

# KIC 012644119

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
012644119-01	OBS	No	429.616955	452.806344	408.0	25.902	13.2	14.7	1.13	6160	2.37	1.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012644119-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

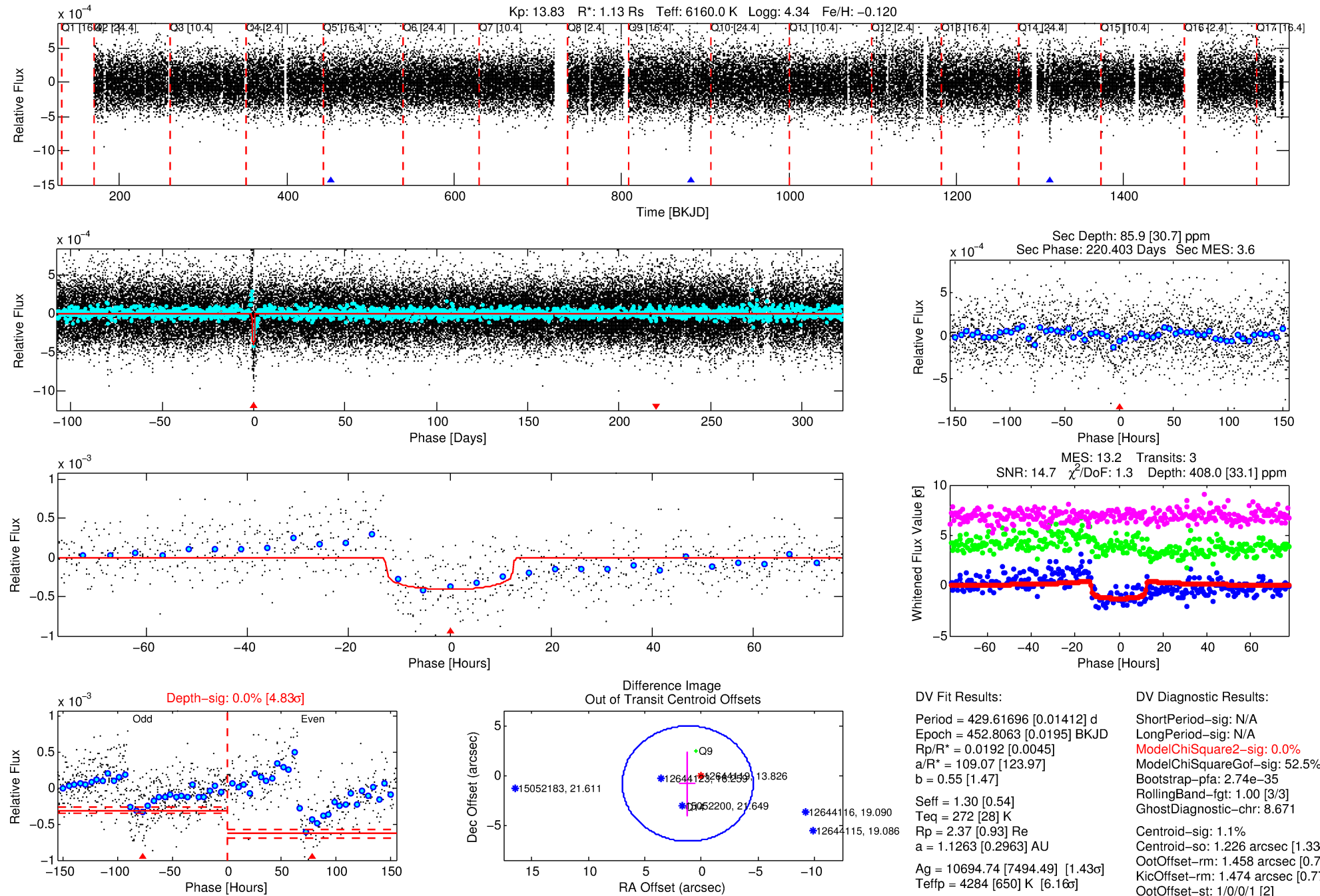
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 012644119-01

No Significant Match Found

# DV One-Page Summary

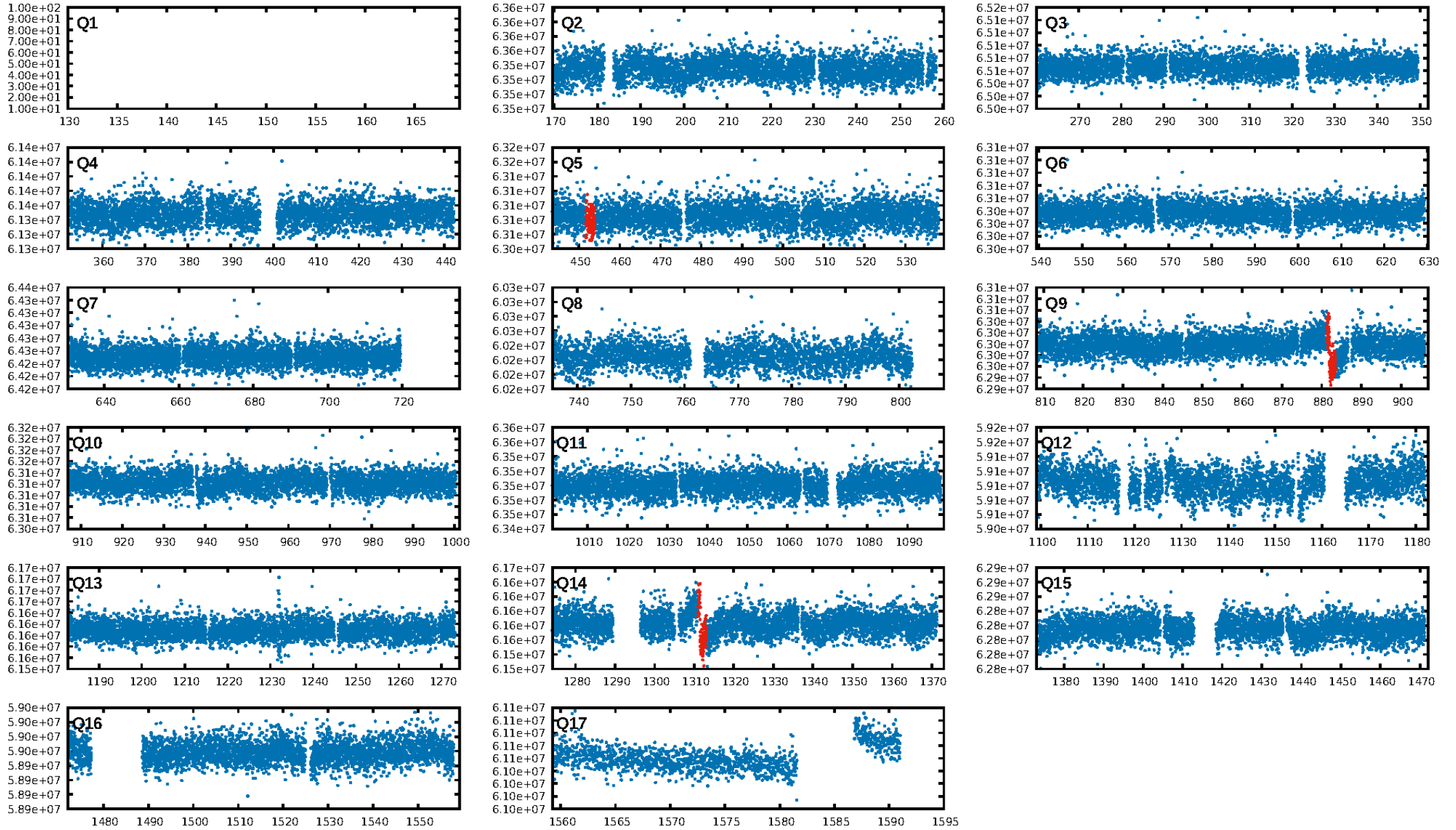
KIC: 12644119 Candidate: 1 of 1 Period: 429.617 d



