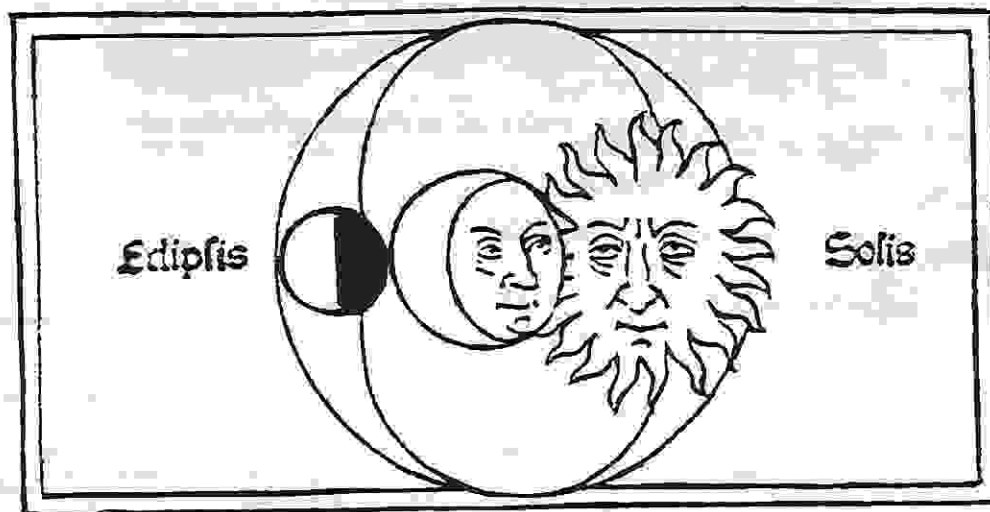
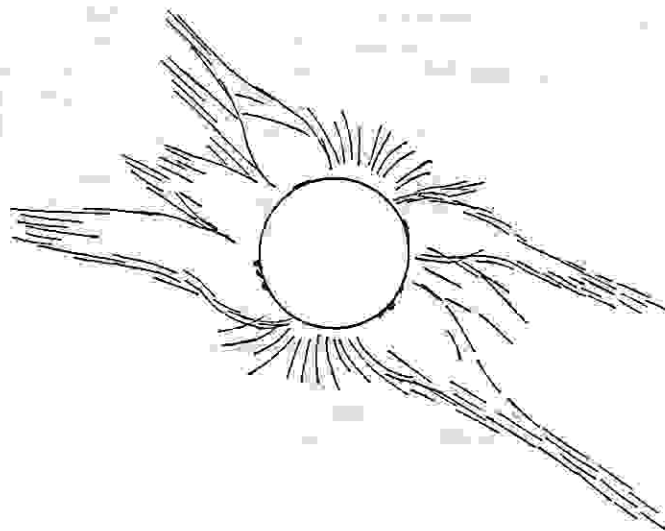
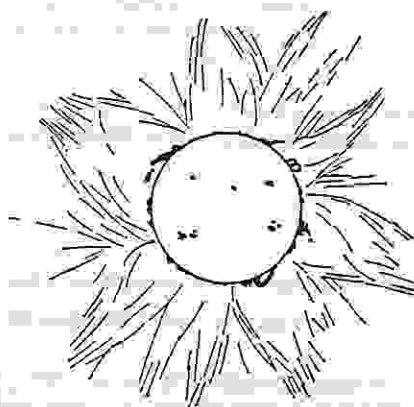


# Desert Skies

JULY 1991



Solar eclipse, from Johannes de Sacrobusco's *Opus Sphaericum*,  
printed by Erhard Ratdolt, Venice, 1482





**GENERAL MEETING - Friday, July 5, 7:30 P.M.** at Steward Obs. lecture room.  
Robert McMillan, from Lunar & Planetary Laboratory (U of A),  
will present a talk on "Stellar Radial Velocities".

