

HST Status

13 November 2008

Topics

- SM4 Support
- SMOV4 Preparations
- Replanning for a delayed SM4

SM4 Readiness

- STScI SM4 Readiness Review 9-10 September
 - ◆ Required development work completed and tested
 - ◆ Teams ready to support SM4 and SMOV4
 - ◆ SMOV4 program ready
 - ◆ List of close-out items developed and tracked
 - ◆ Cycle 17 preparations still in progress (Calibration plans, Contact Scientist reviews, etc.)
- We will conduct a delta-Readiness Review about a month before rescheduled SM4

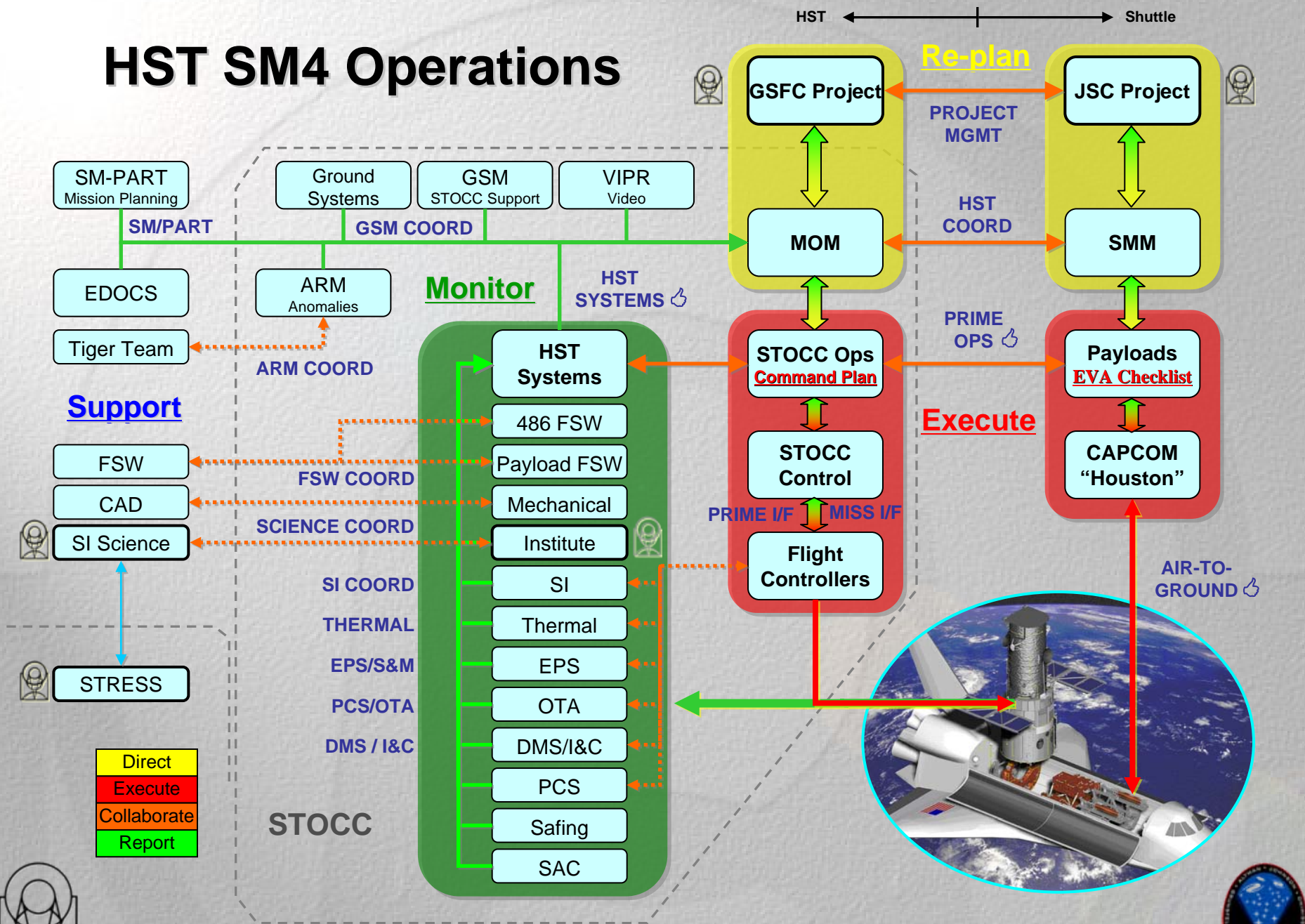
WFC3 Delivery



SM4 Support

- Participate in development of ATs (Acceptance tests) and FTs (Functional tests)
- Participate in development of the success criteria for ATs and FTs
- Evaluate science data obtained during FTs
- STScI staff train as part of the entire Hubble team
 - ◆ ~ 10 SIMs (GSFC only)
 - ◆ ~ 10 JISs (JSC & GSFC)

HST SM4 Operations



STScI Roles in SM4

Project (DO/HSTMO)

Mission planning science advocates

Observatory advisors to program management

Science Analysis (Instrument Teams)

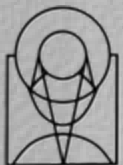
Instrument capability evaluation

Science advisors to project management

Console (Engineers)

Science instrument operations

Engineering advisors to the science community

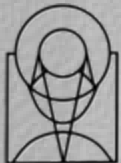


Observatory Support Team

	<u>Project/JSC</u>	<u>Project/GSFC</u>	<u>STOCC</u>	<u>STScI</u>
Orbit	Mountain	Doxsey/Jenkner	C. Long	Blades
Planning	Hauser	Sembach	Wheeler	Biagetti

	<u>WFC3</u>		<u>COS</u>		<u>STIS</u>		<u>ACS</u>	
	GSFC	STScI	GSFC	STScI	GSFC	STScI	GSFC	STScI
Orbit	Hartig Petro		Aloisi Shanow J. Green Penton Mcthate		Kaiser Oliveira Woodgate		L. Smith Lucas	Cox Platais Gonzaga
Analysis	MacKenty Bushouse	Baggett Hilbert	Keyes Friedman Osterman	Ake Shaw Beland Froning	Aloisi Proffitt Gull Linder	Lennon Wolfe	Sirianni Golimowski Mutchler	Gilliland Chiaberge Lim

<u>FGS</u>	Lallo	Nelan
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STScI Information Channel

STScI Information Channel (SIC) -

File Edit View History Bookmarks ID

http://www.stsci.edu/org/csa/teams/sic/sic/frames_index.html

STScI Information Chann...

Select JIS/SIM: SIM 13 Go Pause Resume Contacts Guide HSTMO About SIC Sign Out

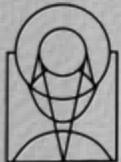
STScI Information Channel: **SIM 13** Refreshed: Thu Aug 21 14:23:46 EDT

