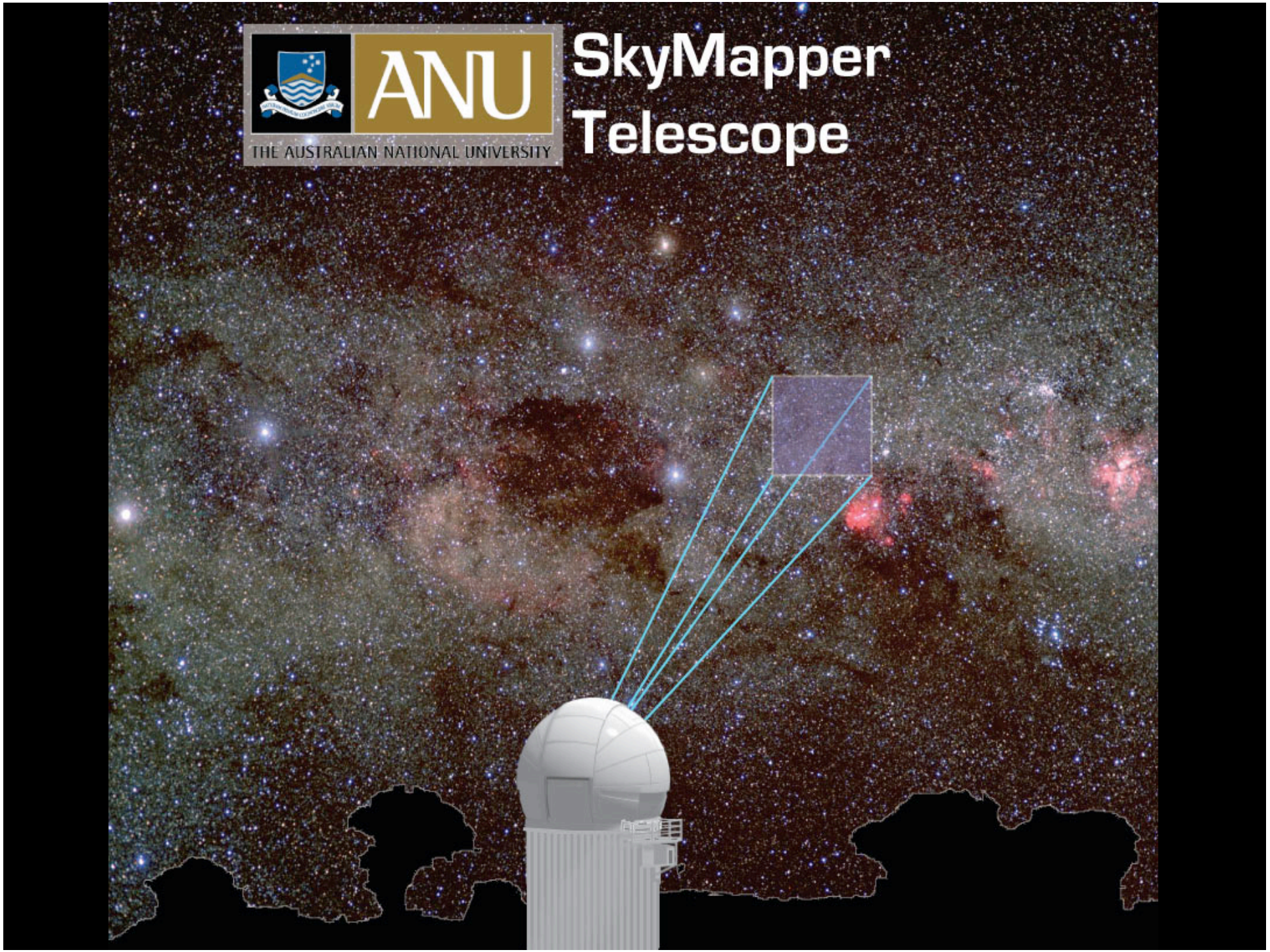
