

Saguaro Astronomy Club

Metro Phoenix, Arizona

SACNEWS



December 1995 — Issue #227

v11.27

1995 All-Arizona Star Party Beautiful Nights by Paul Dickson

The 1995 All-Arizona Star Party was again host by the East Valley Astronomy Club. The site was moved this year to a location a little more than 5 miles further south.

October in Arizona in the transition month for the weather. At the beginning of the month it is very hot. By the end of the month the nights are chilly. The changes in temperature are seldom smooth. Usually the temperature drops after a cold front comes through with its storm. The past two years, there has been weather problems with the star party. Last year had a warm wind start just after the moon set, blowing dust through the old observing site.

The weeks before the 1995 All-Arizona were nerve wracking. Each day brought tantalizingly clear nights, wasting them on weekdays or the full moon, and increasing the odds that a storm would arrive for the star party. Even the last few days just prior to the event the prediction was "windy," due to the southern edge of a cold front that was making its way across the northern U.S. Now that the event is over, I can tell you it was indeed windy but the breeze never moved fast enough to pick up loose dust. In fact, on Saturday the wind had died enough to create a small dust-devil.

Friday afternoon it was hazy. Visibility in the Case Grande area was 30 to 40 miles. This was due mostly to the harvesting of cotton in the surrounding fields. The new site, east of Ray Farnsworth's land, was a undeveloped field.

The observing field was large. Very, very large. In fact a row of brush cut the field into two parts, allowing only a narrow pathway to the southern part field. This southern field, virtually unused, was equal in size to the northern field. For the entire event, only six vehicles were parked in the southern field. While in the northern field, more than fifty vehicles could park, setup and still have room.

Due to the large size of the field, the port-a-pottie was placed in the center of the northern field. This didn't pose any problems. The only difficulty that resulted was

Quick Calendar

SAC Party

Pot-Luck at Susan Pritchard's Home (see page 6)
7:30 PM, Saturday, December 9

SAC Star Party

Buckeye Hills Recreation Area
Saturday, December 16

1996 SAC Officers

President	Gerry Rattley
Vice President	Steve Coe
Secretary	David Fredericksen
Treasurer	Regina Lawless
Properties	Adam Sunshine

since no one was set up near it and the site being so dark, it was easy to walk past it without seeing it. Since it was in the center of the field, you didn't have to worry about wandering away from the observing field. Don Wrigley, EVAC's President, talked about rigging a flash red LED above the port-a-pottie for the next time we use the site.

Looking south from the site we could just barely make out Kitt Peak through the haze on Friday night. But after the sunset, they skies grew very dark. One of the first objects I looked for on Friday night was Comet Hale-Bopp, in Sagittarius. I took some time and drew the comet's

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position against the starring background. I then spent time wandering around the observing field visiting people. An hour later I came back to my scope and redrew the comet's position. According to my drawings the comet had moved.

For how warm it was during the day, it got cold surprisingly fast. Evening twilight ended shortly after 7 PM, and by 8 o'clock it was time to change into warm clothes. It wasn't too bad, I didn't have to put on everything that I had brought "just in case." The rumor going about the field Saturday was that the temperature had dropped into the 40's. It had certainly felt that cold.

My observing list for the night (actually both nights) had more than 100 objects on it. It contained the remaining Messier Objects that I had not yet written observations for plus most of the objects from the 110 Best of the NGC list. During Friday night, I finished observing the Messier list and attempted 15 of the other objects. I say attempted because of the 15 objects, I got observations for 3 objects. The rest were planetary nebulae which were too small for me to discern from the stars. I was observing without filters so there was no way I could get these objects to stand out. Maybe it's time dig deep into my pocket and spend some more money.

Negative observations are still important, but they take a lot more time than if you find the object. Normally if you find the object, you note what you want to write, write your notes, then look again. Repeating until you've noted everything you want to write about. But if you can't find the object, you have to make several attempts

to locate the object, to be absolutely you are looking in the right location in the sky before you note that you can't find the object.

On Friday night I was only making two or three attempts to locate these objects, but I was giving up without making any notes. My plan was to save these objects for when I had the proper filters. These unfindable objects were really slowing me down.

