



SACnews

Volume 30 Issue 10

October 2006

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Shifting Gears

By Rick Tejera

Definition: Paradigm Shift: *noun*-
1) A fundamental change in ap-
proach or assumptions. 2) *noun*-
acceptance by a majority of a
changed belief, attitude, or way of
doing things.¹

The term was coined in 1962 by
Thomas Kuhn in his book "The
Structure of Scientific Revolutions"
to describe changes in the basic
assumptions & theories of science.
The term has evolved to represent
radical changes in thinking in areas
other than science as well, but it is
fitting that it originally was applied
to scientific endeavor. By its very
nature, science represents the
quest for knowledge heretofore un-
known, yet it always comes as a
surprise when new discoveries
force us to look at what we thought
we knew and accept new ideas.

Astronomy seems to be exception-
ally vulnerable to this, most likely
due to the simple fact that as much
as we know, it is merely a drop in
the bucket of all there is to know.
Generations from now our descen-
dents will still be trying to figure it
out. What we regard as basic truth
today will be looked on by those
after us with a "what were they
thinking?" attitude.

Face it, astronomy has already
gone through several major para-
digm shifts. The most obvious and
largest was the shift from a Ptole-
maic Universe to a Copernican Uni-
verse. For years on end it seemed
pretty obvious that everything in
the sky revolved around us. There
were many explanations to fit the
eccentric movement of the planets
into this mindset, but it was clear,
based on what we could observe &
measure that we the center of it all.
Then Copernicus came along and
said uh-uh. Still it took several hun-
dred years before Galileo turned a
small tube with some glass in it to
the sky and saw the solar system
in miniature around Jupiter. Cul-
tural bias and the human tendency
to hang on to long held beliefs
slowed the acceptance of the helio-
centered solar system, but eventu-
ally it came to be regarded as fact.
Now ask any school child, and
they'll be surprised you need to
ask if the Sun is the center of the
solar system. It can be argued that
this particular paradigm shift wasn't
complete until 1981, when the Ro-
man Catholic Church finally ac-
knowledged that maybe Galileo
was right after all.

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NASA Space Place

Staggering Distance By Dr. Tony Phillips

Tonight, when the sun sets and the twilight fades to black, go outside and look southwest. There's mighty Jupiter, gleaming brightly. It looks so nearby, yet Jupiter is 830 million km away. Light from the sun takes 43 minutes to reach the giant planet, and for Earth's fastest spaceship, New Horizons, it's a trip of 13 months.

That's nothing.

Not far to the left of Jupiter is Pluto. Oh, you won't be able to see it. Tiny Pluto is almost 5 billion km away. Sunlight takes more than 4 hours to get there, and New Horizons 9 years. From Pluto, the sun is merely the brightest star in a cold, jet-black sky.

That's nothing.

A smidgen to the right of Pluto, among the stars of the constellation Ophiuchus, is Voyager 1. Launched from Florida 29 years ago, the spacecraft is a staggering 15 billion km away. It has traveled beyond all the known planets, beyond the warmth of the sun, almost beyond the edge of the solar system itself.

Now that's something.

"On August 15, 2006, Voyager 1 reached the 100 AU mark—in other words, it is 100 times farther from the Sun than Earth," says Ed Stone, Voyager project scientist and the former director of NASA's Jet Propulsion Laboratory. "This is an important milestone in our exploration of the Solar System. No other spacecraft has gone so far."

At 100 AU (astronomical units), Voyager 1 is in a strange realm called "the heliosheath."

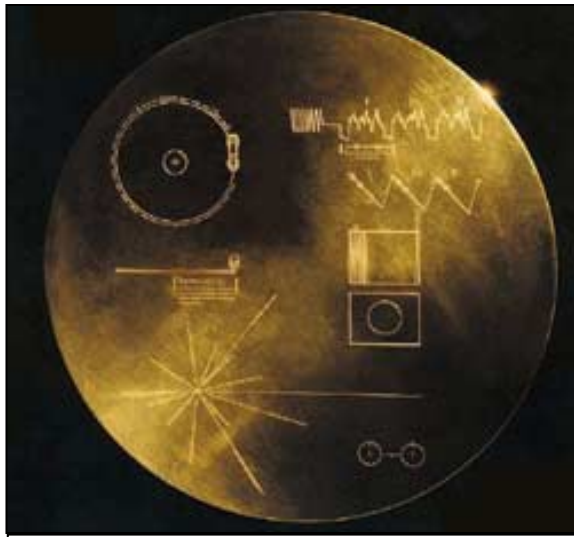
As Stone explains, our entire solar system—planets and all—sits inside a giant bubble of gas called the heliosphere. The sun is responsible; it blows the bubble by means of the solar wind. Voyager 1 has traveled all the way from the bubble's heart to its outer edge, a gassy membrane dividing the solar system from interstellar space. This "membrane" is the heliosheath.

