13184 - Deciphering AGN outflows: multiwavelength monitoring of NGC 5548

Cycle: 21, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) NGC-5548	COS/FUV	2	03-Sep-2013 21:10:44.0	yes
02	(1) NGC-5548	COS/FUV	2	03-Sep-2013 21:11:01.0	yes
03	(1) NGC-5548	COS/FUV	2	03-Sep-2013 21:11:18.0	yes
04	(1) NGC-5548	COS/FUV	2	03-Sep-2013 21:11:33.0	yes
05	(1) NGC-5548	COS/FUV	2	03-Sep-2013 21:11:49.0	yes
06	(1) NGC-5548	COS/FUV	2	03-Sep-2013 21:12:06.0	yes

12 Total Orbits Used

ABSTRACT

AGN outflows couple supermassive black holes to their environments. Using an ambitious multiwavelength campaign on NGC 5548, (XMM-Newton, HST, Swift, and optical) we propose to achieve a new level of physical understanding for these enigmatic winds by obtaining the deepest RGS spectrum of any AGN, allowing us to determine the ionisation structure of the gas. Using EPIC data we will measure the response of the outflow to continuum variations, which combined with HST/COS data determines unambiguously the location and tomography of the outflow components. Time-dependent UV and X-ray continuum variations will constrain the geometry and physics close to the black hole. Our team pioneered this approach, and recently applied it successfully (12 refereed papers) to Mrk 509.

OBSERVING DESCRIPTION

We will use COS/FUV with gratings G130M and G160M to observe the 1150-1800 A spectrum of the Seyfert 1 galaxy NGC 5548. These observations will be coordinated with XMM-Newton X-ray spectral observations, which are to be scheduled as 10 visits, each ~1 day long, at 4 day intervals in June/July 2013, followed by 2 visits in January 2014. We will schedule five 2-orbit HST visits in coordination with the core of the campaign in June/July 2013, and one additional 2-orbit visit in January 2014. The HST observations should be scheduled to within 1 day of the XMM observations, offering a 3-day window around each. Preliminary XMM-Newton observing times are as follows:

Tstart -> Tstop
2013-Jun-22 00:36:56 GMT -> 2013-Jun-22 22:21:03 GMT

2013-Jul-11 23:18:56 GMT -> 2013-Jul-12 21:03:04 GMT
2013-Jul-23 22:31:47 GMT -> 2013-Jul-24 20:33:33 GMT
2013-Jul-29 22:07:46 GMT -> 2013-Jul-30 20:09:32 GMT
2013-Jul-31 21:59:49 GMT -> 2013-Aug-01 20:01:34 GMT
2014-Jan-01 00:00:00 GMT -> 2014-Feb-01 00:00:00 GMT

The far-UV continuum of NGC 5548 shows 17 to 30% rms variability with peak-to-trough variations of 2-5 over 2-month time scales. Extremely low FUV flux episodes are very rare (Dunn et al. 2006). We expect a roughly linear response for the column density of Ly alpha, N V, and C IV in response to continuum changes. Therefore, to be sensitive to changes in the absorption lines at the 3-sigma level, a conservative estimate of the required S/N per resolution element is 3/0.17=17.6. For Ly and NV using grating G130M, assuming a historical median flux Fmed of 3.5x1e-14 erg cm^{-2} s^{-1} A^{-1}1 at 1376 A (Dunn et al. 2006), this requires t >1000 s and for C IV in G160M t > 2000 s. Since only 2000 s per orbit remain after overheads for science exposures, we need two HST orbits per visit to obtain sufficient S/N. With 2 orbits and all overheads accounted for, we have 1800 s for science in the first orbit with G130M, and 2280 s in the 2nd orbit with G160M. At the median flux, this gives per visit S/N>25 in the Lyalpha and N V
region in G130M, and S/N>20 for C IV in G160M.

COS observations of NGC 5548 have been carried out safely and successfully before (see HST PID 12212), and they do not pose a bright object risk. We verify this with the following ETC calculations for which we use the FOS quasar spectrum in the ETC at a redshift of z=0.017 normalized to flux levels at 1360 A as given below. For limiting cases we use the following maximum and minimum historical flux levels from Dunn et al. (2006) (263 observations spanning 35 years):

Max: 8.6e-14 at 1360 A
Min: 0.66e-14 at 1360 A

COS ETC ID	Config	Flux	Max cts/s/pix	Total rate	Buffer Time
COS.sa.468856	G130M/1291	0.66e-14	0.1	689	3423
COS.sa.468862	G130M/1291	8.6e-14	0.2	4189	563
COS.sp.468865	G130M/1309	8.6e-14	0.13	4343	543
COS.sp.468872	G160M/1600	8.6e-14	0.13	1876	1257

Proposal 13184 - Visit 01 - Deciphering AGN outflows: multiwavelength monitoring of NGC 5548

Visit

Proposal 13184, Visit 01, completed Wed Sep 04 01:12:17 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; BETWEEN 21-JUN-2013:00:00:00 AND 24-JUN-2013:00:00:00; ON HOLD

Comments: To be coordinated with XMM-Newton observations tentatively scheduled for
2013-Jun-22 00:36:56 GMT -> 2013-Jun-22 22:21:03 GMT

On Hold Comments: To be coordinated with XMM-Newton Observations.

