



# 12257 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

Cycle: 18, Proposal Category: GO

(Availability Mode: SUPPORTED)

## INVESTIGATORS

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|-------------------------------------------------|-------------------------------------------|---------------------------------|
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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> |
|--------------|------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 10           | (1) NGC-2203<br>ANY          | ACS/WFC<br>WFC3/UVIS                | 2                  | 22-Jun-2011 21:02:14.0        | yes                           |
| 11           | (3) NGC-2173<br>ANY          | ACS/WFC<br>WFC3/UVIS                | 2                  | 22-Jun-2011 21:02:32.0        | yes                           |

Proposal 12257 (STScI Edit Number: 0, Created: Wednesday, June 22, 2011 8:04:22 PM EST) - Overview

| <b>Visit</b> | <b>Targets used in Visit</b> | <b>Configurations used in Visit</b> | <b>Orbits Used</b> | <b>Last Orbit Planner Run</b> | <b>OP Current with Visit?</b> |
|--------------|------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 12           | (6) NGC-411<br>ANY           | ACS/WFC<br>WFC3/UVIS                | 2                  | 22-Jun-2011 21:02:48.0        | yes                           |
| 20           | (2) NGC-2005<br>ANY          | ACS/WFC<br>WFC3/UVIS                | 1                  | 22-Jun-2011 21:02:57.0        | yes                           |
| 21           | (5) H-6<br>ANY               | ACS/WFC<br>WFC3/UVIS                | 1                  | 22-Jun-2011 21:03:04.0        | yes                           |
| 22           | (7) NGC-1718<br>ANY          | ACS/WFC<br>WFC3/UVIS                | 1                  | 22-Jun-2011 21:03:11.0        | yes                           |
| 23           | (8) NGC-1651<br>ANY          | ACS/WFC<br>WFC3/UVIS                | 1                  | 22-Jun-2011 21:03:17.0        | yes                           |
| 24           | (4) H-2<br>ANY               | ACS/WFC<br>WFC3/UVIS                | 1                  | 22-Jun-2011 21:03:25.0        | yes                           |
| 25           | (9) NGC-2213<br>ANY          | ACS/WFC<br>WFC3/UVIS                | 1                  | 22-Jun-2011 21:03:31.0        | yes                           |
| 30           | (10) NGC-419<br>ANY          | ACS/WFC<br>WFC3/UVIS                | 1                  | 22-Jun-2011 21:03:38.0        | yes                           |
| 40           | (11) NGC-1978<br>ANY         | ACS/WFC<br>WFC3/UVIS                | 1                  | 22-Jun-2011 21:03:45.0        | yes                           |
| 41           | (17) NGC-1852<br>ANY         | ACS/WFC<br>WFC3/UVIS                | 1                  | 22-Jun-2011 21:03:51.0        | yes                           |
| 42           | (16) NGC-2154<br>ANY         | ACS/WFC<br>WFC3/UVIS                | 1                  | 22-Jun-2011 21:03:59.0        | yes                           |
| 50           | (12) NGC-1783<br>ANY         | ACS/WFC<br>WFC3/UVIS                | 1                  | 22-Jun-2011 21:04:05.0        | yes                           |
| 51           | (13) NGC-1806<br>ANY         | ACS/WFC<br>WFC3/UVIS                | 1                  | 22-Jun-2011 21:04:11.0        | yes                           |
| 52           | (15) NGC-1751<br>ANY         | ACS/WFC<br>WFC3/UVIS                | 1                  | 22-Jun-2011 21:04:16.0        | yes                           |

## **ABSTRACT**

Recently, deep images from the ACS camera aboard HST provided conclusive evidence that several massive intermediate-age star clusters in the LMC and SMC present multiple main-sequence turn-offs (MMSTO), and in some cases also dual red clumps. These observations challenge the notion that star clusters are simple stellar populations, and pose serious questions regarding the mechanisms responsible for star cluster formation.

In this project, we propose to collect WFC3 imaging that should lead to an understanding of the nature of the MMSTO phenomenon. We will perform deep F475W and F814W imaging for a complete sample of star clusters covering well-defined intervals of age and total mass. The sample comprises star clusters spanning a wide variety of concentrations and locations within the LMC and SMC, so as to allow a study of the physical properties causing the MMSTO phenomenon. The data will allow us to derive detailed star formation histories via CMD reconstruction methods, and locate the targets in the robust absolute age scale provided by clusters with dual red clumps. The underlying field population will be characterized by means of ACS images of nearby areas obtained in parallel. For all sample clusters more massive than  $10^5$  solar masses (including those with previous ACS/WFC imaging) we will also obtain high-S/N F336W imaging to probe star-to-star abundance variations in C and N along the RGB. Such variations are expected from self-enrichment from intermediate-mass stars within the clusters, in analogy with what is observed in the most massive old globular clusters. Thanks to its photometric depth and accuracy, the resulting dataset will constitute an invaluable resource for studies of stellar evolution and dynamics in star clusters.

## **OBSERVING DESCRIPTION**

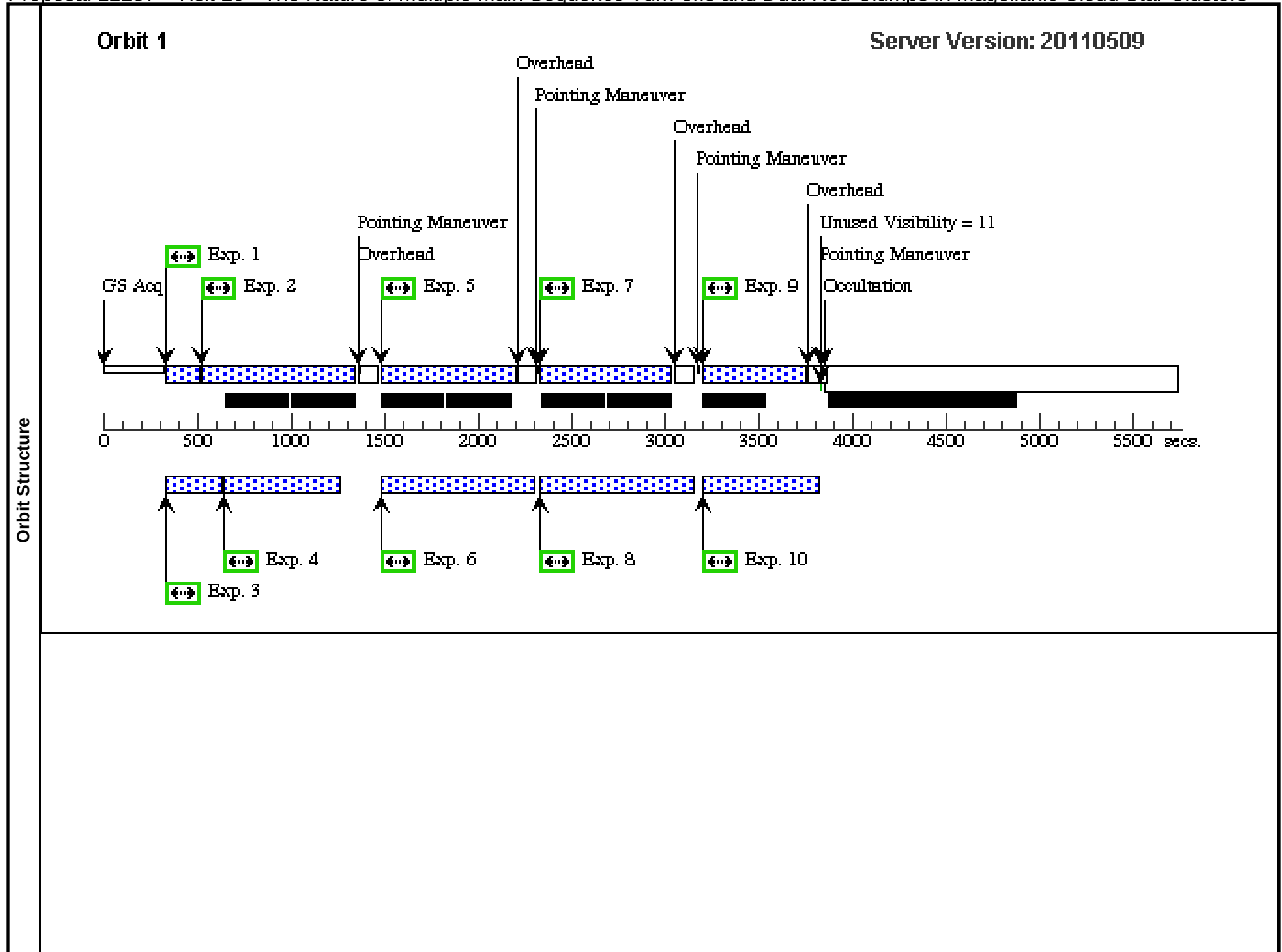
The target star clusters which do NOT have archival ACS/WFC imaging available are observed with WFC3 using the F336W, F475W, and F814W filters. The target star clusters that DO have archival F555W and F814W ACS/WFC imaging available are observed with WFC3 using the F336W filter plus short exposures in F555W. We will thus yield images with three filters for each target star cluster, which will improve the age estimate (relative to the use of only two filters). Since the shape and position of the RGB is used to determine metallicities, we include exposures in each filter that do not saturate the bright giants. On the other hand, we need color uncertainties less than 0.05 mag down to well beyond the estimated magnitude of the main sequence turnoff to achieve an accurate age determination and to enable a robust identification of multiple turnoff structures in clusters with multiple stellar populations. Hence, at least one short exposure is used in each filter to avoid saturation of the giants and red clump stars, while at least two longer exposures are used to achieve deep photometry. At least two dither positions are used for each target star cluster to allow a robust elimination of hot pixels and cosmic ray hits during the analysis.

# Proposal 12257 - Visit 10 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                      |          |                                                                                     |                          |        |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------|--------------------------|--------|
| Visit                                                                                             | <b>Proposal 12257, Visit 10, pi</b> <span>Thu Jun 23 01:04:22 GMT 2011</span>                                                                                                                                                                                                                                                                        |          |                                                                                     |                          |        |
|                                                                                                   | <b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: WFC3/UVIS, ACS/WFC<br>Special Requirements: ORIENT 35D TO 44 D; ORIENT 50D TO 75 D; ORIENT 84.0D TO 100.0 D; ORIENT 153.0D TO 172.0 D; ORIENT 202.0D TO 237.0 D; ORIENT 267.0D TO 305.0 D; ORIENT 335.0D TO 348.0 D; VISIBILITY INTERVAL 3850 S<br>Comments: Applies to NGC 2203 |          |                                                                                     |                          |        |
| Fixed Targets                                                                                     | #                                                                                                                                                                                                                                                                                                                                                    | Name     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes |
|                                                                                                   | (1)                                                                                                                                                                                                                                                                                                                                                  | NGC-2203 | RA: 06 04 41.3000 (91.1720833d)<br>Dec: -75 26 11.00 (-75.43639d)<br>Equinox: J2000 |                          | V=11.3 |
| Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. |                                                                                                                                                                                                                                                                                                                                                      |          |                                                                                     |                          |        |

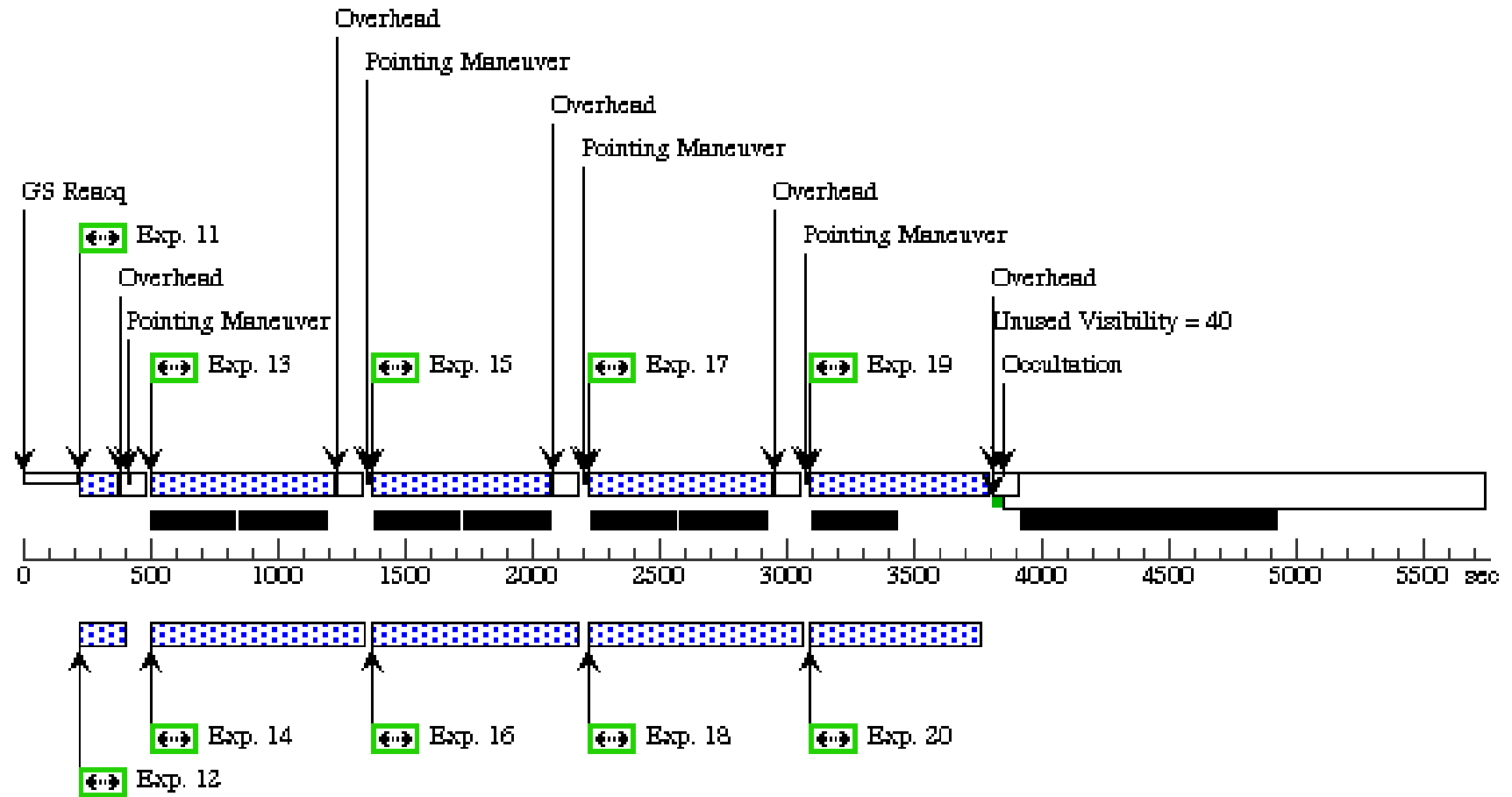
# Proposal 12257 - Visit 10 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

| Exposures | #  | Label | Target       | Config,Mode,Aperture          | Spectral Els. | Opt. Params. | Special Reqs.        | Groups                                   | Exp. Time/[Actual Dur.]     | Orbit |
|-----------|----|-------|--------------|-------------------------------|---------------|--------------|----------------------|------------------------------------------|-----------------------------|-------|
|           | 1  |       | (1) NGC-2203 | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG null,15     | Prime + Parallel Group 1-4 in Visit 10   | 30 Secs<br>[==>]            | [1]   |
|           | 2  |       | (1) NGC-2203 | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  | POS TARG 0,15        | Prime + Parallel Group 1-4 in Visit 10   | 800 Secs<br>[==>]           | [1]   |
|           | 3  |       | ANY          | ACS/WFC, ACCUM, WFC           | F475W         |              |                      | Prime + Parallel Group 1-4 in Visit 10   | 90 Secs<br>[==>]            | [1]   |
|           | 4  |       | ANY          | ACS/WFC, ACCUM, WFC           | F475W         |              |                      | Prime + Parallel Group 1-4 in Visit 10   | 500 Secs<br>[==>]           | [1]   |
|           | 5  |       | (1) NGC-2203 | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG .16,15.06   | Prime + Parallel Group 5-6 in Visit 10   | 700 Secs<br>[==>]           | [1]   |
|           | 6  |       | ANY          | ACS/WFC, ACCUM, WFC           | F475W         |              |                      | Prime + Parallel Group 5-6 in Visit 10   | 400 Secs<br>[==>700.0 Secs] | [1]   |
|           | 7  |       | (1) NGC-2203 | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG 0.1,15.16   | Prime + Parallel Group 7-8 in Visit 10   | 700 Secs<br>[==>]           | [1]   |
|           | 8  |       | ANY          | ACS/WFC, ACCUM, WFC           | F475W         |              |                      | Prime + Parallel Group 7-8 in Visit 10   | 400 Secs<br>[==>700.0 Secs] | [1]   |
|           | 9  |       | (1) NGC-2203 | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG 1.62,17.92  | Prime + Parallel Group 9-10 in Visit 10  | 550 Secs<br>[==>]           | [1]   |
|           | 10 |       | ANY          | ACS/WFC, ACCUM, WFC           | F475W         |              |                      | Prime + Parallel Group 9-10 in Visit 10  | 450 Secs<br>[==>500.0 Secs] | [1]   |
|           | 11 |       | (1) NGC-2203 | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO  | POS TARG 1.56,18.02  | Prime + Parallel Group 11-12 in Visit 10 | 120 Secs<br>[==>]           | [2]   |
|           | 12 |       | ANY          | ACS/WFC, ACCUM, WFC           | F814W         |              |                      | Prime + Parallel Group 11-12 in Visit 10 | 10 Secs<br>[==>]            | [2]   |
|           | 13 |       | (1) NGC-2203 | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  | POS TARG -0.10,14.94 | Prime + Parallel Group 13-14 in Visit 10 | 700 Secs<br>[==>]           | [2]   |
|           | 14 |       | ANY          | ACS/WFC, ACCUM, WFC           | F814W         |              |                      | Prime + Parallel Group 13-14 in Visit 10 | 400 Secs<br>[==>713.0 Secs] | [2]   |
|           | 15 |       | (1) NGC-2203 | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  | POS TARG 1.40,17.96  | Prime + Parallel Group 15-16 in Visit 10 | 700 Secs<br>[==>]           | [2]   |
|           | 16 |       | ANY          | ACS/WFC, ACCUM, WFC           | F814W         |              |                      | Prime + Parallel Group 15-16 in Visit 10 | 400 Secs<br>[==>690.0 Secs] | [2]   |
|           | 17 |       | (1) NGC-2203 | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO  | POS TARG 1.46,17.86  | Prime + Parallel Group 17-18 in Visit 10 | 700 Secs<br>[==>]           | [2]   |
|           | 18 |       | ANY          | ACS/WFC, ACCUM, WFC           | F814W         |              |                      | Prime + Parallel Group 17-18 in Visit 10 | 400 Secs<br>[==>713.0 Secs] | [2]   |
|           | 19 |       | (1) NGC-2203 | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO  | POS TARG 0.1,15.16   | Prime + Parallel Group 19-20 in Visit 10 | 700 Secs<br>[==>]           | [2]   |
|           | 20 |       | ANY          | ACS/WFC, ACCUM, WFC           | F814W         |              |                      | Prime + Parallel Group 19-20 in Visit 10 | 400 Secs<br>[==>550.0 Secs] | [2]   |



Orbit 2

Server Version: 20110509

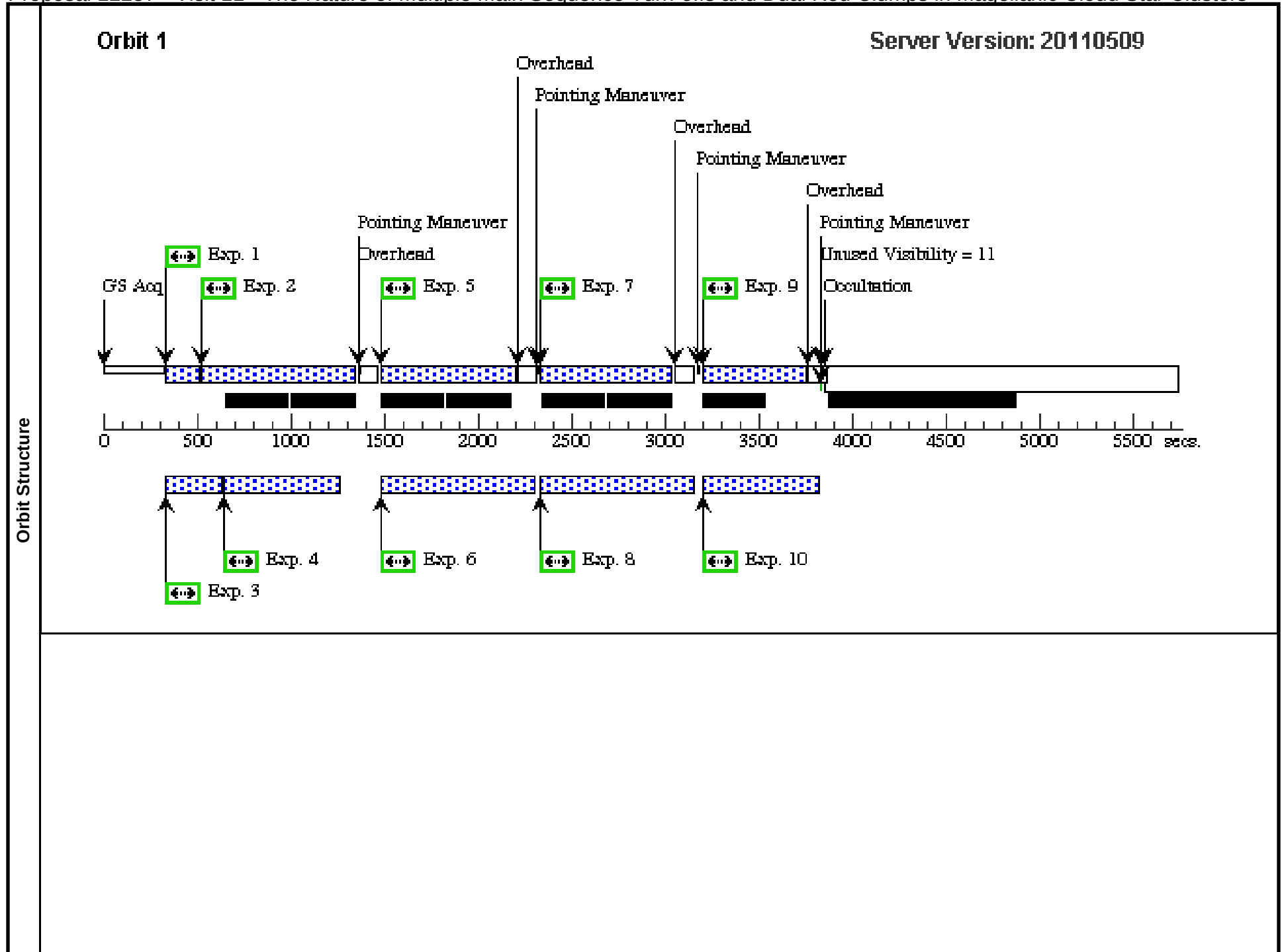


# Proposal 12257 - Visit 11 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|                                                                                                          |                                                                                                                                                                                                                              |          |                                                                                     |                          |        |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------|--------------------------|--------|
| Visit                                                                                                    | <b>Proposal 12257, Visit 11, pi</b> <span style="float: right;">Thu Jun 23 01:04:24 GMT 2011</span>                                                                                                                          |          |                                                                                     |                          |        |
|                                                                                                          | <b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: WFC3/UVIS, ACS/WFC<br>Special Requirements: ORIENT 77D TO 346 D; ORIENT 357D TO 65 D; VISIBILITY INTERVAL 3850 S<br><i>Comments: Applies to NGC 2173</i> |          |                                                                                     |                          |        |
| Fixed Targets                                                                                            | #                                                                                                                                                                                                                            | Name     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes |
|                                                                                                          | (3)                                                                                                                                                                                                                          | NGC-2173 | RA: 05 57 58.6000 (89.4941667d)<br>Dec: -72 58 45.30 (-72.97925d)<br>Equinox: J2000 |                          | V=11.9 |
| <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> |                                                                                                                                                                                                                              |          |                                                                                     |                          |        |

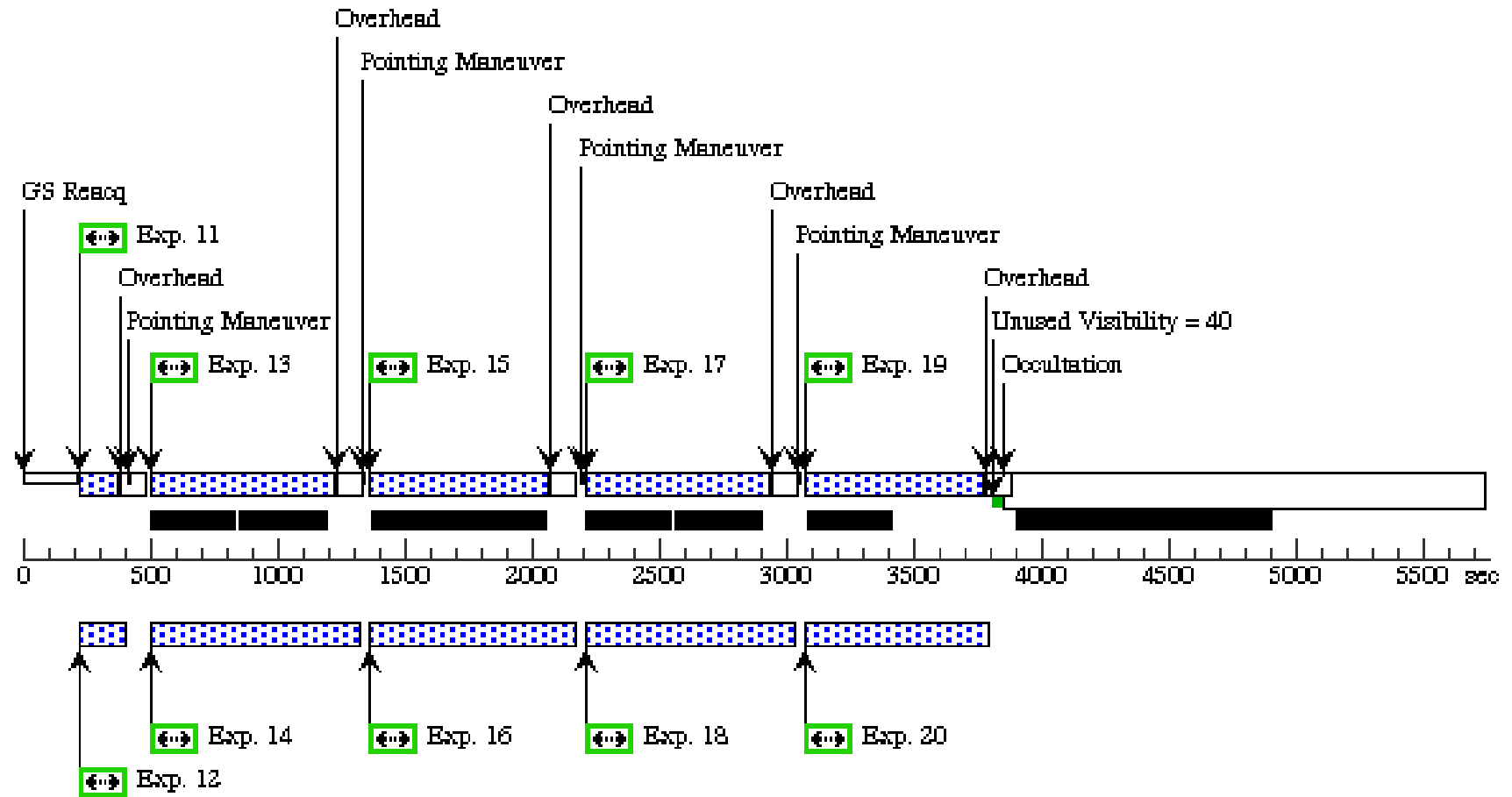
# Proposal 12257 - Visit 11 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

| Exposures | #  | Label | Target       | Config,Mode,Aperture          | Spectral Els. | Opt. Params. | Special Reqs.       | Groups                                   | Exp. Time/[Actual Dur.] | Orbit |
|-----------|----|-------|--------------|-------------------------------|---------------|--------------|---------------------|------------------------------------------|-------------------------|-------|
|           | 1  |       | (3) NGC-2173 | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG null,20    | Prime + Parallel Group 1-4 in Visit 11   | 30 Secs<br>[==>]        | [1]   |
|           | 2  |       | (3) NGC-2173 | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  | POS TARG 0,20       | Prime + Parallel Group 1-4 in Visit 11   | 800 Secs<br>[==>]       | [1]   |
|           | 3  |       | ANY          | ACS/WFC, ACCUM, WFC           | F475W         |              |                     | Prime + Parallel Group 1-4 in Visit 11   | 90 Secs<br>[==>]        | [1]   |
|           | 4  |       | ANY          | ACS/WFC, ACCUM, WFC           | F475W         |              |                     | Prime + Parallel Group 1-4 in Visit 11   | 500 Secs<br>[==>]       | [1]   |
|           | 5  |       | (3) NGC-2173 | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG .16,20.06  | Prime + Parallel Group 5-6 in Visit 11   | 700 Secs<br>[==>]       | [1]   |
|           | 6  |       | ANY          | ACS/WFC, ACCUM, WFC           | F475W         |              |                     | Prime + Parallel Group 5-6 in Visit 11   | 700 Secs<br>[==>]       | [1]   |
|           | 7  |       | (3) NGC-2173 | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG 0.1,20.16  | Prime + Parallel Group 7-8 in Visit 11   | 700 Secs<br>[==>]       | [1]   |
|           | 8  |       | ANY          | ACS/WFC, ACCUM, WFC           | F475W         |              |                     | Prime + Parallel Group 7-8 in Visit 11   | 700 Secs<br>[==>]       | [1]   |
|           | 9  |       | (3) NGC-2173 | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG 1.62,22.92 | Prime + Parallel Group 9-10 in Visit 11  | 550 Secs<br>[==>]       | [1]   |
|           | 10 |       | ANY          | ACS/WFC, ACCUM, WFC           | F475W         |              |                     | Prime + Parallel Group 9-10 in Visit 11  | 500 Secs<br>[==>]       | [1]   |
|           | 11 |       | (3) NGC-2173 | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO  | POS TARG 1.56,23.02 | Prime + Parallel Group 11-12 in Visit 11 | 120 Secs<br>[==>]       | [2]   |
|           | 12 |       | ANY          | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Group 11-12 in Visit 11 | 10 Secs<br>[==>]        | [2]   |
|           | 13 |       | (3) NGC-2173 | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  | POS TARG -0.1,19.94 | Prime + Parallel Group 13-14 in Visit 11 | 700 Secs<br>[==>]       | [2]   |
|           | 14 |       | ANY          | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Group 13-14 in Visit 11 | 700 Secs<br>[==>]       | [2]   |
|           | 15 |       | (3) NGC-2173 | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  | POS TARG 1.40,22.96 | Prime + Parallel Group 15-16 in Visit 11 | 700 Secs<br>[==>]       | [2]   |
|           | 16 |       | ANY          | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Group 15-16 in Visit 11 | 690 Secs<br>[==>]       | [2]   |
|           | 17 |       | (3) NGC-2173 | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO  | POS TARG 1.46,22.86 | Prime + Parallel Group 17-18 in Visit 11 | 700 Secs<br>[==>]       | [2]   |
|           | 18 |       | ANY          | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Group 17-18 in Visit 11 | 700 Secs<br>[==>]       | [2]   |
|           | 19 |       | (3) NGC-2173 | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO  | POS TARG 0.1,20.16  | Prime + Parallel Group 19-20 in Visit 11 | 700 Secs<br>[==>]       | [2]   |
|           | 20 |       | ANY          | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Group 19-20 in Visit 11 | 600 Secs<br>[==>]       | [2]   |



Orbit 2

Server Version: 20110509

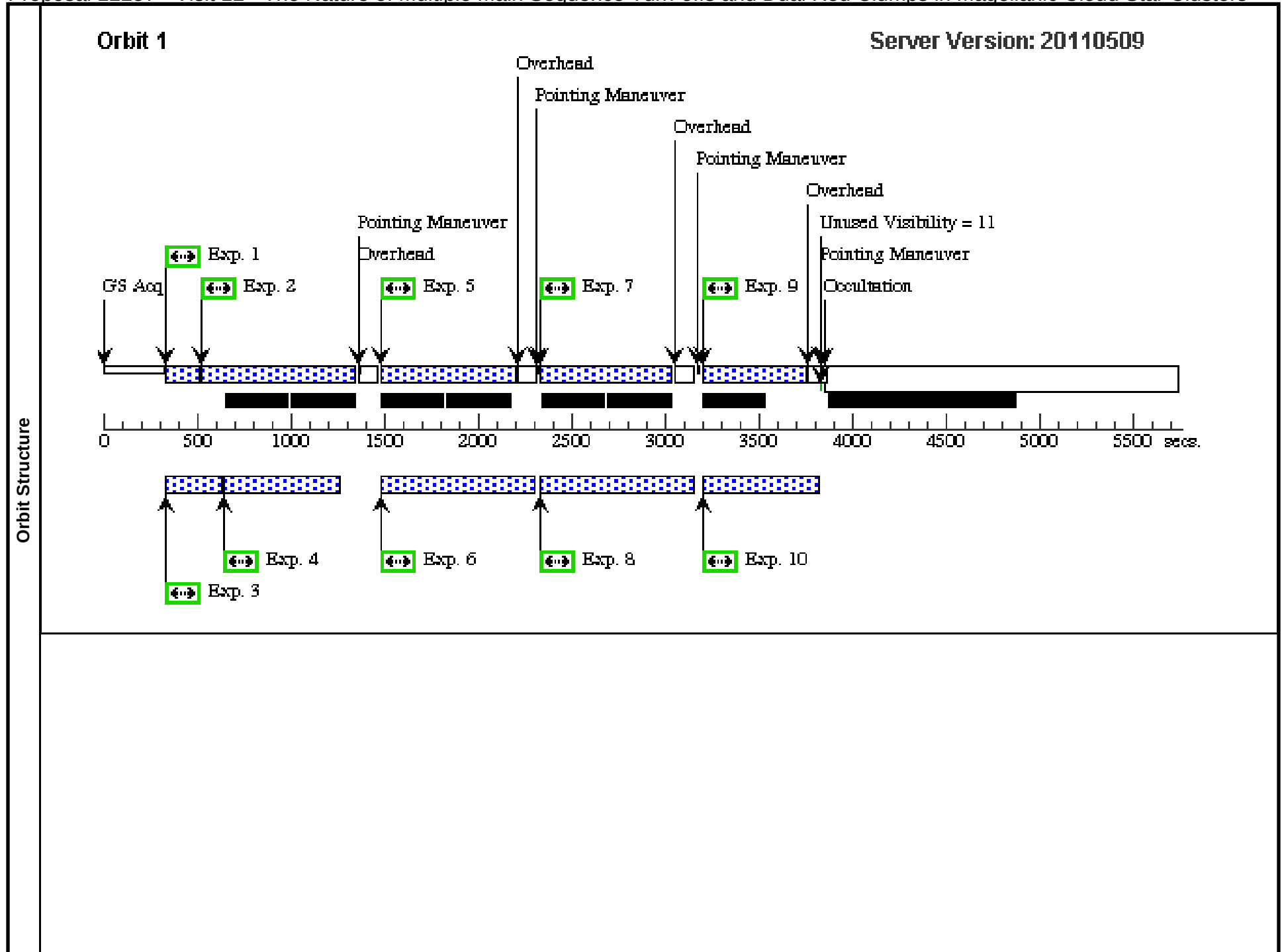


# Proposal 12257 - Visit 12 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|                                                                                                          |                                                                                                                                                                                                                              |         |                                                                                    |                          |        |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------|--------------------------|--------|
| Visit                                                                                                    | <b>Proposal 12257, Visit 12, pi</b> <span style="float: right;">Thu Jun 23 01:04:25 GMT 2011</span>                                                                                                                          |         |                                                                                    |                          |        |
|                                                                                                          | <b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: WFC3/UVIS, ACS/WFC<br>Special Requirements: ORIENT 32D TO 246 D; ORIENT 303D TO 352 D; VISIBILITY INTERVAL 3850 S<br><i>Comments: Applies to NGC 411</i> |         |                                                                                    |                          |        |
| Fixed Targets                                                                                            | #                                                                                                                                                                                                                            | Name    | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes |
|                                                                                                          | (6)                                                                                                                                                                                                                          | NGC-411 | RA: 01 07 54.4000 (16.9766667d)<br>Dec: -71 46 1.40 (-71.76706d)<br>Equinox: J2000 |                          | V=12.2 |
| <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> |                                                                                                                                                                                                                              |         |                                                                                    |                          |        |

