17228 - A Supernova in a Magnified Multiply Imaged Galaxy at Redshift z=1.76

Cycle: 29, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. Patrick Kelly (PI) (Contact)	**University of Minnesota - Twin Cities**	**plkelly@umn.edu**
Dr. Wenlei Chen (CoI)	University of Minnesota - Twin Cities	chen6339@umn.edu
Prof. Tommaso L. Treu (CoI)	University of California - Los Angeles	tt@astro.ucla.edu
Dr. Anton M. Koekemoer (CoI)	Space Telescope Science Institute	koekemoer@stsci.edu
Prof. Masamune Oguri (CoI)	Chiba University	masamune.oguri@chiba-u.jp
Prof. Adi Zitrin (CoI)	Ben Gurion University of the Negev	adizitrin@gmail.com
Dr. Jose M. Diego (CoI) (ESA Member)	Instituto de Fisica de Cantabria	jdiego@ifca.unican.es
Prof. Alex V. Filippenko (CoI)	University of California - Berkeley	alex@astro.berkeley.edu
Prof. Ryan Foley (CoI)	University of California - Santa Cruz	foley@ucsc.edu
Dr. Saurabh W. Jha (CoI)	Rutgers the State University of New Jersey	saurabh@physics.rutgers.edu
Prof. Thomas J. Broadhurst (CoI) (ESA Member)	University of the Basque Country	tomie325@gmail.com

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
04	(1) RXJ1347.5-1145	WFC3/IR	1	14-Jul-2022 18:02:07.0	yes
05	(1) RXJ1347.5-1145	WFC3/IR	1	14-Jul-2022 18:02:08.0	yes
06	(1) RXJ1347.5-1145	WFC3/IR	1	14-Jul-2022 18:02:09.0	yes
07	(1) RXJ1347.5-1145	WFC3/IR	1	14-Jul-2022 18:02:09.0	yes
08	(1) RXJ1347.5-1145	WFC3/IR	1	14-Jul-2022 18:02:10.0	yes
09	(1) RXJ1347.5-1145	WFC3/UVIS	1	14-Jul-2022 18:02:11.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
10	(1) RXJ1347.5-1145	WFC3/IR	1	14-Jul-2022 18:02:12.0	yes
11	(1) RXJ1347.5-1145	WFC3/IR	1	14-Jul-2022 18:02:12.0	yes
12	(1) RXJ1347.5-1145	WFC3/IR	1	14-Jul-2022 18:02:13.0	yes
13	(1) RXJ1347.5-1145	WFC3/IR	1	14-Jul-2022 18:02:14.0	yes

10 Total Orbits Used

ABSTRACT

We have discovered a candidate young magnified supernova (SN) in a galaxy at redshift z=1.76 that is strongly lensed by the foreground RX J1347-1145 (z=0.451) galaxy cluster. Two lens models predict magnifications of 4--4.5 for the observed image of the transient. An ongoing SNAP program acquired imaging of the field on May 18th, and do not detect the SN candidate. From imaging acquired on the program's last visit to the field on May 30th, we detect a source with F110W = 25.8+-0.3 mag, with no detection in F606W. Consequently, the first detection is when the SN is younger than 4 days in the rest frame at z=1.76.

If the SN is a Type Ia SN, it can be used to provide a novel test of galaxy cluster models' prediction at high magnification. If a core-collapse SN, its addition would improve constraints on the core-collapse SN rate at z=1--2 from cluster-magnified supernovae (SNe), which are in tension with that inferred from blank fields. Finally, the SN may reappear in ~9.5 years in an arc of the same galaxy at much greater magnification, where it would be detected by LSST, and would provide an extremely precise time delay, constraints on the value of H0, and test of lens models.

We propose to measure the light curve of the magnified SN, which should reach a peak in very early July if it is a Type Ia SN, and acquire a near-infrared G102 grism spectrum to determine its spectroscopic type.

OBSERVING DESCRIPTION

We will acquire a total of five orbits of WFC3 IR G102 grism spectroscopy of the SN candidate,
and five orbits of imaging.

The G102 spectroscopy will be acquired at the same pointing, POS TARGS, and ORIENT (103) that

was used to acquire G102 spectra of the field by the GLASS program in visits 17 and 18.
The matching ORIENT, target, and POS TARGS are to enable a direct subtraction of the
two sets of data to measure the spectrum of the transient (if it is sufficiently bright).

There are four different POS TARGS used by the GLASS visits at ORIENT=103. For each of
our five spectroscopy orbits, we select a POS TARG (one is repeated). Each orbit consists
of three WFC IR G102 integrations and two F105W image for registration at the beginning and end to mitigate
contamination from He.
We request that the five spectroscopy orbits be scheduled within a period of two days.

