

# KIC 010936474

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010936474-01	OBS	No	305.875514	206.320655	226.3	15.259	7.1	7.2	2.10	7504	4.14	11.20

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010936474-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_ALT—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.

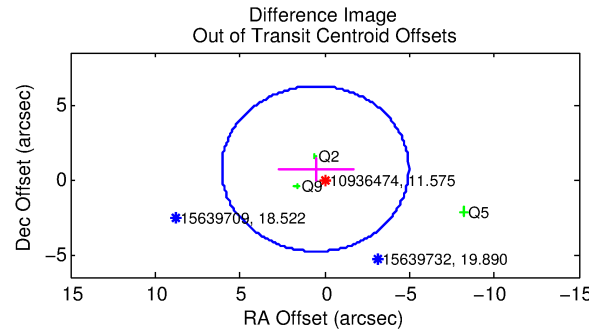
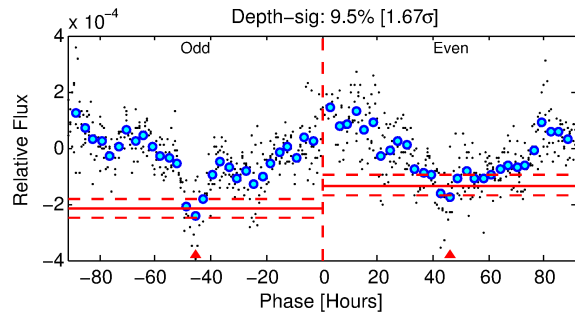
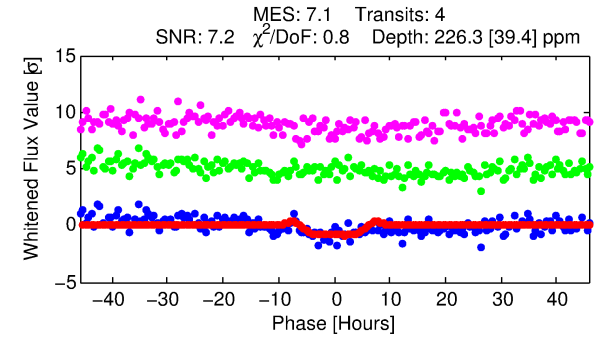
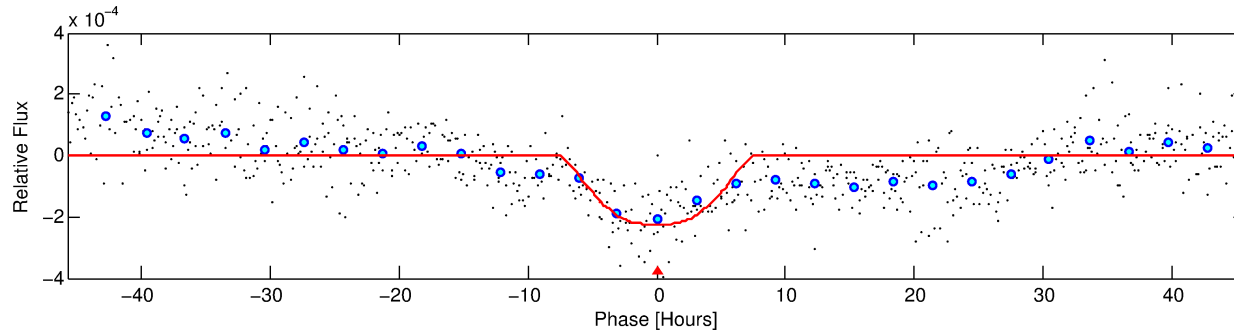
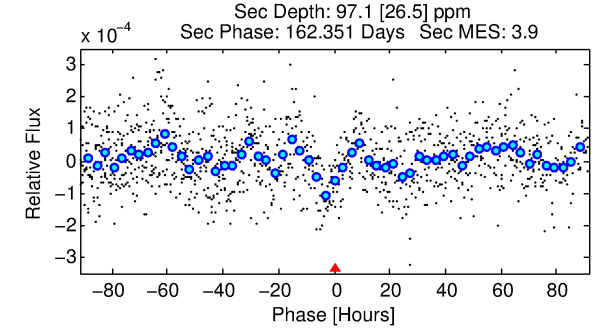
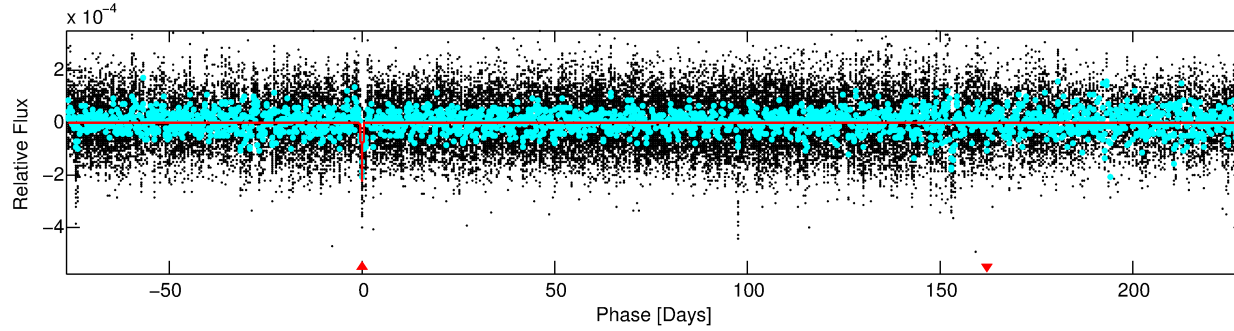
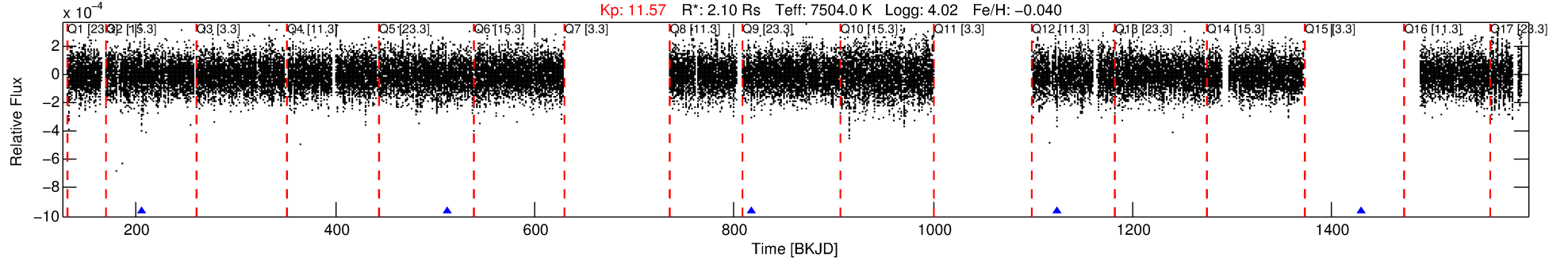
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010936474-01

