

# ASTRON

Netherlands Institute for Radio Astronomy

## Multi-dimensional Data from LOFAR

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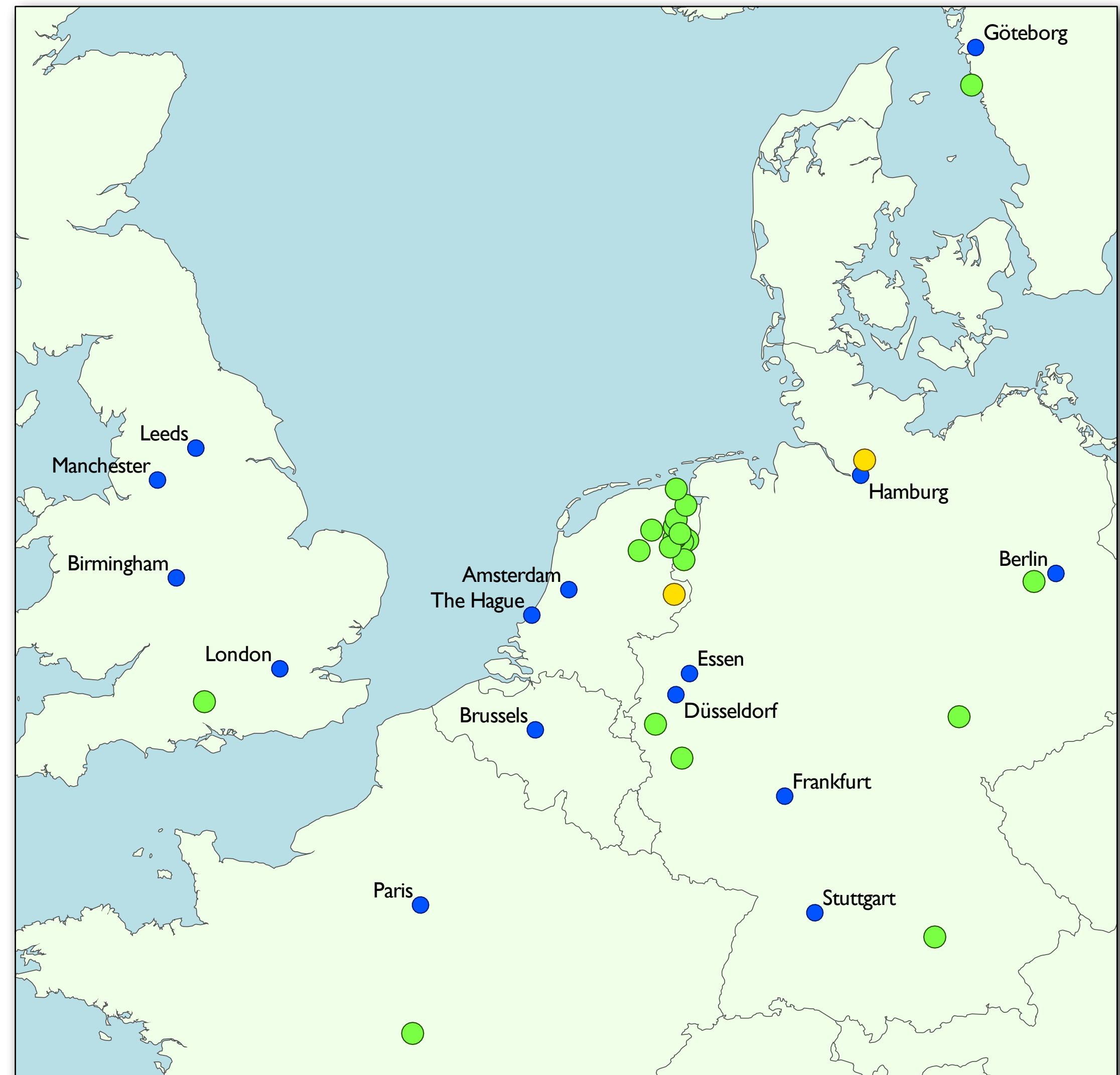
# LOFAR

## ■ LOFAR Array Overview

- *Operates from 10–240 MHz*
- *48 stations in NL, DE, UK, FR, SW*
- *Baselines from 60 m–1150 km*
- *Sub-arcsec resolution,  $\sim 100 \text{ deg}^2 \text{ FoV}$*
- *Rapid response, parallel observing*
- *Data rates of 10-100 TB/hour*

## ■ Key Science Projects

- *Epoch of Reionization*
- *Surveys and Distant Universe*
- *Transients and Pulsars*
- *High Energy Cosmic rays*
- *Cosmic Magnetism*
- *Solar Physics and Space Weather*



(courtesy G. Heald)

## ■ Science Data Products

- *Image cubes, RM cubes (4D)*
- *Source catalogs (x,y, freq, flux, pol, etc.)*
- *VOEvents, light curves, snapshot images*
- *BF data (time series), pulse profiles*
- *Fast cadence images (5 nsec - 1 sec)*
- *CR event files, Near-field cubes (6D)*

## ■ Planned Data Publishing

- *Surveys catalogs and data cubes*
- *Transient database and lightcurves*
- *Pulsar database and pulse profiles*

## ■ Status of VO Integration

- *LOFAR archive not VO enabled*
- *Analysis tools not VO enabled*

