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Spectrophotometric Redshifts in the Faint Infrared Grism Survey

JOHN PHARO, Arizona State Univ — A galaxy's redshift is vital for understanding its place in the growth and evolution of the universe. Determination of a galaxys redshift generally requires measuring prominent features in the galaxys spectrum with known rest-frame wavelengths, such as known strong emission or absorption lines (eg, Hα) or characteristic breaks. Spectroscopic redshifts maintain high accuracy, but are unable to probe fainter sources. Redshifts for these sources can also be calculated with photometric catalogs, but with a generally less accurate result. Using a technique pioneered by Ryan et al. 2007, one can combine spectra and photometry to yield an accurate spectrophotometric redshift (SPZ) while still measuring faint sources. By taking mid-resolution spectra from the HST Faint Infrared Grism Survey, SPZs can be found for measurements potentially down to 27th magnitude (the typical brightness of a dwarf galaxy at redshift $\sim$1.5), more completely filling the faint-end and high-redshift portions of the luminosity function than before. The improved redshift and distance measurements allowed for the identification of a structure at z=0.83 in one of the FIGS fields.

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