11554 - Luminosity Profiles of Extremely Massive Clusters in NGC 7252

Cycle: 17, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(2) NGC7252-2	WFC3/UVIS	1	19-Jun-2009 21:00:55.0	yes
02	(2) NGC7252-2	WFC3/UVIS	1	19-Jun-2009 21:01:01.0	yes

2 Total Orbits Used

ABSTRACT

The galactic merger remnant NGC 7252 represents one of the most extreme post-starburst environments in the local universe. During the disk-disk merger (~400 Myr ago) this galaxy produced the largest young massive star cluster population known, including two clusters above 10^7 Msun, a factor of 100 more massive than typical globular clusters in the Milky Way. We propose ACS-HRC observations of 3 fields in NGC 7252 in order to explore the detailed properties, i.e. luminosity profiles, of these massive star clusters. These observations will be able to test massive cluster formation mechanisms (e.g. the cluster merger scenario) as well as the possible tidal erosion and truncation of the outer regions of the clusters by the

galactic tidal field. These observations will compliment our large on-going study using archival HST data, of star cluster profiles outside the Local Group. The cluster population in NGC 7252 will extend our sample in cluster mass by an order of magnitude.

OBSERVING DESCRIPTION

We propose ACS-HRC observations of 3 fields in NGC 7252 in order to explore the detailed properties, i.e. luminosity profiles, of these massive star clusters. Three fields will be observed, each in the F475W and F775W filters. The multiple filters will allow independent checks of the size/profile, and allow us to gain some colour information for a large number of clusters.

Visit

Proposal 11554, Visit 01, implementation Sat Jun 20 01:01:04 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT 300D TO 330 D

*Comments: In this visit we plan to have 6 subexposures, two short (60s) at the beginning and end (one at the start and one at the end) of the orbit (offset by 4.5 pixels, i.e. 0.18"). The main part of the orbit will consist of 4 * 500s subexposures, which will be dithered (small box 4 point dither) to improve PSF sampling.*

We prefer that the observations be taken a Orient=315. If the range of 'Orient' is insufficient for schedualing, then we can also use Orient=135 +- 15, but if this is the case we would like to re-center the observations by ~20" (please contact us if this is the case).

We also prefer that Visit 02 be taken at the same orient as Visit 01.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	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		(2)

