11899 - NUV Imaging Sensitivity, Cycle 17

Cycle: 17, Proposal Category: CAL/COS

(Availability Mode: RESTRICTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) NGC6681-OFFSET (2) NGC6681-STARA (3) NGC6681-STARB (4) NGC6681-STARC (6) NGC6681-STARG (7) NGC6681-STARH (8) NGC6681-STARI (9) NGC6681-STARJ (10) NGC6681-STARK (11) NGC6681-STARL (12) NGC6681-STARM	COS/NUV	1	04-May-2009 21:16:27.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
02	(13) P330E	COS/NUV	1	04-May-2009 21:16:36.0	yes

2 Total Orbits Used

ABSTRACT

Test NUV imaging sensitivity for a range of target spectral energy distributions. All targets have wide-slit STIS spectra in the HST Archive. We use eleven horizontal branch stars in the globular cluster NGC 6681 covering a range of effective temperatures, plus a solar-analog standard star.

OBSERVING DESCRIPTION

This activity is designed to characterize the performance of the COS/NUV imaging mode beyond the initial measurements conducted in SMOV program 11473. The sensitivity of the main PSA/MIRRORA mode will be fully calibrated in the central position (including color terms) using 13 stars covering a variety of spectral energy distributions. The PSA/MIRRORB will also be characterized as a function of location within the aperture by moving a star from the center to various positions with a 3x3 grid pattern and a step of 0.25 arcsec.

ADDITIONAL COMMENTS

The visits are scheduled relatively early-on during Cycle 17 (namely during September 2009 [as of submission date March 13, 2009]) to make sure the full PSA/MIRRORA calibration will be available early on.

Visit

Proposal 11899, Visit 01, implementation Tue May 05 01:16:40 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV

Special Requirements: SCHED 50%; BETWEEN 01-SEP-2009:00:00:00 AND 01-OCT-2009:00:00:00

Comments: Imaging visit of several Horizontal Branch stars in NGC 6681, covering a range of effective temperatures to determine color terms in the imaging sensitivity calibration. All target stars have wide-slit STIS G140L, G230L, and G430L spectra available for reference.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC6681-OFFSET	RA: 18 43 13.1078 (280.8046158d) Dec: -32 17 23.70 (-32.28992d) Equinox: J2000		V=17.45+/-.1	Reference Frame: ICRS
Comments: This star is located close to all science targets in Visit 1, and is the brightest star in the NUV as judged by STIS/NUV-MAMA/F25SRF2 image o46h04f5q so that it is well suited for the (first) target acquisition. *Magnitude provided is B magnitude derived from ACS/HRC F435W image.* *Since the GSC2 catalog avoids crowded regions like NGC 6681, the astrometry of the targets in NGC 6681 was determined by using 2MASS positions of NGC 6681 stars and tying the coordinate reference frame of 2MASS to that of GSC2 in the outskirts of NGC 6681. Positions of the targets relative to those of the stars in the 2MASS database was done by means of accurate astrometry in the ACS/HRC/F450W image j95z03030_drz.fits and ACS/WFC/F814W image j9l939020_drz.fits.*					
(2)	NGC6681-STARA	Offset from NGC6681-OFFSET by RA Offset: 0.2114 Secs Dec Offset: -1.579 Arcsec		V=15.95+/-.1	Offset Position (NGC6681-STARA) Reference Frame: ICRS
Comments: Magnitude provided is B magnitude derived from wide-slit STIS G430L spectrum. Teff = 8330 K.					
(3)	NGC6681-STARB	Offset from NGC6681-OFFSET by RA Offset: 0.0573 Secs Dec Offset: -2.042 Arcsec		V=16.21+/-.1	Offset Position (NGC6681-STARB) Reference Frame: ICRS
Comments: Magnitude provided is B magnitude derived from STIS G430L spectrum. Teff = 9580 K.					
(4)	NGC6681-STARC	Offset from NGC6681-OFFSET by RA Offset: -0.0676 Secs Dec Offset: -1.627 Arcsec		V=16.83+/-.1	Offset Position (NGC6681-STARC) Reference Frame: ICRS
Comments: Magnitude provided is B magnitude derived from STIS G430L spectrum. Teff = 12350 K.					
(6)	NGC6681-STARG	Offset from NGC6681-OFFSET by RA Offset: -0.3532 Secs Dec Offset: -1.913 Arcsec		V=16.12+/-.1	Offset Position (NGC6681-STARG) Reference Frame: ICRS
Comments: Magnitude provided is B magnitude derived from STIS G430L spectrum. Teff = 10210 K.					
(7)	NGC6681-STARH	Offset from NGC6681-STARI by RA Offset: 0.3632 Secs Dec Offset: 0.434 Arcsec		V=15.87+/-.1	Offset Position (NGC6681-STARH) Reference Frame: ICRS
Comments: Magnitude provided is B magnitude derived from STIS G430L spectrum.					