We obtain four epochs of F110W/F160W imaging. The first of these should be accompanied by
a single orbit of F814W imaging, and we have grouped the first F110W/F160W visit within a day of the
F814W. Ideally they could be scheduled during a single visit, and within a day or two of the
G102 spectroscopy.

The subsequent F110W and F160W epochs are scheduled 11 to 14 days after the first.

Visit

Proposal 17228, 1 Grism Orbit: 2x f105w; 3x g102 (POS TARG -2.034, -6.065) (04), completed Thu Jul 14 22:02:14 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; ORIENT 89D TO 103 D; TOO RESPONSE TIME 14.0D

Comments: Orient of 103 and POS TARG's to match existing GLASS spectroscopy. Please try to use the same guide stars if possible.

Fixed Targets

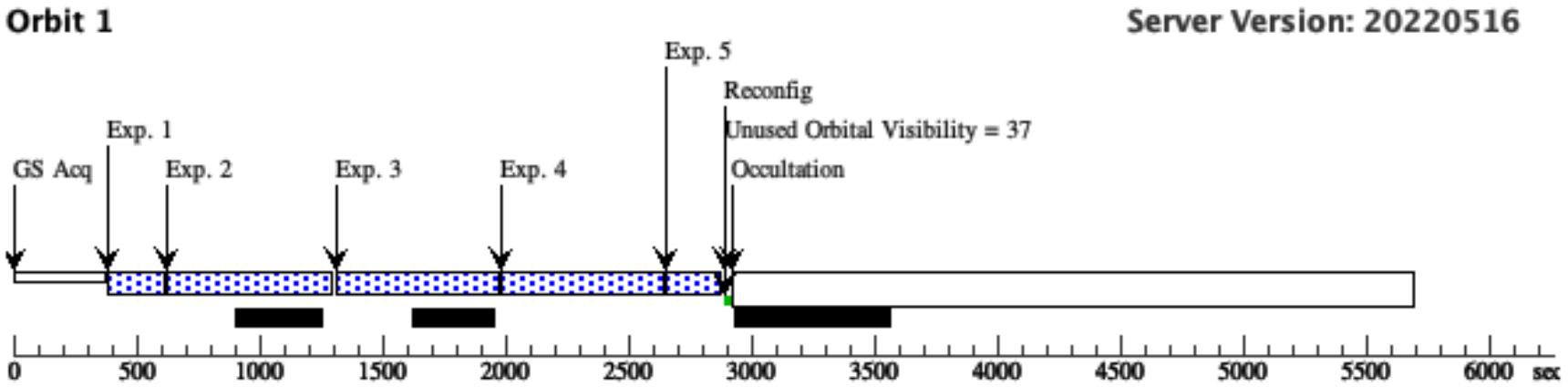
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ1347.5-1145	RA: 13 47 32.2800 (206.8845000d) Dec: -11 45 12.81 (-11.75356d) Equinox: J2000		V=20	Reference Frame: ICRS

Comments:
Category=CLUSTER OF GALAXIES
Description=[GRAVITATIONAL LENS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=9; SAMP-SEQ=SPARS25	POS TARG -2.034,-6.065		202.936411 Secs (202.936 Secs) *[==>]*	*[1]*
2		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -2.034,-6.065		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
3		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -2.034,-6.065		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
4		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -2.034,-6.065		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
5		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=9; SAMP-SEQ=SPARS25	POS TARG -2.034,-6.065		202.936411 Secs (202.936 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 17228, 1 Grism Orbit: 2x f105w; 3x g102 (POS TARG -0.679, -5.641) (05), completed Thu Jul 14 22:02:15 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; SAME ORIENT AS 04; TOO RESPONSE TIME 14.0D

Comments: Orient of 103 and POS TARG's to match existing GLASS spectroscopy. Please try to use the same guide stars if possible.

