

The MUSYC Public Data Release

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www.astro.yale.edu/MUSYC



Abstract

The Multiwavelength Survey by Yale-Chile (MUSYC) is studying the formation and evolution of galaxies and their central black holes. MUSYC consists of deep optical (UBVRiz+NB5000) and near-infrared (JHK) imaging of four quarter-square-degree fields on the sky, centered on CDF-S, HDF-S, SDSS1050+05 and CW1255+01. On **July 1, 2007**, we will publicly release our optical and NIR images and catalogs, which cover 1.2 square degrees to 5 sigma point-source detection depths of U,B,V,R=26 and K=22 (AB) plus deeper NIR imaging of four 10'x10' pointings to K=23 (AB). Our optical catalog contains 277,341 objects detected in BVR images with median seeing of 0.9". A simultaneous release of images and catalogs from 4-band IRAC coverage of the Extended CDF-S will be available from SIMPLE (the Spitzer IRAC/MUSYC Public Legacy of the ECDF-S). We describe the data products available at <http://www.astro.yale.edu/MUSYC>. Satellite coverage includes Chandra, XMM, GALEX, HST-ACS, and Spitzer, with the Extended CDF-S imaged at all of these wavelengths plus the radio, making it the premier multiwavelength field on the sky. Future data releases will include Spitzer IRAC+MIPS imaging of the four 10'x10' deep regions and spectroscopy from VLT+VIMOS, Magellan+IMACS and Gemini+GNIRS.

Survey Fields

Field	RA (J2000)	DEC (J2000)	E(B-V)	100 μ m (MJy/Sr)	N_{II} (10^{20} cm $^{-2}$)
ECDFS	03:32:29.0	-27:48:47	0.01	0.40	0.9
SDSS1030+05	10:30:27.1	+05:24:55	0.02	1.01	2.3
Cast1255+01	12:55:40.0	+01:07:00	0.02	0.81	1.6
EHDFS	22:32:35.6	-60:47:12	0.03	1.37	1.6

Survey Catalogs (5 σ AB Point Source Limits)

Field	# Obj.	U	B	V	R	I	z	J (deep)	H (deep)	K (deep)	J (full)	K (full)	NB5000	X-Ray [erg/s/cm 2]
E-CDFS	84410	26.0	26.9	26.4	26.4	24.6	23.6	24.3	23.8	23.4	23.0	22.3	25.5	2×10^{-16}
SDSS 1030+05	69619	25.8	26.0	26.2	26.0	25.4	23.7	24.1	23.9	23.3	-	22.4	24.8	8×10^{-16}
Cast1255+01	60344	26.0	26.2	26.1	26.0	25.0	24.1	24.0	22.8	23.0	-	22.2	24.4	-
E-HDFS	62968	26.0	26.1	26.0	25.8	24.7	23.6	24.3	23.4	23.4	-	-	24.1	-

Recent MUSYC Publications

MUSYC: Survey Design and UBVRiz' Images and Catalogs of E-HDFS
Gawiser et al. 2006a, ApJS 162, 1

The Extended Chandra Deep Field-South: X-ray Point-Source Catalog
Virani et al. 2006, AJ 131, 2373

The Space Density and Colors of Massive Galaxies at $2 < z < 3$
van Dokkum et al. 2006, ApJ 638, L59, astro-ph/0601113

Stellar Continua and Balmer/4000 Angstrom Breaks of Red $z > 2$ Galaxies
Kriek et al. 2006a, ApJ 645, 44

Massive Galaxies at $z \sim 2.3$ with Strongly Suppressed Star Formation
Kriek et al. 2006b, ApJ 649, L71

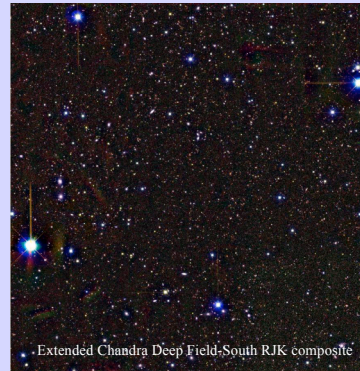
Star Formation in Distant Red Galaxies: Spitzer Observations in HDF-S
Webb et al. 2006, ApJ 636, L17