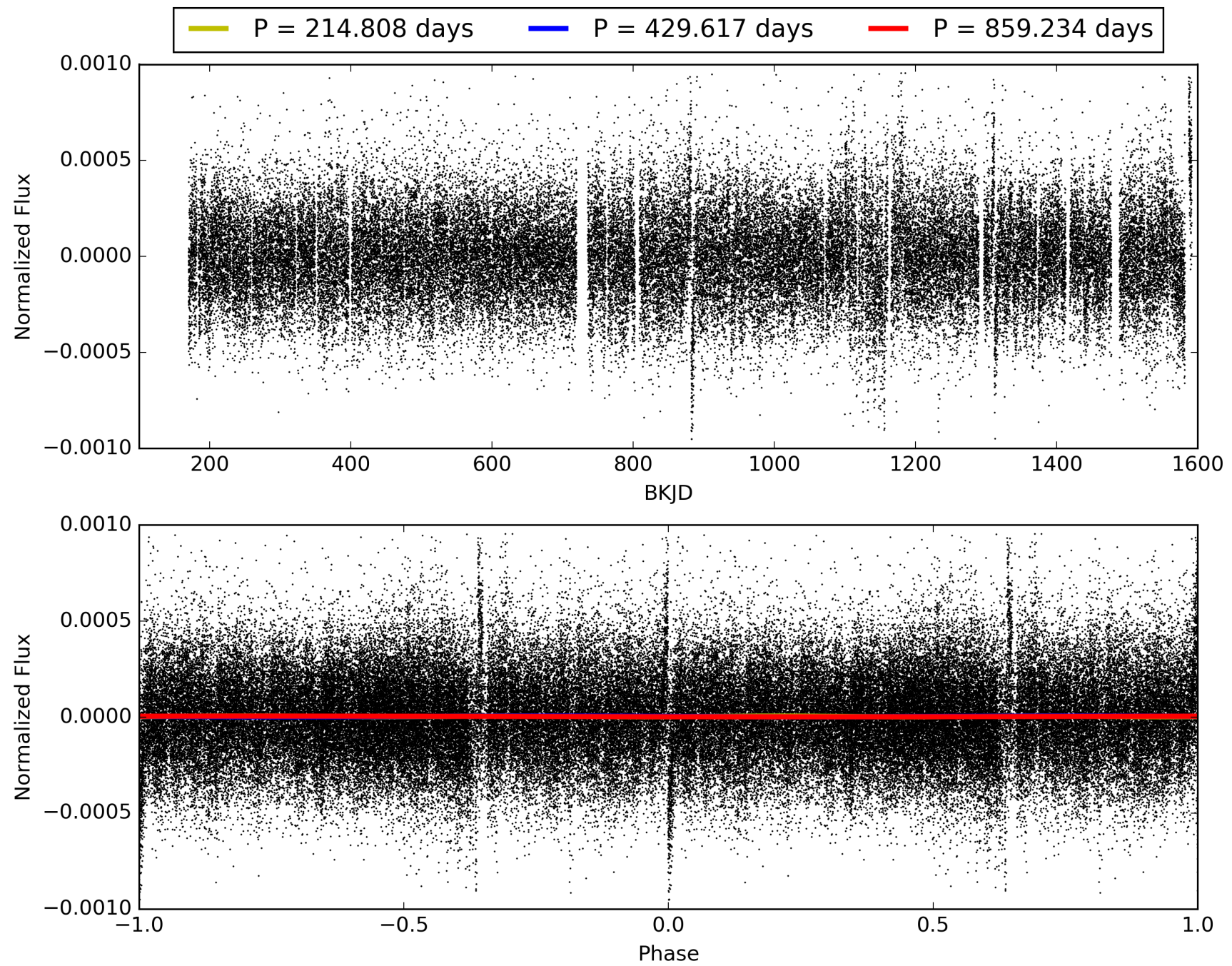
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:08:26 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 012644119-01, PDC Light Curves

