



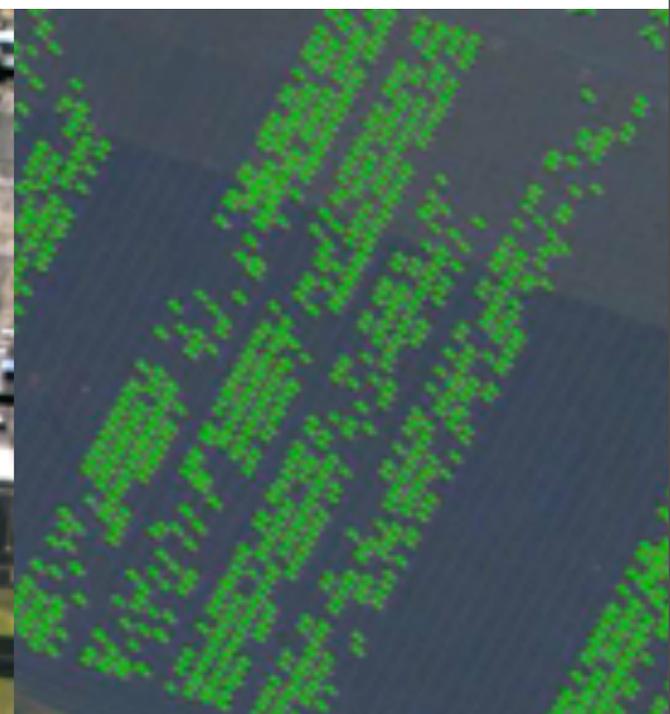
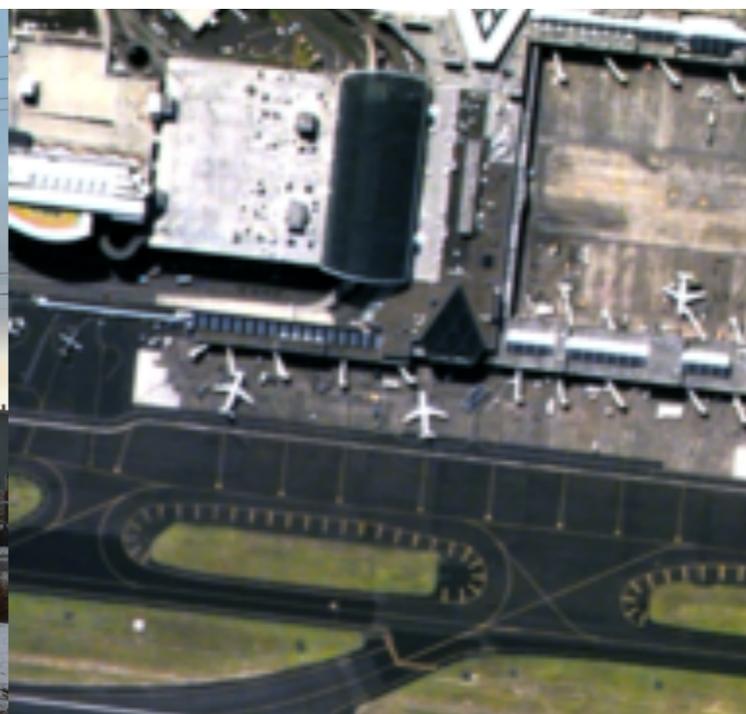
**Skybox**  
Imaging

**Dirk Robinson, PhD**

Director of Image Engineering

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JACIE 2012 Annual Workshop



This presentation includes “basic marketing information on function or purpose or general system descriptions” as defined in the ITAR (Sec. 120.10, Article (5) and Sec. 120.11) and therefore is not controlled ITAR information.



# The Skybox Vision

A scalable **platform** to deliver **analytics** of **daily global activity** - derived from **mining** timely satellite imagery & video



