

# KIC 006848401

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006848401-01	OBS	No	374.551137	209.023952	184.1	34.188	8.2	8.2	0.82	5627	2.26	0.62

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006848401-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—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.

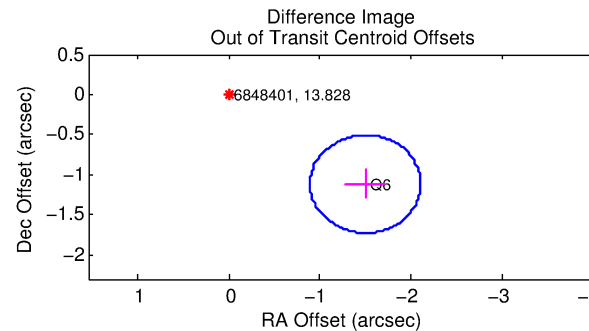
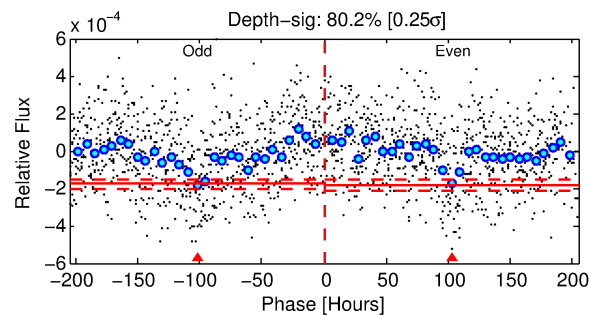
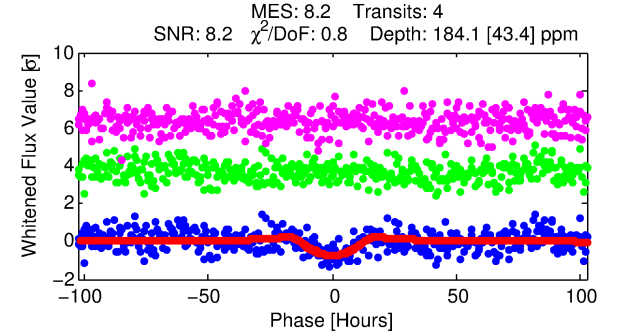
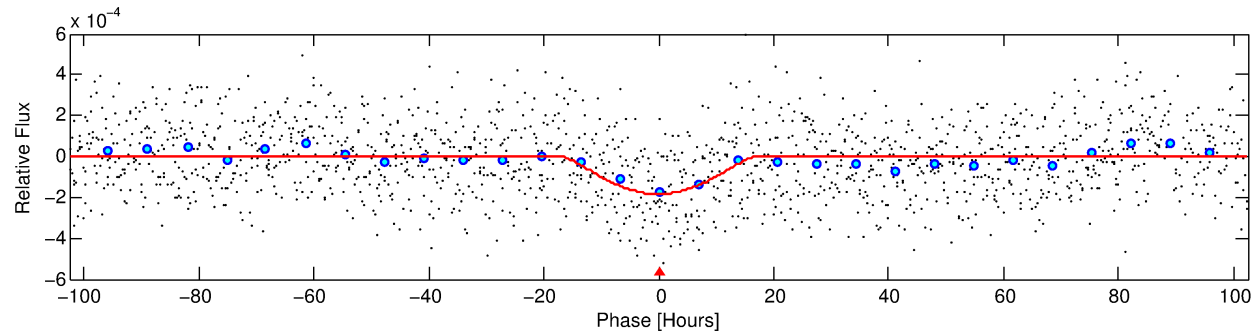
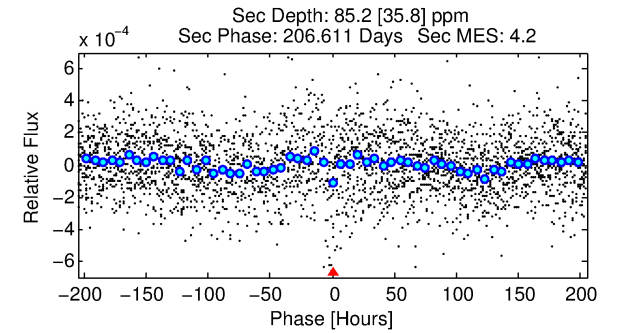
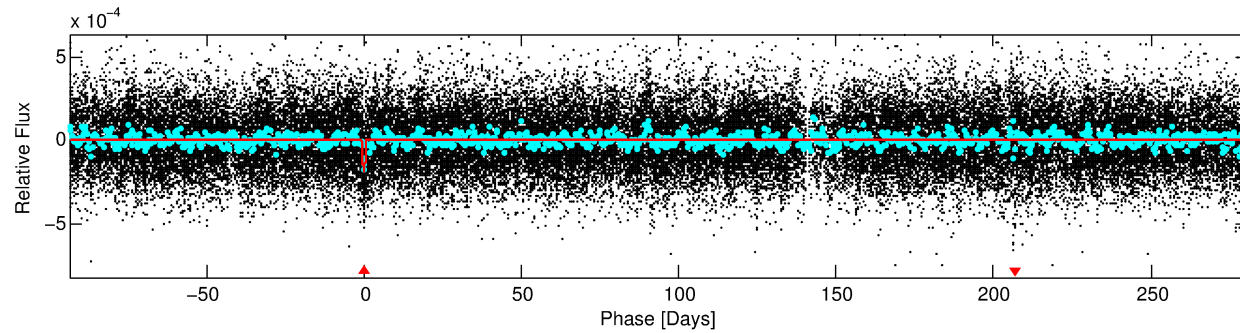
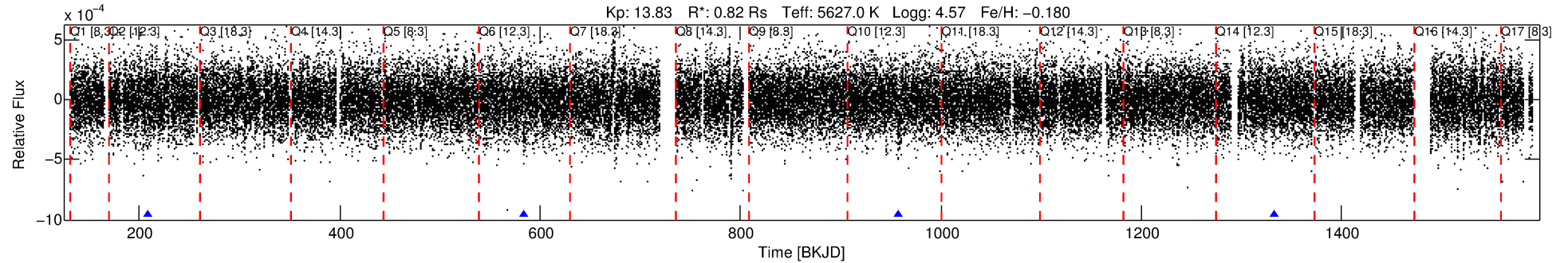
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006848401-01

No Significant Match Found

# DV One-Page Summary

KIC: 6848401 Candidate: 1 of 1 Period: 374.551 d



## DV Fit Results:

Period = 374.55114 [0.03859] d  
Epoch = 209.0240 [0.0741] BKJD  
Rp/R\* = 0.0253 [0.0769]  
a/R\* = 19.20 [15.67]  
b = 1.00 [0.12]  
Seff = 0.62 [0.21]  
Teq = 226 [19] K  
Rp = 2.26 [6.89] Re  
a = 0.9830 [0.2213] AU  
Ag = 8874.76 [54112.05] [0.16σ]  
Teffp = 3398 [5174] K [0.61σ]