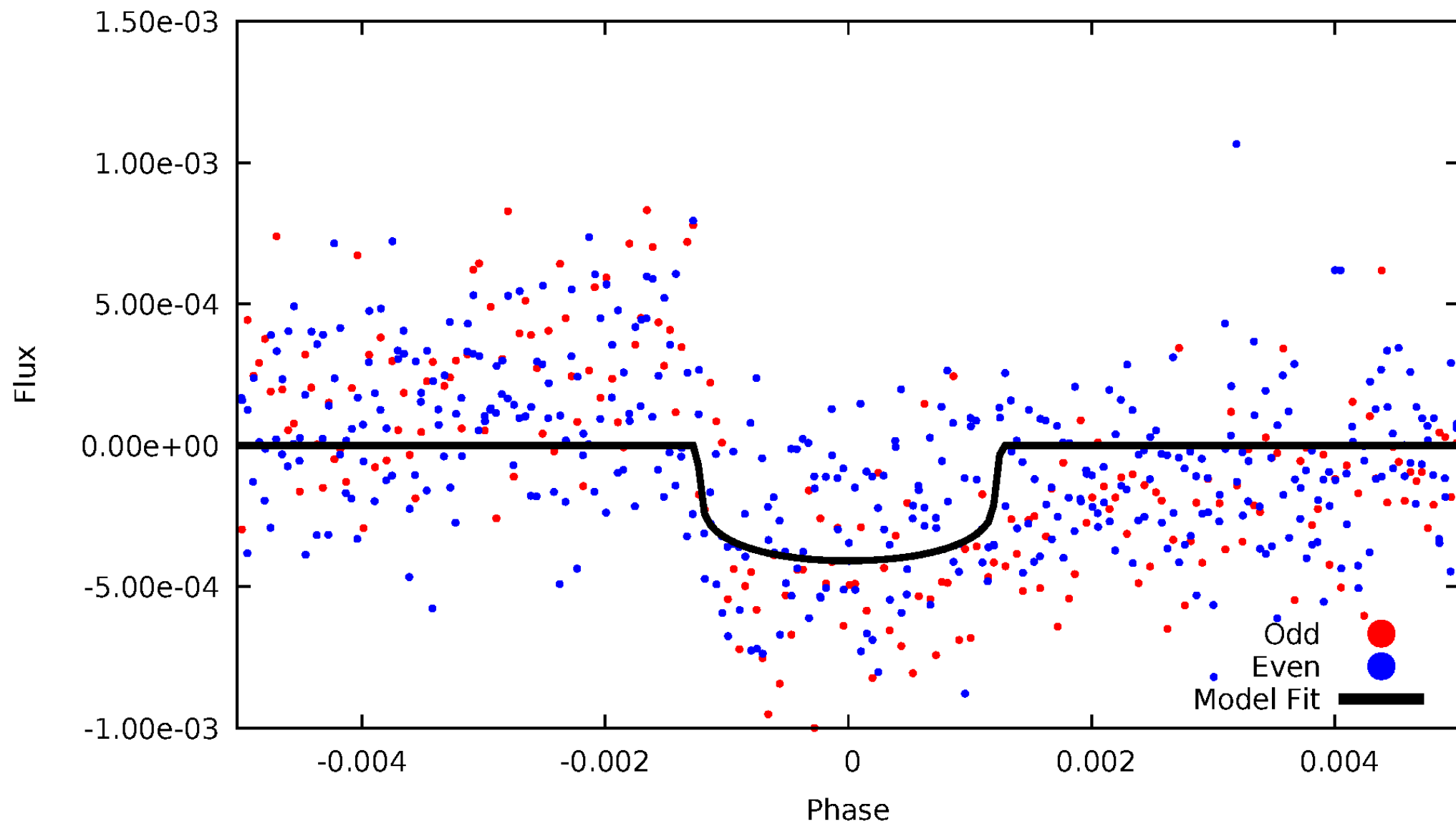


# TCE 012644119-01



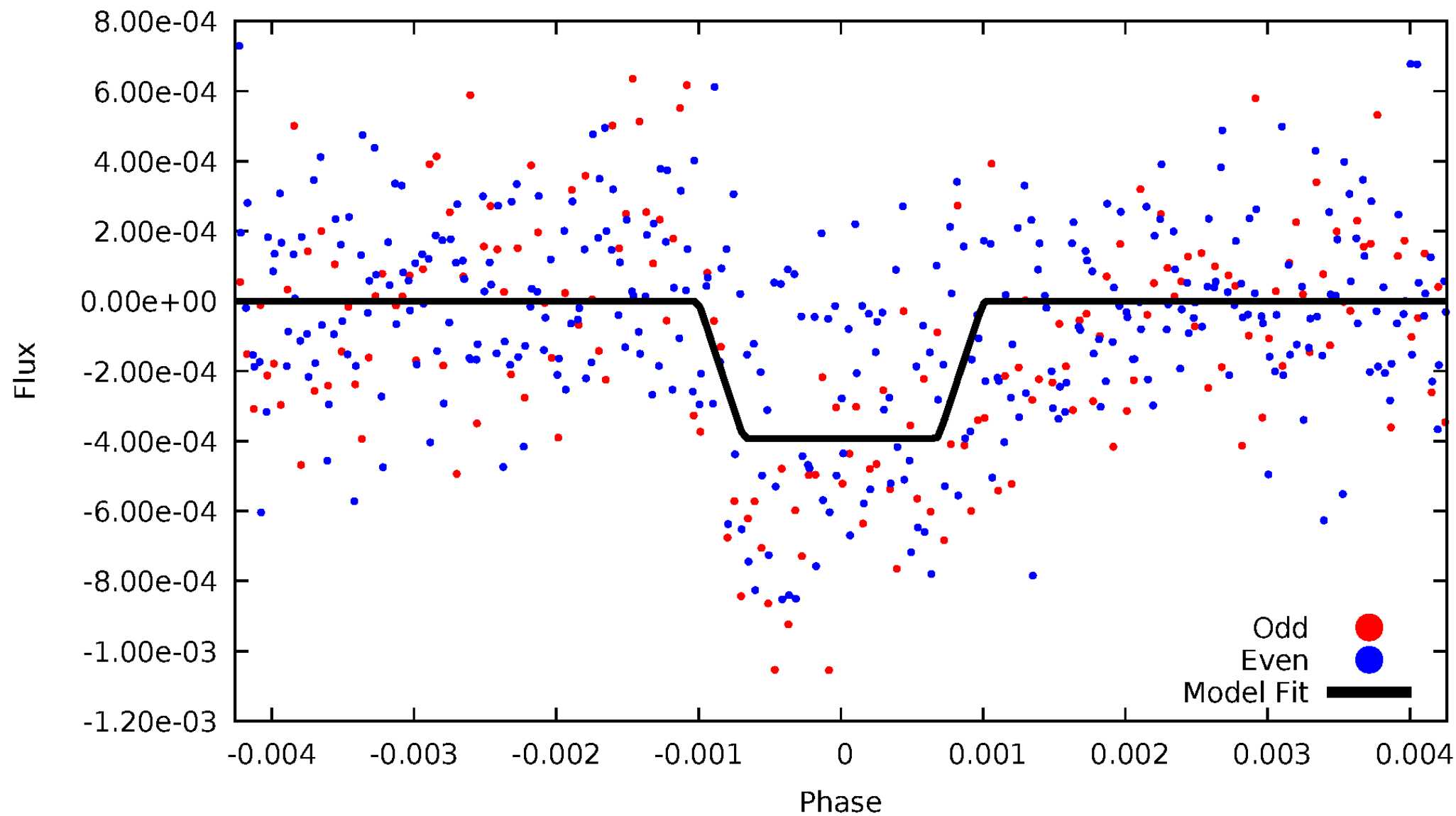
# DV Odd/Even

TCE 012644119-01



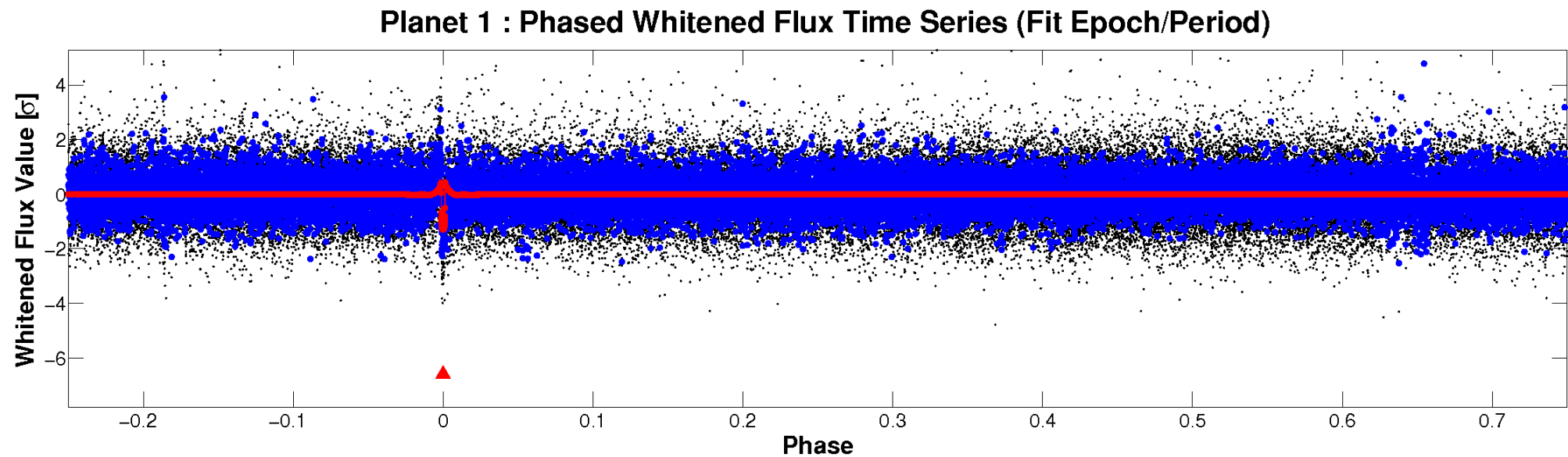
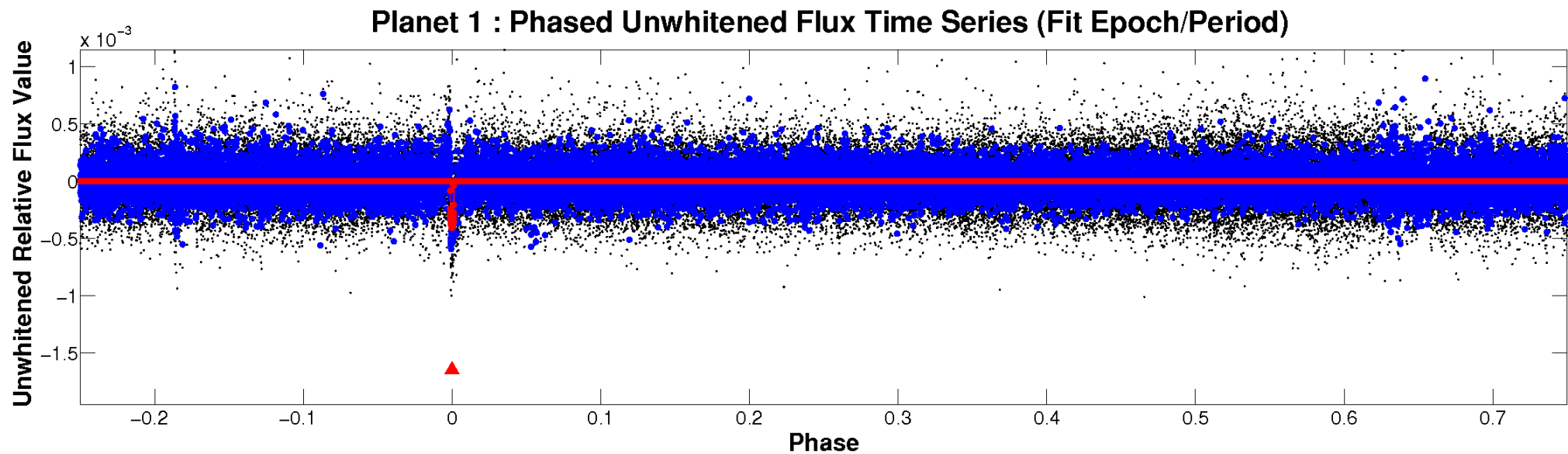
# ALT Odd/Even

