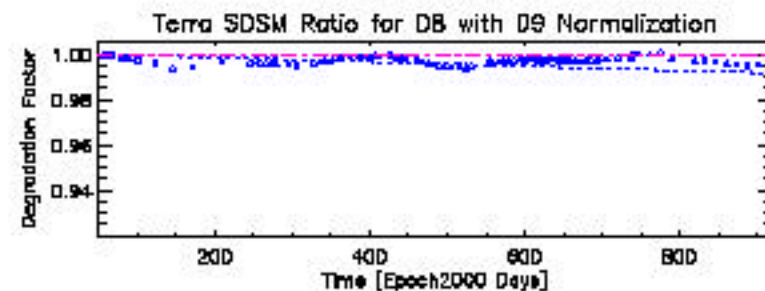
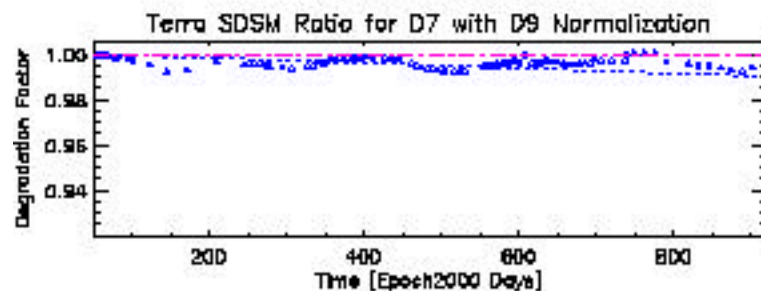
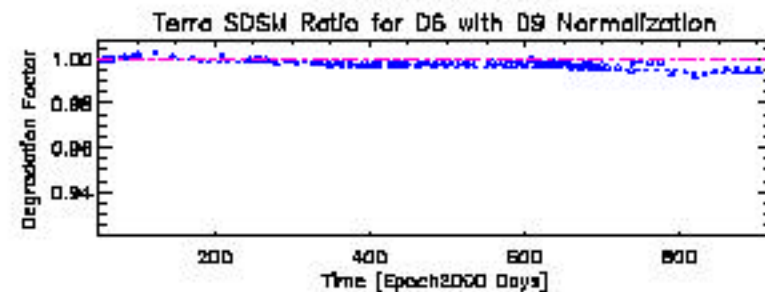
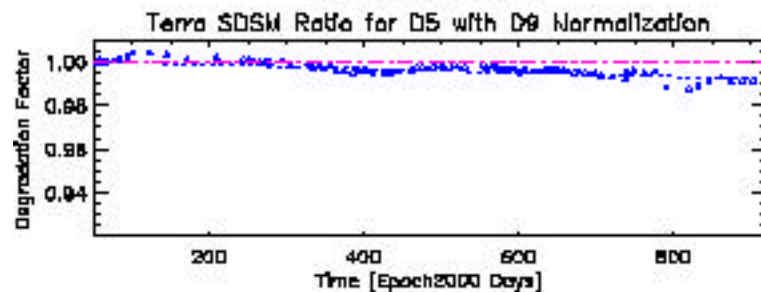
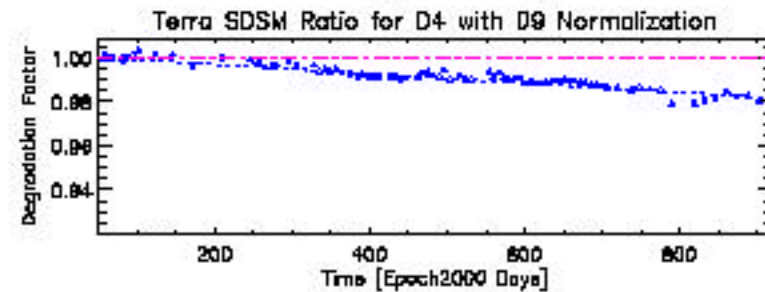
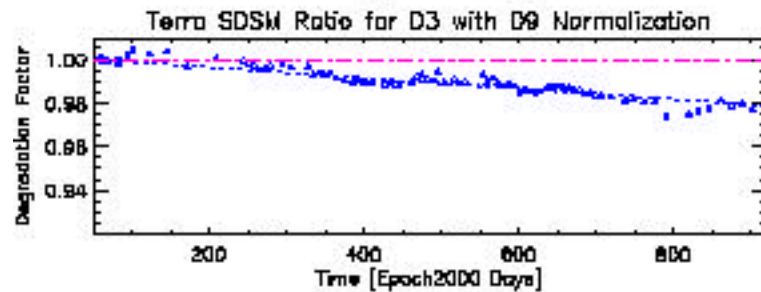
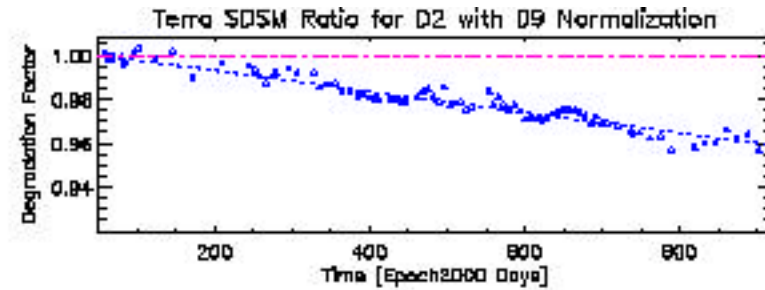
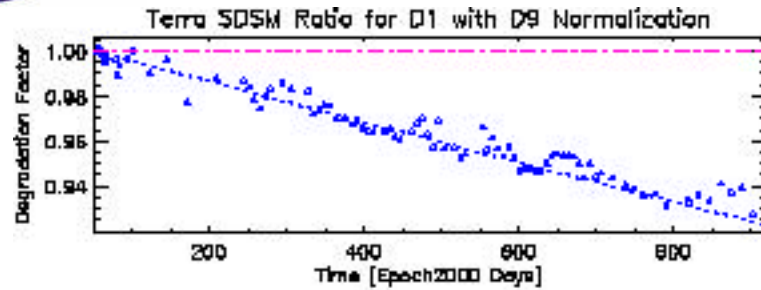