**EXECUTIVE MEETING -Thursday, July 11, 7:30 P.M.** at Flandrau Planetarium.

**STAR PARTIES - Saturday, July 6 - Empire Ranch**

**Saturday, July 13 - Empire Ranch**

**Saturday, July 20 - Stars in the Park, 7 P.M., Saguaro Monument West.**

**Saturday, July 27 - Saturn/Uranus/Neptune Opposition Potluck , 3 P.M.**  
at Laura & Andy Meyer's house (see map).

**You, too, can write articles for DESERT SKIES!**

Send them to the editor by the 20th of the month,  
4632 E. 14th St., Tucson, AZ 85711 or LPL via UA campus mail

#### TAAA EXECUTIVE

President	Dean Ketelson	293-2855
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Desert Skies ed.	Dolores Hill	325-9820
Asst. ed.	Rik Hill	325-9820

#### Desert Skies Publishing Guidelines

- \*All articles, announcements, news etc. must be submitted by the 20th of the month. Materials received after that date will appear in the NEXT issue.
- \*All submissions are retained by the editor unless prior arrangements are made.
- \*Articles, artwork, and photos should be camera ready. Photos should be screened.
- \*We will not publish slanderous or libelous material!

Send articles, announcements etc. to Desert Skies c/o Dolores Hill 4632 E. 14th St., Tucson, AZ 85711 (phone: 325-9820) OR Lunar & Planetary Lab, U of A (621-6951).

#### MEMBERSHIP IN THE TAAA

Individual Membership	\$20.00
Family Membership	\$25.00
Senior Citizen (over 60)	\$18.00

Sky & Telescope subscription (optional) \$18.00

Rates for membership in the TAAA are given above. Members can subscribe to Sky & Telescope at the time of membership renewal, saving over 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, P.O.Box 41254, Tucson, AZ 85717. It is best to pay your dues 2-3 months before your membership actually expires.

#### 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 \$18 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.



## SATURN/ NEPTUNE/ URANUS OPPOSITION POTLUCK JULY 27!

A potluck will be held in honor of the Saturn/Neptune/Uranus opposition at Laura and Andy Meyer's house starting at 3 P.M., Saturday, July 27. They will supply chicken, hamburgers, and soda if you'll bring a side dish and telescope (of course!).



Sextans



### ANOTHER COMET ?!

Congratulations yet, again go to David Levy on his discovery of COMET LEVY (1991q)!



\*\*\*\*\*

### ITEMS WANTED OR FOR SALE.....

If YOU have place an ad and sell the item(s) or no longer wish to run it, please call Dolores or Rik Hill at 325-9820 (home) or 621-6951(work). Otherwise the ad will continue to appear. Thanks. -ed.

**FOR SALE:** ECLIPSE TOUR to Baja for 2, July 7-14 to La Paz. Amateur Symposium and hotel \$431. Two airline tickets for departure from Tucson, July 7 are also available. (For sale due to illness). Call Steven Smith in Sierra Vista at 456-9440 or write to Box 5056, Huachuca City, AZ 85616.

**WANTED:** Broken telescopes! Call Bob Goff at 790-1452.

**FOR SALE:** Pyrex mirror blanks: 5 5/8" O.D., 1" thick, R=44"...\$13. Call Bob Goff at 790-1452.

**FOR SALE:** ASTRONOMY magazine 1974-1990; missing 7 early issues; 14 yrs. complete, in good condition...\$150. 8 inch Edmund mirror kit...\$40.00. CAVE drive, 1 1/2 inch shaft with housing, only 40 hrs. running time...\$80.00. Call Mike Sweetman evenings at 297-2781.

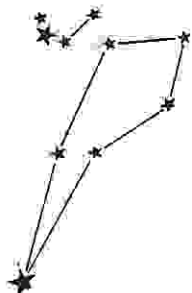
**FOR SALE:** 2.4" Unitron refractor with equatorial mount, unihex, 2 oculars & storage box. Call Jeff Bridges at 888-0591.

**FOR SALE:** Criterion Solar Prominence Viewer with occulting disc sets for instruments of 1250mm and 2000mm focal lengths...\$300 O.B.O. Contact Steve Edberg, 163 Starlight Crest Dr., La Canada, CA 91011.

**FOR SALE:** 2" Rack & pinion Novak focuser with 1 1/4" adapter- mint condition (never used).....\$90.00. Call Ray Wallace at 294-1197.

