

From root Tue Jan 25 12:01:18 1994
X-VM-v5-Data: ([nil nil nil nil t nil nil nil nil]
["1717" "Tue" "25" "January" "94" "10:49:06" "CST" "David Hough" "dthough@physics.Trinity.EDU "
"<9401251649.AA15792@physics.Trinity.EDU>" "31" "Gratuitous Reassurance" "^From:" nil nil "1"])
Received: from vm1.tucc.trinity.edu by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)
id AA37296; Tue, 25 Jan 1994 12:01:15 -0500
Received: from physics.Trinity.EDU by VM1.TUCC.TRINITY.EDU (IBM VM SMTP V2R2)
with TCP; Tue, 25 Jan 94 11:00:15 CST
Received: by physics.Trinity.EDU (4.1/SMI-4.1)
id AA15792; Tue, 25 Jan 94 10:49:06 CST
Message-Id: <9401251649.AA15792@physics.Trinity.EDU>
From: dthough@physics.Trinity.EDU (David Hough)
To: abridle@polaris.cv.nrao.edu
Subject: Gratuitous Reassurance
Date: Tue, 25 Jan 94 10:49:06 CST

SA, TX
1/25/94

Alan,

I was putting a few thoughts together for the Socorro Workshop next month when it occurred to me that we had abandoned one of your earlier ideas about measuring jet emission: using the flux density per unit length, or "linear flux density density(?)". A few minutes work shows that the "A" measure of straight jet prominence, "normalized" by the length of the straight jet, is highly correlated with the standard "B" measure of central feature prominence (both prominences relative to extended jetted lobe emission): $r=0.7495$, $P(r)=0.0032$. And York's slope is 0.53 ± 0.13 , consistent with our other results.

Further, there is no correlation of fractional straight jet length (length of straight jet/central feature-jet hot spot distance) with central feature prominence ($F_{cf,jx,B}$): $r=0.4472$, $P(r)=0.1255$.

So my silly worry that prominent straight jets might be so by virtue of their lengths alone was unfounded. And we don't have to worry about mechanisms that might somehow have strong nuclei producing long jets, but in such a way that the length-normalized prominence remains ~constant. Such are the things that keep me awake at night!

Also for good measure, I note that $F_{cf,jx,B}$ vs. $F_{jst,jx,A}$ gives $r=0.7500$, $P(r)=0.0032$, and York slope 0.53 ± 0.13 . I point this out only because this test formally compares what we know to be on the mas-scale with what we know to be on the arcs-scale, and doesn't mess with the murky 10-100 mas stuff.

But none of the above really matters, so you might as well recycle this message.

-Dave

From abridle Tue Jan 25 14:27:48 1994
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil
["529" "Tue" "25" "January" "1994" "14:27:30" "-0500" "Alan Bridle" "abridle " nil "17" "Re: Gratuitous
Reassurance" "^From:" nil nil "1"]])
Received: by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)
id AA16258; Tue, 25 Jan 1994 14:27:30 -0500
Message-Id: <9401251927.AA16258@polaris.cv.nrao.edu>
References: <9401251649.AA15792@physics.Trinity.EDU>
From: abridle (Alan Bridle)
To: dhough@physics.Trinity.EDU (David Hough)
Subject: Re: Gratuitous Reassurance
Date: Tue, 25 Jan 1994 14:27:30 -0500

Hi Dave,

Thanks for the message checking out the jet-length
business. Certainly worth making sure of these things
at this stage.

We might start thinking some more about follow-up
projects. What is in the VLBI/VLBA pipeline on
these sources from caltech?

It occurs to me that high-resolution VLA imaging of the
hot spots, perhaps at 2cm, might become very relevant
to the notion that we have some beamed emission
there, and to sorting out some of the hot spot
relationships that were poorly resolved in our data.

Cheers, A.

From root Tue Jan 25 15:14:22 1994
X-VM-v5-Data: ([nil nil nil nil t nil nil nil nil]
["833" "Tue" "25" "January" "94" "14:02:01" "CST" "David Hough" "dough@physics.Trinity.EDU "
"<9401252002.AA16033@physics.Trinity.EDU>" "17" "Further work on 3C sources" "^From:" nil nil "1"])
Received: from vm1.tucc.trinity.edu by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)
id AA35485; Tue, 25 Jan 1994 15:14:21 -0500
Received: from physics.Trinity.EDU by VM1.TUCC.TRINITY.EDU (IBM VM SMTP V2R2)
with TCP; Tue, 25 Jan 94 14:13:17 CST
Received: by physics.Trinity.EDU (4.1/SMI-4.1)
id AA16033; Tue, 25 Jan 94 14:02:01 CST
Message-Id: <9401252002.AA16033@physics.Trinity.EDU>
From: dough@physics.Trinity.EDU (David Hough)
To: abridle@polaris.cv.nrao.edu
Subject: Further work on 3C sources
Date: Tue, 25 Jan 94 14:02:01 CST

Alan,

(1) The VLBI work is stalled right now while we all wait for the VLBA to come up to speed (3 out of 113 proposals scheduled last time!). In a way it's good, because things can get written up during the interim period. This will all be summarized in my Socorro Workshop contribution, a copy of which I'll send you in about a week for your approval that I haven't gone "too far" for a single author work.

