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Mapping of the source regions of the dust jets on comet 67P

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Because of the inclination of the rotational axis to the orbital plane and the orbital motion around the Sun, the sunlit regions on the nucleus surface of comet 67P/Churyumov-Gerasimenko moved from the northern hemisphere to the sourthern hemisphere between August, 2014 and October, 2015. From the comparison of the dust jet features in images taken at successive time series, the footpoints of these jets can be identified by a projection method. The distributiosn of the corresponding source regions can be compared with the geomorphology of the nucleus surface from inbound to outbound. The correlation of the dust jet activity with the volatile outgassing phenomenon as monitored by different scientific instruments onboard Rosetta will provide important information on the sublimation process.