12312 - Hubble Investigation of 103P/Hartley 2 in Support of NASA's DIXI Mission

Cycle: 18, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. Harold A. Weaver (PI)	**The Johns Hopkins University Applied Physics Laboratory**	**hal.weaver@jhuapl.edu**
Dr. Michael F. A'Hearn (CoI)	University of Maryland	ma@astro.umd.edu
Dr. Neil Dello Russo (CoI)	The Johns Hopkins University Applied Physics Laboratory	neil.dello.russo@jhuapl.edu
Dr. Paul D. Feldman (CoI)	The Johns Hopkins University	pdf@pha.jhu.edu
Dr. S. Alan Stern (CoI)	Southwest Research Institute	astern@swri.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) 103P-HARTLEY-2	COS/FUV COS/NUV	1	16-Nov-2010 21:28:35.0	yes
02	(1) 103P-HARTLEY-2	COS/NUV	1	16-Nov-2010 21:28:45.0	yes
03	(1) 103P-HARTLEY-2	STIS/CCD	1	16-Nov-2010 21:28:54.0	yes
04	(1) 103P-HARTLEY-2	COS/FUV COS/NUV	1	16-Nov-2010 21:29:06.0	yes
05	(1) 103P-HARTLEY-2	COS/NUV	1	16-Nov-2010 21:29:15.0	yes
06	(2) 103P-HARTLEY-2-B	COS/FUV COS/NUV	1	16-Nov-2010 21:29:21.0	yes
07	(2) 103P-HARTLEY-2-B	COS/NUV	1	16-Nov-2010 21:29:28.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
08	(2) 103P-HARTLEY-2-B	STIS/CCD	1	16-Nov-2010 21:29:35.0	yes
09	(2) 103P-HARTLEY-2-B	COS/FUV COS/NUV	1	16-Nov-2010 21:29:43.0	yes
10	(2) 103P-HARTLEY-2-B	COS/NUV	1	16-Nov-2010 21:29:50.0	yes
11	(3) 103P-HARTLEY-2-C	COS/FUV COS/NUV	1	16-Nov-2010 21:29:58.0	yes
12	(3) 103P-HARTLEY-2-C	COS/NUV	1	16-Nov-2010 21:30:08.0	yes
13	(3) 103P-HARTLEY-2-C	STIS/CCD STIS/NUV-MAMA	1	16-Nov-2010 21:30:19.0	yes
14	(3) 103P-HARTLEY-2-C	COS/FUV COS/NUV	1	16-Nov-2010 21:30:30.0	yes
15	(3) 103P-HARTLEY-2-C	COS/NUV	1	16-Nov-2010 21:30:38.0	yes
16	(1) 103P-HARTLEY-2	COS/FUV COS/NUV	1	16-Nov-2010 21:30:44.0	yes
17	(1) 103P-HARTLEY-2	COS/NUV	1	16-Nov-2010 21:30:51.0	yes
18	(1) 103P-HARTLEY-2	STIS/CCD	1	16-Nov-2010 21:30:58.0	yes
19	(1) 103P-HARTLEY-2	COS/FUV COS/NUV	1	16-Nov-2010 21:31:06.0	yes
20	(1) 103P-HARTLEY-2	COS/NUV	1	16-Nov-2010 21:31:13.0	yes

20 Total Orbits Used

ABSTRACT

Comet 103P/Hartley 2 is a small but highly active comet that will pass unusually close to the Earth (0.12 AU) during the fall of 2010, when it will also be visited by NASA's DIXI spacecraft. We propose a 15-orbit spectroscopic observing campaign with Hubble, comprised of three 5-orbit visits spanning a 2-month period, to measure the abundances of several

key volatiles (CO, CO2, S2) and their possible seasonal variations. CO has not yet been detected in 103P, and Hubble may be the only facility capable of doing it. Hubble is also uniquely capable of providing confirmation of DIXI's measurements of the CO2 abundance. The DIXI flyby is an exceptional opportunity to study the nature of comets, and Hubble will contribute important and unique data to the international campaign supporting this mission.

OBSERVING DESCRIPTION

We plan to observe 103P/Hartley 2 during three different epochs: on the same day as the NASA DIXI mission's closest approach (CA) to the comet (on 4-Nov-2010), roughly 1 month before CA, and roughly 1 month after CA. During each epoch, we will execute exactly the same 5-orbit sequence of observations:

Orbit #1 --> COS/FUV G160M

Orbit #2 --> COS/NUV G185M

Orbit #3 --> STIS/CCD G230LB + STIS/CCD image with F28x50LP

Orbit #4 --> COS/FUV G160M

Orbit #5 --> COS/NUV G185M

Finding adequate guide star coverage for this fast-moving target is going to be a major challenge for this program, and GS selection may end up dictating where these observations are scheduled.

Visit

Proposal 12312, Visit 01, withdrawn Wed Nov 17 02:31:20 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: BETWEEN 15-SEP-2010:00:00:00 AND 24-OCT-2010:00:00:00; SEQ 01,02,03,04,05 WITHIN 5.5 Orbits

Solar System Targets

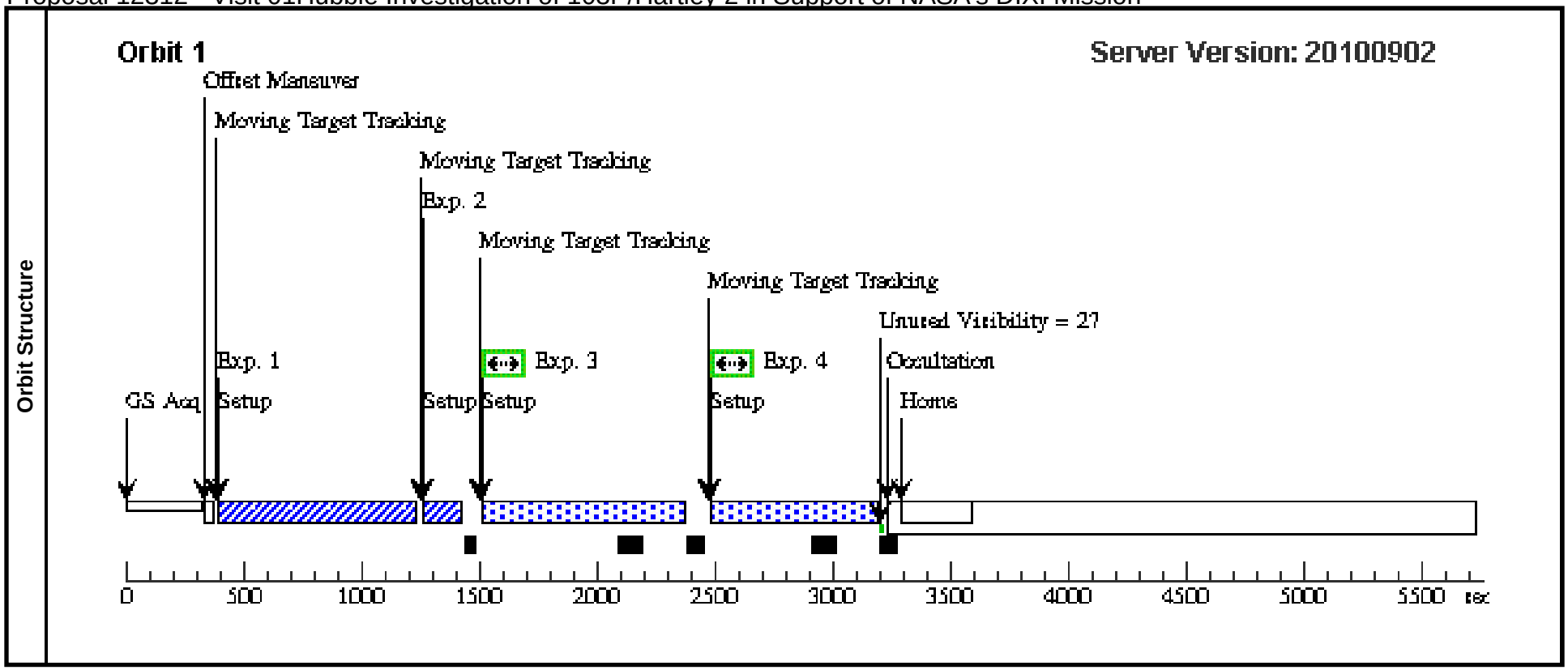
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	103P-HARTLEY-2	TYPE=COMET,Q=1.0586833307917800,E=0.6951398461582717,I=13.61732081969205,O=219.76129504028940,W=181.19735624925000,T=28-OCT-2010:06:10:23,EQUINOX=J2000,EPOCH=25-SEP-2010:00:00:00,A1=1.80911924294E-09,A2=-3.1418447208E-11,A3=4.8989105707E-10				EARTH

Comments: Currently using JPL #50 reference ephemeris. This should be accurate enough for planning the Hubble observations this fall.

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) 103P-HARTLEY-2	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART01; GS ACQ SCENARIO BASE1B3		30 Secs *[==>]*	*[1]*
2		(1) 103P-HARTLEY-2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART01		30 Secs *[==>]*	*[1]*
3		(1) 103P-HARTLEY-2	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=2; EXTENDED=YES	REQ EPHEM CORR HART01		500 Secs *[==>655.0 Secs]*	*[1]*
4		(1) 103P-HARTLEY-2	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=3; EXTENDED=YES	REQ EPHEM CORR HART01		500 Secs *[==>655.0 Secs]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 27
Exp. 1
Exp. 3
Exp. 4
Occultation
GS Acq
Setup
Setup
Setup
Setup
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12312, Visit 02, withdrawn Wed Nov 17 02:31:22 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV

Special Requirements: (none)

Solar System Targets

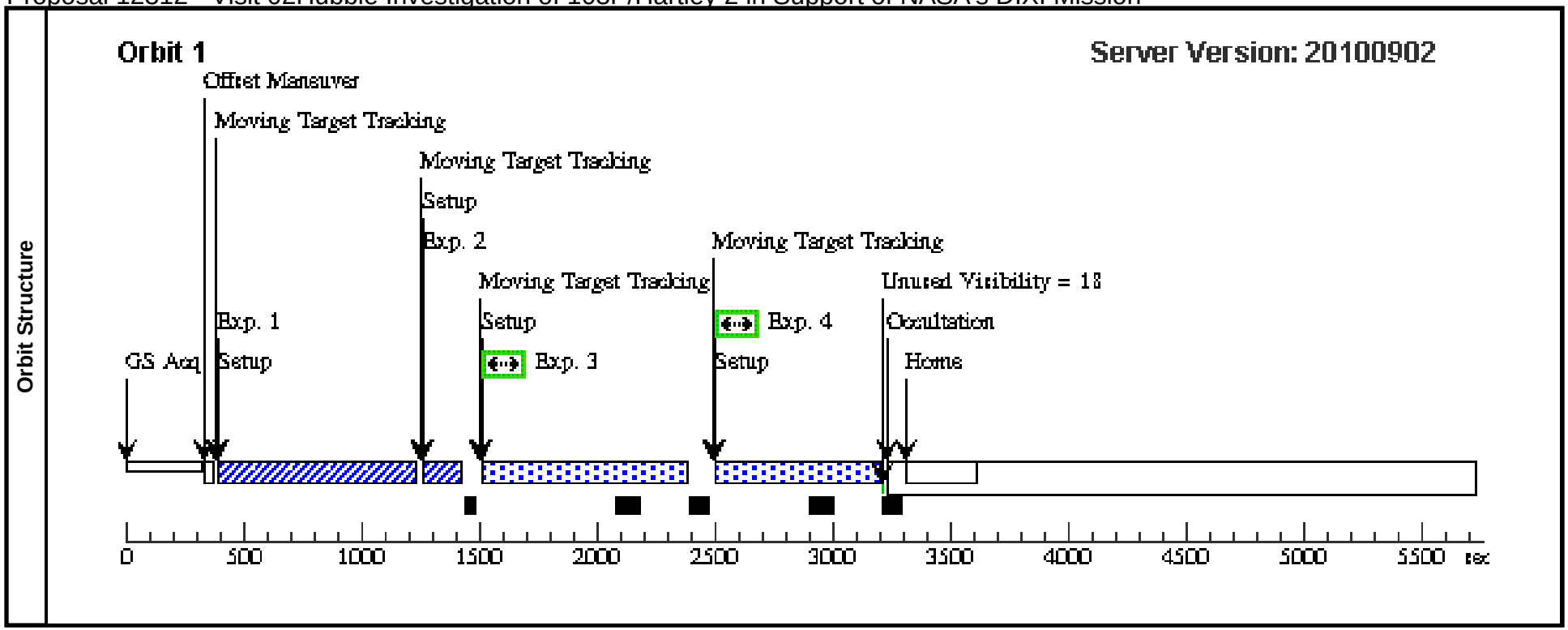
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	103P-HARTLEY-2	TYPE=COMET,Q=1.0586833307917800,E=0.6951398461582717,I=13.61732081969205,O=219.76129504028940,W=181.19735624925000,T=28-OCT-2010:06:10:23,EQUINOX=J2000,EPOCH=25-SEP-2010:00:00:00,A1=1.80911924294E-09,A2=-3.1418447208E-11,A3=4.8989105707E-10				EARTH

Comments: Currently using JPL #50 reference ephemeris. This should be accurate enough for planning the Hubble observations this fall.

