

Desert Skies

July, 1994

The Newsletter of the Tucson Amateur Astronomy Association (TAA)



GENERAL MEETING - Friday, July 1st, 7:30 pm at the Steward Observatory Auditorium - room N210. The July Meeting is a "Member's Night."

6:30 pm - pre-meeting "Beginners lecture" by Teresa Lappin will be "Venus." All are welcome! This lecture is in Steward obs. lecture hall N210. Note earlier time this month!). See enclosed map for directions!

EXECUTIVE MEETING - Thursday, July 7th, 7:30 pm at Flandrau Science Center's Conference Room

30" TELESCOPE DESIGN, LAND & FUNDRAISING MEETING - Wednesday, July 13th, 7:30 pm at the home of Sharon and Duane Niehaus - call 797-4189 for directions.

STAR PARTIES: 2 July - Dark sky star party at Empire Ranch - see enclosed map.
9 July - Dark sky star party at Empire Ranch (for those not attending below).
14 July - Lecture and star party at El Pueblo Library.

GABFEST: 9 July - At the Rik Hill residence (eastside).

Next Newsletter Deadline - July 20.

COVER: The Grand Canyon Star Party was a great success thanks to a lot of people putting in lots of hours getting out the word about the evening observing. Here Bob Goff becons visitors to take a look through a Celestron 8" at the river below. **Back Cover:** Barry Hirrell searches for Jupiter from his observing platform before his twilight talk, and 9 year old Delaine Dommel of Texas makes herself at home checking out the canyon views through Dean's 5" binoculars. Photos by Dean Ketelsen.

TAAA EXECUTIVE

President	Dean Ketelsen	293-2855
Vice-President	Terri Lappin	579-0185
Executive Sec.	Rob Nyberg	745-0710
Recording Sec.	Tabitha Niehaus	797-4189
Treasurer	Duane Niehaus	797-4189
Member-at-Large	Bob Goff	790-1452
Member-at-Large	Dave Harvey	797-2512
Chief Observer	Mike Terenzoni	887-3226
Mem. Coord.	Gary Rosenbaum	579-0185
Past President	Tim Hunter	299-2972
Newsletter	Dean Ketelsen	293-2855

MEMBERSHIP IN THE TAAA

Individual	\$25.00/year (increased
Family	\$30.00/year rates as of
Senior Citizen (over 60)	\$23.00/year July 1st '94)

Sky & Telescope subscription (optional) \$20.00 (as of July, 1992)

Rates for membership in the TAAA are given above. Members may subscribe to Sky & Telescope at the time membership renewal, saving more than 25% off the cost of a regular subscription. The subscription term must match your membership period.

Send one check, made payable to: Tucson Amateur Astronomy Association, to cover both membership and subscription to: TAAA, PO Box 41254, Tucson, AZ 85717. It is best to pay your dues 2-3 months before your membership actually expires.

Desert Skies Publishing Guidelines

* All articles, announcements, news, etc. must be submitted by the newsletter deadline listed above. Materials received after that date will appear in the next issue.

* All submissions are retained by the editor unless prior arrangements are made.

* Partial page article submissions should be submitted on Wordperfect compatible files on a floppy. Full page articles, artwork, and photos should be camera ready.

* We will not publish slanderous or libelous material!

Send articles, announcements, etc. to:

TAAA - Desert Skies

PO Box 41254

Tucson, AZ 85717

Send ADDRESS CHANGES to:

TAAA

Attention: "address change"

P.O.Box 41254

Tucson, AZ 85717

4 EASY STEPS TO MEMBERSHIP RENEWAL

1. Pay your dues 2-3 months early. Your month of membership expiration is listed on your newsletter mailing label.

2. a) Decide if you want Sky & Telescope, then add \$20 to your membership rate.

b) Include Sky & Telescope's renewal notice, if possible.

3. Write one check, payable to TAAA.

4. Send it to TAAA, P.O. Box 41254, Tucson, AZ 85717.

Call the Treasurer if you have any problems.

July's Meeting is 'Member's Night!'

About twice a year, we hear from ourselves. Particularly now that observing takes a back seat with the arrival of the monsoons, it is time to hear from those of you who might have an interesting observing or construction project to share with the rest of us. We will be limiting presentations to 15 minutes unless we do not have a full slate of speakers. Please call Dean at 293-2855 to reserve your place in the program. The first to call go directly to the front of the program so call now - don't be shy!

Beginner's Lecture- "Venus"

**Time and Place Change!!!!
Steward's Lecture Hall @ 6:30pm**

A couple months ago I was to present a Beginner's Lecture about Venus and Mercury. Not having time to properly prepare the talk, coupled with having to work quite late the night of the talk, I decided to cancel that presentation. Thank you to Dean who was kind enough to talk to the Beginner's group that night. Since Venus is still in the evening sky, I will talk about our "sister" planet this month. (Mercury isn't visible...I've been looking, but haven't seen it recently.) This talk will concentrate on the planet itself with a little information about observing it. Some observers do see features in the clouds and I will present some recent drawings of Venus from the ALPO journal, "The Strolling Astronomer".

