16263 - Diagnosing a New Species of Dusty Debris: the Chameleon Debris Disk

Cycle: 28, Proposal Category: GO

(Availability Mode: AVAILABLE)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. John P. Wisniewski (PI) (Contact)	**George Mason University**	**john.p.wisniewski@gmail.com**
Dr. Jamie R. Lomax (CoI)	United States Naval Academy	jrlomax@gmail.com
Dr. John Henry Debes (CoI)	Space Telescope Science Institute - ESA - JWST	debes@stsci.edu
Dr. Carol A. Grady (CoI)	Eureka Scientific Inc.	cagrady@comcast.net
Dr. Anthony Boccaletti (CoI) (ESA Member)	Observatoire de Paris - Section de Meudon	anthony.boccaletti@obspm.fr
Dr. Alycia J. Weinberger (CoI)	Carnegie Institution of Washington	alycia@dtm.ciw.edu
Dr. Adam F. Kowalski (CoI)	University of Colorado at Boulder	adam.f.kowalski@colorado.edu
Dr. Jessica Arnold (CoI)	Carnegie Institution of Washington	jarnold@carnegiescience.edu
Mr. Elie Sezestre (CoI) (ESA Member)	Institut de Planetologie et d'Astrophysique de Grenoble	elie.sezestre@univ-grenoble-alpes.fr

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) V-AU-MIC CCDFLAT	STIS/CCD	3	15-Jul-2022 17:00:16.0	yes
02	(2) HD-191849 CCDFLAT	STIS/CCD	1	15-Jul-2022 17:00:18.0	yes
03	(1) V-AU-MIC	STIS/CCD	3	15-Jul-2022 17:00:19.0	yes
04	(2) HD-191849	STIS/CCD	1	15-Jul-2022 17:00:20.0	yes
53	(1) V-AU-MIC	STIS/CCD	1	15-Jul-2022 17:00:21.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
54	(2) HD-191849	STIS/CCD	1	15-Jul-2022 17:00:22.0	yes
55	(1) V-AU-MIC	STIS/CCD	1	15-Jul-2022 17:00:23.0	yes
56	(1) V-AU-MIC	STIS/CCD	1	15-Jul-2022 17:00:24.0	yes

12 Total Orbits Used

ABSTRACT

Two new, potentially causally correlated, observational phenomena have recently been discovered in spatially resolved imagery of debris disks: outward moving features traveling at super-Keplerian velocities and changes in the color of the AU Mic debris disk. To date, these are the only moving structures and the only observed color change seen in spatially resolved debris disks. We propose to use the only observational facility capable of yielding high fidelity optical coronagraphic spectroscopy of AU Mic's disk, HST/STIS, to obtain second epoch G750L and first epoch G430L spectroscopy. These data will enable us to: a) quantify color changes in the disk over a 2x greater time baseline (16 yrs) than previously achieved; b) determine whether the disk's color between 30-45 au continues to change as additional fast moving features pass by; c) better quantify the size of dust grains whose spatial distribution has changed; and d) confirm and better quantify whether small grains populate small (10-30 au) stellocentric distances. Derived grain size distributions will be linked to dynamical models proposed for the origin of fast moving features in this system.

OBSERVING DESCRIPTION

The observational setup of our program necessarily follows GO-12512, a precursor program that observed the same targets in G750L with this technique.

Each target consists of a sequence of observations:

1. Standard acquisition
2. Peakup - We do the peakup in the smallest available aperture, in BOTH x AND y.

Then, for both G430L and G750L gratings, we do the following:

3. Point source spectrum outside of fiducial in 52x0.2 slit
4. Fiducial spectra - maximum integration time for bright sources set by time to saturation of stellar scattered light at edge of the fiducial, minimum

integration time for faint sources set by time to achieve source noise limited spectra. Integrations are CR-SPLIT for CR removal. In Phase I, we specifically requested the F2 fiducial (unsupported aperture) because of its superior light rejection. For the science objects, we specify a narrow range of acceptable ORIENTs to position the slit along the disk major axis.

We therefore require an absolute orient between 351.6 to 353.6 (+/- 1 degree of tolerance around 352.6). We STRONGLY desire to use the EXACT orient as used in GO-12512, 352.0 degrees. We ask our PC to try to get and maintain this exact setting if at all possible.

For G750L only, we do a
5. Flat

------ Calibration Justification -------

PSF observation - This is necessary to be able to subtract off the stellar contribution at every position and wavelength to reveal the spectrum and spatial profile of the disk.

Peakup -We want exceptionally good positioning under the fiducial in order to be able to cleanly subtract off the PSF contribution. For all targets (objects and PSFs), we do the peakup IN BOTH X AND Y in the smallest available aperture.

Point source spectrum outside of fiducial in 52x0.2 slit - This is necessary for calibrating out any spectral differences between the target and PSFas well as for aiding in photometric calibration

G750L flat -CCDFLAT taken with 52X0.2 slit for better defringing of extended-source spectra (narrower slit would be better for defringing point-source spectra).

Visit

Proposal 16263, 1-au-mic-750 (01), completed Fri Jul 15 21:00:25 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.05"; GYRO MODE 3GOBAD; ORIENT 351.6D TO 353.6 D; ORIENT 171.6D TO 173.6 D; AFTER 02 BY 0.7 Orbits TO 1.2 Orbits

Comments: Point-source and fiducial spectra of AU Mic with G705L.

1) We need to align slit parallel to the disk semi-major axis. The disk PA is 128.6 degrees (Krist et al. 2005). We adopt the setup and assumptions of GO-12512. We require an ORIENT = (128.6, 308.6) + offset angle = (128.6, 308.6) + 45 -1 = (172.6, 352.6) degrees. The (-1) above is an additional offset angle due to the rotation of the slit (we ask our PC to confirm this is still correct). We therefore require an absolute orient between 351.6 to 353.6 (+/- 1 degree of tolerance around 352.6).

We STRONGLY desire to use the EXACT orient as used in GO-12512, 352.0 degrees. We ask our PC to try to get and maintain this exact setting if at all possible.

2) It is critical that this visit be scheduled immediately (in the next orbit) following visit "2-hd191849-750" to allow accurate PSF subtraction to occur.

3) Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).

4) To get desired ORIENT to schedule, we had to shorten our orbits by about 200 seconds. Once we have a schedule window locked in , we ask our PC to allow us to extend our orbits to the maximum integration time allowed to maintain our required absolute ORIENT (352.0 degrees is most optimal).

