



12288 - Hot Evolved Companions to Intermediate-Mass Main-Sequence Stars: Solving the Mystery of KOI-81

Cycle: 18, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Dr. Douglas R. Gies (PI)	Georgia State University Research Foundation	gies@chara.gsu.edu
Mr. Noel D. Richardson (CoI)	Georgia State University Research Foundation	richardson@chara.gsu.edu
Mr. Stephen Williams (CoI)	Georgia State University Research Foundation	swilliams@chara.gsu.edu

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>
01	(1) KOI-81	COS/FUV	2	13-Jun-2011 21:01:21.0	yes
02	(1) KOI-81	COS/FUV	2	13-Jun-2011 21:01:37.0	yes
03	(1) KOI-81	COS/FUV	2	13-Jun-2011 21:01:49.0	yes
04	(1) KOI-81	COS/FUV	2	13-Jun-2011 21:02:02.0	yes
05	(1) KOI-81	COS/FUV	2	13-Jun-2011 21:02:13.0	yes

10 Total Orbits Used

ABSTRACT

The NASA Kepler Science Team recently announced the discovery of two transiting binaries that have "planets" hotter than their host stars.

These systems probably represent the first known examples of white dwarfs

formed through mass loss and transfer among intermediate mass, close binary stars. Here we propose to obtain COS FUV spectroscopy of one of these systems, KOI-81, in order to detect the hot companion in a part of the spectrum where it is relatively bright. The spectral flux and Doppler shift measurements will yield the temperatures, masses, radii, and compositions of both components. These observations will provide our first opportunity to explore this previously hidden stage of close binary evolution.

OBSERVING DESCRIPTION

We propose to obtain FUV spectroscopy of KOI-81 at five points in the orbit: two near radial velocity maximum, two near radial velocity minimum, and one during hot companion eclipse.

The ephemeris is from Jason Rowe (2010, priv. communication).

Each visit will include a target acquisition, cross-dispersion peak up, dispersion peak up, and ten science observations at different FP-POS and central wavelength positions made with the COS/FUV and G130M.

Exposure times were estimated using the COS ETC and a model spectrum for the FUV flux.

We would like to optimize S/N.