Before Voyager 1 reached its present location, researchers had calculated what the heliosheath might be like. "Many of our predictions were wrong," says Stone. In situ, Voyager 1 has encountered unexpected magnetic anomalies and a surprising increase in low-energy cosmic rays, among other things. It's all very strange—"and we're not even out of the Solar System yet."

To report new developments, Voyager radios Earth almost every day. At the speed of light, the messages take 14 hours to arrive. Says Stone, "it's worth the wait."

Keep up with the Voyager mission at voyager.jpl.nasa.gov. To learn the language of Voyager's messages, kids (of all ages) can check out spaceplace.nasa.gov/en/kids/vqr_fact1.shtml.

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



In case it is ever found by intelligent beings elsewhere in the galaxy, Voyager carries a recording of images and sounds of Earth and its inhabitants. The diagrams on the cover of the recording symbolize Earth's location in the galaxy and how to play the record.

(Continued from page 1)

In the 1920's Edwin Hubble Used Cepheid Variables to measure the distance to some of those little splotches of light called nebulae. What he found turned the whole structure of the universe as we knew it upside down. All of a sudden we were just one of billions of galaxies. Those nebulae were not just clouds of gas beyond the solar system. Then he goes and tells us that not only are these galaxies at incredible distances but they're moving apart as well, Leading to the evolution of the Big Bang and other theories of how the universe was formed. Topics still heatedly debated to this day. This shift may take a while to sort out as now there is evidence that the expanding universe is really a runaway universe. Is it? I'll lay odds we won't find out in our lifetimes.

On March 13th, 1781, William Herschel discovered Uranus, tossing all we knew about the solar system into disarray. On March 12th, 1781, there were only five other planets, suddenly without a by your leave, there are six! How many more? We thought we had a pretty good handle on the solar system, after all it's our own backyard, astronomically speaking. It was like finding a new tree in your backyard one day that wasn't there before. Next thing you know folks are figuring that Uranus is moving the way it should and on September 23rd, 1846, Johann Gottfried Galle discovered Neptune. Finally Clyde Tombaugh discovers Pluto on Feb 18th, 1930, succeeding where others had failed. OK that's it. Really. There aren't any more planets. Nine, 1,2,3,4,5,6,7,8,9. Nothing else out there. Finally, we're in 4th gear on this particular Paradigm Shift.

Or are we? In 1951 Gerard Kuiper postulated that Comets may come from a belt of hereto unseen objects beyond Neptune. Since 1992 larger telescopes have discovered well over 800 Kuiper belt objects. Most are small asteroid size rocks, but the discovery of several large ones including Quaoar, Sedna & 2003 UB313 (Xena, for now) again brings to question, how many planets does the solar system really contain? Seems odd, but up to this August, there was no real definition of the term "Planet". Maybe because it just seem so obvious. So it came to be that the IAU tasked itself to define what a planet is. People seemed surprised at the maelstrom that ensued, especially when Pluto's status as a full card carrying member of the Planet Society came into question. Talk about a sudden downshift to 3rd! Several iterations later (which I won't go into here as you probably already know what happened) and we now have eight planets, several dwarf planets (including Pluto), and thousands of "Small Solar System Objects. The subject apparently is not closed as debate continues. How long before we're back in 4th gear?

Quite frankly, from the point of view of an amateur astronomer does it really matter what we call Pluto? It's still averaging 39.5 AU from the sun, it still passes inside Neptune orbit for 20 years of its period, and it is still a bear to see in the average amateur's telescope. It's not going anywhere folks (OK, it IS going around the Sun, DUH). New Horizons will still get there in 2015, hopefully by then we'll be more in a mood to learn about what makes Pluto tick rather than what to call it.

