

# KIC 003939134

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003939134-01	OBS	No	524.663082	214.740106	97.4	9.441	7.3	7.2	1.36	6173	1.54	1.50

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003939134-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_SATURATED

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

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

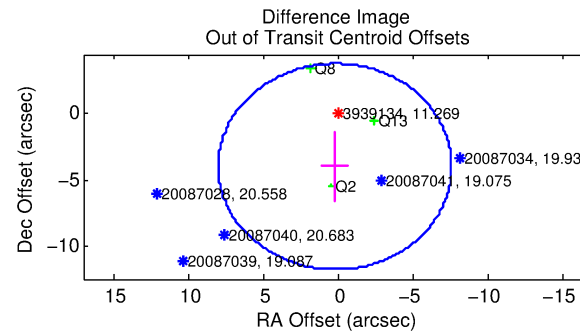
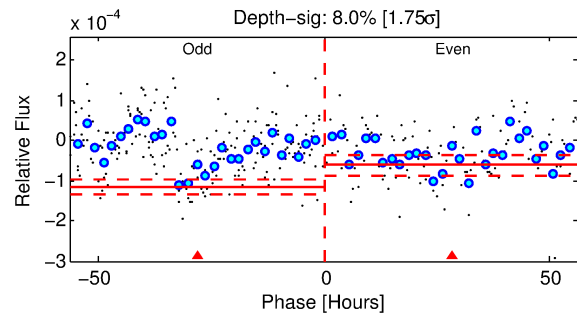
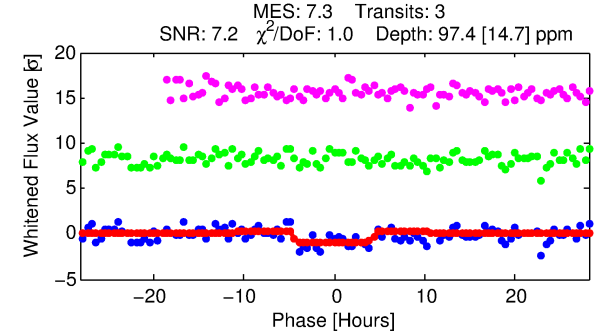
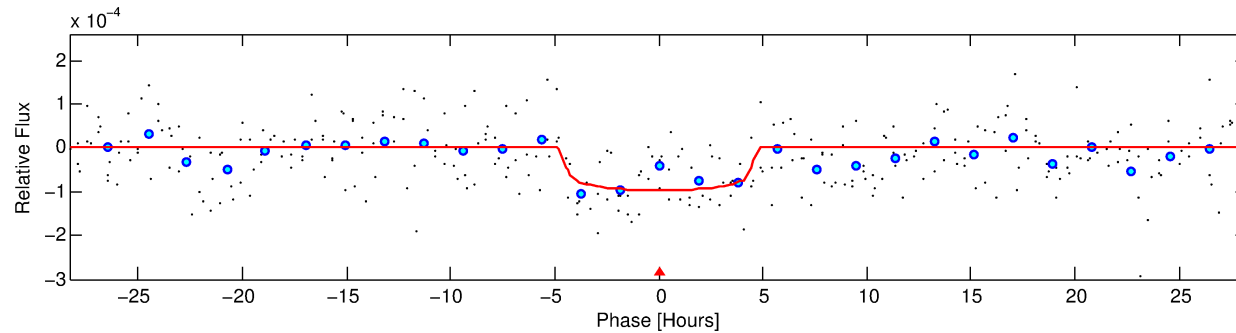
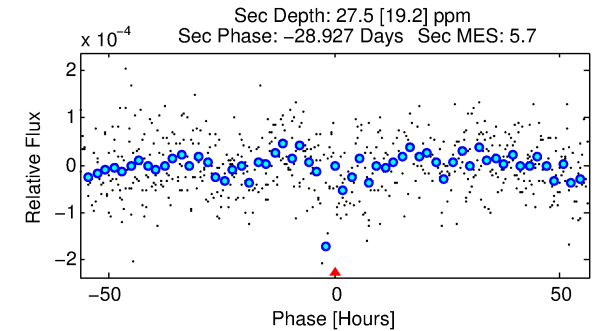
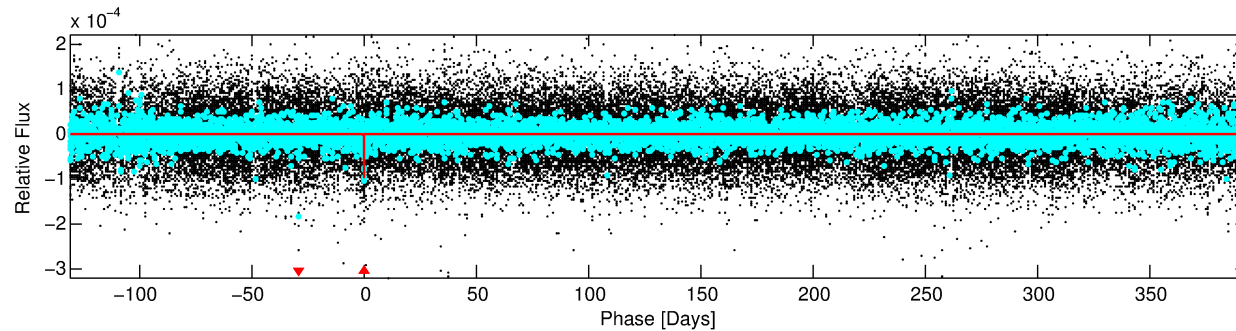
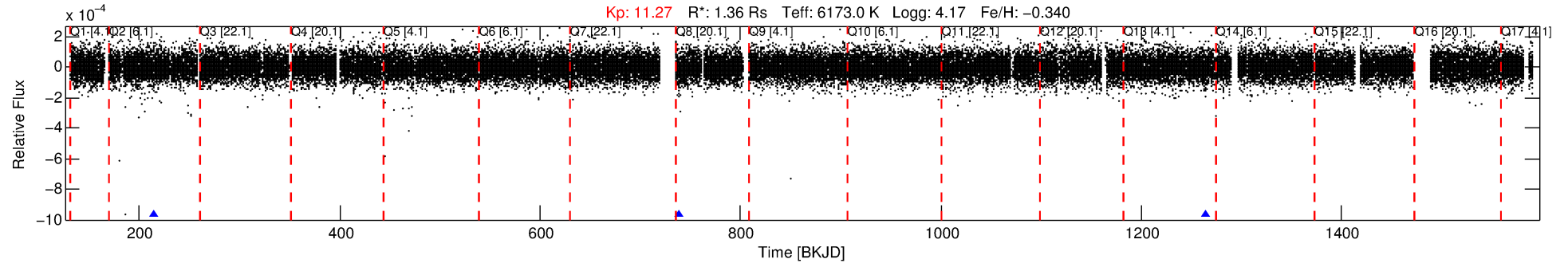
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003939134-01

No Significant Match Found

# DV One-Page Summary

KIC: 3939134 Candidate: 1 of 1 Period: 524.663 d



## DV Fit Results:

Period = 524.66308 [0.01000] d  
Epoch = 214.7401 [0.0138] BKJD  
Rp/R\* = 0.0104 [0.0041]  
a/R\* = 215.13 [463.76]  
b = 0.87 [0.58]  
Seff = 1.50 [0.56]  
Teq = 282 [26] K  
Rp = 1.54 [0.70] Re  
a = 1.2688 [0.2792] AU  
Ag = 10215.59 [11361.24] [0.90σ]  
Teffp = 4386 [1162] K [3.53σ]