No Significant Match Found

# DV One-Page Summary

KIC: 10936474 Candidate: 1 of 1 Period: 305.876 d



## DV Fit Results:

Period = 305.87551 [0.01467] d  
Epoch = 206.3207 [0.0266] BKJD  
Rp/R\* = 0.0180 [0.0018]  
a/R\* = 41.27 [4.15]  
b = 0.98 [0.01]  
Seff = 11.20 [2.66]  
Teq = 466 [28] K  
Rp = 4.14 [0.84] Re  
a = 1.0588 [0.1636] AU  
Ag = 3500.29 [1445.15] [2.42σ]  
Teffp = 5547 [476] K [10.66σ]

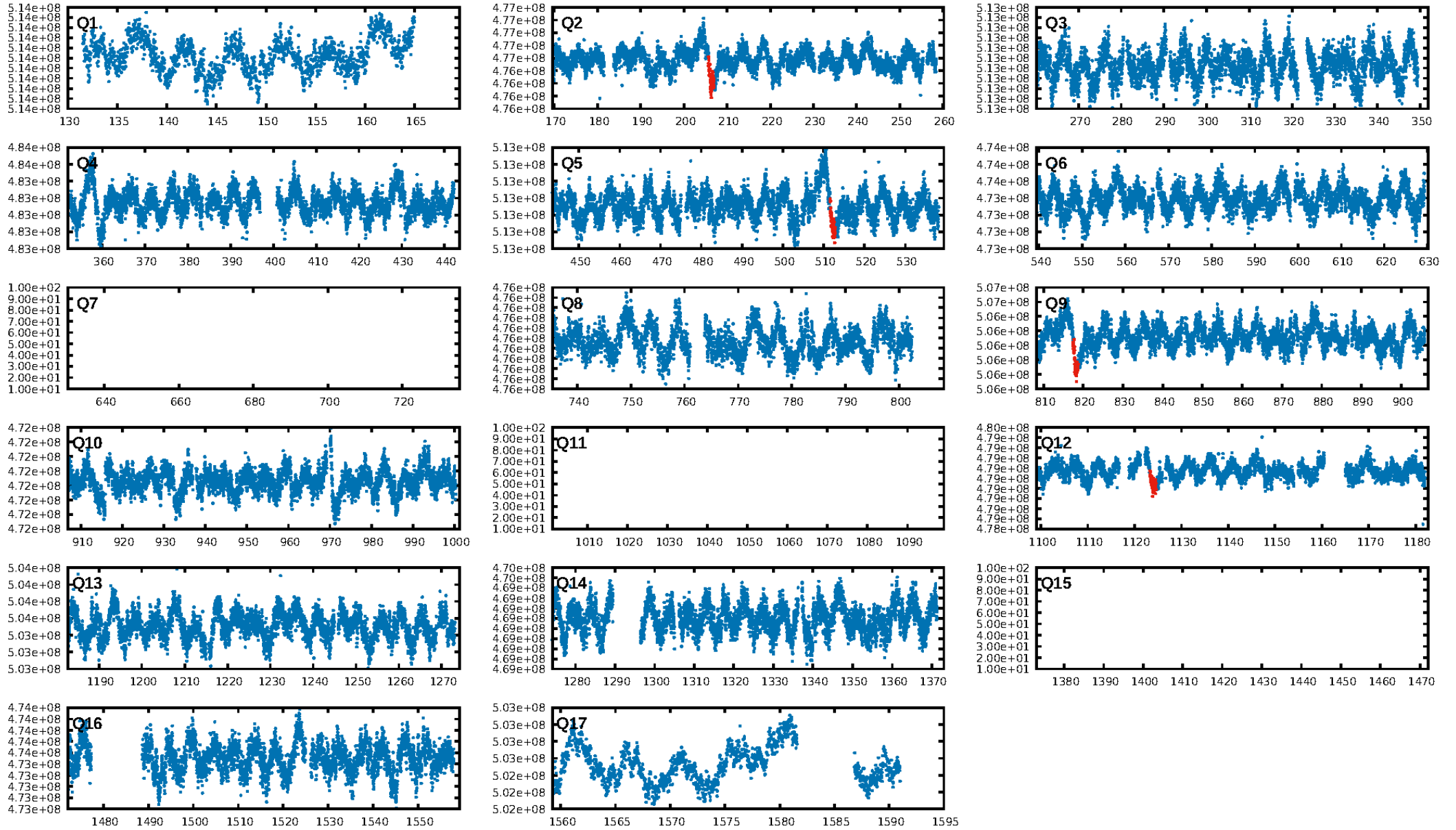
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 42.5%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 5.17e-11**  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -12.34  
Centroid-sig: 1.0%  
Centroid-so: 1.107 arcsec [1.53σ]  
OotOffset-rm: 0.906 arcsec [0.49σ]  
KicOffset-rm: 0.967 arcsec [0.36σ]  
OotOffset-st: 1/0/0/2 [3]  
KicOffset-st: 1/0/0/2 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [3/3]

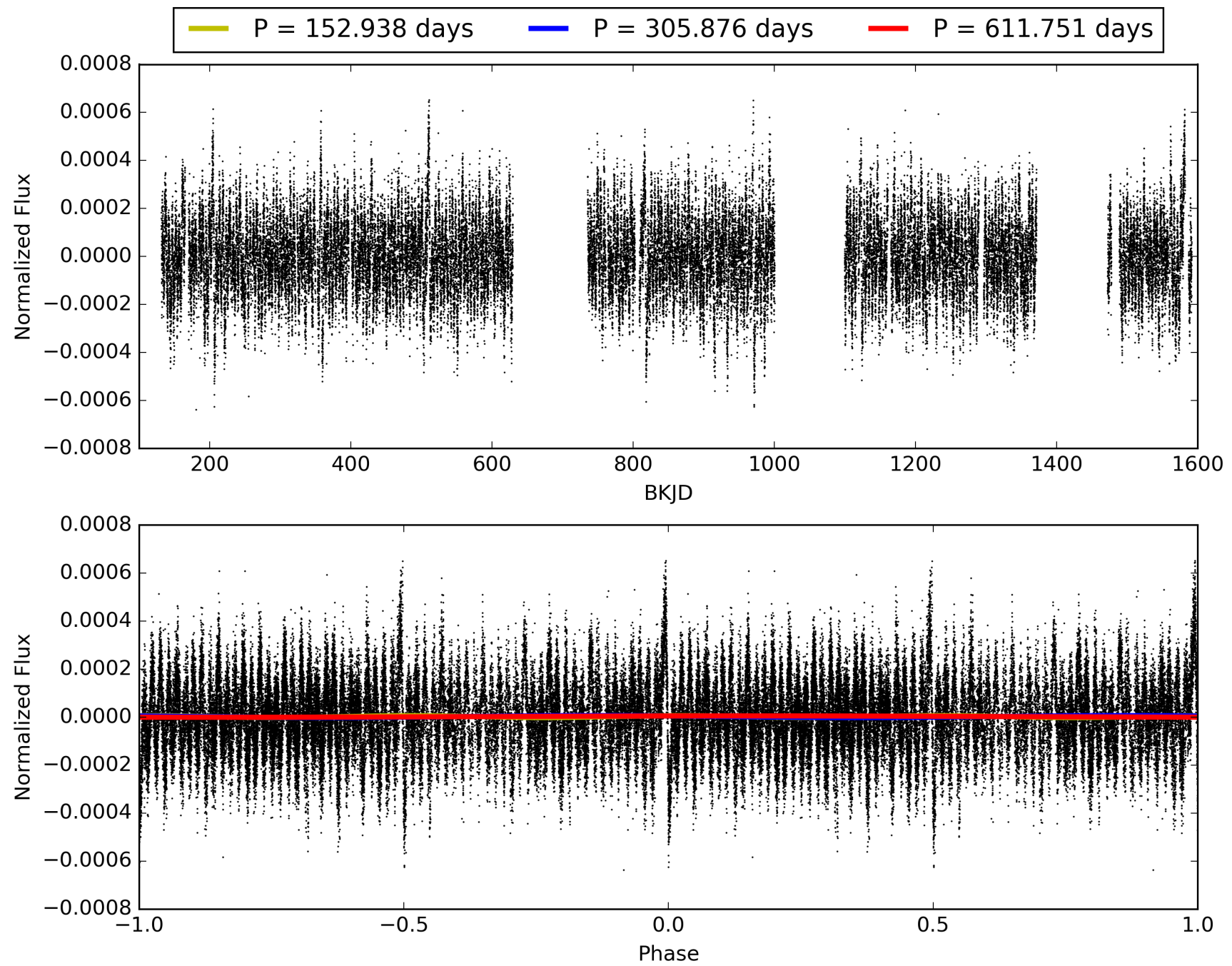
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:17:07 Z

