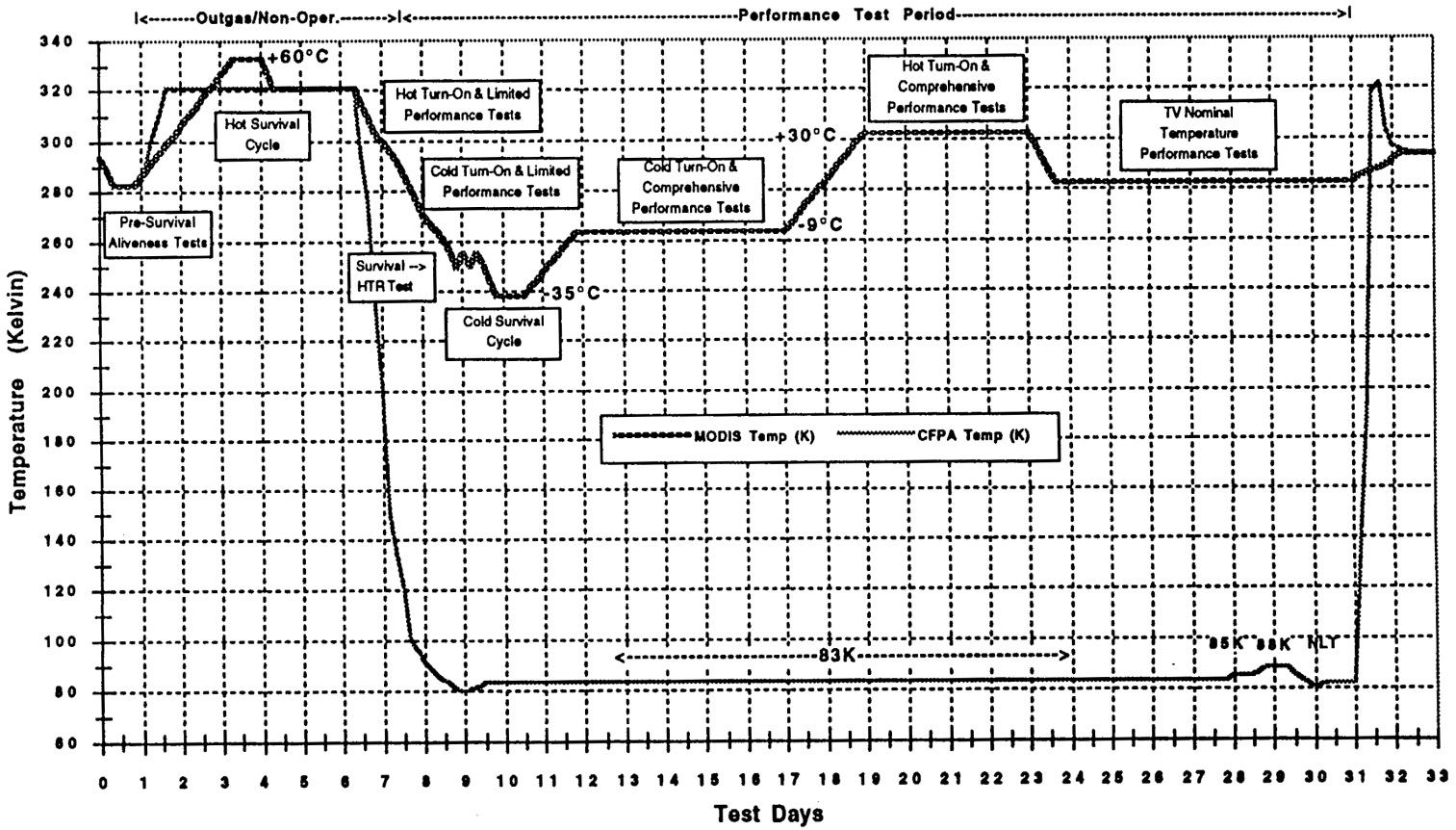
Test and Data Overview

Summary of Tests Conducted

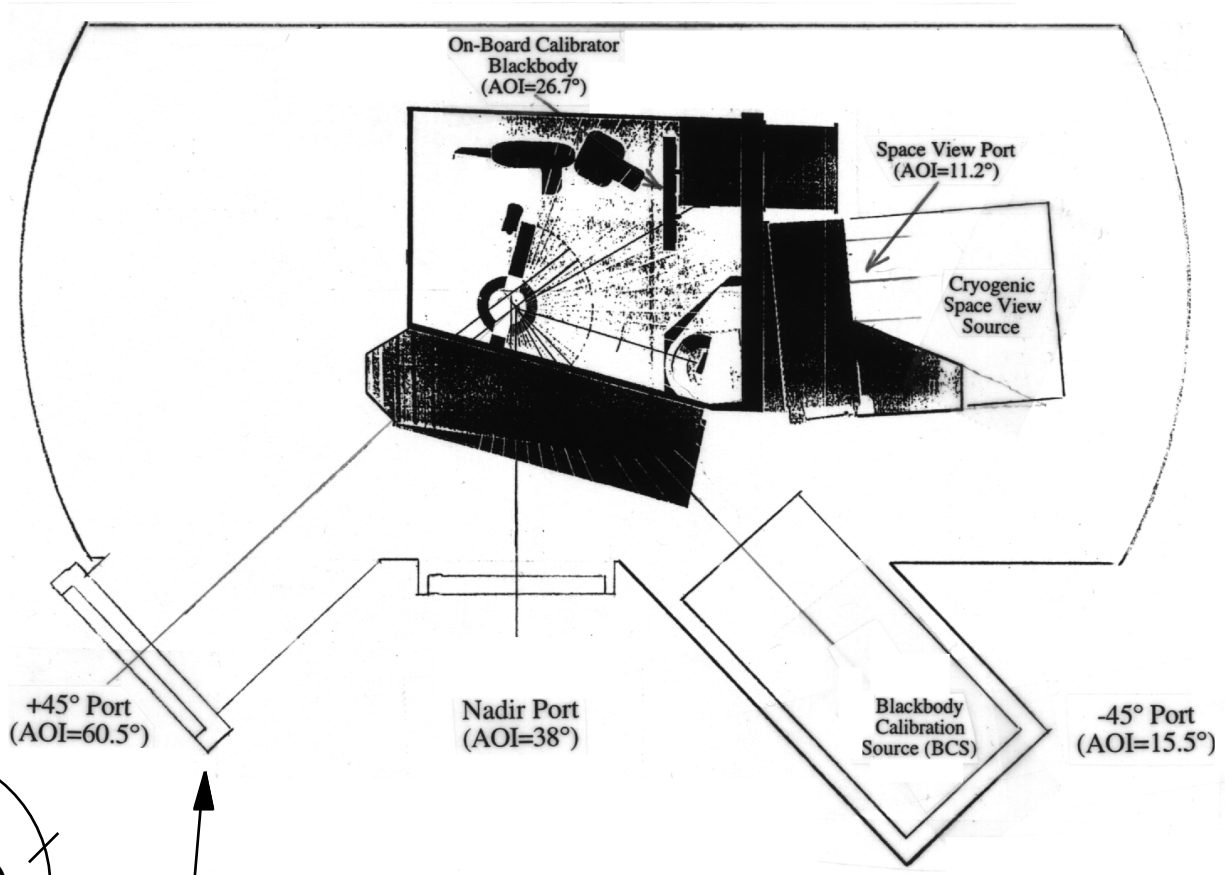
Data Features

MODIS PFM Thermal Vacuum Timeline



Calibration Methodology

(MODIS Thermal Vacuum Calibration Chamber)



SIS(100)

Fused Silica Window

Solar Reflective Bands T/V Calibration Tests (RC01)

		(UAID #s) Instrument Temperature (per aft-optics S/MWIR Objective Assembly temperature)		
		Cold Plateau (256K)	**Nominal Plateau (273K)**	**Hot Plateau (283K)**
FPA Tempera-ture	**NLT**			
	83K	1303 (Side A; 20 Levels) 1338-1339 (Side A; 20 Levels) 1341 (Side B; 20 Levels)	1504 (Nominal 1 set; Side A; 38 Levels) 1657 (Nominal 2 set; Side A; 20 Levels; 2 Vdets) 1505 (Nominal 1 set; Side B; 18 Levels) 1527 (Nominal 2 set; Side B; 20 Levels)	1403 (Side A; 20 Levels) 1442-1443 (Side A; 20 Levels, diff DC restore) 1427 (Side B; 20 Levels) 1441 (Side B; 20 Levels, diff DC Restore)
	85K			

