Saguaro Astronomy Club

Metro Phoenix, Arizona

SACNEWS

March 1993 — Issue #194

You Call It What?

by M. Leon Knott

Well, here we are class. Summer, with its hazy skies and too hot temperatures has given way to blessed fall, with cooler temperatures and incredible skies. Now is the time to take out those new binoculars, telescope, star charts or books you just couldn't resist, as you begin mining the riches of the night-time sky. And right away, with the general cussedness and perverseness of life, you face a seemingly impossible task. For all those stars have such unusual names and just how do you really pronounce something like Betelgeuse and some others even worse? After all, one doesn't wish to appear unknowing about such elementary things when in the company of friends, spouses, students, ministers and school teachers, right?

I recently experienced such a problem when visited by the well-known Walter Scott Houston, author of *Sky & Telescope* magazine's "Deep Sky Wonders" column for nearly 47 years. Sitting in our living room, we were talking about galaxies, clusters and nebulae when I happened to mention the beautiful double star in Orion we know as Rigel (rhymes with well-known antacid.) Mr. Houston looked at me and said, "It's Rigel (rhymes with regal)." To which I replied, "Rigel (rhymes with well-known antacid)." At that point the famous Walter Scott Houston glared at me and said, "How many advanced degrees do you have?" When I answered that I had one degree and that it didn't amount to very much, he said "Well, I have three degrees and two fellowships. It's Rigel (rhymes with regal)." Glancing up, I could see my wife Fannie and two daughters, Dottie and Kana, smirking at me, and believe me I know how to pronounce "smirking." Well, Mr. Houston has gone back home, and in the spirit of modest correctness, I hereby affirm that the proper pronunciation of Rigel is Rigel (rhymes with well-known antacid).

...you might say
Bellatrix is for kids.

So, in an attempt to share with you my grammatical, syntactical and pronounciational expertise, and in order to help you become better acquainted with the names of several famous stars, I have drawn up the following short list. If you learn to pronounce the names of these stars properly, you can hold your head high in any crowd, and put to shame anyone who might presume to correct you, whether PhD, school teacher or even high school kid. If someone does try to push too hard, just tell them you heard it here and that ought to be good enough to silence even the most adamant and obdurate.

Let's begin with the bright stars in Orion, since that brilliant constellation commands the fast approaching winter skies. This starry warrior has beacons mark-

Quick Calendar

SAC Meeting
7:30, Friday, March 5

Deep Sky Meeting
Leo
Thursday, January 11

Messier Marathon
EVAC's Arizona City Site
Saturday, March 20

Public Star Party
Reach-11
Tatum Blvd. & Union Hills
Saturday, March 27

SAC Meeting
7:30, Friday, April 2

SAC Officers

President	Bob Dahl	582–5526
Vice President	Tom Polakis	966–2625
Treasurer	Carol Lee	946–9206
Secretary	Susan Morse	934–7496
Properties	Rich Walker	997–0711
SACNEWS Editor	Paul Dickson	841–7044
Public Events	Piet Burggraaf	995-1964

Public Star Party at Reach 11

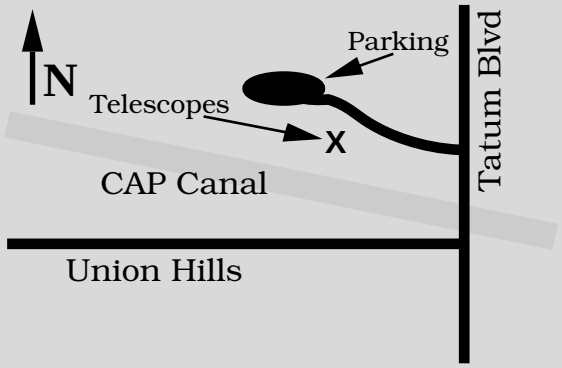
Saturday, March 27
Sunset to 10 PM*

Observe the Night Sky

Sponsored by
Phoenix Parks & Recreation Dept.

Telescopes by Saguaro Astronomy Club
and other valley clubs

*Club members bringing scopes can
setup beginning at 6 PM



ing out his shoulders, his belt and of course, his left foot (Rigel. . . you already know how to say that) along with his right knee. The bright star that does signify Orion's right knee is Saiph, and you'll be perfectly safe in pronouncing it "safe" with just a tiny bit of emphasis right in the middle of the word; you know, as if you suddenly realized that a bug had entered your mouth and was conducting extensive and probing explorations in there.