When I was in the neighborhood, I looked at M31, the Andromeda Galaxy. It was nearly straight up. From my notes:

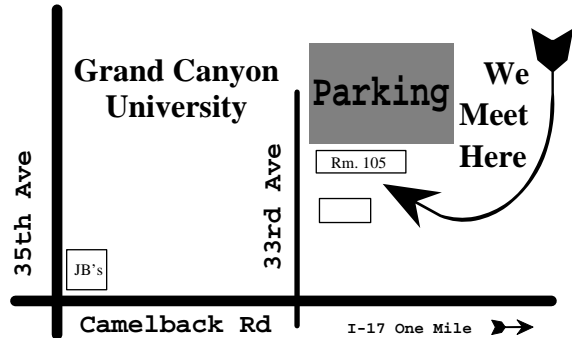
Naked eye, the galaxy has a finger width extent. With the 26mm Plössl (35X), the view was great near the zenith. There was even a dark lane visible. Covered nearly the full field of view. In a borrowed 13mm Nagler (70X), the view was spectacular! The dark lane was very distinct. The view extended beyond twice the field of view.

My scope is a 8" f/4.5 Newtonian for those of you who want math and figure out the magnification. For the of you who don't the 26mm is about 35X and the 13mm is 70X. I also looked at M33 too. When using the 13mm Nagler, the Kidney Bean Effect of the eyepiece was very prominent for me.

Earlier in the evening, I discovered that my Telrad was off. This explained part my difficulty in finding objects. To realign the Telrad, I used it to point my scope at lone bright star, the locating that "star" in the telescope. The "star" looked like a dim Jupiter. Obviously, I was looking at Saturn. It was so dim because it lacked the

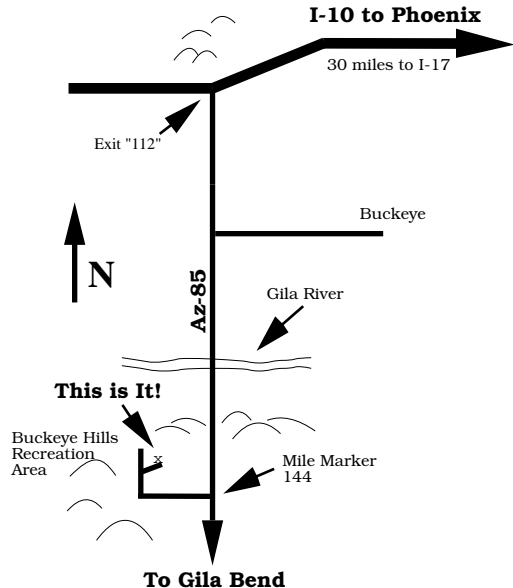
Directions to SAC Events

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.

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.



reflected light from the rings.

Saturday morning, the site looked vacant. People had temporarily left the site for whatever reason. My reason was breakfast. I went up to Interstate 10 and had breakfast with Don Wrigley and Robert Kerwin. As we entered the coffee shop, we ran into Paul and Heidi who were visiting Utah from the Netherlands. They had made the journey down to southern Arizona after reading the announcement of the event in *Astronomy* or *Sky & Telescope* and contacting Don Wrigley. They had been at the star party on the previous night.

After breakfast, we picked up a load of ice for several

people, maybe 8 10 pound bags worth, and headed back. By this time it was early afternoon, and I tried to get some sleep, but the 90° to 100° day made it very difficult. Next year I may either get a motel room to sleep or make a round trip to home.

Late Saturday afternoon, we waited and waited for people to show up. The sun got lower and lower. Just when we were least expecting it 10 vehicles arrived in a slow, dusty line. Cars then continued to arrive until just after twilight ended. I had counted 59 vehicles on site before the last three cars arrived, putting the total number of people at more than 70.

Comet activity has picked up in the past few months. A couple of comets have outburst — one, Periodic Comet Schwassmann-Wachmann 3, remains in our south evening sky. Not far away is Periodic Comet Honda-Mrkos-Pajdusakova. Meanwhile, Comet Hale-Bopp slips behind the sun, in three months it will reappear in the morning sky. Reports of the comet dimming are not true, the comet was simply seen against a thicker Milky Way background.

