

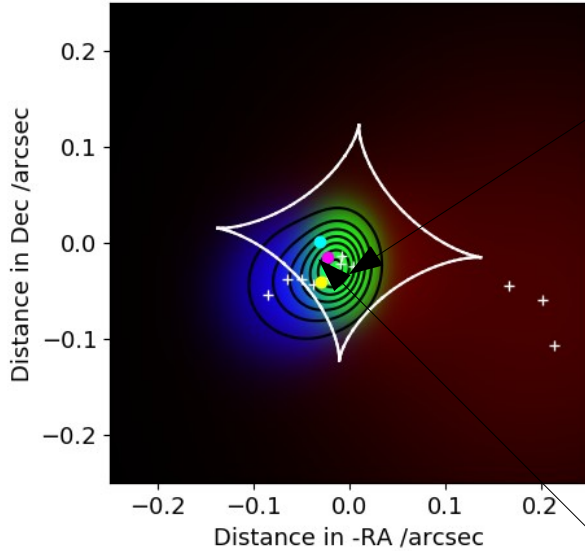
Long-baseline gravitational lens observations

Neal Jackson

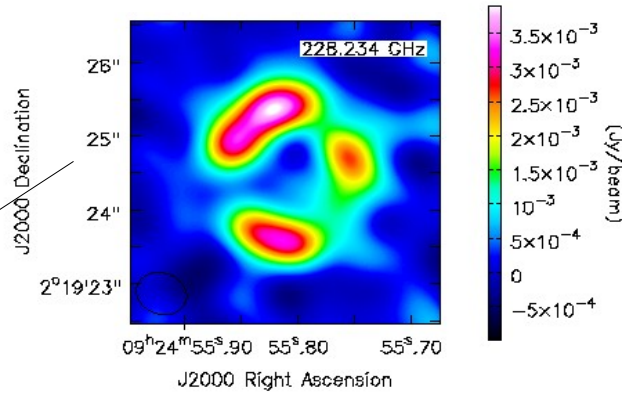
Motivation (i)

Badole et al. 2020

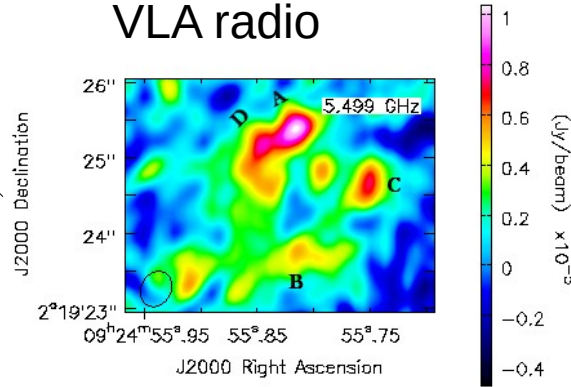
Lensed RQQ 0924+0219



Submm CO/continuum



VLA radio



Reconstruction: can work out what goes where in source plane (with high resolution, S:N)

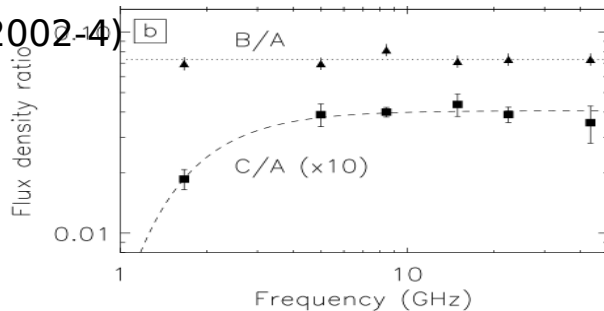
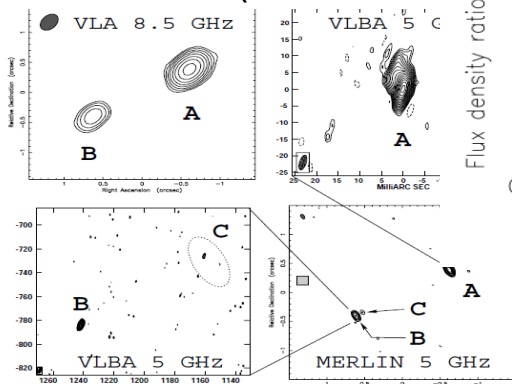
Motivation (ii)

