13396 - Dual views of Saturn's UV aurora: revealing magnetospheric dynamics

Cycle: 21, 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?*
K1	(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA	1	19-Dec-2013 21:05:51.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
K2	(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA	1	19-Dec-2013 21:06:02.0	yes
K3	(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA	3	19-Dec-2013 21:06:26.0	yes
K4	(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA	3	19-Dec-2013 21:06:58.0	yes
K5	(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA	3	19-Dec-2013 21:07:25.0	yes
K6	(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA	1	19-Dec-2013 21:07:39.0	yes
K7	(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA	3	19-Dec-2013 21:08:00.0	yes

15 Total Orbits Used

ABSTRACT

The Cassini spacecraft has made many exciting discoveries during its exploration of Saturn, but some observations of dynamic processes coupling the magnetosphere and ionosphere still require explanation. Our proposed observations exploit the presence of Cassini at Saturn to provide dual views of the aurorae, which show a snapshot of the global magnetospheric dynamics. A key target is the simultaneous observation of the northern aurorae by HST and the southern aurorae by Cassini. Such conjugate viewing is very rare and will provide fundamental insight on magnetospheric and auroral processes. We propose three complementary observing strategies targeted at elucidating: (i) North-south asymmetries: modes of solar wind-magnetosphere-ionosphere coupling, (ii) Relationship of equatorial and auroral enhancements: acceleration mechanisms, and (iii) 3-D structure of the aurora: electron energy and origin. The expected results will impact the broader astronomical community by revealing the electromagnetic interaction of planets with their local and stellar plasma environments, and the origin of periodic emission signals. Only HST is capable of studying Saturn's UV aurora at the temporal and spatial resolution required to achieve the science goals in partnership with already-scheduled Cassini observations. In spring 2014 HST will have the best view of Saturn's northern polar region to date. This is probably the last opportunity for simultaneous HST-Cassini observations because Cassini's orbit will again move to lower inclination from which the aurora cannot be viewed well. This proposal responds to the Cycle 21 UV Initiative.

OBSERVING DESCRIPTION

Observations of Saturn's northern UV aurorae around Saturn opposition in 2014, while the Cassini spacecraft is making complementary measurements. STIS/FUV-MAMA will be used in imaging mode to observe the 2-dimensional auroral morphology at over the wavelength range 115-170 nm. The observations are to be made with the SrF2 filter outside the low sky portion of the orbits to reject geo-coronal contaminated

Lyman-alpha.

Visit

Proposal 13396, Visit K1, scheduling Fri Dec 20 02:08:15 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: STIS/FUV-MAMA

Special Requirements: ORIENT 75D TO 195 D; ORIENT 255D TO 360 D; ORIENT 0.1D TO 15 D; BETWEEN 02-FEB-2014:17:35:00 AND 02-FEB-2014:23:35:00

Comments: Observations of Saturn's northern UV aurorae coincident with a Cassini flyby of Titan at the magnetopause, which may affect the aurora.
The observations should be as close as possible to 2014-033T20:35:39 (2 Feb).
ORIENT ranges are to avoid the repeller wire shadow falling on the northern polar region.

Diagnostics

(Exposure 1 (Visit K1)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 2 (Visit K1)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 3 (Visit K1)) Warning (Form): Sensitive exposures should have an ETC run number provided.

Solar System Targets

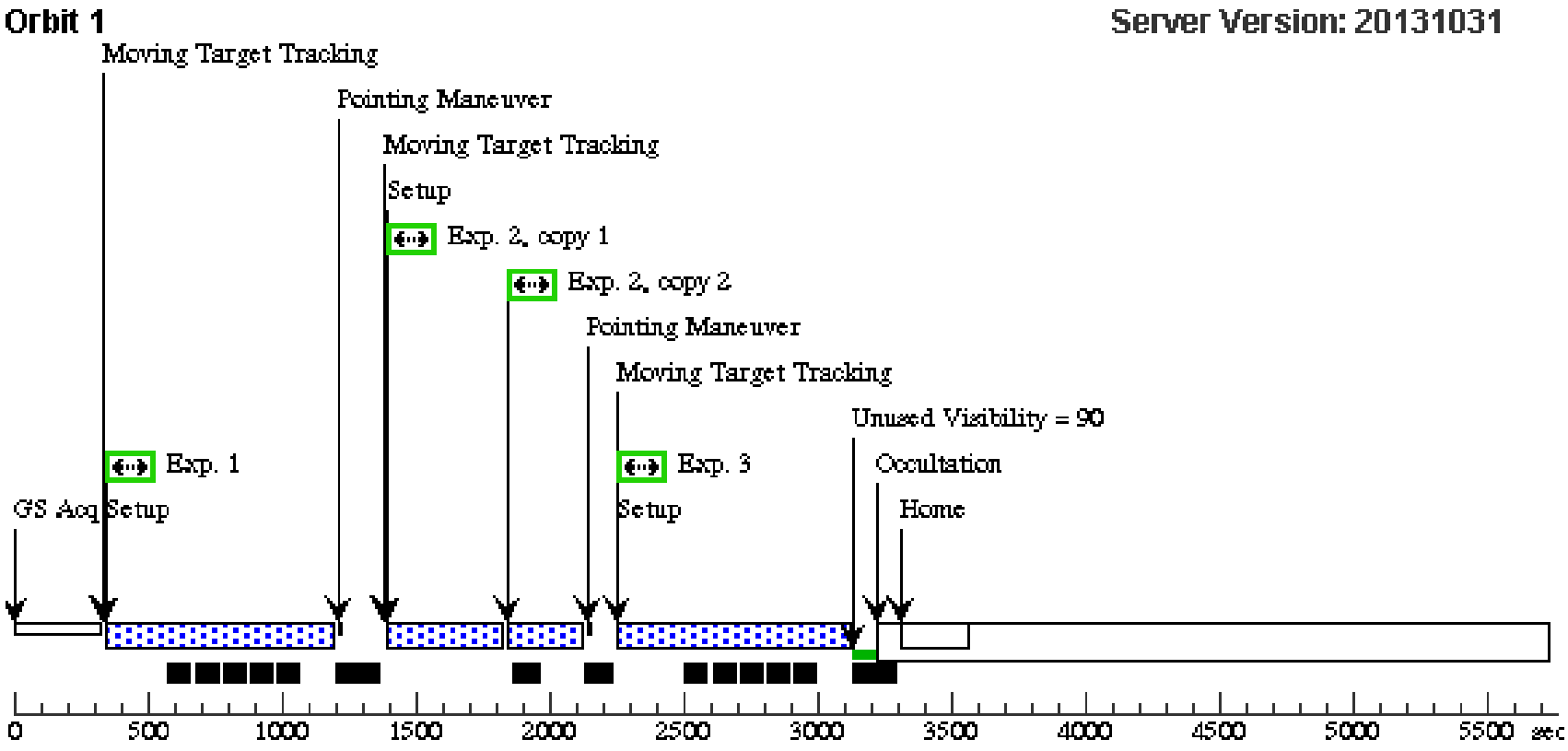
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	SATURN-AURORA-NORTH	STD=SATURN				EARTH

Comments: Moving target. Point at the planet center so that the northern limb and the front and rear parts of the A, B, C rings fit in the MAMA aperture.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100			700 Secs (700 Secs) *[==>]*	 ***[1]***
2		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR				270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[1]***
3		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100			700 Secs (700 Secs) *[==>]*	 ***[1]***

Orbit Structure



Visit

Proposal 13396, Visit K2, scheduling Fri Dec 20 02:08:17 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: STIS/FUV-MAMA

Special Requirements: ORIENT 75D TO 195 D; ORIENT 255D TO 360 D; ORIENT 0.1D TO 15 D; BETWEEN 07-APR-2014:09:00:00 AND 07-APR-2014:17:56:00

Comments: Observations of Saturn's northern UV aurorae coincident with a Cassini flyby of Titan at the magnetopause, which may affect the aurora.
The observations should be as close as possible to 2014-097T14:56:15 (7 Apr).
ORIENT ranges are to avoid the repeller wire shadow falling on the northern polar region.

Diagnostics

(Exposure 1 (Visit K2)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 2 (Visit K2)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 3 (Visit K2)) Warning (Form): Sensitive exposures should have an ETC run number provided.

