

# KIC 006038100

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006038100-01	OBS	No	619.394717	216.195742	212.4	16.865	7.9	7.7	0.92	6217	1.44	0.56

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006038100-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_TER_DV—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.

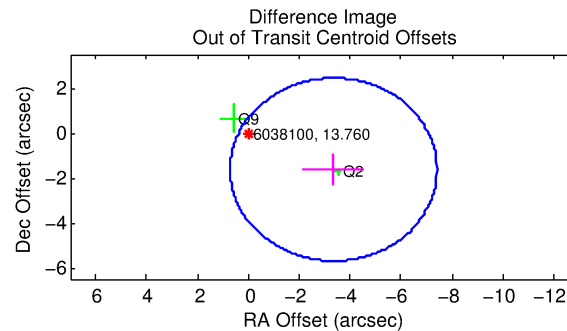
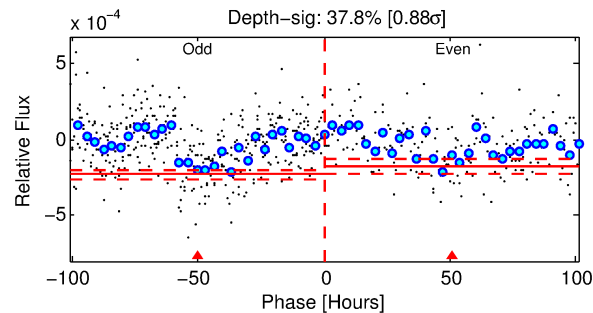
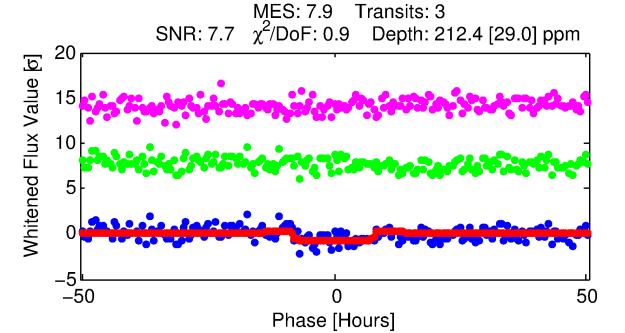
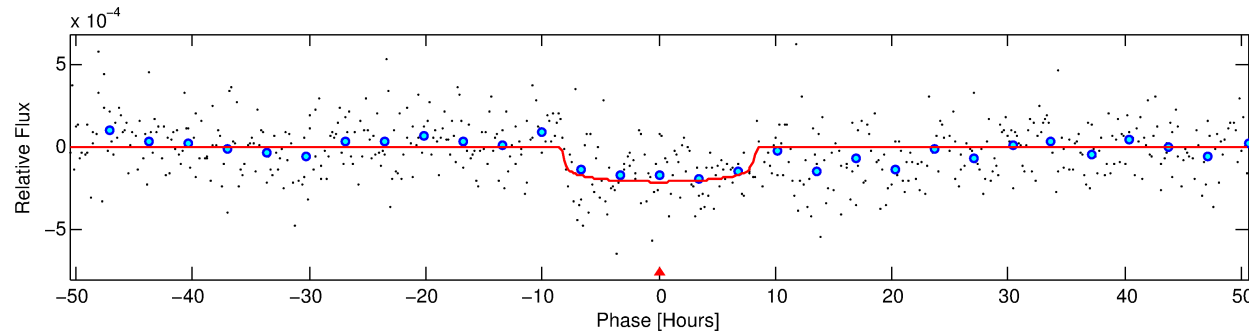
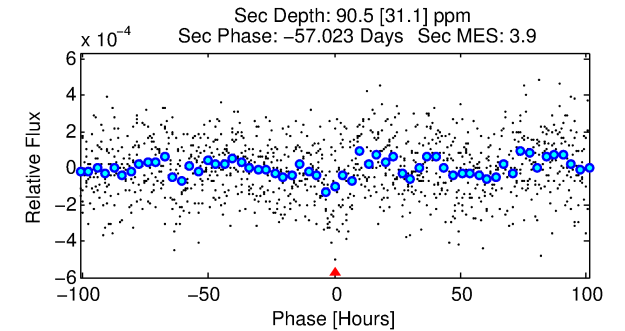
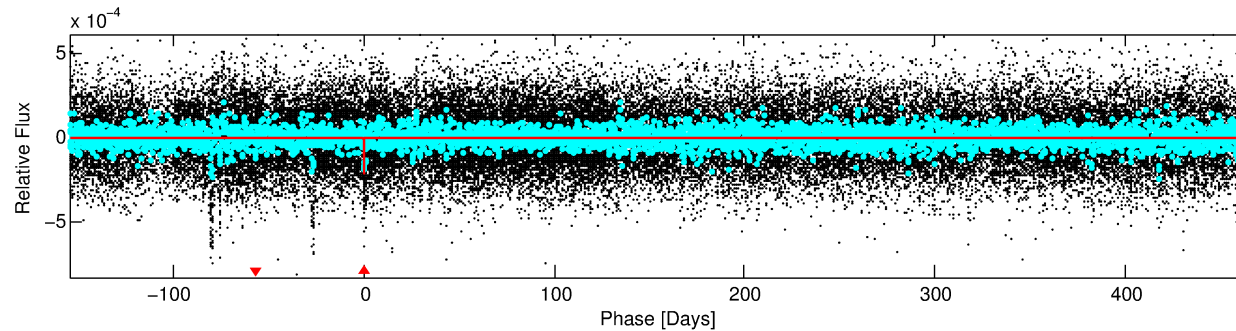
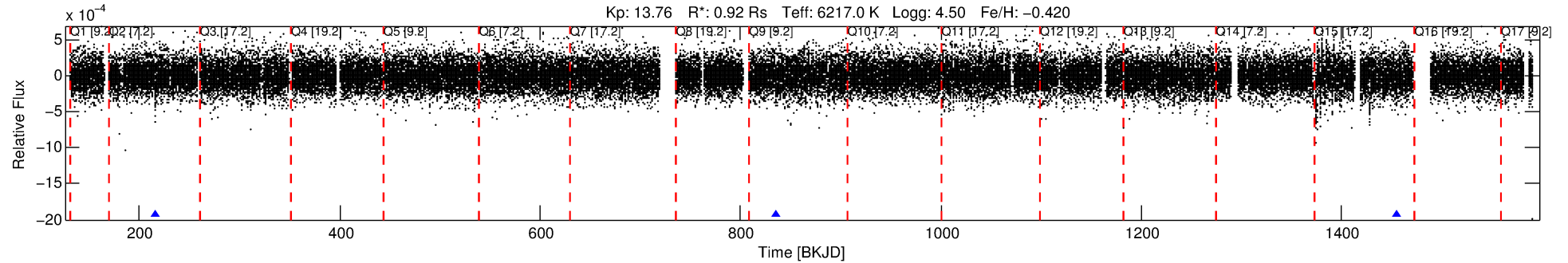
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006038100-01

No Significant Match Found

# DV One-Page Summary

KIC: 6038100 Candidate: 1 of 1 Period: 619.395 d



## DV Fit Results:

Period = 619.39472 [0.01421] d  
Epoch = 216.1957 [0.0185] BKJD  
Rp/R\* = 0.0144 [0.0043]  
a/R\* = 200.28 [310.55]  
b = 0.72 [1.04]  
Seff = 0.57 [0.23]  
Teq = 221 [22] K  
Rp = 1.44 [0.62] Re  
a = 1.4143 [0.3680] AU  
Ag = 47987.88 [38171.60] [1.26σ]  
Teffp = 5059 [894] K [5.41σ]