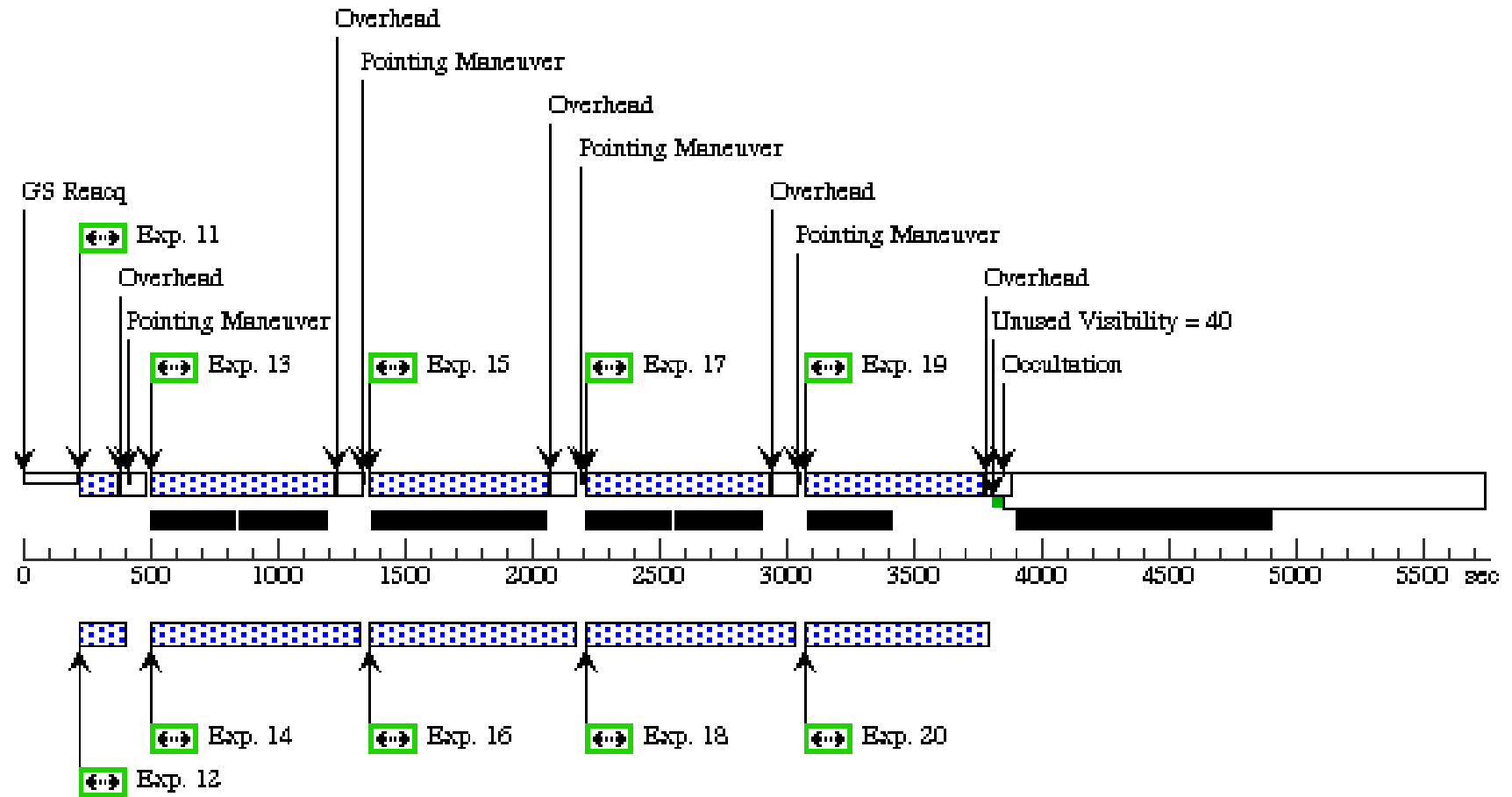
# Proposal 12257 - Visit 12 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

| Exposures | #  | Label | Target      | Config,Mode,Aperture          | Spectral Els. | Opt. Params. | Special Reqs.       | Groups                                   | Exp. Time/[Actual Dur.] | Orbit |
|-----------|----|-------|-------------|-------------------------------|---------------|--------------|---------------------|------------------------------------------|-------------------------|-------|
|           | 1  |       | (6) NGC-411 | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG null,20    | Prime + Parallel Group 1-4 in Visit 12   | 30 Secs<br>[==>]        | [1]   |
|           | 2  |       | (6) NGC-411 | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  | POS TARG 0,20       | Prime + Parallel Group 1-4 in Visit 12   | 800 Secs<br>[==>]       | [1]   |
|           | 3  |       | ANY         | ACS/WFC, ACCUM, WFC           | F475W         |              |                     | Prime + Parallel Group 1-4 in Visit 12   | 90 Secs<br>[==>]        | [1]   |
|           | 4  |       | ANY         | ACS/WFC, ACCUM, WFC           | F475W         |              |                     | Prime + Parallel Group 1-4 in Visit 12   | 500 Secs<br>[==>]       | [1]   |
|           | 5  |       | (6) NGC-411 | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG .16,20.06  | Prime + Parallel Group 5-6 in Visit 12   | 700 Secs<br>[==>]       | [1]   |
|           | 6  |       | ANY         | ACS/WFC, ACCUM, WFC           | F475W         |              |                     | Prime + Parallel Group 5-6 in Visit 12   | 700 Secs<br>[==>]       | [1]   |
|           | 7  |       | (6) NGC-411 | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG 0.1,20.16  | Prime + Parallel Group 7-8 in Visit 12   | 700 Secs<br>[==>]       | [1]   |
|           | 8  |       | ANY         | ACS/WFC, ACCUM, WFC           | F475W         |              |                     | Prime + Parallel Group 7-8 in Visit 12   | 700 Secs<br>[==>]       | [1]   |
|           | 9  |       | (6) NGC-411 | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG 1.62,22.92 | Prime + Parallel Group 9-10 in Visit 12  | 550 Secs<br>[==>]       | [1]   |
|           | 10 |       | ANY         | ACS/WFC, ACCUM, WFC           | F475W         |              |                     | Prime + Parallel Group 9-10 in Visit 12  | 500 Secs<br>[==>]       | [1]   |
|           | 11 |       | (6) NGC-411 | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO  | POS TARG 1.56,23.02 | Prime + Parallel Group 11-12 in Visit 12 | 120 Secs<br>[==>]       | [2]   |
|           | 12 |       | ANY         | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Group 11-12 in Visit 12 | 10 Secs<br>[==>]        | [2]   |
|           | 13 |       | (6) NGC-411 | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  | POS TARG -0.1,19.94 | Prime + Parallel Group 13-14 in Visit 12 | 700 Secs<br>[==>]       | [2]   |
|           | 14 |       | ANY         | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Group 13-14 in Visit 12 | 700 Secs<br>[==>]       | [2]   |
|           | 15 |       | (6) NGC-411 | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  | POS TARG 1.40,22.96 | Prime + Parallel Group 15-16 in Visit 12 | 700 Secs<br>[==>]       | [2]   |
|           | 16 |       | ANY         | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Group 15-16 in Visit 12 | 690 Secs<br>[==>]       | [2]   |
|           | 17 |       | (6) NGC-411 | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO  | POS TARG 1.46,22.86 | Prime + Parallel Group 17-18 in Visit 12 | 700 Secs<br>[==>]       | [2]   |
|           | 18 |       | ANY         | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Group 17-18 in Visit 12 | 700 Secs<br>[==>]       | [2]   |
|           | 19 |       | (6) NGC-411 | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO  | POS TARG 0.1,20.16  | Prime + Parallel Group 19-20 in Visit 12 | 700 Secs<br>[==>]       | [2]   |
|           | 20 |       | ANY         | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Group 19-20 in Visit 12 | 600 Secs<br>[==>]       | [2]   |



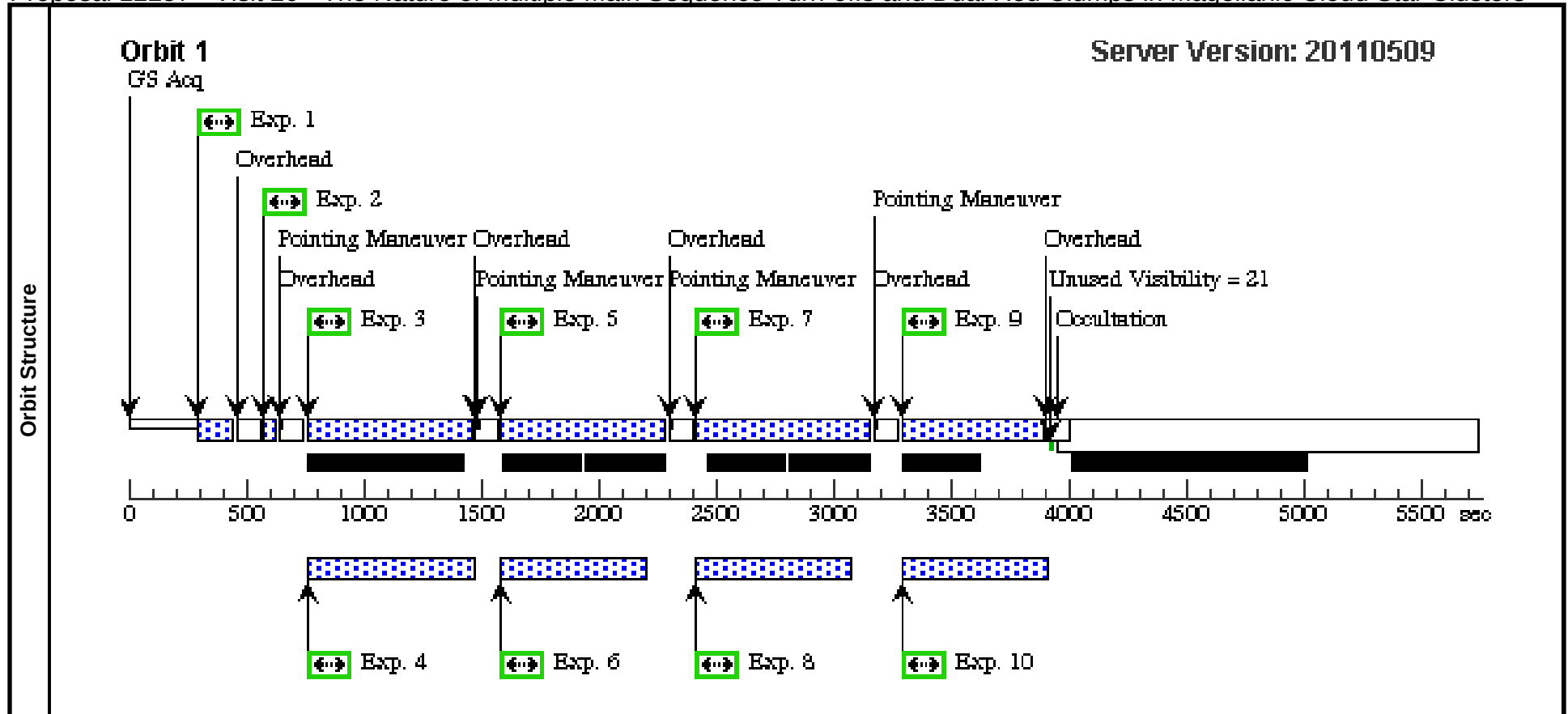
Orbit 2

Server Version: 20110509



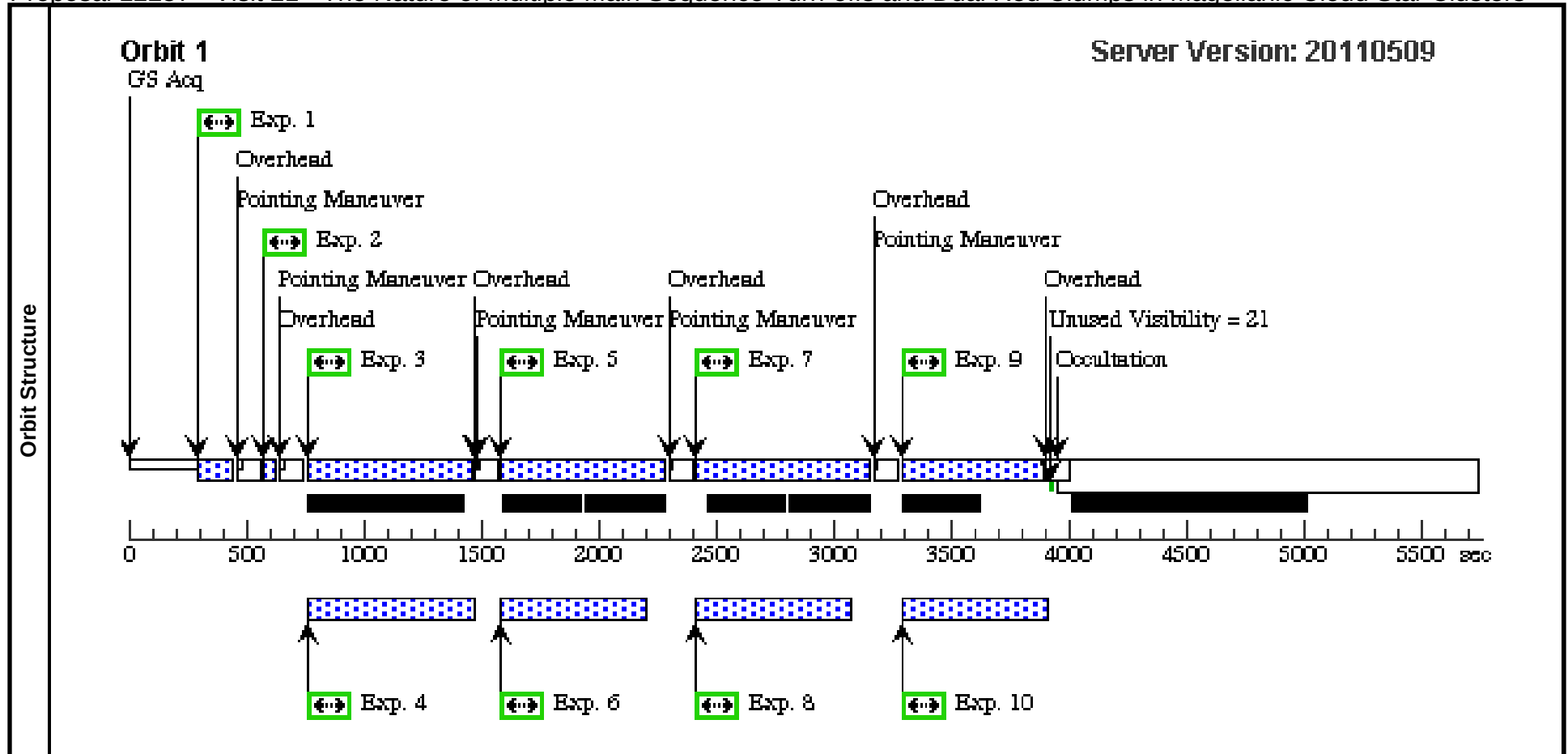
# Proposal 12257 - Visit 20 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|                               |                                                                                                   |              |                                                                                    |                               |               |                    |                                         |                                        |                              |       |
|-------------------------------|---------------------------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------|-------------------------------|---------------|--------------------|-----------------------------------------|----------------------------------------|------------------------------|-------|
| Visit                         | Proposal 12257, Visit 20, pi                                                                      |              |                                                                                    |                               |               |                    |                                         |                                        | Thu Jun 23 01:04:25 GMT 2011 |       |
|                               | Diagnostic Status: No Diagnostics                                                                 |              |                                                                                    |                               |               |                    |                                         |                                        |                              |       |
|                               | Scientific Instruments: WFC3/UVIS, ACS/WFC                                                        |              |                                                                                    |                               |               |                    |                                         |                                        |                              |       |
|                               | Special Requirements: ORIENT 205D TO 94 D; ORIENT 135D TO 160 D; VISIBILITY INTERVAL 3950 S       |              |                                                                                    |                               |               |                    |                                         |                                        |                              |       |
| Comments: Applies to NGC 2005 |                                                                                                   |              |                                                                                    |                               |               |                    |                                         |                                        |                              |       |
| Fixed Targets                 | #                                                                                                 | Name         | Target Coordinates                                                                 | Targ. Coord. Corrections      |               | Fluxes             |                                         | Miscellaneous                          |                              |       |
|                               | (2)                                                                                               | NGC-2005     | RA: 05 30 10.0000 (82.5416667d)<br>Dec: -69 45 7.80 (-69.75217d)<br>Equinox: J2000 |                               |               | V=11.6             |                                         | Reference Frame: ICRS                  |                              |       |
|                               | 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/[Actual Dur.]      | Orbit |
|                               | 1                                                                                                 |              | (2) NGC-2005                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO        | POS TARG null,20                        |                                        | 120 Secs                     |       |
|                               |                                                                                                   |              |                                                                                    |                               |               |                    |                                         |                                        | [==>]                        | [1]   |
|                               | 2                                                                                                 |              | (2) NGC-2005                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO        | POS TARG null,20                        |                                        | 30 Secs                      |       |
|                               |                                                                                                   |              |                                                                                    |                               |               |                    |                                         |                                        | [==>]                        | [1]   |
|                               | 3                                                                                                 |              | (2) NGC-2005                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO        | POS TARG -0.1,19.94                     | Prime + Parallel Group 3-4 in Visit 20 | 700 Secs                     |       |
|                               |                                                                                                   |              |                                                                                    |                               |               |                    |                                         |                                        | [==>]                        | [1]   |
|                               | 4                                                                                                 |              | ANY                                                                                | ACS/WFC, ACCUM, WFC           | F475W         |                    |                                         | Prime + Parallel Group 3-4 in Visit 20 | 500 Secs                     |       |
|                               |                                                                                                   |              |                                                                                    |                               |               |                    |                                         |                                        | [==>]                        | [1]   |
|                               | 5                                                                                                 |              | (2) NGC-2005                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO        | POS TARG 1.46,22.86                     | Prime + Parallel Group 5-6 in Visit 20 | 700 Secs                     |       |
|                               |                                                                                                   |              |                                                                                    |                               |               |                    |                                         |                                        | [==>]                        | [1]   |
|                               | 6                                                                                                 |              | ANY                                                                                | ACS/WFC, ACCUM, WFC           | F475W         |                    |                                         | Prime + Parallel Group 5-6 in Visit 20 | 500 Secs                     |       |
|                               |                                                                                                   |              |                                                                                    |                               |               |                    |                                         |                                        | [==>]                        | [1]   |
|                               | 7                                                                                                 |              | (2) NGC-2005                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO        | POS TARG 1.62,22.92                     | Prime + Parallel Group 7-8 in Visit 20 | 720 Secs                     |       |
|                               |                                                                                                   |              |                                                                                    |                               |               |                    |                                         | [==>]                                  | [1]                          |       |
| 8                             |                                                                                                   | ANY          | ACS/WFC, ACCUM, WFC                                                                | F814W                         |               |                    | Prime + Parallel Group 7-8 in Visit 20  | 500 Secs                               |                              |       |
|                               |                                                                                                   |              |                                                                                    |                               |               |                    |                                         | [==>]                                  | [1]                          |       |
| 9                             |                                                                                                   | (2) NGC-2005 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                      | F475W                         | CR-SPLIT=NO   | POS TARG 0.1,20.16 | Prime + Parallel Group 9-10 in Visit 20 | 600 Secs                               |                              |       |
|                               |                                                                                                   |              |                                                                                    |                               |               |                    |                                         | [==>]                                  | [1]                          |       |
| 10                            |                                                                                                   | ANY          | ACS/WFC, ACCUM, WFC                                                                | F814W                         |               |                    | Prime + Parallel Group 9-10 in Visit 20 | 500 Secs                               |                              |       |
|                               |                                                                                                   |              |                                                                                    |                               |               |                    |                                         | [==>]                                  | [1]                          |       |



