16260 - Tied up in Knots: The Spatially Resolved LyC Escape from Haro 11

Cycle: 28, Proposal Category: GO

(UV Initiative)

(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) HARO-11-KNOT-C	COS/FUV COS/NUV	2	27-Jun-2022 15:00:16.0	yes
02	(1) HARO-11-KNOT-C	COS/FUV COS/NUV	2	27-Jun-2022 15:00:17.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
11	(1) HARO-11-KNOT-C	COS/FUV COS/NUV	1	27-Jun-2022 15:00:17.0	yes
03	(1) HARO-11-KNOT-C	COS/FUV COS/NUV	2	27-Jun-2022 15:00:18.0	yes
04	(1) HARO-11-KNOT-C (2) HARO-11-KNOT-A	COS/FUV COS/NUV	2	27-Jun-2022 15:00:19.0	yes
12	(1) HARO-11-KNOT-C (2) HARO-11-KNOT-A	COS/FUV COS/NUV	1	27-Jun-2022 15:00:19.0	yes
05	(1) HARO-11-KNOT-C (2) HARO-11-KNOT-A	COS/FUV COS/NUV	2	27-Jun-2022 15:00:20.0	yes
13	(1) HARO-11-KNOT-C (2) HARO-11-KNOT-A	COS/FUV COS/NUV	1	27-Jun-2022 15:00:21.0	yes
06	(1) HARO-11-KNOT-C (2) HARO-11-KNOT-A	COS/FUV COS/NUV	2	27-Jun-2022 15:00:21.0	yes
14	(1) HARO-11-KNOT-C (2) HARO-11-KNOT-A	COS/FUV COS/NUV	2	27-Jun-2022 15:00:22.0	yes
15	(1) HARO-11-KNOT-C (2) HARO-11-KNOT-A	COS/FUV COS/NUV	1	27-Jun-2022 15:00:23.0	yes
07	(1) HARO-11-KNOT-C (3) HARO-11-KNOT-B	COS/FUV COS/NUV	2	27-Jun-2022 15:00:24.0	yes
08	(1) HARO-11-KNOT-C (3) HARO-11-KNOT-B	COS/FUV COS/NUV	2	27-Jun-2022 15:00:24.0	yes
09	(1) HARO-11-KNOT-C (3) HARO-11-KNOT-B	COS/FUV COS/NUV	2	27-Jun-2022 15:00:25.0	yes
10	(1) HARO-11-KNOT-C	WFC3/UVIS	1	27-Jun-2022 15:00:26.0	yes

25 Total Orbits Used

ABSTRACT

The nearest and most well-studied Lyman continuum (LyC) emitting galaxy, Haro 11, offers an unparalleled opportunity to determine the conditions for LyC escape at 15-pc resolution. However, we do not know which of the 3 dominant star-forming knots is the LyC source: Knot C is a strong Ly-alpha emitter (LAE) with an ultraluminous X-ray source (ULX); Knot B hosts a very luminous ULX that is a candidate low-luminosity AGN (LLAGN); and Knot A is a starburst driving optically thin, Green Pea-like properties. Our proposed COS spectra of the LyC will identify which of the three knots is responsible for the known LyC emission. Depending on which Knot is confirmed as the LyC emitter (LCE), it would illuminate the connection between LyC escape and: LAEs and ULXs (Knot C); ULXs/LLAGN (Knot B); or Green Peas (Knot A). If Knot C is not confirmed, then this would overturn the widely held paradigm that all LCEs must be strong LAEs. If Knot B or C is the LyC source, then this first confirmation of a ULX LCE would imply that black hole accretion processes in dwarf galaxies may be a viable cosmological source of LyC. By establishing the LyC source in this iconic galaxy, these observations will allow much-needed, spatially resolved, detailed study of the radiative transfer of LyC from the ionizing source through the local ISM. Our results will clarify understanding of LyC escape and its relation to Ly-alpha, and inform efforts to identify LCEs at higher redshift.

OBSERVING DESCRIPTION

We will obtain COS LyC spectral observations using G130M/1055, of the three separate targets, Knots A, B, and C, within Haro 11, to determine which of the three is the LyC emitter. With redshift z = 0.021, the 912 A Lyman break of Haro 11 falls at 931 A. We will observe uncontaminated Haro 11 LyC emission in a 3.4 A window between the 930.75 A and 926.25 A geocoronal lines, and in a 2.0 A window between the 926.25 A and 923.15 A geocoronal lines. The exposure times for all 3 Knots are identical, ~14 ks, or 6 orbits each.

COS has previously observed all 3 Knots in Program GO-15352. The previous COS observations show that the fluxes are not high enough to warrant turning off Segment A for any of our targets in any of our spectroscopic exposures. Target acquisition time is based on existing COS/NUV acquisition images of Haro 11 taken with MIRRORA for GO-15352. Based on the observed flux in Knot C, acquisition exposure time of 10 sec yields S/N of 40. For the other knots, we will use Knot C for the target acquisition and offset the pointing accordingly. Knot A is an extended group of smaller clusters, so we set the ORIENT to minimize contamination. Knot B similarly has some extended emission, and also has ORIENT limits.

We also will obtain imaging with 1 orbit using WFC3 in filter FQ492N to capture H-beta. We take exposures dithered at 3 POS-TARGs to improve spatial resolution and mitigate cosmic rays. We also request a POST-FLASH to attain a 20 e background as recommended to mitigate the CTE issues.

Visit

Proposal 16260, Knot-C-Visit1 (01), completed Mon Jun 27 19:00:26 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Multiple previous COS observations for GO-15352 use Knot C for target acquisition. These observations show that the fluxes are not high enough to warrant turning off Segment A for any of our targets in any of our spectroscopic exposures. Target acquisition time is based on existing COS/NUV acquisition images of Haro 11 taken with MIRRORA for GO-15352. Based on the observed flux in Knot C, acquisition exposure time of 10 sec yields S/N of 40.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS

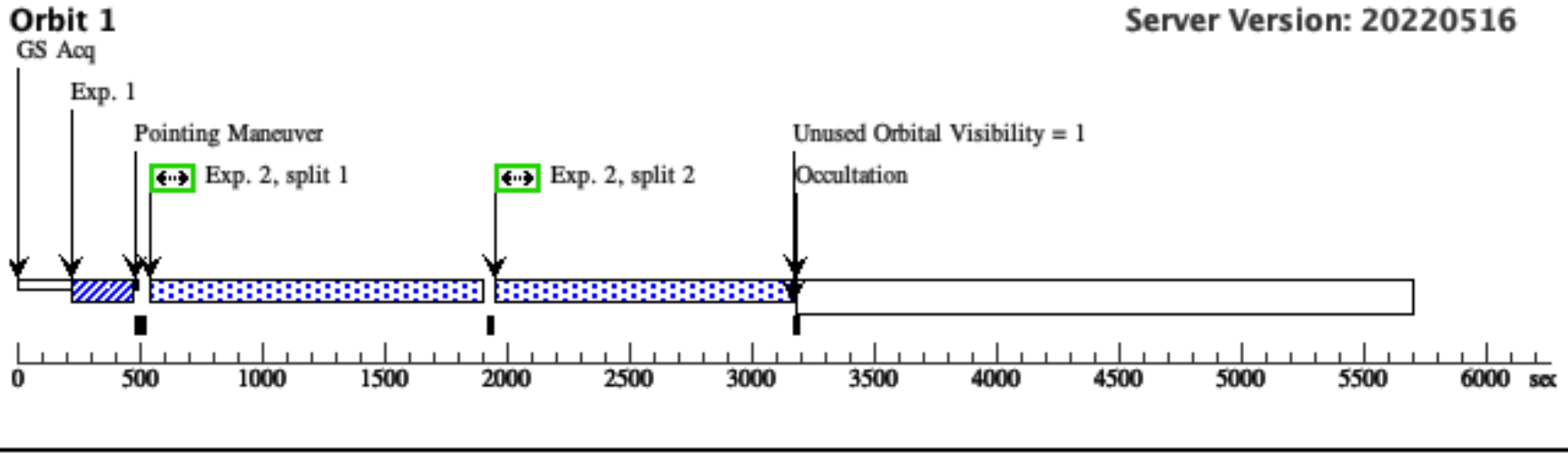
Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.

