

# KIC 011187837

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011187837-01	OBS	0252.01	17.604623	135.288354	2276.8	3.761	72.0	72.0	0.52	3744	2.71	4.08

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011187837-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

**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.

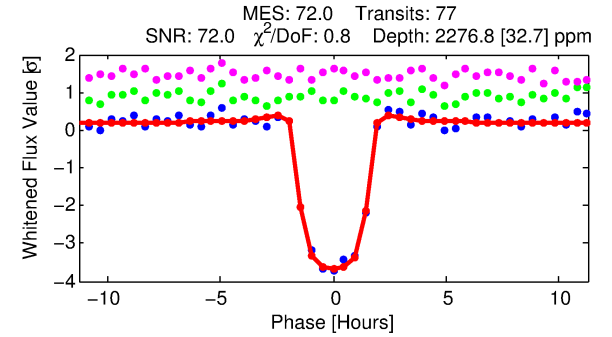
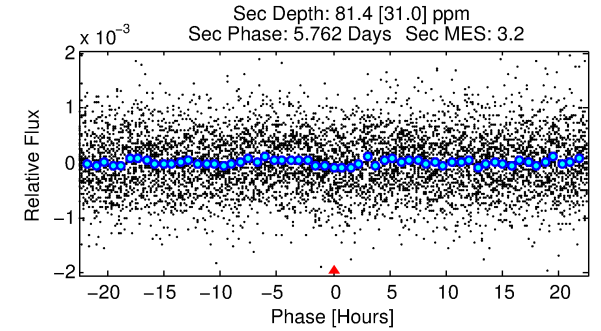
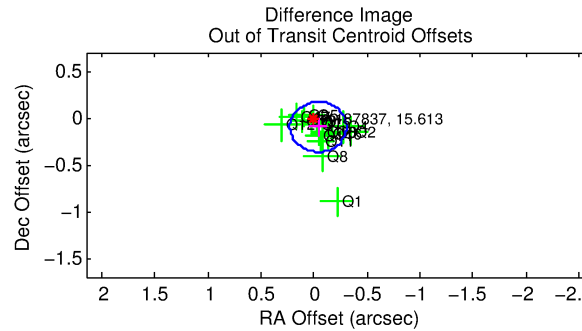
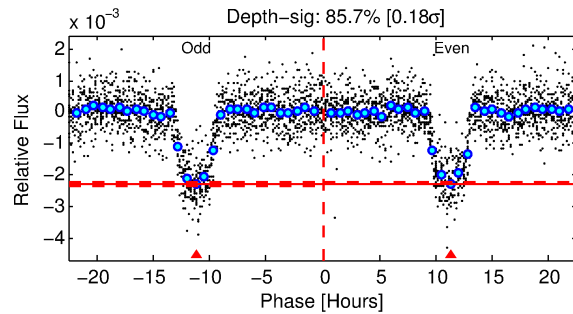
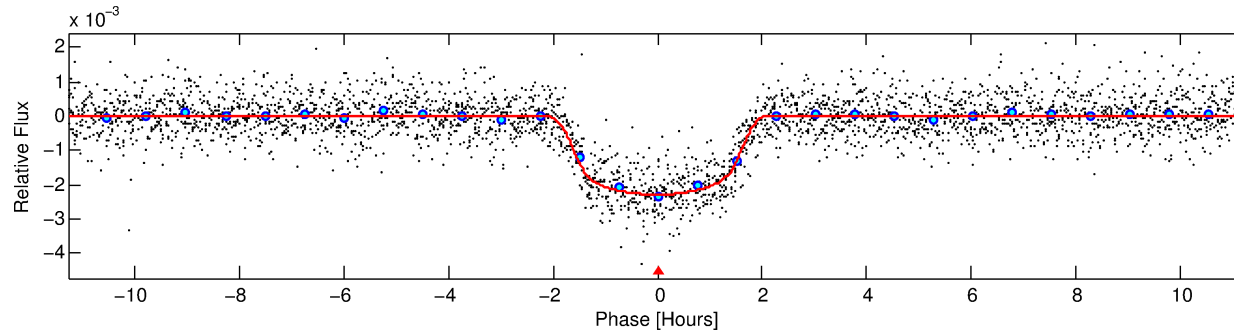
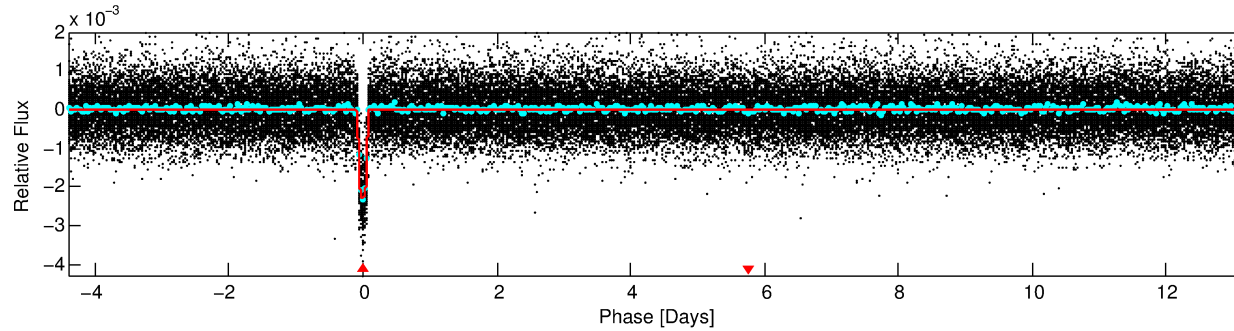
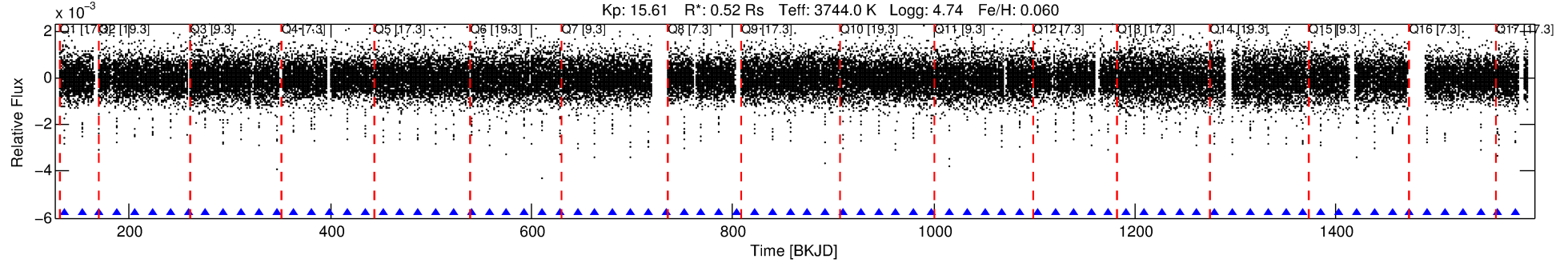
## Ephemeris Match Information For 011187837-01