Print

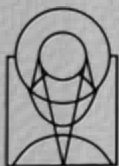
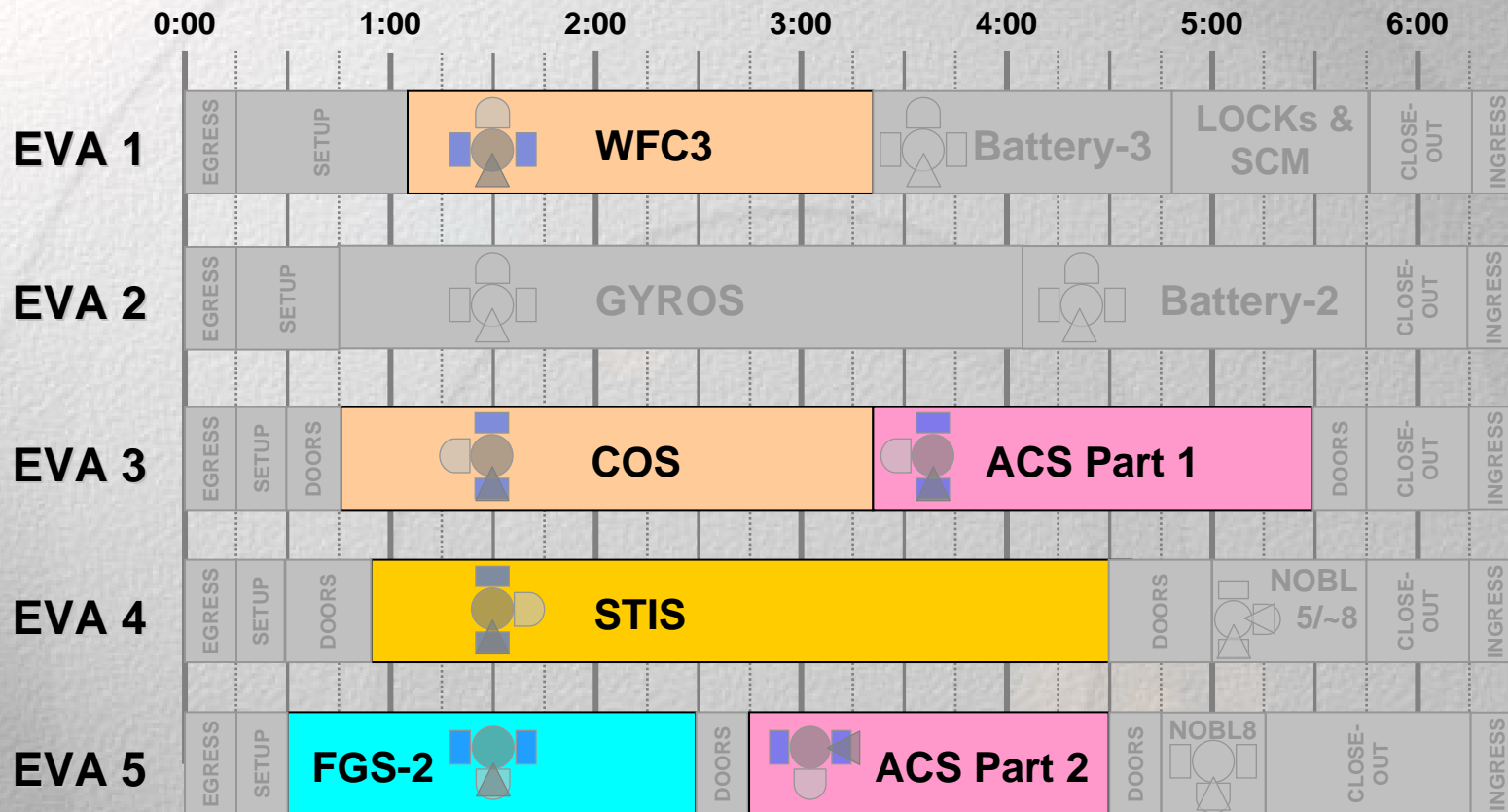
Index	Entry (click name to send e-mail)	Date	Click to Edit
SIM 13-319	Ken Carpenter - We're shutting down in the mgt office, but not leaving yet, until the storm moves further east...	73 10:45:24 MET (entry edited)	Edit
SIM 13-318	Tom Wheeler - I'm shutting down here at STScI.	73 10:45:24 MET (entry edited)	Edit
SIM 13-317	Ken Sembach - Sounds like the SIM is shutting down. BE VERY CAREFUL out there - severe storms are moving through the area right now.	73 10:45:24 MET (entry edited)	Edit
SIM 13-316	Larry Petro - Ken C., Yes, that's basically the tenor of the discussions on the science/ipt.	73 10:45:24 MET (entry edited)	Edit
SIM 13-315	Chris Long - As unusual as this is the SI console has been dismissed so I am logging off.	73 10:45:24 MET (entry edited)	Edit
SIM 13-314	Ken Carpenter - I think a logical path that the orbit shift could investigate further would be to execute the IR FT, try to get some images to confirm position and see what if any science field(s) we have in that position, and then try any last-ditch efforts we could come up with for freeing-up the stuck mechanism (though this last step might depend on how much field it appears we have).	73 10:45:24 MET (entry edited)	Edit
SIM 13-313	Howard Bushouse - IR channel visibility estimates based on a 2004 TV-1 image suggest that we'd have 50% of the IR field visible at a CSM position of 113.	73 10:45:24 MET (entry edited)	Edit
