1 Giroletti

Denise Gabuzda *Question* How did you derive spectral-index information about individual VLBI components if you only had VLBI observations at 1.46 Hz?

Answer We derived most of out spectral index information form the simultaneous VLA observations at 8 and 22 GHz. For VLBA cores we give spectral index information only in the case that individual components are well separated also in the 22 GHz VLA image. For example, the two components that we see in 0258+35 with the VLBA are ∼0.2 arcseconds apart, which is larger than the VLA beam at 22GHz (A config). Phase referencing is also much useful because we have absolute position information and are thus able to make good matching between components in different images. (Giroletti et al. 2005 A&A in press, astro-ph/0506497)

Martin Hardcastle *Question* You use the presence or absence of a terminal hotspot as an indication of a 'live' vs. 'dying' source. But we know of many sources - Cen A is the best example - where a small source has no hotspots but is still strongly overpressured wrt the external medium and so will continue to expand. I'd be interested to see a comparison between the minimum internal pressure in your sources and the (plausible) external pressure in the ISM (hot phase)

Answer While it is true that other relatively compact sources do not show hotspots but they are still expanding, it has to be noted that we are dealing with extremely compact sources, well within the host galaxies. Sources as Cen A, for how compact, have radio emission that extends well beyond the dense environment of the host galaxy. That could explain why they can expand without the appearence of hot spots Such an explanation is less plausible in our LPC, an that's why our images, though not conclusive, are certainly suggestive of the possibility that the central engine is not working at full [power]. The calculation of the minimum internal pressure is however worth doing in our sources and we will definately consider it. Estimates of equipartition magnetic fields are reported in Giroletti et al. 2005 A&A in press, astro-ph/0506497

David Meier *Question* Is there any evidence for optical or X-ray activity in the LPC sources?

Answer Except for their low radio power emission, LPC do not show any signature of stron nuclear activity. In the optical, they look like luminous ($M_v \sim$ -22) elliptical galaxies, with narrow lines. Of the five sources observed by us, there is one case (0648+27) in which HST images are available. No compact core or other signatures of nuclear activity are detected; there is actually much dust in its central region. X-ray observations are also unavailable or non-detections of the level of about 10^{40} erg/s. Some low level emission is detected only in 0258+35 and 1855+37 (probably related to thermal emission of the gas from the galaxy cluster it belongs to) (see Giroletti et al. 2005 A&A in press, astro-ph/0506497)

Eric Perlman *Question* Is there any gradient in the spectral index maps, particularly towards the ends? I would be more convinced of frustration if I saw

the spectrum steepen

Answer The most feasable case for such study is 0258+35, in which the lobes are well resolved at 8 and 22 GHz and a good spectral index map can be obtained. The core region has the flatter spectral index. The jet has $\alpha \sim 0.6$ (S $\propto \nu^{-\alpha}$) and the control region of both lobes has a similar flat index. It however steepens towards the outermost regions and in the external region of the lobes it has the steeper value $\alpha = 1.0 - 1.5$. In other cases it is more difficult to have enough resolution (because we want to make a sensible comparison using the same convolving (?) beam. In 1855+37 we do not have a detection at 22 GHz, which is also in agreement with a steep spectrum, although this can't tell us much about the spatial distribution of α (see astro-ph/0506497)