# SD Degradation Results

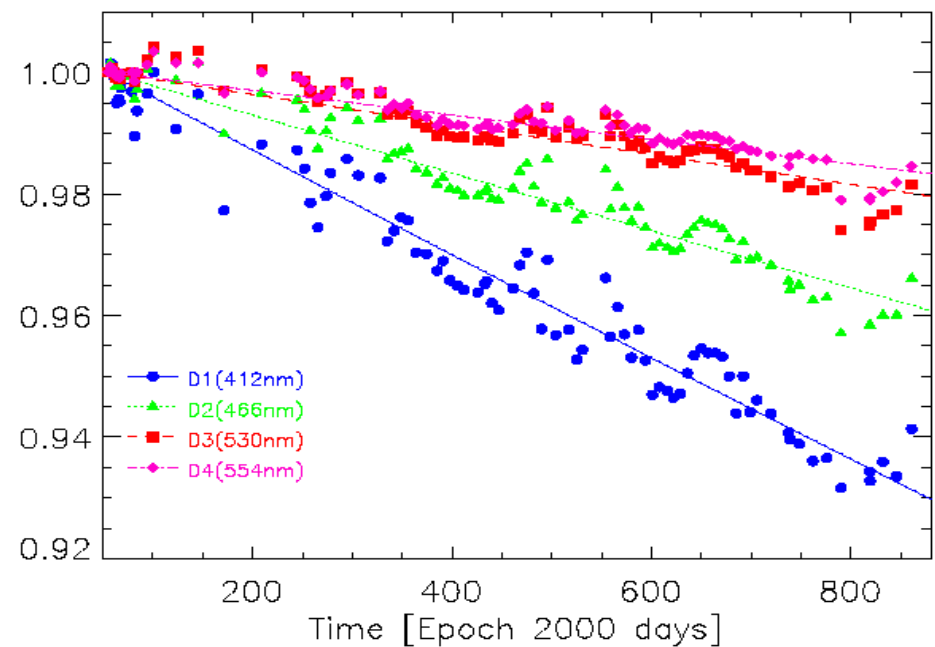
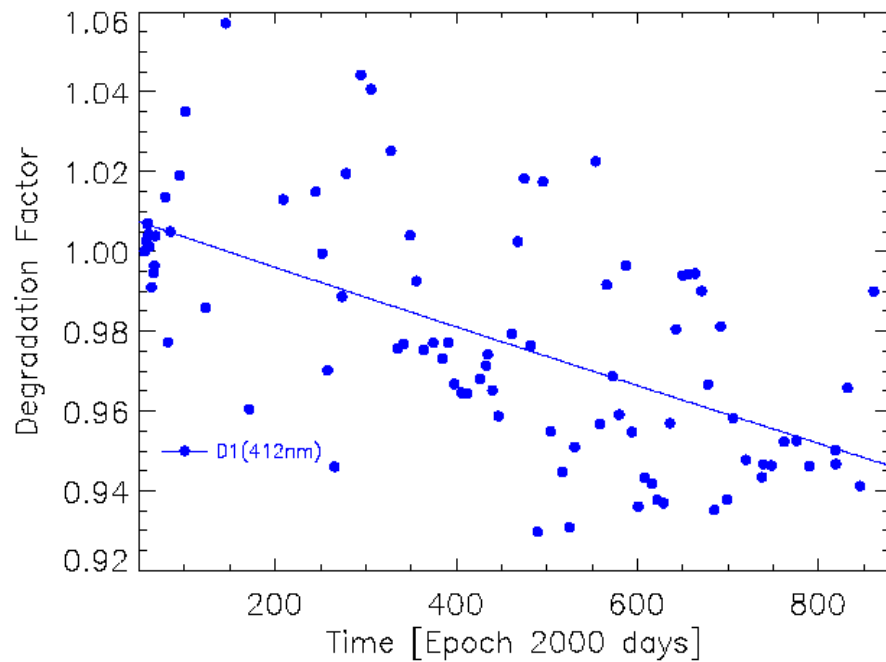




# SD Degradation Results



Comparison of Original (left) and Alternative Approach (right)





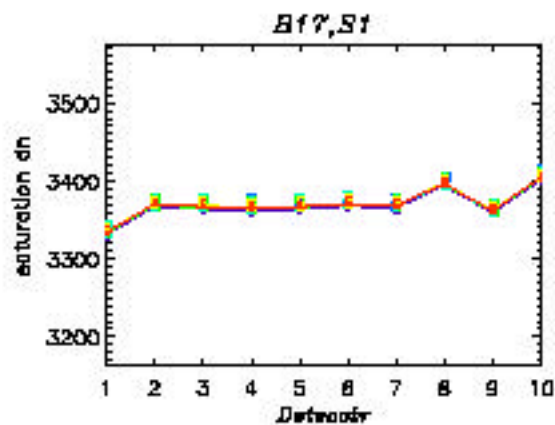
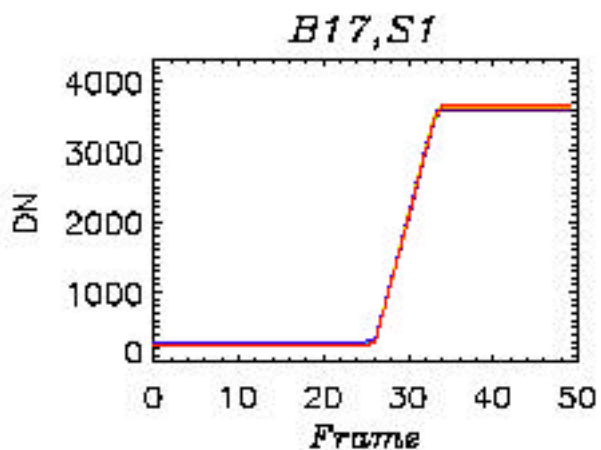
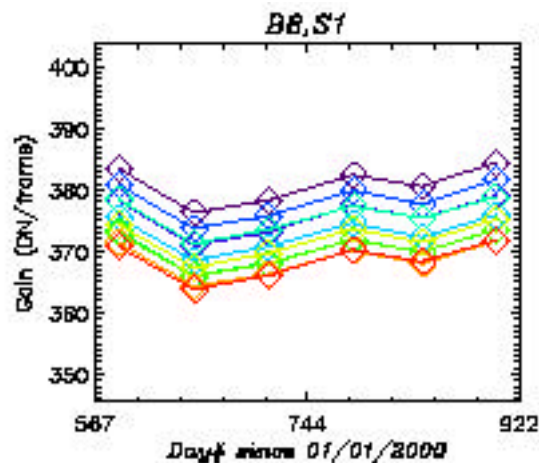
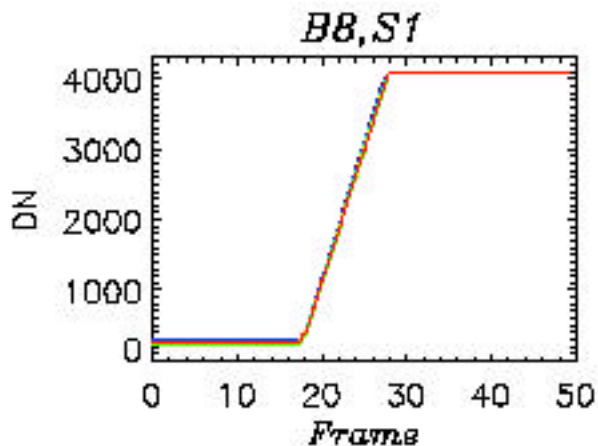
# ECAL Trending



