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Observing transiting exoplanets in colors with ASTEP+

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The ASTEP telescope has begun since 2019 an active program to confirm and monitor long-period transiting exoplanets. Its unique localisation at the Concordia station, Antarctica, allows the observation of targets difficult to observe from other latitudes, in particular when close to the celestial South pole or for long-duration transits. This is ideal to follow-up TESS exoplanetary candidates (in majority near the poles) but also for the preparation of JWST and ARIEL as this corresponds to their continuous viewing zones. By following-up exoplanet candidates found by the NASA TESS mission, ASTEP has enabled the confirmation of exciting exoplanets, including the observations of transits lasting more than 8 hours (a first from the ground) and the participation to the discovery of the temperate Neptune-size exoplanet TOI-1231 b. At the end of 2021, a new camera box will be installed, enabling simultaneous observations in two colors. This effectively new instrument, ASTEP+, will thus have the capability to efficiently separate false positive from bona fide exoplanets, in addition to a much increased sensitivity. I will discuss the perspectives of this evolution.

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