

# East Valley Astronomy Club

February

Newsletter

1996

## EVAC MEETING HIGHLIGHTS

The January meeting began at 7:30 PM and after some latecomers filtered in, attendance was 67 people, probably a record crowd for the Club! Thanks for your support. Please keep the suggestions and help coming.

Robert Kerwin reviewed upcoming Club events and then opened discussion on relocating the "local" star party site. The "corral" has been getting a lot of unwanted traffic lately and most members would like to move. A number of people have used the new site suggested by Mike Sargeant and Art Zarkos but more input is desired. A decision will probably be made at the February meeting.

Don Wrigley spoke on the public star party at Boyce Thompson Aboretum and asked for a few more volunteers. (The star party was held on Jan 13.)

### Adopt-A-Highway

The Club has been accepted into the State's Adopt-A-Highway program. It involves bagging roadside trash three times a year along Highway 60 near Florence Junction. In return, the state erects a blue sign with the Club's name along that stretch of road. Look for our first cleanup shortly after the sign goes up.

### Beginners Lecture Series

Bernie Sanden also requested suggestions and/or help with the Club project to start a beginners lecture series. So far he has received very little input! If you are new to astronomy and the Club, please call, e-mail, or write Bernie to give him an idea on what subjects should be covered. You can reach him at:

Bernie Sanden  
4614 S. Los Feliz  
Tempe, AZ 85282  
e-mail: bsanden@amug.org

### 1996 Messier Marathon

A.J. Crayon of the Saguaro Astronomy Club has been

organizing this annually for several years now. If you like deep sky observing at all, you'll love this event. As A.J. explained, every spring conditions allow spotting all or most of the 110 object Messier List in one (long) night. The marathon will be held at the Arizona City deep sky site on March 16th. Look for all the details in the next issue of the newsletter.

### Old and Young Moons

Pierre Schwaar spoke about a recent attempt to spot an "Old Moon," that is one only hours away from being a New Moon (which can't be seen—an eclipse doesn't count). He didn't spot it visually because of poor conditions, but may have captured it on film. He also detailed the mid-January opportunity to spot a record setting "Young Moon," only hours past new. The results to follow.

### Aerial Tour

Tom Polakis had a well organized show of slides on an aerial tour of Arizona observatories shot from a Cessna 172. The "damage" atop Mt. Graham was barely visible. The slides can be seen on Tom's Web site at <http://www.indirect.com/www/polakis/airtour/airtour.html>. (Ed. note - no spaces or returns, and no final period.)

### 1996 Astro Calendars

A few calendars have not been paid for. These will be up for sale at the February Meeting if not redeemed by then. If you didn't order one or want another, this may be your chance. Bring cash or a check payable to EVAC.

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- CALENDAR OF EVENTS AND MORE

## FEATURED PRESENTATION

EVAC member Chris Schur of Payson gave a terrific presentation on what he has learned during 25 years of astrophotography. He spoke on the virtues of the Arizona skies which make the State second only to California (because of it's huge population) in terms of output in amateur astrophotography.

Before showing his sky shots, Chris detailed his current setup. He still uses his homemade 12.5" f/5 Newtonian reflector but has updated it with a ST-4 CCD auto-guider and a Lumicon coma corrector. The auto-guider allows Chris to get 3-4 good one-hour shots where the fatigue of manual guiding only allowed 2. The coma corrector gives him a nice "flat" field across the entire negative which is then focused with a custom Sure-Shot focusing device. His film of choice is hypered Tech Pan (black&white) because of it's speed and terrific resolution.

The rest of the hour entailed examples of his work, which words can't describe. Suffice it to say that his 1/2 degree true field shots capture stars to 20.5 magnitude and display details normally seen only in major observatory photos! With his own darkroom work and "unsharp masking" techniques, even familiar objects like the galaxy M51 showed outlying details I haven't seen anywhere else. Thanks for the great show Chris!

The presentation wrapped up at 9:30 PM and members chatted for another hour while enjoying soda provided by Robert Kerwin.

## FEBRUARY GUEST SPEAKER

The speaker for February will be Dr. Paul Scowen of ASU. The last time that Dr. Scowen spoke, he presented us with some slides of M16 taken by the Hubble Space Telescope.

## INTERNET E-MAIL

### Expand Your Universe

DO YOU HAVE astronomy friends with Internet access limited to e-mail only? Do you have an astro.sig at work? By sending a request for ASTRONET.TXT to our address at: resource@rahul.net. They will receive a short description file about this newsletter and how to subscribe (free).

Remember, Internet is second nature to many of us, but the vast majority of "connected" individuals have only e-mail. Help expand their universe, send them AstroNet's e-mail address.

No it's not a site, but a publication sent to you by e-mail every two weeks. It contains comments, reports and images done by other amateur astronomers and news and press releases, many from NASA, updating situation of probes such as Galileo, Voyager, TOPEX and so on. I think it's really cool (and better, it's free!), the "publisher" has done a fine job.

Any and all articles in AstroNet may be reprinted by in an astronomy club newsletter. Tell your club editor. We also welcome your articles (individual or club) regarding special events, accomplishments, observing, etc.

Received from Diffrient.R.S@nort.bwi.wec.com

## New Young Moon Report

From: jimstamm@aztec.asu.edu (JIM STAMM)  
Newsgroups: sci.astro.amateur  
Subject: Re: Young moon record--how young?  
Date: 27 Jan 1996 19:14:37 GMT  
Organization: Arizona State University  
Message-ID: <4edtitsdq@news.asu.edu>

On Jan 27, 1996; Steve Bach wrote:>>>>>Sorry I didn't get the posting on the new young moon record. What is the new record? Who where and how?>>>>>I am still "high" on the viewing of the 12 hour 07 minute old Moon from Tucson, AZ last Saturday (Jan. 21 @ 00:57 UT). Details of the planning and observation were posted here under New Moon Record Attempt - Parts I-III. If you can't retrieve them, e-mail a request to me, and I'll send the entire thread plus more. Following are some comments that I made after Robert Victor suggested more on the actual observation: The Sun was not quite set; just behind some houses when I attempted to watch Beta Capricorni drift through the top of the field at 00:42 UT. The sky was bright, but I had seen the star a week before, and it was easy. The sky was just as clear, but the smaller solar elongation prevented viewing. There was a soft reddish glow along the horizon that seemed to go up past the 5 degrees that the telescope was set at, but viewing through the eyepiece showed no color at all. When I first saw the Moon, its arc was about 45 degrees, and I could not see any breaks. Past observations when the Moon was 1.0 percent lit showed many breaks, so I looked hard for some this time. The white color of the Moon contrasted with what seemed like a white background a few minutes before. My impression later was that the thickness of the crescent was uniform, except at the horns. It was hard to tell where they ended. When I returned to the eyepiece after the others looked, I thought the Moon was a little easier to see. This was probably about 5 minutes after the initial 00:57 sighting. It also seemed to have a little longer arc. When I transferred my drawing of the image so that the Moon's center would coincide with the center of the field, and rotated my head so that the line between my eyes would be parallel with the celestial equator, I would guess that the horns were at 10 O'clock and 12 O'clock, through the inverting scope. That would make a naked eye sighting with eyes parallel to the ground have the horns at about 5 O'clock and 7 O'clock. At this time my wife, Chris hadn't seen the Moon yet. So I let her change the focus, and she acquired the image. When I got back to the eyepiece, I had a hard time focusing the Moon back in, but when I finally succeeded, I noticed that it had taken the reddish color of the sky more, and it did not have the contrast of a few minutes ago. It got redder and redder as it sank toward the horizon, but not any harder to see. It seemed redder than the

background. The two kids who drew the image in the sand put much more arc to the Moon than was actually observable. Following the tradition of Bob Victor (who helped me a lot in this endeavor) I will assist any who want to try for a very old or very young Moon. Bob was always warning us of opportunities, and suggesting techniques. I won't be able to educate like he does, but I'll be able to try and answer any questions that are sent my way.-Jim--

### West US Observers—Highway M42

This item is most applicable to observers in the Western United States near longitude 112 West.

