



13051 - Long term observations of Saturn's northern auroras

Cycle: 20, Proposal Category: GO

(Availability Mode: AVAILABLE)

INVESTIGATORS

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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
J1	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:21.0	yes
J2	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:23.0	yes
J3	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:25.0	yes
J4	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:26.0	yes
J5	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:28.0	yes
J6	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:30.0	yes
J7	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:31.0	yes
J8	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:33.0	yes
J9	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:35.0	yes
JA	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:36.0	yes
JB	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:39.0	yes
JC	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:41.0	yes
JD	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:42.0	yes
JE	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:44.0	yes
JF	(1) SATURN	ACS/SBC	1	03-Feb-2016 21:06:46.0	yes
JG	DARK	ACS/SBC	1	03-Feb-2016 21:06:46.0	yes

16 Total Orbits Used

ABSTRACT

Auroral emissions are a vital tool in diagnosing the dynamics of planetary magnetospheres. While Saturn's southern UV auroras have been observed with high-sensitivity cameras onboard the Hubble Space Telescope (HST), the northern auroras have only been observed at very oblique angles. Our understanding of Saturn's auroral emissions is thus only half complete. However, Saturn has now passed equinox and is moving toward summer in the northern hemisphere, such that the northern auroras are now visible from Earth, and recent results from HST have indicated that Saturn's northern auroras are not simply mirror images of the southern. The changing seasons are also expected to result in significant changes in magnetospheric phenomena related to the auroras. Observing these changes is a specific goal of the Cassini Solstice Mission (CSM) and, since joint HST-Cassini observations have repeatedly proved to be invaluable, CSM operations are currently being planned specifically with joint HST

observations in mind. The observations proposed here will thus execute over Cycles 18-20, and will address the following science questions:

What is the morphology of Saturn's northern auroras?

Do Saturn's auroras change with the planet's season?

How are the auroral emissions of different wavelengths related?

The importance of long term HST observations of Saturn's northern auroras are highlighted by the fact that recent key discoveries would have been missed without the multiyear archive of observations of the planet's southern auroras. The opportunity to obtain HST images while Cassini makes specifically-tailored supporting observations is an extremely valuable opportunity, and HST is the only instrument capable of providing sustained, high time resolution observations of Saturn's auroral emission.

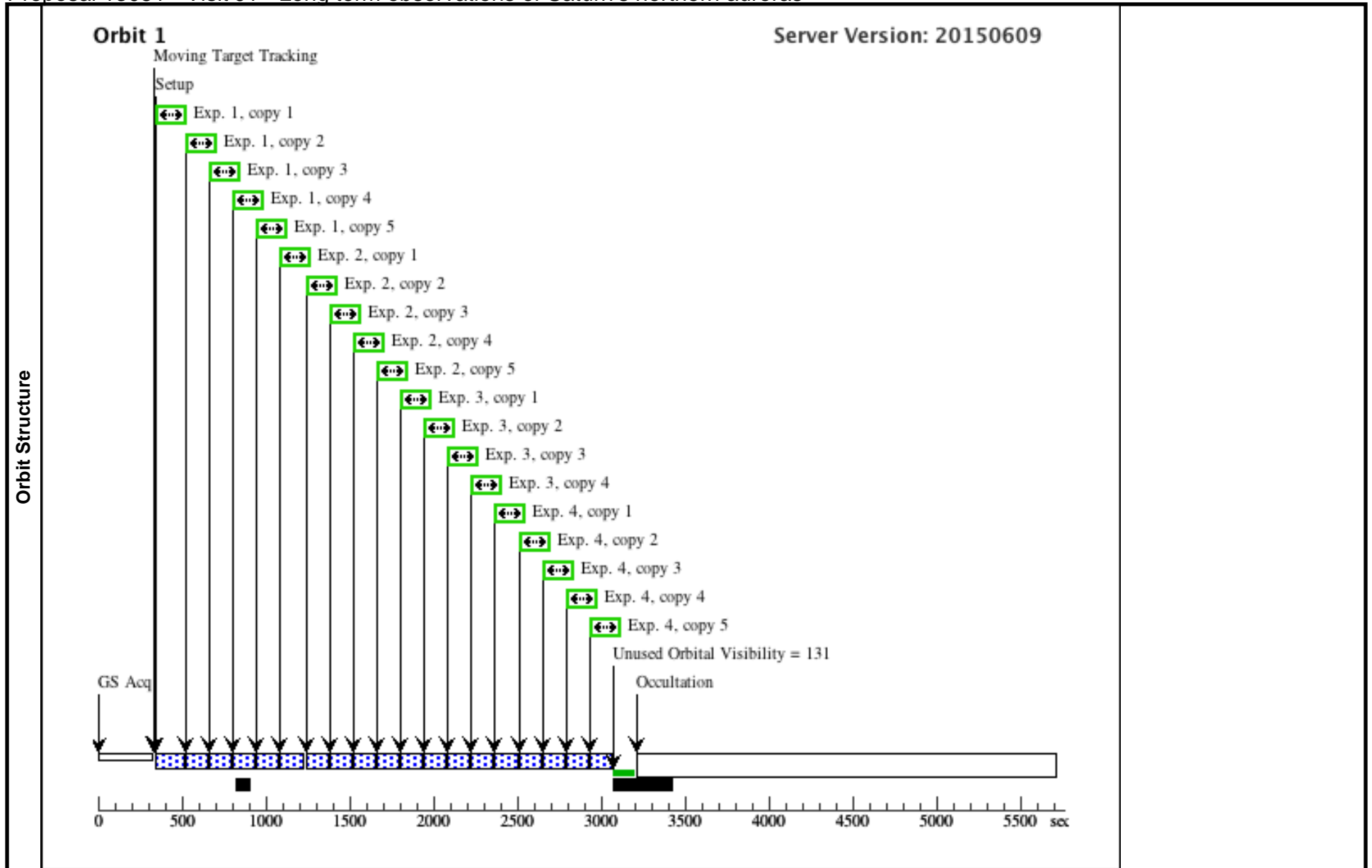
OBSERVING DESCRIPTION

These observations will be obtained with the Solar Blind Channel (SBC) of the ACS. The field of view of the ACS/SBC is large enough to encompass the whole disc of the planet plus a significant portion of the rings. The observations could, however, also be obtained with the STIS/FUV-MAMA instrument if the ACS is not functioning, but in practice we prefer to use the ACS, since the sensitivity using e.g. the F125LP filter is $\sim 1.5 \times 10^3$ counts pixel⁻¹ s⁻¹ for 1 kiloRayleigh of H₂ plus Lyman- α emission, versus $\sim 0.5 \times 10^3$ counts pixel⁻¹ s⁻¹ for the STIS using the equivalent F25-SrF₂ filter. Higher count rates are desirable since planetary rotation introduces $\sim 1/100$ s of blurring of features near the central meridian longitude. Previously measured count rates are $\sim 25,000$ counts s⁻¹, well below the limit of 200,000 counts s⁻¹. We will use the F115LP filter during the Low Sky portion of the orbit and the F125LP filter outside of this in order to reduce the Ly- α background contamination from the geocorona. For each set of observations, we will also obtain a set of images using the F140LP filter in order to provide the background reflected sunlight for subtraction. We will obtain 100 s exposures, a length experience shows is sufficient to obtain a good signal-to-noise ratio. We request 30 orbits over 3 cycles divided as follows: 5 orbits in Cycle 18, 10 orbits in Cycle 19 and 15 orbits in Cycle 20. This increasing number of orbits per year reflects the increasing view of the northern auroral region as shown in Fig. 1. Observations will be obtained near opposition each year, with pre-opposition providing the best viewing angles due to the Earth's orbital motion. In the past, Saturn observations have been successfully obtained in both 2-gyro and 3-gyro mode.

