

+

#0061

+

**Thermal consequences of planetesimal impacts  
on meteoritic parent bodies**

Fischer\*, C., Gail, H.-P., Tieloff, M., \*Institut für  
Theoretische Astrophysik, Universität Heidelberg, Albert-  
Ueberle-Str. 2, 69120 Heidelberg, [ch.fischer@stud.uni-  
heidelberg.de](mailto:ch.fischer@stud.uni-heidelberg.de).

Radioisotopic ages of meteorites contain useful information about the evolution of their parent body. However, high temperatures induced by impacts can lead to a reset of thermochronometrical clocks. We investigate the consequences of shock heating due to planetesimal impacts on thermal history of meteoritic parent bodies.

The Z model [1] is used for crater and ejecta modelling and the temperature changes due to shock heating are calculated as in [2]. The thermal evolution after the impact is then calculated by solving the heat conduction equation with the finite element method.

The results are used to analyse the consequences for metamorphism of the meteoritic material and for thermochronometry.

[1] Maxwell, D.E. (1977) *Imp. & Expl. Crat.*, 1003-1008.

+

[2] Takagi, Y. & Mizutani, H. (1990) *Planet. Sci.* 8, 1-11.

+

Cite abstract as:

Fischer, C., Gail, H.P., Tieloff, M. (2015) Thermal consequences of planetesimal impacts on meteoritic parent bodies. Paneth Kolloquium, Nördlingen (Germany), abstract URL:

<http://www.paneth.eu/PanethKolloquium/2015/0061.pdf> (abstract #0061).