Sunday Jan 14th, while observing near Phoenix, AZ, I spotted 10 geosynchronous satellites pass by the Orion Nebula in less than an hour (and I didn't observe continuously either). But even better, 5 were in a "caravan" visible in same field at once! These "space truckers" are truly fun to watch. From my 33 deg North latitude, the satellites appear to pass about 2 arc minutes North of the Trapezium, spaced about 10 arc minutes apart, and about 8th magnitude (one was fainter at about 9th). I was using a 13" Dobsonian at a fairly dark site and 60 to 125 power (1.1 and 0.6 deg true field). The following are Mountain Standard Times for the sightings accurate to 0.5 minutes. Adjust them by -4 minutes for each evening after the 14th to get the new "arrival times."

Jan 14	2053	MST
	2110	
	2120	
	2130	
	2134	
	2136	The Caravan of 5

Although geosynchronous satellites orbit over the Earth's equator, parallax from latitudes North or South moves their apparent path relative to the celestial equator. Latitudes higher than 33 deg North will shift the apparent path further South than the -5 declination that I observe. A different longitude again introduces a parallax affect, making them appear a little earlier or later than the times given.

Since these satellites are stationary relative to the Earth's surface, they appear to move in from the West (since the sky is "rotating" from East to West). Once you acquire them, simply stop tracking to "follow" them. You can also find them relative to other objects and stars at earlier or later times. Simply pick an object with the same declination as they appear from your location and adjust the time by the difference in right ascension from M42. For instance, I left the caravan for a while and reacquired them 40 minutes later North of Gamma Monocerotis by adding the 40 minutes difference in RA to the M42 time. If you choose an object/star West of M42, subtract the difference in RA. E-mail me on your results. Enjoy....SAM HERCHAK

### UPCOMING CLUB EVENTS

EVAC Club Meeting, Feb 14, 7:30 pm  
SCC, Physical Science Bldg., Room PS 172

Local Star Party, Feb 10, Sunset pm  
Florence Junction Site

Deep Sky Star Party, Feb 17, Sunset pm  
Vekol Road Site

### Galileo Probe Mission Update

The most difficult atmospheric entry in the solar system was successfully accomplished. After a six year journey through the solar system and after being inexorably accelerated to a speed of 170,700 km/hour (106,000 mph) by Jupiter's tremendous gravitational pull, the Galileo Probe successfully entered Jupiter's atmosphere at 22:04 UT ( 2:04 P.M. PST) on December 7, 1995. During the first two minutes of this most difficult atmospheric entry ever attempted, temperatures twice as hot as the Sun's surface temperature and deceleration forces as great as 230 g's (230 times the acceleration of gravity at Earth's surface) were produced as the spacecraft was slowed down by Jupiter's atmosphere. The Galileo Probe and Orbiter separated on July 13, 1995 and both arrived at Jupiter on slightly different trajectories. The Galileo Orbiter successfully became the first spacecraft to enter an orbit about Jupiter a few hours after the Probe's successful descent into the atmosphere.

The Galileo Probe's radio transmission lasted for 57.6 minutes. The Probe's transmissions to the Orbiter, which stored the data in its computer memory and on its tape recorder for later playback to Earth, lasted for 57.6 minutes, failing only after the communication system on the Probe succumbed to the extreme environmental conditions about 600 km (373 miles) after entering the tenuous upper reaches of Jupiter's atmosphere.

All the scientific instruments operated successfully.

--> The Probe data stored in the Orbiter's computer memory has been successfully received on Earth (transmission of the more complete data on the tape recorder begins the week of January 22, 1996). Preliminary analysis of the received data indicates all scientific instruments operated properly and returned valuable measurements of the complex atmosphere of Jupiter and the innermost regions of Jupiter's intense radiation belts. Six scientific instruments and an experiment utilizing the Probe's radio transmissions to determine wind speeds collected information on the environmental conditions down to about 200 km (125 miles) below the visible cloud tops of Jupiter. The atmospheric probe did not include a camera.

Measurements of temperature, pressure, and vertical winds reveal several surprises. As the plunge into Jupiter's atmosphere began, the Atmosphere Structure Instrument (ASI) started to probe the uppermost regions of the atmosphere through its influence on the probe's motion. The objective of this investigation was to measure the temperature, pressure, and density structure of Jupiter's atmosphere throughout the Probe's descent into the atmosphere. Such information is essential for understanding Jupiter's atmosphere and for interpreting the results of the other experiments. Temperature and pressure were directly measured during the parachute descent phase of the mission. Initial results include the detection of upper atmospheric densities and temperatures that are significantly higher than expected. An additional source of heating beyond sunlight appears necessary to account for this result.

Visibility in the atmosphere is much greater than expected in the immediate vicinity of the Probe entry site. Since we are seeing clouds when we look at Jupiter from afar, detecting and understanding the nature of its clouds can reveal a great deal about this cloud enshrouded world. The objective of the Nephelometer (NEP) instrument was to detect and characterize cloud particles in the immediate vicinity of the Probe as it descended to different levels. This objective was achieved by shining a laser beam across a short distance to a small mirror deployed just outside the Probe. By studying the scattered and transmitted light, cloud particles could be detected and characterized. This experiment has found several surprising initial results. No thick dense clouds were found, in contrast to expectations based on analysis of telescopic and flyby spacecraft observations of the planet and simple theoretical models. In fact only very small concentrations of cloud and haze materials were found along the entire descent trajectory. Only one well-defined distinct cloud structure was found, and this layer appears to correspond to a previously postulated ammonium hydrosulfide cloud layer. The observed cloud structure is very different than that expected by astronomers, and they will have to revise ideas of cloud formation on Jupiter. One important question which has arisen from these as well as other observations is whether the Probe's entry location is representative of most other regions of Jupiter.

Additional information on the status of the data reduction and the latest results will be listed on the World Wide Web at URL : [http://ccf.arc.nasa.gov/galileo\\_probe/](http://ccf.arc.nasa.gov/galileo_probe/)

## **GRAND CANYON STAR PARTY '96**

8-15 June 1996  
South and North Rim

Well boys and girls, it is time once again to make plans for that perfect summer getaway - the Grand Canyon Star Party! Where else can you go to keep the family

happy and occupied all day, and the dark nights will keep even the most jaded of astronomers smiling all night long? Also, for the first time, we will be offering a North Rim version this year.

### **What is the Grand Canyon Star Party?**

Its current revision started in 1991, as the first anniversary of Dean and Vicki Ketelsen's honeymoon there. It was noticed that a telescope set up looking at the Canyon or sky soon gathered a crowd, so a public oriented event was planned. Though tens of thousands visit every day, a small fraction stay overnight to be treated to the spectacular views of the night sky there. The appreciative tourists tend to leave early, leaving the astronomers in solitude for observing far into the night. The last few years we have had solitary access to a clearing behind a locked gate so you can leave your scope set up for the duration of your stay.