# Skybox By The Numbers



**2009**

Incorporation

**65**

# Employees

**7**

Months to scheduled launch  
of SkySat-1

**\$91M**

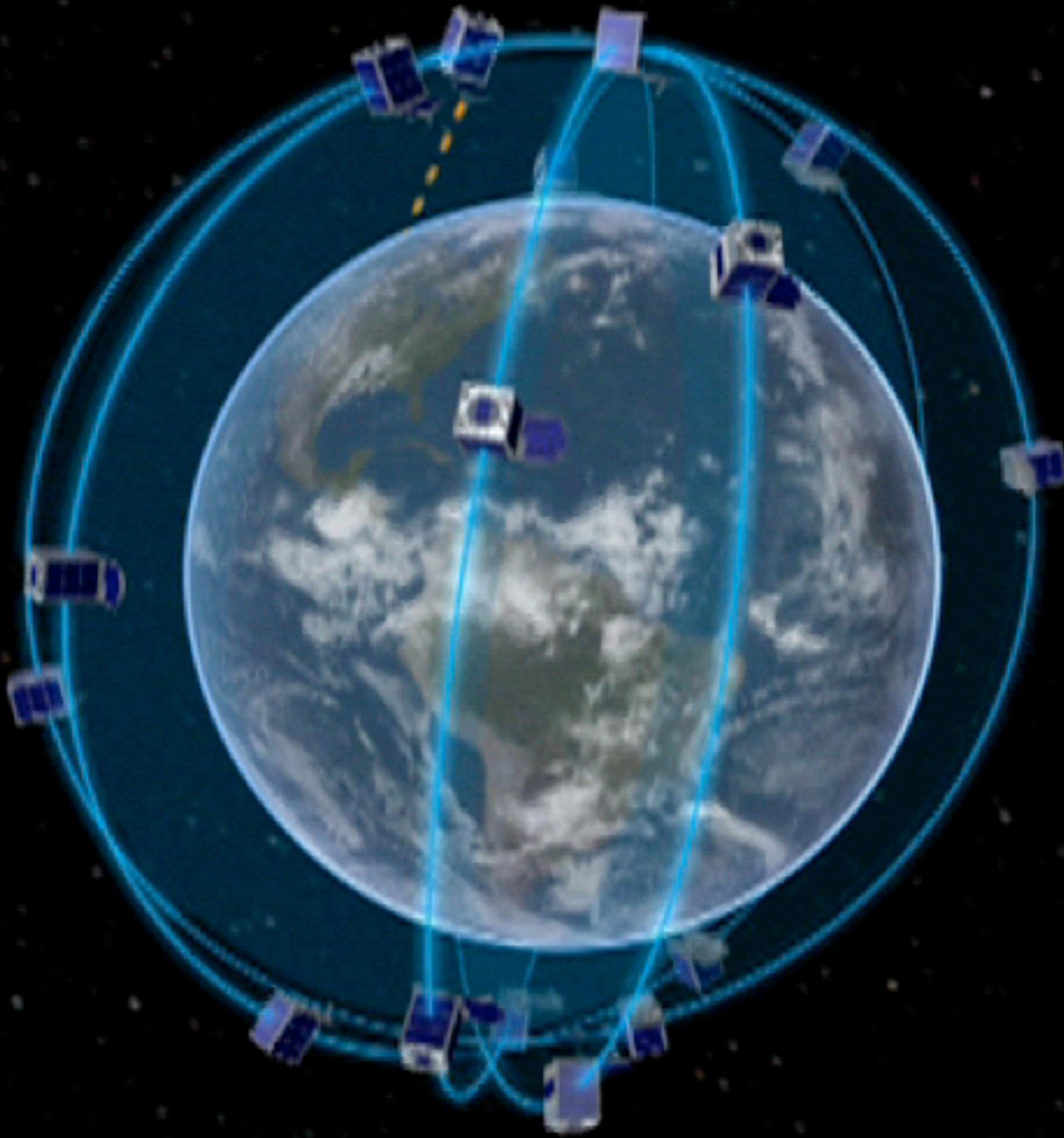
Funded by Khosla Ventures and  
Bessemer Ventures