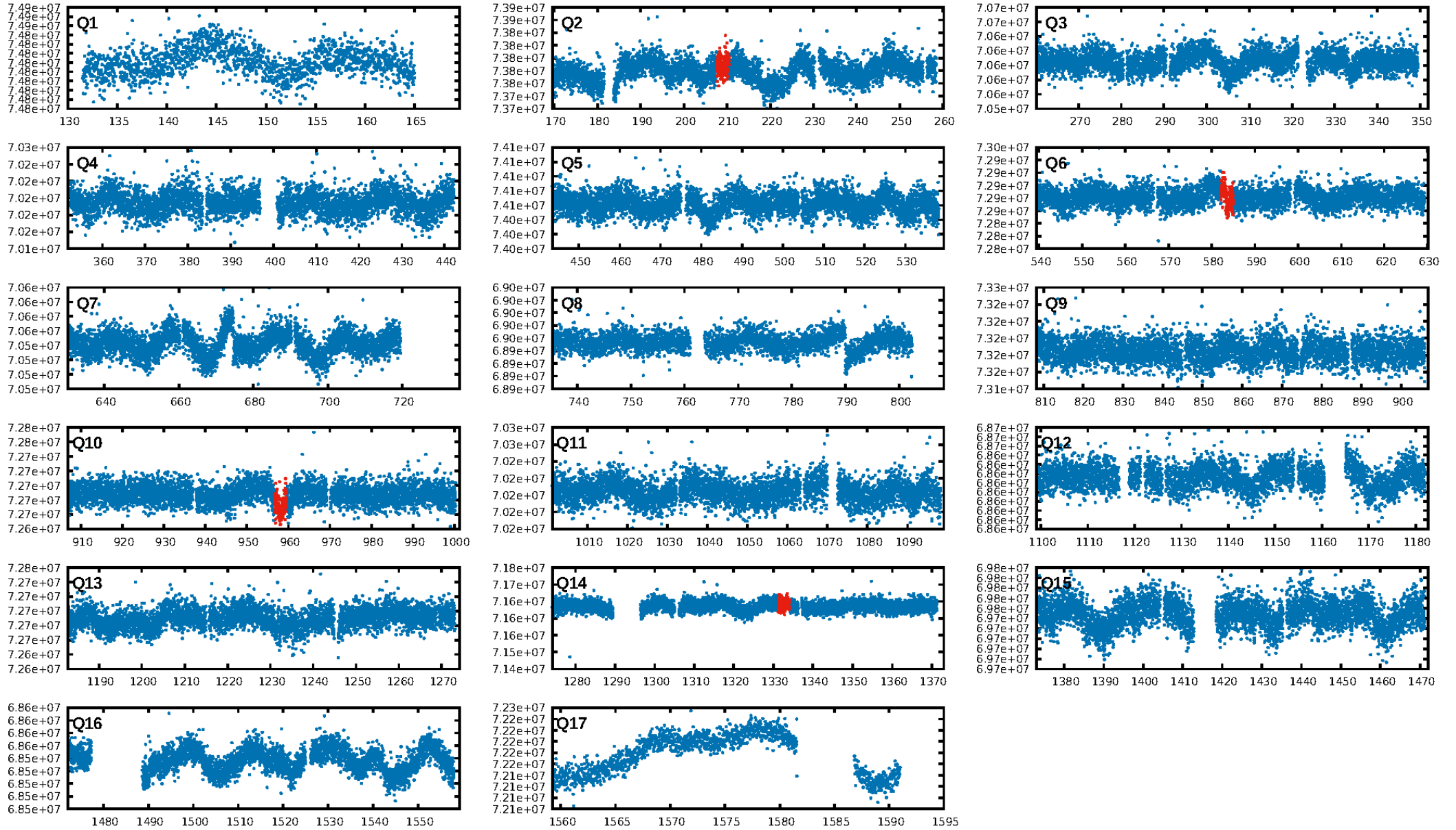
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 19.8%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 5.56e-12**  
RollingBand-fgt: 1.00 [4/4]  
**GhostDiagnostic-chr: 0.5626**  
Centroid-sig: 1.0%  
Centroid-so: 2.709 arcsec [1.92σ]  
**OotOffset-rm: 1.870 arcsec [9.21σ]**  
**KicOffset-rm: 1.542 arcsec [7.59σ]**  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [4/4]

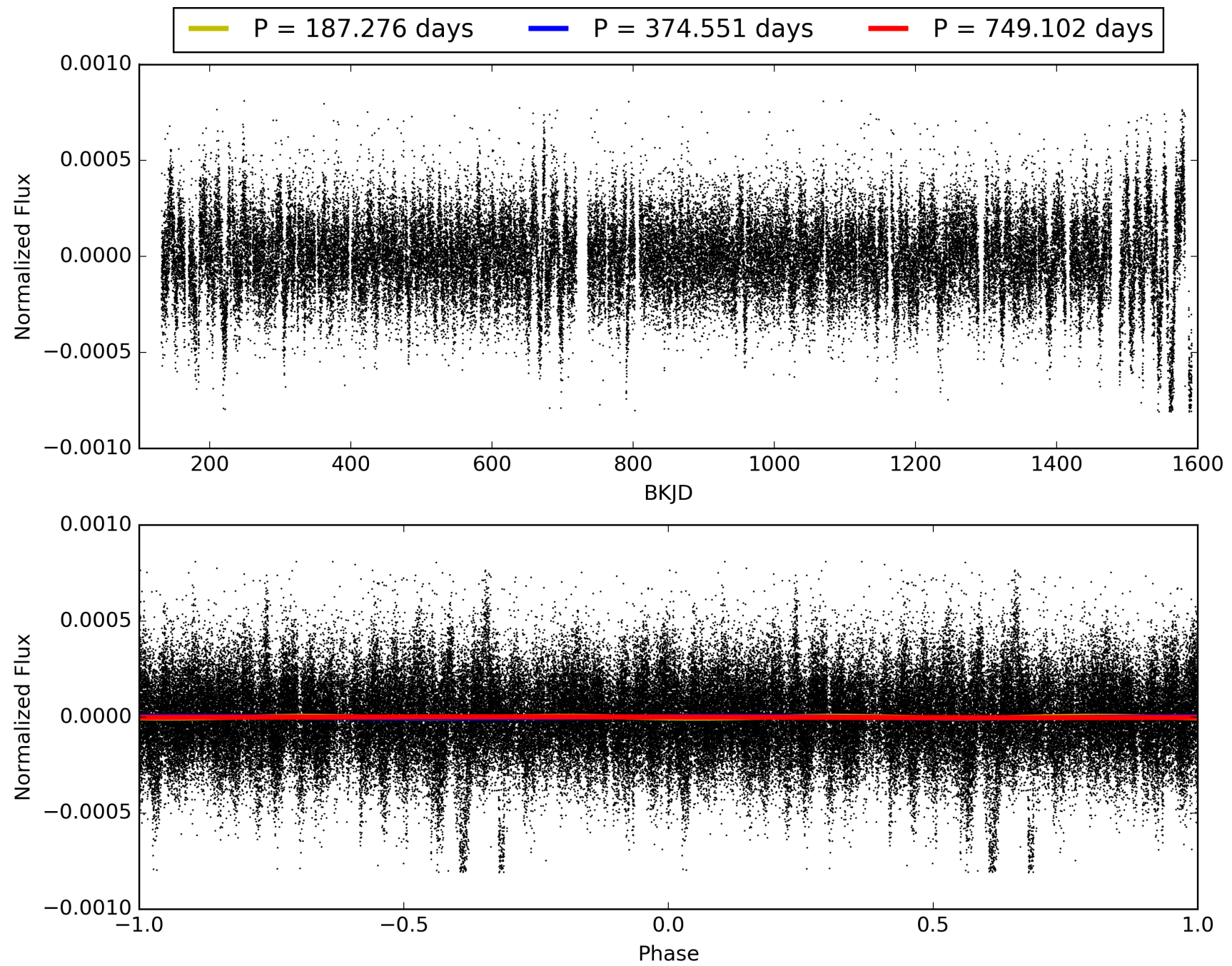
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:50:19 Z

