



# 13058 - Accurate Mass Determination of the Old White Dwarf G105-30 through Astrometric Microlensing

Cycle: 20, Proposal Category: GO  
(Availability Mode: AVAILABLE)

## INVESTIGATORS

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## VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(3) G105-30-SOURCE	WFC3/UVIS	1	16-Sep-2014 21:00:43.0	yes
02	(3) G105-30-SOURCE	WFC3/UVIS	1	16-Sep-2014 21:00:45.0	yes
06	(3) G105-30-SOURCE	WFC3/UVIS	1	16-Sep-2014 21:00:47.0	yes
07	(3) G105-30-SOURCE	WFC3/UVIS	1	16-Sep-2014 21:00:50.0	yes
57	(3) G105-30-SOURCE	WFC3/UVIS	1	16-Sep-2014 21:00:52.0	yes

5 Total Orbits Used

## ABSTRACT

We propose to determine the mass of the cool, nearby, high-proper-motion white dwarf (WD) G 105-30 (LHS 1838) through astrometric microlensing. In a reprise of the famous 1919 solar eclipse that verified general relativity, G 105-30 will pass very close in front of a 19.5-mag

background star in June 2012, with an impact parameter of only  $\sim 0.08$  arcsec. As it passes in front, it will cause a relativistic deflection of the background star's image by  $>2$  milliarcsec, an amount easily detectable with HST/WFC3. The gravitational deflection angle depends only on the distances and relative positions of the stars, and on the mass of the WD. Since the distance to G 105-30 is already known from an accurate parallax, and the relative positions can be determined precisely before the event, the astrometric measurement offers a unique and direct method to measure the mass of the WD to high accuracy ( $<5\%$ , potentially  $<1\%$  for favorable circumstances).

One key astrophysical prediction for WDs is the existence of a mass-radius relation (MRR), which depends on the WD's core composition. Since the luminosity and distance of G 105-30 are known, its radius is known. Our measurements will thus provide a new, precise point in the MRR. The mass of G 105-30 is of special interest because it is an old and relatively massive WD, which would provide new constraints near the bottom of the WD cooling curve, currently being used to age-date stellar populations.

## **OBSERVING DESCRIPTION**

First, we need to know accurate locations and proper motions for G105-30 and the source star, in order to predict the precise circumstances of the event, including the date and impact parameter. We will use direct imaging with WFC3 to determine the astrometric parameters of G105-30, the source star, and the surrounding reference field.

