



Sacnews

Volume 28 Issue 6

June 2004

SAC Officers

President: Thad Robosson
602-826-0328
President@saguaroastro.org

Vice President: Jennifer Keller
480-967-1658
Vicepresident@saguaroastro.org

Treasurer: Al Stiewing
623-875-3969
Treasurer@saguaroastro.org

Secretary: Joe Macke
623-979-8044
secretary@saguaroastro.org

Properties: David Fredericksen
properties@saguaroastro.org
623-979-0513

Public Events:
Jack Jones
602-944-5488
publicevents@saguaroastro.org

Astro-Imaging Sub Group: Al Stiewing
623-875-3969
Treasurer@saguaroastro.org

SACNEWS Editor:
Rick Tejera, 623-572-0713
newsletter@saguaroastro.org

ATM Subgroup: Thad Robosson
602-826-0328
atmgroup@saguaroastro.org

Inside This Issue

| | |
|--|----|
| Leslie Peltier: An Unsolved Mystery | 1 |
| NASA's Space Place: Far Out Ideas | 2 |
| A Call For Observations- Leo Minor | 4 |
| Astro-Bits: Going Manual | 6 |
| Calendar of Events | 7 |
| Field of View | 8 |
| Bits & Pisces: Minutes of the May General Meeting | 10 |
| Member Services | 11 |

Leslie Peltier & An Unsolved Mystery

By Phill Gibson

As a young teen back in the late 60s and early 70s, I used to be fascinated by my oldest brother's collection of astronomy magazines. He had the latest Sky & Telescope issues, plus The Review of Popular Astronomy (RPA) going back a few years.

I would especially be interested in the RPA's AAVSO "scorecard"; a list of all who had contributed to variable star estimates for the previous month for the American Association of Variable Star Observers. To me, one name always stood out above the rest: Leslie Peltier. He wasn't

always the one with the most variable star estimates for each month (although he was always near the top), but I now see why Harlow Shapely once called him "the world's greatest living amateur astronomer".

So it was with fond memories that I found a copy of his "Starlight Nights" for a few dollars at the Booklegger about 2 years ago. I finally got around to reading it just recently. Since that time, I've noticed several astronomers (professional as well as amateur)

credit Leslie Peltier's book with sparking or further motivating their interest in the starry skies. According to Timothy Ferris in his excellent book "Seeing in the Dark", David Levy carries Starlight Nights around, bible-style, complete with a new binding from all the loving wear and tear, to his speaking engagements. When he quotes from Peltier, he writes it down in the back. (Let's get David Levy here and see if this really happens!)



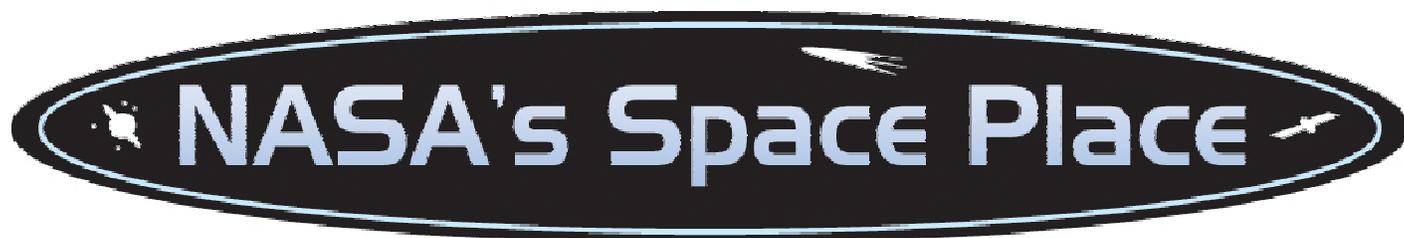
Leslie C. Peltier
1900-1980

Leslie Peltier was born on a farm near Delphos, Ohio at the turn of the century.

He enjoyed a fairly carefree, albeit hard-working, life helping with the farm chores. He was also quite interested in gardening and geology, as well as astronomy. He bought his first telescope, a 2-inch refractor, with money collected from picking strawberries one summer. I think anyone who reads his book will feel his heart race with excitement as Leslie describes that first scope arriving in the mail.

After demonstrating his tireless observing efforts (how did he do all

(Continued on page 3)



Far-out Ideas by Patrick L. Barry

Ever had a great idea for a new spacecraft propulsion system, or for a new kind of Mars rover? Have you ever wondered how such "dinner napkin sketches" evolve into real hardware flying real missions out in the cold blackness of space?

The road to reality for each idea is a unique story, but NASA has defined some common steps and stages that all fledgling space technologies must go through as they're nursed from infancy to ignition and liftoff.