**FOR SALE:** Yashica 35mm SLR camera/50MM lens...\$150. Call Patrick Craig at 792-4980 (new phone#).

**TELESCOPES AND MIRRORS TESTED** by Bob Goff.....Call 790-1452.



## OBSERVER'S REPORT

Star Parties

Regular

July 6 Empire Ranch  
July 13 Empire Ranch

Public

July 20 Stars in the Park,  
7pm, Saguaro Monument  
West, Red Hills Hdqtrs.

With summer now upon us I'd like to first point out a little jewel in Sagittarius, a Barnard dark nebula, B86. This object, though only about 3' wide, finds itself in the middle of the large star cloud in this region. As such, its contrast with the background stars is like India ink on the whitest paper. And, as if this weren't enough, a small bright open cluster, NGC6520 is set right on the eastern edge of this intense abyss! I found it for myself quite by accident last summer while scanning approximately 3° to the NNW of Gamma Sagittarii. Please look for it, you won't be disappointed! Also look at the two globulars NGC6522/6528 30' NW of Gamma Sag.

Star parties coming up include back-to-back Saturdays at Empire Ranch (July 6 & 13). At this point I'll get up on my soap box and say "Monsoon - Shmonsoon!". I've driven through rain squalls to get to Empire only to have a beautifully clear, albeit humid, night of observing - if you don't try you may miss out; enough said.

Don't forget a public star party at Saguaro Monument West (Red Hills Hdqtrs) on July 20, setup at 7pm, party starts at 7:30pm. Bring your telescope! Also, those of you with really big scopes, I mean Mondo Dobs, please bring them. The general public have now seen John Dobson's behemoth - if they watched The Astronomers - and will be impressed with The Heavens available to them at the top of an 8ft ladder.

As I'm sure you are aware by now Msr. Levy has found another comet, I think #12. During the morning of June 13 and only a couple of minutes into his observing run he found it, 1991Q, the "2 Minute Comet". As this goes to press Comet Levy should be in Aries and to the west/north west of the Pleiades, approximately 5-8°, estimated mag 8.4.

Star parties in June were generally well attended. Our scheduled 6/8 session suffered from high cloudiness that eventually socked in about 10pm. In the meantime Bruce Walsh took us on an NGC marathon with his 14.5" Dob outfitted with the NGC-Max digital setting circles. Though expensive, this device is a remarkable tool allowing retrieval of objects in a fraction of the time required to star hop. Though not necessarily recommended for the individual just beginning to find his way around the sky, they are a time savings for anyone with a complex observing program.

An attempt at observing the next weekend was considerably more successful. A view of M7 in Scorpius was worth it. M7 has a globular cluster, NGC6453, within its borders. Though no doubt a background object, it is located in the SW quadrant of M7 and is mag. 11, 1' in diameter. We also looked at the "Ringtail Galaxy(s)" in Corvus, NGC4038, 1° N of 31 Crater. Though the tails were not visible in my 8", the central condensations of this interacting pair form a definite "Vee" shape. I would definitely like to see this through a larger aperture.

In closing many thanks to everyone involved with the annual TAA Picnic.

Especially Pat & Ed Vega our gracious hosts and Colin & Marcia Maybury our guests from "Down-under" in Australia. This years get-together was bigger and better than ever!

