The Star Formation Distribution in Interacting Galaxies

Scientific Justification (max 1200 words)

Notes on what I want to write here:

1. The primary aim of this project is to get velocity information throughout these interacting galaxies.
   1. Talk about constraining interaction.
   2. Talk about the Galaxy Zoo Mergers project.
   3. Talk about my code, and how that’s working.
   4. Provide an example of how adding velocity information to this approach could seriously improve statistics.
   5. Relate to how Euclid / WEAVE, providing spectroscopic and velocity information through their surveys will make using my code even better.
2. A secondary, easy result, is to investigate where star formation is occurring at different stages of the interaction.
   1. We know interactions cause starbursts.
   2. So, where do they happen?
   3. Will compare the star formation occurring in the galactic core compared to that in the tidal features.
   4. Due to the size of each target, we will get extremely high resolution maps of the star formation happening within them.
      1. Calculate this to see.

Technical Justification (max 1200 Words)

Notes on what I want to write here:

1. Basically, primary reason I want to use WEAVE here is the massive Field of View.
   1. The colossal FOV of the LIFU means that for the first time we can capture the entire system of these very local systems.
   2. Because these systems are so local, and so large in size, have not got IFU data for any of the given ones (besides Heart, used as comparison).
2. Extremely large, local galaxies will be an excellent use of WEAVE to show how we can get to the sub-kpc measurements of galaxy emission.
3. Each galaxy is a very bright one, with the dimmest target having a V band magnitude of 18 magnitude (double check this).
   1. Therefore, to get the outer edges of the disks should be easy.
   2. Tidal features will be no dimmer than mu = 21 mags/arcsec^2.
4. Can achieve a SNR of 50 with just two hours of exposure on each target.
5. Hence, asking for 32 hours exposure for full 16 targets. This is a total of 11 interacting systems that will be fully observed.