Suppose, for example, that you've thought of a new way to shield astronauts from harmful radiation during long space missions. In the first stage, you would simply "flesh out" the idea: Write it down, check the physics, and do some quick experiments to test your assumptions.

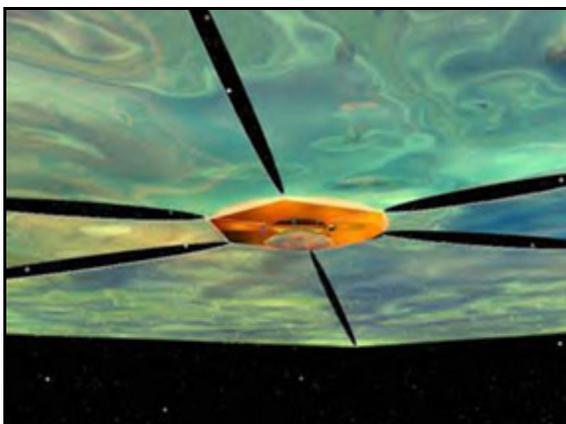
If the idea still looks good, the next step is to build a "proof of concept." This is the "science fair project" stage, where you put together a nifty demonstration on a low budget—just to show that the idea can work.

For your radiation-shielding idea, for example, you might show how a Geiger counter inside a miniature mock-up doesn't start clicking when some radioactive cobalt-60 is held nearby. The shielding really works!

Once that hurdle is cleared, development shifts into a higher gear. In this stage, explains Dr. Christopher Stevens of JPL, the challenge isn't just making it

work, but making it work in space.

"Some conditions of space flight cannot be adequately simulated here on Earth," Stevens says. Cobalt-60 doesn't truly mimic the diverse mixture of radiation in space, for example, and the true microgravity of orbit is needed to test some technologies, such as the delicate unfolding of a vast, gossamer solar sail. Other technologies, such as artificial intelligence control systems, must be flight tested just because they're so radically new that mission commanders won't trust them based solely on lab tests.



This is just one idea of how a solar sail could be used to power an interstellar probe. A solar sail is one possible type of new technology that NASA's New Millennium Program would test in space before it would be risked on a scientific mission.

risk" technologies.

Thanks to the NMP, lots of dinner napkin sketches have become real, and they're heading for space. You can learn more at the NMP website, nmp.nasa.gov/.

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

(Continued from page 1)

that observing and still manage to get to work each day?), he was rewarded by never having to buy another telescope the rest of his life, and that includes a full-focal-length 12" refractor with observatory!

He never seemed to care much for equatorial mounts as he apparently had the entire sky memorized. His friend Carolyn Hurless (also a well-known AAVSO'er) relates the tale of his giving her his own AAVSO charts while she was learning. She assumed that he must have extras. Imagine her surprise upon learning why he didn't need the charts anymore. According to Roger Hoffman, not only did Leslie have the skies memorized, he also memorized his variable estimates and wrote them down during breakfast the next morning. That way he didn't have to spend time writing them down while he made them.

Another curious fact about Mr. Peltier was that he had considerably better than average eyesight, according to an article about him in the RPA. I don't remember where I read this, but as a teen, I seem to recall his being able to see something like 7th magnitude stars on an ideal night.

During his lifetime, he made over 132,000 variable star estimates for the AAVSO, discovered 12 comets and 6 novae. He is still referenced in astronomical papers if you "Google" his name. Today, the AAVSO honors his efforts through the well-known Peltier award, given for significant contributions to observational astronomy.

After reading his book, I did a bit of research on him. Apparently, immediately after his rather sudden death while riding his lawn mower, his family put the legendary 6" comet seeker refractor away, but the rest of his merry-go-round observatory was left to the elements. Only after 9 or 10 years had passed did Roger Hoffman find his unique observatory and restore it. All the wood had since rotted away, but with considerable metal parts to it, the observatory

was reconstructed and placed in a state park just east of Dayton, Ohio, where it is in routine use today.

And what of that 12" refractor? I found a bit of information on that in the unlikely place of Astromart recently. Read on: "About 8 years ago, Leslie Peltier's observatory housing the 12-inch Clark Refractor from Miami University was razed by friends of the family. Peltier's son, Stanley, had plans to refurbish the mount and tube assembly for either subsequent sale or personal use.

"Upon inspection, Stanley noticed that the tailpiece (focuser) of the big refractor was missing. It was not found anywhere in or around the observatory so it is assumed to have been stolen.

"My plea is to anyone who may have information regarding the whereabouts of tailpiece. I would like to facilitate its successful recovery so Stanley could get on with his restoration project. Please contact me via e-Mail if you can provide any insight. Thanks. "Roger J. Hoffman, MacLove Observatory"

On the remote chance anyone reading this knows anything about the tailpiece to this famous telescope, you should contact Roger Hoffman at sooline@sbcglobal.net.

