

# KIC 009030537

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009030537-01	OBS	1892.01	62.561136	178.410234	1330.3	5.647	28.1	30.0	0.84	5662	3.28	7.14

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009030537-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

**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 009030537-01

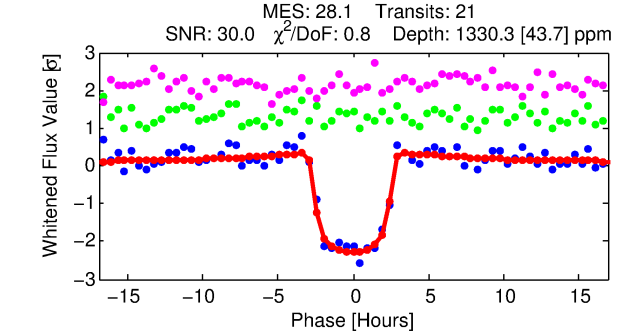
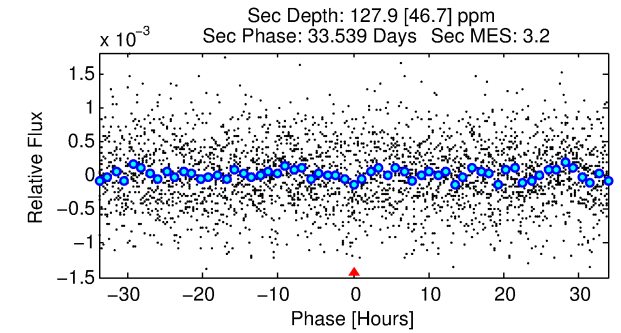
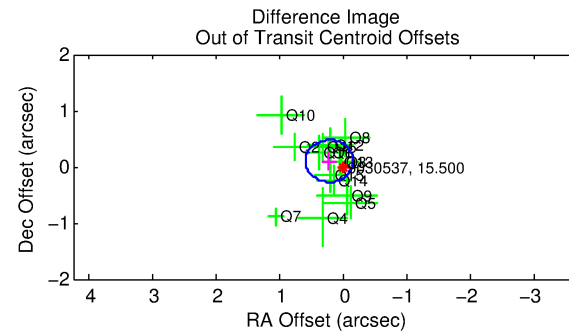
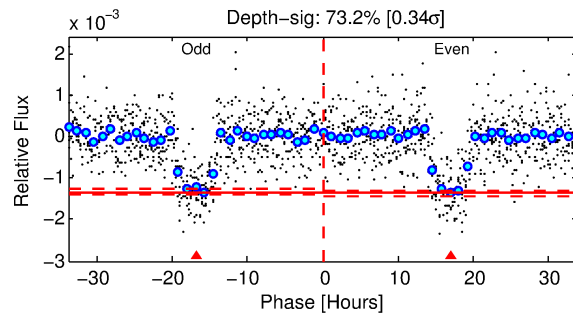
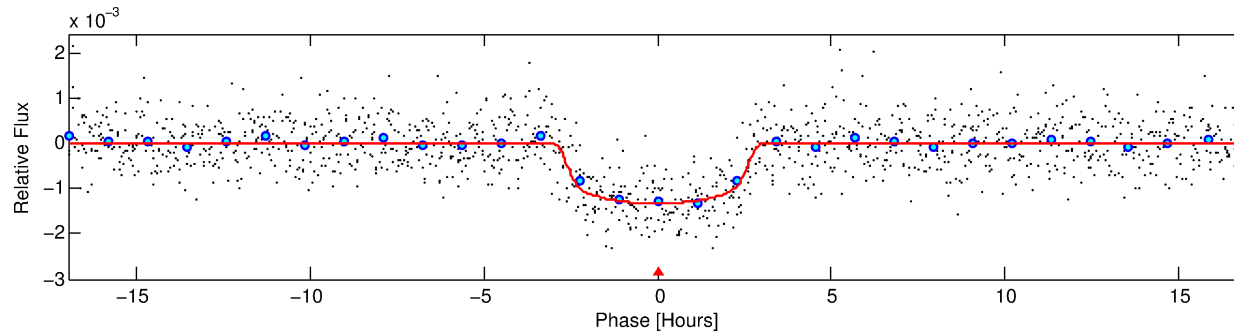
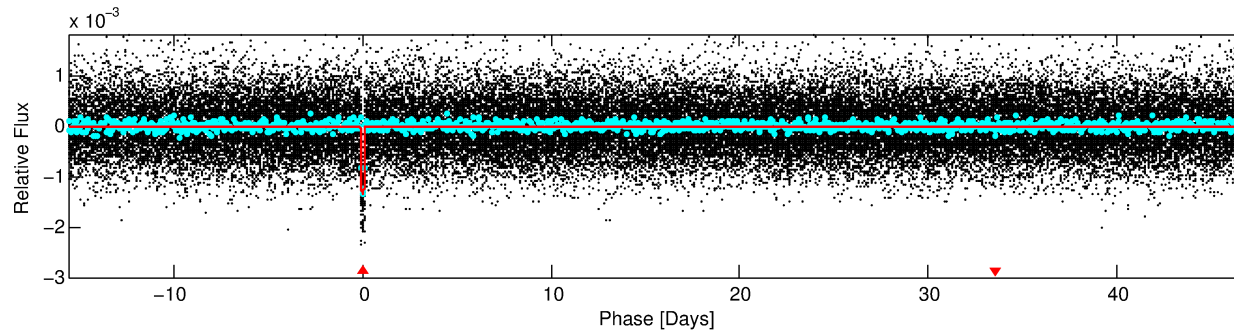
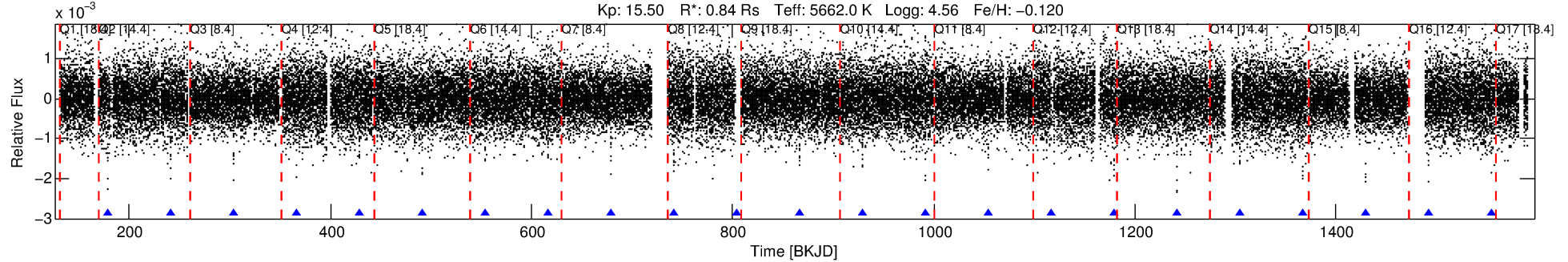
No Significant Match Found

# DV One-Page Summary

KIC: 9030537 Candidate: 1 of 1 Period: 62.561 d

KOI: K01892.01 Corr: 0.982

Kp: 15.50 R\*: 0.84 Rs Teff: 5662.0 K Logg: 4.56 Fe/H: -0.120



## DV Fit Results:

Period = 62.56114 [0.00026] d  
Epoch = 178.4102 [0.0033] BKJD  
Rp/R\* = 0.0358 [0.0060]  
a/R\* = 63.92 [45.09]  
b = 0.71 [0.50]  
Seff = 7.14 [2.38]  
Teq = 417 [35] K  
Rp = 3.28 [1.02] Re  
a = 0.3016 [0.0655] AU  
Ag = 594.65 [347.41] [1.71σ]  
Teffp = 3183 [405] K [6.81σ]

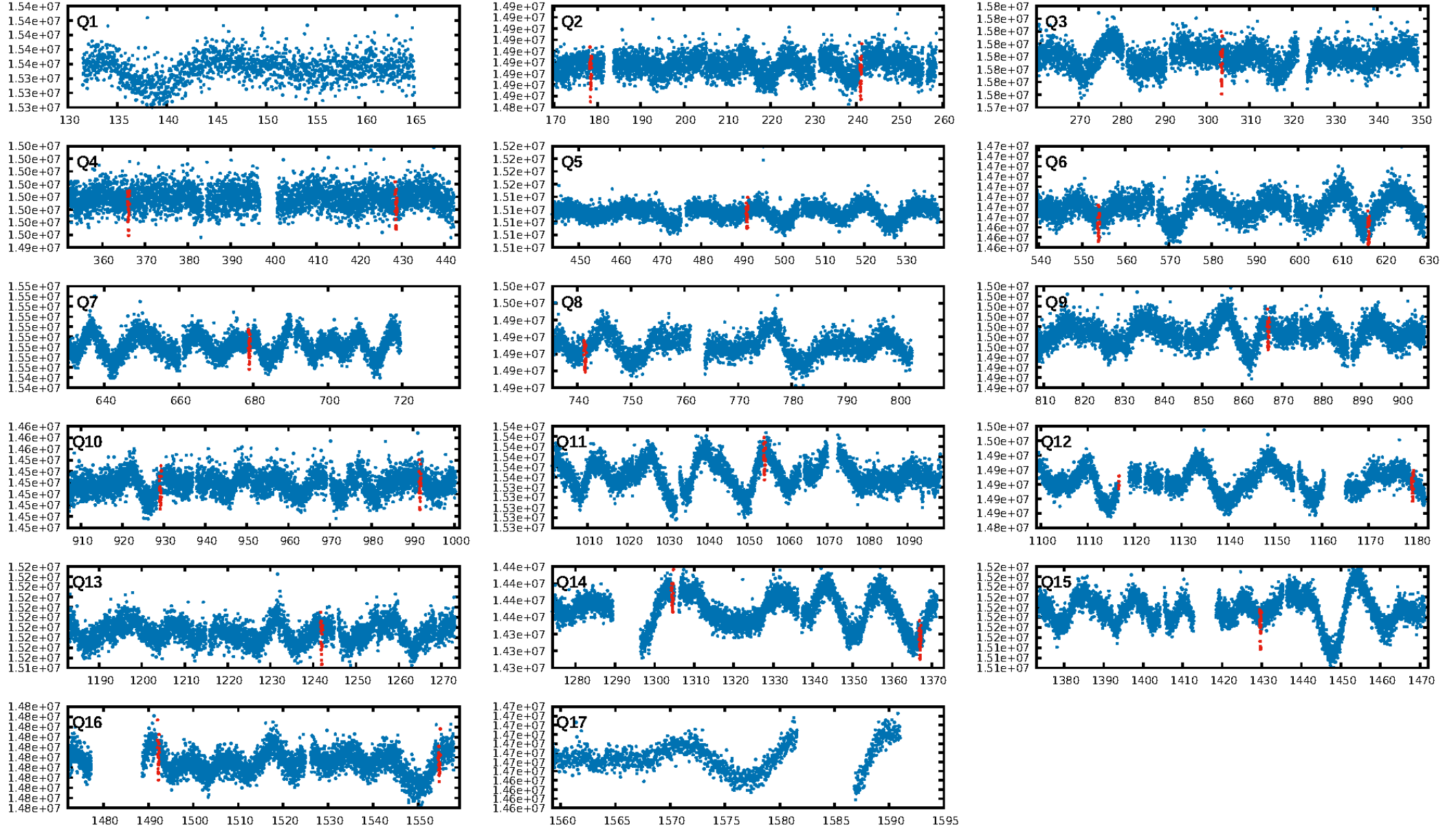
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.82e-153  
RollingBand-fgt: 1.00 [21/21]  
GhostDiagnostic-chr: 13.88  
Centroid-sig: 33.3%  
Centroid-so: 0.652 arcsec [1.30σ]  
OotOffset-rm: 0.243 arcsec [1.94σ]  
KicOffset-rm: 0.116 arcsec [0.98σ]  
OotOffset-st: 4/4/4/3 [15]  
KicOffset-st: 4/4/4/3 [15]  
DiffImageQuality-fgm: 1.00 [15/15]  
DiffImageOverlap-fno: 1.00 [15/15]