From the Editor

Please note that the speaker for the October meeting was listed as Richard Payne. Unfortunately, Richard will not be able to speak at the October meeting. In his stead, we are please to have Jon Christianson, Who will

talk about Astro-imaging. Hopefully, we'll be able to Re-Schedule Richard for another date. Thanks for understanding

Call For Observations– Vulpecula

By A.J. Crayon

Here we are at the sly Foxes constellation – Vulpecula. Those of us that tried CG Vulpeculae were surprised at the lack of results. For details read on – now!

CG Vulpeculae

This one caused some problems for many, if not all of us. For starters the only place I found information was the All Sky Automated Survey at http://www.astrow.edu.pl/cgi-asas/asas_lc/191654+2154.8 and SIMBAD. The magnitude range is listed as 13.5 to 15 and not the 9th reported by the SAC red star database, which answers the basic question why we didn't find anything obvious; regardless of the 4.28 color index. The location does put the star at the position given, which is about 0.5° north of northeast from 1 Vulpeculae. One piece of experience we can take from this is when our electronic pointing devices don't show us what we expect to see, and then it is time to take out the star chart and verify the exact position.

8" f6, Dobsonian, 135X; Rick Tejera: Again, had to match the field of View to identify the star. Very dim, barely visible in the 8". No hint of any color in this scope on this night. AJ Crayon had a look and agreed it was there, but with no color.

12.5" f4.9 Newtonian, 100X; Rick Rotramel - Var. Star - I saw the star as nearly white, slightly yellowish or tan. Maybe the variable state on this date wipes out the color.

18" f4.5, Dobsonian, 209X; Dan Gruber: This is a dim (mag 12 or 13) reddish star located about 12 – 15' east of a much brighter (mag 8 – 9) star with a greenish cast.

Vulpeculae Cluster

And yes, the Vulpeculae Cluster is also known as the Coat Hanger or Cr 399. This is just another name to remember this well-known open cluster.

10X50 binoculars; Ken Reeves: The Coat hanger shape shows up much better in binoculars than in the telescope. There are 6 stars in the arm, 4 in the hook; the 4th makes the hook look bent. I can see it naked eye, even make out the shape.

60mm ETX, Dobsonian, 14X; Rick Tejera: Noted Σ 2523 to the north of cluster at edge of field.

12.5" f4.9 Newtonian, 100x; Rick Rotramel - OC - vL, B, 6 B*'s E-W in a row, with 4 B*'s in group to the south, with an orange star in the group. The Coat Hanger asterism!

18" f4.5, Dobsonian, 53X; Dan Gruber: This asterism indeed is shaped like a coat hanger. The base consists

of 7 mag 5 – 7 stars in a line running roughly SE/NW. The spacing generally increases from W to E, ranging from <10' between the westernmost star (which is reddish) and the next star, up to about 60' between the 6th star and the easternmost star (which actually may not be part of the asterism). The "hook" consists of 4 mag 5 – 8 stars to the south of the base stars and centered above the 4th or middle star of the base. These four stars are rather evenly spaced around a 30 – 40' FOV south of the 4th base star. The 2nd and 3rd hook stars appear to be doubles. The 2nd hook star, which is yellow-orange, appears to have a mag 10 companion about 100" away at PA 0°. The 3rd hook star (furthest away from the base) appears to have a mag 11 or 12 companion about 15" away at PA 300°.

Stock 1

60mm f5.8, ETX, 39X; Rick Tejera: Loose cluster, 2 groups of stars the more central one seen as a more or less rectangular pattern in PA E-W with several chains of stars near the center forming an "X" perpendicular to the major axis. A second smaller grouping of stars is seen to the east as a small circular patch of loosely connected stars.

12.5" f4.9 Newtonian, 100x; Rick Rotramel - OC - vL, pB, pRich, ~ 50*'s, about a degree in size.

