



WFC3 Status



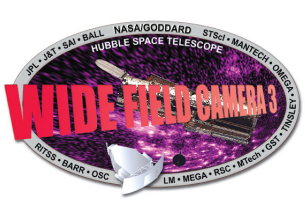
- WFC3 completely re-integrated to flight configuration
 - IR detector situation is much improved since the Oct 2006 STUC
 - New issues have arisen with the UVIS detectors
 - Intend to replace IR detector prior to flight
- Upcoming testing flow
 - Ambient testing this week
 - Early VEST testing this month (20 hour STScI SMS ran against bench)
 - Thermal vacuum test #2 starting in late May
 - Thermal vacuum test #3 starting Jan 2008 (3-4 months slack on 9/08)
- WFC3 SOC met at STScI on March 8-9
- SMOV Delta Requirements Review held 3/21
 - SMOV activities descriptions (Phase 1) due in Oct 2007
- Draft WFC3 handbook being edited by Howard Bond & team



IR Detector Status



- IR2 (FPA 64, substrate on – proton glow risk)
 - Successfully completed acceptance testing, thermal vacuum characterization and alignment verification
 - Currently installed in WFC3 and available for TV2 if needed
- IR1 (FPA 129, substrate removed, new BCS, significant dark tail)
 - Performance significantly exceeds FPA 64 even ignoring glow issue
 - JFET failure on internal pre-amp – bypassed with new design external board
 - Encountered electrical short (fixed) during acceptance testing
 - Developed vacuum leak at vent tube following vibe (in work)
 - Pressing to get to GSFC in early May for TV2 (uncertain)
- IR3 (FPA 150, substrate removed, new BCS, excellent QE, dark & persistence)
 - Detector at Ball awaiting bonding to TEC pending TEC proof testing
 - Two spare FPAs (152 and 154) completed GSFC testing and SOC review
 - Primary IR flight detector – expect delivery to GSFC in Nov 2007 for TV3
- IR4 (FPA TBD)
 - Spare IR detector build to start in May
 - Lot 4D FPAs from Teledyne (formerly Rockwell) arriving now
 - Assembly delivered to GSFC in January 2008 following acceptance testing

