



12302 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and Heating Mechanisms

Cycle: 18, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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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	(2) V-BET-DOR	COS/FUV	1	23-May-2011 21:37:45.0	yes
10	(7) V-BET-DOR-1	COS/FUV COS/NUV	1	23-May-2011 21:37:51.0	yes
11	(2) V-BET-DOR	COS/FUV	1	23-May-2011 21:37:57.0	yes
12	(2) V-BET-DOR	COS/FUV	1	23-May-2011 21:38:04.0	yes
13	(2) V-BET-DOR	COS/FUV	1	23-May-2011 21:38:10.0	yes
14	(2) V-BET-DOR	COS/FUV	1	23-May-2011 21:38:16.0	yes
15	(6) V-DEL-CEP-1	COS/FUV	1	23-May-2011 21:38:21.0	yes

<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>
16	(7) V-BET-DOR-1	COS/FUV COS/NUV	1	23-May-2011 21:38:26.0	yes
09	(4) V-DEL-CEP	COS/FUV	1	23-May-2011 21:38:31.0	yes
17	(4) V-DEL-CEP	COS/FUV	1	23-May-2011 21:38:37.0	yes
18	(4) V-DEL-CEP	COS/FUV	1	23-May-2011 21:38:43.0	yes
19	(4) V-DEL-CEP	COS/FUV	1	23-May-2011 21:38:50.0	yes
20	(4) V-DEL-CEP	COS/FUV	1	23-May-2011 21:38:55.0	yes
21	(4) V-DEL-CEP	COS/FUV	1	23-May-2011 21:39:01.0	yes
22	(4) V-DEL-CEP	COS/FUV	1	23-May-2011 21:39:06.0	yes
23	(4) V-DEL-CEP	COS/FUV	1	23-May-2011 21:39:11.0	yes

16 Total Orbits Used

ABSTRACT

Classical Cepheids, although well studied in terms of their cosmologically crucial Period-Luminosity Law, are proving themselves to be increasingly complex and astrophysically intriguing objects. The major aim of this proposal is to probe their stellar atmospheres and try to understand the mechanisms by which they are heated. Archival IUE UV spectra revealed the presence and variability of $10^4 - 10^5$ K plasma emission lines, correlated to the pulsation period of the studied Cepheids, indicating that a pulsation-driven heating mechanism may be at work. However, the spectra were of low resolution and also contaminated by scattered light, precluding a more thorough analysis. We propose multiple observations of two selected Cepheids (beta Dor and delta Cep - the prototype of all Classical Cepheids) with HST-COS through the G130M and G160M gratings. The COS spectra will provide comprehensive and detailed diagnostics of the atmospheric plasmas around these Cepheids, and will give us the best look yet at how large-scale, radial pulsations affect the upper atmospheres of supergiants. The phase constraints placed on some of the visits will also allow possible phase-lags between the emission lines to be detailed, giving important additional information into the heating mechanism. Numerous emission lines are covered by the G130M and G160M wavelength range ($\sim 1150-1750\text{\AA}$), including N V 1240, O I 1305, C IV 1550 and He II 1640. When combined with our approved and ongoing X-ray observations of Cepheids, the HST-COS data will allow us to construct an understanding of Cepheid atmospheric plasmas with temperature from tens of thousands up to millions of degrees - the most thorough atmospheric study to date for this important class of pulsating stars.

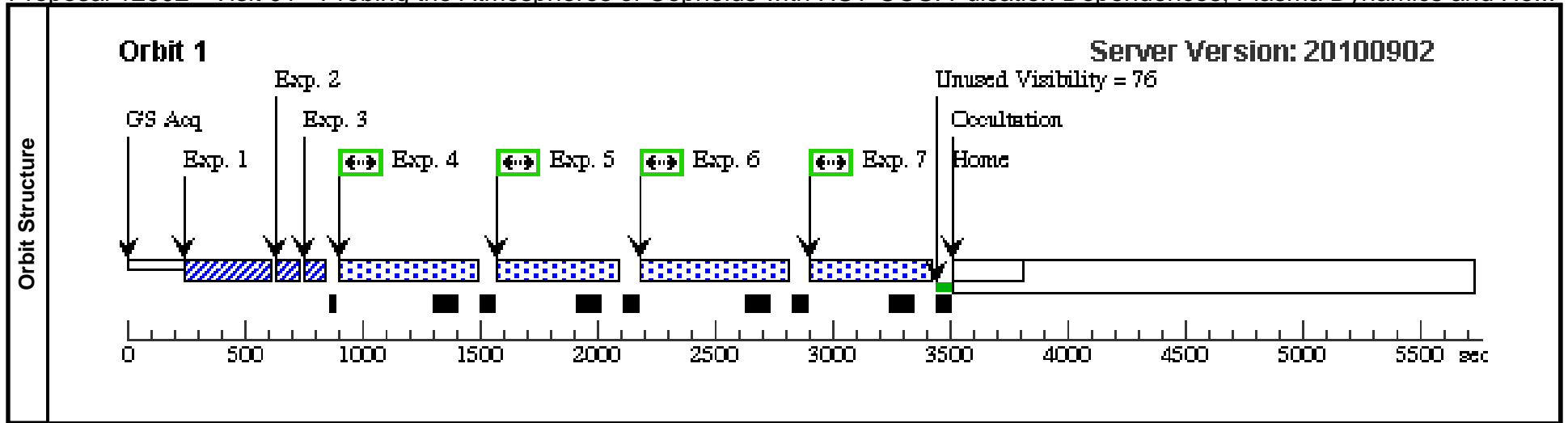
OBSERVING DESCRIPTION

We will observe each of the two Cepheids in the G130M and G160M elements. Five observations will be phase-constrained and three will not be. This will allow us to have an excellent sampling of the Cepheid pulsations and will allow line intensity and RV changes to be measured as the Cepheid pulsates.

Proposal 12302 - Visit 01 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:17 GMT 2011