Fixed Targets (continued)

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	NGC6681-STARI	RA: 18 43 12.2768 (280.8011533d) Dec: -32 17 27.44 (-32.29096d) Equinox: J2000		V=16.78+/-.1	Reference Frame: ICRS
Comments: Magnitude provided is B magnitude derived from STIS G430L spectrum. Teff = 12360 K.					
(9)	NGC6681-STARJ	Offset from NGC6681-STARI by RA Offset: -0.0777 Secs Dec Offset: 0.417 Arcsec		V=15.90+/-.1	Offset Position (NGC6681-STARJ) Reference Frame: ICRS
Comments: Magnitude provided is B magnitude derived from STIS G430L spectrum. Teff = 8300 K.					
(10)	NGC6681-STARK	Offset from NGC6681-STARI by RA Offset: -0.1292 Secs Dec Offset: 0.926 Arcsec		V=18.36+/-.1	Offset Position (NGC6681-STARK) Reference Frame: ICRS
Comments: Magnitude provided is B magnitude derived from STIS G430L spectrum. Teff = 19150 K.					
(11)	NGC6681-STARL	Offset from NGC6681-STARI by RA Offset: -0.2277 Secs Dec Offset: 0.0 Arcsec		V=14.72+/-.1	Offset Position (NGC6681-STARL) Reference Frame: ICRS
Comments: Magnitude provided is B magnitude derived from STIS G430L spectrum. Teff = 8090 K.					
(12)	NGC6681-STARM	Offset from NGC6681-STARI by RA Offset: -0.3745 Secs Dec Offset: -0.4 Arcsec		V=17.16+/-.1	Offset Position (NGC6681-STARM) Reference Frame: ICRS
Comments: Magnitude provided is B magnitude derived from STIS G430L spectrum. Teff = 14980 K.					