2 lines of sight through galaxy from same object

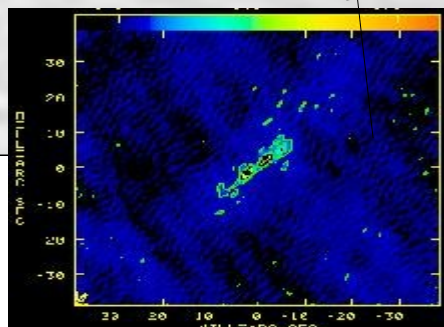
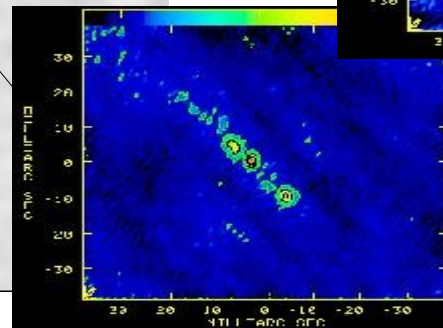
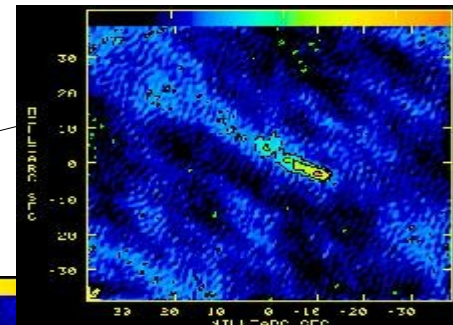
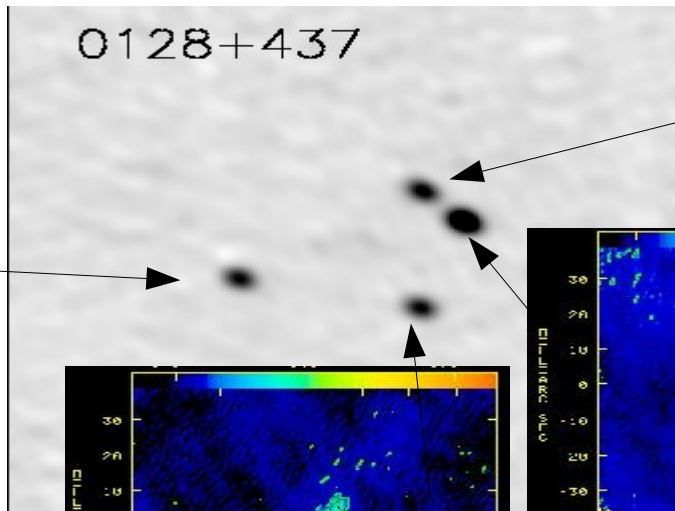
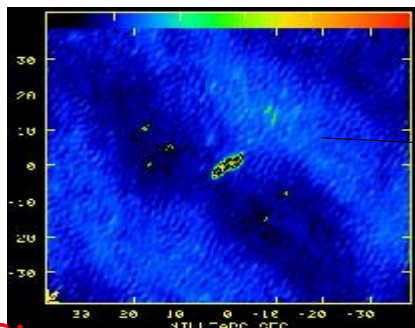
→ explore environmental effects (esp. low f)

Free-free

1632-0033 (winn et al 2002-4)



Scattering



Other cases:

CLASS B0218+357 (Biggs+ 2003)

PMN J0934-0931 (Winn+ 2003)

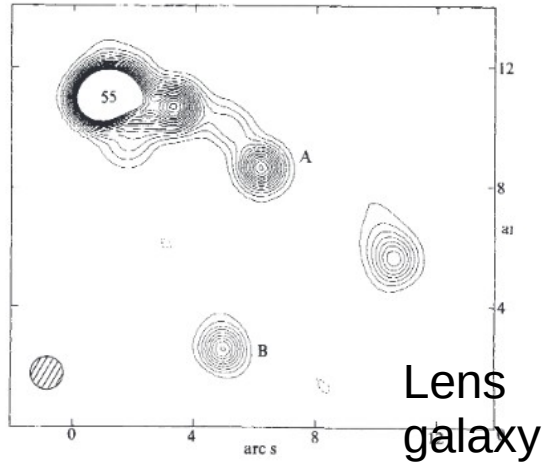
CLASS B1933+503 (Marlow+ 1999)

PKS 1830-211 (Jones+1996)

