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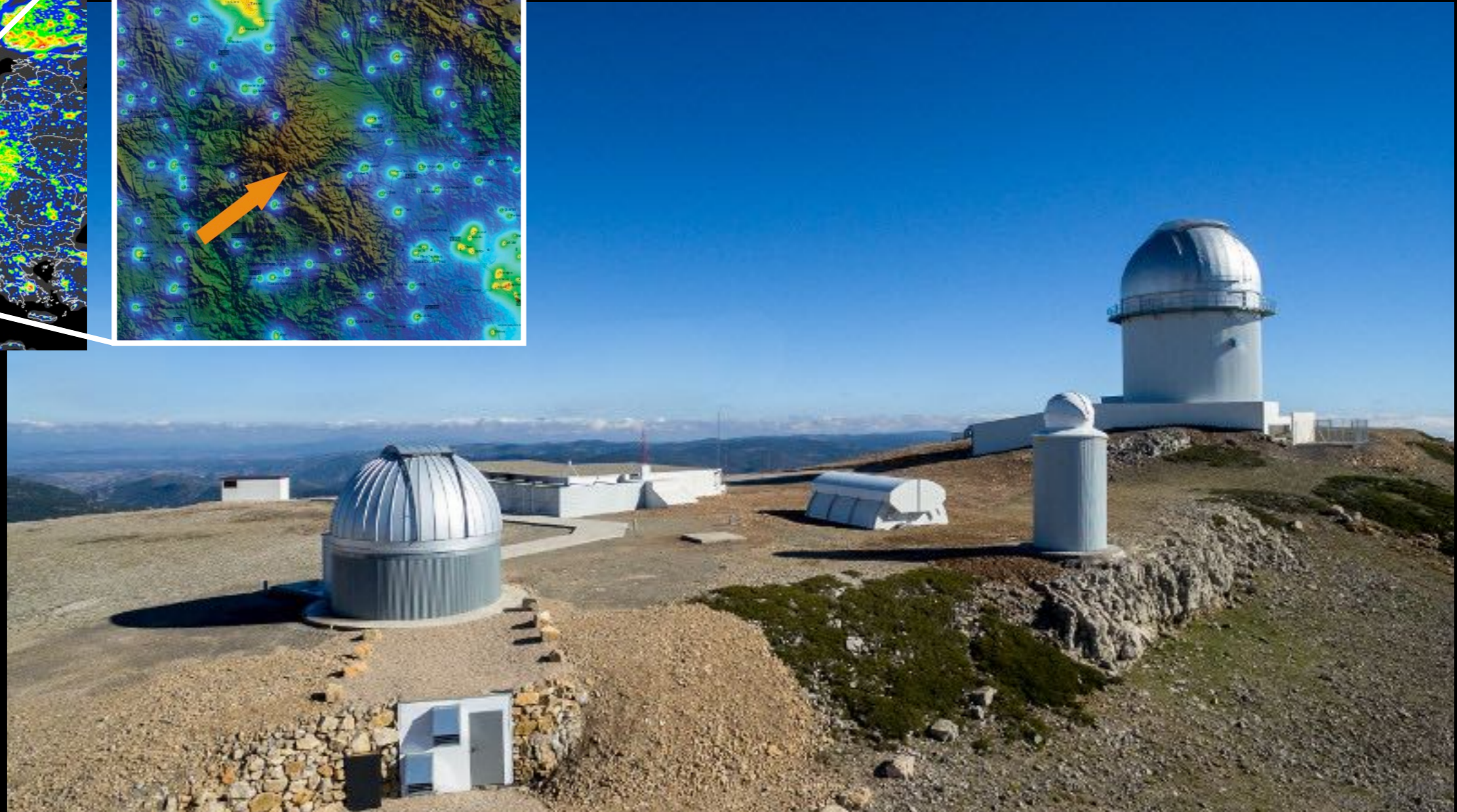
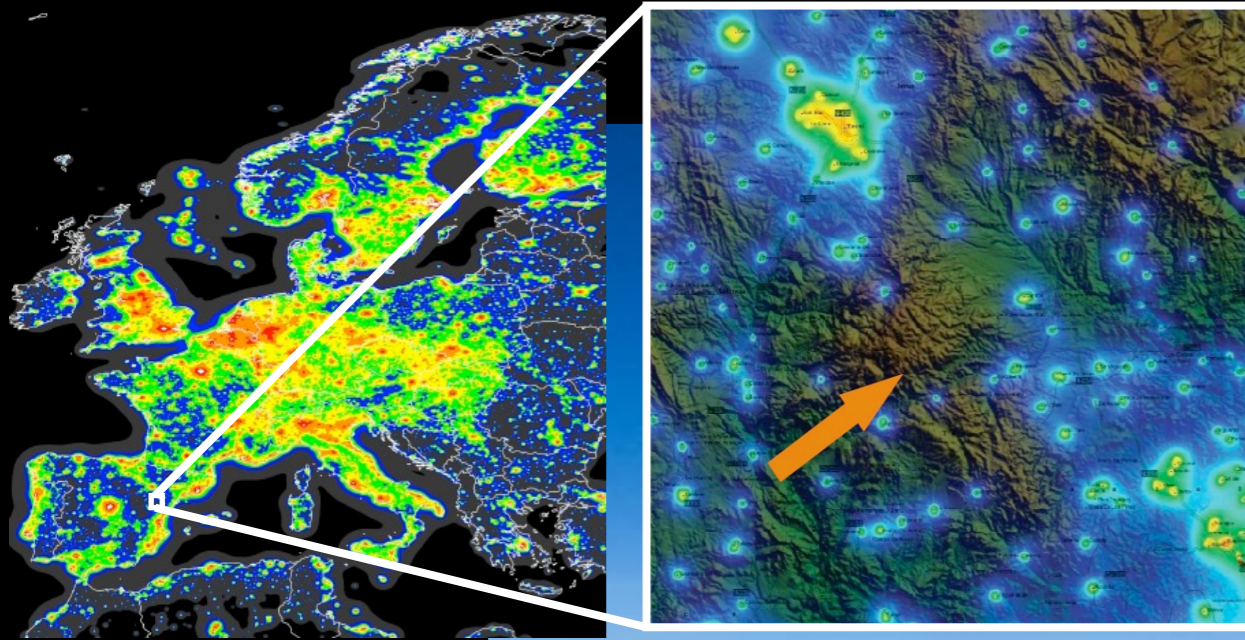
Variability Studies with Wide Field Imagers

A. Ederoclite
IAG/USP



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El Observatorio Astrofísico de Javalambre





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T250/JST



2.50m
f/3.5

FoV = 5sq.deg.



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Benitez et al. (2014)

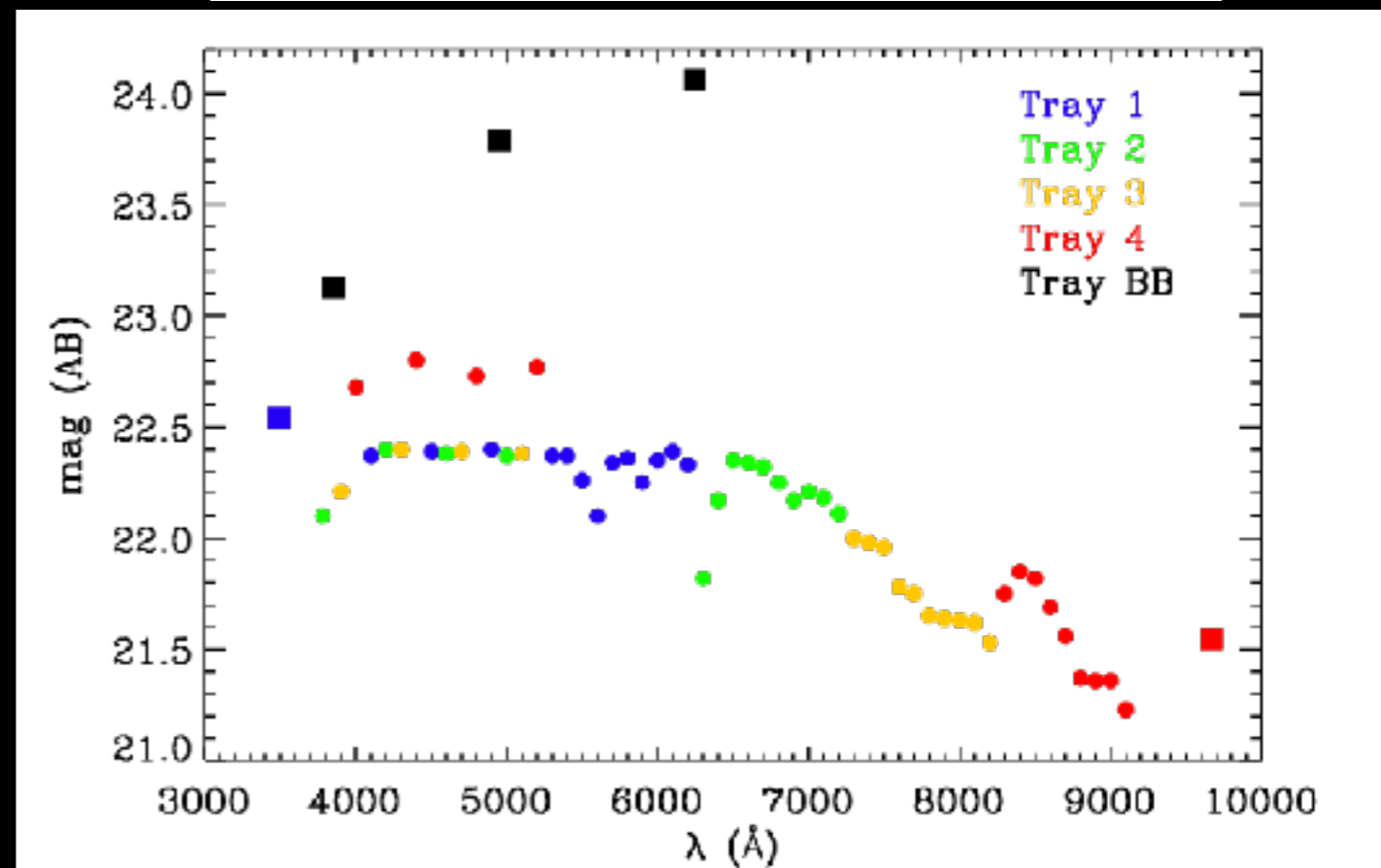
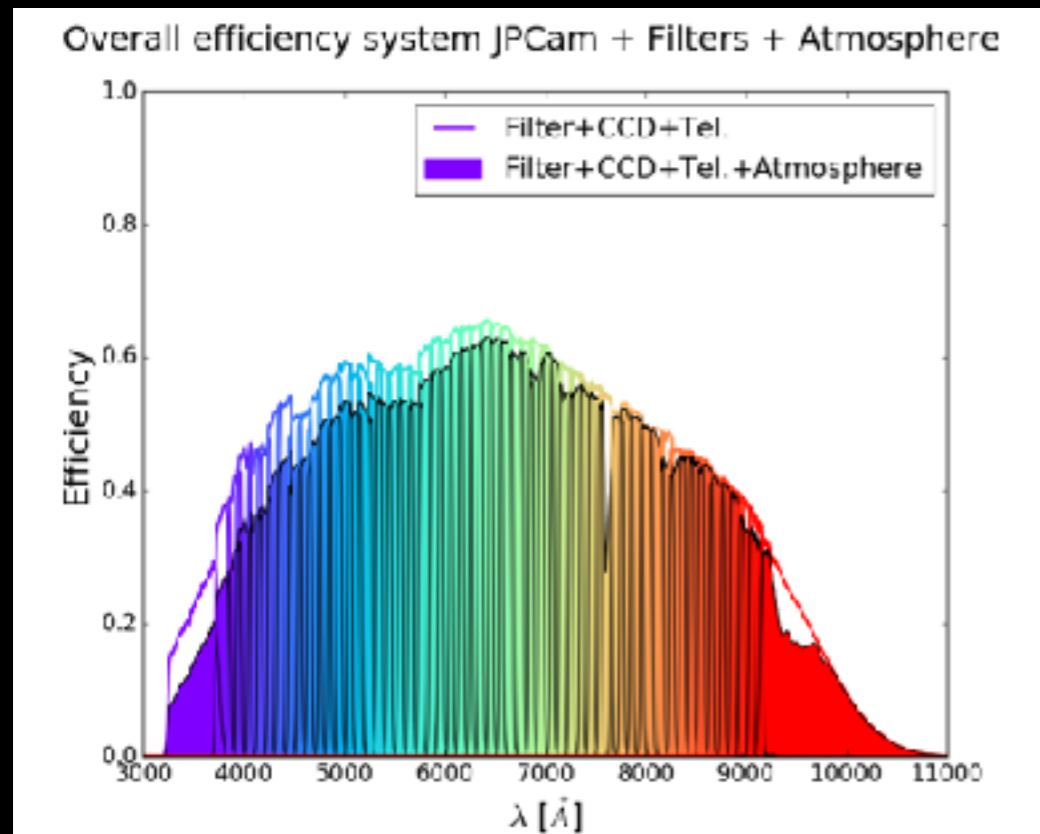
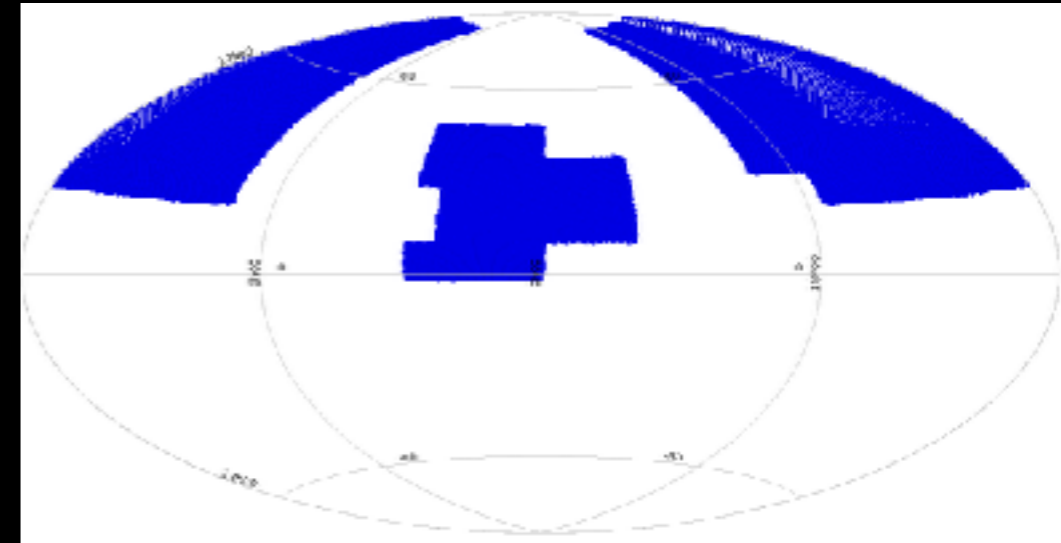
400 M galaxies

