16405 - WFC3 IR Gain Monitor

Cycle: 28, Proposal Category: CAL/WFC3

(Availability Mode: RESTRICTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Mr. Harish Khandrika (PI) (Contact)	**Space Telescope Science Institute**	**hkhandrika@stsci.edu**
Dr. Joel David Green (CoI)	Space Telescope Science Institute	jgreen@stsci.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:49.0	yes
02	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:50.0	yes
03	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:51.0	yes
04	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:51.0	yes
05	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:52.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
06	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:52.0	yes
07	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:53.0	yes
08	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:54.0	yes
09	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:54.0	yes
10	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:55.0	yes
11	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:55.0	yes
12	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:56.0	yes
13	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:56.0	yes
14	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:57.0	yes
15	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:57.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
16	DARK DARK-NM TUNGSTEN	WFC3/IR	1	03-Aug-2020 12:00:58.0	yes

16 Total Orbits Used

ABSTRACT

The conversion factor from electronic analog digital units (ADUs) to electrons, gain, is a fundamental parameter needed to characterize the WFC3 IR detector. The gain must be monitored each cycle in order to ensure that the true value in each quadrant does not deviate significantly from the nominal gain setting of 2.5 e-/ADU within the WFC3/IR data reduction pipeline. We propose an observing program for the IR channel of WFC3 that will measure the gain in each of the four quadrants of the detector with a series of flat field pairs taken no more than a week apart, performed first in winter 2020-21 and again in summer 2021. For each quadrant of each ramp pair, the measured mean signal is plotted against the variance. The gain is the inverse of the slope of the best fit line. This proposal is an identical continuation of Cycle 27's program 15725. Ramp pairs are taken twice a year, providing two separate calculations of gain each cycle.

OBSERVING DESCRIPTION

Of the 16 alloted orbits, 8 are done in the winter and 8 are done in the summer. This spacing ensures the gain is measured twice during the cycle, once towards the beginning and once towards the end. Each visit is identical and begins with a dark current observation to allow the BLANK time to move into position before the Tungsten lamp is turned on. This serves as a check for persistance induced by previous observations, and is a safeguard against persistence induced by a grism or wide band filter rotating through the beam. Next, a warm up flat is taken. The narrow band filter F126N is put in place and the Tungsten lamp is turned on. While the lamp warms up, a short flat is observed. A warm-up flat before the primary flat is necessary since the gain measurement depends on a linear signal hitting the detector for the entirety of the observation. This short flat also serves as another check for persistence and monitors the lamp warm up time. Next, the long flat field ramp to be used in the gain measurement is observed. At the end of each visit, a trailing dark is taken to monitor persistence caused by the flat fields, a measure taken to protect IR observations following the gain measurements.

The long flat is intended to reach about half full-well; about 14,000 DN per pixel. This value is chosen to limit persistence for the next observer, to minimize the non-linearity correction needed, and for consistency with previous observing cycles.

Scheduling Constraints

In order to avoid self-induced persistence, visits should not be taken back to back. Results from cycle 17 show that persistence will affect the measured signal rate at or greater than the 0.5% level for approximately 100 seconds after an observation. Visits should be scheduled non-consecutively to insure persistence does not effect the observation.

A second constraint beginning in cycle 23 (program 14376) is that pairs of visits should be observed within a 24 hour period. In WFC3 ISR 2015-14, the authors show that the cleanest measurements come from pairs of ramps taken within a 24-hour period.

These constraints require that these paired observations are taken as close together temporally as possible for the best paired measurement, but not directly back-to-back to avoid self-induced persistence.

Calibration Justification

Gain is a fundamental parameter of the detector and is crucial to produce scientifically meaningful data as it relates the digital signal to electrons. With the mean variance method on pairs of flat field ramps, we can measure the true gain to ensure that there are no significant deviations from the nominal setting of 2.5 e-/ADU in the WFC3/IR data reduction pipeline. Additionally, the ability to measure any possible drifts in gain serves as a monitor of the overall health of the IR detector.

Visit

Proposal 16405, epoch 1 (01) Mon Aug 03 16:00:58 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: BETWEEN 05-NOV-2020 AND 05-FEB-2021:00:00:00

