12315 - Winds, accretion and activity: Deciphering the FUV lines in TW Hya

Cycle: 18, Proposal Category: GO

(Availability Mode: SUPPORTED)

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) V-TW-HYA	COS/FUV COS/NUV	3	01-Oct-2010 21:29:37.0	yes
02	(1) V-TW-HYA	COS/FUV COS/NUV	1	01-Oct-2010 21:29:46.0	yes
03	(1) V-TW-HYA	COS/FUV COS/NUV	1	01-Oct-2010 21:29:53.0	yes
04	(1) V-TW-HYA	COS/FUV COS/NUV	1	01-Oct-2010 21:29:58.0	yes
05	(1) V-TW-HYA	COS/FUV COS/NUV	1	01-Oct-2010 21:30:04.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
06	(1) V-TW-HYA	COS/FUV COS/NUV	1	01-Oct-2010 21:30:11.0	yes
07	(1) V-TW-HYA	COS/FUV COS/NUV	1	01-Oct-2010 21:30:16.0	yes
08	(1) V-TW-HYA	COS/FUV COS/NUV	1	01-Oct-2010 21:30:21.0	yes

10 Total Orbits Used

ABSTRACT

Classical T Tauri stars (CTTS) show strong, broad and asymmetric FUV emission lines. Neither the width, nor the line profile is understood. Likely, different mechanisms influence the line profile; the best candidates are accretion, winds and stellar activity.

We propose to monitor the CIV 1548/1550 Ang doublet in the nearby, bright CTTS TW Hya and to correlate it with i) the cool wind, as seen in COS NUV MgII line profiles, ii) the photometric period from joint ground-based monitoring, iii) the accretion rate as determined from the UV continuum and iv) the Ha line profile from independent ground-based observations. We request 10 orbits distributed over a few weeks to cover the typical time scales of stellar rotation, accretion and winds.

With this data we can identify the FUV emission region, test for the presence of a hot wind, identify its properties, and characterize the variability of the accretion region.

OBSERVING DESCRIPTION

We concentrate here on the Civ doublet at 1548/1550 A, the brightest hot FUV line, which we will observe with the G160M grating, set on central wavelength 1577 A.

Several other important features are covered in the wavelength range of this grating: i) Si iv 1392/1403 A is a second hot ion line we will use for comparison. ii) Si ii 1527/1533 A, He ii 1640 A and Ci 1656 A probe the presence of cooler material. iii) Between the lines we obtain a continuum measurement to calculate the mass accretion rate. Supporting data are needed from the NUV G285M grating, set to central wavelength 2676 A. It covers i) the Mg ii 2796 A line, which is absorbed on the blue side, so that we know the minimum and maximum speed of the cool wind, and ii)

provides continuum measurements between 2520 and 2820 A. Together with the FUV from the G160M grating we can thus fit the shape of the continuum and calculate the contemporary mass accretion rate according to the models of Calvet & Gullbring (1998).

We ask for 10 HST orbits unevenly spaced over a few weeks (see comments to each visit).

Each orbit will have an identical layout of observations with target acquisition, G285M and G160M exposures. According to the ETC TW Hya can be observed in the ACQ/IMAGE mode, if the BOA is used, but target Acquisition is faster in spectroscopic mode, because the overhead is reduced. The coordinates of our target are well known (to 0.01 arcsec), so we can save the time for ACQ/SEARCH (see COS ISR 2010-14).

The existing HST/STIS spectra allow us to estimate the required exposure time in the COS bandpass reliably and to verify that no safety contraint for COS will be violated. The first 12 min will be used for a single NUV exposure with the G285M grating. This exposure time is sufficient to reach a SNR 20 per resolution element at 2594 A, i.e. blueward of the wind absorption in the Mg ii line. The maximum SNR in the NUV without flatfielding is 50, a value we will reach only in the line center. This allows us to determine the maximum speed of the wind observed in this ion. At the same time we pick up enough signal in the continuum to calculate the mass accretion rate according to the models of Calvet & Gullbring (1998).To answer the observational questions we need to achieve a SNR comparable to previous observations. However, in the FUV fixed-pattern noise limitsthe SNR to 18 per exposure per resolution element, so we need to obtain spectra at different settings of FP-POS. We will use FP-POS=2,3,4, because in position 1 the Si iv 1392 A line falls right on the edge of the detector.

For the line center of Civ the limiting SNR is reached in < 2 min, however each exposure shall last 7 min to obtain the required signal in the wings of the Civ line (blueward of the maximum wind speed and at +300 km/s were emission variability has been observed before) and in the weaker lines, while keeping the instrumental overhead low. Including the initial grating change, the FP-POS changes and setup and readout for each exposure in total 33 min will be spent on the FUV exposures.

ADDITIONAL COMMENTS

It is the purpose of this proposal to determine the time scale of the FUV line variations.

Photometric and spectral variability has been observed over periods of years in the past and there is an ongoing program for three observations of TW Hya (Proposal ID: 11608), spaced by a few months. Thus the new observations only need to cover the shorter time scale. This can be achieved by unevenly spacing out the visits over a few weeks with most visits within a short time frame e.g. with visits on days 1, 1, 1, 2, 2, 3, 5, 10, 15, 30 or 1, 5, 9, 10, 10, 10, 11, 15, 20, 30. However, there is no particular order required, it can be chosen to fit scheduling needs as long as is covers short and long timescales. Therefore, we specify only very rough constraints on the timing of the individual visits.

