10590 - Star-Formation History of an Unmerged Fragment: the Leo A Dwarf Galaxy

Cycle: 14, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets*	*Configurations*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(2) PARALLEL-FIELD (1) LEOA-CENTER	ACS/WFC WFPC2	2	20-Jun-2005 11:21:11.0	yes
02	(2) PARALLEL-FIELD (1) LEOA-CENTER	ACS/WFC WFPC2	2	20-Jun-2005 11:21:16.0	yes

Visit	*Targets*	*Configurations*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
03	(2) PARALLEL-FIELD (1) LEOA-CENTER	ACS/WFC WFPC2	2	20-Jun-2005 11:21:19.0	yes
04	(2) PARALLEL-FIELD (1) LEOA-CENTER	ACS/WFC WFPC2	2	20-Jun-2005 11:21:23.0	yes
05	(2) PARALLEL-FIELD (1) LEOA-CENTER	ACS/WFC WFPC2	2	20-Jun-2005 11:21:26.0	yes
06	(2) PARALLEL-FIELD (1) LEOA-CENTER	ACS/WFC WFPC2	2	20-Jun-2005 11:21:28.0	yes
07	(2) PARALLEL-FIELD (1) LEOA-CENTER	ACS/WFC WFPC2	2	20-Jun-2005 11:21:31.0	yes
08	(2) PARALLEL-FIELD (1) LEOA-CENTER	ACS/WFC WFPC2	2	20-Jun-2005 11:21:34.0	yes

16 Total Orbits Used

ABSTRACT

The Leo A dwarf irregular is the only known Local Group galaxy that on the weight of current evidence has been suggested to have experienced its first star formation within the past 2-3 billion years. As a galaxy that could have been almost purely gaseous during the epoch of giant galaxy assembly, Leo A is the best nearby candidate to be a redshift zero analogue to the major building blocks of the Milky Way. We propose to obtain deep optical images of Leo A with the ACS/WFC to achieve three main goals: 1) To establish the fractions of star-formation, by mass, that occurred prior and subsequent to the main epoch of hierarchical merging (redshift z ~ 2-4, Age ~ 10-12.5 Gigayears); 2) to measure the time variation in Leo A's star-formation rate over the past 10 Gyr, based on statistical analyses of its (V-I, I) color-magnitude diagram; and 3) to measure the radial distributions of young and old stellar populations and quantify the degree to which the optically prominent, young population is embedded in an extended, low-surface brightness sheet or halo of ancient stars. Because of the distance modulus (24.5 mag) and high degree of stellar crowding at the level of the oldest main-sequence turnoffs, the observations necessary to achieve these goals are unobtainable except with HST. The ONLY way

to reliably derive the star-formation history of Leo A over its entire lifetime is with photometry to magnitudes of (B,I) = (28.6, 27.9), the level of the oldest main-sequence turnoff in Leo A. These data would confirm and extend the limited inferences obtained from WFPC2 photometry over 2 magnitudes less deep, and provide the first opportunity to measure the complete star-formation history of a potential "living fossil" analogue to the building blocks of the Milky Way. We propose to use WFPC2 in parallel to measure radial variations in the stellar populations between the galaxy's core and outskirts. Because the expected 2-gyro jitter ellipse is comparable to the pixel scale of ACS/WFC, we rely on point-spread function fitting photometry, and we require no special scheduling constraints, our proposed program would be virtually unaffected by entry into 2-gyro mode.

OBSERVING DESCRIPTION

We will image the center region of the Leo A dwarf (DDO 69) using the F475W and F814W filters of ACS/WFC, and an outlying region of the galaxy in F555W and F814W with WFPC2 in parallel. Our exposures are designed to precisely measure the mass fraction, radial distribution, and approximate age and metallicity distributions of the most ancient stellar populations in Leo A, with ages corresponding to cosmological redshifts of z = 2-3. This requires accurate photometry down to a limiting magnitude of B ~ 28. Our limiting magnitude requirement is based on the expected magnitude and colors of the subgiant branch and main-sequence turnoff, which contain unique information about the oldest stars in the galaxy. We choose to image in the F475W and F814W bands to give the optimal combination of throughput and temperature sensitivity. Simulations using theoretical isochrones show that signal-to-noise >10 is required to resolve temperature differences of 20 percent. The ACS exposure time calculator suggests that we require roughly 19,000 seconds of exposure time (8 orbits) in each filter to achieve this goal. Leo A has been suggested to have a radial population gradient; our WFPC2 parallel exposures will accurately measure the properties of an outer field in the galaxy. For roll ranges obtained using the APT Visit Planner, WFPC2 will well-sample the Leo A halo (semimajor axis 8 arcmin). We will minimize the impact of cosmic rays and hot pixels on our data, and improve the sampling of the PSF, using prescribed dither patterns taken from the ACS instrument handbook. By filling each orbit with a single exposure, we minimize overheads and maximize sensitivity to faint stars. It is critical to obtain precise photometry for stars at the level of the oldest main-sequence turnoff, so our strategy is to integrate for as long as possible at a given individual pointing. For schedulability, we implement our observations in 2-orbit visits. Therefore the 4-point box dither pattern is implemented by use of exposure level POS-TARG constraints, confirmed using the VTT. By adopting this strategy we maximize S/N for the faint stars in Leo A while minimizing artifacts. In Phase I, we requested the LOW-SKY visit-level constraint for our observations because of the low ecliptic latitude of Leo A. However, because we expect that the earthshine will NOT be a strong contributor to the sky background for limb angles 20-40 degrees, we prefer to drop the

LOW-SKY requirement, thereby gaining in efficiency by filling more of each orbit with science time. In order to ensure that we observe during periods of low zodiacal light background (the original impetus to observe during LOW-SKY), we wish instead to use the visit-level BETWEEN timing constraint to ensure that the sun-telescope-target angle is larger than 100 degrees. The APT Visit Planner shows that this does not negatively affect schedulability. Because we are using WFPC2 to obtain deep parallel exposures, Visits 2-8 are marked with the SAME ORIENT as VISIT 1 flag. Except for a 45 degree zone which would put bright foreground stars in the parallel field, the exact orient is unimportant so long as each visit is the same.

ADDITIONAL COMMENTS

Leo A has twice been observed with WFPC2 (Tolstoy et al. 1998, Schulte-Ladbeck et al. 2002) in the F435W, F555W, and F814W filters. These observations laid the groundwork for our program. The absolute magnitudes reached in the previous work are at least 2 magnitudes too faint to reach our target, the subgiant branch and main-sequence turnoffs of the oldest populations in Leo A. Deep observation with ACS is the only way to accurately measure the fraction of ancient stars in Leo A. Our WFPC2 parallels will provide imaging in the outskirts of Leo A of comparable depth to data that currently exists only for the center.