His right shoulder is Bellatrix, and you might say Bellatrix is for kids. On the other hand, his left shoulder is Betelgeuse, and I defy anyone to pronounce it "Beetle Juice" within my hearing. I just simply won't stand for it. . . You'd be much safer in pronouncing it as if it were spelled "Bet Old Joy." Now doesn't it feel really good when you get it right?

The three stars making up Orion's belt are very famous and are known as Mintaka, Alnitak, and Alnilam. I dare you to say all three name, quickly as you can, three times in a row! These stars point to the eastern direction and help us locate the brightest star in the heavens. This star is seriously bright and is named Sirius. You might even call it Seriously Sirius, if you know what I mean. Letting the belt lead us in the opposite direction will point us to the glaring red eye of Taurus (like the well-known automobile) the Bull. This bright red star in named Aldebaran. Here, you might say "The Bull attacks us. . . Al, Deb and I run (Aldebaran,) while Ann tarries behind (Antares, the name of the Scorpion's heart, seen during summer. . . I threw it in for free)." Poor Ann.

Well, you've been marvelous students and this is enough for a first session. Later we'll cover such important names as Arcturus, Zubeneshamali, Algenubi, Mirach and

SAC and SAC Meetings

Saguaro Astronomy Club (SAC) was formed in 1977 to promote fellowship and the exchange of scientific information among its members — amateur astronomers. SAC meets monthly for both general meetings and star parties, and regularly conducts and supports public programs on astronomy.

SAC meetings are usually held on the Friday nearest the full moon. This means that over the course of the year, meetings are not held on same week of the month. The same is true of the club's star parties. Star parties at Buckeye Hills are mostly held on the Saturday of the third quarter moon.

1993 SAC Meetings
Jan. 8
Feb. 5
Mar. 5
Apr. 2
May 7
Jun. 4
Jul. 2
Aug. 27
Sep. 24
Oct. 29
Nov. 19
Dec. 18 Party

1993 SAC Star Parties		
Date	Sunset	Moonrise
Jan. 16	5:46pm	3:11am
Feb. 13	6:12pm	2:05am
Mar. 20	6:41pm	5:24am
Apr. 17	7:01pm	3:55am
May 15	7:22pm	2:25am
Jun. 12	7:38pm	12:55am
Jul. 17	7:38pm	4:44am
Aug. 14	7:15pm	3:39am
Sep. 11	6:40pm	2:15am
Oct. 9	6:03pm	1:04am
Nov. 6	5:33pm	11:57pm
Dec. 11	5:22pm	6:35am

perhaps, even Uranus. Being an amateur is fun and informative. It can also give rise to some justifiable pride and perhaps even some gentle snob appeal, especially when we can pronounce all those tough words correctly, with confidence and verve arising out of knowing we're right and all those other guys are wrong...

Comet Comments

by Don Machholz

(916) 346-8963 February 9, 1993

Periodic Comet Schaumasse remains in our northern evening sky, well-placed for observation. Meanwhile, a new comet has been discovered, it should be visible in our telescopes late this year.

Comet Mueller (1993a): Jean Mueller discovered this comet on Jan. 2 from Mt. Palomar. It was found on a plate exposed on the 1.2-m Schmidt as part of the Second Palomar Survey. Then magnitude 14 and in the morning sky, the comet was 4.5 AU from the sun and more than a year from perihelion.

Periodic Comet Bus (1993b): Jim Scotti recovered this comet from Kitt Peak on Jan. 1. It then appeared stellar at 22nd-magnitude. Perihelion will occur later this year, but it will remain out of reach of amateurs' instruments.

Periodic Comet Tempel 1 (1993b): Jim Scotti also recovered this comet, on Jan. 21. Perihelion is still more than a year away.

Periodic Comet Schaumasse (1992x)

Date	RA-2000-Dec		Elong	Sky	Mag
02–22	04h36.1m	$+41^\circ40'$	100°	E	8.2
02–27	04h55.4m	$+43^\circ27'$	98°	E	8.1
03–04	05h17.5m	$+45^\circ00'$	98°	E	8.1
03–09	05h42.3m	$+46^\circ14'$	98°	E	8.2
03–14	06h09.4m	$+47^\circ04'$	98°	E	8.3
03–19	06h38.3m	$+47^\circ26'$	98°	E	9.2
03–24	07h08.2m	$+47^\circ17'$	98°	E	9.0
03–29	07h38.3m	$+46^\circ35'$	99°	E	8.8
04–03	08h07.7m	$+45^\circ23'$	100°	E	8.6
04–08	08h35.7m	$+43^\circ42'$	101°	E	8.4
04–13	09h01.8m	$+41^\circ39'$	101°	E	8.3

Directions to SAC Events

SAC General Meetings 7:30 PM at Grand Canyon University, Fleming Building, Room 105 — 1 mile west of Interstate 17 on Camelback Rd., north on 33rd Ave., second building on the right.