SIM 13-312	Ken Sembach - Tom - thanks for the clarification. I hadn't considered the magnetic field stepping around the motor. Glad I have you available for questions like these!	73 10:45:24 MET (entry edited)	Edit
SIM 13-311	Chris Long - HST is on external power	73 10:45:24 MET (entry edited)	Edit
SIM 13-310	Tom Wheeler - Ken if the rotor does not move, the magnetic field will step around the rotor. At one of the four points, the force applied will be in the UVIS direction, but only for one step. The next step will cause no motion because it will be on step (aligned with the present position), but the third step will be in the IR direction, thus the rocking action.	73 10:45:24 MET (entry edited)	Edit
SIM 13-309	Ken Sembach - Larry - at this point, this is a good plan of action for the orbit shift.	73 10:45:24 MET (entry edited)	Edit
SIM 13-308	Ken Sembach - Tom - good point. I was in the ARM handover during that discussion, but I did hear Ken C. mention this to Lisa after the TT meeting. But just a question - the -200 step move sequence doesn't actually apply force in the UVIS direction (or at least not the same force as a +UVIS commanded move), does it?	73 10:45:24 MET (entry edited)	Edit
SIM 13-307	Larry Petro - Ken, the plan is for the Orbit Shift to plan our next moves, which will run during Planning Shift (so we hear that...)	73 10:45:24 MET (entry edited)	Edit