Fixed Targets

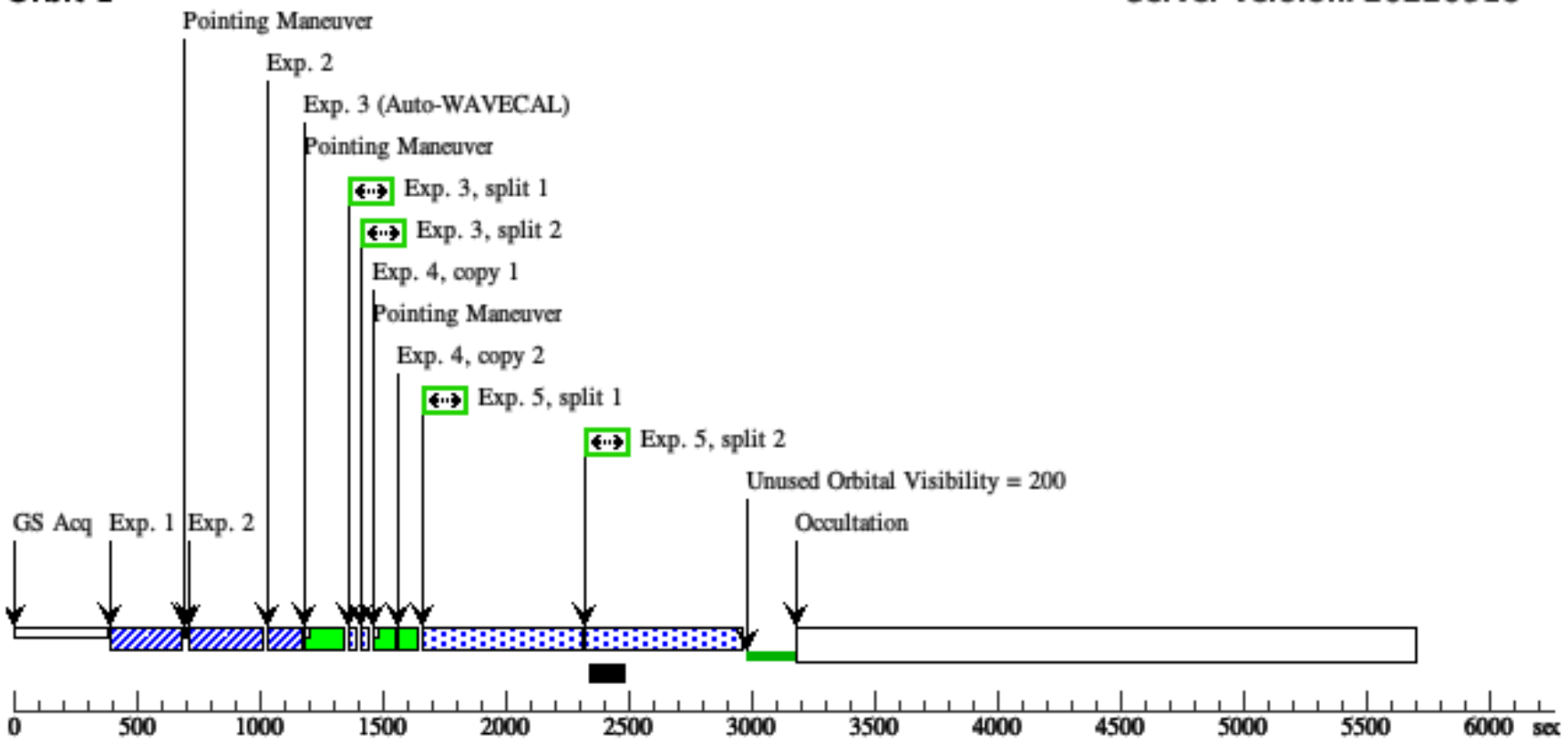
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AU-MIC	RA: 20 45 9.5323 (311.2897179d) Dec: -31 20 27.23 (-31.34090d) Equinox: J2000	Proper Motion RA: 281.424 mas/yr Proper Motion Dec: -359.895 mas/yr Parallax: 0.1028295" Epoch of Position: 2000.0	V=8.627	Reference Frame: ICRS

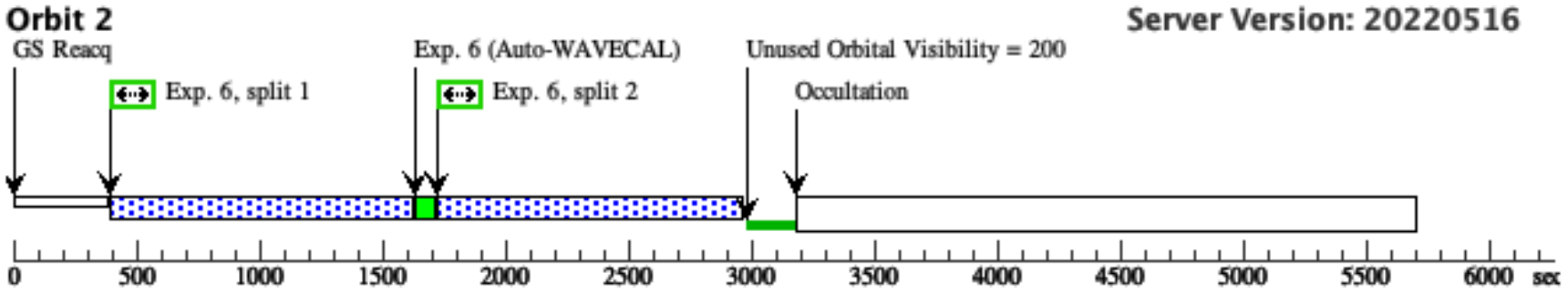
Comments: Coordinates are from GSC2.3.2
Category=STAR
Description=[M V-IV]

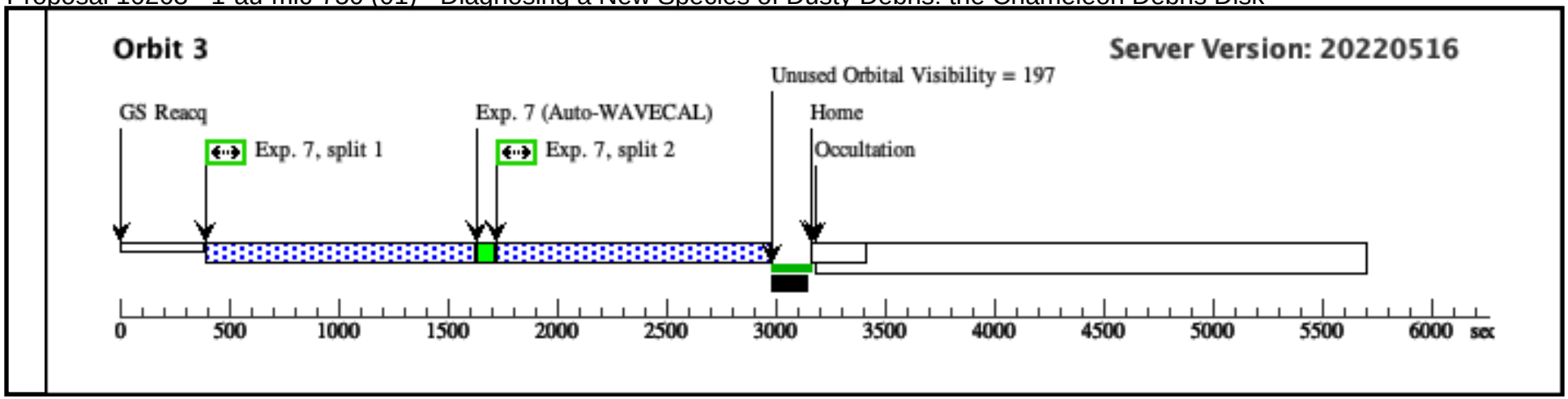
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq	(1) V-AU-MIC	STIS/CCD, ACQ, F25ND3	MIRROR				0.4 Secs (0.4 Secs) *[==>]*	*[1]*
Comments: SNR = 100, V = 8.61, sp = M1Ve, Exptime rounded to nearest 0.1 second									
2	peakup	(1) V-AU-MIC	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				0.4 Secs (0.4 Secs) *[==>]*	*[1]*
Comments: Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).									
3	point-G750 L	(1) V-AU-MIC	STIS/CCD, ACCUM, 52X0.2E1	G750L 7751 A	GAIN=1; CR-SPLIT=2			0.6 Secs (0.6 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	*[1]*
Comments: SNR 57 from etc v28.2									
4	flat-G750L	CCDFLAT	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A				*[==>(Copy 1)]* *[==>(Copy 2)]*	*[1]*
5	fiducial-750 L	(1) V-AU-MIC	STIS/CCD, ACCUM, 52X0.2F2	G750L 7751 A	GAIN=1; CR-SPLIT=2			1208 Secs (1208 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	*[1]*
6	fiducial-750 L	(1) V-AU-MIC	STIS/CCD, ACCUM, 52X0.2F2	G750L 7751 A	GAIN=1; CR-SPLIT=2			2380 Secs (2380 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	*[2]*
7	fiducial-750 L	(1) V-AU-MIC	STIS/CCD, ACCUM, 52X0.2F2	G750L 7751 A	GAIN=1; CR-SPLIT=2			2380 Secs (2380 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20220516
Unused Orbital Visibility = 197
GS Reacq
Exp. 7, split 1
Exp. 7 (Auto-WAVECAL)
Exp. 7, split 2
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16263, 2-hd191849-750 (02), completed Fri Jul 15 21:00:25 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.05"; GYRO MODE 3GOBAD

