



GETTING TO KNOW AN ASTEROID

In October 2014, ALMA generated ten images of the asteroid named Juno, as it rotated around its own axis, showing various angles of the space rock.

Asteroids are rocky bodies that orbit around the Sun between the orbits of Mars and Jupiter. Juno is one of the largest known asteroids and was the third asteroid to be discovered, in 1804, by German astronomer Karl Ludwig Harding. It was named Juno after a Roman god. It was initially

classified as a new planet. Later, astronomers realized that there were so many small objects between the Mars and Jupiter orbit that they couldn't possibly all be planets. They are now known as asteroids (or planetoids).

Although Juno is 250 kilometers wide, it is hard to observe it in detail because it is so far away. During the ALMA observations, the asteroid was 295 million kilometers away. Even so, ALMA, was able to see Juno's slightly egg-shape.

Asteroids like Juno are cold and dark. We can only see them because they reflect a little solar light. However, astronomers had already discovered

that the Sun's light reflected by Juno changes every 7.2 hours due to the rotation of the asteroid. The luminosity variations led them to deduce that Juno was slightly elongated in shape. This was confirmed by new observations from ALMA, made by a great international team of astronomers led by Todd Hunter at the US National Radio Astronomy Observatory. By studying the millimetric radiation of asteroids like Juno, astronomers hope to better understand their rock composition and whether their surface is smooth or porous.

In November 2018, Juno will be relatively close to Earth again and ALMA will be there to observe it once more.