

Saguaro Astronomy Club

Metro Phoenix, Arizona

SACNEWS



May 1998 — Issue #256

v4.29

1998 Arizona Messier Marathon

by A. J. Crayon

This year's Marathon; scheduled for Saturday, March 28, 1998; generated more excitement than in the last few years. It was easily generated due to the fact that chances for observing the entire Messier Catalog were very high. Many veteran marathoners and veteran observers were excited, not to mention all others. One of the more excited veteran observers was Tony Ortega of EVAC. In our discussion it was abundantly clear he could just taste the first place telescope plate for all 110. I couldn't wait to make the award.

Unfortunately these visions didn't work out. A quick summation would seem to be rain, rain, and go away; A.J. wants to telescope away!

My bad feelings about the weather actually began the Monday before. Lately a lot has been blamed on El Niño and it looked like we were going to be added to its list, we appeared to be headed towards unacceptable weather. By Wednesday Steve Coe and I were already discussing cancellation possibilities. Normally, I wait until Thursday to start deciding on what the weekend's weather may be like. On this Thursday it still didn't look good, it didn't look good at all. Chances for improvement looked very close to approaching zero.

So, the next day it was time to take advantage of modern technology and use an E-mail system just set up by SAC members Bob Erdmann and Paul Dickson. This E-mail system is primarily for Arizona Observers to discuss weather, what's up, what site to use and who's going where.

The first message was posted Thursday evening, more of a warning about the impending bad weather. The next evening I posted the fateful cancellation message. The message was graciously accepted; the weather wasn't.

Saturday, it rained; did it ever rain, not to mention the windy conditions.

Alas Tony, we'll have to wait until next year when the chances of seeing the entire catalogue are still possible.

Quick Calendar

Public Star Party
Estrella Park
Sunset to 10 PM, Saturday, May 2

SAC Meeting
Speaker: Tom Polakis: *Backyard CCD Astronomy*
7:30 PM, Friday, May 8

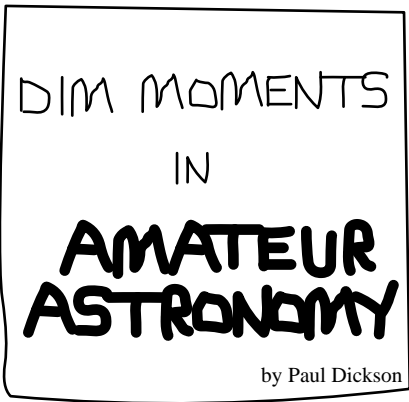
SAC Deep-Sky Meeting
This Month at Ken Reeves' House
Camelopardalis and Hydra
7:30 PM, Thursday, May 14

SAC Star Party
Buckeye Hills Recreation Area
Saturday, May 16

Picacho Peak Star Party
Picacho Peak State Park
\$10/vehicle
Saturday, May 23

In retrospect we should be happy for all the years of good weather we've had not just for the Marathon but for all of our observing session. It is a time like this we should realize how spoiled we are in having such conditions for observing.

Not all seems to have been lost by Arizona observers. Here's an email message from Bob Davidson who tried his observing skills out a day earlier. "I watched the satellite images most of Friday morning and afternoon and decided to chance it for Friday night/Saturday morning. It cleared off and was a wonderful evening! Wish I had had some company, as I was the ONLY one there except for the coyotes. I finished the marathon with just a slight issue with clouds for the last few objects early Saturday morning. There were a few low clouds on the eastern horizon that hindered me just a bit. Even so, I finished just a little after 5 AM, packed up and headed home! I had a very nice talk with Ray Farnsworth whose land we use. He told me he now owns this farm. He had bladed several miles of the road leading up to the farm in anticipation of us coming and it was in great shape. Sure wish the weather had held up so those who could not make it Friday night would have had a chance. This was my first marathon



and it was fun!"

Thanks for such a nice observing report Bob!!