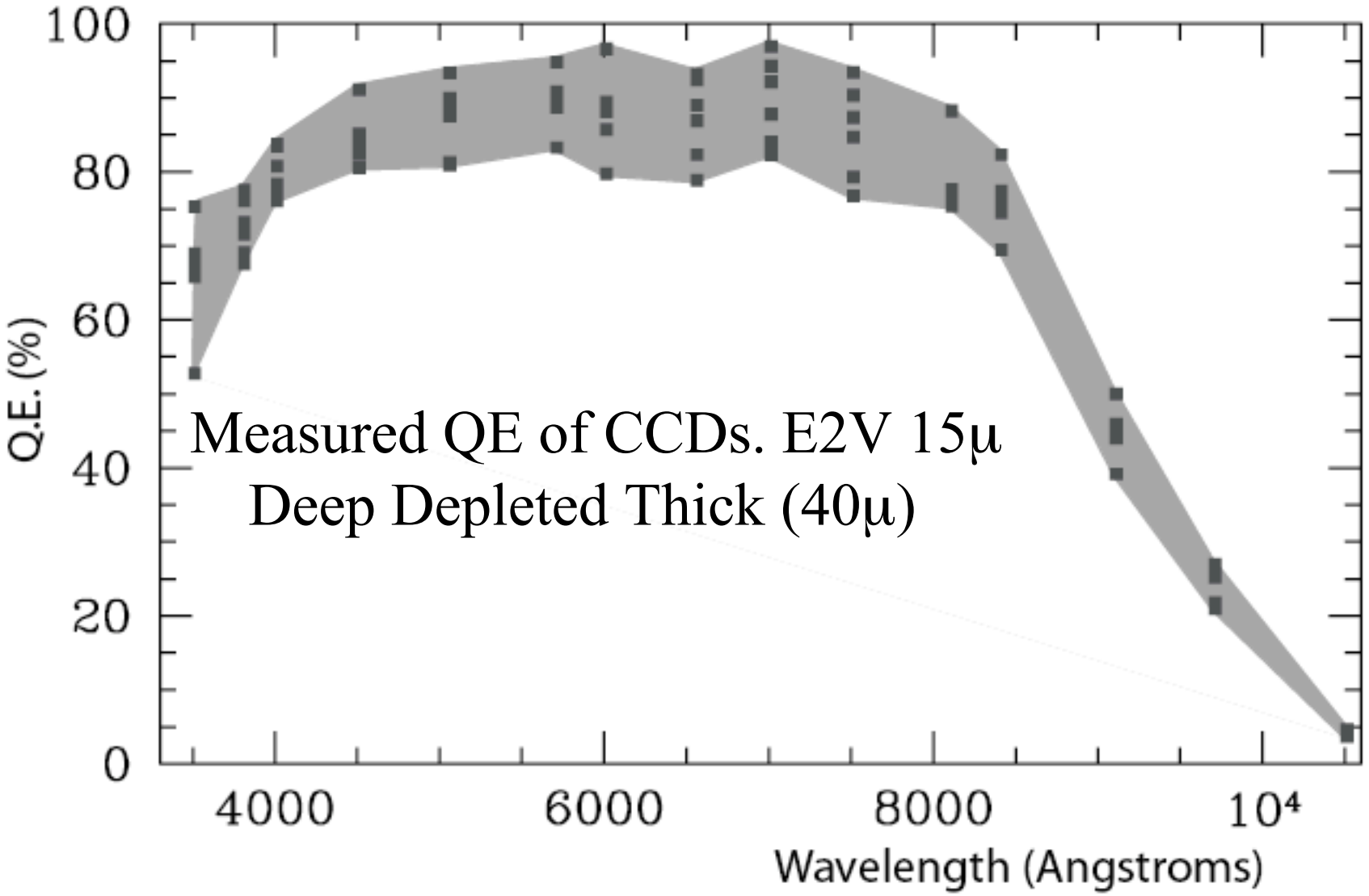
