From: ESTCS0::PSI%SPAN.DWINGELO::SBAUM 14-MAR-1988 14:42
To: PSI%DATANET.SPAN_IN::NRAO::ABRIDLE
Subj: RE: 3C98, tome

Thanks for submitting the proposal.

I will send NRAO 4 preprints of the data paper. I'm sending out the data paper as a preprint from Dwingeloo so it is not necessary to issue it as an NRAO preprint.

Believe it or not I have submitted two papers on the thesis results to Ap. J. (one on statistical properties, the other on the radio - emission line connection). I'm going to send you out copies soon.

Regards from the family,
Stefi

P.S. I've been thinking about the relationship of broad line radio galaxies to narrow line radio galaxies. You may remember, in my thesis I pointed out that the ratio of total (narrow plus broad) line luminosity to radio luminosity is a factor of 25 higher in broad line radio galaxies than in narrow line radio galaxies. A possible (though certainly not necessary interpretation) is that the broad line region can only be viewed from a preferred orientation (e.g., along the radio source axis). Anyway, I was wondering if any one looked into the properties of the radio cores in broad line radio galaxies (BLRGs) versus in (NLRGs). That is, if you plot core power versus total radio power do the BLRGs stand out (e.g., have particularly high radio core powers)? Do you know if this has been looked at in the past? If it hasn't been, perhaps your compilation of radio source parameters (in REFLEX) might be a good first place to look at this.

From: CVAX::ABRIDLE 21-NOV-1988 12:15
To: SBAUM,ABRIDLE
Subj: Missing paper

The person who handles the Supplements was out when I called. Her name is Eileen O'Connor. But I talked with Grace White, who checked some records and found that the paper is now scheduled for the December issue, though she does not know why it slipped. I will try to elucidate when Ms. O'Connor gets back in town.

I have been put on the board that is doing the autopsy on the 300-foot, so may be in Green Bank more than CV in the immediate future. But I shall keep my ear to the ground re the paper.

From: CVAX::ABRIDLE 22-NOV-1988 17:49
To: SBAUM,ABRIDLE
Subj: Misc.

I had not planned to go up to Boston for the AAS, so may miss you yet again unless I'm in New Mexico round then. May depend on January schedule.

I've just sent you a preprint on 3C288, which is finally going to appear in A.J. after some rounds of re-observing and thinking. It's a candidate for emission line studies, showing evidence of Faraday depolarization and interaction. I'd be interested in your thoughts about sensitivities and whether there's any hope for an optical study.

I have recently been concentrating on the Pie Town link, and very recently on the 300-foot collapse. It may be some weeks before we are ready to report on what brought the telescope down, so hard to predict how long I'll be tied up with the problem.

From: CVAX::ABRIDLE 12-DEC-1988 17:11
To: SBAUM,ABRIDLE
Subj: Ap.J.Supp. paper

It has indeed appeared in the December issue. Ap.J.Suppl., vol. 68, pp. 643-714.

From: CVAX::ABRIDLE 19-MAY-1989 12:47
To: SBAUM,ABRIDLE
Subj: Ghosts from past

Two ghosts have arisen. The first you may already know -- I've mailed everyone a draft of the paper on 0326+39. The second is more recent. I'm starting in on 3C353 using the tapes you left me. I've immediately discovered that they contained none of the 6cm data, for which in the proposal we said we'd do A,B and C arrays. The four tapes you left with me appear to contain the 1/2cm D array, 2cm C array, 2cm B array and 20cm A array data only. Do you have some more over there with the 6cm data and the other 20cm data ? If so, perhaps you could make copies for me. If not, I'll have to go back to the ModComp tapes I guess, but I presume there was Dec-10 calibration of those runs on some EXPORT tapes somewhere.

Cheers, A.

From: CVAX::ABRIDLE 20-JUN-1989 11:22
To: CVAX::GATEWAY::"SBAUM%RZMVX1.RZMSUR.SURFNET@HASARA5.BITNET",ABRIDLE
Subj: RE: 3c353 confusion

The job situation at NRAO is basically as follows: the only scientific positions at the moment are VLBA-related, e.g. the two AIPS positions we are currently filling (one already taken, the other advertised in the April AIPSLetter. Much may change if the new Green Bank telescope is funded, but then the short-term positions will be mainly in design I think, and in C'ville or Green Bank. Prospects for "general staff" and VLA-related positions are pretty bleak for 1990, but I guess Miller will decide whether to try to get any near the end of this year. They have just hired Eli Brinks to the spectral line position, as you probably know. So nothing obvious that would be appropriate for you or Chris, I'm afraid. I'll let you know, of course, if anything comes along.

We may know the state of the replacement telescope project late this week. The House/Senate conference committee has included full funding in a bill that should go to the White House on Friday. But the same bill may contain a provision for increased expenditures on drug enforcement that Bush has said he will veto. Which would of course send the entire bill back to the House. We're very close, but still waiting .....

From: ESTCS0::PSI%SPAN.DWINGELO::CODEA "Chris O'Dea, Dwingeloo" 22-JUN-1989 06:24
To: FRAZER,BRIDLE
Subj: It's a boy (again)

Kieran Peter Baum O'Dea was born on June 22 at 0230. He weighed 4.150 kg. Kieran was born at home in Dwingeloo after a short but hard labor of 4 hours total! We are all doing well and resting.

From: CVAX::ABRIDLE 22-JUN-1989 16:12
To: ESTCS0::PSI%SPAN.DWINGELO::CODEA,ABRIDLE
Subj: RE: It's a boy (again)

Congratulations! Didn't anyone tell you that sitting in front of video terminals for months produces male children?

---- Just joking, of course. :-)

Best wishes, Alan

From: CVAX::ABRIDLE 5-JUL-1989 15:12
To: SBAUM,ABRIDLE
Subj: K.O'D imagery

K.O. looks O.K. and glad to see all 4 of you in cluster image. Thanks for sending.

News from here: 3C353 progresses, but slowly. Found some more B array data at 1665 that we are trying to calibrate and add to the previous images, along with the C array data. A few problems with RFI I think and many many iterations needed but fortunately we are able to hog the convex this week. The U Band full resolution stuff is nearly done, East hot spot fully resolved and some detectable polarization; no surprises in the behavior provided the RM is moderate (have not got any more RM estimates yet, we're concentrating on image-making while there is some disk space available). West hot spot also fully resolved and almost disappeared into noise. Don't have enough sensitivity to calibrate well, unfortunately, the core was too far down the primary beam. But again, enough to measure physical sizes.

I think C Band A array will be a good idea. The jet looks edge brightened over some of its length at 1.4" resolution, but is too weak to show up properly at U Band in B array. I'll dig some more to find out whether we did actually get some A array C band data, but I think we'll need a full synthesis more anyway to have a good chance at imaging the possibly hollow part of the jet. I'll look after this.

President Bush has signed the bill that contains the $75M for the new telescope at Green Bank. Now all we have to do is build it!

Cheers, A.

From: CVAX::ABRIDLE 26-OCT-1989 12:21
To: SBAUM,ABRIDLE
Subj: Misc

Hi Stefi. I'm in NM at the moment; came out for the pc-scale jets meeting and misc other things. Got your message re 3C353 and I'll send you a couple paragraphs when I'm reunited with the 353 stuff back in CV (second week in November). Status of 0326 is that Paola pointed out that the calculations based on Phil Hardee's relations for instabilities gave significantly different Mach numbers than those she did based on Attilio Ferrari's. I think this is the difference between time-domain and space-domain analyses and that my use of Phil's spatial relationships is correct, but I want to make sure of that before I circulate a last and final version that includes everybody's comments. Thanks for the comments you sent me.

No news on 353 as it all stopped when all of the TV's in CV were struck by lightning. We'd got all of the datasets below 20 GHz pretty well calibrated and were starting to look at the inter-frequency comparisons; just the sort of stuff you really need TV displays for! It's still not clear when th IIS may be back up as so many chips got fried and Warren has had to learn a lot about IIS to even start debugging it, but the IVAS came back just before I left for NM. I didn't try bringing it here as it is now on about 20 tapes altogether. I am planning to give a poster on it at the AAS in Washington, just the basic imaging and filamentation for comparison with Cygnus and Fornax, so further work is guaranteed in the near future!

From: CVAX::ABRIDLE 7-MAY-1990 17:35
To: GATEWAY::"sbaum@nfra.nl",ABRIDLE
Subj: Definite jet list

226 Jets and no Possible Jets 3:15:30 pm May 7, 1990

Jets:

IAU Name Other Name(s) ID z Pcore Ptot Ljet kpc S Contact

0017+15 3C9 Q 2.0120 25.45 28.15 22.50 1 Bridle
0017+257 4C25.01 Q 0.2800 25.47 25.66 65.92 0 Gower
0033+18 3C14 Q 1.4690 25.58 27.80 64.21 1 Laing
0034+25A B2 G 0.0321 21.83 23.13 52.97 2 Parma
0038-019 4C-02.04 Q 1.6900 ERROR 27.52 42.18 1 Barthel
0055+265 NGC326 G 0.0472 22.29 24.60 25.31 2 Ekers
0055+300 NGC315 G 0.0167 23.24 24.07 235.79 3 Bridle
0104+321 3C31=NGC383 G 0.0169 22.45 24.19 14.31 2 Bridle
0106+729 3C33.1 G 0.1810 23.76 26.09 147.34 1 Rudnick
0110+29 Q 0.3630 25.15 ERROR 122.37 0 Wardle
0123-01 3C40 G 0.0186 22.35 24.37 37.69 2 O'Dea
0123-016A NGC541 G 0.0187 21.51 23.54 23.68 2 v Breugel
0130+24 4C24.02 Q 0.4570 25.11 ERROR 92.41 1 Wardle
0133+207 3C47 Q 0.4250 25.10 26.91 66.21 0 Burns
0134+32 3C48 Q 0.3670 25.96 27.40 1.54 1 Simon
0149+35 NGC708 G 0.0160 21.14 ERROR 4.52 2 Laing
0153+74 Q 2.3400 27.70 28.46 0.05 1 Witzel
0206+35 UGC1651 G 0.0373 23.15 24.50 16.78 2 Parma
0220+42 3C66B G 0.0215 22.59 24.68 45.16 2 Pooley
0235+017 NGC1004 G 0.0220 22.23 23.10 30.78 2 Condon
0238+08 NGC1044 G 0.0214 22.54 23.79 43.16 2 Cornwell
0240-00 3C71=NGC1068 G 0.0040 20.99 22.92 0.29 2 Wilson
0246+181 UGC02296 G 0.0330 ERROR 23.67 135.94 2 Condon
0247+46 B3 G 0.0500 23.09 24.57 300.23 2 Bridle
0255+05A 3C75A G 0.0241 22.40 24.32 30.24 0 Owen
0255+05B 3C75B G 0.0241 22.40 24.26 30.24 2 Owen
0256+13 4C13.17B G 0.0748 22.30 24.07 15.33 2 O'Dea
0304+575 GT ERROR ERROR 0.00 Duric
0305+03 3C78=NGC1218 G 0.0289 23.77 24.81 0.60 1 Cornwell
0314+41 NGC1265 G 0.0255 22.15 24.81 17.73 2 Owen
0316+41 3C84=NGC1275 G 0.0177 24.87 24.65 4.99 1 Readhead
0320-37 ForA=NGC1316 G 0.0063 20.99 24.72 2.72 2 Fomalont
0326+39 VV7.08.14 G 0.0243 22.70 24.05 40.64 2 Bridle
0336-35 NGC1399 G 0.0049 20.41 22.70 8.05 2 Killeen
0356+10 3C98 G 0.0306 22.88 24.98 50.63 0 Bridle
0405-123 OF-109 Q 0.5740 26.60 27.12 59.96 0 Rusk
0415+37 3C111 G 0.0485 24.47 25.57 77.86 1 Perley
0430+05 3C120 G 0.0334 24.93 24.74 82.49 1 Walker
0445+44 3C129 G 0.0208 22.19 24.57 8.75 1 Burns
0448+519 3C130 G 0.1090 23.58 25.57 396.43 0 Bridle
0448+52 3C130N G 0.1090 22.93 24.59 66.07 3 Bridle
0449-17 PK G 0.0313 22.03 23.92 10.34 2 Ekers
0459+25 3C133 . G 0.2775 25.33 26.71 14.42 1 Laing
0514-16 PK Q 1.2780 27.32 27.24 33.16 1 Perley
0538+49 3C147 Q 0.5450 26.78 27.93 0.77 1 Readhead
0546-32 PK G 0.1470 23.90 ERROR 201.56 0 Ekers
0609+71 Mrk3 = 4C70.05 G 0.0137 22.95 23.33 0.49 1 Pedlar
0658+33 B2 G 0.1270 23.98 24.82 55.38 2 O'Dea