Fixed Targets

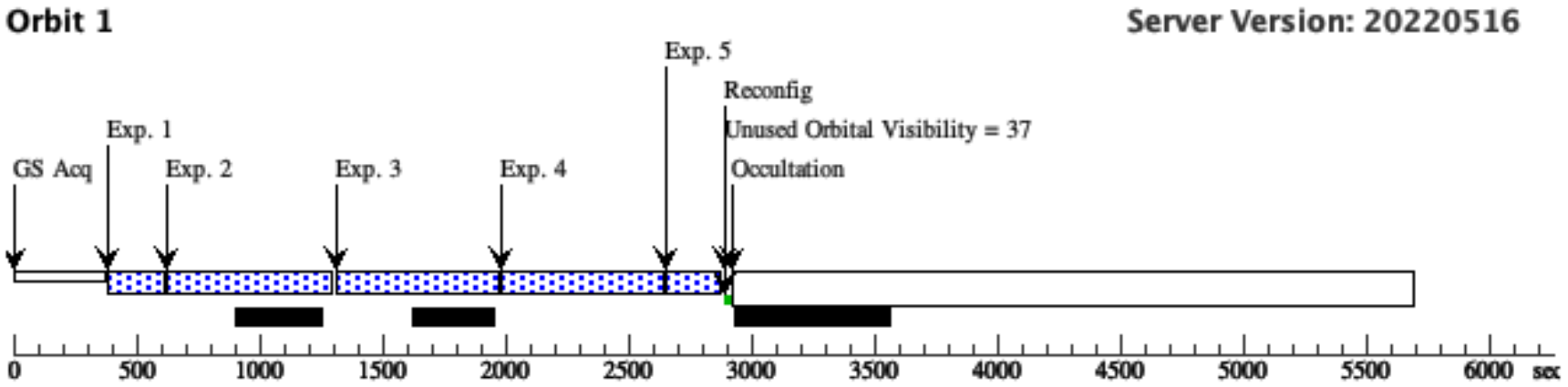
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ1347.5-1145	RA: 13 47 32.2800 (206.8845000d) Dec: -11 45 12.81 (-11.75356d) Equinox: J2000		V=20	Reference Frame: ICRS

Comments:
Category=CLUSTER OF GALAXIES
Description=[GRAVITATIONAL LENS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=9; SAMP-SEQ=SPARS25	POS TARG -0.679,-5.641		202.936411 Secs (202.936 Secs) *[==>]*	*[1]*
2		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -0.679,-5.641		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
3		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -0.679,-5.641		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
4		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -0.679,-5.641		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
5		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=9; SAMP-SEQ=SPARS25	POS TARG -0.679,-5.641		202.936411 Secs (202.936 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 17228, 1 Grism Orbit: 2x f105w; 3x g102 (POS TARG -1.153, -4.853) (06), completed Thu Jul 14 22:02:15 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; SAME ORIENT AS 04; TOO RESPONSE TIME 14.0D

Comments: Orient of 103 and POS TARG's to match existing GLASS spectroscopy. Please try to use the same guide stars if possible.

Fixed Targets

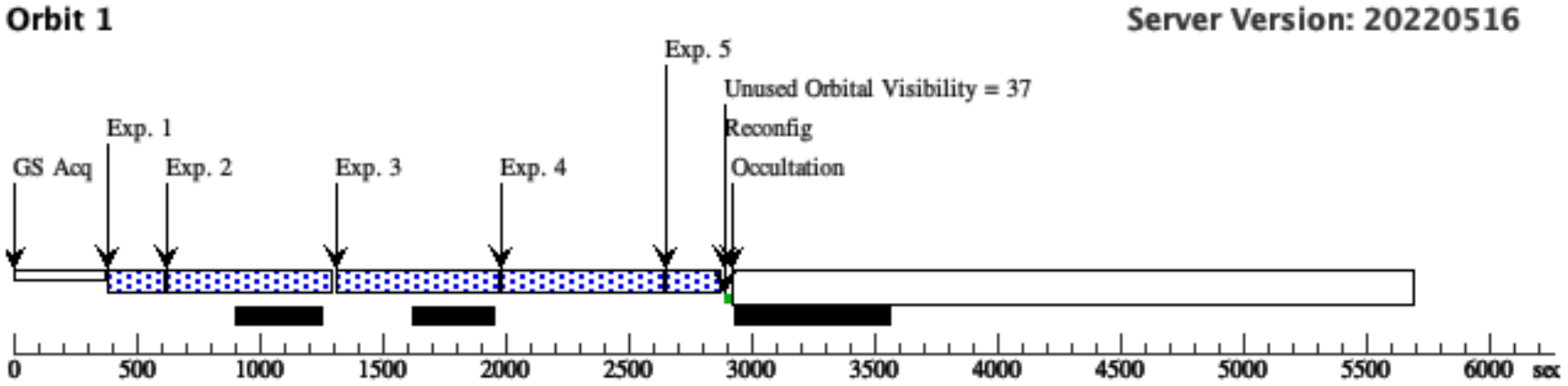
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ1347.5-1145	RA: 13 47 32.2800 (206.8845000d) Dec: -11 45 12.81 (-11.75356d) Equinox: J2000		V=20	Reference Frame: ICRS