Solar System Targets

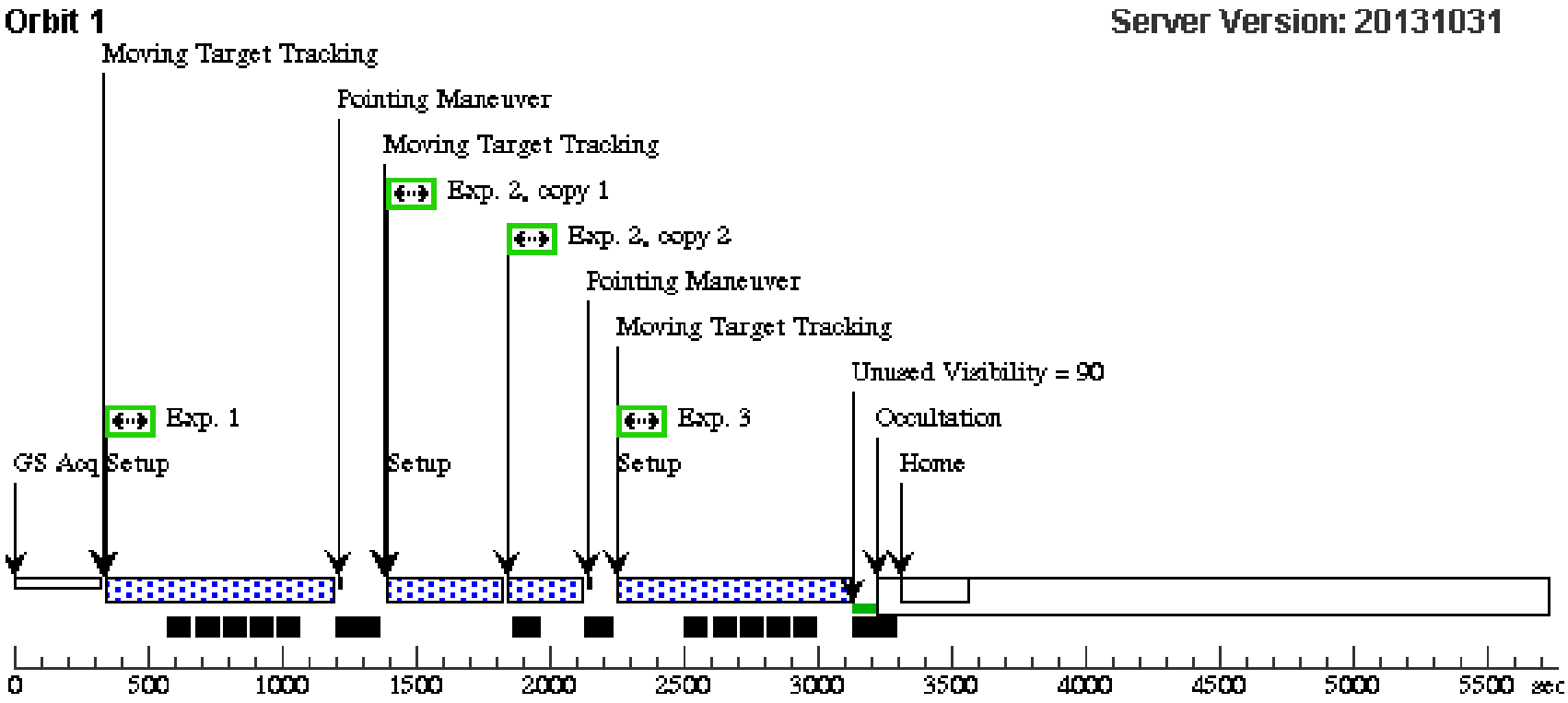
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	SATURN-AURORA-NORTH	STD=SATURN				EARTH

Comments: Moving target. Point at the planet center so that the northern limb and the front and rear parts of the A, B, C rings fit in the MAMA aperture.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100			700 Secs (700 Secs) *[==>]*	 ***[1]***
2		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR				270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[1]***
3		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100			700 Secs (700 Secs) *[==>]*	 ***[1]***

Orbit Structure



Visit

Proposal 13396, Visit K3, scheduling Fri Dec 20 02:08:18 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: STIS/FUV-MAMA

Special Requirements: ORIENT 75D TO 195 D; ORIENT 255D TO 360 D; ORIENT 0.1D TO 15 D; BETWEEN 09-APR-2014:12:30:00 AND 10-APR-2014:01:50:00; BETWEEN 10-APR-2014:12:30 AND 11-APR-2014:02:15; BETWEEN 15-JUN-2014:16:30 AND 16-JUN-2014:07:30; BETWEEN 16-JUN-2014:16:30 AND 17-JUN-2014:05:20

Comments: Observations of Saturn's northern UV aurorae coincident with Cassini observations of the southern aurorae.
Imaging on three consecutive orbits to observe time development of features.
Each orbit contains 4 exposures: SrF2-Clear-Clear-SrF2. SrF2 exposures are TIME_TAG, Clear are ACCUM.
Opportunity to optimise timings with STScI when SAA-free orbits are known.
ORIENT ranges are to avoid the repeller wire shadow falling on the northern polar region.

Diagnostics

(Visit K3) Warning (Orbit Planner): STIS TIME-TAG EXPOSURE GENERATES HEAVY DATA VOLUME

(Exposure 1 (Sequence 1-3 Non-Int in Visit K3)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 2 (Sequence 1-3 Non-Int in Visit K3)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 3 (Sequence 1-3 Non-Int in Visit K3)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 4 (Sequence 4-6 Non-Int in Visit K3)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 5 (Sequence 4-6 Non-Int in Visit K3)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 6 (Sequence 4-6 Non-Int in Visit K3)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 7 (Sequence 7-9 Non-Int in Visit K3)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 8 (Sequence 7-9 Non-Int in Visit K3)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 9 (Sequence 7-9 Non-Int in Visit K3)) Warning (Form): Sensitive exposures should have an ETC run number provided.

Solar System Targets

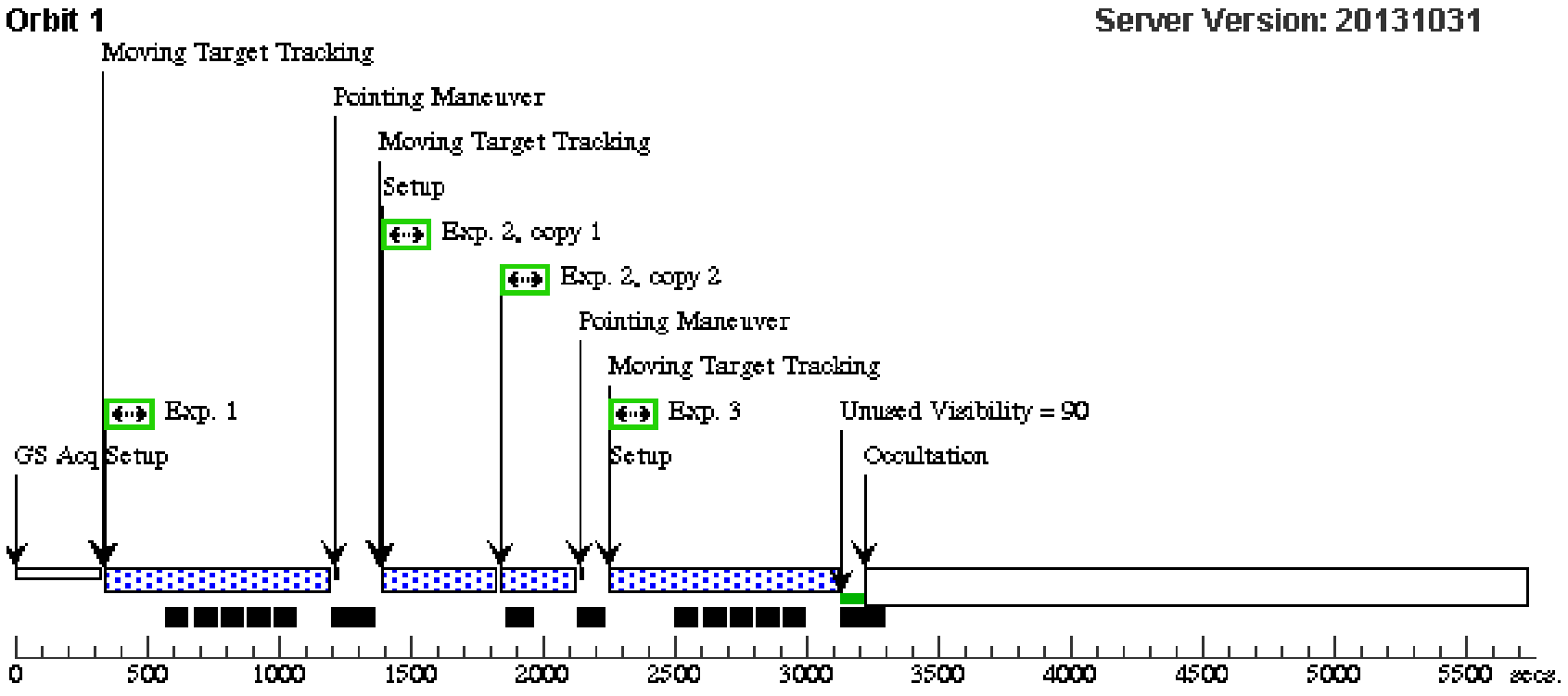
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	SATURN-AURORA-NORTH	STD=SATURN				EARTH