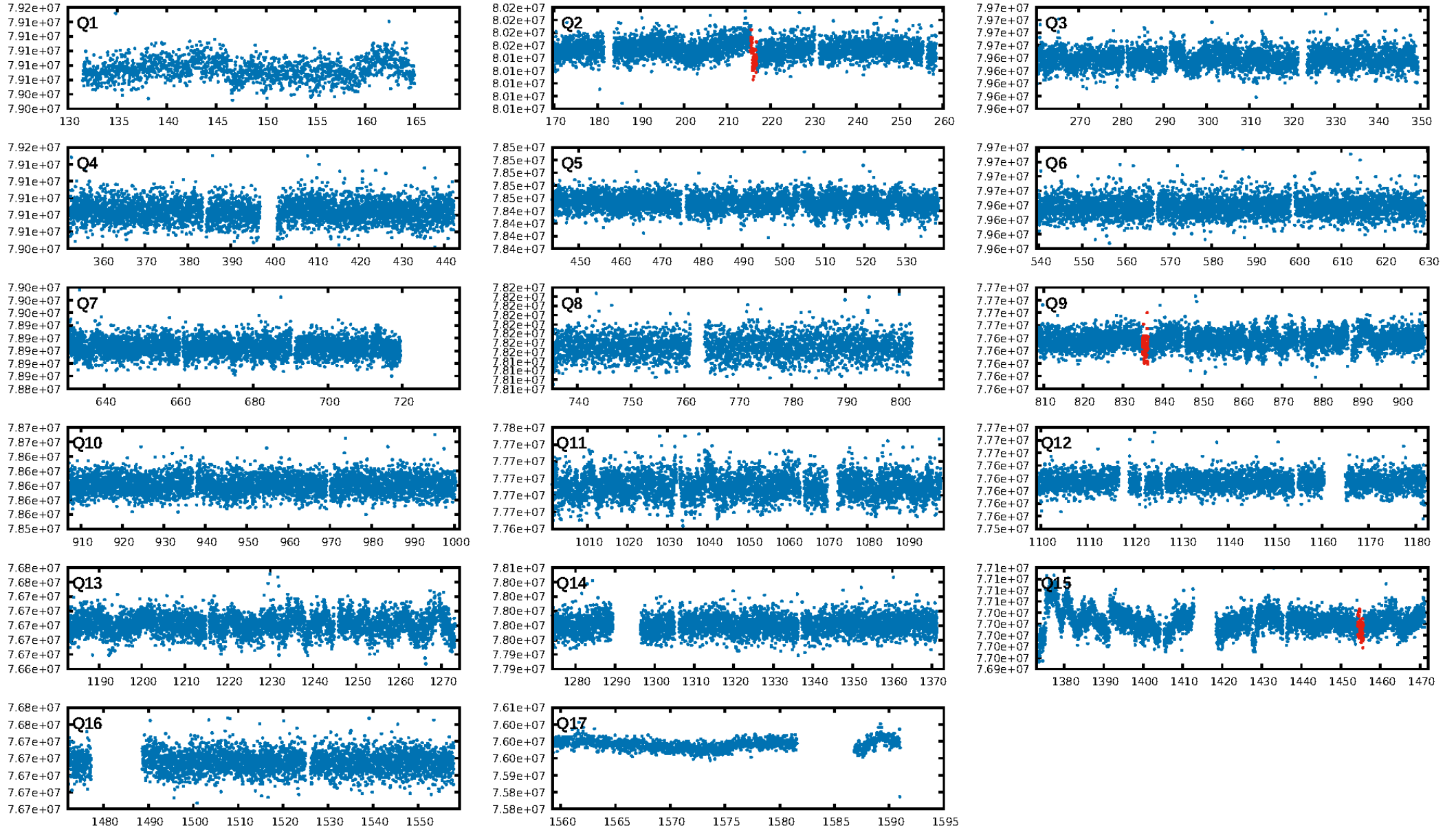
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 40.4%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 2.46e-09**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -2.587  
Centroid-sig: 2.7%  
Centroid-so: 3.324 arcsec [1.88σ]  
OotOffset-rm: 3.725 arcsec [2.75σ]  
**KicOffset-rm: 3.765 arcsec [3.23σ]**  
OotOffset-st: 1/0/0/1 [2]  
KicOffset-st: 1/0/0/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

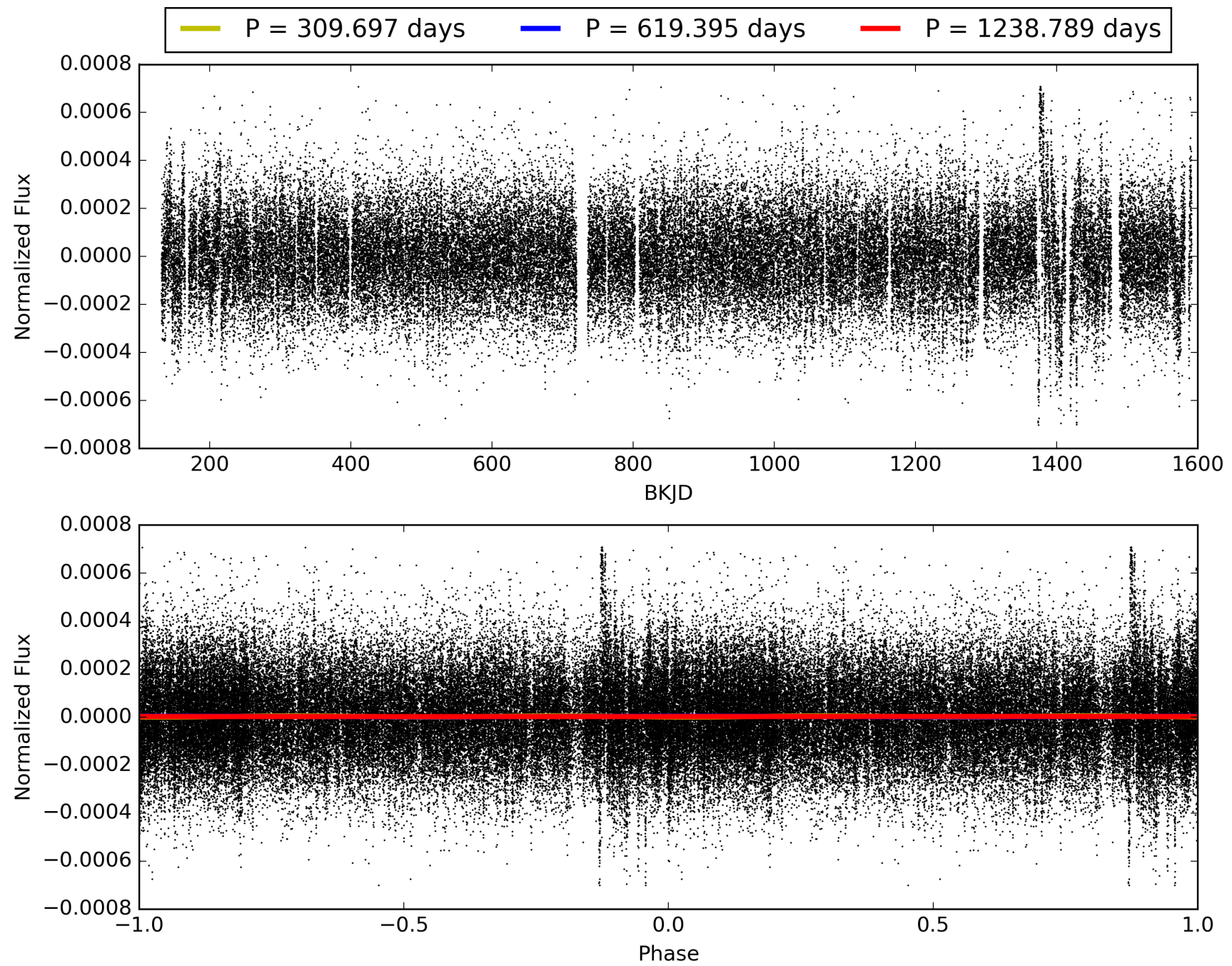
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:01:42 Z