**1 x 1**

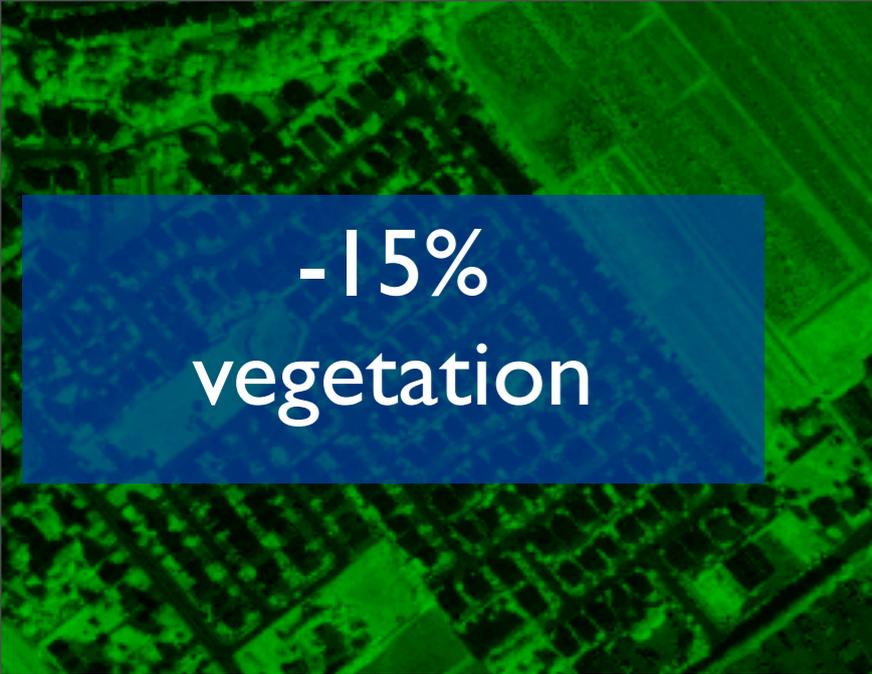
Consistent & timely high quality data

**75**

Number of space missions  
supported by the team



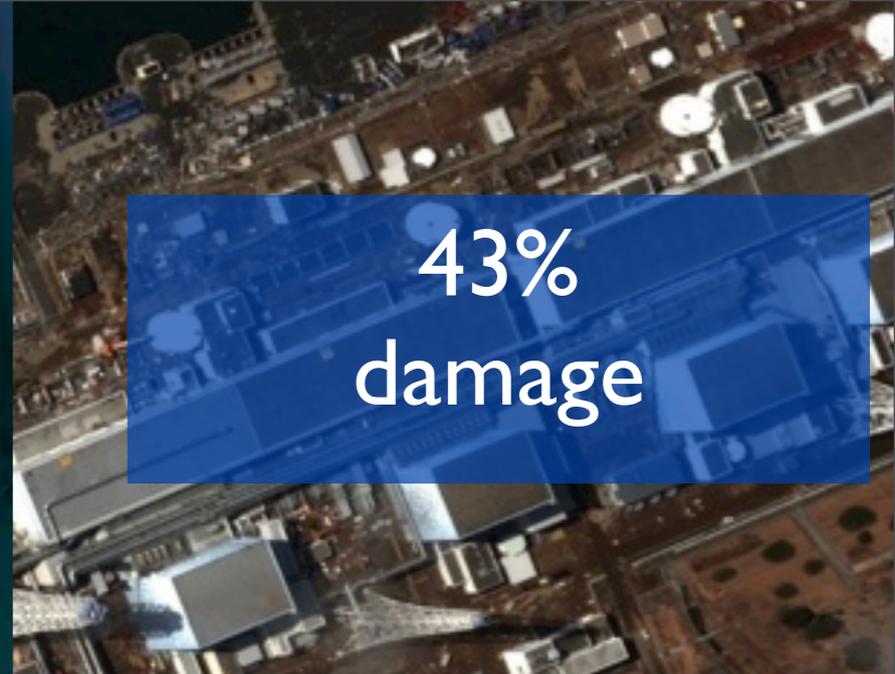




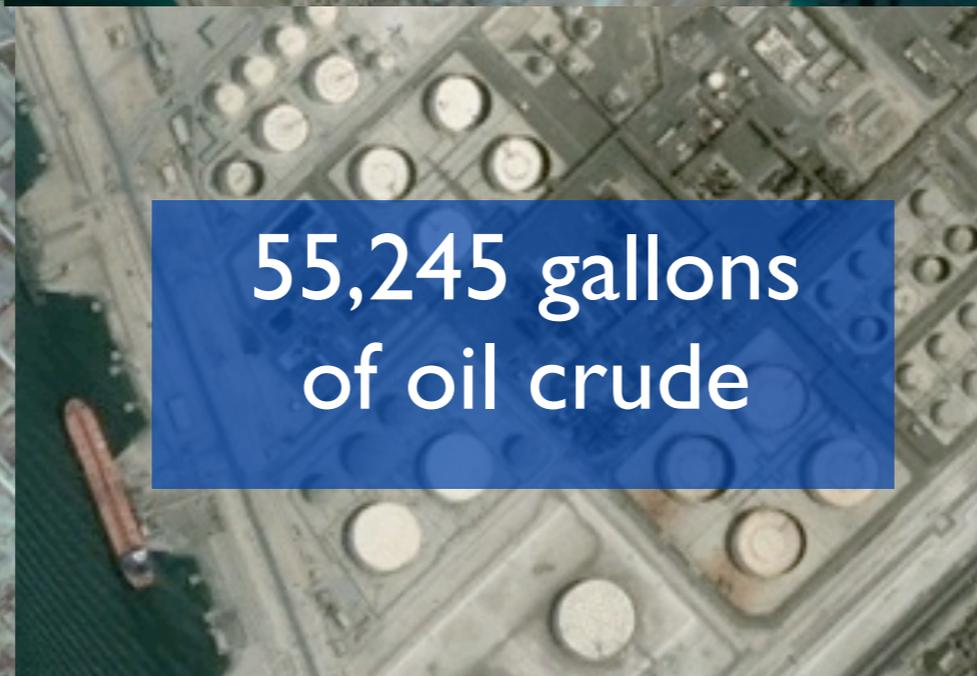
-15%  
vegetation



43%  
damage



55,245 gallons  
