Version 9.1
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Wide Field and Planetary Camera 2 Instrument Handbook Update for Cycle 15

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and at the WFPC2 web site:

URL:http://www.stsci.edu/instruments/wfpc2/wfpc2_top.html

Revision History

Instrument	Version	Date	Editor
WF/PC-1	1.0; 2.0; 2.1	October 1985; May 1989; May 1990	Richard Griffiths
WF/PC-1	3.0	April 1992	John W. MacKenty
WFPC2	1.0; 2.0; 3.0	March 1993; May 1994; June 1995	Christopher J. Burrows
WFPC2	4.0	June 1996	John A. Biretta
WFPC2	Update	June 1998	Andrew Fruchter, Inge Heyer
WFPC2	Update	June 1999	Stefano Casertano
WFPC2	5.0	June 2000	John A. Biretta, Inge Heyer
WFPC2	6.0	June 2001	John A. Biretta, Inge Heyer
WFPC2	6.1	July 2001	John A. Biretta, Inge Heyer
WFPC2	7.0	October 2002	John A. Biretta, Lori M. Lubin
WFPC2	8.0	October 2003	Anton Koekemoer, Inge Heyer
WFPC2	9.0	October 2004	Inge Heyer, John A. Biretta
WFPC2	9.1	October 2005	Inge Heyer, John A. Biretta

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CHAPTER 1:

WFPC2 Instrument Handbook Update

In this book. . .

1.1 WFPC2 and Two-Gyro Mode

Two-gyro mode is expected to have no impact whatsoever on WFPC2 imaging performance. This expectation is based largely on extensive on-orbit imaging tests carried out with both ACS and WFPC2 in February 2005. The gyro set and implementation details will be somewhat different between the February 2005 test and GO observing, so there is some remote possibility of unexpected effects. Additional tests are planned in August 2005 to address these concerns.

There are, however, significant impacts from two-gyro mode on target scheduling. These are discussed in the *HST Two-Gyro Handbook* and are implemented in the APT planning tools.

HST fine-pointing and instrument performance in two-gyro mode is expected to be indistinguishable from the performance observed in three-gyro mode.

1.2 STIS Availability

While the full version of WFPC2 Instrument Handbook (Cycle 14) compares the properties of WFPC2 and STIS, observers are of course reminded that STIS is no longer available.

1.3 Photometric Stability

The long-term photometric stability of WFPC2 has been evaluated by examining the photometric monitoring data collected over the lifetime of the instrument. Our primary standard, GRW+70D5824, has been observed roughly every four weeks, before and after decontamination procedures, both in the far UV and in the standard photometric filters. Early observations were taken monthly in both the PC and WF3. Observations starting in Cycle 6 were on a rotating schedule, where observations are taken in a different chip each month. Since Cycle 11 (starting Fall 2002) these observations are taken every 49 days either before or after a decontamination procedure, and starting in Cycle 14 they will be taken every 55-60 days due to the more limited target visibility resulting from 2-gyro mode.

Figure 1.1 on page 3 shows the photometric monitoring data for the standard star GRW+70D5824 (a white dwarf classified DA3; B-V = -0.09) in the WF3 and PC1 for the set of filters which are routinely monitored. Only data after April 24, 1994, when the CCD operating temperatures were lowered from -76˚C to -88˚C, are shown.

1.4 Cycle 14 WFPC2 Calibration Plan

The overall goals of the Cycle 14 WFPC2 Calibration Programs are to monitor health and safety of the instrument and to maintain required calibration accuracies for the science modes used in Cycle 14. As noted above, starting in Cycle 14 the decontamination procedures and observations are taken every 55-60 days either before or after a decontamination procedure due to the more limited target visibility resulting from 2-gyro mode.

Table 1.1 on page 4 shows the Cycle 14 Calibration Plan.

Figure 1.1: Photometric Monitoring Data for WFPC2.