Diagnostics

(Visit 01) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

Fixed Targets

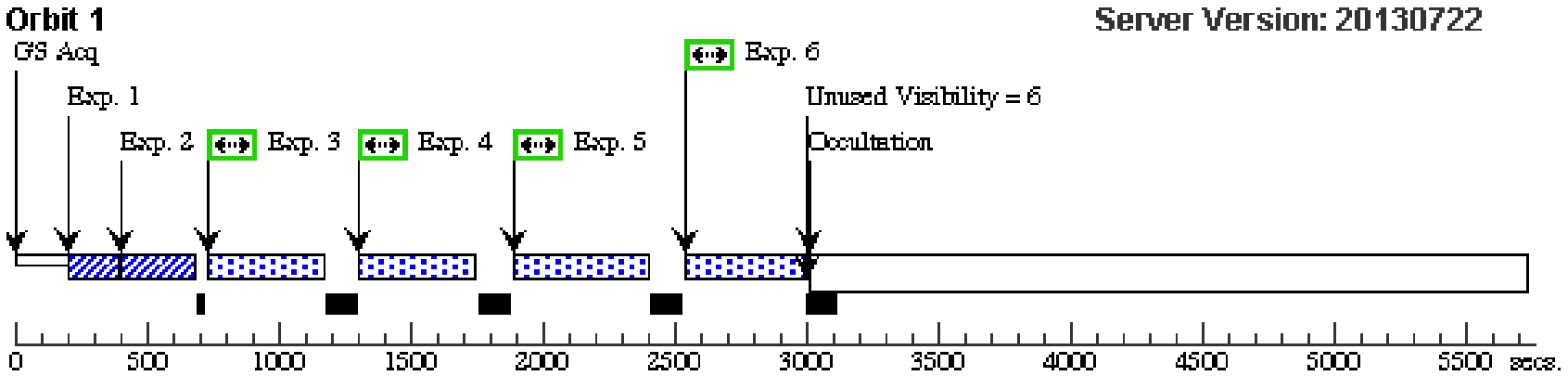
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-5548	RA: 14 17 59.5344 (214.4980600d) Dec: +25 08 12.44 (25.13679d) Equinox: J2000	Redshift: 0.017175	V=13.73 4.39e-14 at 1360 A (historical mean)	Reference Frame: ICRS

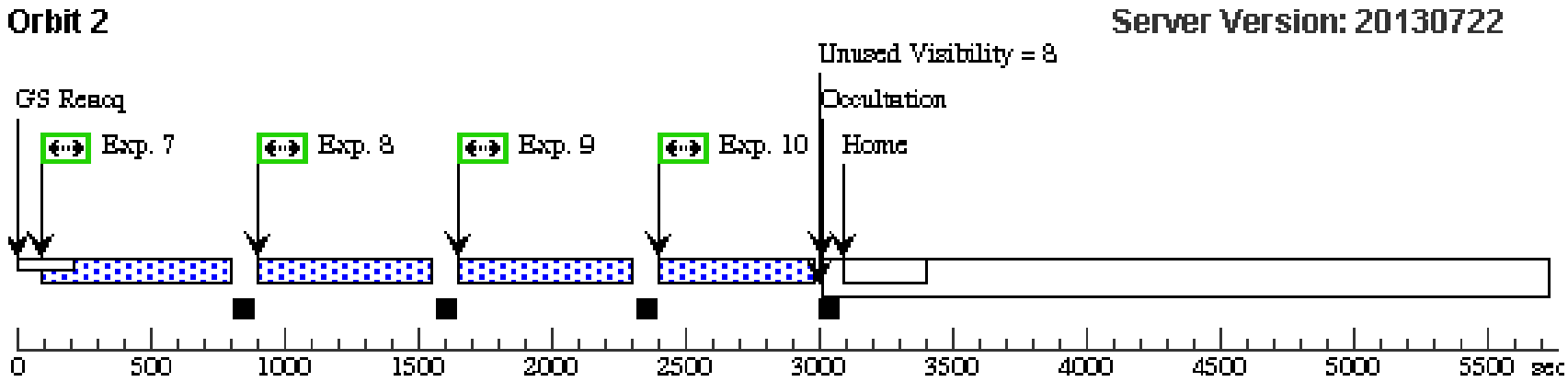
Comments: This object was generated by the targetselector and retrieved from the NED database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.sa.468856)	(1) NGC-5548	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				25 Secs (25 Secs) *[==>]*	***[1]***
Comments: Our spectroscopic target acq calculation is based on the observed historical minimum flux for NGC 5548 of 0.66e-14 at 1360 A to ensure adequate S/N even if the target is in a faint state.									
2	(COS.sa.468856)	(1) NGC-5548	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	NUM-POS=5; STEP-SIZE=0.9; CENTER=FLUX-WT-FLR			25 Secs (25 Secs) *[==>]*	***[1]***
Comments: Our spectroscopic target acq calculation is based on the observed historical minimum flux for NGC 5548 of 0.66e-14 at 1360 A to ensure adequate S/N even if the target is in a faint state.									
3	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=360; FP-POS=3			390 Secs (390 Secs) *[==>]*	***[1]***
4	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=360; FP-POS=4			390 Secs (390 Secs) *[==>]*	***[1]***
5	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=360; FP-POS=3			390. Secs (390 Secs) *[==>]*	***[1]***
6	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=360; FP-POS=4			400. Secs (400 Secs) *[==>]*	***[1]***
7	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=840; FP-POS=1			530. Secs (530 Secs) *[==>]*	***[2]***
8	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=840; FP-POS=1			530. Secs (530 Secs) *[==>]*	***[2]***
9	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=840; FP-POS=1			530. Secs (530 Secs) *[==>]*	***[2]***
10	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=840; FP-POS=4			530. Secs (530 Secs) *[==>]*	***[2]***

