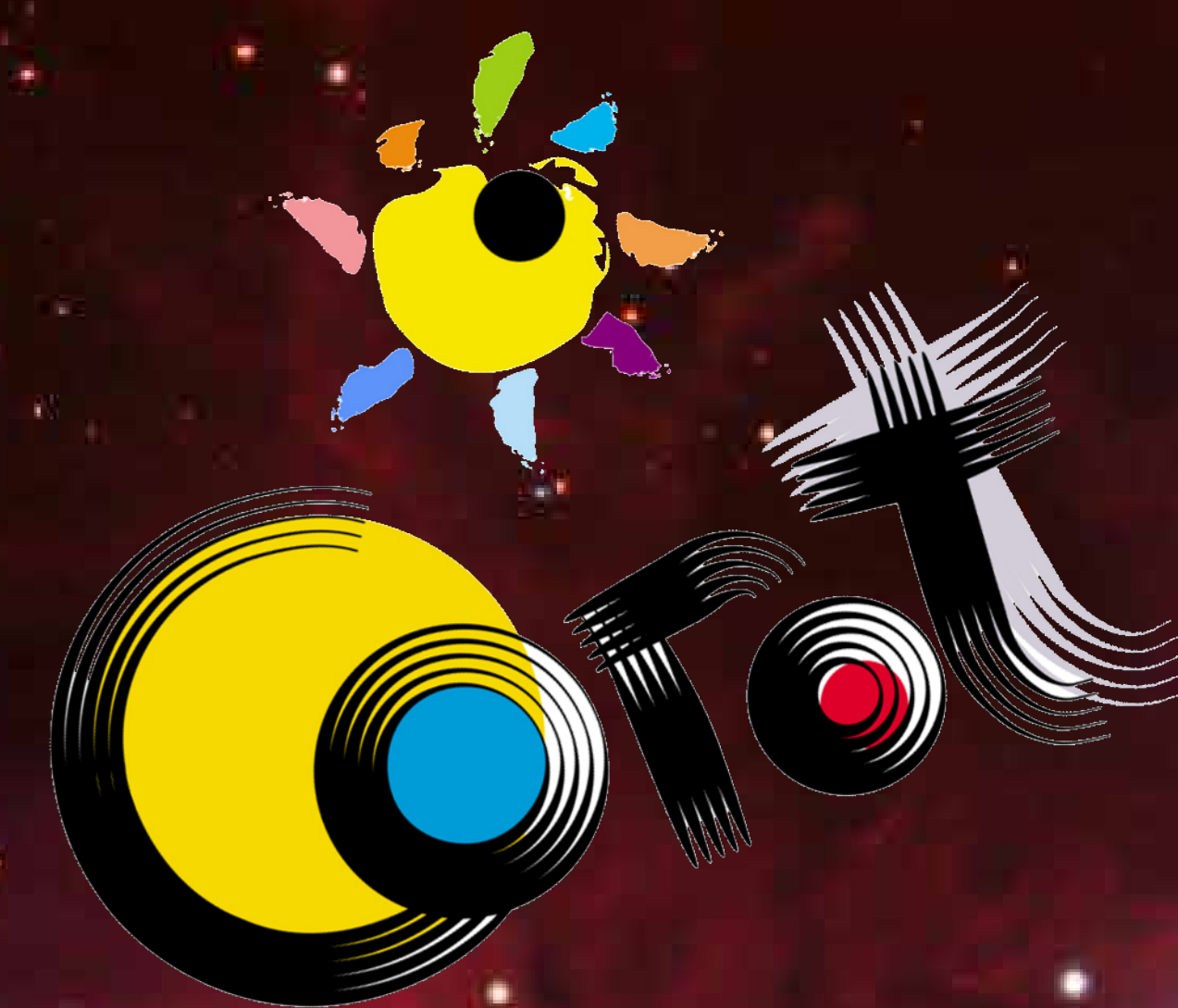


BEST II – A Photometric Survey Telescope in the Atacama Desert