A couple of good starting places to learn more about Leslie Peltier are at:

<http://www.aavso.org/aavso/membership/lcpeltier.shtml> and :

http://www.mvas.org/merry_go_round.html

Reprinted with permission of the author. This article first appeared in the Via Stellaris, The information publication of the Von Braun Astronomical Society of Huntsville Alabama. Visit them at www.vbas.org

Last Call For Observations—Leo Minor

By A.J. Crayon

This month's constellation is Leo Minor, the Lesser or Small Lion, was named by Johannes Hevelius in the late 17th century. It doesn't stand out well against other spring constellations, the only northern constellation with no alpha, its brightest star is 6th magnitude beta. It is easily located between Leo and Ursa Major. *The Night Sky Observer's Guide* lists the brighter stars as 21, 30, 31 or beta and 46 as the brighter and, if we are short of submitted observations some will be lifted from this publication. It culminates at midnight in late February, but it is best seen during April in the early evening hours after sunset.

It has a few fairly bright galaxies and many fainter ones. So why select this constellation rather than other more well know ones that have more to offer? It was selected because it is not a very well know constellation and has some nice galaxies for our viewing pleasure.

There was one selection, the double star, that produced an interesting and informative discussion. From the SAC database of the Washington Double Star list one of the brighter and easiest to split was selected, it was STT105 (O Σ 105), from Otto Struve's Polkova Catalogue. Unfortunately STT105 is not in Leo Minor, it is in Orion. What gives? The next logical step to resolve this apparent error was to try STF105 (Σ 105), from F.G. Wilhelm Struve's, Dorpat catalog. This double is in Cassiopeia. Obviously neither of these is the double in question. So what was the problem here? Turns out it is a problem with the old indexing from the Struve's. The one selected is actually OSS105 (O $\Sigma\Sigma$ 105) from Otto Struve's First Index Catalog for wide pairs. It is interesting to know that of the 11639 doubles in the SAC list, I picked this one! Do you wonder how many others like this exist? *The Night Sky Observer's Guide* has the correct name for this double. As if there aren't enough Struve's to begin with, there's another double star observer, STF (H Σ) Hermann Struve.

So much for the introductory remarks, let's get on with the observations.

OSS105 (10 29.9 +28° 35')

(8") F/6 Newtonian, 75X; Charles Whiting: This is a widely separated double star. The primary is yellow. The secondary is also yellow, just not as bright. The PA is roughly 225-degrees. The separation is approximately 2'. The secondary is about one magnitude less than the primary.

20" F/5 Dobsonian, 60X; Ken Reeves: A bright, unequal double, wide NE/SW. The primary is white/yellow and the secondary is more yellow. The color is very slight.

NGC3294 (10 36.3 +37 19)

8" f6 Newtonian 80X; AJ Crayon: is 3'X2' in size and 11th mag, it is round and has a gradually very little brighter middle. The field has a 9m star 10'E, an 8m star 15' SE and another 8m star 20' S.

13" f5.6 Newtonian; Steve Coe: Pretty bright, pretty large, much elongated 3 X 1 in PA 135 and much brighter in the middle.

16" to 18" at 150X; *Night Sky Observer's Guide*: revealed is a moderately faint 3' X 1.25' ESE-WNW halo containing a broad, mottled core but no definite nucleus. A 13th mag star lies 2.5' west of the galaxies center.

20" F/5 Dobsonian, 180X; Ken Reeves: This galaxy is somewhat bright, pretty large, slightly brighter middle, with no nucleus, and is elongated 3:1 WNW/ESE. The shape is irregular, quite unusual.

NGC3344 (10 43.5 +24 55)

8f6 Newtonian, 71X; Rick Tejera: Noted as elongated about 2/1 E-W. Star immediately to the west interferes with view. Noted what looked like a double star near the center of the galaxy, May be just the core and a foreground star. Hint of arm structure to the west.

8f6 Newtonian, 80X; AJ Crayon: 2* in milky nebulosity with a little brighter middle that is off center; there are 2 stars less than 8th mage.

(8") F/6 Newtonian, 120X; Charles Whiting: A six day old moon was still up and lighting the sky. This is supposed to be a face-on galaxy. But, all I could see was the nucleus. There is a pair of stars (a

(Continued on page 5)

(Continued from page 4)

double, maybe?) that are embedded in the east side of the galaxy. The glare from the stars made seeing the halo all but impossible. The nucleus was roundish. Averted vision made the halo/nucleus grow and shrink. The sight was never steady. It seemed to be pretty evenly illuminated, except that it seemed brighter or more concentrated towards the SW.

