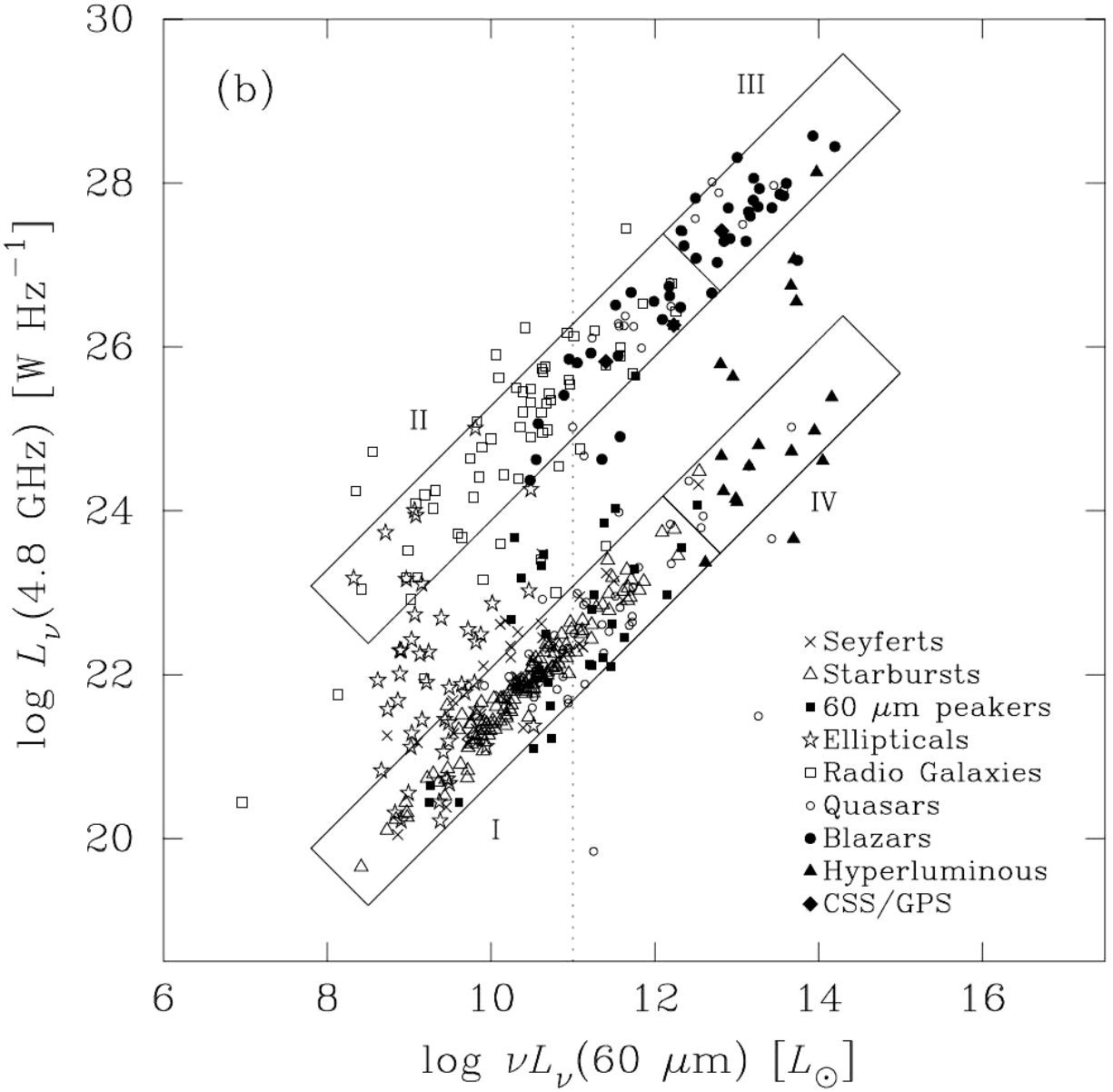
6. AGN

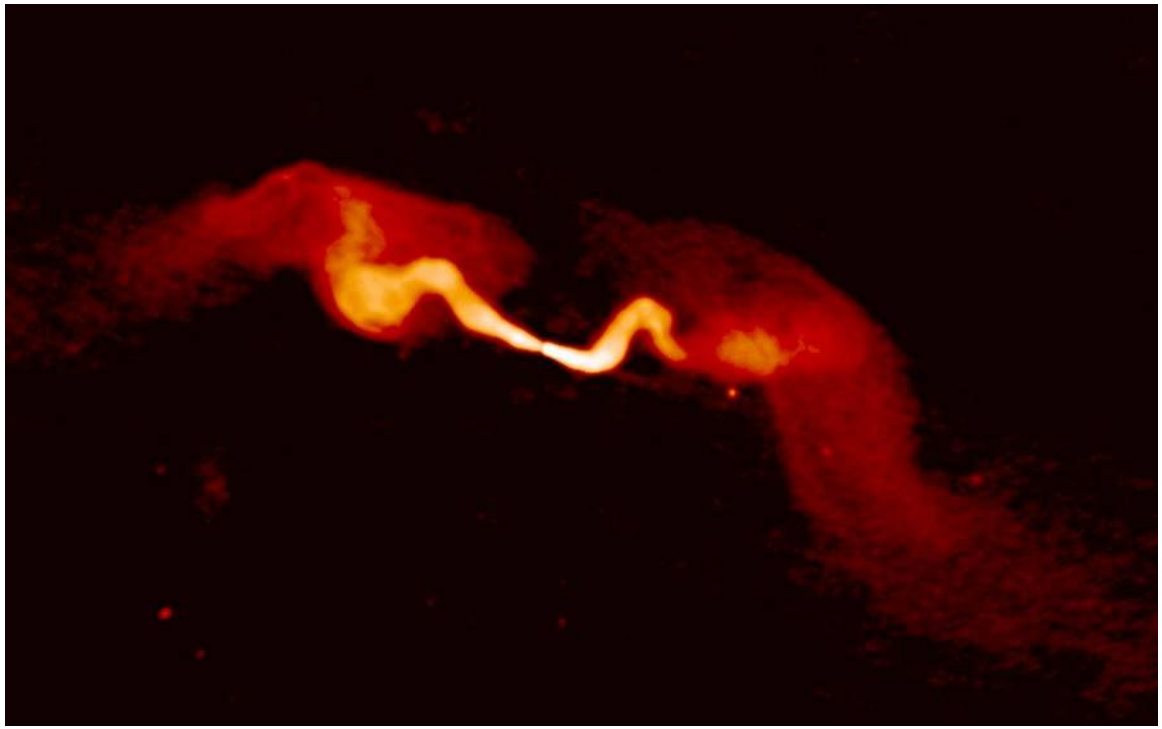


radio-FIR correlation
(Drake et al. 2003)

Radio galaxies:

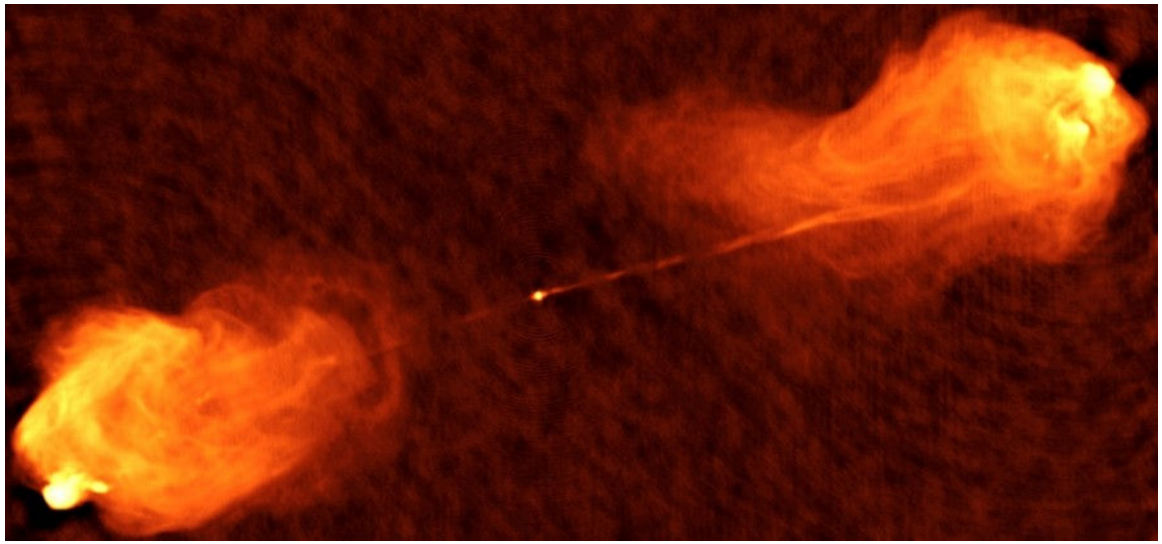
FR I

e.g. 3C 31



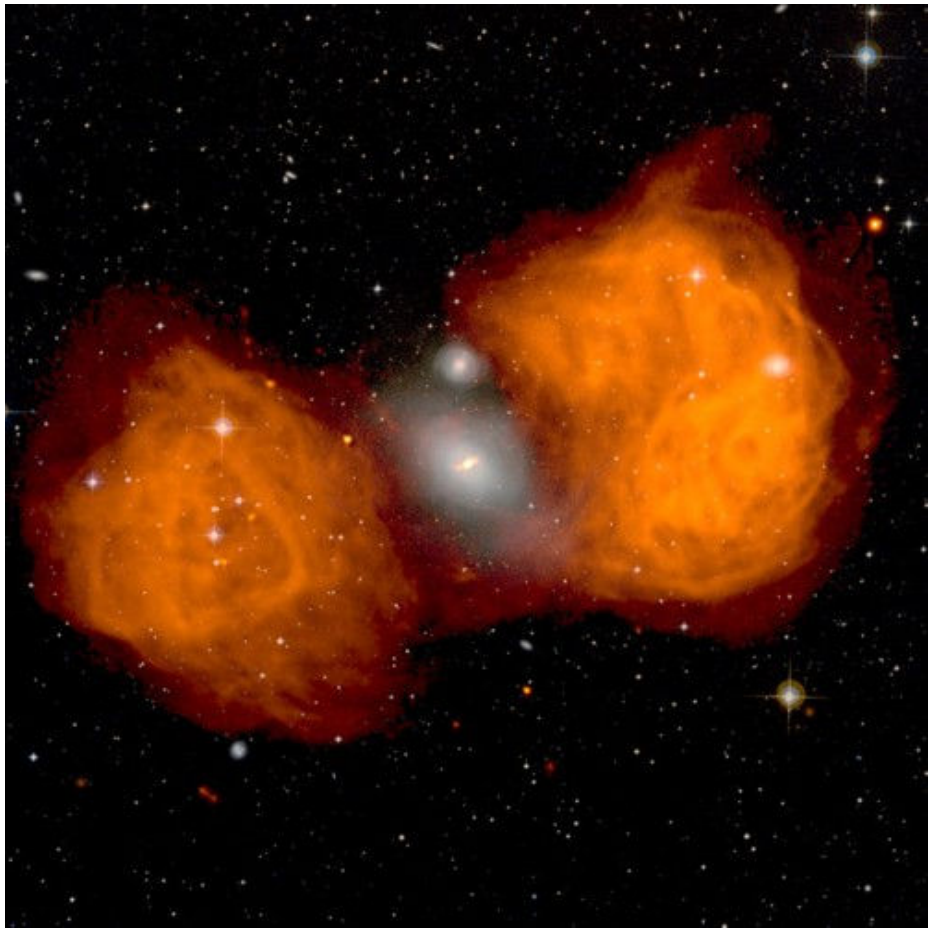
FR II

e.g. Cyg A

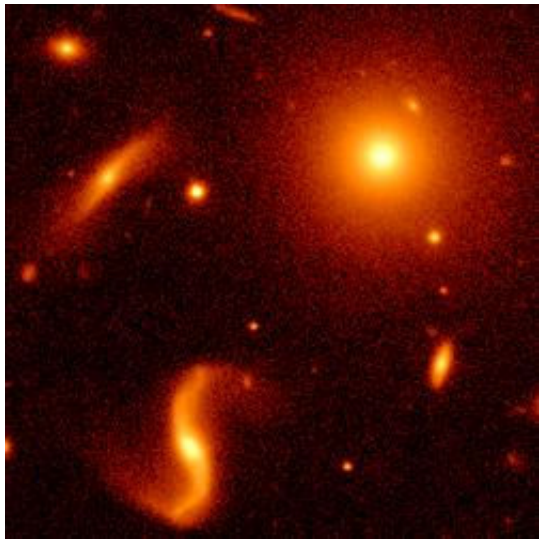


Radio/optical:

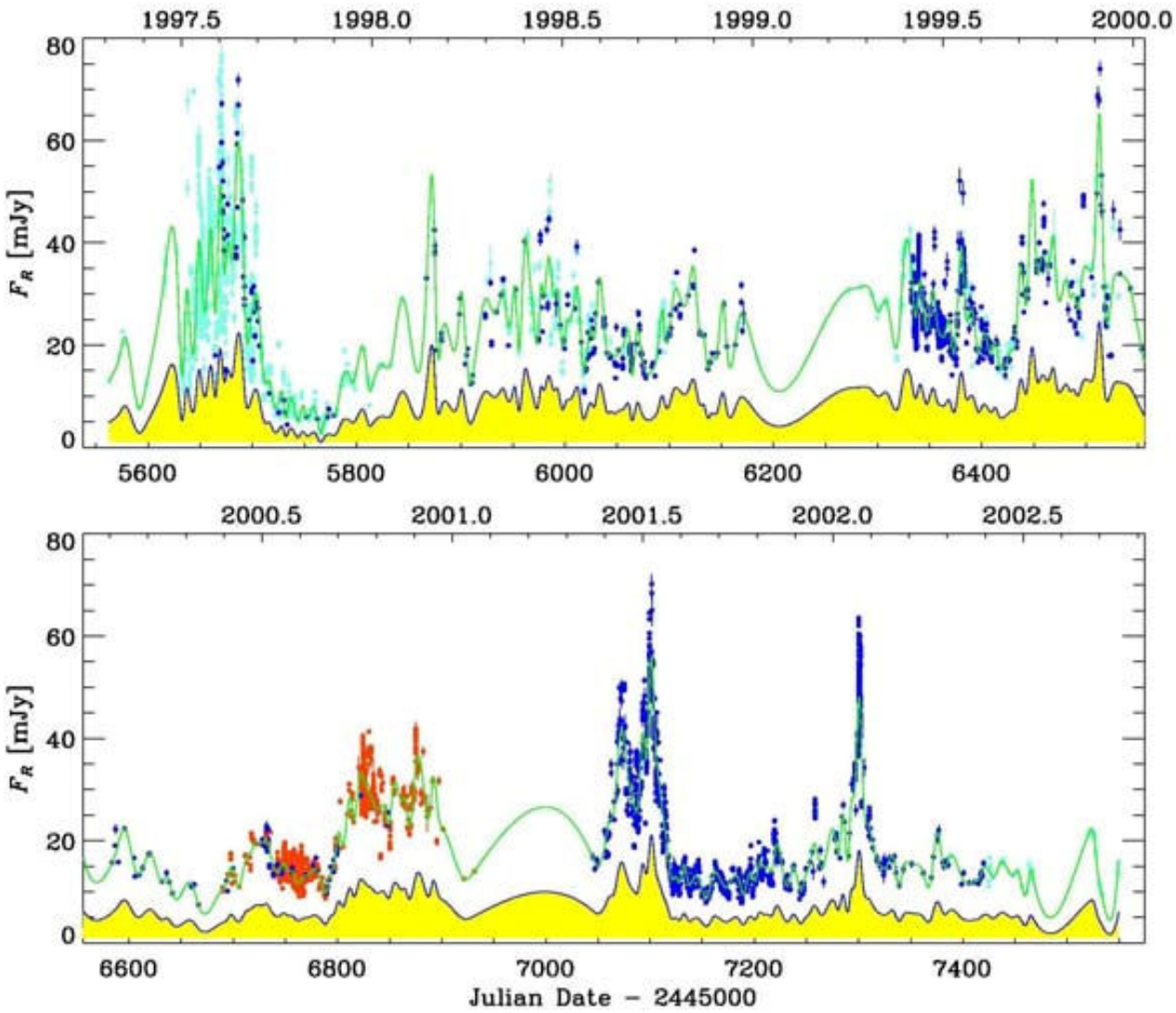
Fornax A



3C 219

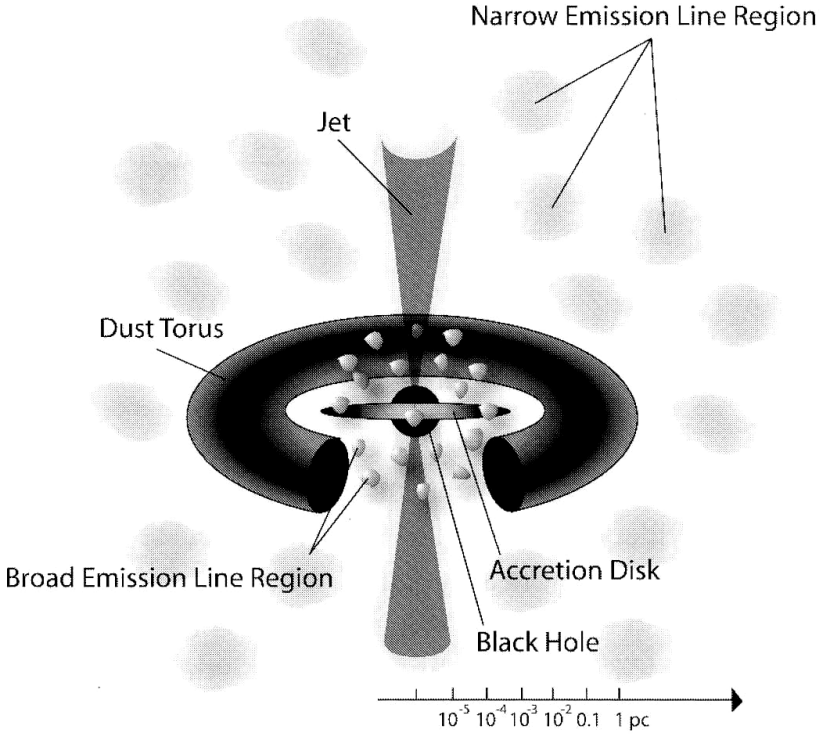


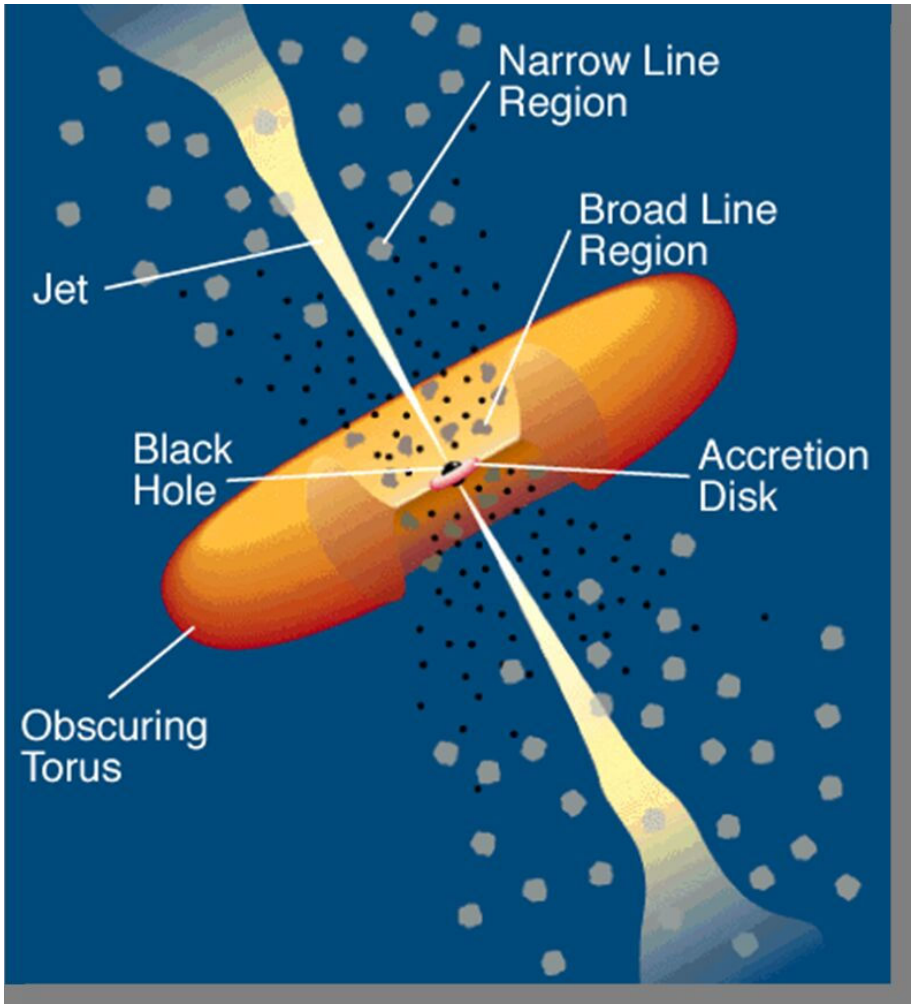
Blazar variability: BL Lac



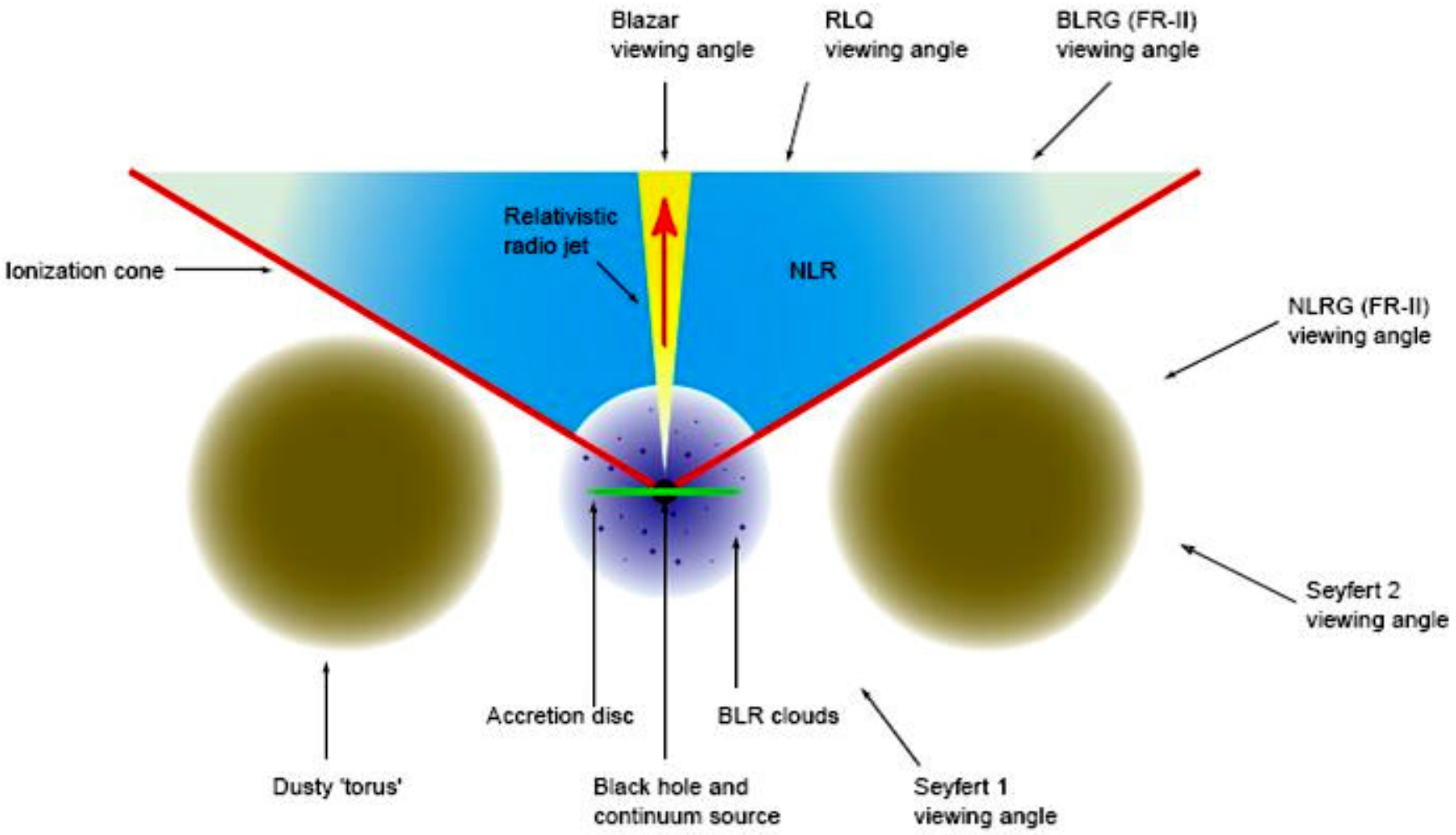
broad-/narrow-line regions

(BRL/NLR)

