



**National Aeronautics and
Space Administration**
Ames Research Center

Laboratory for Advanced Sensing (LAS)
Earth Sciences Division
Sustainability Base
Moffett Field, CA 94035

Overview

The NASA Ames Laboratory for Advanced Sensing (NASA LAS) focuses on science-driven sensing and technology development for next-generation instruments that help us better understand our world and benefit humanity. NASA LAS operates in NASA Ames' Earth Sciences Division with a primary focus on developing novel instrumentation and information systems to advance NASA's Earth Science objectives. We welcome collaborations with scientists at NASA, academia and other federal agencies. *Publications available online.*

Technology Portfolio



FluidCam 1 & 2 - Fluid-Lensing visible and near-infrared computational imagers developed with NASA ESTO support for UAV-based 3D imaging of shallow marine environments at cm-scales. High-bandwidth imaging (500 MB/s), onboard storage (1TB), compute capability (0.4 TFLOPS) and payload-directed flight capabilities.



MiDAR - Multispectral Imaging, Detection and Active Reflectance Instrument. Currently under development with

NASA CIF 2015 grant for FY16 deployment, patents pending. Will enable active Fluid Lensing for multispectral underwater imaging from remote sensing platforms.

Capacities

- Large fleet of Unmanned Aerial Vehicles (UAVs)
- 2 multirotor FluidCam equipped UAVs
- Over 350 flights of experience
- NASA internal FAA certification process



Fluid Lensing Datasets

- American Samoa, Ofu Island (2013, 2016) - cm-scale 2D and 3D color imagery
- Hamelin Pool, Western Australia (2014) - cm-scale 2D and 3D color imagery

People

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Current Collaborators

Stanford University, NASA ESTO, NOAA, University of Miami RSMAS, Mission Blue, EPA, USGS, Google, BAERI, Pumpkin, Inc.