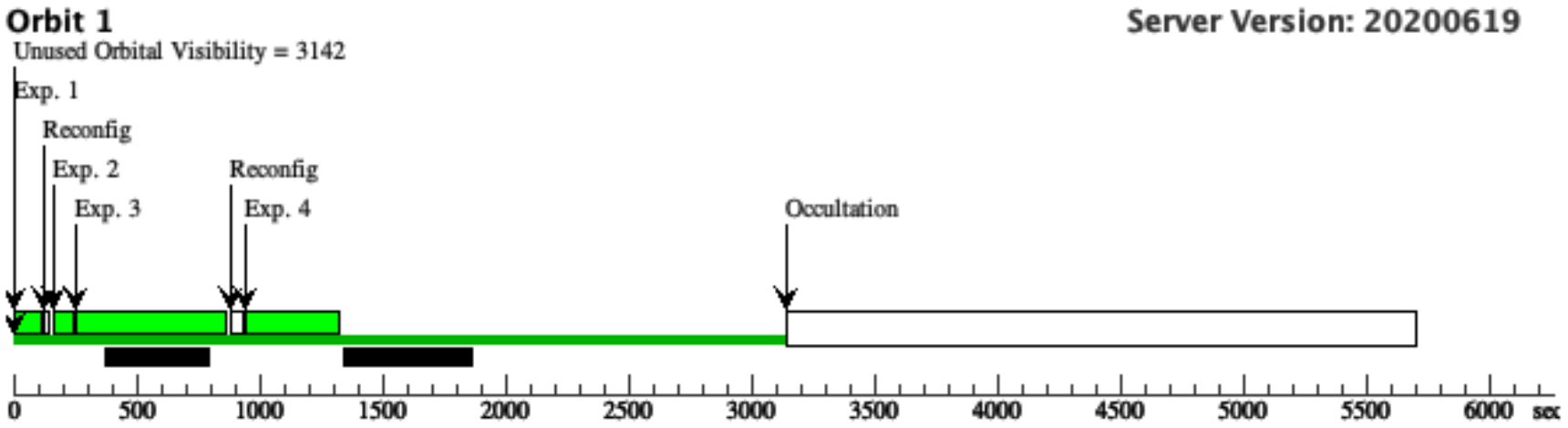
Diagnostics

(epoch 1 (01)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 1 (02) Mon Aug 03 16:00:58 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER_01 BY 5 H TO 24 H; BETWEEN 05-NOV-2020 AND 05-FEB-2021:00:00:00

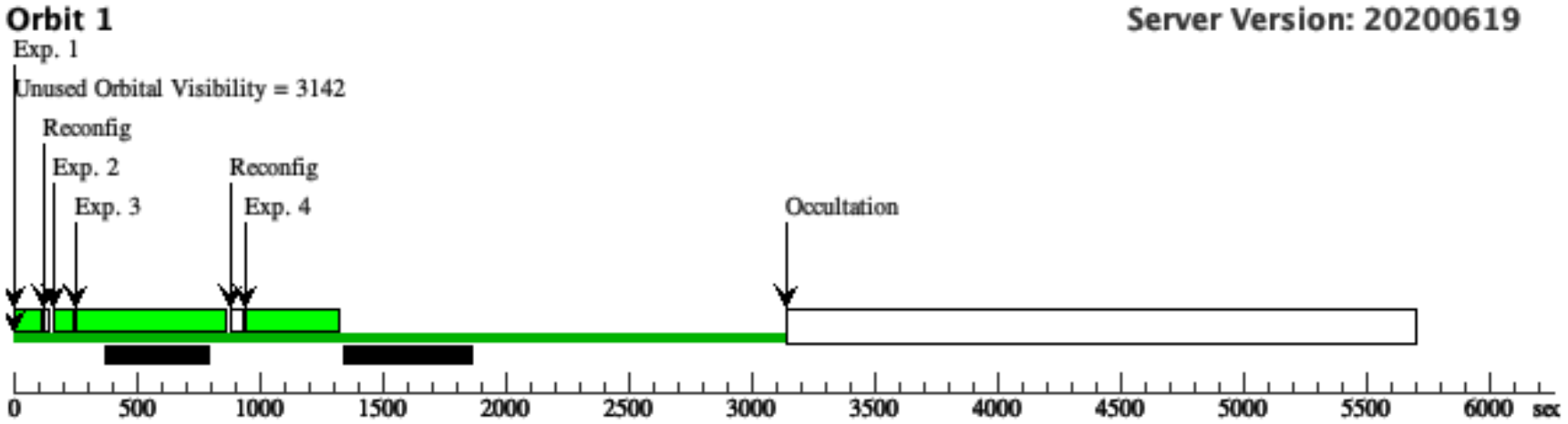
Diagnostics

(epoch 1 (02)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 1 (03) Mon Aug 03 16:00:58 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: BETWEEN 05-NOV-2020 AND 05-FEB-2021:00:00:00

