Dust Extinction (Absorption + Scattering)

size $<< \lambda$

Rayleigh scattering

$\sim \lambda^{-4}$

Mie Scattering, small particle

$\sim \lambda^{-1}$

Mie Scattering, large particle

Strong forward scattering
Examples of $Q_{\text{ext}}$ for different size grains

Dust Opacity – Far-IR/(sub)millimeter