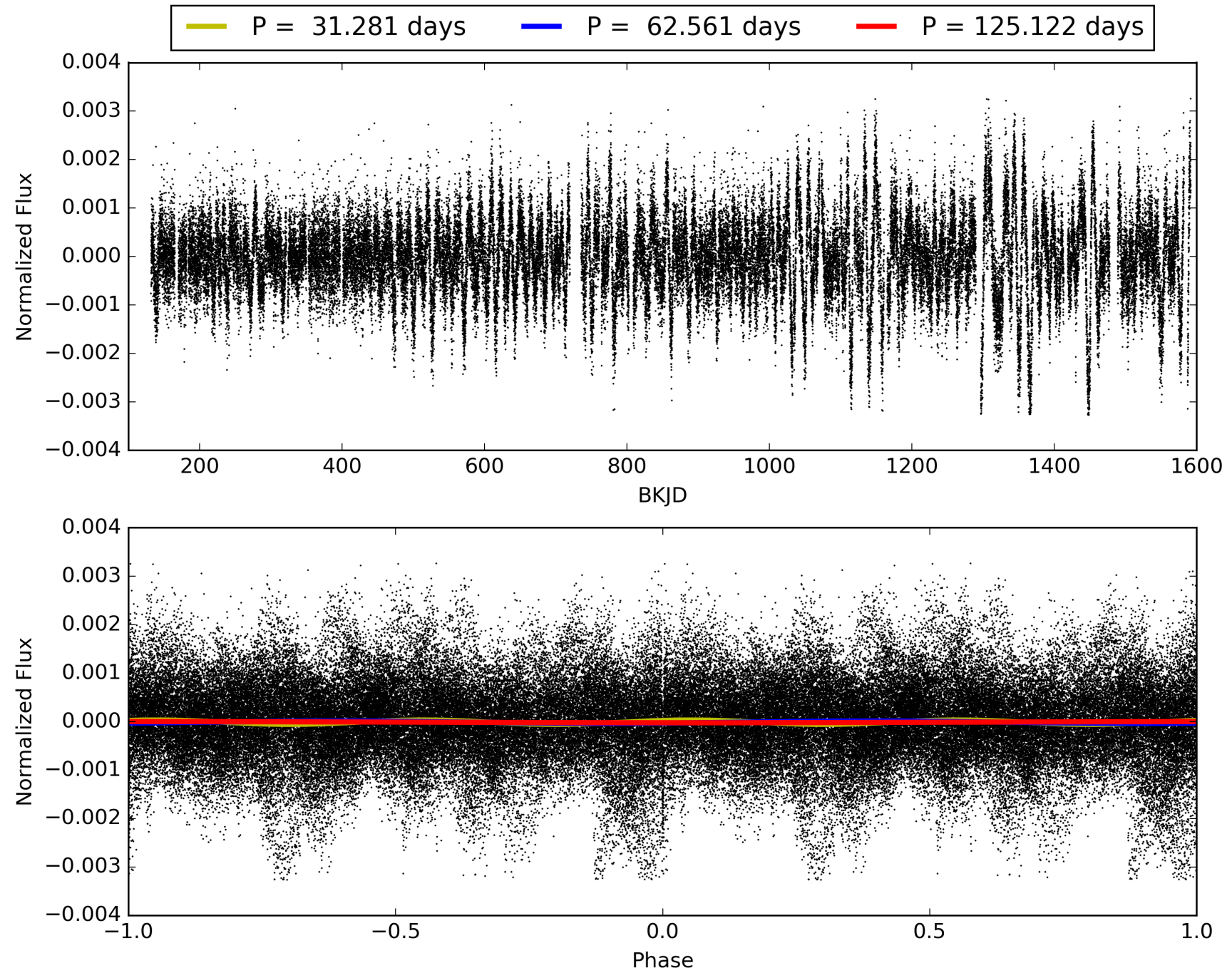
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:01:05 Z

