Identifying false positives in WTS

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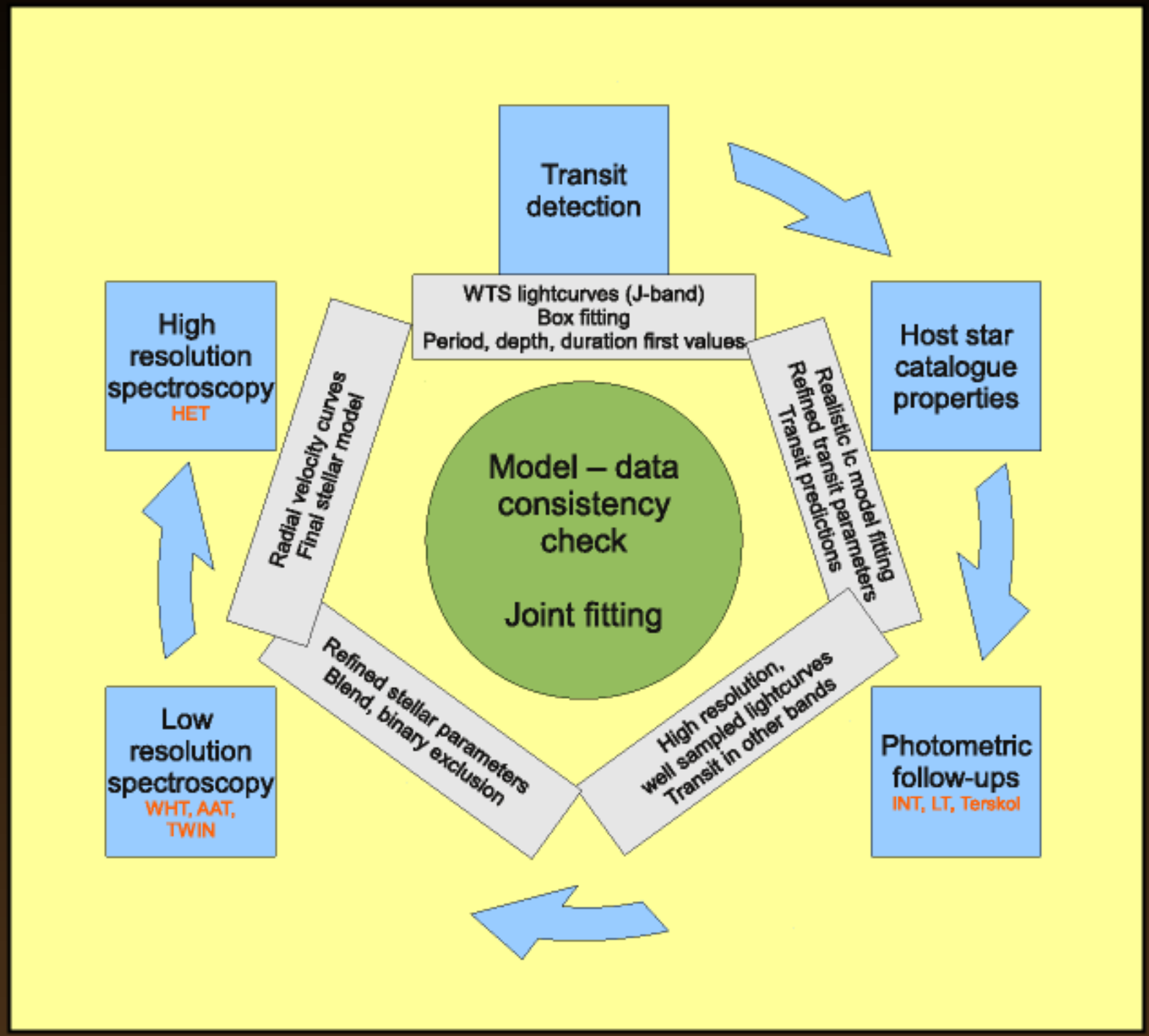
Candidate life overview



WTS follow-up strategy

- **Transit photometry (INT, LT)**
  transit confirmation, rejecting blends, improving cadence
- **Low/medium resolution spectroscopy (WHT, Calar Alto 3.5, AAT)**
  spectral classification, large RV variations
- **High resolution spectroscopy (HET, Keck)**
  planet confirmation