## Applications:

Electronic gain trending

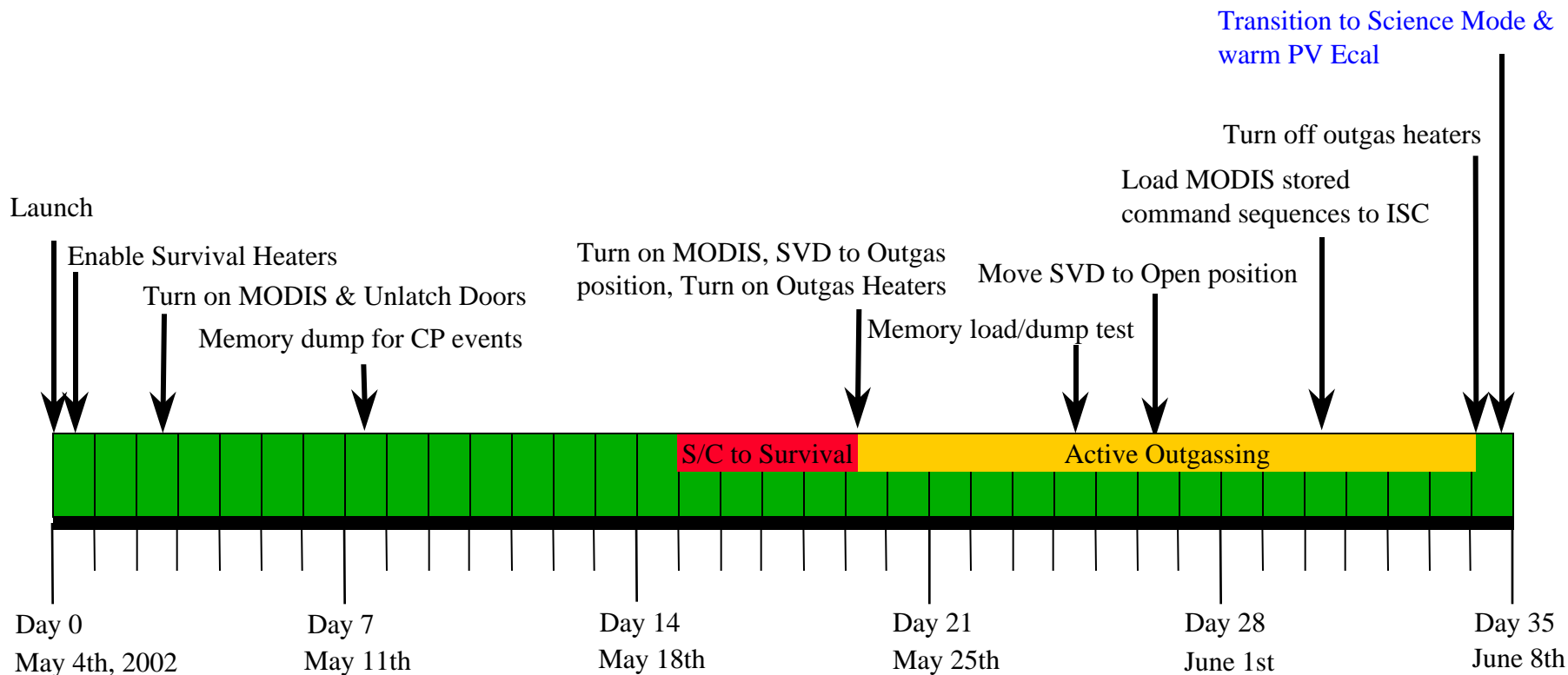
Electronic gain saturation (dn\_sat)