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

# TCE 006038100-01, PDC Light Curves

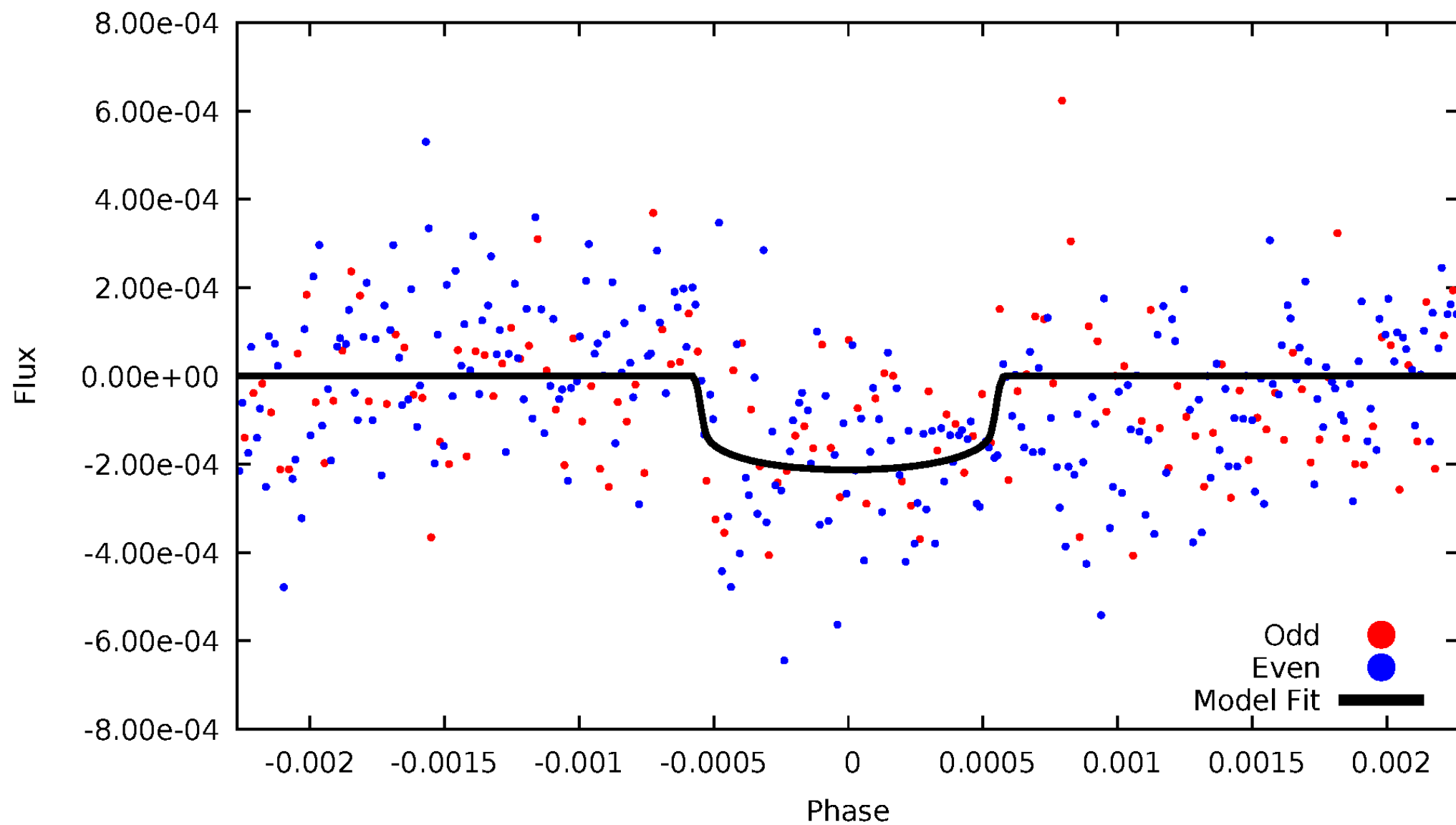


TCE 006038100-01



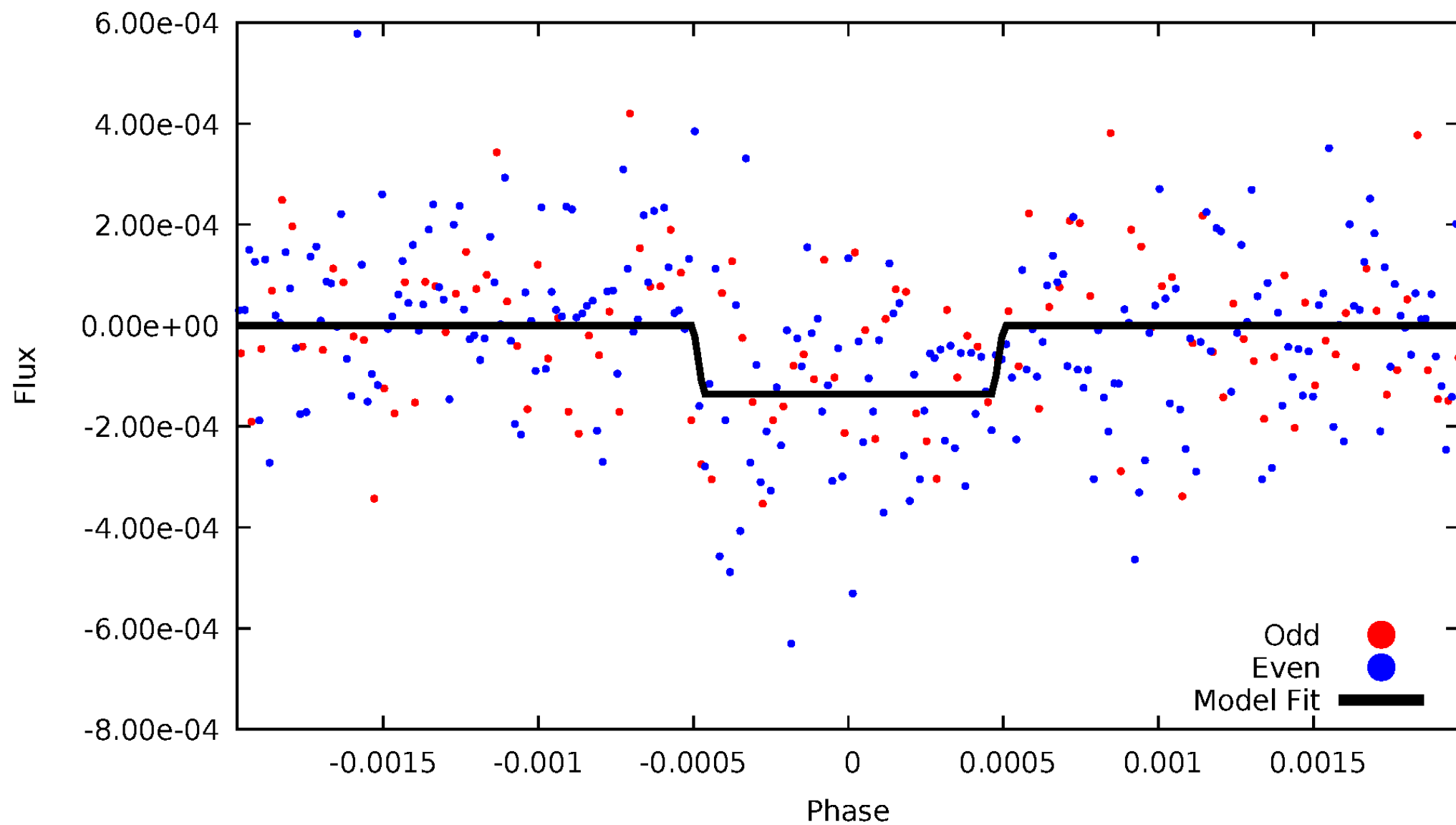
# DV Odd/Even

TCE 006038100-01



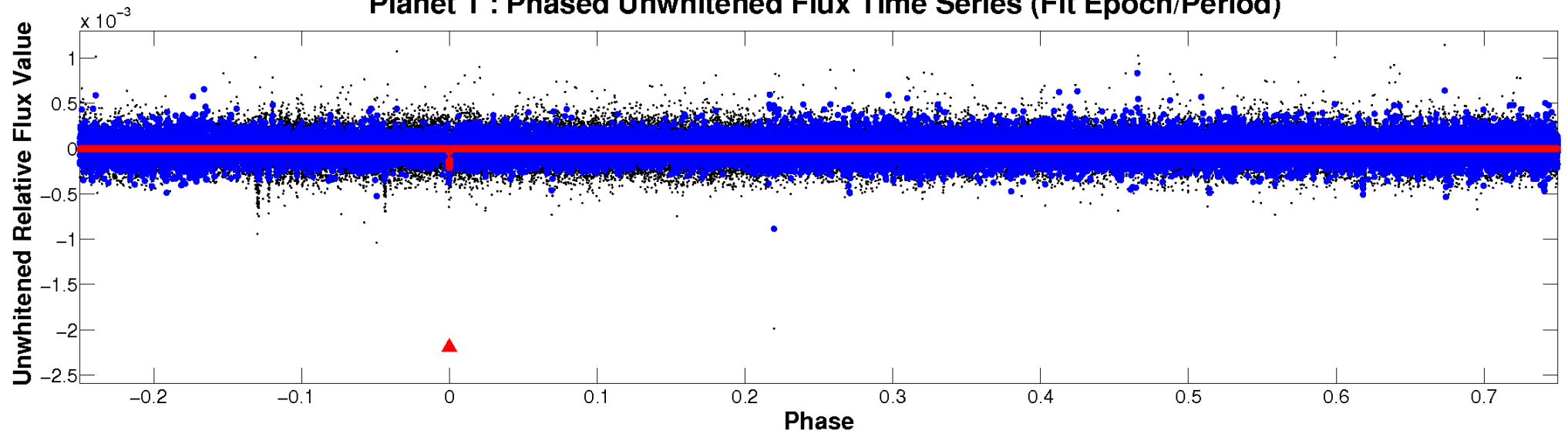
