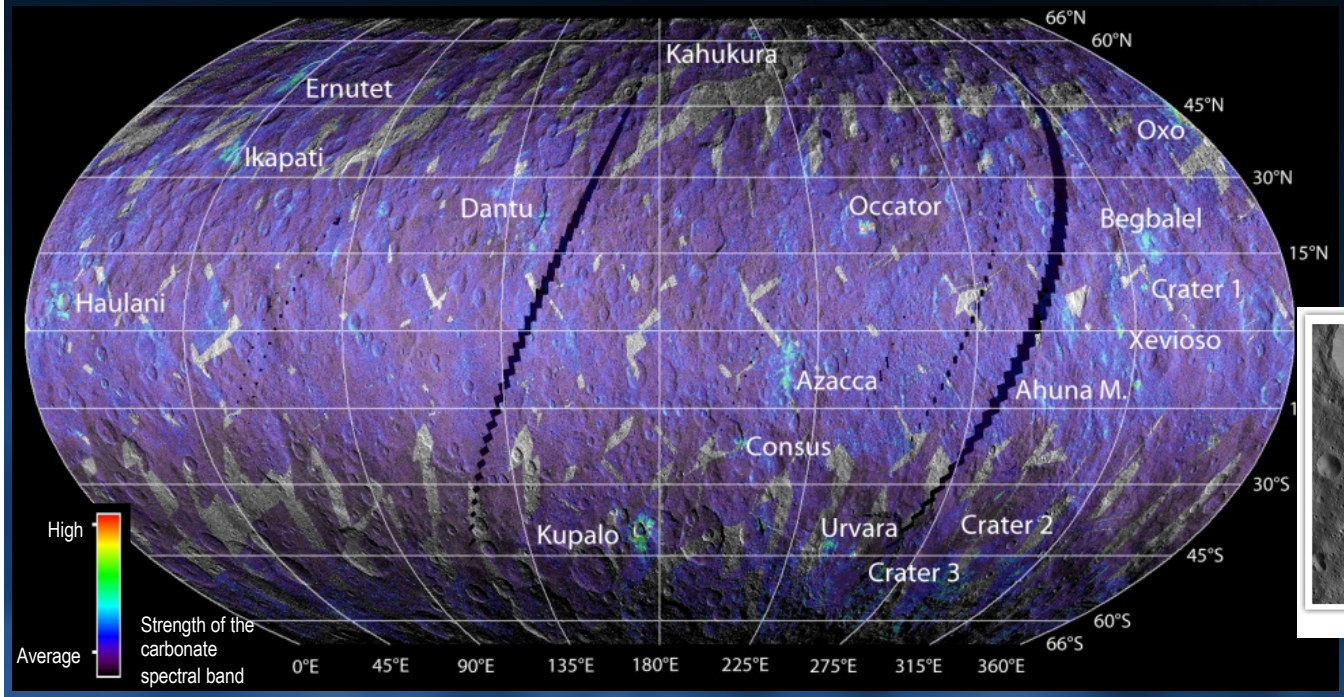
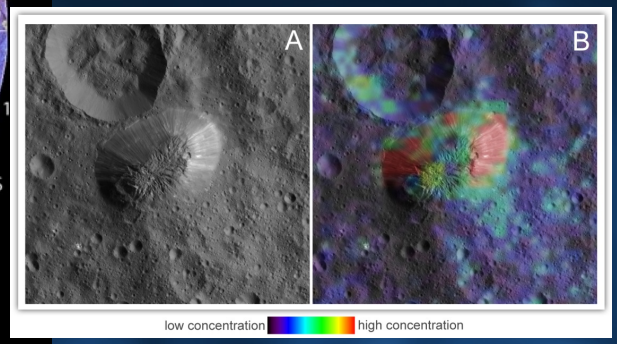
Carbonate-Rich Sites on Ceres



Left: Map of carbonate-rich sites on Ceres. Their varying compositions point to crustal heterogeneities. *Below*: High carbonate content is found on the flanks of the cryovolcano Ahuna Mons.



(Carrozzo et al., *Science Advances*, 2018)

Carbonate-rich sites on Ceres, measured by the Dawn spacecraft, are associated with young craters and cryovolcanic features suggesting recent formation. The visible and infrared mapping spectrometer (VIR) on Dawn mapped the distribution and chemistry of carbonate-rich sites on dwarf planet Ceres, and detected hydrated forms for the first time. Most of these carbonates were produced by aqueous alteration in Ceres' early global ocean, and travelled through the subsurface as brine solutions. The presence of hydrated carbonates indicate active processes, such as small impacts, landslides, or geological activity, in this heterogeneous surface composition.