# As-run Activation Timeline

## Launch - MET Day 35



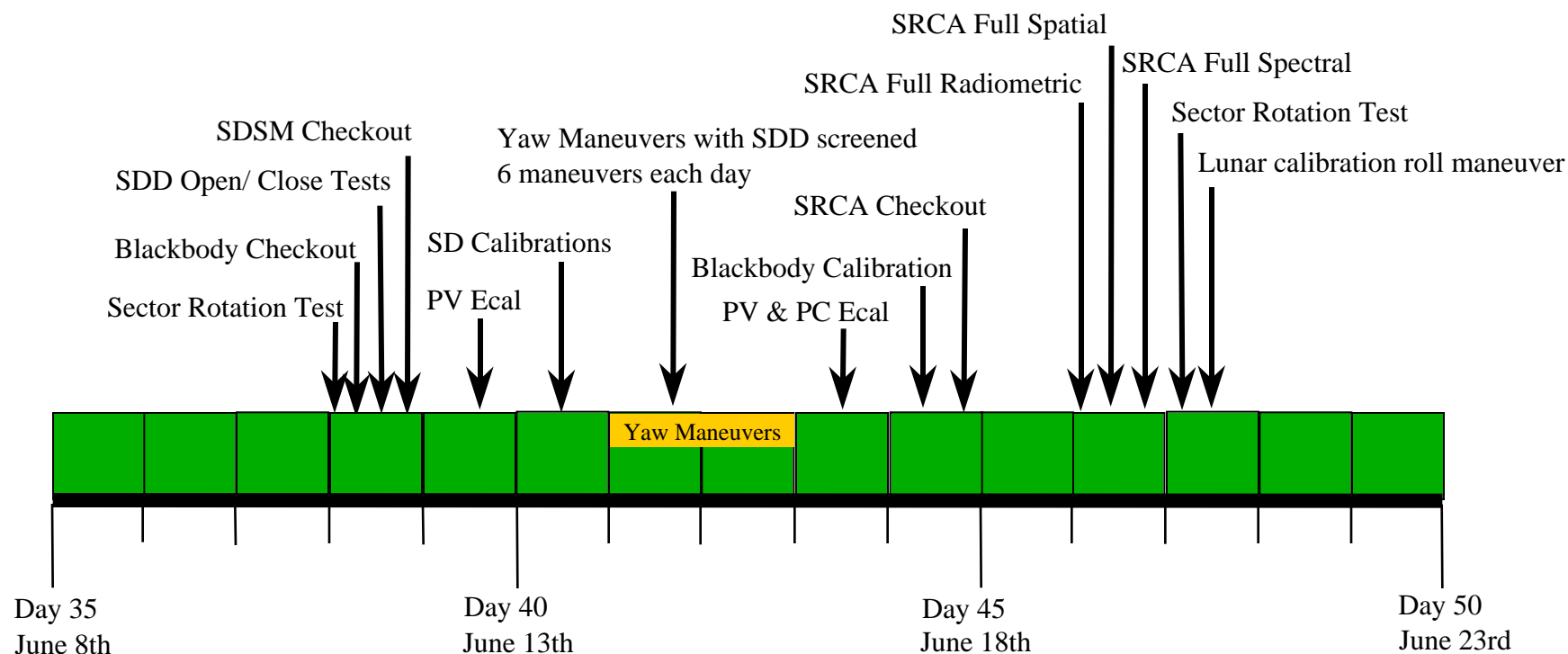
### Mission Elapsed Time / Date

May 4th, 2002 => day 124



# As-run Activation Timeline

## MET Day 35 - MET Day 50

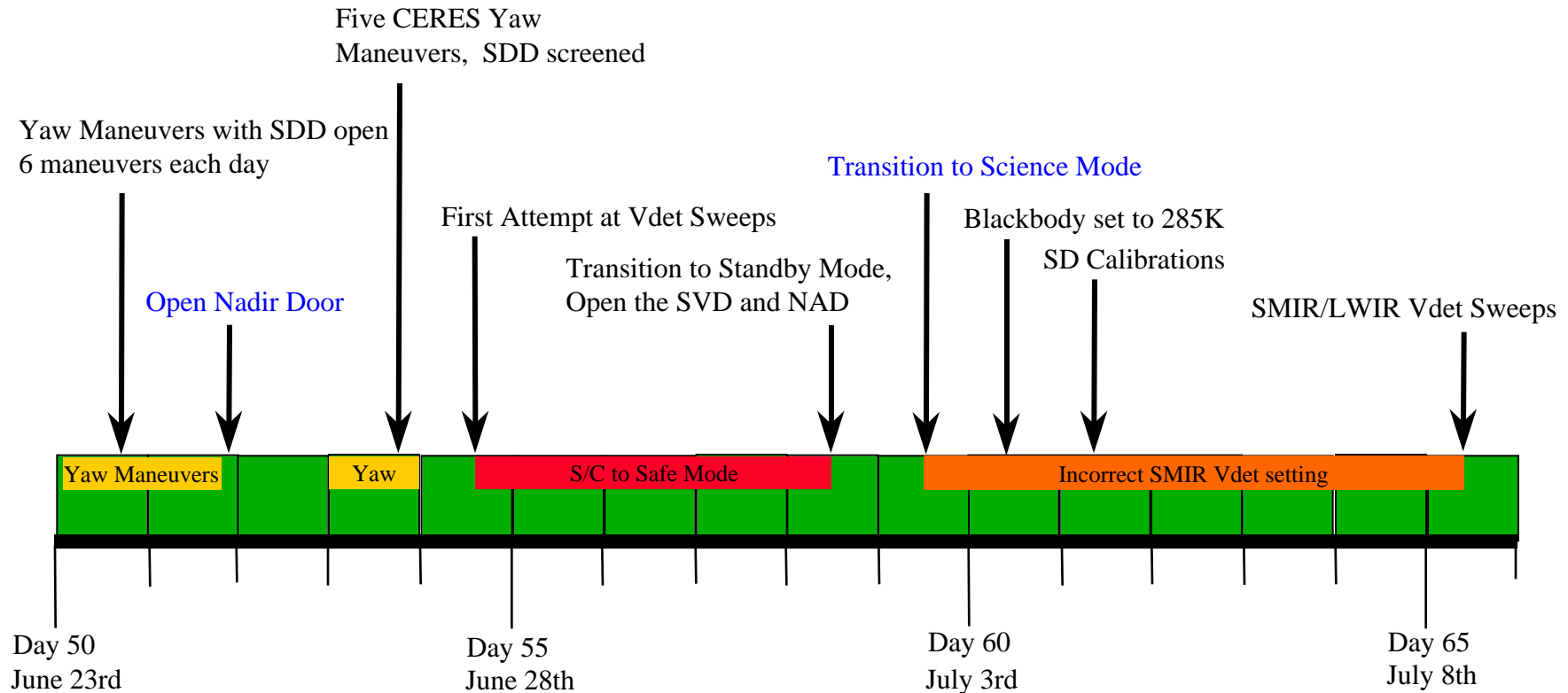


**Mission Elapsed Time / Date**



# As-run Activation Timeline

## MET Day 50 - MET Day 66



**Mission Elapsed Time / Date**

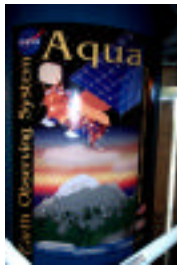


## Major Calibration & Characterization Activities



- SD/SDSM (6 planned, 4 implemented, and 4 processed)
- BB warm-up/cool-down (2, 2, 1)
- Ecal (3, 3, 3)
- SRCA (4, 4, 4)
- Lunar observation (2, 1, 1)
- Itwk/Vdet sweep (1, 1, 1)
- Night time day mode observations (1, 1, 0)
- Yaw Maneuver (2, 2, 2)



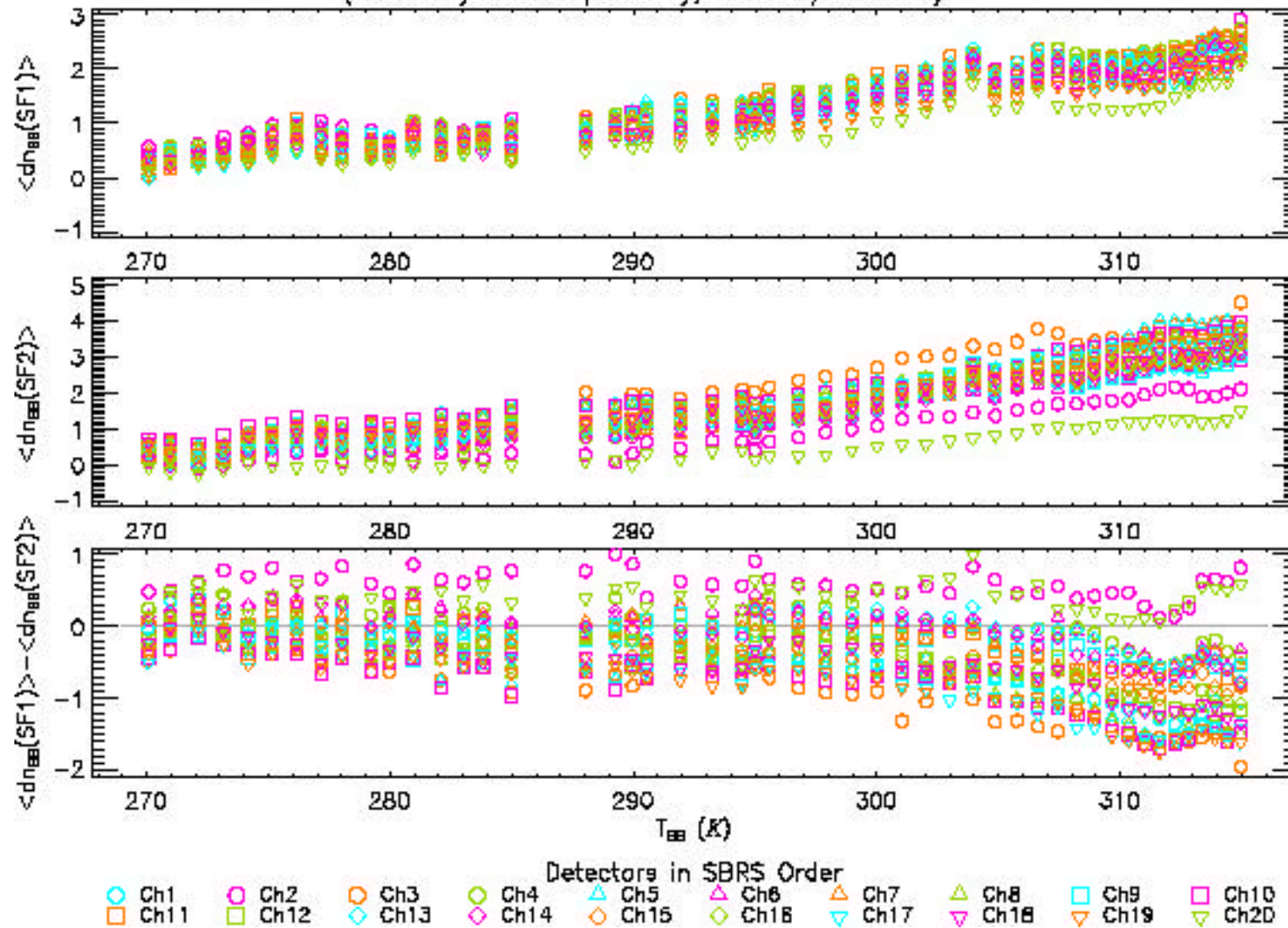


## Aqua MODIS B7 dn\_BB

**Compared to Terra MODIS: Smaller dn\_BB, less SF difference**



Figure 3. Aqua MODIS B7  $\langle dn_{BB} \rangle$  of Sub-frame 1, 2, and their Difference  
 OBC Data Set during Day\_2002\_190\_191  
 (Blackbody Warm-up Activity; Itwk:102/Vdet:184)

