Abstract Submitted
for the MAS14 Meeting of
The American Physical Society

Photometric Redshifts in the Hawaii-Hubble Deep Field-North (H-HDF-N) GUANG YANG, Chinese Academy of Sciences Hefei and Pennsylvania State Univ., Y.Q. XUE, Chinese Academy of Sciences Hefei, B. LUO, W.N. BRANDT, Pennsylvania State Univ — We derive photometric redshifts (zphot) for sources in the entire ($\sim$ 0.4 deg2) Hawaii-Hubble Deep Field-North (H-HDF-N) field with the EAzY code, based on point spread function-matched photometry of 15 broad bands from the ultraviolet (U band) to mid-infrared (IRAC 4.5 μm). Our catalog consists of a total of 131,678 sources. We evaluate the zphot quality by comparing zphot with spectroscopic redshifts (zspec) when available, and find a value of normalized median absolute de- viation σNMAD= 0.029 and an outlier fraction of 5.5% (outliers are defined as sources having |zphot $-$ zspec|/(1 + zspec) >0.15) for non-X-ray sources. Our zphot quality is comparable to those presented in similar works that derive zphot utilizing broadband photometry. We also classify each object as star or galaxy through template spectral energy distribu- tion fitting, resulting in 4913 stars and 126,765 galaxies. Furthermore, we match our catalog with the 2 Ms Chandra Deep Field-North main X-ray catalog. For the 462 matched non-stellar X-ray sources (281 having zspec), we improve their zphot quality by adding three additional AGN templates, achieving σNMAD= 0.037 and an outlier fraction of 12.8%. We make our catalog publicly available presenting both photometry and zphot, and provide guidance on how to make use of our catalog.

Renee Diehl
Pennsylvania State Univ

Date submitted: 21 Aug 2014 Electronic form version 1.4