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) 103P-HARTLEY-2	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART02; GS ACQ SCENARIO BASE1B3		30 Secs *[==>]*	*[1]*
2		(1) 103P-HARTLEY-2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART02		30 Secs *[==>]*	*[1]*
3		(1) 103P-HARTLEY-2	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=2	REQ EPHEM CORR HART02		500 Secs *[==>682.0 Secs]*	*[1]*
4		(1) 103P-HARTLEY-2	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=3	REQ EPHEM CORR HART02		500 Secs *[==>682.0 Secs]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Setup
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 18
Exp. 1
Setup
Exp. 4
Occultation
GS Acq
Setup
Exp. 3
Setup
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12312, Visit 03, withdrawn Wed Nov 17 02:31:23 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: (none)

Solar System Targets

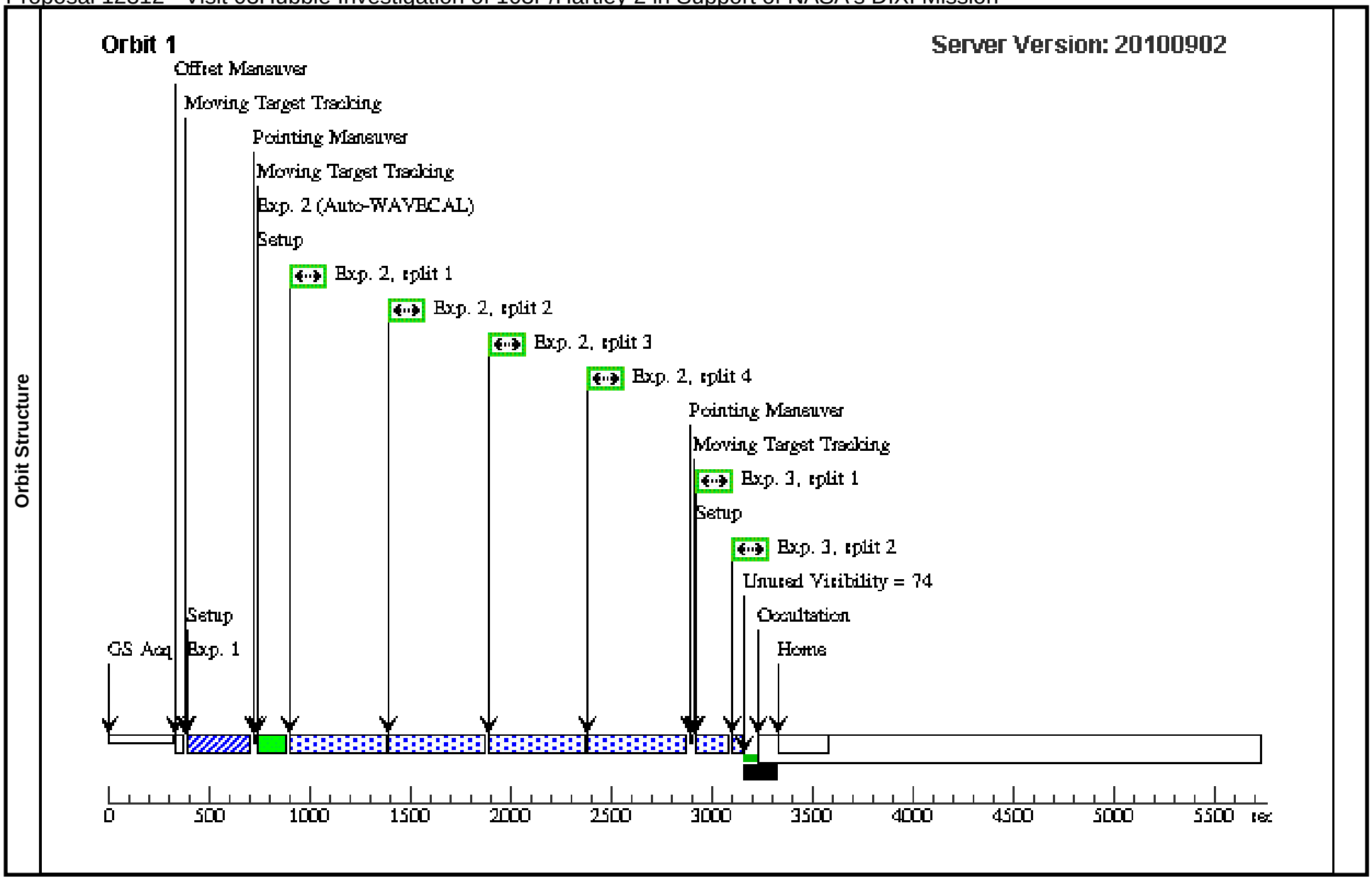
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	103P-HARTLEY-2	TYPE=COMET,Q=1.0586833307917800,E=0.6951398461582717,I=13.61732081969205,O=219.76129504028940,W=181.19735624925000,T=28-OCT-2010:06:10:23,EQUINOX=J2000,EPOCH=25-SEP-2010:00:00:00,A1=1.80911924294E-09,A2=-3.1418447208E-11,A3=4.8989105707E-10				EARTH

Comments: Currently using JPL #50 reference ephemeris. This should be accurate enough for planning the Hubble observations this fall.

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) 103P-HARTLEY-2	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=POINT	REQ EPHEM CORR HART03; GS ACQ SCENARIO BASE1B3		10 Secs *[==>]*	*[1]*
2		(1) 103P-HARTLEY-2	STIS/CCD, ACCUM, 52X0.2	G230LB 2375 A	CR-SPLIT=4	REQ EPHEM CORR HART03		1800 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3		(1) 103P-HARTLEY-2	STIS/CCD, ACCUM, F28X50LP	MIRROR	CR-SPLIT=2	REQ EPHEM CORR HART03		20 Secs *[==>(Split 1)]* *[==>(Split 2)]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
Offset Maneuver
Moving Target Tracking
Pointing Maneuver
Moving Target Tracking
Exp. 2 (Auto-WAVECAL)
Setup
Exp. 2, split 1
Exp. 2, split 2
Exp. 2, split 3
Exp. 2, split 4
Pointing Maneuver
Moving Target Tracking
Exp. 3, split 1
Setup
Exp. 3, split 2
Unused Visibility = 74
Occultation
Home
Setup
GS Acq
Exp. 1
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12312, Visit 04, withdrawn Wed Nov 17 02:31:24 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Solar System Targets

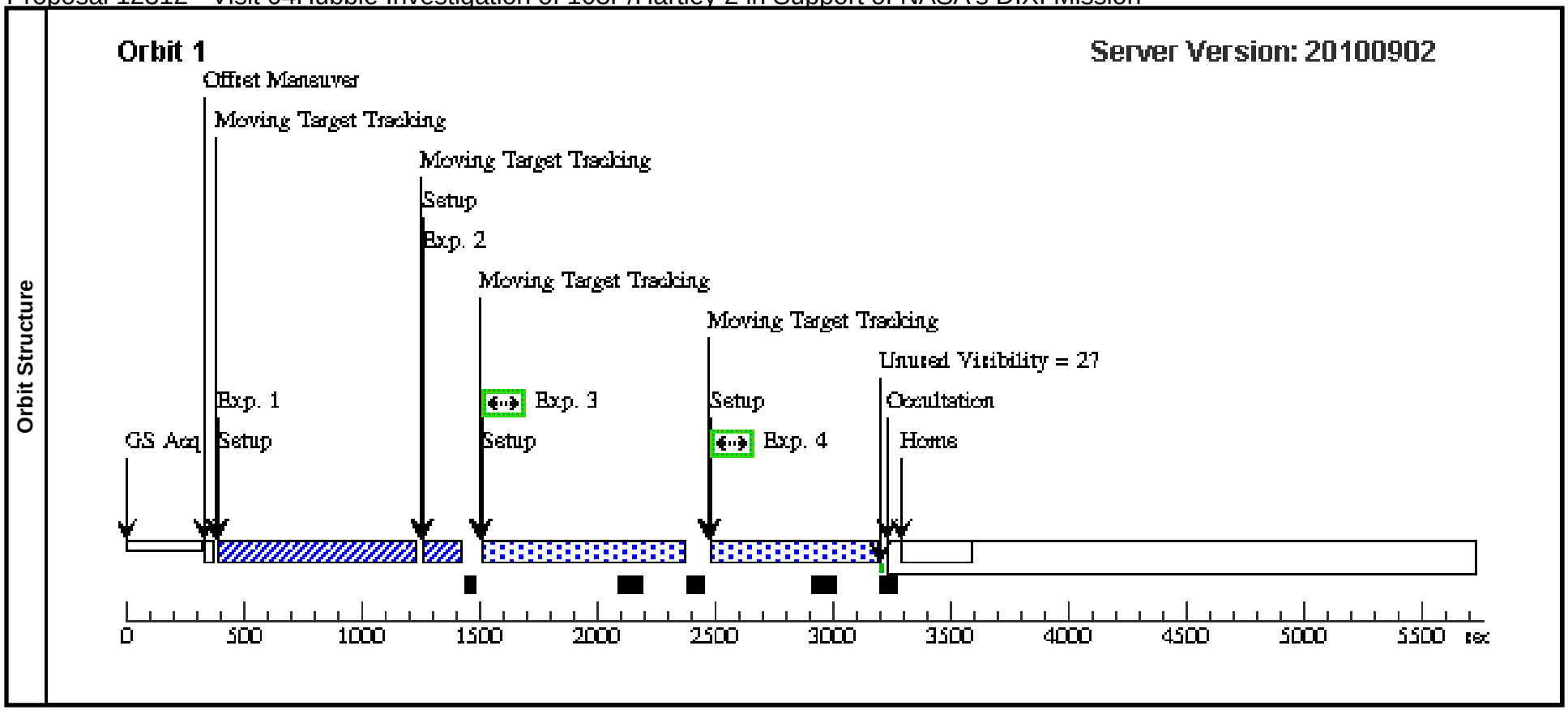
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	103P-HARTLEY-2	TYPE=COMET,Q=1.0586833307917800,E=0.6951398461582717,I=13.61732081969205,O=219.76129504028940,W=181.19735624925000,T=28-OCT-2010:06:10:23,EQUINOX=J2000,EPOCH=25-SEP-2010:00:00:00,A1=1.80911924294E-09,A2=-3.1418447208E-11,A3=4.8989105707E-10				EARTH

Comments: Currently using JPL #50 reference ephemeris. This should be accurate enough for planning the Hubble observations this fall.

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) 103P-HARTLEY-2	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART04; GS ACQ SCENARIO BASE1B3		30 Secs *[==>]*	*[1]*
2		(1) 103P-HARTLEY-2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART04		30 Secs *[==>]*	*[1]*
3		(1) 103P-HARTLEY-2	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=2; EXTENDED=YES	REQ EPHEM CORR HART04		500 Secs *[==>655.0 Secs]*	*[1]*
4		(1) 103P-HARTLEY-2	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=3; EXTENDED=YES	REQ EPHEM CORR HART04		500 Secs *[==>655.0 Secs]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Setup
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 27
Exp. 1
Exp. 3
Setup
Occultation
GS Acq
Setup
Setup
Exp. 4
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12312, Visit 05, withdrawn Wed Nov 17 02:31:24 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV

Special Requirements: (none)

