SPIDER: Surface Probe Interplanetary Drill Exploring Regolith

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NASA’s InSight probe was used to hammer into the surface of Mars in hopes of studying the planet’s internal temperature. Unfortunately the mission ended early, due to the probe penetrating a maximum of 3 centimeters, when it was designed to descend up to 16 feet. The question is why did it penetrate only 3 centimeters? The probe used a hammering mechanism to punch through Mars’ surface, where SPIDER: Surface Probe Interplanetary Drill Exploring Regolith uses a drill mechanism. This difference in design is intended to allow SPIDER’s drill to bore into the surface of Mars, in hopes of descending deeper than NASA’s InSight probe. Additionally, the use of a drill mechanism allows greater potential to drill through multiple types of planetary substances below the surface, including various rocks or ice, which may have been the challenge encountered by InSight.

Awards Won:
Third Award of $1,000