(2) Absolutely, the hot spots could stand some high-resolution VLA imaging. I guess you, Colin, and Robert really have the most experience at this, and perhaps Robert has the most actual data in hand at 2cm already for these sources? Might be worth reviewing what he has if we're gonna get serious about a new VLA proposal soon. Did you have the upcoming deadline in mind?

-Dave

From abridle Tue Jan 25 16:14:45 1994
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil
["220" "Tue" "25" "January" "1994" "16:14:31" "-0500" "Alan Bridle" "abridle " nil "8" "Re: Further work on 3C
sources" "^From:" nil nil "1"])
Received: by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)
id AA20437; Tue, 25 Jan 1994 16:14:31 -0500
Message-Id: <9401252114.AA20437@polaris.cv.nrao.edu>
References: <9401252002.AA16033@physics.Trinity.EDU>
From: abridle (Alan Bridle)
To: dthough@physics.Trinity.EDU (David Hough)
Subject: Re: Further work on 3C sources
Date: Tue, 25 Jan 1994 16:14:31 -0500

Hi Dave,

I wasn't actually thinking of the next VLA proposal
deadline here, as I'm pretty much preoccupied at the
moment with Peter Scheuer's visit (he's here for
10 days while I (gasp!) teach him how to run AIPS).

A.

From root Thu Jan 27 14:01:42 1994

X-VM-v5-Data: ([nil nil nil nil t nil nil nil nil])

["1388" "Thu" "27" "January" "94" "12:49:17" "CST" "David Hough" "dough@physics.Trinity.EDU" "
"9401271849.AA18706@physics.Trinity.EDU">" "26" "Further Cent. Feature-Str. Jet Prominence Data" "^From:" nil nil
"1"])

Received: from vm1.tucc.trinity.edu by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)
id AA13476; Thu, 27 Jan 1994 14:01:39 -0500

Received: from physics.Trinity.EDU by VM1.TUCC.TRINITY.EDU (IBM VM SMTP V2R2)
with TCP; Thu, 27 Jan 94 13:00:38 CST

Received: by physics.Trinity.EDU (4.1/SMI-4.1)
id AA18706; Thu, 27 Jan 94 12:49:17 CST

Message-Id: <9401271849.AA18706@physics.Trinity.EDU>

From: dough@physics.Trinity.EDU (David Hough)

To: abridle@polaris.cv.nrao.edu

Subject: Further Cent. Feature-Str. Jet Prominence Data

Date: Thu, 27 Jan 94 12:49:17 CST

Alan,

I finally sat down last night to try a messy task I wasn't sure would be too fruitful, but it may have been. I did admittedly CRUDE measurements of central feature and straight jet flux densities off of various maps of TEN additional sources in the 3CR complete sample of 25 lobe-dominated quasars. In some cases authors provided hard numbers roughly consistent with what I was eyeballing off the maps, so I don't think what I've done is totally off base. Anyway, I got the raw numbers, I hope without terrible bias or errors of any kind, so that a cf-jst prominence plot can be done with 23 of the 25 sources; the two stragglers, 3C14 & 3C181, are the only ones for which I've never seen a VLA map. The results follow in a .ps plot file for your amusement. You will note that I choose to plot jst "A" prominence vs. cf "B" prominence, because I'm becoming more convinced that the "B" - "B" plot has the potential for inducing false correlations near unit slope, IF you always take away about the same fraction of cf flux and the addition of this flux to the jet then DOMINATES the jet emission (there will be more of a tendency for this to happen in sources at small orientations, where larger beaming factors in the central features might occur).

I'm pretty convinced I'd like to bring this up in Socorro at th workshop next month.