No Significant Match Found

# DV One-Page Summary

KIC: 11187837 Candidate: 1 of 1 Period: 17.605 d

KOI: K00252.01 Corr: 0.993



## DV Fit Results:

Period = 17.60462 [0.00002] d  
Epoch = 135.2884 [0.0011] BKJD  
Rp/R\* = 0.0481 [0.0021]  
a/R\* = 25.04 [4.21]  
b = 0.78 [0.09]  
Seff = 4.08 [0.52]  
Teq = 362 [12] K  
Rp = 2.71 [0.27] Re  
a = 0.1072 [0.0074] AU  
Ag = 70.03 [28.11] [2.46 $\sigma$ ]  
Teffp = 1621 [162] K [7.73 $\sigma$ ]

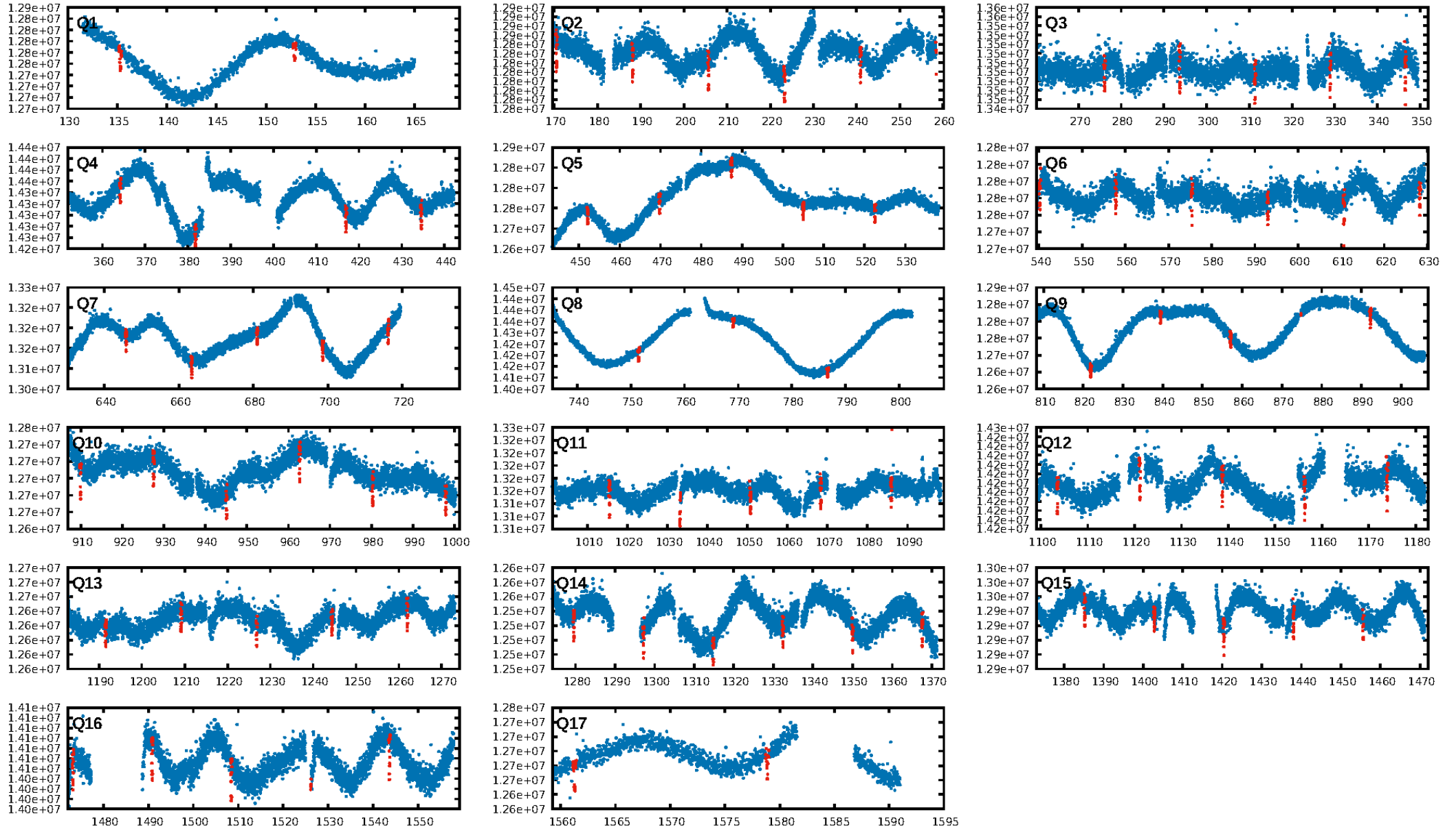
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 97.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [73/73]  
GhostDiagnostic-chr: 46.96  
Centroid-sig: 0.0%  
Centroid-so: 0.288 arcsec [1.85 $\sigma$ ]  
OotOffset-rm: 0.105 arcsec [1.17 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.428 arcsec [4.92 $\sigma$ ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

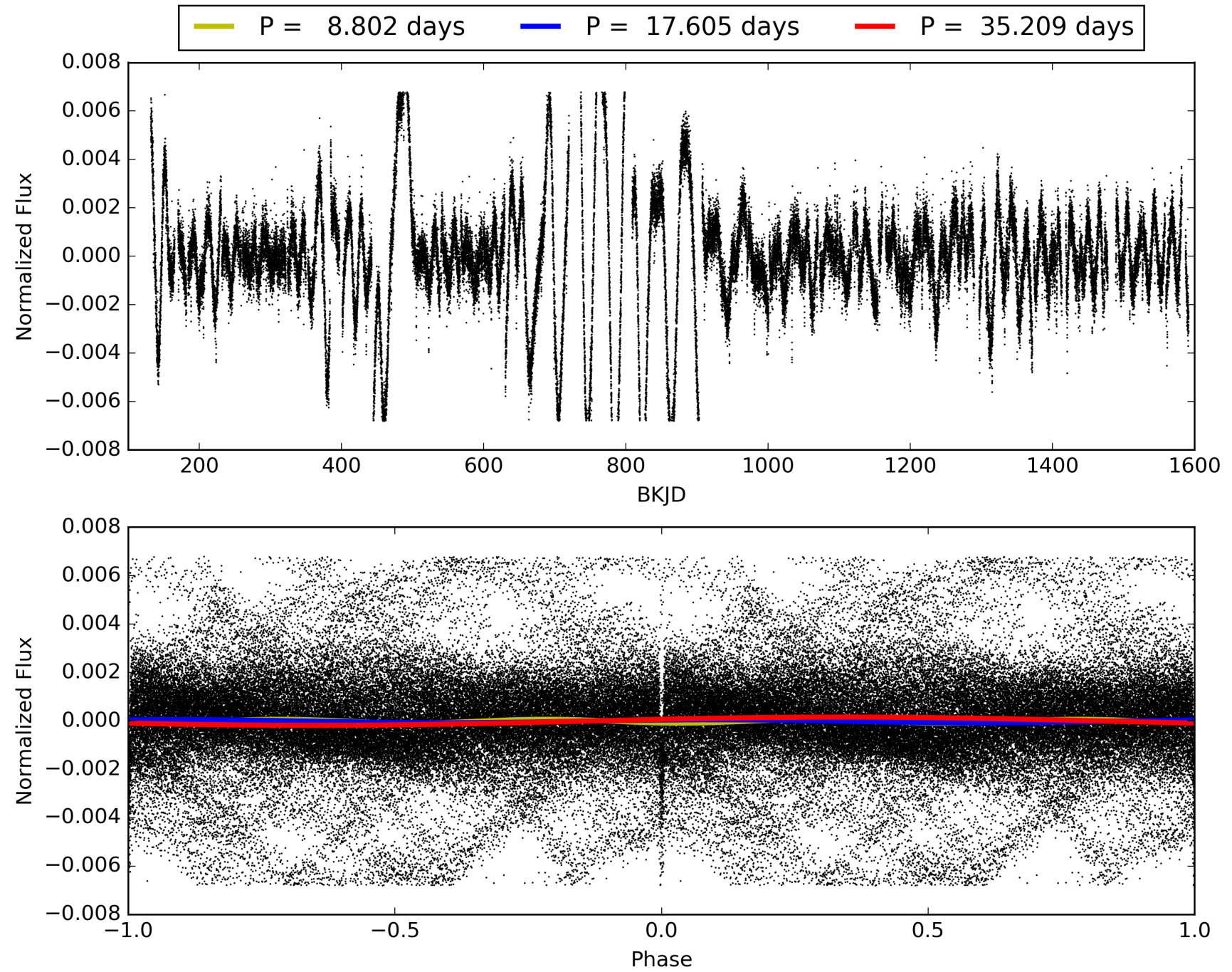
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:12:52 Z