Visit

Proposal 10590, Visit 01 Mon Jun 20 15:21:36 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC, WFPC2

Special Requirements: ORIENT 0.0D TO 220.0 D; ORIENT 265.0D TO 359.9 D; BETWEEN 24-NOV-2005:00:00:00 AND 30-APR-2006:23:59:00; BETWEEN 24-NOV-2006:00:00:00 AND 30-APR-2007:23:59:00

Comments: The BETWEEN timing requirement replaces the LOW-SKY request that was made in our Phase I proposal. We can more efficiently observe by using timing requirements to ensure sun-target angles greater than 100 degrees to minimize zodiacal light, because we have calculated that the earthshine within 20-40 degrees of the earth limb will not significantly impact our observations. The only orient constraint is that we wish to avoid bright stars in the parallel field; the unacceptable ORIENTs were derived using the VTT.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	LEOA-CENTER	RA: 09 59 23.8000 (149.8491667d) Dec: +30 45 23.80 (30.75661d) Equinox: J2000 Plate Id: 021H	Radial Velocity: 24.0 km/sec	V=18.0+/-1.0 Total mag of Leo A galaxy is V = 12.8; most stars fainter than V = 21, I = 20.	Coordinate Source: GSC_SURVEY_PLATE

Generic Targets

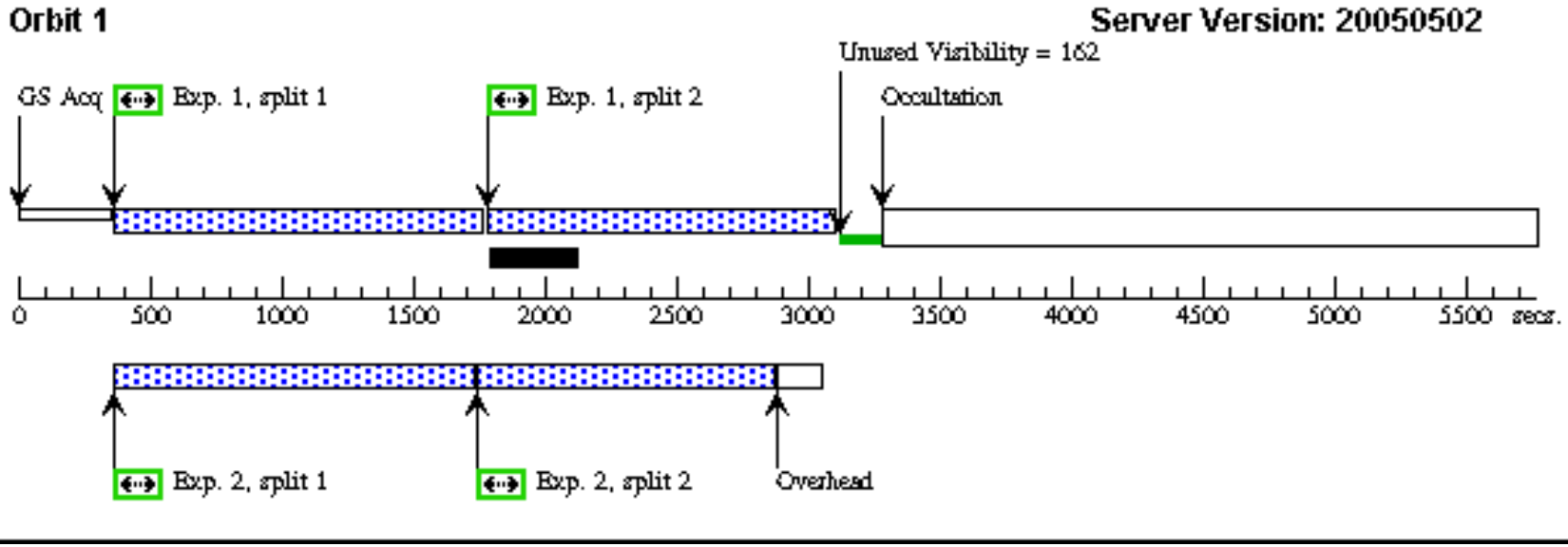
#	Name	Criteria	Description
(2)	PARALLEL-FIELD	RA =149.858333D, DEC =+30.7463889D, R =1D	AMORPHOUS IRREGULAR HALO LSB

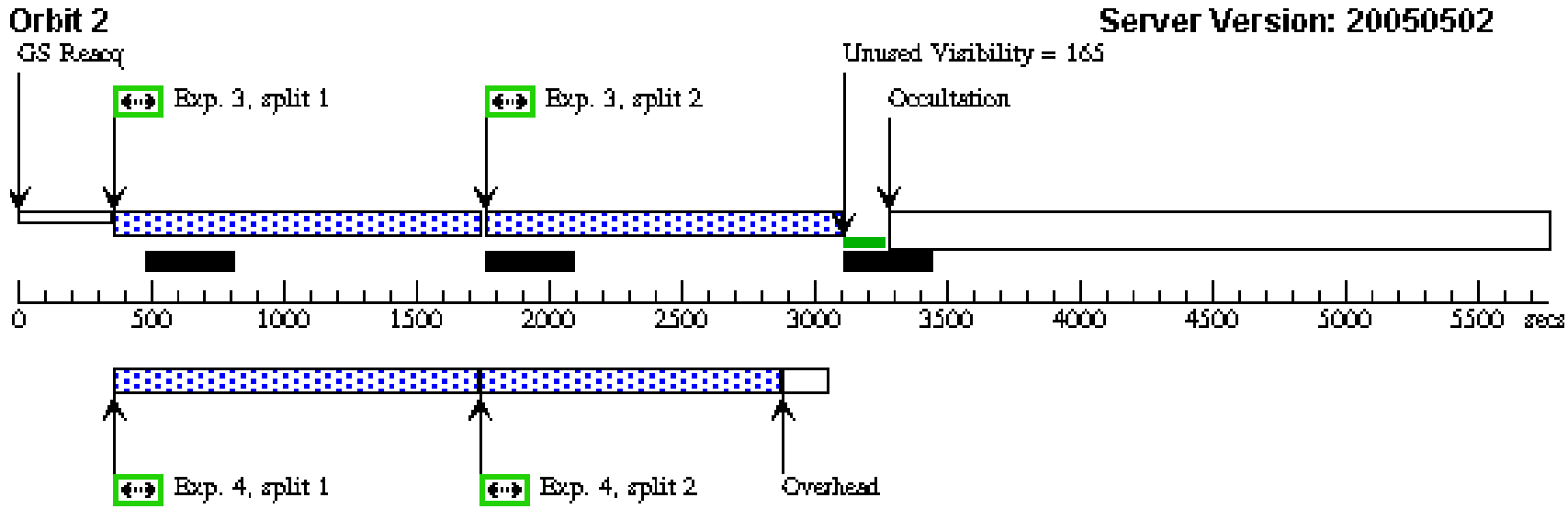
Comments: Field in outer, "halo" region of Leo A dwarf irregular galaxy.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Center/g	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F475W	CR-SPLIT=2; GAIN=2		Prime + Parallel Group 1-2	2400.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
2	Halo/I	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=DEF		Prime + Parallel Group 1-2	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3	Center/I	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=2; GAIN=2		Prime + Parallel Group 3-4	2440.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***
4	Halo/I	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=DEF		Prime + Parallel Group 3-4	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***

