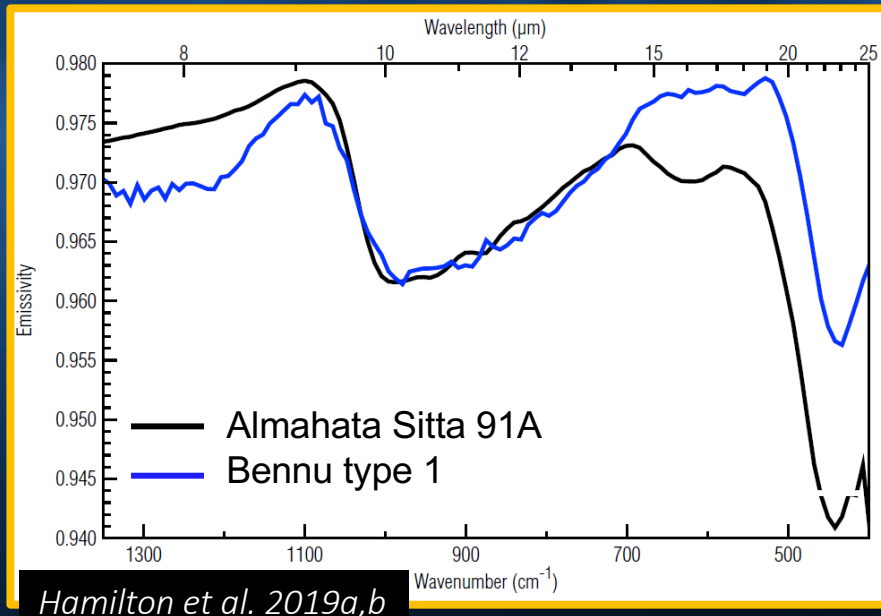
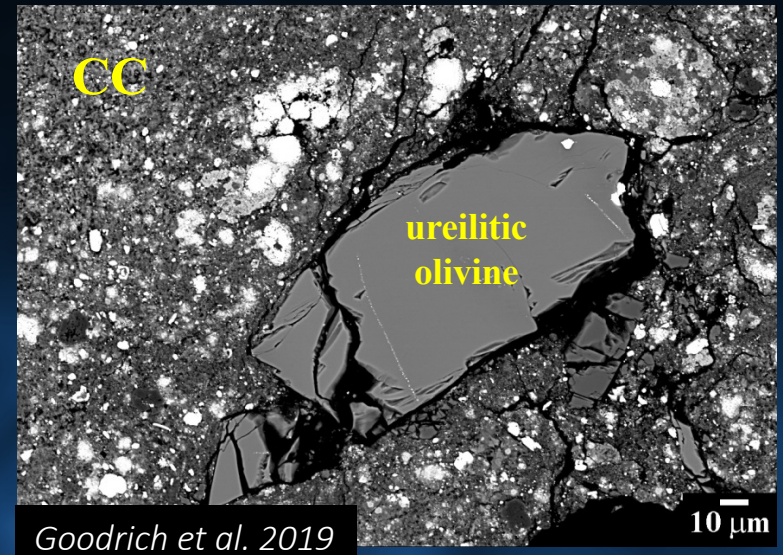


2008 TC₃ – Ureilitic or Carbonaceous Chondrite Asteroid?

A better compositional understanding of a recent meteorite fall may provide clues to the composition of other nearby asteroids.

- In 2008, asteroid 2008 TC₃ disintegrated in the atmosphere over Sudan, with some pieces surviving to become the Almahata Sitta (AhS) meteorite.
- Most AhS stones are ureilites, a type of achondrite, but some were chondrites. Therefore, 2008 TC₃ was thought to be ureilitic, but no stones showed the relationship between these different materials.



- Newly discovered fragment AhS 91A (above) is a hydrous carbonaceous chondrite (CC) that contains minor ureilitic and other clasts.
- Physical and spectral properties of this fragment match those of the parent asteroid better than ureilites, suggesting that it was dominantly a CC.
- Additionally, the thermal infrared spectrum of AhS 91A (left) resembles some surfaces on Bennu, suggesting similarities between the two asteroids.