Comet Comments

by Don Machholz

(916) 346-8963 CC208.TXT November 8, 1995

122P/de Vico					
Date	RA-2000-Dec	Elong	Sky	Mag	
11-14	15h47.2m	+27°28'	46°	E	8.3
11-19	16h08.5m	+25°53'	46°	E	8.8
11-24	16h26.6m	+24°23'	45°	E	9.2
11-29	16h42.3m	+23°02'	45°	E	9.6
12-04	16h56.0m	+21°50'	44°	E	10.0
12-09	17h08.2m	+20°47'	44°	E	10.3
12-14	17h19.1m	+19°53'	43°	M	10.6
12-19	17h28.9m	+19°08'	43°	M	10.9
12-24	17h37.9m	+18°30'	43°	M	11.2
12-29	17h46.1m	+17°59'	43°	M	11.4
01-03	17h53.7m	+17°35'	43°	M	11.7
01-08	18h00.6m	+17°17'	44°	M	12.0
01-13	18h06.9m	+17°05'	45°	M	12.2

C/1995 Q1 (Bradfield)					
Date	RA-2000-Dec	Elong	Sky	Mag	
11-14	10h47.0m	+58°42'	94°	M	10.5
11-19	10h31.2m	+64°30'	102°	M	10.7
11-24	10h03.4m	+70°17'	109°	M	10.9
11-29	09h11.6m	+75°31'	115°	M	11.1
12-04	07h34.9m	+79°06'	120°	M	11.4
12-09	05h23.0m	+79°29'	123°	M	11.6
12-14	03h44.4m	+76°52'	125°	E	11.9
12-19	02h51.6m	+73°03'	129°	E	12.2
12-24	02h23.8m	+69°06'	124°	E	12.4
12-29	02h08.5m	+65°23'	121°	E	12.7
01-03	02h00.0m	+62°03'	118°	E	13.0
01-08	01h55.4m	+59°05'	114°	E	13.3
01-13	01h53.3m	+56°31'	110°	E	13.5

73P/Schwassmann-Wachmann 3					
Date	RA-2000-Dec	Elong	Sky	Mag	
11-14	19h20.1m	-31°58'	56°	E	7.3
11-19	19h46.4m	-30°59'	57°	E	7.6
11-24	20h11.2m	-29°57'	57°	E	7.8
11-29	20h34.4m	-28°42'	58°	E	8.0
12-04	20h56.1m	-27°18'	58°	E	8.2
12-09	21h16.3m	-25°48'	57°	E	8.5
12-14	21h35.1m	-24°13'	57°	E	8.7
12-19	21h52.6m	-22°35'	56°	E	8.9
12-24	22h09.0m	-20°57'	55°	E	9.1
12-29	22h24.4m	-19°19'	54°	E	9.3
01-03	22h38.8m	-17°42'	53°	E	9.5
01-08	22h52.5m	-16°06'	51°	E	9.8
01-13	23h05.5m	-14°32'	50°	E	10.0

45P/Honda-Mrkos-Pajdusakova					
Date	RA-2000-Dec	Elong	Sky	Mag	
11-14	18h33.3m	-25°46'	46°	E	13.9
11-19	18h46.3m	-25°37'	44°	E	13.2
11-24	19h00.2m	-26°51'	42°	E	12.4
11-29	19h14.9m	-28°52'	41°	E	11.5
12-04	19h30.2m	-28°38'	39°	E	10.6
12-09	19h45.6m	-28°25'	38°	E	9.6
12-14	20h00.5m	-28°11'	36°	E	8.7
12-19	20h13.9m	-27°58'	34°	E	7.9
12-24	20h24.2m	-27°45'	32°	E	7.4
12-29	20h29.5m	-27°31'	28°	E	6.9
01-03	20h28.1m	-27°58'	23°	E	7.0
01-08	20h18.4m	-27°45'	16°	E	7.1
01-13	19h59.4m	-27°31'	07°	E	7.4