Orbit Structure





Visit

Proposal 10590, Visit 02 Mon Jun 20 15:21:38 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC, WFPC2

Special Requirements: SAME ORIENT AS 01; BETWEEN 24-NOV-2005:00:00:00 AND 30-APR-2006:23:59:00; BETWEEN 24-NOV-2006:00:00:00 AND 30-APR-2007:23:59:00

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	LEOA-CENTER	RA: 09 59 23.8000 (149.8491667d) Dec: +30 45 23.80 (30.75661d) Equinox: J2000 Plate Id: 021H	Radial Velocity: 24.0 km/sec	V=18.0+/-1.0 Total mag of Leo A galaxy is V = 12.8; most stars fainter than V = 21, I = 20.	Coordinate Source: GSC_SURVEY_PLATE

Generic Targets

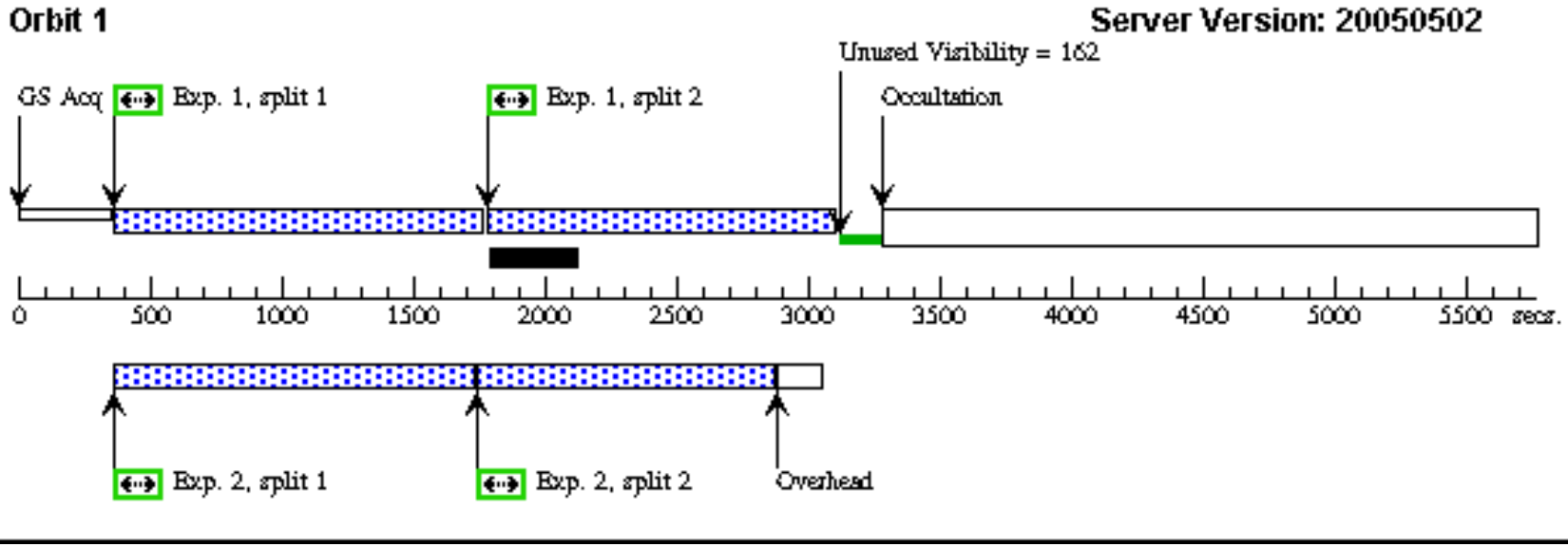
#	Name	Criteria	Description
(2)	PARALLEL-FIELD	RA =149.858333D, DEC =+30.7463889D, R =1D	AMORPHOUS IRREGULAR HALO LSB

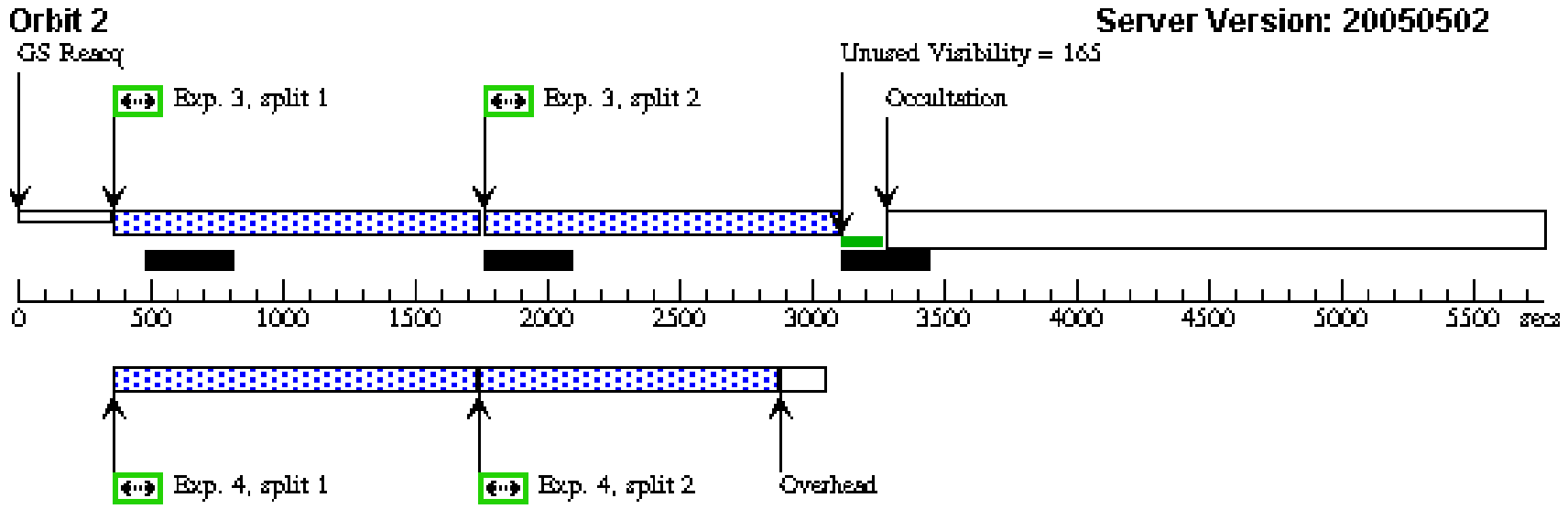
Comments: Field in outer, "halo" region of Leo A dwarf irregular galaxy.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Center/g	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F475W	CR-SPLIT=2; GAIN=2		Prime + Parallel Group 1-2	2400.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
2	Halo/V	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F555W	CR-SPLIT=DEF		Prime + Parallel Group 1-2	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3	Center/I	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=2; GAIN=2		Prime + Parallel Group 3-4	2440.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***
4	Halo/I	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=DEF		Prime + Parallel Group 3-4	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***

Orbit Structure





Visit

Proposal 10590, Visit 03 Mon Jun 20 15:21:40 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC, WFPC2