400 M stars

2 M quasars

4000 SNe Ia

J-PAS





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T80/JAST



80cm

f/4.5

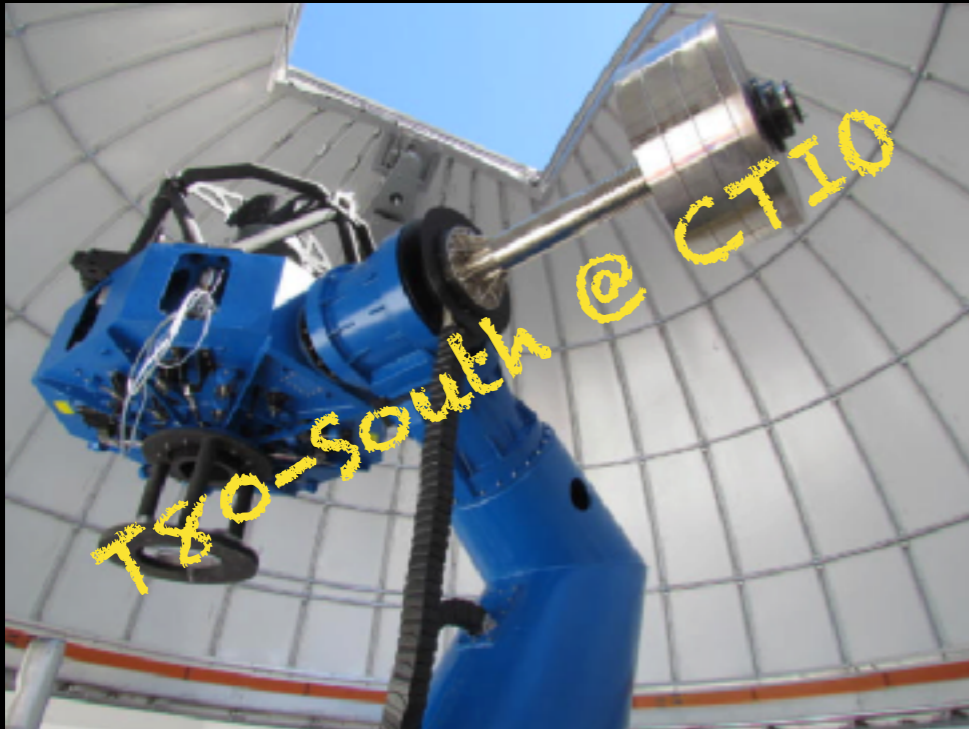
FoV ~ 2sq.deg.

9k x 9k CCD



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T80/JAST



80cm

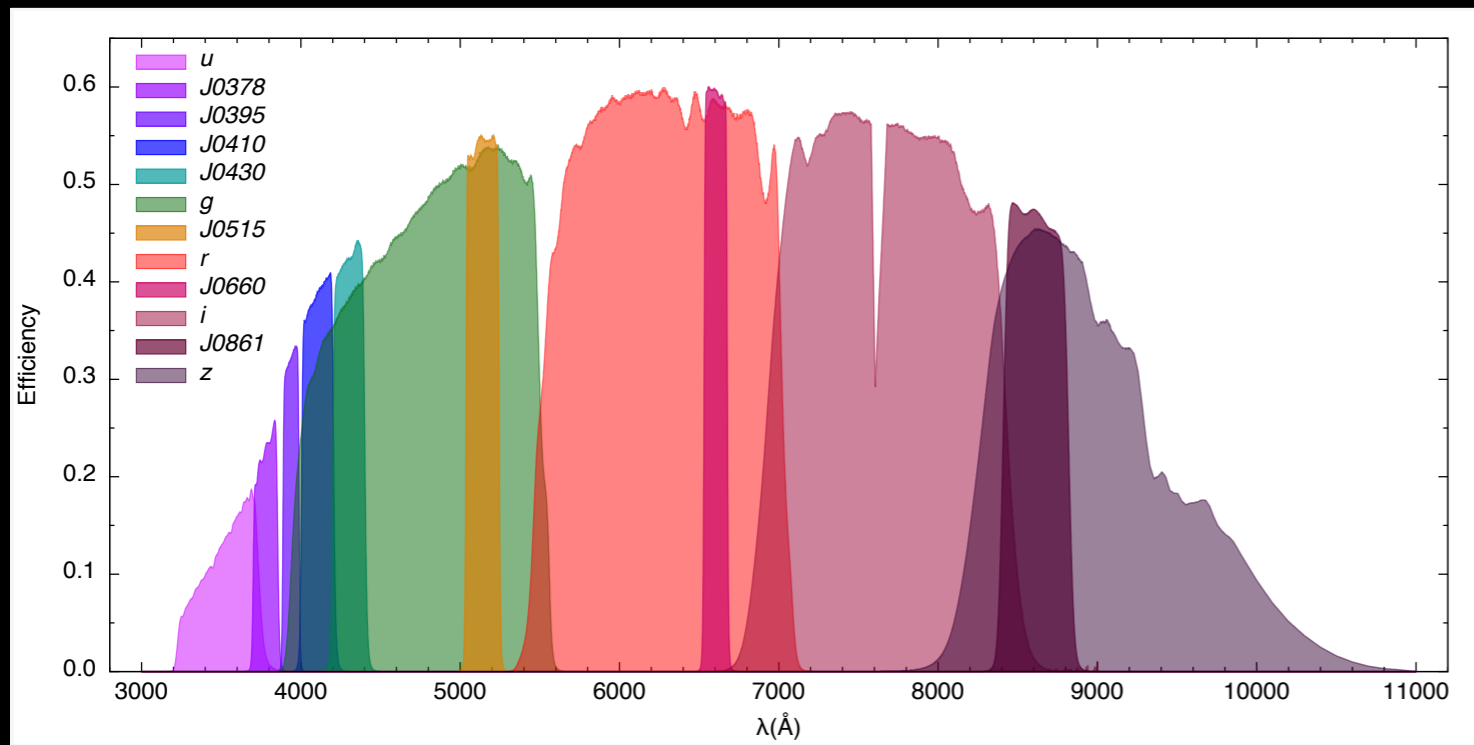
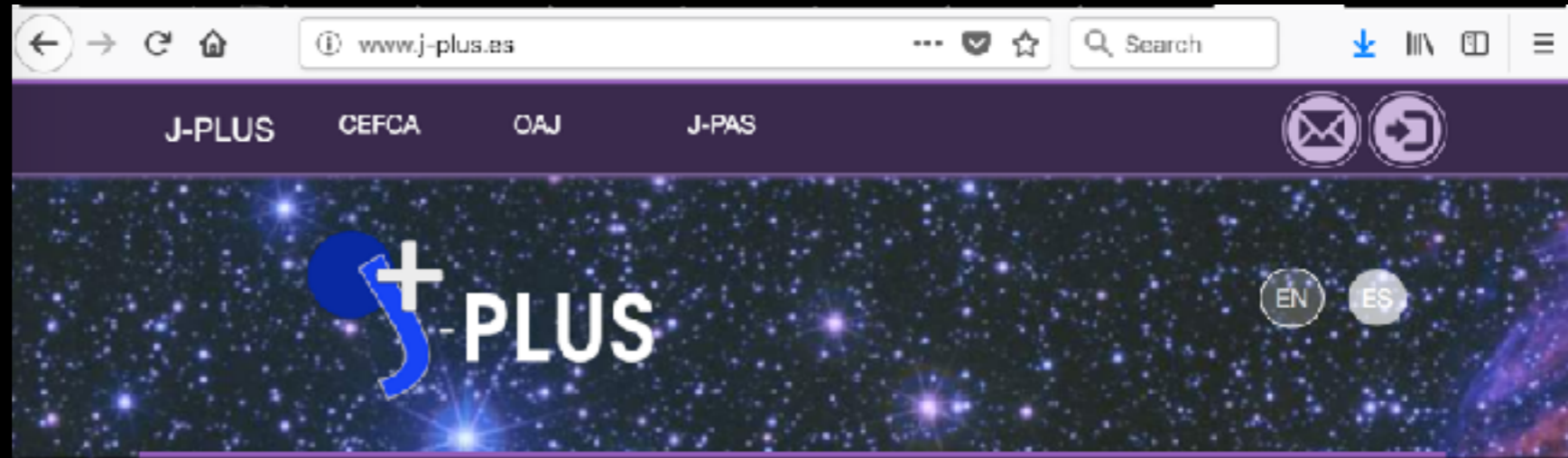
f/4.5

FoV ~ 2sq.deg.

