



AEROKATS

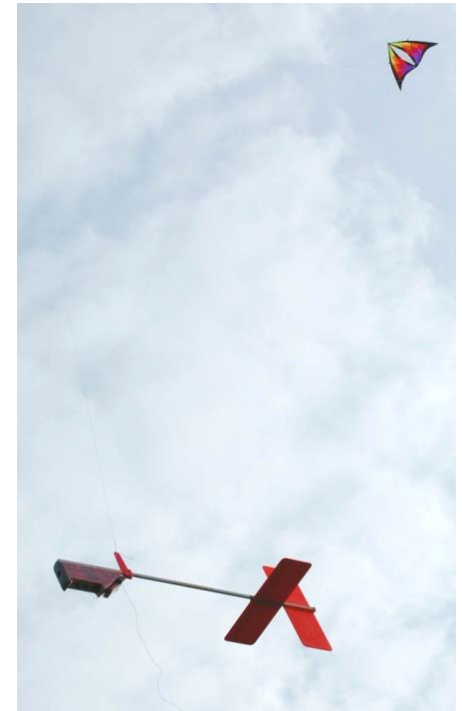
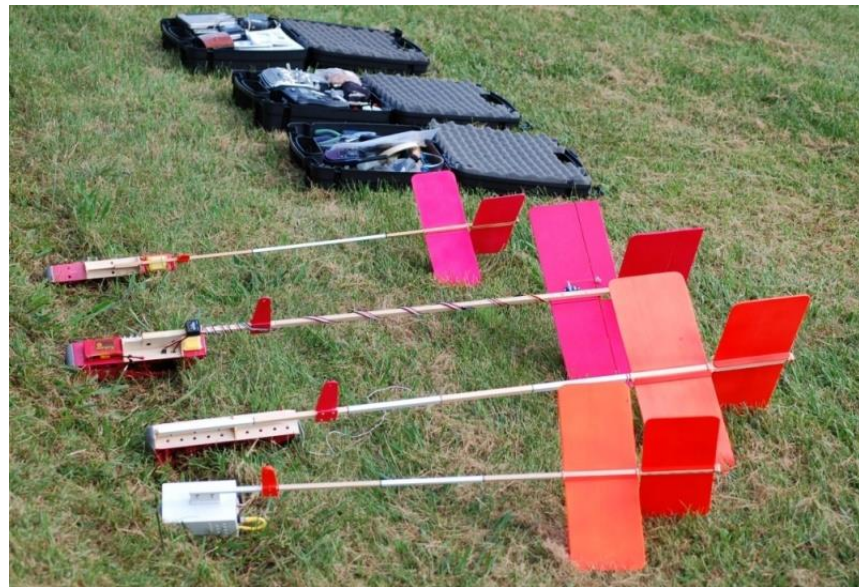
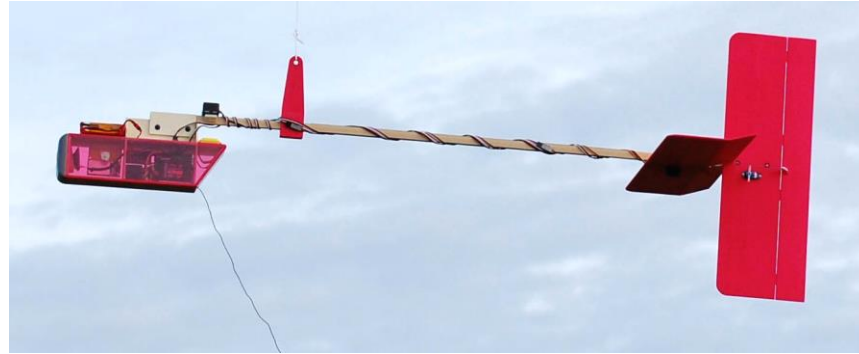
*Advancing Earth Research Observations with Kites &
Atmospheric/Terrestrial Sensors*