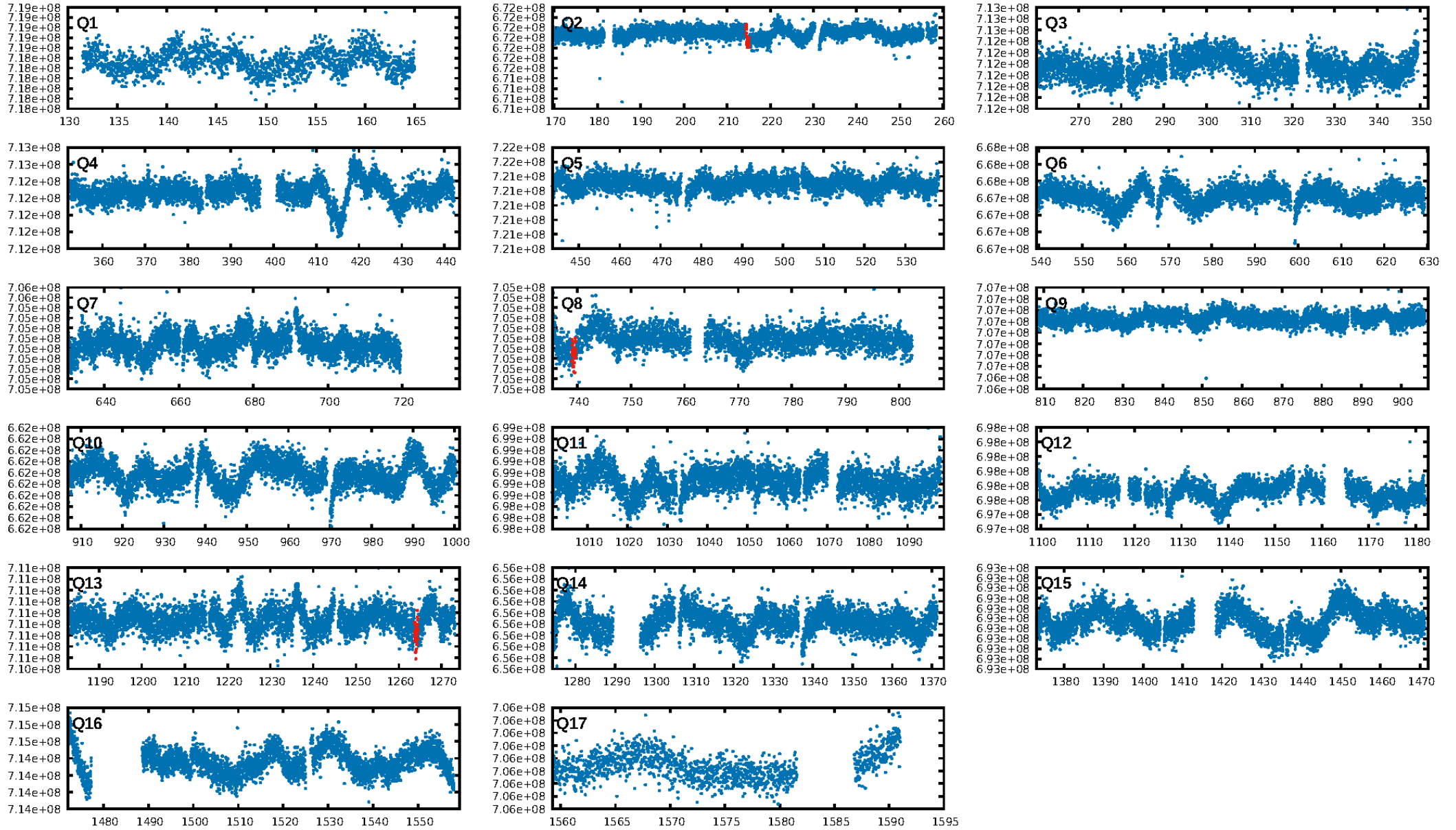
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 12.2%  
ModelChiSquareGof-sig: 93.5%  
**Bootstrap-pfa: 5.84e-09**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.967  
Centroid-sig: 18.5%  
Centroid-so: 2.372 arcsec [1.24σ]  
OotOffset-rm: 3.998 arcsec [1.54σ]  
OotOffset-st: 1/0/1/1 [3]  
KicOffset-rm: 4.559 arcsec [1.72σ]  
KicOffset-st: 1/0/1/1 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

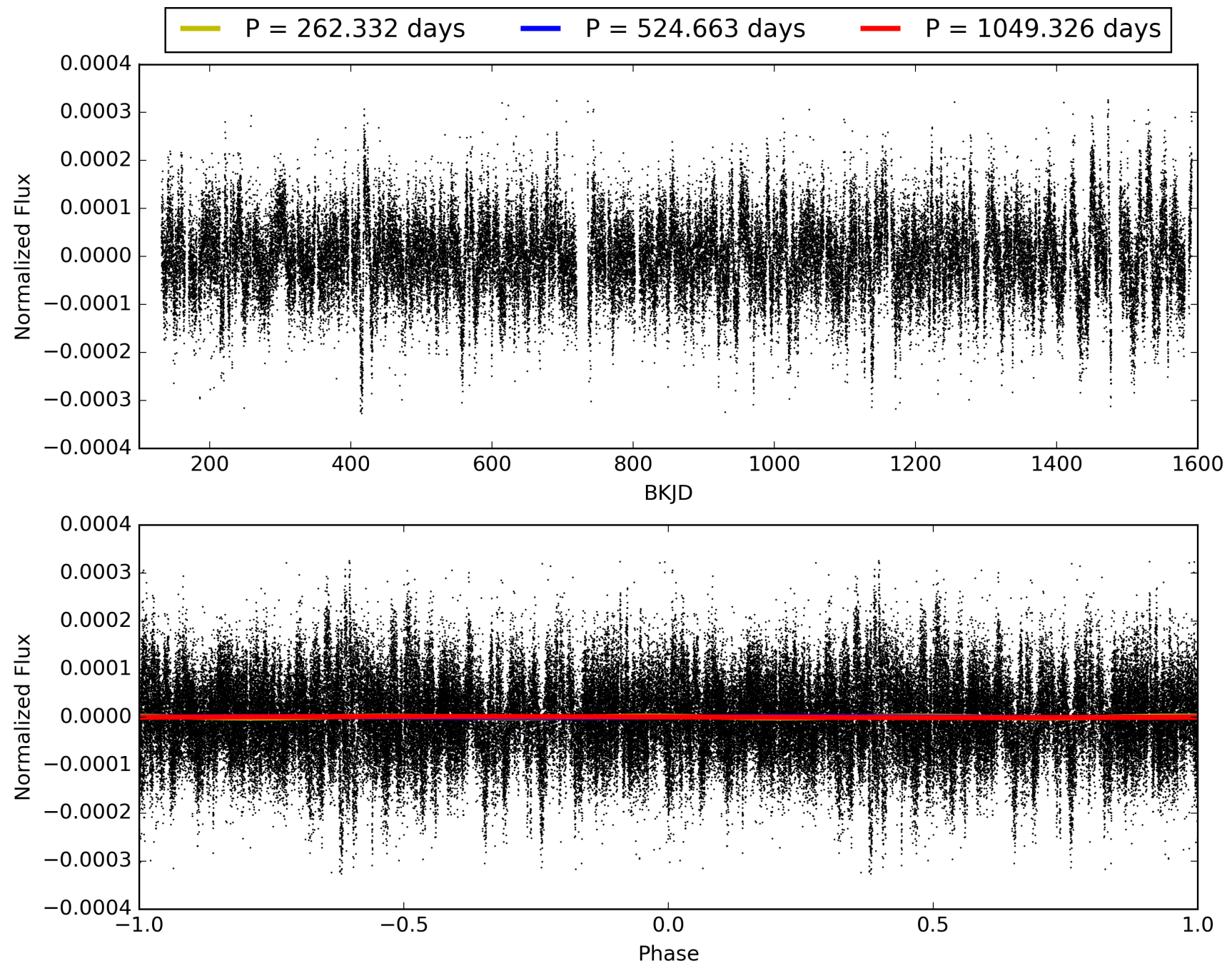
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:40:17 Z