Comments: PSF star red grating. There are no orient or schedule constraints on this visit. Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).

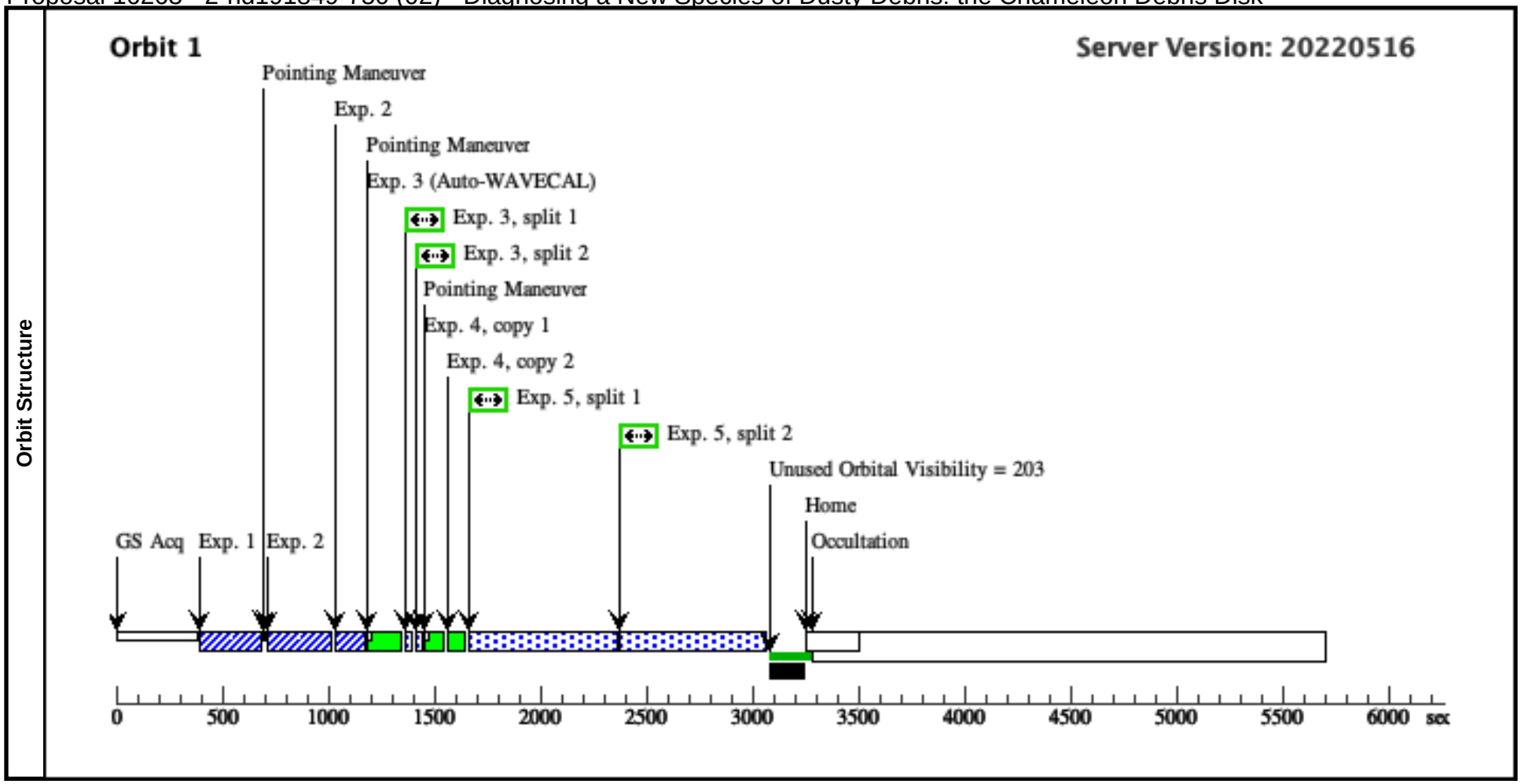
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	HD-191849	RA: 20 13 53.3960 (303.4724833d) Dec: -45 09 50.47 (-45.16402d) Equinox: J2000	Proper Motion RA: 778.236 mas/yr Proper Motion Dec: -159.744 mas/yr Parallax: 0.1623212" Epoch of Position: 2000.0	V=7.966	Reference Frame: ICRS

Comments: Coordinates from GSC2.3.2
Category=STAR
Description=[M V-IV]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq	(2) HD-191849	STIS/CCD, ACQ, F25ND3	MIRROR				0.3 Secs (0.3 Secs) *[==>]*	***[1]***
Comments: SNR = 100, V = 7.97, sp = M0Ve, Exptime rounded to nearest 0.1 second									
2	peakup	(2) HD-191849	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				0.3 Secs (0.3 Secs) *[==>]*	***[1]***
Comments: Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).									
3	point-G750 L	(2) HD-191849	STIS/CCD, ACCUM, 52X0.2E1	G750L 7751 A	GAIN=1; CR-SPLIT=2			0.4 Secs (0.4 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
Comments: SNR 70 from etc v28.2									
4	flat-G750L	CCDFLAT	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A				*[==>(Copy 1)]* *[==>(Copy 2)]*	***[1]***
5	fiducial-750 L	(2) HD-191849	STIS/CCD, ACCUM, 52X0.2F2	G750L 7751 A	GAIN=1; CR-SPLIT=2			1310 Secs (1310 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20220516
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Exp. 3, split 1
Exp. 3, split 2
Pointing Maneuver
Exp. 4, copy 1
Exp. 4, copy 2
Exp. 5, split 1
Exp. 5, split 2
Unused Orbital Visibility = 203
Home
Occultation
GS Acq
Exp. 1
Exp. 2
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16263, 3-au-mic-430 (03), failed Fri Jul 15 21:00:25 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.05"; GYRO MODE 3GOBAD; ORIENT 351.6D TO 353.6 D; ORIENT 171.6D TO 173.6 D; AFTER 04 BY 0.7 Orbits TO 1.2 Orbits

Comments: Point-source and fiducial spectra of AU Mic with G430L.

