Mansi M. Kasliwal
(Hubble & Carnegie-Princeton Fellow)

On behalf of: ZTF, CRTS & LSST

CRTS/CSS

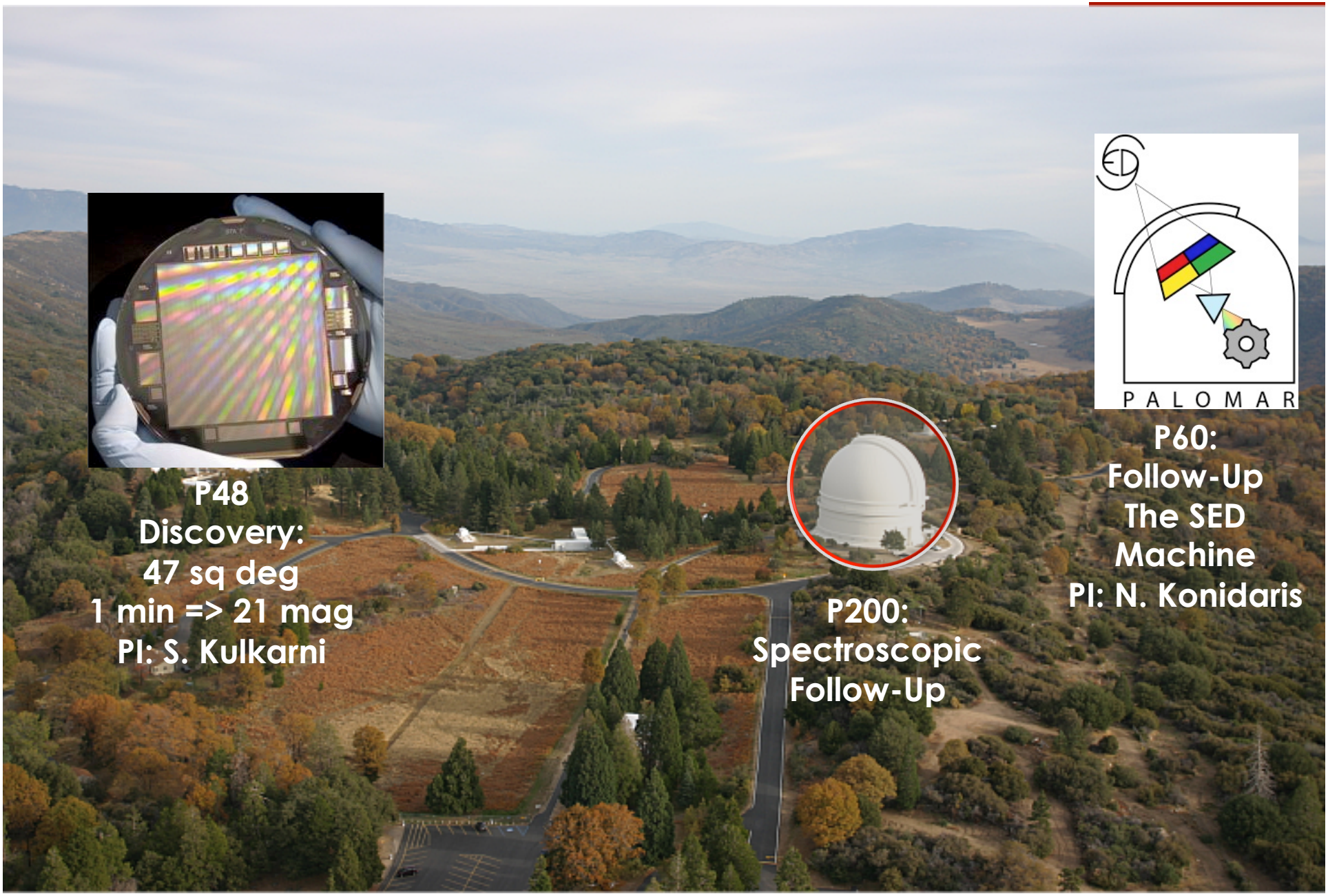
Soon:

Telescope	FOV (sq. deg)	Pix. Scale	Sq. deg/ night	Limiting V mag (1 epoch)
MLS 1.5m	5.1	0”.77	800	21.3
CSS 0.7m	19.4	1”.5	3600	19.5

Additional data streams are also expected

- **Independent mode**
- Follow-up: 12-24 hour turnaround time. Likely much faster.
- 2-3 actionable alerts/month (in observable space)
    - 24 nights/month
    - away from moon
    - excluding Milky Way
    - ~35% time lost to weather
- NEO pattern (multiple short visits in 30-40 mins) => more follow-up
    - including 6-10 adjacent tiles
- 1m telescope for color photometry
- Existing lightcurves over 10 years are available
- Deep coadds

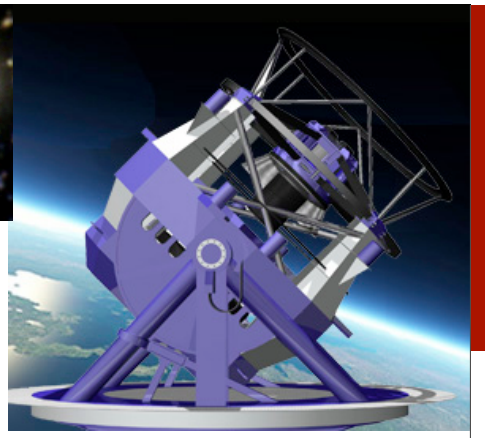
CRTS:
SG Djorgovski
AJ Drake
AA Mahabal
MJ Graham
C Donalek
CSS:
E Christensen
S Larson



The Zwicky Transient Facility

Large Synoptic Survey Telescope

the widest, fastest, deepest eye of the new digital age



LSST EM/GW group (16+ members)

Part of LSST transients collaboration (~70) chaired by A. Mahabal and L. Walkowicz.

