

## **NEW VIEW OF CERES, as Dawn Craft moves higher**

Remember the famous bright spots on dwarf planet Ceres? Some thought they looked like signs of an alien intelligence. Here's a recent view from a new angle, by the Dawn spacecraft.

It looks like the moon, but it's Ceres, largest body in the asteroid belt, **now classified as a dwarf planet**. This image shows Occator Crater, some 57 miles across and home of Ceres' famous bright spots. The dramatic new view was taken October 16, 2016 from Dawn's fifth science orbit, about 1,480 km above Ceres. Since arriving at Ceres in March 2015, Dawn has shifted between various orbits to give us amazing views of this little world. It reached this new orbit in early October. In this image, the angle of the sun was different from that in previous orbits. **This image shows the famous bright spots in Occator Crater on Ceres. There's a central bright region and secondary, less-reflective areas, prominent near the limb, or edge, of Ceres in this image.**



Occator Crater, some 57 miles across and home of Ceres' intriguing brightest areas, is prominently featured in this image from NASA's Dawn spacecraft

At 92 km wide and 4 km deep, Occator displays evidence of recent geologic activity. The latest research suggests that the bright material in this crater is comprised of salts left behind after a briny liquid emerged from below, froze and then sublimated, meaning it turned from ice into vapour. The impact that formed the crater millions of years ago unearthed material that blanketed the area outside the crater, and may have triggered the upwelling of salty liquid.

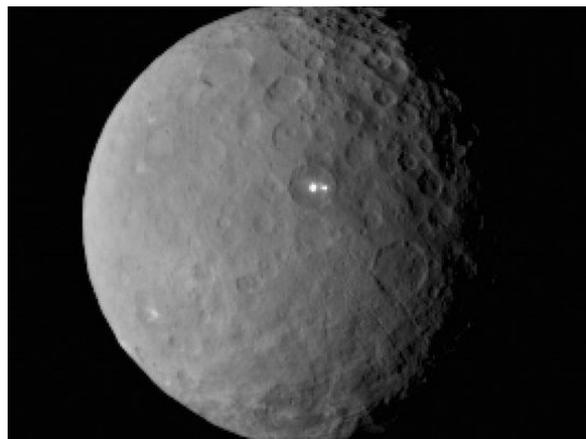
The image that started the controversy was taken by NASA's Dawn spacecraft as the craft approached the dwarf planet Ceres on 19 February from a distance of nearly 46,000 kilometres. It shows that the brightest spot on Ceres has a dimmer companion, which apparently lies in the same basin.. At first, many thought these famous bright spots on Ceres looked like alien lights, but now – thanks to Dawn – we know there are many bright spots on Ceres and that they are likely salt deposits.

**After months of research, scientists say they've cracked the mystery of the bright spots seen by NASA's Dawn spacecraft on the surface of dwarf planet Ceres. The glowing spots are likely salt deposits.**

Ceres has more than 130 bright areas, and most of them are associated with impact craters. Images from Dawn's framing camera suggest the bright material is consistent with a type of magnesium sulfate called hexahydrite, akin to the magnesium sulfate we know on Earth as Epsom salt.

**Reviewing three possible analogs for the bright spots (ice, clays and salts), salts seem to fit the bill best of what we see on the surface of Ceres.**

The researchers say that these salt-rich areas were likely left behind when water-ice sunk into Ceres surface sometime in the past. Impacts from asteroids would have unearthed the mixture of ice and salt. The location of some bright spots also coincide with places where water vapour was detected by other spacecraft. This gives us confidence that the bright spots are likely salt deposits left over by sublimating salty water. In this closest-yet view, the brightest spots within a crater in the northern hemisphere of the dwarf planet Ceres are revealed to be composed of many smaller spots. Their exact nature remains unknown. But the global nature of Ceres' bright spots suggests that this world has a subsurface layer that contains briny water-ice.



This image of Ceres was taken by NASA's Dawn spacecraft of dwarf planet Ceres on 19 February from a distance of nearly 46,000 kilometres.