



16283 - Understanding the Extreme Population in the Globular Cluster NGC 6402

(M14): Breaking the Degeneracy of Cluster Formation Scenarios

Cycle: 28, Proposal Category: GO

(UV Initiative)

(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) M-14 ANY	ACS/WFC WFC3/UVIS	1	22-Jun-2020 15:02:15.0	yes
02	(1) M-14 ANY	ACS/WFC WFC3/UVIS	1	22-Jun-2020 15:02:16.0	yes
03	(1) M-14 ANY	ACS/WFC WFC3/UVIS	1	22-Jun-2020 15:02:17.0	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	(1) M-14 ANY	ACS/WFC WFC3/UVIS	1	22-Jun-2020 15:02:18.0	yes
05	(1) M-14 ANY	ACS/WFC WFC3/UVIS	1	22-Jun-2020 15:02:19.0	yes
06	(1) M-14 ANY	ACS/WFC WFC3/UVIS	1	22-Jun-2020 15:02:19.0	yes
07	(1) M-14 ANY	ACS/WFC WFC3/UVIS	1	22-Jun-2020 15:02:20.0	yes
08	(1) M-14 ANY	ACS/WFC WFC3/UVIS	1	22-Jun-2020 15:02:21.0	yes
09	(1) M-14 ANY	ACS/WFC WFC3/UVIS	1	22-Jun-2020 15:02:22.0	yes
10	(1) M-14 ANY	ACS/WFC WFC3/UVIS	1	22-Jun-2020 15:02:23.0	yes
11	(1) M-14 ANY	ACS/WFC WFC3/UVIS	1	22-Jun-2020 15:02:23.0	yes
12	(1) M-14 ANY	ACS/WFC WFC3/UVIS	1	22-Jun-2020 15:02:24.0	yes
13	(1) M-14 ANY	ACS/WFC WFC3/UVIS	1	22-Jun-2020 15:02:25.0	yes

13 Total Orbits Used

ABSTRACT

Multiple populations are recognized to be a common trait of nearly all ancient Globular Clusters (GCs), but no model or scenario so far proposed for their formation satisfies all the observational constraints, and observations are still necessary to discriminate among competing models.

HST observations have largely contributed to define the properties of multiple populations; in particular, HST observations have clearly revealed the photometric manifestation of the presence chemically distinct groups of stars. A recent spectroscopic investigation of NGC6402 has shown that this massive GC hosts three populations, including a primordial, a quasi-primordial and an extreme group, this latter displaying light elements

Proposal 16283 (STScI Edit Number: 1, Created: Monday, June 22, 2020 at 2:02:25 PM Eastern Standard Time) - Overview

abundances that in other GCs, (e.g. NGC2808), are associated with a very high helium. This peculiar distribution of abundances has stimulated innovative formation scenarios where the cluster requires two distinct sources and timescales of enrichment.

We propose to derive the 'chromosome map' two-color diagram that harnesses the unique UV capabilities of the UVIS channel of WFC3 and investigate the possible abundance gap in these spectro-photometric data, by separating the different groups. We will then determine the relative helium abundances of the groups, and discern between two competing scenarios for the formation of the extreme population in this cluster: either a scenario in which these stars formed from pristine gas mixed with ejecta of a supermassive star formed and living in the first ~5-15 Myr in the cluster core; or the Asymptotic Giant Branch (AGB) scenario, in which the extreme stars are formed from the pure ejecta of super-AGB stars.

OBSERVING DESCRIPTION

The observing program is designed to image the central regions globular cluster NGC6402 in four WFC3/UVIS filters: F275W, F336W, F438W and F814W.

The resulting photometry will be used to derive the pseudo two color diagram called chromosome map ($F275W - 2 * F336W + F438W$ vs. $F275W - F814W$), which is sensitive to multiple stellar populations with different chemical composition.

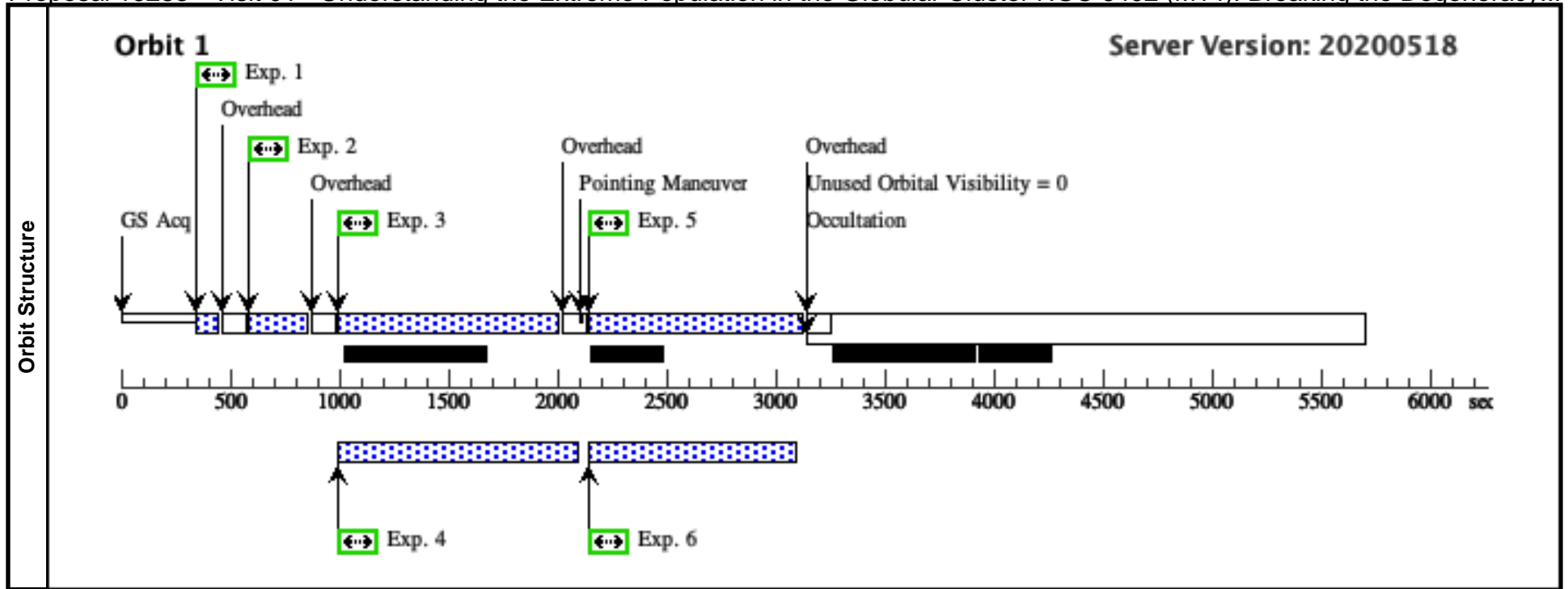
There are 13 1-orbit visits. The images are properly dithered to optimize the resulting photometric and astrometric quality.

The parallel will be taken through F475W and F814W filters of WFC/ACS to allow the investigation of multiple populations with different helium abundance in the external regions from the $F814W$ vs. $F475W - F814W$ CMD.

Proposal 16283 - Visit 01 - Understanding the Extreme Population in the Globular Cluster NGC 6402 (M14): Breaking the Degeneracy...