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

# TCE 010936474-01, PDC Light Curves

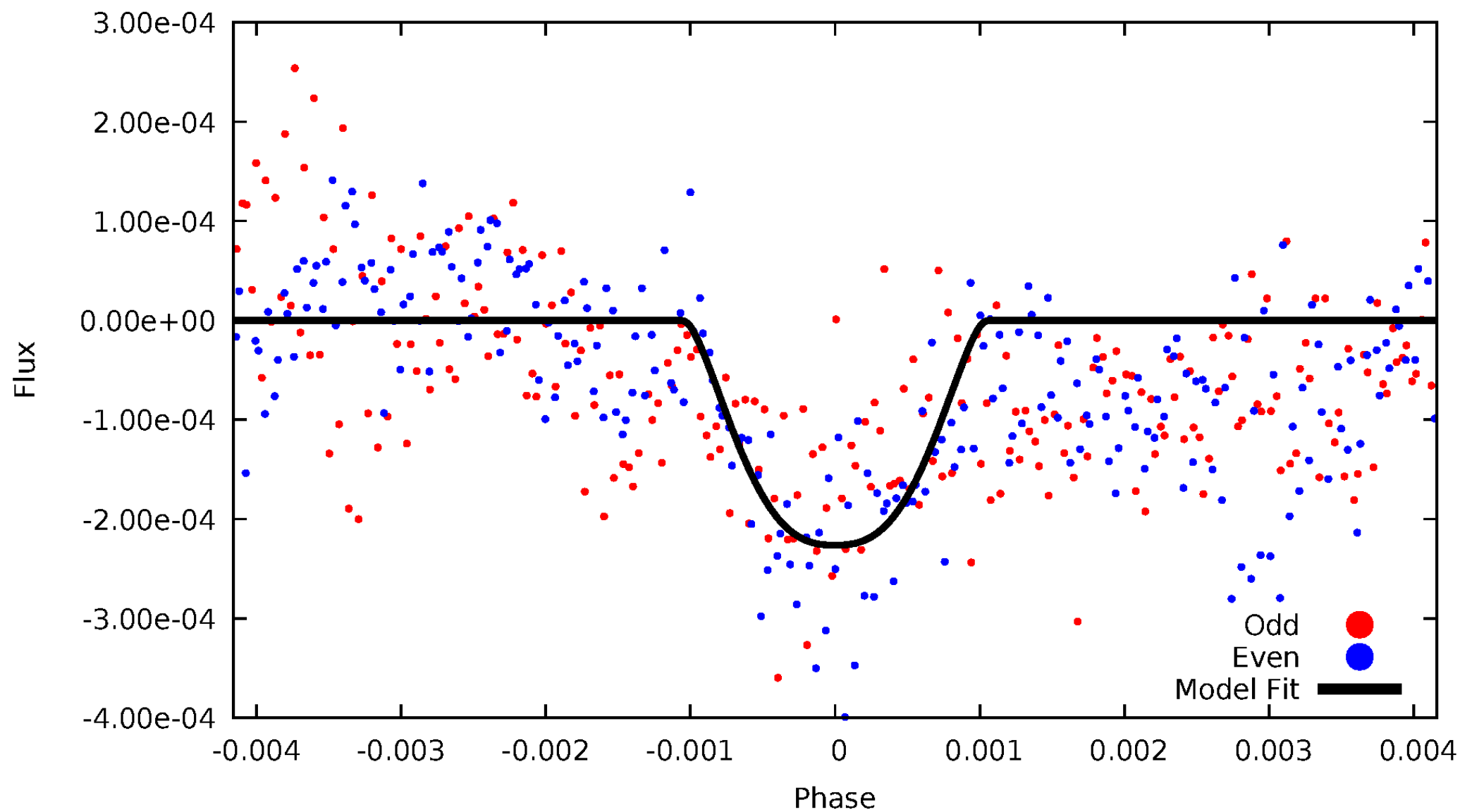


TCE 010936474-01



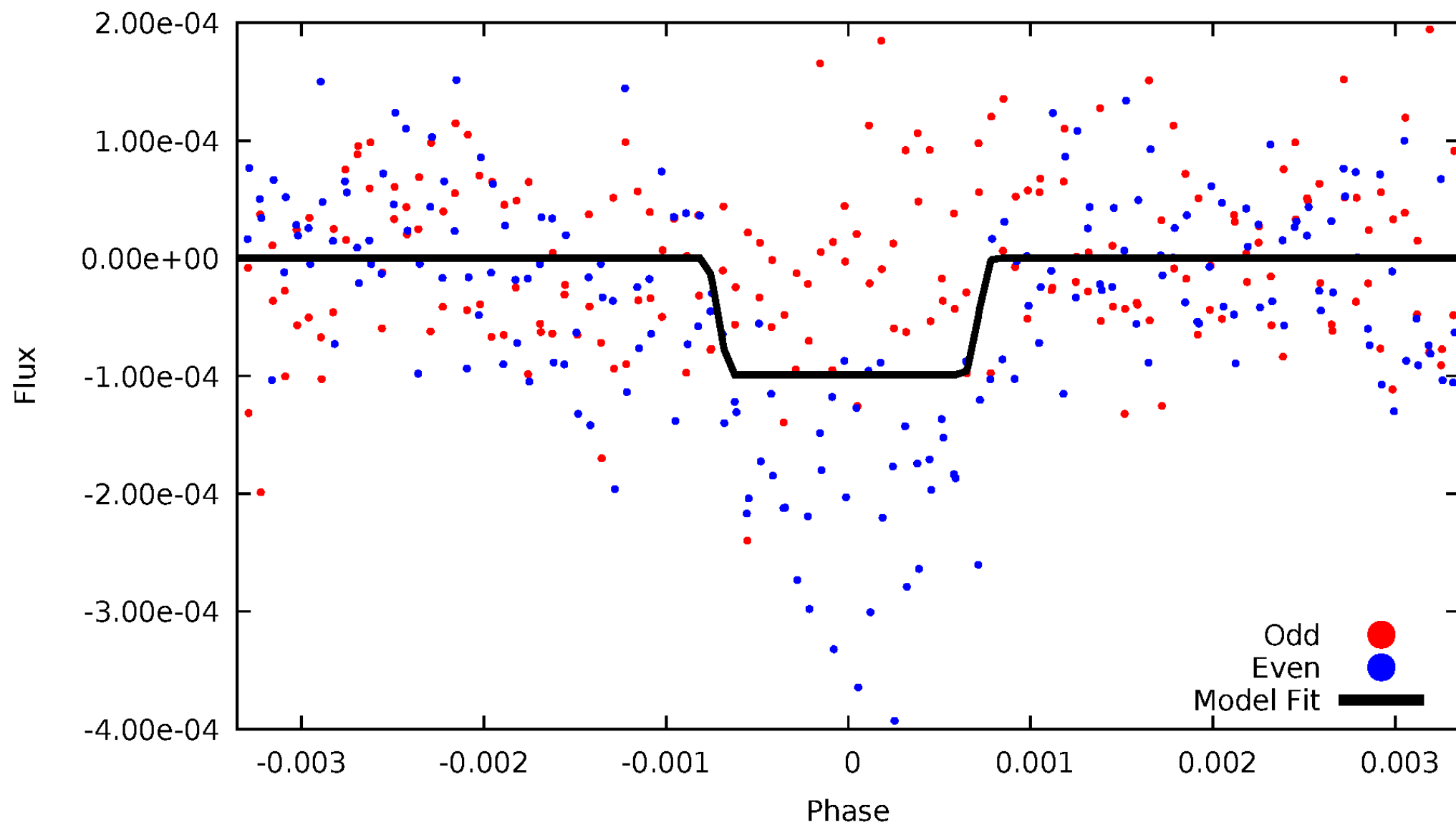
# DV Odd/Even

TCE 010936474-01



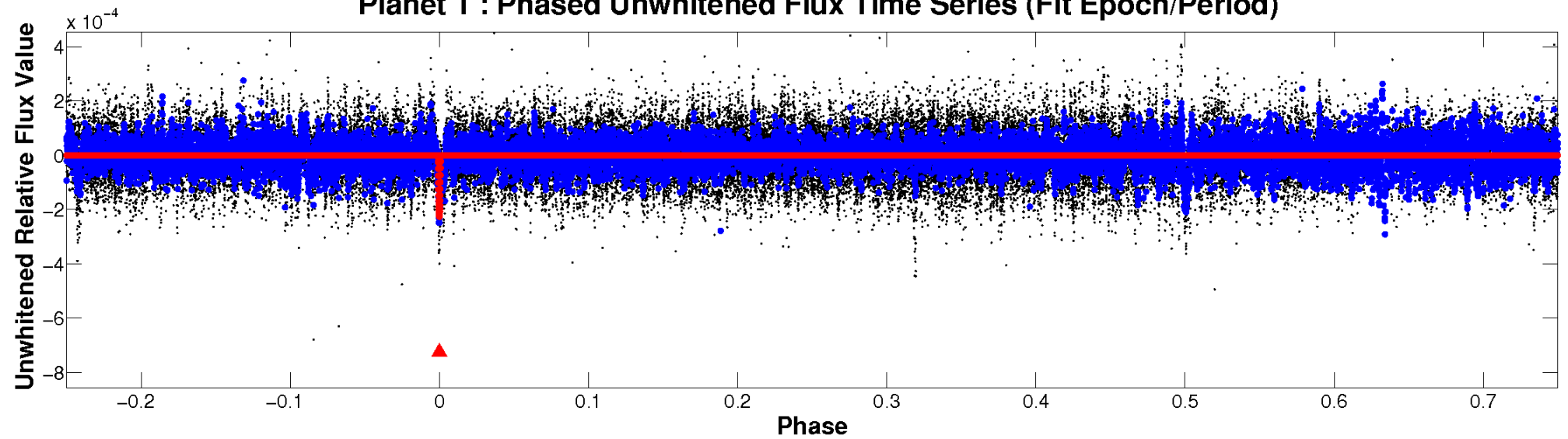
