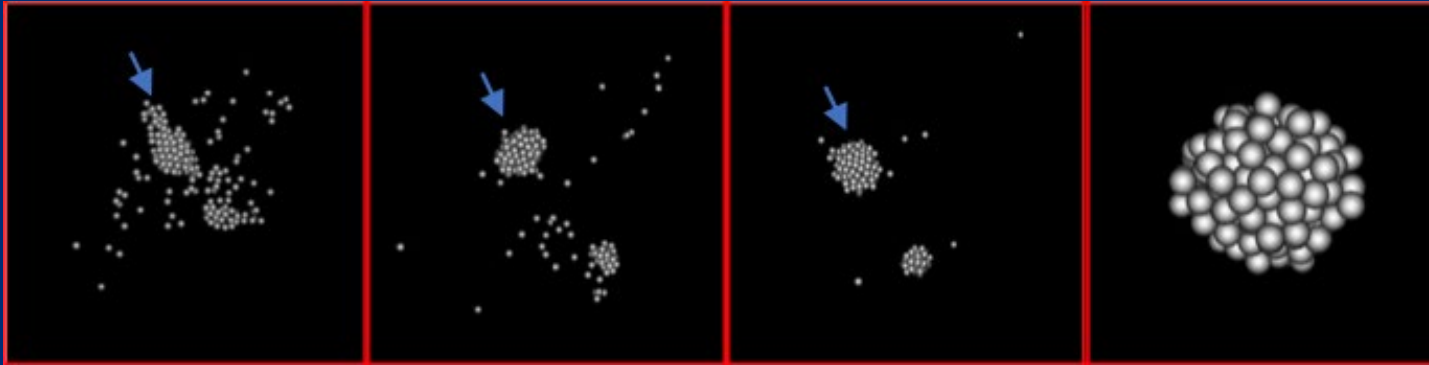
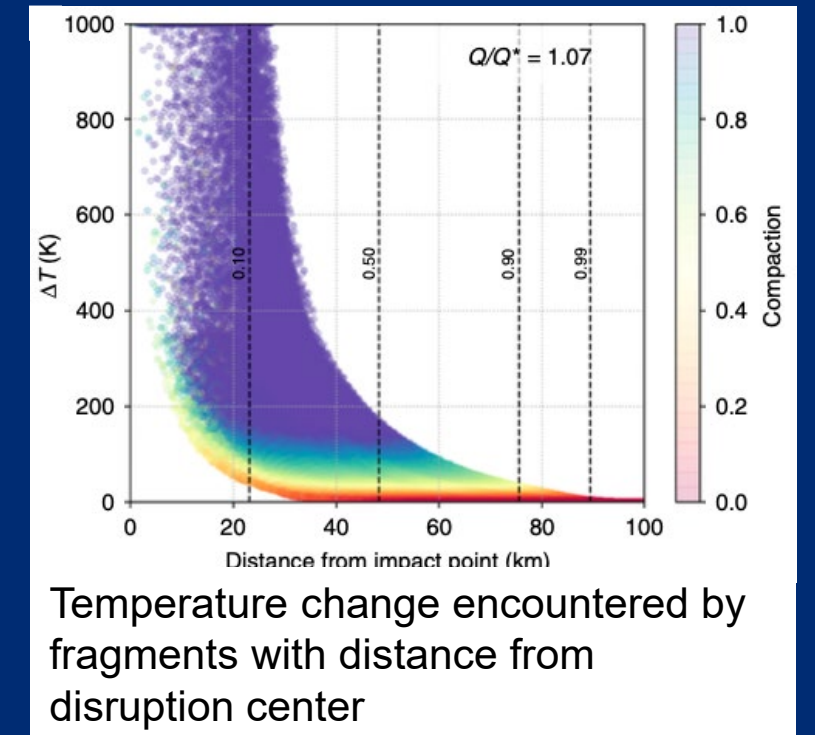
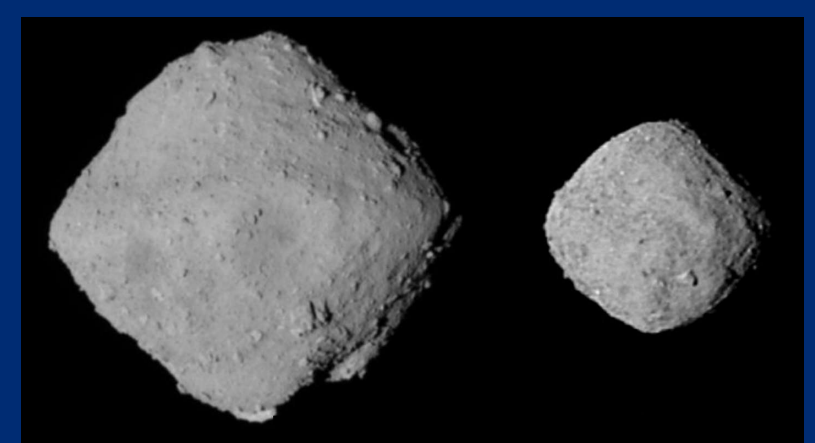


Origin of Bennu and Ryugu

- Numerical simulations of large asteroid disruptions, such as those occurring in the asteroid belt between Mars and Jupiter, provide an answer to the mysteries of the spinning top shape and different hydration levels of Bennu and Ryugu.
- The simulations show that ejected fragments re-accumulate to form aggregates that can form shapes that resemble spinning tops. This is consistent with the observed crater population seen on both asteroids, but not likely if these shapes were formed by the more commonly accepted YORP spin-up processes.



- Simulations also show re-accumulated fragments can have various hydration levels, explaining the observed diversity and low densities of those objects.
- The global properties of Ryugu and Bennu could thus be the direct outcome of the disruption of their parent body in the asteroid belt



The asteroids Ryugu and Bennu are aggregates born from the disruption of a large parent asteroid.