Special Requirements: SAME ORIENT AS 01; BETWEEN 24-NOV-2005:00:00:00 AND 30-APR-2006:23:59:00; BETWEEN 24-NOV-2006:00:00:00 AND 30-APR-2007:23:59:00

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	LEOA-CENTER	RA: 09 59 23.8000 (149.8491667d) Dec: +30 45 23.80 (30.75661d) Equinox: J2000 Plate Id: 021H	Radial Velocity: 24.0 km/sec	V=18.0+/-1.0 Total mag of Leo A galaxy is V = 12.8; most stars fainter than V = 21, I = 20.	Coordinate Source: GSC_SURVEY_PLATE

Generic Targets

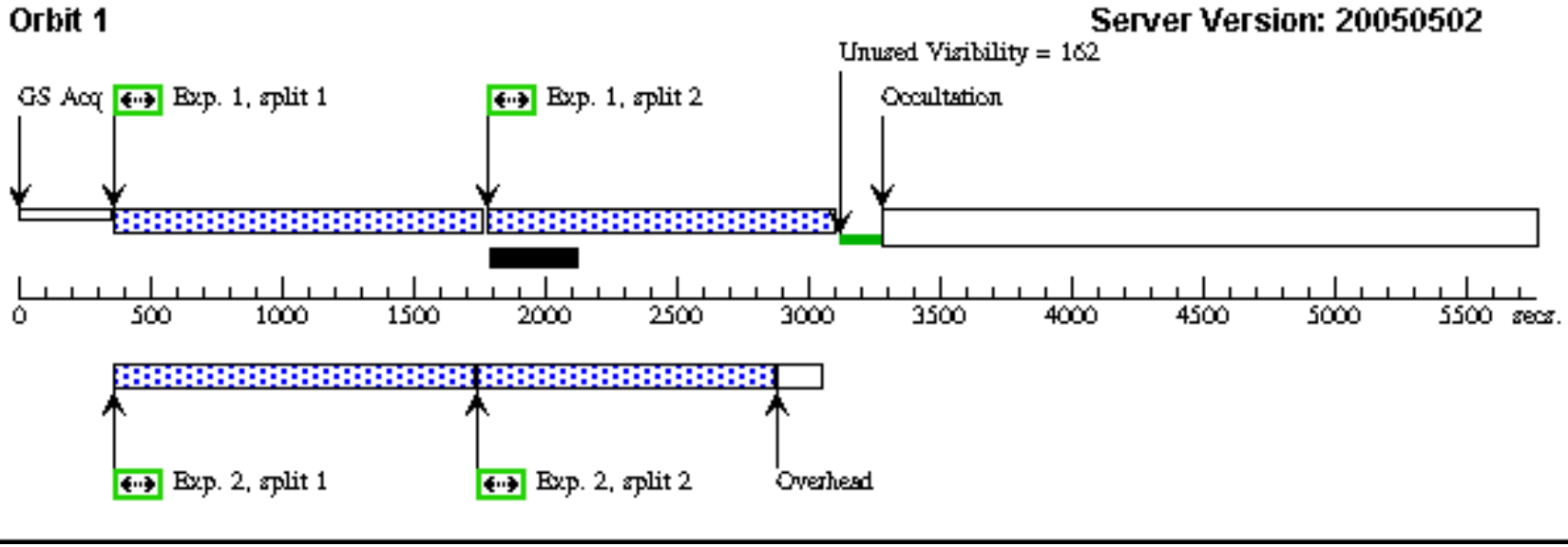
#	Name	Criteria	Description
(2)	PARALLEL-FIELD	RA =149.858333D, DEC =+30.7463889D, R =1D	AMORPHOUS IRREGULAR HALO LSB

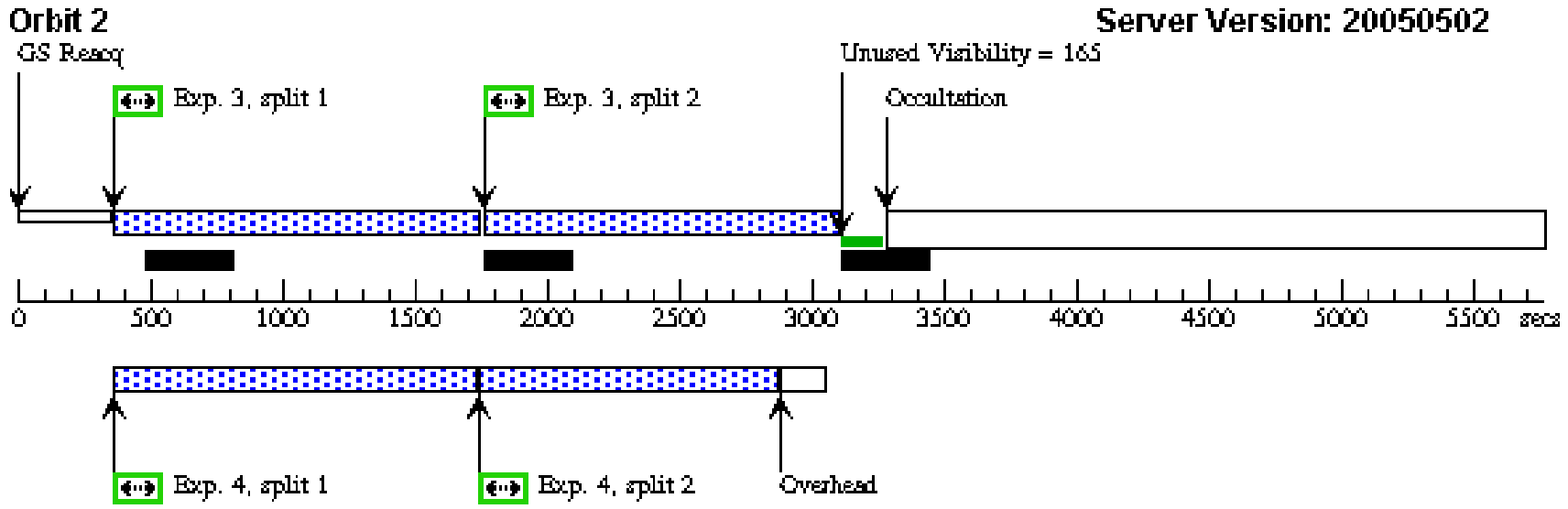
Comments: Field in outer, "halo" region of Leo A dwarf irregular galaxy.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Center/g	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F475W	CR-SPLIT=2; GAIN=2	POS TARG 0.148,0.086	Prime + Parallel Group 1-2	2400.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
2	Halo/V	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F555W	CR-SPLIT=DEF		Prime + Parallel Group 1-2	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3	Center/I	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=2; GAIN=2	POS TARG 0.148,0.086	Prime + Parallel Group 3-4	2440.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***
4	Halo/I	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=DEF		Prime + Parallel Group 3-4	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***

Orbit Structure





Visit

Proposal 10590, Visit 04 Mon Jun 20 15:21:42 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC, WFPC2

