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- No es necesario entender todo el paper (ser honesto y normalizar el “no saber”)
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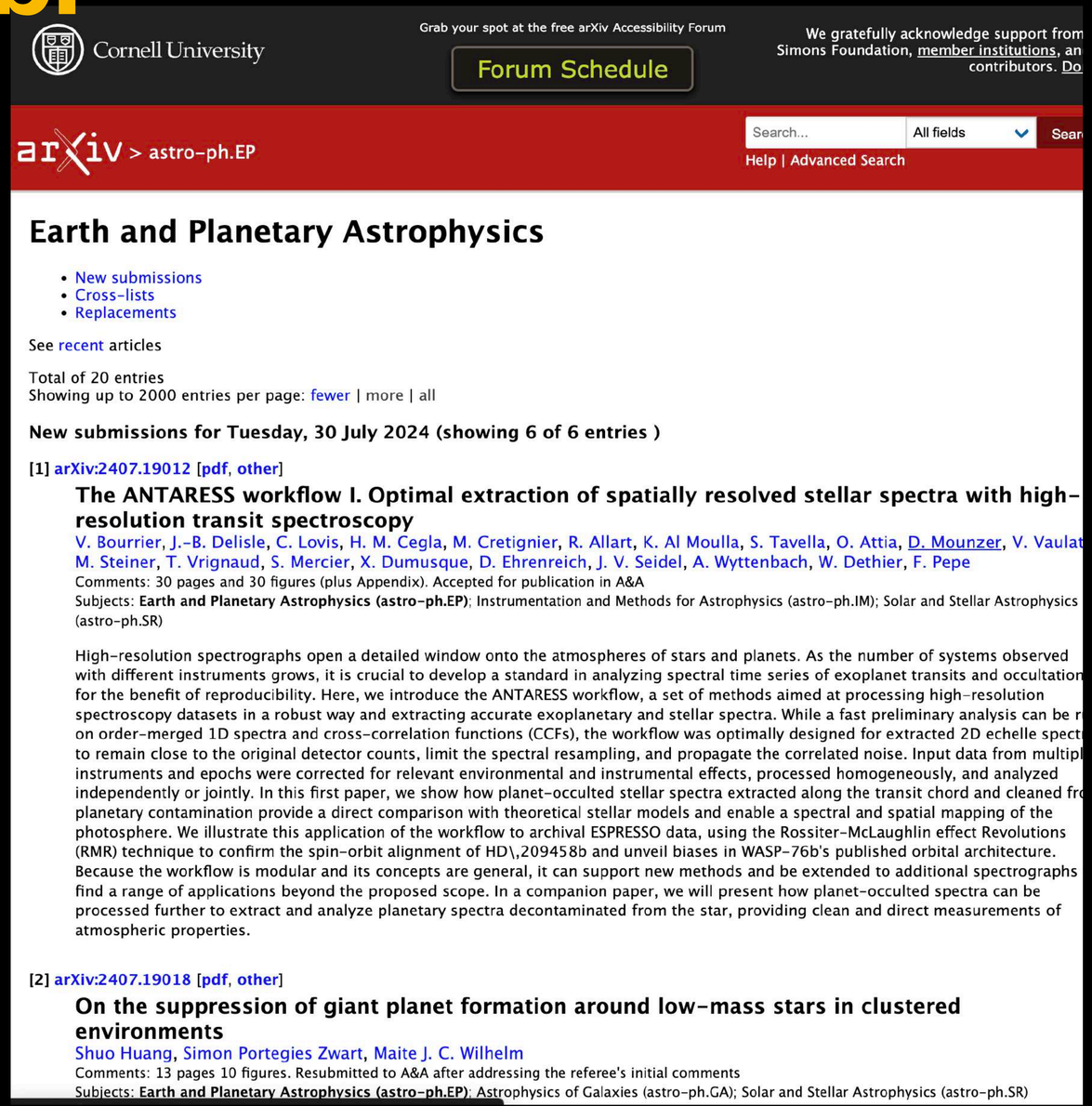

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New submissions for Tuesday, 30 July 2024 (showing 6 of 6 entries)

[1] arXiv:2407.19012 [pdf, other]

The ANTARESS workflow I. Optimal extraction of spatially resolved stellar spectra with high-resolution transit spectroscopy

V. Bourrier, J.-B. Delisle, C. Lovis, H. M. Cegla, M. Cretignier, R. Allart, K. Al Moulla, S. Tavella, O. Attia, D. Mounzer, V. Vaulat M. Steiner, T. Vrignaud, S. Mercier, X. Dumusque, D. Ehrenreich, J. V. Seidel, A. Wyttenbach, W. Dethier, F. Pepe

Comments: 30 pages and 30 figures (plus Appendix). Accepted for publication in A&A

Subjects: **Earth and Planetary Astrophysics (astro-ph.EP)**; Instrumentation and Methods for Astrophysics (astro-ph.IM); Solar and Stellar Astrophysics (astro-ph.SR)

High-resolution spectrographs open a detailed window onto the atmospheres of stars and planets. As the number of systems observed with different instruments grows, it is crucial to develop a standard in analyzing spectral time series of exoplanet transits and occultation for the benefit of reproducibility. Here, we introduce the ANTARESS workflow, a set of methods aimed at processing high-resolution spectroscopy datasets in a robust way and extracting accurate exoplanetary and stellar spectra. While a fast preliminary analysis can be r on order-merged 1D spectra and cross-correlation functions (CCFs), the workflow was optimally designed for extracted 2D echelle spect to remain close to the original detector counts, limit the spectral resampling, and propagate the correlated noise. Input data from multipl instruments and epochs were corrected for relevant environmental and instrumental effects, processed homogeneously, and analyzed independently or jointly. In this first paper, we show how planet-occulted stellar spectra extracted along the transit chord and cleaned fr planetary contamination provide a direct comparison with theoretical stellar models and enable a spectral and spatial mapping of the photosphere. We illustrate this application of the workflow to archival ESPRESSO data, using the Rossiter-McLaughlin effect Revolutions (RMR) technique to confirm the spin-orbit alignment of HD\,209458b and unveil biases in WASP-76b's published orbital architecture. Because the workflow is modular and its concepts are general, it can support new methods and be extended to additional spectrographs find a range of applications beyond the proposed scope. In a companion paper, we will present how planet-occulted spectra can be processed further to extract and analyze planetary spectra decontaminated from the star, providing clean and direct measurements of atmospheric properties.

[2] arXiv:2407.19018 [pdf, other]

On the suppression of giant planet formation around low-mass stars in clustered environments

Shuo Huang, Simon Portegies Zwart, Maite J. C. Wilhelm

Comments: 13 pages 10 figures. Resubmitted to A&A after addressing the referee's initial comments

Subjects: **Earth and Planetary Astrophysics (astro-ph.EP)**; Astrophysics of Galaxies (astro-ph.GA); Solar and Stellar Astrophysics (astro-ph.SR)