- **Intensive follow-up campaign during last summer**

Initial light curve fitting

- Occfit results are only for detection
  Epoch and period are retuned after modeling

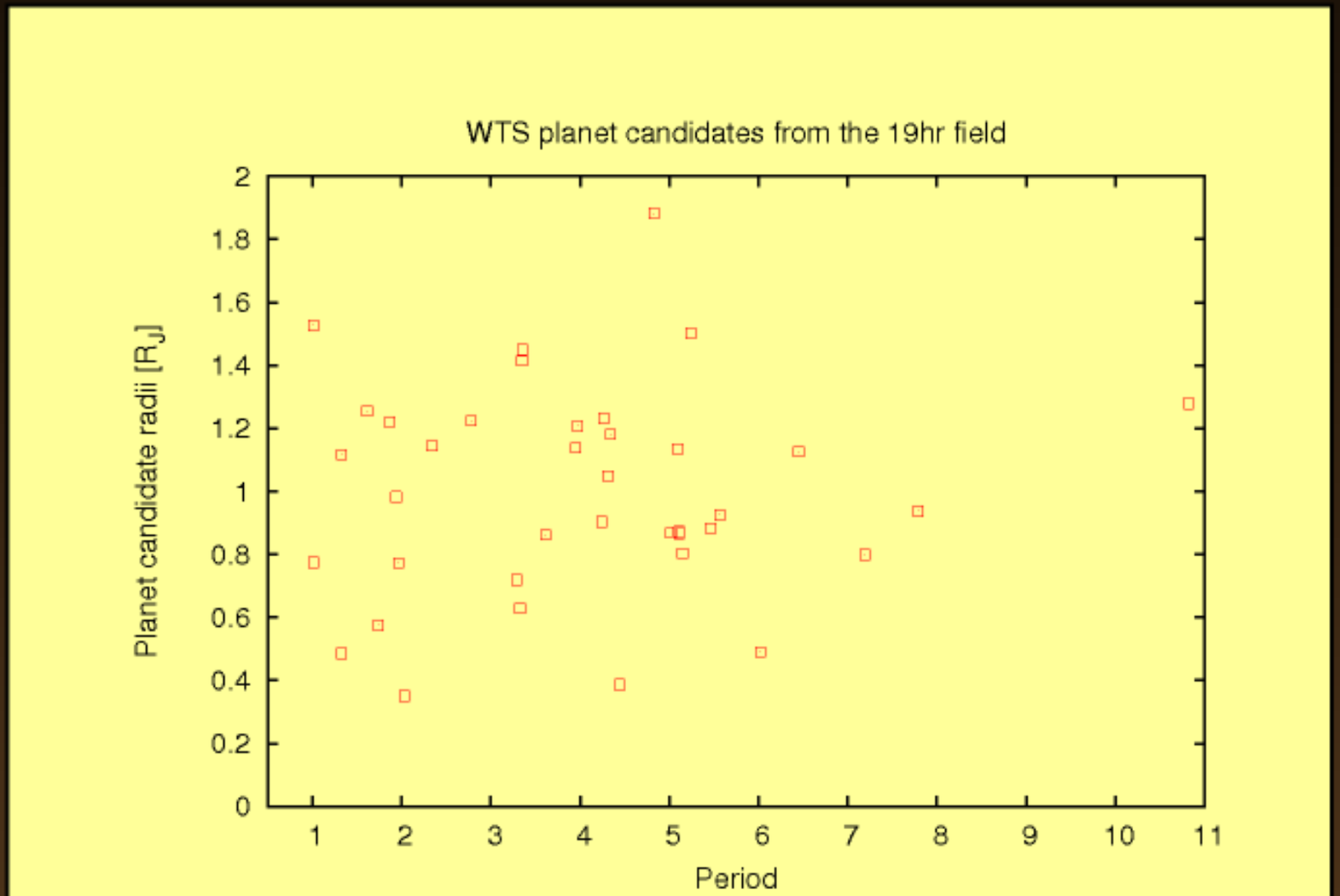
- More realistic models are needed to get planetary/binary parameters
  - Using binary star models
    - EBOP, WD, BLENDER
  - or using planetary models
    - Mandel-Agol

WTS candidate prioritization

- Spectral type/Teff (based on colors)
- Relative planetary radii (from MA)
- X-ray catalogue cross match
- ...
- Priorities: P1/P2/P3 and B1
- Candidate and follow-up management

