How to best use SALT: maximizing your chances

Petri Vaisanen &
the SALT Astronomy Operations

Outline:

- Block principles
- Visibilities and tracks
- Target distributions
- Simulations with unexpected results
- What can you do
  - Optional targets
  - Conditions and probabilities
- Science now

SALT observing basics: Blocks

Block:

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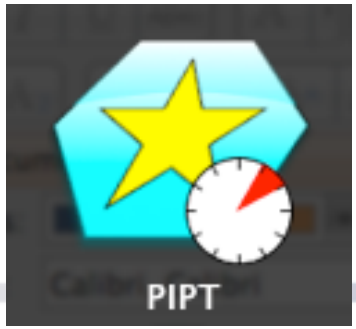

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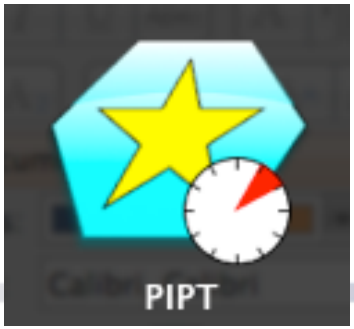

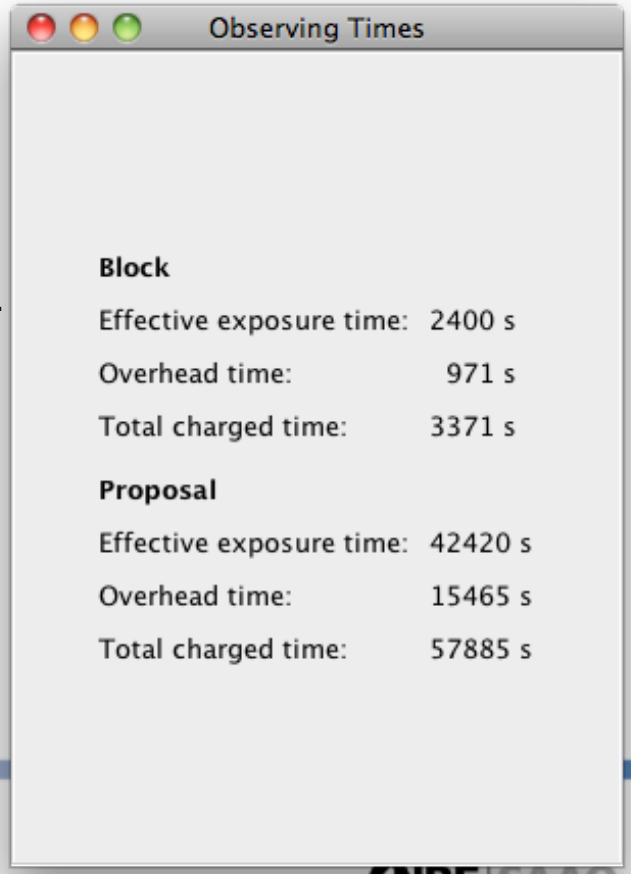

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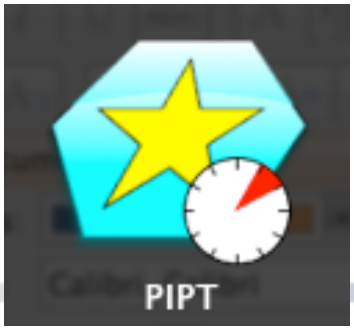
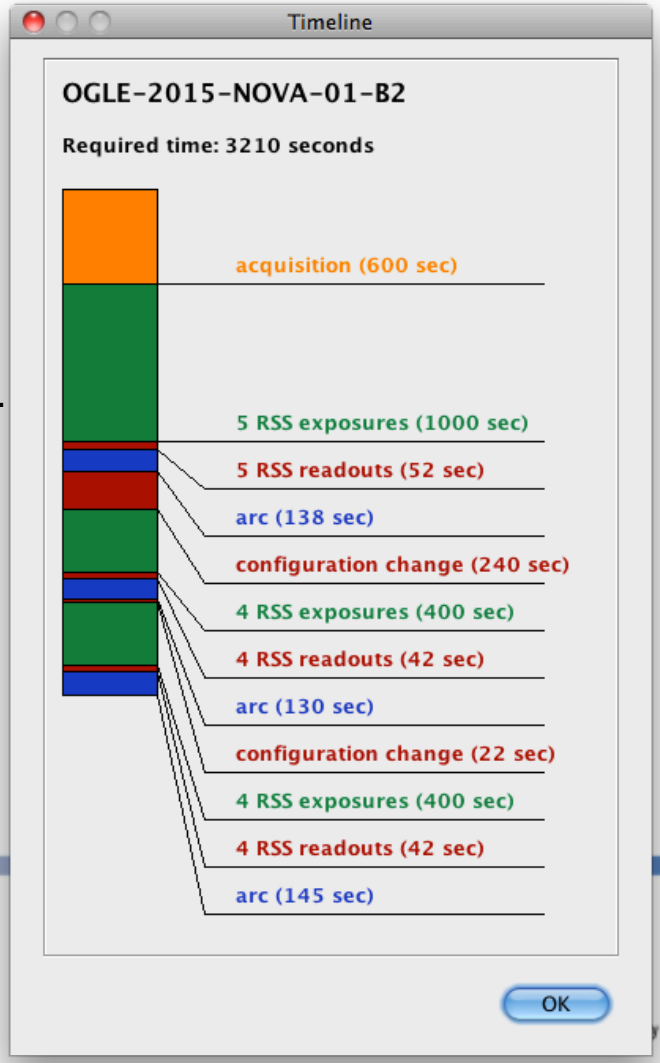