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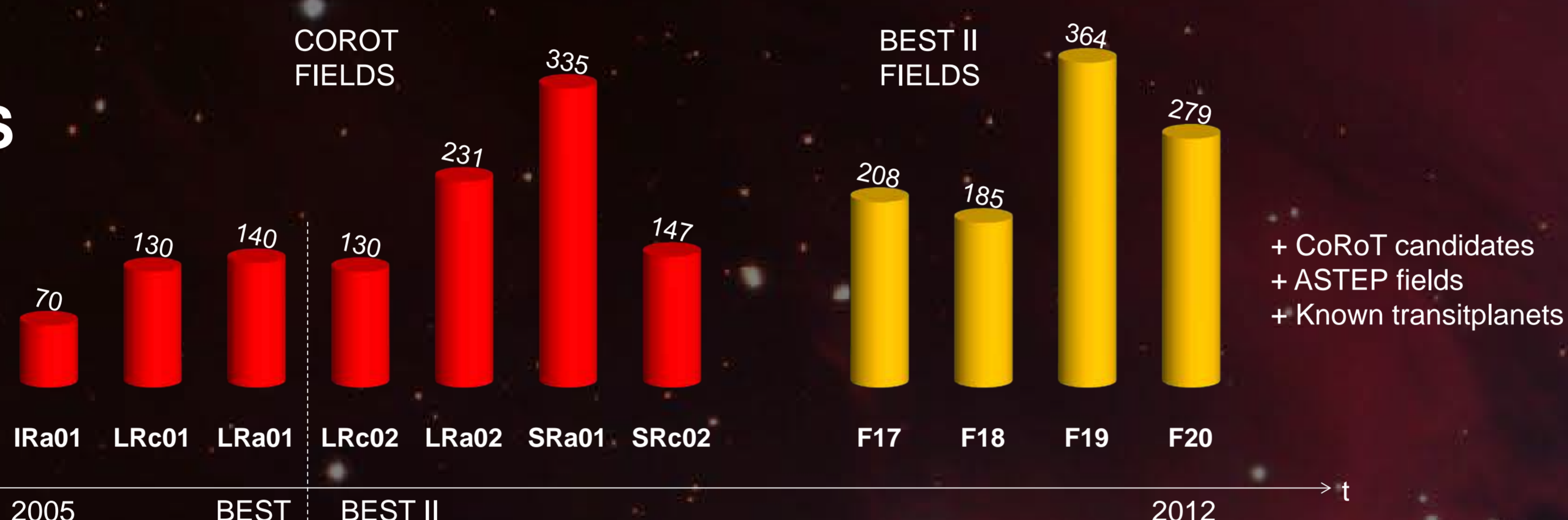
Contact: thomas.fruth@dlr.de