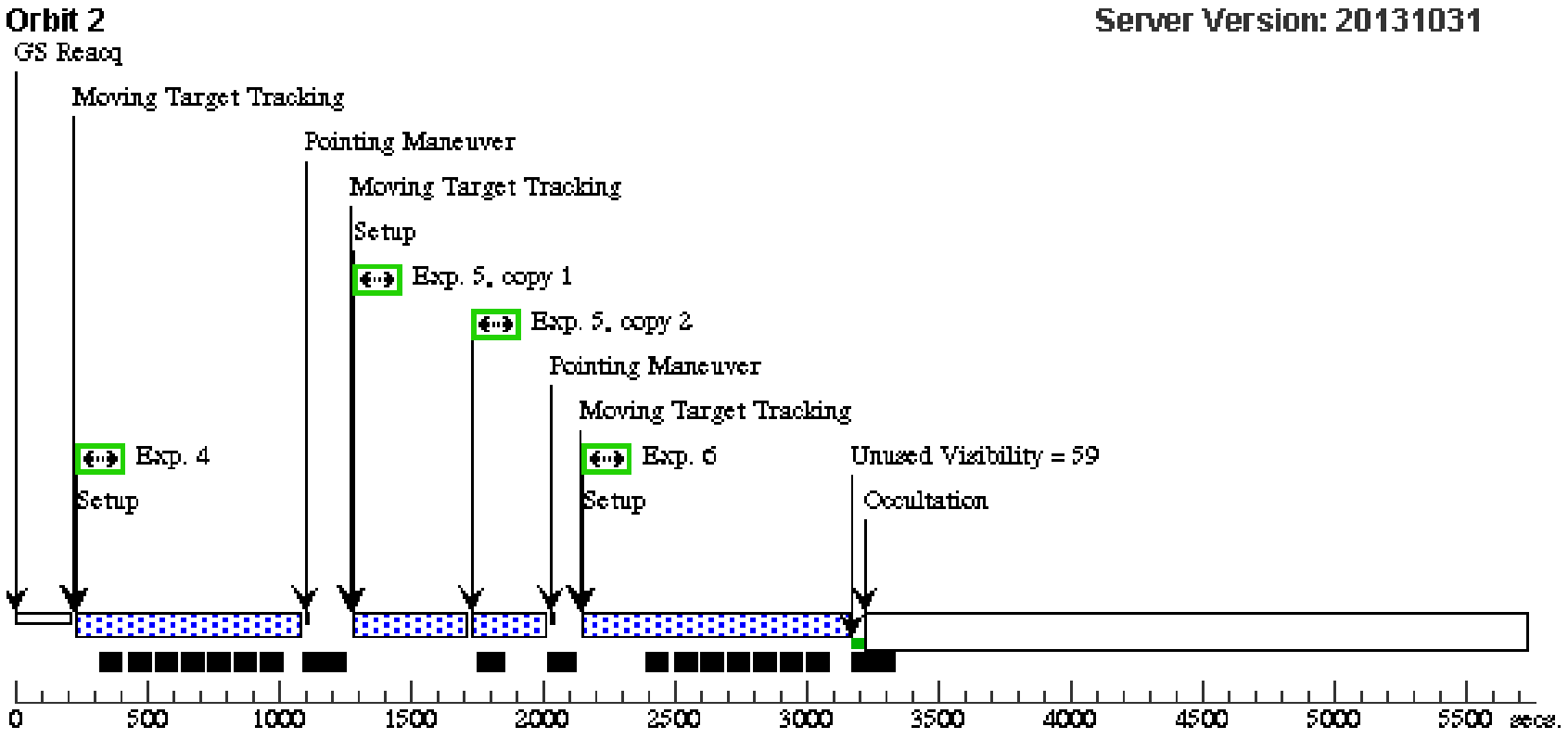
Comments: Moving target. Point at the planet center so that the northern limb and the front and rear parts of the A, B, C rings fit in the MAMA aperture.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 1-3 Non-Int in Visit K3	700 Secs (700 Secs) *[==>]*	 ***[1]***
2		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR			Sequence 1-3 Non-Int in Visit K3	270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[1]***
3		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 1-3 Non-Int in Visit K3	700 Secs (700 Secs) *[==>]*	 ***[1]***
4		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 4-6 Non-Int in Visit K3	840 Secs (840 Secs) *[==>]*	 ***[2]***
5		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR			Sequence 4-6 Non-Int in Visit K3	270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[2]***
6		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 4-6 Non-Int in Visit K3	840 Secs (840 Secs) *[==>]*	 ***[2]***
7		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 7-9 Non-Int in Visit K3	840 Secs (840 Secs) *[==>]*	 ***[3]***
8		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR			Sequence 7-9 Non-Int in Visit K3	270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[3]***
9		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 7-9 Non-Int in Visit K3	840 Secs (840 Secs) *[==>]*	 ***[3]***

Orbit Structure




Orbit 2
Server Version: 20131031
GS Reacq
Moving Target Tracking
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 5, copy 1
Exp. 5, copy 2
Pointing Maneuver
Moving Target Tracking
Exp. 4
Setup
Exp. 6
Setup
Unused Visibility = 59
Occultation
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1000
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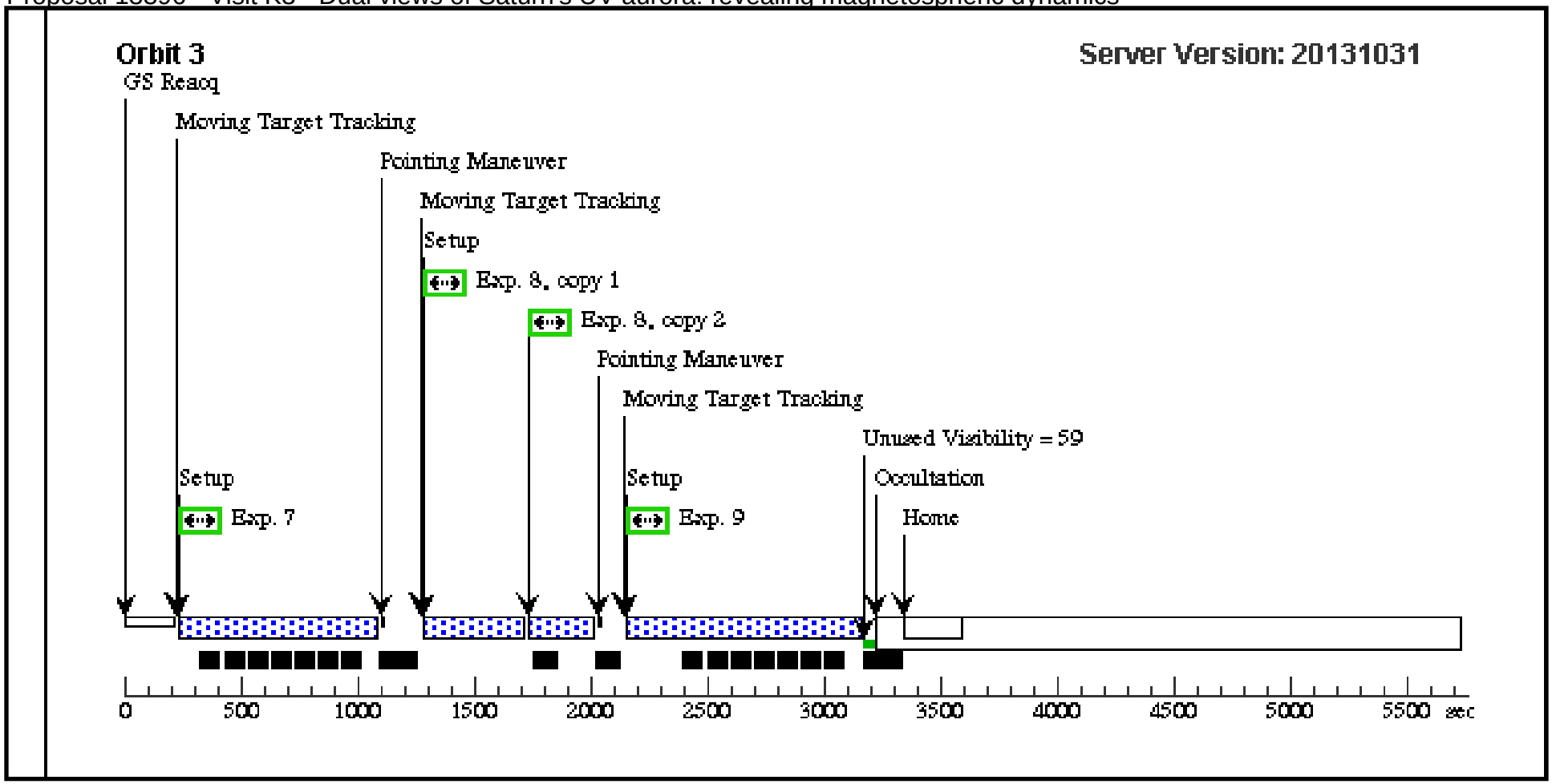
5500
secs.


Orbit 3
Server Version: 20131031
GS Reacq
Moving Target Tracking
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 8, copy 1
Exp. 8, copy 2
Pointing Maneuver
Moving Target Tracking
Unused Visibility = 59
Setup
Occultation
Setup
Exp. 7
Exp. 9
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Proposal 13396 - Visit K4 - Dual views of Saturn's UV aurora: revealing magnetospheric dynamics

Visit

Proposal 13396, Visit K4, scheduling Fri Dec 20 02:08:21 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: STIS/FUV-MAMA

Special Requirements: ORIENT 75D TO 195 D; ORIENT 255D TO 360 D; ORIENT 0.1D TO 15 D; BETWEEN 11-APR-2014:14:45:00 AND 14-APR-2014:03:00:00; BETWEEN 14-APR-2014:14:30:00 AND 16-APR-2014:03:00:00; BETWEEN 16-APR-2014:14:30:00 AND 17-APR-2014:00:00:00

Comments: Observations of Saturn's northern UV aurorae coincident with Cassini observations of the northern aurorae and ENA.
Imaging on three consecutive orbits to observe time development of features.
Each orbit contains 4 exposures: SrF2-Clear-Clear-SrF2. SrF2 exposures are TIME_TAG, Clear are ACCUM.
Opportunity to optimise timings with STScI when SAA-free orbits are known.
ORIENT ranges are to avoid the repeller wire shadow falling on the northern polar region.

Diagnostics

(Visit K4) Warning (Orbit Planner): STIS TIME-TAG EXPOSURE GENERATES HEAVY DATA VOLUME

(Exposure 1 (Sequence 1-3 Non-Int in Visit K4)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 2 (Sequence 1-3 Non-Int in Visit K4)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 3 (Sequence 1-3 Non-Int in Visit K4)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 4 (Sequence 4-6 Non-Int in Visit K4)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 5 (Sequence 4-6 Non-Int in Visit K4)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 6 (Sequence 4-6 Non-Int in Visit K4)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 7 (Sequence 7-9 Non-Int in Visit K4)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 8 (Sequence 7-9 Non-Int in Visit K4)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 9 (Sequence 7-9 Non-Int in Visit K4)) Warning (Form): Sensitive exposures should have an ETC run number provided.