The Grand Canyon Star Party originally started much earlier as a function of the San Francisco Sidewalk Astronomers who made annual pilgrimages to several western National Parks in the late '70s and '80s, spending several weeks at each stop. The latest version of the star party has been readily endorsed by several of their members who have become regular attendees.

### **What is there to do there?**

Well, the Grand Canyon offers world class hiking through Earth's largest canyon system. Even those less physically inclined can spend days exploring the scenic vistas offered from every bend of the rim trail, or from the roads from their cars or park shuttle buses. The place offers lots to explore for the history buff with many original structures preserved and a nearly century old train making daily runs to the rim. The area offers astronomical day trips to Lowell Observatory or Meteor Crater, as well as scenic drives through Monument Valley, the Painted Desert, Flagstaff and Oak Creek Canyon. One could easily spend a couple action packed days or the entire week without repeating yourself.

### **How is the observing at the Canyon?**

Conditions are excellent. The nearest town, Flagstaff - population 45,000, is 80 miles away, while Las Vegas and Phoenix are both about 170 air miles away making for very dark skies. Elevation at the South Rim is about 7,000 feet with the North about 8,000 feet. Seeing conditions are usually very good with the exception of very still nights when pockets of cold air move through slowly disrupting the seeing. Early June is Arizona's clearest time. We have not had a night lost to clouds in over three years (over 24 clear nights in a row)! 'Nuff said!

### **Where would we stay?**

That is the big question for every Canyon visitor during the summer. By anyone's opinion, the Canyon is overcrowded in June and most housing has been booked up months in advance. If you need a room to stay in, you had best start NOW (I'm writing this before Christmas). Even in March you will likely have to search around for a room. If you can stand the 7 mile drive to Tusayan, there are also a number of motels

there. Check out the list below. The campground is very nice if you enjoy roughing it a little. It is amazing how well you sleep on the ground when you are up all day and most of the night! Campsites are generally available a day or two ahead of time (\$10/night). The Park Service also gives us a few complimentary campsites which we make available first come, first served after March 1st. RV parking with a full hookup is available in Trailer Village (\$17/night). Again, early reservations are advised.

Any special activities planned?

I'm glad you asked that. As part of our program, we offer a twilight talk every evening to entertain the folks while it gets dark. We always need volunteers to give these talks, so step up especially if you have an astronomical story to tell and have worked with crowds before. Also for the first time, the San Francisco Sidewalk Astronomers have stepped up and offered to grind and polish a telescope mirror and put together a telescope for the local school. There will likely be daily demonstrations and you may get put to work. Also we generally have a couple social cookouts to get to know the astronomical folk who come. These are great fun and you get to actually see the faces of the guy you have set up next to the last 4 nights!

Sounds great! How do I let you know I'm coming?

If you need further information, or to let us know you would like to volunteer by bringing a telescope, PLEASE let us know at the address below. The space in the observing field is limited and we need to know how many folks we have coming that are bringing scopes. Be sure to have some housing plans before you let us know you are coming!

Dean Ketelsen

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Further Info:

For South Rim information, write: Dean Ketelsen  
1122 East Greenlee Pl.  
Tucson, AZ 85719  
520-293-2855  
ketelsen@as.arizona.edu

For North Rim information, write: Deloy Pierce  
P.O. Box 674  
Farmington, UT  
801-451-8215

South Rim Lodging:

> All rim lodging or Trailer Village (Fred Harvey, Inc)  
520-638-2401

> Campsites (MISTIX - no more than 8 weeks in advance) 800-365-2267

> Housing in Tusayan (7 miles south of Grand Canyon):

+ Squire Inn 520-638-2681

+ Moqui Lodge 520-638-2424

+ Quality Inn 520-638-2673

+ Red Feather Lodge 520-638-2414

+ Seven Mile Lodge 520-638-2291

> North Rim Lodging: (801-586-7686)

> North Rim Camping (MISTIX - no more than 8 weeks in advance) 800-365-2267

Past Year's Reviews are available.

## NEW COMET DISCOVERIES

### COMET C/1996 B1 (SZCZEPANSKI)

The following ephemeris is from a parabolic fit to 20 positions 29 and 30 January:

T= 1996 Feb 5.227                      Node = 345.921  
q = 1.45851 AU                          Incl. = 51.803  
Peri = 149.523

UT date	R. A.	Dec.	Mag.
30 Jan	13:59.43	+53 24.5	8.6
1 Feb	13:52.00	+52 58.7	8.5
3 Feb	13:43.89	+52 29.3	8.5
5 Feb	13:35.08	+51 55.4	8.4
7 Feb	13:25.59	+51 16.1	8.3
9 Feb	13:15.45	+50 30.3	8.3
11 Feb	13:04.68	+49 37.1	8.2
13 Feb	12:53.35	+48 35.4	8.2

From: drako@ix.netcom.com (Kenneth Drake)

Subject: new comet

To: bas@lowell.edu (Brian Skiff)

Brian,

I'm sending this to as many people in the astronomy community as I can think of.

At about 04:30 CST Jan. 27th, (Jan. 27.44 UT), Ed Szczepanski started a 50 min. exposure of M101 using a 4" refractor and a 300 mm camera lens. Later in the day, while examining the two b&w negatives, he discovered a slightly streaked fuzzy patch about 30' northeast of and the same brightness as NGC 5474.

He called around and managed to get the phone # to call in a discovery from Larry Mitchell. He reported his suspect to Brian Marsden who indicated that he should get a confirmation photo. When I walked in the door from work, Mitchell was ringing my phone to check with me to see if I was interested in going to our club observatory site to help Ed confirm the possible comet. Do the Cowboys play football? It was clear and the object would culminate about 6:00 A.M. local time. I was really excited about the possibility of one of our club members finding a comet. When we got to the site at 11:30 P.M. Ed showed us the negatives. Both showed a 10th or 11th mag. fuzzy at 14h 08m +53d 54m. We used MegaStar, the POSS, and an old photo of the field to check against. It had to be a comet! We went outside to wait on moonset and the field to get higher in the sky. It didn't take long to locate NGC