18" f4.5, Dobsonian, 74X; Dan Gruber: This is a very scattered open cluster. Centering the densest concentration of bright stars in a 1° FOV, there appear to be 20 – 22 mag 6 – 8 stars. Within this 1° FOV, the stars appear to be bunched into 2 groups, a vaguely trapezoidal one to the east and a larger group to the west characterized by an arc of 4 stars. The eastern group is 10 – 15' across and is about 10 – 15' away from the western group, which is about 20' across. There are several possible doubles in each group, with mag 9 – 10 stars separated from brighter cluster members by 30 – 60". In the same 1° FOV there are another 20+ dimmer stars.

NGC6820

This bright nebula and the following open cluster are in the same field. Did I say "bright nebula?"

8" f6, Dobsonian, 16X; Rick Tejera: Seen surrounding NGC 6823 and extending for about 20' to the SW. Framed by the chain of stars mention in the observation of NGC 6823 to the N and a smaller less defined chain from the south. It is very faint. Need Averted vision, patience & the nebula filter to see this in the 8".

12.5" f4.9 Newtonian, 100x; Rick Rotramel - EN - Did not

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see the nebula this date, even with OIII or UHC filters.

18" f4.5, Dobsonian, 135X; Dan Gruber: NGC 6820 is an emission nebula, but little nebulosity was noticed even using OIII and UHC filters. With filters there is a faint "mottled" appearance to the area east of the central core.

NGC6823

8" f6, Dobsonian, 72X; Rick Tejera: Very sparse cluster. Noted a triangle of bright stars with about 6 dim stars inside. This area had some suspected mottling. It is seen as a small loose grouping of stars mostly in a line. A few dimmer stars to the northern edge give it a rounded appearance. Averted vision & the Nebula filter bring out some of the associated nebulosity (NGC6820) that surrounds this cluster. An interesting chain of 5 stars points to the cluster from the west.

10" F4.5 Dobsonian, 70X; Ken Reeves: The cluster is pretty bright, somewhat small, poor, fairly condensed. This is a real nice grouping of 4 stars in the middle. 3 levels of stars with a count of 25 stars in central area with another 20 or so stars surrounding it. Not much shape. With UHC filter, there is a definite but subtle glow around the cluster, which is 6820. No detail seen in the nebula.

16" f4.4 Newtonian, Rick Rotramel: OC - L, pB, fRich, ~ 50*s, compressed in the middle.

18" f4.5, Dobsonian, 135X; Dan Gruber: NGC 6823 is an open cluster. There are roughly 12 mag 9 – 10 stars scattered in a 20' area and 5 of these are concentrated in the central 10' field. At **209X**, there are 2 centrally located mag 9 – 10 stars, both yellowish, about 2 – 3' apart. Between these 2 stars and perpendicular to the line connecting them there are 2 mag. 11 – 12 orange stars less than 60" apart. At this magnification another dozen or so mag 11 – 13 stars are visible in the central 10' core.

20" F5 Dobsonian, 80X; Ken Reeves: Somewhat small, somewhat bright, pretty condensed, and somewhat poor. Nice grouping of 4 stars in the middle. Pretty round, somewhat detached. 3 levels of stars with about 30 obvious stars, count could double depending on how far out you go. There is supposed to be some nebulosity, unable to see for certain, at best suspected (filter not used). I like the central grouping of stars

Dumbbell Nebula

Can't hide this planetary nebula behind and reasonable name!

10" F4.5 Dobsonian, 100X; Ken Reeves: Very, very large for a planetary, very bright, kind of an apple core shape, oriented N/S, dimmer part is actually elongated farther E/W. Stars around periphery, no stars in nebula noted.

18" f4.5, Dobsonian, 209X; Dan Gruber: The Dumbbell Nebula looks like a double-headed ax, with bright "blades" connected by a slightly dimmer strip. However, using OIII and UHC filters shows gauzy/filamentous extensions perpendicular to the major axis connecting the "ax-heads" and extending out well beyond the top and bottom points of each "blade". There appear to be 3 or 4 mag 11 – 12 stars embedded in the nebula, one near the center.

12.5" f4.9 Newtonian, 100x; Rick Rotramel - PN - vL, B, football shaped in total left/right, with a brighter apple core shape up/down in the middle. No filter needed gobs of detail, and sits in a rich field of stars. Very Nice!

20" F5 Dobsonian, 180X; Ken Reeves: Very large, pretty bright, very slight green color. Filter brings out some detail in the outer part. Brightest part is elongated NE/SW, faint part is elongated NW/SE. WOW! 9 stars involved including central star.

