# Desert Skies

The Newsletter of the Tucson Amateur Astronomy Association (TAAA)

February, 1995



GENERAL MEETING - Friday, February 3, 7:30 pm at the Steward Observatory Auditorium - room N210. Topic is Mars Pathfinder Mission by Dr. Daniel Britt...

BEGINNERS LECTURE- Friday, February 3, 6:30 pm at the Steward Observatory Auditorium - room N210. Topic is Mars by Teresa Lappin. All are welcome!

YOUNG ASTRONOMER'S CLUB - Friday, February 3, 7:30 pm at Steward Observatory room 208. Aimed at school-age kids and is concurrent with the general meeting. This month - Mars

See enclosed map for directions to Steward Observatory.

EXECUTIVE MEETING - Thursday, February 9, 7:30 pm at Flandrau Science Center's Conference Room.

#### STAR PARTIES:

February 4 - Flandrau Science Center, UA Mall.

February 25 & March 1 - Empire Ranch Dark-sky Party.

March 4 - TAAA and Kitt Peak star party at Gilbert Ray Campgrounds

March 4 - Quartzsite Chamber of Commerce

Next Newsletter Deadline - February 15.

Cover: This month's cover is a composite of pictures taken by the Viking spacecraft as it approached Mars. This picture was downloaded from the Astronomy Forum on Compuserve.

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#### MEMBERSHIP IN THE TAAA

Individual	\$25.00/year	(increased)
Company of the same	Terminal and the second second	

Family \$30.00/year Senior Citizen (over 60) \$23.00/year

Sky & Telescope subscription (optional) \$20.00. 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.

#### Send ADDRESS CHANGES to:

TAAA

Attention: "ADDRESS CHANGE"

P.O.Box 41254 Tucson, AZ 85717

#### 4 EASY STEPS TO MEMBERSHIP RENEWAL

- Pay your dues 2-3 months early Your month of membership expiration is listed on your newsletter mailing label.
- 2. If you want Sky & Telescope:
  - a) 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.

#### **Desert Skies Publishing Guidelines**

All articles, announcements, news, etc. must be submitted by the newsletter deadline listed above. Materials received after that date may 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! Final decision for content of TAAA Newsletter shall be made by the TAAA Executive Staff. Send articles, announcements, etc. to:

TAAA - Desert Skies PO Box 41254 Tucson, AZ 85717

OR email:

# Meeting News

#### February's Speaker - Dr. Daniel Britt on "The Mars Pathfinder Mission" BY DEAN KETELSEN

Dan Britt is the project manager for the imaging team on the Mars Pathfinder mission, due for launch in December, 1996. Pathfinder is one of the new NASA missions that go from drawing board to launch in only a few years, reducing cost tremendously, yet still getting a lot of science return. Dan will give an overview of the mission, which is a direct entry to a Mars landing (no orbiter), and will cover some of the science to be done (night time CCD observations of stars and moons as well as daytime imaging).

Dan grew up in the Seattle area and attended the University of Washington, where he received an undergraduate degree in economics. He was dissatisfied with economics as a career, and pursued geology and earned a Phd at Brown University. His interests leaned towards planetary geology, and he has now been working at the Lunar and Planetary Laboratory for 4 years. Research interests include remote sensing and reflectance spectroscopy, particularly applied towards asteroids.

# Young Astronomer's Club

BY NINA LEHMAN

The January meeting was the largest one yet. We covered Gemini and the asteroid 4 Vesta, made a pocket sundial, and visited the telescope at Flandrau for a look at the Moon and the Orion nebula.

This month we will talk about Mars, Leo, and make a see-through star finder. Again, many thanks to Karen Allen and Sharon Neihaus for their help each month.

### Beginner's Lecture: Mars

BY TERRI LAPPIN

Although Venus is most like the Earth in size, Mars has seasons very much like the Earth. With its changing seasons, Mars appears a little different with each apparition. This month Mars reachs opposition which means it will be conveniently located in the evening sky during the next few months. This month's Beginner's Lecture will be about Mars --something about the planet, how to observe it and what can be expected during this apparition.

The Beginner's Lecture starts at 6:30pm, one hour before the start of the regular meeting, in Steward Observatory's Lecture Hall.

# Accessing the Internet

BY TERRI LAPPIN

If you have a computer and a modem, then you can join the growing number of TAAA members with e-mail addresses. What is an e-mail address? Well, it's kind of like an electronic mailbox where you can receive and send messages from others with e-mail addresses. The internet, part of the super information highway you may have heard about, is what makes this possible. It is the common link between computers all across the nation. At a recent computer show at the Community Center, a presentation about the internet was given. The handout contains information about how to get your own e-mail address and how to gain access to the internet at no charge (it's paid for by your taxes). It isn't Compuserve or Americaon-Line, but it will make it possible for you to receive and send e-mail messages. If you would like a copy of this handout contact Terri at 579-0185.