of oil crude



215  
automobiles



6,254  
containers



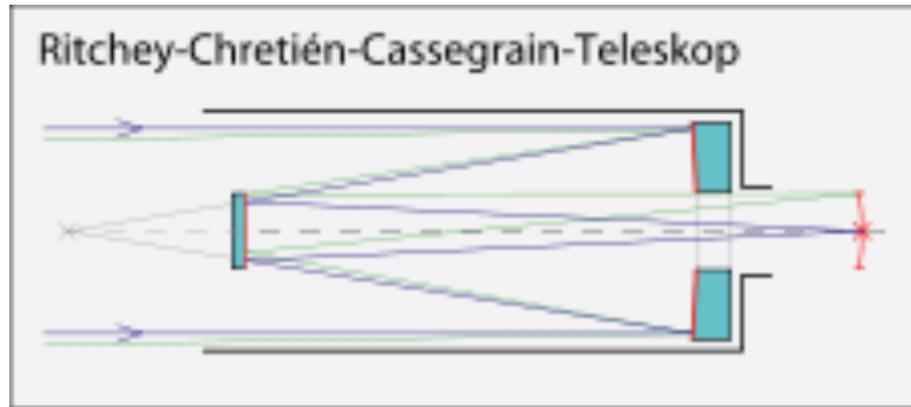
# The Skybox Approach



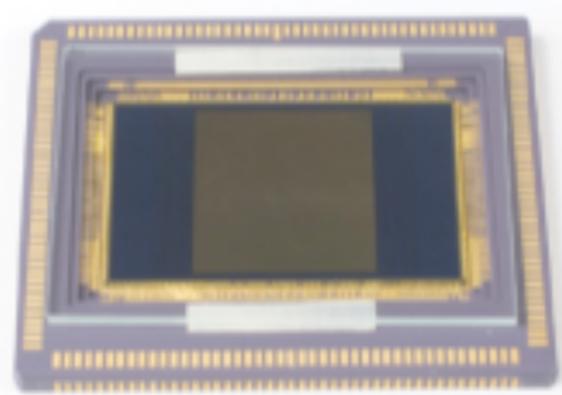
- Cutting-edge commercial sensors
- Ground processing trade off
- Technology improves each generation
- Scalability



