

EDUCATION PARTNERSHIPS IN THE STRATOSPHERE: AIRBORNE ASTRONOMY EDUCATION AND OUTREACH Edna K. DeVore¹ and Dana E. Backman², ¹Director of Education and Outreach, SETI Institute, 515 N. Whisman Road, Mountain View, CA 94043, edevore@seti.org, ²SOFIA Outreach Director, SETI Institute, 515 N. Whisman Road, Mountain View, CA 94043. dbackman@sofia.usra.edu

Introduction: Embedding educators in scientific research environments provides unique learning and teaching experiences. Research experiences have been shown to enhance teachers' STEM (Science, Technology, Engineering, and Mathematics) professional knowledge and skills [1], which impacts the quality of their student's classroom experience and performance [2]. Teacher partnerships also create more opportunities for scientists, engineers and technologists to be engaged in outreach in formal and informal settings. Both communities benefit from teacher research experience programs.

Airborne Astronomy Education and Outreach: NASA conducts research in Earth and space sciences using airborne platforms. The airborne astronomy research aircraft are designed to conduct infrared astronomy possible only from high altitudes or in space. Airborne telescopes have a significant advantage: they perform like space missions but land each morning. Airborne observatories bring together STEM professionals and STEM educators in a unique research environment. This talk will reflect upon the lessons learned from the Flight Opportunities for Science Teacher Enrichment (FOSTER) program conducted cooperatively between NASA Headquarters, NASA Ames Research Center and the SETI Institute. The FOSTER program provided professional development for teachers and flight experiences onboard NASA's Kuiper Airborne Observatory (KAO) from 1991 until 1995 when the observatory was retired [3, 4, 5, 6]. Late in the KAO's service, a series of flights hosted "Live from the Stratosphere," a nation-wide educational broadcast, transmitted directly from the KAO to schools, NASA centers, and science museums. The "Live from the Stratosphere" events point to media-driven outreach opportunities for suborbital vehicles of all types. The KAO's successor, the Stratospheric Observatory for Infrared Astronomy (SOFIA) is designed to support an expanded research experience for teacher teams with the Airborne Astronomy Ambassador program, which draws upon experiences from FOSTER on the KAO and comparable teacher research experiences in diverse scientific environments [7]. Educator's research experiences translate into new classroom teaching strategies and public outreach in their communities.

References:

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