

# HSO Far-Infrared Spectroscopy of high-redshift Luminous Infrared Galaxies

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We propose a comprehensive survey of the far-infrared fine-structure lines  $[OI]_{\mu\text{m}}$ ,  $[OIII]_{\mu\text{m}}$  and  $[NIII]_{\mu\text{m}}$  for a sample of Spitzer/MIPS  $160 \mu\text{m}$  selected galaxies with redshifts in the range 0.4--1.2. The lines will be used primarily to probe the ISM at high redshifts and also to construct FIR diagnostic diagrams (Sb vs AGN).

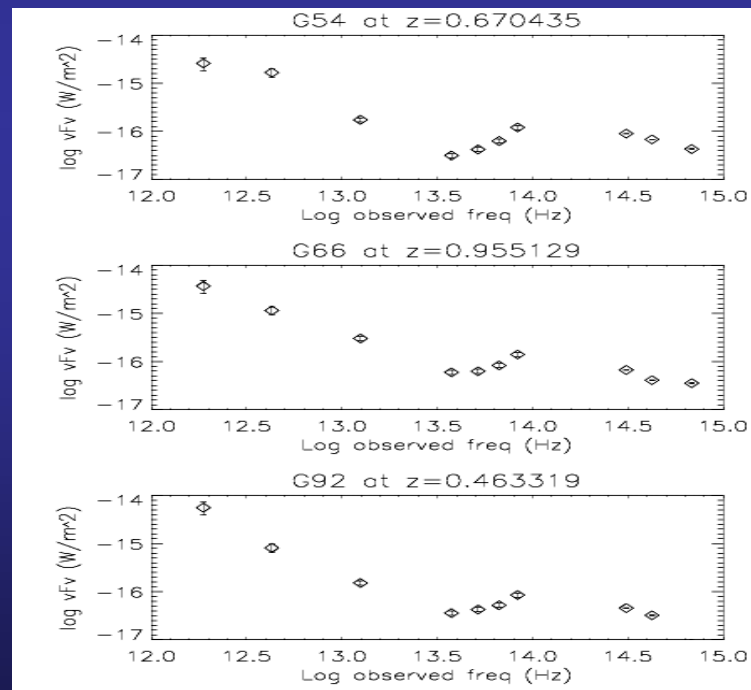


Figure 1: multiwavelength SEDs of MIPS  $160 \mu\text{m}$  selected sources

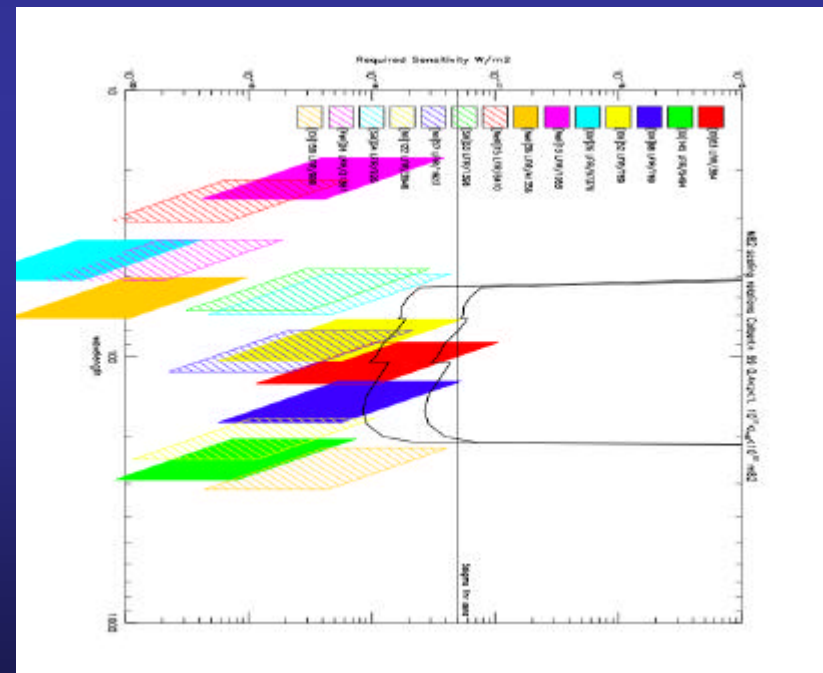


Figure 2: PACS sensitivity estimates