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

# TCE 003939134-01, PDC Light Curves

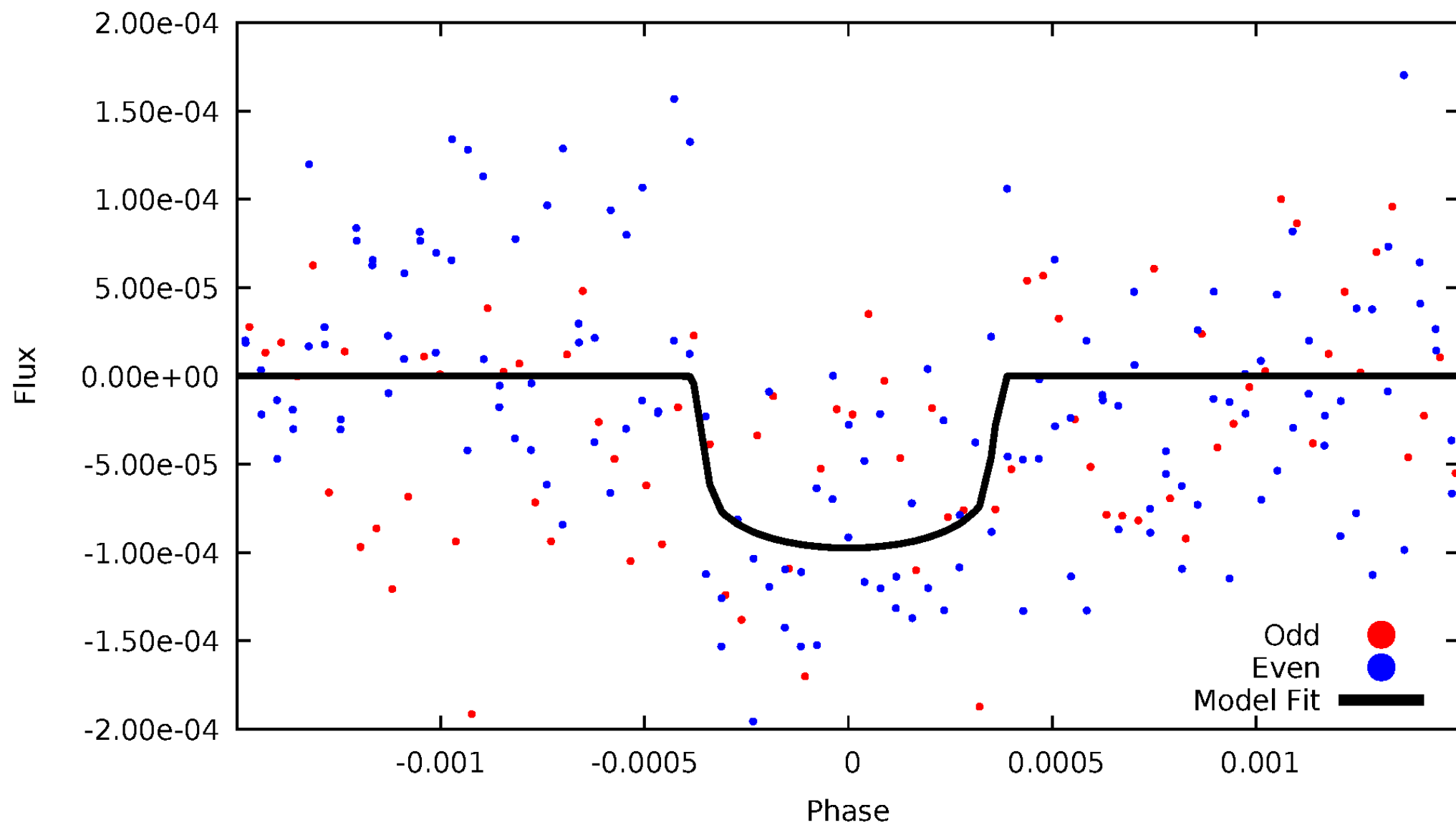


TCE 003939134-01



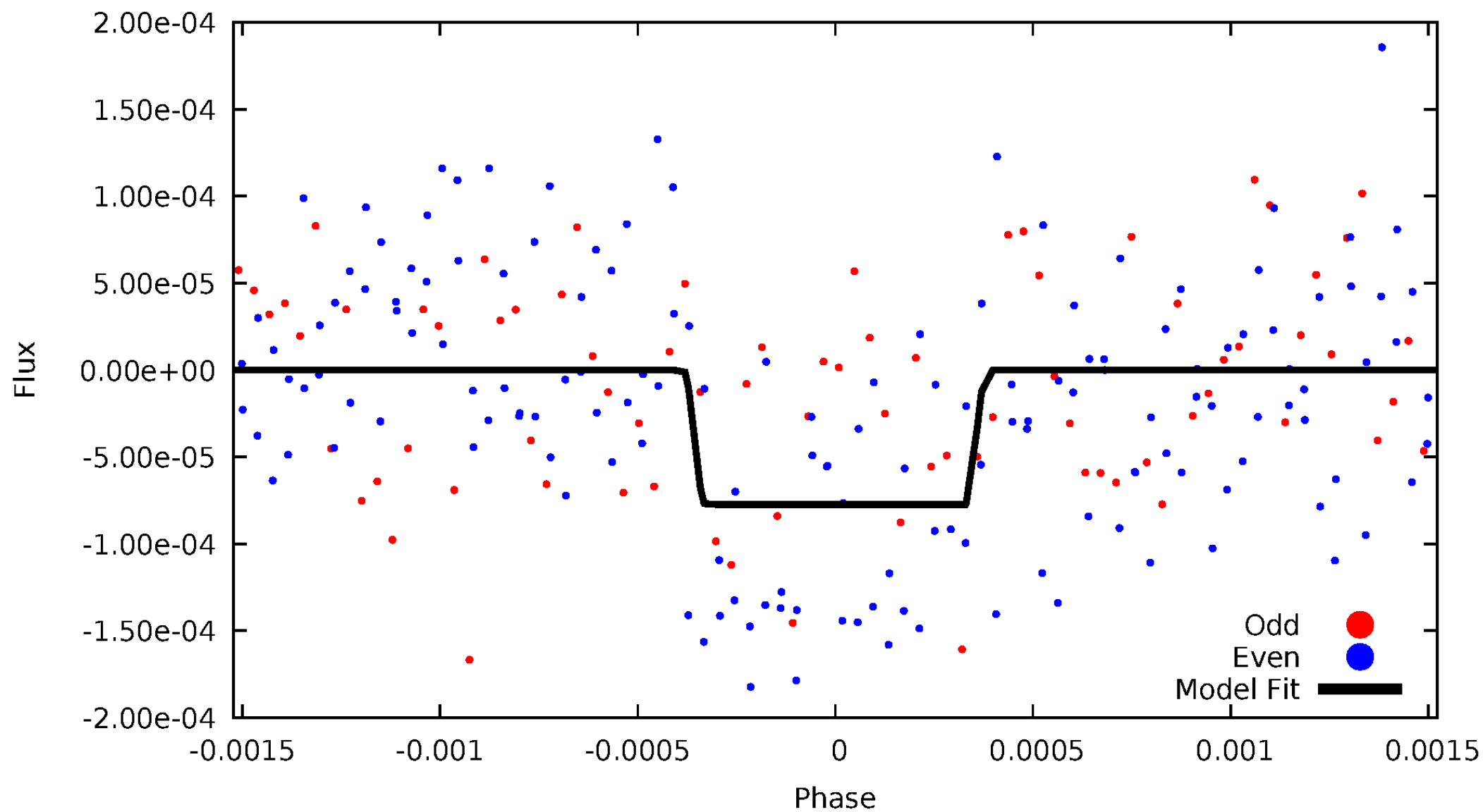
# DV Odd/Even

TCE 003939134-01



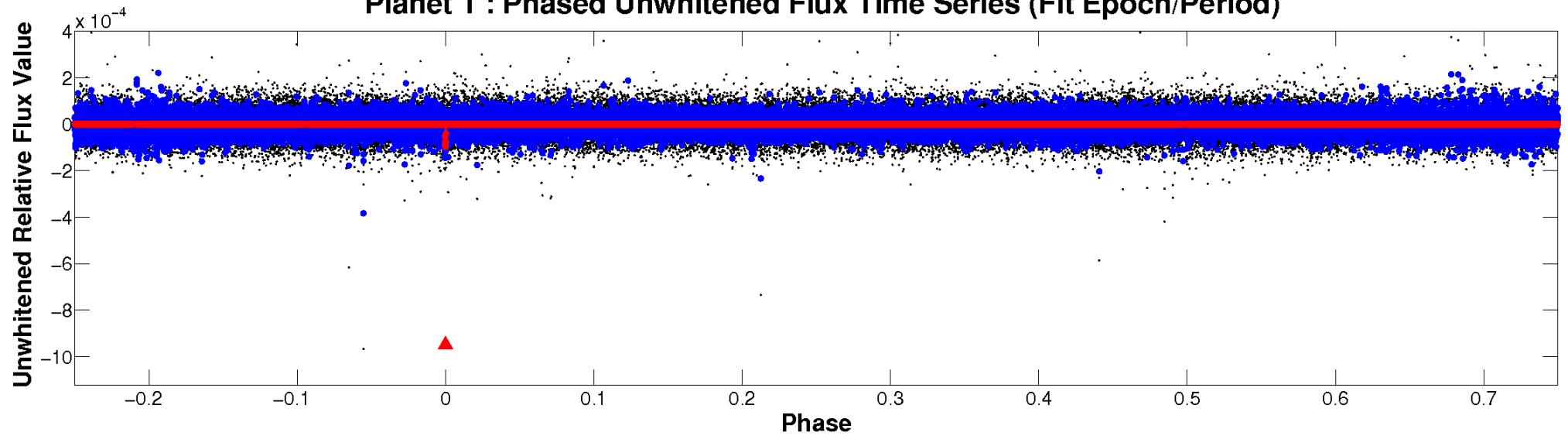
