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QUICK SETUP LUNAR/MARTIAN BASE CAMP IMPLANTED INTO LAVA TUBE DERIVED  
FROM JASMINE DIMPLES AND LOW CURVATURE FOLDING

**Abstract**

In the initial steps of Lunar/Martian habitation, a quickly deployable base camp is beneficial in preparing for permanent human presence. The lava tube is considered a favorable site for quick establishment of a camp due to its protected environment. Envisioning a habitation module and related infrastructure which occupy the lava tube, each have their own system for semi-automatic deployment. First, the mock-up shows simultaneous ejection of an envelope and embedded floor for the habitation module by air pressure. The module also comprises footings and releasing rails applicable to other infrastructures. The geometry of the envelope is derived from jasmine flower-shaped dimples and low curvature folding. The dimples enable a multifaceted aluminum envelope to snap-through easily during the deployment through dynamics that reduce in-plane stiffness while increasing out-of-plane stiffness. The floor is composed of sliding beams and four-legged bracings. Transportation and installation scenarios would develop based on these interventions.