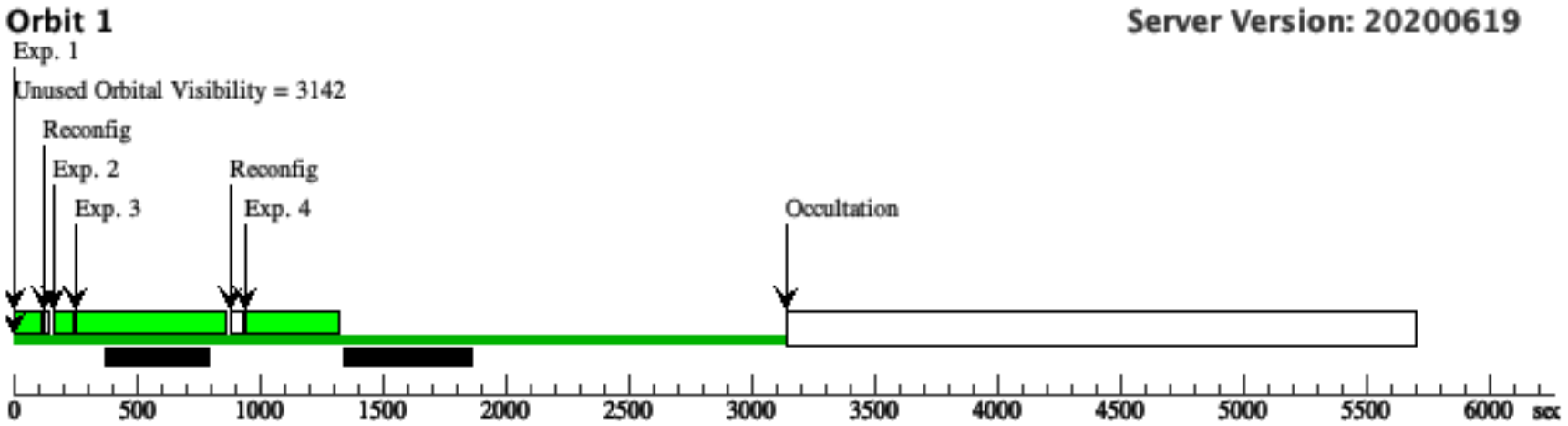
Diagnostics

(epoch 1 (03)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 1 (04) Mon Aug 03 16:00:58 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 03 BY 5 H TO 24 H; BETWEEN 05-NOV-2020 AND 05-FEB-2021:00:00:00

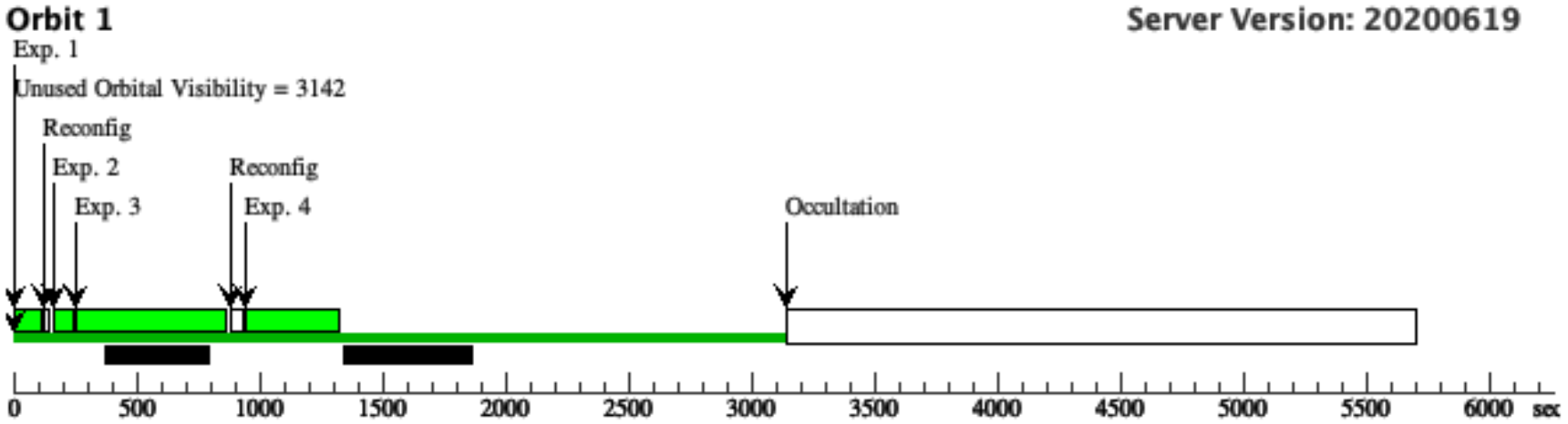
Diagnostics

(epoch 1 (04)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 1 (05) Mon Aug 03 16:00:59 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: BETWEEN 05-NOV-2020 AND 05-FEB-2021:00:00:00

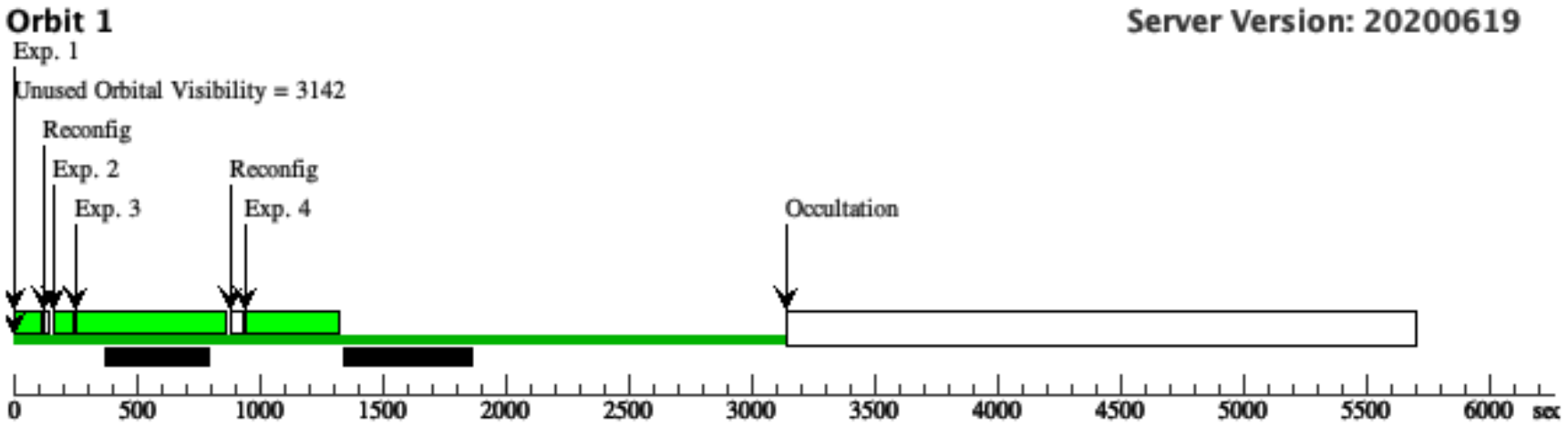
Diagnostics

(epoch 1 (05)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 1 (06) Mon Aug 03 16:00:59 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 05 BY 5 H TO 24 H; BETWEEN 05-NOV-2020 AND 05-FEB-2021:00:00:00

