"Comets, unseen planets, and the outer fringes of the solar system"

Comets have inspired awe since prehistoric times, but the modern study of comets only began with Halley's successful prediction of the return of what is now called Halley's comet. Even today there are only a few thousand comets with well-determined orbits. Nevertheless, the analysis of this limited sample yields a compelling model for the formation, evolution and present distribution of comets. This model implies that the primary source of comets is the Oort cloud, containing over 100 billion comets at 5,000 to 50,000 times the Earth-Sun distance. I will review our current understanding of the formation of the Oort cloud, and what comets can tell us about possible undiscovered planets beyond Neptune. Finally, I'll describe some of the puzzles arising from the recent discovery of an interstellar asteroid/comet, ‘Oumuamua.

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