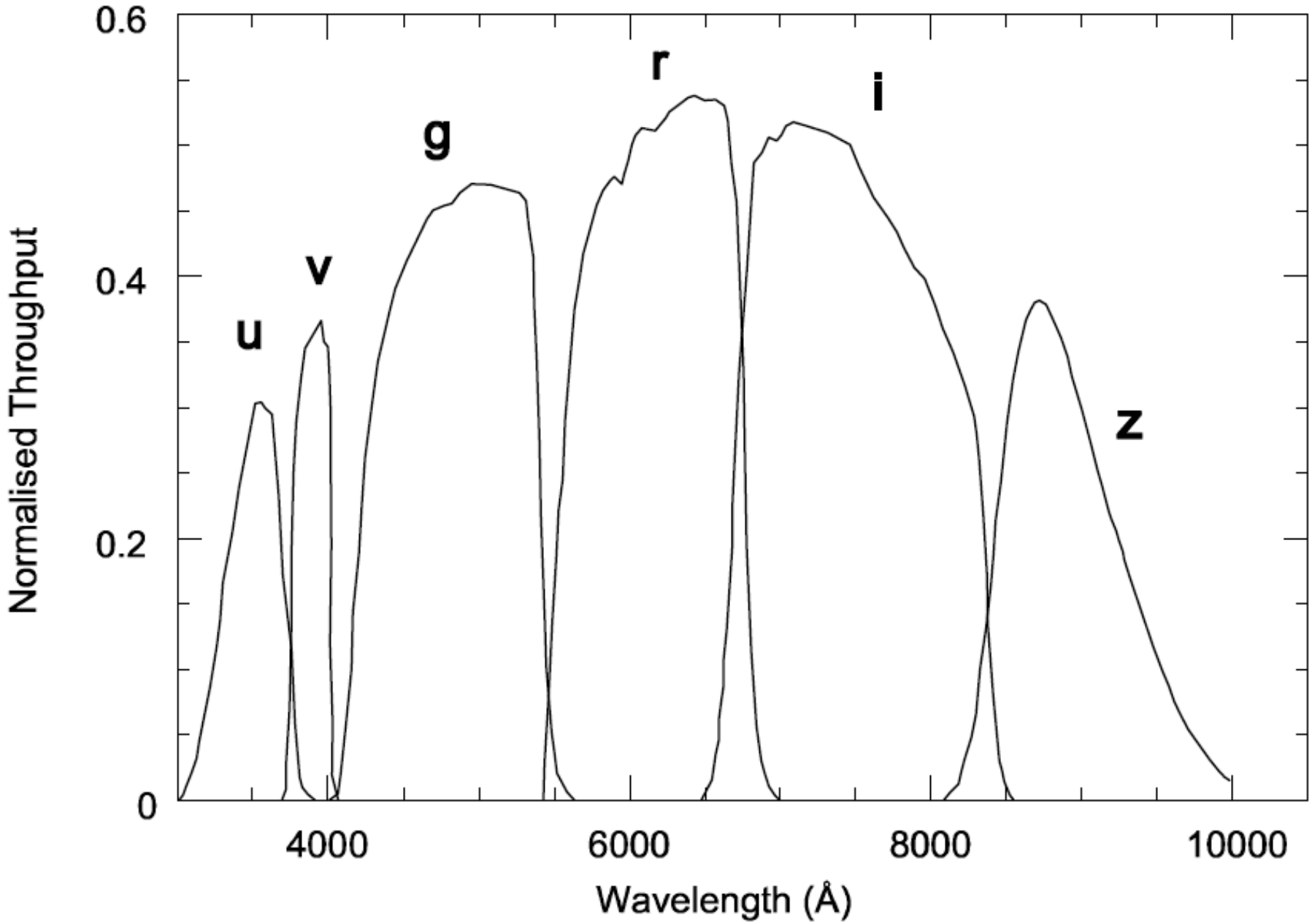

