I've put together this memo to address one of the action items from the chop-nod telecon of March 12th, 2008. The issue here is how consistent is our polarimetry over the 3 dithers of data obtained on NGC 1333?

The following images were produced with the November 2007 rgm, pointing corrections, and smooth tau corrections. Sharp_combine was called with the following parameters:

./sharp_combine ngc1333p.list all.fits -hwp 91 -l 51 51 -q -sm 2 -ma 5 -ps 9.5 -pm 12 -bg 10 0 -ip 0.0034 0.00017 0.0036 0.0

Polsharp3 was called with the following parameters:

polsharp3,'all.fits',/vec,skipv=2,maxsig=3,color=2,corners=[10,40,10,40],/ps

The data sets in question are the raw sharc2 files 40619-22 (dither 1), 40623-26 (dither 2), and 40872-40876 (dither 3). Note that the first two dithers were obtained during the November 2007 run, while the final dither was obtained during the December 2007 run. Also note that the 3rd dither contains 5 files, this is because an additional single position file was included in this bin (for those who are interested, that file is 40872). Illustrated below are the results for each of the dithers individually:
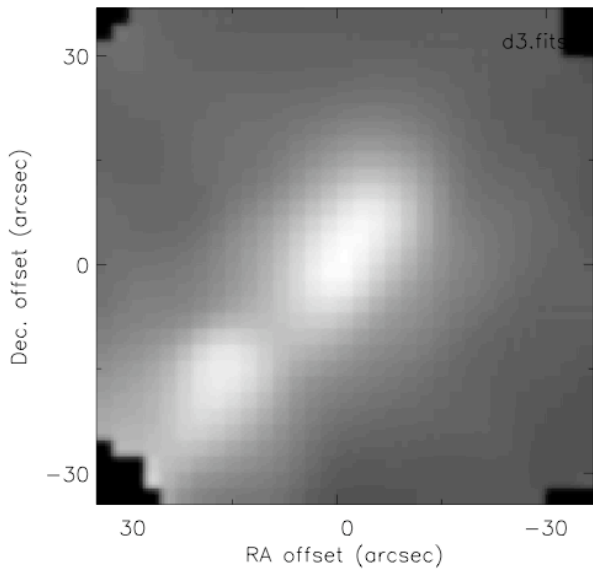
Dither 1:
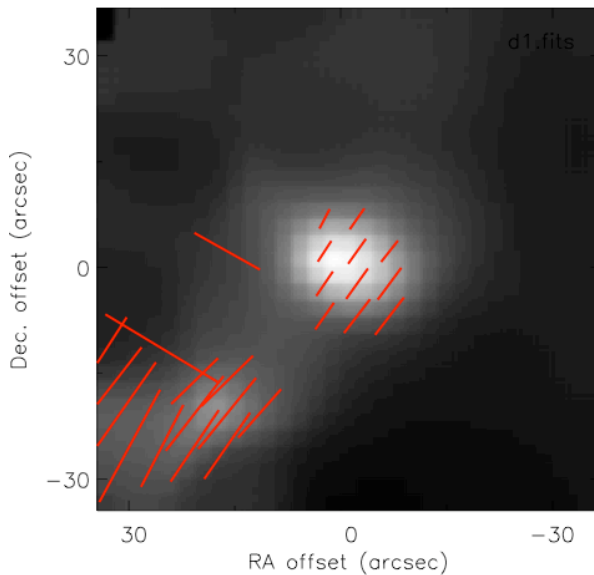
Dither 2:
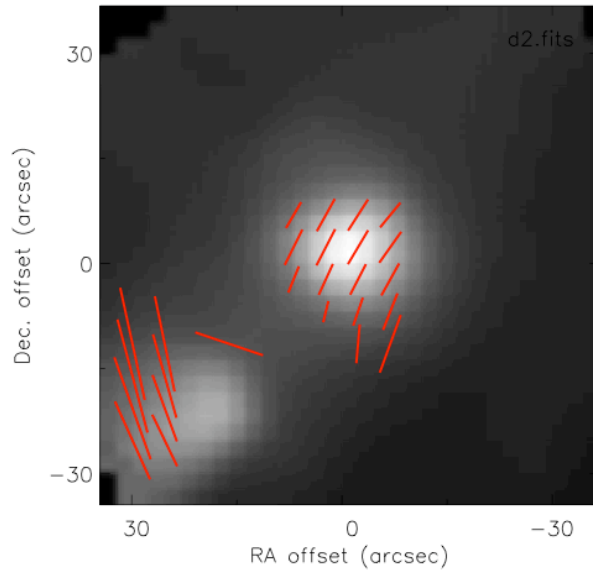
Dither 3 (Nov rgm):

Dithers 1 & 2 look fairly consistent over source 4A (although they are not consistent over 4B). However, it is clear that the data obtained in December does not produce any 3 sigma vectors, and has a distorted-looking I map. I decided to re-run the analysis on dither 3 with the rgm used on the mountain back in December. Below are the results:

Dither 3 (Mysterious rgm.dat used on the mountain in December):
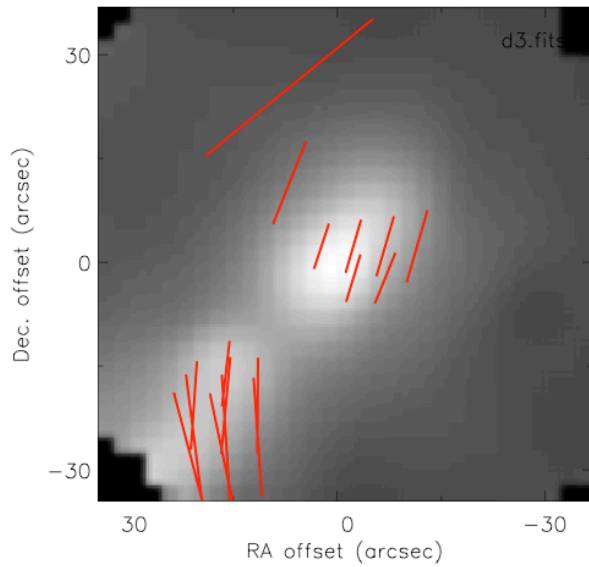
So it appears that the new November rgm is just as incompatible with the December results as the August rgm. I guess the big question now is where did this rgm come from? (we never figured this out) The vectors presented here over 4A are roughly compatible with the results from dithers 1 & 2.

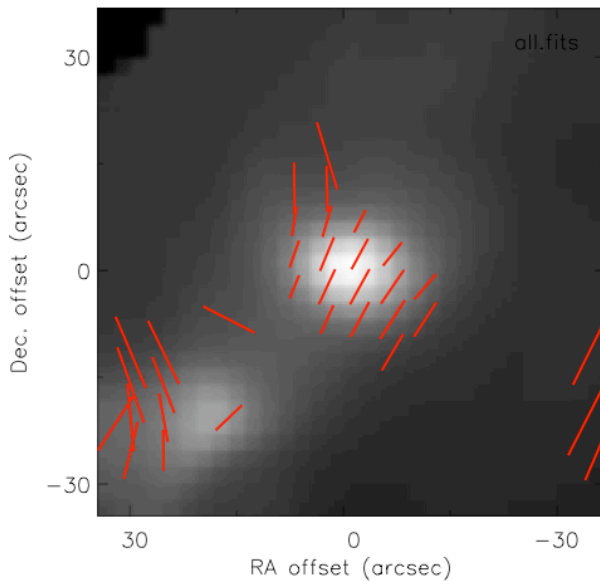Presented below are cumulative maps generated with polsharp3:

All November data (dither 1 & 2 combined):
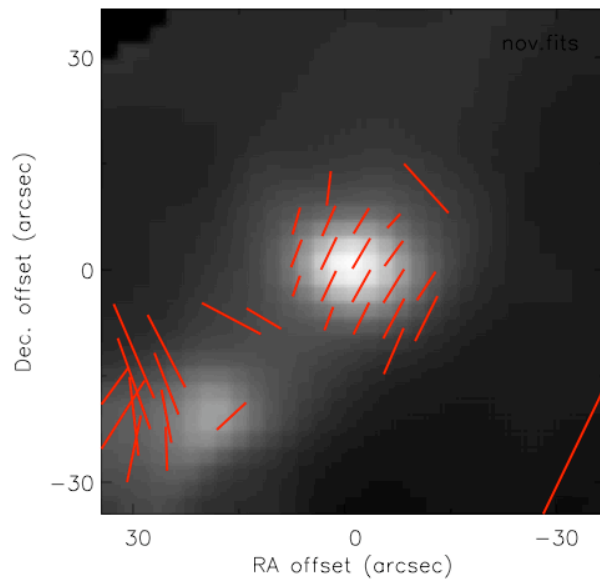
All dithers (dither 3 reduced with the November 07 rgm):
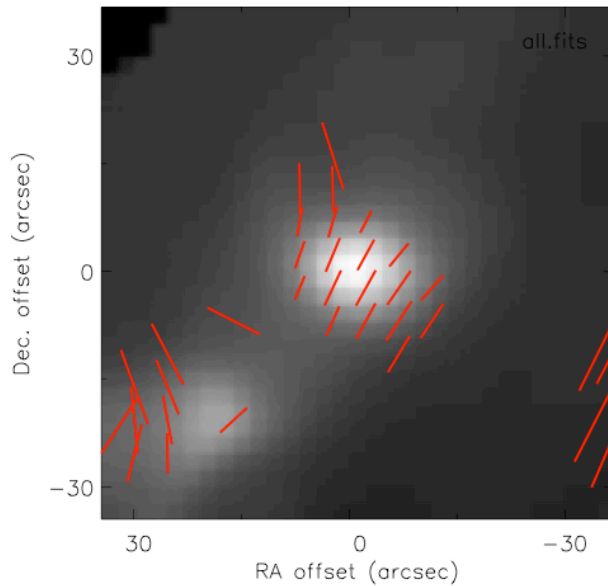
All dithers together (dither 3 reduced with the old rgm.dat)

Looking at these three final maps makes me wonder whether the December data is really helping us here. The cumulative November map has less flux in the background and the vectors over 4A appear to be more uniform than the cases where all the data is integrated. Also, the inclusion of dither 3 does not result in more vectors over 4A. I am starting to question whether any actual polarimetry on NGC 1333 was detected during the December run….?