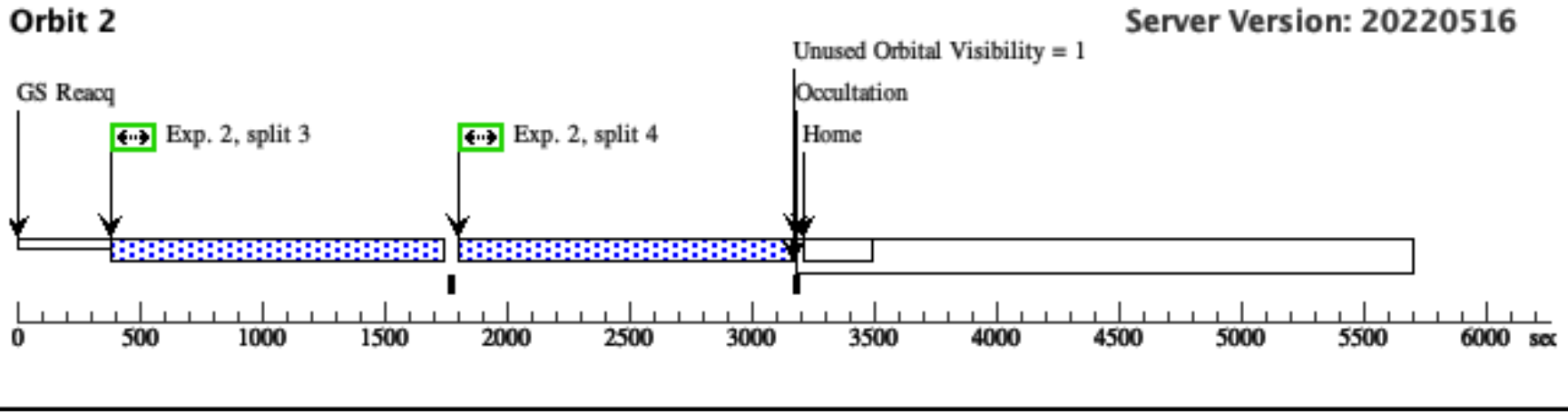
This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	*[1]*
Comments: Exposure time based on existing COS acquisition of this object.									
2	SCIENCE (1417614)	(1) HARO-11-KNOT-C	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=ALL			1100 Secs (4924 Secs) *[==>1153.0 Secs (Split 1)]* *[==>1153.0 Secs (Split 2)]* *[==>1309.0 Secs (Split 3)]* *[==>1309.0 Secs (Split 4)]*	*[1]* *[2]*

Orbit Structure





Visit

Proposal 16260, Knot-C-Visit2 (02), failed Mon Jun 27 19:00:26 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS

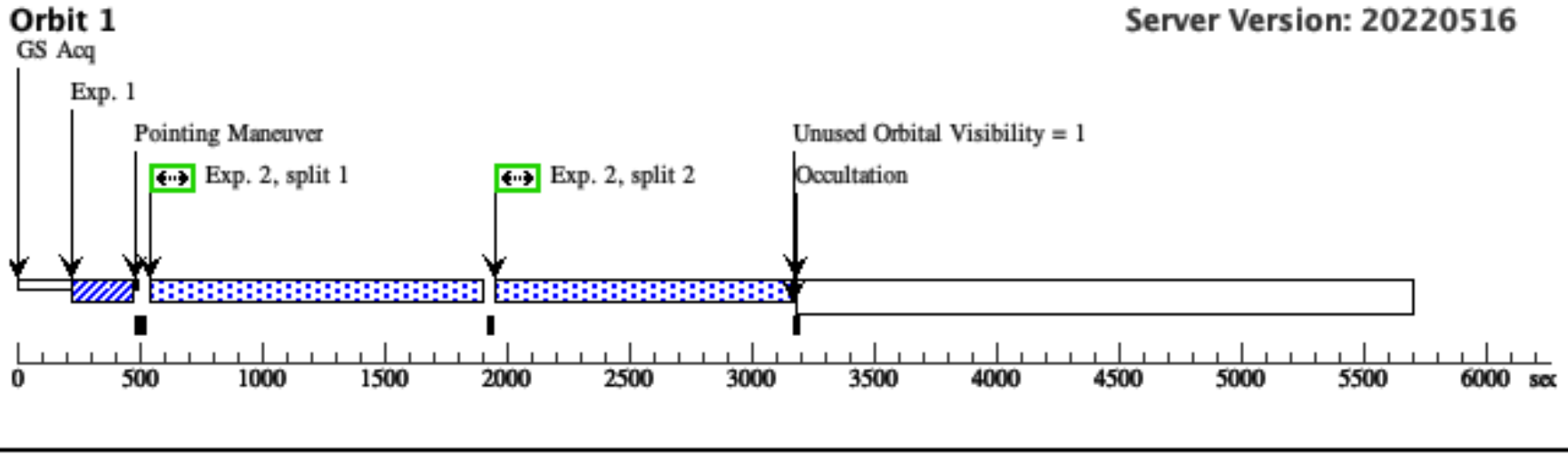
Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.

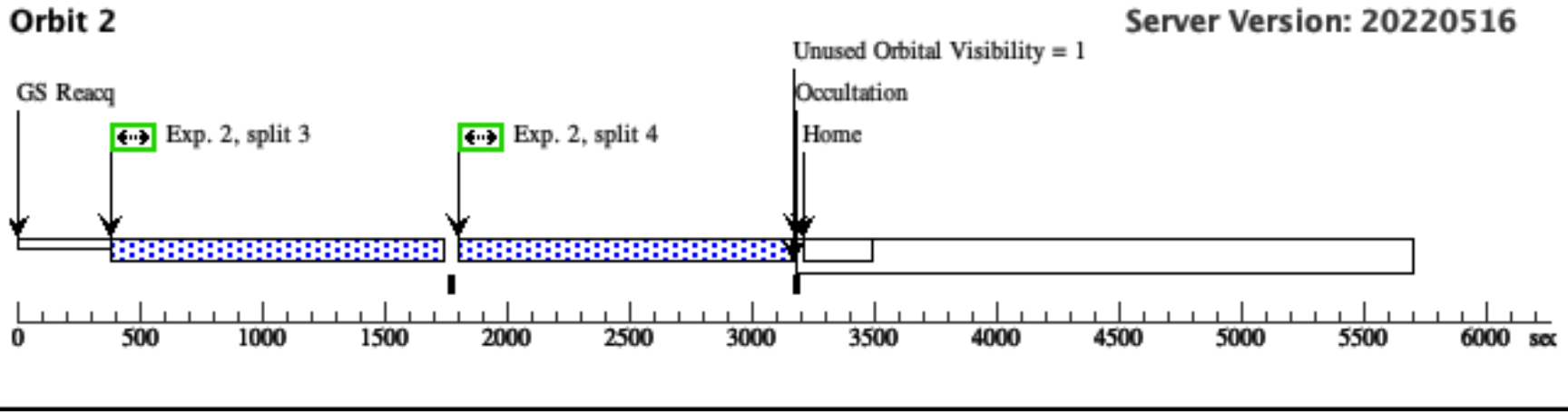
This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	 ***[1]***
Comments: Exposure time based on existing COS acquisition of this object.									
2	SCIENCE (1417614)	(1) HARO-11-KNOT-C	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=ALL			1100 Secs (4924 Secs) *[==>1153.0 Secs (Split 1)]* *[==>1153.0 Secs (Split 2)]* *[==>1309.0 Secs (Split 3)]* *[==>1309.0 Secs (Split 4)]*	 ***[1]*** ***[2]***

Orbit Structure





Visit

Proposal 16260, Knot-C-Visit2-REDO-V02 (11), completed Mon Jun 27 19:00:26 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: This is a redo of the first Orbit of Visit 02.

Diagnostics

(Knot-C-Visit2-REDO-V02 (11)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS

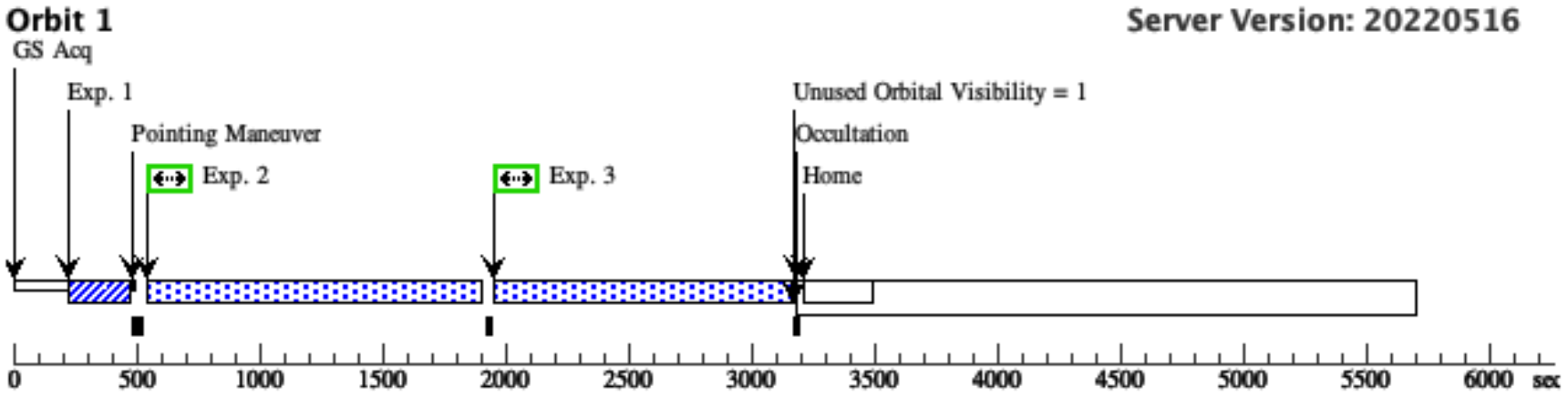
Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.