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

# TCE 009030537-01, PDC Light Curves

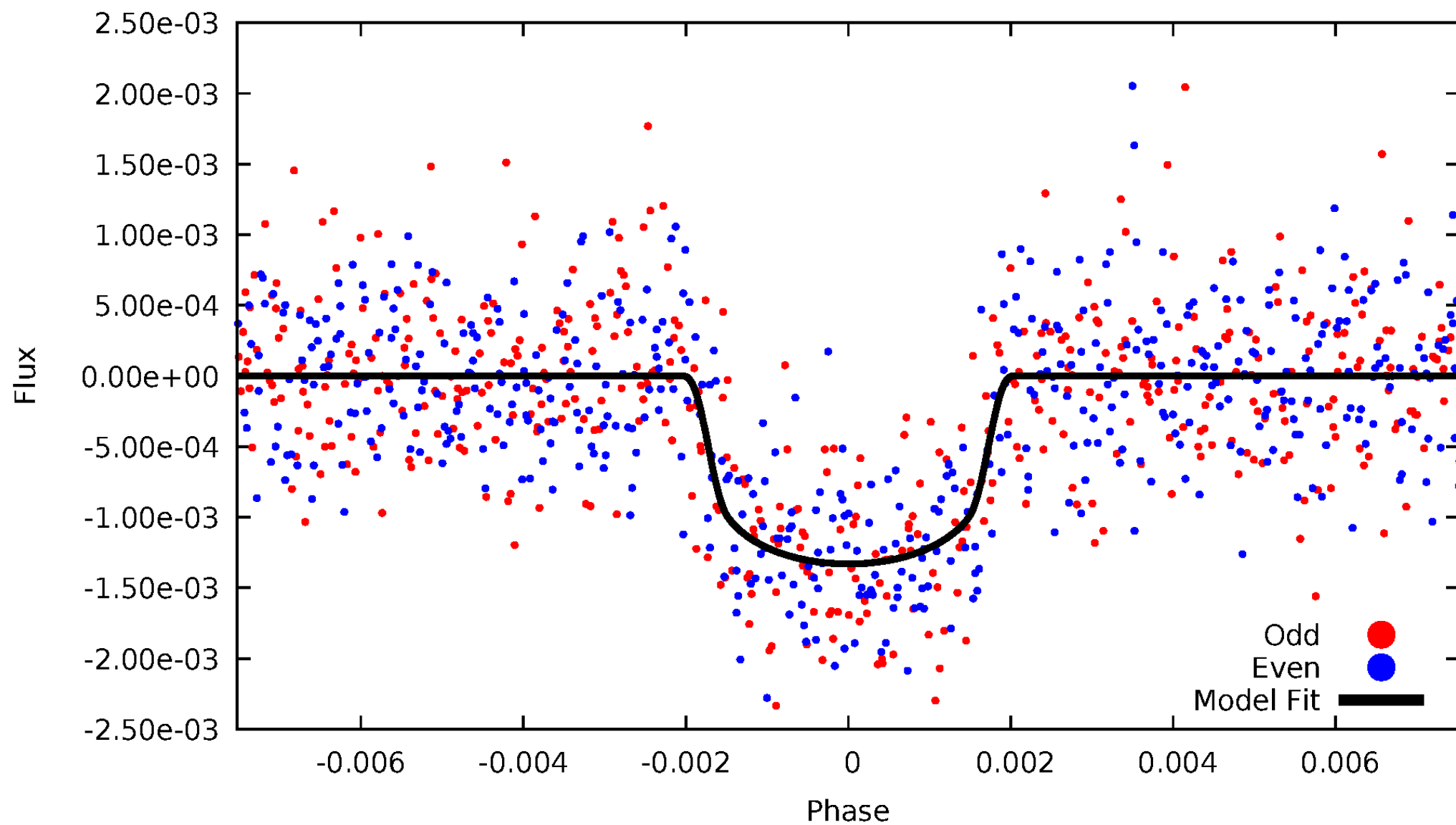


TCE 009030537-01



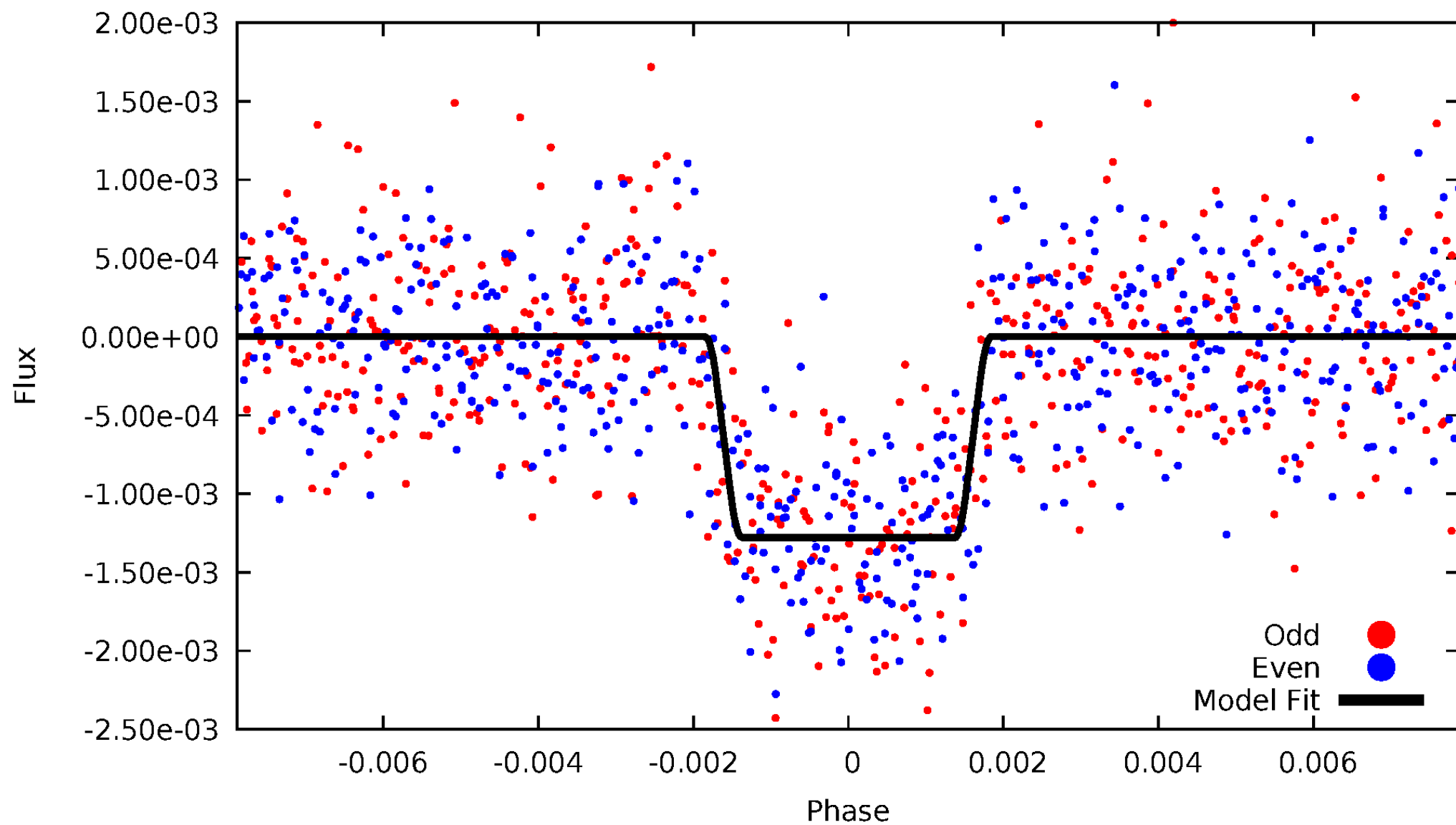
# DV Odd/Even

TCE 009030537-01



# ALT Odd/Even

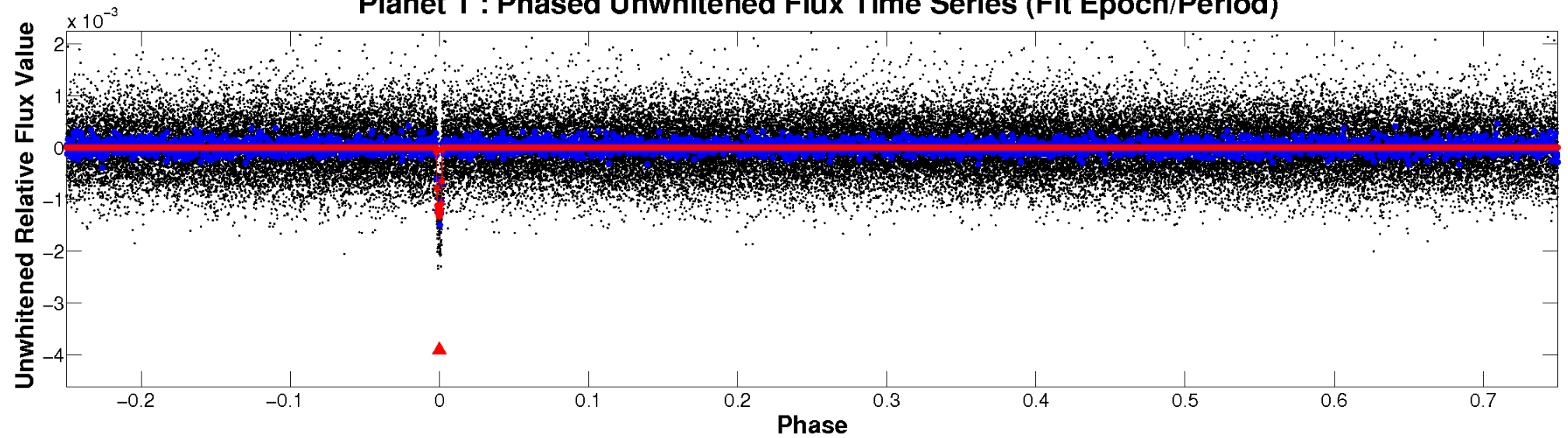
TCE 009030537-01



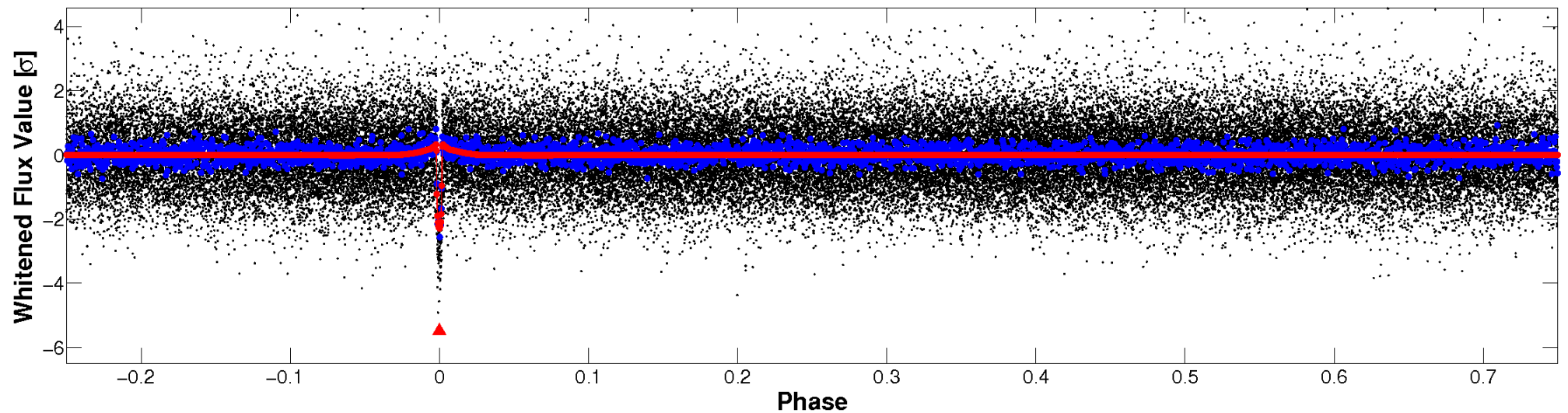


# Non-Whitened Vs. Whitened Light Curve

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

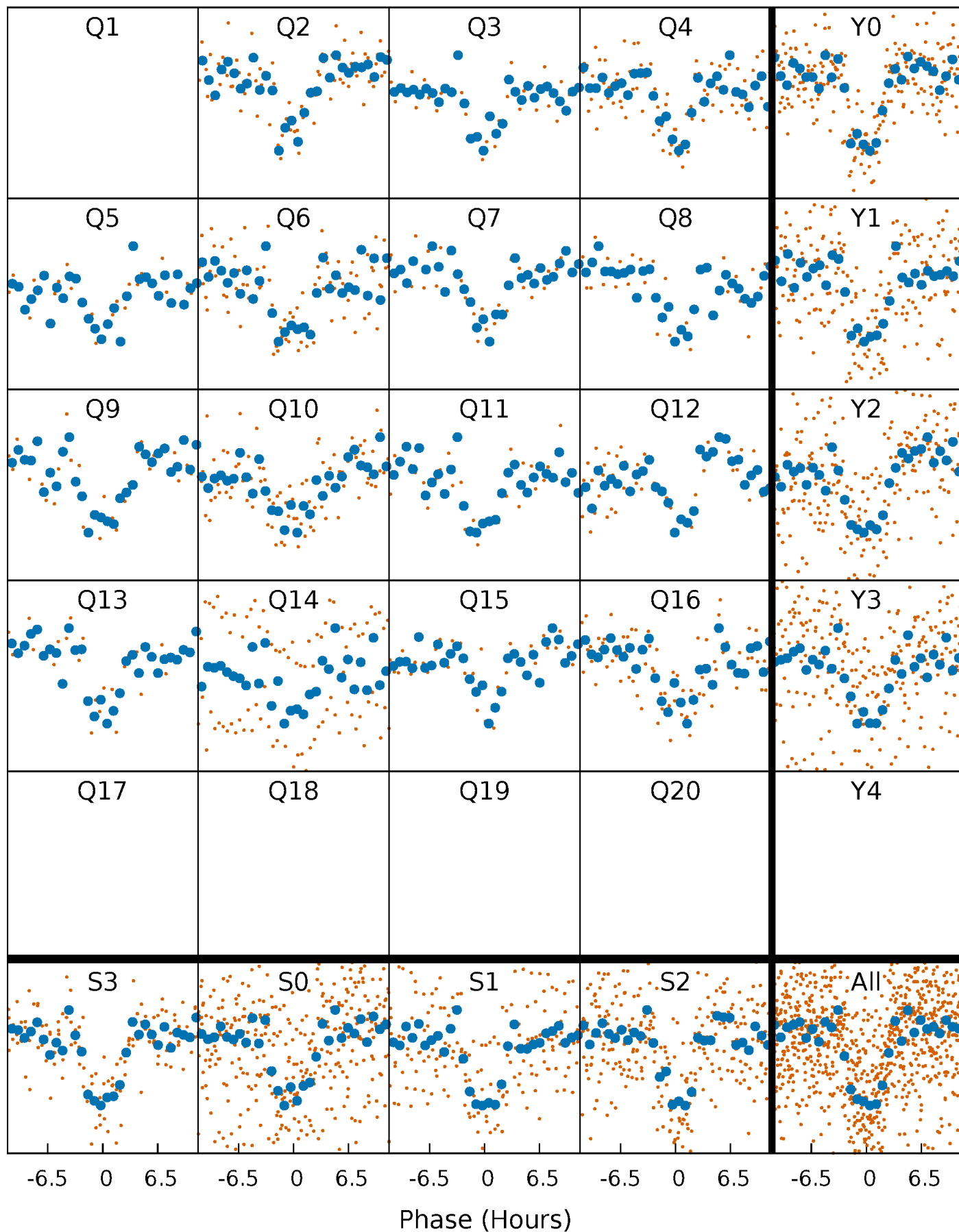


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

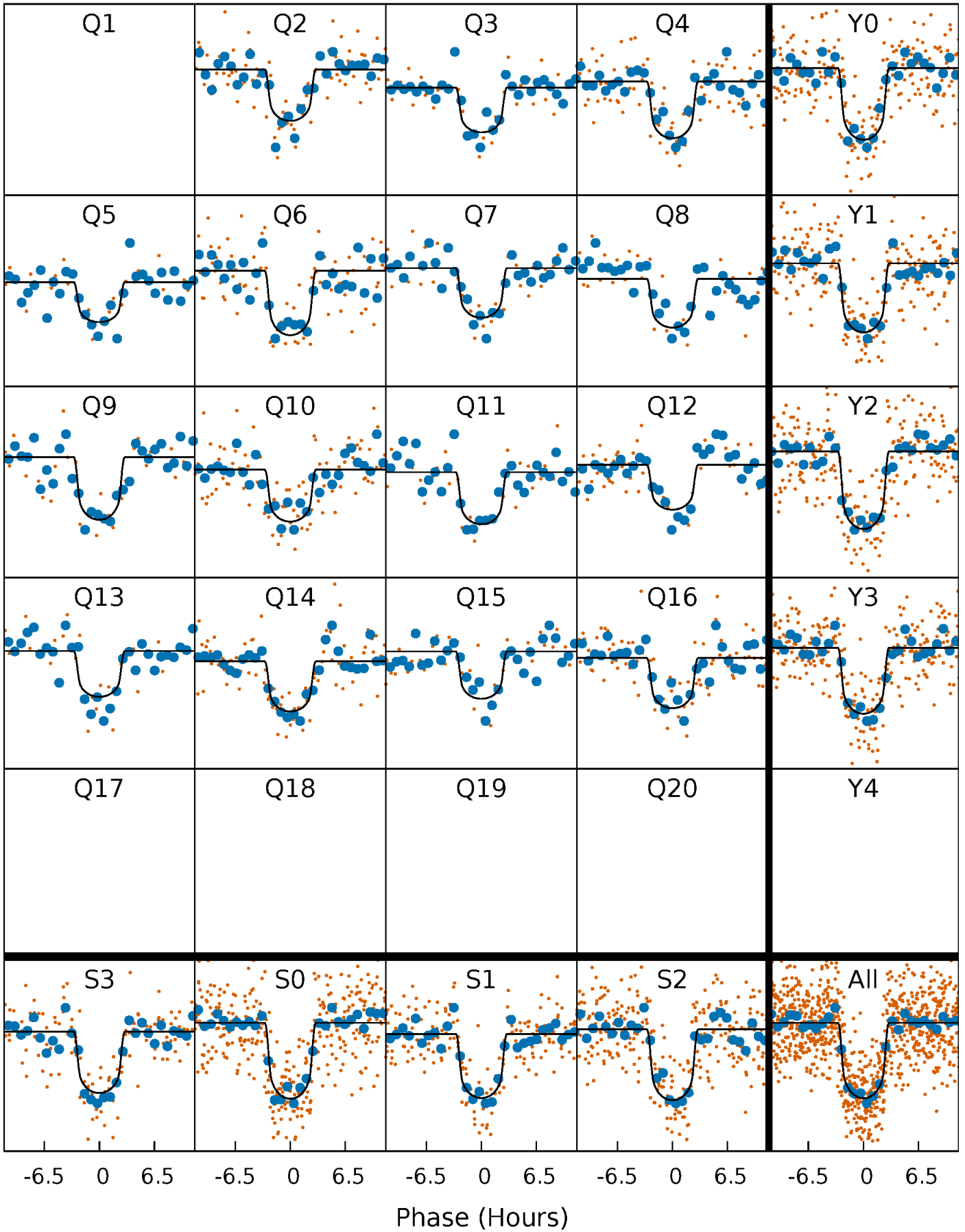
TCE 009030537-01   P= 62.561136 Days    $T_0=178.410234$  (BKJD)





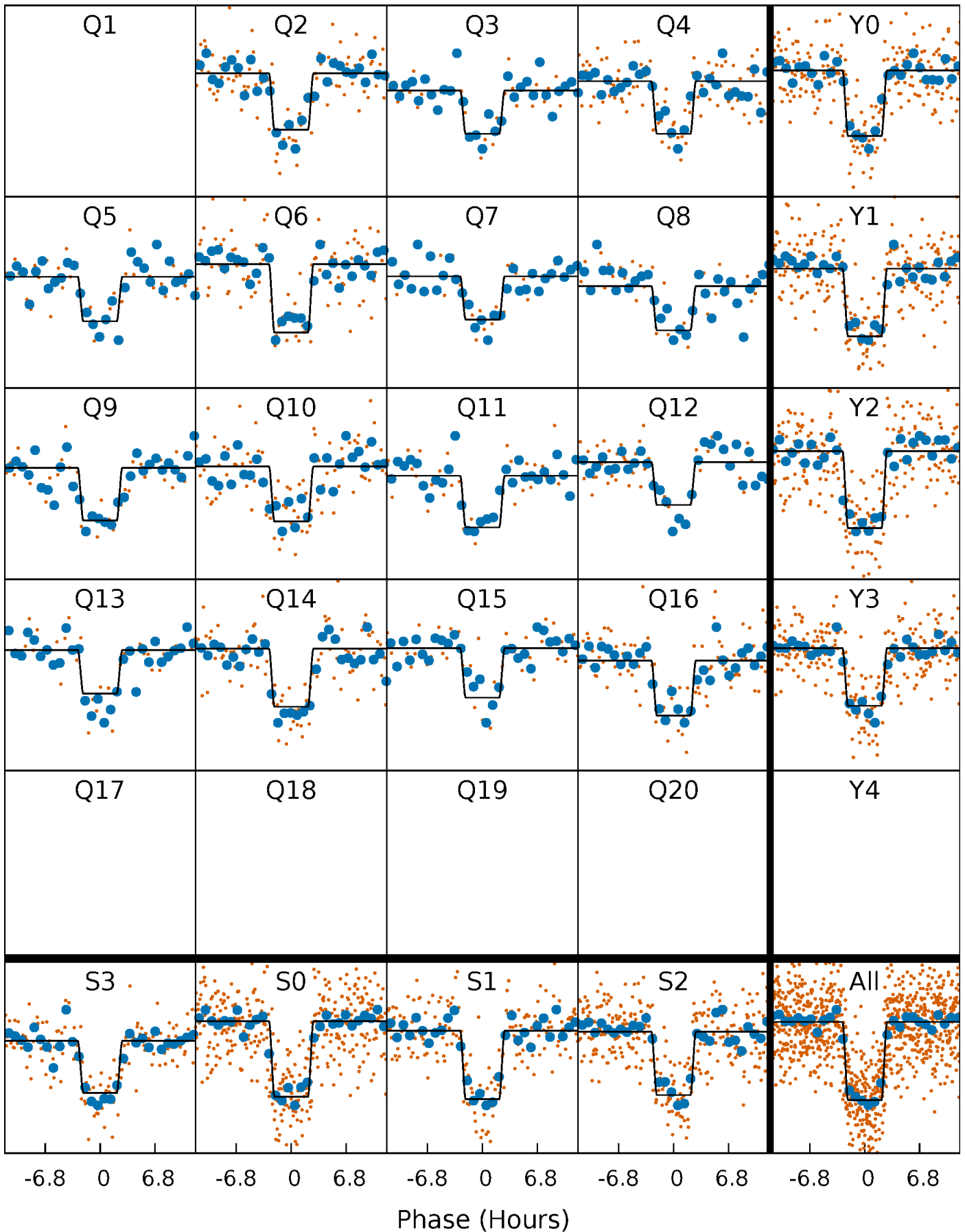
# DV Quarter-Phased Transit Curves

TCE 009030537-01 P= 62.561136 Days  $T_0=178.410234$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

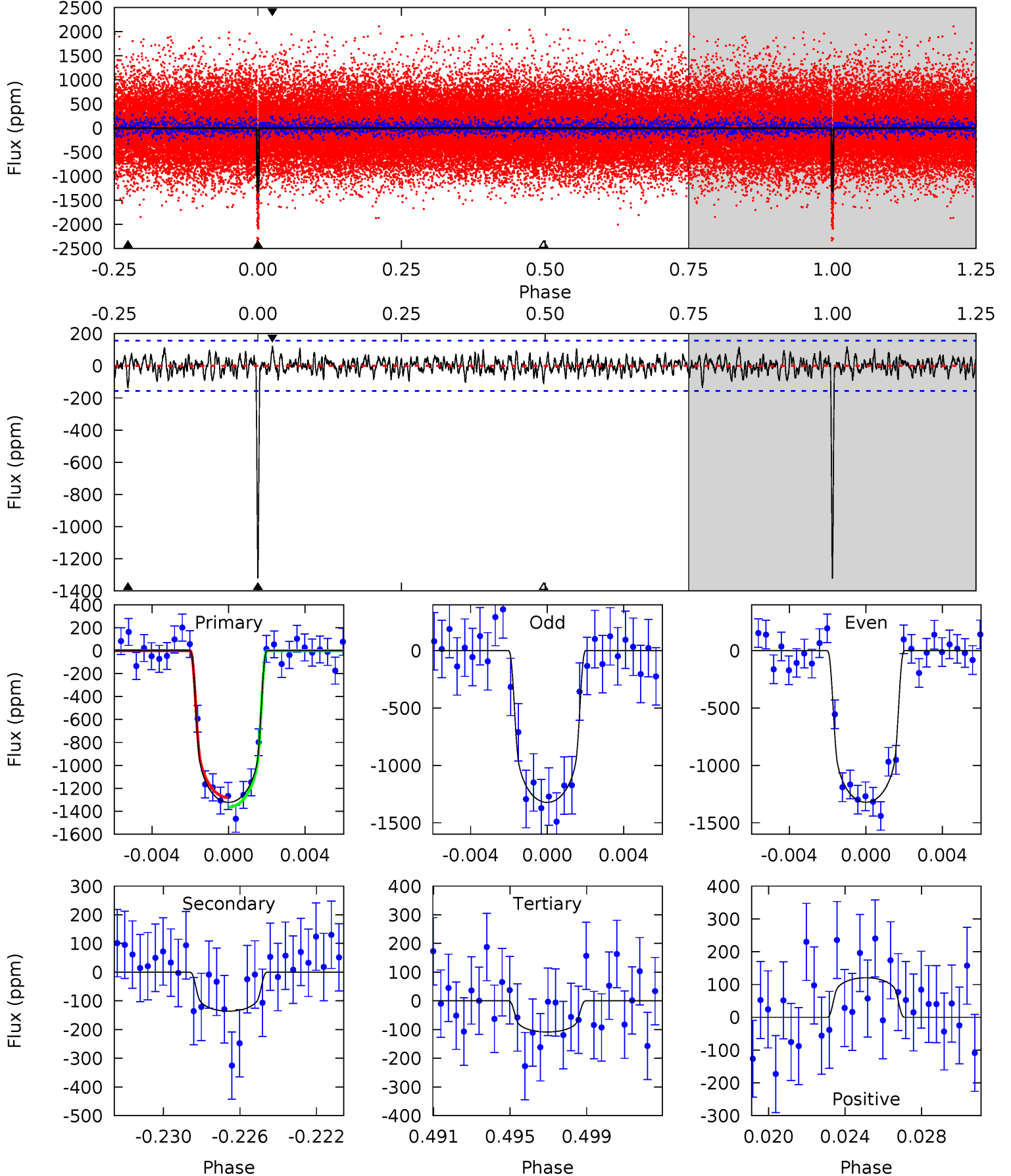
TCE 009030537-01 P= 62.561566 Days  $T_0=178.406127$  (BKJD)