BEST II

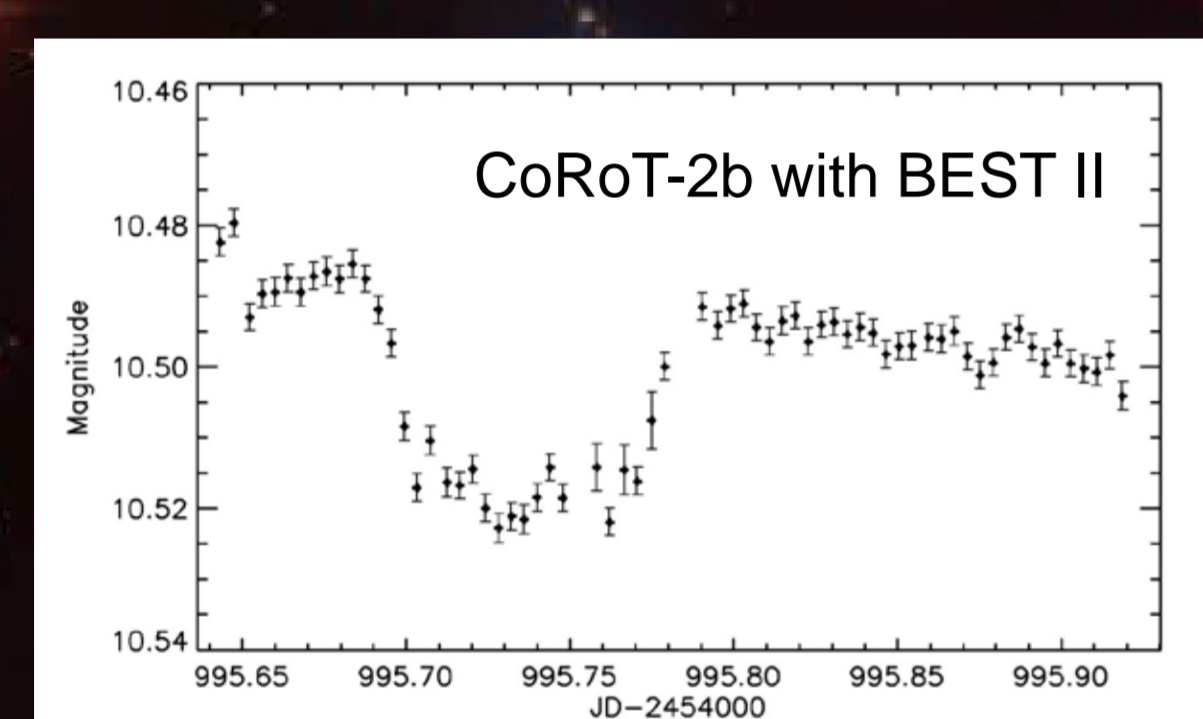
The “Berlin Exoplanet Search Telescope II” (BEST II) operates as ground based support to the CoRoT space mission. The system is designed to perform precise photometric variability characterization of selected stellar fields. A large field of view provides the possibility of monitoring several