Proposal Title: Radar imaging of four near-Earth asteroids in October-November, 2004

ABSTRACT:

We propose delay-Doppler imaging of near-Earth asteroids 3908 Nyx, 7753 (1988 XB), 1998 ST27, and 1999 LF6. We seek to improve the published radar shape model of Nyx, a basaltic object and a possible meteorite parent body. We seek to improve constraints on the orbital parameters, mass, and bulk density of binary asteroid 1998 ST27, which Arecibo observations in 2001 revealed has an eccentric, distant orbit. 1988 XB and 1999 LF6 will be observed for the first time. We seek to obtain shape models for all four objects and to determine whether or not 1988 XB and 1999 LF6 are binary systems.