9k x 9k CCD



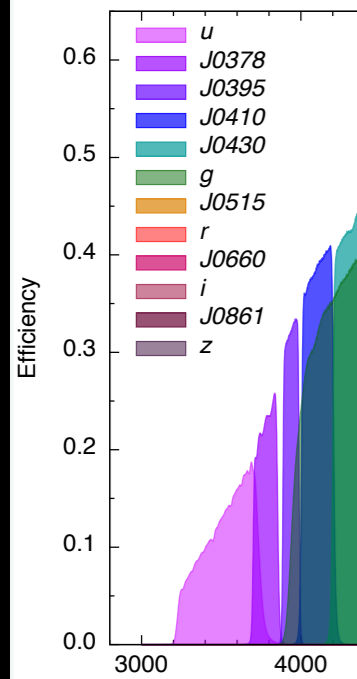
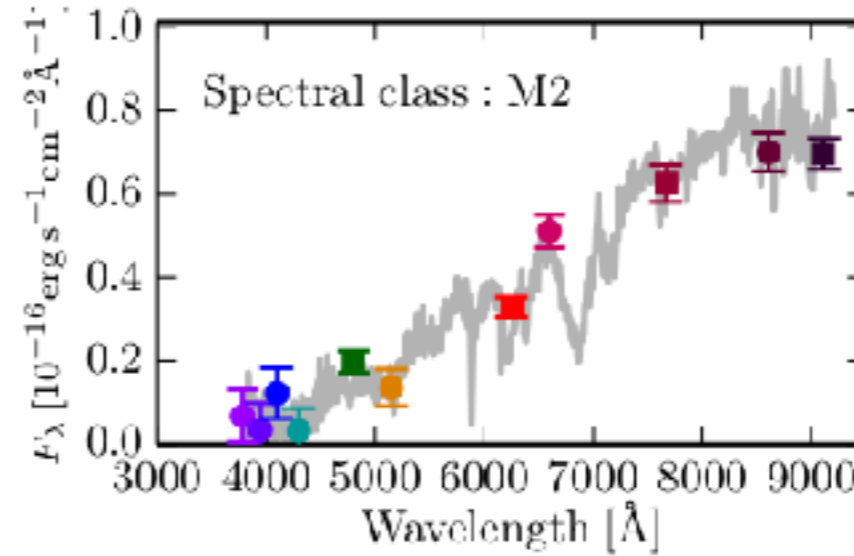
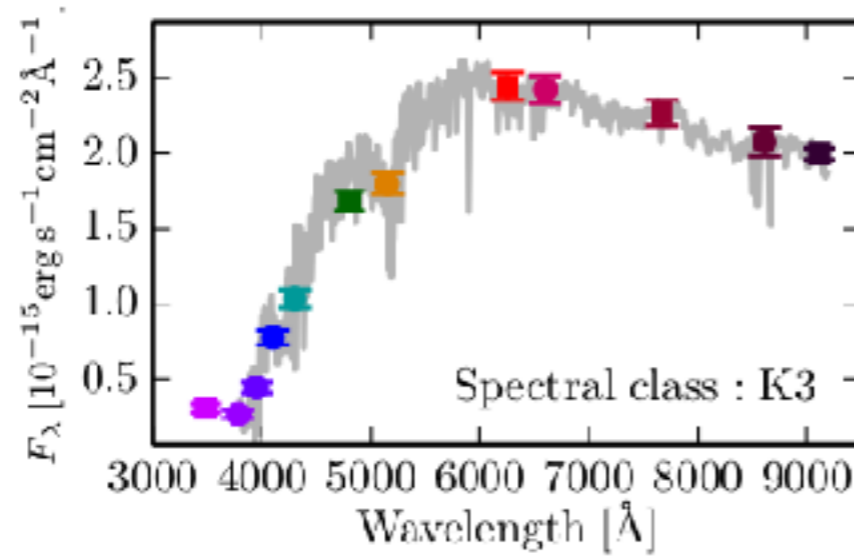
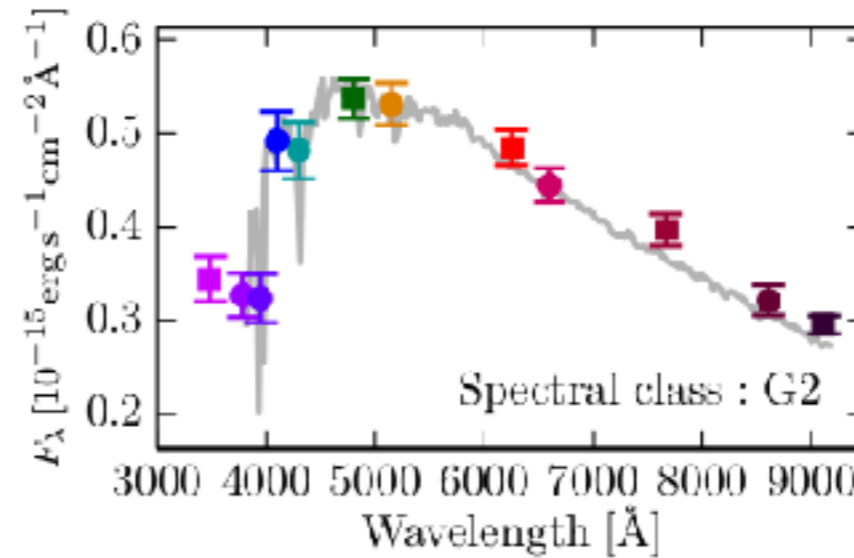
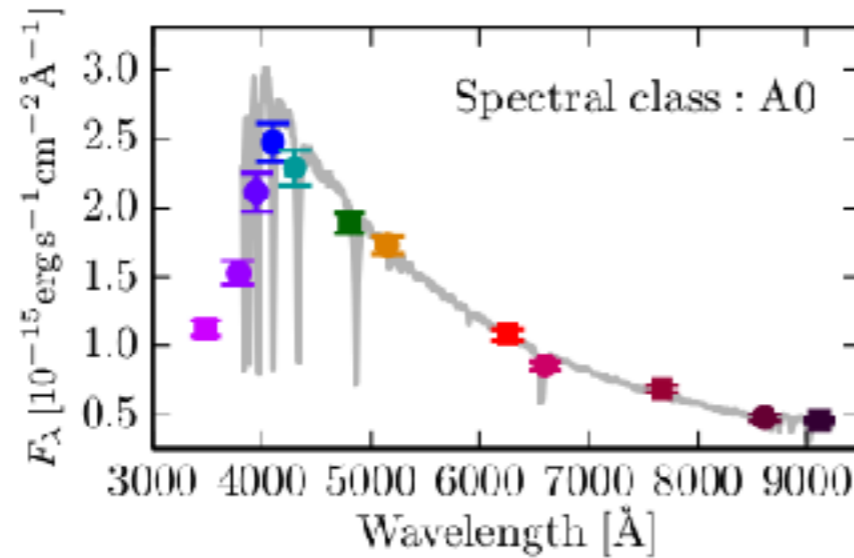
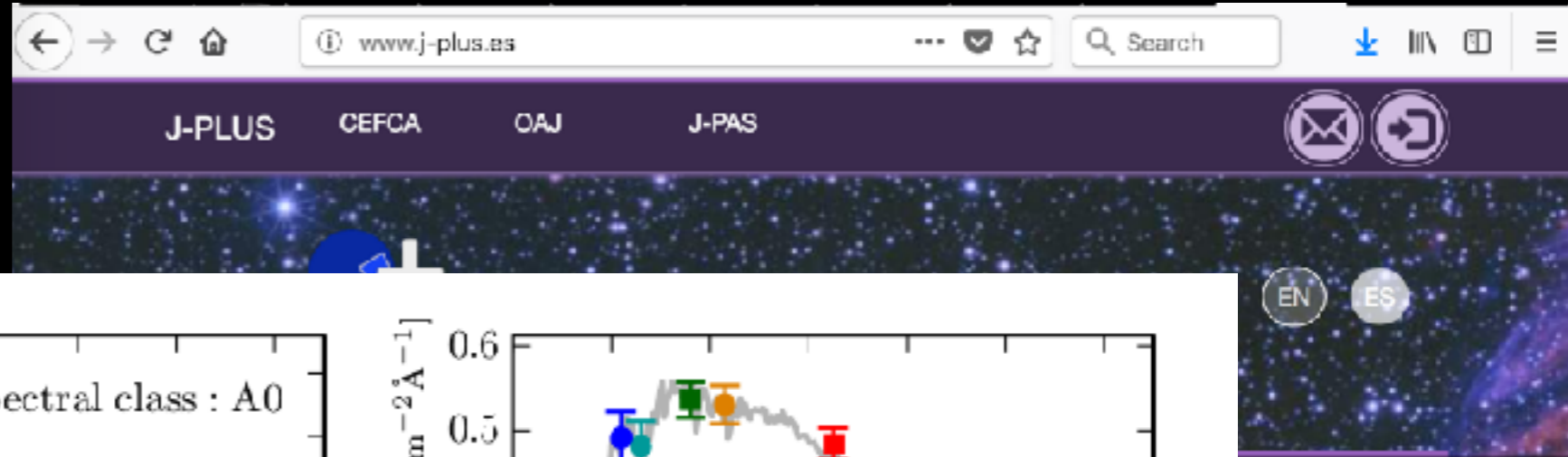
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EDR	Oct 2017	36 sq.deg
DR1	Jul 2018	1000 sq.deg.

13 M objects

<https://archive.cefca.es/catalogues/login>



EN ES

36 sq.deg

1000 sq.deg.

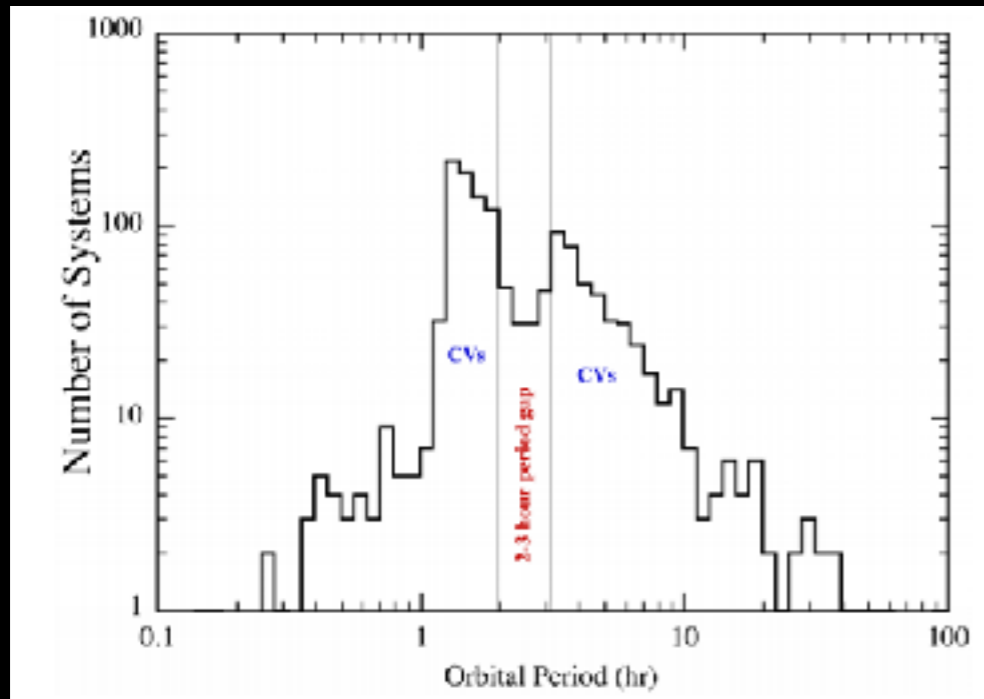
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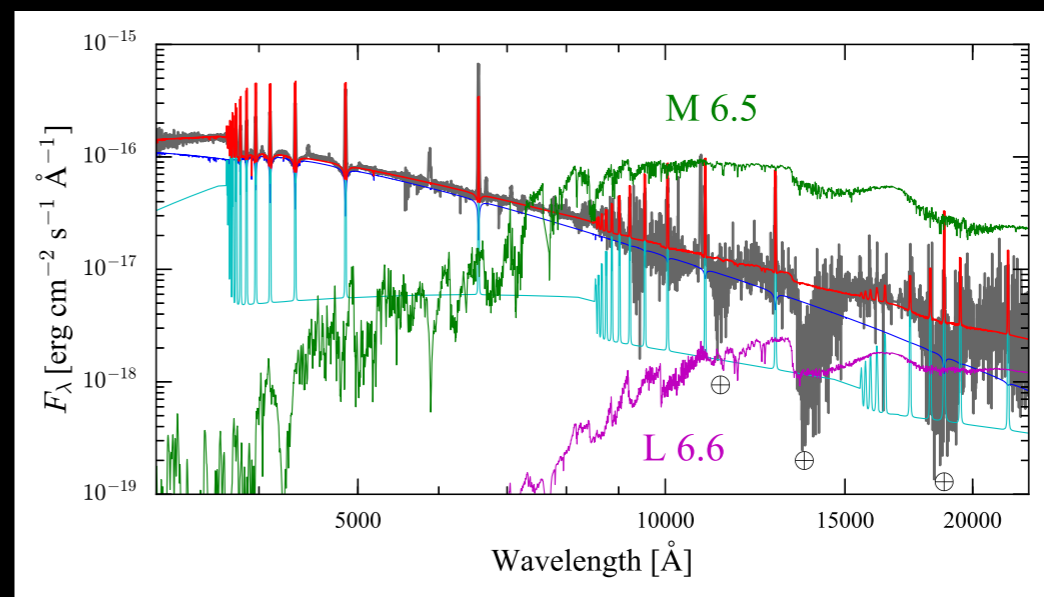
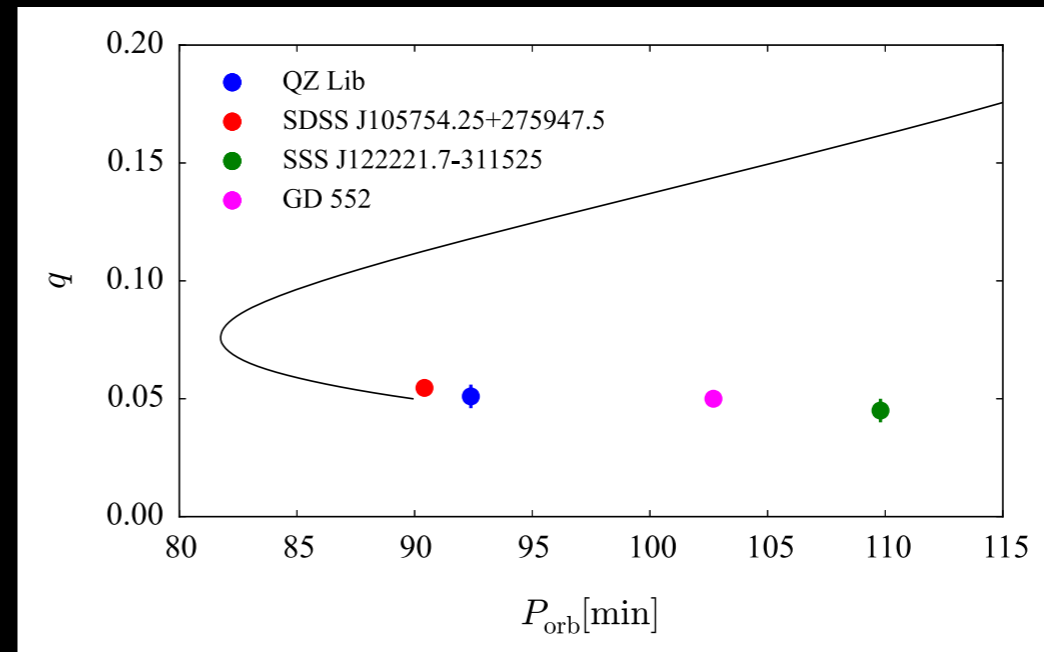


Period Bouncers

Kalomeni et al. (2016)



