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Revised age for Iapetus

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Decay energies used for computing the heat produced by the decay of 26Al in geophysical models have recently been reviewed [1,2]. The 26Al decay scheme is complex and the values used range by a factor ∼3. This is a major issue because 26Al is a primary heat source for planetary objects formed in the early solar system. They [1,2] recommend a heat production value of 3.12 MeV per decay and a half-life of 0.717 My. This heat value is a factor of ∼2.4 higher than used for Iapetus by Castillo-Rogez et al. [3]. The new value does not change their conclusions but does shift their time of formation by about 1 My, (from ∼2.5 - 5.0) to between ∼3.4 and 5.5 My after the formation of the Ca-Al inclusions (CAIs). Since Saturn had to be in place before Iapetus could form, Saturn formed less than ∼5.5 My after CAIs. This constraint is fully consistent with the growing number of observed protoplanetary disks that have cleared lanes, indicating giant planet formation in less than 8 My [4]. This work was performed at the Jet Propulsion Laboratory-California Institute of Technology, under contract with NASA. [1] Castillo-Rogez et al. (2009) Icarus, submitted. [2] Matson et al. (2009) Lunar and Planet. Sci. Conf. 40, submitted. [3] Castillo-Rogez J. et al. (2007) Icarus, 190, 179-202. [3] Cieza et al. (2007) ApJ 667, 308-328.