14453 - The Nature of 55 Cancri e

Cycle: 23, Proposal Category: GO

(Availability Mode: AVAILABLE)

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?*
11	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:08:06.0	yes
12	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:08:13.0	yes
13	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:08:21.0	yes
14	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:08:27.0	yes
21	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:08:33.0	yes
22	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:08:40.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
23	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:08:46.0	yes
24	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:08:53.0	yes
31	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:08:59.0	yes
32	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:09:05.0	yes
33	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:09:12.0	yes
34	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:09:18.0	yes
41	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:09:25.0	yes
42	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:09:31.0	yes
43	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:09:37.0	yes
44	(1) 55-CNC	WFC3/IR	1	09-Feb-2016 21:09:43.0	yes

16 Total Orbits Used

ABSTRACT

Recent surveys have revealed an extraordinary and unexplained diversity of low-mass exoplanets. The main frontier for constraining the nature and origins of these planets is atmospheric characterization to reveal their detailed physical properties. Previous spectroscopic observations of small exoplanets have been focused on transmission measurements, but these studies have been limited by clouds.

We aim to turn small exoplanet characterization in a new direction in anticipation of JWST. We focus on 55 Cnc e, a quintessential super-Earth in a tight orbit and transiting a nearby star that is visible to the naked eye. We propose to obtain multi-wavelength emission spectroscopy of this planet to test the hypothesis of the recently claimed variable eclipse depth and to determine the bulk composition and dynamics of its atmosphere. The multi-wavelength nature of the observations is essential for our goals: by combining Spitzer and HST data, we will be able to distinguish between different atmospheric compositions with high confidence, constrain the vertical temperature structure of the atmosphere, and examine the variable eclipse depth hypothesis with multiple instruments. This will be a significant improvement over previous efforts to characterize super-Earths because emission spectroscopy isn't limited by clouds like the more common transmission measurements. 55 Cnc e, with its high temperature, short orbital period and bright host star, is the only super-Earth for which this is feasible with current facilities. Ultimately, JWST will perform emission spectroscopy of a much larger sample that will be guided by the results for this key object.

OBSERVING DESCRIPTION

We will use the G141 grism on WFC3, spanning the wavelength range 1.1-1.7 micron. Our target is too bright to be efficiently observed in staring mode. To maximize the exposure time and to minimize overheads, we will use forward and reverse scans which have proven effective toward achieving these goals for other WFC3 exoplanet observations (GJ 1214b, Kreidberg et al. 2014a; HD 97658b, Knutson, Dragomir et al. 2014).

We will use the 512x512 pixel subarray and SAMP-SEQ=SPARS10 and NSAMP=2 read mode for our observations. The integration time will be 8.78 s per exposure. The maximum scan rate we can use under FGS control has to be less than 5"/second, so assuming 4.99"/second we will get a maximum pixel count of 52 000 electrons. Based on these estimates we expect a signal-to-noise ratio of 34000 per resolution element which, for a 365-pixel tall spectrum, gives an expected white light uncertainty of 30 ppm per image. The duration of a 55 Cnc e eclipse is 87.4 minutes. According to APT, including overheads we can fit on average 36 exposures into an eclipse. With 4 eclipses and 15 0.035 micron-wide channels (as in Stevenson et al. 2014b), we expect an uncertainty of 10 ppm per channel. Although 55 Cnc is a very bright target for WFC3, our team has experience getting precise and repeatable results from observations that are in the high count regime.

We request spectroscopic time series of 55 Cnc which will include four secondary eclipses of the super-Earth 55 Cnc e. Each of the four visits will be four HST orbits long. We will schedule each visit such that the second and fourth orbits occur before and after the eclipse, while the third orbit occurs during eclipse. The target is observable for about 50 minutes out of every HST orbit. The first orbit will be allocated to burn-in of the telescope's new thermal condition after pointing at the target. This orbit will likely be conservatively discarded following standard practice. Therefore, the total allocation is 4 visits of four orbits each, for a total of 16 orbits.

We request four visits of 4 orbits each, for a total of 16 HST orbits.

Visit

Proposal 14453, 55-Cnc_WFC3_G141_1a (11), implementation Wed Feb 10 02:09:46 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: Period 0.7365437 D AND ZERO-PHASE HJD2455733.008; SEQ 11,12,13,14 WITHIN 3.2 Orbits

Comments: First (of four) WFC3/G141 eclipse visits of 55 Cnc e.

This is the first (of four) WFC3/G141 secondary eclipse visits for 55 Cnc e. The four orbits in each visit must be scheduled in a contiguous block. None of these orbits should be scheduled during SAA crossings. During each visit, orbit 3 must be entirely scheduled within the secondary eclipse. The eclipse lasts for approximately 98 minutes and the eclipse time uncertainty is 20 minutes, so the first exposure in orbit 1 is 0.2874-0.3157 in planet orbital phase, corresponding to a 30 minute interval.

Diagnostics

(55-Cnc_WFC3_G141_1a (11)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d) Dec: +28 19 50.95 (28.33082d) Equinox: J2000	Proper Motion RA: -485.80 mas/yr Proper Motion Dec: -234.05 mas/yr Parallax: 0.08103" Epoch of Position: 2000	V=5.95 B=6.82, R=5.4, I=5.0, J=4.768, H=4.265, K=4.015	Reference Frame: SIMBAD

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

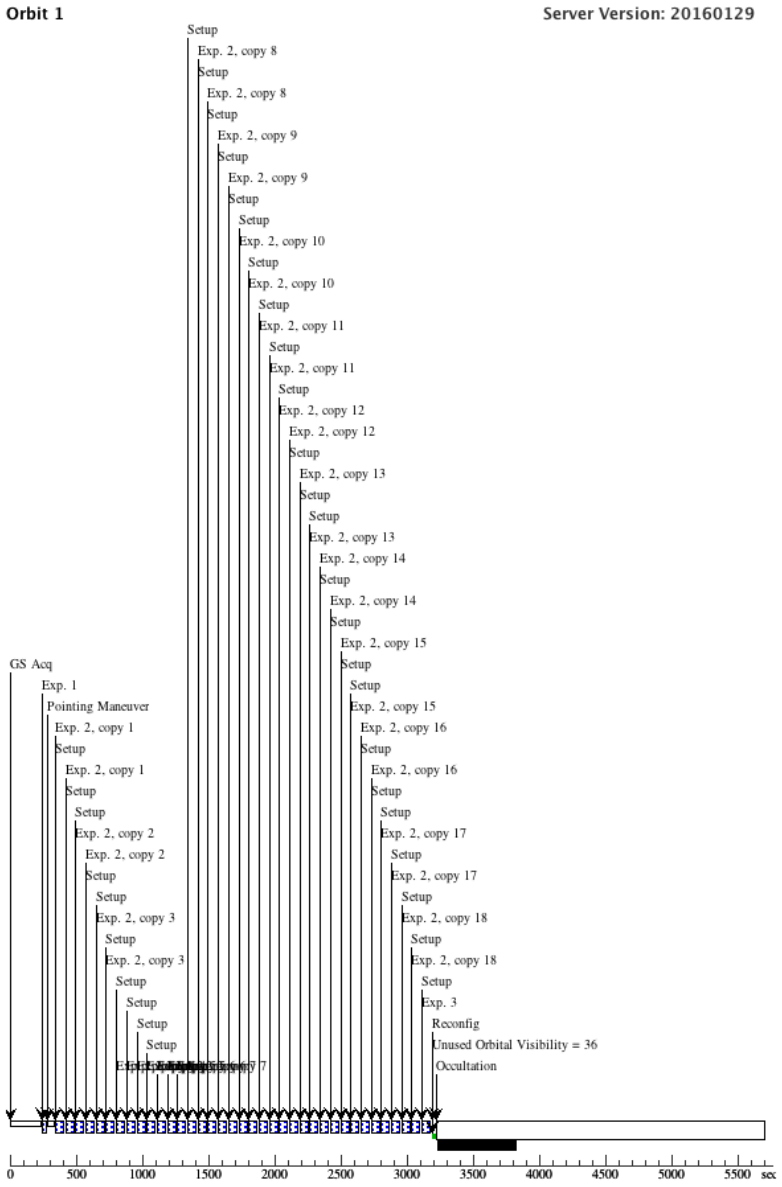
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	PHASE 0.2874 TO 0.3157; GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_1a (11) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_1a (11) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_1a (11)	1.706054 Secs (1.706 Secs) *[==>]*	*[1]*