Mon Jun 22 19:02:26 GMT 2020

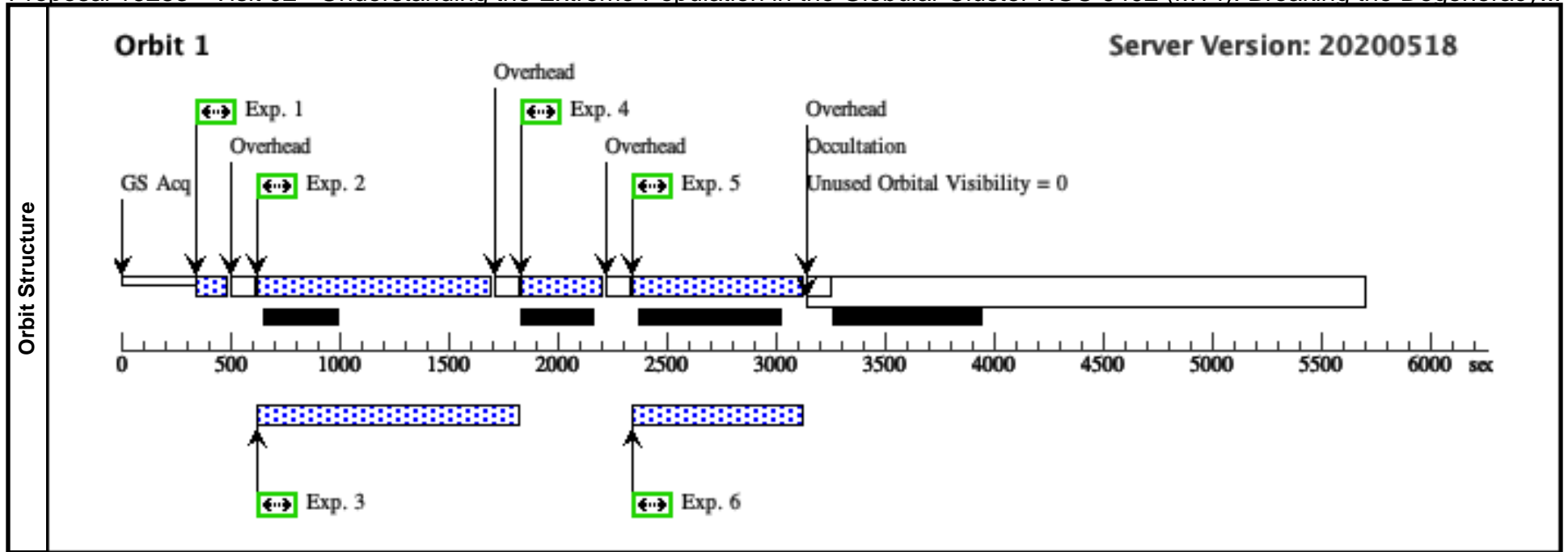
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes	Miscellaneous				
	(1)	M-14	RA: 17 37 37.1600 (264.4048333d) Dec: -03 14 45.30 (-3.24592d) Equinox: J2000	Proper Motion RA: -2.1768255963927123E-4 V=5.73 sec of time/yr Proper Motion Dec: - 0.0026000000616477337 arcsec/yr Epoch of Position: 2015.5			Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER]											
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F438W	FLASH=12	POS TARG -1.0,-1		70 Secs (70 Secs)		
									[==>]		[1]
	2		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	FLASH=12	POS TARG -1.0,-1		253 Secs (253 Secs)		
									[==>]		[1]
	3		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=12	POS TARG -1,-1	Prime + Parallel Group 3-4 in Visit 01	988 Secs (988 Secs)		
									[==>]		[1]
4		ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Group 3-4 in Visit 01	890 Secs (890 Secs)			
								[==>]		[1]	
5		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=12	POS TARG 1,1	Prime + Parallel Group 5-6 in Visit 01	987 Secs (987 Secs)			
								[==>]		[1]	
6		ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Group 5-6 in Visit 01	822 Secs (822 Secs)			
								[==>]		[1]	



Proposal 16283 - Visit 02 - Understanding the Extreme Population in the Globular Cluster NGC 6402 (M14): Breaking the Degeneracy...

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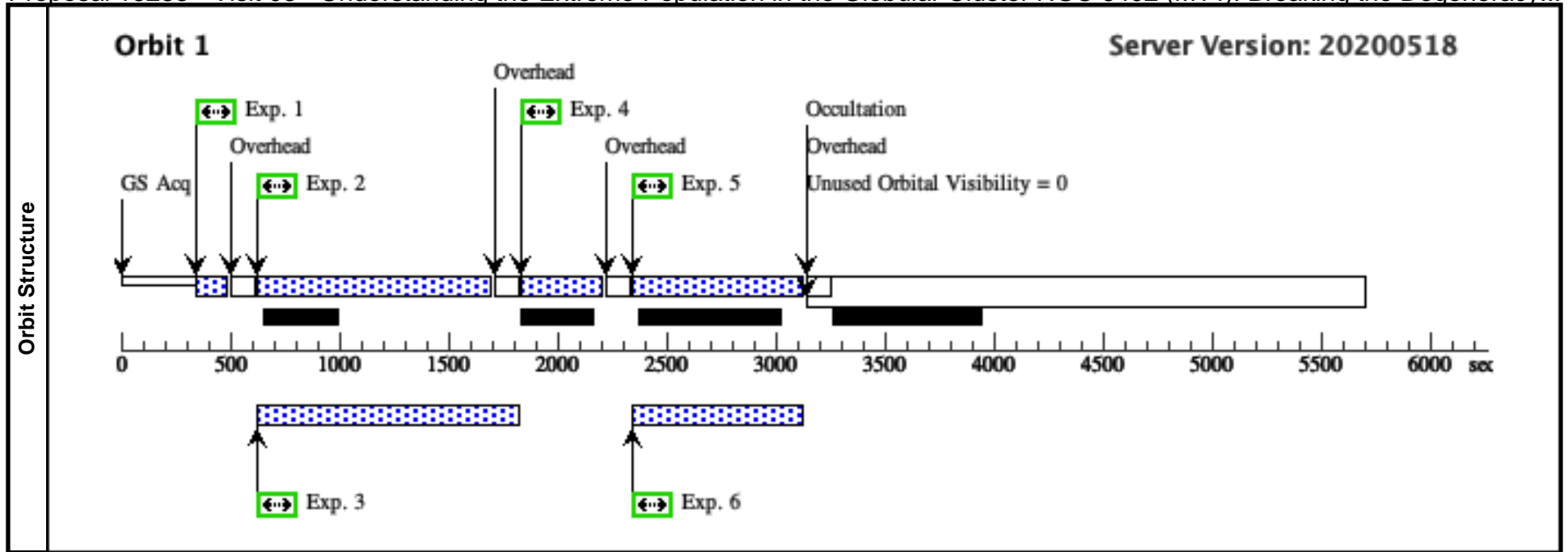
Visit	Proposal 16283, Visit 02, implementation Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: (none)									
	(Primary Exposure 2 (Prime + Parallel Group 2-3 in Visit 02)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Exposure 4 (Visit 02)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Primary Exposure 5 (Prime + Parallel Group 5-6 in Visit 02)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser									
Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	M-14	RA: 17 37 37.1600 (264.4048333d) Dec: -03 14 45.30 (-3.24592d) Equinox: J2000	Proper Motion RA: -2.1768255963927123E-4 V=5.73 sec of time/yr Proper Motion Dec: - 0.0026000000616477337 arcsec/yr Epoch of Position: 2015.5		Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	FLASH=12	POS TARG -6.5,-6.5		110 Secs (110 Secs) [==>]	[1]
	2		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG -6.5,-6.5	Prime + Parallel Group 2-3 in Visit 02	1050 Secs (1050 Secs) [==>]	[1]
	3		ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Group 2-3 in Visit 02	990 Secs (990 Secs) [==>]	[1]
	4		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F438W	FLASH=14	POS TARG -6.5,-6.5		348 Secs (348 Secs) [==>]	[1]
	5		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=16	POS TARG -6.5,-6.5	Prime + Parallel Group 5-6 in Visit 02	761 Secs (761 Secs) [==>]	[1]
	6		ANY	ACS/WFC, ACCUM, WFCENTER	F814W			Prime + Parallel Group 5-6 in Visit 02	619 Secs (619 Secs) [==>]	[1]