Solar System Targets

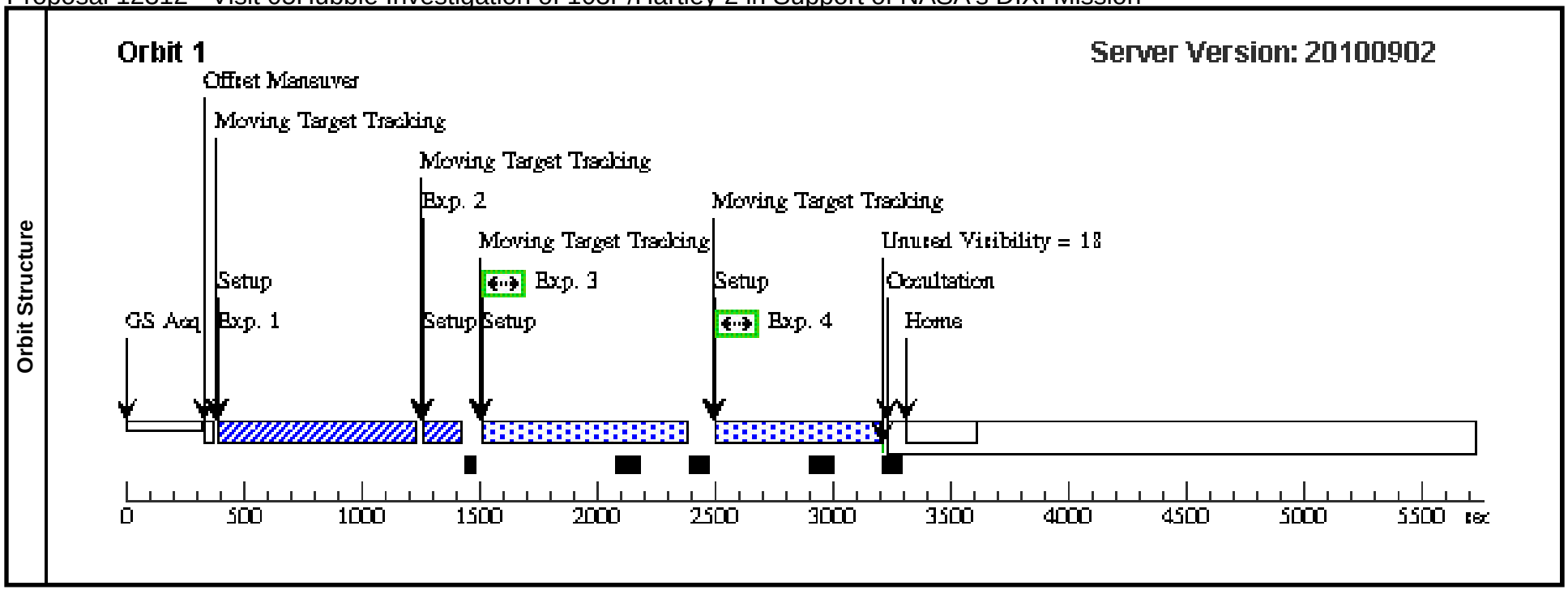
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	103P-HARTLEY-2	TYPE=COMET,Q=1.0586833307917800,E=0.6951398461582717,I=13.61732081969205,O=219.76129504028940,W=181.19735624925000,T=28-OCT-2010:06:10:23,EQUINOX=J2000,EPOCH=25-SEP-2010:00:00:00,A1=1.80911924294E-09,A2=-3.1418447208E-11,A3=4.8989105707E-10				EARTH

Comments: Currently using JPL #50 reference ephemeris. This should be accurate enough for planning the Hubble observations this fall.

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) 103P-HARTLEY-2	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART05; GS ACQ SCENARIO BASE1B3		30 Secs *[==>]*	*[1]*
2		(1) 103P-HARTLEY-2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART05		30 Secs *[==>]*	*[1]*
3		(1) 103P-HARTLEY-2	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=2	REQ EPHEM CORR HART05		500 Secs *[==>682.0 Secs]*	*[1]*
4		(1) 103P-HARTLEY-2	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=3	REQ EPHEM CORR HART05		500 Secs *[==>682.0 Secs]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 18
Setup
Exp. 3
Setup
Occultation
GS Acq
Exp. 1
Setup
Setup
Exp. 4
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12312, Visit 06, completed Wed Nov 17 02:31:25 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: BETWEEN 04-NOV-2010:00:00:00 AND 05-NOV-2010:00:00:00

Solar System Targets

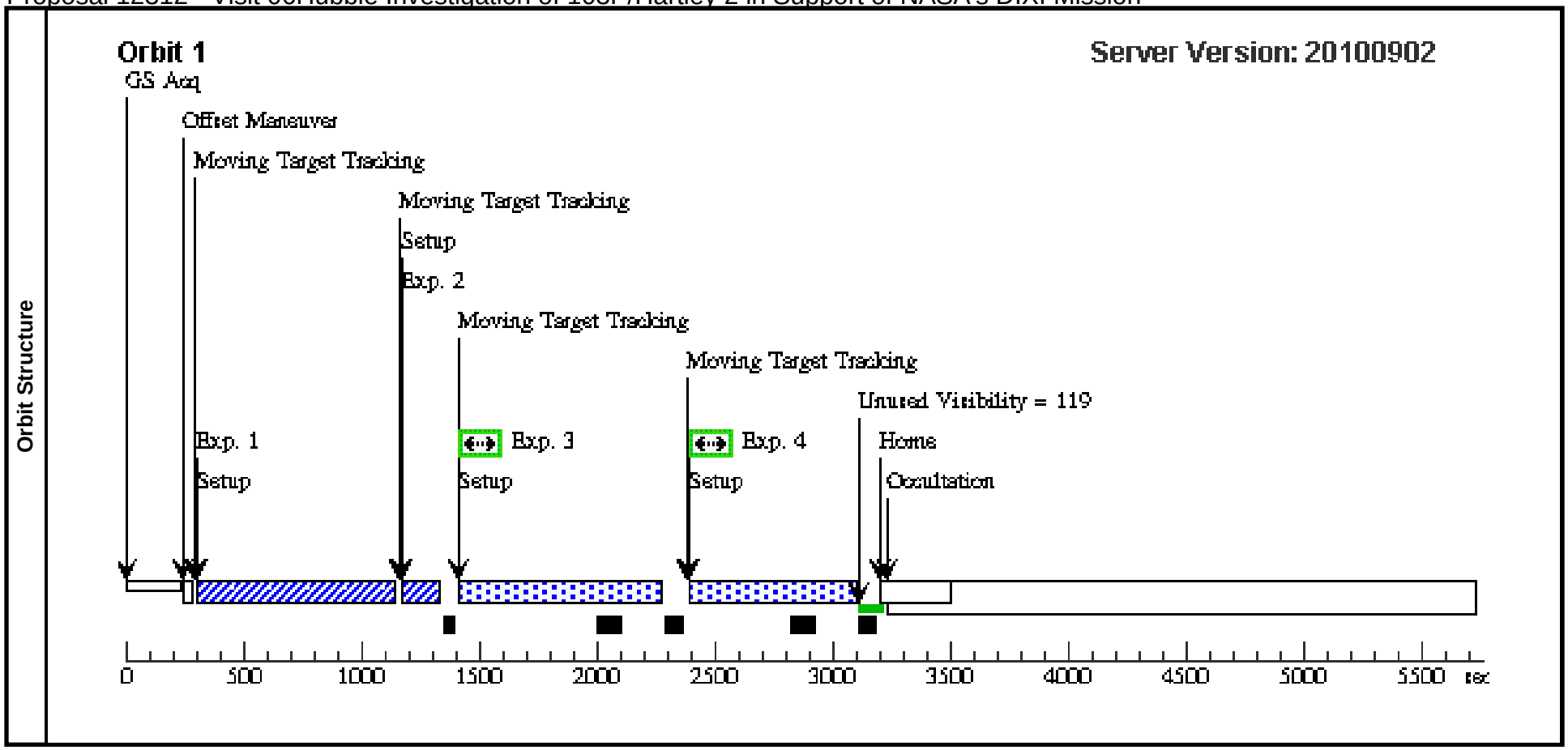
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(2)	103P-HARTLEY-2-B	TYPE=COMET,Q=1.058676120124298,E=0.6949802846326966,I=13.61928878420733,O=219.7596943092058,W=181.2071038939688,T=28-OCT-2010:06:20:57,EQUINOX=J2000,EPOCH=04-NOV-2010:00:00:00,A1=6.028426008179833E-10,A2=-5.704220041383923E-11,A3=2.354554128002155E-09				EARTH

Comments: This is the JPL #122 reference ephemeris and should be accurate enough for planning the Hubble observations on Nov4, 2010

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) 103P-HARTLEY-2-B	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART06; GS ACQ SCENARIO ONEB1B3		30 Secs *[==>]*	*[1]*
2		(2) 103P-HARTLEY-2-B	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART06		30 Secs *[==>]*	*[1]*
3		(2) 103P-HARTLEY-2-B	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=2; EXTENDED=YES	REQ EPHEM CORR HART06		500 Secs *[==>655.0 Secs]*	*[1]*
4		(2) 103P-HARTLEY-2-B	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=3; EXTENDED=YES	REQ EPHEM CORR HART06		500 Secs *[==>655.0 Secs]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Setup
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 119
Exp. 1
Setup
Exp. 3
Setup
Exp. 4
Setup
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Proposal 12312 - Visit 07Hubble Investigation of 103P/Hartley 2 in Support of NASA's DIXI Mission

Visit

Proposal 12312, Visit 07, completed Wed Nov 17 02:31:26 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV

Special Requirements: (none)

Solar System Targets

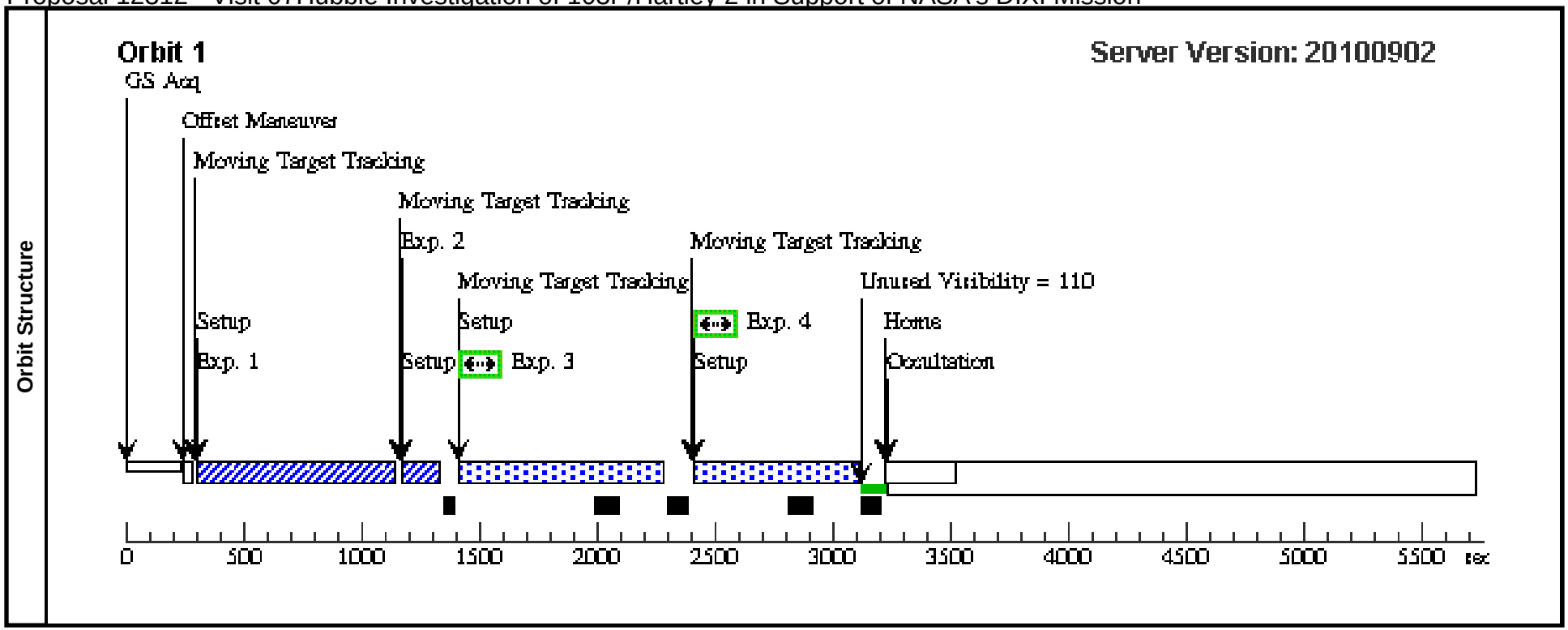
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(2)	103P-HARTLEY-2-B	TYPE=COMET,Q=1.058676120124298,E=0.6949802846326966,I=13.61928878420733,O=219.7596943092058,W=181.2071038939688,T=28-OCT-2010:06:20:57,EQUINOX=J2000,EPOCH=04-NOV-2010:00:00:00,A1=6.028426008179833E-10,A2=-5.704220041383923E-11,A3=2.354554128002155E-09				EARTH

Comments: This is the JPL #122 reference ephemeris and should be accurate enough for planning the Hubble observations on Nov4, 2010

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) 103P-HARTLEY-2-B	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART07; GS ACQ SCENARIO ONEB1B3		30 Secs *[==>]*	*[1]*
2		(2) 103P-HARTLEY-2-B	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART07		30 Secs *[==>]*	*[1]*
3		(2) 103P-HARTLEY-2-B	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=2	REQ EPHEM CORR HART07		500 Secs *[==>682.0 Secs]*	*[1]*
4		(2) 103P-HARTLEY-2-B	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=3	REQ EPHEM CORR HART07		500 Secs *[==>682.0 Secs]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 110
Setup
Exp. 1
Setup
Setup
Exp. 3
Exp. 4
Setup
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Proposal 12312 - Visit 08Hubble Investigation of 103P/Hartley 2 in Support of NASA's DIXI Mission

Visit

Proposal 12312, Visit 08, completed Wed Nov 17 02:31:27 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: (none)

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(2)	103P-HARTLEY-2-B	TYPE=COMET,Q=1.058676120124298,E=0.6949802846326966,I=13.61928878420733,O=219.7596943092058,W=181.2071038939688,T=28-OCT-2010:06:20:57,EQUINOX=J2000,EPOCH=04-NOV-2010:00:00:00,A1=6.028426008179833E-10,A2=-5.704220041383923E-11,A3=2.354554128002155E-09				EARTH