# ALT Odd/Even

TCE 003939134-01

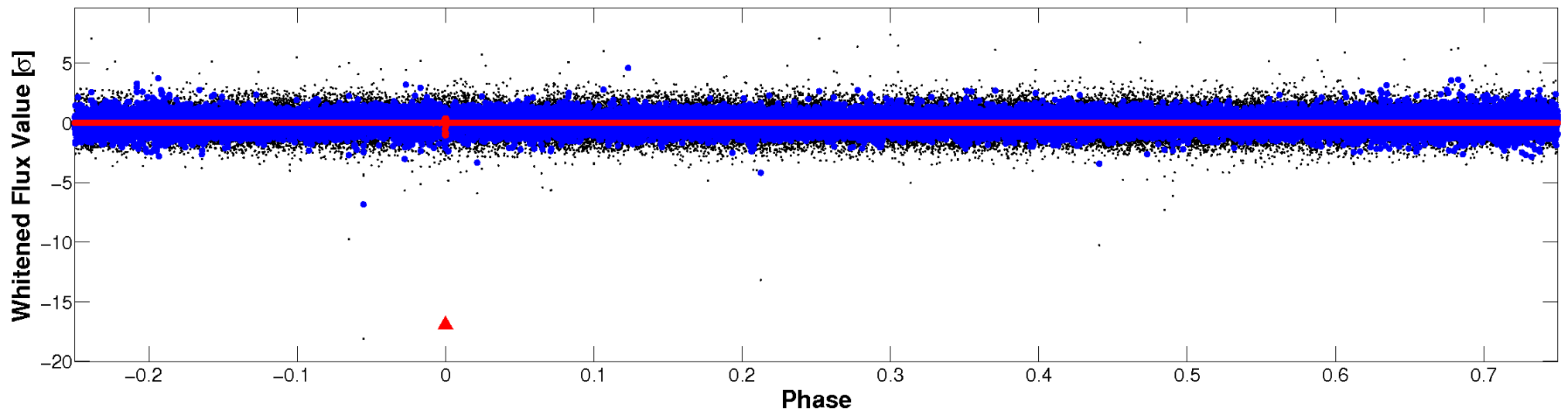


# Non-Whitened Vs. Whitened Light Curve

**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

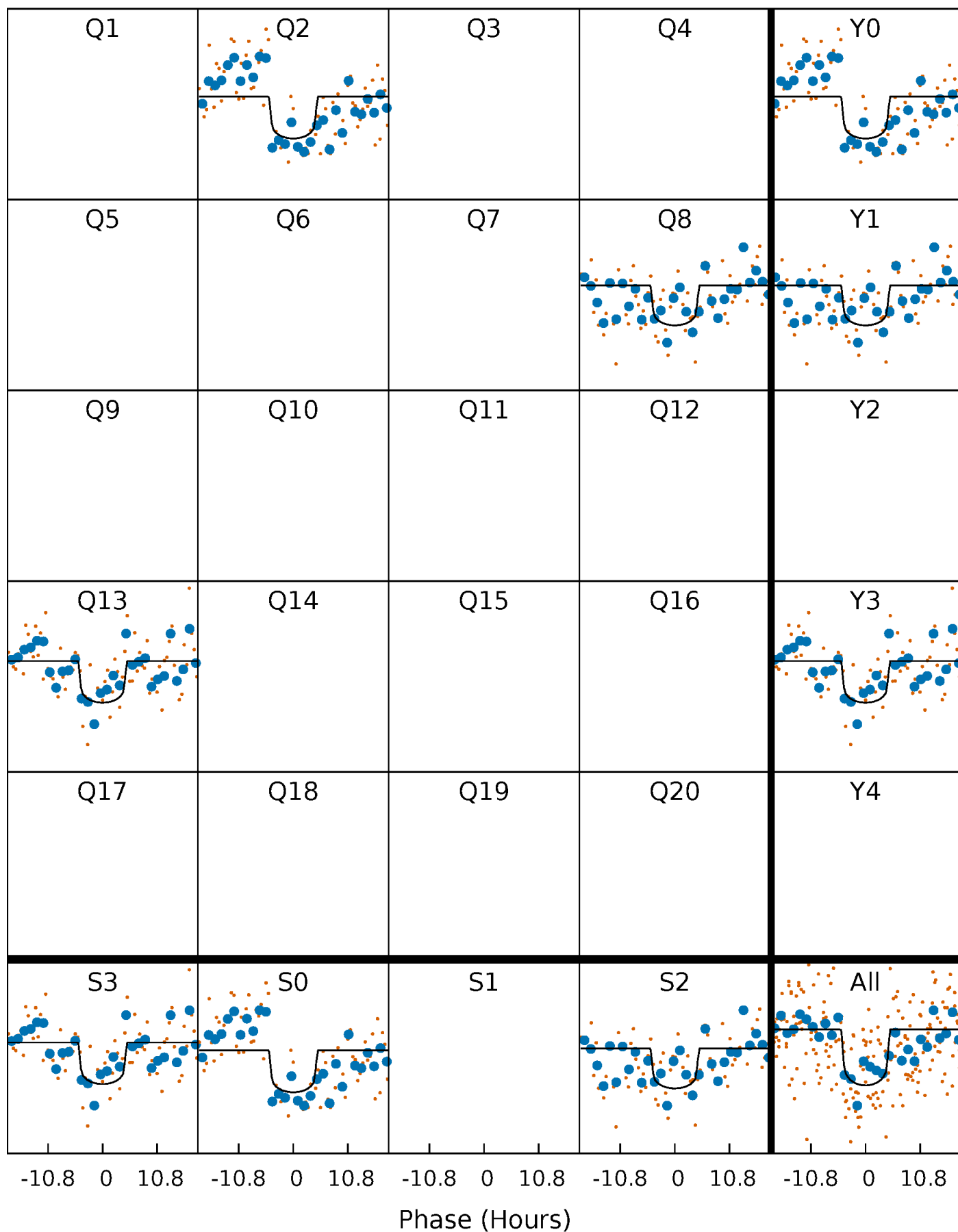
TCE 003939134-01 P=524.663082 Days  $T_0=214.740106$  (BKJD)