This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	*[1]*
Comments: Exposure time based on existing COS acquisition of this object.									
2	SCIENCE (1417614)	(1) HARO-11-KNOT-C	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=1			1100 Secs (1153 Secs) *[==>1153.0 Secs]*	*[1]*
3	SCIENCE (1417614)	(1) HARO-11-KNOT-C	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=2			1100 Secs (1153 Secs) *[==>1153.0 Secs]*	*[1]*

Orbit Structure



Visit

Proposal 16260, Knot-C-Visit3 (03), completed Mon Jun 27 19:00:26 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS

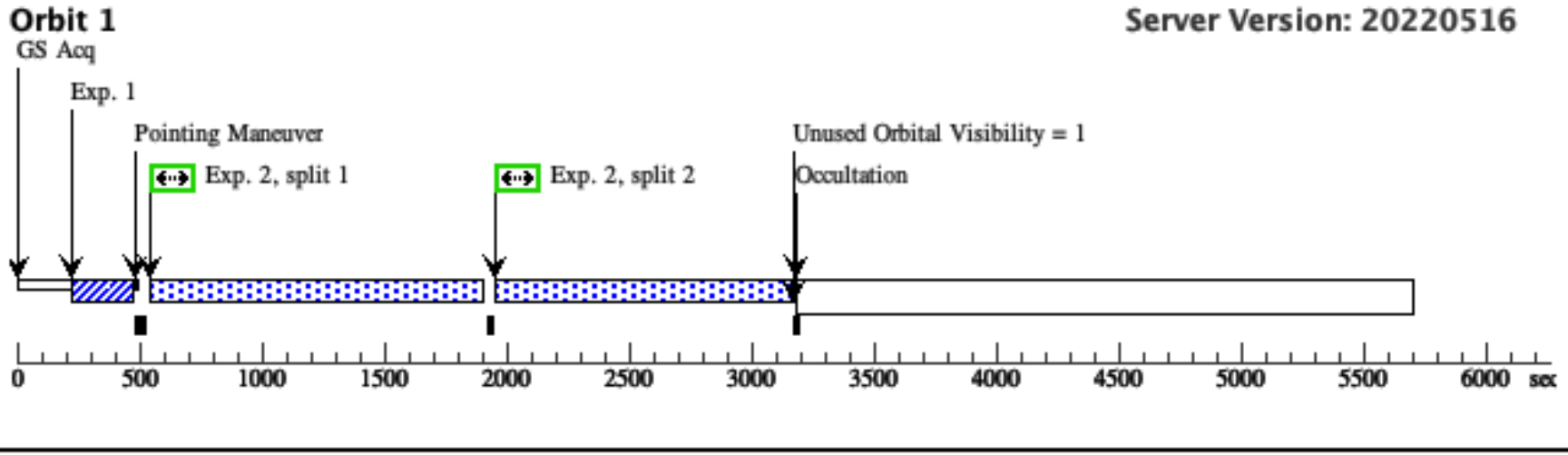
Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.

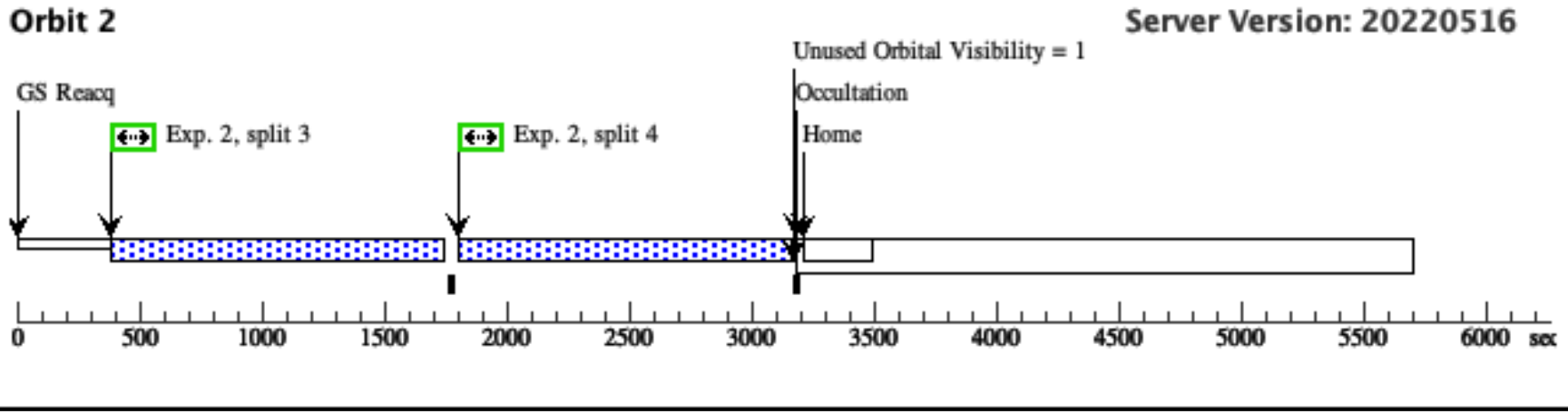
This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	 ***[1]***
Comments: Exposure time based on existing COS acquisition of this object.									
2	SCIENCE (1417614)	(1) HARO-11-KNOT-C	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=ALL			1100 Secs (4924 Secs) *[==>1153.0 Secs (Split 1)]* *[==>1153.0 Secs (Split 2)]* *[==>1309.0 Secs (Split 3)]* *[==>1309.0 Secs (Split 4)]*	 ***[1]*** ***[2]***

Orbit Structure





Visit

Proposal 16260, Knot-A-Visit1 (04), failed Mon Jun 27 19:00:26 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: ORIENT 25D TO 45 D; ORIENT 205D TO 225 D

Comments: Multiple previous COS observations for GO-15352 use Knot C for target acquisition. These observations show that the fluxes are not high enough to warrant turning off Segment A for any of our targets in any of our spectroscopic exposures. Target acquisition time is based on existing COS/NUV acquisition images of Haro 11 taken with MIRRORA for GO-15352. Based on the observed flux in Knot C, acquisition exposure time of 10 sec yields S/N of 40.

Diagnostics

(SCIENCE (04.002)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS

Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.

This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=NO

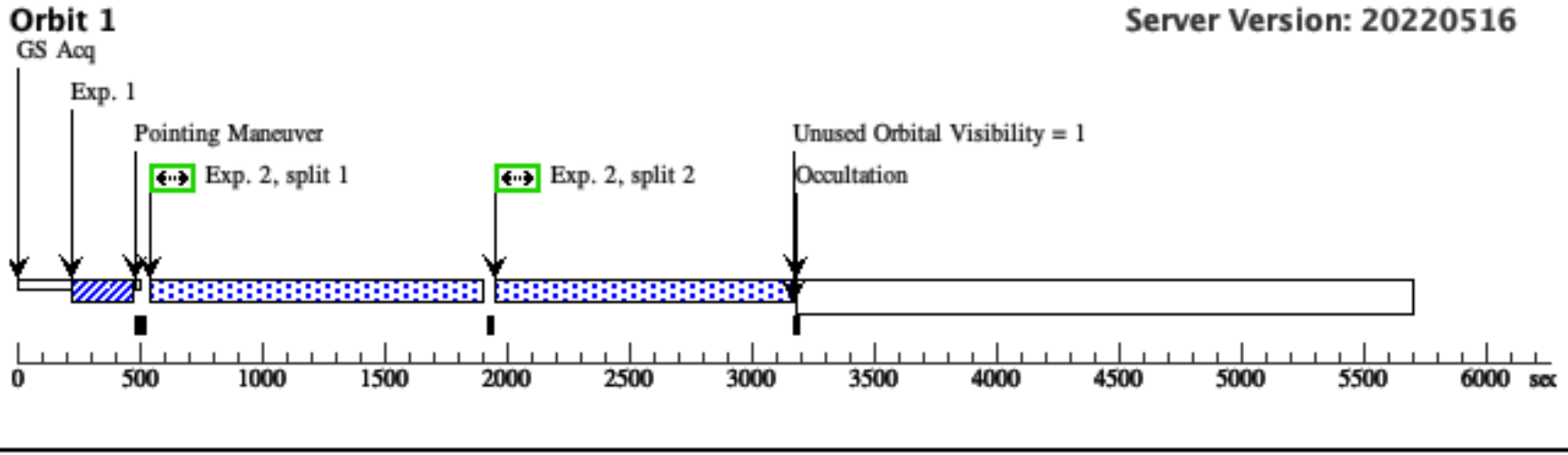
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	HARO-11-KNOT-A	Offset from HARO-11-KNOT-C RA Offset: -0.342 Secs Dec Offset: -2.76 Arcsec	Redshift: 0.021	V=17.241+/-0.05 F330W=15.819	Offset Position (HARO-11-KNOT-A)

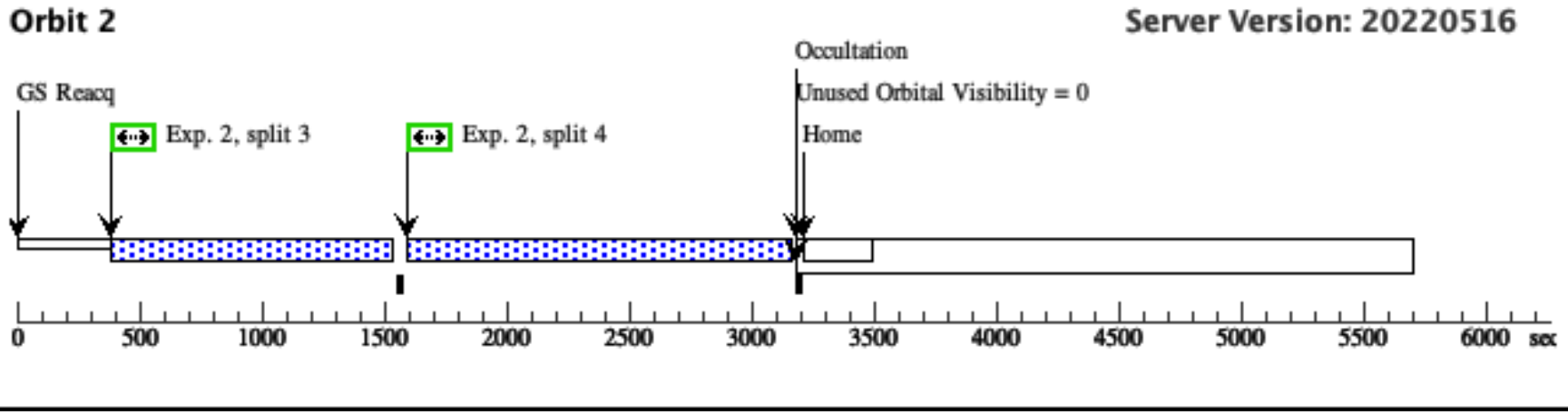
Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.1E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, MULTIPLE NUCLEI, STAR FORMING REGION]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	 ***[1]***
Comments: Exposure time based on existing COS acquisition of this object.									
2	SCIENCE (1417614)	(2) HARO-11-KNOT-A	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=ALL			1100 Secs (4925 Secs) *[==>1153.0 Secs (Split 1)]* *[==>1153.0 Secs (Split 2)]* *[==>(Split 3)]* *[==>1519.0 Secs (Split 4)]*	 ***[1]*** ***[2]***

Orbit Structure





Visit

Proposal 16260, Knot-A-Visit1-REDO-V04 (12), completed Mon Jun 27 19:00:26 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: ORIENT 25D TO 45 D; ORIENT 205D TO 225 D

Comments: This is a redo of the first Orbit of Visit 04.