Geoff Bland
4-3-18



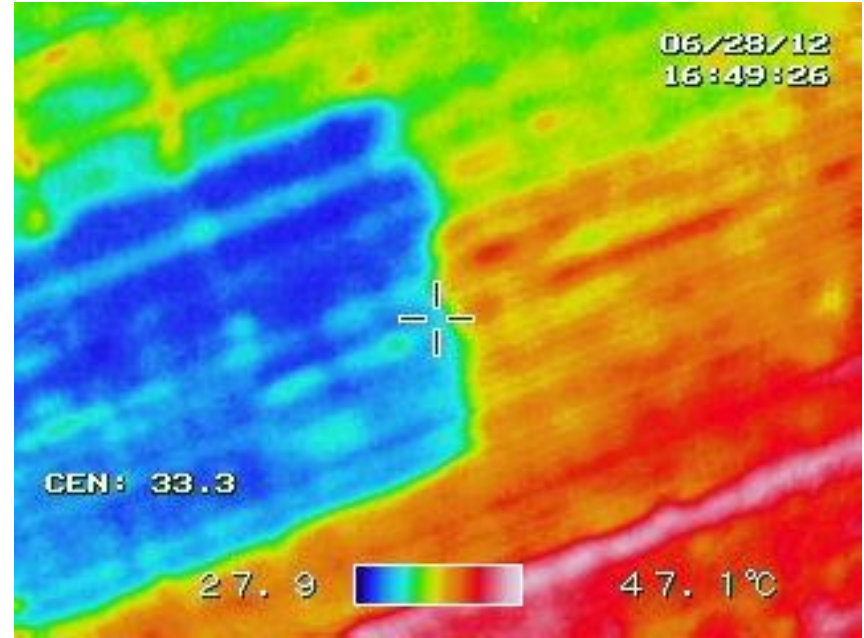
1912 Picavet Alternative - The Aeropod



MultiPod



UMES/Boseman Field - Thermal Imager



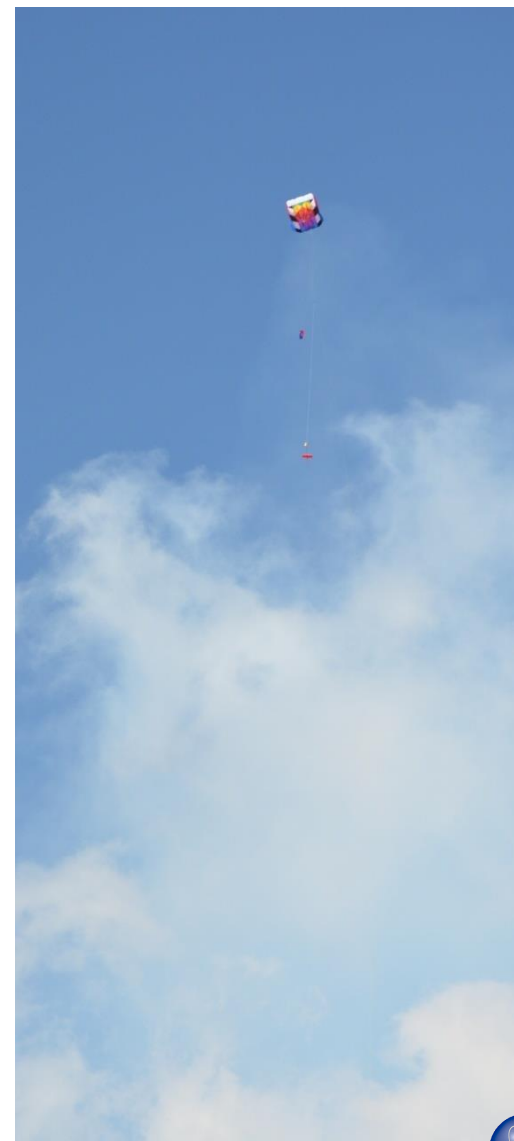
Arenal & Turrialba Volcanoes

w/ David Pieri/JPL, Andres Diaz/Univ. Costa Rica