0704+35A 4C35.16A G 0.0780 21.83 24.27 16.90 2 O'Dea
0710+11 3C175 Q 0.7680 25.29 27.28 89.68 1 Bridle
0712+53 4C53.16 G 0.0640 22.96 24.82 12.52 0 Burns
0723+67 3C179 Q 0.8460 26.62 27.37 18.29 1 Shone
0730+257 4C25.21 Q 2.6860 ERROR 27.89 22.67 1 Barthel
0742+31 4C31.30 Q 0.4620 26.24 26.54 206.33 1 Neff
0749+37 * ERROR ERROR 0.00 0 Condon
0755+37 NGC2484 G 0.0433 23.60 24.71 43.82 3 Parma
0800+24 B2 G 0.0430 22.48 23.48 17.42 2 Burns
0800+60 OJ601 Q 0.6890 25.63 26.78 71.42 1 Browne
0802+103 3C191 Q 1.9560 26.36 28.06 12.34 1 Laing
0812+02 4C02.23 Q 0.4020 25.60 26.56 32.23 0 Rudnick
0812+36 B2 Q 1.0250 27.10 27.20 29.87 1 Perley
0824+294 3C200 G 0.4580 24.98 26.72 41.11 1 Clarke
0833+58 Q 2.1010 27.64 27.51 44.56 0 Perley
0833+65 3C204 Q 1.1120 25.70 27.37 55.81 1 Bridle
0833-016 PKS=NGC2616 G ERROR ERROR 0.00 Condon
0836+290 G 0.0680 23.75 24.64 43.16 1 Parma
0836+299 4C29.30 G 0.0643 22.68 24.48 20.95 3 Parma
0836+71 4C71.07 Q 2.1600 27.26 28.62 0.04 1 Witzel
0838+13 3C207 Q 0.6840 26.45 27.22 24.95 1 Wardle
0844+319 4C31.32 G 0.0675 23.35 24.87 58.62 1 v Breugel
0850+140 3C208 Q 1.1100 25.98 27.63 20.17 0 Bridle
0850+581 4C58.17 Q 1.3220 27.26 27.39 30.12 1 Barthel
0852+49 G ERROR ERROR 0.00 2 Condon
0855+14 3C212 Q 1.0490 25.38 27.59 22.23 1 Laing
0903+16 3C215 Q 0.4110 24.55 26.53 40.40 1 Bridle
0908+37 B2 G 0.1040 23.48 24.88 25.42 1 Condon
0913+38 B2 G 0.0711 22.05 24.29 15.58 2 Parma
0915+32 B2 G 0.0620 22.71 24.08 44.60 2 Parma
0915-118 HydA=3C218 G 0.0650 24.01 26.31 8.46 2 Perley
0917+45 3C219 G 0.1744 24.18 26.44 36.32 1 Bridle
0938+39 4C39.27 Q 0.6180 25.00 26.98 96.04 1 Wardle
0957+00 4C00.34 Q 0.9070 26.02 27.02 75.69 0 Hintzen
0957+56 Double QSO Q 1.4050 26.28 27.10 21.46 1 Burke
1001+22 4C22.26 Q 0.9740 25.73 ERROR 30.56 0 Wardle
1003+35 3C236 G 0.0989 24.64 25.77 0.37 1 Fomalont
1004+13 4C13.41 Q 0.2400 23.87 25.90 59.76 1 Fomalont
1004+14 NGC3121 G 0.0310 22.97 24.06 76.88 2 Cornwell
1005+28 B2 G 0.1476 22.68 24.28 202.19 2 Parma
1007+417 4C41.21 Q 0.6130 25.83 26.90 76.64 1 Clarke
1028+31 OL347 Q 0.1800 24.62 25.04 15.65 1 Gower
1029+570 HB13 G 0.0340 22.50 23.72 279.64 2 Strom
1033+00 PK G 0.0670 23.33 24.44 9.13 1 Cornwell
1040+123 3C245 Q 1.0290 27.32 27.67 10.67 1 Foley
1100+77 3C249.1 Q 0.3110 24.93 26.44 21.62 1 Bridle
1108+27 B2 G 0.0331 22.28 23.02 18.18 1 Parma
1113+29 4C29.41 G 0.0489 23.08 24.71 13.07 1 Parma
1116+28 B2 G 0.0667 23.17 24.34 129.86 2 Parma
1122+39 NGC3665 G 0.0067 20.46 21.75 3.27 2 Hummel
1131+49 IC708 G 0.0321 22.74 24.12 35.32 2 Bridle
1137+18 NGC3801 G 0.0105 20.59 23.04 2.10 2 Laing
1137+66 3C263 Q 0.6560 25.96 27.23 62.61 0 Bridle
1142+19 3C264 G 0.0208 23.09 24.42 3.50 0 Baum
1144+35 B2 G 0.0630 24.37 24.40 24.68 0 Parma
1150+49 4C49.22 Q 0.3340 25.89 26.42 23.39 1 Perley
1209+745 4CT74.17.1 G 0.1070 23.26 24.97 121.02 1 v Breugel
1216+06 3C270=NGC4261 G 0.0073 22.25 24.04 31.43 2 Kronberg

1217+02 PK Q 0.2400 25.33 25.67 119.52 0 Neff
1222+13 M84=3C272.1 G 0.0051 21.72 23.23 3.53 2 Bridle
1226+02 3C273 Q 0.1580 26.98 27.15 39.06 1 Perley
1226+105 MC2 Q 2.2960 26.60 27.80 11.88 1 Barthel
1228+12 M87=3C274 G 0.0051 22.92 24.77 1.76 1 Owen
1241+16 3C275.1 Q 0.5570 25.74 27.07 35.96 0 Burns
1243+26 B2 G 0.0891 22.20 24.52 44.60 2 Parma
1250-10 NGC4760 G 0.0138 22.14 23.26 2.94 2 Laing
1251+273 NGC4789 G 0.0270 21.16 ERROR 6.74 2 Laing
1251+278 3C277.3=ComA G 0.0857 22.98 25.36 10.78 1 Baum
1251-12 3C278=NGC4783 G 0.0138 22.13 24.21 13.71 2 Cornwell
1253-05 3C279 Q 0.5360 27.45 27.58 9.87 1 Perley
1254+27 NGC4839 G 0.0249 21.19 22.63 4.85 2 Parma
1256+28 NGC4869 G 0.0235 21.08 22.89 2.62 0 O'Dea
1258+40 3C280.1 Q 1.6590 26.21 27.82 42.28 1 Swarup
1258-32 PK G 0.0000 ERROR ERROR 0.00 2 Perley
1308+182 4C18.36 Q 1.6890 25.79 27.12 14.76 1 Barthel
1308-441 PK G 0.0515 23.55 24.38 233.07 1 Jones
1311-270 PK Q 2.1950 26.59 27.59 20.04 1 Barthel
1313+07 PK G 0.0507 22.88 24.72 33.79 2
1315+34 B2 Q 1.0500 26.76 26.97 8.55 1 Perley
1316+29 4C29.47 G 0.0728 23.25 24.91 112.26 2 Condon
1317+52 4C52.27 Q 1.0600 26.77 27.36 59.91 0 Owen
1321+31 NGC5127 G 0.0161 21.77 23.83 54.61 2 Parma
1322+36 NGC5141=4C36.24 G 0.0175 22.38 23.43 6.66 2 Parma
1322-427 CenA=NGC5128 G 0.0017 22.20 24.60 5.17 3 Burns
1328+30 3C286 Q 0.8490 27.88 28.17 0.21 0 Perley
1333-33 IC4296 G 0.0129 22.61 24.04 128.33 2 Killeen
1336+391 3C288 G 0.2460 23.90 26.37 6.07 1 Bridle
1347+60 NGC5322 G 0.0070 20.84 21.61 7.04 2 Hummel
1354+195 4C19.44 Q 0.7200 27.01 27.16 72.25 1 Rusk
1354+258 PK Q 2.0320 26.16 27.21 16.33 1 Barthel
1357+28 B2 5 G 0.0629 22.43 24.04 24.65 2 Parma
1358-11 PK G 0.0250 22.78 24.10 81.43 2 Brodie
1400+162 4C16.39 Q 0.2400 24.95 25.73 14.34 1 Gower
1407+17 NGC5490 G 0.0163 22.00 23.67 69.09 2 Jenkins
1414+11 3C296=NGC5532 G 0.0237 22.67 24.41 49.59 2 Laing
1422+26 B2 G 0.0370 22.25 24.00 17.66 2 Parma
1441+52 3C303 G 0.1410 24.62 25.73 26.02 0 Kronberg
1448+63 3C305 G 0.0410 22.57 24.72 0.94 2 v Breugel
1450+28 B2 G 0.1265 22.81 24.36 37.30 2 Parma
1451-375 Q 0.3140 26.24 26.35 16.94 1 Perley
1452+16O 3C306=IC4516 G 0.0456 ERROR 24.50 73.56 2 Condon
1453+12 K445 G 0.0320 22.41 23.97 79.22 2 Burns
1458+71 3C309.1 Q 0.9040 27.62 27.99 3.78 0 Wilkinson
1510-089 PK Q 0.3610 26.40 26.76 24.40 3 O'Dea
1521+28 B2 G 0.0825 23.52 24.71 93.92 1 Parma
1525+29 B2 G 0.0653 22.07 24.01 9.34 2 Parma
1528+29 B2 G 0.0843 22.55 24.22 83.99 2 Parma
1529+24 3C321 G 0.0960 23.52 25.54 23.76 1 Baum
1553+24 B2 G 0.0426 23.02 23.37 20.72 2 Parma
1557+70 4C70.19=NGC6048 G 0.0000 ERROR ERROR 0.00 2 Peacock
1613+27 B2 G 0.0647 22.71 24.04 15.17 2 Parma
1615+42 G 0.1310 23.20 24.19 13.81 2 O'Dea
1618+17 3C334 Q 0.5550 25.75 26.96 62.95 1 Bridle
1622+23 3C336 Q 0.9270 25.42 27.51 25.31 1 Bridle
1623+41 NGC6146 G 0.0300 22.75 23.11 0.79 1 Wrobel
1626+27 3C341 G 0.4480 23.49 26.78 111.94 1 Bridle