	2	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_1a (11) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_1a (11) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _1a (11)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_1a (11) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_1a (11) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _1a (11)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_1b (12), implementation Wed Feb 10 02:09:46 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 11

Diagnostics

(55-Cnc_WFC3_G141_1b (12)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d) Dec: +28 19 50.95 (28.33082d) Equinox: J2000	Proper Motion RA: -485.80 mas/yr Proper Motion Dec: -234.05 mas/yr Parallax: 0.08103" Epoch of Position: 2000	V=5.95 B=6.82, R=5.4, I=5.0, J=4.768, H=4.265, K=4.015	Reference Frame: SIMBAD

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

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	2	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_1b (12) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_1b (12) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _1b (12)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

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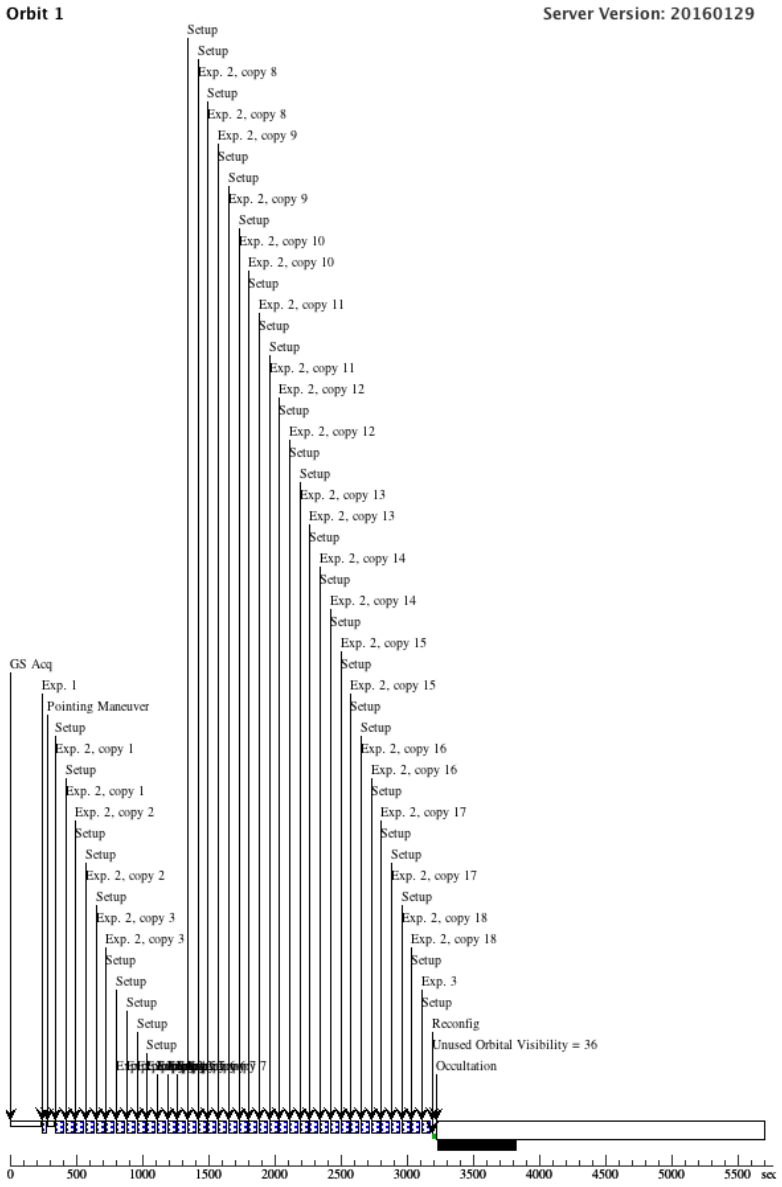
Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_1c (13), implementation Wed Feb 10 02:09:46 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 12

Diagnostics

(55-Cnc_WFC3_G141_1c (13)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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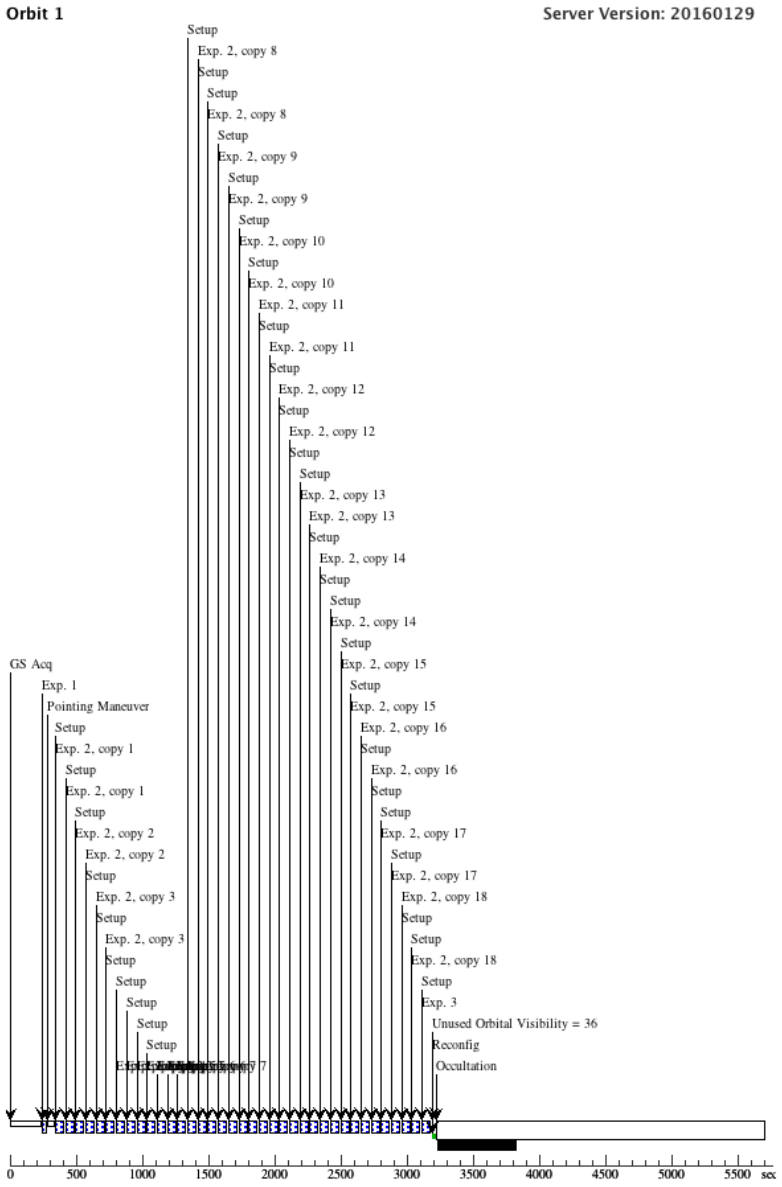
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_1c (13) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_1c (13) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_1c (13)	1.706054 Secs (1.706 Secs) *[==>]*	***[1]***

	2	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_1c (13) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_1c (13) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _1c (13)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_1c (13) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_1c (13) Same Obset in Sequ nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _1c (13)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_1d (14), implementation Wed Feb 10 02:09:47 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 13

Diagnostics

(55-Cnc_WFC3_G141_1d (14)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_1d (14)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_1d (14)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_1d (14)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_1d (14)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_1d (14)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_1d (14)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_1d (14)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_1d (14)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_1d (14)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_1d (14)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d)	Proper Motion RA: -485.80 mas/yr	V=5.95	Reference Frame: SIMBAD
		Dec: +28 19 50.95 (28.33082d)	Proper Motion Dec: -234.05 mas/yr	B=6.82,	
		Equinox: J2000	Parallax: 0.08103"	R=5.4,	
			Epoch of Position: 2000	I=5.0,	
				J=4.768,	
				H=4.265,	
				K=4.015	