VEREX

Volcanic Retrievals Emissions Experiment





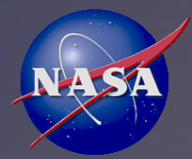
AEROKATS and ROVER Education Network



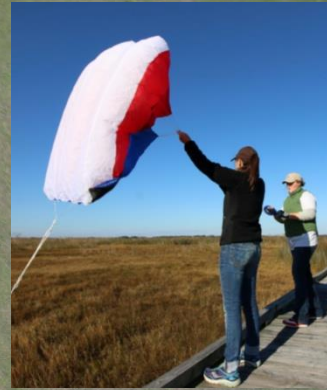
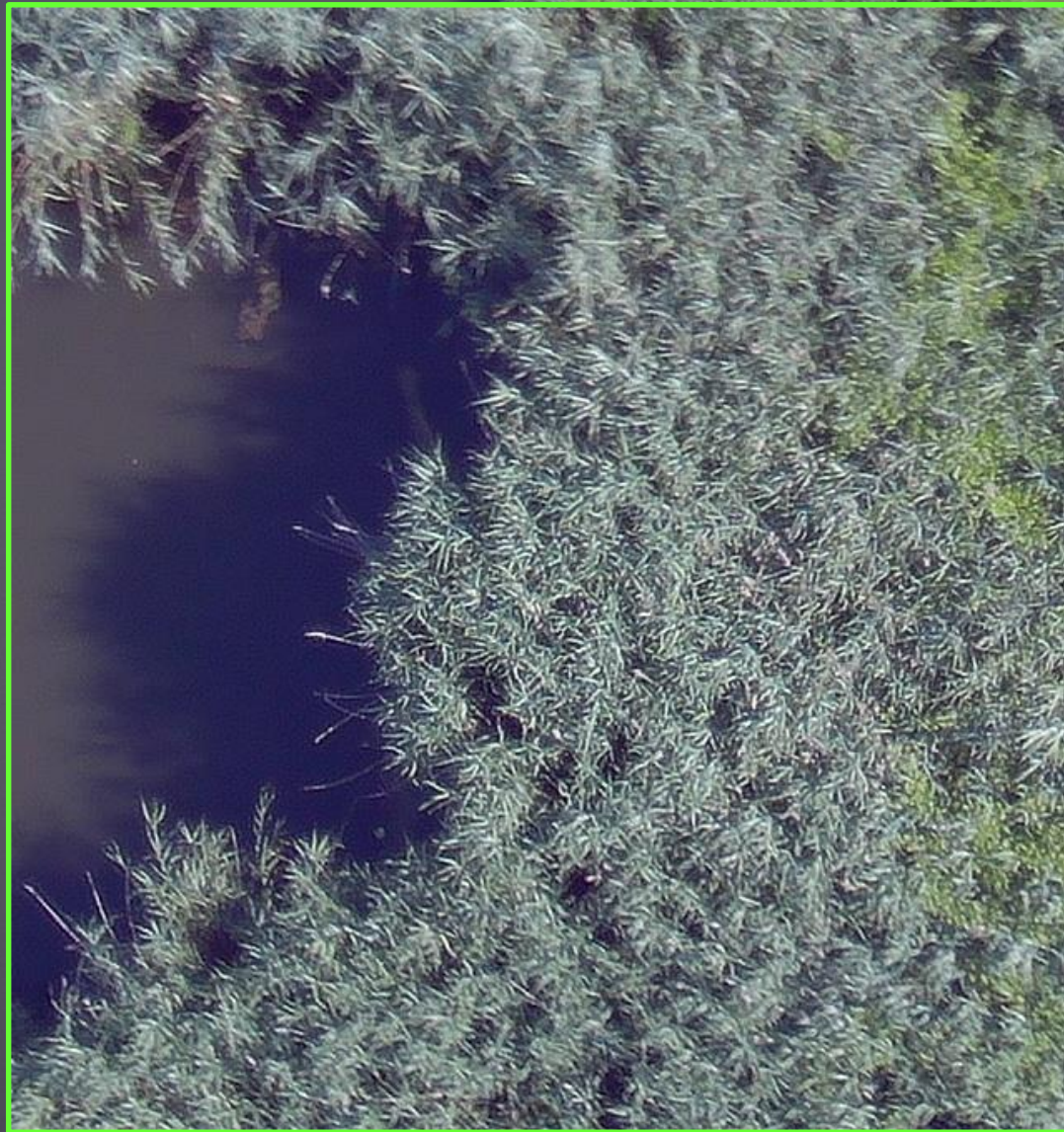
Typical NASA Mission Model