Proposal 13051 - Visit J1 - Long term observations of Saturn's northern auroras

Thu Feb 04 02:06:48 GMT 2016

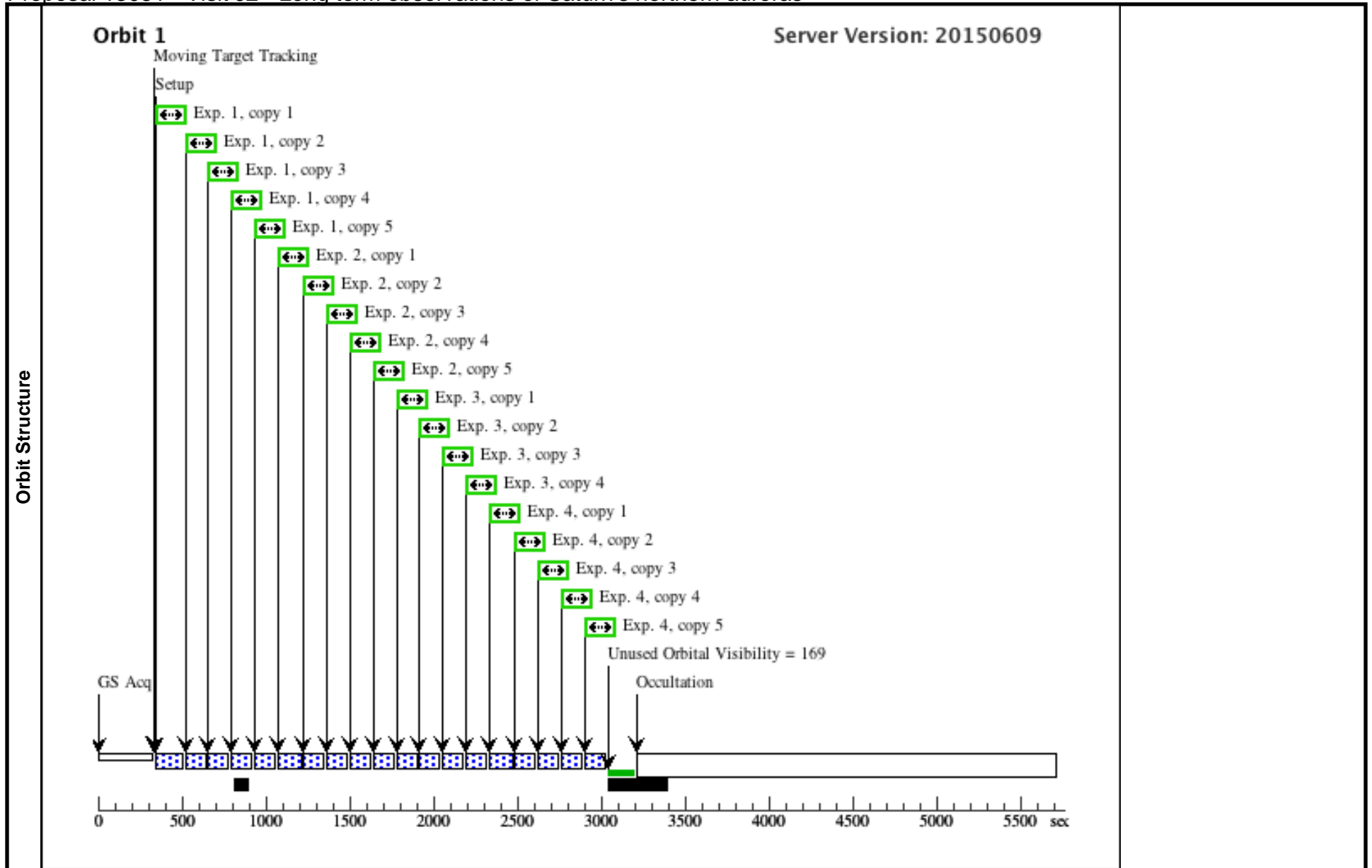
Visit	Proposal 13051, Visit J1, completed Diagnostic Status: Warning Scientific Instruments: ACS/SBC Special Requirements: BETWEEN 05-APR-2013:04:00:00 AND 05-APR-2013:20:00:00 <i>Comments: This visit is timed to co-occur with Cassini observations of Titan crossing the magnetosheath, which could impact on the aurora. The UT range (04-16 h) is to ensure as much overlap with supporting ground-based observations from Hawaii as possible. However, this latter constraint can be relaxed if this is not possible.</i>									
	Diagnosics (Exposure 1 (Visit J1)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 2 (Visit J1)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 3 (Visit J1)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 4 (Visit J1)) 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	STD=SATURN			SEP OF SATURN RHEA FROM EARTH GT 10.0", SEP OF SATURN TITAN FROM EARTH GT 10.0"	EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP		GS ACQ SCENARI O BASE1B3		100 Secs X 5 (500 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
	2		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 5 (500 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
	3		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 4 (400 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)]	[1]
	4		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP				100 Secs X 5 (500 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]



Proposal 13051 - Visit J2 - Long term observations of Saturn's northern auroras

Thu Feb 04 02:06:48 GMT 2016

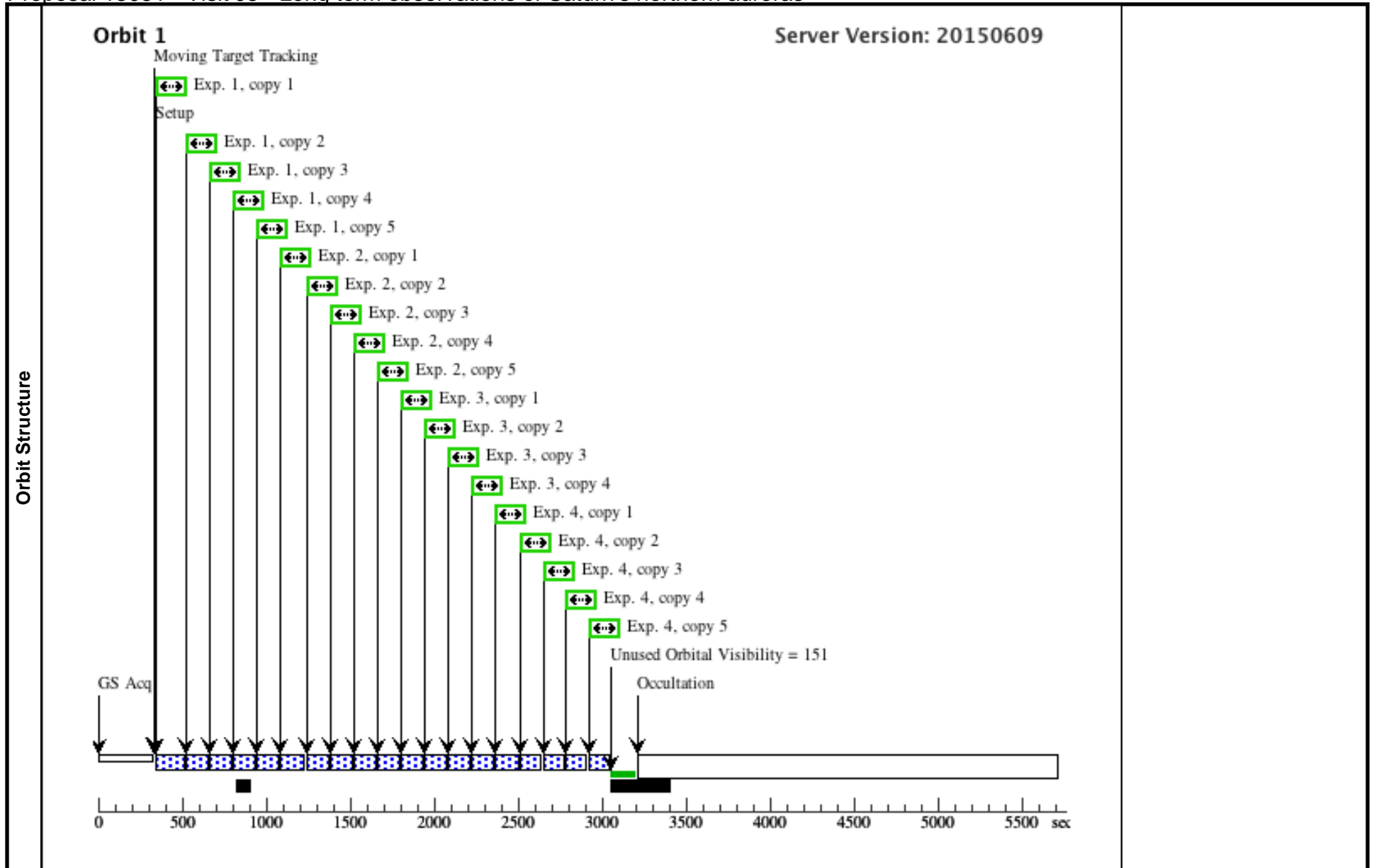
Visit	Proposal 13051, Visit J2, completed Diagnostic Status: Warning Scientific Instruments: ACS/SBC Special Requirements: BETWEEN 19-APR-2013:04:00:00 AND 19-APR-2013:16:00:00 <i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (04-16 h) is to ensure as much overlap with related Cassini observations as possible. However, this latter constraint can be relaxed if this is not possible.</i>									
	Diagnosics (Exposure 1 (Visit J2)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 2 (Visit J2)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 3 (Visit J2)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 4 (Visit J2)) 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	STD=SATURN			SEP OF SATURN RHEA FROM EARTH GT 10.0", SEP OF SATURN TITAN FROM EARTH GT 10.0"	EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP		GS ACQ SCENARI O BASE1B3		98 Secs X 5 (490 Secs)	
									[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
	2		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				98 Secs X 5 (490 Secs)	
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3		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				98 Secs X 4 (392 Secs)		
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4		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP				98 Secs X 5 (490 Secs)		
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]	