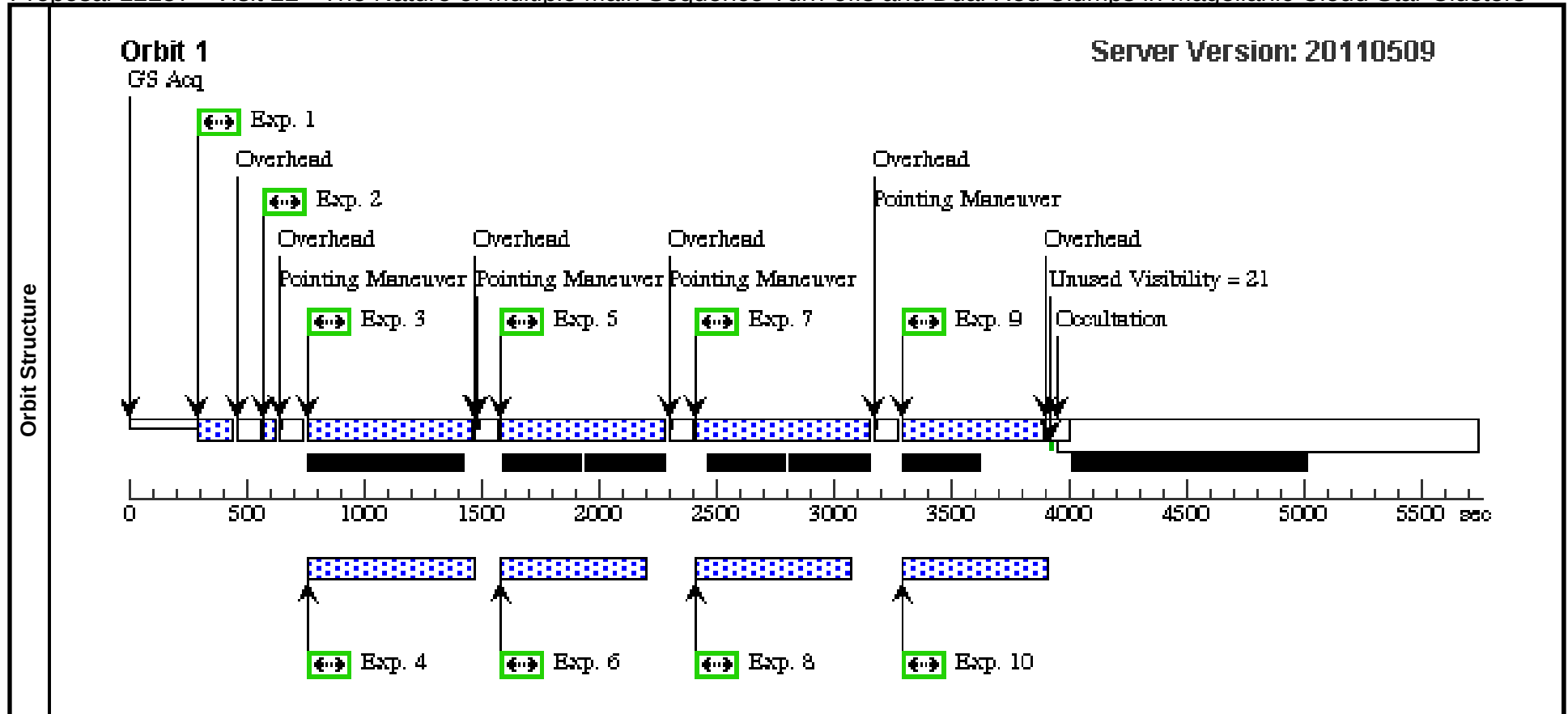
# Proposal 12257 - Visit 21 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|                         |                                                                                                                  |         |                                                                                     |                               |                          |                    |                                         |                                        |                         |                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------|-------------------------------|--------------------------|--------------------|-----------------------------------------|----------------------------------------|-------------------------|------------------------------|
| Visit                   | Proposal 12257, Visit 21, pi                                                                                     |         |                                                                                     |                               |                          |                    |                                         |                                        |                         | Thu Jun 23 01:04:26 GMT 2011 |
|                         | Diagnostic Status: No Diagnostics                                                                                |         |                                                                                     |                               |                          |                    |                                         |                                        |                         |                              |
|                         | Scientific Instruments: WFC3/UVIS, ACS/WFC                                                                       |         |                                                                                     |                               |                          |                    |                                         |                                        |                         |                              |
|                         | Special Requirements: ORIENT 62D TO 103 D; ORIENT 170D TO 277 D; ORIENT 330D TO 20 D; VISIBILITY INTERVAL 3950 S |         |                                                                                     |                               |                          |                    |                                         |                                        |                         |                              |
| Comments: Applies to H6 |                                                                                                                  |         |                                                                                     |                               |                          |                    |                                         |                                        |                         |                              |
| Fixed Targets           | #                                                                                                                | Name    | Target Coordinates                                                                  |                               | Targ. Coord. Corrections |                    | Fluxes                                  |                                        | Miscellaneous           |                              |
|                         | (5)                                                                                                              | H-6     | RA: 05 42 17.0000 (85.5708333d)<br>Dec: -71 35 30.00 (-71.59167d)<br>Equinox: J2000 |                               |                          |                    | V=12.1                                  |                                        | Reference Frame: ICRS   |                              |
|                         | 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/[Actual Dur.] | Orbit                        |
|                         | 1                                                                                                                |         | (5) H-6                                                                             | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W                    | CR-SPLIT=NO        | POS TARG null,20                        |                                        | 120 Secs                |                              |
|                         |                                                                                                                  |         |                                                                                     |                               |                          |                    |                                         |                                        | [==>]                   | [1]                          |
|                         | 2                                                                                                                |         | (5) H-6                                                                             | WFC3/UVIS, ACCUM, UVIS        | F814W                    | CR-SPLIT=NO        | POS TARG null,20                        |                                        | 30 Secs                 |                              |
|                         |                                                                                                                  |         |                                                                                     |                               |                          |                    |                                         |                                        | [==>]                   | [1]                          |
|                         | 3                                                                                                                |         | (5) H-6                                                                             | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W                    | CR-SPLIT=NO        | POS TARG -0.1,19.94                     | Prime + Parallel Group 3-4 in Visit 21 | 700 Secs                |                              |
|                         |                                                                                                                  |         |                                                                                     |                               |                          |                    |                                         |                                        | [==>]                   | [1]                          |
|                         | 4                                                                                                                |         | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F475W                    |                    |                                         | Prime + Parallel Group 3-4 in Visit 21 | 500 Secs                |                              |
|                         |                                                                                                                  |         |                                                                                     |                               |                          |                    |                                         |                                        | [==>]                   | [1]                          |
|                         | 5                                                                                                                |         | (5) H-6                                                                             | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W                    | CR-SPLIT=NO        | POS TARG 1.46,22.86                     | Prime + Parallel Group 5-6 in Visit 21 | 700 Secs                |                              |
|                         |                                                                                                                  |         |                                                                                     |                               |                          |                    |                                         |                                        | [==>]                   | [1]                          |
|                         | 6                                                                                                                |         | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F475W                    |                    |                                         | Prime + Parallel Group 5-6 in Visit 21 | 500 Secs                |                              |
|                         |                                                                                                                  |         |                                                                                     |                               |                          |                    |                                         |                                        | [==>]                   | [1]                          |
|                         | 7                                                                                                                |         | (5) H-6                                                                             | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W                    | CR-SPLIT=NO        | POS TARG 1.62,22.92                     | Prime + Parallel Group 7-8 in Visit 21 | 720 Secs                |                              |
|                         |                                                                                                                  |         |                                                                                     |                               |                          |                    |                                         | [==>]                                  | [1]                     |                              |
| 8                       |                                                                                                                  | ANY     | ACS/WFC, ACCUM, WFC                                                                 | F814W                         |                          |                    | Prime + Parallel Group 7-8 in Visit 21  | 500 Secs                               |                         |                              |
|                         |                                                                                                                  |         |                                                                                     |                               |                          |                    |                                         | [==>]                                  | [1]                     |                              |
| 9                       |                                                                                                                  | (5) H-6 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                       | F475W                         | CR-SPLIT=NO              | POS TARG 0.1,20.16 | Prime + Parallel Group 9-10 in Visit 21 | 600 Secs                               |                         |                              |
|                         |                                                                                                                  |         |                                                                                     |                               |                          |                    |                                         | [==>]                                  | [1]                     |                              |
| 10                      |                                                                                                                  | ANY     | ACS/WFC, ACCUM, WFC                                                                 | F814W                         |                          |                    | Prime + Parallel Group 9-10 in Visit 21 | 500 Secs                               |                         |                              |
|                         |                                                                                                                  |         |                                                                                     |                               |                          |                    |                                         | [==>]                                  | [1]                     |                              |



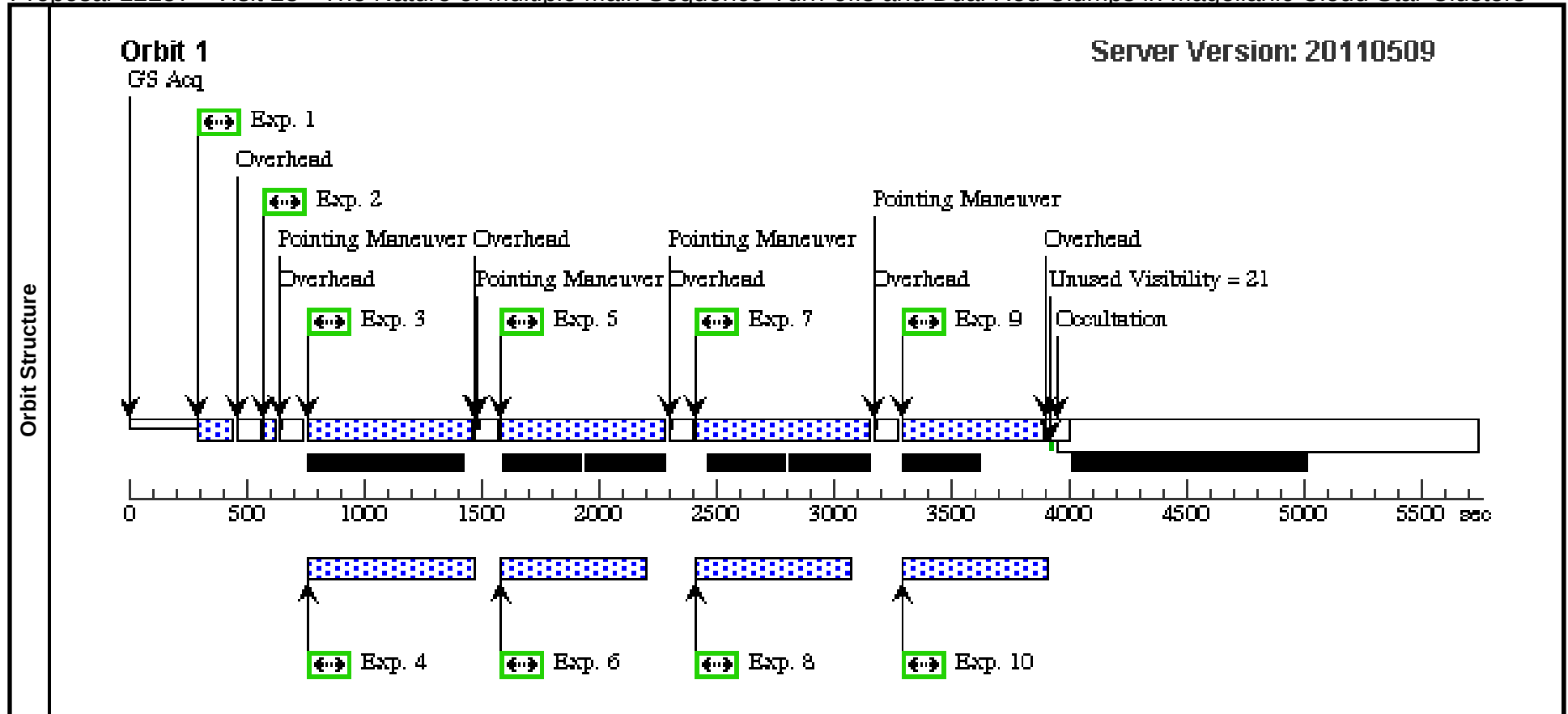
# Proposal 12257 - Visit 22 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|                               |                                                                                                   |          |                                                                                    |                               |               |              |                     |                                         |                         |                              |
|-------------------------------|---------------------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------|-------------------------------|---------------|--------------|---------------------|-----------------------------------------|-------------------------|------------------------------|
| Visit                         | Proposal 12257, Visit 22, pi                                                                      |          |                                                                                    |                               |               |              |                     |                                         |                         | Thu Jun 23 01:04:26 GMT 2011 |
|                               | Diagnostic Status: No Diagnostics                                                                 |          |                                                                                    |                               |               |              |                     |                                         |                         |                              |
|                               | Scientific Instruments: WFC3/UVIS, ACS/WFC                                                        |          |                                                                                    |                               |               |              |                     |                                         |                         |                              |
|                               | Special Requirements: ORIENT 331D TO 108 D; ORIENT 129D TO 276 D; VISIBILITY INTERVAL 3950 S      |          |                                                                                    |                               |               |              |                     |                                         |                         |                              |
| Comments: Applies to NGC 1718 |                                                                                                   |          |                                                                                    |                               |               |              |                     |                                         |                         |                              |
| Fixed Targets                 | #                                                                                                 | Name     | Target Coordinates                                                                 | Targ. Coord. Corrections      |               | Fluxes       |                     | Miscellaneous                           |                         |                              |
|                               | (7)                                                                                               | NGC-1718 | RA: 04 52 27.1000 (73.1129167d)<br>Dec: -67 03 2.00 (-67.05056d)<br>Equinox: J2000 |                               |               | V=12.3       |                     | Reference Frame: ICRS                   |                         |                              |
|                               | 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/[Actual Dur.] | Orbit                        |
|                               | 1                                                                                                 |          | (7) NGC-1718                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO  | POS TARG null,20    |                                         | 120 Secs<br>[==>]       | <br>[1]                      |
|                               | 2                                                                                                 |          | (7) NGC-1718                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG null,20    |                                         | 30 Secs<br>[==>]        | <br>[1]                      |
|                               | 3                                                                                                 |          | (7) NGC-1718                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG -0.1,19.94 | Prime + Parallel Group 3-4 in Visit 22  | 700 Secs<br>[==>]       | <br>[1]                      |
|                               | 4                                                                                                 |          | ANY                                                                                | ACS/WFC, ACCUM, WFC           | F475W         |              |                     | Prime + Parallel Group 3-4 in Visit 22  | 500 Secs<br>[==>]       | <br>[1]                      |
|                               | 5                                                                                                 |          | (7) NGC-1718                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO  | POS TARG 1.46,22.86 | Prime + Parallel Group 5-6 in Visit 22  | 700 Secs<br>[==>]       | <br>[1]                      |
|                               | 6                                                                                                 |          | ANY                                                                                | ACS/WFC, ACCUM, WFC           | F475W         |              |                     | Prime + Parallel Group 5-6 in Visit 22  | 500 Secs<br>[==>]       | <br>[1]                      |
|                               | 7                                                                                                 |          | (7) NGC-1718                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO  | POS TARG 1.62,22.92 | Prime + Parallel Group 7-8 in Visit 22  | 720 Secs<br>[==>]       | <br>[1]                      |
|                               | 8                                                                                                 |          | ANY                                                                                | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Group 7-8 in Visit 22  | 500 Secs<br>[==>]       | <br>[1]                      |
|                               | 9                                                                                                 |          | (7) NGC-1718                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO  | POS TARG 0.1,20.16  | Prime + Parallel Group 9-10 in Visit 22 | 600 Secs<br>[==>]       | <br>[1]                      |
|                               | 10                                                                                                |          | ANY                                                                                | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Group 9-10 in Visit 22 | 500 Secs<br>[==>]       | <br>[1]                      |