-Dave

From root Thu Jan 27 14:26:34 1994
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil
["530" "Thu" "27" "January" "94" "13:14:21" "CST" "David Hough" "dthough@physics.Trinity.EDU " nil "11"
"Possible Alternative with N=21" "^From:" nil nil "1"]])
Received: from vm1.tucc.trinity.edu by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)
id AA20307; Thu, 27 Jan 1994 14:26:33 -0500
Received: from physics.Trinity.EDU by VM1.TUCC.TRINITY.EDU (IBM VM SMTP V2R2)
with TCP; Thu, 27 Jan 94 13:25:34 CST
Received: by physics.Trinity.EDU (4.1/SMI-4.1)
id AA18766; Thu, 27 Jan 94 13:14:21 CST
Message-Id: <9401271914.AA18766@physics.Trinity.EDU>
From: dthough@physics.Trinity.EDU (David Hough)
To: abridle@polaris.cv.nrao.edu
Subject: Possible Alternative with N=21
Date: Thu, 27 Jan 94 13:14:21 CST

Alan,

I will NOT allow myself to fiddle with numbers I got late last night, when I just called 'em as I saw 'em and left it at that. However, one fair alternative to the previous plot I sent is one that drops 3C190 and 3C191. Both sources have angular size 5", and are thus the smallest in the entire sample. The small number of beams across these sources made them very difficult to work with, and I have the least confidence in the results for them. So a plot omitting them follows.

-Dave

From abridle Thu Jan 27 14:43:45 1994
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil
["1048" "Thu" "27" "January" "1994" "14:43:22" "-0500" "Alan Bridle" "abridle " nil "28" "Re: Further Cent. Feature-
Str. Jet Prominence Data" "^From:" nil nil "1"]])
Received: by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)
id AA17507; Thu, 27 Jan 1994 14:43:22 -0500
Message-Id: <9401271943.AA17507@polaris.cv.nrao.edu>
References: <9401271849.AA18706@physics.Trinity.EDU>
From: abridle (Alan Bridle)
To: dthough@physics.Trinity.EDU (David Hough)
Subject: Re: Further Cent. Feature-Str. Jet Prominence Data
Date: Thu, 27 Jan 1994 14:43:22 -0500

Hi Dave,

Thanks for the update with the extra sources. I guess the problem with the "B" case is to be worried about for the sources in which we transfer the same fraction of the VLBI core flux density in the absence of the actual VLBI data. If we have the VLBI data I don't think we need to worry about how we do the division, we just do it Nature's own way and look at the consequences.

Interesting that slope for the 23-source sample was 1.0!
And the exclusion of the two small ones shows how vulnerable we are to small-sample troubles.

I guess the $P(r)$ you are quoting comes from the unbiased, un-logged statistical significance assessment, not from the simulations?

Colin has found that combining our sample with his hi-z sample gives a flat slope but he also sees redshift segregation in the correlation. This is with a much larger sample. You may want to keep in touch with him about that if you aren't doing so already.

Keep me posted, you are succeeding in making we worry a bit about things we have said in the AJ paper!

A.

From root Thu Jan 27 17:04:52 1994
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil
["1723" "Thu" "27" "January" "94" "15:52:06" "CST" "David Hough" "dough@physics.Trinity.EDU" nil "31" "New
cf-jst prominence data" "^From:" nil nil "1"])
Received: from vm1.tucc.trinity.edu by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)
id AA33953; Thu, 27 Jan 1994 17:04:46 -0500
Received: from physics.Trinity.EDU by VM1.TUCC.TRINITY.EDU (IBM VM SMTP V2R2)
with TCP; Thu, 27 Jan 94 16:03:25 CST
Received: by physics.Trinity.EDU (4.1/SMI-4.1)
id AA19036; Thu, 27 Jan 94 15:52:06 CST
Message-Id: <9401272152.AA19036@physics.Trinity.EDU>
From: dough@physics.Trinity.EDU (David Hough)
To: abridle@polaris.cv.nrao.edu
Subject: New cf-jst prominence data
Date: Thu, 27 Jan 94 15:52:06 CST

Alan,

Yes, I quoted the "standard" probability $P(r)$ that goes with the correlation coefficient r for both plots.

I'm not too worried - I'm actually delighted! I think it's perfectly fair to drop 3C190 & 3C191 - what I called a "jet candidate" in 3C190 is the most dubious by far of the whole bunch, and this point was doing the most damage; 3C191 can be made to "fit better" if I sneak a peak at a 2 cm map and decide to cut the jet off at its first knot, which is hinted at on the 6 cm map but I added some more in anyway (to appreciate the difficulties, see Pearson, Perley & Readhead 1985, AJ, 90, 738).