ANU
THE AUSTRALIAN NATIONAL UNIVERSITY
SkyMapper
Telescope

SkyMapper vital stats...

- 1.35m telescope with 5.2 sq degree imager (16k x 16k) covering 5.7 sq degrees
- 12s readout time and filter exchange
- All Southern Sky Survey (2pi steradians) 6 colours @ 6 epochs
- First light scheduled for Aug this year.



Measured QE of CCDs. E2V 15μ
Deep Depleted Thick (40μ)


0.6
0.4
0.2
0
Normalised Throughput
u
v
g
r
i
z
4000
6000
8000
10000
Wavelength (Å)

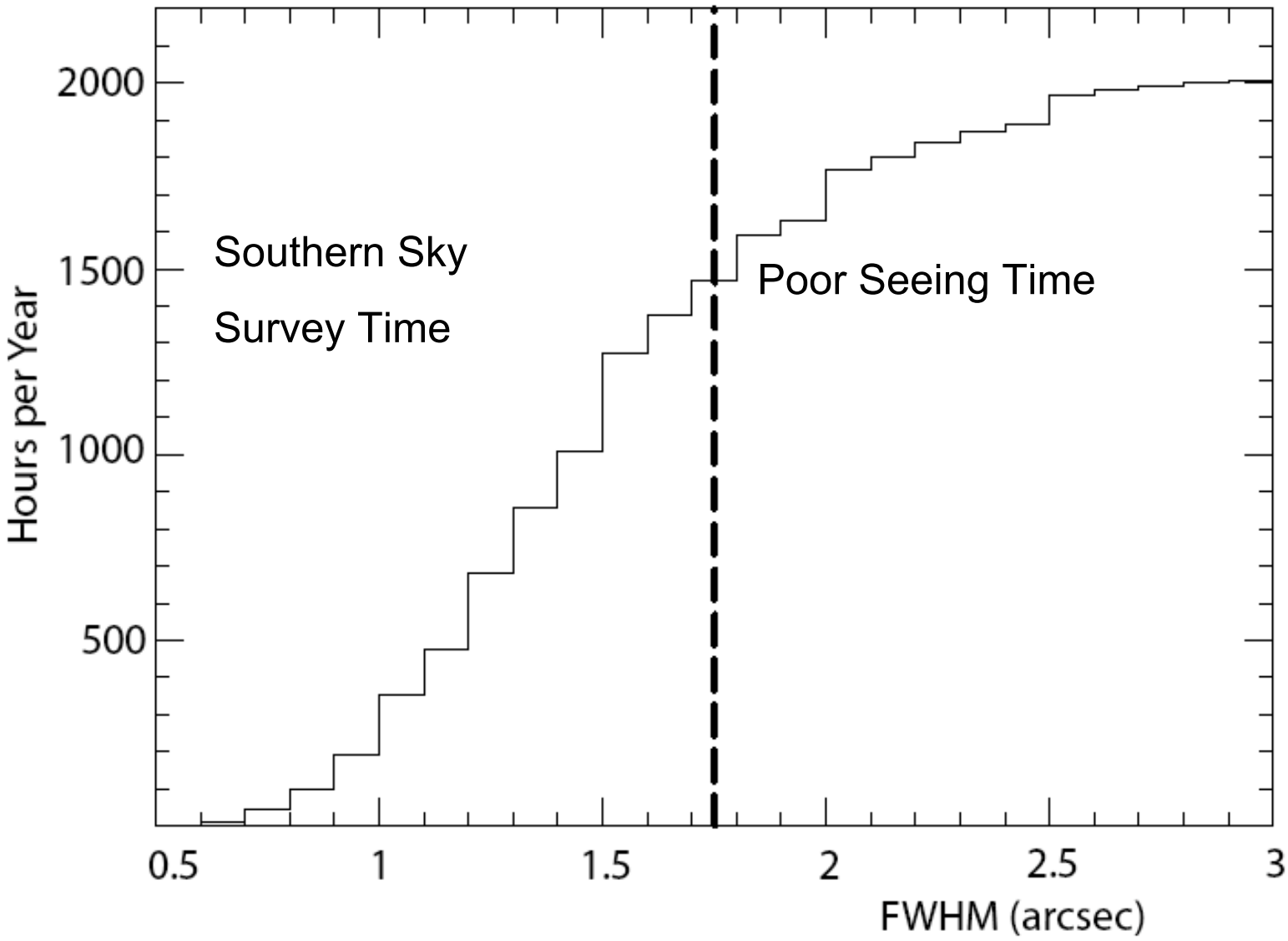


Figure 3: Seeing at Siding Spring derived from logs of the Anglo-Australian Telescope.