TCE 012644119-01



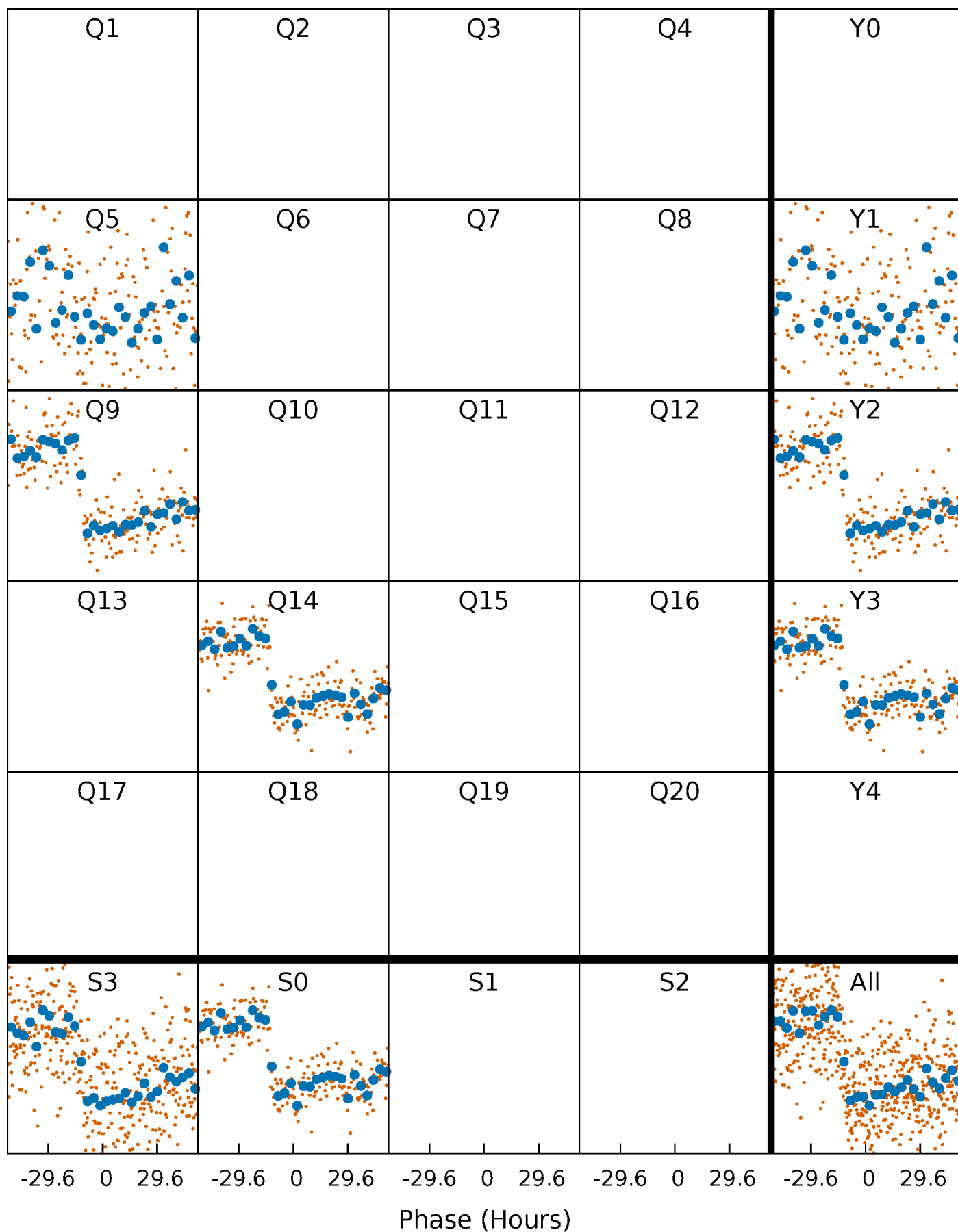


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 012644119-01 P=429.616955 Days  $T_0=452.806344$  (BKJD)





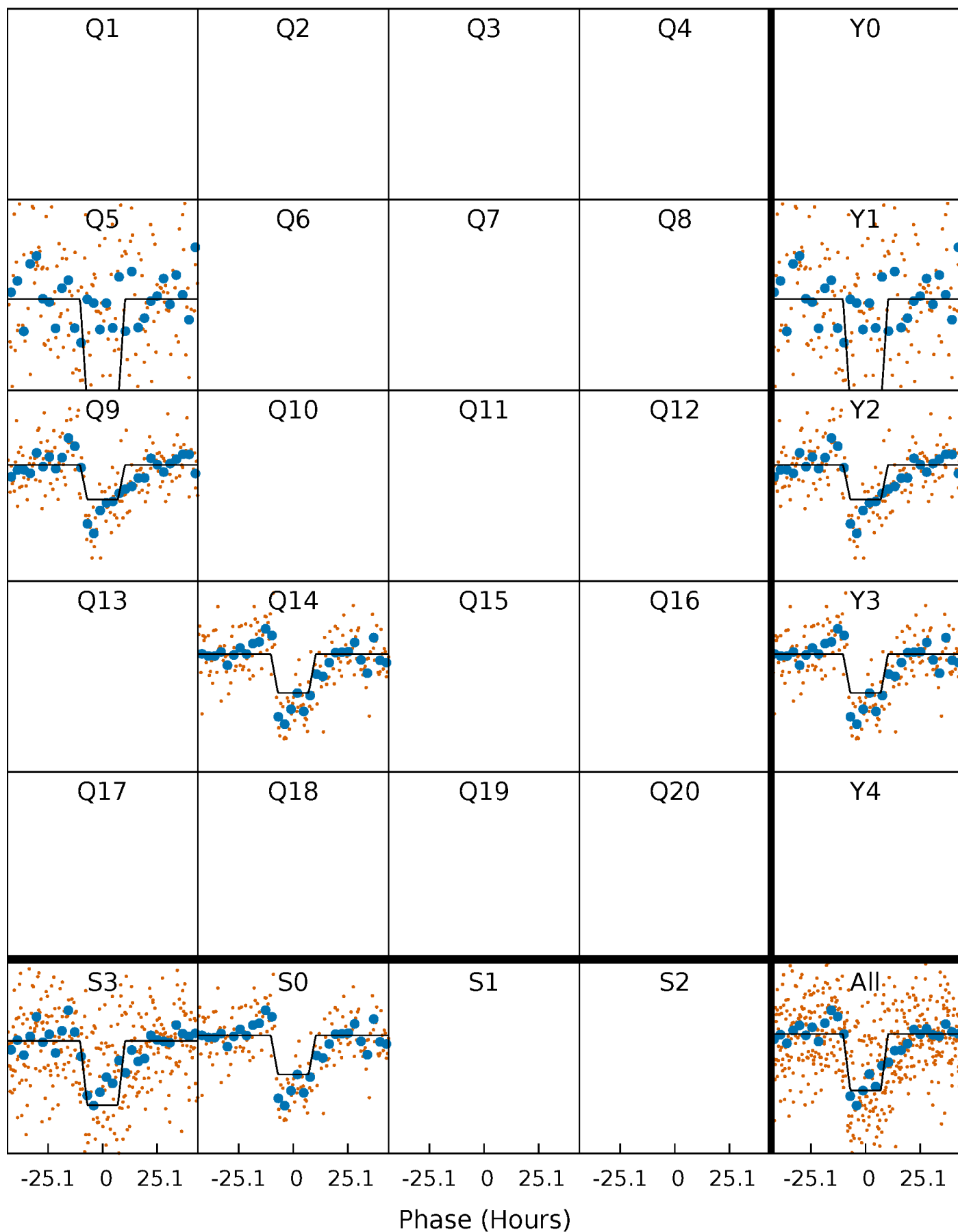
# DV Quarter-Phased Transit Curves

TCE 012644119-01 P=429.616955 Days  $T_0=452.806344$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

