#0213

Supernova Dust in Terrestrial Deep-Sea Archives.

Feige*, J., Wallner, A., Fifield, L.K., Korschinek, G., Merchel, S., Rugel, G., Winkler, S.R., *University of Vienna, VERA Laboratory, Währinger Straße 17, 1090 Vienna, jenny.feige@univie.ac.at.

The long-lived radionuclides ^{26}Al, ^{53}Mn and ^{60}Fe are produced in the late burning phases and during a supernova explosion of a massive star. These nuclides are then ejected into space, condensed into dust and, if the supernova occurs in a close distance to the solar system, might be able to reach the Earth. An indication for a close-by supernova in the past, deduced from a signal about 2 Myr ago, has already been identified in a ferromanganese crust [1]. Deep-sea sediments, with higher accumulation rates, provide a higher time resolution and allows therefore a more precise dating of the signal.

Here, samples of two sediment cores originating from the Indian Ocean are analyzed to search for supernova signals. Currently, the only method sensitive enough to detect these signals is accelerator mass spectrometry. Additionally to the supernova-produced nuclides, ^{10}Be, which is constantly produced by cosmic rays in the Earth's atmosphere, is measured to date the sediment cores. First ^{10}Be and ^{26}Al data are presented and discussed.

[1] Knie, K., et al. (2004), Phys. Rev. Lett. 93, 17.

Cite abstract as:
Feige, J., Wallner, A., Fifield, L.K., Korschinek, G., et al. (2012) Supernova Dust in Terrestrial Deep-Sea Archives. Paneth Kolloquium, Nördlingen (Germany), abstract URL: http://www.paneth.eu/PanethKolloquium/2012/0213.pdf (abstract #0213).