## Club News

# Grand Canyon Star Party By DEAN KETELSEN

Mark your calendars now! The week of June 17-24, 1995 has been chosen for this year's Grand Canyon Star Party. Sponsored by the Tucson Amateur Astronomy Association and the National Park Service, the GCSP is fast becoming one of the West's hottest astronomical events. If you have never been to the Canyon, what are you waiting for? This is your big chance!

The South Rim of the Grand Canyon is one of the most ideal places for a public star party. John Dobson and the San Francisco Sidewalk Astronomers first visited the park two decades ago. An estimated 20,000 people looked through the telescopes during a 15-day period in 1980. Inspired by those visits, the TAAA has carried on the tradition of bringing telescopes to Yavapai Point, so that more eyes might see our universe as it really is.

You may be wondering why you should plan so far ahead. Well, June is pretty busy at Grand Canyon National Park. So if you want a hotel room or a nice burro ride while you are there, I suggest you make reservations now. Some free campsites are provided by the Park Service for star party volunteers. Camping at the Canyon is first class, with a full range of amenities available inside the park.

If you are a hiker, this place is paradise. Be advised that a trip down to the Colorado River and back takes two days, and remember that on day hikes, allow twice as much time for coming out of the Canyon as going in—that thing is steep!

Historic Lowell Observatory, the Red Rocks of Sedona, Meteor Crater and the Painted Desert are but a few possible day trips from the Grand Canyon. The scenery in Northern Arizona will astound you.

By day, the Canyon beckons you to explore its ancient mysteries. By night, clear dark skies and a very curious public await you and your telescope. Crowds can be large, but are well behaved and very appreciative.

Looking through your telescope will be the "icing on their cake" after experiencing a dramatic Grand Canyon sunset.

An observing field is provided, with a locking gate, so large scopes can be left set up all week. The ranger in charge does all he can to make this star party user-friendly. Volunteer astronomers are recruited to give the nightly slide show, so let Dean Ketelsen know if you'd like to make a presentation.

For an all-around fun vacation, the Grand Canyon is hard to beat. There is something for every interest, and you don't have to be Sir Edmund Hillary to navigate most of the trails. I hope some of you will consider working the GCSP into this summer's vacation plans. It really is a rewarding experience. For more details on registering, a list of area motels, or to signup for a complementary campsite (available after March 1) contact:

Dean Ketelsen Grand Canyon Star Party 1122 East Greenlee Pl. Tucson, AZ 85719

For making lodging reservations on the rim, or to schedule that mule ride, call Fred Harvey Inc., (602) 638-2401 as soon as you make your plans.

Above information courtesy of Barry Hirrell.

# Computers in Astronomy Subgroup By Roger Tanner

Two years ago I helped start a special interest subgroup in one of the astronomy clubs I was in, called the Computers in Astronomy Subgroup. This group seemed to collect all the members in the club who were interested in computers, electronics and astronomy; things like drive controllers, CCD cameras, photometers, and computers and all the astronomy related software.

The group would meet once a month at a member's house, rotating between the members of the group. It was very loosely setup and lots of fun. This way everyone could show what they have been doing without dragging their equipment around. Some of the projects people have been quietly working on would probably amaze you. These projects might be boring for the audience at a general meeting but would be fascinating for the electronic enthusiast. Typically we would start the meeting by someone reviewing some piece of software or someone's hardware or software project, even part done. This was the organized part of the meeting, after that the meeting would turn to chaos with several conversations breaking out and a few really interested people looking at one particular program or piece of hardware.

There are many people who have IBM compatible computers who are not familiar with what is available on other platforms such as a UNIX Workstation or Mac, and vise versa. People would bring up news items and discuss club projects such as electronic drive controller or computer control for the club scope. Through discussions like this we got a computer donated to the club for a controller (OK, it was an old IBM XT with a monochrome display, sort of a computer, but it was free). I found it interesting to see all the software that is available. It was especially valuable to use for a half an hour something I was considering purchasing, as one persons obvious user interface is another's maximum frustration. We made it a rule not to allow illegal copying of software. There were

people who didn't have a computer ( hard to imagine these days ), and they were interested in finding out what was available and what it took to run certain pieces of software. Other people would type in a Basic program from Sky and Tel computing section and debug it and offer copies to members. Other people would fish the Internet or CompuServe for interesting shareware and share that at a meeting. Some of the most interesting programs I have spent an evening with was a basic program running Commodore 64 doing interactions and a similar program doing orbit simulations on a Mac, (you wouldn't believe how hard it is to set up a triple star system that is stable). We had people who programmed for a living and others who liked to program with a soldering iron, and some who were just interested in what is going on.

One of the other things the subgroup would do is put together a program year for the general club to show what is going on in this part of astronomy. We also had a column in the newsletter to report on all the fun we had. People who had the meeting at their house usually provided some snacks, and one of the members present was selected to write the article for the newsletter. At the end of the meeting, the next meeting topic and location was selected, this was also announced in the newsletter.

