

Dear Organizer,

Advanced Cooling Technologies (ACT) plans to present/report the following:

1. Sample return concept and its development to date. It is a passive cooling concept based on consumables (vapor venting). The technology presented is relevant/responsive/supportive to the following abstracts:
 - a. *"A South Pole-Aitken Basin Sample Return Mission Using Commercial Rovers and Landers"*
 - b. *"Ceres Sample Return"*
 - c. *"Comet Surface Sample Return-CSSR"*
 - Calin Tarau and Jeff Diebold (from ACT) are the developers.

2. Cooling concept and its development for Venus's surface survival. It is a passive cooling concept based on consumables (mixture of compressed gas and vapor venting). The technology presented is relevant/responsive/supportive to the following abstracts:
 - a. *"Venus In Situ Transfer and Analysis (VISTA)"*
 - b. *"Seismic and Atmospheric Exploration of Venus-SAEVe"*
 - c. *"Venus Bridge Orbiter and Surface System-V-BOSS"*
 - Calin Tarau and Kuan-Lin Lee (from ACT) are the developers.

3. Thermal Management and Cooling concept for Mercury Lander. It consists of passive components that include a cooling concept based on consumables (potentially mixture of compressed gas and vapor venting or only vapor venting). The technology presented is relevant/responsive/supportive to the *"Mercury Lander Mission Concept Study"* abstract
 - Calin Tarau, Jeff Diebold and Kuan-Lin Lee (from ACT) are the developers.

4. Thermal management concepts and their development status for lunar night survival: Thermal Switches, Non-Integrated Hot Reservoir Variable Heat Pipes (VCHPs), Hot Reservoir VCHPs with Non-Condensable Gas (NCG) Flow and Thermal Control Valves (TCVs) for Loop Heat Pipes (LHPs). The technologies presented are relevant/responsive/supportive to the following abstracts:
 - a. *"A South Pole-Aitken Basin Sample Return Mission Using Commercial Rovers and Landers"*
 - b. *"Lunar Geophysical Network Mission"*
 - Bill Anderson, Calin Tarau, Kuan-Lin, Mike Ellis, Jeff Diebold, Nathan Van Velson, Ion Nicolaescu, David-Paul Schulze, Joshua Charles, Rohit Gupta (from ACT) are the developers.

5. Autonomous Melting Probe for Icy Planets, status of the development. ACT is currently developing a thermal probe based on Radio-Isotope power that is capable of passively adjusting its thermal resistance with the environment to maximize the forward melting rate as well as to release the probe from critical conditions (tail re-freezing) during descent. The technology presented is relevant/responsive to the *"Enceladus Orbilander"* abstract
 - Calin Tarau, Kuan-Lin Lee and Brett Leitherer (from ACT) are the developers.