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

# TCE 011187837-01, PDC Light Curves

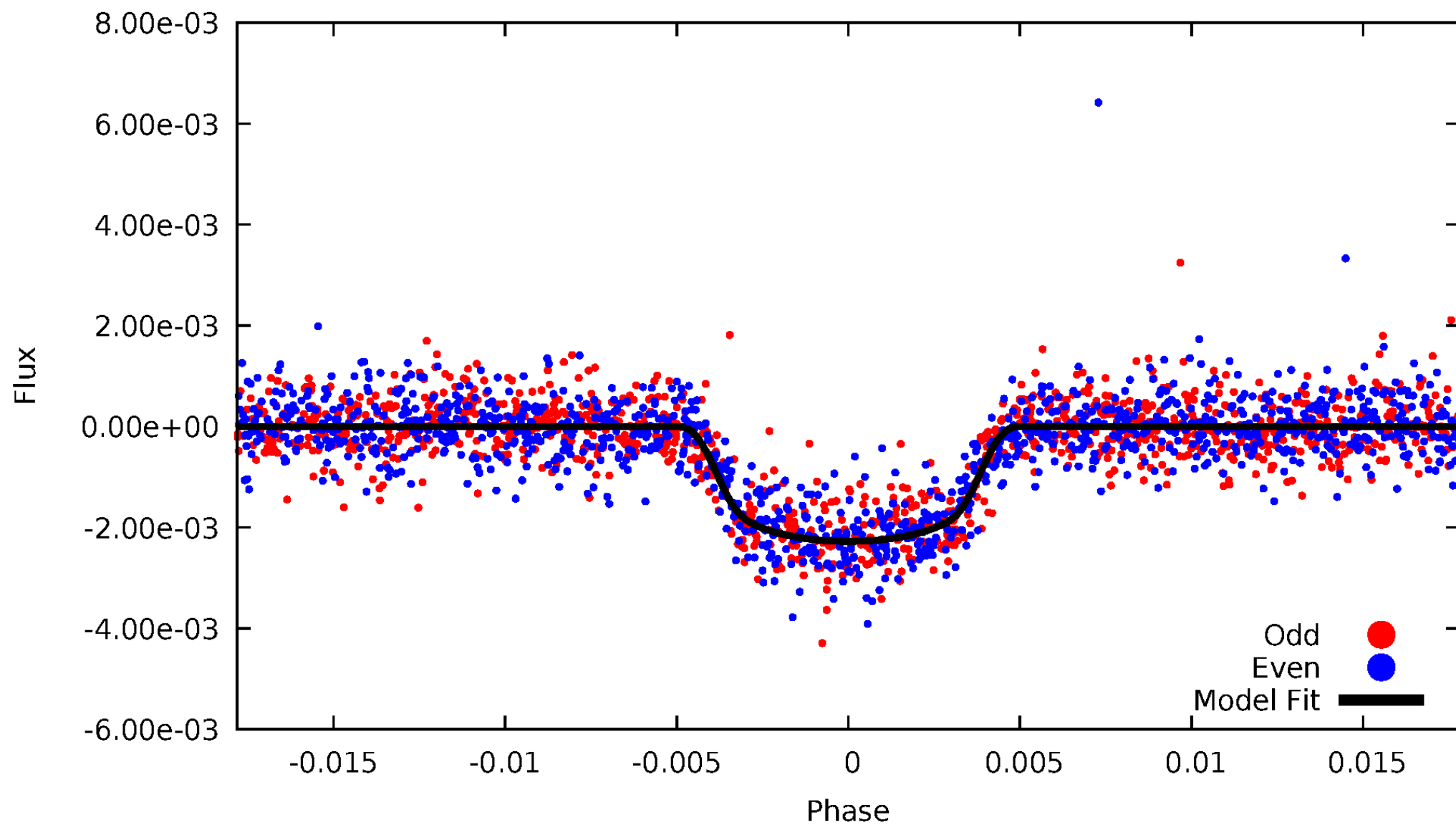


# TCE 011187837-01



