16892 - VLA Identification of Candidate Dual and Lensed Quasars from Gaia and HST

Cycle: 29, 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) J034828.67-401513.2	WFC3/IR	1	07-Jan-2022 16:01:16.0	yes
02	(2) J053620.23+503826.2	WFC3/IR	1	07-Jan-2022 16:01:18.0	yes
03	(3) 074922.97+225511.8	WFC3/IR	1	07-Jan-2022 16:01:20.0	yes
04	(4) J164818.08+415550.2	WFC3/IR	1	07-Jan-2022 16:01:22.0	yes
05	(5) J164941.30+081233.5	WFC3/IR	1	07-Jan-2022 16:01:24.0	yes
06	(6) J171139.98-161147.9	WFC3/IR	1	07-Jan-2022 16:01:27.0	yes
07	(7) J193718.82-182132.2	WFC3/IR	1	07-Jan-2022 16:01:29.0	yes
08	(8) J205000.01-294721.7	WFC3/IR	1	07-Jan-2022 16:01:30.0	yes
09	(9) J082341.08+241805.0	WFC3/IR	1	07-Jan-2022 16:01:32.0	yes

9 Total Orbits Used

ABSTRACT

We propose VLA A-config Ku- and C-band imaging to resolve the sub-arcsec double nuclei in 11 candidate dual/ lensed quasars. Our targets are selected using a new astrometric technique leveraging the universal AGN variability which produces astrometric signals from dual/lensed quasars. Gaia's precision astrometry combined with follow- up HST optical dual-band imaging provides strong candidates of dual/lensed quasars with close compact double cores. We adopt a refined target selection based on the HST optical color to better reject star-quasar superpositions compared to a pilot program. The proposed VLA dual-band imaging will detect two compact flat-spectrum radio cores to confirm our targets as dual or lensed quasars. Joint HST/IR imaging is requested to further test the lensing scenario to identify bona-fide dual quasars. Our sample probes a new regime at higher redshifts and smaller merger separations than previous work, where mergers are thought to be more important in driving the evolution of galaxies and supermassive black holes, providing empirical constraints on the stochastic gravitational wave background from binary supermassive black holes.

OBSERVING DESCRIPTION

WFC3/IR F160W imaging of 9 candidate high-redshift kpc-scale dual/lensed quasars. The targets are selected using a new astrometric technique leveraging the universal AGN variability which produces astrometric signals from dual/lensed quasars. The deep IR imaging will be used to test the gravitational lensing scenario in order to find bona-fide high-redshift kpc-scale dual quasars.

We use the 512x512 subarray to reduce time of readout and buffer dump. This setting provides a FOV of 60"x60", or a physical transverse scale of 500x500 kpc at z~2, more than enough to cover the quasar host and close companions. There are stars of comparable flux to the quasar target in the FoV, which will be used as PSF reference to decompose the quasar+host system.

We use the STEP25 MILTIACCUM mode to increase the dynamic range and deal with potential saturation of bright central sources. We use the 4-step BOX dither pattern between exposures to facilitate cosmic-ray and bad-pixel rejection, to better sample the PSF, and to improve the effective image resolution. With this setup we will be able to reach surface brightness depth as faint as H~25.65 mag/arcsec^2 (AB, 3\sigma detection within a circular 0.2" radius aperture, using an elliptical galaxy SED at z = 2) in 2700 s exposure. This depth is well suited for the gravitational lensing test, and to explore merger features and host morphologies for the targets.

Visit

Proposal 16892, J0348 (01), implementation Fri Jan 07 21:01:33 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=1.716 Line Spacing=1.095	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