13" f5.6 Newtonian 135X; Steve Coe: Bright, pretty large, round, brighter in the middle with a stellar nucleus and somewhat mottled. There are three stars involved with this galaxy. Buckeye, 13" S=4, T=6 150X--pretty bright, large, gradually brighter in the middle, round, averted vision makes it double in size. There are 3 stars involved, one pretty faint and near the core to the NE. Two are pretty bright, about 10th mag, to the east of the core. All three stars in the Vickers atlas, no supernovae tonight!

16" to 18" at 150X; *Night Sky Observer's Guide*: the halo does not gain much in size with an increase in aperture, but the two stars east of the galaxies center are now distinctly within its periphery. The central area has a mottled texture and a small 25" core with a non-stellar nucleus. Thirty arc seconds SSE of the galaxies center is a 14th mag star that appears about as bright as the nucleus.

20" F/5 Dobsonian, 180X; Ken Reeves: This galaxy is somewhat faint, very large, with a slightly brighter middle. There are 3 stars involved. The galaxy is an amorphous glow with little detail or structure. The shape is hard to tell due to the stars.

NGC3432 (10 52.5 +36 37)

8f6 Newtonian, 71X; Rick Tejera: Noted a very dense core, very rounded with very well defined arms extending NW-SE. Core was more noticeable to the SW and there were two stars involved on the NE side of the core.

8f6 Newtonian, 100X AJ Crayon: 12th mag 4'X2', very elongated in a 60° position, between stars of 8th, 9th, and two 12th mag stars involved; the field has 8 stars from 9th to 13th mag.

8" to 10", 100X; *Night Sky Observer's Guide*: this galaxy has a moderately bright spindle-shaped halo elongated 3.5' X 0.75' NE-SW. A very thin 2' long core runs through the galaxies center along the halo's major axis. An E-W pair of 12.5 and 13th mag stars lie west of the halo's SW tip, and a 12.5 mag star lies 1' ENE of the galaxies center.

13" f5.6 Newtonian 135X; Steve Coe: Pretty

bright, pretty large, brighter middle with a stellar nucleus. Very elongated 3 X 1 in PA 110.

20" F/5 Dobsonian, 180X; Ken Reeves: Nice!! Little bright, pretty large, extremely elongated 5:1 NE/SW, slightly brighter toward the middle, with no nucleus. Definite mottling seen. The brightest part is on the NE end, then darkens and brightens back up going SW. Most mottling is on the SW. 3 stars involved, 2 on the SW end and one on the SE side of the middle. A much brighter star is further E, also a very faint star on the NW of the middle. WOW!

NGC3486 (11 00.4 +28 59)

8f6 Newtonian, 80X AJ Crayon: 11th mag 6'X4' in an east of north east direction, bright elongated middle of 3'X2' with six field stars from 9th to 13th mag.

13" f5.6 Newtonian 135X; Steve Coe: Pretty bright, pretty large, little elongated 1.2 X 1 in PA 75 and much brighter in the middle with an occasional stellar nucleus.

14.5-inch f5.2 Dob 140X; AJ Crayon: pretty larger, considerably bright and round - nice face on spiral. Visually it appears to be 11m and 5 arc minutes with a small gradually brighter middle. With averted vision it is a little larger and a little brighter.

16" to 18" at 150X; *Night Sky Observer's Guide*: has a much elongated 5'X1' NE-SW envelope with a mottled texture and a highly irregular central bar, the NE half of which is broken into knots. A 14th mag star is on the NW edge of the envelope 1.25' north of the galaxies center. Opposite it, on the other flank, is a magnitude 12.5 star.

20" F/5 Dobsonian, 180X; Ken Reeves: This galaxy is pretty bright, pretty large, has a much brighter middle with a prominent stellar nucleus, and is round. There is some possible mottling, but I'm very unsure of this. Averted vision extends halo quite a bit and may show a slight elongation E/W. No stars are involved or are nearby.

NGC3504 (11 03.2 + +27 58)

13" f5.6 Newtonian 135X; Steve Coe: Pretty bright, pretty large, elongated 2 X 1 in PA 165, bright middle with a stellar core and mottled.

12" to 14" at 125X; *Night Sky Observer's Guide*: has a bright non-stellar nucleus embedded in a much fainter un-concentrated 1.5'X1' NNW-SSE halo. At 175X a slight mottled texture may be seen

(Continued on page 9)

Astrobits

By Thad Robosson

To beep or not to beep, that was the question I asked myself not so long ago at an outing to the new Eagle Eye site. Technically, the Sky Commander does not beep, but the fact that it is electronic might lead one to imagine it doing so. But I digress, so please allow me to get back on track. Once finding the new site, the process of setting up started to take place. It was a Sunday night, and I had not planned on staying the night due to the salient fact that I do have work to attend on Mondays. Typically, one of the last tasks I do after getting everything else set up is to plug in and align the Sky Commander, but for some reason, this did not appeal to me on this starry eve. My thoughts turned to hunting down the appropriate pair of alignment stars, and then having to reset the platform every hour which means determining if the Sky Commander is still aligned well. At this point, I decide to take a pass on electronic auspices, and I proceed to brave the dark sky with only my wits to guide me. I may have second-guessed myself once I found that the best Herschel 400 hunting was in Leo Minor, but I stuck to my plan, and did manage to bag many of the targets by merely star hopping.