AREN Model





AEROKATS



MonoCam

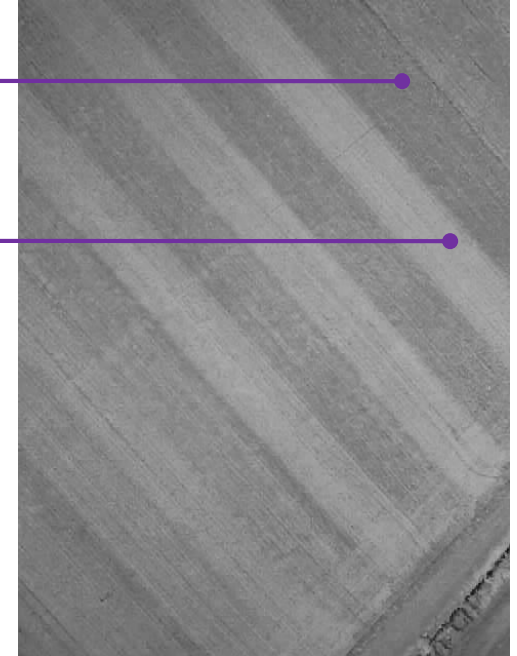
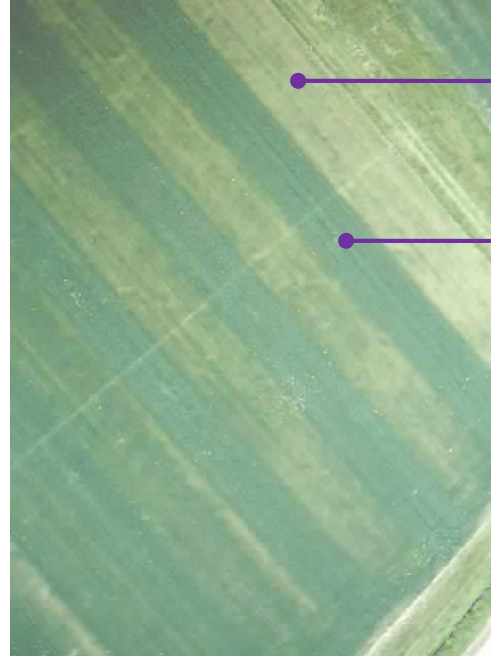