# DV Model-Shift Uniqueness Test

009030537-01,  $P = 62.561136$  Days,  $E = 115.849098$  Days

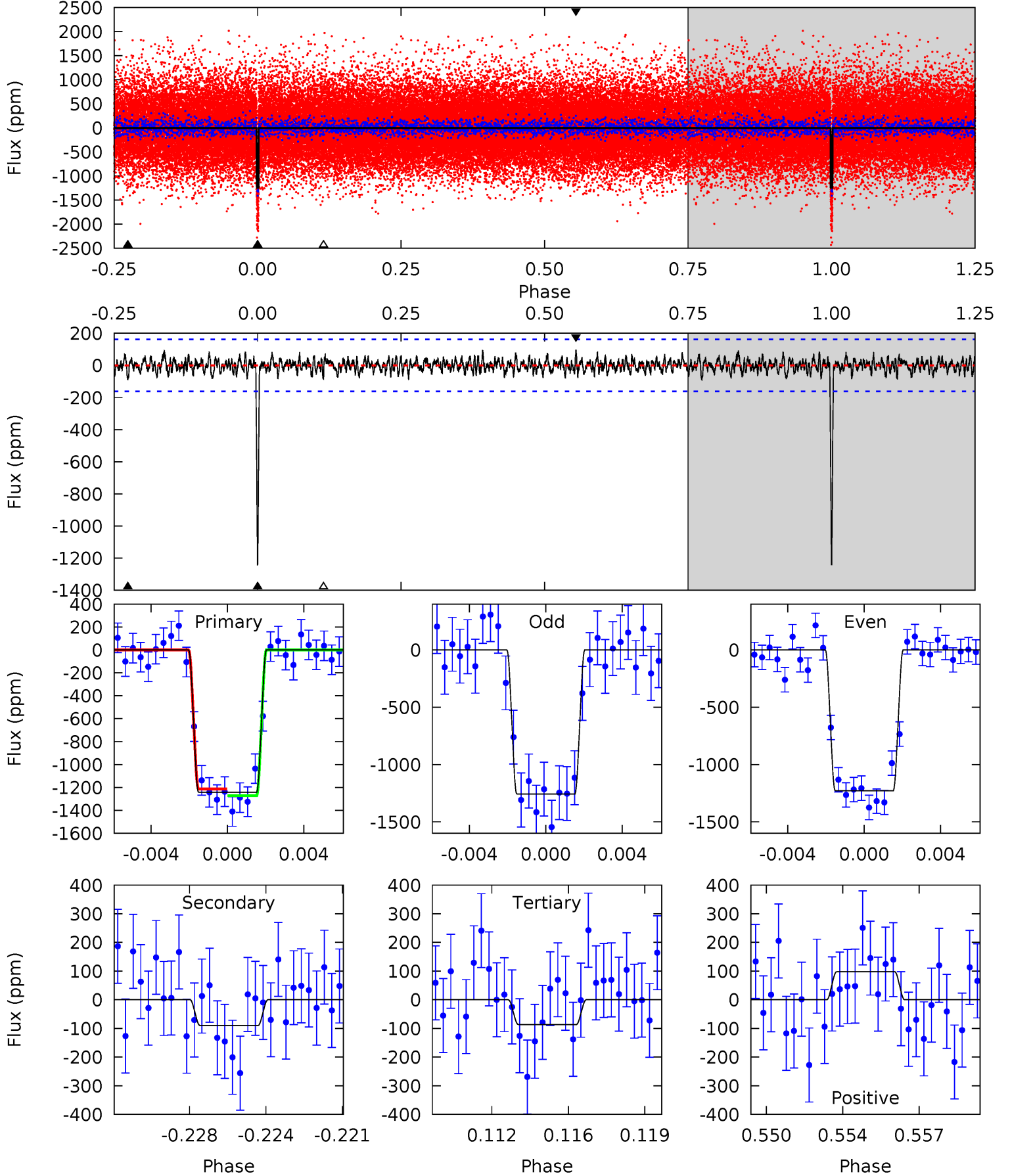
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.9	4.51	3.61	4.00	5.20	2.88	1.23	40.3	39.9	0.91	0.51	0.02	0.97	0.08	1.39



# Alt Model-Shift Uniqueness Test

009030537-01,  $P = 62.561566$  Days,  $E = 115.844561$  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
40.1	2.90	2.78	3.15	5.22	2.91	0.98	37.3	36.9	0.12	-0.25	0.48	1.00	0.07	0.96



### Stellar Parameters For KIC 009030537

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5662^{+169}_{-152}$	$4.560^{+0.042}_{-0.168}$	$-0.120^{+0.300}_{-0.300}$	$0.840^{+0.220}_{-0.073}$	$0.937^{+0.094}_{-0.115}$	$2.228^{+0.391}_{-1.061}$
	+3%/-3%	+1%/-4%	+250%/-250%	+26%/-9%	+10%/-12%	+18%/-48%
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 009030537-01 / KOI 1892.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-136 \pm 30$	$3.42^{+0.67}_{-0.61}$	$595^{+37}_{-27}$	$3645^{+275}_{-220}$	$550^{+333}_{-178}$
Alt.	$-90 \pm 31$	$3.38^{+0.66}_{-0.65}$	$595^{+35}_{-27}$	$3417^{+276}_{-264}$	$368^{+243}_{-153}$

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

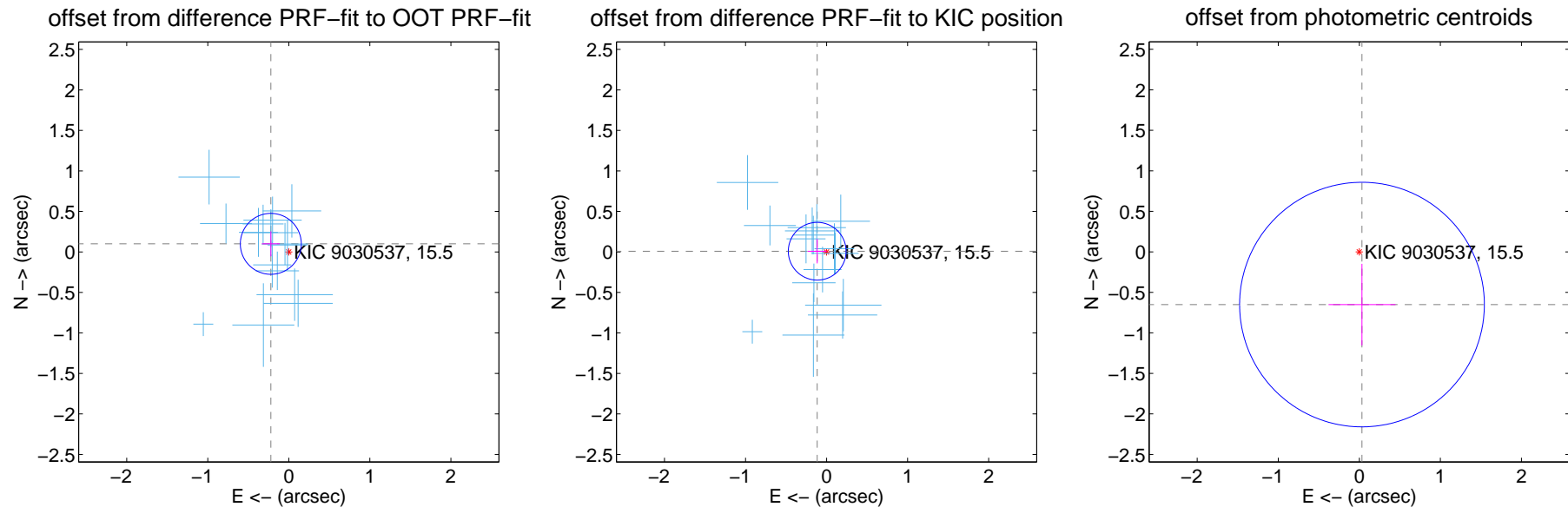
## DV Centroid Data

Supplemental centroid analysis for 009030537-01. Kepler magnitude: 15.50. Transit SNR 30.02

