

Metallicities and Dust in High- z Galaxies

C. S. Möller¹, U. Fritze-v. Alvensleben¹, D. Calzetti², & K. J. Fricke¹

¹ *Universitäts-Sternwarte Göttingen, Germany*

² *Space Telescope Science Institute, Baltimore, MD, 21218, USA*

Abstract. By consistently connecting the chemical and spectrophotometric evolution of galaxies we are able to include the effect of dust absorption. The time and redshift evolution of the extinction is based on the evolution of the gas content and metallicity. We present our evolutionary synthesis models which include dust absorption to analyze the UV emission in various galaxy types. We are able to predict the extinction $E(B-V)$ for different galaxy types as a function of redshift. We further use these models to explore the range of metallicities in normal and starbursting galaxies and the metallicity distribution of the stellar population. Comparing our model spectral energy distributions (SEDs) with templates from R. C. Kennicutt's (1992, *ApJS* 79, 255) and A. L. Kinney et al.'s (1996, *ApJ*, 467, 38) atlas we show the detailed agreement with integrated spectra of galaxies and point out the importance of aperture effects. Combined with a cosmological model we show the differences in the evolutionary and K-corrections by comparing models with and without dust.

Discussion

Eli Dwek: A test of your models is their ability to explain (in addition to the extinction) the IR emission from the various types of galaxies. Have you done such calculations?

Claudia Möller: I agree; this will be our next step.