1) We need to align slit parallel to the disk semi-major axis. The disk PA is 128.6 degrees (Krist et al. 2005). We adopt the setup and assumptions of GO-12512. We require an ORIENT = (128.6, 308.6) + offset angle = (128.6, 308.6) + 45 -1 = (172.6, 352.6) degrees. The (-1) above is an additional offset angle due to the rotation of the slit (we ask our PC to confirm this is still correct). We therefore require an absolute orient between 351.6 to 353.6 (+/- 1 degree of tolerance around 352.6).

We STRONGLY desire to use the EXACT orient as used in GO-12512, 352.0 degrees. We ask our PC to try to get and maintain this exact setting if at all possible.

2) It is critical that this visit be scheduled immediately (in the next orbit) following visit "4-hd191849-750" to allow accurate PSF subtraction to occur.

3) Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).

4) To get desired ORIENT to schedule, we had to shorten our orbits by about 200 seconds. Once we have a schedule window locked in, we ask our PC to allow us to extend our orbits to the maximum integration time allowed to maintain our required absolute ORIENT (352.0 degrees is most optimal).

Fixed Targets

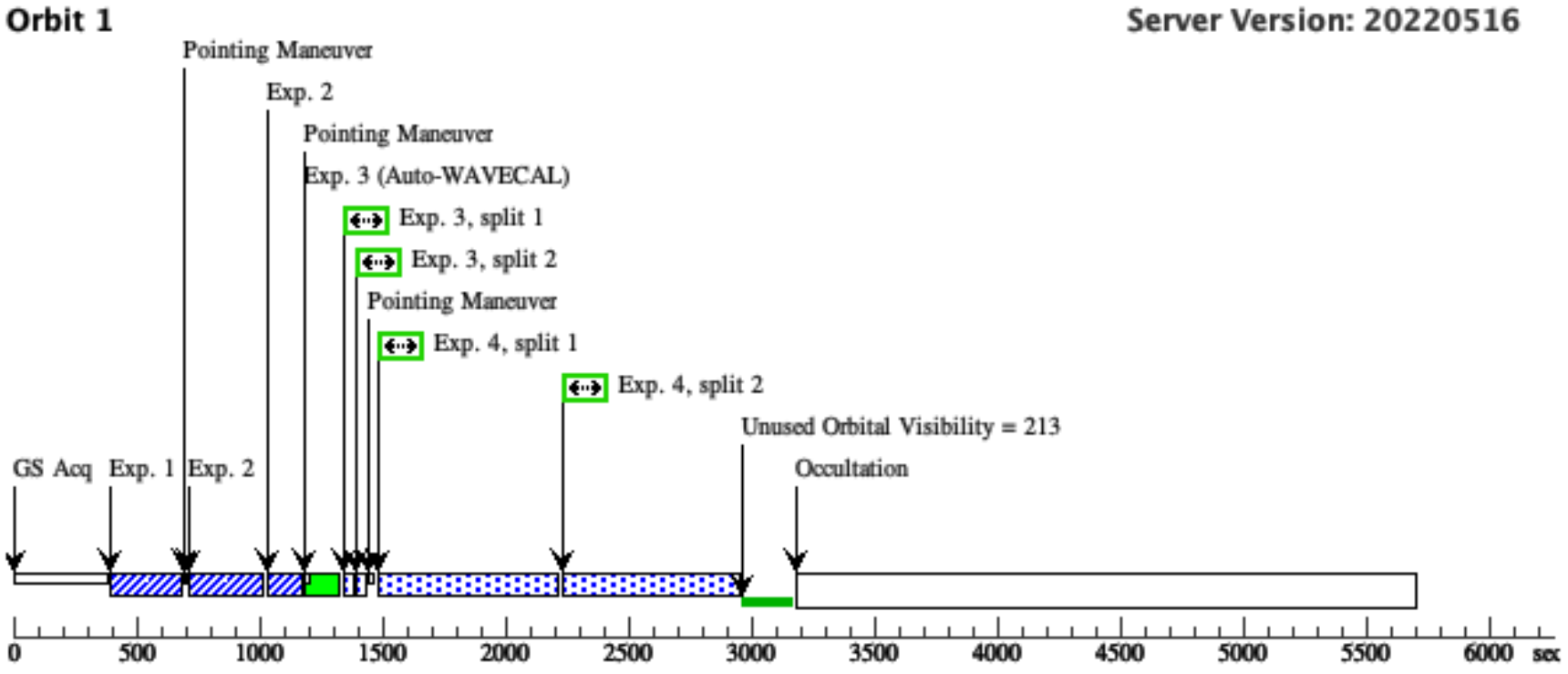
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AU-MIC	RA: 20 45 9.5323 (311.2897179d) Dec: -31 20 27.23 (-31.34090d) Equinox: J2000	Proper Motion RA: 281.424 mas/yr Proper Motion Dec: -359.895 mas/yr Parallax: 0.1028295" Epoch of Position: 2000.0	V=8.627	Reference Frame: ICRS

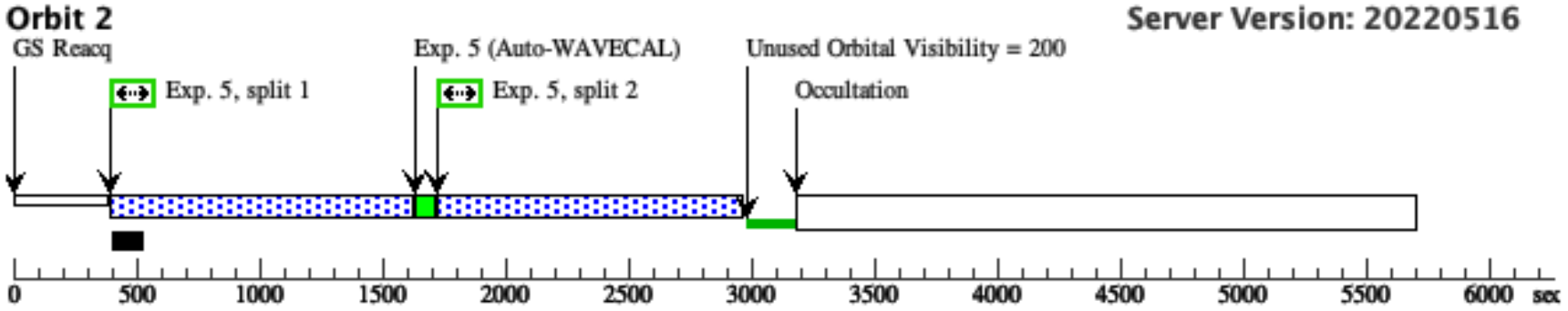
Comments: Coordinates are from GSC2.3.2
Category=STAR
Description=[M V-IV]