Roslund 4

Another open cluster located in the same field with a nebula, i.e. IC4954.

8" f6, Dobsonian, 135X; Rick Tejera: Seen as a small patch of three stars within IC 4955. Takes averted vision & patience to see the three stars. Averted vision by itself will show a small knot within the nebulosity.

18" f4.5, Dobsonian, 209X; Dan Gruber: The densest part of this open cluster consists of 2 parallel lines of mag 11 – 12 stars running NW/SE. The northern line has 2 stars and the southern line has 3. The two parallel lines are about 2 – 3' apart. Less than 5' east of these lines of stars is an equilateral triangle of mag 11 – 12 stars with a dimmer central star. There are perhaps a dozen additional dim (mag 12+) stars within a 10' FOV.

IC4954

8" f6, Dobsonian, 135X; Rick Tejera: Very difficult to note dark area that separates the two nebulae. Again averted vision & Nebula Filter needed to see this. Seen as a faint brightening of the sky elongated about 2-1 NE-SW. Gradually bright to the middle. Needs nebula filter to bring it out.

18" f4.5, Dobsonian, 329X; Dan Gruber: using a broadband filter, there appears to be a very faint nebulosity (IC 4954?) roughly 1' in diameter slightly north of the parallel lines of stars in Roslund 4. This circular patch is best seen with averted vision and is not visible through OIII or UHC filters.

20" F5 Dobsonian, 210X; Ken Reeves: Observed without O-III filter as it dims it down too much, must be a reflection nebula. There is a moderately bright star with a somewhat bright glow around it, fading fairly evenly, with possible nebulosity around 2 stars to NNW. Pretty

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President's Message

By Rick Tejera



OK, I was philosophical enough in the lead article, so Looks like just some general announcements & such this month.

First up, Did you know that next year the Saguaro Astronomy Club will celebrate 30 years of observing? Pretty cool, Huh? Sound like we need to commemorate the occasion. To that end, the Board discussed a few ideas at the September Board Meeting. Among the ideas tossed out were a semi formal dinner at nice restaurant or other suitable location (this was done on the 20th anniversary), A SAC calendar featuring Member Astro images taken over the years, T-Shirts, Logo Keychains or other trinkets among other things (See the minutes of the board meeting for more details). If you have any ideas that will help mark our 30th year, please let the board know.

Although I couldn't attend due to other obligation, The rescheduled and relocated 5 mile meadow Star party went well. The event was rescheduled to Hovatter Rd due to the very real possibility od 5 Mile Meadow being a dew magnet. Recent rains concerned Steve Coe enough to consider the move to a lower elevation. Fortunately the temperatures were mild and the skies clear.

Mark your calendars for November 17th & 18th. We'll make ourt annual pilgrimage to Sentinel for the Sentinel Schwaar Stargaze. Be prepared for the cold, as temp will dip down low once the sun goes down. Directions are on page 9 of this issue.

While we're marking calendars, Don't forget about October 28th & the Thunderbird Starwatch. We'll need all

the telescopes we can get out there for an appreciative public. Come out and share you love of the sky with others.

Please note that the calendar on the back page now show December 9th for a meeting. Well the meeting is our annual holiday gathering and again this year, our lovely Secretary, Susan Pritchard has graciously offered to host the event. I'll make sure details & directions are in the November issue.

OK, Now into Nag Mode: It's October folks and you know what that means: Membership renewal time. As you know all memberships expire iat year end. Now id the time to renew, before Holiday shopping taps you out. Also check on your magazine subscriptions and renew those as well. A Member Service s for is included in this issue (And will be through March) for your convenience. In addition Paul will have the forms at the meeting as well.

October also brings elections. As mandated in the constitution & bylaws, we will begin accepting nominations for all officers for the year 2007. Final nominations will be taken at the November meeting followed by a vote if necessary.

The only position coming on term limits is that of Secretary. If you'd like to get more involved in the inner workings of the club, please consider a run for a position. That being said, I personally have enjoyed being the President the past year and hope to continue in the role for 2007.

Until Next Month
Clear Skies

Monthly Trivia Question

Around what object was the first exoplanet discovered?

