



Integration of the Solar Spectral Flux Radiometer on NASA Aircraft With a Miniature Active Leveling Platform

PI: Sebastian Schmidt, CU/LASP

Objective

- Develop stabilizing platforms for the Solar Spectral Flux Radiometer (SSFR) zenith and nadir looking light collectors (located in the ER-2 Q-Bay and E-Bay) to eliminate incorrect measurements and data loss due to changing aircraft pitch and roll attitude
- Maintain system versatility such that it can be integrated on other NASA aircraft (including the DC-8, P-3, and GlobalHawk), with only minor modifications



zenith system (ER-2 Q-Bay)

nadir system (ER-2 E-Bay)

Accomplishments

- Designed and built active leveling platform for SSFR zenith and nadir light collectors for the NASA ER-2.
- Tested, optimized, and characterized system in three field experiments: (pre-PODEX, PODEX, SEAC⁴RS)
- Used off-the-shelf, ruggedized components that comply with ER-2 requirements
- Developed two different form factors, which allows easy adaptation for other aircraft
- Developed a non-proprietary, low-cost, flexible system, which will be improved and maintained as part of the SSFR instrument

Co-Is/Partners: Peter Pilewskie, LASP; Warren Gore, NASA ARC;
Timothy Moes, Mike Kapitzke, Adam Webster, NASA DFRC