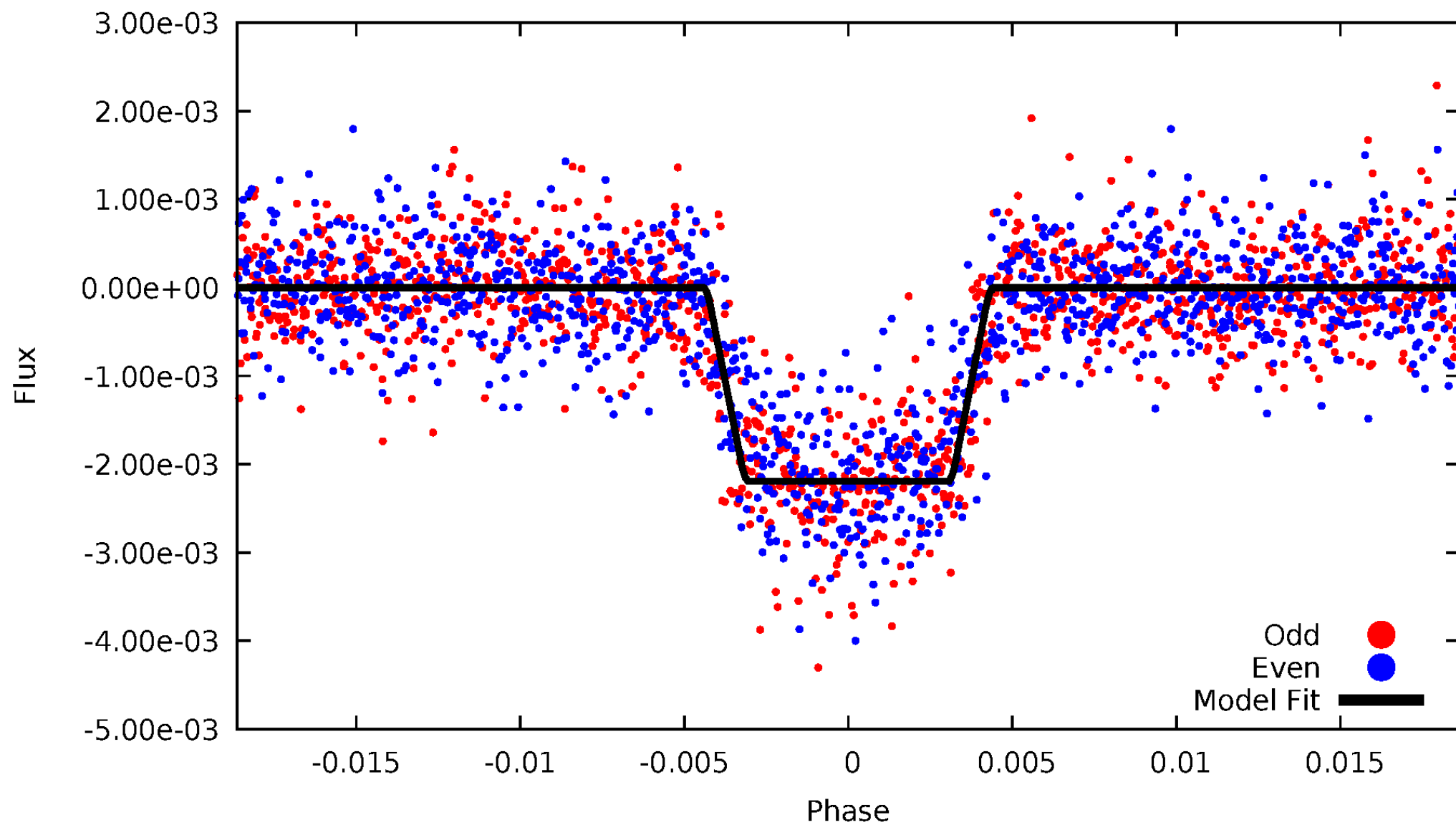
# DV Odd/Even

TCE 011187837-01



# ALT Odd/Even

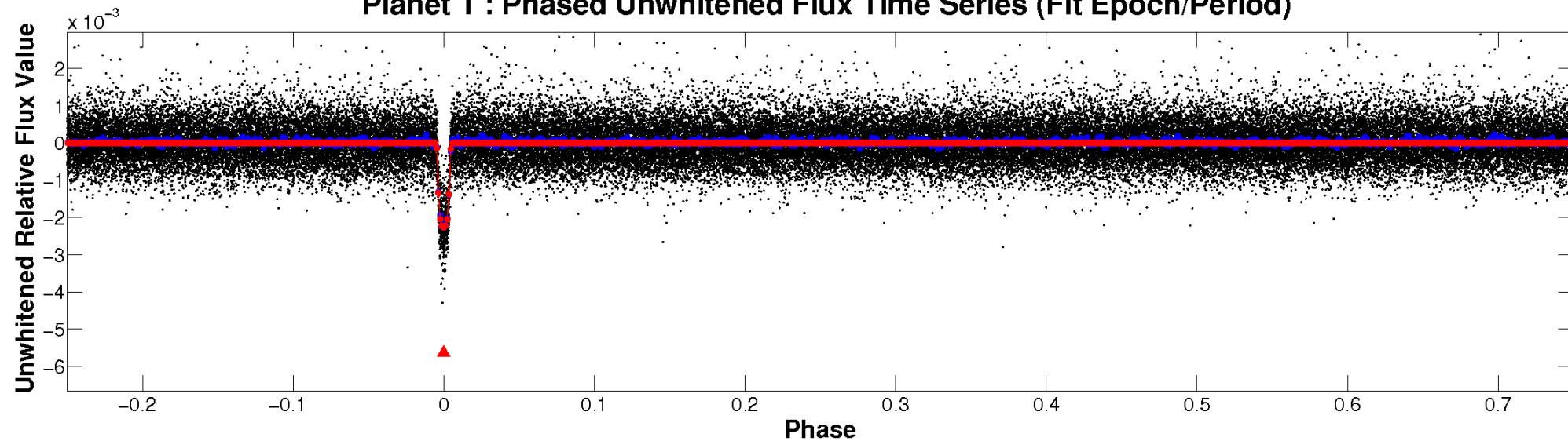
TCE 011187837-01



