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DustPedia: Multiwavelength Photometry & Imagery of 875 Nearby Galaxies in 42 Ultraviolet-Microwave Bands

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The DustPedia project is capitalising on the legacy of the Herschel Space Observatory, using cutting-edge modelling techniques to study dust in the 875 DustPedia galaxies - representing the vast majority of extended galaxies within 3000 km/s (~40 Mpc) that were observed by Herschel. This work requires a database of multiwavelength imagery and photometry that greatly exceeds the scope (in terms of wavelength coverage and number of galaxies) of any previous local-Universe survey.

We therefore present multiwavelength imagery and photometry across 42 UV-microwave bands for the 875 DustPedia. This database contains custom Herschel reductions, plus standardised GALEX, SDSS, DSS, 2MASS, WISE, Spitzer, and Planck data. We also present CAAPR, the pipeline we use to conduct aperture-matched photometry of our data; CAAPR is designed to produce consistent photometry for the enormous range of galaxy and observation types we employ. In particular, CAAPR is able to determine robust cross-compatible uncertainties, thanks to a novel method for reliably extrapolating the aperture noise for observations that cover a very limited amount of background. The 27-band aperture-matched photometry, in combination with ancillary catalogue data from IRAS and Planck, represents 21857 photometric measurements. A typical DustPedia galaxy has photometry spanning 25 bands. This database of imagery and photometry is being made publicly available at: dustpedia.astro.noa.gr.

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Yes

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