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

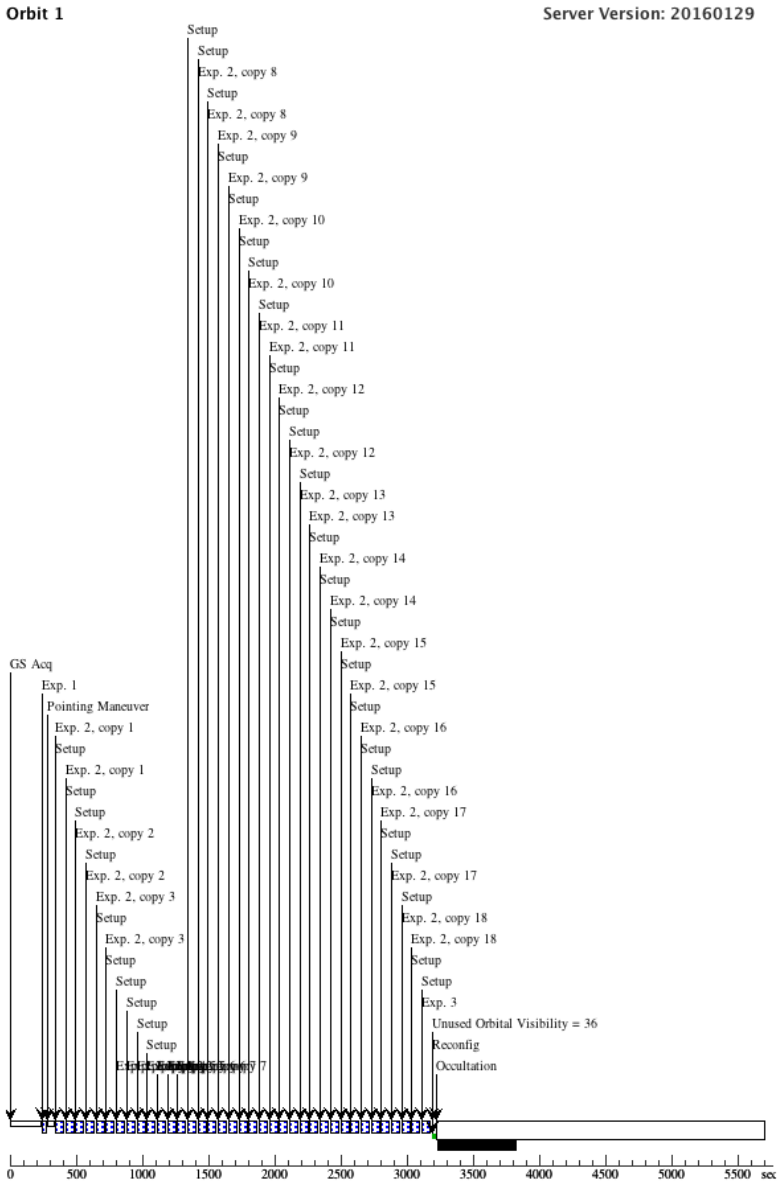
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_1d (14) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_1d (14) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_1d (14)	1.706054 Secs (1.706 Secs) *[==>]*	***[1]***

	2	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_1d (14) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_1d (14) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _1d (14)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_1d (14) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_1d (14) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _1d (14)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_2a (21), implementation Wed Feb 10 02:09:47 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: Period 0.7365437 D AND ZERO-PHASE HJD2455733.008; SEQ 21,22,23,24 WITHIN 3.2 Orbits

Comments: Second (of four) WFC3/G141 eclipse visits of 55 Cnc e.

This is the second (of four) WFC3/G141 secondary eclipse visits for 55 Cnc e. The four orbits in each visit must be scheduled in a contiguous block. None of these orbits should be scheduled during SAA crossings. During each visit, orbit 3 must be entirely scheduled within the secondary eclipse. The eclipse lasts for approximately 98 minutes and the eclipse time uncertainty is 20 minutes, so the first exposure in orbit 1 is 0.2874-0.3157 in planet orbital phase, corresponding to a 30 minute interval.

Diagnostics

(55-Cnc_WFC3_G141_2a (21)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2a (21)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_2a (21)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2a (21)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d) Dec: +28 19 50.95 (28.33082d) Equinox: J2000	Proper Motion RA: -485.80 mas/yr Proper Motion Dec: -234.05 mas/yr Parallax: 0.08103" Epoch of Position: 2000	V=5.95 B=6.82, R=5.4, I=5.0, J=4.768, H=4.265, K=4.015	Reference Frame: SIMBAD

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

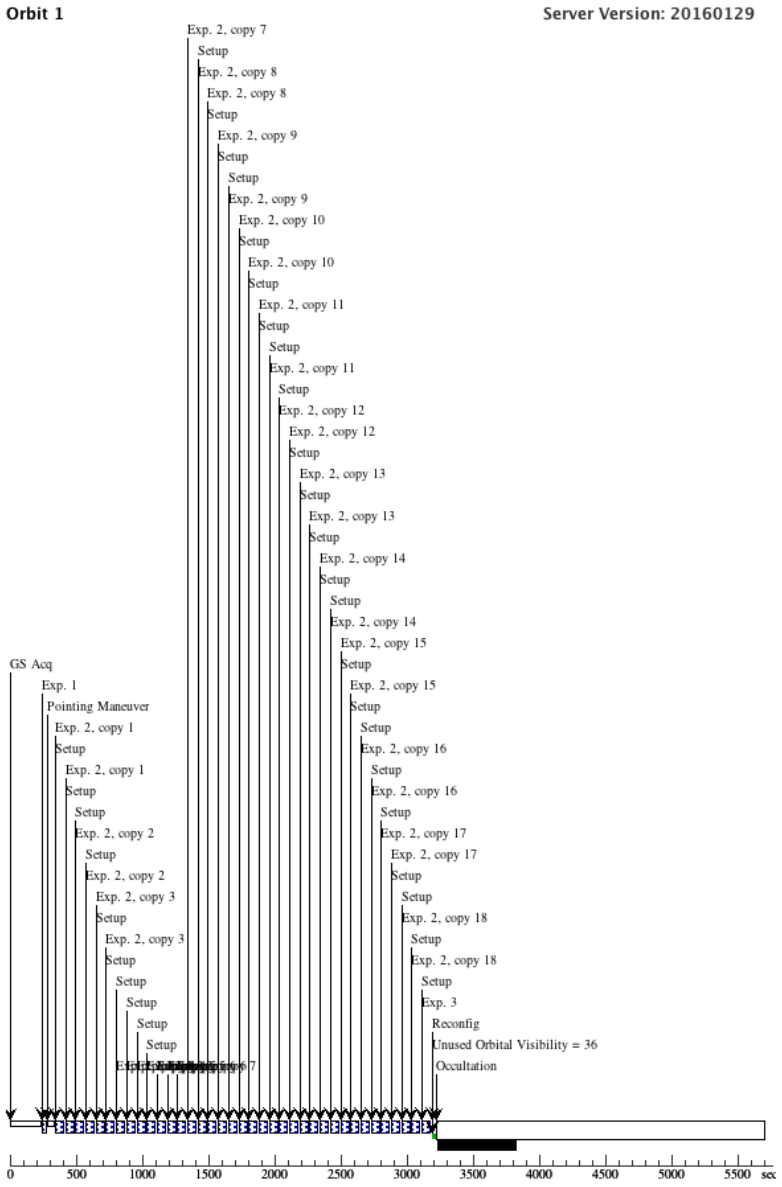
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	PHASE 0.2874 TO 0.3157; GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_2a (21) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_2a (21) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_2a (21)	1.706054 Secs (1.706 Secs) *[==>]*	*[1]*

	2	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_2a (21) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_2a (21) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _2a (21)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_2a (21) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_2a (21) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _2a (21)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_2b (22), implementation Wed Feb 10 02:09:47 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 21

Diagnostics

(55-Cnc_WFC3_G141_2b (22)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2b (22)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2b (22)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2b (22)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_2b (22)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2b (22)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d)	Proper Motion RA: -485.80 mas/yr	V=5.95	Reference Frame: SIMBAD
		Dec: +28 19 50.95 (28.33082d)	Proper Motion Dec: -234.05 mas/yr	B=6.82,	
		Equinox: J2000	Parallax: 0.08103"	R=5.4,	
			Epoch of Position: 2000	I=5.0,	
				J=4.768,	
				H=4.265,	
				K=4.015	