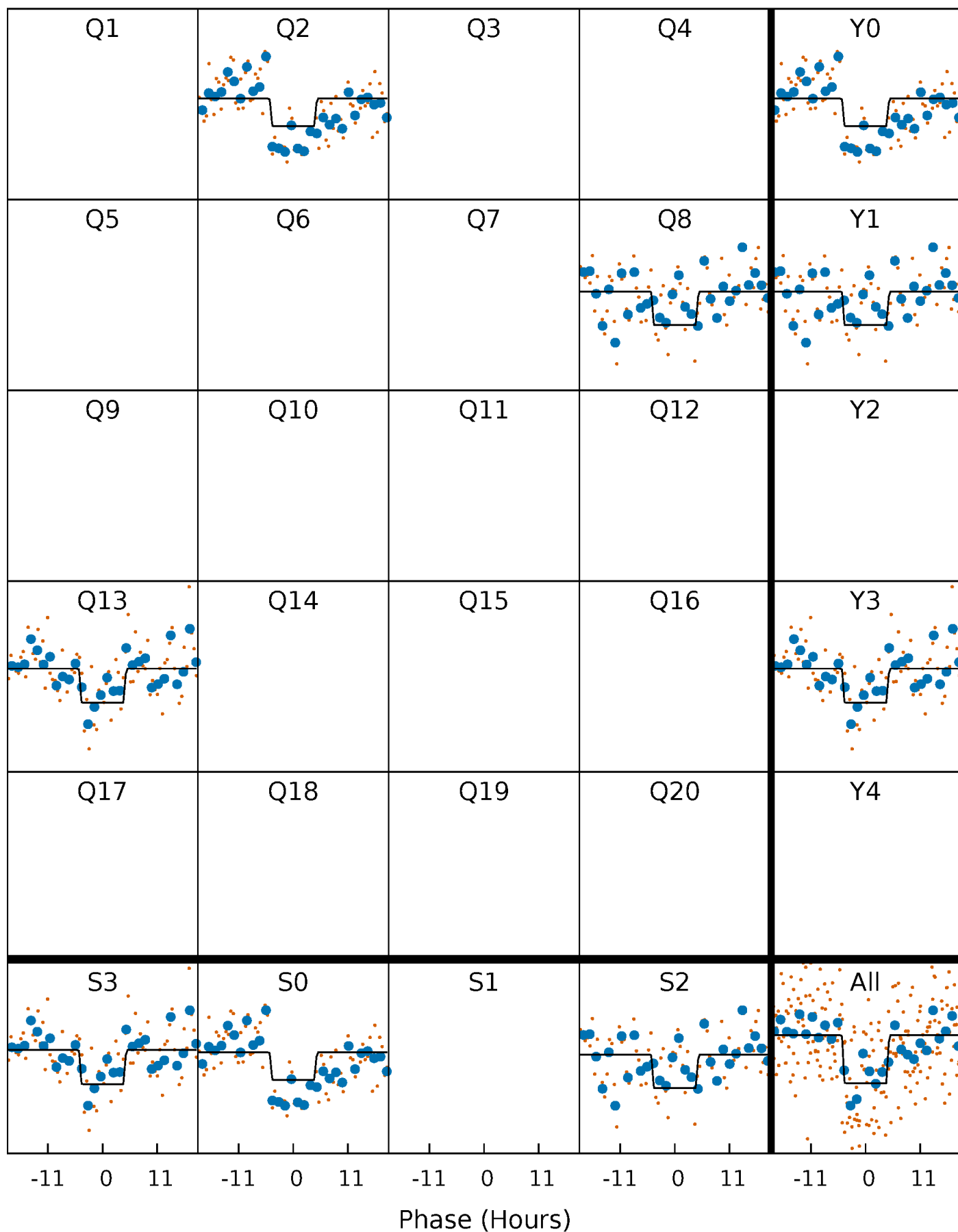
# DV Quarter-Phased Transit Curves

TCE 003939134-01 P=524.663082 Days  $T_0=214.740106$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

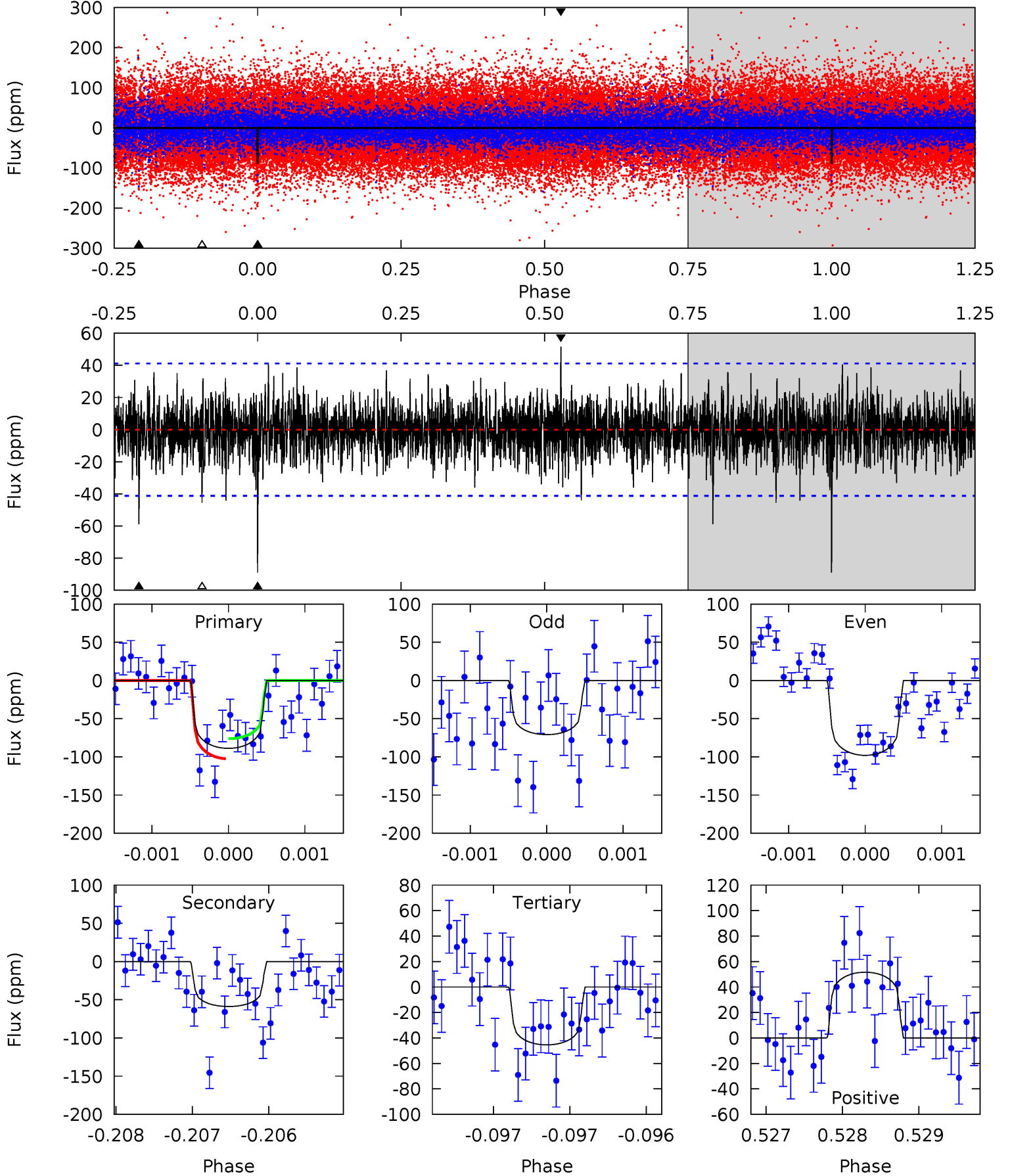
TCE 003939134-01 P=524.652086 Days  $T_0=214.751795$  (BKJD)