1637+29 B2 G 0.0880 22.84 24.42 66.20 2 Parma
1637+826 NGC6251 G 0.0230 23.66 24.13 160.62 1 Perley
1638+32 B2 G 0.1398 24.10 24.69 29.07 1 Parma
1638+53 4C53.37 G 0.1098 23.21 ERROR 39.88 2 Burns
1641+399 3C345 Q 0.5940 27.51 27.55 14.41 1 Perley
1642+69 4C69.21 Q 0.7510 26.96 27.07 17.44 1 Browne
1643+27 B2 G 0.1017 22.68 24.11 62.37 1 Parma
1648+05 HerA=3C348 G 0.1540 23.61 27.08 118.38 1 Dreher
1658+30 4C30.31 G 0.0351 22.97 23.89 21.61 3 Parma
1658+575 4C57.29 Q 2.1730 26.46 27.36 22.10 1 Barthel
1704+60 3C351 Q 0.3710 24.14 26.77 74.27 1 Bridle
1709+46 3C352 G 0.8057 24.46 27.22 24.71 1 Laing
1717-009 3C353 G 0.0304 23.05 25.74 39.83 Bridle
1721+343 4C34.47 Q 0.2060 25.22 25.86 237.04 1 Barthel
1732+16 4C16.49 Q 1.0000 ERROR ERROR 38.31 1 Laing
1736+32A B2 G 0.0741 22.93 23.74 14.25 2 Parma
1747+30 B2 G 0.1297 22.94 23.97 91.33 1 Parma
1752+32 B2 G 0.0449 22.67 23.48 30.21 2 Parma
1759+21 4C21.51 G 0.0800 23.11 24.79 20.32 1 Cornwell
1807+27 4C27.41 Q 1.7600 27.29 27.65 13.42 0 Perley
1807+698 3C371 G 0.0500 24.60 24.81 2.00 1 Perley
1816+475 4C47.48 Q 2.2250 26.20 27.52 11.98 1 Barthel
1823+568 4C56.27 Q 0.6640 26.88 26.93 11.78 1 O'Dea
1827+32 B2 G 0.0659 23.10 24.08 77.08 2 Parma
1828+48 3C380 Q 0.6910 27.32 27.98 0.08 0 Perley
1842+45 3C388 G 0.0908 23.76 25.71 18.13 1 Burns
1857+566 4C56.28 Q 1.5950 25.72 27.56 61.60 1 Owen
1919+47 4C47.51 G 0.1030 23.36 25.15 214.31 1 Burns
1924+50 4C50.47 Q 0.0000 ERROR ERROR 0.00 1 Owen
1928+73 4C73.18 Q 0.3020 26.24 26.58 41.40 3 Simon
1939+60 3C401 G 0.2010 23.50 26.36 24.36 1 Laing
1940+50 3C402N G 0.0247 22.08 24.30 82.56 2 Pooley
1957+40 CygA=3C405 G 0.0570 24.39 27.74 47.36 3 Perley
2019+09 3C411 G 0.4680 25.50 26.95 27.67 0 Dreher
2037+511 3C418 Q 1.6860 28.12 28.39 9.28 1 Muxlow
2040-26 PK G 0.0403 22.79 24.65 81.99 2 Brodie
2058-13 PK=IC1347 G 0.0296 22.16 24.08 53.14 2 Brodie
2058-28 PK G 0.0380 22.20 24.91 46.56 0 Brodie
2104-25N PK G 0.0389 22.92 24.99 24.33 1 Cameron
2104-25S PK G 0.0389 22.94 24.88 237.97 1 Cameron
2106+49 3C428 ? ERROR ERROR 0.00 0 Higgs
2116+26 NGC7052 G 0.0164 22.12 22.71 83.40 2 Laing
2121+24 3C433 G 0.1016 22.77 26.14 29.91 0 v Breugel
2153+37 3C438 G 0.2920 23.99 26.84 21.64 2 Laing
2201+14 UGC11889 G ERROR 1ERROR 0.00 2 Condon
2201+31 4C31.63 Q 0.2970 26.21 26.28 54.65 1 Gower
2209+152 MC3 Q 1.5020 25.79 26.85 34.18 1 Barthel
2221-02 3C445 G 0.0570 23.51 25.29 210.50 1 v Breugel
2223-05 3C446 Q 1.4040 27.67 28.27 1.07 1 Simon
2229+39 3C449 G 0.0171 22.07 24.05 19.30 2 Cornwell
2236+35 B2 G 0.0277 21.75 23.46 2 8.44 2 Parma
2251+15 3C454.3 Q 0.8590 28.01 28.05 20.84 1 Wilkinson
2300-18 PK Q 0.1290 24.90 25.44 68.20 1 Condon
2305+18 4C18.68 Q 0.3130 24.99 26.06 4.51 1 Gower
2316+18 OZ127 G 0.0395 22.41 23.69 16.09 2 O'Dea
2318+07 NGC7626 G 0.0112 21.31 23.15 6.39 2 Laing
2325+29 4C29.68 Q 1.0150 26.37 ERROR 85.27 1 Wardle
2335+26 3C465=NGC7720 G 0.0293 23.37 24.83 24.29 1 Owen

2337+26 NGC7728 G 0.0314 23.00 23.48 38.91 2 Condon
2338+04 4C04.81 Q 2.5940 27.15 28.26 4.59 0 Barthel
2349+327 4C32.69 Q 0.6710 25.15 26.52 98.46 1 Wardle
2354+47 4C47.63 G 0.0460 22.49 24.61 37.08 3 Burns
2357+00 G 0.0839 23.07 ERROR 63.53 1 Downes

226 jets in above list, status: Jet

From: ESTCS1::PSI%SPAN.DWINGELO::RZMVX1::SBAUM 8-MAY-1990 05:15
To: BRIDLE_ALAN
Subj: 3c215

Thanks for the jet list. 3C215 will be out of sight during
our observations (at the wrong RA). However, if we have luck
with the service request observations on 3C353 (or even if we don't)
we could put in for a deep narrow band image during service time
in the winter. I look into it to see if there is a filter at the
appropriate wavelength in the la Palma store, if that is aggreable
to you?
Cheers,
Stefi

Prepared on: 08-May-90 11:15:34

Original to: bridle_alan at NRAO

Reply Internet: SBAUM@nfra.nl
SPAN: ESTCS1::PSI%DWINGELO::SBAUM
NSSDCA::PSI%DWINGELO::SBAUM
SURFnet: RZMSUR::SBAUM
PSI: PSI%(0)(204)1521004::SBAUM

Address:
NFRA Phone: +(31)(0)5219.7244
Radio Observatory Fax: +(31)(0)5219.7332
P.O. Box 2 Telex: 42043 srzm nl
7990 AA Dwingeloo
The Netherlands

From: CVAX::ABRIDLE 2-OCT-1990 11:33
To: CVAX::GATEWAY::"ODEA@STSCI",ABRIDLE
Subj: RE: from Stefi

Ah yes, the "joys" of settling in again! Hope it's not too traumatic
and that you will enjoy the big astronomical community where you are now.

Glad to hear that 3C353 got done; we should probably be thinking about
21cm line observations in the A array -- when you get a chance, that is!

Aren't you wondering whatever happened to the "paperless office" we were
all supposed to have in the computer age?

Best wishes, Alan

From: CVAX::GATEWAY::"ODEA@STSCI" 29-JAN-1991 09:30
To: ABRIDLE AT NRAO
Subj: 3c353

Date sent: Tue, 29 Jan 91 09:28 EST
To: ABRIDLE@NRAO.BITNET
Message-id: <C92BE7C1645FC0227E@SCIVAX>
X-Envelope-to: ABRIDLE@NRAO.BITNET
X-VMS-To: IN%"ABRIDLE@NRAO.BITNET"
X-VMS-Cc: 3C353

Howdy Alan. This is me. My user name is SBAUM at the same address
you send Chris mail to.

The baby is now 5 days late! so I am eagerly awaiting the `a
Yesterday, however, I loaded the 3c353 optical data on to my newly
arrived Sparke station and plan to give the data a quick look over
this morning. Don't know how far I'll get with this before the
baby arrives, but for now I shall work away at it.

Cheers,
Stefi

From: CVAX::GATEWAY::"ODEA@STSCI" 29-JAN-1991 14:22
To: ABRIDLE AT NRAO
Subj: Stefi

Date sent: Tue, 29 Jan 91 14:18 EST
To: abridle@NRAO.BITNET
Message-
d: <C9036A6E233FC03312@SCIVAX>
X-Envelope-to: abridle@NRAO.BITNET
X-VMS-To: IN%"abridle@nrao.bitnet"

Hi Alan,
The baby was due a couple days ago. We are sitting around waiting for it to come. The kids and I just got over a flu, so it's good that the baby is taking its time!
Stefi can be reached at the same address as me, userid SBAUM.
I should be down in C'ville in March.
cheers,
Chris

From: "CVAX::GATEWAY::\"SBAUM@STSCI\""@CVAX.CV.NRAO.EDU
To: abridle@polaris.cv.nrao.edu
Subject: 3c353
Date: Wed, 22 May 1991 10:46:28 EDT

Date sent: Wed, 22 May 91 10:45 EST
To: abridle@NRAO.BITNET
Message-id: <70555EC03C5FC0290E@SCIVAX>
X-Envelope-to: abridle@NRAO.BITNET
X-VMS-To: IN%"abridle@nrao.bitnet"

Howdy. I have received a VLA questionare about the status of our observations
of 3C353 (project code AB389), including a question about any publications
from the data and whether a student has been involved.
And about the future stat us of the observations (i.e., planned publications).

Since you are nearer and dearer to the data at this point could you tell me;
(1) the reference for the AAS paper you presented
(2) the student invovlvement
(3) our future plans!(I'm interested in this one as well, of course).

Stefi

P.S. We are planning a trip to Cville this fall for an extended period (1-2 wee
ks), perhaps we could do something about the 3c353 project then?

From abridle Wed May 22 10:58:25 1991
X-VM-v5-Data: ([nil nil nil nil nil nil t nil nil]
["2062" "Wed" "22" "May" "91" "10:58:25" "-0400" "Alan Bridle" "abridle " nil "44" "Re: 3c353" "^From:" nil nil "5"])
Received: by polaris.cv.nrao.edu (AIX 3.1/UCB 5.61/1.0)
id AA25169; Wed, 22 May 91 10:58:25 -0400
Message-Id: <9105221458.AA25169@polaris.cv.nrao.edu>
References: <910522104628.143e@CVAX.CV.NRAO.EDU>
From: abridle (Alan Bridle)
To: SBAUM@STSCI
Subject: Re: 3c353
Date: Wed, 22 May 91 10:58:25 -0400

Hi Stefi,

The paper was with Chris Williamson at the Washington AAS Meeting.

Since then, we have processed the 5 GHz images further but I still have not had the time to do more on the multi-frequency comparisons.

I think the 2cm data are really too noisy to do a proper spectral analysis with, plus we have some problems still with missing flux. I also came to the conclusion that the mosaicing of the overall image from the separate fields was being limited by a poor model for the primary beam, at least at the 10% level. For both these reasons, I'd like to do a multi-array synthesis at 8 GHz, where we'd have better sensitivity and shorter spacings available from the D array.