Solar System Targets

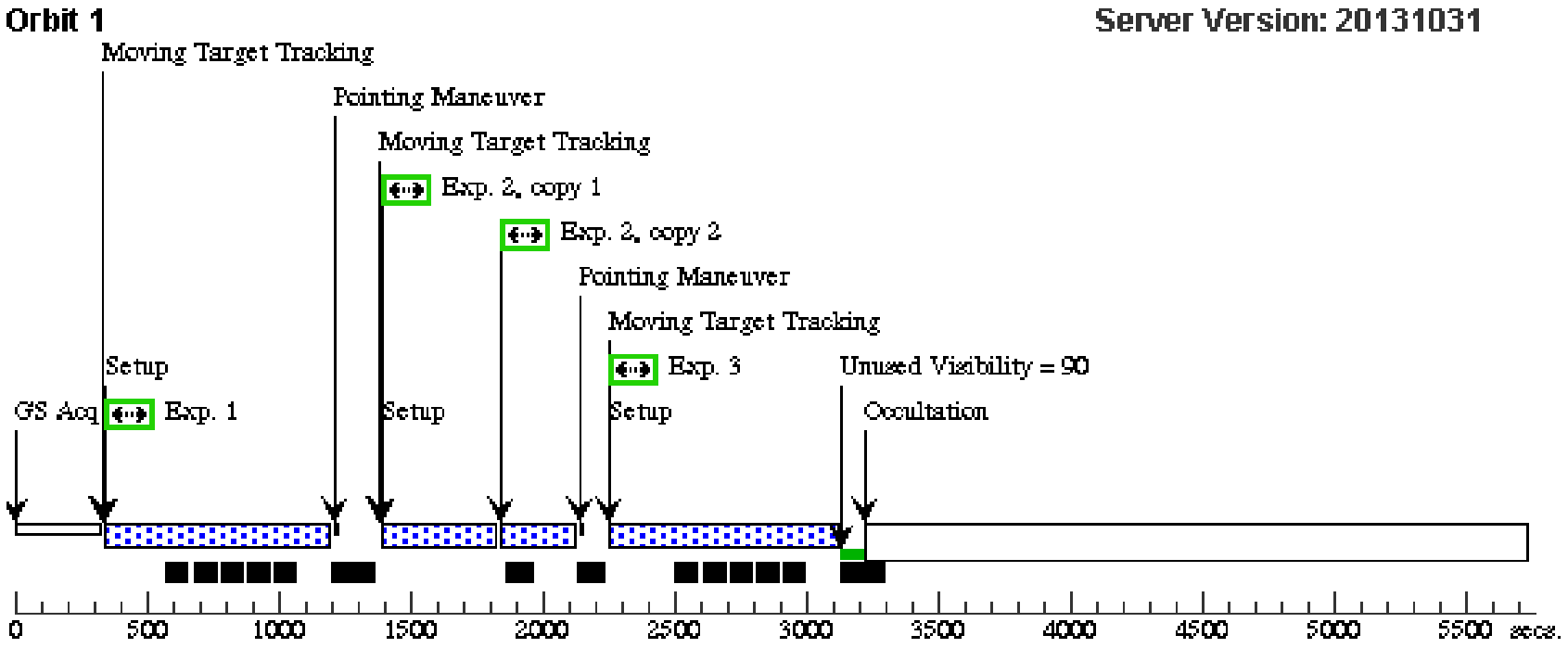
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	SATURN-AURORA-NORTH	STD=SATURN				EARTH

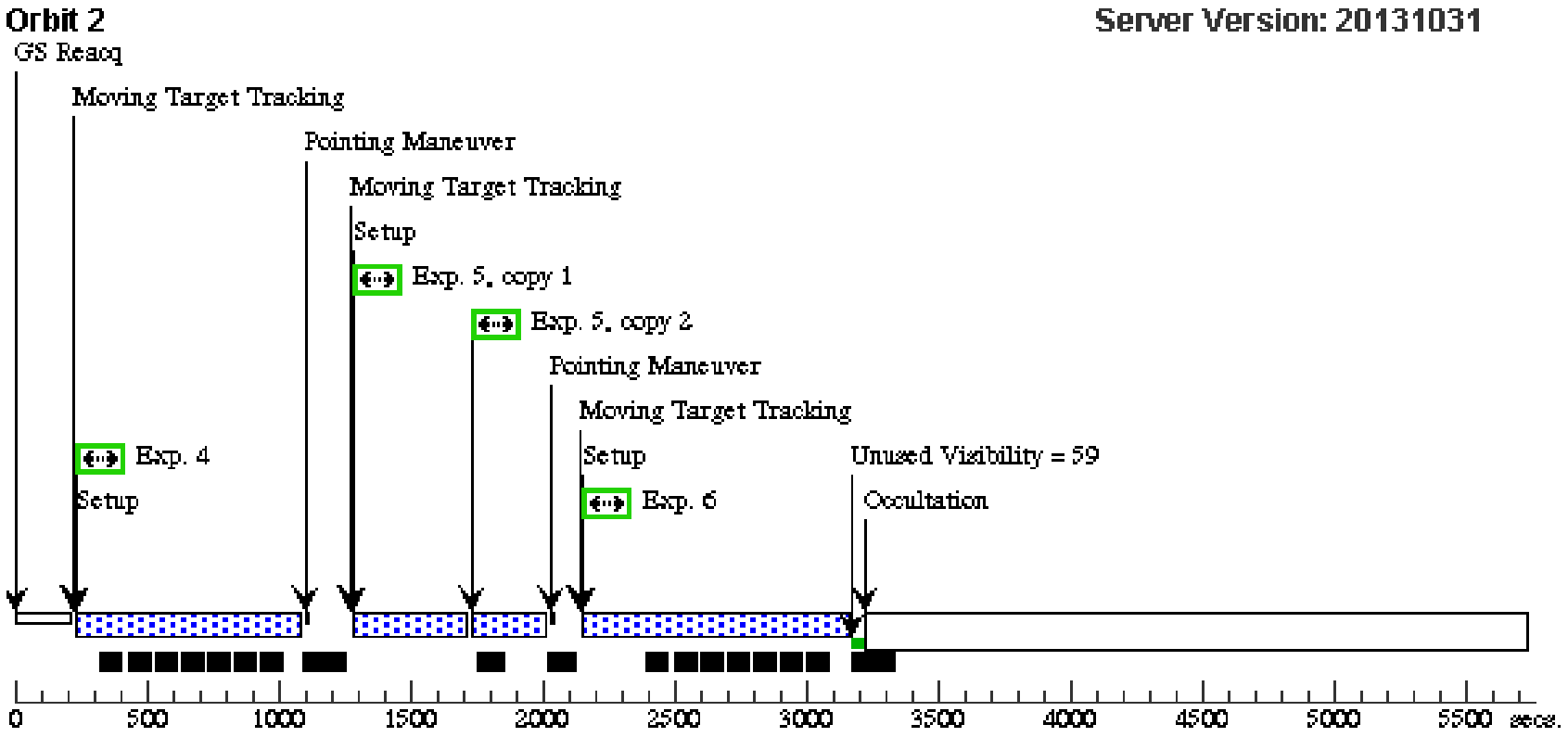
Comments: Moving target. Point at the planet center so that the northern limb and the front and rear parts of the A, B, C rings fit in the MAMA aperture.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 1-3 Non-Int in Visit K4	700 Secs (700 Secs) *[==>]*	 ***[1]***
2		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR			Sequence 1-3 Non-Int in Visit K4	270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[1]***
3		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 1-3 Non-Int in Visit K4	700 Secs (700 Secs) *[==>]*	 ***[1]***
4		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 4-6 Non-Int in Visit K4	840 Secs (840 Secs) *[==>]*	 ***[2]***
5		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR			Sequence 4-6 Non-Int in Visit K4	270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[2]***
6		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 4-6 Non-Int in Visit K4	840 Secs (840 Secs) *[==>]*	 ***[2]***
7		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 7-9 Non-Int in Visit K4	840 Secs (840 Secs) *[==>]*	 ***[3]***
8		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR			Sequence 7-9 Non-Int in Visit K4	270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[3]***
9		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 7-9 Non-Int in Visit K4	840 Secs (840 Secs) *[==>]*	 ***[3]***