# ALT Odd/Even

TCE 006038100-01

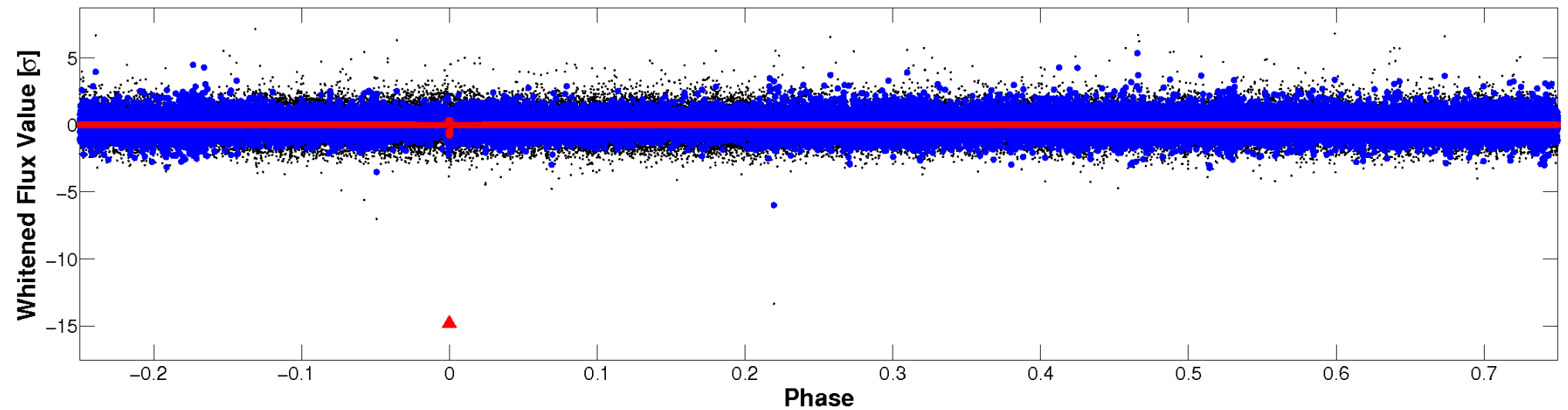


# Non-Whitened Vs. Whitened Light Curve

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



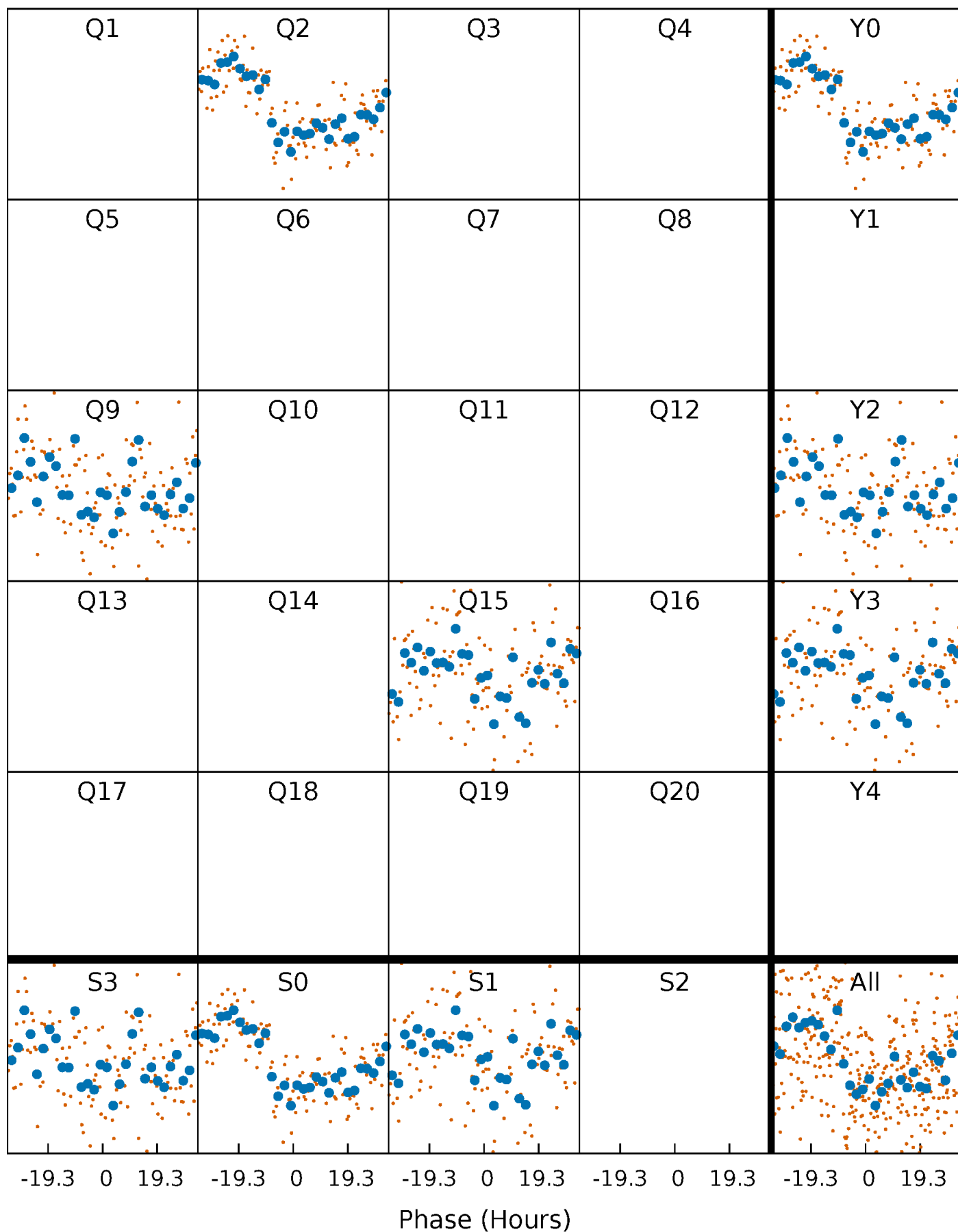
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

