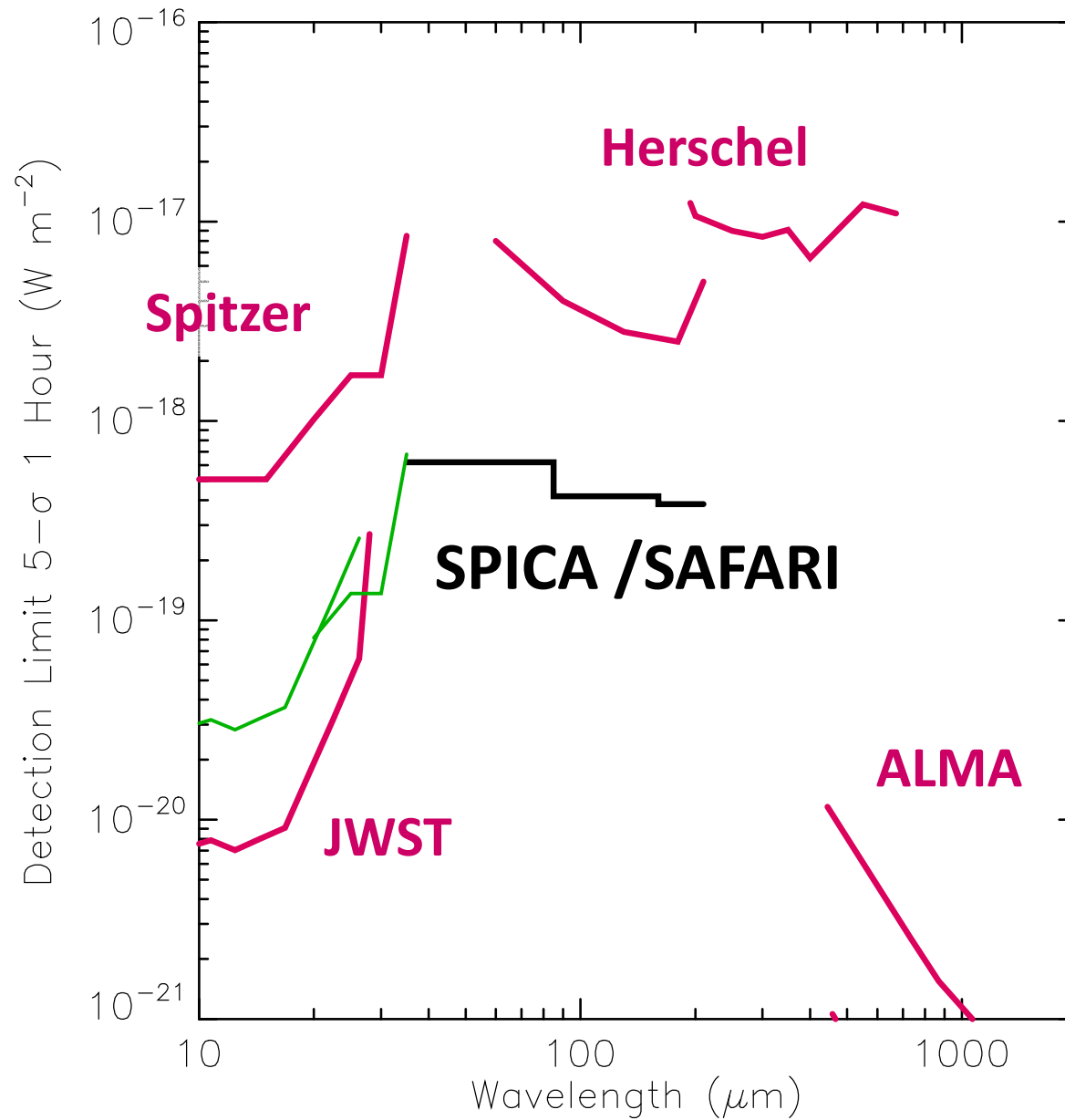
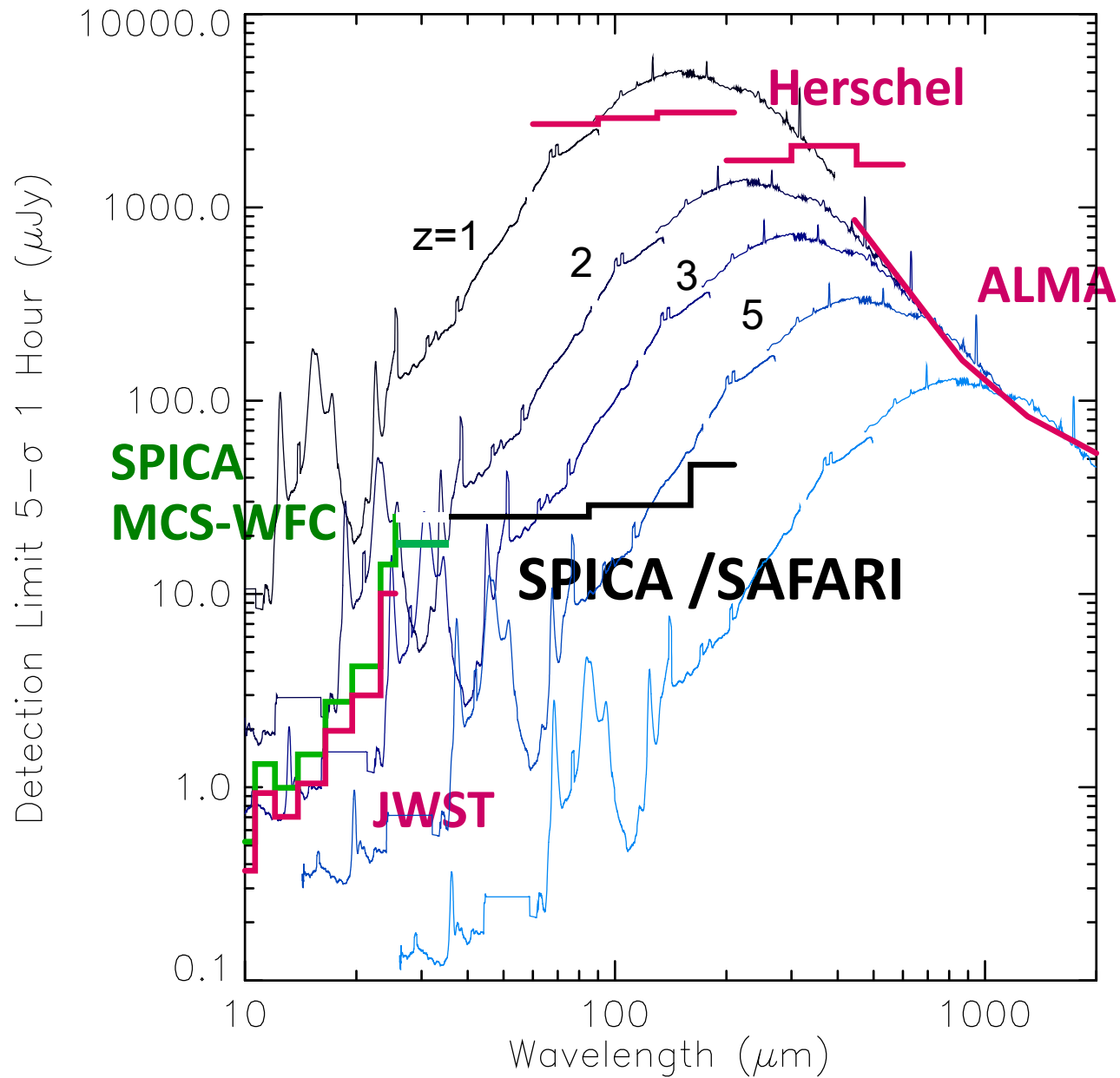
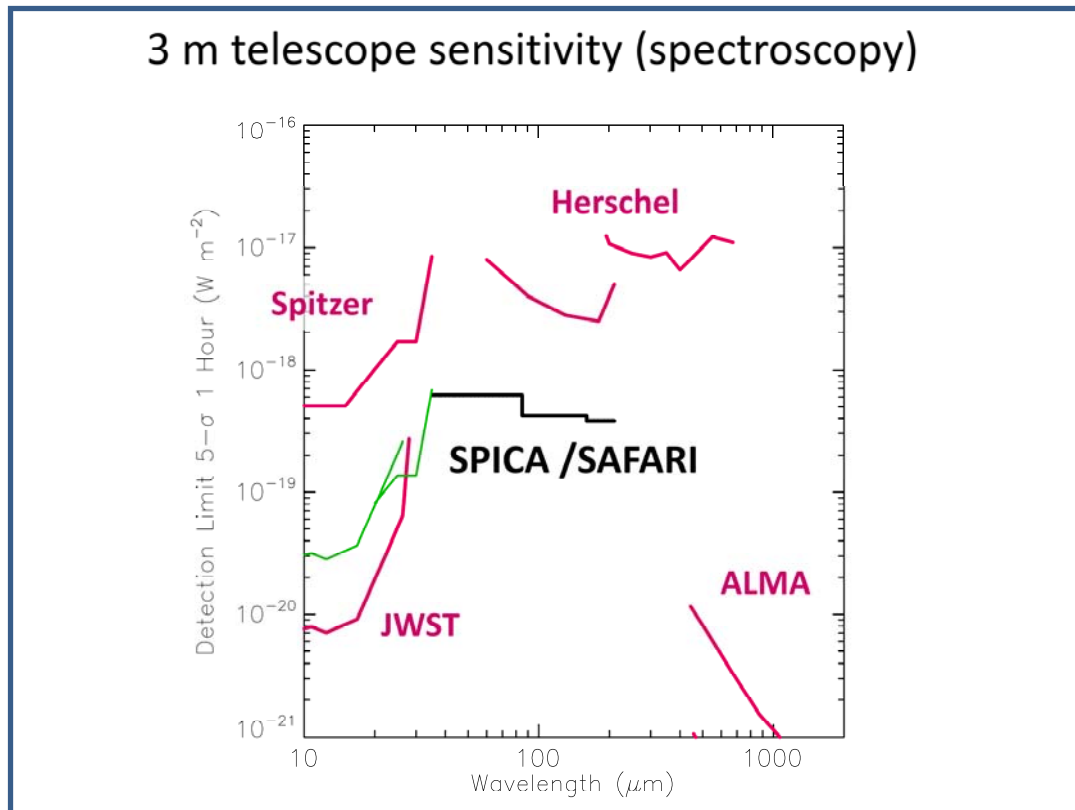