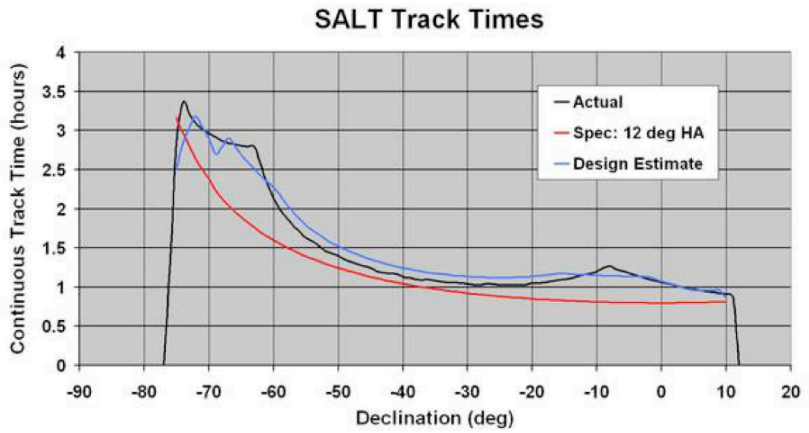


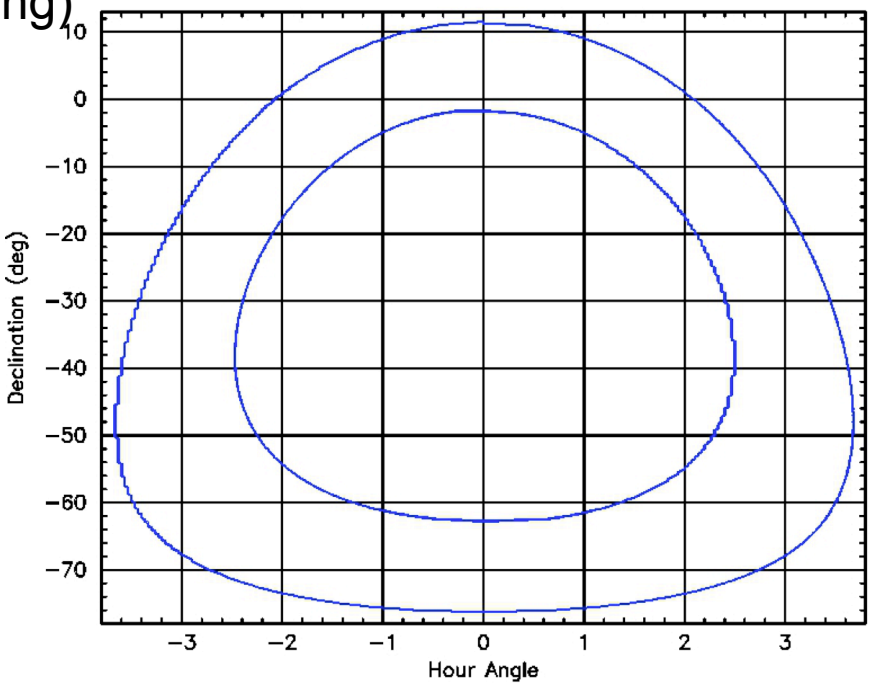
Visibilities and Track times

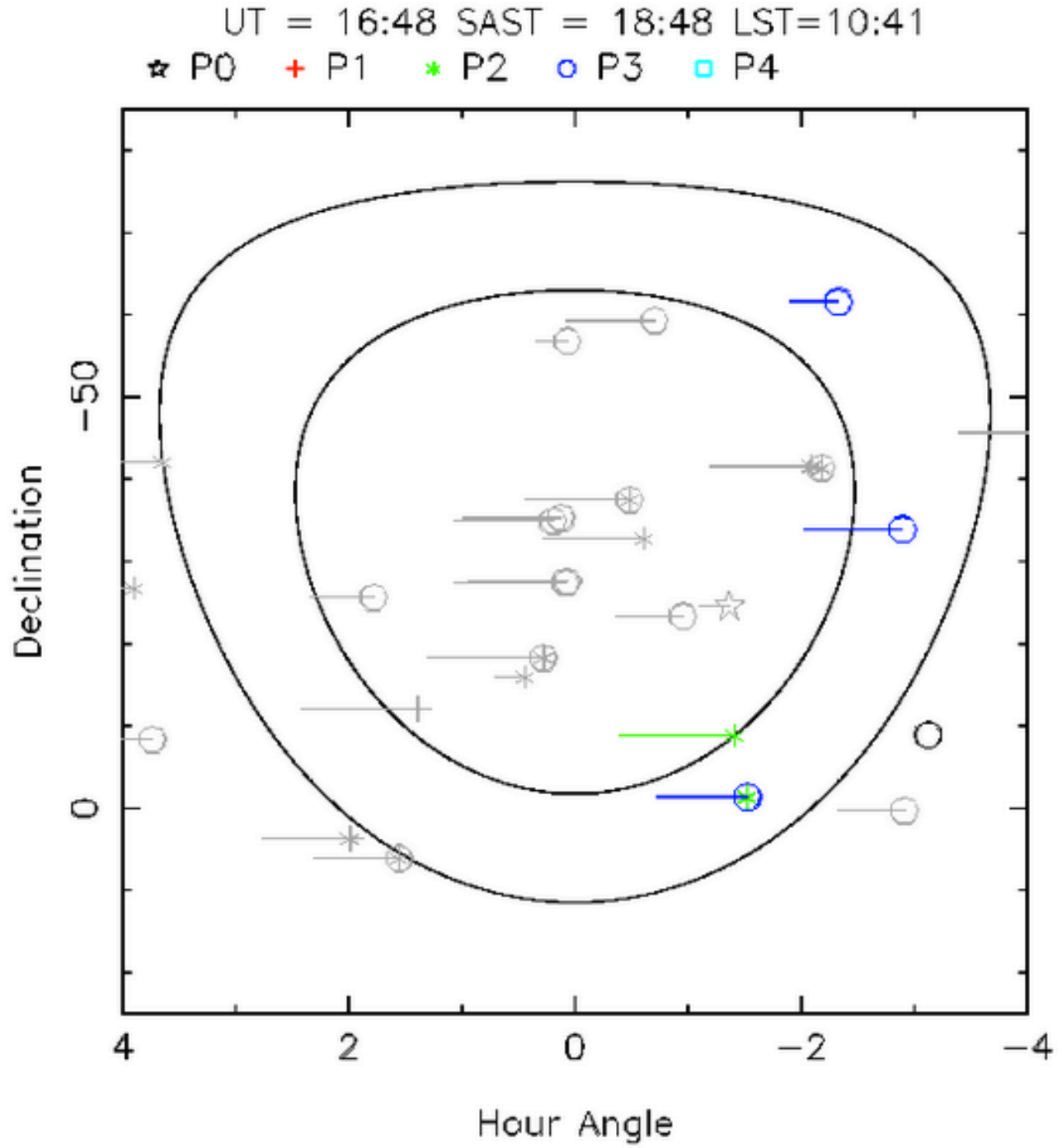
Fixed-altitude SALT visibilities often non-intuitive for new users

Visibilities (possibility of accessing target)

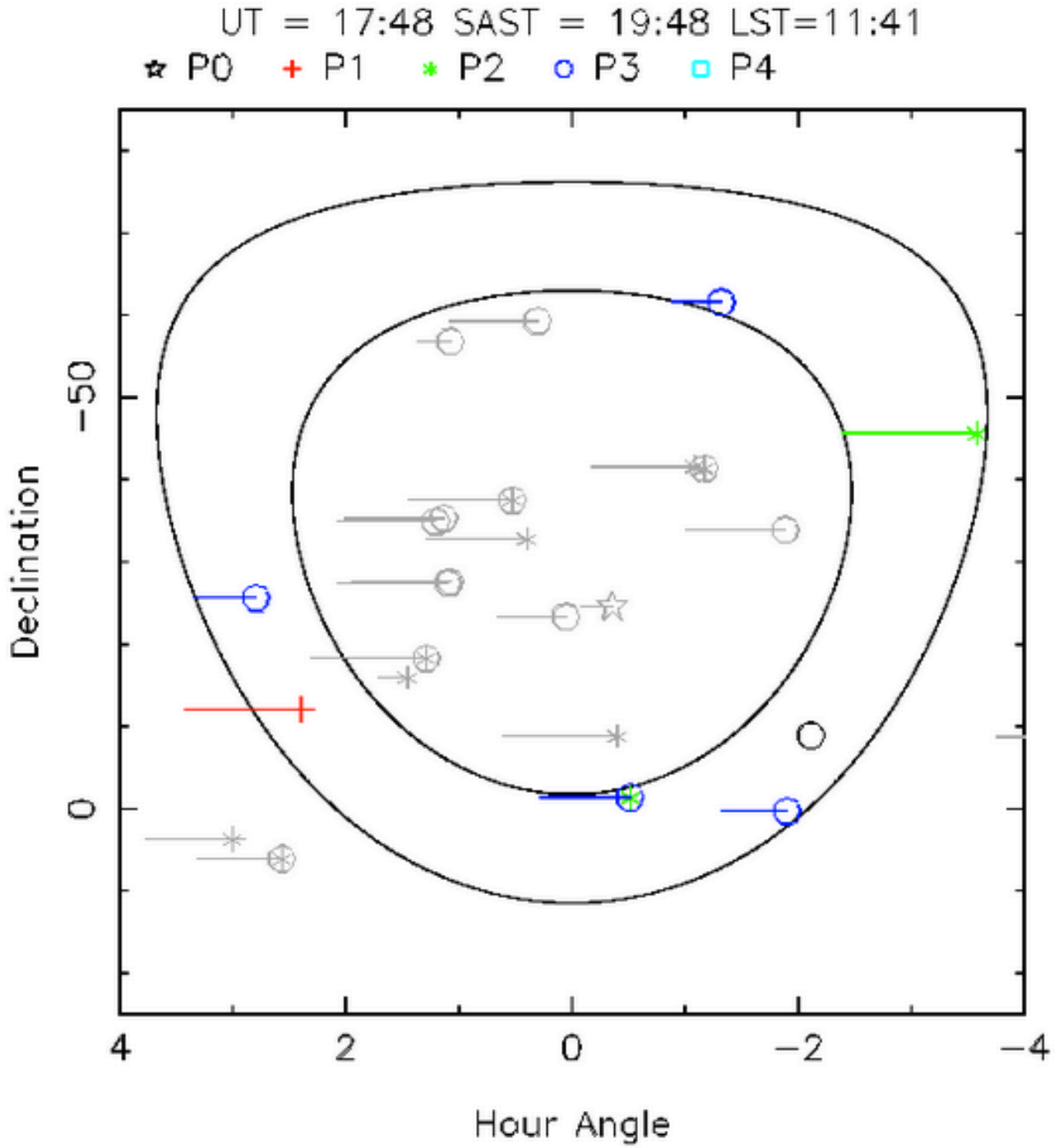
vs. Track times (visibility with single pointing)







SAAO
South African Astronomical Observatory



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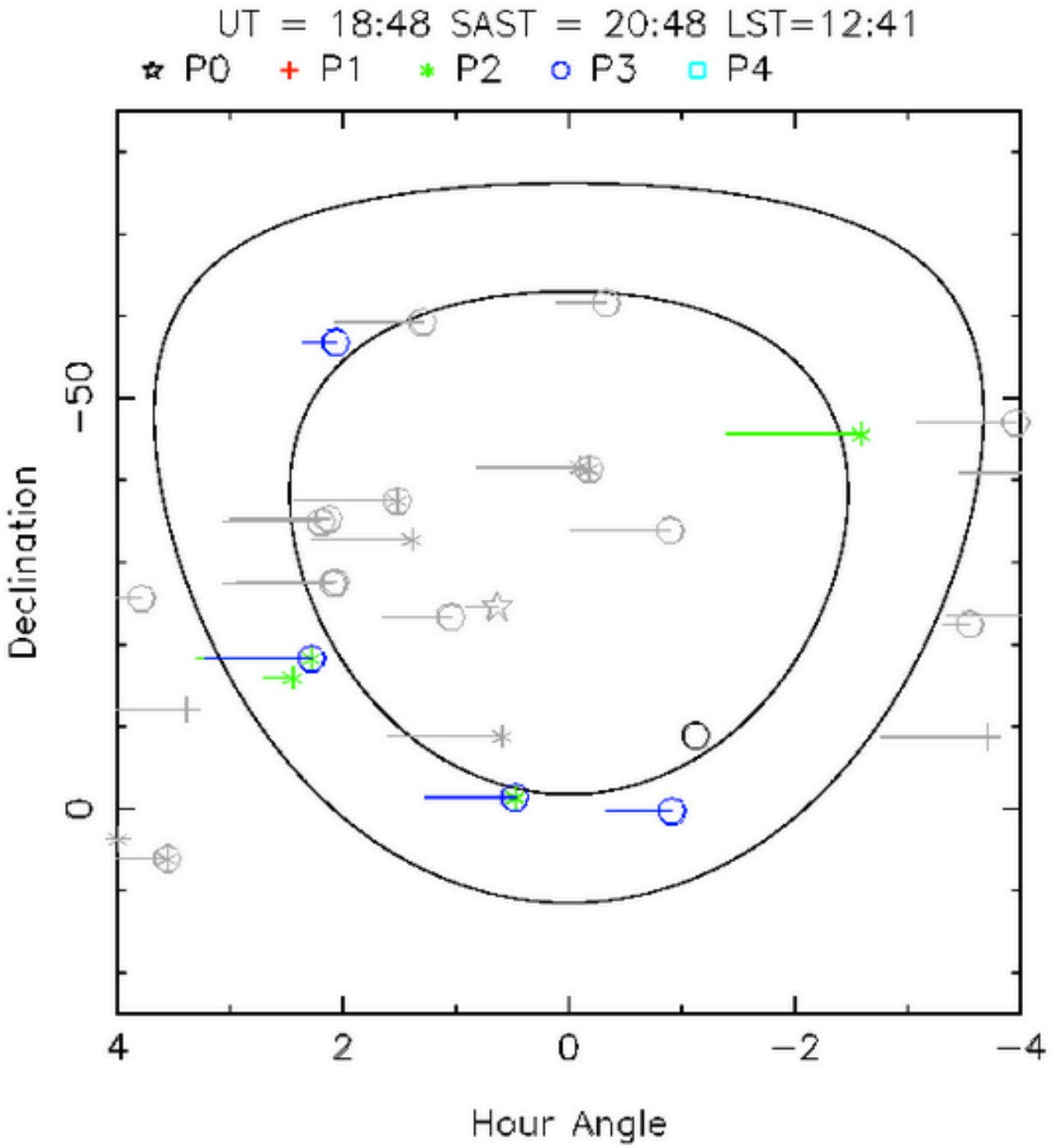