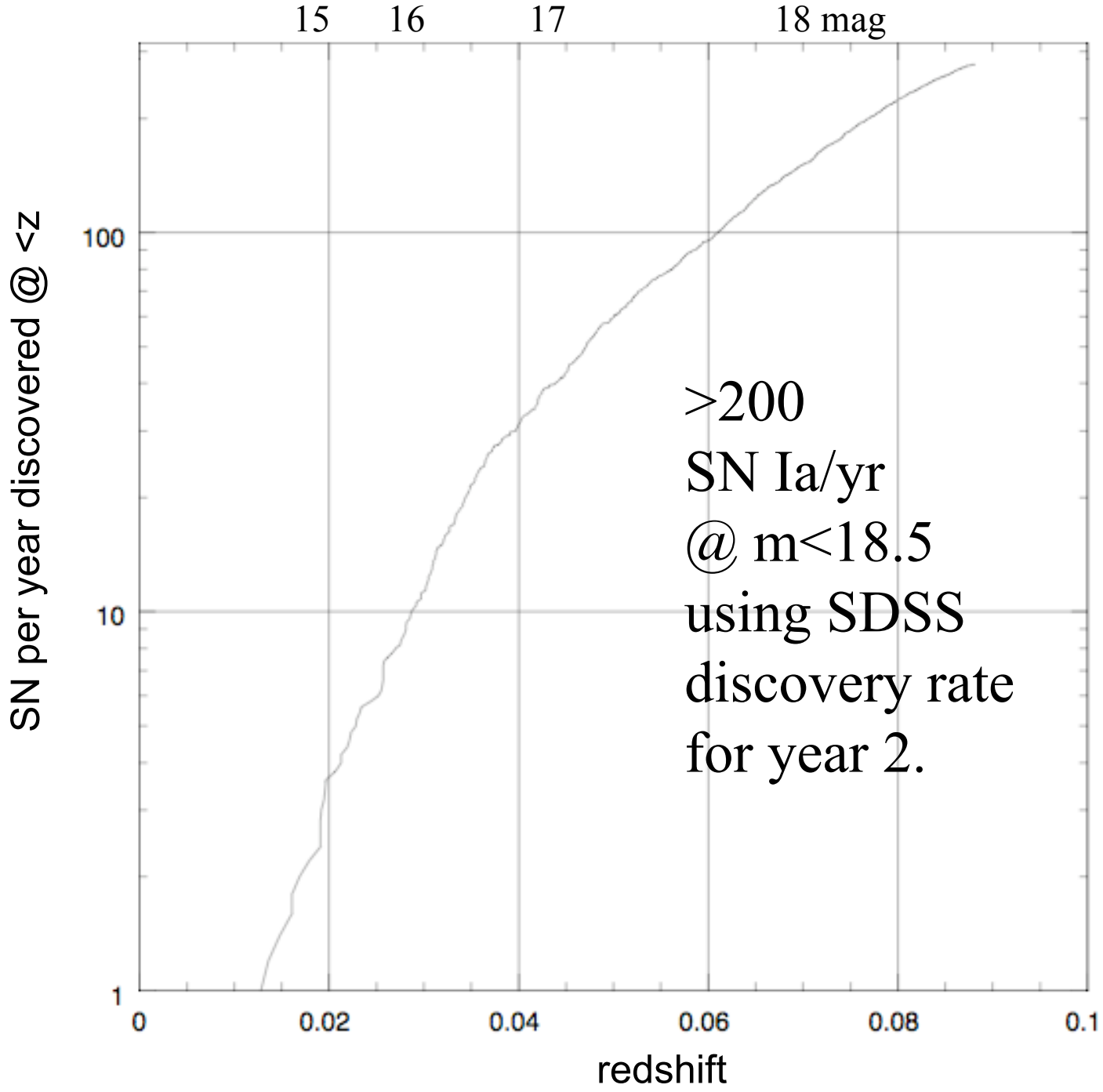
Sensitivity - SNR=10 Vega Mags

	u	v	g	r	i	z
30s 2” D	18.6	19.1	20.4	19.7	18.8	18.1
30s 2” G	18.3	18.9	20.1	19.5	18.7	18.0
30s 2” B	17.1	18.1	19.0	18.9	18.3	17.7