Visit

Proposal 12315, Visit 01, implementation Sat Oct 02 01:30:25 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Comments: It is the purpose of this proposal to determine the time scale of the FUV line variations. Photometric and spectral variability has been observed over periods of years in the past and there is an ongoing program for three observations of TW~Hya (Proposal ID: 11608), spaced by a few months. Thus the new observations only need to cover the shorter time scale. This can be achieved by unevenly spacing out the visits over a few weeks with most visits within a short time frame e.g. with visits on days 1, 1, 1, 2, 2, 3, 5, 10, 15, 30 or 1, 2 ,5, 5, 5, 6, 10, 12, 18, 30 or 1, 10, 15,18, 20, 24, 25, 25, 25, 28. However, there is no particular order required, it can be chosen to fit scheduling needs.
We have specified some time relations between the visits, but is is acutally more flexible than that. Choose any order and spacing within 30 days with a few vitis wintin a few days to study short time scales and a few further apart.

Diagnostics

(Visit 01) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronography with STIS or COS.

(Visit 01) Warning (Form): COS ACQ/PEAKXD exposure should be preceded by an ACQ/SEARCH exposure in the Visit.

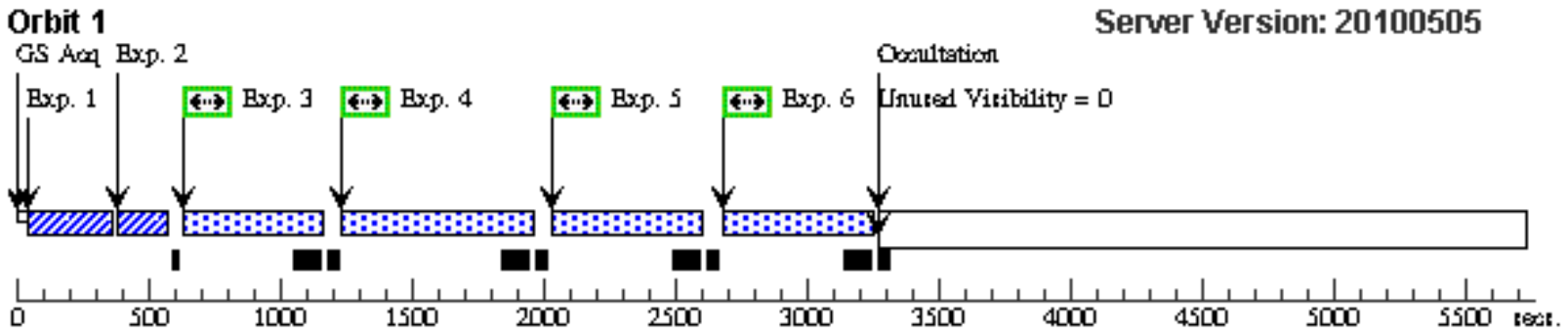
Fixed Targets

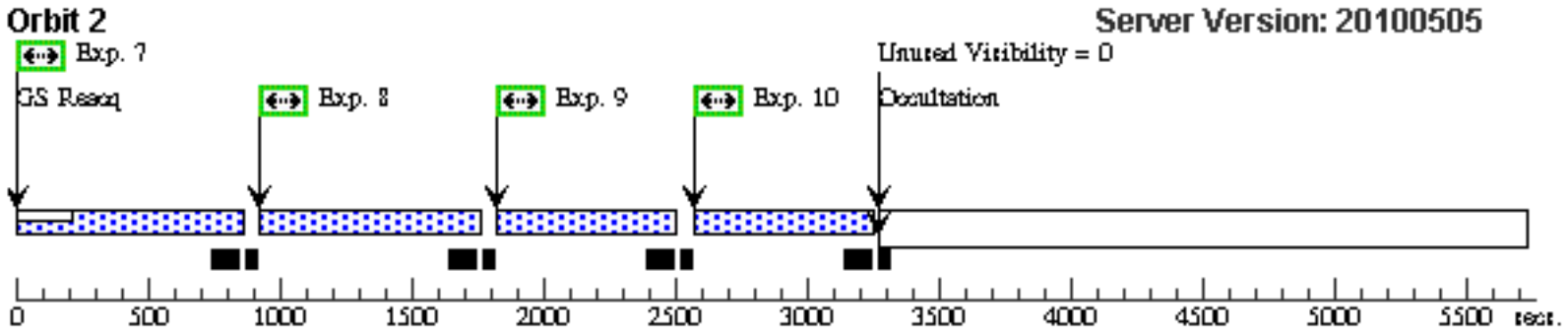
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9063 (165.4662763d) Dec: -34 42 17.02 (-34.70473d) Equinox: J2000	Proper Motion RA: -0.005425150137958488s/yr Proper Motion Dec: -0.01236"/yr Parallax: 0.01772" Epoch of Position: 2000 Radial Velocity: 13.4 km/sec	V=11.07	Reference Frame: ICRS