SAC Deep Sky Subgroup Meeting at John & Tom McGrath's, 11239 N. 75th St., Scottsdale, 998–4661 — Scottsdale Rd. north, Cholla St. east to 75th St., southeast corner.

Hunting for Comets

One Observers Success Story

by Michael Janes

The September, 1992 Labor Day weekend reached a high point for some valley amateur astronomers on Sunday. Leon Knott, who recently moved to the valley and a new member with SAC, hosted a small get together in Mesa. Among the people there was a friend of Leon's visiting for the weekend from New Mexico, Howard Brewington.

Howard and his wife live in Cloudcroft, New Mexico at an elevation of 7,400 feet. There, out in front of their home, is Howard's observatory which houses a 16 inch $f/4.5$ reflector on an Alt./Az. mounting. The primary mirror was figured by Howard and the telescope design was done by Leon. Piggy backed on the 16 is an 8 inch $f/4.3$ reflector. The design of the observatory does not allow for good viewing to the North. However it does provide good views of both the West and Eastern horizons.

Back in the winter of 1987 Howard was actively photographing comet Bradfield. By the end of its apparition he was "Bit by the comet hunting bug." The first half of 1988 was spent conducting a photographic search with an 8 inch $f/1.5$ schmidt camera. This type of search was not effective considering the time involved to take the photographs in relation to the amount of sky covered, not to mention the expense. So in the summer of 1988 Howard converted to a visual search method.

Don Machholz of California searches for comets by dividing the sky into about 40 quadrants and examines each for an interloper. David Levy will sweep up and down, slowly across the sky. Unlike the methods used by these accomplished observers Howard takes a different approach. When asked about his search methods Howard replied "I have only four quadrants, two in the evening and two in the morning. I just make sweeps in azimuth 60 degrees long and I just wait for the object to come into the eyepiece." This motion in azimuth is coupled with the rotation of the Earth allowing for a shift of one field in altitude after the 60 degree sweep. The skies over Cloudcroft, New Mexico seem to be similar to our own here in Arizona during 1992. "When the skies good I spend any where from 20 to 25 hours a month at the eyepiece. But this year I've been lucky for 10 hours."

In November of 1989 after 93 session, 14 months, and 230 search hours Comet 1989a1, Aarseth-Brewington, was discovered. This, his first comet, rose to 3rd magnitude by December and is reviewed by David Levy in his Star Trails column in the April, 1990 *Sky & Telescope*. Many photographs are also included in that issue. The searches continued for over a year until January 7, 1991. This comet turned out to be Comet Metcalf which had been lost after its discovery in the winter of 1906–07. Periodic Comet Metcalf-Brewington, 1991a, has a period of 8

years though its last orbit took it toward Jupiter which increased its distance by 1 AU so that any future returns are unlikely. Comet 1991a exhibited an outburst of 10 magnitudes over a period of 30 hours. Two nights before Christmas of that same year Comet 1991g1 was co-discovered by Mauro Zanotta of Italy just 12 hours prior to Brewington's observation. August 29, 1992 brought Howard's fourth discovery and his first morning comet. At 11.5 magnitude it was outward bound at a distance of 2 AU. This comet is now too faint for amateur telescopes.

Although their have been a handful of good comets in recent years we are due for a GREAT comet. According to Howard Brewington "I plan to find the next great comet. It'll be the biggest disappointment of my life if I don't." When asked if their was one comet observation that stands out from the rest Howard replied "Well the best comet I've seen in my life was mine."

Bits and Pieces

Coming Events

Two public star parties are planned for this spring. The first will be on March 27 at Reach 11. The second is scheduled for May 1 (National Astronomy Day) at Thunderbird Park. There will be more info in next month's newsletter.

The 3rd Annual **Grand Canyon Star Party** is scheduled for June 12–19. Final arrangements are still being made and more info will hopefully be included elsewhere in this issue of the newsletter.

Deep Sky Meeting

The Deep Sky Group is made up of people that like to observe celestial bodies out past the far reaches of our Solar System. These bodies include stars, nebula and galaxies. If you are interested in sharing your observations, or knowing what they look like in telescopes — then by all means come join us at the next meeting. We will discuss Deep Sky objects in Leo. The meeting will be held at John McGrath's house and the directions will be found elsewhere in the Newsletter.

