



11603 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Cycle: 17, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Ms. Jennifer Andrews (PI)	Louisiana State University and A & M College	jandrews@phys.lsu.edu
Dr. Geoffrey C. Clayton (CoI)	Louisiana State University and A & M College	gclayton@fenway.phys.lsu.edu
Dr. Karl D. Gordon (CoI)	Space Telescope Science Institute	kgordon@stsci.edu
Dr. Ben E. Sugerma (CoI)	Goucher College	sugerma@stsci.edu
Dr. Douglas L. Welch (CoI)	McMaster University	welch@dogwood.physics.mcmaster.ca
Dr. Margaret Meixner (CoI)	Space Telescope Science Institute	meixner@stsci.edu
Dr. Barbara Ercolano (CoI) (ESA Member)	University of Cambridge	be@ast.cam.ac.uk
Dr. Michael J. Barlow (CoI) (ESA Member)	University College London	mjb@star.ucl.ac.uk

VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) SN-2007IT	WFPC2	2	22-Oct-2009 21:01:09.0	yes
02	(1) SN-2007IT	WFC3/IR WFC3/UVIS	1	22-Oct-2009 21:01:24.0	yes
03	(2) SN-2007OC	WFPC2	2	22-Oct-2009 21:01:32.0	yes

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
04	(2) SN-2007OC	WFC3/IR WFC3/UVIS	1	22-Oct-2009 21:01:43.0	yes
05	(3) SN-2007OD	ACS/WFC	1	22-Oct-2009 21:01:53.0	yes
06	(3) SN-2007OD	WFC3/IR WFC3/UVIS	1	22-Oct-2009 21:02:01.0	yes
07	(1) SN-2007IT	ACS/WFC	1	22-Oct-2009 21:02:08.0	yes
08	(1) SN-2007IT	WFC3/IR WFC3/UVIS	1	22-Oct-2009 21:02:19.0	yes
09	(2) SN-2007OC	ACS/WFC	1	22-Oct-2009 21:02:26.0	yes
10	(2) SN-2007OC	WFC3/IR WFC3/UVIS	1	22-Oct-2009 21:02:37.0	yes
11	(3) SN-2007OD	ACS/WFC	1	22-Oct-2009 21:02:44.0	yes
12	(3) SN-2007OD	WFC3/IR WFC3/UVIS	1	22-Oct-2009 21:02:52.0	yes
13	(1) SN-2007IT	ACS/WFC	1	22-Oct-2009 21:02:58.0	yes
14	(1) SN-2007IT	WFC3/IR WFC3/UVIS	1	22-Oct-2009 21:03:08.0	yes
15	(2) SN-2007OC	ACS/WFC	1	22-Oct-2009 21:03:14.0	yes
16	(2) SN-2007OC	WFC3/IR WFC3/UVIS	1	22-Oct-2009 21:03:25.0	yes
17	(3) SN-2007OD	ACS/WFC	1	22-Oct-2009 21:03:31.0	yes
18	(3) SN-2007OD	WFC3/IR WFC3/UVIS	1	22-Oct-2009 21:03:39.0	yes

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
51	(1) SN-2007IT	WFPC2	2	22-Oct-2009 21:03:45.0	yes
53	(2) SN-2007OC	WFPC2	1	22-Oct-2009 21:03:52.0	yes
61	(1) SN-2007IT	WFPC2	2	22-Oct-2009 21:03:56.0	yes

25 Total Orbits Used

ABSTRACT

The recent discovery of three extremely bright Type II SNe, (2007it, 2007oc, 2007od) gives us a unique opportunity to combine observations with HST, Spitzer and Gemini to study the little understood dust formation process in Type II SNe. Priority 1 Spitzer Cycle 5 and band 1 Gemini 2008A time has already been approved for this project. Since late-time Type II SNe are faint and tend to be in crowded fields, we need the high sensitivity and high spatial resolution of ACS/HRC and NICMOS/NIC2 for these observations. This project is motivated by the recent detection of large amounts of dust in high redshift galaxies. The dust in these high-z galaxies must come from young, massive stars so Type II SNe could be potential sources. The mechanism and the efficiency of dust condensation in Type II SN ejecta are not well understood, largely due to the lack of observational data. We plan to produce a unique dataset, combining spectroscopy and imaging in the visible, near- and mid-IR covering the key phase, 400-700 days after maximum when dust is known to form in the SN ejecta. Therefore, we are proposing for coordinated HST/NOAO observations (HST ACS/HRC, NICMOS/NIC2 & Gemini/GMOS and TReCS) which will be combined with our Spitzer Cycle 5 data to study these new bright SNe. The results of this program will place strong constraints on the formation of dust seen in young high redshift ($z > 5$) galaxies.

OBSERVING DESCRIPTION

We will use SNe 1987A and 2003gd as templates to guide the observing strategy because 2003gd had a detected light echo and both had a measurable change in flux over a 6 month timescale in both the visible and mid-infrared. See Figure 3. We propose to use the ACS/HRC in three broad-band filters (F435W, F606W, F814W) and the NICMOS/NIC2 in three broad-band filters (F110W, F160W, F205W), thereby providing the necessary flux and colors to constrain the dust properties as well as its 3-D positions should a light

echo be detected. PSF-matched difference imaging, which can provide up to a tenfold increase in sensitivity over direct photometry, will be used to detect faint signals since multiple epochs will be available. Since we require (1) accurate photometry of the SNe, (2) images free from cosmic rays and warm pixels, and (3) the highest resolution possible, we will use a 4-step dither on all observations, which is optimal at rejecting bad pixels while minimizing overhead. These data will be resampled using multidrizzle to further increase the resolution when searching for faint echo signal close to the PSF of the SN.

Our choices of filters, visits, and exposure times have been made to use the smallest number of orbits while maximizing the scientific content of our data. The three SNe have between 54 and 57 minutes of visibility per orbit minus the telescope acquisition (6 minutes) and the instrument acquisition (2.5 minutes). Since our first goal is to monitor the light curves of each target, we will observe each SN three

times during Cycle 17, at the beginning middle and end of the cycle, with each visit separated by about 5 months as allowed by scheduling constraints. This is adequate to measure a change in flux and a movement of a light echo which, at the distances of our targets, travel across the sky as slowly as 0."1 arcsecs/year.

Based on our previous observations of SN 2003gd we find that the flux in a SN may drop by a factor of 10 or 2.5 magnitudes over a 6 month period of time but a light echo around SN 2003gd developed which was brighter, 21st magnitude per sq. arcsecond. Using the ACS/HRC ETC, we estimate total exposure times of ~160 sec in each of F435W (B), F606W (V) and F814W

(I) in order to obtain a S/N of at least 5 with B=V=I=26 mag, respectively for a total of 480 sec. Using the model SED for SN 2003gd, we estimate time for two flux values, 2 μ Jy and 40 μ Jy at 1.0 micron and assume a blackbody shape with a temperature of 3000 K to approximate the flux in all three NICMOS/NIC2 bands. These integration times provide a S/N of 2 per pixel for a light echo of 24 mag. per sq. arcsecond surface brightness. Using the

NICMOS ETC for the NIC2 camera, a S/N 5 is obtained for SN magnitudes of 26 with exposure times of 200 sec in each of F110W, F160W, and F205W, for a total exposure time of 600 seconds for NICMOS. Assuming a 4 point dither pattern, filter changes and

guide star acquisition overheads, we estimate that we can just fit these observations into two orbits.

Thus, we estimate two orbits per epoch measurement of each SN, or 6 orbits total per SN. Therefore, we propose for 18 orbits for the observations of the three SNe.

ADDITIONAL COMMENTS

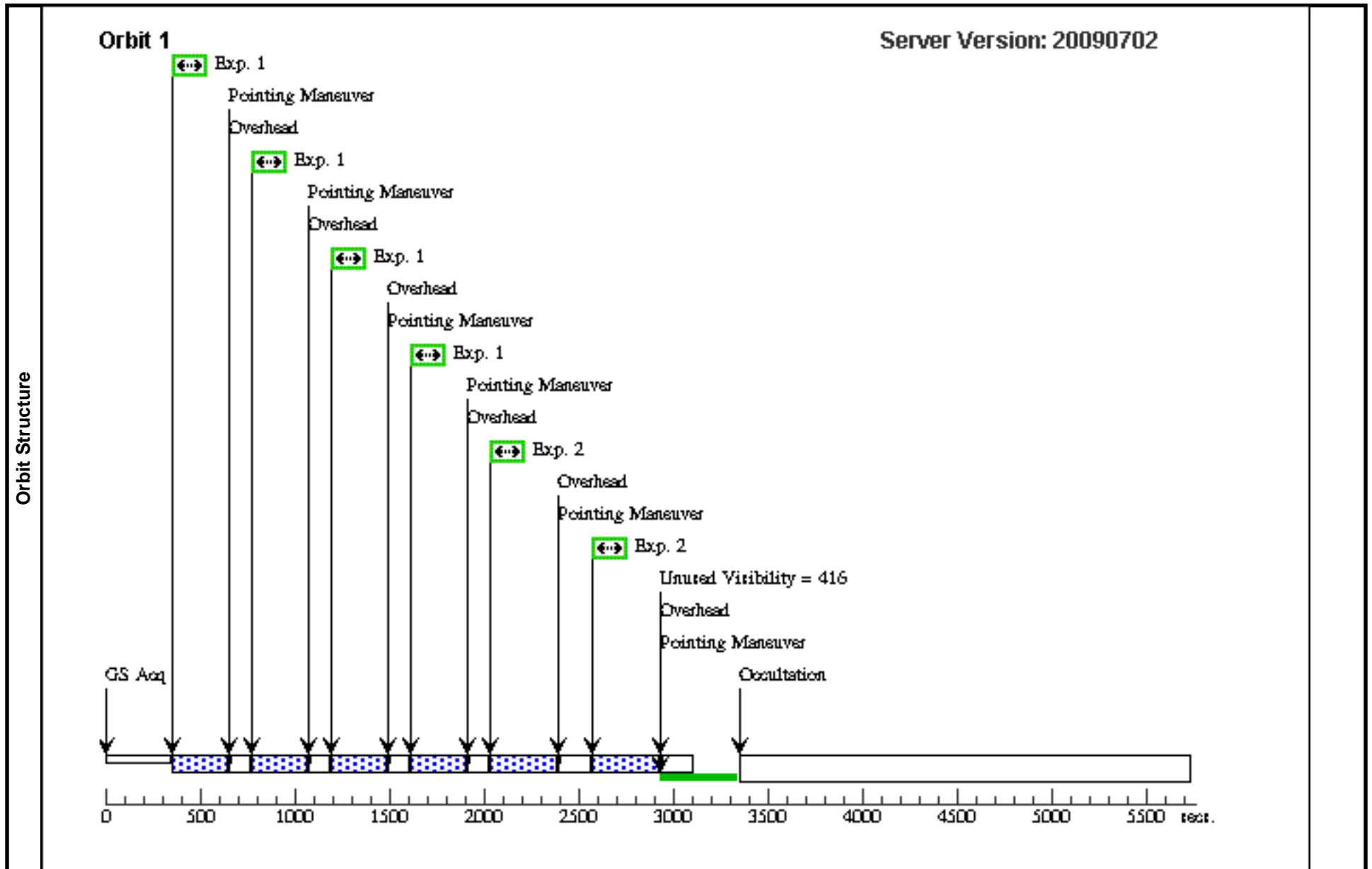
If ACS/HRC is not available, this program could also be done with WFC3 with slightly less spatial resolution. There would be some differences in exposure times and overheads but the program could also be done with WFC3. The F438W, F606W and F814W filters on WFC3 could be used to replace the similar ACS/HRC filters.

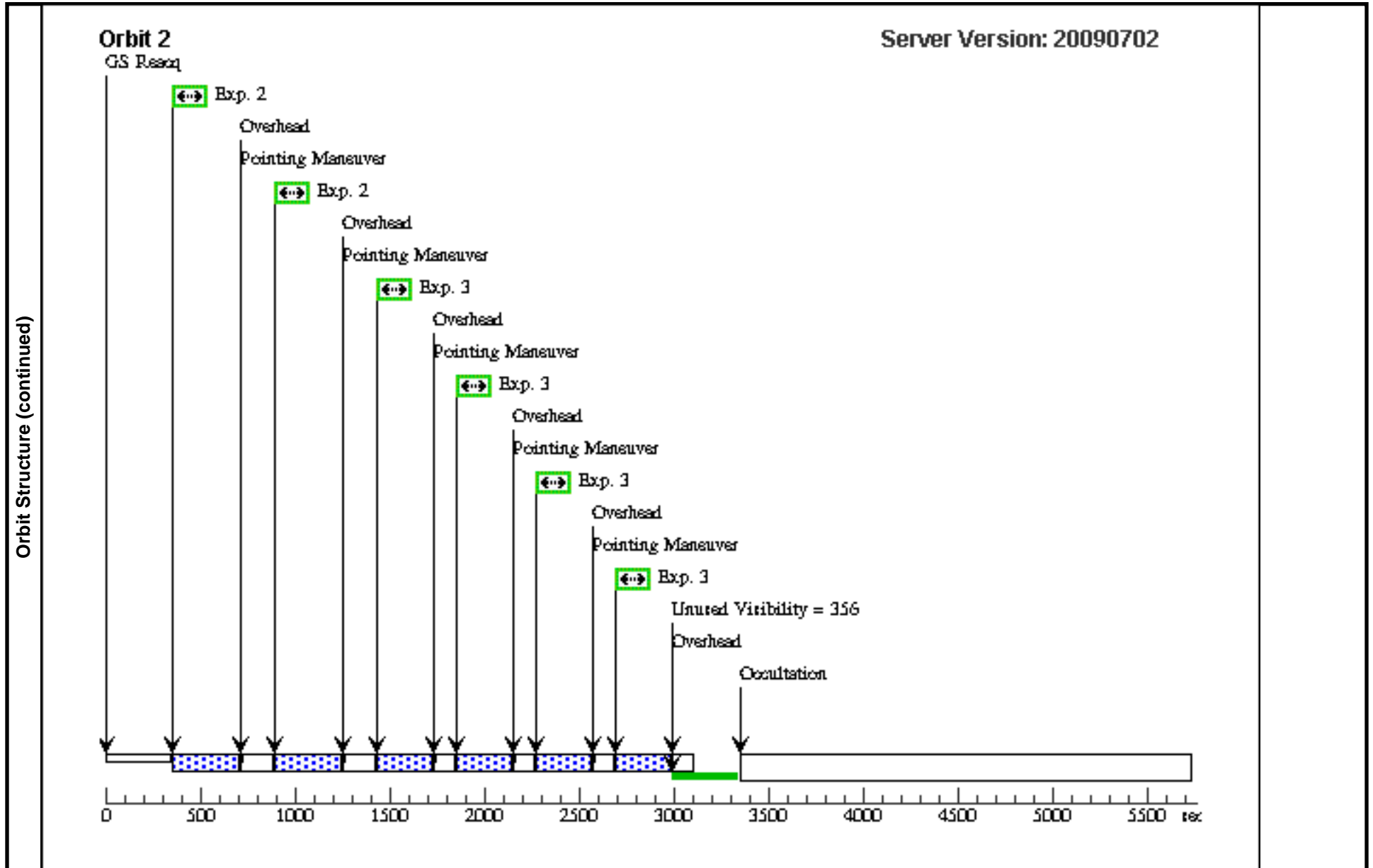
We would also like to get the first observations of the SNe as early as we can. For that reason we have scheduled the first observations of 2007oc and 2007od for before Dec. 23, 2008 and Feb. 05, 2009, respectively, which are the ends of their first visibility of the cycle. If by chance the cycle does not start until after these periods we would like to get them as soon as their visibility allows. We will also most probably like to reschedule the other two observations of each of the SNe so that we get evenly spaced intervals between observations over the cycle.

