd guess at least 500 guests. This year the City of Glendale responded to the growth in popularity of this event and addressed the two biggest concerns: Parking & rest rooms. There was a porta-potty on the field. And they ran a shuttle bus from the parking areas to the observing field. Several guests commented that this worked well. There was a lot to show and we had good time showing it.

To Close out, Mark your calendars for June 23rd-24th as we make our annual trek up to 5 Mile Meadow. If you haven't had the chance, please try to get there. The site is among the darkest we have and the seeing is typically very good. Steve Coe will check on the possibility of fire restriction and will keep all informed if we need to reschedule or, hopefully not, cancel.

Oh, by the way, start digging through your unwanted Astro stuff. We will be having a swap meet at the June meeting after the break. You chance to turn Dusty stuff into cool hard cash.

Clear Skies, Rick

A Letter of Thanks From Doug Turner

Club Members,

Thank you very much for a fine Messier Marathon. This was my first. My friend, Greg Golden and I have never attended one before, and this is definitely the one to do. You guys are gracious hosts and the location is superb. Having no experience with the Marathon before, we set out goal at 50 objects. I cannot speak highly enough regarding the performance of my new scope, an LX-200 GPS (UHTC) 12 inch. I almost feel like we were cheating. The scope was dead on throughout the entire night.

At one point, we decided to take a 2-3 hour snooze, and left the scope centered on M13. Two and a half hours later we arose and peeked into the eyepiece, and M13

was still dead centered. I was, and still am, thoroughly pleased with this scope. Although I tried several eyepieces throughout the night, mostly I used a Nagler 31, probably the best investment in astronomy I've made to date.

At any rate, a big thank you to all the members of the club. I've enclosed a check to cover the plaques you sent to Greg and I, and I've added a couple of extra dollars to cover some of the additional expenses you all incur in putting on this fine event. We hope to attend again, and maybe get a glimpse of M74, M110, and M33.

Cheers, and Clear Skies!
Doug Turner

June 2006

<i>SUN</i>	<i>MON</i>	<i>TUE</i>	<i>WED</i>	<i>THU</i>	<i>FRI</i>	<i>SAT</i>
				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	

Schedule of Events for June 2006

June 2nd	Moon at first quarter at 1806 mst
June 9th	SAC General Meeting at Grand Canyon University at 1930, Swap Meet after the break
June 11th	Moon is full at 1103 mst.
June 17th	SAC Star Party at Cherry Road Sunset 1943, End Ast. Twilight 2129 Moonrise 0029.
June 17th-24th	Grand Canyon Star Party. Go to http://www.tucsonastronomy.org/gcsp.html for more details
June 18th	Moon at third quarter at 0708 mst
Jun 21st	Summer Soltice at 0525 mst.
June 23rd-24th	5 Mile Meadow Star Party, Near Happy Jack, See directions on page xx
June 25th	Moon is new at 1213 mst.

Bits & Pisces– Minutes of the April 14th 2006 Board Meeting

By Susan V. Pritchard

The April 14, 2006 Board meeting opened at 6:30 pm by President Rick Tejera in the general meeting room of Fleming Hall. Present were Rick Tejera, Paul Lind, A.J. Crayon, Paul Dickson, Susan Pritchard, and Jennifer Polakis.

A.J. Crayon mentioned that he had the awards from the Messier Marathon and some of the costs would be recovered by reimbursements from the Tucson Astronomy Club, and EVAC. He said that the money raised from the T-shirt sales from Jack Jones helped to pay for the Port-a-Potties and if the rest of the remaining 15 shirts sell, the club will make a profit. Even if you were not there for the Marathon, it is all right to wear one of the T-shirts. Don Machholz was there to talk to the public and the attendance was estimated at 200.

Rick gave some information from Peter about Astronomy Magazine sponsoring an “Out-of-

this-World” \$2500 annual award prize to be given to groups with the best outreach programs. He then suggested that we should establish a separate committee to submit an entry from the club. Rick will chair the committee, and Jack Jones, as Public Events chair, will assist.

Jennifer Polakis announced that she would have her presentation ready in time for next month’s “Show ‘n Tell”. She is also willing to work with Jack on expanding the Public Events programs.

Paul Dickson made a motion to adjourn, and A. J. Crayon seconded the motion. The meeting adjourned at 7:20 pm.

Respectfully submitted,
Susan V. Pritchard, svpritchard@msn.com
Secretary

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is a popular pick for M102, is magnitude 10.8 **NGC5866**, an early spiral. Some of the above galaxies have other field galaxies included. Just for the observational fun of it, let us know which ones you can identify.

Include your opinion of which object you believe is M102 and don't let the popular pick sway your selection.