thousands of stars with a precision of a few millimagnitudes, which allows the detection of faint variable stars and transiting Jupiter-sized extrasolar planets. BEST II is located at the Observatorio Cerro Armazones, Chile, and operated in robotic mode.

OBSERVED TARGET FIELDS

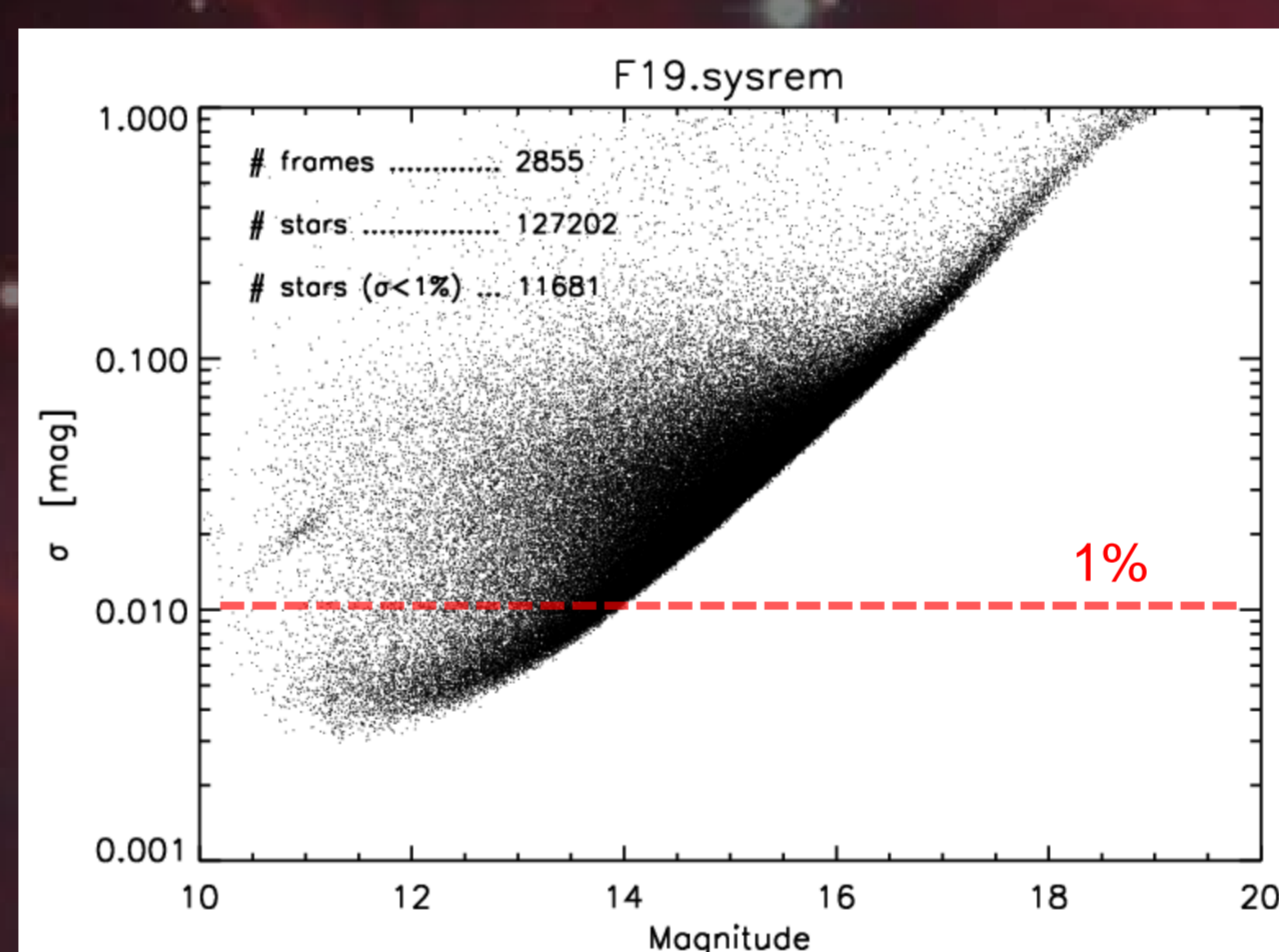
(hours observed)