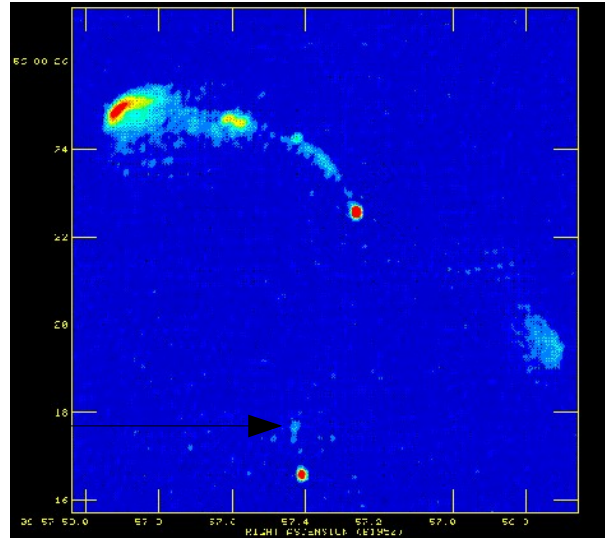
MERLIN+VLBI

(Biggs et al. 2004,
Zhang 2007)

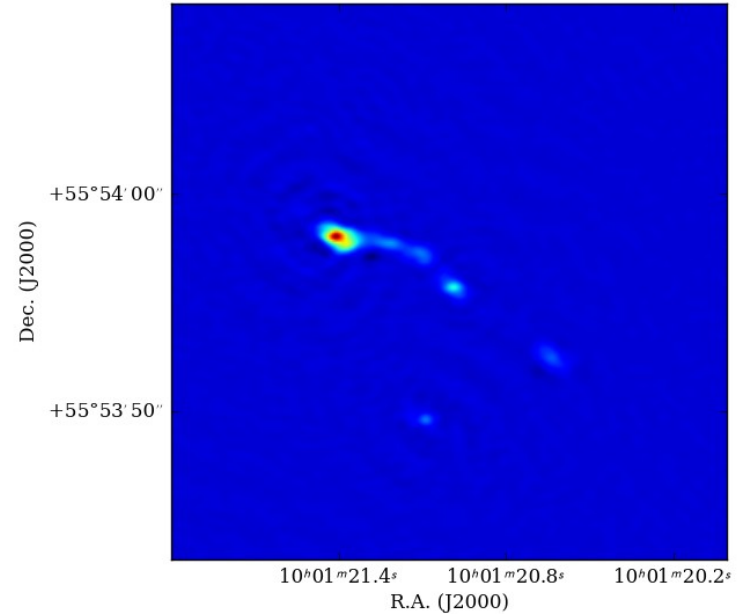
Early attempts: cycle 0



Merlin 408MHz
(Noble et al.)



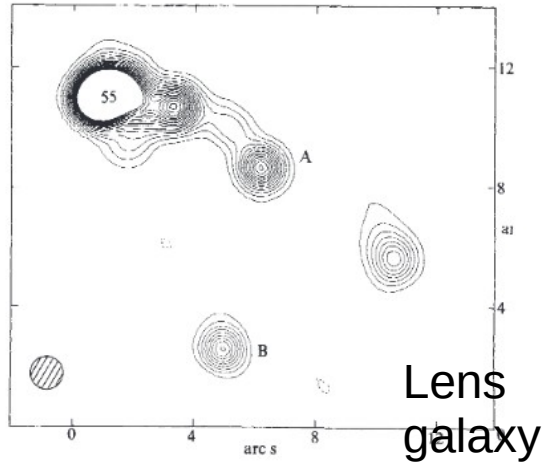
E-MERLIN L-band
(Tom Muxlow)



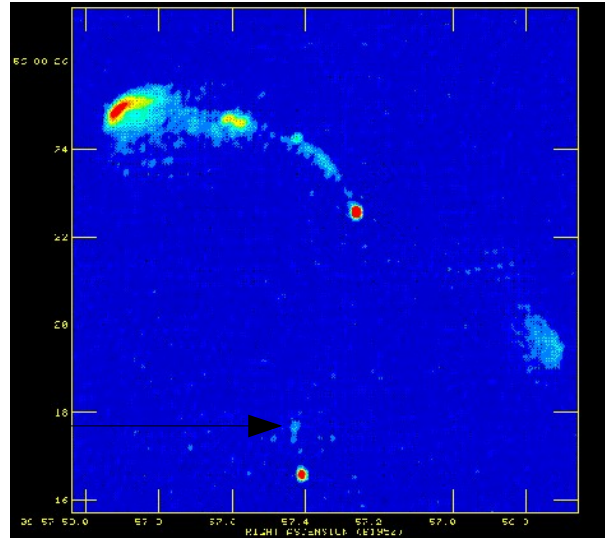
LOFAR Cycle 0
hint of different B/A
(Philippa Hartley)