Proposal 13051 - Visit J3 - Long term observations of Saturn's northern auroras

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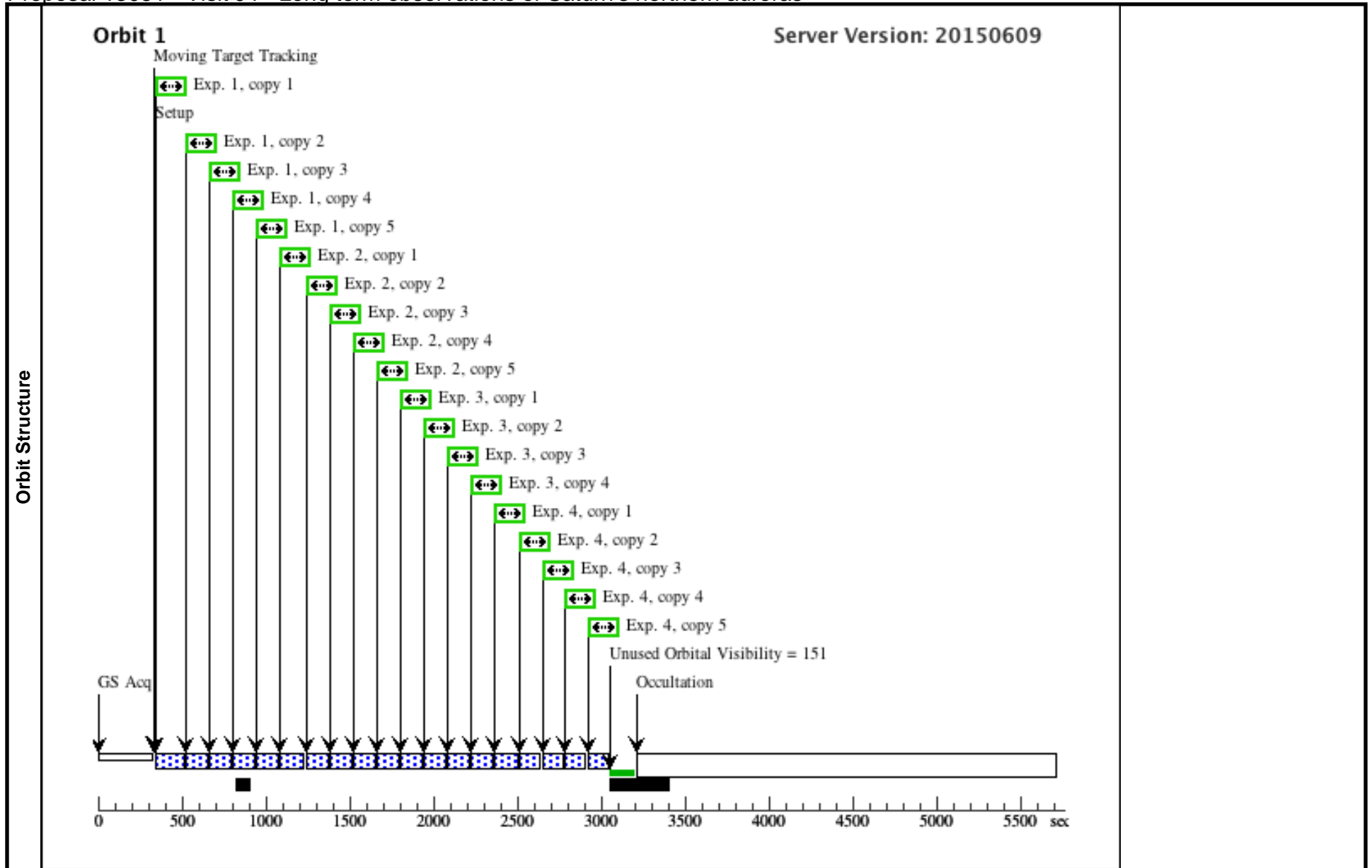
Visit	<p>Proposal 13051, Visit J3, completed</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: ACS/SBC</p> <p>Special Requirements: BETWEEN 20-APR-2013:12:00:00 AND 20-APR-2013:17:00:00</p> <p><i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (12-17 h) is to ensure as much overlap with supporting ground-based observations from Hawaii as possible. However, this latter constraint can be relaxed if this is not possible. In order to get this visit to schedule, Exposure 4 was reduced to exposure times of 96 s, from the original 100 s.</i></p>									
	<p>(Exposure 1 (Visit J3)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 2 (Visit J3)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 3 (Visit J3)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 4 (Visit J3)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p>									
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	SATURN	STD=SATURN			SEP OF SATURN RHEA FROM EARTH GT 10.0", SEP OF SATURN TITAN FROM EARTH GT 10.0"	EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP		GS ACQ SCENARI O BASE1B3		100 Secs X 5 (500 Secs)	
									[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
	2		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 5 (500 Secs)	
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3		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 4 (400 Secs)		
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4		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP				96 Secs X 5 (480 Secs)		
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Proposal 13051 - Visit J4 - Long term observations of Saturn's northern auroras

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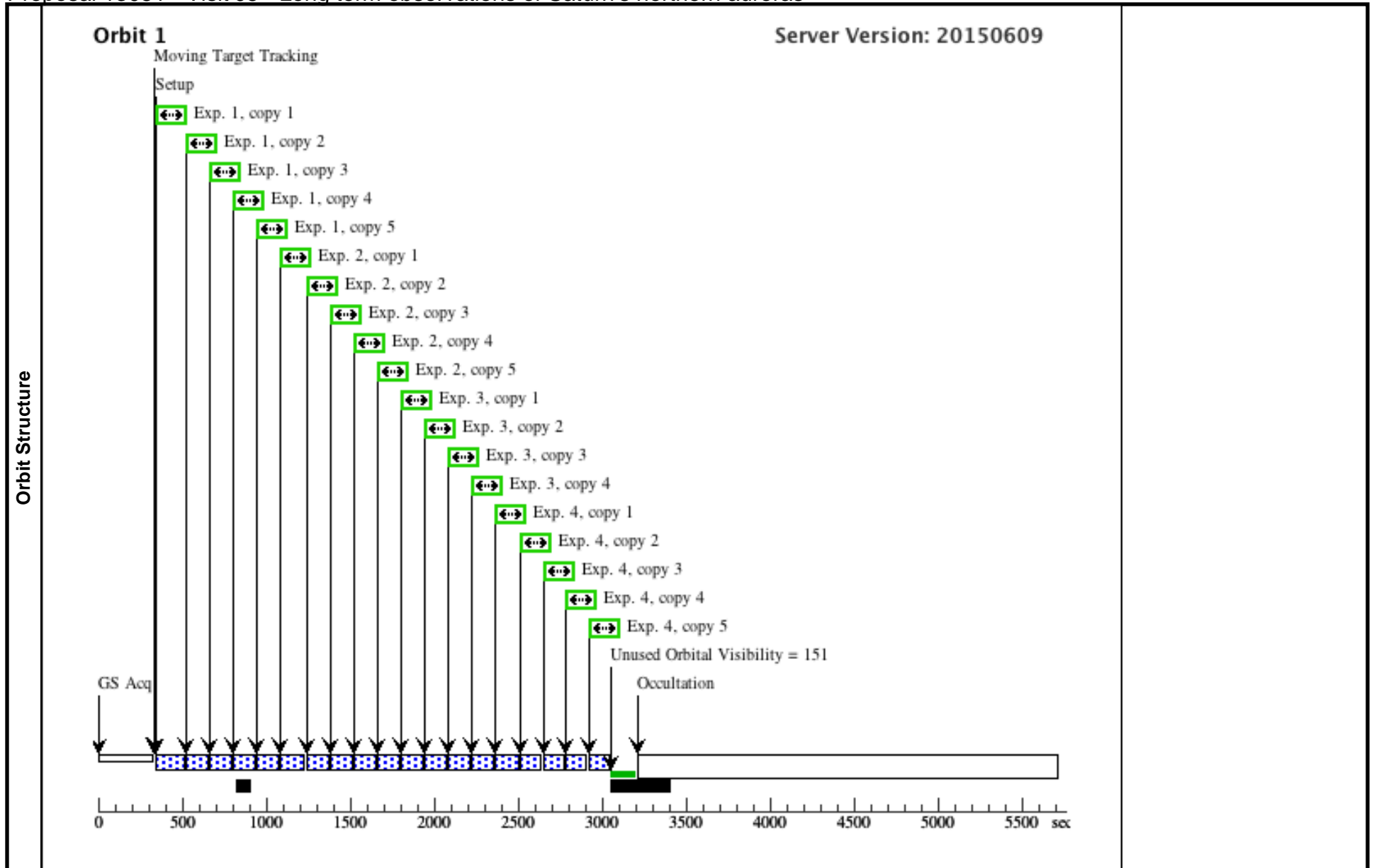
Visit	<p>Proposal 13051, Visit J4, completed</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: ACS/SBC</p> <p>Special Requirements: BETWEEN 21-APR-2013:04:00:00 AND 21-APR-2013:16:00:00</p> <p><i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (04-16 h) is to ensure as much overlap with supporting Cassini auroral observations as possible. However, this latter constraint can be relaxed if this is not possible. In order to get this visit to schedule, Exposure 4 was reduced to exposure times of 96 s, from the original 100 s.</i></p>									
	<p>(Exposure 1 (Visit J4)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 2 (Visit J4)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 3 (Visit J4)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 4 (Visit J4)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p>									
Diagnostics										
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	SATURN	STD=SATURN			SEP OF SATURN RHEA FROM EARTH GT 10.0", SEP OF SATURN TITAN FROM EARTH GT 10.0"	EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP		GS ACQ SCENARI O BASE1B3		100 Secs X 5 (500 Secs)	
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	2		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 5 (500 Secs)	
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3		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 4 (400 Secs)		
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4		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP				96 Secs X 5 (480 Secs)		
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Proposal 13051 - Visit J5 - Long term observations of Saturn's northern auroras