Comments:
Category=CLUSTER OF GALAXIES
Description=[GRAVITATIONAL LENS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=9; SAMP-SEQ=SPARS25	POS TARG -1.153,-4.853		202.936411 Secs (202.936 Secs) *[==>]*	*[1]*
2		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -1.153,-4.853		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
3		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -1.153,-4.853		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
4		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -1.153,-4.853		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
5		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=9; SAMP-SEQ=SPARS25	POS TARG -1.153,-4.853		202.936411 Secs (202.936 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 17228, 1 Grism Orbit: 2x f105w; 3x g102 (POS TARG -2.508, -5.277) (07), completed Thu Jul 14 22:02:15 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; SAME ORIENT AS 04; TOO RESPONSE TIME 14.0D

Comments: Orient of 103 and POS TARG's to match existing GLASS spectroscopy. Please try to use the same guide stars if possible.

Fixed Targets

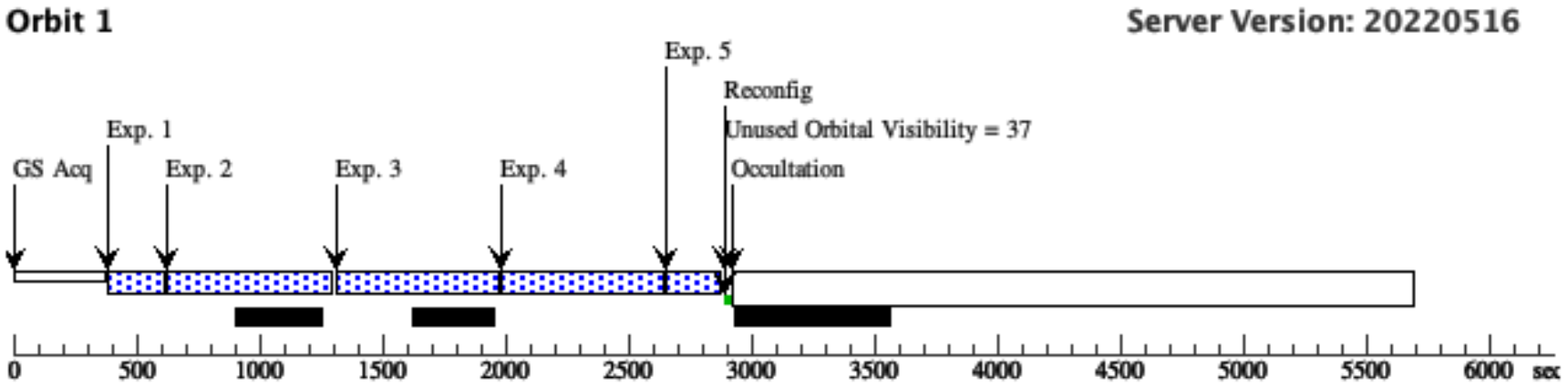
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ1347.5-1145	RA: 13 47 32.2800 (206.8845000d) Dec: -11 45 12.81 (-11.75356d) Equinox: J2000		V=20	Reference Frame: ICRS

Comments:
Category=CLUSTER OF GALAXIES
Description=[GRAVITATIONAL LENS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=9; SAMP-SEQ=SPARS25	POS TARG -2.508,-5.277		202.936411 Secs (202.936 Secs) *[==>]*	*[1]*
2		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -2.508,-5.277		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
3		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -2.508,-5.277		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
4		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -2.508,-5.277		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
5		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=9; SAMP-SEQ=SPARS25	POS TARG -2.508,-5.277		202.936411 Secs (202.936 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 17228, 1 Grism Orbit: 2x f105w; 3x g102 (POS TARG -2.034, -6.065) (08), completed Thu Jul 14 22:02:15 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; SAME ORIENT AS 04; TOO RESPONSE TIME 14.0D

Comments: Orient of 103 and POS TARG's to match existing GLASS spectroscopy. Please try to use the same guide stars if possible.