The proposal is to form a similar group for the TAAA. The focus would be electronics and computers related to astronomy. Because our topics ranged wider than just computers maybe it should be called Electronics in Astronomy Subgroup (EAS?). Discussing this with Dean Ketelsen and Terri Lappin indicated they thought people would be interested. People who are interested could contact me, Roger Tanner, at (602) 584-3876, email:

rtanner@gas.uug.arizona.edu or at the next meeting and we can decide what to do next.

#### **AAS Meeting**

BY TERRI LAPPIN

About ten TAAA members volunteered for the January American Astronomical Society Most of us operated slide meeting. projectors and lights during the hundreds of five minute lectures. The lectures were probably over the heads of most TAAA volunteers, but the main points were understood. Probably the most exciting place to work was the press room where photographs and late recent Hubble breaking astro-news items were being distributed. The exhibit area was a great place to pick up free posters from several places like Hubble/Space Telescope Institute or observatories like Kitt Peak.

Tuesday was exciting. The anti-Mt. Graham demonstrators threatened to show up making it necessary to lock the doors to the community center. A task force of doormen (and women) stood at doors all day making sure only legitimate astronomers were allowed in. Sure enough, people gathered the anti-Mt. Graham appropriately at the press room for a midday rally so they got their news coverage. At about the same time, a fire alarm went off at the community center. In talking to community center staff I found that the alarm had been malfunctioning the week before, so it was most likely not associated with the anti-Mt. Graham demonstration going on.

Wednesday night's banquet at Old Tucson was fun. BBQ chicken and ribs were served up and a Bluegrass/Western band (the award winning Titan Valley Warheads) played until after 9pm. It was great fun!

The next big professional gathering in Tucson will be in October 1996 when the AAS Department of Planetary Sciences will be meeting. I hope our members can volunteer for that meeting as well.

## **TAAA Constitution Changes**

By TERRI LAPPIN

Your Executive Committee has been looking at making changes to the TAAA constitution which we hope will make our organization function more efficiently. Of course the proposed changes need to be brought to a vote of the general membership, but until then we want to tell you about some of the things we are thinking about. We are discussing changes in the Executive Committee which are given here, and things like how we spend money and making it possible to vote by proxy. Attend the February executive meeting (February 9th) if you want to give us some constitutional input about proposed changes.

It is our goal to get more members involved in TAAA projects, but without asking them to attend meetings if they don't want to.

First, the proposed Board of Directors (those we elect into office) will consist of the President, the Vice President, Treasurer, Secretary (one secretary instead of two), and Members at Large.

Second, we hope to create several appointed positions (which make up the balance of the Executive Committee). These Publicist, Education include positions Administrator, Fundraising Chairperson, Property Chairperson, Chief Observer, Treasurer's Assistant, and Newsletter Editor. Since these positions are not elected, they can be held by the same person for years (we hope) or can be vacated in less than a year for any reason. Attendance at Executive Meetings is not required of these people, but if they attend they will have executive voting privileges.

If any of the positions sound interesting to you, please let Dean or Terri know. If the changes to the constitution are accepted by the general membership, then we will be looking for warm bodies to fill these positions.

### Carson Middle School Star Party 2 February, 1995

We have scheduled a star party on February 2nd at 7pm for sixth graders at Carson Middle School. This star party was originally set for December but was clouded out. Carson is at 7777 E. Stella Road. About 60 kids are in the class, so at least 4 telescopes would be appreciated. We recommend that you arrive arrive early to set up your equipment.

### Public Star Party at Flandrau 4 February, 1995

Come out and help make this a great public event!

Another public star party has been scheduled to be held on the Mall in front of Flandrau Science Center. There will be a young moon, and a farewell to Saturn as it sinks into the west. Replacing it in the east is Mars, fast approaching opposition. With a few bright nebulae and star clusters in the winter Milky Way, there will be plenty to show to the public, especially with the lights turned off along the Mall. Sunset is around 5:45, so set up around then. Parking along the Mall will be allowed (permits will be available for those with scopes from Flandrau staff).

#### Ridesharing to Starparties

The response to last month's inquiry to determine the interest in setting up a rideshare program for star parties was underwhelming (one call). I suspect there is much more interest than that. If you want a ride or can offer one to Empire Ranch, call Dean at 293-2855 to register your interest.

# Quartzsite Star Party 3-5 March, 1995

For those of you who travel along 1-10 to California remember Quartzsite as the lone interruption on the drive through the middle of nowhere. Well, those who have ever visited in the Winter know that it is the Mecca of RV powered snowbirds, who swell the population from the normal 2,000 to nearly 250,000 this time of year. Chamber of Commerce wants to try setting up a public star party, and has called for assistance with scopes and expertise. The site selected is several miles south of town to get away from local lights, so the skies should be excellent, and of course, there should be some good crowds. They have planned entertainment and day activities as well, so think about doing the 4 hour drive and check out what may become an annual event. If you are interested in forming a caravan to the event, check with Dean (293-2855) to register your interest and check the status of the local caravan. For more information on the event, call the Quartzsite Chamber of Commerce at (602) They want an indication of attendance soon, so if you are planning to attend, call them by February 15th.

