



16490 - The XUV irradiation of the young exo-planets around V1298 Tau

Cycle: 28, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Dr. Serena Benatti (PI) (ESA Member) (Contact)	Osservatorio Astronomico di Palermo Giuseppe S. Vaiana	serena.benatti@inaf.it
Dr. Ignazio Pillitteri (CoI) (ESA Member)	Osservatorio Astronomico di Palermo Giuseppe S. Vaiana	ignazio.pillitteri@inaf.it
Prof. Giuseppina Micela (CoI) (ESA Member)	Osservatorio Astronomico di Palermo Giuseppe S. Vaiana	giusi@oapa.astropa.unipa.it
Prof. Salvatore Sciortino (CoI) (ESA Member)	Osservatorio Astronomico di Palermo Giuseppe S. Vaiana	sciorti@oapa.astropa.unipa.it
Dr. Silvano Desidera (CoI) (ESA Member)	Osservatorio Astronomico di Padova	silvano.desidera@oapd.inaf.it
Dr. Aldo Stefano Bonomo (CoI) (ESA Member)	INAF- Osservatorio Astrofisico di Torino	bonomo@oato.inaf.it
Dr. Valerio Nascimbeni (CoI) (ESA Member)	Osservatorio Astronomico di Padova	valerio.nascimbeni@inaf.it
Mario Damasso (CoI) (ESA Member)	INAF- Osservatorio Astrofisico di Torino	mario.damasso@inaf.it
Prof. Luca Malavolta (CoI) (ESA Member)	University of Padova	luca.malavolta@unipd.it
Dr. Riccardo Claudi (CoI) (ESA Member)	INAF - Osservatorio Astronomico di Padova	riccardo.claudi@inaf.it
Dr. Francesco Borsa (CoI) (ESA Member)	INAF, Osservatorio Astronomico di Brera, Merate	francesco.borsa@inaf.it
Dr. Riccardo Spinelli (CoI) (ESA Member)	UNIVERSITA DEGLI STUDI DELL'INSUBRIA	rspinelli@uninsubria.it
Dr. Daniele Locci (CoI) (ESA Member)	Osservatorio Astronomico di Palermo Giuseppe S. Vaiana	daniele.locci@inaf.it

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) V1298-TAU	COS/FUV COS/NUV	3	29-Jun-2021 09:00:17.0	yes

3 Total Orbits Used

ABSTRACT

We propose joint XMM-Newton (30ks) and HST observations (3 orbits) of the nearby K young star V1298 Tau (~20Myr) hosting four transiting exoplanets discovered with Kepler (K2), and included in a follow-up optical/IR campaign with HARPS-N and GIANO-B@TNG. These young planets have radii between 5.6 and 10.3 R Earth and they are located between 0.08 and ~0.3 AU from the host. They are still experiencing the contraction phase toward their final sizes and are subject to photoevaporation effects at different rates. Our immediate objective is to reconstruct the full XUV spectrum, and to assess the spectral and time variability of the host star. In this way we will characterize its activity level and the dose of highenergy radiation received by those very young planets.

OBSERVING DESCRIPTION

We ask observations with HST/COS joint and simultaneous with XMM-Newton observations of the young K-type star V1298 Tau. We aim to acquire high resolution spectra in the band 1180 - 1450 Angstrom with the G130M grating (central wavelength of 1291 Angstrom) during 3 HST orbits.

The declination of the star ensures an average HST visibility of 54' per orbit, available for science exposures.

We intend to measure the intensity of ion lines from Si II, Si III, Si IV, CII , CIII, NV falling in the above wavelength range.

Proposal 16490 - Visit 01 - The XUV irradiation of the young exo-planets around V1298 Tau

Tue Jun 29 13:00:18 GMT 2021

Visit	Proposal 16490, Visit 01, implementation Diagnostic Status: No Diagnostics Scientific Instruments: COS/FUV, COS/NUV Special Requirements: VISIBILITY INTERVAL 51.5 M																											
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>V1298-TAU</td> <td>RA: 04 05 19.5912 (61.3316300d) Dec: +20 09 25.56 (20.15710d) Equinox: J2000</td> <td>Proper Motion RA: 5.563 mas/yr Proper Motion Dec: -16.077 mas/yr Epoch of Position: 2015.5</td> <td>V=10.12</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td colspan="6"> <i>Comments:</i> Category=STAR Description=[CORONA, EXTRA-SOLAR PLANETARY SYSTEM, K V-IV] Extended=NO </td> </tr> </tbody> </table>										#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	V1298-TAU	RA: 04 05 19.5912 (61.3316300d) Dec: +20 09 25.56 (20.15710d) Equinox: J2000	Proper Motion RA: 5.563 mas/yr Proper Motion Dec: -16.077 mas/yr Epoch of Position: 2015.5	V=10.12	Reference Frame: ICRS	<i>Comments:</i> Category=STAR Description=[CORONA, EXTRA-SOLAR PLANETARY SYSTEM, K V-IV] Extended=NO				
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous																							
(1)	V1298-TAU	RA: 04 05 19.5912 (61.3316300d) Dec: +20 09 25.56 (20.15710d) Equinox: J2000	Proper Motion RA: 5.563 mas/yr Proper Motion Dec: -16.077 mas/yr Epoch of Position: 2015.5	V=10.12	Reference Frame: ICRS																							
<i>Comments:</i> Category=STAR Description=[CORONA, EXTRA-SOLAR PLANETARY SYSTEM, K V-IV] Extended=NO																												
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit																		
	1	(1481846)	(1) V1298-TAU	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				65 Secs (65 Secs) [==>]	[1]																		
	2	(1482074)	(1) V1298-TAU	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=11 55; FLASH=YES; FP-POS=3			2316 Secs (2249 Secs) [==>2249.0 Secs]	[1]																		
	3	(1478275)	(1) V1298-TAU	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=12 96; FLASH=YES; FP-POS=3			2701 Secs (2634 Secs) [==>2634.0 Secs]	[2]																		
	4	(1478275)	(1) V1298-TAU	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=12 96; FLASH=YES; FP-POS=4			2701 Secs (2634 Secs) [==>2634.0 Secs]	[3]																		

