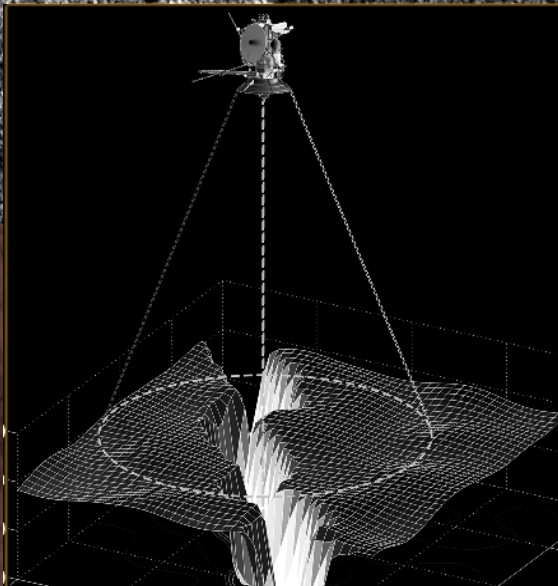


# Rivers of Hydrocarbons Flow Through Titan's Narrow Canyons

Cassini radar and altimeter echoes have revealed surprisingly deep (up to 1000 feet), steep canyons that are home to rivers of hydrocarbons on Saturn's moon Titan. These canyons appear to be connected to Titan's northern lake, Ligeia Mare.

The Titan canyons may have formed either when the land rose tectonically or the sea level temporarily dropped. Both mechanisms helped to carve the river canyons of the American Southwest. On Titan, however, the liquid is methane and ethane, not water, and the surface is rock-hard mix of water ice and solid hydrocarbons.

Upstream tributaries were found to be much higher than Ligeia's sea level. This difference would cause flow that could erode Titan's deep canyons in the way the Colorado River carved the Grand Canyon. The liquid at the river's mouth and main trunk, however, was level with the sea. This may be a sign of backflooding, producing a drowned river valley similar to the Georges River in Australia.



In the "Vid Flumina" river channel network, radar found nearly vertical canyons up to one-third mile deep and less than a half-mile wide. The radar echo from the canyon bottom showed the presence of liquid.