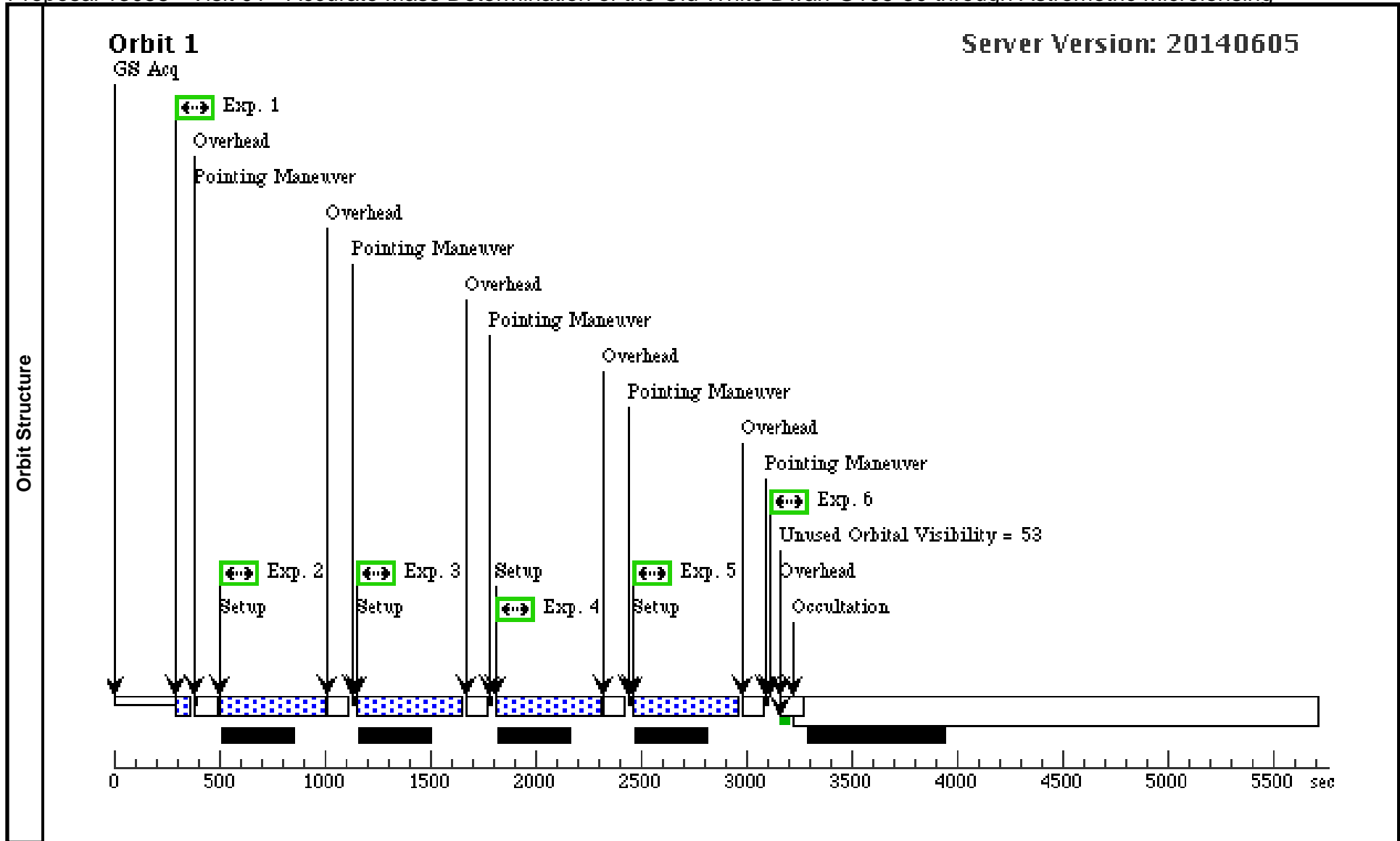
We need to know the time of closest approach as accurately as possible in order to schedule subsequent critical observations. We have a four-phase observing program:

- (1) In the first phase, we will obtain the HST observations needed to make the final predictions of the circumstances of the event (impact parameter and time of closest approach) with high accuracy. At the beginning of Cycle~19 we will image the field twice at about a 3-month separation for this purpose.
- (2) Based on the early Cycle~19 astrometry, we will refine the predicted dates between which the images will be blended, so that we will know the optimal observation dates just before and after those times.
- (3) We will obtain one more observation in cycle 19 just before the onset of blending (and before the peak of the microlensing), when the astrometric deflection is at its largest observable value. (If this epoch turns out to lie in the solar-avoidance interval, May--August 2012, we would make sure to obtain this observation just before the solar-avoidance interval.)
- (4) We will obtain 4 more observations after the peak of the microlensing, beginning just after the time when the source and the lens are no more blended.

Proposal 13058 - Visit 01 - Accurate Mass Determination of the Old White Dwarf G105-30 through Astrometric Microlensing

