



13680 - A 3D view of massive cluster formation in the SMC

Cycle: 22, Proposal Category: GO

(Availability Mode: SUPPORTED)

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>
01	(1) NGC-346	ACS/WFC	2	22-Aug-2014 21:00:42.0	yes
02	(1) NGC-346	ACS/WFC	2	22-Aug-2014 21:00:45.0	yes
05	(3) NGC-346-COPY-1	ACS/WFC	1	22-Aug-2014 21:00:46.0	yes

5 Total Orbits Used

ABSTRACT

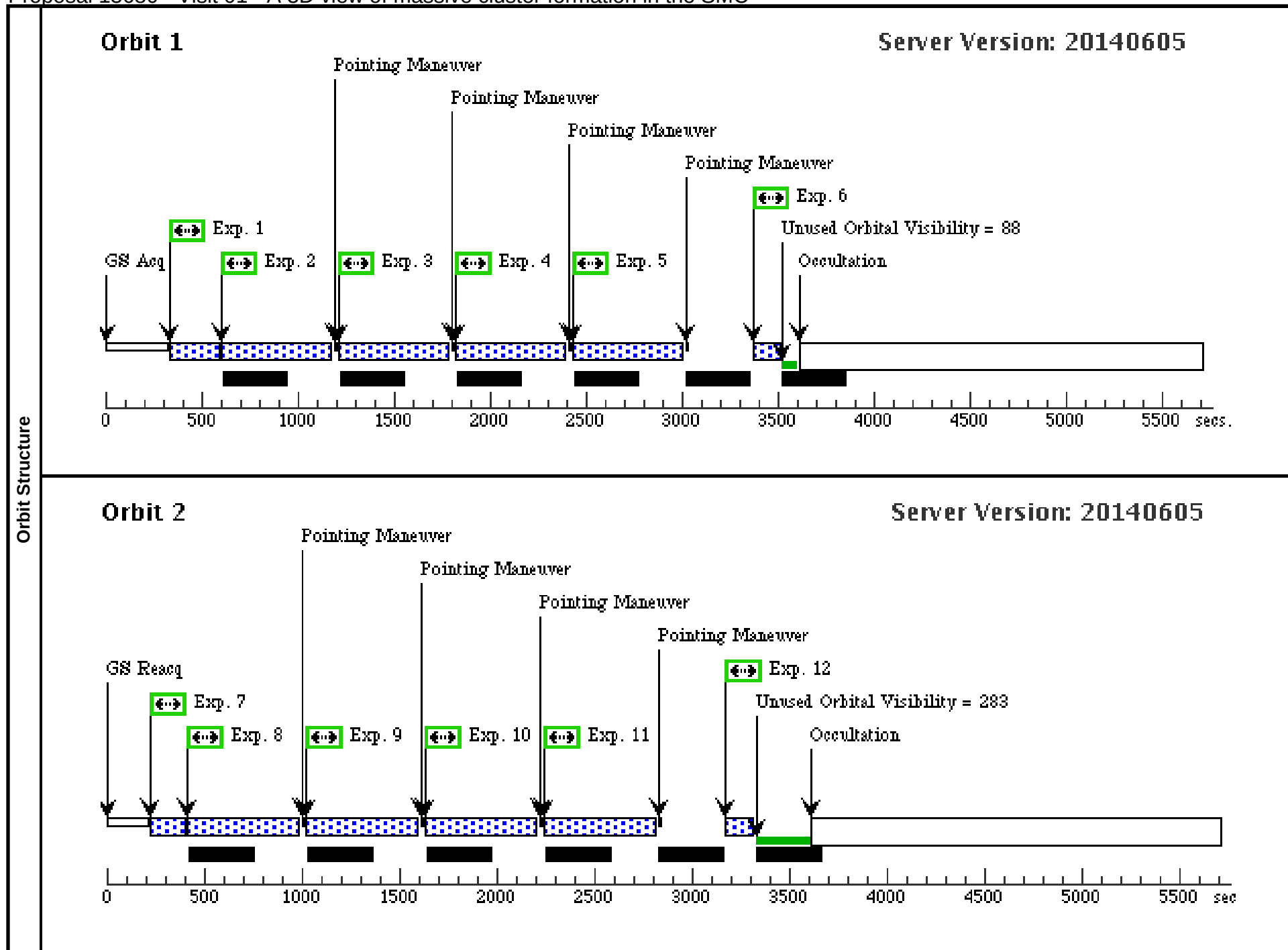
This is a 5-orbit astrometric proposal designed to measure for the first time the internal dynamics of NGC347, the super-OB-association in the Small Magellanic Cloud. Regions of massive-star formation are important to study because they are intricately related to the origin of the stellar-mass distribution and the formation, evolution and possible disruption of open and globular clusters. Despite its relevance, the process whereby stars form in massive star clusters is still poorly explored terrain within astrophysics. By combining our new observations with archival ACS/WFC data acquired in July 2004, we will be able to (1) measure the relative proper motions of NGC346 sub-clusters better than 3 km/s; (2) investigate the nature of the apparently isolated massive stars found around NGC346; (3) identify runaway OB stars with proper motion velocities >9 km/s and also establish their probable points of origin. Combined with radial velocities (RVs) from the "VLT-FLAMES Survey of Massive Stars", our observations will allow us to determine the 3D dynamics of NGC 346. This work will address significant open issues in: star formation, cluster dynamics, the origin of isolated Type II supernovae and GRBs, and the role of massive star feedback on the interstellar medium.

