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All sky imaging on LOFAR PL610 in single-station mode

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Observing the entire sky using a single LOFAR station can be done at a single selected frequency, independent of other ongoing observations. Due to the size of a single station, the resolution of the resulting images is limited, and analysis can only be conducted for the brightest objects. The conducted experiment aimed to determine the impact of the ionosphere on the measured positions of natural objects (A-Team, Sun), as well as to attempt an analysis of the ionospheric state using artificial radio signal reflections. In this paper, we present changes and statistical analysis of these changes depending on the prevailing conditions.