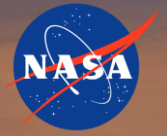




Small Satellite-sized Hypersonic Inflatable Decelerators for Interplanetary Science Missions

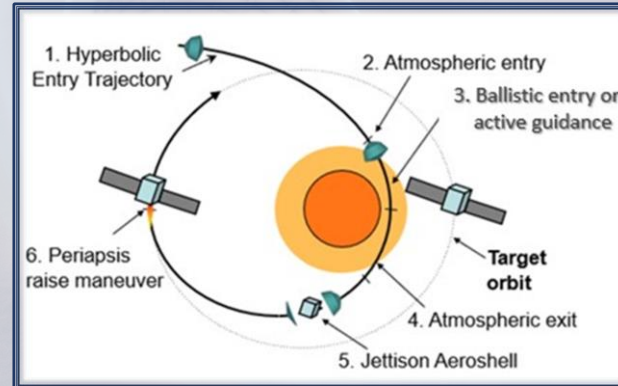


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- Using SmallSats for interplanetary missions
 - Involves hyperbolic entry velocities.
 - Higher orbit insertion costs using fully propulsive methods.

- Aerocapture as a solution
 - Reduces propulsive burn requirements.
 - Atmospheric entry requires an Aeroshell.
 - Aeroshells can be rigid or deployable.

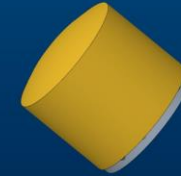


HIAD scaled models

Entry Configuration



Launch Configuration



- Can HIAD technology be scaled-down for interplanetary missions using aerocapture for orbit insertion?

Yes, they can!

- Feasibility study results are presented for aerocapture mission scenarios at **Mars, Venus, and Earth.**