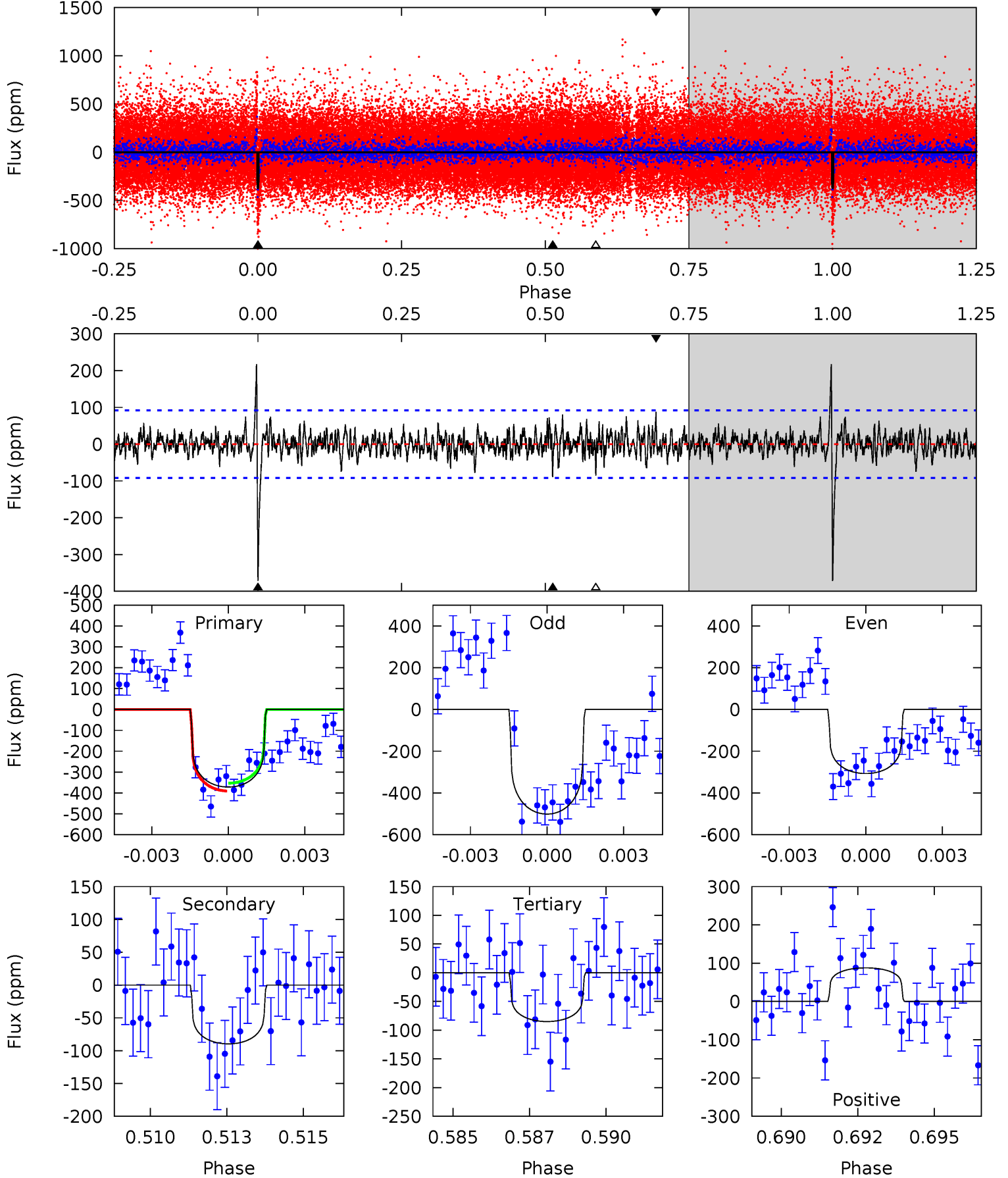
TCE 012644119-01 P=429.533865 Days  $T_0=452.805835$  (BKJD)



# DV Model-Shift Uniqueness Test

012644119-01,  $P = 429.616955$  Days,  $E = 23.189389$  Days

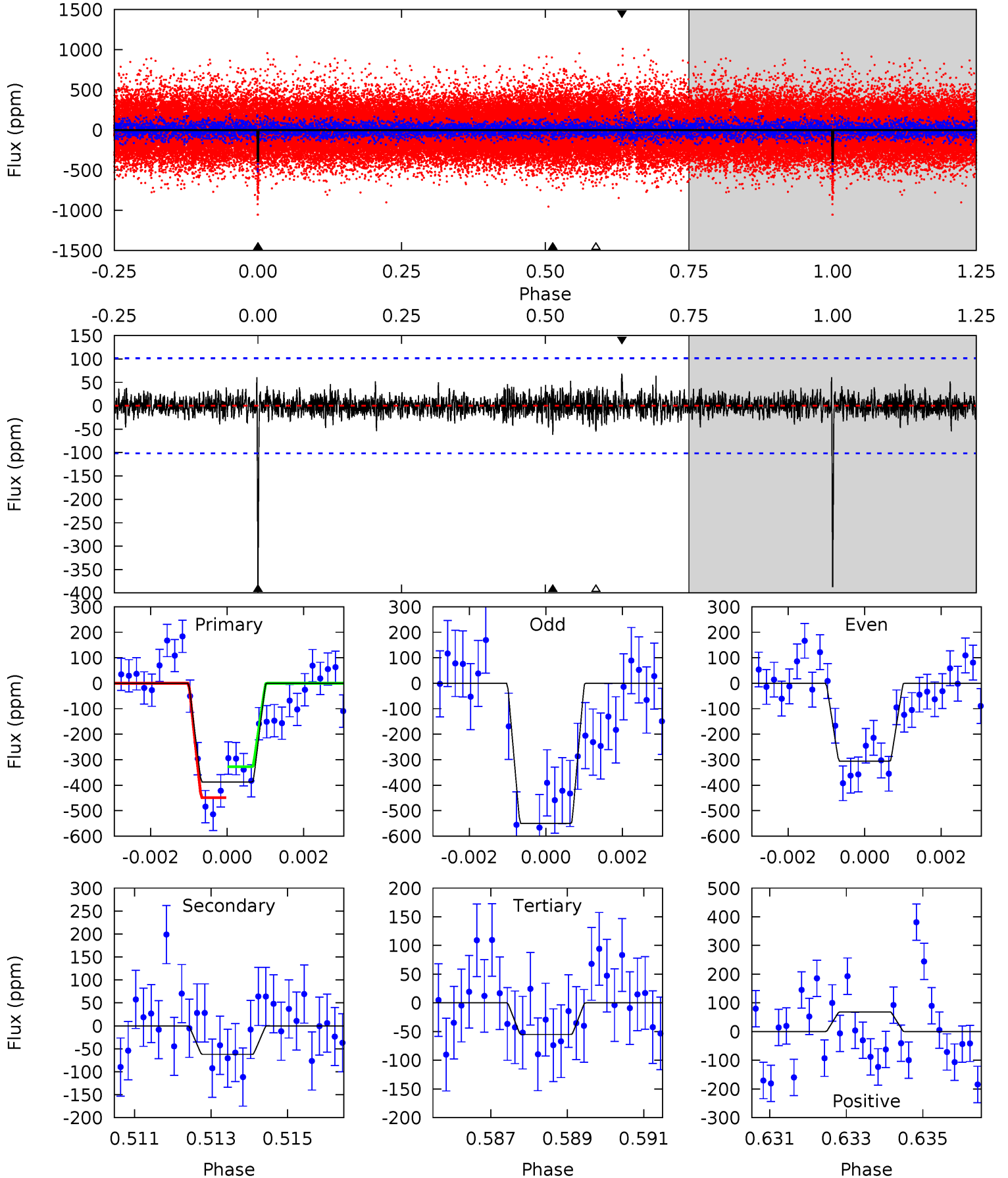
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	5.15	4.88	5.04	5.28	3.02	1.47	16.5	16.3	0.27	0.11	5.24	0.78	0.37	1.08



# Alt Model-Shift Uniqueness Test

012644119-01,  $P = 429.533865$  Days,  $E = 23.271970$  Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.3	3.26	2.88	3.59	5.33	3.09	0.79	17.4	16.7	0.38	-0.33	6.03	0.70	0.15	3.18



### Stellar Parameters For KIC 012644119

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6160^{+193}_{-236}$	$4.344^{+0.112}_{-0.208}$	$-0.120^{+0.250}_{-0.300}$	$1.132^{+0.355}_{-0.164}$	$1.029^{+0.181}_{-0.120}$	$0.999^{+0.598}_{-0.499}$
	+3%/-4%	+3%/-5%	+208%/-250%	+31%/-14%	+18%/-12%	+60%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 012644119-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-90 \pm 17$	$2.44^{+0.76}_{-0.62}$	$385^{+27}_{-21}$	$4504^{+594}_{-431}$	$10432^{+8840}_{-4534}$
Alt.	$-62 \pm 19$	$2.54^{+0.70}_{-0.65}$	$384^{+29}_{-22}$	$4150^{+501}_{-409}$	$6703^{+5757}_{-3070}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming A=0.3)