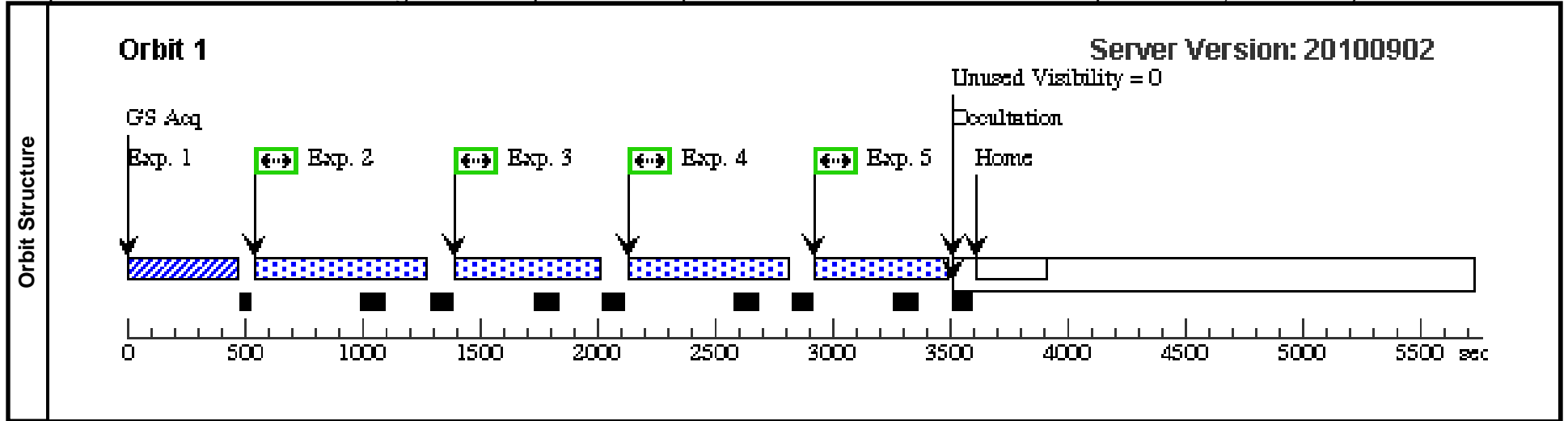
Visit	Proposal 12302, Visit 01, completed Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 9.84262 D AND ZERO-PHASE HJD2451643.54									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(2)	V-BET-DOR	RA: 05 33 37.5177 (83.4063238d) Dec: -62 29 23.37 (-62.48982d) Equinox: J2000		V=3.77	Reference Frame: ICRS				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(2) V-BET-DOR		COS/FUV, ACQ/SEARCH, PSA	G130M 1291 A	STEP-SIZE=1.767; SCAN-SIZE=3	PHASE 0.77 TO 0.8 3		1 Secs [==>]	[1]
	2	(2) V-BET-DOR		COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				3 Secs [==>]	[1]
	3	(2) V-BET-DOR		COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.05			1 Secs [==>]	[1]
	4	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			464 Secs [==>]	[1]
	5	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			463 Secs [==>]	[1]
	6	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			464 Secs [==>]	[1]
	7	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			463 Secs [==>]	[1]



Proposal 12302 - Visit 10 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:18 GMT 2011

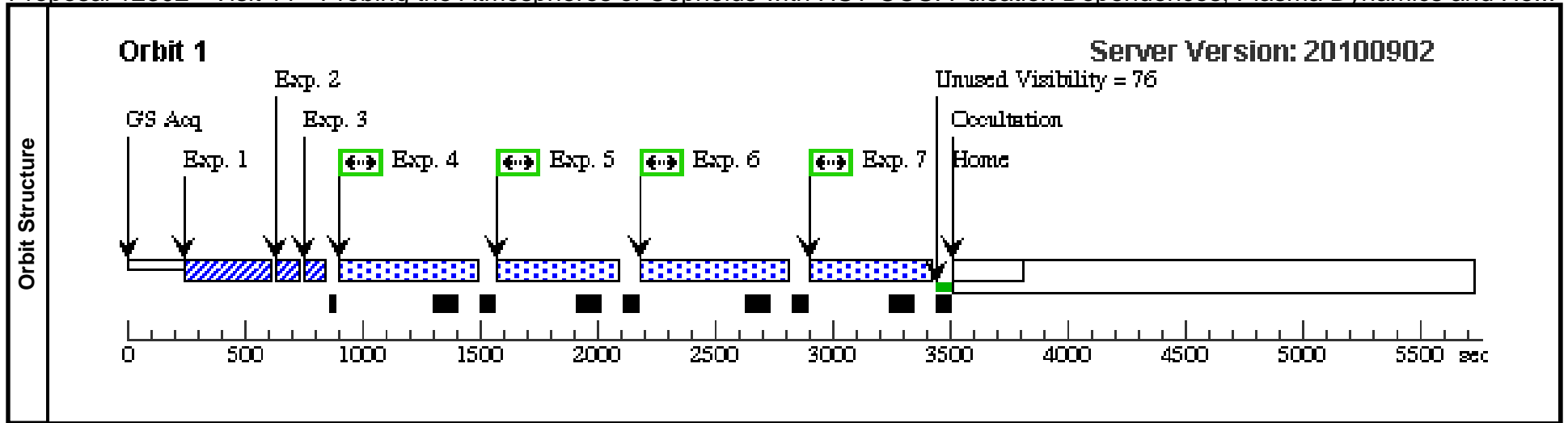
Visit	Proposal 12302, Visit 10, implementation Diagnostic Status: Warning Scientific Instruments: COS/NUV, COS/FUV Special Requirements: Period 9.84262 D AND ZERO-PHASE HJD2451643.54									
	(Visit 10) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(7)	V-BET-DOR-1	RA: 05 33 37.5177 (83.4063238d) Dec: -62 29 23.37 (-62.48982d) Equinox: J2000	Proper Motion RA: 0.79 mas/yr Proper Motion Dec: 12.74 mas/yr Epoch of Position: 2000.00	V=3.77	Reference Frame: ICRS				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(7) V-BET-DOR-1	COS/NUV, ACQ/IMAGE, BOA	MIRRORB		PHASE 0.76 TO 0.8 0		25 Secs [==>]	[1]
	2		(7) V-BET-DOR-1	COS/FUV, TIME-TAG, PSA	G130M 1291 A		BUFFER-TIME=30 0; FLASH=YES; FP-POS=1		564 Secs [==>]	[1]
	3		(7) V-BET-DOR-1	COS/FUV, TIME-TAG, PSA	G130M 1291 A		BUFFER-TIME=30 0; FLASH=YES; FP-POS=3		563 Secs [==>]	[1]
	4		(7) V-BET-DOR-1	COS/FUV, TIME-TAG, PSA	G160M 1589 A		BUFFER-TIME=30 0; FLASH=YES; FP-POS=1		518 Secs [==>]	[1]
	5		(7) V-BET-DOR-1	COS/FUV, TIME-TAG, PSA	G160M 1589 A		BUFFER-TIME=30 0; FLASH=YES; FP-POS=3		518 Secs [==>]	[1]



Proposal 12302 - Visit 11 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:19 GMT 2011