TCE 006038100-01 P=619.394717 Days  $T_0=216.195742$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 006038100-01 P=619.394717 Days  $T_0=216.195742$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

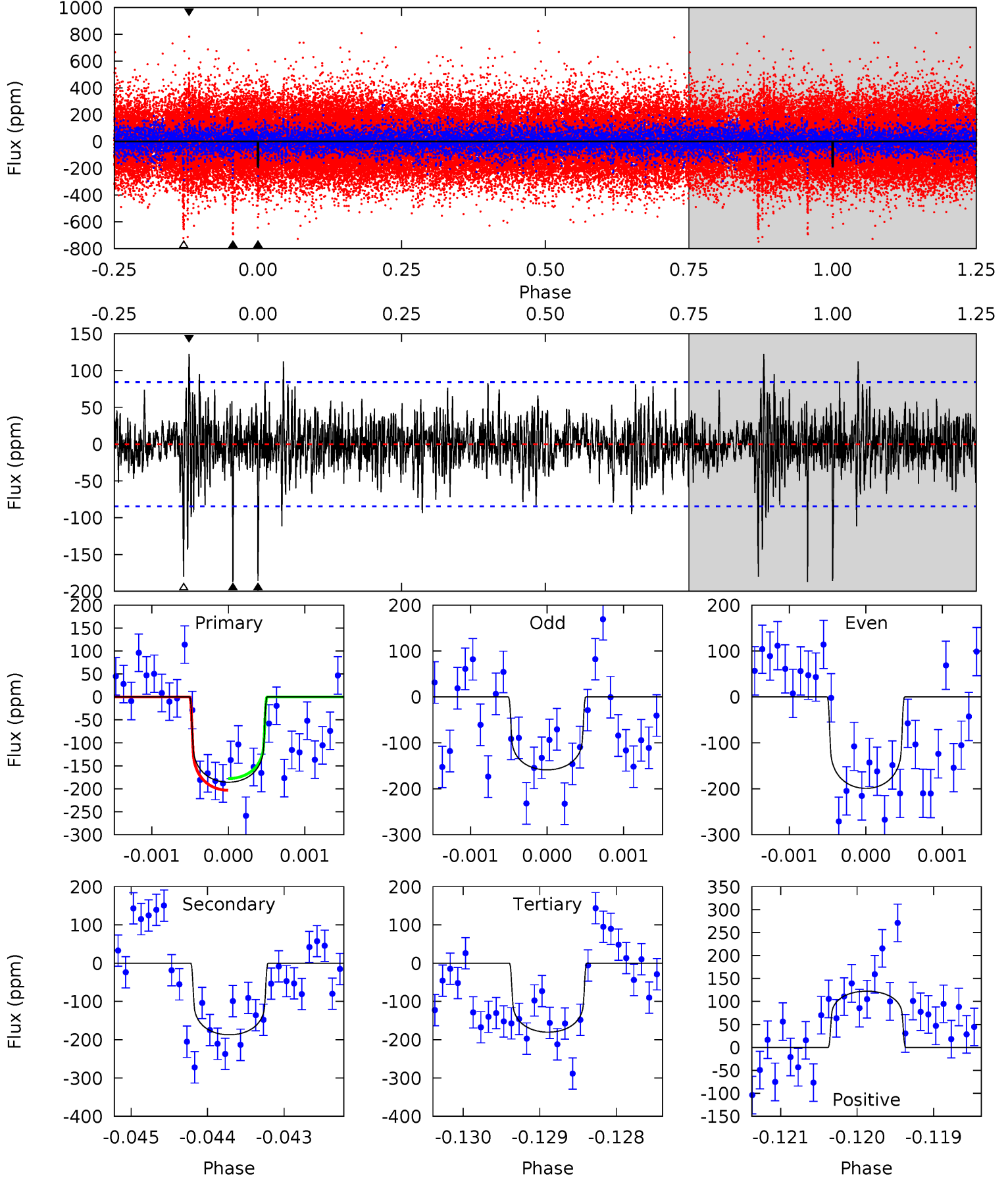
TCE 006038100-01 P=619.416127 Days  $T_0=216.162146$  (BKJD)