PHOTOMETRIC PRECISION



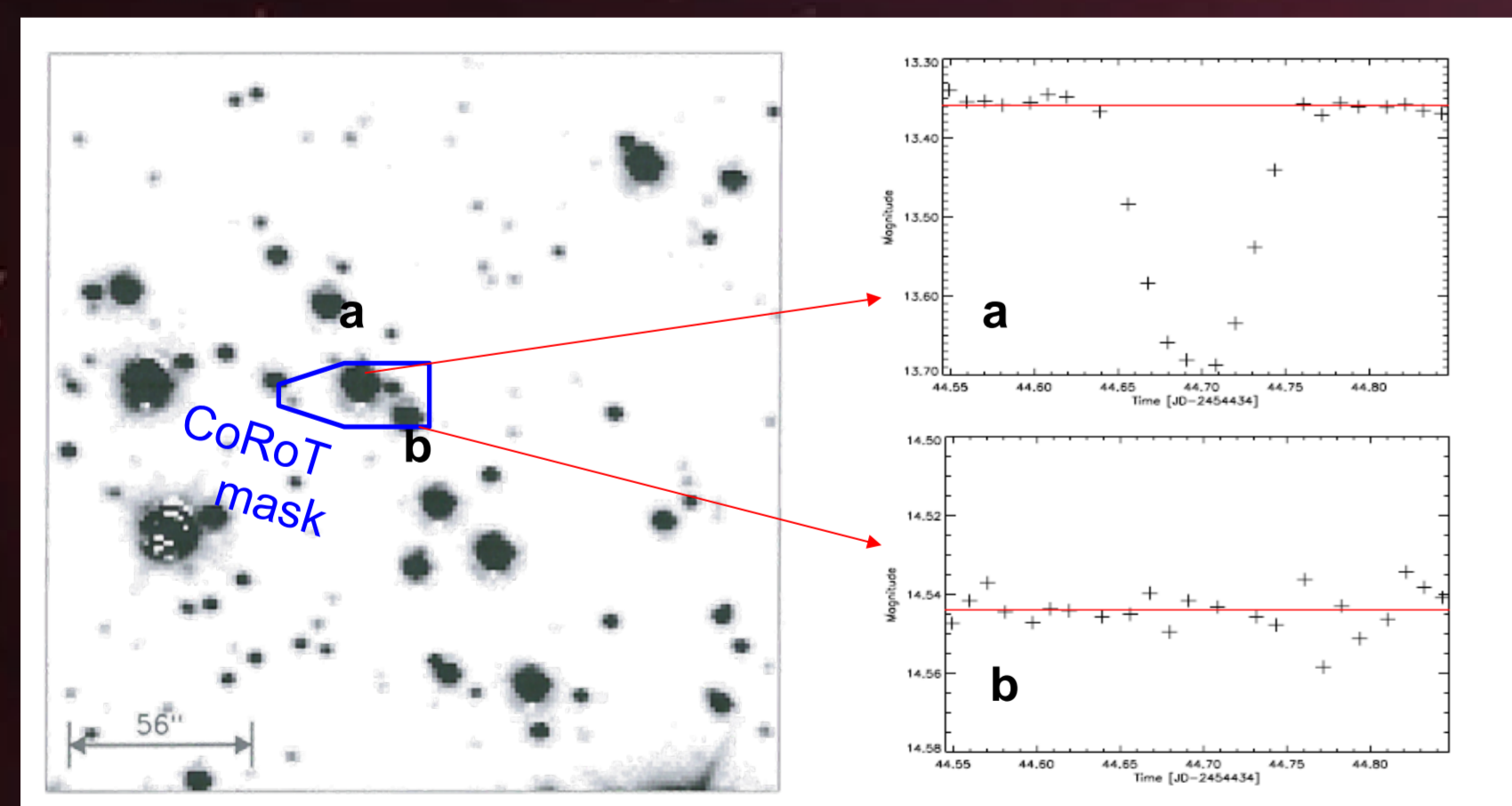
Right: Lightcurve standard deviation (s) vs. magnitude for every star in the BEST II dataset F19. In this example, a precision better than 1% is reached for more than 10,000 stars in the range of 12 to 15mag (exp. time of 300s). The brightest star in the field shows $s \sim 3\text{mmag}$.



Left: Transit of CoRoT-2b (depth $\sim 3\%$) recorded with BEST II on 13 June 2009