As it is when I use the Sky Commander, I still turn my atlas to the object so that I may confirm that it's indeed what I'm looking for, but also so I can see what is nearby that may be interesting. So the usual process is to

punch in the object, slew the scope, find and center the object, confirm the correct field, and then do an observation and sketch. When you think about it, it really isn't saving a whole lot of time unless it's for a long observing session. But tonight was a short session, and I wasn't up for all the extra steps. So off I went, star hopping the whole way, and I was not frustrated for it. I managed eight full observations before we decided to call it a night. Not a personal record, but definitely a decent short night's work. And as for finding my way around Leo Minor? Let's just say that future evenings out may or may not include the Sky Commander, dependent on my disposition that particular evening. After all, if Leo Minor is star-hoppable, then most other constellations should be as well.

Of course, one could argue that electronic guidance systems provide not only a quicker means of finding objects, but newer versions also offer many details about the objects themselves, potentially making the observing session a bit more informative and rewarding. But even so, I would challenge everyone to forgo his or her electronic meanderings for a night just to see if the device is truly indispensable when it comes to a great night of observing. Besides, there's always the chance you'll show up at a session with a dead battery, and wouldn't it be nice to know that it's not the end of the session?

July 2004

| 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 June & July 2004

| | |
|----------------|--|
| June 3rd | Moon is Full at 0419 mst. |
| June 4th | SAC General Meeting at Grand Canyon University at 1930. Speaker: William Hartmann, Topic TBA |
| June 9th | Moon at last quarter at 2002 mst |
| June 12th | SAC Star Party at Cherry Rd. Sunset 1942, Ast. Twilight Ends 2127, Moonrise 0234 |
| Jun 12-19th | Grand Canyon Star Party. Go to: http://www.tucsonastronomy.org/gcsp.html for more information |
| June 17th | Moon is new at 2027 mst. |
| June 17th-20th | Lowell Star Party at the Arizona Snowbowl. For more information goto: http://kraken.lowell.edu/lsp2/obssite.html |
| June 21st | Summer Solstice at 0056 mst. |
| June 25th | Moon at First quarter at 1908 mst. |
| June 29th | ATM & Astro-Imaging Sub Group Meetings at Precision Guitar, Contact Thad for Details |
| July 2nd | Moon is Full at 1109 mst. |
| July 2nd | SAC General Meeting at Grand Canyon University at 1930, Speaker TBA, A board meeting will precede the General Meeting at 1830, All are welcome to attend. |
| July 9th | Moon at Last Quarter at 0734mst. |
| July 10th | SAC Star Party at Cherry Rd. Sunset: 1943, Ast Twilight: 2126, Moonrise 0105 |
| July 17th | Moon is new at 1124 mst. |
| July 25th | Moon is at first Quarter at 0337 mst. |
| July 31st | Blue Moon at 1805 mst. |

Field of View

By Roger Curry, Northeast Florida Astronomical Society

It is often helpful to know how big a piece of the sky that your telescopic view encompasses. This is called "True Field of View" (TFOV). This has a lot to do with the design of the eyepiece, as an eyepiece like an Erfle will give a larger true field of view than a Plössl eyepiece of the same focal length (hence the same power in a given telescope). The design of the eyepiece determines the "Apparent Field of View" (AFOV), which is the angular projection of the light circle that comes through the eyepiece (more is usually better).

To determine True Field of View, just divide the Apparent Field of View by the magnification.

As an example, my 21mm Pentax XL eyepiece has an apparent FOV of 65°. With my PortaBall telescope, whose focal length is 1524 mm, I get a magnification of 72.5. My true FOV with this eyepiece is thus 65/72.5 degrees or close to 54 arcminutes.

But what if I didn't know the apparent FOV of my eyepiece? Then you can determine the true FOV empirically by timing a star's drift.

If you can picture a globe of the Earth, you will recall that the lines of longitude converge at the pole, while the lines of latitude remain equally spaced from equator to pole. Only at the equator does 1 degree of longitude measure the same as 1 degree of latitude. Since the sky is a spherical shell around the Earth, there are corresponding lines of latitude and longitude in the sky, except that they are called Declination and Right Ascension, respectively. At the celestial equator, 1° of R. A. equals 1° of Dec,

Recalling that a star's path in the sky

describes a circle and completes its circuit in 24 hours, you can easily calculate that a star travels across 15° of sky in one hour. However, 15° near the pole is a much shorter distance than 15° on the equator.

