

## Effect on the obliquity due to a giant impact on a rotating ice giant

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Solar system planets have intrinsic rotation period and obliquity. Especially, Uranus's obliquity is 98 degrees, which is larger than Jupiter, Saturn, and Neptune. Obliquity of Uranus is to the giant impact event. However, previous studies ignored the pre-impact rotation of Uranus. To understand the tilted rotation axis via a giant impact, we calculate the giant impact on a rotating target. We use Godunov Smoothed Particle Hydrodynamics simulation. We include that a giant impact can reproduce the present obliquity of Uranus if the impactor collides on anti-rotating direction.

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