## Gilbert Ray Star Party 4 March, 1995

For those not wanting to make the long drive to Quartzsite, we have offered to help Kitt Peak with another public star party at the Gilbert Ray campground west of the Tucson Mountains. There is a reasonably dark sky for such a short drive and the people who come are usually amazed with the views. Plan now to attend. There will be more details and a map in the March Newsletter.

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# Observing Reports

# Adventures in Asteroid Occultations BY DEAN KETELSEN

Though asteroid occultations (where the tiny disk of a distant asteroid blocks the light of a star) have been listed in *Sky and Telescope* for years, I never had the urge to observe one. In fact, I don't consciously recall even searching out and observing an asteroid, though many have fallen across exposed plates of mine while at Kitt Peak. Distant faint fuzzies have dominated my observing lists.

But asteroid occultations are fun and dynamic observations to make and are scientifically useful, too. At a minimum, all you need is a tape recorder, a shortwave radio that can be tuned to WWV for time signals, and a telescope. By recording time signals with the observer's note of disappearance and reappearance, the profile of the passing shadow can be fixed to a fraction of a second. Accurate diameters and shapes can be determined by simple timed observations by many observers along the track traced out by the shadow.

It was probably at the October '93 TAAA meeting when Derald Nye noted that 27 Euterpe would block an 8.4 magnitude star the next week, as seen from the Tucson area. Why not, I thought? It was something you could do from town, and it was a chance to see a real change in sky appearance over the space of a few seconds, if we were within the path.

The night arrived, and space artist Joe Bergeron, who was visiting the area joined me in observing the event using my 5" binoculars and 10" Celestron. We fought passing cumulus early, trying to find the field.

Suddenly, with about an hour to go to the midnight event, a police helicopter started circling the house, the searchlight effectively ending the search for now. They were evidently looking for something within 100 yards of my backyard.

After about 15 minutes of the aerial assault, a squad car pulled up front with a German shepherd assistant and we were told to go stay in the house, while they pursued their unknown mission.

Finally, they all went away, and with 10 minutes to the event under clear skies, we jumped on the scopes again. We found the star in the 3 degree field of the binoculars, and I searched with the 10 inch Celestron. Moments from finding it, Joe exclaimed, "It just dimmed!" We didn't have the tape running yet, but we dutifully noted Joe's positive detection, with an estimate of the occultation duration, the length of time it faded. So I was zero for one, but I would be better prepared next time, I swore.

The next time occurred just this last month, on January 19th, 1995. 654 Zelinda was due to block a 9.1 magnitude star. The track center was to pass just southeast of Tucson, but as it was about 130 km wide, there was a reasonable chance to see it from the back yard.

It was a cold night, a few nights after a winter storm had dumped snow on the Catalina Mountains. But it was clear!

I set up at 9:00, 3.5 hours early, and to assist in finding the field, I had since obtained an Amici roof prism diagonal, which gives an erect image through a Schmidt-Cass. It was simple to find the field in a couple minutes, even though there was a very bright moon 40 degrees away. And there it was! Zelinda was slightly fainter and still an arc minute or two away from the star. Great, I thought, a ringside seat to a straightforward observation. I waited a half hour to confirm motion - "Yes, a real asteroid, all right!" I went in to warm up.

When I returned in a half hour - the eyepiece was dark. I looked up, still clear, but where did the stars go? A glance at the corrector showed it completely dewed over after less than an hour outside. I brought it inside to warm and dry off. I figured I could wait till 15 minutes before the event, bring the scope out, re acquire the field, and not have to worry about fogging. Meanwhile,

the WWV radio required new batteries and the tape recorder was checked out.

So at 12:15am, the scope was carried out, bolted to the wedge, field located and higher power eyepiece inserted. "Yes," I thought, "Five minutes to go!" The seeing was bad, with the warm optics, but it would still be an easy observation. Four minutes to go, tape was turned on. Three minutes, I couldn't decide to use direct vision or slightly averted it seemed I had a better feel for brightness while looking very slightly away. Two minutes, the time signals weakened, then returned. One minute, wouldn't be long now.! Finally it was time, I strained to see the combined light fade, anticipating calling "OUT!" but it didn't come.

One minute past, two, then three minutes past predicted. Oh well, a miss for midtown Tucson.

A call to Derald the next morning revealed a 10 second duration for the Grasslands Observatory where they used Video signals from the 24-inch there to record times to .03 seconds. Terenzoni missed it from Vega-Bray. Other returns will no doubt trickle in.Well, the negative observation is important too, and will be duly noted. So now I am zero for two.

Will I keep on trying? You bet! 2 Pallas this weekend is only a .3 magnitude drop and very difficult visually. But it was neat to come so close a second time. I think I will subscribe to the IOTA (International Occultation Timing Association) newsletter and get on their distribution list for late-breaking events. Full membership costs \$30. To receive the newsletter only - \$20.