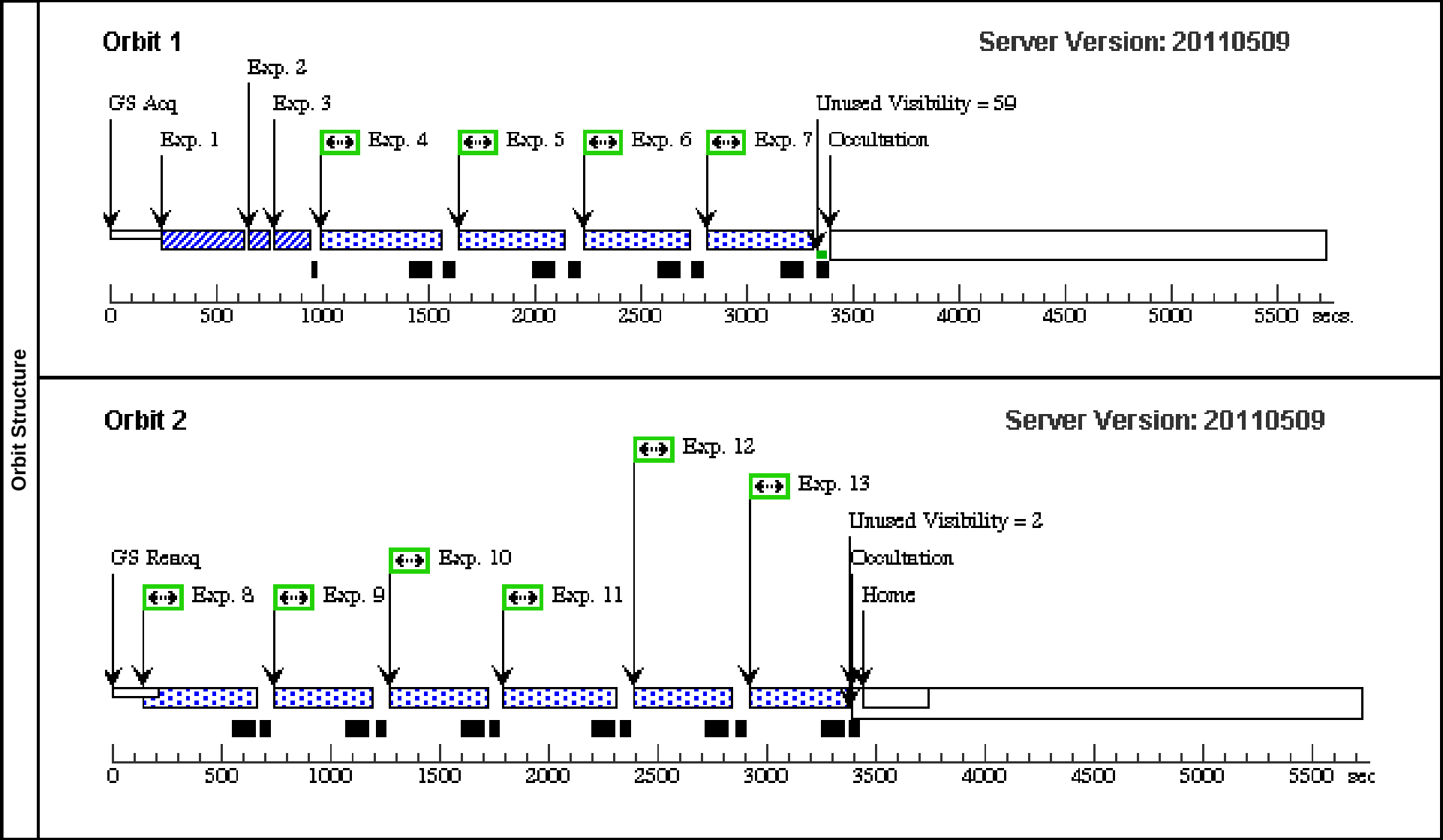
Proposal 12288 - Visit 01 - Hot Evolved Companions to Intermediate-Mass Main-Sequence Stars: Solving the Mystery of KOI-81

Visit	Proposal 12288, Visit 01, scheduling Tue Jun 14 01:02:19 GMT 2011				
	Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 23.875999 D AND ZERO-PHASE HJD2454976.07155 <i>Comments: Eclipse phase</i>				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(1)	KOI-81	RA: 19 35 8.5767 (293.7857362d)		V=11.33064
		Alt Name1: N2K9001230	Dec: +45 01 6.36 (45.01843d)		Reference Frame: ICRS
			Equinox: J2000		
	<i>Comments: This object was generated by the targetselector and retrieved from the GSC 2.3 database.</i>				

Proposal 12288 - Visit 01 - Hot Evolved Companions to Intermediate-Mass Main-Sequence Stars: Solving the Mystery of KOI-81

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	Dispersed acquisition	(1) KOI-81	COS/FUV, ACQ/SEARCH, PSA	G130M 1300 A	CENTER=FLUX-W T-FLR; SCAN-SIZE=3; STEP-SIZE=1.766	PHASE 0.493 TO 0.5032		3.2 Secs [==>]	[1]
	Comments: Dispersed light target acquisition for S/N=40									
	2	Cross disp. peakup	(1) KOI-81	COS/FUV, ACQ/PEAKXD, PSA	G130M 1300 A				3.0 Secs [==>]	[1]
	Comments: Cross dispersion peak up for S/N=70									
	3	Disp. peakup	(1) KOI-81	COS/FUV, ACQ/PEAKD, PSA	G130M 1300 A	CENTER=FLUX-W T-FLR; NUM-POS=5; STEP-SIZE=0.9			3.0 Secs [==>]	[1]
	4	1300 FP1	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	FP-POS=1; BUFFER-TIME=315			430. Secs [==>447.0 Secs]	[1]
	Comments: Science exposure									
	5	1300 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=315; FP-POS=2			430. Secs [==>447.0 Secs]	[1]
	Comments: second science exposure									
	6	1300 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=315; FP-POS=3			430 Secs [==>447.0 Secs]	[1]
	Comments: third science exposure									
	7	1300 FP4	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=315; FP-POS=4			430. Secs [==>447.0 Secs]	[1]
	Comments: fourth science exposure									
	8	1318 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=300; FP-POS=2			399 Secs [==>]	[2]
	Comments: third science exposure									
	9	1318 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=300; FP-POS=3			399 Secs [==>]	[2]
	Comments: third science exposure									
	10	1318 FP4	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=300; FP-POS=4			399. Secs [==>]	[2]
	Comments: fourth science exposure									
	11	1309 FP1	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	FP-POS=1; BUFFER-TIME=300			399 Secs [==>]	[2]
	Comments: Science exposure									

12	1309 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=30 0; FP-POS=2	399 Secs [==>]	[2]
Comments: second science exposure							
13	1309 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=30 0; FP-POS=3	399 Secs [==>]	[2]
Comments: third science exposure							



Proposal 12288 - Visit 02 - Hot Evolved Companions to Intermediate-Mass Main-Sequence Stars: Solving the Mystery of KOI-81

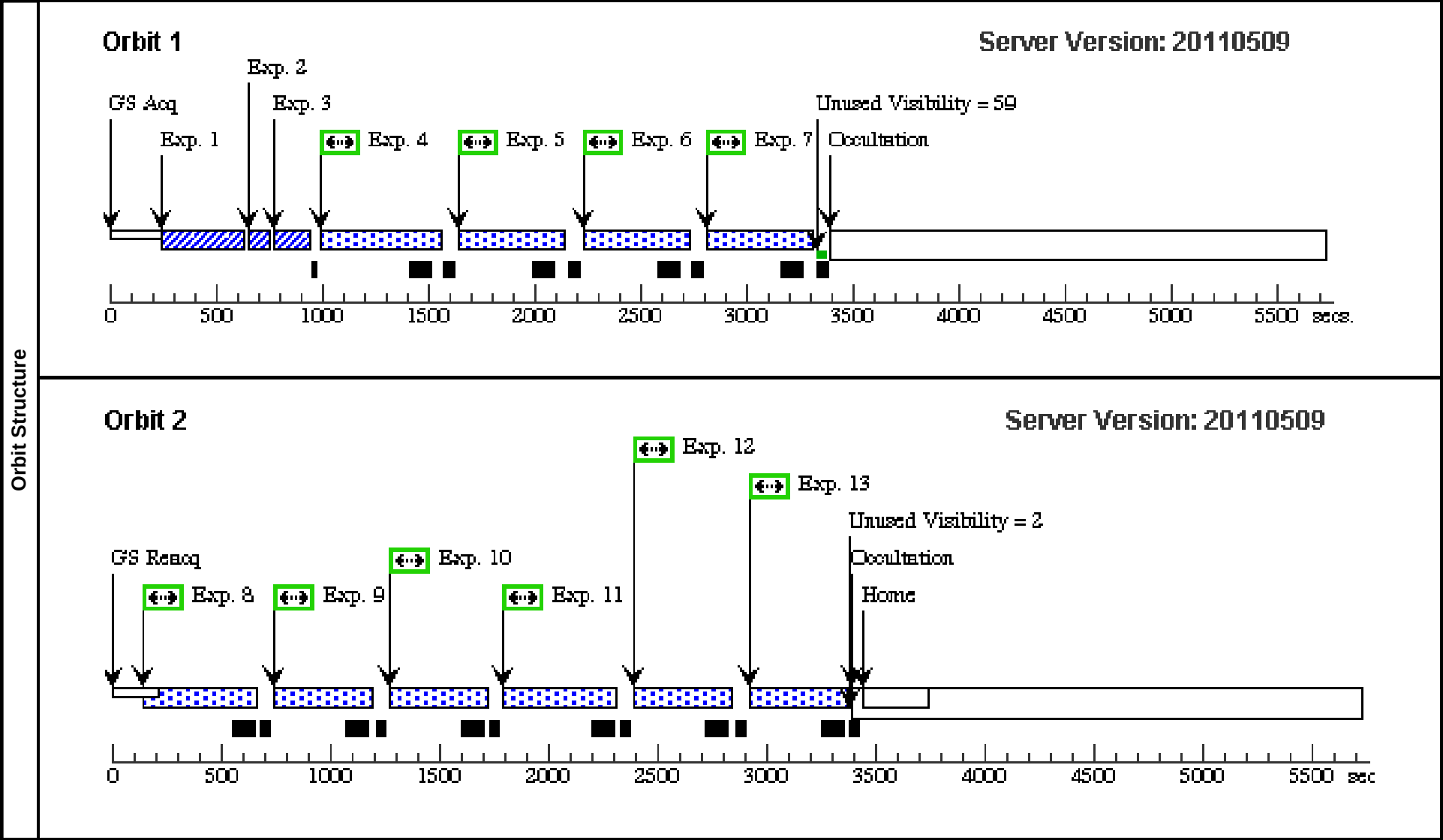
Visit	Proposal 12288, Visit 02, scheduling Tue Jun 14 01:02:22 GMT 2011				
	Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 23.875999 D AND ZERO-PHASE HJD2454976.07155 <i>Comments: first low velocity phase</i>				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(1)	KOI-81	RA: 19 35 8.5767 (293.7857362d)		V=11.33064
		Alt Name1: N2K9001230	Dec: +45 01 6.36 (45.01843d)		Reference Frame: ICRS
			Equinox: J2000		
	<i>Comments: This object was generated by the targetselector and retrieved from the GSC 2.3 database.</i>				

Proposal 12288 - Visit 02 - Hot Evolved Companions to Intermediate-Mass Main-Sequence Stars: Solving the Mystery of KOI-81

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	Dispersed ac quisition	(1) KOI-81	COS/FUV, ACQ/SEARCH, PSA	G130M 1300 A	CENTER=FLUX-W T-FLR; SCAN-SIZE=3; STEP-SIZE=1.766	PHASE 0.15 TO 0.3 5		3.2 Secs [==>]	[1]
	Comments: DIspersed light target acquisition for S/N=40									
	2	Cross disp. peakup	(1) KOI-81	COS/FUV, ACQ/PEAKXD, PSA	G130M 1300 A				3.0 Secs [==>]	[1]
	Comments: Cross dispersion peak up for S/N=70									
	3	Disp. peakup	(1) KOI-81	COS/FUV, ACQ/PEAKD, PSA	G130M 1300 A	CENTER=FLUX-W T-FLR; NUM-POS=5; STEP-SIZE=0.9			3.0 Secs [==>]	[1]
	4	1300 FP1	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	FP-POS=1; BUFFER-TIME=31 5			430. Secs [==>447.0 Secs]	[1]
	Comments: Science exposure									
	5	1300 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=31 5; FP-POS=2			430. Secs [==>447.0 Secs]	[1]
	Comments: second science exposure									
	6	1300 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=31 5; FP-POS=3			430 Secs [==>447.0 Secs]	[1]
	Comments: third science exposure									
	7	1300 FP4	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=31 5; FP-POS=4			430. Secs [==>447.0 Secs]	[1]
	Comments: fourth science exposure									
	8	1318 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=30 0; FP-POS=2			399 Secs [==>]	[2]
	Comments: third science exposure									
	9	1318 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=30 0; FP-POS=3			399 Secs [==>]	[2]
	Comments: third science exposure									
	10	1318 FP4	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=30 0; FP-POS=4			399. Secs [==>]	[2]
	Comments: fourth science exposure									
	11	1309 FP1	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	FP-POS=1; BUFFER-TIME=30 0			399 Secs [==>]	[2]
	Comments: Science exposure									

Proposal 12288 - Visit 02 - Hot Evolved Companions to Intermediate-Mass Main-Sequence Stars: Solving the Mystery of KOI-81

12	1309 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=30 0; FP-POS=2	399 Secs [==>]	[2]
Comments: second science exposure							
13	1309 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=30 0; FP-POS=3	399 Secs [==>]	[2]
Comments: third science exposure							



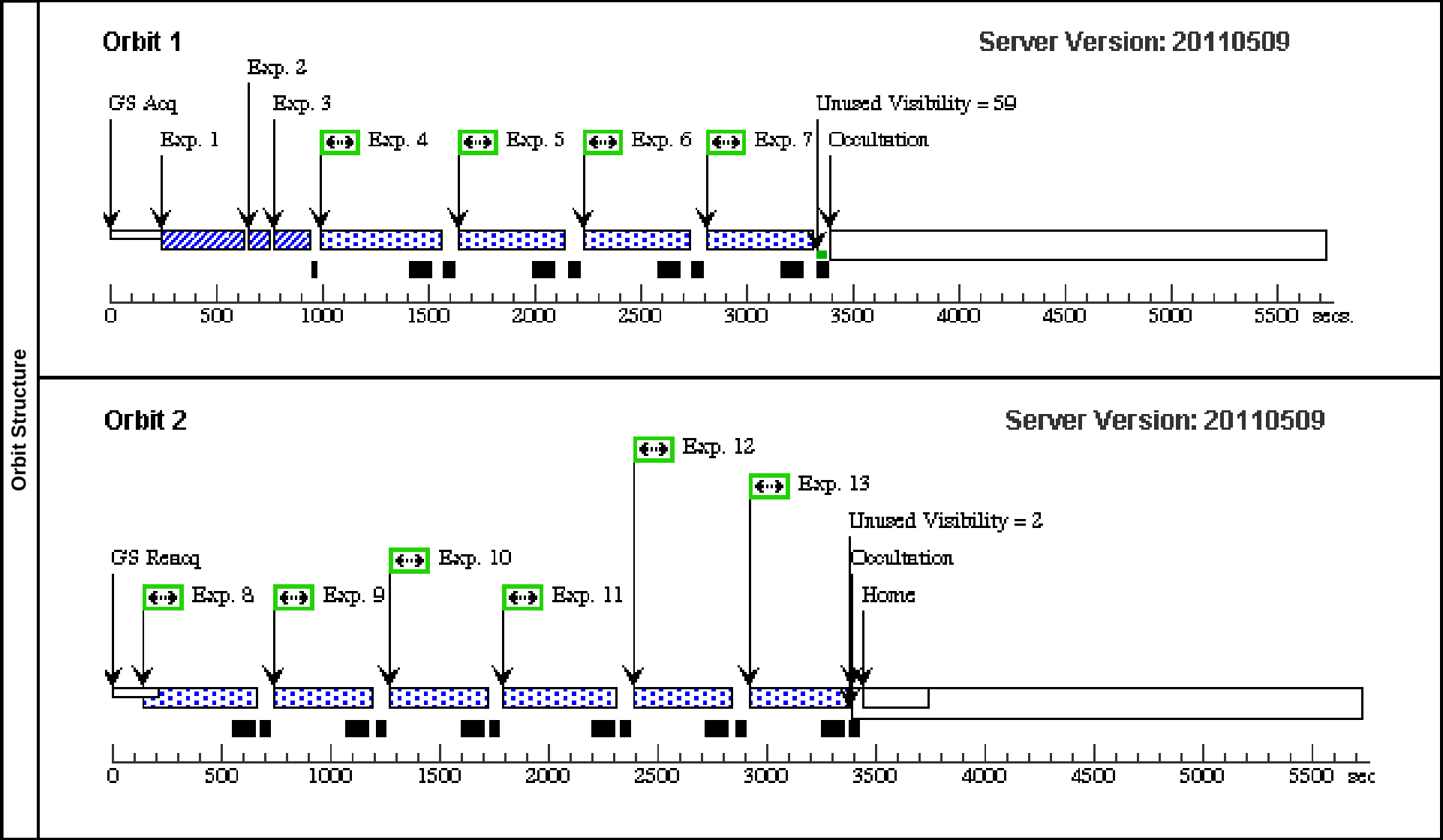
Proposal 12288 - Visit 03 - Hot Evolved Companions to Intermediate-Mass Main-Sequence Stars: Solving the Mystery of KOI-81

Visit	Proposal 12288, Visit 03, scheduling Tue Jun 14 01:02:23 GMT 2011				
	Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 23.875999 D AND ZERO-PHASE HJD2454976.07155 <i>Comments: second low velocity phase</i>				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(1)	KOI-81	RA: 19 35 8.5767 (293.7857362d)		V=11.33064
		Alt Name1: N2K9001230	Dec: +45 01 6.36 (45.01843d)		Reference Frame: ICRS
			Equinox: J2000		
	<i>Comments: This object was generated by the targetselector and retrieved from the GSC 2.3 database.</i>				

Proposal 12288 - Visit 03 - Hot Evolved Companions to Intermediate-Mass Main-Sequence Stars: Solving the Mystery of KOI-81

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	Dispersed ac quisition	(1) KOI-81	COS/FUV, ACQ/SEARCH, PSA	G130M 1300 A	CENTER=FLUX-W T-FLR; SCAN-SIZE=3; STEP-SIZE=1.766	PHASE 0.15 TO 0.3 5		3.2 Secs [==>]	[1]
	Comments: DIspersed light target acquisition for S/N=40									
	2	Cross disp. peakup	(1) KOI-81	COS/FUV, ACQ/PEAKXD, PSA	G130M 1300 A				3.0 Secs [==>]	[1]
	Comments: Cross dispersion peak up for S/N=70									
	3	Disp. peakup	(1) KOI-81	COS/FUV, ACQ/PEAKD, PSA	G130M 1300 A	CENTER=FLUX-W T-FLR; NUM-POS=5; STEP-SIZE=0.9			3.0 Secs [==>]	[1]
	4	1300 FP1	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	FP-POS=1; BUFFER-TIME=31 5			430. Secs [==>447.0 Secs]	[1]
	Comments: Science exposure									
	5	1300 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=31 5; FP-POS=2			430. Secs [==>447.0 Secs]	[1]
	Comments: second science exposure									
	6	1300 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=31 5; FP-POS=3			430 Secs [==>447.0 Secs]	[1]
	Comments: third science exposure									
	7	1300 FP4	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=31 5; FP-POS=4			430. Secs [==>447.0 Secs]	[1]
	Comments: fourth science exposure									
	8	1318 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=30 0; FP-POS=2			399 Secs [==>]	[2]
	Comments: third science exposure									
	9	1318 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=30 0; FP-POS=3			399 Secs [==>]	[2]
	Comments: third science exposure									
	10	1318 FP4	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=30 0; FP-POS=4			399. Secs [==>]	[2]
	Comments: fourth science exposure									
	11	1309 FP1	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	FP-POS=1; BUFFER-TIME=30 0			399 Secs [==>]	[2]
	Comments: Science exposure									

12	1309 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=30 0; FP-POS=2	399 Secs [==>]	[2]
Comments: second science exposure							
13	1309 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=30 0; FP-POS=3	399 Secs [==>]	[2]
Comments: third science exposure							



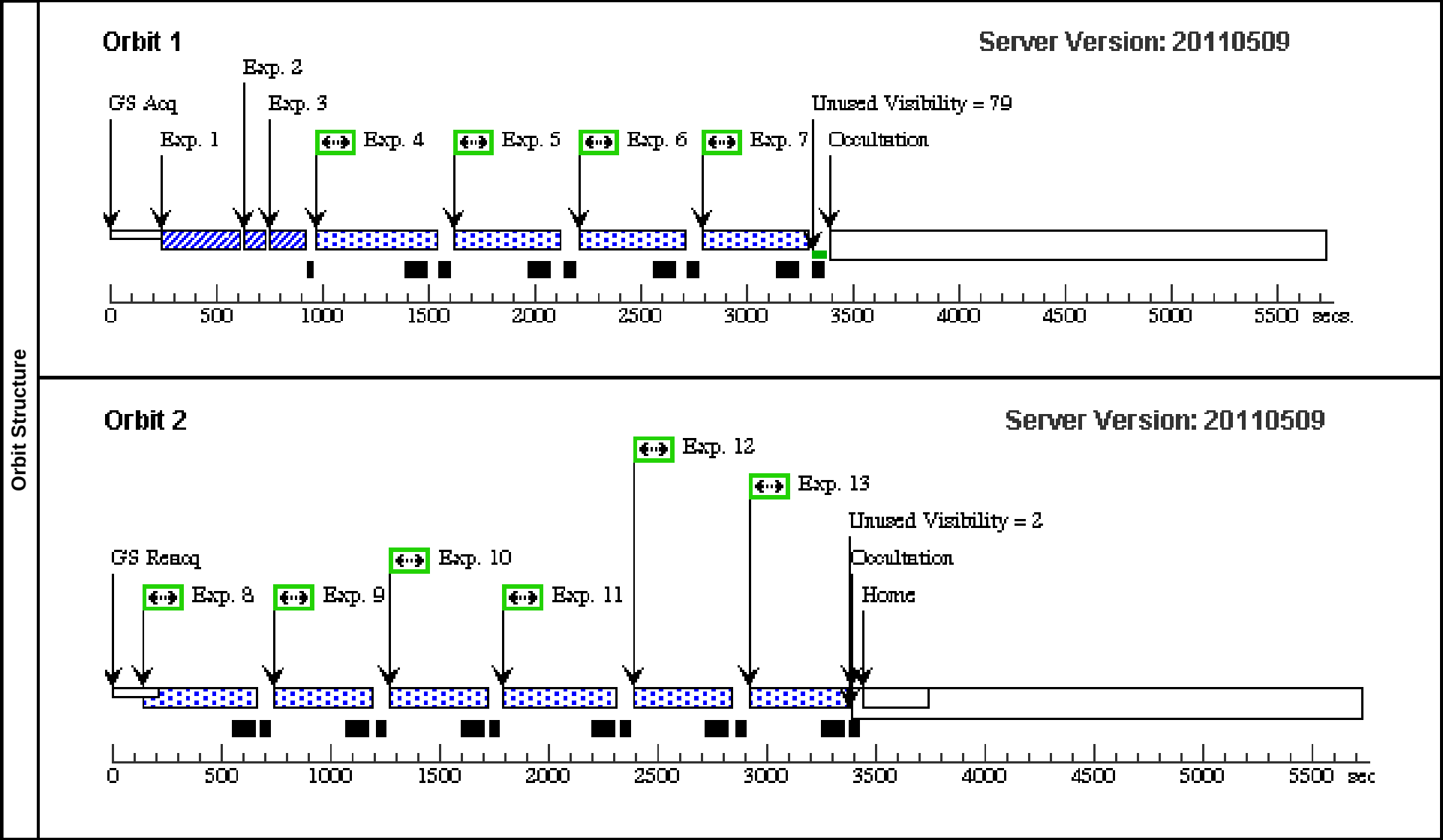
Proposal 12288 - Visit 04 - Hot Evolved Companions to Intermediate-Mass Main-Sequence Stars: Solving the Mystery of KOI-81

Visit	Proposal 12288, Visit 04, scheduled Tue Jun 14 01:02:24 GMT 2011				
	Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 23.87752 D AND ZERO-PHASE HJD2454976.06983 <i>Comments: first high velocity phase</i>				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(1)	KOI-81	RA: 19 35 8.5767 (293.7857362d)		V=11.33064
		Alt Name1: N2K9001230	Dec: +45 01 6.36 (45.01843d)		Reference Frame: ICRS
			Equinox: J2000		
	<i>Comments: This object was generated by the targetselector and retrieved from the GSC 2.3 database.</i>				

Proposal 12288 - Visit 04 - Hot Evolved Companions to Intermediate-Mass Main-Sequence Stars: Solving the Mystery of KOI-81

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	Dispersed ac quisition	(1) KOI-81	COS/FUV, ACQ/SEARCH, PSA	G130M 1300 A	CENTER=FLUX-W T-FLR; SCAN-SIZE=3; STEP-SIZE=1.766	PHASE 0.65 TO 0.8 5		1.0 Secs [==>]	[1]
	Comments: DIspersed light target acquisition for S/N=40									
	2	Cross disp. peakup	(1) KOI-81	COS/FUV, ACQ/PEAKXD, PSA	G130M 1300 A				3.0 Secs [==>]	[1]
	Comments: Cross dispersion peak up for S/N=70									
	3	Disp. peakup	(1) KOI-81	COS/FUV, ACQ/PEAKD, PSA	G130M 1300 A	CENTER=FLUX-W T-FLR; NUM-POS=5; STEP-SIZE=0.9			3.0 Secs [==>]	[1]
	4	1300 FP1	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	FP-POS=1; BUFFER-TIME=31 5			430. Secs [==>447.0 Secs]	[1]
	Comments: Science exposure									
	5	1300 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=31 5; FP-POS=2			430. Secs [==>447.0 Secs]	[1]
	Comments: second science exposure									
	6	1300 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=31 5; FP-POS=3			430 Secs [==>447.0 Secs]	[1]
	Comments: third science exposure									
	7	1300 FP4	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=31 5; FP-POS=4			430. Secs [==>447.0 Secs]	[1]
	Comments: fourth science exposure									
	8	1318 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=30 0; FP-POS=2			399 Secs [==>]	[2]
	Comments: third science exposure									
	9	1318 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=30 0; FP-POS=3			399 Secs [==>]	[2]
	Comments: third science exposure									
	10	1318 FP4	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=30 0; FP-POS=4			399. Secs [==>]	[2]
	Comments: fourth science exposure									
	11	1309 FP1	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	FP-POS=1; BUFFER-TIME=30 0			399 Secs [==>]	[2]
	Comments: Science exposure									

12	1309 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=30 0; FP-POS=2	399 Secs [==>]	[2]
Comments: second science exposure							
13	1309 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=30 0; FP-POS=3	399 Secs [==>]	[2]
Comments: third science exposure							



Proposal 12288 - Visit 05 - Hot Evolved Companions to Intermediate-Mass Main-Sequence Stars: Solving the Mystery of KOI-81

Visit	Proposal 12288, Visit 05, scheduling Tue Jun 14 01:02:25 GMT 2011				
	Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV Special Requirements: Period 23.875999 D AND ZERO-PHASE HJD2454976.07155 <i>Comments: second high velocity phase</i>				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(1)	KOI-81	RA: 19 35 8.5767 (293.7857362d)		V=11.33064
		Alt Name1: N2K9001230	Dec: +45 01 6.36 (45.01843d)		Reference Frame: ICRS
			Equinox: J2000		
	<i>Comments: This object was generated by the targetselector and retrieved from the GSC 2.3 database.</i>				

Proposal 12288 - Visit 05 - Hot Evolved Companions to Intermediate-Mass Main-Sequence Stars: Solving the Mystery of KOI-81

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	Dispersed ac quisition	(1) KOI-81	COS/FUV, ACQ/SEARCH, PSA	G130M 1300 A	CENTER=FLUX-W T-FLR; SCAN-SIZE=3; STEP-SIZE=1.766	PHASE 0.65 TO 0.8 5		3.2 Secs [==>]	[1]
	Comments: DIspersed light target acquisition for S/N=40									
	2	Cross disp. peakup	(1) KOI-81	COS/FUV, ACQ/PEAKXD, PSA	G130M 1300 A				3.0 Secs [==>]	[1]
	Comments: Cross dispersion peak up for S/N=70									
	3	Disp. peakup	(1) KOI-81	COS/FUV, ACQ/PEAKD, PSA	G130M 1300 A	CENTER=FLUX-W T-FLR; NUM-POS=5; STEP-SIZE=0.9			3.0 Secs [==>]	[1]
	4	1300 FP1	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	FP-POS=1; BUFFER-TIME=31 5			430. Secs [==>447.0 Secs]	[1]
	Comments: Science exposure									
	5	1300 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=31 5; FP-POS=2			430. Secs [==>447.0 Secs]	[1]
	Comments: second science exposure									
	6	1300 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=31 5; FP-POS=3			430 Secs [==>447.0 Secs]	[1]
	Comments: third science exposure									
	7	1300 FP4	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=31 5; FP-POS=4			430. Secs [==>447.0 Secs]	[1]
	Comments: fourth science exposure									
	8	1318 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=30 0; FP-POS=2			399 Secs [==>]	[2]
	Comments: third science exposure									
	9	1318 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=30 0; FP-POS=3			399 Secs [==>]	[2]
	Comments: third science exposure									
	10	1318 FP4	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=30 0; FP-POS=4			399. Secs [==>]	[2]
	Comments: fourth science exposure									
	11	1309 FP1	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	FP-POS=1; BUFFER-TIME=30 0			399 Secs [==>]	[2]
	Comments: Science exposure									

12	1309 FP2	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=30 0; FP-POS=2	399 Secs [==>]	[2]
Comments: second science exposure							
13	1309 FP3	(1) KOI-81	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=30 0; FP-POS=3	399 Secs [==>]	[2]
Comments: third science exposure							