	1991	Moon	RA (B1950)	Dec	RA (J2000)	Dec	Delta	r	Elong	Av	Dist	Min/Rev	Lat
Jul 1 Mon		3° 0.6"	+24°56'	3° 3.5"	+25° 8'	1.321au	1.003au	49°mo	+8.1	1.27°	1441.4	5°N	
Jul 2 Tue		3° 5.6"	+25°31'	3° 8.6"	+25°42'	1.325au	1.001au	48°mo	+8.1	1.27°	1441.5	5°N	
Jul 3 Wed		3°10.5"	+26° 6'	3°13.5"	+26°17'	1.329au	0.999au	48°mo	+8.1	1.25°	1441.4	6°N	
Jul 4 Thu		3°15.5"	+26°40'	3°18.5"	+26°51'	1.334au	0.998au	48°mo	+8.1	1.26°	1441.5	7°N	
Jul 5 Fri	3Q	3°20.5"	+27°13'	3°23.5"	+27°24'	1.338au	0.997au	48°mo	+8.1	1.24°	1441.5	8°N	
Jul 6 Sat		3°25.5"	+27°46'	3°28.5"	+27°56'	1.344au	0.996au	47°mo	+8.1	1.24°	1441.5	8°N	
Jul 7 SUN		3°30.5"	+28°17'	3°33.5"	+28°27'	1.349au	0.996au	47°mo	+8.1	1.22°	1441.5	9°N	
Jul 8 Mon		3°35.5"	+28°47'	3°38.7"	+28°57'	1.354au	0.995au	47°mo	+8.1	1.23°	1441.6	10°N	
Jul 9 Tue		3°40.6"	+29°17'	3°43.7"	+29°26'	1.360au	0.995au	47°mo	+8.1	1.20°	1441.5	10°N	
Jul 10 Wed		3°45.7"	+29°45'	3°46.8"	+29°54'	1.366au	0.996au	47°mo	+8.2	1.20°	1441.6	11°N	
Jul 11 Thu	W	3°50.7"	+30°13'	3°53.8"	+30°22'	1.372au	0.997au	46°mo	+8.2	1.18°	1441.5	12°N	
Jul 12 Fri		3°55.8"	+30°39'	3°58.9"	+30°48'	1.378au	0.998au	46°mo	+8.2	1.18°	1441.6	12°N	
Jul 13 Sat		4° 0.8"	+31° 5'	4° 3.9"	+31°13'	1.385au	0.999au	46°mo	+8.2	1.16°	1441.5	13°N	
Jul 14 SUN		4° 5.9"	+31°30'	4° 9.1"	+31°38'	1.391au	1.000au	46°mo	+8.2	1.17°	1441.6	13°N	
Jul 15 Mon		4°11.0"	+31°53'	4°14.2"	+32° 1'	1.398au	1.002au	46°mo	+8.2	1.15°	1441.6	14°N	
Jul 16 Tue		4°16.0"	+32°16'	4°19.2"	+32°23'	1.405au	1.004au	46°mo	+8.3	1.13°	1441.5	15°N	
Jul 17 Wed		4°21.0"	+32°38'	4°24.2"	+32°45'	1.412au	1.007au	45°mo	+8.3	1.12°	1441.5	15°N	
Jul 18 Thu	1Q	4°26.1"	+32°58'	4°29.3"	+33° 5'	1.419au	1.010au	45°mo	+8.3	1.12°	1441.6	16°N	
Jul 19 Fri		4°31.1"	+33°18'	4°34.3"	+33°24'	1.427au	1.013au	45°mo	+8.3	1.10°	1441.5	17°N	
Jul 20 Sat		4°36.1"	+33°37'	4°39.4"	+33°43'	1.434au	1.016au	45°mo	+8.4	1.09°	1441.5	17°N	

