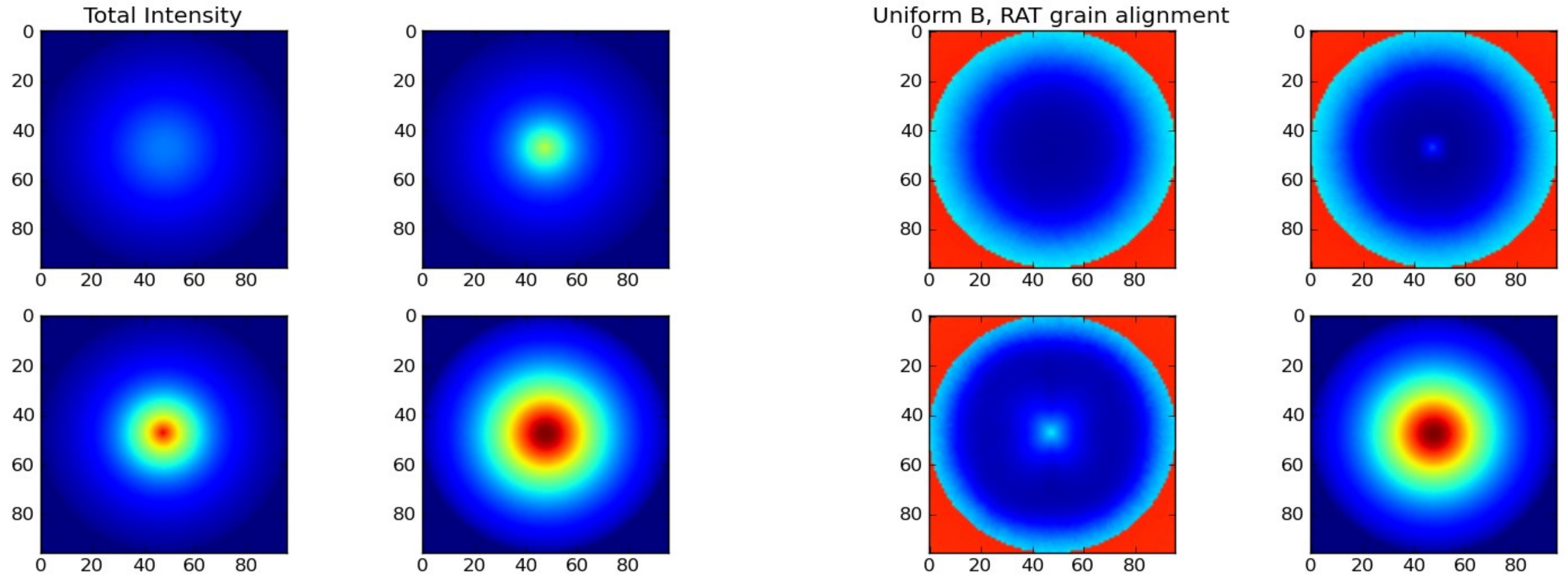
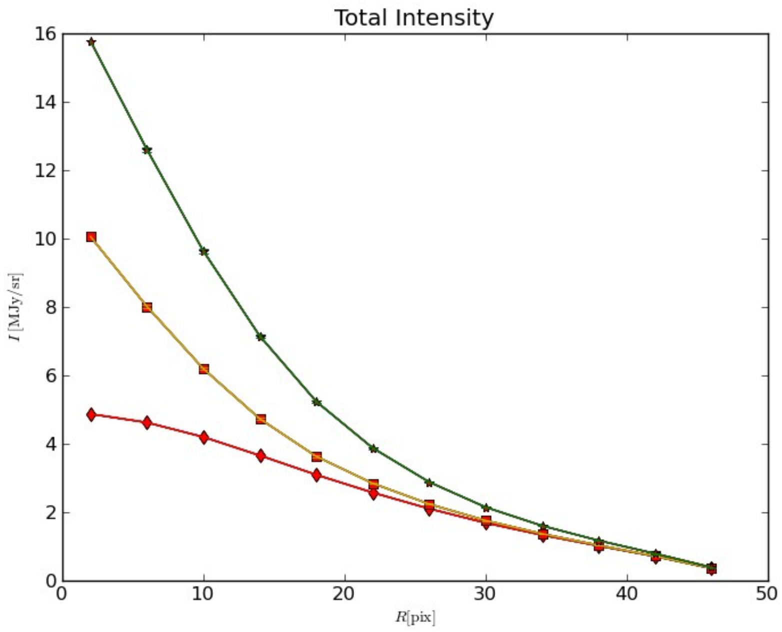
Radiative transfer modelling and RATs: internal sources

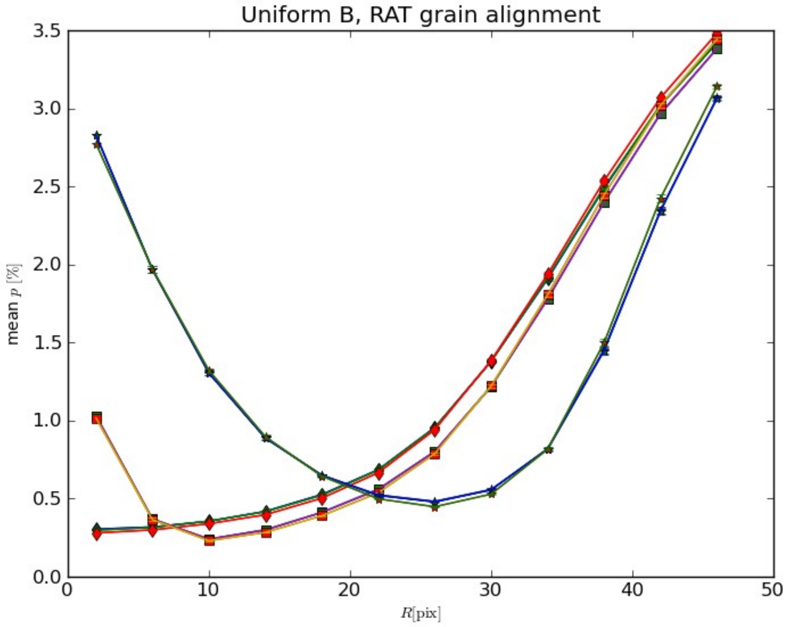
- 1.5 M_{sol} Bonnor-Ebert sphere (radius ~ 0.07 pc) with L_{sol} = [0, 1, 10] internal source (*T* = 2000 K)