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

# TCE 006848401-01, PDC Light Curves

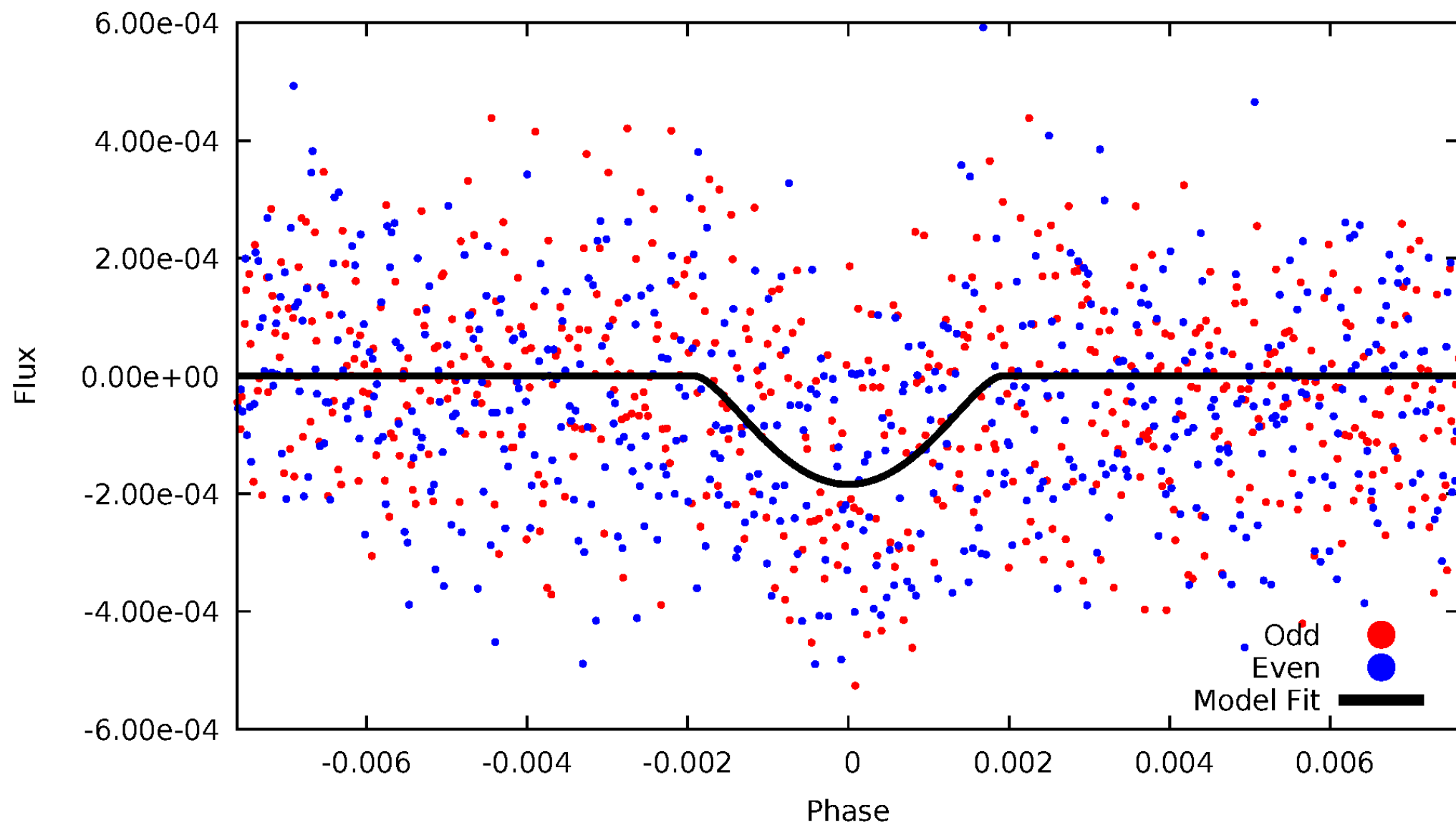


TCE 006848401-01



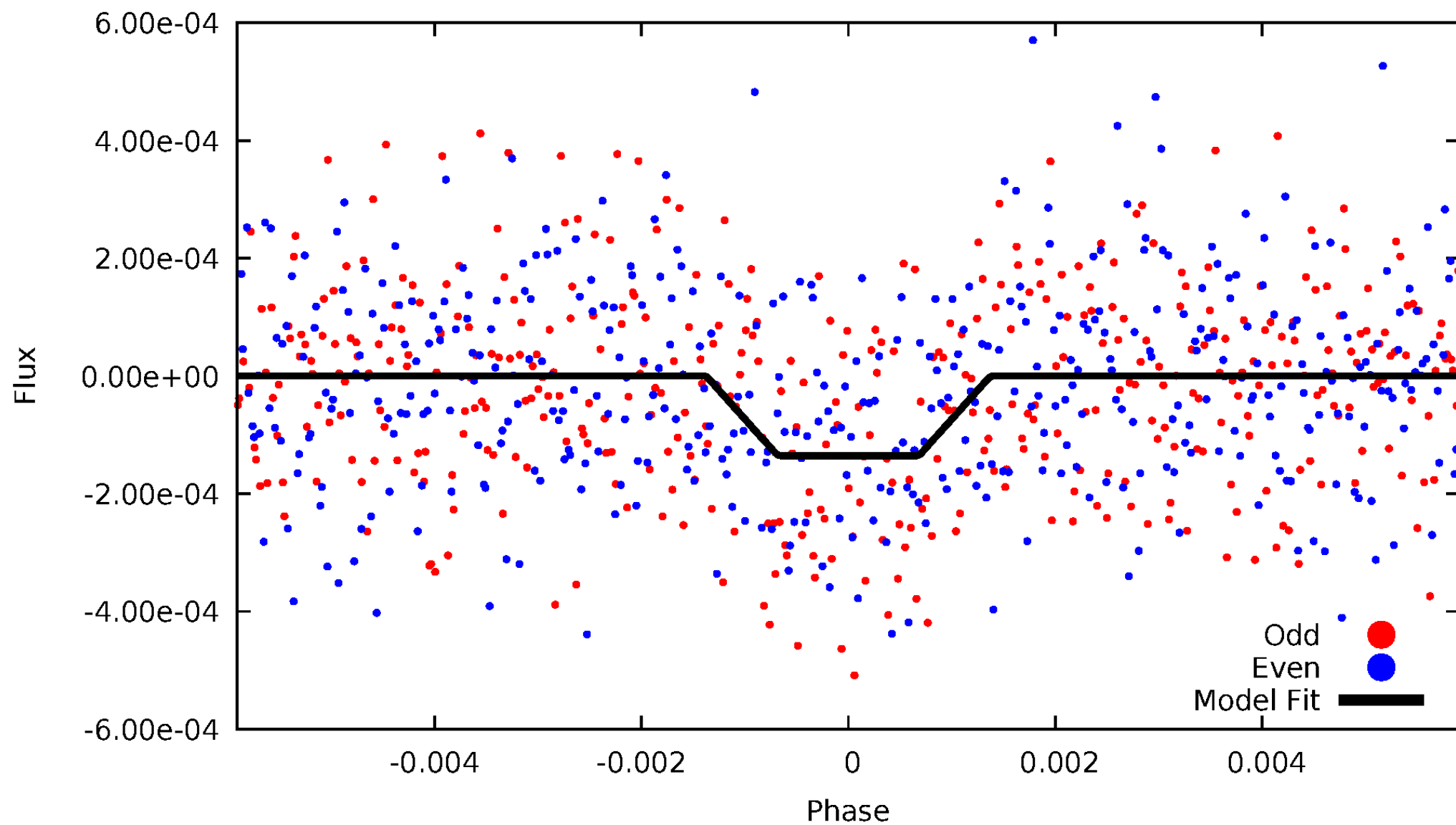
# DV Odd/Even

TCE 006848401-01



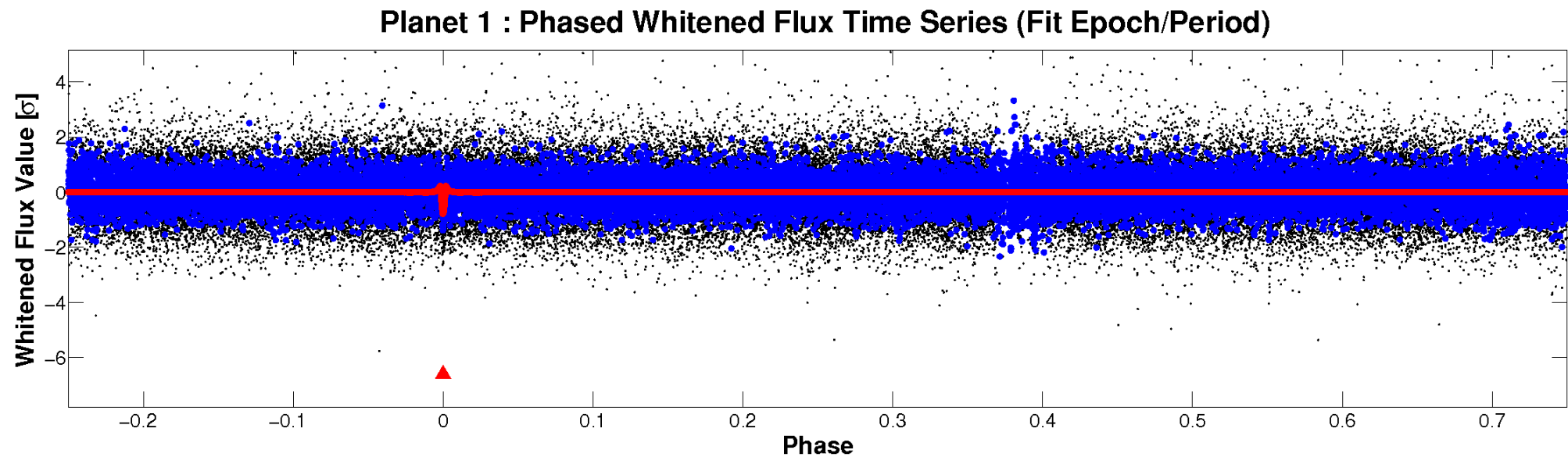
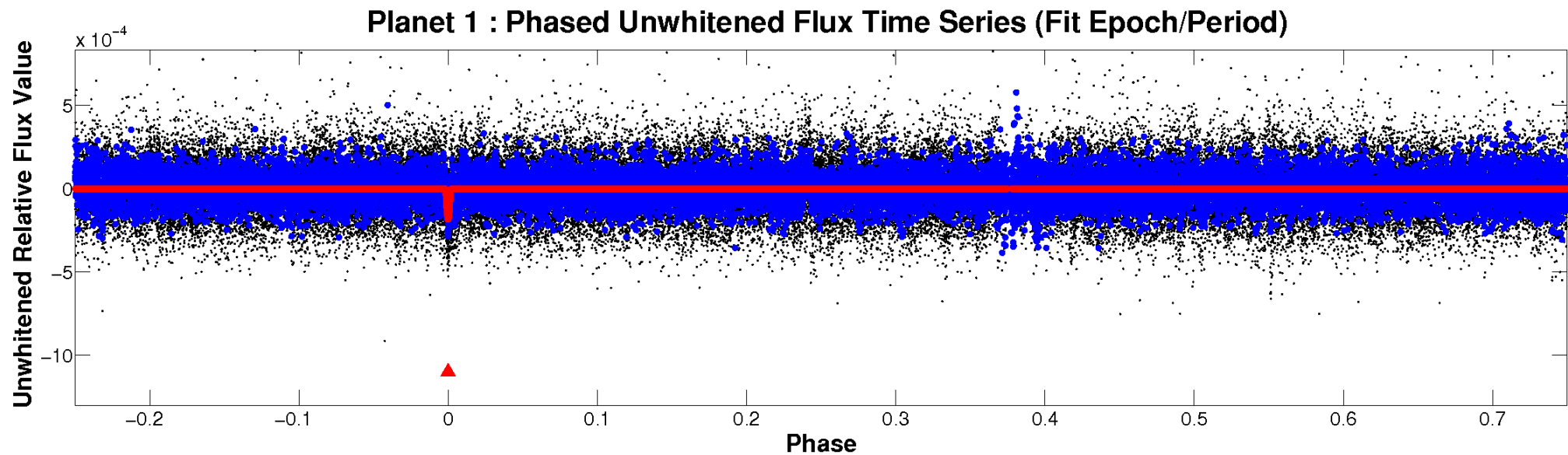
# ALT Odd/Even