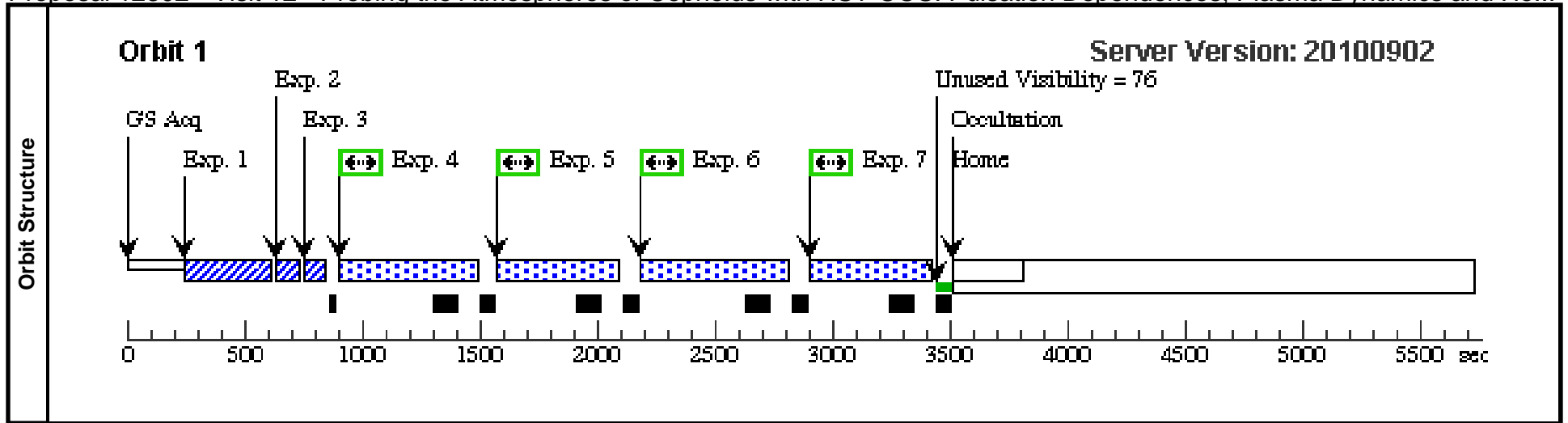
Visit	Proposal 12302, Visit 11, completed Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 9.84262 D AND ZERO-PHASE HJD2451643.54									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(2)	V-BET-DOR	RA: 05 33 37.5177 (83.4063238d) Dec: -62 29 23.37 (-62.48982d) Equinox: J2000		V=3.77	Reference Frame: ICRS				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(2) V-BET-DOR		COS/FUV, ACQ/SEARCH, PSA	G130M 1291 A	STEP-SIZE=1.767; SCAN-SIZE=3	PHASE 0.75 TO 0.8 5		1 Secs [==>]	[1]
	2	(2) V-BET-DOR		COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				3 Secs [==>]	[1]
	3	(2) V-BET-DOR		COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.05			1 Secs [==>]	[1]
	4	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			464 Secs [==>]	[1]
	5	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			463 Secs [==>]	[1]
	6	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			464 Secs [==>]	[1]
	7	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			463 Secs [==>]	[1]



Proposal 12302 - Visit 12 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:19 GMT 2011

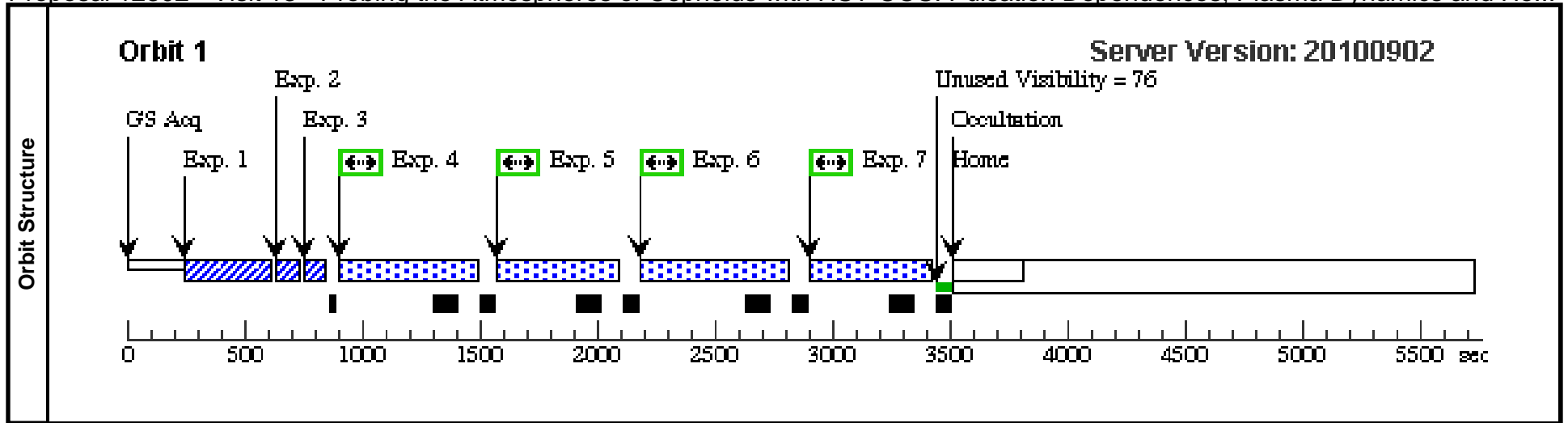
Visit	Proposal 12302, Visit 12, completed Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 9.84262 D AND ZERO-PHASE HJD2451643.54									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(2)	V-BET-DOR	RA: 05 33 37.5177 (83.4063238d) Dec: -62 29 23.37 (-62.48982d) Equinox: J2000		V=3.77	Reference Frame: ICRS				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(2) V-BET-DOR		COS/FUV, ACQ/SEARCH, PSA	G130M 1291 A	STEP-SIZE=1.767; SCAN-SIZE=3	PHASE 0.85 TO 0.9 5		1 Secs [==>]	[1]
	2	(2) V-BET-DOR		COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				3 Secs [==>]	[1]
	3	(2) V-BET-DOR		COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.05			1 Secs [==>]	[1]
	4	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			464 Secs [==>]	[1]
	5	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			463 Secs [==>]	[1]
	6	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			464 Secs [==>]	[1]
	7	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			463 Secs [==>]	[1]



Proposal 12302 - Visit 13 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:20 GMT 2011