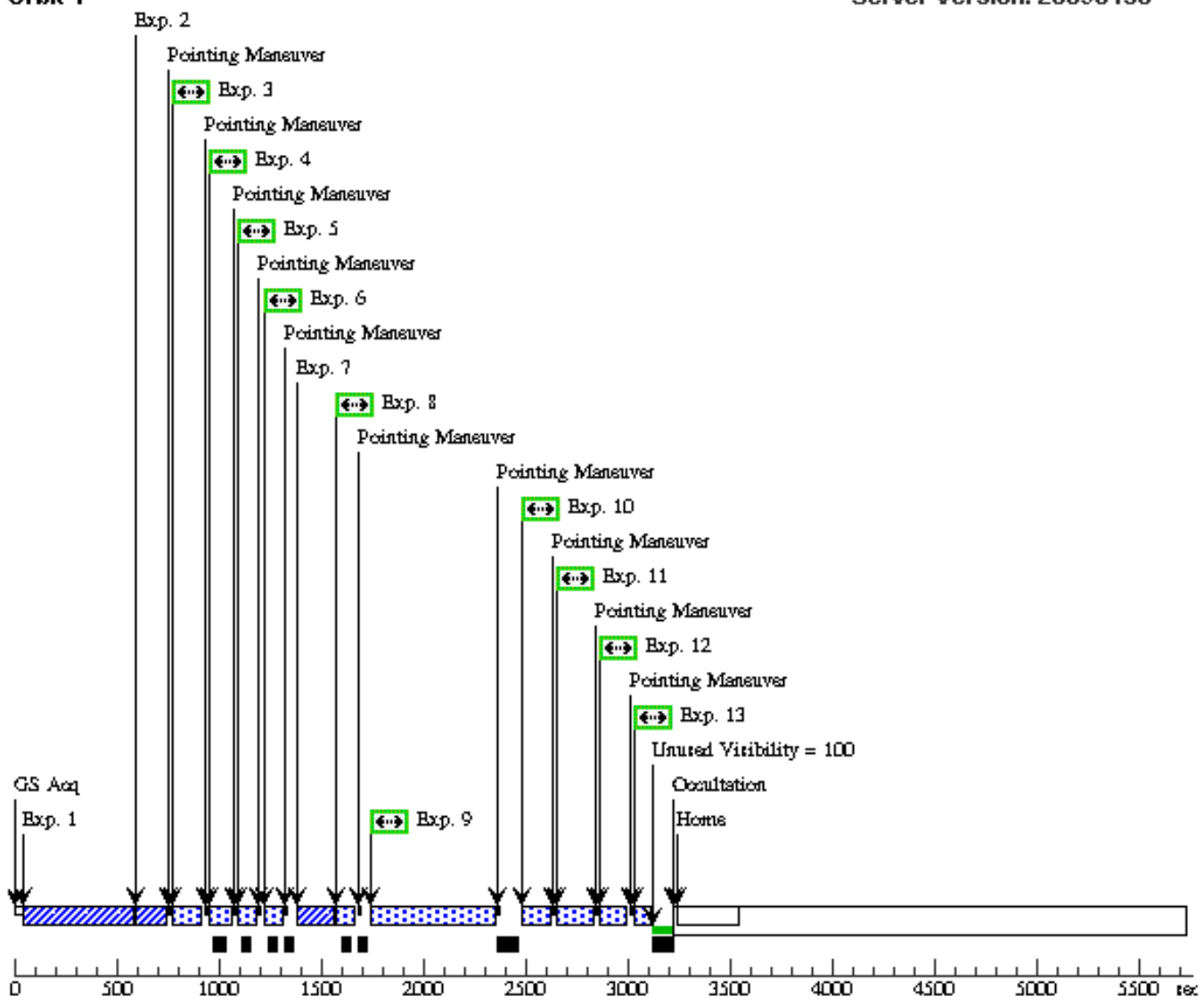
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) NGC6681-OFFSET	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	STEP-SIZE=1.767; SCAN-SIZE=2			25 Secs *[==>]*	 ***[1]***
Comments: Exp time based on ETC calculation COS97286, which yields exptime = 23 for S/N = 60 for nearby science target NGC6681-STARA; NUV photometry in STIS/NUV-MAMA/F25SRF2 image O46H04F5Q shows this offset star to be a factor of 1.72 brighter than NGC6681-STARA.									
2		(1) NGC6681-OFFSET	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				25 Secs *[==>]*	 ***[1]***
Comments: Exp time based on ETC calculation COS97286, which yields exptime = 23 for S/N = 60 for nearby science target NGC6681-STARA; NUV photometry in STIS/NUV-MAMA/F25SRF2 image O46H04F5Q shows this offset star to be a factor of 1.72 brighter than NGC6681-STARA.									
3		(2) NGC6681-STARA	COS/NUV, ACCUM, PSA	MIRRORA				130 Secs *[==>]*	 ***[1]***
Comments: ETC COS97315: S/N = 100 in 64 sec									
4		(3) NGC6681-STARB	COS/NUV, ACCUM, PSA	MIRRORA				100 Secs *[==>]*	 ***[1]***
Comments: ETC COS97313: S/N = 100 in 49 sec									
5		(4) NGC6681-STARC	COS/NUV, ACCUM, PSA	MIRRORA				80 Secs *[==>]*	 ***[1]***
Comments: ETC COS97138: S/N = 100 in 40 sec									