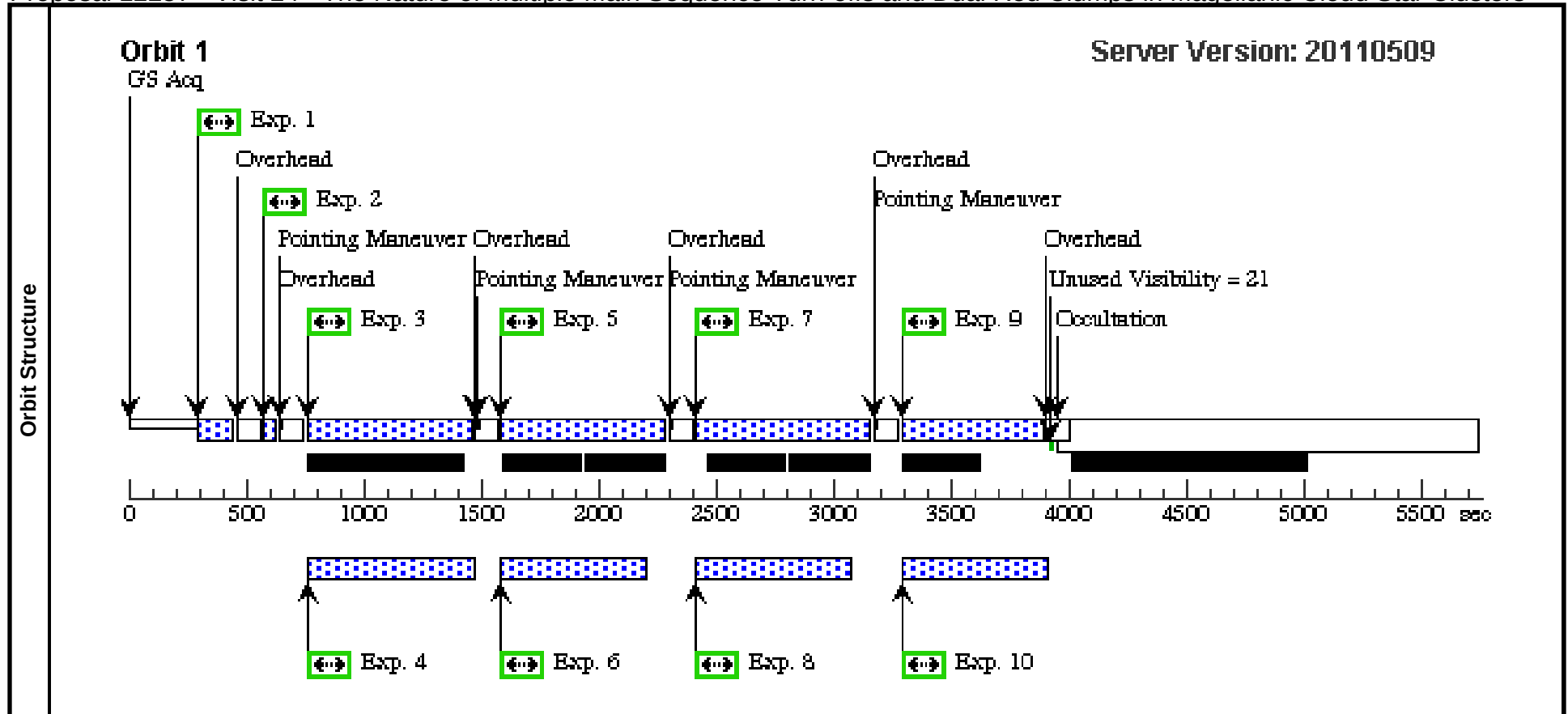
# Proposal 12257 - Visit 23 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         |                         |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------|-----------------------|-----------------------------------------|-----------------------------------------|-------------------------|
| Visit         | Proposal 12257, Visit 23, pi<br>Diagnostic Status: No Diagnostics<br>Scientific Instruments: WFC3/UVIS, ACS/WFC<br>Special Requirements: VISIBILITY INTERVAL 3950 S<br>Comments: Applies to NGC 1651 |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         |                         |
|               | Thu Jun 23 01:04:26 GMT 2011                                                                                                                                                                         |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         |                         |
| Fixed Targets | #                                                                                                                                                                                                    | Name         | Target Coordinates                                                                                                                                                                       | Targ. Coord. Corrections | Fluxes        | Miscellaneous         |                                         |                                         |                         |
|               | (8)                                                                                                                                                                                                  | NGC-1651     | RA: 04 37 33.2000 (69.3883333d)<br>Dec: -70 35 20.00 (-70.58889d)<br>Equinox: J2000<br>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. |                          | V=12.3        | Reference Frame: ICRS |                                         |                                         |                         |
| Exposures     | #                                                                                                                                                                                                    | Label        | Target                                                                                                                                                                                   | Config,Mode,Aperture     | Spectral Els. | Opt. Params.          | Special Reqs.                           | Groups                                  | Exp. Time/[Actual Dur.] |
|               | 1                                                                                                                                                                                                    | (8) NGC-1651 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                                                                                                                            | F475W                    | CR-SPLIT=NO   | POS TARG null,20      |                                         |                                         | 120 Secs                |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [==>]                   |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [1]                     |
|               | 2                                                                                                                                                                                                    | (8) NGC-1651 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                                                                                                                            | F814W                    | CR-SPLIT=NO   | POS TARG null,20      |                                         |                                         | 30 Secs                 |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [==>]                   |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [1]                     |
|               | 3                                                                                                                                                                                                    | (8) NGC-1651 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                                                                                                                            | F814W                    | CR-SPLIT=NO   | POS TARG -0.1,19.94   | Prime + Parallel Group 3-4 in Visit 23  |                                         | 700 Secs                |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [==>]                   |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [1]                     |
|               | 4                                                                                                                                                                                                    | ANY          | ACS/WFC, ACCUM, WFC                                                                                                                                                                      | F475W                    |               |                       |                                         | Prime + Parallel Group 3-4 in Visit 23  | 500 Secs                |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [==>]                   |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [1]                     |
|               | 5                                                                                                                                                                                                    | (8) NGC-1651 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                                                                                                                            | F814W                    | CR-SPLIT=NO   | POS TARG 1.46,22.86   | Prime + Parallel Group 5-6 in Visit 23  |                                         | 700 Secs                |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [==>]                   |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [1]                     |
|               | 6                                                                                                                                                                                                    | ANY          | ACS/WFC, ACCUM, WFC                                                                                                                                                                      | F475W                    |               |                       |                                         | Prime + Parallel Group 5-6 in Visit 23  | 500 Secs                |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [==>]                   |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [1]                     |
|               | 7                                                                                                                                                                                                    | (8) NGC-1651 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                                                                                                                            | F475W                    | CR-SPLIT=NO   | POS TARG 1.62,22.92   | Prime + Parallel Group 7-8 in Visit 23  |                                         | 720 Secs                |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [==>]                   |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [1]                     |
|               | 8                                                                                                                                                                                                    | ANY          | ACS/WFC, ACCUM, WFC                                                                                                                                                                      | F814W                    |               |                       |                                         | Prime + Parallel Group 7-8 in Visit 23  | 500 Secs                |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [==>]                   |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [1]                     |
|               | 9                                                                                                                                                                                                    | (8) NGC-1651 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                                                                                                                            | F475W                    | CR-SPLIT=NO   | POS TARG 0.1,20.16    | Prime + Parallel Group 9-10 in Visit 23 |                                         | 600 Secs                |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [==>]                   |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [1]                     |
|               | 10                                                                                                                                                                                                   | ANY          | ACS/WFC, ACCUM, WFC                                                                                                                                                                      | F814W                    |               |                       |                                         | Prime + Parallel Group 9-10 in Visit 23 | 500 Secs                |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [==>]                   |
|               |                                                                                                                                                                                                      |              |                                                                                                                                                                                          |                          |               |                       |                                         |                                         | [1]                     |



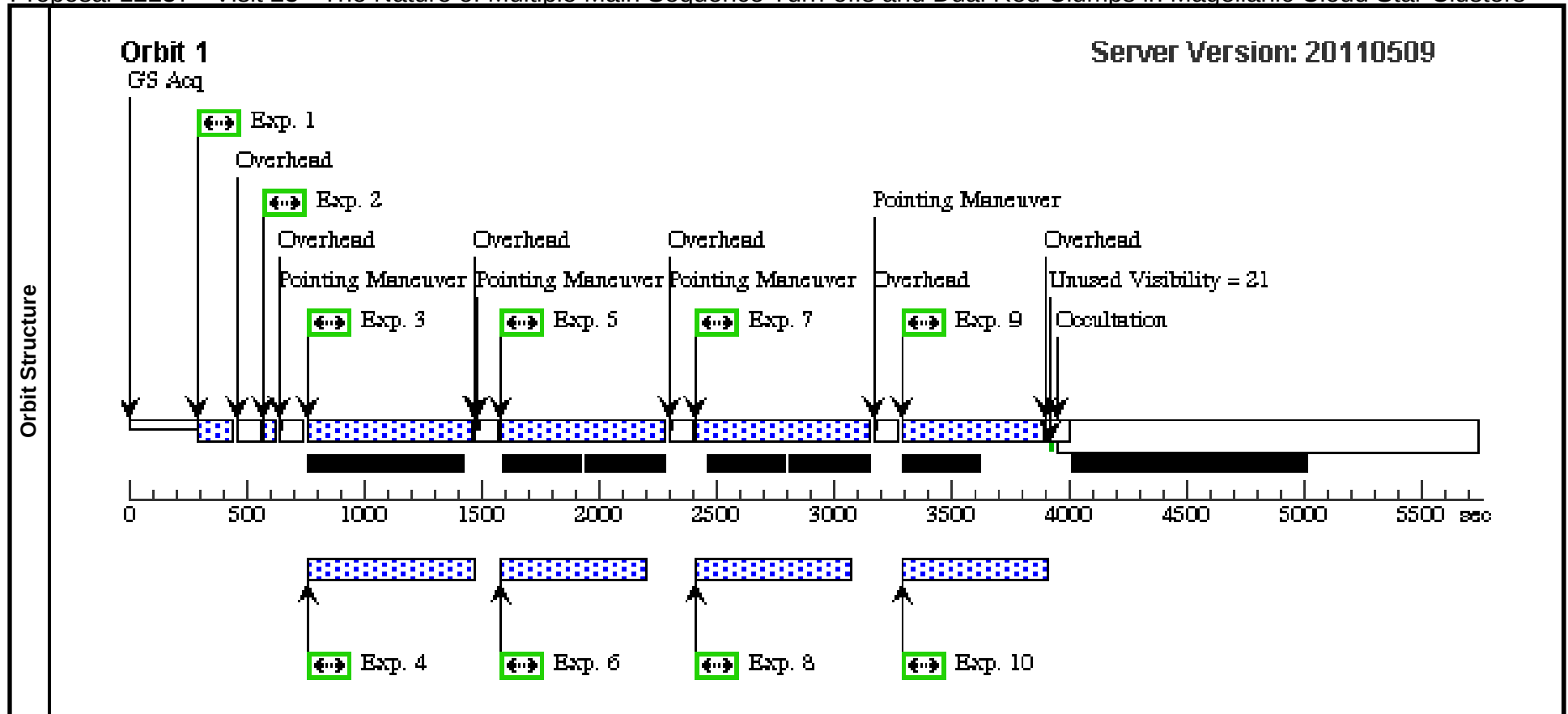
# Proposal 12257 - Visit 24 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|                                                                                                                                                                    |                                                                      |         |                                                                                     |                               |                          |                    |                                          |                                         |                         |     |                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------|-------------------------------|--------------------------|--------------------|------------------------------------------|-----------------------------------------|-------------------------|-----|------------------------------|
| Visit                                                                                                                                                              | Proposal 12257, Visit 24, pi                                         |         |                                                                                     |                               |                          |                    |                                          |                                         |                         |     | Thu Jun 23 01:04:27 GMT 2011 |
|                                                                                                                                                                    | Diagnostic Status: No Diagnostics                                    |         |                                                                                     |                               |                          |                    |                                          |                                         |                         |     |                              |
|                                                                                                                                                                    | Scientific Instruments: WFC3/UVIS, ACS/WFC                           |         |                                                                                     |                               |                          |                    |                                          |                                         |                         |     |                              |
|                                                                                                                                                                    | Special Requirements: ORIENT 21D TO 54 D; VISIBILITY INTERVAL 3950 S |         |                                                                                     |                               |                          |                    |                                          |                                         |                         |     |                              |
|                                                                                                                                                                    | Comments: Applies to H2                                              |         |                                                                                     |                               |                          |                    |                                          |                                         |                         |     |                              |
| Orient fixed to ensure cluster to the west of target is on ACS. Primary cluster in WFC3 field is compact enough that field subtraction will be achieved with WFC3. |                                                                      |         |                                                                                     |                               |                          |                    |                                          |                                         |                         |     |                              |
| Fixed Targets                                                                                                                                                      | #                                                                    | Name    | Target Coordinates                                                                  |                               | Targ. Coord. Corrections |                    | Fluxes                                   |                                         | Miscellaneous           |     |                              |
|                                                                                                                                                                    | (4)                                                                  | H-2     | RA: 05 17 48.0000 (79.4500000d)<br>Dec: -69 38 43.00 (-69.64528d)<br>Equinox: J2000 |                               |                          |                    | V=11.9                                   |                                         | Reference Frame: ICRS   |     |                              |
| Exposures                                                                                                                                                          | #                                                                    | Label   | Target                                                                              | Config,Mode,Aperture          | Spectral Els.            | Opt. Params.       | Special Reqs.                            | Groups                                  | Exp. Time/[Actual Dur.] |     | Orbit                        |
|                                                                                                                                                                    | 1                                                                    |         | (4) H-2                                                                             | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W                    | CR-SPLIT=NO        | POS TARG null,30                         |                                         | 120 Secs                |     |                              |
|                                                                                                                                                                    |                                                                      |         |                                                                                     |                               |                          |                    |                                          |                                         | [==>]                   |     | [1]                          |
|                                                                                                                                                                    | 2                                                                    |         | (4) H-2                                                                             | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W                    | CR-SPLIT=NO        | POS TARG null,30                         |                                         | 30 Secs                 |     |                              |
|                                                                                                                                                                    |                                                                      |         |                                                                                     |                               |                          |                    |                                          |                                         | [==>]                   |     | [1]                          |
|                                                                                                                                                                    | 3                                                                    |         | (4) H-2                                                                             | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W                    | CR-SPLIT=NO        | POS TARG -0.1,29.94                      | Prime + Parallel Gro up 3-4 in Visit 24 | 700 Secs                |     |                              |
|                                                                                                                                                                    |                                                                      |         |                                                                                     |                               |                          |                    |                                          |                                         | [==>]                   |     | [1]                          |
|                                                                                                                                                                    | 4                                                                    |         | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F475W                    |                    |                                          | Prime + Parallel Gro up 3-4 in Visit 24 | 500 Secs                |     |                              |
|                                                                                                                                                                    |                                                                      |         |                                                                                     |                               |                          |                    |                                          |                                         | [==>]                   |     | [1]                          |
|                                                                                                                                                                    | 5                                                                    |         | (4) H-2                                                                             | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W                    | CR-SPLIT=NO        | POS TARG 1.46,32.86                      | Prime + Parallel Gro up 5-6 in Visit 24 | 700 Secs                |     |                              |
|                                                                                                                                                                    |                                                                      |         |                                                                                     |                               |                          |                    |                                          |                                         | [==>]                   |     | [1]                          |
|                                                                                                                                                                    | 6                                                                    |         | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F475W                    |                    |                                          | Prime + Parallel Gro up 5-6 in Visit 24 | 500 Secs                |     |                              |
|                                                                                                                                                                    |                                                                      |         |                                                                                     |                               |                          |                    |                                          |                                         | [==>]                   |     | [1]                          |
|                                                                                                                                                                    | 7                                                                    |         | (4) H-2                                                                             | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W                    | CR-SPLIT=NO        | POS TARG 1.62,32.92                      | Prime + Parallel Gro up 7-8 in Visit 24 | 720 Secs                |     |                              |
|                                                                                                                                                                    |                                                                      |         |                                                                                     |                               |                          |                    |                                          | [==>]                                   |                         | [1] |                              |
| 8                                                                                                                                                                  |                                                                      | ANY     | ACS/WFC, ACCUM, WFC                                                                 | F814W                         |                          |                    | Prime + Parallel Gro up 7-8 in Visit 24  | 500 Secs                                |                         |     |                              |
|                                                                                                                                                                    |                                                                      |         |                                                                                     |                               |                          |                    |                                          | [==>]                                   |                         | [1] |                              |
| 9                                                                                                                                                                  |                                                                      | (4) H-2 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                       | F475W                         | CR-SPLIT=NO              | POS TARG 0.1,30.16 | Prime + Parallel Gro up 9-10 in Visit 24 | 600 Secs                                |                         |     |                              |
|                                                                                                                                                                    |                                                                      |         |                                                                                     |                               |                          |                    |                                          | [==>]                                   |                         | [1] |                              |
| 10                                                                                                                                                                 |                                                                      | ANY     | ACS/WFC, ACCUM, WFC                                                                 | F814W                         |                          |                    | Prime + Parallel Gro up 9-10 in Visit 24 | 500 Secs                                |                         |     |                              |
|                                                                                                                                                                    |                                                                      |         |                                                                                     |                               |                          |                    |                                          | [==>]                                   |                         | [1] |                              |



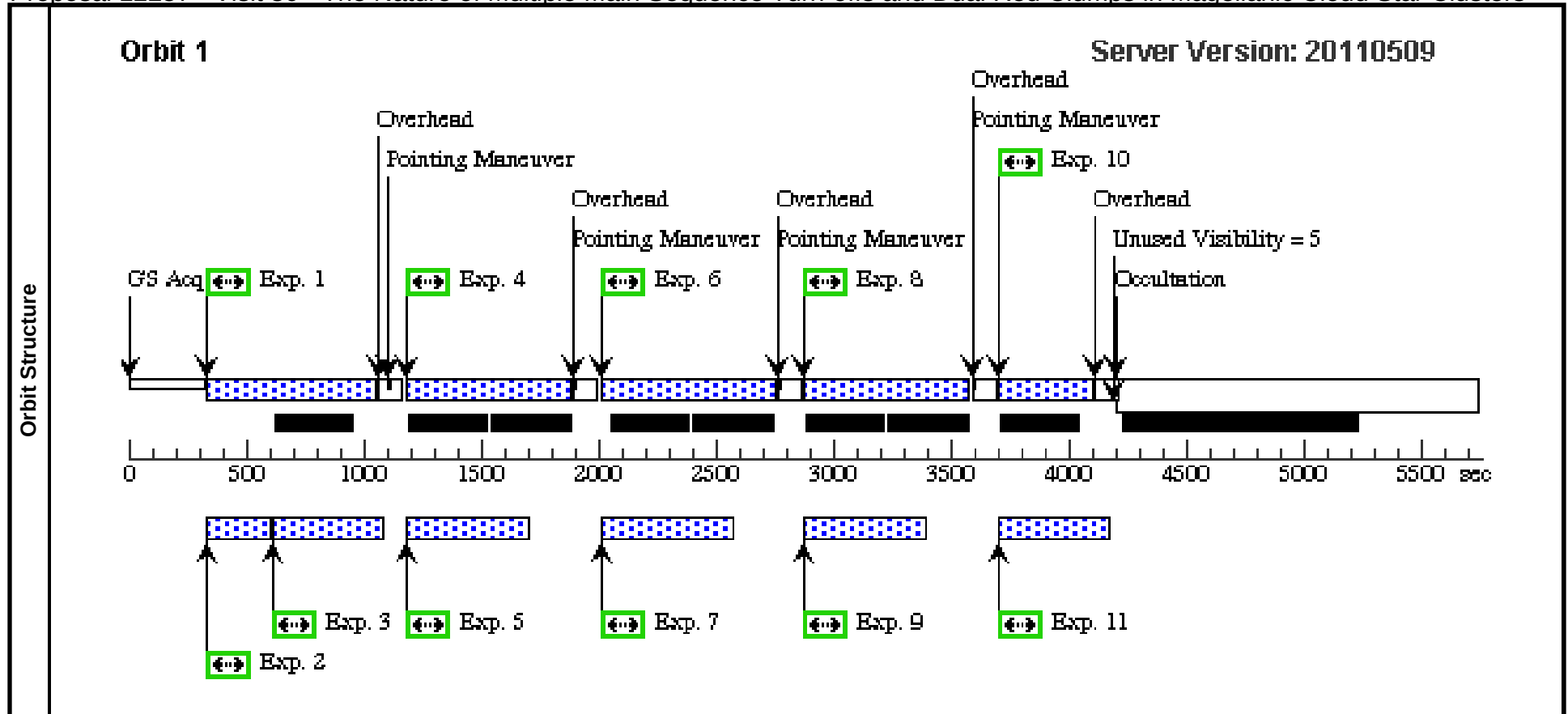
# Proposal 12257 - Visit 25 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|                               |                                                                                                   |              |                                                                                     |                               |               |                    |                                         |                                        |                              |       |
|-------------------------------|---------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------|-------------------------------|---------------|--------------------|-----------------------------------------|----------------------------------------|------------------------------|-------|
| Visit                         | Proposal 12257, Visit 25, pi                                                                      |              |                                                                                     |                               |               |                    |                                         |                                        | Thu Jun 23 01:04:27 GMT 2011 |       |
|                               | Diagnostic Status: No Diagnostics                                                                 |              |                                                                                     |                               |               |                    |                                         |                                        |                              |       |
|                               | Scientific Instruments: WFC3/UVIS, ACS/WFC                                                        |              |                                                                                     |                               |               |                    |                                         |                                        |                              |       |
|                               | Special Requirements: ORIENT 64D TO 223 D; ORIENT 270D TO 9 D; VISIBILITY INTERVAL 3950 S         |              |                                                                                     |                               |               |                    |                                         |                                        |                              |       |
| Comments: Applies to NGC 2213 |                                                                                                   |              |                                                                                     |                               |               |                    |                                         |                                        |                              |       |
| Fixed Targets                 | #                                                                                                 | Name         | Target Coordinates                                                                  | Targ. Coord. Corrections      |               | Fluxes             |                                         | Miscellaneous                          |                              |       |
|                               | (9)                                                                                               | NGC-2213     | RA: 06 10 41.9000 (92.6745833d)<br>Dec: -71 31 41.20 (-71.52811d)<br>Equinox: J2000 |                               |               | V=12.4             |                                         | Reference Frame: ICRS                  |                              |       |
|                               | 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/[Actual Dur.]      | Orbit |
|                               | 1                                                                                                 |              | (9) NGC-2213                                                                        | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO        | POS TARG null,20                        |                                        | 120 Secs                     |       |
|                               |                                                                                                   |              |                                                                                     |                               |               |                    |                                         |                                        | [==>]                        | [1]   |
|                               | 2                                                                                                 |              | (9) NGC-2213                                                                        | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO        | POS TARG null,20                        |                                        | 30 Secs                      |       |
|                               |                                                                                                   |              |                                                                                     |                               |               |                    |                                         |                                        | [==>]                        | [1]   |
|                               | 3                                                                                                 |              | (9) NGC-2213                                                                        | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO        | POS TARG -0.1,19.94                     | Prime + Parallel Group 3-4 in Visit 25 | 700 Secs                     |       |
|                               |                                                                                                   |              |                                                                                     |                               |               |                    |                                         |                                        | [==>]                        | [1]   |
|                               | 4                                                                                                 |              | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F475W         |                    |                                         | Prime + Parallel Group 3-4 in Visit 25 | 500 Secs                     |       |
|                               |                                                                                                   |              |                                                                                     |                               |               |                    |                                         |                                        | [==>]                        | [1]   |
|                               | 5                                                                                                 |              | (9) NGC-2213                                                                        | WFC3/UVIS, ACCUM, UVIS-CENTER | F814W         | CR-SPLIT=NO        | POS TARG 1.46,22.86                     | Prime + Parallel Group 5-6 in Visit 25 | 700 Secs                     |       |
|                               |                                                                                                   |              |                                                                                     |                               |               |                    |                                         |                                        | [==>]                        | [1]   |
|                               | 6                                                                                                 |              | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F475W         |                    |                                         | Prime + Parallel Group 5-6 in Visit 25 | 500 Secs                     |       |
|                               |                                                                                                   |              |                                                                                     |                               |               |                    |                                         |                                        | [==>]                        | [1]   |
|                               | 7                                                                                                 |              | (9) NGC-2213                                                                        | WFC3/UVIS, ACCUM, UVIS-CENTER | F475W         | CR-SPLIT=NO        | POS TARG 1.62,22.92                     | Prime + Parallel Group 7-8 in Visit 25 | 720 Secs                     |       |
|                               |                                                                                                   |              |                                                                                     |                               |               |                    |                                         | [==>]                                  | [1]                          |       |
| 8                             |                                                                                                   | ANY          | ACS/WFC, ACCUM, WFC                                                                 | F814W                         |               |                    | Prime + Parallel Group 7-8 in Visit 25  | 500 Secs                               |                              |       |
|                               |                                                                                                   |              |                                                                                     |                               |               |                    |                                         | [==>]                                  | [1]                          |       |
| 9                             |                                                                                                   | (9) NGC-2213 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                       | F475W                         | CR-SPLIT=NO   | POS TARG 0.1,20.16 | Prime + Parallel Group 9-10 in Visit 25 | 600 Secs                               |                              |       |
|                               |                                                                                                   |              |                                                                                     |                               |               |                    |                                         | [==>]                                  | [1]                          |       |
| 10                            |                                                                                                   | ANY          | ACS/WFC, ACCUM, WFC                                                                 | F814W                         |               |                    | Prime + Parallel Group 9-10 in Visit 25 | 500 Secs                               |                              |       |
|                               |                                                                                                   |              |                                                                                     |                               |               |                    |                                         | [==>]                                  | [1]                          |       |