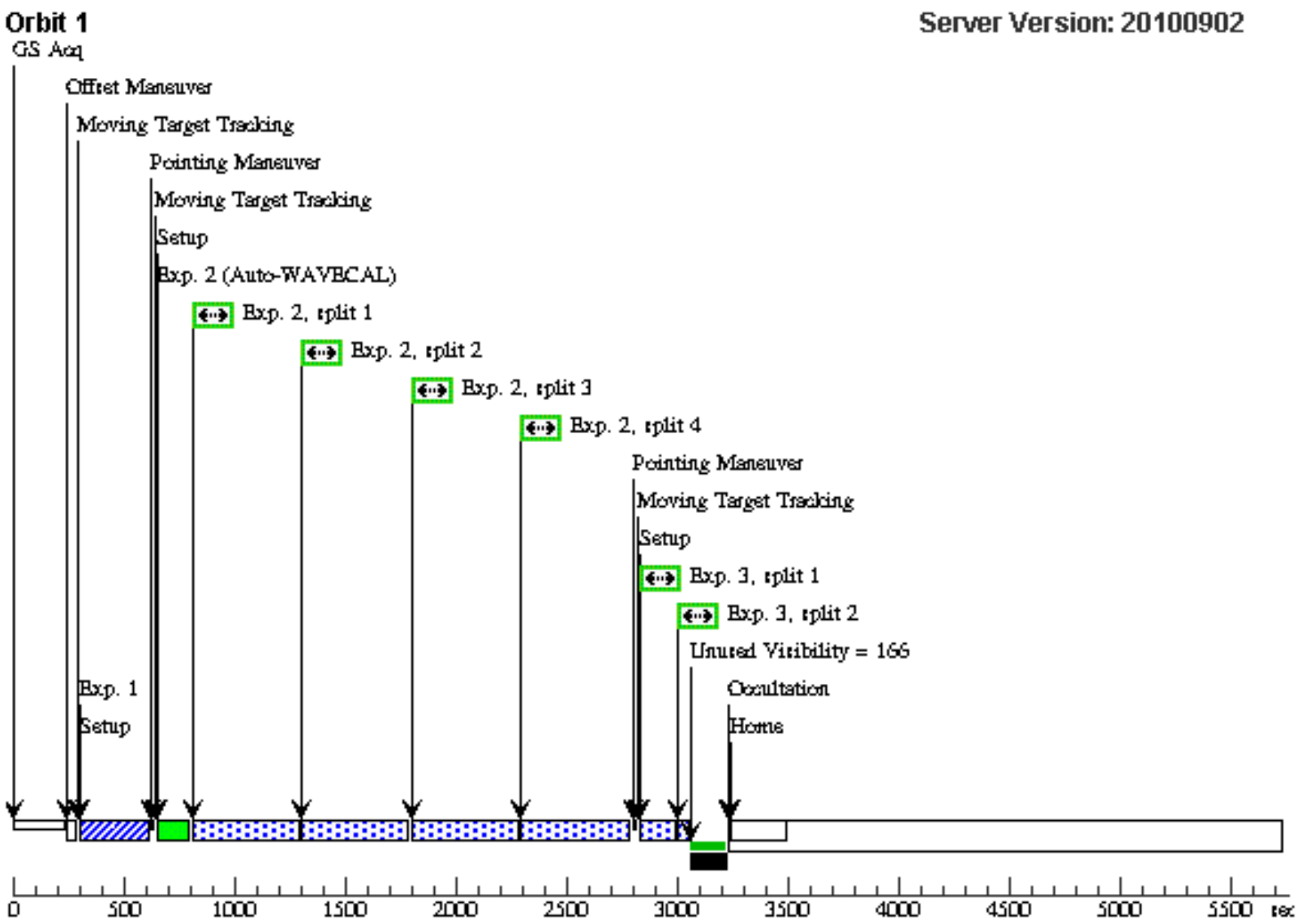
Comments: This is the JPL #122 reference ephemeris and should be accurate enough for planning the Hubble observations on Nov4, 2010

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) 103P-HARTLEY-2-B	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=POINT	REQ EPHEM CORR HART08; GS ACQ SCENARIO ONEB1B3		10 Secs *[==>]*	*[1]*
2		(2) 103P-HARTLEY-2-B	STIS/CCD, ACCUM, 52X0.2	G230LB 2375 A	CR-SPLIT=4	REQ EPHEM CORR HART08		1800 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3		(2) 103P-HARTLEY-2-B	STIS/CCD, ACCUM, F28X50LP	MIRROR	CR-SPLIT=2	REQ EPHEM CORR HART08		20 Secs *[==>(Split 1)]* *[==>(Split 2)]*	*[1]*

Orbit Structure



Visit

Proposal 12312, Visit 09, completed Wed Nov 17 02:31:27 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Solar System Targets

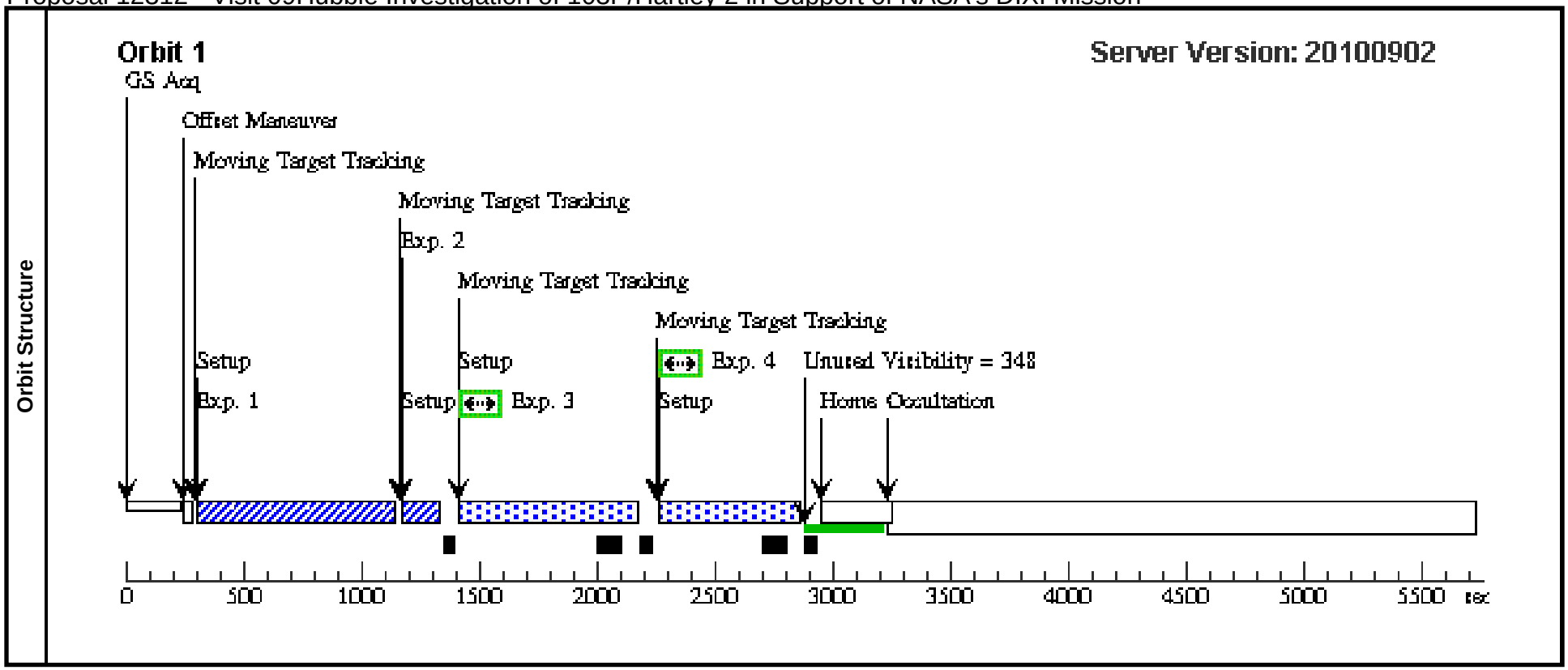
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(2)	103P-HARTLEY-2-B	TYPE=COMET,Q=1.058676120124298,E=0.6949802846326966,I=13.61928878420733,O=219.7596943092058,W=181.2071038939688,T=28-OCT-2010:06:20:57,EQUINOX=J2000,EPOCH=04-NOV-2010:00:00:00,A1=6.028426008179833E-10,A2=-5.704220041383923E-11,A3=2.354554128002155E-09				EARTH

Comments: This is the JPL #122 reference ephemeris and should be accurate enough for planning the Hubble observations on Nov4, 2010

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) 103P-HARTLEY-2-B	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART09; GS ACQ SCENARIO ONEB1B3		30 Secs *[==>]*	*[1]*
2		(2) 103P-HARTLEY-2-B	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART09		30 Secs *[==>]*	*[1]*
3		(2) 103P-HARTLEY-2-B	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=2; EXTENDED=YES	REQ EPHEM CORR HART09		500 Secs *[==>550 Secs]*	*[1]*
4		(2) 103P-HARTLEY-2-B	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=3; EXTENDED=YES	REQ EPHEM CORR HART09		500 Secs *[==>550 Secs]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Exp. 2
Moving Target Tracking
Moving Target Tracking
Setup
Exp. 1
Setup
Setup
Exp. 3
Exp. 4
Setup
Unused Visibility = 348
Home Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Proposal 12312 - Visit 10Hubble Investigation of 103P/Hartley 2 in Support of NASA's DIXI Mission

Visit

Proposal 12312, Visit 10, completed Wed Nov 17 02:31:28 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV

Special Requirements: (none)

Solar System Targets

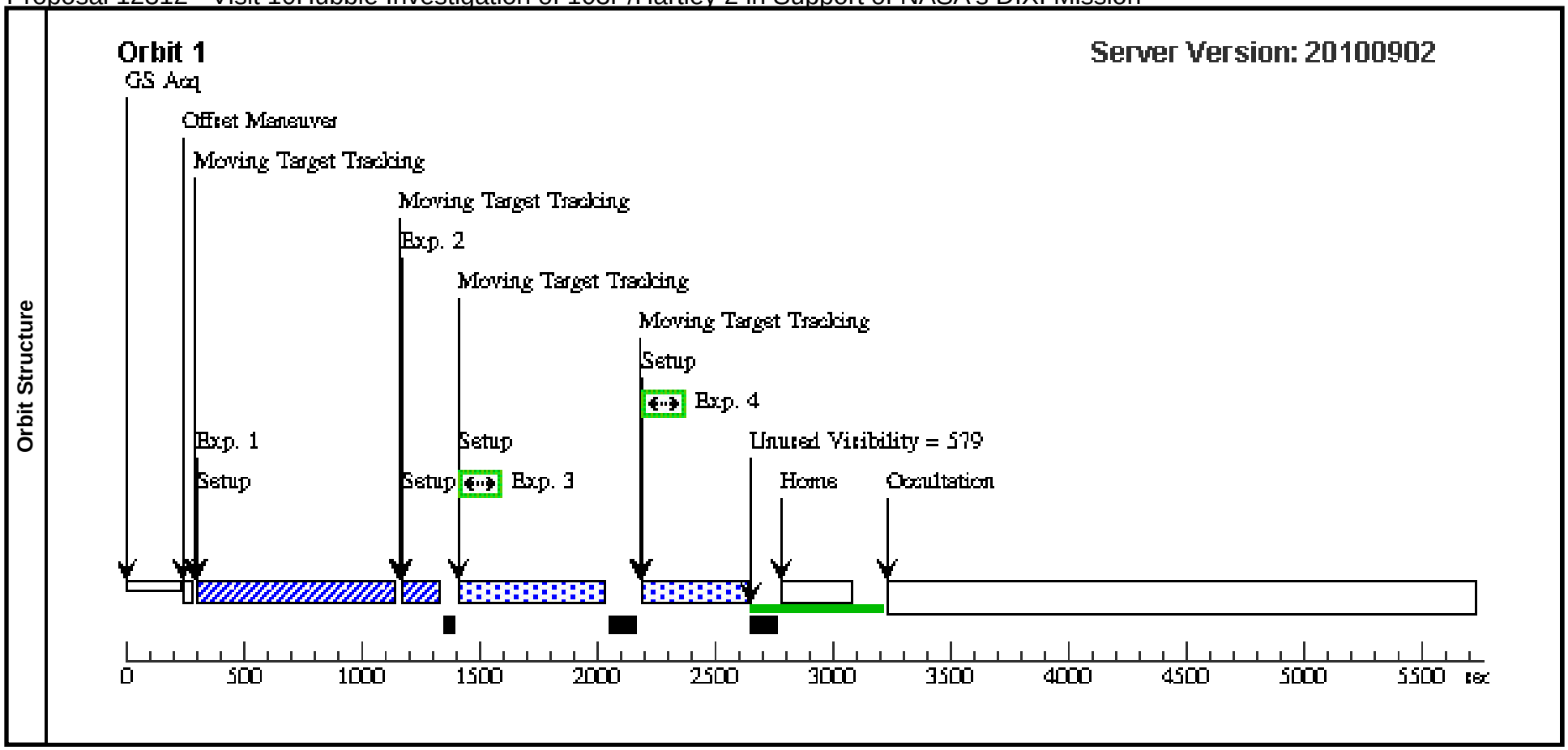
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(2)	103P-HARTLEY-2-B	TYPE=COMET,Q=1.058676120124298,E=0.6949802846326966,I=13.61928878420733,O=219.7596943092058,W=181.2071038939688,T=28-OCT-2010:06:20:57,EQUINOX=J2000,EPOCH=04-NOV-2010:00:00:00,A1=6.028426008179833E-10,A2=-5.704220041383923E-11,A3=2.354554128002155E-09				EARTH