Answer next month

Answer to last month's question: Which crewmember on Apollo 13 first reported the explosion of the O2 Tank, saying "Okay, Houston, we've had Prob-

lem"? It wasn't Jim Lovell. Jack Swigert first made the call "Okay, Houston we've had a problem" after the explosion. Lovell was the lower equipment bay (near the hatch to the LM. When the Capcom Jack Lousma asked "Say Again, Please", Lovell then repeated the now often quoted phrase.

November 2006

SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3 SAC Meeting, GCU 1930	4 ○
5	6	7	8	9	10	11 SAC Star Party, Flat Iron
12 ☾	13	14	15	16	17 Sentinel Schwaar Star Gaxe	18 Sentinel Schwaar Star Gaxe
19	20 ●	21	22	23	24	25
26	27 ☽	28	29	30		

Schedule of Events for November 2006

Nov. 3rd	SAC General Meeting at Grand Canyon University at 1930, Speaker: TBA
Nov. 4th	Moon is Full at 2214 mst.
Nov. 11th	SAC Star Party at Flat Iron, Sunset 1723, End Ast. Twilight 1850 Moonrise 2316.
Nov, 12th	Moon at 3rd Quarter at 1045 mst.
Nov. 17th & 18th	Sentinel Schwaar Stargaze at Sentenel. See page 10 for Directions
Nov. 20th	Moon is new at 1518 mst.
Nov, 27th	Moon at first Quarter at 2329mst

Future Planning

Dec. 9th	Holiday Party at Susan Pritchard's House. Details in the next issue
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small, somewhat bright, fades evenly, no other detail. Not bad for an IC object.

NGC7080

This one was supposed to be a surprise as there aren't many galaxies in the middle of the Milky Way.

8" f6, Dobsonian, 81X; Rick Tejera: Seen as a very round and small Faint with a gradual brightening to the middle.

18" f4.5, Dobsonian, 209X; Dan Gruber: This galaxy has a generally round, faint halo <2' in diameter surrounding a slightly brighter, very small (<1') core.

Call for Observations

For November we are going to try something a little different – two constellations. They are Delphinus and Equuleus. There isn't much at all in Equuleus and there are a scant few in Delphinus within reach of most our telescope. So taking both at the same time should take care of them; besides how many of us have observations in Equuleus? Delphinus will be first starting with **NGC6891**; a planetary located about 23' south of mag 7.5 SAO105890. Next is the galaxy pair **NGC6928** and **NGC6930** both in the 12th magnitude range, fairly small by my standards, about 4' apart and listed as

IC1326. They are located about 17' west northwest of 6.5 mag. SAO125960. The last two are globular clusters and part of the 400 Herschel list, **NGC6934** and **NGC7006**. The brighter is **NGC6934** located about 30' northwest from 6th mag SAO125996 and should be visible in most finders. Finally, for Delphinus, is **NGC7006** and located about 23' to the northwest of 7th mag SAO106792. Now on to Equuleus where our first object is something rather new, Levy 70! It is also called the Equuleus S as it is an S shaped asterism located at RA 21h 09m Dec +06° 18' or almost 1° east northeast from 6th mag 4 Equulei. Be sure to include its PA in your observation. More information about David Levy's list may be found at www.jarnac.org/levylist.htm. Our second is **NGC7015** is a faint and small galaxy; no wonder it is the only observation in my old 8". The last of our tour for this mighty constellation is **NGC7045**, an interesting discovery by John Herschel in 1827 and seen as extremely faint and later identified as a double star! So get ready for this one because it is about 14th mag. To help with locating this gem it is at RA 21h 14m 50.2s Dec +04° 30' 25" or about 6' SSW from 9th mag SAO126648 but do not confuse with a 12th mag star a little farther away. So there you have it – two constellations for one month.

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Bits & Pisces– Minutes of the September 8th, 2006 Board Meeting By Susan V. Pritchard

The September 8th, 2006 Board meeting opened at 7:15 pm by President Rick Tejera in the adjacent classroom to the general meeting classroom of Fleming Hall. Present were as follows: Rick Tejera, Paul Lind, Paul Dickson, Tom and Jennifer Polakis, Jack Jones and Susan V. Pritchard.