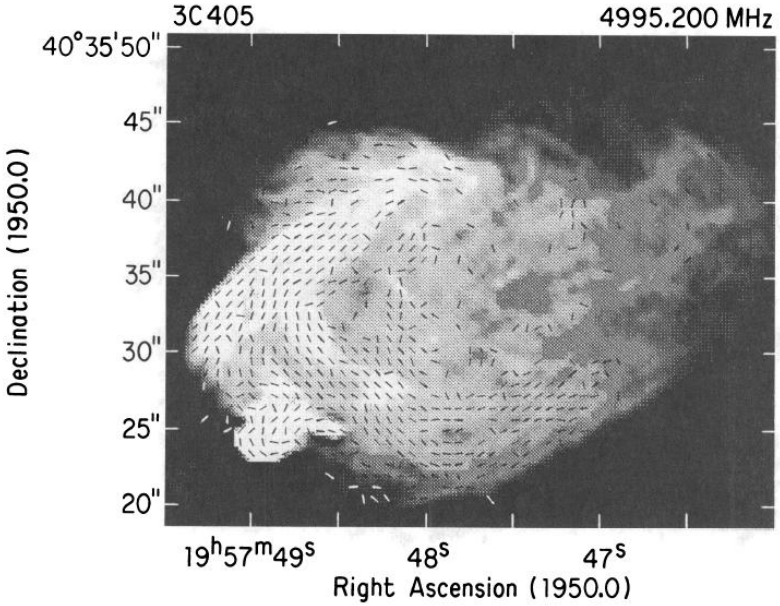


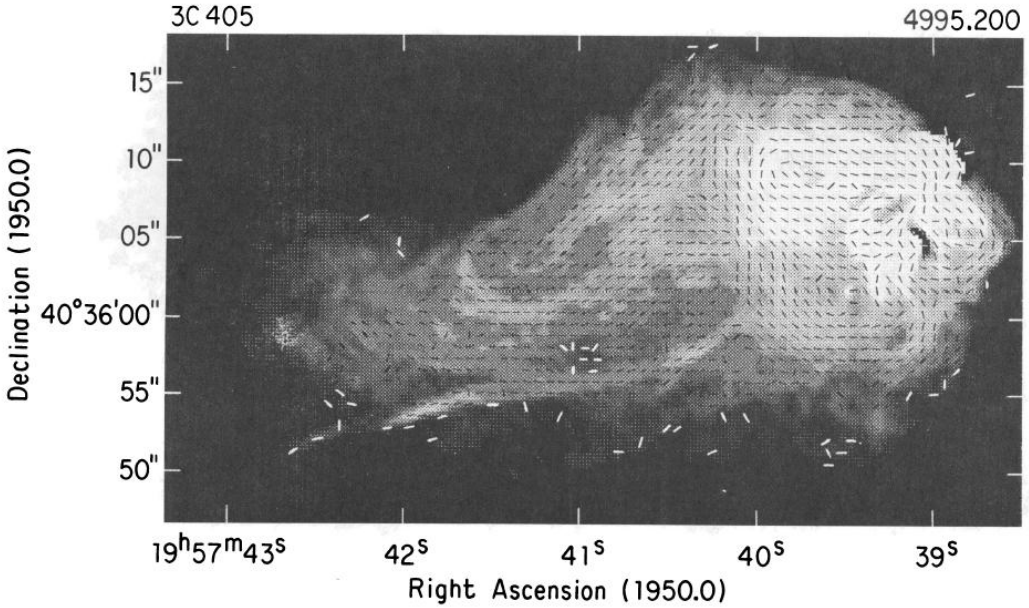


BLR/NLR and AGN zoo

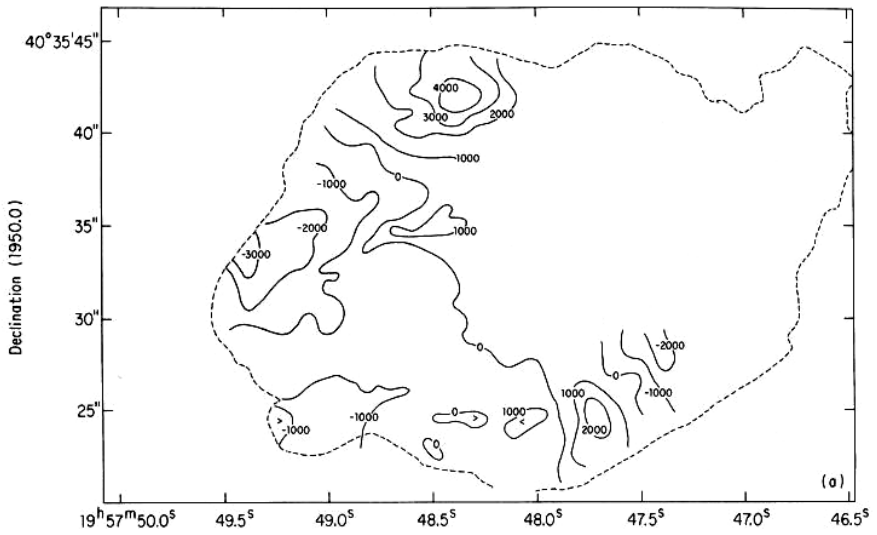


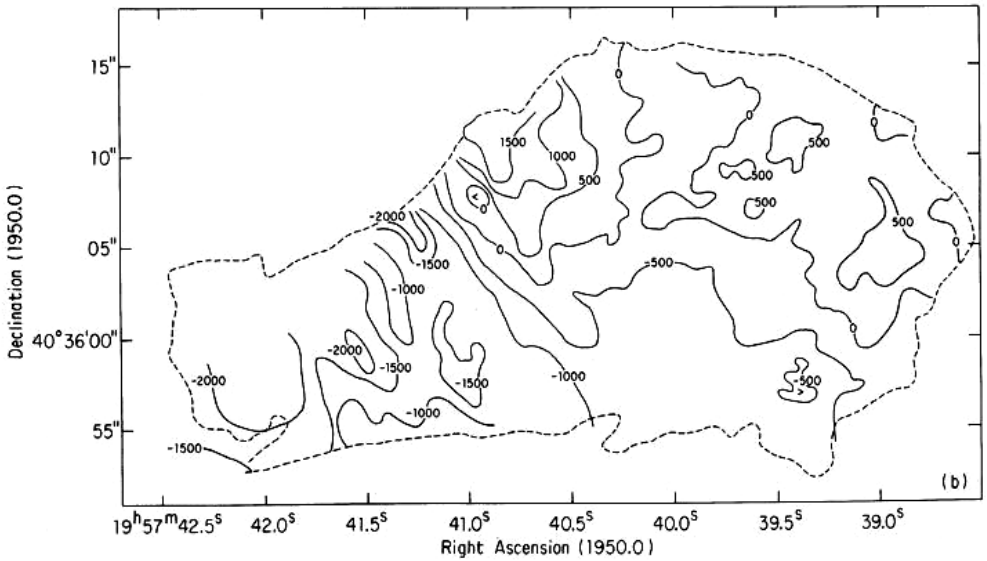
Cyg A: B-fields

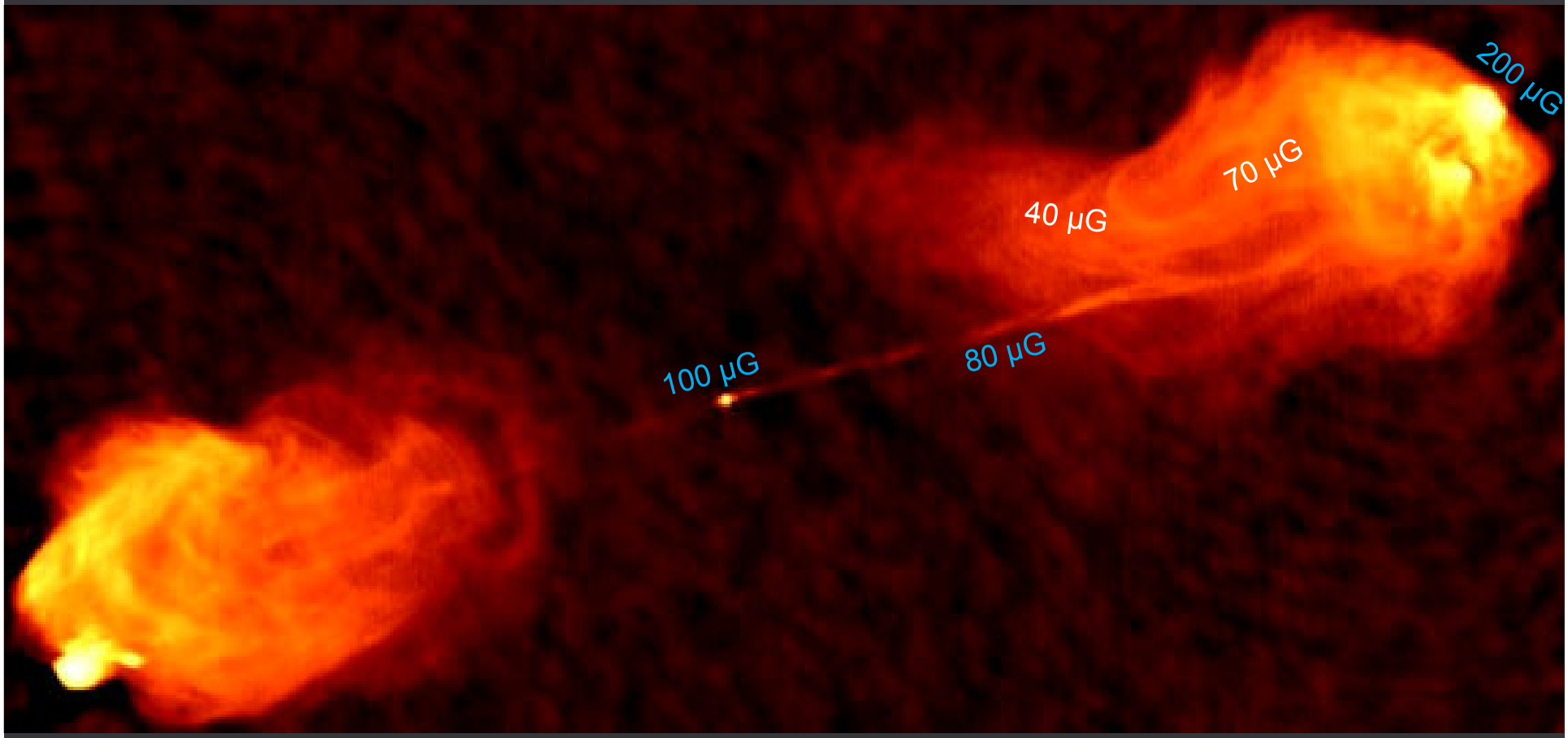




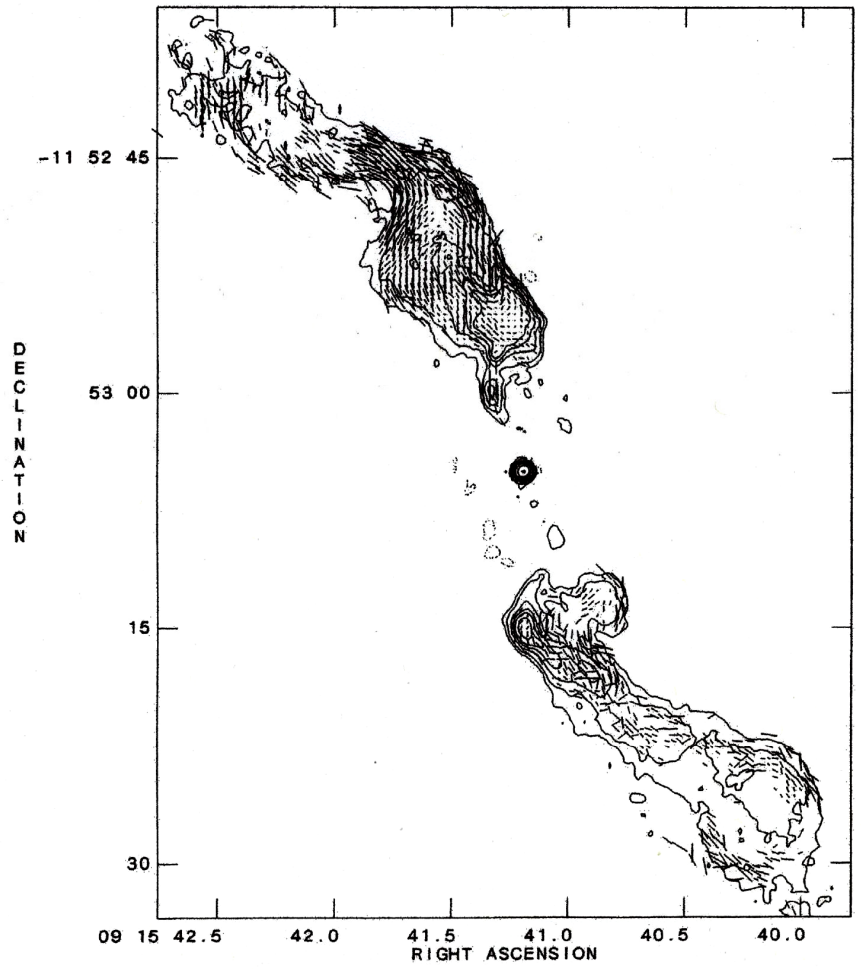
Cyg A: RMs

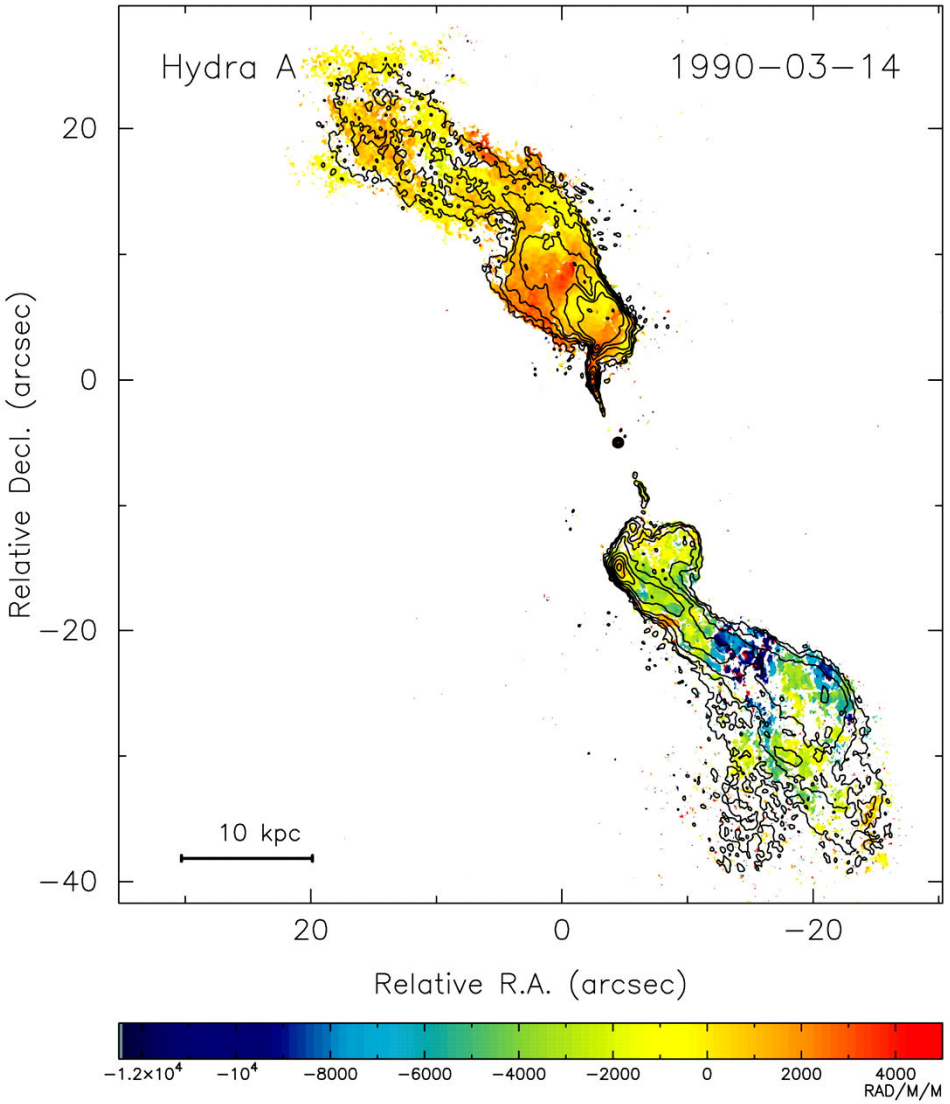




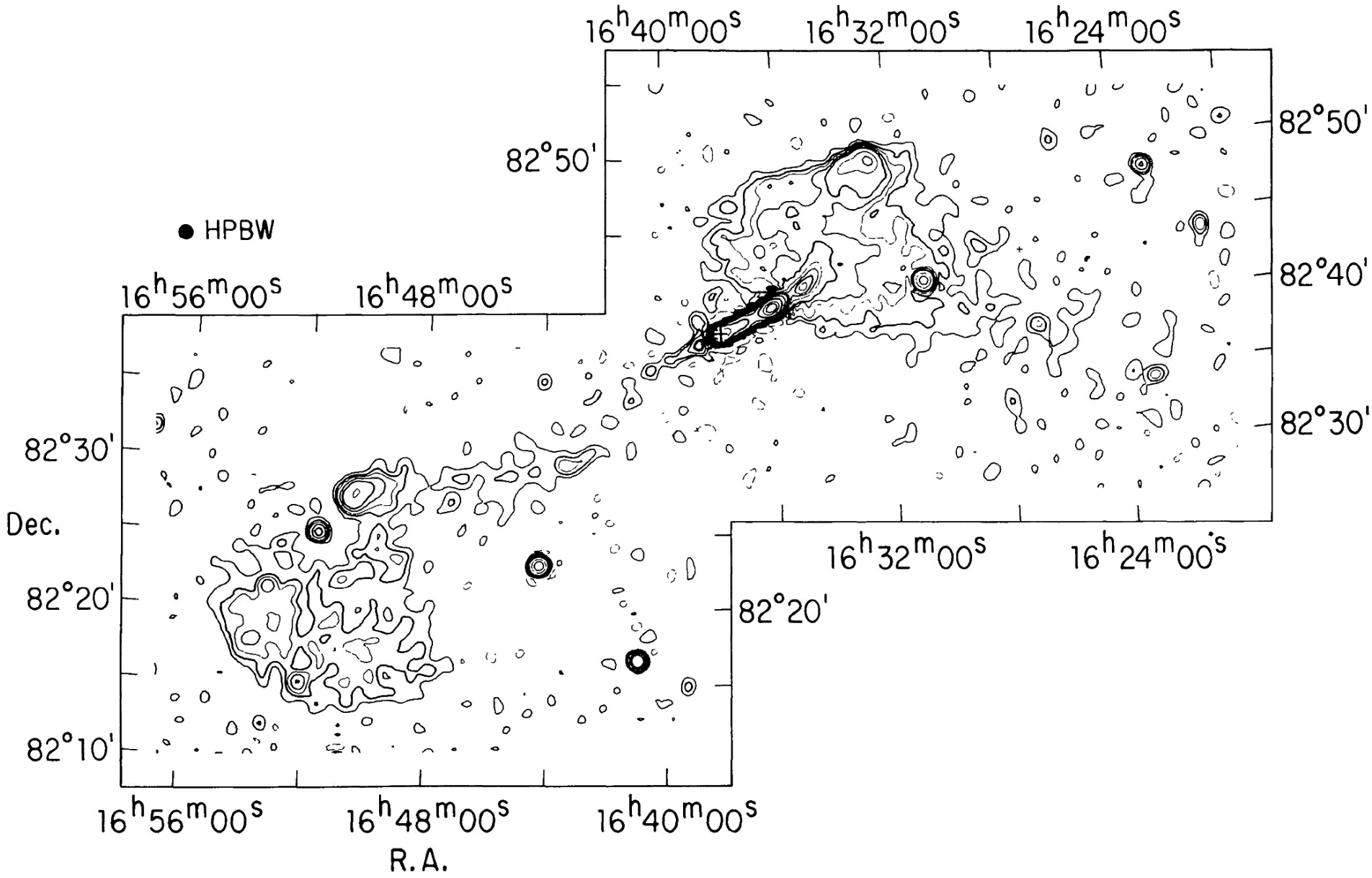

200 μG
70 μG
40 μG
80 μG