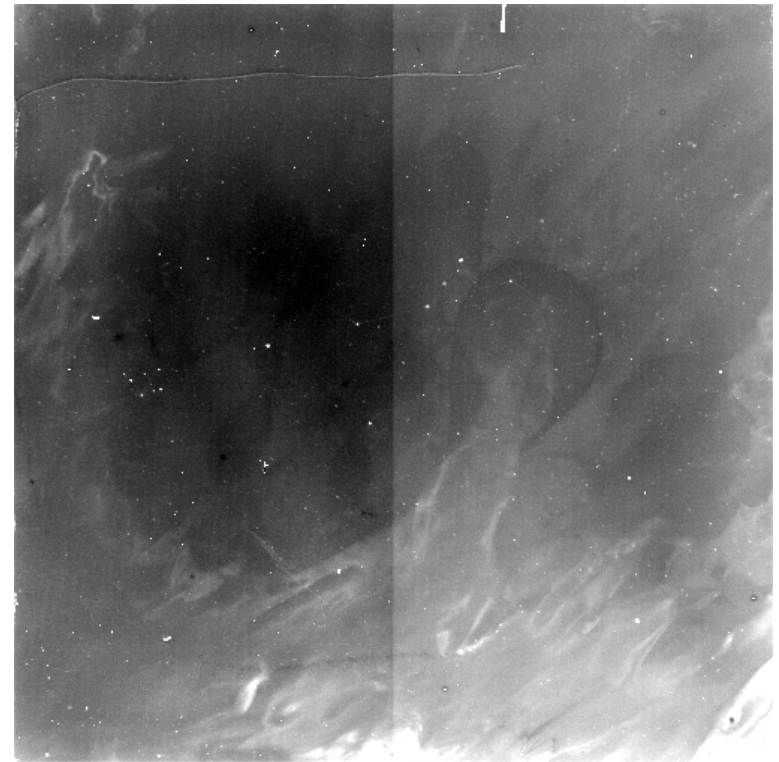
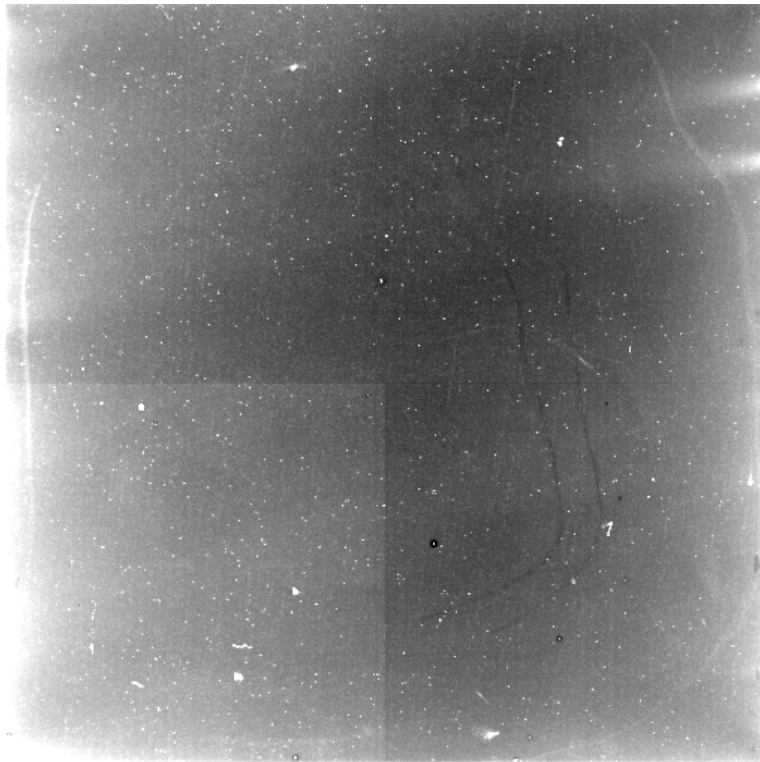


Flat Fields



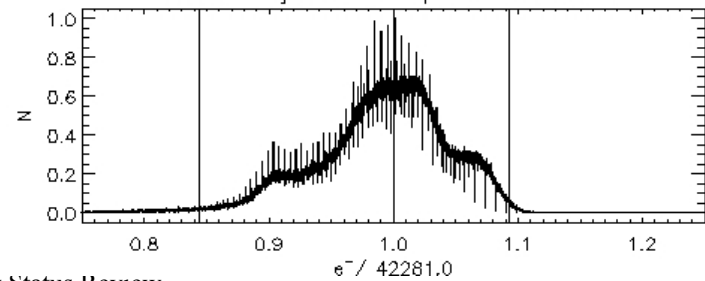
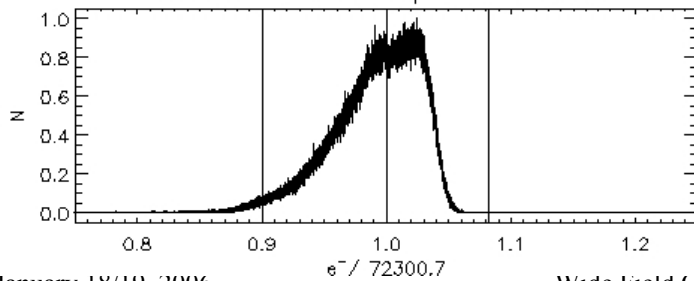
FPA 150

