

NATIONAL RADIO ASTRONOMY OBSERVATORY

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11 May 1982

Dr. John Rolfe,
Editor, Physics in Canada,
151 Slater St., Suite 903,
Ottawa, Ont. K1P 5H3

Dear Dr. Rolfe,

Your letter of 27 April concerning my article INTERFEROMETRY OF EXTRAGALACTIC RADIO SOURCES arrived here today. I am pleased that it will be suitable for publication in Physics in Canada.

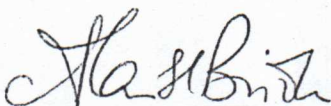
My apologies for the obscurities inadvertently left in the Figure captions - your comments have alerted me to the perils of reproducing other authors' diagrams in a review, and of lapsing into radio-astronomy jargon.

I now realise that Figure 1 and Figure 2(b) give no visual display of the effective resolution of the maps, while Figures 2(a), 3, 4 and 5 do. The only practical solution to this is to force consistency by giving the resolution only in the caption in each case. I suspect that most readers would anyway not do the mental "beam deconvolution" from the image which radio astronomers have in mind when they show these data. In that case, I suggest that the black circle and the letters HPBW be opaqued out on the glossy for Figure 2(a), the cross-hatched ellipse and the word BEAM be opaqued out from the upper left of Figure 3, the cross-hatched 'object' from Figure 4, and the cross-hatched ellipse and the word BEAM from the lower left of Figure 5.

I attach on a separate sheet revised captions for Figures 4 and 5. Thank you for pointing out these difficulties to me; I am sure they would indeed have confused most readers.

I am not familiar with procedures for ordering offprints from Physics in Canada. Offprints will probably be required both for Queen's University and for the CLBA Planning Committee. I will alert Tom Legg to the fact that the article has been accepted, so that he can contact you about the offprints for the CLBA group.

Yours sincerely,



Alan H. Bridle

REVISED FIGURE CAPTIONS FOR "INTERFEROMETRY OF EXTRAGALACTIC RADIO SOURCES"
by A.H.Bridle.

Figure 4. Structure in the nucleus of the radio galaxy NGC6251 at two radio frequencies and resolutions. The upper panel shows 2291-MHz emission within about 1.6 parsecs of the centre of the galaxy, at a resolution of 2 by 0.4 arc milliseconds. The direction of lowest resolution is also that of greatest elongation of the structure, which aligns with the large-scale jet shown in Figure 2(b) to within a few degrees. The lower panel shows detail of the brightest part of this image, at 10651 MHz and at 0.5 by 0.6 arc millisecond resolution. (Note the different angular scales of the upper and lower panels, shown by the tic marks). The 10651 MHz map defines a bright "inner core" and a fainter "minijet" extending towards the large-scale jet. The faint emission detected at the upper right of the 2291-MHz map is a weak continuation of the minijet which lies below the limiting sensitivity of the 10651 MHz data. From Cohen and Readhead (1979), by permission of the authors and of the editors of *Astrophysical Journal*.

Figure 5. VLBI maps of the core of the quasar 3C273 at 10651 MHz at five epochs, showing directly the outflow of material along the minijet. Each map has an angular resolution of 4.2 by 1.2 arc milliseconds, the direction of lowest resolution being approximately perpendicular to the extension of the minijet. The maps were made with an ad hoc array of radio telescopes in California, Texas, West Virginia, Massachusetts and West Germany. From Pearson et al. (1981), by permission of the authors and of the editors of *Nature*.

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6 April 1982

Dr, John Rolfe,
Editor, "Physics in Canada",
Bank of Canada,
234 Wellington Street,
OTTAWA,
Ontario K1A 0G9
CANADA

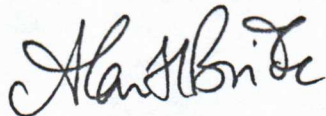
Dear Dr. Rolfe,

I enclose two copies of the manuscript, and glossies of six diagrams, for a review entitled INTERFEROMETRY OF EXTRAGALACTIC RADIO SOURCES, which I hope will be suitable for publication in Physics in Canada. This is the "follow-up" article to Tom Legg's discussion of the CLBA plans, and deals with the current state of high-resolution studies of extragalactic radio sources, and the role which the CLBA may play in this field.

Please note that Figures 2(a) and 2(b) should appear together on the same page; they are sent as separate glossies only because they were derived from different originals.

Please address correspondence relating to this review to me at NRAO, P.O. Box 0, Socorro, NM 87801 until the end of August 1982; after that I shall be returning to Queen's University, where my address is: Department of Physics, Queen's Univ., Kingston, Ont. K7L 3N6.

