

The Composition of Extrasolar Minor Planets

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Abstract: We have identified white dwarf stars whose atmospheres are polluted by accretion of tidally-disrupted minor planets. Although our sample is tiny, it seems that extrasolar minor planets are very approximately similar to the Earth; they are mainly composed of oxygen, magnesium, silicon and iron. Some extrasolar minor planets apparently have experienced differentiation - a key process for understanding the Solar System's large solid bodies such as the Earth. There is evidence that perhaps 10% of the mass of extrasolar asteroids is water. If so, since it is likely that some of this water is liquid, suitable habitats for extremophiles may be widespread in the Milky Way.