



OSIRIS-REX

ASTEROID SAMPLE RETURN MISSION

Mission Overview

[Name]



OSIRIS-REx

Originis

Spectral **I**nterpretation

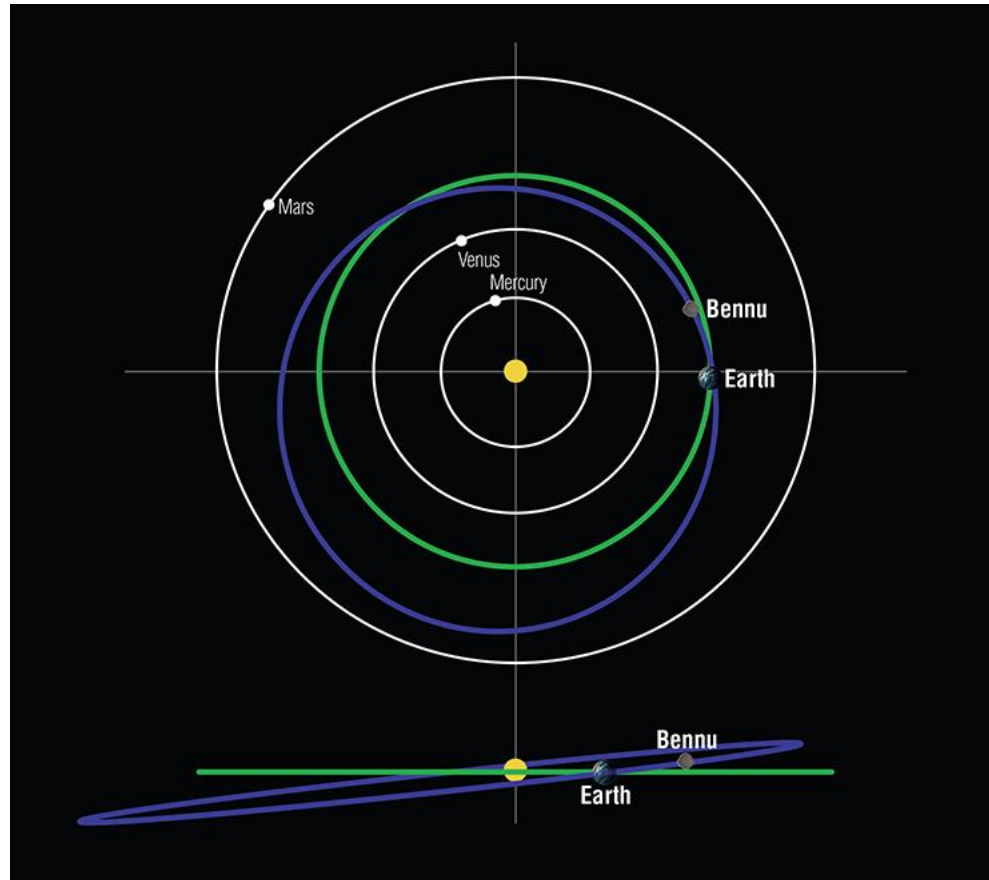
Resource **I**dentification

Security

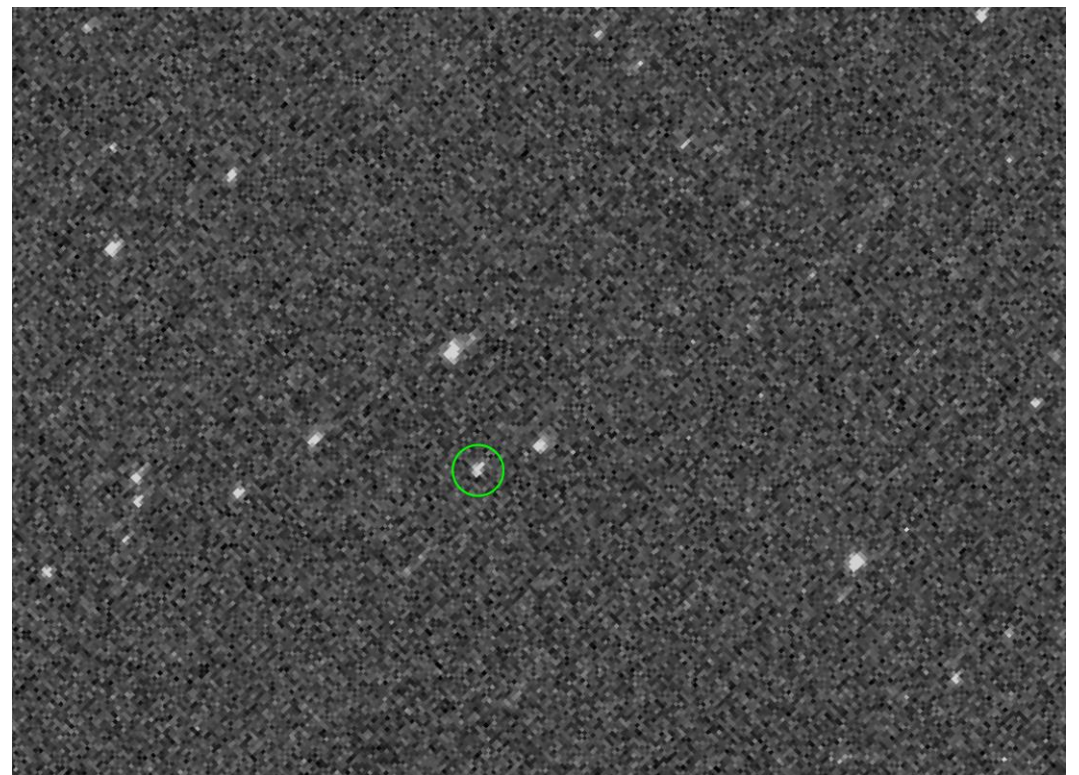
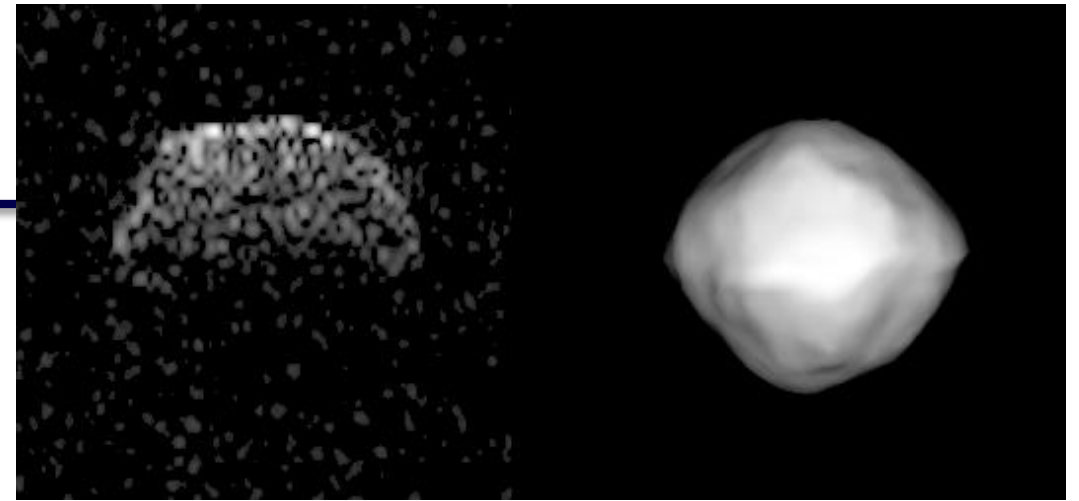
Regolith **E**xplorer

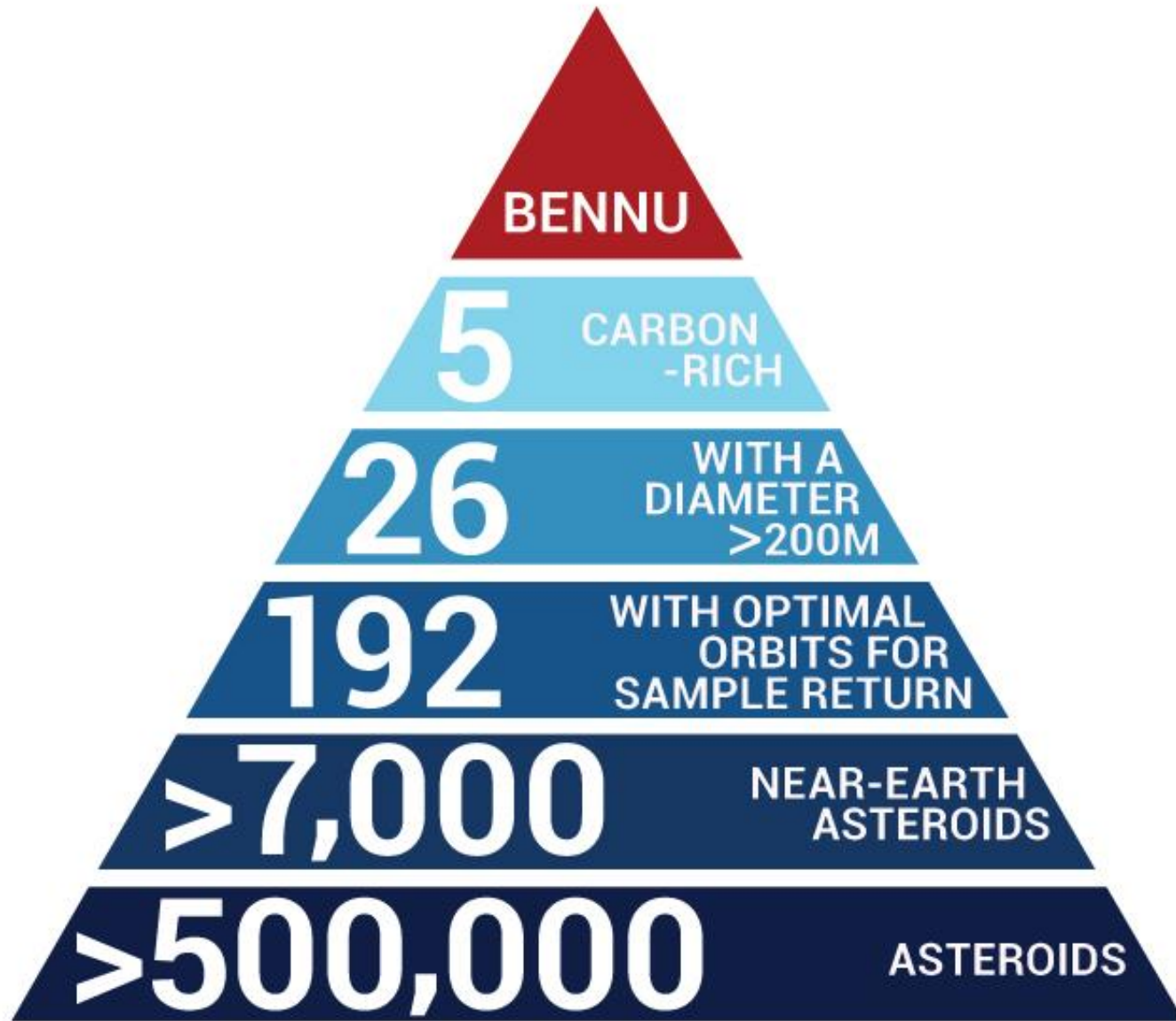


BENNU IS ONE OF THE BEST CHARACTERIZED ASTEROIDS



- Size = 492-m (± 20 m, mean diameter)
- Shape = spheroidal “spinning top”
- Rotation state = 4.3 hr period, 180° obliquity





Bennu Facts:

Equatorial Diameter: *~500 m*

Polar Diameter: *~510 m*

Average Speed: *63,000 mph*

Rotation Period: *4.3 hrs*

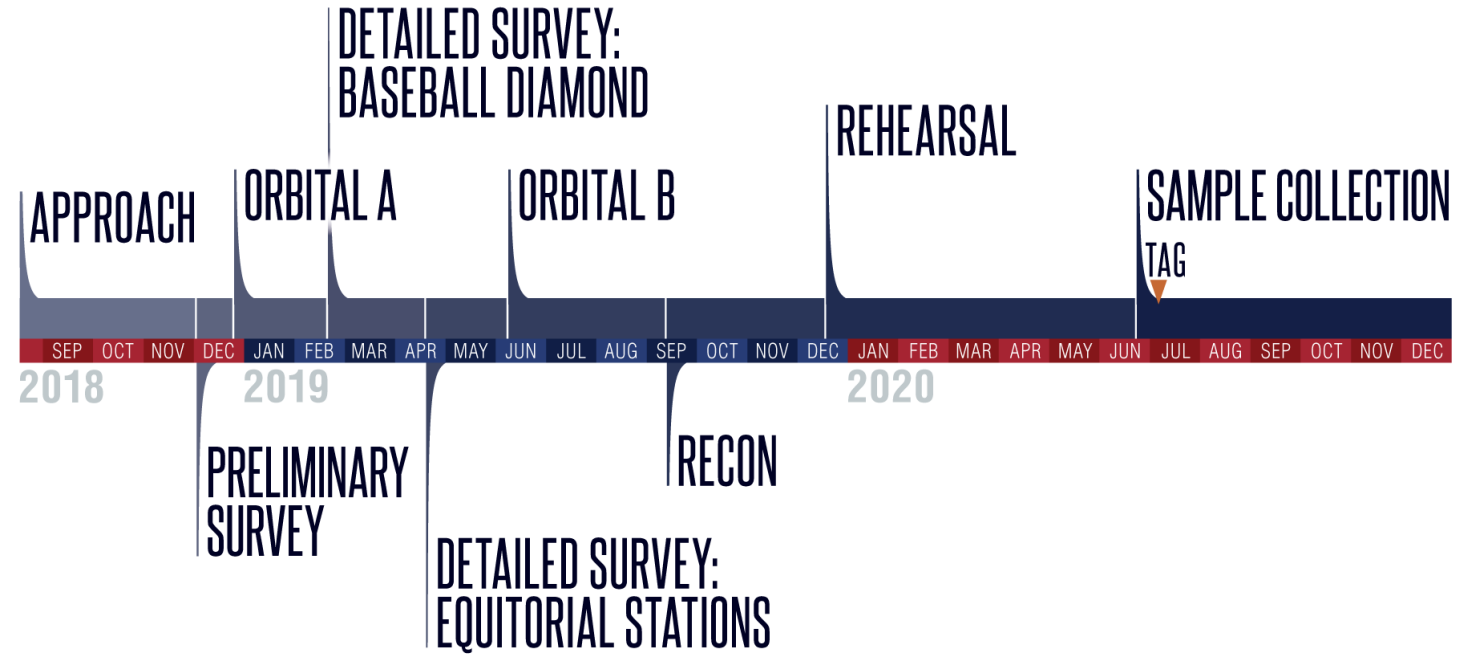
Orbital Period: *1.2 yrs*

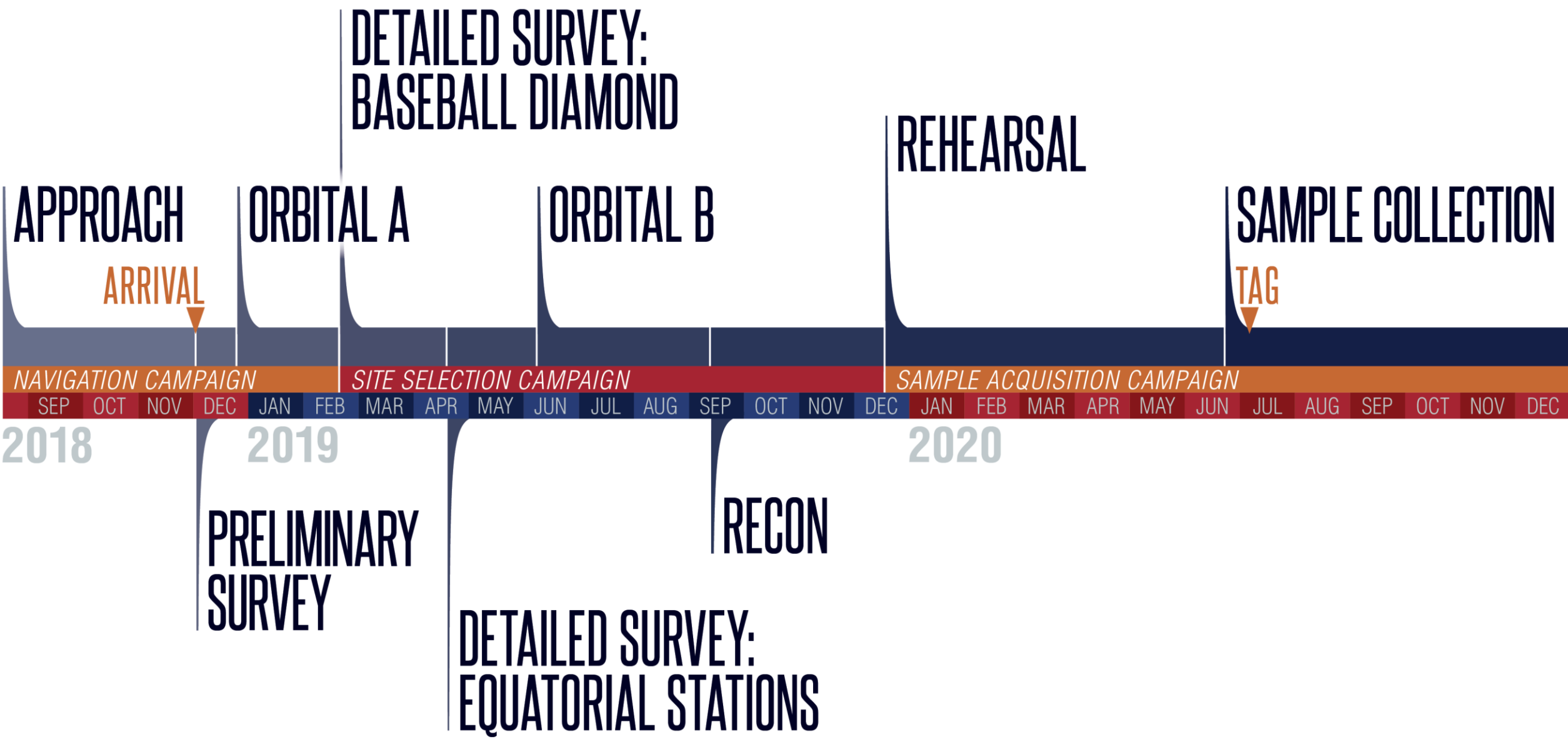
Orbital Inclination: *6 degrees*

Earth Approach: *Bennu comes close to Earth every 6 yrs*

OSIRIS-REx

ASTEROID OPERATIONS TIMELINE





APPROACH

ARRIVAL

ORBITAL A

**DETAILED SURVEY:
BASEBALL DIAMOND**

ORBITAL B

REHEARSAL

SAMPLE COLLECTION

TAG

NAVIGATION CAMPAIGN

SITE SELECTION CAMPAIGN

SAMPLE ACQUISITION CAMPAIGN

2018

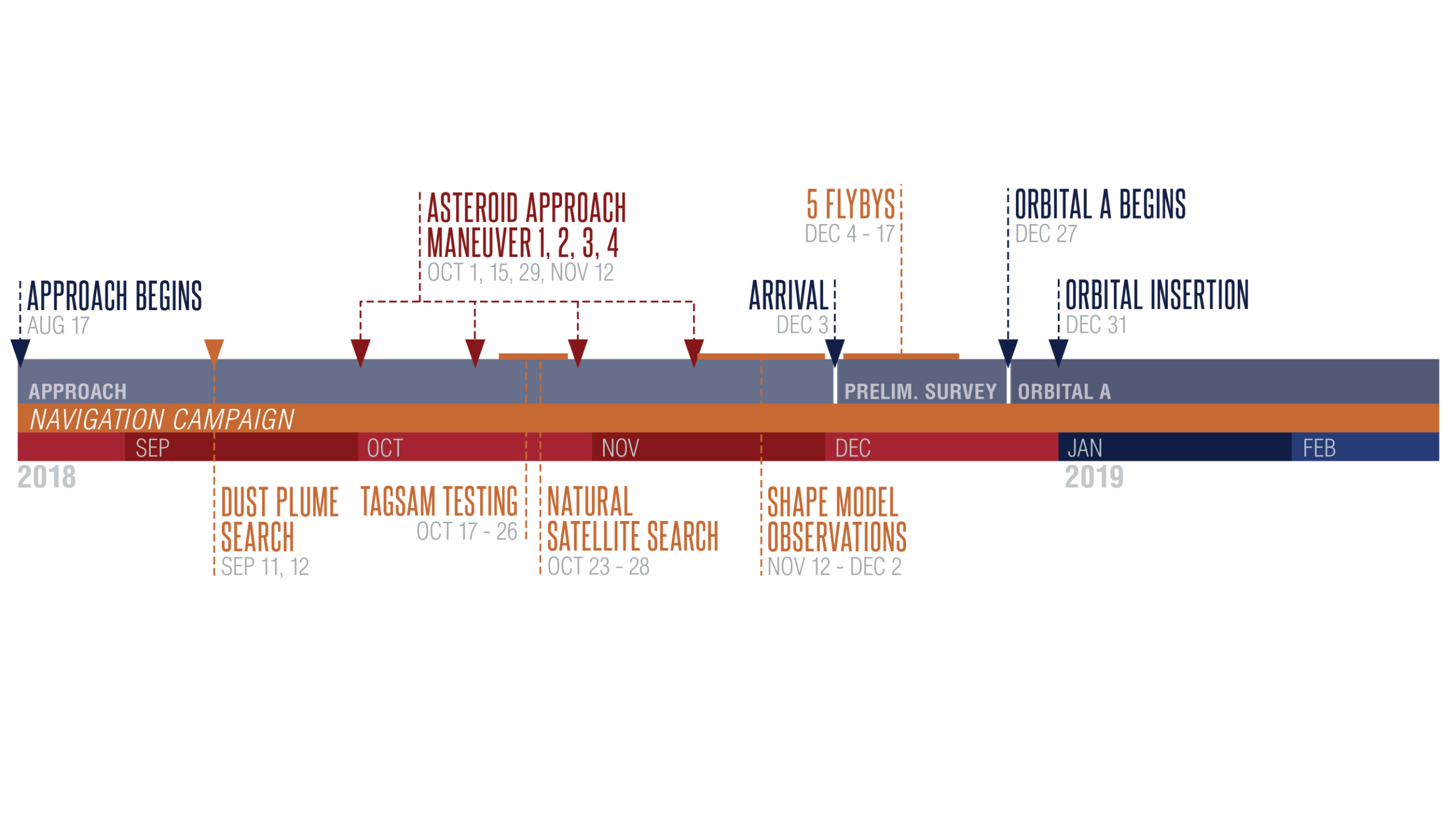
2019

2020

**PRELIMINARY
SURVEY**

RECON

**DETAILED SURVEY:
EQUATORIAL STATIONS**



APPROACH BEGINS
AUG 17

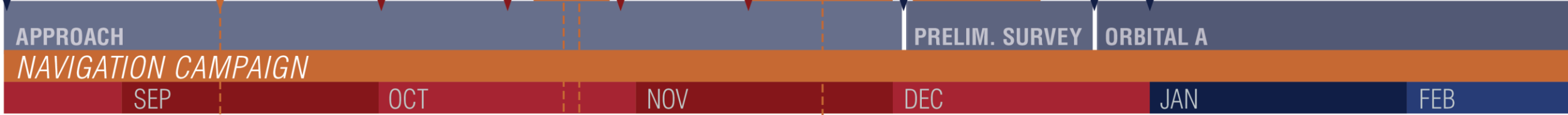
**ASTEROID APPROACH
MANEUVER 1, 2, 3, 4**
OCT 1, 15, 29, NOV 12

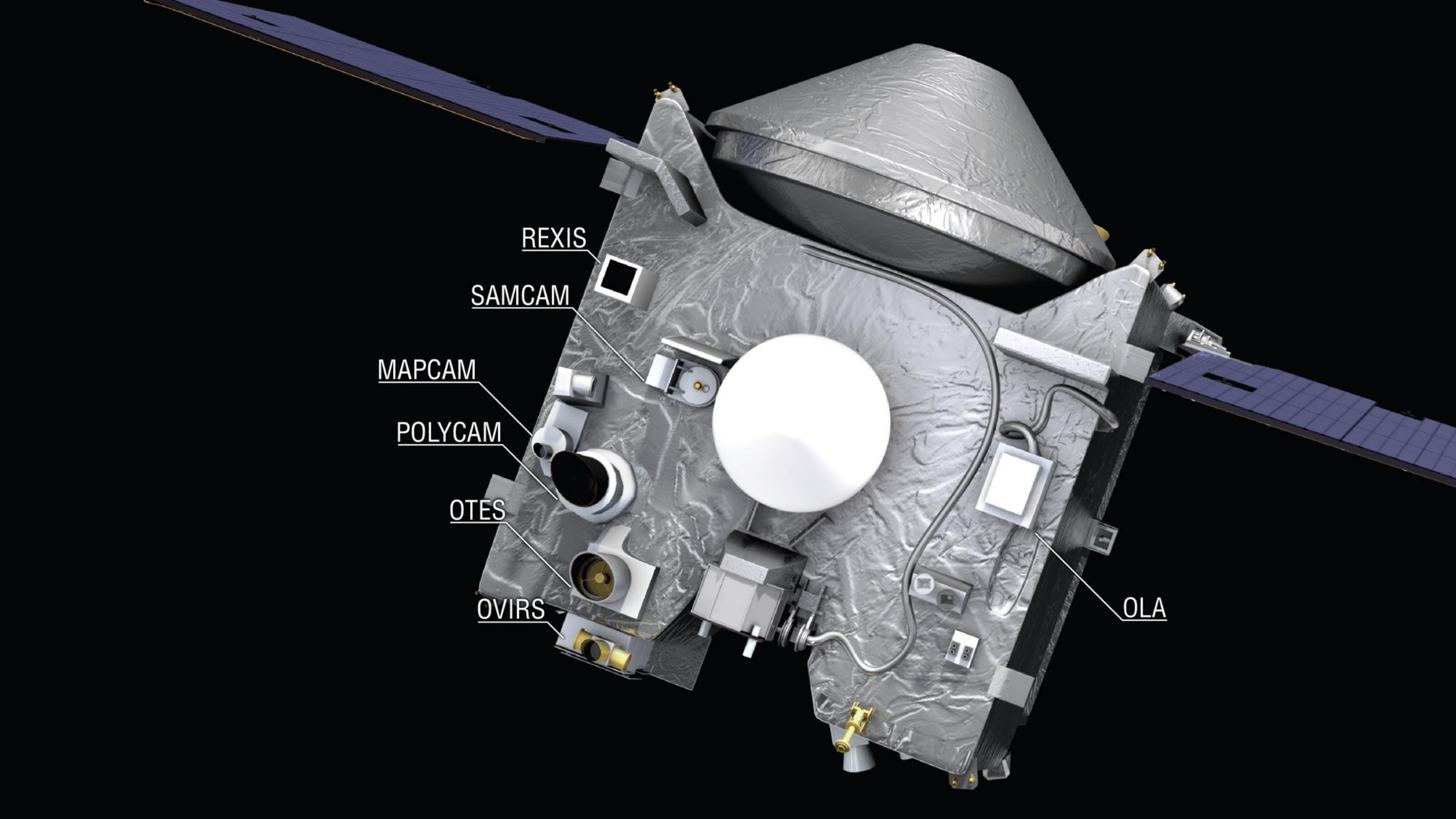
5 FLYBYS
DEC 4 - 17

ARRIVAL
DEC 3

ORBITAL A BEGINS
DEC 27

ORBITAL INSERTION
DEC 31





REXIS

SAMCAM

MAPCAM

POLYCAM

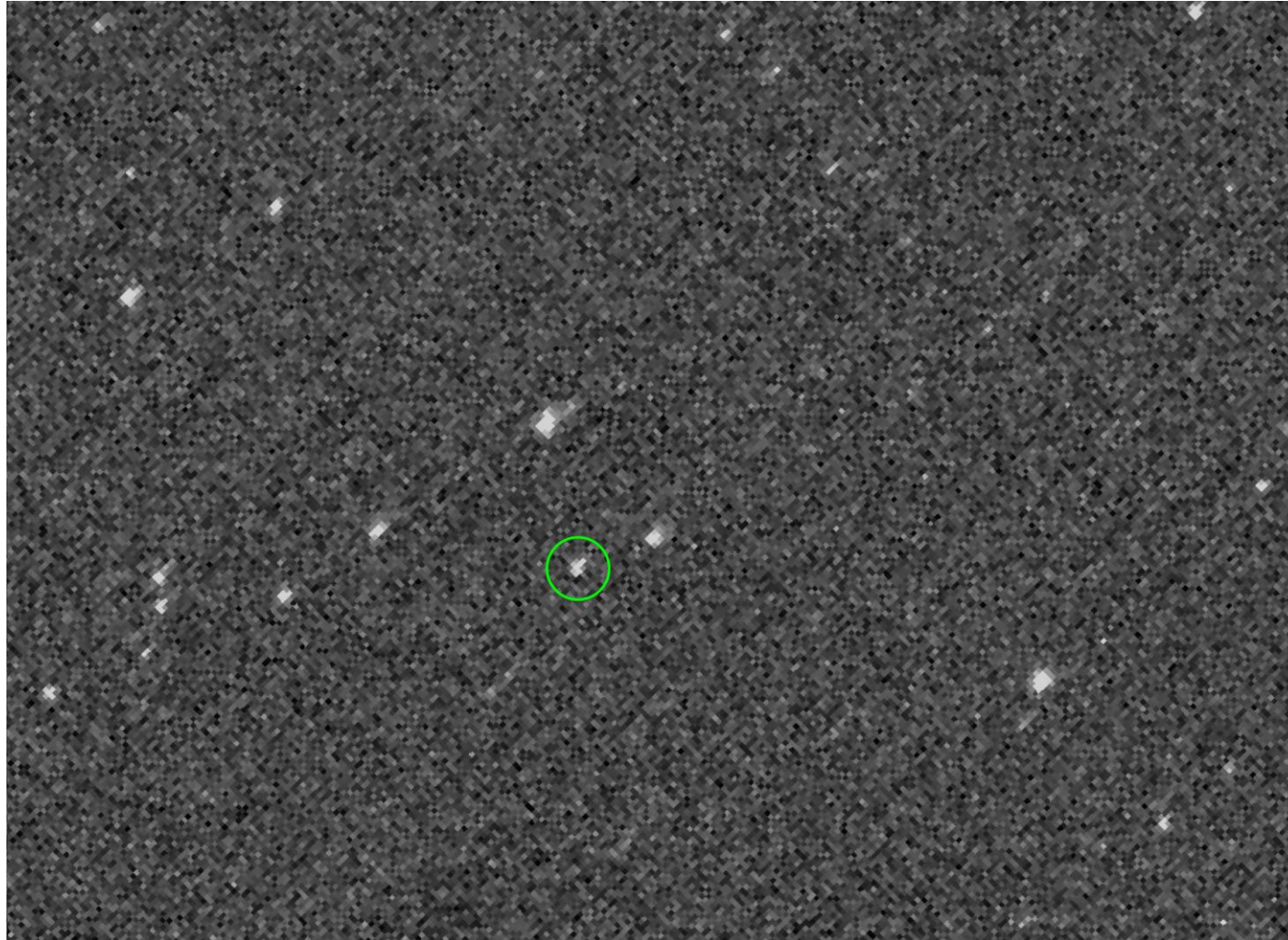
OTES

OVIRS

OLA



FIRST GLIMPSE OF BENNU – AUG. 17, 2018



NASA/Goddard/University of Arizona

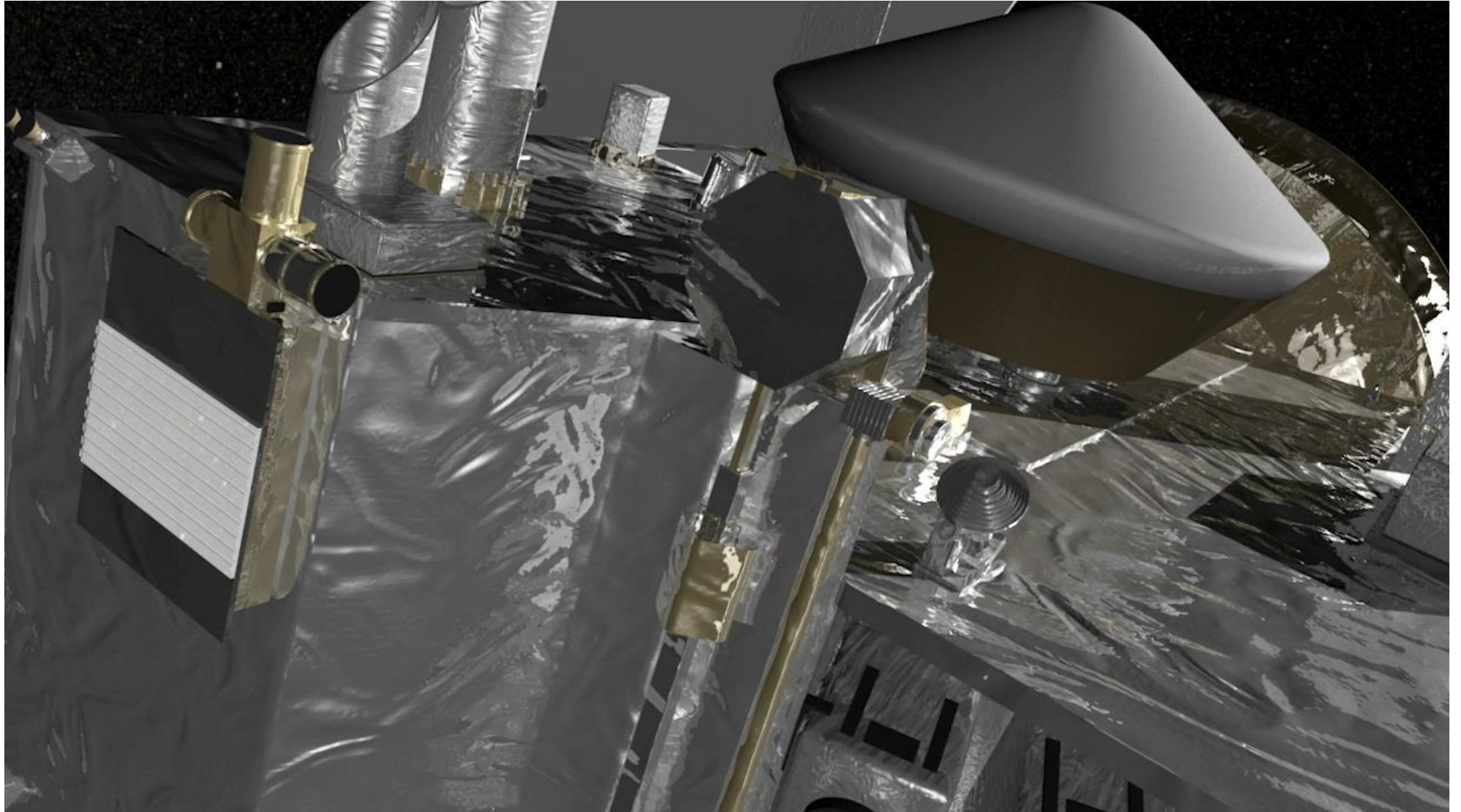


MAPPING BENNU





TAG MANEUVER





STAY TUNED!



AsteroidMission.org



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DSLauretta.com