Wed Sep 17 01:00:53 GMT 2014

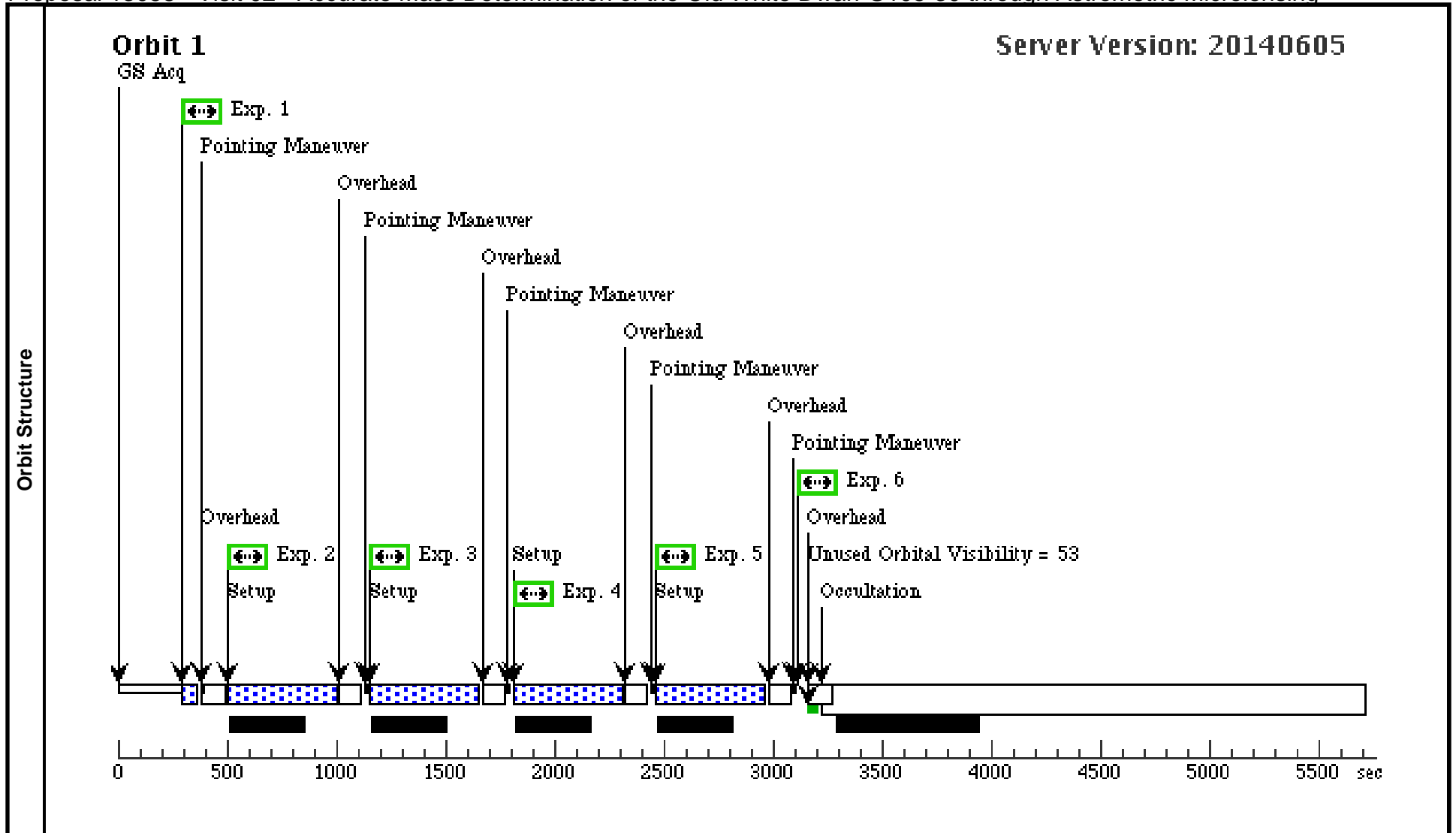
Fixed Targets	Visit									
	Proposal 13058, Visit 01, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 27D TO 30 D; BETWEEN 01-JAN-2013 AND 01-FEB-2013									
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous					
(3)	G105-30-SOURCE	RA: 06 20 48.2000 (95.2008333d) Dec: +06 45 17.10 (6.75475d) Equinox: J2000		V=16.37	Reference Frame: ICRS					
<i>Comments: The coordinates were calculated using POSS2 red image. The coordinates are that of the source that will be lensed by the WD.</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(3) G105-30-SOUR CE	(3) G105-30-SOUR CE	WFC3/UVIS, ACCUM, UVIS2	F606W	FLASH=10	POS TARG 0,0		40 Secs (40 Secs) [==>]	[1]
	2	(3) G105-30-SOUR CE	(3) G105-30-SOUR CE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 0,0; SPATIAL SCAN 0.0 04,1.8612 Degrees,Forward		500 Secs (500 Secs) [==>]	[1]
	3	(3) G105-30-SOUR CE	(3) G105-30-SOUR CE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 2,0; SPATIAL SCAN 0.0 04,1.8612 Degrees,Forward		500 Secs (500 Secs) [==>]	[1]
	4	(3) G105-30-SOUR CE	(3) G105-30-SOUR CE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 0,0; SPATIAL SCAN 0.0 04,88.091 Degrees,Forward		500 Secs (500 Secs) [==>]	[1]
	5	(3) G105-30-SOUR CE	(3) G105-30-SOUR CE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 0,2; SPATIAL SCAN 0.0 04,88.091 Degrees,Forward		500 Secs (500 Secs) [==>]	[1]
	6	(3) G105-30-SOUR CE	(3) G105-30-SOUR CE	WFC3/UVIS, ACCUM, UVIS2	F606W	FLASH=10	POS TARG 2,5		40 Secs (40 Secs) [==>]	[1]



