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On the Frontier: Some Observations of Surface Tension Phenomena from the International Space Station
DON PETTIT, NASA - Johnson Space Center

Frontiers are interesting places; they offer the possibility to make observations outside our normal range of experience. The International Space Station is such a frontier offering a local reduction in acceleration force by nearly a factor of a million thus allowing the observation of subtle phenomena that are typically masked on Earth. In this presentation we show a variety of unusually large length scale fluid interfacial phenomena dominated by electro-hydrodynamics, Marangoni convection, and non-Newtonian fluid mechanics. The experimental results presented are largely performed during weekends and other brief time-off periods allotted to the astronaut crew on the ISS.