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Cold Electrons at Comet 67P

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Abstract

We present observations of cold (around or below 0.3 eV) in the coma of comet 67P covering all the Rosetta mission. While cold electrons were most abundant around perihelion (1.25 AU), we show their existence as far out as 3 AU. To explain the observations at low activity, we suggest that this is an effect of the ambipolar electric field keeping the electrons close to the nucleus and therefore give them time to cool on the neutrals.