



## 14443 - COS NUV Internal/External Wavelength Scale Monitor

Cycle: 23, Proposal Category: CAL/COS

(Availability Mode: RESTRICTED)

### INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
<b>Dr. Paule G. Sonnetrucker (PI) (ESA Member) (Contact)</b>	<b>Space Telescope Science Institute - ESA</b>	<b>sonnetr@stsci.edu</b>

### 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) HD-6655	COS/NUV	1	11-Nov-2015 21:21:58.0	yes
02	(1) HD-6655	COS/NUV	1	11-Nov-2015 21:22:01.0	yes

2 Total Orbits Used

### ABSTRACT

This program monitors the offset between the internal and external wavelength scales: this offset is referred to as "DELTA" in the wavelength dispersion reference file and corrects for the shift between the WCA and PSA in TV03 versus the shift between the WCA and PSA in orbit :  $(WCA\_PSA\_TV03 - (WCA - PSA)\_orbit)$ . Analysis of TV data indicates that this DELTA (offset) is cenwave and FPPOS independent for a particular grating, but it is grating and stripe dependent. To verify and monitor this, this program observes various cenwaves.

### OBSERVING DESCRIPTION

This program monitors the offset between the internal and external wavelength scales by obtaining spectra of a select number of cenwaves for the G230L, G285M, G225M and G185M gratings three times per cycle. All data are obtained at FP-POS=3. This program structure has been modified compared to that of cycle 21 program 13529 due to GS acquisition issues. The double PEAKXD sequence was replaced by the traditional

Proposal 14443 (STScI Edit Number: 2, Created: Wednesday, November 11, 2015 9:22:02 PM EST) - Overview

ACQ/SEARCH, ACQ/PEAKXD and ACQ/PEAKD for the remaining visits following the recommendations after the failure investigation for V02. The BETWEEN ranges for the remaining visits were updated accordingly. This program was reduced to 2 observing epochs separated by about 6 months in Cycle 23, as 2 epochs were deemed sufficient to perform the dispersion solution verification for COS/NUV. Note also that the proper motion in RA was modified from 0.0111 sec of time/year to the latest GAIA measurement of 48.9 mas/year (or 0.00326 sec of time /year). The proper motion in declination did not need update.

Proposal 14443 - Visit 01 - COS NUV Internal/External Wavelength Scale Monitor

Thu Nov 12 02:22:02 GMT 2015

<b>Visit</b>	<p><b>Proposal 14443, Visit 01, implementation</b></p> <p><b>Diagnostic Status: Warning</b></p> <p>Scientific Instruments: COS/NUV</p> <p>Special Requirements: SCHED 30%; BETWEEN 15-FEB-2016:00:00:00 AND 25-FEB-2016:00:00:00</p>												
<b>Diagnostics</b>	<p>(Visit 01) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN</p> <p>(Visit 01) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.</p>												
<b>Fixed Targets</b>	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>HD-6655</td> <td>RA: 01 05 18.2073 (16.3258637d) Dec: -72 33 14.47 (-72.55402d) Equinox: J2000</td> <td>Proper Motion RA: 48.9 mas/yr Proper Motion Dec: -0.118 arcsec/yr Epoch of Position: 2000 Radial Velocity: 19.5 km/sec</td> <td>V=8.05+/-0.05</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments: This object was generated by the target selector and retrieved from the SIMBAD database.</i> <i>Extended=NO</i></p>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	HD-6655	RA: 01 05 18.2073 (16.3258637d) Dec: -72 33 14.47 (-72.55402d) Equinox: J2000	Proper Motion RA: 48.9 mas/yr Proper Motion Dec: -0.118 arcsec/yr Epoch of Position: 2000 Radial Velocity: 19.5 km/sec	V=8.05+/-0.05	Reference Frame: ICRS
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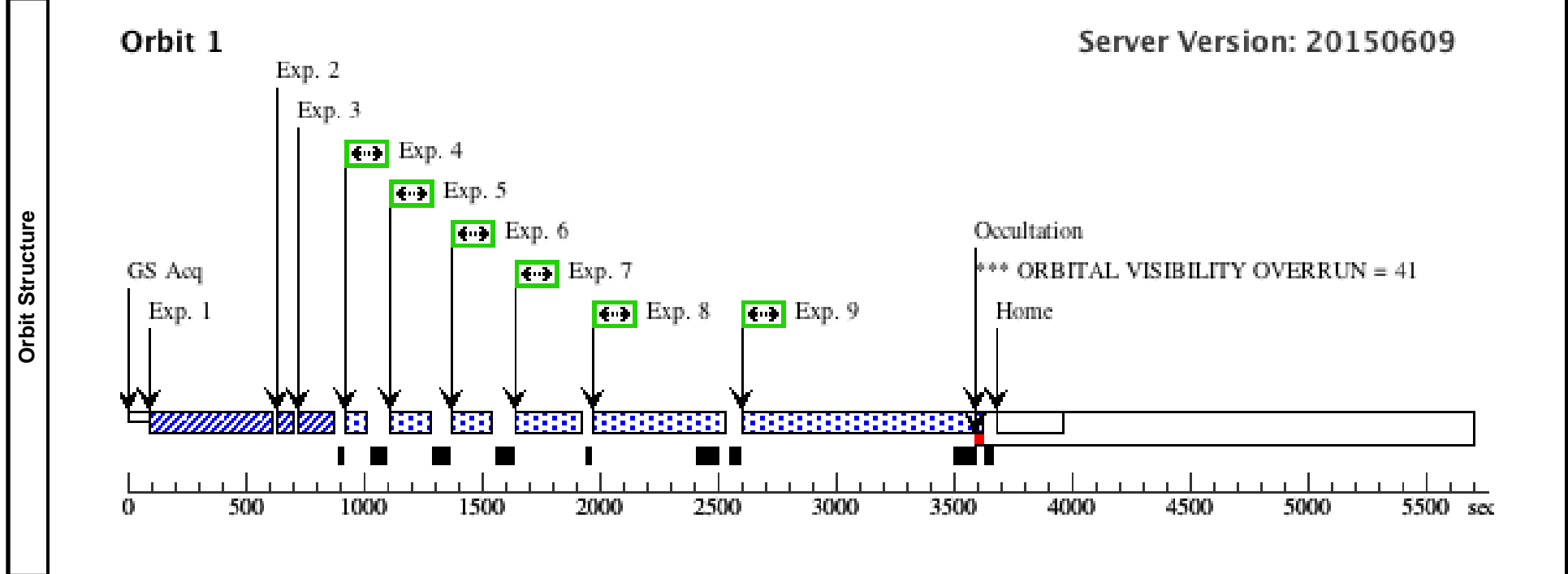
Proposal 14443 - Visit 01 - COS NUV Internal/External Wavelength Scale Monitor