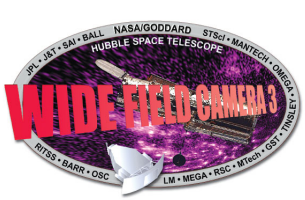
FPA 152



FPA150: d05_145k_qe_1300nm_0001

FPA152: ja18_145k_qe_1300nm_0001

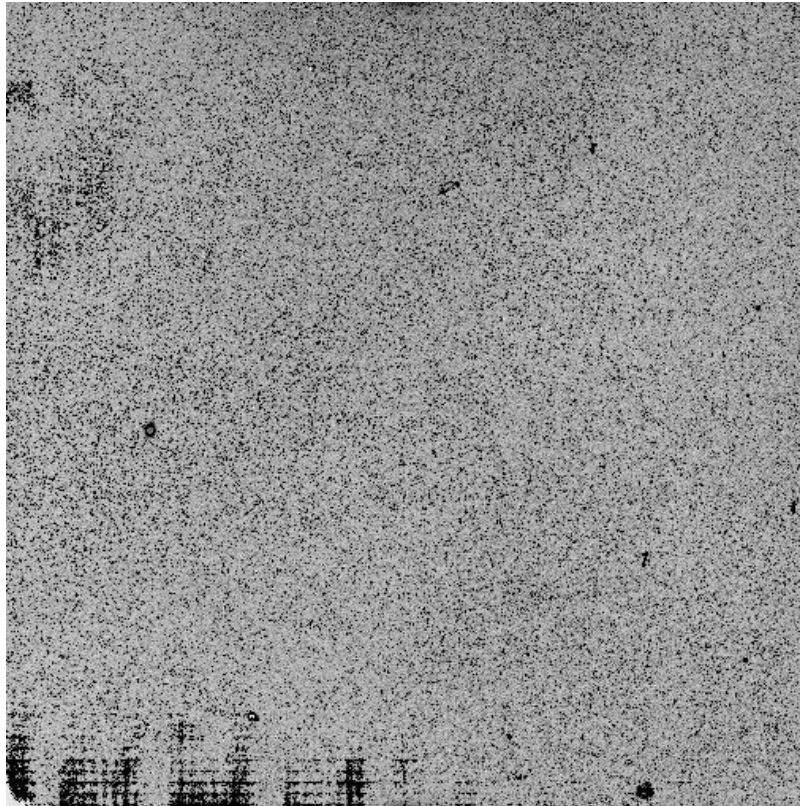




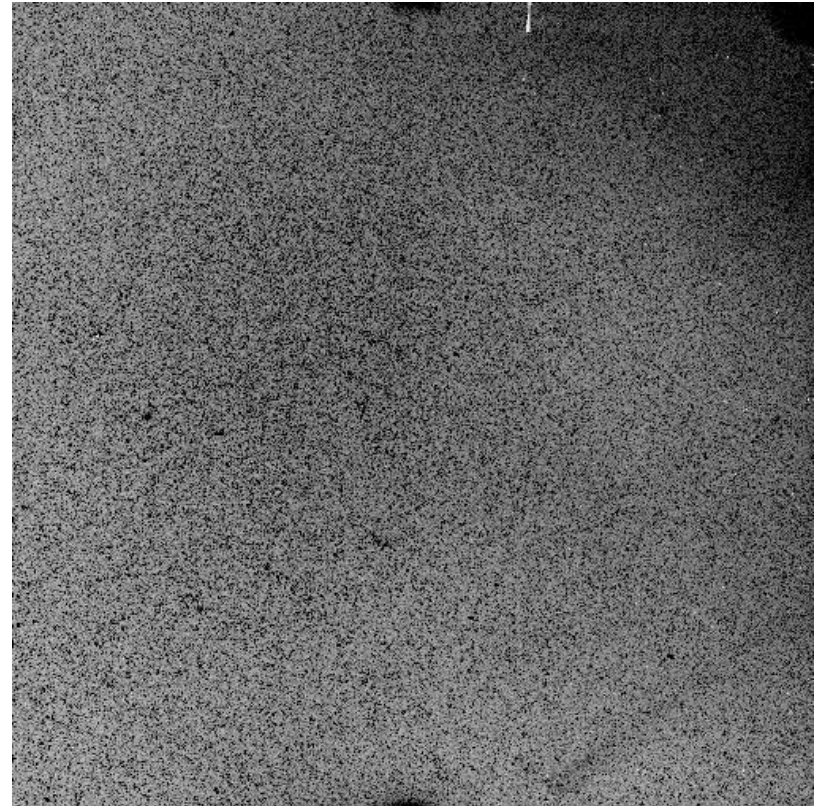
Dark Images

