

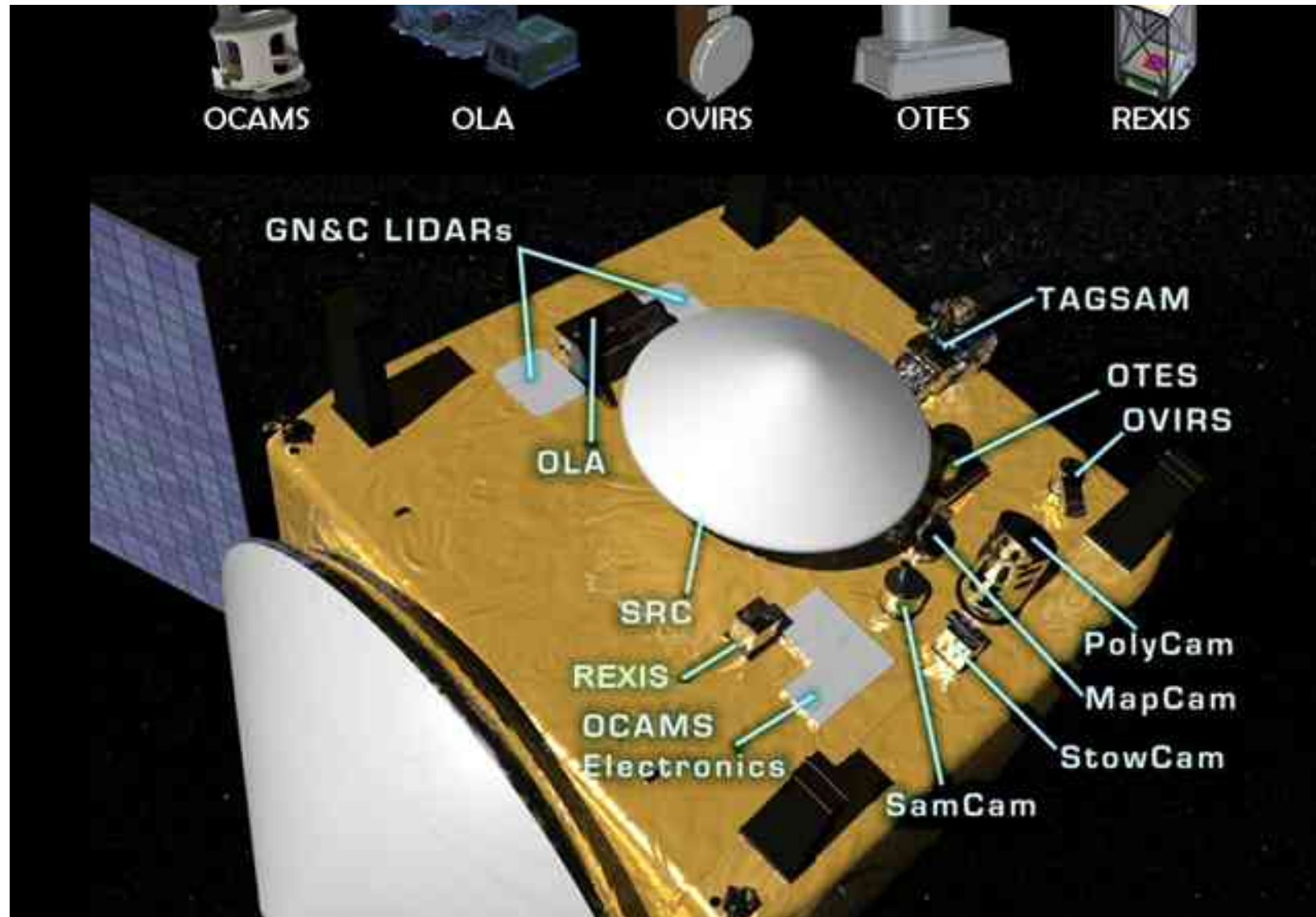
OSIRIS-REx Status

Carol Neese & Mike A'Hearn



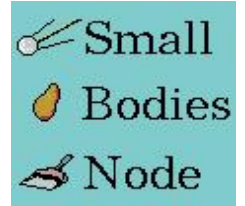
Spacecraft & Instruments

-  Small
-  Bodies
-  Node





Payload

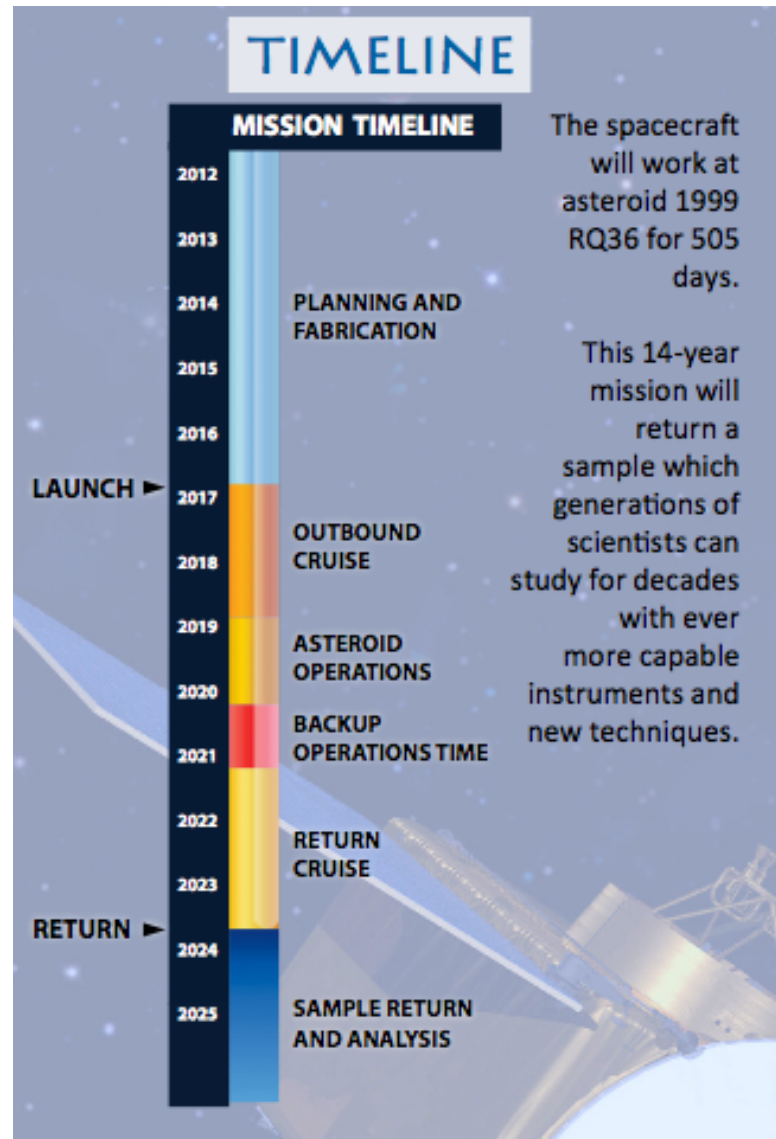


- OCAMS
 - POLYCAM – 8" aperture, Acq & high-res mapping
 - MAPCAM – satellite & outgassing search, 4-color map
 - SAMCAM – documents sample acquisition
- OLA – OSIRIS-REx Laser Altimeter
- OVIRS – OSIRIS_REx Visible and IR Spectrometer
- OTES – OSIRIS-REx Thermal Emission Spectrometer
- REXIS – Regolith Imaging X-Ray Spectrometer
- TAGSAM – Touch And Go Sample Acquisition System