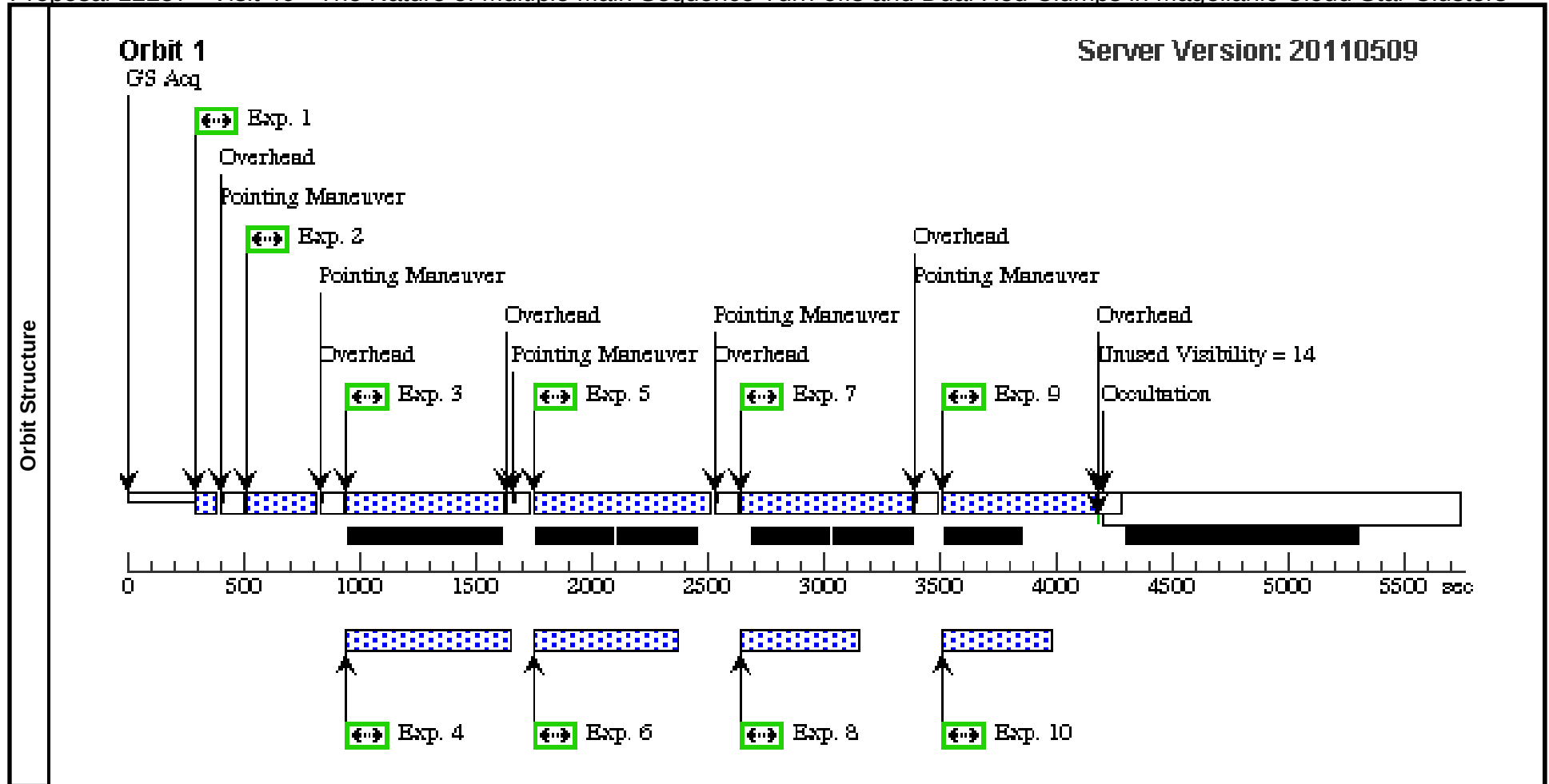
# Proposal 12257 - Visit 30 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|                              |                                                                                                                             |              |                                                                                     |                               |               |                        |                                              |                                            |                              |       |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------|-------------------------------|---------------|------------------------|----------------------------------------------|--------------------------------------------|------------------------------|-------|
| Visit                        | Proposal 12257, Visit 30, pi                                                                                                |              |                                                                                     |                               |               |                        |                                              |                                            | Thu Jun 23 01:04:27 GMT 2011 |       |
|                              | Diagnostic Status: No Diagnostics                                                                                           |              |                                                                                     |                               |               |                        |                                              |                                            |                              |       |
|                              | Scientific Instruments: WFC3/UVIS, ACS/WFC                                                                                  |              |                                                                                     |                               |               |                        |                                              |                                            |                              |       |
|                              | Special Requirements: ORIENT 0.0D TO 67.0 D; ORIENT 105.0D TO 253.0 D; ORIENT 290.0D TO 359.9 D; VISIBILITY INTERVAL 4200 S |              |                                                                                     |                               |               |                        |                                              |                                            |                              |       |
| Comments: Applies to NGC 419 |                                                                                                                             |              |                                                                                     |                               |               |                        |                                              |                                            |                              |       |
| Fixed Targets                | #                                                                                                                           | Name         | Target Coordinates                                                                  | Targ. Coord. Corrections      |               | Fluxes                 |                                              | Miscellaneous                              |                              |       |
|                              | (10)                                                                                                                        | NGC-419      | RA: 01 08 22.6000 (17.0941667d)<br>Dec: -72 52 45.00 (-72.87917d)<br>Equinox: J2000 |                               |               | V=10.6                 |                                              | Reference Frame: ICRS                      |                              |       |
|                              | Comments: Coordinates were selected so as to yield good overlap with existing ACS images.                                   |              |                                                                                     |                               |               |                        |                                              |                                            |                              |       |
| Exposures                    | #                                                                                                                           | Label        | Target                                                                              | Config,Mode,Aperture          | Spectral Els. | Opt. Params.           | Special Reqs.                                | Groups                                     | Exp. Time/[Actual Dur.]      | Orbit |
|                              | 1                                                                                                                           |              | (10) NGC-419                                                                        | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO            |                                              | Prime + Parallel Gro<br>up 1-3 in Visit 30 | 690 Secs                     |       |
|                              |                                                                                                                             |              |                                                                                     |                               |               |                        |                                              | [==>]                                      |                              | [1]   |
|                              | 2                                                                                                                           |              | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F555W         |                        |                                              | Prime + Parallel Gro<br>up 1-3 in Visit 30 | 60 Secs                      |       |
|                              |                                                                                                                             |              |                                                                                     |                               |               |                        |                                              | [==>]                                      |                              | [1]   |
|                              | 3                                                                                                                           |              | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F555W         |                        |                                              | Prime + Parallel Gro<br>up 1-3 in Visit 30 | 350 Secs                     |       |
|                              |                                                                                                                             |              |                                                                                     |                               |               |                        |                                              | [==>]                                      |                              | [1]   |
|                              | 4                                                                                                                           |              | (10) NGC-419                                                                        | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO            | POS TARG 1.46,2.8<br>6                       | Prime + Parallel Gro<br>up 4-5 in Visit 30 | 700 Secs                     |       |
|                              |                                                                                                                             |              |                                                                                     |                               |               |                        |                                              | [==>]                                      |                              | [1]   |
|                              | 5                                                                                                                           |              | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F555W         |                        |                                              | Prime + Parallel Gro<br>up 4-5 in Visit 30 | 400 Secs                     |       |
|                              |                                                                                                                             |              |                                                                                     |                               |               |                        |                                              | [==>]                                      |                              | [1]   |
|                              | 6                                                                                                                           |              | (10) NGC-419                                                                        | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO            | POS TARG 1.62,2.9<br>2                       | Prime + Parallel Gro<br>up 6-7 in Visit 30 | 740 Secs                     |       |
|                              |                                                                                                                             |              |                                                                                     |                               |               |                        |                                              | [==>]                                      |                              | [1]   |
|                              | 7                                                                                                                           |              | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F814W         |                        |                                              | Prime + Parallel Gro<br>up 6-7 in Visit 30 | 400 Secs                     |       |
|                              |                                                                                                                             |              |                                                                                     |                               |               |                        | [==>]                                        |                                            | [1]                          |       |
| 8                            |                                                                                                                             | (10) NGC-419 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                       | F336W                         | CR-SPLIT=NO   | POS TARG 1.56,3.0<br>2 | Prime + Parallel Gro<br>up 8-9 in Visit 30   | 700 Secs                                   |                              |       |
|                              |                                                                                                                             |              |                                                                                     |                               |               |                        | [==>]                                        |                                            | [1]                          |       |
| 9                            |                                                                                                                             | ANY          | ACS/WFC, ACCUM, WFC                                                                 | F814W                         |               |                        | Prime + Parallel Gro<br>up 8-9 in Visit 30   | 400 Secs                                   |                              |       |
|                              |                                                                                                                             |              |                                                                                     |                               |               |                        | [==>]                                        |                                            | [1]                          |       |
| 10                           |                                                                                                                             | (10) NGC-419 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                       | F336W                         | CR-SPLIT=NO   | POS TARG -0.06,0.<br>1 | Prime + Parallel Gro<br>up 10-11 in Visit 30 | 400 Secs                                   |                              |       |
|                              |                                                                                                                             |              |                                                                                     |                               |               |                        | [==>]                                        |                                            | [1]                          |       |
| 11                           |                                                                                                                             | ANY          | ACS/WFC, ACCUM, WFC                                                                 | F814W                         |               |                        | Prime + Parallel Gro<br>up 10-11 in Visit 30 | 350 Secs                                   |                              |       |
|                              |                                                                                                                             |              |                                                                                     |                               |               |                        | [==>]                                        |                                            | [1]                          |       |



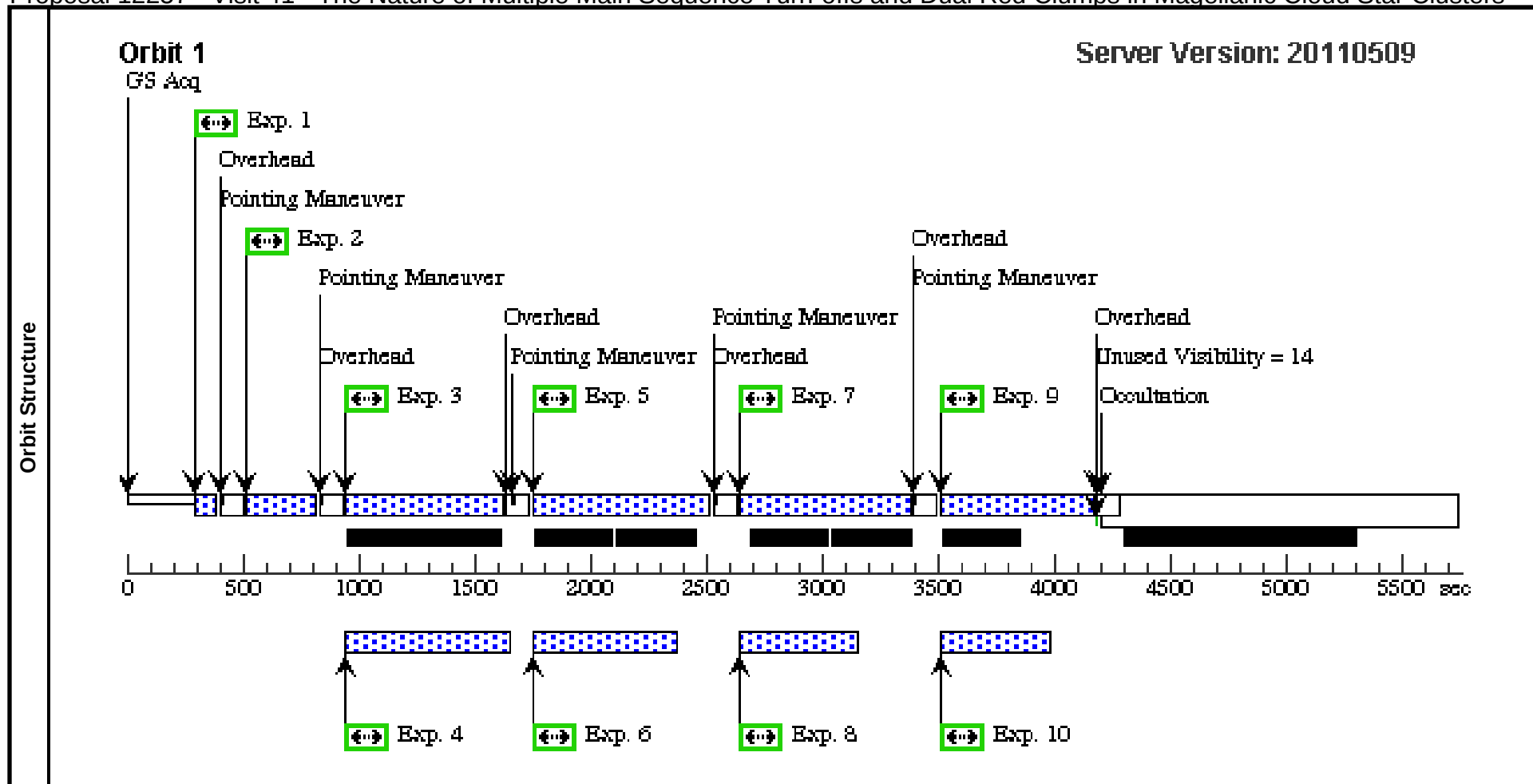
# Proposal 12257 - Visit 40 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|               |                                                                                                                                                                                                                            |          |                                                                                     |                               |                          |              |                       |                                          |                              |       |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------|-------------------------------|--------------------------|--------------|-----------------------|------------------------------------------|------------------------------|-------|
| Visit         | Proposal 12257, Visit 40, pi                                                                                                                                                                                               |          |                                                                                     |                               |                          |              |                       |                                          | Thu Jun 23 01:04:28 GMT 2011 |       |
|               | Diagnostic Status: No Diagnostics                                                                                                                                                                                          |          |                                                                                     |                               |                          |              |                       |                                          |                              |       |
|               | Scientific Instruments: WFC3/UVIS, ACS/WFC                                                                                                                                                                                 |          |                                                                                     |                               |                          |              |                       |                                          |                              |       |
|               | Special Requirements: ORIENT 7.D TO 20.0 D; ORIENT 26.D TO 64.0 D; ORIENT 70.0D TO 95.5 D; ORIENT 102.D TO 114.5 D; ORIENT 122.D TO 130.0 D; ORIENT 169.0D TO 316.0 D; ORIENT 352.D TO 359.9 D; VISIBILITY INTERVAL 4200 S |          |                                                                                     |                               |                          |              |                       |                                          |                              |       |
|               | Comments: Applies to NGC 1978                                                                                                                                                                                              |          |                                                                                     |                               |                          |              |                       |                                          |                              |       |
| Fixed Targets | #                                                                                                                                                                                                                          | Name     | Target Coordinates                                                                  |                               | Targ. Coord. Corrections |              | Fluxes                |                                          | Miscellaneous                |       |
|               | (11)                                                                                                                                                                                                                       | NGC-1978 | RA: 05 28 49.5000 (82.2062500d)<br>Dec: -66 14 18.00 (-66.23833d)<br>Equinox: J2000 |                               |                          |              | V=10.7                |                                          | Reference Frame: ICRS        |       |
|               | Comments: Coordinates were selected so as to yield good overlap with existing ACS images.                                                                                                                                  |          |                                                                                     |                               |                          |              |                       |                                          |                              |       |
| Exposures     | #                                                                                                                                                                                                                          | Label    | Target                                                                              | Config,Mode,Aperture          | Spectral Els.            | Opt. Params. | Special Reqs.         | Groups                                   | Exp. Time/[Actual Dur.]      | Orbit |
|               | 1                                                                                                                                                                                                                          |          | (11) NGC-1978                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F555W                    | CR-SPLIT=NO  |                       |                                          | 60 Secs<br>[==>]             | [1]   |
|               | 2                                                                                                                                                                                                                          |          | (11) NGC-1978                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F555W                    | CR-SPLIT=NO  | POS TARG -0.100,-0.06 |                                          | 300 Secs<br>[==>]            | [1]   |
|               | 3                                                                                                                                                                                                                          |          | (11) NGC-1978                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F555W                    | CR-SPLIT=NO  | POS TARG 1.62,2.9 2   | Prime + Parallel Gro up 3-4 in Visit 40  | 680 Secs<br>[==>]            | [1]   |
|               | 4                                                                                                                                                                                                                          |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F555W                    |              |                       | Prime + Parallel Gro up 3-4 in Visit 40  | 500 Secs<br>[==>]            | [1]   |
|               | 5                                                                                                                                                                                                                          |          | (11) NGC-1978                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W                    | CR-SPLIT=NO  | POS TARG 1.46,2.8 6   | Prime + Parallel Gro up 5-6 in Visit 40  | 740 Secs<br>[==>]            | [1]   |
|               | 6                                                                                                                                                                                                                          |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F555W                    |              |                       | Prime + Parallel Gro up 5-6 in Visit 40  | 500 Secs<br>[==>]            | [1]   |
|               | 7                                                                                                                                                                                                                          |          | (11) NGC-1978                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W                    | CR-SPLIT=NO  |                       | Prime + Parallel Gro up 7-8 in Visit 40  | 740 Secs<br>[==>]            | [1]   |
|               | 8                                                                                                                                                                                                                          |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F814W                    |              |                       | Prime + Parallel Gro up 7-8 in Visit 40  | 350 Secs<br>[==>]            | [1]   |
|               | 9                                                                                                                                                                                                                          |          | (11) NGC-1978                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W                    | CR-SPLIT=NO  | POS TARG 0.1,0.16     | Prime + Parallel Gro up 9-10 in Visit 40 | 660 Secs<br>[==>]            | [1]   |
|               | 10                                                                                                                                                                                                                         |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F814W                    |              |                       | Prime + Parallel Gro up 9-10 in Visit 40 | 350 Secs<br>[==>]            | [1]   |