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	(COS.sa.739 (1) HD-6655 058)	COS/NUV, ACQ/SEARCH, PSA	G230L 2635 A	SCAN-SIZE=3; STEP-SIZE=1.767; CENTER=FLUX-W T-FLR			1. Secs (1 Secs) [==>]	[1]	
	2	(COS.sa.739 (1) HD-6655 058)	COS/NUV, ACQ/PEAKXD, PSA	G230L 2635 A	STRIPE=MEDIUM			1. Secs (1 Secs) [==>]	[1]	
	3	(COS.sa.739 (1) HD-6655 058)	COS/NUV, ACQ/PEAKD, PSA	G230L 2635 A	NUM-POS=5; STEP-SIZE=1; CENTER=FLUX-W T-FLR			1 Secs (1 Secs) [==>]	[1]	
	4	(COS.sa.739 (1) HD-6655 058)	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=17 7.; FP-POS=3			80 Secs (80 Secs) [==>]	[1]	
	<i>Comments: Brightest Pixel (2642.97 A) 9.433 Count rate entire detector 9,104.456 Count rate stripe A 12.450 Count rate stripe B 8,154.580 Stripe C contains only second order light not calculated</i>									
	5	(COS.sp.751 (1) HD-6655 783)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 3; FP-POS=3			80 Secs (80 Secs) [==>]	[1]	
	<i>Comments: Brightest Pixel (at 2913.11 A) 10.691 Count rate entire detector 12,911.725 Count rate Stripe A 834.152 Count rate Stripe B 11,140.147 Stripe C contains only second order light not calculated</i>									
	6	(COS.sp.751 (1) HD-6655 784)	COS/NUV, TIME-TAG, PSA	G230L 3000 A	BUFFER-TIME=12 4; FP-POS=3			80 Secs (80 Secs) [==>]	[1]	
<i>Comments: Brightest Pixel (at 2905.81A) 10.192 Count rate entire detector 12,785.862 Count rate Stripe A 1,362.901 Count rate Stripe B 10,485.536 Stripe C contains only second order light not calculated</i>										
7	(COS.sp.751 (1) HD-6655 785)	COS/NUV, TIME-TAG, PSA	G285M 2676 A	BUFFER-TIME=11 42; FP-POS=3			90 Secs (90 Secs) [==>]	[1]		
<i>Comments: Brightest Pixel (at 2668.63 A) 0.201 Count rate entire detector 1,309.571 Count rate Stripe A 75.583 Count rate Stripe B 213.285 Count rate Stripe C 83.277</i>										
8	(COS.sp.739 (1) HD-6655 473)	COS/NUV, TIME-TAG, PSA	G225M 2217 A	BUFFER-TIME=33 0; FP-POS=3			440 Secs (440 Secs) [==>]	[1]		
<i>Comments: Brightest Pixel (at 2324.63 A) 0.329 Count rate entire detector 1,598.483 Count rate Stripe A 127.660 Count rate Stripe B 250.096 Count rate Stripe C 283.302</i>										

Proposal 14443 - Visit 01 - COS NUV Internal/External Wavelength Scale Monitor

9	(COS.sp.739 (1) HD-6655 343)	COS/NUV, TIME-TAG, PSA	G185M 2010 A	BUFFER-TIME=75 0; FP-POS=3	860 Secs (860 Secs) [==>]	[1]
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Comments: Brightest Pixel (at 2120.84 A) 0.233  
 Count rate entire detector 1,220.388  
 Count rate Stripe A 32.767  
 Count rate Stripe B 61.246  
 Count rate Stripe C 188.949



# Proposal 14443 - Visit 02 - COS NUV Internal/External Wavelength Scale Monitor

Thu Nov 12 02:22:02 GMT 2015

<b>Visit</b>	<b>Proposal 14443, Visit 02, implementation</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: COS/NUV Special Requirements: SCHED 30%; BETWEEN 18-SEP-2016:00:00:00 AND 29-SEP-2016:00:00:00																
<b>Diagnostics</b>	(Visit 02) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. (Visit 02) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN																
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Proposal 14443 - Visit 02 - COS NUV Internal/External Wavelength Scale Monitor

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	2	(COS.sa.739 (1) HD-6655 058)	COS/NUV, ACQ/PEAKXD, PSA	G230L 2635 A	STRIPE=MEDIUM			1. Secs (1 Secs) [==>]	[1]	
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	4	(COS.sp.534 (1) HD-6655 878)	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=17 7; FP-POS=3			80 Secs (80 Secs) [==>]	[1]	
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