Proposal 13058 - Visit 02 - Accurate Mass Determination of the Old White Dwarf G105-30 through Astrometric Microlensing

Wed Sep 17 01:00:54 GMT 2014

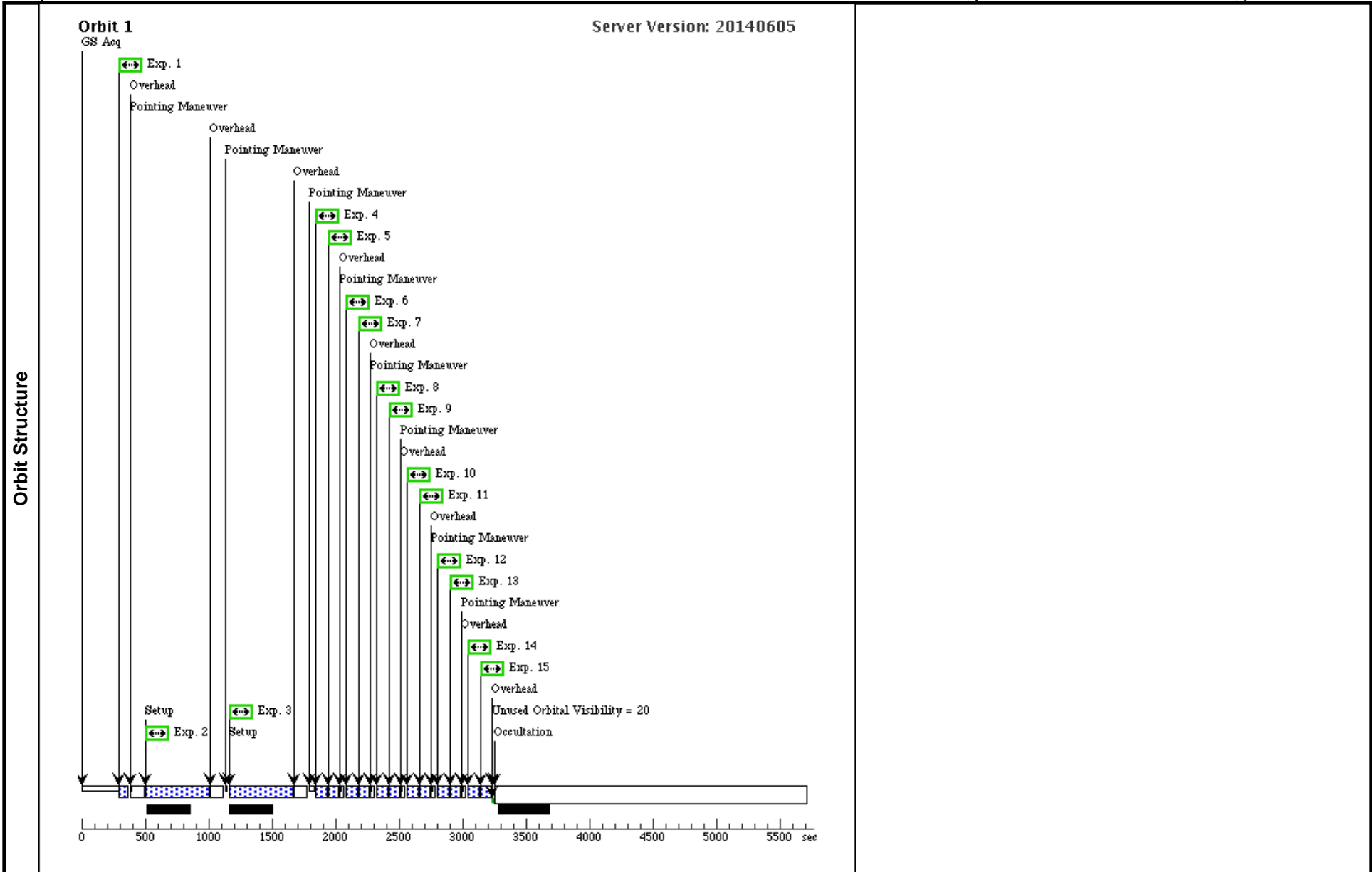
Fixed Targets	Visit									
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	Proposal 13058, Visit 02, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 01-APR-2013 AND 01-MAY-2013									
	(3)	G105-30-SOURCE	RA: 06 20 48.2000 (95.2008333d) Dec: +06 45 17.10 (6.75475d) Equinox: J2000		V=16.37	Reference Frame: ICRS				
	<i>Comments: The coordinates were calculated using POSS2 red image. The coordinates are that of the source that will be lensed by the WD.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(3) G105-30-SOUR CE	WFC3/UVIS, ACCUM, UVIS2	F606W	FLASH=10	POS TARG 0,0		40 Secs (40 Secs) [==>]	[1]
	2		(3) G105-30-SOUR CE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 0,0; SPATIAL SCAN 0.0 04,1.8612 Degrees,Forward		500 Secs (500 Secs) [==>]	[1]
	3		(3) G105-30-SOUR CE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 2,0; SPATIAL SCAN 0.0 04,1.8612 Degrees,Forward		500 Secs (500 Secs) [==>]	[1]
	4		(3) G105-30-SOUR CE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 0,0; SPATIAL SCAN 0.0 04,88.091 Degrees,Forward		500 Secs (500 Secs) [==>]	[1]
	5		(3) G105-30-SOUR CE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 0,2; SPATIAL SCAN 0.0 04,88.091 Degrees,Forward		500 Secs (500 Secs) [==>]	[1]
	6		(3) G105-30-SOUR CE	WFC3/UVIS, ACCUM, UVIS2	F606W	FLASH=10	POS TARG 2,5		40 Secs (40 Secs) [==>]	[1]



Proposal 13058 - Visit 06 - Accurate Mass Determination of the Old White Dwarf G105-30 through Astrometric Microlensing