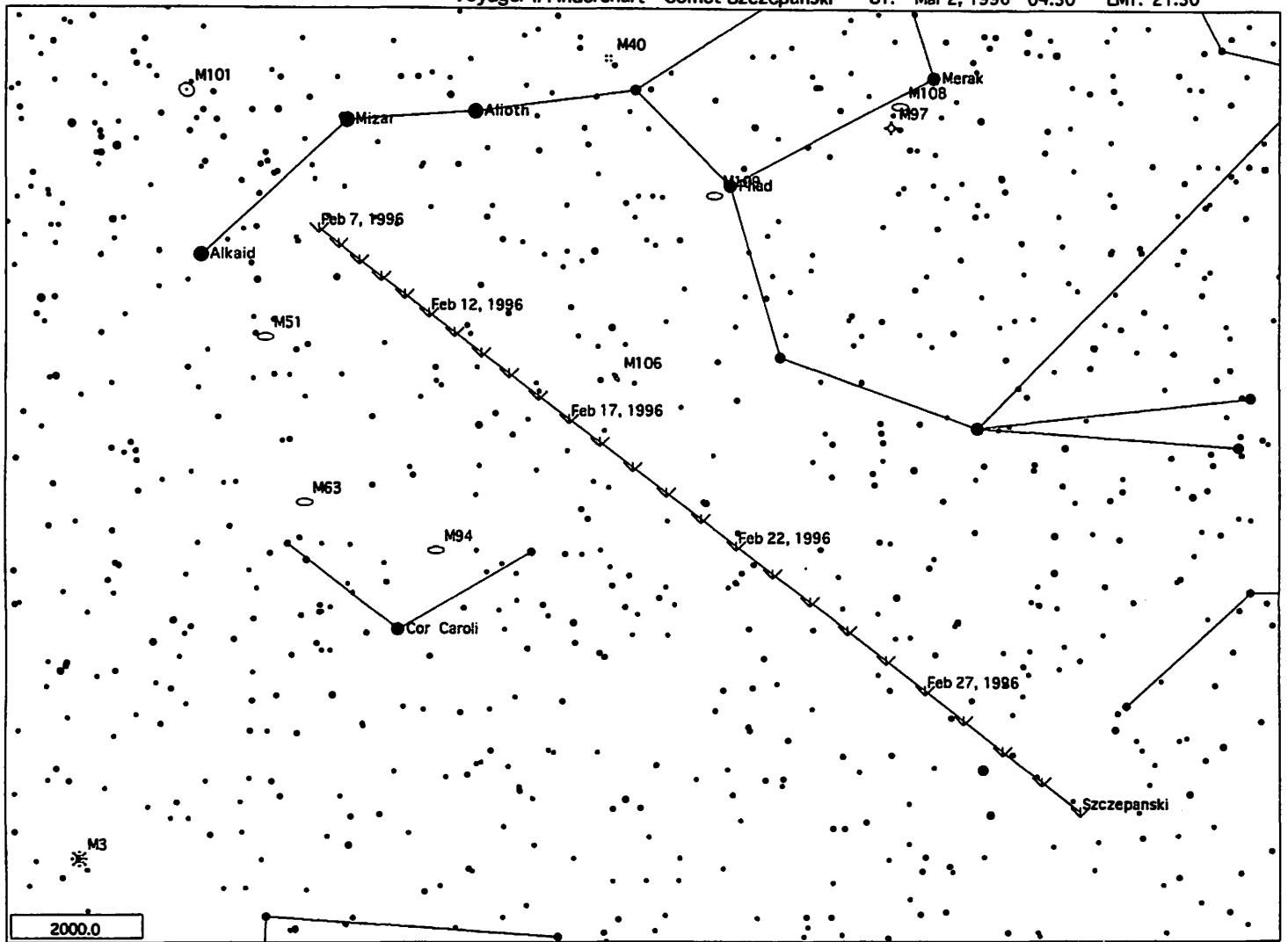


Chart Center: 12h 13.7m +44° 00' Equatorial: 44° x 32' Location: 112° 04' W 33° 28' N Phoenix

5474 or so we thought. We had a 12.5" f/5, a 7" f/9.5 refractor, and Don Pearce showed up with a 17.5" f/4.5. My personal observation goes like this: Jan. 28.33 UT, the comet had moved to just north of NGC 5474 (the central condensation being located at 14h 5m 9s +53d 43' 44"). The coma size was 5.5'x4' in P.A. 80 degrees. The central condensation appeared shifted slightly west of center with a DC=2. I estimate a magnitude of 9.3 using GSC star 3852:633 and the Sidgwick method. I used a 17.5" reflector at 62 power.

This is exciting!  
Kenneth

**COMET C/1996 B2 (HYAKUTAKE)**

Total visual magnitude estimates: Feb. 1.49 UT, 10.1: (A. Hale, Cloudcroft, NM, 0.41-m reflector; coma diameter about 2'.5); 1.73, 8.9 (D. A. J. Seargent, The Entrance, N.S.W., 25 x 100 binoculars; coma 4'); 1.81, 11.7 (Y. Kushida, Yatsugatake, Japan, 0.40-m reflector; coma 2'.5-3'.0).

The orbital elements on IAUC 6303 indicate that the comet will pass only 0.11 AU from the earth on Mar. 26 on its way to perihelion more than a month later. The comet can be expected to become a naked-eye object,

both on account of the approach to the earth, and later as it approaches perihelion. The predicted magnitude in the following ephemeris for around those times is, of course, highly uncertain. There is also a very large positional uncertainty, particularly in late March, when it amounts to tens of degrees.

1996 TT	R. A. (2000)	Decl.	m1
Jan. 28	14 29.01	-24 53.4	10.2
Feb. 2	14 33.06	-24 56.3	9.8
7	14 36.94	-24 54.9	9.4
12	14 40.63	-24 47.7	9.0
17	14 44.07	-24 32.9	8.5
22	14 47.21	-24 07.0	8.0
27	14 49.98	-23 24.8	7.4
Mar. 3	14 52.28	-22 16.6	6.8
8	14 53.95	-20 23.1	6.0
13	14 54.65	-16 58.2	5.0
18	14 53.46	- 9 42.4	3.8
23	14 46.46	+11 55.0	2.0
28	12 28.3	+80 59.2	0.9
Apr. 2	3 24.64	+57 28.7	1.9
7	3 12.26	+46 13.5	2.4
12	3 06.26	+40 56.1	2.5
17	3 00.45	+37 22.2	2.2
22	2 53.20	+34 04.2	1.5