Orbital Elements

Object:	de Vico	Bradfield	Schwassmann-Wachmann 3	Honda-Mrkos-Pajdusakova
Peri Date:	1995 10 06.02	1995 08 31.42	1995 09 22.76	1995 12 25.93
Peri Dist:	0.6589 AU	0.4364 AU	0.9328 AU	0.5319 AU
Arg/Peri (2000)	012.973°	331.163°	198.776°	326.061°
Asc Node (2000)	079.612°	178.052°	069.947°	089.167°
Incl (2000):	085.391°	147.393°	011.423°	004.250°
Eccentricity:	0.9627370	0.9980457	0.694799	0.824302
Orbital Period:	74.36 yrs	approx 3337 yrs	5.34 yrs	5.27 yrs
Reference:	MPC 25715	MPC 25714	IAU Catalog	MPC 20124

What's Up

by Steve Coe

December 1995

Aries

The Sign of the Ram happens to be my astrological sign, so I would like to take a little space to say a couple of nice things about astrology. First of all, it is often the first place where people hear the language of the constellations. Knowing that someone is an Aries or a Gemini might not provide an insight into their psyche, but it can at least have you hear the terminology associated with things in the sky. Also, let's stop deriding the ancient astronomers for also being astrologers. It was the real reason that the ancients started studying the sky, they thought Marduk (God to the Sumerians) was providing a huge puzzle that could be solved and allow the priests to predict the future. An interesting idea that should not hold up our ancestors to ridicule. Well, even though I don't believe the stars can portend the future, I do believe there are some nice deep sky goodies in Aries, so let's take a look.

NGC 680 is pretty bright, pretty large, round and much brighter in the middle at 165X in my 13" f/5.6. This galaxy is at 1 hr 49.8 min and +21 58.

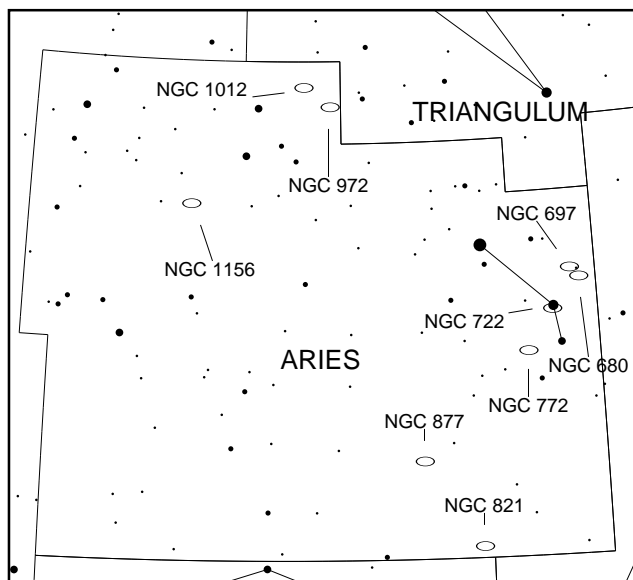
NGC 697 looks pretty bright, pretty large and is elongated 3 X 1 in a PA of 110 degrees. This galaxy is much brighter in the middle at 165X and it displays very obvious mottling in the spiral arms. It is located at 1 hr 51.3 min and +22 21.

NGC 722 shows up as faint, pretty small, little elongated in PA 90 and is not brighter in the middle at 135X. This galaxy is close to Beta Aries at 1 hr 54.8 min and +20 41.

NGC 772 is the most obvious deep sky object in Aries. The 13" shows it as bright, large and little elongated in PA 135 degrees. The arms of this face-on spiral are very mottled. The core is much brighter than the arms at 165X and the very center has a stellar nucleus in moments of good seeing. It is at 1 hr 59.3

min and +19 01.

NGC 821 is pretty bright, small and somewhat elongated (1.5 X 1) in a PA of 30 degrees. There is a very bright middle at 165X. This nice galaxy is located at 2 hr 08.4 min and +11 00.



NGC 877 is pretty bright, pretty large, elongated 2 X 1 in PA 0 and a little brighter in the middle at 165X. This galaxy is located at 2 hr 18 min and +14 33.

NGC 972 shows up as pretty bright, pretty small, much brighter in the middle and elongated 3 X 1 in PA 145 at 165X. This galaxy really grows with averted vision. It is at 2 hr 34 min and +29 19.