Early attempts: cycle 0

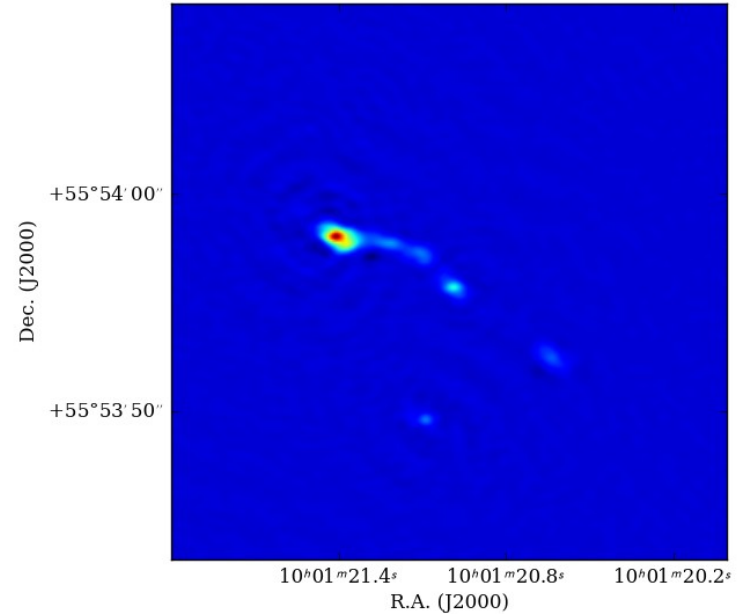
(To return to shortly – now in surveys footprint)



Merlin 408MHz
(Noble et al.)

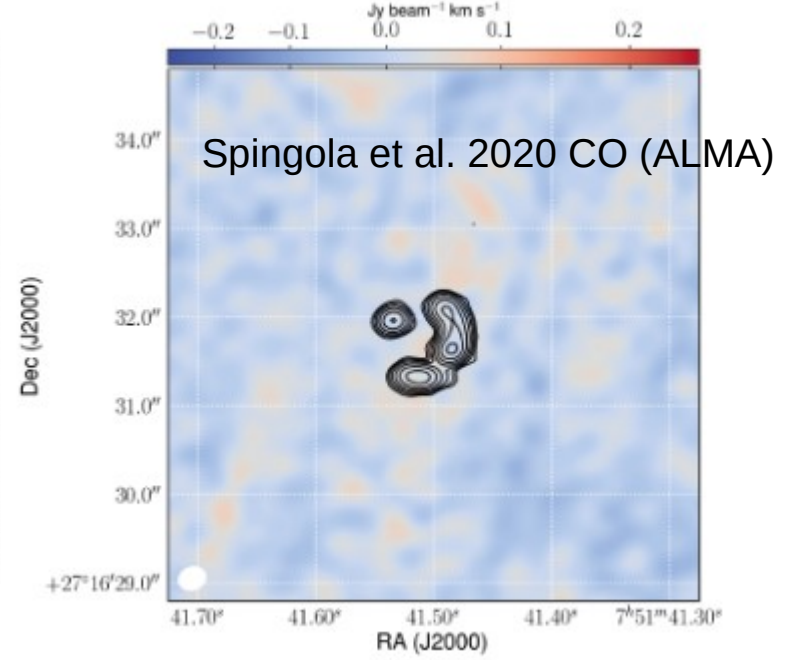
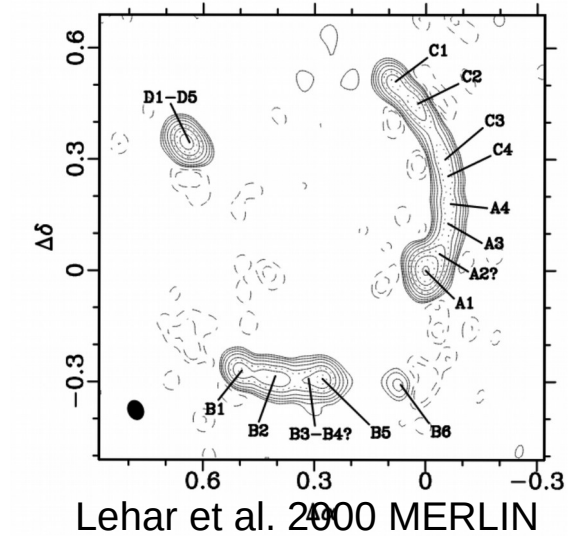