Rick Tejera mentioned that we needed to arrange the December holiday party and Susan Pritchard volunteered to host the party again at her house; the date was set for December 9th. Rick then brought up that the club would be celebrating their 30th anniversary in 2007 and plans for that celebration need to be arranged. There was a discussion about having a dinner arranged at a local restaurant, and commemorative T-Shirts should be made. He said that we need to have a chairperson to head up the anniversary plans, and he will announce that at the general meeting. Other suggestions were to have some kind of promotional items to be sold or given to all the members—such as key chains with the SAC logo imprinted. Other suggestions

are welcomed and Susan Pritchard will look into ordering these items. Paul Dickson said that the club's budget should be able to finance the celebration.

The next item on the agenda was the possible donation of 2 telescopes to the club. The Board members discussed the issue and it was decided that because the club already has a telescope, that we do not really want others at this time. The main obstacle was the storage and portability of the telescope—possible suggestions were for these to be donated to other organizations or schools. Rick then brought up the tentative SAC events calendar for 2007. For the first part of the year, the general meetings will be held on the first Friday of the month, and starting in June, there will be two meetings—one on the first Friday, and one on the last Friday. Then the meetings shift to the latter part of the months, with December's to be arranged. The star parties will be held the weekend following the general meetings. He will post the calendar on the website. The meeting adjourned at 7:30 pm.

Bits & Pisces– Minutes of the September 8th, 2006 General Meeting

By Susan V. Pritchard

The September 8th, 2006 meeting opened at 7:35 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. Paul Dickson gave the Treasurer's Report; the club has a balance of \$5,384.14. Most of the recent assets were from T-shirt sales and memberships. Paul reminded members to renew their memberships for 2007.

Announcements: Rick mentioned that the December holiday party would be on December 9th at Susan Pritchard's house—more details to follow. He then told the members about the upcoming 30th Anniversary in 2007 and asked if anyone would like to help with the planning details. He said that the 2007 SAC calendar was ready and would be posted on the website. The general meetings would be the first Friday of each month and starting in June, there will be a second meeting and then the dates will shift to the latter part of the months.

Upcoming Events: Next Saturday, September 16, 2006 will be our regular monthly star party at Cherry Road II site; the last regular star party held there until next spring. The Thunderbird star party will be on Saturday, Oct. 28; and Reach 11 event will be on Dec. 9. Steve Dodder said that the next potluck at Stone Haven Observatory is on Saturday, October 14, 2006. It will be a potluck and encouraged all to bring their telescopes as



Dr. Ted Bowell of Lowell Observatory, Our main Speaker in September

well. Joe Orman will be there again. There will also be a star party at 5 Mile Meadow on September 22-23, 2006. The October 14 star party will be held at Flat Iron. Map is in the Newsletter. A. J. Crayon said that March 17, 2007 is the date set for the next Messier Marathon. November 17-18 is the Sentinel Schwaar Star Gaze. The next SAC general meeting will be on October 6, 2006 here at Grand Canyon University. The speaker will be Jon Christenson.

Show and Tell:

For the September 5 Mile Meadow star party, Steve Coe brought in some clothing items and suggested what to wear for cold weather observing. He warned everyone that the 5 Mile Meadow site has gotten a lot of rain this summer and will be very damp and dewy, so that everyone needs to be prepared to stay dry and warm.

After the break, Paul Lind introduced our speaker, Dr. Edward (Ted) Bowell, from Lowell Observatory in Flagstaff. Dr. Bowell presented his report on the "Hunting for dangerous near-Earth hazardous asteroids", and then talked about the decision from the Prague meeting of the IAU to demote Pluto to a dwarf planet.

The meeting adjourned at 10:00 pm and members went to the JB's restaurant at Northern and 35th Avenue for fellowship and food.