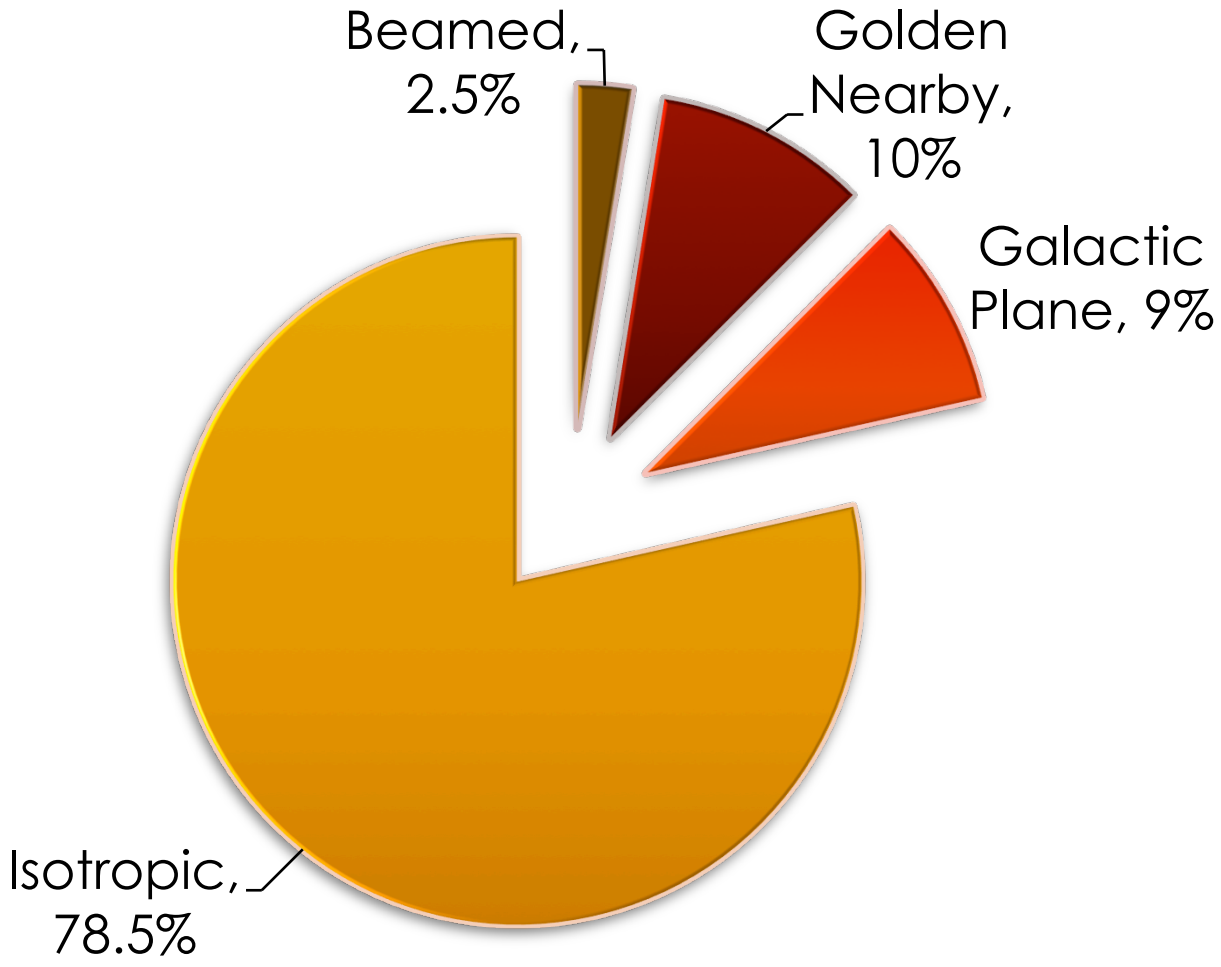
Independent MoU.

LSST: 8.4m, 9.6 sq. deg, r ~ 24.5, Chile (3π sky), 6 bands (0.3 - 1.1 microns), 1000 visits over 10 years, 2021.

ToO time fraction yet to be finalized, but definite possibility.

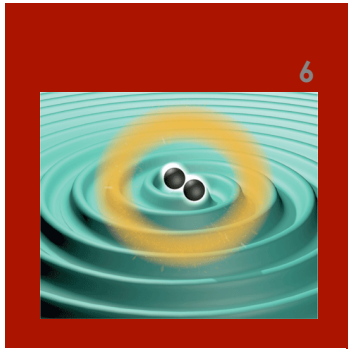
<u>Tools enabled</u>: deep sky, galaxy catalogs, false positive vetting.