I think we also need to take a look at the 21cm line in the B array, to diagnose what's going on in the "black hole". I've tried to fitting the "hole" at several frequencies and so far as I can tell its depth is almost independent of frequency from 21 cm to 2cm but the width may be growing slightly as the frequency decreases. This thing is a major mystery. If it's a free-electron feature, either by absorption or scattering, then we need a galactic nucleus in the way. There should be at least some sign of a host galaxy in that direction! If it's not free-electrons then I think it must either be anisotropic synchrotron emission or a horrendous conspiracy (the knitting needle of God!).

What this thing really needs is more full-time attention than I have been able to give it. I have a student from Rochester starting a Ph.D. in the Fall (if he passes his qualifying exam), and I've offered this to him as one possible project, along with several others.

In the meantime, I think we should propose some B array observing, in the H line and at 8 GHz.

What happened with the emission-line follow-up?

Glad to hear you may be coming down here for a little while. Let's indeed plan to get tohgether around this data then. We also have 3C98 hanging in our closet!

Hope all is well with the family and that Baltimore is treating you kindly,

Best wishes, Alan

From: abridle (Alan Bridle)
To: SBAUM@STSCI
Subject: Re: 3c353
Date: Wed, 22 May 91 10:58:25 -0400

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Hope all is well with the family and that Baltimore is treating you kindly,

Best wishes, Alan

From: abridle (Alan Bridle)
To: Stefi Alison Baum <sbaum@stsci.edu>
Date: Tue, 19 May 92 10:30:59 -0400

Thanks (in advance!) for the 109 image(s).

Really sorry I had to miss the meeting, though it was as well that i did, as Mary's staff all managed to get sick just as we were moving so she sended up not being able to take anything but the purchase day and moving day itself off work.

We are really enjoying the new house, it's got many improvements we were thinking of adding in to the previous one, plus it's even closer to Ivy, Duners', etc, and in a nice development around the edge of an old estate that is now mainly a vineyard. We're hoping to get to know the owners and do some deals for them over grapes!

Parachute has decided she likes the place (it's her eighth house, including the one she was born in before we got her as a kitten and the two she boarded in while we were in NM, so she's sort of used to this business). She's still convinced that Cedar Ridge Lane must be in the back of one of the many closets, however, and keeps looking for it with a somewhat accusatory face. "This is all very well, Mary and Alan, but where did you put the *o*t*h*e*r* house when you moved into this one?" Sigh.

All the best, A.

From: abridle (Alan Bridle)
To: baum@stsci.edu
Subject: 3C98, 3C109
Date: Mon, 14 Sep 92 11:55:01 -0400

Hi Stefi, did you get the 3C98 contour map o.k.? What should the next move be re the 3C98 data?

Also, just to remind you that you said you would send a 3C109 image for use in the 3CR Atlas.

We're working on putting together the A+B+C+D configuration image of 3C353 at C Band. Some complications with core variability, but it looks as though we will have a spectacular image of the whole source at 0.4" resolution from this data, with many details of filaments and the internal structure of the jet. Mark Swain is very eager to get the 8-GHz equivalent put together now! The "dark spot" now looks rather more convincingly connected to the rest of the radio structure at this resolution: there are filamentary structures apparently bracketing it, and there is a dark band emanating from it towards the south-west that apparently crosses several other bright features. This makes it more likely that we have to explain it in terms of the geometry of 3C353's emission rather than by some sort of bizarre interposed object. For that reason I'm less inclined to go out after an HI observation that would look for "invisible galaxy" in its direction.

When we get the A+B+C+D properly put together and cross-calibrated, we'll send you a copy of the image so you can see how this is progressing ....

Cheers, A.

From: SBAUM@stsci.edu
To: abridle@polaris.cv.nrao.edu
Subject: stuff
Date: Wed, 16 Sep 1992 09:53 EST

Howdy,

Good to hear from you! just a note - my email adress is sbaum@stsci,
not just baum@stsci (there is another baum here and he eventually forwards
me my mail, but it can take a while to get to me...)

Yes, I just got the 3c98 image in the mail. I'm still at home on
maternity leave, but in a few weeks I should be back on the job and
I can look up the state of the optical data on this object. Then I
guess we should sit down and see what kind of a paper?we have?

I'm real interested in the 3c353 result. I wander if you (and Mark)
might be interested in visiting STScI sometime this fall? Perhaps
you could give an informal lunch talk and we could go over the data
etc? I'm not so mobile right now (newborn babies tend to tie one down!),
otherwise I'd suggest I visit Cville...

Give my best to Mary,
and let me know what you think about the visit idea,
Stefi

P.S. Thank you for reminind me about 3c109. K

From: abridle (Alan Bridle)
To: SBAUM@stsci.edu
Subject: Re: stuff
Date: Fri, 18 Sep 92 13:47:45 -0400

Sorry 'bout the truncated E-mail address, don't know how that happened!

We'd like to come up to Baltimore as you suggested. Let's make some plans for that once Mark has the A+B+C+D image put together.

The D-array 8-GHz run was done last night. We went through the pointing and bandwidth options rather carefully and decided to do it exactly as we had done the C+D array observing at 14.5 GHz -- in two pointings, one midway between the east hot spot and the core, and one midway between the west hot spot and the core. We're going to give higher priority to getting the entire 6cm data set spliced together than to working with the new data for a while, especially as the new data order will be D,A,B,C, so there won't be anything really exciting to look at until we have all four runs done.

I'm guessing, from the fact that we were given the full 10hrs of A configuration that we asked for, that we'll get 100% of the time despite the slightly rude comments of one jaundiced referee!

Mark would be very keen to get into any optical followup that we think is appropriate, as part of his thesis. I'm a bit rusty about what you did actually try as a followup to look for weaker extended line emission. Could you remind me?

Enjoy the rest of your leave -- you must have quite a handful at home these days!

Cheers, and best wishes to Chris,

Alan

From: SBAUM@stsci.edu
To: abridle@polaris.cv.nrao.edu
Subject: Re: stuff
Date: Fri, 18 Sep 1992 20:43 EST

Hi. Optically, the only followup we have obtained on 3c353 was
obtained as part of a service observations done for us at the WHT.
I can't remember off the top of my head, but I think we had spectra
taken on the 4 meter, one with the slit along the radio axis, and
one with the slit running perpendiculr to that axis but directly through
the dark spot. Something like that. The data were a bit confusing because
the log we were sent of the observations didn't correctly correspond
with what was on the tape, but I think most of the stuff is there
to reduce the data. Perhaps we could look into it when you guys come up?
That data certainly could go into his thesis - the integrations were
I believe quite substantial, so if no detection is made, the limits
should still be interested. I'll hunt down the tapes and the logs and
see if I have been correct in what I have just said! but I think thaat's
about right.n Did you guys ever apply for ROSAT time for this object?
If not, we should certainly put in in the upcoming proposal round (deadline
December I believe...)

Glad to know you guys will be up for a visit,
Stefi

From: abridle (Alan Bridle)
To: SBAUM@stsci.edu
Subject: Re: stuff
Date: Mon, 21 Sep 92 09:32:44 -0400

OK, let's plan on looking at the spectroscopy when we get together around the all-array imaging at 6cm a little while from now.

No, we did not put in a ROSAT proposal last time around. Have you seen the AO for the forthcoming round?

I'm not an expert on ROSAT proposal planning, have you done any before? I have heard (from the last round) that they have been very tough to get time on for radio-galaxy work. Maybe we should try to link up with one of the "insiders" for that side of things? I'll talk to Craig Sarazin about that next time I see him.

Cheers, A.

From: SBAUM@stsci.edu
To: abridle@polaris.cv.nrao.edu
Subject: Re: stuff
Date: Mon, 21 Sep 1992 13:16 EST

sounds good. Re to rosat stuff - I agree about hooking up with Craig.
I think 3c353 had a strong Eisntein detection, so that should help.

Cheers,
Stefi

From: SBAUM@stsci.edu
To: abridle@polaris.cv.nrao.edu
Subject: visit to ST?
Date: 24 Oct 1992 11:37:06 -0400 (EDT)

Hi Alan,

At ST we have a visitor program whereby individual staff members can submit proposals to bring in visitors to work with them for periods of days to months. The program then pays for the full expenses of the visitor. My question to you is would you or your student like to visit ST under the auspices of this program some time this winter/spring/summer to work on kC353? If your student visited for a few weeks I could try to work with him to get the optical spectra we took at La Palma reduced for instance...

Let me know if either of you are interested ; the deadline for the proposals is the end of this week!

Thanks,
Stefi

From: abridle (Alan Bridle)
To: SBAUM@stsci.edu
Subject: Re: visit to ST?
Date: Mon, 26 Oct 92 10:44:10 -0500

Hi Stefi,

Thanks for the message. Could you refresh me about just what data there is from La Palma and what reductions are needed? (In particular, could the reductions in fact be done here?) Mark is keen to visit ST and to learn about the spectroscopic work but a "few weeks" sounds like it might need some justification if the reduictions could actually be done more locally. But if there is a good justification for doing it there I think it might be very valuable experience for him and we should go for it.

A.

From: abridle (Alan Bridle)
To: SBAUM@stsci.edu
Subject: Re: visit to ST?
Date: Mon, 26 Oct 92 12:08:32 -0500

Hi again Stefi,

I talked with Mark and he is indeed keen to spend some time at ST as you suggested. end of Jan/ early Feb for a first visit would be just fine with him, too.

If you think there might be enough work to be done to fill a couple of weeks overall (including his learning curve time), then maybe a good strategy would be to ask for 2 weeks' support, but then plan to do it in two actual visits, a first week to familiarize him with the data and analysis, then a second one to really finish it off? Then if it turns out that there isn't much need for a second trip, e.g. if there's not much signal or if a few finishing touches could be done locally (here) with IRAF, perhaps we would decide not use a second week's budget?

So let's ask for support for the full length of time you think it might take to do such a reduction if done entirely at ST, but keep the option open if possible for using it in more than one visit? (I can easily have NRAO cover any extra travel costs that this would entail for Mark compared with a single visit, if needed).

I've no feel at all for what total length of time might be reasonable, so just go with your own judgement on that ....

The C Band data reduction has hit a few difficulties (the usual problems of cross-array calibration with high resolution on a big source, every step is a time-eater) but the overall picture is still encouraging. We should be getting the X band A configuration run scheduled soon, too ...

Cheers, A.

From: abridle (Alan Bridle)
To: SBAUM@stsci.edu
Subject: How's it going?
Date: Tue, 2 Mar 1993 09:38:30 -0500

Hi Stefi,

I've been flat on my back with the flu for almost a week (more or less since Mark left C'ville) and have just resurfaced.

How's his visit with you going? Any new features in your spectra?

Cheers, A.

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@NRAO.EDU
Subject: me visit CV?
Date: Sun, 26 Sep 93 06:10:30 EDT

Hi Alan,

I was thinking I might like to visit NRAO/CV some time this fall.
To talk with you and Mark about the 3C353 stuff. And also to speak
with you about some other 3C things - in particular your
3cr compilation and some ways it might be useful to use it.

I would also be interested in giving a talk. Either a colloquium
(don't know if these slots are all filled up?) or a lunch talk
would be fine. I also have a graduate student, Jack Gallimore,
who has done some really fine and interesting HI absoprtion studies
with the VLA of Seyfert galaxies. He might also come down and would
also be interested in giving a talk.

