

**Subject: LMA instrumentation**

**Date:** Wed, 27 Jan 1999 15:18:47 GMT

**From:** stafford@mrao.cam.ac.uk

**To:** akerr@NRAO.EDU

27 Jan 1999

Anthony,

As you may have heard, the UK is starting to get its act together with respect to the LMA, and I have been asked how MRAO might contribute to the programme. After some initial internal discussion it seems as though we will be bidding for UK development money for some aspect of receivers. Any initiative by MRAO will, of course, have to interface effectively with the rest of Europe and indeed the USA. In order for our bids to be successful we will have to demonstrate, quite reasonably, how our activities will be related to work going on in other LMA groups. At the present time there is no unified plan in Europe, and therefore it is not possible to answer these questions in a formal way. We do have some general ideas, but I am sure that these are along the same lines as many other groups. I think that our main interest lies in developing short wavelength mixer technology (>500GHz), and a bid is likely to be in the context of mixers, IF amplifiers, small-scale optics, etc. We would, for example, rather like to build an image reject mixer along the lines you have been promoting, but based on our finline mixer technology. We have now built a 350GHz finline mixer and are working on a 700GHz version. Of course it is getting more difficult at the very high frequencies, and the losses may become severe.

Anyway, my basic question is how would you like to see MRAO contributing to the receiver work? Obviously we want to be supportive rather than competitive, but it is not at all clear what other groups would like us to do. Perhaps one way of approaching this question is to ask whether there is anything that MRAO and NRAO could do jointly in order to demonstrate the emergence of a UK/USA collaboration on LMA receiver technology. The bidding for detailed work packages starts now, and so our plans do have to be rather specific. We have to promote specific items rather than just making general comments. I am completely open-minded about this, and we could even start looking at LO sources, planar mixers, etc., if appropriate.

I will be coming over to Charlottesville for the STT conference, and we could get together for an hour to talk about LMA related work if you feel that anything useful could come out of it.

I hope all is well.

Best regards,

Stafford

-----  
Dr Stafford Withington,

Email [stafford@mrao.cam.ac.uk](mailto:stafford@mrao.cam.ac.uk)

Assistant Director of Research,