\* \* \* CRAS NOTICE \* \* \*

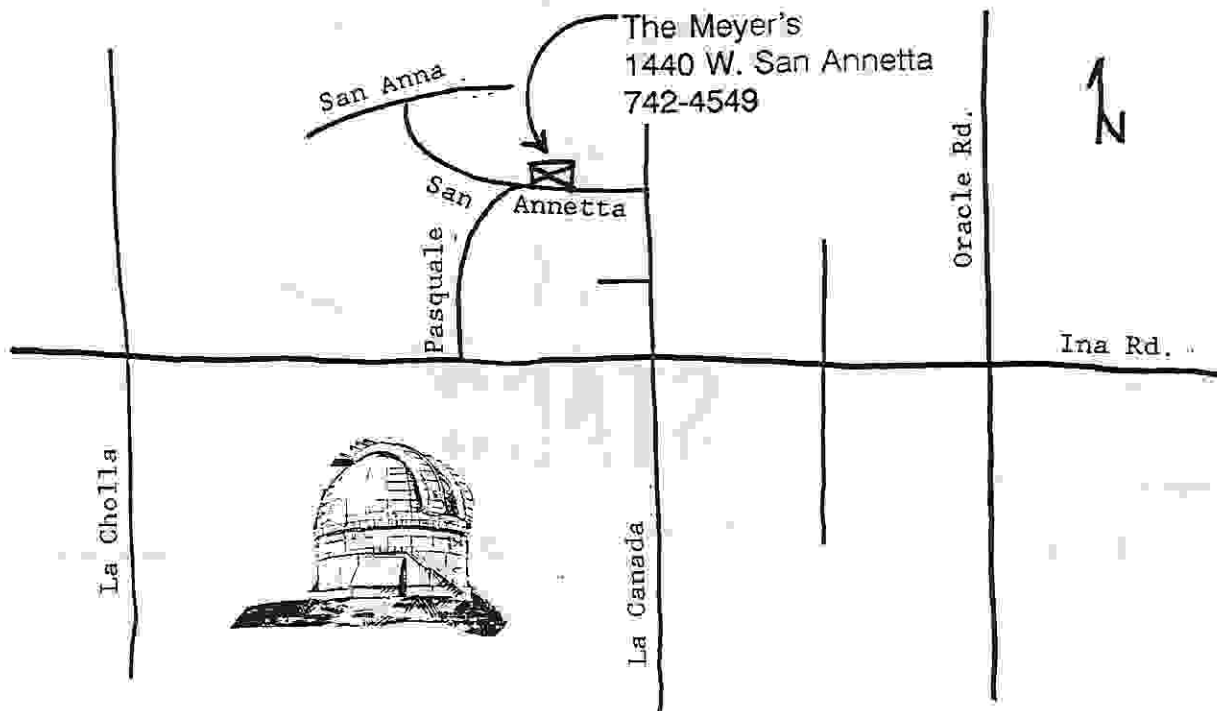
COMET LEVY (1991Q)

The COMET RAPID ANNOUNCEMENT SERVICE

publishes comet ephemeris periodicals  
and bulletins about newly-discovered comets.

CRAS, P.O. Box 110282, Cleveland, OH 44111-0282

SATURN, NEPTUNE, URANUS OPPOSITION PARTY  
3:00 P.M., SATURDAY, JULY 27



**DARK SKIES for July, 1991 (in MST):**

M/T	Jul. 1/2	9:14pm - 10:25pm
T/W	Jul. 2/3	9:14pm - 10:53pm
W/T	Jul. 3/4	9:14pm - 11:22pm
T/F	Jul. 4/5	9:13pm - 11:53pm
F/S	Jul. 5/6	9:13pm - 12:27am
S/S	Jul. 6/7	9:13pm - 1:08am
S/M	Jul. 7/8	9:13pm - 1:56am
M/T	Jul. 8/9	9:12pm - 2:53am
T/W	Jul. 9/10	9:12pm - 3:46am
W/T	Jul. 10/11	9:11pm - 3:47am
T/F	Jul. 11/12	9:11pm - 3:48am
F/S	Jul. 12/13	9:10pm - 3:49am
S/S	Jul. 13/14	9:10pm - 3:49am
S/M	Jul. 14/15	9:42pm - 3:50am
M/T	Jul. 15/16	10:14pm - 3:51am
T/W	Jul. 16/17	10:45pm - 3:52am
W/T	Jul. 17/18	11:17pm - 3:53am
T/F	Jul. 18/19	11:51pm - 3:54am
F/S	Jul. 19/20	12:27am - 3:55am

S/S	Jul. 20/21	1:08am - 3:55am
S/M	Jul. 21/22	1:53am - 3:56am
M/T	Jul. 22/23	2:42am - 3:57am
T/W	Jul. 23/24	3:35am - 3:58am
W/T	Jul. 24/25	none
T/F	Jul. 25/26	none
F/S	Jul. 26/27	none
S/S	Jul. 27/28	none
S/M	Jul. 28/29	none
M/T	Jul. 29/30	none
T/W	Jul. 30/31	8:56pm - 9:25pm
W/T	Jul. 31/1	8:55pm - 9:55pm
T/F	Aug. 1/2	8:54pm - 10:28pm
F/S	Aug. 2/3	8:52pm - 11:05pm
S/S	Aug. 3/4	8:51pm - 11:48pm

Times listed are for Tucson, Arizona when  
(1) Moon is below the horizon  
(2) Sun is >18° below the horizon  
(astronomical twilight)

Andrew J. Meyer

**COMET LEVY 1991q**

The following positions are reported for a comet discovered this morning  
by (David.) Levy:

1991 UT	R.A. (1950.0) Dec1.	m <sub>1</sub>	
June 14.448	1 <sup>h</sup> 42 <sup>m</sup> 2	+13° 32'	8 Diffuse, with central condensation; nothing reported about a tail.
14.465	1 42.4	+13 34	8

**TAAA & SAGUARO  
NATIONAL MONUMENT**

Present

**STARS  
in the  
PARK**

**Tucson Mountain Park  
Red Hills Visitors Center**

**July 20.....August 17.....Sept. 14**

**7:00 P.M.**

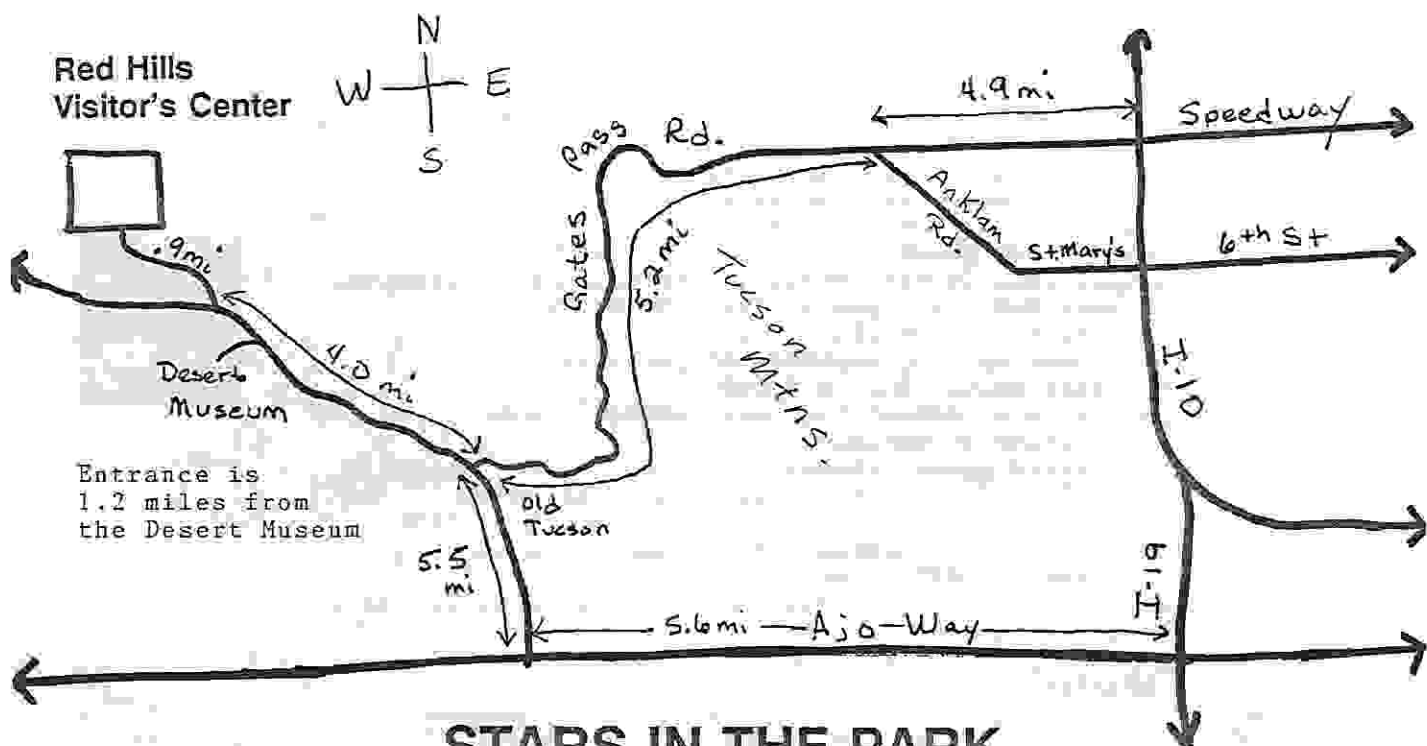
**Come out early and enjoy the sunset from the Monument.  
Bring a picnic dinner if you like. We should have  
telescopes set up by 7:30, when the public arrives.**

**See a map elsewhere in the newsletter. Tell the park ranger  
you have a telescope to set up and follow his directions.**

**In the event of bad weather the night's program will be cancelled.**







## STARS IN THE PARK

7 P.M. July 20

There are a number of ways to the Red Hills Visitor's Center in the Saguaro National Monument-Western Region.