IOTA 2760 SW Jewell Ave. Topeka, KS 66611

Get out there with me and keep looking up!

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## Spring 1995 Steward Observatory's Public Evening Series

The 72nd year of Steward Observatory Public Evenings continues during the Sring Semester 1995. The host for the Series is Dr. Raymond E. White. All talks will be held in Room N210, Steward Observatory Lecture Hall, and will begin 7:30pm. The talks, followed by a question and answer period, will last for about an hour.

Following the talk, there will be opportunities for viewing the night sky (weather permitting, as always) with the use of the telescopes at the Campus Station of the Observatory, and with the assistance of members of the University's Astronomy Club.

All of the lectures and the use of the telescopes are free of charge and open to the general

public.

Date	Speaker	Topic		
6 Feb	Dr. Raymond White	The June Solstice is NOT the Beginning of Summer and Other Calendric Problems		
20 Feb	Dr. Neville Woolf	Adaptive Optics: What it Can and Cannot Do		

#### THE SUPER HEAVYWEIGHT CHAMPION

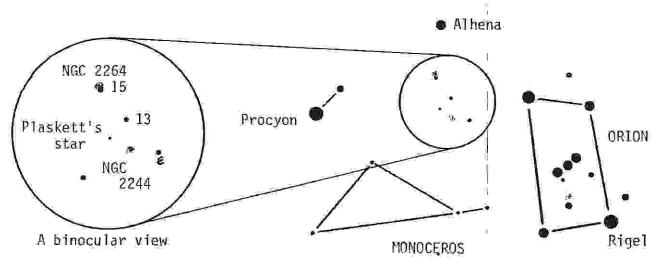
As February begins Orion crosses the meridian in the early evening. Following Orion are his hunting companions Canis Major and Canis Minor. In between the two dogs lies a dim section of the Milky Way in Monoceros. Monoceros is an area of the sky that astronomers have been studying extensively, because this region is underlaid with gas and dust. This gas and dust continues at the present to contract and form new stars. The Rosette Nebula is just one example of a star forming area in Monoceros in which very young massive stars have formed. Just 11/2° northeast of the Rosette Nebula lies a 6th magnitude star known as Plaskett's Star.

Plaskett's Star came into fame in 1922 when the Canadian astronomer J.S.Plaskett discovered it. At the time of discovery both stars of this massive binary system where thought to weigh 90 solar masses each. Plaskett's Startoday still retains the super heavy weight title of massive stars in the Milky Way Galaxy that have been directly measured by astronomers. But more massive stars probably do exist. Plaskett's Star is a spectroscopic binary with a period of 14.4 days, and it has a combined magnitude of +6.05, which should make it visible to the unaided eye at a dark sky site. The two supergiant stars are separated by a mere 50 million miles. Recent observations gathered in 1992 have shed new light on this massive system.

The primary has a spectrum of O7.5I, and a diameter of 43 times the Sun, and its mass is equal to 421/2 suns. The secondary has a spectrum of O6.2I, and the diameter is estimated to be 30 to 40 suns, with a mass of 51 suns. Both these stars are blazing hot having surface temperatures of 35100°K and 38400°K respectively. The reasons for the discrepancies in the size estimate of the secondary are due to the intense stellar winds spewing material off these stars and enshrouding the star in a gaseous cloud, it also has a very rapid rotational spin making accurate measurements difficult. Plaskett's Star is thought to belong to the Rosette Nebula (Monoceros OB2) Stellar Association. Distance estimates place Plaskett's Star out on the Perseus Arm of the Galaxy between 5200 and 6600 light years away, where it must shine as a distant beacon.

To locate Plaskett's Star with binoculars or a small telescope look 1½° southeast of the star 13 Monocerotis. Coordinates for Plaskett's Star epoch 2000 are R.A. 06h 37m 24.0s, Dec. +06° 08' 07". To most observers Plaskett's Star appears as an ordinary white star in the night sky. To the astrophysicist it is a star worth continued study. And to the amateur astronomer it is a star of wonder, something to ponder over and try to imagine the tremendous forces that are at work out in the distant spiral arms of the Galaxy we live in

By Jeff Brydges





# OBSERVER'S REPORT

The planet Mars this month appears the biggest and brightest it will get until 1997. All month the planet's size is in excess of 13 arc seconds, reaching maximum diameter of 13.8" at opposition. Look for the "red planet" rising in the east 1 hour after sunset early this month. By late month Mars is already 30 degrees high in the east 1 hour after sunset, so get out those color filters and high power evenieces! Mars is brightest on February 11th, when it will be closest to earth, 63 million miles away. Unfortunately, this is not nearly as close as Mars can get to Earth, but fine surface features can be seen with amateur telescopes if the air is steady. With the kind of seeing we can get here in Arizona, there's no excuse for not observing this fascinating planet. Try to drive to a higher elevation site if you can and remember that good seeing can surprise you, appearing suddenly during nights that started with mediocre conditions. Of course the longer and more you observe the more you will see, and the better chance you'll get for lucking into good seeing. Right now Flandrau Science Center's vastly improved 16" telescope is obtaining good planetary images when seeing is reasonable on

campus, so you may want to drop by when the telescope is open Wend-Sat. nights.