TCE 006848401-01





# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

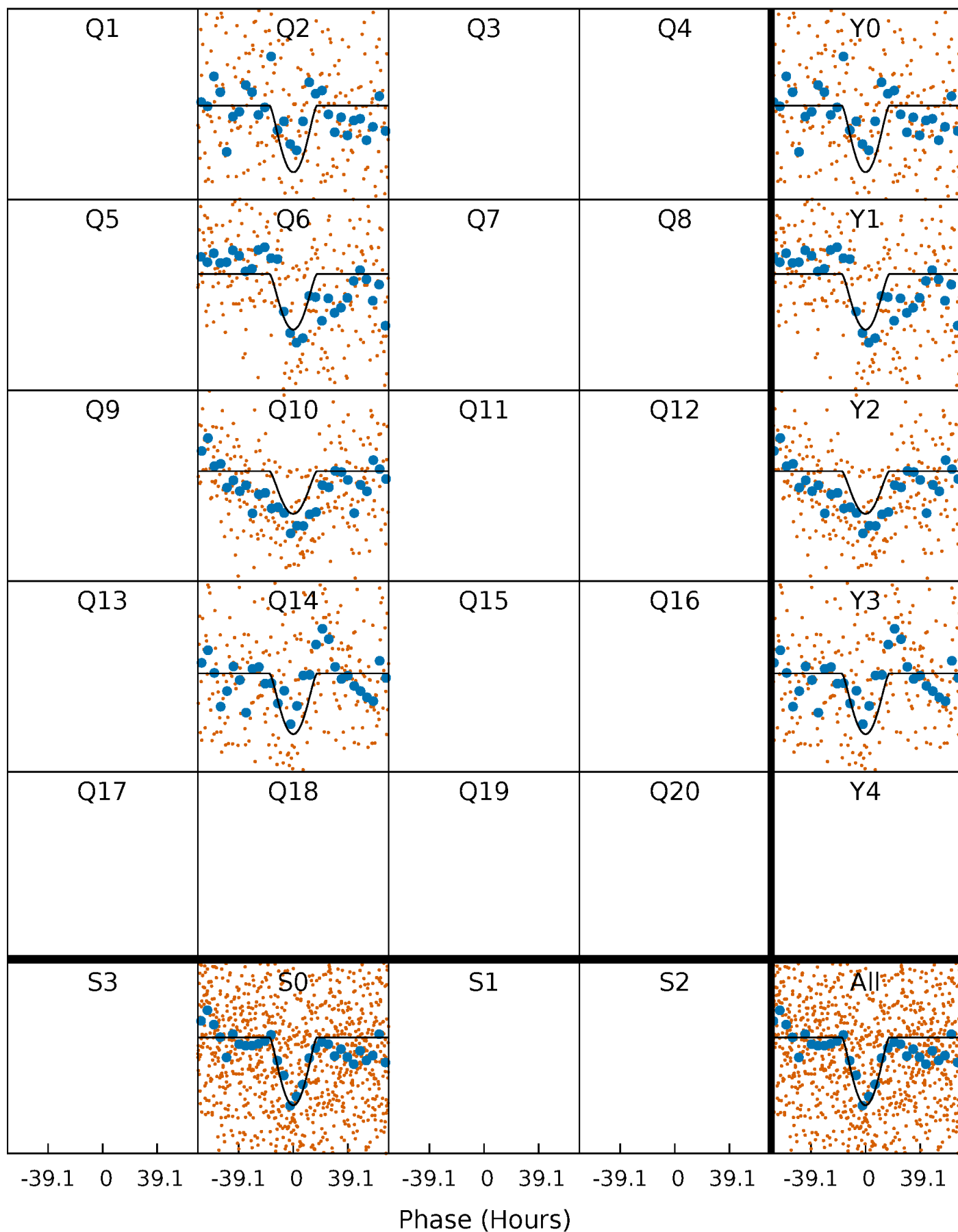
TCE 006848401-01 P=374.551137 Days  $T_0=209.023952$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 006848401-01 P=374.551137 Days  $T_0=209.023952$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

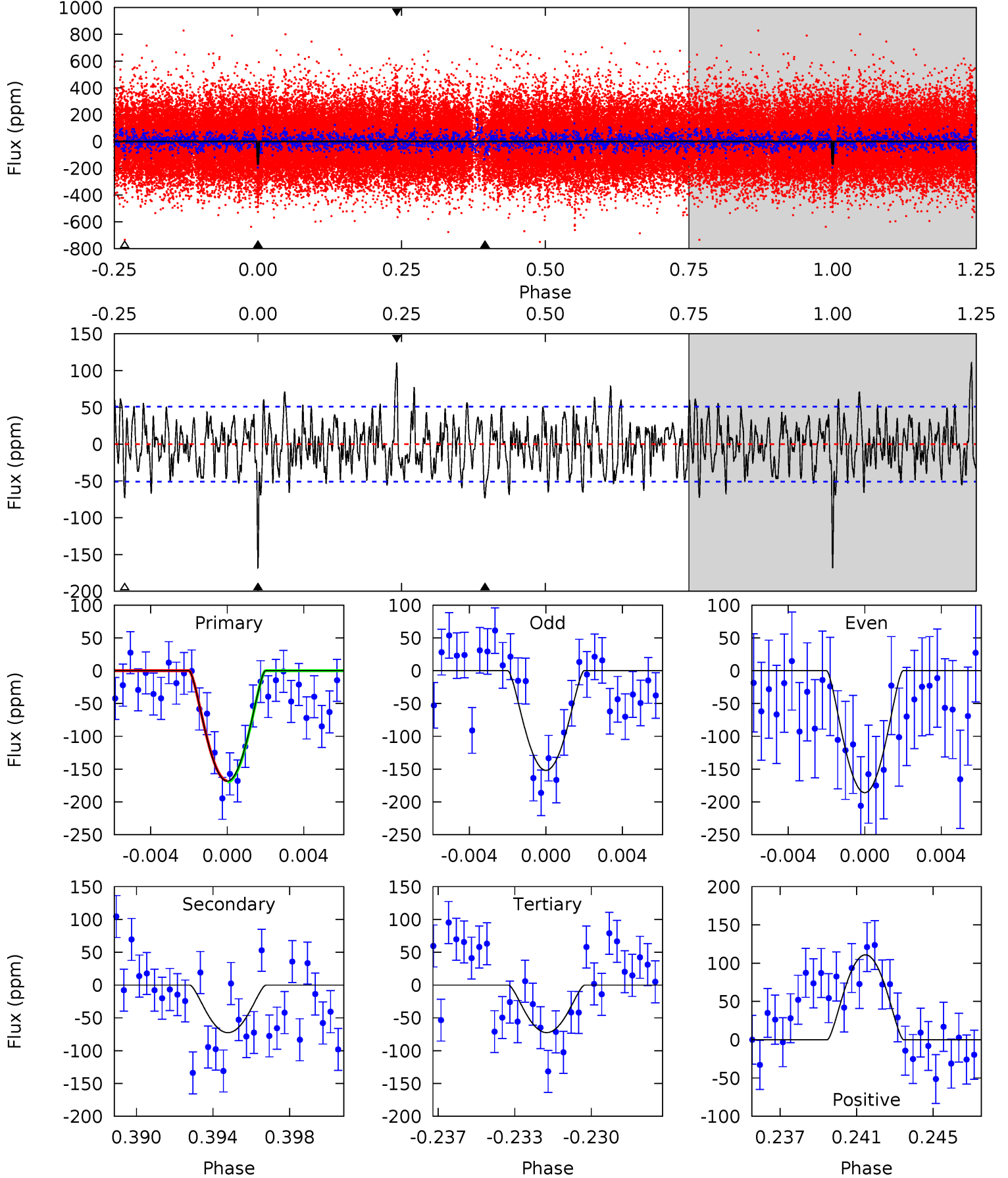
TCE 006848401-01 P=374.601644 Days  $T_0=208.984279$  (BKJD)



