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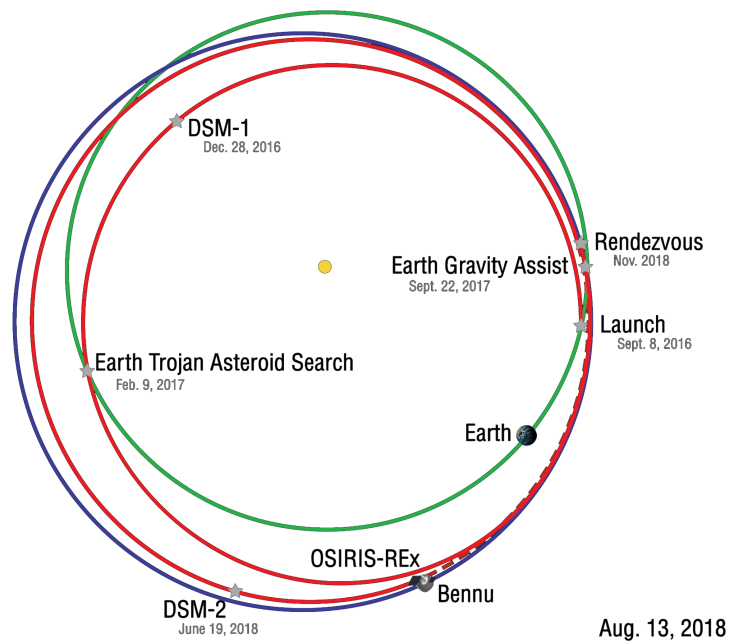
## Status of the OSIRIS-REx Sample Return Mission

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Origins, Spectral Interpretation, Resource Identification, and Security–Regolith Explorer (OSIRIS-REx) asteroid sample return mission is the third mission in the New Frontiers program. The spacecraft departed for near-Earth asteroid (101955) Bennu on an Atlas V 411 launch vehicle September 8, 2016 to return samples from near-Earth asteroid Bennu. The spacecraft is on an outbound-cruise trajectory with an Earth-gravity assist in September 2017 which will enable a rendezvous with Bennu in August 2018 (Figure 1). The science instruments on the spacecraft will survey Bennu to measure its physical, geological, and chemical properties, and the team will use these data to select a site on the surface to collect at least 60 g (and as much as 2000 g) of regolith from this primitive object. The team will also analyze the remote-sensing data to perform a detailed study of the sample site for context, assess Bennu's resource potential, refine estimates of its impact probability with Earth, and provide ground-truth data for the extensive astronomical data set collected on this asteroid. The spacecraft will leave Bennu in 2021 and return the sample to the Utah Test and Training Range (UTTR) on September 24, 2023 for global study. Unlike meteorites, the sample will come from a known, well-characterized source and will be collected and transported to Earth to keep it pristine from terrestrial contamination.



**Figure 1** – Orbit diagram of the OSIRIS-REx spacecraft from launch to asteroid arrival, as of the beginning of Approach Phase on August 13, 2018. Included are the spacecraft's positions during Deep Space Maneuver 1 (DSM-1), the Earth Trojan Asteroid Search, the Earth Gravity Assist, Deep Space Maneuver 2 (DSM-2) and the November 2018 rendezvous with Bennu.