To measure an eyepiece's True FOV, we choose a star that is on or near the celestial equator. For those of us living in Jacksonville, FL, at latitude 30 degrees, the celestial equator is 60 degrees above our horizon at due south. For practical purposes, you can get a star chart and select a visible star that is within 5° of the celestial equator (Dec = 0°). Procyon would be a good choice during June.

Center the star in the eyepiece whose field you want to measure. If your telescope has a clock drive, turn it off and let the star drift from the center of the eyepiece until it disappears at the edge of the field. Use your watch to time the number of seconds that it takes. You will be measuring the time that it takes for the star to cross half of the eyepiece's FOV. You could do this from edge to edge, but it is more difficult to estimate a star that will pass through the center of the eyepiece FOV at its midway point, so it is easier to start in the middle and let it drift to the edge. Now, use the classic formula: Distance = Rate x Time. Since we are only timing half the distance, we can compensate for that by doubling the rate.

Since the rate of a star's drift is 15°/hour, then it is 15 arc-minutes per minute. Doubling that gives 30 arc-minutes per minute. Therefore, the formula for calculating your eyepiece's True FOV is: TFOV = 30 arc-minutes x Time (in minutes). If a star takes 1 minute to drift through half the field of view of an eyepiece, the True FOV of that eyepiece is 30 arc-

(Continued on page 9)

(Continued from page 8)

minutes. If it takes 45 seconds, then that is 3/4 of a minute, so the field would be $30 \times 0.75 = 22.5$ arc minutes.

Once we have the True FOV of an eyepiece on a given telescope, we can easily calculate its apparent FOV. Recall that True FOV = (Apparent FOV) / (magnification). We now know the True FOV and the magnification for this telescope and multiplying the two together will give the apparent FOV. This will let you easily calculate the True FOV when using the same eyepiece on a telescope of different focal length.

Recapping:

Time = minutes it takes for a star to drift across half of an eyepiece's FOV.

Rate = 30 arc-minutes/minute

True FOV = (30 x Time) arc-minutes

Magnification = (f.l. telescope) / (f.l. eyepiece)

Apparent FOV = True FOV x magnification of eyepiece.

Knowing your eyepiece's True FOV allows you estimate the separation of two stars in the field, or the diameter of a galaxy or star cluster, or the diameter of the coma of a comet.

Used with permission of the author and the Northeast Florida Astronomical Society. Visit them at : www.nefas.org

(Continued from page 5)

near the nucleus. A 12th mag star lies 2' SW and two 14.5 mag stars are 2.5' NNW and 2.75' NNE of the galaxies center. Twelve arc minutes ENE is galaxy NGC3512.

14.5-inch f5.2 Dob 140X; AJ Crayon: this galaxy is 11m, 3 arc minutes. It has a large gradually brighter middle that is about 2/3 the size of this face-on spiral and sports a stellar looking nucleus. The companion, NGC3512, in the same field of view is located in a triangular grouping of stars; is small, round and pretty faint. With averted vision it has a large, gradually brighter middle that is about 3/4 the size of the galaxy. I estimate it to be 12m 2'.

20" F/5 Dobsonian, 180X; Ken Reeves: This galaxy is pretty bright, little small, has a slightly brighter middle with an extremely bright sub-stellar nucleus. Using averted vision, the halo is elongated 2:1 N/S. A star to the ESE is just involved in halo. Several other stars surround the object. To the E is 3512 - Somewhat faint, somewhat small, round, with a slightly brighter middle, and an occasional stellar nucleus. Averted vision is of little help.

Call for Observations: For the June column, let's see what we can come up with . . . Canes Venatici, the Hunting Dogs. First for the double and variable stars try 2 and Y CVn (checked both with three references). For the remainder here they are, presented without comment; NGC4143, NGC4631, NGC4656, M3 and M94. Go out and observe them and let us know what you see!!!

For July column bite the bullet and do Virgo! So many galaxies so little time and we can start just about anywhere we want. Let's begin with the brighter Messier objects and heart of the Virgo cluster of galaxies M84, M86 and friends NGC4387, NGC4388 all in the same field of view. After this observation, count the number of galaxies you see in a 1° field centered on NGC4387 and report your count. Next M49, the brightest of the Virgo galaxy cluster, again count the number of galaxies in a 1° field and report. Finally, rounding out the galaxy pig out, M87 and M89. For the double star, 31 Virginis (S.W. Burnham 924 and verified with Guide 8) should do, its separation is a little closer than those in the past but should be splittable for just about any reasonable size telescope. For a lagniappe add SS Virginis, a pulsating variable; what color do you see?

