HARDWARE

	WFIRST	**Euclid**
telescope		
design	1.3-m unobstructed	1.2-m obstructed
entrance pupil	1.327 m^2	0.848 m^2
solar angle	$90 \pm 36°$	$90 \pm 3°$
focal plane		
imaging CCDs (4096^2 pixels)	0	$36 \times (0\farcs10)^2$
imaging HgCdTe (2048^2 pixels)	$28 \times (0\farcs18)^2$	$22\% \times 16 \times (0\farcs30)^2$
spectroscopic HgCdTe (2048^2 pixels)	$8 \times (0\farcs45)^2$	$78\% \times 16 \times (0\farcs30)^2$

PROGRAM ALLOCATIONS

program	WFIRST	Euclid
exoplanet microlensing	1.5 years	0 years
guest investigator	1.0 year	0 years
supernovae	0.5 year	0 years
BAO + weak lensing*	2.0 years	5 years

* imaging surveys proceed in parallel

Why is the WFIRST approach preferred for weak lensing?

weak lensing is the riskiest program:

$$\begin{pmatrix} \textbf{uncertainty in local} \\ \textbf{mean image ellipticity} \end{pmatrix} < 0.0002$$

1. **Progressive CCD charge transfer inefficiency elongates images.**
2. **CCDs allow only one very broad "riz" filter; galaxy shapes and PSF vary within bandpass.**
3. **Requirements on optics and jitter are specified relative to diffraction limit and are a factor of two less demanding in IR.**
4. **Unobscured design produces cleaner diffraction pattern.**
5. **Galaxies are less irregular in the red than in the blue.**
6. **Unless systematic ellipticity errors are within the requirement, additional area provides little or no benefit.**

Kocevski et al. http://www.arxiv.org/pdf/1109.2588

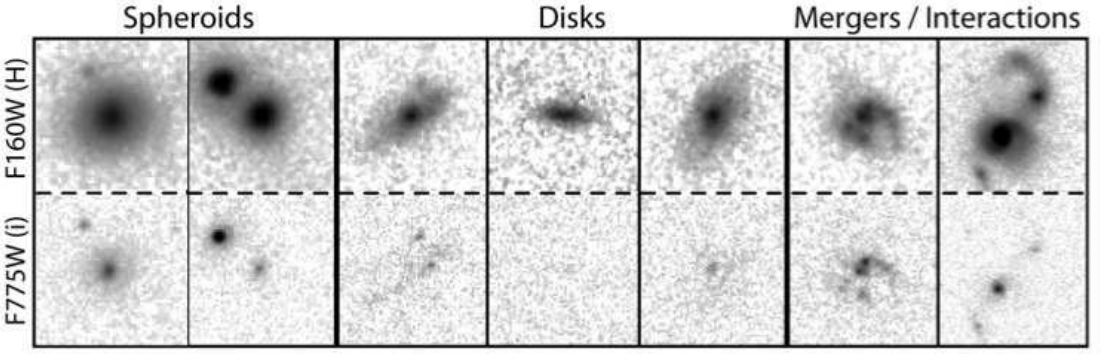

FIG. 3.— Examples of AGN host galaxies that were classified as having spheroid and disk morphologies, as well as two galaxies experiencing disruptive interactions. Thumbnails on the top row are WFC3/IR images taken in the F160W (H) band (rest-frame optical), while those on the bottom row are from ACS/WFC in the F775W (i) band (rest-frame ultraviolet). These images demonstrate that accurately classifying the morphology of these galaxies at $z \sim 2$ requires H-band imaging.