SIM 13 Entry:

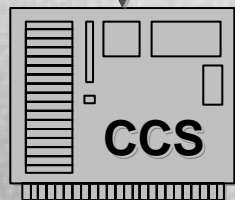
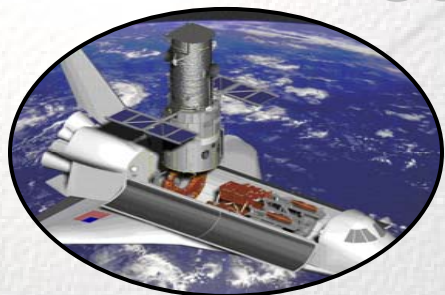
[Add](#) [Clear](#) **Tip:** Use HTML tags to add color or emphasis.



Instrument Support Activities



Science Analysis and Reporting



STOCC



SIMOPS



STRESS

Press

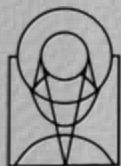
Project @JSC

Results

Project @GSFC

MOM

Voice Loops



SMOV4 Status

- SMOV4 proposals completed
 - ◆ Some targets will need to be adjusted for new date
 - ◆ Some changes may come from recent NCS/NICMOS experience
 - ◆ We do not expect many changes as a result of inclusion of SIC&DH in the manifest
- First 4 weeks of SMOV4 planned in detail
 - ◆ “Calendars” built in scheduling system to verify proposals, timing, etc.
 - ◆ Some minor tweaks as a result
 - ◆ Will redo for new launch date
- Analysis assignments and plans developed by Instrument teams
 - ◆ Watch for over-utilization of key staff
 - ◆ Focus on enabling science for each Instrument and channel

SMOV PROPOSAL IMPLEMENTATION TEAM (PIT) EARNED VALUE (EV) *as of 20OCT08*

10 EV points/proposal

- 3 pts for prop submit
- 2 pts for 1st PIT mtg
- 2 pts for 2nd PIT mtg
- 3 pts for prop complete