Last month's Beginner's Lecture in the Lecture Hall at Steward was so pleasant that I think we will try it again. Everyone gets a comfortable seat and late comers aren't as much of a distraction. I also get to use a microphone. We will again meet at 6:30pm. So, see you at 6:30pm on July 1st in the Lecture Hall.

Dues Increase Imminent

As voted at the May meeting, membership dues in TAAA increase accross the board by \$5, as noted on the opposite page, effective on July 1st.

TAAA Lost and Found

Found from the Kitt Peak Star Party on March 5th-

1 stocking cap, blue and gray in color.

-Call Dean for this item at 293-2855.

Found at Eduardo Vega's Observatory after the picnic May 14th-

1 pair of Rockport sandals - large size.

2 small beginner's astronomy books.

-Call Eduardo for these items at 747-9323.

40TH ANNIVERSARY BANQUET

Get your tickets now!

When: Saturday, September 10th @ 6pm

Speaker: Fred Whipple

Food: Lots of it!

Our 40th Anniversary Banquet and Lecture will be held on the evening of Saturday, September 10th at the Viscount Suite located at Broadway and Swan. Our speaker is Mr. Fred Whipple of the Harvard-Smithsonian Center for Astrophysics-Planetary Sciences Division. The lecture will be suitable for a general audience, so its safe to bring the un-astronomer in your life. Fred Whipple is internationally known for his theoretical model which describes comets as "dirty snowballs". Whipple served as director of the Smithsonian Astrophysical Observatory from 1955 to 1973, during which time he established the observatory on Mt. Hopkins south of Tucson. In 1981, on his 75th birthday, the Board of Regents of the Smithsonian Institution renamed the Mt. Hopkins Observatory in his honor, recognizing his contributions to science and his foresight in establishing the research facility on Mt. Hopkins. Fred retired in 1973, but still has an office at the Harvard-Smithsonian Center for Astrophysics in Cambridge, MA and is enjoying his "retirement". He is looking forward to his upcoming visit to Tucson.

The banquet will start at 6pm with dinner being served about 7pm. A cash bar will be available between 6 and 7. Tickets will be available at our meetings or you may order them through the mail by sending a check to: TAAA-Banquet, PO Box 41254, Tucson, AZ 85717. Tickets are \$25 per person. Tickets must be purchased in advance.

Astronomical League Debate: Continue Membership?

The subject of A.L. membership has polarized the Executive, more than in recent years. Despite the summary of League benefits at the last meeting by Tim Hunter and the straw poll taken afterward showing the majority of membership in favor of continuing membership, the some executive think the arguments presented were one sided and believe the \$400 could be better spent on our educational programs or land acquisition.

To solve the stalemate, at the July meeting, 10 minutes will be set aside before the break for a A.L. debate, after which a binding vote by the membership will decide the issue. A representative for each opinion will present the case, Tim Hunter?? in favor of continuing, David Harvey opposed. They will each get two minutes to present their case, and two minutes of rebuttal (8 minutes total), followed by the vote. If you have strong feelings about the outcome, call the person representing your feelings and tell them. And of course, attend the meeting and vote!

Raffles, Raffles, Raffles

TAAA raffles are a fun way to get rid of some of your surplus and a way for the club to pick up a few dollars. Rob Nyberg, the self-appointed TAAA raffle meister, wants them to be a standard feature of our general meetings. If you have an item or two of general interest to amateurs that is gathering dust on your shelves you would be willing to donate to the TAAA, call Rob at 745-0710. For the July meeting we have a 2" eyepiece donated by David Harvey. Bring a few bucks and perhaps you will be its new owner!

Grand Canyon 1994

By nearly any measure of an event's success, the Grand Canyon Star Party continues to improve and reach more public every year. The crowds were again fantastic - waiting patiently in telescope lines, paying attention at the slide shows and expressing a lot of gratitude for their observing experience.

As in 1993 we enjoyed 8 clear nights in a row. Not all of them were ideal as the wind picked up and gave mountings a good test early in the week. Though we usually had good seeing, we saw how bad it can get on one still night when alternating cool and warm pools of air made for puffy images.

Chuck Wahler, our Park Liaison, did an outstanding job in running interference for us. The Park is a changing place and with the restrictions of personal cars, there were a lot of concerns regarding our vehicles, as well as those of the public we were trying to serve. He stayed on top of that, organized campsites, got us fee waivers into the Park, organized publicity and got us the AV equipment. Also, those he recognized from previous years got a Grand Canyon Volunteer t-shirt! Great job Chuck!

