



18434 - UV pulsations in accreting millisecond pulsars: a new window on the pulsar-disk interaction

Cycle: 34, Proposal Category: GO

(Availability Mode: SUPPORTED)

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VISITS

Visit	Targets used in Visit	Configurations used in Visit	Orbits Used	Last Orbit Planner Run	OP Current with Visit?
01	(2) SAX-J1808.4-3658	STIS/CCD STIS/NUV-MAMA	1	11-Aug-2026 11:00:50.0	yes
02	(3) V-V1037-CAS	STIS/CCD STIS/NUV-MAMA	1	11-Aug-2026 11:00:51.0	yes
03	(4) V-BW-ANT	STIS/CCD STIS/NUV-MAMA	1	11-Aug-2026 11:00:51.0	yes
04	(5) V-V5511-SGR	STIS/CCD STIS/NUV-MAMA	1	11-Aug-2026 11:00:51.0	yes
05	(6) IGR-J17511-3057	STIS/CCD STIS/NUV-MAMA	1	11-Aug-2026 11:00:52.0	yes
06	(7) 2MAXI-J1900-248	STIS/CCD STIS/NUV-MAMA	1	11-Aug-2026 11:00:52.0	yes
07	(8) KRL2007B-291	STIS/CCD STIS/NUV-MAMA	1	11-Aug-2026 11:00:53.0	yes
08	(9) KRL2007B-304	STIS/CCD STIS/NUV-MAMA	1	11-Aug-2026 11:00:53.0	yes
09	(10) IGR-J17494-3030	STIS/CCD STIS/NUV-MAMA	1	11-Aug-2026 11:00:53.0	yes
10	(11) XTE-J1737-376	STIS/CCD STIS/NUV-MAMA	1	11-Aug-2026 11:00:54.0	yes
11	(12) IGR-J18245-2452	STIS/CCD STIS/NUV-MAMA	1	11-Aug-2026 11:00:54.0	yes
12	(1) GENERIC-AMSP	STIS/CCD STIS/NUV-MAMA	1	11-Aug-2026 11:00:55.0	yes

12 Total Orbits Used

ABSTRACT

Accreting millisecond pulsars (AMSPs) are the fastest-spinning neutron stars known, typically powered by mass transfer from a companion. However, the 2019 HST discovery of ultraviolet millisecond pulsations in SAX J1808.4-3658 challenged this paradigm, suggesting that magnetospheric particle acceleration can occur even during active accretion. The physical origin of these UV pulses remains one of the most intriguing mysteries in pulsar physics. We propose a disruptive Target of Opportunity program to observe one AMSP in outburst using the HST/STIS NUV-MAMA in TIME-TAG mode for 1 HST orbit. By timing UV pulsations across different accretion regimes, we aim to constrain the pulsar-disk interaction and the evolution of the emission mechanism during the outburst cycle. HST/STIS in TIME-TAG mode is the only facility capable of providing the temporal resolution and UV sensitivity required to resolve these signals, which are currently inaccessible from the ground or other space telescopes. To maximize the scientific return, each HST trigger will be supported by (quasi-)simultaneous X-ray monitoring with EP/FXT through pre-established collaboration. This synergy will provide the X-ray spectral context and the precise ephemeris required to fold the UV photons and search for coherent pulsations.

OBSERVING DESCRIPTION

The unpredictable, short-lived nature of AMSP outbursts, which typically peak and decay within a few weeks (Di Salvo & Sanna 2022; Patruno & Watts 2021; Campana & Di Salvo 2018), poses a strict time-criticality requiring a disruptive ToO activation. While scientific success does not exclusively depend on catching the outburst peak (given that UV pulsations remain detectable during the decay phase (Ambrosino et al. 2021; Ballocco et al. 2026)) prompt execution is essential to capture the source in an accretion state before it inevitably returns to quiescence.

We request the ToO observation to be performed using the STIS/NUV-MAMA detector in TIME-TAG mode (time resolution of 125 microseconds). This observation can only be carried out using instruments with a high temporal resolution (< 1 ms), capable of resolving millisecond pulsations in the UV band. There are no other instruments on ground-based telescopes suited to perform this type of UV-band study. STIS has successfully characterized fast variability in multiple fast pulsars (Sollerman et al. 2000; Romani et al. 2005; Shibano et al. 2005; Mignani et al. 2019; Jaodand et al. 2021; Ambrosino et al. 2021; Miraval Zanon et al. 2022; Baglio et al. 2023; Ballocco et al. 2026). We request the G230L grating (1600-3100 Å) with the 52x0.2 arcsec slit to ensure precise background subtraction for the pulsed component.