SO, the $N=21$ sample slope of 0.78 ± 0.14 suggests a γ_{jet} of $\sim 2.5 \pm 0.5$: the jets still seem to be decelerating. The $N=23$ slope of 1.0 ± 0.2 suggests $\gamma_{\text{jet}} \sim 3 \pm 1$ which, although certainly less impressive, still leans the right way if it does anything at all. I'm happy, because I had expected this CRUDE analysis would turn the whole thing into a scatter diagram, but the correlation is undoubtedly there! Slopes we can argue, but something's going on beyond any reasonable doubt in my mind: maybe no really credible evidence for deceleration, but the nuclear and straight jet prominences are intimately connected. By the way, I let the angle range go from 50 to 10 degrees (rather than 50 to 20 degrees) since we're including nearly all the objects now, and at least one might be 10 degrees or less to the line of sight statistically, so I just picked 10. Note that this makes it necessary for the jets to have LARGER gammas for a GIVEN slope, since they have to "work harder" to keep up with the booming beaming factors from those nuclei tipped toward us.

-Dave

From abridle Tue Feb 8 15:44:54 1994
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil
["1261" "Tue" "8" "February" "1994" "15:44:43" "-0500" "Alan Bridle" "abridle " nil "29" "Paper and reference"
"^From:" nil nil "2"])
Received: by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)
id AA44069; Tue, 8 Feb 1994 15:44:43 -0500
Message-Id: <9402082044.AA44069@polaris.cv.nrao.edu>
From: abridle (Alan Bridle)
To: dthough@physics.Trinity.EDU
Subject: Paper and reference
Date: Tue, 8 Feb 1994 15:44:43 -0500

Hi dave,

Thanks for the copy of your talk at the Socorro meeting.

I'm perfectly happy with your single-authorship and the references to the work in process of publication. If you find an extremely pissed-off individual in your audience, it's probably our A.J. referee!

Regarding the BAAS ref, it's page 1418 and it's formally 1993 because that issue of BAAS is dated Dec 1993 even though it contains the abstracts for a meeting held in January 1994.

My only nit-pick is (p.4) that you say we _derived_ an expression for the beaming-model slope in the A.J. paper. Jack wanted us to, but our consensus was simply to state it.

I gave an internal talk on asymmetries in strong sources here today, leading into the spectral-asymmetry problem and the idea that some relativistic flow persists to, and even beyond, the hot spots. I took the liberty of showing your augmented 3CR prominence plot during that talk, as well as the plots I had made for the AAS poster. It's nice to be able to say that the effect doesn't evaporate in a slightly bigger sample! I carefully referred to this as a plot from the paper you'll be giving later this week, so the C'ville folks present in Socorro will know they have had a "preview" of one of your results.

Cheers, A.

From root Tue Feb 8 18:04:26 1994
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil
["1240" "Tue" "8" "February" "94" "16:50:43" "CST" "David Hough" "dough@physics.Trinity.EDU " nil "23"
"Paper and reference" "^From:" nil nil "2"])
Received: from vm1.tucc.trinity.edu by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)
id AA41326; Tue, 8 Feb 1994 18:04:24 -0500
Received: from physics.Trinity.EDU by VM1.TUCC.TRINITY.EDU (IBM VM SMTP V2R2)
with TCP; Tue, 08 Feb 94 17:02:55 CST
Received: by physics.Trinity.EDU (4.1/SMI-4.1)
id AA06549; Tue, 8 Feb 94 16:50:43 CST
Message-Id: <9402082250.AA06549@physics.Trinity.EDU>
From: dough@physics.Trinity.EDU (David Hough)
To: abridle@polaris.cv.nrao.edu
Subject: Paper and reference
Date: Tue, 8 Feb 94 16:50:43 CST

Hello Alan,

Thanks for your quick feedback on the copy of my talk for Socorro. Glad you have no major complaints - yes, I'll change my wording from "derive" to "state" on the slope formula. Thanks also for the BAAS ref. (I knew it was '93!). Sure, show the plot to anybody you want; in fact, I've got the "final" version for Socorro now, and it follows in the next message. (I moved one point that worsened the correlation slightly, when I allowed re-evaluation of 3C191 using a 15 GHz image that shows the jet bending much better; also, I'm using triangles for $z > 1.3$, not squares as the figure caption says. Oh, now that I think of it, I also moved 3C275.1 a tad when I decided I believed the "kink" in the inner part of the jet on the Stocke, Christiansen, and Burns map. This also worsened the correlation slightly, so my conscience is clear on these adjustments.)

With these changes, the correlation is still very strong. For $N=22$, $r=0.73$ & $P(r)=1.2e-4$ (normal statistics). Dropping 3C68.1 & 3C351 so $N=20$, $r=0.82$ & $P(r)=1.2e-5$, so the correlation gets tighter. But of course the slope goes from about 0.8 to about 1.3, so all evidence for deceleration vanishes!