Comments: This is the JPL #122 reference ephemeris and should be accurate enough for planning the Hubble observations on Nov4, 2010

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) 103P-HARTLEY-2-B	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART10; GS ACQ SCENARIO ONEB1B3		30 Secs *[==>]*	*[1]*
2		(2) 103P-HARTLEY-2-B	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART10		30 Secs *[==>]*	*[1]*
3		(2) 103P-HARTLEY-2-B	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=2	REQ EPHEM CORR HART10		433 Secs *[==>]*	*[1]*
4		(2) 103P-HARTLEY-2-B	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=3	REQ EPHEM CORR HART10		433 Secs *[==>]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Exp. 2
Moving Target Tracking
Moving Target Tracking
Setup
Exp. 4
Exp. 1
Setup
Setup
Setup
Exp. 3
Unused Visibility = 579
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12312, Visit 11, scheduling Wed Nov 17 02:31:29 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: BETWEEN 08-NOV-2010:00:00:00 AND 29-NOV-2010:00:00:00; VISIBILITY INTERVAL 50 M

Solar System Targets

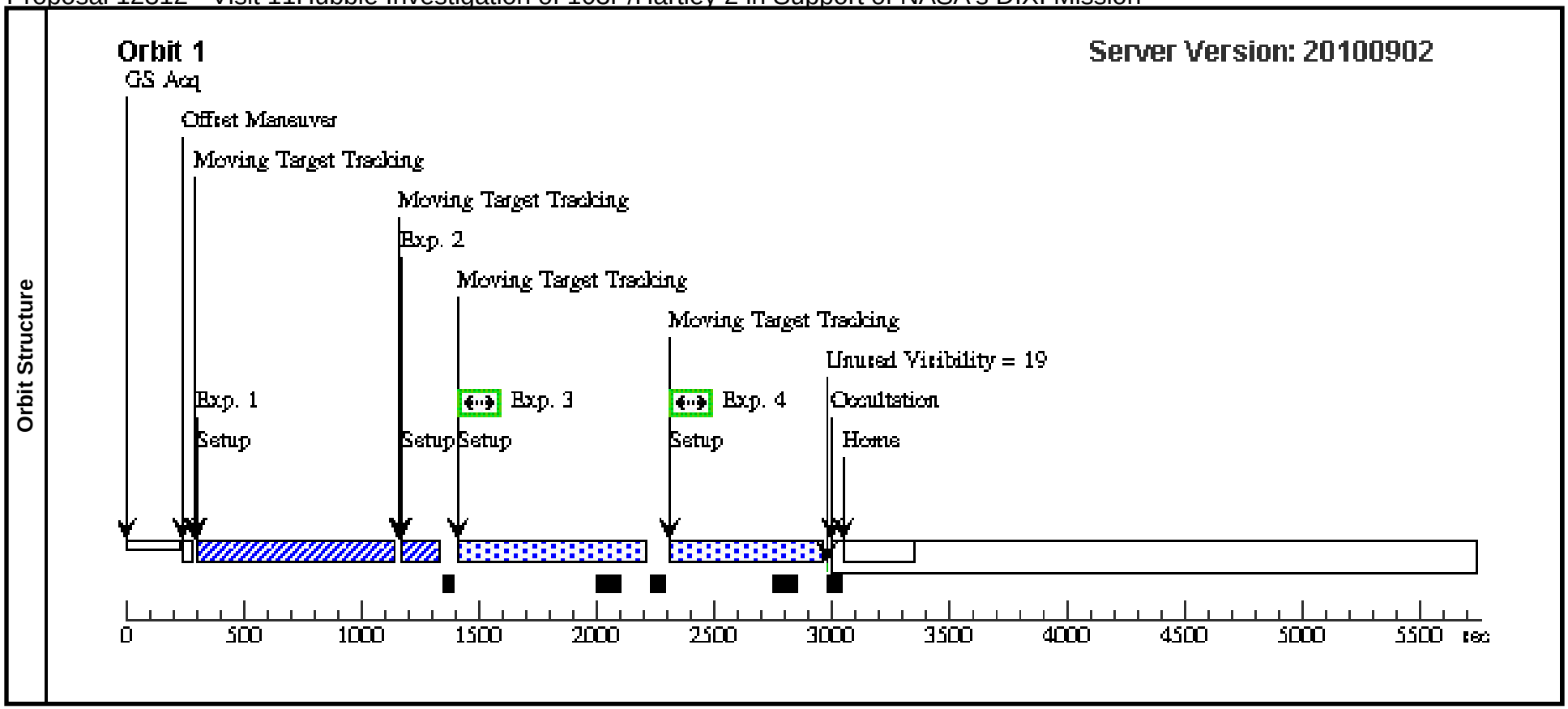
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(3)	103P-HARTLEY-2-C	TYPE=COMET,Q=1.058676120124298,E=0.6948944852399084,I=13.61937718211394,O=219.7584073592891,W=181.2099419064577,T=28-OCT-2010:06:22:11,EQUINOX=J2000,EPOCH=28-NOV-2010:00:00:00				EARTH

Comments: This is the JPL #214 reference ephemeris and should be accurate enough for planning the Hubble observations on Nov28, 2010

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) 103P-HARTLEY-2-C	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART11; GS ACQ SCENARIO ONEB1B3		30 Secs [==>]	[1]
2		(3) 103P-HARTLEY-2-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART11		30 Secs [==>]	[1]
3		(3) 103P-HARTLEY-2-C	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=2; EXTENDED=YES	REQ EPHEM CORR HART11		500 Secs [==>593.0 Secs]	[1]
4		(3) 103P-HARTLEY-2-C	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=3; EXTENDED=YES	REQ EPHEM CORR HART11		500 Secs [==>593.0 Secs]	[1]


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 19
Exp. 1
Setup
Setup
Setup
Exp. 3
Setup
Exp. 4
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12312, Visit 12, scheduling Wed Nov 17 02:31:30 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV

Special Requirements: VISIBILITY INTERVAL 50 M

Solar System Targets

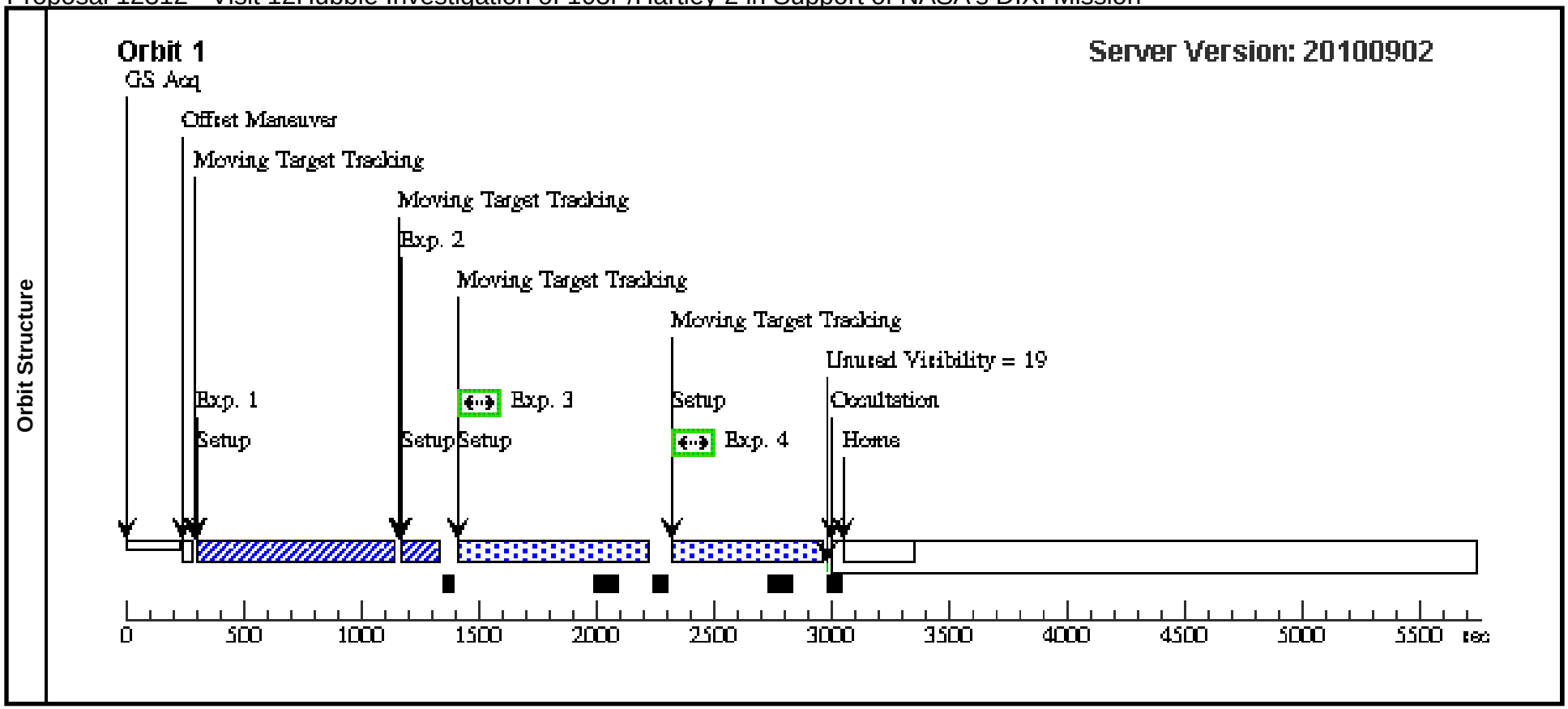
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(3)	103P-HARTLEY-2-C	TYPE=COMET,Q=1.058676120124298,E=0.6948944852399084,I=13.61937718211394,O=219.7584073592891,W=181.2099419064577,T=28-OCT-2010:06:22:11,EQUINOX=J2000,EPOCH=28-NOV-2010:00:00:00				EARTH

Comments: This is the JPL #214 reference ephemeris and should be accurate enough for planning the Hubble observations on Nov28, 2010

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) 103P-HARTLEY-2-C	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART12; GS ACQ SCENARIO ONEB1B3		30 Secs *[==>]*	***[1]***
2		(3) 103P-HARTLEY-2-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART12		30 Secs *[==>]*	***[1]***
3		(3) 103P-HARTLEY-2-C	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=2	REQ EPHEM CORR HART12		500 Secs *[==>620.0 Secs]*	***[1]***
4		(3) 103P-HARTLEY-2-C	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=3	REQ EPHEM CORR HART12		500 Secs *[==>620.0 Secs]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 19
Exp. 1
Setup
Setup
Setup
Exp. 3
Setup
Exp. 4
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Proposal 12312 - Visit 13Hubble Investigation of 103P/Hartley 2 in Support of NASA's DIXI Mission

Visit

Proposal 12312, Visit 13, scheduling Wed Nov 17 02:31:30 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/NUV-MAMA

