

Regolith X-ray Imaging Spectrometer (REXIS)

The REXIS Student Collaboration Experiment is a joint venture of Massachusetts Institute of Technology and Harvard-Smithsonian Center for Astrophysics. REXIS significantly enhances OSIRIS-REx by obtaining a global X-ray map of elemental abundance on Bennu. The REgolith X-Ray Imaging Spectrometer (REXIS) was conceived as a student led project whose primary goal is the education of science and engineering students who will participate in the development of flight hardware in future space missions. Additionally REXIS also augments the observation capabilities of the OSIRIS-REx mission at the high end of the electromagnetic spectrum which will enable characterization of the asteroid elemental abundances from a global scale down to 50 m, a capability unique to REXIS among instruments of this type that have previously flown. REXIS is designed to observe induced X-ray fluorescence lines emitted from the asteroid surface that arise as a result of exposure to solar X-rays as well as the cosmic X-ray background (CXB).