Multiple previous COS observations for GO-15352 use Knot C for target acquisition. These observations show that the fluxes are not high enough to warrant turning off Segment A for any of our targets in any of our spectroscopic exposures. Target acquisition time is based on existing COS/NUV acquisition images of Haro 11 taken with MIRRORA for GO-15352. Based on the observed flux in Knot C, acquisition exposure time of 10 sec yields S/N of 40.

Diagnostics

(Knot-A-Visit1-REDO-V04 (12)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.

(SCIENCE (12.002)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(SCIENCE (12.003)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS

Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.

This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=NO

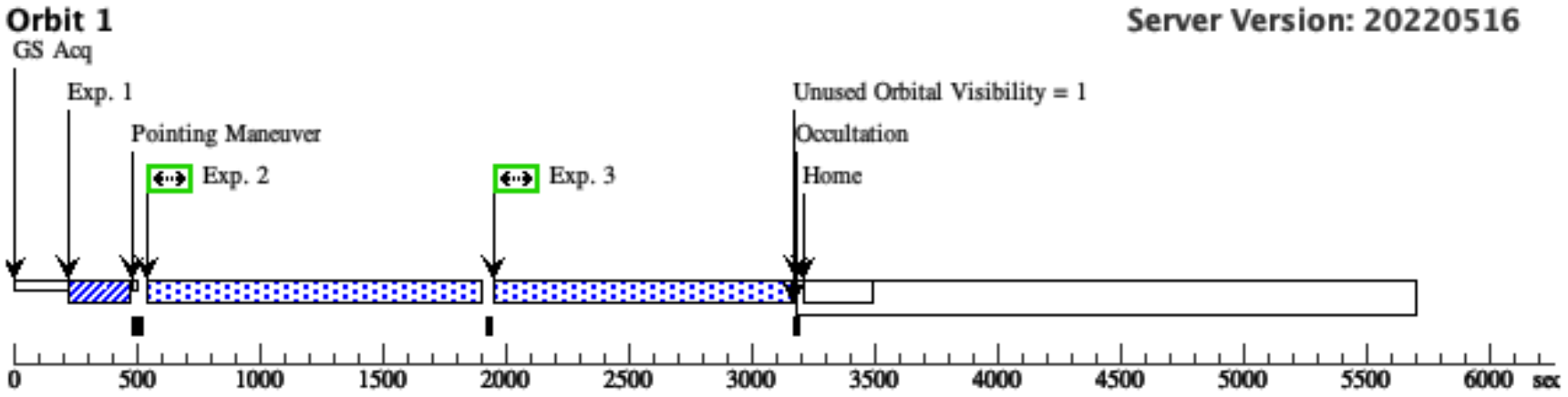
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	HARO-11-KNOT-A	Offset from HARO-11-KNOT-C RA Offset: -0.342 Secs Dec Offset: -2.76 Arcsec	Redshift: 0.021	V=17.241+/-0.05 F330W=15.819	Offset Position (HARO-11-KNOT-A)

Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.1E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, MULTIPLE NUCLEI, STAR FORMING REGION]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	*[1]*
	Comments: Exposure time based on existing COS acquisition of this object.								
2	SCIENCE (1417614)	(2) HARO-11-KNOT-A	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=1			1100 Secs (1153 Secs) *[==>1153.0 Secs]*	*[1]*
3	SCIENCE (1417614)	(2) HARO-11-KNOT-A	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=2			1100 Secs (1153 Secs) *[==>1153.0 Secs]*	*[1]*

Orbit Structure



Visit

Proposal 16260, Knot-A-Visit2 (05), failed Mon Jun 27 19:00:26 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: ORIENT 25D TO 45 D; ORIENT 205D TO 225 D

Diagnostics

(SCIENCE (05.002)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

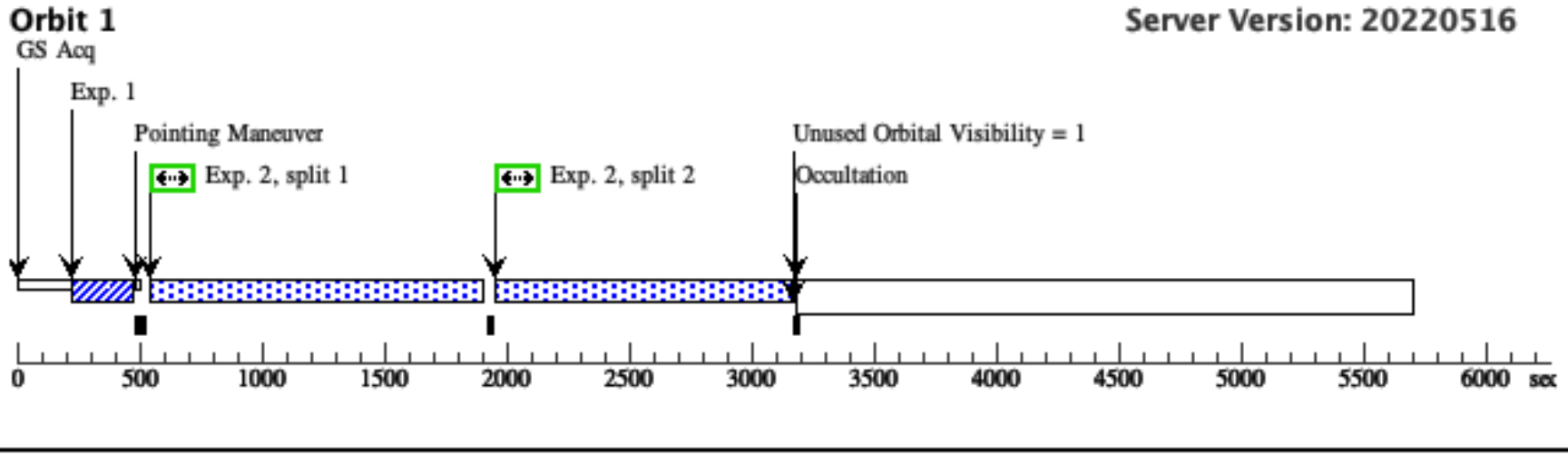
Fixed Targets

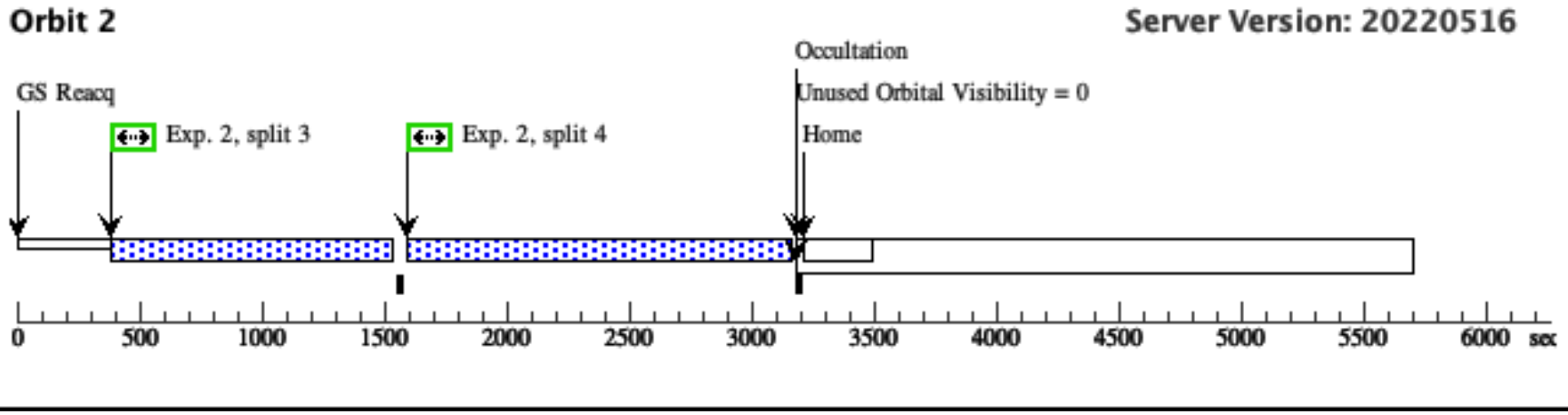
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS
		Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture. *FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.* *This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.* *Category=EXT-CLUSTER* *Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]* *Extended=NO*			
(2)	HARO-11-KNOT-A	Offset from HARO-11-KNOT-C RA Offset: -0.342 Secs Dec Offset: -2.76 Arcsec	Redshift: 0.021	V=17.241+/-0.05 F330W=15.819	Offset Position (HARO-11-KNOT-A)
		Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture. *FUV=1.1E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC.* *Category=EXT-CLUSTER* *Description=[EMISSION LINE NEBULA, KNOT, MULTIPLE NUCLEI, STAR FORMING REGION]* *Extended=YES*			

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	*[1]*
	Comments: Exposure time based on existing COS acquisition of this object.								
2	SCIENCE (1417614)	(2) HARO-11-KNOT-A	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=ALL			1100 Secs (4925 Secs) *[==>1153.0 Secs (Split 1)]* *[==>1153.0 Secs (Split 2)]* *[==>(Split 3)]* *[==>1519.0 Secs (Split 4)]*	*[1]* *[2]*

Orbit Structure





Visit

Proposal 16260, Knot-A-Visit2-REDO-V05 (13), completed Mon Jun 27 19:00:27 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: ORIENT 25D TO 45 D; ORIENT 205D TO 225 D

Comments: This is a redo of the first Orbit of Visit 05.