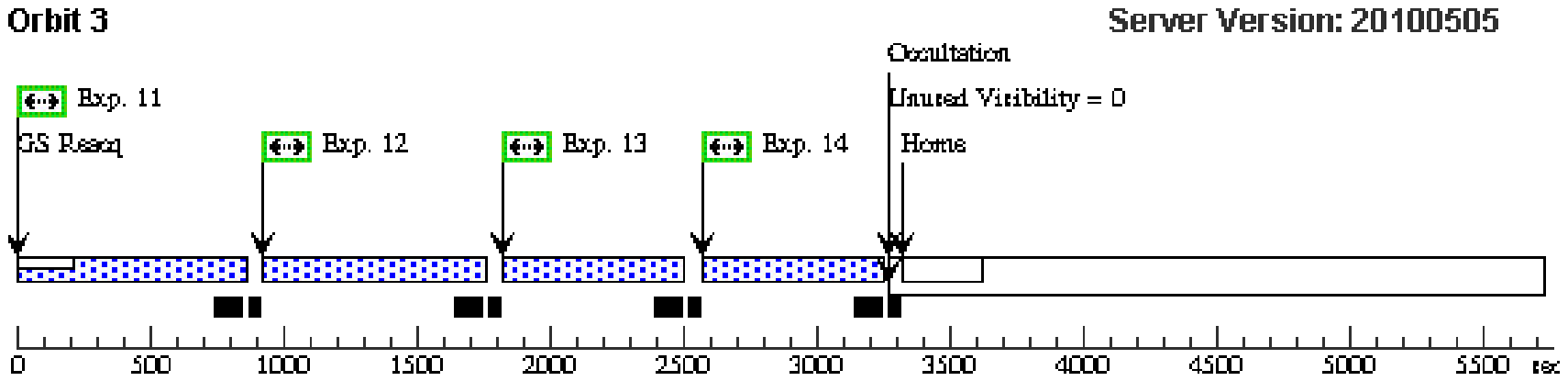
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) V-TW-HYA	COS/NUV, ACQ/PEAKXD, PSA	G285M 2676 A				16 Secs *[==>]*	*[1]*
2		(1) V-TW-HYA	COS/NUV, ACQ/PEAKD, PSA	G285M 2676 A	NUM-POS=5; STEP-SIZE=1.2			6 Secs *[==>]*	*[1]*
3	NUV	(1) V-TW-HYA	COS/NUV, TIME-TAG, PSA	G285M 2676 A	BUFFER-TIME=419			519 Secs *[==>]*	*[1]*
4	FUV FPPOS 2	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=2			520 Secs *[==>]*	*[1]*
5	FUV FP Pos 3	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; BUFFER-TIME=420			520 Secs *[==>]*	*[1]*
6	FUV FP POS 4	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=4			520 Secs *[==>]*	*[1]*
7	NUV	(1) V-TW-HYA	COS/NUV, TIME-TAG, PSA	G285M 2676 A	BUFFER-TIME=528			628 Secs *[==>]*	*[2]*
8	FUV FPPOS 2	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=530; FP-POS=2			630 Secs *[==>]*	*[2]*
9	FUV FP Pos 3	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; BUFFER-TIME=530			630 Secs *[==>]*	*[2]*
10	FUV FP POS 4	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=530; FP-POS=4			630 Secs *[==>]*	*[2]*
11	NUV	(1) V-TW-HYA	COS/NUV, TIME-TAG, PSA	G285M 2676 A	BUFFER-TIME=528			628 Secs *[==>]*	*[3]*
12	FUV FPPOS 2	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=530; FP-POS=2			630 Secs *[==>]*	*[3]*
13	FUV FP Pos 3	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; BUFFER-TIME=530			630 Secs *[==>]*	*[3]*
14	FUV FP POS 4	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=530; FP-POS=4			630 Secs *[==>]*	*[3]*

Orbit Structure







Visit

Proposal 12315, Visit 02, implementation Sat Oct 02 01:30:26 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: AFTER 01 BY 1 D TO 2 D; GROUP 02,01 WITHIN 30D

Comments: It is the purpose of this proposal to determine the time scale of the FUV line variations. Photometric and spectral variability has been observed over periods of years in the past and there is an ongoing program for three observations of TW~Hya (Proposal ID: 11608), spaced by a few months. Thus the new observations only need to cover the shorter time scale. This can be achieved by unevenly spacing out the visits over a few weeks with most visits within a short time frame e.g. with visits on days 1, 1, 1, 2, 2, 3, 5, 10, 15, 30 or 1, 2 ,5, 5, 5, 6, 10, 12, 18, 30 or 1, 10, 15,18, 20, 24, 25, 25, 25, 28. However, there is no particular order required, it can be chosen to fit scheduling needs.
We have specified some time relations between the visits, but is is acutally more flexible than that. Choose any order and spacing within 30 days with a few vitis wintin a few days to study short time scales and a few further apart.

Diagnostics

(Visit 02) Warning (Form): COS ACQ/PEAKXD exposure should be preceded by an ACQ/SEARCH exposure in the Visit.