SAC Deep-Sky Meeting

Thursday, May 14, 7:30 PM

At Ken Reeves' House

This month, the Deep-Sky meeting will be held Ken Reeves' house. Ken's address is **8845 W Seldon Ln.** This is just less than a half-mile south of **Olive Ave.** (Dunlap Ave. in Phoenix,) on the corner of **89th Ave.** It is the house on the SE corner. If you need directions, you can call Ken at **878-9460.**

The Deep-Sky Group is a Special Interest Group made up of people who like to discuss observing and observing techniques. They particularly like to observe ob-

jects out past the Orrt Cloud that's why they're called the Deep-Sky Group. The type of objects include stars, nebulae, and galaxies.

If you are interested in sharing your observations, or are interested in observing techniques, then by all means come join in. The meetings are held at John McGrath's house every other month on the Thursday after the SAC meeting; directions are found on page 2 of this newsletter.

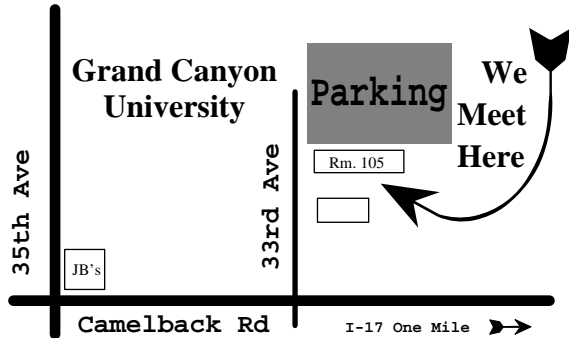
Consider this to be an invitation to this meeting. This meeting is OPEN to all SAC members. All you have to bring is an interest in what objects look like when view through a telescope.

For the May Deep-Sky Meeting we will discuss the objects in Ken Reeves' March and April *Fuzzy Spot* columns (Camelopardalis and Hydra), which total 11 objects.

If you have new or old observations, bring them along. Even if you have no observations, come anyway. This is a

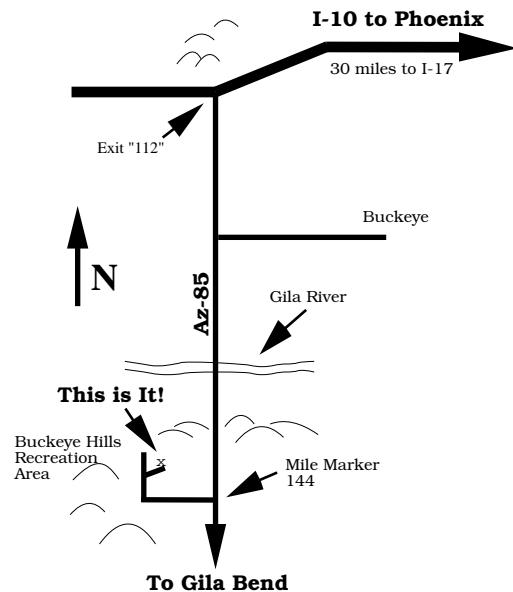
Directions to SAC Events

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.



good way to improve your observing skills.

Bits and Pieces

May Club Meeting

At the May SAC meeting Tom Polakis will talk about what he has done with a CCD imager from his own backyard in Tempe.

The June club meeting will be our annual Show-N-Tell night and Swap Meet.

Newsletter Deadline

Mail items for Such-a-Deal at least two weeks before the end of the month. Articles that need to be published in a timely fashion must be submitted or the newsletter editor notified of the article at least 6 weeks before month they are published. Items arriving too late for an issue will be included in the next newsletter.

Minutes from the April Meeting

President Paul Dickson called the meeting to order promptly at 7:30. He invited any guests to sign the guest book and to introduce themselves. 8 people introduced themselves.

Jack Jones gave the treasure report, and attempted to pass out several name tags, of which he was unsuccessful.

Paul Dickson mentioned the new Arizona Observing E-mail list. Early activities on this list included the foul weather for the marathon, use of the list to spread word of the cancellation of the marathon, and comments on using Picacho Peak State Park as an observing site. Paul then summarized the upcoming star parties, Buckeye on April 18, Sentinel on April 25, Estrella Public on May 2, and Picacho Peak (Riverside alternative) on May 23. There is a \$10 fee per vehicle for the Picacho Peak star party.