Diagnostics

(Knot-A-Visit2-REDO-V05 (13)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.

(SCIENCE (13.002)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(SCIENCE (13.003)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS

Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.

This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=NO

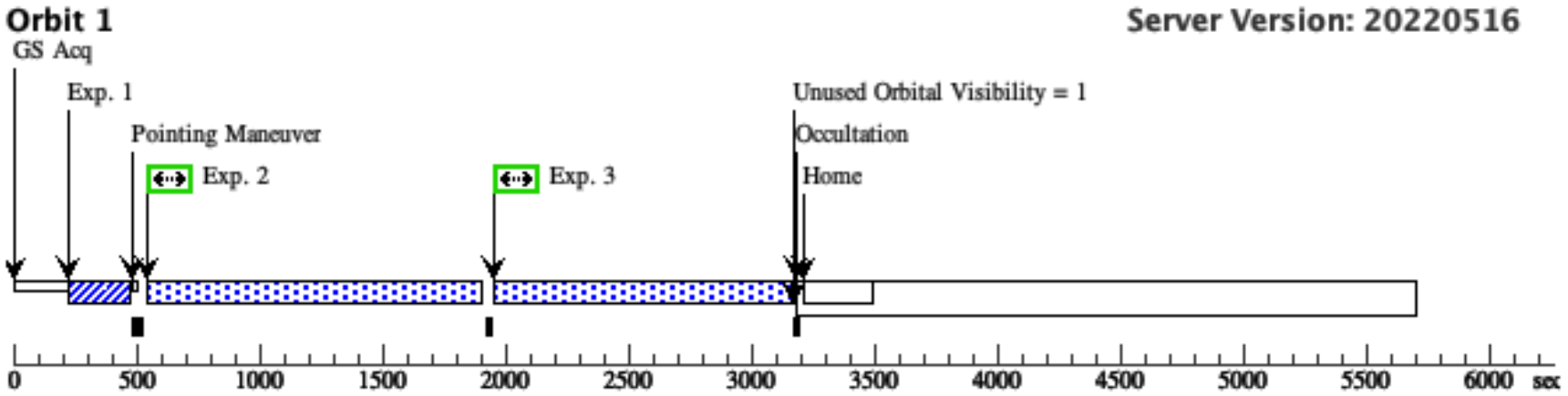
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	HARO-11-KNOT-A	Offset from HARO-11-KNOT-C RA Offset: -0.342 Secs Dec Offset: -2.76 Arcsec	Redshift: 0.021	V=17.241+/-0.05 F330W=15.819	Offset Position (HARO-11-KNOT-A)

Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.1E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, MULTIPLE NUCLEI, STAR FORMING REGION]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	*[1]*
Comments: Exposure time based on existing COS acquisition of this object.									
2	SCIENCE (1417614)	(2) HARO-11-KNOT-A	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=1			1100 Secs (1153 Secs) *[==>1153.0 Secs]*	*[1]*
3	SCIENCE (1417614)	(2) HARO-11-KNOT-A	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=2			1100 Secs (1153 Secs) *[==>1153.0 Secs]*	*[1]*

Orbit Structure



Visit

Proposal 16260, Knot-A-Visit3 (06), failed Mon Jun 27 19:00:27 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: ORIENT 25D TO 45 D; ORIENT 205D TO 225 D

Diagnostics

(SCIENCE (06.002)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

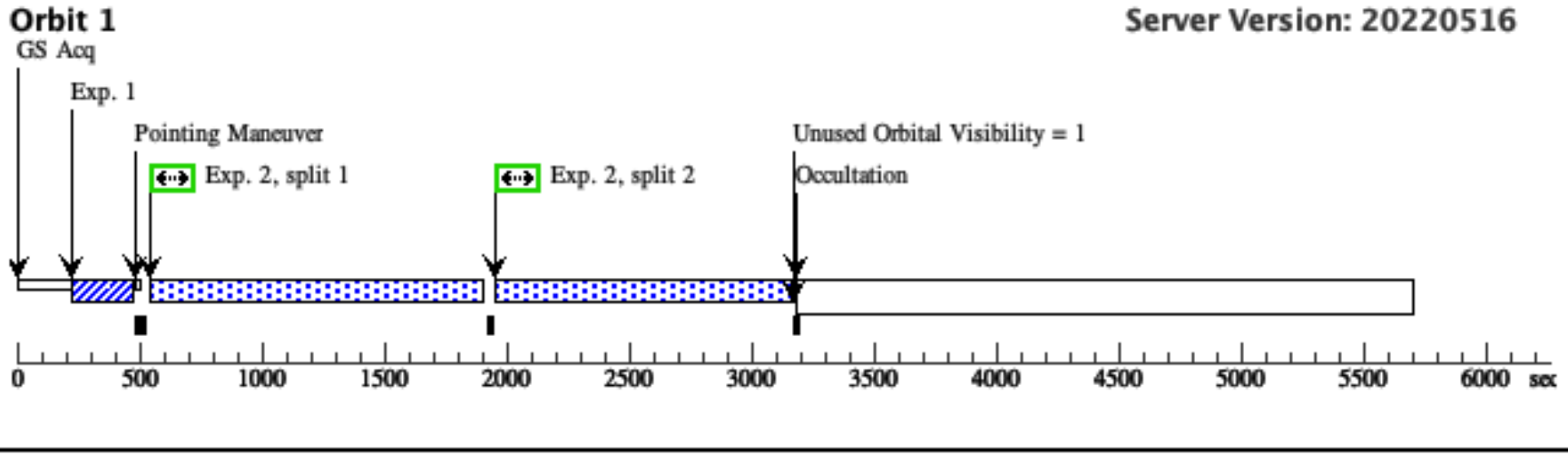
Fixed Targets

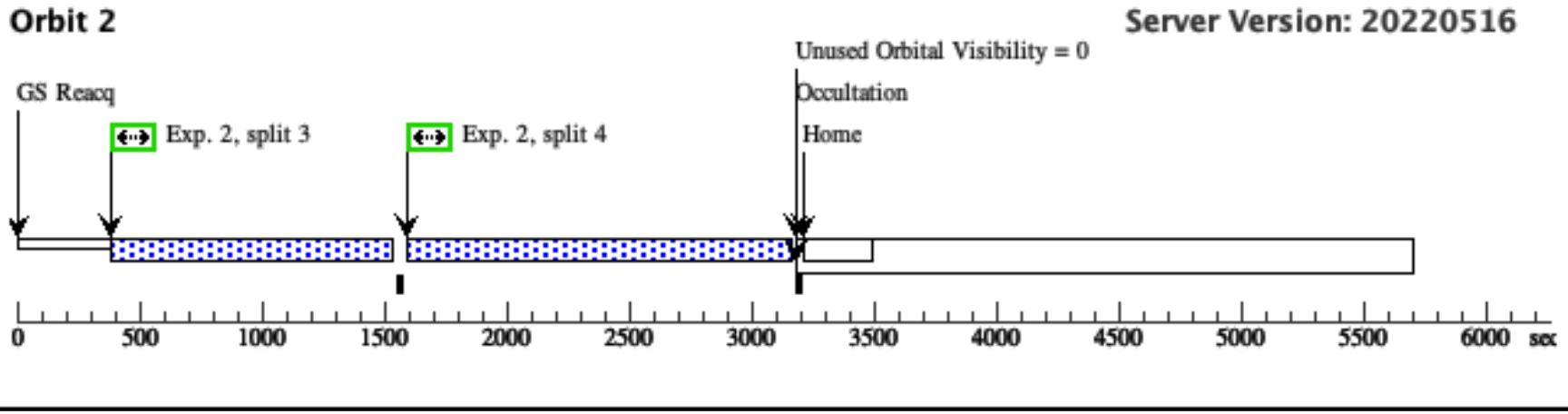
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS
	Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture. *FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.* *This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.* *Category=EXT-CLUSTER* *Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]* *Extended=NO*				
(2)	HARO-11-KNOT-A	Offset from HARO-11-KNOT-C RA Offset: -0.342 Secs Dec Offset: -2.76 Arcsec	Redshift: 0.021	V=17.241+/-0.05 F330W=15.819	Offset Position (HARO-11-KNOT-A)
	Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture. *FUV=1.1E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC.* *Category=EXT-CLUSTER* *Description=[EMISSION LINE NEBULA, KNOT, MULTIPLE NUCLEI, STAR FORMING REGION]* *Extended=YES*				

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	*[1]*
	Comments: Exposure time based on existing COS acquisition of this object.								
2	SCIENCE (1417614)	(2) HARO-11-KNOT-A	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=ALL			1100 Secs (4925 Secs) *[==>1153.0 Secs (Split 1)]* *[==>1153.0 Secs (Split 2)]* *[==>(Split 3)]* *[==>1519.0 Secs (Split 4)]*	*[1]* *[2]*

Orbit Structure





Visit

Proposal 16260, Knot-A-Visit3-REDO-V06 (14), failed Mon Jun 27 19:00:27 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: ORIENT 25D TO 45 D; ORIENT 205D TO 225 D

Comments: This is a redo of both orbits of Visit 06. Exposure times in Orbit 2 revised to match those for Knots B and C.

Diagnostics

(SCIENCE (14.002)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS

Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.

This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=NO

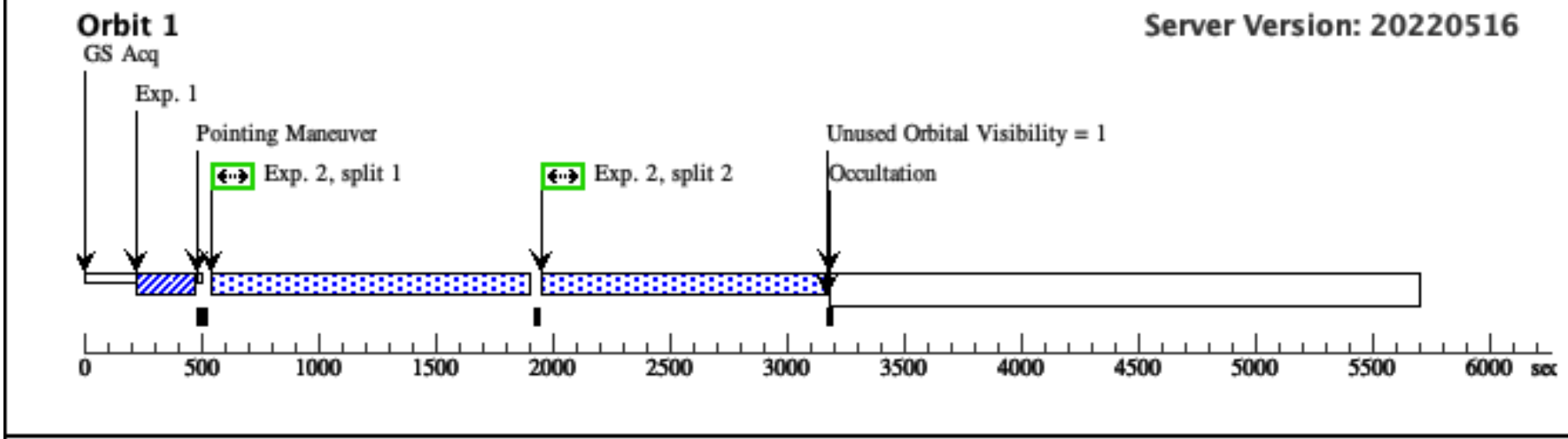
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	HARO-11-KNOT-A	Offset from HARO-11-KNOT-C RA Offset: -0.342 Secs Dec Offset: -2.76 Arcsec	Redshift: 0.021	V=17.241+/-0.05 F330W=15.819	Offset Position (HARO-11-KNOT-A)

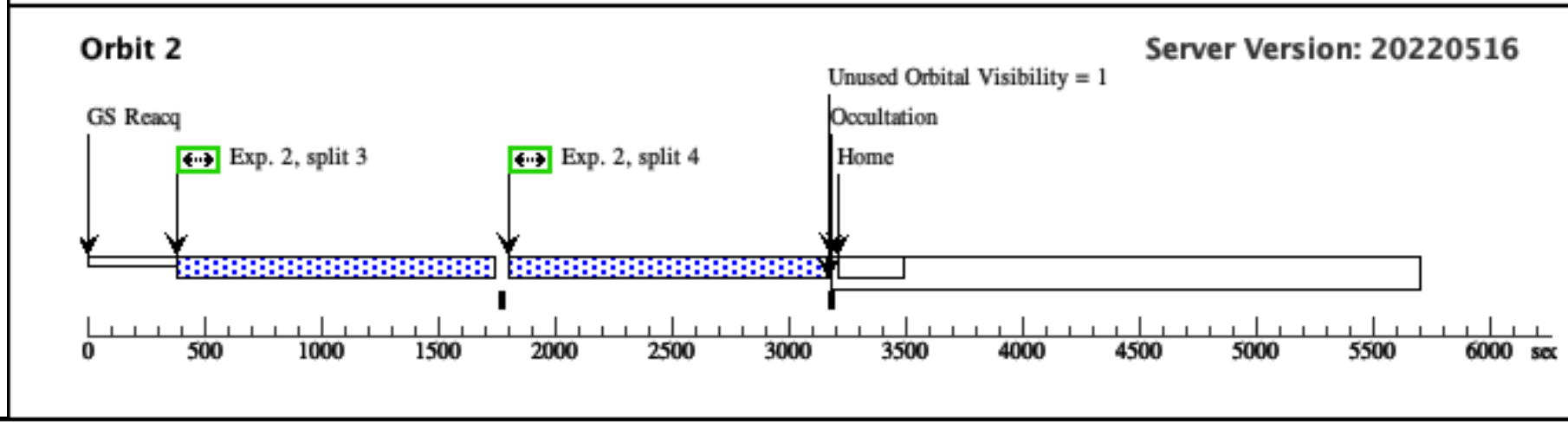
Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.1E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, MULTIPLE NUCLEI, STAR FORMING REGION]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	 ***[1]***
	Comments: Exposure time based on existing COS acquisition of this object.								
2	SCIENCE (1417614)	(2) HARO-11-KNOT-A	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=ALL			1100 Secs (4924 Secs) *[==>1153.0 Secs (Split 1)]* *[==>1153.0 Secs (Split 2)]* *[==>1309.0 Secs (Split 3)]* *[==>1309.0 Secs (Split 4)]*	 ***[1]*** ***[2]***

Orbit Structure





Visit

Proposal 16260, Knot-A-Visit3-REDO-V14 (15), completed Mon Jun 27 19:00:27 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: ORIENT 25D TO 45 D; ORIENT 205D TO 225 D

Comments: This is a redo of the first Orbit of Visit 04.

Multiple previous COS observations for GO-15352 use Knot C for target acquisition. These observations show that the fluxes are not high enough to warrant turning off Segment A for any of our targets in any of our spectroscopic exposures. Target acquisition time is based on existing COS/NUV acquisition images of Haro 11 taken with MIRRORA for GO-15352. Based on the observed flux in Knot C, acquisition exposure time of 10 sec yields S/N of 40.

Diagnostics

(Knot-A-Visit3-REDO-V14 (15)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.

(SCIENCE (15.002)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(SCIENCE (15.003)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS

Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.

This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=NO

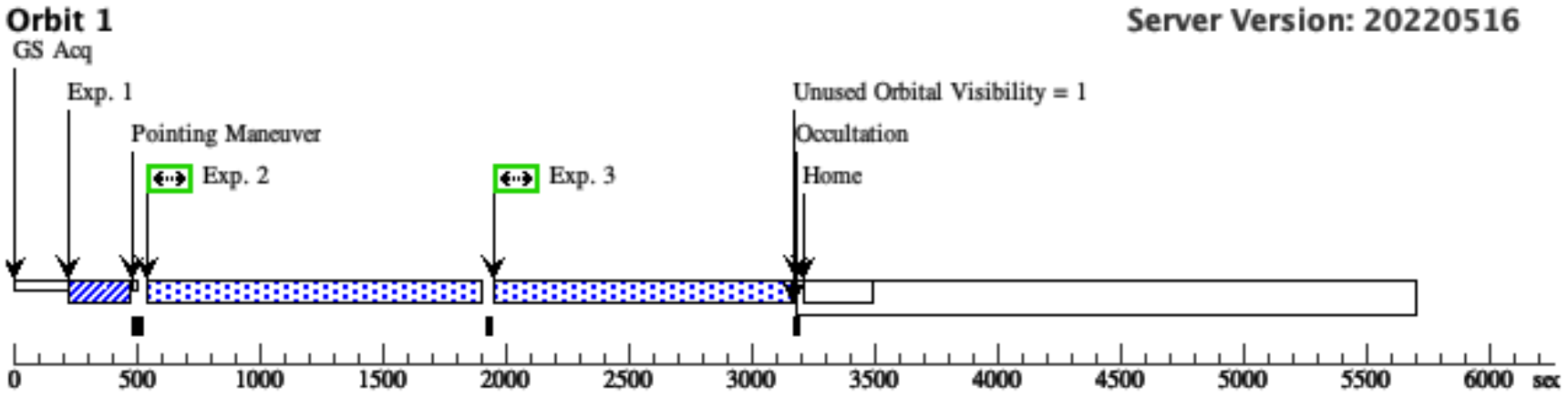
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	HARO-11-KNOT-A	Offset from HARO-11-KNOT-C RA Offset: -0.342 Secs Dec Offset: -2.76 Arcsec	Redshift: 0.021	V=17.241+/-0.05 F330W=15.819	Offset Position (HARO-11-KNOT-A)

Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.1E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, MULTIPLE NUCLEI, STAR FORMING REGION]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	*[1]*
Comments: Exposure time based on existing COS acquisition of this object.									
2	SCIENCE (1417614)	(2) HARO-11-KNOT-A	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=1			1100 Secs (1153 Secs) *[==>1153.0 Secs]*	*[1]*
3	SCIENCE (1417614)	(2) HARO-11-KNOT-A	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=2			1100 Secs (1153 Secs) *[==>1153.0 Secs]*	*[1]*

Orbit Structure



Visit

Proposal 16260, Knot-B-Visit1 (07), completed Mon Jun 27 19:00:27 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: ORIENT 40D TO 60 D; ORIENT 220D TO 240 D

Comments: Multiple previous COS observations for GO-15352 use Knot C for target acquisition. These observations show that the fluxes are not high enough to warrant turning off Segment A for any of our targets in any of our spectroscopic exposures. Target acquisition time is based on existing COS/NUV acquisition images of Haro 11 taken with MIRRORA for GO-15352. Based on the observed flux in Knot C, acquisition exposure time of 10 sec yields S/N of 40.