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

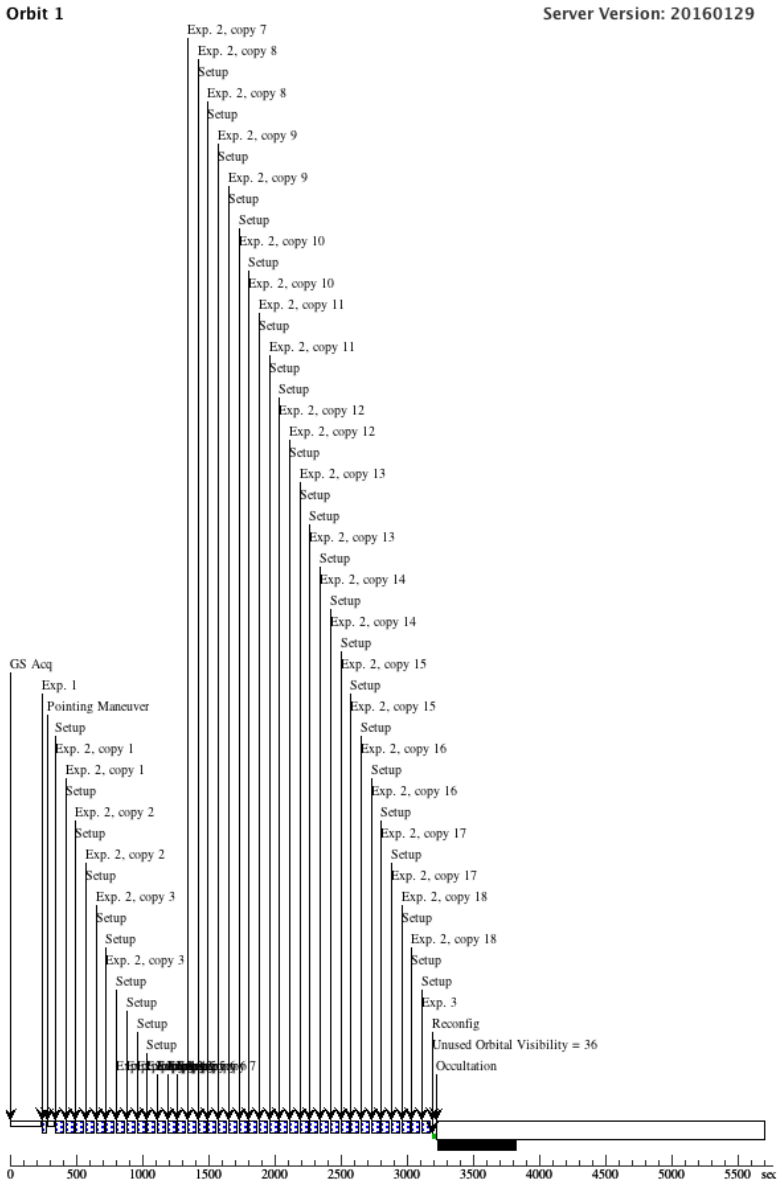
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_2b (22) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_2b (22) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_2b (22)	1.706054 Secs (1.706 Secs) *[==>]*	***[1]***

	2	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_2b (22) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_2b (22) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _2b (22)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_2b (22) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_2b (22) Same Obset in Sequ nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _2b (22)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_2c (23), implementation Wed Feb 10 02:09:47 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 22

Diagnostics

(55-Cnc_WFC3_G141_2c (23)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2c (23)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_2c (23)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2c (23)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2c (23)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2c (23)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_2c (23)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2c (23)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2c (23)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d) Dec: +28 19 50.95 (28.33082d) Equinox: J2000	Proper Motion RA: -485.80 mas/yr Proper Motion Dec: -234.05 mas/yr Parallax: 0.08103" Epoch of Position: 2000	V=5.95 B=6.82, R=5.4, I=5.0, J=4.768, H=4.265, K=4.015	Reference Frame: SIMBAD

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

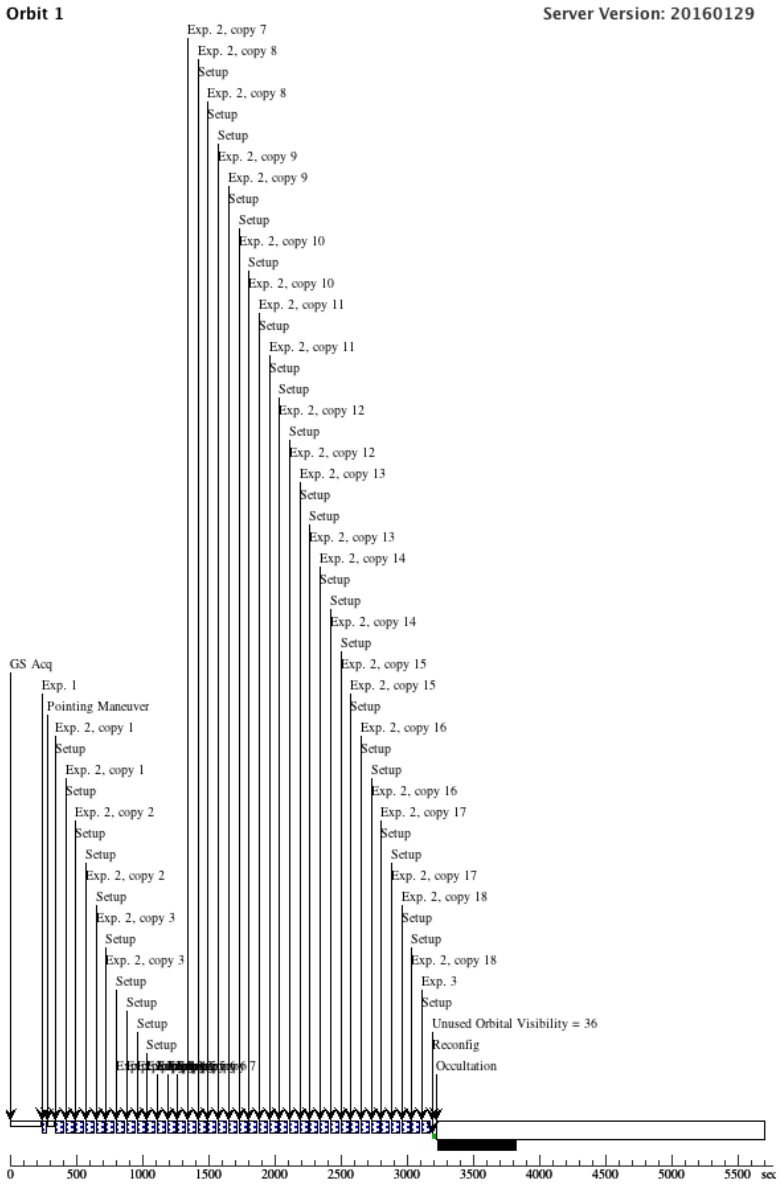
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_2c (23) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_2c (23) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_2c (23)	1.706054 Secs (1.706 Secs) *[==>]*	***[1]***

	2	G141 Scienc e Data (1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_2c (23) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_2c (23) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _2c (23)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data (1)	55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_2c (23) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_2c (23) Same Obset in Sequ nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _2c (23)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_2d (24), implementation Wed Feb 10 02:09:47 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 23

Diagnostics

(55-Cnc_WFC3_G141_2d (24)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2d (24)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_2d (24)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2d (24)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_2d (24)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_2d (24)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d) Dec: +28 19 50.95 (28.33082d) Equinox: J2000	Proper Motion RA: -485.80 mas/yr Proper Motion Dec: -234.05 mas/yr Parallax: 0.08103" Epoch of Position: 2000	V=5.95 B=6.82, R=5.4, I=5.0, J=4.768, H=4.265, K=4.015	Reference Frame: SIMBAD

