NYAC Partnership with the International Gemini Observatory

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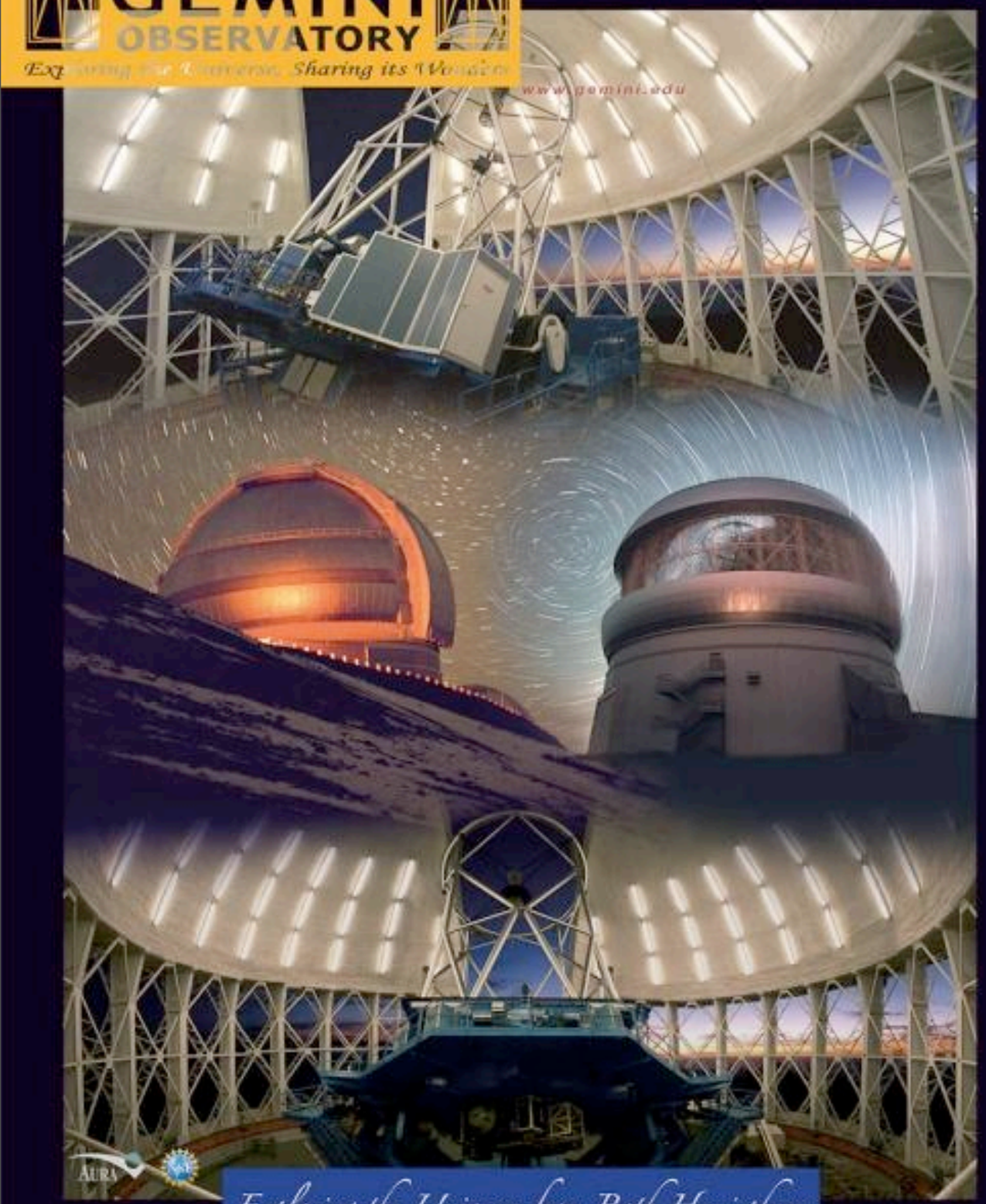
GEMINI OBSERVATORY