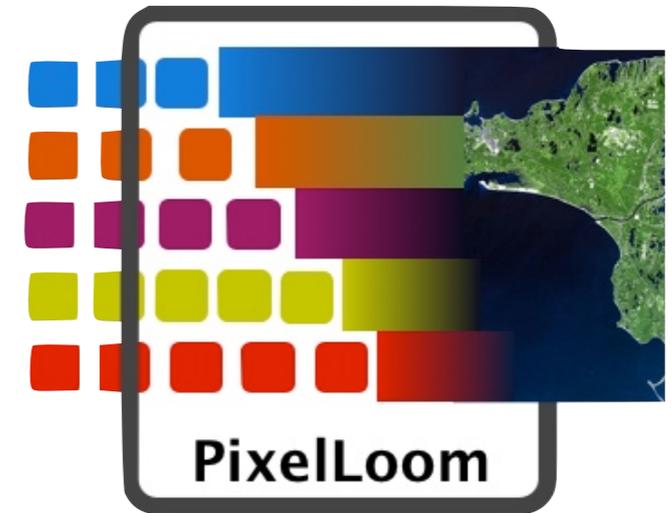
# The Skybox Imaging Architecture



Telescope



2-Dimensional Detectors



Ground Processing Software

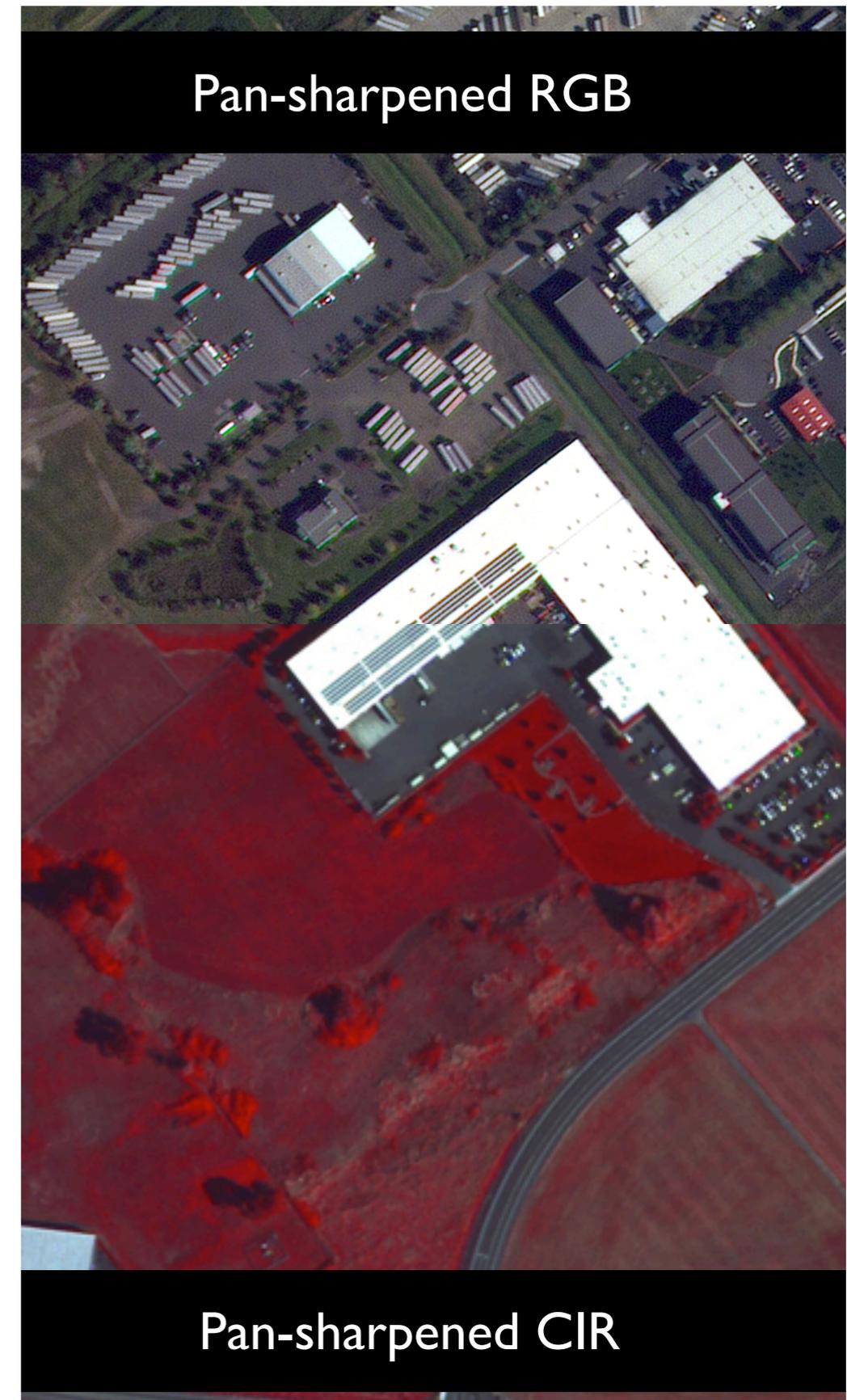
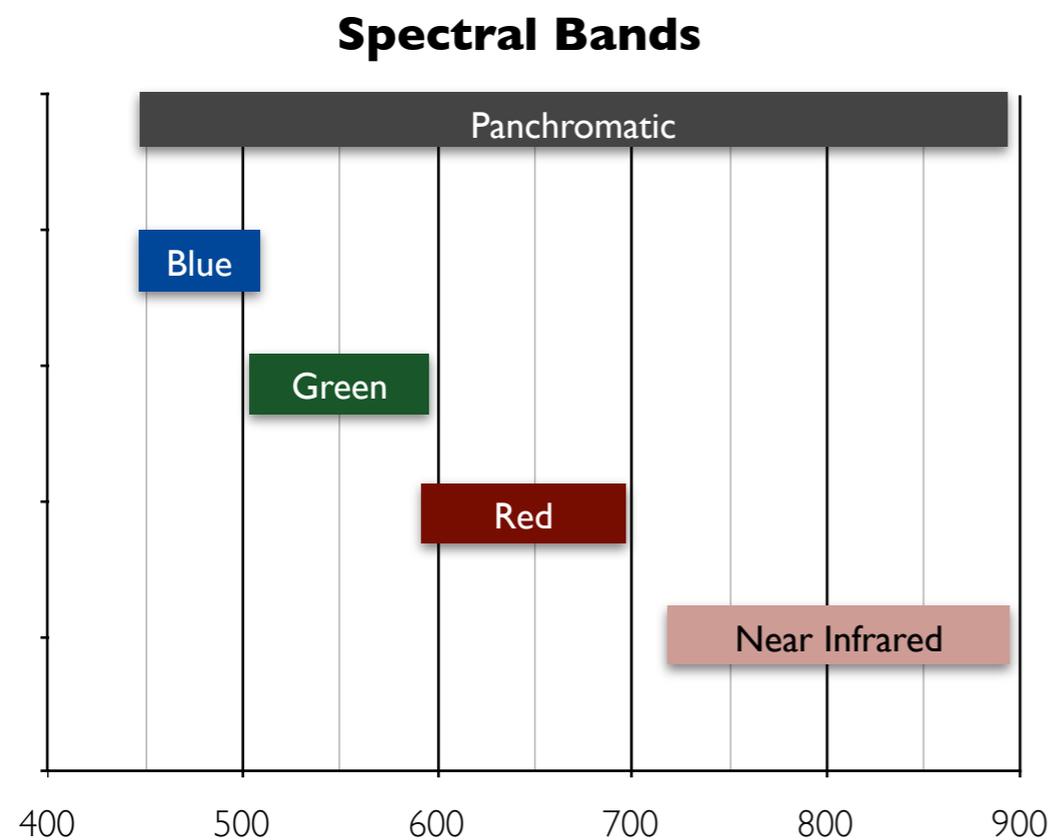
- Ritchey-Chretien silicon carbide telescope
- Low-noise, high-frame rate 5.5 Mpix CMOS imaging detectors
- Onboard image correction
- Real-time JPEG 2000 image compression
- Proprietary ground-based synthetic TDI
- Web scale Hadoop-based production platform