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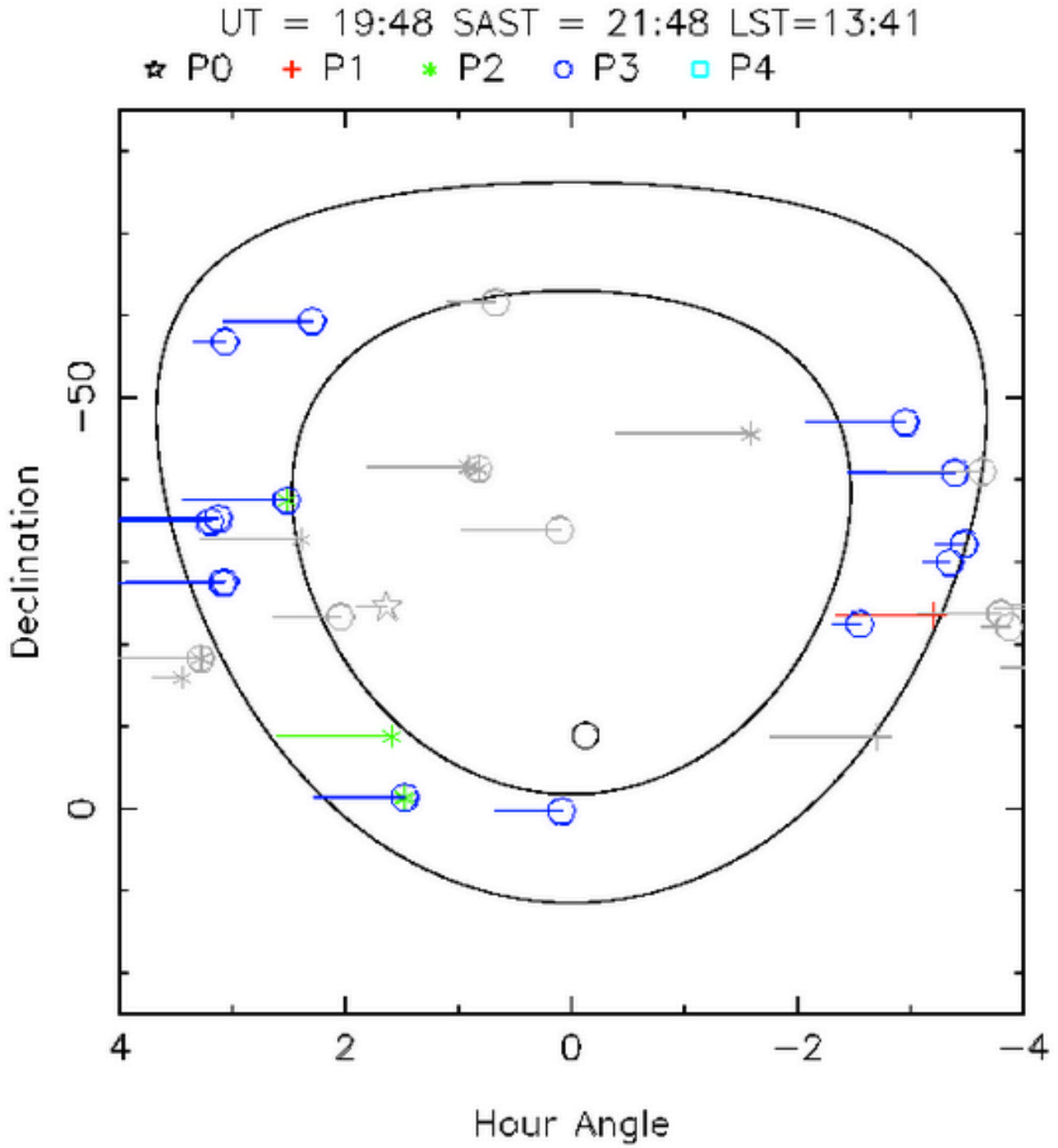