# DV Model-Shift Uniqueness Test

003939134-01, P = 524.663082 Days, E = 214.740106 Days

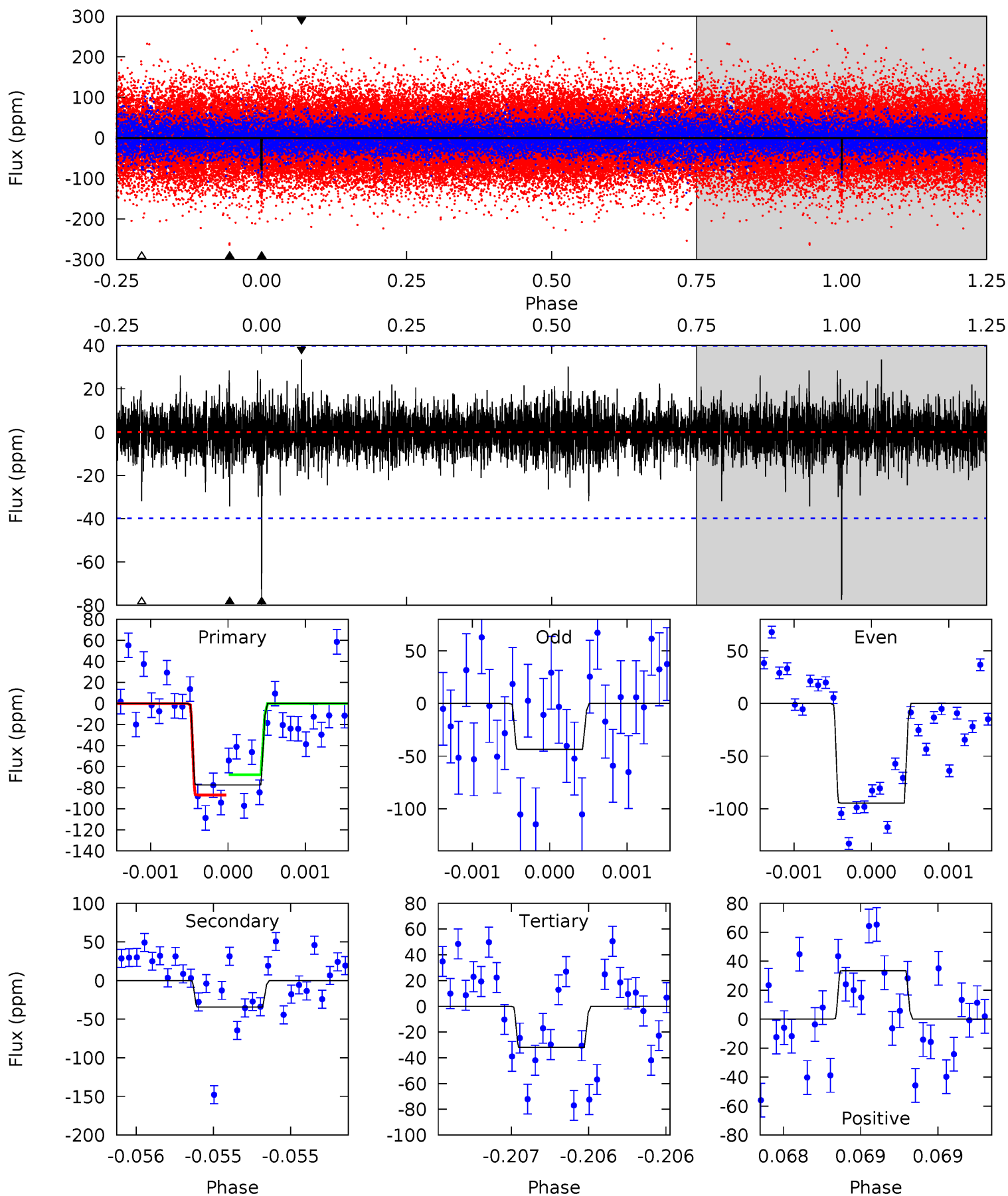
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	7.85	6.06	6.89	5.50	3.36	1.49	5.80	4.97	1.79	0.96	1.74	1.05	0.37	1.75



# Alt Model-Shift Uniqueness Test

003939134-01, P = 524.652086 Days, E = 214.751795 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
10.7	4.72	4.40	4.61	5.50	3.36	0.98	6.26	6.05	0.32	0.11	3.31	1.23	0.30	1.33



### Stellar Parameters For KIC 003939134

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6173^{+173}_{-173}$	$4.165^{+0.210}_{-0.140}$	$-0.340^{+0.300}_{-0.300}$	$1.362^{+0.306}_{-0.306}$	$0.988^{+0.165}_{-0.110}$	$0.551^{+0.607}_{-0.215}$
	+3%/-3%	+5%/-3%	+88%/-88%	+22%/-22%	+17%/-11%	+110%/-39%
Source	PHO1	FLK73	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 003939134-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-59 \pm 7$	$1.48^{+0.71}_{-0.58}$	$391^{+24}_{-28}$	$5384^{+1532}_{-781}$	$23907^{+39477}_{-12991}$
Alt.	$-34 \pm 7$	$1.26^{+0.65}_{-0.59}$	$391^{+25}_{-27}$	$5094^{+1772}_{-777}$	$19679^{+46963}_{-11709}$

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

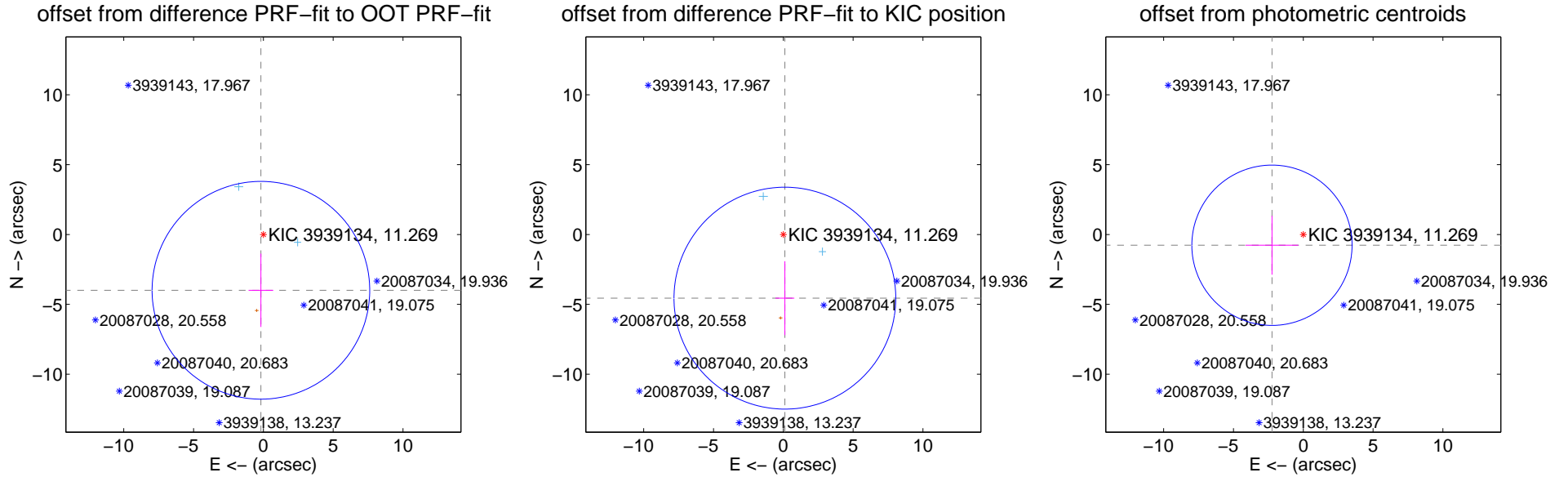
## DV Centroid Data

Supplemental centroid analysis for 003939134-01. **Kepler magnitude: 11.27.** Transit SNR 7.21