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

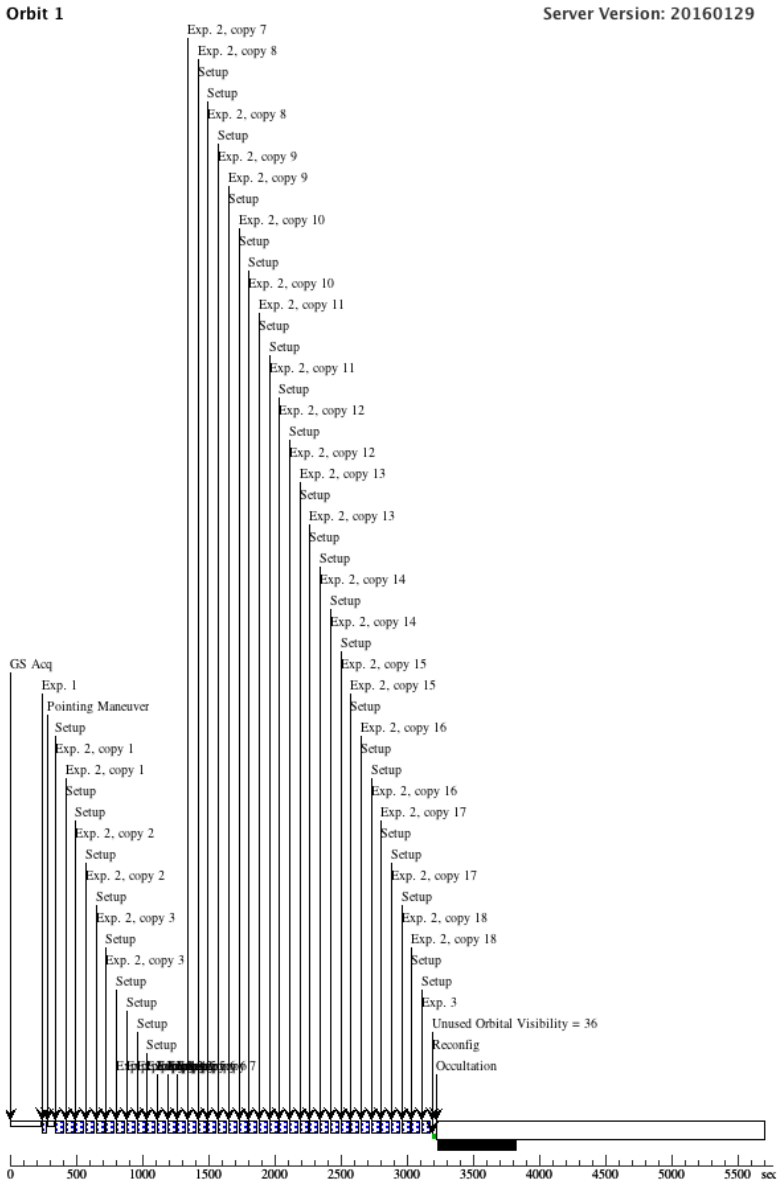
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_2d (24) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_2d (24) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_2d (24)	1.706054 Secs (1.706 Secs) *[==>]*	***[1]***

	2	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_2d (24) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_2d (24) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _2d (24)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_2d (24) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_2d (24) Same Obset in Sequ nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _2d (24)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_3a (31), implementation Wed Feb 10 02:09:47 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: Period 0.7365437 D AND ZERO-PHASE HJD2455733.008; SEQ 31,32,33,34 WITHIN 3.2 Orbits

Comments: Third (of four) WFC3/G141 eclipse visits of 55 Cnc e.

This is the third (of four) WFC3/G141 secondary eclipse visits for 55 Cnc e. The four orbits in each visit must be scheduled in a contiguous block. None of these orbits should be scheduled during SAA crossings. During each visit, orbit 3 must be entirely scheduled within the secondary eclipse. The eclipse lasts for approximately 98 minutes and the eclipse time uncertainty is 20 minutes, so the first exposure in orbit 1 is 0.2874-0.3157 in planet orbital phase, corresponding to a 30 minute interval.

Diagnostics

(55-Cnc_WFC3_G141_3a (31)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3a (31)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3a (31)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3a (31)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_3a (31)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_3a (31)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3a (31)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3a (31)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3a (31)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3a (31)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d) Dec: +28 19 50.95 (28.33082d) Equinox: J2000	Proper Motion RA: -485.80 mas/yr Proper Motion Dec: -234.05 mas/yr Parallax: 0.08103" Epoch of Position: 2000	V=5.95 B=6.82, R=5.4, I=5.0, J=4.768, H=4.265, K=4.015	Reference Frame: SIMBAD

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

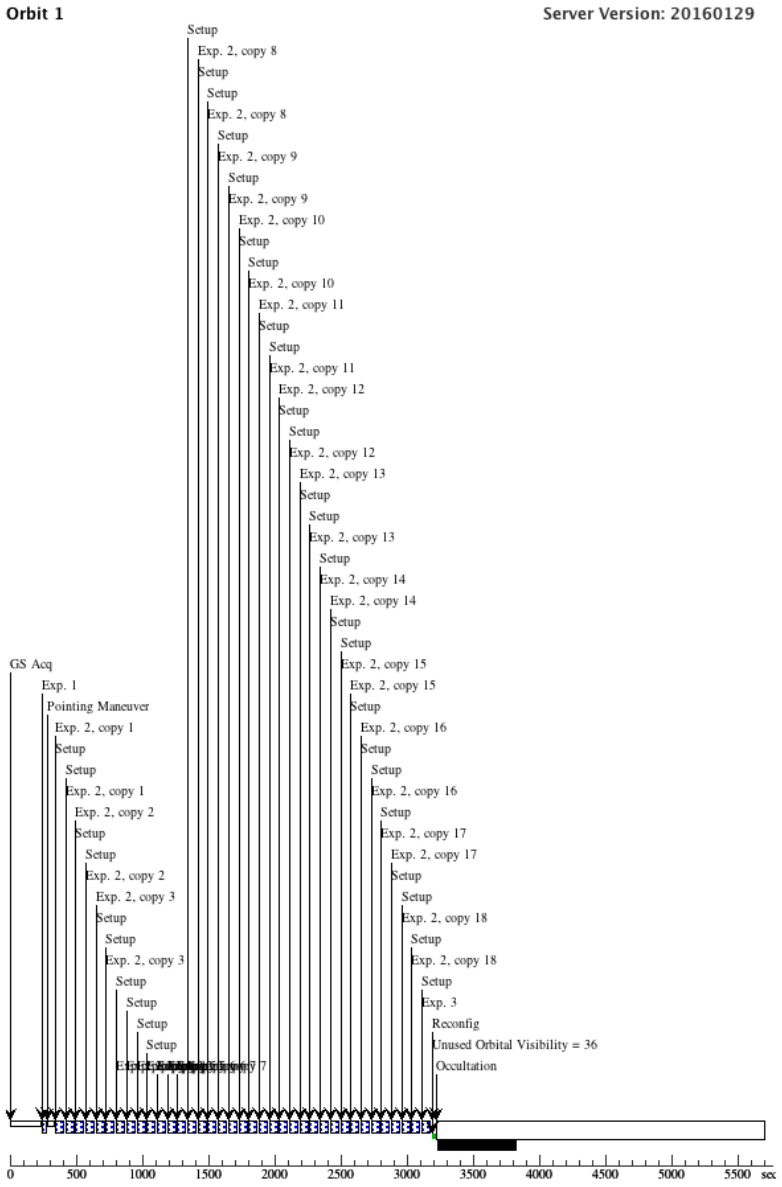
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	PHASE 0.2874 TO 0.3157; GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_3a (31) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_3a (31) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_3a (31)	1.706054 Secs (1.706 Secs) *[==>]*	*[1]*

	2	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_3a (31) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_3a (31) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _3a (31)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_3a (31) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_3a (31) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _3a (31)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_3b (32), implementation Wed Feb 10 02:09:47 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 31

Diagnostics

(55-Cnc_WFC3_G141_3b (32)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3b (32)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3b (32)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3b (32)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3b (32)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_3b (32)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3b (32)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3b (32)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3b (32)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3b (32)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3b (32)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d) Dec: +28 19 50.95 (28.33082d) Equinox: J2000	Proper Motion RA: -485.80 mas/yr Proper Motion Dec: -234.05 mas/yr Parallax: 0.08103" Epoch of Position: 2000	V=5.95 B=6.82, R=5.4, I=5.0, J=4.768, H=4.265, K=4.015	Reference Frame: SIMBAD