Special Requirements: SAME ORIENT AS 01; BETWEEN 24-NOV-2005:00:00:00 AND 30-APR-2006:23:59:00; BETWEEN 24-NOV-2006:00:00:00 AND 30-APR-2007:23:59:00

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	LEOA-CENTER	RA: 09 59 23.8000 (149.8491667d) Dec: +30 45 23.80 (30.75661d) Equinox: J2000 Plate Id: 021H	Radial Velocity: 24.0 km/sec	V=18.0+/-1.0 Total mag of Leo A galaxy is V = 12.8; most stars fainter than V = 21, I = 20.	Coordinate Source: GSC_SURVEY_PLATE

Generic Targets

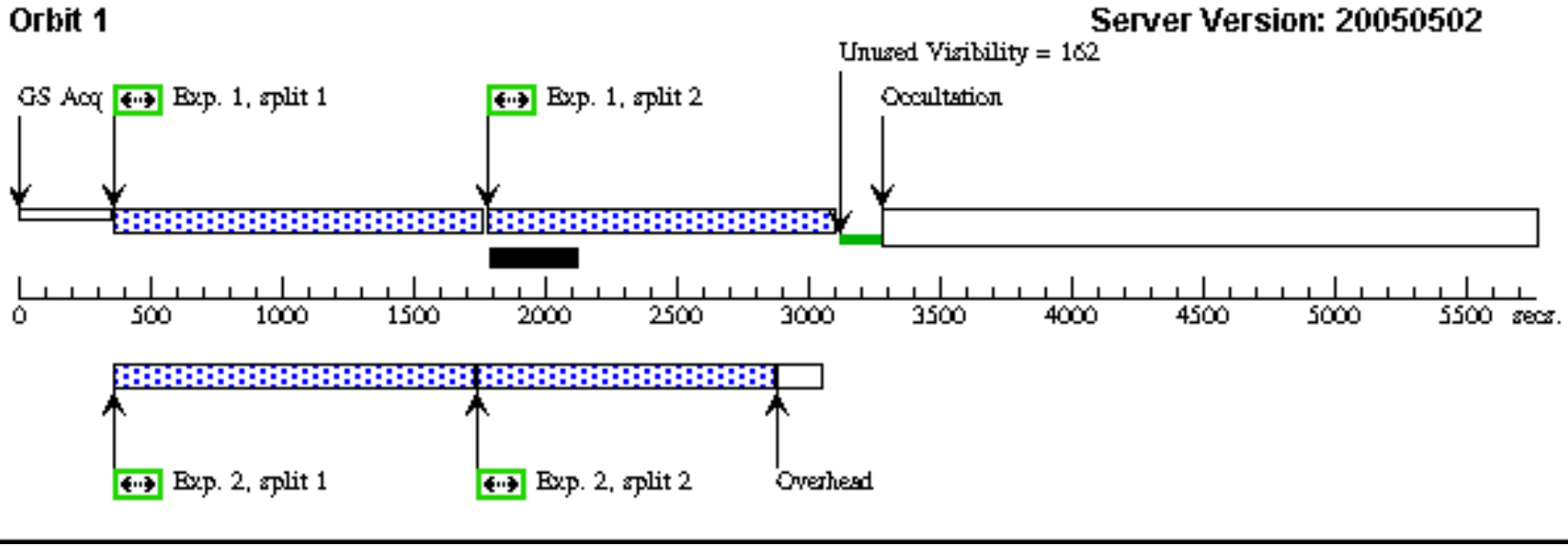
#	Name	Criteria	Description
(2)	PARALLEL-FIELD	RA =149.858333D, DEC =+30.7463889D, R =1D	AMORPHOUS IRREGULAR HALO LSB

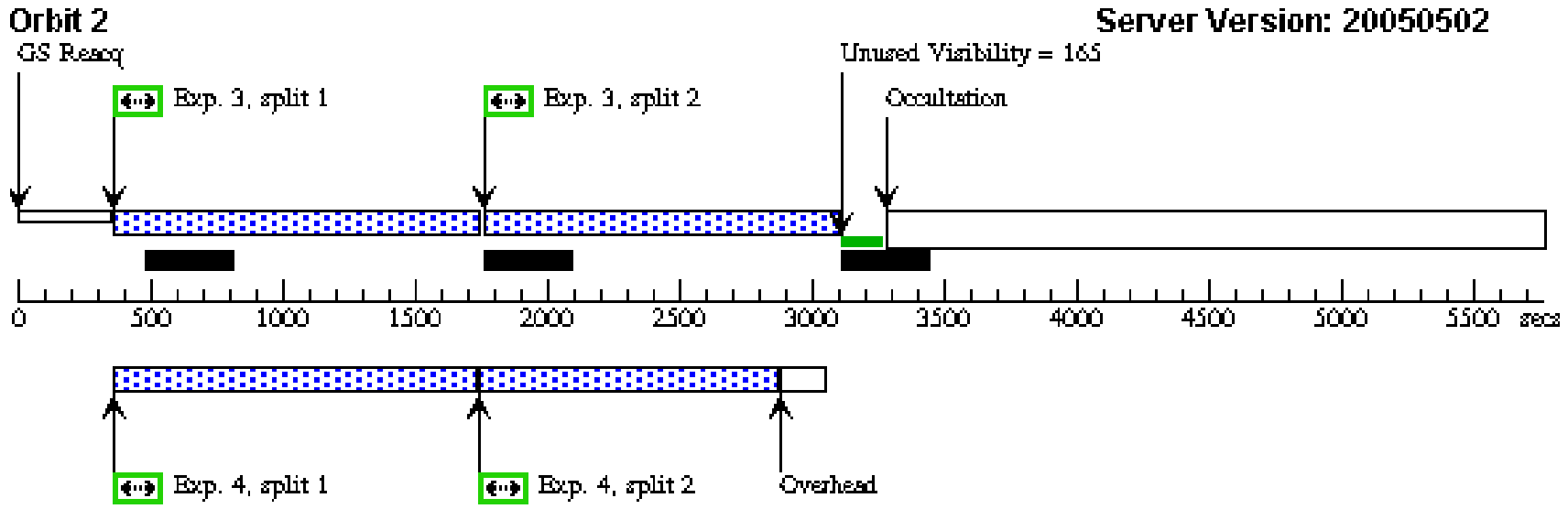
Comments: Field in outer, "halo" region of Leo A dwarf irregular galaxy.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Center/g	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F475W	CR-SPLIT=2; GAIN=2	POS TARG 0.148,0.086	Prime + Parallel Group 1-2	2400.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
2	Halo/V	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F555W	CR-SPLIT=DEF		Prime + Parallel Group 1-2	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3	Center/I	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=2; GAIN=2	POS TARG 0.148,0.086	Prime + Parallel Group 3-4	2440.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***
4	Halo/I	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=DEF		Prime + Parallel Group 3-4	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***

Orbit Structure





Visit

Proposal 10590, Visit 05 Mon Jun 20 15:21:44 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC, WFPC2

Special Requirements: SAME ORIENT AS 01; BETWEEN 24-NOV-2005:00:00:00 AND 30-APR-2006:23:59:00; BETWEEN 24-NOV-2006:00:00:00 AND 30-APR-2007:23:59:00