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MONOCAM



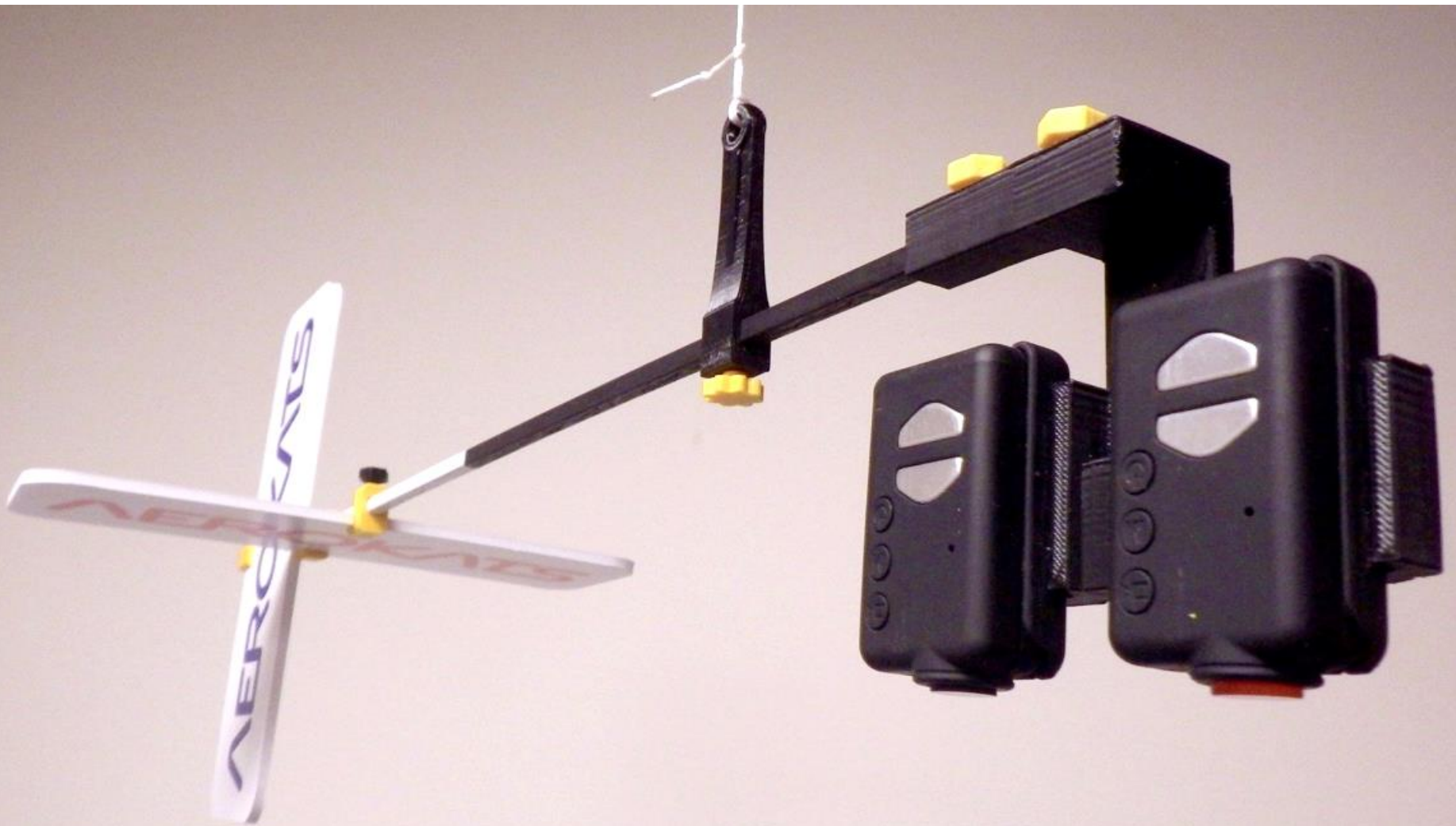
TwinCam



- Low-Cost Video Cameras: Color and Near-Infrared for Normalized Difference Vegetative Index (NDVI)
- With UMES Natural Sciences & Engineering and Aviation Sciences Departments



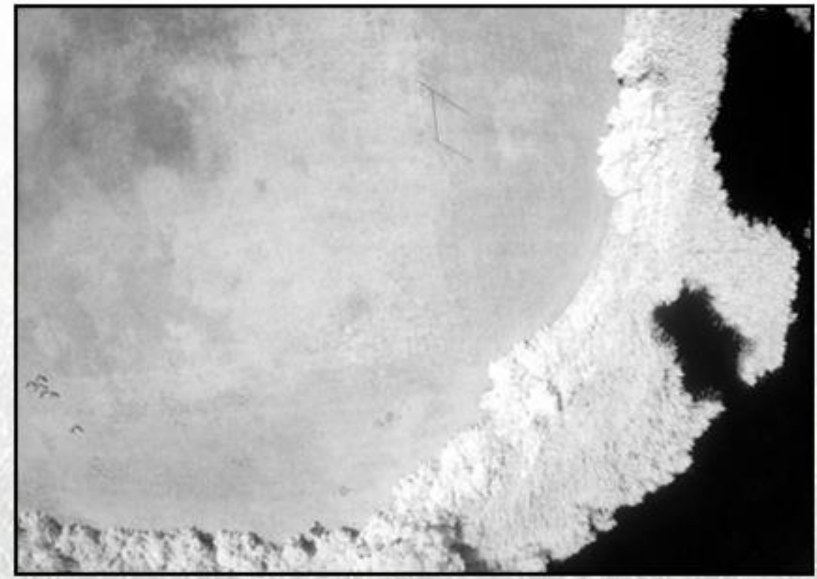
TwinCam



Twin Cam Image Processing - Classification Example



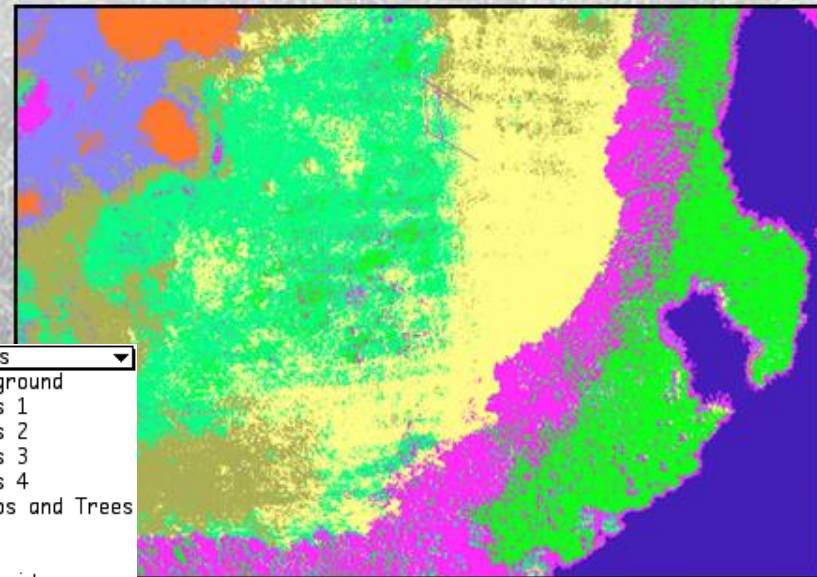
Visible (RGB)



