

Problem of South Pole–Aitken basin origin

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South Pole–Aitken (SPA) basin on the Moon is the largest impact structure in the entire Solar System. Its dimensions exceed 3000 km, and its depth reaches 9 km. There is no generally accepted explanation for the origin of this basin. The existing hypotheses suggest that the basin was formed about 4 billion years ago as a result of the fall of a very large cosmic body.

Based on the cumulative impact mechanism of the formation of large craters and sea basins on the Moon, Mars and Mercury, a hypothesis is substantiated, according to which we conclude the following.

The SPA basin arose not as a result of the impact of one large cosmic body, but as a result of multiple falls of high-speed galactic comets in periods of the last four bombardments of the Solar System by galactic comets.

The elliptical shape and a peculiar ring structure of the SPA basin are caused not only by the oblique incidence of galactic comets, but also by an increase in the angle of their incidence relative to the plane of the Moon's equator with each subsequent bombardment.

The time of the SPA basin formation should be considered Cenozoic, i.e., its age is 65 million years.