-Dave

From root Mon Feb 28 17:36:48 1994

X-VM-v5-Data: ([nil nil nil nil t nil nil nil nil])

["268" "Mon" "28" "February" "94" "16:12:46" "CST" "David Hough" "dthough@physics.Trinity.EDU "
"<9402282212.AA01106@physics.Trinity.EDU>" "6" "Free Spirits" "^From:" nil nil "2"])

Received: from vm1.tucc.trinity.edu by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)

id AA43577; Mon, 28 Feb 1994 17:36:26 -0500

Received: from physics.Trinity.EDU by VM1.TUCC.TRINITY.EDU (IBM VM SMTP V2R2)

with TCP; Mon, 28 Feb 94 16:34:36 CST

Received: by physics.Trinity.EDU (4.1/SMI-4.1)

id AA01106; Mon, 28 Feb 94 16:12:46 CST

Message-Id: <9402282212.AA01106@physics.Trinity.EDU>

From: dthough@physics.Trinity.EDU (David Hough)

To: abridle@polaris.cv.nrao.edu

Subject: Free Spirits

Date: Mon, 28 Feb 94 16:12:46 CST

A.,

Polished off the Chardonnay '88 last night. Was much enjoyed
by Gina, her Mom, and me. Many thanks.

No chance that you've heard anything from the AJ referee yet,
is there? I suppose it is still a bit early.

-D.

From abridle Tue Mar 1 09:59:51 1994

X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil

["230" "Tue" "1" "March" "1994" "09:59:35" "-0500" "Alan Bridle" "abridle " nil "8" "Re: Free Spirits" "^From:" nil nil "3"])

Received: by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)

id AA16144; Tue, 1 Mar 1994 09:59:35 -0500

Message-Id: <9403011459.AA16144@polaris.cv.nrao.edu>

References: <9402282212.AA01106@physics.Trinity.EDU>

From: abridle (Alan Bridle)

To: dthough@physics.Trinity.EDU (David Hough)

Subject: Re: Free Spirits

Date: Tue, 1 Mar 1994 09:59:35 -0500

Hi Dave,

Glad to hear you enjoyed the bottle. No, I haven't heard anything from A.J. yet. If it was a paper of normal length, I would be harassing them by now, but under the circumstances I'll give it a bit longer.

Cheers, A.

From root Wed Jun 8 15:53:56 1994
X-VM-v5-Data: ([nil nil nil nil t nil nil nil nil]
["768" "Wed" "8" "June" "94" "14:54:14" "CDT" "David Hough" "dough@physics.Trinity.EDU "
"<9406081954.AA19151@physics.Trinity.EDU>" "19" "Halftone / Preprint Request" "^From:" nil nil "6"])
Received: from vm1.tucc.trinity.edu by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)
id AA36218; Wed, 8 Jun 1994 15:53:54 -0400
Received: from physics.Trinity.EDU by VM1.TUCC.TRINITY.EDU (IBM VM SMTP V2R2)
with TCP; Wed, 08 Jun 94 14:50:35 CDT
Received: by physics.Trinity.EDU (4.1/SMI-4.1)
id AA19151; Wed, 8 Jun 94 14:54:14 CDT
Message-Id: <9406081954.AA19151@physics.Trinity.EDU>
From: dough@physics.Trinity.EDU (David Hough)
To: abridle@polaris.cv.nrao.edu
Subject: Halftone / Preprint Request
Date: Wed, 8 Jun 94 14:54:14 CDT

A.,

Good to hear AJ did a good job on the halftone figure.

I was just putting away the absolute last scrap on the project -
a letter from a J. Roland in Paris from last year. I noticed at
the end of his letter that he would appreciate receiving any
future preprint on our work. Could you request that NRAO send
one out to him? If not, I can run off a copy here. Here's his
address:

J. Roland
CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE
INSTITUT D'ASTROPHYSIQUE
98 bis, BOULEVARD ARAGO, 75014 PARIS
FRANCE

Thanks.

D.

P.S.: And a big P.S. it is - Gina delivered a 9 lb. 2 oz. baby
boy last Friday. She and little Stephen are doing well.

From abridle Wed Jun 8 15:59:10 1994

X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil

["24" "Wed" "8" "June" "1994" "15:59:02" "-0400" "Alan Bridle" "abridle " nil "3" "Congratulations!" "^From:" nil nil "6"])

Received: by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)

id AA32391; Wed, 8 Jun 1994 15:59:02 -0400

Message-Id: <9406081959.AA32391@polaris.cv.nrao.edu>

References: <9406081954.AA19151@physics.Trinity.EDU>

From: abridle (Alan Bridle)

To: dthough@physics.Trinity.EDU (David Hough)

Subject: Congratulations!

Date: Wed, 8 Jun 1994 15:59:02 -0400

on the new arrival!