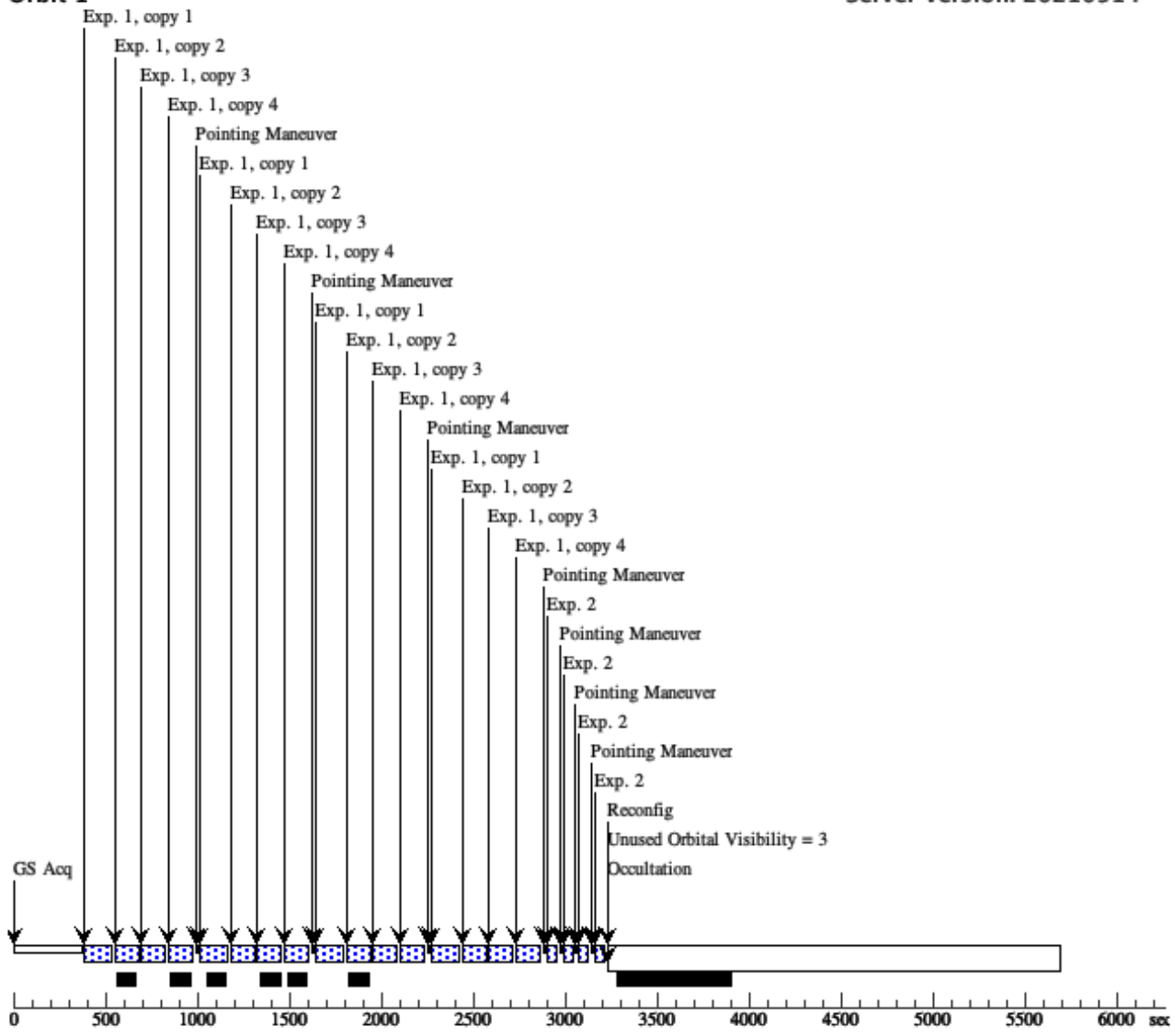
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J034828.67-401513.2	RA: 03 48 28.6700 (57.1194583d) Dec: -40 15 13.20 (-40.25367d) Equinox: J2000		V=19.3	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[QUASAR]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) J034828.67-401513.2	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=10; SAMP-SEQ=STEP25		Pattern 1, Exps 1-1 in J0348 (01) (1)	128.439646 Secs X 4 (2055.034 Secs)	
								[==>(Pattern 1, Copy 1)] *[==>(Pattern 1, Copy 2)]* *[==>(Pattern 1, Copy 3)]* *[==>(Pattern 1, Copy 4)]* *[==>(Pattern 2, Copy 1)]* *[==>(Pattern 2, Copy 2)]* *[==>(Pattern 2, Copy 3)]* *[==>(Pattern 2, Copy 4)]* *[==>(Pattern 3, Copy 1)]* *[==>(Pattern 3, Copy 2)]* *[==>(Pattern 3, Copy 3)]* *[==>(Pattern 3, Copy 4)]* *[==>(Pattern 4, Copy 1)]* *[==>(Pattern 4, Copy 2)]* *[==>(Pattern 4, Copy 3)]* *[==>(Pattern 4, Copy 4)]*	***[1]***
2		(1) J034828.67-401513.2	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=10; SAMP-SEQ=SPARS5		Pattern 1, Exps 2-2 in J0348 (01) (1)	27.14659 Secs (108.586 Secs)	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 16892, J0536 (02), implementation Fri Jan 07 21:01:33 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=1.716 Line Spacing=1.095	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