Exploring the Universe, Sharing its Wonders

www.gemini.edu



AURA

Exploring the Universe from Both Hemispheres

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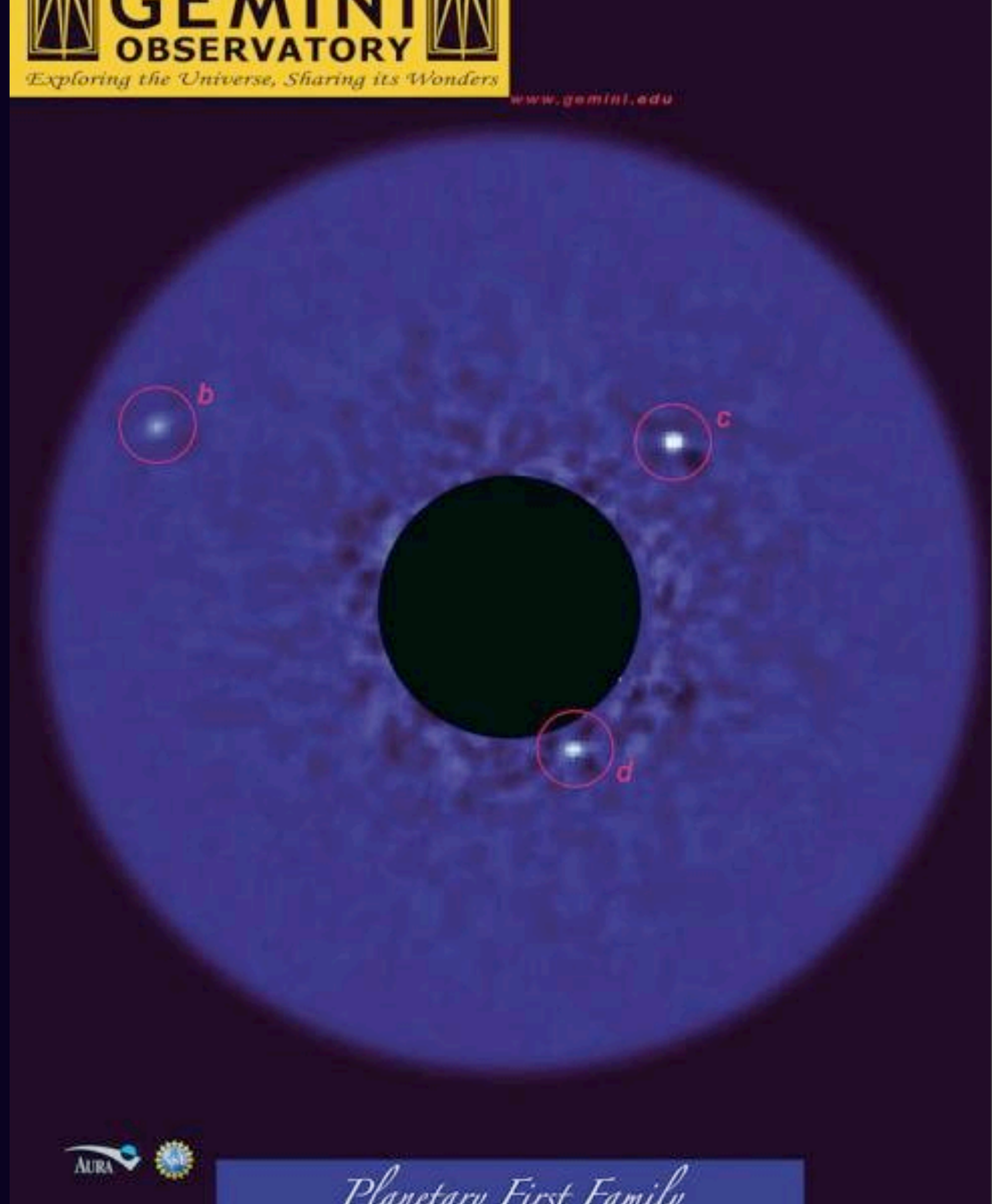