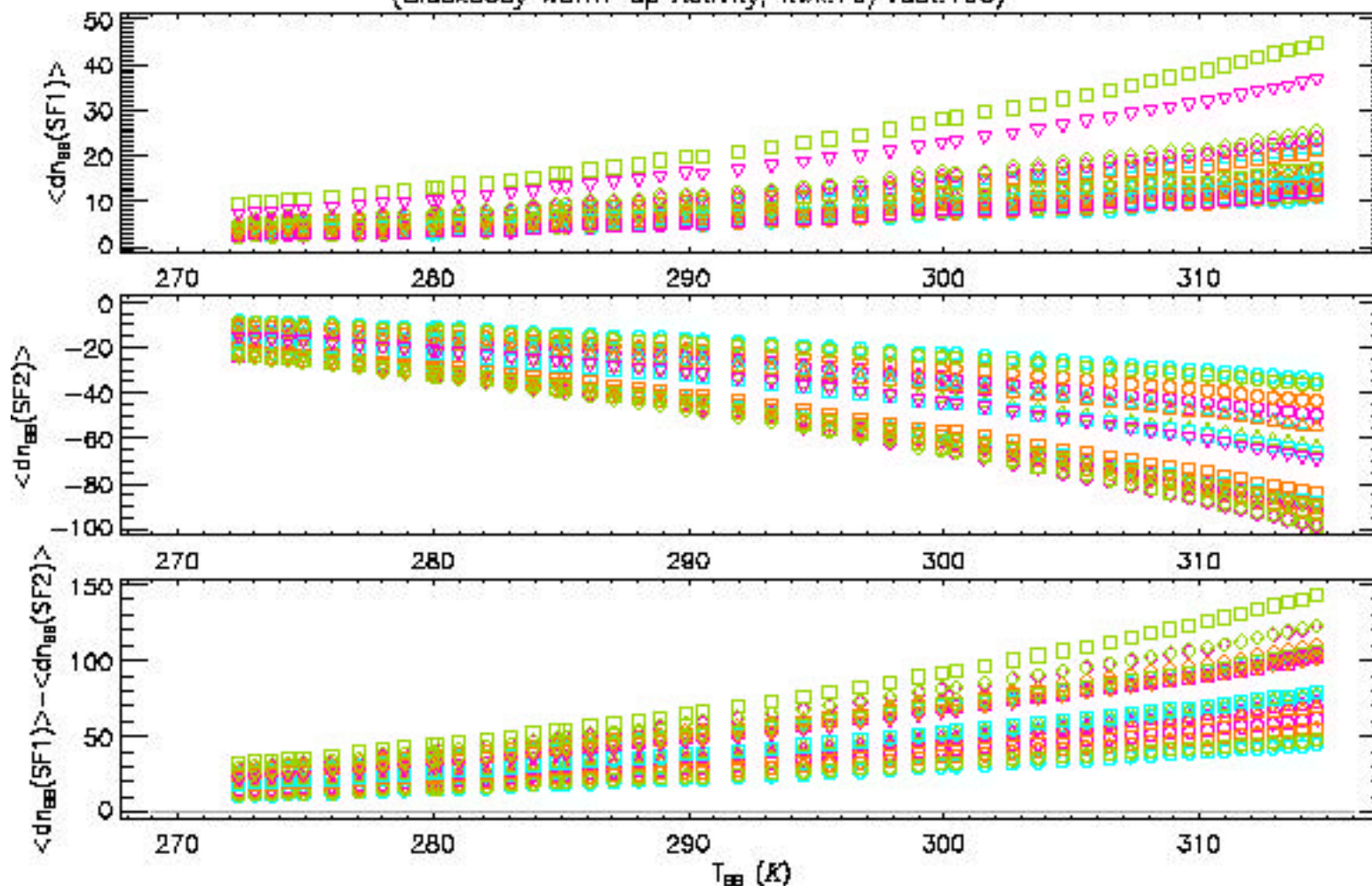




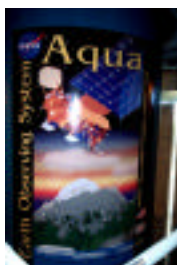
# Terra MODIS B7 dn\_BB



Figure 3. Terra MODIS B7  $\langle dn_{bb} \rangle$  of Sub-frame 1, 2, and their Difference  
 OBC Data Set during Day\_2002\_111  
 (Blackbody Warm-up Activity; Itwk:79/Vdet:190)



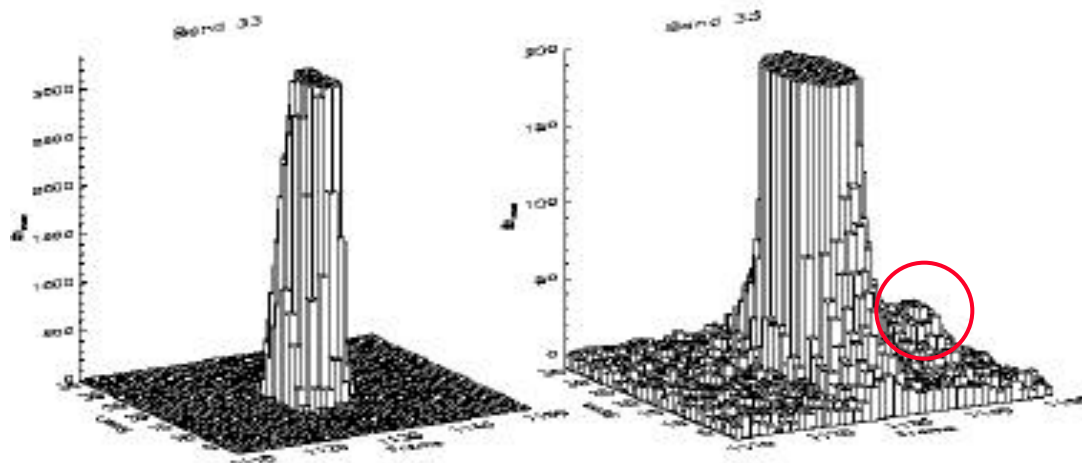
- Detectors in SBRS Order
- Ch1
  - Ch2
  - Ch3
  - Ch4
  - △ Ch5
  - △ Ch6
  - △ Ch7
  - △ Ch8
  - Ch9
  - Ch10
  - Ch11
  - Ch12
  - ◇ Ch13
  - ◇ Ch14
  - ◇ Ch15
  - ◇ Ch16
  - ▽ Ch17
  - ▽ Ch18
  - ▽ Ch19
  - ▽ Ch20



## PC Bands (32-36) 11 $\mu$ m Optical Leak



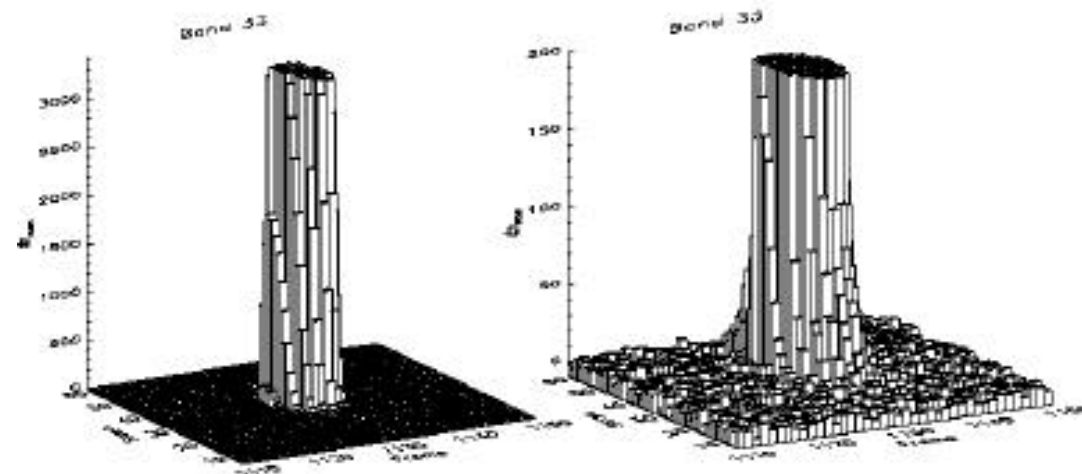
FMI Band 33 (Channel 5) During 2002062/07:15 Moon Wax Event