Radiative transfer modelling and RATs: internal sources

- Alignment efficiency is enhanced towards the center
  → difference between starless and protostellar cores



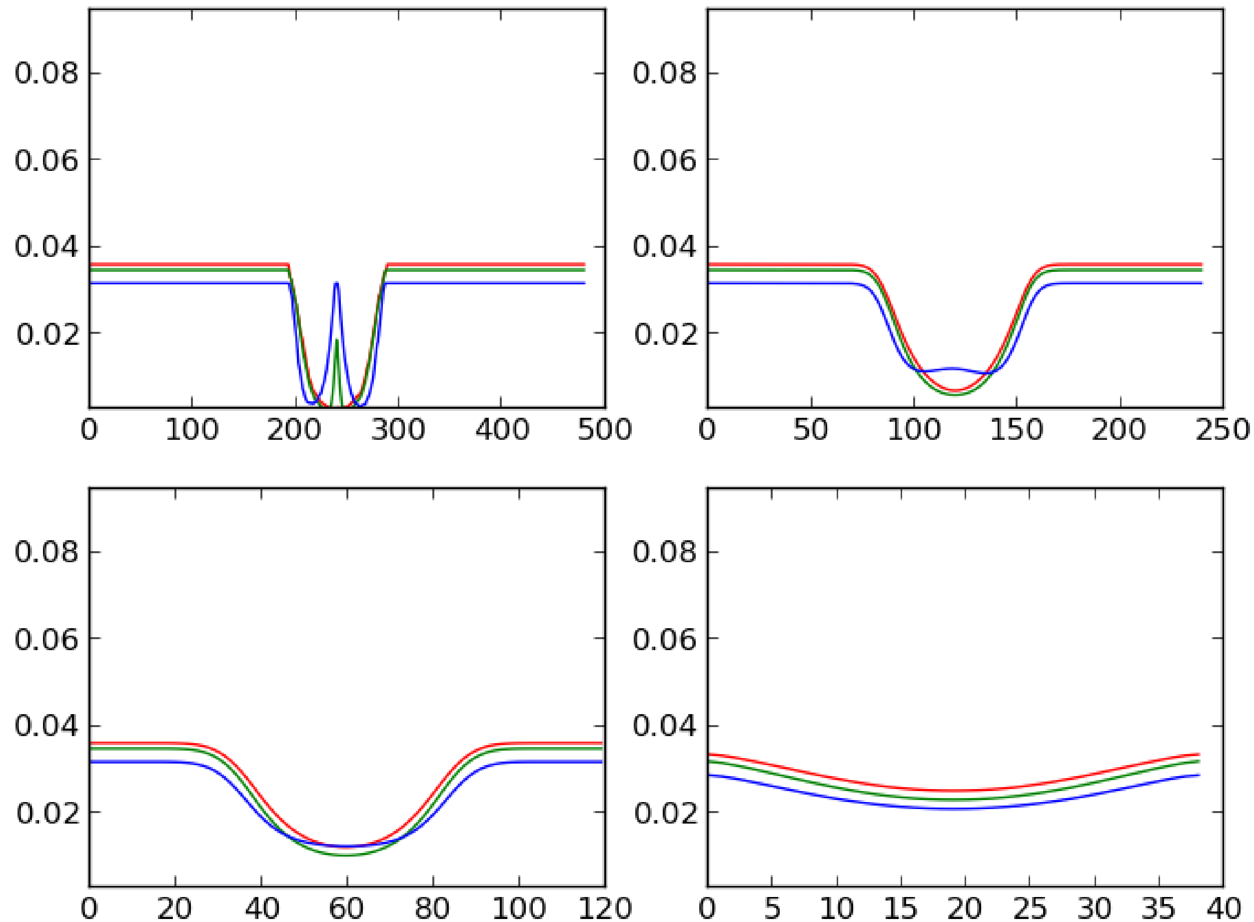


However, how does this actually look at Planck Resolution?

- Take the Best Case: ordered magnetic field
- The core maps (I, P) are placed in the middle of 5 times larger image, which has been filled with min(I) and max(P) as a 'background'.
- The polarized intensity is calculated (I*P) and then it is resampled (to lower resolution, to keep the Planck beam of reasonable pixel size, you can see the pixel scale changing in the x-axis) and then convolved by Planck beam at different distances (50 pc, 100 pc, 300 pc)

Normal Lee & Draine 2001 dust

- Color (RGB) = 0,1,10 Lsun
- Subplots: 1pc (beam = pixel), 50 pc (beam ~ radius), 100 pc (beam ~ diameter), 300 pc (beam ~ 2/3 map)



Doubled Lee & Draine 2001 dust

- Color (RGB) = 0,1,10 Lsun
- Subplots: 1pc (beam = pixel), 50 pc (beam ~ radius), 100 pc (beam ~ diameter), 300 pc (beam ~ 2/3 map)