DAY/TIME-U	P	AC	USNO	O	MAX	SP	PCT	ELG	SN	MN	MN	CA	PA	VA	WA	LONG	LAT	A	B	C	DM	SAO	HA	DECL.	RT.	ASC.	
H M S	S	D	REF NO	V	MAG	SHLT		AL	AL	AZ					LIB	LIB	M/O	M/O	S/K	REF NO	REF NO	O	//	D	//	H M S	
SEPTEMBER													SEPTEMBER														
21/04	38	20/DK	2	X25418	39	5.2	A0	58+	99	25	223	30N	28	351	31	-4.9	-6.0	-6	1.6	1.9	-18	4988	161564	401837	-182408	183115.1	
23/04	10	01/DC	2	X28531	57	6.2	G0	79+	126	41	187	46S	124	118	139	-2.1	-5.2	-3.0	-1.8	-8	-15	5696	163645	51551	-150351	203054.2	
24/02	47	54/D	2	X29719	67	6.5	F5	88+	139	37	144	75N	61	92	81	-1.1	-4.1	-1.7	1.5	.0	-12	6005	164415	-283625	-113446	212804.4	
POSSIBLE LUNAR ECLIPSE -- SPECIAL MAGNITUDE LIMITS CALCULATED.																											
27/02	27	48/D	3	X00306	99	6.4	G5	0E	179	15	98	80U	9	65	34	4.7	.6	-1.1	3.5	.8	N	1	0024	109119	-730531	14023	1739.0
27/02	58	56/R	3	X00306	99	6.4	G5	0E	179	21	103	77U	308	3	333	4.6	.6	-1.2	-5.2	-2.0	N	1	0024	109119	-651603	14023	1739.0
27/03	05	35/DX	1	X00350	97	7.9	G5	0E	179	22	104	64U	81	136	107	4.7	.6	-7	1.3	-7	N	1	0026	109142	-640842	13400	1948.5
ENO OF POSSIBLE LUNAR ECLIPSE PERIOD.																											
30/05	10	41/R	1	X04068	87	5.8	G5	88-	139	23	89	58S	226	286	244	7.0	5.2	-2	2.1	-3	N12	0329	093276	-712643	131029	30614.2	
OCTOBER													OCTOBER														
2/07	12	25/RX	2	X06351	68	5.7	K0	71-	114	29	88	52S	228	289	235	6.7	6.9	-2	2.4	-4	N17	0434	094227	-664120	170849	45711.8	
3/06	16	42/R	1	X07602	67	5.5	F0	62-	103	8	74	88N	272	329	273	6.1	7.3	.0	1.0	-9	N17	0523	094858	-921147	174335	54715.3	
6/12	27	08/RV	3	X12813	89	5.9	A2	31-	68	52	111	35N	337	31	322	2.1	6.3	-1.9	-3.5	-1.4	N14	0915	097843	-364010	141314	82826.1	
7/13	03	00/R	16	X14088	98	6.3	A0	22-	56	-5	48	112	4N	11	63	352	.8	5.5	*****	N11	1089	098476	-385548	113052	91740.1		
X14088 DISTANCE TO SMOOTH-MOON TERMINATOR = 62.7 ARC SEC., DISTANCE TO POSSIBLE 3-KM SUNLIT PEAK = 3.1 ARC SEC.																											
GRAZE OF X14088 NEARBY -- APPROXIMATE N. LIMIT -- LAT. = 33.533 + .088(W. LONG. -111.788). CA = -2N. SEC. RA=40.141. OEC=51.70.																											
X14088 DISTANCES TO TERMINATOR= .0 .0 31.4 A.S., OIST. TO 3-KM SUNLIT PEAK= .0 .0 .0 A.S. FOR C.A.= -6 -2 2. RESP.																											
18/03	40	52/DA	2	X24932	38	6.1	A2	32+	69	15	235	67N	64	17	65	-4.1	-6.1	-7	-2	1.1	-18	4864	161227	563056	-183936	181519.0	
22/08	56	03/D	1	X30540	47	4.3	K0	78+	124	5	257	90N	71	15	93	-1	-3.6	-2	-4	.9	-8	5845	145991	790813	-74748	221640.6	
23/02	17	26/DK	2	X31189	57	6.2	K0	85+	135	42	136	84N	64	99	88	2.0	-1.8	-1.6	1.5	-2	-5	5910	146451	-305856	-44335	230122.7	
27/06	29	28/R	2	X03666	98	5.2	A3	99-	171	62	135	85S	267	304	285	5.3	4.4	-2.2	.7	-4	N12	0295	093083	-194325	122557	24448.6	
ABOVE STAR X03666 IS A VARIABLE STAR -- MINIMUM MAGNITUDE = 5.2.																											
X03666 DISTANCE TO SMOOTH-MOON TERMINATOR = 12.6 ARC SEC., DISTANCE TO POSSIBLE 3-KM SUNLIT PEAK = 4.4 ARC SEC.																											
30/05	49	24/RT	2	X06957	98	5.3	B3	85-	135	28	86	47N	315	16	319	5.6	7.0	-1.5	-9	-1.7	N17	0489	094554	-672209	175728	52700.1	
31/06	55	44/R	2	X08867	77	6.5	K0	77-	123	32	89	80S	266	327	264	4.9	7.2	-8	1.3	-9	N17	0606	095572	-631830	174547	62115.6	
NOVEMBER													NOVEMBER														
4/08	59	49/RW	1	X14636	69	3.8	F5	40-	78	15	88	76N	302	0	282	.3	4.9	-5	.0	-1.2	N10	1245	098709	-781029	95422	94058.7	
9/13	29	47/RM	3	X19717	97	6.2	K0	3-	19	-5	13	111	17S	223	275	201	-4.2	-2.1	-1.9	5.4	-3	-8	3639	139544	-670752	-94127	134702.3
14/01	53	41/D	2	X24211	87	6.4	A0	10+	37	12	238	53N	46	358	46	-3.5	-5.9	-3	4	1.4	-18	4686	160909	610933	-184756	175542.8	
14/02	13	29/D	1	G00000	77	6.9	OC	10+	37	8	241	73S	101	50	100	-3.5	-5.9	-8	-1.3	.7	M	0023	000000	655246	-190049	175641.8	
ABOVE PREDICTION IS FOR CENTER OF GALACTIC NEBULAR OBJECT M 23. DIAMETER 25.0 ARCMIN. APPROX. TIME TO OCCULT = 52.0 MINUTES.																											
21/04	55	43/D	2	X00744	57	6.6	K0	83+	131	57	205	48S	109	88	134	3.5	.9	-3.0	-1.5	.0	N	2	0056	109315	131643	30709	3721.8
DECEMBER													DECEMBER														
18/05	43	37/DC	5	X00476	28	6.0	G5	59+	100	30	251	11S	146	94	171	4.2	.6	*****	N	1	0041	109192	545332	15523	2515.2		

## '96 EVAC OCCULTATION PREDICTIONS

by Sam Herchak

Kent Okasaki of the International Occultation Timing Association (IOTA) was kind enough to run these custom tables for us at the cost of a few stamps. He has taken the IOTA total occultation prediction service from Walter Morgan, who retired after 20 years of dedicated service! Please send all future requests to:

Kent Okasaki  
 Box 236  
 5255 Stevens Creek Blvd.  
 Santa Clara, CA 95051-6664

73112.3157@compuserve.com

### USING THESE TABLES

I sent the geographic coordinates for Phoenix Sky Harbor International Airport, a pretty central location, to have the predictions generated for. Notice the year begins on the backside of this page and that the column headers are shifted slightly right of the actual data.

DAY & TIME are in the first column, down to the second. The accuracy is about 5 seconds for the airport. Allow a few minute pad for your location. Subtract 7 hours to obtain Mountain Standard Time.

**P** stands for phenomena, meaning disappearance (D) or reappearance (R) of the star from behind the Moon. An additional letter indicates a multiple star. More info about the star can be obtained with this code letter and the expanded instructions from IOTA.

**O** stands for observability, which is affected by the star's magnitude, twilight conditions, etc. The higher the number, the easier to observe the event.

**MAX MAG** is the maximum magnitude for star since many are variables.

**PCT SNLT** is the percent of the Moon's disk illuminated, with 100% being a Full Moon. A bright Moon makes occultations harder to observe.

**MN AL** is the Moon's altitude above the horizon in degrees.

**CA** is cusp angle of the event. This is the angle in degrees from the nearest lunar cusp (sunlit tips). It's measured from the nearer of the two cusps and is positive if on the dark limb and negative for the bright. The letters identify the north or south cusp.

For the casual observer, the other codes are either self explanatory or unimportant. I have the detailed instructions if you have further questions. Enjoy watching these beautiful examples of the cosmos in motion.