You don't need to RSVP, we don't extend special invitations to anyone — ourselves included. If you are interested show up, we'd love to have you.

The Deep Sky meeting will take place on Thursday, March 11 at 7:30pm.

Newsletter Deadline

Mail items at least two weeks before the end of the month. Items arriving too late for an issue will be included in the next newsletter.

Minutes of the February Meeting

President Bob Dahl opened the meeting at 7:30pm with a welcome to all new members and visitors. In November, our regular SAC meeting is scheduled to be held on the day after Thanksgiving and because of this, Bob made a suggestion to change the date to the Friday before — November 19. There were no objections from the members.

Carol Lee then gave the Treasurer's report with the current membership at 114. Steve Coe reported on the SAC Deep Sky Database status. There are now 10,600 objects entered, but the release of the database is not ready yet. He asked for volunteers to check the accuracy on the database files and report back to him with any errors.

A.J. Crayon gave an update on the Messier Marathon on March 20–21 to the held at Arizona City. He reminded members that awards will be given for those who observe the most objects. A map to the site would be in the newsletter. For the Deep Sky meeting on March 11, the constellation is Leo. On the table there was a catalog from California, listing second-hand telescopes and equipment. Rich Walker told members that with the money from the sale of the older materials, he bought several new books for the library, and members were encouraged to check out the new sources.

Tom McGrath thanked everyone who worked as a volunteer at the American Astronomical Society meeting in January. As a small token of their appreciation, there were free canvas bags available and several members were entitled to T-shirts. Piet Burggraaf made a correction to the January minutes, saying that he did not volunteer for life as Public Events Coordinator. Currently the next public star party is set for March 27 at Reach 11; and May 1 set for Thunderbird Park. Piet said that he would contact various groups and set tentative dates so the club could provide educational programs to schools, etc. The first date is Feb. 23 at Glendale Christian Academy and he asked for volunteers. Because he also provides these programs on his own, if anyone sees his name associated with other organizations, do not assume that the club is committed as well. March is Archaeology Month and there are several events planned by the Bureau of Land Management that involve archaeoastronomy; flyers with information are on the table.

The "Show 'n Tell" presentations were led by Stan Student with overheads of the Swift-Tuttle Comet, followed by Tom Polakis's slides and drawings of the comet and Bob Gardner's slides of the North American nebula. Pierre showed a well-done video compilations of his work with lunar and solar eclipses, as well as planetary observations — all set to music. Following the break, the main speaker from ASU, Dr. Phil Christenson, gave a wonderful presentation about the Mars Observer, scheduled to reach Mars in September. His contribution is the spectrometer equipment, and when the data is recorded, the

information will be made available to the public.

—*Susan V. Morse, SAC Secretary*

Magazines & Discounts

Club members may subscribe to astronomical magazines at reduced rates through the club Treasurer. See the Member Services Form on the back page of this newsletter. Furthermore, club members are encouraged to align their subscriptions with the Jan.–Dec. calendar year. This eases the burden both on the Treasurer and the Publisher by permitting a single Group Renewal to be placed in the autumn for the upcoming calendar year.

Those members who experience problems with their subscriptions to *Astronomy* magazine may call Kalmbach Publishing Customer Service at (800) 446–5489.

Those members who experience problems with their subscriptions to *Sky & Telescope* magazine may call Sky Publishing at (800) 253–0245.

Besides the club discount on *Sky & Telescope* magazine, Sky Publishing offers club members a 10% discount on all other Sky publications. This means books, star atlases, observing aids, Spotlight prints, videos, globes, computer software, and more.

Club members who subscribe to *Sky & Telescope* through the Club Discount Plan may order Sky publications directly, at the above toll-free number, without going through the club Treasurer. Simply mention the Club Discount Plan and give the Saguaro Astronomy Club name to receive the discount. Sky Publishing will check their records to verify that you are eligible to receive the discount.

Observer's Column

AAS

by Paul Dickson and Mike Willmoth

I started writing this article the night of the January star party. At that time, it was also the 12th consecutive day with a trace of rain for Phoenix. In total, it rained for 15 days. Arizona route 85, the road over the Gila River to our Buckeye Hills observing site, was closed that tonight due to high water. Not only was it raining, but we couldn't even get to the observing site. Two very good reasons not to go to the star party.

The yearly average rain fall for Phoenix, newly raised after last year's totals, is 7.66″. For January, we received 5.22″, the wettest January recorded and breaking a 96 year old record. In fact, if you combine both December and January, the total is 8.3″. February has been only slightly drier than January, but with yet another storm expected during the last week, we can expect even more rain and fewer stars.