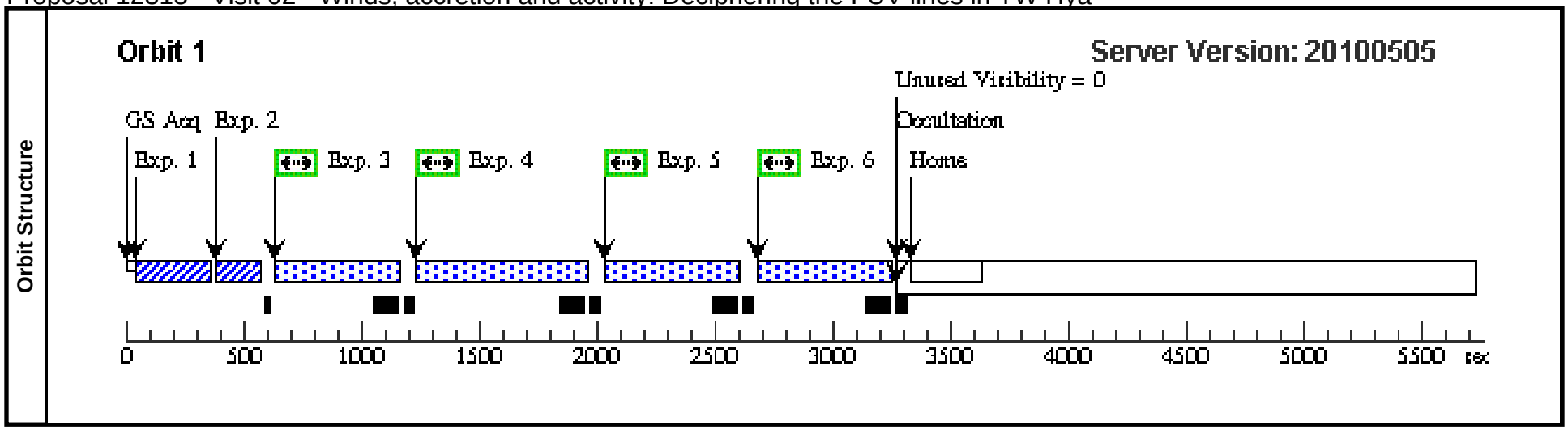
(Visit 02) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronography with STIS or COS.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9063 (165.4662763d) Dec: -34 42 17.02 (-34.70473d) Equinox: J2000	Proper Motion RA: -0.005425150137958488s/yr Proper Motion Dec: -0.01236"/yr Parallax: 0.01772" Epoch of Position: 2000 Radial Velocity: 13.4 km/sec	V=11.07	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) V-TW-HYA	COS/NUV, ACQ/PEAKXD, PSA	G285M 2676 A				16 Secs *[==>]*	 ***[1]***
2		(1) V-TW-HYA	COS/NUV, ACQ/PEAKD, PSA	G285M 2676 A	NUM-POS=5; STEP-SIZE=1.2			6 Secs *[==>]*	 ***[1]***
3	NUV	(1) V-TW-HYA	COS/NUV, TIME-TAG, PSA	G285M 2676 A	BUFFER-TIME=419			519 Secs *[==>]*	 ***[1]***
4	FUV FPPOS 2	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=2			520 Secs *[==>]*	 ***[1]***
5	FUV FP Pos 3	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; BUFFER-TIME=420			520 Secs *[==>]*	 ***[1]***
6	FUV FP POS 4	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=4			520 Secs *[==>]*	 ***[1]***


Orbit Structure
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Unused Visibility = 0
GS Acq
Exp. 2
Occultation
Exp. 1
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Home
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1500
2000
2500
3000
3500
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4500
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5500
sec

Visit

Proposal 12315, Visit 03, implementation Sat Oct 02 01:30:27 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: AFTER 01 BY 3 D TO 4 D; GROUP 03,01 WITHIN 30D

Comments: It is the purpose of this proposal to determine the time scale of the FUV line variations. Photometric and spectral variability has been observed over periods of years in the past and there is an ongoing program for three observations of TW~Hya (Proposal ID: 11608), spaced by a few months. Thus the new observations only need to cover the shorter time scale. This can be achieved by unevenly spacing out the visits over a few weeks with most visits within a short time frame e.g. with visits on days 1, 1, 1, 2, 2, 3, 5, 10, 15, 30 or 1, 2 ,5, 5, 5, 6, 10, 12, 18, 30 or 1, 10, 15,18, 20, 24, 25, 25, 25, 28. However, there is no particular order required, it can be chosen to fit scheduling needs.
We have specified some time relations between the visits, but is is acutally more flexible than that. Choose any order and spacing within 30 days with a few vitis wintin a few days to study short time scales and a few further apart.

Diagnostics

(Visit 03) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronography with STIS or COS.

(Visit 03) Warning (Form): COS ACQ/PEAKXD exposure should be preceded by an ACQ/SEARCH exposure in the Visit.

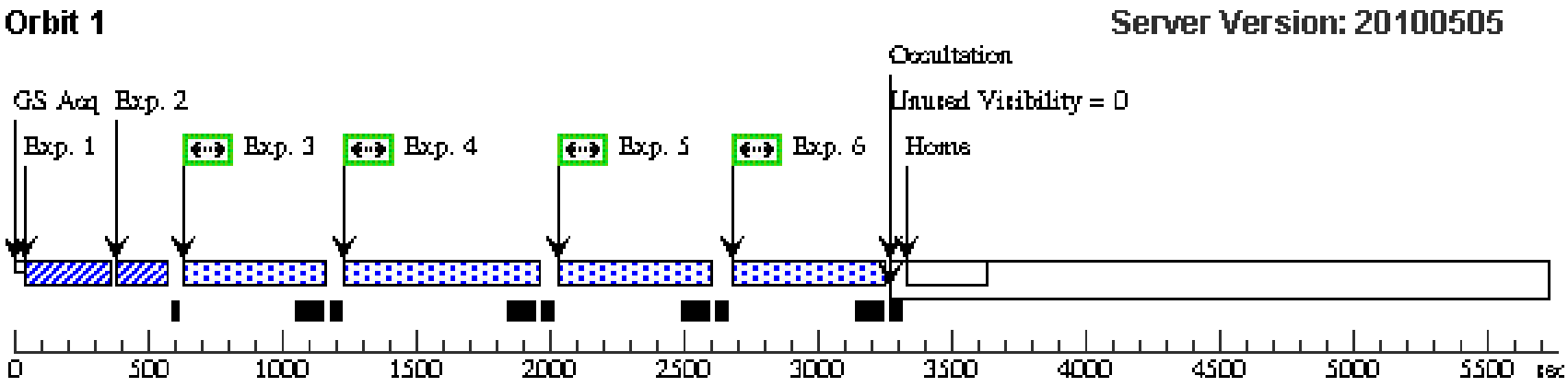
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9063 (165.4662763d) Dec: -34 42 17.02 (-34.70473d) Equinox: J2000	Proper Motion RA: -0.005425150137958488s/yr Proper Motion Dec: -0.01236"/yr Parallax: 0.01772" Epoch of Position: 2000 Radial Velocity: 13.4 km/sec	V=11.07	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) V-TW-HYA	COS/NUV, ACQ/PEAKXD, PSA	G285M 2676 A				16 Secs *[==>]*	 ***[1]***
2		(1) V-TW-HYA	COS/NUV, ACQ/PEAKD, PSA	G285M 2676 A	NUM-POS=5; STEP-SIZE=1.2			6 Secs *[==>]*	 ***[1]***
3	NUV	(1) V-TW-HYA	COS/NUV, TIME-TAG, PSA	G285M 2676 A	BUFFER-TIME=419			519 Secs *[==>]*	 ***[1]***
4	FUV FPPOS 2	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=2			520 Secs *[==>]*	 ***[1]***
5	FUV FP Pos 3	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; BUFFER-TIME=420			520 Secs *[==>]*	 ***[1]***
6	FUV FP POS 4	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=4			520 Secs *[==>]*	 ***[1]***