**First meter-class high-performance EO platform using 2-dimensional sensor**

# Skybox Spectral Bands



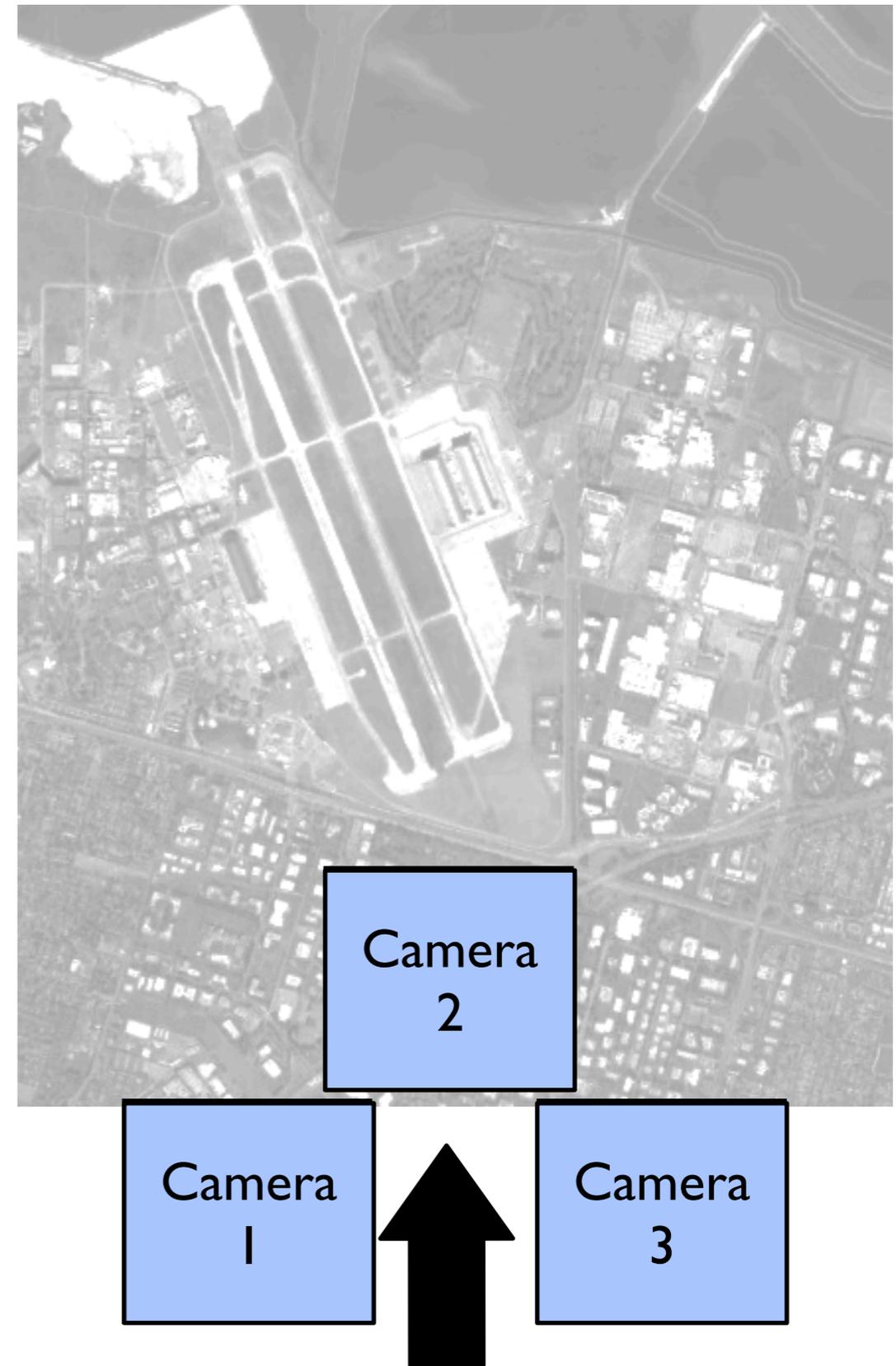
- Spectral bands designed to support natural “photographic” color reproductions
- Minimal color ‘halos’ from pan-sharpening
- Supports vegetation index calculations (NDVI)