Proposal 16283 - Visit 03 - Understanding the Extreme Population in the Globular Cluster NGC 6402 (M14): Breaking the Degeneracy...

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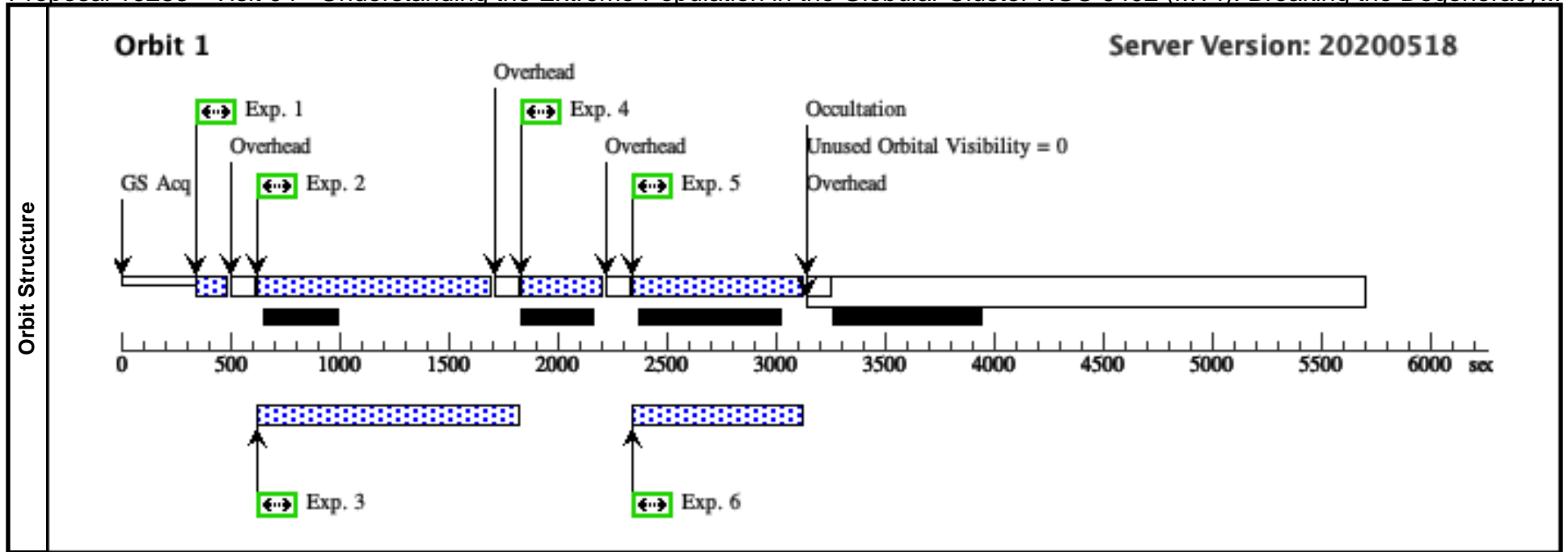
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Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	M-14	RA: 17 37 37.1600 (264.4048333d) Dec: -03 14 45.30 (-3.24592d) Equinox: J2000	Proper Motion RA: -2.1768255963927123E-4 V=5.73 sec of time/yr Proper Motion Dec: - 0.0026000000616477337 arcsec/yr Epoch of Position: 2015.5		Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	FLASH=12	POS TARG -5,-5		110 Secs (110 Secs)	
									[==>]	[1]
	2		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG -5,-5	Prime + Parallel Group 2-3 in Visit 03	1050 Secs (1050 Secs)	
									[==>]	[1]
	3		ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Group 2-3 in Visit 03	990 Secs (990 Secs)	
									[==>]	[1]
4		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F438W	FLASH=14	POS TARG -5,-5		348 Secs (348 Secs)		
								[==>]	[1]	
5		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=16	POS TARG -5,-5	Prime + Parallel Group 5-6 in Visit 03	761 Secs (761 Secs)		
								[==>]	[1]	
6		ANY	ACS/WFC, ACCUM, WFCENTER	F814W			Prime + Parallel Group 5-6 in Visit 03	619 Secs (619 Secs)		
								[==>]	[1]	



Proposal 16283 - Visit 04 - Understanding the Extreme Population in the Globular Cluster NGC 6402 (M14): Breaking the Degeneracy...

