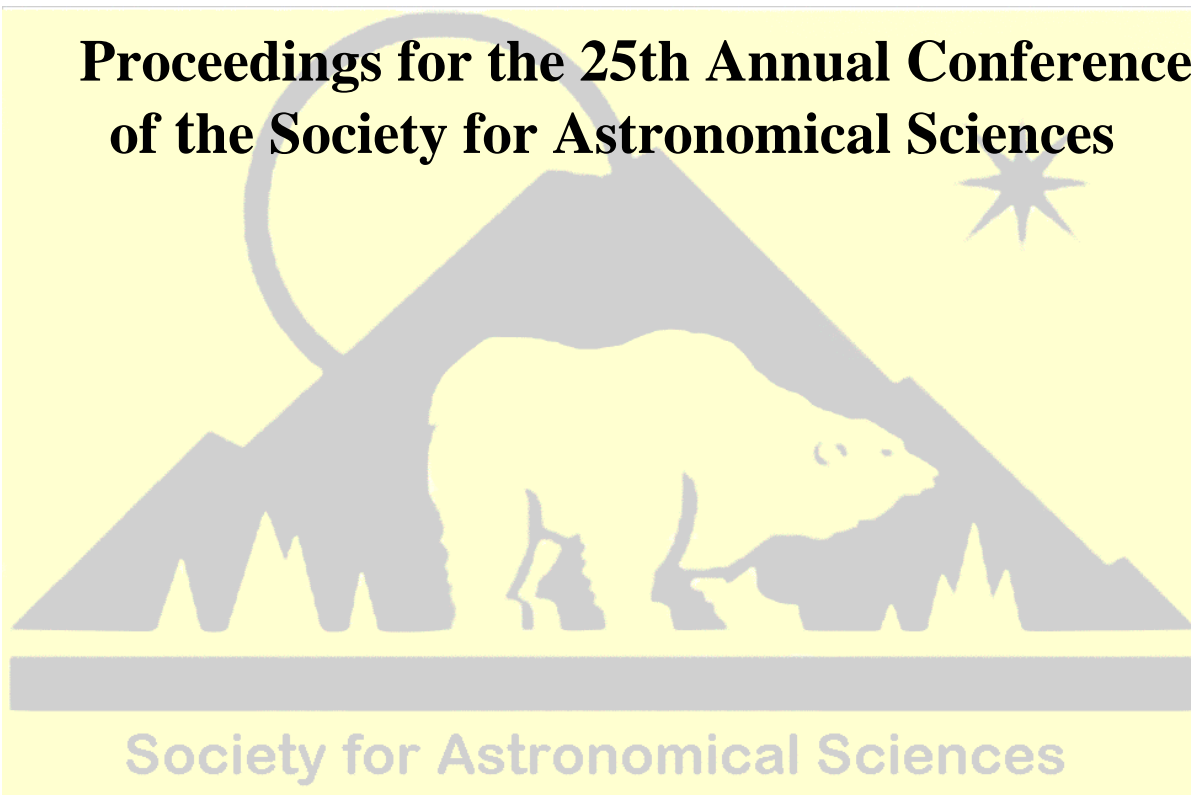

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Editors:
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Jerry Foote
David A. Kenyon
Dale Mais

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Arecibo and Goldstone Radar Imaging of Near-Earth and Main-Belt Asteroids in 2005

*Lance A. M. Benner
Mail Stop 300-233
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, CA 91109-8099
lance@reason.jpl.nasa.gov
<http://echo.jpl.nasa.gov/>*

Abstract

This talk will summarize radar imaging of near-Earth asteroids (NEAs) at Arecibo and Goldstone during 2005-2006. During 2005, 32 near-Earth and 21 main-belt asteroids (MBAs) were detected by radar, a rate of nearly one detection per week. Of these, 26 NEAs and 15 MBA were detected by radar for the first time. As of February 2006, 187 NEAs and 107 MBAs have been detected by radar, increases of factors of 3.7 and 2.7, respectively, since completion of the upgrade at Arecibo in January 1999. Highlights during 2005 include discoveries that 1994 XD and 1862 Apollo are binary systems, detections of 15 targets-of-opportunity, detailed images of 1992 UY4, a 2-km-sized object with a "lumpy" surface, and the first Mars-crossing binary asteroid detected by radar. Other highlights include the extraordinarily narrow Doppler-broadening of 2005 OE3, which may indicate extremely slow rotation, radar imaging of several main-belt asteroids, and new radar astrometry from 99942 Apophis in August 2005, which significantly reduced its orbital uncertainties and eliminated a low-probability impact in 2035. New radar observations of Apophis are scheduled in early May 2006 at Arecibo and preliminary results will be discussed at the meeting. © 2006 Society for Astronomical Sciences.