Special Requirements: VISIBILITY INTERVAL 50 M

Solar System Targets

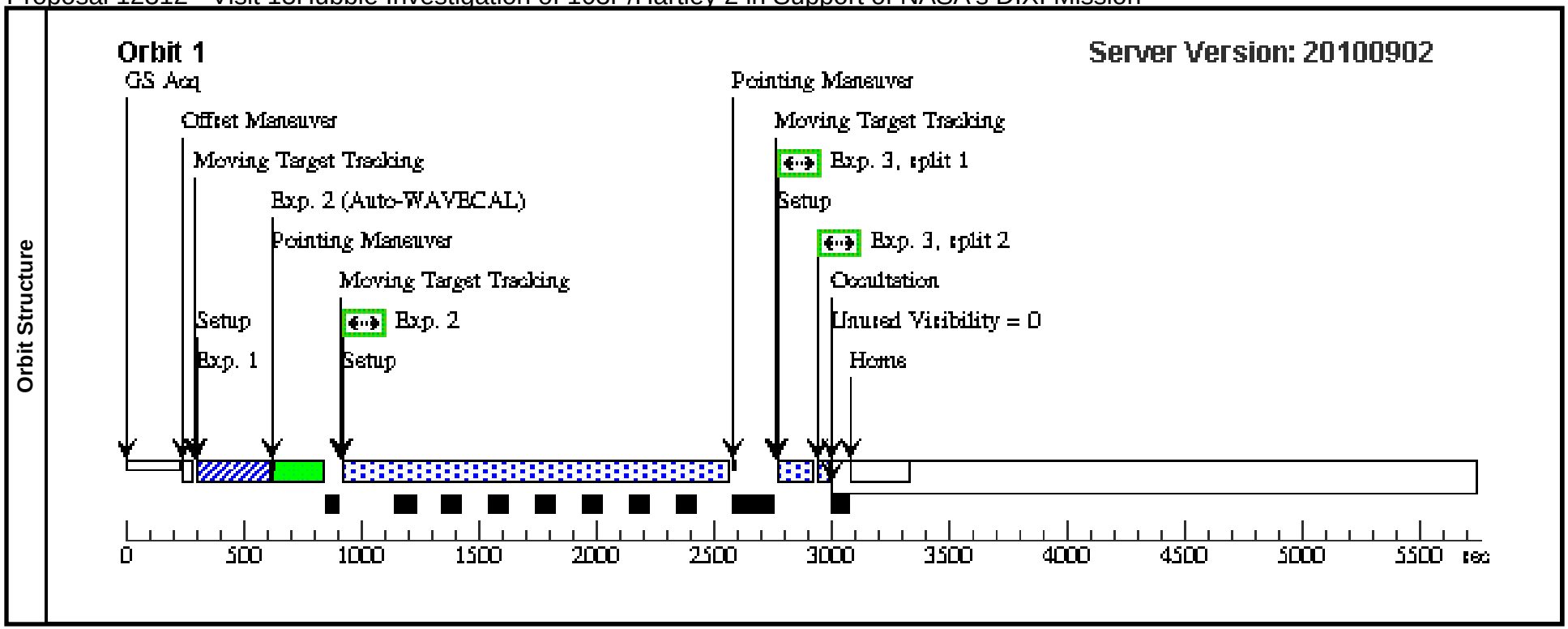
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(3)	103P-HARTLEY-2-C	TYPE=COMET,Q=1.058676120124298,E=0.6948944852399084,I=13.61937718211394,O=219.7584073592891,W=181.2099419064577,T=28-OCT-2010:06:22:11,EQUINOX=J2000,EPOCH=28-NOV-2010:00:00:00				EARTH

Comments: This is the JPL #214 reference ephemeris and should be accurate enough for planning the Hubble observations on Nov28, 2010

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) 103P-HARTLEY-2-C	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=POINT	REQ EPHEM CORR HART13; GS ACQ SCENARIO ONEB1B3		10 Secs *[==>]*	*[1]*
2		(3) 103P-HARTLEY-2-C	STIS/NUV-MAMA, TIME-TAG, 52X0.5	G230L 2376 A	BUFFER-TIME=200	REQ EPHEM CORR HART13		1800 Secs *[==>1605.0 Secs]*	*[1]*
3		(3) 103P-HARTLEY-2-C	STIS/CCD, ACCUM, F28X50LP	MIRROR	CR-SPLIT=2	REQ EPHEM CORR HART13		20 Secs *[==>(Split 1)]* *[==>(Split 2)]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Offset Maneuver
Moving Target Tracking
Exp. 2 (Auto-WAVECAL)
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 1
Exp. 2
Setup
Pointing Maneuver
Moving Target Tracking
Exp. 3, split 1
Setup
Exp. 3, split 2
Occultation
Unused Visibility = 0
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Proposal 12312 - Visit 14Hubble Investigation of 103P/Hartley 2 in Support of NASA's DIXI Mission

Visit

Proposal 12312, Visit 14, scheduling Wed Nov 17 02:31:30 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: VISIBILITY INTERVAL 50 M

Solar System Targets

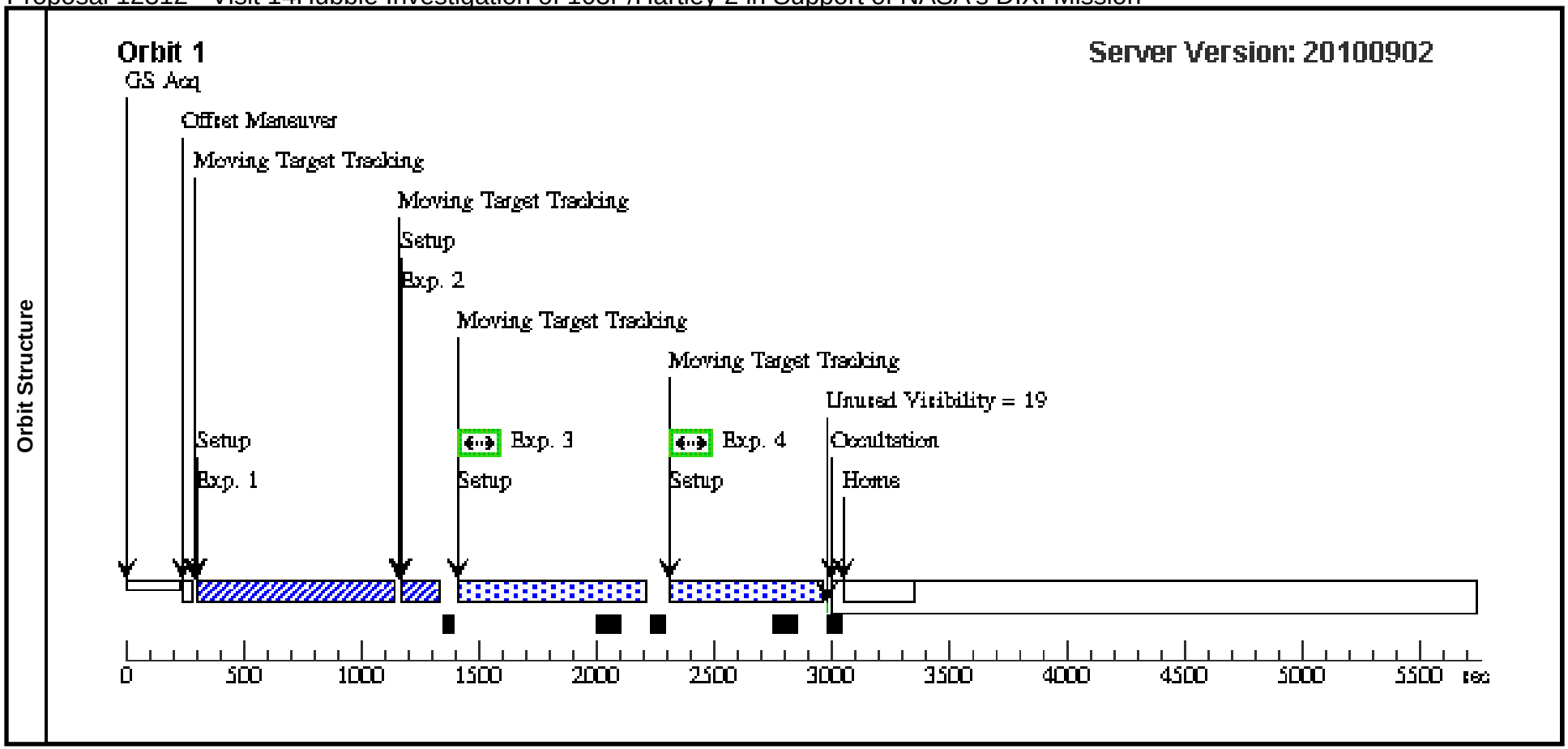
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(3)	103P-HARTLEY-2-C	TYPE=COMET,Q=1.058676120124298,E=0.6948944852399084,I=13.61937718211394,O=219.7584073592891,W=181.2099419064577,T=28-OCT-2010:06:22:11,EQUINOX=J2000,EPOCH=28-NOV-2010:00:00:00				EARTH

Comments: This is the JPL #214 reference ephemeris and should be accurate enough for planning the Hubble observations on Nov28, 2010

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) 103P-HARTLEY-2-C	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART14; GS ACQ SCENARIO ONEB1B3		30 Secs [==>]	[1]
2		(3) 103P-HARTLEY-2-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART14		30 Secs [==>]	[1]
3		(3) 103P-HARTLEY-2-C	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=2; EXTENDED=YES	REQ EPHEM CORR HART14		500 Secs [==>593.0 Secs]	[1]
4		(3) 103P-HARTLEY-2-C	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=3; EXTENDED=YES	REQ EPHEM CORR HART14		500 Secs [==>593.0 Secs]	[1]


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Setup
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 19
Setup
Exp. 1
Exp. 3
Setup
Exp. 4
Setup
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12312, Visit 15, scheduling Wed Nov 17 02:31:31 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV

Special Requirements: VISIBILITY INTERVAL 50 M

Solar System Targets

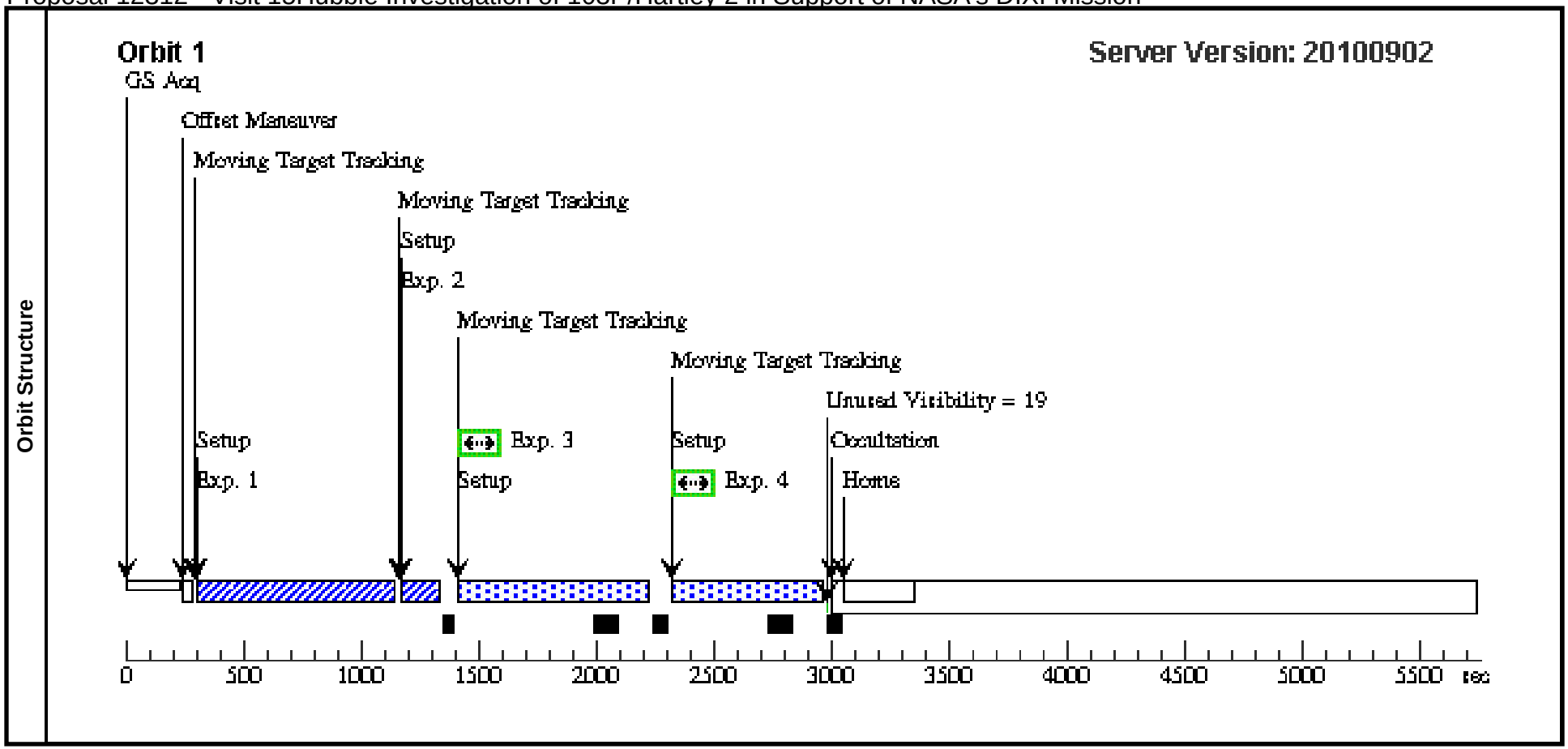
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(3)	103P-HARTLEY-2-C	TYPE=COMET,Q=1.058676120124298,E=0.6948944852399084,I=13.61937718211394,O=219.7584073592891,W=181.2099419064577,T=28-OCT-2010:06:22:11,EQUINOX=J2000,EPOCH=28-NOV-2010:00:00:00				EARTH

Comments: This is the JPL #214 reference ephemeris and should be accurate enough for planning the Hubble observations on Nov28, 2010