Proposal 11603 - Visit 01 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:00 GMT 2009

Visit	Proposal 11603, Visit 01, failed Diagnostic Status: Warning Scientific Instruments: WFPC2 Special Requirements: GYRO MODE 2G; BEFORE 07-MAR-2009:00:00:00 <i>Comments: SN 2007it 1</i>									
	Diagnostics (Visit 01) Warning (Form): Gyro Mode overrides default value of 3GOBAD.									
Patterns	#	Primary Pattern		Secondary Pattern	Exposures					
	(3)	Pattern Type=WFPC2-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.559017 Line Spacing=0.559017	Coordinate Frame=POS-TARG Pattern Orientation=26.56505 Angle Between Sides=143.130102 Center Pattern=false		(1), (2), (3)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN-2007IT	RA: 14 18 25.6300 (214.6067917d) Dec: -43 22 53.80 (-43.38161d) Equinox: J2000		V=18.7	Reference Frame: ICRS				
<i>Comments: This object was generated by the targetselector and retrieved from the NED database.</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) SN-2007IT	WFPC2, IMAGE, PC1	F814W	CR-SPLIT=NO			Pattern 3, Exps 1-1 (3)	166 Secs [==>160.0 Secs (Pattern 1)] [==>160.0 Secs (Pattern 2)] [==>160.0 Secs (Pattern 3)] [==>160.0 Secs (Pattern 4)]	[1]
	2	(1) SN-2007IT	WFPC2, IMAGE, PC1	F606W	CR-SPLIT=NO			Pattern 3, Exps 2-2 (3)	166 Secs [==>200.0 Secs (Pattern 1)] [==>200.0 Secs (Pattern 2)] [==>200.0 Secs (Pattern 3)] [==>200.0 Secs (Pattern 4)]	[1]
	3	(1) SN-2007IT	WFPC2, IMAGE, PC1	F450W	CR-SPLIT=NO			Pattern 3, Exps 3-3 (3)	166 Secs [==>160.0 Secs (Pattern 1)] [==>160.0 Secs (Pattern 2)] [==>160.0 Secs (Pattern 3)] [==>160.0 Secs (Pattern 4)]	[2]





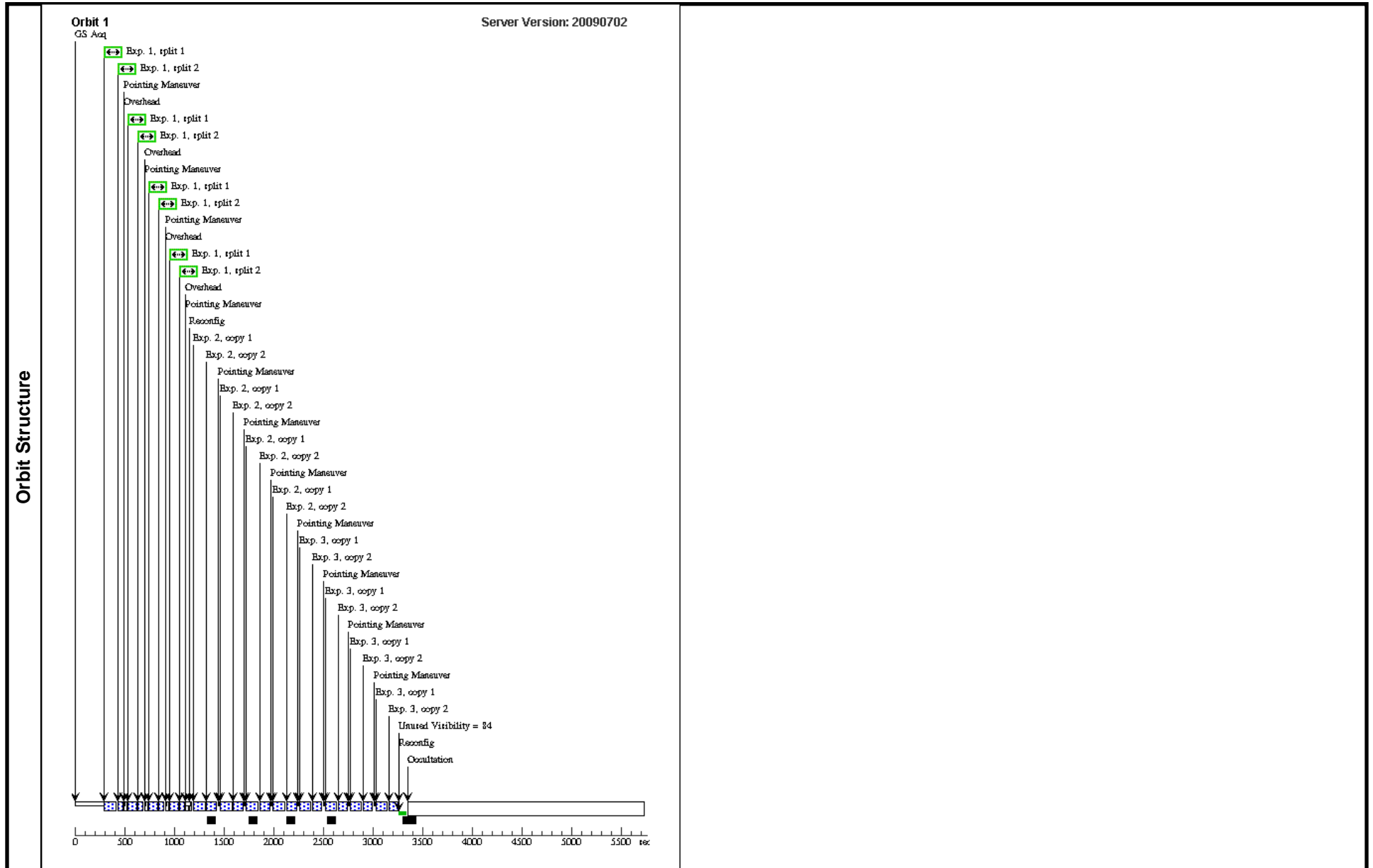
Proposal 11603 - Visit 02 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:02 GMT 2009

Visit	Proposal 11603, Visit 02, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: BETWEEN 09-JAN-2010:00:00:00 AND 13-JAN-2010:00:00:00 Comments: SN 2007it WFC3									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(4)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(2), (3)				
	(5)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN-2007IT	RA: 14 18 25.6300 (214.6067917d) Dec: -43 22 53.80 (-43.38161d) Equinox: J2000		V=18.7	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) SN-2007IT	WFC3/UVIS, ACCUM, UVIS1-C512A-SUB	F814W				Pattern 5, Exps 1-1 (5) 100 Secs [=>(Pattern 1, Split 1)] [=>(Pattern 1, Split 2)] [=>(Pattern 2, Split 1)] [=>(Pattern 2, Split 2)] [=>(Pattern 3, Split 1)] [=>(Pattern 3, Split 2)] [=>(Pattern 4, Split 1)] [=>(Pattern 4, Split 2)]	[1]

Proposal 11603 - Visit 02 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

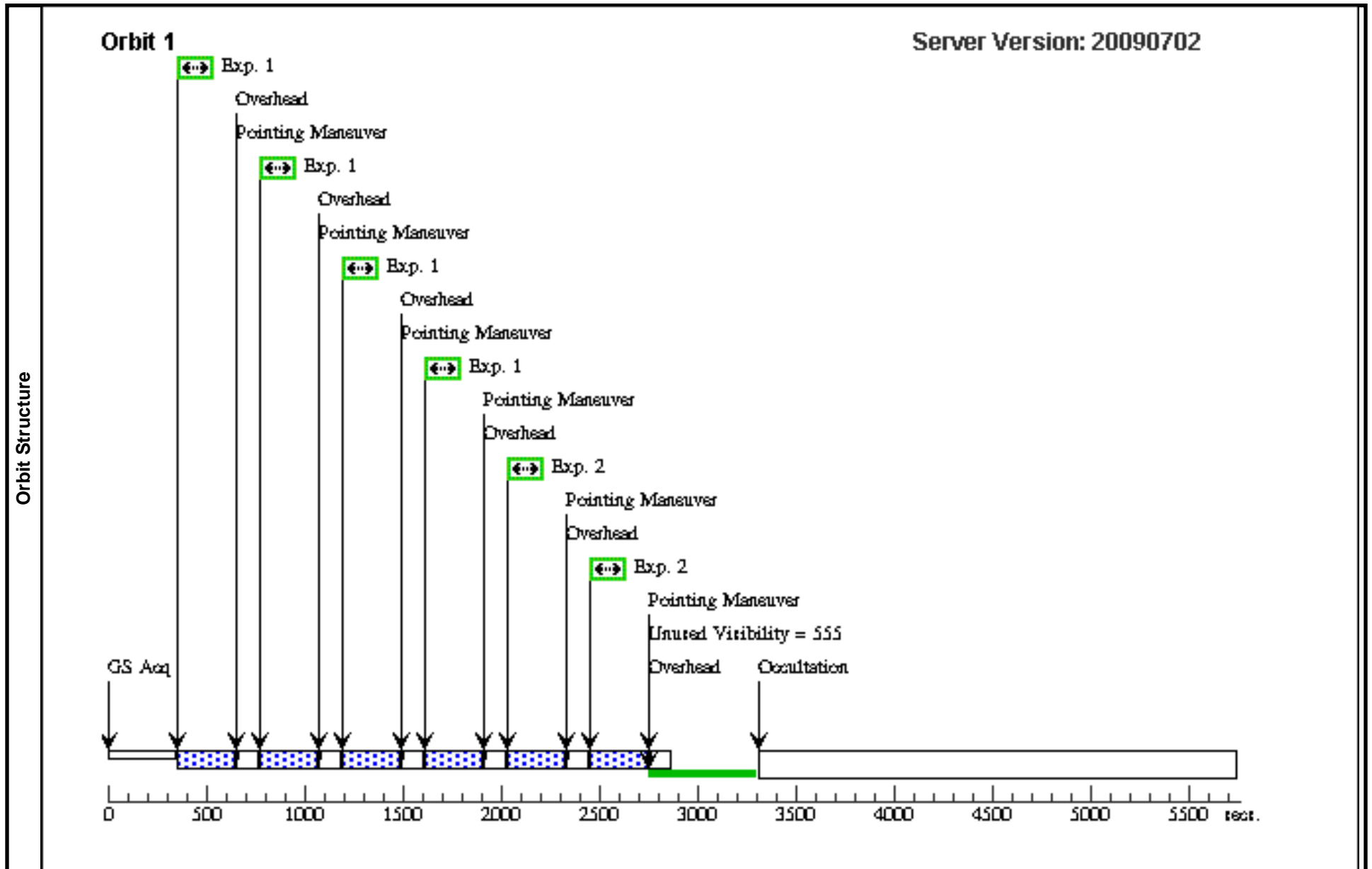
Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	2	(1) SN-2007IT	WFC3/IR, MULTIACCUM, IRSUB256	F160W	NSAMP=14; SAMP-SEQ=SPAR S10	Pattern 4, Exps 2-2 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]		
3	(1) SN-2007IT	WFC3/IR, MULTIACCUM, IRSUB256	F110W	NSAMP=13; SAMP-SEQ=SPAR S10	Pattern 4, Exps 3-3 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]			

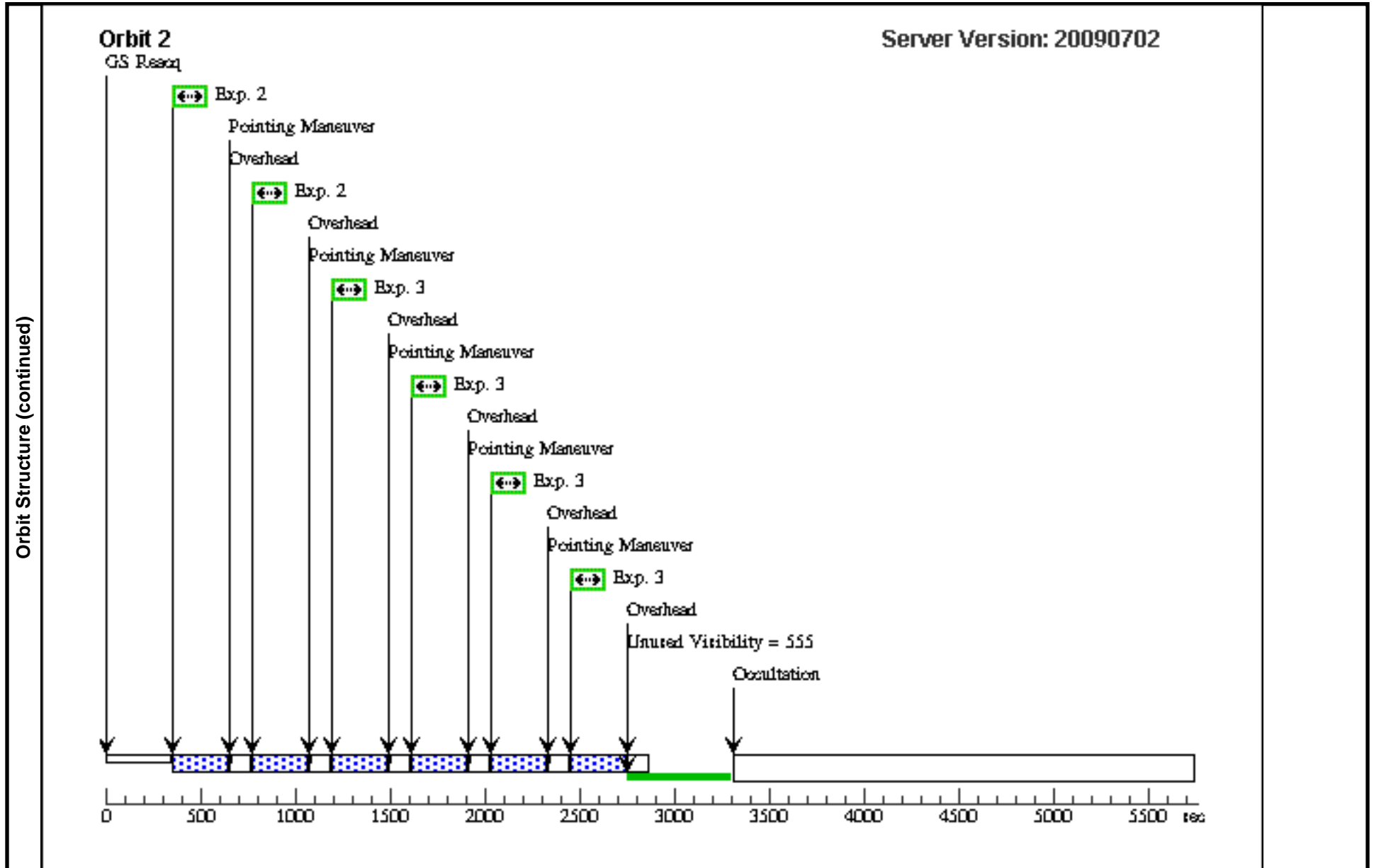


Proposal 11603 - Visit 03 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:03 GMT 2009

Visit	Proposal 11603, Visit 03, failed Diagnostic Status: Warning Scientific Instruments: WFPC2 Special Requirements: GYRO MODE 2G; BEFORE 12-MAY-2009:00:00:00 Comments: SN 2007oc									
	(Visit 03) Warning (Form): Gyro Mode overrides default value of 3GOBAD.									
Diagnosics										
Patterns	#	Primary Pattern				Secondary Pattern			Exposures	
	(3)	Pattern Type=WFPC2-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.559017 Line Spacing=0.559017	Coordinate Frame=POS-TARG Pattern Orientation=26.56505 Angle Between Sides=143.130102 Center Pattern=false						(1), (2), (3)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SN-2007OC	RA: 22 56 41.7000 (344.1737500d) Dec: -36 46 22.30 (-36.77286d) Equinox: J2000		V=19.3	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(2) SN-2007OC	WFPC2, IMAGE, PC1	F814W	CR-SPLIT=NO	GS ACQ SCENARI O BASE1T3	Pattern 3, Exps 1-1 (3)	163 Secs [=>160.0 Secs (Pattern 1)] [=>160.0 Secs (Pattern 2)] [=>160.0 Secs (Pattern 3)] [=>160.0 Secs (Pattern 4)]	[1]	
	2	(2) SN-2007OC	WFPC2, IMAGE, PC1	F606W	CR-SPLIT=NO		Pattern 3, Exps 2-2 (3)	163 Secs [=>160.0 Secs (Pattern 1)] [=>160.0 Secs (Pattern 2)] [=>160.0 Secs (Pattern 3)] [=>160.0 Secs (Pattern 4)]	[1] [2]	
	3	(2) SN-2007OC	WFPC2, IMAGE, PC1	F450W	CR-SPLIT=NO		Pattern 3, Exps 3-3 (3)	153 Secs [=>160.0 Secs (Pattern 1)] [=>160.0 Secs (Pattern 2)] [=>160.0 Secs (Pattern 3)] [=>160.0 Secs (Pattern 4)]	[2]	





