

## Exploring extrasolar dusts from ancient deep-sea sediment

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If our solar system encounters the dense molecular cloud and near explosion of supernovae, the flux of galactic cosmic ray and extrasolar dust into Earth's atmosphere will increase and may cause an extreme environmental change (snowball earth and mass extinction). To investigate a causal connection between mass extinction events and encountering the molecular clouds we focus on the geological samples which record both ancient environmental change and cosmic dust, that is deep-sea sediment in an accretional complex on land. We collected more than 400 samples of thin shale interlayer between cherts in the Inuyama-area, which include T/J boundary and Toarcian anoxic event. If extrasolar dust particles are found from terrestrial sample, they would be similar to presolar grains. Thus we performed acid treatment to recover residual mass because most presolar grains are recovered as acid residue. Known types of presolar materials include carbonaceous phases such as nanodiamond, silicon carbide, graphite, and, probably, organic materials, as well as silicon nitride and oxide phases such as corundum, spinel, hibonite and silicate. We challenge the exploration of extrasolar dust particles from deep-sea sediment and will provide our preliminary results.

Keywords: mass extinction, extrasolar dusts, deep-sea sediment, accretionary complex