Orbit Structure





Proposal 13184 - Visit 02 - Deciphering AGN outflows: multiwavelength monitoring of NGC 5548

Visit

Proposal 13184, Visit 02, completed Wed Sep 04 01:12:19 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; BETWEEN 11-JUL-2013:00:00:00 AND 14-JUL-2013:00:00:00; ON HOLD

Comments: To be coordinated with XMM-Newton observations tentatively scheduled for
2013-Jul-11 23:18:56 GMT -> 2013-Jul-12 21:03:04 GMT

On Hold Comments: To be coordinated with XMM-Newton Observations.

Diagnostics

(Visit 02) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

Fixed Targets

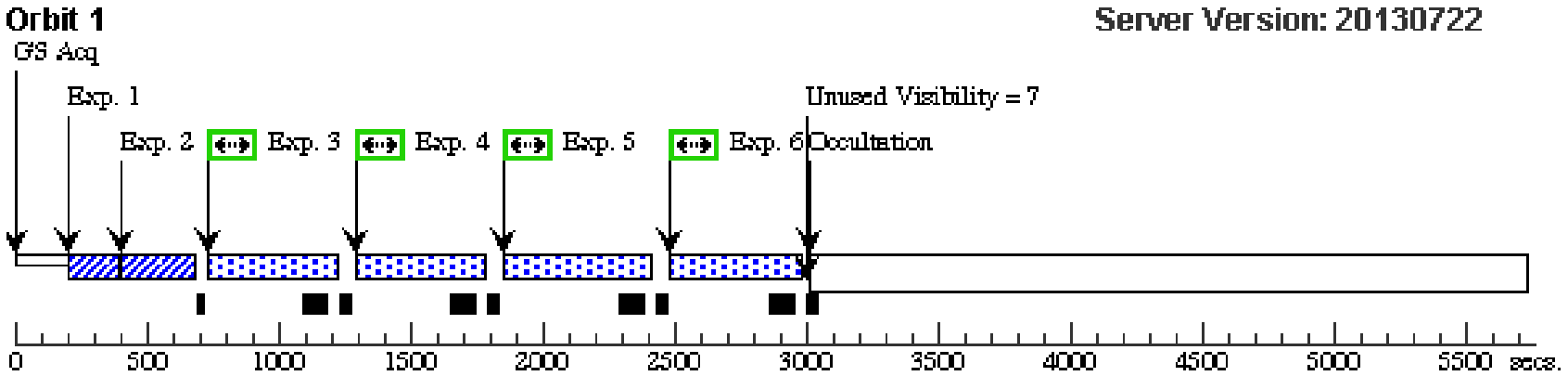
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-5548	RA: 14 17 59.5344 (214.4980600d) Dec: +25 08 12.44 (25.13679d) Equinox: J2000	Redshift: 0.017175	V=13.73 4.39e-14 at 1360 A (historical mean)	Reference Frame: ICRS