OBSERVING DESCRIPTION

This is an astrometric proposal aimed to measure proper motions in a massive star-forming region in the Small Magellanic Cloud. Observations are designed to duplicate data acquired in 2004 by Nota et al. in program GO-10248. In order to minimize uncertainties we ask to use exactly the same orientations and dither patterns used in Nota's program.

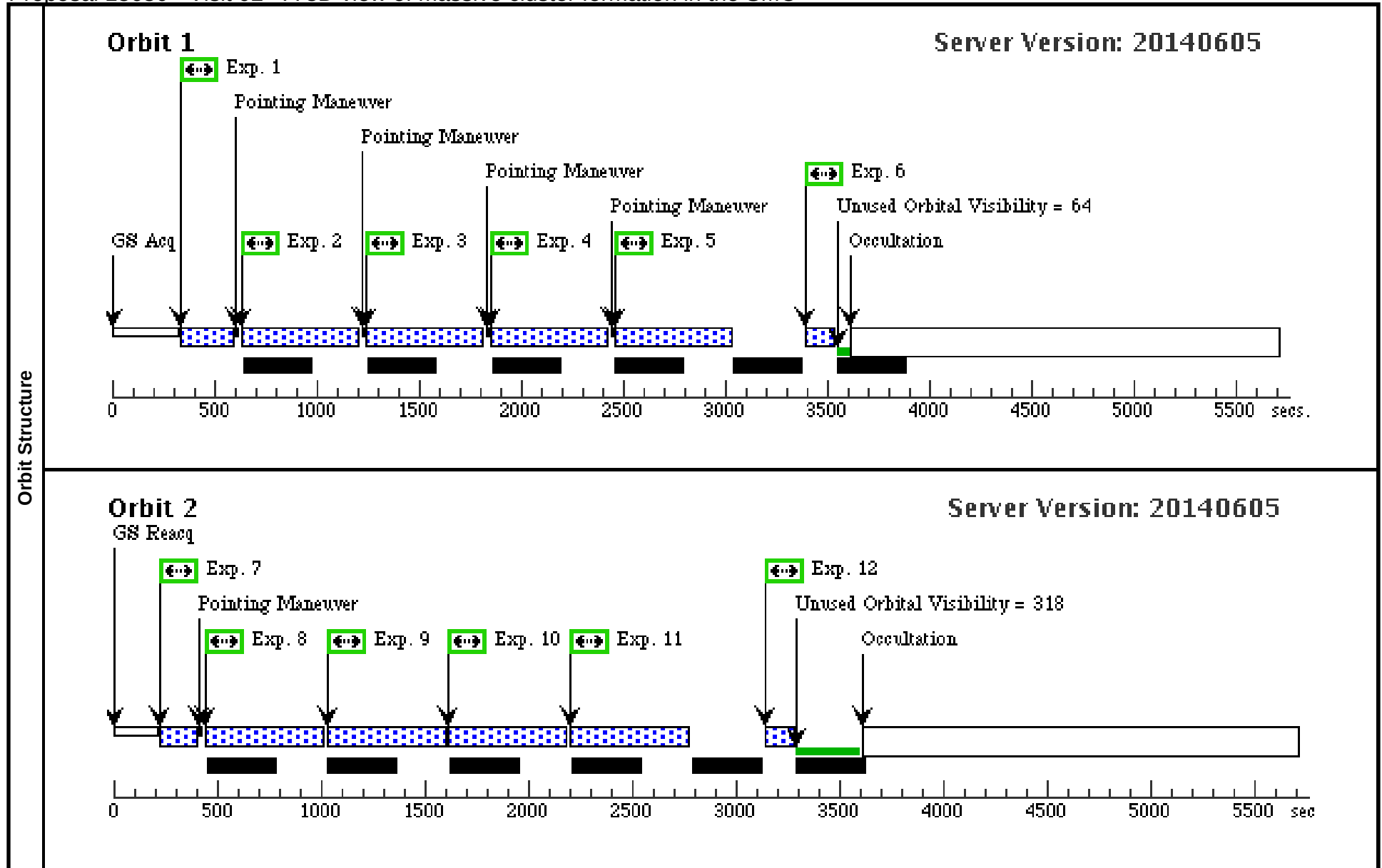
Proposal 13680 - Visit 01 - A 3D view of massive cluster formation in the SMC