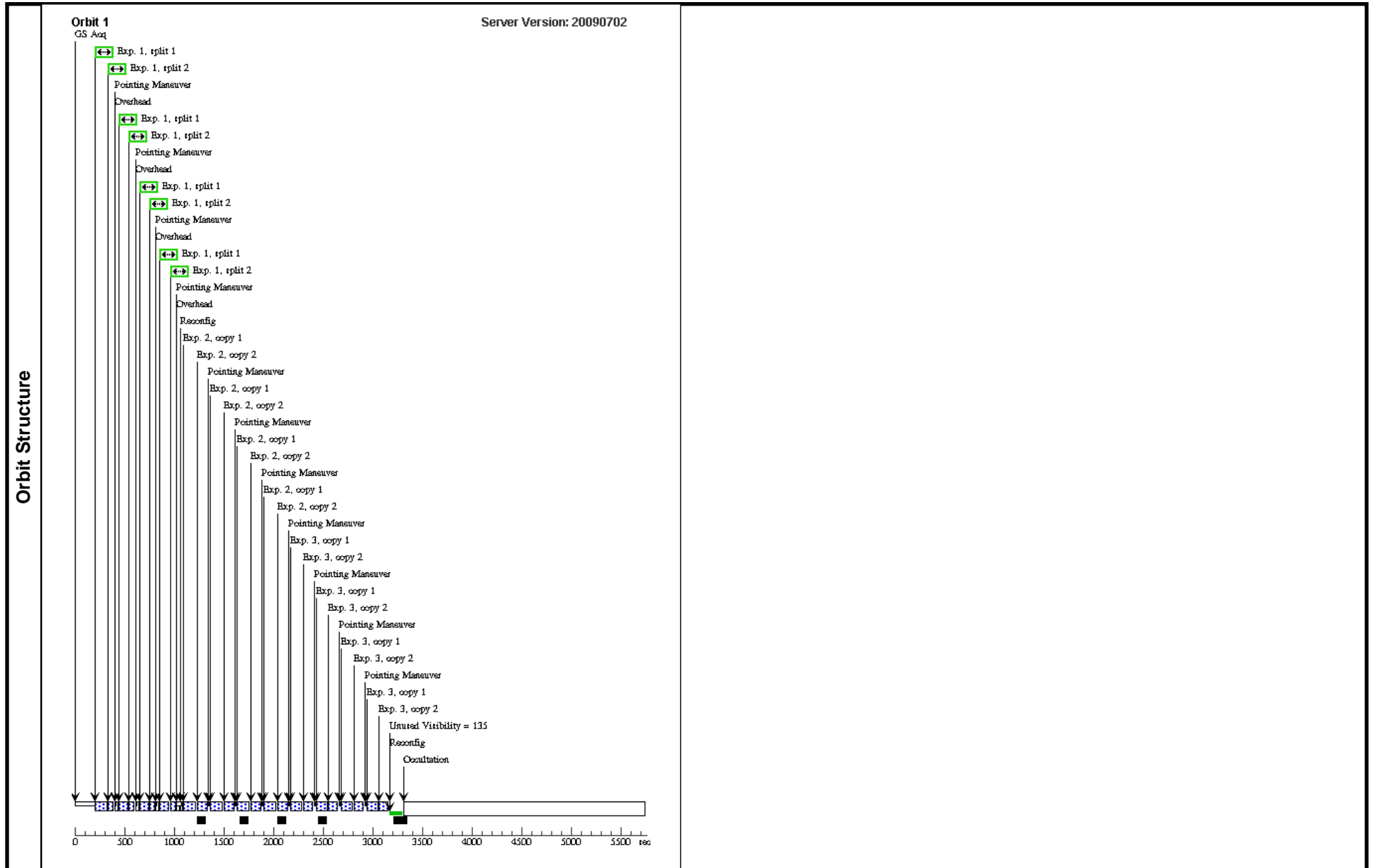
Proposal 11603 - Visit 04 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:03 GMT 2009

Visit	Proposal 11603, Visit 04, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: (none) Comments: SN 2007oc WFC3									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(4)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(2), (3)				
	(5)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SN-2007OC	RA: 22 56 41.7000 (344.1737500d) Dec: -36 46 22.30 (-36.77286d) Equinox: J2000		V=19.3	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) SN-2007OC	WFC3/UVIS, ACCUM, UVIS1-C512A-SUB	F814W			GS ACQ SCENARI O SINGLE	Pattern 5, Exps 1-1 (5)	100 Secs [=>(Pattern 1, Split 1)] [=>(Pattern 1, Split 2)] [=>(Pattern 2, Split 1)] [=>(Pattern 2, Split 2)] [=>(Pattern 3, Split 1)] [=>(Pattern 3, Split 2)] [=>(Pattern 4, Split 1)] [=>(Pattern 4, Split 2)]

Proposal 11603 - Visit 04 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

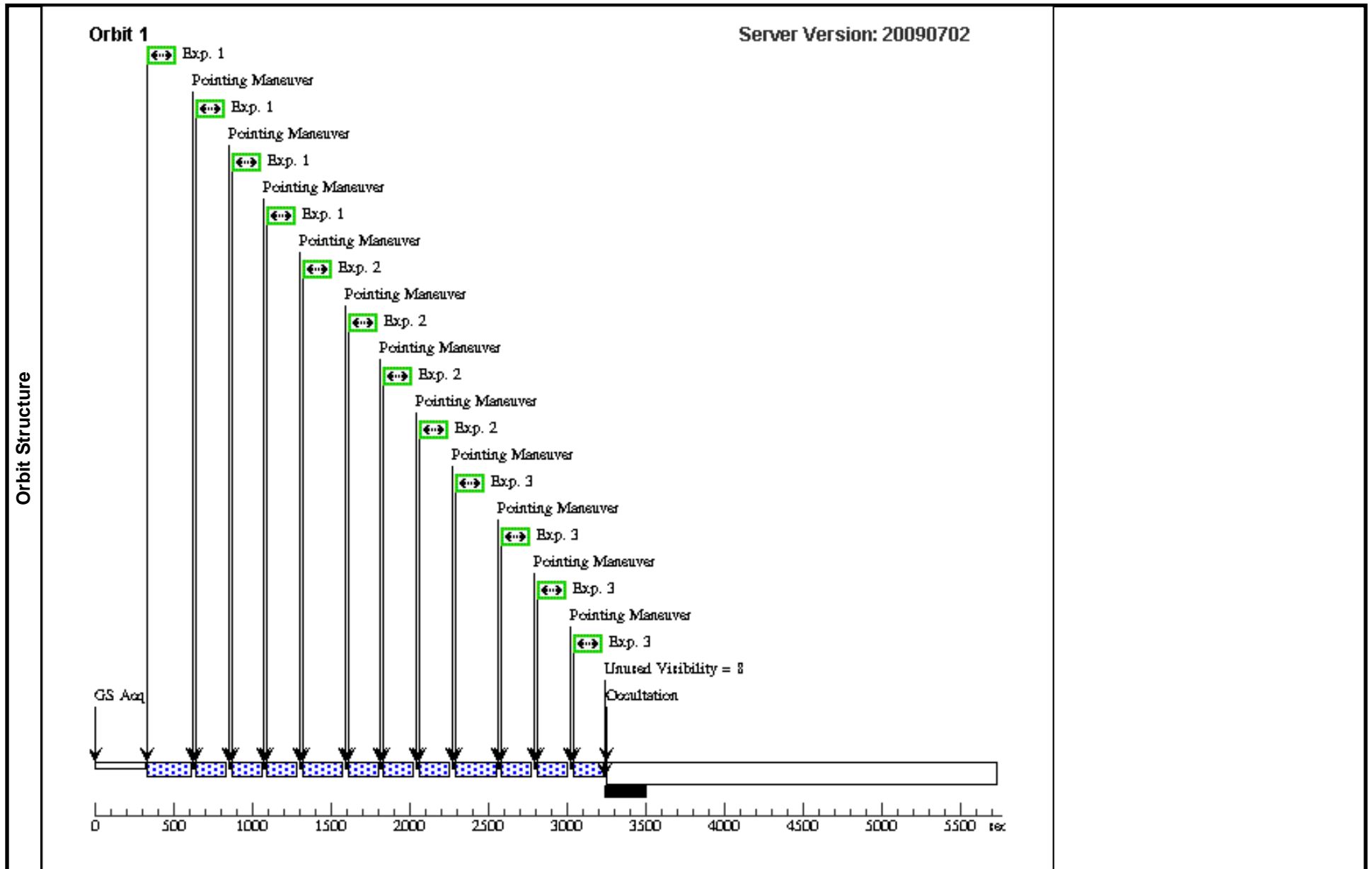
Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	2	(2) SN-2007OC	WFC3/IR, MULTIACCUM, IRSUB256	F160W	NSAMP=14; SAMP-SEQ=SPAR S10	Pattern 4, Exps 2-2 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]		
3	(2) SN-2007OC	WFC3/IR, MULTIACCUM, IRSUB256	F110W	NSAMP=13; SAMP-SEQ=SPAR S10	Pattern 4, Exps 3-3 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]			



Proposal 11603 - Visit 05 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:04 GMT 2009

Visit	Proposal 11603, Visit 05, completed Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: BETWEEN 12-AUG-2009:12:00:00 AND 23-AUG-2009:11:59:00 Comments: SN 2007od									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.67 Angle Between Sides=69.05 Center Pattern=false						(1), (2), (3)
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	SN-2007OD	RA: 23 55 48.7000 (358.9529167d) Dec: +18 24 54.80 (18.41522d) Equinox: J2000		V=20	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(3) SN-2007OD	ACS/WFC, ACCUM, WFC1-1K	F814W	CR-SPLIT=NO	GS ACQ SCENARI O BASE1B3	Pattern 1, Exps 1-1 (1)	159 Secs [==>98 Secs (Pattern 1)] [==>98 Secs (Pattern 2)] [==>98 Secs (Pattern 3)] [==>98 Secs (Pattern 4)]	[1]
	2		(3) SN-2007OD	ACS/WFC, ACCUM, WFC1-1K	F606W	CR-SPLIT=NO		Pattern 1, Exps 2-2 (1)	159 Secs [==>98 Secs (Pattern 1)] [==>98 Secs (Pattern 2)] [==>98 Secs (Pattern 3)] [==>98 Secs (Pattern 4)]	[1]
	3		(3) SN-2007OD	ACS/WFC, ACCUM, WFC1-1K	F435W	CR-SPLIT=NO		Pattern 1, Exps 3-3 (1)	159 Secs [==>98 Secs (Pattern 1)] [==>98 Secs (Pattern 2)] [==>98 Secs (Pattern 3)] [==>98 Secs (Pattern 4)]	[1]



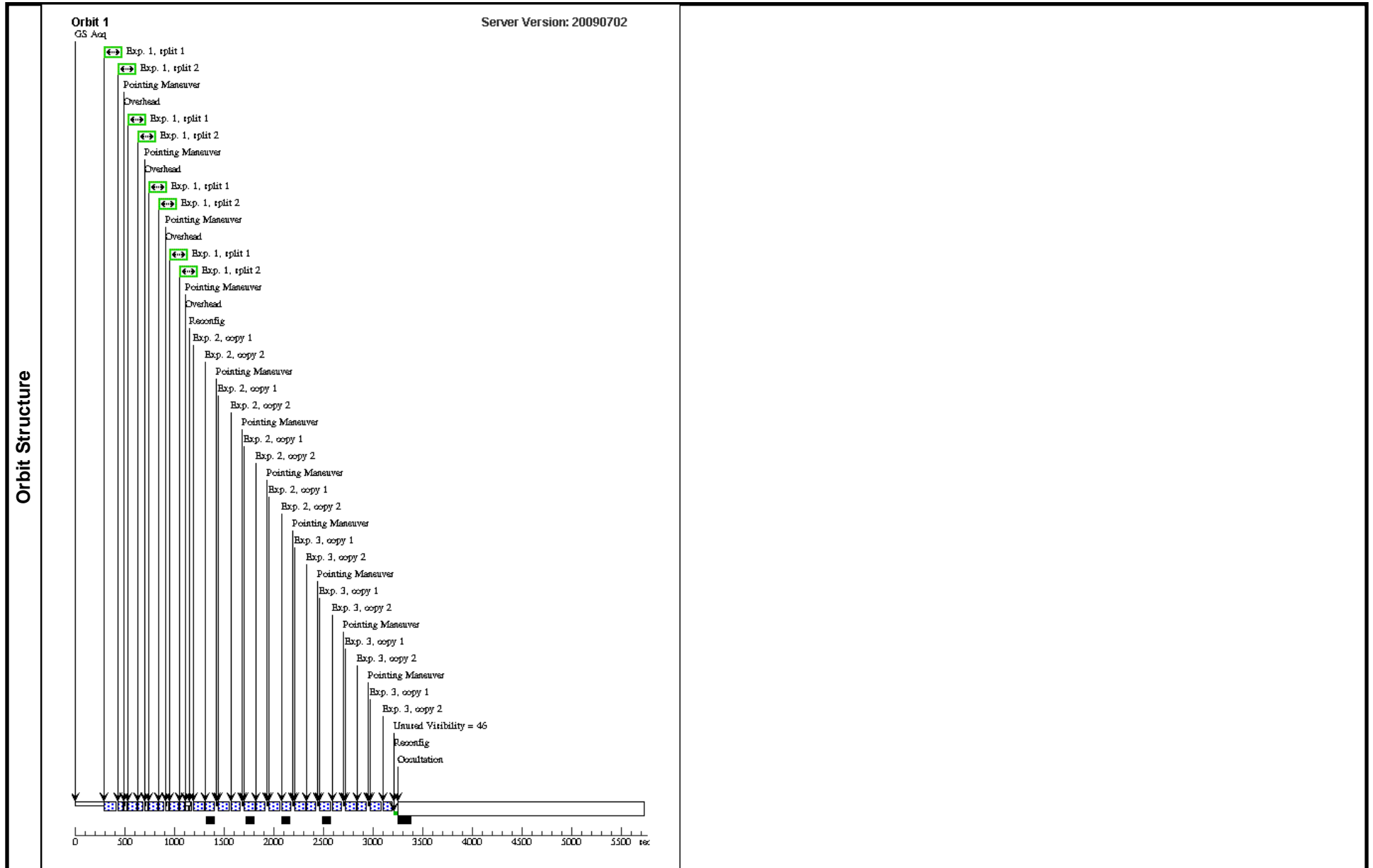
Proposal 11603 - Visit 06 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:04 GMT 2009

Visit	Proposal 11603, Visit 06, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: BETWEEN 01-NOV-2009:02:39:42 AND 30-NOV-2009:02:39:42 Comments: SN 2007od WFC3									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(4)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(2), (3)				
	(5)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	SN-2007OD	RA: 23 55 48.7000 (358.9529167d) Dec: +18 24 54.80 (18.41522d) Equinox: J2000		V=20	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(3) SN-2007OD	WFC3/UVIS, ACCUM, UVIS1-C512A-SUB	F814W				Pattern 5, Exps 1-1 (5) 100 Secs [=>(Pattern 1, Split 1)] [=>(Pattern 1, Split 2)] [=>(Pattern 2, Split 1)] [=>(Pattern 2, Split 2)] [=>(Pattern 3, Split 1)] [=>(Pattern 3, Split 2)] [=>(Pattern 4, Split 1)] [=>(Pattern 4, Split 2)]	[1]

