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Abstract

Titan: Earth's REAL Sister Planet

Lou Mayo

NASA Goddard Space Flight Center

Ever since the discovery of Titan's atmosphere in 1944 by Gerard Kuiper, astronomers have speculated about Earth like analogies and more privately wondered about possibilities for life. Both ground based and space borne campaigns have been carried out since then to answer these questions and in most respects, we got more than we bargained for. Keck, IRTF, HST, Voyager, and Cassini/Huygens observations (to name a few) have provided a wealth of data. The Titan we know today is shrouded in a thick photochemical aerosol haze, opaque in visible wavelengths. It has a rich pre-biotic atmospheric chemistry, rivers, lakes, clouds, rain, and seasons. Titan's polar regions are no less interesting. Seasonal changes have been observed and infrared observations from spacecraft suggest the presence of an assortment of hydrocarbon and nitrile molecules that condense out during winter seasons and precipitate to the ground. This talk will outline Titan's history of discovery and focus on findings that have shed light on its polar regions.