Orbit Structure




Orbit 2
Server Version: 20131031
GS Reacq
Moving Target Tracking
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 5, copy 1
Exp. 5, copy 2
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 6
Unused Visibility = 59
Occultation
Exp. 4
Setup
0
500
1000
1500
2000
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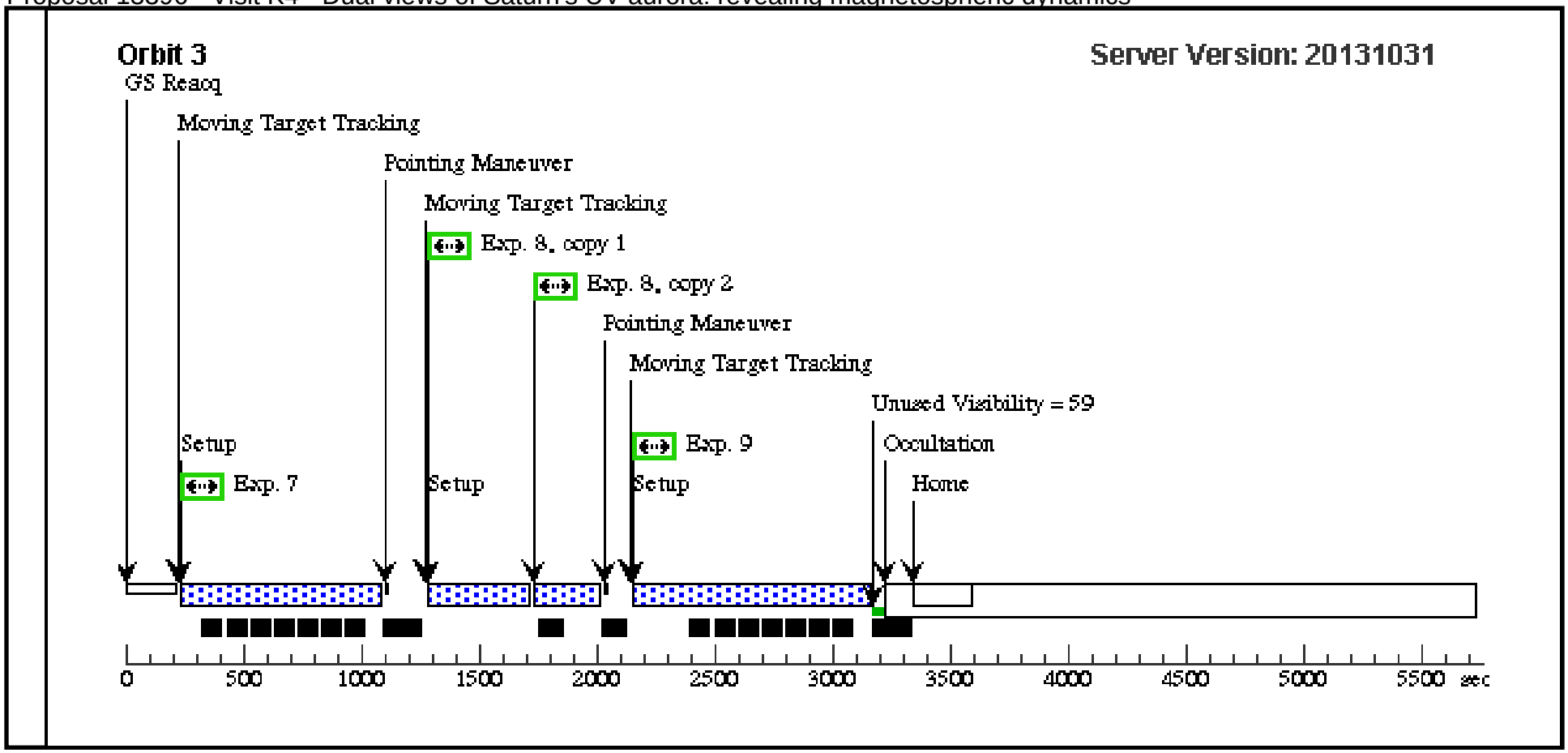
3000
3500
4000
4500
5000
5500
secs.


Orbit 3
Server Version: 20131031
GS Reacq
Moving Target Tracking
Pointing Maneuver
Moving Target Tracking
Exp. 8, copy 1
Exp. 8, copy 2
Pointing Maneuver
Moving Target Tracking
Unused Visibility = 59
Setup
Exp. 7
Setup
Exp. 9
Setup
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13396, Visit K5, scheduling Fri Dec 20 02:08:23 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: STIS/FUV-MAMA

Special Requirements: ORIENT 87D TO 98 D; BETWEEN 24-MAY-2014:13:22:00 AND 26-MAY-2014:00:00:00; BETWEEN 26-MAY-2014:04:30:00 AND 28-MAY-2014:00:00:00; BETWEEN 28-MAY-2014:04:30:00 AND 29-MAY-2014:23:45:00; BETWEEN 30-MAY-2014:04:15:00 AND 30-MAY-2014:23:45:00; BETWEEN 31-MAY-2014:04:15:00 AND 31-MAY-2014:23:45:00; BETWEEN 01-JUN-2014:04:15:00 AND 01-JUN-2014:23:30:00; BETWEEN 02-JUN-2014:04:30:00 AND 03-JUN-2014:01:00:00; BETWEEN 03-JUN-2014:11:00:00 AND 06-JUN-2014:05:45:00; BETWEEN 06-JUN-2014:10:15:00 AND 08-JUN-2014:05:30:00; BETWEEN 08-JUN-2014:17:00:00 AND 10-JUN-2014:05:30:00; BETWEEN 10-JUN-2014:17:00:00 AND 12-JUN-2014:05:15:00; BETWEEN 12-JUN-2014:16:45:00 AND 13-JUN-2014:05:15:00

Comments: Observations of Saturn's northern UV aurorae coincident with Cassini observations of the northern aurorae and ENA.
Imaging on three consecutive orbits to observe time development of features.
Each orbit contains 4 exposures: SrF2-Clear-Clear-SrF2. SrF2 exposures are TIME_TAG, Clear are ACCUM.
Opportunity to optimise timings with STScI when SAA-free orbits are known.
ORIENT ranges are to avoid the repeller wire shadow falling on the northern polar region.

Diagnostics

(Visit K5) Warning (Orbit Planner): STIS TIME-TAG EXPOSURE GENERATES HEAVY DATA VOLUME

(Exposure 1 (Sequence 1-3 Non-Int in Visit K5)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 2 (Sequence 1-3 Non-Int in Visit K5)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 3 (Sequence 1-3 Non-Int in Visit K5)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 4 (Sequence 4-6 Non-Int in Visit K5)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 5 (Sequence 4-6 Non-Int in Visit K5)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 6 (Sequence 4-6 Non-Int in Visit K5)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 7 (Sequence 7-9 Non-Int in Visit K5)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 8 (Sequence 7-9 Non-Int in Visit K5)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 9 (Sequence 7-9 Non-Int in Visit K5)) Warning (Form): Sensitive exposures should have an ETC run number provided.

Solar System Targets

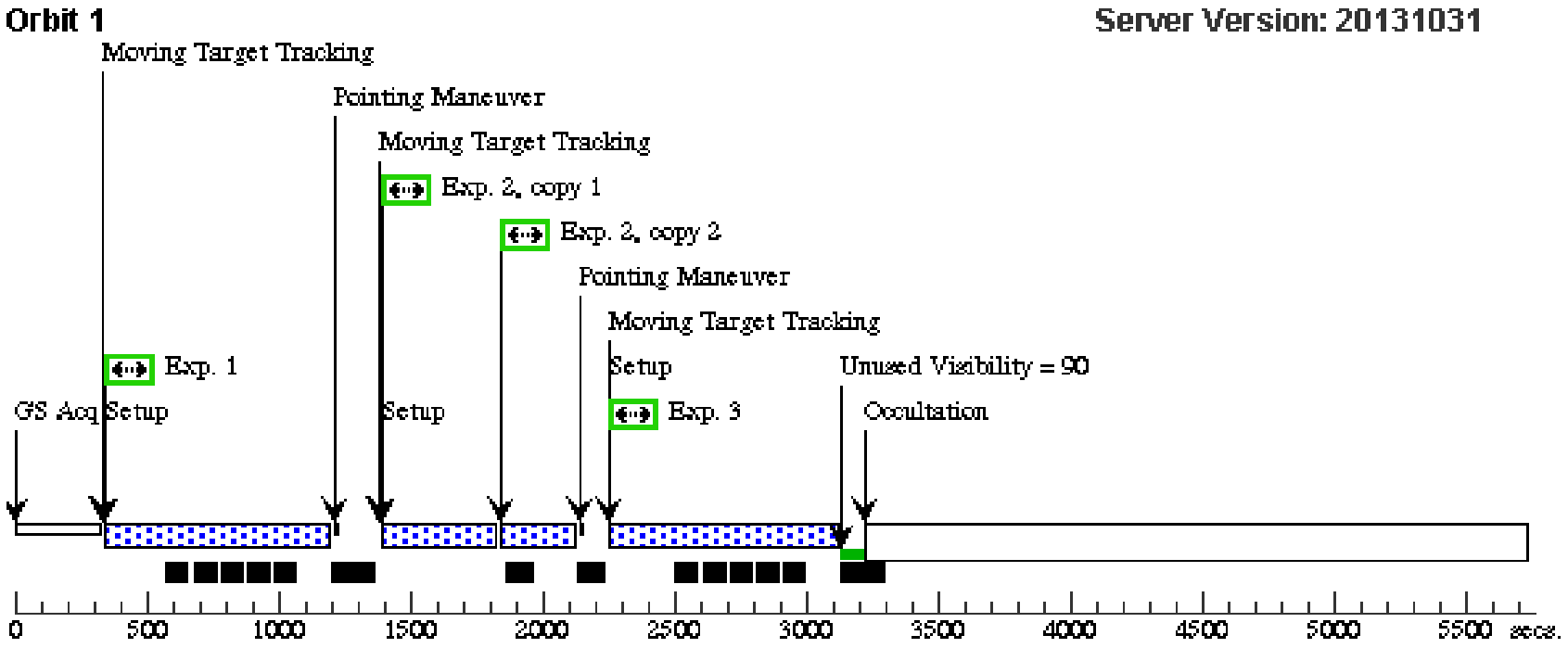
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	SATURN-AURORA-NORTH	STD=SATURN				EARTH