There are 15 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

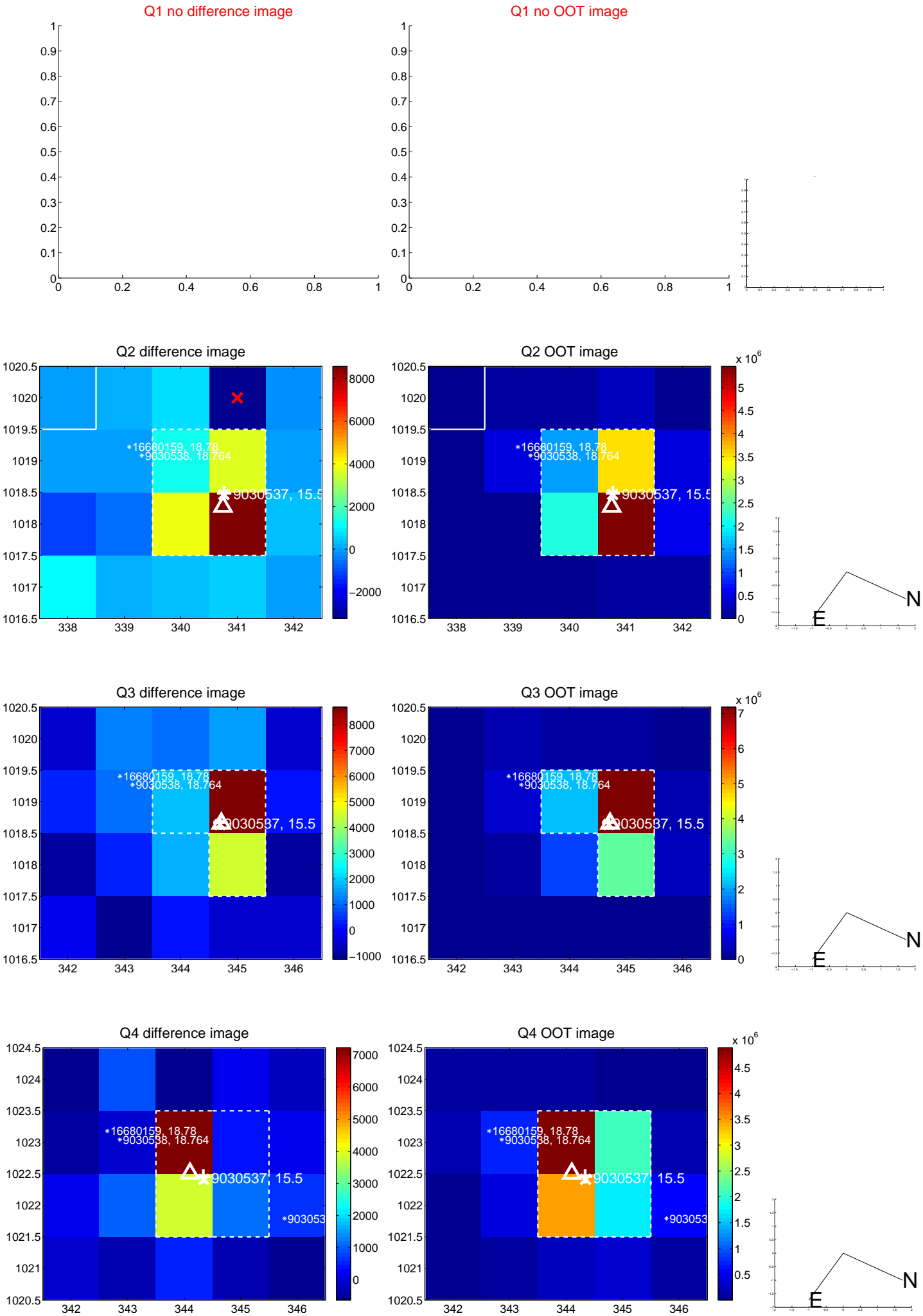
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.243 \pm 0.125$	1.94	$0.222 \pm 0.110$	$0.100 \pm 0.154$
PRF-fit source offset from KIC position	$0.116 \pm 0.119$	0.98	$0.116 \pm 0.117$	$0.008 \pm 0.151$
photometric centroid source offset	$0.65 \pm 0.50$	1.30	$-0.03 \pm 0.41$	$-0.65 \pm 0.50$



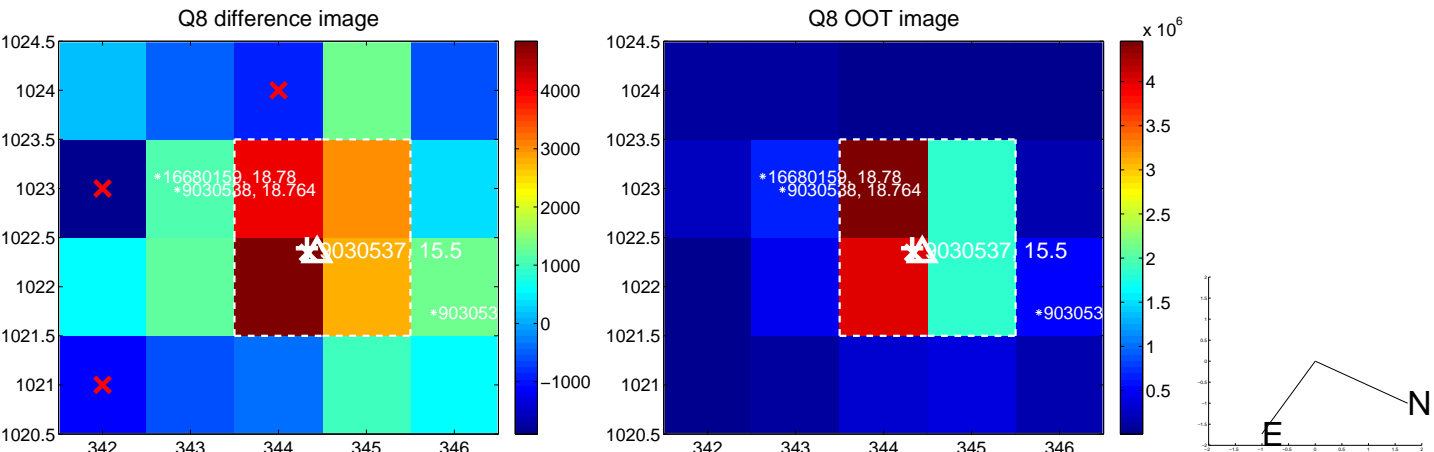
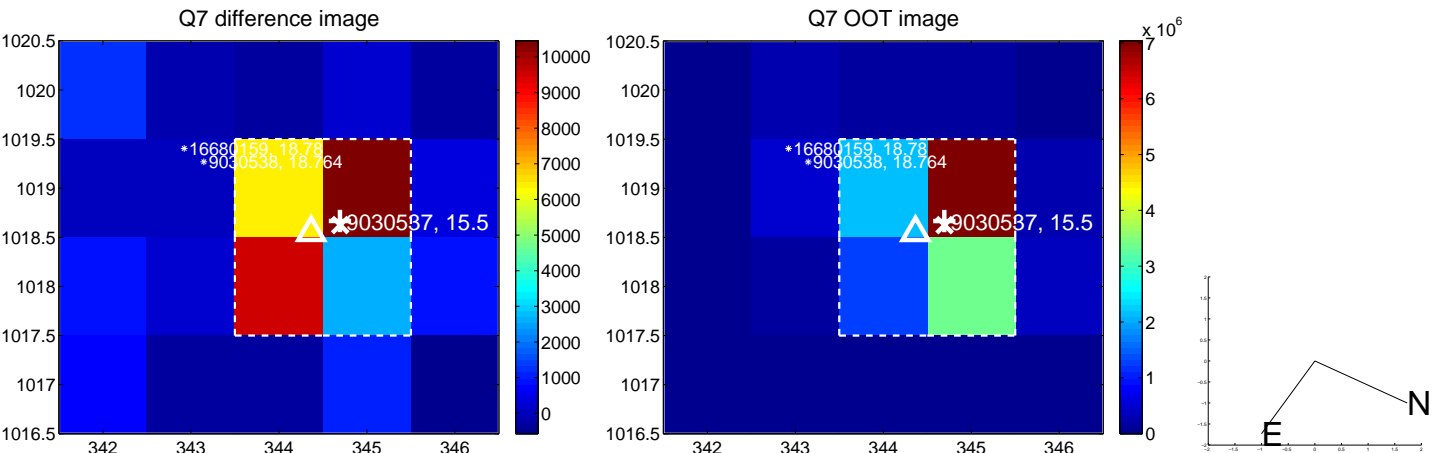
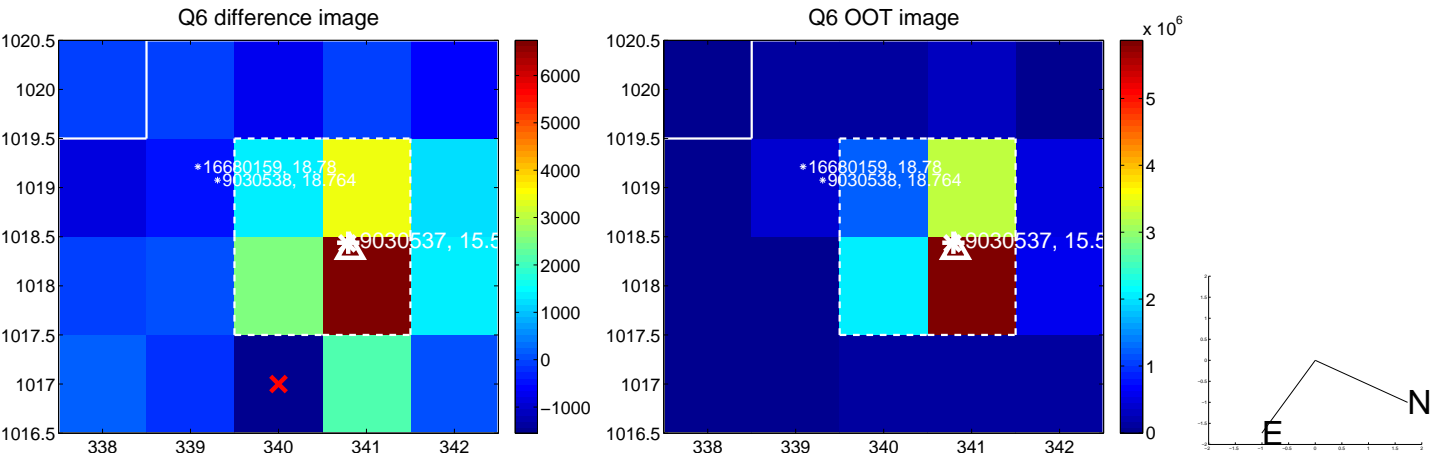
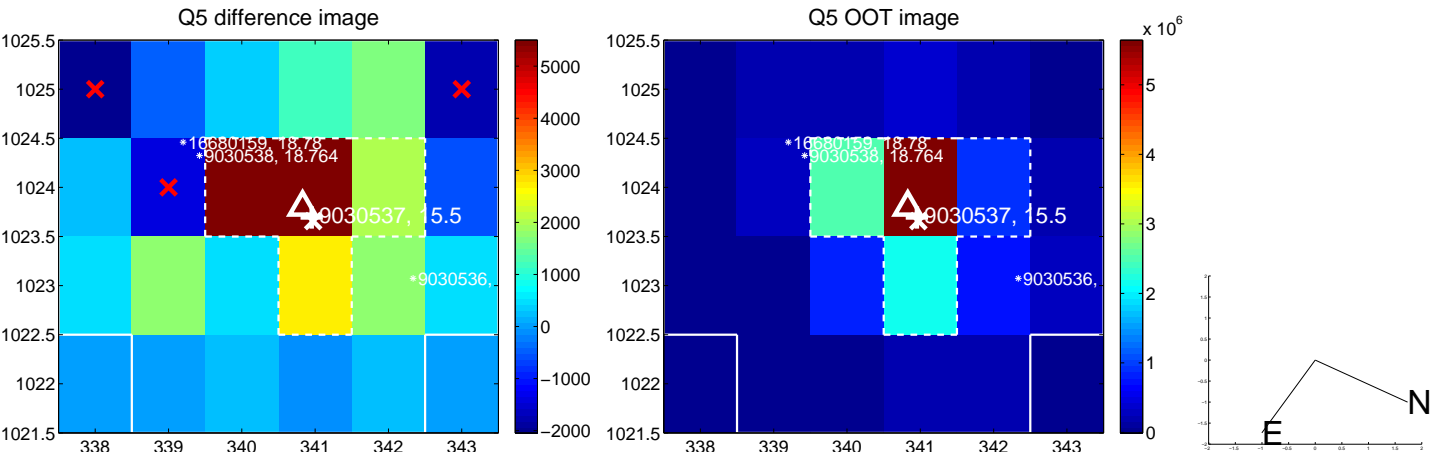
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



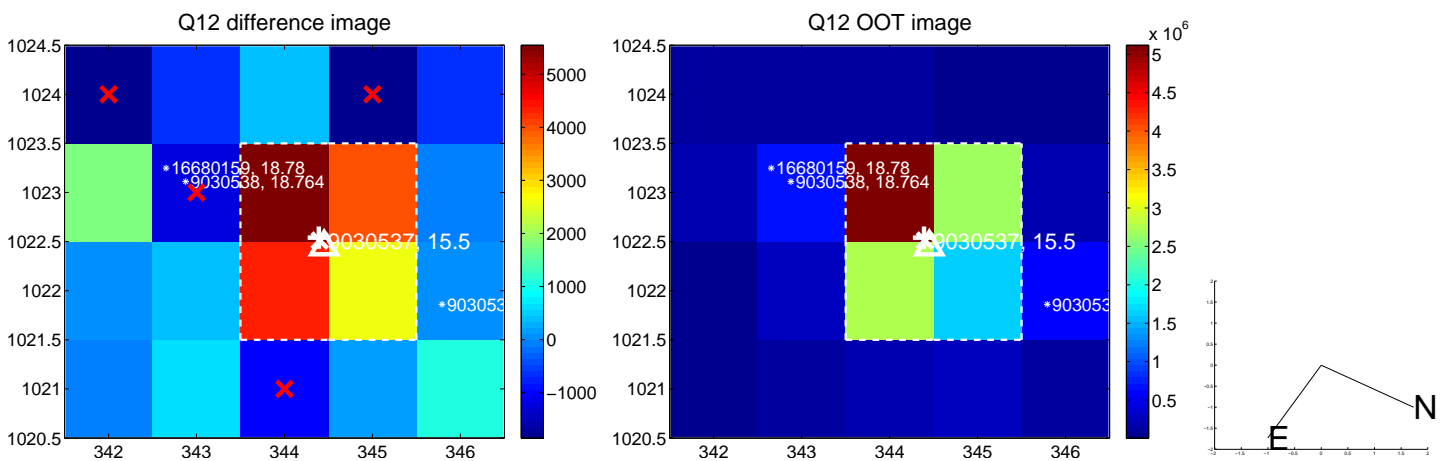
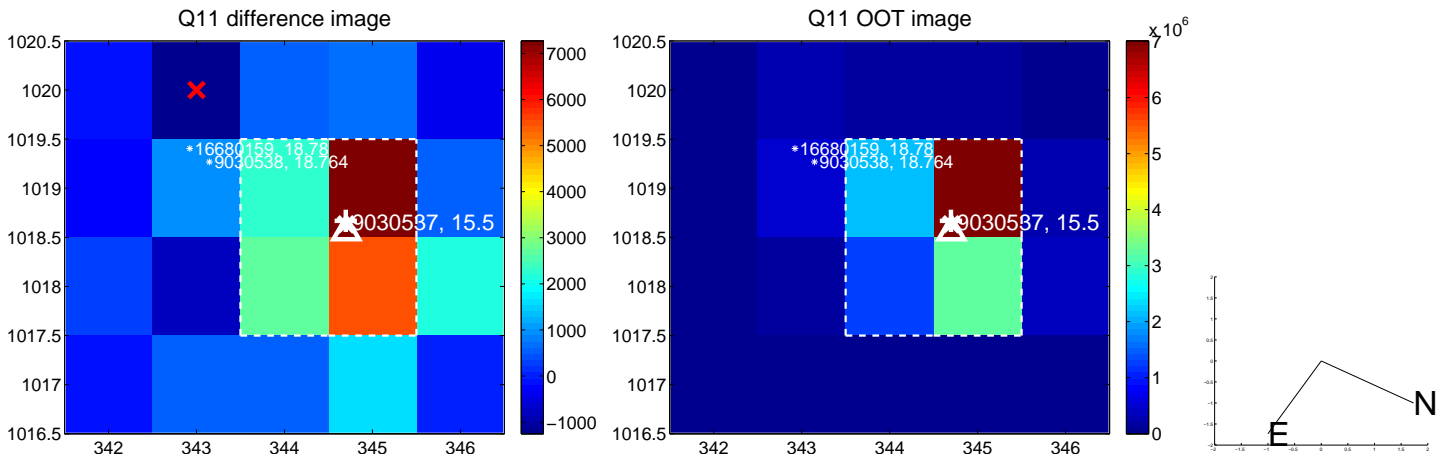
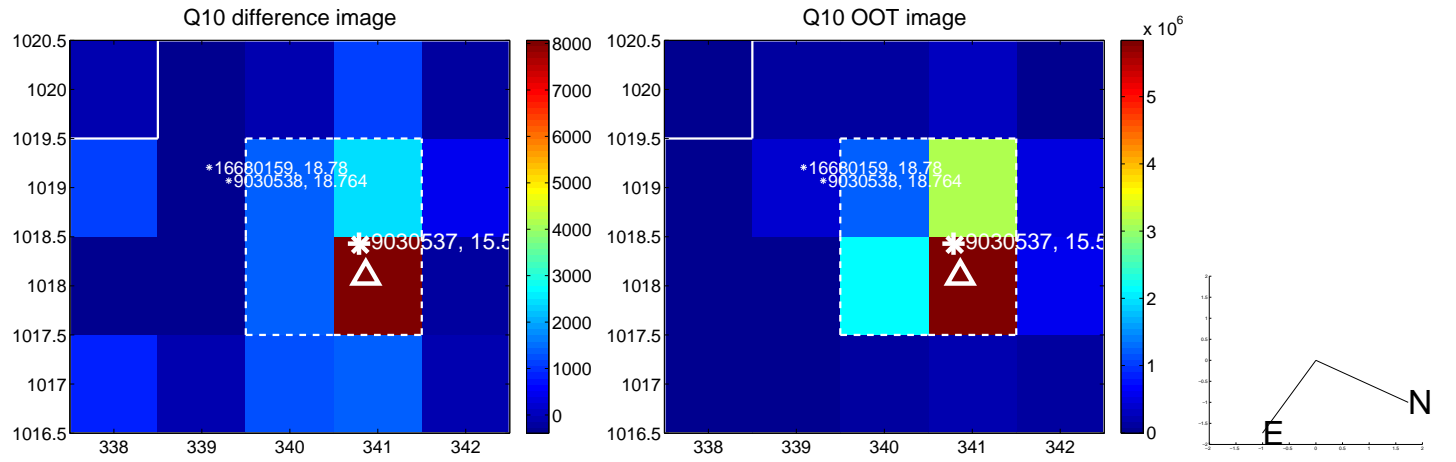
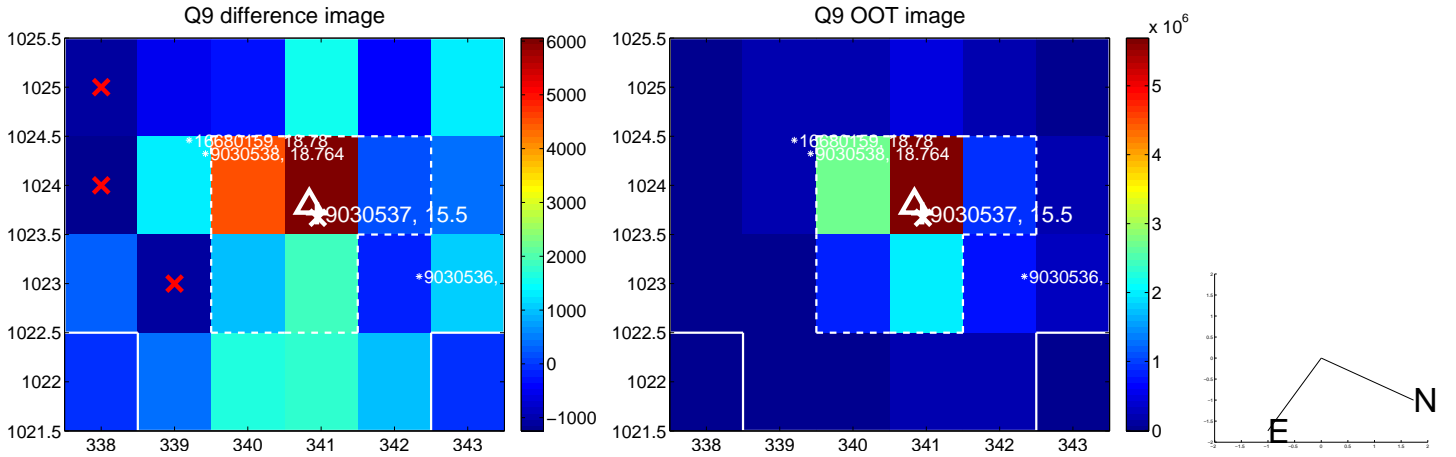
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