165 SMOV4 PROPOSALS = 1650 total EV points

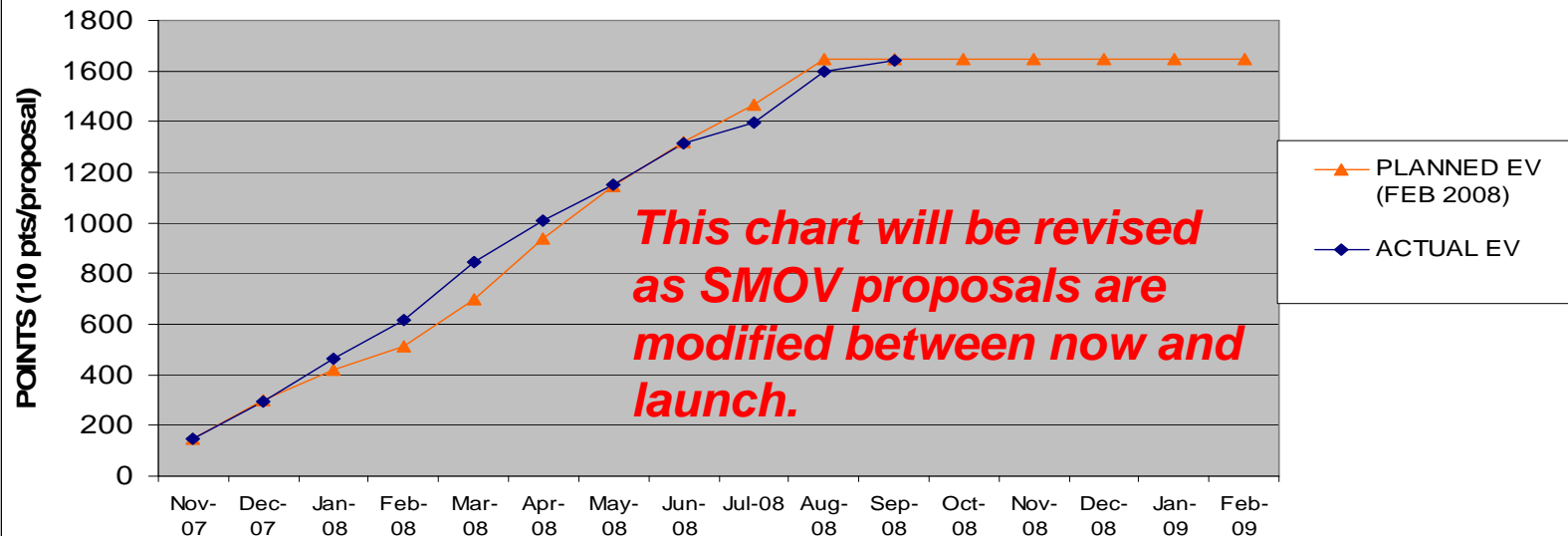
- 164 PROPOSALS PIT-APPROVED

PIT PROGRESS

- **100 % PLANNED EARNED VALUE** for Aug 31

- **99.7 % ACTUAL EARNED VALUE** as of Aug 31

SMOV PIT EARNED VALUE -- NOV2007 - SEP2008
(as of 20OCT08)



SMOVs 2 – 4

EXTERNAL ORBITS

HISTORICAL COMPARISON

		SMOV2	SMOV2	SMOV3B	SMOV4
SI/SS		PLANNED	ACTUAL	ACTUAL	PLANNED
WFPC2		46	77	31	
FOC		15	15		
Spacecraft/FGS		69	61	41	81
NICMOS		194	285	77	34
STIS		205	267	14	21
ACS				186	38
WFC3					163
COS					164
ERO		72	75	70	90
TOTALS		601	780	419	591

Notes:

1. STIS and NICMOS required more orbits than planned because of the NICMOS thermal short and the opto-coupler resets in both SIs.

2. SMOV4 seems to be the most complex in terms of realtime interactions and in-line analyses.

SMOV4 Plan Overview



SMOV4 Plan satisfies the following constraints

Minimize excess FGS3 usage by timely commissioning of FGS2R2

Long intervals for outgassing and contaminant dissipation

- Bright Earth Avoidance (for 21 days from Release)
 - to avoid UV-induced polymerization of exposed optics (WFC3 POM)
- COS NUV = 10 days from Release (per model) to allow internal pressure below 20 uTORR, before detector activation
- COS FUV = 15 days from Release (per model) to allow internal pressure below 10 uTORR, before detector activation
- WFC3 = 21 days from Release before cal lamp usage and TEC cooldown