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 (**β** 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 **ε** 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.

Now, because the summer monsoon is such a drag on our observing schedule, here's 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 **ο** Scorpii. If you star hop this one, take a

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Bits & Pisces– Minutes of the April 14th 2006 General Meeting

By Susan V. Pritchard

The April 14, 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. Some of the guests had attended the Messier Marathon and said that they would join SAC. Paul Dickson gave the Treasurer's Report—the club has a total balance of \$5968,85. Most of the expenses from the Marathon were offset by sales of the T-shirts, and with plans to have more shirts ordered, there should be a small profit.

Announcements: Although he was unable to attend, A.J. Crayon announced that the Messier Marathon was a great success with over 200 in attendance and thanked Jack Jones and Rick Tejera for all their help. He then asked Rick to present the awards for those who had turned in their observed sightings. These included the following ranges: 1) Less than 50 objects—Honorable Mention; 2) 50-90 objects; 3) Plaques for 1st, 2nd & 3rd place (108, 107 & 106 objects respectively). A.J. said that the clouds did present a challenge and no one recorded all 110 Messier objects, but all who participated were to be congratulated.

Because Jack Jones was not here tonight, A.J. said that next Public Event star party would be on April 20 at the Garden Lakes elementary school in Avondale at 107th Avenue and Indian School Rd. Also, there are still 15 Messier Marathon T-shirts left and more will be ordered. The May 6th public party will be at Thunderbird Park in Glendale and there has been some discussion with the Glendale Parks Department to have a shuttle for the public from the farthest parking lot. There is also a possibility that Glendale will provide a Port-a-John—maybe even handicapped accessible.

Steve Dodder again announced the next semi-annual Potluck Star Party would be held at Stonehaven Obser-

vatory in Maricopa on April 22 and encouraged all to bring their telescopes and a food dish. Joe Orman will be there with a presentation of naked-eye objects. Steve then said that Rosie had been in a car accident and although she is recovering all right, he asked for 3-4 people to help in setting up the potluck. He said that Pierre Schwaar's binocular chair still needs some work, but should be ready. A map will be in the newsletter.

Gene Lucas mentioned that there was going to be the Astronomy Fair at the Arizona Science Center in downtown Phoenix on May 6th and volunteers were needed to staff some of the display tables—see him during break for more information—those who volunteer will be admitted free to the Center and the planetarium shows.

Steve Coe asked for 9 people to check the data in the Double Star Database that he is compiling.

Show 'n Tell: Glen Nishimoto presented his eclipse pictures from his trip to Turkey for the recent total solar eclipse, and Paul Lind showed his eclipse pictures from his trip to Egypt with his wife Gail.

After the break, Ted Dunham from the Lowell Observatory in Flagstaff spoke on the Kuiper Express Mission to Search for Exo-Planets and gave an update of the SOFIA project and the Discovery Channel Telescope. 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 May 12, 2006.

Respectfully submitted,
Susan V. Pritchard svpritchard@msn.com
Secretary, Saguaro Astronomy Club
April 27, 2006

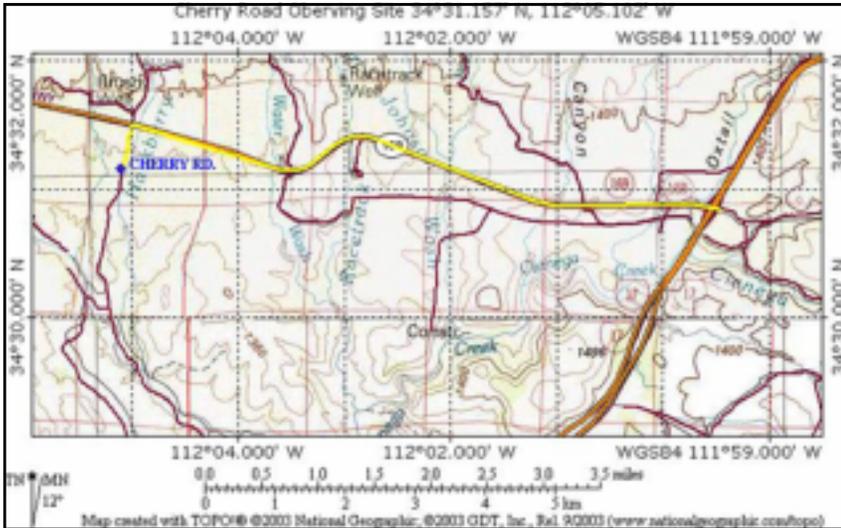
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gander at the Milky Way you traverse between the two. Next is easily located **M4**, in the same finder view of Antares and 1.3° to the west. Both of these globular clusters are easily seen in modest size finders. Next is a planetary nebula, **NGC6153**, 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 **η** 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 **ζ**

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 **λ** 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?

