Identifying and Massing Galaxies

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Previous Work

The objects we are looking have already been identified using spectroscopy, a technique which can be used to determine the emitted spectrum of an object very precisely, but does not give a good idea of where it is physically. In particular, many of the objects identified using spectroscopy don’t have clear counterparts in existing object catalogs. The aim of this project is to determine what exactly these objects are and to measure some properties about them.

Mass and oxygen

By looking in the near infrared and visible ranges of emitted light, we can determine the mass of all of the stars in a galaxy. While this is only a portion of the galaxy’s actual mass, it will allow important research to be conducted in the future, such as studying the relationship between a galaxy’s mass and it’s metal content, a subject of significant interest. We can also identify oxygen emission lines in these galaxies, which tell us the oxygen content of the matter between stars. Accurate measurements of this are an important factor in forming theoretical models about the formation of galaxies.