$A_{obs}$  = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

## DV Centroid Data

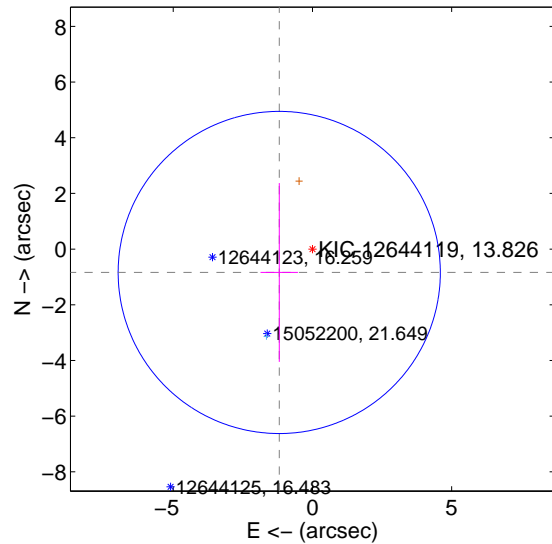
Supplemental centroid analysis for 012644119-01. Kepler magnitude: 13.83. Transit SNR 14.74

There are 1 quarters with good PRF difference image offsets

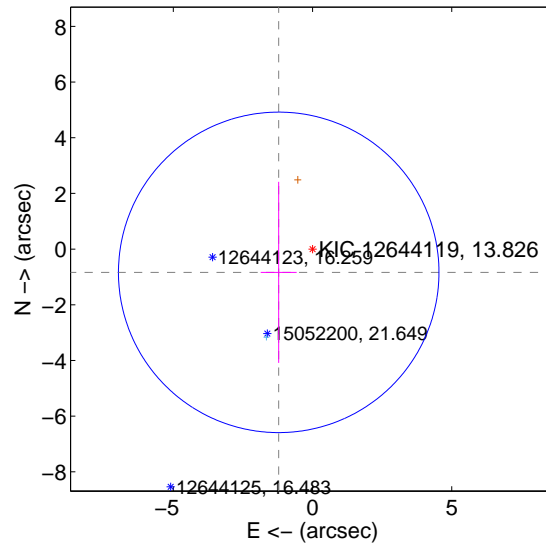
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.458 \pm 1.928$	0.76	$1.192 \pm 0.673$	$-0.839 \pm 3.212$
PRF-fit source offset from KIC position	$1.474 \pm 1.918$	0.77	$1.215 \pm 0.645$	$-0.835 \pm 3.253$
photometric centroid source offset	$1.23 \pm 0.92$	1.33	$1.02 \pm 0.84$	$-0.68 \pm 1.08$

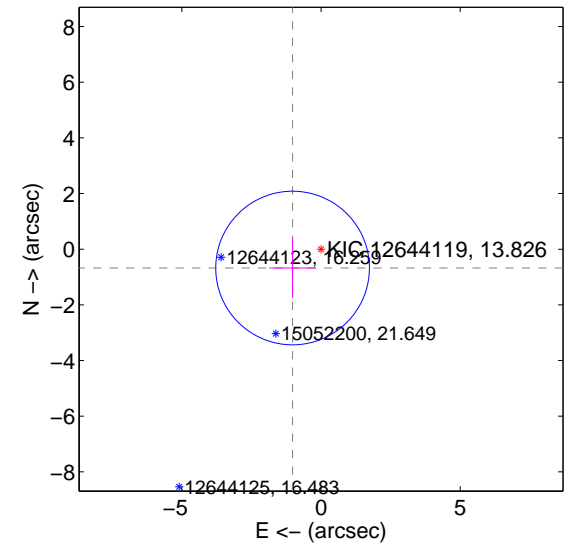
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



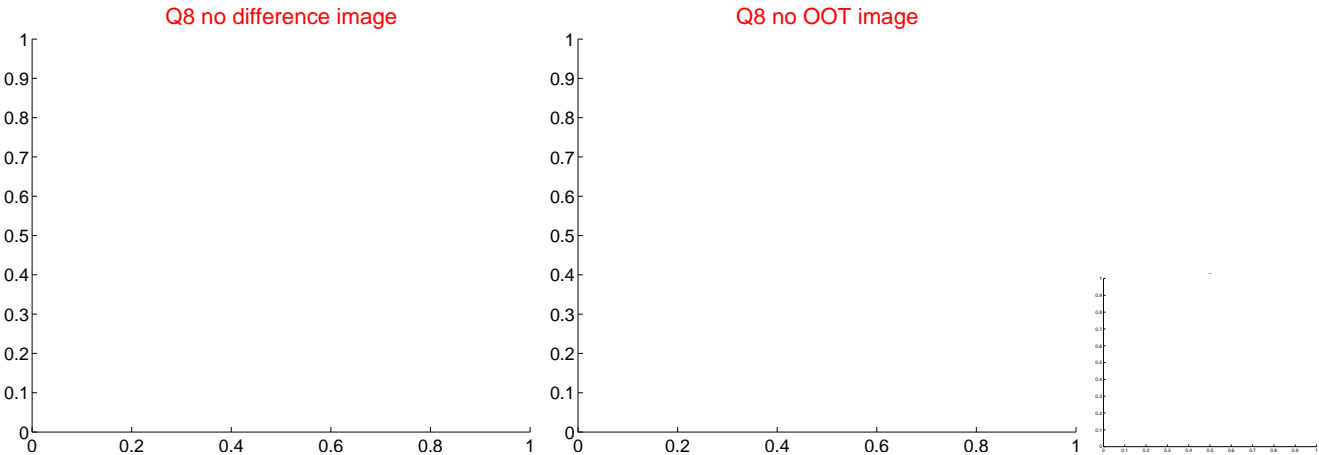
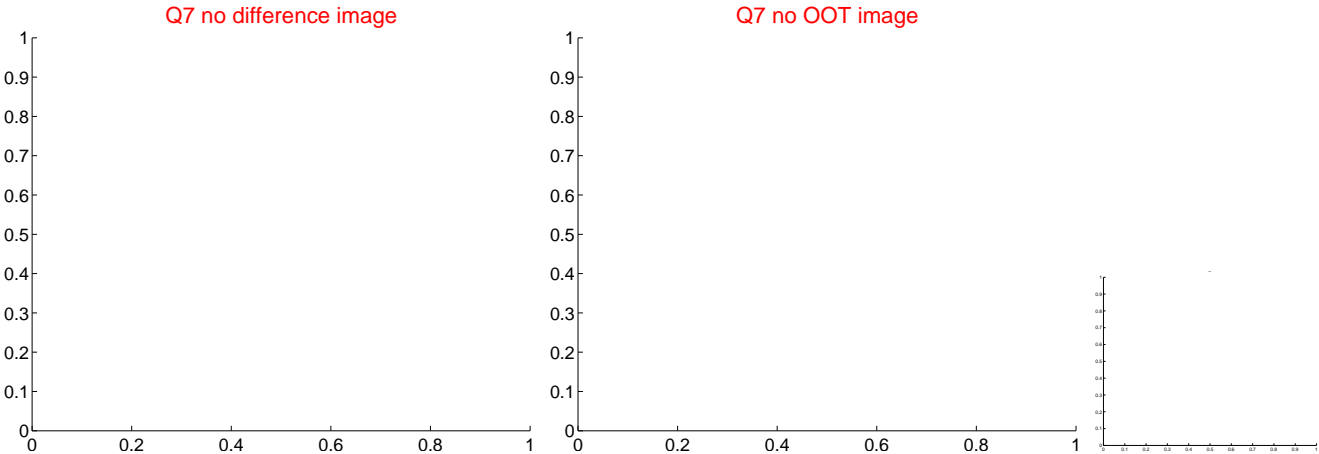
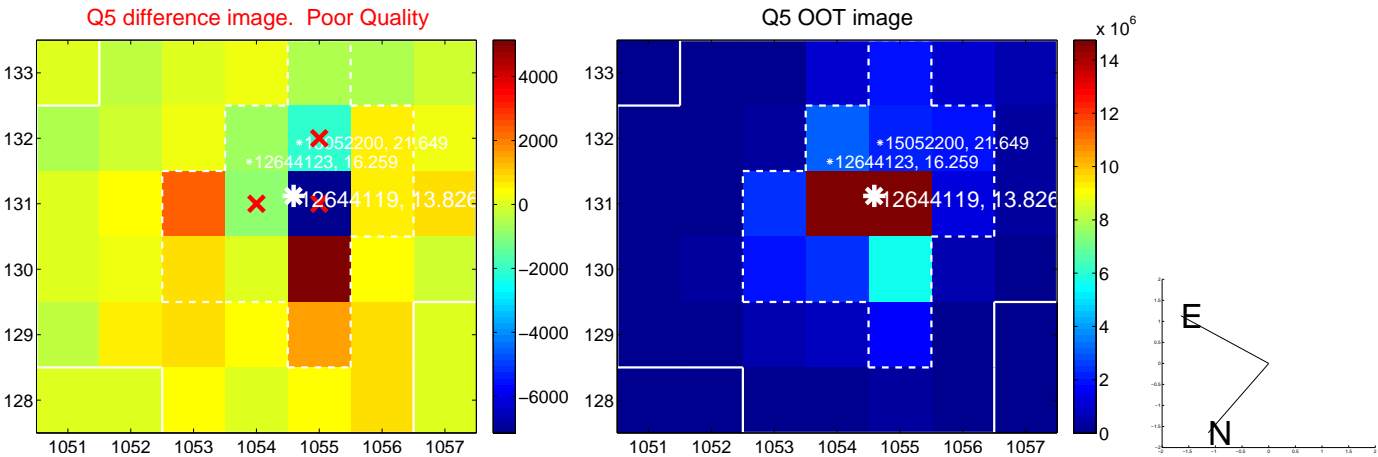
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.