E-MERLIN L-band
(Tom Muxlow)

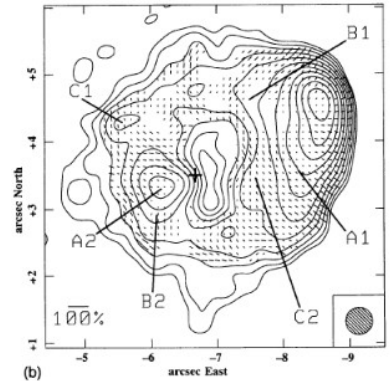
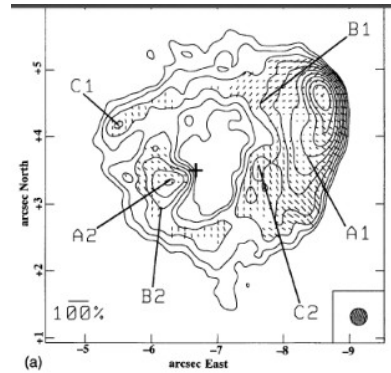


LOFAR Cycle 0
hint of different B/A
(Philippa Hartley)

MG0751+2716

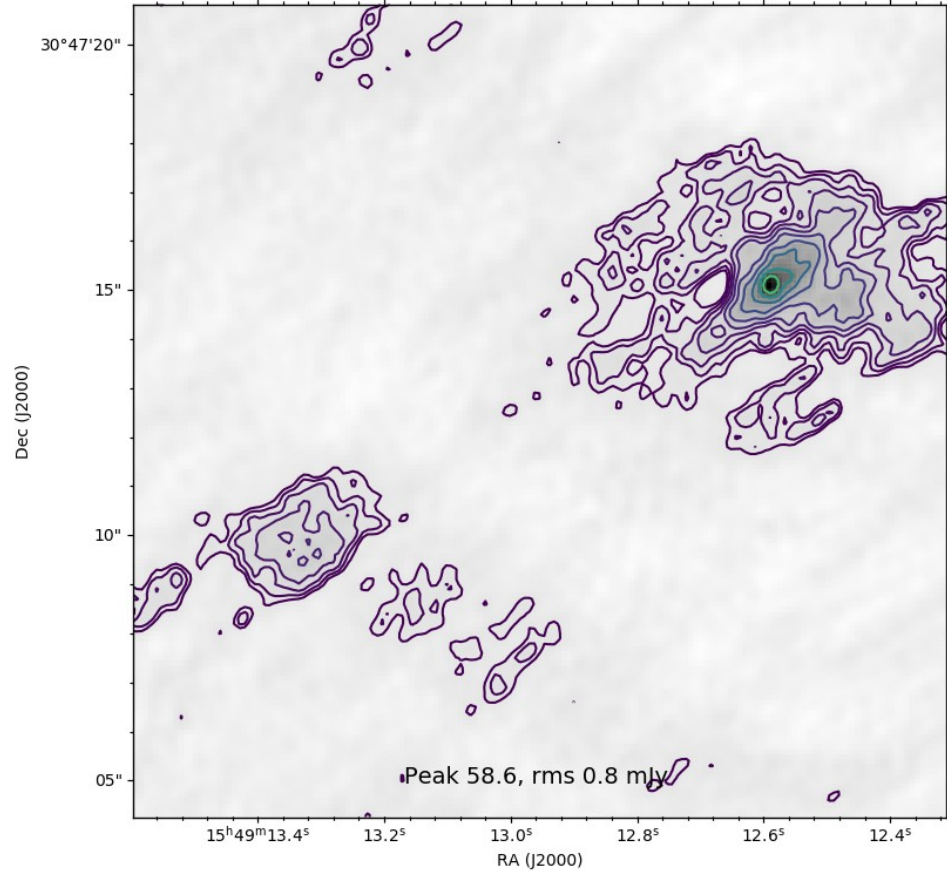


MG1549+3047



Lehar et al 1993

FIG. 2. VLA maps of the NW lobe at (a) 8.4 GHz and (b) 4.8 GHz. The contours are at factors of $\sqrt{2}$, starting at (a) 0.25 and (b) 0.5 mJy/beam. The vectors show the fractional intensity and orientation angle of polarized emission. The absolute polarization calibration was lost due to bad weather, and the vectors in the 4.8 GHz map may all be rotated by a constant angle. There is no substantial variation in spectral index over the lobe. Pairs of possibly corresponding features are labeled, and the



151MHz (in progress)
(astrometry TBD!)