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
6		(6) NGC6681-STAR G	COS/NUV, ACCUM, PSA	MIRRORA				80 Secs	
								[==>]	***[1]***
Comments: ETC COS97331: S/N = 100 in 38 sec									
7		(8) NGC6681-STAR I	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				40 Secs	
								[==>]	***[1]***
Comments: ETC COS97322: S/N = 100 in 40 sec									
8		(8) NGC6681-STAR I	COS/NUV, ACCUM, PSA	MIRRORA				80 Secs	
								[==>]	***[1]***
9		(7) NGC6681-STAR H	COS/NUV, TIME-TAG, PSA	MIRRORA	BUFFER-TIME=600			600 Secs	
								[==>]	***[1]***
Comments: ETC COS97339: S/N = 100 in 497 sec									
10		(9) NGC6681-STAR J	COS/NUV, ACCUM, PSA	MIRRORA				130 Secs	
								[==>]	***[1]***
Comments: ETC COS97323: S/N = 100 in 65 sec									
11		(10) NGC6681-STARK	COS/NUV, ACCUM, PSA	MIRRORA				170 Secs	
								[==>]	***[1]***
Comments: ETC COS97319: S/N = 100 in 83 sec									
12		(11) NGC6681-STARL	COS/NUV, ACCUM, PSA	MIRRORA				120 Secs	
								[==>]	***[1]***
Comments: ETC COS97324: S/N = 100 in 58 sec									
13		(12) NGC6681-STARM	COS/NUV, ACCUM, PSA	MIRRORA				70 Secs	
								[==>]	***[1]***
Comments: ETC COS97325: S/N = 100 in 34 sec									

Orbit Structure



Visit

Proposal 11899, Visit 02, implementation Tue May 05 01:16:41 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV

Special Requirements: SCHED 60%; GROUP 02,01 WITHIN 10D

Comments: Imaging visit of Solar Analog star P330E, which has wide-slit STIS spectra available for reference. This visit will also be useful for the further characterization of relative throughput of PSA+MIRRORA and PSA+MIRRORB, and also covers a 3x3 mosaic with a step size of 0.25 arcsec around the central position for PSA+MIRRORB.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(13)	P330E	RA: 16 31 33.8242 (247.8909342d) Dec: +30 08 46.51 (30.14625d) Equinox: J2000	Proper Motion RA: -0.00046 s/yr Proper Motion Dec: -0.036"/yr Parallax: 0.0" Epoch of Position: 2000	V=13.0+/-0.1	Reference Frame: ICRS

Comments: Solar Analog standard star; Same as used during SMOV program 11473.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(13) P330E	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3; STEP-SIZE=1.767			10 Secs *[==>]*	 ***[1]***
Comments: See ETC ID COS97801									
2		(13) P330E	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs *[==>]*	 ***[1]***
Comments: See ETC ID COS97801									
3		(13) P330E	COS/NUV, ACCUM, PSA	MIRRORA		POS TARG 0.0,0.0		60 Secs *[==>]*	 ***[1]***
Comments: See ETC ID COS97802, S/N = 100 in 30 sec; POS TARG 0.0,0.0									
4		(13) P330E	COS/NUV, ACCUM, PSA	MIRRORB				200 Secs *[==>]*	 ***[1]***
Comments: See ETC ID COS97805, S/N = 60 in 155 s; POS TARG 0,0									
5		(13) P330E	COS/NUV, ACCUM, PSA	MIRRORB		POS TARG 0.25,0.0		200 Secs *[==>]*	 ***[1]***
Comments: pos targ 0.25, 0.0									
6		(13) P330E	COS/NUV, ACCUM, PSA	MIRRORB		POS TARG 0.25,0.25		200 Secs *[==>]*	 ***[1]***
Comments: pos targ 0.25, 0.25									
7		(13) P330E	COS/NUV, ACCUM, PSA	MIRRORB		POS TARG 0.0,0.25		200 Secs *[==>]*	 ***[1]***
Comments: pos targ 0.0, 0.25									
8		(13) P330E	COS/NUV, ACCUM, PSA	MIRRORB		POS TARG -0.25,0.25		200 Secs *[==>]*	 ***[1]***
Comments: pos targ -0.25, 0.25									

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
9		(13) P330E	COS/NUV, ACCUM, PSA	MIRRORB		POS TARG -0.25,0.0		200 Secs	
								[==>]	***[1]***
Comments: pos targ -0.25, 0.0									
10		(13) P330E	COS/NUV, ACCUM, PSA	MIRRORB		POS TARG -0.25,-0.25		200 Secs	
								[==>]	***[1]***
Comments: pos targ -0.25, -0.25									
11		(13) P330E	COS/NUV, ACCUM, PSA	MIRRORB		POS TARG 0.0,-0.25		200 Secs	
								[==>]	***[1]***
Comments: pos targ 0.0, -0.25									
12		(13) P330E	COS/NUV, ACCUM, PSA	MIRRORB		POS TARG 0.25,-0.25		200 Secs	
								[==>]	***[1]***
Comments: pos targ 0.25, -0.25									

Orbit Structure