# DV Model-Shift Uniqueness Test

006848401-01, P = 374.551137 Days, E = 209.023952 Days

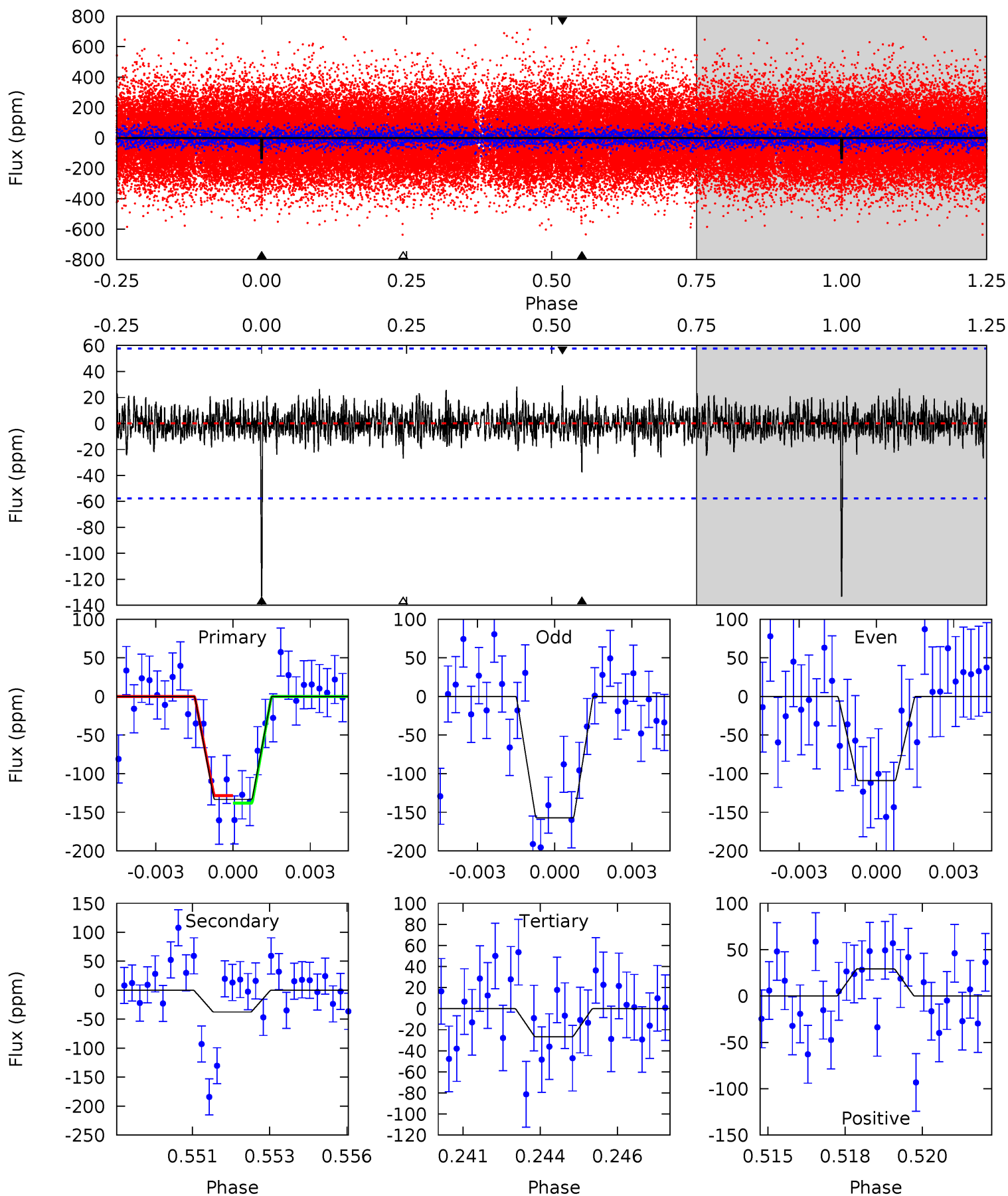
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	7.41	7.40	11.3	5.21	2.89	2.84	9.79	5.86	0.01	-3.92	1.74	1.11	0.40	0.11



# Alt Model-Shift Uniqueness Test

006848401-01, P = 374.601644 Days, E = 208.984279 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
12.2	3.44	2.44	2.67	5.27	2.99	0.77	9.73	9.51	1.00	0.77	2.21	1.05	0.18	0.44



### Stellar Parameters For KIC 006848401

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5627^{+152}_{-152}$	$4.568^{+0.033}_{-0.176}$	$-0.180^{+0.300}_{-0.300}$	$0.818^{+0.221}_{-0.069}$	$0.910^{+0.083}_{-0.104}$	$2.341^{+0.401}_{-1.041}$
	+3%/-3%	+1%/-4%	+167%/-167%	+27%/-8%	+9%/-11%	+17%/-44%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006848401-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-73 \pm 10$	$6.22^{+5.96}_{-4.23}$	$324^{+20}_{-13}$	$2775^{+1167}_{-436}$	$1002^{+8616}_{-755}$
Alt.	$-38 \pm 11$	$5.38^{+5.33}_{-3.81}$	$324^{+18}_{-14}$	$2639^{+1155}_{-411}$	$668^{+7150}_{-508}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

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

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

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

## DV Centroid Data

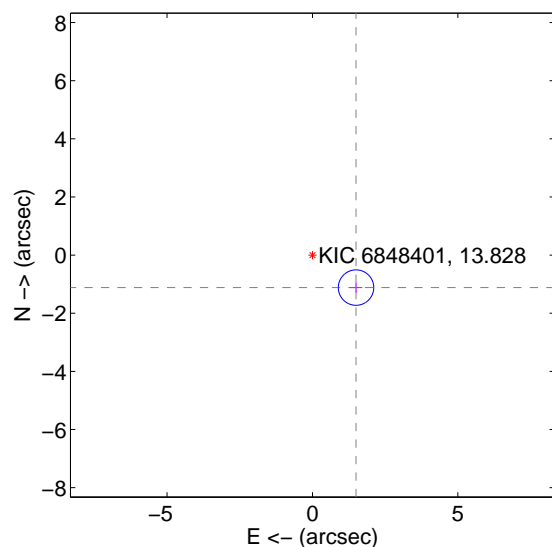
Supplemental centroid analysis for 006848401-01. Kepler magnitude: 13.83. Transit SNR 8.23

There are 1 quarters with good PRF difference image offsets

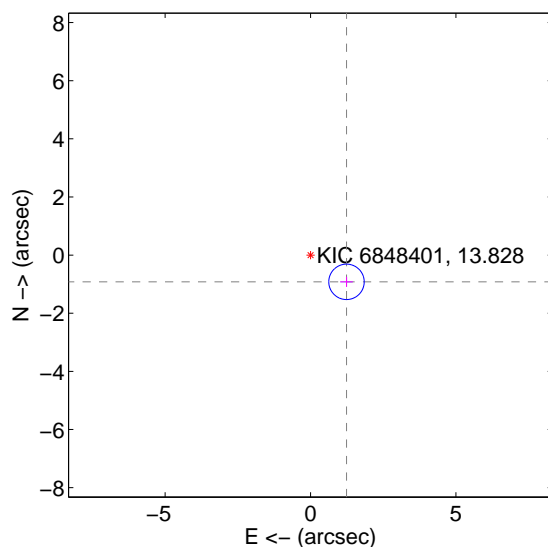
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.870 \pm 0.203$	9.21	$-1.500 \pm 0.217$	$-1.117 \pm 0.175$
PRF-fit source offset from KIC position	$1.542 \pm 0.203$	7.59	$-1.237 \pm 0.217$	$-0.920 \pm 0.175$
photometric centroid source offset	$2.71 \pm 1.41$	1.92	$1.84 \pm 1.48$	$-1.99 \pm 1.34$

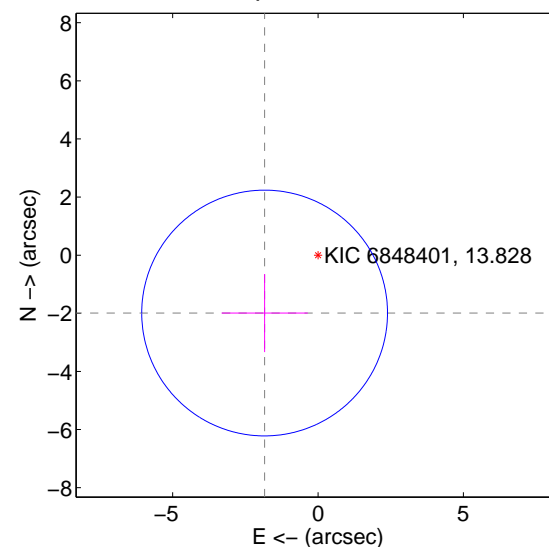
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



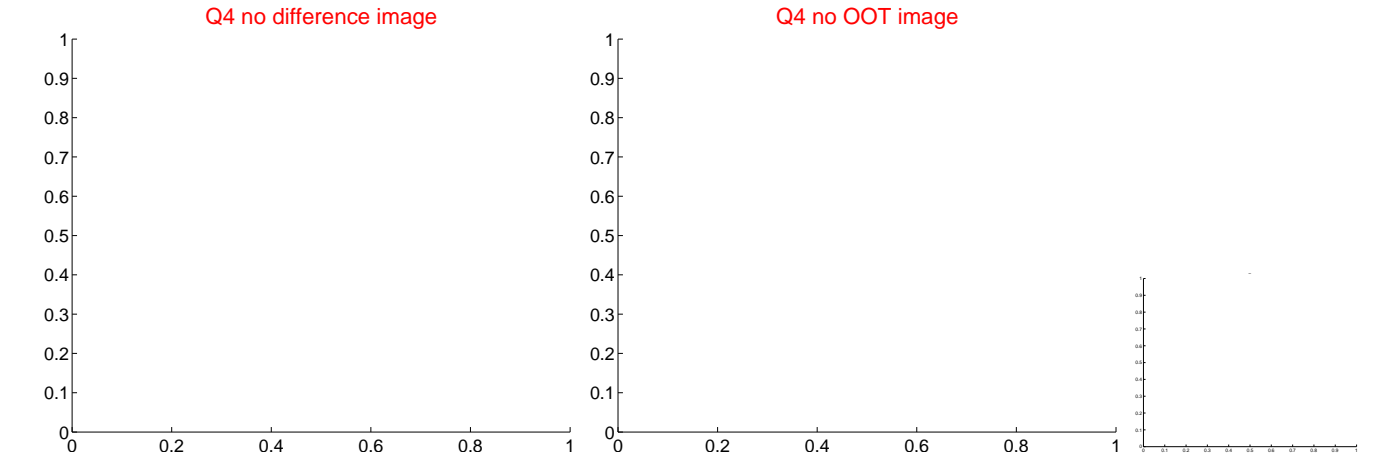
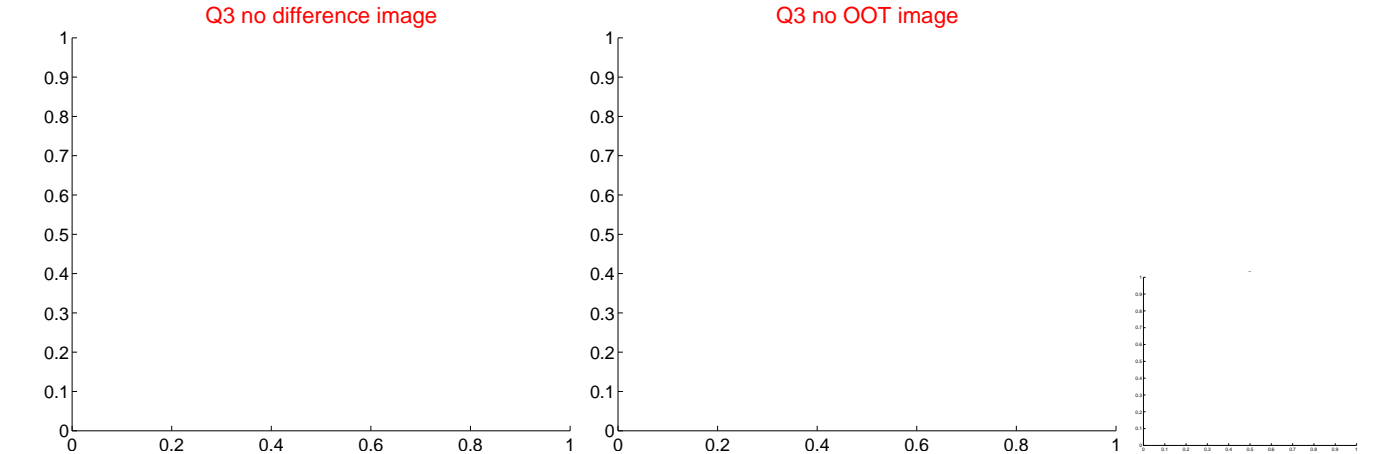
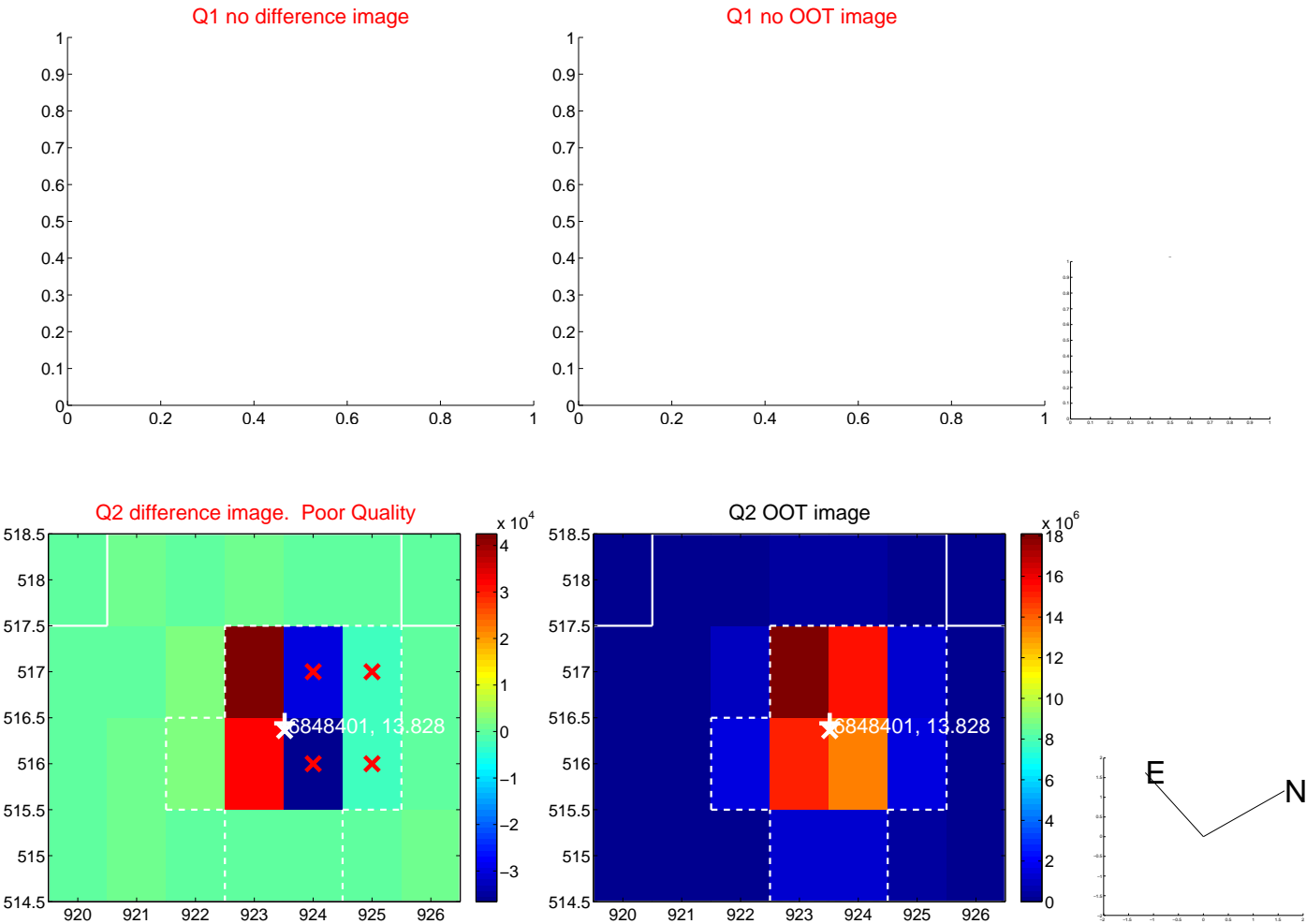
offset from photometric centroids