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) 103P-HARTLEY-2-C	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART15; GS ACQ SCENARIO ONEB1B3		30 Secs *[==>]*	***[1]***
2		(3) 103P-HARTLEY-2-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART15		30 Secs *[==>]*	***[1]***
3		(3) 103P-HARTLEY-2-C	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=2	REQ EPHEM CORR HART15		500 Secs *[==>620.0 Secs]*	***[1]***
4		(3) 103P-HARTLEY-2-C	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=3	REQ EPHEM CORR HART15		500 Secs *[==>620.0 Secs]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Setup
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 19
Setup
Exp. 1
Exp. 3
Setup
Setup
Exp. 4
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12312, Visit 16, completed Wed Nov 17 02:31:32 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%; BETWEEN 15-SEP-2010:00:00:00 AND 24-OCT-2010:00:00:00; SEQ 16,17,18,19,20 WITHIN 5.5 Orbits

Comments: copy of visit 1

Solar System Targets

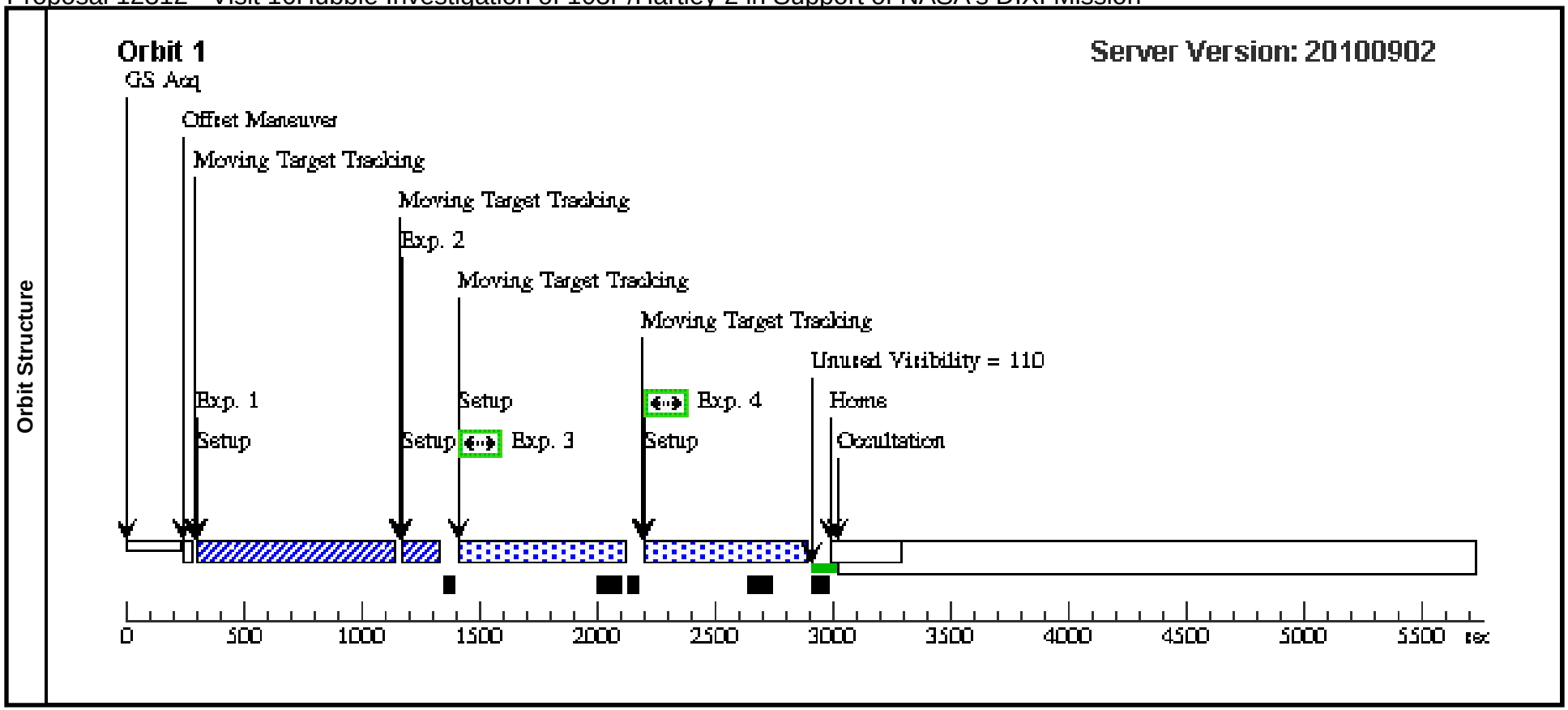
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	103P-HARTLEY-2	TYPE=COMET,Q=1.0586833307917800,E=0.6951398461582717,I=13.61732081969205,O=219.76129504028940,W=181.19735624925000,T=28-OCT-2010:06:10:23,EQUINOX=J2000,EPOCH=25-SEP-2010:00:00:00,A1=1.80911924294E-09,A2=-3.1418447208E-11,A3=4.8989105707E-10				EARTH

Comments: Currently using JPL #50 reference ephemeris. This should be accurate enough for planning the Hubble observations this fall.

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) 103P-HARTLEY-2	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART16; GS ACQ SCENARIO ONEB1B3		30 Secs *[==>]*	*[1]*
2		(1) 103P-HARTLEY-2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART16		30 Secs *[==>]*	*[1]*
3		(1) 103P-HARTLEY-2	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=2; EXTENDED=YES	REQ EPHEM CORR HART16		500 Secs *[==>]*	*[1]*
4		(1) 103P-HARTLEY-2	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=3; EXTENDED=YES	REQ EPHEM CORR HART16		500 Secs *[==>635.0 Secs]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 110
Exp. 1
Setup
Setup
Setup
Exp. 3
Exp. 4
Setup
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12312, Visit 17, completed Wed Nov 17 02:31:33 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV

Special Requirements: SCHED 100%

Comments: copy of visit 2

Solar System Targets

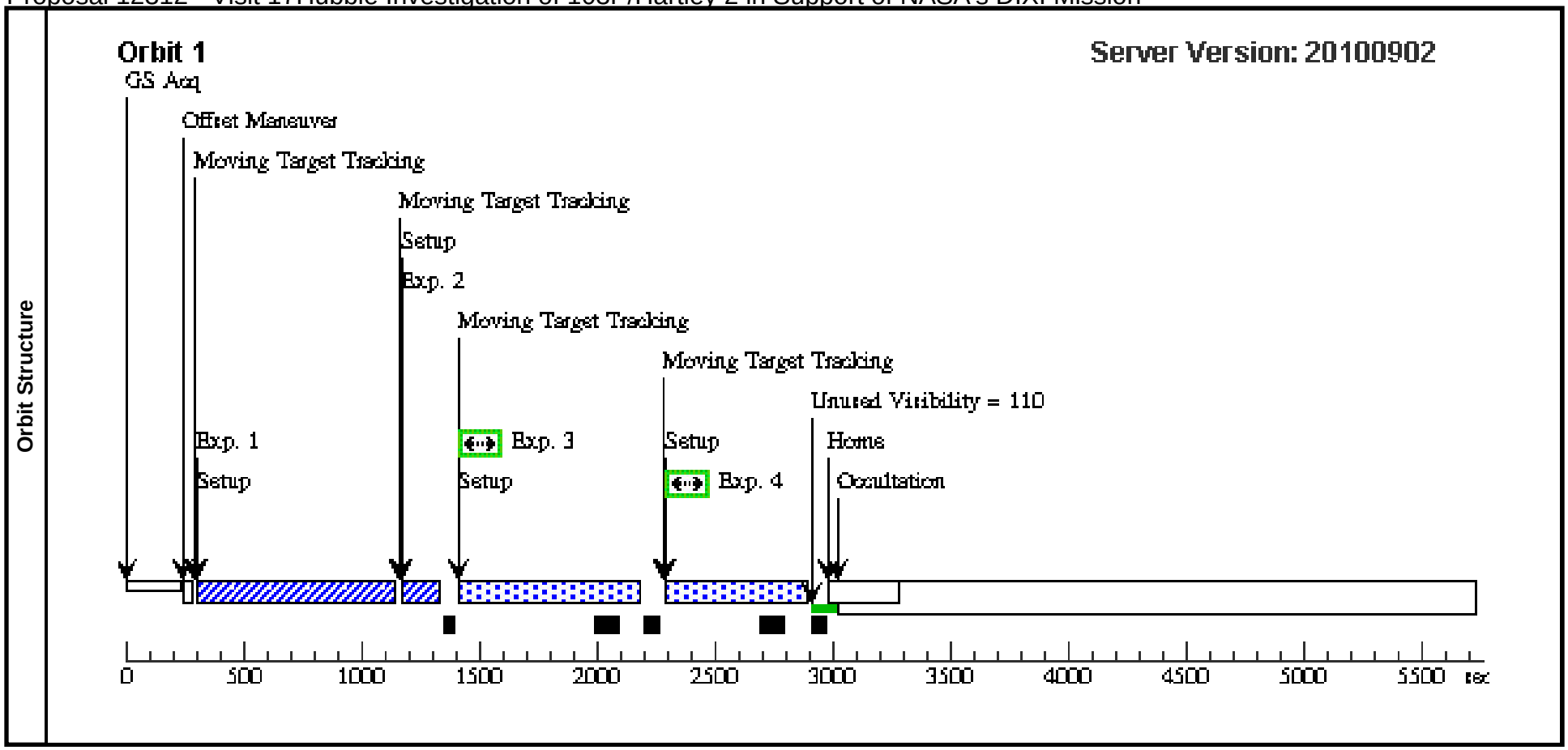
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	103P-HARTLEY-2	TYPE=COMET,Q=1.0586833307917800,E=0.6951398461582717,I=13.61732081969205,O=219.76129504028940,W=181.19735624925000,T=28-OCT-2010:06:10:23,EQUINOX=J2000,EPOCH=25-SEP-2010:00:00:00,A1=1.80911924294E-09,A2=-3.1418447208E-11,A3=4.8989105707E-10				EARTH

Comments: Currently using JPL #50 reference ephemeris. This should be accurate enough for planning the Hubble observations this fall.

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) 103P-HARTLEY-2	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART17; GS ACQ SCENARIO ONEB1B3		30 Secs *[==>]*	*[1]*
2		(1) 103P-HARTLEY-2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART17		30 Secs *[==>]*	*[1]*
3		(1) 103P-HARTLEY-2	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=2	REQ EPHEM CORR HART17		500 Secs *[==>585.0 Secs]*	*[1]*
4		(1) 103P-HARTLEY-2	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=3	REQ EPHEM CORR HART17		500 Secs *[==>585.0 Secs]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Setup
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 110
Exp. 1
Setup
Exp. 3
Setup
Setup
Exp. 4
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12312, Visit 18, completed Wed Nov 17 02:31:34 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: SCHED 100%

Comments: copy of visit 3

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	103P-HARTLEY-2	TYPE=COMET,Q=1.0586833307917800,E=0.6951398461582717,I=13.61732081969205,O=219.76129504028940,W=181.19735624925000,T=28-OCT-2010:06:10:23,EQUINOX=J2000,EPOCH=25-SEP-2010:00:00:00,A1=1.80911924294E-09,A2=-3.1418447208E-11,A3=4.8989105707E-10				EARTH

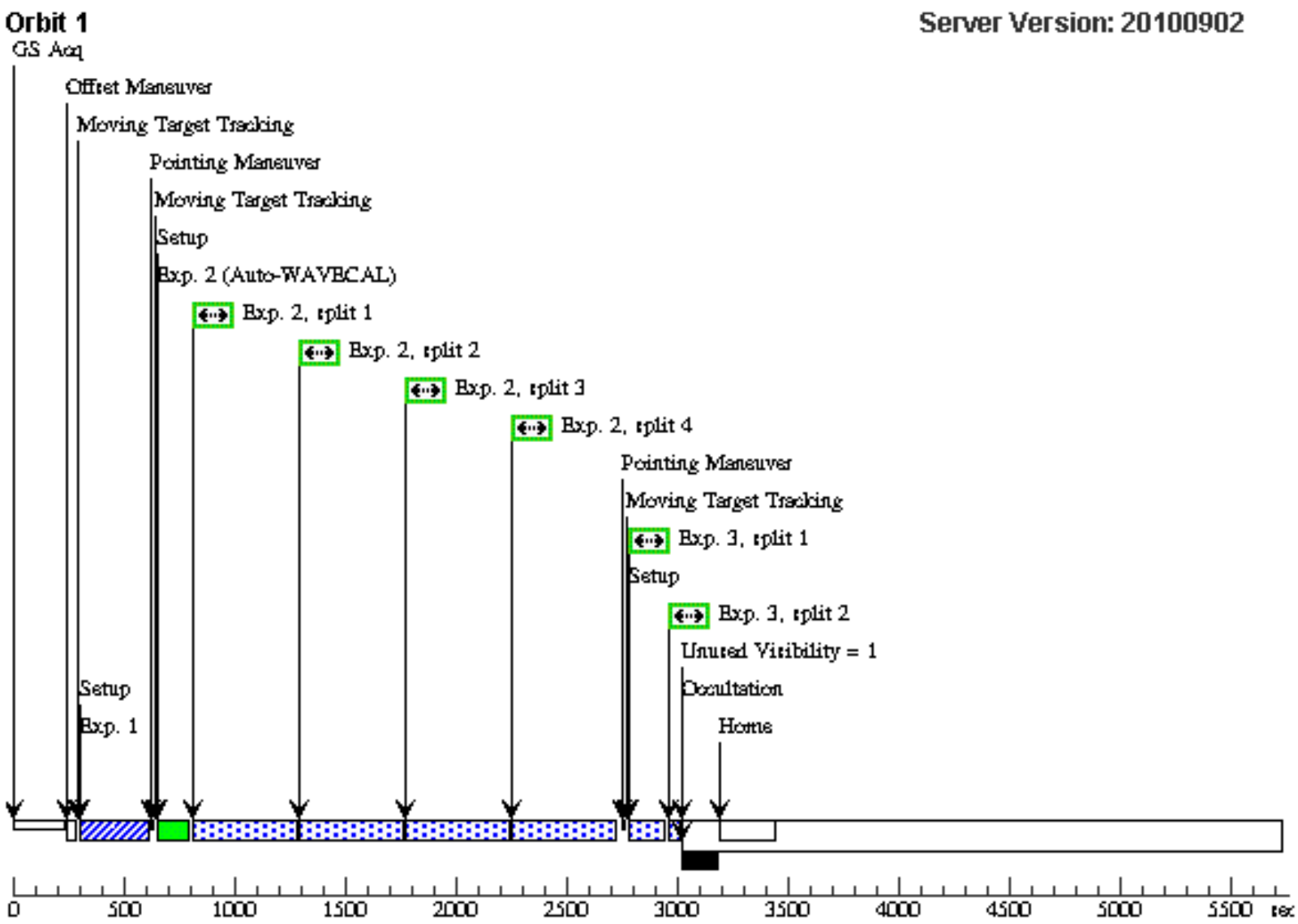
Comments: Currently using JPL #50 reference ephemeris. This should be accurate enough for planning the Hubble observations this fall.