Proposal 11603 - Visit 06 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

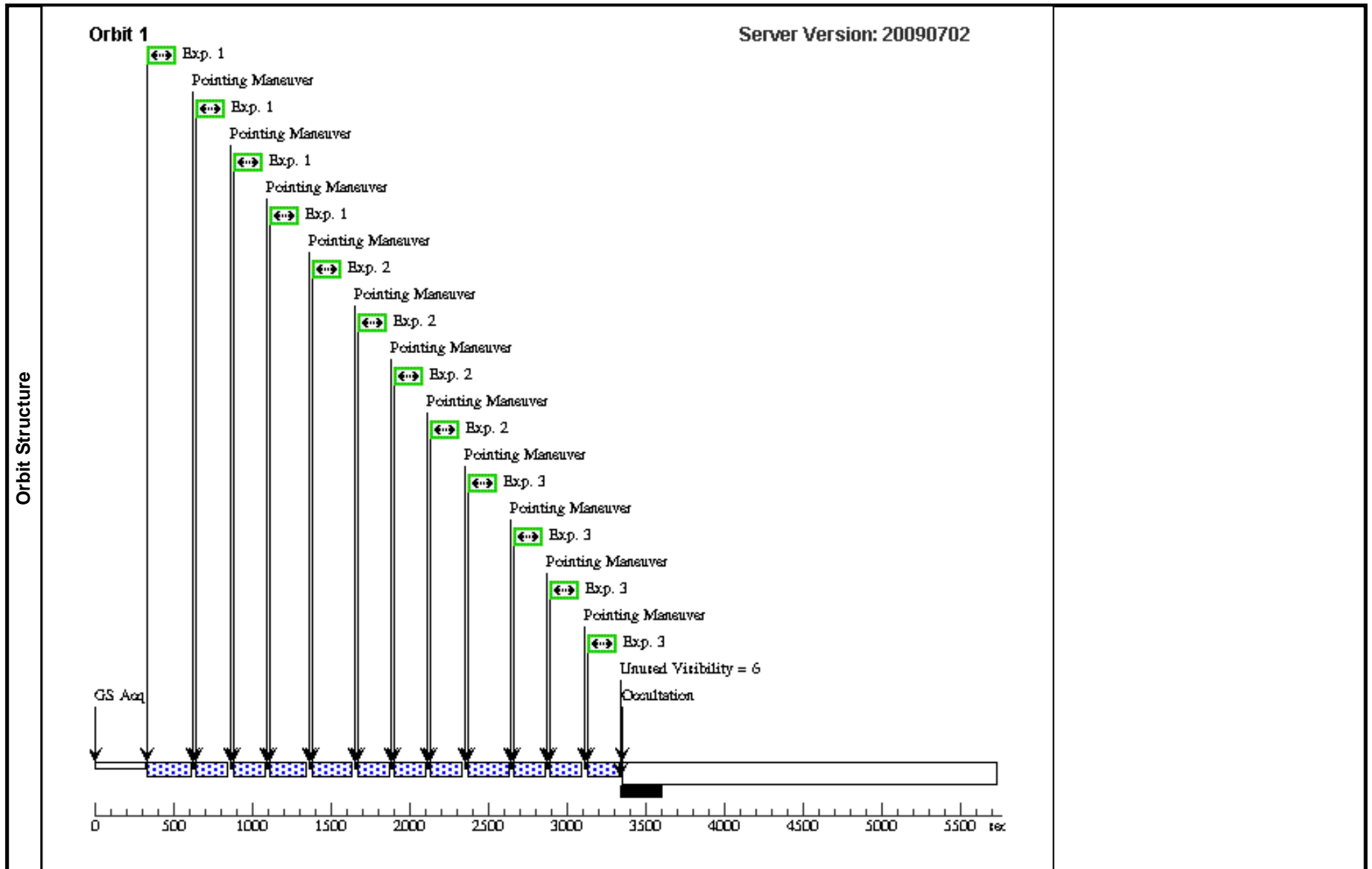
Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	2	(3) SN-2007OD	WFC3/IR, MULTIACCUM, IRSUB256	F160W	NSAMP=13; SAMP-SEQ=SPAR S10	Pattern 4, Exps 2-2 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]		
3	(3) SN-2007OD	WFC3/IR, MULTIACCUM, IRSUB256	F110W	NSAMP=13; SAMP-SEQ=SPAR S10	Pattern 4, Exps 3-3 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]			



Proposal 11603 - Visit 07 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:05 GMT 2009

Visit	Proposal 11603, Visit 07, completed Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: BETWEEN 24-JUL-2009:12:00:00 AND 26-AUG-2009:11:59:00 Comments: SN 2007it									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.67 Angle Between Sides=69.05 Center Pattern=false					(1), (2), (3)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN-2007IT	RA: 14 18 25.6300 (214.6067917d) Dec: -43 22 53.80 (-43.38161d) Equinox: J2000		V=18.7	Reference Frame: ICRS				
	Comments: This object was generated by the targetselector and retrieved from the NED database.									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) SN-2007IT	ACS/WFC, ACCUM, WFC1-1K	F814W	CR-SPLIT=NO		Pattern 1, Exps 1-1 (1)	70 Secs [==>103.0 Secs (Pattern 1)] [==>103.0 Secs (Pattern 2)] [==>103.0 Secs (Pattern 3)] [==>139.0 Secs (Pattern 4)]	[1]
	2		(1) SN-2007IT	ACS/WFC, ACCUM, WFC1-1K	F606W	CR-SPLIT=NO		Pattern 1, Exps 2-2 (1)	70 Secs [==>103.0 Secs (Pattern 1)] [==>103.0 Secs (Pattern 2)] [==>103.0 Secs (Pattern 3)] [==>103.0 Secs (Pattern 4)]	[1]
	3		(1) SN-2007IT	ACS/WFC, ACCUM, WFC1-1K	F435W	CR-SPLIT=NO		Pattern 1, Exps 3-3 (1)	70 Secs [==>103.0 Secs (Pattern 1)] [==>103.0 Secs (Pattern 2)] [==>103.0 Secs (Pattern 3)] [==>103.0 Secs (Pattern 4)]	[1]



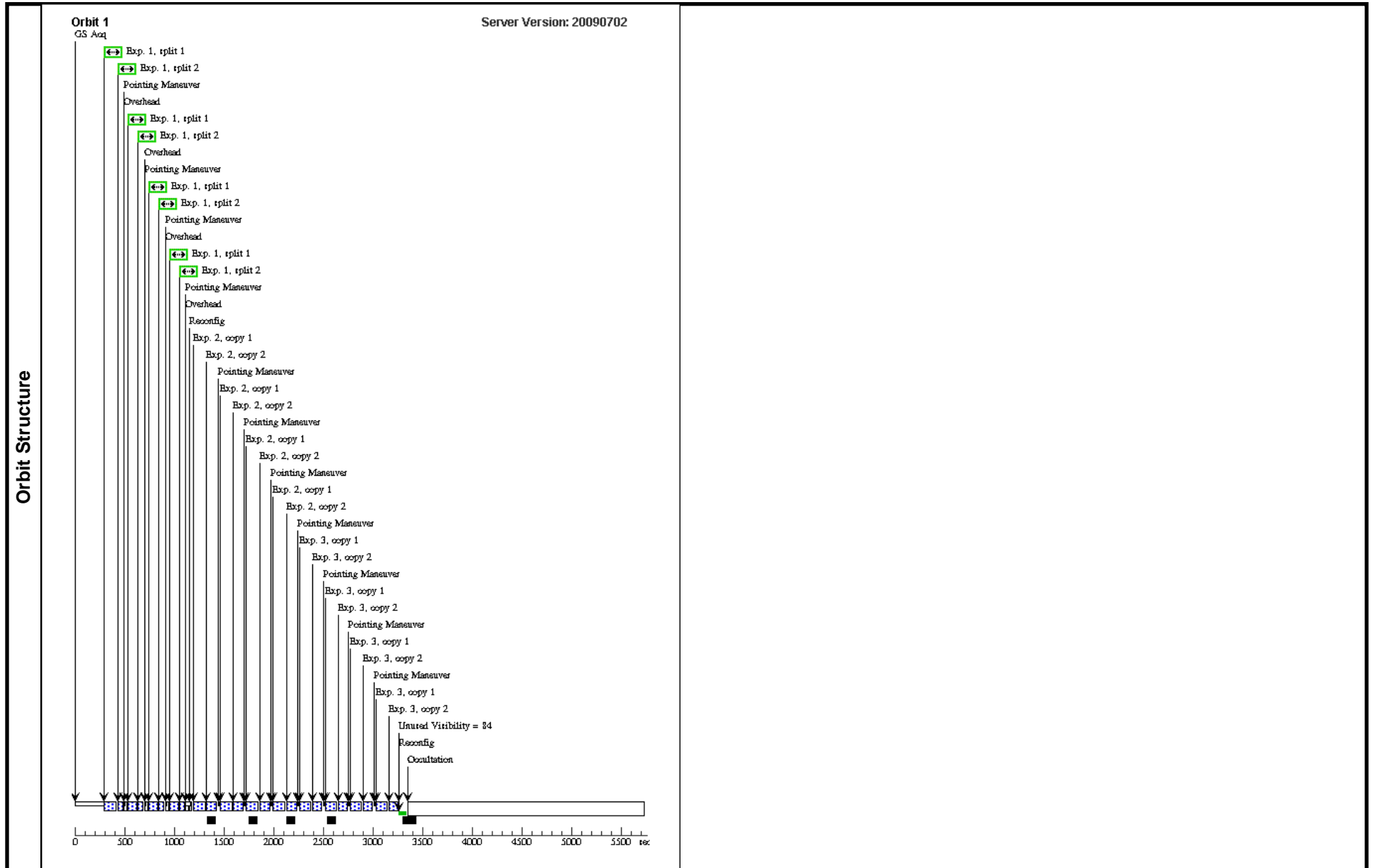
Proposal 11603 - Visit 08 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:05 GMT 2009

Visit	Proposal 11603, Visit 08, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: (none) Comments: SN 2007it WFC3									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(4)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(2), (3)				
	(5)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN-2007IT	RA: 14 18 25.6300 (214.6067917d) Dec: -43 22 53.80 (-43.38161d) Equinox: J2000		V=18.7	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) SN-2007IT	WFC3/UVIS, ACCUM, UVIS1-C512A-SUB	F814W				Pattern 5, Exps 1-1 (5) 100 Secs [=>(Pattern 1, Split 1)] [=>(Pattern 1, Split 2)] [=>(Pattern 2, Split 1)] [=>(Pattern 2, Split 2)] [=>(Pattern 3, Split 1)] [=>(Pattern 3, Split 2)] [=>(Pattern 4, Split 1)] [=>(Pattern 4, Split 2)]	[1]

Proposal 11603 - Visit 08 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

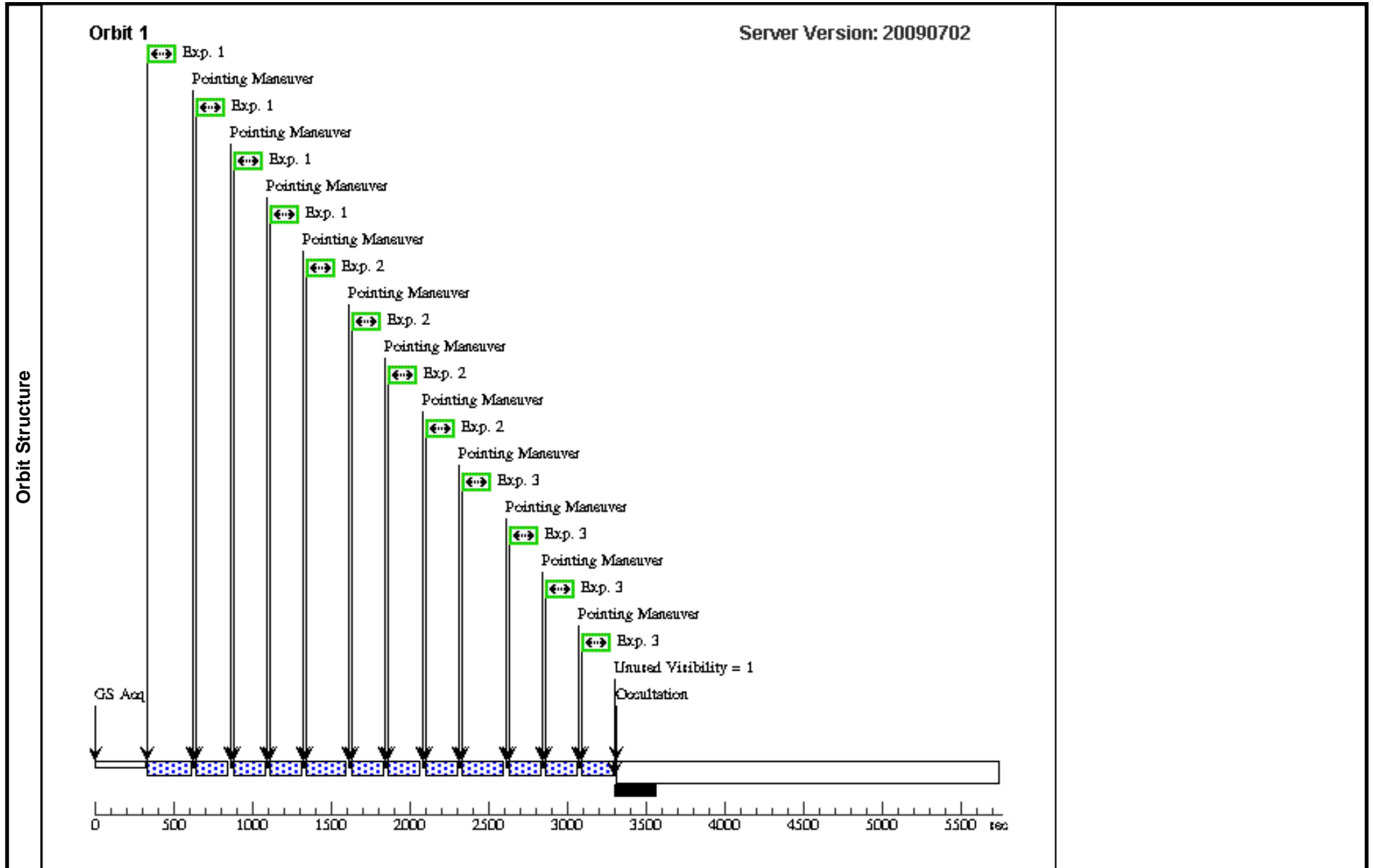
Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	2	(1) SN-2007IT	WFC3/IR, MULTIACCUM, IRSUB256	F160W	NSAMP=14; SAMP-SEQ=SPAR S10	Pattern 4, Exps 2-2 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]		
3	(1) SN-2007IT	WFC3/IR, MULTIACCUM, IRSUB256	F110W	NSAMP=13; SAMP-SEQ=SPAR S10	Pattern 4, Exps 3-3 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]			



Proposal 11603 - Visit 09 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:06 GMT 2009

Visit	Proposal 11603, Visit 09, completed Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: BETWEEN 11-JUL-2009:12:00:00 AND 30-JUL-2009:11:59:00 Comments: SN 2007oc									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.67 Angle Between Sides=69.05 Center Pattern=false						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SN-2007OC	RA: 22 56 41.7000 (344.1737500d) Dec: -36 46 22.30 (-36.77286d) Equinox: J2000		V=19.3	Reference Frame: ICRS				
	Comments: This object was generated by the targetselector and retrieved from the NED database.									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) SN-2007OC	ACS/WFC, ACCUM, WFC1-1K	F814W	CR-SPLIT=NO		Pattern 1, Exps 1-1 (1)	163 Secs [=>103.0 Secs (Pattern 1)] [=>103.0 Secs (Pattern 2)] [=>103.0 Secs (Pattern 3)] [=>103.0 Secs (Pattern 4)]	[1]
	2		(2) SN-2007OC	ACS/WFC, ACCUM, WFC1-1K	F606W			Pattern 1, Exps 2-2 (1)	163 Secs [=>103.0 Secs (Pattern 1)] [=>103.0 Secs (Pattern 2)] [=>103.0 Secs (Pattern 3)] [=>103.0 Secs (Pattern 4)]	[1]
	3		(2) SN-2007OC	ACS/WFC, ACCUM, WFC1-1K	F435W			Pattern 1, Exps 3-3 (1)	163 Secs [=>103.0 Secs (Pattern 1)] [=>103.0 Secs (Pattern 2)] [=>103.0 Secs (Pattern 3)] [=>103.0 Secs (Pattern 4)]	[1]



