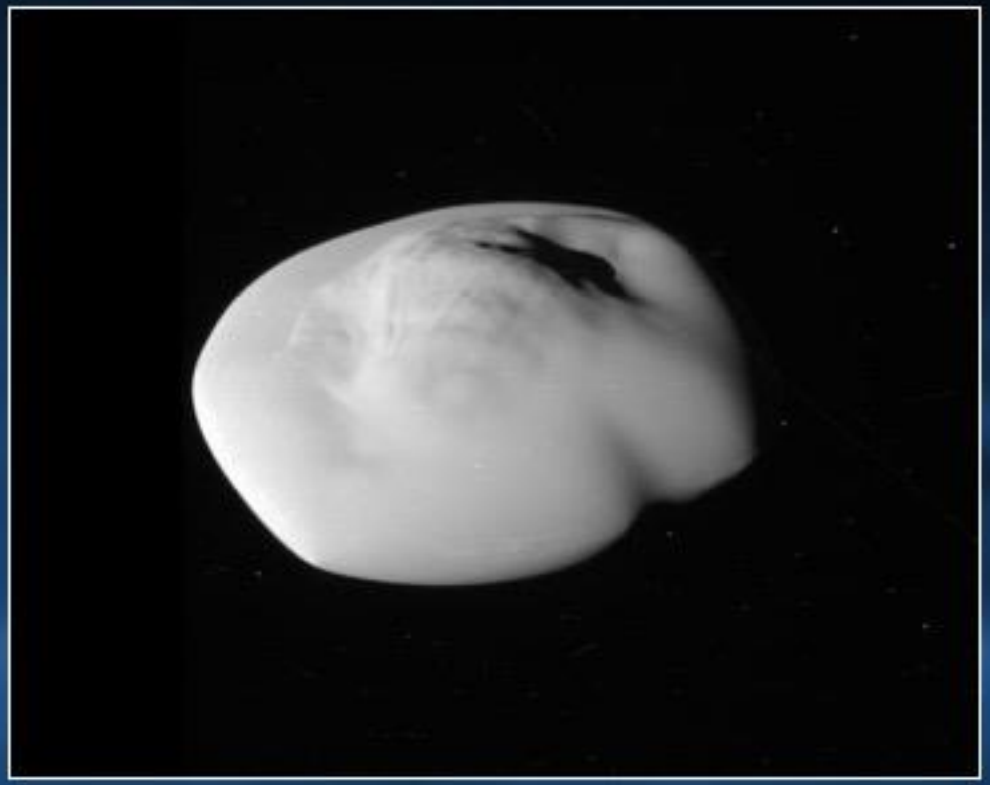
Atlas Changing Shape by Accreting Ring Material



On April 12th, 2017, while diving daringly close to Saturn's F ring, NASA's robotic spacecraft Cassini snapped this image of the moon Atlas, which resembles a flying saucer. Coming within just 11,000 km (7,000 miles) of this curiously-shaped moon, this was Cassini's closest flyby of Atlas in the entire mission. At this distance, features just 250 feet across can be resolved. While Atlas' longest dimension is 42 km (26 miles) across, it is just 18 km (11 miles) from pole to pole. Its flattened shape is reminiscent of neighboring Pan and Daphnis, moons which reside within gaps in the A ring.

Atlas, which skims the A ring's outer edge, appears to consist of a central body whose mid-section is cloaked in small, icy grains from the rings. Because Saturn's gravity is so strong, it is only in a compact region around Atlas that Atlas' own gravity can keep this ring material from drifting away. Atlas is roughly the size and shape that would be expected if this region were filled with as much aberrant ring material as possible. Atlas' equatorial ridge and the subtle ridges and grooves winding across its core may hold clues to Atlas' own history and evolution, as well as that of the region of Saturn's ring system where it dwells. https://saturnraw.jpl.nasa.gov/multimedia/images/raw/casJPGFullS98/N00279656.jpg