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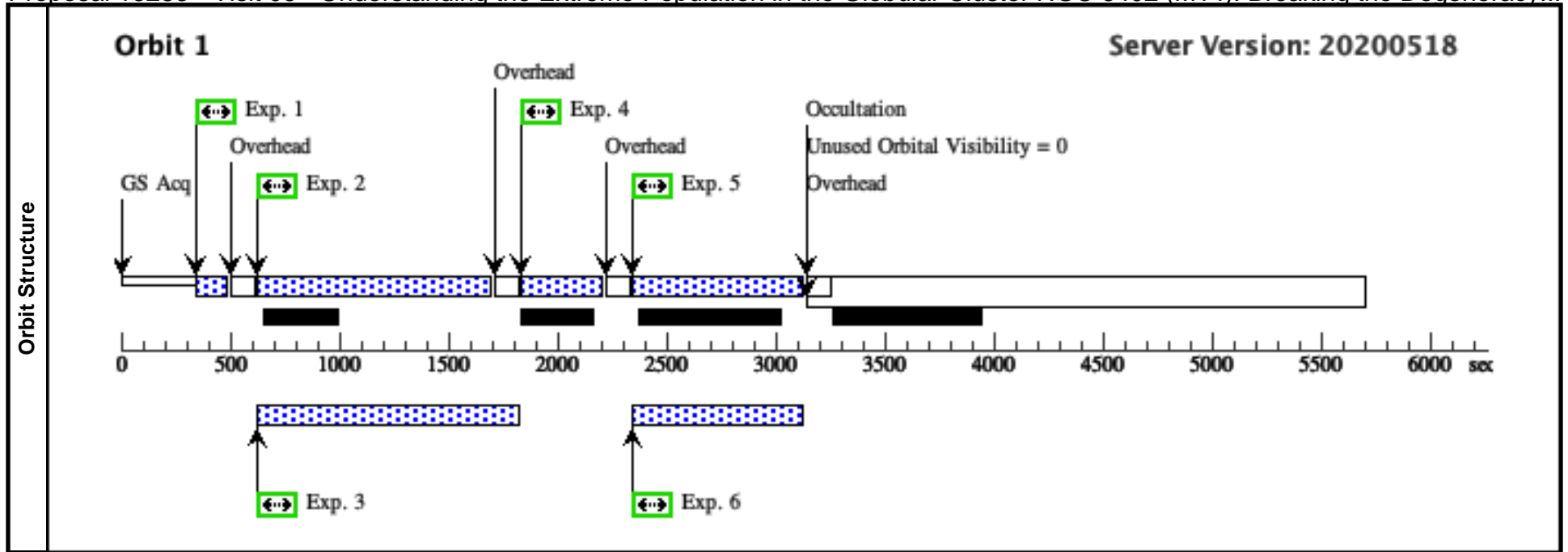
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Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	M-14	RA: 17 37 37.1600 (264.4048333d) Dec: -03 14 45.30 (-3.24592d) Equinox: J2000	Proper Motion RA: -2.1768255963927123E-4 V=5.73 sec of time/yr Proper Motion Dec: - 0.0026000000616477337 arcsec/yr Epoch of Position: 2015.5		Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) M-14	(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	FLASH=12	POS TARG -3.5,-3.5		110 Secs (110 Secs) [==>]	[1]
	2	(1) M-14	(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG -3.5,-3.5	Prime + Parallel Group 2-3 in Visit 04	1050 Secs (1050 Secs) [==>]	[1]
	3	ANY	ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Group 2-3 in Visit 04	990 Secs (990 Secs) [==>]	[1]
	4	(1) M-14	(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F438W	FLASH=14	POS TARG -3.5,-3.5		348 Secs (348 Secs) [==>]	[1]
	5	(1) M-14	(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=16	POS TARG -3.5,-3.5	Prime + Parallel Group 5-6 in Visit 04	761 Secs (761 Secs) [==>]	[1]
	6	ANY	ANY	ACS/WFC, ACCUM, WFCENTER	F814W			Prime + Parallel Group 5-6 in Visit 04	619 Secs (619 Secs) [==>]	[1]



Proposal 16283 - Visit 05 - Understanding the Extreme Population in the Globular Cluster NGC 6402 (M14): Breaking the Degeneracy...

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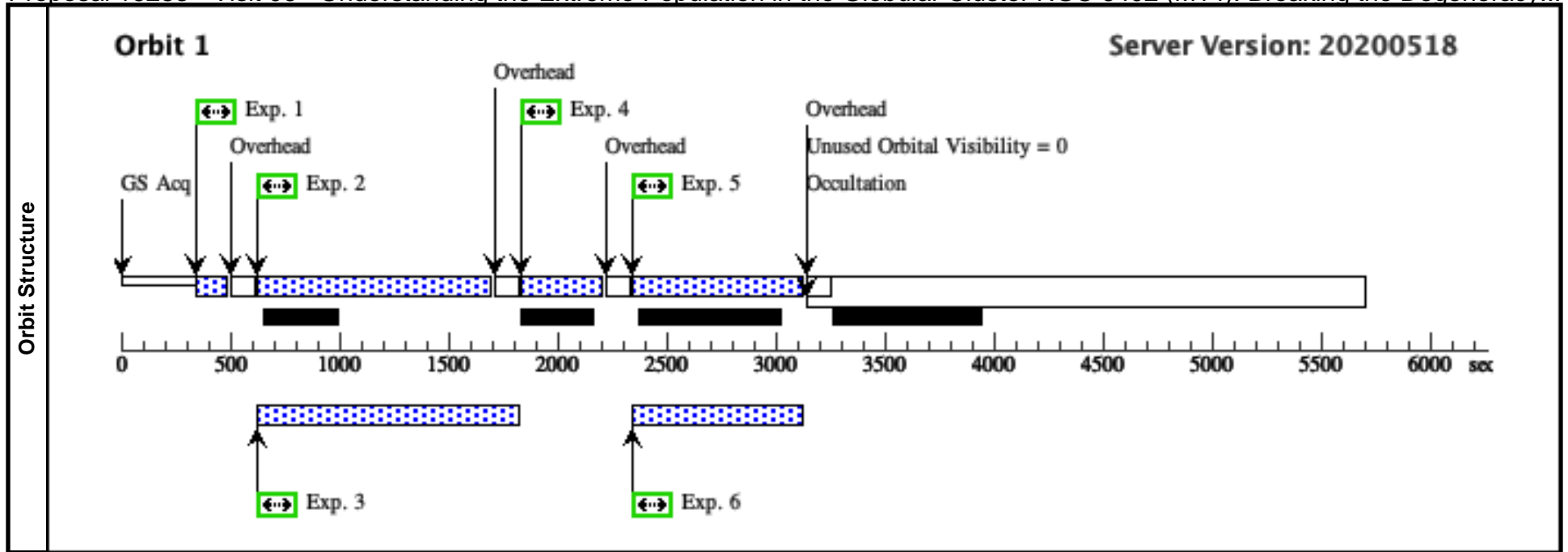
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Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	M-14	RA: 17 37 37.1600 (264.4048333d) Dec: -03 14 45.30 (-3.24592d) Equinox: J2000	Proper Motion RA: -2.1768255963927123E-4 V=5.73 sec of time/yr Proper Motion Dec: - 0.0026000000616477337 arcsec/yr Epoch of Position: 2015.5		Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	FLASH=12	POS TARG -2.0,-2.0		110 Secs (110 Secs) [==>]	[1]
	2		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG -2.0,-2.0	Prime + Parallel Group 2-3 in Visit 05	1050 Secs (1050 Secs) [==>]	[1]
	3		ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Group 2-3 in Visit 05	990 Secs (990 Secs) [==>]	[1]
	4		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F438W	FLASH=14	POS TARG -2.0,-2.0		348 Secs (348 Secs) [==>]	[1]
	5		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=16	POS TARG -2.0,-2.0	Prime + Parallel Group 5-6 in Visit 05	761 Secs (761 Secs) [==>]	[1]
	6		ANY	ACS/WFC, ACCUM, WFCENTER	F814W			Prime + Parallel Group 5-6 in Visit 05	619 Secs (619 Secs) [==>]	[1]



Proposal 16283 - Visit 06 - Understanding the Extreme Population in the Globular Cluster NGC 6402 (M14): Breaking the Degeneracy...

