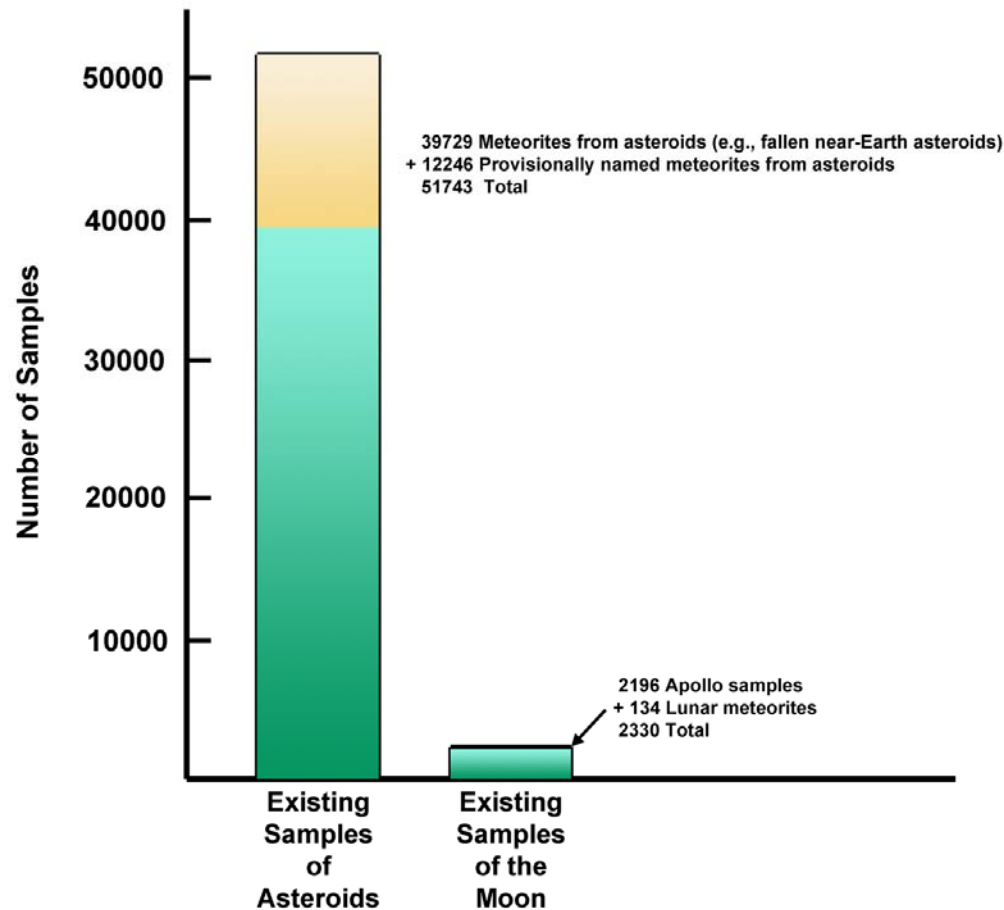




CENTER FOR LUNAR SCIENCE AND EXPLORATION

vitality impacting the future – today



Data as of January 2011

Asteroids and small fragments of them fall to Earth to produce meteorites.

We have sampled several tens of thousands of these objects.

The number of lunar samples available for study is approximately 20 times smaller.



Samples of Near-Earth Asteroids

In pushing for human exploration of near-Earth asteroids (NEA's), it is often implied (if not said explicitly) that we know very little about them and that it is crucial to obtain a sample from one of them. This is not quite right.

We actually have 40,000 to 50,000 samples of these objects in the form of meteorites. Japan has also robotically recovered a sample from the asteroid Itokawa.

We have far more samples of NEA's than we do of the Moon.

It is very important to obtain more samples of asteroids to answer questions about the solar system's origins and evolution and to assess future impact hazards.

However, it is also very important to obtain samples of the Moon to address those same issues and many other issues of fundamental importance to the origin and evolution of the entire Earth-Moon system. It is also reasonable to argue that asteroids are relatively simple geologic targets that are ideally suited for robotic assets, whereas the Moon and Mars are complex planetary surfaces that are best suited for the enhanced capabilities of human explorers.

We have far fewer samples of the Moon than of near-Earth asteroids.

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