

Subject: Re: Relativistic jet talk in Portland next week + ARAA review
From: "Alan Bridle" <abridle@nrao.edu>
Date: Mon, June 25, 2018 6:31 pm
To: "Readhead, Anthony C." <acr@astro.caltech.edu>

Dear Tony,

Thanks for asking re the upcoming meeting. I have been retired from the NRAO since 2008 and am now taking that happy state rather more seriously than I did at first, so I am not as involved with new datasets as I was 4 years ago.

There is not a large amount that is new to report on the type of detailed modeling we were doing with the FRI's anyway. The last push we made was on NGC6251 which does indeed look as if it can be modeled by the fast spine, slower sheath model that we anticipated for it, but unfortunately the signal to noise on the counterjet is not as good as we need to really tie the model down well.

Also the JVLA has been a mixed blessing for very high dynamic range imaging and polarimetry, which is now much harder although the benefits of the upgrade of for wide-band polarimetry and Faraday rotation imaging are clear it is not really a big step forward for mapping the polarization asymmetries at high signal to noise as we need for the type of modeling that we were doing. I understand Robert has already sent you the latest state of play on NGC6251 which is interesting as a genuine intermediate case between the FRI's we had worked on in detail and the FRII's we would love to subject to the same approach.

The problem with the FRII's is that the jets and especially the counterjets are too weak to attack by the approach we were using, and the brightest and best example, Cygnus A, is too depolarized on the counterjet side to be analyzed in that amount of detail at all. Basically unless we can get good signal to noise on the polarization structure in the counterjet as well as in the main jet, you can't bring our full modeling approach to bear. The brighter FRII's all stuff us at that point, counterjet polarization is simply out of reach at the level we need it for the best candidates.

So better coverage of the FRI's ought to be possible, but it's not something I am going to collect more data on. And our best guess about what may be going on in a more powerful jet may still have to come from NGC6251. Even there, we do not expect to be able to pin down the velocity field solution as well as we did for the FRI's, there simply are not enough well resolved high signal to noise polarization pixels on the counterjet side to get as good a grip on the modeling.

I will look forward very much to seeing your ARAA review.

Best regards,

Alan

On Sat, June 23, 2018 10:07 am, Readhead, Anthony C. wrote:

> Dear Robert and Alan,

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> From the listed attendees it looks as if neither of you will be at the NRAO
> meeting on astrophysical frontiers in Oregon next week - is that correct? If so
> I'm sorry I won't see you there.

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> I've been asked to talk on Relativistic Jets in AGN, and I will be referring a
> lot to your beautiful 2014 paper. I am writing now to ask what progress you might
> have made since then, especially on more powerful jets,
> FRIIs, etc. Is there any progress that you would like me to report there or
> are there any figures you would
> like me to show? Together with Roger Blandford and David Meier I am writing
> an ARAA review on this subject,
> and we would like to include any recent work that you have done in addition to
> your 2014 paper and also
> we would like any suggestions you may have for recent papers other than your
> own that you think
> must be included. We will, of course, include the beautiful recent VLBI
> results on M87 and 3C84 that show
> clearly the collimation at the base of the pc-scale jet and the
> limb-brightening.

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> Any comments that you would like to make or pointers you would like to give
> us?

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> Many thanks in advance!

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> My Best,

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> Tony

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