Our twilight slide shows, designed to entertain the public between sunset and the start of observing, were a great success. Early in the week we started out with about 80 attendees, increasing to over 120 as the week wore on and word got out. We published 500 "newsletters", providing one per family at the slide show and only had 20 left at week's end. The talks were first rate - Barry Hirrell of San Francisco, gave one talk about telescope making with John Dobson, and then two talks later in the week on a slide tour of the Solar System. Derald Nye gave his eclipse talk twice, Dean Ketelsen gave a current events talk twice (eclipses, light pollution, Comet Crash) and Gene Fioretti gave a star cluster talk.

The telescope crew was a varied lot - no 20" binoculars this year, but no lack of spectacular views through the scopes that were there. We had 26 total astronomers, of which 10 were from outside Tucson. Special thanks to these travelers - Barry Hirrell and Rob Negro of San Francisco, Rick Koehler of Chesapeake, Virginia, Paul Thayer from Littleton, Colorado, Mike Spooner of Page, John Gregory of Austin, Dennis Young of Sedona, and Bernie Sanden, Tom Polakis, and Pierre Schwaar of the Phoenix area. TAAA

members taking part were Bob Goff, Derald Nye, Dean Ketelsen, David Levine, Sandy Pharo, Keith Kumm, Gene and Chris Fioretti, Andy Meyer, Duane and Sharon Niehaus, Hazel Lawler, Mike Nakamura, Jeff Brydges, Paul Lorenz, Erich Karkoschka, and Rik Hill. If I have missed anyone, let me know as you are not on my registration list.

Special thanks go to those who went the extra mile and set up on the rim to inform people about the nighttime program. Pulling double duty were Derald Nye, Bob Goff, Dean Ketelsen, Chris and Gene Fioretti, Jeff Brydges, Rick Koehler and David Levine. Interacting with the daytime crowds is nearly as much fun as nighttime observing, and it is easy to see why these people do it. Most visitors take in the general vistas of the Canyon, and don't even realize there is a river down there. With a little optical aid we can show them hikers on the way to Phantom Ranch, river rafts putting in at a beach for lunch, or Venus and sunspots overhead. It opens their horizons and ours too by our interacting with them.

Final attendance figures: using the Newsletters as a guide, we had about 500 families witness our slide shows, most of them going down to observe afterward. However, much of the crowd that came later did not attend the slide shows so are not part of those figures. Derald Nye took a count of people looking through his scope, both for daytime and night time observing and totaled 1,570 for 21 hours of daytime efforts, and 1,203 for 46 hours of nighttime efforts. This does not differentiate between people who came back for second looks, but not everyone looks through all the telescopes, so these numbers are probably close to reality.

For those of you who missed it this year - you missed a good one. For the last year I have wavered on whether or not to hold another. It is a hassle to get publicity for the event, try to corral astronomers and speakers, make arrangements and hope all goes well the week of the event. But hearing the reactions of people looking through a telescope at M13 for the first time makes all the work seem very worth it. So for my part, as long as we get support from the National Park Service to continue, I will continue to organize it. Next year's event is tentatively scheduled for 24 June through 1 July, 1995. Don't miss it!

-Dean Ketelsen 293-2855

Comet Crash 1994!

As just about everyone in the universe knows by now, Comet Shoemaker-Levy 9 collides with Jupiter during the period of July 16-22, 1994. Look for the latest impact times from JPL elsewhere in this newsletter.

What will you see? As time has gone by since it was known the fragments would collide with Jupiter, the predictions have covered the full spectrum of possibilities from needing sunglasses for naked eye observations to nothing visible at all. The only known fact is that if you don't look, you will certainly see nothing. Jupiter is always an impressive view through a telescope and if nothing else, the press to see something can only help get observers looking through their telescopes.

With all the publicity this "once in a millennium" opportunity has received, there will also be a rush by the public to see something. This cannot be another Comet Kohoutek as there will most certainly be something there for them to see. As mentioned above, Jupiter is always a spectacular sight and combined with Venus, the Moon, M13 and another heavenly sight or two, we have the possibility of converting a great number into amateur astronomers, even if there are no jovian fireworks.

With the bright moon during this event, there is no advantage to a dark sky site. There are a number of programs being conducted locally, and rather than spread TAAA resources too thin, the Executive decided to join the various forces. The biggest problem to fight will probably be the monsoon weather, but barring that, please share the wealth by phoning the neighbors, call the kids, or take part in one of the following activities:

Flandrau Planetarium July 16-23:

Mike Terenzoni is heading up the Science Center's Comet Crash activities. Their current plans are for public observing every night, weather permitting from the Mall on campus in front of Flandrau. To coordinate with him, call him at 621-4515 afternoons, or leave a message at home 887-3226.

