

Available Test Images

- SDSS
 - ugriz, shallow
 - ground, FWHM ~ 1.3 arcsec
- CNOC2 mosaic from CFHT/CFH12K
 - BVRI, moderately deep
 - ground, FWHM ~ 0.7 arcsec
- GOODS from HST/ACS
 - BViz, depth similar to SNAP Wide Area Survey
 - space, FWHM < 0.1 arcsec
- Ultra Deep Field (UDF) from HST/ACS
 - BViz, depth similar to co-added SNAP Deep Survey
 - space, FWHM < 0.1 arcsec
 - to be observed 2004

Testing Lossy Compression

- SExtractor (Source-Extractor) for initial tests
 - Already in hand, easy to run
 - Simple measurements
 - * magnitudes
 - * ellipse parameters: a , b , θ
 - * 2nd order moments: X_2 , Y_2 , XY
- More sophisticated codes; need to be incorporated
 - Michigan moments (McKay et al.)
 - Shapelets (Massey et al.)

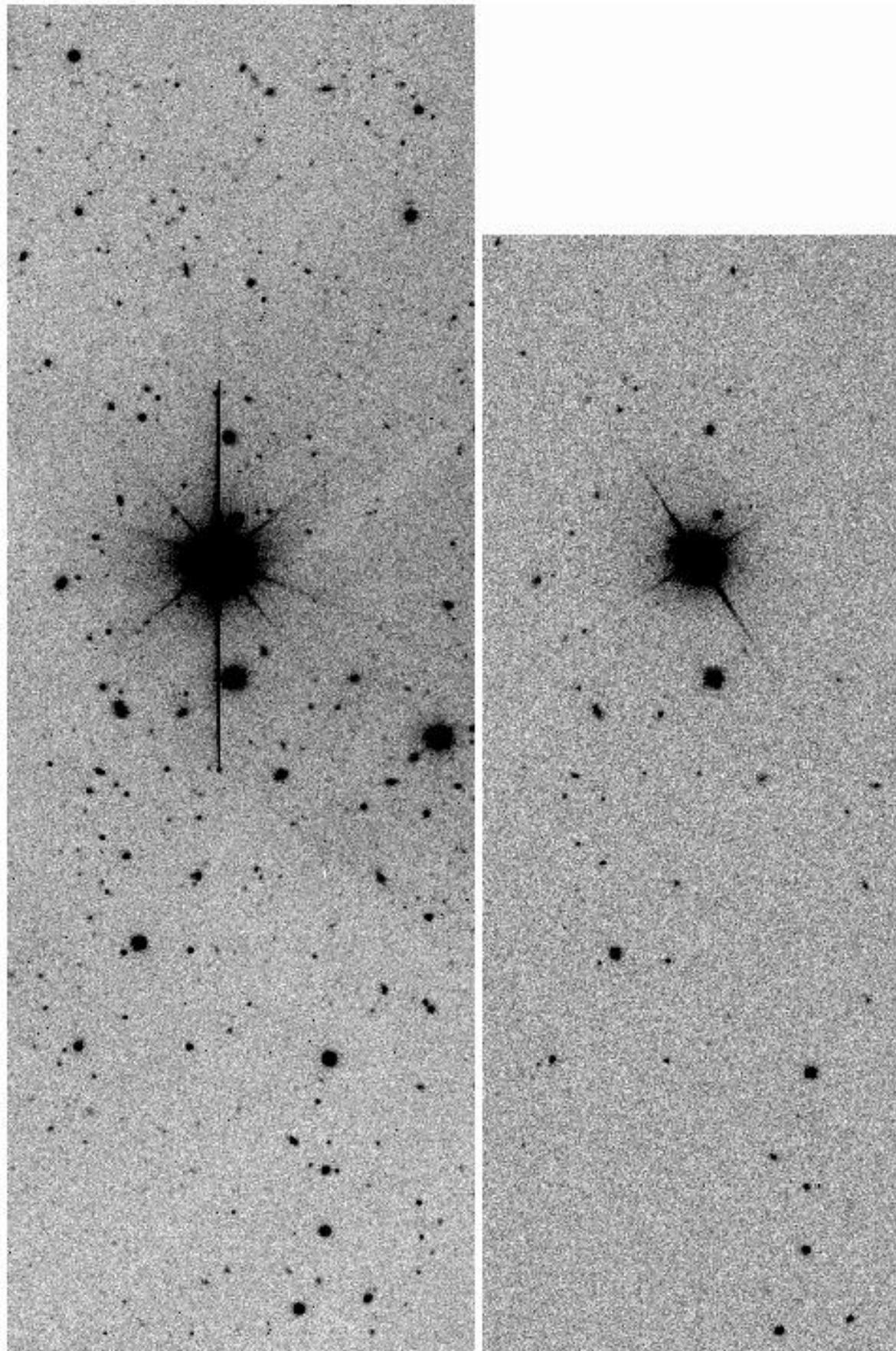


Fig. 1.— Comparison of deeper CNOC2/CFH12K image (left) with shallower SDSS image (right) of the same field.