# Proprietary Ground-Based Synthetic TDI



- Pushframe architecture
  - Capture many overlapping 2D images
  - Stitch & blend on the ground
- Multiple measurements for every ground point
- Improved SNR & resolution



1/2 Ground Speed

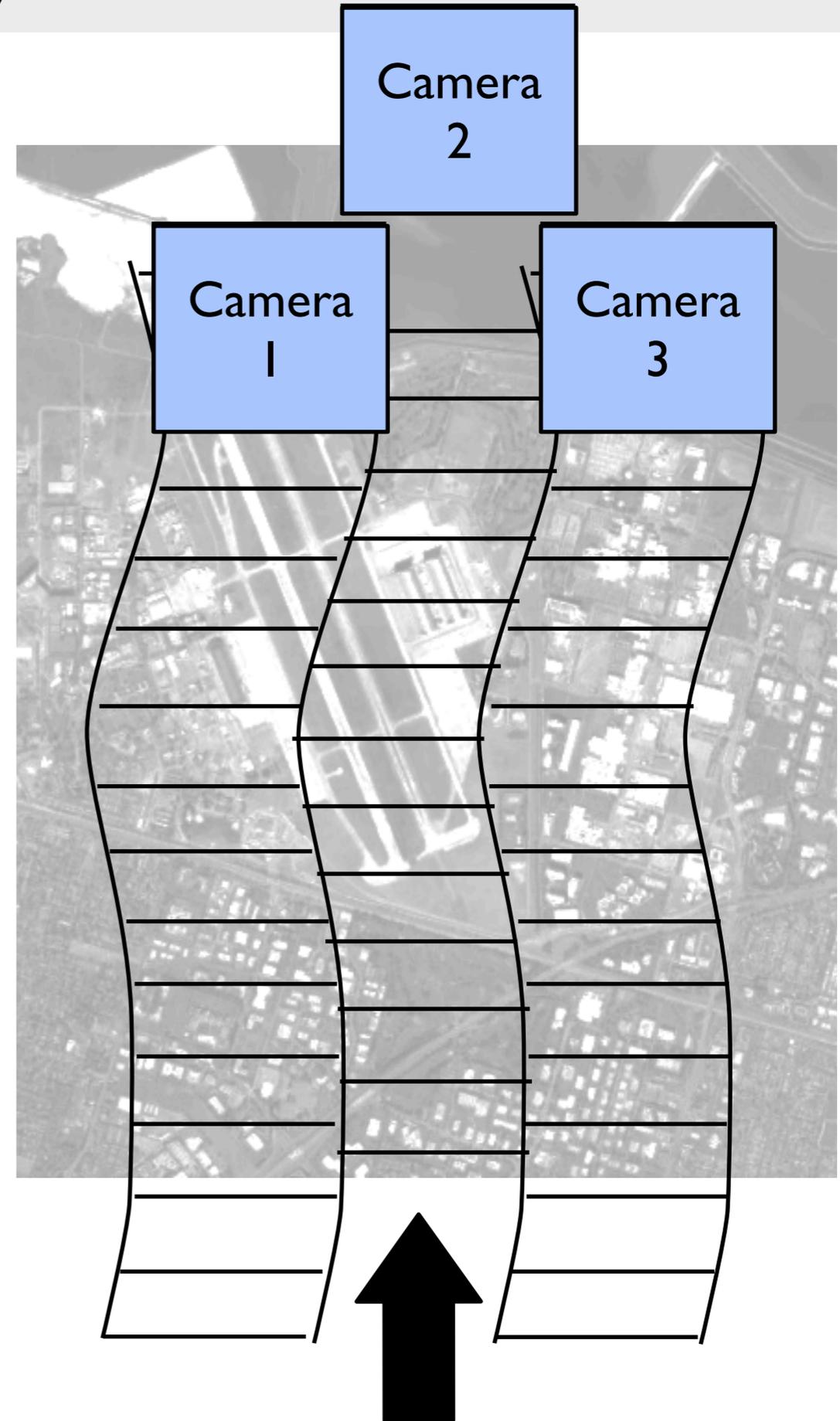
# Proprietary Ground-Based Synthetic TDI