Bits & Pisces, Minutes of the May 7th General Meeting

Recorded by Joe Macke

The meeting was called to order sometime prior to the secretary's arrival at 1938MST. The secretary's irresponsibility has cost the membership an accurate report of the meeting's starting time. He should drummed from office for this lack of concern. There were 44 attendees at this time.

- 1) President Thad Robosson asked any visitors to identify themselves, but by the time this reporter arrived, this had concluded. The secretary should be shot.
- 2) Thad related that treasurer Al Stiewing couldn't attend the meeting, but had sent a report on the club's finances. There is \$1257.14 in the checking account, \$4328.25 in the savings account and \$49 on-hand. This yields a total of \$5634.39. There is also one month's room rental paid.
- 3) Thad announced a star party sponsored by the Salvation Army near Heber. Contact him for details.
- 4) A.J. Crayon thanked correspondents for their contributed observations for the 'Last Call' column in the newsletter. Refer to the newsletter for the constellations for the next column and a correction to the double star list.
- 5) Gene Lucas reported that the members have been invited to participate in the annual Astronomy Day activities at the Arizona Science Center. This year it will be May 15 at the Science Center. Park at the Heritage Square lot on 5th street, one mile north. Get a badge and parking validation at the lobby desk in the center. There will be displays and, hopefully, telescopes to view the sun. He had flyers for the Astronomy Day and Telescope workshop.
- 6) Paul Dickson brought some items to sell. He had several binders for \$1, books for \$5 each, an HP-41CV programmable calculator for \$10 and a 1.5 Megapixel digital camera with extra lenses for \$40. He also had a separate case.
- 7) Jack Jones reported that we can get the Honeywell rate at Kinko's for the newsletter and asked if the club would fund an additional \$10 per month to have the newsletter folded and stapled by Kinko's. There was a motion to do so; it was seconded. The motion passed.
- 8) A representative (Thom Walzack) from Sirius Lookers in Sedona relayed an invitation to join them at their Stoneman Lake observing site the

next two weekends if the weather cooperates.

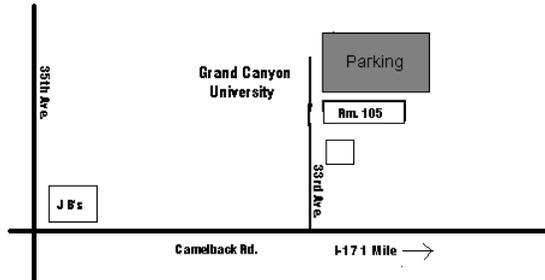
- 9) Show and Tell: Steve Dodder gave a short update on the Schwaar Binocular Chair restoration. For more information, see Steve's website at <http://www.stargazing.net/astroman>. He also said that he has a supply of Ebony Star that he could be persuaded to part with.
- 10) Tom Polakis presented information on three comets presently in the sky. Comets LINEAR, NEAT and Bradfield. He showed simulations of each comet's orbit and nine images of the comets and attendant observing activity. Vello Tolu took two of the images.
- 11) Steve Coe had a pair of flyers, one on comets and the other with maps and directions to the club's observing sites. He then showed six images of photographs that he had scanned on his (very accommodating, sweet, almost perfect) wife's new scanner. The images included comet Bradfield, the Milky Way, comet NEAT and M46 and M47, a pair of wide angle images and an image showing the light dome of Phoenix from the Flat Iron site. He had available for sale, 4 x 6 inch prints of the Comet NEAT/M46/M47 image.
- 12) There was a break at 2025MST
- 13) The meeting reconvened at 2045. Before the speaker, Thad listed upcoming events: May 8, Cherry Road; May 15, Cherry Road, sunset at 1930MST, moonrise at 0400MST; June 1, (Tuesday), ATM and Astro-Imaging SIGs at Precision Guitar; June 4, June General Meeting at Grand Canyon University, Room 105 in the Fleming Building; June 12, Cherry Road, sunset at 1940MST, moonrise at 0234MST
- 14) Thad then yielded to Jennifer T.P. Keller who introduced the evening's speaker. George DeLange delivered a talk entitled 'Ancient Astronomy' about what he called 'astro-archeology.' He presented a description of ancient Mesoamerican astronomy and the ancient's prediction of the end of the world on December 21, 2012. Apparently the Christmas shopping season will be cut short that year.

The meeting adjourned at 2256MST and attendees were invited to continue the talk and mutual verbal abuse at J.B.'s at 35th Avenue and Northern.