# 1996 EVAC LUNAR OCCULTATION PREDICTIONS FOR PHOENIX

DAY	TIME-UT	P	AC	USNO	O	MAX SP	PCT	ELG	SN	MN	MN	CA	PA	VA	NA	LONG	LAT	A	B	C	DM	SAO	HA	DECL.	RT.	ASC.			
H	M	S	D	REF NO	Y	MAG	SNLT	AL	AL	AL	AZ				LIB	LIB	M/O	M/O	S/K	REF NO	REF NO	O	//	O	//	H	M	S	
JANUARY																													
2/05	28	36	D	2	X05220	57	6.3	89	89+	141	71	215	75M	60	29	73	4.0	4.4	-2.4	1.3	.5	N17	0348	093716	112437	171704	40024.8		
7/05	18	27	RK	2	X12360	97	6.1	A0	98-	164	54	113	41S	251	303	238	-1.6	6.7	-2.1	2.0	-.6	N14	0884	097628	-334535	143816	81047.2		
8/15	40	05	RA	2	X13644	99	4.3	A3	95-	153	36	100	23S	229	286	212	-2.6	6.4	-1.2	4.0	-.5	N12	1094	098267	-541614	115211	85817.8		
12/12	54	48	RE	2	X18274	77	7.0	F0	64-	106	52	194	64M	320	308	295	-7.1	2.5	-1.6	-2.0	-.6	-3	3262	138703	84428	-35600	12175.9		
12/12	54	13	RA	2	X18276	77	6.7	F0	64-	106	52	194	63N	321	310	297	-7.1	2.5	-1.6	-2.1	-.7	-3	3263	138704	83535	-35540	121758.2		
18/13	15	16	RK	2	X24365	97	7.6	K5	6-	28	8	120	53N	315	6	315	-2.0	-5.4	-.2	-4.1	-1.4	-19	4789	160980	-654618	-191343	180010.0		
26/04	15	20	DB	1	X01686	19	5.6	A5	37+	74	30	258	81S	76	21	100	6.7	.1	-1.0	-6	1.0	N	7	0134	109739	582554	73315	11331.7	
26/04	16	12	DM	1	X01687	18	6.5	F8	37+	74	30	258	82S	76	20	100	6.7	.1	-1.0	-6	1.0	N	7	0135	109740	583832	73325	11333.1	
27/03	23	18	D	2	X02845	17	6.8	K0	47+	86	52	242	68S	92	43	114	6.6	1.6	-2.0	-1.0	.7	N10	0222	092768	340344	105957	20245.5		
30/03	05	18	DM	3	X05862	38	6.2	88	75+	120	74	162	51N	41	57	50	4.2	5.3	-2.2	3.1	.3	N17	0402	094002	-50856	180025	43320.6		
31/06	50	55	DT	2	X07004	47	6.6	A2	83+	132	53	256	52S	121	62	125	2.3	6.2	-1.5	-2.4	.5	N18	0449	094586	382818	182137	52906.9		
31/08	47	27	D	3	X07074	69	4.2	M1	84+	133	29	274	48N	42	340	45	1.9	6.3	-1.6	1.2	1.8	N18	0459	094628	665658	183521	53200.5		
ABOVE STAR X07074 IS A VARIABLE STAR -- MINIMUM MAGNITUDE = 4.5.																													
31/09	28	15	D	2	X07109	58	5.5	B3	84+	133	21	279	54N	47	346	51	1.9	6.3	-1.0	.6	1.6	N18	0460	094649	765108	183207	53319.4		
FEBRUARY																													
2/11	58	12	DY	1	X10846	89	3.6	A2	95+	155	9	284	70S	106	48	99	-8	7.2	.1	-1.4	.7	N16	0755	096746	901623	163239	71753.9		
12/10	18	50	R	2	X21374	68	5.9	K0	49-	89	22	130	66S	260	302	245	-5.5	-3.3	-1.5	1.4	-.7	-16	4099	159307	-475600	-163542	153027.7		
12/11	36	00	RX	2	X21415	79	5.6	B3	49-	88	33	146	51S	245	274	230	-5.7	-3.2	-2.5	1.9	-.1	-16	4110	159335	-290825	-165019	15242.5		
13/09	27	05	R	2	X22350	78	4.2	B3	38-	76	3	114	52S	242	296	233	-4.7	-4.5	-.8	2.1	-.6	-18	4282	159918	-735942	-182645	162648.1		
ABOVE STAR X22350 IS A VARIABLE STAR -- MINIMUM MAGNITUDE = 5.0.																													
22/01	42	26	D	1	X01036	58	5.8	G5	12+	41	-6	33	252	66S	91	38	116	5.7	-.4	-1.2	-1.1	.9	N	5	0087	109471	530254	51534	4810.3
26/07	31	06	D	3	X05687	28	4.8	A5	50+	90	9	285	40N	31	333	41	3.8	5.5	-.8	1.5	1.8	N17	0386	093907	902747	172600	42353.0		
MARCH																													
2/07	46	24	DX	2	X12934	67	6.4	K0	91+	145	51	248	80S	108	55	93	-1.9	6.9	-1.6	-1.6	.5	N13	0855	097913	364930	131600	83333.8		
13/12	54	50	RG	3	X25009	87	6.6	B5	41-	79-10	34	156	25N	335	356	336	-2.6	-5.7	-1.6	-3.0	-2.8	-18	4888	161278	-210136	-184754	181737.9		
27/03	50	52	DY	2	X09253	17	7.2	F8	51-	91	57	250	74N	77	21	75	1.0	7.1	-2.2	-.3	.9	N17	0651	095795	324611	174704	63205.7		
28/00	43	14	DY	2	X10846	17	3.6	A2	60+	101	12	62	121	59S	128	177	121	.7	7.1	-2.3	-1.4	-.9	N16	0755	096746	-244342	163240	71753.2	
29/03	33	54	DK	3	X12360	28	6.1	A0	69+	113	70	197	59N	69	54	57	-1.1	7.0	-3.2	1.2	.4	N14	0884	097628	54911	143815	81047.0		
30/02	46	30	DA	2	X13644	39	4.3	A3	78+	124	63	140	71S	122	155	105	-1.9	6.5	-2.2	-1.1	-.7	N12	1094	098267	-165818	115209	85817.9		
31/03	21	01	DA	2	X14762	57	6.7	F0	85+	135	59	140	68S	127	161	107	-2.9	5.7	-2.0	-1.2	-.8	N	8	1307	117908	-193204	83504	94705.8	
APRIL																													
8/12	54	34	RK	2	X22959	77	6.4	K0	77-	123	-3	33	207	68N	294	271	288	-3.1	-4.9	-2.2	-1.3	.0	-18	4381	160231	233104	-185244	170139.3	
20/03	20	13	DK	2	X04670	98	6.5	A3	5+	26	7	284	29S	145	88	160	3.3	4.6	.7	-3.4	.1	N15	0309	093524	922148	152456	33734.5		
23/04	05	34	DM	2	X08622	29	5.7	A5	25+	60	28	274	80N	84	23	83	.9	7.1	-.8	-1.0	1.0	N17	0594	095419	673221	175417	61415.2		
26/04	45	06	DV	2	X13246	19	5.7	A3	53+	93	46	253	83N	98	43	83	-2.5	6.9	-1.6	-1.3	.7	N12	1067	098069	431308	124129	84300.4		
26/07	21	11	D	2	X13342	18	5.7	A0	54+	94	14	276	46S	149	90	133	-2.9	7.0	.2	-2.6	.0	N12	1070	098117	812505	120715	84644.2		
27/05	35	57	DA	3	X14434	29	5.3	K0	63+	105	43	251	42N	60	7	41	-3.7	6.2	-2.5	.5	1.7	N	9	1213	117751	444456	94346	93146.3	
29/05	50	39	DA	2	X16701	58	5.7	G5	80+	127	50	224	27S	173	138	149	-5.3	4.1	-.4	-4.2	-1.2	N	2	1459	118668	264145	15822	110643.9	
MAY																													
1/06	26	00	DC	2	X18786	87	6.3	F8	94+	152	49	199	64S	138	122	113	-5.8	1.2	-1.7	-1.9	-.6	-5	3569	138967	121836	-61701	124723.4		
10/11	24	56	R	2	X29927	68	6.2	K0	47-	86	34	135	55S	126	254	237	3.7	-4.5	-1.4	2.4	.4	-11	5640	164555	-364917	-103532	219316.5		
11/10	11	40	R	1	X30765	78	6.2	F8	36-	74	15	109	89S	249	302	272	4.6	-3.3	-.7	1.6	-.6	-7	5797	146135	-670950	-63424	223106.7		
11/10	52	17	R	1	X30778	77	7.0	G0	36-	73	23	115	86S	245	295	268	4.6	-3.3	-1.0	1.7	-.5	-7	5805	146142	-571808	-62908	223222.4		
28/07	08	14	DV	1	X18469	77	6.2	F2	75+	120	26	245	83S	120	70	95	-7.1	1.8	-1.1	-1.9	.4	-3	3298	138798	542831	-43548	122741.4		
ABOVE STAR X18469 IS A VARIABLE STAR -- MINIMUM MAGNITUDE = 6.2.																													
JUNE																													
3/11	51	43	RV	2	X25129	98	5.2	F5	96-	157	-5	24	225	37N	309	270	311	-1.6	-5.7	-2.0	-2.4	.0	-18	4926	161376	430333	-185133	182111.9	
ABOVE STAR X25129 IS A VARIABLE STAR -- MINIMUM MAGNITUDE = 6.2.																													
4/10	24	03	RX	2	X26843	89	3.9	A5	91-	144	38	188	81S	246	238	254	.5	-5.7	-2.0	.5	.6	-18	5322	162512	65902	-175104	192129.3		
ABOVE STAR X26843 IS A VARIABLE STAR -- MINIMUM MAGNITUDE = 3.9.																													
7/09	38	43	R	1	X30540	69	4.3	K0	62-	104	31	125	71N	267	311	290	5.4	-3.5	-1.5	1.1	-.8	-8	5845	145991	-451158	-74758	221639.2		
7/11	01	32	R	1	X30585	89	4.4	B8	61-	102	42	145	17S	175	204	197	5.2	-3.5	.2	5.9	2.9	-8	5855	146023	-251929	-75014	222001.1		
11/10	07	35	R	2	X02454	89	4.5	K0	20-	53	8	84	36N	302	359	324	6.7	2.4	-.3	1.1	-1.6	N	8	0199	110110	-860950	90817	14511.9	
12/10	29	08	RV	2	X03503	98	5.7	F5	12-	41	5	78	48N	292	349	311	6.2	3.8	-.1	.5	-1.2	N12	0276	093022	-923506	122548	23625		