Solar Reflective Bands T/V SRCA Tests

		(UAID #s) Instrument Temperature (per aft-optics S/MWIR Objective Assembly temperature)		
		Cold Plateau T_{instr}= (256K)	**Nominal Plateau T_{instr} = (273K)**	**Hot Plateau T_{instr} = (283K)**
SRCA Mode	**Radiometric**	1304 (Side A; Full) 1307 (Side B; Full)	1444-1445 (Side A; Full) 1446 (Side B; Full)	1556-1557 (Side A; Full) 1558 (Side B; Full)
	Spectral	1308-1309 (Side A) (10W Level)	1451 (Side A) (10W Level)	1619 (10W Level) 1658-1663 (Side A) (30W Level)
	Spatial	1355 (Side A; Full)	1447 (Side A)	1540 (Side A) 1643 (Side A; Full) 1665 (Side A; Full) 1669 (Side B)

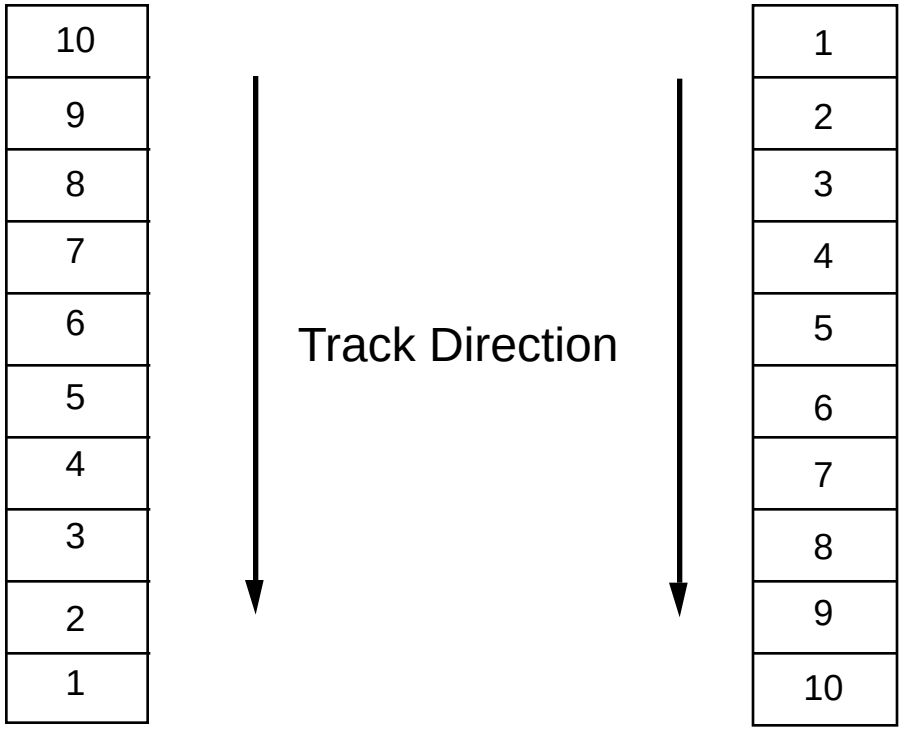
Other Tests Required for Radiometric Calibration

- Spectral Tests
  - Results required before final pre-launch coefficients can be generated
  - In-band Spectral Tests conducted in T/V; analysis complete
  - Out-of-Band Spectral Tests conducted in ambient
    - Both dispersive and integrated tests were run
  - Need to merge Out-of-Band data set with in-band data
- Response vs. Scan angle
  - Data collected in ambient for VIS/NIR; analysis complete
    - may revise curve fit
  - Will have to model SWIR region
    - no system level measurements; no witness sample measurements

Data Features

- **HEADS UP!**
  - **SBRS Detector numbering convention (which is used in this presentation) is the reverse of Level 1B numbering convention**

All Characterization Data done using SBRS Convention



Change done so Level 1B product consistent with COTS Data mapping conventions

“Out of Family” Channels

- Band 5, Channel 17
  - Shows unusual non-linearity, poor SNR, and atypical subframe offsets and zero intercepts
- Band 6, Channel 9 subframe 1
  - Noisy--more investigation required
- Band 7
  - Shows high degree of channel to channel non-uniformity, including non-linearity
- Others TBD

Nomenclature

- DN--the raw digital number output by MODIS (0 to 4095)
- dn--the signal digital number (scene minus space view)
- DN*--the corrected scene digital number
  - Reported as part of the Level 1B product
  - Has been corrected for Response vs. Scan Angle, Temperature, and has the space view subtracted off