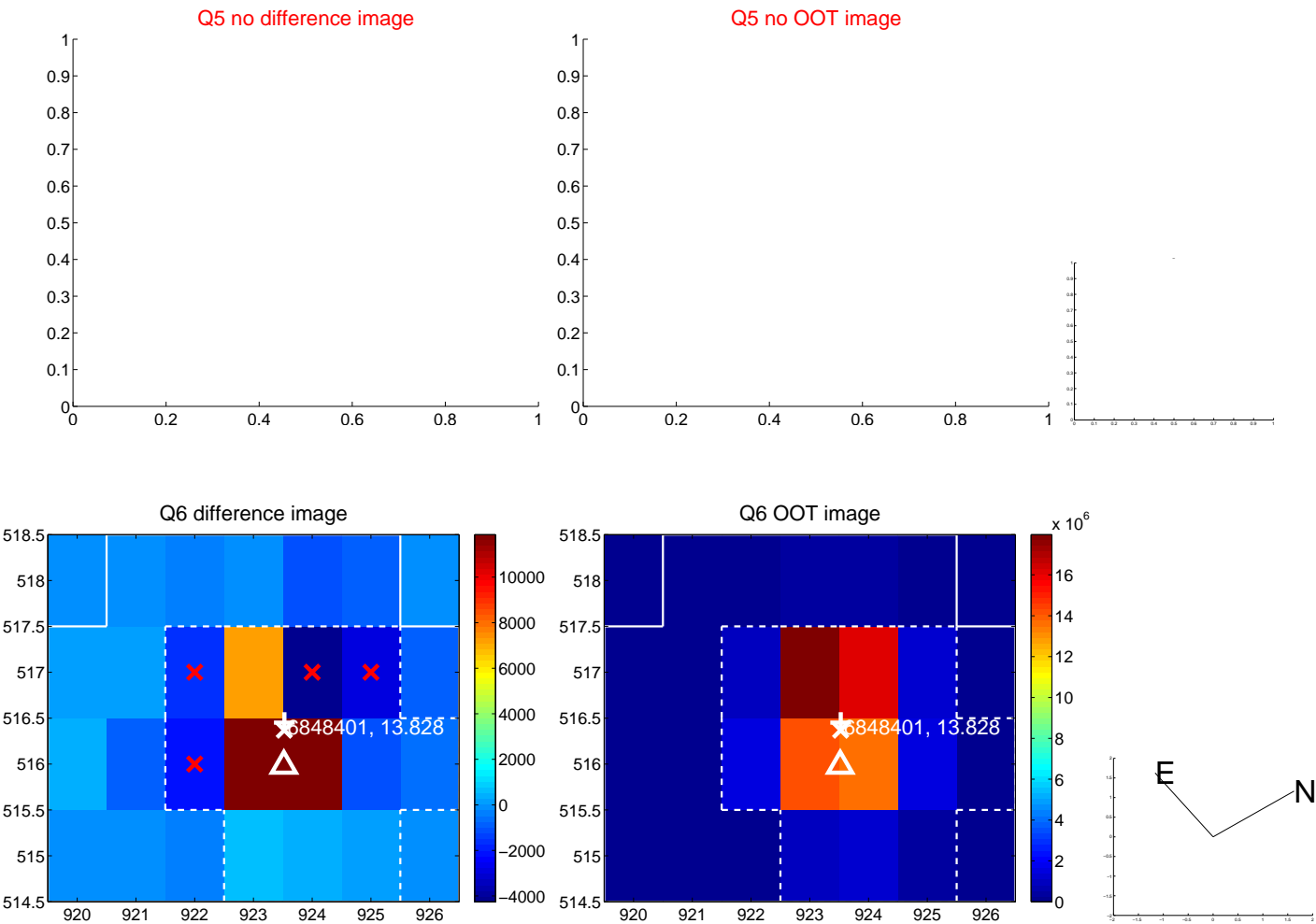
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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.



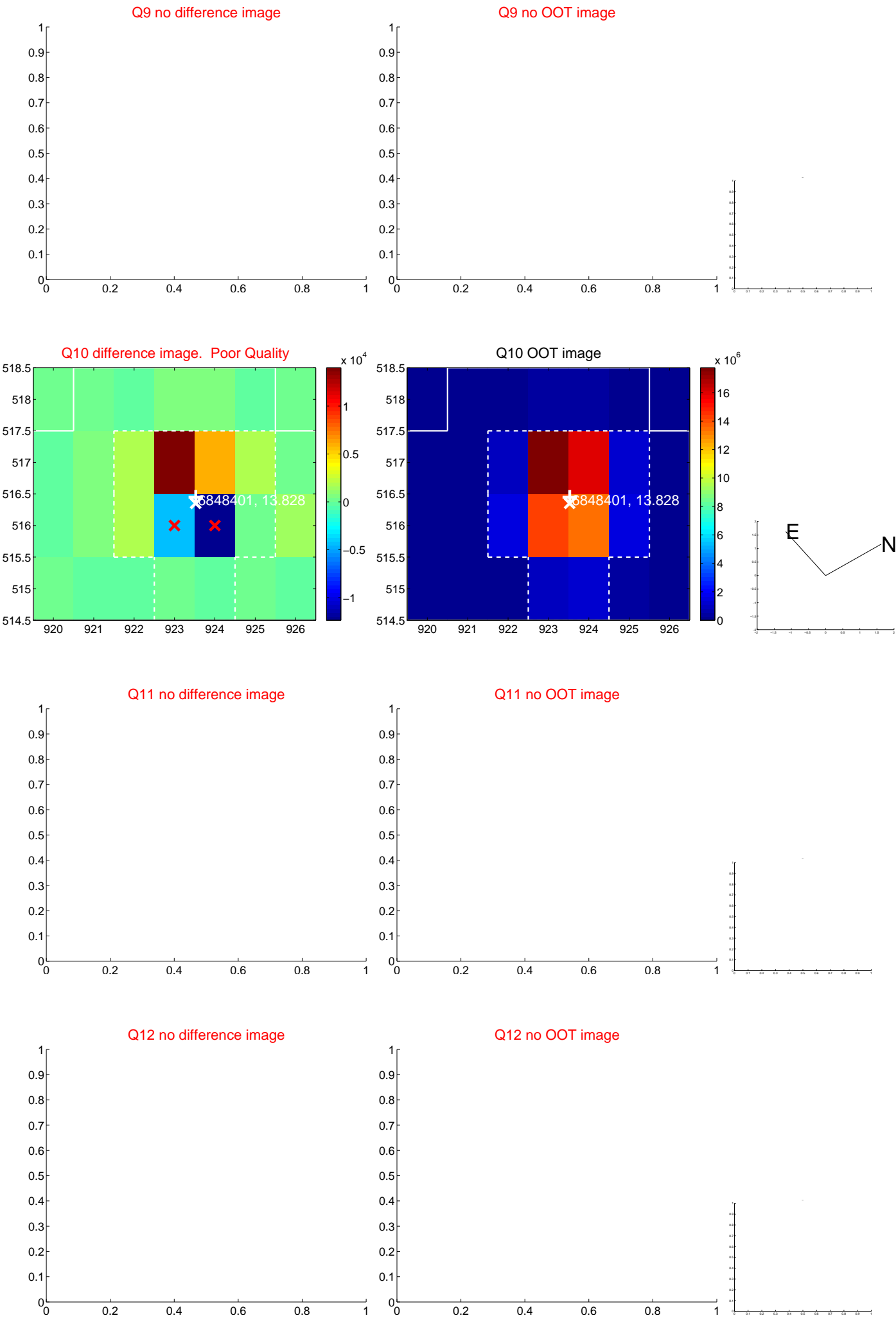
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