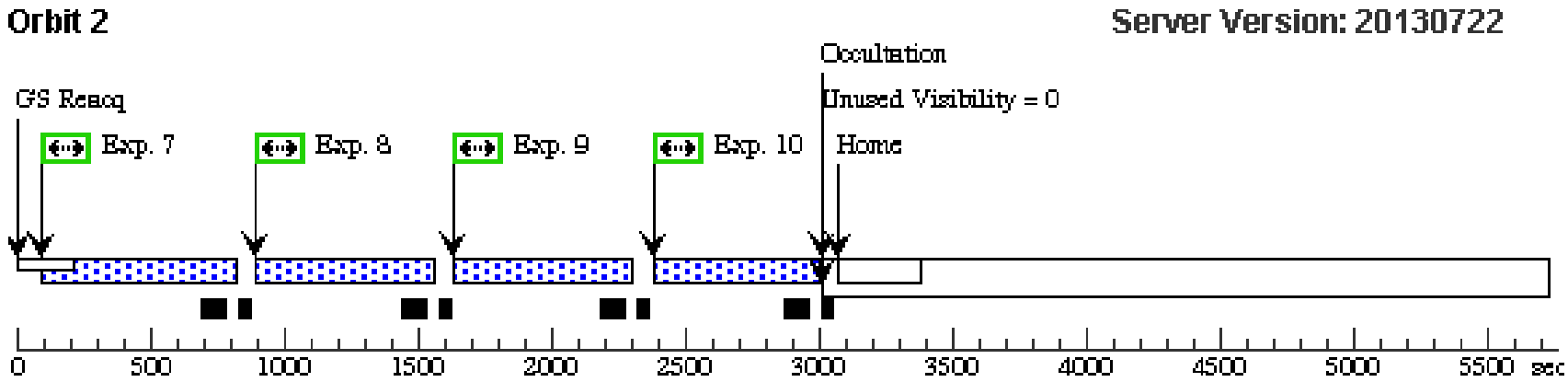
Comments: This object was generated by the targetselector and retrieved from the NED database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.sa.468856)	(1) NGC-5548	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				25 Secs (25 Secs) *[==>]*	***[1]***
Comments: Our spectroscopic target acq calculation is based on the observed historical minimum flux for NGC 5548 of 0.66e-14 at 1360 A to ensure adequate S/N even if the target is in a faint state.									
2	(COS.sa.468856)	(1) NGC-5548	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	NUM-POS=5; STEP-SIZE=0.9; CENTER=FLUX-WT-FLR			25 Secs (25 Secs) *[==>]*	***[1]***
Comments: Our spectroscopic target acq calculation is based on the observed historical minimum flux for NGC 5548 of 0.66e-14 at 1360 A to ensure adequate S/N even if the target is in a faint state.									
3	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=330; FP-POS=3			440 Secs (440 Secs) *[==>]*	***[1]***
4	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=330; FP-POS=4			440 Secs (440 Secs) *[==>]*	***[1]***
5	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=330; FP-POS=3			440. Secs (440 Secs) *[==>]*	***[1]***
6	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=340; FP-POS=4			450. Secs (450 Secs) *[==>]*	***[1]***
7	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
8	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
9	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
10	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=455; FP-POS=4			565. Secs (565 Secs) *[==>]*	***[2]***

Orbit Structure





Proposal 13184 - Visit 03 - Deciphering AGN outflows: multiwavelength monitoring of NGC 5548

Visit

Proposal 13184, Visit 03, completed Wed Sep 04 01:12:21 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; BETWEEN 23-JUL-2013:00:00:00 AND 26-JUL-2013:00:00:00; ON HOLD

Comments: To be coordinated with XMM-Newton observations tentatively scheduled for
2013-Jul-23 22:31:47 GMT -> 2013-Jul-24 20:33:33 GMT

On Hold Comments: To be coordinated with XMM-Newton Observations.