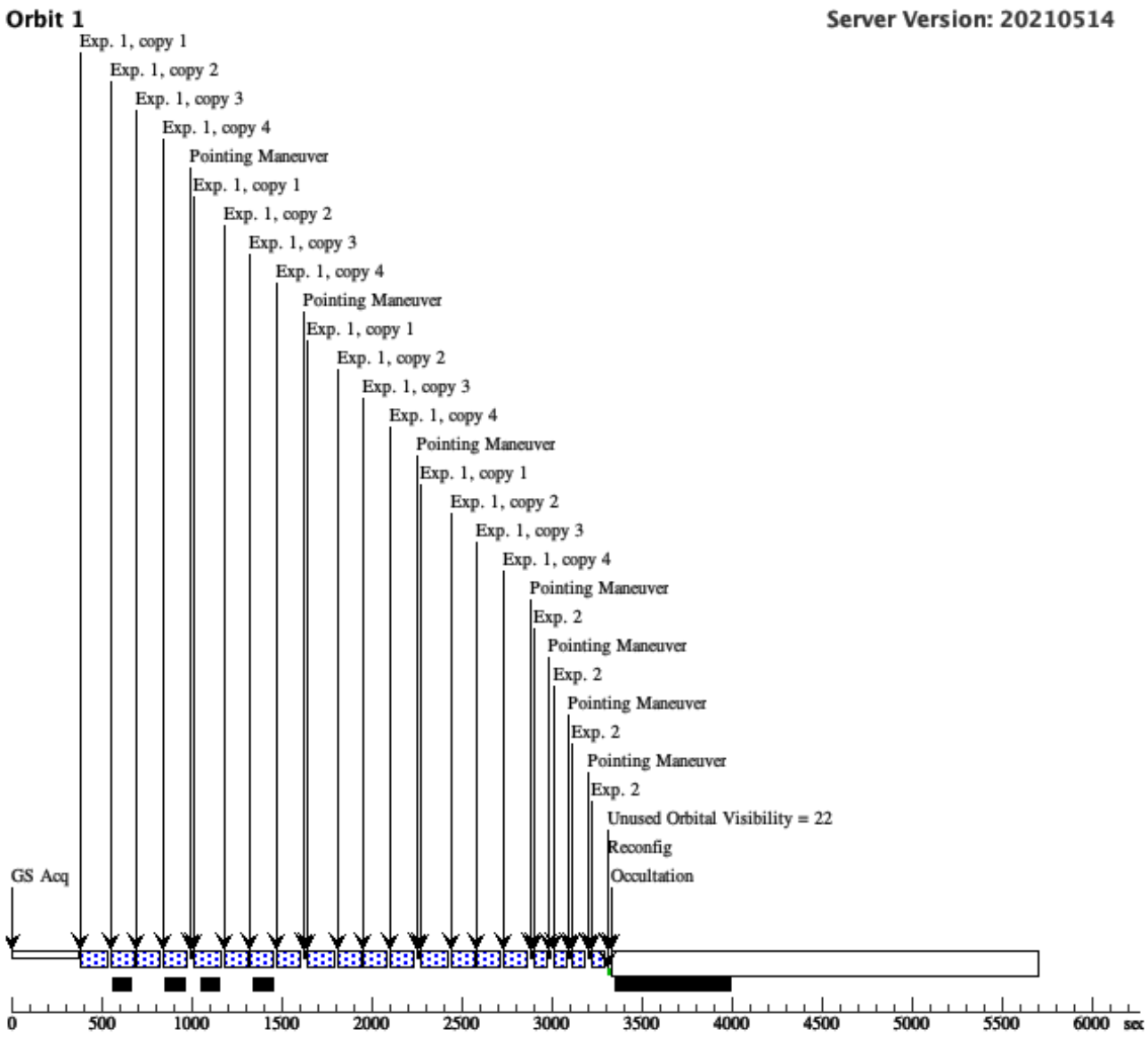
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	J053620.23+503826.2	RA: 05 36 20.2300 (84.0842917d) Dec: +50 38 26.20 (50.64061d) Equinox: J2000		V=18.5	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[QUASAR]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) J053620.23+503826.2	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=10; SAMP-SEQ=STEP25		Pattern 1, Exps 1-1 in J0536 (02) (1)	128.439646 Secs X 4 (2055.034 Secs)	
								[==>(Pattern 1, Copy 1)] *[==>(Pattern 1, Copy 2)]* *[==>(Pattern 1, Copy 3)]* *[==>(Pattern 1, Copy 4)]* *[==>(Pattern 2, Copy 1)]* *[==>(Pattern 2, Copy 2)]* *[==>(Pattern 2, Copy 3)]* *[==>(Pattern 2, Copy 4)]* *[==>(Pattern 3, Copy 1)]* *[==>(Pattern 3, Copy 2)]* *[==>(Pattern 3, Copy 3)]* *[==>(Pattern 3, Copy 4)]* *[==>(Pattern 4, Copy 1)]* *[==>(Pattern 4, Copy 2)]* *[==>(Pattern 4, Copy 3)]* *[==>(Pattern 4, Copy 4)]*	***[1]***
2		(2) J053620.23+503826.2	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=3; SAMP-SEQ=SPARS25		Pattern 1, Exps 2-2 in J0536 (02) (1)	46.695529 Secs (186.782 Secs)	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 16892, J0749 (03), implementation Fri Jan 07 21:01:33 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=1.716 Line Spacing=1.095	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