## Lunar Response

**Terra MODIS B33**

FMI Band 33 (Channel 5) During 2002171/16:45 Near Wax Event



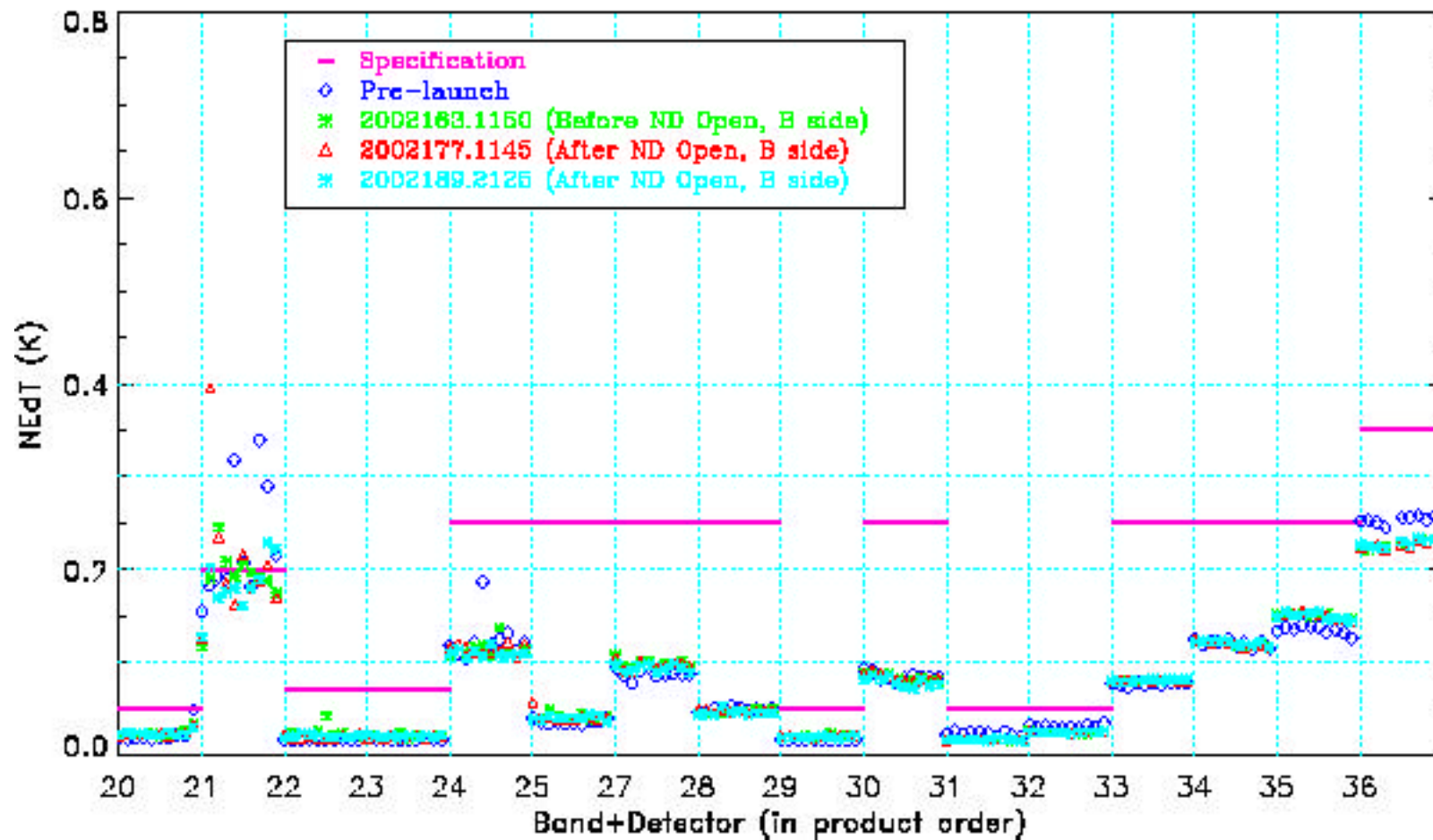
**Aqua MODIS B33**



# Aqua MODIS TEB NEdT



AQUA MODIS Thermal Emissive Bands On-Orbit NEdT at  $L_{typ}$

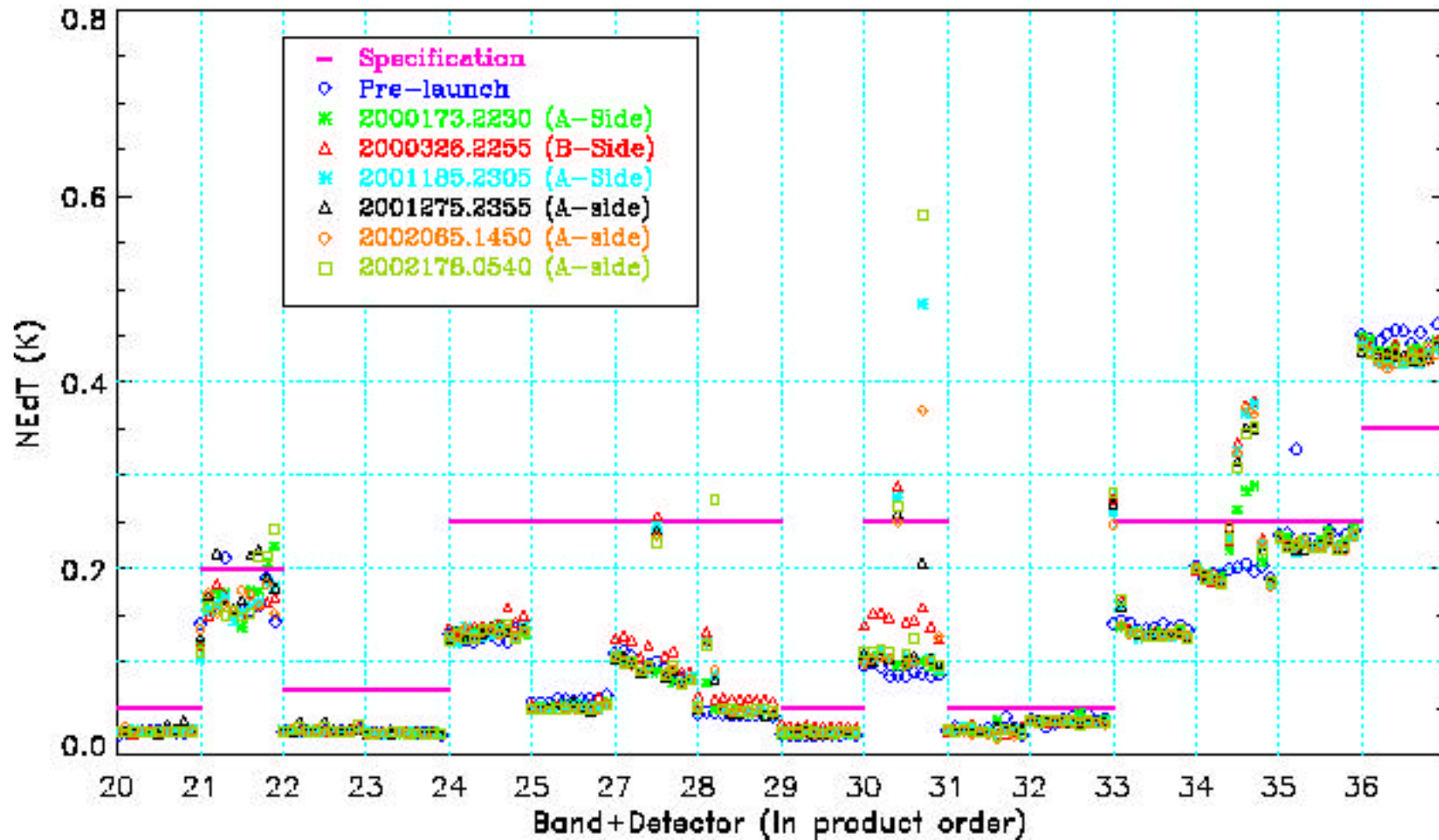




# Terra MODIS TEB NEdT



TERRA MODIS Thermal Emissive Bands On-Orbit NEdT at  $L_{typ}$

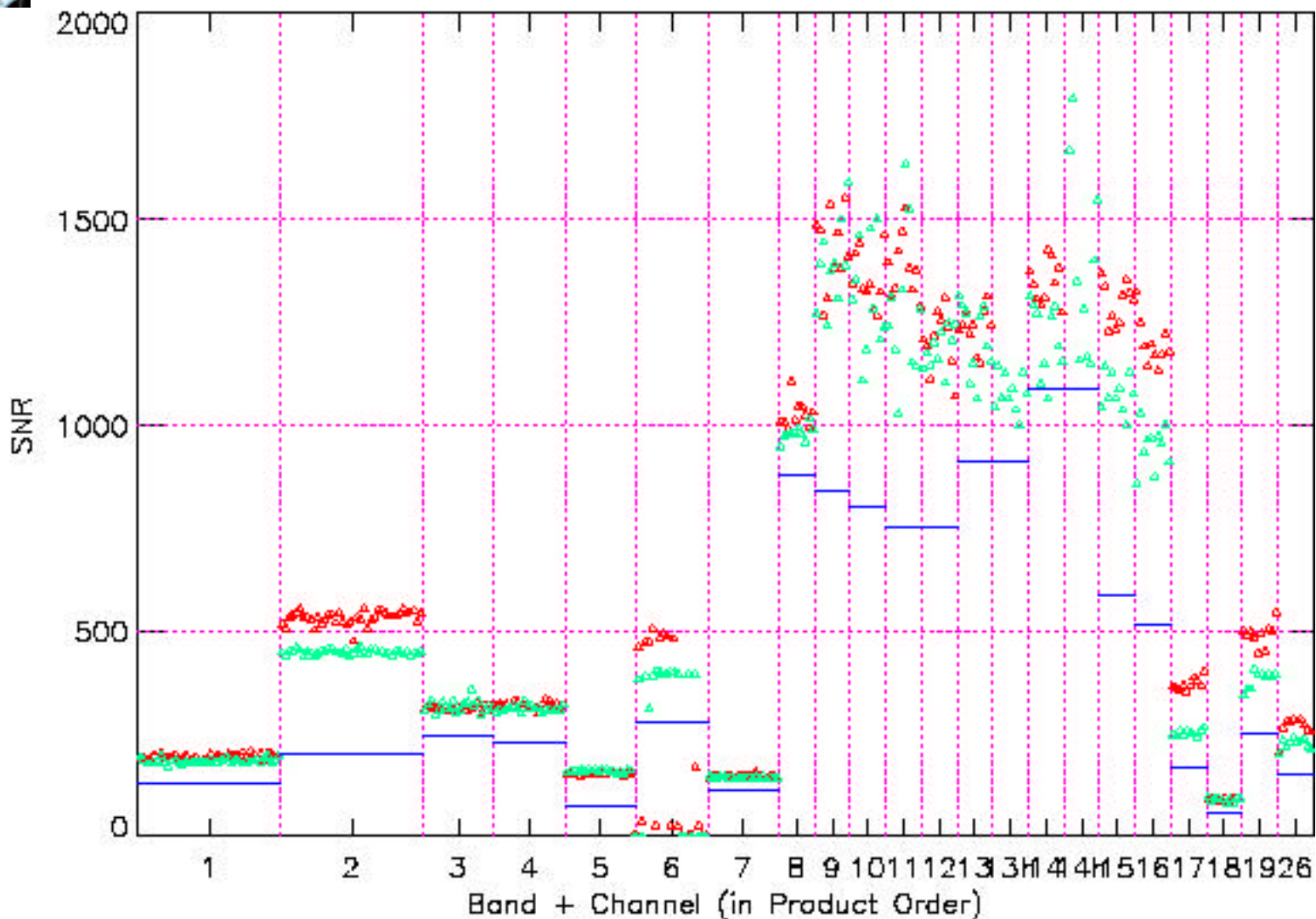




# RSB SNR (prelaunch and on-orbit)



Aqua MODIS RSB SNR at Ltyp



Day 2002164

Prelaunch

Specification



# B6 Operability Issue



- SD calibrations

Planned	SD Screen	Implementation	ltwk/Vdet	Data Processed	m1 obtained	Dead detectors in B6 (SBRS order)
June 13 (2002164)	Down	Successful	102/184	Processed	1-17,17-19,26	1,2,3,5,6,7,8,9,11,15,19
	Up	Successful	102/184	Processed	8-16,13h,14h	1,2,3,5,6,7,8,9,11,15,19
June 16 (2002167)	Down	Successful	102/184	Processed	1-17,17-19,26	1,2,3,5,6,7,8,9,11,15,19
	Up	Successful	102/184	Processed	8-16,13h,14h	1,2,3,5,6,7,8,9,11,15,19
June 29 (2002180)	Down	Failed (Safe Mode)	102/136			
	Up	Failed (Safe Mode)	102/136			
July 4 (2002185)	Down	Successful	102/136	Processed	1-17,17-19,26	1,2,3,5,6,7,8,9,11,15,16,19
	Up	Successful	102/136	Processed	8-16,13h,14h	1,2,3,5,6,7,8,9,11,15,16,17,19
July 10 (2002191)	Down	Failed	102/184			
	Up	Successful	102/184	Processed	1-7,17-19,26	1,2,3,5,6,7,8,9,15,19
July 17 (2002198)	Down					
	Up					