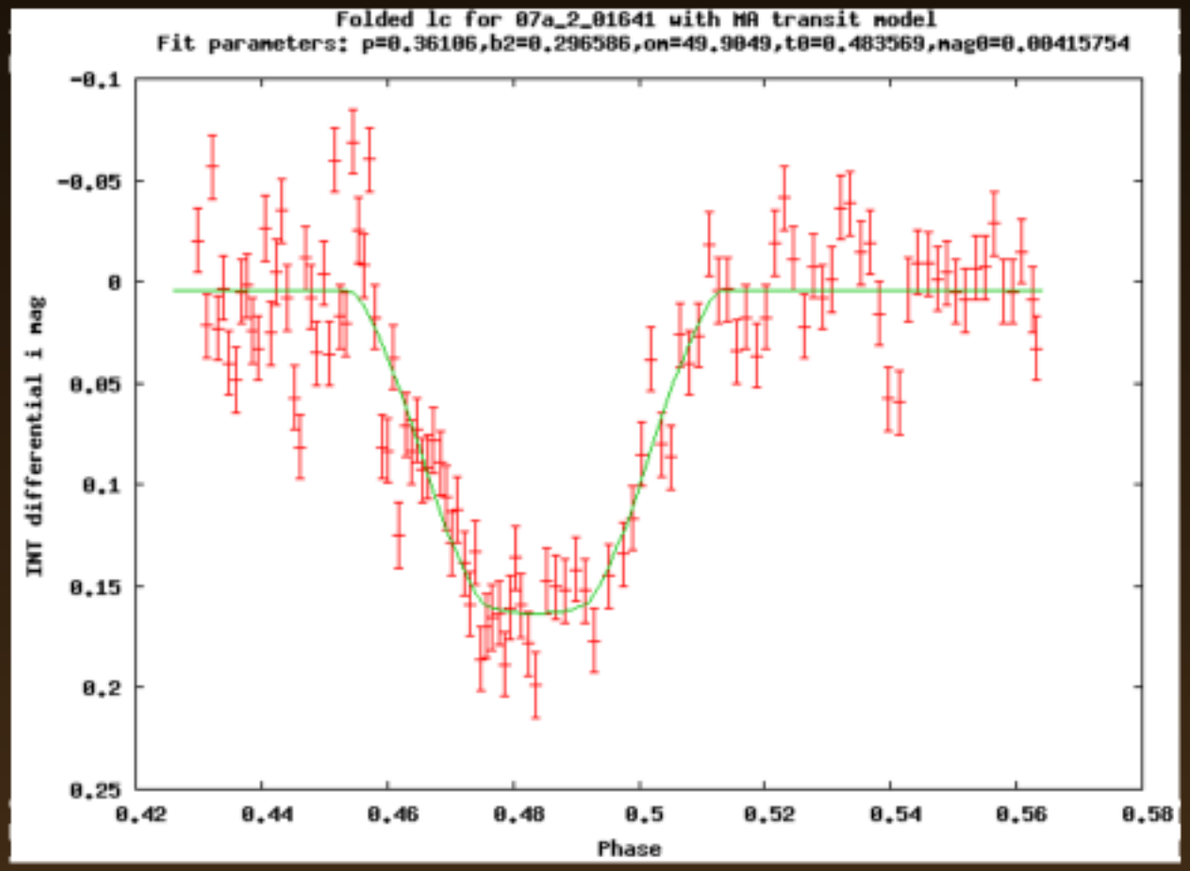
Candidates in one WTS field

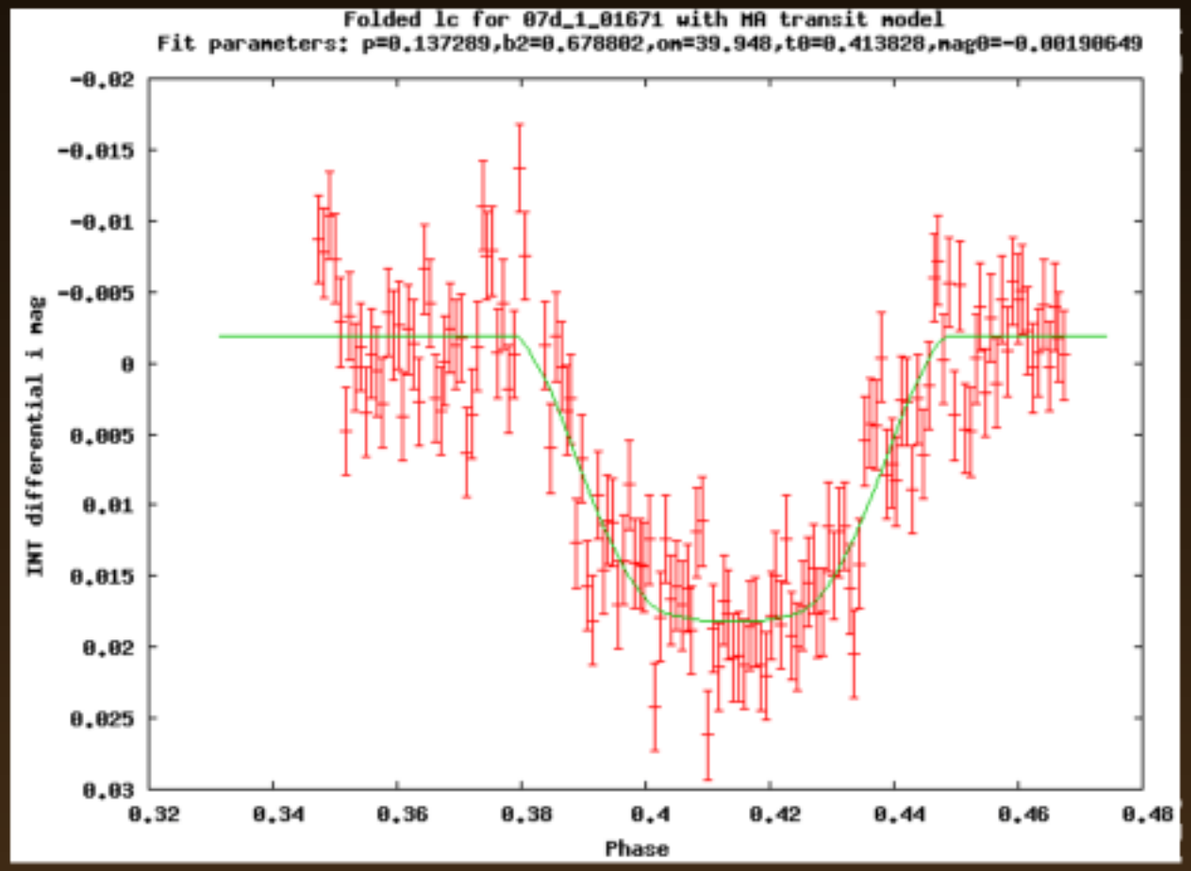
- **Candidates from the 19hr field before summer follow-up**
  - **39 planet candidates (6 P1, 25 P2, 8 P3)**