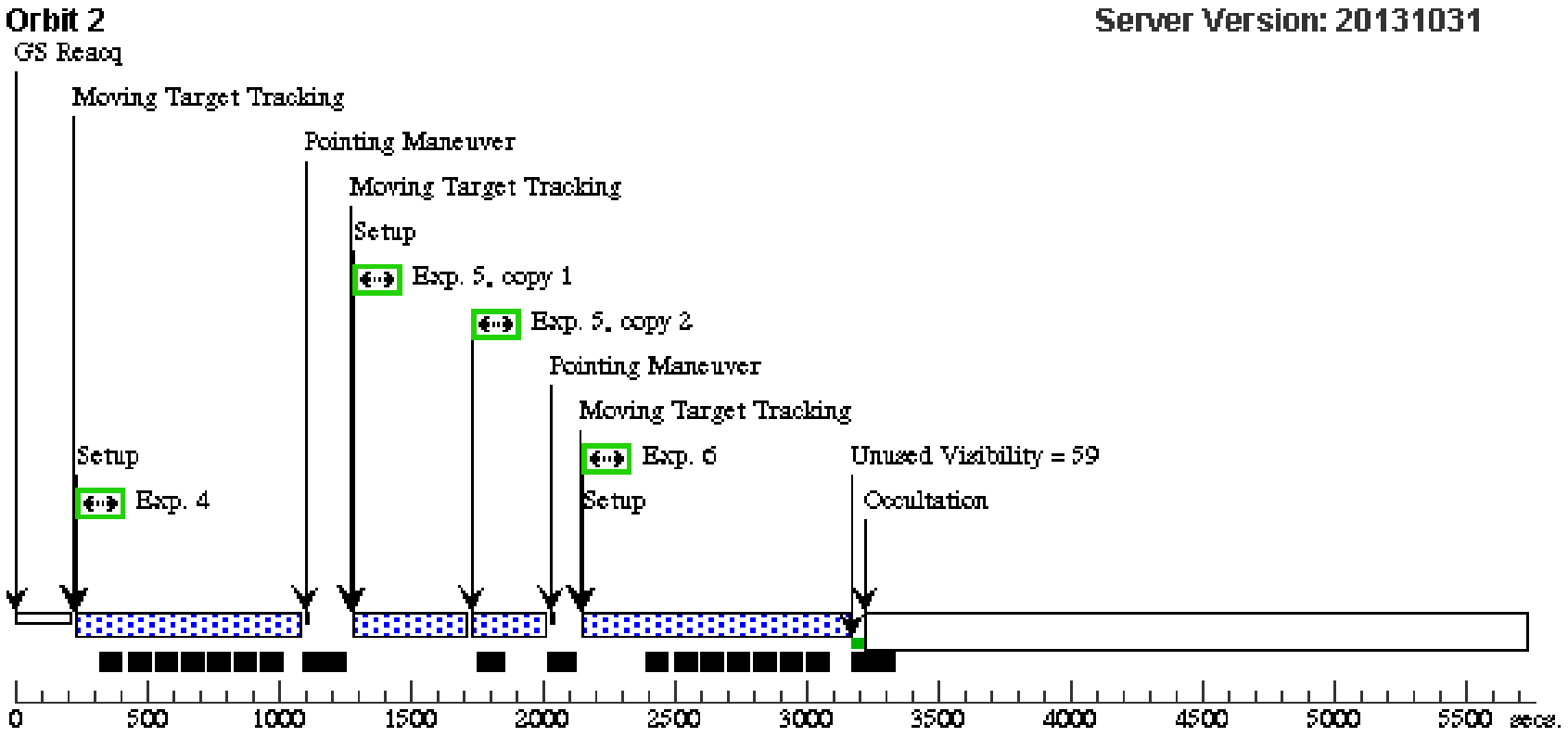
Comments: Moving target. Point at the planet center so that the northern limb and the front and rear parts of the A, B, C rings fit in the MAMA aperture.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 1-3 Non-Int in Visit K5	700 Secs (700 Secs) *[==>]*	 ***[1]***
2		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR			Sequence 1-3 Non-Int in Visit K5	270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[1]***
3		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 1-3 Non-Int in Visit K5	700 Secs (700 Secs) *[==>]*	 ***[1]***
4		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 4-6 Non-Int in Visit K5	840 Secs (840 Secs) *[==>]*	 ***[2]***
5		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR			Sequence 4-6 Non-Int in Visit K5	270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[2]***
6		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 4-6 Non-Int in Visit K5	840 Secs (840 Secs) *[==>]*	 ***[2]***
7		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 7-9 Non-Int in Visit K5	840 Secs (840 Secs) *[==>]*	 ***[3]***
8		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR			Sequence 7-9 Non-Int in Visit K5	270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[3]***
9		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 7-9 Non-Int in Visit K5	840 Secs (840 Secs) *[==>]*	 ***[3]***

Orbit Structure




Orbit 2
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GS Reacq
Moving Target Tracking
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 5, copy 1
Exp. 5, copy 2
Pointing Maneuver
Moving Target Tracking
Exp. 6
Unused Visibility = 59
Setup
Exp. 4
Setup
Occultation
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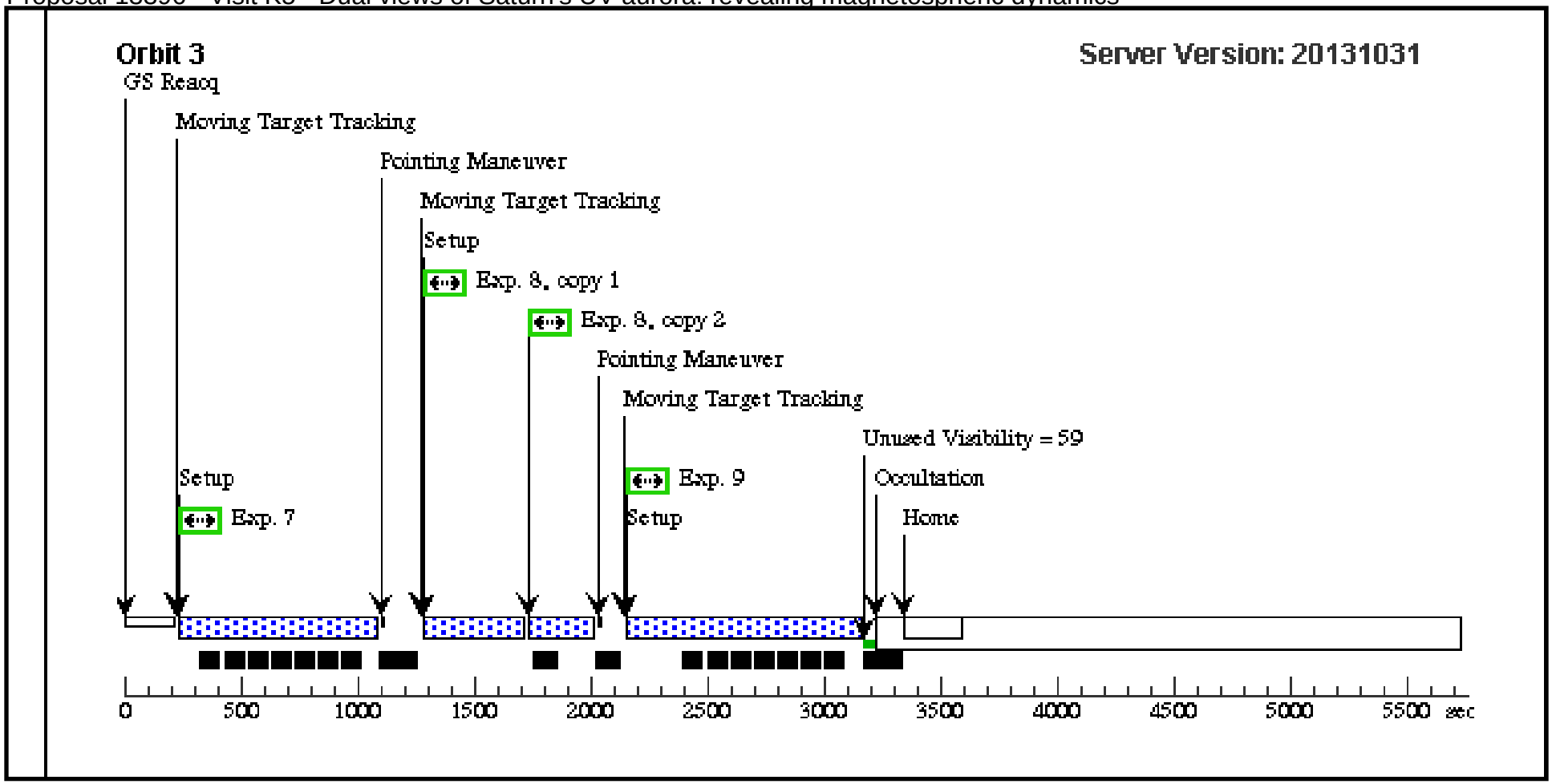
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 3
Server Version: 20131031
GS Reacq
Moving Target Tracking
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 8, copy 1
Exp. 8, copy 2
Pointing Maneuver
Moving Target Tracking
Unused Visibility = 59
Setup
Exp. 7
Exp. 9
Occultation
Setup
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13396, Visit K6, scheduling Fri Dec 20 02:08:25 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: STIS/FUV-MAMA

Special Requirements: ORIENT 87D TO 98 D; BETWEEN 24-MAY-2014:13:22:00 AND 26-MAY-2014:00:00:00; BETWEEN 26-MAY-2014:02:30:00 AND 28-MAY-2014:00:00:00; BETWEEN 28-MAY-2014:02:30:00 AND 29-MAY-2014:23:45:00; BETWEEN 30-MAY-2014:02:15:00 AND 30-MAY-2014:23:45:00; BETWEEN 31-MAY-2014:02:15:00 AND 31-MAY-2014:23:45:00; BETWEEN 01-JUN-2014:02:15:00 AND 01-JUN-2014:23:30:00; BETWEEN 02-JUN-2014:02:00:00 AND 03-JUN-2014:01:00:00; BETWEEN 03-JUN-2014:11:00:00 AND 06-JUN-2014:05:45:00; BETWEEN 06-JUN-2014:08:15:00 AND 08-JUN-2014:05:30:00; BETWEEN 08-JUN-2014:17:00:00 AND 10-JUN-2014:05:30:00; BETWEEN 10-JUN-2014:17:00:00 AND 12-JUN-2014:05:15:00; BETWEEN 12-JUN-2014:16:45:00 AND 13-JUN-2014:05:15:00

Comments: Observations of Saturn's northern UV aurorae coincident with Cassini observations of the northern aurorae and ENA.
Imaging on one orbit, containing 4 exposures: SrF2-Clear-Clear-SrF2. SrF2 exposures are TIME_TAG, Clear are ACCUM.
Opportunity to optimise timings with STScI when SAA-free orbits are known.
ORIENT ranges are to avoid the repeller wire shadow falling on the northern polar region.