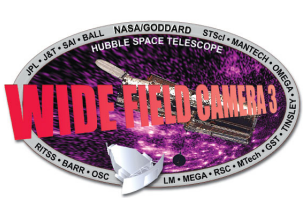


FPA 150



FPA 152

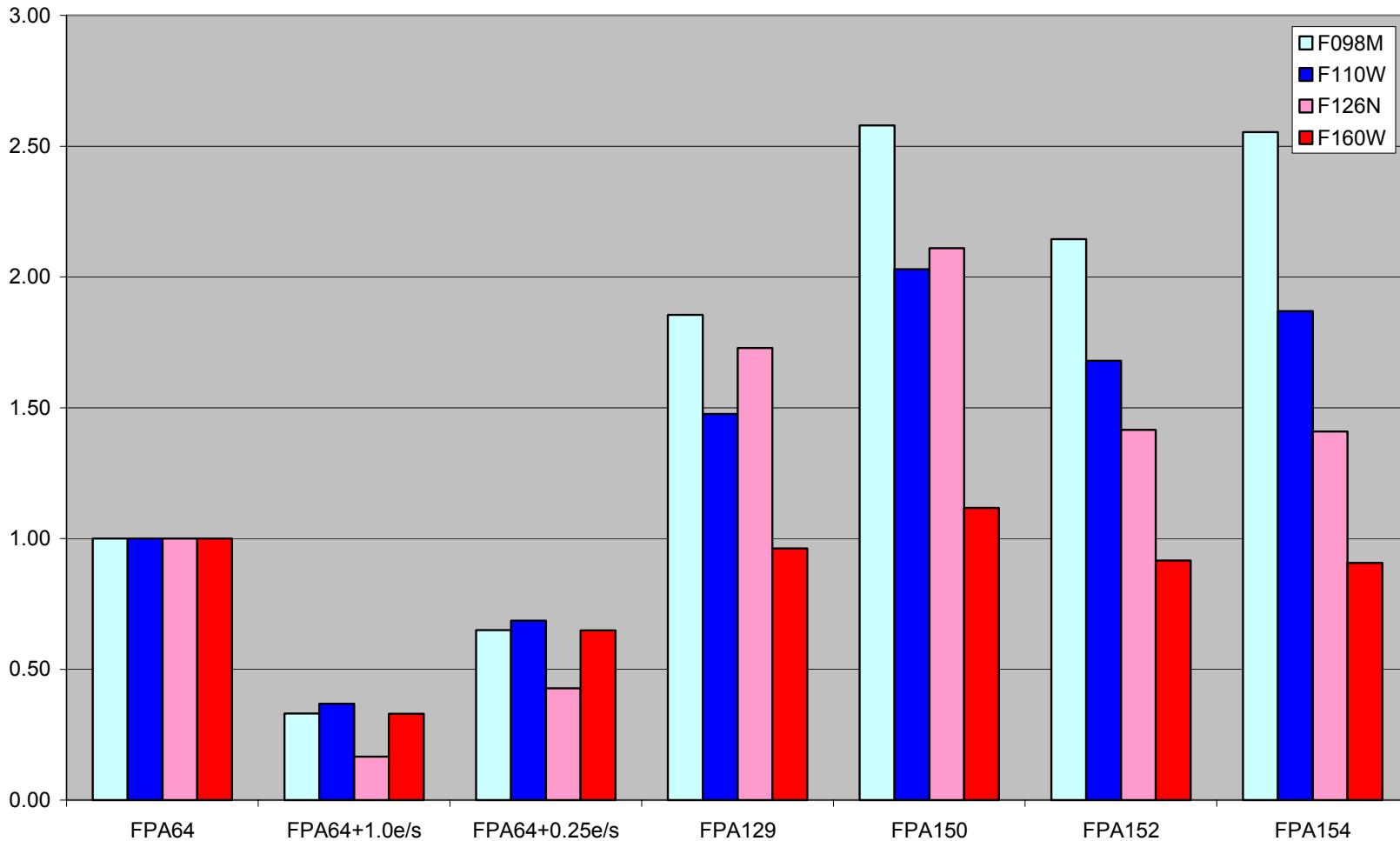




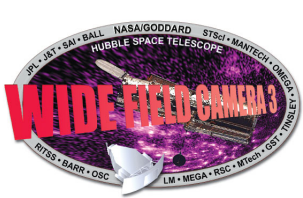
Survey Speed Metric Normalized to FPA64 (With No Radiation Background)