From the University area, take Speedway or 6th St. (which turns into St. Mary's and then Anklam) to Gates Pass Road. From the point where the roads Speedway and Anklam (and also Camino de Oeste) join Gates Pass, take Gates Pass over the Tucson Mountains to Kinney Road (5.2 miles). Turn north (right) onto Kinney Road and continue past the Desert Museum to the Saguaro National Monument entrance (4.0 miles).

From I-19 and Ajo Way, go west on Ajo to Kinney Road (5.6 miles). Turn north (right) onto Kinney Road. Take Kinney Road past Old Tucson and the Desert Museum to the Saguaro National Monument entrance (9.5 miles).

Once at the Saguaro National Monument entrance, turn into the monument (a right turn). Go about 1 mile (.9 miles on my odometer!) to the Visitor's Center.

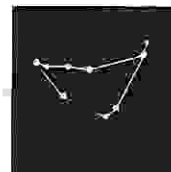


Arabian astrologers scanning the heavens, from Macrobius!  
In Somnium Scipionis, Venice, 1513

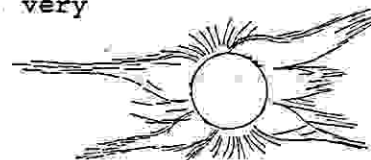


# CELESTIAL CALENDAR for July 1991 (all times are in MST):

- M July 1 Comet Lexell passes within 1.4 million miles of Earth, coma was 2.5° in diameter, 1770
  - T July 2 12:00pm, the year is half over.
  - W July 3 Geo. van Biesbroeck discovers Comet 1936I, 1935
  - T July 4 12am, Uranus at opposition  
7:50pm, **LAST QUARTER MOON**
  - F July 5 7:30pm, TAAA General Meeting, Steward Obs. Auditorium, Robert McMillan, Radial Velocity Project
  - S July 6 6am, Earth at aphelion, 1.01671 a.u.  
3pm, Comet Harrington-Abell at perihelion  
**TAAA Star Party, Empire Ranch**
  - S July 7 4pm, Venus at descending node through the ecliptic  
7pm, Neptune at opposition
  - M July 8 **Capricornid meteor shower**, multiple peaks: tonight, 7/16, 7/26 & 8/2, in sky all night, ZHR 6-9
  - T July 9 Voyager 2 makes closest approach to Jupiter, 1979
  - W July 10 Alvan G. Clark, American astronomer, born 1832
  - T July 11 12am, Venus 0.99° S of Regulus  
3am, Moon at perigee, distance 56.1 earth radii, very high tides
- SOLAR ECLIPSE in Tucson:**
- 10:23am, 1st Contact
  - 11:43am, Maximum, 71.9% covered, Moon reaches across .765 of Sun's diameter from Tucson
  - 76° alt., 132° az.
  - 12:03pm, Moon at descending node
  - 12:06pm, **NEW MOON**
  - 1:04pm, 4th Contact
- F July 12 M27, the "Dumbbell" nebula discovered by C. Messier, 1764
  - S July 13 7am, Moon passes 3° S of Mercury  
**TAAA Star Party, Empire Ranch**
  - S July 14 6pm, Moon close to Regulus, 0.65°
  - M July 15 1am, Mercury passes 0.08° S of Jupiter
  - T July 16 4pm, Asteroid Juno at opposition
  - W July 17 1st photograph of star, Vega, 1850(?)
  - T July 18 8:10am, **FIRST QUARTER MOON**  
7pm, Comet Kowal-Mrkos at perihelion
  - F July 19 5am, Mercury at descending node through the ecliptic  
11am, Venus brightest, mag. -4.5
  - S July 20 7pm, "Stars in the Park" star party, Saguaro Monument West, Red Hills Headquarters, bring your telescope and see map elsewhere
  - S July 21 5pm, Comet Machholz at perihelion  
11pm, Venus 4° S of Mars
  - M July 22 6am, Summer solstice on Mars
  - T July 23 E.E. Barnard, last to observe Comet Halley after 1910 apparition, 1911
  - W July 24 4am, Moon at apogee, distance 63.6 earth radii  
2pm, Moon passes 0.4° S of Uranus  
7pm, Mercury at greatest elongation east, 27.0° from Sol  
10pm, Moon passes 1.2° S of Neptune
  - T July 25 6:34am, Moon at ascending node, longitude 289.0°
  - F July 26 11:24am, **FULL MOON**  
1pm, Moon passes 1.9° N of Saturn  
5pm, Mercury 2.0° S of Regulus  
6pm, Saturn at opposition
  - S July 27 3pm, **Saturn Opposition Party**, Andy & Laura Meyer's, see map elsewhere
  - S July 28 **Delta Aquarid meteor shower**, a good un', ZHR 10-35
  - M July 29 2am, Mercury and Mars 6.9° from each other  
1pm, Mercury at aphelion, .4667 a.u. from Sol
  - T July 30 Apollo 15 lands with 1st lunar roving vehicle, 1971
  - W July 31 The word of the month is "syzygy"