Fixed Targets

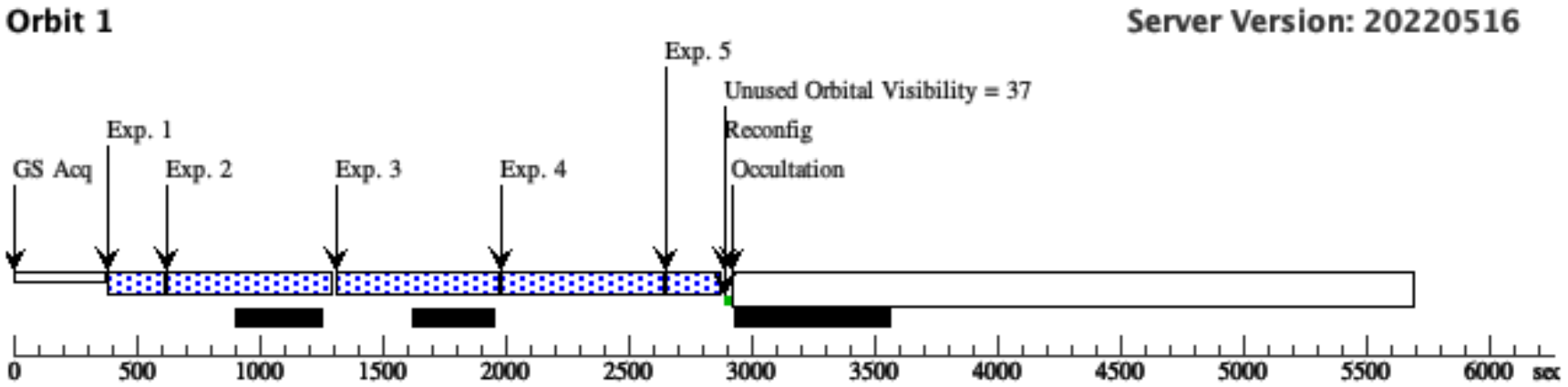
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ1347.5-1145	RA: 13 47 32.2800 (206.8845000d) Dec: -11 45 12.81 (-11.75356d) Equinox: J2000		V=20	Reference Frame: ICRS

Comments:
Category=CLUSTER OF GALAXIES
Description=[GRAVITATIONAL LENS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=9; SAMP-SEQ=SPARS25	POS TARG -2.034,-6.065		202.936411 Secs (202.936 Secs) *[==>]*	*[1]*
2		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -2.034,-6.065		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
3		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -2.034,-6.065		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
4		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS50	POS TARG -2.034,-6.065		652.938154 Secs (652.938 Secs) *[==>]*	*[1]*
5		(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=9; SAMP-SEQ=SPARS25	POS TARG -2.034,-6.065		202.936411 Secs (202.936 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 17228, 1 WFC3 UVIS F814W Orbit (09), completed Thu Jul 14 22:02:15 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SCHED 100%

Comments: Please schedule as early as possible.

Fixed Targets

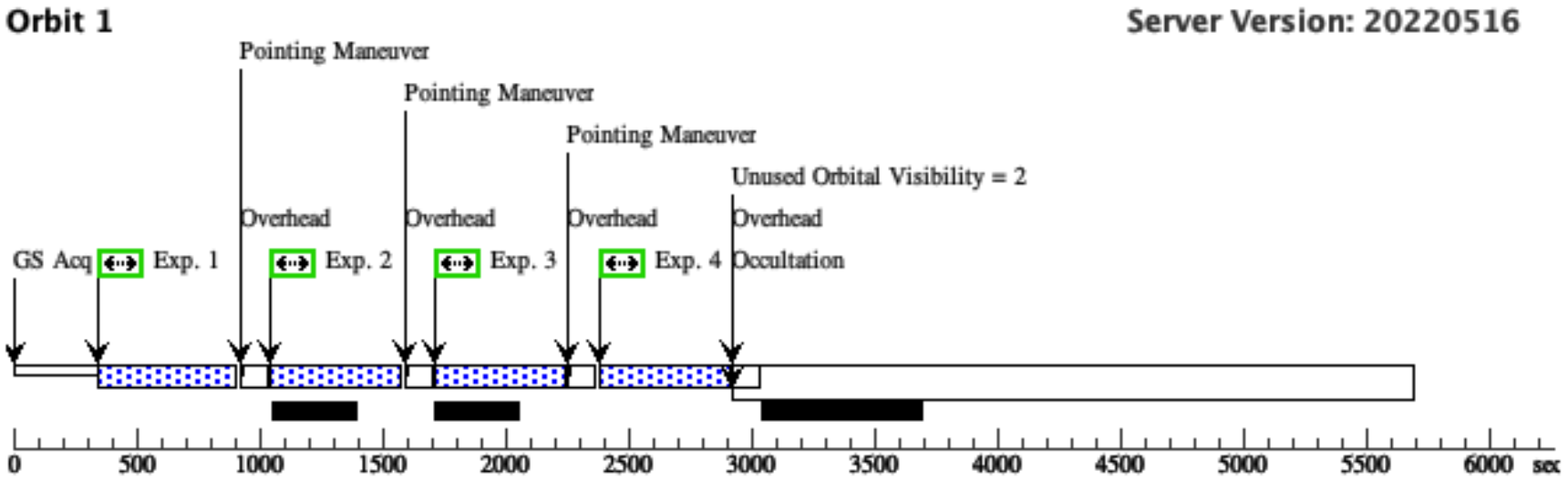
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ1347.5-1145	RA: 13 47 32.2800 (206.8845000d) Dec: -11 45 12.81 (-11.75356d) Equinox: J2000		V=20	Reference Frame: ICRS