SAC Meeting and Observing Sites

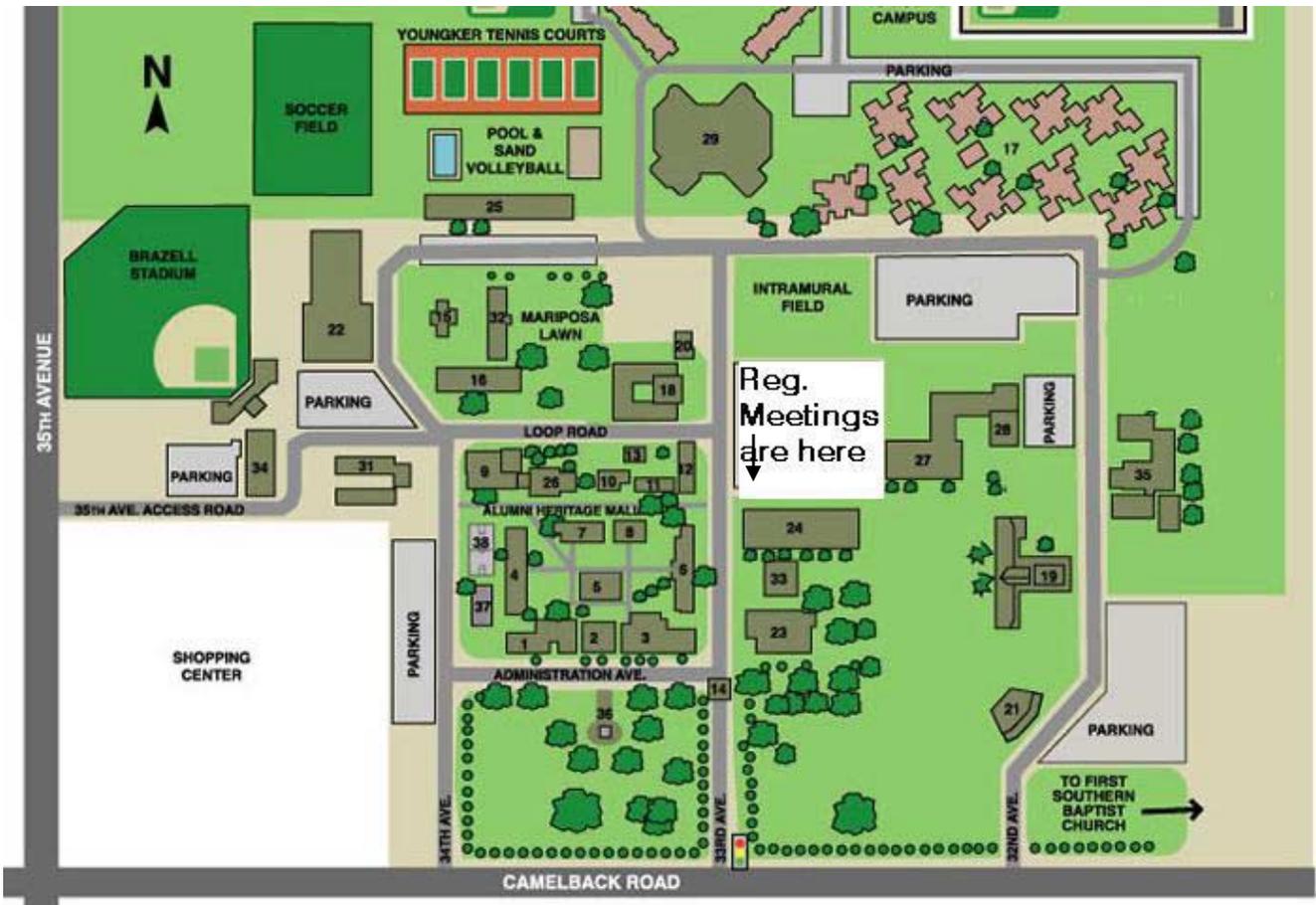
Cherry Rd. Star Parties



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 1/2 mile in through a fence on your right. Please close the gate behind you and make sure it remains closed at all times

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

Make Check Payable to : SAC

Name: _____

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

Address: _____

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

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 your prefer a printed copy.

Please send me a hard Copy of the newsletter

SAGUARO ASTRONOMY CLUB

March 2006

5643 W. Pontiac Dr
Glendale, AZ 85308-9117

Phone: 623-572-0713
Fax: 623-572-8575
Email: newsletter@saguaroastro.org



Videmus Stellae



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