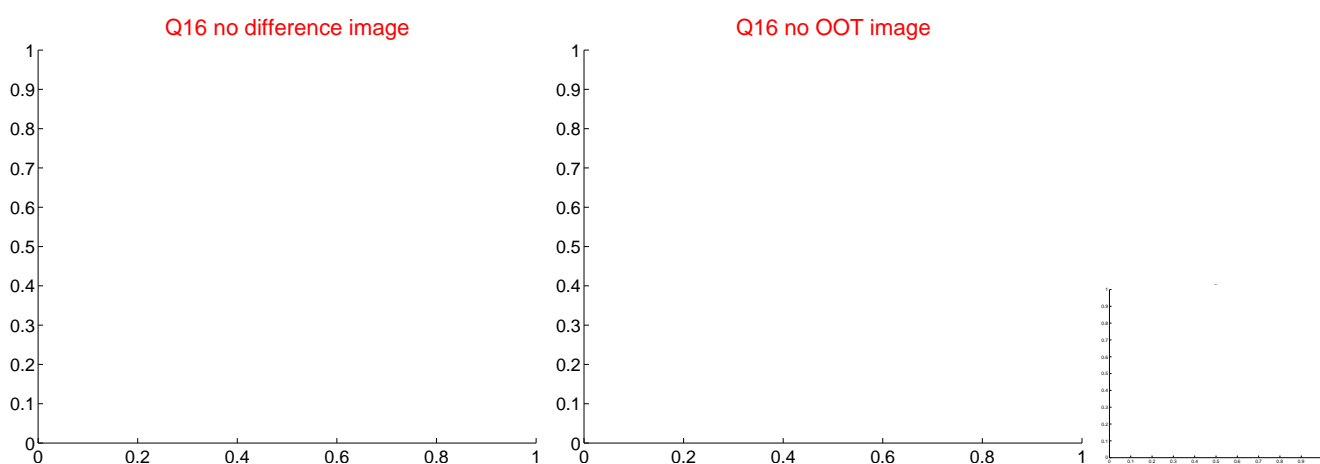
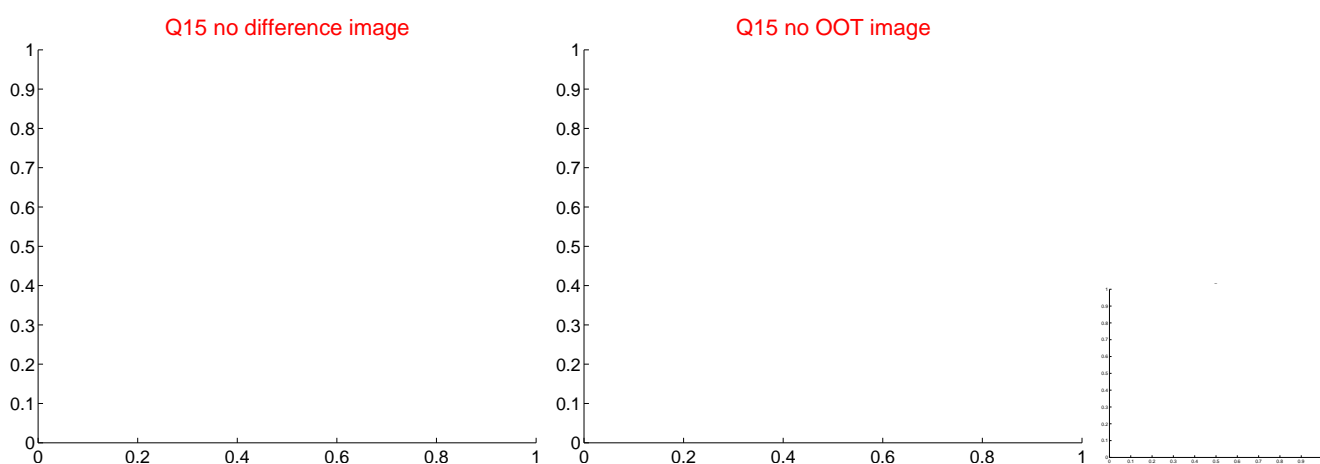
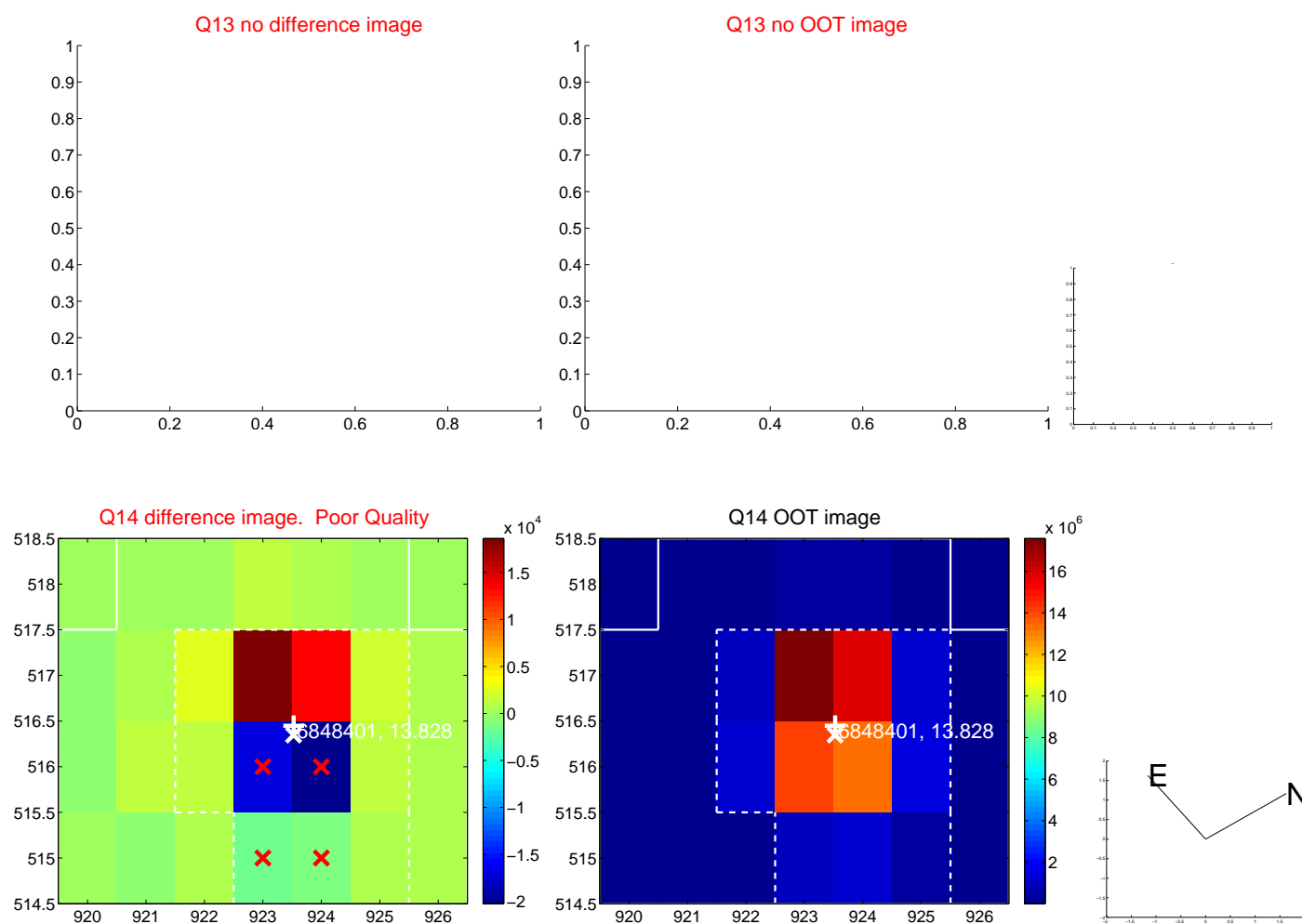
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



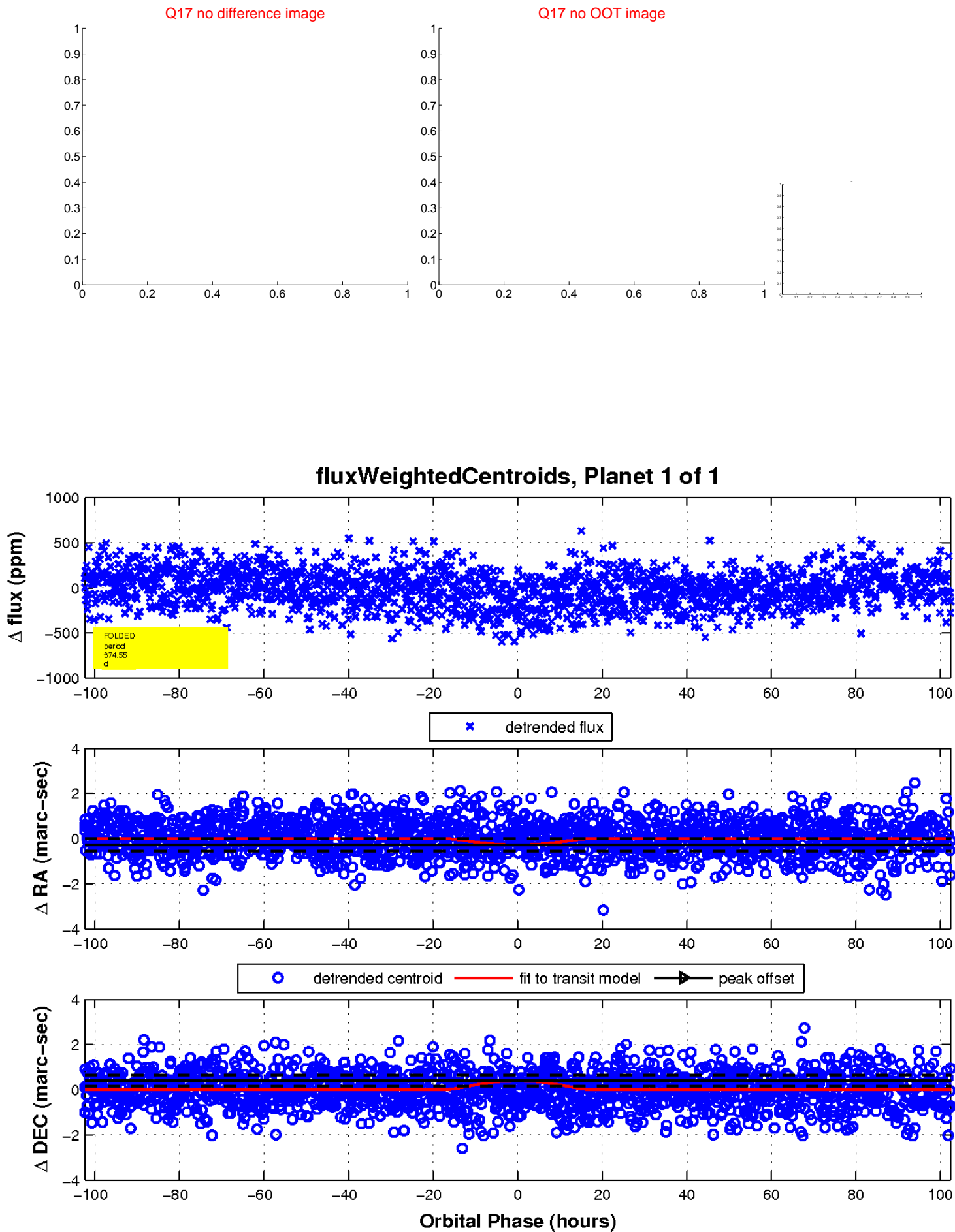
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

