

Saguaro Astronomy Club

Metro Phoenix, Arizona

SACNEWS



April 1995 — Issue #219

v3.25

Great Night under Arizona Skies

by Steve Coe

Anyone who lives in the West and has paid attention to the weather this winter knows it has been a wet, cloudy year. So, as the weekend of February 24th and 25th approached we watched anxiously to see if there was a chance to observe under clear skies. My observing buddy for many years, A.J. Crayon, and I decided to try a weekend trip, even though some clouds lingered over Phoenix. We both thought it would clear from the west as the night progressed. Once the vehicles were packed up, we made it out of town by 2:00 and beat the traffic. The two hour

Pierre calls to A.J. and I to come observe the Leo I galaxy cluster (Abell 1367). It is the richest galaxy cluster available to amateur telescopes.

drive to the tiny town of Sentinel, Arizona passed as A.J. and I chatted on the CB radio about what objects we planned to observe.

The observing spot is two miles south of the I-8 freeway and is nothing more than a large flat area in the Arizona desert. However, once the sun set and the clouds dissipated it became an astronomer's Nirvana. Just as twilight began, Pierre Schwaar pulled in with a van full of scopes. We were all set for a night under clear, sharp Arizona skies.

Over the past year I have been re-observing the brightest deep sky objects and looking for more detail in old favorites. I started this evening in Auriga and began with M 38. It was easy in the 11X80 finder, with 10 stars resolved. At 150X in my 13" f/5.6 Newtonian I

Quick Calendar

Messier Marathon

Arizona City

Saturday, April 1

Public Star Party

Reach 11

Saturday, April 8

SAC Meeting

7:30 PM, Friday, April 14

SAC Star Party

Buckeye Hills Recreation Area

Saturday, April 22

Sentinel Star Gaze

Arizona City

Saturday, April 29

can pick out 105 stars, with many pairs and triples. The cluster is very bright, very large, very rich and somewhat compressed. It is well detached from the Milky Way background. Going to 220X shows off another 30 faint stars that fill in the cluster. A great place to start.

The last of a few lingering clouds have gone away and A.J. and I discuss a rating for the night. We agree that the transparency is 8 out of 10. A peek at the detail we can see on Mars has us rate the seeing at 7 out of 10 as the night begins. The Martian polar cap is obvious at 220X and there is a dark band around the bright white ice-covered pole.

I move on to Camelopardalis and spend some time with NGC 1501. It is a planetary nebula that I have

SAC Officers

| | | |
|----------------|--------------------|----------|
| President | Bob Gardner | 274-5046 |
| Vice President | Susan V. Pritchard | 934-7496 |
| Treasurer | Adam Sunshine | 780-1386 |
| Secretary | A.J. Crayon | 938-3277 |
| Properties | Pierre Schwaar | 265-5533 |
| SACNEWS Editor | Paul Dickson | 862-4678 |
| Public Events | Rich Walker | 997-0711 |

not observed in many years. It is immediately obvious at 150X, I see it as pretty bright and pretty large, a grey disk with a stellar nucleus. Using 220X and 440X allows me to hold the central star steady and see that it is quite mottled across the face of the nebula. I see NGC 1501 as elongated 1.2 X 1 in a Position Angle of 90 degrees, exactly East-West. It is quite a bit brighter on the north side. The UHC filter actually dims the nebula. The next object in Camelopardalis is NGC 2403, a large galaxy. The 11X80 finder picks it out and at 100X it is bright, very large and much elongated in a PA of 120 degrees. It is mottled and has a gradually brighter middle. There are 8 stars superimposed and a very stellar core at 220X.

Pierre has his 20" f/5 scope set up and is using a 35mm Panoptic eyepiece and an O III filter to observe some winter nebulae. The Orion nebula is amazing with

such a large aperture and this eyepiece-filter combination. I can see the entire loop of the nebulosity surrounding the Trapezium. It is easily one of the best views I have ever seen of this well-known object. The scope is moved to the Horsehead, that elusive dark marking north of the Great Nebula and it is immediately obvious. The nebulous streamer has a dark notch in it that does indeed resemble the outline of a horsehead! I have spotted this object before, but never this easily. There is a small double star in the "mane." These two views in the 20" convince me that we are in for a great night.

Moving my 13" into Puppis, NGC 2440 is next on my list. It is a planetary nebula that I find easily at 100X. It is pretty bright, pretty large, elongated 1.5 X 1 in PA 45. Going to high power shows off amazing internal detail. Using 330X and 440X the central region looks turbulent,

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.