Kitt Peak National Observatory July 16:

The visitor's center on Kitt Peak is planning a public observing session on the mountain on July 16 and has requested TAAA assistance. One of the best impacts for the western U.S. takes place that evening. They will be allowing 60 preregistered cars up for observing, so expect up to 240 people on the mountain. Dave Bedell, volunteer coordinator there would like 8-10 TAAA members with scopes to help with their own efforts. There is a possibility of a t-shirt and dinner in the mountain cafeteria in exchange for your efforts. There will be a sign up sheet at the July 1 meeting, and the first 10 names will be taken. Of course, if you are already a docent there, you can coordinate with Dave directly, otherwise sign up on 1 July.

Eduardo Vega Open House July 17th:

Eduardo is holding an open house at the Vega-Bray observatory near Benson on the 17th. Please see the enclosed map if you are interested in attending. There are many fine instruments at the observatory suitable for Jupiter watching, including the TAAA's 16" telescope, or you may bring your own scope. Ed will even supply sodas and cookies for snacks. You can coordinate with him at 747-9323.



OBSERVER'S REPORT



The Grand Canyon Star Party was again a big success this year. Clear but breezy weather was experienced for the two nights I attended early in the week. The breezes diminished later in the week leaving nearly ideal observing weather for the remaining attendees. One of the highlights of this event is getting people to stare through telescopes and binoculars at the canyon during the day. Many people are suspect of our presence and think we are illegal panhandlers, trading looks through our binoculars and telescopes for cash. Most of these folks of course have never looked through high quality instruments and so are amazed at the view they get once they let down their guard and realize we're legitimate. One of the best experiences for me this year was when a bus load of Taiwanese unloaded at Yavapai Point. A lady tried to communicate with me through a sheet with Chinese translated into English asking: "How much we were charging?". When an American who had just finished looking through my binoculars explained to her viewing was free (he happened to speak Chinese!), our instruments were mobbed for the next 20 minutes. I think we were as entertained watching and listening to our guest's excitement, as our guests were by looking at the canyon in a new way. I think Vicki Ketelsen summed it up succinctly: "It's fun watching people get excited." I might add its entertaining as well.

Night observing at the canyon usually lasted until 12 midnight although some diehards lasted until 1 or 2 a.m. (Derald Nye and Erick Karkoshka usually were the last to leave). I enjoyed giving two people from Holland and two Americans spectacular views of bright Messier objects M13, M11, M27 and M57 in Gene Fioretti's 17.5" Dobsonian. These folks had "never seen stars" before and so were pretty amazed at the views this scope gave. Speaking of Gene, he's getting ready to move to the ShowLow area. I'd like to thank him for his past help and wish him well in his new endeavor both with his new practice and with the new astronomy club

he is starting. Don't be a stranger Gene, we hope to see you from time to time! Other members attending were Dean and Vicki Ketelsen (of course), David Levine, Hazel Lawler, Mike (from Hawaii) and Bob and Valerie Goff (If I forgot anyone please forgive me).

This month most of our observing attention will be placed on Jupiter due to the upcoming "comet crash". Tucson's southerly position in the U.S. favors us compared to most other Americans. Unfortunately the monsoon weather (common this time of year) does not. As I write this it seems the monsoons have started early already! In reading the July *Sky and Telescope* and in talking with Gary Rosenbaum it seems we won't get to see much (see the comet-crash visibility maps on page 34 of the July issue). Just like with comet Halley, Australia is positioned well to see this event: Jupiter is close to 70 degrees in altitude at end of evening twilight from most areas of the country, and crash visibility favors the "Land Down Under" as well. Why are recent comets always seen better from Australia?! From Tucson Jupiter will be 44° in altitude 10 minutes after sunset on the evening of July 16. The 9 day old gibbous moon, 4° south of Jupiter, makes it easy to find the gas planet in the daytime on this date. One of the best ways to get ready for this event is to sketch Jupiter. You'll train your eye to see faint features and learn the gas giant as well. An ALPO Jupiter report form is in the July issue of *Sky and Telescope*, page 33. Feel free to copy this and use it.

At Flandrau Science Center we will be having a "Jupiter Watch" every night of the impacts, weather permitting. All TAAA members are invited and encouraged to attend and bring their scopes (even if partly cloudy!). Even if the odds are minimal that we'll see anything, this is a prime opportunity for the club to obtain news coverage and educate the public. Hope to see you there!

Michael Terenzoni

Comet Crash Predictions as of 1994 June 12

P.W. Chodas and D.K. Yeomans (JPL/Caltech)

For each fragment for which we have computed a separate orbit, the orbit reference number and the orbital data interval are given.

The dynamical model used for the predictions includes perturbations due to the Sun, planets, Galilean satellites and the oblateness of Jupiter. The planetary ephemeris used was DE245.