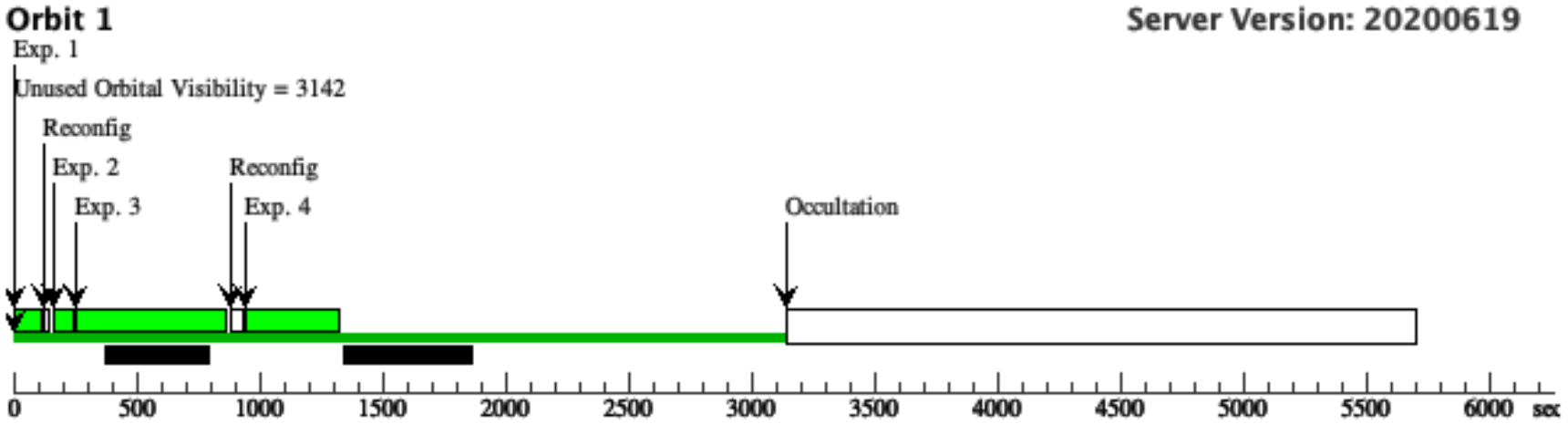
Diagnostics

(epoch 1 (06)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 1 (07) Mon Aug 03 16:00:59 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: BETWEEN 05-NOV-2020 AND 05-FEB-2021:00:00:00

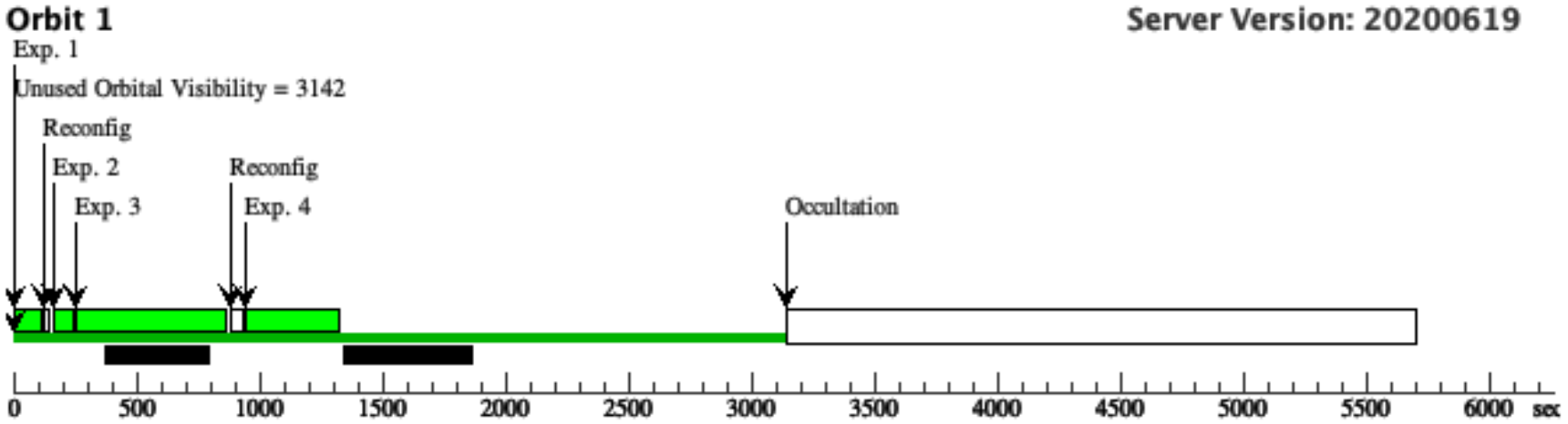
Diagnostics

(epoch 1 (07)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 1 (08) Mon Aug 03 16:00:59 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 07 BY 5 H TO 24 H; BETWEEN 05-NOV-2020 AND 05-FEB-2021:00:00:00

