

OSIRIS-REX

ORIGINS SPECTRAL INTERPRETATION RESOURCE IDENTIFICATION SECURITY REGOLITH EXPLORER

The purpose of NASA's Origins Spectral Interpretation Resource Identification Security-Regolith Explorer (OSIRIS-REx) mission is to travel to Bennu (the asteroid formerly known as "1999 RQ36") and collect a sample to be returned to earth for analysis. Bennu is a pristine, carbonaceous asteroid containing the original material from the solar nebula, from which our Solar System formed. OSIRIS-REx is one of NASA's New Frontiers missions and is being led by the University of Arizona. OSIRIS-REx launched September 8, 2016.

THE PAYLOAD FOR OSIRIS-REX INCLUDES THE FOLLOWING INSTRUMENTS:

- **OSIRIS-REx Camera Suite (OCAMS):** Three high-resolution cameras will provide global mapping, sample site reconnaissance and characterization, high-resolution imaging, and records of sample acquisition.
- **OSIRIS-REx Laser Altimeter (OLA):** This LIDAR and scanning instrument will be used to create topographical maps of Bennu.
- **OSIRIS-REx Visible and IR Spectrometer (OVIRS):** This spectrometer will provide mineral and organic spectral maps for the mission.
- **OSIRIS-REx Thermal Emission Spectrometer (OTES):** This instrument will provide mineral and thermal emission spectral maps.
- **Regolith X-ray Imaging Spectrometer (REXIS):** This spectrometer will provide an X-ray map of Bennu.
- **Touch-And-Go Sample Acquisition Mechanism (TAGSAM):** This mechanism will collect the asteroid sample.

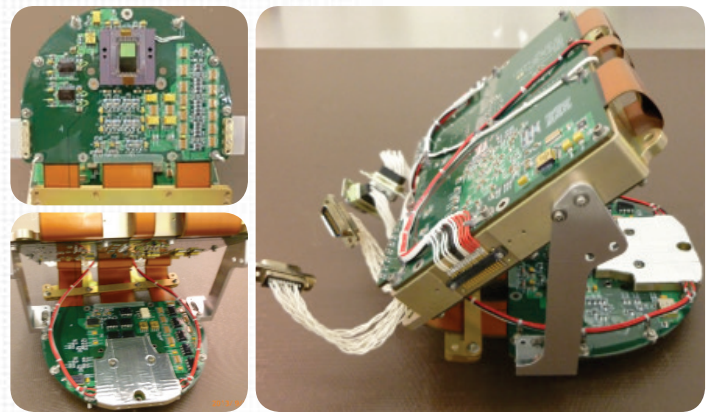
The Space Dynamics Laboratory (SDL) provided the detector assemblies for each camera in the OCAMS camera suite. The detector assemblies in each of the three cameras are identical.

OCAMS CONSISTS OF THE FOLLOWING CAMERAS:

- **PolyCam** is designed to acquire images and increase the resolution as the spacecraft approaches the asteroid.
- **MapCam** will search for satellite and outgassing plumes and provide high resolution images of the sample site.
- **SamCam** will document the sample acquisition process.



The OSIRIS-REx asteroid mission is tasked with capturing an asteroid sample for further analysis. Image courtesy of NASA.



OCAMS Detector Assemblies

DETECTOR	Teledyne Dalsa Trius
FORMAT	1024 by 1024
SHUTTER	Frame transfer
MASS	0.6 kg
POWER	5.3 W
INTERFACE	UART (command), synchronous serial (data)



Space Dynamics
LABORATORY
Utah State University Research Foundation