(Remember to convert UT to MST you need to subtract 7 hours, or remember that 5pm MST equals 0 hours on the next day (UT)...ie. June 16 at 5pm MST is June 17 at 0 hours (UT). This means that impact B (June 17 @ 2:46UT) will occur at 7:46pm (5pm + 2h 46m) on the night of June 16th. Editor)

Fragment	Impact	Jovicentric	Meridian						
Date/Time	Lat.	Long.	Angle	E-J-F	Orbit	Data			
July (UT)	(deg)	(deg)	(deg)	(deg)	Ref.	Interval			
h-m									
A=21	16	19:50	-43.12	173	63.57	99.37	A11	3/27/93-6/08/94	
B=20	17	02:46	-43.16	65	63.01	99.75	B12	3/27/93-6/08/94	
C=19	17	06:50	-43.15	212	64.33	98.81	C9	3/27/93-6/08/94	
D=18	17	11:11	-43.11	10	63.60	99.34	D10	3/27/93-6/08/94	
E=17	17	15:17	-43.56	157	66.02	97.52	E26	3/27/93-6/08/94	
F=16	18	00:16	-43.49	124	63.58	99.25	F17	3/27/93-6/08/94	
G=15	18	07:36	-43.68	27	66.65	97.04	G26	3/27/93-6/08/94	
H=14	18	19:35	-43.77	102	67.08	96.71	H24	3/27/93-6/08/94	
K=12	19	10:26	-43.87	280	67.87	96.12	K25	3/27/93-6/08/94	
L=11	19	22:24	-43.94	353	68.63	95.56	L26	3/27/93-6/08/94	
N= 9	20	10:09	-44.30	60	67.10	96.57	N13	3/27/93-6/08/94	
P=8b	20	14:58	-44.57	236	65.84	97.40	P12	3/27/93-6/08/94	
Q=7b	20	19:52	-44.49	50	69.37	94.93	Theory		
Q=7a	20	20:07	-44.09	59	69.52	94.89	Q28	3/27/93-6/08/94	
R= 6	21	05:47	-44.18	49	69.95	94.56	R23	3/27/93-6/08/94	
S= 5	21	15:39	-44.21	46	70.63	94.08	S33	3/27/93-6/08/94	
T= 4	21	18:28	-45.23	152	67.93	95.80	T8	3/27/93-6/01/94	
U= 3	22	22:52	-44.69	309	70.30	94.24	U9	3/27/93-5/08/94	
V= 2	22	03:54	-44.38	133	67.88	95.98	V9	3/27/93-6/08/94	
W= 1	22	08:21	-44.24	292	70.99	93.80	W26	3/27/93-6/08/94	

Notes:

1. Fragments J=13 and M=10 are omitted from the Table because they have faded from view. Fragments P=8 and Q=7 each consist of two major components: P2=8b is the brighter and more easterly of the two P components in the January'94 HST image, while Q1=7a is the brighter and more southerly of the two Q fragments. The March'94 HST image shows that P1=8a has almost completely faded away (so it too is omitted from the Table), and that P2=8b has split. We do not as yet have sufficient data to obtain independent predictions for the two components of P2=8b.

2. The impact date/time is the time the impact would be seen at the Earth (if the limb of Jupiter were not in the way); the date is the day in July 1994; the time is given as hours and minutes of Universal Time. Uncertainties are of the order 20-30 minutes.

3. The impact latitude is Jovicentric (latitude measured at the center of Jupiter); the Jovigraphic latitudes are about 3.84 deg more negative.

4. The impact longitude is System III, measured westwards on the planet. Although System III applies to the interior of the planet, not the atmosphere, it is more deterministic than Systems I or II. The large uncertainty in impact longitudes is due to the uncertainty in the impact times and Jupiter's fast rotation.

5. The meridian angle is the Jovicentric longitude of impact measured from the midnight meridian towards the morning terminator. This relative longitude is known much more accurately than the absolute longitude.

6. Angle E-J-F is the Earth-Jupiter-Fragment angle at impact; values greater than 90 deg indicate a farside impact. All impacts will be just on the farside as viewed from Earth; the later impacts will be closest to the limb. According to our Monte Carlo analyses, the probability that any fragment will impact on the near side as viewed from the Earth is < 0.01%.

LOCATING THE OUTER AQUAMARINE WORLDS

July is the prime time to search the outer reaches of our Solar System for the planets Uranus and Neptune. As you recall last year Uranus and Neptune remained in close conjunction to one another. This year the nearer Uranus begins to speed ahead of the more distant Neptune but they still remain within 3° of each other in the same binocular field this summer.