1995 SAC Meetings

Jan. 13
 Feb. 10
 Mar. 17
 Apr. 14
 May 12
 Jun. 9
 Jul. 14
 Aug. 4
 Sep. 8
 Oct. 6
 Nov. 3
 Dec. 9 Party

1995 SAC Star Parties

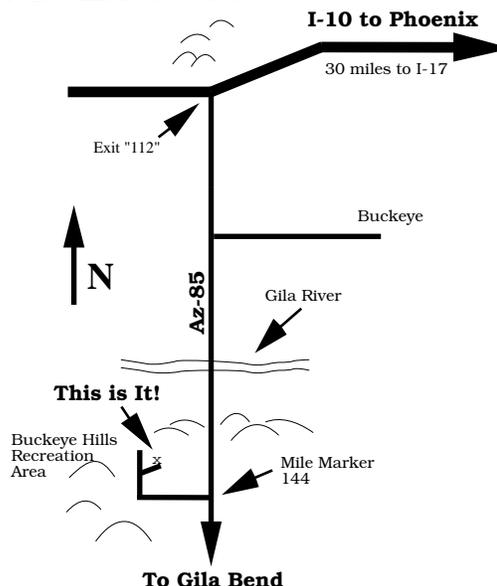
| Date | Sunset | Moonrise |
|---------|--------|----------|
| Jan. 28 | 5:56pm | 5:15am |
| Feb. 25 | 6:22pm | 4:00am |
| Mar. 25 | 6:41pm | 2:50am |
| Apr. 22 | 7:05pm | 1:30am |
| May 20 | 7:26pm | 12:10am |
| Jun. 24 | 7:42pm | 3:00am |
| Jul. 22 | 7:36pm | 1:40am |
| Aug. 19 | 7:11pm | 12:20am |
| Sep. 23 | 6:24pm | 5:15am |
| Nov. 18 | 5:25pm | 2:40am |
| Dec. 16 | 5:23pm | 1:25am |

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 Star Parties at Buckeye Hills Recreation Area Interstate 10 west to Exit 112 (30 miles west of Interstate 17), then south for 10.5 miles, right at entrance to recreation area, one-half mile, on the right. No water and only pit toilets. Please arrive before sunset; allow one hour from central Phoenix.

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.



with several bright areas of interacting gas. The central “star” is never quite stellar and averted vision makes the nebulosity grow much larger.

Next is NGC 2903 in Leo, a very nice galaxy. At 150X it is bright, very large, much elongated 2 X 1 in PA 20. The core is quite elongated along the same axis as the galaxy and using 220X makes this more obvious. This galaxy is very mottled at all powers.

Pierre calls to A.J. and I to come observe the Leo I galaxy cluster (Abell 1367). It is the richest galaxy cluster available to amateur telescopes. In the 20” at 120X it is an amazing plethora of different shapes and sizes of galaxies. I count 39 galaxies observed within two degrees of the center of the cluster. We ascend the ladder to the eyepiece several times each to catch a glimpse of this ancient starlight. This leads to a discussion of the paradox of modern physics as we take a break for a while and let our feet and eyes rest.

Finally, after a long, memorable night we collapse into our sleeping bags for a much-needed rest. The next day we sit in the shade of the vehicles; yes, you can get sunburned in Arizona in February. The conversation drifts from last night’s observations to telescope types and recent Hubble telescope findings. Following a meal, a short nap is necessary to prepare for another night at the eyepiece. We awaken to threatening skies with large, dark clouds to the south. However, we are lucky again and the clouds dissipate by 8:00, which puts us back at the eyepiece.

I start this night with one of my all-time favorites, M 37. This Auriga star cluster is one of the best of its’ type in the sky. It is easy in the 11X80 finder and at 150X it is spectacular. A careful count shows 146 stars resolved with many beautiful chains of stars and dark lanes running through the cluster. There is an lovely orange star of 10th magnitude on the North side. Going to 220X and 330X

Comet Comments

by Don Machholz

(916) 346-8963 CC200.TXT March 6, 1995

No new comets have been discovered recently, but I’m including the positions for Periodic Comet d’Arrest for those wanting the challenge of finding a faint comet. By mid-summer it should be visible in binoculars.

This is the 200th issue of Comet Comments. This column began in May, 1978 as an addition to the San Jose Astronomical Association newsletter (“Ephemeris”), and has run as a regular monthly feature since September 1978. Add to these the several special editions of Comet Comments and you get 200 issues.

My original idea was to provide comet information and positions to fellow club members. Within two years I was also sending it to two other club newsletters. Presently it is mailed to twenty astronomy clubs, plus interested individuals around the world. Most English-speaking comet discoverers receive it. It is also circulated in China and in the Philippines. It remains available on an exchange basis to club newsletters and for SASE to individuals.