Orbit Structure



Visit

Proposal 12315, Visit 04, implementation Sat Oct 02 01:30:28 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: AFTER 01 BY 5 D TO 6 D; GROUP 04,01 WITHIN 30D

Comments: It is the purpose of this proposal to determine the time scale of the FUV line variations. Photometric and spectral variability has been observed over periods of years in the past and there is an ongoing program for three observations of TW~Hya (Proposal ID: 11608), spaced by a few months. Thus the new observations only need to cover the shorter time scale. This can be achieved by unevenly spacing out the visits over a few weeks with most visits within a short time frame e.g. with visits on days 1, 1, 1, 2, 2, 3, 5, 10, 15, 30 or 1, 2 ,5, 5, 5, 6, 10, 12, 18, 30 or 1, 10, 15,18, 20, 24, 25, 25, 25, 28. However, there is no particular order required, it can be chosen to fit scheduling needs.
We have specified some time relations between the visits, but is is acutally more flexible than that. Choose any order and spacing within 30 days with a few vitis wintin a few days to study short time scales and a few further apart.

Diagnostics

(Visit 04) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronography with STIS or COS.

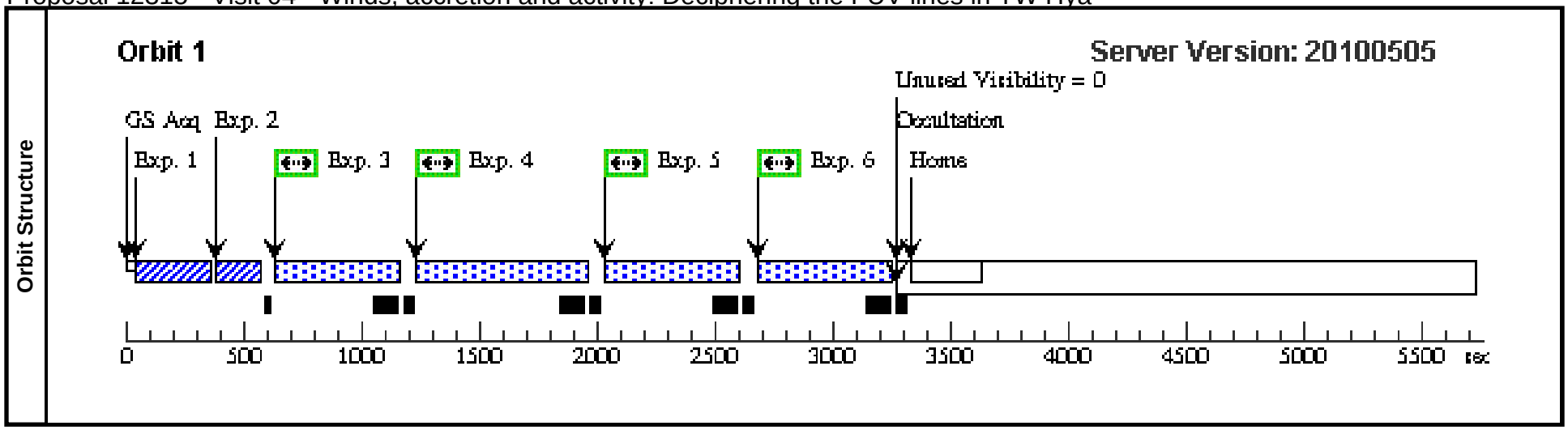
(Visit 04) Warning (Form): COS ACQ/PEAKXD exposure should be preceded by an ACQ/SEARCH exposure in the Visit.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9063 (165.4662763d) Dec: -34 42 17.02 (-34.70473d) Equinox: J2000	Proper Motion RA: -0.005425150137958488s/yr Proper Motion Dec: -0.01236"/yr Parallax: 0.01772" Epoch of Position: 2000 Radial Velocity: 13.4 km/sec	V=11.07	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) V-TW-HYA	COS/NUV, ACQ/PEAKXD, PSA	G285M 2676 A				16 Secs *[==>]*	 ***[1]***
2		(1) V-TW-HYA	COS/NUV, ACQ/PEAKD, PSA	G285M 2676 A	NUM-POS=5; STEP-SIZE=1.2			6 Secs *[==>]*	 ***[1]***
3	NUV	(1) V-TW-HYA	COS/NUV, TIME-TAG, PSA	G285M 2676 A	BUFFER-TIME=419			519 Secs *[==>]*	 ***[1]***
4	FUV FPPOS 2	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=2			520 Secs *[==>]*	 ***[1]***
5	FUV FP Pos 3	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; BUFFER-TIME=420			520 Secs *[==>]*	 ***[1]***
6	FUV FP POS 4	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=4			520 Secs *[==>]*	 ***[1]***