# ALT Odd/Even

TCE 010936474-01

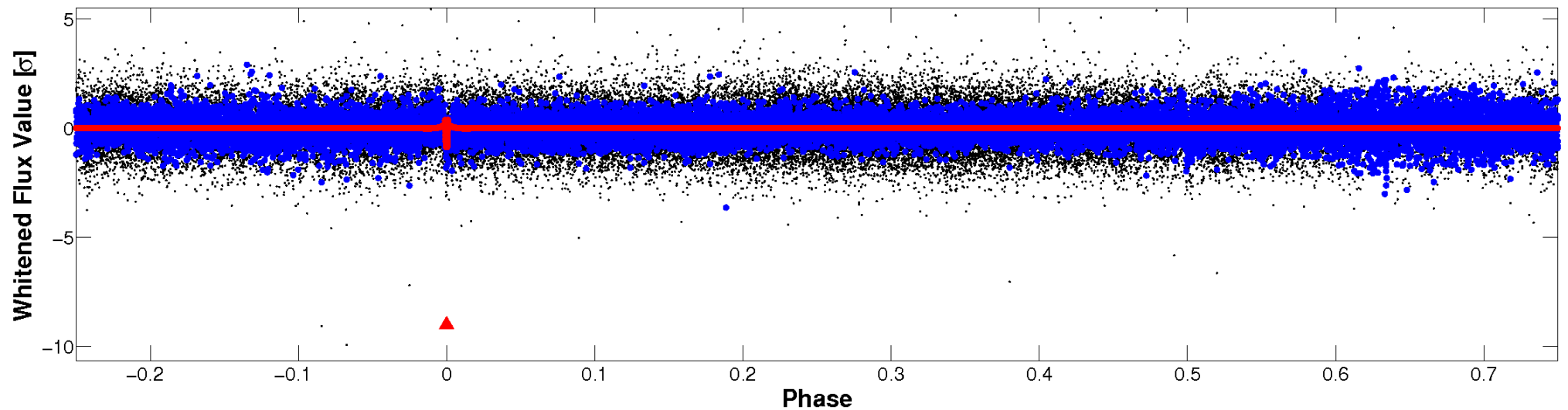


# Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

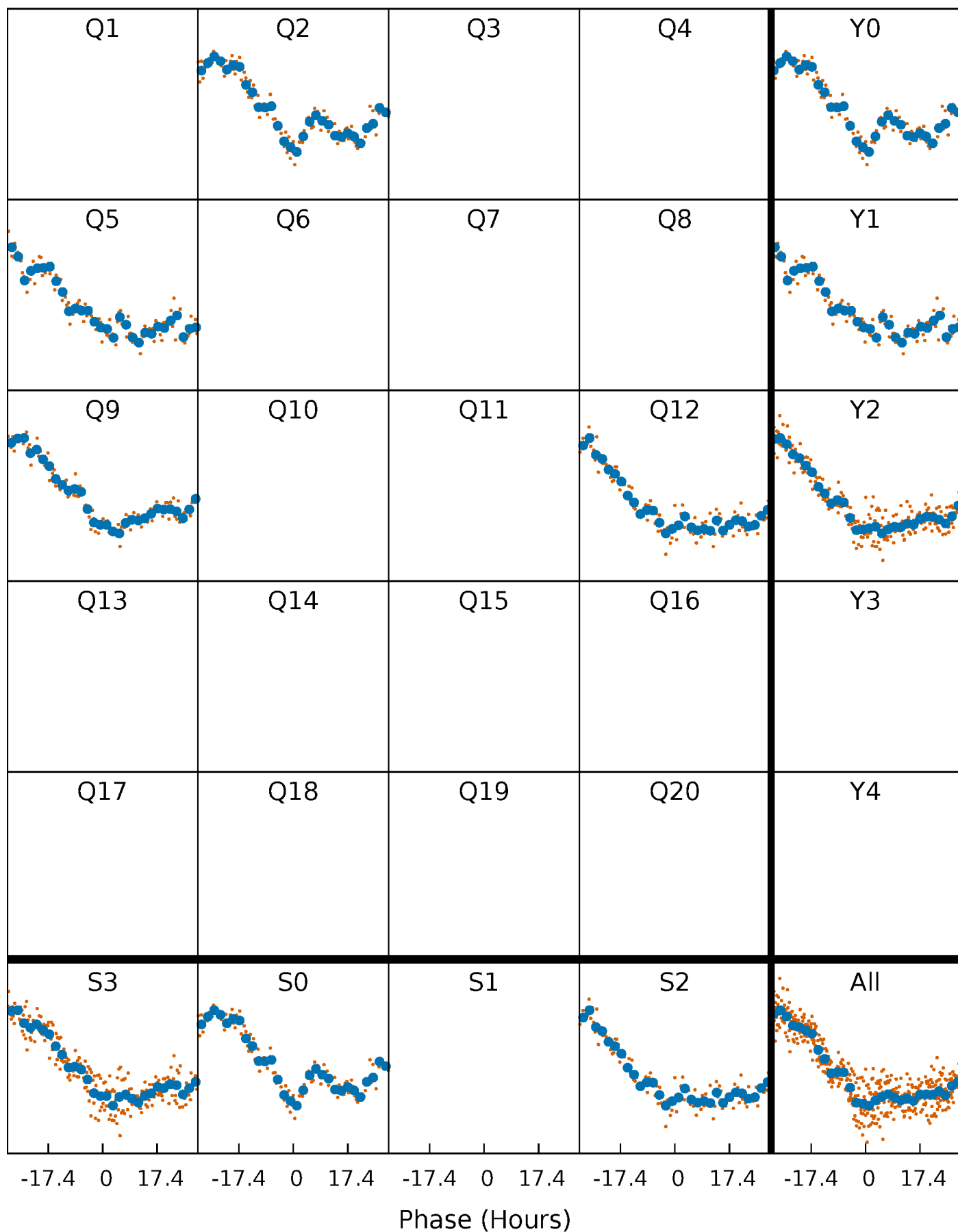


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

TCE 010936474-01 P=305.875514 Days  $T_0=206.320655$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 010936474-01 P=305.875514 Days  $T_0=206.320655$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

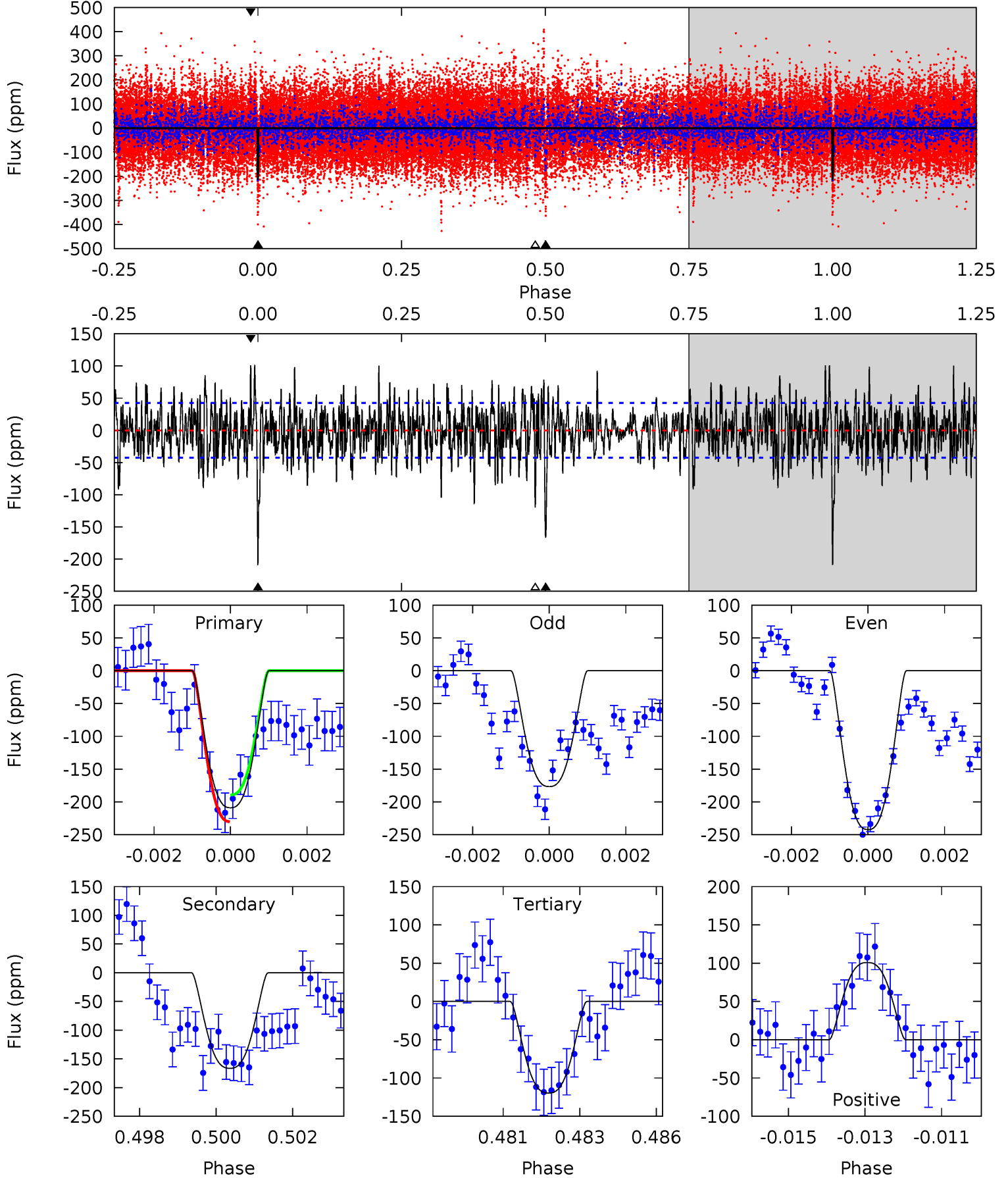
TCE 010936474-01 P=305.910827 Days  $T_0=206.263936$  (BKJD)