Diagnostics

(Visit 03) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

Fixed Targets

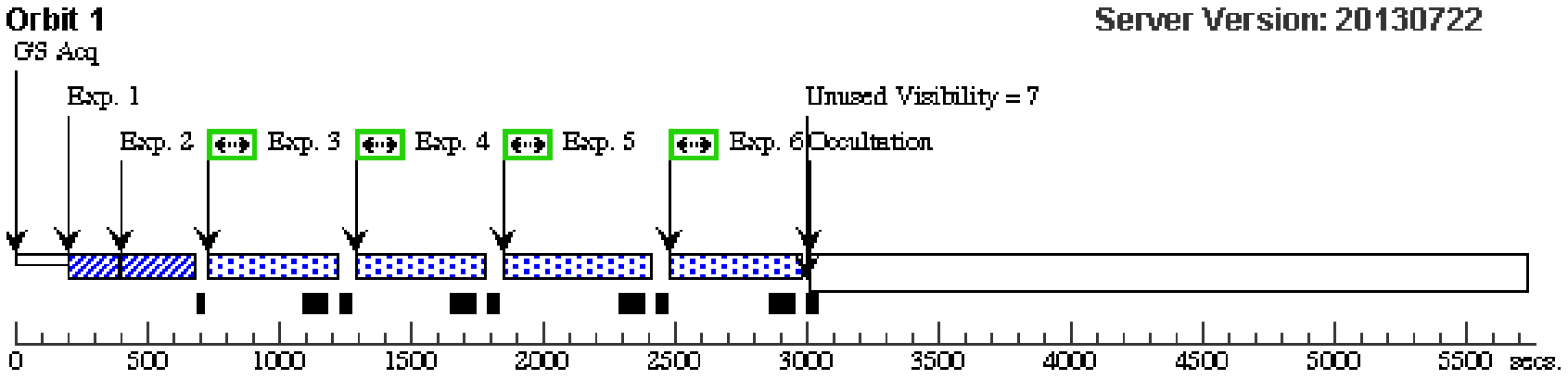
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-5548	RA: 14 17 59.5344 (214.4980600d) Dec: +25 08 12.44 (25.13679d) Equinox: J2000	Redshift: 0.017175	V=13.73 4.39e-14 at 1360 A (historical mean)	Reference Frame: ICRS

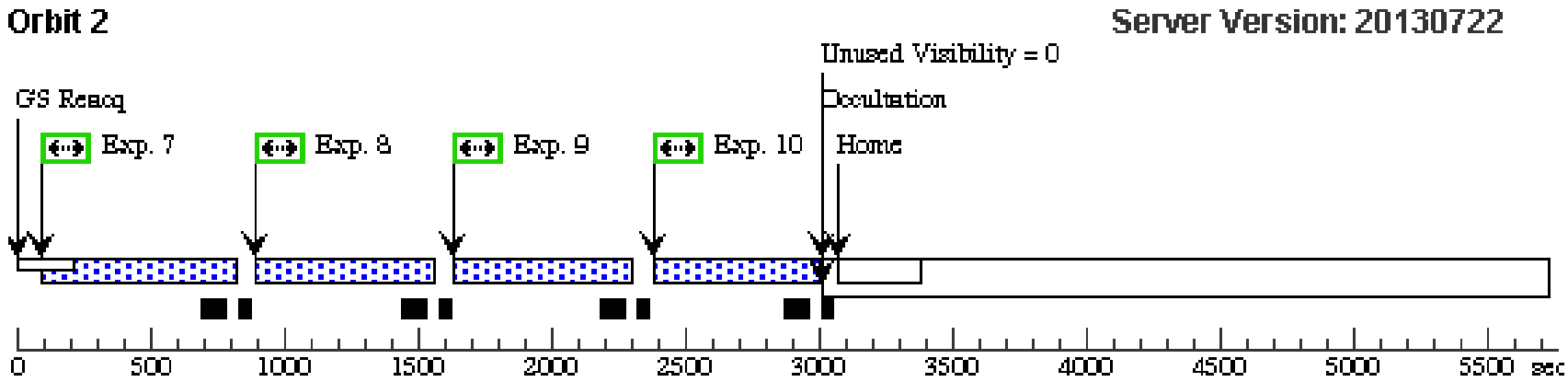
Comments: This object was generated by the targetselector and retrieved from the NED database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.sa.468856)	(1) NGC-5548	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				25 Secs (25 Secs) *[==>]*	***[1]***
Comments: Our spectroscopic target acq calculation is based on the observed historical minimum flux for NGC 5548 of 0.66e-14 at 1360 A to ensure adequate S/N even if the target is in a faint state.									
2	(COS.sa.468856)	(1) NGC-5548	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	NUM-POS=5; STEP-SIZE=0.9; CENTER=FLUX-WT-FLR			25 Secs (25 Secs) *[==>]*	***[1]***
Comments: Our spectroscopic target acq calculation is based on the observed historical minimum flux for NGC 5548 of 0.66e-14 at 1360 A to ensure adequate S/N even if the target is in a faint state.									
3	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=330; FP-POS=3			440 Secs (440 Secs) *[==>]*	***[1]***
4	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=330; FP-POS=4			440 Secs (440 Secs) *[==>]*	***[1]***
5	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=330; FP-POS=3			440. Secs (440 Secs) *[==>]*	***[1]***
6	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=340; FP-POS=4			450. Secs (450 Secs) *[==>]*	***[1]***
7	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
8	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
9	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
10	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=455; FP-POS=4			565. Secs (565 Secs) *[==>]*	***[2]***

Orbit Structure





Proposal 13184 - Visit 04 - Deciphering AGN outflows: multiwavelength monitoring of NGC 5548

Visit

Proposal 13184, Visit 04, completed Wed Sep 04 01:12:22 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; BETWEEN 29-JUL-2013:00:00:00 AND 31-JUL-2013:00:00:00; ON HOLD

Comments: To be coordinated with XMM-Newton observations tentatively scheduled for
2013-Jul-29 22:07:46 GMT -> 2013-Jul-30 20:09:32 GMT

On Hold Comments: To be coordinated with XMM-Newton Observations.