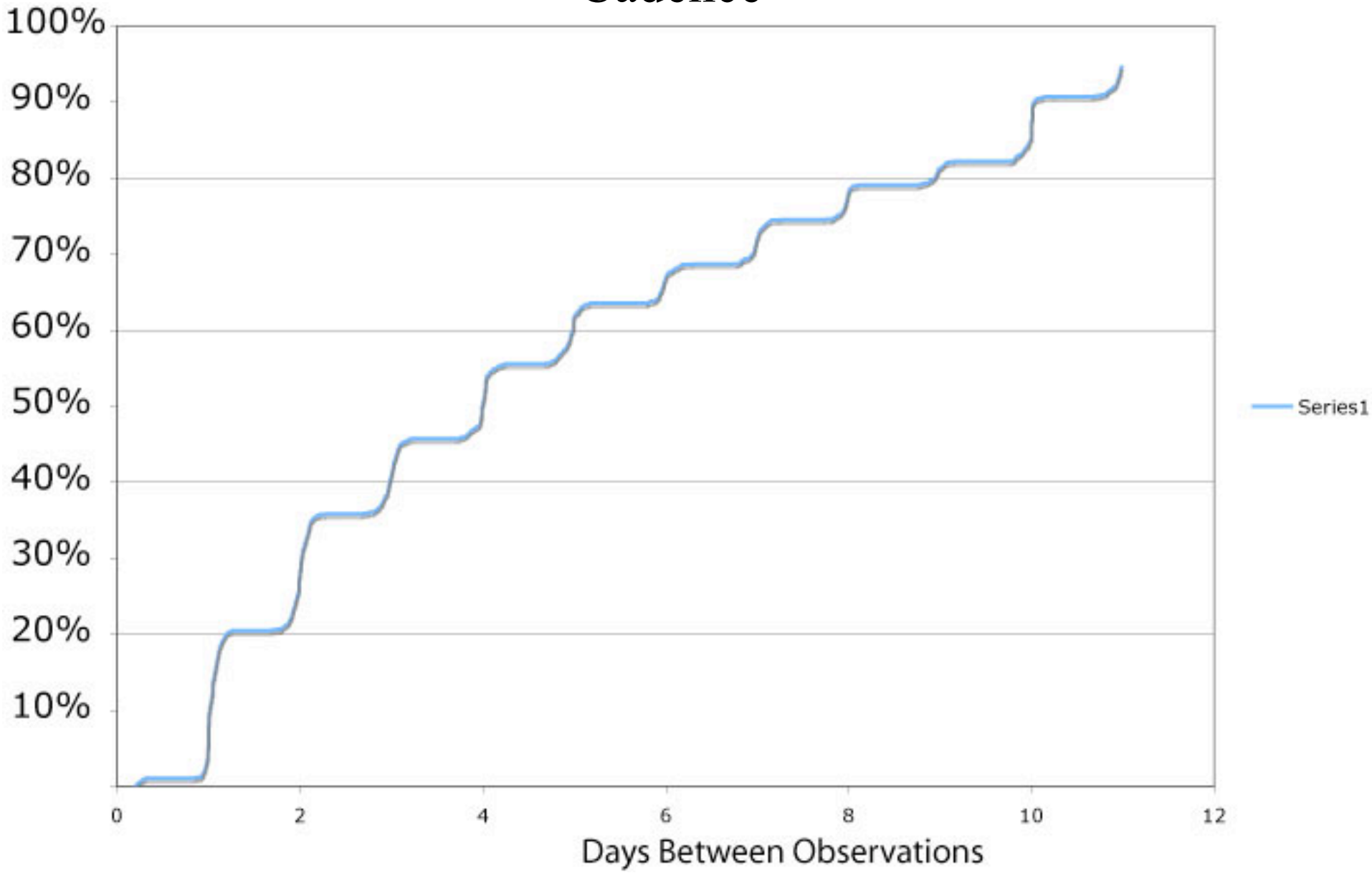
Survey

- Survey Speed: 2 minutes per field (v,g,i)
  - 1250 sq/degrees per 8hr night.
  - Use bad seeing time (worst 1/3rd + augment with 60hrs/year to fill in gaps) to do 1250 sq/degree continual SN search
  - Spectroscopic follow-up of anything brighter than 18.5
  - In collaboration with IN2P3 (Pain, Austier, Guy, Regnault,..) Data Reduction on ANU Super Computing Facility (1850 itanium II + Petabyte mass storage system)

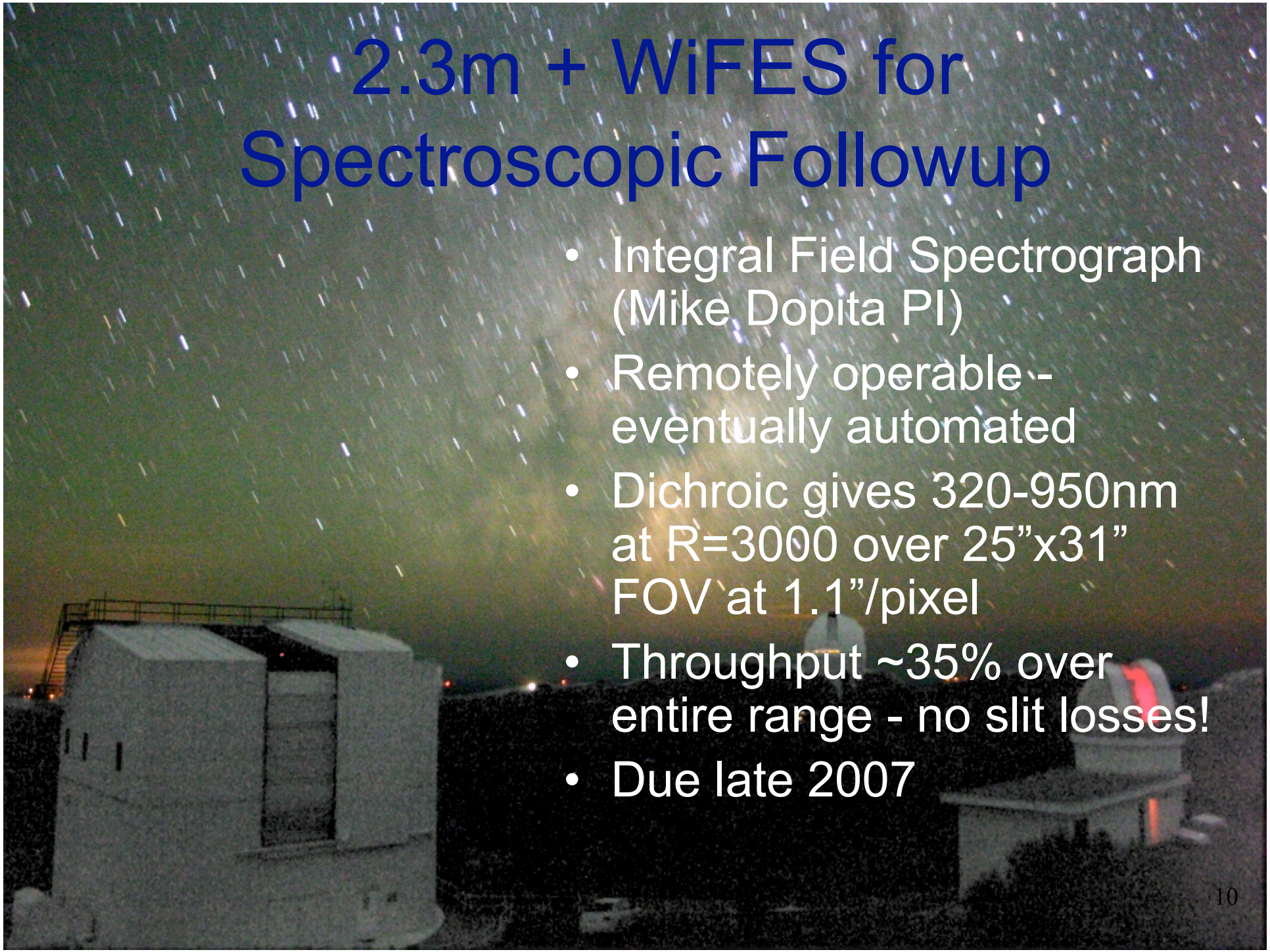
Simulations using last 7 years of seeing data from AAT.


15
16
17
18 mag
SN per year discovered @ <z
100
10
1
0
0.02
0.04
0.06
0.08
0.1
redshift
>200
SN Ia/yr
@ m<18.5
using SDSS
discovery rate
for year 2.

Cadence


100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0
2
4
6
8
10
12
Days Between Observations
Series1

2.3m + WiFES for Spectroscopic Followup



- Integral Field Spectrograph (Mike Dopita PI)
- Remotely operable - eventually automated
- Dichroic gives 320-950nm at R=3000 over 25”x31” FOV at 1.1”/pixel
- Throughput ~35% over entire range - no slit losses!
- Due late 2007

Science

- Hubble Diagram of 1000 SN Ia at cz<0.1
  - ability to choose unreddened objects
  - abundance and star formation info for all objects
  - complement to the large samples of z>0.1 objects
  - population vs. environment.
- ~300 Core Collapse objects
  - unbeamed GRBs
  - Nucleosynthetic output of SN II
  - abundance and star formation info for CC SN.
- Largest sample of wierdos...