We propose to observe 1 known or newly discovered AMSP in outburst for 1 HST orbit. Following guidance from the HST Help Desk, the APT uses a single generic "AMSP" placeholder. This entry covers all known AMSPs with confirmed optical counterparts and established ephemerides, as well as any new discoveries. The specific target will be selected at the time of the trigger based on the criteria described below.

To assess the feasibility and ensure a conservative approach, we performed simulations using the STIS Exposure Time Calculator (ETC v. 34.1.1,

STIS.sp.2327962), adopting the parameters of one of the most distant and faint AMSP, XTE J0929-314 (Giles et al. 2005). We assumed an average magnitude during the outburst of $V = 18.8$ mag, an extinction of $E(B-V) = 0.2$ mag, and a blackbody model with $T = 15000$ K to represent the disk contribution (see Supplementary Table 1 from Ambrosino et al. 2021). Our simulations show that with one orbit (~ 2700 s of net integration), we obtain a Signal-to-Noise Ratio (SNR) > 9 per resolution element at 2376 Å. The total source counts integrated over the full NUV-MAMA bandpass exceed 6×10^4 photons. This photon statistics allow for a targeted single-trial search, exploiting the precise X-ray ephemeris from EP/FXT (obtained via priv. comm.), enabling the detection of millisecond pulsations with an amplitude as low as $\sim 2\%$ at a confidence level $> 3\sigma$ (Vaughan et al. 1994). This sensitivity threshold is well below the $\sim 4\%$ amplitude ($\sim 2.7\%$ r.m.s.) estimated for SAX J1808.4-3658 (Ambrosino et al. 2021), ensuring that we can significantly detect UV pulsations even in the faintest AMSP with 1 HST orbit.

To ensure the instrument safety according to the limits for irregularly variable sources (Table 7.8 from the STIS Instrument Handbook), we simulated an extremely bright AMSP at its outburst peak ($V = 15$ mag, $E(B-V) = 0.1$), with a $T = 25000$ K blackbody model to account for the maximum expected UV flux (STIS ETC v.32.2; STIS.sp.2320384). The global and peak local count rates are ~ 2953 counts/s and a ~ 1.1 counts/s/pixel, respectively, well below the required limits.

Proposal 18434 - Visit 01 - UV pulsations in accreting millisecond pulsars: a new window on the pulsar-disk interaction

Visit	Proposal 18434, Visit 01, implementation									Tue Aug 11 15:00:55 GMT 2026	
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: STIS/NUV-MAMA, STIS/CCD										
	Special Requirements: TOO MIN RESPONSE TIME 2.0D; TOO MAX RESPONSE TIME 14.0D										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous					
	(2)	SAX-J1808.4-3658	RA: 18 08 27.5800 (272.1149167d) Dec: -36 58 43.90 (-36.97886d) Equinox: J2000	Epoch of Position: 2000	V=17.6	Reference Frame: ICRS					
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.										
	Category=STAR Description=[BINARY PULSAR, LMXB, NEUTRON STAR]										
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
	1	(STIS.ta.236 0369)	(2) SAX-J1808.4-3658	STIS/CCD, ACQ, F28X50LP	MIRROR				5 Secs (5 Secs)		
									[==>]	[1]	
	2	(STIS.sp.23 20384)	(2) SAX-J1808.4-3658	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230L 2376 A	BUFFER-TIME=60 0			2000 Secs (2000 Secs)		
								[==>]	[1]		
Orbit Structure	Orbit 1										Server Version: 20260618

Proposal 18434 - Visit 02 - UV pulsations in accreting millisecond pulsars: a new window on the pulsar-disk interaction