A.J. Crayon talked about the upcoming deep sky meeting on May 14th, which will be at Ken Reeves' house (for this meeting only). He then talked about the canceled Messier Marathon, the good news is that we got a refund on the Port-a-John. He then asked for any observations on NGC 12 (which is in Pisces), but got no response. It turns out that 12 is the number of SAC T-shirts he had left to sale. With some luck and A.J.'s fine marketing strategies, this number will be less in future meetings.

Steve Coe mentioned the upcoming star party which includes a Novice session. Also he went into additional detail on the Sentinel Star Gaze.

Gene Lucas brought up a Photometry/Imaging conference to be held at Lake Arrowhead, starting the

Comet Comments

by Don Machholz

(530) 346-8963 CC237.TXT April 8, 1998
<http://members.aol.com/cometcom/index.html>
 DonM353259@aol.com

1995 O1 (Hale-Bopp)					
Date	RA-2000-Dec	Elong	Sky	Mag	
05-02	05h23.8m	-50°26'	75°	E	9.7
05-07	05h28.1m	-50°10'	75°	E	9.8
05-12	05h32.6m	-49°57'	75°	E	9.9
05-17	05h37.2m	-49°48'	74°	E	9.9
05-22	05h41.9m	-49°42'	74°	E	10.0
05-27	05h46.7m	-49°39'	74°	E	10.1
06-01	05h51.5m	-49°39'	74°	E	10.1
06-06	05h56.5m	-49°42'	74°	E	10.2
06-11	06h01.4m	-49°48'	74°	E	10.2

The satellite SOHO has picked up three more comets, while a faint one was discovered during an asteroid search. That object, **Comet C/1998 G1 (Linear)** has a nuclear magnitude of 18 and is not expected to brighten.

The Hubble Space Telescope has determined that the nucleus of Periodic Comet Tempel-Tuttle is only about two miles across. This comet is responsible for the Leonid Meteor Shower each November.

Comet activity remains low this month. **Comet Hale-Bopp** remains deep in the southern sky—it is about 450 million miles from us. **Comet Meunier-Dupouy**, a bit closer, is in our morning sky.

COMET HUNTING NOTES: The SOHO satellite, which is in solar orbit and monitors the sun, has discovered 44 comets. Forty-two of these are sungrazers; they go very close to the sun. SOHO generally images them for only about a day or two, and then the comets merge into the sun, never to be seen again. They have not been observed from the earth. This satellite is presently our most active comet discoverer, finding about 20 new comets per year.

C/1997 J2 (Meunier-Dupouy)					
Date	RA-2000-Dec	Elong	Sky	Mag	
05-02	22h19.5m	+30°55'	60°	M	11.6
05-07	22h22.5m	+30°49'	63°	M	11.6
05-12	22h25.1m	+30°41'	66°	M	11.6
05-17	22h27.3m	+30°33'	69°	M	11.6
05-22	22h28.9m	+30°22'	73°	M	11.5
05-27	22h30.1m	+30°10'	76°	M	11.5
06-01	22h30.8m	+29°55'	80°	M	11.5
06-06	22h31.0m	+29°37'	84°	M	11.5
06-11	22h30.6m	+29°15'	88°	M	11.5

Orbital Elements

Object:	Hale-Bopp	Meunier-Dupouy
Peri Date:	1997 04 01.1347	1998 03 10.4365
Peri Dist:	0.914008 AU	3.051015 AU
Arg/Peri (2000)	130.5787°	122.6755°
Asc Node (2000)	282.4653°	148.8429°
Incl (2000):	089.4268°	091.2731°
Eccentricity:	0.995085	1.000760
Orbital Period:	~2500 years	Long Period
Reference:	MPC 30738	MPC 30738
Epoch:	1997 12 18	1998 03 08
Absol Mag/"n":	-1.0/4.0	4.0/4.0

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: Televue 55-mm Plössl plus 2X Barlow, \$275.00; 13-in. Coulter Dobsonian (improved) \$700.00; wanted 8-in. Schmidt-Cassegrain. Pete Burggraaf (520) 684-1265 days, (520) 684-3635 evenings.

Wednesday (May 20th) before the Riverside Telescope Conference.