Anywya, let me know, what you think of all this,
I trust all is well with you, Mary, and parachute?

best,
Stefi

From: abridle (Alan Bridle)
To: Stefi Baum <sbaum@stsci.edu>
Subject: Re: me visit CV?
Date: Mon, 27 Sep 1993 15:53:30 -0400

Hi Stefi, nice to hear from you again.

Yes, you're very welcome to come down for a get-together.
When did you have in mind? I'll be out of town from about Nov.
3rd to some time in early December, so it may need to be
in October, or between about Dec 5th and Xmas.

You and your student would both be welcome to stay at our house
(plenty of room since we've moved, we now have two bedrooms
that we can use as guest rooms). Then there's Alden house if
you'd like to be closer in to town.

Mary's doing fine and Parachute, like the rest of us, is
getting old and cranky at times but basically still in good
humor. (She's just passed 18 which is a whole bunch of years
for a pudden).

Let's find some dates that may work out and we contact Jim C.
re talks to take it from there.

Cheers, Alan

From: mswain (Mark Swain)
To: abridle (Alan Bridle)
Subject: Re: forwarded message from Stefi Baum
Date: Mon, 27 Sep 1993 16:46:12 -0400

Alan,

Talking with Stefi would be great. I hope it is convenient for Stefi to visit some day other than Oct. 15. Melanie and I have out-of-town visitors that day and I will not be comming in.

Mark

From: abridle (Alan Bridle)
To: Stefi Baum <sbaum@stsci.edu>
Subject: Re: me visit CV?
Date: Mon, 6 Dec 1993 10:43:17 -0500

Hi again Stefi,

Jack's talk is scheduled for 12:15-13:00 on Wednesday.

Jim usually arranges for the speaker's lunch (sandwich) to be here at 12:00. I've not seen Jim for a month (I've been away until today) and he's not here today, so does your question imply that he (Jim) has not been in contact with Jack yet re logistics on Jack's talk? Anything I need to dig into there?

What are your plans for Thursday pm? Are you heading back to Baltimore a.s.a.p. or will you have time to get together with some locals for dinner after your talk?

We can plan on you seeing some of the local folks at Pizza Lunch on Thursday, that is if you think you can survive another encounter with the dreaded Anna's Pizza #5!

Just let me know what your preferred "getaway mode" might be on Thursday, we'll work with whatever suits you best.

Cheers, A.

From: abridle (Alan Bridle)
To: Stefi Baum <sbaum@stsci.edu>
Subject: Re: radio galaxy question
Date: Tue, 8 Feb 1994 13:56:46 -0500

The FRI jets frequently peak some way down their length on kpc scales, i.e. there is a "rise", if not an actual "gap". I don't recall a very recent reference to this, but Robert is trying to model the differential "gap" profiles of jets and counterjets in FRI's with his relativistic-jet model. he may have said something about this in his review (of which I don't have a copy).

And some FRII RG's definitely show the effect, e.g. 3C219. I'm not so sure about FRII QSRs, but one would have to be very careful to compare at similar linear resolution and I don't recall anyone doing that recently either.

No, Robert did not come over while Peter was here, but I do expect him to be here again before too long as we now have a NATO grant for work on the FRI-relativistic-jet problem.

Cheers, A.

From: abridle (Alan Bridle)
To: sbaum@stcsi.edu
Subject: 3C353
Date: Thu, 5 Oct 1995 14:53:40 -0400

Hi Stefi,

I imagine you're about to head to Bologna? This is to let you know there will be a draft of the paper that Mark gave at Tuscaloosa awaiting your review when you get back (assuming you're coming home soon after it?). I have just finished drafting the text, need to insert the Figures as PostScript. As you can imagine, there was a big push just before the meeting to squeeze goodies out of the jet data so we didn't have a chance for you to preview it then, but I hope you'll have time to give it a good looking-at before the deadline (mid-November) for the written-up version.

Sorry you couldn't make it down for the meeting, it was nice to see Chris there.

Mary sends her best.

Cheers

Alan

From: abridle (Alan Bridle)
To: sbaum@stsci.edu
Subject: 3C353
Date: Thu, 5 Oct 1995 14:56:52 -0400

Hi Stefi,

I imagine you're about to head to Bologna? This is to let you know there will be a draft of the paper that Mark gave at Tuscaloosa awaiting your review when you get back (assuming you're coming home soon after it?). I have just finished drafting the text, need to insert the Figures as PostScript. As you can imagine, there was a big push just before the meeting to squeeze goodies out of the jet data so we didn't have a chance for you to preview it then, but I hope you'll have time to give it a good looking-at before the deadline (mid-November) for the written-up version.

Sorry you couldn't make it down for the meeting, it was nice to see Chris there.

Mary sends her best.

Cheers

Alan

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@polaris.cv.nrao.edu
Subject: Re: 3C353
Date: Thu, 5 Oct 95 17:33:29 EDT

Hi Alan,

sounds great!
I am not actually going to Bologna...

So I'll be around and will give it the good going over!

Best To Mary-
I hope all is well...
cheers,
Stefi

From: abridle (Alan Bridle)
To: Stefi Baum <sbaum@stsci.edu>
Subject: Re: 3C353
Date: Wed, 18 Oct 1995 17:34:10 -0400

Hi Stefi,

Needless to say getting the draft took a bit longer than expected but it, with rough drafts of the Figures and the image data tape, are now on their way to you by snail mail.

A.

From: abridle (Alan Bridle)
To: mswain, sbaum@stsci.edu
Subject: Possible Fig.5 .ps
Date: Fri, 20 Oct 1995 17:50:06 -0400

Mark, Stefi,

Here is .ps of a possible display of the data for Fig. 5
in the Alabama paper; it might also be worth multiplying
the polarized intensity x2 or x3 to show the alignment
between the "rails" and the total intensity profile
better? Other suggestions welcome.

Stefi, if you haven't got the package from me yet
simply use this instead of the scruffy double-overlaid
draft of Figure 5 I that I made on the Xerox machine!

If we can make this into a good display, we might
not need Figs.2 and 5 separately, and this would
allow us a mite more text space.

A.

From: abridle (Alan Bridle)
To: mswain, sbaum@stsci.edu
Subject: The x2 version
Date: Fri, 20 Oct 1995 18:31:48 -0400

Mark, Stefi,

Here's an example of how we might display the "rails"
at x2 amplification. This looks like quite a reasonable display
to me.

A.

========== .ps file

From: abridle (Alan Bridle)
To: sbaum@stsci.edu, mswain
Subject: Figure 3 Postscript
Date: Mon, 23 Oct 1995 13:11:52 -0400

Here is the postscript file for Figure 3 in the Alabama paper draft/ Note that this is at 1.3" FWHM resolution to show the double-dip in the sheath at the edges of the jet, not the 3" stated in the text of the paper, which will be revised accordingly.

A.

From: abridle (Alan Bridle)
To: sbaum@stsci.edu, mswain
Subject: 3C353 Figure 4 Postscript
Date: Mon, 23 Oct 1995 14:47:42 -0400

Here is the new Postscript file for Figure 4. Note that the y scale is now Jy per kpc (previous numbers have been divided down by 3) and that Mark has adjusted the errors down by a factor of 2 (this was a mistake on his earlier draft).

========== .ps file

From: Stefi Baum <sbaum@stsci.edu>
To: sbaum@stsci.edu, mswain@polaris.cv.nrao.edu, abridle@polaris.cv.nrao.edu
Subject: Re: 3C353 Figure 4 Postscript
Date: Thu, 26 Oct 95 09:06:02 EDT

Hi Alan, Mark!

Just got `the package' in the mail today! (snail mail that is,
I have been receiving all the emails, printing out the figures
and not known the context!).

so I will read through today/tomorrow and send comments etc.

Cheers!
Stefi

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@polaris.cv.nrao.edu
Subject: Re: 3C353 Figure 4 Postscript
Date: Fri, 27 Oct 95 05:15:03 EDT

HI Alan, Mark-

Read through the contribution. Looks great and very interesting!

I have a few comments-

1. In Abstract - last sentence, it readys
"so their polarized emission cancels that from adjacent regions
where the field is predominantly perpendicular to the jet axis"

I think it is importnat to say that the adjacent regions are external
to the jet in the sheath/lobe - if one just reads the abstract
as written (and not the text) it seems to imply that the center of
the jet has a perp B field...

2. Introduction - don't know if it really needs to go here, but
is 3C353 one of Owen and Laing's fat doubles? which they like
to sort of lump with the FRIs in some of their optical properties?

3. On page 2, third bullet, it reads
"both jets contain knots of enhanced brightenss wtihin more diffuse,
roughly parallel-sided emission."
I'm not sure I know what "parallel-sided" means?

4. Page 3, under 3.1 first section on Flat-Topped JEt, it might
be worth just stating the FWHM of the jet in kpc?

5. page 5, first full sentence on page.
"The correlation between .... that is directly interacting with the jet"
not sure that interacting with the jet is the right terminology?
It has connotations of jets running into things?
maybe something like
direcly connected with the jet?
could add
directly connected with the jet, perhaps a sheath around the jet caused
by the interaction of the jet flow and the surrounding lobe?

6. page 6 Third bullet under 4.
"There is a further scale of enhanced emission for about 5 jet radii"
maybe could be rephrased a bit to
"There is additional enhanced emission on the scale of 5 jet radii..."

7. again, from my point 2. - under the fourth bullet.
I think 3C353 is a fat double - and so this transition between
FRIs, fat doubles and FRIIs might be relevant here?

Well, generally like I said I think it looks GRREAT!
(these are nits).

I have an HST image of 3C353. It looks marginally interesting.
I will get it out and the radio images off the tape and superimpose
em and let you see what turns up!

Best, Stefi

.From: abridle (Alan Bridle)
To: sbaum@stsci.edu, mswain
Subject: 3C353 draft
Date: Fri, 27 Oct 1995 14:35:33 -0400

Hi Stefi,

We got both your early-morning messages, thanks for
getting onto it so quickly.

Taking your points in order,

1. The point we want to emphasize in the abstract is the properties of
the edges of the jet. To get two rails, rather than just a "dark
jet" in polarization we must have
(a) regions at the edges where the fields in the jet are crossed
relative to the fields in the background.
(b) a region in between where the degree of polarization in the jet
is less. To first order, you will then see "rails" whether the
central region has the same net field as in the edges, or a modest
polarization but an oblique-to-perpendicular ner field. Finding out
which is actually occurring very careful separation of the background
profiles in Q and U, which Mark is still working on. There may indeed
be some regions where the degree of polarization is lower on the jet
axis but the net direction remains B-parallel, and others where the
polarization makes the transition to net B-perpendicular on the jet
axis. I am updating my old jet field-modeling code to allow for a
polarixed background and help us compare field models with the data in
detail (but not for the conference publication!). So the possibility
of B-perp in the center should be left open without implying
that it is mandatory. For this paper, it is enough that the
degree of polarization in the jet decreases between the rails,
whatever the reason.

So we do we need to clarify "adjacent" here, maybe replace it
with "surrounding"? We can get into the finer detail about
the field direction in the center of the jet in the next
incarnation of this (it will definitely be in Mark's thesis).