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

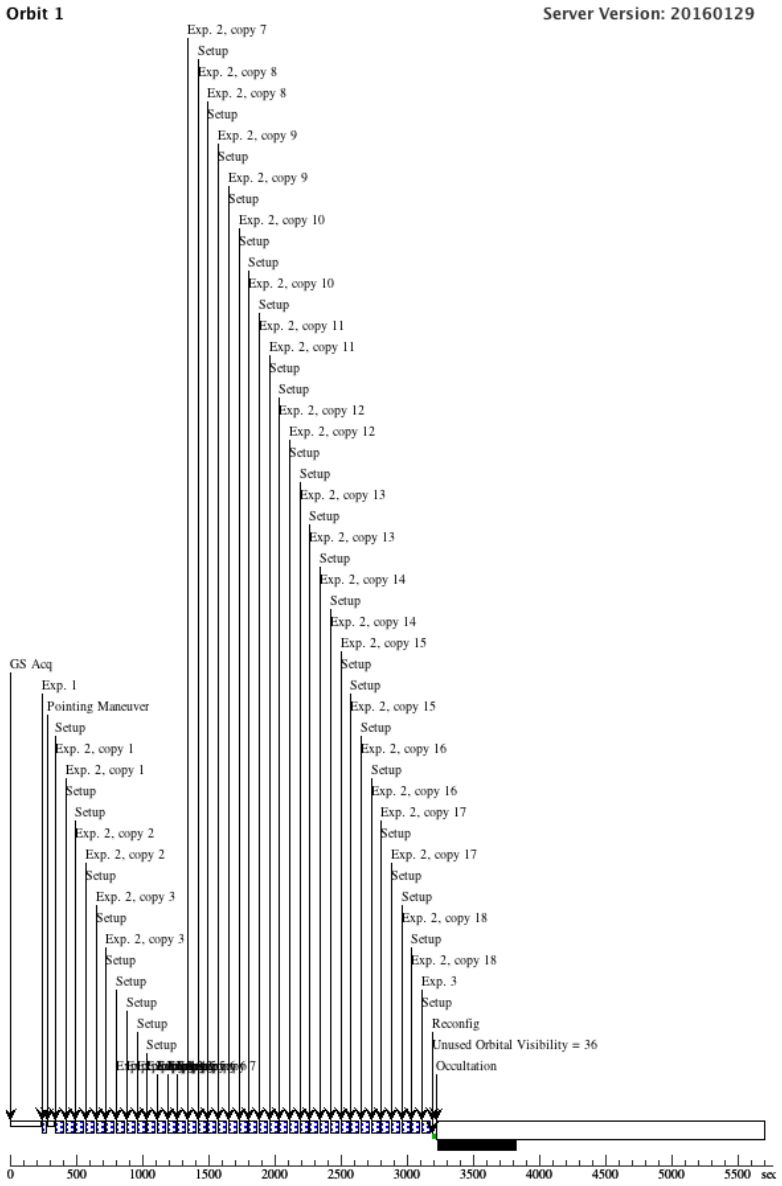
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_3b (32) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_3b (32) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_3b (32)	1.706054 Secs (1.706 Secs) *[==>]*	***[1]***

	2	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_3b (32) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_3b (32) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _3b (32)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_3b (32) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_3b (32) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _3b (32)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_3c (33), implementation Wed Feb 10 02:09:48 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 32

Diagnostics

(55-Cnc_WFC3_G141_3c (33)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3c (33)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_3c (33)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_3c (33)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3c (33)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_3c (33)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3c (33)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3c (33)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d) Dec: +28 19 50.95 (28.33082d) Equinox: J2000	Proper Motion RA: -485.80 mas/yr Proper Motion Dec: -234.05 mas/yr Parallax: 0.08103" Epoch of Position: 2000	V=5.95 B=6.82, R=5.4, I=5.0, J=4.768, H=4.265, K=4.015	Reference Frame: SIMBAD

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

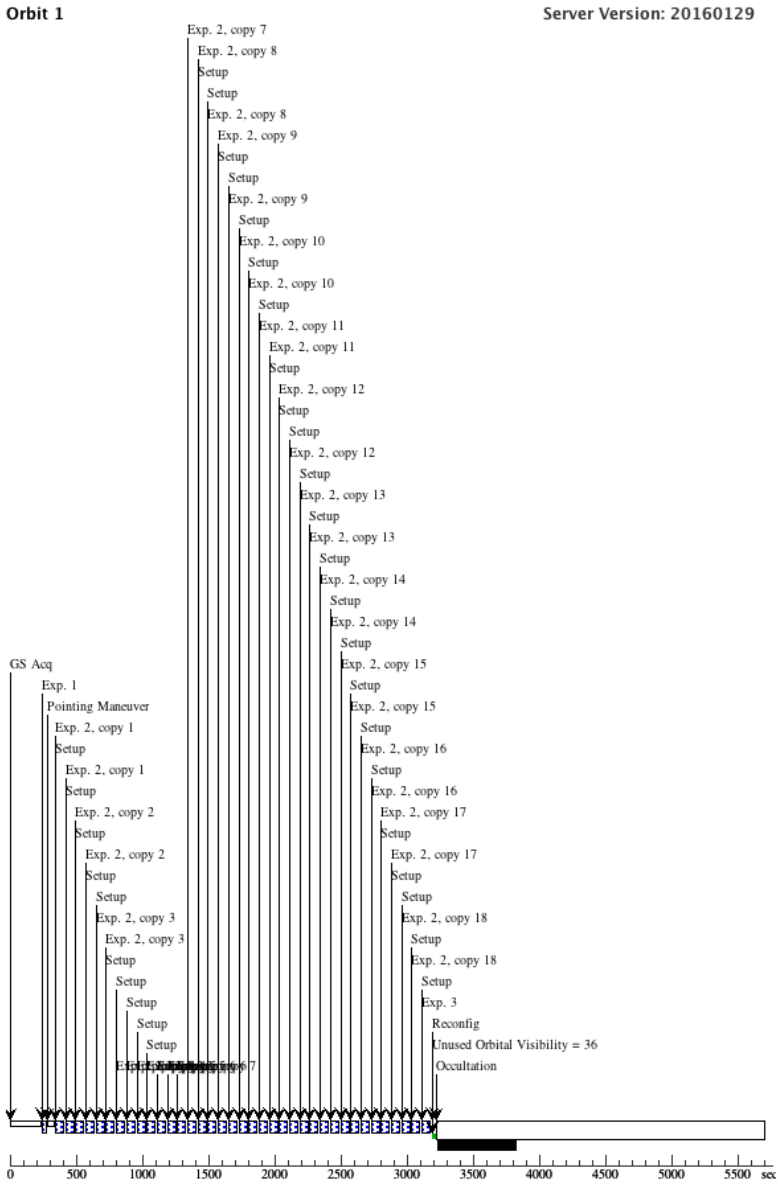
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_3c (33) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_3c (33) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_3c (33)	1.706054 Secs (1.706 Secs) *[==>]*	***[1]***

	2	G141 Scienc e Data (1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_3c (33) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_3c (33) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _3c (33)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_3c (33) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_3c (33) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _3c (33)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_3d (34), implementation Wed Feb 10 02:09:48 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 33

Diagnostics

(55-Cnc_WFC3_G141_3d (34)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3d (34)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_3d (34)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_3d (34)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d) Dec: +28 19 50.95 (28.33082d) Equinox: J2000	Proper Motion RA: -485.80 mas/yr Proper Motion Dec: -234.05 mas/yr Parallax: 0.08103" Epoch of Position: 2000	V=5.95 B=6.82, R=5.4, I=5.0, J=4.768, H=4.265, K=4.015	Reference Frame: SIMBAD

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

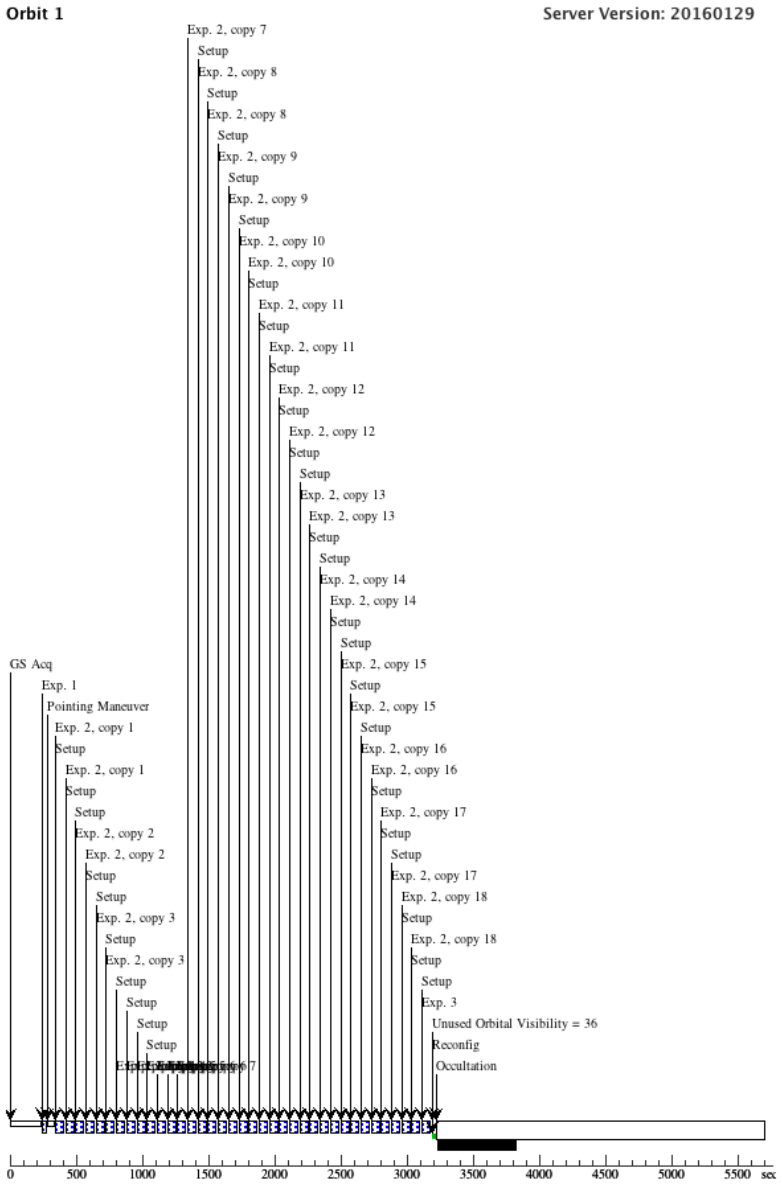
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_3d (34) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_3d (34) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_3d (34)	1.706054 Secs (1.706 Secs) *[==>]*	*[1]*

	2	G141 Scienc e Data (1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_3d (34) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_3d (34) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _3d (34)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_3d (34) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_3d (34) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _3d (34)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_4a (41), implementation Wed Feb 10 02:09:48 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: Period 0.7365437 D AND ZERO-PHASE HJD2455733.008; SEQ 41,42,43,44 WITHIN 3.2 Orbits

Comments: Fourth (of four) WFC3/G141 eclipse visits of 55 Cnc e.

This is the fourth (of four) WFC3/G141 secondary eclipse visits for 55 Cnc e. The four orbits in each visit must be scheduled in a contiguous block. None of these orbits should be scheduled during SAA crossings. During each visit, orbit 3 must be entirely scheduled within the secondary eclipse. The eclipse lasts for approximately 98 minutes and the eclipse time uncertainty is 20 minutes, so the first exposure in orbit 1 is 0.2874-0.3157 in planet orbital phase, corresponding to a 30 minute interval.

Diagnostics

(55-Cnc_WFC3_G141_4a (41)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4a (41)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_4a (41)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4a (41)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d)	Proper Motion RA: -485.80 mas/yr	V=5.95	Reference Frame: SIMBAD
		Dec: +28 19 50.95 (28.33082d)	Proper Motion Dec: -234.05 mas/yr	B=6.82,	
		Equinox: J2000	Parallax: 0.08103"	R=5.4,	
			Epoch of Position: 2000	I=5.0,	
				J=4.768,	
				H=4.265,	
				K=4.015	

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

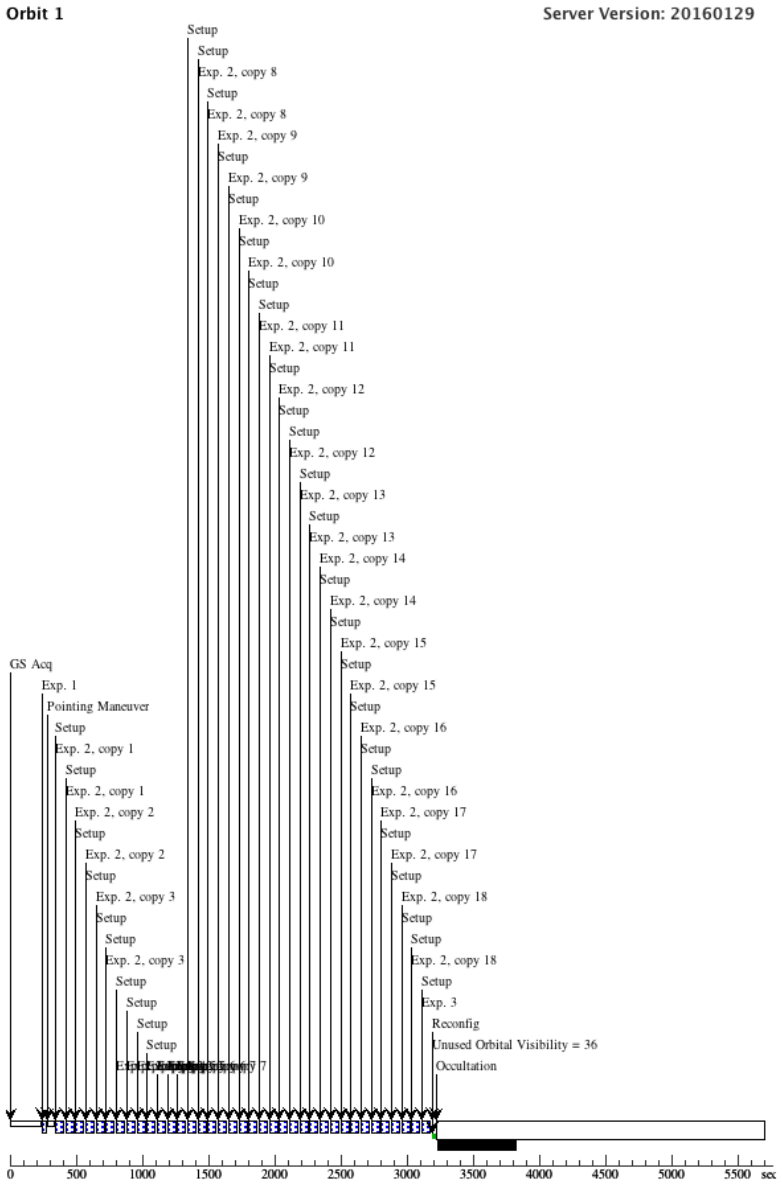
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	PHASE 0.2874 TO 0.3157; GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_4a (41) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_4a (41) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_4a (41)	1.706054 Secs (1.706 Secs) *[==>]*	*[1]*

	2	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_4a (41) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_4a (41) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _4a (41)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_4a (41) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_4a (41) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _4a (41)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_4b (42), implementation Wed Feb 10 02:09:48 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 41

Diagnostics

(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4b (42)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d)	Proper Motion RA: -485.80 mas/yr	V=5.95	Reference Frame: SIMBAD
		Dec: +28 19 50.95 (28.33082d)	Proper Motion Dec: -234.05 mas/yr	B=6.82,	
		Equinox: J2000	Parallax: 0.08103"	R=5.4,	
			Epoch of Position: 2000	I=5.0,	
				J=4.768,	
				H=4.265,	
				K=4.015	

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

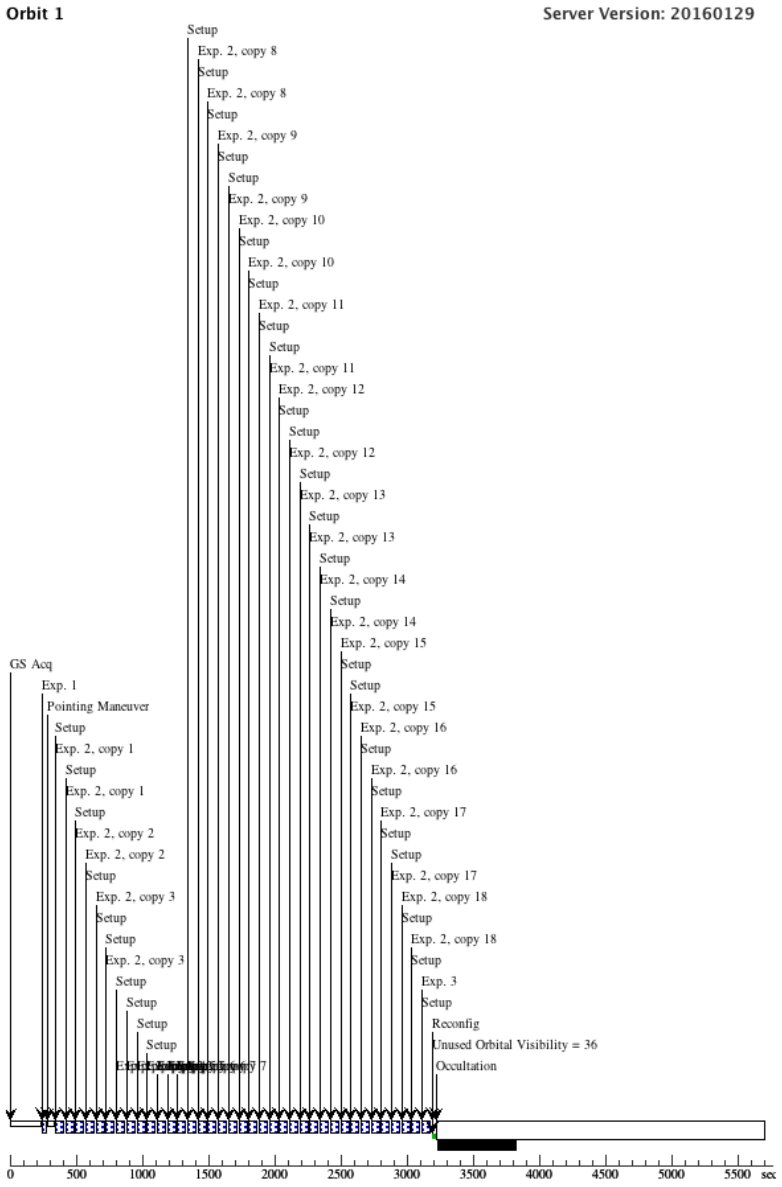
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_4b (42) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_4b (42) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_4b (42)	1.706054 Secs (1.706 Secs) *[==>]*	***[1]***