NGC 1012 is not easy in the 13", even on a night I rated 7 out of 10 for transparency. I saw it as faint, pretty small, elongated 1.5 X 1 in PA 30 and much brighter in the middle at 165X. There are several stars involved on the east side. It is at 2 hr 39.3 min and +30 09.

NGC 1156 is pretty bright, pretty large, elongated 2 X 1 in PA 30 and somewhat mottled at 165X. It is at 2 hr 59.7 min and +25 14.

On Saturday evening, I got word of Comet Schwassmann-Wachmann 3. I found it in the same field of view with M 62 (using 26mm Plössl). It had a very obvious tail.

I also looked at and saw NGC 7000, the North America Nebula, with the naked-eye. It was obvious to see in the very dark sky.

I looked at NGC 6992, the eastern part of the Veil Nebula. I took notes, and since it was 8 o'clock and the temperature was dropping I changed into warmer clothes. But after changing, the lack of rest during the day caught up with me, so I ended up going to bed early.

Don Wrigley and EVAC did a spectacular job putting together the event and should be congratulated on a job

well done.

Exceptional All-Arizona Star Party

by Sam Herchak

Due to the efforts and prayers of EVAC President Don Wrigley, this year's All-Arizona Star Party was a resounding success. The new site proved to be ideal with lots of room, no lighting directly visible, and minimal sky glows from the metropolitan areas.

Observing Friday kicked off with 20 telescopes and an eerie knee-deep fog created by dust and the motionless

air. The daytime high of 90° degrees Fahrenheit dropped to a chilly 45° after midnight when a southeast breeze increased transparency dramatically by clearing out the dust. The morning Zodiacal light stretched to the zenith!

Saturday was another cloudless day and 5° warmer. By 5:00 PM, only 30 telescopes were present. Then like a scene out of the "Field of Dreams" movie, twilight brought several caravans and the number jumped to 50! Thanks to Tom Polakis and Frank Honer, word quickly spread to look for Comet Schwassmann-Wachmann 3 at sunset near M62 in Scorpius. It had brightened beyond expectation to about 6.5 magnitude and displayed a classic tail over a degree long. Many observers also spotted the now not so spectacular Hale-Bopp that evening followed by Bradfield and de Vico in the predawn sky.

Saturday night remained warmer than the previous but transparency was also exceptional after midnight. An 18" Dobsonian clearly showed the Horsehead Nebula with just a UHC filter. Dawn Sunday was preceded by a spectacular Moonrise where the Earth-lit portion was observed for 30 seconds atop a hill before the slender crescent crept out from behind. The Orionids were prolific both nights. These meteors were swift, often left luminous trains, and numbered about 30 per hour in the early morning hours.

Observers came mostly from Phoenix and Tucson but one couple planned their visit from the Netherlands to attend! Another drove down from Phoenix after seeing the short announcement in *Sky & Telescope* with only "Arizona City" for directions-somehow they found us! The approaching cold front and high winds didn't find us until mid-morning on Sunday. No one was disappointed.

Many thanks to Ray Farnsworth who farms the area and provided use of the site. Also to Don Wrigley who did most of the organizing and got the excellent weather through all his agonizing beforehand!

Bits and Pieces

Minutes of the November Meeting

The President opened the meeting and requested a

Treasurer's report. Adam Sunshine indicated that the 1996 Observer's Guides would be available to members around the December party time frame. In reference to the Hubble Space Telescopes magnificent picture of the Eagle Nebula the Internet address for its pictures as: <http://www.stsci.edu/pubinfo/Pictures.html>. The December meeting will be our annual Christmas Party at Susan Pritchard's house.

The officer's for the 1996 term were elected as follows:

President	Gerry Rattley
Vice President	Steve Coe
Secretary	David Fredericksen
Treasurer	Regina Lawless
Properties	Adam Sunshine

A round of applause was given for the newly elected officers and another for the outgoing officers.

Steve Coe described his attendance to the Ultimate Star Party, hosted by Obsession Telescopes at McDonald Observatory. There were four 36", eighteen 24" and many other telescopes down to the smallest of 18". The seeing for three nights were 7, 8, and 9 on a scale of 10. Quite a religious experience!