Near Infrared (N)



Composite (NRG)

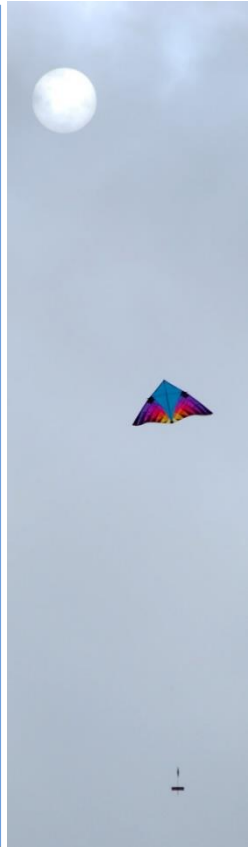
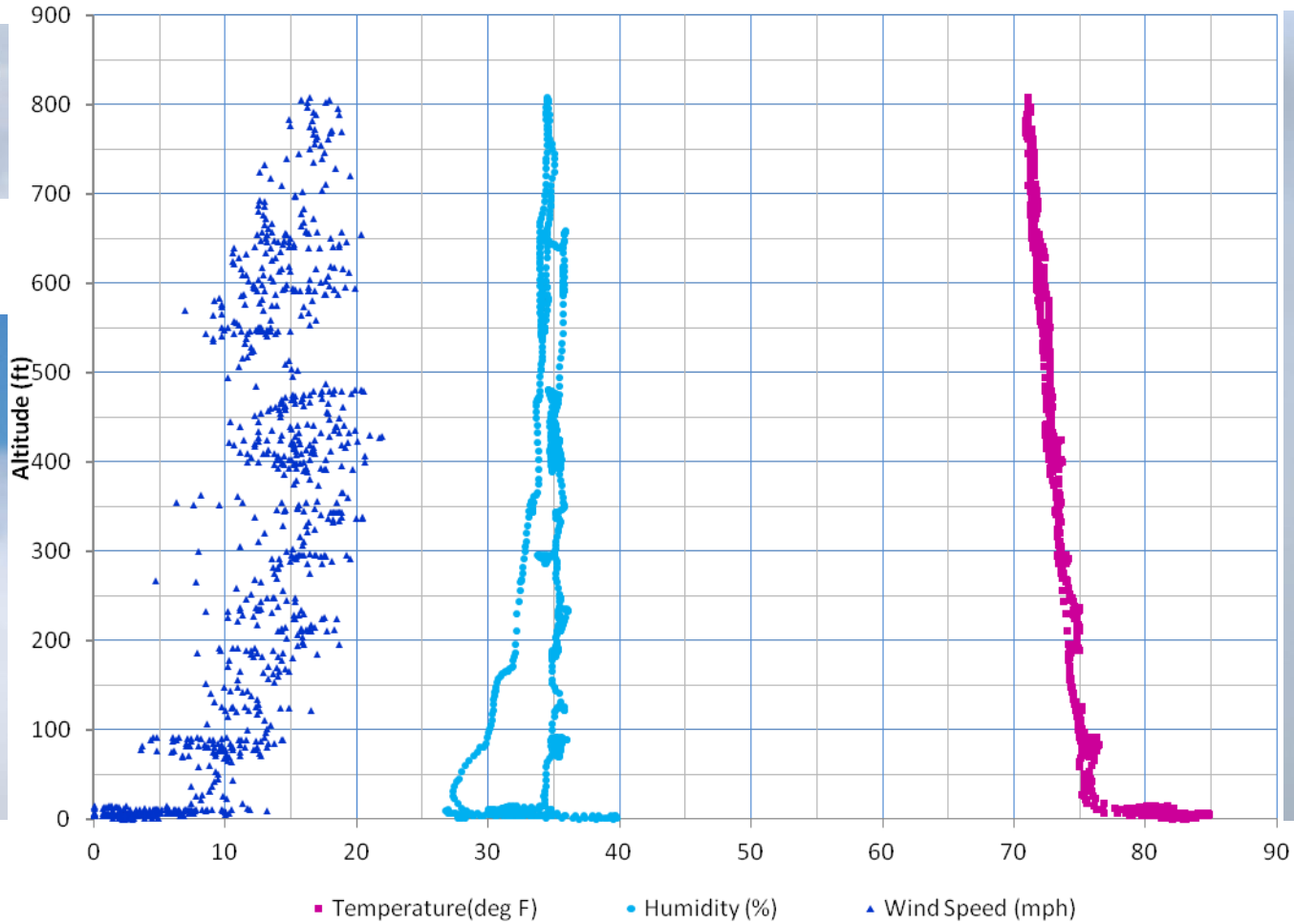
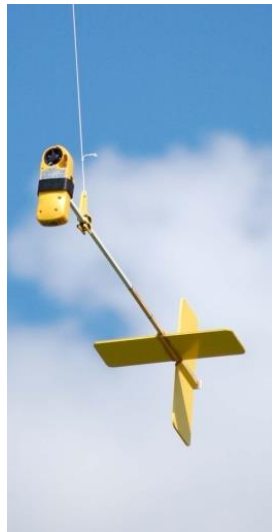


Classified

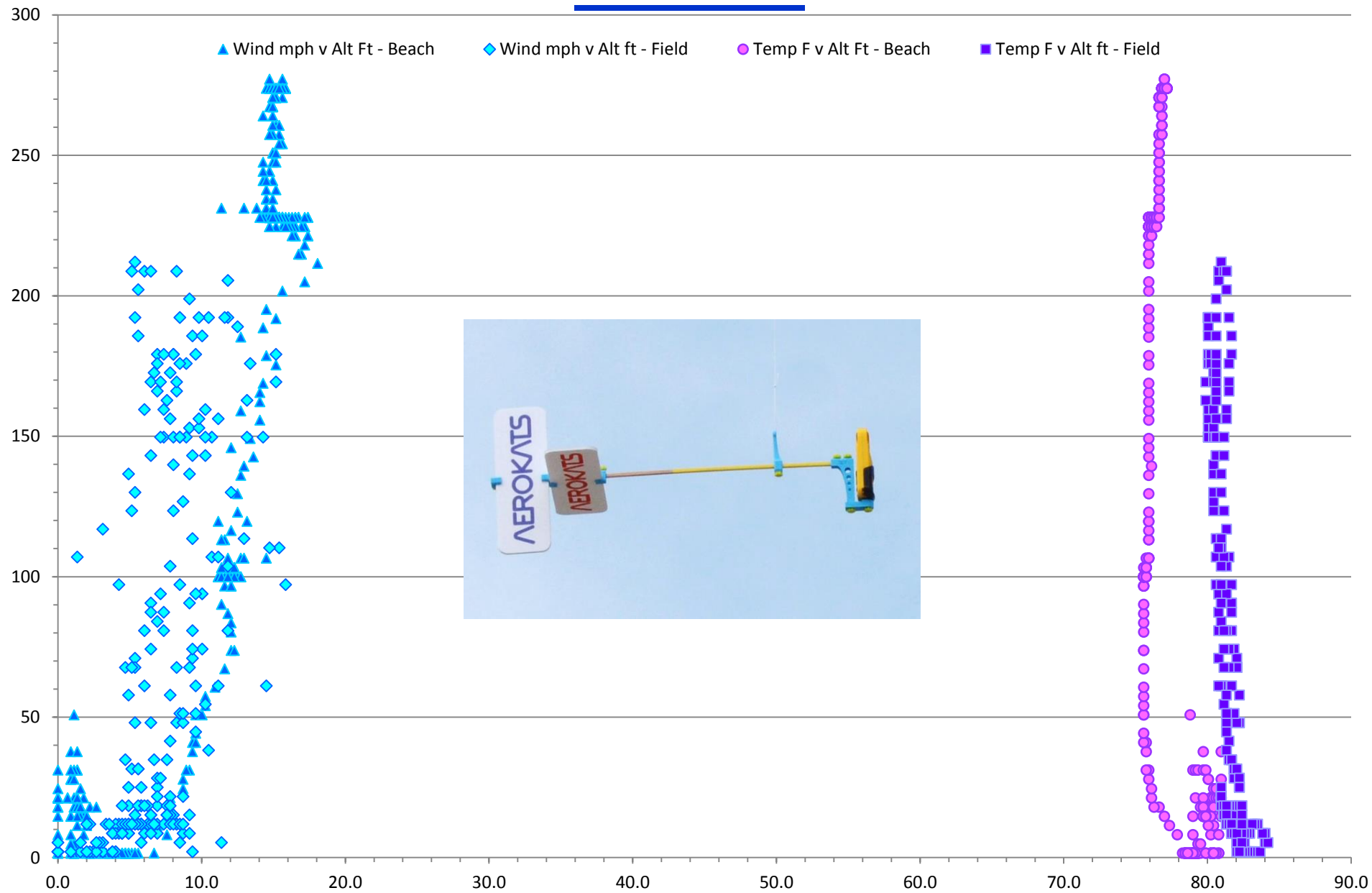
- Classes
- background
 - Grass 1
 - Grass 2
 - Grass 3
 - Grass 4
 - Shrub and Trees
 - Phragmites
 - Grass 5
 - Water