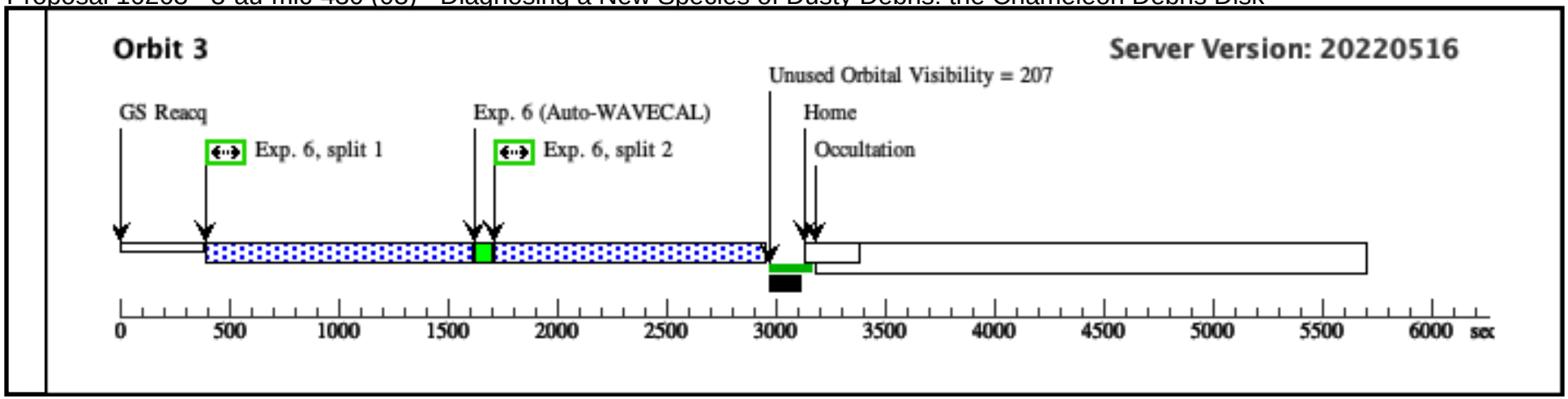
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq	(1) V-AU-MIC	STIS/CCD, ACQ, F25ND3	MIRROR				0.4 Secs (0.4 Secs) *[==>]*	***[1]***
Comments: SNR = 100, V = 8.61, sp = M1Ve, Exptime rounded to nearest 0.1 second									
2	peakup	(1) V-AU-MIC	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				0.4 Secs (0.4 Secs) *[==>]*	***[1]***
Comments: Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).									
3	point-G430 L	(1) V-AU-MIC	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A	GAIN=1; CR-SPLIT=2			4.6 Secs (4.6 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
Comments: SNR 54 from etc v28.2									
4	fiducial-430 L	(1) V-AU-MIC	STIS/CCD, ACCUM, 52X0.2F2	G430L 4300 A	GAIN=1; CR-SPLIT=2			1380 Secs (1380 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
5	fiducial-430 L	(1) V-AU-MIC	STIS/CCD, ACCUM, 52X0.2F2	G430L 4300 A	GAIN=1; CR-SPLIT=2			2380 Secs (2380 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[2]***
6	fiducial-430 L	(1) V-AU-MIC	STIS/CCD, ACCUM, 52X0.2F2	G430L 4300 A	GAIN=1; CR-SPLIT=2			2370 Secs (2370 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20220516
Unused Orbital Visibility = 207
GS Reacq
Exp. 6, split 1
Exp. 6 (Auto-WAVECAL)
Exp. 6, split 2
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16263, 4-hd191849-430 (04), failed Fri Jul 15 21:00:25 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.05"; GYRO MODE 3GOBAD

Comments: PSF star blue grating. There are no orient or schedule constraints on this visit. Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).

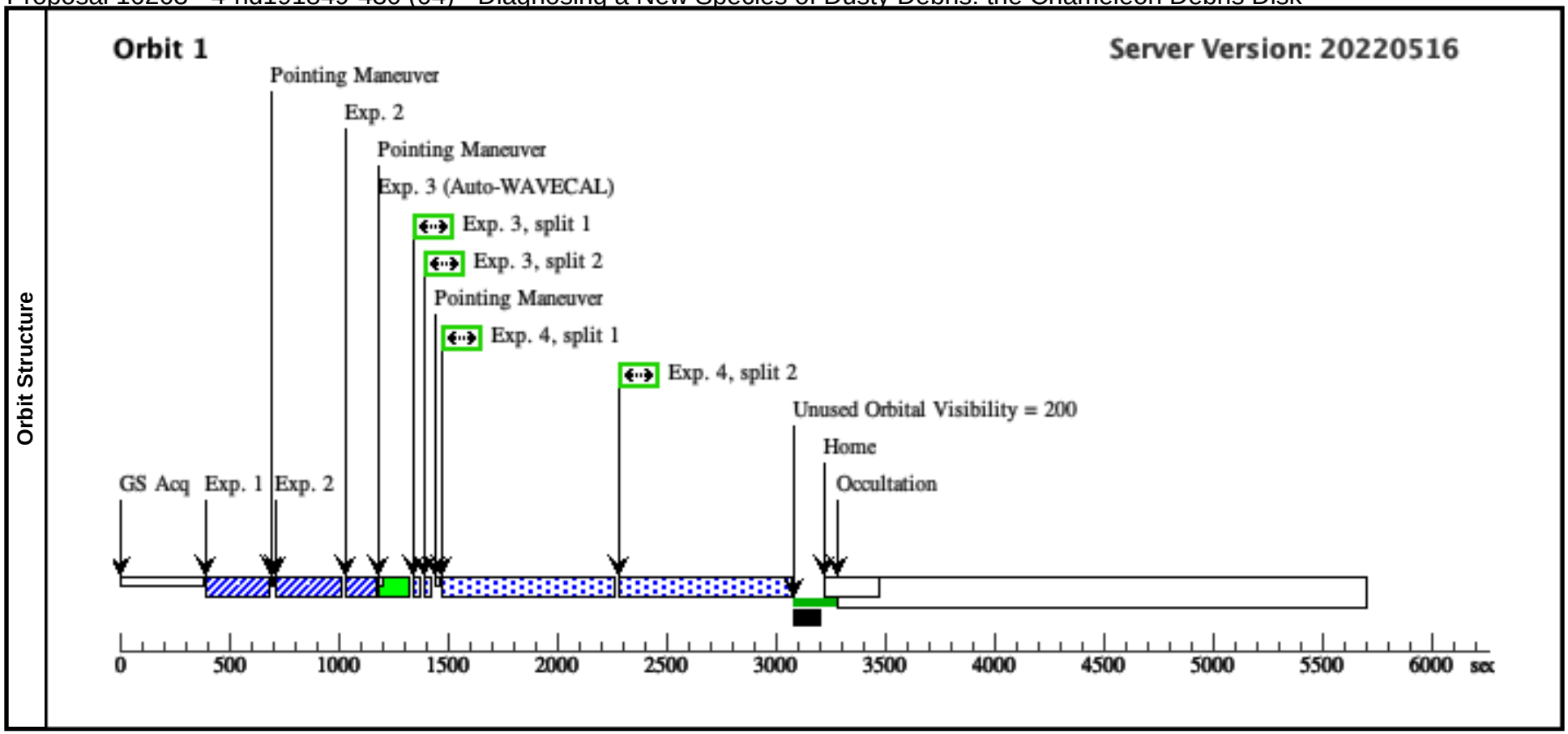
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	HD-191849	RA: 20 13 53.3960 (303.4724833d) Dec: -45 09 50.47 (-45.16402d) Equinox: J2000	Proper Motion RA: 778.236 mas/yr Proper Motion Dec: -159.744 mas/yr Parallax: 0.1623212" Epoch of Position: 2000.0	V=7.966	Reference Frame: ICRS