Visit	Proposal 13680, Visit 01, implementation Sat Aug 23 01:00:47 GMT 2014									
	Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: ORIENT 271.4135D TO 271.4135 D									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	NGC-346	RA: 00 59 6.1800 (14.7757500d) Dec: -72 10 31.20 (-72.17533d) Equinox: J2000 <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>		V=14.59+/-0.3	Reference Frame: SIMBAD				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) NGC-346	ACS/WFC, ACCUM, WFC1	F555W	CR-SPLIT=NO; FLASH=75.	POS TARG 50.7904, 3.891		3 Secs (3 Secs) [==>]	[1]
	2		(1) NGC-346	ACS/WFC, ACCUM, WFC1	F555W	CR-SPLIT=NO	POS TARG 50.7904, 3.891		450 Secs (450 Secs) [==>]	[1]
	3		(1) NGC-346	ACS/WFC, ACCUM, WFC1	F555W	CR-SPLIT=NO	POS TARG 50.964,5 .2712		450 Secs (450 Secs) [==>]	[1]
	4		(1) NGC-346	ACS/WFC, ACCUM, WFC1	F555W	CR-SPLIT=NO	POS TARG 51.038,6 .6188		450 Secs (450 Secs) [==>]	[1]
	5		(1) NGC-346	ACS/WFC, ACCUM, WFC1	F555W	CR-SPLIT=NO	POS TARG 51.212,7 .974		450 Secs (450 Secs) [==>]	[1]
	6		(1) NGC-346	ACS/WFC, ACCUM, WFC1	F555W	CR-SPLIT=NO; FLASH=75.	POS TARG 50.7904, 3.891		3.0 Secs (3 Secs) [==>]	[1]
	7		(1) NGC-346	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; FLASH=75.	POS TARG 50.7904, 3.891		2.0 Secs (2 Secs) [==>]	[2]
	8		(1) NGC-346	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO	POS TARG 50.7904, 3.891		450. Secs (450 Secs) [==>]	[2]
	9		(1) NGC-346	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO	POS TARG 50.964,5 .2712		450. Secs (450 Secs) [==>]	[2]
	10		(1) NGC-346	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO	POS TARG 51.038,6 .6188		450. Secs (450 Secs) [==>]	[2]
	11		(1) NGC-346	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO	POS TARG 51.212,7 .974		450. Secs (450 Secs) [==>]	[2]
	12		(1) NGC-346	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; FLASH=75.	POS TARG 50.7904, 3.891		2. Secs (2 Secs) [==>]	[2]