Early in February, Saturn is visible low in the evening sky, 1 hour after sunset. The ringed planet is moving towards the sun in the southwestern sky and will be invisible by month's end. The next time Saturn appears in our night sky will be in mid-April, when the ringed wonder has a spectacular conjunction with Venus.

Venus and Jupiter are dual "morning stars" before sunrise all month. Look for gas giant Jupiter in the southeast, in the constellation Scorpius, appearing as an extremely bright star, but only one-fifth as bright as brilliant Venus. Venus, a brilliant beacon in the southeast, will appear closer to the horizon of the two. Jupiter will slowly draw away from Venus and the horizon as February progresses. By month's end, astronomers around the world will get good views of the remaining impact areas from the Shoemaker-Levy comet. Finally, look for the moon to slide by Jupiter on the 23rd, and by Venus on the mornings of the 25th and 26th.

Wishing you Mars filled skies!

Michael Terenzoni



16" Telescope Update

Lots of positive changes are underway with the observatory thanks to Demo Galanos and Bob Goff. Future changes have been discussed and approved by the newly formed Observatory Committee. Changes you'll see include the cleaning and painting of the telescope and observatory, the addition of a new reading light, repair of the step ladder, and new "turning" labels on the telescope. Two of the more critical improvements done are the fixing of a dome rotation problem, and the collimation of the primary mirror (thanks to Bob Goff). With optical collimation completed, the telescope

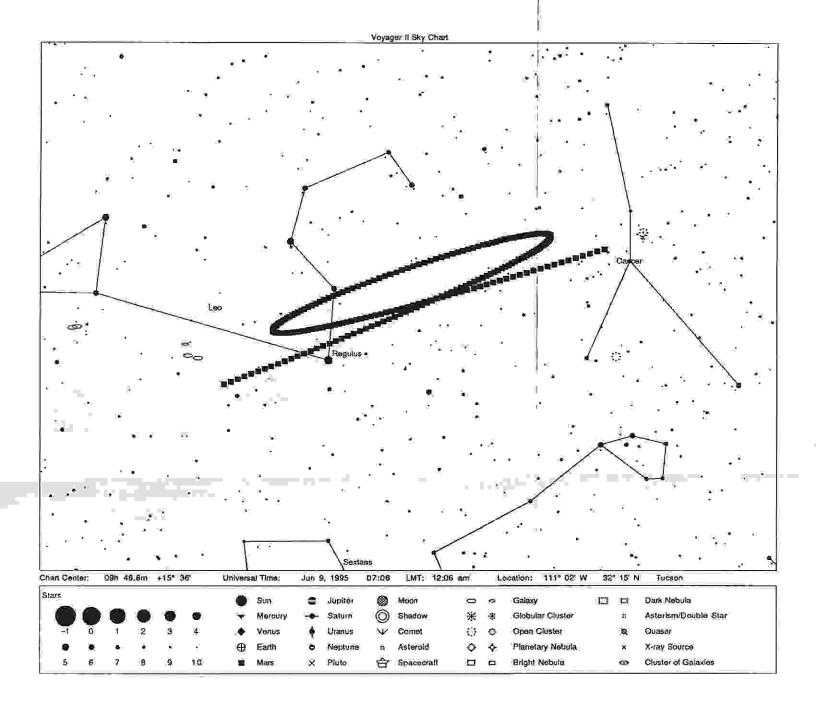
is seeing excellent detail on Mars and Saturn.

Work continues on to minimize drift and periodic error in the 16" telescope drive system. The ultimate goal will be to give us ability to do Cassegrain focus deep sky and planetary astrophotography/imaging.

Finally, a new floor covering has replaced the worn carpet. The new floor was picked for it's toughness, ease of cleaning, and non-skid characteristics at cold temperatures. It also improves the appearance of the observatory substantially. There's always a need for telescope volunteers to run the telescope, if you'd like to do so, please drop me a line!

Michael Terenzoni Outreach Coordinator Flandrau Science Center Phone: 621-4515;

Voice mail at 621-2001: mailbox #111-1123 E-Mail: terezon@gas.uug.arizona.edu



Path of Mars through Leo from 22 October, 1994 through 9 June, 1995. Mars comes to opposition on the night of February 11-12. Since it will be at aphelion on March 14, it will be a small disk of only 13.8" when it is closest to Earth (63 million miles).