The first Comet Comments were hand-written. A manual typewriter served until 1982. Then came a Commodore 64 computer with a variety of printers. Finally, last year I converted to an IBM 286 computer.

Electronic Bulletin Board now carry Comet Comments. The Kingmont BBS has it on Area 44 at (916) 652-5920. The Tri-Valley (Livermore, CA) BBS carries it on directory 33. It can be reached at (510) 443-6146. “America On-Line” displays it in their Astronomy (Keynote: “Astronomy”) department. And I understand that it can be found in other areas of the Internet. It appears on

these boards, and in the mail, about three weeks before the intended month.

For the past five years I have tried to keep Comet Comments to one full page. This fits well in the newsletter formats. Through the years it has varied from ten lines to two and one-half pages. Often I would add what has turned out to be popular “fillers”: a paragraph or two highlighting famous comets, comet hunters, Halley’s Comet or comet discovery statistics.

I continue to enjoy writing Comet Comments each month and the readers continue to find the information useful. It also keeps me in touch with many of the comet observers around the world. I plan to keep writing it for a long time to come.

| 6P/d’Arrest | | | | | |
|-------------|-------------|---------|------|-----|------|
| Date | RA-2000-Dec | Elong | Sky | Mag | |
| 03-24 | 18h12.5m | -00°53’ | 90° | M | 14.7 |
| 03-29 | 18h22.9m | -00°17’ | 92° | M | 14.5 |
| 04-03 | 18h33.3m | +00°23’ | 94° | M | 14.2 |
| 04-08 | 18h43.8m | +01°05’ | 95° | M | 13.9 |
| 04-13 | 18h54.3m | +01°49’ | 97° | M | 13.7 |
| 04-18 | 19h05.0m | +02°35’ | 99° | M | 13.4 |
| 04-23 | 19h15.7m | +03°23’ | 100° | M | 13.1 |
| 04-28 | 19h26.5m | +04°11’ | 102° | M | 12.9 |
| 05-03 | 19h37.5m | +05°00’ | 103° | M | 12.6 |
| 05-08 | 19h48.6m | +05°49’ | 105° | M | 12.3 |
| 05-13 | 19h59.9m | +06°36’ | 106° | M | 12.0 |

| Orbital Elements | d’Arrest |
|------------------------|---------------------|
| Perihelion | 1.34587 AU |
| Perihelion Date | Jul. 27.36197, 1995 |
| Argument of Perihelion | 178.0504°(2000) |
| Ascending Node | 138.9874°(2000) |
| Inclination | 019.5232°(2000) |
| Eccentricity | 0.6140404 |
| Period | 6.51 years |
| Source | MPC 20122 |

Grand Canyon Star Party

The Tucson Amateur Astronomy Association (TAAA) has been going to the canyon in the June dark-of-the-moon for what has to be one of the largest public star parties.

The objective of the star party is to maintain an astronomical presence there for two weekends and the week in between. The first year, in 1991, there were seven TAAA members spread out thinly, but there were enthusiastic crowds. The star party has grown every year.

The dates for 1995 are June 17–24, and if you are interested in attending and want a real bed to sleep in, you haven't a moment to lose. June is the Grand Canyon National Park's busiest time, and it is never too early to book a room. Most hotels fill up 3–4 months in advance so you need to act now. Camping is a different story, as sites are available days before your visit. Refer to the phone list below for hotels and camping. The TAAA charges no registration fee—just take care of a place to stay and let us know you are coming (you need to sign liability waivers for TAAA and the National Park Service.)

Housing: 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.

For questions concerning the Grand Canyon Star Party, please call or write to me at: **1122 E. Greenlee Pl., Tucson, AZ, 85719**, home phone (602) 293–2855 or E-mail to ketelsen@as.arizona.edu.

brings out many faint members, with lots of pairs and multiple star chains.

Moving to Canis Major, I visit another old favorite NGC 2359, the Duck Nebula. This pretty bright gas cloud is in the shape of a duck's head. At 100X I can see the shape without difficulty. Adding the UHC filter makes the view explode with nebulosity. The glow of interstellar gas clouds goes beyond the 40 arc minute field of view in several directions. The best view is at 150X with the UHC filter in place. There is much nebulosity surrounding the "Duck head" and mottled detail within the brighter regions. There is a bright edge to the nebula on the north side and eight stars involved within the nebula.