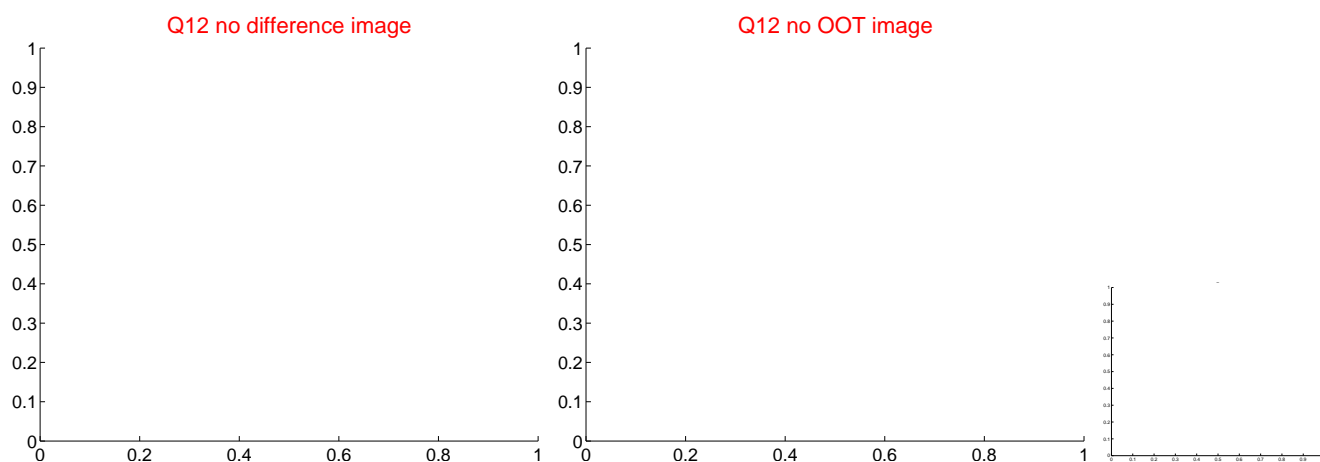
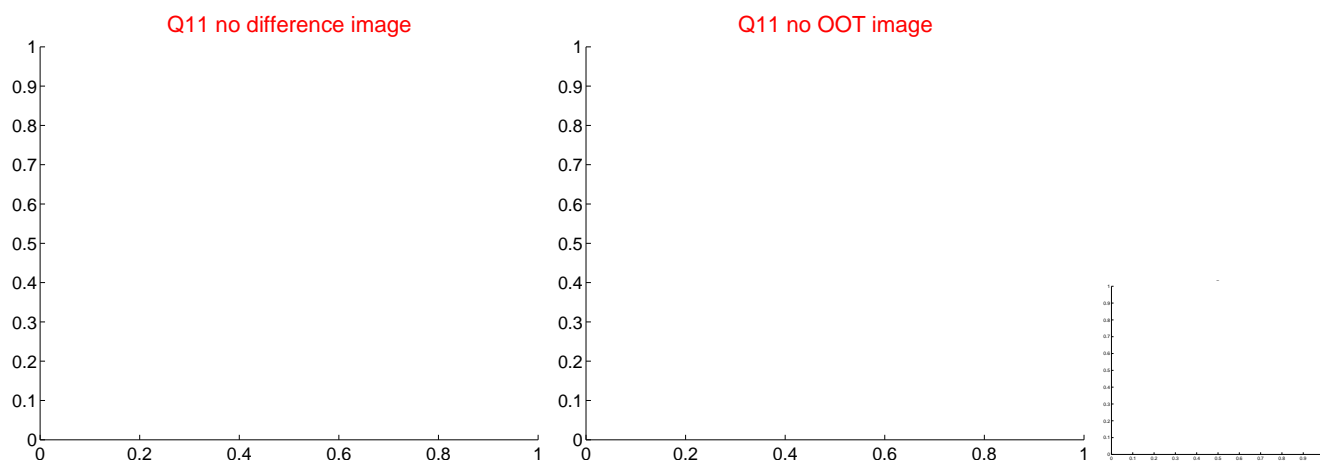
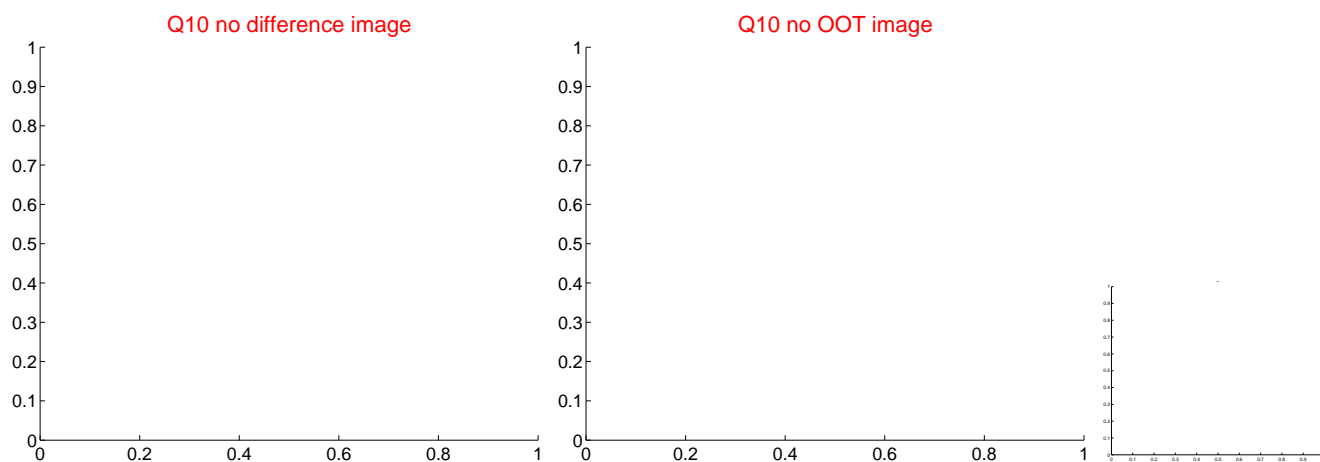
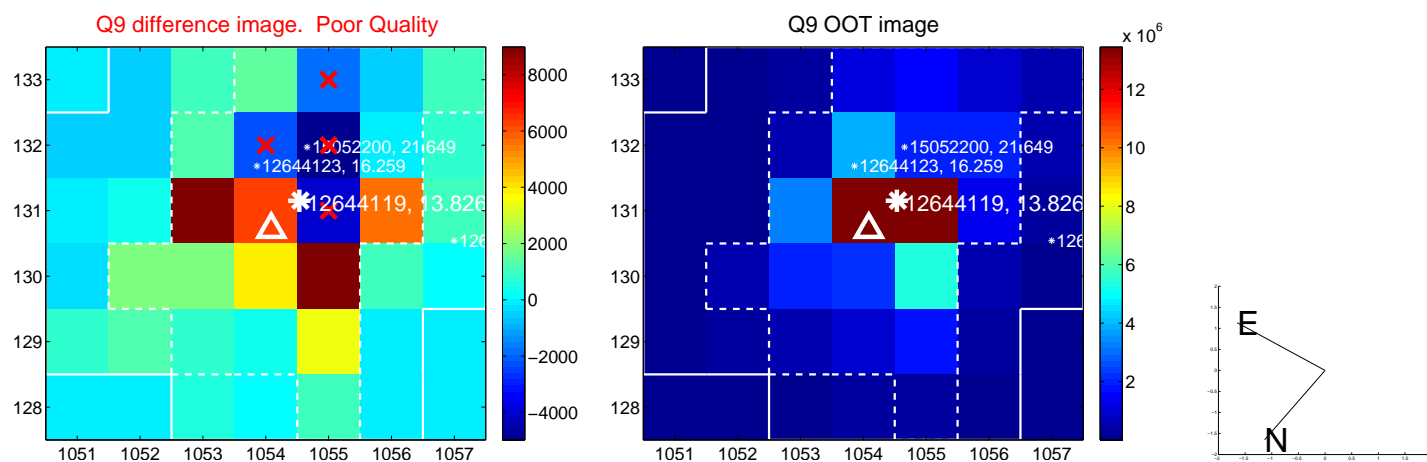
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

