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Searching for solar wind ions backscattered from the nucleus of comet 67P/Churyumov-Gerasimenko

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Observations from the Earth's moon show that solar wind particles are backscattered from the lunar regolith. A substantial amount (1%) of the solar wind ions retains its charge in the process. A similar process may be important at 67P/Churyumov-Gerasimenko. We investigate if a detectable amount of the solar wind is backscattered as ions from the surface of the comet. We use data from the Rosetta Plasma Consortium Ion Composition Analyser (RPC-ICA) obtained at distances of about 20 to 30 km from the centre of the nucleus. RPC-ICA measures ions in the energy range 10 eV-40 keV and has a field of view of 2.8π sr. During most of the observation time both the comet and the solar wind is within the field of view of RPC-ICA. We compare our results with observations made by the spacecraft Chandrayaan-1 at the Moon.