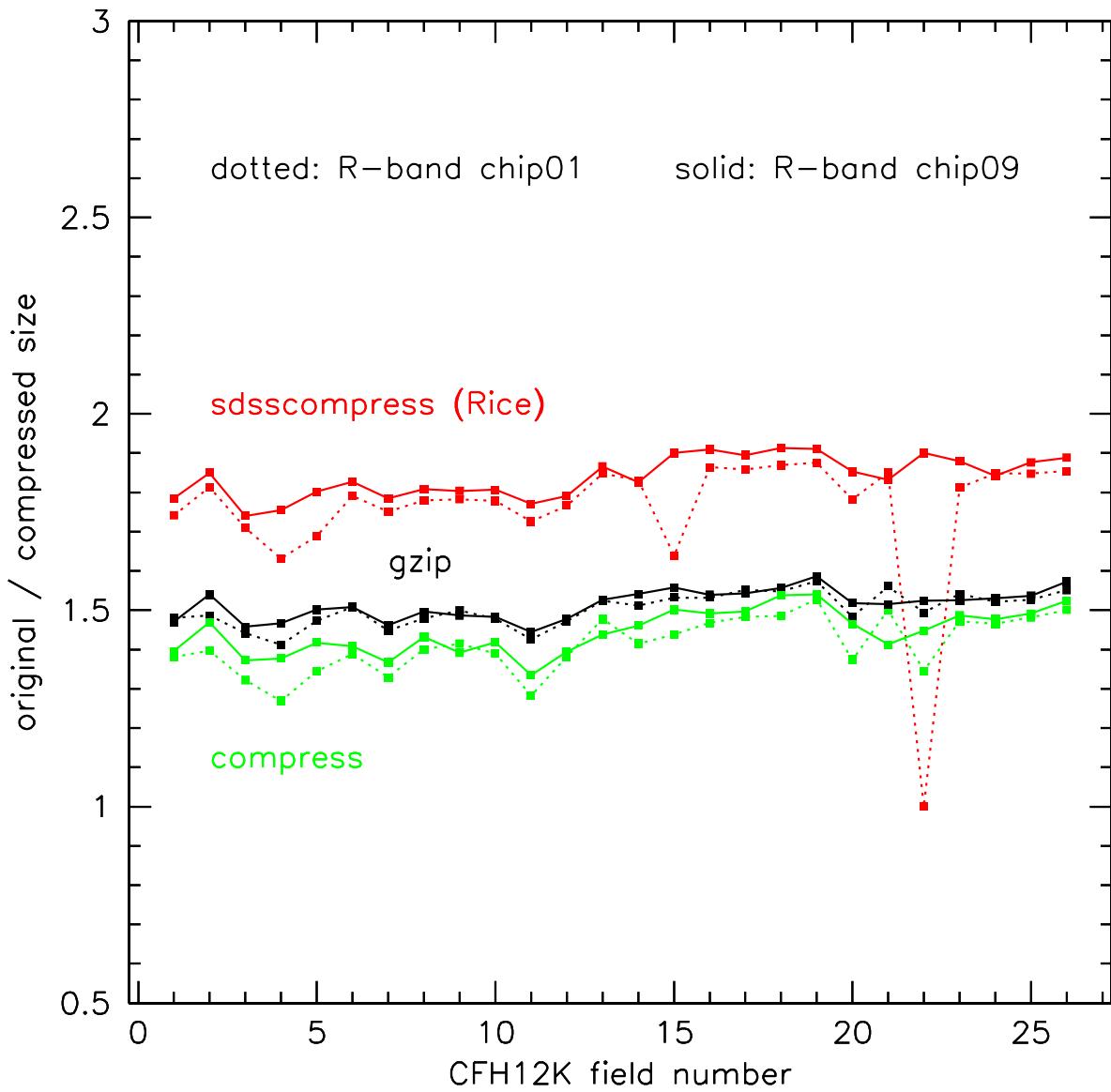


Fig. 2.— Compression ratio vs. ad-hoc field number for a selection of CNOC2/CFH12K mosaic images.