From root Thu Sep 29 12:31:16 1994

X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil

["73" "Thu" "29" "September" "94" "10:51:16" "CDT" "David Hough" "dthough@physics.Trinity.EDU " nil "2"

"Tenure..." "^From:" nil nil "9"])

Received: from vm1.tucc.trinity.edu by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)

id AA42653; Thu, 29 Sep 1994 12:31:15 -0400

Received: from physics.Trinity.EDU by VM1.TUCC.TRINITY.EDU (IBM VM SMTP V2R2)

with TCP; Thu, 29 Sep 94 10:50:14 CDT

Received: by physics.Trinity.EDU (4.1/SMI-4.1)

id AA01199; Thu, 29 Sep 94 10:51:16 CDT

Message-Id: <9409291551.AA01199@physics.Trinity.EDU>

From: dthough@physics.Trinity.EDU (David Hough)

To: abridle@polaris.cv.nrao.edu

Subject: Tenure...

Date: Thu, 29 Sep 94 10:51:16 CDT

I'm supposed to receive official word, one way or the other,
by January.

From root Thu May 18 15:15:03 1995

X-VM-v5-Data: ([nil nil nil nil t nil nil nil nil]

["3210" "Thu" "18" "May" "1995" "14:15:39" "CDT" "David Hough" "dthough@physics.trinity.edu"

"<9505181915.AA11721@physics.Trinity.EDU>" "63" "Continuation of Deep VLA Imaging of 3CR Quasars?" "^From:"
nil nil "5" nil nil nil nil]

nil)

Received: from vm1.tucc.trinity.edu by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)

id AA26421; Thu, 18 May 1995 15:14:58 -0400

Received: from physics.Trinity.EDU by VM1.TUCC.TRINITY.EDU (IBM VM SMTP V2R2)

with TCP; Thu, 18 May 95 14:14:42 CDT

Received: by physics.Trinity.EDU (4.1/SMI-4.1)

id AA11721; Thu, 18 May 95 14:15:39 CDT

Message-Id: <9505181915.AA11721@physics.Trinity.EDU>

From: dthough@physics.Trinity.EDU (David Hough)

To: abridle@polaris.cv.nrao.edu, cjl@wells.haystack.edu, jburns@nmsu.edu,

rl@ast.cam.ac.uk

Subject: Continuation of Deep VLA Imaging of 3CR Quasars?

Date: Thu, 18 May 95 14:15:39 CDT

San Antonio, TX

May 18, 1995

Dear Alan, Colin, Robert, and Jack:

At least four of us have actually met face-to-face, two or three at a time, over the past two months (sorry if you were "in the loop" and I didn't hear about it, Jack). Some ideas about continuing the project on deep VLA imaging of the 3CR extended quasars were discussed in these meetings. No great enthusiasm for further observations at this time emerged from our discussions. However, since we have already missed the VLA A-array deadline this year, and since the June 1 B-array deadline looms near, it seems a good time to summarize what I gather to be our current thinking before we miss this A/B cycle completely.

There seems to be a consensus that going really deep - say, 48 hours at 5 or 8 GHz - on a source like 3C334 would be desirable. The objective would be to detect, or set stricter limits on, the "straight" counterjet. However, it is not clear that we could obtain an image of much improved dynamic range despite the four-fold increase in observing time with the present VLA. There would be far greater enthusiasm for this after the VLA upgrade, but that is probably several years off, assuming it gets funded.

A minority of one (yours truly) would like to plod along and do imaging at the same resolution and sensitivity levels for the remainder of the complete sample of 25 3CR extended quasars. I must admit that, in light of our results to date for 12 sources, much of the original motivation for doing this has dissipated (using jet/counterjet ratios to test beaming, etc.). The motivation would have to shift more toward having all the 3CR extended quasars imaged with similar high quality, to see if various trends we've noticed in half the sample are reinforced or destroyed. This may not have the air of any urgency about it, but I think it is worth remembering the considerable value of COMPLETED, long-term surveys for

statistical tests of whatever interests you most, from some detail of the source physics to AGN unification.

With all this said, my guess is that we will not have any serious interest in a new VLA proposal until the A-array comes around again. If we decide pursuing additional sources in the sample is worthwhile, the following points may be of interest. Most of the remaining sources in the sample are of small angular size, and probably won't require much B-array, so it makes sense to me to do the A-array first. Further, most of the remaining sources have relatively strong and, in many cases, variable central features that would probably make combined A+B array imaging most reliable for A- and B-array observations in consecutive configurations (rather than doing B now and A a year or more later).

If anyone has a good reason for proposing B-array observations of any kind for the June 1 deadline, quick action will be necessary. Otherwise, I'll assume the project will continue on hold (if it's not dead) until next year.