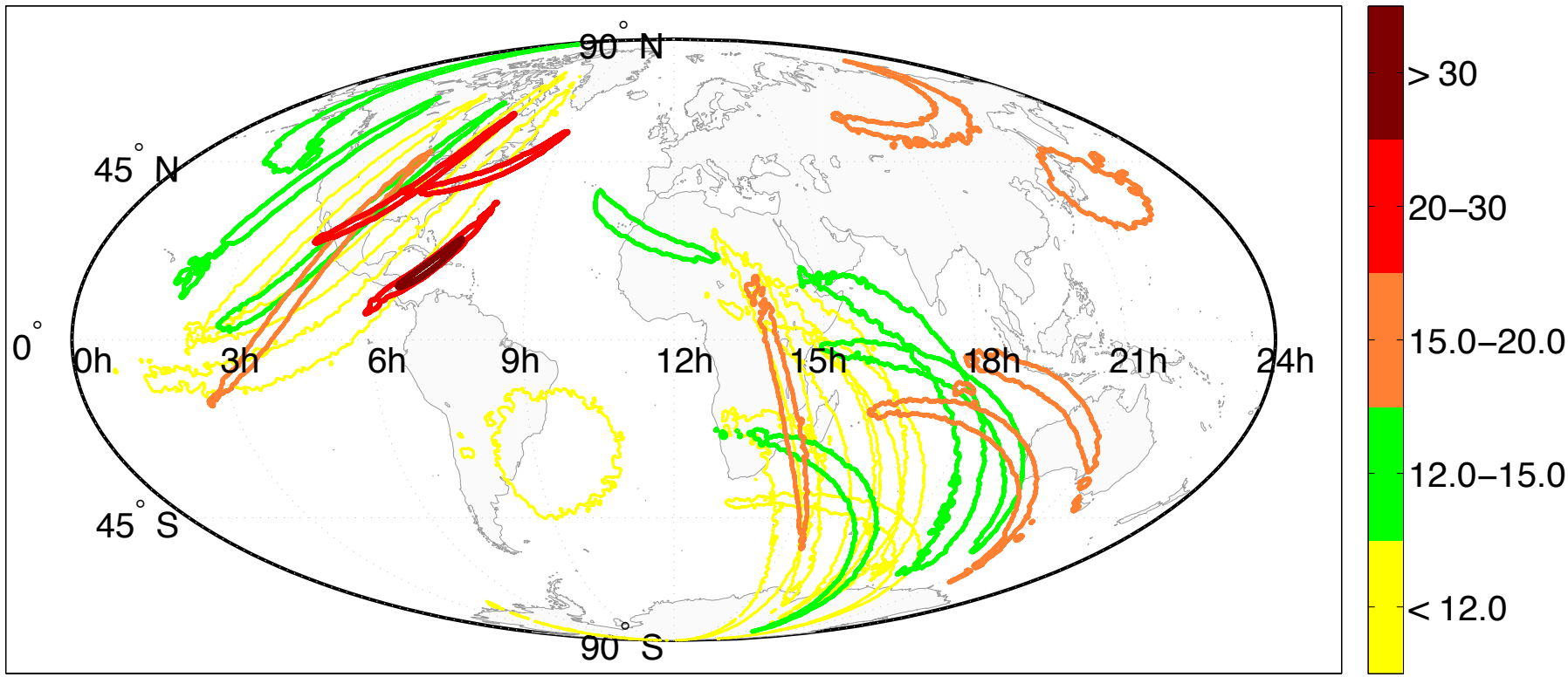
Pie of Binaries



Nissanke, Kasliwal & Georgieva 2013

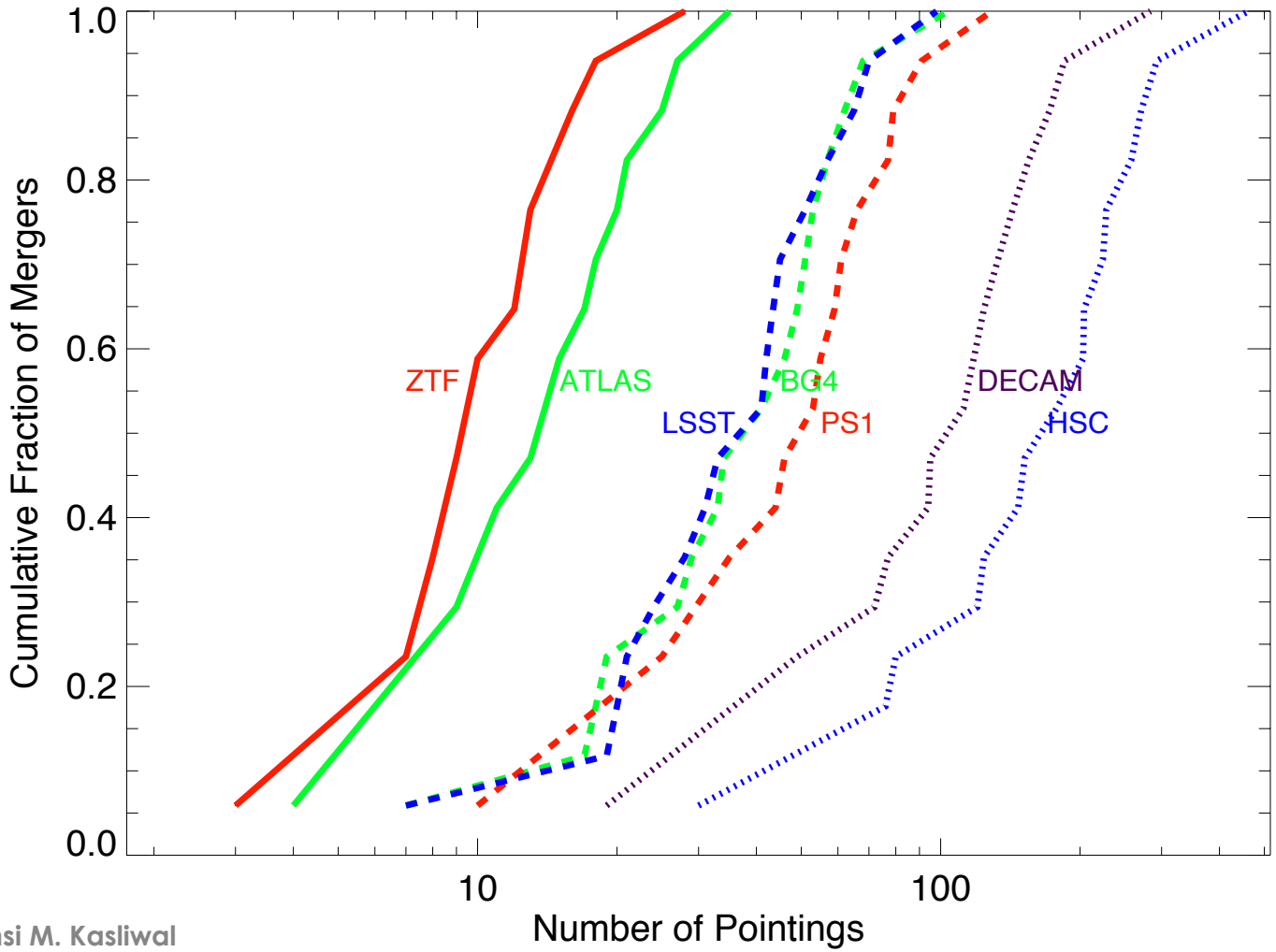
Early Days:
Two Interferometers



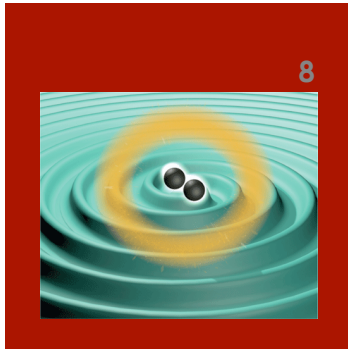


Kasliwal & Nissanke 2013

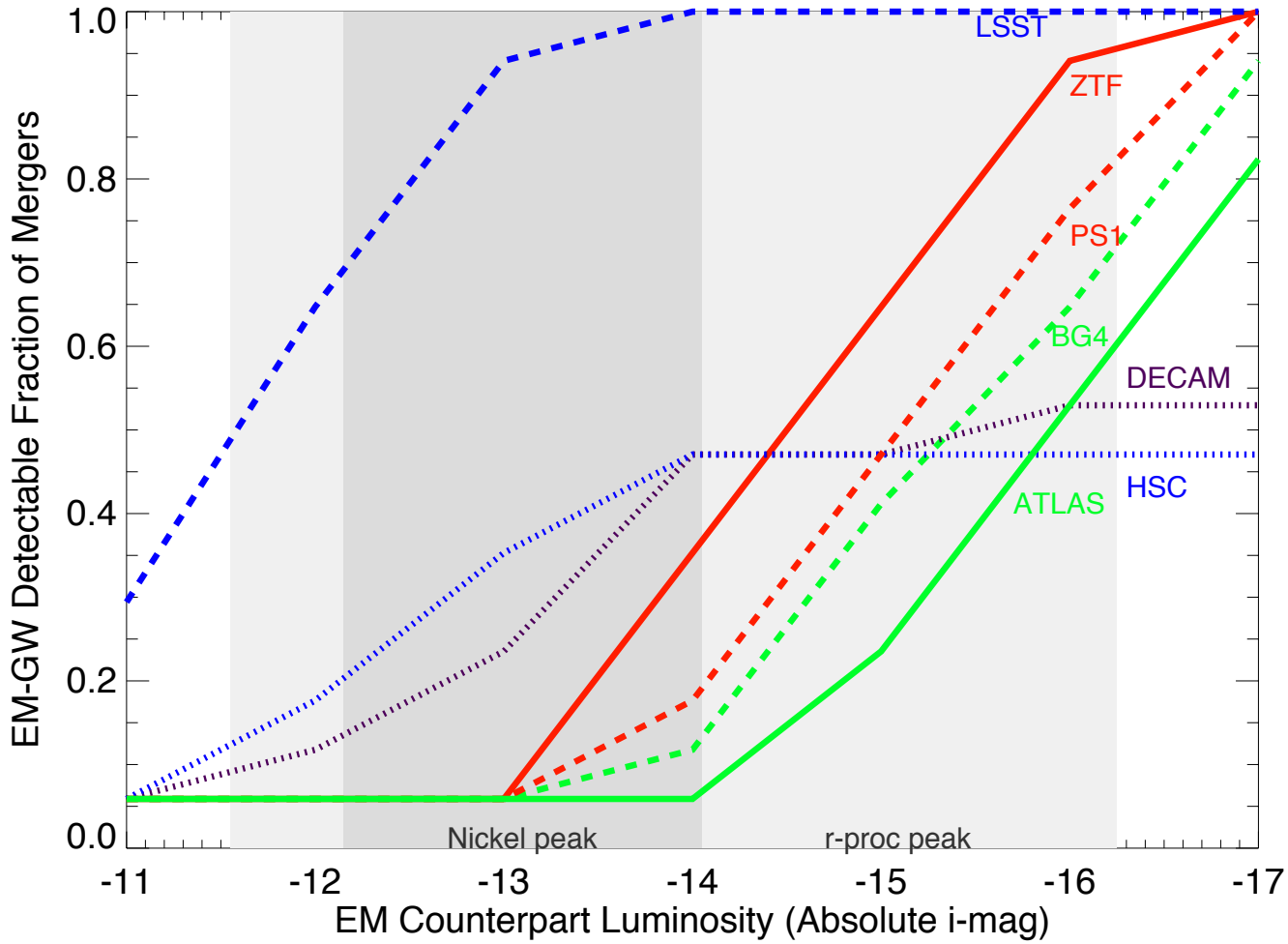
Number of Pointings



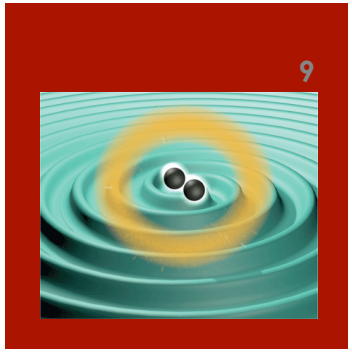
Kasliwal & Nissanke 2013



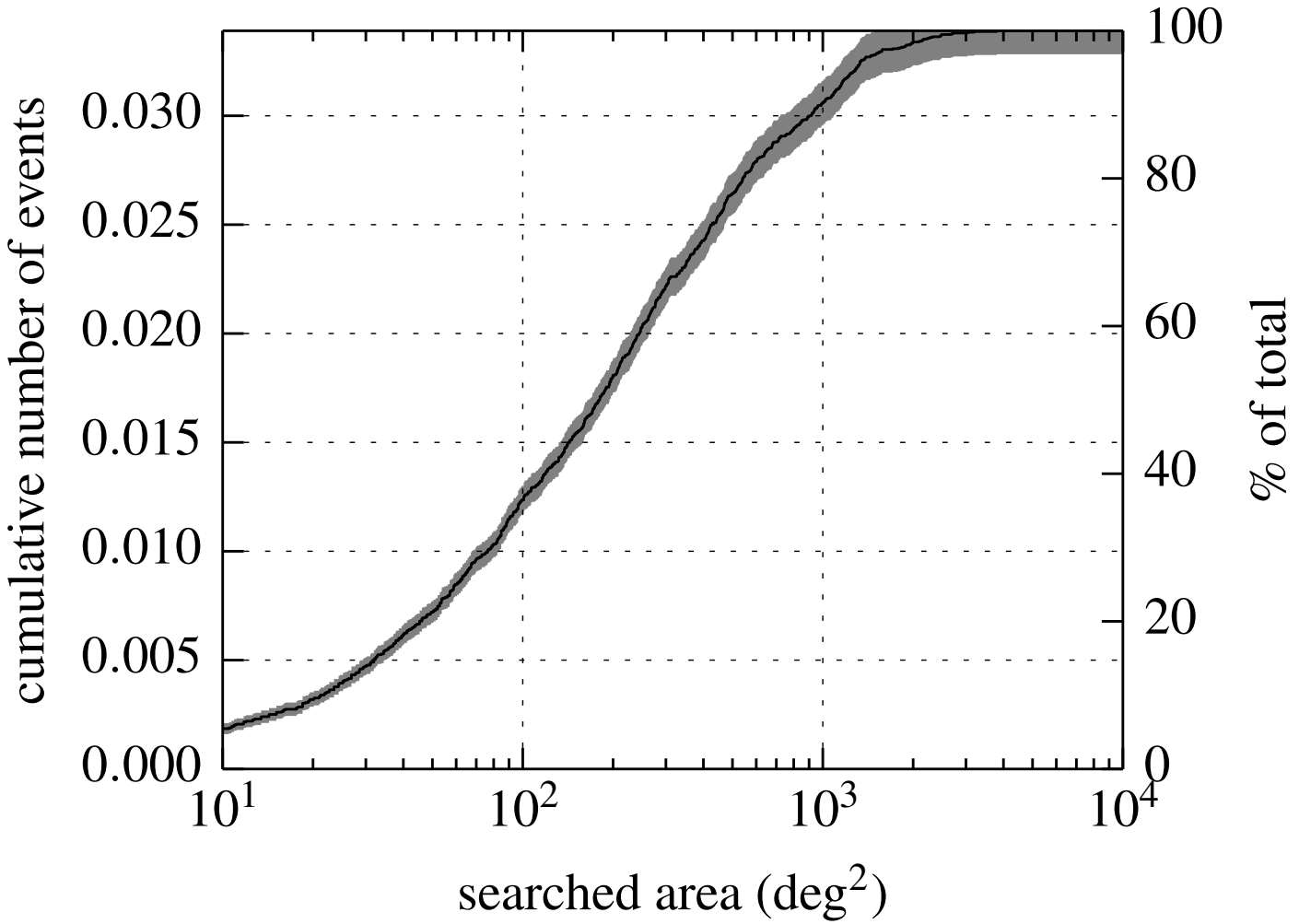
Kilonova Sensitivity



Nissanke, Kasliwal & Georgeiva 2013
Kasliwal & Nissanke 2013

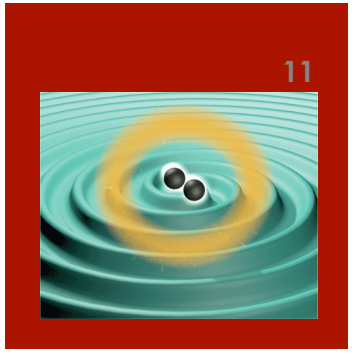


Maximizing Luck



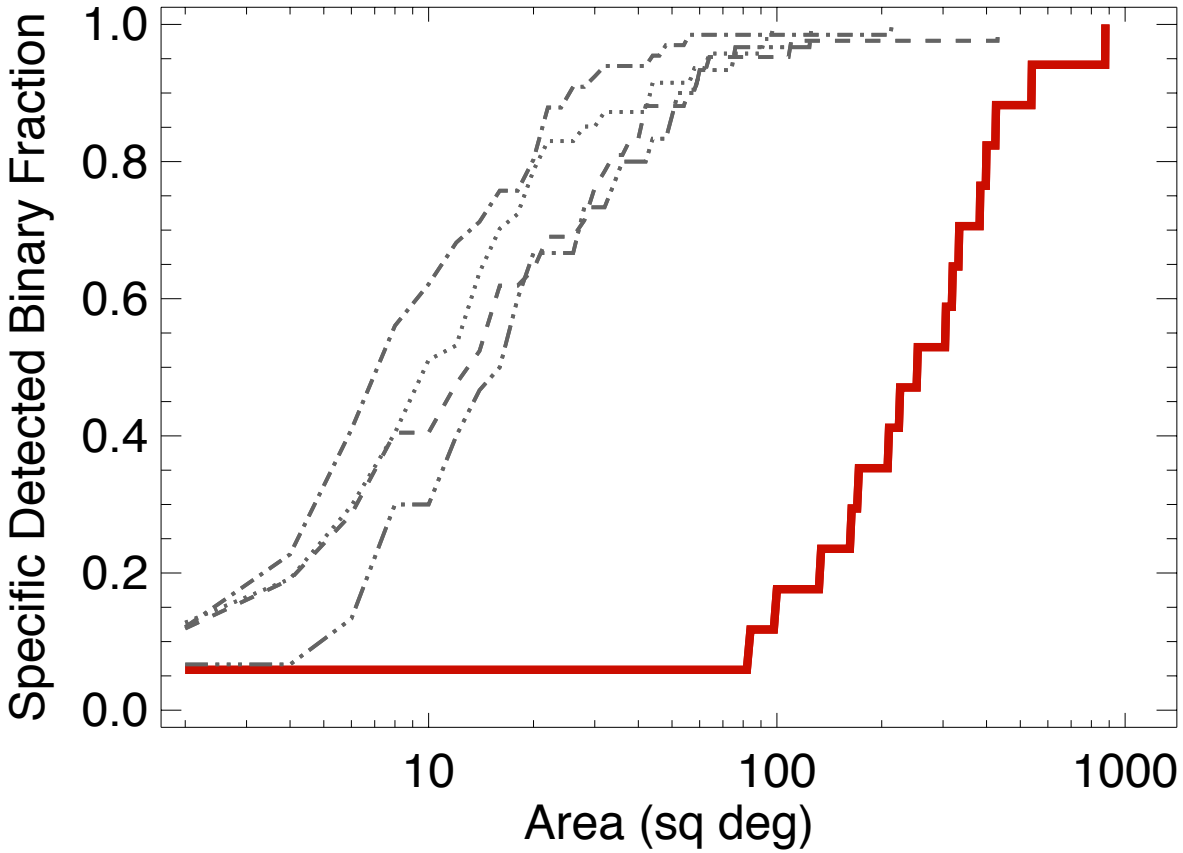
Singer, Price et al. in prep

Thank You



The Challenge

- Coarse GW Localization: 10s to 100s of sq deg



Nissanke, Kasliwal & Georgeiva 2013
Kasliwal & Nissanke 2013