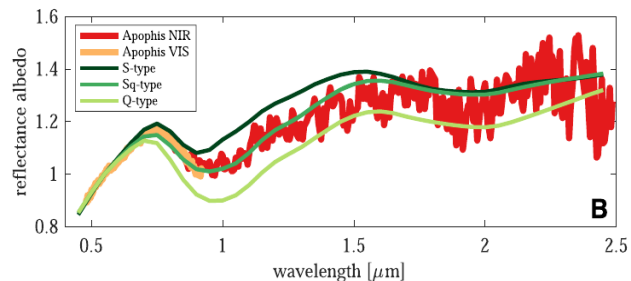
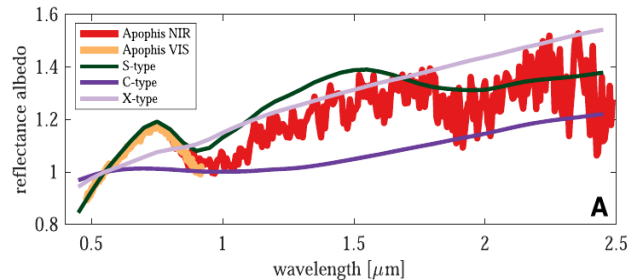


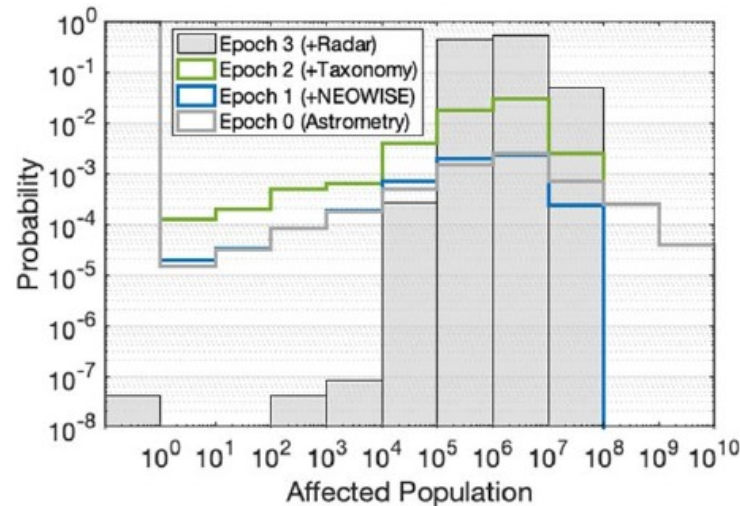


Apophis Planetary Defense Campaign

The third campaign to assess planetary defense readiness was carried out with the support of NASA's Planetary Defense Coordination Office and the International Asteroid Warning Network. The asteroid Apophis was targeted, and using a number of observations, an impact assessment was made. IRTF/SpeX provided critical compositional information.



- Target: Apophis. Campaign duration: 12/2020-03/2021
- NEOWISE estimate of diameter (~340 m) through thermal models.
- IRTF/SpeX differentiates S, X, and C taxonomic types, at S/N>30.
- Differentiation S, Sq, and Q types requires S/N>40 with SpeX+optical spectrum (GTC/OSIRIS).



- Taxonomic type provides meteoritic group (LL-chondrite; top Figure), base density, and with diameter, porosity. Important for impact assessment (green histogram in right Figure).

Reddy et al., PSJ 3, 123, 2022; <https://iopscience.iop.org/article/10.3847/PSJ/ac66eb>