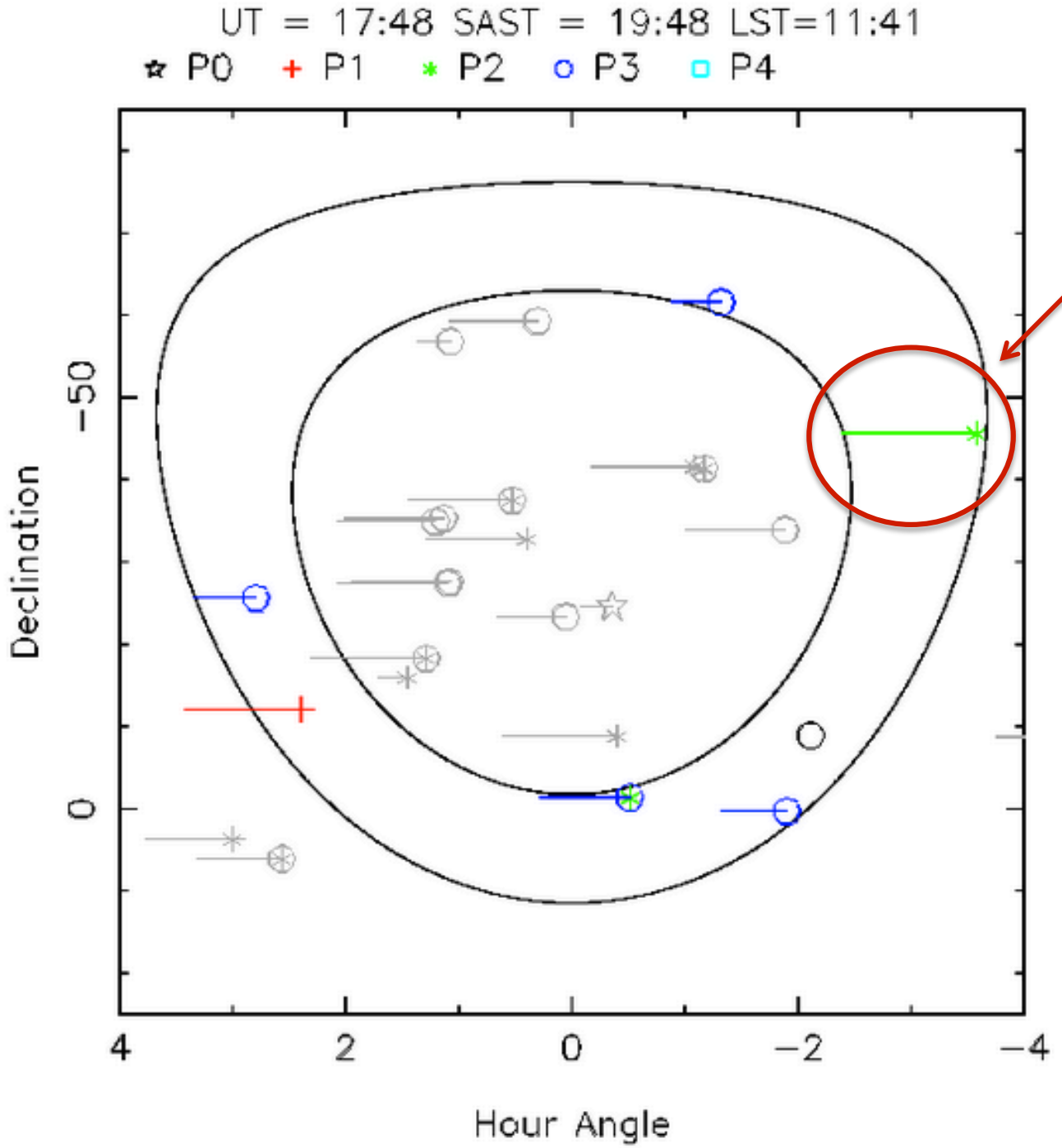

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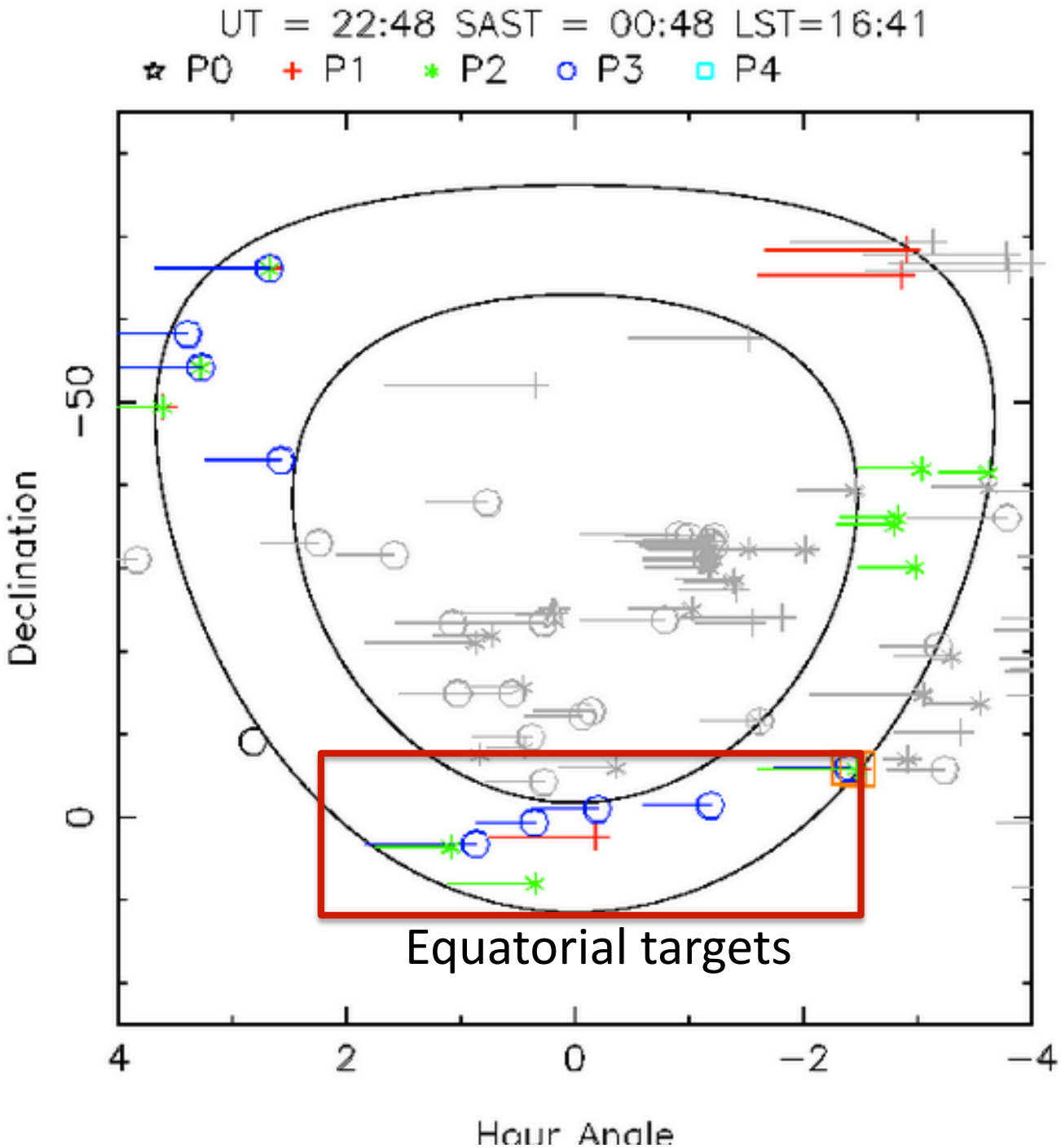
Visibilities and Track times

Do not make your track too tight within a visibility window!



Equatorial targets

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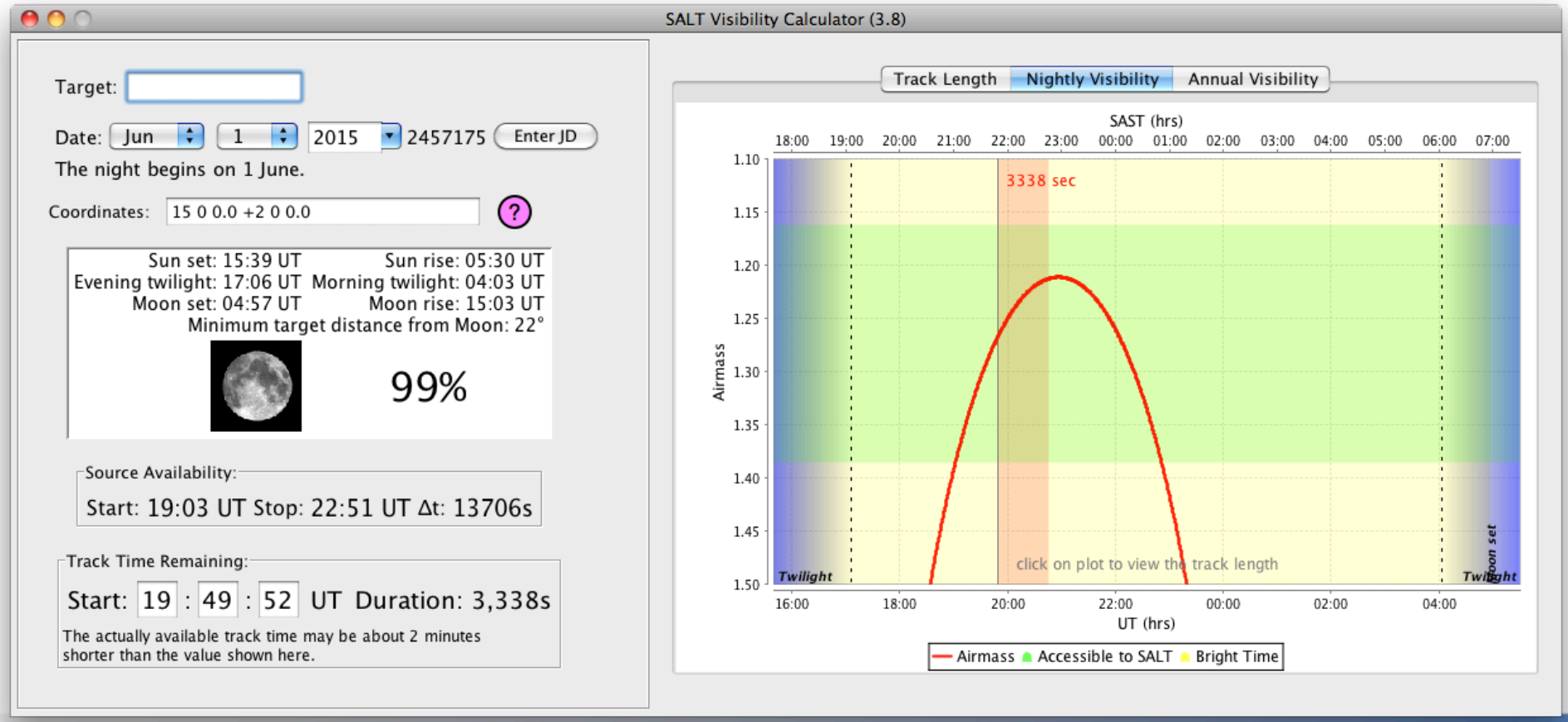

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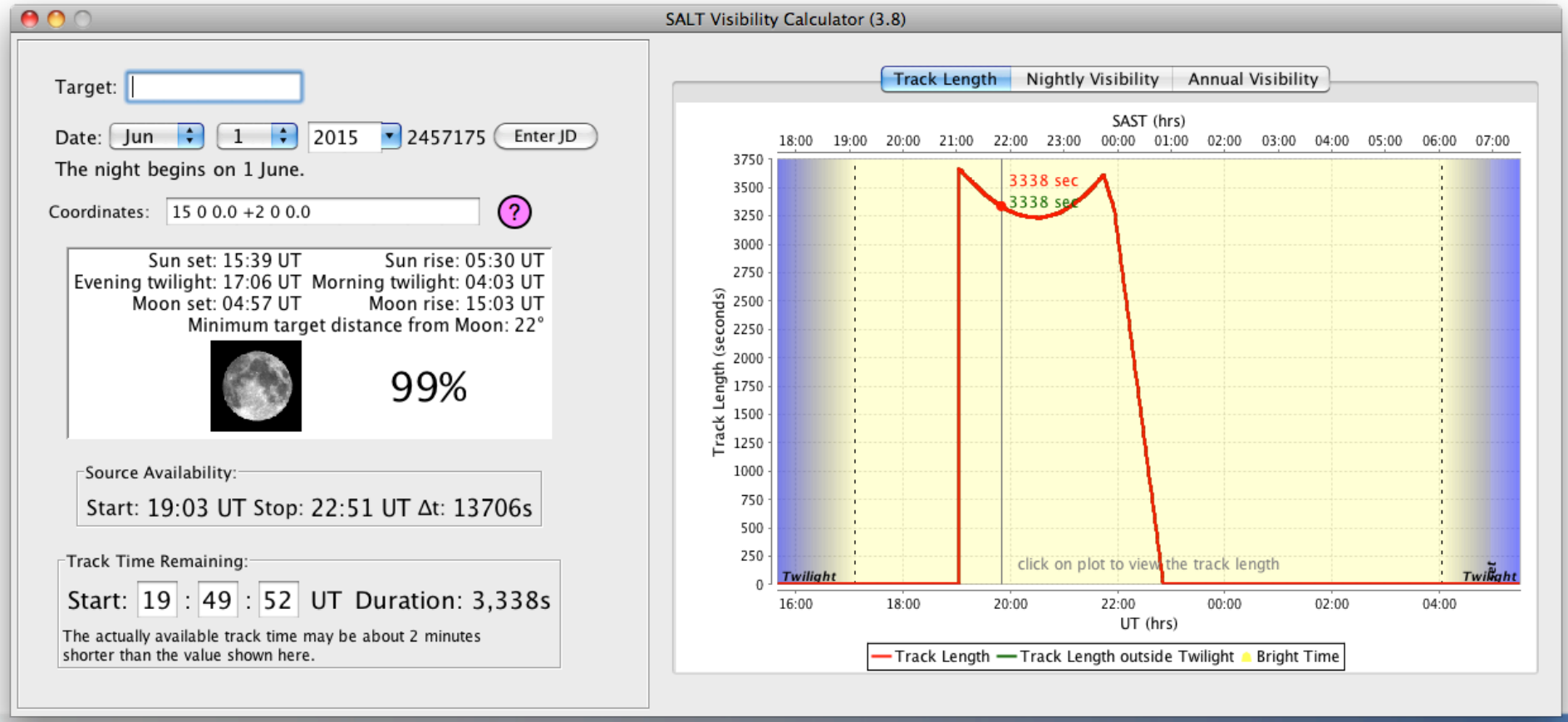