Dave Hough
dhough@physics.trinity.edu

From root Fri Sep 22 10:40:00 1995

X-VM-v5-Data: ([nil nil nil nil t nil nil nil nil]

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Received: from physics.Trinity.EDU by VM1.TUCC.TRINITY.EDU (IBM VM SMTP V2R2)
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Received: from jun0.mms.Trinity.EDU by physics.Trinity.EDU (4.1/SMI-4.1)
id AA10543; Fri, 22 Sep 95 09:41:01 CDT

Message-Id: <9509221441.AA10543@physics.Trinity.EDU>

From: dthough@physics.Trinity.EDU (David Hough)

To: abridle@NRAO.EDU

Subject: Oct. 1 VLA deadline

Date: Fri, 22 Sep 95 09:41:01 CDT

Hi Alan,

How's things? I just wanted to check in with you since Oct. 1 is coming up soon. It is my understanding that we can wait at least one more deadline, perhaps even two (Feb. 1 or June 1), to submit a proposal for A-array time, should we really desire to do so, to observe more of the 3CR extended quasars. If you can confirm this, I'll just let Oct. 1 slip by. Thanks.

Dave

From abridle Mon Sep 25 14:45:04 1995
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil]
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id AA143519; Mon, 25 Sep 1995 14:44:53 -0400
Message-Id: <9509251844.AA143519@polaris.cv.nrao.edu>
In-Reply-To: <9509221441.AA10543@physics.Trinity.EDU>
References: <9509221441.AA10543@physics.Trinity.EDU>
From: abridle (Alan Bridle)
To: dthough@physics.Trinity.EDU (David Hough)
Subject: Re: Oct. 1 VLA deadline
Date: Mon, 25 Sep 1995 14:44:53 -0400

David Hough writes:

> Hi Alan,
> How's things? I just wanted to check in with you since Oct. 1
> is coming up soon. It is my understanding that we can wait at
> least one more deadline, perhaps even two (Feb. 1 or June 1), to
> submit a proposal for A-array time, should we really desire to do
> so, to observe more of the 3CR extended quasars. If you can
> confirm this, I'll just let Oct. 1 slip by. Thanks.
> Dave

Hi Dave, this is my first day back from the Tuscaloosa meeting. John Wardle presented a nice analysis based largely on our QSR sample data, concluding that he could rule out intrinsic asymmetries $>3:1$, needed a mean beta in the straight jet segments of 0.7 but could not distinguish this from a symmetric range 0.6 to 0.8, and had to have the QSR sample in general oriented no further than 70 deg from the line of sight. Nothing radically in conflict with our conclusions, but of course modeled in a quite different way.

I was amused that Sergei Kommissarov showed some relativistic hydro codes giving bulk relativistic flows through, near and beyond the hot spots, even into the backflows. Basically he found enough oblique shocks to turn the flows around without converting them down to low velocities, and he even ended up with some bulk relativistic backflow. I re-emphasized the hotspot-jet asymmetry correlations during my review, and nobody seemed to bat much of an eyelid at the idea that there could be a bulk-relativistic beaming component to such asymmetries. How fast times change! Mike Norman thinks that the 3-d codes will limit the bulk relativistic outflows through hotspots to smaller regions than in Sergei's 2-d code, but will not eliminate them. We shall see. I got the distinct impression that "all the way with large beta-j" could become a bandwagon any time soon.

Re the VLA deadline, yes the upcoming one is for C config. Robert again opined that it would be nice to image 3C334 better, at 8 GHz, and I have just worked out the details. We would need A+B+C configuration and 25 MHz bandwidth to avoid smearing. then a 10-hr integration would get us down to about 10 microJy rms if we could get the needed dynamic range. This would involve using the new robust weighting, not uniform weighting. That would give us a better look at the counterjet candidate, the detailed collimation properties of the

jet, and perhaps the structure of the filament and jet-termination system in the counterjet lobe. I doubt that it would help the jet-counterjet ratio particularly, beyond giving us a sanity check.

To me, the biggest puzzle in all of 3C334 is whether source A might really be related to it. If there was a steep-spectrum connection that might best be explored with a deep synthesis at 20cm, in the C array perhaps. That would also give us a crack at the local source count around 3C334 to refine our statistics.

Overall, this would be something of a fishing expedition and I'm not sure we have any physics to push it really hard beyond "it would probably be a gorgeous image".

I have a feeling that the source that would benefit most from 8 GHz data would be 3C336, to sort out exactly what the structure in the counterjet lobe is, whether we have a wall jet, etc. The MEM reduction suggests there could be some very interesting (i.e. distinctive) structure in that counterjet lobe just below our limiting resolution. It would be an easier experiment with the added interest of imaging a QSR in a possible cooling flow. But it would not require the C configuration.