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	LEOA-CENTER	RA: 09 59 23.8000 (149.8491667d) Dec: +30 45 23.80 (30.75661d) Equinox: J2000 Plate Id: 021H	Radial Velocity: 24.0 km/sec	V=18.0+/-1.0 Total mag of Leo A galaxy is V = 12.8; most stars fainter than V = 21, I = 20.	Coordinate Source: GSC_SURVEY_PLATE

Generic Targets

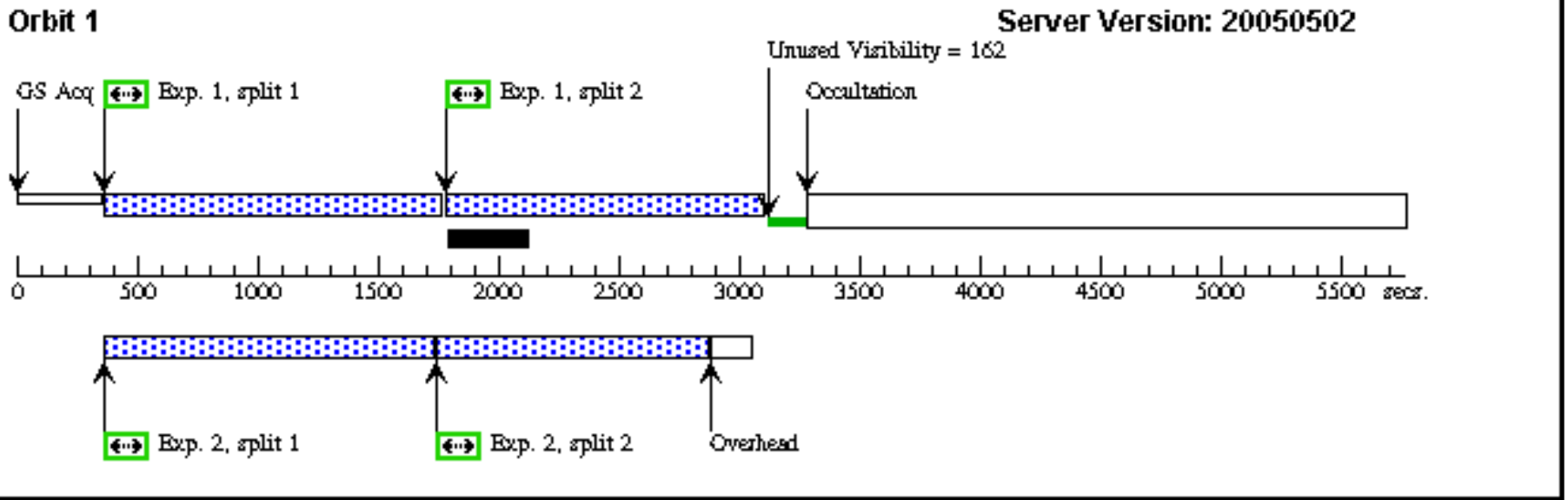
#	Name	Criteria	Description
(2)	PARALLEL-FIELD	RA =149.858333D, DEC =+30.7463889D, R =1D	AMORPHOUS IRREGULAR HALO LSB

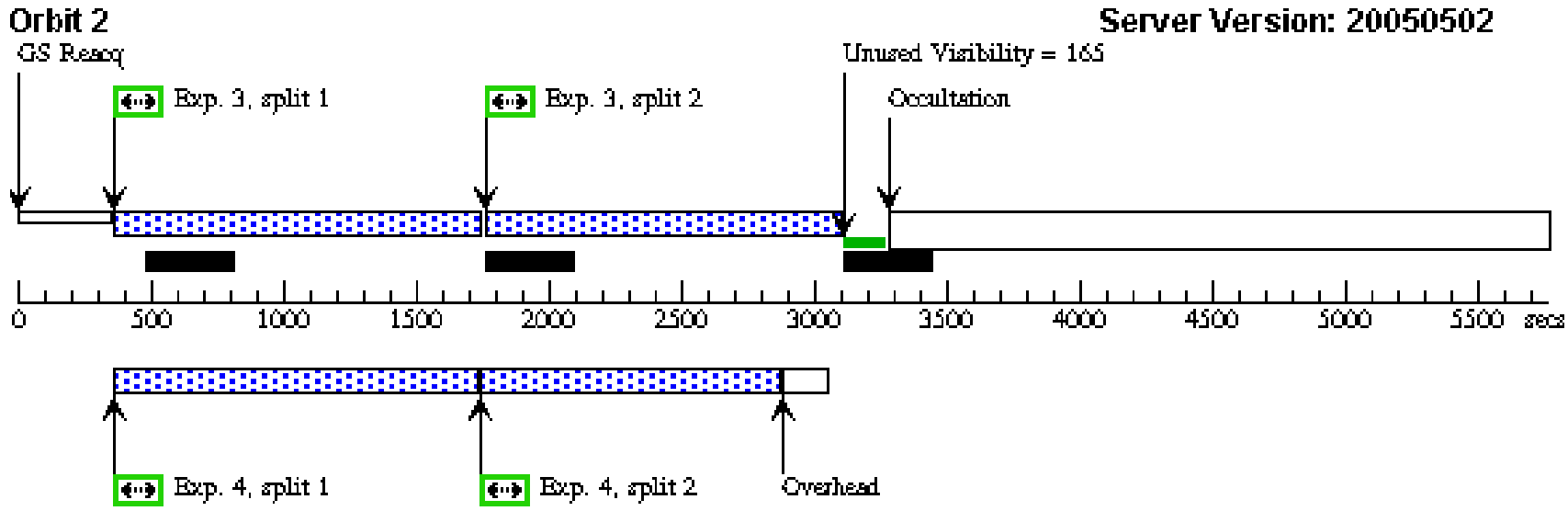
Comments: Field in outer, "halo" region of Leo A dwarf irregular galaxy.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Center/g	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F475W	CR-SPLIT=2; GAIN=2	POS TARG 0.222,0.24	Prime + Parallel Group 1-2	2400.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
2	Halo/V	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F555W	CR-SPLIT=DEF		Prime + Parallel Group 1-2	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3	Center/I	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=2; GAIN=2	POS TARG 0.222,0.24	Prime + Parallel Group 3-4	2440.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***
4	Halo/I	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=DEF		Prime + Parallel Group 3-4	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***

Orbit Structure





Visit

Proposal 10590, Visit 06 Mon Jun 20 15:21:46 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC, WFPC2

Special Requirements: SAME ORIENT AS 01; BETWEEN 24-NOV-2005:00:00:00 AND 30-APR-2006:23:59:00; BETWEEN 24-NOV-2006:00:00:00 AND 30-APR-2007:23:59:00

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	LEOA-CENTER	RA: 09 59 23.8000 (149.8491667d) Dec: +30 45 23.80 (30.75661d) Equinox: J2000 Plate Id: 021H	Radial Velocity: 24.0 km/sec	V=18.0+/-1.0 Total mag of Leo A galaxy is V = 12.8; most stars fainter than V = 21, I = 20.	Coordinate Source: GSC_SURVEY_PLATE

Generic Targets

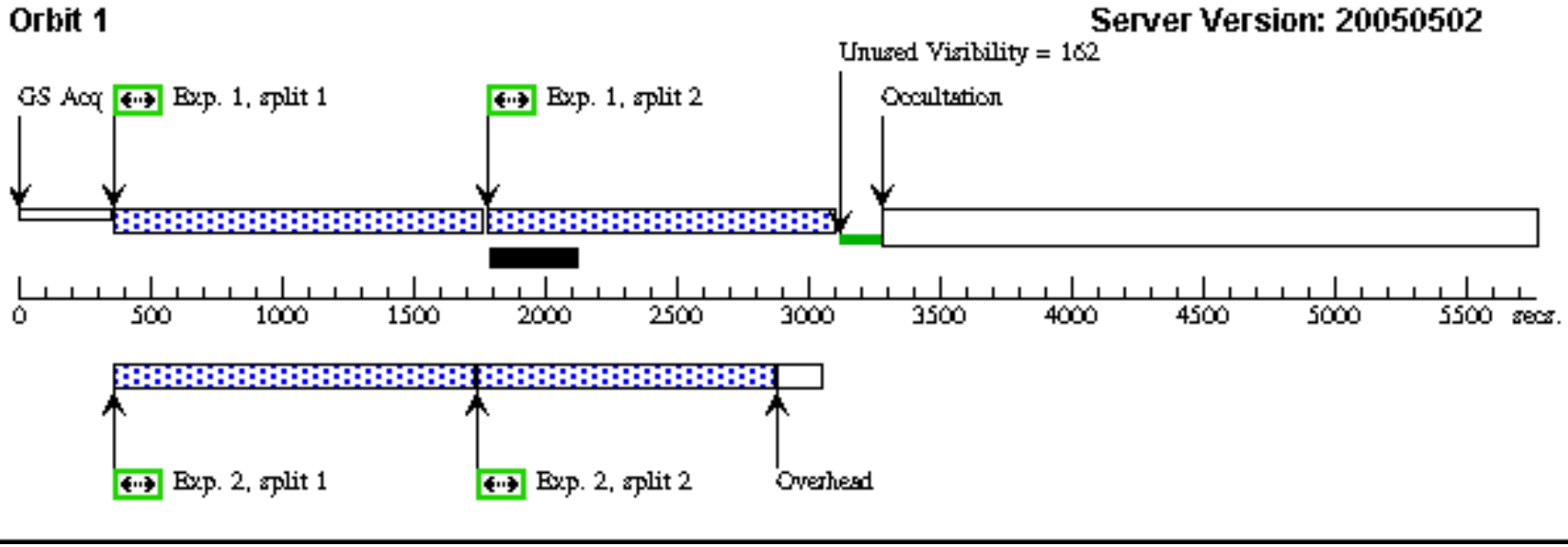
#	Name	Criteria	Description
(2)	PARALLEL-FIELD	RA =149.858333D, DEC =+30.7463889D, R =1D	AMORPHOUS IRREGULAR HALO LSB

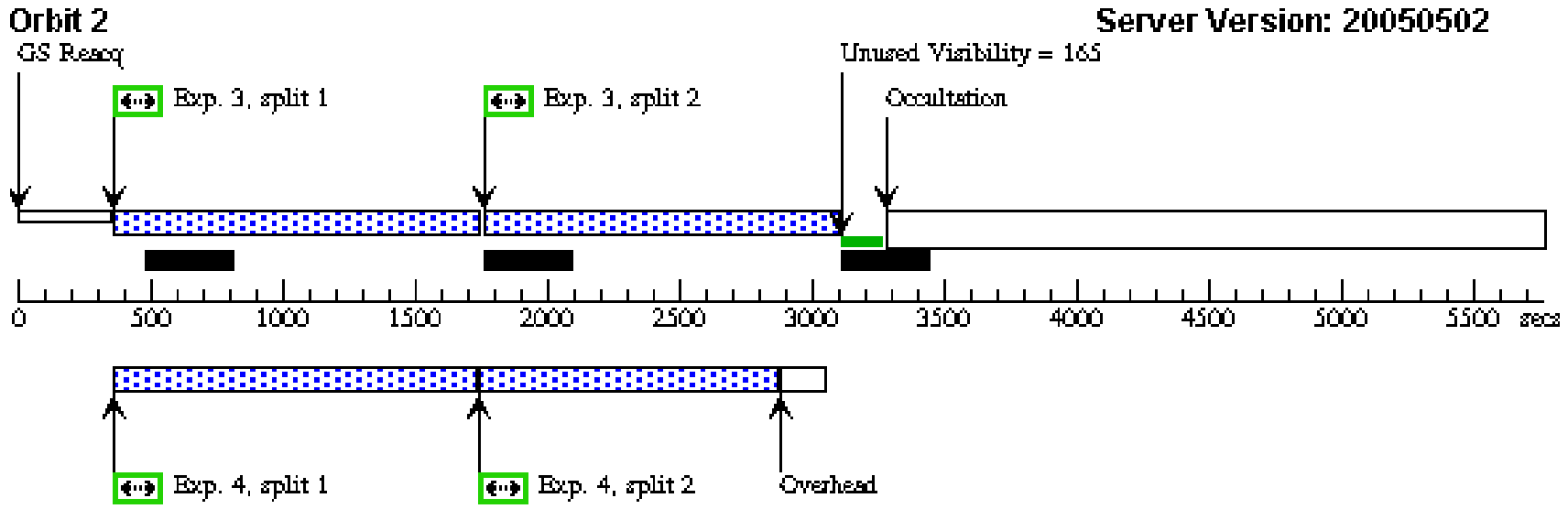
Comments: Field in outer, "halo" region of Leo A dwarf irregular galaxy.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Center/g	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F475W	CR-SPLIT=2; GAIN=2	POS TARG 0.222,0.24	Prime + Parallel Group 1-2	2400.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
2	Halo/V	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F555W	CR-SPLIT=DEF		Prime + Parallel Group 1-2	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3	Center/I	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=2; GAIN=2	POS TARG 0.222,0.24	Prime + Parallel Group 3-4	2440.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***
4	Halo/I	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=DEF		Prime + Parallel Group 3-4	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***

Orbit Structure





Visit

Proposal 10590, Visit 07 Mon Jun 20 15:21:47 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC, WFPC2

Special Requirements: SAME ORIENT AS 01; BETWEEN 24-NOV-2005:00:00:00 AND 30-APR-2006:23:59:00; BETWEEN 24-NOV-2006:00:00:00 AND 30-APR-2007:23:59:00

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	LEOA-CENTER	RA: 09 59 23.8000 (149.8491667d) Dec: +30 45 23.80 (30.75661d) Equinox: J2000 Plate Id: 021H	Radial Velocity: 24.0 km/sec	V=18.0+/-1.0 Total mag of Leo A galaxy is V = 12.8; most stars fainter than V = 21, I = 20.	Coordinate Source: GSC_SURVEY_PLATE