Yours sincerely,



Alan H. Bridle



Physics in Canada

The Bulletin of
The Canadian Association
of Physicists

La Physique au Canada

Bulletin de
l'Association canadienne
des physiciens

April 27, 1982

Dr. A.H. Bridle
National Radio Astronomy Observatory
P.O. Box 0
Socorro, New Mexico
NM 87801

Dear Dr. Bridle,

Thank you for your manuscript "Interferometry of ExtraGalactic Radio Sources" which I will be happy to publish in the July issue of "Physics in Canada". I found it very interesting, well written, and it will be one of the few manuscripts which I can send almost verbatim to the printers.

However I had a little difficulty with some of the figures. I will enlarge the cross in Figure 2(a) marking the centre of the galaxy because it took me a very long time to find it at its present size. Also, I can guess what HPBW means, but could you spell it out for me? I also had difficulty with Figure 4; since the upper and lower halves of the picture look so different. Is the "minijet" the extension to the upper right in the upper half of the picture? Which way is the 2×0.4 resolution? How is the length of the minijet defined, and is it depicted in the lower half? Is the shaded object in the lower right the resolution? I think that you could answer all these questions with improved captions to Figures 2(a) and 4 - please do not hesitate to make the captions as long as you need to make the diagram absolutely clear. There are many people who will read the captions only, before they decide to read the article, and I think that captions and Figures are a good way to interest readers in the body of the article.

Let me have your new captions before the middle of May, if possible. I would like to have an excellent article such as yours in the July issue.

Yours sincerely,

John Rolfe
Editor

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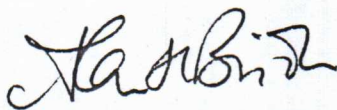
20 April 1982

Dr A.Dalgarno,
Letters Editor,
Astrophysical Journal,
Center for Astrophysics,
60 Garden Street,
Cambridge, MA 02138.

Dear Dr. Dalgarno,

I enclose copies of a correspondence between myself and Dr. A.C.S. Readhead of CalTech regarding my use of a diagram which appeared in Ap.J. Letters, 253, L101 for republication in a review article I am sending to Physics in Canada - the in-house journal of the Canadian Association of Physicists. As you will note, Dr. Readhead has given his permission for reproduction of the diagram. I should be most grateful if you would authorize its use on behalf of the Astrophysical Journal, or refer this letter to the appropriate person.

Yours sincerely,



Alan H. Bridle

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16 March 1982

Dr. A.C.S. Readhead,
Owens Valley Radio Observatory,
California Institute of Technology,
Pasadena,
CA 91125.

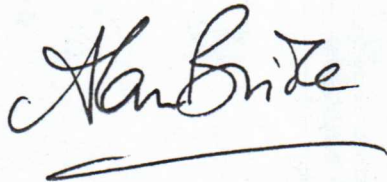
Dear Tony,

I am putting together a short review on interferometry of extragalactic radio sources for PHYSICS IN CANADA - the in-house journal of the Canadian Association of Physicists. I would like to use Figure 1 from Cohen and Readhead, Ap.J.Letts., 253, L101 - the 2291-MHz model and 10651-GHz hybrid map of the NGC6251 core - as a diagram in this review. Could I have your permission to reproduce it there ?

I will have NRAO graphics rephotograph the diagram from your preprint if necessary, but if by any chance you have a left-over glossy of the diagram it would probably give a better quality result. If you do have one, and also agree to my use of the diagram, I would be most grateful if you could send it to me.

I look forward to seeing you at CalTech next month.

With best wishes,



CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA, CALIFORNIA 91125

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RADIO OBSERVATORY 105-24

TELEPHONE (213) 356-4972
TELEX 675245

Dr. Alan H. Bridle
NRAO
P.O. Box 0
Socorro, NM 87801

Dear Alan:

You are most welcome to use our diagram in your review. Unfortunately I don't have a glossy.

Yours ever,



ACSR:at

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16 March 1982

Editorial Office,
Nature,
15 East 26 Street,
New York, NY 10010.

MAR 22 1982

Gentlemen,

I am writing a review article on very long baseline radio interferometry for the journal PHYSICS IN CANADA. Dr. Timothy Pearson of CalTech has agreed to provide me with a reproduction of a diagram showing the superluminal expansion of 3C273 which appeared as Figure 1 of the article by Pearson et al. in Nature, Vol. 290, pp.365-368, (April 2 1981).

I should be grateful for your written permission to reproduce this diagram in PHYSICS IN CANADA.

Yours sincerely,

Alan H. Bridle
Scientist, NRAO VLA Program
Professor of Physics, Queen's University, Kingston, Canada

PERMISSION GRANTED
PROVIDED THE PERMISSION
OF THE AUTHORS IS OBTAINED
AND ACKNOWLEDGEMENT GIVEN
TO NATURE.

DATE

4/1/82