Beam Steering Devices Reduce Payload Weight

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Langley Research Center

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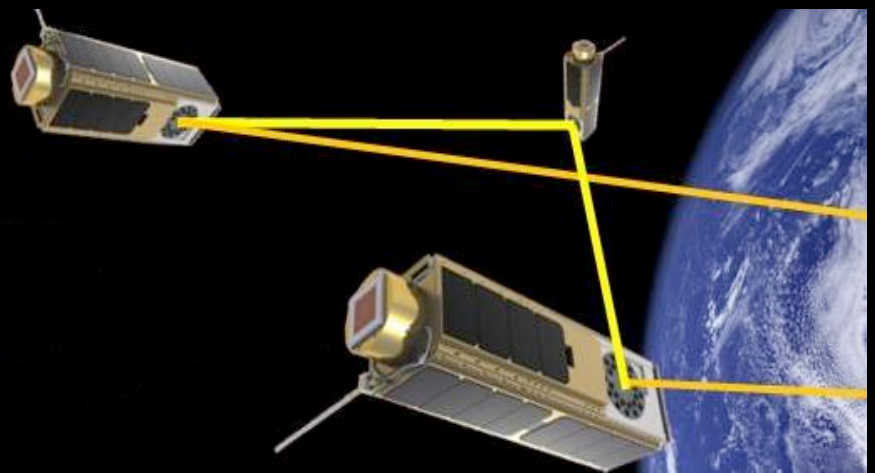

NASA Technology

- Traditionally, redirecting lasers in space for precision applications requires swinging the entire laser apparatus toward the target
- A NASA partner invented a beam steering method that bends and redirects beams using low amounts of power and a reduced footprint

Partnership

- Through Small Business Innovation Research (SBIR) contracts with Johnson and Langley, BNS developed a solution to some of the problems of mechanical beam steering
- Under a 2002 Phase II SBIR grant, BNS developed high-speed, high-resolution, fully programmable nonmechanical beam steering by using optical phase array (OPA) chips

Benefits

- The liquid crystal on silicon OPA chips enable accurate and precise laser beam steering
- BNS's NASA-derived chips are used by all the major aerospace companies and by over 100 research laboratories and universities
- OPA chips have applications in forensics, military sensing technology, and laser imaging