Water found in asteroid dust

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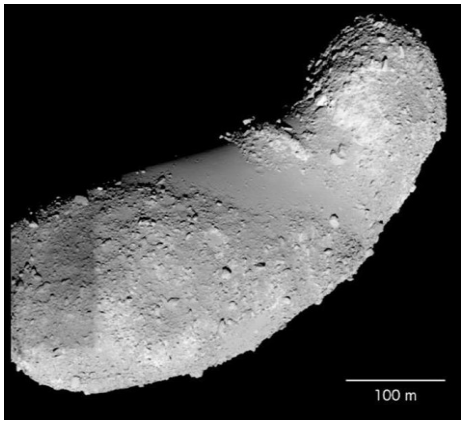

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Cosmochemists investigated five specks of dust less than 10μm in diameter, using a nanoscale mass spectrometer. This instrument is capable of measuring tiny quantities of material with great sensitivity. They were able to detect water in particles of the mineral pyroxene. The researchers say their findings suggest these asteroids may contain more water than is currently assumed. They calculated that as much as half the water in Earth's oceans could have been delivered to the early planet by meteorite impacts.

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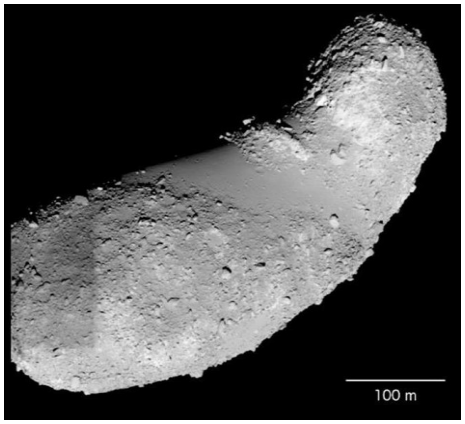

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1. Calculate the relative molecular mass of a water molecule (H_2O).
2. Describe how scientists think the oceans were formed from the Earth's early atmosphere.
3. Give advantages of using instrumental methods like mass spectrometers compared to chemical tests.