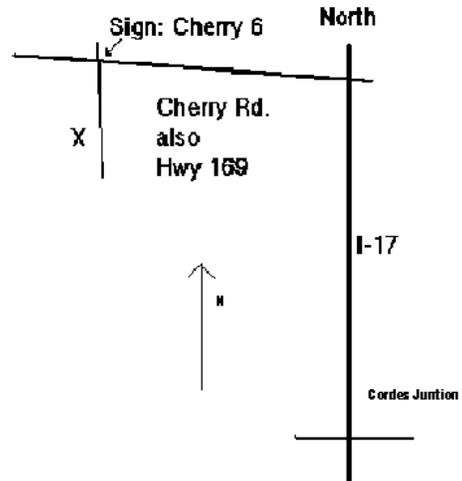
SAC Meeting and Observing Sites

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.

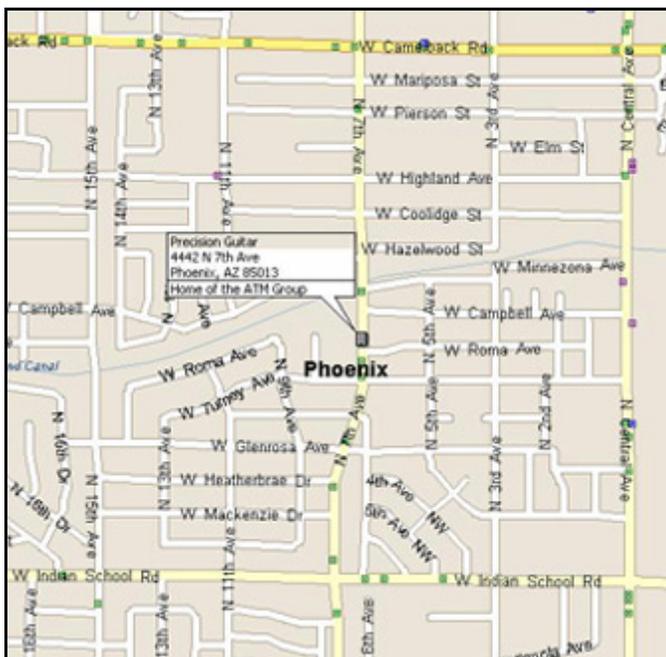


Cherry Rd. Star Parties



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

ATM & Astro-Imaging Subgroup Meetings



The ATM (Amateur Telescope Making) and Astro-Imaging sub groups meet at Thad's Shop, Precision Guitar, on the Tuesday before the General meetings. The address is: 4442 N. 7th Ave, Phoenix. To get there:

Precision Guitar, is located at 4442 N. 7th Ave, suite # 6. Specifically, this is the SOUTHWEST corner of the STOPLIGHTED intersection at 7th Ave and Campbell. (Campbell is 1/2 mile SOUTH of Camelback, and 1/2 mile NORTH of Indian School) The suite on the end sports a large "Allied Cabinet Refinishing" sign on the front of the facade. We are further in (west) at suite 6. Please see <http://www.precisionguitar.net/ShopSatPhotoA.jpg> for a bird's eye view map.....

SAGUARO ASTRONOMY CLUB

June 2004

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 2003-2004

SAC Meetings

| | |
|----------------------|----------------|
| Jan 9th, 2004 | Jul 2nd, 2004 |
| Feb 6th, 2004 | Jul 30th, 2004 |
| Mar 5th, 2004 | Aug 27th, 2004 |
| Apr 2nd, 2004 | Sep 24th, 2004 |
| May 7th, 2004 | Oct 29th, 2004 |
| Jun 4th, 2004 | Nov 19th, 2004 |

ATM & Astro-Imaging Group Meetings

| | |
|-----------------------|-----------------|
| Jun 29th, 2004 | Jul 27th, 2004 |
| Aug 24th, 2004 | Sept 21st, 2004 |
| Oct. 26th, 2004 | Nov. 16th, 2004 |

SAC Star Parties

| Date | Sunset | Astronomical Twilight Ends | Moonrise | Site |
|----------------------|-------------|-------------------------------|-------------|----------|
| Jan 17, 2004 | 1747 | 1915 | 0429 | F |
| Feb 14th, 2004 | 1814 | 1938 | 0327 | F |
| Mar 13th, 2004 | 1839 | 2002 | 0328 | F |
| April 10th, 2004 | 1859 | 2025 | 0124 | F |
| May 15th, 2004 | 1924 | 2103 | 0404 | C |
| June 12, 2004 | 1942 | 2127 | 0234 | C |
| Jul 10th, 2004 | 1943 | 2126 | 0105 | C |
| Aug 7th, 2004 | 1924 | 2058 | 2335 | C |
| Sep 11th, 2004 | 1840 | 2005 | 0405 | C |
| Oct 9th, 2004 | 1804 | 1927 | 0256 | F |
| Nov 6th, 2004 | 1734 | 1859 | 0141 | F |
| Dec 4th, 2004 | 1723 | 1851 | 0027 | F |

F= Flat Iron; C= Cherry Road