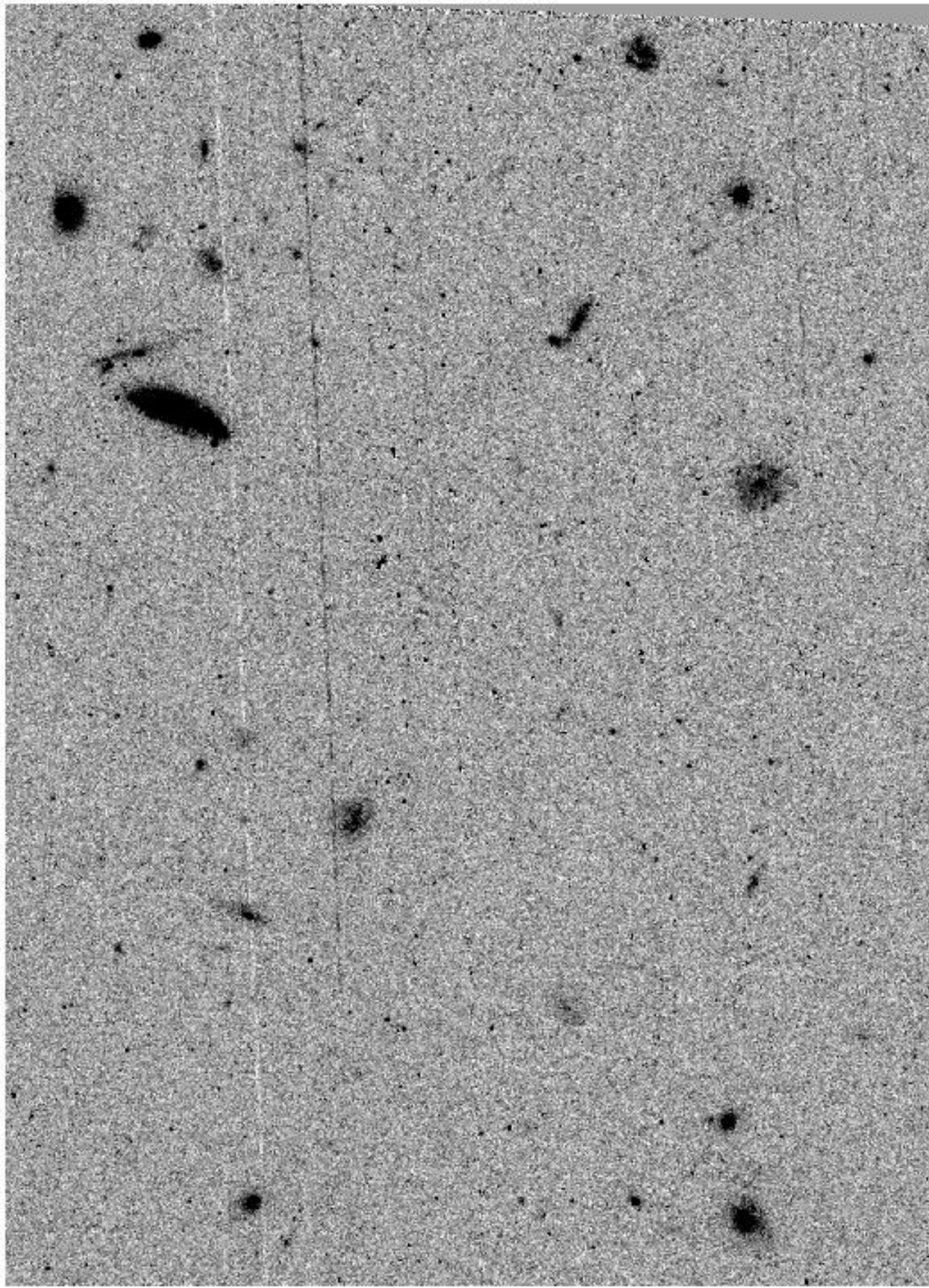


Fig. 3.— Example GOODS image taken by the Hubble Space Telescope's Advanced Camera for Surveys (ACS).