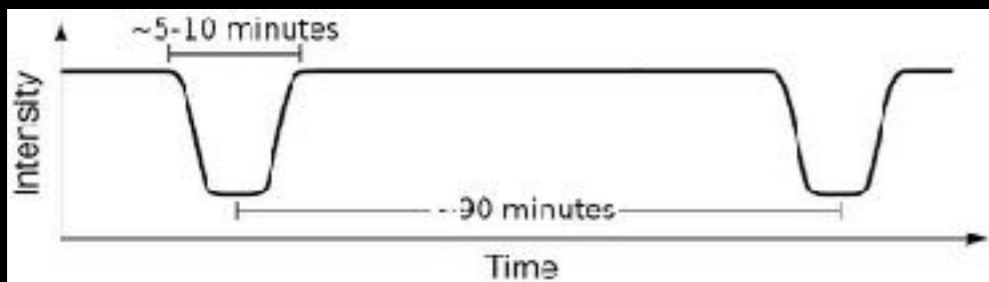
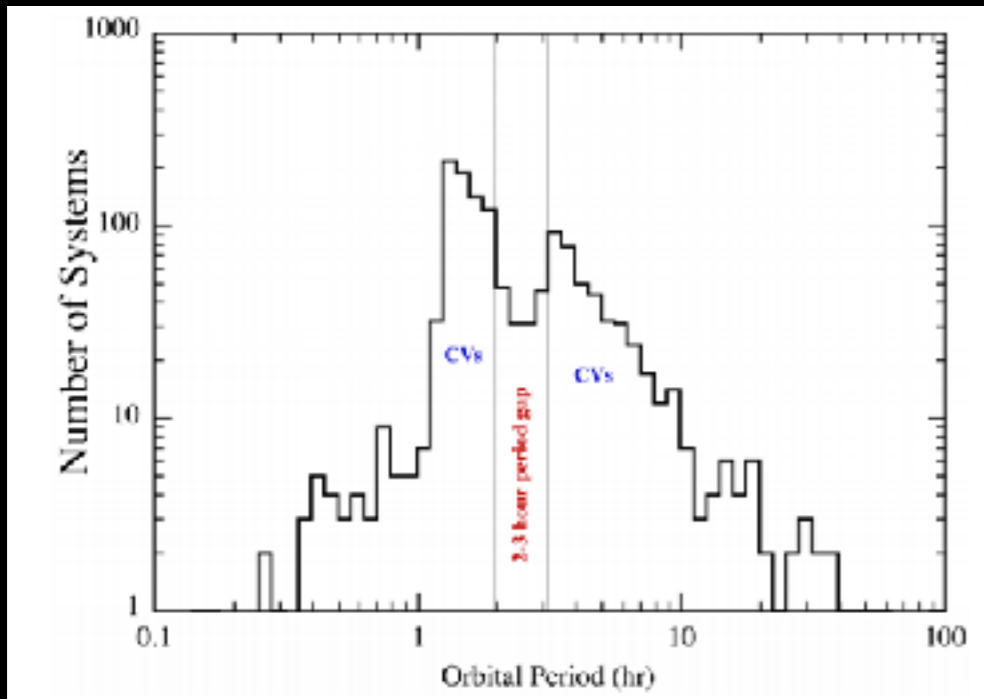
Pala et al. (2018)



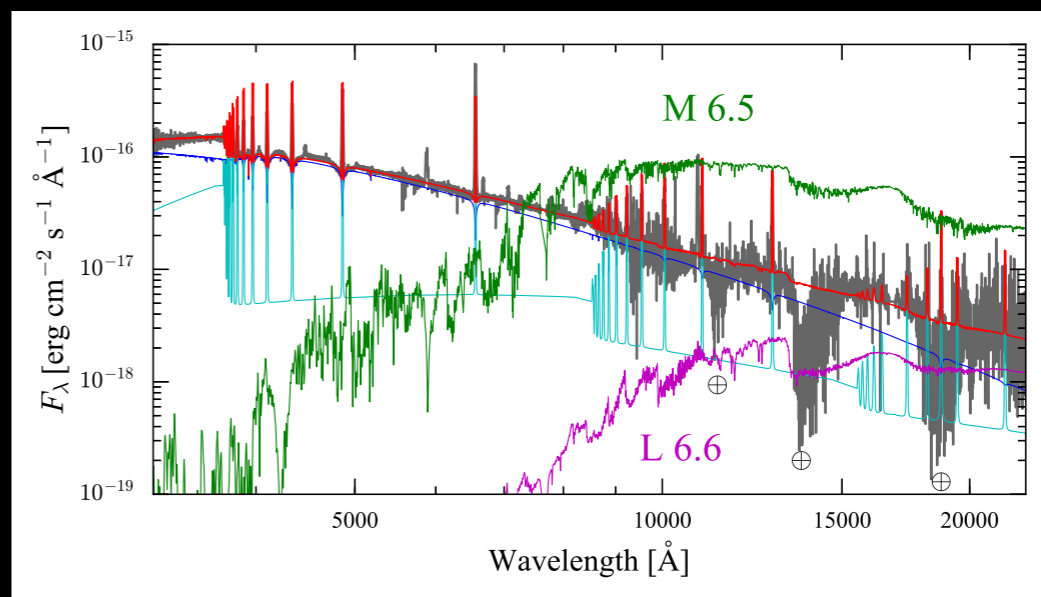
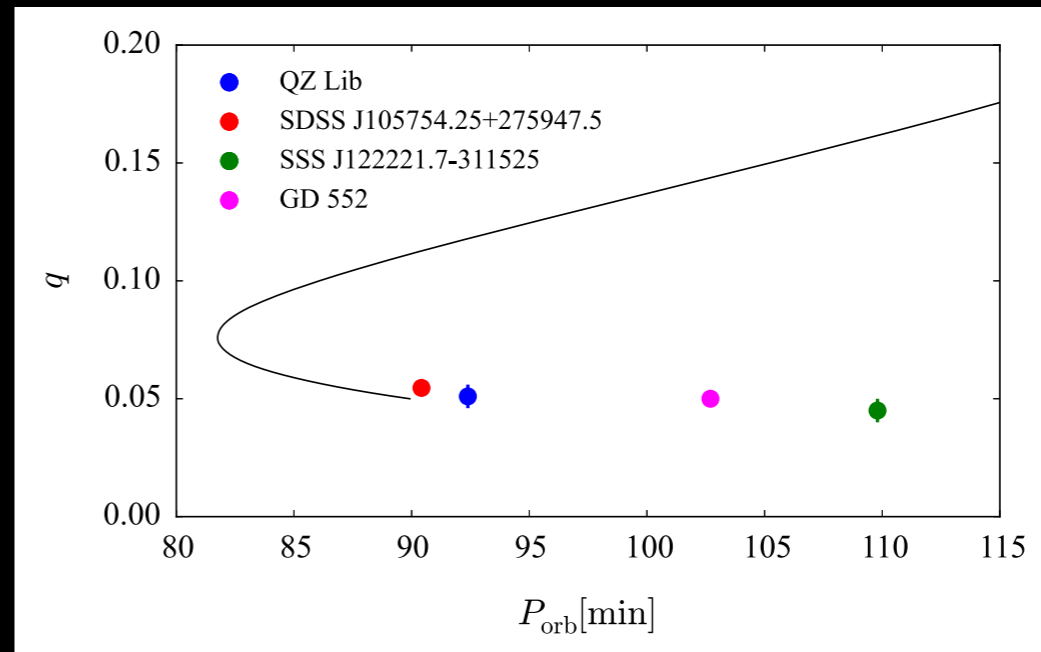


Period Bouncers

Kalomeni et al. (2016)



Pala et al. (2018)

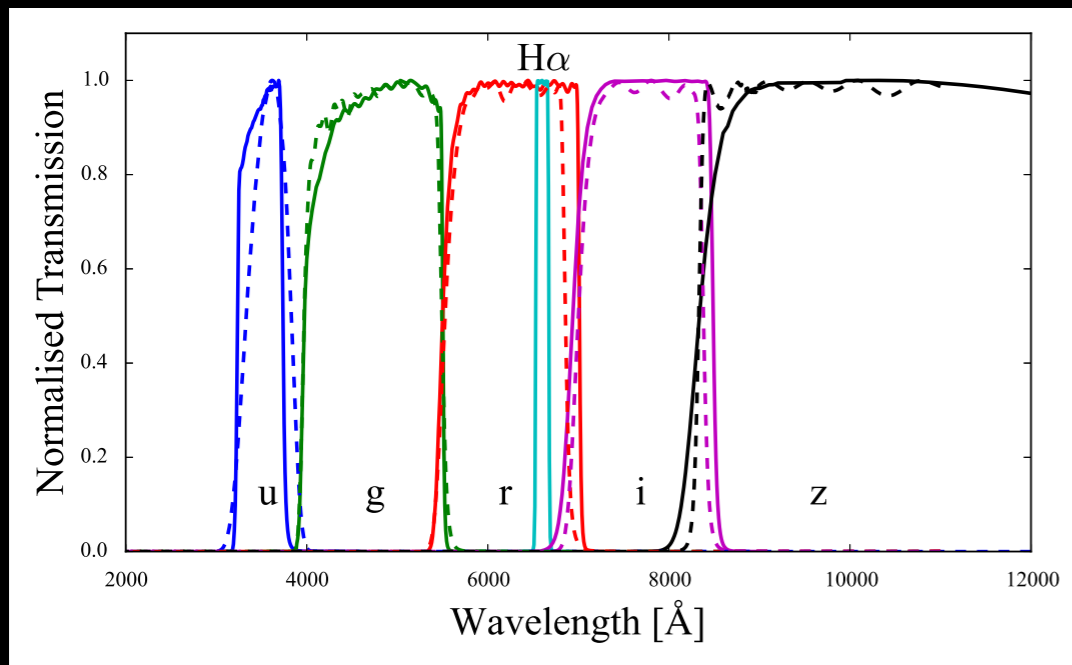




CHiCaS: Contact binaries High Cadence Survey

Anna Francesca Pala, Alessandro Ederoclite

**Boris Gänsicke, J. Abril, H. Vázquez Ramió, R. Raddi,
N. P. Gentile Fusillo, A. Rebassa-Mansergas**



268 hours awarded over 4 semesters

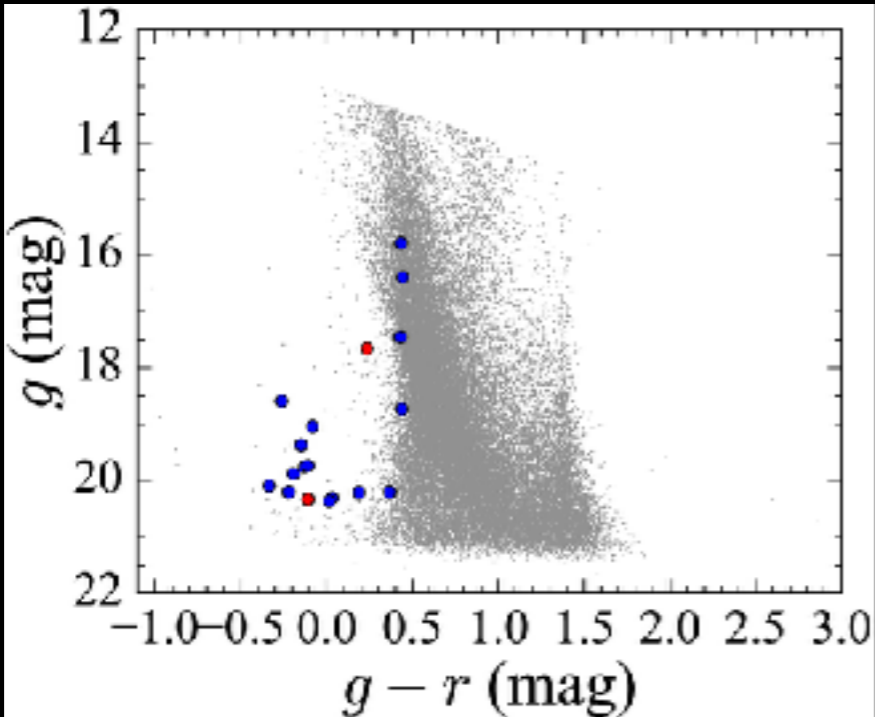
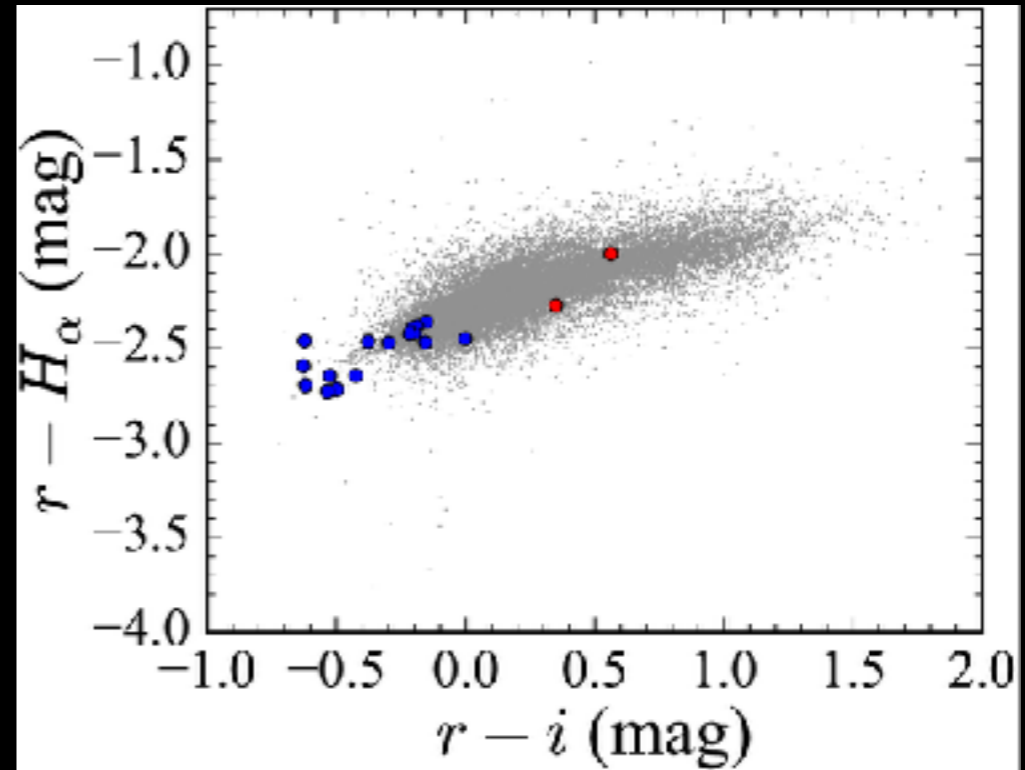
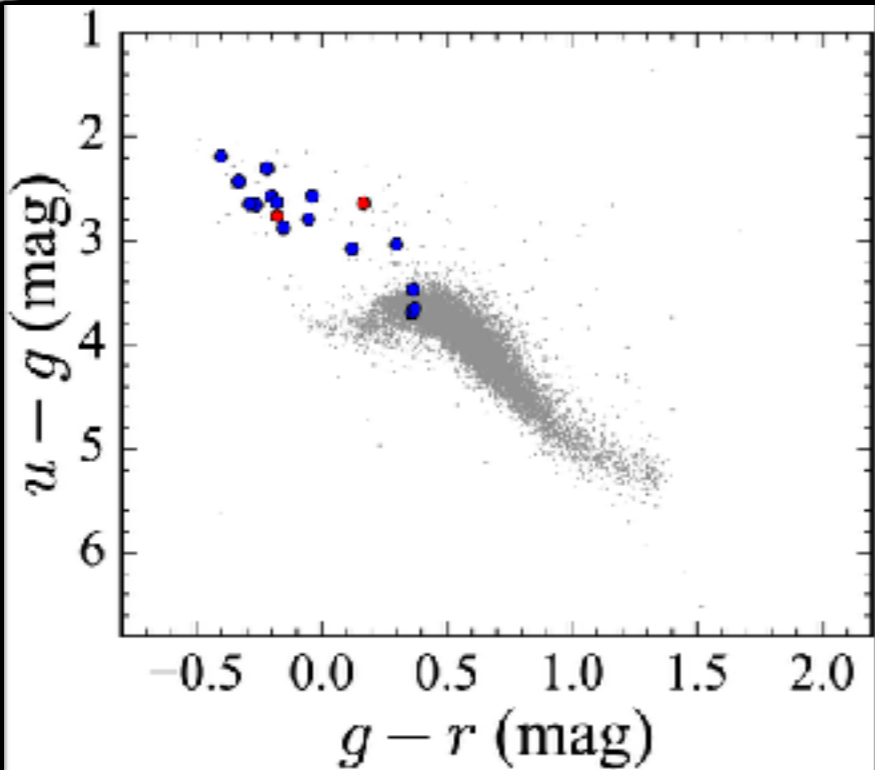
**136 sq.deg. @ $|b| \sim 15^\circ$
 $E(B-V) < 0.05$**

