ASTROPHYSICS

Lost Comet Showers Sky

The long-lost comet responsible for the Leonid meteor showers that sprinkle the sky has been rediscovered

➤ CALCULATIONS made by a speedy computer have helped scientists rediscover the long-lost comet responsible for one of the most spectacular displays of "shooting stars" seen each year.

The Leonid meteor showers sprinkle the sky with bright shafts of light every November, reaching their height on Nov. 16 when some 25 to 35 meteor streaks can be seen each hour, not counting the usual average of seven visible by a single observer any night of the year.

The comet that strews in its path the debris that results in the brilliant display is known as Tempel-Tuttle. It was found a hundred years ago and then was not seen again until data on a German computer showed astronomers where to look for it last summer.

The calculations concerning Comet Tempel-Tuttle were reported in Science, 152:1236, 1966. They were made by Joachim Schubart of the Astronomisches Rechen Institut, Heidelburg, Germany, and Yale University Observatory, New Haven, Conn., using an International Business Machines Corporation 7090 computer.

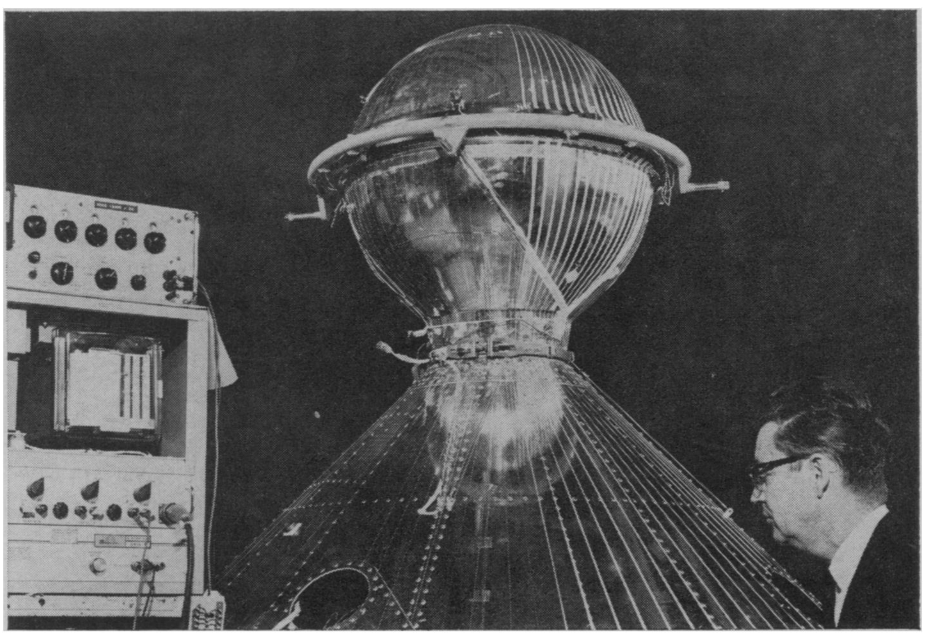
The Leonid meteor shower is so named because the shooting stars appear to radiate from the constellation of Leo, the lion. The heavenly show produced by the Leonids is expected to be spectacular this year since it comes close to the time of the return of Comet Tempel-Tuttle. The shower could well rival the one in 1833, when so many shooting stars fell that they were reported to resemble a storm of snowflakes falling from the sky.

Comet Tempel-Tuttle is now on its way back to the far reaches of the solar system, making its highly elliptical journey around the sun. When it returns again in 33 years for another visit to the vicinity of the sun and earth, its orbital path will be sufficiently well known so that this comet should never be lost again.

When the comet was discovered in 1866, astronomers realized it had the same period and shared a common orbit with the tiny particles causing the Leonid meteor shower.

The meteors appear to radiate from the constellation of Leo only because of perspective. The paths of meteors are actually parallel although they seem to converge in the distance in the same way that the parallel tracks of a railroad appear to come together at the horizon.

• *Science News, 89:459 June 11, 1966*



Goodyear

SPACE CANNISTER—An inflatable Pageos (Passive Geodetic Satellite) satellite to be launched later this year will be put into orbit with the help of this cannister assembly fabricated by Goodyear Aerospace Corporation for the National Aeronautics and Space Administration. The satellite will be packed inside the cannister whose hemispherical halves will open to release it once orbit is achieved.

ASTRONOMY

Star Once Variable Now in Stable State

➤ A STRANGE STAR that only four years ago varied its light output rhythmically every 22 days has mysteriously changed and is now generating a stable amount of visible light.

The detective work leading to the discovery of this rapid change from a pulsating star to one virtually constant in brightness is outlined in Sky and Telescope, 31:323, 1966. The cause of the dramatically sudden change is a mystery.

The star is the well-known Cepheid variable, RU Camelopardalis. It formerly ranged between visual magnitudes 8.2 and 9.1 in a period of slightly more than 22 days. It has now settled down to shine at a magnitude of 8.5, too faint to be seen with the naked eye.

RU Camelopardalis can, however, be easily spotted with good binoculars or a small telescope. Based on 1966 coordinates, it is located at right ascension 7 hours, 18.1 minutes and declination plus 69 degrees, 44 minutes.

The star's variability has been known since 1907, demonstrated by many series of visual, photographic and photoelectric observations.

Since no one knows whether RU Camelopardalis has stopped pulsating for good or will resume, amateurs are urged to make regular observations of this star. These would be of "great assistance," Dr. J. D. Fernie of the University of Toronto's David Dunlap Observatory, Ontario, Canada, stated.

If an amateur making regular visual estimates should note a definite resumption of varying brightness, photoelectric and spectroscopic observers at observatories around the world would be alerted to study this rare change.

The observations showing the star has settled down to constant light output were carefully made and cannot be explained on the basis of wrong identification or instrumental fault. The change spotted by Dr. Fernie and Serge Demers, also of David Dunlap Observatory, has been substantiated by P. T. Oosterhoff at Leiden Observatory, The Netherlands, and Cuno Hoffmeister at Sonneberg Observatory, East Germany.

The Canadian astronomers reported that the "pulsation has indeed died away and the star has taken up the 'stable' power output that would have been predicted from the earlier light curves. That it should have been able to accomplish this in only four years is most remarkable," since a 40-year-old theory would indicate a required time scale of 1,000 to 10,000 years.

Dr. Hoffmeister, studying mean light curves for consecutive six-month intervals from 1961 through 1965, found that the amplitude of RU during the first two years was approximately normal, less in 1963, much less in 1964, and lacking in 1965.

• *Science News, 89:459 June 11, 1966*