

# Observations of (3200) Phaethon and (155140) 2005 UD

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Apollo type near-Earth asteroid (3200) Phaethon has both comet-like and asteroid-like characteristics and has been regarded as one of the most enigmatic asteroids in solar system. Phaethon is believed to be a parent body of Geminid meteor stream from studies of orbital similarities between meteors and Phaethon. Recently, a detection of a tail was reported around Phaethon. On the other hand, Phaethon is classified as F- or B-type object, which is consistent with thermally metamorphosed CI/CM-related carbonaceous asteroids, based on visible multi-color photometry and low resolution spectroscopy. Furthermore, Apollo type near-Earth asteroid (155140) 2005 UD is suggested to share a common origin with Phaethon from the result of orbital integrations. Here, we present the results of our observations of Phaethon and 2005 UD, and discuss the formation and evolution of the Phaethon-Geminid stream complex.