(Continued from page 8)

We haven't done Aquarius, so let's make it our choice for December. Starting in the southwest part of the constellation and a little more than a degree west of southwest is the **Helix (NGC 7293)** and, although it is large it has a low surface brightness. The globular cluster **M2** is a little more than a degree southwest of 6th mag SAO145533. This magnificent stellar island should be visible in your finder. While there can you see the diffuse nebula Cederblad 193, just include a yes or no about its visibility? The magnitude 10.8 galaxy **NGC7606** is found about one degree northeast of ψ_1 , that's the western most ψ . You didn't think we would get away from galaxies, did you? Here's another, **NGC7184**

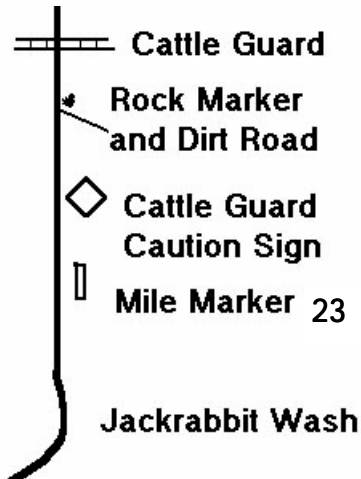
that is about a degree northeast of 6th magnitude BW Capricorni. This next to last one, **NGC7492** a globular cluster is a toughie. On a reasonable night it was very difficult in my 14.5" telescope and I had to use Uranometria to verify it position. You have been warned. It is about 40' east southeast of 8th magnitude SAO165488. The last one is a sentimental favorite of several observers, including Gerry Rattley. It is the double star **107 Aquarii** located about 30' southeast from 5th magnitude 106 Aquarii. This double of 5.7 and 6.7 magnitudes has nice contrasting colors. Here's the fun part, what colors do you see. And be honest!

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

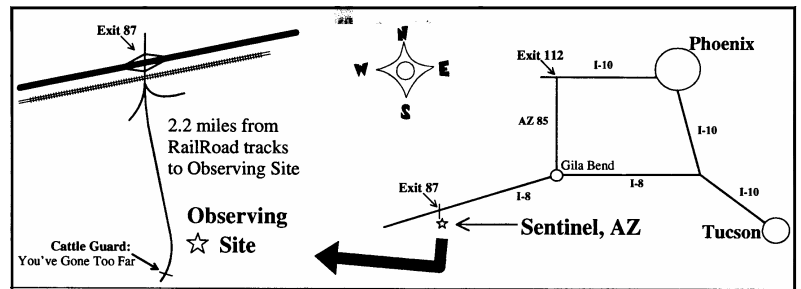
Flatiron Star Parties



Head west on I-10 to the 339th Ave exit (exit 103). Turn North (right) and go two miles to Indian School Rd. Turn West (left) on Indian School and go 2 miles to 355th Ave. Turn North (right). This will turn into Wickenburg Rd. Follow this road for about 12 miles. Just after mile marker 23 you will go through Jackrabbit wash and pass a cattle guard sign. There is a dirt road just after the sign, marked by white painted rocks. Turn on to this road and follow it about .9 miles. Just after you pass through a wash, you'll see the field on your left. If you hit the cattle guard, or the dirt road your on is next to a fence, you've missed the correct road. Go back and look for the white rocks. (see detail map above).

Sentinel

Get to Gila Bend. From there head West on I-8 to exit 87, Sentinel. Turn left under the overpass and continue across the railroad tracks. Follow the dirt road for 2.2 miles to the site which is on the left. If you get to a cattle guard, you've gone to far.



Treasurer's Note: Sky & Telescope

Sky & Telescope have just sent me a list of current SAC subscribers. This means that anyone that has let their subscription expire is not listed (which makes it hard for me to track these subscriptions). What follows is a list of subscribers whose subscription will expire this February or sooner. Please use the SAC Membership Services

form on page 11 to renew.
 Dwight Bogan
 AJ Crayon
 Thomas Hilton
 Glenn Nishimoto
 Leon & Janis Schoenfeld
 Brian Workman

Thomas Conner
 David Fredericksen
 Frank Martin
 Rheta Peiser
 Earl Timmerman

SAC Membership Services

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

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

Magazine Subscription Services

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

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

Please Print

Make Check Payable to : SAC

Name: _____

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

Address: _____

**SAC Treasurer
c/o 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

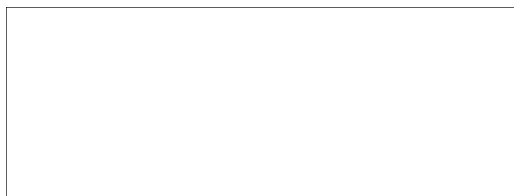
October 2006

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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 9th, 2006

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