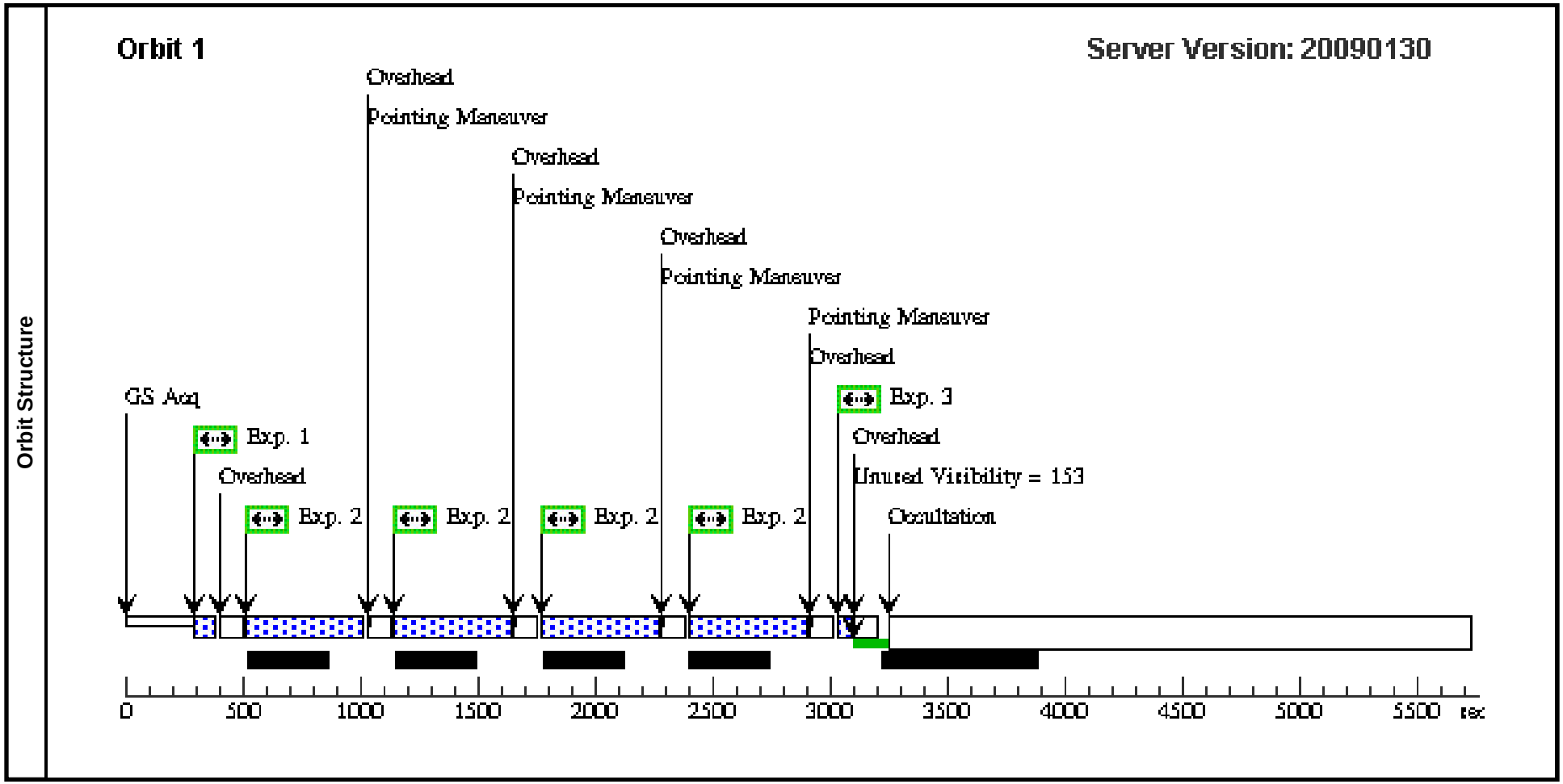
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	NGC7252-2	RA: 22 20 44.9980 (335.1874917d) Dec: -24 40 26.50 (-24.67403d) Equinox: J2000		V=20+/-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	visit1-exp1	(2) NGC7252-2	WFC3/UVIS, ACCUM, UVIS-FIX	F475W	CR-SPLIT=NO			60 Secs	
								[==>]	***[1]***
2	visit1-dithering	(2) NGC7252-2	WFC3/UVIS, ACCUM, UVIS-FIX	F475W	CR-SPLIT=NO	GS ACQ SCENARIO BASE1B3	Pattern 2, Exps 2-2 (2)	500 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
3	visit1-exp3	(2) NGC7252-2	WFC3/UVIS, ACCUM, UVIS-FIX	F475W	CR-SPLIT=NO	POS TARG 0.18,0.0		60 Secs	
								[==>]	***[1]***


Orbit Structure
Orbit 1
Server Version: 20090130
Overhead
Pointing Maneuver
Overhead
Pointing Maneuver
Overhead
Pointing Maneuver
Pointing Maneuver
Overhead
GS Acq
Exp. 1
Exp. 3
Overhead
Overhead
Unused Visibility = 153
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 11554, Visit 02, implementation Sat Jun 20 01:01:05 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 01

Comments: This 2nd visit, should be exactly the same as Visit 01, except images will be taken with the F775W filter instead of the F475W. Please see the comments in Visit 01 as to the goal and preferences of this observation.

We prefer that Visit 02 be taken at the same orient as Visit 01.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	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		(2)