100 μG

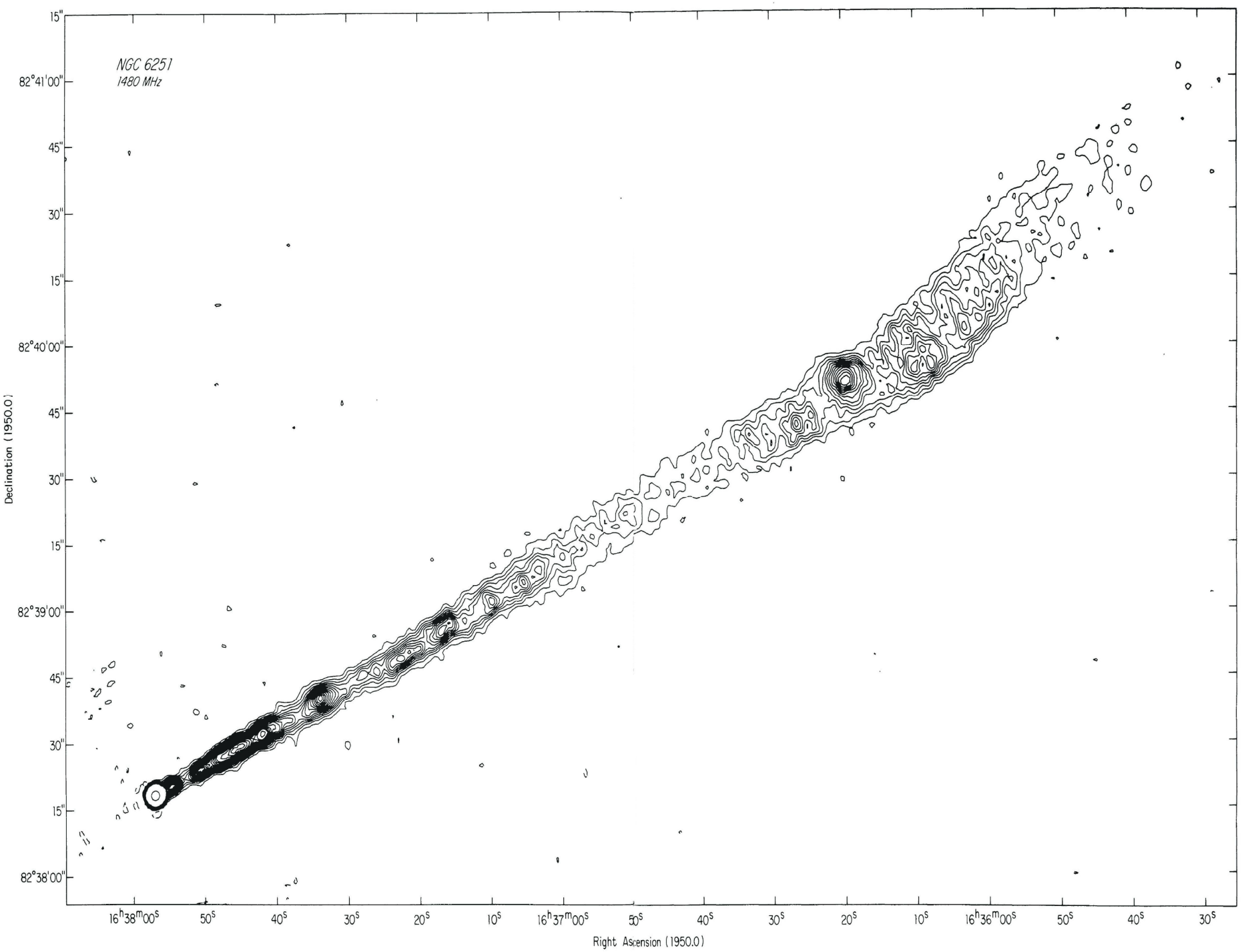
Hydra A: B-fields and RMs





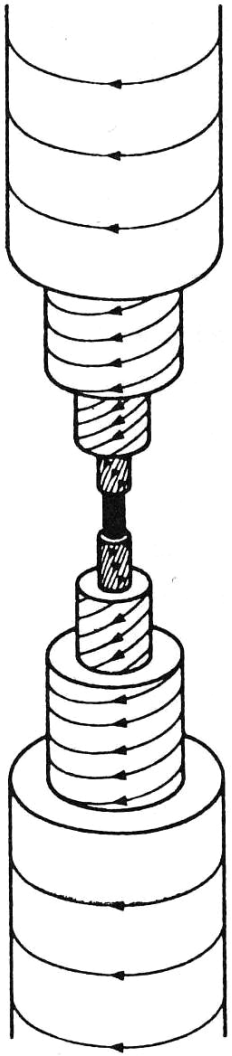
Jets: e.g. NGC 6251

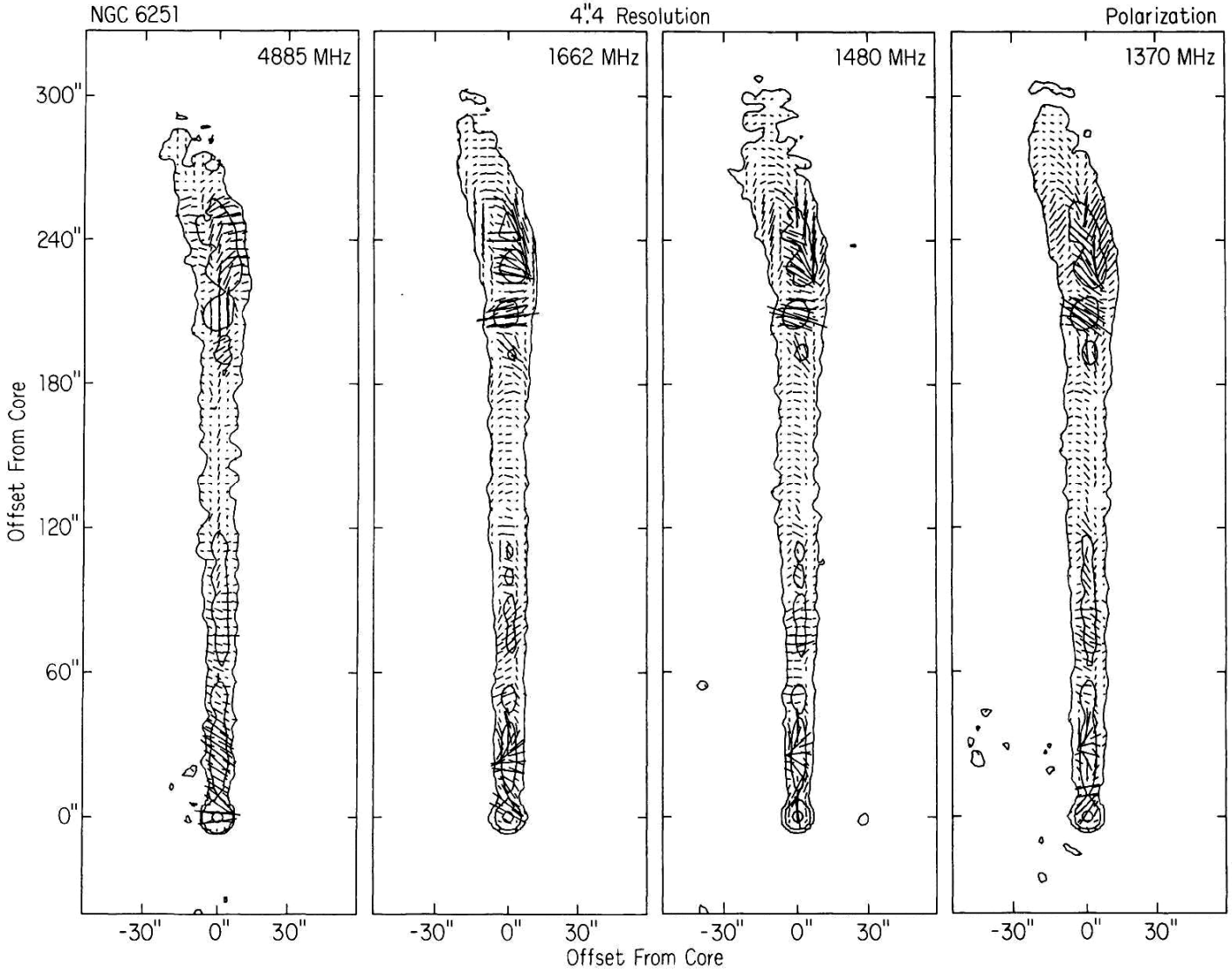



NGC 6251
1480 MHz
15"
82°41'00"
45"
30"
15"
82°40'00"
45"
30"
15"
82°39'00"
45"
30"
15"
82°38'00"
Declination (1950.0)
16h38m00s
50s
40s
30s
20s
10s
16h37m00s
50s
40s
30s
20s
10s
16h36m00s
50s
40s
30s
Right Ascension (1950.0)

