

# OSIRIS-REx

## Camera Detector Assemblies

NASA's Origins, Spectral Interpretation, Resource Identification, Security-Regolith Explorer (OSIRIS-REx) is a New Frontiers asteroid sample return mission led by the University of Arizona. The Space Dynamics Laboratory (SDL) provided identical detector assemblies for each camera in the OSIRIS-REx Camera Suite (OCAMS).

OSIRIS-REx is NASA's first mission to obtain material from an asteroid. The spacecraft collected and returned to Earth a sample from the asteroid Bennu to provide insight into the origins of the universe. Bennu is a pristine, carbonaceous asteroid containing the original material from the solar nebula, from which our solar system formed.

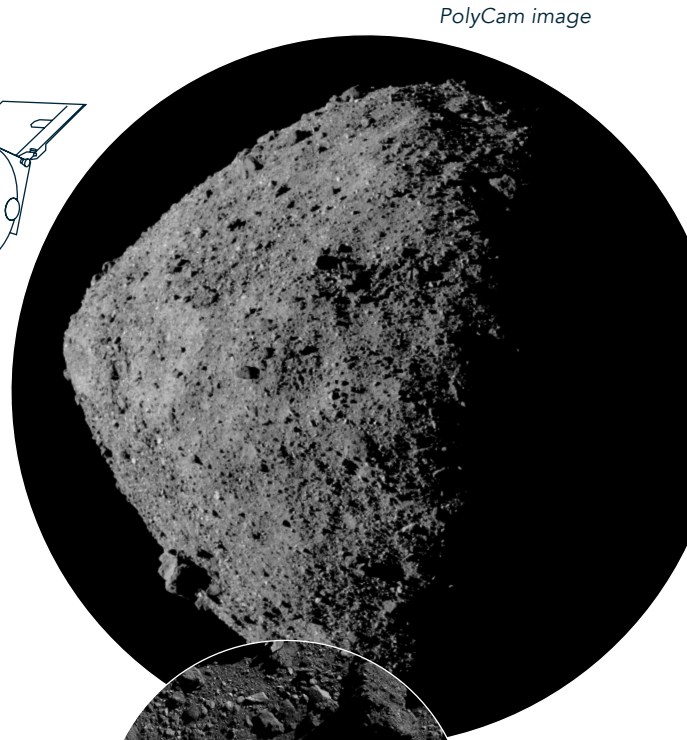
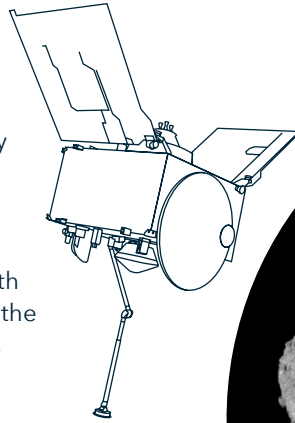
Launched on September 8, 2016, the spacecraft arrived at Bennu on December 3, 2018, and began its study of the asteroid. For nearly two years, the spacecraft collected imagery and data that the science team used to generate a shape model of Bennu, map the chemical composition of the entire surface, and produce digital terrain maps and global image mosaics.

The OSIRIS-REx team used the data to choose the sample collection site, called Nightingale. On October 20, 2020, OSIRIS-REx successfully collected and stowed a sample of the asteroid. The spacecraft returned to Earth with the sample on September 24, 2023.

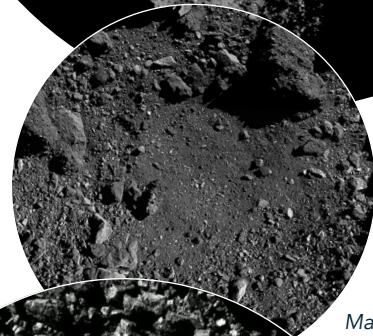
### OSIRIS-REx CAMERA SUITE (OCAMS)

OCAMS includes three high-resolution cameras, each containing an SDL-built detector assembly, that provide global mapping, sample site reconnaissance and characterization, high-resolution imaging, and sample acquisition records.

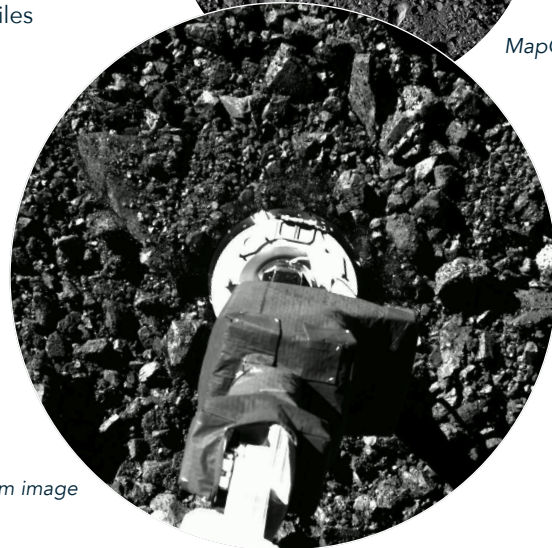
- **PolyCam:** Collected images of Bennu from approximately 1.2 million miles away, enabling the spacecraft to navigate to the asteroid safely.
- **MapCam:** Mapped Bennu in color, searching for the best sampling location and for outgassing plumes and other debris expelled from the asteroid.
- **SamCam:** Documented the sample acquisition process.



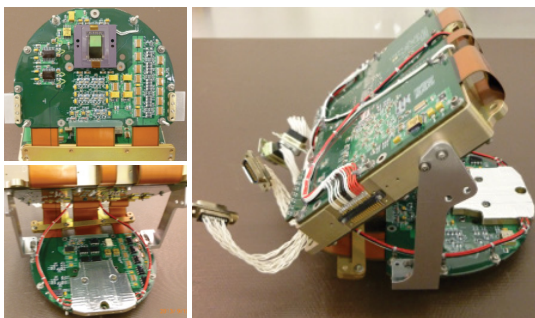
*PolyCam image*



*MapCam image*



*SamCam image*



(Credit: NASA/Goddard/University of Arizona)