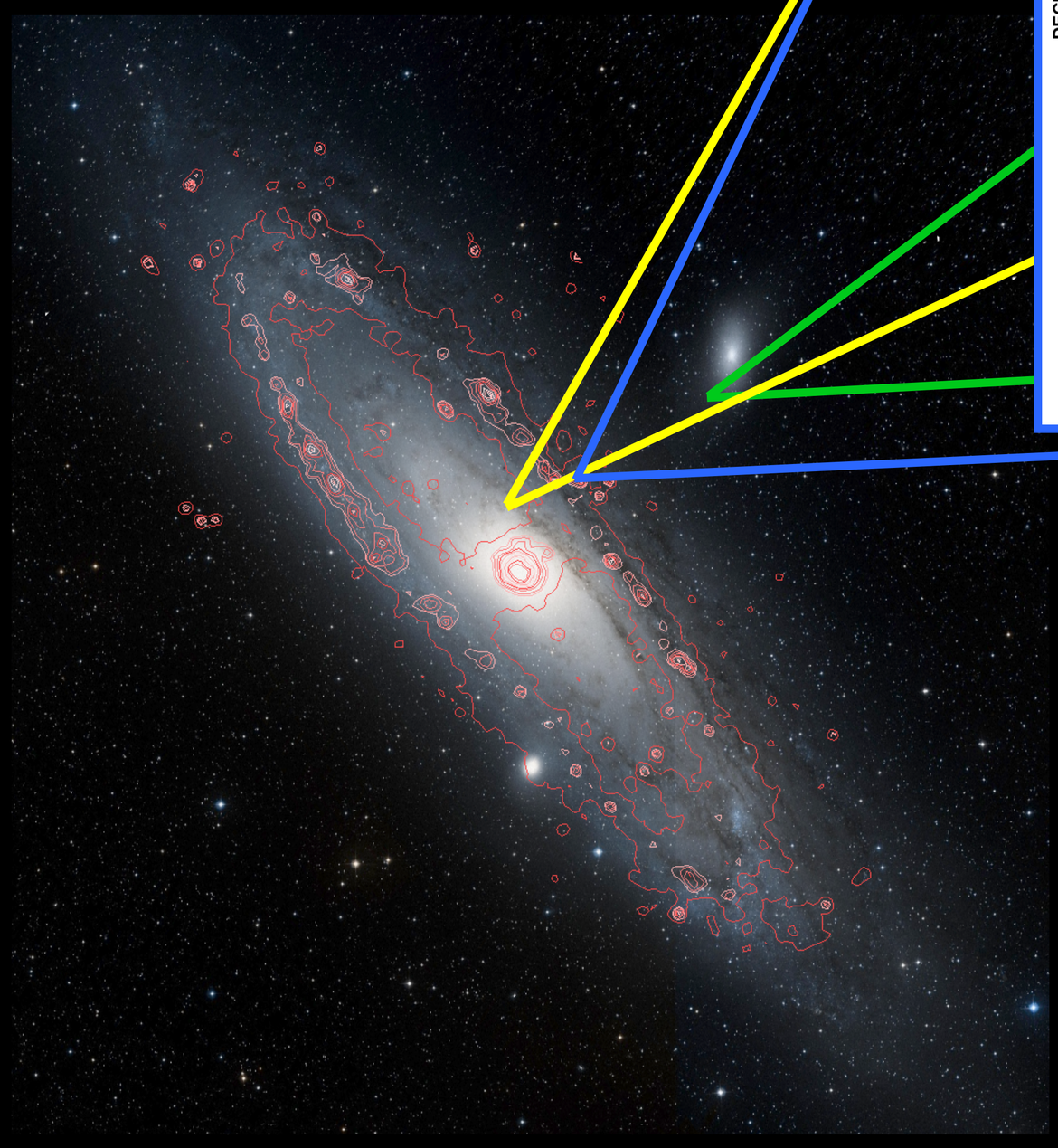
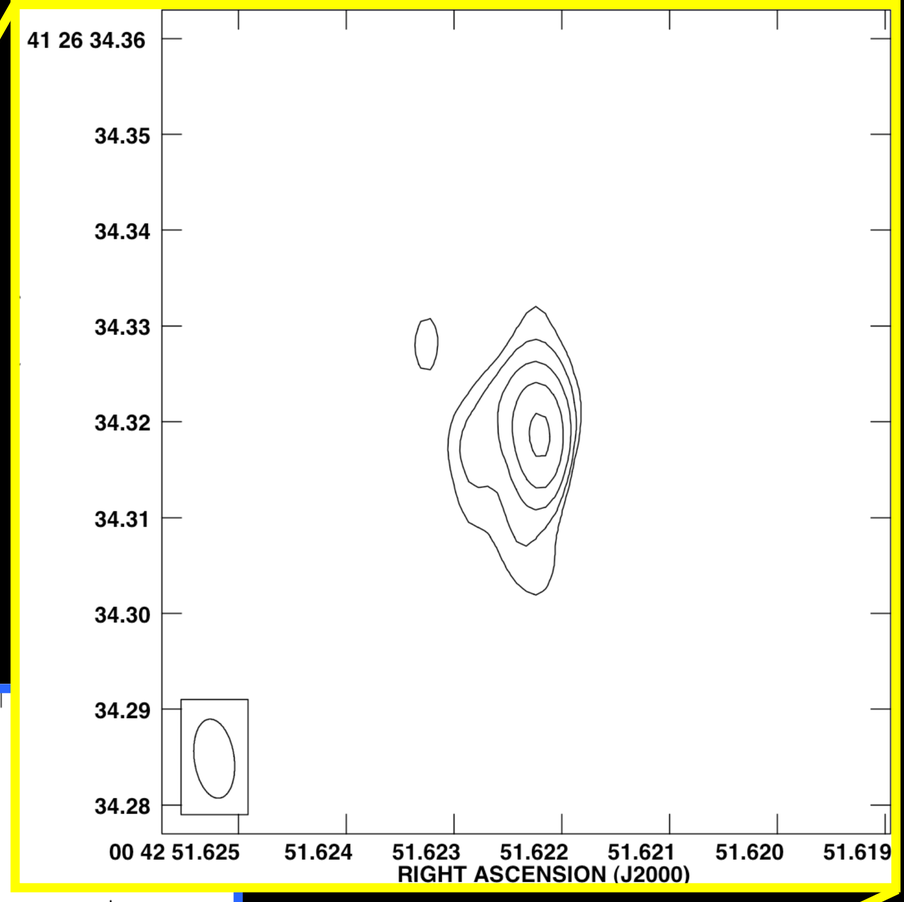
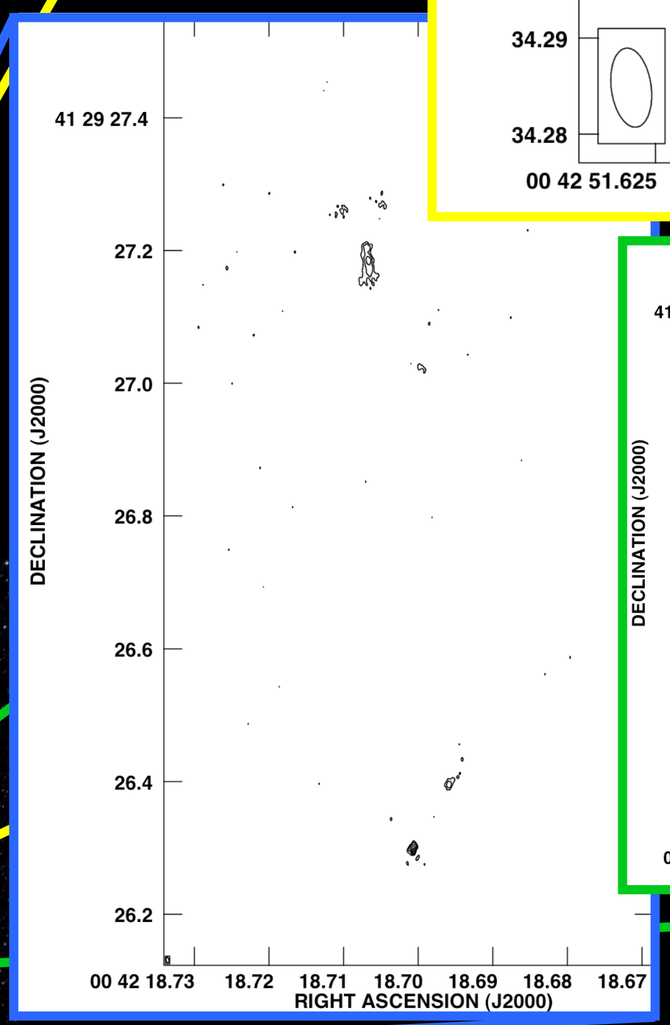
European VLBI Network stations