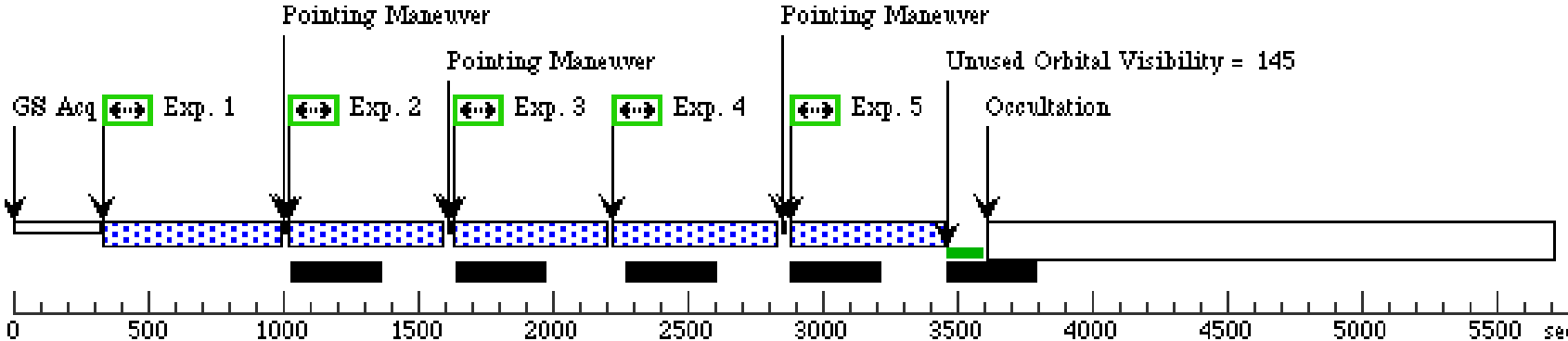


Proposal 13680 - Visit 02 - A 3D view of massive cluster formation in the SMC

Visit	Proposal 13680, Visit 02, implementation										Sat Aug 23 01:00:48 GMT 2014
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: ACS/WFC										
	Special Requirements: ORIENT 275.5915D TO 275.5915 D										
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(1)	NGC-346	RA: 00 59 6.1800 (14.7757500d) Dec: -72 10 31.20 (-72.17533d) Equinox: J2000				V=14.59+/-0.3		Reference Frame: SIMBAD		
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1		(1) NGC-346	ACS/WFC, ACCUM, WFC2	F814W	CR-SPLIT=NO; FLASH=75.	POS TARG -50.790 4,-3.8912		2.0 Secs (2 Secs) [==>]		[1]
	2		(1) NGC-346	ACS/WFC, ACCUM, WFC2	F814W	CR-SPLIT=NO	POS TARG -50.368 8,0.1916		450.0 Secs (450 Secs) [==>]		[1]
	3		(1) NGC-346	ACS/WFC, ACCUM, WFC2	F814W	CR-SPLIT=NO	POS TARG -50.542 4,-1.16355		450.0 Secs (450 Secs) [==>]		[1]
	4		(1) NGC-346	ACS/WFC, ACCUM, WFC2	F814W	CR-SPLIT=NO	POS TARG -50.616 8,-2.5115		450.0 Secs (450 Secs) [==>]		[1]
	5		(1) NGC-346	ACS/WFC, ACCUM, WFC2	F814W	CR-SPLIT=NO	POS TARG -50.790 4,-3.8912		450.0 Secs (450 Secs) [==>]		[1]
	6		(1) NGC-346	ACS/WFC, ACCUM, WFC2	F814W	CR-SPLIT=NO; FLASH=75.	POS TARG -50.790 4,-3.8912		2.0 Secs (2 Secs) [==>]		[1]
	7		(1) NGC-346	ACS/WFC, ACCUM, WFC2	F555W	CR-SPLIT=NO; FLASH=75.	POS TARG -50.790 4,-3.8912		3. Secs (3 Secs) [==>]		[2]
	8		(1) NGC-346	ACS/WFC, ACCUM, WFC2	F555W	CR-SPLIT=NO	POS TARG -50.368 8,0.1916		450. Secs (450 Secs) [==>]		[2]
	9		(1) NGC-346	ACS/WFC, ACCUM, WFC2	F555W	CR-SPLIT=NO	POS TARG -50.368 8,0.1916		450. Secs (450 Secs) [==>]		[2]
	10		(1) NGC-346	ACS/WFC, ACCUM, WFC2	F555W	CR-SPLIT=NO	POS TARG -50.368 8,0.1916		450. Secs (450 Secs) [==>]		[2]
	11		(1) NGC-346	ACS/WFC, ACCUM, WFC2	F555W	CR-SPLIT=NO	POS TARG -50.368 8,0.1916		450. Secs (450 Secs) [==>]		[2]
	12		(1) NGC-346	ACS/WFC, ACCUM, WFC2	F555W	CR-SPLIT=NO; FLASH=75	POS TARG -50.368 8,0.1916		3. Secs (3 Secs) [==>]		[2]



Proposal 13680 - Visit 05 - A 3D view of massive cluster formation in the SMC

Visit	Proposal 13680, Visit 05, implementation						Sat Aug 23 01:00:48 GMT 2014			
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: ACS/WFC									
	Special Requirements: ORIENT 273.2264D TO 273.2264 D: AFTER 01-JUL-2015:00:00:00									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes	Miscellaneous			
	(3)	NGC-346-COPY-1	RA: 00 59 6.1800 (14.7757500d) Dec: -72 10 43.20 (-72.17867d) Equinox: J2000			V=14.59+/-0.3	Reference Frame: SIMBAD			
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(3) NGC-346-COPY-1	ACS/WFC, ACCUM, WFC	F555W	CR-SPLIT=NO	GS ACQ SCENARIO BASE1B3		450 Secs (450 Secs) [==>]	[1]
	2		(3) NGC-346-COPY-1	ACS/WFC, ACCUM, WFC	F555W	CR-SPLIT=NO	POS TARG -1.16,2.5		450 Secs (450 Secs) [==>]	[1]
	3		(3) NGC-346-COPY-1	ACS/WFC, ACCUM, WFC	F555W	CR-SPLIT=NO	POS TARG 0.297,5.415		450 Secs (450 Secs) [==>]	[1]
	4		(3) NGC-346-COPY-1	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO	POS TARG 0.297,5.415		450 Secs (450 Secs) [==>]	[1]
	5		(3) NGC-346-COPY-1	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO			450 Secs (450 Secs) [==>]	[1]
Orbit Structure	Orbit 1  GS Acq → Exp. 1 → Pointing Maneuver → Exp. 2 → Pointing Maneuver → Exp. 3 → Pointing Maneuver → Exp. 4 → Pointing Maneuver → Exp. 5 → Pointing Maneuver → Unused Orbital Visibility = 145 → Occultation						Server Version: 20140605			