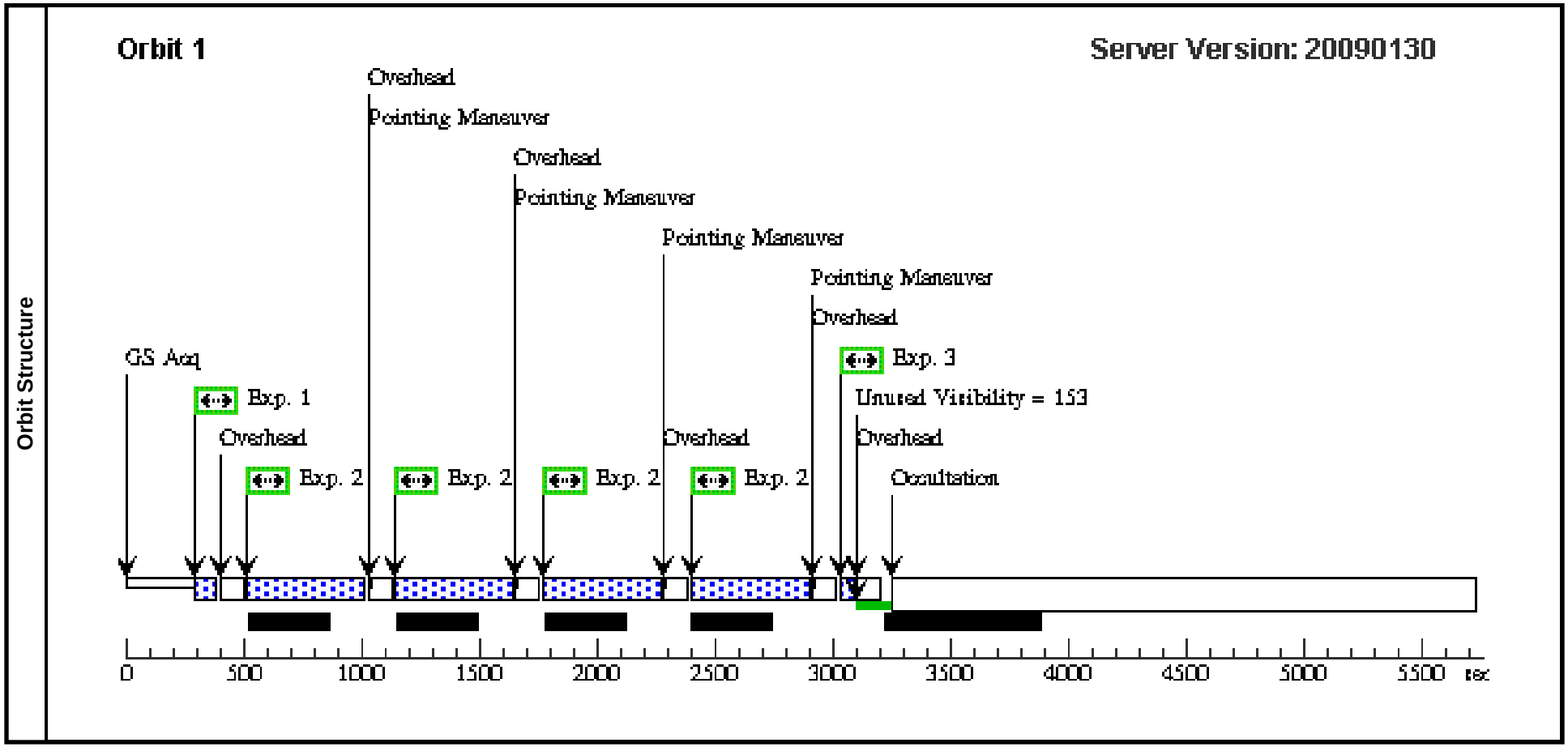
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	NGC7252-2	RA: 22 20 44.9980 (335.1874917d) Dec: -24 40 26.50 (-24.67403d) Equinox: J2000		V=20+/-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	visit2-exp1	(2) NGC7252-2	WFC3/UVIS, ACCUM, UVIS-FIX	F775W	CR-SPLIT=NO			60 Secs	
								[==>]	***[1]***
2	visit2-dithering	(2) NGC7252-2	WFC3/UVIS, ACCUM, UVIS-FIX	F775W	CR-SPLIT=NO	GS ACQ SCENARIO BASE1B3	Pattern 2, Exps 2-2 (2)	500 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
3	visit2-exp3	(2) NGC7252-2	WFC3/UVIS, ACCUM, UVIS-FIX	F775W	CR-SPLIT=NO	POS TARG 0.18,null		60 Secs	
								[==>]	***[1]***


Orbit Structure
Orbit 1
Server Version: 20090130
GS Acq
Exp. 1
Overhead
Exp. 2
Overhead
Pointing Maneuver
Exp. 2
Overhead
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Overhead
Pointing Maneuver
Overhead
Exp. 3
Unused Visibility = 153
Overhead
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec