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Mercury: A Review of Observed Characteristics and Formation Possibilities

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Enough is known about Mercury to raise many intriguing questions. Is the magnetic field remanent or continuously generated? Is the tenuous atmosphere derived from surface materials, the Sun, meteoroid material or all of these? Was Mercury smashed apart during its early history and reassembled from the fragments? Are the surface soils devoid of iron? Why is the mean density higher than any other terrestrial planet? Is Mercury's surface chemistry unique amongst the terrestrial planets? What is the high albedo material in permanently shadowed regions at high latitudes? This talk will address these questions in the context of spectroscopic and imaging ground-based observations of Mercury from visible to radio wavelengths, and the Mariner 10 and MESSENGER missions.