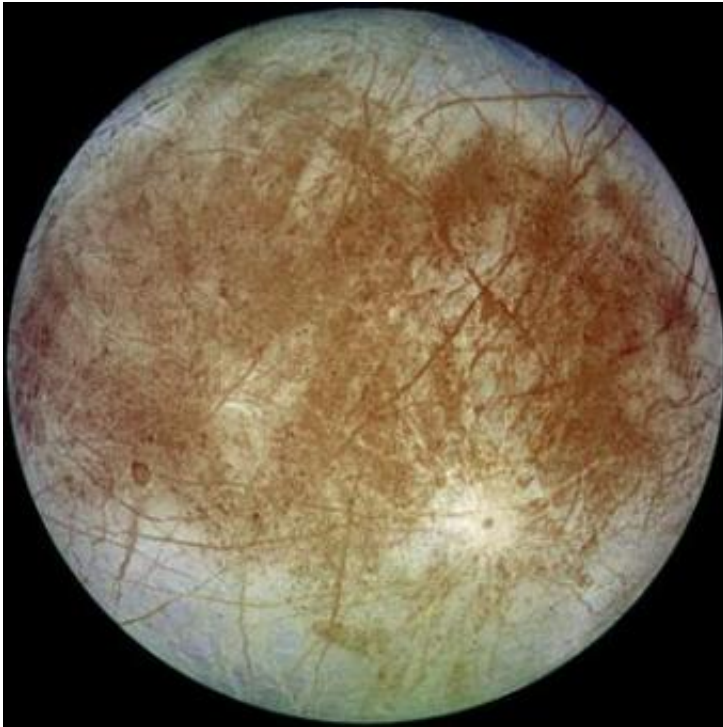


British engineers report successful test of space penetrator

July 15 2013, by Bob Yirka



The Galileo spacecraft took this image of Europa, which is about the size of Earth's moon, in 1996. Credit: NASA.

(Phys.org) —British engineers have told reporters that a test of their space penetrator has been conducted and all signs suggest it was a complete success. The space penetrator is a bullet shaped projectile with electronics inside. Its purpose is to hard-land on another planet or moon, penetrating the surface by up to ten feet, then radio back sensor

information.

In the test, the penetrator was fired at a 10 tonne block of ice—it struck the block moving at approximately 340m/s, which is of course nearly the [speed of sound](#). While the block of ice was reduced to a giant snow-cone, the electronic instruments inside the probe remained intact and in fact, continued to operate as planned, thanks to a spring mechanism engineers crafted to help soften the blow.

The main goal of the penetrator is to determine whether life exists on another planet or moon in our solar system. Currently, the hope is that it will be used on Jupiter's moon Europa, which is believed to be harboring a [liquid ocean](#) beneath its icy crust. The penetrator would be carried aboard a more traditional [space](#) craft then launched into orbit around a target as part of a satellite. At the appropriate time, a penetrator module would be ejected from the satellite. The module would consist of the penetrator and an engine component to propel the module to a desired location. Once that location is reached, the engine would be released and the penetrator would fall head first down to the surface below. Because of its high speed, it would make its way some distance below the surface before stopping.

The researchers report the test penetrator experienced 24,000g as it came to a rest. Once in place, the penetrator would then begin sending [sensor data](#) via radio messages to the satellite which would relay them back to Earth.



Representatives for the project team told the media that the penetrator could host a wide variety of sensors and could even carry a small drill for taking samples near the probe.

The penetrator project is being funded by the European Space Agency, though the agency has yet to decide whether the penetrator will ever actually be deployed. Researchers on the project say it will be ready for launch within a decade's time.

More information: via [BBC](#)

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