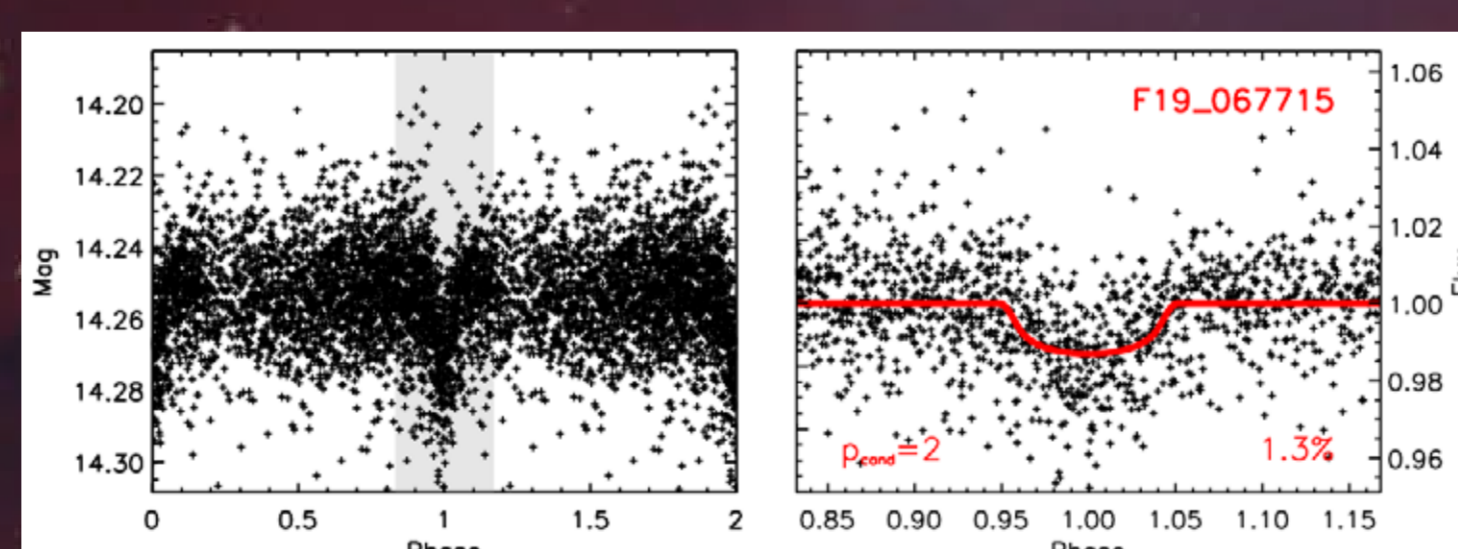
SCIENTIFIC RESULTS

1) CoRoT follow-up



2) Exoplanet candidates

§ BEST II detected 14 good planetary candidates in two fields. Follow-up ongoing.

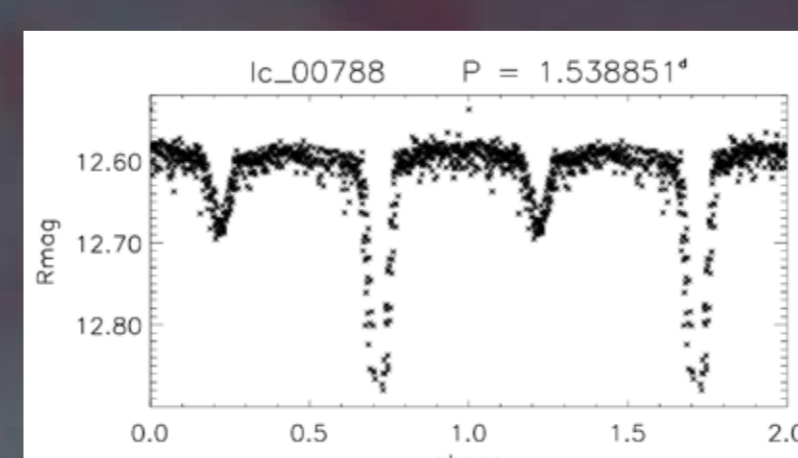


Example: BEST II transit candidate F19_067715 (Period: 0.94 days; Host Star: F5V)

3) Characterization of Stellar Variability

§ BEST/BEST II archive yields detailed characterization of stellar variability within CoRoT fields (e.g., Fruth et al. 2012)

§ 1,442 new periodic variable stars detected with BEST/BEST II so far (see publications) and >2,500 new variables to come



Example: Eclipsing binary (EA) in field LRA02.



SPECIFICATIONS

Telescope	BRC – 250
Aperture	25 cm
Focal ratio	f/5.0
Camera	FLI IMG-16801
CCD size	4K x 4K
Pixel size	9 μm
Pixel scale	1.5"/pixel
Field of view	1.7° x 1.7°
Precision < 1%	12-15 mag



BEST II (front building) at Observatorio Cerro Armazones, Atacama Desert, Chile. Cerro Armazones, the site for the next-generation ESO telescope E-ELT, can be seen in the back.



MORE INFORMATION

www.dlr.de/caesp
www.corot.de
smc.cnes.fr/COROT

PUBLICATIONS

Deeg et al. 2009, A&A, 506, 343
 Fruth et al. 2012, AJ, 143, 140
 Kabath et al. 2007, AJ, 134, 1560
 Kabath et al. 2008, AJ, 136, 654

Kabath et al. 2009a, AJ, 137, 3911
 Kabath et al. 2009b, A&A, 506, 569
 Karoff et al. 2007, AJ, 134, 766
 Pasternacki et al. 2011, AJ, 142, 114
 Rauer et al. 2010, AJ, 139, 53-58