Comments: Coordinates from GSC2.3.2
Category=STAR
Description=[M V-IV]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq	(2) HD-191849	STIS/CCD, ACQ, F25ND3	MIRROR				0.3 Secs (0.3 Secs) *[==>]*	***[1]***
Comments: SNR = 100, V = 7.97, sp = M0Ve, Exptime rounded to nearest 0.1 second									
2	peakup	(2) HD-191849	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				0.3 Secs (0.3 Secs) *[==>]*	***[1]***
Comments: Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).									
3	point-G430 L	(2) HD-191849	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A	GAIN=1; CR-SPLIT=2			3.2 Secs (3.2 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
Comments: SNR 65 from etc v28.2									
4	fiducial-430 L	(2) HD-191849	STIS/CCD, ACCUM, 52X0.2F2	G430L 4300 A	GAIN=1; CR-SPLIT=2			1500 Secs (1500 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20220516
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Exp. 3, split 1
Exp. 3, split 2
Pointing Maneuver
Exp. 4, split 1
Exp. 4, split 2
Unused Orbital Visibility = 200
Home
Occultation
GS Acq
Exp. 1
Exp. 2
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16263, 5-au-mic-430 (53), implementation Fri Jul 15 21:00:25 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.05"; GYRO MODE 3GOBAD; ORIENT 351.6D TO 353.6 D; ORIENT 171.6D TO 173.6 D

Comments: Point-source and fiducial spectra of AU Mic with G430L.

1) We need to align slit parallel to the disk semi-major axis. The disk PA is 128.6 degrees (Krist et al. 2005). We adopt the setup and assumptions of GO-12512. We require an ORIENT = (128.6, 308.6) + offset angle = (128.6, 308.6) + 45 -1 = (172.6, 352.6) degrees. The (-1) above is an additional offset angle due to the rotation of the slit (we ask our PC to confirm this is still correct). We therefore require an absolute orient between 351.6 to 353.6 (+/- 1 degree of tolerance around 352.6).

We STRONGLY desire to use the EXACT orient as used in GO-12512, 352.0 degrees. We ask our PC to try to get and maintain this exact setting if at all possible.

2) It is critical that this visit be scheduled immediately (in the next orbit) following visit "4-hd191849-750" to allow accurate PSF subtraction to occur.

3) Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).

4) To get desired ORIENT to schedule, we had to shorten our orbits by about 200 seconds. Once we have a schedule window locked in, we ask our PC to allow us to extend our orbits to the maximum integration time allowed to maintain our required absolute ORIENT (352.0 degrees is most optimal).

Fixed Targets

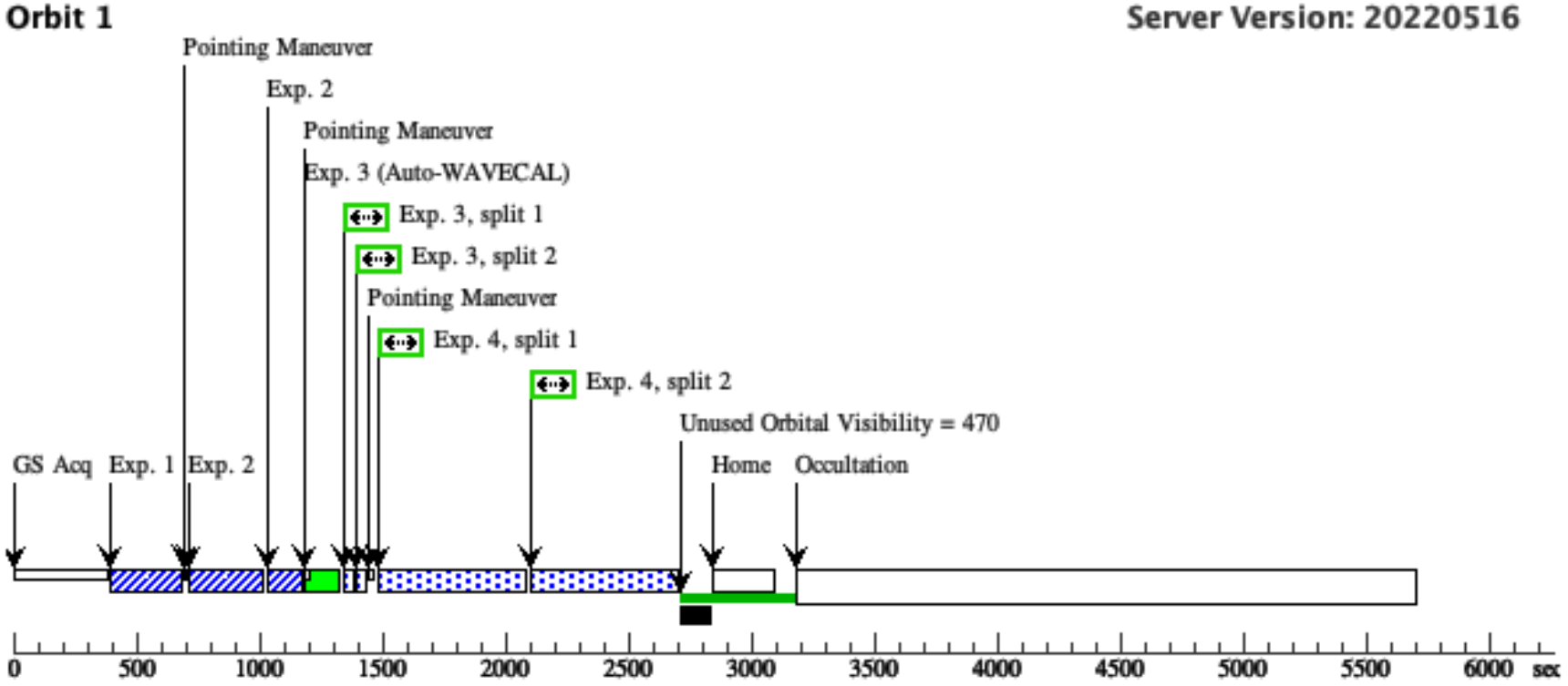
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AU-MIC	RA: 20 45 9.5323 (311.2897179d) Dec: -31 20 27.23 (-31.34090d) Equinox: J2000	Proper Motion RA: 281.424 mas/yr Proper Motion Dec: -359.895 mas/yr Parallax: 0.1028295" Epoch of Position: 2000.0	V=8.627	Reference Frame: ICRS