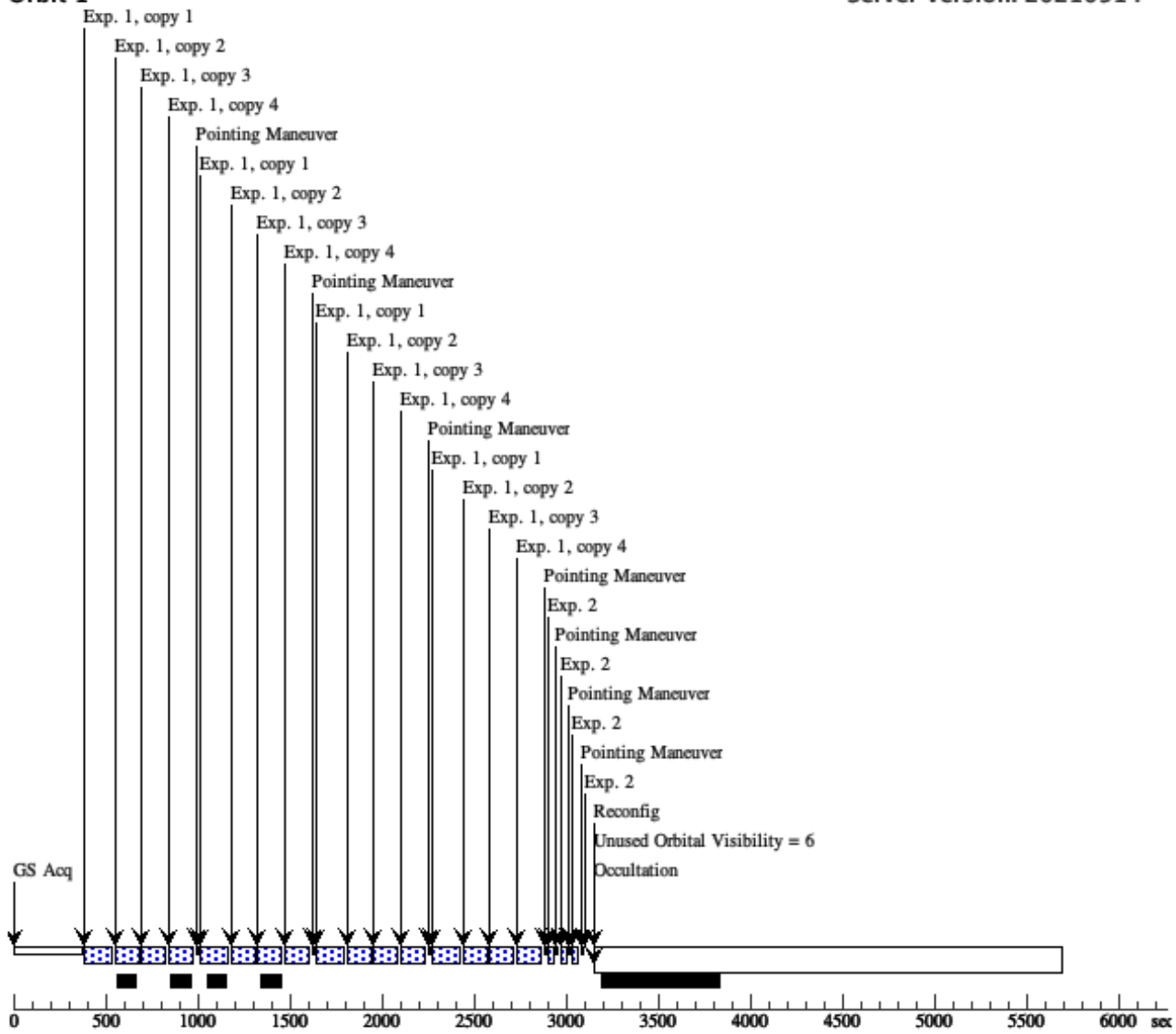
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	074922.97+225511.8	RA: 07 49 22.9700 (117.3457083d) Dec: +22 55 11.80 (22.91994d) Equinox: J2000	Redshift: 2.166	V=18.7	Reference Frame: ICRS