# DV Model-Shift Uniqueness Test

006038100-01, P = 619.394717 Days, E = 216.195742 Days

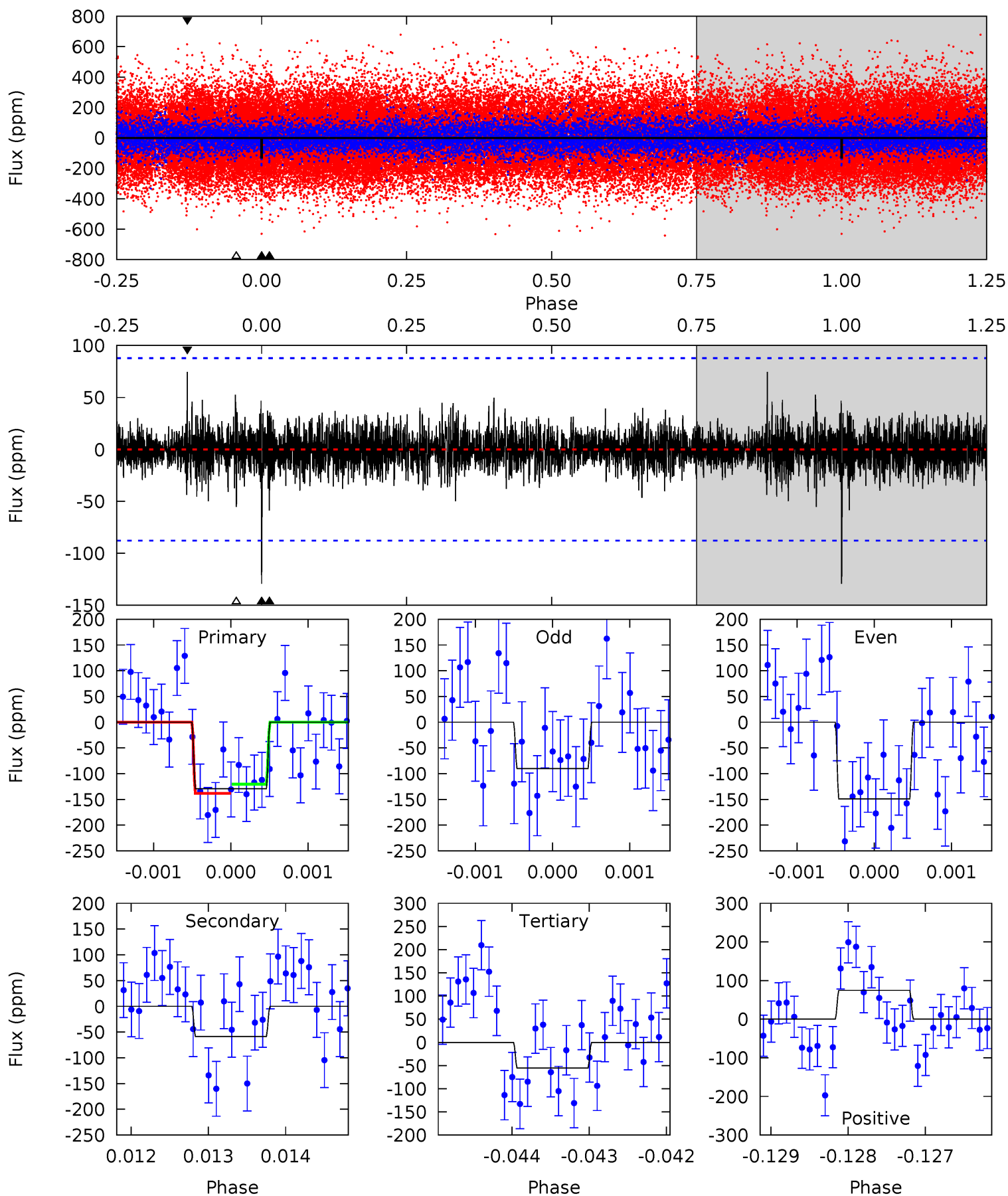
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	12.0	11.6	7.86	5.43	3.25	1.80	0.35	4.07	0.44	4.16	1.23	1.17	0.40	0.82



# Alt Model-Shift Uniqueness Test

006038100-01, P = 619.416127 Days, E = 216.162146 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
8.03	3.64	3.44	4.63	5.45	3.29	0.82	4.60	3.41	0.20	-0.99	1.72	1.44	0.37	0.55



### Stellar Parameters For KIC 006038100

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6217^{+169}_{-188}$	$4.504^{+0.050}_{-0.213}$	$-0.420^{+0.300}_{-0.300}$	$0.919^{+0.279}_{-0.087}$	$0.985^{+0.123}_{-0.123}$	$1.785^{+0.461}_{-0.929}$
	+3%/-3%	+1%/-5%	+71%/-71%	+30%/-9%	+12%/-12%	+26%/-52%
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 006038100-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-187 \pm 16$	$1.52^{+0.48}_{-0.48}$	$315^{+23}_{-15}$	$6046^{+1263}_{-710}$	$88492^{+103190}_{-37839}$
Alt.	$-59 \pm 16$	$1.22^{+0.46}_{-0.44}$	$315^{+20}_{-15}$	$5089^{+1122}_{-660}$	$41925^{+63308}_{-21350}$

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

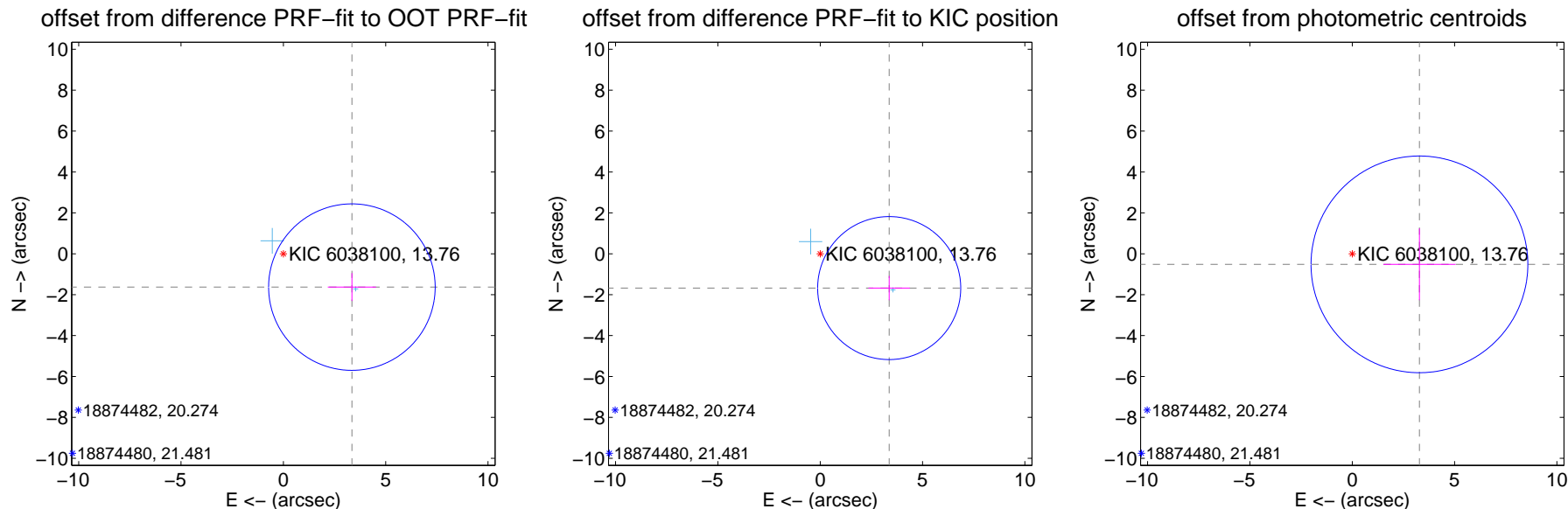
## DV Centroid Data

Supplemental centroid analysis for 006038100-01. Kepler magnitude: 13.76. Transit SNR 7.67

