Little Eros on Way to Visit Earth

Astronomy

Astronomers Eagerly Await Close-Up of Minute Planet

MAINTAINING an average speed of 15 miles per second, a planet named Eros is on its way to visit the earth. Eagerly awaited by astronomers all over the world, this small but fascinating member of the solar system will remain in the neighborhood of the earth from October, 1930, to May, 1931.

The present visit is the most intimate that earth astronomers have enjoyed since the discovery of the eccentric little planet in 1898. Never quite visible to the naked eye, this coy little visitor will be easily reached by field glasses and small telescopes during several months of its stay in our vicinity.

Though believed to be only about 15 miles in diameter, Eros is the most valuable and useful member of a family of 1100 asteroids. Owing to the fact that it will come within 16,700,000 miles of the earth or one-fifth the sun's distance, it will be pulled out of its elliptic path by the attraction of the earth. By carefully measuring the amount of this deviation, astronomers can determine the extent of the earth's gravitational power, and compute the mass or weight of the earth more accurately than it has been ascertained by other methods. When the number of tons of material contained in earth are known exactly, the sun's distance can be determined by comparing its attraction for Eros with the earth's influence.

Studied For Years

Many astronomers, especially R. H. Tucker at Lick Observatory and A. Kopff of Berlin, have devoted years to the task of preparing accurate and dependable positions of the stars near the predicted path of Eros in order that the observations of the planet may be measured with the greatest exactness obtainable.

Early in October, Eros will appear in the constellation of Auriga, having a magnitude of ten, or a hundred times dimmer than fifth magnitude stars which are easily discernible to the unaided eye on a clear night. Passing south of the familiar great dipper of Ursa Major and through Leo Minor during December, Eros will move east and southward. By January 14 it will apparently stand still for a few days at the extreme eastern limit of the loop which its apparent orbit describes among the stars. This is due to the fact that we view it from a rapidly moving earth.

At its stationary point east, Eros will be only 14 degrees north of the celestial equator in the constellation Leo, and will be of the seventh magnitude, or 18 times brighter than in October.

Moving rapidly southward, the tiny planet will cross the equator on January 27 and will reach its closest point to the earth on February 17. Seen from a latitude of 40 degrees north, Eros will then be only 30 degrees above the southern horizon, or a third of the way from the horizon to the zenith.

70 Times As Far As Moon

Eros will then be 70 times as far away as the moon. The constellation Antlia in this part of the sky has no stars brighter than fourth magnitude.

On March 15, Eros will reach the western end of the loop and its farthest point south of the equator. During this part of its visit it will be observed by astronomers of the southern hemisphere, particularly in South Africa, for whom it will be high in the sky.

Retracing its northerly path but rapidly diminishing in brightness, the small planet will say farewell to the earth in May and vanish, not into outer darkness, but into the brightness of the Sun's radiation.

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Stone Age Tools Being Made Now

Archaeology

IN Pasadena, California, lives a man who can turn out arrow heads, knife blades, spear heads, and scrapers, chipped from stone or glass, that surpass the workmanship of the primitive stone workers of five thousand years ago.

J. A. Barbieri, of Italian descent, has been practising stone chipping since he was a boy. Now he is an expert at fashioning beautiful blades from hard brittle obsidian and chert. His arrowheads are graceful and more delicate than the average Indian arrowhead found in the field. In fact, few Indian stone workers would be able to compete, either in workmanship or speed, in a match with Mr. Barbieri. He can fashion a serviceable arrow head from rough material in less than twelve minutes. In thirty minutes he can flake a blade that is a work of art.

His tools are simple: deer antler, sharpened bits of bone or ivory and sharpened copper wire. He works his blades on his thigh, as did the Indian workman of other days. With a pebble hammerstone he roughs out his implement blanks.

Many people believe that the Indians fashioned their arrowheads by heating the flint or chert and pipping off flakes by dropping water upon the red-hot stone. Mr. Barbieri confessed that as a boy he too believed that tale. He heated a chunk of flint in the fire but he didn't get a chance to drop water on it. It exploded too fast.

The "lost art" of flint chipping, has never been lost, for at this very moment there are beautiful red glass arrowheads of fair workmanship offered for sale in western cities, turned out by some unknown artisan in either Utah or Nevada. The arrowheads are sold by curio dealers as being of "red obsidian made by a lost tribe of Aztecs." They are modern, fraudulent specimens and no more resemble red obsidian than a whale resembles a humming bird.

Mr. Barbieri does not sell his products as genuine specimens. He fashions blades as a hobby and at some future date may write a treatise on flint chipping which should be a real addition to our fund of scientific knowledge.

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A white flowering bulb from South Africa, called the chincherichee, has been introduced to this country, and is expected to gain favor as a novelty.