**Discovery Efficiency relative to FPA64
Point sources - Average zodi - 2400s**



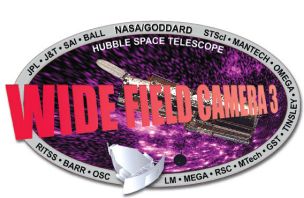
This chart includes an interpixel covariance correction of 12% for all parts.



UVIS Detector Status



- UVIS1 (Prime flight detector)
 - Used successfully in TV#1 and multiple ambient test
 - Developed unexplained increase in dust on internal window
 - Developed short on Amp B during dust investigation → disassembled
 - Short was metal particle on flex lead – source likely from assembly debris
 - Re-assembled and now in acceptance test for May 1 delivery to GSFC
- UVIS2 (Spare flight detector)
 - Acceptance testing deferred in 2004 for cost reasons
 - Short found in external circuit card (repaired)
 - TEC appears to have lost 10 degrees of cooling capability after vibe
 - Cause uncertain; disposition awaiting arrival of UVIS1 to support TV2
- UVIS3 (Backup flight detector – new start)
 - Contingency against formation of another internal short – coated flex leads
 - New contract to E2V to complete assembly of residual CCD dies
 - Current estimate is delivery of acceptance tested assembly to GSFC Feb08



Testing and Calibration (1)



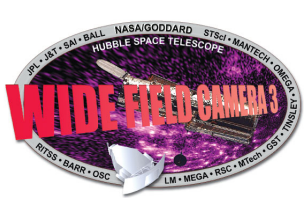
- Ambient Test #2 (April 2007)
 - Confirm readiness of WFC3 and CASTLE for TV#2
 - Close filter ghost, CCD cross-talk, and UVIS Grism cal issues
- Thermal Vac #2 (May-July 2007)
 - First full instrument acceptance test
 - Validate updated thermal model and new heatpipes' performance
 - 30 days of science cal within a 70 day test period under vacuum
 - Approximately 150 SMS based science proposals
 - Close majority of liens and validate CEI specifications
 - STScI provides science and data analyst support (20 people)
- SMGT and VEST testing (various time)
 - Validate interfaces to ground systems (front and back)
 - Validate interoperability with HST spacecraft
- Acoustic test



Testing and Calibration (2)



- Mechanical fit checks (Hi-Fi and WSIPE)
- Crew Fam
- Thermal Vac #3 (timing TBD)
 - Validate alignment of final flight detectors
 - Calibration with flight detectors
 - Validate any changes resulting from TV#2
- AT/FT on ground and during SM4 (basic function test)
- SMOV (patterned on ACS and WFC3 TV experience)
 - Validate safe operation; detector cooling; and optics alignment
 - Verify performance expectations
 - Demonstrate ability to calibrate to advertised accuracies



Testing and Calibration (3)



- Cy 17 Calibration
 - ACS and NICMOS provide templates
 - Re-use of calibration targets should be 100%
 - IR channel was designed to use relatively bright NICMOS standards
 - Learn from ACS and NICMOS experience
 - Exploring impact of bus voltage slews in TV2
 - Intend to obtain deep survey level Bias (UVIS) and Dark (IR) calibrations during thermal vac to better understand critical calibration needs for Cy 17
 - WFC3 has a rich filter set (but few modes)
 - Spectroscopy out-sourced to ECF via MOU on ACS model
 - Inputs for calibration plans
 - Will need to set priorities on filters (77 elements) and subarrays&binning
 - WFC3 SOC is developing Early Release Science program (will support this)
 - STUC and SOC advice most welcome