AURA

Planetary First Family

International Partnership

	Cost	Time
NSF	50.119%	53.91%
STFC (UK)	23.81%	22.00%
NRC (Canada)	15.00%	13.86%
ARC (Australia)	6.19%	5.72%
CONICYT (Chile)	0%	0.0%
CONICET (Argentina)	2.381%	2.2%
MCT (Brazil)	2.5%	2.31%

U. Hawaii receives 10% of Gemini North, Chile receives 10% of Gemini South
Partners have also traded their shares with each other

Total budget (operations + facilities + instrumentation)
for both telescopes is ~$40M/yr

Gemini time is partly fungible with Subaru and Keck

Instrumentation capabilities

GMOS (multi-object, long-slit and IFU spectrograph and imager)
NIRI (1-5µm imager with grism spectroscopy)
Michelle (10-20µm imager/ spectrometer; imaging polarimetry)
ALTAIR (facility natural/laser guide star AO system)
NIFS (1.0-2.5µm integral field spectrograph)
TEXES** (visiting 10-20µm high resolution spectrograph)
GCAL (facility calibration unit)
GNIRS* (1-5µm long-slit and 0.9-2.5µm cross-dispersed spectrograph; formerly at Gemini South)

GMOS (multi-object, long-slit and IFU spectrograph and imager)
Phoenix*** (high resolution spectrometer)
T-ReCS (formerly known as MIRI; imager and spectrometer)
GCAL (facility calibration unit)
NICI (coronagraphic imager)
MCAO (Canopus)* (Multi-conjugate adaptive optics system)
FLAMINGOS-2* (multi-object spectrograph)
GSAOI* (high-resolution imager for use with Multi-Conjugate Adaptive Optics system "Canopus")

AO/ELT case

- Gemini is the most advanced observatory in the MCAO/Laser Guide Star/Extreme AO regime
- ELTs will operate almost entirely in one of these modes
- If these capabilities do not deliver, then likely neither will the ELTs
- Being scientifically successful with Gemini will be good preparation for the ELT era