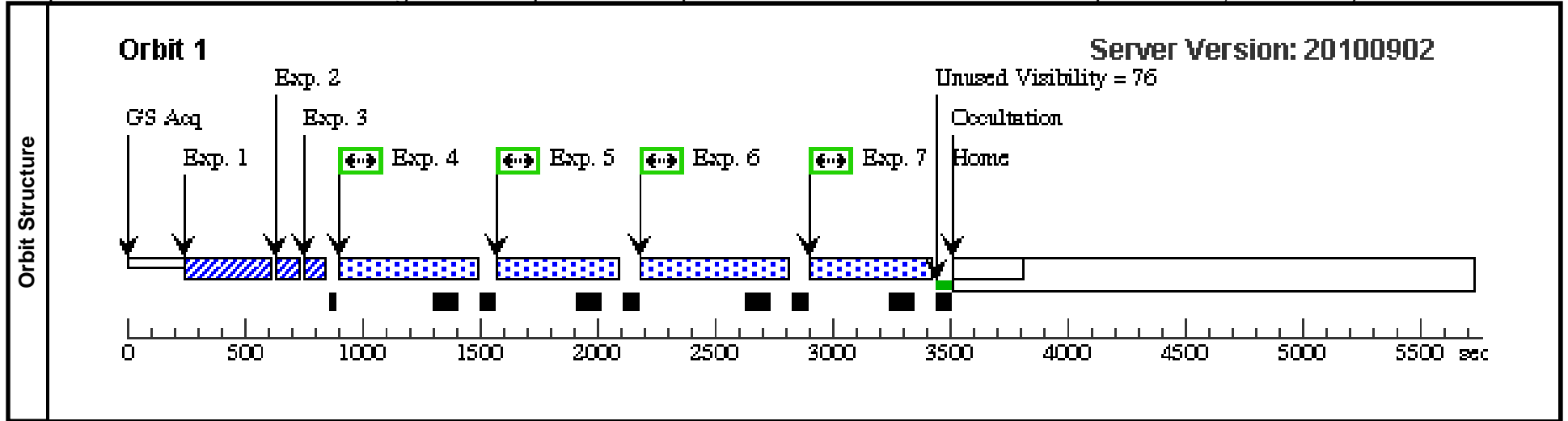
Visit	Proposal 12302, Visit 13, completed Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 9.84262 D AND ZERO-PHASE HJD2451643.54									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(2)	V-BET-DOR	RA: 05 33 37.5177 (83.4063238d) Dec: -62 29 23.37 (-62.48982d) Equinox: J2000		V=3.77	Reference Frame: ICRS				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(2) V-BET-DOR		COS/FUV, ACQ/SEARCH, PSA	G130M 1291 A	STEP-SIZE=1.767; SCAN-SIZE=3	PHASE 0.95 TO 0.0 5		1 Secs [==>]	[1]
	2	(2) V-BET-DOR		COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				3 Secs [==>]	[1]
	3	(2) V-BET-DOR		COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.05			1 Secs [==>]	[1]
	4	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			464 Secs [==>]	[1]
	5	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			463 Secs [==>]	[1]
	6	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			464 Secs [==>]	[1]
	7	(2) V-BET-DOR		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			463 Secs [==>]	[1]



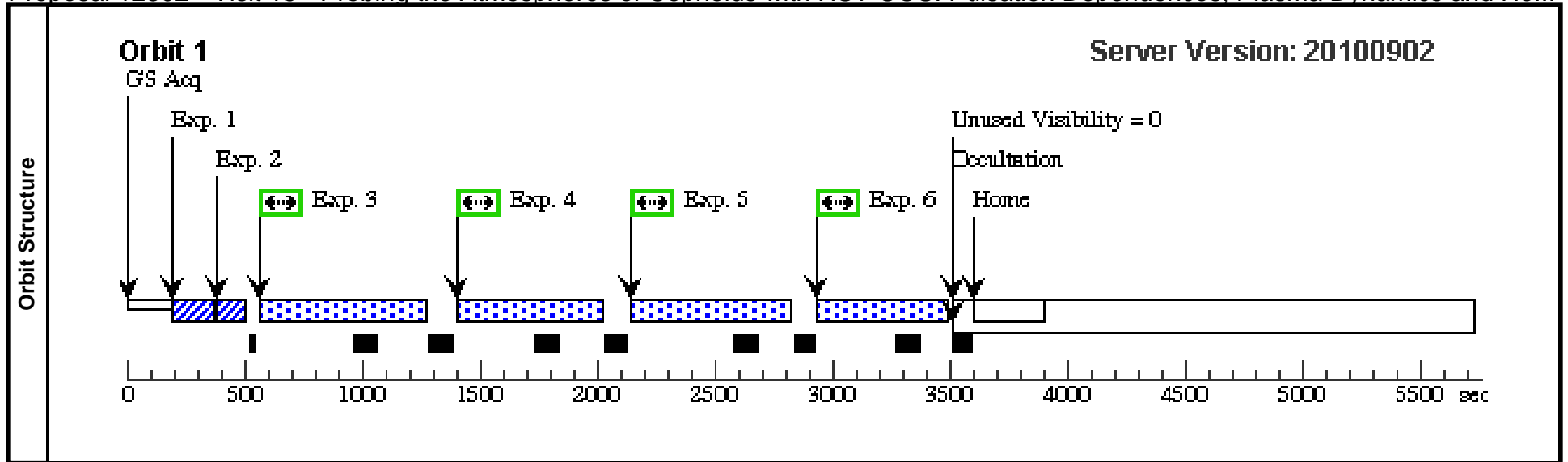
Proposal 12302 - Visit 14 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:20 GMT 2011

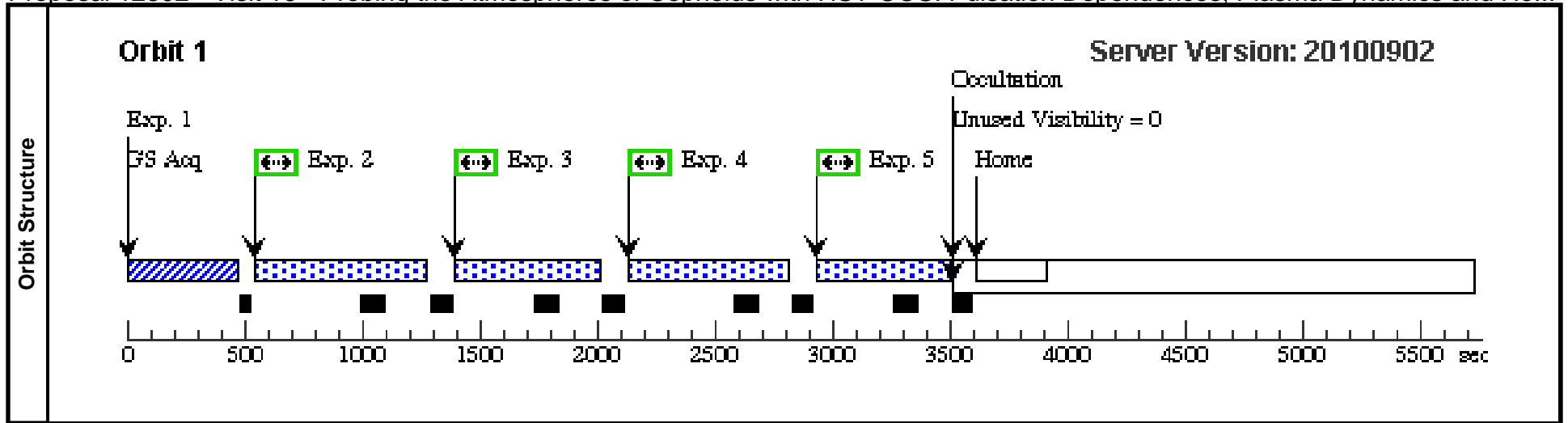
Visit	Proposal 12302, Visit 14, completed Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: (none)									
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	(2)	V-BET-DOR	RA: 05 33 37.5177 (83.4063238d) Dec: -62 29 23.37 (-62.48982d) Equinox: J2000		V=3.77	Reference Frame: ICRS				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(2) V-BET-DOR	COS/FUV, ACQ/SEARCH, PSA	G130M 1291 A	STEP-SIZE=1.767; SCAN-SIZE=3				1 Secs [==>]	[1]
	2	(2) V-BET-DOR	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A					3 Secs [==>]	[1]
	3	(2) V-BET-DOR	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.05				1 Secs [==>]	[1]
	4	(2) V-BET-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1				464 Secs [==>]	[1]
	5	(2) V-BET-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3				463 Secs [==>]	[1]
	6	(2) V-BET-DOR	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1				464 Secs [==>]	[1]
	7	(2) V-BET-DOR	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3				463 Secs [==>]	[1]



