



11792 - Extrasolar Planet XO-2b

Cycle: 17, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
04	(2) X0-2A (3) X0-2B (4) X0-2REF1 (5) X0-2REF2 (6) X0-2REF3 (7) X0-2REF4 (8) X0-2REF5 (9) X0-2REF6 (10) X0-2REF7 (11) X0-2REF8	FGS	1	28-Mar-2011 21:01:20.0	yes

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
05	(2) X0-2A (3) X0-2B (4) X0-2REF1 (5) X0-2REF2 (6) X0-2REF3 (7) X0-2REF4 (8) X0-2REF5 (9) X0-2REF6 (10) X0-2REF7 (11) X0-2REF8	FGS	1	28-Mar-2011 21:01:38.0	yes

2 Total Orbits Used

ABSTRACT

We propose observations of the newly discovered extrasolar planet XO-2b and its twin star XO-2. When combined with the transit light curve, the FGS-derived parallax will constrain the stellar mass of the host star XO-2. From the high signal-to-noise near-IR time series resulting from NICMOS grism spectroscopy, we will refine the system parameters, in particular radii of the star and planet. From the same data, we will search for evidence of water vapor in the atmosphere via transmission spectroscopy. Differential observations with NICMOS in the spectroscopic mode will be used to search for the small spectral changes that occur during planetary transits resulting from absorption of stellar light as it passes through the planetary atmosphere. Water is an important constituent, the detection of which would provide information on Oxygen, and it has a convenient strong band well-positioned for NICMOS.

OBSERVING DESCRIPTION

This is an FGS parallax measurement of XO-2A and XO-2B. This proposal complements proposal 11228, in that it acquires the astrometric observations at the April 15 maximum parallax factor, while the observations in 11228 acquire the astrometry at the October maximum parallax factor.

Note, the first epoch 11228 observations executed in October 2007, while the second epoch is scheduled for October 2008. This second epoch will likely not occur due to SM4. Therefore, the second October epoch will need to execute in 10/2009 (in three-gyro mode).

ADDITIONAL COMMENTS

IMPLEMENTATION NOTES: the new parameter CAMERA-FOCUS=DEFOCUS and aperture NIC3-FIXD is used on all exposures to place the NIC3 focus mechanism at -0.5mm and adjust the target placement in the aperture for the defocus respectively.

Proposal 11792 - Visit 04 - Extrasolar Planet XO-2b

Tue Mar 29 01:01:47 GMT 2011

Visit	Proposal 11792, Visit 04, completed Diagnostic Status: No Diagnostics Scientific Instruments: FGS Special Requirements: ORIENT 100D TO 100 D; BETWEEN 13-APR-2010:00:00:00 AND 16-APR-2010:00:00:00					
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
Fixed Targets	(2)	X0-2A Alt Name1: N2302133722	RA: 07 48 6.4680 (117.0269500d) Dec: +50 13 32.93 (50.22581d) Equinox: J2000		V=11.19+/-0.1	Reference Frame: ICRS
	(3)	X0-2B Alt Name1: N2302133726	RA: 07 48 7.4770 (117.0311542d) Dec: +50 13 3.26 (50.21757d) Equinox: J2000		V=11.13+/-0.1	Reference Frame: ICRS
	(4)	X0-2REF1 Alt Name1: N2302133731	RA: 07 47 52.4120 (116.9683833d) Dec: +50 12 41.12 (50.21142d) Equinox: J2000		V=10.18+/-0.1	Reference Frame: ICRS
	(5)	X0-2REF2 Alt Name1: N2302133727	RA: 07 47 47.1230 (116.9463458d) Dec: +50 13 1.63 (50.21712d) Equinox: J2000		V=13.85+/-0.1 B=14.77 R = 13.15	Reference Frame: ICRS
	(6)	X0-2REF3 Alt Name1: N2302133718	RA: 07 47 37.8020 (116.9075083d) Dec: +50 13 59.06 (50.23307d) Equinox: J2000		V=13.59+/-0.1 B=14.14, R=13.09	Reference Frame: ICRS
	(7)	X0-2REF4 Alt Name1: N2302133716	RA: 07 47 35.7360 (116.8989000d) Dec: +50 14 28.36 (50.24121d) Equinox: J2000		V=12.75+/-0.1 B=13.41, R=12.45	Reference Frame: ICRS
	(8)	X0-2REF5 Alt Name1: N2302133714	RA: 07 47 45.1990 (116.9383292d) Dec: +50 14 57.49 (50.24930d) Equinox: J2000		V=12.29+/-0.1 B=12.94, R=11.89	Reference Frame: ICRS
	(9)	X0-2REF6 Alt Name1: N2302133736	RA: 07 48 8.7420 (117.0364250d) Dec: +50 11 40.48 (50.19458d) Equinox: J2000		V=13.87+/-0.1 B=14.6, R=13.38	Reference Frame: ICRS
	(10)	X0-2REF7 Alt Name1: N2302133738	RA: 07 48 26.6070 (117.1108625d) Dec: +50 11 7.84 (50.18551d) Equinox: J2000		V=15.02+/-0.1 B=15.7, R=14.4	Reference Frame: ICRS
	(11)	X0-2REF8 Alt Name1: N2302133720	RA: 07 48 20.9900 (117.0874583d) Dec: +50 13 53.09 (50.23141d) Equinox: J2000		V=14.52+/-0.1 B=15.14, R=14.12	Reference Frame: ICRS

