

5:28 EST (4:28 CST, 3:28 MST, 2:28 PST) and ends (3) at 6:47 EST (5:47 CST, 4:47 MST, 3:47 PST). Again there is a partial eclipse as the edge of the shadow again moves across the moon. At 7:50 EST (6:50 CST, 5:50 MST, 4:50 PST) the moon has emerged from the shadow (4) and again is shining brightly as a full moon.

A total eclipse of the moon cannot occur except at the full phase. Then the moon is opposite the sun, and only then can it enter the earth's shadow. But every full moon does not bring an eclipse. Usually the moon goes above or below the shadow of earth.

Even though the moon enters the earth's shadow, it does not vanish. During the total eclipse it has a dull, coppery-red color. The earth's atmosphere acts as a prism, and bends some rays of sunlight into the shadow. As they pass through the atmosphere some of their blue light is scattered, giving us the familiar blue color of the daytime sky.

With blue removed, the light that is bent around into the shadow, and falls on the eclipsed moon, is redder than it was before. This gives the eclipsed moon its characteristic color.

Celestial Time Table for December

| DEC. | EST | |
|------|------------|---|
| 6 | 10:00 p.m. | Mercury passes Venus |
| 7 | 4:34 p.m. | Moon in last quarter |
| 12 | 12:59 a.m. | Algol (variable star in Perseus) at minimum brightness |
| 13 | 4:00 a.m. | Moon farthest, distance 252,500 miles |
| 14 | 9:48 p.m. | Algol at minimum |
| 15 | 9:07 p.m. | New moon |
| 17 | 6:38 p.m. | Algol at minimum |
| 18 | 7:00 a.m. | Mercury farthest east of sun |
| | 9:00 a.m. | Moon passes Venus |
| 20 | 9:00 a.m. | Moon passes Saturn |
| 22 | 9:02 a.m. | Sun farthest south, winter begins in Northern Hemisphere, summer in Southern Hemisphere |
| 23 | 2:55 p.m. | Moon in first quarter |
| 28 | 7:00 p.m. | Moon nearest, distance 223,800 miles |
| 30 | 6:04 a.m. | Full moon, total eclipse of moon |

Subtract one hour for CST, two hours for MST, and three hours for PST.

• Science News Letter, 84:330 Nov. 23, 1963

ASTRONOMY

Radar Shows Mercury Has Rugged Surface

► THE EXPRESSION "smooth as mercury" means rather rough, if you are referring to the planet Mercury.

The surface of that hottest of planets is much more rugged than that of Mars and twice as rugged as that of Venus, analysis of an intricate series of radar experiments indicates.

The findings also confirm that Mercury's rotation period is 88 days and corroborates the belief that Venus undergoes a slow backward rotation.

The experiments were conducted with an 85-foot parabolic antenna at the Jet Propulsion Laboratory's Goldstone tracking station in the Mojave desert of California.

Dr. Richard M. Goldstein and Roland L. Carpenter of the Jet Propulsion Laboratory in Pasadena, reported the findings in Science, 142:381, 1963.

• Science News Letter, 84:331 Nov. 23, 1963

ENTOMOLOGY

Fruit Fly Destroyed On Pacific Island

► A NEW TECHNIQUE of using an irresistible chemical, mixed with poison, has wiped out all male fruit flies on the isolated island of Rota, 37 miles north of Guam.

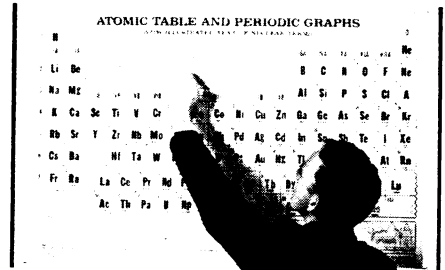
The synthesized chemical, methyl eugenol, attracts the male oriental fruit fly, which eats it avidly. The chemical was mixed with the insecticide naled, which kills the flies after they ingest only a tiny amount.

The pilot test was carried out by the U.S. Department of Agriculture, in cooperation with the U.S. Navy and the Trust Territory of the Pacific Islands.

Since the tests were conducted, no males have been trapped and no infestation has been found in preferred hosts such as mangoes and breadfruit for the past five months, announced the USDA.

• Science News Letter, 84:331 Nov. 23, 1963

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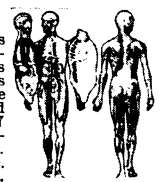


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