Visit	Proposal 12302, Visit 15, implementation Diagnostic Status: Warning Scientific Instruments: COS/FUV Special Requirements: Period 5.366341 D AND ZERO-PHASE HJD2450102.86									
	(Visit 15) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/PEAKXD.									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(6)	V-DEL-CEP-1	RA: 22 29 10.2663 (337.2927763d) Dec: +58 24 54.71 (58.41520d) Equinox: J2000	Proper Motion RA: 15.35 mas/yr Proper Motion Dec: 3.52 mas/yr Epoch of Position: 2000.00	V=4.07	Reference Frame: ICRS				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>Proper Motion retrieved from Hipparcos: the New Reduction (van Leeuwen 2007)</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(6) V-DEL-CEP-1	(6) V-DEL-CEP-1	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A		PHASE 0.89 TO 0.9 5		10 Secs [==>]	[1]
	2	(6) V-DEL-CEP-1	(6) V-DEL-CEP-1	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A		STEP-SIZE=0.05		10 Secs [==>]	[1]
	3	(6) V-DEL-CEP-1	(6) V-DEL-CEP-1	COS/FUV, TIME-TAG, PSA	G130M 1291 A		BUFFER-TIME=30 0; FLASH=YES; FP-POS=1		589 Secs [==>]	[1]
	4	(6) V-DEL-CEP-1	(6) V-DEL-CEP-1	COS/FUV, TIME-TAG, PSA	G130M 1291 A		BUFFER-TIME=30 0; FLASH=YES; FP-POS=3		563 Secs [==>]	[1]
	5	(6) V-DEL-CEP-1	(6) V-DEL-CEP-1	COS/FUV, TIME-TAG, PSA	G160M 1589 A		BUFFER-TIME=30 0; FLASH=YES; FP-POS=1		520 Secs [==>]	[1]
	6	(6) V-DEL-CEP-1	(6) V-DEL-CEP-1	COS/FUV, TIME-TAG, PSA	G160M 1589 A		BUFFER-TIME=30 0; FLASH=YES; FP-POS=3		504 Secs [==>]	[1]



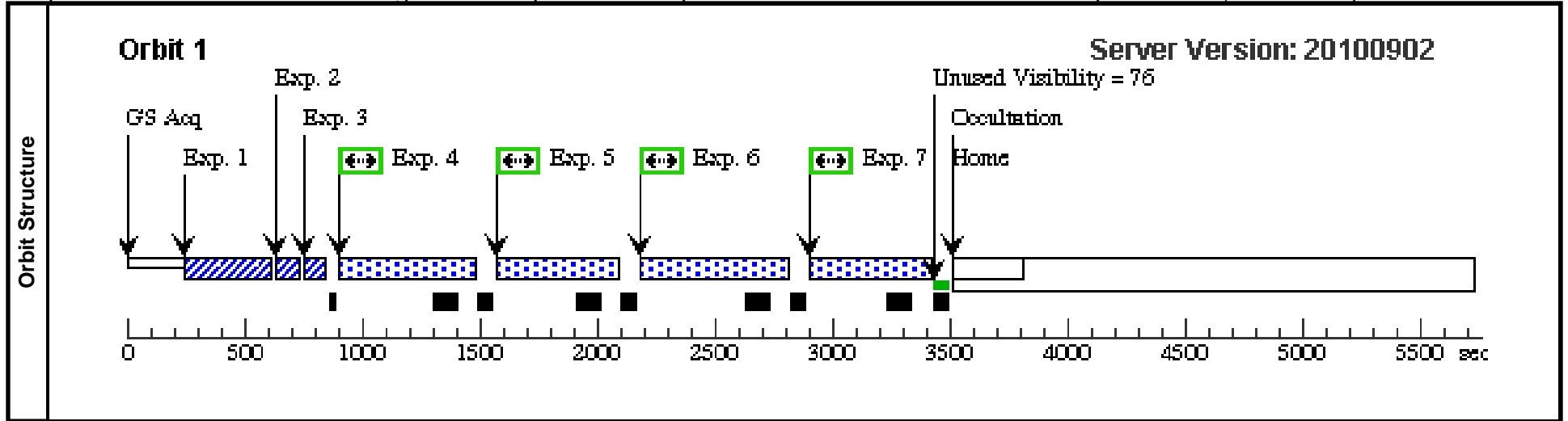
Visit	Proposal 12302, Visit 16, implementation Diagnostic Status: Warning Scientific Instruments: COS/NUV, COS/FUV Special Requirements: Period 9.84262 D AND ZERO-PHASE HJD2451643.54									
	(Visit 16) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(7)	V-BET-DOR-1	RA: 05 33 37.5177 (83.4063238d) Dec: -62 29 23.37 (-62.48982d) Equinox: J2000	Proper Motion RA: 0.79 mas/yr Proper Motion Dec: 12.74 mas/yr Epoch of Position: 2000.00	V=3.77	Reference Frame: ICRS				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(7) V-BET-DOR-1	COS/NUV, ACQ/IMAGE, BOA	MIRRORB		PHASE 0.95 TO 1.0		25 Secs [==>]	[1]
	2		(7) V-BET-DOR-1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	0; FLASH=YES; FP-POS=1			564 Secs [==>]	[1]
	3		(7) V-BET-DOR-1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	0; FLASH=YES; FP-POS=3			563 Secs [==>]	[1]
	4		(7) V-BET-DOR-1	COS/FUV, TIME-TAG, PSA	G160M 1589 A	0; FLASH=YES; FP-POS=1			520 Secs [==>]	[1]
	5		(7) V-BET-DOR-1	COS/FUV, TIME-TAG, PSA	G160M 1589 A	0; FLASH=YES; FP-POS=3			516 Secs [==>]	[1]



Proposal 12302 - Visit 09 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:21 GMT 2011