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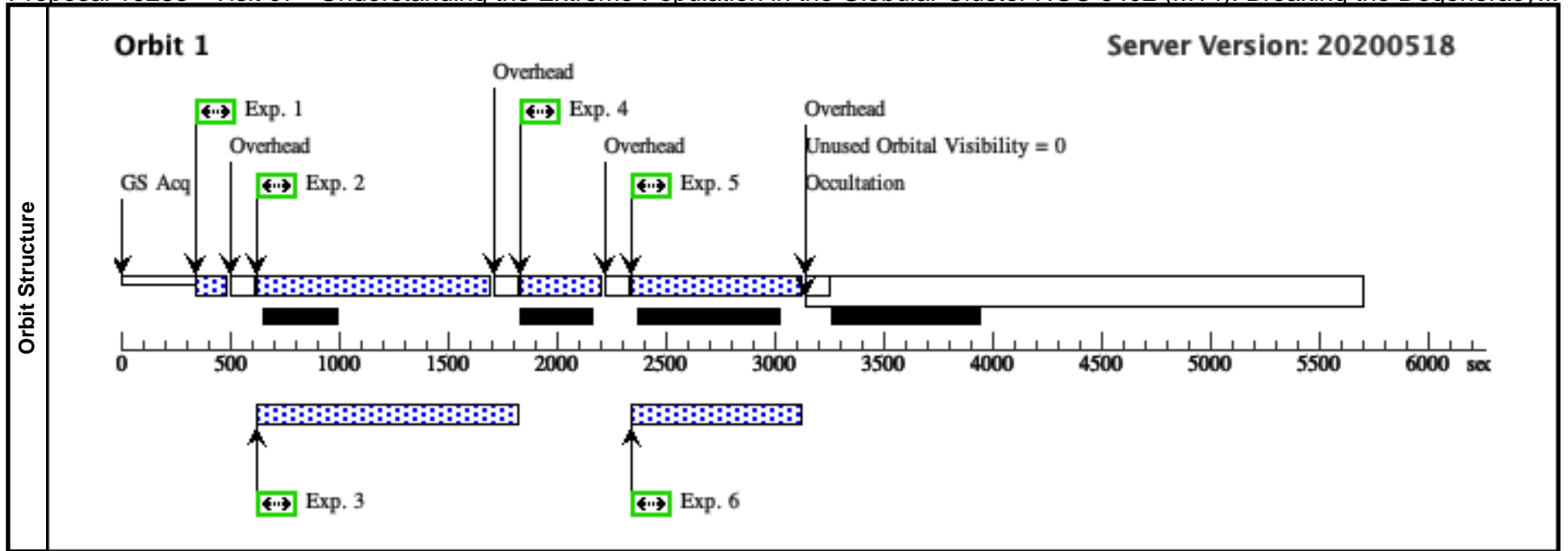
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Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	M-14	RA: 17 37 37.1600 (264.4048333d) Dec: -03 14 45.30 (-3.24592d) Equinox: J2000	Proper Motion RA: -2.1768255963927123E-4 V=5.73 sec of time/yr Proper Motion Dec: - 0.0026000000616477337 arcsec/yr Epoch of Position: 2015.5		Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	FLASH=12	POS TARG -0.5,-0.5		110 Secs (110 Secs)	
									[==>]	[1]
	2		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG -0.5,-0.5	Prime + Parallel Group 2-3 in Visit 06	1050 Secs (1050 Secs)	
									[==>]	[1]
	3		ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Group 2-3 in Visit 06	990 Secs (990 Secs)	
									[==>]	[1]
4		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F438W	FLASH=14	POS TARG -0.5,-0.5		348 Secs (348 Secs)		
								[==>]	[1]	
5		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=16	POS TARG -0.5,-0.5	Prime + Parallel Group 5-6 in Visit 06	761 Secs (761 Secs)		
								[==>]	[1]	
6		ANY	ACS/WFC, ACCUM, WFCENTER	F814W			Prime + Parallel Group 5-6 in Visit 06	619 Secs (619 Secs)		
								[==>]	[1]	



Proposal 16283 - Visit 07 - Understanding the Extreme Population in the Globular Cluster NGC 6402 (M14): Breaking the Degeneracy...

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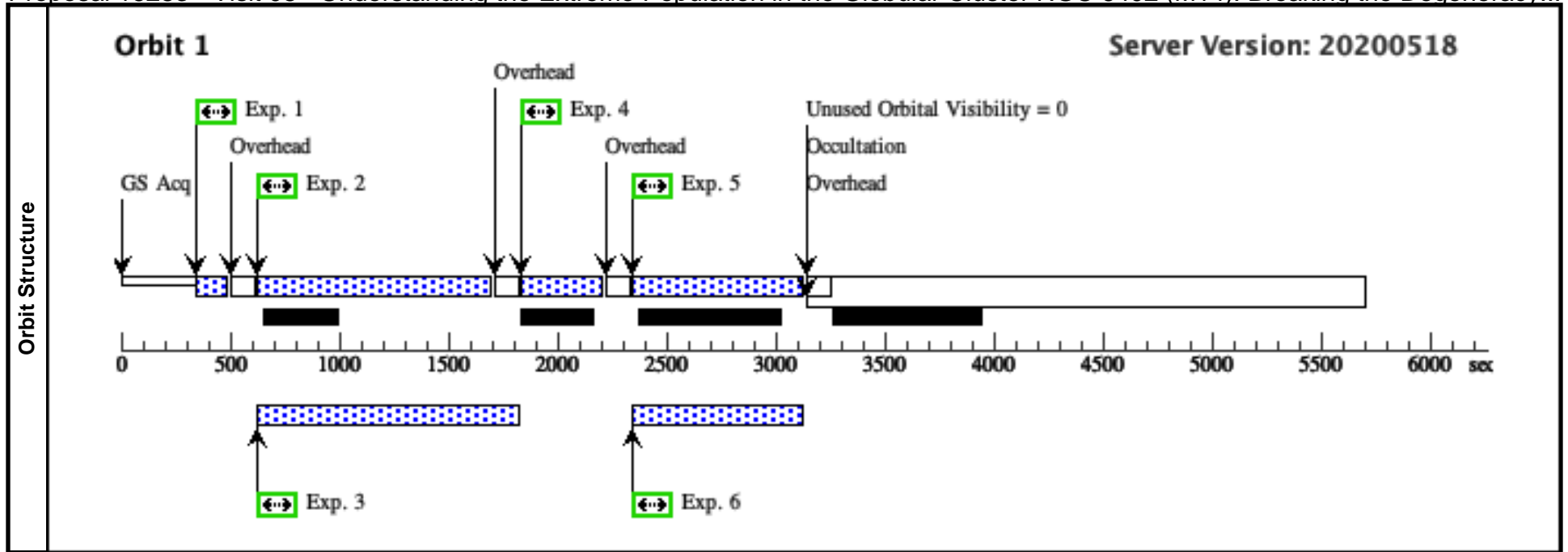
Visit	Proposal 16283, Visit 07, implementation Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: (none)									
	(Primary Exposure 2 (Prime + Parallel Group 2-3 in Visit 07)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Exposure 4 (Visit 07)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Primary Exposure 5 (Prime + Parallel Group 5-6 in Visit 07)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser									
Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	M-14	RA: 17 37 37.1600 (264.4048333d) Dec: -03 14 45.30 (-3.24592d) Equinox: J2000	Proper Motion RA: -2.1768255963927123E-4 V=5.73 sec of time/yr Proper Motion Dec: - 0.0026000000616477337 arcsec/yr Epoch of Position: 2015.5		Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	FLASH=12	POS TARG 1.0,1.0		110 Secs (110 Secs) [==>]	[1]
	2		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG 1.0,1.0	Prime + Parallel Group 2-3 in Visit 07	1050 Secs (1050 Secs) [==>]	[1]
	3		ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Group 2-3 in Visit 07	990 Secs (990 Secs) [==>]	[1]
	4		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F438W	FLASH=14	POS TARG 1.0,1.0		348 Secs (348 Secs) [==>]	[1]
	5		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=16	POS TARG 1.0,1.0	Prime + Parallel Group 5-6 in Visit 07	761 Secs (761 Secs) [==>]	[1]
	6		ANY	ACS/WFC, ACCUM, WFCENTER	F814W			Prime + Parallel Group 5-6 in Visit 07	619 Secs (619 Secs) [==>]	[1]



Proposal 16283 - Visit 08 - Understanding the Extreme Population in the Globular Cluster NGC 6402 (M14): Breaking the Degeneracy...

