

+

#0016

+

Growth of the H chondrite parent body and thermal history of the Acapulco parent body.

Henke*, S., Gail, H.-P., Trielloff, M., Schwarz, W., * Universität Heidelberg, ZAH, Institut für Theoretische Astrophysik, Albert-Ueberle-Straße 2, 69115 Heidelberg and Henke@uni-heidelberg.de

The formation of the H chondrite parent body was likely by accretion of km sized building blocks that may have been heated and even sintered before being incorporated into the parent body. Using our model for the thermal evolution of asteroids, we show that those building blocks are only presintered if they are larger than about 5 km in radius and if they are accreted more than 0.7 Ma after onset of growth, and thus the influence on the thermal evolution of the H chondrite parent body is not very strong.

Furthermore, we present first results of fitting our model of the thermal evolution of asteroids to cooling ages of acapulcoites and lodranites to determine appropriate values of the formation time and radius for the parent body.

The numerical model used for the thermal evolution of asteroids is a one-dimensional model. It includes sintering by using a hot isostatic pressing model and cold pressing. Heating is by ^{26}Al and ^{60}Fe and long-lived isotopes.

+

+

Cite abstract as:

Henke, S., Gail, H.-P., Trielloff, M., Schwarz, W. (2013) Growth of the H chondrite parent body and thermal history of the Acapulco parent body. Paneth Kolloquium, Nördlingen (Germany), abstract URL: <http://www.paneth.eu/PanethKolloquium/2013/0016.pdf> (abstract #0016).