

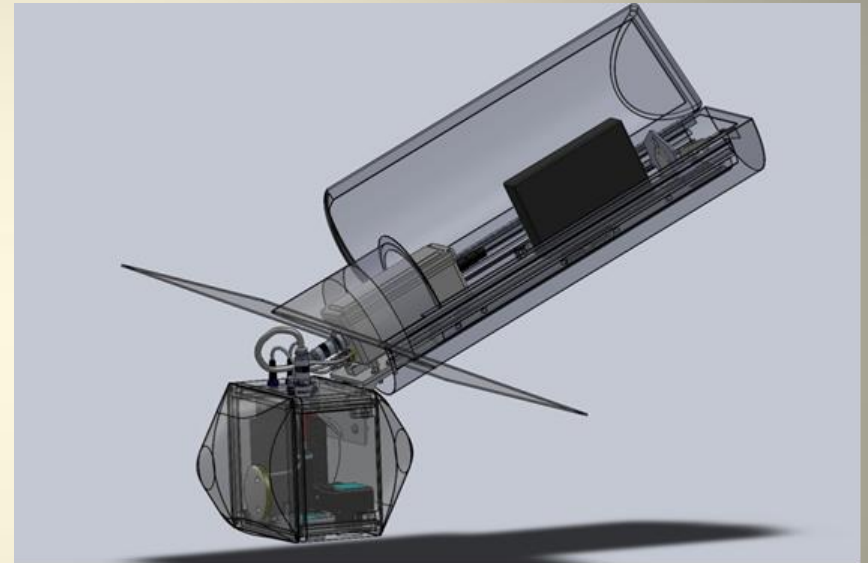


CULPIS-X

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CULPIS-X

- CU Lidar Profilometer and Imaging System – extended
- Initial development supported by NASA
- Follow-on development and deployment supported by ONR, as part of the SIZRS program
- Designed to fit into USCG C-130 flare tube & deploy during the USCG ADA program



Design of CULPIS-X instrument package

CULPIS-X Acquired Data

- distance to surface (laser altimeter)
 - 400 observations per second
 - footprint of ~1m at 300m height above surface
- surface reflectance (pointing spectrometer)
- surface skin temperature (pyrometer)
- digital photographs and continuous video
- aircraft pitch, roll, yaw and rates of motion
- GPS position
- barometric pressure



CULPIS-X in CU Lab. Sensor package on right, data acquisition box in middle, battery on left

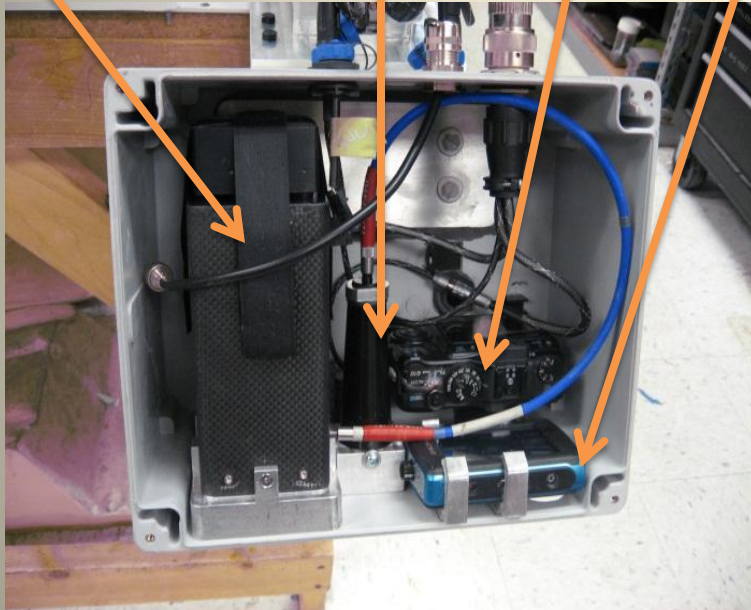
ONR DRI mtg, Seattle, WA, Nov 7-9, 2012

CULPIS
LIDAR

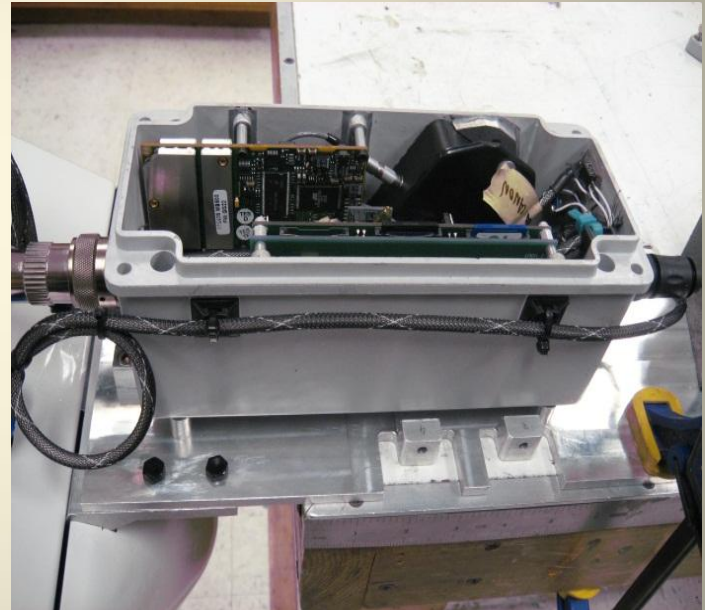
Hyperspectral
Radiometer

Digital
Camera

Video
Camera



CULPIS-X sensor package

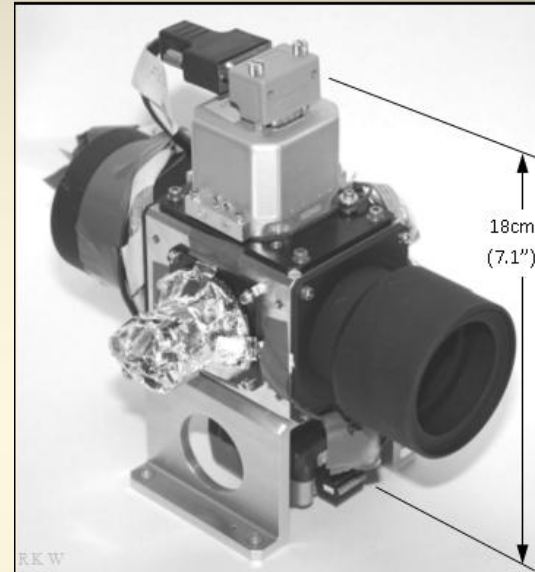


CULPIS-X data acquisition box


CULPIS-X2

Develop 2nd pod for ice sfc temperature obs, containing:

- Ball Experimental SST Radiometer (BESST) radiometer
 - W. Emery (CU), W. Good (Ball Aerospace)
- DRS (model UC640) microbolometer
 - R. Lindsay, C. Chickadel (UW)



CULPIS-X approval process



TASK	Institution	Status
Design CULPIS-X package using CAD program	CU-Boulder	complete
Perform CFD simulation using CULPIS-X and C-130 designs	Naval Air Systems Command (NAVAIR)	delayed
Develop and perform FED analysis using CFD output	CU-Boulder	FED model completed
Analyze FED output & decide on flight approval	US Coast Guard Engineering	Awaiting data