Orbit Structure
Orbit 1
Server Version: 20100505
Unused Visibility = 0
GS Acq
Exp. 2
Occultation
Exp. 1
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Home
0
500
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1500
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4500
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5500
sec

Visit

Proposal 12315, Visit 05, implementation Sat Oct 02 01:30:28 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: AFTER 01 BY 8 D TO 10 D; GROUP 05,01 WITHIN 30D

Comments: It is the purpose of this proposal to determine the time scale of the FUV line variations. Photometric and spectral variability has been observed over periods of years in the past and there is an ongoing program for three observations of TW~Hya (Proposal ID: 11608), spaced by a few months. Thus the new observations only need to cover the shorter time scale. This can be achieved by unevenly spacing out the visits over a few weeks with most visits within a short time frame e.g. with visits on days 1, 1, 1, 2, 2, 3, 5, 10, 15, 30 or 1, 2 ,5, 5, 5, 6, 10, 12, 18, 30 or 1, 10, 15,18, 20, 24, 25, 25, 25, 28. However, there is no particular order required, it can be chosen to fit scheduling needs.
We have specified some time relations between the visits, but is is acutally more flexible than that. Choose any order and spacing within 30 days with a few vitis wintin a few days to study short time scales and a few further apart.

Diagnostics

(Visit 05) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronography with STIS or COS.

(Visit 05) Warning (Form): COS ACQ/PEAKXD exposure should be preceded by an ACQ/SEARCH exposure in the Visit.

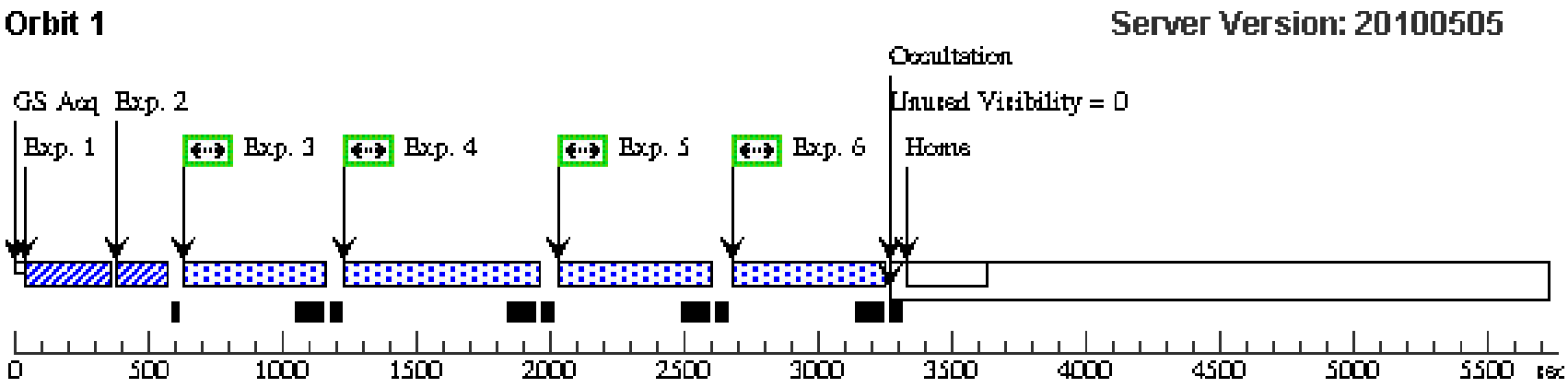
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9063 (165.4662763d) Dec: -34 42 17.02 (-34.70473d) Equinox: J2000	Proper Motion RA: -0.005425150137958488s/yr Proper Motion Dec: -0.01236"/yr Parallax: 0.01772" Epoch of Position: 2000 Radial Velocity: 13.4 km/sec	V=11.07	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) V-TW-HYA	COS/NUV, ACQ/PEAKXD, PSA	G285M 2676 A				16 Secs *[==>]*	 ***[1]***
2		(1) V-TW-HYA	COS/NUV, ACQ/PEAKD, PSA	G285M 2676 A	NUM-POS=5; STEP-SIZE=1.2			6 Secs *[==>]*	 ***[1]***
3	NUV	(1) V-TW-HYA	COS/NUV, TIME-TAG, PSA	G285M 2676 A	BUFFER-TIME=419			519 Secs *[==>]*	 ***[1]***
4	FUV FPPOS 2	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=2			520 Secs *[==>]*	 ***[1]***
5	FUV FP Pos 3	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; BUFFER-TIME=420			520 Secs *[==>]*	 ***[1]***
6	FUV FP POS 4	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=4			520 Secs *[==>]*	 ***[1]***

Orbit Structure



Visit

Proposal 12315, Visit 06, implementation Sat Oct 02 01:30:28 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: AFTER 01 BY 14 D TO 16 D; GROUP 06,01 WITHIN 30D

Comments: It is the purpose of this proposal to determine the time scale of the FUV line variations. Photometric and spectral variability has been observed over periods of years in the past and there is an ongoing program for three observations of TW~Hya (Proposal ID: 11608), spaced by a few months. Thus the new observations only need to cover the shorter time scale. This can be achieved by unevenly spacing out the visits over a few weeks with most visits within a short time frame e.g. with visits on days 1, 1, 1, 2, 2, 3, 5, 10, 15, 30 or 1, 2 ,5, 5, 5, 6, 10, 12, 18, 30 or 1, 10, 15,18, 20, 24, 25, 25, 25, 28. However, there is no particular order required, it can be chosen to fit scheduling needs.
We have specified some time relations between the visits, but is is acutally more flexible than that. Choose any order and spacing within 30 days with a few vitis wintin a few days to study short time scales and a few further apart.