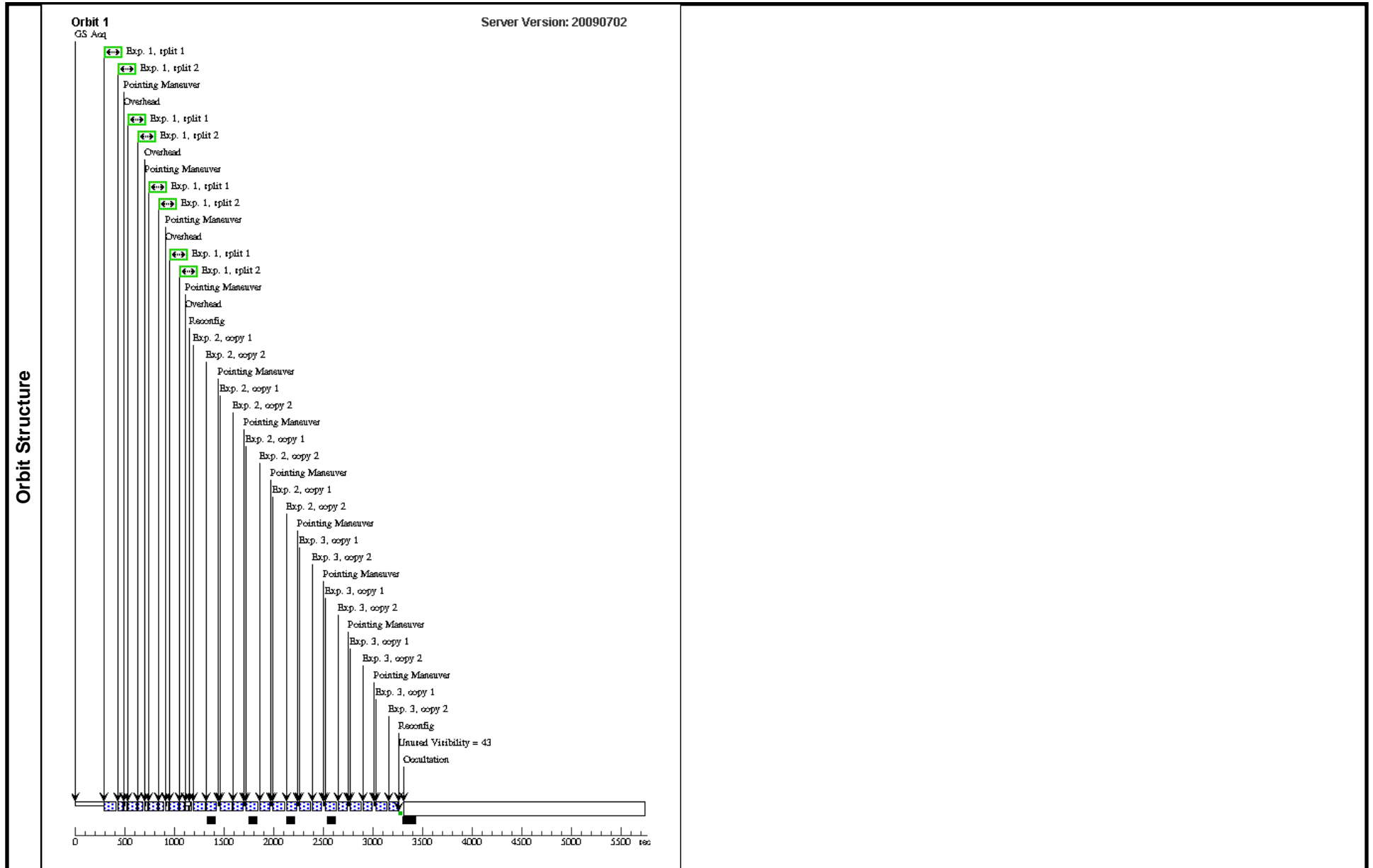
Proposal 11603 - Visit 10 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:06 GMT 2009

Visit	Proposal 11603, Visit 10, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: BETWEEN 12-APR-2010:00:00:00 AND 05-MAY-2010:00:00:00 Comments: SN 2007oc WFC3									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(4)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(2), (3)				
	(5)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SN-2007OC	RA: 22 56 41.7000 (344.1737500d) Dec: -36 46 22.30 (-36.77286d) Equinox: J2000		V=19.3	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) SN-2007OC	WFC3/UVIS, ACCUM, UVIS1-C512A-SUB	F814W				Pattern 5, Exps 1-1 (5) 100 Secs [=>(Pattern 1, Split 1)] [=>(Pattern 1, Split 2)] [=>(Pattern 2, Split 1)] [=>(Pattern 2, Split 2)] [=>(Pattern 3, Split 1)] [=>(Pattern 3, Split 2)] [=>(Pattern 4, Split 1)] [=>(Pattern 4, Split 2)]	[1]

Proposal 11603 - Visit 10 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

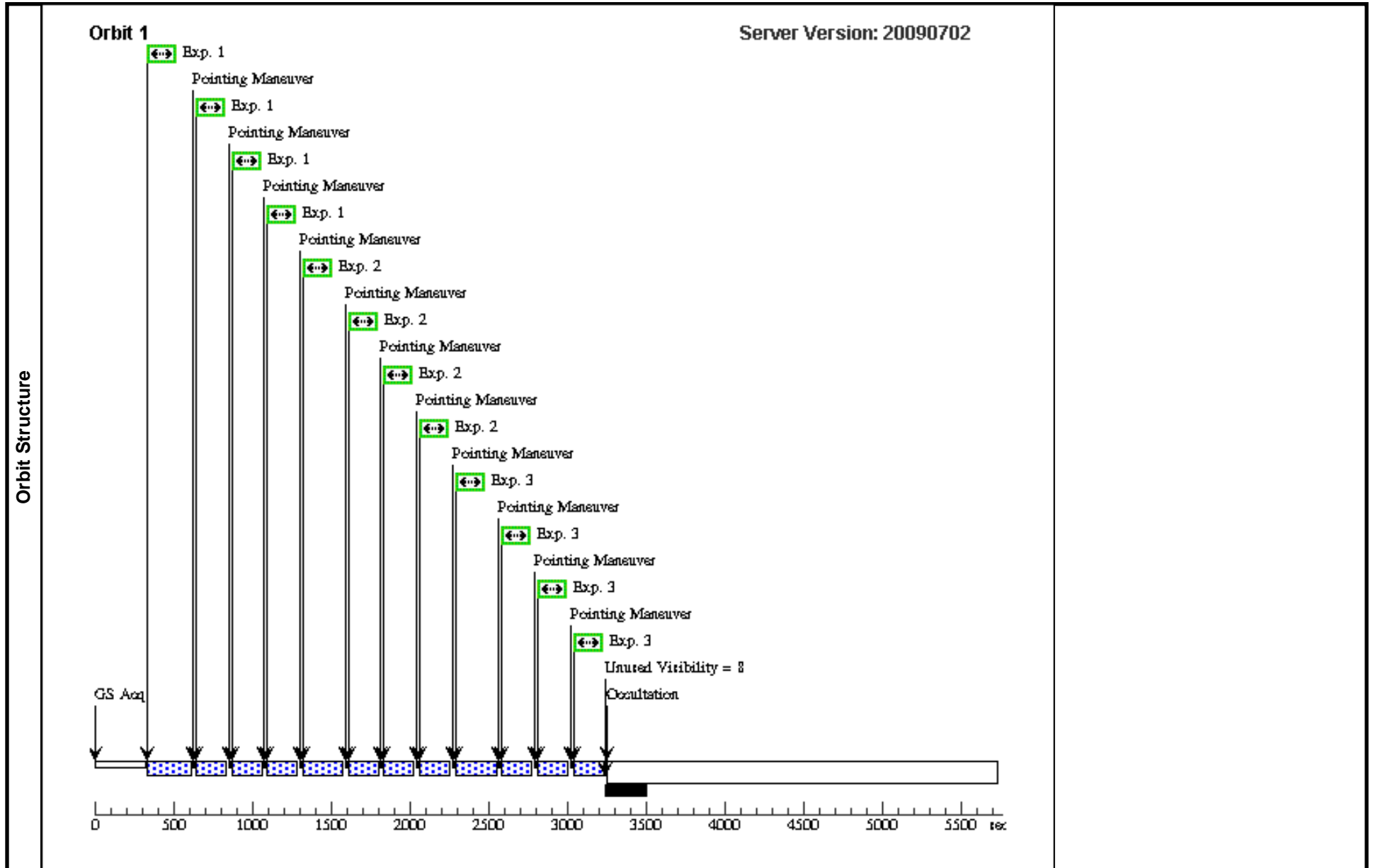
Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	2	(2) SN-2007OC	WFC3/IR, MULTIACCUM, IRSUB256	F160W	NSAMP=14; SAMP-SEQ=SPAR S10	Pattern 4, Exps 2-2 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]		
3	(2) SN-2007OC	WFC3/IR, MULTIACCUM, IRSUB256	F110W	NSAMP=13; SAMP-SEQ=SPAR S10	Pattern 4, Exps 3-3 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]			



Proposal 11603 - Visit 11 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:07 GMT 2009

Visit	Proposal 11603, Visit 11, completed Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: BETWEEN 03-OCT-2009:12:00:00 AND 16-OCT-2009:11:59:00 Comments: SN 2007od									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.67 Angle Between Sides=69.05 Center Pattern=false					(1), (2), (3)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	SN-2007OD	RA: 23 55 48.7000 (358.9529167d) Dec: +18 24 54.80 (18.41522d) Equinox: J2000		V=20	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(3) SN-2007OD	ACS/WFC, ACCUM, WFC1-1K	F814W	CR-SPLIT=NO		Pattern 1, Exps 1-1 (1)	159 Secs	
									[==>98.0 Secs (Pattern 1)]	[1]
									[==>98.0 Secs (Pattern 2)]	
	2		(3) SN-2007OD	ACS/WFC, ACCUM, WFC1-1K	F606W	CR-SPLIT=NO		Pattern 1, Exps 2-2 (1)	159 Secs	
									[==>98.0 Secs (Pattern 1)]	[1]
									[==>98.0 Secs (Pattern 2)]	
									[==>98.0 Secs (Pattern 3)]	
									[==>98.0 Secs (Pattern 4)]	
	3		(3) SN-2007OD	ACS/WFC, ACCUM, WFC1-1K	F435W	CR-SPLIT=NO		Pattern 1, Exps 3-3 (1)	159 Secs	
									[==>98.0 Secs (Pattern 1)]	[1]
									[==>98.0 Secs (Pattern 2)]	
									[==>98.0 Secs (Pattern 3)]	
									[==>98.0 Secs (Pattern 4)]	



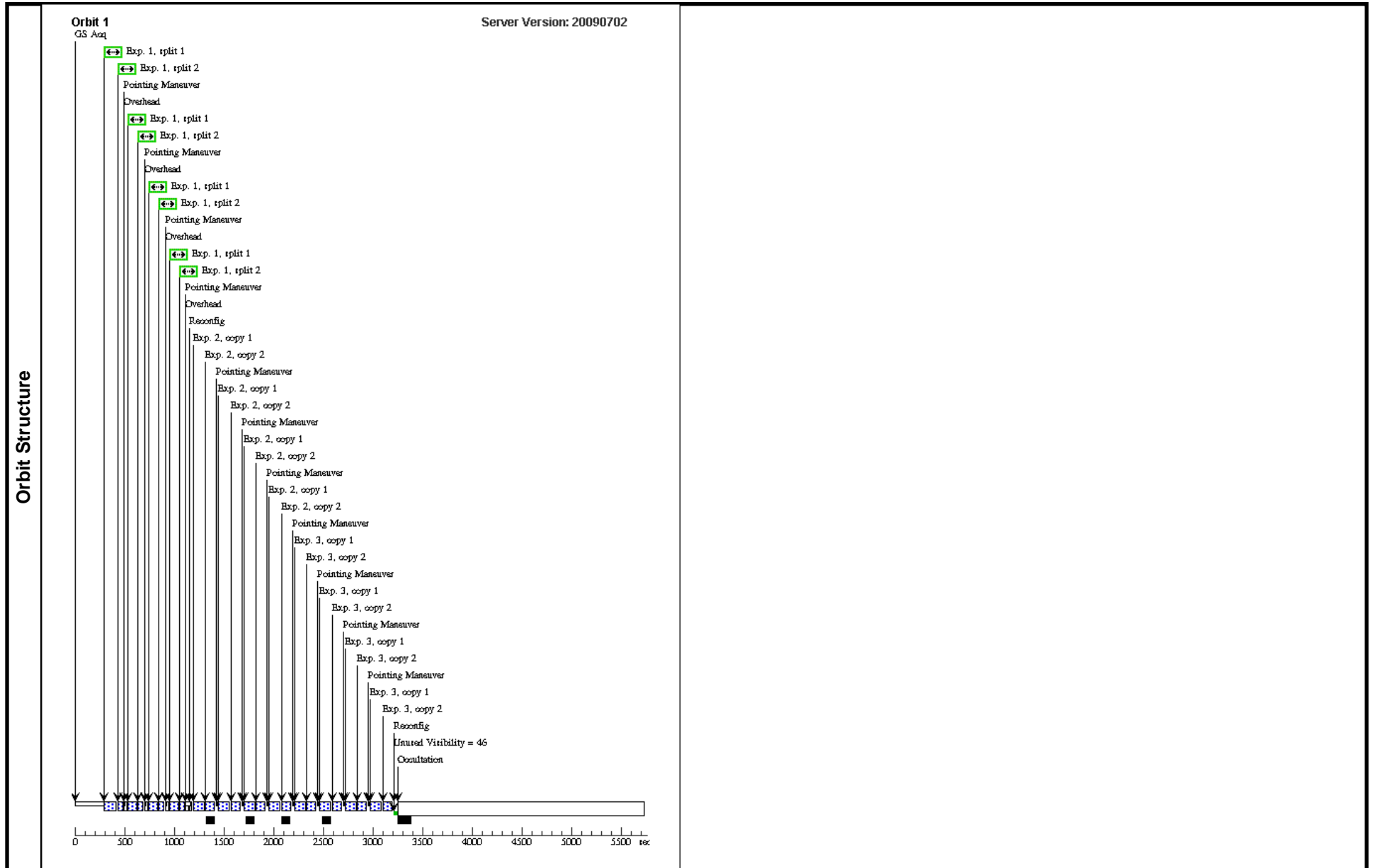
Proposal 11603 - Visit 12 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:07 GMT 2009

Visit	Proposal 11603, Visit 12, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: (none) Comments: SN 2007od WFC3									
	#	Primary Pattern	Secondary Pattern	Exposures						
Patterns	(4)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false	(2), (3)						
	(5)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false	(1)						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	SN-2007OD	RA: 23 55 48.7000 (358.9529167d) Dec: +18 24 54.80 (18.41522d) Equinox: J2000		V=20	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(3) SN-2007OD	WFC3/UVIS, ACCUM, UVIS1-C512A-SUB	F814W			Pattern 5, Exps 1-1 (5)	100 Secs [==>(Pattern 1, Split 1)] [==>(Pattern 1, Split 2)] [==>(Pattern 2, Split 1)] [==>(Pattern 2, Split 2)] [==>(Pattern 3, Split 1)] [==>(Pattern 3, Split 2)] [==>(Pattern 4, Split 1)] [==>(Pattern 4, Split 2)]	[1]