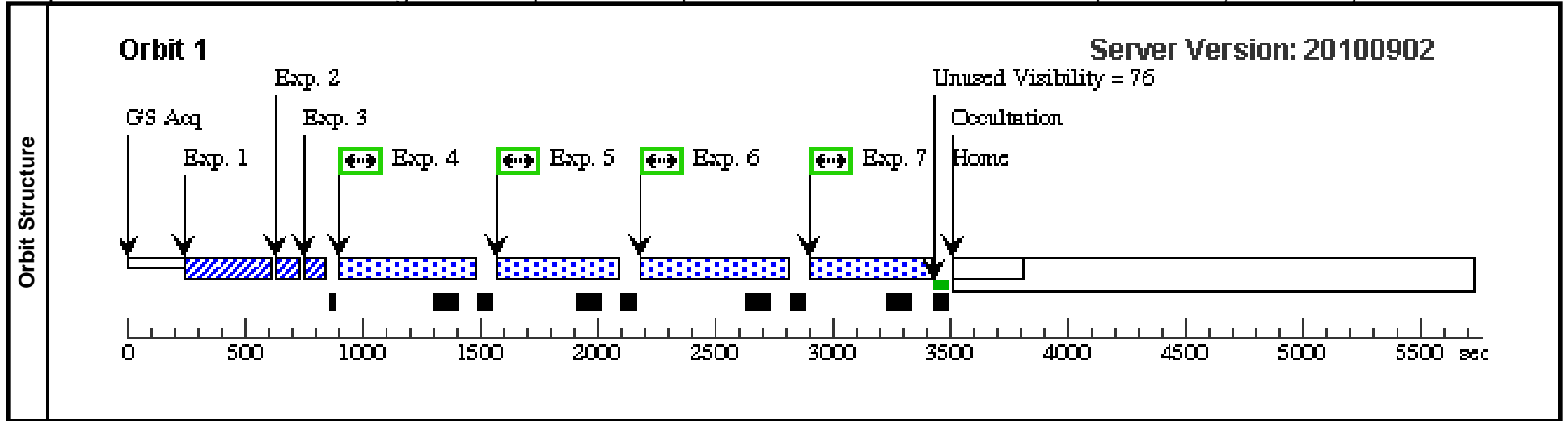
Visit	Proposal 12302, Visit 09, completed Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 5.366341 D AND ZERO-PHASE HJD2450102.86									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(4)	V-DEL-CEP	RA: 22 29 10.2663 (337.2927763d) Dec: +58 24 54.71 (58.41520d) Equinox: J2000		V=4.07	Reference Frame: ICRS				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) V-DEL-CEP		COS/FUV, ACQ/SEARCH, PSA	G130M 1291 A	STEP-SIZE=1.767; SCAN-SIZE=3	PHASE 0.55 TO 0.6 5		1 Secs [==>]	[1]
	2	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				3 Secs [==>]	[1]
	3	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.05			1 Secs [==>]	[1]
	4	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			463 Secs [==>]	[1]
	5	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]
	6	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			462 Secs [==>]	[1]
	7	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]



Proposal 12302 - Visit 17 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:22 GMT 2011

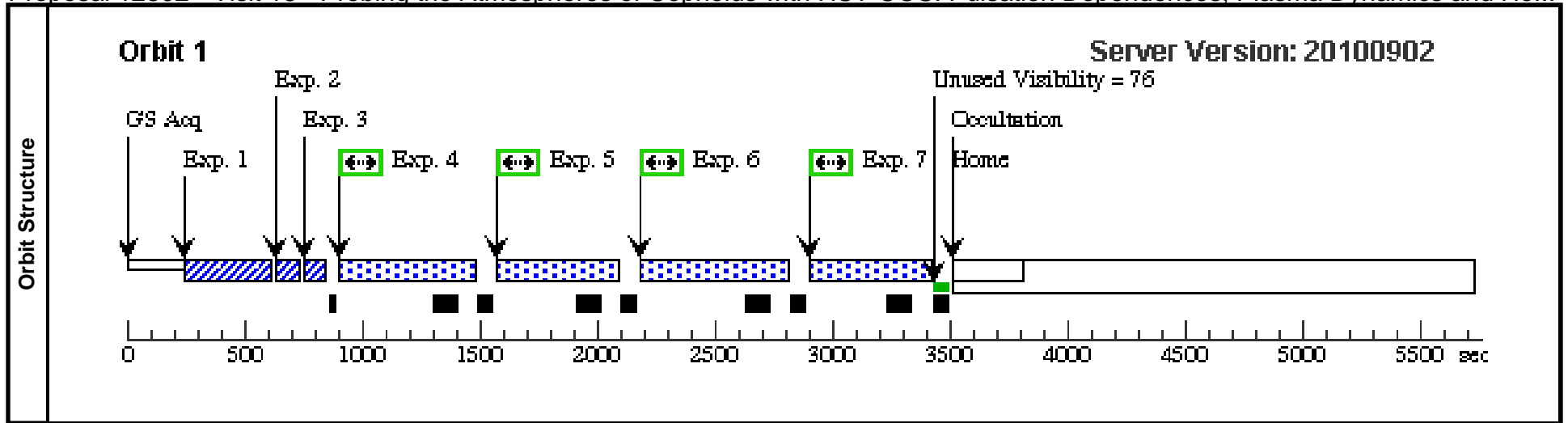
Visit	Proposal 12302, Visit 17, completed Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 5.366341 D AND ZERO-PHASE HJD2450102.86									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(4)	V-DEL-CEP	RA: 22 29 10.2663 (337.2927763d) Dec: +58 24 54.71 (58.41520d) Equinox: J2000		V=4.07	Reference Frame: ICRS				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) V-DEL-CEP		COS/FUV, ACQ/SEARCH, PSA	G130M 1291 A	STEP-SIZE=1.767; SCAN-SIZE=3	PHASE 0.65 TO 0.7 5		1 Secs [==>]	[1]
	2	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				3 Secs [==>]	[1]
	3	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.05			1 Secs [==>]	[1]
	4	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			463 Secs [==>]	[1]
	5	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]
	6	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			462 Secs [==>]	[1]
	7	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]



Proposal 12302 - Visit 18 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:22 GMT 2011

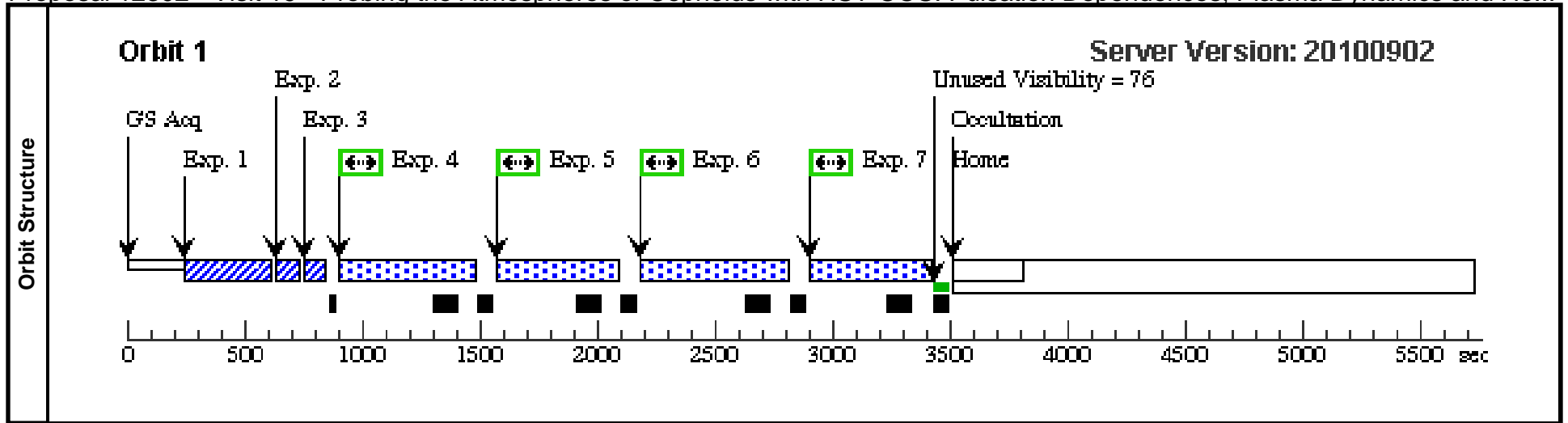
Visit	Proposal 12302, Visit 18, completed Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 5.366341 D AND ZERO-PHASE HJD2450102.86									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(4)	V-DEL-CEP	RA: 22 29 10.2663 (337.2927763d) Dec: +58 24 54.71 (58.41520d) Equinox: J2000		V=4.07	Reference Frame: ICRS				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) V-DEL-CEP		COS/FUV, ACQ/SEARCH, PSA	G130M 1291 A	STEP-SIZE=1.767; SCAN-SIZE=3	PHASE 0.75 TO 0.8 5		1 Secs [==>]	[1]
	2	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				3 Secs [==>]	[1]
	3	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.05			1 Secs [==>]	[1]
	4	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			463 Secs [==>]	[1]
	5	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]
	6	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			462 Secs [==>]	[1]
	7	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]



Proposal 12302 - Visit 19 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:22 GMT 2011

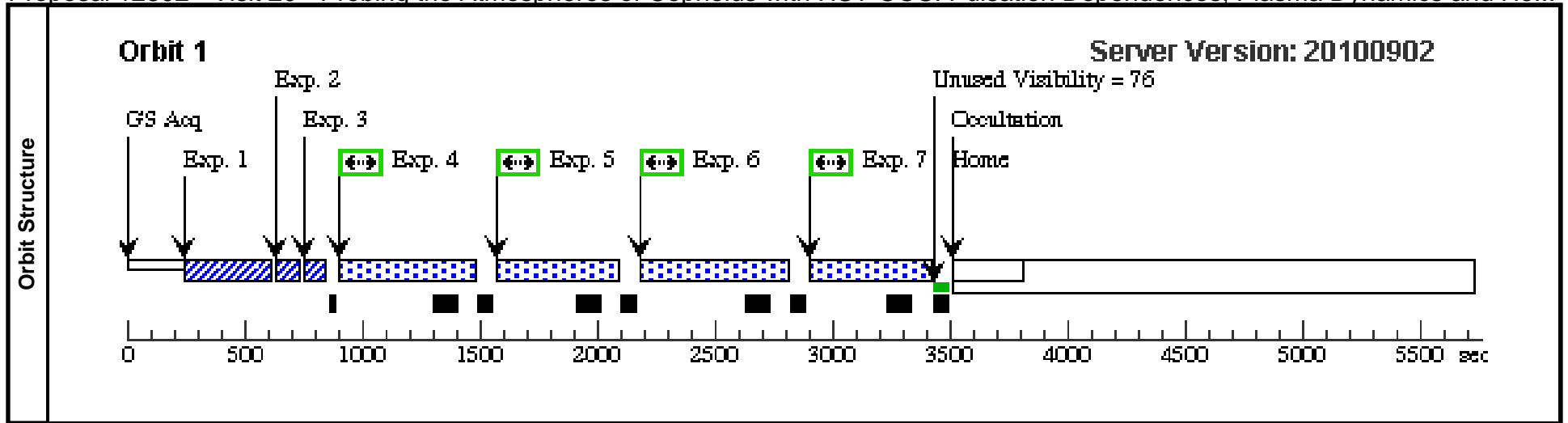
Visit	Proposal 12302, Visit 19, completed Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 5.366341 D AND ZERO-PHASE HJD2450102.86									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(4)	V-DEL-CEP	RA: 22 29 10.2663 (337.2927763d) Dec: +58 24 54.71 (58.41520d) Equinox: J2000		V=4.07	Reference Frame: ICRS				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) V-DEL-CEP		COS/FUV, ACQ/SEARCH, PSA	G130M 1291 A	STEP-SIZE=1.767; SCAN-SIZE=3	PHASE 0.85 TO 0.9 5		1 Secs [==>]	[1]
	2	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				3 Secs [==>]	[1]
	3	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.05			1 Secs [==>]	[1]
	4	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			463 Secs [==>]	[1]
	5	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]
	6	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			462 Secs [==>]	[1]
	7	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]



Proposal 12302 - Visit 20 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:22 GMT 2011

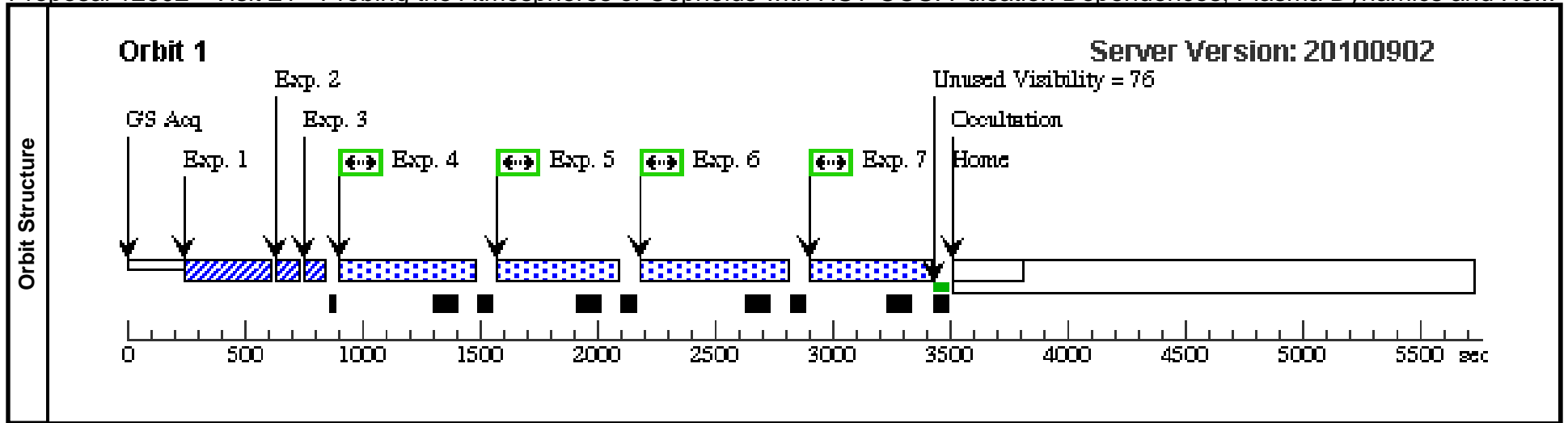
Visit	Proposal 12302, Visit 20, completed Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 5.366341 D AND ZERO-PHASE HJD2450102.86									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(4)	V-DEL-CEP	RA: 22 29 10.2663 (337.2927763d) Dec: +58 24 54.71 (58.41520d) Equinox: J2000		V=4.07	Reference Frame: ICRS				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) V-DEL-CEP		COS/FUV, ACQ/SEARCH, PSA	G130M 1291 A	STEP-SIZE=1.767; SCAN-SIZE=3	PHASE 0.95 TO 0.0 5		1 Secs [==>]	[1]
	2	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				3 Secs [==>]	[1]
	3	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.05			1 Secs [==>]	[1]
	4	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			463 Secs [==>]	[1]
	5	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]
	6	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			462 Secs [==>]	[1]
	7	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]