Mon Jun 22 19:02:26 GMT 2020

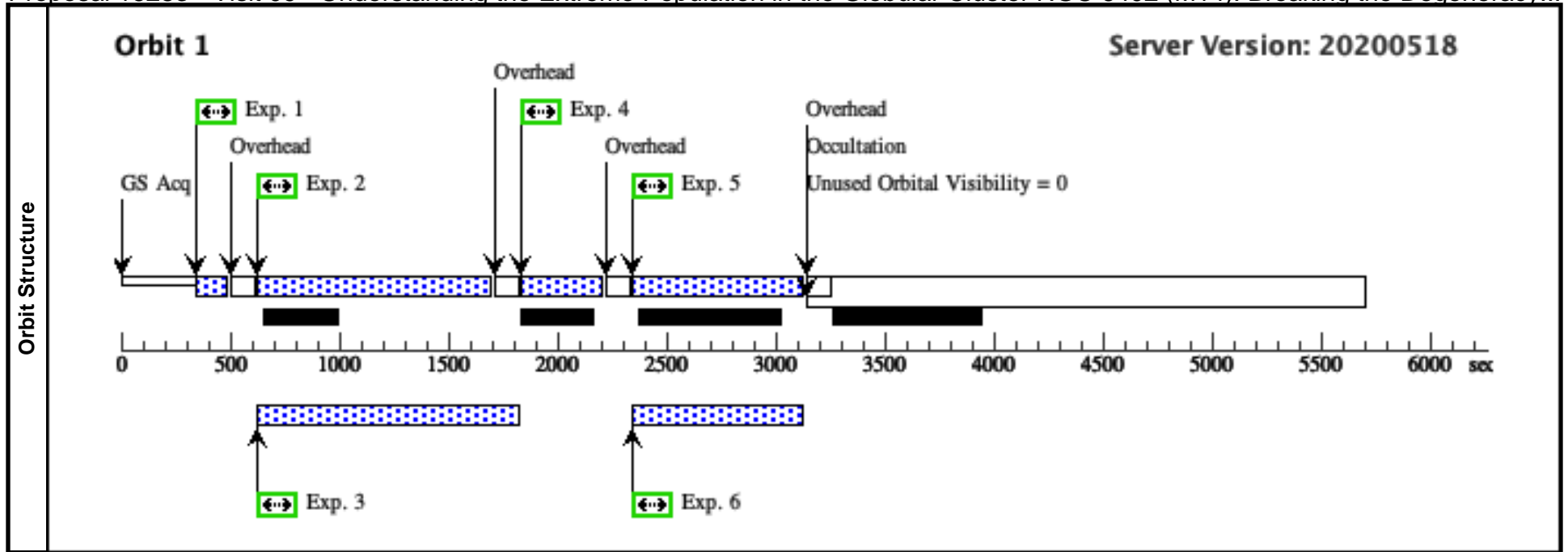
Visit	Proposal 16283, Visit 08, implementation Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: (none)									
	Diagnostics	(Primary Exposure 2 (Prime + Parallel Group 2-3 in Visit 08)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Exposure 4 (Visit 08)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Primary Exposure 5 (Prime + Parallel Group 5-6 in Visit 08)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser								
Fixed Targets		#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(1)	M-14	RA: 17 37 37.1600 (264.4048333d) Dec: -03 14 45.30 (-3.24592d) Equinox: J2000	Proper Motion RA: -2.1768255963927123E-4 sec of time/yr Proper Motion Dec: - 0.0026000000616477337 arcsec/yr Epoch of Position: 2015.5	V=5.73	Reference Frame: SIMBAD				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	FLASH=12	POS TARG 2.5,2.5		110 Secs (110 Secs)	
									[==>]	[1]
	2		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG 2.5,2.5	Prime + Parallel Group 2-3 in Visit 08	1050 Secs (1050 Secs)	
									[==>]	[1]
	3		ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Group 2-3 in Visit 08	990 Secs (990 Secs)	
									[==>]	[1]
4		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F438W	FLASH=14	POS TARG 2.5,2.5		348 Secs (348 Secs)		
								[==>]	[1]	
5		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=16	POS TARG 2.5,2.5	Prime + Parallel Group 5-6 in Visit 08	761 Secs (761 Secs)		
								[==>]	[1]	
6		ANY	ACS/WFC, ACCUM, WFCENTER	F814W			Prime + Parallel Group 5-6 in Visit 08	619 Secs (619 Secs)		
								[==>]	[1]	



Proposal 16283 - Visit 09 - Understanding the Extreme Population in the Globular Cluster NGC 6402 (M14): Breaking the Degeneracy...

Mon Jun 22 19:02:26 GMT 2020

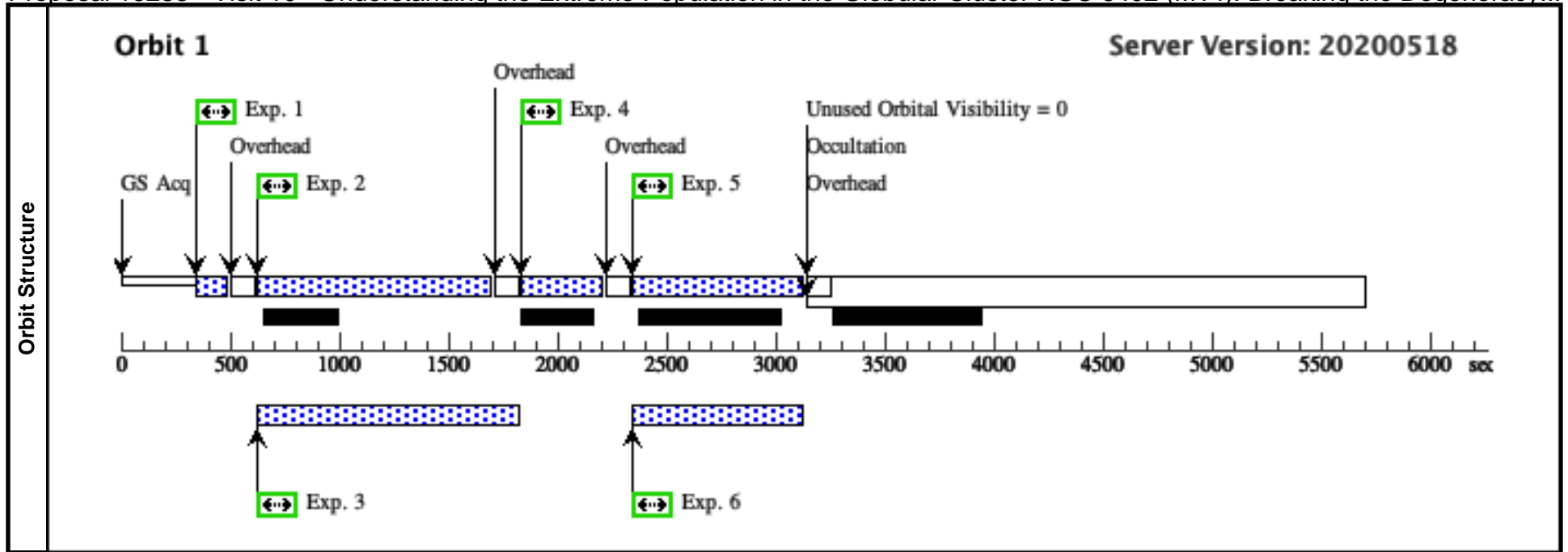
Visit	Proposal 16283, Visit 09, implementation Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: (none)									
	(Primary Exposure 2 (Prime + Parallel Group 2-3 in Visit 09)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Exposure 4 (Visit 09)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Primary Exposure 5 (Prime + Parallel Group 5-6 in Visit 09)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser									
Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	M-14	RA: 17 37 37.1600 (264.4048333d) Dec: -03 14 45.30 (-3.24592d) Equinox: J2000	Proper Motion RA: -2.1768255963927123E-4 V=5.73 sec of time/yr Proper Motion Dec: - 0.0026000000616477337 arcsec/yr Epoch of Position: 2015.5		Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	FLASH=12	POS TARG 4.0,4.0		110 Secs (110 Secs) [==>]	[1]
	2		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG 4.0,4.0	Prime + Parallel Group 2-3 in Visit 09	1050 Secs (1050 Secs) [==>]	[1]
	3		ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Group 2-3 in Visit 09	990 Secs (990 Secs) [==>]	[1]
	4		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F438W	FLASH=14	POS TARG 4.0,4.0		348 Secs (348 Secs) [==>]	[1]
	5		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=16	POS TARG 4.0,4.0	Prime + Parallel Group 5-6 in Visit 09	761 Secs (761 Secs) [==>]	[1]
	6		ANY	ACS/WFC, ACCUM, WFCENTER	F814W			Prime + Parallel Group 5-6 in Visit 09	619 Secs (619 Secs) [==>]	[1]



