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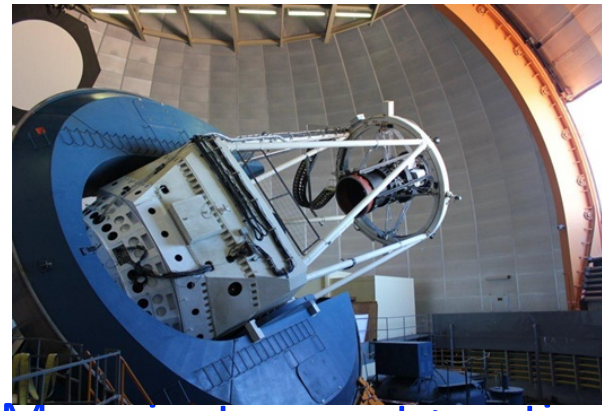
CV@FNAL 11/10/15

Moving DESI

- Major DOE/HEP Investment
- Mayall and Blanco Telescopes are nearly identical



- Move instrument + entire top ring

To be considered:

- Significant down time for 2 facilities
- DESI-North has no design margin for additional seismic loading (required at CTIO)
- Blanco has faster f/2.9 beam
- Blanco Availability

Moving DESI

Cost Estimate (based on DESI installation cost, thanks to D. Sprayberry (NOAO)

Assumption: Cost of removing DESI from the Mayall similar to the installation cost

Remove DESI from Mayall	$2.6M
Shipping, Insurance, Prep. Work	$0.7M (based on Newfirm experience)
Remove DECam from Blanco	$1.0M (my estimate)
Install DESI on Blanco	$2.6M
Misc. (cable wraps, TCS interface)	$1.0M (my estimate)
Total	**~$7M + contingency**

Cloning DESI

Major R&D performed for DESI

Can a new instrument be built for the Blanco at reduced cost?

We are just getting started with multi-object spectroscopic surveys.
A lot will be learned from ongoing projects in the next 5-10 years.

(also check the DESspec white paper arXiv:1209.2451)

DESI	Very large fiber positioner system (5000)
	Spectrographs
4most	Tilting Spine Positioners
	High resolution option
PFS	Yet another positioner technology
	Lenslets on fibers
	NIR channel to 1300 nm

Cloning DESI

How much would it cost? (just to set the scale, not to promote a particular solution)

(thanks to R. Besuner, LBNL)

Assumptions: reuse DECam corrector

no ADC (+ $1M)

~1500 DESI like actuators and 3 or 4 spectrographs

R&D	$2M
Spectrographs	$6M
Focal Plane	$2M
New C5 lens	$1M
Guider, Alignment	$1M
Fiber System, Shack…	$1M
DAQ, Data Systems	$2M
DECam removal, new instrument installation	$3M
Management (@15%)	$3M

Instrument	**$21M**
+ contingency	**$6M**
Total	**$27M**