Visit	Proposal 18434, Visit 02, implementation										Tue Aug 11 15:00:55 GMT 2026
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: STIS/NUV-MAMA, STIS/CCD										
	Special Requirements: TOO MIN RESPONSE TIME 2.0D; TOO MAX RESPONSE TIME 14.0D										
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(3)	V-V1037-CAS	RA: 00 29 3.0600 (7.2627500d)		Epoch of Position: 2000		V=17.4		Reference Frame: ICRS		
		Alt Name1: IGR-J00291+5934	Dec: +59 34 19.00 (59.57194d)								
			Equinox: J2000								
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.										
	Category=STAR										
	Description=[BINARY PULSAR, LMXB, NEUTRON STAR]										
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(STIS.ta.236 0368)	(3) V-V1037-CAS	STIS/CCD, ACQ, F28X50LP		MIRROR				4 Secs (4 Secs)	
										[==>]	[1]
	2	(STIS.sp.23 20384)	(3) V-V1037-CAS	STIS/NUV-MAMA, TIME-TAG, 52X0.2		G230L 2376 A	BUFFER-TIME=60 0			2000 Secs (2000 Secs)	
										[==>]	[1]
Orbit Structure	Orbit 1 Server Version: 20260618 The diagram shows a timeline from 0 to 6000 seconds. Key events include: GS Acq at ~100s, Exp. 1 at ~400s, Pointing Maneuver at ~600s, Exp. 2 (Auto-WAVECAL) at ~800s, Exp. 2 (green box) at ~900s, Unused Orbital Visibility = 121 at ~2900s, Occultation at ~3000s, and Home at ~3100s. The timeline is divided into segments with different patterns: blue diagonal lines, green, blue checkered, and white.										

Proposal 18434 - Visit 03 - UV pulsations in accreting millisecond pulsars: a new window on the pulsar-disk interaction

Visit	Proposal 18434, Visit 03, implementation					Tue Aug 11 15:00:55 GMT 2026				
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: STIS/NUV-MAMA, STIS/CCD									
	Special Requirements: TOO MIN RESPONSE TIME 2.0D; TOO MAX RESPONSE TIME 14.0D									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(4)	V-BW-ANT	RA: 09 29 20.1900 (142.3341250d)	Epoch of Position: 2000	V=18.8	Reference Frame: ICRS				
		Alt Name1: XTE-J0929-314	Dec: -31 23 3.20 (-31.38422d)							
			Equinox: J2000							
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.										
Category=STAR										
Description=[BINARY PULSAR, LMXB, NEUTRON STAR]										
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(STIS.ta.236 0370)	(4) V-BW-ANT	STIS/CCD, ACQ, F28X50LP	MIRROR				14 Secs (14 Secs)	
									[==>]	[1]
	2	(STIS.sp.23 20384)	(4) V-BW-ANT	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230L 2376 A	BUFFER-TIME=60 0			2000 Secs (2000 Secs)	
									[==>]	[1]
Orbit Structure	Orbit 1									
	Server Version: 20260618									

Proposal 18434 - Visit 04 - UV pulsations in accreting millisecond pulsars: a new window on the pulsar-disk interaction

Visit	Proposal 18434, Visit 04, implementation					Tue Aug 11 15:00:55 GMT 2026				
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: STIS/NUV-MAMA, STIS/CCD									
	Special Requirements: TOO MIN RESPONSE TIME 2.0D; TOO MAX RESPONSE TIME 14.0D									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(5)	V-V5511-SGR	RA: 18 13 39.0300 (273.4126250d)	Epoch of Position: 2000	V=18.33	Reference Frame: ICRS				
		Alt Name1: XTE-J1814-338	Dec: -33 46 22.30 (-33.77286d)							
			Equinox: J2000							
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.										
Category=STAR										
Description=[BINARY PULSAR, LMXB, NEUTRON STAR]										
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(STIS.ta.236 0371)	(5) V-V5511-SGR	STIS/CCD, ACQ, F28X50LP	MIRROR				9 Secs (9 Secs)	
									[==>]	[1]
	2	(STIS.sp.23 20384)	(5) V-V5511-SGR	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230L 2376 A	BUFFER-TIME=60 0			2000 Secs (2000 Secs)	
									[==>]	[1]
Orbit Structure	Orbit 1									
	Server Version: 20260618									

Proposal 18434 - Visit 05 - UV pulsations in accreting millisecond pulsars: a new window on the pulsar-disk interaction

Visit	Proposal 18434, Visit 05, implementation										Tue Aug 11 15:00:55 GMT 2026									
	Diagnostic Status: No Diagnostics																			
	Scientific Instruments: STIS/NUV-MAMA, STIS/CCD																			
	Special Requirements: TOO MIN RESPONSE TIME 2.0D; TOO MAX RESPONSE TIME 14.0D																			
Fixed Targets	#	Name		Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous										
	(6)	IGR-J17511-3057		RA: 17 51 8.5500 (267.7856250d) Dec: -30 57 41.70 (-30.96158d) Equinox: J2000		Epoch of Position: 2000		V=17		Reference Frame: ICRS										
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.																			
	Category=STAR Description=[BINARY PULSAR, LMXB, NEUTRON STAR]																			
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture		Spectral Els.		Opt. Params.		Special Reqs.		Groups		Exp. Time (Total)/[Actual Dur.]				Orbit		
	1	(STIS.ta.236 0372)	(6) IGR-J17511-3057	STIS/CCD, ACQ, F28X50LP		MIRROR								3 Secs (3 Secs)						
															[==>]				[1]	
	2	(STIS.sp.23 20384)	(6) IGR-J17511-3057	STIS/NUV-MAMA, TIME-TAG, 52X0.2		G230L 2376 A		BUFFER-TIME=60 0						2000 Secs (2000 Secs)						
														[==>]				[1]		
Orbit Structure	Orbit 1 Server Version: 20260618 GS Acq Exp. 1 Exp. 2 (Auto-WAVECAL) Pointing Maneuver Exp. 2 Unused Orbital Visibility = 68 Occultation Home 0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec																			

Proposal 18434 - Visit 06 - UV pulsations in accreting millisecond pulsars: a new window on the pulsar-disk interaction

Visit	Proposal 18434, Visit 06, implementation										Tue Aug 11 15:00:55 GMT 2026			
	Diagnostic Status: No Diagnostics													
	Scientific Instruments: STIS/NUV-MAMA, STIS/CCD													
	Special Requirements: TOO MIN RESPONSE TIME 2.0D; TOO MAX RESPONSE TIME 14.0D													
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous					
	(7)	2MAXI-J1900-248	RA: 19 00 8.6500 (285.0360417d) Dec: -24 55 13.70 (-24.92047d) Equinox: J2000		Epoch of Position: 2000		V=18.09		Reference Frame: ICRS					
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.													
	Category=STAR Description=[BINARY PULSAR, LMXB, NEUTRON STAR]													
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit		
	1	(STIS.ta.236 0373)	(7) 2MAXI-J1900-2 48	STIS/CCD, ACQ, F28X50LP		MIRROR				7 Secs (7 Secs)				
										[==>]		[1]		
	2	(STIS.sp.23 20384)	(7) 2MAXI-J1900-2 48	STIS/NUV-MAMA, TIME-TAG, 52X0.2		G230L 2376 A	BUFFER-TIME=60 0			2000 Secs (2000 Secs)				
									[==>]		[1]			
Orbit Structure	Orbit 1												Server Version: 20260618	

Proposal 18434 - Visit 07 - UV pulsations in accreting millisecond pulsars: a new window on the pulsar-disk interaction

Visit	Proposal 18434, Visit 07, implementation										Tue Aug 11 15:00:55 GMT 2026										
	Diagnostic Status: No Diagnostics																				
	Scientific Instruments: STIS/NUV-MAMA, STIS/CCD																				
	Special Requirements: TOO MIN RESPONSE TIME 2.0D; TOO MAX RESPONSE TIME 14.0D																				
Fixed Targets	#	Name		Target Coordinates				Targ. Coord. Corrections				Fluxes				Miscellaneous					
	(8)	KRL2007B-291		RA: 17 51 13.4900 (267.8062083d)				Epoch of Position: 2000				V=17.8				Reference Frame: ICRS					
		Alt Name1: XTE-J1751-305		Dec: -30 37 23.40 (-30.62317d)																	
				Equinox: J2000																	
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.																				
	Category=STAR																				
	Description=[BINARY PULSAR, LMXB, NEUTRON STAR]																				
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture				Spectral Els.		Opt. Params.		Special Reqs.		Groups		Exp. Time (Total)/[Actual Dur.]				Orbit	
	1	(STIS.ta.236 0374)	(8) KRL2007B-291	STIS/CCD, ACQ, F28X50LP				MIRROR								6 Secs (6 Secs)					
																[==>]				[1]	
	2	(STIS.sp.23 20384)	(8) KRL2007B-291	STIS/NUV-MAMA, TIME-TAG, 52X0.2				G230L 2376 A		BUFFER-TIME=60 0						2000 Secs (2000 Secs)					
																[==>]				[1]	
Orbit Structure	Orbit 1 Server Version: 20260618																				

Proposal 18434 - Visit 08 - UV pulsations in accreting millisecond pulsars: a new window on the pulsar-disk interaction

Visit	Proposal 18434, Visit 08, implementation									Tue Aug 11 15:00:55 GMT 2026	
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: STIS/NUV-MAMA, STIS/CCD										
	Special Requirements: TOO MIN RESPONSE TIME 2.0D; TOO MAX RESPONSE TIME 14.0D										
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(9)	KRL2007B-304	RA: 18 06 59.8000 (271.7491667d)		Epoch of Position: 2000		V=18		Reference Frame: ICRS		
		Alt Name1: XTE-J1807-294	Dec: -29 24 30.00 (-29.40833d)								
			Equinox: J2000								
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.										
	Category=STAR										
	Description=[BINARY PULSAR, LMXB, NEUTRON STAR]										
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
	1	(STIS.ta.236 0375)	(9) KRL2007B-304	STIS/CCD, ACQ, F28X50LP	MIRROR				7 Secs (7 Secs)		
									[==>]	[1]	
	2	(STIS.sp.23 20384)	(9) KRL2007B-304	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230L 2376 A	BUFFER-TIME=60 0			2000 Secs (2000 Secs)		
									[==>]	[1]	
Orbit Structure	Orbit 1										Server Version: 20260618

Proposal 18434 - Visit 09 - UV pulsations in accreting millisecond pulsars: a new window on the pulsar-disk interaction

Visit	Proposal 18434, Visit 09, implementation										Tue Aug 11 15:00:55 GMT 2026	
	Diagnostic Status: No Diagnostics											
	Scientific Instruments: STIS/NUV-MAMA, STIS/CCD											
	Special Requirements: TOO MIN RESPONSE TIME 2.0D; TOO MAX RESPONSE TIME 14.0D											
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous			
	(10)	IGR-J17494-3030	RA: 17 48 23.6200 (267.0984167d) Dec: -30 29 59.00 (-30.49972d) Equinox: J2000		Epoch of Position: 2000		V=17		Reference Frame: ICRS			
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.											
	Category=STAR Description=[BINARY PULSAR, LMXB, NEUTRON STAR]											
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	(STIS.ta.236 0376)	(10) IGR-J17494-3030	STIS/CCD, ACQ, F28X50LP		MIRROR				3 Secs (3 Secs)		
										[==>]		[1]
	2	(STIS.sp.23 20384)	(10) IGR-J17494-3030	STIS/NUV-MAMA, TIME-TAG, 52X0.2		G230L 2376 A	BUFFER-TIME=60 0			2000 Secs (2000 Secs)		
									[==>]		[1]	
Orbit Structure	Orbit 1											
	Server Version: 20260618											

Proposal 18434 - Visit 10 - UV pulsations in accreting millisecond pulsars: a new window on the pulsar-disk interaction

Visit	Proposal 18434, Visit 10, implementation								Tue Aug 11 15:00:55 GMT 2026	
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: STIS/NUV-MAMA, STIS/CCD									
	Special Requirements: TOO MIN RESPONSE TIME 2.0D; TOO MAX RESPONSE TIME 14.0D									
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes	Miscellaneous		
	(11)	XTE-J1737-376	RA: 17 37 59.5000 (264.4979167d) Dec: -37 46 20.00 (-37.77222d) Equinox: J2000		Epoch of Position: 2000		V=16.8	Reference Frame: ICRS		
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.									
	Category=STAR Description=[BINARY PULSAR, LMXB, NEUTRON STAR]									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(STIS.ta.236 0377)	(11) XTE-J1737-376	STIS/CCD, ACQ, F28X50LP	MIRROR				3 Secs (3 Secs)	
									[==>]	[1]
	2	(STIS.sp.23 20384)	(11) XTE-J1737-376	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230L 2376 A	BUFFER-TIME=60 0			2000 Secs (2000 Secs)	
									[==>]	[1]
Orbit Structure	Orbit 1 Server Version: 20260618									

Proposal 18434 - Visit 11 - UV pulsations in accreting millisecond pulsars: a new window on the pulsar-disk interaction

Visit	Proposal 18434, Visit 11, implementation									Tue Aug 11 15:00:55 GMT 2026
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: STIS/NUV-MAMA, STIS/CCD									
	Special Requirements: TOO MIN RESPONSE TIME 2.0D; TOO MAX RESPONSE TIME 14.0D									
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes	Miscellaneous		
	(12)	IGR-J18245-2452	RA: 18 24 32.5000 (276.1354167d) Dec: -24 52 7.80 (-24.86883d) Equinox: J2000		Epoch of Position: 2000		V=17.5	Reference Frame: ICRS		
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.									
	Category=STAR Description=[BINARY PULSAR, LMXB, NEUTRON STAR]									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(STIS.ta.236 0378)	(12) IGR-J18245-24 52	STIS/CCD, ACQ, F28X50LP	MIRROR				4 Secs (4 Secs)	
									[==>]	[1]
	2	(STIS.sp.23 20384)	(12) IGR-J18245-24 52	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230L 2376 A	BUFFER-TIME=60 0			2000 Secs (2000 Secs)	
									[==>]	[1]
Orbit Structure	Orbit 1 Server Version: 20260618 GS Acq Exp. 1 Exp. 2 (Auto-WAVECAL) Pointing Maneuver Exp. 2 Unused Orbital Visibility = 56 Occultation Home 0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec									

Proposal 18434 - Visit 12 - UV pulsations in accreting millisecond pulsars: a new window on the pulsar-disk interaction

Visit	Proposal 18434, Visit 12, implementation Tue Aug 11 15:00:55 GMT 2026									
	Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD Special Requirements: TOO MIN RESPONSE TIME 2.0D; TOO MAX RESPONSE TIME 14.0D									
Generic Targets	#	Name	Criteria	Description						
	(1)	GENERIC-AMSP	see comments	BINARY PULSAR LMXB NEUTRON STAR Comments: The target will be a known or newly discovered accreting millisecond pulsar (AMSP) in outburst, satisfying all of the following conditions at the time of trigger: Classification and ephemeris: The source is confirmed to be an AMSP in outburst via X-ray monitoring (EP/WXT, MAXI) or optical monitoring (LCO). For newly discovered transients, EP/FXT observations establish the AMSP nature and provide the timing ephemeris. For known sources, existing timing solutions are updated via EP/FXT as needed. Flux and extinction: The source has a detected optical counterpart and $NH < 4 \times 10^{21} \text{ cm}^{-2}$ ($E(B-V) < 0.6 \text{ mag}$). The 0.5-10 keV X-ray flux is $F_X \geq 10^{-10} \text{ erg cm}^{-2} \text{ s}^{-1}$ ($L_X \sim 8 \times 10^{35} \text{ erg s}^{-1}$ at 8 kpc), ensuring a representative outburst state. Visibility: The source is visible to HST (verified in APT) and satisfies all scheduling constraints (e.g., no solar constraints) at the time of the trigger. The specific target is selected from the list of known AMSPs included in this proposal, or corresponds to a newly discovered AMSP meeting the above criteria, whichever occurs first and is confirmed by our EP/FXT and LCO collaboration.						
Exposures	#	Label (ETC Run)	Target	Config, Mode, Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(STIS.ta.236 0379)	(1) GENERIC-AMSP	STIS/CCD, ACQ, F28X50LP	MIRROR				41 Secs (41 Secs)	
									[=>]	[1]
	2	(STIS.sp.23 20384)	(1) GENERIC-AMSP	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230L 2376 Å	BUFFER-TIME=60 0			1900 Secs (1900 Secs)	
									[=>]	[1]
Orbit Structure	Orbit 1 Server Version: 20260618									
	Timeline details: 0-50s: GS Acq 50-100s: Exp. 1 (blue hatched) 100-150s: Exp. 2 (Auto-WAVECAL) (green) 150-300s: Exp. 2 (green with target icon) 300-350s: Pointing Maneuver / Occultation 350-400s: Home 400-6000s: Unused Orbital Visibility = 8									