Diagnostics

(SCIENCE (07.002)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS

Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.

This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=NO

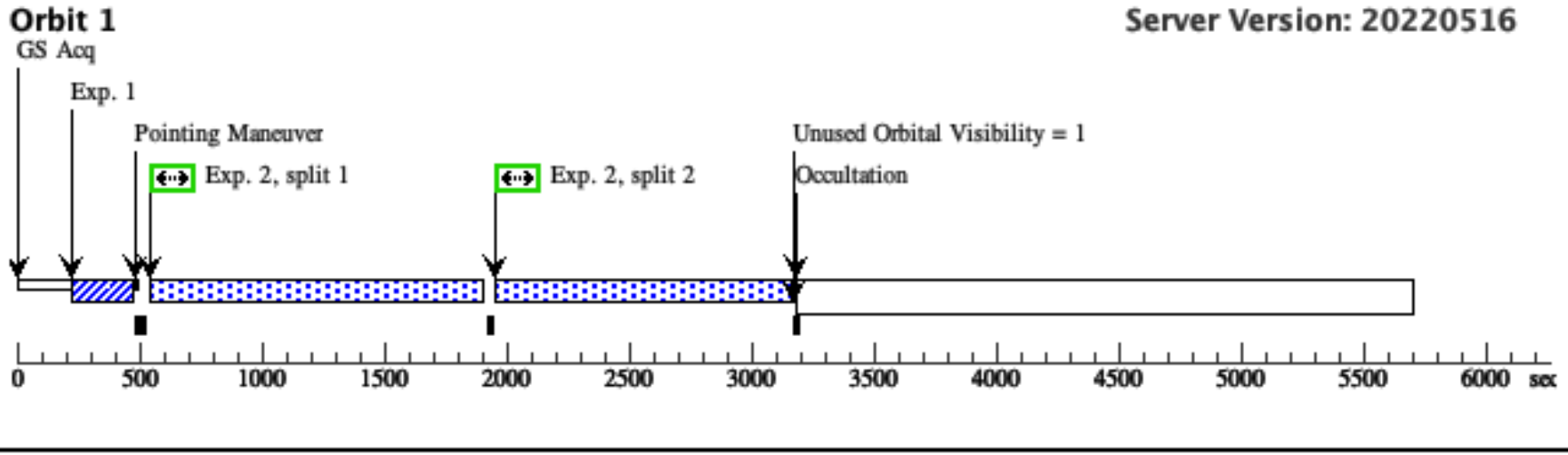
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	HARO-11-KNOT-B	Offset from HARO-11-KNOT-C RA Offset: -0.249 Secs Dec Offset: 0.3 Arcsec	Redshift: 0.021	V=17.050+/-0.05 F330W=16.194	Offset Position (HARO-11-KNOT-B)

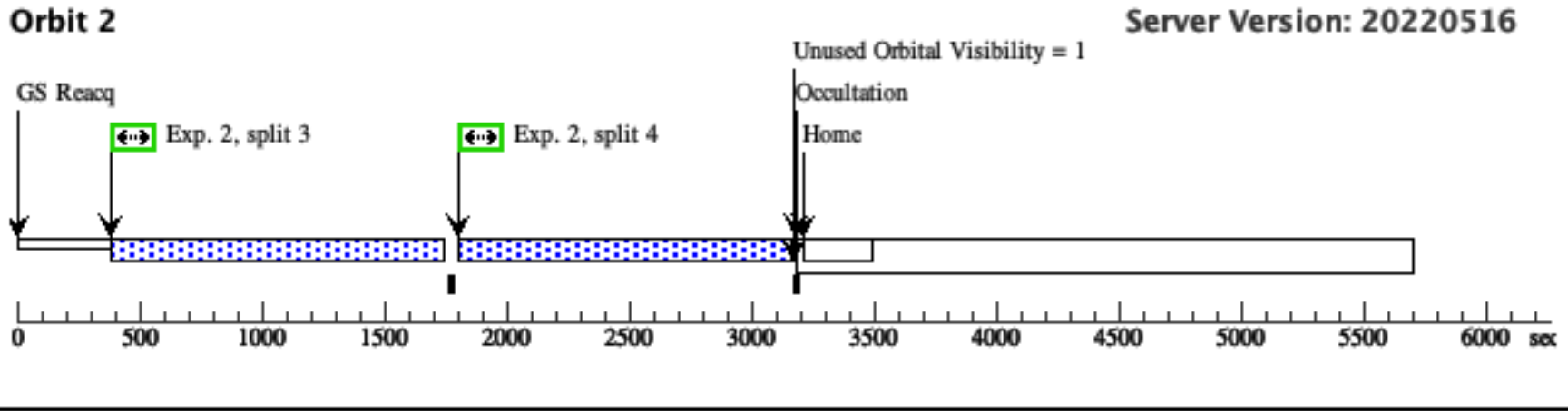
Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=5.3E-15 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	 ***[1]***
Comments: Exposure time based on existing COS acquisition of this object.									
2	SCIENCE (1417614)	(3) HARO-11-KNOT-B	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=ALL			1100 Secs (4924 Secs) *[==>1153.0 Secs (Split 1)]* *[==>1153.0 Secs (Split 2)]* *[==>1309.0 Secs (Split 3)]* *[==>1309.0 Secs (Split 4)]*	 ***[1]*** ***[2]***

Orbit Structure





Visit

Proposal 16260, Knot-B-Visit2 (08), scheduling Mon Jun 27 19:00:27 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 60%; ORIENT 242.5D TO 242.5 D

Diagnostics

(SCIENCE (08.002)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS

Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.

This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=NO

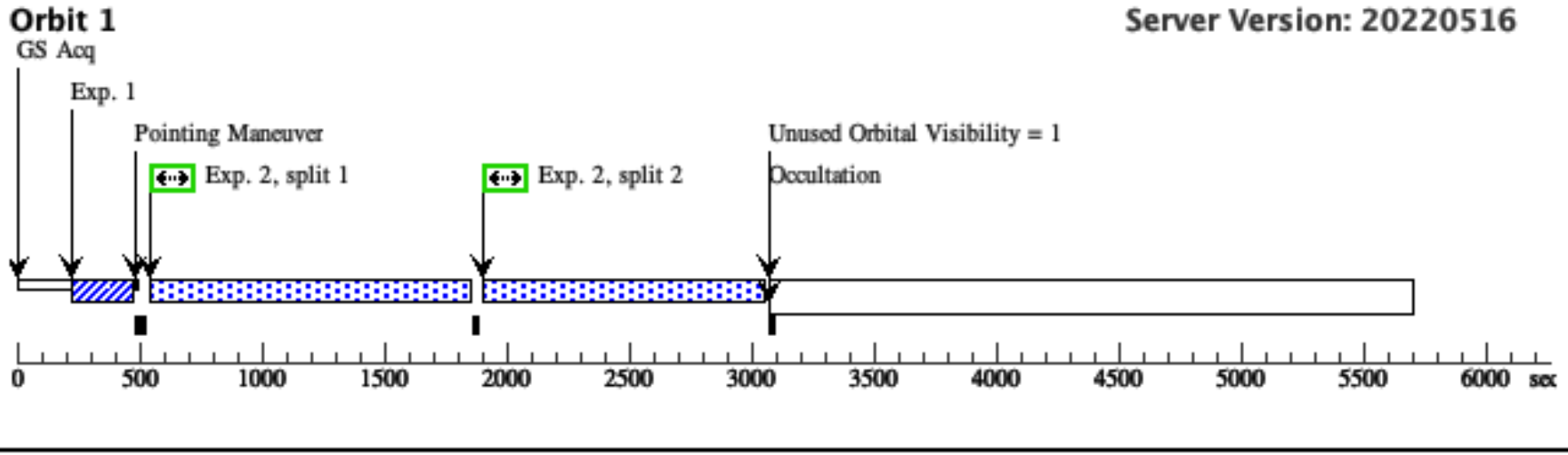
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	HARO-11-KNOT-B	Offset from HARO-11-KNOT-C RA Offset: -0.249 Secs Dec Offset: 0.3 Arcsec	Redshift: 0.021	V=17.050+/-0.05 F330W=16.194	Offset Position (HARO-11-KNOT-B)