  - **32 low mass EB candidates**



Photometry follow-up

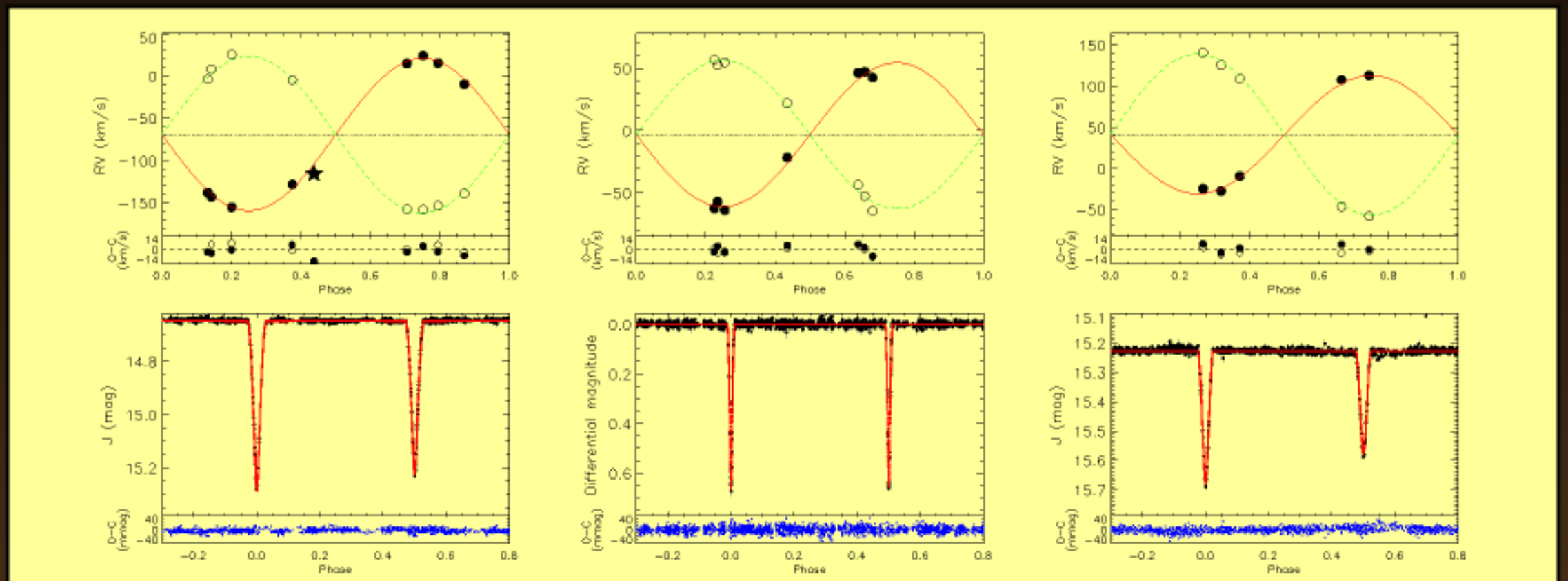
- ∼65 nights awarded on 2m class telescopes (e.g. INT, LT, Terskol, ESO 2.2m)





