

EPSC Abstracts

Vol. 15, EPSC2021-776, 2021

<https://doi.org/10.5194/epsc2021-776>

Europlanet Science Congress 2021

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Follow-Up Lightcurves Multitool Assisting Radial velocities (FULMAR)

José Rodrigues^{1,2}, Susana Barros^{1,2}, and Nuno Santos^{1,2}

¹Instituto de Astrofísica e Ciências do Espaço, Universidade do Porto, Porto, Portugal

²Departamento de Física e Astronomia, Faculdade de Ciências, Universidade do Porto, Porto, Portugal

TESS is now routinely discovering new exoplanets and candidates (2647 TOIs in April 2021). Detailed analysis of the TESS lightcurves is necessary to select the best candidates for Radial Velocities (RV) follow-up as we cannot realistically observe all TOIs using ground facilities due to the instrument time required.

We developed a modular tool called "Follow-Up Lightcurves Multitool Assisting Radial velocities (FULMAR)" to select suitable follow-up targets more effectively, as the ones with lower stellar activity would require fewer observations to be confirmed. Our code compiles available TESS lightcurves for any selected target. It can filter the activity using different methods, compute the rotation period of the star using Gaussian Processes, search for transits in the detrended lightcurve using BLS or TLS and probe signals that were detected with RV. FULMAR could also reduce the necessary observation time per target, for example by killing aliases, allowing for the characterization of more systems with a given instrument.