

**Pinging space rocks – radar story of asteroids and comets**

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Short of sending a spacecraft, radar observations have proven to be the most effective technique when studying asteroids and comets. Two most powerful radars in the world are the Arecibo Observatory in Puerto Rico and the Goldstone Solar System Radar in the Mojave Desert in California. To date, these radars have observed close to 1000 asteroids (both near-Earth and main belt) and 21 comets. Radars play an important role in the physical characterization of small bodies because radar images directly display an object’s size, shape, and surface features. Furthermore, radar measurements of line-of-sight velocities and distances provide powerful orbital constraints and frequently add decades and even centuries to how far in the future we can reliably calculate orbits. This is particularly important when assessing the impact probabilities of potentially hazardous asteroids. This talk will discuss some of the most important radar contributions to the field of small solar system bodies science, space missions, and will also show some of the best radar images of asteroids and comets obtained to date.

**Wilson Hall, One West**