#### DARK SKIES for Tucson (in MST)

1995	FEBRUA.	RY no t	wilight	Su/Mo	12/13	5:37am -	5:46am
		no mo	onlight	Mo/Tu	13/14	·= =	· ÷
			~	Tu/We	14/15		=
We/Th	1/2	8:10pm -	5:54am	We/Th	15/16		_
Th/Fr	1/2 2/3	9:09pm -	5:53am	Th/Fr	16/17	7:33pm -	7:44pm
Fr/Sa	3/4	10:07pm -	5:53am	Fr/Sa	17/18	7:34pm -	8:46pm
Sa/Su	4/5	11:03pm -	5:52am	Sa/Su	18/19	7:35pm -	
Su/Mo	5/ 6 6/ 7	11:58pm -	5:51am	Su/Mo	19/20	7:36pm -	10:53pm
Mo/Tu	5/ 6 6/ 7	12:51am -	5:51am	Mo/Tu	20/21	7:36pm -	
Tu/We	7/8	1:44am, -	5:50am	Tu/We	21/22	7:37pm -	
We/Th	8/ 9	2:35am -	5:49am	We/Th	22/23	7:38pm -	2:02am
$\mathtt{Th}/\mathtt{Fr}$	9/10	3:24am -	5:49am	Th/Fr	23/24	7:39pm -	3:00am
Fr/Sa	10/11	4:11am -	5:48am	Fr/Sa	24/25	7:39pm -	
Sa/Su	11/12	4:55am -	5:47am	Sa/Su	25/26	7:40pm -	4:42am
				S 13 i	88188	e	E. 'A 2
				Su/Mo	26/27	7:41pm -	5:26am
		N .		Mo/Tu	27/28	7:42pm -	5:32am
		. 3		Tu/We	28/ 1	7:42pm -	5:31am

Erich Karkoschka

The Observer's Companion

ARC Science Simulations

PLANETARY EPHEMERIS SEARCH REPORT

Home Site: 32.1 North 110.6 West
Temp Site: 32.1 North 110.6 West
Object of Interest: Mars
Time Interval: 1 Day

Home Time = Universal Time + 0.00 hours
Period = 02/01/1995 to 02/28/1995

Trans Alt Decl RtAsc Lat Long Diam %SL Set Date Rise Azi Azi 1.8 138.2 13.6" 99.4 02/01/ 1995 01:57 70 75 16.7 10h03 15:26 290 08:41 02/02/ 1995 01:51 75 1.8 138.6 13.7" 99.5 08:36 16.8 10h02 15:21 290 70' 02/03/ 1995 01:45 1.8 139.1 13.7" 99.5 70 08:30 75 17.0 10h01 15:16 291 02/04/ 1995 01:40 69 08:25 75 17.1 9h59 1.8 139.5 13.7" 99.6 15:11 291 02/05/ 1995 01:34 1.8 139.9 13.8" 69 75 17.2 9h58 99.7 15:06 291 08:19 69 1.8 140,4 13.8" 02/06/ 1995 01:28 08:14 75 17.4 9h56 99.8 15:01 291 02/07/ 1995 01:22 1.8 140.8 13.8" 69 08:09 76 17.5 9h55 99.8 14:55 291 1.0 141.2 13.8" 99.9 17.7 14:50 291 02/08/ 1995 01:16 08:03 9h53 69 76 02/09/ 1995 01:10 1.8 141.7 13.8" 99.9 14:45 292 07:58 17.8 9h52 69 76 02/10/ 1995 01:05 68 07:52 76 17.9 9h50 1.8 142.1 13.8" 99.9 14:40 292 02/11/ 1995 00:59 02/12/ 1995 00:53 68 07:47 76 18.1 9h48 1.8 142.6 13.9" 99.9 14:35 292 9h47 1.8 143.0 13.9" 99.9 14:30 292 68 07:41 76 18.2 02/13/ 1995 00:47 02/14/ 1995 00:41 02/15/ 1995 00:35 02/16/ 1995 00:29 02/17/ 1995 00:24 1.8 143.4 13.8 14:25 292 07:36 76 18.3 9h45 99.9 68 1.8 143.9 13.8" 68 07:30 77 18.5 9h44 99.9 14:20 292 1.8 144,3 13.8" 99.9 14:15 292 68 07:25 77 18.6 9h42 1.8 144.7 13.8" 14:09 293 99.9 77 67 07:19 18.7 9h41 77 1.8 145.2 13.8" 99.8 14:04 293 07:14 18.8 9h39 67 1.8 145.6 13.8" 02/18/ 1995 00:18 07:08 77 18.9 9h37 99.7 13:59 293 67 02/19/ 1995 00:12 67 07:03 77 19.0 9h36 1.8 146.1 13.7" 99.7 13:54 293 19.1 02/20/ 1995 00:06 9h34 1.8 146.5 13.7" 99.6. 06:57 77 13:49 293 67 02/21/ 1995 00:00 1.8 146.9 13.6" 99.5 13:44 293 06:52 77 19.2 9h33 67 02/22/ 1995 23:49 1.8 147.4 13.6" 67 06:46 77 19.3 9h31 99.4 13:39 293 1.8 147.8 13.5" 02/23/ 1995 23:43 77 19.4 99.3 13:34 294 66 06:41 9h30 02/24/ 1995 23:38 1.8 148.2 13.5" 06:36 78 19.5 9h29 99.2 13:28 294 66 1.8 148.7 13.4" 02/25/ 1995 23:32 06:30 7.8 19.6 9h27 99.1 13:23 294 66 1.8 149.1 13.4" 02/26/ 1995 23:27 66 06:25 78 19.7 9h26 98.9 13:18 294 1.8 149.5 13.3" 9h24 98.8 13:13 294 02/27/ 1995 23:21 66 06:20 78 19.8 1.8 150.0 13.2" 06:15 98.7 13:08 294 02/28/ 1995 23:16 66 78 19.8 9h23 78 1.8 150.4 13.2" 98.5 19.9 9h22 13:03 294 03/01/ 1995 23:11 66 06:09