Comments:
Category=CLUSTER OF GALAXIES
Description=[GRAVITATIONAL LENS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) RXJ1347.5-1145	WFC3/UVIS, ACCUM, UVIS1	F814W	FLASH=8	POS TARG 2.00,2.00		527 Secs (533 Secs) *[==>533.0 Secs]*	 ***[1]***
2		(1) RXJ1347.5-1145	WFC3/UVIS, ACCUM, UVIS1	F814W	FLASH=8	POS TARG 2.158,2.070		527 Secs (533 Secs) *[==>533.0 Secs]*	 ***[1]***
3		(1) RXJ1347.5-1145	WFC3/UVIS, ACCUM, UVIS1	F814W	FLASH=8	POS TARG 2.099,2.165		527 Secs (533 Secs) *[==>533.0 Secs]*	 ***[1]***
4		(1) RXJ1347.5-1145	WFC3/UVIS, ACCUM, UVIS1	F814W	FLASH=8	POS TARG -0.060,0.095		527 Secs (533 Secs) *[==>533.0 Secs]*	 ***[1]***

Orbit Structure



Visit

Proposal 17228, WFC3 F110W/F160W (10), completed Thu Jul 14 22:02:15 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; GROUP 10,09 WITHIN 1D

Comments: 3 short WFC3-IR F110W and 3 short WFC3-IR F160W exposures of new source in RXJ1347 field.
Please schedule as early as possible ideally consecutively with 09

Fixed Targets

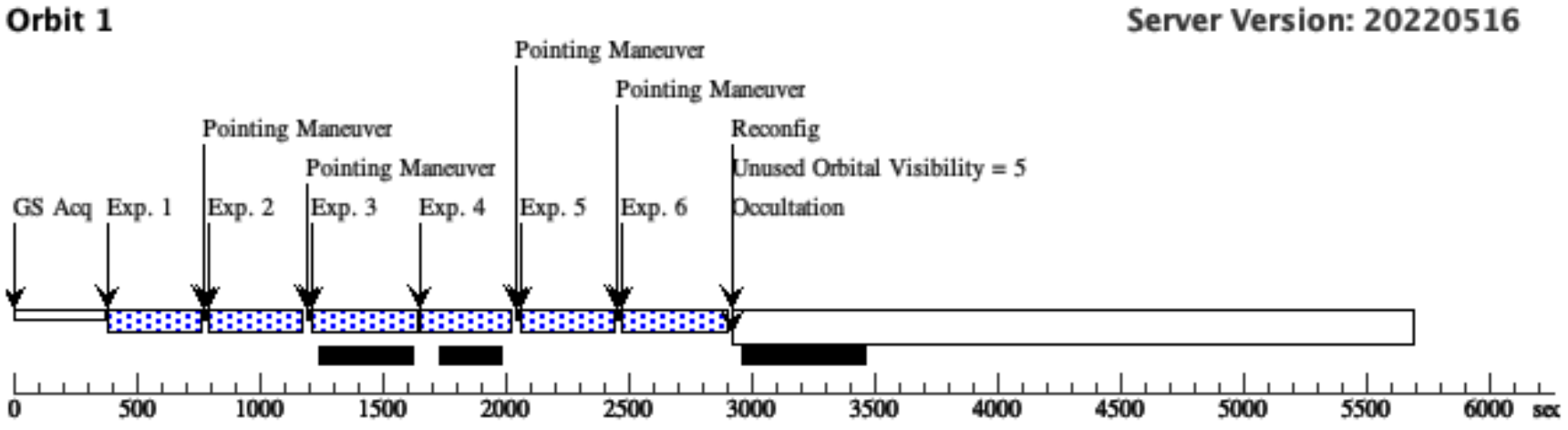
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ1347.5-1145	RA: 13 47 32.2800 (206.8845000d) Dec: -11 45 12.81 (-11.75356d) Equinox: J2000		V=20	Reference Frame: ICRS