Regarding completing the statistical sample, I am more interested than I used to be, given the fragility of our prominence plot and the eventual importance of completeness. I guess the project that would make most sense would be to complete all 19, i.e. do the remaining 6 in two days of A config and one of B, if they fit together. John Wardle would certainly be very happy if we did that and might like to participate more! I would really want to use 4.9 GHz again for consistency with the first group. I could probably talk myself into proposing that for the February 1 1996 deadline, along with doing 3C336 in A and B configurations at 8.4 GHz. The data reductions would now be an order of magnitude easier, with the high-speed workstations and lots of disk space.

Maybe we should not leave it to the last minute, would you be interested in shopping a draft of a "completer" proposal round the gang during the Xmas break if I did the same for 3C336?

For this next (Oct 1) deadline, I'd sooner lie low on the quasars as I'm working up a proposal for a multi-frequency extravaganza on our old friend 3C219, both VLA and VLBA imaging. I came away from Tuscaloosa with a lot of questions about that source in relation to whether any of what we are looking at is actually the "jet" rather than secondary phenomena. Maybe connected with the spine-sheath model, but this may be a case where we have already got some hints about the spine (from the high-resolution X band image and from the shape of the lobes). I'm going to have a busy week getting that put together.

Cheers, A.

From root Mon Oct 30 18:48:51 1995

X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil])

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id AA05721; Mon, 30 Oct 95 14:13:02 CST

Message-Id: <9510302013.AA05721@physics.Trinity.EDU>

From: dthough@physics.Trinity.EDU (David Hough)

To: abridle@NRAO.EDU

Subject: 3C Quasar VLA Proposal

Date: Mon, 30 Oct 95 14:13:02 CST

Alan,

I must apologize for the inexcusable delay in responding to your lengthy e-mail message weeks ago. I still don't have time to answer in any detail, but receiving the VLA Development (which, by the way, I think is an appropriate term - glad to see it) Plan in the mail brought my guilt to the surface.

In short, YES, I will look at a draft VLA proposal as you described in December when the semester's over. Once I have something, I'll circulate it around to all who might be interested. Should give us plenty of time before the Feb. 1, 1996 deadline.

We've got Joe Taylor here today for a Distinguished Scientist Lecture, so of course I'm busy with that all day. Then VLBA schedules are due, then VSOP proposals...my goodness, I don't mean to complain, but teaching FOUR classes and keeping up with just the absolutely critical research matters is all I can manage during the semester any more. I find myself not being very generous with my time with people, etc., something I recall you mentioning as a problem when you were at Queen's.

Anyhow, to end on a positive note - and things generally are really quite positive around here - it's great to have a job!

More in December,

Dave

From VM Tue Jun 11 18:53:07 1996

X-VM-v5-Data: ([nil nil nil nil t nil nil nil nil])

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Received: from physics.Trinity.EDU by VM1.TUCC.TRINITY.EDU (IBM VM SMTP V2R2)
with TCP; Tue, 11 Jun 96 17:08:14 CST

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id AA05316; Tue, 11 Jun 96 17:09:01 CDT

Message-Id: <9606112209.AA05316@physics.Trinity.EDU>

From: dhough@physics.Trinity.EDU (David Hough)
To: abridle@nrao.edu
Subject: Visit next week
Date: Tue, 11 Jun 96 17:09:01 CDT

Hi Alan,

Just to let you know I'll be around for the Users Committee meeting next Mon. and Tues. Maybe we can find a few minutes to get caught up on 3C quasar deep VLA imaging matters...

Dave

From VM Tue Jun 11 19:09:20 1996

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Message-Id: <9606112300.AA23388@polaris.cv.nrao.edu>

In-Reply-To: <9606112209.AA05316@physics.Trinity.EDU>

References: <9606112209.AA05316@physics.Trinity.EDU>

From: abridle (Alan Bridle)

To: dhough@physics.Trinity.EDU (David Hough)

Subject: Re: Visit next week

Date: Tue, 11 Jun 1996 19:00:15 -0400

David Hough writes:

> Hi Alan,

> Just to let you know I'll be around for the Users Committee meeting

> next Mon. and Tues. Maybe we can find a few minutes to get caught up

> on 3C quasar deep VLA imaging matters...

Sure thing! I'm planning to listen in on most of the meeting and I guess Colin will also be here too.

Mary will also be coming to the dinner on Monday evening. She's busy as ever, feeling well, and looking forward to seeing lots of astronomy folks she knows.

So we should get well caught up on science and equally pleasant matters

Cheers,

A.