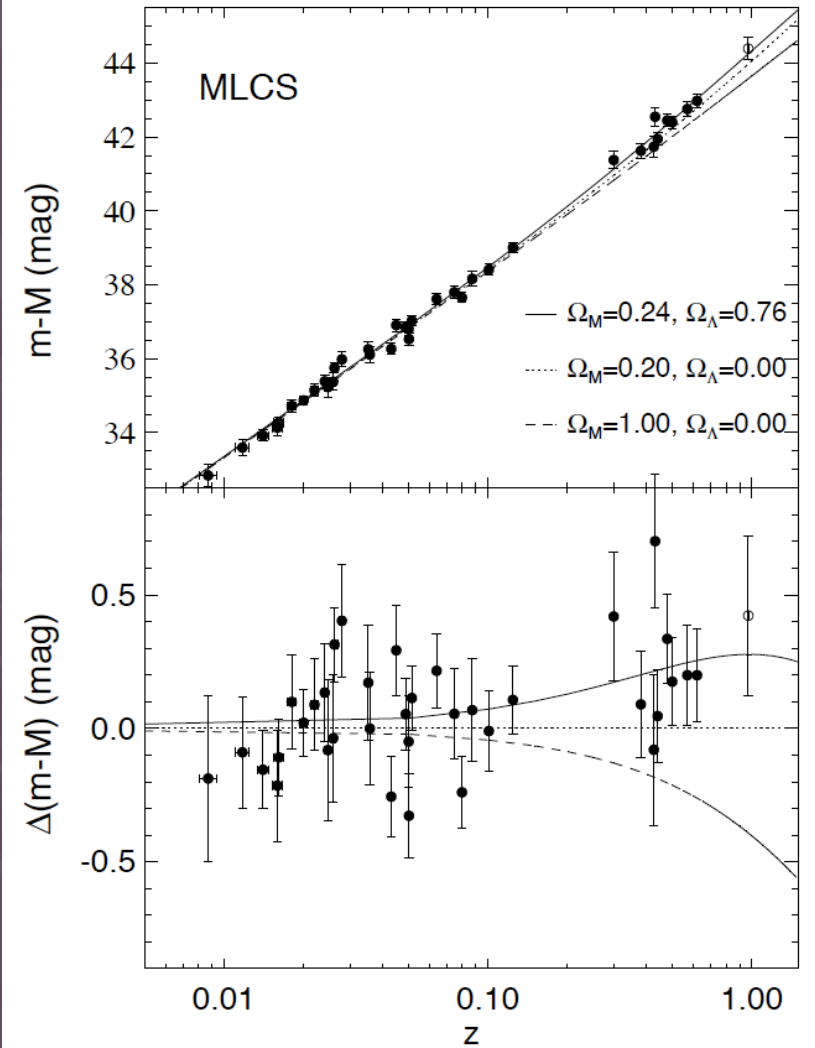