The constellation Capricorn, from a Swiss calendar, 1900



Cepheus

Personification of Cepheus, from Hyginus' Astronomicon, Venice, 1482





\* \* \* CRAS NOTICE \* \* \*

COMET LEVY (1991q) [Preliminary!] 2-day intervals Stars to  $M_v 8\frac{1}{2}$  CRAS

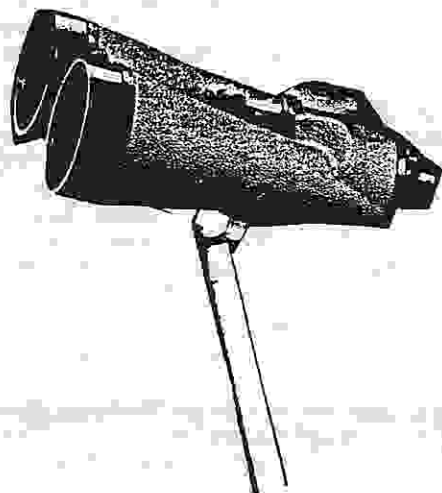
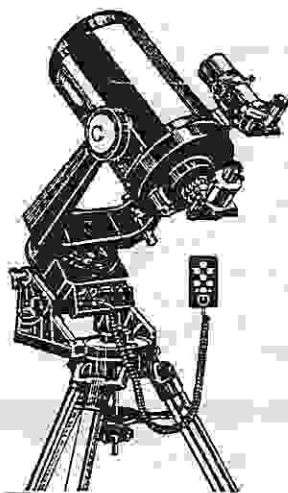


Geocentric Ephemeris for 0h U.T. computed by Stephen M. Smith, CRAS, on 6-18-1991.  
 This comet was discovered visually by David Levy on June 14.5 with a 16-inch reflector.  
 PRELIMINARY Orbital Element Set by Syuichi Nakano, from IAU Circular No. 5293 (6/18).  
 $T = 1991 \text{ July } 8.16804 \text{ ET}$   $\text{Peri} = 41.31077^\circ$   
 $q = 0.9959338 \text{ AU}$   $\text{Node} = 329.82386^\circ - 1950.0$   
 $e = 1.0$   $\text{Incl} = 19.36099^\circ$   
 $M_v = 7.5 + 5 \cdot \log(\Delta) + 10.0 \cdot \log(r)$   
 Observation Arc: 6 observations from June 14 to 18.  
 Angular distance traveled in 40 days is over  $47^\circ$ .  
 Actual brightness is subject to change WITHOUT notice!!

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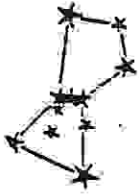


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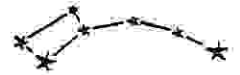
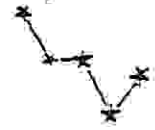
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