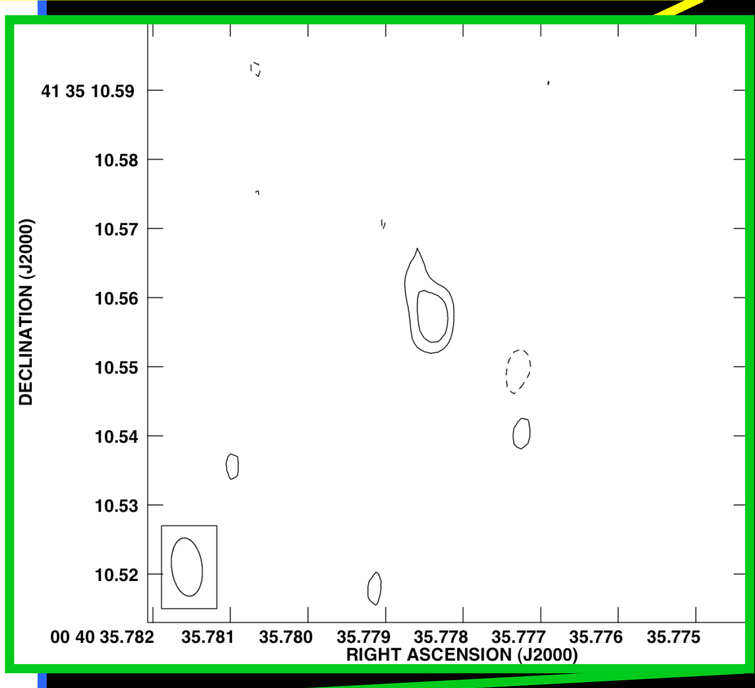


Image credits: NRAO/AUI (radio image, EVLA), STScI/NASA (DSS optical image), B. Campbell/EarthView (EVN), M. Argo (VLBI)

Arrays such as the EVLA, right, can rapidly produce a deep image of a large target like the M31 galaxy (radio contours overlaid on an optical image above). Using multi-field techniques, VLBI arrays can then “zoom in” 1000x on hundreds of radio sources simultaneously (top right)

Very Long Baseline Interferometry (VLBI) makes the highest resolution images in astronomy, but the miniscule pixels mean that VLBI images can only cover a tiny patch of sky - much smaller than “normal” radio interferometers. A novel new technique called “multi-field” VLBI has been implemented in the latest generation of software correlators to allow many small patches of the sky to be imaged simultaneously. This technique is now being used for the first generation of large radio surveys at high angular resolution.

ASTRON
Netherlands Institute for Radio Astronomy