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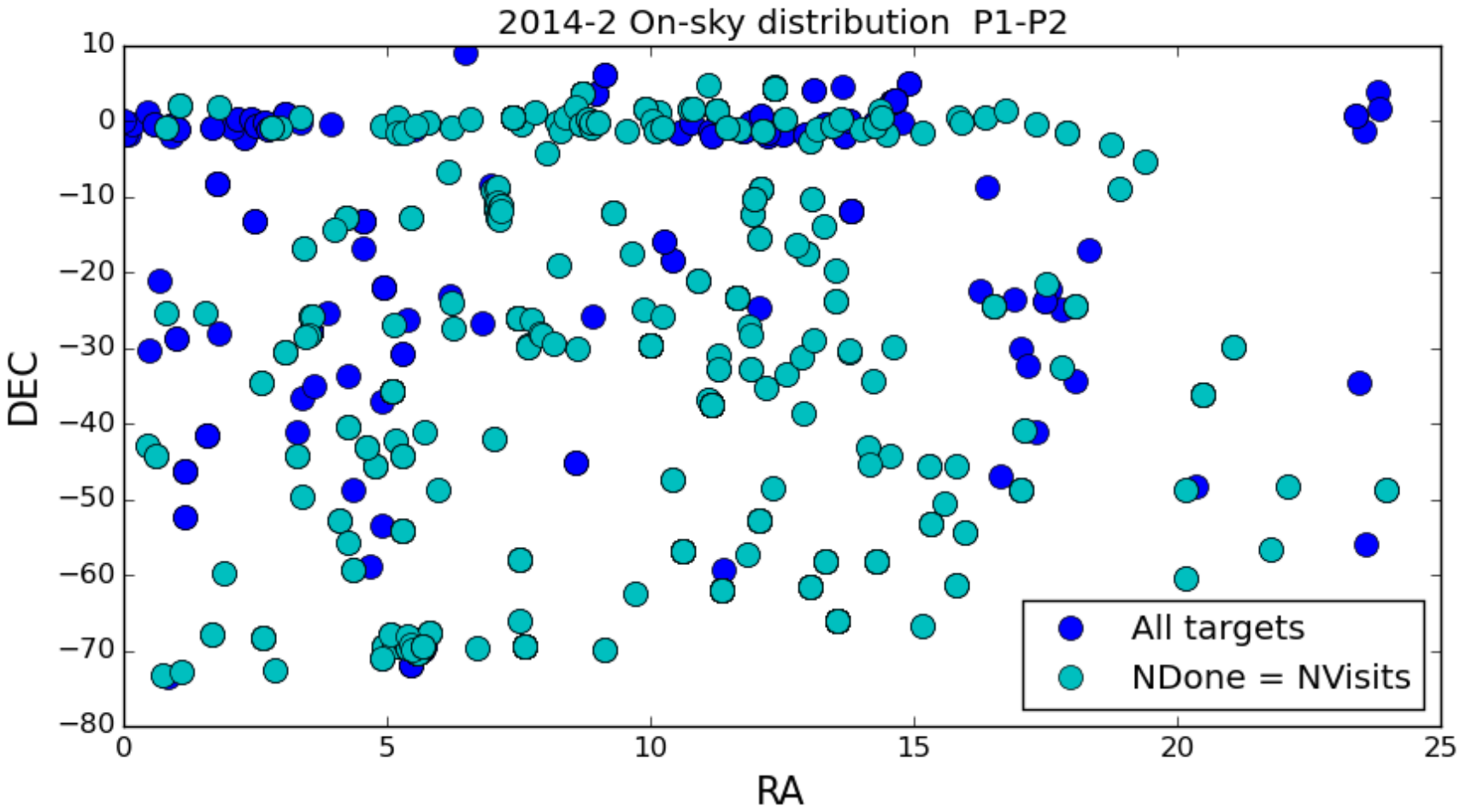
Consider seasonal visibility

– and fold in seeing and Moon phase requirements especially with early/late season targets. If you have more than one restrictive constraint, things get very tough.

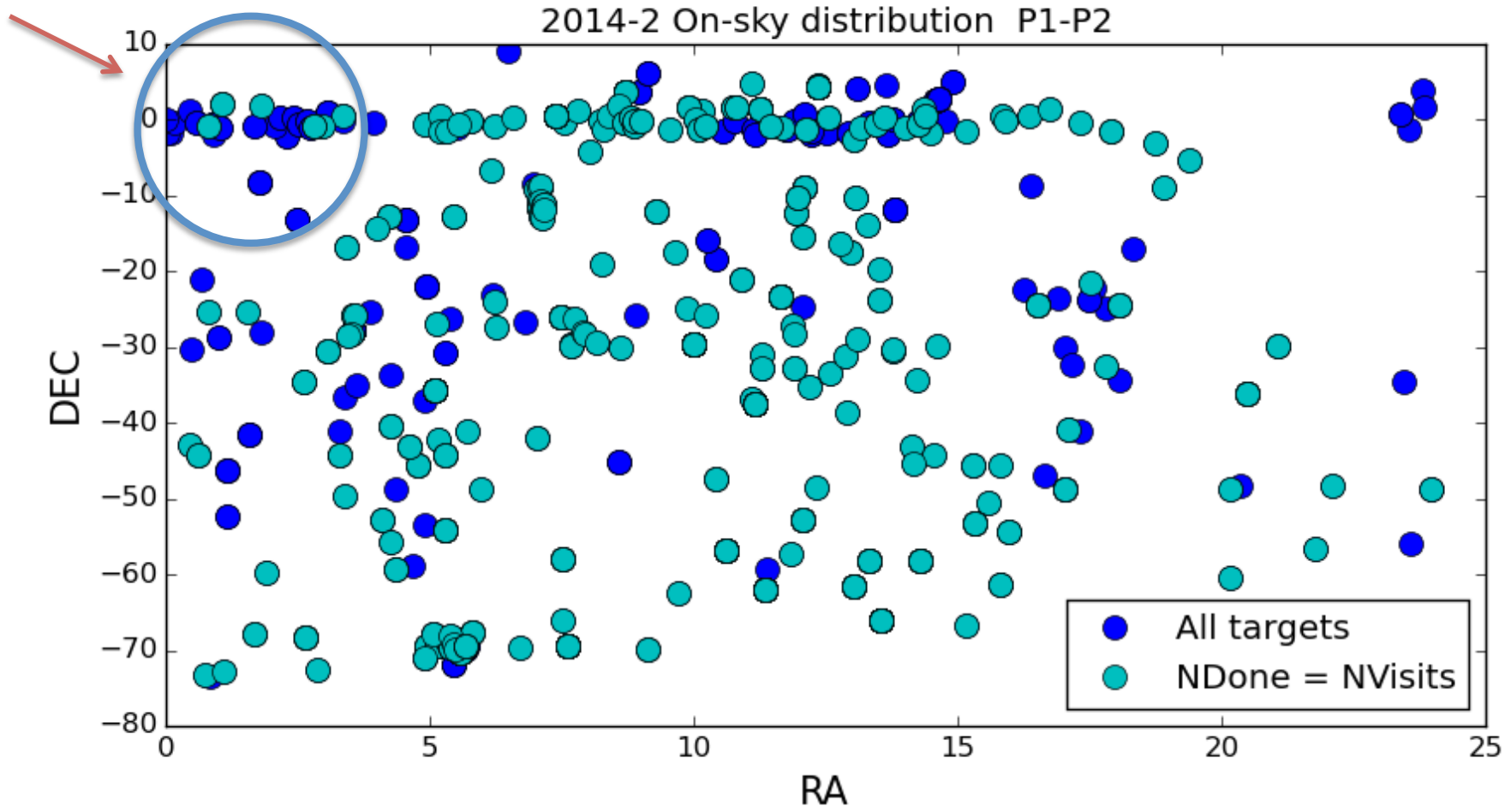
- What is the probability of a given block getting done ???

Annual Visibilities



Annual Visibilities

Too many early semester targets



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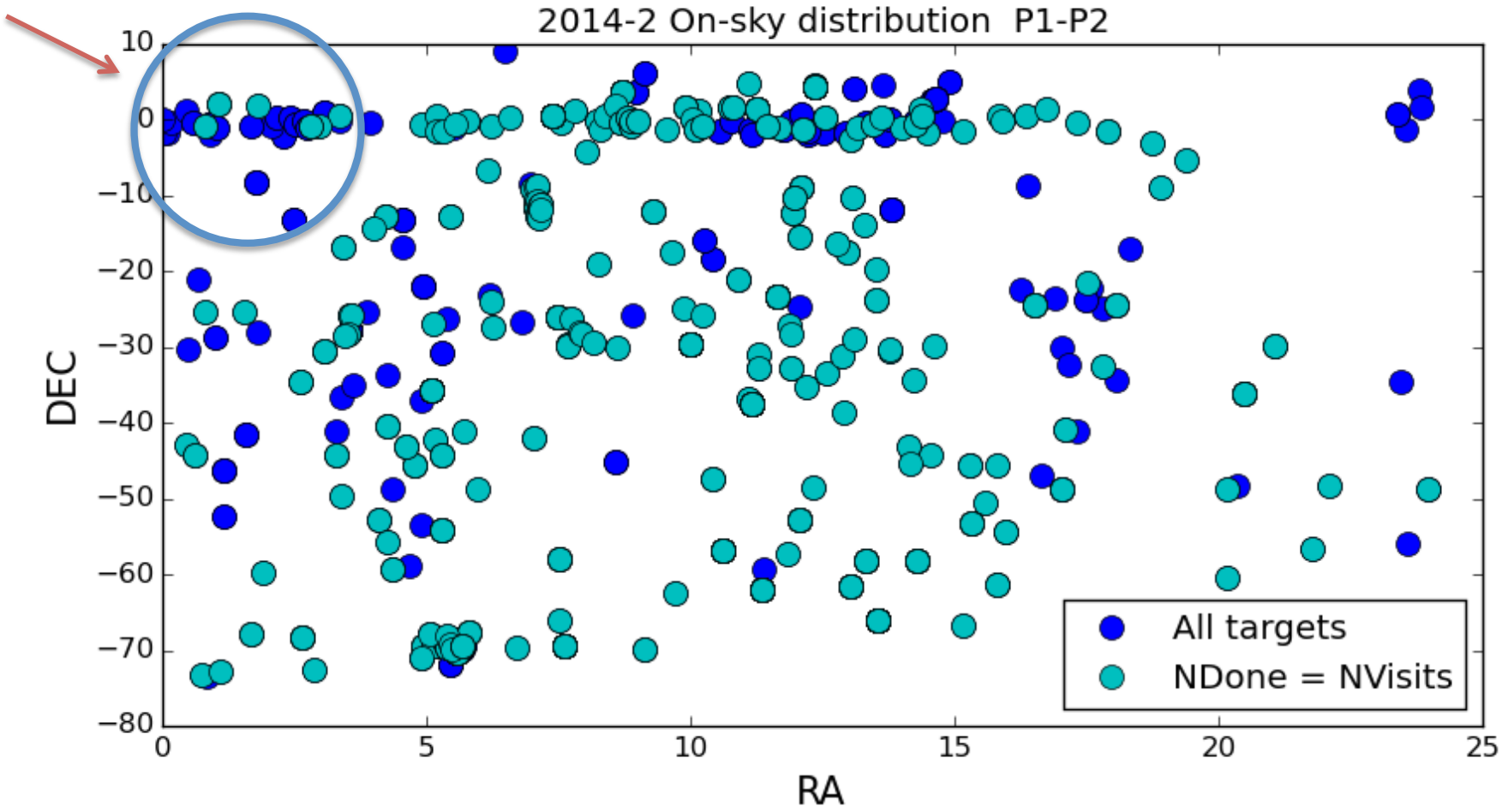
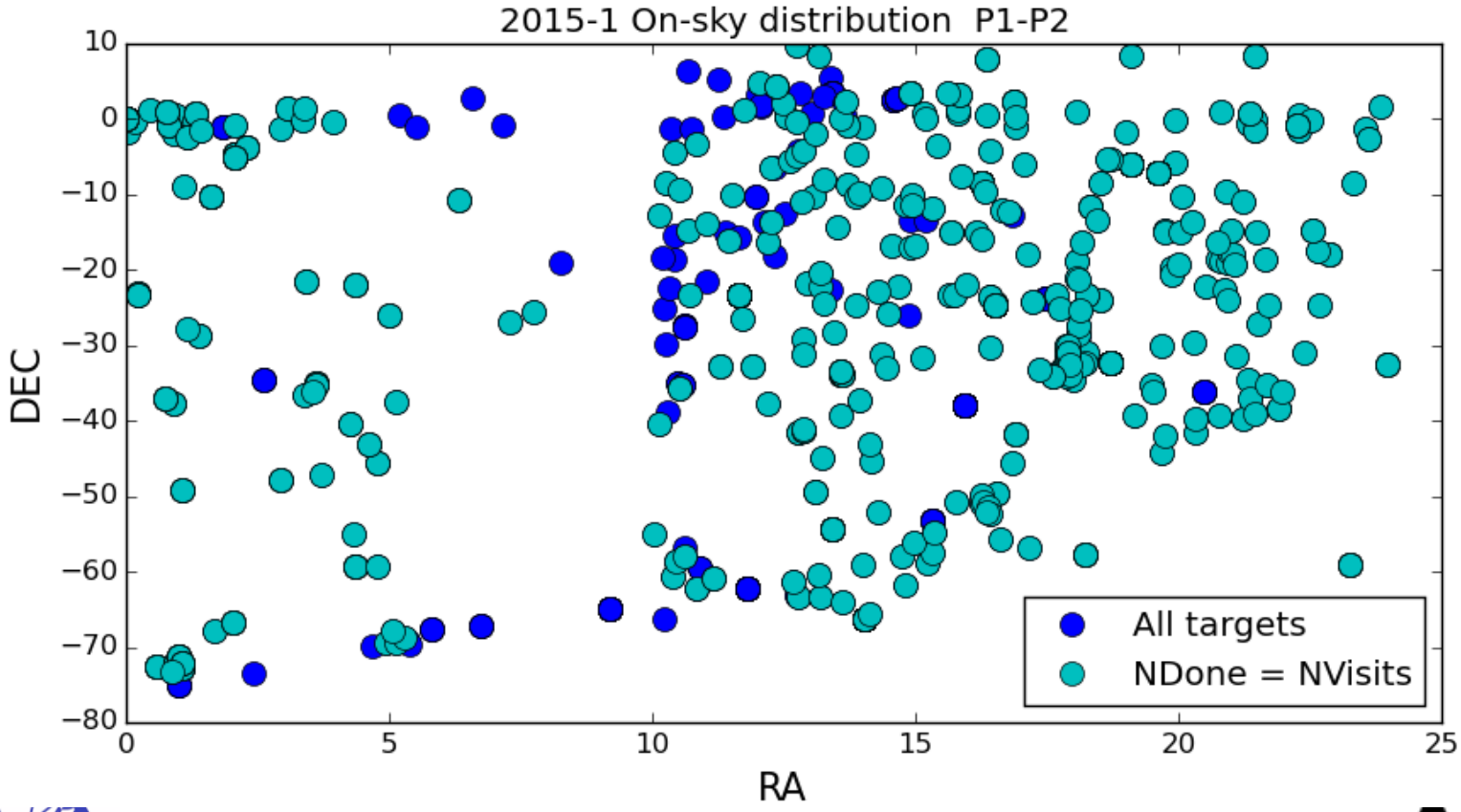
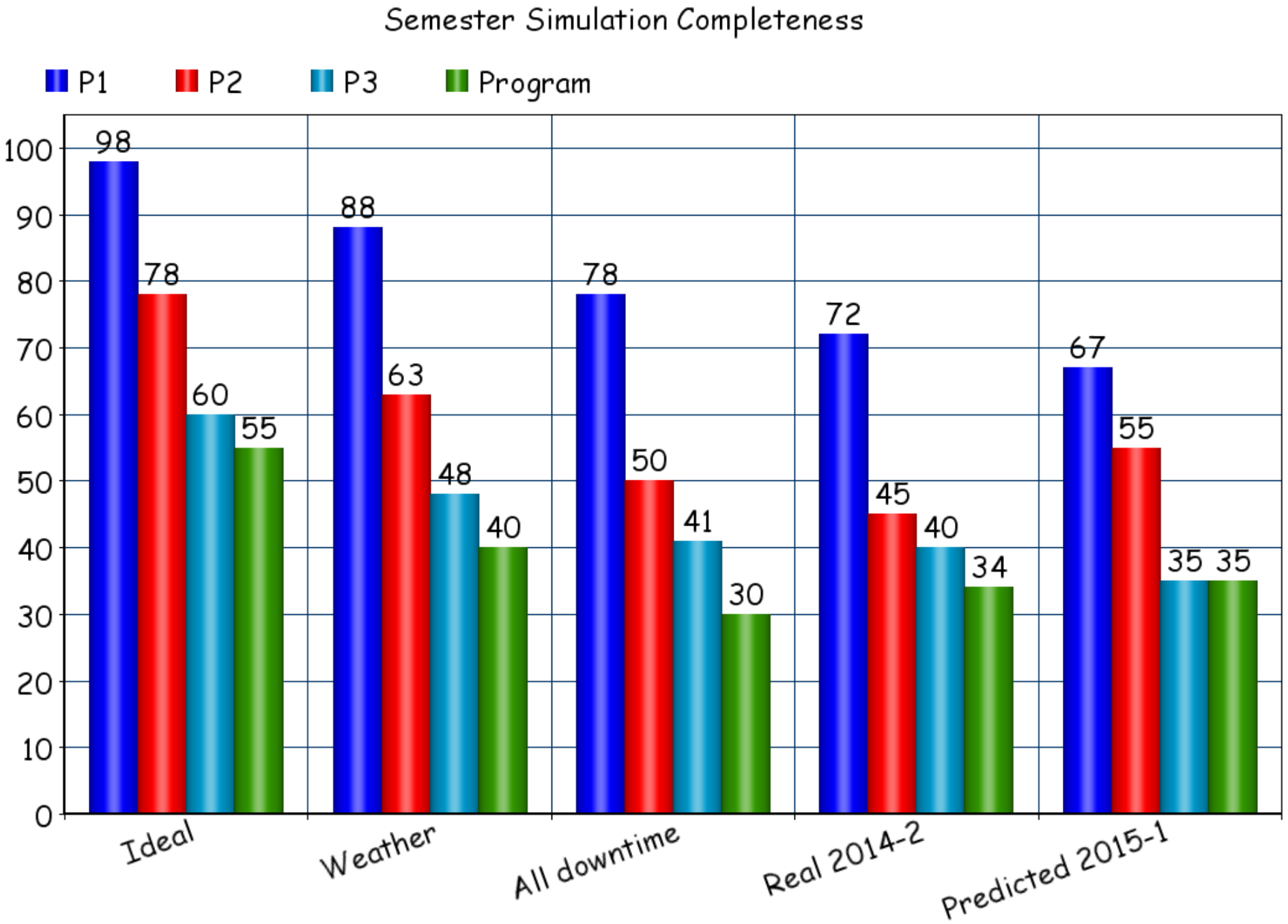
Check the visibilities of your Blocks on Web Manager



