



## 12700 - Extending the Range & Precision of the Count Rate non Linearity

Cycle: 19, Proposal Category: CAL/WFC3

(Availability Mode: RESTRICTED)

### INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
<b>Dr. Adam Riess (PI) (Contact)</b>	<b>The Johns Hopkins University</b>	<b>ariess@stsci.edu</b>
Dr. John W. MacKenty (CoI)	Space Telescope Science Institute	mackenty@stsci.edu
Dr. Larry D. Petro (CoI)	Space Telescope Science Institute	larrypetro@verizon.net

### VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) NGC-5139	WFC3/IR WFC3/UVIS	2	05-Sep-2018 12:00:37.0	yes

2 Total Orbits Used

### ABSTRACT

Determining the count rate non-linearity (CRNL) of a HgCdTe device is critical in order to extent the zeropoints measured with bright stars to the much fainter science level fluxes.

### OBSERVING DESCRIPTION

To supplement previous calibration observations of asterisms (program 12335) and cluster data (programs 11360 and 11933), we propose observations of cluster stars in Omega Cen for comparing overlapping SED of stars in F850LP (WFC3/UVIS) and in F098M (WFC3/IR) to measure the Count Rate Non-linearity. Because these filters cover such similar wavelengths, the linearity of the UVIS detector (F850LP), with a small color term (F775W-F850LP), can be used to test the CRNL of the IR detector (F098M). These calibration data will allow a better measurement of the

Proposal 12700 (STScI Edit Number: 1, Created: Wednesday, September 5, 2018 11:00:38 AM EST) - Overview  
CRNL from 16<H<24 mag.

Proposal 12700 - Visit 01 - Extending the Range & Precision of the Count Rate non Linearity

Wed Sep 05 16:00:38 GMT 2018

<b>Visit</b>	<b>Proposal 12700, Visit 01, completed</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: (none)									
	(Visit 01) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Exposure 1 (Pattern 1, Exps 1-1 in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (Exposure 2 (Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (Exposure 4 (Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser									
<b>Diagnosics</b>										
<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>	<b>Secondary Pattern</b>	<b>Exposures</b>						
	(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)					
(2)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(3)						
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>				
	(1)	NGC-5139	RA: 13 26 47.2800 (201.6970000d) Dec: -47 28 46.10 (-47.47947d) Equinox: J2000		V=5.33	Reference Frame: ?				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Description=[]										
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	(1) NGC-5139	(1) NGC-5139	WFC3/UVIS, ACCUM, UVIS-IR-FIX	F850LP			Pattern 1, Exps 1-1 in Visit 01 (1)	500 Secs (2000 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	2	(1) NGC-5139	(1) NGC-5139	WFC3/UVIS, ACCUM, UVIS-IR-FIX	F775W				450 Secs (450 Secs) [=>]	[1]
	3	(1) NGC-5139	(1) NGC-5139	WFC3/IR, MULTIACCUM, IR-UVIS-FIX	F098M	NSAMP=7; SAMP-SEQ=SPAR S100		Pattern 2, Exps 3-3 in Visit 01 (2)	602.934229 Secs (2411.737 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[2]
4	(1) NGC-5139	(1) NGC-5139	WFC3/UVIS, ACCUM, UVIS-IR-FIX	F775W			POS TARG 0.10,0.10	450 Secs (450 Secs) [=>]	[2]	