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>28</b> *Explosion kills Challenger crew-1986	<b>29</b> *8:57 PM Algal at min	<b>30</b>	<b>31</b>	<b>1</b> *ALL MONTH NOTES *7:00 PM PAS Mtg	<b>2</b> *7:00 PM Venus-Saturn Conj. *7:30 PM SAC Mtg	<b>3</b>
<b>4</b>	<b>5</b> ○	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b> Local S Party
Sunset 5:59 PM      Sunrise 7:18 AM						
<b>11</b> *6:05 AM Mercury-Neptune Conj. *7:00 PM Saturn Ring Plane	<b>12</b> *3:18 AM Occ *4:36 AM Occ	<b>13</b> ● *2:27 AM Occ	<b>14</b> 7:30 PM EVAC Mtg	<b>15</b> *7:53 AM Algal at min.	<b>16</b> *6:05 AM Mercury-Uranus Conj.	<b>17</b> *10:42 PM Algal at min. Deep Sky S Party
<b>18</b>	<b>19</b> ●	<b>20</b> *7:32 PM Algal at min.	<b>21</b> *6:42 PM Occ *7:00 PM Moon-Venus Conj.	<b>22</b>	<b>23</b>	<b>24</b>
Sunset 6:12 PM      Sunrise 7:05 AM						
<b>25</b>	<b>26</b> ● *12:31 AM Occ	<b>27</b>	<b>28</b>	<b>29</b>	<b>1</b>	<b>2</b> 

Date	Start	Title	Description
2/1/96	12:00 AM	ALL MONTH NOTES	<p><b>CALENDAR NOTES:</b> See 1996 EVAC Occultation Predictions In the February newsletter for details on lunar occultations (Occ). Algol min refers to minimum magnitude of the naked eye variable star. See Sky&amp;Telescope (S&amp;T) and Astronomy (Astro) for more details.</p> <p><b>PLANETS:</b> MERCURY is very difficult, low in the East at dawn. Reaches greatest western elongation on the 11th. VENUS is bright (-4 mag) and unmistakable in the SW evening sky. It's involved in several conjunctions this month. MARS is positioned close to the Sun and cannot be observed. JUPITER is 13 degrees above SE horizon at dawn at mid-month and easy to spot at -1.9 mag. SATURN is lower in the SW at dusk each night and will soon be lost in the Sun's glare. The Earth again passes through it's ring plane on the 11th, so we view them on-edge. URANUS and NEPTUNE are both rising from the Sun's glare in the E at dawn, but very difficult to spot. PLUTO is high in the SE at dawn and can be found with a moderate size scope (+13th mag) and a good finderchart.</p> <p><b>OBJECTS OF INTEREST:</b> Comets Honda-Mrkos-Padjusakova (Feb S&amp;T and Astro); Szczepanski Asteroids 7 Iris &amp; 16 Psyche (see Nov 95 S&amp;T), 14 Irene (Jan Astro), and 532 Herculina (Feb Astro) Variable stars Algol and Mira (Feb S&amp;T) Peculiar object Chiron (Feb Astro)</p>
2/1/96	7:00 PM	7:00 PM PAS Mtg	Phoenix Astronomical Society meeting, Brophy Prep, 4701 N. Central Ave. Turn off Highland into Main entrance, follow signs upstairs to Physics lab.
2/2/96	7:00 PM	7:00 PM Venus-Saturn Conj.	Venus is just 1 degree from Saturn. Photo opportunity.
2/2/96	7:30 PM	7:30 PM SAC Mtg	Saguaro Astronomy Club meeting, Grand Canyon University, Fleming Bldg, Rm 105. Camelback and 33rd Ave.
2/11/96	6:05 AM	6:05 AM Mercury-Neptune Conj.	Mercury only 2 arcminutes from Neptune but both low in the East as dawn begins. At 6:05 AM, pair is only 3 degrees above the horizon.
2/11/96	7:00 PM	7:00 PM Saturn Ring Plane	Earth passes to South side of Saturn's ring-plane. Rings are difficult to view.
2/16/96	6:05 AM	6:05 AM Mercury-Uranus Conj.	Mercury just 15 arcminutes North of Uranus. Both low in the East at dawn. Pair just 2.5 degrees above horizon at 6:05 AM.
2/21/96	7:00 PM	7:00 PM Moon-Venus Conj.	Moon closes in on Venus all evening. At 9 PM, Moon is only 1.4 degrees away from Venus and 5 degrees above the horizon. Excellent photo opportunity. Moon sets at 9:30 PM.