- Pushframe architecture
  - Capture many overlapping 2D images
  - Stitch & blend on the ground
- Multiple measurements for every ground point
- Improved SNR & resolution



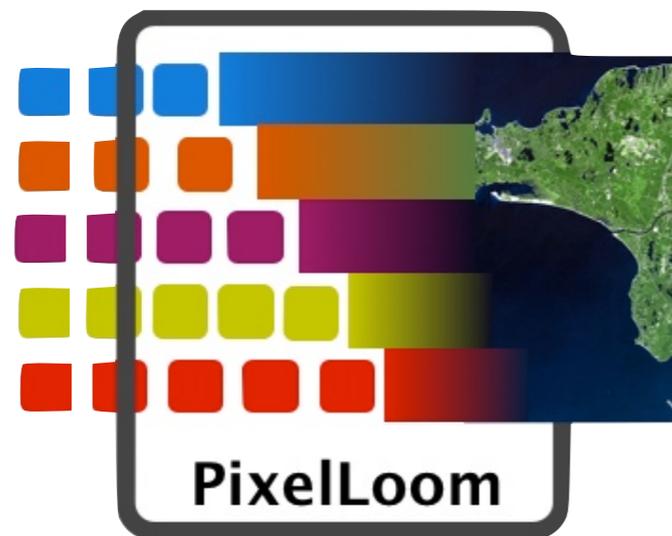
1/2 Ground Speed



# Proprietary Ground-Based Synthetic TDI



- Pushframe architecture
  - Capture many overlapping 2D images
  - Stitch & blend on the ground
- Multiple measurements for every ground point
- Improved SNR & resolution





## Basic Image Product

- Set of images
  - Radiometrically corrected Pan & MSI
  - Tiff or J2k
- Geometry files (Exterior Orientation, Sensor Model, RPCs)
- Metadata (Collection data, Image Quality Masks)



## Basic Video Product

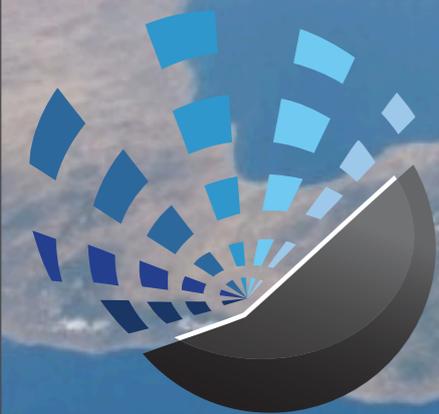
- H.264 video file
- Geometry files (Exterior Orientation, Sensor Model, RPCs)
- Metadata (Collection data)



# SkySat-1

Scheduled to launch Q4 2012

Questions/Opportunities?



**Skybox**  
Imaging

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For Public Disclosure