

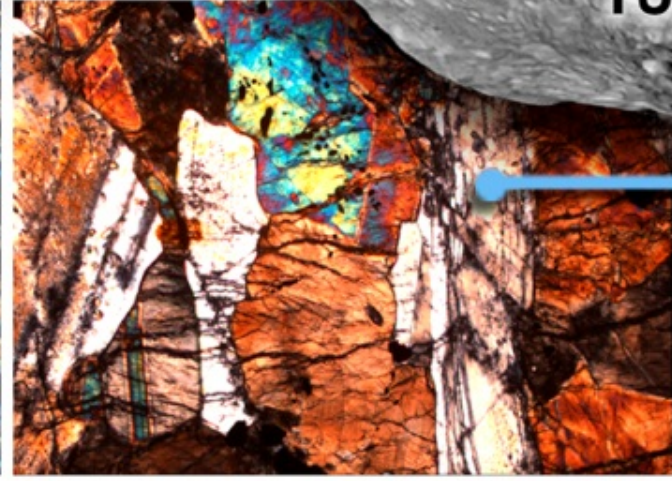
The Moon

Lunar rocks:
448 kg



Vesta

HED meteorites:
1332 kg





Sampling Vesta and the Moon

Spacecraft flyby and orbital missions are an essential part of a successful exploration effort.

However, missions to planetary surfaces and the return of samples to Earth provide far greater insights and can confidently resolve some of the most fascinating questions we have about the Solar System.

It is sometimes said that we do not know anything about asteroids and, thus, must target them rather than our Moon. While analyses of asteroids are certainly needed, it is also important to understand what sample masses already exist.

We currently have, for example, 3 times more sample mass from the asteroid Vesta than we do from our own Moon. Because the Moon is a larger and more complex body than the asteroid Vesta, we need far more sample mass to tease out its secrets. This is one of the reasons the Moon is a higher priority exploration target.

Illustration credit: SwRI/LPI (Marchi, Kring, Bottke, & others)

The Moon is only three days from Earth and can provide spectacular geologic samples from the early evolution of the Earth-Moon system and provide a surprising number of clues about the origin and evolution of planets throughout the Solar System.

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