Ring-mold craters within Occator Crater, Ceres: Evidence for subsurface ice reservoirs

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One of the main tasks of the Dawn mission is to characterize the potentially ice-rich crust of the dwarf planet Ceres. Ongoing studies reveal morphological features related to ice-rich material such as pits or particular landslides. Here we report the identification of ring-mold craters within the huge impact crater Occator. The Cerean ring-mold craters exhibit strong morphological similarities to ring-mold craters on Mars, where ice-rich material is thought to be involved in such crater development. Ring-mold craters are common on lineated valley fill and lobate debris aprons on Mars. They are thought to be formed on layers with subsurface glacial ice. The occurrence of water ice reservoirs in the subsurface reveals that ice-rich material likely plays an important role in the development of ring-mold craters on Ceres. We found different shapes of ring-mold craters within Occator crater on Ceres. The craters contain either a central pit or bowl or a central peak.