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Exoplanetary characterisation with ARIEL

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The ARIEL mission will be devoted to the observation of a large sample of (transiting) exo-planets with the goal to understand the properties of their atmospheres. Chemical composition, clouds, temperature profile, atmospheric circulation and the impact of stellar environment, among others, will be studied.

The observed sample will include gas giants, Neptunes, super-Earths and Earth-size planets orbiting around stars of different spectral type, focusing on warm and hot planets. These planets are particularly interesting since their atmospheres are well mixed, and, therefore, more representative of the planetary bulk compared to their colder counterparts.

ARIEL will observe simultaneously from 0.5 to 7.8 μm using photometry in the optical bands and low-resolution spectroscopy in the NIR. This broadband will cover several molecular features expected in the exo-atmospheres and will allow to monitor and correct for the stellar activity, the main source of astrophysical noise of exoplanet observations.

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