The 1993 Arizona Messier Marathon

The 1993 Arizona Messier Marathon will be held on March 20–21 as part of the monthly SAC star party. The object of the marathon is to view as many entries in the Messier Catalog as the night and your observing skills permit.

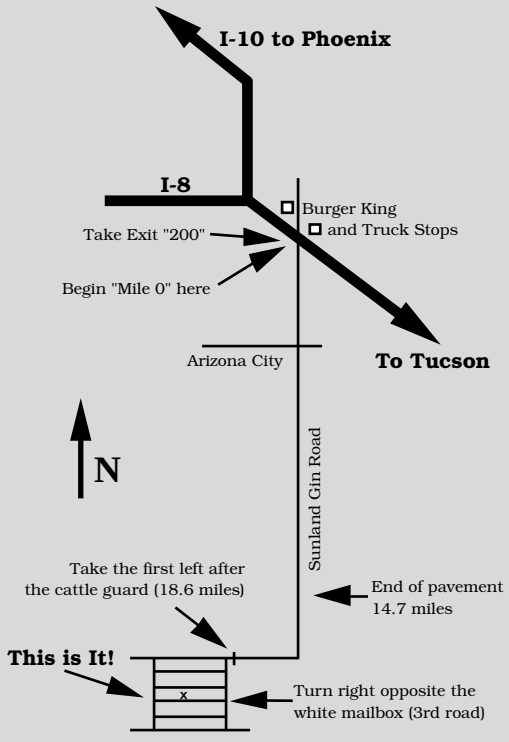
At the March meeting, there will be available a handout containing observing tips and a suggested observing order.

Awards will be presented in recognition of your efforts. Certificates will be awarded to those observing 50 or more entries. Telescope plaques will be awarded for first, second and third places. Duplicate plaques will be presented in case of ties.

Remember the insect repellent! With all the wet weather, a warming trend will bring a lot of hunger mosquitoes.

The site of the marathon is near Arizona City, which is south of Phoenix. See the map to the right.

Other area Astronomy Clubs have also been invited. The East Valley Astronomy Club has accepted the invitation. The Tucson Club has also been invited.



Fortunately everything that happens in astronomy does not take place in the sky. On the first week of January, Arizona State University hosted the American Astronomical Society winter meeting. Aside from having maybe one day (if that) of Arizona sunshine, the meeting went well.

Local amateurs were recruited at volunteers by the Local Organizing Committee to help run the meeting. Basically, we worked room lights, the audio/visual equipment, and signs. All trivial stuff, but very important in running a smooth meeting. A 90 minute session can have 6 presentations with the possibility of each presenter wanting to put their own slides into a slide tray that quickly becomes full. In return for working the meeting, the volunteers where given free admission.

The 181st meeting began on Jan. 3. Because I was a volunteer, it began a day earlier for me. On that day, Saturday, all the volunteers gathered bushy-tailed, if not very bright-eyed (after all, these were amateur astronomers and 10 AM is early), at the Pointe South Mountain to learn how to operated the A/V equipment, room lights, and what to do if a bulb burned out (don't touch, call the hotel personnel). We then toured the hotel learning the locations of the conference rooms. Later we began stuffing meeting packets with a pizza lunch interruption.

Mike's first day was Sunday, working the registration desk. Many notable astronomers arrived at the registration desk where he got to hand out badges and registration packets filled with goodies and sold some of their AAS T-shirts. Mike also worked Tuesday evening as a door sitter for the Carl Sagan talk.

My first day was Monday, where I ran the A/V equipment for both the morning and afternoon sessions of the Historical Astronomy Division. These sessions covered a large time range. From the ancient indian observatories in New Mexico and Argentina to the history of NASA's High Resolution Microwave Survey (HRMS) which started last October. HRMS is NASA's new name for SETI, Search for Extra-Terrestrial Intelligence, so it can get through Congress without causing a discussion about Little Green Men.

One presentation of interest was an expansion of Ron Schorn's parallels between Simon Newcomb and Arthur Conan Doyle's Professor Moriarty by B.E. Schaefer. Not only can the exact descriptions of Moriarty be used to describe Newcomb, but also the descriptions of Colonel Moran similarly describe Doyle's friend Col. Alfred Drayson. The conclusion was that Professor Moriarty and Colonel Moran were both based on prominent members of the astronomical community.