#### TAAA Executive Committee Meeting - January 12, 1995

Members present: Dean Ketelsen, Terri Lappin, Gary Rosenbaum, Duane Niehaus, Bob Goff, Mike Terenzoni. Guests: Larry Wilson (member), John Zajac (member), Peter Schmerl (visitor, attorney)

- Acquisition of State Land: Peter Schmerl reported findings regarding acquisition of state land for proposed observing site. It is most cost effective to use the current state bidding process which Peter outlined. Discussion about possible problems regarding grazing, water, mining rights, access to property. Peter will verify that water rights go with state land purchase (there is concern about the right to pump groundwater...water/surface/mineral rights?). Peter said he would represent the TAAA in drawing up the papers for bidding on a piece of state land. Peter will provide a written report of his findings.
- 2. Researching State Land: In regards to #1, a loosely organized group will investigate state land, mostly along route 286 between Three Points and Sasabe.
- 3. Constitution: Terri passed out proposed changes to the TAAA constitution. Decided that executive members would look changes over and discuss at February executive meeting. For changes in executive positions to take place at the May election meeting, the proposed changes need to be announced in April newsletter (deadline in mid-March) and voted on by general membership at May election meeting. Terri to write article for February newsletter about proposed changes to constitution.
- Treasurer's Report: Duane Niehaus reported the association has \$29,552.04 distributed amoung four accounts
  and cash on hand. Gary Rosenbaum will work with Brad Becker this month, learn how to do automatic donation
  plan transfers.
- 5. Land and Telescope Fund: Again it was requested that a figure for the Land & Telescope Fund be determined. Terri and Duane will meet the following week to determine the balance of the fund. Three different Treasurer's in the last 4 years has resulted in some confusion regarding the total amount of money ear-marked for the Land & Telescope Fund.
- 6. Nominating Committe: A nominating committee was appointed (Gary Rosenbaum, Larry Wilson, Bob Goff) to determine slate of officers for the May election meeting. Elected positions are: President, Vice President, Executive Secretary, Recording Secretary, Treasurer, Members at Large (3 required by the constitution). Positions on the Board of Directors may change at May election meeting if changes to constitution are voted in by general membership.
- 7. Upcoming Events: Star party at Smithsonian planned for February 4th put off a month or so. Star party at Carson Middle School scheduled for February 2nd (rescheduled from December). Star party at Flandrau on March 4th was discussed. February meeting speaker not confirmed; Terri will contact Jim Benson for confirmation.
- 8. Astronomical League: No Astronomical League news to report.
- 9. TAAA Phone Line: The TAAA phone number (traditionally the President's number) was discussed. Someone will check into cost of getting a "virtual phone". Dean pointed out that it is best to have a real person answer the phone instead of a machine.

#### Desert Skies Classified

For Sale: CD-ROM disks of astronomical images and CD-ROM player. ARN (Astronomical Research Network), IRAS, Deep Space, Neptune and moons for \$40 each or best offer. External CD-ROM drive, like new in box \$150 or best offer. Perry Berlind, 795-4575. (02-95)

For Sale: 7X32 riflescope for telescope finder - long eye relief \$10. Gilbert Freidman 571-1662.(03-95)

For Sale: Issues of Astronomy and Sky & Telescope magazines. Will only be sold as groups. Prices are suggested, and negotiable. Astronomy 8/85-7/86, 8/86-7/87, 8/87-7/88, in the nice Astronomy binders, \$5 per set, fragments from 9/88-1/89, free. Sky & Telescope 2/88-1/89, 2/89-1/90, 2/90-1/91, in standard magazine holders, \$1 per set, 1/87-1/88 fragments free. Enrique, 792-9975, or e-mail echavez@as.arizona.edu. (03-95)

For Sale: Coulter 4.25" F/4 optic set with Novak mirror supports \$45, Deep Sky Magazine, 24 issues \$15. Call evenings 797-1693, ask for Ted. (04-95)

For Sale: SBIG ST-4 imager/autoguider \$600. Meade 97E spotting scope \$225 Glen Nishimoto, 321-4737. (04-95)

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 Nancy or Nina at 579-1382 or email to 74750.247@compuserve.com.

## **TAAA Meeting Location**