- EV Observations

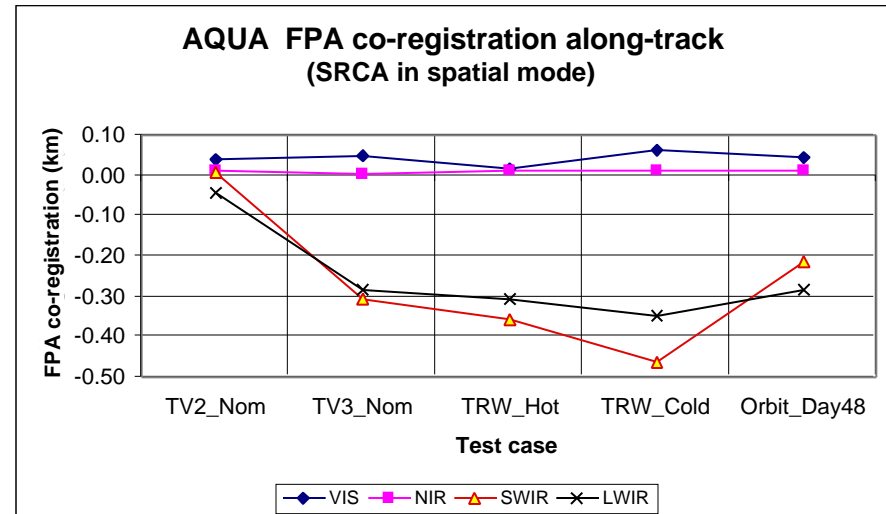
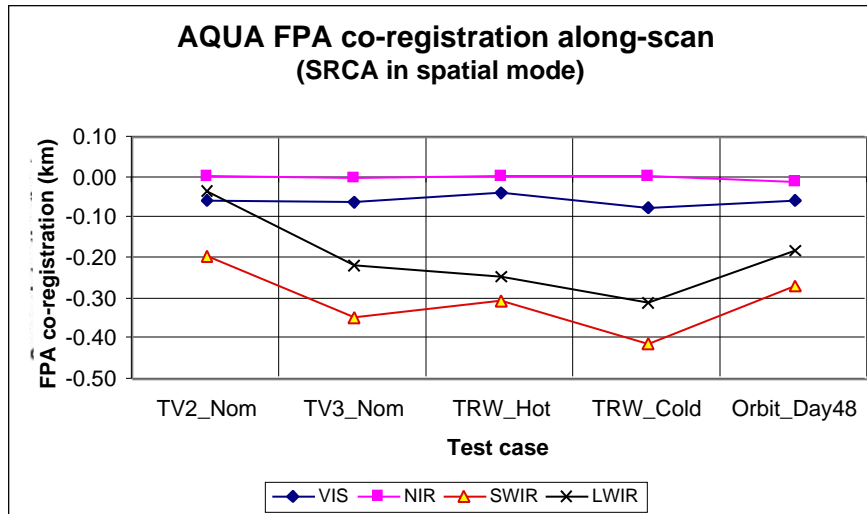
Date	Dead Detectors in B6 (SBRS order)
June 25 (2002176)	1,2,3,5,6,7,8,9,11,15,19
June 26 (2002177)	1,2,3,5,6,7,8,9,11,15,19
June 27 (2002178)	1,2,3,5,6,7,8,9,11,15,19
July 4 (2002185)	1,2,3,5,6,7,8,9,11,15,16,19
July 5 (2002186)	1,2,3,4,5,6,7,8,9,11,15,16,19
July 6 (2002187)	1,2,3,5,6,7,8,9,15,19
July 7 (2002188)	1,2,3,5,6,7,8,9,15,19
July 8 (2002189)	1,2,3,5,6,7,8,9,15,19
July 9 (2002190)	1,2,3,5,6,7,8,9,15,19



# Spatial Characterization



◆ FPA co-registration is relative to band 1



## AQUA FPA co-registration tracking from prelaunch to on-orbit

	FPA	TV2_Nom	TV3_Nom	TRW_Hot	TRW_Cold	Orbit_Day48
Along-scan	VIS	-0.056	-0.060	-0.036	-0.074	-0.056
	NIR	0.001	0.000	0.001	0.002	-0.012
	SWIR	-0.198	-0.349	-0.307	-0.412	-0.270
	LWIR	-0.036	-0.216	-0.246	-0.312	-0.183
Along-track	VIS	0.042	0.050	0.018	0.061	0.045
	NIR	0.011	0.003	0.012	0.010	0.012
	SWIR	0.009	-0.306	-0.359	-0.461	-0.215
	LWIR	-0.043	-0.283	-0.304	-0.346	-0.282



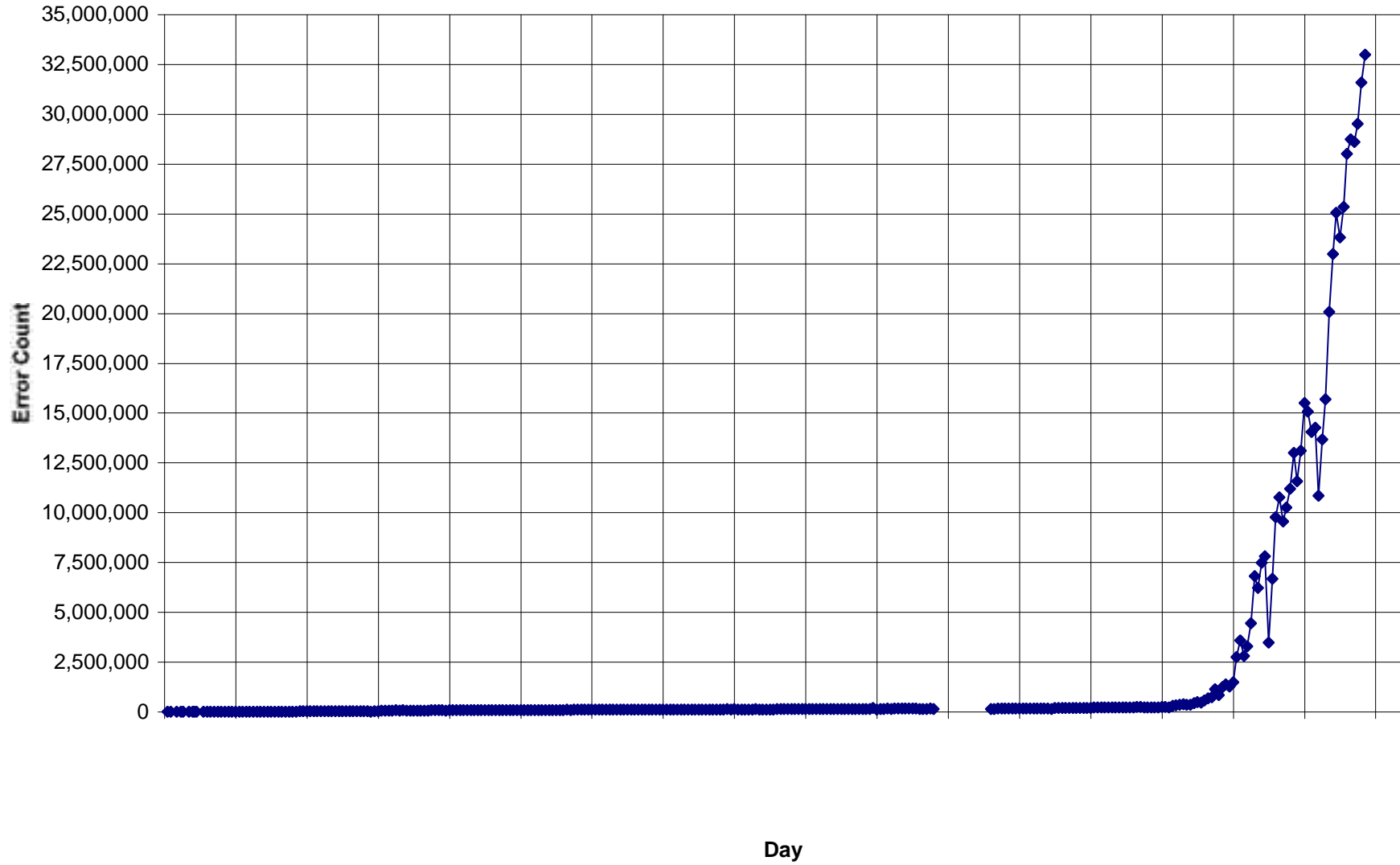


## Current Work and Future Plan



- Complete ALL Early Calibration and Characterization (apply lessons learned from Terra) activities
- Key Issues:
  - SWIR crosstalk (optical/electronic), B6 detectors operability, BBR tracking, SD and optics degradation, B33, 35, 36 stability tracking, striping
- Others:
  - Same as Terra Work Plan

Total Number of Error Counts per Day



Total Number of Error Counts per Day

