Have mass information, not the luminosity information, talk about how much error it will introduce to results

At snapshot 0:

* define center of mass, use particles within a half-mass radius (radius at where half the mass is contained)
* want half-light radius, but have mass information, so write a function for determining half mass radius (flux as a function of radius, but have mass as a function of radius)
* experiment at which radii these very thin shells work best at
* iterate over radii
* plot mass profile (could be used to find dark to light mass ratio) and put in analytic fits
* Sersic units are in a brightness per area, but have mass per volume, so problems may arise there
* Particles within very thin shells instead of a large volume within a sphere of one radius

For 6.2 Gyr, and additional snapshots, perform the same kind of iterative process, but with index changes

Could do an edge on 2D projection plot, which is equivalent to the same plot of M(delta\_R) vs R, where delta\_R is like 1-2 kpc, 2-3 kpc, and plot Sersic profile over position (in order to try and see if the Sersic profile is in fact a good fit, try to see if there is literature on other large spiral mergers similar to this one)

\*\*check if bn, since it’s a constant dependent on the Gamma Function, check scipy if the function is in there\*

Will need to figure out the analytical constant Io in the beginning, may be just a factor of needing to divide by a certain value

Look at scipy optimization package, have Sersic profile, then pass it your mass profile

Start with I(R) α e-(r/h)^(1/n) and that will be shifted, then find normalization constants

Plot mass profile, plot Sersic profiles for spiral and elliptical, then use scipy.omptimize.curve\_fit to do additional fit

