

In addition to six first-magnitude stars in the October evening sky, the brilliant planets Jupiter and Mars, about an 11th as bright as usual, will be visible late in the evening at the end of the month.

On Oct. 1, Jupiter rises after 11 p.m., local DST, and two hours earlier on the 31st in the constellation Gemini. It's so bright that later in the night you'll be able to locate it easily in the eastern sky.

Mars rises after midnight on the first and about 10:30, LST, on the 31st. During the month its eastward movement takes it from Gemini into Cancer.

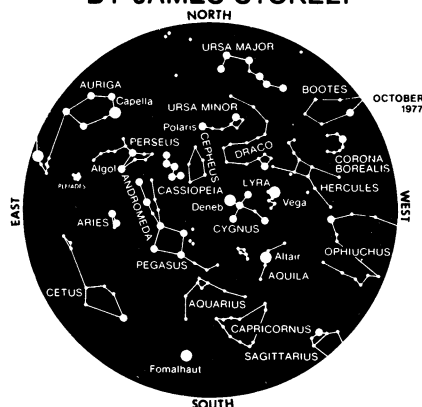
Vega, brightest star of October evenings, stands toward the west in Lyra. It's brighter than Mars but considerably fainter than Jupiter. Cygnus, also known as the Northern Cross, is above, with Deneb at the top of the cross, now in a vertical position. Altair, in Aquila, appears in the southwest.

Capella is low in the northeast in Auriga. To the right of Auriga, still lower, stands reddish Aldebaran in Taurus, considerably dimmed because of its low altitude and the atmospheric absorption of its light that results. Fomalhaut is low in the south, the only star that you can easily see of the southern constellation Piscis Austrinus.

High in the south look for Pegasus and for Andromeda to the northeast. Three stars in Pegasus and one in Andromeda mark the corners of the Great Square, a characteristic of the autumn evening sky. Farther to the northeast, towards Auriga, is Perseus with Algol. Every 2 days and 21 hours this star dims to about a third of its maximum brightness as a fainter companion passes in front and

OCTOBER STARS

BY JAMES STOKELY



To use star map hold over head with directions oriented as indicated.

Oct. 3	10:00 am EDT	Moon farthest
4	5:00 pm	Moon south of Jupiter
5	5:21 am	Moon in last quarter
	11:00 pm	Moon south of Mars
8	midnight	Moon south of Saturn
10	9:00 pm	Moon south of Venus
12	4:31 pm	New Moon; total eclipse of sun visible in Pacific Ocean, partial eclipse visible in most of North America
15	5:00 am	Moon nearest
17	12:20 am	Algol at minimum brightness
18	7:00 pm	Mercury behind sun
19	8:46 am	Moon in first quarter
	9:10 pm	Algol at minimum
22	6:00 pm	Algol at minimum
26	7:35 pm	Full Moon (Hunter's moon)
31	3:00 am EST	Moon farthest

partially eclipses the brighter star.

On Oct. 12 there will be a total eclipse of the sun in the Pacific Ocean, which North America, except northeastern Canada, will see as a partial eclipse. Starting in the western Pacific at about 40° north latitude and 170° east longitude, the moon's shadow will sweep southeastward, then east, tracing a path about a hundred miles wide. It misses any land until it reaches the coast of Colombia in the late afternoon. Along this path of totality the moon will completely hide the sun. The path ends in Venezuela as the sun is setting.

From San Francisco the maximum eclipse will occur at about 1 p.m., Pacific daylight saving time. From beginning to end the eclipse will last about 2 hours 20 minutes. In Washington, the duration will be about an hour and 20 minutes, with the maximum about 5:20 p.m., EDT.

If you watch the eclipse, be sure you have adequate protection for your eyes, otherwise severe damage or even blindness might result. One safe method is to punch a pinhole in the end of a long cardboard box like those used for flowers. Point the end with the hole toward the sun and you'll see its image on the inside at the other end.

Two more planets will shine in the early morning toward the east. Saturn rises about 3:30 a.m. on the 1st and two hours earlier on the 31st. It's followed by Venus, about 50 times brighter, which rises about 4:45 a.m., local DST, on the first, and about 5 a.m., local standard time (which will then be in effect) on the 31st. □

MARTIAN SUNSET

Genuine NASA Viking 1 high-quality FULL-COLOR ART PRINT. 22" x 34". Ideal for permanent framing & display. Beautiful. \$9.95 plus \$1.05 ins. pstg.

WOODSTOCK PRODUCTS

PO. BOX 4087, Dept. SNB, Beverly Hills, CA 90213

Circle No. 129 on Reader Service Card

FREE CATALOG

HARD-TO-FIND PRECISION TOOLS
Lists more than 3000 items: pliers, tweezers, wire strippers, vacuum systems, relay tools, optical equipment, tool kits and cases. Also includes ten pages of useful "Tool Tips" to aid in tool selection.

JENSEN TOOLS & ALLOYS
1230 SOUTH PRIEST DRIVE • TEMPE, AZ 85281



Circle No. 124 on Reader Service Card

FREE INFORMATION!



WRITE TODAY to find out how you can receive a different, interesting and valuable Mineral Specimen each month, with detailed "come-alive" fact sheet. Get started today in this fascinating and educational hobby. **FREE** Natural Ruby Crystal when you join. Write today.

Box 487-A28

MINERAL OF THE MONTH CLUB
YUCAIPA, CALIF. 92399

Circle No. 125 on Reader Service Card

FREE TROPICAL FISH CATALOG

RIGHT NOW our \$1 catalog of aquarium fish & over 500 low-cost pumps, filters, lights, etc., is **FREE** if you phone 313-527-2877 & ask for it. Mailed at once. Operators are standing by. If you MAIL us your request, please enclose \$06 to pay for paperwork, handling. But act **NOW** for free catalog because full \$1 charge may have to be made after month shown on this publication's cover.

Act NOW Aqua Discount, Box 1-E, Ortonville, Mich. 48462

Circle No. 121 on Reader Service Card

MURPHY'S LAWS!

Incomparable "scientific" wit. Colorfully lithographed on 8" x 10" heavy Parchtext for framing. A great business or personal gift! Only \$3 (4/\$10). Four Corners Press, Dept. SRS, Hanover, Mass. 02339.

Book Publishing

Manuscripts invited for prompt review and terms of publication. All subjects. Professional editing, design, production and marketing since 1920. Send inquiry or manuscript, or call (215) 642-8303. Ask for free *Authors' Guide* BE.
DORRANCE & COMPANY
35 Cricket Terrace, Ardmore, Pa. 19003

SCIENCE GAMES

SPACE COLONY
A scientifically accurate survival and colonization game of human life on Mars. Fun for all, children and adults learn Mars terrain, the requirements and hazards of successful space survival and colony building. Takes about one hour to play. \$12 plus \$1 handling or two for \$25 including postage & freight.

TEACHING AIDS COMPANY
65 West Fayette, Salt Lake City, UT 84101

Circle No. 128 on Reader Service Card

Microprobe THERMOMETERS

We make 14 thermometers, with digital or meter readout. All read in 2 secs, are extremely easy to use. Simply apply probe — read temperature.

Unbreakable probes are steel sheathed including World's Smallest Microprobe, 0.01" dia.

Models
BAT-4 BIOLOGICAL
BAT-5 CRYOGENIC
BAT-7 INDUSTRIAL
BAT-8 DIGITAL °C or °F
TH-2 CLINICAL

BAILEY INSTRUMENTS INC.
Saddle Brook, N.J. 07662 • (201) 845-7252

Circle No. 122 on Reader Service Card