

Asteroid may herald a new class

Just in time to pump up interest in Hollywood's recent spate of rocky horror films, astronomers have found a near-Earth asteroid that appears to belong to a new class. Its orbit lies entirely inside that of Earth, astronomers announced in a July 1 press release.

The asteroid, dubbed 1998 DK36, is not on a collision course with Earth and "is nothing to lose sleep over," says codiscoverer David J. Tholen of the University of Hawaii in Honolulu. He and his Hawaii collaborator, Robert Whiteley, note, however, that other asteroids in the same class, including those that have the potential to strike Earth, might go unseen because astronomers aren't looking for them.

All other known asteroids spend at least part of their orbit farther from the sun than Earth does. That's because observers typically hunt asteroids when these objects are at their brightest, fully illuminated by the sun. This requires Earth to lie between the sun and the asteroid. With a body that never travels beyond the orbit of Earth, that geometry would never occur.

Tholen and Whiteley spotted the object, which has an estimated diameter of 40 meters, in images taken during two consecutive nights with the University of Hawaii's 2.24-meter telescope on Mauna Kea. Whiteley speculates that the gravity of the inner planets altered the asteroid's orbit so that it remains inside that of Earth.

Other astronomers, including David L. Rabinowitz of NASA's Jet Propulsion Laboratory in Pasadena, Calif., note that the data are too sparse to ascertain that 1998 DK36 remains entirely within Earth's orbit. Tholen and Whiteley plan further observations in late August. —R.C.

Planets are candidates, not finds

Over the past 5 weeks, astronomers have reported the discovery of several planets orbiting stars within 100 light-years of the solar system. (SN: 6/27/98, p. 405).

At a late-June symposium of the International Astronomical Union in Victoria, British Columbia, astronomers working at the European Southern Observatory (ESO) in La Serena, Chile, reported on their hunt for extrasolar planets. They have gathered preliminary evidence of three new candidate planets, noted Martin Kürster, an ESO astronomer based in Santiago, Chile.

Despite some media accounts that put these candidates on an equal footing with extrasolar planets that had been more definitively reported, this data "looks intriguing . . . but fails to pass the necessary statistical significance tests" required for them to be bona fide discoveries, Kürster told SCIENCE NEWS.

The most compelling of the three candidates, he says, is a planet orbiting the star HR785, also known as phi2 Pavonis. Kürster and his colleagues, including William D. Cochran of the University of Texas at Austin, deduce that if an unseen object is tugging on HR785, it would have at least 70 percent of the mass of Jupiter and its orbit would be highly elliptical.

The next-best candidate would have at least twice the mass of Jupiter and orbit the star HR810, also known as Iota Horologii. Variations in the star's brightness mimic the wobble that would be induced by a planet and thus confound analysis, Kürster says. Far less certain is the hint that a planet with a minimum mass of three-fourths that of Jupiter circles the star HR5568. "With additional data, the [star's wobble] may go away," says Cochran. The researchers have decided to omit that candidate in a written account of their report. —R.C.

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