On Tuesday morning I worked at the registration desk until lunchtime. This didn't allow me to attend any sessions and I had other things I had to do that afternoon. The most notably occurrence for that morning was made notable by its lack of being really noticeable. Carl Sagan came and picked up his registration packet. After he lad left, those of us behind the desk wondered if we should have jokingly asked him if he wanted a ticket to attend the talk he was giving that night.

On my way out at lunchtime I walked in front of a parked milk truck. This was a large truck, just short of a tractor-trailer. As I passed in front of it, it started to move. Not fast, I easily got well out of its way without increasing my walk. Glancing back at the truck, I noticed the front door was open and at first thought the driver was just repositioning the truck. After the truck had moved further, I could see within the cab only to see that there was no one in there. One passerby attempted to climb into the truck but quickly abandoned the attempt rather than be brushed off by a tree. The truck proceeded to make a good attempt as pushing its way into two parked cars parked maybe less than 30 feet from where the truck started.

Wednesday I was scheduled to work the signs for the Grand Ballroom. Due to the position of the lights, slide projector, and signs I ended up working the projector too. This session was long, mainly because it was really three sessions. The first and last session had most of the attendees present. No little pressure here. The worst part was the last session with the invited talk. This session had slides and I ended up advancing the slides, rather than the speaker doing it. This would have been fine except I had a hard time hearing the speaker over the slide projector. I must have lived through it, I'm still here.

Wednesday afternoon was even more wild. I arrived in the session room with the microphones disconnected and the smell of smoke. It first smelled like popcorn and later as burnt sugar. Since I discovered that there was feedback when the mics were plugged in, I called the hotel's A/V department. After adjusting the volume they said they would investigate the smell of smoke. Naturally, they never returned. The High Energy Physics session went off without any problems. No slides, but the control panel for the lights was behind the screen used for overheads.

Thursday morning I had one short session to work signs. I also worked the lights, since the control panel was between me and the sign so it was no problem. The person running the projector never got any slides for this session.

Due to only working a short session, I attended the session in the Grand Ballroom. It was entitled "The Wonderful World of Supernovae" given by A.V. Filippenko. It covered the history of supernova studies of the Type Ia, Ib, Ic, and Type II. Also covered were peculiarities of the Ia and the use of Type II supernovae as a direct measurement of distance, hereby skipping the many steps of the

cosmic distance ladder.

Thursday afternoon I worked as runner. Generally a backup position to perform what ever needed to be done. I nearly had to run the slide projector when someone arrived late. But after they arrived, I went back to sitting around. It was lucky I has a full packet from all the hand outs from the the Pavilion, I almost had everything read by the end of the day.

The Pavilion was a big tent. It was where the vendors were showing their wares and the papers where posted (on bulletin boards.) There were a lot of handouts, posters, CDs, and CD-ROMs given away. Book vendors were offering between 10% to 30% off. All told, I spent about $100 on books. I wish I could have afforded to spend more.

I overheard some other volunteers talking about one weird session that they covered. It seems that one presenter spent most of his time talking about a still in Bejing.

Pete Manly, a SAC member and a moderator on BIX also attended as a volunteer. Here are some of his comments he sent me:

"At the AAS meeting I saw more business conducted outside the scheduled sessions than in. This is where collaborations are formed, grad students find permanent jobs, nights on telescopes are traded (one astronomer quipped that they really needed to formalize trades and have open sessions conducted in 'trading pits' like pork bellies and corn futures are traded on market floors).

"The only really 'big ticket' item I saw announced was that Geminga, the enigmatic high energy source (and possible black hole) has a detectable proper motion, im-

Grand Canyon Star Party

The Tucson Amateur Astronomy Association (TAAA), in conjunction with the National Park Service, announces the third annual Grand Canyon Star Party, to be held **June 12–19, 1993**. It is the perfect spot for such an event — spectacular scenery by day and wonderfully dark sky by night. Geared towards showing the sky to the visiting novice, many of which have never been under a dark sky before, the excitement, joy and gratitude expressed by the mostly international crowd is very satisfying. And when the hour grows late and the crowds thin, you are left to explore the limits of your telescope in some of the darkest skies in the United States. We guarantee you will make lots of friends and retain a multitude of pleasant memories with which to return home.

Location and Ground Rules:

We will be setting up on the South Rim in a clearing near the Yavapai Museum. The observing area, though near the Yavapai parking lot, will be behind a locked gate during the day and you will be allowed to leave your telescopes set up during your stay. We are also looking for volunteers to give twilight talks to entertain visitors between sunset and when viewing starts. Please indicate if you would like to do this. Although we are not charging for registration, to monitor attendance, and provide proper paperwork if you are bringing a telescope, we are requiring a cursory registration with the approximate dates of your stay and where you will be staying while at the canyon.