	2	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_4b (42) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_4b (42) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _4b (42)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_4b (42) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_4b (42) Same Obset in Sequ nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _4b (42)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_4c (43), implementation Wed Feb 10 02:09:48 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 42

Diagnostics

(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4c (43)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d) Dec: +28 19 50.95 (28.33082d) Equinox: J2000	Proper Motion RA: -485.80 mas/yr Proper Motion Dec: -234.05 mas/yr Parallax: 0.08103" Epoch of Position: 2000	V=5.95 B=6.82, R=5.4, I=5.0, J=4.768, H=4.265, K=4.015	Reference Frame: SIMBAD

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

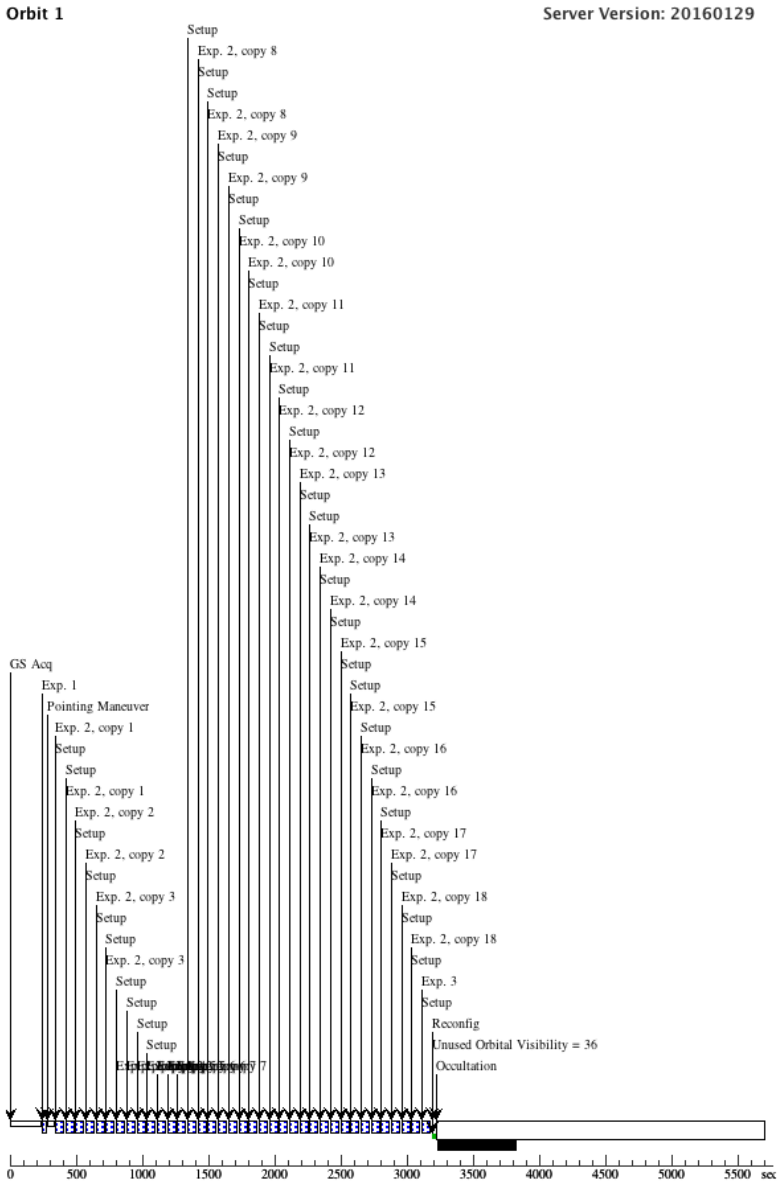
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_4c (43) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_4c (43) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_4c (43)	1.706054 Secs (1.706 Secs) *[==>]*	***[1]***

	2	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_4c (43) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_4c (43) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _4c (43)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_4c (43) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_4c (43) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _4c (43)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 14453, 55-Cnc_WFC3_G141_4d (44), implementation Wed Feb 10 02:09:48 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 43

Diagnostics

(55-Cnc_WFC3_G141_4d (44)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4d (44)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4d (44)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
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(55-Cnc_WFC3_G141_4d (44)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING
(55-Cnc_WFC3_G141_4d (44)) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	55-CNC	RA: 08 52 35.8109 (133.1492121d)	Proper Motion RA: -485.80 mas/yr	V=5.95	Reference Frame: SIMBAD
		Dec: +28 19 50.95 (28.33082d)	Proper Motion Dec: -234.05 mas/yr	B=6.82,	
		Equinox: J2000	Parallax: 0.08103"	R=5.4,	
			Epoch of Position: 2000	I=5.0,	
				J=4.768,	
				H=4.265,	
				K=4.015	

Comments: This star is in a double system (common proper motions) with 55 Cnc B, a much fainter (V = 13) M4 dwarf that is 1.4 arcminutes away. It is also 4.6 arcminutes away from the similarly bright (V = 6.3) star 53 Cnc.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	55-Cancri, ACQ, phase constrained	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	F132N	NSAMP=2; SAMP-SEQ=RAPID	GS ACQ SCENARIO SINGLE	Same Guide Stars in 55-Cnc_WFC3_G141_4d (44) Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_4d (44) Same Obset in Sequence 1-3 Non-Int in Same Guide Stars in 55-Cnc_WFC3_G141_4d (44)	1.706054 Secs (1.706 Secs) *[==>]*	***[1]***

	2	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Round trip	Same Guide Stars in 55-Cnc_WFC3_G14 1_4d (44) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_4d (44) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _4d (44)	8.774726 Secs X 18 (315.89 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]* *[==>(Copy 11, Forward)]* *[==>(Copy 11, Reverse)]* *[==>(Copy 12, Forward)]* *[==>(Copy 12, Reverse)]* *[==>(Copy 13, Forward)]* *[==>(Copy 13, Reverse)]* *[==>(Copy 14, Forward)]* *[==>(Copy 14, Reverse)]* *[==>(Copy 15, Forward)]* *[==>(Copy 15, Reverse)]* *[==>(Copy 16, Forward)]* *[==>(Copy 16, Reverse)]* *[==>(Copy 17, Forward)]* *[==>(Copy 17, Reverse)]* *[==>(Copy 18, Forward)]* *[==>(Copy 18, Reverse)]*	***[1]***

	3	G141 Scienc e Data	(1) 55-CNC	WFC3/IR, MULTIACCUM, GRISM512	G141	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -16.5,-3 7; SPATIAL SCAN 4.8 ,90.0 Degrees,Forwa rd	Same Guide Stars in 55-Cnc_WFC3_G14 1_4d (44) Sequence 1-3 Non-In t in Same Guide Star s in 55-Cnc_WFC3_ G141_4d (44) Same Obset in Seque nce 1-3 Non-Int in S ame Guide Stars in 5 5-Cnc_WFC3_G141 _4d (44)	8.774726 Secs (8.775 Secs) *[==>]*	***[1]***

Orbit Structure