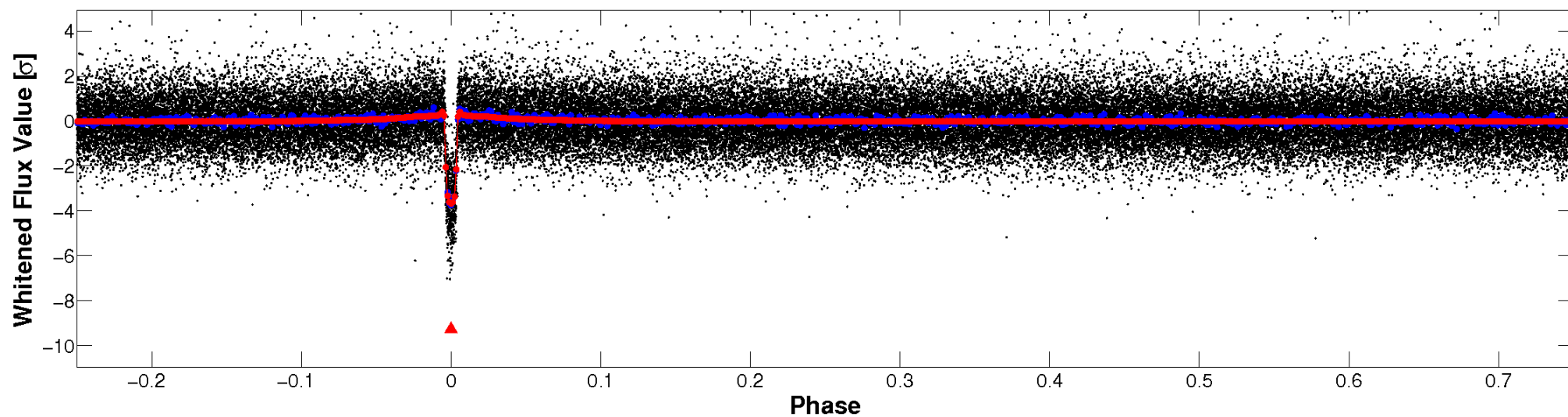


# Non-Whitened Vs. Whitened Light Curve

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

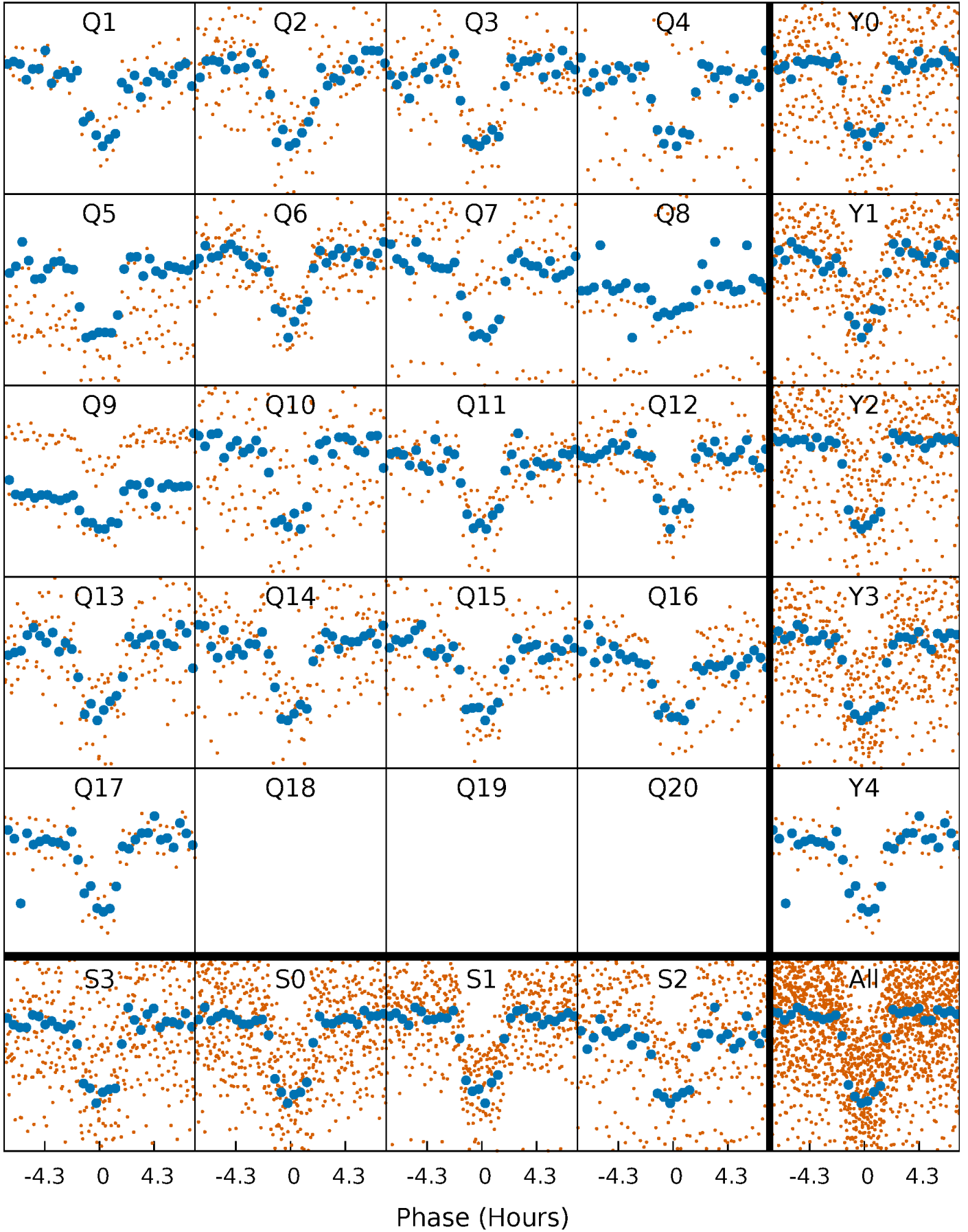