Unfortunately, I have an appointment for the next day and so I must stuff the scope in the back of my trusty Toyota truck and make my way back to "civilization." Once it is packed up and ready to go, I make one request of Pierre. Can I please make the lingering last image be The Whirlpool? We swing the 20 inch onto M 51 and climb to the eyepiece. I find it difficult to invent new

words to describe this sublime view. Observers of the skies have viewed the grandeur of this distant swirling galaxy many times and never seem to tire of its' beauty. The arms wrap about the blazing core and connect to the small companion galaxy, showing dark markings and bright knots as the splendid detail reveals itself. I have chosen my last image well. This will indeed remain a memorable weekend for years to come.

Bits and Pieces

Coming Events

Star Parties

| | |
|------------------|------------|
| Quartzsite | Mar. 3–5 |
| Messier Marathon | Apr. 1 |
| Sentinel | Apr. 29 |
| Texas Star Party | May 21–29 |
| RTMC | May 27–29 |
| Grand Canyon | Jun. 17–24 |

Public Star Parties

| | |
|------------------|--------|
| Reach 11 | Apr. 8 |
| Thunderbird Park | May 6 |

Minutes of the March 17, 1995 Board of Directors Meeting

The meeting was held just before the March club meeting in the same meeting room. President Bob Gardner opened the meeting at 7:10PM MST. Present were Adam Sunshine, Paul Dickson and AJ Crayon in addition to the President.

The first topic to discuss was an increase in club dues. The current \$20.00 per annum is not enough to continue with the current activities because the treasury is slowly decreasing.

Currently there is roughly \$800 in checking and \$1170 in savings.

Expenses — 1994

| | |
|------------------|-----------|
| Meeting Room | \$220.00 |
| Newsletter | \$1856.50 |
| Honorarium (x 8) | \$400.00 |
| Awards | \$126.95 |
| Insurance | \$229.00 |
| Total | \$2832.45 |

Income — 1994

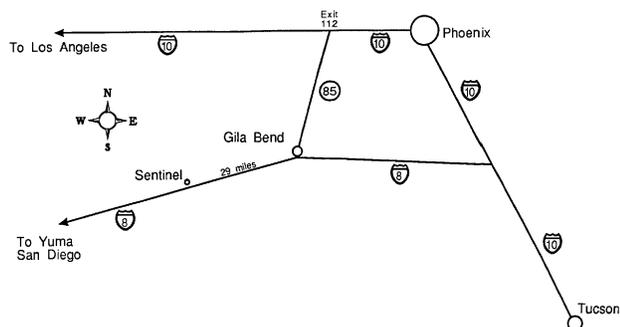
| | |
|-----------------|-----------|
| Dues | \$1835.00 |
| Avg. Membership | 91.75 |

Source: Adam Sunshine

The treasury depletion is due to a decrease in membership, currently 70 on the rolls, and an increase in expenses. For example room rental (\$20 per month), speaker (\$50 each), miscellaneous items like projector bulbs and awards (\$100 a year) and insurance (\$200 per year) have all gone up without a commensurate increase in dues. The

Sentinel Star Party

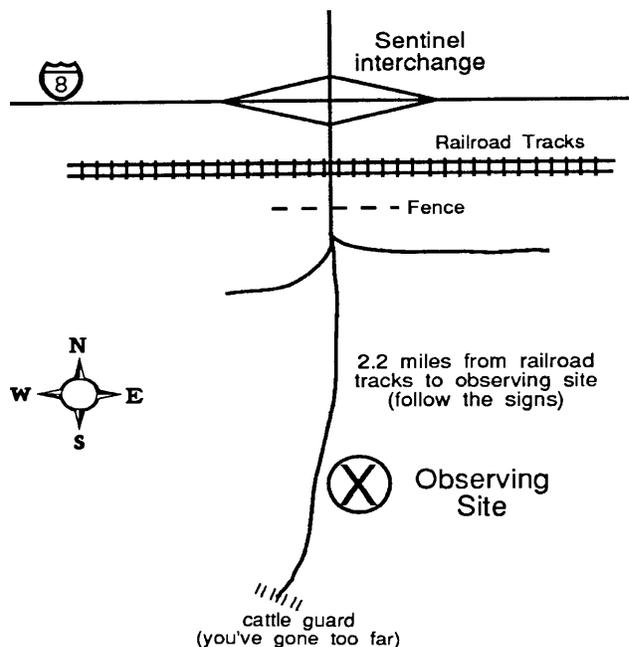
April 29, 1995



The fourth annual Sentinel Star Party is taking place at the Sentinel Site on April 29, 1994. Sunset is at 7:13 PM MST and moonset is at 7:24 PM MST.

Although this is only a one night event, some people show up the Friday night for an extra night of observing. Last year, both nights were spectacular, from sun down to sun rise.

Sentinel is 2 hours southwest of Phoenix; Port-a-Johns will be provided. Plan for cold weather and hunger flying insects during twilight — let's hope we get neither.



biggest expense is the Newsletter costing about \$140 per month, which includes printing and postage. Which adds up to approximately \$2600 per year in expenses.

After several attempts to set an increase in dues, an amount of \$30.00 per year was agreed to by all in attendance. By this time Pierre Schwaar and Susan Pritchard had arrived.

The increase would not take affect until January 1st 1996 and those paying before then would beat the increase.

In was also agreed to continue the family membership, at half again more than a single membership, and newsletter, at half the price of a membership.

—A.J. Crayon, SAC Secretary

Minutes of the March Meeting

The president opened the meeting and promptly asked for visitors to introduce themselves. Five did so.

Adam Sunshine gave the treasurers report. The savings account continues to decline.

Public Star Party at REACH 11

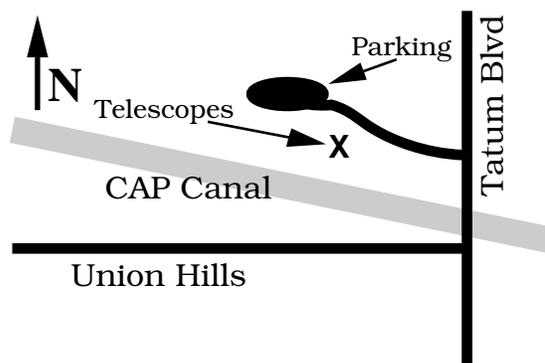
Saturday, April 8
Sunset to 10 PM*

Observe the Night Sky

Sponsored by
Phoenix Parks & Recreation Dept.

Telescopes by Saguaro Astronomy Club
and other valley clubs

*Club members bringing scopes should plan
on setting up beginning at 6 PM



What's Up by Steve Coe

April 1995

Sextans

It can easily be said that Sextans is not going to be the first constellation that anyone learns. It probably isn't even going to be the twentieth, but if you are one of those folks who likes to hunt deep sky objects, it is worth the trip. There are lots of nice galaxies in this relatively blank part of the sky. There are also some great objects for testing the limits of the night, your telescope and your viewing skills. In this article, the observations are from a 13.1" f/5.6 unless noted.

NGC 2967 is pretty bright, pretty large, much brighter in the middle, and round at 220X. It is located at: 9hr 42.1min, +00 20.

NGC 2974 is pretty bright, pretty small, elongated 1.5 X 1 in PA 90 and somewhat brighter in the middle. There is a 10th mag star in contact with the west side at 165X. It is at: 9hr 42.6min, -03 42.

NGC 3044 is pretty faint, pretty large, somewhat brighter in the middle and elongated 2.5 X 1 in PA 120 at 220X. It is located at: 9hr 53.7min, +01 35.

NGC 3115 is easily the best galaxy in Sextans. I see it as bright, large, very much elongated 4 X 1 in PA 45, much brighter in the middle at 135X. It is just seen in the 11 X 80 finder. The center is a bright envelope which has an oval, very bright nucleus, all of which is elongated in the same PA as the main body of the galaxy. I have heard this galaxy called "The Spindle" and I agree with that name.

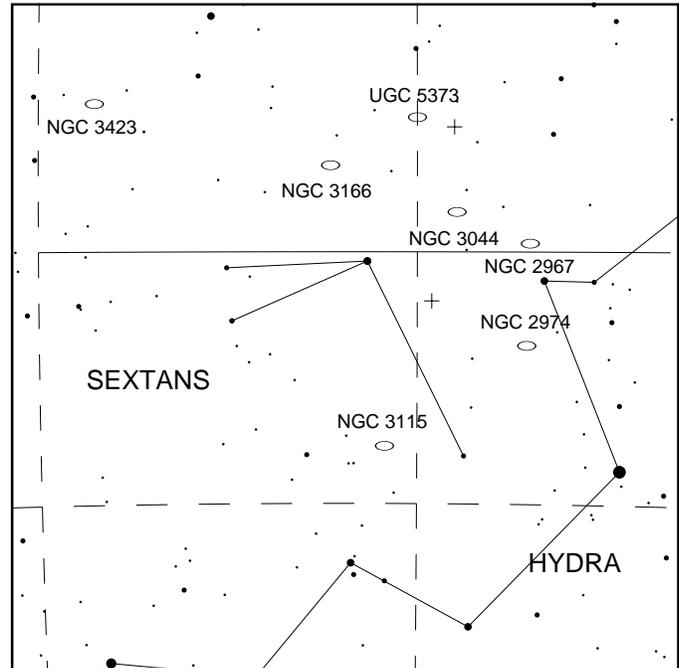
NGC 3166 is bright, pretty large, round and much brighter in the middle at 100X. It is the brightest in a chain of 4 galaxies from NE to SW.

NGC 3423 is pretty bright, large, round, much brighter in the middle and quite mottled at 220X. Averted vision makes this face-on galaxy grow in size. It is at: 10hr 51.2min, +05 50.

UGC 5373 is the Sextans B Dwarf galaxy. It is faint, pretty large, elongated 2 X 1 in PA 100 and not much brighter in the middle at 100X. At this lower

power it is somewhat mottled, but going to 220X raises the contrast with the background, makes the surface very mottled and brings out several stars across the face of this galaxy. It is located at: 10hr 00min, +05 20.

Like all constellations, there are plenty of double stars in Sextans, enough to keep anyone busy for at least a few hours, here are several I had a chance to observe in the 13".



9 Sextans is a wide pair at 52 arc seconds. So, they are easily split at 100X, I see these two stars as a nice orange and light blue pair. This double is also known as South 605, at: 9hr 54.1min, +04 57.

Aitken 1767 is tough to divide at 270X, it shows a figure 8 shape where the two stars are just touching most of the time. This "separated but not split" view of a double star is called "notched." This pair displays a clean split with dark sky between the stars about 20% of the time in good seeing, both stars are light yellow. The reason it is difficult separate this binary star is that the stars are only 1.8 arc seconds apart. This binary is at: 9hr 57.7min, -01 57.

AJ Crayon gave a Deep Sky report that covered three topics. The Herschel Club coordinator for the Astronomical League, Brenda Branchett, will be in Phoenix for May 18th and 19th, and would like to meet with as many as possible. The 18th is a scheduled Deep Sky Meeting and seems to be a good idea at this time. The Deep Sky Meeting will discuss objects in Steve Coe's What's Up column for January and February. Finally, the Messier Marathon is in two weeks.

AJ Crayon gave the Public Affairs report in Rich Walkers absence. The REACH-11 Public Star Party is

April 8th. Plan on being there around 6PM.

New Business—AJ Crayon introduced a motion to increase regular club dues from \$20.00 to \$30.00. The increase is due to an increase in expenses with a commiserate increase in dues. The effective date is January 1, 1996, the increase can be avoided by paying before. The family membership will still be one and one half the regular dues and newsletter only will be one half regular dues. This motion will be discussed at the next meeting.

For Show-n-Tell, Stan Student presented CCD images for Messier Catalogue entries 11 thru 20, with club

participation. Next month it is 21 thru 30—bring your observations along for discussion.

Pierre Schwaar showed video images of Mars and a very young moon. His record video of 13 hour 42 minute old moon on January 1, 1995 is just shy of Victor's 1988 visual observation of a 13 hour 28 minute old moon.

At break there were 43 members present and about half stayed for the main speaker.

After the break Vice President Susan Pritchard introduced our main speaker, Ralph Aeschliman from the US Geological Services. He discussed the planetary mappings, being done in Flagstaff, of many planets. The greatest interest, by far, was Mars. He had two very big images of Mars that were drooled over by several club members after the meeting.

—A.J. Crayon, SAC Secretary

Dues...Our Club's History

by Paul Maxson

Paul Maxson is a charter member of Saguario Astronomy Club. He has served as both President and Newsletter Editor.

I listened with interest to the discussion about the proposed increase at our March meeting. I thought it might be interesting to look back and see the history of SAC's dues since the club's creation. As an original member and an addicted pack-rat I have every issue of the SACNEWS ever published, and after Paul Dickson borrowed and sorted them by date a while back, it was easy to find out club's dues history. This is listed below:

| SAC Dues Summary | | | | | |
|------------------|-------|------|------|------|------|
| 1978 | \$12 | 1984 | \$15 | 1990 | \$12 |
| 1979 | \$12 | 1985 | \$15 | 1991 | \$20 |
| 1980 | \$20† | 1986 | \$12 | 1992 | \$20 |
| 1981 | \$20† | 1987 | \$12 | 1993 | \$20 |
| 1982 | \$15 | 1988 | \$12 | 1994 | \$20 |
| 1983 | \$15 | 1989 | \$12 | 1995 | \$20 |

† included S&T

From 1980 on our membership has been about 75–100 or so. The 1980 and 1981 rates reflected the fact that Sky & Telescope (S&T) required members to have a subscription for discount rates to be in affect. We sent \$8 per member to S&T so in affect our dues those years was \$12.