Comments:
Category=CLUSTER OF GALAXIES
Description=[GRAVITATIONAL LENS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F110W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0,0		352.935448 Secs (352.935 Secs) *[==>]*	 ***[1]***
2	F110W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0.451,0.403		352.935448 Secs (352.935 Secs) *[==>]*	 ***[1]***
3	F110W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=9; SAMP-SEQ=SPARS50	POS TARG 0.902,0.806		402.935899 Secs (402.936 Secs) *[==>]*	 ***[1]***
4	F160W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0.902,0.806		352.935448 Secs (352.935 Secs) *[==>]*	 ***[1]***
5	F160W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 1.353,1.209		352.935448 Secs (352.935 Secs) *[==>]*	 ***[1]***
6	F160W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=9; SAMP-SEQ=SPARS50	POS TARG 1.804,1.612		402.935899 Secs (402.936 Secs) *[==>]*	 ***[1]***

Orbit Structure



Visit

Proposal 17228, WFC3 F110W/F160W (11), scheduled Thu Jul 14 22:02:15 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; AFTER 10 BY 11 D TO 14 D

Comments: 3 short WFC3-IR F110W and 3 short WFC3-IR F160W exposures of new source in RXJ1347 field.

Fixed Targets

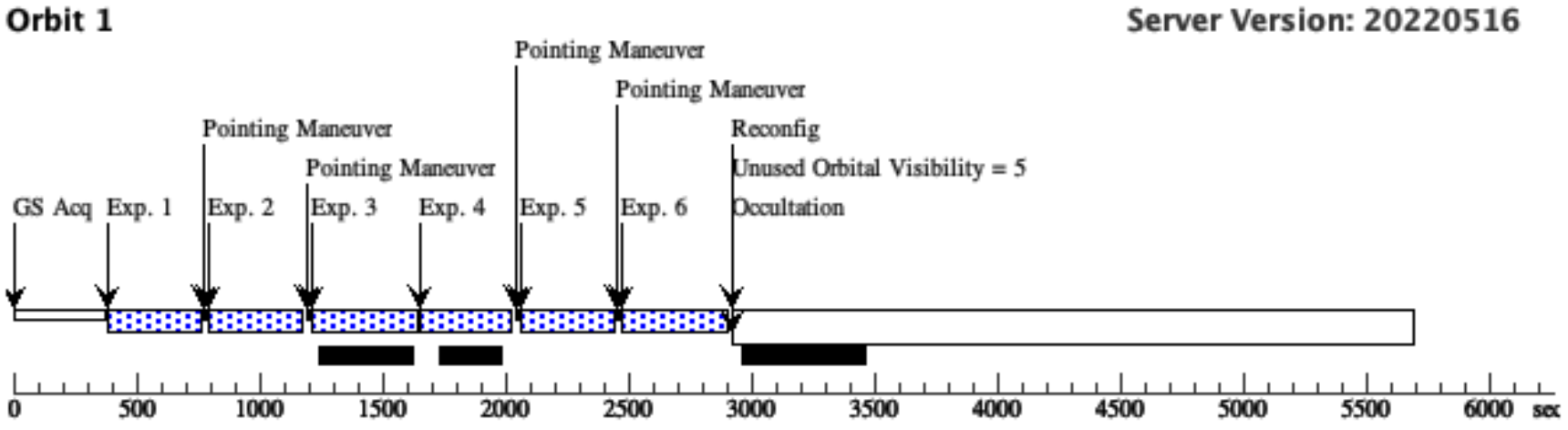
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ1347.5-1145	RA: 13 47 32.2800 (206.8845000d) Dec: -11 45 12.81 (-11.75356d) Equinox: J2000		V=20	Reference Frame: ICRS

Comments:
Category=CLUSTER OF GALAXIES
Description=[GRAVITATIONAL LENS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F110W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0,0		352.935448 Secs (352.935 Secs) *[==>]*	***[1]***
2	F110W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0.451,0.403		352.935448 Secs (352.935 Secs) *[==>]*	***[1]***
3	F110W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=9; SAMP-SEQ=SPARS50	POS TARG 0.902,0.806		402.935899 Secs (402.936 Secs) *[==>]*	***[1]***
4	F160W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0.902,0.806		352.935448 Secs (352.935 Secs) *[==>]*	***[1]***
5	F160W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 1.353,1.209		352.935448 Secs (352.935 Secs) *[==>]*	***[1]***
6	F160W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=9; SAMP-SEQ=SPARS50	POS TARG 1.804,1.612		402.935899 Secs (402.936 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 17228, WFC3 F140W/F160W (12), implementation Thu Jul 14 22:02:15 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; AFTER 11 BY 11 D TO 14 D

Comments: 3 short WFC3-IR F140W and 3 short WFC3-IR F140W exposures of new source in RXJ1347 field.

