

Property	Pre-Encounter	OSIRIS-REx
	Value ($\pm 1\sigma$)	Value ($\pm 1\sigma$)
Size and Shape		
Mean Diameter (m)	492 \pm 20	490.06 \pm 0.16
Polar Extent (m)	508 \pm 52	498.49 \pm 0.12
Equatorial Extent (m)	565 \pm 10 x 535 \pm 10	564.73 \pm 0.12 x 536.10 \pm 0.12
Volume (km ³)	0.062 \pm 0.006	0.0615 \pm 0.0001
Surface Area (km ²)	0.79 \pm 0.04	0.782 \pm 0.004
Mass and Density		
Bulk Density (kg m ⁻³)	1260 \pm 70	1190 \pm 13
Mass (10 ¹⁰ kg)	7.8 \pm 0.9	7.329 \pm 0.009
GM (m ³ /s ²)	5.2 \pm 0.6	4.892 \pm 0.006
Hill Sphere Radius (km)	31.7 +3.3/-4.2	31.05 \pm 0.01
Rotational Properties		
Sidereal Rotation Period (J2000) (h)	4.296059 \pm 0.000002	4.296057 \pm 0.000002
Obliquity (°)	178 \pm 4	177.6 \pm 0.11
Pole Position (RA, DEC, J2000) (°)	+87 \pm 3, -65 \pm 3	+85.65 \pm 0.12, -60.17 \pm 0.09
Rotational Acceleration (10 ⁻⁶ deg/day ²)	2.64 \pm 1.05	3.63 \pm 0.52
COM/COF [†] Offset [x, y, z] (m)	Undetermined	[1.38 \pm 0.04, -0.43 \pm 0.07, -0.12 \pm 0.27]
Products of Inertia ^{**} (m ²)	Undetermined	I _{xz} = -46.70 \pm 0.05 I _{zy} = 11.39 \pm 0.01
Non-principal Axis Rotation (°)	No evidence	<0.2 \pm 0.2
Surface and Compositional Properties		
Geometric Albedo (%)	4.5 \pm 0.5	4.4 \pm 0.2
Geometric Albedo Range (%)	Undetermined	3.3 – \geq 15
Thermal Inertia (J m ⁻² s ^{-0.5} K ⁻¹)	310 \pm 70	350 \pm 20
Average Particle Size (cm)	< 1 cm	TBD
Largest Boulder (m)	(10-20) \pm 7.5	Height: 30 \pm 3, Length: 58 \pm 6
# of Boulder > 10 m	Undetermined	208 \pm 40
CSFD ^{***} slope (down to 8 m)	Undetermined	-2.9 \pm 0.3
Average Surface Slope (°)	15 \pm 2.4	17 \pm 2
Asteroid Spectral Type	B	B
Closest Meteorite Analogs	CI and CM chondrites	CM chondrites

[†]COM/COF = Center of Mass/Center of Figure

^{**}For the constant density shape

^{***}CSFD = Cumulative Size Frequency Distribution

CHANGE LOG

Date

3/6/2019

3/6/2019

Change

Sidereal rotation period (J200) updated to GRL value in column B

Darkest albedo changed from 3.5% to 3.3% per Laurretta et al. Na

and last digit corrected from 6 to 7 in column C [CW, per Mike Nolan]