

Student Explorer Demonstration Initiative: Affordable Access to Space

Jack Sevier and Paul Coleman, Universities Space Research Association

The high cost of access to space for science payloads, together with the long lead times from the inception of a project to when it is actually launched, preclude meaningful involvement of students and entry level professionals in a project from beginning to end. This is in contrast to the early days of space science when projects were less complicated and lead times were much shorter. It is also in contrast to the way university sounding rocket programs are done today. The Universities Space Research Association has long been endeavoring to find affordable means through which university investigators and their graduate students can have frequent access to space for their payloads and on a lead time that spans the typical graduate period. The Student Explorer Demonstration Initiative (STEDI) was conceived as a first step towards a new way of doing business for small payloads. The STEDI program will utilize surplus ballistic missiles from the U.S. strategic weapons inventory (which would otherwise be destroyed under the terms of the START treaty) as the launch vehicle, and will invite proposals for scientific payloads (including the spacecraft, instruments, data analyses, and everything else except for the launch vehicle and launch operations). Total mission costs are capped at \$8 million, of which roughly half would go toward the launch vehicle and launch operations, with most of the remainder going to the cost associated with the payload. Using a modified three stage Minuteman missile, a payload of 350 lbs. can be placed in a 200 n.mile polar orbit. NASA Administrator Dan Goldin has agreed to place high priority on funding in the FY95 budget for three such missions (\$24M). The schedule is to launch all three missions within two years of go-ahead and that the missions be completed within three years of go-ahead. Six candidates will be selected for a four month Phase I study, after which three of them will be selected for continued development.