**FEB 1996**

	START OF DARK	6:30	7P	7:30	8P	8:30	9P	8:30	10P	10:30	11P	11:30	12M	12:30	1A	1:30	2A	2:30	3A	3:30	4A	4:30	5A	5:30	6A	END OF DARK	TOTAL DARK	
TUES NITE	2/6 7:29 PM	EOT																								2/6 8:15 PM	MR	0:46
WED NITE	2/7 7:30 PM	EOT																								2/7 9:11 PM	MR	1:41
THURS NITE	2/8 7:31 PM	EOT																								2/8 10:09 PM	MR	2:38
FRI NITE	2/9 7:31 PM	EOT																								2/9 11:07 PM	MR	3:36
SAT NITE	2/10 7:32 PM	EOT																								2/11 12:07 AM	MR	4:35
SUN NITE	2/11 7:33 PM	EOT																								2/12 1:09 AM	MR	5:36
MON NITE	2/12 7:34 PM	EOT																								2/13 2:10 AM	MR	6:36
TUES NITE	2/13 7:35 PM	EOT																								2/14 3:11 AM	MR	7:36
WED NITE	2/14 7:36 PM	EOT																								2/15 4:10 AM	MR	8:34
THURS NITE	2/15 7:36 PM	EOT																								2/16 5:04 AM	MR	9:28
FRI NITE	2/16 7:37 PM	EOT																								2/17 5:47 AM	SOT	10:10
SAT NITE	2/17 7:38 PM	EOT																								2/18 5:46 AM	SOT	10:08
SUN NITE	2/18 7:39 PM	EOT																								2/19 5:45 AM	SOT	10:06
MON NITE	2/19 7:40 PM	EOT																								2/20 5:44 AM	SOT	10:04
TUES NITE	2/20 8:33 PM	MS																								2/21 5:43 AM	SOT	9:10
WED NITE	2/21 9:36 PM	MS																								2/22 5:42 AM	SOT	8:06
THURS NITE	2/22 10:36 PM	MS																								2/23 5:41 AM	SOT	7:05
FRI NITE	2/23 11:34 PM	MS																								2/24 5:40 AM	SOT	6:06

EOT - End of Twilight; MS - Moonset; MR - Moonrise; SOT - Start of Twilight; NOTE: Applicable to Phx Metro area. Times are Mountain Standard Time. Bernie Sander 12/95

## REPORT FROM SENTINEL - JAN 20, 1996

by Bernie Sanden

We had one of those nights that you hope so much for. One in which there is something a little different (the young Moon observation) and therefore no Moon to deal with all night, perfectly clear & dry, good seeing, no wind, and good company. Only thing that could have been better would have been short sleeve weather, but now I'm asking for too much for a January night!!

We had about five scopes set up at a higher spot just before sunset, looking for the young Moon. Most were 8 & 10" scopes, I had my 12.5". You might say it was unfair that I had more of a photon grabber, but I was no match for Pierre, who saw it first when the moon was 12h33m old. We were all able to confirm it in Pierre's 10". A guy down in Tucson claims to have seen it some 15 - 20 minutes or so earlier, so as far as a record goes, I think we were 'also-rans'. Good effort nonetheless...and it was an awesome sight just above the distant mountain silhouettes.

As we RE-set-up at the normal field and joined the eight or nine others (mostly SAC folks), we could see the zodiacal light and double-cluster naked eye way before astronomical twilight was over. Judging from the young moon, visible all the way until it vanished behind the mountains (about 1/4 degree or so above the horizon), we knew the sky transparency was extremely good. Steve Coe gave it a "10 out of 10". I think I've heard that out of him only a couple rare times. I gave it a 9 only because the Saturday before the Messier Marathon last March, I know it was about as good as it ever gets anywhere anytime, and I think it had this one beat just slightly. Nonetheless, and especially in light of how good the seeing was (simultaneously!!), I felt the overall viewing this night was all we could have hoped for.

I got 340X power on M79 in Lepus and resolved to the core. Debatable whether I saw the main sequence (mag 16.2) with the 12.5", but what I saw -- at the altitude I observed -- was very impressive and my best view of this one.

Kevin Gill had his 20" Obsession. Tom is working on an article for Sky&Tele so he had to leave his 20" at home and work with his 13" (to stay consistent with the other parts to the article). AJ Crayon of SAC had real nice views of the Fornax cluster in his 8" f6.

Yea, it was cold. But we really only had slight breezes a couple times and then only for a few minutes each time (although I swear the temp dropped 5 degrees more with each little breeze coming thru). Nonetheless, I think the satisfaction of how nice the night was kept everyone from complaining too much about the cold.

I hate to admit it, but I forgot to look for the caravan of

geos. Never did run out of stuff to look at, though. We lost the "best" of the seeing about 2am, but never did get a wind. The seeing changed from real good to "fast", where the amount of distortion is small but quick. I was observing a bunch of open clusters in the Winter Milky Way by then, but the seeing hardly diminished the views. About 3:30 am, as the horns of the Hyades were setting in the west, I could see a thin line of clouds near the northwest horizon, so I grabbed a couple quick views of the good springtime stuff (M51, M66&67, V Hydra, NGC 4565, etc), then shut down for the night. About half the group was still on site by morning. Overhead was variable high cloudiness. Looks as if we couldn't have timed it better.

Nights like this -- when it all works just right -- is what you have to remember when those inevitable nights come in which everything goes wrong!

Anyhow, a lot of fun...especially for someone (me) who hasn't had a full night of observing since the All-Arizona Star Party last October.

### CLUB NOTICES

A school star party is being planned for the 5th grade class at Black Mountain School. The date is Wednesday March 20 from 7 to 9 pm. The school is in Cave Creek. The students are very interested in seeing deep sky objects. We've held a star party for this school last year. For more information call Don Wrigley at 982-2428.

Silvio Jaconelli is interested in going to the Riverside Telescope-Making Conference this year. He will be at the next meeting with the information. He is wondering if anybody else is planning on going and interested in pooling their resources. He can be contacted at his work number 655-2976.

### LETTER FROM THE EDITOR

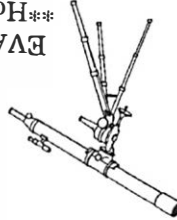
I would like to this opportunity to introduce myself. I've enjoyed astronomy since my youth. It seems that every time I go observing I see something new. I find this hobby very exhilarating.

Prior to moving here to Mesa, I was involved with The Denver Astronomical Society (DAS). I was the newsletter editor amongst other things. I would say that I now have some experience at putting together a newsletter. When I volunteered to be the DAS editor it was suppose to be until the club could find someone else. It would take them nearly 7 years to find my replacement. That was only after I announced that my wife and I were moving to Arizona.

I hope to continue to make this newsletter as good as my predecessor Sam Herchak did.

-Thank you Bob Kearney

EVAC member since 1/17/92!  
\*\*Hope to see you at the meeting Feb. 14th\*\*



**EAST VALLEY ASTRONOMY CLUB**  
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**MEMBERSHIP&SUBSCRIPTIONS:** \$20.00 annually. Reduced rates available to members for *Sky&Telescope* and *Astronomy*. Contact Sheri Cahn, 4220 W. Northern #116, Phoenix, AZ 85051, (602)-246-4633.

**CLUB MEETINGS:** Second Wednesday of every month at the Scottsdale Community College, 7:30 PM. Normally Room PS 170 or 172 in the Physical Sciences Building.

**NEWSLETTER:** Published and mailed out the week before the monthly Club meeting. Send your thoughts and stories for publication to: Robert G. Kearney, Jr., 2120 W. 8th Ave., Mesa, AZ 85202, (602)-844-1732. Email to: JRKearney@aol.com.

**CHANGE OF ADDRESS:** Notify Bill Smith, 1663 S. Sycamore, Mesa, AZ 85202, (602)-831-1520. Email to: bsmithaz@aol.com.

**EVAC LIBRARY:** The library contains a good assortment of books, downloaded imagery, and helpful guides and is usually brought to the Club meetings. Contact Steve O'Dwyer for complete details, (602)-926-2028.

**BOOK DISCOUNTS:** Great savings for members through Kalmbach and Sky Publishing Companies. Contact Sam Herchak, 145 S. Norfolk Cir, Mesa, AZ 85206-1123, (602)-924-5981.

**EVAC PARTY LINE:** Let other members know in advance if you plan to attend a scheduled EVAC observing session. Contact Robert Kerwin, (602)-837-3971. Email to: p24493@gegpo7.geg.mot.com.