SALT Observation Simulations

We can simulate a Semester to a good accuracy now
(MC simulations using real database by Paul Kotze)

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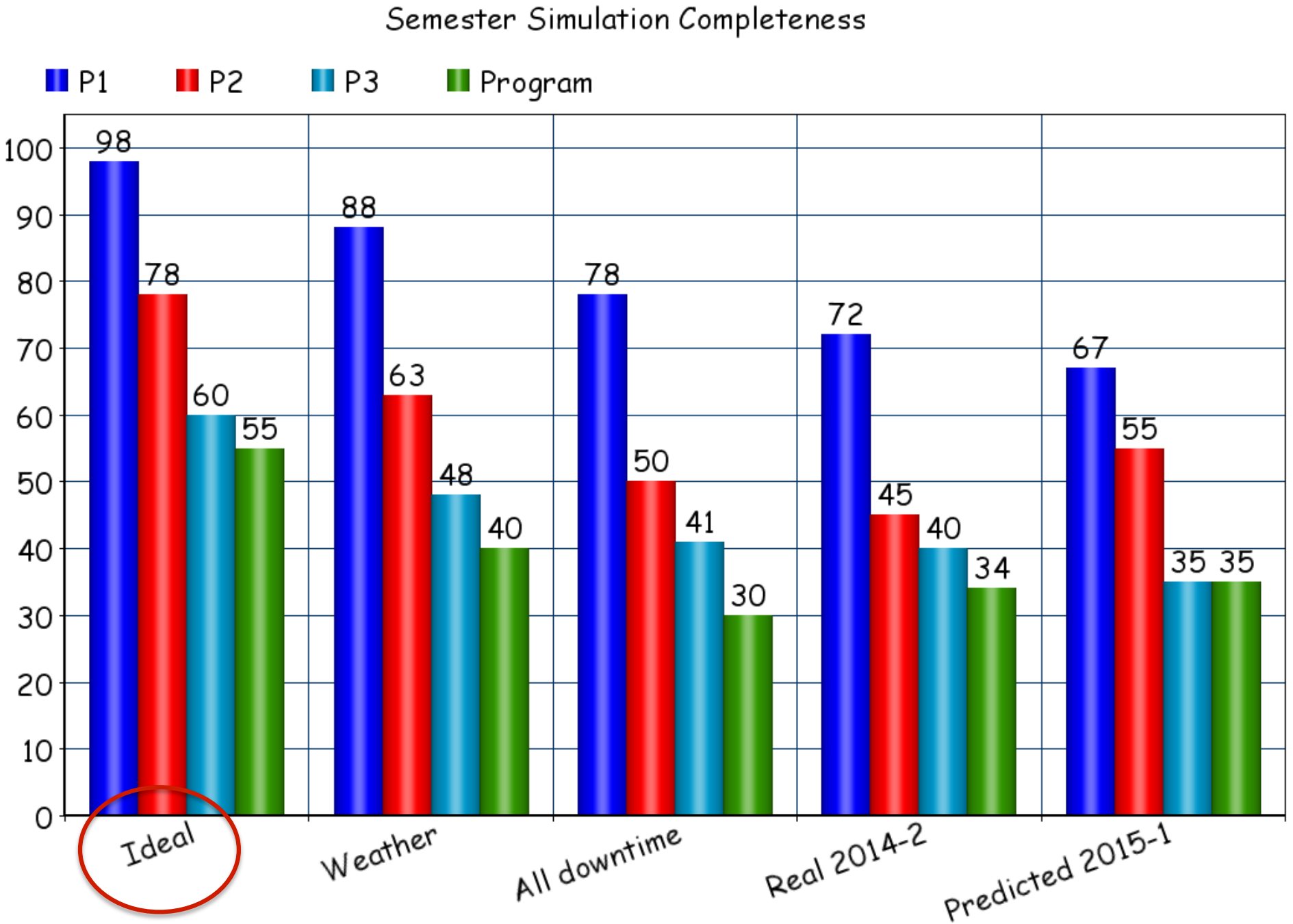
All downtime
Real 2014-2
Predicted 2015-1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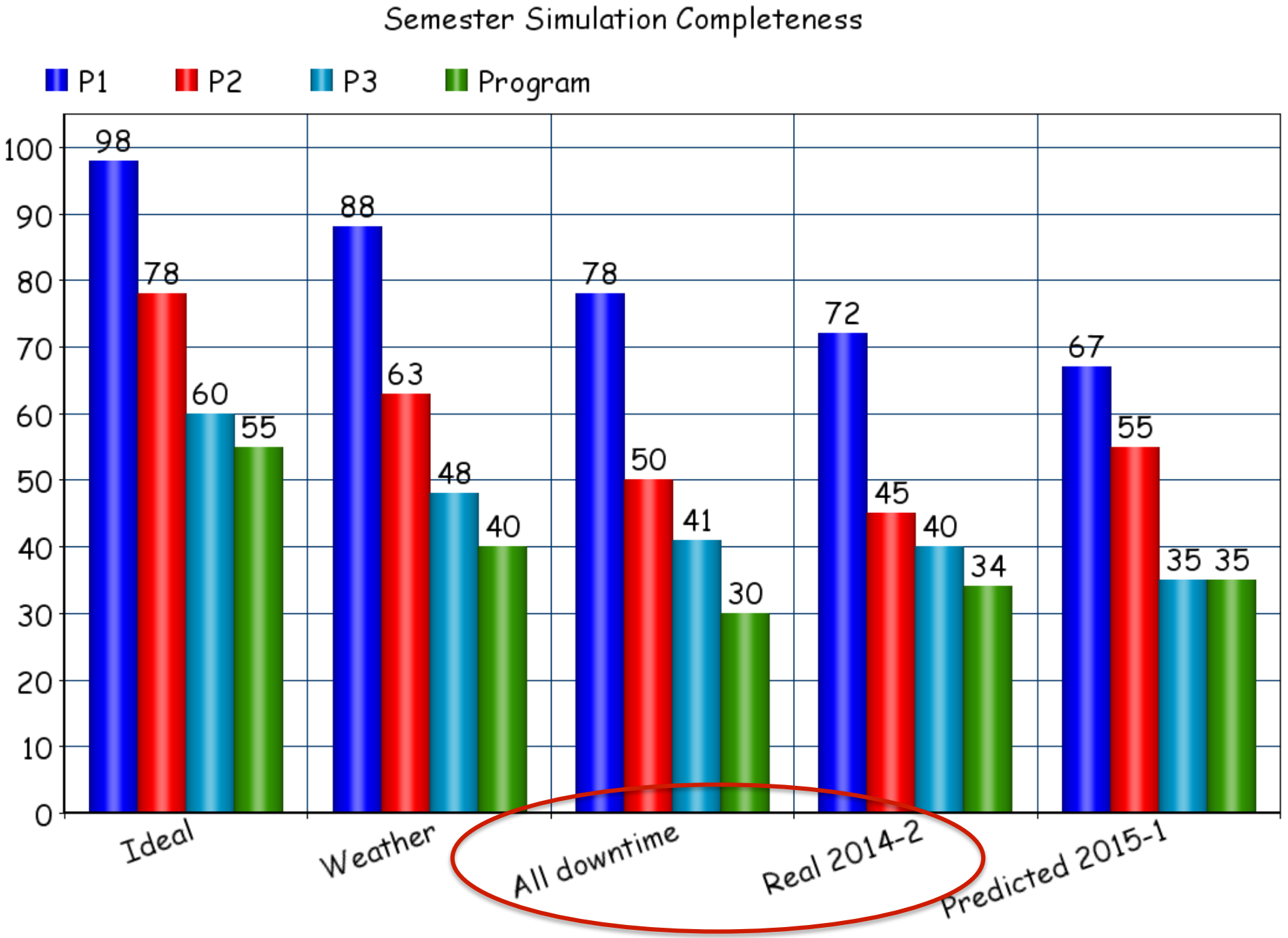
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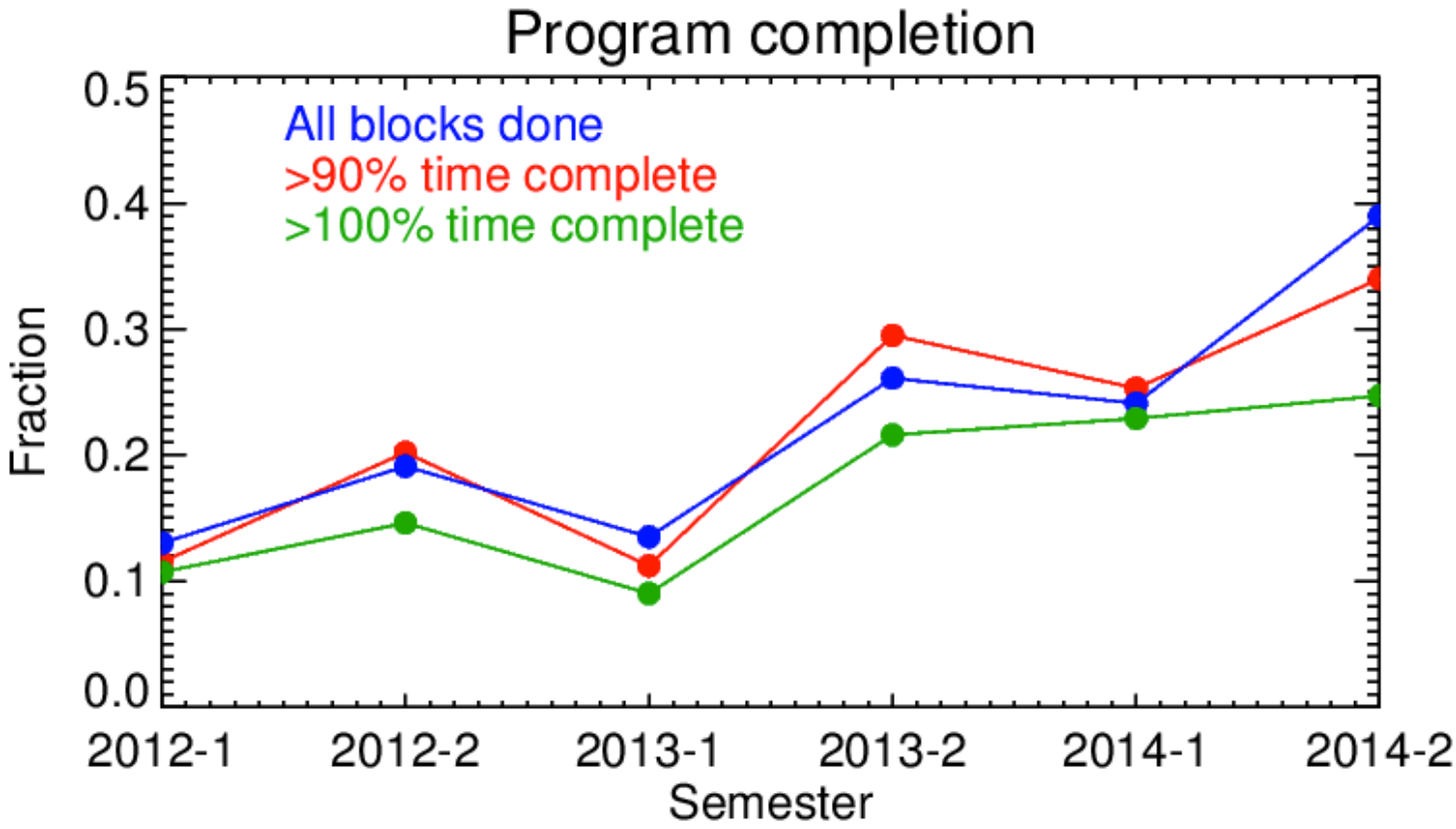
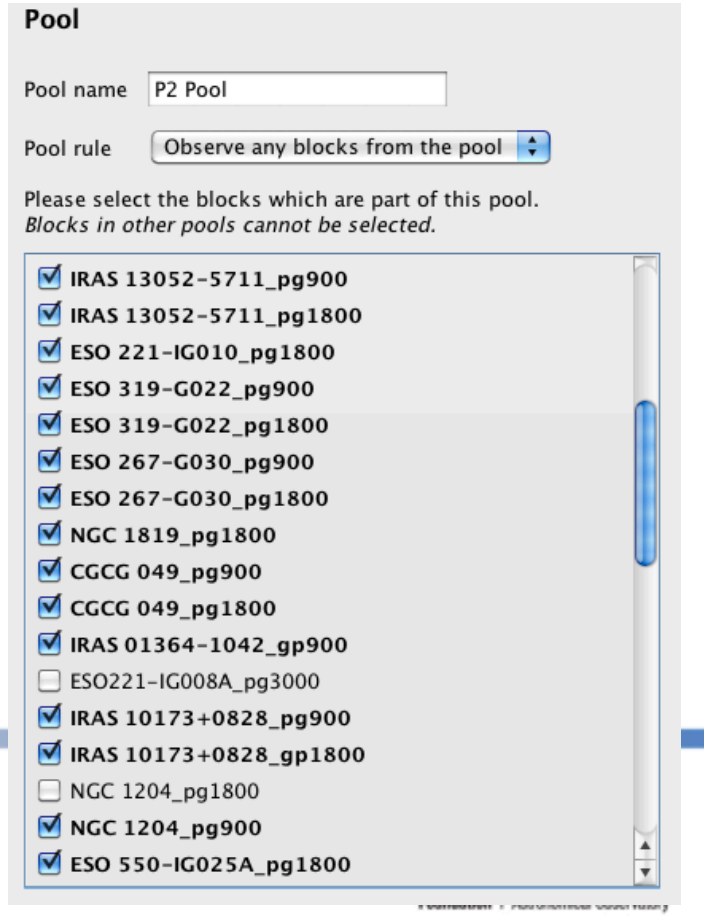