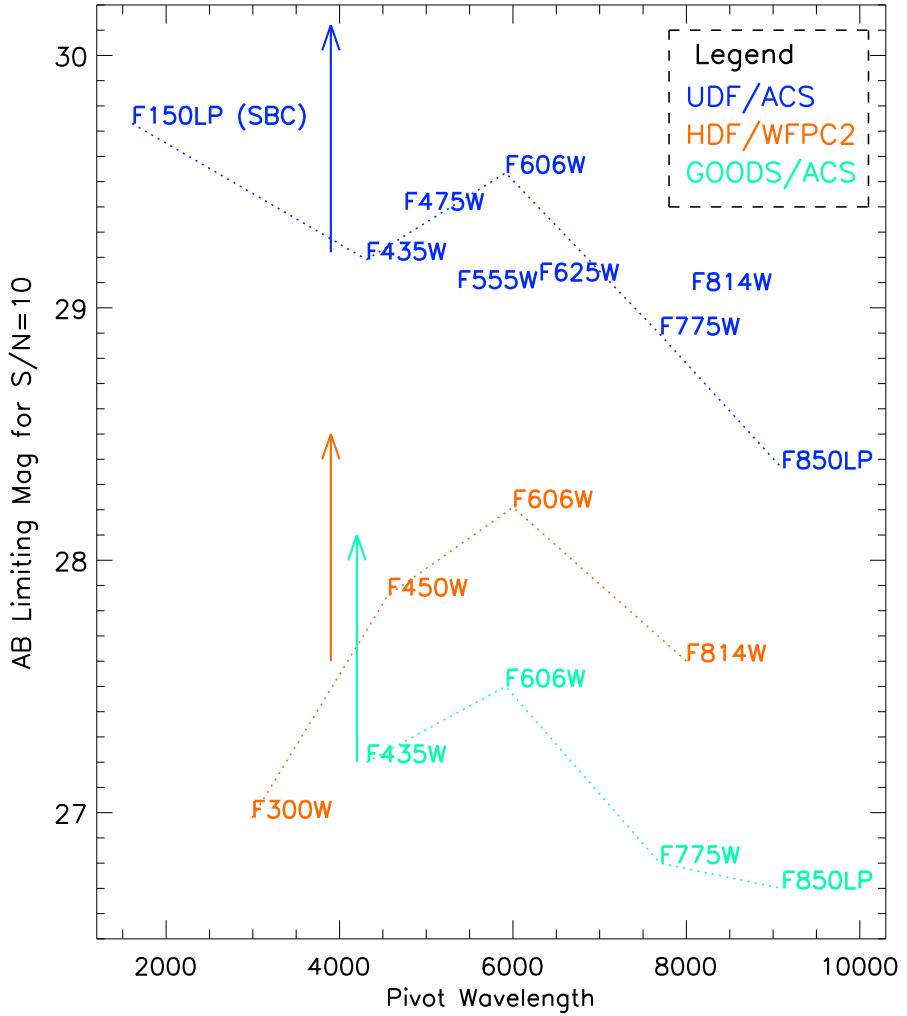


Figure 4: **Limiting Magnitude of HST Imaging Surveys:** Plotted are the limiting 10σ AB magnitude for extended sources in different *HST* surveys, assuming a 0.2 square arcsec aperture. For the UDF, plotted values assume an exposure time of 240 kilosec (~ 100 orbits), 1 CR-split or a 2-point dither per orbit, low sky background in the optical and high sky background in the UV. For point sources, the limiting magnitude is ~ 0.8 mag fainter as shown by the arrows. Note that the SBC covers only 3% of the WFC field of view.