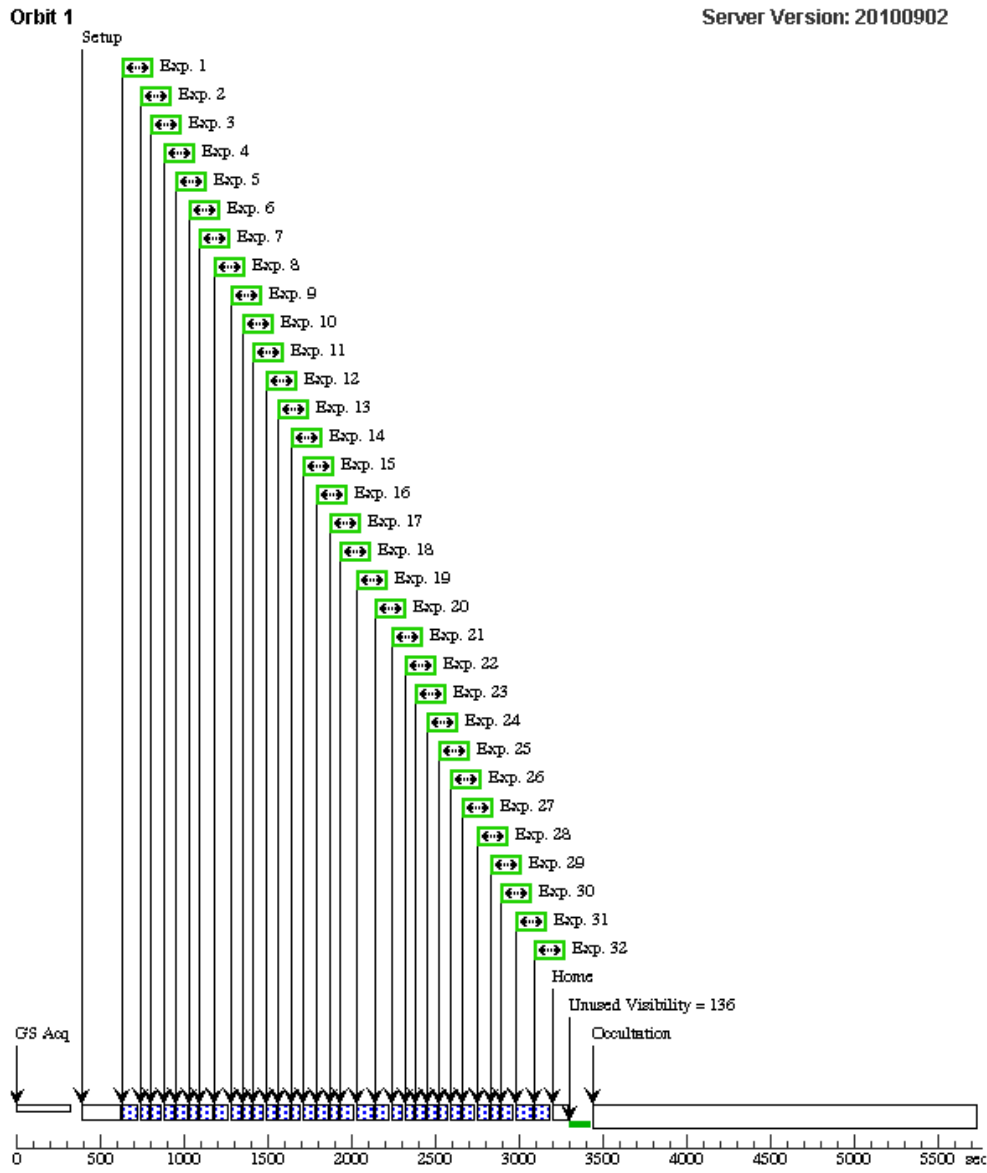
Proposal 11792 - Visit 04 - Extrasolar Planet XO-2b

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) X0-2A	FGS, POS, 1	F583W		POS TARG 0.0,5.0; GS ACQ SCENARI O BASE1B3	Sequence 1-32 Non-I nt in Visit 04	10.00 Secs [==>]	[1]
	2		(3) X0-2B	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	3		(4) X0-2REF1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	4		(8) X0-2REF5	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	5		(2) X0-2A	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	6		(3) X0-2B	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	7		(11) X0-2REF8	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	8		(9) X0-2REF6	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	9		(2) X0-2A	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	10		(3) X0-2B	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	11		(4) X0-2REF1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	12		(8) X0-2REF5	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	13		(6) X0-2REF3	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	14		(7) X0-2REF4	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	15		(5) X0-2REF2	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	16		(2) X0-2A	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	17		(3) X0-2B	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	18		(11) X0-2REF8	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	19		(10) X0-2REF7	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	20		(9) X0-2REF6	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]
	21		(3) X0-2B	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-32 Non-I nt in Visit 04	10.0 Secs [==>]	[1]

Proposal 11792 - Visit 04 - Extrasolar Planet XO-2b

22	(2) X0-2A	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-32 Non-Int in Visit 04	10.0 Secs	[1]
						[==>]	
23	(4) X0-2REF1	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-32 Non-Int in Visit 04	10.0 Secs	[1]
						[==>]	
24	(8) X0-2REF5	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-32 Non-Int in Visit 04	10.0 Secs	[1]
						[==>]	
25	(7) X0-2REF4	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-32 Non-Int in Visit 04	10.0 Secs	[1]
						[==>]	
26	(6) X0-2REF3	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-32 Non-Int in Visit 04	10.0 Secs	[1]
						[==>]	
27	(5) X0-2REF2	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-32 Non-Int in Visit 04	10.0 Secs	[1]
						[==>]	
28	(3) X0-2B	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-32 Non-Int in Visit 04	10.0 Secs	[1]
						[==>]	
29	(2) X0-2A	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-32 Non-Int in Visit 04	10.0 Secs	[1]
						[==>]	
30	(9) X0-2REF6	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-32 Non-Int in Visit 04	10.0 Secs	[1]
						[==>]	
31	(10) X0-2REF7	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-32 Non-Int in Visit 04	10.0 Secs	[1]
						[==>]	
32	(11) X0-2REF8	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-32 Non-Int in Visit 04	10.0 Secs	[1]
						[==>]	

Orbit Structure



Proposal 11792 - Visit 05 - Extrasolar Planet XO-2b

Tue Mar 29 01:01:49 GMT 2011

Visit	Proposal 11792, Visit 05, scheduling					
	Diagnostic Status: No Diagnostics					
Scientific Instruments: FGS						
Special Requirements: ORIENT 105D TO 105 D; BETWEEN 06-APR-2011:00:00:00 AND 16-APR-2011:00:00:00						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(2)	X0-2A Alt Name1: N2302133722	RA: 07 48 6.4680 (117.0269500d) Dec: +50 13 32.93 (50.22581d) Equinox: J2000		V=11.19+/-0.1	Reference Frame: ICRS
	(3)	X0-2B Alt Name1: N2302133726	RA: 07 48 7.4770 (117.0311542d) Dec: +50 13 3.26 (50.21757d) Equinox: J2000		V=11.13+/-0.1	Reference Frame: ICRS
	(4)	X0-2REF1 Alt Name1: N2302133731	RA: 07 47 52.4120 (116.9683833d) Dec: +50 12 41.12 (50.21142d) Equinox: J2000		V=10.18+/-0.1	Reference Frame: ICRS
	(5)	X0-2REF2 Alt Name1: N23021133727	RA: 07 47 47.1230 (116.9463458d) Dec: +50 13 1.63 (50.21712d) Equinox: J2000		V=13.85+/-0.1 B=14.77 R = 13.15	Reference Frame: ICRS
	(6)	X0-2REF3 Alt Name1: N2302133718	RA: 07 47 37.8020 (116.9075083d) Dec: +50 13 59.06 (50.23307d) Equinox: J2000		V=13.59+/-0.1 B=14.14, R=13.09	Reference Frame: ICRS
	(7)	X0-2REF4 Alt Name1: N2302133716	RA: 07 47 35.7360 (116.8989000d) Dec: +50 14 28.36 (50.24121d) Equinox: J2000		V=12.75+/-0.1 B=13.41, R=12.45	Reference Frame: ICRS
	(8)	X0-2REF5 Alt Name1: N2302133714	RA: 07 47 45.1990 (116.9383292d) Dec: +50 14 57.49 (50.24930d) Equinox: J2000		V=12.29+/-0.1 B=12.94, R=11.89	Reference Frame: ICRS
	(9)	X0-2REF6 Alt Name1: N2302133736	RA: 07 48 8.7420 (117.0364250d) Dec: +50 11 40.48 (50.19458d) Equinox: J2000		V=13.87+/-0.1 B=14.6, R=13.38	Reference Frame: ICRS
	(10)	X0-2REF7 Alt Name1: N2302133738	RA: 07 48 26.6070 (117.1108625d) Dec: +50 11 7.84 (50.18551d) Equinox: J2000		V=15.02+/-0.1 B=15.7, R=14.4	Reference Frame: ICRS
	(11)	X0-2REF8 Alt Name1: N2302133720	RA: 07 48 20.9900 (117.0874583d) Dec: +50 13 53.09 (50.23141d) Equinox: J2000		V=14.52+/-0.1 B=15.14, R=14.12	Reference Frame: ICRS

Proposal 11792 - Visit 05 - Extrasolar Planet XO-2b

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit
Exposures	1	(2) X0-2A	FGS, POS, 1	F583W		GS ACQ SCENARI O BASE1B3	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	2	(3) X0-2B	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	3	(4) X0-2REF1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	4	(8) X0-2REF5	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	5	(2) X0-2A	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	6	(3) X0-2B	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	7	(11) X0-2REF8	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	8	(9) X0-2REF6	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	9	(2) X0-2A	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	10	(3) X0-2B	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	11	(4) X0-2REF1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	12	(8) X0-2REF5	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	13	(6) X0-2REF3	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	14	(7) X0-2REF4	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	15	(5) X0-2REF2	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	16	(2) X0-2A	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	17	(3) X0-2B	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	18	(11) X0-2REF8	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	19	(10) X0-2REF7	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	20	(9) X0-2REF6	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	21	(3) X0-2B	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]
	22	(2) X0-2A	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-33 Non-I nt in Visit 05	10.0 Secs	[==>]	[1]

Proposal 11792 - Visit 05 - Extrasolar Planet XO-2b

23	(4) X0-2REF1	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-33 Non-Int in Visit 05	10.0 Secs	[1]
						[==>]	
24	(8) X0-2REF5	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-33 Non-Int in Visit 05	10.0 Secs	[1]
						[==>]	
25	(6) X0-2REF3	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-33 Non-Int in Visit 05	10.0 Secs	[1]
						[==>]	
26	(7) X0-2REF4	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-33 Non-Int in Visit 05	10.0 Secs	[1]
						[==>]	
27	(5) X0-2REF2	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-33 Non-Int in Visit 05	10.0 Secs	[1]
						[==>]	
28	(3) X0-2B	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-33 Non-Int in Visit 05	10.0 Secs	[1]
						[==>]	
29	(3) X0-2B	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-33 Non-Int in Visit 05	10.0 Secs	[1]
						[==>]	
30	(9) X0-2REF6	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-33 Non-Int in Visit 05	10.0 Secs	[1]
						[==>]	
31	(10) X0-2REF7	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-33 Non-Int in Visit 05	10.0 Secs	[1]
						[==>]	
32	(11) X0-2REF8	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-33 Non-Int in Visit 05	10.0 Secs	[1]
						[==>]	
33	(8) X0-2REF5	FGS, POS, 1	F583W	SAME POS AS 1	Sequence 1-33 Non-Int in Visit 05	10.0 Secs	[1]
						[==>]	

Orbit Structure