Proposal 11603 - Visit 12 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

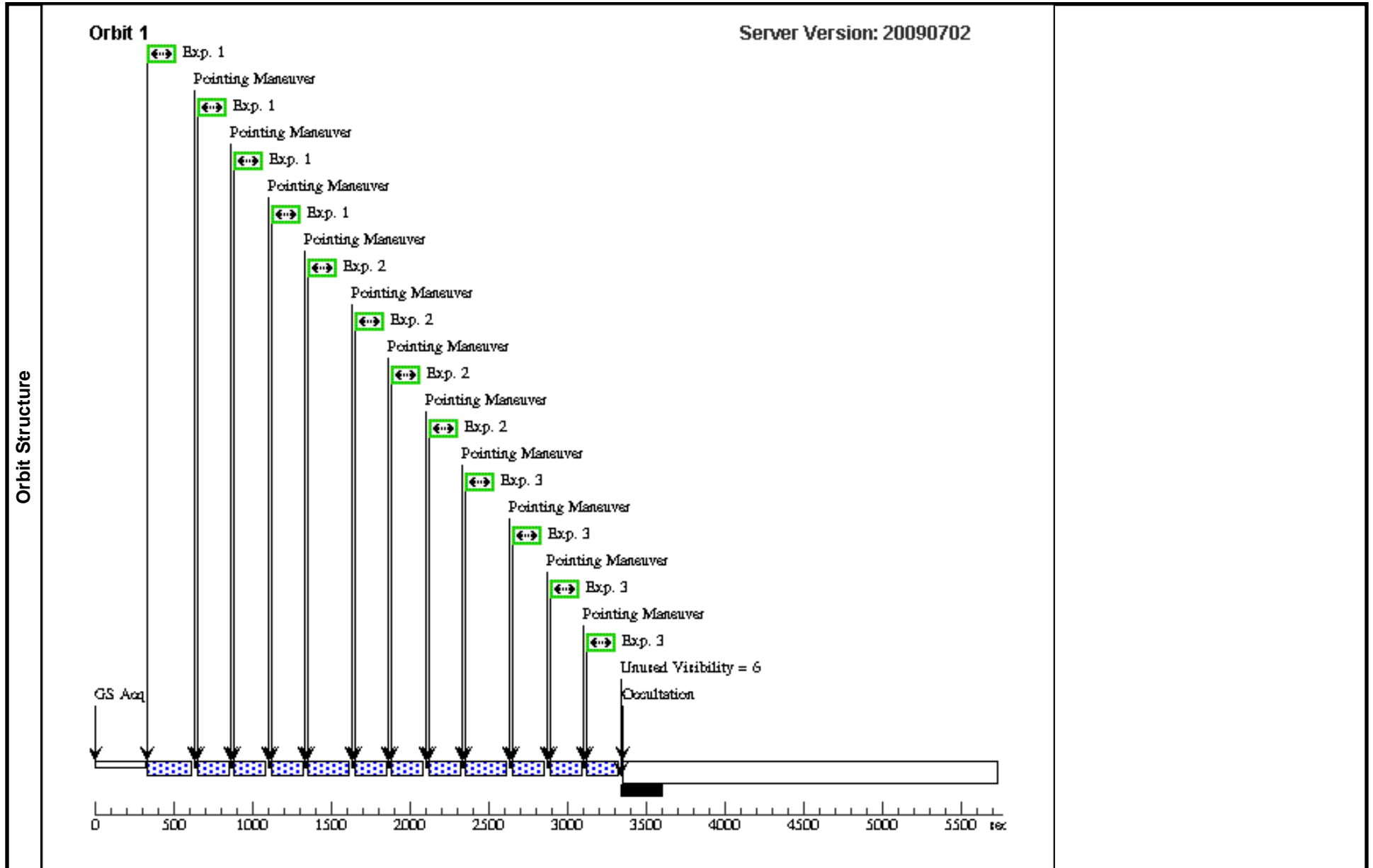
Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	2	(3) SN-2007OD	WFC3/IR, MULTIACCUM, IRSUB256	F160W	NSAMP=13; SAMP-SEQ=SPAR S10	Pattern 4, Exps 2-2 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]		
3	(3) SN-2007OD	WFC3/IR, MULTIACCUM, IRSUB256	F110W	NSAMP=13; SAMP-SEQ=SPAR S10	Pattern 4, Exps 3-3 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]			



Proposal 11603 - Visit 13 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:08 GMT 2009

Visit	Proposal 11603, Visit 13, implementation Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: BETWEEN 13-MAR-2010:12:00:00 AND 02-APR-2010:11:59:00; SEQ 08,13 WITHIN 5 D Comments: SN 2007it ACS									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.67 Angle Between Sides=69.05 Center Pattern=false					(1), (2), (3)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN-2007IT	RA: 14 18 25.6300 (214.6067917d) Dec: -43 22 53.80 (-43.38161d) Equinox: J2000 Comments: This object was generated by the targetselector and retrieved from the NED database.		V=18.7	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) SN-2007IT	ACS/WFC, ACCUM, WFC1-1K	F814W	CR-SPLIT=NO		Pattern 1, Exps 1-1 (1)	165 Secs [==>106.0 Secs (Pattern 1)] [==>106.0 Secs (Pattern 2)] [==>106.0 Secs (Pattern 3)] [==>106.0 Secs (Pattern 4)]	[1]
	2		(1) SN-2007IT	ACS/WFC, ACCUM, WFC1-1K	F606W	CR-SPLIT=NO		Pattern 1, Exps 2-2 (1)	165 Secs [==>106.0 Secs (Pattern 1)] [==>106.0 Secs (Pattern 2)] [==>106.0 Secs (Pattern 3)] [==>106.0 Secs (Pattern 4)]	[1]
	3		(1) SN-2007IT	ACS/WFC, ACCUM, WFC1-1K	F435W	CR-SPLIT=NO		Pattern 1, Exps 3-3 (1)	165 Secs [==>106.0 Secs (Pattern 1)] [==>106.0 Secs (Pattern 2)] [==>106.0 Secs (Pattern 3)] [==>106.0 Secs (Pattern 4)]	[1]



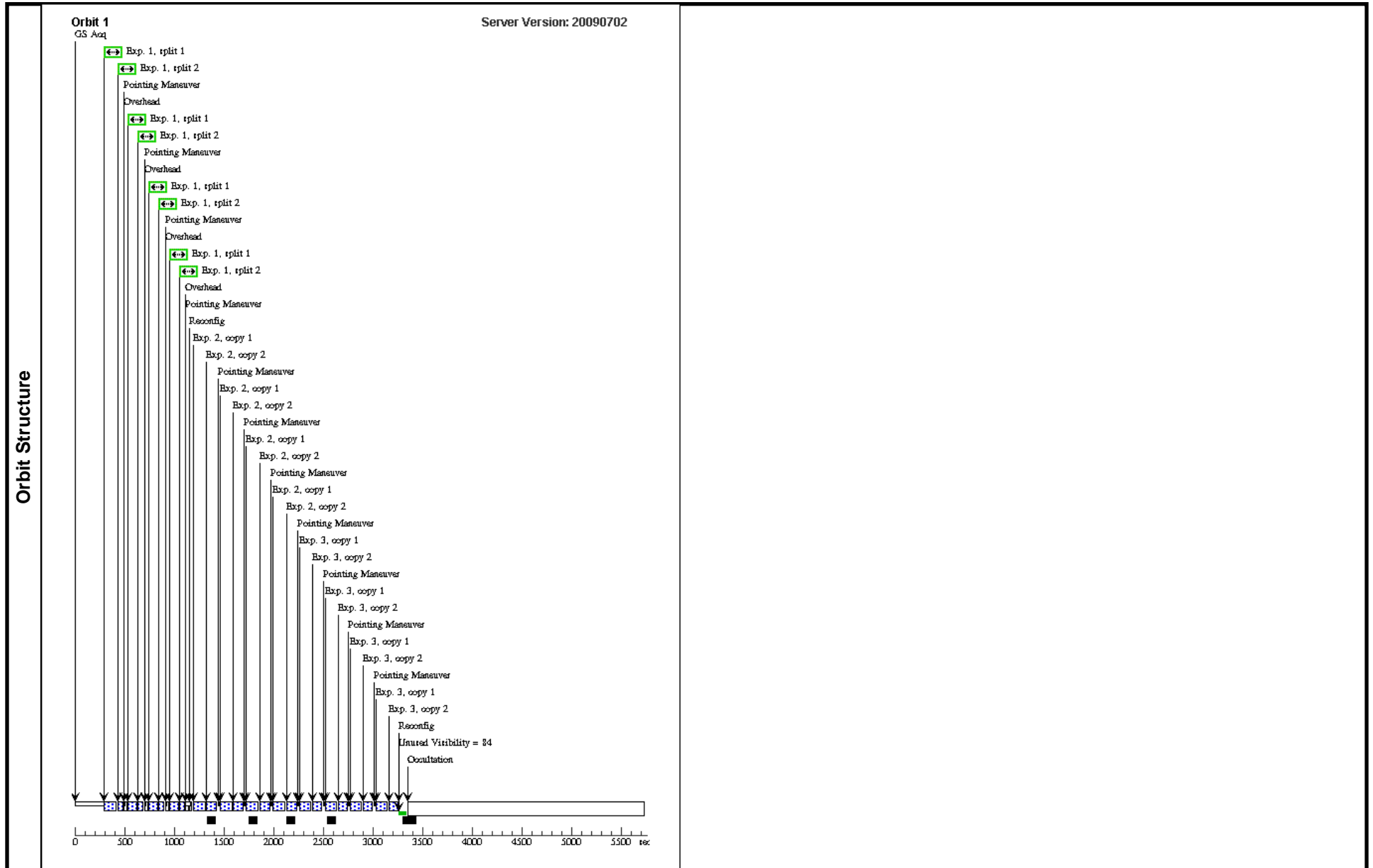
Proposal 11603 - Visit 14 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:08 GMT 2009

Visit	Proposal 11603, Visit 14, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: BETWEEN 02-JUN-2010:00:00:00 AND 20-JUN-2010:00:00:00 Comments: SN 2007it WFC3									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(4)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(2), (3)				
	(5)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN-2007IT	RA: 14 18 25.6300 (214.6067917d) Dec: -43 22 53.80 (-43.38161d) Equinox: J2000		V=18.7	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) SN-2007IT	WFC3/UVIS, ACCUM, UVIS1-C512A-SUB	F814W				Pattern 5, Exps 1-1 (5) 100 Secs [=>(Pattern 1, Split 1)] [=>(Pattern 1, Split 2)] [=>(Pattern 2, Split 1)] [=>(Pattern 2, Split 2)] [=>(Pattern 3, Split 1)] [=>(Pattern 3, Split 2)] [=>(Pattern 4, Split 1)] [=>(Pattern 4, Split 2)]	[1]

Proposal 11603 - Visit 14 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

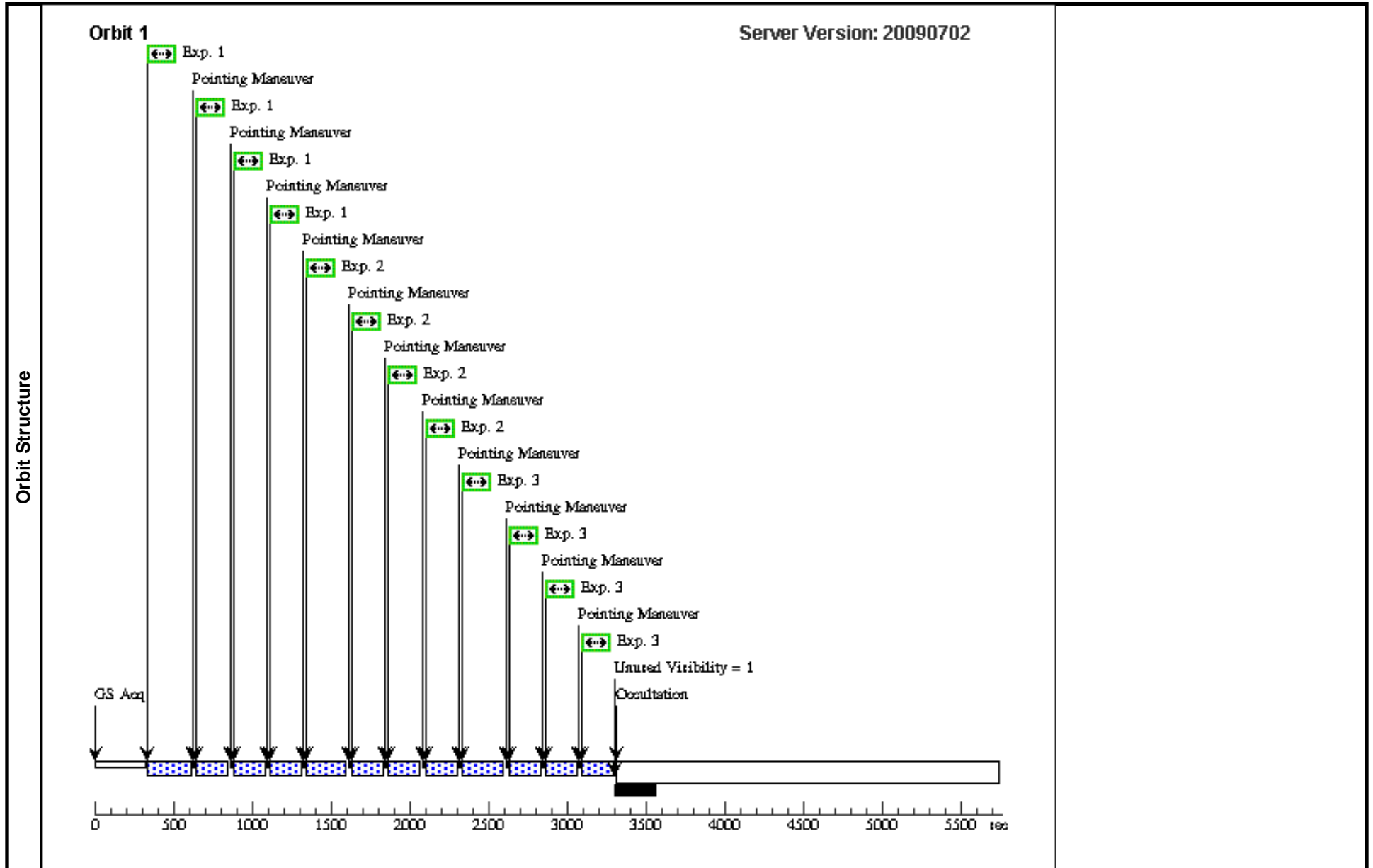
Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	2	(1) SN-2007IT	WFC3/IR, MULTIACCUM, IRSUB256	F160W	NSAMP=14; SAMP-SEQ=SPAR S10	Pattern 4, Exps 2-2 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]		
3	(1) SN-2007IT	WFC3/IR, MULTIACCUM, IRSUB256	F110W	NSAMP=13; SAMP-SEQ=SPAR S10	Pattern 4, Exps 3-3 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]			



Proposal 11603 - Visit 15 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:09 GMT 2009

Visit	Proposal 11603, Visit 15, implementation Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: BETWEEN 02-DEC-2009:12:00:00 AND 16-JAN-2010:11:59:00; SEQ 04,15 WITHIN 5 D Comments: SN 2007oc ACS									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.67 Angle Between Sides=69.05 Center Pattern=false					(1), (2), (3)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SN-2007OC	RA: 22 56 41.7000 (344.1737500d) Dec: -36 46 22.30 (-36.77286d) Equinox: J2000		V=19.3	Reference Frame: ICRS				
	Comments: This object was generated by the targetselector and retrieved from the NED database.									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) SN-2007OC	ACS/WFC, ACCUM, WFC1-1K	F814W	CR-SPLIT=NO	GS ACQ SCENARI O BASE1B3	Pattern 1, Exps 1-1 (1)	163 Secs	
									[==>103.0 Secs (Pattern 1)] [==>103.0 Secs (Pattern 2)] [==>103.0 Secs (Pattern 3)] [==>103.0 Secs (Pattern 4)]	[1]
	2		(2) SN-2007OC	ACS/WFC, ACCUM, WFC1-1K	F606W	CR-SPLIT=NO		Pattern 1, Exps 2-2 (1)	163 Secs	
								[==>103.0 Secs (Pattern 1)] [==>103.0 Secs (Pattern 2)] [==>103.0 Secs (Pattern 3)] [==>103.0 Secs (Pattern 4)]	[1]	
3		(2) SN-2007OC	ACS/WFC, ACCUM, WFC1-1K	F435W	CR-SPLIT=NO		Pattern 1, Exps 3-3 (1)	163 Secs		
								[==>103.0 Secs (Pattern 1)] [==>103.0 Secs (Pattern 2)] [==>103.0 Secs (Pattern 3)] [==>103.0 Secs (Pattern 4)]	[1]	