There are 2 quarters with good PRF difference image offsets

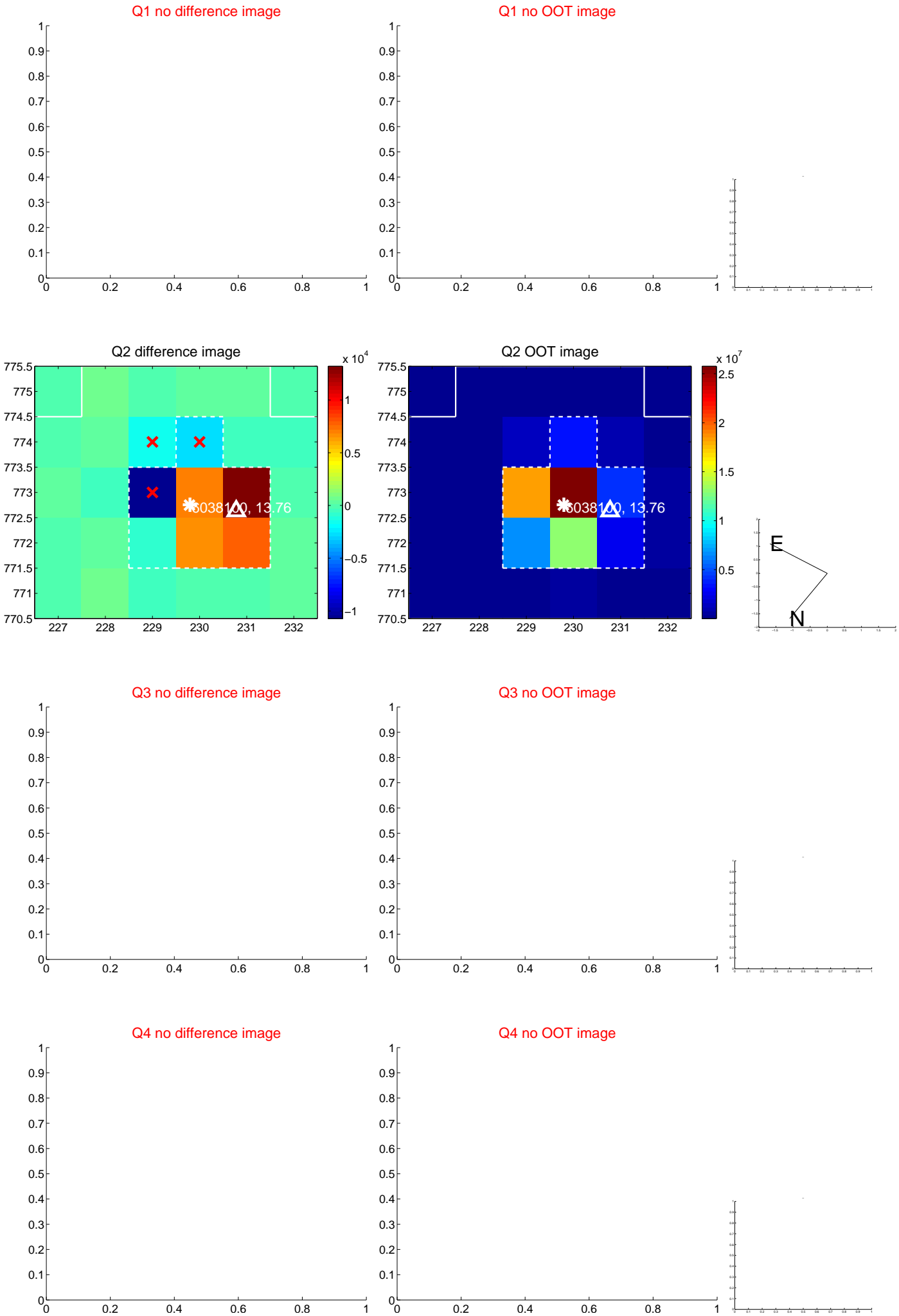
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.725 \pm 1.357$	2.75	$-3.350 \pm 1.179$	$-1.630 \pm 0.681$
PRF-fit source offset from KIC position	<b><math>3.765 \pm 1.165</math></b>	<b>3.23</b>	$-3.371 \pm 1.008$	$-1.677 \pm 0.594$
photometric centroid source offset	$3.32 \pm 1.77$	1.88	$-3.28 \pm 1.77$	$-0.52 \pm 1.75$



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.

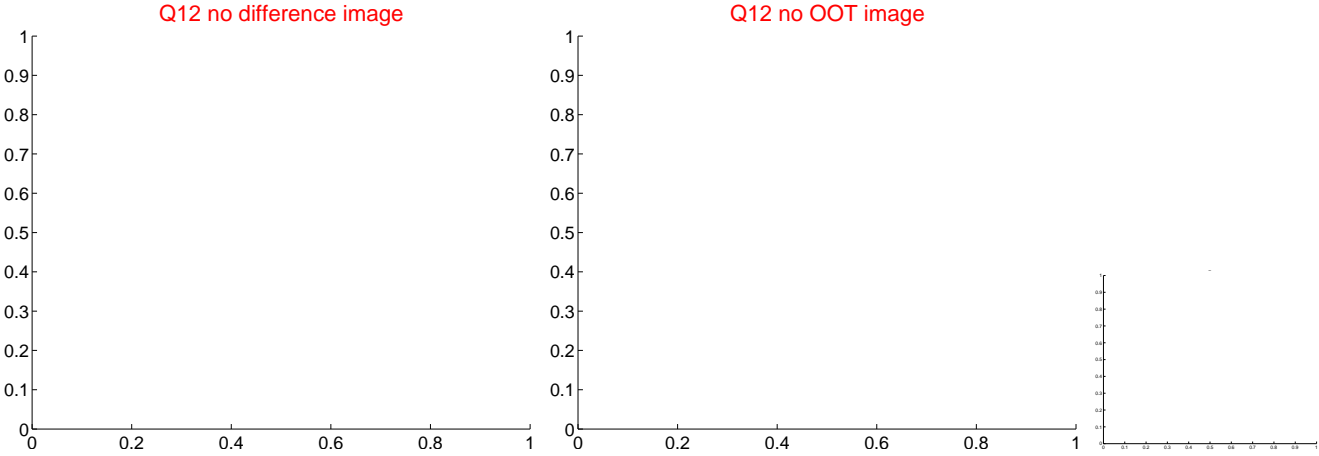
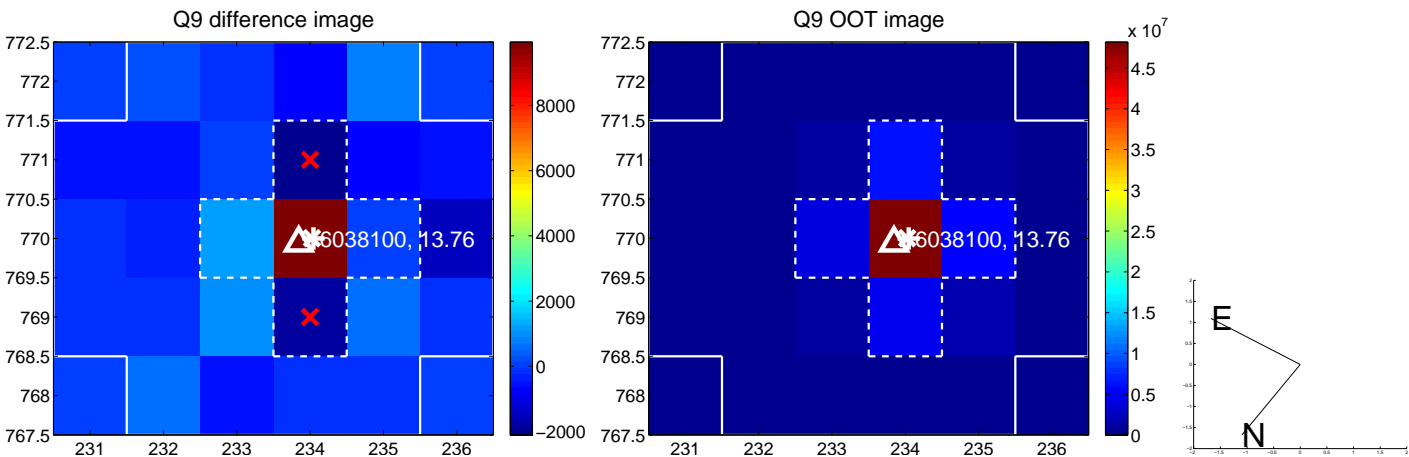