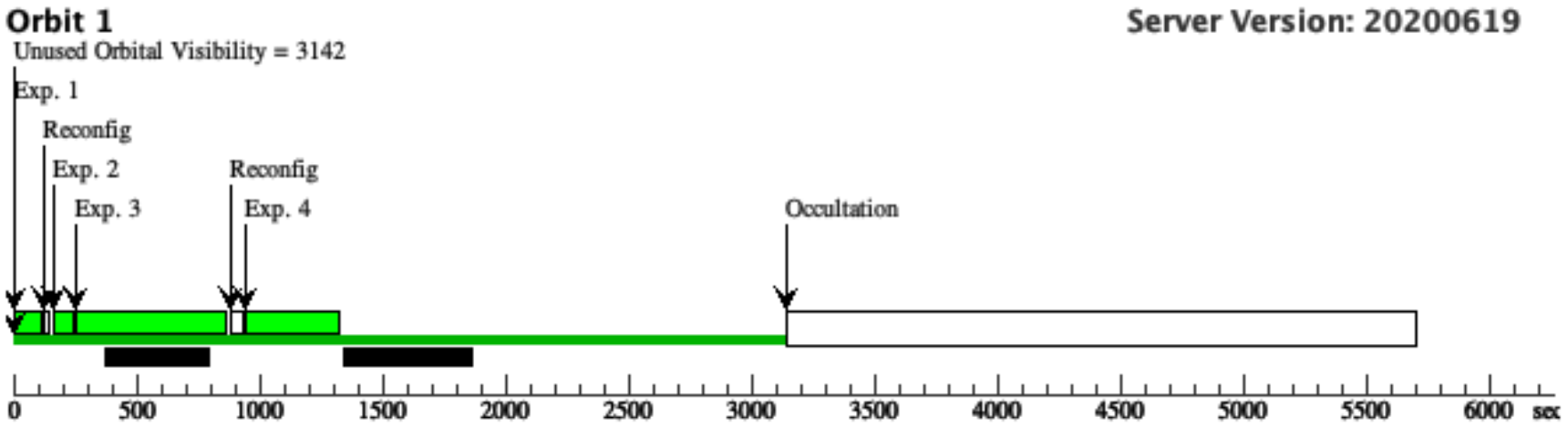
Diagnostics

(epoch 1 (08)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 2 (09) Mon Aug 03 16:00:59 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: BETWEEN 01-JUN-2021 AND 01-SEP-2021

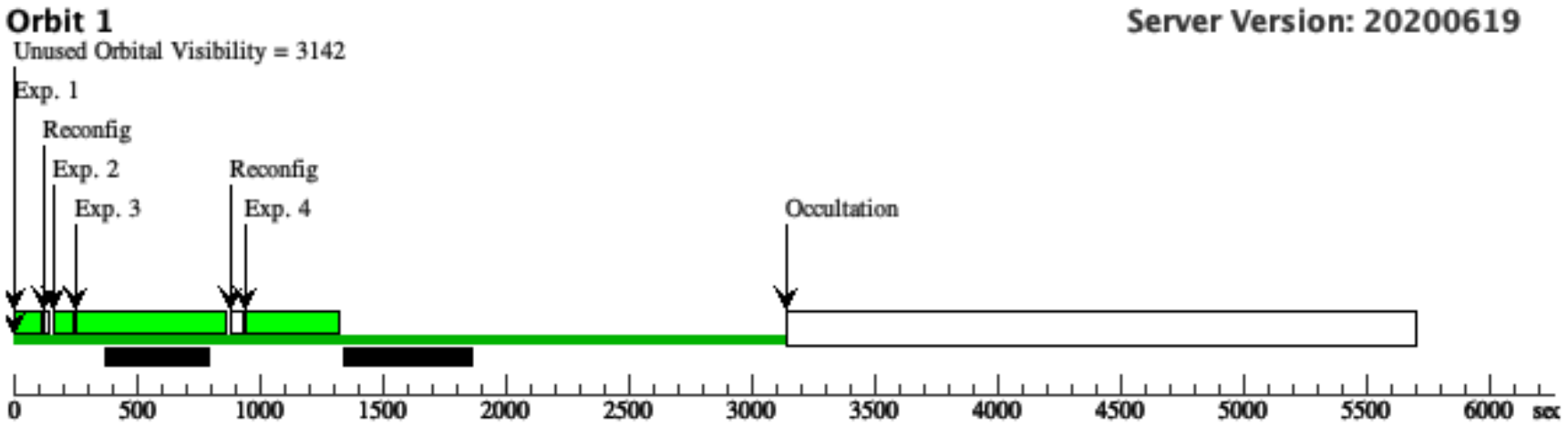
Diagnostics

(epoch 2 (09)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) [==>]	[1]
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) [==>]	[1]
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) [==>]	[1]
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) [==>]	[1]

Orbit Structure



Visit

Proposal 16405, epoch 2 (10) Mon Aug 03 16:00:59 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER_09 BY 5 H TO 24 H; BETWEEN 01-JUN-2021 AND 01-SEP-2021

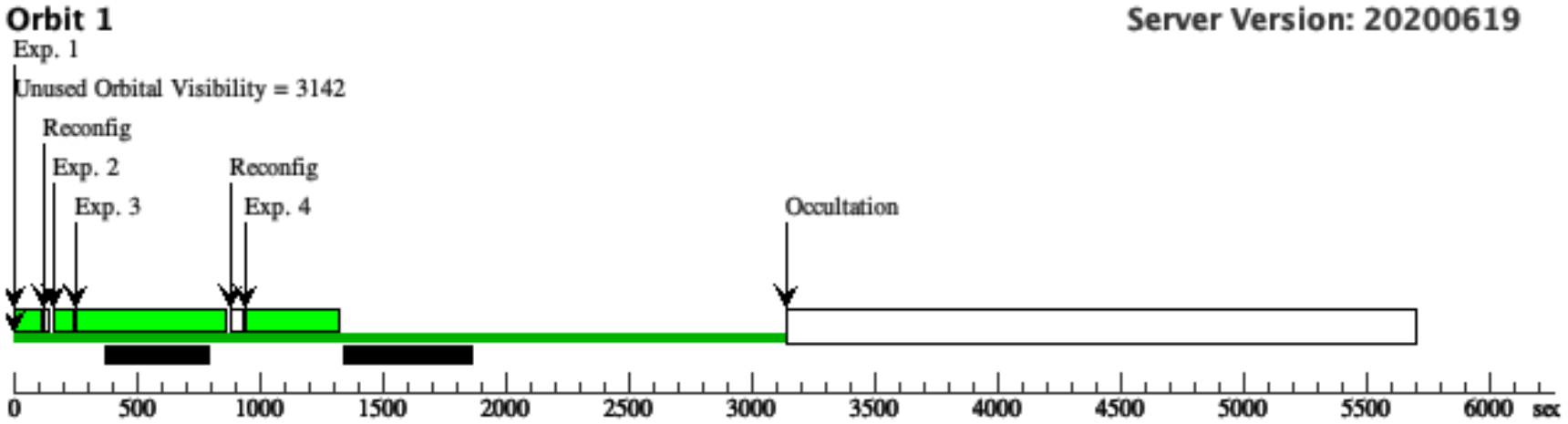
Diagnostics

(epoch 2 (10)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 2 (11) Mon Aug 03 16:00:59 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: BETWEEN 01-JUN-2021 AND 01-SEP-2021

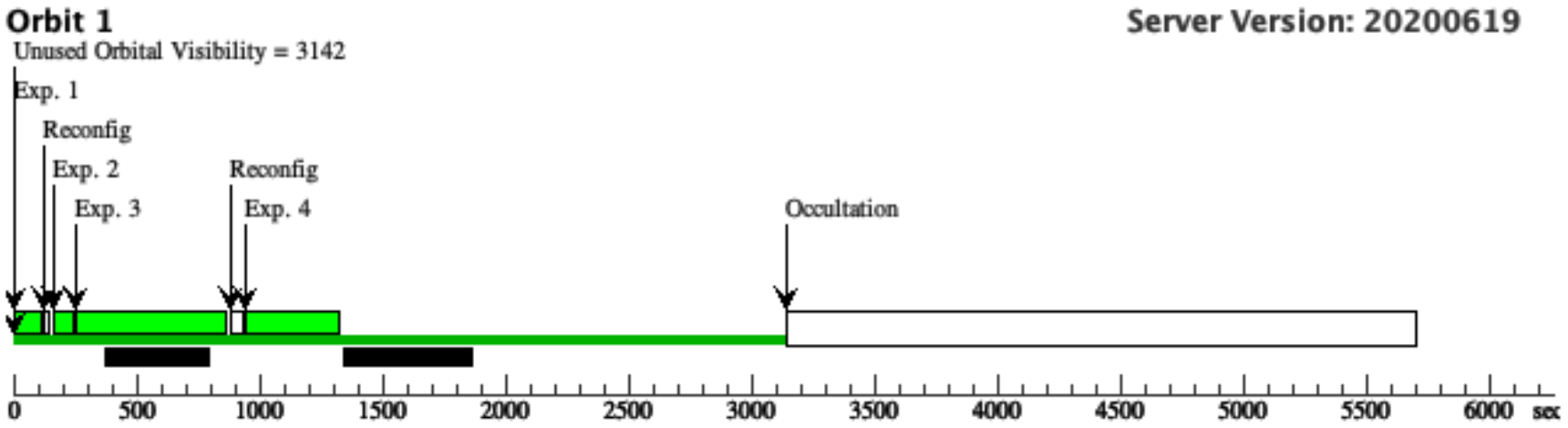
Diagnostics

(epoch 2 (11)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 2 (12) Mon Aug 03 16:00:59 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 11 BY 5 H TO 24 H; BETWEEN 01-JUN-2021 AND 01-SEP-2021

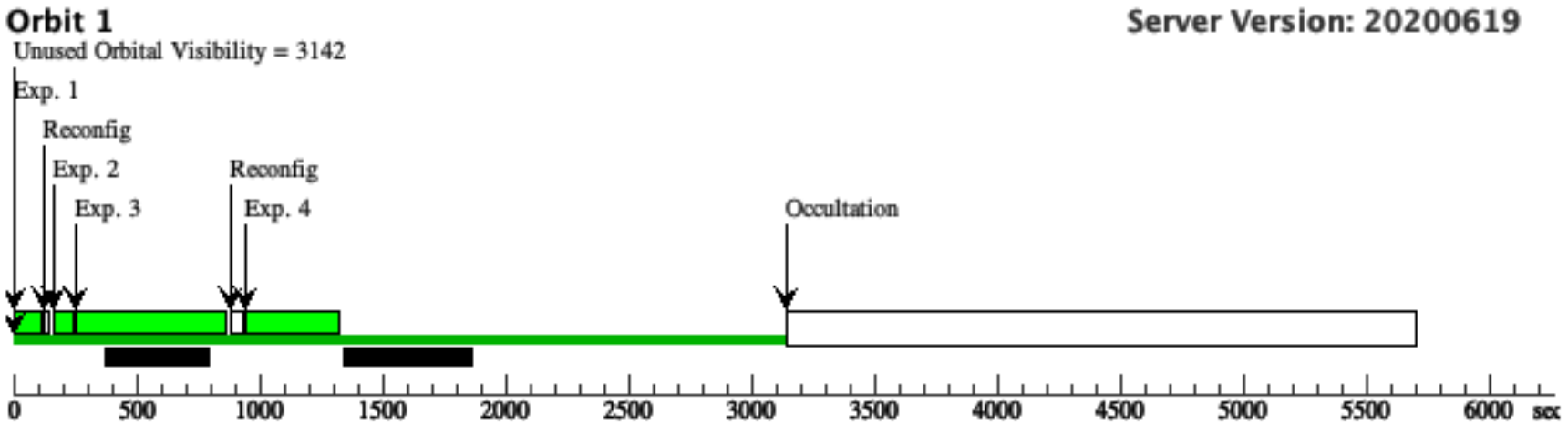
Diagnostics

(epoch 2 (12)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 2 (13) Mon Aug 03 16:00:59 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: BETWEEN 01-JUN-2021 AND 01-SEP-2021

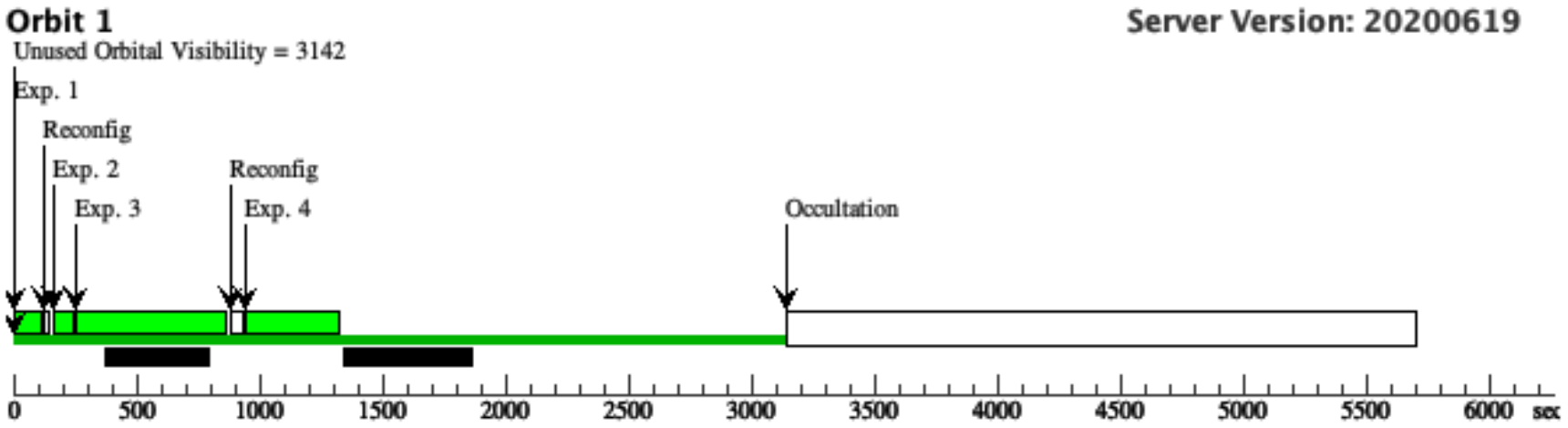
Diagnostics

(epoch 2 (13)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 2 (14) Mon Aug 03 16:00:59 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 13 BY 5 H TO 24 H; BETWEEN 01-JUN-2021 AND 01-SEP-2021

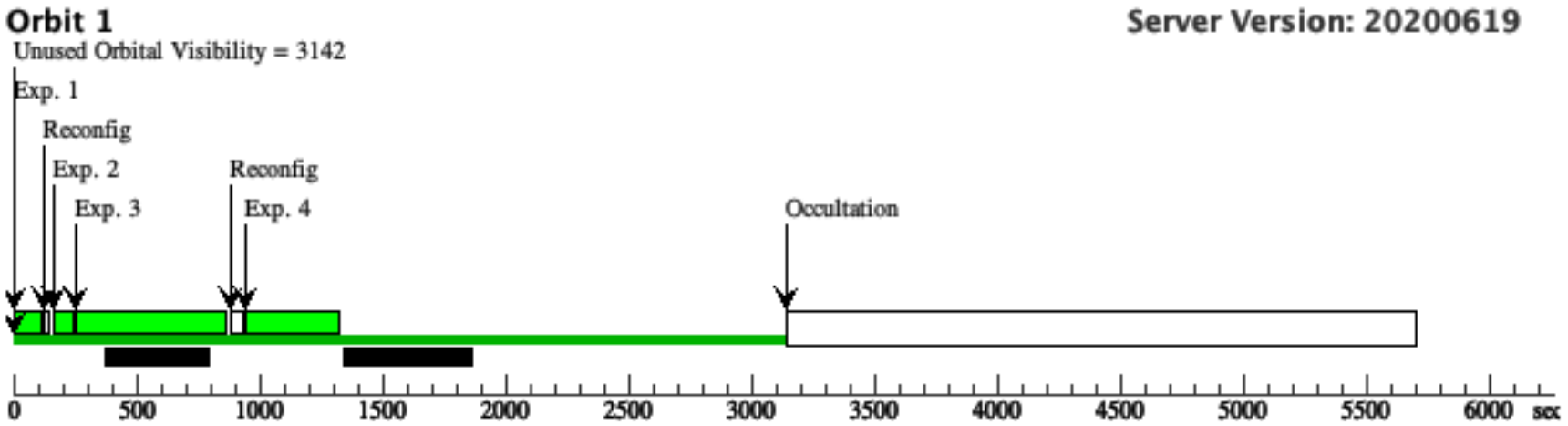
Diagnostics

(epoch 2 (14)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 2 (15) Mon Aug 03 16:00:59 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: BETWEEN 01-JUN-2021 AND 01-SEP-2021

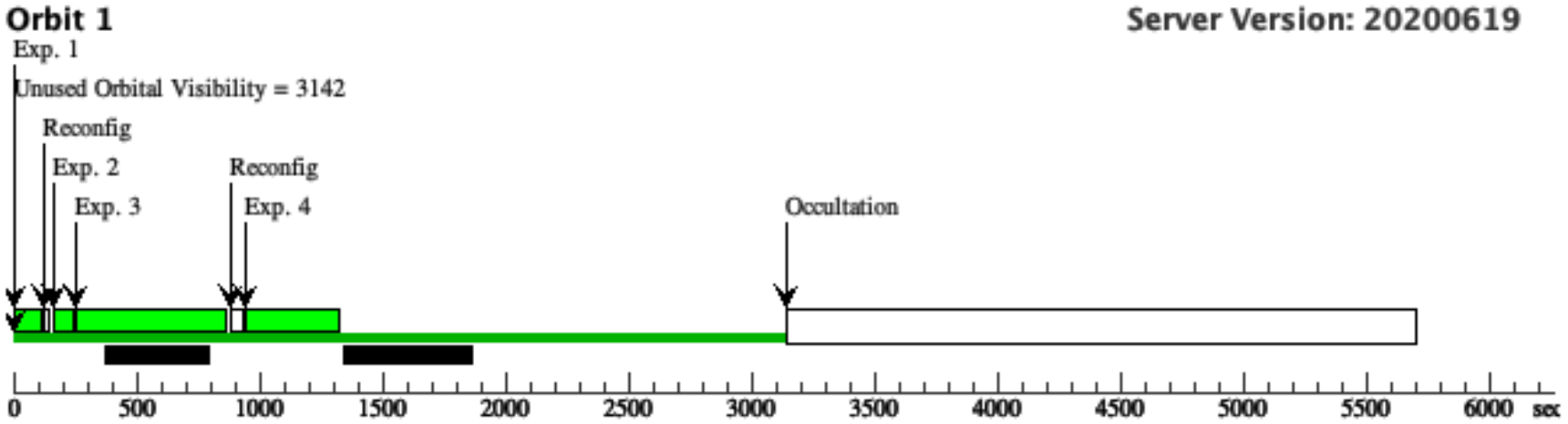
Diagnostics

(epoch 2 (15)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16405, epoch 2 (16) Mon Aug 03 16:00:59 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: AFTER 15 BY 5 H TO 24 H; BETWEEN 01-JUN-2021 AND 01-SEP-2021

Diagnostics

(epoch 2 (16)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Dark	DARK-NM	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=9; SAMP-SEQ=SPARS10			82.939995 Secs (82.94 Secs) *[==>]*	*[1]*
2	Warm-up Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=6; SAMP-SEQ=SPARS10			52.937106 Secs (52.937 Secs) *[==>]*	*[1]*
3	Gain Flat	TUNGSTEN	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=13; SAMP-SEQ=SPARS50			602.937703 Secs (602.938 Secs) *[==>]*	*[1]*
4	Persistance Dark	DARK	WFC3/IR, MULTIACCUM, IR	BLANK	NSAMP=15; SAMP-SEQ=SPARS25			352.939501 Secs (352.94 Secs) *[==>]*	*[1]*

Orbit Structure