3 m telescope sensitivity (spectroscopy)



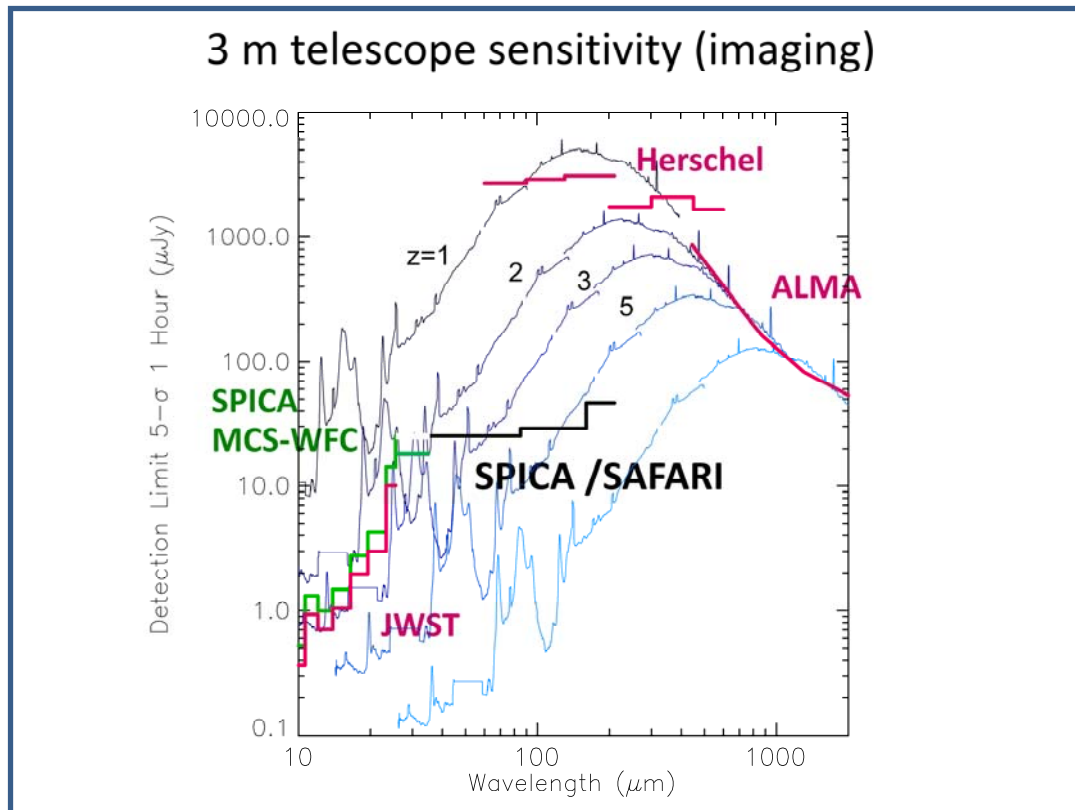
3 m telescope sensitivity (imaging)





Spectroscopic performance expected for SPICA (black) compared to predecessor and complementary facilities (purple) for an unresolved line for a point source in Wm^{-2} for 5σ in 1 hour. For ALMA 100 km s^{-1} resolution is assumed. the green lines are for MIR instruments based on scaling the JWST MIRI and IRS sensitivities to a 3 m telescope from 6 m and 0.85 m respectively. Note that SPICA becomes more sensitive than JWST beyond $20 \mu\text{m}$.

Also note the spatial & spectral multiplicity of SPICA/SAFARI : $2 \times 2 \text{ arcmin}^2$ IFU , simultaneous spectral coverage over 35-210 μm .
[original prepared by Bruce Swinyard & SAFARI consortium]



Note: confusion limit due to faint galaxies, which can be reached beyond 20 μ m in one hour exposures, is not included.

Estimated Confusion limit (Takeuchi et al. 2010)

50 μ Jy @ 40 μ m

300 μ Jy @ 70 μ m

1.5mJy @ 100 μ m

For illustrative purposes the SED of the starburst galaxy M82 as redshifted to the values indicated is shown in the background. [original prepared by Bruce Swinyard & SAFARI consortium, comments added by H. Matsuhara]