Generic Targets

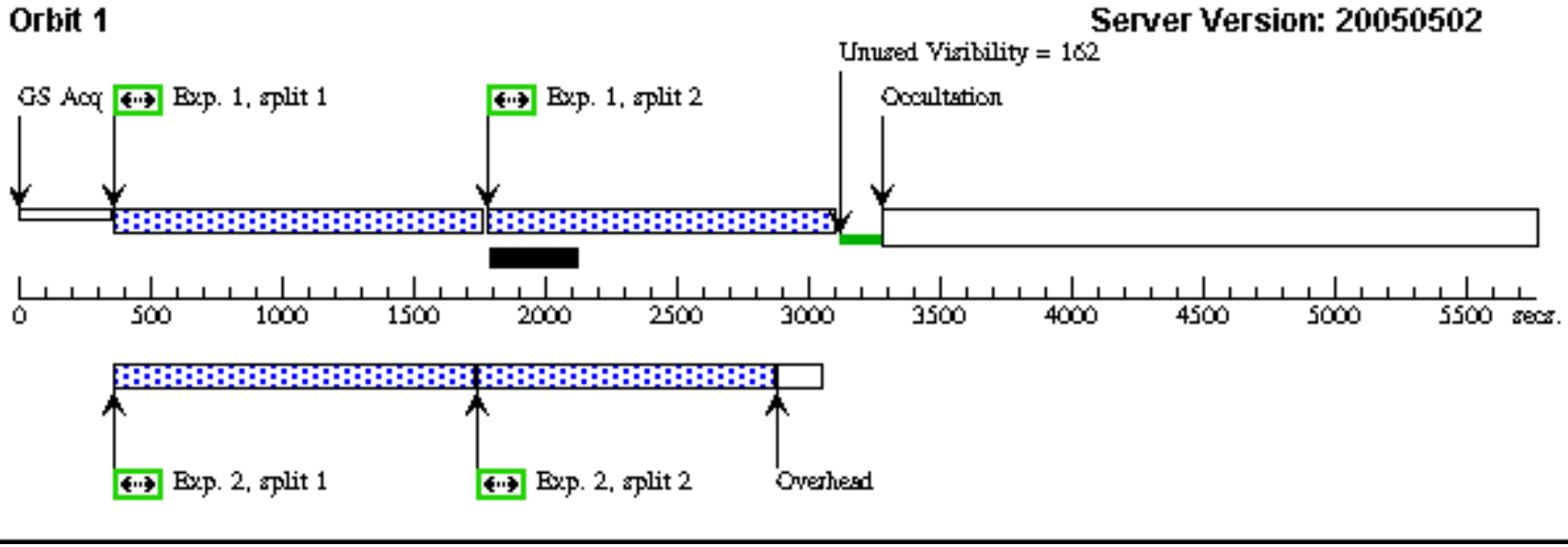
#	Name	Criteria	Description
(2)	PARALLEL-FIELD	RA =149.858333D, DEC =+30.7463889D, R =1D	AMORPHOUS IRREGULAR HALO LSB

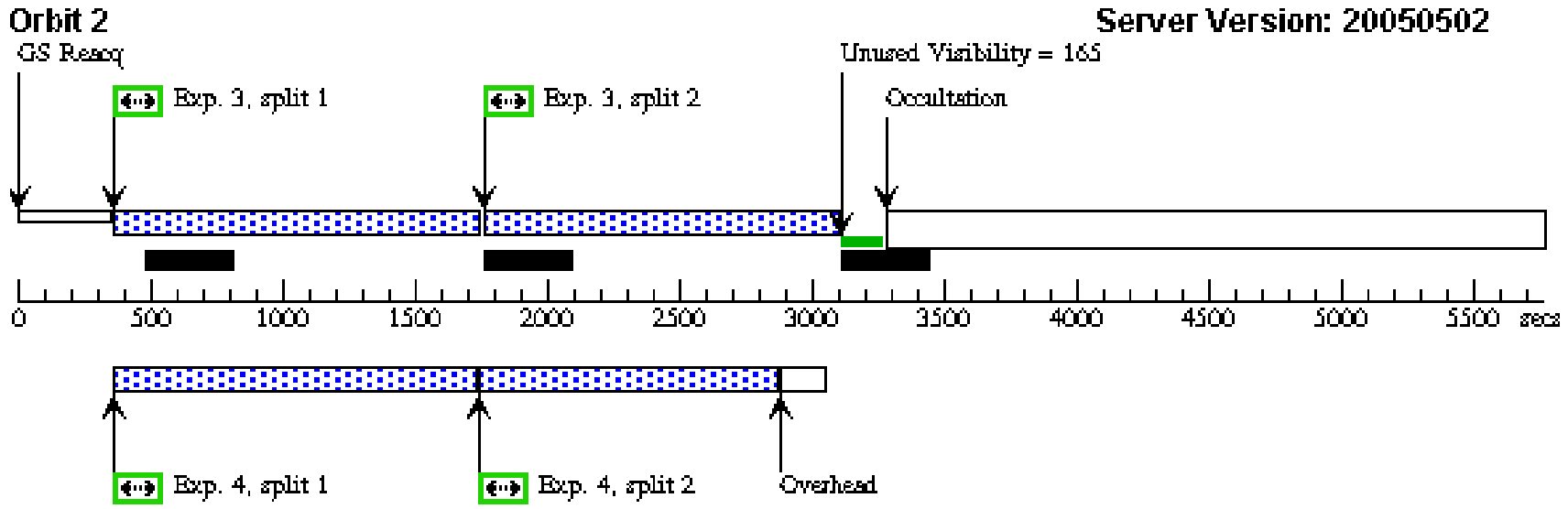
Comments: Field in outer, "halo" region of Leo A dwarf irregular galaxy.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Center/g	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F475W	CR-SPLIT=2; GAIN=2	POS TARG 0.074,0.154	Prime + Parallel Group 1-2	2400.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
2	Halo/V	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F555W	CR-SPLIT=DEF		Prime + Parallel Group 1-2	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3	Center/I	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=2; GAIN=2	POS TARG 0.074,0.154	Prime + Parallel Group 3-4	2440.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***
4	Halo/I	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=DEF		Prime + Parallel Group 3-4	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***

Orbit Structure





Visit

Proposal 10590, Visit 08 Mon Jun 20 15:21:49 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC, WFPC2

Special Requirements: SAME ORIENT AS 01; BETWEEN 24-NOV-2005:00:00:00 AND 30-APR-2006:23:59:00; BETWEEN 24-NOV-2006:00:00:00 AND 30-APR-2007:23:59:00

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Exposures

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2	Halo/I	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=DEF		Prime + Parallel Group 1-2	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3	Center/I	(1) LEOA-CENTER	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=2; GAIN=2	POS TARG 0.074,0.154	Prime + Parallel Group 3-4	2440.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***
4	Halo/I	(2) PARALLEL-FIELD	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=DEF		Prime + Parallel Group 3-4	2200.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***

Orbit Structure