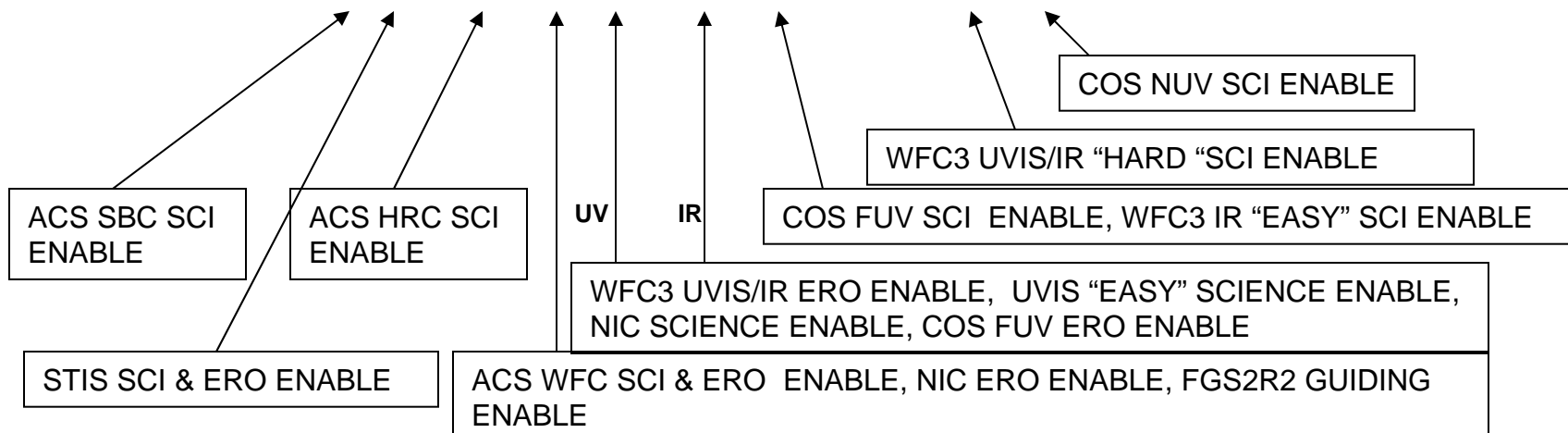
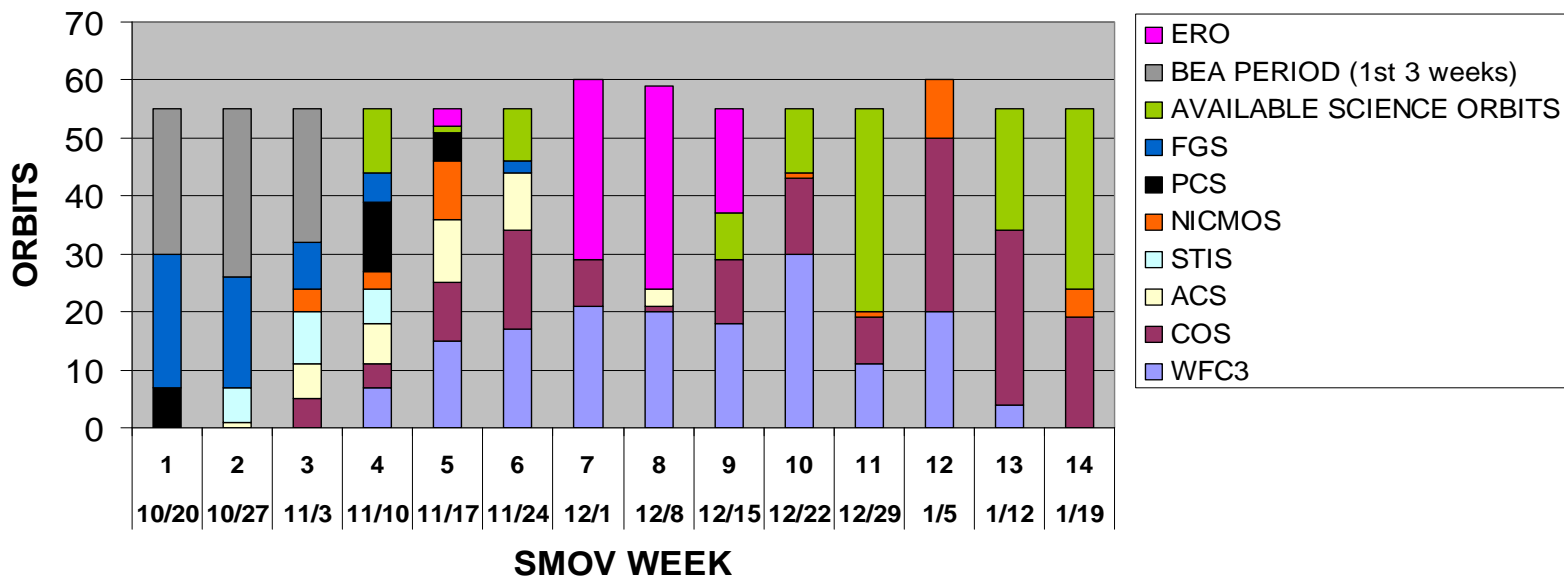
Careful, incremental initial high-voltage ramp-ups