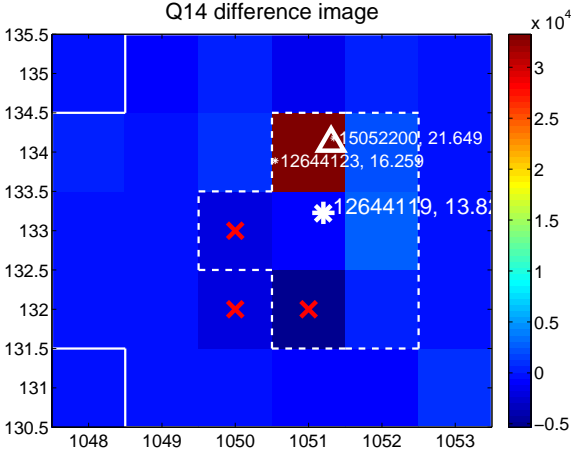
Q13 no difference image



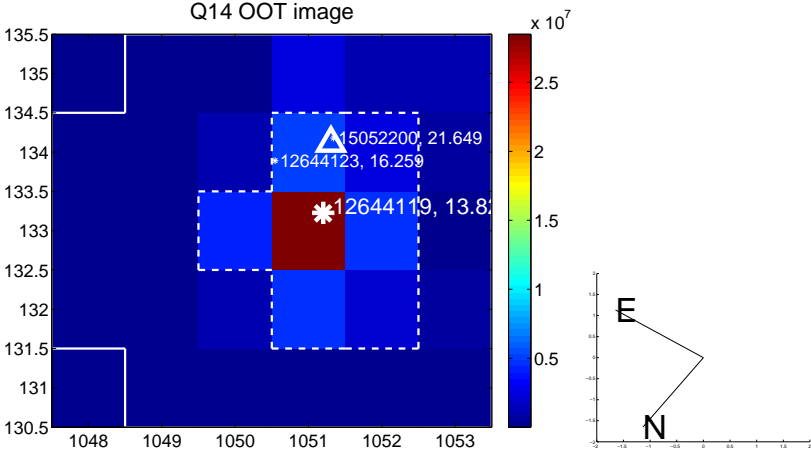
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



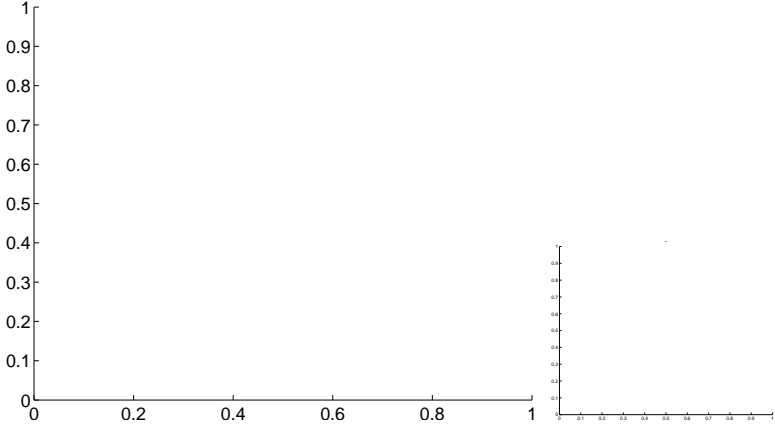
Q15 no OOT image



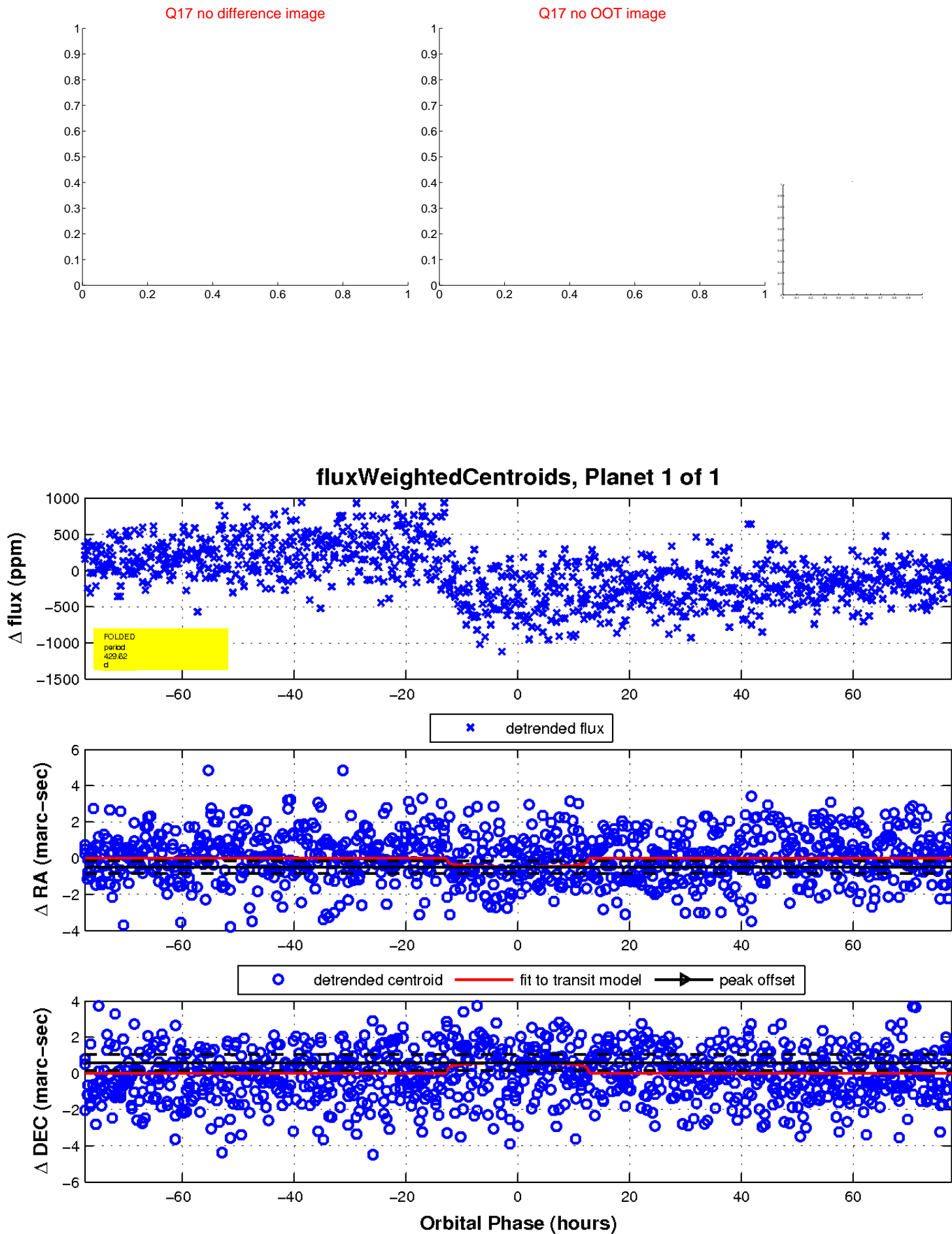
Q16 no difference image



Q16 no OOT image



white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination

