



Astrophysics > Solar and Stellar Astrophysics

# A search for Star-Planet-Interactions in the upsilon Andromedae system at X-ray and optical wavelengths

K. Poppenhaeger, L. F. Lenz, A. Reiners, J. H. M. M. Schmitt

(Submitted on 27 Oct 2010)

Close-in, giant planets are expected to influence their host stars via tidal or magnetic interaction. But are these effects strong enough in suitable targets known so far to be observed with today's instrumentation? The upsilon And system, an F8V star with a Hot Jupiter, was claimed to undergo cyclic changes in chromospheric activity indicators with its innermost planet's period. We want to investigate the stellar chromospheric and coronal activity over several months. We therefore monitored the star in X-rays as well as at optical wavelengths to test coronal and chromospheric activity indicators for planet-induced variability, making use of the Chandra X-ray Observatory as well as the echelle spectrographs FOCES and HRS at Calar Alto (Spain) and the Hobby-Eberly Telescope (Texas, US), respectively. The stellar activity level is low, as seen both in X-rays as in Ca II line fluxes; the chromospheric data show variability with the stellar rotation period. We do not find activity variations in X-rays or in the optical which can be traced back to the planet. Observational evidence for Star-Planet-Interactions in X-rays thus remains elusive.

Comments: submitted to A&A

Subjects: **Solar and Stellar Astrophysics (astro-ph.SR)**

Cite as: **arXiv:1010.5632v1** [astro-ph.SR]

## Submission history

From: Katja Poppenhaeger [[view email](#)]

[v1] Wed, 27 Oct 2010 09:58:30 GMT (69kb)

[Which authors of this paper are endorsers?](#)

## Download:

- [PDF](#)
- [PostScript](#)
- [Other formats](#)

Current browse context:

**astro-ph.SR**

[< prev](#) | [next >](#)

[new](#) | [recent](#) | [1010](#)

Change to browse by:

[astro-ph](#)

## References & Citations

- [SLAC-SPIRES HEP](#)  
([refers to](#) | [cited by](#))
- [NASA ADS](#)

Bookmark([what is this?](#))

