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A Joint NASA-ESA Titan Saturn System Mission

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In the 50 years since space exploration began, the Titan Saturn System Mission (TSSM) would be the first in situ exploration of active organic chemistry and climate on the land, on the sea, and in the air of another world. TSSM is planned as a collaborative NASA-ESA mission that includes a full complement of NASA and ESA exploration elements. Orbiter, lander and montgolfière flight elements deploy highly capable complementary instruments in orbit, in atmospheric flight and on a large sea, and investigate the plumes of Enceladus in ways that Cassini cannot. The same instruments that provide orbital global coverage of Titan will be used to gain exceptional insights into the chemistry and internal evolution of Enceladus during seven targeted close flybys that promise to answer many of the most intriguing questions raised by Cassini. Furthermore, TSSM will make measurements that shed light on how Saturn's magnetosphere exchanges mass and energy with Titan and in particular feeds ions from other moons, such as Enceladus, into Titan's atmosphere.

This poster will present the NASA-ESA approach to achieving comprehensive focused exploration of Titan and Enceladus.