

Near Earth Asteroid Scout Mission Update

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NASA is developing solar sail propulsion for the Near Earth Asteroid (NEA) Scout, a SmallSat-enabled reconnaissance mission of a Near Earth Asteroid. The NEA Scout mission will use the solar sail as its primary propulsion to allow it to survey and image the NEA for possible future human exploration. NEA Scout will launch on the first mission of the Space Launch System (SLS). After its first encounter with the moon, NEA Scout will deploy the 86-square-meter sail and enter the sail characterization phase. A mechanical Active Mass Translation system, combined with reaction wheels and a cold gas Reaction Control System, will be used for sail momentum management. The spacecraft will perform a series of lunar flybys to achieve optimum departure trajectory before beginning its two-year-long cruise. About one month before the asteroid flyby, NEA Scout will start its approach phase using radio tracking and optical navigation. The solar sail will provide NEA Scout continuous low thrust to enable a slow flyby (<20 m/s) of the target asteroid under lighting conditions favorable to geological imaging. Once complete, NASA will have demonstrated the capability to fly low-cost, high delta-V CubeSats to perform interplanetary missions. The presentation this year is an update with the latest information on project status.