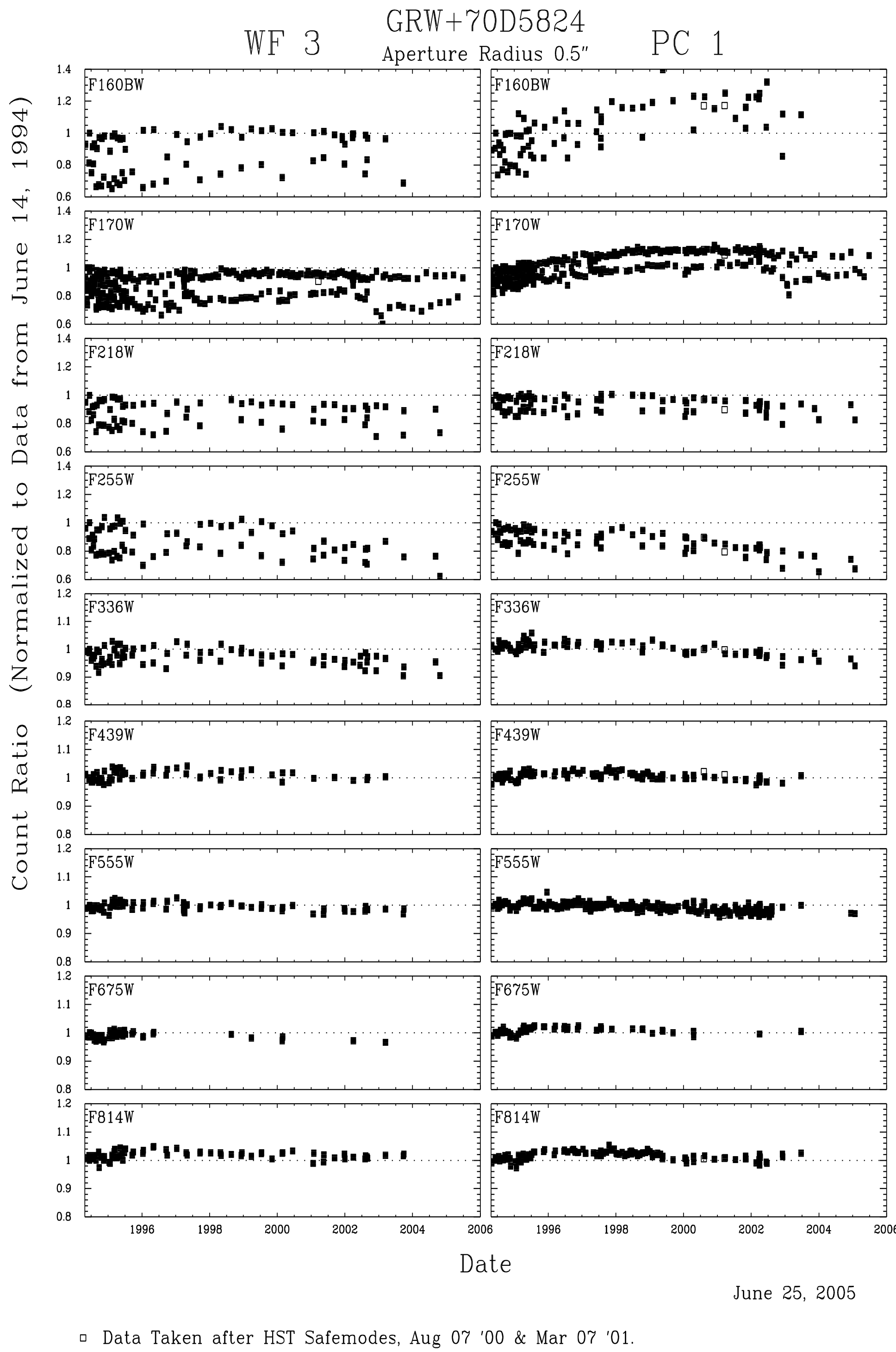

Table 1.1: WFPC2 Cycle 14 Calibration Plan.

ID	Proposal Title	Frequency	Estimated Time (orbits) "External"	Estimated Time (orbits) "Internal"	Scheduling Required	Products	Accuracy Required	Notes
				Routine Monitoring Programs				
TBD	WFPC2 Decons & Associated Observations	Decons every 50-60d	8	124	every 50-60d	CDBS, IHB, Synphot, WWW reports	1-2%	Decons, phot.monitor, internals, UV throughput, VISFLATS and UVFLATS.
TBD	Standard Darks	weekly, exc. decon wk		264	every 7 days, exc.decon wk	CDBS	1 e-/hr	CDBS updates and weekly WWW hot pixel lists.
TBD	Internal Monitor	weekly, exc. decon wk		44	every 7 days, exc.decon wk	CDBS	0.8e-/pix	BIAS, INTFLATS in F555W for gain and throughput stability measurements
TBD	Visible Earth Flats	continuous		50	mid-to-late	CDBS	0.3%	F502N only (time dependence only)
TBD	UV Earth Flats	continuous		20	mid-to-late	CDBS	0.3%	F255W only
TBD	Intflat & Visflat Sweeps, Filter Anomaly Check	1/cycle		80	mid-cycle	TIR	0.3%	Flats in all the filters used in Cycle 12, both gain settings/shutters.
TBD	CTE Monitor	1/cycle	2		mid-to-late	ISR	0.03 mag	Continue CTE monitor.
TBD	Photometric Monitor	1/cycle	3		mid-cycle	ISR, Synphot	1%	GRW+70D5824 in filter/chip combos used for science in Cycle 14.
				Close-Out Calibration Programs				
TBD	Photometric Cross-Calibration	once	2		mid-cycle	ISR, Synphot	1%	T-dwarf star in a range of WFPC2 filters, for ACS & WFC3 cross-calibr.
	~10% reserve		2					Placeholder for unexpected items.
TOTAL TIME (including all executions)			**17**	**582**				