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Strategies for Rapid Implementation of Interstellar Missions: Precursors and Beyond (4)

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THE BREAKTHROUGH STARSHOT INITIATIVE: PROGRAM UPDATE AND NEXT STEPS

Abstract

The Starshot project aims to send a lightweight probe to the nearest star system, Alpha Centauri, in search for evidence of life in it. To reach the target within a couple decades, the probe should be launched at a fifth of the speed of light. Such a speed can be achieved by pushing a gram-scale lightsail in space with a 100 GW-scale laser on Earth over a period of a few minutes. The sail will carry with it a gram-scale payload, including a camera, navigation and communication devices. The project is currently in its initial research and development phase, with a dozen experimental teams working on the laser technology and a comparable number of teams working on the material selection and design of the sail. The talk will overview the current status of the project and look at some of the technology that will be developed during the course of the effort. It will also cover potential precursor missions that are intended to validate the Starshot concept including smaller scale, high velocity missions to solar system bodies.