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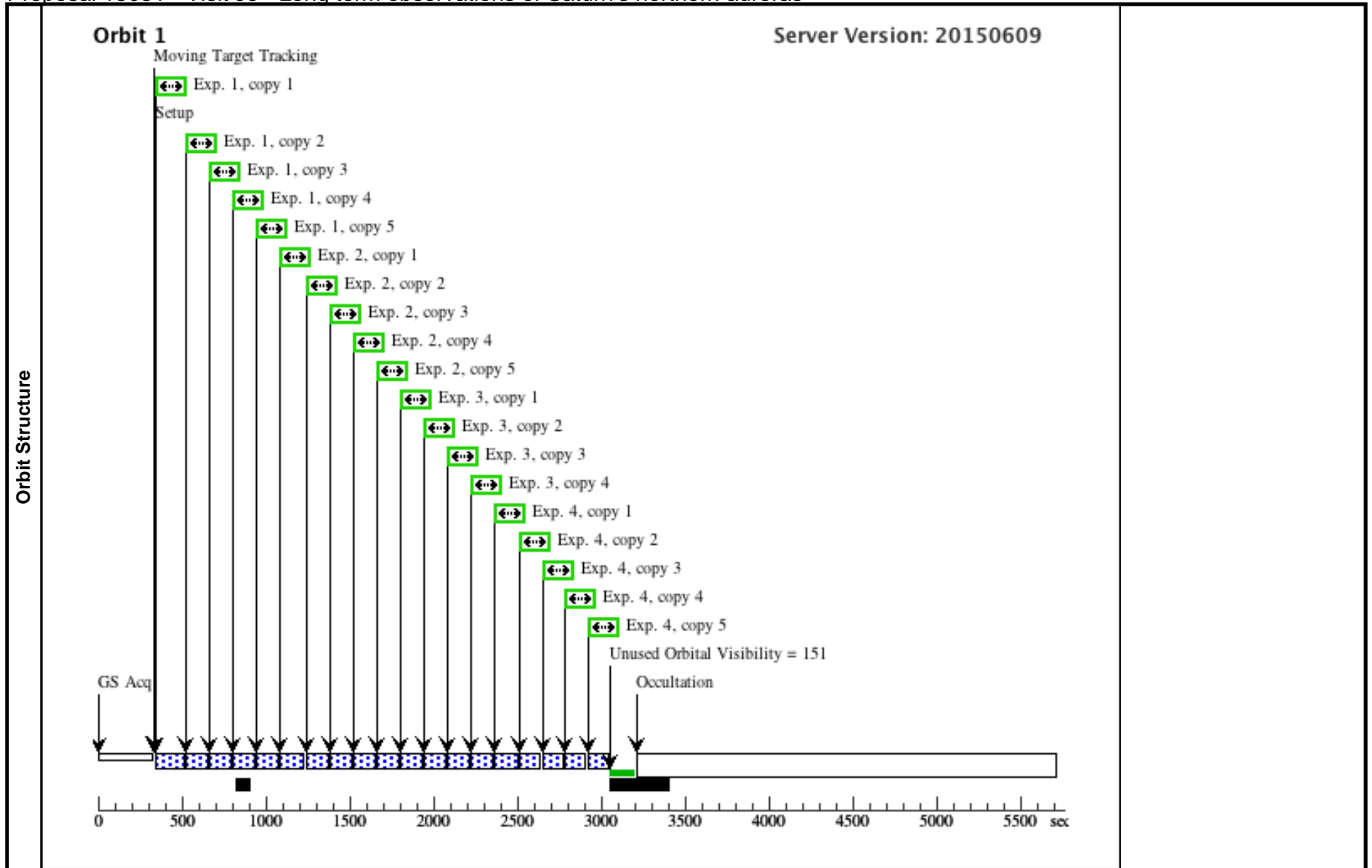
Visit	<p>Proposal 13051, Visit J5, completed</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: ACS/SBC</p> <p>Special Requirements: BETWEEN 21-APR-2013:04:00:00 AND 21-APR-2013:16:00:00</p> <p><i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (04-16 h) is to ensure as much overlap with supporting ground-based observations from Hawaii as possible. However, this latter constraint can be relaxed if this is not possible. In order to get this visit to schedule, Exposure 4 was reduced to exposure times of 96 s, from the original 100 s.</i></p>									
	<p>(Exposure 1 (Visit J5)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 2 (Visit J5)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 3 (Visit J5)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 4 (Visit J5)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p>									
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	SATURN	STD=SATURN			SEP OF SATURN RHEA FROM EARTH GT 10.0", SEP OF SATURN TITAN FROM EARTH GT 10.0"	EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP		GS ACQ SCENARI O BASE1B3		100 Secs X 5 (500 Secs)	
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								[==>(Copy 4)]		
								[==>(Copy 5)]		
2		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP					100 Secs X 5 (500 Secs)	
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									[==>(Copy 2)]	
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3		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP					100 Secs X 4 (400 Secs)	
									[==>(Copy 1)]	[1]
									[==>(Copy 2)]	
									[==>(Copy 3)]	
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4		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP					96 Secs X 5 (480 Secs)	
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									[==>(Copy 2)]	
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Proposal 13051 - Visit J6 - Long term observations of Saturn's northern auroras

Thu Feb 04 02:06:48 GMT 2016

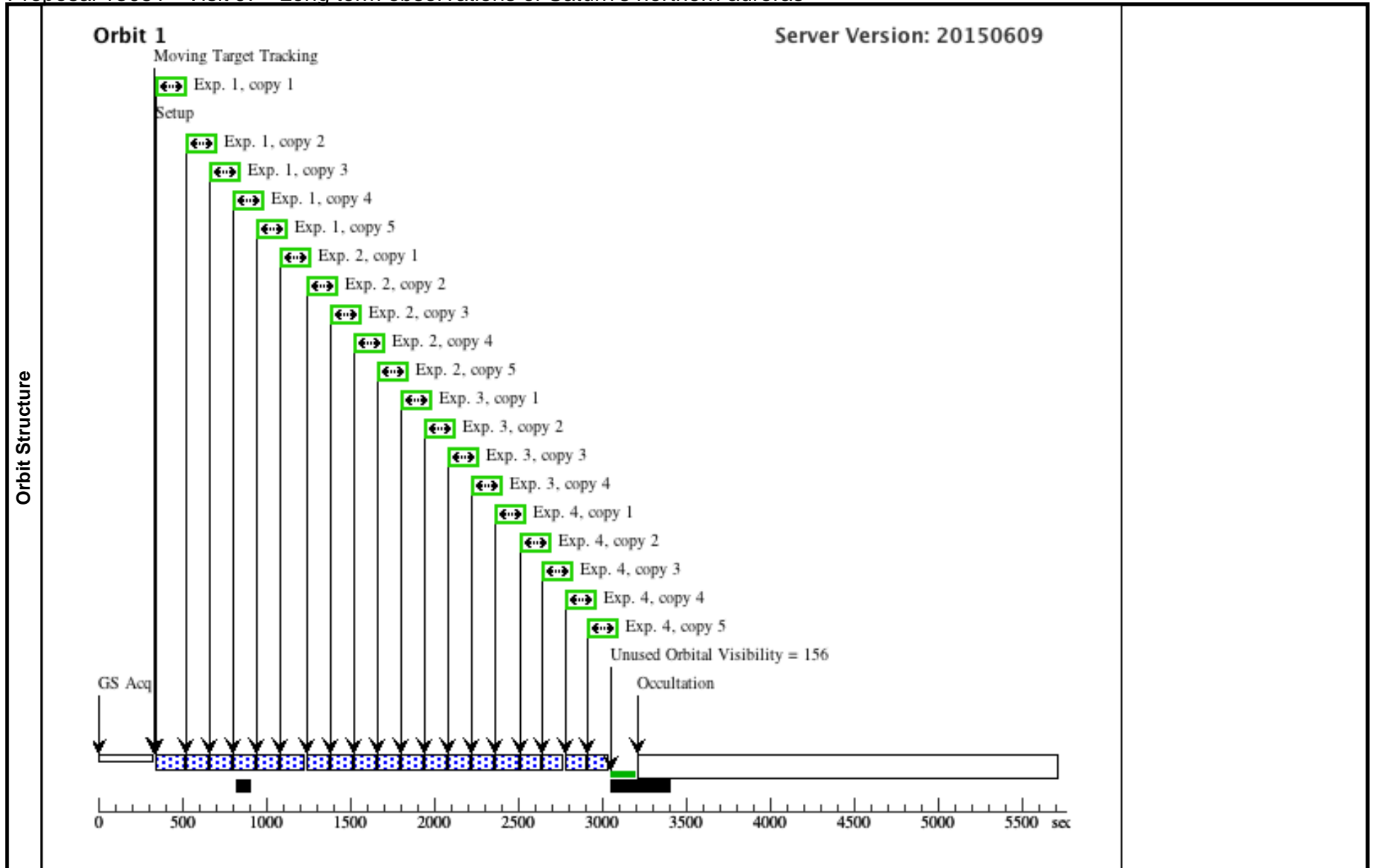
Visit	<p>Proposal 13051, Visit J6, completed</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: ACS/SBC</p> <p>Special Requirements: BETWEEN 22-APR-2013:04:00:00 AND 22-APR-2013:16:00:00</p> <p><i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (04-16 h) is to ensure as much overlap with supporting ground-based observations from Hawaii as possible. However, this latter constraint can be relaxed if this is not possible. In order to get this visit to schedule, Exposure 4 was reduced to exposure times of 96 s, from the original 100 s.</i></p>									
	<p>Diagnosics</p> <p>(Exposure 1 (Visit J6)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 2 (Visit J6)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 3 (Visit J6)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 4 (Visit J6)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p>									
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	SATURN	STD=SATURN			SEP OF SATURN RHEA FROM EARTH GT 10.0", SEP OF SATURN TITAN FROM EARTH GT 10.0"	EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP		GS ACQ SCENARI O BASE1B3		100 Secs X 5 (500 Secs)	
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									[==>(Copy 3)]	
								[==>(Copy 4)]		
								[==>(Copy 5)]		
2		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP					100 Secs X 5 (500 Secs)	
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3		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP					100 Secs X 4 (400 Secs)	
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									[==>(Copy 3)]	
									[==>(Copy 4)]	
4		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP					96 Secs X 5 (480 Secs)	
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Proposal 13051 - Visit J7 - Long term observations of Saturn's northern auroras

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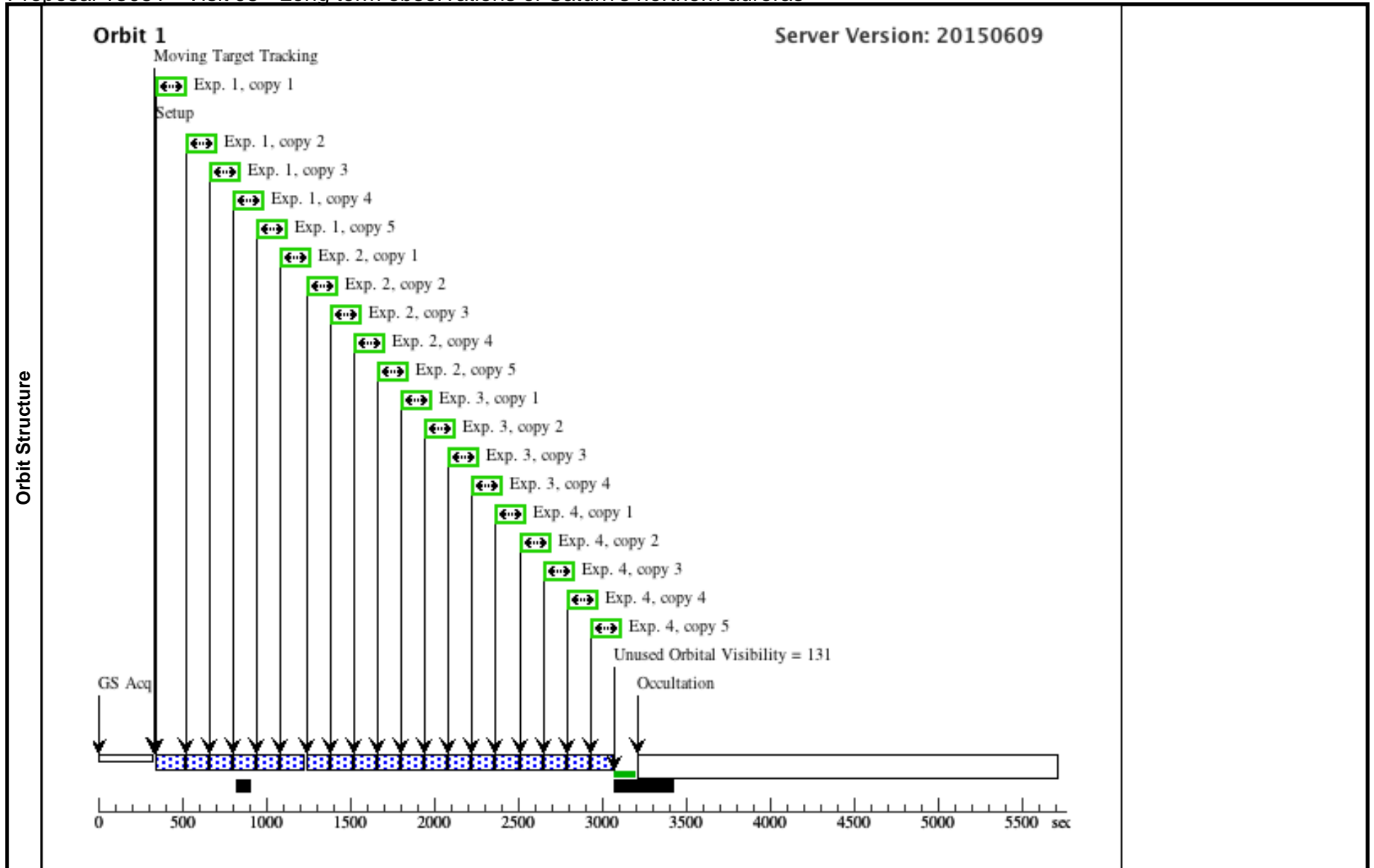
Visit	<p>Proposal 13051, Visit J7, completed</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: ACS/SBC</p> <p>Special Requirements: BETWEEN 23-APR-2013:04:00:00 AND 23-APR-2013:16:00:00</p> <p><i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (04-16 h) is to ensure as much overlap with supporting ground-based observations from Hawaii as possible. However, this latter constraint can be relaxed if this is not possible. In order to get this visit to schedule, Exposure 4 was reduced to exposure times of 95 s, from the original 100 s.</i></p>									
	<p>(Exposure 1 (Visit J7)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 2 (Visit J7)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 3 (Visit J7)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 4 (Visit J7)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p>									
Diagnostics										
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
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Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP		GS ACQ SCENARI O BASE1B3		100 Secs X 5 (500 Secs)	
									[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
	2		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 5 (500 Secs)	
									[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
3		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 4 (400 Secs)		
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4		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP				95 Secs X 5 (475 Secs)		
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]	



Proposal 13051 - Visit J8 - Long term observations of Saturn's northern auroras

Thu Feb 04 02:06:48 GMT 2016

Visit	Proposal 13051, Visit J8, completed Diagnostic Status: Warning Scientific Instruments: ACS/SBC Special Requirements: BETWEEN 18-MAY-2013:02:30:00 AND 18-MAY-2013:18:00:00 <i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (04-16 h) is to ensure as much overlap with supporting ground-based observations from Hawaii as possible. However, this latter constraint can be relaxed if this is not possible.</i>									
	Diagnosics (Exposure 1 (Visit J8)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 2 (Visit J8)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 3 (Visit J8)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 4 (Visit J8)) 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	STD=SATURN			SEP OF SATURN RHEA FROM EARTH GT 10.0", SEP OF SATURN TITAN FROM EARTH GT 10.0"	EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP		GS ACQ SCENARI O BASE1B3		100 Secs X 5 (500 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
	2		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 5 (500 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
	3		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 4 (400 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)]	[1]
	4		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP				100 Secs X 5 (500 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]



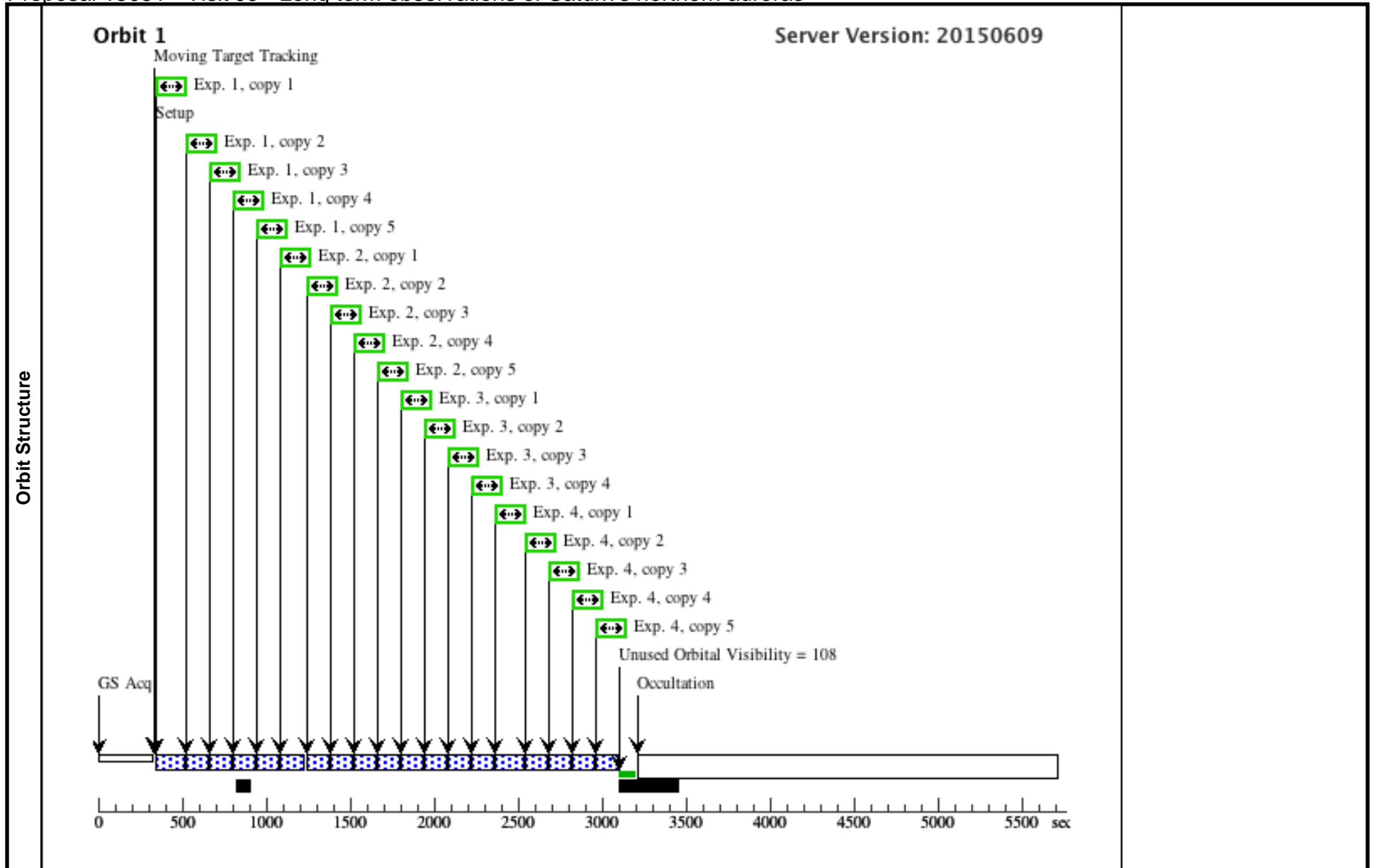
Proposal 13051 - Visit J9 - Long term observations of Saturn's northern auroras

Thu Feb 04 02:06:48 GMT 2016

Visit	<p>Proposal 13051, Visit J9, completed</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: ACS/SBC</p> <p>Special Requirements: BETWEEN 19-MAY-2013:02:00:00 AND 19-MAY-2013:16:00:00</p> <p><i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (04-16 h) is to ensure as much overlap with supporting ground-based observations from Hawaii as possible. However, this latter constraint can be relaxed if this is not possible. This visit contains the exposures required for background subtraction. In previous Cycles for this program we used F140LP, although in practice we have found that this filter does not entirely eliminate auroral emission. A more effective filter for this purpose, used in previous programs, is F160LP, which we would like to use here in place of the F140LP observations originally requested. If this is not possible, F140LP will be OK.</i></p>																				
	<p>(Exposure 1 (Visit J9)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 2 (Visit J9)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 3 (Visit J9)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p> <p>(Exposure 4 (Visit J9)) Warning (Form): Sensitive exposures should have an ETC run number provided.</p>																				
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	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center														
(1)	SATURN	STD=SATURN			SEP OF SATURN RHEA FROM EARTH GT 10.0", SEP OF SATURN TITAN FROM EARTH GT 10.0"	EARTH															

Proposal 13051 - Visit J9 - Long term observations of Saturn's northern auroras

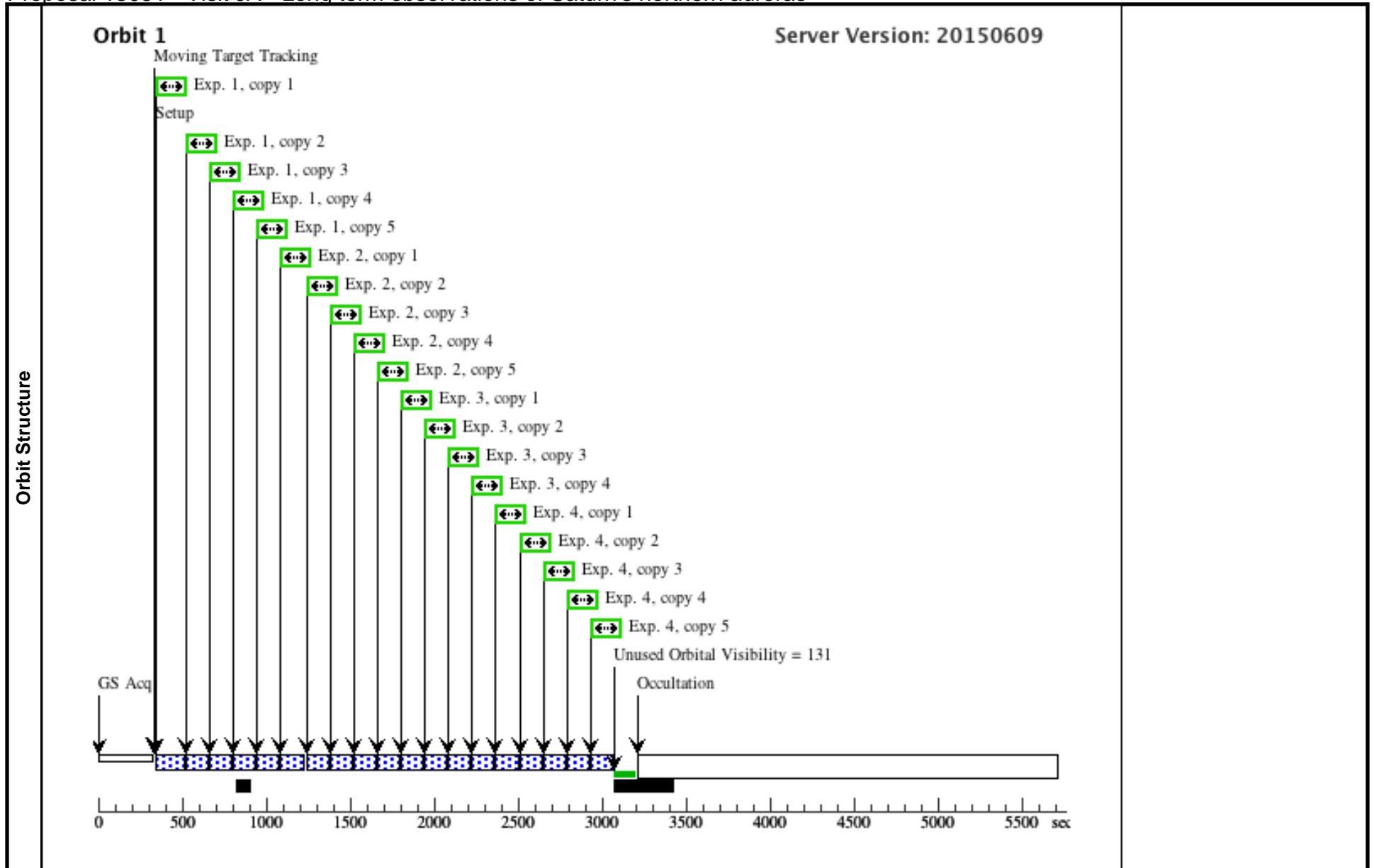
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
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									[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
	2		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 5 (500 Secs)	
									[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
3		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 4 (400 Secs)		
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)]	[1]	
4		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F165LP				100 Secs X 5 (500 Secs)		
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]	



Proposal 13051 - Visit JA - Long term observations of Saturn's northern auroras

Thu Feb 04 02:06:48 GMT 2016

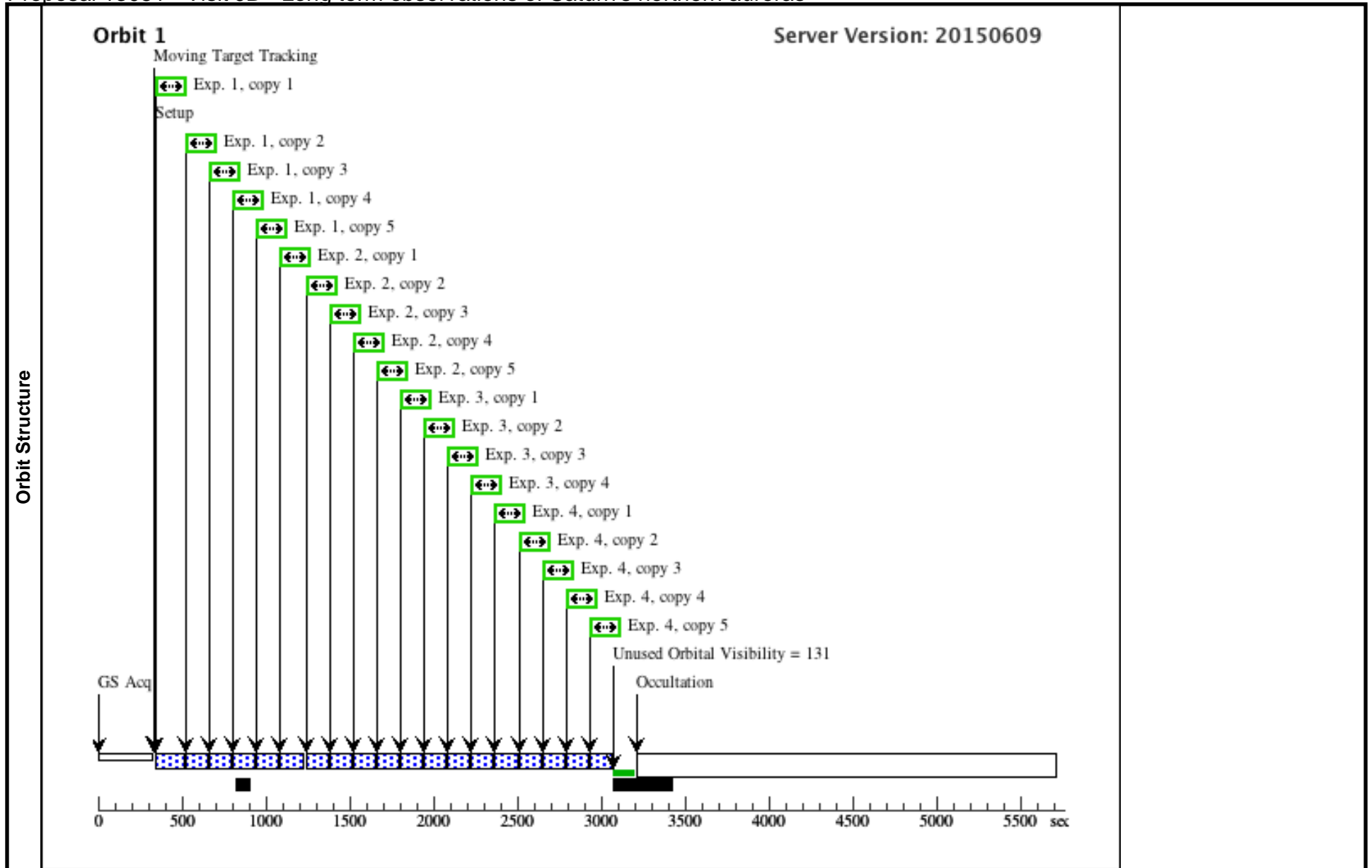
Visit	Proposal 13051, Visit JA, completed Diagnostic Status: Warning Scientific Instruments: ACS/SBC Special Requirements: BETWEEN 19-MAY-2013:16:30:00 AND 20-MAY-2013:04:00:00 <i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (04-16 h) is to ensure as much overlap with supporting ground-based observations from Hawaii as possible. However, this latter constraint can be relaxed if this is not possible. This orbit is timed to coincide with related Cassini observations.</i>																																																								
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Proposal 13051 - Visit JB - Long term observations of Saturn's northern auroras