# DV Model-Shift Uniqueness Test

010936474-01, P = 305.875514 Days, E = 206.320655 Days

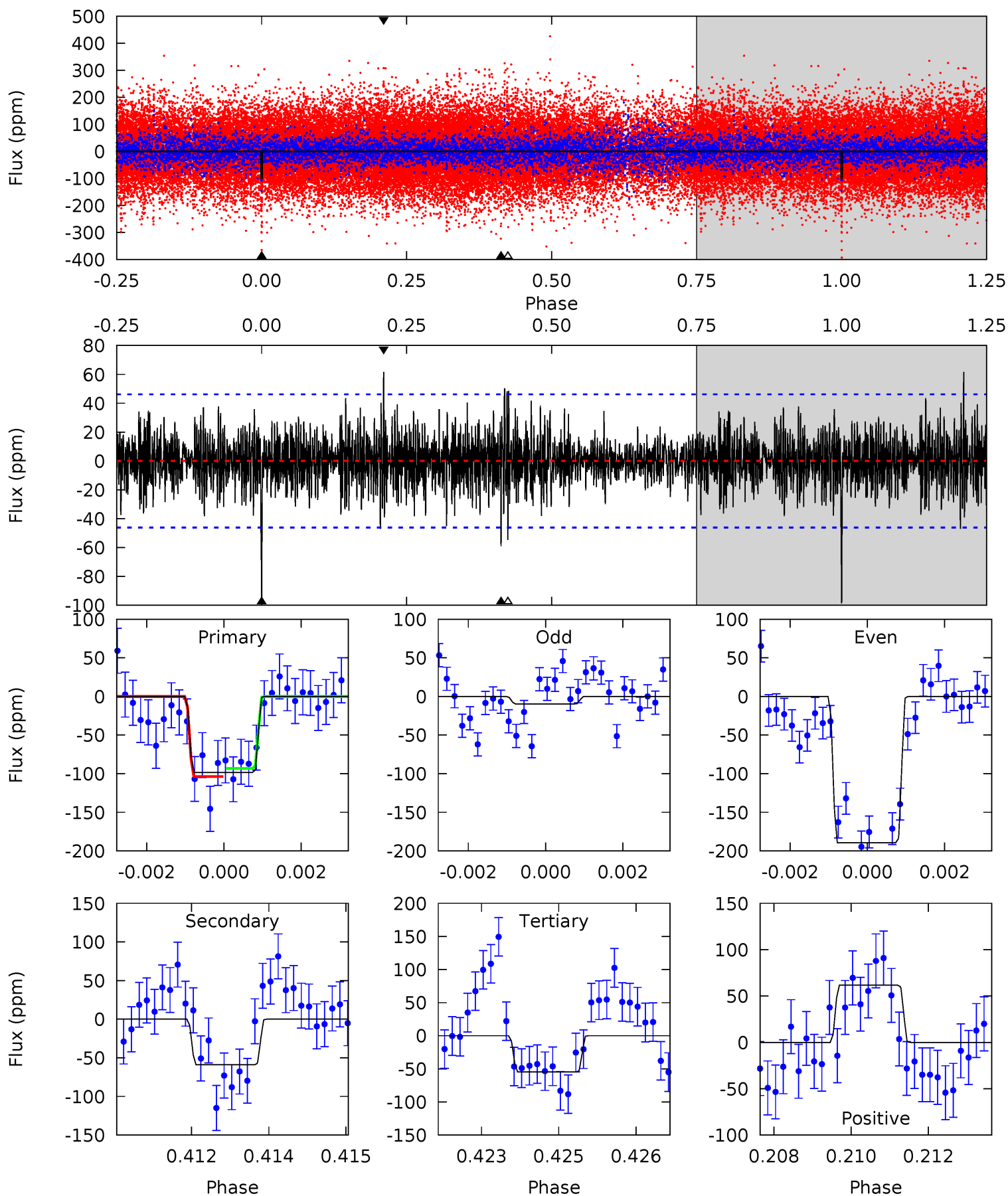
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.1	20.8	14.9	12.6	5.32	3.07	3.98	11.2	13.5	5.84	8.19	4.09	1.04	0.33	2.57



# Alt Model-Shift Uniqueness Test

010936474-01, P = 305.910827 Days, E = 206.263936 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
11.4	6.86	6.36	7.16	5.37	3.16	1.63	5.08	4.29	0.50	-0.30	10.6	1.17	0.38	0.62



### Stellar Parameters For KIC 010936474

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7504^{+82}_{-82}$	$4.021^{+0.132}_{-0.108}$	$-0.040^{+0.150}_{-0.150}$	$2.102^{+0.368}_{-0.368}$	$1.691^{+0.107}_{-0.161}$	$0.257^{+0.161}_{-0.084}$
	+1%/-1%	+3%/-3%	+375%/-375%	+18%/-18%	+6%/-10%	+63%/-33%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 010936474-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-166 \pm 8$	$4.07^{+0.61}_{-0.57}$	$649^{+28}_{-31}$	$6255^{+377}_{-308}$	$6140^{+2204}_{-1516}$
Alt.	$-59 \pm 9$	$2.23^{+0.48}_{-0.44}$	$650^{+30}_{-30}$	$6529^{+792}_{-579}$	$7225^{+4130}_{-2506}$

$T_{max}$  = 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  $A_{obs} \gg 1.0$