2. Re the "fat doubles", 3C353 is not literally one of Owen and Laing's
sources but I presume you're really asking whether it _should_ be. I
agree that the "fat doubles" are a classification that deserves to endure
and we will need to understand 3C353's relationship to them. But
I'm not convinced that the relationship is clear. Here's why:

I have some problems wiwh the Owen and Laing FD definition as it stood
in their paper. From what they _said_ about the definition in their
paper, it's uncertain what to do about sources that have clear compact
hot spots, but not at the _edges_ of the source. From their FD
sketch, my problem is that very few sources really match it.

The 5 examples they suggested don't help a lot, either. 0712+534 was
not well enough resolved to classify (my view). I think Robert meant
DA240 to be the archetype, but I'm confused about its hot spots. Is
4C56.16 is a hot spot in the East lobe, and why has the apparent hot
spot in the West lobe in the original 610 MHz image vanished so
thoroughly in Wim Jagers' thesis (which did not have so _much_ extra

resolution that this should have happened). Is it right that DA240 would be a good prototype for a class if both of its "hot spots" are illusory, but not if they are not? It is curious that DA240 does not in fact exemplify the optical distinctions that Owen and Laing then went on to draw for the FD's -- its absolute magnitude and power law profile fit were both close to the the peaks for these quantities in the FR-II distributions. Their third FD example, NGC2484, looks like an FRI because it _is_ an FRI in my opinion. I don't really see why they called it FD. 3C310 would be my choice to prototype the class, with big fat woofly lobes and _no sign_ of any hot spots. 3C386 would be another, but their 5th example was actually 3C388, which we now know to be a classical double with an extraordinary history as revealed by its spectral index distribution. I"m not sure its lobes are fat for the same reasons as 3C310's, now we know this.

So I think there may be a valid FD class and it will certainly be in the halfway house between clear FRI's and clear FRII's and can help understand the transition region. 3C353 may indeed be in the boundary between this FD class (which would be hot-spot-less were I to define it) and clear FR-II's. It might turn out to be a class of well-collimated jets that don't quite make it to the hot spot all the time because of non-axi-symmetric surface instabilities, and which spend some of their lives "fraying" into bundles of filaments. 3C310 is very filamentary (Fornax A may be another example). Possibly we have caught 3C353 in a phase when the jet has got its act together and remained coherent to the end while at other times it looks like a 3C310 or a Fornax A.

Anyway, I do think the definition of the FD class needs to be revisited and clarified, and how 3C353 fits into it is well worth examining. But maybe we should save the issue for later as this paper has to be shoe-horned into such a small space.

Should we however be less emphatic in classifying it as an FR-II because of the clear hot hot spot? We might for example point out that, if 3C353 lacked this hot spot, it would be a candidate for the Owen/Laing FD class, without arguing what that classification really is.

3. "Parallel-sided" was meant to imply "well-collimated", or "slowly-expanding". We should clarify it (see below).

4. Yes, we should give the width (which is about 2/h kpc). In fact, if we can make Fig.5 (which repeats the plot used in Fig.2) do the work of both figures 5 and 2, we then have space to clarify both this and your previous point by _showing_ a collimation plot. Mark has now looked at the collimation derived from the 3-sigma jet isophote, the 5-sigma jet isophote, an "equivalent rectangular width", the steepest brightness gradient (the peaks on the Sobel-filtered image), and the standard one-Gaussian fit to the FWHM. We are thinking about using a plot that shows some of these, and superposing the positions of the "rails" on it. If we give such a plot kpc units it will also clarify both your points 3 and 4. It would also show a further point that Mark made orally in Tuscaloosa - that the jet collimation you would estimate from the rails is consistent with the collimation you would estimate from total intensity measures. We should have the diagram by this afternoon.

5. Re the correlation between the jet and the sheath intensities, both Mark and I are leery of using the term "connected" because it could be taken to mean direct intensity connections in the features (like filaments linking the sheath to the jet). In fact one of the clearest features of all the images is the relative lack of emission in many places just adjacent to the jet. The jet-sheath correlation helps give a bit more faith in the sheath as something other than just an accidental pile of lobe features that stacks around the jet, but it's hard to see how an interaction driven by the jet would produce a correlation with the sheath intensities at the same distance from the nucleus. It's a bit easier to understand if some property of the sheath (e.g. an outer scale of turbulence), is able to "tickle" the jet as it passes through. So we used the term "interacting with the jet" to imply that we were open to the sheath being the driver of the interaction. Maybe we should search for a more neutral language, as it's not at all clear which way round the interaction might be driven.

6. We'll say it as you suggest.

7. As in 2, it's a good topic but we need to think a little about how much of it to raise in this limited space. When we go to the journal, let's definitely explore this thoroughly, though.

Re the HST image -- tell us more, what's the "marginally interesting" part?

We'll make another full draft as soon as Mark has the new figure, and see if we can improve the wording on all the above. This time I'll E-mail everything to you (easier now we have the .PS files for the diagrams -- except Fig.1 which still needs to be photographed)

Cheers,

A.

From: abridle (Alan Bridle)
To: mswain, sbaum@stsci.edu
Subject: Status of 353 paper
Date: Thu, 2 Nov 1995 11:30:28 -0500

Mark, Stefi,

Attached to this message is the draft Postscript for the collimation figure that will become the new Figure 5. (It now has to go at the end because it refers to the "rails" and must therefore come after the polarization section). The Figure order will now be:

Figure 1: photo of 353 XBand 0.44" FWHM image -- still in preparation

Figure 2: transverse intensity profiles of I and Px2 at 0.44 FWHM integrated between major knots

Figure 3: transverse intensity profile of I at 1.3 FWHM integrated along all of jet (except for very end where the hot spot "ray" complicates matters)

Figure 4: integrated intensities of sheath and jet versus distance - this has to be redone as Mark discovered he had inadvertently included the jet in both integrations as plotted, the correlation still exists but will be less striking than before

Figure 5: as attached

I have a redraft of the text, will send that when the revised Figure 4 is ready so wording reflects appearance of that Figure.

A.

P.S. Stefi, what was the "marginally interesting" feature of the HST image? Could we peek at it from here?

========== .PS of new Fig.5

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@polaris.cv.nrao.edu, mswain@polaris.cv.nrao.edu
Subject: hst of 3c353
Date: Sun, 5 Nov 95 09:38:16 EST

Hi,

am working (slowly) on getting some more out of the
3C353 HST image.

will keep you posted.
(note `dust'? in inner part of galaxy)?

I also have the fits image itself.
Do you want it?
How best to get it to you-
I can put it in our anonymous ftp area here?

S

From: abridle (Alan Bridle)
To: Stefi Baum <sbaum@stsci.edu>
Subject: Re: hst of 3c353
Date: Mon, 6 Nov 1995 09:16:07 -0500

Stefi Baum writes:
> Hi,
>
> am working (slowly) on getting some more out of the
> 3C353 HST image.
>
> will keep you posted.
> (note `dust'? in inner part of galaxy)?
>
> I also have the fits image itself.
> Do you want it?
> How best to get it to you-
> I can put it in our anonymous ftp area here?
>

Sure, why don't you do that?

Mark is doing a few, mainly small, recalculations of error estimates on the collimation plot to include the systematic errors better and so does not want to make the "final" version of the paper quite yet. I do not think there are any more "surprises", though. he will have the new Fig.4 later today.

A.

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@polaris.cv.nrao.edu
Subject: Re: 353 draft
Date: Fri, 10 Nov 95 16:20:10 EST

Hi Alan,

Yes - 3C31 is REALLY beautiful. I will email you the ps of that
one also and then when I get a chance (soon Ihope) I'll put
the iamges of 3C353 and 3C31 somewhere you can ftp them.
Maybe this weekned even...

Stefi

From abridle Fri Nov 10 15:50:44 1995
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil]
["1024" "Fri" "10" "November" "1995" "15:50:39" "-0500" "Alan Bridle" "abridle" nil "26" "353 draft" "^From:" nil
nil "11" nil nil nil nil]
nil)
Received: by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.03)
id AA111647; Fri, 10 Nov 1995 15:50:39 -0500
Message-Id: <9511102050.AA111647@polaris.cv.nrao.edu>
From: abridle (Alan Bridle)
To: sbaum@stsci.edu
Subject: 353 draft
Date: Fri, 10 Nov 1995 15:50:39 -0500

Hi Stefi,

I now have a complete draft of the paper with all of the Figures
included. Mark has made a few small changes to error estimates to
take account of random and systematic errors a little better, and I
have a working .ps copy of the image that prints reasonably on a 600
dpi printer. We do not have the photographic version of the image yet,
I will submit the paper with the .ps file and a note to Phil that the
glossy will appear a little later -- stretching my editorial privilege
a tad.

I could send you the .ps file of the whole paper by E-mail if you
like, it's about 1 Mb. Or I could send you just the .tex input file,
or I could put it all somewhere where you could grab it off the Web or
ftp. What would be your preference for a final look-through?

A.

P.S. Thanks for the .ps of the HST data, it looks a little dusty
all right. Robert L. was telling me you also have confirmed a
lot of dust in 3C31; he's coming over in November for a couple
of weeks so we can try to finish the VLA work on that.

From: abridle (Alan Bridle)
To: Stefi Baum <sbaum@stsci.edu>
Subject: Re: fits images for 3c353 and 3c31
Date: Mon, 13 Nov 1995 09:30:04 -0500

Thanks for putting them on disk, Stefi, I now have them here.

Would it be o.k. for Mark to show the 3C353 image as a Figure in his thesis? For the wide field, and to identify the other sources that showed up, he will use the digital sky survey image, but it would be nice if his introduction could also show a higher-resolution image, as "background information". He would not be trying to do any analysis with it at this point.

If he could include it, how should it be attributed?

A.

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@polaris.cv.nrao.edu
Subject: Re: fits images for 3c353 and 3c31
Date: Mon, 13 Nov 95 10:07:40 EST

Sure, he can include it
refernece

Baum et al. 1996 (in preparation).

Baum, de Koff, Wyckoff, Sparks, Macchetto, Miley, McCarthy, Bridle

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@polaris.cv.nrao.edu
Subject: potential project?
Date: Fri, 12 Jan 96 08:47:10 EST

Hi Alan,

We have some interesting, short snapshot HST images of
3C348 (Hercules-A) which appear to show (very low signal to noise,
need strong imagination but I really do think they are real!)
rings of obscuration - interlocking around the nucleus of
3C348 - one directly along the radio axis the other slightly
offest, one (west) around 1 kpc across, other (east) about
3
 kpc-across. Given the fact that 3c348 has those beautiful
radio rings - this seems RIPE for further investigation.
I asked Eric Feigelson about the status of VLA or VLBI or
VLAB data on 3C348 and got the message below.

Didn't know if you had any interst in this? Seemed ripe for
a graduate student - we would propose (and I can't imaging not
get but you never know...) for Cycle 7 deep multi=colour
HST imaging (deadline August 15, 1996) - might be able to get
some ground based optical data (particularly if we involved
John Hutchings who might be able to get CFHT time for this)
and we could reduce all that beatuiful data Eric describes
in his email below. Of course, we is used a bit colloquially,
because I don't have thie time to do this personally, but thought
maybe a graduate student might fit this bill?

well,
let me know if you have any interest at all in any way-
we are writing a short paper on the
existing HST data which I can send you in a week or so
when it is slighlty more integrated (will be a rreal DRAFT
still),
cheers,
hope all goes well with you , Mary, and the SNOWBANKS!!!!! you
must have quite a view indeed these days.
Stefi and Chris

p.s. we might be able to scratch up some funding from here for
say 1 year, maybe NRAO could do the other or some such?

From edf@astro.psu.edu Wed Jan 10 10:59:45 1996
To: sbaum@stsci.edu
Subject: Re: 3C348
Content-Length: 872
X-Lines: 20

Hi Stefi --

Alas, you are touching a sore spot. John Dreher and I actually obtained full ABCD-array syntheses of Herc A, intending to do a comprehensive study. The structure is so complex that 10^4-5 CLEAN components on 2048 pixel images are needed. But computers at the time were inadequate to analyze the data, and we each moved to different jobs (this is old history). So there is a full study for somone to do based on the VLA archive. Also, these were the days before FITS became prevalent, so I don't have a convenient electronic image. You certainly have my permission to reproduce the Nature figure. NRAO also has a color slide of the image (also in the Tersch collection).
We never did VLBI on the core, but maybe somone else did.

Sorry I can't be more helpful. We have 1.5 feet of snow, but we are more used to it than you southerners.

Cheers, Eric

From: abridle (Alan Bridle)
To: Stefi Baum <sbaum@stsci.edu>
Subject: Re: potential project?
Date: Mon, 15 Jan 1996 08:56:35 -0500

Stefi Baum writes:
>
> Hi Alan,
>

> well,
> let me know if you have any interest at all in any way-
> we are writing a short paper on the
> existing HST data which I can send you in a week or so
> when it is slighlty more integrated (will be a rreal DRAFT
> still),
> cheers,

> p.s. we might be able to scratch up some funding from here for
> say 1 year, maybe NRAO could do the other or some such?
>

It's certainly a source that deserves the full treatment, and I had wondered what became of the data. Having been making 8k by 8k images of 3C31 with 3 x 10^5 CLEAN componentsI don't think the A+B+C+D reductions are such an obstacle any more. Robert and I between us probably spent about 3 months getting them done, but the problems do increase as one goes down to lower declinations. (Mark needed about 2 yrs to get 3C353 in shape, but some of that was learning time for him).

I agree that it would be a good project for a student, as it would deserve full-time attention. I don't have anyone in sight here at the moment. Do you? The NRAO budget is in total limbo (along with the NASA budget) in the DC gridlock, so it's hard to get specific but I imagine the student program would have enough in it that if we could find a student I could talk Bob Brown into at least matching your year.

> hope all goes well with you , Mary, and the SNOWBANKS!!!!! you
> must have quite a view indeed these days.
> Stefi and Chris
>

In between the digging, the view's been grand! I have rediscovered muscles I hadn't heard from since leaving Canada. And it is still something of an adventure getting to our house from Rt. 250. Mary is continuing to do well, it is good to see her energy coming back each week. She had put up a bird feeder just before the snowstorms so I think we are now feeding most of the small birds for about a couple of square miles. Did you catch much of the second storm in Baltimore, it dropped much less here than they were expecting. But we still have all kinds of shortages in the grocery stores, and chaos on the roads because they didn't have anywhere to put most of the snow and not enough equipment to carry it away.

It's been quite the week, hope you are all surviving it ....

A.

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@polaris.cv.nrao.edu
Subject: Re: potential project?
Date: Tue, 23 Jan 96 10:55:11 EST

Hi Alan,

sorry this got lost...

no, I don't have a student `in sight' but feel confident
I could root one up somewhere if I tried. I'll start trying
a bit...

cheers,
Stefi

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@polaris.cv.nrao.edu
Subject: Re: Field configuration in 3C353 jet
Date: Sun, 4 Feb 96 16:42:09 EST

Hi Alan,

Sounds great and exciting!

Robert gave his talk here, and I was struck by
this comment re the B fields and his models as well.

Can you send me a complete postscript with the paper
again when you have amended it?

The letter also sounds like a very good idea!

Stefi

p.s. I will have a ocuple of weeks of
`research leave' in about 1 months time and
was thinking about coming down to Cville for a few days.
Any particular time good/bad for you?

From: abridle (Alan Bridle)
To: Stefi Baum <sbaum@stsci.edu>
Subject: Re: Field configuration in 3C353 jet
Date: Tue, 6 Feb 1996 11:52:46 -0500

Stefi Baum writes:
> Hi Alan,
>
> Sounds great and exciting!
>
> Robert gave his talk here, and I was struck by
> this comment re the B fields and his models as well.
>
> Can you send me a complete postscript with the paper
> again when you have amended it?
>

Sure will.

>
> p.s. I will have a ocuple of weeks of
> `research leave' in about 1 months time and
> was thinking about coming down to Cville for a few days.
> Any particular time good/bad for you?

I will be in GB March 12-13 and have still to arrange a trip to
Rochester re Mark's oral. Date will be determined by exactly when he
can FedEx his package to them, but will be about a month from now.
I'll let you know a.s.a.p. Other than these items, I'll expect to be
here through March and would be just delighted if you came to visit.

Hopefully, it'll be green around here then instead of blinding
white .... Aren't these global warming oscillations fun?

A.

From: abridle (Alan Bridle)
To: sbaum@stsci.edu
Subject: Herc A
Date: Tue, 6 Feb 1996 19:06:37 -0500

Stefi,

I note from the February VLA schedule that Paddy leahy and
Simon Garrington are working on the Faraday RM of Hercules A.
Proposal AG449. Might want to check in with them also about
Herc A datasets.

A.

From: abridle (Alan Bridle)
To: mswain, sbaum@stsci.edu
Subject: Field configuration in 3C353 jet
Date: Wed, 31 Jan 1996 11:01:25 -0500

Mark, Stefi

I would like to make a small change in the text of the Alabama paper to head off any confusion re what we are saying about field configurations in the 3C353 jet. I will slip this into the next round of editing the Proceedings if you are both happy with it.

The basic point is to distinguish more clearly between the apparent magnetic field direction (i.e. that inferred from the synchrotron polarization data) and the actual magnetic field configuration in the jet. I would like to amend the second paragraph in the section on "Polarized intensity - the "rails" to read as follows (additions marked by asterisks, deletion by % signs:

We believe that these pairs of polarization minima indicate a systematic misalignment between the dominant magnetic field components on the edges of the jet and in surrounding (lobe plus sheath) emission. Four-frequency fits to the Faraday rotation measure across 3C\,353 show that the

* apparent (i.e., synchrotron-emissivity weighted, line-of-sight averaged) *

magnetic field in the emission around both jets is predominantly, though not exclusively, {\it perpendicular} \index{lobes!magnetic fields} to their axes. The ``rails" can therefore be accounted for by the crossed-field configuration that results if the

* apparent *

field near the edges of the jets \index{jets!magnetic fields} is predominantly axial, while that near their centers is

* more *

disordered, or is dominated by toroidal or radial components. Such a configuration might result if a velocity shear \index{jets!shear layers} removes radial field

* in the outer layers * %replacing "near the surface"

of a quasi-cylindrical jet. For a jet near the plane of the sky, this would also flatten the transverse intensity profiles, as observed. We therefore suggest that if 3C\,353's jets could be obsersed in isolation, they would be strongly limb-brightened in polarization, with the apparent magnetic field direction parallel to the jet axis along both edges.

I believe that the above is a more accurate statement of what we are actually proposing. We do not actually need the B_z component to

dominate anywhere within the body of the jet itself. If it is randomly mixed with B_phi in the shearing layer then a cylindrical geometry alone gives what we need: the B_phi component contributes little to the polarization toward the edge of the jet because that component is close to the line of sight, but it can cancel the axial polarization on lines of sight through the center of the jet, where B_phi is closer to the plane of the sky. So it is worth emphasizing that it is only the _apparent_ field that we want to be primarily axial, not the actual field.

Stefi - Mark and I have pursued this in detail by modifying my old jet modeling program to include variable-thickness boundary layers with various kinds of field randomization. The best simultaneous fit to the observed average flat-topped total intensity profiles and polarization "rails" is when the outer half of the jet cylinder (by radius) contains a random mix of B_z and B_phi with equal probabilities, and the inner half has a low emissivity, <= 1/4 that of the outer half. This outer field configuration is just what Robert Laing and I are also finding is needed to fit his model to 3C31 -- instead of having pure B_z in the shear layer as was first suggested, the real key is to turn off B_r. In Robert's model, this means we go from a 2-d random field that has no B_z component in the spine to a 2-d random field that has no B_r component in the shear layer. This is quite plausible physically. The 3C353 situation would correspond to the case where the spine remains Doppler-hidden all the way along the jet, so most of what we see is the outer layer.

Mark is writing the 3C353 part up in detail in his thesis, and I think we should write the magnetic-field story up as an Ap.J. Letter very soon. It fits in nicely with the current scheme of unifying FR~I and FR~II sources via the deceleration of relativistic jets, and even with the "tired jet" picture that was suggested by the jet-hotspot relationships in the 3CR quasars. The FR~II's are just the cases where the spine never decelerates, and stays hidden all the way until the hot spots, so all of our kiloparsec-scale gamma estimates for FR~II's are dominated by the boundary layer.

Let me know if you are happy with the changes and if so I'll pop them in, we have the space for a few extra words!

A.

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@polaris.cv.nrao.edu
Subject: Re: HerculesA
Date: Wed, 5 Jun 96 07:37:14 EDT

> Hi Alan,
>
> I just got a new graduate student (Chun) from UMd who will start
> working on the HerculesA VLA radio data.
>
> Are you still interested in working on this? I've given him
> Mark's thesis to read to get him going on the radio psossilibities...
>
> and he is going to start dearchiving data from the VLA archives
> as soon as we figure out whihc data to nab on HerculesA.
>
> If you are still interested - that woudl be great.
> Might send him down to you in Cville for a few weeks to work
> on the data some time this summer if you are around?
>
> cheers,
> Stefi
>

p.s. hope/trust all is well with you and Mary...

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@polaris.cv.nrao.edu
Subject: Re: HerculesA
Date: Wed, 5 Jun 96 07:37:14 EDT

> Hi Alan,
>
> I just got a new graduate student (Chun) from UMd who will start
> working on the HerculesA VLA radio data.
>
> Are you still interested in working on this? I've given him
> Mark's thesis to read to get him going on the radio psossilibities...
>
> and he is going to start dearchiving data from the VLA archives
> as soon as we figure out whihc data to nab on HerculesA.
>
> If you are still interested - that woudl be great.
> Might send him down to you in Cville for a few weeks to work
> on the data some time this summer if you are around?
>
> cheers,
> Stefi
>

p.s. hope/trust all is well with you and Mary...

From: abridle (Alan Bridle)
To: Stefi Baum <sbaum@stsci.edu>
Subject: Re: HerculesA
Date: Wed, 5 Jun 1996 09:46:42 -0400

Stefi Baum writes:

> I just got a new graduate student (Chun) from UMd who will start
> working on the HerculesA VLA radio data.

What happened with the U.K. group on this? I thought there was some follow-up going on.

> If you are still interested - that woudl be great.
> Might send him down to you in Cville for a few weeks to work
> on the data some time this summer if you are around?

Yes, I'm definitely interested, if the data are otherwise lyiong fallow. And I'll be in C'ville until July 18 and then after Aug 12th.

> p.s. hope/trust all is well with you and Mary...

We're both doing well these days, thanks. M. is now permanently part-time at U.Va. doing four days a week, i.e. has kept the routine she ended up on during her chemo. This suits her well as every weekend can be a long one, but she has full medical benefits and gets paid for any overtime she does.