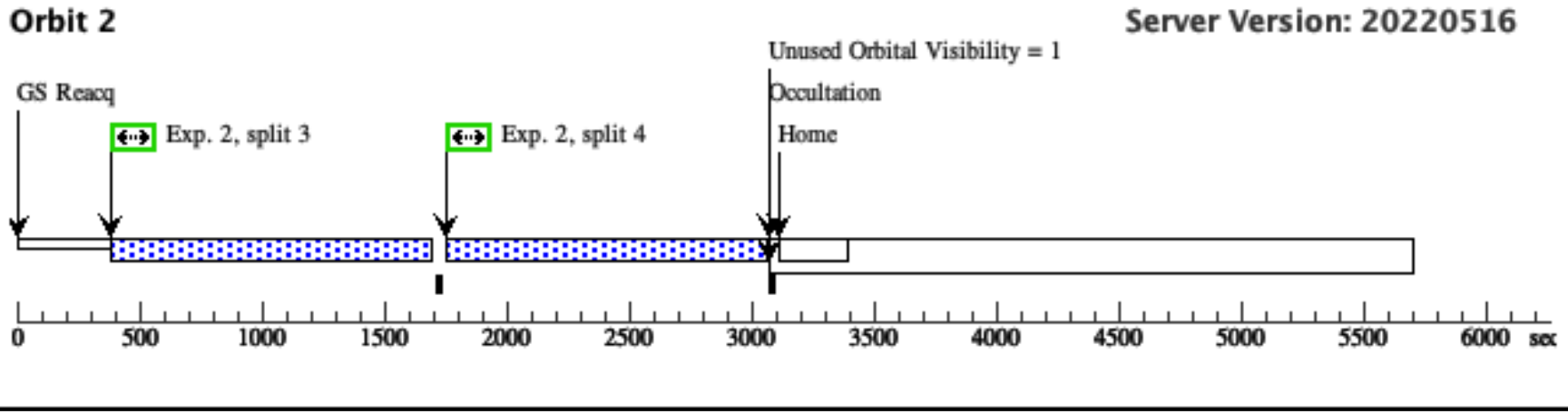
Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=5.3E-15 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	*[1]*
Comments: Exposure time based on existing COS acquisition of this object.									
2	SCIENCE (1417614)	(3) HARO-11-KNOT-B	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=ALL			1100 Secs (4712 Secs) *[==>1100.0 Secs (Split 1)]* *[==>1100.0 Secs (Split 2)]* *[==>1256.0 Secs (Split 3)]* *[==>1256.0 Secs (Split 4)]*	*[1]* *[2]*

Orbit Structure





Visit

Proposal 16260, Knot-B-Visit3 (09), scheduling Mon Jun 27 19:00:27 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 60%; ORIENT 242.5D TO 242.5 D

Diagnostics

(SCIENCE (09.002)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS

Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.

This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=NO

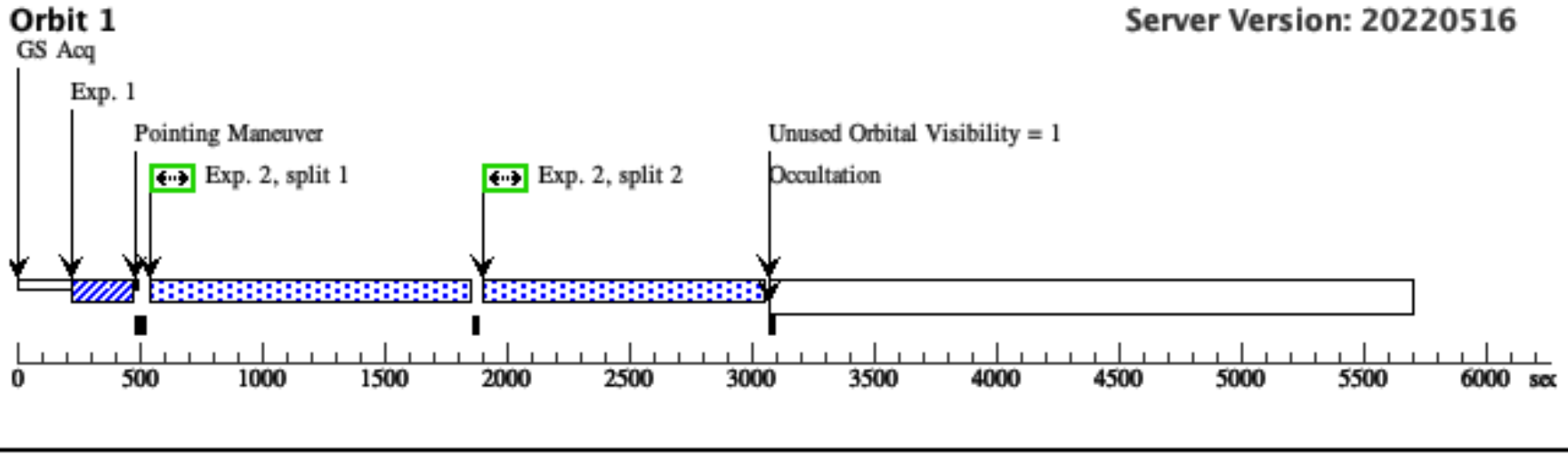
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	HARO-11-KNOT-B	Offset from HARO-11-KNOT-C RA Offset: -0.249 Secs Dec Offset: 0.3 Arcsec	Redshift: 0.021	V=17.050+/-0.05 F330W=16.194	Offset Position (HARO-11-KNOT-B)

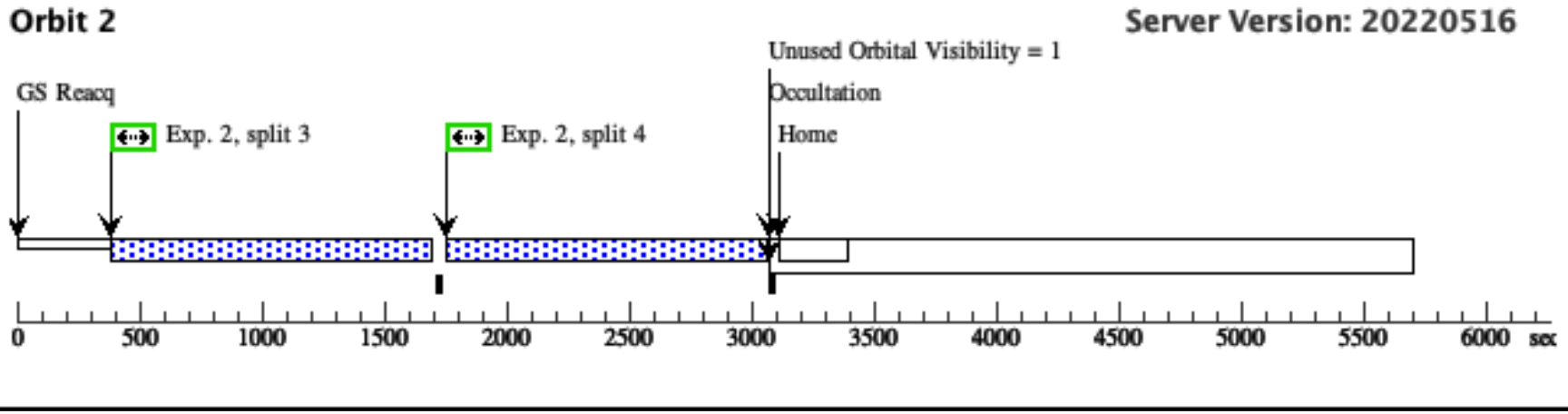
Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=5.3E-15 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1427038)	(1) HARO-11-KNOT-C	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				10 Secs (10 Secs) *[==>]*	 ***[1]***
Comments: Exposure time based on existing COS acquisition of this object.									
2	SCIENCE (1417614)	(3) HARO-11-KNOT-B	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=17000; FP-POS=ALL			1100 Secs (4712 Secs) *[==>1100.0 Secs (Split 1)]* *[==>1100.0 Secs (Split 2)]* *[==>1256.0 Secs (Split 3)]* *[==>1256.0 Secs (Split 4)]*	 ***[1]*** ***[2]***

Orbit Structure





Visit

Proposal 16260, WFC3-HBETA (10), completed Mon Jun 27 19:00:27 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Comments: POS-TARG is applied for manual dithering to improve the spatial resolution.

Diagnostics

(WFC3-FQ492N (10.002)) Warning (Form): POS TARG & PATTERN should be used carefully with WFC3 quad filters to avoid placing the target on the vignetted part of the field of view or moving it to another quadrant.

(WFC3-FQ492N (10.003)) Warning (Form): POS TARG & PATTERN should be used carefully with WFC3 quad filters to avoid placing the target on the vignetted part of the field of view or moving it to another quadrant.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HARO-11-KNOT-C	RA: 00 36 52.7030 (9.2195958d) Dec: -33 33 17.02 (-33.55473d) Equinox: J2000	Redshift: 0.021	V=16.291+/-0.05 F330W=15.266	Reference Frame: ICRS

Comments: V-mag = HRC/F550M. Magnitudes obtained with 1 arcsec radius aperture.
FUV=1.93E-14 erg/s/cm2 at 1530 A, within 1.25 arcsec radius COS aperture, measured from ACS/SBC F140LP.

This source is very compact, but not a true point source. It has been previously used for acquisition using COS-MIRRORA several times for program GO-15352.
Category=EXT-CLUSTER
Description=[EMISSION LINE NEBULA, KNOT, NUCLEUS, STAR FORMING REGION]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	WFC3-FQ492N	(1) HARO-11-KNOT-C	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ492N	FLASH=17			805 Secs (805 Secs) *[==>]*	 ***[1]***
2	WFC3-FQ492N	(1) HARO-11-KNOT-C	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ492N	FLASH=17	POS TARG 1.003,0.799		805 Secs (805 Secs) *[==>]*	 ***[1]***
3	WFC3-FQ492N	(1) HARO-11-KNOT-C	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ492N	FLASH=17	POS TARG -0.805,-0.760		805 Secs (805 Secs) *[==>]*	 ***[1]***

Orbit Structure