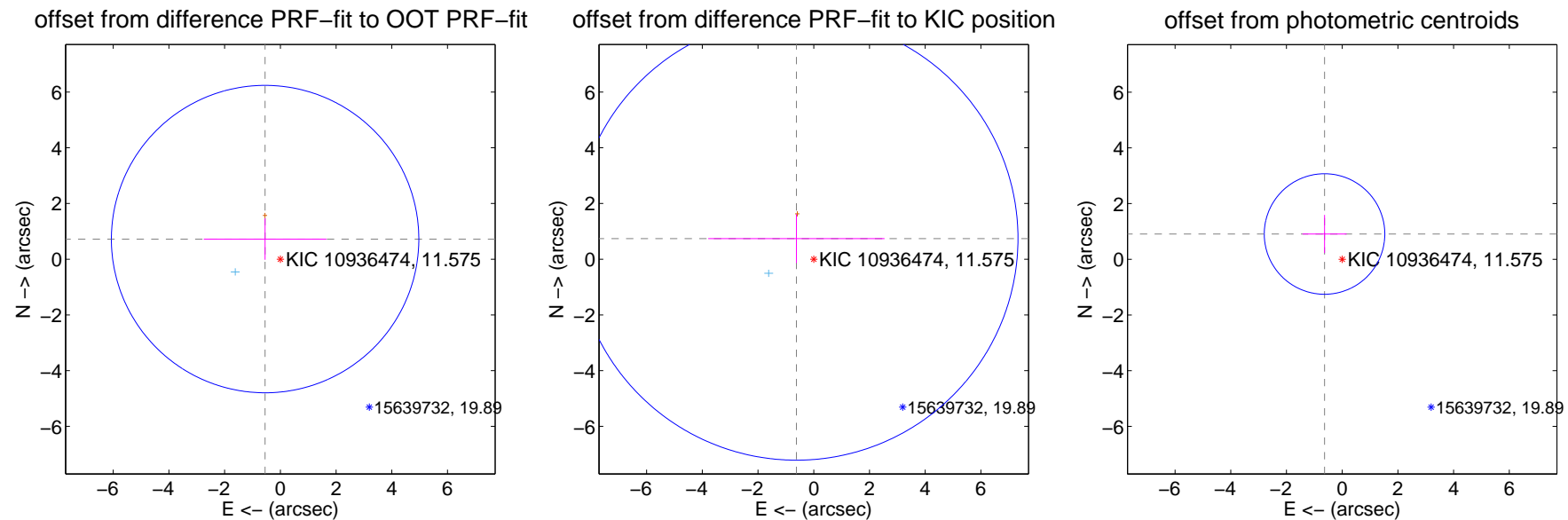
## DV Centroid Data

Supplemental centroid analysis for 010936474-01. **Kepler magnitude: 11.57.** Transit SNR 7.16

**There are 1 quarters with good PRF difference image offsets**

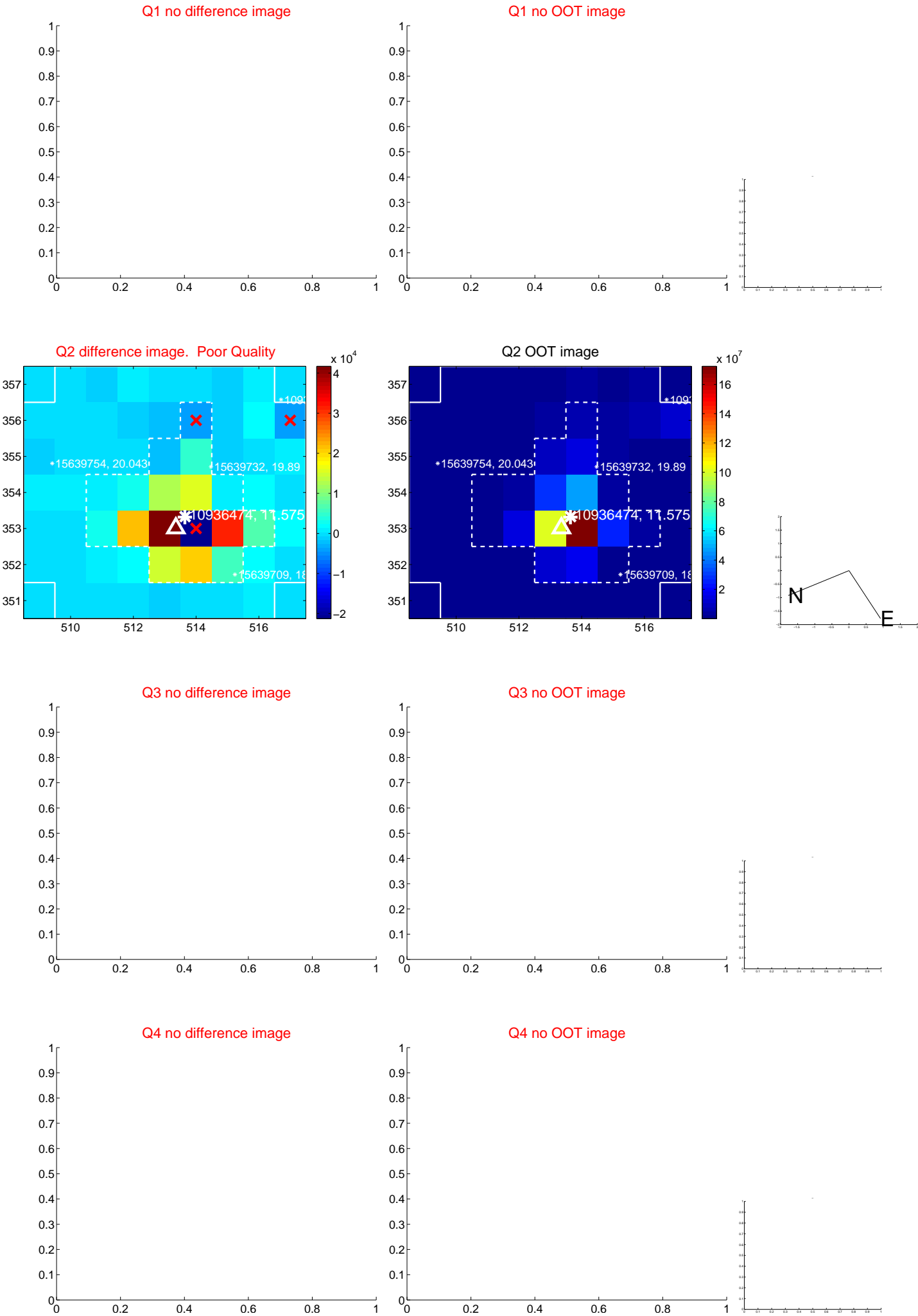
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.906 \pm 1.839$	0.49	$0.548 \pm 2.203$	$0.722 \pm 0.742$
PRF-fit source offset from KIC position	$0.967 \pm 2.651$	0.36	$0.623 \pm 3.164$	$0.740 \pm 0.877$
photometric centroid source offset	$1.11 \pm 0.72$	1.53	$0.63 \pm 0.79$	$0.91 \pm 0.68$