Wed Sep 17 01:00:54 GMT 2014

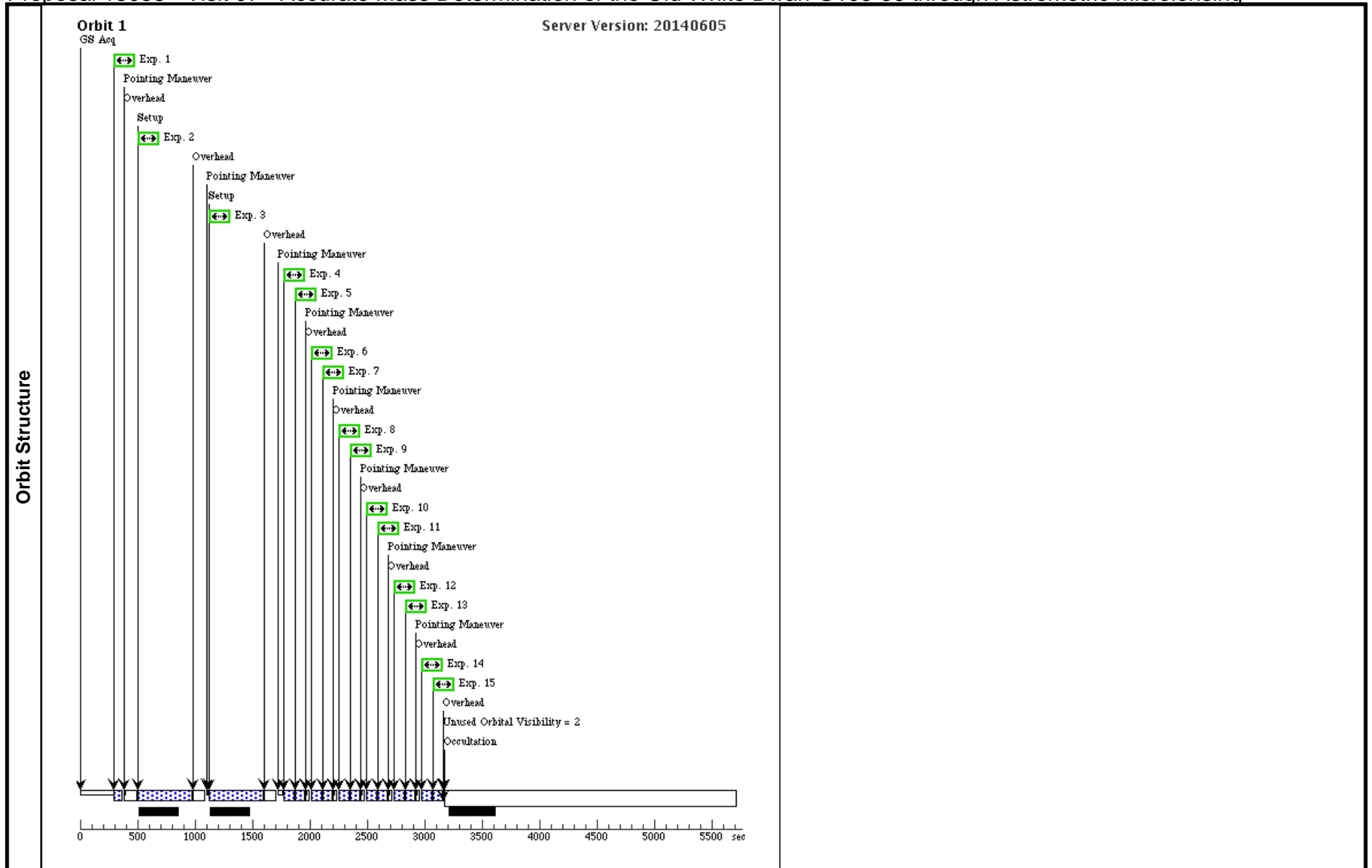
Visit	Proposal 13058, Visit 06, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 105D TO 105 D; BETWEEN 23-APR-2014 AND 05-MAY-2014; VISIBILITY INTERVAL 54.3 M										
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	G105-30-SOURCE	RA: 06 20 48.2000 (95.2008333d) Dec: +06 45 17.10 (6.75475d) Equinox: J2000			V=16.37	Reference Frame: ICRS	<i>Comments: The coordinates were calculated using POSS2 red image. The coordinates are that of the source that will be lensed by the WD.</i>			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
	1	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2	F606W	FLASH=10; BLADE=A	POS TARG 0,0	Sequence 1-15 Non-Int in Visit 06	40 Secs (40 Secs) [==>]	[1]		
	2	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 0,0; SPATIAL SCAN 0.0 04,88.091 Degrees,Forward	Sequence 1-15 Non-Int in Visit 06	500 Secs (500 Secs) [==>]	[1]		
	3	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 2,0; SPATIAL SCAN 0.0 04,88.091 Degrees,Forward	Sequence 1-15 Non-Int in Visit 06	500 Secs (500 Secs) [==>]	[1]		
	4	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10; BLADE=A	POS TARG -2,-2	Sequence 1-15 Non-Int in Visit 06	40 Secs (40 Secs) [==>]	[1]		
	5	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG -2,-2	Sequence 1-15 Non-Int in Visit 06	80 Secs (80 Secs) [==>]	[1]		