The Physical Nature of Lyman Alpha Emitting Galaxies at $z \sim 3.1$
Gawiser et al. 2006b, ApJ 642, L13

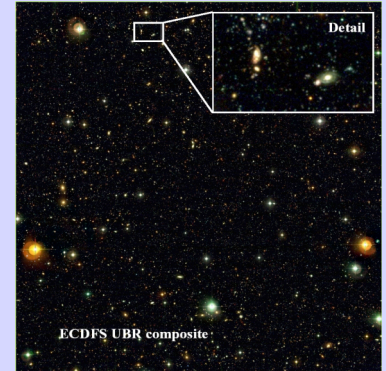
The Luminosity Function of Lyman Alpha Emitting Galaxies at $z \sim 3.1$
Gronwall et al. 2007, ApJ, in press

Clustering of K-selected Galaxies at $2 < z < 3.5$
Quadri et al. 2007, ApJ 654, 138

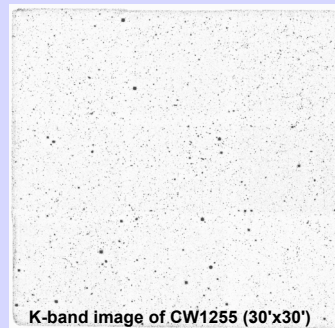
The Rest-frame Optical Luminosity Functions of Galaxies at $2 < z < 3.5$
Marchesini et al. 2007, ApJ 656, 42



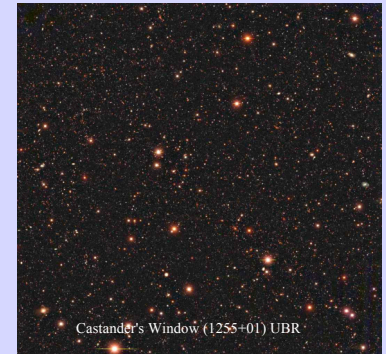
Extended Chandra Deep Field-South RJK composite



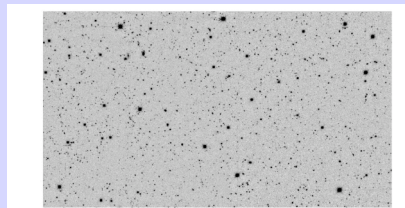
ECDFS UBR composite



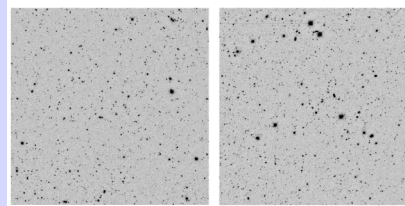
K-band image of CW1255 (30'x30')



Castander's Window (1255+01) UBR



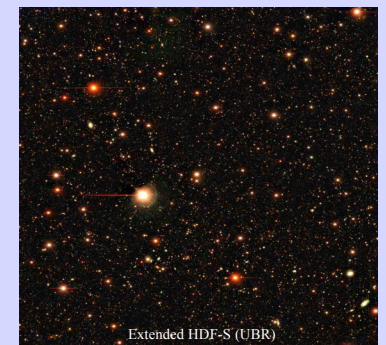
HDFS1/2



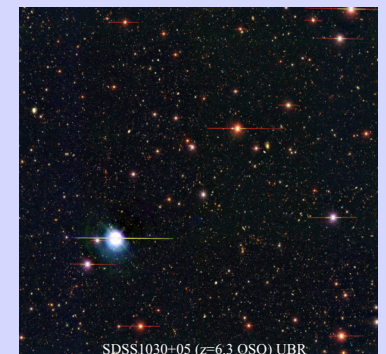
1255

1030

K-band images of the 10'x10' deep fields



Extended HDF-S (UBR)



SDSS1030+05 ($z=6.3$ QSO) UBR