Where to Stay:

Housing is critical at this time of the year. There are no special arrangements available for Star Party attendees, except for a few provided campsites, for which we will take names starting on March 1. They will go fast!

Rooms, RV's, & Trailers: If you want a room near the South Rim, make your plans and reservations now! It is never too early to book a room in the summer at the Grand Canyon. If there are none available, you might make alternate plans (ie. campground reservations) and try to pick up a cancellation when you get there. All lodging and motels release no-show's rooms at about 4pm, and since many tour groups overbook, there may be rooms available. For reservations at any of the motels or lodges at the South Rim or for Trailer Village (Camping trailers or RV's) call Fred Harvey Inc. at (602) 638–2401 **as soon as you make your plans!** Expect long telephone waits while making your reservations.

If you can tolerate a 7 mile drive, you can also try the following motels at Tusayan (all area code 602): Squire Inn 638–3515, Moqui Lodge 638–2424, Quality Inn 638–2673, Red Feather Inn 638–2414, 7 Mile Lodge 638–2291.

Camping: To make reservations for campsites at the regular rates ($10 per night,) call MISTIX at 1–800–365–2267, no more than 8 weeks ahead.

Procedure:

If you plan to bring a telescope, please register by sending a long self-addressed stamped envelope to TAAA—Grand Canyon, 1122 E. Greenlee Pl., Tucson, AZ, 85719. For questions, please call (602) 293–2855 between 8 and 10pm MST. Internet E-mail to `ketelsen@as.arizona.edu`. Come for one night or for all eight, but be prepared for a lack of sleep, with the Canyon calling for you by day, and the wonderful skies by night!

plying it is close by and within the Milky Way Galaxy. Unfortunately, for that session I was working the light switches from behind the screen so I could only hear the session and did not see the diagrams.

"I personally found it entertaining, as I ran into old friends I hadn't observed with for 15–20 years. I also had several kind folks come up to me with copies of my book for signature, a duty I like second only to signing the backs of royalty checks."

The next dozen paragraphs are from Mike describing a session he attended and what was going on in the Pavilion.

The most interesting group of sessions going on that I wanted to see was the Education track. I walked into the middle of one of the first presentations, but caught the rest. Many dealt with using personal computers in training undergraduate students how to handle data reduction and plan observing sessions.

One professor was describing the software he had written over several years to train students to do data reduction. It was similar, but different, to one already available; the names escape me now that it's almost two months later. He indicated that he had found that the topics covered with the original software failed to teach everything that was needed by an astronomer.

His goal was to augment this program with one that would cover some of the same topics, but also include the other missing ones. Over time he pared down the software to be as simple as possible since some of his students had never used a personal computer let alone a mouse driving a graphical user interface. When he took questions from the audience another professor indicated that he, too, had written a program that did some of the same things, but added some others. They decided to discuss them together afterwards.

The next speaker was a professor from the University of Iowa who had taken different CCD cameras and attached them to their smaller telescopes. These ranged from a 14-inch Schmidt-Cassegrain to a 4-inch telephoto lens. Each CCD camera had its own features and he showed these in table format on an overhead transparency. He then showed photos of the equipment in place in their observatory.

This professor went on to describe their arrangement. Students would decide which piece(s) of equipment to use during an observing run, set up a schedule compatible with the other students and collect the data. They would then reduce the data and possibly use their results to decide whether additional sessions with the same object(s) were warranted. All equipment was controllable from inside away from the observatory itself.

From Minnesota came another professor who had similar success. He had software which his students could use to decide how to set up an observing run and then store the images afterwards. They would view their results real time and make a decision as to continue with the schedule or concentrate more on what they had just done. In the event of a cloudy night they could reanalyze their earlier work and the software would train them in further techniques. Students would work together in pairs.

Finally, one professor got up and showed a chart used for the game of Life. He explained that the game of life is such that if you start out with a configuration of disks on a Tic-Tac-Toe board, then using certain rules you can simulate life. For example, three neighboring squares filled creates a fourth. However, four neighboring squares filled creates a death and frees up a square.

He then took this a step further by programming software to use concentric circles or rings. Each ring had sectors representing the squares on the board. In addition, each ring held a population of stars which orbits the center of a galaxy in a Keplerian orbit. As the inner rings pass the outer rings the game of life causes stars to be born and to die. Depending on the initial conditions of the stellar distribution he could determine which parameters would be conducive to continued life and which would die out.

