

Extinction, seeing and sky transparency monitoring at the Observatorio Astrofísico de Javalambre for J-PAS and J-PLUS calibration and scheduling

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Abstract

The Javalambre-Physics of the Accelerating Universe Astrophysical Survey (J-PAS; see Benítez et al. 2014) and the Javalambre-Photometric Local Universe Survey (J-PLUS) will be conducted at the brand-new Observatorio Astrofísico de Javalambre (OAJ) in Teruel, Spain. J-PLUS is planned to start by the first half of 2015 while J-PAS first light is expected to happen along 2015. Besides the two main telescopes (with 2.5 m and 80 cm apertures), several smaller-sized facilities are present at the OAJ devoted to site characterization and supporting measurements to be used to calibrate the J-PAS and J-PLUS photometry and to feed up the OAJ’s Sequencer with the integrated seeing and the sky transparency. These instruments are: i) an extinction monitor, an 11” telescope estimating the atmospheric extinction to finally obtain the OAJ extinction curve, which is the initial step to J-PAS overall photometric calibration procedure; ii) an 8” telescope implementing the Differential Image Motion Monitor (DIMM) technique to obtain the integrated seeing; and iii) an All-Sky Transmission MONitor (ASTMON), a roughly all-sky instrument providing the sky transparency as well as sky brightness and the atmospheric extinction too.

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