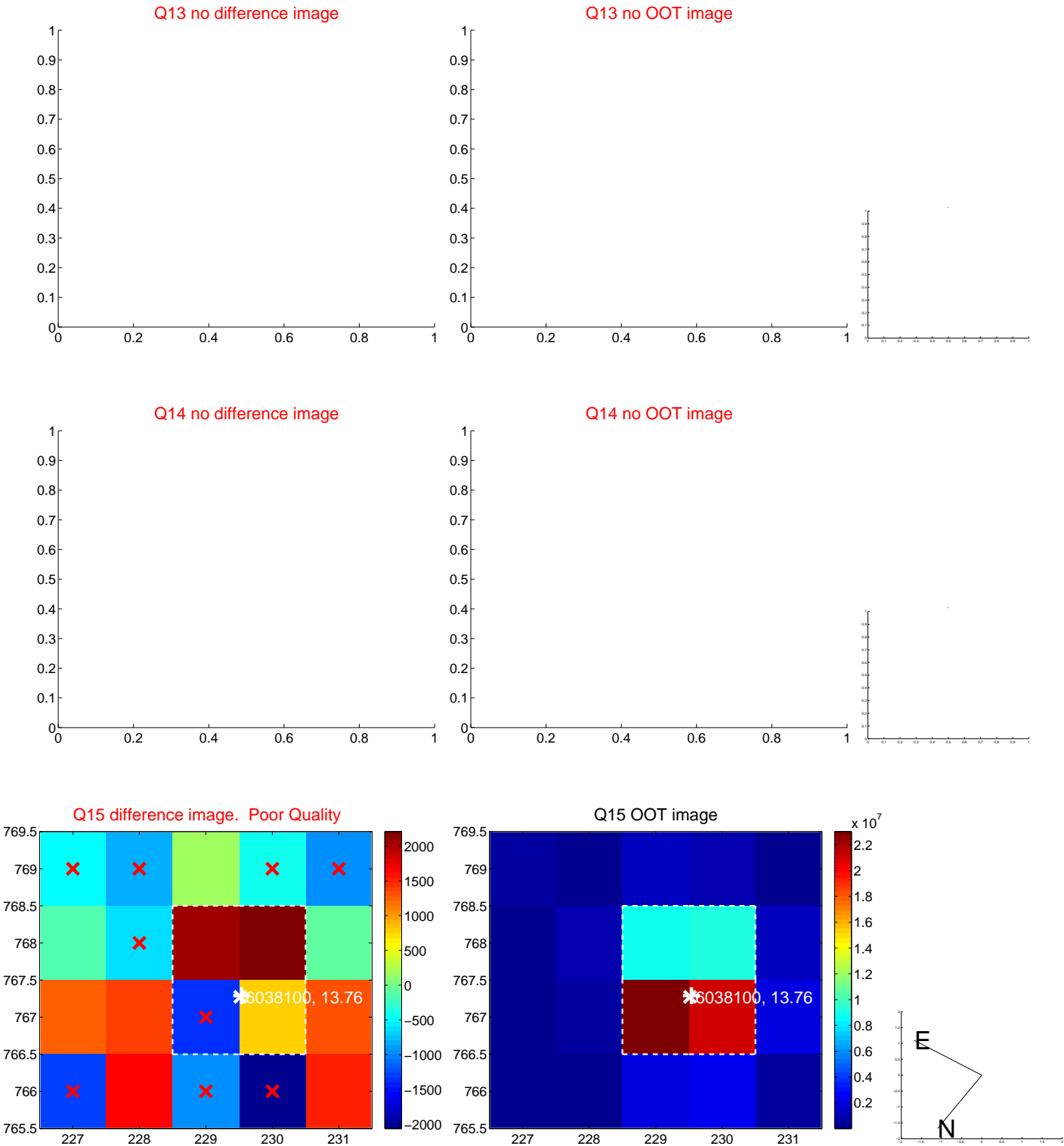
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



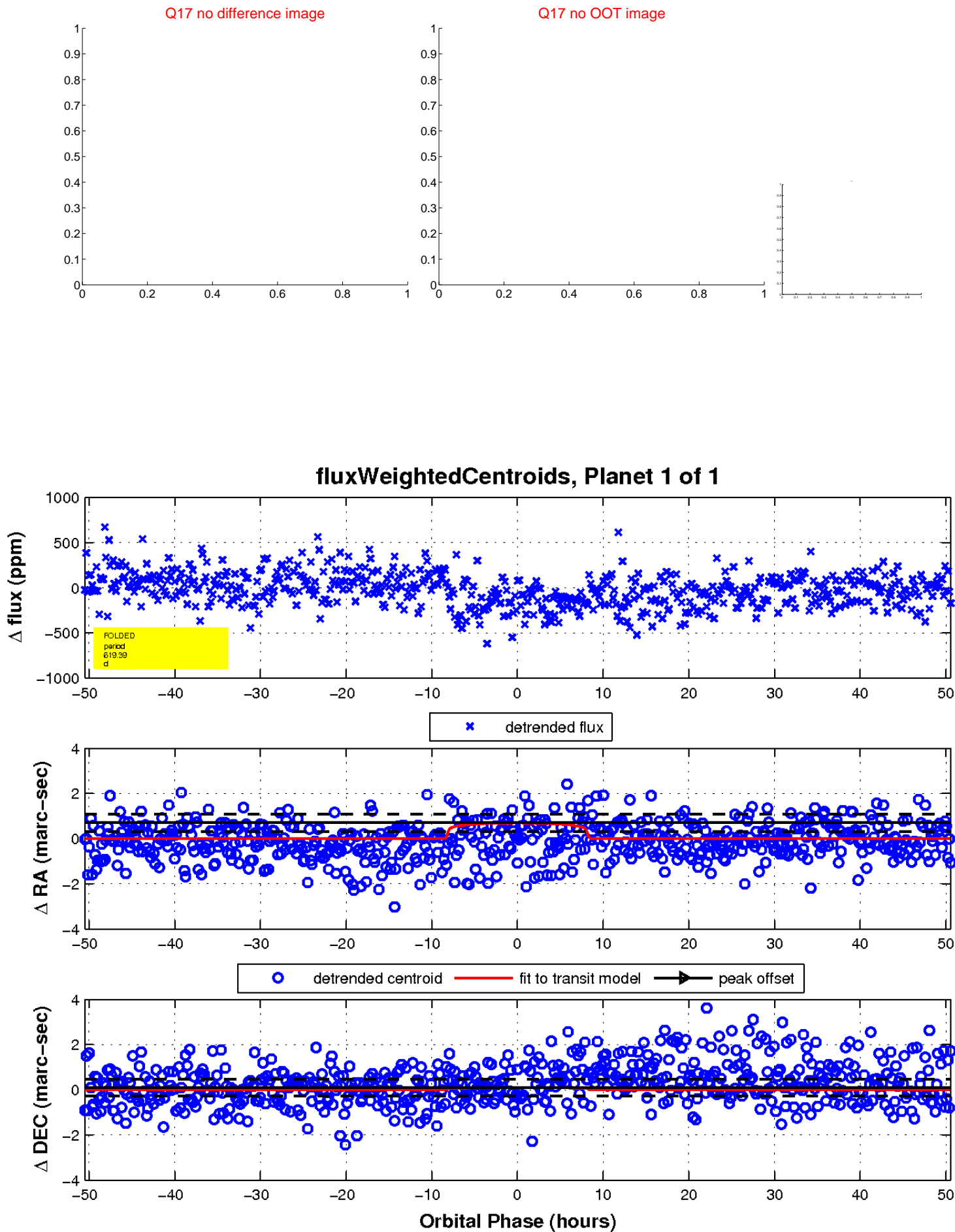
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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.



UKIRT Image

Declination

