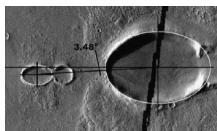


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By: Dan Talpalariu, Science Editor



Mars' scars from an ancient moon
NASA

[Mars' Scars Are Remnants from Impact with Third Moon](#)

Phobos moon crashing may yield similar results

About a billion years ago, there was a pair of small moons revolving each other in close orbit with Mars. One of them, Phobos, is still performing its regular cyclic patrols around the red planet, but the other, as experts believe, has broken into pieces, entered the atmosphere, and eventually smashed on Mars' surface, leaving behind a couple of large craters. Predictions have it that, millions of years into the future, the surviving moon will follow the example. The [craters](#) on Mars are quite similar with the Messier ones on the Moon, thus some insight can be gained from the data obtained from the analysis of the latter, in spite of the fact that John Chappelow and Rob Herrick, from the University of Alaska, believe that the similarity in what concerns the crater formation process is just about 2%. According to them, the asteroids' mutual orbit must have been random, so the craters resulting after the collision should also be randomly placed and shaped. The smaller moon (calculated to have been about 1.5 km in width) was closer to Mars and so it was pulled towards its doom. It was split apart in the Martian atmosphere and the pieces got separated by gravity and the drag of the atmosphere, hitting ground at slightly remote points at a 10° or smaller angle in reference to the surface. Jay Melosh, a University of Arizona crater specialist, believes that, normally, orbiting asteroids tend to settle around the equator due to gravitational tugs, but the small moon that hit Mars was pulled before it could reach a stable equatorial orbit. "Any close natural satellite must, like Phobos, orbit in Mars' equatorial plane," the researcher says. "We don't know the details of the [moonlet's] capture mechanism, so I don't know that we can definitively say that the object must have moved to an equatorial orbit before spiraling in. There is even a known near-Earth binary asteroid, 1999 KW4, that has precisely the characteristics that, if it were to strike Mars at an angle of 10°, would produce a doublet closely resembling [the Martian] pair."