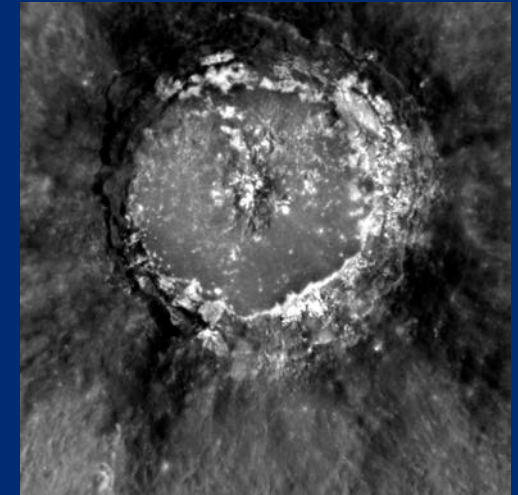
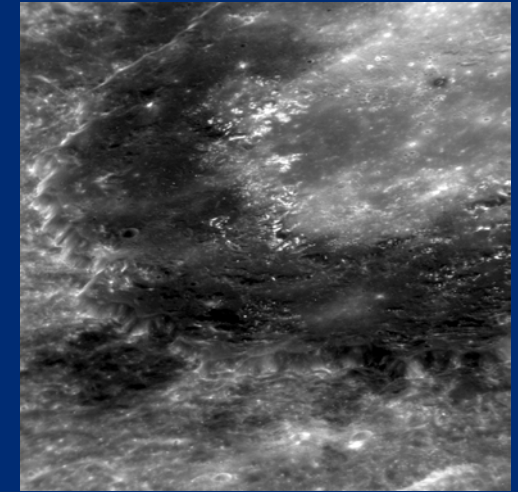
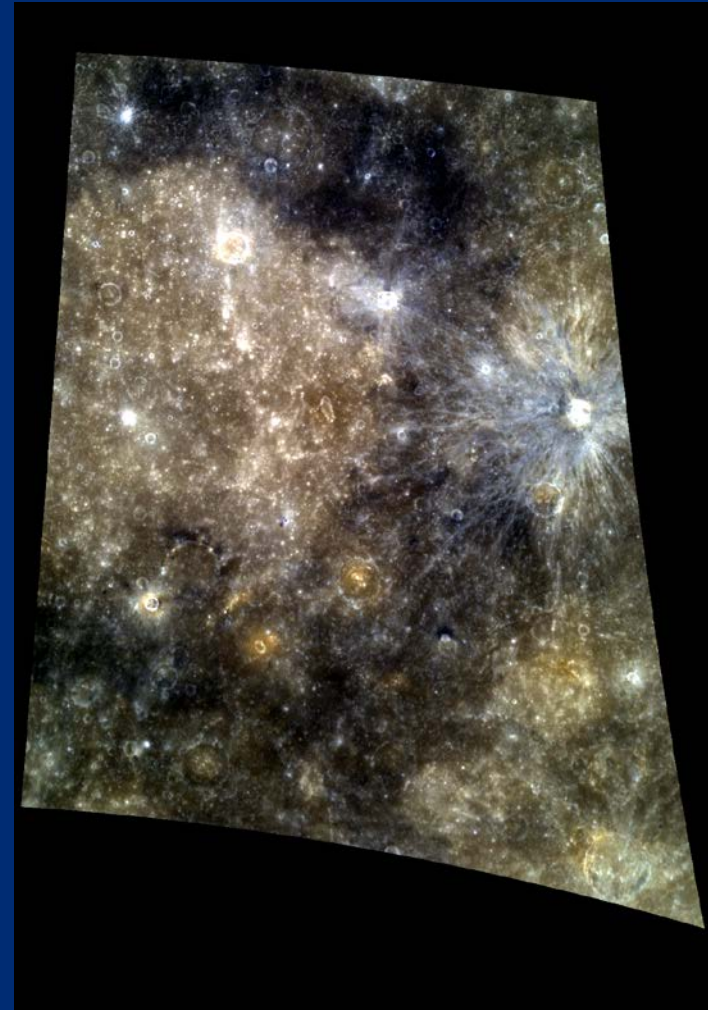


# Mercury's Dark Secret

- Dark material (referred to as "Low Reflectance Material" or "LRM") found on the surface of Mercury is enriched in carbon.
- The darkest material was excavated by impact craters, suggesting that this material originates beneath the volcanic plains.
- Some of the darkest deposits are estimated to contain >4.5 weight % carbon.
- The oldest regions of the crust of Mercury are also enriched by ~2.5 weight % carbon compared with the younger portions of the planet.
- This evidence suggests that the carbon is native to Mercury and may support the hypothesis that early in the planet's history it was encircled by molten rock (a "magma ocean") in which carbon in the form of graphite was an important constituent.



**Low Reflectance Material on Mercury is enriched in carbon, and is native to Mercury.**