Proposal 16283 - Visit 10 - Understanding the Extreme Population in the Globular Cluster NGC 6402 (M14): Breaking the Degeneracy...

Mon Jun 22 19:02:26 GMT 2020

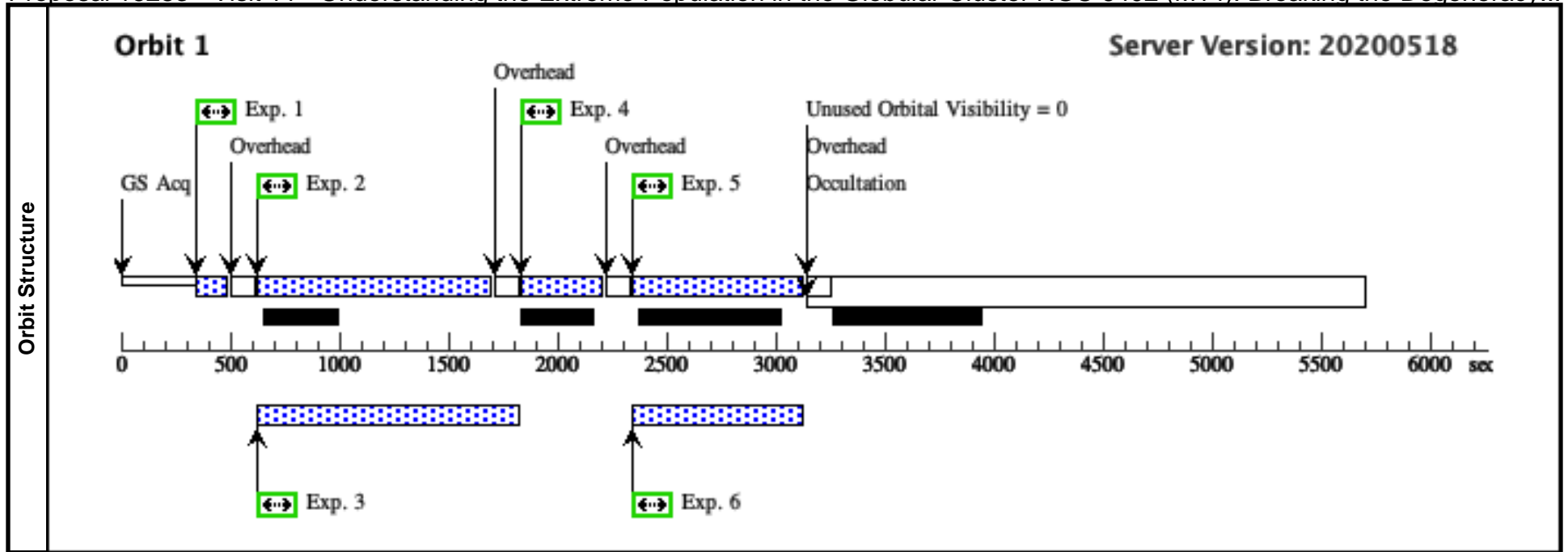
Visit	Proposal 16283, Visit 10, implementation Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: (none)									
	(Primary Exposure 2 (Prime + Parallel Group 2-3 in Visit 10)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Exposure 4 (Visit 10)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Primary Exposure 5 (Prime + Parallel Group 5-6 in Visit 10)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser									
Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	M-14	RA: 17 37 37.1600 (264.4048333d) Dec: -03 14 45.30 (-3.24592d) Equinox: J2000	Proper Motion RA: -2.1768255963927123E-4 V=5.73 sec of time/yr Proper Motion Dec: - 0.0026000000616477337 arcsec/yr Epoch of Position: 2015.5		Reference Frame: SIMBAD				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) M-14	(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	FLASH=12	POS TARG 5.5,5.5		110 Secs (110 Secs) [==>]	[1]
	2	(1) M-14	(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG 5.5,5.5	Prime + Parallel Group 2-3 in Visit 10	1050 Secs (1050 Secs) [==>]	[1]
	3	ANY	ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Group 2-3 in Visit 10	990 Secs (990 Secs) [==>]	[1]
	4	(1) M-14	(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F438W	FLASH=14	POS TARG 5.5,5.5		348 Secs (348 Secs) [==>]	[1]
	5	(1) M-14	(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=16	POS TARG 5.5,5.5	Prime + Parallel Group 5-6 in Visit 10	761 Secs (761 Secs) [==>]	[1]
	6	ANY	ANY	ACS/WFC, ACCUM, WFCENTER	F814W			Prime + Parallel Group 5-6 in Visit 10	619 Secs (619 Secs) [==>]	[1]



Proposal 16283 - Visit 11 - Understanding the Extreme Population in the Globular Cluster NGC 6402 (M14): Breaking the Degeneracy...

