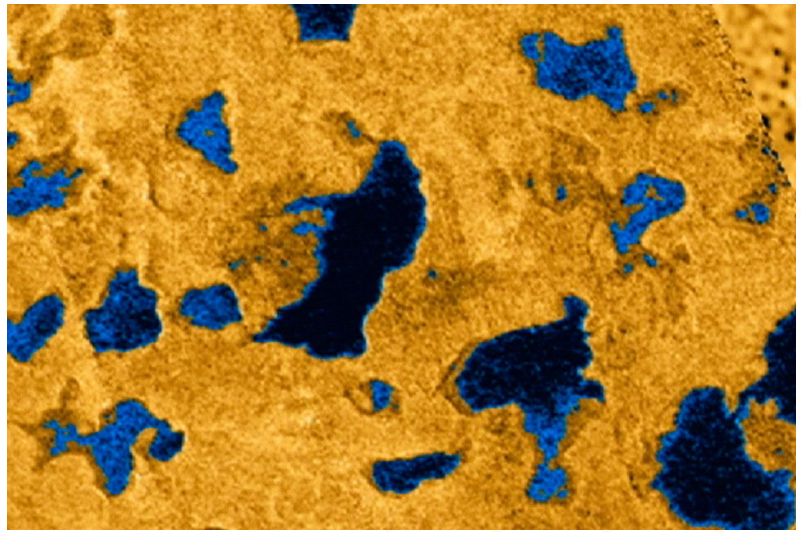
Titan's liquid hydrocarbon seas

Slide by Neil Goalby. Available from rsc.li/4eg12S7

Radar observations from the Cassini–Huygens space probe have given new insight into Saturn's largest moon, Titan. Titan has flat plains and polar regions, with seas and lakes of liquid hydrocarbons, primarily made of methane and ethane.

The observations of Titan's surface showed that the seas were mostly level, with different ratios of methane and ethane. They showed methane-rich rivers entering seas with higher ethane content. Researchers detected small waves in coastal areas near estuaries, which could indicate that Titan's seas have tides.



Titan is the only known place to have a liquid on its surface other than Earth

Questions

1. Define hydrocarbon.
2. What is the molecular formula of ethane?
3. Explain why ethane has a low boiling point.