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) 103P-HARTLEY-2	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=POINT	REQ EPHEM CORR HART18; GS ACQ SCENARIO ONEB1B3		10 Secs *[==>]*	***[1]***
2		(1) 103P-HARTLEY-2	STIS/CCD, ACCUM, 52X0.2	G230LB 2375 A	CR-SPLIT=4	REQ EPHEM CORR HART18		1750 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[1]***
3		(1) 103P-HARTLEY-2	STIS/CCD, ACCUM, F28X50LP	MIRROR	CR-SPLIT=2	REQ EPHEM CORR HART18		20 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***

Orbit Structure



Proposal 12312 - Visit 19Hubble Investigation of 103P/Hartley 2 in Support of NASA's DIXI Mission

Visit

Proposal 12312, Visit 19, completed Wed Nov 17 02:31:35 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Comments: copy of visit 4

Solar System Targets

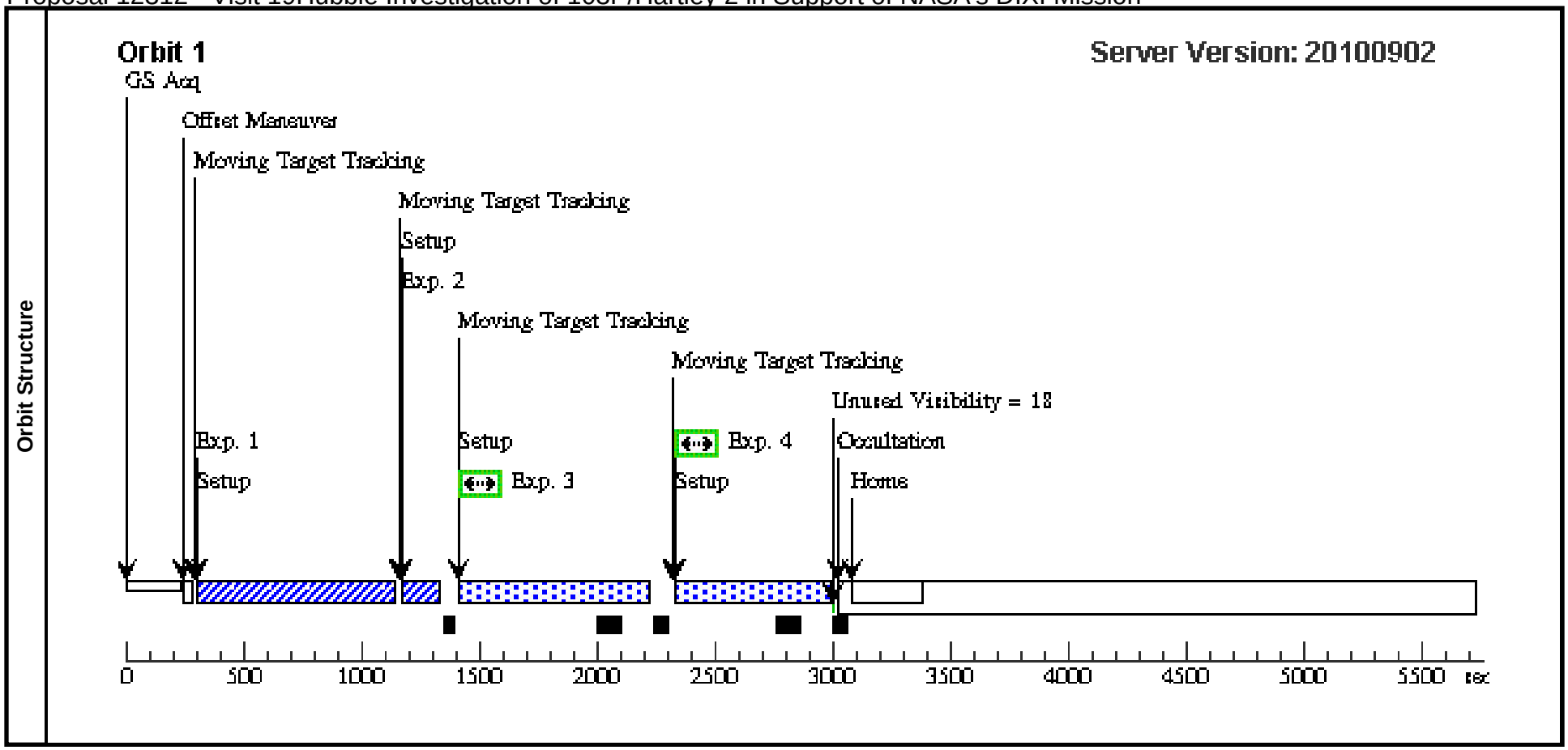
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	103P-HARTLEY-2	TYPE=COMET,Q=1.0586833307917800,E=0.6951398461582717,I=13.61732081969205,O=219.76129504028940,W=181.19735624925000,T=28-OCT-2010:06:10:23,EQUINOX=J2000,EPOCH=25-SEP-2010:00:00:00,A1=1.80911924294E-09,A2=-3.1418447208E-11,A3=4.8989105707E-10				EARTH

Comments: Currently using JPL #50 reference ephemeris. This should be accurate enough for planning the Hubble observations this fall.

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) 103P-HARTLEY-2	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART19; GS ACQ SCENARIO ONEB1B3		30 Secs *[==>]*	*[1]*
2		(1) 103P-HARTLEY-2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART19		30 Secs *[==>]*	*[1]*
3		(1) 103P-HARTLEY-2	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=2; EXTENDED=YES	REQ EPHEM CORR HART19		500 Secs *[==>604.0 Secs]*	*[1]*
4		(1) 103P-HARTLEY-2	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=400; FP-POS=3; EXTENDED=YES	REQ EPHEM CORR HART19		500 Secs *[==>604.0 Secs]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Setup
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 18
Exp. 1
Setup
Setup
Exp. 3
Exp. 4
Setup
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12312, Visit 20, completed Wed Nov 17 02:31:35 GMT 2010

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV

Special Requirements: SCHED 100%

Comments: copy of visit 5

Solar System Targets

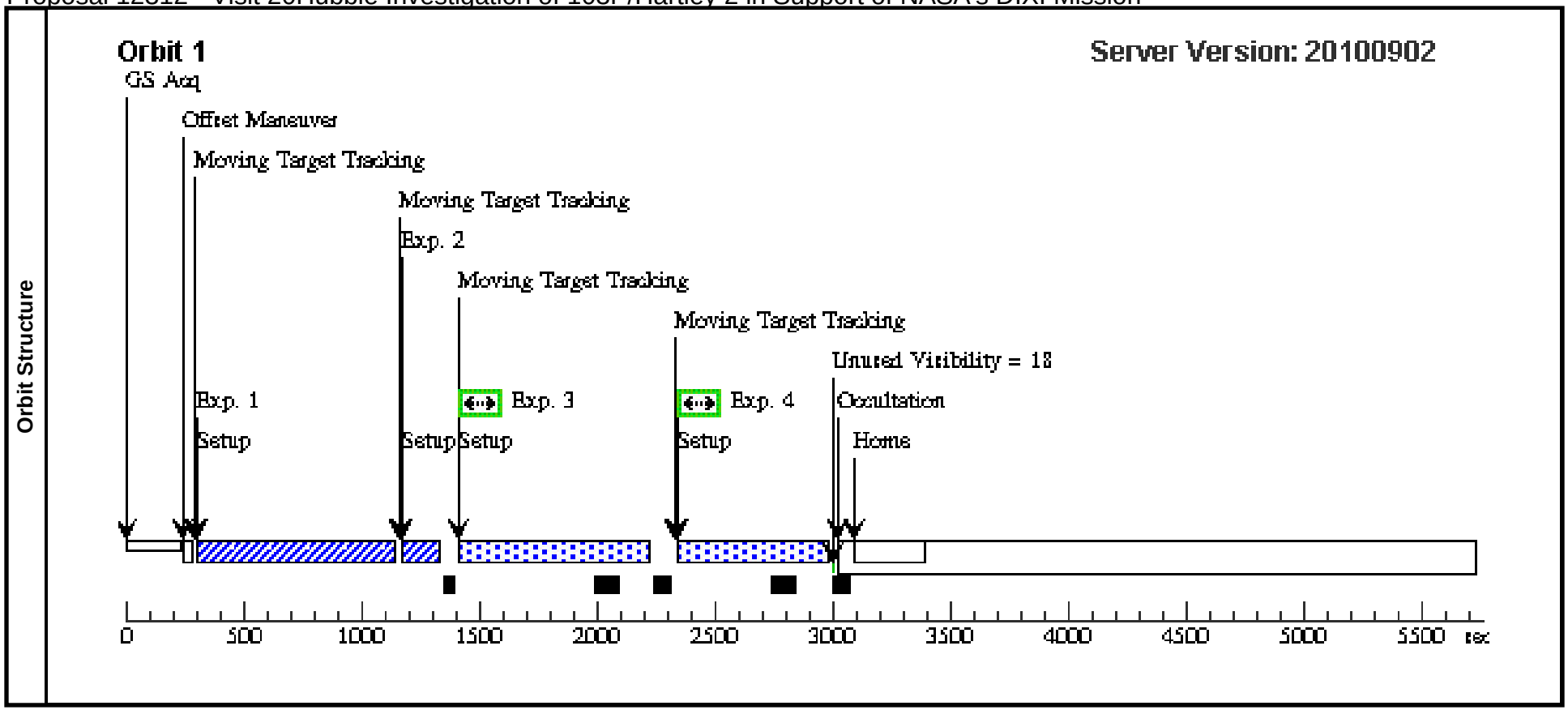
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	103P-HARTLEY-2	TYPE=COMET,Q=1.0586833307917800,E=0.6951398461582717,I=13.61732081969205,O=219.76129504028940,W=181.19735624925000,T=28-OCT-2010:06:10:23,EQUINOX=J2000,EPOCH=25-SEP-2010:00:00:00,A1=1.80911924294E-09,A2=-3.1418447208E-11,A3=4.8989105707E-10				EARTH

Comments: Currently using JPL #50 reference ephemeris. This should be accurate enough for planning the Hubble observations this fall.

Acquisition Uncertainty: 5 Arcsec
Ephemeris Uncertainty: 2175 Kilometers

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) 103P-HARTLEY-2	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=3	REQ EPHEM CORR HART20; GS ACQ SCENARIO ONEB1B3		30 Secs *[==>]*	*[1]*
2		(1) 103P-HARTLEY-2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		REQ EPHEM CORR HART20		30 Secs *[==>]*	*[1]*
3		(1) 103P-HARTLEY-2	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=2	REQ EPHEM CORR HART20		500 Secs *[==>626.0 Secs]*	*[1]*
4		(1) 103P-HARTLEY-2	COS/NUV, TIME-TAG, PSA	G185M 1986 A	BUFFER-TIME=400; EXTENDED=YES; FP-POS=3	REQ EPHEM CORR HART20		500 Secs *[==>626.0 Secs]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Offset Maneuver
Moving Target Tracking
Moving Target Tracking
Exp. 2
Moving Target Tracking
Moving Target Tracking
Unused Visibility = 18
Exp. 1
Setup
Setup
Setup
Exp. 3
Setup
Exp. 4
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec