



11199 - A Hard Look at Stellar Disks at the Epoch of Planet Formation

Cycle: 16, 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>
01	(1) OB1A-776	ACS/SBC	1	28-Sep-2007 11:33:48.0	yes
02	(2) OB1A-1192	ACS/SBC	1	28-Sep-2007 11:33:52.0	yes
03	(3) OB1A-1200	ACS/SBC	2	28-Sep-2007 11:33:54.0	yes
04	(4) OB1A-1630	ACS/SBC	2	28-Sep-2007 11:33:57.0	yes

6 Total Orbits Used

ABSTRACT

We propose to use HST/ACS/SBC and Chandra/ACIS-S3 to observe the high energy fluxes of 4 stars surrounded by disks in the newly discovered aggregate 25 Ori, the most populous 10 Myr group known within 500 pc. Our observations will cover the 1-25Å and 1250-2000Å bandpasses, and will complement our optical and Spitzer data for these objects, to provide essential input to physically-consistent models of disk structure and chemistry in the age range around 10 Myr, thought to be a critical period in the planet-forming process. We will be able to determine the Ne/O ratio and determine if the anomalous metal abundances observed in X-ray spectra of young stars are an evolutionary or an environmental effect. Our proposed observations will double the number of 10 Myr old accreting stars with known high energy radiation fields, and will be the first FUV observations of low mass accreting stars in an OB association.

OBSERVING DESCRIPTION

ACS prism observations are being made of 4 young stellar objects in 25 Ori to study the FUV continuum of these objects. The spectral element is the PR130L being used with the ACS/SBC. A single observation of an orbit in length is scheduled for OB1A-776 and OB1A-1192. For OB1A-1200 and OB1A-1630, the observation will be 2 orbits in length. A pair of short observations is also scheduled, as these are needed for wavelength calibration. The pair of short images is being taken with the F140LP filter on the SBC/ACS.

ADDITIONAL COMMENTS

One of our targets (OB1A-1192) was identified by the BOT tool as posing a hazard to the ACS/SBC based on assuming an incorrect spectral type of O5. The correct spectral type for this object is K7. Within the visit for this object, BOT also identifies the following target as a hazard: N91A012945 at 05 25 47, +01 45 38.34. However, plotting this object on a 2MASS color-color diagram shows that it cannot be higher than an F0 star and it therefore falls within the limits of Table 7.4 in the ACS handbook.

Proposal 11199 - Visit 01 - A Hard Look at Stellar Disks at the Epoch of Planet Formation

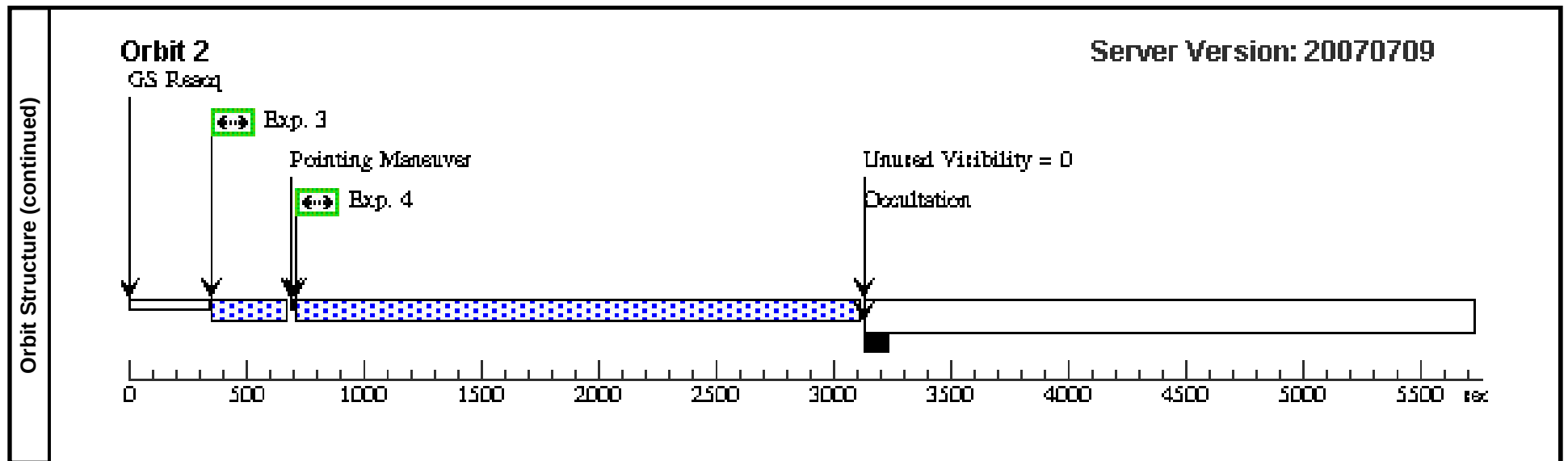
Visit	Proposal 11199, Visit 01 Fri Sep 28 15:34:00 GMT 2007									
	Diagnostic Status: No Diagnostics Scientific Instruments: ACS/SBC Special Requirements: (none)									
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous	
	(1)	OB1A-776	RA: 05 24 41.0400 (81.1710000d) Dec: +01 54 38.63 (1.91073d) Equinox: J2000				V=14.93		Reference Frame: 2MASS	
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	OB1A-776	(1) OB1A-776	ACS/SBC, ACCUM, SBC	F140LP				360.0 Secs X 2	
									[=>108.0 Secs (Copy 1)]	
									[=>108.0 Secs (Copy 2)]	[1]
	2	OB1A-776	(1) OB1A-776	ACS/SBC, ACCUM, SBC	PR130L				1800.0 Secs X 2	
									[=>1148.0 Secs (Copy 1)]	
									[=>1148.0 Secs (Copy 2)]	[1]
Orbit Structure	Orbit 1 Server Version: 20070709									
	GS Acq Exp. 1, copy 1 Exp. 1, copy 2 Pointing Maneuver Exp. 2, copy 1 Exp. 2, copy 2 Occultation Unused Visibility = 0 0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec									

Proposal 11199 - Visit 02 - A Hard Look at Stellar Disks at the Epoch of Planet Formation

Visit	Proposal 11199, Visit 02										Fri Sep 28 15:34:01 GMT 2007																									
	Diagnostic Status: No Diagnostics																																			
	Scientific Instruments: ACS/SBC																																			
	Special Requirements: (none)																																			
Fixed Targets	#	Name		Target Coordinates				Targ. Coord. Corrections				Fluxes				Miscellaneous																				
	(2)	OB1A-1192		RA: 05 25 45.8900 (81.4412083d) Dec: +01 45 50.08 (1.76391d) Equinox: J2000								V=14.72				Reference Frame: 2MASS																				
Exposures	#	Label	Target	Config,Mode,Aperture				Spectral Els.		Opt. Params.		Special Reqs.		Groups		Exp. Time/[Actual Dur.]		Orbit																		
	1	OB1A-1192	(2) OB1A-1192	ACS/SBC, ACCUM, SBC				F140LP								360.0 Secs X 2																				
																[=>108.0 Secs (Copy 1)]																				
																[=>108.0 Secs (Copy 2)]		[1]																		
	2	OB1A-1192	(2) OB1A-1192	ACS/SBC, ACCUM, SBC				PR130L								1800.0 Secs X 2																				
																[=>1148.0 Secs (Copy 1)]																				
															[=>1148.0 Secs (Copy 2)]		[1]																			
Orbit Structure	Orbit 1 Server Version: 20070709 Timeline details: <table border="1"><thead><tr><th>Event</th><th>Approx. Time (s)</th></tr></thead><tbody><tr><td>GS Acq</td><td>200</td></tr><tr><td>Exp. 1, copy 1</td><td>400</td></tr><tr><td>Exp. 1, copy 2</td><td>600</td></tr><tr><td>Pointing Maneuver</td><td>700</td></tr><tr><td>Exp. 2, copy 1</td><td>800</td></tr><tr><td>Exp. 2, copy 2</td><td>2000</td></tr><tr><td>Occultation</td><td>3200</td></tr></tbody></table>																				Event	Approx. Time (s)	GS Acq	200	Exp. 1, copy 1	400	Exp. 1, copy 2	600	Pointing Maneuver	700	Exp. 2, copy 1	800	Exp. 2, copy 2	2000	Occultation	3200
	Event	Approx. Time (s)																																		
GS Acq	200																																			
Exp. 1, copy 1	400																																			
Exp. 1, copy 2	600																																			
Pointing Maneuver	700																																			
Exp. 2, copy 1	800																																			
Exp. 2, copy 2	2000																																			
Occultation	3200																																			

Proposal 11199 - Visit 03 - A Hard Look at Stellar Disks at the Epoch of Planet Formation

Visit	Proposal 11199, Visit 03									Fri Sep 28 15:34:02 GMT 2007		
	Diagnostic Status: No Diagnostics											
	Scientific Instruments: ACS/SBC											
	Special Requirements: (none)											
Fixed Targets	#	Name		Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(3)	OB1A-1200		RA: 05 25 46.7500 (81.4447917d) Dec: +01 43 30.30 (1.72508d) Equinox: J2000				V=17.21		Reference Frame: 2MASS		
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.		Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	OB1A-1200	(3) OB1A-1200	ACS/SBC, ACCUM, SBC		F140LP					360.0 Secs	
											[>=>256.0 Secs]	[1]
	2	OB1A-1200	(3) OB1A-1200	ACS/SBC, ACCUM, SBC		PR130L					2600.0 Secs	
											[>=>2313.0 Secs]	[1]
	3	OB1A-1200	(3) OB1A-1200	ACS/SBC, ACCUM, SBC		F140LP					360.0 Secs	
											[>=>256.0 Secs]	[2]
	4	OB1A-1200	(3) OB1A-1200	ACS/SBC, ACCUM, SBC		PR130L					2600.0 Secs	
											[>=>2336.0 Secs]	[2]
Orbit Structure	Orbit 1 GS Acq Exp. 1 Pointing Maneuver Exp. 2 Pointing Maneuver Unused Visibility = 0 Occultation Server Version: 20070709											



Proposal 11199 - Visit 04 - A Hard Look at Stellar Disks at the Epoch of Planet Formation

Visit	Proposal 11199, Visit 04									Fri Sep 28 15:34:02 GMT 2007		
	Diagnostic Status: No Diagnostics											
	Scientific Instruments: ACS/SBC											
	Special Requirements: (none)											
Fixed Targets	#	Name		Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(4)	OB1A-1630		RA: 05 26 55.3800 (81.7307500d) Dec: +01 40 22.48 (1.67291d) Equinox: J2000				V=16.68		Reference Frame: 2MASS		
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit
	1	OB1A-1630	(4) OB1A-1630	ACS/SBC, ACCUM, SBC		F140LP				360.0 Secs		
										[>=>256.0 Secs]		[1]
	2	OB1A-1630	(4) OB1A-1630	ACS/SBC, ACCUM, SBC		PR130L				2600.0 Secs		
										[>=>2313.0 Secs]		[1]
	3	OB1A-1630	(4) OB1A-1630	ACS/SBC, ACCUM, SBC		F140LP				360.0 Secs		
										[>=>256.0 Secs]		[2]
	4	OB1A-1630	(4) OB1A-1630	ACS/SBC, ACCUM, SBC		PR130L				2600.0 Secs		
										[>=>2336.0 Secs]		[2]
Orbit Structure	Orbit 1 GS Acq Exp. 1 Pointing Mansuwer Exp. 2 Pointing Mansuwer Occultation Unreded Visibilibity = 0 Server Version: 20070709 