Comments: Replacing J074800.55+314648.0 which was recently discovered to be a stellar interloper.
Category=GALAXY
Description=[QUASAR]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) 074922.97+225511.8	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=10; SAMP-SEQ=STEP25		Pattern 1, Exps 1-1 in J0749 (03) (1)	128.439646 Secs X 4 (2055.034 Secs)	
								[==>(Pattern 1, Copy 1)] *[==>(Pattern 1, Copy 2)]* *[==>(Pattern 1, Copy 3)]* *[==>(Pattern 1, Copy 4)]* *[==>(Pattern 2, Copy 1)]* *[==>(Pattern 2, Copy 2)]* *[==>(Pattern 2, Copy 3)]* *[==>(Pattern 2, Copy 4)]* *[==>(Pattern 3, Copy 1)]* *[==>(Pattern 3, Copy 2)]* *[==>(Pattern 3, Copy 3)]* *[==>(Pattern 3, Copy 4)]* *[==>(Pattern 4, Copy 1)]* *[==>(Pattern 4, Copy 2)]* *[==>(Pattern 4, Copy 3)]* *[==>(Pattern 4, Copy 4)]*	***[1]***
2		(3) 074922.97+225511.8	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=3; SAMP-SEQ=SPARS5		Pattern 1, Exps 2-2 in J0749 (03) (1)	6.696041 Secs (26.784 Secs)	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 16892, J1648 (04), implementation Fri Jan 07 21:01:33 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=1.716 Line Spacing=1.095	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