Well, the above are the facts, now an opinion or two (this IS a commentary you know...). I would like to see a formal expense listing in a newsletter before a vote, this has typically been done in the past. I am curious if something can be done to cut some expenses, the newsletter seems to be the biggest expense, so I wonder if anything can be done help out there. From personal experience I put out a newsletter internationally for the ALPO with over 100 mailings at a cost of \$20/newsletter. Yes, it is a one pager, front and back but it gets mailed all over the

world. I am sure our officers make every effort to expenses down, but I wonder if we have untapped people resources the club that could help as well. I guess the thought of \$30 makes cringe, but also I agreed with Gene Lucas when he said that we got pretty cheap in the past. Again, agreeing with Gene, this was done the help of many of our “non-officer type” members in the past. I think if these avenues are exhausted, then we should consider a increase.

Along these same lines I would like to see the club set ceiling to the amount of money we keep on hand. Seems to me that over \$2000 which we have had for several years may be unnecessary. Perhaps a ceiling of \$1500 would be appropriate, and the amount of dues should cover club expenses and keep that ceiling in tact. Well, these my thoughts and while I am not opposed to a dues increase I just hope it doesn't have the negative affect of keeping new people out and marginal members from renewing.

Newsletter facts:

This newsletter is currently 50% or more of SAC's yearly budget. Printing costs have not been the lowest possible, as convenience and quality have taken a priority over price. In recent years almost of all of the newsletters have been printed between the hours midnight and 6 AM, on copiers that have been regularly cleaned and maintained. When the cost of the newsletter was mentioned during meetings in the past, no one wanted to spend time to locate or make arrangements for lower printing costs.

Currently, the newsletter costs 11 cents per double-sided page plus 6 cents for a staple. A ten-page newsletter is about 60 cents and with postage is 92 cents. Then with complementary newsletters added in, the cost of each newsletter mailed is about \$1.15 (assuming 80 members). Of course, there was a half-price discount after 100 copies, but with the declining membership we are less and less able to take advantage of this.

Editorial:

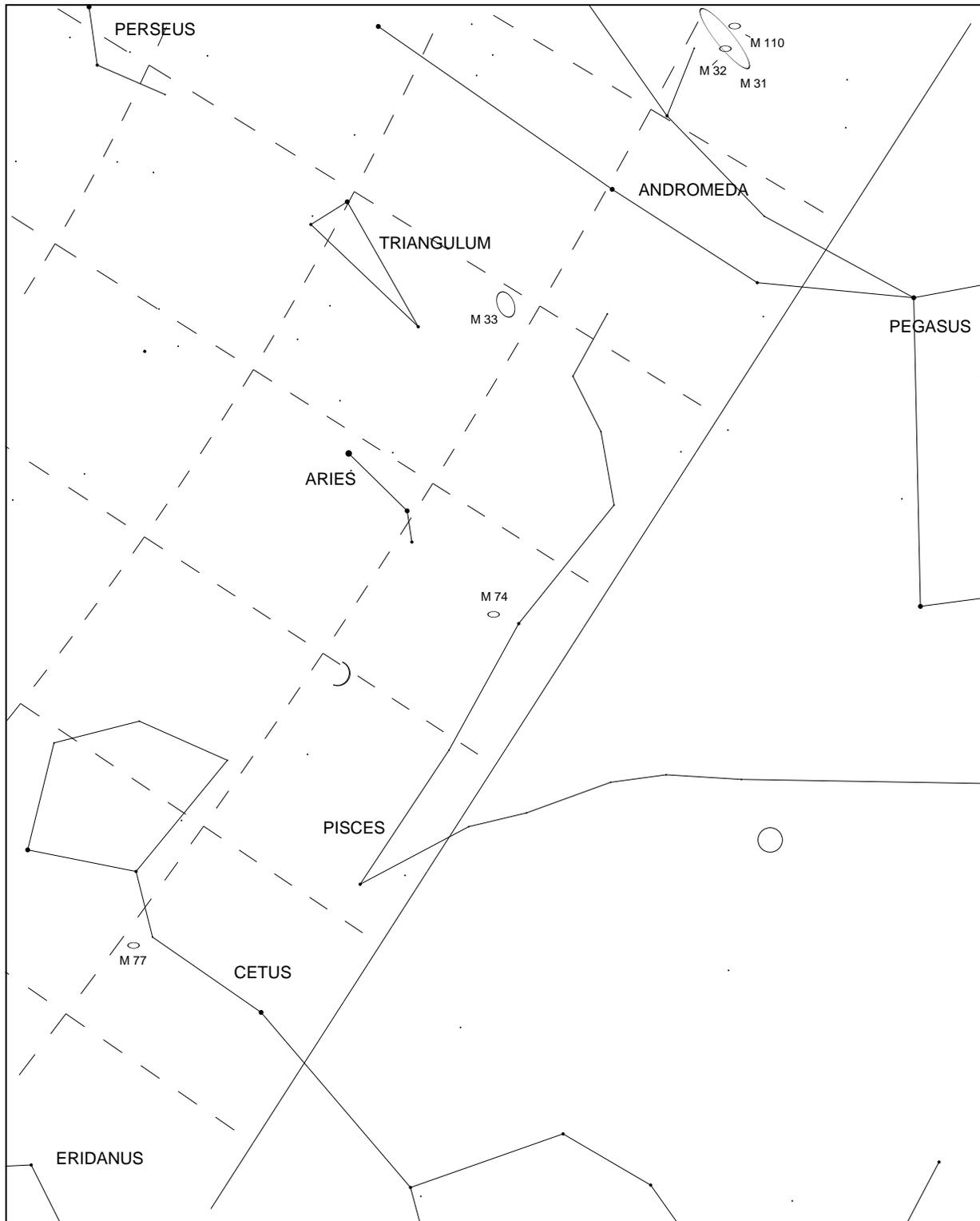
Since the March meeting, I have been the central person gathering and presenting information about the intended dues increase. Because of this it may seem much more serious to me than it really is. Hopefully, after reading this newsletter you can see why this decision is important.

