14870 - WFC3: IR Zeropoint Linearity
Cycle: 24, Proposal Category: CAL/WFC3
(Availability Mode: RESTRICTED)

INVESTIGATORS

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<tr>
<th>Name</th>
<th>Institution</th>
<th>E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Susana E. Deustua (PI) (Contact)</td>
<td>Space Telescope Science Institute</td>
<td><a href="mailto:deustua@stsci.edu">deustua@stsci.edu</a></td>
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VISITS

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<tr>
<th>Visit</th>
<th>Targets used in Visit</th>
<th>Configurations used in Visit</th>
<th>Orbits Used</th>
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2 Total Orbits Used

ABSTRACT

The photometric monitoring program 14883 observes bright white dwarfs and GV flux standards for routine monitoring of the detector response. The inverse sensitivity (IS) measurements are therefore made for sources with high count rates and short exposure times. IR detectors are non-linear devices, thus zeropoints for faint sources may be different compared to those derived from bright stars. IS derived from faint galaxies are 0.012 mag brighter than the IS from bright stars (e.g. Rubin et al 2016). This Cy 24 calibration program will derive and compare IS from faint star analogues to the bright star zeropoints.

With the addition of the faintest white dwarf and the faintest G star gives dynamic range of ~250. Including the bright M-star VB8 (GJ644C), observed in Cycles 18 and 22, (props 12334 and 14021), gives a dynamic range between 500 and 1000 for wavelengths greater than 1 micron.

OBSERVING DESCRIPTION
1 orbit for each star (using subarrays) to sample all of the broad and medium filters.
2 dither positions will be obtained for each filter to mitigate artifacts.
### Fixed Targets

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<tr>
<th>#</th>
<th>Name</th>
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<th>Targ. Coord. Corrections</th>
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<th>Miscellaneous</th>
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Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Sloan magnitudes are in AB:
- B = 16.12
- g = 16.16 (sloan)
- r = 16.69 (sloan)
- i = 17.06 (sloan)
- z = 17.39 (sloan)
- J = 17.5
- H = 17.5

Proper motion: RA/Dec = 11 mas/yr, -31 mas/yr (Griven et al MNRAS 2011, 417, 1210)

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Visit Proposal 14870, SNAP-2 (02)

Diagnostic Status: No Diagnostics
Scientific Instruments: WFC3/IR
Special Requirements: (none)

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Comments: This object was generated by the targetselector and retrieved from the SIMBAD database

- B 17.09 [0.42] E 2008AJ,...136..735L
- V 16.23 [0.28] E 2008AJ,...136..735L
- R 16.41 [0.19] E 2009yCat.1315,...0Z
- J 14.97 [0.04] C 2003yCat.2246,...0C
- H 14.59 [0.05] C 2003yCat.2246,...0C
- K 14.49 [0.07] C 2003yCat.2246,...0C
- u (AB) 17.806 [0.013] B 2009yCat.2294,...0A
- g (AB) 16.503 [0.004] B 2009yCat.2294,...0A
- r (AB) 16.032 [0.003] B 2009yCat.2294,...0A
- i (AB) 15.883 [0.004] B 2009yCat.2294,...0A
- z (AB) 15.838 [0.007] B 2009yCat.2294,...0A

proper motion RA/Dec= -4.6 mas/yr, -0.3 mas/yr (2009 yCat.1315 = 3rd USNO CCD Astrograph Catalog UCAC3, Zacharias et al)
Extended=NO
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### Proposal 14870 - SNAP-2 (02) - WFC3: IR Zeropoint Linearity

| Orbit | Exp. 1 | Exp. 2, copy 1 | Exp. 2, copy 2 | Exp. 3 | Exp. 4 | Exp. 5 | Exp. 6 | Exp. 7 | Exp. 8 | Exp. 9 | Exp. 10 | Exp. 11 | Exp. 12 | Exp. 13 | Exp. 14 | Exp. 15 | Exp. 16, copy 1 | Exp. 16, copy 2 | Exp. 17 | Exp. 18 | GS Act | Rec сф | Rec сф | Rec сф | Rec сф | Rec сф | Rec сф | Rec сф | Rec сф | Rec сф | Rec сф | Rec сф | Unused Critical Visibility = 80 | Rec сф | Occultation |
|-------|--------|---------------|---------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------------|---------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------------|--------|-------------|

**Orbit Structure**

#### Orbit 1

- Pointing Maneuver
- Exp. 1
- Exp. 2, copy 1
- Exp. 2, copy 2
- Pointing Maneuver
- Exp. 3
- Exp. 4
- Exp. 5
- Exp. 6
- Exp. 7
- Exp. 8
- Pointing Maneuver
- Exp. 9
- Exp. 10
- Exp. 11
- Exp. 12
- Pointing Maneuver
- Exp. 13
- Exp. 14
- Exp. 15
- Pointing Maneuver
- Exp. 16, copy 1
- Exp. 16, copy 2
- Pointing Maneuver
- Exp. 17
- Pointing Maneuver
- Exp. 18

#### Server Version: 20160601

- Unused Critical Visibility = 80
- Rec сф
- Occultation