- COS NUV/FUV
- STIS NUV/FUV
- ACS SBC

SMOV4 EXTERNAL ORBITS & ENABLE DATES

- Including EROs -

Oct. 10, 2008 Launch -- Assumes 55 - 60 prime observing orbits per week



Replanning for a delayed SM4

- Support Cycle 16 extended observing program
- Support SIC&DH delivery activities (e.g. SMGT)
- Maintain SM4 and SMOV4 readiness
- Press ahead with non-SM4 activities
 - ◆ **Cycle 17 Activities**
 - ◆ Calibration plan
 - ◆ Contact Scientist reviews
 - ◆ Long Range Observing Plan
 - ◆ **WFPC2 reprocessing**
 - ◆ **NICMOS reprocessing**
 - ◆ **HLA DR3 release**
 - ◆ **Multidrizzle upgrades**
 - ◆ **Plan for Data Management System computer replacement**
 - ◆ **Routine software maintenance**

} Later today

} Tomorrow

Instrument “Get Ahead work”

■ WFC3

- ◆ Further investigate bow ties in UVIS
- ◆ Look more closely at persistence in IR channel
- ◆ ISRs to document TV findings
- ◆ Tweaks to CALWFC3

■ COS

- ◆ Complete pipeline verification process
- ◆ Tweaks to CALCOS

■ ACS

- ◆ End-to-end Oscilloscope mode testing
- ◆ Refine criteria for “good enough” CCD performance

Staffing steps taken to support SM4

- With two new instruments and two repaired instruments, the key staffing area for SM4 is scientific commissioning
- Worked out transition of some development and scientific staff to JWST
- We augmented support in the instrument area without increasing permanent AURA science staff
 - ◆ Recruited 7 Term-hire Scientists (3-yr terms).
 - ◆ Recruited 1 Visiting Scientist (1-yr term) and are interviewing a second
 - ◆ Subcontract with JHU provides ~ 3.8 FTE of scientific support
 - ◆ Filling 3 ESA positions for instrument support.

Staffing for HST Instruments

WFPC2

Linda Smith²
Van Dixon²
John Biretta³
Luigi Bedin¹
Aparna Maybhate¹
Norm Grogin¹

Shireen Gonzaga
Matt McMaster
Katya Verner²
Pey-Lian Lim¹

ACS

Linda Smith²
Marco Sirianni
Dave Golimowski
Luigi Bedin
Aparna Maybhate
Norm Grogin
Marco Chiaberge
Andy Fruchter
Ron Gilliland
Ralph Bohlin³

Tyler Desjardins
Ray Lucas
Max Mutchler
Jennifer Mack
Francesca Boffi
Pey-Lian Lim

WFC3

John Mackenty
Sylvia Baggett
Tom Brown
Howard Bushouse
Susana Deustua
Linda Dressel
Jason Kalirai
Peter McCullough
Andre Martel
Larry Petro
Elena Sabbi

Tiffany Borders
Michael Dulude
Bryan Hilbert
Jessica Kim
Cheryl Pavlovsky
Vera Platais
Alex Viana²
Abi Rajan

COS

Alessandra Aloisi²
Nolan Walborn²
Tony Keyes
Dave Soderblom
Rachel Osten
Paul Goudfrooij
Parviz Ghavamian
Christina Oliviera
Dave Sahnou
Tom Ake
Derck Massa
Van Dixon²

Ed Smith
Rosa Diaz²
Brittany Shaw
Sammi Niemi
Katya Verner²
Michael York

STIS

Alessandra Aloisi²
Charles Proffitt
Danny Lennon
Nolan Walborn²

Rosa Diaz²
Michael Wolfe

NICMOS

Anton Koekemoer³
Tommy Wiklind
Thomas Dahlen
Roelof deJong
Nor Pirzkal

Elizabeth Barker
Deepashri Thatte
Alex Viana²

Notes:

¹ To move to ACS

² Split w/ another instrument

³ To move to JWST