Mon Jun 22 19:02:26 GMT 2020

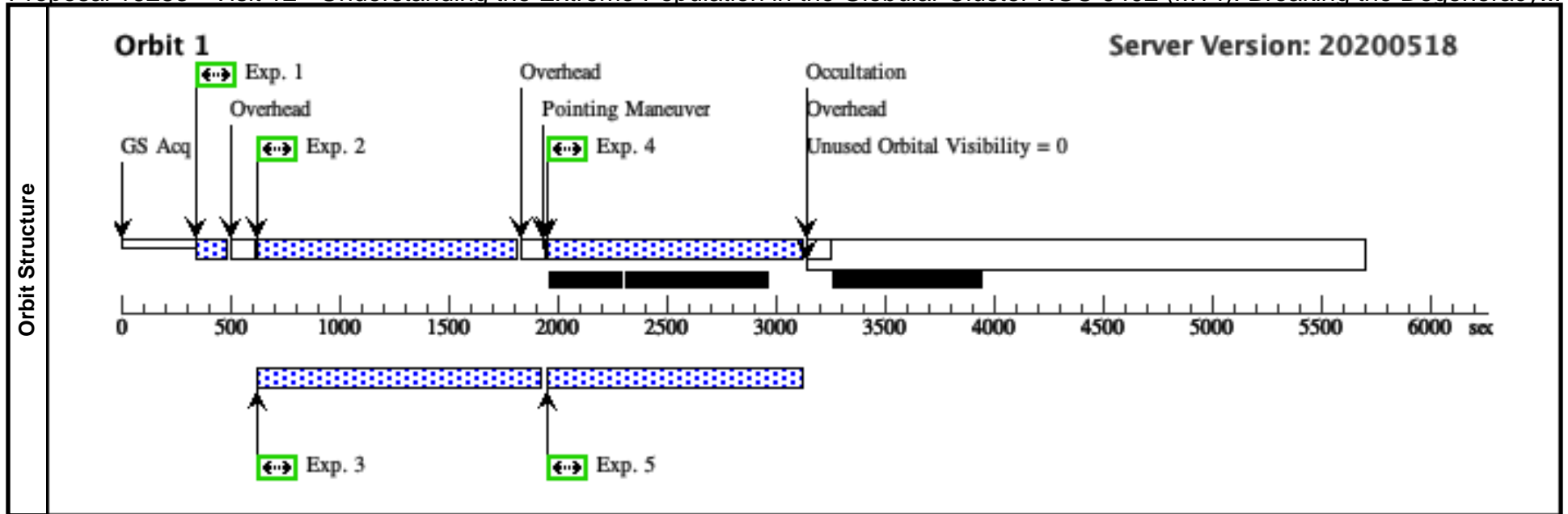
Visit	Proposal 16283, Visit 11, implementation Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: (none)									
	(Primary Exposure 2 (Prime + Parallel Group 2-3 in Visit 11)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Exposure 4 (Visit 11)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Primary Exposure 5 (Prime + Parallel Group 5-6 in Visit 11)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser									
Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	M-14	RA: 17 37 37.1600 (264.4048333d) Dec: -03 14 45.30 (-3.24592d) Equinox: J2000	Proper Motion RA: -2.1768255963927123E-4 V=5.73 sec of time/yr Proper Motion Dec: - 0.0026000000616477337 arcsec/yr Epoch of Position: 2015.5		Reference Frame: SIMBAD				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	FLASH=12	POS TARG 7,7		110 Secs (110 Secs)	
									[==>]	[1]
	2		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG 7,7	Prime + Parallel Group 2-3 in Visit 11	1050 Secs (1050 Secs)	
									[==>]	[1]
	3		ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Group 2-3 in Visit 11	990 Secs (990 Secs)	
									[==>]	[1]
4		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F438W	FLASH=14	POS TARG 7,7		348 Secs (348 Secs)		
								[==>]	[1]	
5		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=16	POS TARG 7,7	Prime + Parallel Group 5-6 in Visit 11	761 Secs (761 Secs)		
								[==>]	[1]	
6		ANY	ACS/WFC, ACCUM, WFCENTER	F814W			Prime + Parallel Group 5-6 in Visit 11	619 Secs (619 Secs)		
								[==>]	[1]	



Proposal 16283 - Visit 12 - Understanding the Extreme Population in the Globular Cluster NGC 6402 (M14): Breaking the Degeneracy...

Mon Jun 22 19:02:26 GMT 2020

Visit	Proposal 16283, Visit 12, implementation Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: (none)									
	(Primary Exposure 2 (Prime + Parallel Group 2-3 in Visit 12)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Primary Exposure 4 (Prime + Parallel Group 4-5 in Visit 12)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser									
Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes	Miscellaneous			
	(1)	M-14	RA: 17 37 37.1600 (264.4048333d) Dec: -03 14 45.30 (-3.24592d) Equinox: J2000	Proper Motion RA: -2.1768255963927123E-4 sec of time/yr Proper Motion Dec: - 0.0026000000616477337 arcsec/yr Epoch of Position: 2015.5		V=5.73	Reference Frame: SIMBAD			
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F438W	FLASH=12	POS TARG 0,0		110 Secs (110 Secs)	
									[==>]	[1]
	2		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG 0,0	Prime + Parallel Gro up 2-3 in Visit 12	1172 Secs (1172 Secs)	
									[==>]	[1]
	3		ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Gro up 2-3 in Visit 12	1091 Secs (1091 Secs)	
								[==>]	[1]	
4		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG 1,1	Prime + Parallel Gro up 4-5 in Visit 12	1172 Secs (1172 Secs)		
								[==>]	[1]	
5		ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Gro up 4-5 in Visit 12	1046 Secs (1046 Secs)		
								[==>]	[1]	



Proposal 16283 - Visit 13 - Understanding the Extreme Population in the Globular Cluster NGC 6402 (M14): Breaking the Degeneracy...

Mon Jun 22 19:02:26 GMT 2020

Visit	Proposal 16283, Visit 13, implementation Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: (none)									
	Diagnostics	(Primary Exposure 2 (Prime + Parallel Group 2-3 in Visit 13)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser (Primary Exposure 4 (Prime + Parallel Group 4-7 in Visit 13)) Warning (Form): FLASH level may be too high for this exposure or a long subexposure. See extended explanation in the diagnostic browser								
Fixed Targets		#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(1)	M-14	RA: 17 37 37.1600 (264.4048333d) Dec: -03 14 45.30 (-3.24592d) Equinox: J2000	Proper Motion RA: -2.1768255963927123E-4 sec of time/yr Proper Motion Dec: - 0.0026000000616477337 arcsec/yr Epoch of Position: 2015.5	V=5.73	Reference Frame: SIMBAD				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F438W	FLASH=14	POS TARG -7.25,-7.25		100 Secs (100 Secs)	
									[==>]	[1]
	2		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG 7.25,7.25	Prime + Parallel Group 2-3 in Visit 13	1172 Secs (1172 Secs)	
									[==>]	[1]
	3		ANY	ACS/WFC, ACCUM, WFCENTER	F814W			Prime + Parallel Group 2-3 in Visit 13	719 Secs (719 Secs)	
									[==>]	[1]
	4		(1) M-14	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=16	POS TARG 6.25,6.25	Prime + Parallel Group 4-7 in Visit 13	1181 Secs (1181 Secs)	
								[==>]	[1]	
5		ANY	ACS/WFC, ACCUM, WFCENTER	F814W			Prime + Parallel Group 4-7 in Visit 13	35 Secs (35 Secs)		
								[==>]	[1]	
6		ANY	ACS/WFC, ACCUM, WFCENTER	F814W			Prime + Parallel Group 4-7 in Visit 13	350 Secs (350 Secs)		
								[==>]	[1]	
7		ANY	ACS/WFC, ACCUM, WFCENTER	F475W			Prime + Parallel Group 4-7 in Visit 13	350 Secs (350 Secs)		
								[==>]	[1]	