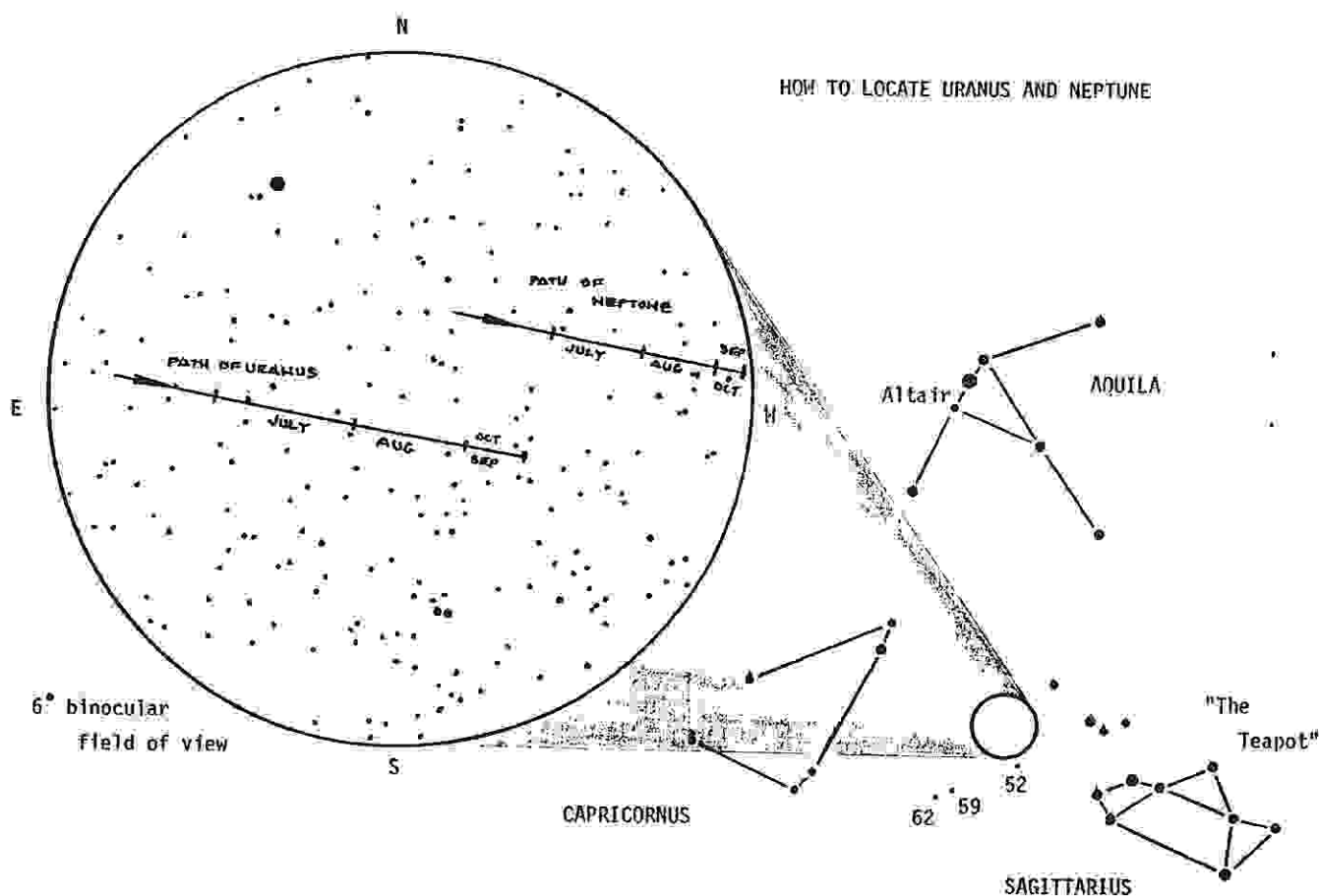
Uranus reaches opposition on July 17th shining at magnitude 5.6. In a small telescope it looks like a little green emerald bead showing about a $3.8''$ disk at 100x. For observers with large telescopes ($16''$ - $24''$), try using as high of power as the atmosphere will allow, and see if you can pick up some of the subtle cloud markings of Uranus. The Uranian moons of Titania and Oberon may also be visible shining at 14th magnitude. Some keen eyed observers may

even see Uranus without the aid of binoculars from a very dark site, try it!

Neptune comes to opposition on July 14th, and in a small telescope it appears as a $2.8''$ blue sapphire like dot of magnitude 7.9. A pair of $7\times 50\text{mm}$ binoculars skillfully used will reveal Neptune. Again users of large telescopes should be able to pick up Triton, Neptune's largest moon shining at a dim 14th magnitude.

A chart has been provided so you can track these distant aquamarine worlds for the next few months. Although binoculars and small telescopes don't reveal any details on these planets its refreshing to know you pushed your skills and instrument to their limits just to see these distant worlds at the edge of outer space.