Imagine you and Chris are as busy as ever with the family growing up faster than you ever imagined?

A.

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@nrao.edu
Subject: Re: HerculesA
Date: Wed, 5 Jun 96 10:05:00 EDT

Hi Alan,

Don't know about the UK group... Just got the archival listing - there is a boatload of data on it, including some recent stuff.

We'll have to poke around a bit and see what it all is and what the goals were.

Do you know who the UK group is?

Stefi

p.s. yes we are _very_ busy... finding out that it indeed gets harder mentally at least as they get older!

From: abridle (Alan Bridle)
To: sbaum@stsci.edu
Subject: forwarded message from Alan Bridle
Date: Wed, 5 Jun 1996 10:10:16 -0400

Hi Stefi, maybe this message got lost back in February?
I thought you might know a bit more about it as you had
been working with Paddy:

------- start of forwarded message (RFC 934 encapsulation) -------

From: abridle (Alan Bridle)
To: sbaum@stsci.edu
Subject: Herc A
Date: Tue, 6 Feb 1996 19:06:37 -0500

Stefi,

I note from the February VLA schedule that Paddy leahy and
Simon Garrington are working on the Faraday RM of Hercules A.
Proposal AG449. Might want to check in with them also about
Herc A datasets.

A.

------- end -------

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@nrao.edu
Subject: Re: forwarded message from Alan Bridle
Date: Wed, 5 Jun 96 10:30:25 EDT

will investigate directly - thanks...stefi

From: Stefi Baum <sbaum@stsci.edu>
To: jpl@jb.man.ac.uk
Cc: chun@astro.umd.edu, abridle@polaris.cv.nrao.edu
Subject: Re: Hercules-A/3c348
Date: Thu, 6 Jun 96 07:14:11 EDT

Hi Paddy,

Well I'm glad I emailed you before we started in earnest!
A collaborative effort would be fine by me. However,
I don't think there is sufficient stuff in a thesis for Chun (my
new student) at this time juht from the optical/ir end.
As the radio data was in hand in some sense (in the archive)
I had thought to start him off on that while we proposed
etc for the other parts of the spectrum...

What do you think? Is there anything useful for Chun to do
on any of the existing data - radio or xray that would
constitue say 1 year or so of a thesis effort - or do you
feel like you will all have pretty much socked up the radio end of
it all?

thanks...
Stefi

----- Begin Included Message -----

>From jpl@jb.man.ac.nk Thu Jun 6 05:49:13 1996
X-Sender: jpl@fafnir
To: Stefi Baum <sbaum@stsci.edu>
Subject: Re: Hercules-A/3c348
Mime-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII
Content-Length: 2311
X-Lines: 45

Dear Stefi,
Thanks for your e-mail. I have a second-year grad student,
Nectaria Gizani, writing a thesis mainly on Her A at present. This being
the British system, she is due to finish in September 1997. We already
have a poster in the Bologna proceedings, and hope that one or two real
papers might get submitted before she finishes. We have 3-configuration
data at four L-band frequencies, at X-band, and we are re-analysing John
Dreher's old data at 5 GHz. We also have ROSAT PSPC and HRI images which
show the cluster emission pretty well. While the RMs and the environment
in general were and are our main objective, we are also thinking about the
rings. Furthermore John Dreher has also spent a bit of time on Her A
recently, as quite a lot of his early-80's data has not been published.
So yes, you would be stepping on our toes if you went ahead with this,
although I guess we are treading on John Dreher's so you might say it was
fair do's. It's true that we don't have A-configuration data at X-band
but to get the fine details of the ring structure John's A-config C band
data is pretty well as good (its not as if there's much need for
sensitivity!).

>From the above you can guess that we were very interested in your HST
preprint (thanks for sending it!), and actually I was planning to get back

to you to ask you how you are doing with getting the deeper follow-up observations you suggest at the end of that. I totally agree that your "obscuration rings" need following up, but deeper data would also be useful for lots of other reasons, in particular checking out the cluster environment, looking for gravitational arcs, and looking for optical jet emission near the peak of the jet, an arcmin or so from the galaxy. (This must be about the brightest radio jet in the sky! We *ought* to see it! [provided the WFPC2 orientation is right...]).

I guess from my point of view it would be more productive if we cooperated in the sense that Nectaria & I did the radio/X-ray and your group did a thorough job on the optical (/IR?) with mutual exchange of information and perhaps formal collaboration if it turns out there is a real gain to be made by putting the two together. Sorry if this complicates things at your end.

Paddy

PS. Yes I'm doing fine. Best wishes to you & Chris.

----- End Included Message -----

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@nrao.edu
Subject: Re: HerculesA
Date: Thu, 6 Jun 96 17:05:51 EDT

Hi Alan,

Well after copious emails back and forth to Paddy it seems
to me that the Hercules A mapping project is not a good
idea for the student, as a lot of work mapping the radio
data has been done and is ongoing.

So nix that.
There are several other options for the student so he
is not in a bad way. However, if you have any other
good radio data sets related to jets/jet propagation
you were interested in having a student work on in
a collaborative fashion (and that hopefully there would
be some good logical HST or ground based optical work
to accomapny) - that would also be a good possibility
(as he seems quite intersted in this type of work).
Any thoughts?

cheers,
Stefi

From: abridle (Alan Bridle)
To: Stefi Baum <sbaum@stsci.edu>
Subject: Re: HerculesA
Date: Fri, 7 Jun 1996 13:14:26 -0400

Stefi Baum writes:
> Hi Alan,
>
> Well after copious emails back and forth to Paddy it seems
> to me that the Hercules A mapping project is not a good
> idea for the student, as alot of work mapping the radio
> data has been done and is ongoing.
>

Better to find that out now than later!

> However, if you have any other
> good radio data sets related to jets/jet propagation
> you were interested in having a student work on in
> a collaborative fashion (and that hopefully there would
> be some good logical HST or ground based optical work
> to accomapny) - that would also be a good possibility
> (as he seems quite intersted in this type of work).
> Any thoughts?
>

I'll give it some; right now my major push is back on the
FRI's, working with Robert to try to model the jet deceleration
by fitting brightness and polarization images in detail.
3C31 is going very well and we are putting a similar proposal
in for NGC315, along with Bill Cotton and the Bologna group.

I've also got multi-frequency imaging of 3C219 underway at the
higher frequencies, this time with the shorter spacings that we
need to get all of the flux.

I'm not sure what bits of any of these might split out as
a viable student project, but I'll think about it all right.

It will be interesting to see Herc A when it's done, it
certainly deserved more followup.

A.

From: baum@dao.nrc.ca
To: abridle@nrao.edu
Subject: 3C198
Date: Fri, 26 Jul 1996 16:58:37 -0700

Hi Alan,

I am at DAO on a 4 week research leave. Am in need of a radio map
of 3C198 - just want to see what it looks like and figure out
what it's radio axis is. Do you have a contour plot or postscript file
you could email me? Or do you know of a reference in the literature?
I can't find a map of it...

thanks for your help!
Stefi

From: Stefi Baum <sbaum@stsci.edu>
To: abridle@nrao.edu
Subject: 3c353 fits image
Date: Mon, 5 Aug 96 13:54:24 EDT

>From Mailer-Daemon@stsci.edu Mon Aug 5 13:52:48 1996
Subject: Returned mail: User unknown
To: <sbaum@stsci.edu>

The original message was received at Mon, 5 Aug 1996 13:52:47 -0400
from phaeton.stsci.edu [130.167.103.23]

   ----- The following addresses had delivery problems -----
<mswain@nroa.edu> (unrecoverable error)
<bridle@nrao.edu> (unrecoverable error)

   ----- Transcript of session follows -----
550 <mswain@nroa.edu>... Host unknown (Name server: nroa.edu: host not found)
... while talking to cv3.cv.nrao.edu.:
>>> RCPT To:<bridle@nrao.edu>
<<< 550 <bridle@nrao.edu>... User unknown
550 <bridle@nrao.edu>... User unknown

   ----- Original message follows -----
Return-Path: <sbaum@stsci.edu>
Received: from NEMESIS.STSCI.EDU by stsci.edu (SMI-8.6/SMI-SVR4-DNI-8.0)
        id NAA22711; Mon, 5 Aug 1996 13:52:47 -0400
Received: Mon, 5 Aug 96 13:52:23 EDT by phaeton.stsci.edu (4.1)
Date: Mon, 5 Aug 96 13:52:23 EDT
From: Stefi Baum <sbaum@stsci.edu>
Message-Id: <9608051752.AA01084@NEMESIS.STSCI.EDU>
To: bridle@nrao.edu, mswain@nroa.edu
Subject: 3c353 fits image
content-length: 291

Hi Mark, Alan-

My graduate student Sigrid de Koff wanted to make an overlay
of the HST 3C353 image and the radio image.

Can I get (ftp fron anonymous) a fits image of the 3c353 radio map-
probably one that showed the most structure in close to the nucleus
would be best?

thanks...
Stefi

From VM Mon Aug 12 10:16:49 1996
X-VM-v5-Data: ([nil nil nil nil nil nil nil nil nil]
        ["596" "Mon" "12" "August" "1996" "09:30:33" "-0400" "Alan Bridle" "abridle" nil "18" "Re: 3C198" "^From:" nil nil
"8" nil nil nil nil]
        nil)
Content-Length: 596
Received: by polaris.cv.nrao.edu (AIX 3.2/UCB 5.64/4.07)
         id AA45875; Mon, 12 Aug 1996 09:30:33 -0400
Message-Id: <9608121330.AA45875@polaris.cv.nrao.edu>

In-Reply-To: <9607262358.AA15211@songish.dao.nrc.ca>
References: <9607262358.AA15211@songish.dao.nrc.ca>
From: abridle (Alan Bridle)
To: baum@dao.nrc.ca
Subject: Re: 3C198
Date: Mon, 12 Aug 1996 09:30:33 -0400

baum@dao.nrc.ca writes:
> Hi Alan,
>
> I am at DAO on a 4 week research leave. Am in need of a radio map
> of 3C198 - just want to see what it looks like and figure out
> what it's radio axis is. Do you have a contour plot or postscript file
> you could email me? Or do you know of a reference in the literature?
> I can't find a map of it...
>

Hi Stefi, sorry to be so long but we were away in Canada. I don't
have any inside info on this source, and the only ref I could find to the
structure in my files is Fomalont AJ, 76, 513 -- 1971!!

Maybe NED has something more recent?

A.

From: baum@dao.nrc.ca (Stefi Baum--STScI Visitor)
To: abridle@nrao.edu
Subject: Re: 3C198
Date: Mon, 12 Aug 1996 09:03:49 -0700

Yes, Paddy Leahy told me that it was basically a very fat
double - apparently they tried to observe it at high
resolution for the hot spot observations and
nothing was left! Perley took a D array observation
of it apparently and it is a very very woofly/diffuse
fat double - Rick has a map - (I haven't seen it.)

cheers,
hope you all had a nice vacation!
Stefi

From: abridle (Alan Bridle)
To: Stefi Baum <sbaum@stsci.edu>
Subject: Re: 3c353 fits image
Date: Fri, 16 Aug 1996 08:27:56 -0400

Hi Stefi,

The 8 GHz 0.44 FWHM image is now in /pub/NRAO-staff/abridle
on ftp.cv.nrao.edu, as 3C353X.I

Hope this gives you what you need,

A.