

Football shaped asteroid observed by students at NAIC/NRAO

July 16 2015

Images of the near-Earth asteroid 2015 HM10 were captured by students and researchers participating in the NAIC/NRAO 8th Single-Dish Radio Astronomy School as it passed by Earth on Wednesday, July 8. The asteroid, coincidentally observable during the biennial school, was 1.14 times the Earth-Moon distance at its closest (about 440,000 km or 270,000 miles), its closest approach to Earth until at least 2178.

Students from the school along with National Astronomy and Ionosphere Center (NAIC), official name of the Arecibo Observatory, and National Radio Astronomy Observatory (NRAO) researchers found 2015 HM10 has an elongated "football" shape, with a size of about 75 by 45 meters (250 by 150 feet).

To observe the passing asteroid, which posed no danger to Earth, Arecibo emitted the radar signal and the Green Bank Telescope in West Virginia received the echo. "At this distance, light takes 3 seconds to reach the asteroid and bounce back. This is too short of a time for our systems at Arecibo to switch from emitting the radar to receiving the echo from the asteroid," explained Dr. Patrick Taylor, research scientist in the planetary radar department at the Arecibo Observatory.

The students also observed near-Earth [asteroid](#) 2015 MO116, another recently discovered object, using the Arecibo radio telescope. Because of the high sensitivity of the Arecibo planetary radar system, the team was able to improve the object's orbit. They found that 2015 MO116 was 2,400 kilometers (1,500 miles) closer to Earth and traveling 5

meters per second (11 miles per hour) faster than predicted. "Sensitive radar measurements along with observations from optical telescopes are used to precisely determine the orbits of asteroids, allowing for better estimates of their impact potential," explained Dr. Taylor, noting that 2015 MO116 is not a threat to Earth.

Provided by Arecibo Observatory

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