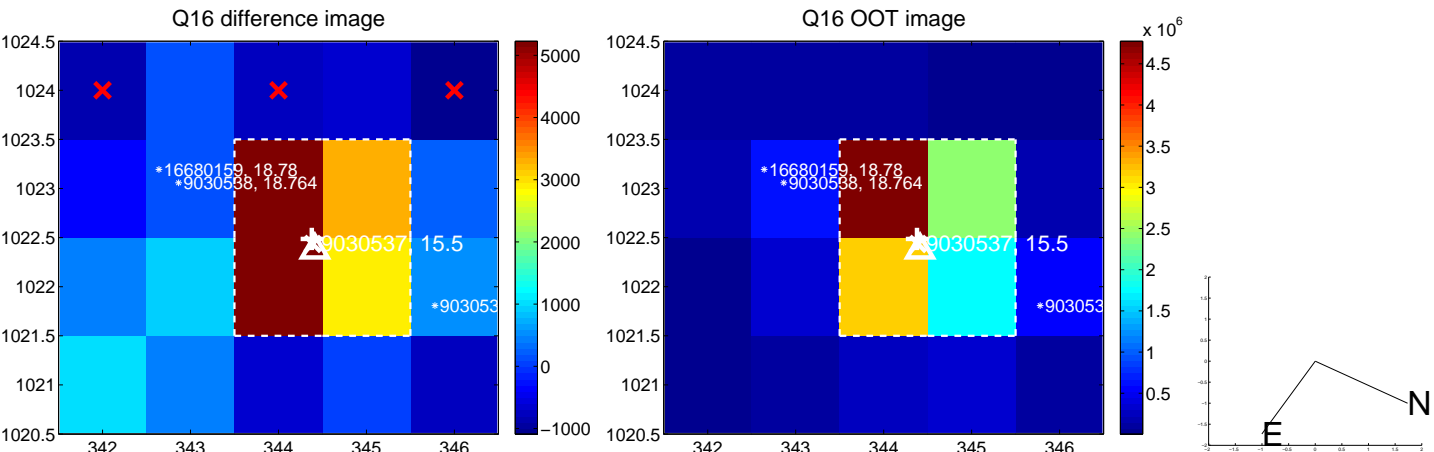
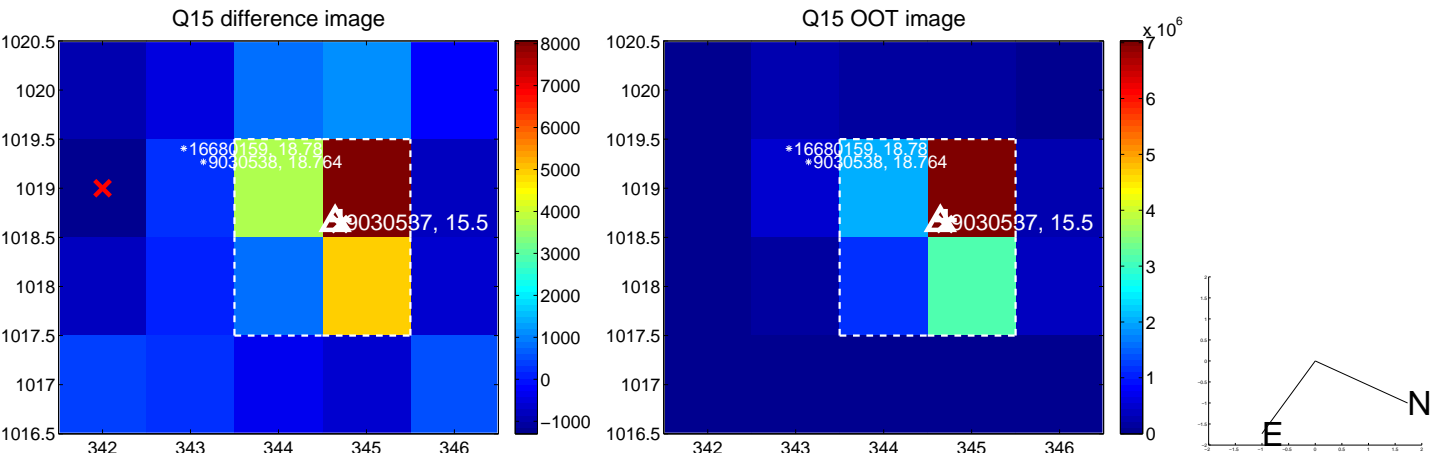
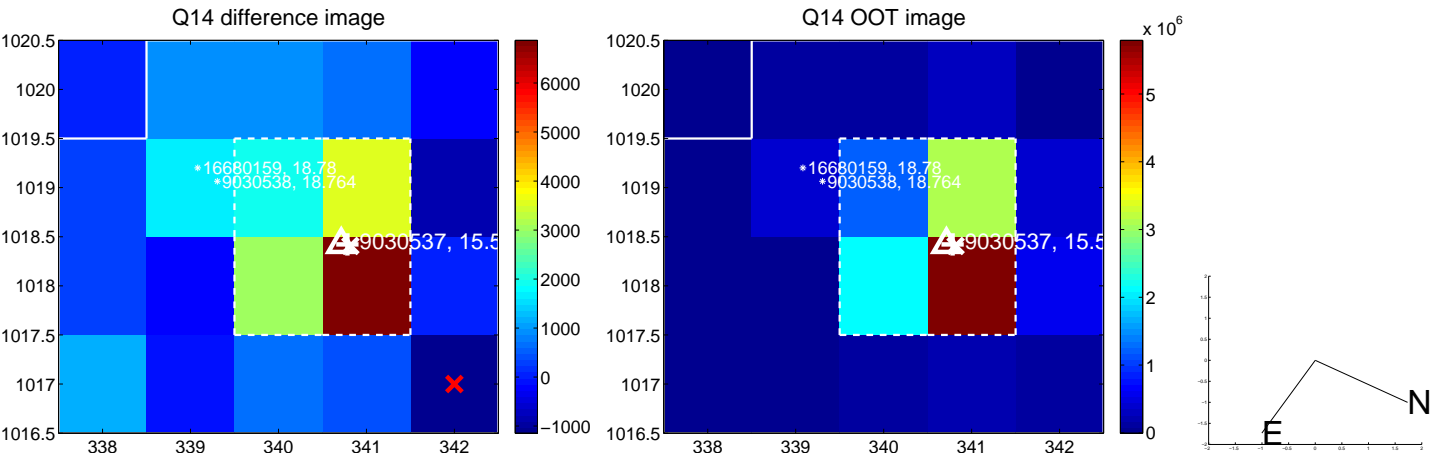
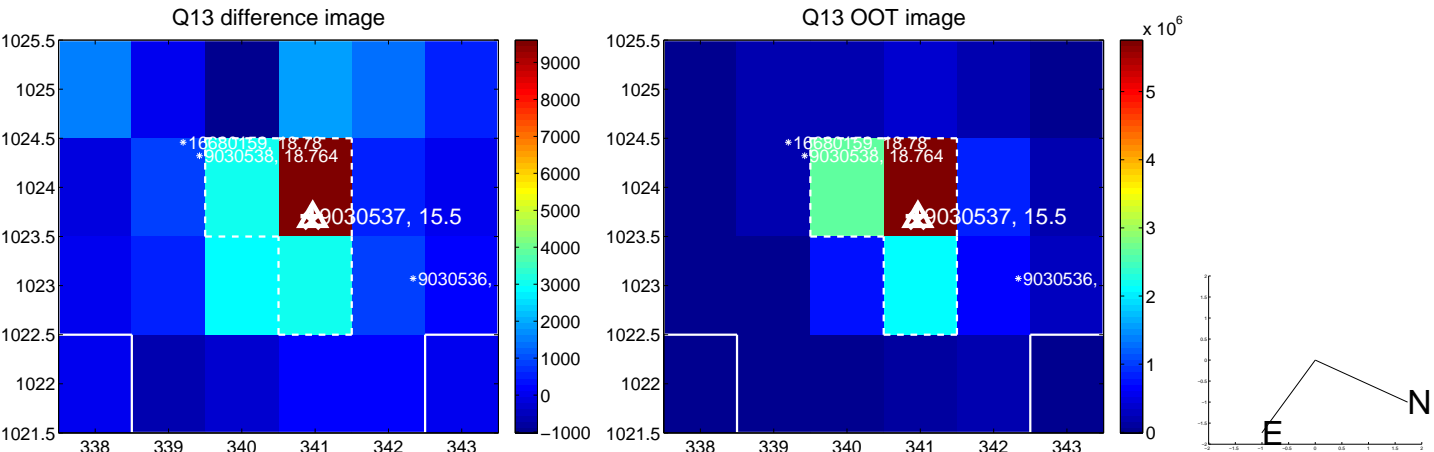
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



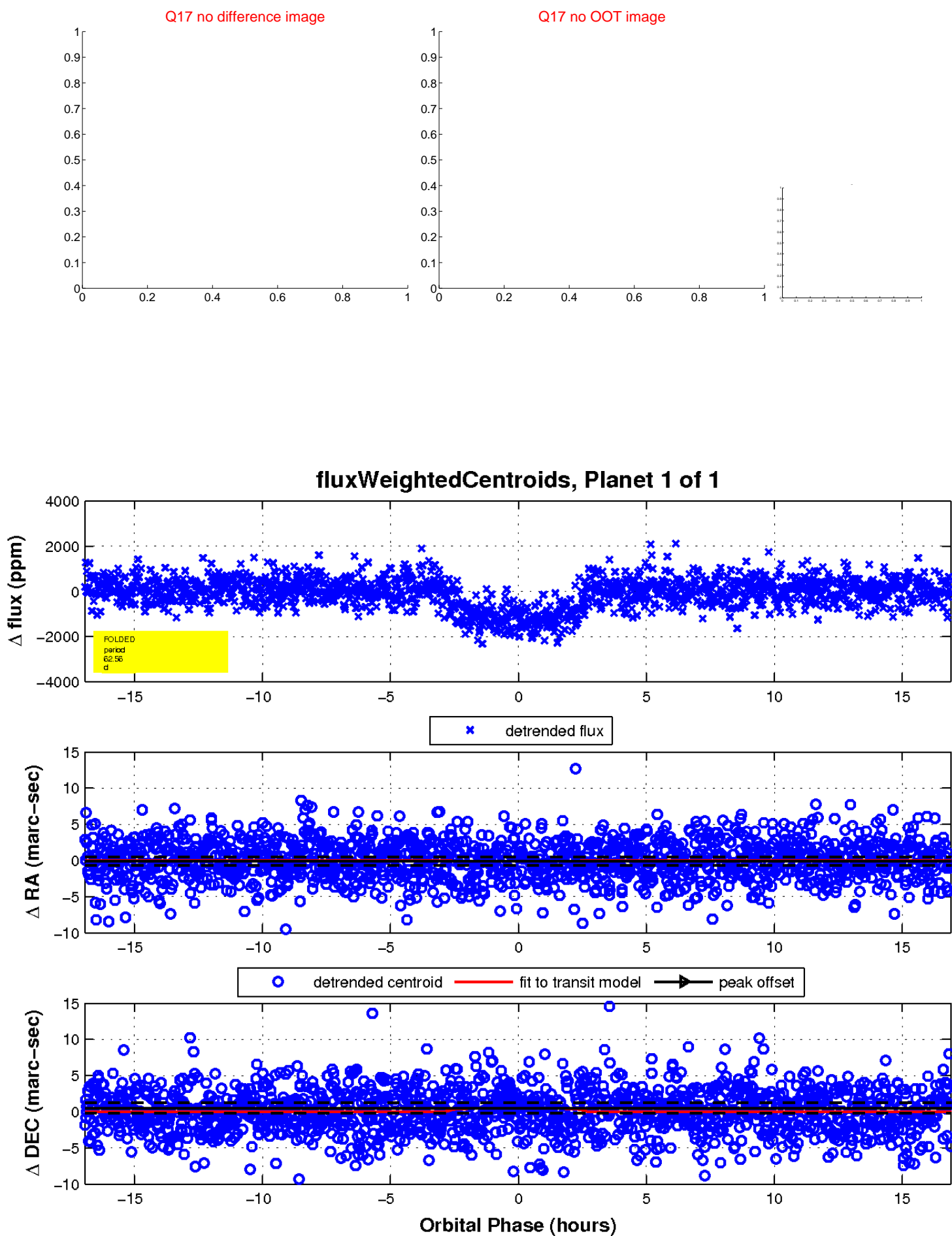
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