Comments: Coordinates are from GSC2.3.2
Category=STAR
Description=[M V-IV]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq	(1) V-AU-MIC	STIS/CCD, ACQ, F25ND3	MIRROR				0.4 Secs (0.4 Secs) *[==>]*	***[1]***
Comments: SNR = 100, V = 8.61, sp = M1Ve, Exptime rounded to nearest 0.1 second									
2	peakup	(1) V-AU-MIC	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				0.4 Secs (0.4 Secs) *[==>]*	***[1]***
Comments: Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).									
3	point-G430L	(1) V-AU-MIC	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A	GAIN=1; CR-SPLIT=2			4.6 Secs (4.6 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
Comments: SNR 54 from etc v28.2									
4	fiducial-430L	(1) V-AU-MIC	STIS/CCD, ACCUM, 52X0.2F2	G430L 4300 A	GAIN=1; CR-SPLIT=2			1120 Secs (1120 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***

Orbit Structure



Visit

Proposal 16263, 6-hd191849-430 (54), implementation Fri Jul 15 21:00:25 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.05"; GYRO MODE 3GOBAD; AFTER 56 BY 0.7 Orbits TO 1.2 Orbits

Comments: PSF star blue grating. There are no orient or schedule constraints on this visit. Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).

Fixed Targets

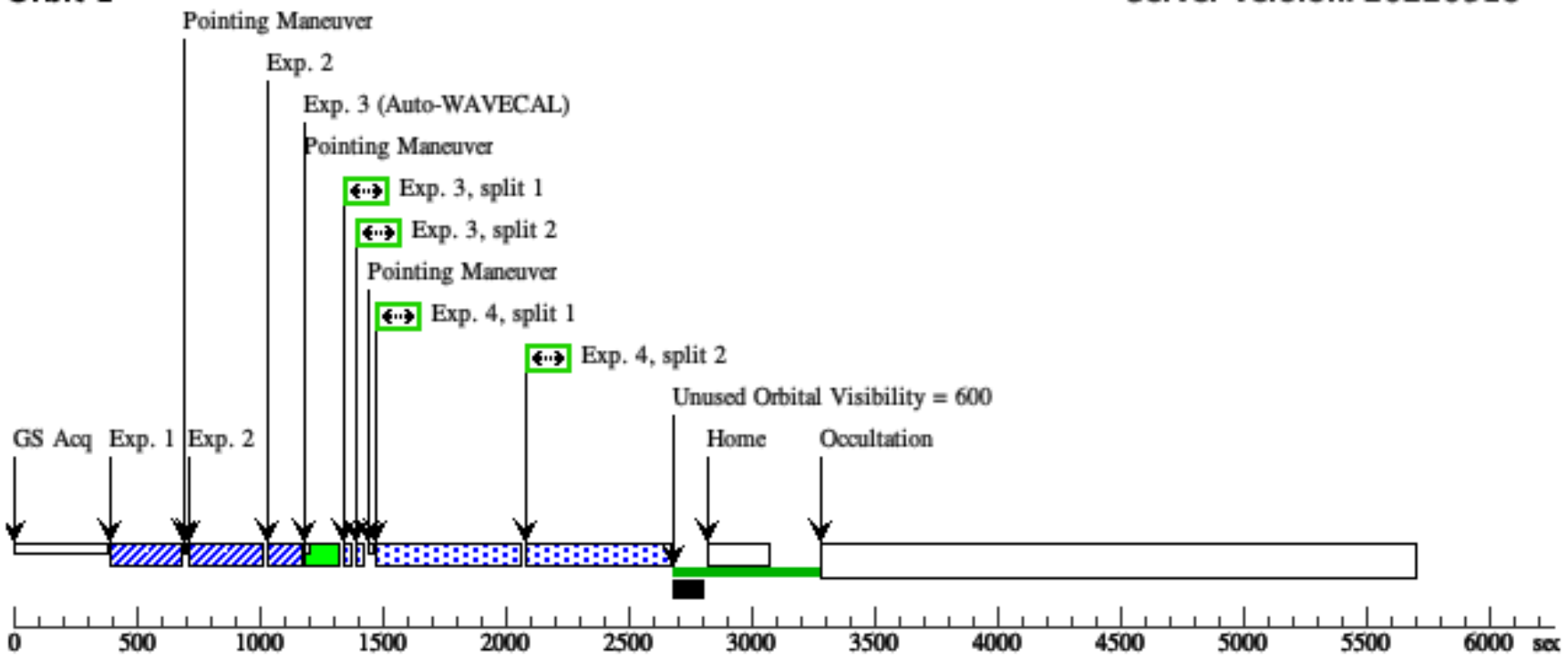
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	HD-191849	RA: 20 13 53.3960 (303.4724833d) Dec: -45 09 50.47 (-45.16402d) Equinox: J2000	Proper Motion RA: 778.236 mas/yr Proper Motion Dec: -159.744 mas/yr Parallax: 0.1623212" Epoch of Position: 2000.0	V=7.966	Reference Frame: ICRS

Comments: Coordinates from GSC2.3.2
Category=STAR
Description=[M V-IV]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq	(2) HD-191849	STIS/CCD, ACQ, F25ND3	MIRROR				0.3 Secs (0.3 Secs) *[==>]*	***[1]***
Comments: SNR = 100, V = 7.97, sp = M0Ve, Exptime rounded to nearest 0.1 second									
2	peakup	(2) HD-191849	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				0.3 Secs (0.3 Secs) *[==>]*	***[1]***
Comments: Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).									
3	point-G430 L	(2) HD-191849	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A	GAIN=1; CR-SPLIT=2			3.2 Secs (3.2 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
Comments: SNR 65 from etc v28.2									
4	fiducial-430 L	(2) HD-191849	STIS/CCD, ACCUM, 52X0.2F2	G430L 4300 A	GAIN=1; CR-SPLIT=2			1100 Secs (1100 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***

Orbit Structure



Visit

Proposal 16263, 7-au-mic-430 (55), implementation Fri Jul 15 21:00:25 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.05"; GYRO MODE 3GOBAD; ORIENT 351.6D TO 353.6 D; ORIENT 171.6D TO 173.6 D; AFTER 53 BY 0.7 Orbits TO 1.2 Orbits

Comments: Point-source and fiducial spectra of AU Mic with G430L.

1) We need to align slit parallel to the disk semi-major axis. The disk PA is 128.6 degrees (Krist et al. 2005). We adopt the setup and assumptions of GO-12512. We require an ORIENT = (128.6, 308.6) + offset angle = (128.6, 308.6) + 45 -1 = (172.6, 352.6) degrees. The (-1) above is an additional offset angle due to the rotation of the slit (we ask our PC to confirm this is still correct). We therefore require an absolute orient between 351.6 to 353.6 (+/- 1 degree of tolerance around 352.6).

We STRONGLY desire to use the EXACT orient as used in GO-12512, 352.0 degrees. We ask our PC to try to get and maintain this exact setting if at all possible.