Jeff Brydges



Gabfest July 9th

Let's see, it has been cloudy for days with no end in sight, and there is no place to get your astronomy fix for the month? You have no excuse in July as there is a Gabfest scheduled! A Gabfest is a social gathering of TAAA members to talk telescopes, observing, or even (gasp) non-astronomical topics for a change. Rik Hill has graciously offered his home for a location this month. They recently moved to the eastside and are anxious to show us thier new location. David Sage has a videotape of the construction of the 200" Palomar telescope, or if the weather does clear, bring your scope for some relatively dark skies. Festivities start about 7pm, call them at 721-0123 for directions and whether or not you can contribute to the refreshment table. Be there or be square!

Lecture and Star Party at El Pueblo Library

The Summer Reading Program at the Tucson Library has asked us to do a program for them on July 14th. Dean Ketelsen will present a lecture at 7:30, to be followed by telescope viewing on the library grounds. If you can bring a telescope and help out, there will be a sign up sheet at the July meeting. Hopefully the weather will cooperate and we can get some younger folks inspired by showing them the stars. The El Pueblo library is at 101 West Irvington Road. Sorry, no map available.

Exec Meeting

The June Executive meeting minutes will run next month.

Desert Skies Classified

For Sale: Lumicon 1-1/4" Deep Sky filter \$40.00, Lumicon 48mm H-ALPHA filter \$30.00 (never used). Call evenings 797-1693, ask for Mike. (7-94)

Wanted: Elliptical diagonal mirror, 1/8th to 1/10th wave flat, 1.83 - 2.14" minor axis. Call Andy Meyer between 6 and 9 pm, 742-4549. (7-94)

House for Sale: w/ astronomical observatory on 1 acre site in Green Valley. 3 BR, 3 Bath, swimming pool, 2400 sq ft. Observatory is 12'X12' building with 2 meter motorized aluminum dome, cement pier ready for your telescope - Dark Skies! Owner is TAAA member Randy Quiroz, price \$245,000. For further information, call Everett Real Estate, Green Valley, 625-8998 - MLS#11253.(8-94)

For Sale: TELEVUE EYEPiece 12mm Type II Nagler. Like new. \$160 plus shipping. Will bring to July 1st meeting. Robert Harris, Phila., PA. (215) 985-0408 evenings.(10-94)

For Sale: 12.5" F/6.3 Newtonian, Coulter optics, Parks tube, Novak parts. 2" focuser, 3.1" diagonal, sturdy Dobsonian mounting, 3" finder \$600. A lot of you have looked through this at star parties. Dean Ketelsen, 293-2855.(10-94)

For Sale: 11.82" diameter DF1 Flint glass for making large achromat, uncertified. The TAAA is selling off some of the glass stores we have. This is Air Force surplus leftover from making recon lenses, so is high quality. A flint blank this large might run you \$600 if you buy one - we would like \$120. Call Dean if interested 293-2855.(10-94)

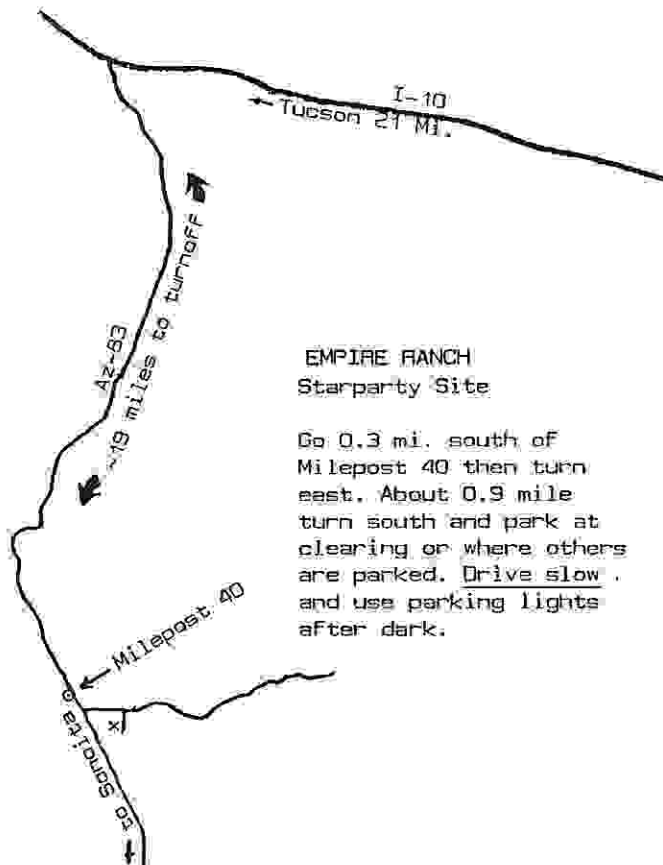
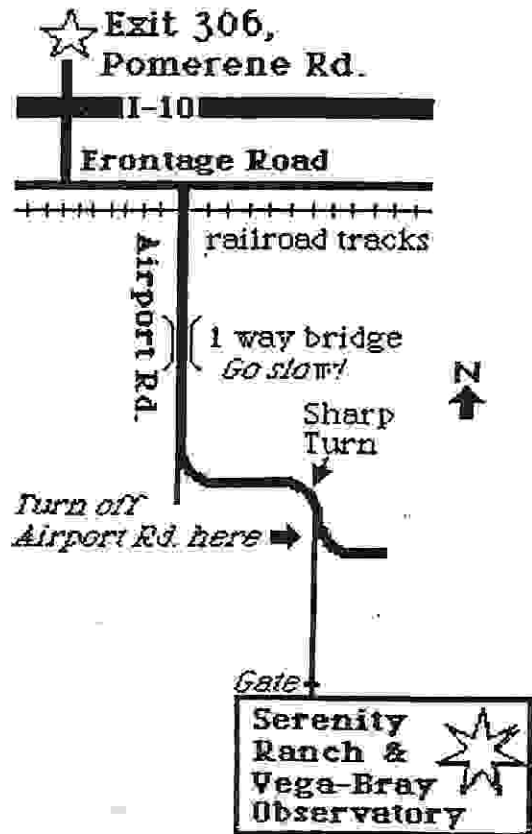
Your ad will run for 4 months unless specified. Month and year of last appearance is last item of ad. For additions or changes to this list call Dean, 293-2855.

DARK SKIES for Tucson (in MST)

1994 JULY no twilight
no moonlight

Fr/Sa	1/ 2	9:15pm - 12:48am
Sa/Su	2/ 3	9:14pm - 1:23am
Su/Mo	3/ 4	9:14pm - 2:02am
Mo/Tu	4/ 5	9:14pm - 2:45am
Tu/We	5/ 6	9:14pm - 3:32am
We/Th	6/ 7	9:13pm - 3:44am
Th/Fr	7/ 8	9:13pm - 3:45am
Fr/Sa	8/ 9	9:13pm - 3:46am
Sa/Su	9/10	9:12pm - 3:46am
Su/Mo	10/11	9:12pm - 3:47am
Mo/Tu	11/12	9:22pm - 3:48am
Tu/We	12/13	9:58pm - 3:49am
We/Th	13/14	10:34pm - 3:50am
Th/Fr	14/15	11:12pm - 3:50am
Fr/Sa	15/16	11:52pm - 3:51am
Sa/Su	16/17	12:36am - 3:52am
Su/Mo	17/18	1:25am - 3:53am
Mo/Tu	18/19	2:19am - 3:54am
Tu/We	19/20	3:18am - 3:55am
We/Th	20/21	- - -
Th/Fr	21/22	- - -
Fr/Sa	22/23	- - -
Sa/Su	23/24	- - -
Su/Mo	24/25	- - -
Mo/Tu	25/26	9:01pm - 9:09pm
Tu/We	26/27	9:00pm - 9:42pm
We/Th	27/28	8:59pm - 10:14pm
Th/Fr	28/29	8:58pm - 10:47pm
Fr/Sa	29/30	8:57pm - 11:22pm
Sa/Su	30/31	8:56pm - 11:59pm
Su/Mo	31/ 1	8:55pm - 12:40am

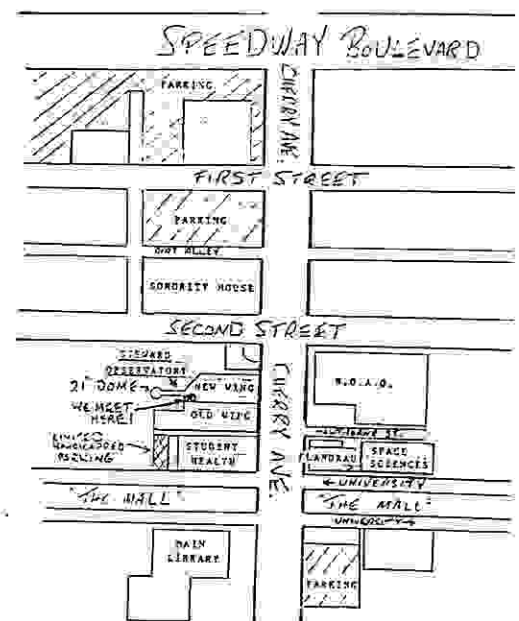
Erich Karkoschka



EMPIRE RANCH Starparty Site

Go 0.3 mi. south of
Milepost 40 then turn
east. About 0.9 mile
turn south and park at
clearing or where others
are parked. Drive slow
and use parking lights
after dark.

TAAA Meeting Location



Tucson Amateur Astronomy Association
P. O. Box 41254
Tucson, AZ 85717

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