



## NASA SBIR 2014 Phase I Solicitation

### S1.07 Airborne Measurement Systems

Lead Center: GSFC

Participating Center(s):

Measurement system miniaturization and/or increased performance is needed to support for NASA's airborne science missions, particularly those utilizing the Global Hawk, SIERRA, Dragon Eye or other unmanned aircraft. The subject airborne instruments are intended as calibration/validation systems - the proposers should demonstrate an understanding of the measurement requirements and be able to link those to instrument performance. Linkages to other subtopics such as S3.04 Unmanned Aircraft and Sounding Rocket Technologies are encouraged. Complete instrument systems are desired, including features such as remote/unattended operation and data acquisition, low power consumption, and minimum size and weight. Desired sensors include:

- Precipitation- multiphase (0.1 mm to 20 mm with 5 % accuracy in three dimensions).
- Surface snow thickness (5 cm resolution).
- Aerosols and cloud particles (0.01 micron to 200 micron with 10 % accuracy).
- Volcanic ash (0.25 to 100 micron with 10 % accuracy).
- Sulfur dioxide (4 ppb resolution).
- Carbon dioxide (1 ppm accuracy).
- Methane (5 ppm accuracy, 10 ppm precision).
- Three-dimensional wind measurement (1 mps accuracy/resolution at 10 Hz sampling).