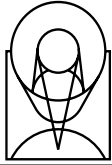


Cycle 15+16 WFPC2 Calibration Augmentation

- Augment calibration plan to address increased WFPC2 utilization / importance in Cycles 15 & 16. Better calibration of CTE and WF4 photometry.
- Augment routine monitor programs for SM4 slip. Previously assumed 24 months operation (SM4 Dec. 2007 + 6 month contingency). Augment by 6 months to allow SM4 as late as Dec. 2008.
- Some observations are time sensitive -- must start observing 6 June 2007 if SM4 moved early to ~July 2008 (target visibility issues, etc.).
- Specific needs of Cycle 16 GO programs will be considered later, after Phase II deadline, and some additional orbits might be requested.
- Total augmentation request: 33 external orbits, 264 internal orbits.

WFPC2 Cycle 15+16 Calibration Augmentation Summary

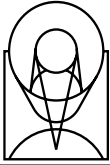
ID	Proposal Title (PI)	Frequency	Requested Augmentation (orbits)		Existing Allocation (orbits)		Products	Accuracy Required	Notes
			“External”	“Internal”	“External”	“Internal”			
	Closeout Programs								
11030	WF4 Anomaly (Dixon)	Every 6 months	3	27	2	54	CDBS, IHB, WWW	1-2%	March 2008 temperature reduction; WF4 photometry test
11032	CTE Extended Targets (Golimowski)	once	26		8		ISR, IHB	0.03 mag	Abell 1689, HDF-N field
	Routine Monitors								
11022	WFPC2 Decons & Associated Observations (Biretta)	Decons every 45d - 60d	3	48	12	188	CDBS, Inst Hbk, Synphot, WWW reports	1-2%	Decons, photometric monitor, internals, UV throughput, VISFLATS and UVFLATS.
11023, 11070	Standard Darks (Part 1 & Part 2; Biretta)	weekly, except decon week		132		528	CDBS	1 e-/hr	CDBS updates and weekly WWW hot pixel lists.
11024	Internal Monitor (Biretta)	weekly, except decon week		22		88	CDBS	0.8e-/pix	BIAS, INTFLATS in F555W for gain and throughput stability measurements
11025	CTE Monitor (Biretta)	1/year	1		4		ISR	0.03 mag	Continue CTE monitor
11027	Visible Earth Flats (Gonzaga)	continuous		25		100	CDBS	0.3%	F502N only (time dependence only)
11028	UV Earth Flats (Gonzaga)	continuous		10		40	CDBS	0.3%	F255W only
TOTAL TIME (including all executions)			33	264	26	998			



WFPC2 Closeout Programs

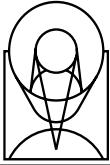
11030: WFPC2 Closeout: WF4 Anomaly (PI=Dixon)

- Keep WF4 alive for GO observations and closeout calibrations.
- Need additional temperature adjustment ~ March 2008 since SM4 slip.
- Various internal images taken to test resulting performance.
- Omega Cen to check PSF.
- Add 2 more orbits Omega Cen at low and high bias to test photometric corrections, which are more important to verify now.
- Cost: 3 more external orbits, 27 more internal orbits.



11032: WFPC2 Closeout: CTE for Extended Target (PI=Golimowski)

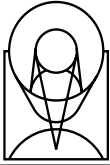
- Measure CTE at ~15 years on-orbit when effect is large.
- Likely last opportunity to study CTE effects on long-lived detector.
- Extended targets (galaxies, etc.) represent large component of WFPC2 archive and Cycle 16 proposal pool, but very little calibration data exists.
- Image galaxies in each CCD with two ORIENTS 180 degrees apart.
- Repeat entire Cycle 8 program 8456 (Abell 1689), rather than previously proposed partial repeat. Will provide CTE measurements in both F606W and F814W filters (two important filters and background levels).
- Add new target HDF-N field containing small, faint galaxies. Compare new data vs. original 1995 HDF and 2000 data in program 8389. Filter F606W.
- Cost: 26 more external orbits.



WFPC2 Cycle 15+16 Routine Monitors

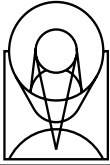
11022: WFPC2 Cycle 15+16 Routine Cals: Decontaminations (PI=Biretta)

- Decontaminations every 45 - 60 days (synchronized with target).
- Monitor F170W in all 4 chips each decon when target available.
- Other UV & blue filters cycling among the different chips to fill orbit.
- Augment with 6 more months to allow SM4 as late as Dec. 2008.
- Cost: 3 more external orbits, 48 more internal orbits.



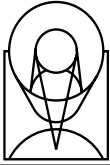
11023/11070: WFPC2 Cycle 15+16 Routine Cals: Standard Darks (PI=Biretta)

- Six 1800s exposures / week (5 with clocks off, 1 with clocks on).
- Used for weekly CDBS darks (hot pixels, superdark).
- Not scheduled during Decon weeks (those are in Decon proposal).
- Need is driven by ~week timescale for hot pixel growth.
- Augment with 6 more months to allow SM4 as late as Dec. 2008.
- Cost: 132 more internal exposures.



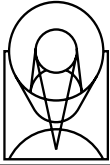
11024: WFPC2 Cycle 15+16 Routine Cals: Internal Monitor (PI=Biretta)

- Monitor the health of the camera electronics (bias level, gain stability, flat).
- Scheduled once / week, except for Decon weeks (are in Decon proposal).
- Each week: 4 BIAS frames, 2 INTFLATs at Gain=7 and Gain=15.
- Provides data for bi-annual superbias in CDBS.
- Augment with 6 more months to allow SM4 as late as Dec. 2008.
- Cost: 22 more internal orbits.



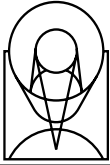
11025: WFPC2 Cycle 15+16 Routine Cals: CTE Monitor (PI=Biretta)

- Monitor CTE degradation; better characterize long-vs-short anomaly.
- Standard monitor, execute once per year.
- Omega Cen in F814W and F555W, in WF2 & WF4, gain 7 and some gain 15.
- Include high S/N Long vs. Short test for uncrowded field.
- Augment with 6 more months to allow SM4 as late as Dec. 2008.
- Cost: 1 more external orbit.



11027: WFPC2 Cycle 15+16 Routine Cals: Visible Earth Flats (PI=Gonzaga)

- Time-dependent changes are predominantly monochromatic (Koekemoer et al. 2001).
- Monitor only single visible filter, F502N.
- Combine and used to update filter flats in CDBS.
- Augment with 6 more months to allow SM4 as late as Dec. 2008.
- Cost: 25 more internal orbits.



11028: WFPC2 Cycle 15+16 Routine Cals: UV Earth Flats (PI=Gonzaga)

- Monitor potential UV throughput changes across the field caused by contaminants.
- Monitor single UV filter, F255W.
- Augment with 6 more months to allow SM4 as late as Dec. 2008.
- Cost: 10 more internal orbits.