Flux rope in jet

NGC 6251 $\vec{E}$-vectors

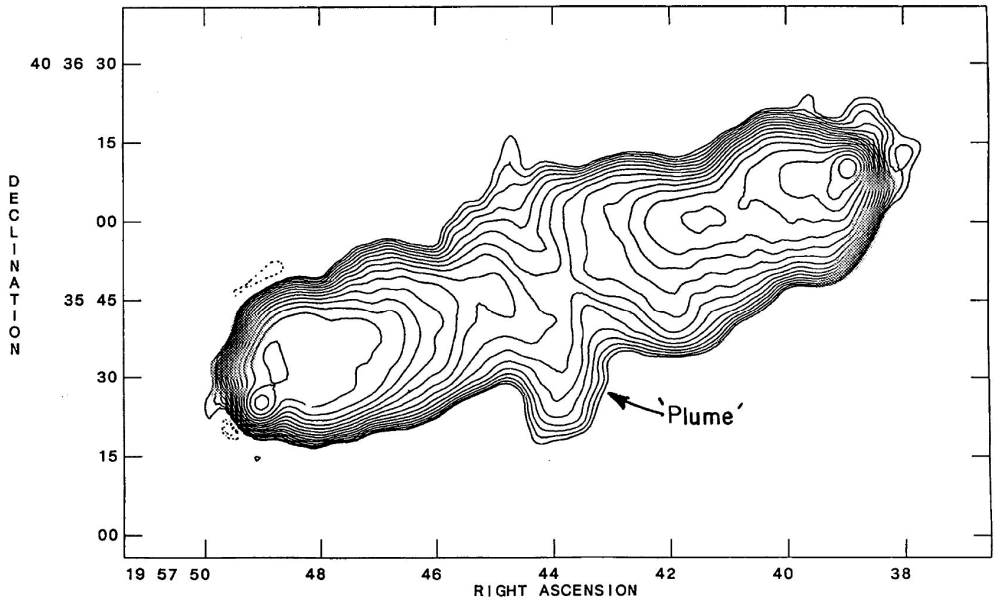




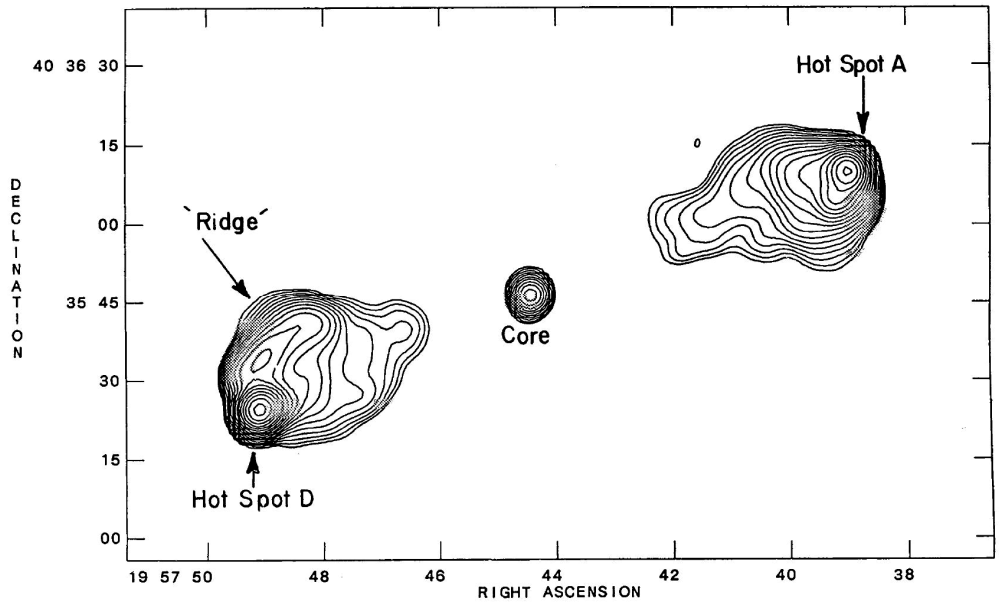
Cyg A:

synchrotron radiation

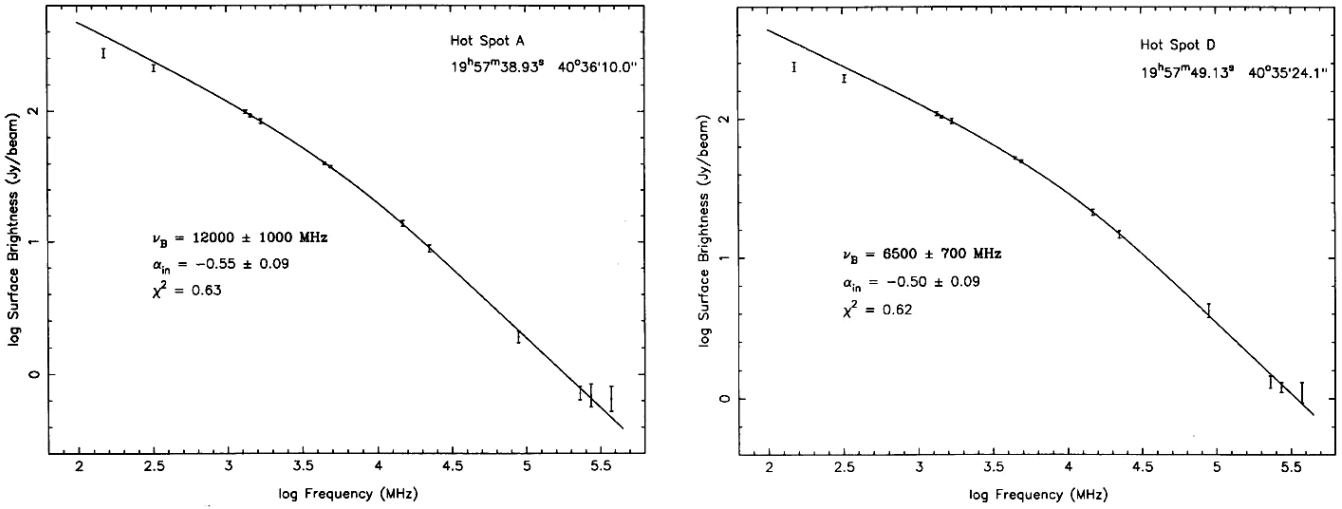
327 MHZ



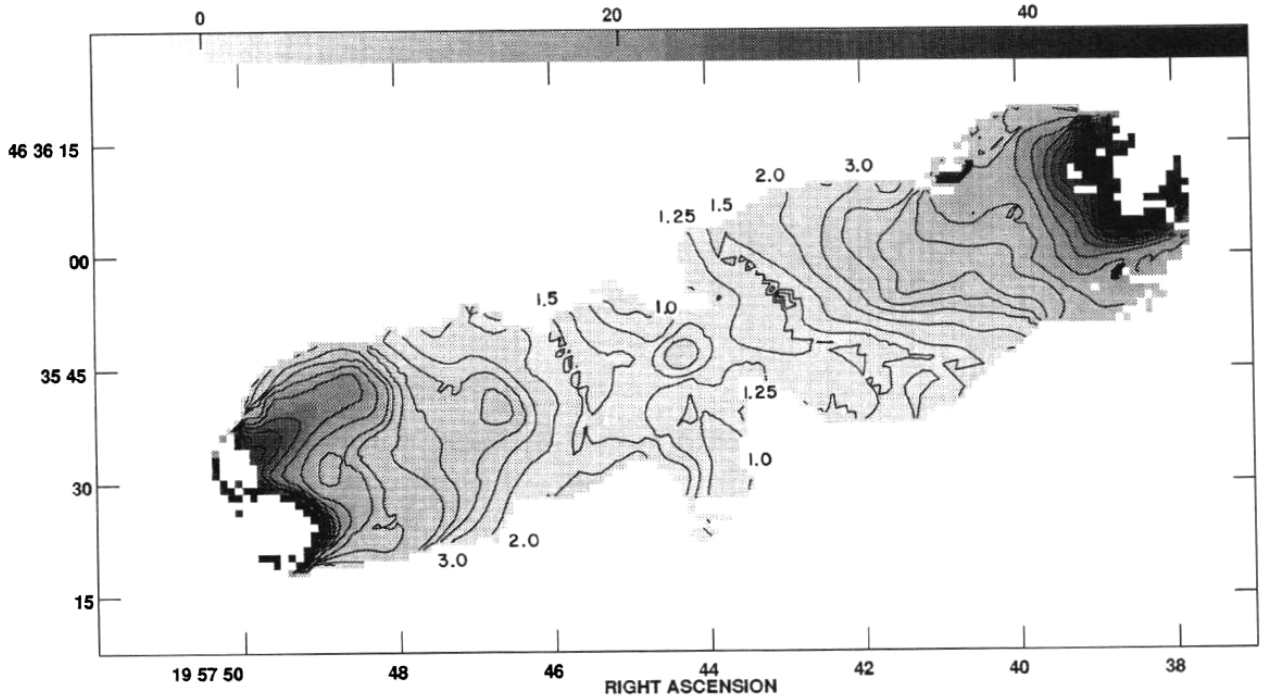
15 GHz



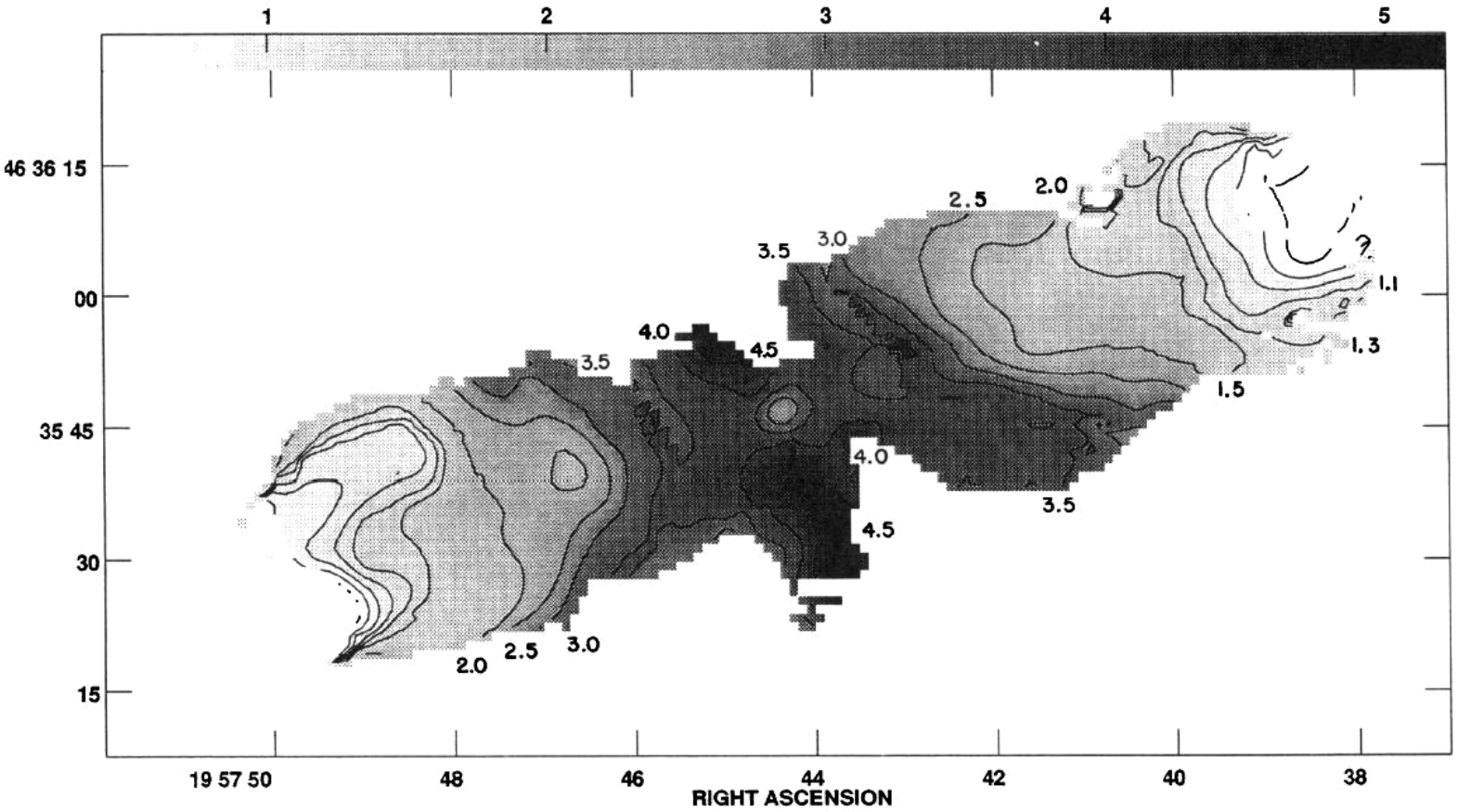
Cyg A: spectral index



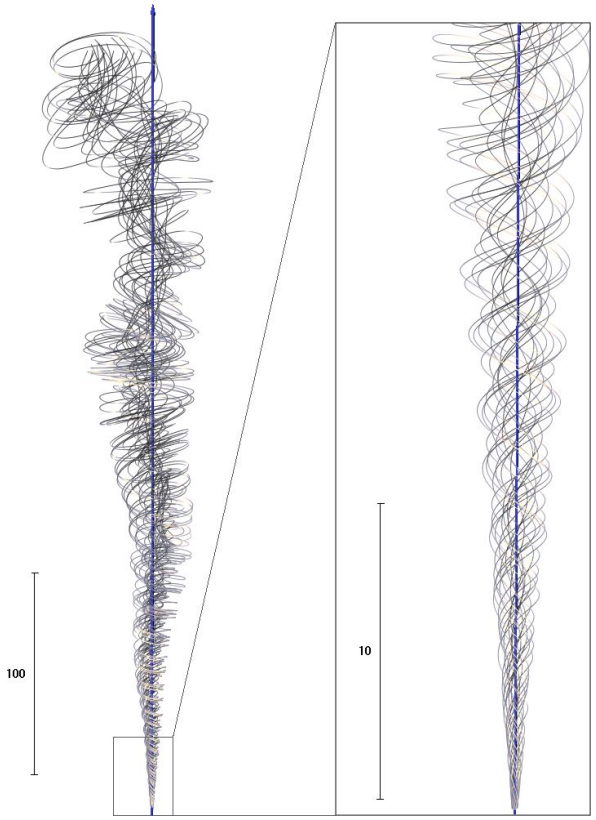
Cyg A: break frequencies

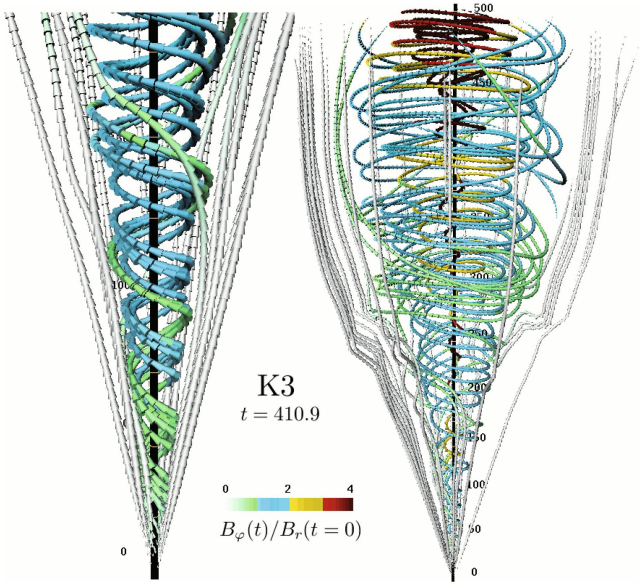


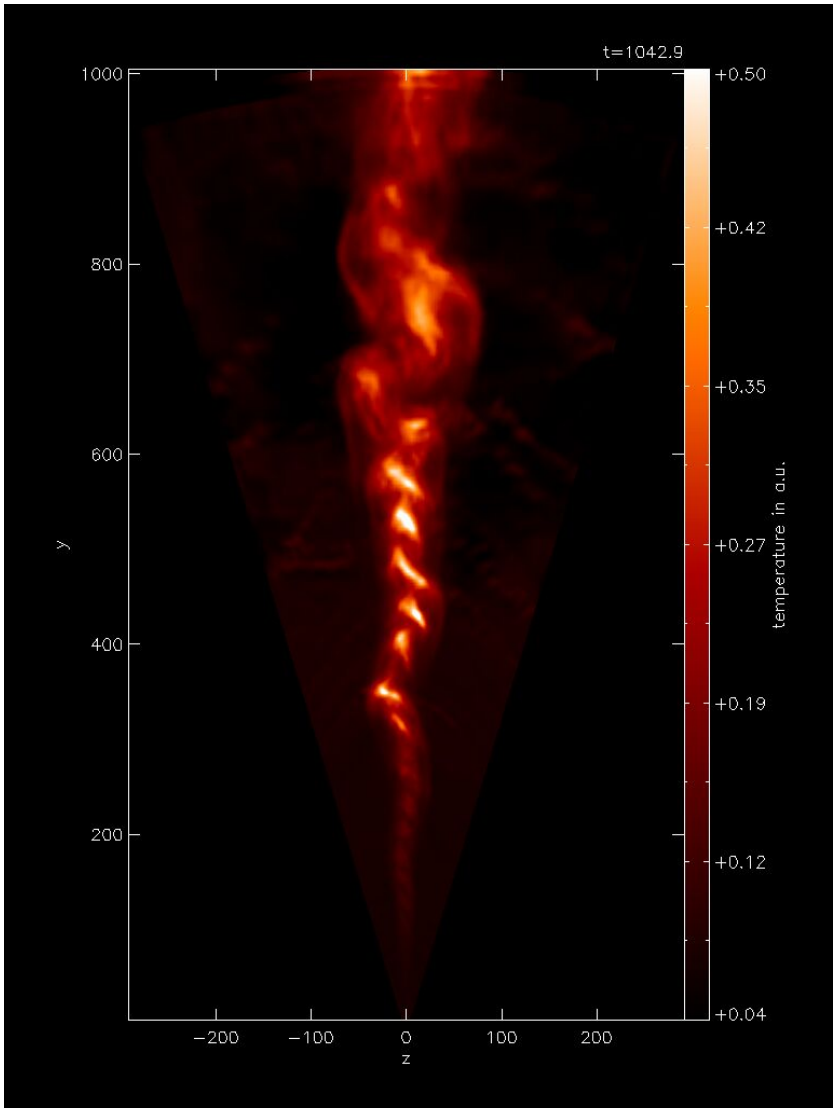
Cyg A: particle ages



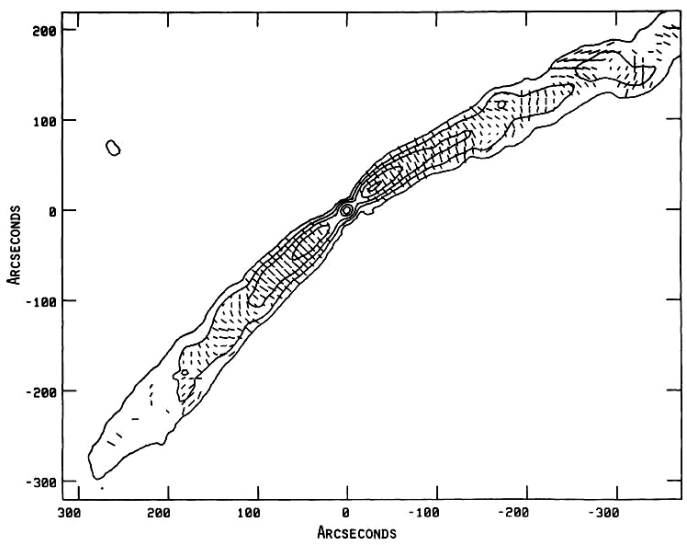
MHD simulations of jets

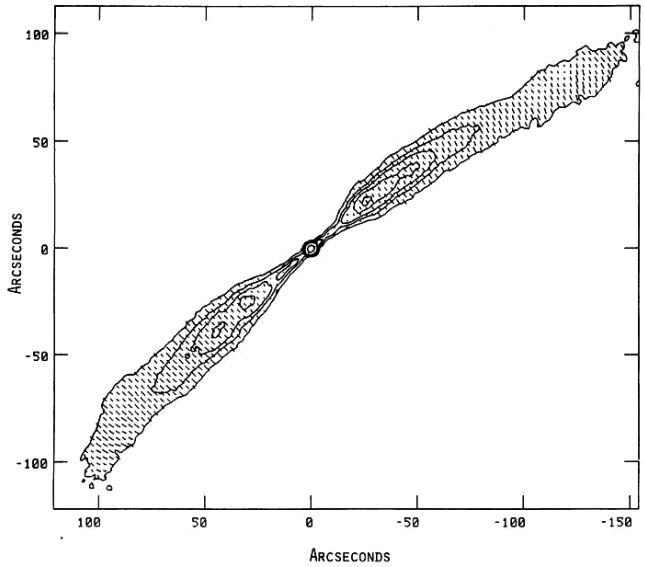


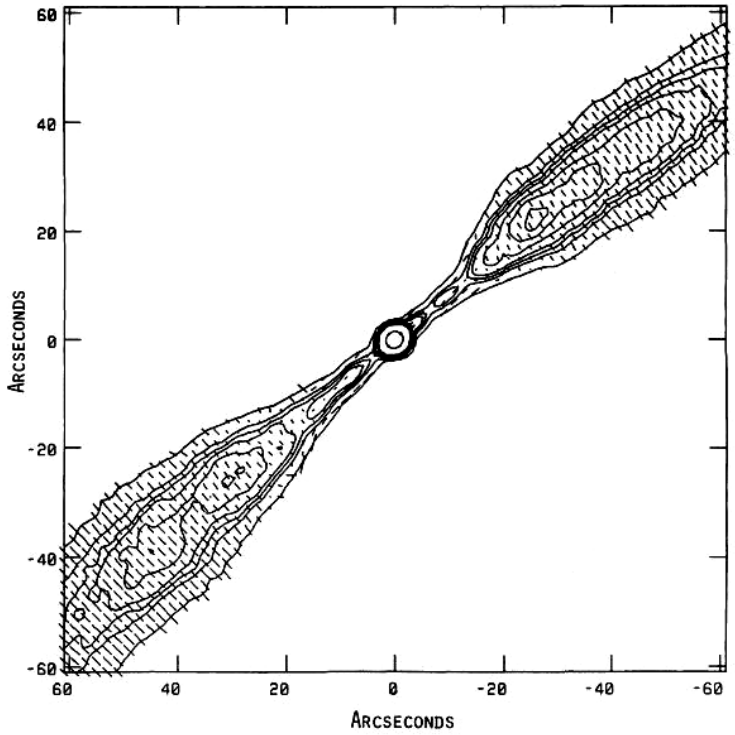




B-fields in FR I radio galaxies: NGC 4296

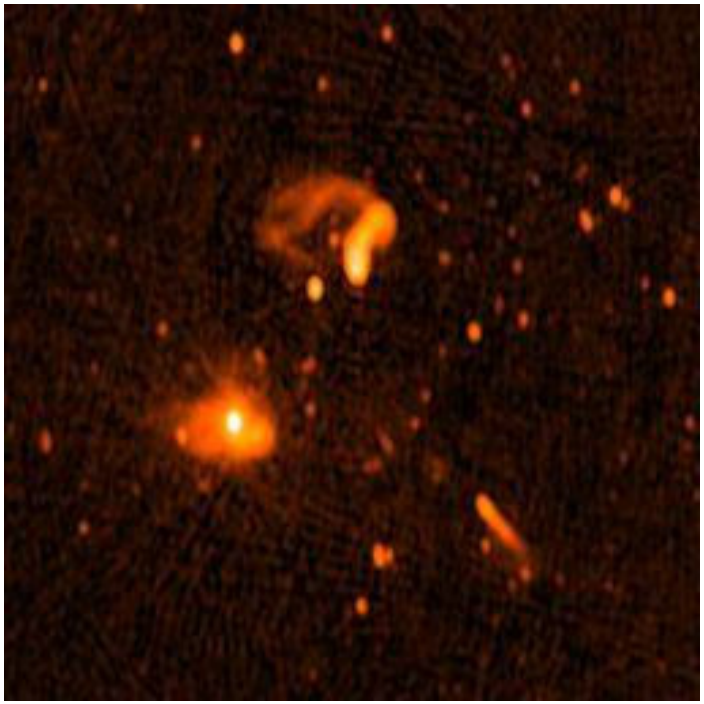


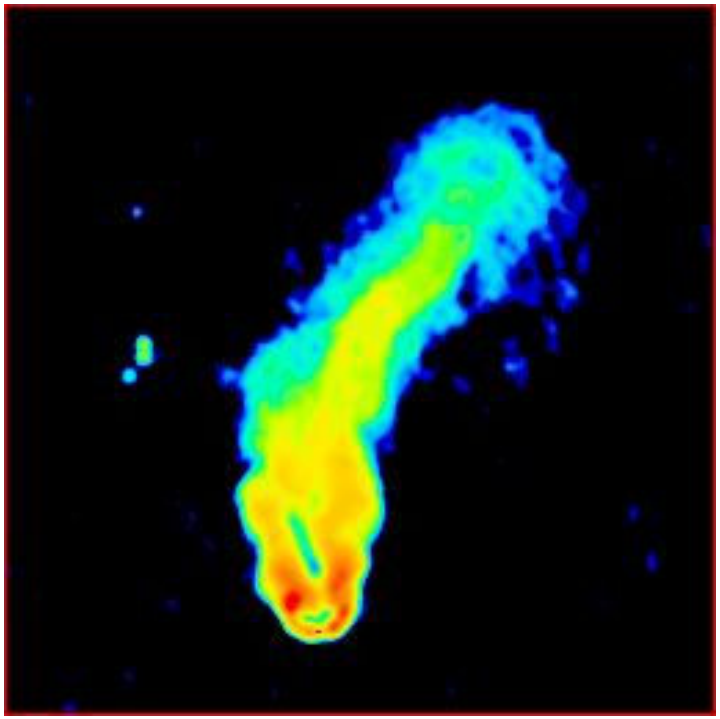


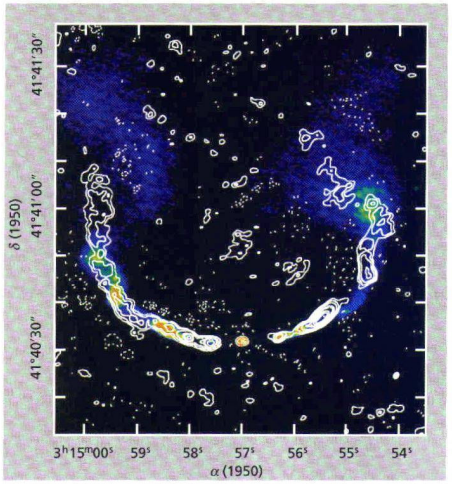