2) It is critical that this visit be scheduled immediately (in the next orbit) following visit "4-hd191849-750" to allow accurate PSF subtraction to occur.

3) Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).

4) To get desired ORIENT to schedule, we had to shorten our orbits by about 200 seconds. Once we have a schedule window locked in, we ask our PC to allow us to extend our orbits to the maximum integration time allowed to maintain our required absolute ORIENT (352.0 degrees is most optimal).

Fixed Targets

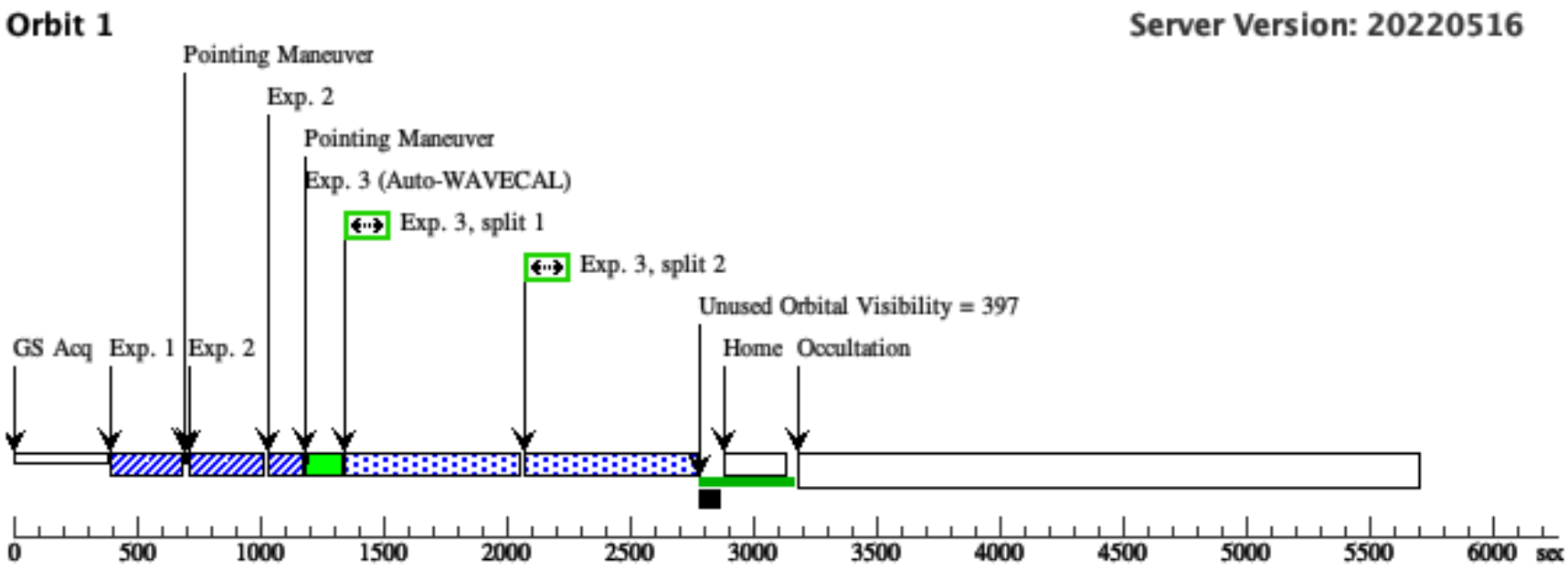
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AU-MIC	RA: 20 45 9.5323 (311.2897179d) Dec: -31 20 27.23 (-31.34090d) Equinox: J2000	Proper Motion RA: 281.424 mas/yr Proper Motion Dec: -359.895 mas/yr Parallax: 0.1028295" Epoch of Position: 2000.0	V=8.627	Reference Frame: ICRS

Comments: Coordinates are from GSC2.3.2
Category=STAR
Description=[M V-IV]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq	(1) V-AU-MIC	STIS/CCD, ACQ, F25ND3	MIRROR				0.4 Secs (0.4 Secs) *[==>]*	 ***[1]***
Comments: SNR = 100, V = 8.61, sp = M1Ve, Exptime rounded to nearest 0.1 second									
2	peakup	(1) V-AU-MIC	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				0.4 Secs (0.4 Secs) *[==>]*	 ***[1]***
Comments: Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).									
3	fiducial-430 L	(1) V-AU-MIC	STIS/CCD, ACCUM, 52X0.2F2	G430L 4300 A	GAIN=1; CR-SPLIT=2			1320 Secs (1320 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	 ***[1]***

Orbit Structure



Visit

Proposal 16263, 8-au-mic-430 (56), implementation Fri Jul 15 21:00:25 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.05"; GYRO MODE 3GOBAD; ORIENT 351.6D TO 353.6 D; ORIENT 171.6D TO 173.6 D; AFTER 55 BY 0.7 Orbits TO 1.2 Orbits

Comments: Point-source and fiducial spectra of AU Mic with G430L.

1) We need to align slit parallel to the disk semi-major axis. The disk PA is 128.6 degrees (Krist et al. 2005). We adopt the setup and assumptions of GO-12512. We require an ORIENT = (128.6, 308.6) + offset angle = (128.6, 308.6) + 45 -1 = (172.6, 352.6) degrees. The (-1) above is an additional offset angle due to the rotation of the slit (we ask our PC to confirm this is still correct). We therefore require an absolute orient between 351.6 to 353.6 (+/- 1 degree of tolerance around 352.6).

We STRONGLY desire to use the EXACT orient as used in GO-12512, 352.0 degrees. We ask our PC to try to get and maintain this exact setting if at all possible.

2) It is critical that this visit be scheduled immediately (in the next orbit) following visit "4-hd191849-750" to allow accurate PSF subtraction to occur.

3) Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).

4) To get desired ORIENT to schedule, we had to shorten our orbits by about 200 seconds. Once we have a schedule window locked in, we ask our PC to allow us to extend our orbits to the maximum integration time allowed to maintain our required absolute ORIENT (352.0 degrees is most optimal).

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AU-MIC	RA: 20 45 9.5323 (311.2897179d) Dec: -31 20 27.23 (-31.34090d) Equinox: J2000	Proper Motion RA: 281.424 mas/yr Proper Motion Dec: -359.895 mas/yr Parallax: 0.1028295" Epoch of Position: 2000.0	V=8.627	Reference Frame: ICRS

Comments: Coordinates are from GSC2.3.2
Category=STAR
Description=[M V-IV]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq	(1) V-AU-MIC	STIS/CCD, ACQ, F25ND3	MIRROR				0.4 Secs (0.4 Secs) *[==>]*	 ***[1]***

Comments: SNR = 100, V = 8.61, sp = M1Ve, Exptime rounded to nearest 0.1 second

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
2	peakup	(1) V-AU-MIC	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				0.4 Secs (0.4 Secs) *[==>]*	 ***[1]***

Comments: Peak-up in x and y required for accurate positioning of star under fiducial bar (short slit peak-up).

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
3	fiducial-430 L	(1) V-AU-MIC	STIS/CCD, ACCUM, 52X0.2F2	G430L 4300 A	GAIN=1; CR-SPLIT=2			1320 Secs (1320 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	 ***[1]***

Orbit Structure