Rich Walker gave a Public Events announcement. He thanked all that showed up on April 1st for the event at Challenger school. He again mentioned the public star party at Estrella Park on May 2, and mentioned that a public star party is in the works for May 30th at Thunderbird Park.

Rounding out star parties, Dean Ketelsen provided information on the Grand Canyon star party on June 13th through 20th. There will be activities on both the North and South rims. Contact Dean for additional information.

Lest we didn't get our fill of eclipse coverage at the last meeting, Bernie Sanden showed a video of activities on-board the ship during the eclipse. There were lots of cheering and applause for both the second contact and the third contact for the diamond ring. A very nice video showing the excitement on-board the ship.

At the break, I counted 53 people.

Following the break, vice president Gerry Rattley introduced Paul Comba, a Prescott amateur who diligently hunts down asteroids. He has worked visually, photographically, and computerized via CCD. He has observed approximately 1300 asteroids, and discovered about 380. His presentation showed that this is a very serious and structured task, involving much record keeping.

At 10:00, Paul adjourned the meeting and invited anyone interested in continuing the discussions over to JB's, of which 20 people attended.

—Ken Reeves, SAC Secretary

Minutes from the April 3rd Board Meeting

The April board meeting was called to order at 7:55. In attendance was Paul Dickson, Jack Jones, Adam Sunshine, A.J. Crayon, and Ken Reeves.

Paul gave the membership status. We are currently doing well with 102 members. Paul thinks that we may possibly reach 120.

A discussion on upcoming public star parties was held. Parties at Reach 11 and Thunderbird are still open. Wil Milan offered to be an assistant for Public Events. The Estrella Park Public star party is set for May 2.

Other star parties include Sentinel on April 25, and a potential star party at Picacho Peak on May 23, Memorial

Day weekend. Will Milan was volunteered to look into this. *[It is now set up, see page 6. —Paul]*

Jack Jones provided the budget for 1998.

1998 SAC Budget		
	Expenses	Assets
102 Members (as of April 3rd)		\$2856
8 Families (+ \$14 each)		\$112
9 Newsletter (+ \$14 each)		\$126
Remaining 1997 Assets		\$1274
Sub-Total		\$4368
Newsletter (Comps & Postage)	\$1500	
Meeting Room Rent	\$220	
Insurance	\$230	
Honoraria	\$400	
Deep-Sky Awards (Obs. & MM)	\$200	\$100*
Admin. Expenses (checks, etc)	\$130	
X-mas Party	\$100	
Misc. (inc. 2x J-Jon)	\$190	\$55*
Sub-Total	\$2970	\$4523
Field Trip Seed Fund	\$200	\$200
Observer's Handbooks (#60)	\$690	\$690
SAC 110 of the NGC (#100)	\$370	\$375**
Total	\$4230	\$5788

* Messier Marathon canceled, no awards. J-Jon refunded.
 ** 75 books remain to be sold (at \$5) before more books are purchased.

There was some discussion on additional amenities for the Sentinel star gaze in future years, primarily a Porta-Jon.

Finally, with all the E-mail discussion about EVAC moving the All-Arizona Star Party, we talked about future locations for the Marathon. The plan is to keep using the same location, Ray Farnsworth's property.

The meeting was adjourned at 9:00. The next Board Meeting will be held on Friday Aug 14th, location TBD.