What can you do to enhance your chances ?

.. making the most of what you get from your TAC
(or influencing the TAC by smart choices)

Use Optional Targets (Pools)

- If you e.g. need 10 targets of a certain type observed for a sample, submit 40 of them in the queue in phase-1 already.
- The wider the RA-range the better. Chances really go up.



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Moon related issues to realize:

- Bright time is under subscribed – think of science which can use it.

- Be careful with Equatorial targets and Bright time – Moon is likely to be too close (<30 deg) to your field for most of that time

- Gray time means Moon illumination 15-85% at the time your block is in the visibility window. Can be very restrictive.

- Check the WM for your block visibilities

What can you do to enhance your chances ?

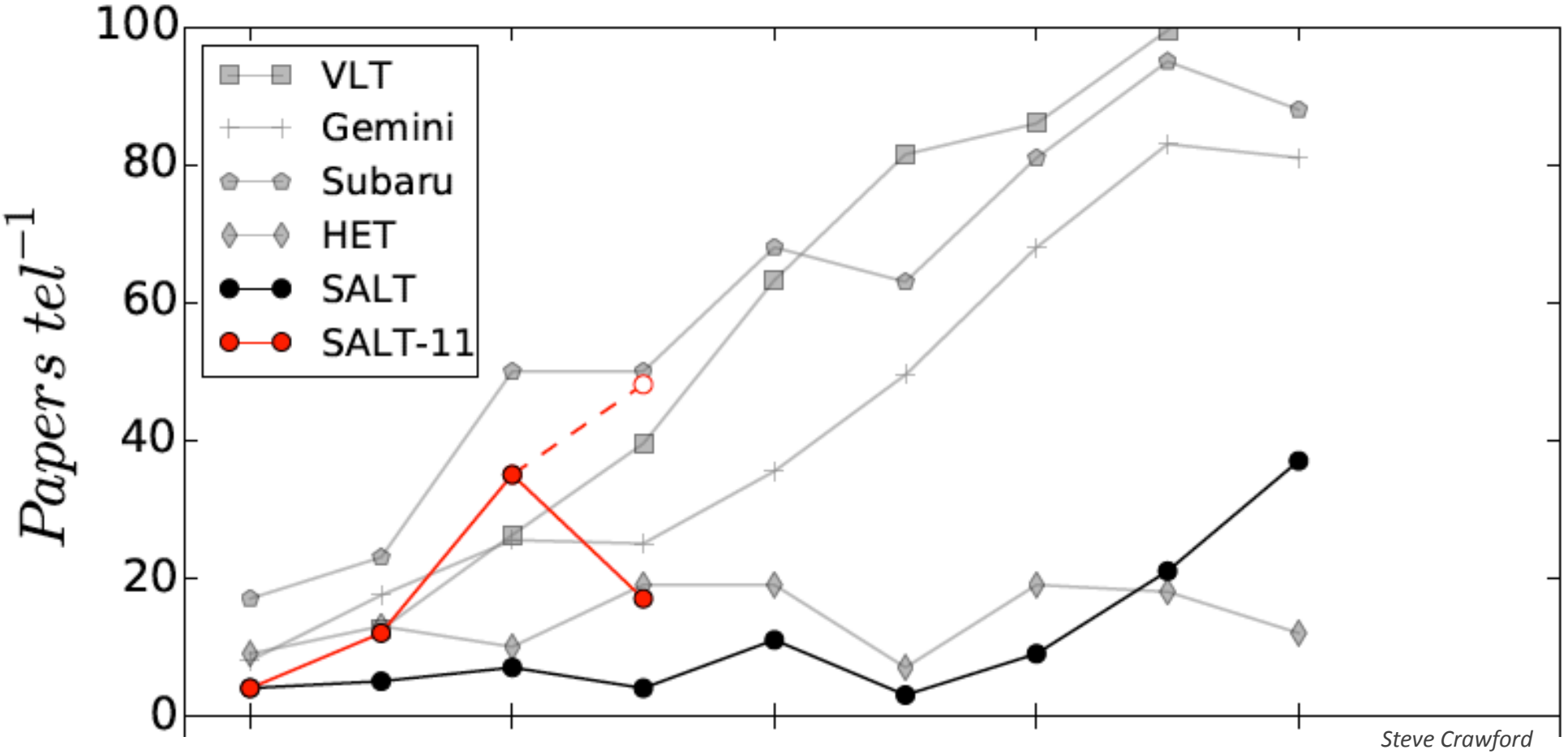
Other things:

- P4 time is unrestricted, uncharged, unlimited.

- Poor seeing time is also less over-subscribed, at seeing 2.0” or 2.5” and over.

- Be pro-active, check your data, give feedback, remind us of e.g. time critical windows coming up.

Science is coming out – see Anja Schroeder's Poster



Years after start of science operations

Science good news

Instruments/modes available:

SALTICAM – normal and fast modes

RSS / long-slit and NB imaging

RSS / MOS

RSS / Fabry-Perot LR & MR back, HR maybe for 2016)

RSS / Polarimetry for 2016

HRS / all modes

Recent improvements:

RSS throughput better by 30-50%

RSS stray-light decrease by 50% – improves faint target SNR

New RSS guide-probe funded – no more rotational drift in 2016 (MOS)

Active alignment progressing (2016?) – PSF issues much better

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Pipeline:

Primary reduced data available to all

Effort to get analysis-ready data-product pipelines is not funded by SALT (yet, at least). RSA users can contact SAAO-based staff for ad hoc help.

Summary

Be careful with your Block visibilities and tracks, nightly and seasonal

- We will give more info about this in the next Call for Proposals and in future WM pages

Use Optional Targets and Pools

Try to think of areas not used by others (e.g. Bright, P4s)

Be active in checking your data, communicate.

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http://astronomers.salt.ac.za/