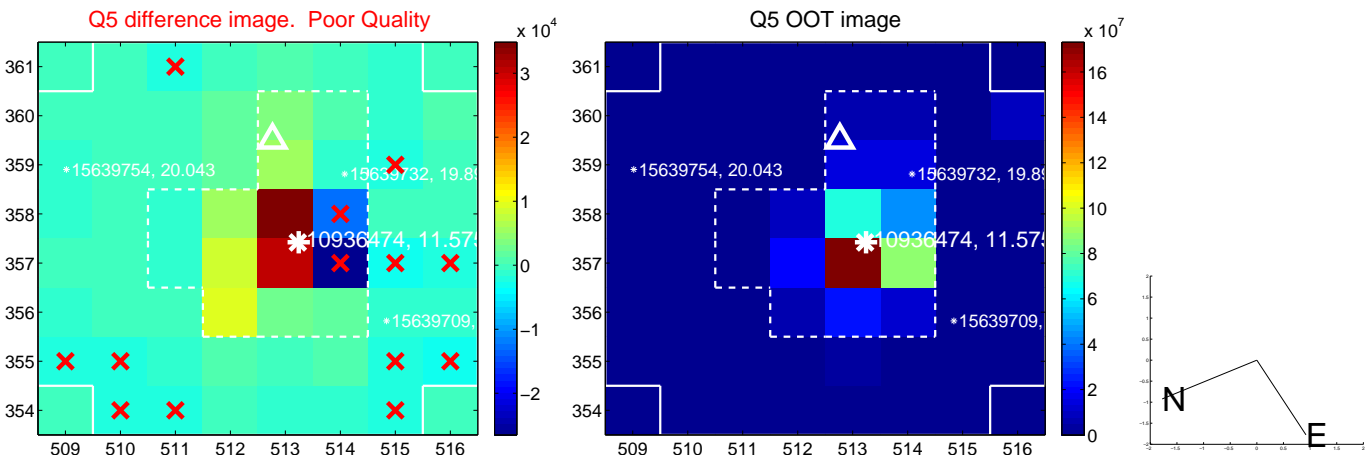


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

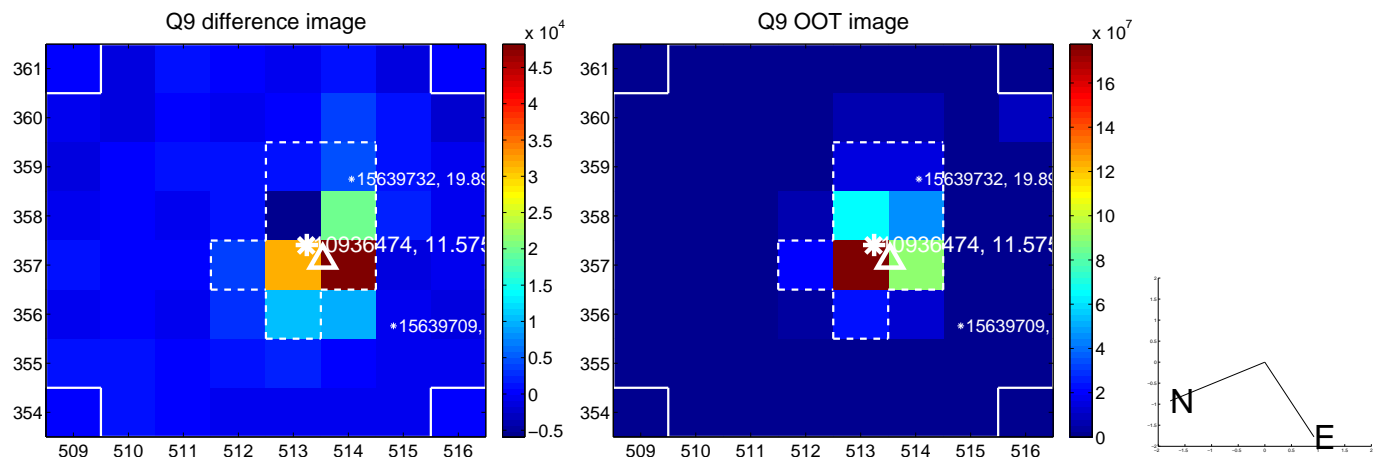


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





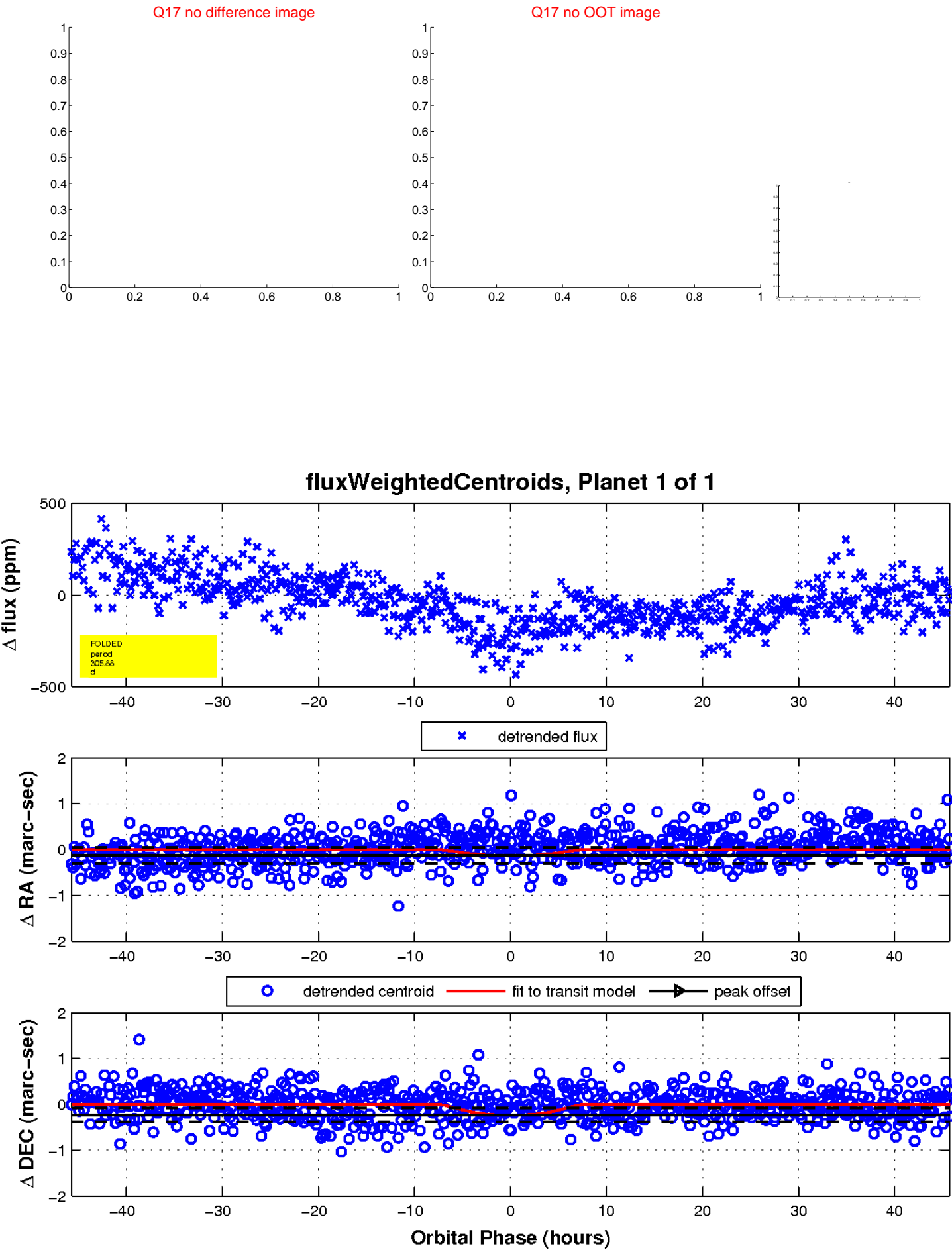
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