With this he populated his rings and began the game. He showed a video of the results where the initial conditions fell into an interval where stellar life was perpetuated. He found that as time went on in the computer the statistical distribution of stars appeared to form into spiral arms. At this point he formed the question of whether spiral arms were really physical or merely statistical. As he took questions from the audience another professor mentioned that he had also done something like this, but had included parameters to simulate interstellar dust and gas; the speaker had simplified his by not doing so. After the discussion they arranged to speak together about this.

Once the education sessions were complete I headed for the pavilion tent. This is where all the exhibits were located. There were companies promoting their services or equipment. Want an automated small aperture telescope? No problem. Need observation data from NASA? They've got you covered. Hubble telescope information? Lots. Want to join AAS? You betcha!

I found technical book companies offering how to use fractals in astronomy. Several observatories had displays promoting their current research projects. Kitt Peak had a display on their latest telescope construction. The submillimeter array had brochures available for interested attendees. The replacement for the Kuiper Airborne Observatory had a cutaway diagram to view. All these were to be found around the perimeter and down the middle of the tent. As I wandered amidst all this I found research projects being done by astronomers. Several of the undergraduate astronomy students from ASU had their names on some projects, including some of our SAC members. At least one of my old astronomy professors, Dr. Per Aannestad, was manning his display to discuss his project with others on atmospheres around white dwarfs to explain the strange lines observed in their spectra. These spectra apparently didn't fit into the current theories, but they were successful at eliminating this possibility to explain it away.

March 1993

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	First Quarter Moon 8:46 a.m. MST **1**	**2**	**3**	**4**	**SAC Meeting** **5**	**6**
7	Full Moon 2:46 a.m. MST Pioneer 11 launched 20 years ago today. **8**	Jupiter 6°N of Moon **9**	**EVAC Meeting** **10**	**Deep Sky Meeting** **PAS Meeting** **11**	**12**	Lunar Occultation See January newsletter for more details. (3:42 a.m.) **13**
Last Quarter Moon 9:16 p.m. MST **14**	**15**	**16**	**17**	**18**	**19**	**Messier Marathon** Equinox 7:41 a.m. MST **20**
Mercury 4°S of Moon **21**	Moon about 18 hours from New at dawn in Az. **22**	New Moon 12:14 a.m. MST Moon about 18 hours old at sunset in Az. **23**	**24**	**25**	**26**	**Public Star Party** Reach-11 Tatum Blvd. & Union Hills **27**
28	Because Venus is so far north of the sun, it is visible at sunset tonight AND at dawn tomorrow. **29**	First Quarter Moon 9:10 p.m. MST Jupiter is at opposition: it's up all night **30**	Mars 5°N of Moon **31**			

I also ran into a fellow from New York who had developed a way for students to get a real feel for parallax. Using CCD cameras in different locations across the country, say NY and Kansas, simultaneous observations of an asteroid would be arranged for students. They would process their results and mail the images to each other. By noting the different stellar positions in the background and measuring the asteroid's displacement the parallax and, therefore, its distance from the Earth could be determined. His goal is to make the results available in real time in the near future.

He also proposed that students could also use north-south satellites to accomplish the parallax test. By using CCD cameras on 35mm lenses they could take several minute exposures and observe the same satellites from a mile or so apart. The trails would appear to pass over different stars and a distance could be determined.

As we discussed these projects he noticed my badge and mentioned that he had heard of our club. Didn't we put out a database of viewable objects? I confirmed this and we then proceeded to discuss our project in detail. He was impressed by our efforts and suggested that we keep up the good work. So, it looks like we are notorious, fellow members.

All in all I (Paul) had a good time. If I had a chance to do this again, I would work fewer hours so I could attend random presentations in differing sessions. This meeting is not for the novice. In some cases, the details of what was covered was beyond my understanding, but it exposed me to new directions for learning.

Saguaro Astronomy Club Member Services Form

Membership

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

- ❑ $20.....Individual Membership
- ❑ $30.....Family Membership (one newsletter)
- ❑ $100.....Business Membership (includes advertising)
- ❑ $4.....Nametag for members
- ❑ $10.....Newsletter Only

Subscriptions

The following magazines are available to members. Subscribe or renew by paying the club treasurer. You will receive the discounted club rate only by allowing the treasurer to renew your subscription.

Sky & Telescope.....$20.00 for one year ❑

Astronomy.....$16.00 for one year ❑

Write your name, address, and phone number in the space below.

Make checks payable to SAC. Mail the completed form to:

Carol Lee
SAC Treasurer
3314 N 68th Street, #205-W
Scottsdale AZ 85251

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