Diagnostics

(Visit 06) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronography with STIS or COS.

(Visit 06) Warning (Form): COS ACQ/PEAKXD exposure should be preceded by an ACQ/SEARCH exposure in the Visit.

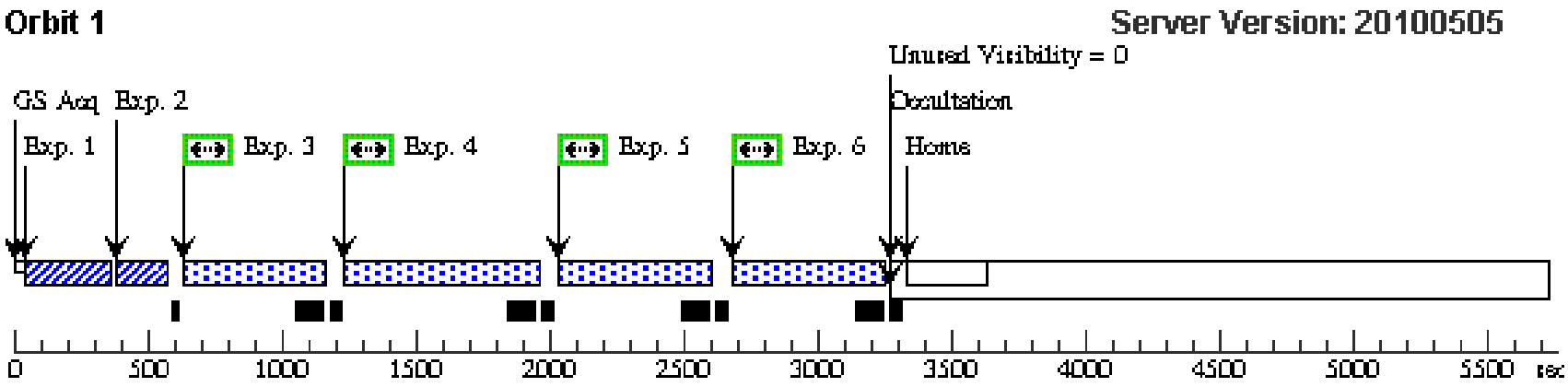
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9063 (165.4662763d) Dec: -34 42 17.02 (-34.70473d) Equinox: J2000	Proper Motion RA: -0.005425150137958488s/yr Proper Motion Dec: -0.01236"/yr Parallax: 0.01772" Epoch of Position: 2000 Radial Velocity: 13.4 km/sec	V=11.07	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) V-TW-HYA	COS/NUV, ACQ/PEAKXD, PSA	G285M 2676 A				16 Secs *[==>]*	 ***[1]***
2		(1) V-TW-HYA	COS/NUV, ACQ/PEAKD, PSA	G285M 2676 A	NUM-POS=5; STEP-SIZE=1.2			6 Secs *[==>]*	 ***[1]***
3	NUV	(1) V-TW-HYA	COS/NUV, TIME-TAG, PSA	G285M 2676 A	BUFFER-TIME=419			519 Secs *[==>]*	 ***[1]***
4	FUV FPPOS 2	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=2			520 Secs *[==>]*	 ***[1]***
5	FUV FP Pos 3	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; BUFFER-TIME=420			520 Secs *[==>]*	 ***[1]***
6	FUV FP POS 4	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=4			520 Secs *[==>]*	 ***[1]***

Orbit Structure



Visit

Proposal 12315, Visit 07, implementation Sat Oct 02 01:30:29 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: AFTER 01 BY 18 D TO 22 D; GROUP 07,01 WITHIN 30D

Comments: It is the purpose of this proposal to determine the time scale of the FUV line variations. Photometric and spectral variability has been observed over periods of years in the past and there is an ongoing program for three observations of TW~Hya (Proposal ID: 11608), spaced by a few months. Thus the new observations only need to cover the shorter time scale. This can be achieved by unevenly spacing out the visits over a few weeks with most visits within a short time frame e.g. with visits on days 1, 1, 1, 2, 2, 3, 5, 10, 15, 30 or 1, 2 ,5, 5, 5, 6, 10, 12, 18, 30 or 1, 10, 15,18, 20, 24, 25, 25, 25, 28. However, there is no particular order required, it can be chosen to fit scheduling needs.
We have specified some time relations between the visits, but is is acutally more flexible than that. Choose any order and spacing within 30 days with a few vitis wintin a few days to study short time scales and a few further apart.

Diagnostics

(Visit 07) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronography with STIS or COS.

(Visit 07) Warning (Form): COS ACQ/PEAKXD exposure should be preceded by an ACQ/SEARCH exposure in the Visit.