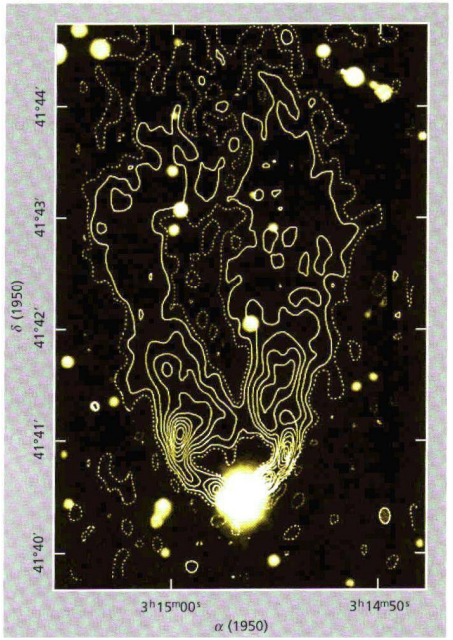
‘Tailed’ radio sources:

‘cluster weather’!

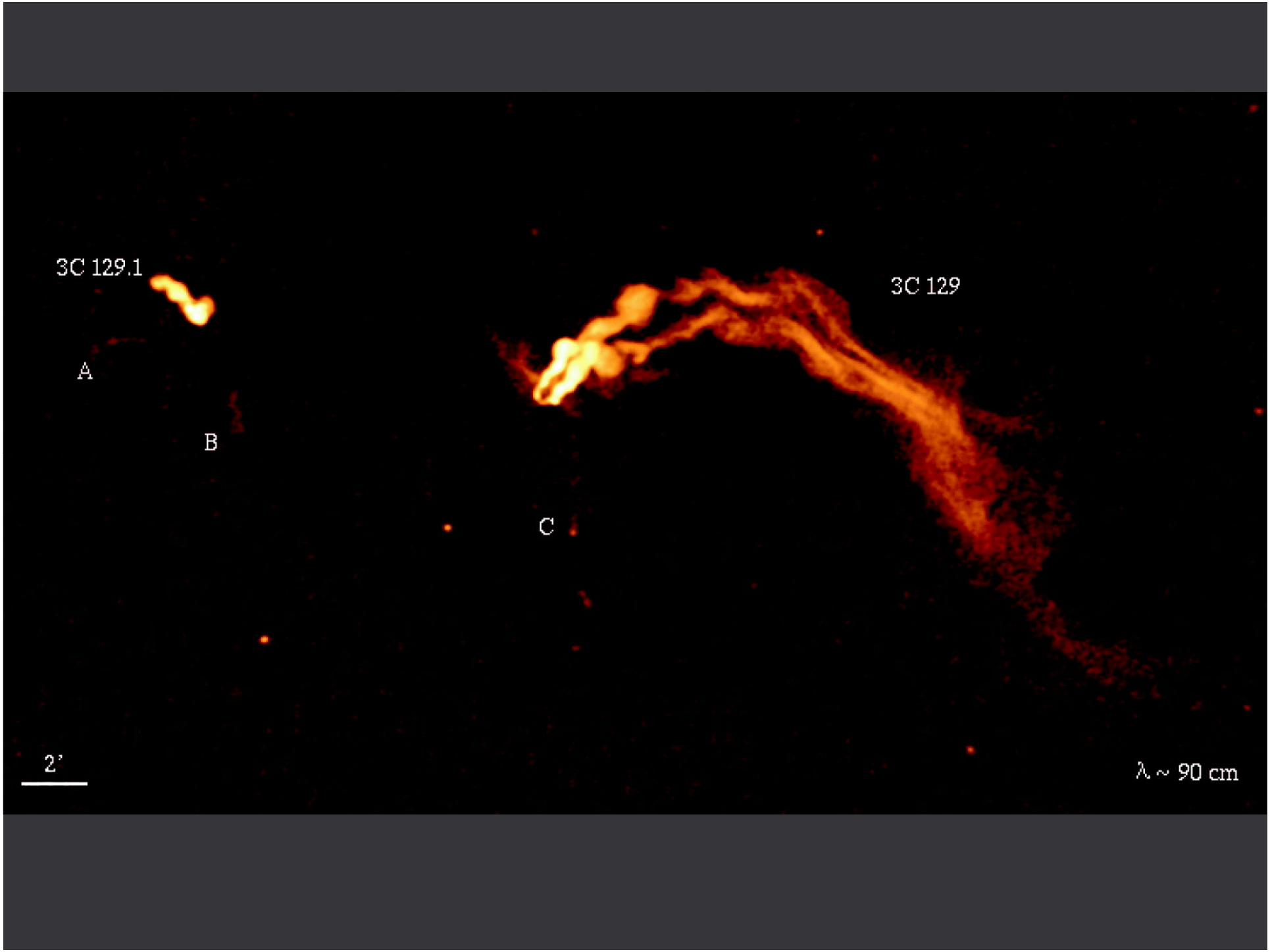




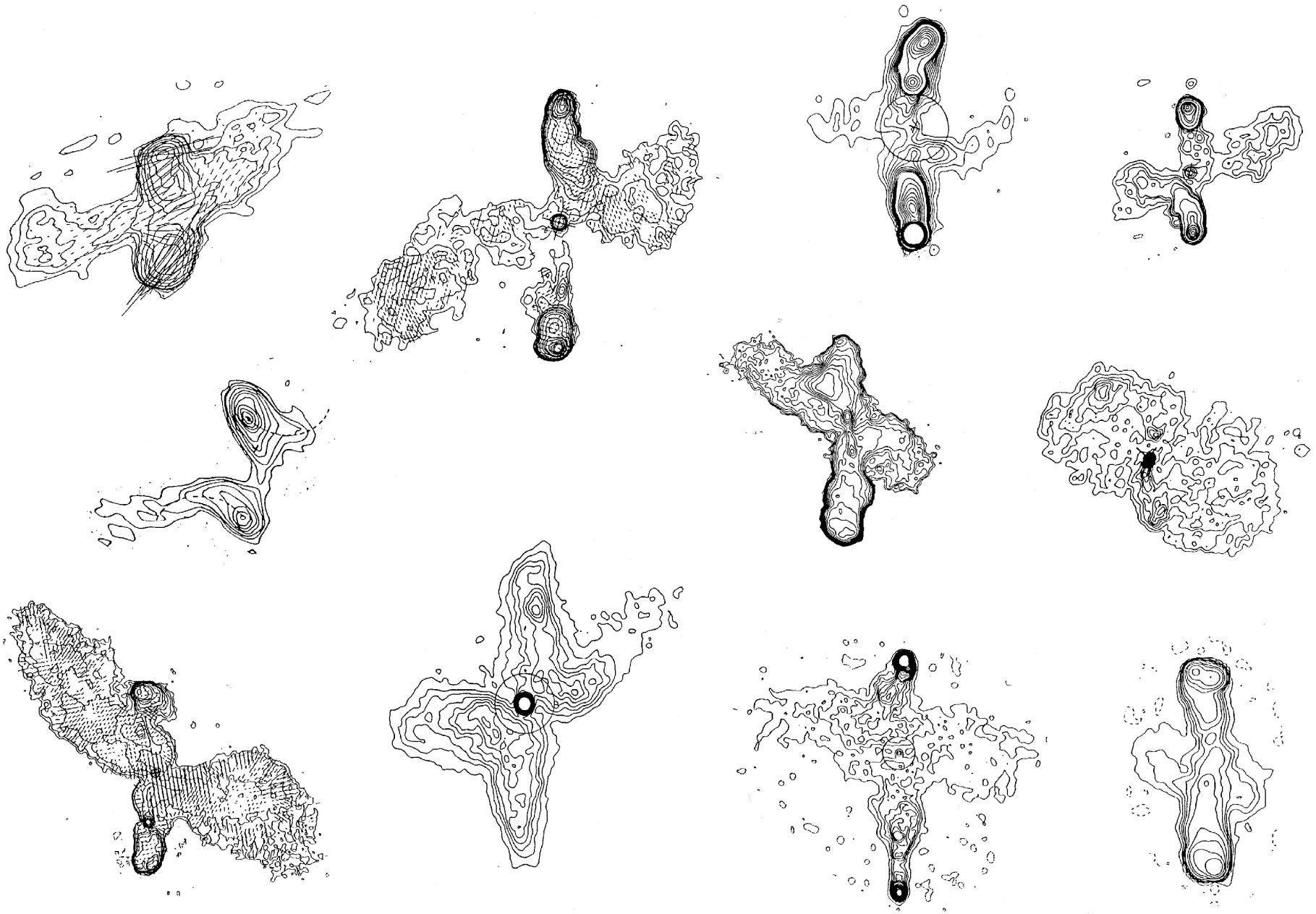




NGC 1265


3C 129.1
3C 129
A
B
C
2'
λ ~ 90 cm

‘X-shaped’ radio sources: binary BHs and precession



‘exhausting radio sources’: B2 0824+30