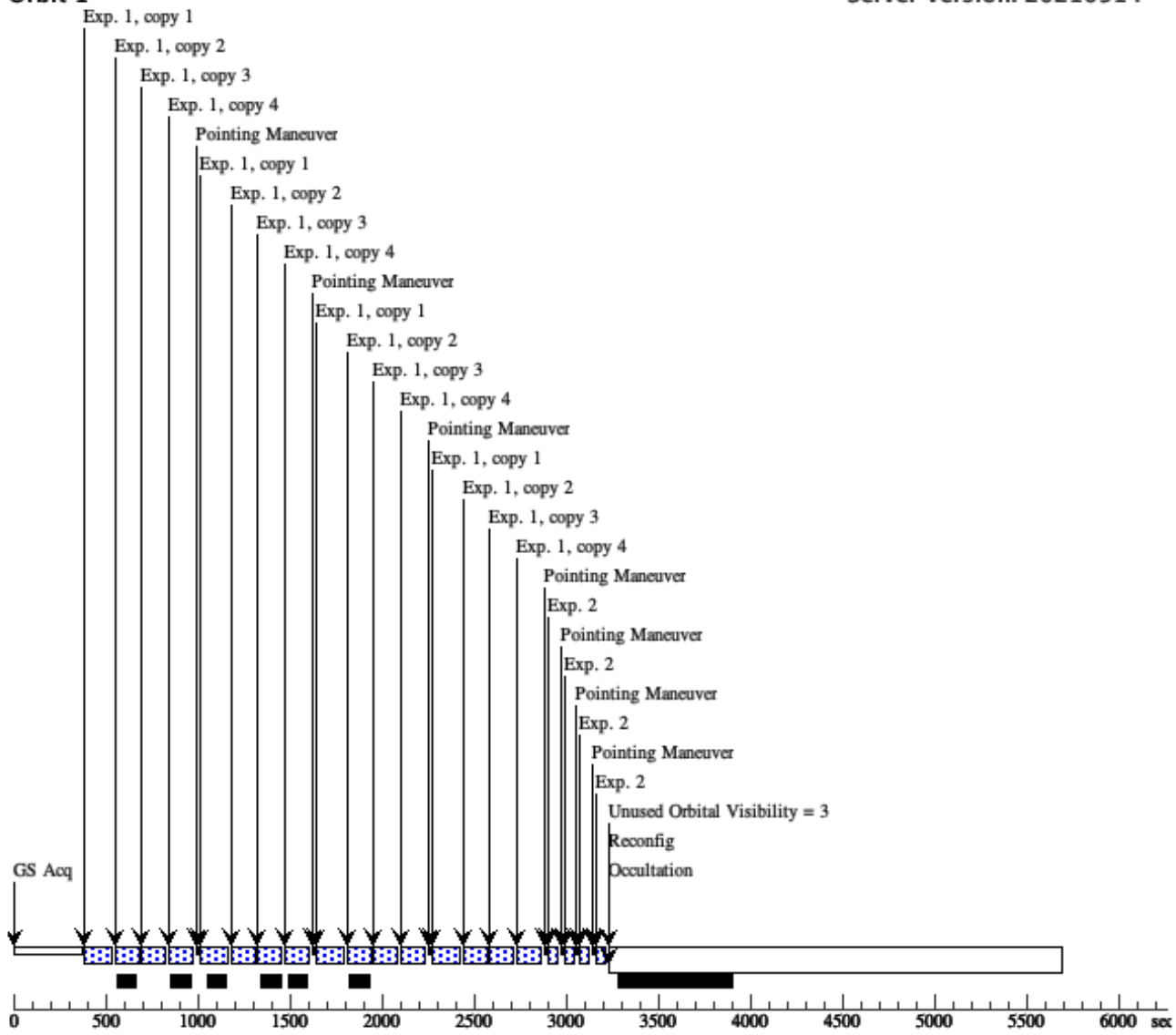
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	J164818.08+415550.2	RA: 16 48 18.0800 (252.0753333d) Dec: +41 55 50.20 (41.93061d) Equinox: J2000		V=18.4	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[QUASAR]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) J164818.08+415550.2	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=10; SAMP-SEQ=STEP25		Pattern 1, Exps 1-1 in J1648 (04) (1)	128.439646 Secs X 4 (2055.034 Secs)	
								[==>(Pattern 1, Copy 1)] *[==>(Pattern 1, Copy 2)]* *[==>(Pattern 1, Copy 3)]* *[==>(Pattern 1, Copy 4)]* *[==>(Pattern 2, Copy 1)]* *[==>(Pattern 2, Copy 2)]* *[==>(Pattern 2, Copy 3)]* *[==>(Pattern 2, Copy 4)]* *[==>(Pattern 3, Copy 1)]* *[==>(Pattern 3, Copy 2)]* *[==>(Pattern 3, Copy 3)]* *[==>(Pattern 3, Copy 4)]* *[==>(Pattern 4, Copy 1)]* *[==>(Pattern 4, Copy 2)]* *[==>(Pattern 4, Copy 3)]* *[==>(Pattern 4, Copy 4)]*	***[1]***
2		(4) J164818.08+415550.2	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=10; SAMP-SEQ=SPARS5		Pattern 1, Exps 2-2 in J1648 (04) (1)	27.14659 Secs (108.586 Secs)	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 16892, J1649 (05), implementation Fri Jan 07 21:01:33 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=1.716 Line Spacing=1.095	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	J164941.30+081233.5	RA: 16 49 41.3000 (252.4220833d) Dec: +08 12 33.50 (8.20931d) Equinox: J2000		V=19.1	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[QUASAR]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) J164941.30+081233.5	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=10; SAMP-SEQ=STEP25		Pattern 1, Exps 1-1 in J1649 (05) (1)	128.439646 Secs X 4 (2055.034 Secs)	
								[==>(Pattern 1, Copy 1)] *[==>(Pattern 1, Copy 2)]* *[==>(Pattern 1, Copy 3)]* *[==>(Pattern 1, Copy 4)]* *[==>(Pattern 2, Copy 1)]* *[==>(Pattern 2, Copy 2)]* *[==>(Pattern 2, Copy 3)]* *[==>(Pattern 2, Copy 4)]* *[==>(Pattern 3, Copy 1)]* *[==>(Pattern 3, Copy 2)]* *[==>(Pattern 3, Copy 3)]* *[==>(Pattern 3, Copy 4)]* *[==>(Pattern 4, Copy 1)]* *[==>(Pattern 4, Copy 2)]* *[==>(Pattern 4, Copy 3)]* *[==>(Pattern 4, Copy 4)]*	***[1]***
2		(5) J164941.30+081233.5	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=2; SAMP-SEQ=SPARS5		Pattern 1, Exps 2-2 in J1649 (05) (1)	3.774534 Secs (15.098 Secs)	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure

Visit

Proposal 16892, J1711 (06), implementation Fri Jan 07 21:01:34 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=1.716 Line Spacing=1.095	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J171139.98-161147.9	RA: 17 11 39.9800 (257.9165833d) Dec: -16 11 47.90 (-16.19664d) Equinox: J2000		V=20.3	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[QUASAR]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(6) J171139.98-161147.9	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=10; SAMP-SEQ=STEP25		Pattern 1, Exps 1-1 in J1711 (06) (1)	128.439646 Secs X 4 (2055.034 Secs)	
								[==>(Pattern 1, Copy 1)] *[==>(Pattern 1, Copy 2)]* *[==>(Pattern 1, Copy 3)]* *[==>(Pattern 1, Copy 4)]* *[==>(Pattern 2, Copy 1)]* *[==>(Pattern 2, Copy 2)]* *[==>(Pattern 2, Copy 3)]* *[==>(Pattern 2, Copy 4)]* *[==>(Pattern 3, Copy 1)]* *[==>(Pattern 3, Copy 2)]* *[==>(Pattern 3, Copy 3)]* *[==>(Pattern 3, Copy 4)]* *[==>(Pattern 4, Copy 1)]* *[==>(Pattern 4, Copy 2)]* *[==>(Pattern 4, Copy 3)]* *[==>(Pattern 4, Copy 4)]*	***[1]***
2		(6) J171139.98-161147.9	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=3; SAMP-SEQ=SPARS5		Pattern 1, Exps 2-2 in J1711 (06) (1)	6.696041 Secs (26.784 Secs)	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure

Visit

Proposal 16892, J1937 (07), implementation Fri Jan 07 21:01:34 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=1.716 Line Spacing=1.095	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	J193718.82-182132.2	RA: 19 37 18.8200 (294.3284167d) Dec: -18 21 32.20 (-18.35894d) Equinox: J2000		V=20.3	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[QUASAR]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(7) J193718.82-182132.2	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=10; SAMP-SEQ=STEP25		Pattern 1, Exps 1-1 in J1937 (07) (1)	128.439646 Secs X 4 (2055.034 Secs)	
								[==>(Pattern 1, Copy 1)] *[==>(Pattern 1, Copy 2)]* *[==>(Pattern 1, Copy 3)]* *[==>(Pattern 1, Copy 4)]* *[==>(Pattern 2, Copy 1)]* *[==>(Pattern 2, Copy 2)]* *[==>(Pattern 2, Copy 3)]* *[==>(Pattern 2, Copy 4)]* *[==>(Pattern 3, Copy 1)]* *[==>(Pattern 3, Copy 2)]* *[==>(Pattern 3, Copy 3)]* *[==>(Pattern 3, Copy 4)]* *[==>(Pattern 4, Copy 1)]* *[==>(Pattern 4, Copy 2)]* *[==>(Pattern 4, Copy 3)]* *[==>(Pattern 4, Copy 4)]*	***[1]***
2		(7) J193718.82-182132.2	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=3; SAMP-SEQ=SPARS5		Pattern 1, Exps 2-2 in J1937 (07) (1)	6.696041 Secs (26.784 Secs)	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure

Visit

Proposal 16892, J2050 (08), implementation Fri Jan 07 21:01:34 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=1.716 Line Spacing=1.095	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