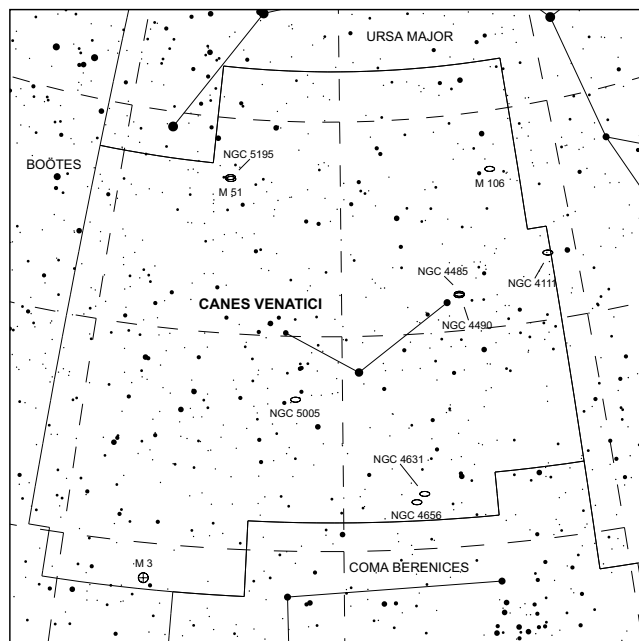
—Ken Reeves, SAC Secretary

Fuzzy Spot

by Ken Reeves

Canes Venatici

May 1998



Spring time means one thing for deep-sky astronomers, galaxies! This month covers the constellation Canes Venatici. Although not as rich as Virgo or Ursa Major, the SAC Deep-Sky Database lists 238 galaxies, enough to keep one busy for a long time.

Alpha (α) or Cor Caroli is the brightest star in the constellation, and in addition to being a good jump star for star hopping, it is a very nice double star. Speaking of stars, be sure to take a look at Y Canes Venatici, or La Superba. Although I have yet to observe this star, it is described as one of the reddest stars known.

There isn't room to describe all of the Herschel 400 objects in this constellation, so here are a few of the ones I have observed along with a few Messier objects. Working your way around this area of the sky can be somewhat frustrating, but the objects are well worth the trip.

NGC 4111 (12h07.1 +43°05') This galaxy is quite bright, contains a reasonably bright halo, a good bright middle, but I saw no nucleus. It is very elongated NW/SE. Using averted vision makes the halo grow only somewhat. Also notice the nice double star on NE side.

NGC 4258 (12h18.9 +47°19') Here you get a chance to get a Herschel 400 object and a Messier object, **M 106**. At 100X, this galaxy is big, pretty bright, contains a fairly

bright halo, a brightening towards the middle, and an occasional non-stellar nucleus. Averted vision makes the halo grow somewhat and show some possible mottling. There is a star on both ends of the galaxy, and the nucleus appeared to be skewed from the axis. The galaxy is elongated NW/SE, with the halo darkening suddenly on the NE side.

NGC 4485 (12h30.5 +41°43') and **NGC 4490** (12h30.6 +41°39') Here is a real beautiful pair of galaxies. 4485 is not very big, not too bright, but contains a somewhat bright middle (about as bright as halo of 4490 half way out), and is round. 4490 is pretty large, pretty bright, and gets much brighter towards the middle. It is elongated NW/SE. This observation was at 70X, cranking up the power seemed to make 4485 fade out.

NGC 4631 (12h42.1 +32°33') At 70X, this quite nice galaxy is pretty bright, very large, extremely elongated E/W, and shows a definite bulging toward the middle. The W side is much brighter. Averted vision helps especially with E side. Immediately to the N of the middle, just out of the halo, is a star. Going NW from this star, I spotted a faint smudge which is NGC 4672.

NGC 4656 (12h43.9 +32°11') This unusual galaxy is a little bright, pretty big, and very elongated NE/SW. The middle is a little brighter with no nucleus seen. Look carefully at the NE end for a 'hook' which points E. This hook is NGC 4657. Due to the unusual shape, this galaxy pair is nicknamed the "Hockey Stick".

NGC 5005 (13h11.0 +37°03') Here is a nice edge on galaxy, pretty bright, somewhat large, and containing a brighter middle. It is elongated E/W with a possible dark lane on N side. Use averted vision to help bring out the halo.

NGC 5194 (13h30.0 +47°11') and **NGC 5195** (13h30.1 +47°16') This is the famous **Whirlpool Galaxy** and its companion. NGC 5194 which is **M 51** is very large, very bright, contains a much brighter middle and a non-stellar nucleus. In the 10" scope, there is a very obvious counter-clockwise spiral pattern and some very definite mottling. NGC 5195 is located to the NNE, and is about 1/3 the size of M 51. It is very bright, contains a brighter middle, and is fairly formless.

NGC 5272 (13h42.2 +28°23'). After an evening of viewing galaxies, it's time for a change. Go to the far end of Canes Venatici, almost into Boötes to find the spectacular globular cluster **M 3**. There are 3 fairly bright stars bordering the cluster. In the cluster, I was able to resolve about 20 stars over a granular haze. This haze brightens up to a very bright center. The core is round, but there is a kind of blank spot on the E edge. This observation was on a night when the 1st quarter moon was up, so the transparency was quite poor.

Herschel 400 Objects

4111, 4143, 4151, 4214, 4258, 4346, 4449, 4485, 4490
4616, 4631, 4656, 4800, 5005, 5033, 5195, 5273

SAC's 110 Best of the NGC Objects

4111, 4214, 4244, 4449, 4490, 4631, 4656, 5005, 5033

Successful Novice Group Meeting

by Steve Coe

The April star party at Buckeye Hills was designated a Novice Group meeting to allow those new to astronomy to ask questions and get some answers about getting started observing the sky. There were 30 vehicles at the site by the time it started to get dark and approximately 50 people ready to take advantage of a nice, clear night. I gave a short talk on star party etiquette and a quick introduction to which constellations were starting to appear as the sky got dark.

Following the talk, an hour was dedicated to a coordinated effort to show a variety of objects in several scopes. As always a big “thanks” to all those who set up telescopes and helped with demonstrating how to view the sky. Participants had a chance to view and compare: The Pleiades, M 35 cluster, NGC 3242—a planetary nebula in Hydra, and M 81 and 82—two bright galaxies in Ursa Major.

After that, the traditional star party commenced and conversations were heard about: eyepieces, focal ratios, mounts, star charts and finder devices. All in all, a very fun time, indeed.

Coming Events

Star Parties

RTMC	May 22–24
Picacho Peak Star Party	May 23
Grand Canyon Star Party	Jun. 13–20
Northern Arizona Star Party	Sep. 18–19
All-Arizona Star Party	Oct. 16–17
Starry Nights Festival	Oct. 16–18

Picacho Peak Star Party

Saturday, May 23, Sunset to Dawn
\$10/vehicle

There will be a star party at the Picacho Peak State Park on Saturday, May 23rd. The Group A campground has been reserved for this event. Facilities include restrooms, campsites, and paved roads to the campsites, where you can set up your telescope. There is an entrance fee for using the park of \$10 per vehicle. The \$35 to reserve the campground for this event has already been paid.

This event is not limited to SAC members, so you can expect to meet people from other Arizona clubs there too. The campgrounds are located NW of Picacho Peak, and with its trails, there’s plenty to do during daylight hours.

Public Star Party at Estrella Park

Saturday, May 2, Sunset to 10 PM

There will be a public star party at Estrella Park on Saturday, May 2nd. SAC members please bring your telescopes.

To get to the park, take I-10 west from Phoenix to exit 126 (Estrella Parkway). Then south to Buckeye Rd. Turn left and go to Bullard Ave. From there, go south to the park.

Sorry for the late notice about this event. Work pressure delayed the putting together of this newsletter.
—Paul

Public Star Party at Thunderbird Park

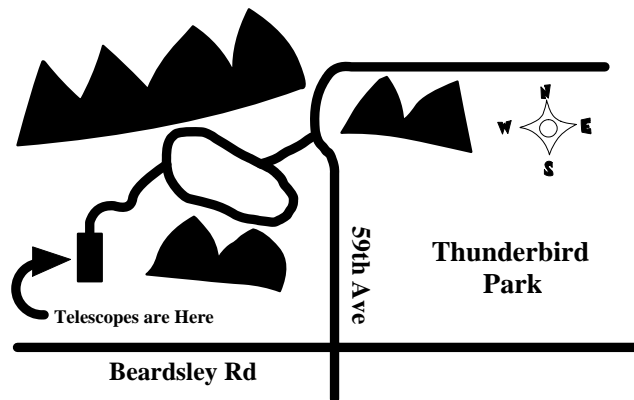
Saturday, May 30, Sunset to 10 PM

There is a public star party tentatively scheduled for Saturday, May 30th at Thunderbird Park. SAC members please bring your telescopes.

The last info available prior to publication of SAC-NEWS had yet to confirm whether this date was set. **Please verify the date of this star party either at the club meeting, via E-mail, or by one of the club officers.** By the date of the club meeting, this issue will be settled.

