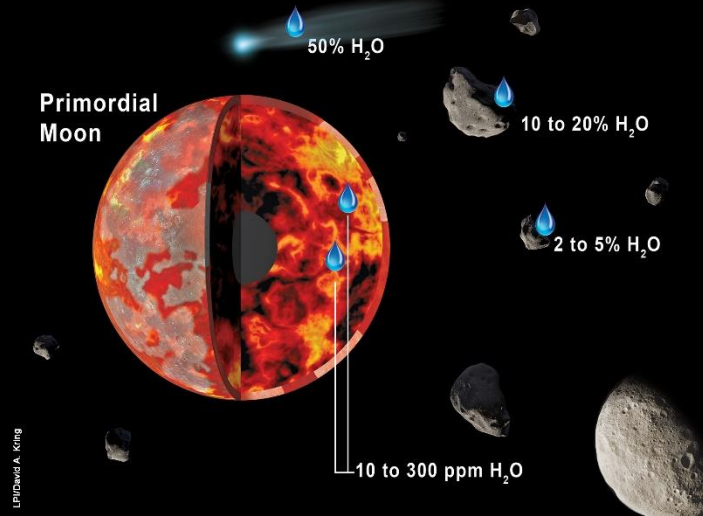
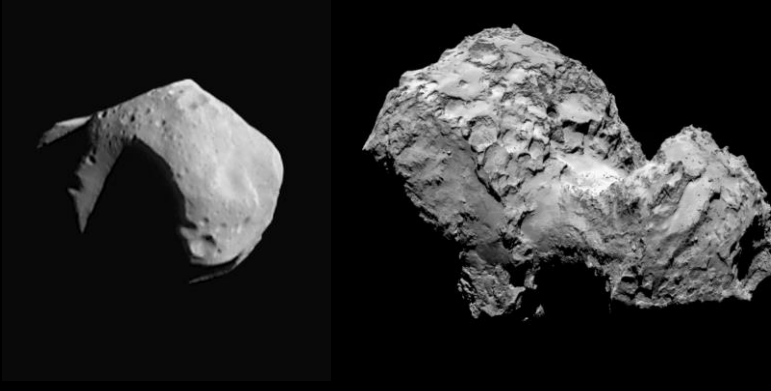


# The origins of lunar water

## Volatile and ice-rich small body candidates:



Based on H and N isotopes carbonaceous chondrites are generally a better source for water in the Moon than comets:



- Water is vital for the existence of life as we know it, and yet little is known about where water in the Earth-Moon system came from.
- Recent studies of lunar samples have challenged the Apollo-era view of a dry Moon. These studies have shown evidence for water in the Moon with isotopic similarities to terrestrial waters.
- Combining chemical and isotopic data from lunar samples, meteorites and comets Barnes *et al.* (2016) demonstrate that wet asteroids (the parent bodies for the carbonaceous chondrite meteorites) delivered the majority of lunar water, while comets contributed very little (< 20% of the total water in the Moon) to the volatile inventory of the Moon.
- Their work has important implications for the types of planetary objects impacting the Earth-Moon system shortly after the formation of the Moon and to fit with the existing models for lunar accretion and differentiation they suggest that this water was delivered to the Moon very early on, within the first 200 million years of the Moon's lifetime.

Barnes, J. J., Kring, D. A., Tartèse, R., Franchi, I. A., Anand, M., & Russell, S. S. (2016). [An asteroidal origin for water in the Moon](#). *Nature communications*, 7.

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