

NATIONAL RADIO ASTRONOMY OBSERVATORY
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Dr. Alan H. Bridle, Tel. 804-296-0375, FTS 940-7375

October 20, 1986

Prof. P. P. Kronberg
Department of Astronomy, Univ. of Toronto
60 St. George Street
Toronto, Ont. M5S 1A7 CANADA

Dear Phil:

Enclosed is a 6250 BPI FITS tape containing u,v data on 3C353 and image data at 3 arcsec resolution on 3C219, with a detailed tape index.

I talked with Jack Burns about the 3C219 data and he was indeed concerned that the full data set be available to his student David Clarke in the first instance, as Rick and I had agreed to provide this as part of a collaboration that will yield four-frequency rotation measures and spectral data. However, I do not think I should restrict the image data to this context, hence the enclosed full suite of 3 arc sec resolution images. I am sending I, Q and U maps as well as some derived polarization images so that your student could decide on his own cutoff levels, etc. for evaluating spectral indices and rotation measures. We will publish results on the large-scale structure based on our own interpretation of these images, but your student is welcome to use them for the purposes of his thesis. The tapering used to obtain these images was 75 kilowavelengths in the AIPS tasks MX and APCLN.

There are interesting spectral gradients and some RM structure shown by these images. The spectral data in particular suggest outflow from both recessed hot spots toward the eastern sides of the lobes. There is also a distinct spectral gradient across the ring-like hot spot in the north lobe. We confirm the large-scale gradients across the lobes that were mapped by Burch.

Best wishes.





The
University of New Mexico

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February 14, 1986

Dear Dr. Bridle

Jack asked me to send you a copy of our VLA proposal and related matter regarding 3C219. As you can see by the referees' reports, time allotment is presumably imminent and we expect to hear about time scheduling within the month. Also enclosed is a copy of a letter that I sent to Dr Barry Clark several months ago. Jack was concerned that there were some rumblings about the necessity of any further 3C219 observations and so I tried to convey to Dr. Clark how important we felt these new observations to be.

I hope this clarifies for you our current status on the project. Please let me know if you have any other questions.

Yours very truly

David Clarke



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November 26, 1985

Dr. Barry Clark
NRAO
P.O. Box 0
Socorro, NM 87801

re: project number AC149

Dear Dr. Clark;

Jack Burns has briefed me on his telephone conversation with you today and has suggested that I write to you and explain further why we feel that 3C219 is so crucial to our project.

First, let me say that we do not agree at all with REF& who stated that rotation measure gradients across jets have been unsuccessfully sought in other sources. Although this very type of measurement is frequently suggested at conferences (Taos, for example) as a measurement that ought to be done, we are not aware of any such endeavours in the literature. Rick Perley has stated to me that he is certain that such an experiment has not been done, and is long overdue. We therefore see no reason, based on alleged previous efforts, that a gradient in the rotation measure should not exist across the jet of 3C219.

During numerous conversations with Drs. Rick Perley, Alan Bridle and Frazer Owen, 3C219 was consistently mentioned as the primary source for this type of study. Drs. Perley and Bridle already have a substantial data base on 3C219 and have generously offered it for our use in this project. However, their frequency coverage is insufficient to definitively measure any rotation measures. In particular, subtle gradients in the rotation measure would be lost in the present data base. Data that Dr. Perley has already reduced shows a great deal of polarization in an extended cocoon region. It also suggests that the jet may not be thermally confined. Further, although 3C219 is rather distant ($z=.17$), its great linear size allows the jet and cocoon features to be resolved significantly. 3C219 is, therefore, an ideal source for the study of magnetic jets, according to the tests described in our proposal. Although we feel that 3C388 is also an excellent source for this project, we think that 3C219 is perhaps even more promising. Here, we are in disagreement with REF& again.