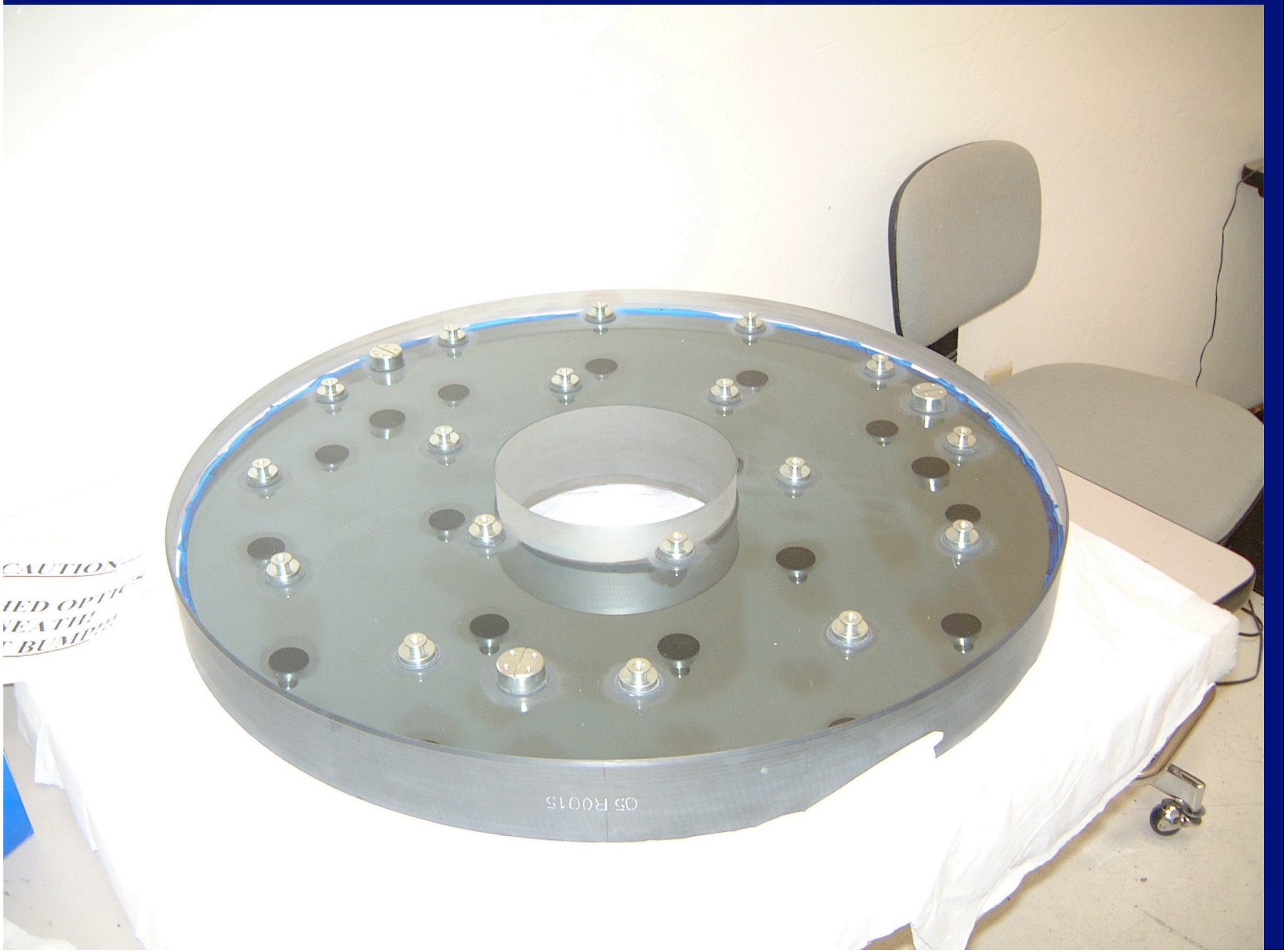
Data Release

- Data taken and transferred via Gigabit Link to ANU and reduced within 24hours.
- New objects flagged, but not id'd as SN until second epoch (unless bright).
  - id'd objects released to public
- New objects observed using 2.3m
  - spectral id's made public.

- light curves and spectra will remain proprietary, but we are open to collaboration.

SkyMapper Progress

- All major components of telescope and imager in place.
- Telescope undergoing final integration and testing as EOS- Tucson
- Dome being constructed at Siding Spring - finished ~end of June
- Telescope to be shipped and tested on site (first light) - late July/August
- Commissioning August/Sept by ANU
- integration of ANU-16kx16k imager Sep/Oct/Nov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