Fixed Targets

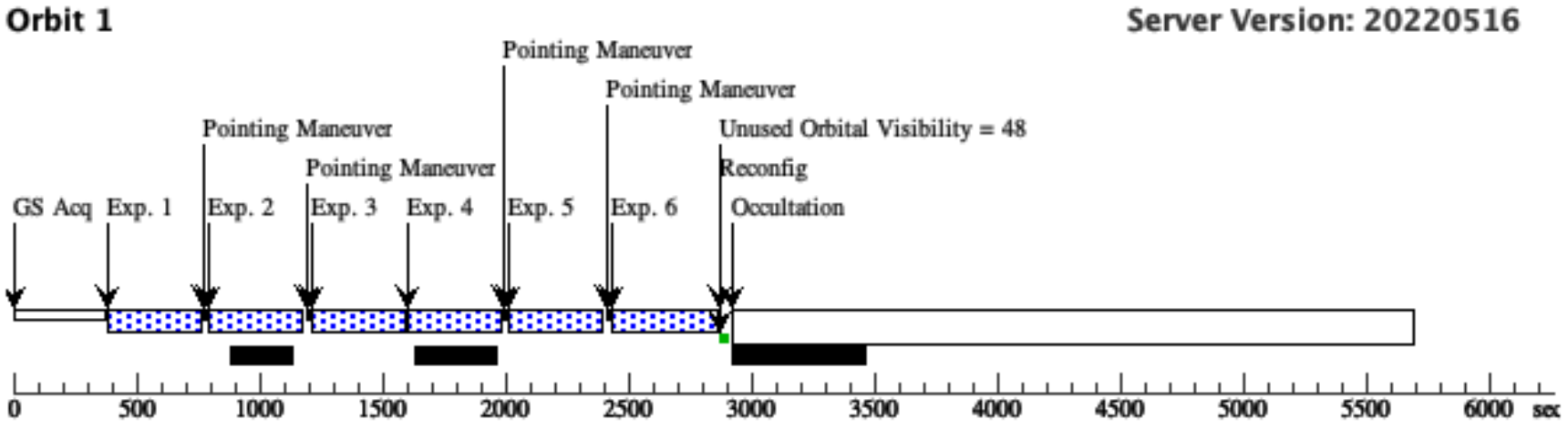
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ1347.5-1145	RA: 13 47 32.2800 (206.8845000d) Dec: -11 45 12.81 (-11.75356d) Equinox: J2000		V=20	Reference Frame: ICRS

Comments:
Category=CLUSTER OF GALAXIES
Description=[GRAVITATIONAL LENS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F140W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F140W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0,0		352.935448 Secs (352.935 Secs) *[==>]*	*[1]*
2	F140W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F140W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0.451,0.403		352.935448 Secs (352.935 Secs) *[==>]*	*[1]*
3	F140W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F140W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0.902,0.806		352.935448 Secs (352.935 Secs) *[==>]*	*[1]*
4	F160W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0.902,0.806		352.935448 Secs (352.935 Secs) *[==>]*	*[1]*
5	F160W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 1.353,1.209		352.935448 Secs (352.935 Secs) *[==>]*	*[1]*
6	F160W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=9; SAMP-SEQ=SPARS50	POS TARG 1.804,1.612		402.935899 Secs (402.936 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 17228, WFC3 F140W/F160W (13), implementation Thu Jul 14 22:02:15 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; AFTER 12 BY 11 D TO 14 D

Comments: 3 short WFC3-IR F140W and 3 short WFC3-IR F160W exposures of new source in RXJ1347 field.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ1347.5-1145	RA: 13 47 32.2800 (206.8845000d) Dec: -11 45 12.81 (-11.75356d) Equinox: J2000		V=20	Reference Frame: ICRS

Comments:
Category=CLUSTER OF GALAXIES
Description=[GRAVITATIONAL LENS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F140W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F140W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0,0		352.935448 Secs (352.935 Secs) *[==>]*	*[1]*
2	F140W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F140W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0.451,0.403		352.935448 Secs (352.935 Secs) *[==>]*	*[1]*
3	F140W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F140W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0.902,0.806		352.935448 Secs (352.935 Secs) *[==>]*	*[1]*
4	F160W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 0.902,0.806		352.935448 Secs (352.935 Secs) *[==>]*	*[1]*
5	F160W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=8; SAMP-SEQ=SPARS50	POS TARG 1.353,1.209		352.935448 Secs (352.935 Secs) *[==>]*	*[1]*
6	F160W	(1) RXJ1347.5-1145	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=9; SAMP-SEQ=SPARS50	POS TARG 1.804,1.612		402.935899 Secs (402.936 Secs) *[==>]*	*[1]*

Orbit Structure