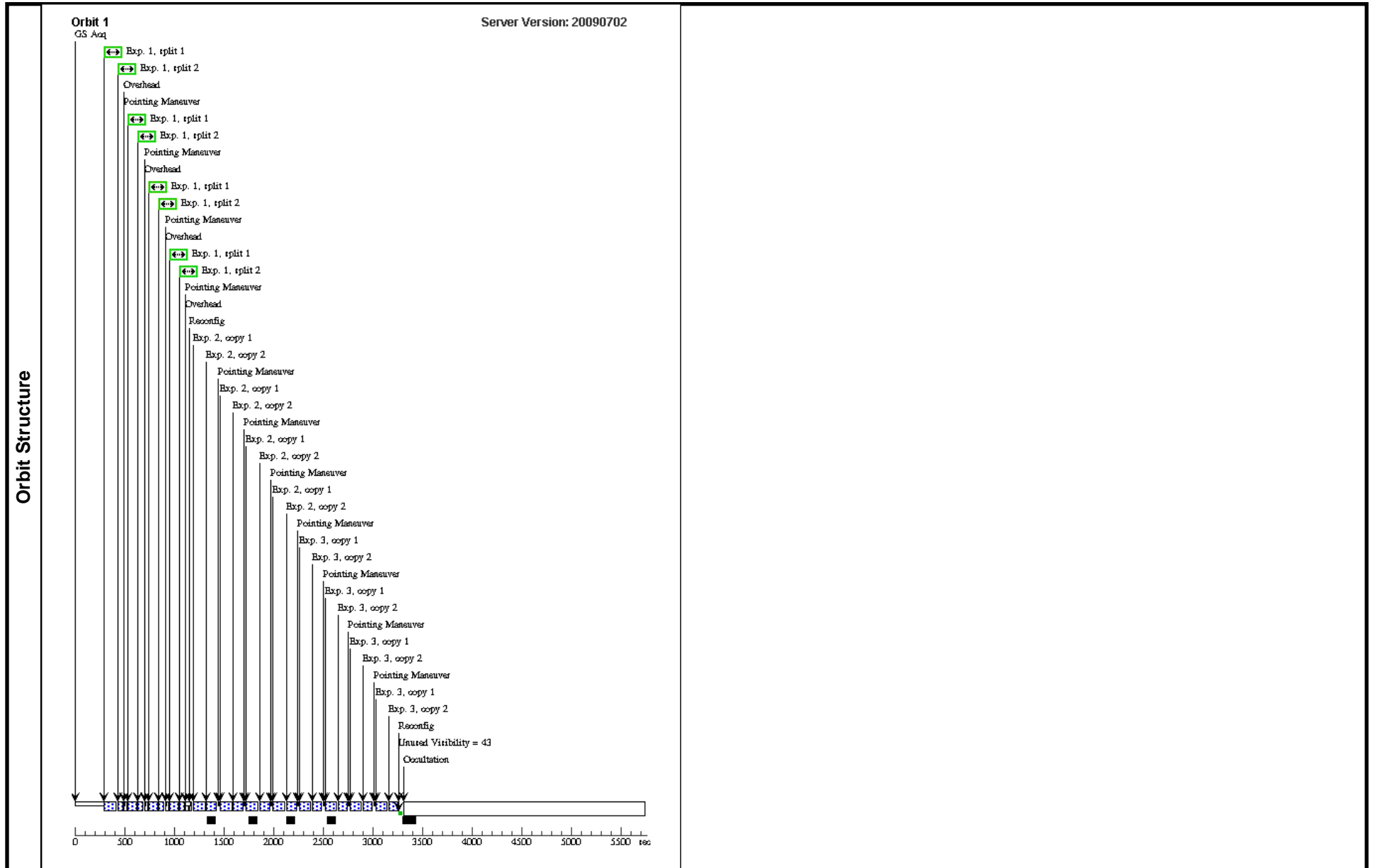
Proposal 11603 - Visit 16 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:10 GMT 2009

Visit	Proposal 11603, Visit 16, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: BETWEEN 07-JUN-2010:20:12:36 AND 30-JUN-2010:20:12:36 Comments: SN 2007oc WFC3									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(4)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(2), (3)				
	(5)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SN-2007OC	RA: 22 56 41.7000 (344.1737500d) Dec: -36 46 22.30 (-36.77286d) Equinox: J2000		V=19.3	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) SN-2007OC	WFC3/UVIS, ACCUM, UVIS1-C512A-SUB	F814W				Pattern 5, Exps 1-1 (5) 100 Secs [=>(Pattern 1, Split 1)] [=>(Pattern 1, Split 2)] [=>(Pattern 2, Split 1)] [=>(Pattern 2, Split 2)] [=>(Pattern 3, Split 1)] [=>(Pattern 3, Split 2)] [=>(Pattern 4, Split 1)] [=>(Pattern 4, Split 2)]	[1]

Proposal 11603 - Visit 16 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

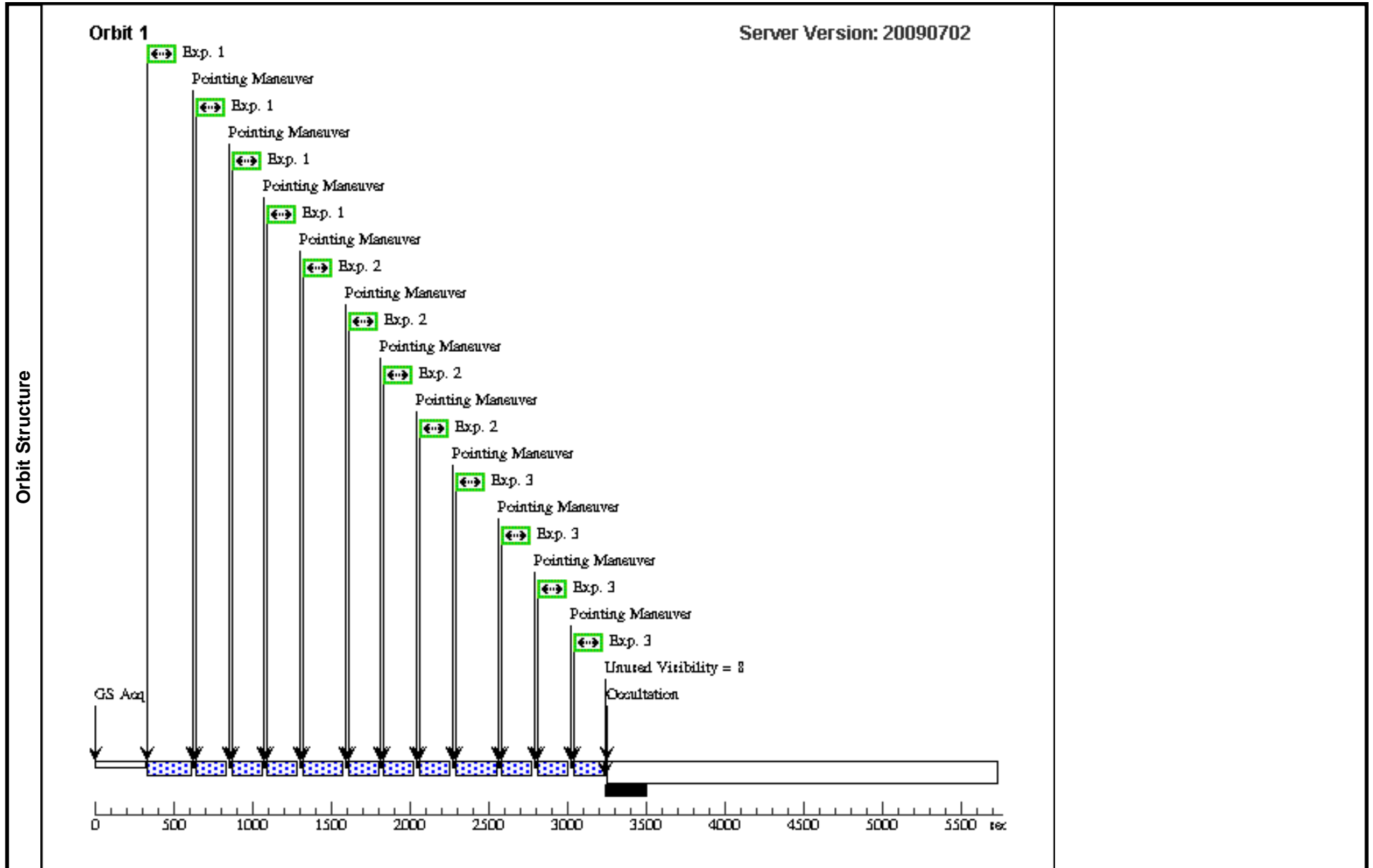
Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	2	(2) SN-2007OC	WFC3/IR, MULTIACCUM, IRSUB256	F160W	NSAMP=14; SAMP-SEQ=SPAR S10	Pattern 4, Exps 2-2 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]		
3	(2) SN-2007OC	WFC3/IR, MULTIACCUM, IRSUB256	F110W	NSAMP=13; SAMP-SEQ=SPAR S10	Pattern 4, Exps 3-3 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]			



Proposal 11603 - Visit 17 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:11 GMT 2009

Visit	Proposal 11603, Visit 17, implementation Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: BETWEEN 13-JAN-2010:12:00:00 AND 06-FEB-2010:11:59:00; SEQ 12,17 WITHIN 5 D Comments: SN 2007od ACS									
	Patterns	#	Primary Pattern	Secondary Pattern			Exposures			
		(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.67 Angle Between Sides=69.05 Center Pattern=false				(1), (2), (3)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	SN-2007OD	RA: 23 55 48.7000 (358.9529167d) Dec: +18 24 54.80 (18.41522d) Equinox: J2000		V=20	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(3) SN-2007OD	ACS/WFC, ACCUM, WFC1-1K	F814W	CR-SPLIT=NO	GS ACQ SCENARI O BASE1B3	Pattern 1, Exps 1-1 (1)	159 Secs	
									[==>98.0 Secs (Pattern 1)] [==>98.0 Secs (Pattern 2)] [==>98.0 Secs (Pattern 3)] [==>98.0 Secs (Pattern 4)]	[1]
	2		(3) SN-2007OD	ACS/WFC, ACCUM, WFC1-1K	F606W	CR-SPLIT=NO		Pattern 1, Exps 2-2 (1)	159 Secs	
								[==>98.0 Secs (Pattern 1)] [==>98.0 Secs (Pattern 2)] [==>98.0 Secs (Pattern 3)] [==>98.0 Secs (Pattern 4)]	[1]	
3		(3) SN-2007OD	ACS/WFC, ACCUM, WFC1-1K	F435W	CR-SPLIT=NO		Pattern 1, Exps 3-3 (1)	159 Secs		
								[==>98.0 Secs (Pattern 1)] [==>98.0 Secs (Pattern 2)] [==>98.0 Secs (Pattern 3)] [==>98.0 Secs (Pattern 4)]	[1]	



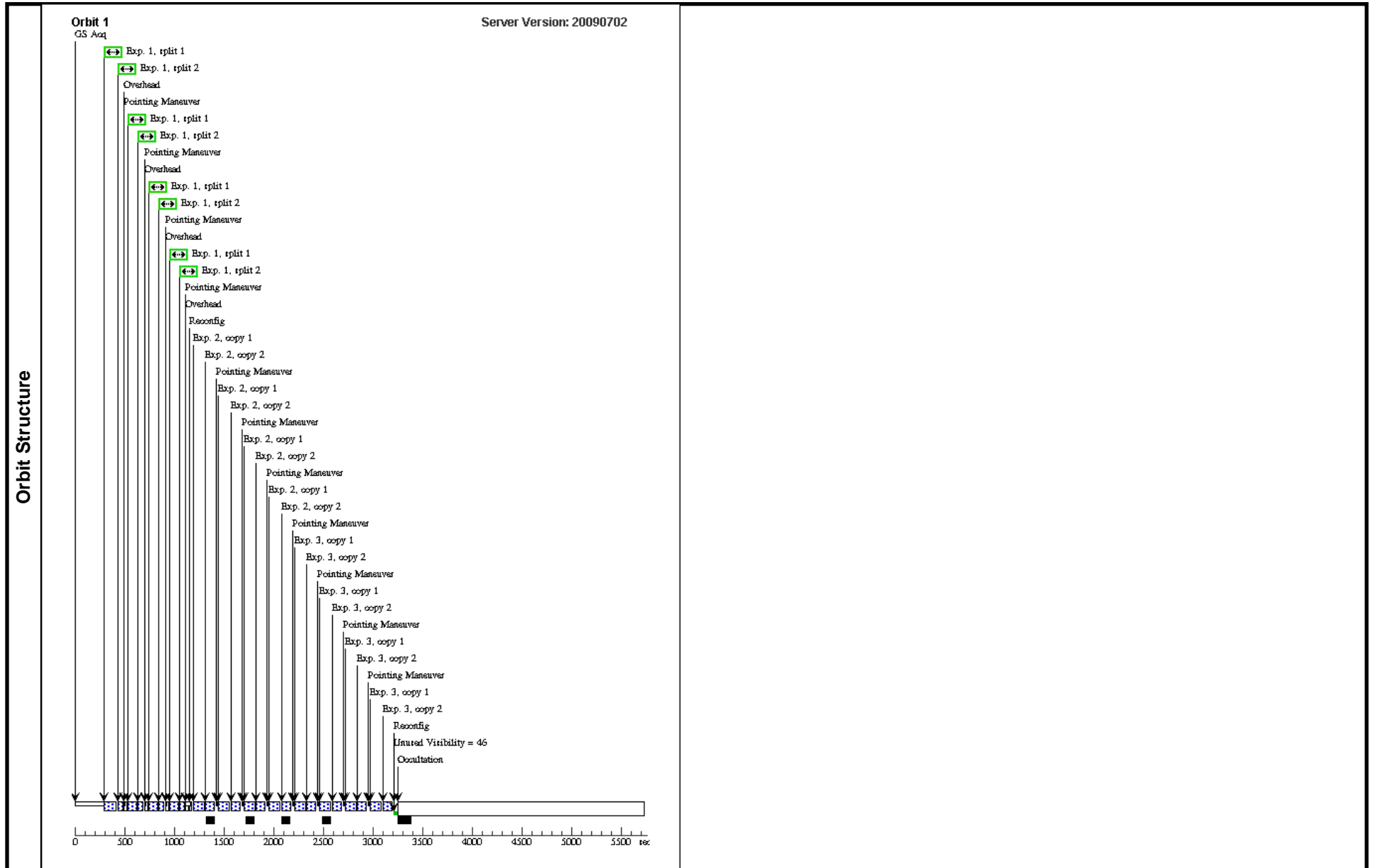
Proposal 11603 - Visit 18 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:11 GMT 2009

Visit	Proposal 11603, Visit 18, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: BETWEEN 03-JUL-2010:00:00:00 AND 31-JUL-2010:00:00:00 Comments: SN 2007od WFC3									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(4)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(2), (3)				
	(5)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	SN-2007OD	RA: 23 55 48.7000 (358.9529167d) Dec: +18 24 54.80 (18.41522d) Equinox: J2000		V=20	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(3) SN-2007OD	WFC3/UVIS, ACCUM, UVIS1-C512A-SUB	F814W		GS ACQ SCENARI O BASE1B3	Pattern 5, Exps 1-1 (5)	100 Secs	[1]
									[==>(Pattern 1, Split 1)] [==>(Pattern 1, Split 2)] [==>(Pattern 2, Split 1)] [==>(Pattern 2, Split 2)] [==>(Pattern 3, Split 1)] [==>(Pattern 3, Split 2)] [==>(Pattern 4, Split 1)] [==>(Pattern 4, Split 2)]	

Proposal 11603 - Visit 18 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

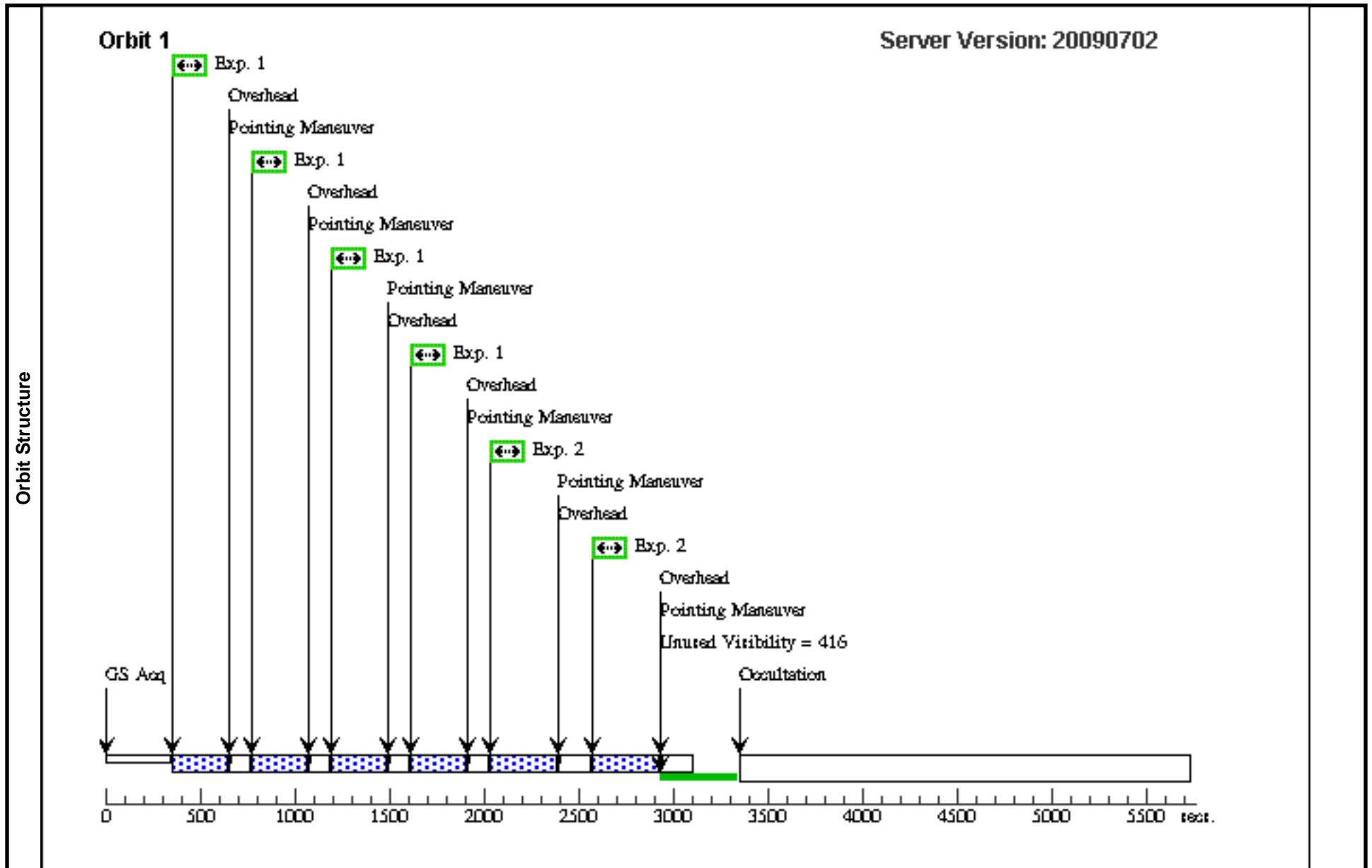
Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	2	(3) SN-2007OD	WFC3/IR, MULTIACCUM, IRSUB256	F160W	NSAMP=13; SAMP-SEQ=SPAR S10	Pattern 4, Exps 2-2 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]		
3	(3) SN-2007OD	WFC3/IR, MULTIACCUM, IRSUB256	F110W	NSAMP=13; SAMP-SEQ=SPAR S10	Pattern 4, Exps 3-3 (4)	[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)]	[1]			

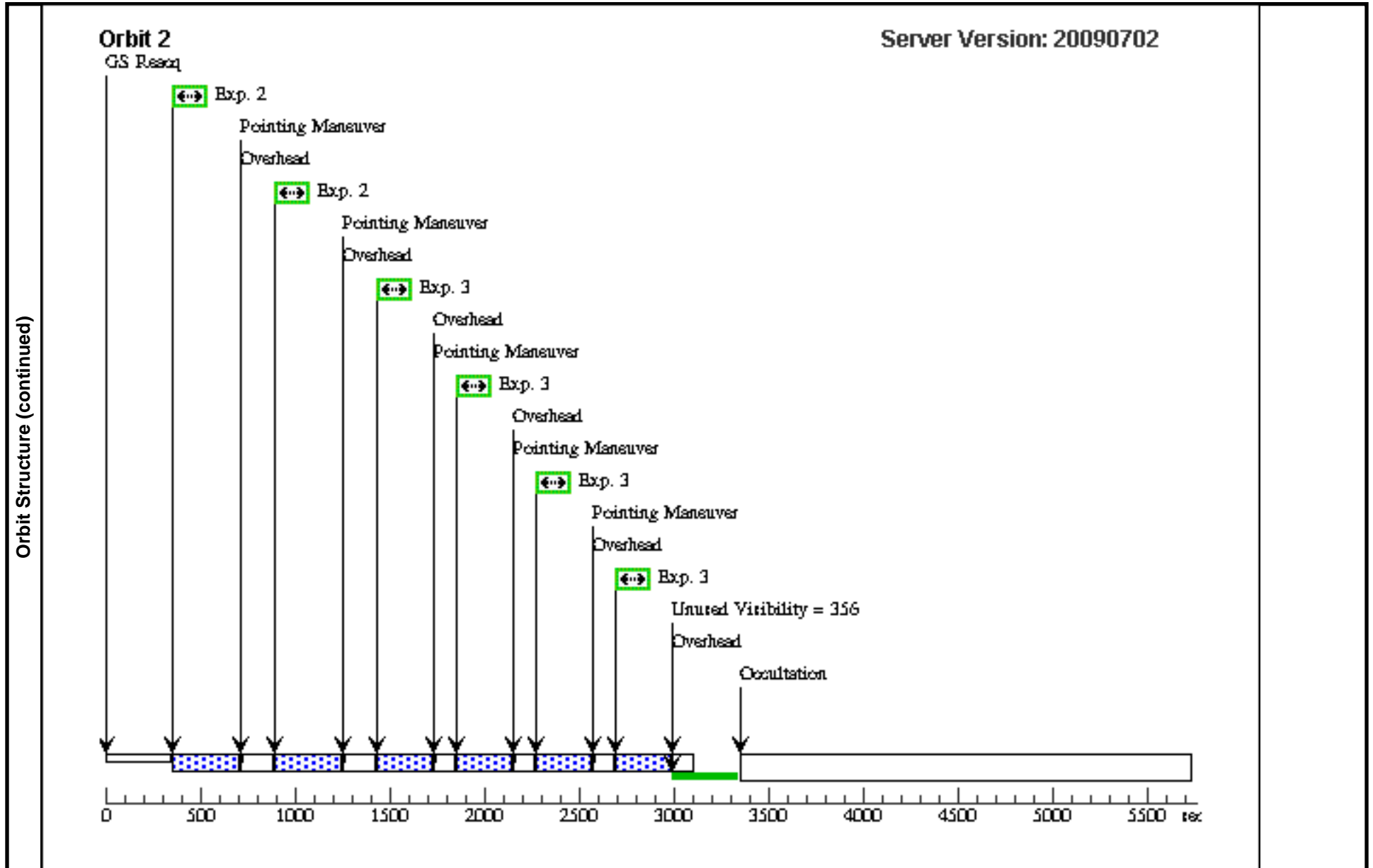


Proposal 11603 - Visit 51 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:12 GMT 2009

Visit	Proposal 11603, Visit 51, failed Diagnostic Status: Warning Scientific Instruments: WFPC2 Special Requirements: GYRO MODE 2G Comments: SN 2007it 1 This is a repeat of visit 01.									
	(Visit 51) Warning (Form): Gyro Mode overrides default value of 3GOBAD.									
Patterns	#	Primary Pattern	Secondary Pattern	Exposures						
	(3)	Pattern Type=WFPC2-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.559017 Line Spacing=0.559017	Coordinate Frame=POS-TARG Pattern Orientation=26.56505 Angle Between Sides=143.130102 Center Pattern=false		(1), (2), (3)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN-2007IT	RA: 14 18 25.6300 (214.6067917d) Dec: -43 22 53.80 (-43.38161d) Equinox: J2000		V=18.7	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) SN-2007IT	WFPC2, IMAGE, PC1	F814W	CR-SPLIT=NO			Pattern 3, Exps 1-1 (3)	166 Secs	
									[==>160.0 Secs (Pattern 1)]	[1]
									[==>160.0 Secs (Pattern 2)]	
									[==>160.0 Secs (Pattern 3)]	
									[==>160.0 Secs (Pattern 4)]	
	2	(1) SN-2007IT	WFPC2, IMAGE, PC1	F606W	CR-SPLIT=NO			Pattern 3, Exps 2-2 (3)	166 Secs	
								[==>200.0 Secs (Pattern 1)]	[1]	
								[==>200.0 Secs (Pattern 2)]		
								[==>200.0 Secs (Pattern 3)]	[2]	
								[==>200.0 Secs (Pattern 4)]		
3	(1) SN-2007IT	WFPC2, IMAGE, PC1	F450W	CR-SPLIT=NO			Pattern 3, Exps 3-3 (3)	166 Secs		
								[==>160.0 Secs (Pattern 1)]	[2]	
								[==>160.0 Secs (Pattern 2)]		
								[==>160.0 Secs (Pattern 3)]		
								[==>160.0 Secs (Pattern 4)]		

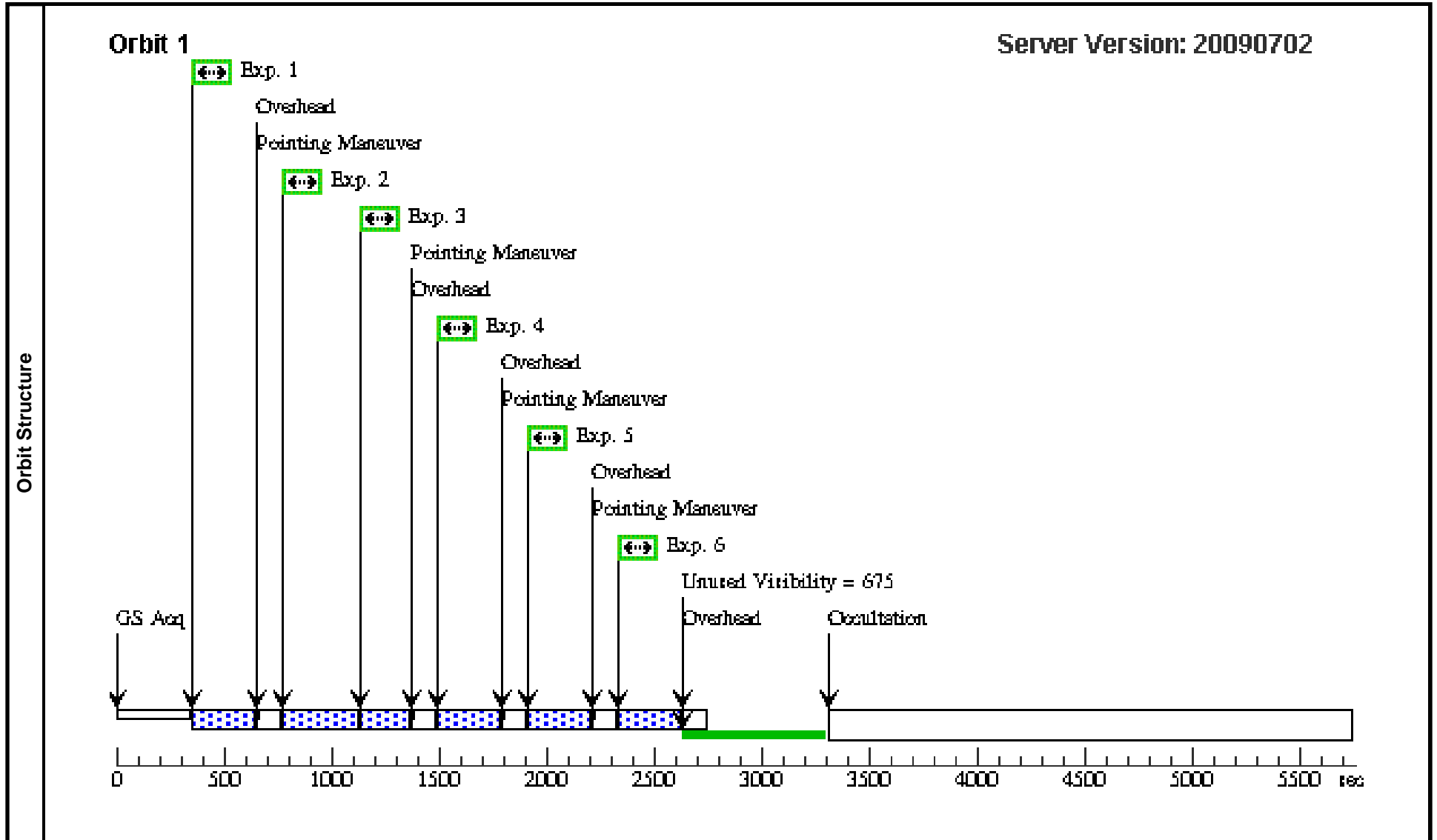




Proposal 11603 - Visit 53 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:12 GMT 2009

Visit	Proposal 11603, Visit 53, completed Diagnostic Status: Warning Scientific Instruments: WFPC2 Special Requirements: GYRO MODE 2G; ORIENT 233D TO 233 D; BEFORE 12-MAY-2009:00:00:00 Comments: SN 2007oc This is a repeat of visit 03.									
	(Visit 53) Warning (Form): Gyro Mode overrides default value of 3GOBAD.									
Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SN-2007OC	RA: 22 56 41.7000 (344.1737500d) Dec: -36 46 22.30 (-36.77286d) Equinox: J2000		V=19.3	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(2) SN-2007OC	WFPC2, IMAGE, PC1	F814W	CR-SPLIT=NO	POS TARG 0.0,0.0; GS ACQ SCENARI O BASE1T3			163 Secs [=>160.0 Secs]	[1]
	2	(2) SN-2007OC	WFPC2, IMAGE, PC1	F814W	CR-SPLIT=NO	POS TARG 0.5,0.25			163 Secs [=>160 Secs]	[1]
	3	(2) SN-2007OC	WFPC2, IMAGE, PC1	F606W	CR-SPLIT=NO	POS TARG 0.5,0.25			163 Secs [=>160.0 Secs]	[1]
	4	(2) SN-2007OC	WFPC2, IMAGE, PC1	F606W	CR-SPLIT=NO	POS TARG 0.75,0.7 5			163 Secs [=>160 Secs]	[1]
	5	(2) SN-2007OC	WFPC2, IMAGE, PC1	F606W	CR-SPLIT=NO	POS TARG 0.25,0.5			163 Secs [=>160 Secs]	[1]
	6	(2) SN-2007OC	WFPC2, IMAGE, PC1	F450W	CR-SPLIT=NO	POS TARG 0.0,0.0			153 Secs [=>160.0 Secs]	[1]



Proposal 11603 - Visit 61 - A Comprehensive Study of Dust Formation in Type II Supernovae with HST, Spitzer and Gemini

Fri Oct 23 01:04:12 GMT 2009

Visit	Proposal 11603, Visit 61, completed Diagnostic Status: Warning Scientific Instruments: WFPC2 Special Requirements: GYRO MODE 2G Comments: SN 2007it 1 This is a repeat of visit 51.									
	(Visit 61) Warning (Form): Gyro Mode overrides default value of 3GOBAD.									
Diagnosics										
Patterns	#	Primary Pattern	Secondary Pattern	Exposures						
	(3)	Pattern Type=WFPC2-BOX Coordinate Frame=POS-TARG Purpose=DITHER Pattern Orientation=26.56505 Number Of Points=4 Angle Between Sides=143.130102 Point Spacing=0.559017 Center Pattern=false Line Spacing=0.559017		(1), (2), (3)						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN-2007IT	RA: 14 18 25.6300 (214.6067917d) Dec: -43 22 53.80 (-43.38161d) Equinox: J2000		V=18.7	Reference Frame: ICRS				
Comments: This object was generated by the targetselector and retrieved from the NED database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) SN-2007IT	WFPC2, IMAGE, PC1	F814W	CR-SPLIT=NO			Pattern 3, Exps 1-1 (3)	166 Secs	
									[==>160.0 Secs (Pattern 1)]	[1]
									[==>160.0 Secs (Pattern 2)]	
									[==>160.0 Secs (Pattern 3)]	
								[==>160.0 Secs (Pattern 4)]		
2	(1) SN-2007IT	WFPC2, IMAGE, PC1	F606W	CR-SPLIT=NO				Pattern 3, Exps 2-2 (3)	166 Secs	
									[==>200.0 Secs (Pattern 1)]	[1]
									[==>200.0 Secs (Pattern 2)]	
									[==>200.0 Secs (Pattern 3)]	[2]
									[==>200.0 Secs (Pattern 4)]	
3	(1) SN-2007IT	WFPC2, IMAGE, PC1	F450W	CR-SPLIT=NO				Pattern 3, Exps 3-3 (3)	166 Secs	
									[==>160.0 Secs (Pattern 1)]	[2]
									[==>160.0 Secs (Pattern 2)]	
									[==>160.0 Secs (Pattern 3)]	
									[==>160.0 Secs (Pattern 4)]	