Spectroscopy follow-up

- 16 nights on 4m class telescopes (e.g. WHT, Calar Alto 3.5, AAT)
  - low resolution spectra for all planet candidates for spectral typing
  - multi-epoch high resolution spectra for 10 objects with WHT (6 EBs, 5 planet candidates)



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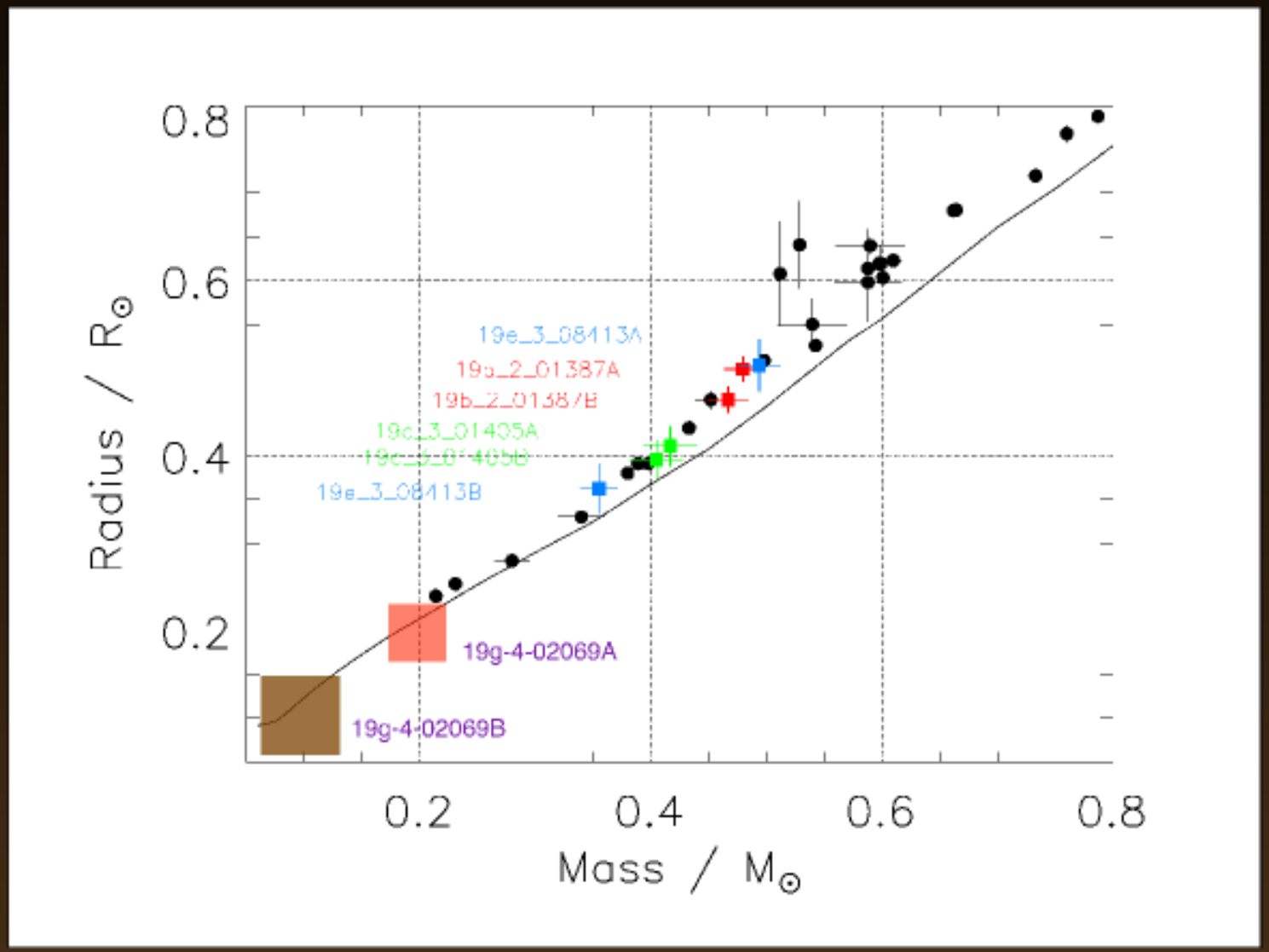
Low-mass Eclipsing Binaries

- They are larger than expected



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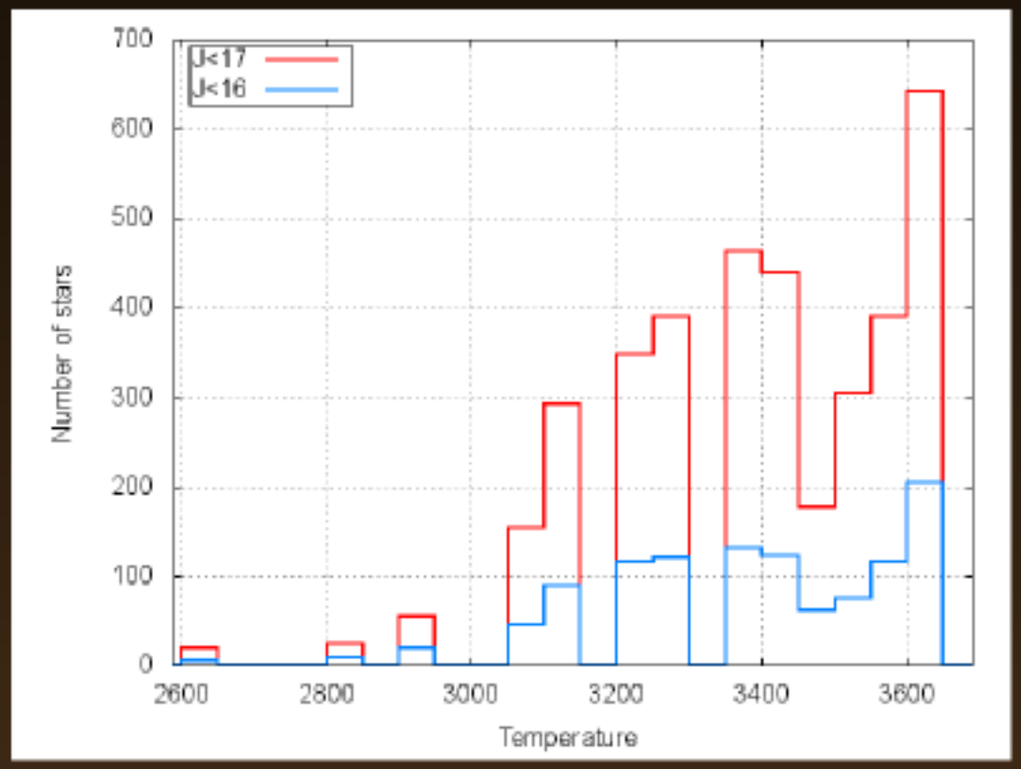
M dwarf sample

- 9 bands (SDSS and WFCAM) SED fitting using Nextgen models
- 5000 dM stars brighter than 17 mag, but
  - majority are early type
  - between $16 < J < 17$
- for statistical studies
  - we should go deeper (any follow-up will be challenging)
  - need larger sample (finishing the other fields will do)



Future work

Thank you!