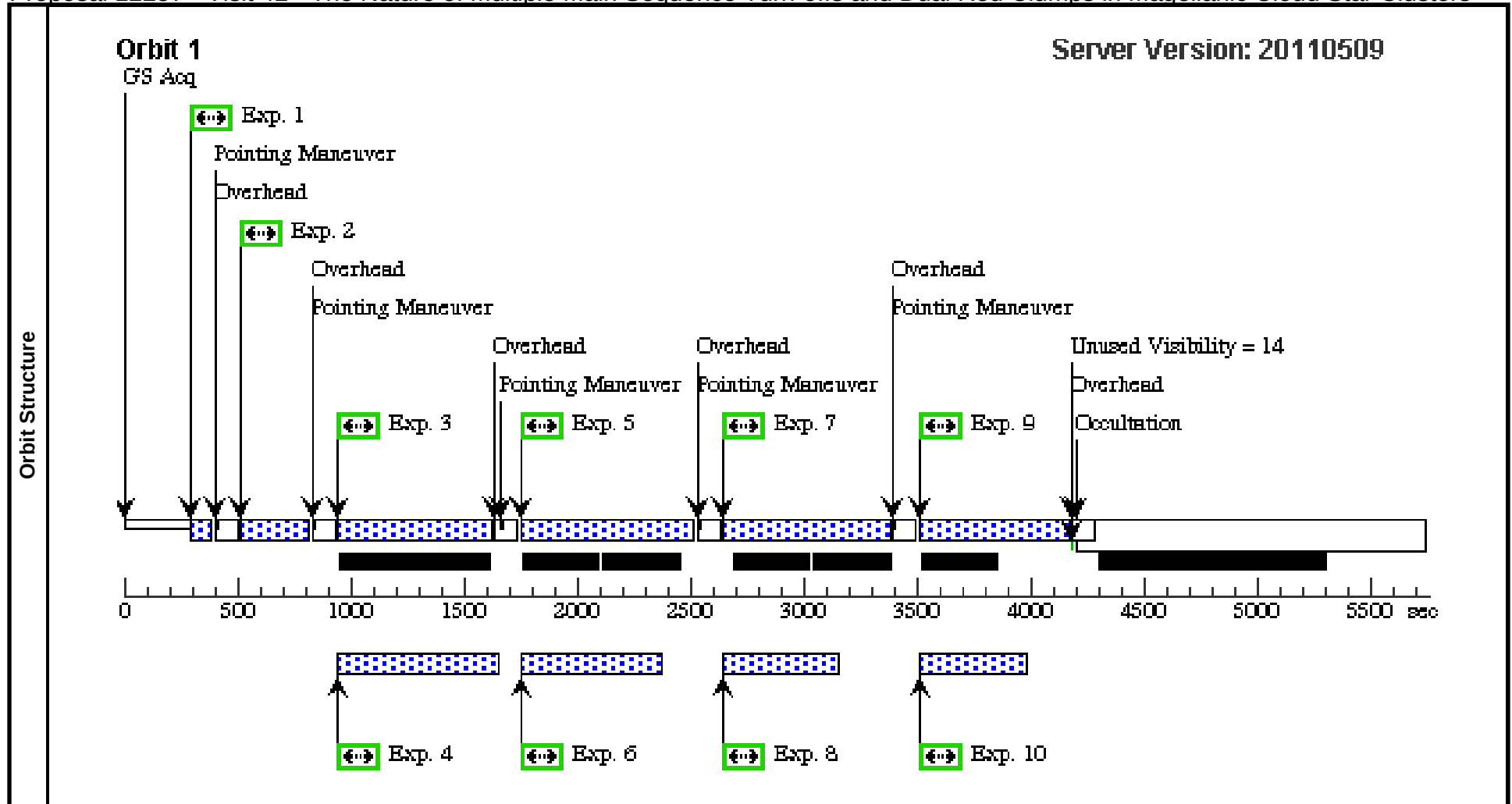
# Proposal 12257 - Visit 41 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|               |                                                                                                                                                   |          |                                                                                     |                               |               |              |                      |                                         |                              |         |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------|-------------------------------|---------------|--------------|----------------------|-----------------------------------------|------------------------------|---------|
| Visit         | Proposal 12257, Visit 41, pi                                                                                                                      |          |                                                                                     |                               |               |              |                      |                                         | Thu Jun 23 01:04:28 GMT 2011 |         |
|               | Diagnostic Status: No Diagnostics                                                                                                                 |          |                                                                                     |                               |               |              |                      |                                         |                              |         |
|               | Scientific Instruments: WFC3/UVIS, ACS/WFC                                                                                                        |          |                                                                                     |                               |               |              |                      |                                         |                              |         |
|               | Special Requirements: ORIENT 7.D TO 130. D; ORIENT 187.D TO 274.0 D; ORIENT 297.D TO 304. D; ORIENT 350.0D TO 359.9 D; VISIBILITY INTERVAL 4200 S |          |                                                                                     |                               |               |              |                      |                                         |                              |         |
|               | Comments: Applies to NGC 1852                                                                                                                     |          |                                                                                     |                               |               |              |                      |                                         |                              |         |
| Fixed Targets | #                                                                                                                                                 | Name     | Target Coordinates                                                                  | Targ. Coord. Corrections      |               | Fluxes       |                      | Miscellaneous                           |                              |         |
|               | (17)                                                                                                                                              | NGC-1852 | RA: 05 09 28.4000 (77.3683333d)<br>Dec: -67 46 55.00 (-67.78194d)<br>Equinox: J2000 |                               |               | V=12.0       |                      | Reference Frame: ICRS                   |                              |         |
|               | Comments: Coordinates were selected so as to yield good overlap with existing ACS images.                                                         |          |                                                                                     |                               |               |              |                      |                                         |                              |         |
| Exposures     | #                                                                                                                                                 | Label    | Target                                                                              | Config,Mode,Aperture          | Spectral Els. | Opt. Params. | Special Reqs.        | Groups                                  | Exp. Time/[Actual Dur.]      | Orbit   |
|               | 1                                                                                                                                                 |          | (17) NGC-1852                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F555W         | CR-SPLIT=NO  |                      |                                         | 60 Secs<br>[==>]             | <br>[1] |
|               | 2                                                                                                                                                 |          | (17) NGC-1852                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F555W         | CR-SPLIT=NO  | POS TARG -0.10,-0.06 |                                         | 300 Secs<br>[==>]            | <br>[1] |
|               | 3                                                                                                                                                 |          | (17) NGC-1852                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F555W         | CR-SPLIT=NO  | POS TARG 1.62,2.92   | Prime + Parallel Group 3-4 in Visit 41  | 680 Secs<br>[==>]            | <br>[1] |
|               | 4                                                                                                                                                 |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F555W         |              |                      | Prime + Parallel Group 3-4 in Visit 41  | 500 Secs<br>[==>]            | <br>[1] |
|               | 5                                                                                                                                                 |          | (17) NGC-1852                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  | POS TARG 1.46,2.86   | Prime + Parallel Group 5-6 in Visit 41  | 740 Secs<br>[==>]            | <br>[1] |
|               | 6                                                                                                                                                 |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F555W         |              |                      | Prime + Parallel Group 5-6 in Visit 41  | 500 Secs<br>[==>]            | <br>[1] |
|               | 7                                                                                                                                                 |          | (17) NGC-1852                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  |                      | Prime + Parallel Group 7-8 in Visit 41  | 740 Secs<br>[==>]            | <br>[1] |
|               | 8                                                                                                                                                 |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F814W         |              |                      | Prime + Parallel Group 7-8 in Visit 41  | 350 Secs<br>[==>]            | <br>[1] |
|               | 9                                                                                                                                                 |          | (17) NGC-1852                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  | POS TARG 0.1,0.16    | Prime + Parallel Group 9-10 in Visit 41 | 660 Secs<br>[==>]            | <br>[1] |
|               | 10                                                                                                                                                |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F814W         |              |                      | Prime + Parallel Group 9-10 in Visit 41 | 350 Secs<br>[==>]            | <br>[1] |



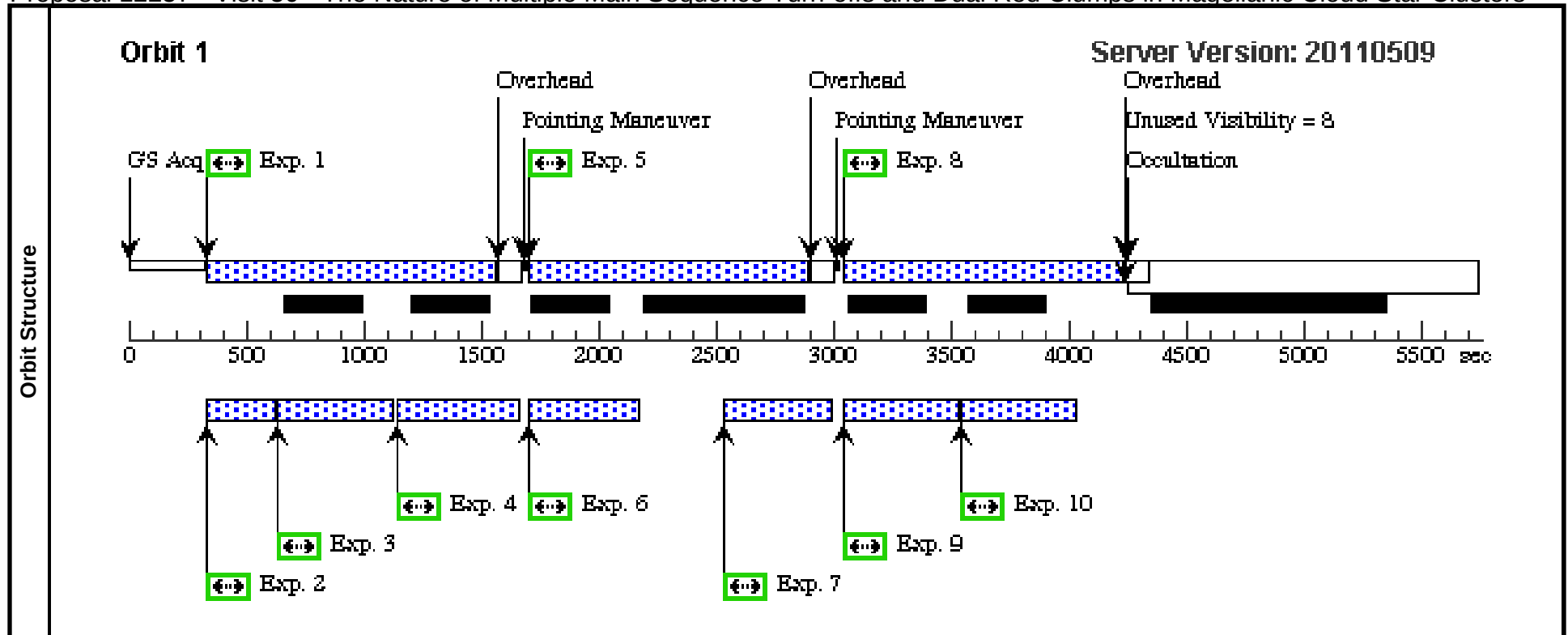
# Proposal 12257 - Visit 42 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|               |                                                                                                                                                      |               |                                                                                     |                               |               |                   |                                         |                                        |                         |     |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|-------------------------------|---------------|-------------------|-----------------------------------------|----------------------------------------|-------------------------|-----|------------------------------|
| Visit         | Proposal 12257, Visit 42, pi                                                                                                                         |               |                                                                                     |                               |               |                   |                                         |                                        |                         |     | Thu Jun 23 01:04:28 GMT 2011 |
|               | Diagnostic Status: No Diagnostics                                                                                                                    |               |                                                                                     |                               |               |                   |                                         |                                        |                         |     |                              |
|               | Scientific Instruments: WFC3/UVIS, ACS/WFC                                                                                                           |               |                                                                                     |                               |               |                   |                                         |                                        |                         |     |                              |
|               | Special Requirements: ORIENT 0.0D TO 103.0 D; ORIENT 167.0D TO 282. D; ORIENT 290.D TO 300.0 D; ORIENT 348.0D TO 359.9 D; VISIBILITY INTERVAL 4200 S |               |                                                                                     |                               |               |                   |                                         |                                        |                         |     |                              |
|               | Comments: Applies to NGC 2154                                                                                                                        |               |                                                                                     |                               |               |                   |                                         |                                        |                         |     |                              |
| Fixed Targets | #                                                                                                                                                    | Name          | Target Coordinates                                                                  | Targ. Coord. Corrections      |               |                   | Fluxes                                  |                                        | Miscellaneous           |     |                              |
|               | (16)                                                                                                                                                 | NGC-2154      | RA: 05 57 42.8000 (89.4283333d)<br>Dec: -67 15 48.00 (-67.26333d)<br>Equinox: J2000 |                               |               |                   | V=11.8                                  |                                        | Reference Frame: ICRS   |     |                              |
|               | Comments: Coordinates were selected so as to yield good overlap with existing ACS images.                                                            |               |                                                                                     |                               |               |                   |                                         |                                        |                         |     |                              |
| Exposures     | #                                                                                                                                                    | Label         | Target                                                                              | Config,Mode,Aperture          | Spectral Els. | Opt. Params.      | Special Reqs.                           | Groups                                 | Exp. Time/[Actual Dur.] |     | Orbit                        |
|               | 1                                                                                                                                                    |               | (16) NGC-2154                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F555W         | CR-SPLIT=NO       |                                         |                                        | 60 Secs                 |     |                              |
|               |                                                                                                                                                      |               |                                                                                     |                               |               |                   |                                         |                                        | [==>]                   |     | [1]                          |
|               | 2                                                                                                                                                    |               | (16) NGC-2154                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F555W         | CR-SPLIT=NO       | POS TARG -0.10,-0.06                    |                                        | 300 Secs                |     |                              |
|               |                                                                                                                                                      |               |                                                                                     |                               |               |                   |                                         |                                        | [==>]                   |     | [1]                          |
|               | 3                                                                                                                                                    |               | (16) NGC-2154                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F555W         | CR-SPLIT=NO       | POS TARG 1.62,2.92                      | Prime + Parallel Group 3-4 in Visit 42 | 680 Secs                |     |                              |
|               |                                                                                                                                                      |               |                                                                                     |                               |               |                   |                                         |                                        | [==>]                   |     | [1]                          |
|               | 4                                                                                                                                                    |               | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F555W         |                   |                                         | Prime + Parallel Group 3-4 in Visit 42 | 500 Secs                |     |                              |
|               |                                                                                                                                                      |               |                                                                                     |                               |               |                   |                                         |                                        | [==>]                   |     | [1]                          |
|               | 5                                                                                                                                                    |               | (16) NGC-2154                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO       | POS TARG 1.46,2.86                      | Prime + Parallel Group 5-6 in Visit 42 | 740 Secs                |     |                              |
|               |                                                                                                                                                      |               |                                                                                     |                               |               |                   |                                         |                                        | [==>]                   |     | [1]                          |
|               | 6                                                                                                                                                    |               | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F555W         |                   |                                         | Prime + Parallel Group 5-6 in Visit 42 | 500 Secs                |     |                              |
|               |                                                                                                                                                      |               |                                                                                     |                               |               |                   |                                         |                                        | [==>]                   |     | [1]                          |
|               | 7                                                                                                                                                    |               | (16) NGC-2154                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO       |                                         | Prime + Parallel Group 7-8 in Visit 42 | 740 Secs                |     |                              |
|               |                                                                                                                                                      |               |                                                                                     |                               |               |                   |                                         | [==>]                                  |                         | [1] |                              |
| 8             |                                                                                                                                                      | ANY           | ACS/WFC, ACCUM, WFC                                                                 | F814W                         |               |                   | Prime + Parallel Group 7-8 in Visit 42  | 350 Secs                               |                         |     |                              |
|               |                                                                                                                                                      |               |                                                                                     |                               |               |                   |                                         | [==>]                                  |                         | [1] |                              |
| 9             |                                                                                                                                                      | (16) NGC-2154 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                       | F336W                         | CR-SPLIT=NO   | POS TARG 0.1,0.16 | Prime + Parallel Group 9-10 in Visit 42 | 660 Secs                               |                         |     |                              |
|               |                                                                                                                                                      |               |                                                                                     |                               |               |                   |                                         | [==>]                                  |                         | [1] |                              |
| 10            |                                                                                                                                                      | ANY           | ACS/WFC, ACCUM, WFC                                                                 | F814W                         |               |                   | Prime + Parallel Group 9-10 in Visit 42 | 350 Secs                               |                         |     |                              |
|               |                                                                                                                                                      |               |                                                                                     |                               |               |                   |                                         | [==>]                                  |                         | [1] |                              |