**Multi-band photometry
($u, g, r, i, z, H\alpha$)**

**3 hours of ininterrupted time-series
($g, T_{\text{exp}} = 1\text{min}$)**

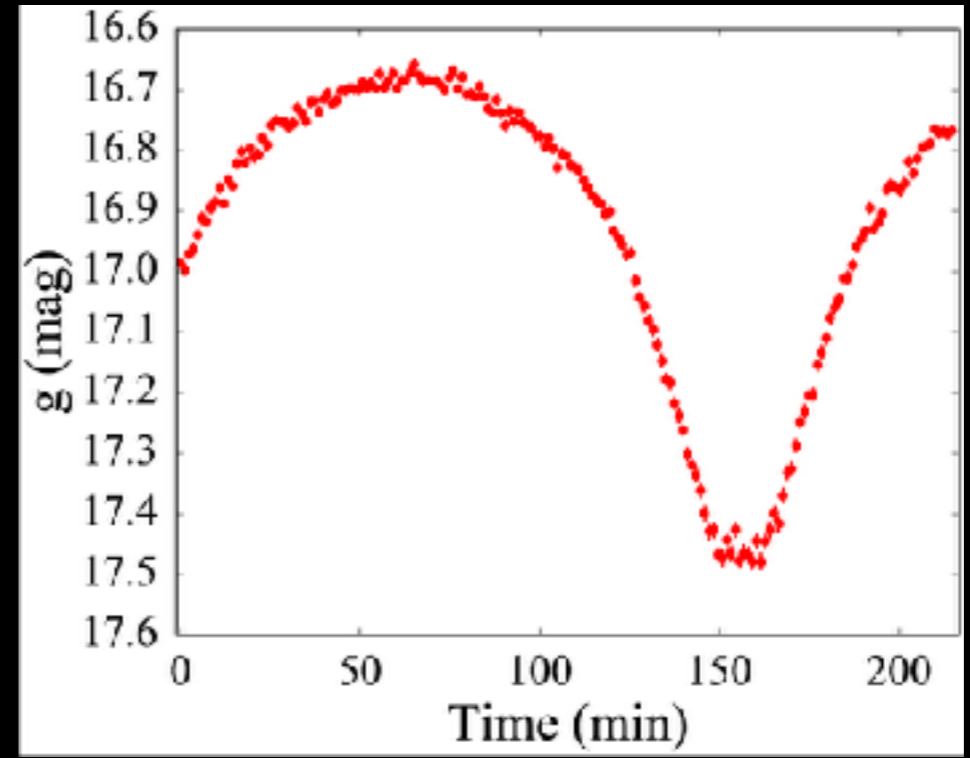
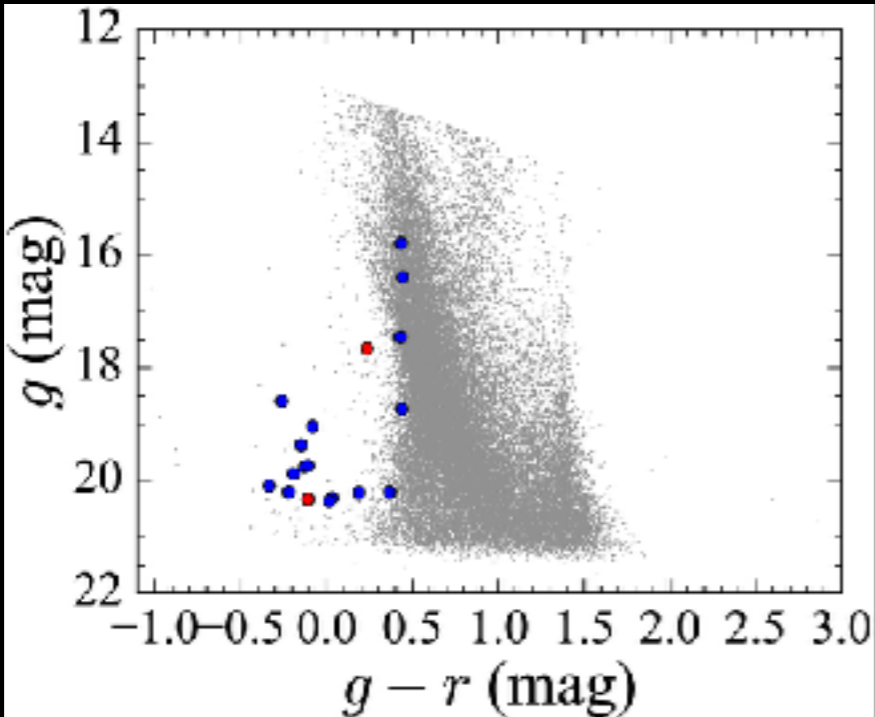
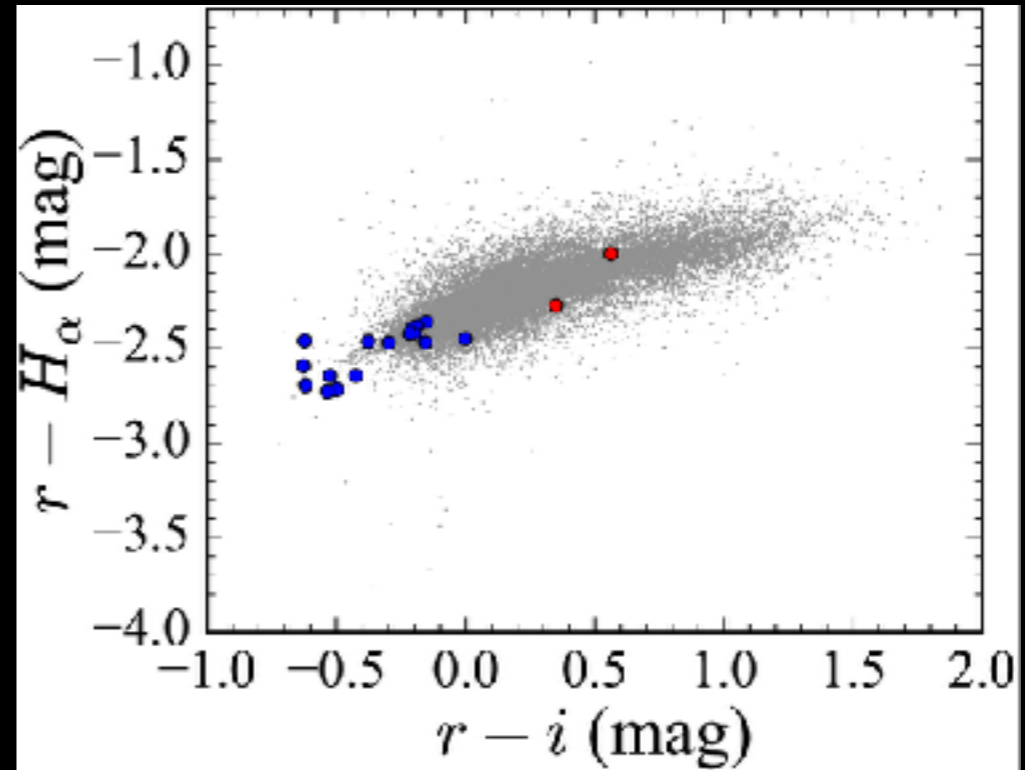
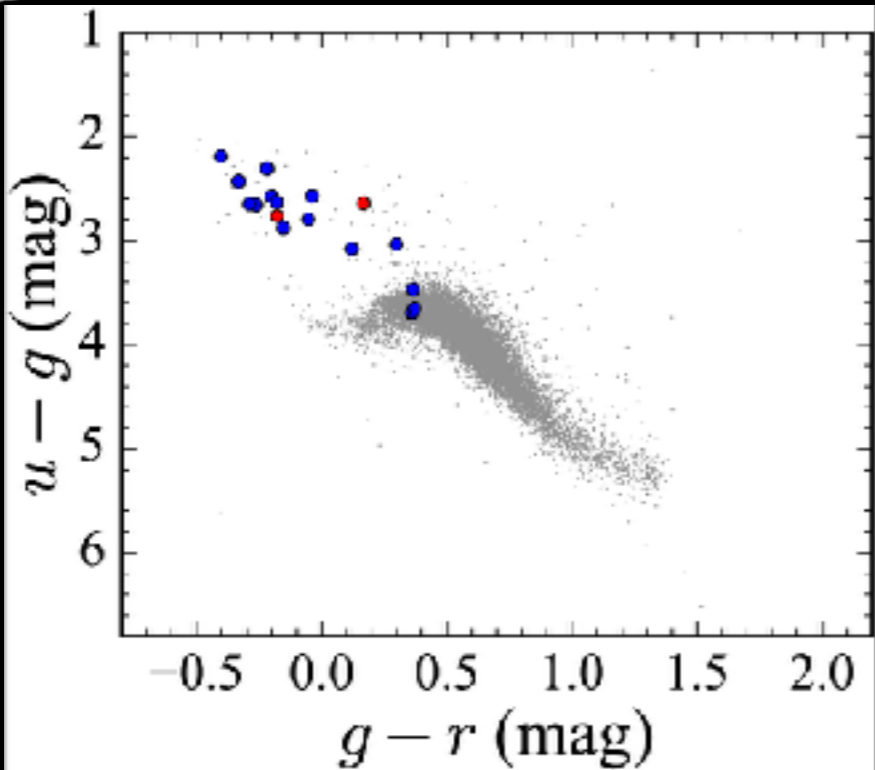


CHiCaS: data



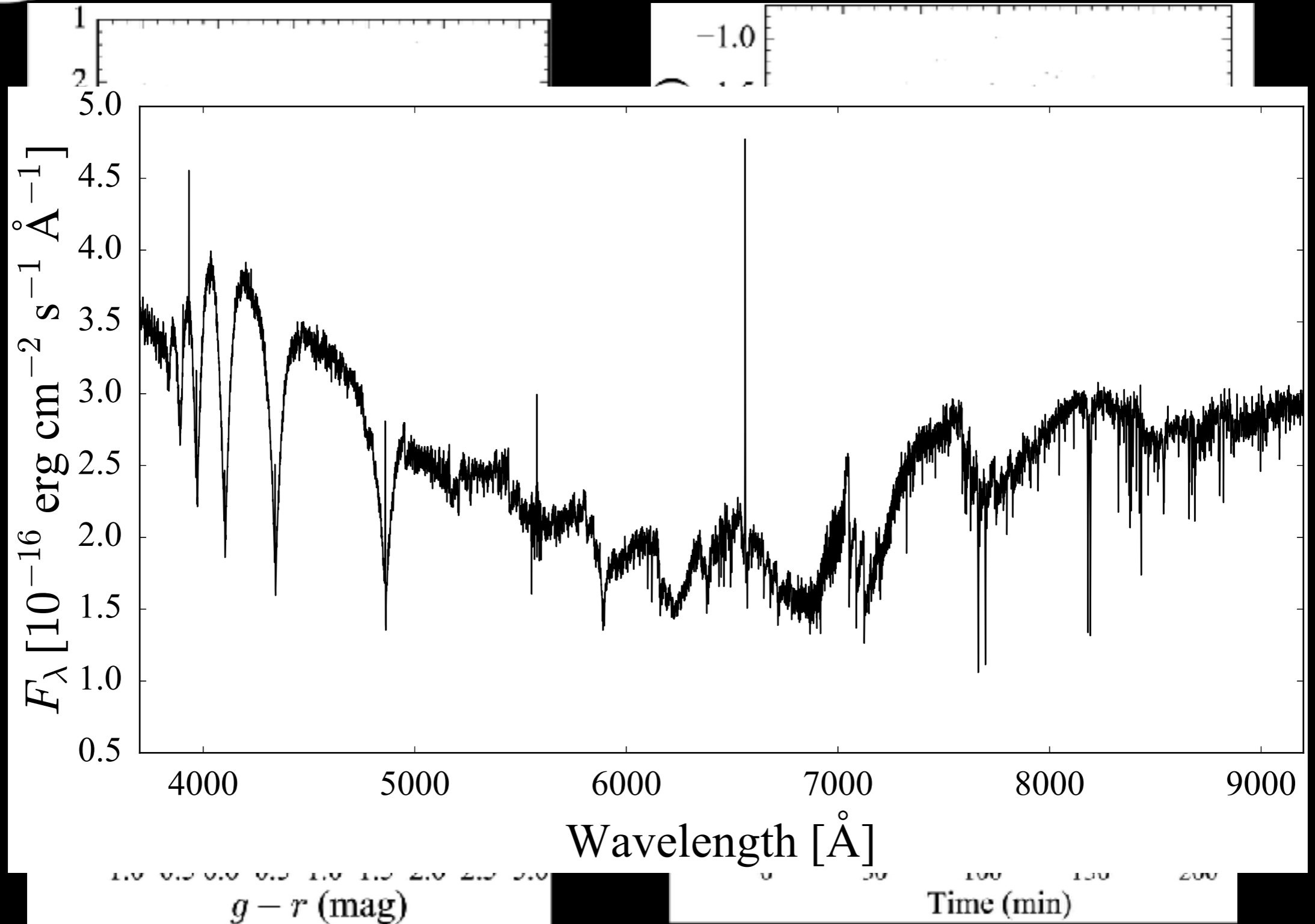


CHiCaS: data





CHiCaS: data





Time available at OAJ

- 20% time offered to community
- J-/S-PLUS observes in
 - good weather
 - not bright time