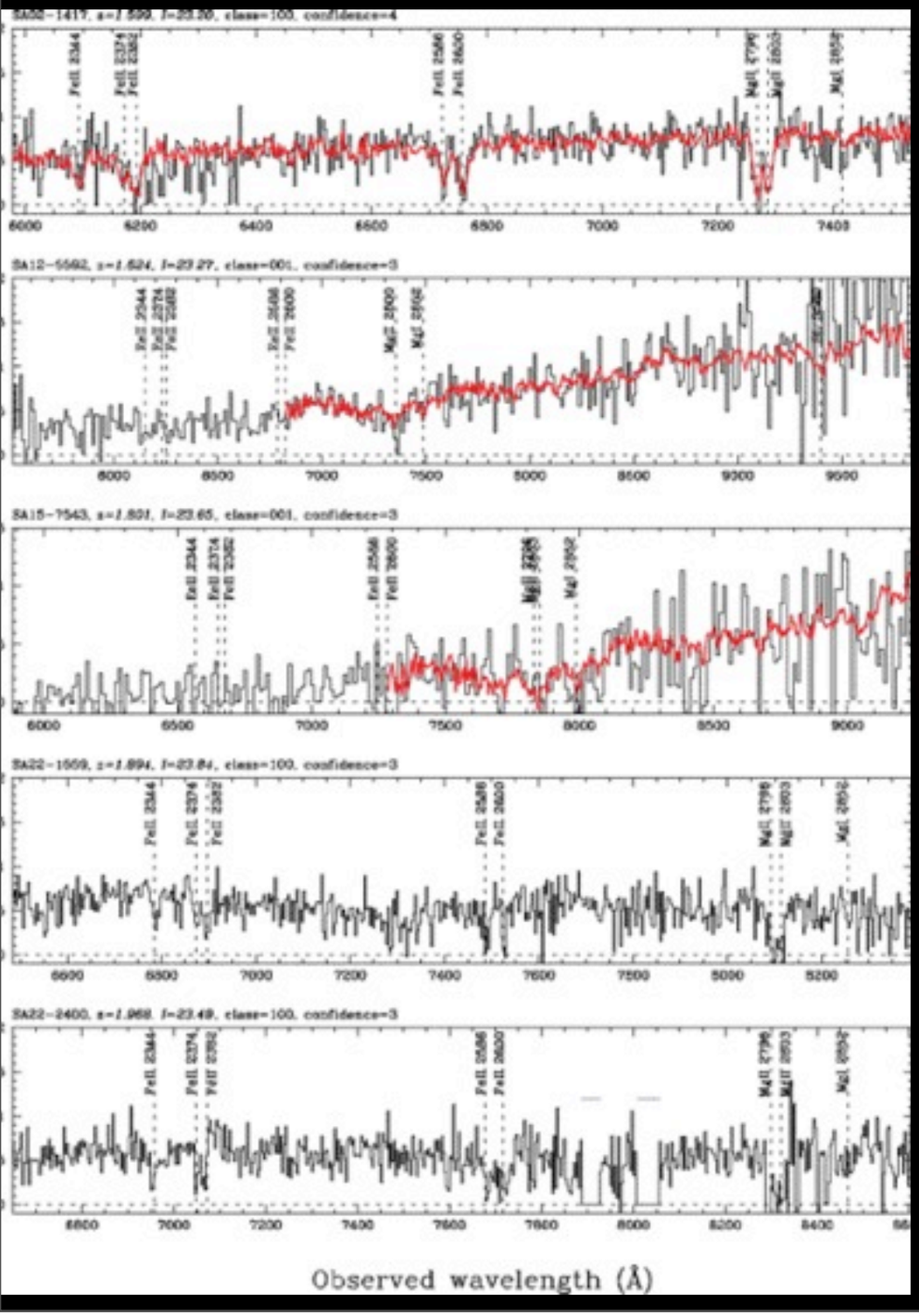
Post 2012

- The UK has expressed its intention to withdraw at the end of the expiry of the international agreement, Dec 31 2012
- Gemini is planning for a 25% reduction of operation budget by streamlining, shedding scientific staff, retiring instruments and suspending instrumentation development
- Any incremental funding would likely go to instrumentation development.

Receptiveness of Gemini

- Positive contacts with:
  Doug Simons (Gemini Director)
  Nancy Levenson (Deputy Director/HoS)
  Larry Ramsey (Chair of Gemini Board)
- Rumors are that there are rumors of a NYAC partnership
- Brazil has expressed an interest in a larger share, but also wishes to join ESO
- Possible opportunity to present to the board in May 2011.

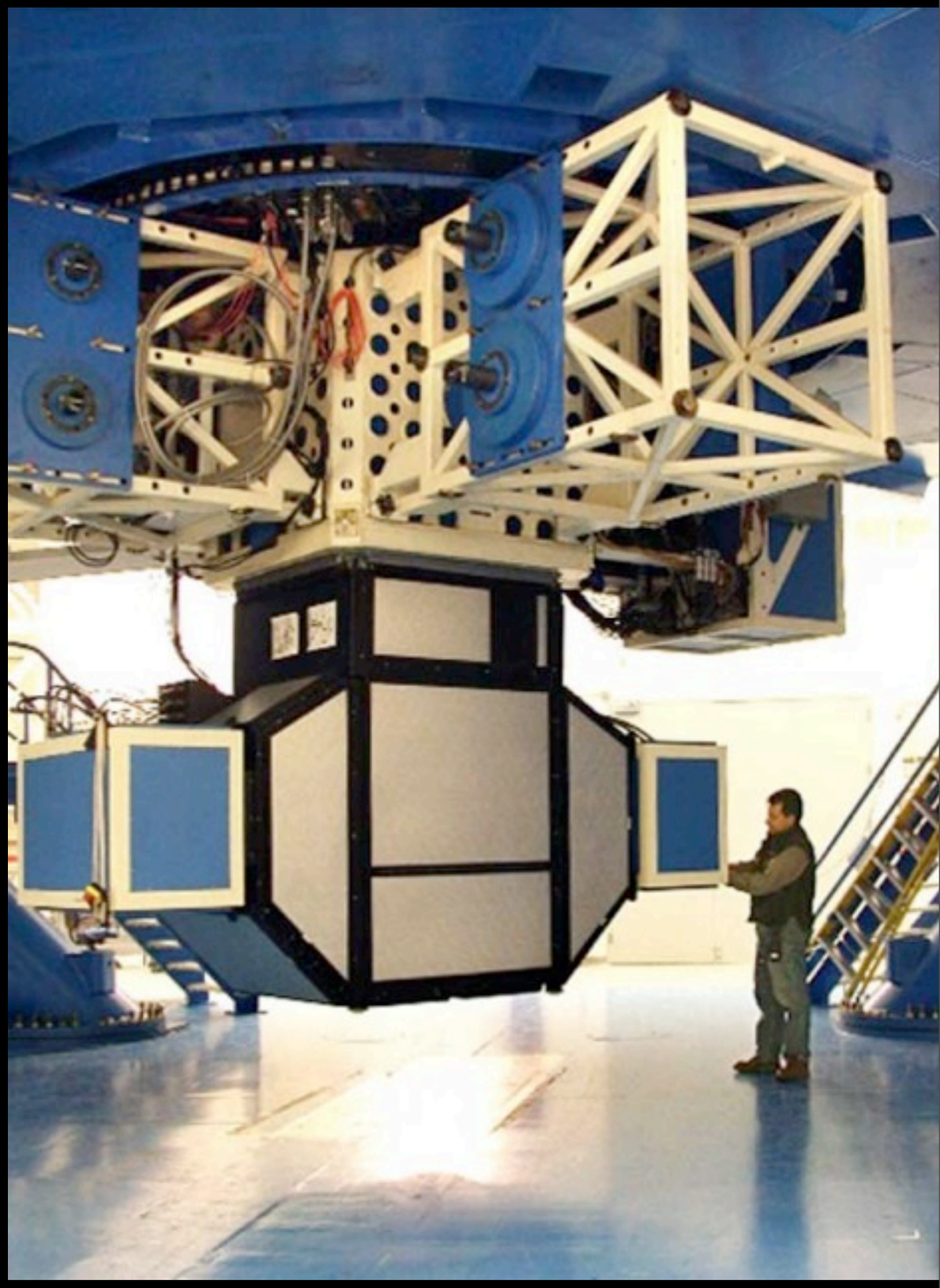
Science



- Gemini has obvious scientific breadth
- I am soliciting for specific instances of science interests within NY state - all contributions are welcome (subject to being made to fit)

Instrumentation

- Gemini has expressed immediate interest in an X-Shooter (0.3-2.5 micron spectrograph) or 4k IR imager to replace NIRI
- High resolution IR spectroscopy is also a clear niche
- These are well matched to instrumentation capabilities within the state, and lead to the idea of a center related to astronomical technology
- Suggestions and participation in formulation of such a center is welcome

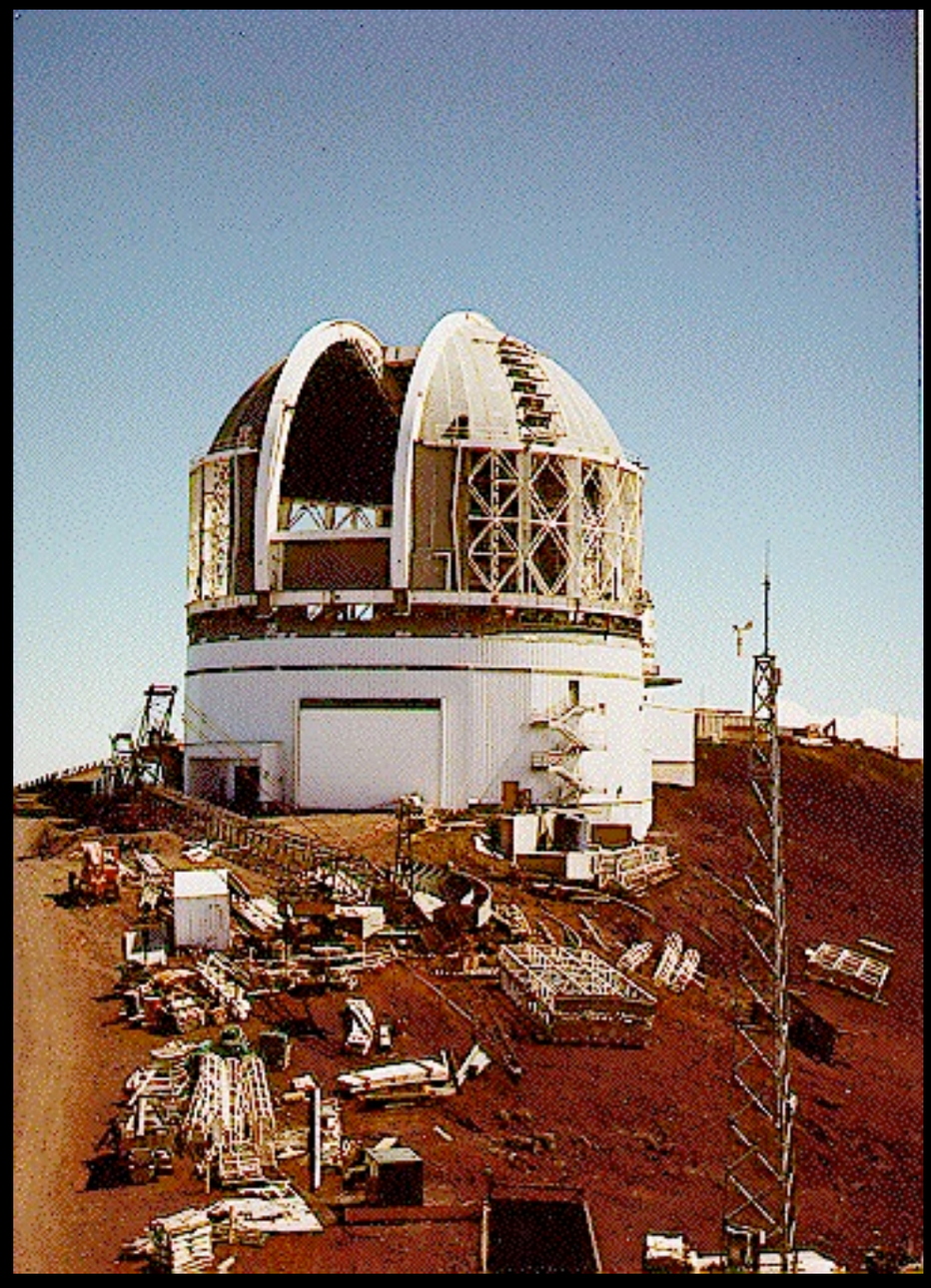


Attracting Federal Funding

	AAS Members	Federal Funding	
CA	>1000	JPL	$1.3B
MD	777	STSci, GSFC, APL	>$1B
MA	533	SAO	>$100M
AZ	392	NOAO+...	$28M+...
NY	322	???	???

Pitfalls

- What's the minimum share of interest?
  - 10% of 50% is 5%
- In-kind contributions will be treated with suspicion, yet it is likely the state will be reluctant to send money out of state
- Chicken vs Egg



Open invitation

- Please contact jpl@astro.cornell.edu if interested in particpating