ASTRONOMY

1957 Astronomical Events

➤ A MAN-MADE EARTH SATELLITE, four eclipses and a passage of the planet Mercury across the sun's face highlight astronomical events for 1957.

The first earth satellite, however, could have a delayed launching and might not actually start circling the earth until early in 1958. If that happens, the 1957 heavenly show will be dominated by the two solar eclipses, the two lunar eclipses and the transit of Mercury.

A crossing of the sun's surface by Mercury, known as a transit, is a much rarer occurrence than an eclipse. Only 13 or 14 times a century can that planet be seen as a black dot against the sun's fiery yellow, as will happen on May 5, 1957.

The event will be visible generally from North America except in the extreme east, starting at 6:56 p.m. EST.

The year's first eclipse comes on April 29 and will be visible as a partial solar eclipse about sunset in the northwestern part of North America. Although the moon will be seen to come in front of the sun in the Arctic regions north of Europe, it will not completely hide it, as this is an annular eclipse.

On May 13 there will be a total eclipse of the moon, visible generally in Asia, Africa, Europe, Australia and Antarctica. Before it is over, the moon will rise along the eastern coast of North America, so people in this region will see the concluding phases.

The next eclipse is of the sun on Oct. 23, and is a total one that few people will see. The path of totality is confined to the Antarctic, although a partial eclipse will be visible in South Africa.

The last eclipse for 1957 is another total eclipse of the moon, on Nov. 7. This time the beginning will be visible generally over North America, except for the eastern part, the region which saw the concluding phases of the May total lunar eclipse.

Official beginnings of the 1957 seasons have been computed at the Naval Observatory's Nautical Almanac Office. Spring starts, according to the astronomers, at 4:17 p.m. EST on March 20; summer begins at 11:21 a.m. EST on June 21; fall starts on Sept. 23 at 2:27 a.m. EST, and winter begins on Dec. 21 at 9:49 p.m.

The earth's two closest planetary neighbors, Venus and Mars, come very close together low in the western sky just after sunset on July 11. By that time, the red planet, which made a "close" approach to the earth last September, will have faded in brilliance until it is only second magnitude.

Most reliable of all meteor showers, the Perseids in August, will reach a maximum on the night of Aug. 12. At that time, it is expected that a single observer would spot about 50 "shooting stars" an hour, compared to the seven seen on the average by an observer when there is no shower.

Twelve other meteor showers with observing rates predicted at from 12 to 40 per hour are scheduled for 1957, from the Aquarids on May 4 to the Ursids on Dec. 22.

Science News Letter, January 5, 1957

MEDICINE

Medical Gift to World

➤ ATOMIC MEDICINE was born 20 years ago.

On Christmas Eve, 1936, a 28-year-old woman, victim of chronic leukemia, was given a dose of radioactive phosphorus 32 by Dr. John Lawrence, director of the Donner Laboratory at the University of California, Berkeley.

This was the first time in history a radioisotope was given for the treatment of a human disease.

That was the infancy of atom-smashing and, in all the world, only the 37-inch cyclotron operated on the Berkeley campus could make enough isotopes for the treatment. It was for the invention and development of this cyclotron, and partially for its application to medicine, that Dr. Ernest O. Lawrence, brother of John, received the Nobel Prize in 1939.

Radiophosphorus was not a cure then, nor is it now. However, since 20 years ago thousands of patients have been treated by this method, which has become a standard treatment. With it, the lives of patients have been extended and made more comfortable.

Today, atomic piles operated by the Atomic Energy Commission dwarf the puny output of the 37-inch and later the 60-inch Berkeley cyclotrons, which in the pre-World War II period shipped isotopes on a small scale to scientists in many nations.

The AEC now makes thousands of shipments of isotopes each year to hundreds of groups of physicians all over the world.

"Isotopes have become an important addition to the medical tool kit, especially in relieving pain and providing comfort and life extension in certain types of cancer," Dr. John Lawrence said, in looking over the last 20 years.

He began treating polycythemia vera, a disease marked by an increase of red blood corpuscles, in 1939 and this became the first disease to be clearly controlled by isotopes. The treatment of Graves' disease, a disorder marked by an enlarged pulsating thyroid gland and other symptoms, was started by Dr. Joseph G. Hamilton of the University of California with radioiodine.

Radioisotopes have also proved useful in treating some thyroid cancers, some skin cancers, and in palliation of cancers of the chest, uterus, prostate and abdomen.

The 1936 treatment was preceded by studies on animals with leukemia by Dr. Lawrence, and Drs. Kenneth Scott and Lawrence Tuttle. In addition, Dr. Hamilton, now director of Crocker Laboratory, Berkeley, and Dr. Robert Stone of the University's School of Medicine in San Francisco, had studied radiosodium uptake in patients with leukemia and allied diseases.

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