	6	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG -2.2925, -2.1255	Sequence 1-15 Non-Int in Visit 06	40 Secs (40 Secs) [==>]	[1]		
	7	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG -2.2925, -2.1255	Sequence 1-15 Non-Int in Visit 06	80 Secs (80 Secs) [==>]	[1]		
	8	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG -2.1862, -2.3044	Sequence 1-15 Non-Int in Visit 06	40 Secs (40 Secs) [==>]	[1]		
	9	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG -2.1862, -2.3044	Sequence 1-15 Non-Int in Visit 06	80 Secs (80 Secs) [==>]	[1]		
	10	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG -1,-2	Sequence 1-15 Non-Int in Visit 06	40 Secs (40 Secs) [==>]	[1]		
	11	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG -1,-2	Sequence 1-15 Non-Int in Visit 06	80 Secs (80 Secs) [==>]	[1]		
	12	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG -1.2925, -2.1255	Sequence 1-15 Non-Int in Visit 06	40 Secs (40 Secs) [==>]	[1]		
	13	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG -1.2925, -2.1255	Sequence 1-15 Non-Int in Visit 06	80 Secs (80 Secs) [==>]	[1]		
	14	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG -1.1862, -2.3044	Sequence 1-15 Non-Int in Visit 06	40 Secs (40 Secs) [==>]	[1]		
15	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG -1.1862, -2.3044	Sequence 1-15 Non-Int in Visit 06	80 Secs (80 Secs) [==>]	[1]			