Diagnostics

(Visit 04) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

Fixed Targets

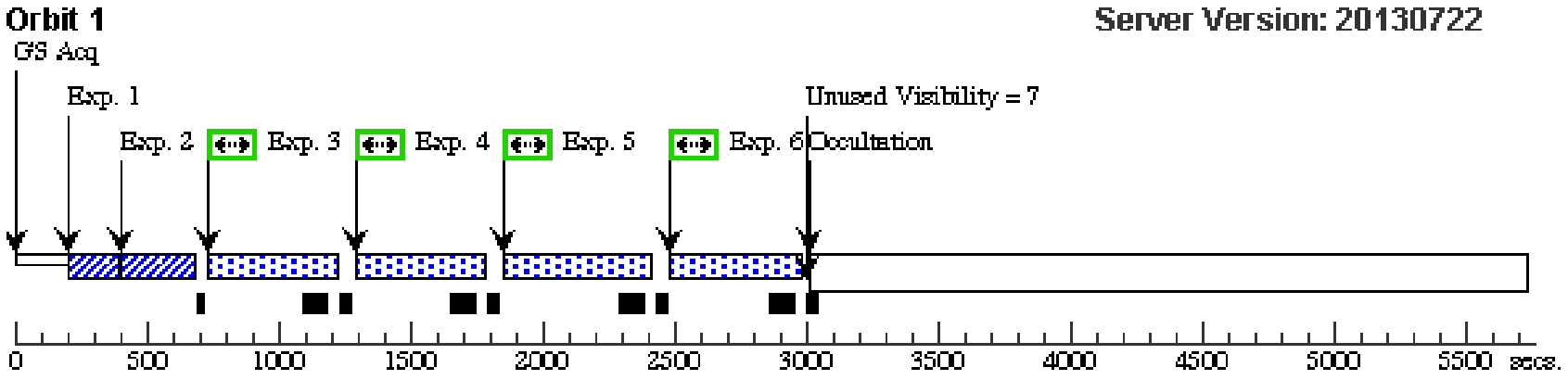
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-5548	RA: 14 17 59.5344 (214.4980600d) Dec: +25 08 12.44 (25.13679d) Equinox: J2000	Redshift: 0.017175	V=13.73 4.39e-14 at 1360 A (historical mean)	Reference Frame: ICRS

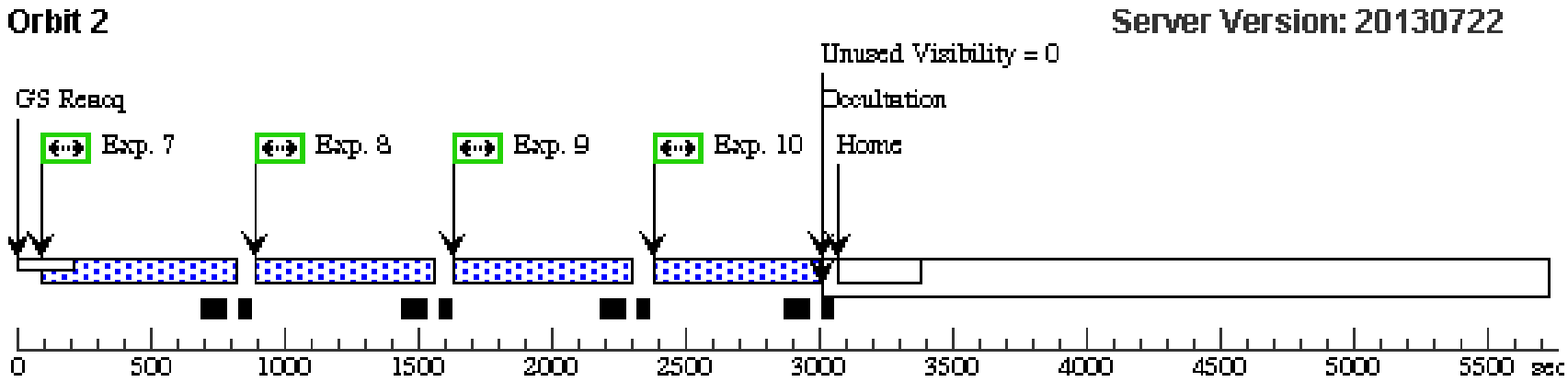
Comments: This object was generated by the targetselector and retrieved from the NED database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.sa.468856)	(1) NGC-5548	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				25 Secs (25 Secs) *[==>]*	***[1]***
Comments: Our spectroscopic target acq calculation is based on the observed historical minimum flux for NGC 5548 of 0.66e-14 at 1360 A to ensure adequate S/N even if the target is in a faint state.									
2	(COS.sa.468856)	(1) NGC-5548	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	NUM-POS=5; STEP-SIZE=0.9; CENTER=FLUX-WT-FLR			25 Secs (25 Secs) *[==>]*	***[1]***
Comments: Our spectroscopic target acq calculation is based on the observed historical minimum flux for NGC 5548 of 0.66e-14 at 1360 A to ensure adequate S/N even if the target is in a faint state.									
3	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=330; FP-POS=3			440 Secs (440 Secs) *[==>]*	***[1]***
4	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=330; FP-POS=4			440 Secs (440 Secs) *[==>]*	***[1]***
5	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=330; FP-POS=3			440. Secs (440 Secs) *[==>]*	***[1]***
6	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=340; FP-POS=4			450. Secs (450 Secs) *[==>]*	***[1]***
7	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
8	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
9	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
10	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=455; FP-POS=4			565. Secs (565 Secs) *[==>]*	***[2]***