Profiler

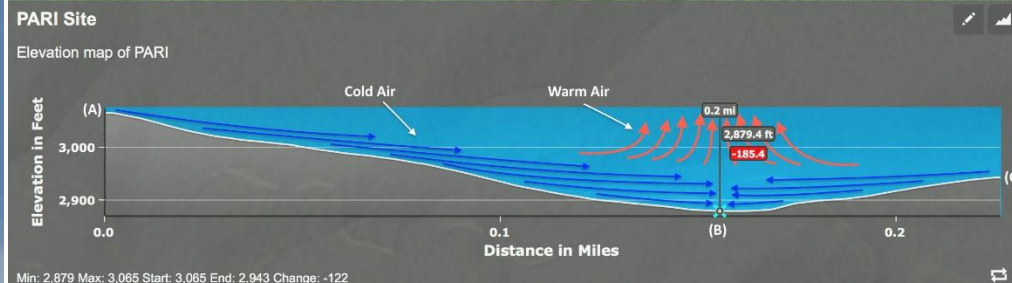
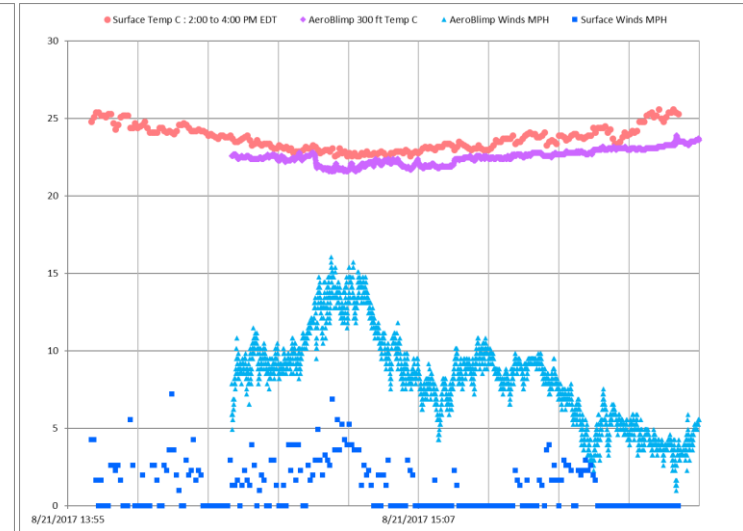
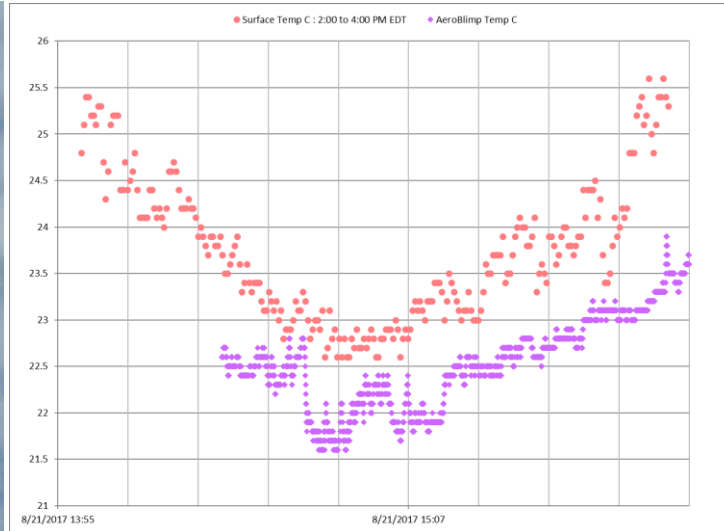
Boundary Layer Studies



Profiler



Eclipse 2017: AREN at PARI



MicroSpectrometer on MSC Barge

w/ Jeff Sumey, et al – California Univ. of Pennsylvania



Schmidt Ocean Institute R/V *Falcor*

Images Captured by S. Uz, et al/NASA