**There are 2 quarters with good PRF difference image offsets**

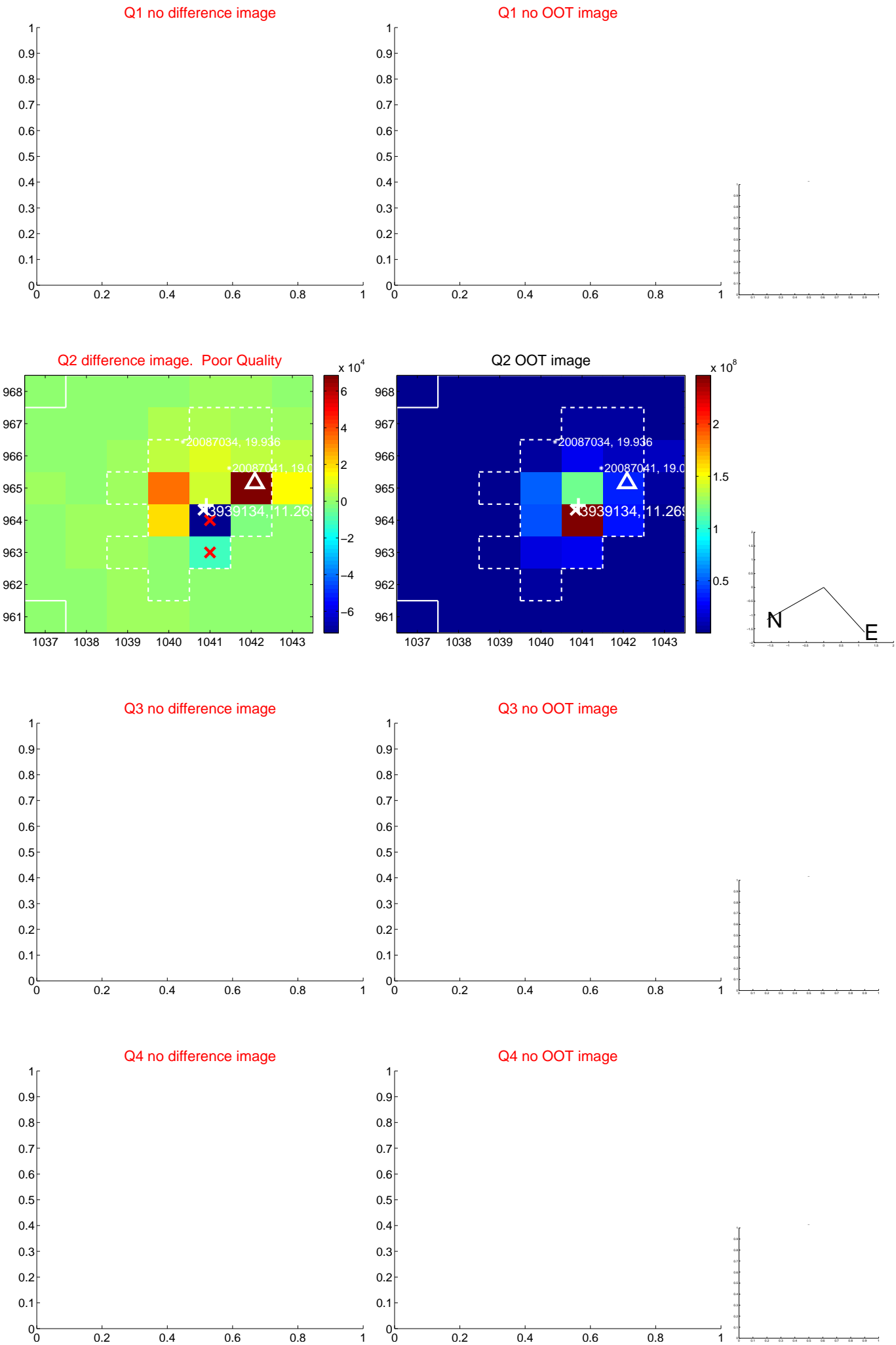
The direct PRF centroid is offset from the target star catalog position by about 0.75 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.998 \pm 2.598$	1.54	$0.177 \pm 0.882$	$-3.994 \pm 2.623$
PRF-fit source offset from KIC position	$4.559 \pm 2.648$	1.72	$-0.112 \pm 0.678$	$-4.557 \pm 2.647$
photometric centroid source offset	$2.37 \pm 1.91$	1.24	$2.24 \pm 1.89$	$-0.77 \pm 2.10$

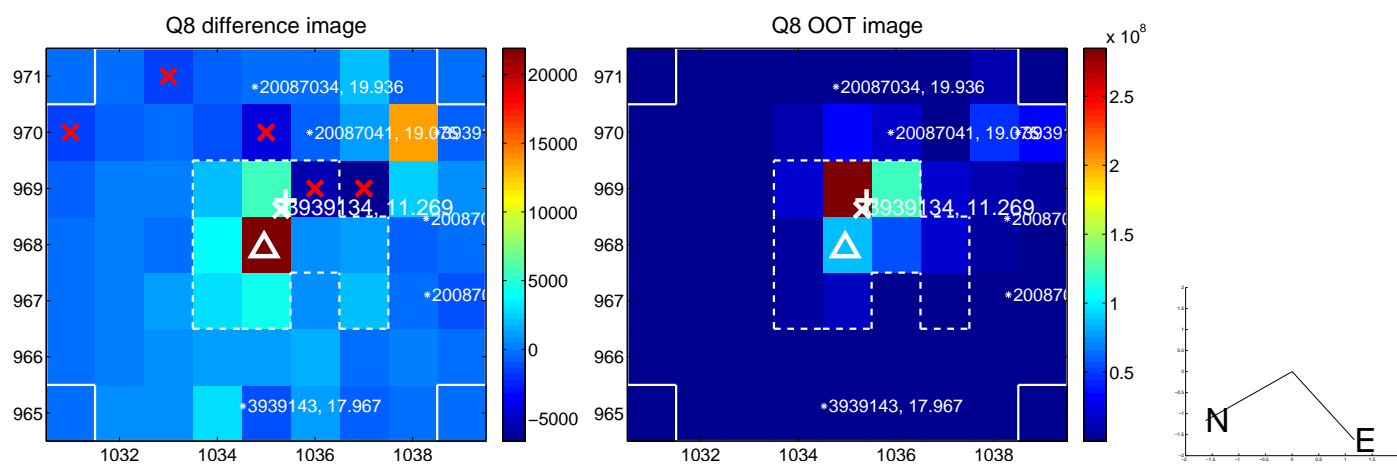
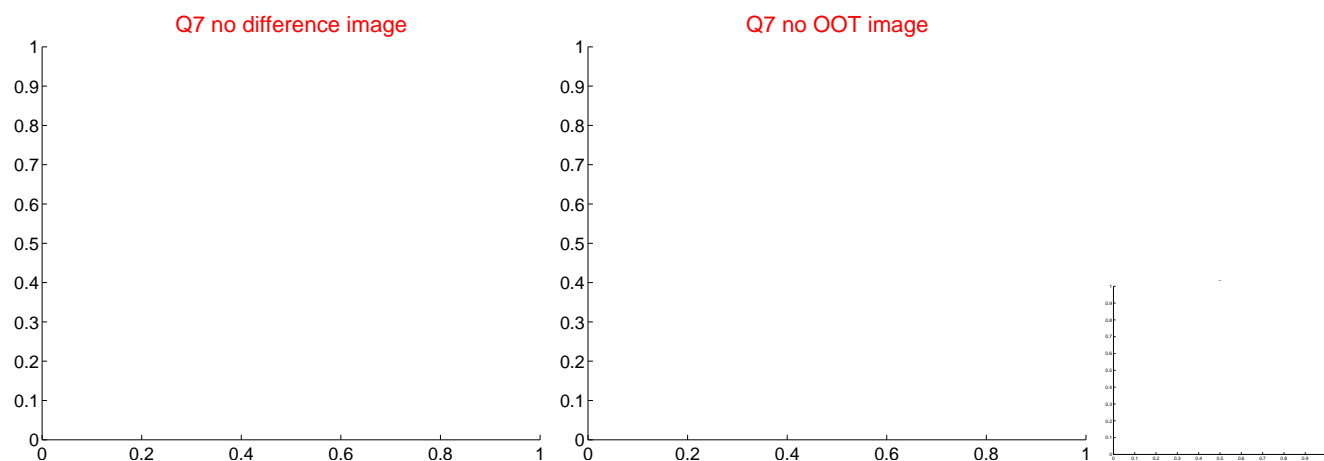
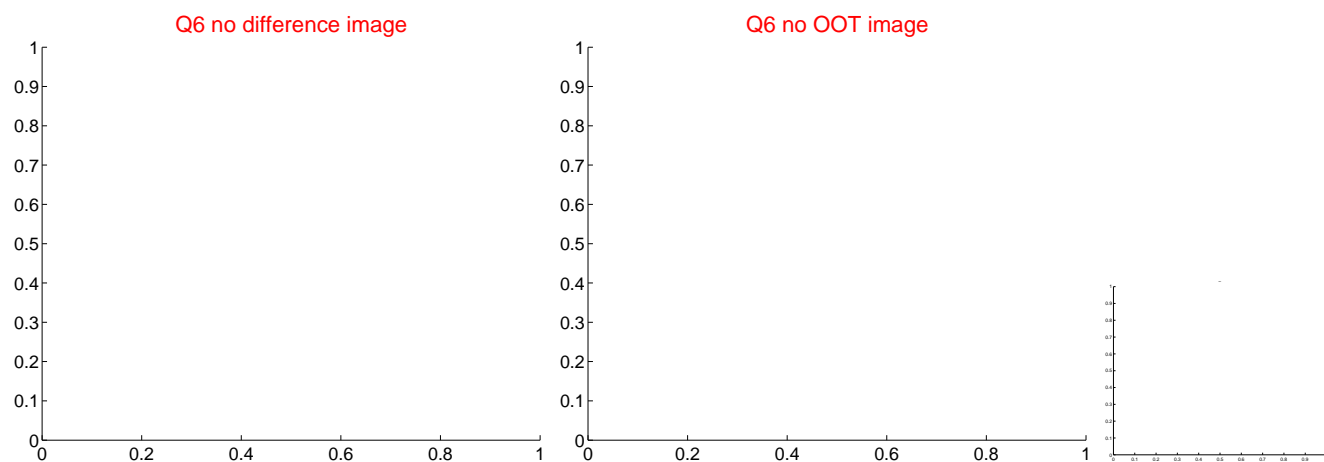
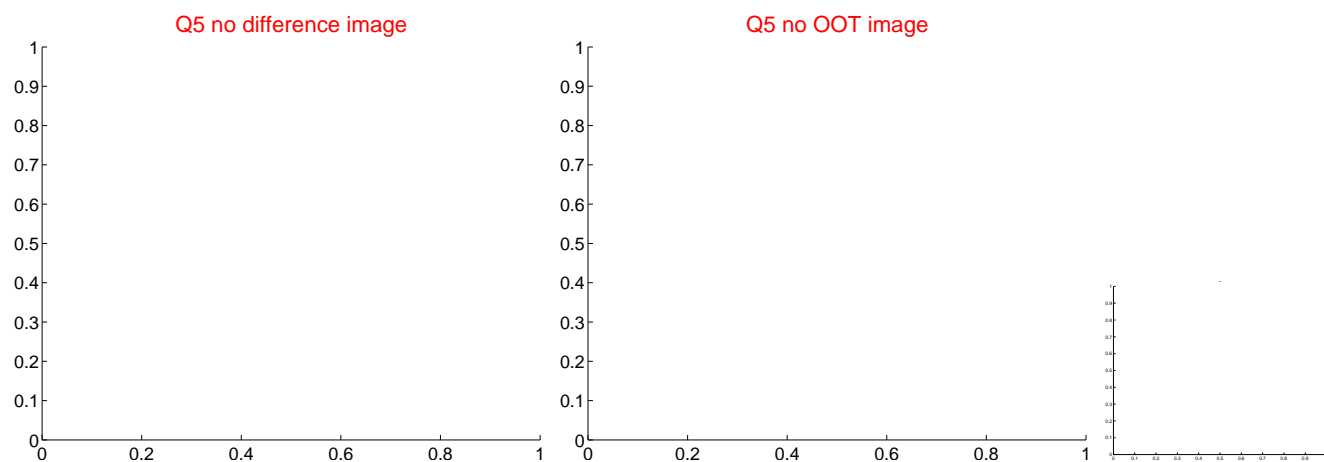


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

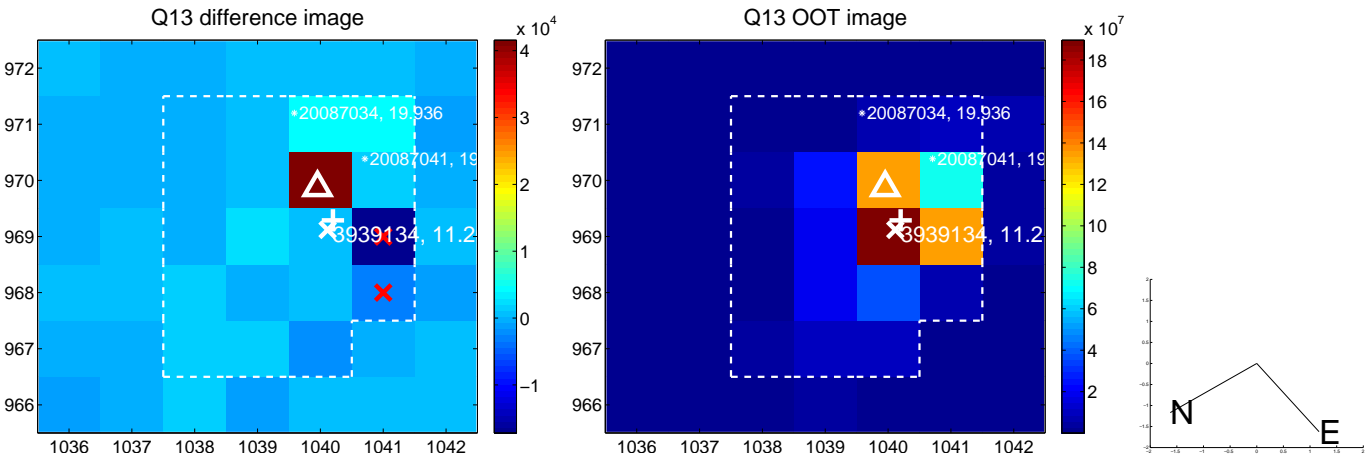




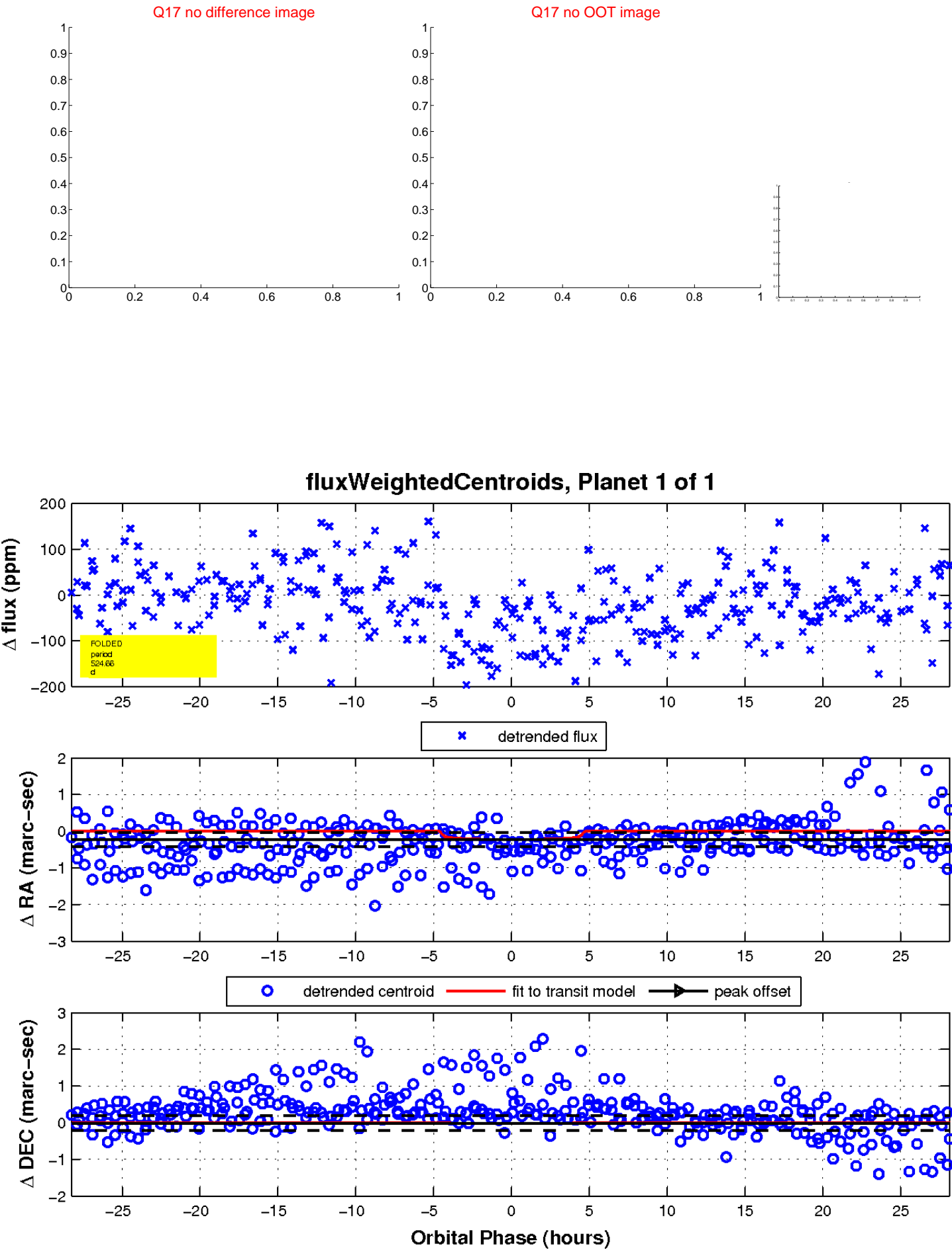
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