Orbit Structure





Proposal 13184 - Visit 05 - Deciphering AGN outflows: multiwavelength monitoring of NGC 5548

Visit

Proposal 13184, Visit 05, completed Wed Sep 04 01:12:23 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; BETWEEN 31-JUL-2013:00:00:00 AND 02-AUG-2013:00:00:00; ON HOLD

Comments: To be coordinated with XMM-Newton observations tentatively scheduled for
2013-Jul-31 21:59:49 GMT -> 2013-Aug-01 20:01:34 GMT

On Hold Comments: To be coordinated with XMM-Newton Observations.

Diagnostics

(Visit 05) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

Fixed Targets

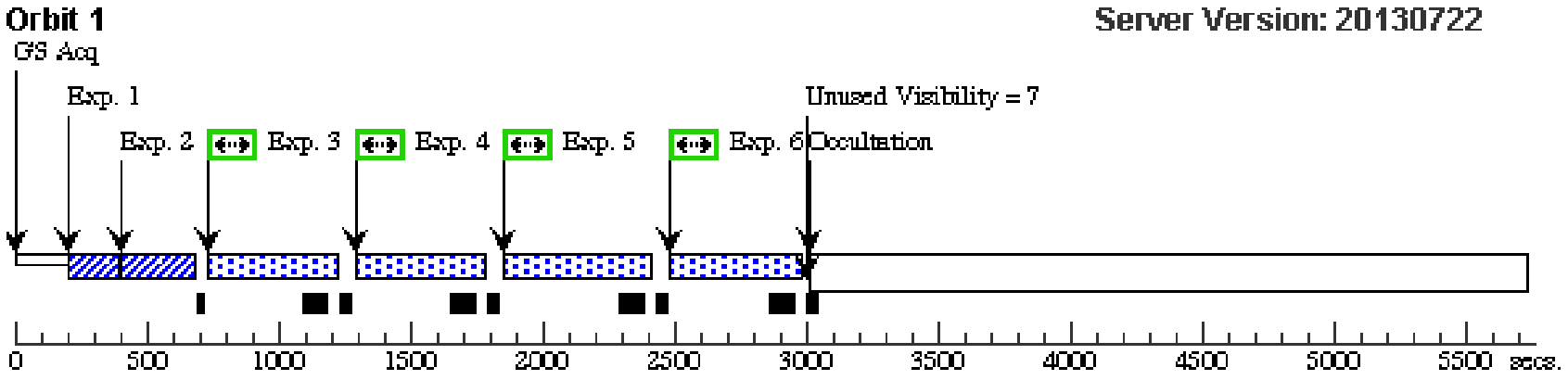
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-5548	RA: 14 17 59.5344 (214.4980600d) Dec: +25 08 12.44 (25.13679d) Equinox: J2000	Redshift: 0.017175	V=13.73 4.39e-14 at 1360 A (historical mean)	Reference Frame: ICRS

