Data Management Plan

Products of the Research

Our ultimate goal is to release a comprehensive set of advanced data products to the community. These will range from data at the pixel level to non-parametric profiles (e.g. curves of growth), model fits and residual maps, and catalogs. We will also make available the appropriate ancillary data, e.g. from WISE, or SDSS and any high-level software products developed by our group.

The data products coming specifically from our observing program will $H\alpha$+continuum maps of 200 galaxies and integrated HI and CO measurementss. We will add to this ancillary data as needed to replicate our analysis. We propose to release all data when the respective papers are published, at the latest at the end of our funding period (12/20.)

Our specific products will include:

1. Fully calibrated $H\alpha$ narrow-band images, continuum images, and continuum subtracted $H\alpha$ maps.

2. Any pipeline software that we develop to reduce $H\alpha$ images from the 0.9m and 1.25m telescopes that we will use in our program. We will release these codes as an open github repository, which our team is already using for development.

3. While the WISE data are already available, we will provide WISE postage stamps of all of our galaxies, properly registered to the SDSS and Halpha images.

4. All 2D model fits in all wavelengths, including the fit residuals. We will include fits for a variety of complexity, including simple Sersic fits and bulge+disk fits.

5. HI and CO(1–0) and CO(2–0) spectra. For galaxies that we cover with multiple IRAM CO pointings, we will release all pointings with their beam center.

6. A catalog of derived properties such as stellar mass, SFR, size, and sersic fit parameters as a function of wavelength as well as uncertainties in all parameters. We will also provide all input files for programs used to compute those properties, e.g. Galfit.

7. Any data cubes that result from our eventual interferometric follow-up of HI or CO.

Data Format

To maximize their usefulness to the community, the catalogs will be released in three machine-readable formats (ASCII tables, fits tables, and IDL save files).

Data Storage and Preservation

All data will be stored both on the Research File Storage (RFS) system at the University of Kansas as well as on desktops at KU and Siena college. The desktops at Siena will be equipped with RAID1 dual hard-drive technology, which provides fault tolerance from disk errors or failures. The RFS provides offsite backups and so all data will have multiply redundant storage. All software will be stored in a github respository as well as on RFS and the local disks of the co-PIs.

Data Sharing and Dissemination

To facilitate the widespread use of the data products outlined above, we will publish the full catalog of measured and derived quantities on the web and in the on-line version of Astrophysical Journal Supplement. In addition, we will work with the NASA/IPAC Extragalactic Database (NED) and the NASA Infrared Science Archive (IRSA) to ensure that our data are discoverable to a larger user base. Co-I Vandana Desai, resident at IPAC, will act as our NED and IRSA liason to ensure that this gets done in a timely manner.