Thu Feb 04 02:06:49 GMT 2016

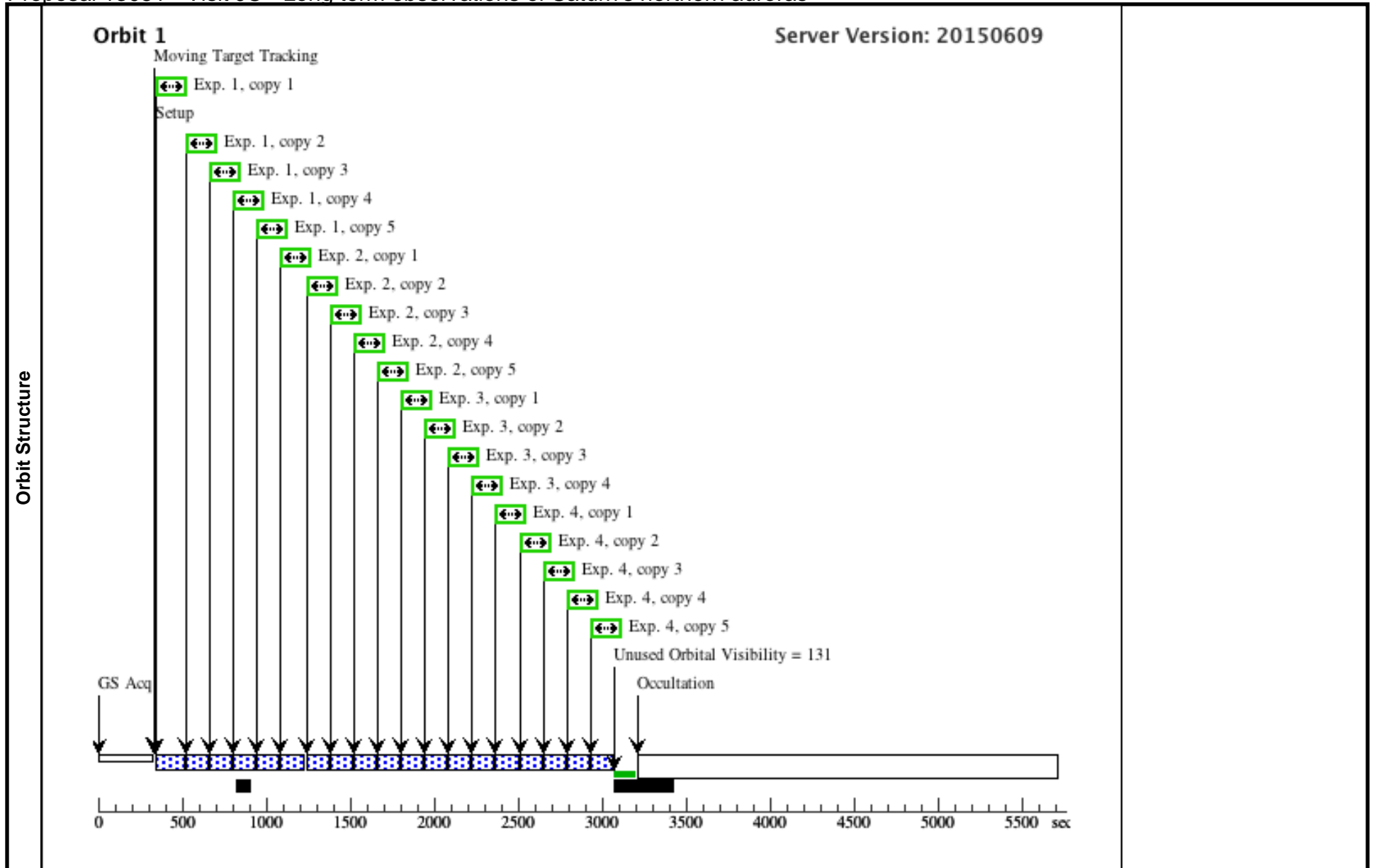
Visit	Proposal 13051, Visit JB, completed Diagnostic Status: Warning Scientific Instruments: ACS/SBC Special Requirements: BETWEEN 20-MAY-2013:04:00:00 AND 20-MAY-2013:19:00:00 <i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (04-16 h) is to ensure as much overlap with supporting ground-based observations from Hawaii as possible. However, this latter constraint can be relaxed if this is not possible. This orbit is timed to coincide with related Cassini observations.</i>									
	Diagnosics (Exposure 1 (Visit JB)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 2 (Visit JB)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 3 (Visit JB)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 4 (Visit JB)) 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	STD=SATURN			SEP OF SATURN RHEA FROM EARTH GT 10.0", SEP OF SATURN TITAN FROM EARTH GT 10.0"	EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP		GS ACQ SCENARI O BASE1B3		100 Secs X 5 (500 Secs)	
									[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
	2		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 5 (500 Secs)	
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3		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 4 (400 Secs)		
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4		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP				100 Secs X 5 (500 Secs)		
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]	



Proposal 13051 - Visit JC - Long term observations of Saturn's northern auroras

Thu Feb 04 02:06:49 GMT 2016

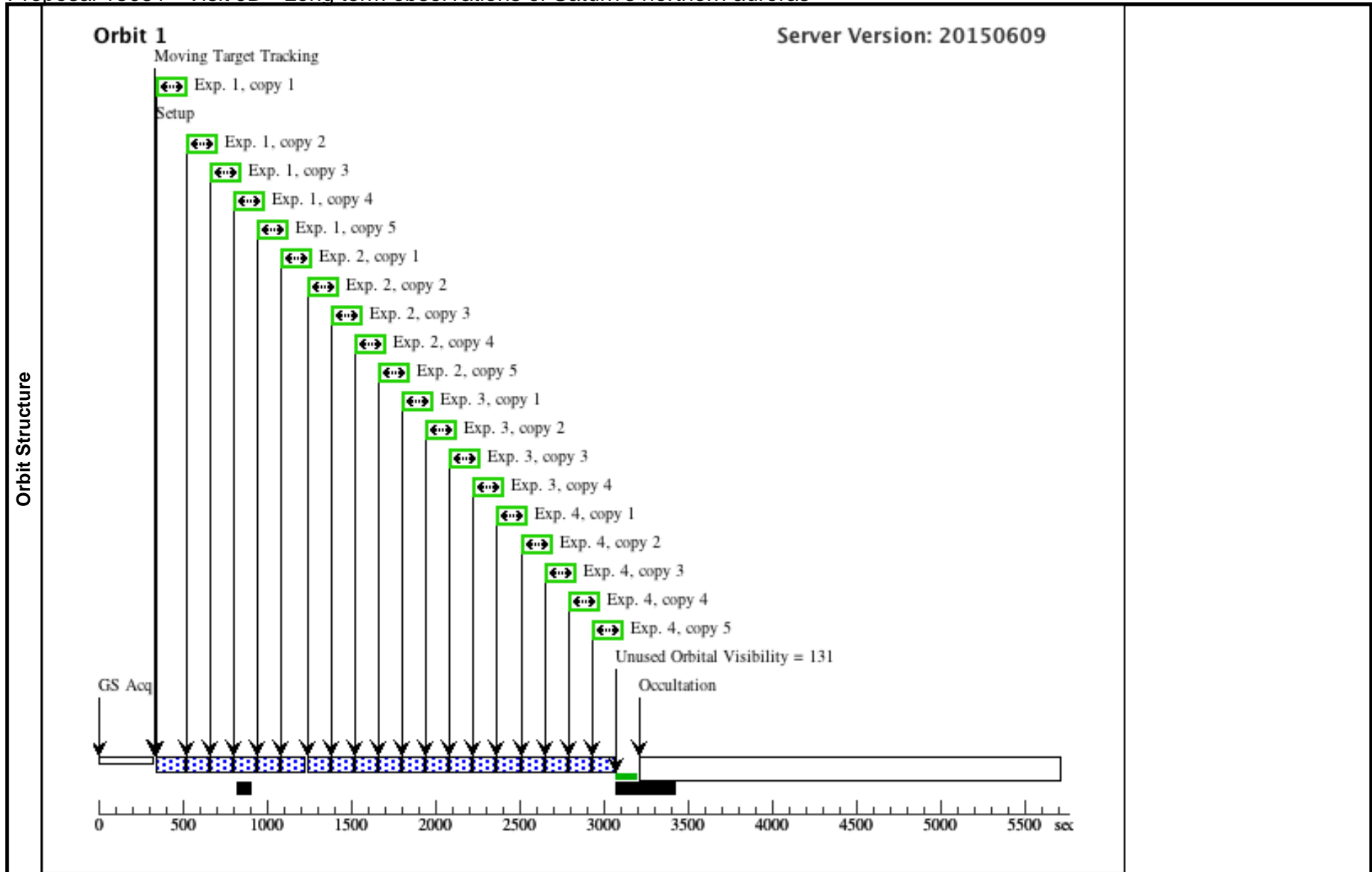
Visit	Proposal 13051, Visit JC, completed Diagnostic Status: Warning Scientific Instruments: ACS/SBC Special Requirements: BETWEEN 20-MAY-2013:04:00:00 AND 20-MAY-2013:20:45:00 <i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (04-16 h) is to ensure as much overlap with supporting ground-based observations from Hawaii as possible. However, this latter constraint can be relaxed if this is not possible. This orbit is timed to coincide with related Cassini observations.</i>																																																								
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Proposal 13051 - Visit JD - Long term observations of Saturn's northern auroras

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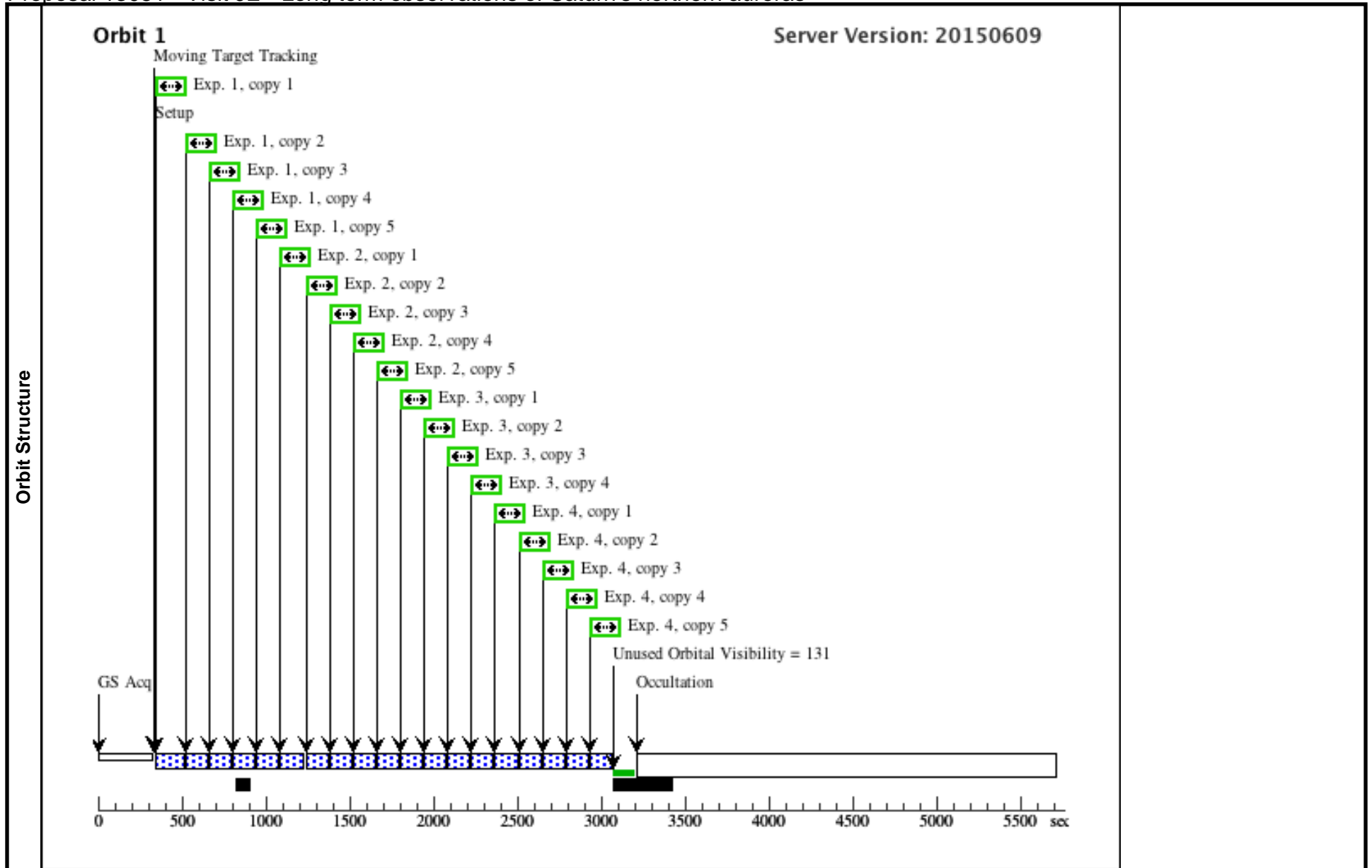
Visit	Proposal 13051, Visit JD, completed Diagnostic Status: Warning Scientific Instruments: ACS/SBC Special Requirements: BETWEEN 20-MAY-2013:04:00:00 AND 20-MAY-2013:22:30:00 <i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (04-16 h) is to ensure as much overlap with supporting ground-based observations from Hawaii as possible. However, this latter constraint can be relaxed if this is not possible. This orbit is timed to coincide with related Cassini observations.</i>									
	Diagnosics (Exposure 1 (Visit JD)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 2 (Visit JD)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 3 (Visit JD)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 4 (Visit JD)) 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	STD=SATURN			SEP OF SATURN RHEA FROM EARTH GT 10.0", SEP OF SATURN TITAN FROM EARTH GT 10.0"	EARTH			
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	1		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP		GS ACQ SCENARI O BASE1B3		100 Secs X 5 (500 Secs)	
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Proposal 13051 - Visit JE - Long term observations of Saturn's northern auroras

Thu Feb 04 02:06:49 GMT 2016

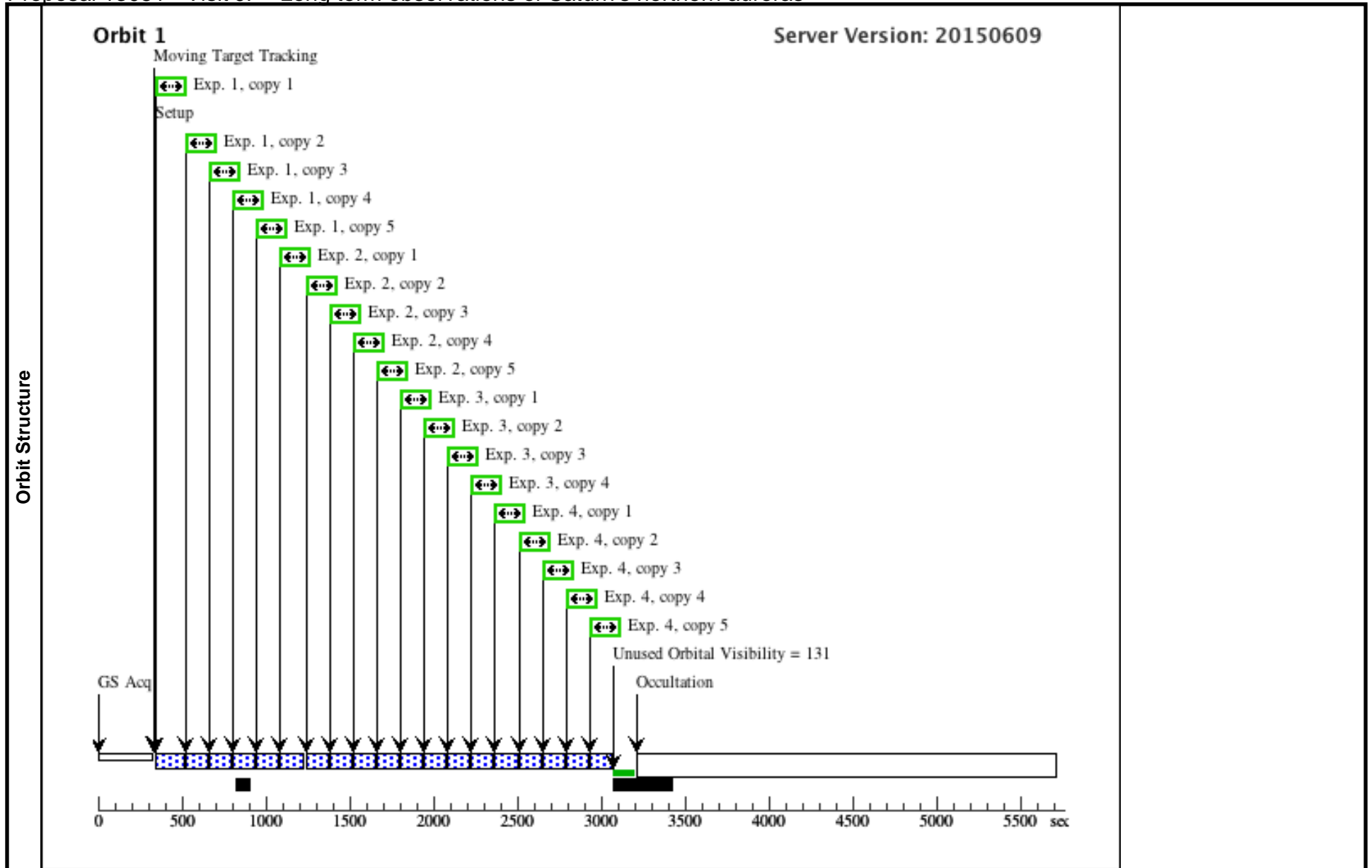
Visit	Proposal 13051, Visit JE, completed Diagnostic Status: Warning Scientific Instruments: ACS/SBC Special Requirements: BETWEEN 21-MAY-2013:04:00:00 AND 21-MAY-2013:18:00:00 <i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (04-16 h) is to ensure as much overlap with supporting ground-based observations from Hawaii as possible. However, this latter constraint can be relaxed if this is not possible.</i>									
	Diagnosics (Exposure 1 (Visit JE)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 2 (Visit JE)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 3 (Visit JE)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 4 (Visit JE)) 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	STD=SATURN			SEP OF SATURN RHEA FROM EARTH GT 10.0", SEP OF SATURN TITAN FROM EARTH GT 10.0"	EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP		GS ACQ SCENARI O BASE1B3		100 Secs X 5 (500 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
	2		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 5 (500 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
	3		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 4 (400 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)]	[1]
	4		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP				100 Secs X 5 (500 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]



Proposal 13051 - Visit JF - Long term observations of Saturn's northern auroras

Thu Feb 04 02:06:49 GMT 2016

Visit	Proposal 13051, Visit JF, completed Diagnostic Status: Warning Scientific Instruments: ACS/SBC Special Requirements: AFTER JG BY 0.25 H TO 1.0 H; BETWEEN 22-MAY-2013:02:00:00 AND 22-MAY-2013:19:00:00 <i>Comments: This visit is timed to occur near periapsis of Cassini, during which supporting auroral observations will be obtained. The UT range (04-16 h) is to ensure as much overlap with supporting ground-based observations from Hawaii as possible. However, this latter constraint can be relaxed if this is not possible.</i>									
	Diagnosics (Exposure 1 (Visit JF)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 2 (Visit JF)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 3 (Visit JF)) Warning (Form): Sensitive exposures should have an ETC run number provided. (Exposure 4 (Visit JF)) 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	STD=SATURN			SEP OF SATURN RHEA FROM EARTH GT 10.0", SEP OF SATURN TITAN FROM EARTH GT 10.0"	EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP		GS ACQ SCENARI O BASE1B3		100 Secs X 5 (500 Secs)	
									[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
	2		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 5 (500 Secs)	
									[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
3		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F115LP				100 Secs X 4 (400 Secs)		
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)]	[1]	
4		(1) SATURN	ACS/SBC, ACCUM, SBC-FIX	F125LP				100 Secs X 5 (500 Secs)		
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]	



Proposal 13051 - Visit JG - Long term observations of Saturn's northern auroras

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Visit	<p>Proposal 13051, Visit JG, completed</p> <p>Diagnostic Status: Error</p> <p>Scientific Instruments: ACS/SBC</p> <p>Special Requirements: (none)</p> <p><i>Comments: This visit is being used to turn on the SBC prior to visit JF. This will allow the SBC to be on for the required 2 hours before HST enters into the SAA following visit JF.</i></p>
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Diagnostics	<p>(Exposure 1 (Visit JG)) Error (Form): This attribute is not allowed to have this value: Calibration_Target = DARK It is a Restricted option and can only be used in an engineering proposal.</p> <p>(Exposure 1 (Visit JG)) Error (Form): Target DARK is no longer a valid selection</p>
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Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		DARK	ACS/SBC, ACCUM, SBC	F125LP					100 Secs (100 Secs) [==>]