To get to the park, take AZ 202 west from I-17 (north Phoenix) to 59th Avenue. Then go one mile north to the park entrance. We are usually set up at the west-most side of the park, so you will be driving over the hill AFTER you are inside the park.

Please arrive before sunset to insure that you can still park near your vehicle.



May 1998

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	Tomorrow First Quarter Moon 3:03 A.M. 2
<div style="border: 1px solid black; padding: 5px;"> Public Star Party Saturday Evening, May 2 Estrella Park South of I-10, Exit 126 </div>		Yesterday Mercury at greatest elongation 27° (morning) 5	6	PAS Meeting Brophy Prep. Physics Lab	SAC Meeting Grand Canyon University, Fleming Rm. 105	8
3	4	5	6	7	8	9
10	Full Moon 7:30 A.M.	Mars in Conjunction (moves into morning sky)	EVAC Meeting (SCC: Rm. PS172)	SAC Deep-Sky Meeting 7:30 P.M.	15	SAC Star Party Buckeye Hills (members&guests)
10	11	12	13	14	15	16
17	Last Quarter Moon 9:35 P.M.	19	20	<div style="border: 1px solid black; padding: 5px;"> May 22 – May 24 Riverside Telescope Makers' Conference (RTMC) May 23 Picacho Peak Star Party </div>		23
17	18	19	20	21	22	23
24/31	Memorial Day	Yesterday New Moon 12:33 P.M.	27	Pluto at opposition (Mag. 13.7)	<div style="border: 1px solid black; padding: 5px;"> Public Star Party Saturday Evening, May 30 Thunderbird Park 59th Ave. North of AZ 202 </div>	
24/31	25	26	27	28	29	30

SAC Information

Area Code (602)

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Deep-Sky Group	A.J. Crayon	938-3277
		acrayon@primenet.com

E-Mail Mailing Lists

SAC-mls is a mailing list for club announcements and quick notification of astronomical events.

SAC-Board is for SAC business. All club members are welcome to participate.

AZ-Observing is a fairly general mailing list about observing in Arizona. Where the star parties are and who's going, as well as what's up.

To join, send E-mail with the Subject: subscribe to the "-request" mailing address at psiaz.com. For example, you would send the request for AZ-Observing to AZ-Observing-request@psiaz.com.

SAC Web Sites

www.accessarizona.com/groups/group-access.html
 www.primenet.com/~dickson/sac.html

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.....\$27.00 for one year
- Astronomy.....\$20.00 for one year

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

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

Jack Jones
SAC Treasurer
2313 W Sierra St
Phoenix AZ 85029

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 the same week of the month. The same is true of the club's star parties. Star parties at Buckeye Hills Recreation Area are mostly held on the Saturday of the third quarter moon.

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. See inside for a map to the meeting location.

1998 SAC Meetings

Jan. 9
Feb. 13
Mar. 13
Apr. 10
May 8
Jun. 12
Jul. 10
Aug. 7
Sep. 11
Oct. 2
Nov. 6
Dec. 5 Party

1998 SAC Star Parties

Date	Sunset	Moonrise
Feb. 21	6:18PM	3:40AM
Mar. 21	6:39PM	2:23AM
Apr. 18	6:59PM	1:08AM
May 16	7:19PM	11:54AM
Jun. 20	7:37PM	3:27AM
Jul. 18	7:34PM	2:10AM
Aug. 15	7:12PM	12:57AM
Sep. 12	6:37PM	11:45PM
Oct. 10	6:00PM	10:32AM
Nov. 14	5:27PM	3:48AM
Dec. 12	5:22PM	2:35AM

SACNEWS

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

Stamp

First Class Mail

Inside:

- 1998 Arizona Messier Marathon
by A.J. Crayon
- Dim Moments by Paul Dickson
- Comet Comments by Don Machholz
- Successful Novice Meeting by Steve Coe
- Fuzzy Spot by Ken Reeves

SAC Meeting — May 8

Deep-Sky Meeting — May 14

SAC Star Party — May 16

Picacho Peak Star Party — May 23

T-Bird Public Star Party — May 30