Abstract Submitted
for the FWS15 Meeting of
The American Physical Society

Size Mass Relation of Galaxies at Redshift z = 4 DEMITRI CALL, Sonoma State Univ, HUGS COLLABORATION[1] — The size-mass relation for galaxies presently traces their evolution to a redshift of z = 3, limited by availability of rest-frame optical data beyond the 4000 angstrom break. These data indicate that galaxies exhibit an increasing trend in compactness with redshift. However, this trend must eventually taper off, as otherwise it would imply that galaxies were infinitely dense at early ages. In this study, recently obtained K-band (2.2um) data has allowed us to explore the galaxies size-mass relation at redshifts up to z = 4. Our goal was to see if this epoch of galaxy evolution is when the change in the trend of compactness begins. Data were collected by making models of our galaxy sample to determine their morphological parameters. Masses will be provided from SED fitting conducted by an external collaboration. By combing these data, we will obtain the first ever reliable estimate of the galaxy size-mass relation beyond redshift z = 3. Initial results are now in a phase of convergence testing to determine the final set of galaxies to be used in finding this size-mass relation. The initial trend reveals surprising results as the relation implies that galaxies in this epoch experienced rapid compression as they were less dense than has been shown in later epochs.

[1]The Hawk-I UDS and GOODS Survey

Demitri Call
Sonoma State Univ

Date submitted: 09 Oct 2015 Electronic form version 1.4