The Deep Sky Chairman presented Vivian Crisman the 110 Best NGC award. Way to go Vivian!

Rich Walker discussed two Public Events star parties and read a poem which he referred to as "an alternative view of space." You had to be there to appreciate the humor.

For Show-n-Tell Tom Polakis showed some piggyback slides of the Milky Way, comets and Mt. Graham's Emerald Peak.

Pierre Schwaar issued a challenge to club members to see the oldest and youngest moon on December 20th and 21st. If interested in taking up the challenge please see him. He also showed some slides of his eclipse trip to Thailand with former club member Jeff Charles.

At the break there were 34 people in attendance.

For the main speakers Vice President Susan Pritchard introduced Jim Rice, an astro geologist, and Ken Edgett, an astro geographer, both from ASU. The topic was Mars and our planned missions there for the remainder of this

'98 Eclipse Cruise — by Steve Coe

I am just gathering some info on a cruise to the Feb. 26, 1998 total solar eclipse. We are looking at the possibility of either chartering our own ship, probably from Holland American Line, leaving San Juan Puerto Rico, with a stop at St. Thomas, plus another stop and then on to Aruba for the eclipse on that Thursday. This depends on the amount of hurricane damage to St. Thomas. and so all that can be said right now is that there will be two stops in route to Aruba.

Whatever the scenario, a deposit of \$500 will be needed to confirm and hold your space on the cruise. With the total amount due by Dec. 1, 1997. The complete cruise package will range from \$1850 to \$3500 per person, this includes air fare from your departure city to San Juan.

The category and location of your cabin on the ship will determine the price.

So, our travel agent for this rendezvous with darkness at noon is **Barbara Philips** at Regency Travel in Scottsdale, Arizona. She is not an astronomer, but is learning by being around me for several hours. Barbara can certainly answer any questions you might have concerning the cruise ships or accommodations. You may reach her at (602) 596-6787, or (800) 796-8024 outside AZ.

I know this seems very distant, but putting a group of this size together requires advance planning. I have no doubt that a winter eclipse in the Caribbean will attract large numbers of observers, so get on the phone to Barbara if you are interested in sailing with us.

Such-A-Deal

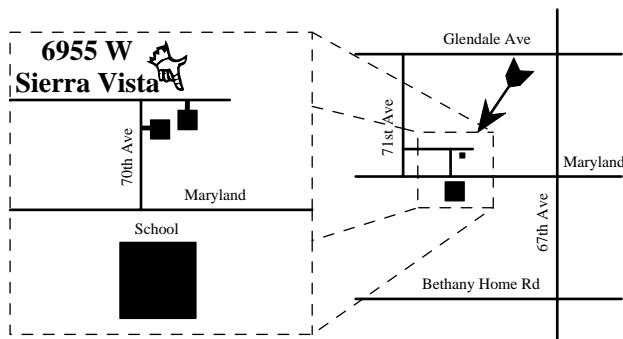
SUCH-A-DEAL is a place to advertise equipment, supplies, and services related to amateur astronomy. This is a free service for SAC members and friends. SAC is not responsible for the quality of advertised items or services. All insertions must be submitted in writing.

For Sale—Meade 4.5" reflecting telescope (Meade Model 4500) with 6X30 view finder, MA 25mm eyepiece, equatorial mount and tripod. One year old, excellent condition. \$300. Call David Ricks, 548-1991 evenings.

century and into the next. These two gentlemen were very enthusiastic about their work and getting the word out to us about Arizona's connection to the many planned surveys of this most interesting planet.

—A.J. Crayon, SAC Secretary

1995 SAC Party



This year the SAC Party will be held at Susan Pritchard's house, at 7:30 PM on Saturday, December 9. Susan's address is 6955 W. Sierra Vista Drive. As usual, the party will be a Pot-Luck with SAC providing the soft drinks. Adam Sunshine says the *Observer's Handbooks* have arrived and will be available for \$11.

Anyone needing help with directions or wishing to help setup should contact Susan at 934-7496.

1995 and 1996 SAC Officers are asked to arrive at 7 PM for a brief meeting.

SACNEWS Puzzle #1

by Paul Dickson

CCD
DUCAL CUP
PAPA
SAFE PAT
PIG HOE

The above five items can be transformed into words astronomers all know. I considered not giving any further clues, but I figured this would be too hard.

So I'll give you this: a star chart will help, but the transform for converting these words was frozen decades ago.

1995 SACNEWS Index

Rick Blakley

"A Method of Checking Eyepieces for Defects", Aug #223

Steve Coe

"A Guide to Eyepieces", Oct #225 – Nov #226

"Great Night under Arizona Skies", Apr #219

"Great Holiday Party", Jan #216

"History of the SAC Databases", Jul #222

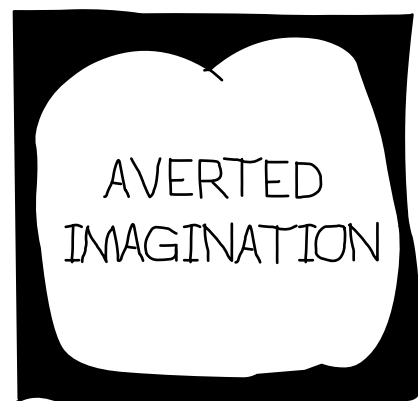
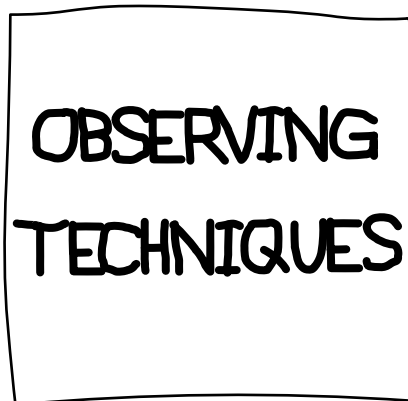
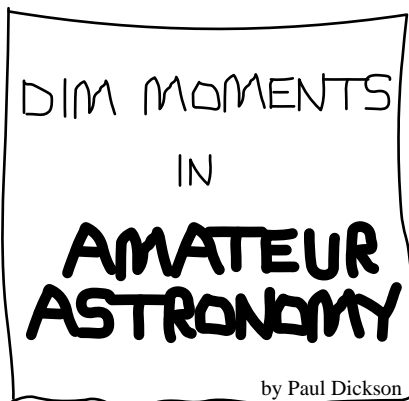
"Partly Cloudy Sentinel", Jun #221

"What can I do for my Astronomy Club", Oct #225

"What's Up", Jan #216 – Dec #227

Paul Comba

"New Asteroid Discovered", Oct #225



I first became aware of the term "averted imagination" one afternoon, two years ago, over at Leon Knott's house. It is derived from the technique called averted vision which allows an observer to see dimmer objects by using the more sensitive parts of the eye outside the center of vision.

On the given afternoon, Leon, myself and others were being en-

tertained by the tales of super observing of a difficult object, from too small of scope, by a not so advanced observer. After teller of the tale finished, claiming it was possible with averted vision, someone, possibly Leon himself said "you probably used averted imagination."

I can't say that this was the first use of this term, but it was the first time I have heard it used.