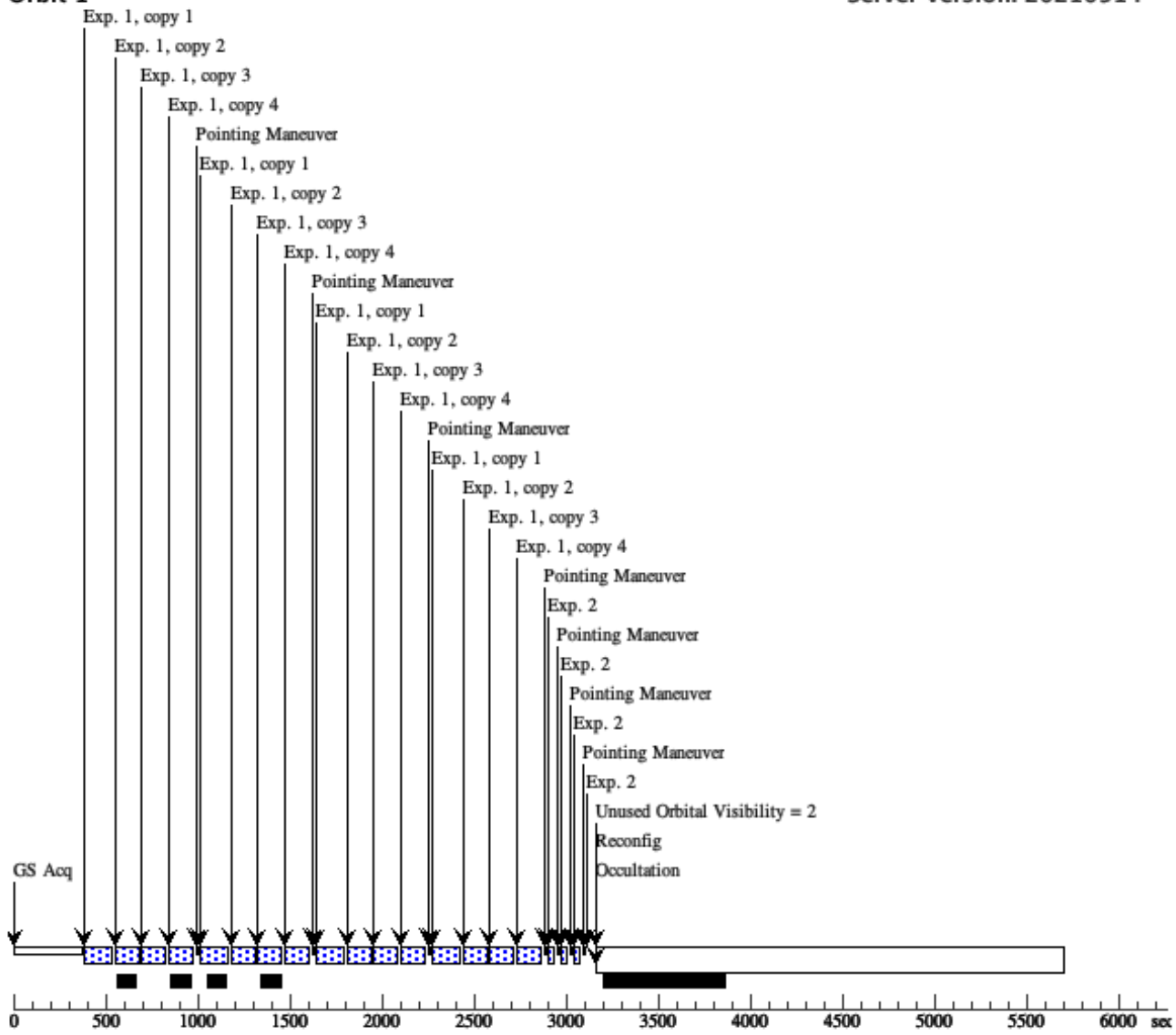
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	J205000.01-294721.7	RA: 20 50 0.0100 (312.5000417d) Dec: -29 47 21.70 (-29.78936d) Equinox: J2000		V=19.2	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[QUASAR]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(8) J205000.01-294721.7	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=10; SAMP-SEQ=STEP25		Pattern 1, Exps 1-1 in J2050 (08) (1)	128.439646 Secs X 4 (2055.034 Secs)	
								[==>(Pattern 1, Copy 1)] *[==>(Pattern 1, Copy 2)]* *[==>(Pattern 1, Copy 3)]* *[==>(Pattern 1, Copy 4)]* *[==>(Pattern 2, Copy 1)]* *[==>(Pattern 2, Copy 2)]* *[==>(Pattern 2, Copy 3)]* *[==>(Pattern 2, Copy 4)]* *[==>(Pattern 3, Copy 1)]* *[==>(Pattern 3, Copy 2)]* *[==>(Pattern 3, Copy 3)]* *[==>(Pattern 3, Copy 4)]* *[==>(Pattern 4, Copy 1)]* *[==>(Pattern 4, Copy 2)]* *[==>(Pattern 4, Copy 3)]* *[==>(Pattern 4, Copy 4)]*	***[1]***
2		(8) J205000.01-294721.7	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=4; SAMP-SEQ=SPARS5		Pattern 1, Exps 2-2 in J2050 (08) (1)	9.617548 Secs (38.47 Secs)	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 16892, J0823 (09), implementation Fri Jan 07 21:01:34 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=1.716 Line Spacing=1.095	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	J082341.08+241805.0	RA: 08 23 41.0800 (125.9211667d) Dec: +24 18 5.00 (24.30139d) Equinox: J2000	Redshift: 1.811	V=17.6	Reference Frame: ICRS

Comments: Replacing J212243.01-002653.8, which was recently discovered to be a stellar interloper.
Category=GALAXY
Description=[QUASAR]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(9) J082341.08+241805.0	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=10; SAMP-SEQ=STEP25		Pattern 1, Exps 1-1 in J0823 (09) (1)	128.439646 Secs X 4 (2055.034 Secs)	
								[==>(Pattern 1, Copy 1)] *[==>(Pattern 1, Copy 2)]* *[==>(Pattern 1, Copy 3)]* *[==>(Pattern 1, Copy 4)]* *[==>(Pattern 2, Copy 1)]* *[==>(Pattern 2, Copy 2)]* *[==>(Pattern 2, Copy 3)]* *[==>(Pattern 2, Copy 4)]* *[==>(Pattern 3, Copy 1)]* *[==>(Pattern 3, Copy 2)]* *[==>(Pattern 3, Copy 3)]* *[==>(Pattern 3, Copy 4)]* *[==>(Pattern 4, Copy 1)]* *[==>(Pattern 4, Copy 2)]* *[==>(Pattern 4, Copy 3)]* *[==>(Pattern 4, Copy 4)]*	***[1]***
2		(9) J082341.08+241805.0	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=3; SAMP-SEQ=SPARS5		Pattern 1, Exps 2-2 in J0823 (09) (1)	6.696041 Secs (26.784 Secs)	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure