$$\theta_r) = \rho(\lambda, \theta,)\tau_\downarrow(\lambda)\tau_\uparrow(\lambda)E$$

Better Calibration
Better Data
Better Decisions

FLARE
Vicarious Calibration Network

$$[hla] = a_0 + \sum_{i=1}^{4} a_i \left(\log_{10}\left(\frac{Rrs_{490\,n}}{Rrs_{555\,n}}\right)\right)$$

www.flare-network.com

What is FLARE

A global vicarious calibration network

On-demand signals and analysis for any imaging sensor in overpass

What are FLARE's benefits

Ensures high value radiometric calibration

Allows high frequency calibration

Provides a foundation for Analysis Ready Data (ARD)

How to access FLARE

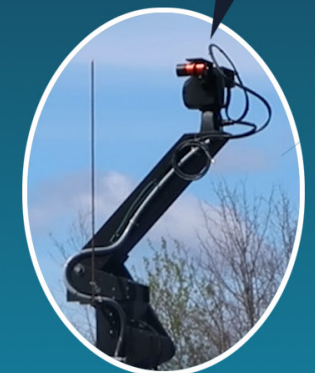Subscriber tasks the network to a satellite

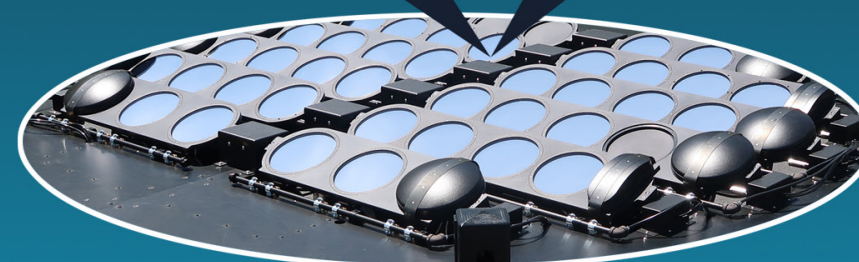Return signal data and analysis via the cloud

How does FLARE work

Satellite is calibrated with accurate radiometric references and minimal atmospheric effects

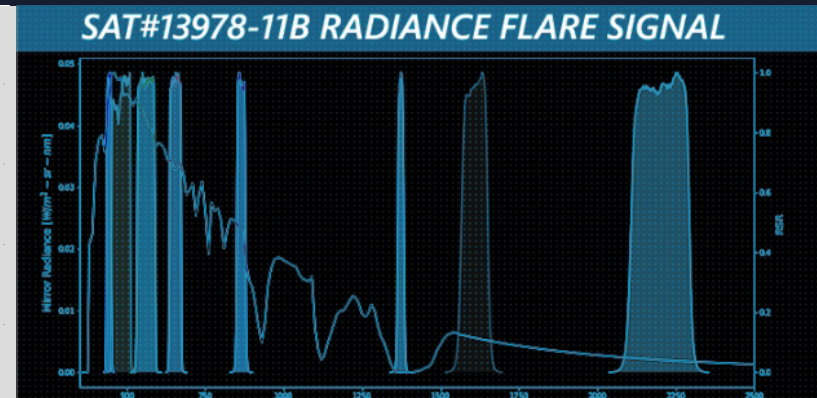Metrology station measures solar radiance, background, and mirror reflectances
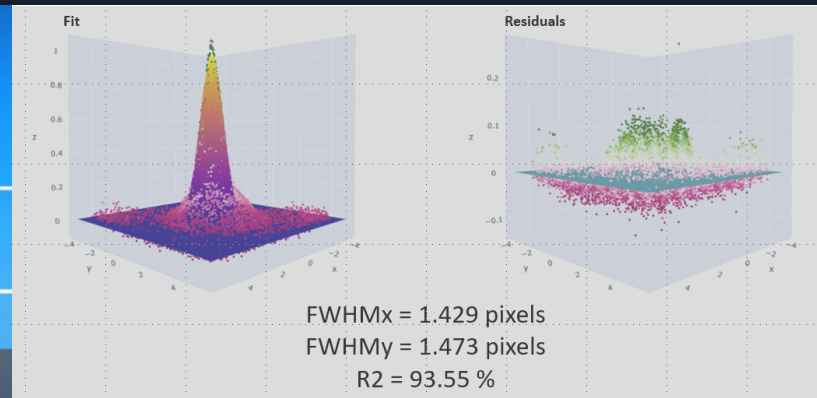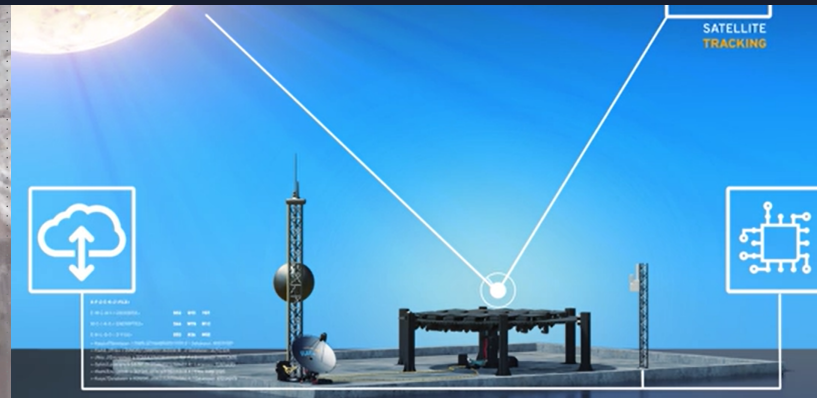
Mirrors direct sun to satellite