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J-VAR

PI: A. Ederoclite

co-PI: H. Vázquez Ramió

Core Team

**Vinicius Placco
Beatriz Blanco Siffert
Alvaro Alvarez-Candal**

Research Team

**Silvia Bonoli
Jorge Carvano
Jaan Laur
Max Mahlke
Ribamar Reis
Enrique Solano**

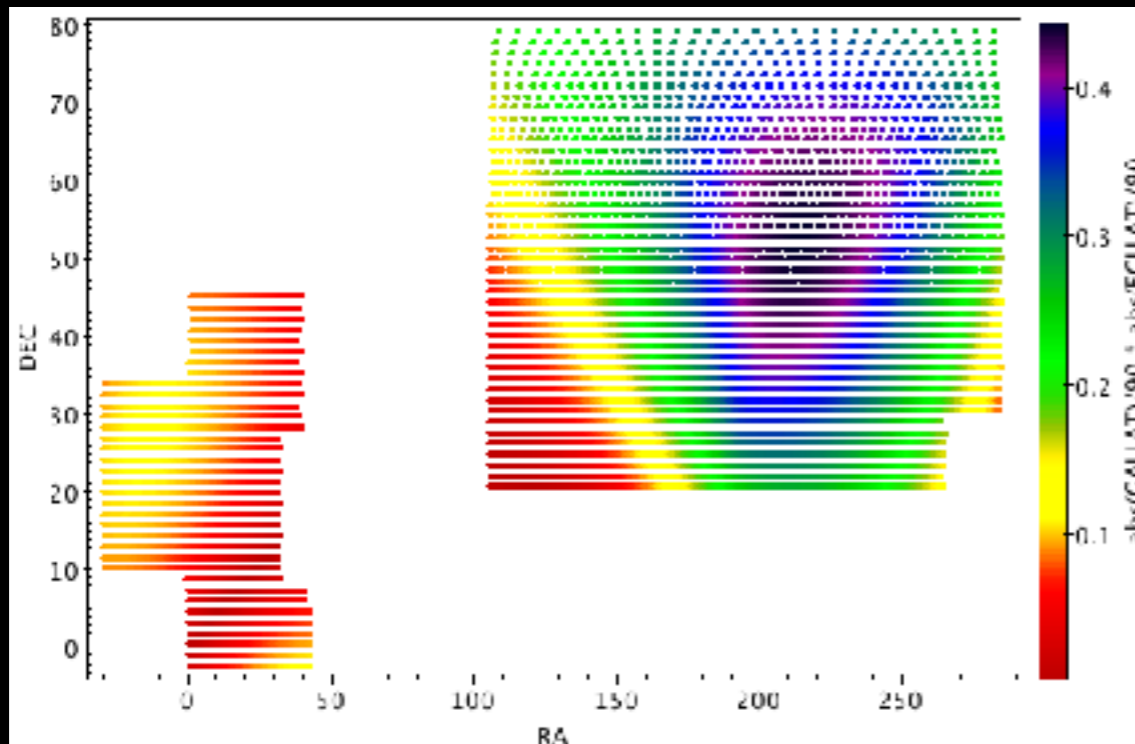
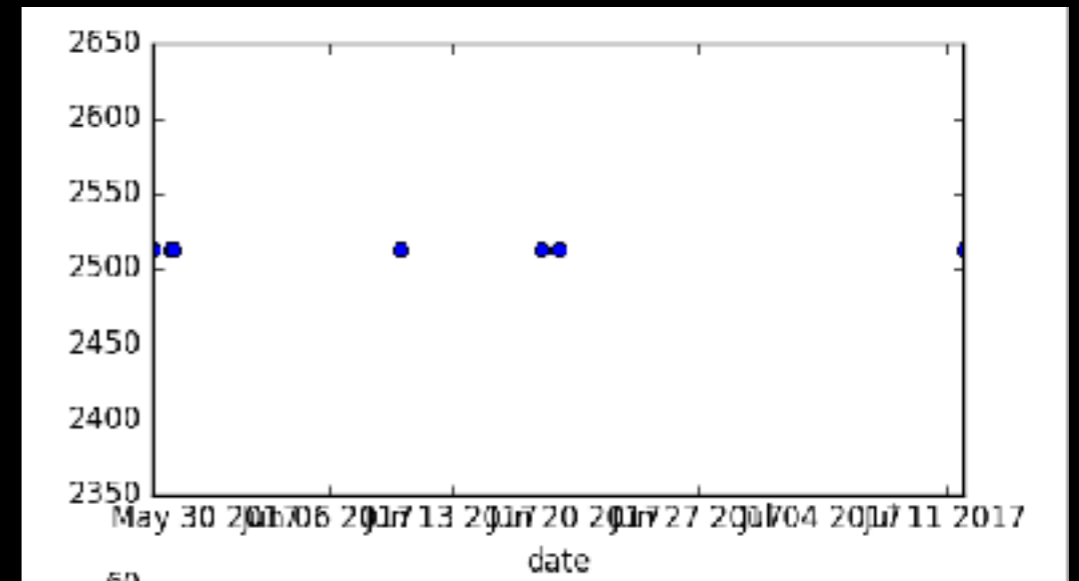


J-VAR: Strategy

Ideal: logarithmic time sampling

Constraint: observe whenever possible

Piggyback on J-/S-PLUS for “calibration”

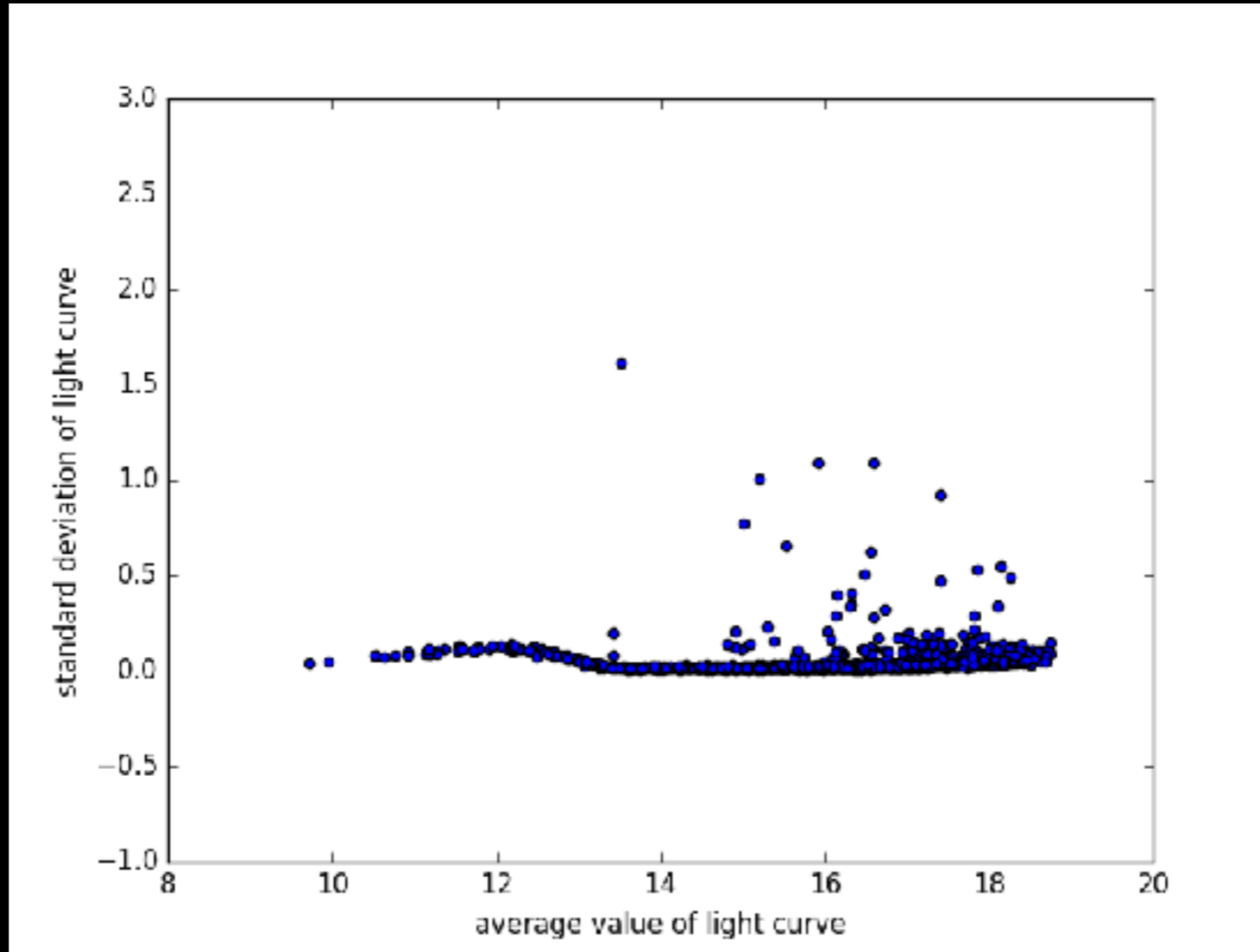


	exptime (s)
J0395	87
gSDSS	33
J0515	40
rSDSS	40
J0660	135
iSDSS	34
J0861	160

Dither (10arcsec) and repeat 3 times



Detection

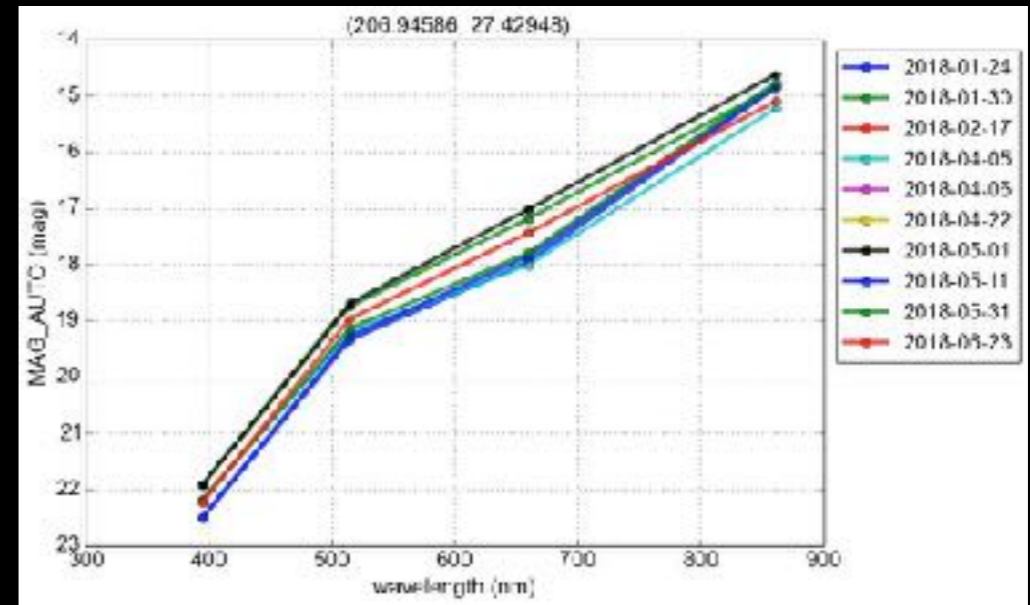
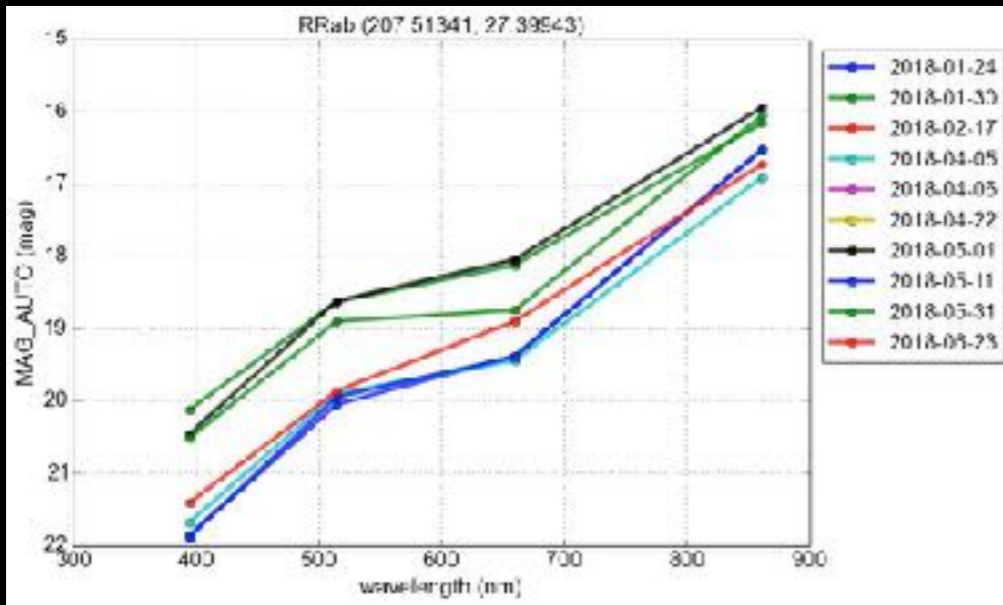
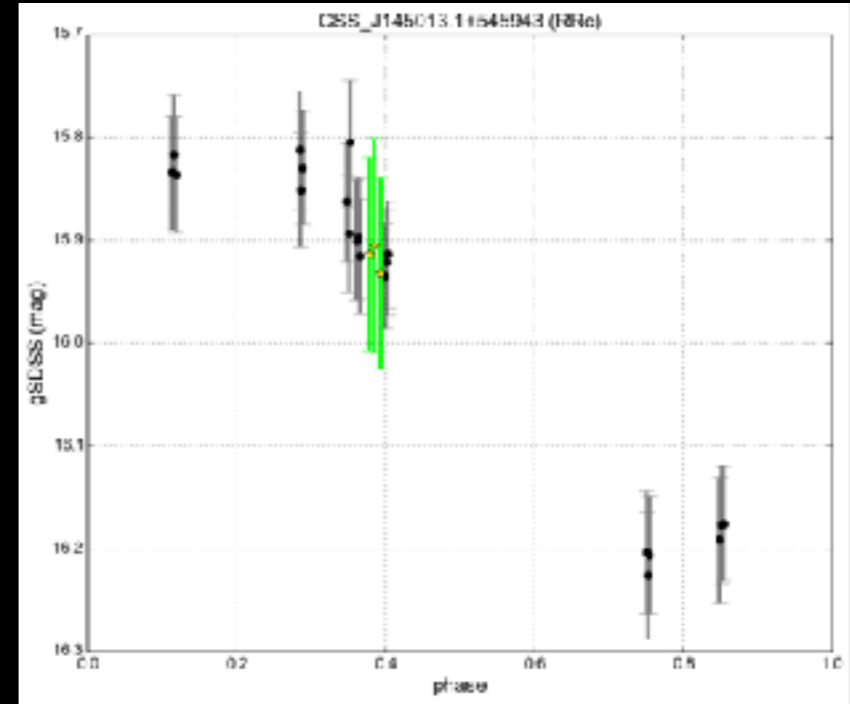
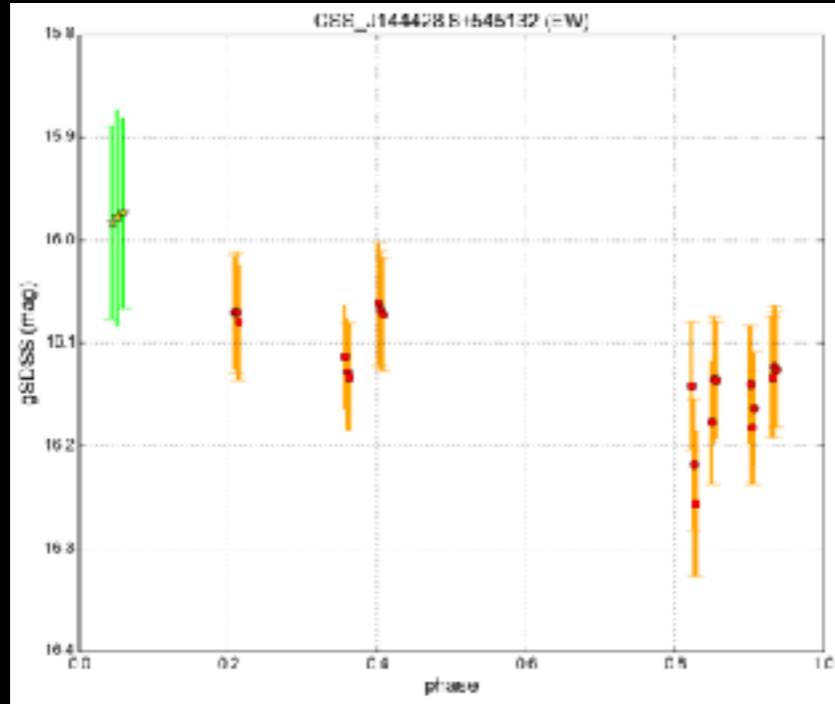


ALSO: comparison with SDSS/PanSTARRS

ALSO: differential imaging



Light Curves

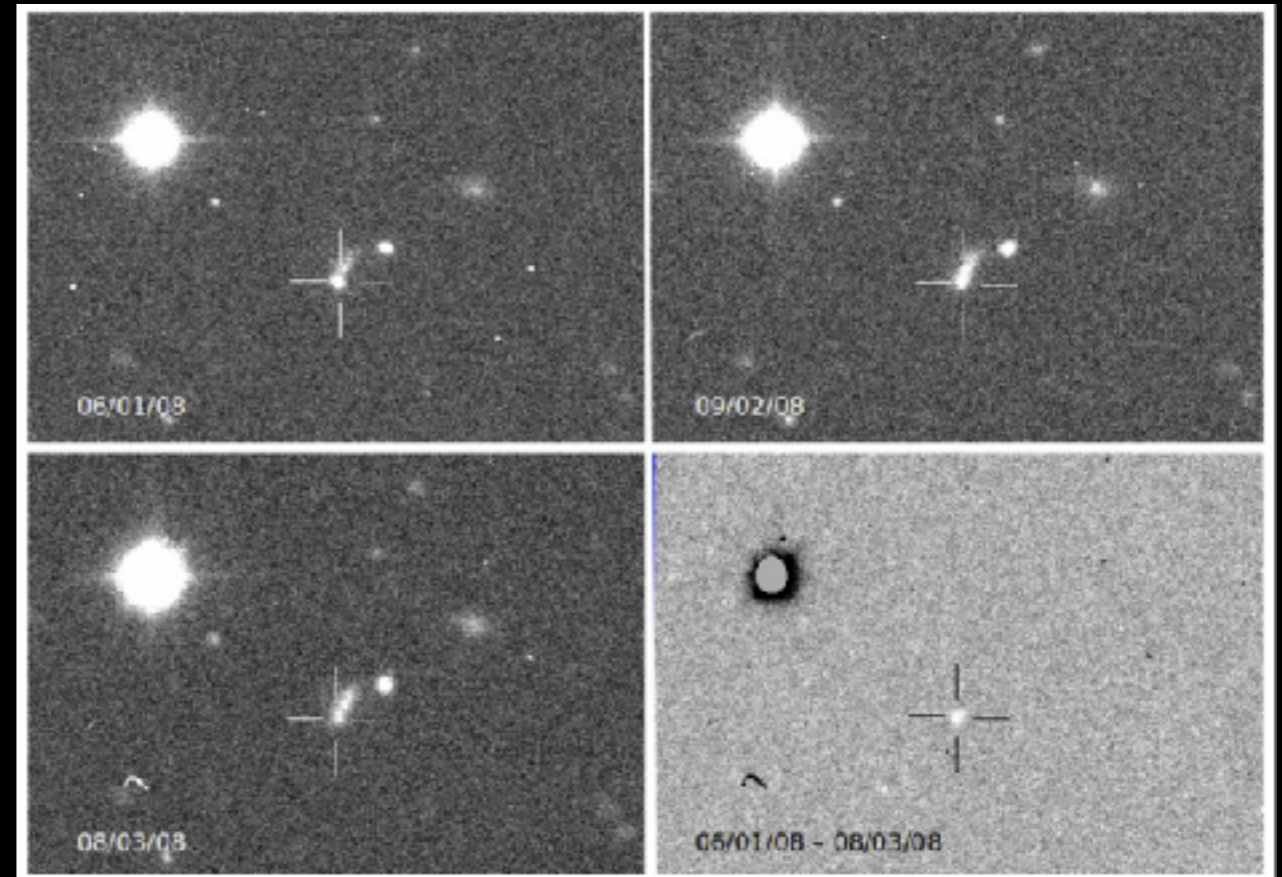
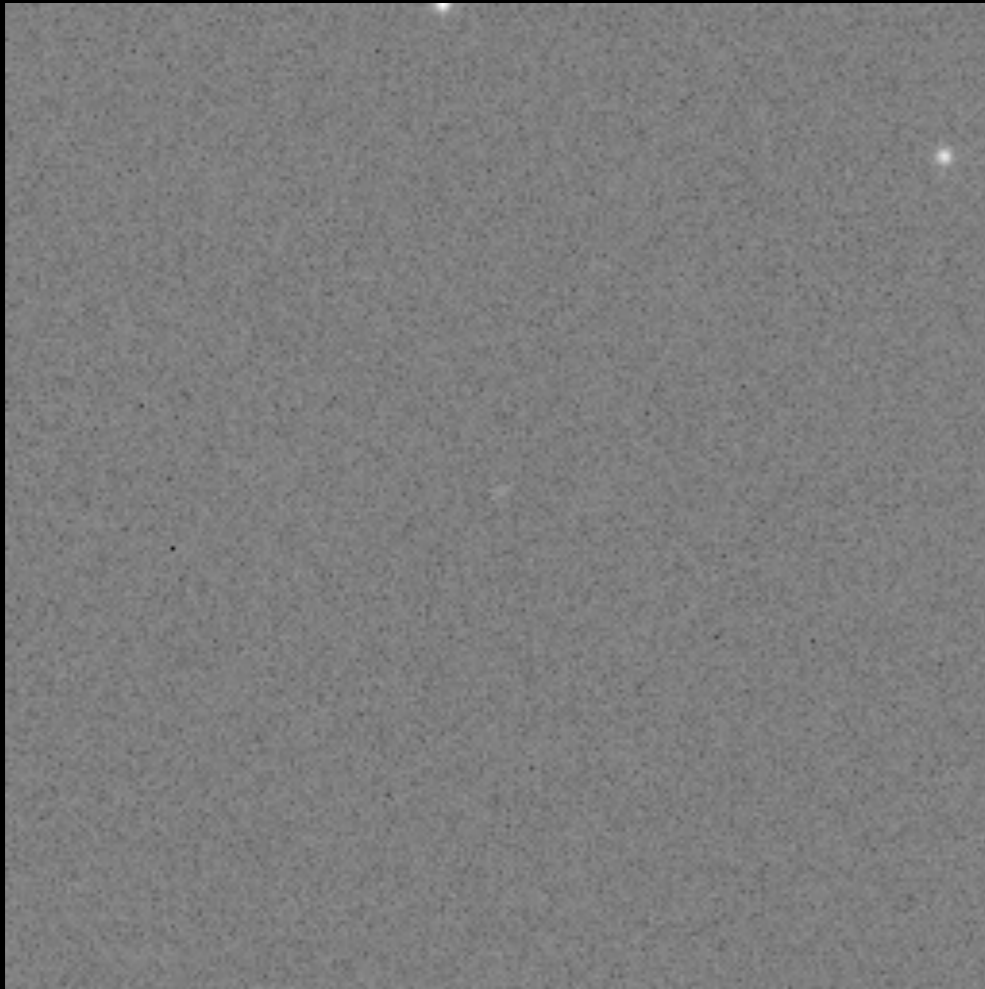