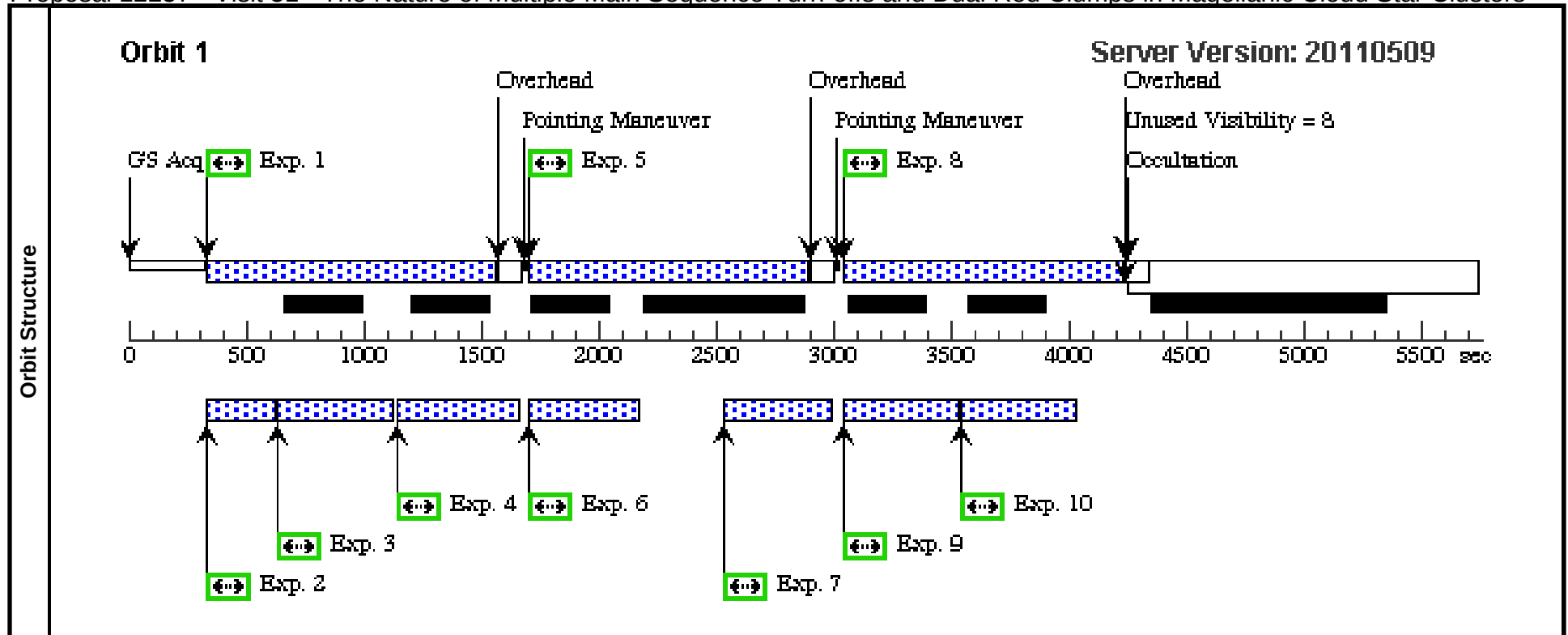
# Proposal 12257 - Visit 50 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|                               |                                                                                                                            |               |                                                                                    |                               |               |                     |                                          |                                         |                              |       |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------|-------------------------------|---------------|---------------------|------------------------------------------|-----------------------------------------|------------------------------|-------|
| Visit                         | Proposal 12257, Visit 50, pi                                                                                               |               |                                                                                    |                               |               |                     |                                          |                                         | Thu Jun 23 01:04:29 GMT 2011 |       |
|                               | Diagnostic Status: No Diagnostics                                                                                          |               |                                                                                    |                               |               |                     |                                          |                                         |                              |       |
|                               | Scientific Instruments: WFC3/UVIS, ACS/WFC                                                                                 |               |                                                                                    |                               |               |                     |                                          |                                         |                              |       |
|                               | Special Requirements: ORIENT 0.0D TO 40. D; ORIENT 103.0D TO 222.0 D; ORIENT 283.0D TO 359.9 D; VISIBILITY INTERVAL 4250 S |               |                                                                                    |                               |               |                     |                                          |                                         |                              |       |
| Comments: Applies to NGC 1783 |                                                                                                                            |               |                                                                                    |                               |               |                     |                                          |                                         |                              |       |
| Fixed Targets                 | #                                                                                                                          | Name          | Target Coordinates                                                                 | Targ. Coord. Corrections      |               | Fluxes              |                                          | Miscellaneous                           |                              |       |
|                               | (12)                                                                                                                       | NGC-1783      | RA: 04 59 5.3700 (74.7723750d)<br>Dec: -65 59 41.50 (-65.99486d)<br>Equinox: J2000 |                               |               | V=10.9              |                                          | Reference Frame: ICRS                   |                              |       |
|                               | Comments: Coordinates were selected so as to yield good overlap with existing ACS images.                                  |               |                                                                                    |                               |               |                     |                                          |                                         |                              |       |
|                               |                                                                                                                            |               |                                                                                    |                               |               |                     |                                          |                                         |                              |       |
| Exposures                     | #                                                                                                                          | Label         | Target                                                                             | Config,Mode,Aperture          | Spectral Els. | Opt. Params.        | Special Reqs.                            | Groups                                  | Exp. Time/[Actual Dur.]      | Orbit |
|                               | 1                                                                                                                          |               | (12) NGC-1783                                                                      | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO         |                                          | Prime + Parallel Gro up 1-4 in Visit 50 | 1200 Secs                    |       |
|                               |                                                                                                                            |               |                                                                                    |                               |               |                     |                                          |                                         | [==>]                        | [1]   |
|                               | 2                                                                                                                          |               | ANY                                                                                | ACS/WFC, ACCUM, WFC           | F814W         |                     |                                          | Prime + Parallel Gro up 1-4 in Visit 50 | 80 Secs                      |       |
|                               |                                                                                                                            |               |                                                                                    |                               |               |                     |                                          |                                         | [==>]                        | [1]   |
|                               | 3                                                                                                                          |               | ANY                                                                                | ACS/WFC, ACCUM, WFC           | F435W         |                     |                                          | Prime + Parallel Gro up 1-4 in Visit 50 | 350 Secs                     |       |
|                               |                                                                                                                            |               |                                                                                    |                               |               |                     |                                          |                                         | [==>]                        | [1]   |
|                               | 4                                                                                                                          |               | ANY                                                                                | ACS/WFC, ACCUM, WFC           | F555W         |                     |                                          | Prime + Parallel Gro up 1-4 in Visit 50 | 350 Secs                     |       |
|                               |                                                                                                                            |               |                                                                                    |                               |               |                     |                                          |                                         | [==>]                        | [1]   |
|                               | 5                                                                                                                          |               | (12) NGC-1783                                                                      | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO         | POS TARG 0.16,0.0 6                      | Prime + Parallel Gro up 5-7 in Visit 50 | 1190 Secs                    |       |
|                               |                                                                                                                            |               |                                                                                    |                               |               |                     |                                          |                                         | [==>]                        | [1]   |
|                               | 6                                                                                                                          |               | ANY                                                                                | ACS/WFC, ACCUM, WFC           | F555W         |                     |                                          | Prime + Parallel Gro up 5-7 in Visit 50 | 350 Secs                     |       |
|                               |                                                                                                                            |               |                                                                                    |                               |               |                     |                                          |                                         | [==>]                        | [1]   |
|                               | 7                                                                                                                          |               | ANY                                                                                | ACS/WFC, ACCUM, WFC           | F814W         |                     |                                          | Prime + Parallel Gro up 5-7 in Visit 50 | 300 Secs                     |       |
|                               |                                                                                                                            |               |                                                                                    |                               |               |                     |                                          | [==>]                                   | [1]                          |       |
| 8                             |                                                                                                                            | (12) NGC-1783 | WFC3/UVIS, ACCUM, UVIS-CENTER                                                      | F336W                         | CR-SPLIT=NO   | POS TARG 1.56,3.0 2 | Prime + Parallel Gro up 8-10 in Visit 50 | 1190 Secs                               |                              |       |
|                               |                                                                                                                            |               |                                                                                    |                               |               |                     |                                          | [==>]                                   | [1]                          |       |
| 9                             |                                                                                                                            | ANY           | ACS/WFC, ACCUM, WFC                                                                | F435W                         |               |                     | Prime + Parallel Gro up 8-10 in Visit 50 | 350 Secs                                |                              |       |
|                               |                                                                                                                            |               |                                                                                    |                               |               |                     |                                          | [==>]                                   | [1]                          |       |
| 10                            |                                                                                                                            | ANY           | ACS/WFC, ACCUM, WFC                                                                | F814W                         |               |                     | Prime + Parallel Gro up 8-10 in Visit 50 | 340 Secs                                |                              |       |
|                               |                                                                                                                            |               |                                                                                    |                               |               |                     |                                          | [==>]                                   | [1]                          |       |



# Proposal 12257 - Visit 51 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|               |                                                                                                                                                                                                        |          |                                                                                     |                               |               |              |                     |                                          |                              |         |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------|-------------------------------|---------------|--------------|---------------------|------------------------------------------|------------------------------|---------|
| Visit         | Proposal 12257, Visit 51, pi                                                                                                                                                                           |          |                                                                                     |                               |               |              |                     |                                          | Thu Jun 23 01:04:29 GMT 2011 |         |
|               | Diagnostic Status: No Diagnostics                                                                                                                                                                      |          |                                                                                     |                               |               |              |                     |                                          |                              |         |
|               | Scientific Instruments: WFC3/UVIS, ACS/WFC                                                                                                                                                             |          |                                                                                     |                               |               |              |                     |                                          |                              |         |
|               | Special Requirements: ORIENT 6.0D TO 23.0 D; ORIENT 33.0D TO 63.0 D; ORIENT 68.0D TO 120.0 D; ORIENT 177.0D TO 209.0 D; ORIENT 215.0D TO 308.0 D; ORIENT 343.0D TO 357.0 D; VISIBILITY INTERVAL 4250 S |          |                                                                                     |                               |               |              |                     |                                          |                              |         |
|               | Comments: Applies to NGC 1806                                                                                                                                                                          |          |                                                                                     |                               |               |              |                     |                                          |                              |         |
| Fixed Targets | #                                                                                                                                                                                                      | Name     | Target Coordinates                                                                  | Targ. Coord. Corrections      |               | Fluxes       |                     | Miscellaneous                            |                              |         |
|               | (13)                                                                                                                                                                                                   | NGC-1806 | RA: 05 02 17.9000 (75.5745833d)<br>Dec: -67 59 16.50 (-67.98792d)<br>Equinox: J2000 |                               |               | V=11.1       |                     | Reference Frame: ICRS                    |                              |         |
|               | Comments: Coordinates were selected so as to yield good overlap with existing ACS images.                                                                                                              |          |                                                                                     |                               |               |              |                     |                                          |                              |         |
|               |                                                                                                                                                                                                        |          |                                                                                     |                               |               |              |                     |                                          |                              |         |
| Exposures     | #                                                                                                                                                                                                      | Label    | Target                                                                              | Config,Mode,Aperture          | Spectral Els. | Opt. Params. | Special Reqs.       | Groups                                   | Exp. Time/[Actual Dur.]      | Orbit   |
|               | 1                                                                                                                                                                                                      |          | (13) NGC-1806                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  |                     | Prime + Parallel Gro up 1-4 in Visit 51  | 1200 Secs<br>[==>]           | <br>[1] |
|               | 2                                                                                                                                                                                                      |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Gro up 1-4 in Visit 51  | 80 Secs<br>[==>]             | <br>[1] |
|               | 3                                                                                                                                                                                                      |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F435W         |              |                     | Prime + Parallel Gro up 1-4 in Visit 51  | 350 Secs<br>[==>]            | <br>[1] |
|               | 4                                                                                                                                                                                                      |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F555W         |              |                     | Prime + Parallel Gro up 1-4 in Visit 51  | 350 Secs<br>[==>]            | <br>[1] |
|               | 5                                                                                                                                                                                                      |          | (13) NGC-1806                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  | POS TARG 0.16,0.0 6 | Prime + Parallel Gro up 5-7 in Visit 51  | 1190 Secs<br>[==>]           | <br>[1] |
|               | 6                                                                                                                                                                                                      |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F555W         |              |                     | Prime + Parallel Gro up 5-7 in Visit 51  | 350 Secs<br>[==>]            | <br>[1] |
|               | 7                                                                                                                                                                                                      |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Gro up 5-7 in Visit 51  | 300 Secs<br>[==>]            | <br>[1] |
|               | 8                                                                                                                                                                                                      |          | (13) NGC-1806                                                                       | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO  | POS TARG 1.56,3.0 2 | Prime + Parallel Gro up 8-10 in Visit 51 | 1190 Secs<br>[==>]           | <br>[1] |
|               | 9                                                                                                                                                                                                      |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F435W         |              |                     | Prime + Parallel Gro up 8-10 in Visit 51 | 350 Secs<br>[==>]            | <br>[1] |
|               | 10                                                                                                                                                                                                     |          | ANY                                                                                 | ACS/WFC, ACCUM, WFC           | F814W         |              |                     | Prime + Parallel Gro up 8-10 in Visit 51 | 340 Secs<br>[==>]            | <br>[1] |



# Proposal 12257 - Visit 52 - The Nature of Multiple Main Sequence Turn-offs and Dual Red Clumps in Magellanic Cloud Star Clusters

|               |                                                                                                                                                                                                                                       |          |                                                                                                                                                                                         |                               |               |                       |                     |                                         |                         |       |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------|-----------------------|---------------------|-----------------------------------------|-------------------------|-------|
| Visit         | <b>Proposal 12257, Visit 52, pi</b> <span style="float: right;">Thu Jun 23 01:04:29 GMT 2011</span>                                                                                                                                   |          |                                                                                                                                                                                         |                               |               |                       |                     |                                         |                         |       |
|               | <b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: WFC3/UVIS, ACS/WFC<br>Special Requirements: ORIENT 14.0D TO 140.0 D; ORIENT 192.0D TO 332.0 D; VISIBILITY INTERVAL 4250 S<br><i>Comments: Applies to NGC 1751</i> |          |                                                                                                                                                                                         |                               |               |                       |                     |                                         |                         |       |
| Fixed Targets | #                                                                                                                                                                                                                                     | Name     | Target Coordinates                                                                                                                                                                      | Targ. Coord. Corrections      | Fluxes        | Miscellaneous         |                     |                                         |                         |       |
|               | (15)                                                                                                                                                                                                                                  | NGC-1751 | RA: 04 54 18.1500 (73.5756250d)<br>Dec: -69 48 46.00 (-69.81278d)<br>Equinox: J2000<br><i>Comments: Coordinates were selected so as to yield good overlap with existing ACS images.</i> |                               | V=11.7        | Reference Frame: ICRS |                     |                                         |                         |       |
| Exposures     | #                                                                                                                                                                                                                                     | Label    | Target                                                                                                                                                                                  | Config,Mode,Aperture          | Spectral Els. | Opt. Params.          | Special Reqs.       | Groups                                  | Exp. Time/[Actual Dur.] | Orbit |
|               | 1                                                                                                                                                                                                                                     |          | (15) NGC-1751                                                                                                                                                                           | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO           |                     | Prime + Parallel Group 1-4 in Visit 52  | 1200 Secs<br>[==>]      | [1]   |
|               | 2                                                                                                                                                                                                                                     |          | ANY                                                                                                                                                                                     | ACS/WFC, ACCUM, WFC           | F814W         |                       |                     | Prime + Parallel Group 1-4 in Visit 52  | 80 Secs<br>[==>]        | [1]   |
|               | 3                                                                                                                                                                                                                                     |          | ANY                                                                                                                                                                                     | ACS/WFC, ACCUM, WFC           | F435W         |                       |                     | Prime + Parallel Group 1-4 in Visit 52  | 350 Secs<br>[==>]       | [1]   |
|               | 4                                                                                                                                                                                                                                     |          | ANY                                                                                                                                                                                     | ACS/WFC, ACCUM, WFC           | F555W         |                       |                     | Prime + Parallel Group 1-4 in Visit 52  | 350 Secs<br>[==>]       | [1]   |
|               | 5                                                                                                                                                                                                                                     |          | (15) NGC-1751                                                                                                                                                                           | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO           | POS TARG 0.16,0.0 6 | Prime + Parallel Group 5-7 in Visit 52  | 1190 Secs<br>[==>]      | [1]   |
|               | 6                                                                                                                                                                                                                                     |          | ANY                                                                                                                                                                                     | ACS/WFC, ACCUM, WFC           | F555W         |                       |                     | Prime + Parallel Group 5-7 in Visit 52  | 350 Secs<br>[==>]       | [1]   |
|               | 7                                                                                                                                                                                                                                     |          | ANY                                                                                                                                                                                     | ACS/WFC, ACCUM, WFC           | F814W         |                       |                     | Prime + Parallel Group 5-7 in Visit 52  | 300 Secs<br>[==>]       | [1]   |
|               | 8                                                                                                                                                                                                                                     |          | (15) NGC-1751                                                                                                                                                                           | WFC3/UVIS, ACCUM, UVIS-CENTER | F336W         | CR-SPLIT=NO           | POS TARG 1.56,3.0 2 | Prime + Parallel Group 8-10 in Visit 52 | 1190 Secs<br>[==>]      | [1]   |
|               | 9                                                                                                                                                                                                                                     |          | ANY                                                                                                                                                                                     | ACS/WFC, ACCUM, WFC           | F435W         |                       |                     | Prime + Parallel Group 8-10 in Visit 52 | 350 Secs<br>[==>]       | [1]   |
|               | 10                                                                                                                                                                                                                                    |          | ANY                                                                                                                                                                                     | ACS/WFC, ACCUM, WFC           | F814W         |                       |                     | Prime + Parallel Group 8-10 in Visit 52 | 340 Secs<br>[==>]       | [1]   |