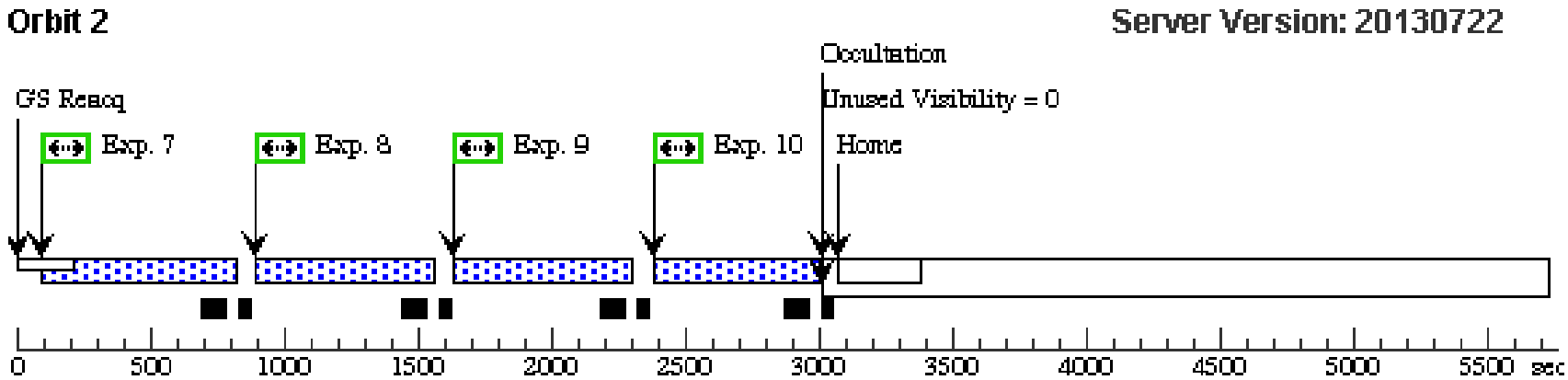
Comments: This object was generated by the targetselector and retrieved from the NED database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.sa.468856)	(1) NGC-5548	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				25 Secs (25 Secs) *[==>]*	***[1]***
Comments: Our spectroscopic target acq calculation is based on the observed historical minimum flux for NGC 5548 of 0.66e-14 at 1360 A to ensure adequate S/N even if the target is in a faint state.									
2	(COS.sa.468856)	(1) NGC-5548	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	NUM-POS=5; STEP-SIZE=0.9; CENTER=FLUX-WT-FLR			25 Secs (25 Secs) *[==>]*	***[1]***
Comments: Our spectroscopic target acq calculation is based on the observed historical minimum flux for NGC 5548 of 0.66e-14 at 1360 A to ensure adequate S/N even if the target is in a faint state.									
3	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=330; FP-POS=3			440 Secs (440 Secs) *[==>]*	***[1]***
4	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=330; FP-POS=4			440 Secs (440 Secs) *[==>]*	***[1]***
5	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=330; FP-POS=3			440. Secs (440 Secs) *[==>]*	***[1]***
6	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=340; FP-POS=4			450. Secs (450 Secs) *[==>]*	***[1]***
7	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
8	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
9	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
10	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=455; FP-POS=4			565. Secs (565 Secs) *[==>]*	***[2]***

Orbit Structure





Proposal 13184 - Visit 06 - Deciphering AGN outflows: multiwavelength monitoring of NGC 5548

Visit

Proposal 13184, Visit 06, scheduling Wed Sep 04 01:12:24 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; ON HOLD

Comments: To be coordinated with XMM-Newton observations tentatively scheduled for 2014-Jan-01 00:00:00 GMT -> 2014-Feb-01 00:00:00 GMT

On Hold Comments: To be coordinated with XMM-Newton Observations.

Diagnostics

(Visit 06) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-5548	RA: 14 17 59.5344 (214.4980600d) Dec: +25 08 12.44 (25.13679d) Equinox: J2000	Redshift: 0.017175	V=13.73 4.39e-14 at 1360 A (historical mean)	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the NED database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.sa.468856)	(1) NGC-5548	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A				25 Secs (25 Secs) *[==>]*	***[1]***
Comments: Our spectroscopic target acq calculation is based on the observed historical minimum flux for NGC 5548 of 0.66e-14 at 1360 A to ensure adequate S/N even if the target is in a faint state.									
2	(COS.sa.468856)	(1) NGC-5548	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	NUM-POS=5; STEP-SIZE=0.9; CENTER=FLUX-WT-FLR			25 Secs (25 Secs) *[==>]*	***[1]***
Comments: Our spectroscopic target acq calculation is based on the observed historical minimum flux for NGC 5548 of 0.66e-14 at 1360 A to ensure adequate S/N even if the target is in a faint state.									
3	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=330; FP-POS=3			440 Secs (440 Secs) *[==>]*	***[1]***
4	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=330; FP-POS=4			440 Secs (440 Secs) *[==>]*	***[1]***
5	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=330; FP-POS=3			440. Secs (440 Secs) *[==>]*	***[1]***
6	(COS.sp.468865)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=340; FP-POS=4			450. Secs (450 Secs) *[==>]*	***[1]***
7	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
8	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
9	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=440; FP-POS=1			550. Secs (550 Secs) *[==>]*	***[2]***
10	(COS.sp.468872)	(1) NGC-5548	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=455; FP-POS=4			565. Secs (565 Secs) *[==>]*	***[2]***

Orbit Structure