

NEO Radar Observations in Europe

We present some results from NEO radar observations conducted in Europe in recent years as part of the ESA project “NEO Observation Concepts for Radar Systems.” The project aimed to: define the functional requirements of a planetary radar system for NEO observations, assess the current and future capabilities of European assets for such observations, and conduct test campaigns utilizing European facilities.

This poster focuses on the test campaigns carried out in collaboration with the Jet Propulsion Laboratory (JPL) between 2021 and 2022, resulting in the observation of several asteroids, including (4660) Nereus and 2005 LW3, which are discussed here. These observations enabled us to derive polarization ratio and rotation period measurements, along with astrometric information. Notably, in the case of 2005 LW3, echoes revealed the binary nature of the target.

These observations, alongside the entire project, underscored that European radio telescopes, despite serving only as receivers in a limited number of experiments, could substantially contribute to the establishment of a European network for NEO monitoring, provided a suitable transmitter becomes available.

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