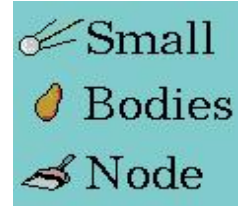
Timeline

- Small
- Bodies
- Node





Target

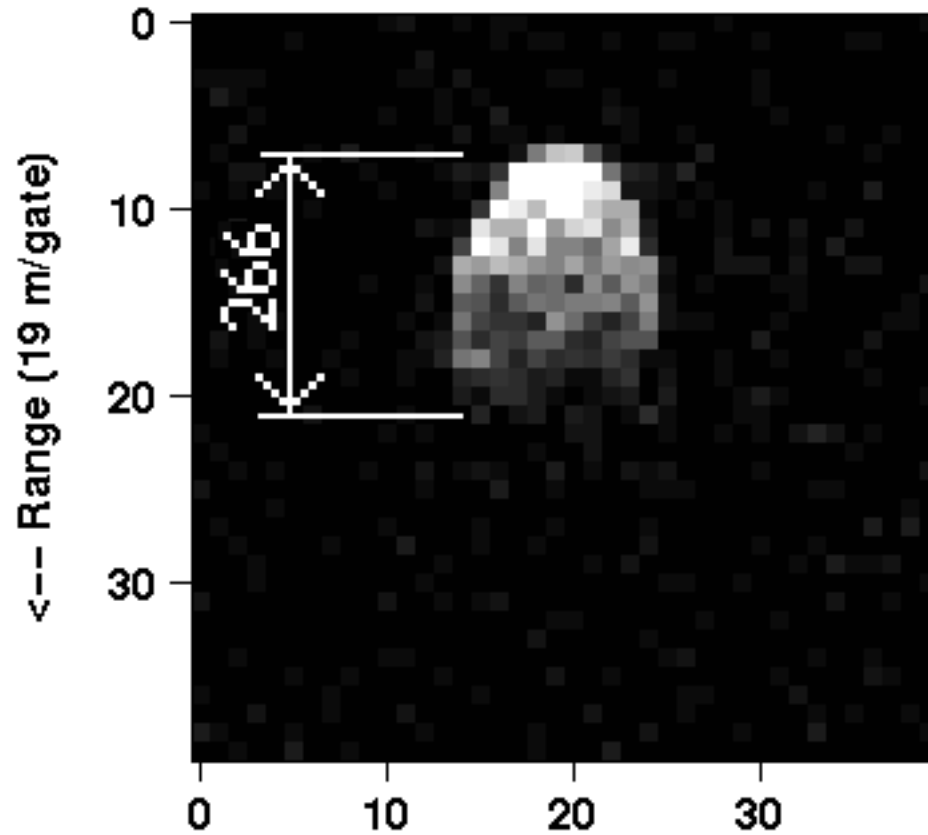


- (101955) Bennu
 - Aka 1999 RQ₃₆
 - NEO/PHA
 - $a = 1.126$ AU, $e = 0.204$, $q = 0.897$ AU
 - MOID = 0.0032
- Physical Parameters
 - Prot = 4.288 hr
 - C_type (carbonaceous)
 - Albedo 0.03-0.06
 - Mean radius 247m
 - Small compared to any previous deep space target

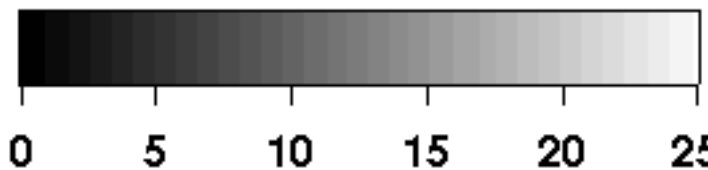


1999 RQ36: 1999 Sep 23, 9:37:50–9:39:19 UTC

- Small
- Bodies
- Node



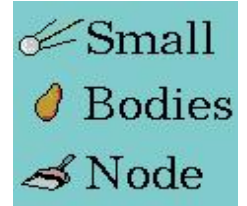
←-- Doppler frequency (1 Hz/bin)



Echo power (std. devs.), saturated at 47%



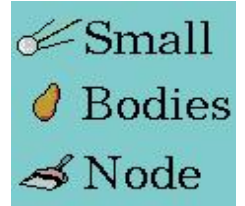
Documents



- MOU fully signed some time ago
- ICD signed last week by everyone except
 - OSIRIS-Rex program scientist
 - A'Hearn was last prior signature delayed to 15 Nov due to travel.
 - A'Hearn wasn't aware that anyone from HQ normally signed an ICD but this is being run by O-Rex, not SBN
- DMAP
 - Not due until MOR in mid-2015
 - Many pieces of it have been agreed between O-Rex and SBN



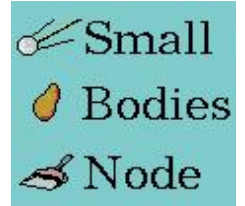
General Comment on Documents



- FAXing signature pages without any document attached is surely obsolete, inefficient, and subject to abuse
- Digital signatures can go on a whole document and the content be certified at the time of signature with subsequent changes flagged
- PDS Report Card for O-REx being developed now



Archive Design



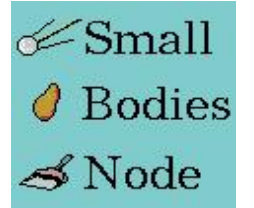
- One bundle per instrument
 - Additional bundles for SPICE, higher level products, and others as needed
- Each bundle has multiple collections.

Examples:

- Browse
- Calibration
- Context
- Raw Data (O-REx defined levels)
- Uncalibrated Data (O-REx defined levels)
- Calibrated Data (O-REx defined levels)
- Documents
- Geometry
- Schema
- Others TBD



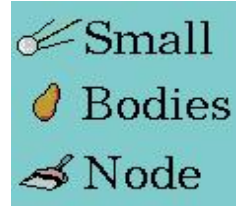
Product Types



- FITS images, with & without extensions
- ASCII tables & CSV tables
- FITS tables – perhaps



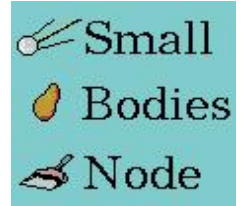
Review Plans



- OCAMS, OLA, OTES, and OVIRS
 - Configuration controlled pipelines
 - Product design review, pipeline review, and inflight review using data from Earth-flyby
- TAGSAM, GNCL
 - Product design review, final archive review
- Additional reviews for
 - Coordinate system
 - SPICE
 - REXIS
 - Higher level products



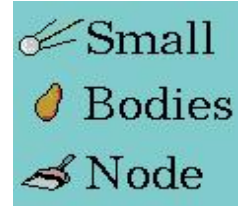
Review Schedules



- Raw and most calibrated product designs
 - Summer 2014
- Higher level product design
 - 2015
- Pipeline reviews
 - Early 2016
- In-flight data reviews
 - Early 2018
- Coordinate system
 - Early 2019
- TAGSAM & GNCL
 - Late 2019 or early 2020
- SPICE & REXIS TBD



Summary



- Things appear to be going well thus far
- Long development means there is time to “do it right”
- Move from Discovery (where it did not quite fit) to New Frontiers means there should be enough funding to “do it right”
- A committed archivist on the team means that “it WILL be done right”
- GREEN