Diagnostics

(Exposure 1 (Visit K6)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 2 (Visit K6)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 3 (Visit K6)) Warning (Form): Sensitive exposures should have an ETC run number provided.

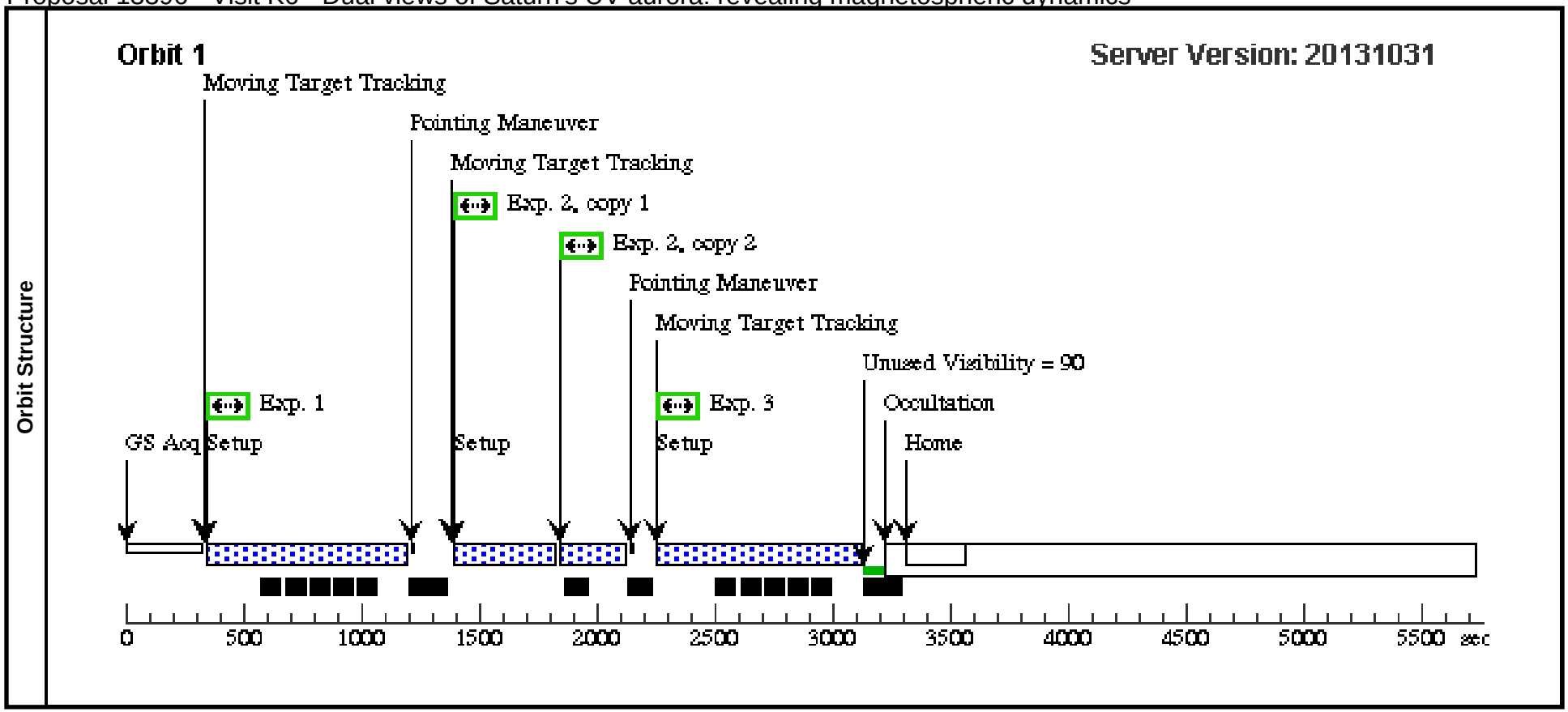
Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	SATURN-AURORA-NORTH	STD=SATURN				EARTH

Comments: Moving target. Point at the planet center so that the northern limb and the front and rear parts of the A, B, C rings fit in the MAMA aperture.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100			700 Secs (700 Secs) *[==>]*	 ***[1]***
2		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR				270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[1]***
3		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100			700 Secs (700 Secs) *[==>]*	 ***[1]***


Orbit Structure
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Server Version: 20131031
Moving Target Tracking
Pointing Maneuver
Moving Target Tracking
Exp. 2, copy 1
Exp. 2, copy 2
Pointing Maneuver
Moving Target Tracking
Unused Visibility = 90
Exp. 1
Exp. 3
Occultation
GS Acq
Setup
Setup
Setup
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Proposal 13396 - Visit K7 - Dual views of Saturn's UV aurora: revealing magnetospheric dynamics

Visit

Proposal 13396, Visit K7, scheduling Fri Dec 20 02:08:26 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: STIS/FUV-MAMA

Special Requirements: ORIENT 89D TO 97 D; BETWEEN 13-JUN-2014:17:30:00 AND 14-JUN-2014:05:15:00; BETWEEN 14-JUN-2014:16:45:00 AND 17-JUN-2014:05:00:00

Comments: Observations of Saturn's northern UV aurorae coincident with Cassini observations of the southern aurorae.
Imaging on three consecutive orbits to observe time development of features.
Each orbit contains 4 exposures: SrF2-Clear-Clear-SrF2. SrF2 exposures are TIME_TAG, Clear are ACCUM.
Opportunity to optimise timings with STScI when SAA-free orbits are known.
ORIENT ranges are to avoid the repeller wire shadow falling on the northern polar region.

Diagnostics

(Visit K7) Warning (Orbit Planner): STIS TIME-TAG EXPOSURE GENERATES HEAVY DATA VOLUME

(Exposure 1 (Sequence 1-3 Non-Int in Visit K7)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 2 (Sequence 1-3 Non-Int in Visit K7)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 3 (Sequence 1-3 Non-Int in Visit K7)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 4 (Sequence 4-6 Non-Int in Visit K7)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 5 (Sequence 4-6 Non-Int in Visit K7)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 6 (Sequence 4-6 Non-Int in Visit K7)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 7 (Sequence 7-9 Non-Int in Visit K7)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 8 (Sequence 7-9 Non-Int in Visit K7)) Warning (Form): Sensitive exposures should have an ETC run number provided.

(Exposure 9 (Sequence 7-9 Non-Int in Visit K7)) Warning (Form): Sensitive exposures should have an ETC run number provided.

Solar System Targets

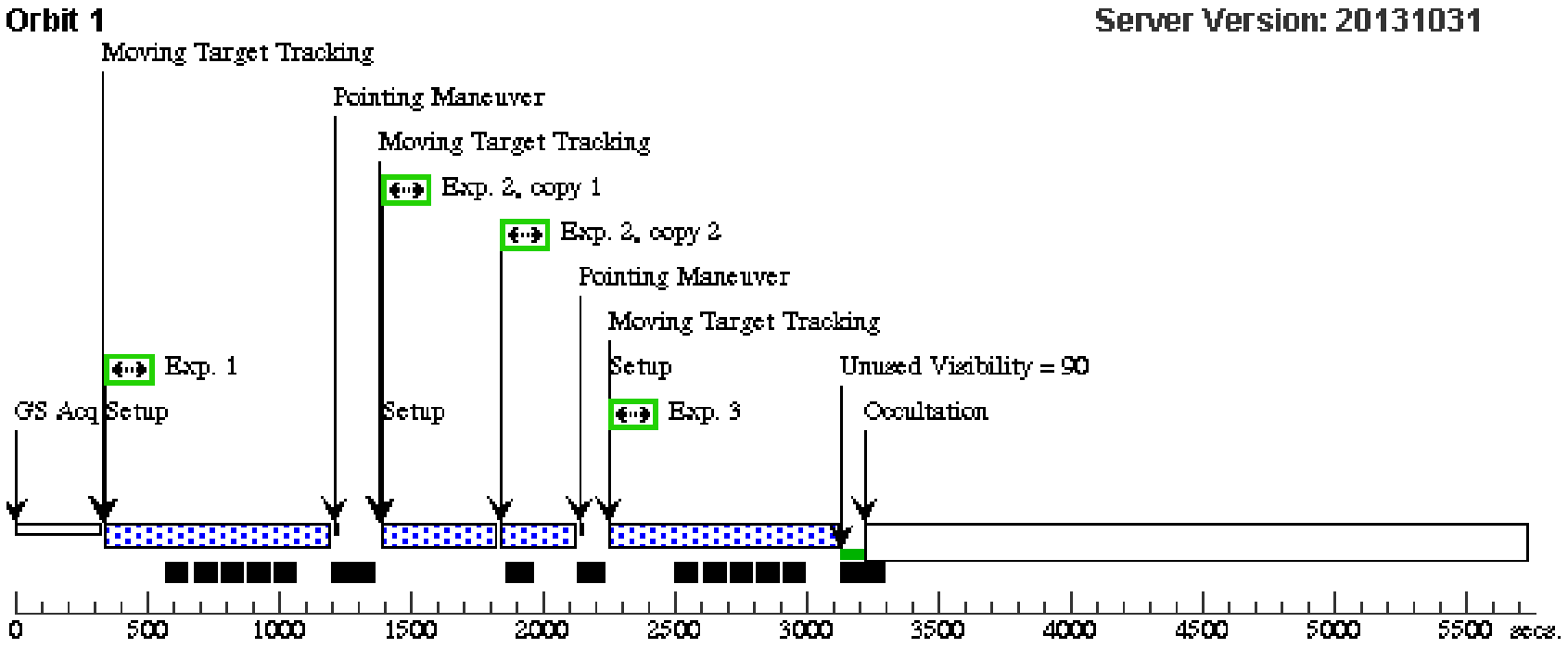
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	SATURN-AURORA-NORTH	STD=SATURN				EARTH