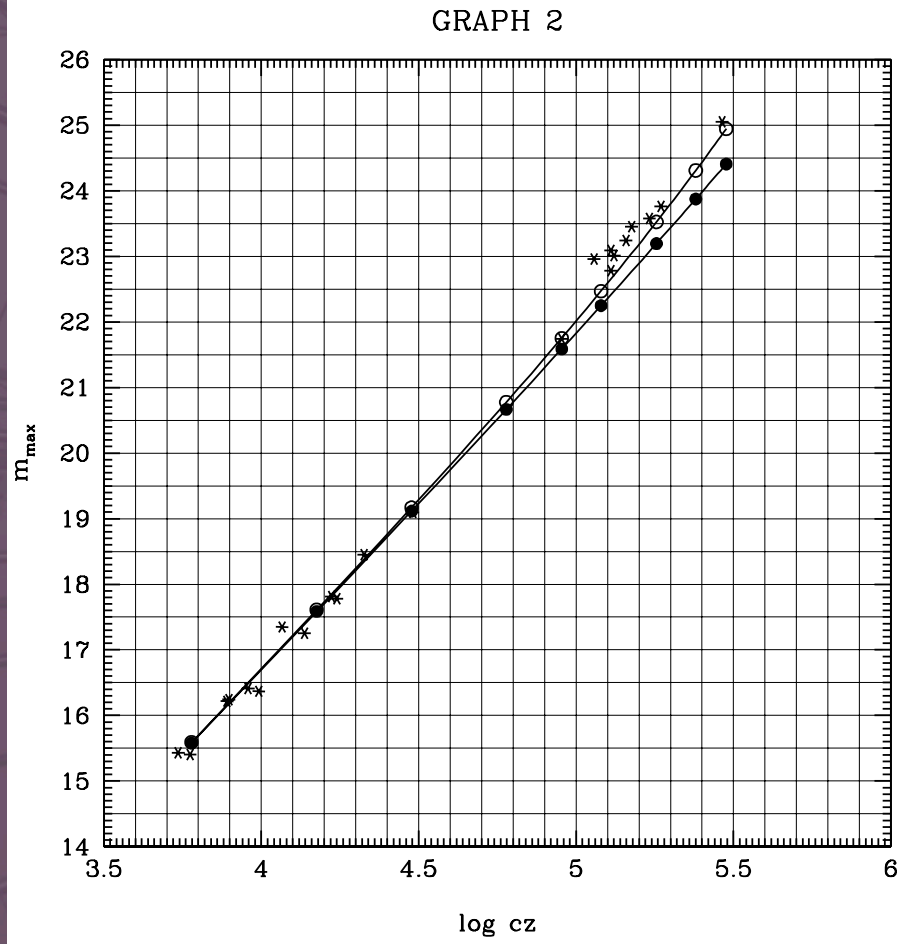
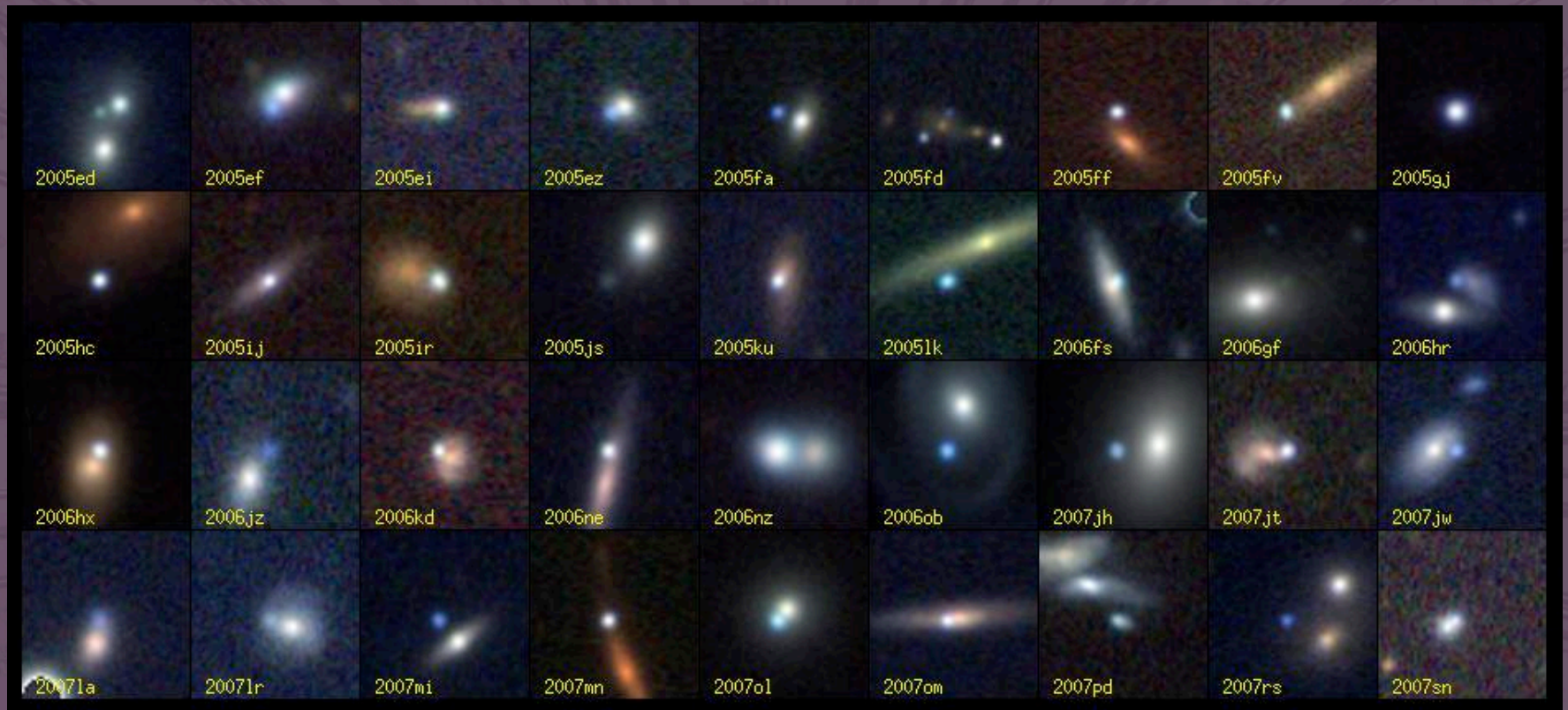
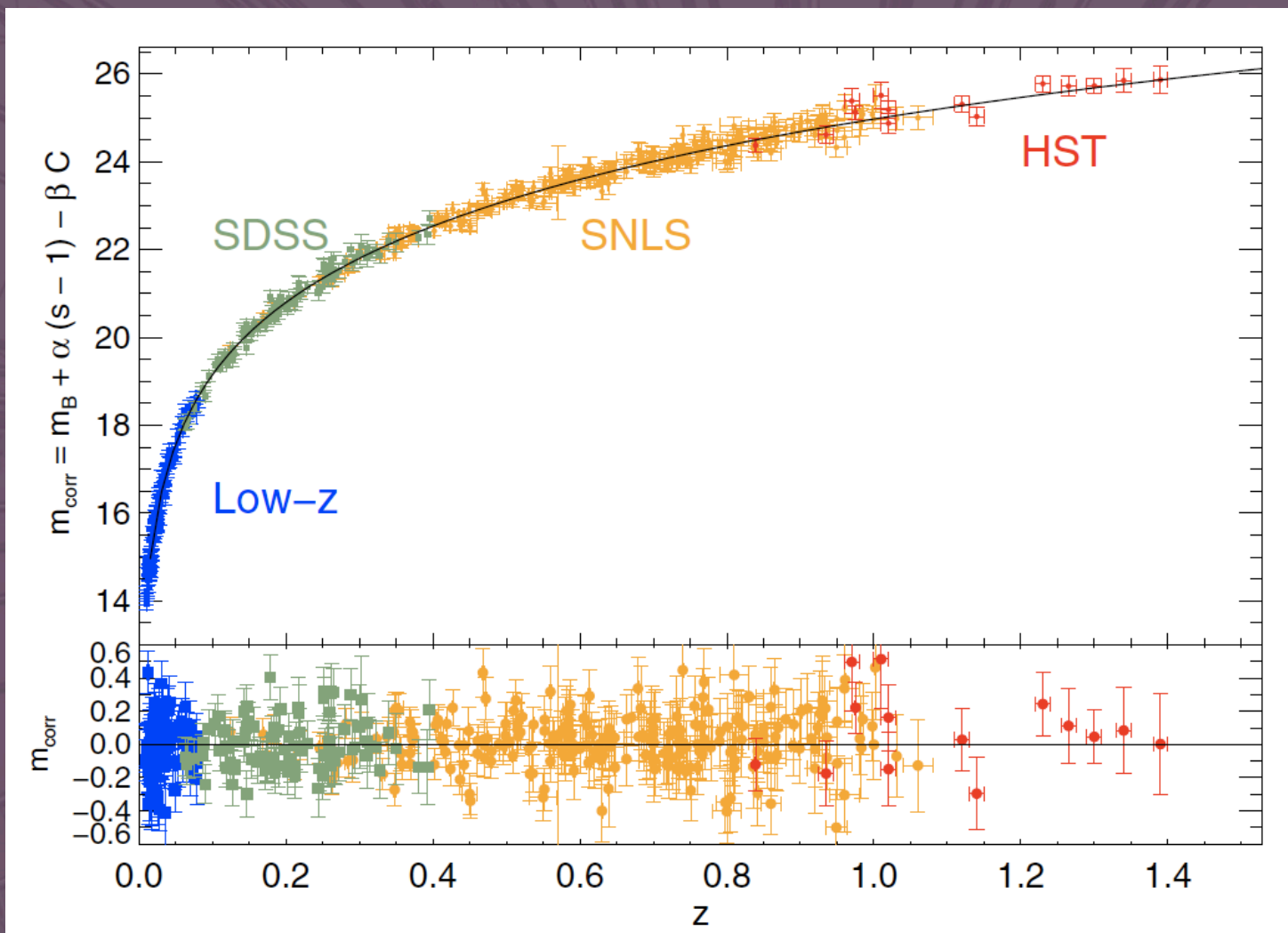


Riess et al. 1998





Conley et al. 2011



Planned field of view for WFIRST (Wide Field Infrared Survey Telescope)
300 million pixels, 0.28 square degrees



IFU field



HST/
ACS

HST/
WF3

JWST/
NIRCAM

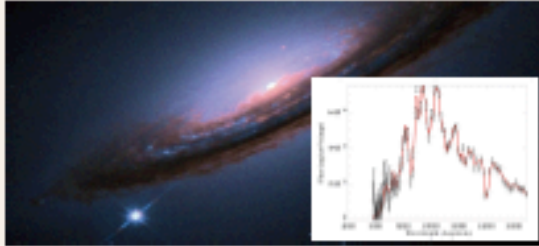
The WFIRST-2.4 Dark Energy Roadmap

Supernova Survey

wide, medium, & deep imaging
+
IFU spectroscopy

2700 type Ia supernovae
 $z = 0.1-1.7$

standard candle distances
 $z < 1$ to 0.20% and $z > 1$ to 0.34%

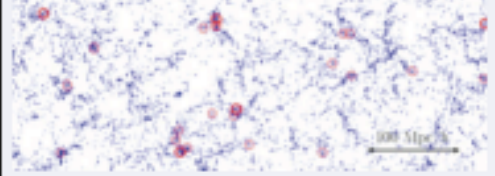


High Latitude Survey

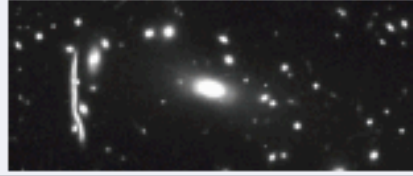
spectroscopic: galaxy redshifts
20 million $H\alpha$ galaxies, $z = 1-2$
2 million [OIII] galaxies, $z = 2-3$

imaging: weak lensing shapes
500 million lensed galaxies
40,000 massive clusters

standard ruler
distances expansion rate
 $z = 1-2$ to 0.4% $z = 1-2$ to 0.72%
 $z = 2-3$ to 1.3% $z = 2-3$ to 1.8%

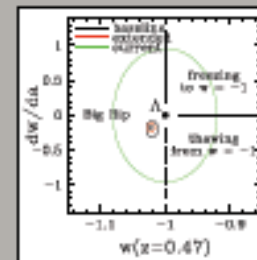


dark matter clustering
 $z < 1$ to 0.18% (WL); 0.14% (CL)
 $z > 1$ to 0.24% (WL); 0.28% (CL)
1.2% (RSD)

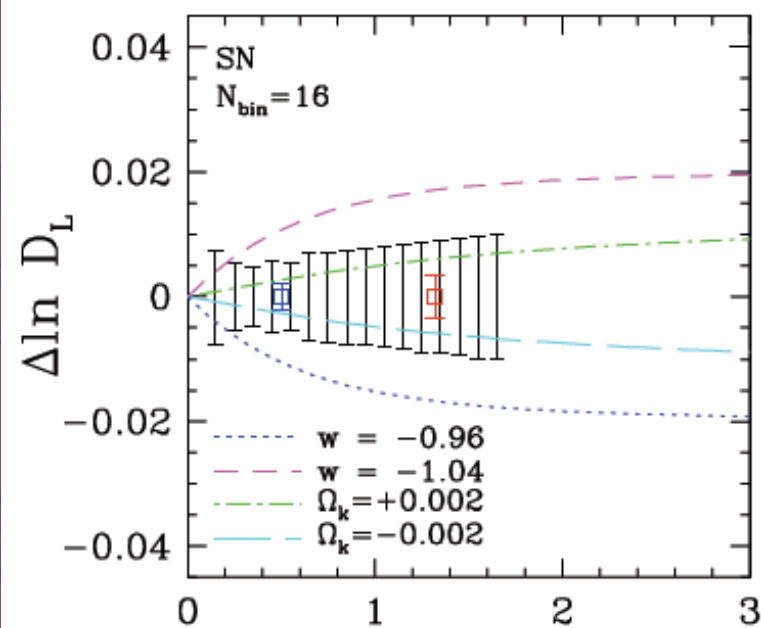


history of dark energy
+
deviations from GR

$w(z)$, $\Delta G(z)$, Φ_{REL}/Φ_{NREL}



Supernovae



Baryon acoustic oscillations