December 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>					TAAA Meeting (Tucson) 1	2																														
<div style="border: 1px solid black; padding: 5px;"> Eclipses of Saturn's Satellites <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Date</th> <th>Start</th> <th>End</th> <th>Event</th> <th>Dims</th> </tr> </thead> <tbody> <tr> <td>12-04</td> <td>01:54.2</td> <td>02:03.5</td> <td>Dione eclipses Rhea</td> <td>54%</td> </tr> <tr> <td>12-06</td> <td>23:34.4</td> <td>23:35.7</td> <td>Tethys eclipses Mimas</td> <td>23%</td> </tr> <tr> <td>12-08</td> <td>20:51.4</td> <td>20:52.7</td> <td>Tethys eclipses Mimas</td> <td>21%</td> </tr> <tr> <td>12-10</td> <td>20:39.5</td> <td>20:45.2</td> <td>Rhea eclipses Dione</td> <td>31%</td> </tr> <tr> <td>12-15</td> <td>17:59.9</td> <td>18:02.5</td> <td>Rhea eclipses Mimas</td> <td>98%</td> </tr> </tbody> </table> <p style="font-size: small;">Source: Astronomy, Sept. '95, pp. 72-75</p> </div>			Date	Start	End	Event	Dims	12-04	01:54.2	02:03.5	Dione eclipses Rhea	54%	12-06	23:34.4	23:35.7	Tethys eclipses Mimas	23%	12-08	20:51.4	20:52.7	Tethys eclipses Mimas	21%	12-10	20:39.5	20:45.2	Rhea eclipses Dione	31%	12-15	17:59.9	18:02.5	Rhea eclipses Mimas	98%	Full Moon 6:27 P.M. 6	PAS Meeting Brophy Prep. Physics Lab 7	Edwin Hubble born 1889 8	SAC Party 9
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10	11	12	EVAC Meeting (SCC: Rm. PS172) 13	Last Quarter Moon 10:33 P.M. 14	Yesterday Geminid Meteors Peak: 3 A.M. Z.H.R. 110 15	SAC Star Party Buckeye Hills (members&guests) 16																														
Tomorrow Sun enters Sagittarius 9 A.M. 17	Jupiter at conjunction with Sun (moves into morning sky) 18	19	20	New Moon 7:22 P.M. 21	Winter Solstice 1:16 A.M. Ursid Meteors Peak: 10 P.M. Z.H.R. 15-50+ 22	23																														
24/31	25	26	27	First Quarter Moon 12:06 P.M. 28	29	30																														

A.J. Crayon

- "Messier's Catalogue", Mar #218
- "Messier Marathon 1995", May #220

Paul Dickson

- Star Chart: "Virgo Cluster", Mar #218
- "What are the SAC Offices?", Oct #225
- "Dim Moments: Averted Imagination", Dec #227
- "SACNEWS Puzzle #1", Dec #227
- "1995 All-Arizona Star Party: Beautiful Nights", Dec #227

Sam Herchak

- "Record Setting Marathon", May #220
- "Exceptional All-Arizona Star Party", Dec #227

Jack Jones

- "Observer Notes: March Star Party", May #220
- "Observer Notes: July Star Party", Sep #224

Dean Ketelsen

- "Grand Canyon Star Party", Feb #217

Andrew J. LePage

- "The Great Moon Race: The Finish Line", Jan #216

Don Machholz

- "Comet Comments", Jan #216 - Dec #227
- "The Positions of Comet Hale-Bopp through 1997", Nov #226

Paul Maxson

- "Dues...Our Club's History", Apr #219

Tom Polakis

- Picture: "Peeling Away the Overcast", Sep #224

Gerry Rattley

- "The Spica Graze in June", May #220
- "Update on the June Spica Graze", Jun #221
- "Early Report on Results of the Spica Graze", Jul #222

Bernie Sanden

- "A Night of Discovery: Comet C/1995 O1 (Hale-Bopp)", Sep #224
- "Grand Canyon Public Star Party 1994", Feb #217

Pierre Y. Schwaar

- "A New Year's Moon after All", Feb #217

Bruce Walsh

- "Last Chance for Third Mt. Graham Telescope?", Oct #225

Don Wrigley

- "Exploring the Sea of Clouds", Sep #224

Saguaro Astronomy Club Member Services Form

Membership

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

- \$28.....Individual Membership
- \$42.....Family Membership (one newsletter)
- \$100.....Business Membership (includes advertising)
- \$4.....Nametag for members
- \$14.....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 club treasurer to renew your subscription.

- Sky & Telescope.....\$24.00 for one year
- Astronomy.....\$20.00 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

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

Jul. 14
Aug. 4
Sep. 8
Oct. 6
Nov. 3
Dec. 9 Party

— 1996 —
Jan. 5
Feb. 2
Mar. 8
Apr. 5
May 3

1995 SAC Star Parties

Date	Sunset	Moonrise
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

— 1996 —		
Date	Sunset	Moonrise
Jan. 20	5:48pm	8:50am
Feb. 17	6:14pm	6:40am
Mar. 16	6:36pm	5:16am
Apr. 13	6:56pm	3:54am
May 11	7:16pm	2:34am

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

SACNEWS

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

Stamp

First Class Mail