

August skies: 2 eclipses, 1 we can see

THE LAST HALF of August features two eclipses — the one last night is the only one which is visible to us.

Full moon was at 11:07 p.m. on Aug. 16. The moon was opposite the sun, as seen from the earth, and was fully lighted. In fact, the moon was exactly opposite the two, and it was totally eclipsed as it passed through the earth's shadow. This is a lunar eclipse, an eclipse (covering) of the moon.

The earth always casts a shadow. It always points away from the sun and out into space. When the moon is opposite the sun, as the moon is during its full phase, it usually passes above or below our shadow and remains lighted. But should things line up precisely, the moon will pass through the shadow, and the light of



skywatch
Raymond E. Bullock

the sun, streaming past the earth is blocked.

Many eclipses are partial; the alignment is close but not exact. The moon will pass through a part of the shadow and only a portion of the moon will darken. This month, however, the alignment happens to be quite precise. This produced a total eclipse; the moon was totally covered and should have darkened considerably. The last total eclipse visible from our area was in 1982.

An eclipse of the moon is totally safe to observe. Best views of the eclipse are through binoculars or with a telescope at low power, although there was plenty to enjoy through the naked eye.

ONE WEEK after the total eclipse of the full moon, the moon is at Last Quarter phase (officially at 2:40 p.m. on Aug. 23). Look high in the south-east, about 45 minutes before sunrise on the 23rd, and locate the moon in Taurus. Below and to the left of the moon is the beautiful Pleiades (PLEI) a deep star cluster. This is the "shoulder" of Taurus. The bull's "eye," the orange-red star Aldebaran (al DEB a ran), is located below the Pleiades. On the morning of

the 24th, the moon forms a triangle with the Pleiades and Aldebaran.

The Voyager 2 spacecraft will have its closest encounter with the outermost planet of the solar system, Neptune, on Aug. 24 and 25. (Because of the high eccentricity (oval shape) of Pluto's orbit, Pluto is actually closer to the sun than Neptune and will remain so until 1999.) While this event is certainly not visible to us, it is interesting to make note of mankind's involvement with

an object that is more than 3 billion miles away.

Launched in 1977, two Voyager spacecraft were sent on a mission to examine the planets Jupiter and Saturn. After these encounters the spacecraft would both cruise the empty blackness of space for all eternity. A meeting with Pluto is not possible.

LOOK FOR the moon, high in the east before sunrise, on Aug. 26. The bright star to the right of the moon is Jupiter.

The moon is near the "heads" of the Gemini twins on the 27th. The star to the left of the moon is Pollux and above Pollux is Castor. On the 28th the moon is located below Castor and Pollux.

Mercury is at maximum elongation (greatest apparent distance)

from the sun on Aug. 29. It will be 27 degrees east (left) of the sun in the evening sky, but it is close to the horizon and very difficult to see.

The second New Moon of the month is at 1:44 a.m. on Aug. 31. But, unlike the new moon of Aug. 1, this time the moon is located nearly exactly between the earth and the sun and there will be a partial solar eclipse. The bad news is: this eclipse is not visible from our area. It occurs at midnight, at which time the sun is not in the Michigan sky. To see this eclipse, you need to be in southern Africa, Madagascar or the Indian Ocean.

An Ocean.

An excellent aid for learning constellations and keeping up to date with the sky is the monthly "Sky Calendar," a one year subscription is \$6. It is available from Abrams Planetarium, Michigan State University, East Lansing, 48824.

Raymond E. Bullock was the former coordinator of the planetarium and observatory at the Cranbrook Institute of Science. He now works for a company specializing in laser displays and effects.

County offers handicap discounts

Persons with permanent disabilities in Oakland County can enjoy the put of doors with a Handicap Discount Card offered by the Oakland County Parks and Recreation Commission.

The program is a cooperative effort between the Oakland County Easter Seals Society and Oakland County Parks and Recreation.

The handicap pass will permit free entry on weekdays for the cardholder and vehicle passengers to Addison Oaks County Park near Oxford, Groveland Oaks near Holly and Independence Oaks near Clarkston. In addition, there is a 50 percent reduction in fees for facilities including two waterparks, a tennis and court games complex and boat rental. Cardholders can also camp for half price Sunday through Thursday at Addison Oaks and Groveland Oaks County Parks. (When a cardholder receives the discount at a park, he or she must be a participant in that activity.)

The discount card will provide handicappers, many of whom are on fixed incomes, an opportunity to maintain a quality lifestyle and better utilize the parks and facilities that we operate," said Jackie McParlane, therapeutic recreation supervisor for Oakland County Parks and Recreation.

In addition to park discounts, a number of private businesses in the community will honor the card.

TO BE ELIGIBLE for the card, applicants must be at least 18 years of age and permanently disabled (mentally or physically). They must also receive some type of disability compensation from a recognized agency and have a signed physician's statement certifying their disability.

The cost for the lifetime, photo I.D. pass is \$10 to cover processing and mailing.

Individuals can apply at Easter Seals Society of Oakland County, 1105 N. Telegraph, Pontiac, or call 398-9626 or 398-3030 (TDD).

UGLY KITCHEN CABINETS?
DON'T REPLACE... **"REFACE"**
MODERN & EUROPEAN STYLES

FORMICA Solid Colors and Woodgrain	SOLID WOODS Oak, Cherry and Birch
---	--

SERVING WAYNE, OAKLAND & MACOMB
• FACTORY SHOWROOM
• FREE ESTIMATES
1842 E. 11 Mile Rd., Madison Hgts.
1 Block W. of Dequindre Daily 9-5, Sun. 10-4

Cabinet Clad 541-5252

After Inventory Clearance

Greenstone's invites you to its annual year-end clearance event, offering 20% to 50% savings on selected fine jewelry, estate items and nationally-advertised watches. Included is a special selection of Concord 14kt. gold men's and ladies' watches at 25% to 50% below factory list prices.

GREENSTONE'S
CREATORS OF FINE JEWELRY

528 N. W. 1st Ave., BIRMINGHAM 4 Bx 15 N. Rte. 101 MALE 642-2650
MUSKIE • SATURDAY 9:30 - 5:30

Marlboro

SURGEON GENERAL'S WARNING: Smoking By Pregnant Women May Result in Fetal Injury, Premature Birth, And Low Birth Weight.

HURD is the window to buy
WOOD, ALUMINUM CLAD
with Exclusive Heat Mirror®

Quality is equal or better than Pella, Andersen or Marvin, yet priced way below.

EXTRA \$100.00 OFF
on presentation of this ad on purchase of six or more windows. FREE DELIVERY in tri-county area. One coupon per customer. Order must be placed by Nov. 1, '89.

- Triple Weatherstripping.
- Heat Mirror insulates twice as well as ordinary double pane.
- Solid wood interior for painting or staining.
- We are the largest stocking supplier in the Midwest.

Also, we carry a FULL LINE OF DOORS AND SKYLIGHTS

(313) 398-4560

3980 COOLIDGE HWY. 8-5:30 M-F
OAK PARK, MI 48237 6-3 SAT.
HERALD Two Doors South of
SASH & DOOR CO. 8 Mile