Proposal 12302 - Visit 21 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:23 GMT 2011

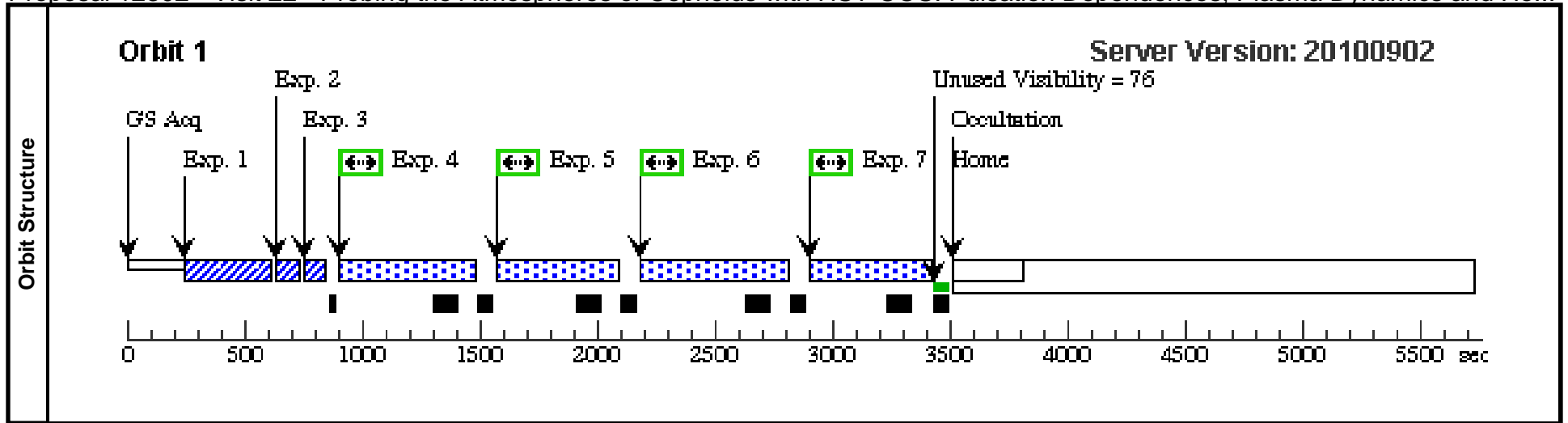
Fixed Targets	Visit					Miscellaneous				
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes					
	Proposal 12302, Visit 21, completed Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: (none)					Reference Frame: ICRS				
	(4)	V-DEL-CEP	RA: 22 29 10.2663 (337.2927763d) Dec: +58 24 54.71 (58.41520d) Equinox: J2000		V=4.07					
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) V-DEL-CEP		COS/FUV, ACQ/SEARCH, PSA	G130M	STEP-SIZE=1.767;			1 Secs	
					1291 A	SCAN-SIZE=3			[==>]	[1]
	2	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKXD, PSA	G130M				3 Secs	
					1291 A				[==>]	[1]
	3	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKD, PSA	G130M	STEP-SIZE=0.05			1 Secs	
					1291 A				[==>]	[1]
	4	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M	BUFFER-TIME=30			463 Secs	
				1291 A	0;	FLASH=YES;		[==>]	[1]	
						FP-POS=1				
5	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M	BUFFER-TIME=30			462 Secs		
				1291 A	0;	FLASH=YES;		[==>]	[1]	
						FP-POS=3				
6	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=30			462 Secs		
				1589 A	0;	FLASH=YES;		[==>]	[1]	
						FP-POS=1				
7	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=30			462 Secs		
				1589 A	0;	FLASH=YES;		[==>]	[1]	
						FP-POS=3				



Proposal 12302 - Visit 22 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:23 GMT 2011

Visit	Proposal 12302, Visit 22, completed Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(4)	V-DEL-CEP	RA: 22 29 10.2663 (337.2927763d) Dec: +58 24 54.71 (58.41520d) Equinox: J2000		V=4.07	Reference Frame: ICRS				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) V-DEL-CEP		COS/FUV, ACQ/SEARCH, PSA	G130M 1291 A	STEP-SIZE=1.767; SCAN-SIZE=3			1 Secs [==>]	[1]
	2	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				3 Secs [==>]	[1]
	3	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.05			1 Secs [==>]	[1]
	4	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			463 Secs [==>]	[1]
	5	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]
	6	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			462 Secs [==>]	[1]
	7	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]



Proposal 12302 - Visit 23 - Probing the Atmospheres of Cepheids with HST-COS: Pulsation Dependences, Plasma Dynamics and He...

Tue May 24 01:39:24 GMT 2011

Visit	Proposal 12302, Visit 23, completed Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(4)	V-DEL-CEP	RA: 22 29 10.2663 (337.2927763d) Dec: +58 24 54.71 (58.41520d) Equinox: J2000		V=4.07	Reference Frame: ICRS				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) V-DEL-CEP		COS/FUV, ACQ/SEARCH, PSA	G130M 1291 A	STEP-SIZE=1.767; SCAN-SIZE=3			1 Secs [==>]	[1]
	2	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				3 Secs [==>]	[1]
	3	(4) V-DEL-CEP		COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.05			1 Secs [==>]	[1]
	4	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			463 Secs [==>]	[1]
	5	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]
	6	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=1			462 Secs [==>]	[1]
	7	(4) V-DEL-CEP		COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=30 0; FLASH=YES; FP-POS=3			462 Secs [==>]	[1]