Get the calibration you need when you need it

SIGNAL PRODUCTS

ANALYSIS PRODUCTS

LOOK S

The FLARE station acts as a point-source

- ✔ **Execution of a Tasked Look with FLARE as a point source**
- ✔ **Sub-pixel geolocation & time stamp**
- ✔ **Optical path sky image**
- ✔ **FLARE station health verification**
- ✔ **Signal enables imager PSF evaluation**
- ✔ **Look quality assessment**

LOOK R

Provides comprehensive ground-truth measurements to characterize imager performance in both the spatial and radiometric domains

Includes LOOK S data package

- ✔ **LOOK S data package included**
- ✔ **At-sensor irradiance prediction (solar spectrum)**
- ✔ **Radiometric measurements**
- ✔ **Atmospheric transmission evaluation**
- ✔ **Look quality assessment**
- ✔ **Labsphere verified uncertainly statement**

EVAL S

Analysis of spatial signal data captured by the imager

Combines LOOK S data stored in the FLARE database to provide comprehensive 2-D characterization of imager performance and resolving

- ✔ **Verification of image quality**
- ✔ **Framing of FLARE Region of Interest (ROI)**
- ✔ **PSF evaluation**
- ✔ **Validate FLARE location & sub-pixel geographical coordinates**

EVAL R

Analysis of radiometric signal data captured by the imager

Combines data associated with the LOOK stored in the FLARE database to provide per-band radiometric calibration coefficients

- ✔ **Verification of image quality**
- ✔ **Framing of FLARE Region of Interest (ROI)**
- ✔ **Calibration coefficient generation: Radiometric correction of DNs**
  - **- Includes atmospheric correction**
  - **- Uncertainty analysis and reports**

Today's Challenges

Sensor calibration requires costly assets and a highly specialized calibration team
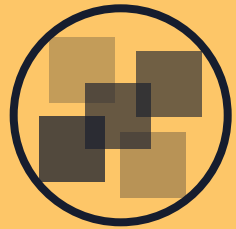
Calibration is infrequent and uncertain, with low frequency of opportunities and inconsistent methods

Current methods require interpretation and analysis, lack a shared standard and are dependent on models that are difficult to maintain over time
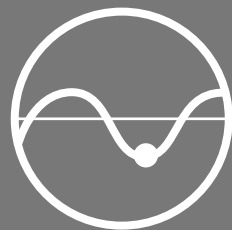
Tomorrow's Solutions

The data you need, at the time you need it – filtering out bad data and providing it at the frequency customers need

Consistent calibration resulting in improved and increased radiometry and image quality

Harmonizing data across sensors, industry and technology through software

Control the cost, timing and value of calibration to your system

Learn More

www.flare-network.com

www.labsphere.com

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