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LOFAR observations of Solar System planets and Exoplanets

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LOFAR will soon provide unprecedented capabilities in terms of sensitivity, angular resolution, and polarization measurements, opening new perspectives for planetary studies, among which the detection and study of solar system planetary lightning, the fast radio imaging of Jupiter's magnetosphere, including synchrotron emission from radiation belts as well as decameter emission from high magnetic latitudes, and the search for radio emission from the plasma environment of exoplanets. We will discuss here LOFAR capabilities in relation to the (exo)planetary observations program that it will undertake in 2009-2010.