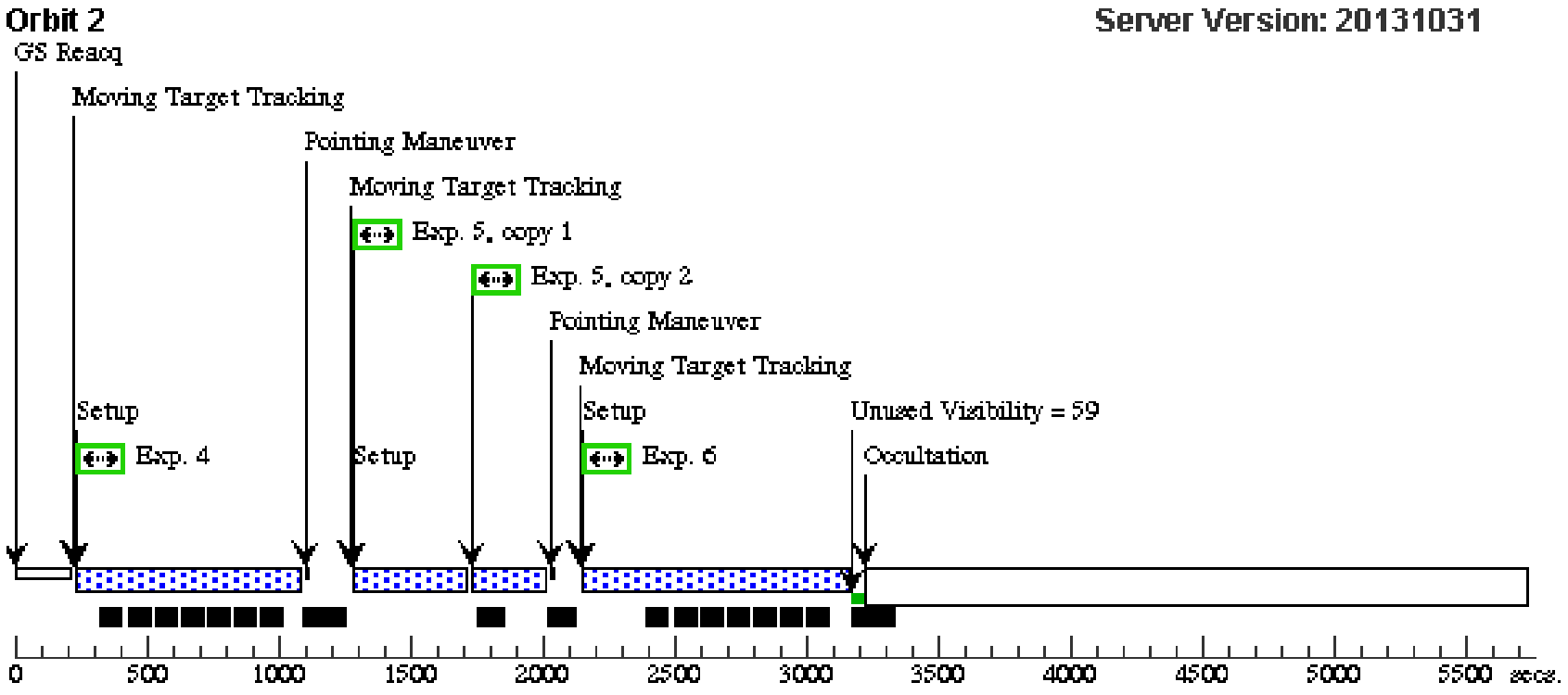
Comments: Moving target. Point at the planet center so that the northern limb and the front and rear parts of the A, B, C rings fit in the MAMA aperture.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 1-3 Non-Int in Visit K7	700 Secs (700 Secs) *[==>]*	 ***[1]***
2		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR			Sequence 1-3 Non-Int in Visit K7	270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[1]***
3		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 1-3 Non-Int in Visit K7	700 Secs (700 Secs) *[==>]*	 ***[1]***
4		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 4-6 Non-Int in Visit K7	840 Secs (840 Secs) *[==>]*	 ***[2]***
5		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR			Sequence 4-6 Non-Int in Visit K7	270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[2]***
6		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 4-6 Non-Int in Visit K7	840 Secs (840 Secs) *[==>]*	 ***[2]***
7		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 7-9 Non-Int in Visit K7	840 Secs (840 Secs) *[==>]*	 ***[3]***
8		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, ACCUM, 25MAMA	MIRROR			Sequence 7-9 Non-Int in Visit K7	270 Secs X 2 (540 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[3]***
9		(1) SATURN-AURORA-NORTH	STIS/FUV-MAMA, TIME-TAG, F25SRF2	MIRROR	BUFFER-TIME=100		Sequence 7-9 Non-Int in Visit K7	840 Secs (840 Secs) *[==>]*	 ***[3]***

Orbit Structure

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Pointing Maneuver
Moving Target Tracking
Exp. 5, copy 1
Exp. 5, copy 2
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 4
Setup
Setup
Exp. 6
Unused Visibility = 59
Occultation
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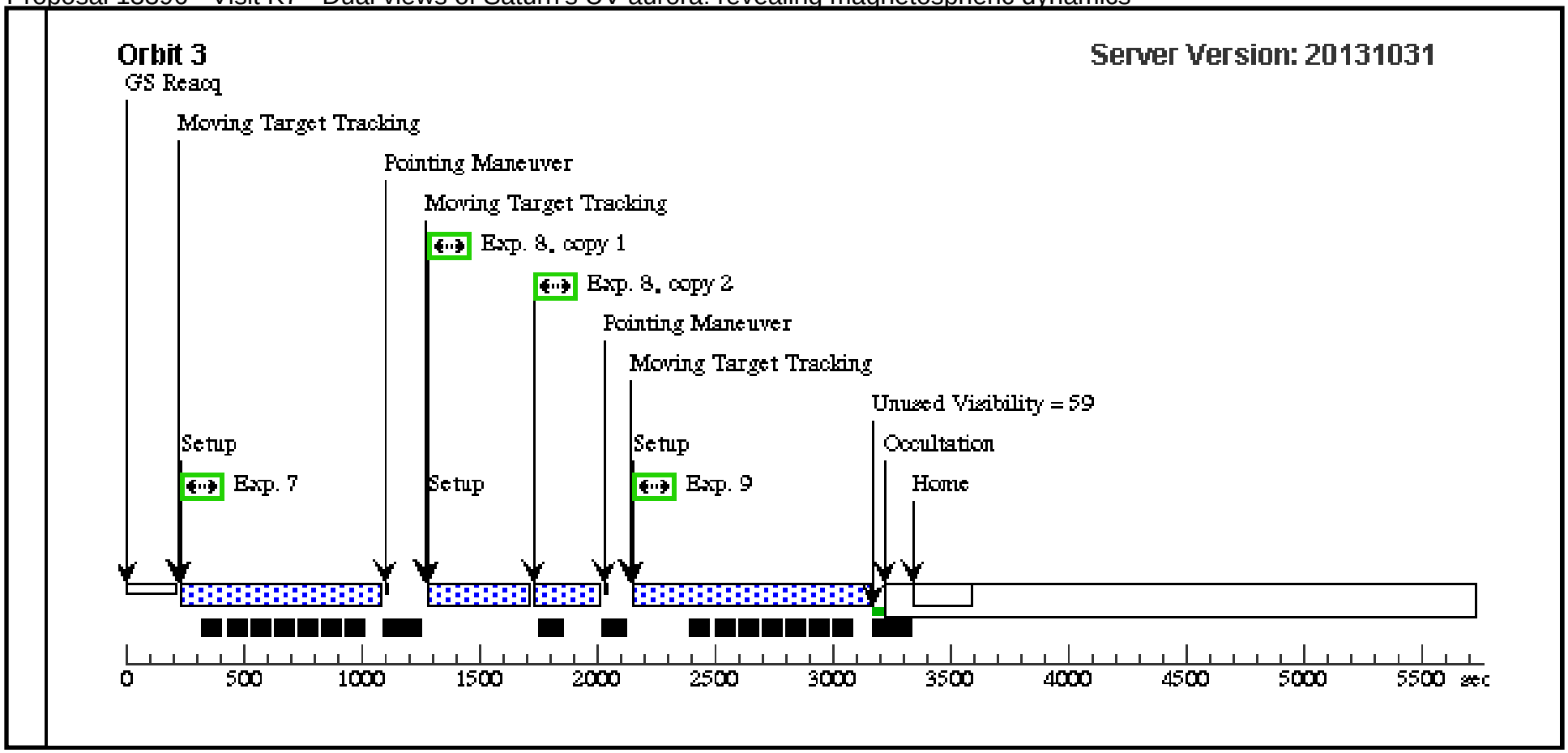
secs.


Orbit 3
Server Version: 20131031
GS Reacq
Moving Target Tracking
Pointing Maneuver
Moving Target Tracking
Exp. 8, copy 1
Exp. 8, copy 2
Pointing Maneuver
Moving Target Tracking
Unused Visibility = 59
Setup
Exp. 7
Setup
Setup
Exp. 9
Occultation
Home
0
500
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1500
2000
2500
3000
3500
4000
4500
5000
5500
sec