Proposal 13058 - Visit 07 - Accurate Mass Determination of the Old White Dwarf G105-30 through Astrometric Microlensing

Wed Sep 17 01:00:54 GMT 2014

Visit	Proposal 13058, Visit 07, failed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 257D TO 257 D; BETWEEN 14-AUG-2014 AND 21-AUG-2014; VISIBILITY INTERVAL 52.83 M									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(3)	G105-30-SOURCE	RA: 06 20 48.2000 (95.2008333d) Dec: +06 45 17.10 (6.75475d) Equinox: J2000		V=16.37	Reference Frame: ICRS	Comments: The coordinates were calculated using POSS2 red image. The coordinates are that of the source that will be lensed by the WD.			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2	F606W	FLASH=10; BLADE=A	POS TARG 0,0	Sequence 1-15 Non-Int in Visit 07	40 Secs (40 Secs) [==>]	[1]
	2	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 0,0; SPATIAL SCAN 0.0 04,88.091 Degrees,Forward	Sequence 1-15 Non-Int in Visit 07	466 Secs (466 Secs) [==>]	[1]
	3	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 2,0; SPATIAL SCAN 0.0 04,88.091 Degrees,Forward	Sequence 1-15 Non-Int in Visit 07	466 Secs (466 Secs) [==>]	[1]
	4	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10; BLADE=A	POS TARG null,2	Sequence 1-15 Non-Int in Visit 07	40 Secs (40 Secs) [==>]	[1]
	5	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	SAME POS AS 4	Sequence 1-15 Non-Int in Visit 07	80 Secs (80 Secs) [==>]	[1]
	6	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG 0.2925,2 .1255	Sequence 1-15 Non-Int in Visit 07	40 Secs (40 Secs) [==>]	[1]
	7	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	SAME POS AS 6	Sequence 1-15 Non-Int in Visit 07	80 Secs (80 Secs) [==>]	[1]
	8	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG 0.1862,2 .3044	Sequence 1-15 Non-Int in Visit 07	40 Secs (40 Secs) [==>]	[1]
	9	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	SAME POS AS 8	Sequence 1-15 Non-Int in Visit 07	80 Secs (80 Secs) [==>]	[1]
	10	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG 1,2	Sequence 1-15 Non-Int in Visit 07	40 Secs (40 Secs) [==>]	[1]
	11	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	SAME POS AS 10	Sequence 1-15 Non-Int in Visit 07	80 Secs (80 Secs) [==>]	[1]
	12	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG 1.2925,2 .1255	Sequence 1-15 Non-Int in Visit 07	40 Secs (40 Secs) [==>]	[1]
	13	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	SAME POS AS 12	Sequence 1-15 Non-Int in Visit 07	80 Secs (80 Secs) [==>]	[1]
	14	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG 0.1862,2 .3044	Sequence 1-15 Non-Int in Visit 07	40 Secs (40 Secs) [==>]	[1]
15	(3) G105-30-SOURCE	(3) G105-30-SOURCE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	SAME POS AS 14	Sequence 1-15 Non-Int in Visit 07	80 Secs (80 Secs) [==>]	[1]	



Proposal 13058 - Visit 57 - Accurate Mass Determination of the Old White Dwarf G105-30 through Astrometric Microlensing

Wed Sep 17 01:00:55 GMT 2014

Visit	<b>Proposal 13058, Visit 57, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 287D TO 287 D; BEFORE 15-OCT-2014:00:00:00									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(3)	G105-30-SOURCE	RA: 06 20 48.2000 (95.2008333d) Dec: +06 45 17.10 (6.75475d) Equinox: J2000		V=16.37	Reference Frame: ICRS				
	<i>Comments: The coordinates were calculated using POSS2 red image. The coordinates are that of the source that will be lensed by the WD.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2	F606W	FLASH=10; BLADE=A	POS TARG 0,0; GS ACQ SCENARI O BASE1B3	Sequence 1-15 Non-Int in Visit 57	40 Secs (40 Secs) [==>]	[1]
	2	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 0,0; SPATIAL SCAN 0.0 04,88.091 Degrees,Forward	Sequence 1-15 Non-Int in Visit 57	466 Secs (466 Secs) [==>]	[1]
	3	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2	F606W		POS TARG 2,0; SPATIAL SCAN 0.0 04,88.091 Degrees,Forward	Sequence 1-15 Non-Int in Visit 57	466 Secs (466 Secs) [==>]	[1]
	4	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10; BLADE=A	POS TARG null,2	Sequence 1-15 Non-Int in Visit 57	40 Secs (40 Secs) [==>]	[1]
	5	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	SAME POS AS 4	Sequence 1-15 Non-Int in Visit 57	80 Secs (80 Secs) [==>]	[1]
	6	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG 0.2925,2 .1255	Sequence 1-15 Non-Int in Visit 57	40 Secs (40 Secs) [==>]	[1]
	7	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	SAME POS AS 6	Sequence 1-15 Non-Int in Visit 57	80 Secs (80 Secs) [==>]	[1]
	8	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG 0.1862,2 .3044	Sequence 1-15 Non-Int in Visit 57	40 Secs (40 Secs) [==>]	[1]
	9	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	SAME POS AS 8	Sequence 1-15 Non-Int in Visit 57	80 Secs (80 Secs) [==>]	[1]
	10	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG 1,2	Sequence 1-15 Non-Int in Visit 57	40 Secs (40 Secs) [==>]	[1]
	11	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	SAME POS AS 10	Sequence 1-15 Non-Int in Visit 57	80 Secs (80 Secs) [==>]	[1]
	12	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG 1.2925,2 .1255	Sequence 1-15 Non-Int in Visit 57	40 Secs (40 Secs) [==>]	[1]
	13	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	SAME POS AS 12	Sequence 1-15 Non-Int in Visit 57	80 Secs (80 Secs) [==>]	[1]
	14	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	POS TARG 0.1862,2 .3044	Sequence 1-15 Non-Int in Visit 57	40 Secs (40 Secs) [==>]	[1]
15	(3) G105-30-SOURCE	CE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=10	SAME POS AS 14	Sequence 1-15 Non-Int in Visit 57	80 Secs (80 Secs) [==>]	[1]	

