



Contribution ID: 15

Type: **Oral contribution**

Exocomets and Their Impact on Planets in the Habitable Zone

Wednesday 25 March 2026 16:30 (20 minutes)

Transiting extrasolar comets have been detected for four decades. Their gaseous components are revealed through spectroscopy, while their dusty tails produce characteristic photometric signatures - remarkably consistent with predictions made 25 years ago. Recently, automated searches for exocometary transits in Kepler and TESS datasets have led to the identification of several dozen new systems. Exocomets offer a unique window into the role of small bodies - often driven onto eccentric orbits by massive planets - in shaping planetary systems, particularly in the delivery and redistribution of volatiles toward the habitable zone. Over the past two years, major progress has been achieved in determining their composition (Vrignaud et al. 2024a, b, 2025a, b). Through detailed analysis of archival HST data and new HST observations obtained in 2025, we can now constrain the abundances of key species, including the C/Fe ratio - a proxy for the volatile-to-dust content. These recent findings yield surprising results, and demonstrate that exocomets under the gravitational influence of massive planets can efficiently transport material throughout planetary systems down to the habitable zone.

Presenter: Dr LECAVELIER DES ETANGS, Alain (Institut d'Astrophysique de Paris - CNRS, France)

Session Classification: Formation of gaseous giant planets and their impact on inner low-mass planets in the habitable zone: from solar system to exoplanetary systems