It may be that the problem we should really be worried about is the declining membership. If we had the 120 members we had a few years ago, we could get by with just an increase to \$24. Currently, 80 members looks a bit optimistic. But in 1995, we've had a significant increase in newsletter-only subscribers. Nearly all were once members who are now living outside of Arizona.

Since I've started writing this, I've gotten more accurate data from Adam Sunshine (it's the boxed data in the board meeting minutes). From that, SAC would deplete its savings account even BEFORE the dues increase took effect. Maybe we should consider starting the increase on September 1, with dues for 1996 being the planned \$30 (ie. no lower advance payment).

—Paul Dickson, SACNEWS Editor

Messier Marathon Horizon at 7:45 PM



Pictured above is the western horizon at 7:45 PM. Use this map to help locate M 74, which will set well before the end of astronomical twilight. For the Messier Marathon, sunset is 6:47 PM, astronomical twilight ends at 8:10 PM. Moonset is at 8:30. North is up with the the horizon running diagonally up the page. The sun is pictured below the horizon. M 74 is pictured about 4° above the horizon.

When morning astronomical twilight begins at 4:51 AM, M 30 will be 4° above the horizon. But the Arizona City Site has a mountain just south of east. M 30 could become a challenging object. Sunrise is at 6:14.

The position of the Arizona City Site is 111° 45' West, 32° 30' North.

April 1995

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|--------|--|--|--|--|---|
| <div style="border: 1px solid black; padding: 5px; display: inline-block;"> All Times are Mountain Standard Time </div> | | | | | | Messier Marathon Arizona City 1 |
| Most of U.S. starts Daylight-Saving Time. Most of Arizona doesn't. 2 | 3 | 4 | Friday First Quarter Moon 10:34 P.M. 5 | PAS Meeting Brophy Prep. Physics Lab 6 | TAAA Meeting (Tucson) 7 | Public Star Party Reach 11 8 |
| 9 | 10 | 11 | Friday Mercury at superior conjunction with the Sun (moves into evening sky) 12 | Venus 0.53° SSE of Saturn (morning) 13 | SAC Meeting Grand Canyon University, Fleming Rm. 105 14 | Full Moon 5:09 A.M. 15 |
| 16 | 17 | Tomorrow Sun enters Aries 12 A.M. 18 | EVAC Meeting (SCC: Rm. PS172) 19 | Lyrid Meteors Peak: 7 A.M. Saturday Z.H.R. 15-25+ 20 | Last Quarter Moon 8:18 P.M. 21 | SAC Star Party Buckeye Hills (members&guests) 22 |
| 23/30 | 24 | 25 | 26 | 27 | Tomorrow New Moon 1:37 P.M. 28 | Sentinel Star Gaze Sentinel, AZ. 29 |

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.

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.....\$18.00 for one year

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

Make checks payable to SAC.

Mail the completed form to:

Adam Sunshine
SAC Treasurer
20401 N 30th Drive,
Phoenix AZ 85027



SACNEWS

c/o Paul Dickson
7714 N 36th Avenue
Phoenix AZ 85051

Stamp

First Class Mail