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Asteroids & SNe

Beatriz Sifert (UFRJ)
SN in ALHAMBRA



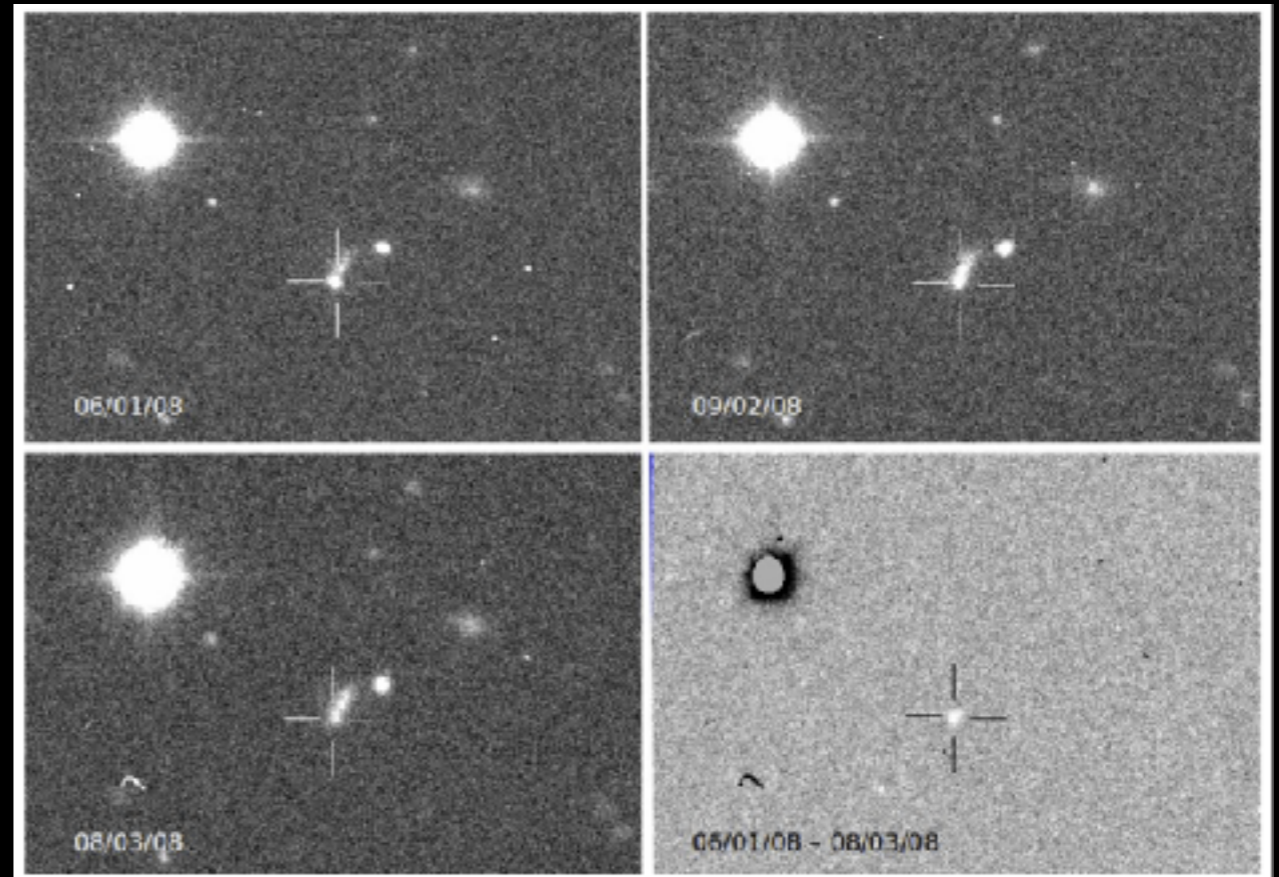
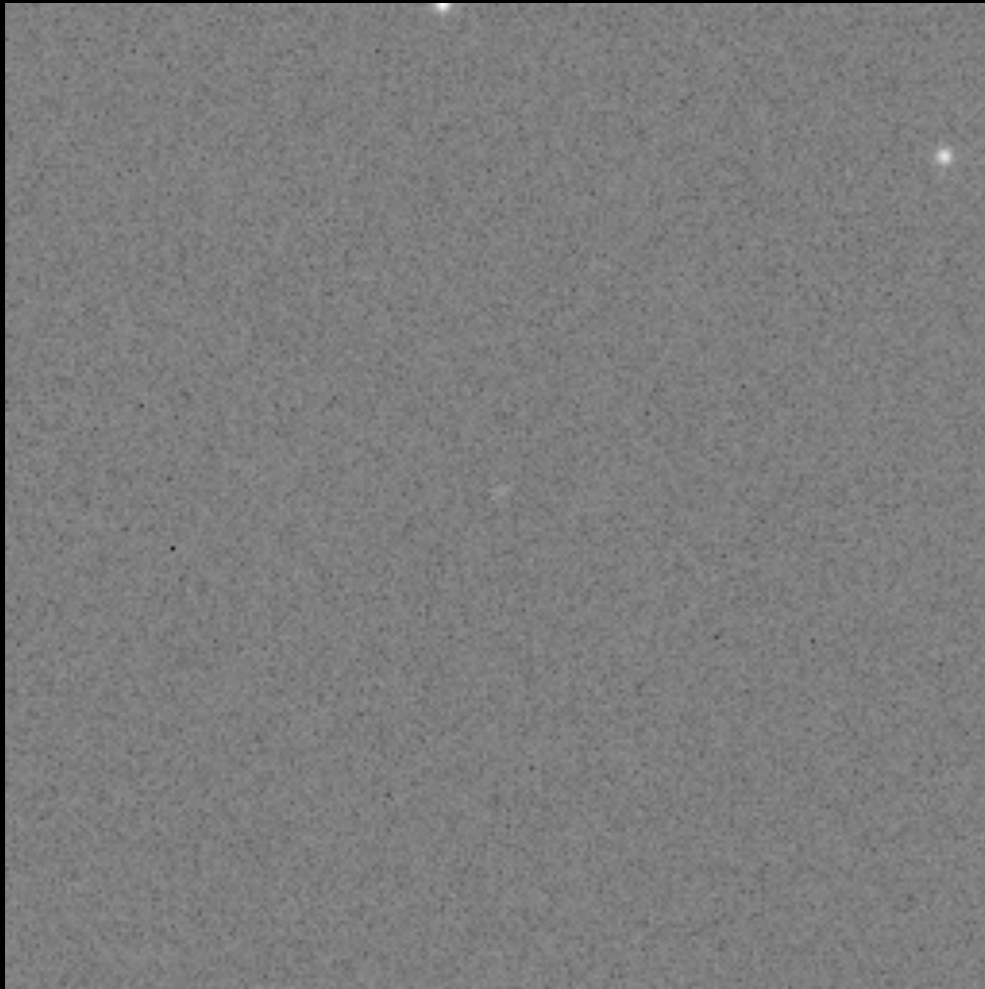
Detection! **OK!**
Calibration... **working on it!**

Image difference tested on J-PLUS => **OK!**
Include in jype => **pending**



Asteroids & SNe

Beatriz Sifert (UFRJ)
SN in ALHAMBRA



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Conclusions

- OAJ (and T80-South) offer a great opportunity for time-domain studies
- CHiCaS
 - open time project: 2 500 000 light curves!
- J-VAR
 - J-/S-PLUS follow-up



Conclusions

- OAJ (and T80-South) offer a great opportunity for time-domain studies
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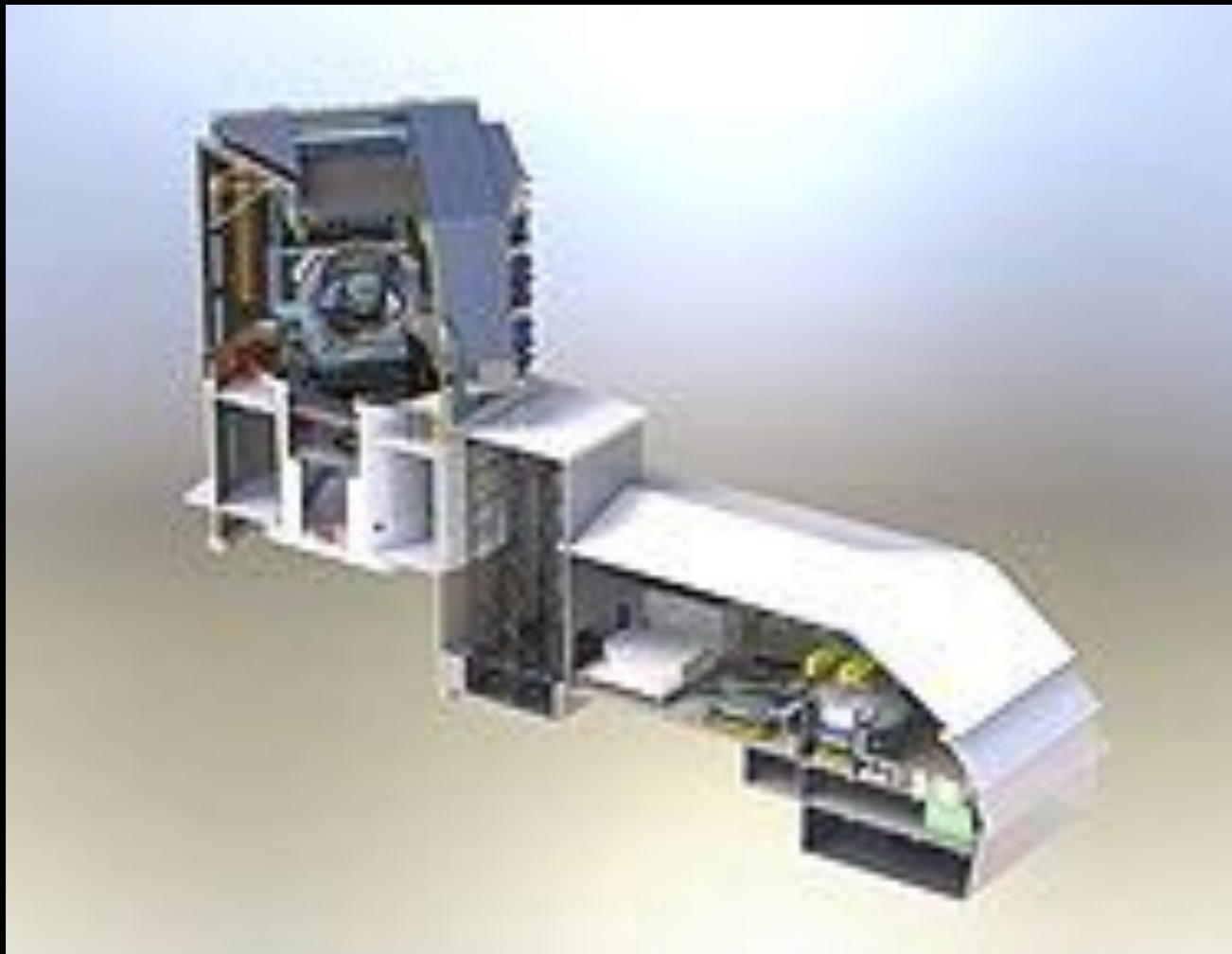
Can we do more?



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Instrumentation!

LSST

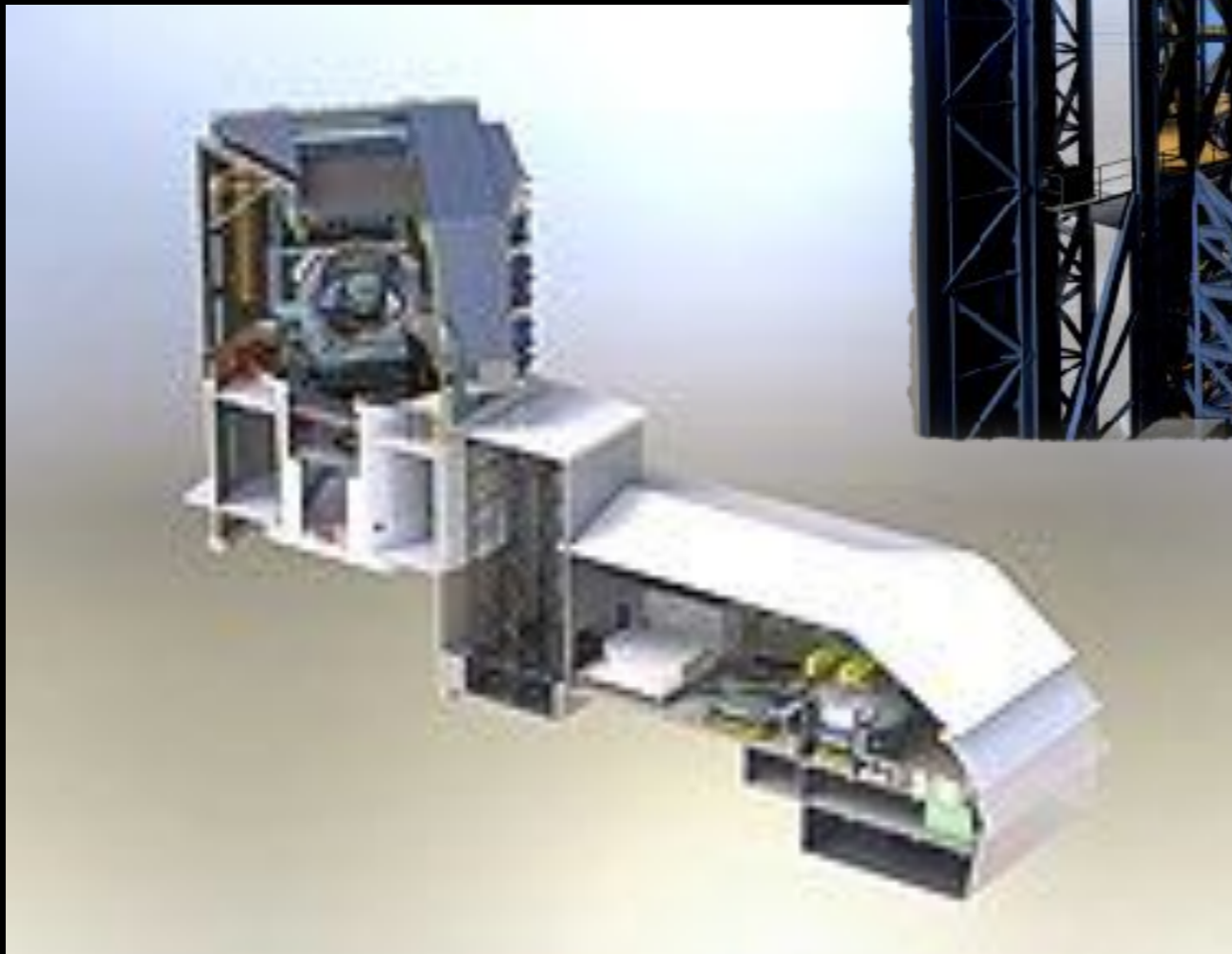




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Instrumentation!

LSST



**Giant
Magellan
Telescope**



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Obrigado!