

Comet formation mechanisms

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Cometary nuclei are presumably the most pristine bodies in the Solar System and are, thus, predestinated objects for the study of planet formation. I will review the two competing planetesimal-formation models and their respective predictions for the properties of planetesimals. Recent numerical studies (Schwartz et al. 2018, *Nature Astronomy*) have shown that the collisional evolution from planetesimals to cometary nuclei, although catastrophic in nature, might preserve the major properties of the planetesimals, such as low temperatures and high porosities. Thus, cometary nuclei might have still preserved the pristine building blocks that were present in the planetesimal-formation era. With the wealth of data from comet 67P gathered by the Rosetta mission, a test of the different formation scenarios has become possible.