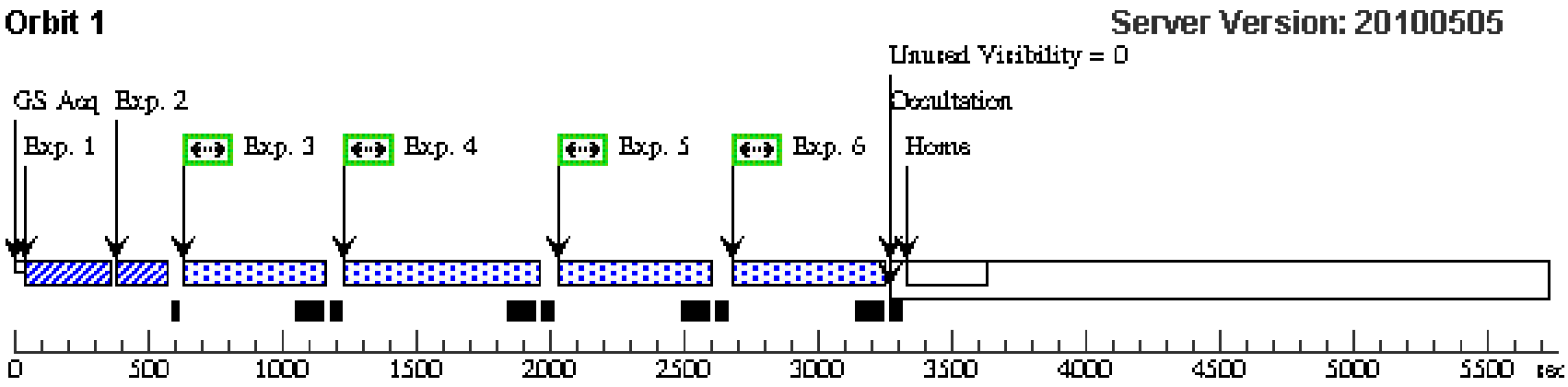
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9063 (165.4662763d) Dec: -34 42 17.02 (-34.70473d) Equinox: J2000	Proper Motion RA: -0.005425150137958488s/yr Proper Motion Dec: -0.01236"/yr Parallax: 0.01772" Epoch of Position: 2000 Radial Velocity: 13.4 km/sec	V=11.07	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) V-TW-HYA	COS/NUV, ACQ/PEAKXD, PSA	G285M 2676 A				16 Secs *[==>]*	 ***[1]***
2		(1) V-TW-HYA	COS/NUV, ACQ/PEAKD, PSA	G285M 2676 A	NUM-POS=5; STEP-SIZE=1.2			6 Secs *[==>]*	 ***[1]***
3	NUV	(1) V-TW-HYA	COS/NUV, TIME-TAG, PSA	G285M 2676 A	BUFFER-TIME=419			519 Secs *[==>]*	 ***[1]***
4	FUV FPPOS 2	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=2			520 Secs *[==>]*	 ***[1]***
5	FUV FP Pos 3	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; BUFFER-TIME=420			520 Secs *[==>]*	 ***[1]***
6	FUV FP POS 4	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=4			520 Secs *[==>]*	 ***[1]***

Orbit Structure



Visit

Proposal 12315, Visit 08, implementation Sat Oct 02 01:30:29 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: AFTER 01 BY 25 D TO 30 D; GROUP 08,01 WITHIN 30D

Comments: It is the purpose of this proposal to determine the time scale of the FUV line variations. Photometric and spectral variability has been observed over periods of years in the past and there is an ongoing program for three observations of TW~Hya (Proposal ID: 11608), spaced by a few months. Thus the new observations only need to cover the shorter time scale. This can be achieved by unevenly spacing out the visits over a few weeks with most visits within a short time frame e.g. with visits on days 1, 1, 1, 2, 2, 3, 5, 10, 15, 30 or 1, 2 ,5, 5, 5, 6, 10, 12, 18, 30 or 1, 10, 15,18, 20, 24, 25, 25, 25, 28. However, there is no particular order required, it can be chosen to fit scheduling needs.
We have specified some time relations between the visits, but is is acutally more flexible than that. Choose any order and spacing within 30 days with a few vitis wintin a few days to study short time scales and a few further apart.

Diagnostics

(Visit 08) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronography with STIS or COS.

(Visit 08) Warning (Form): COS ACQ/PEAKXD exposure should be preceded by an ACQ/SEARCH exposure in the Visit.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9063 (165.4662763d) Dec: -34 42 17.02 (-34.70473d) Equinox: J2000	Proper Motion RA: -0.005425150137958488s/yr Proper Motion Dec: -0.01236"/yr Parallax: 0.01772" Epoch of Position: 2000 Radial Velocity: 13.4 km/sec	V=11.07	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) V-TW-HYA	COS/NUV, ACQ/PEAKXD, PSA	G285M 2676 A				16 Secs *[==>]*	 ***[1]***
2		(1) V-TW-HYA	COS/NUV, ACQ/PEAKD, PSA	G285M 2676 A	NUM-POS=5; STEP-SIZE=1.2			6 Secs *[==>]*	 ***[1]***
3	NUV	(1) V-TW-HYA	COS/NUV, TIME-TAG, PSA	G285M 2676 A	BUFFER-TIME=419			519 Secs *[==>]*	 ***[1]***
4	FUV FPPOS 2	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=2			520 Secs *[==>]*	 ***[1]***
5	FUV FP Pos 3	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; BUFFER-TIME=420			520 Secs *[==>]*	 ***[1]***
6	FUV FP POS 4	(1) V-TW-HYA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=420; FP-POS=4			520 Secs *[==>]*	 ***[1]***

Orbit Structure