# Comet Nucleus Tour – Overview

The Comet Nucleus TOUR (CONTOUR) was a NASA Discovery mission planned to encounter two periodic comets in the inner solar system, 2P/Encke and 73P/Schwassmann-Wachmann 3. The mission launched on 3 July 2002, but was lost approximately six weeks later, on 15 August 2002, when the spacecraft apparently broke up during its attempt to leave Earth orbit.

The comet targets were selected because of their distinct differences. 2P/Encke, intended to be the first encounter in November 2003, has been in a stable orbit in the inner solar system for thousands of years. 73P/Schwassmann-Wachmann 3 (scheduled encounter in June 2006) while in a stable orbit, was observed to have split into at least three observable pieces in 1995 and presented the possibility of CONTOUR observing the internal structure of the nucleus exposed by the breakup. In addition, the mission had contingency plans for redirecting to target a newly discovered, possibly non-periodic, comet if the opportunity arose.

The mission plan called for high resolution images, compositional analysis of gas and dust, and orbit refinement for each target encountered. Close approach distance would have been about 100 kilometers. Had it been successful, CONTOUR would have improved the knowledge of key characteristics of comet nuclei and documented aspects of their diversity.

Because of the early loss of the spacecraft, no data were returned by this mission.