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

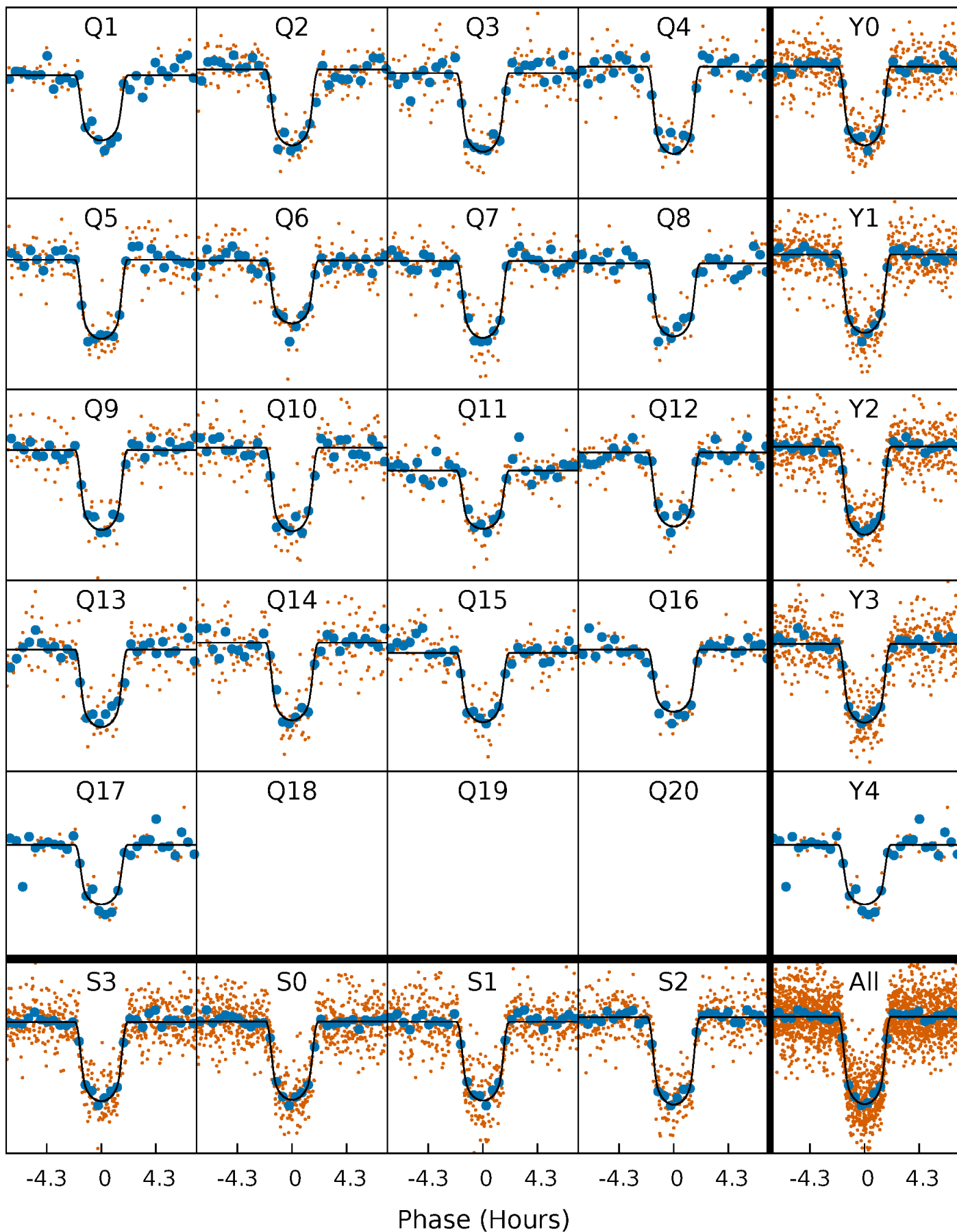
TCE 011187837-01 P= 17.604623 Days  $T_0=135.288354$  (BKJD)





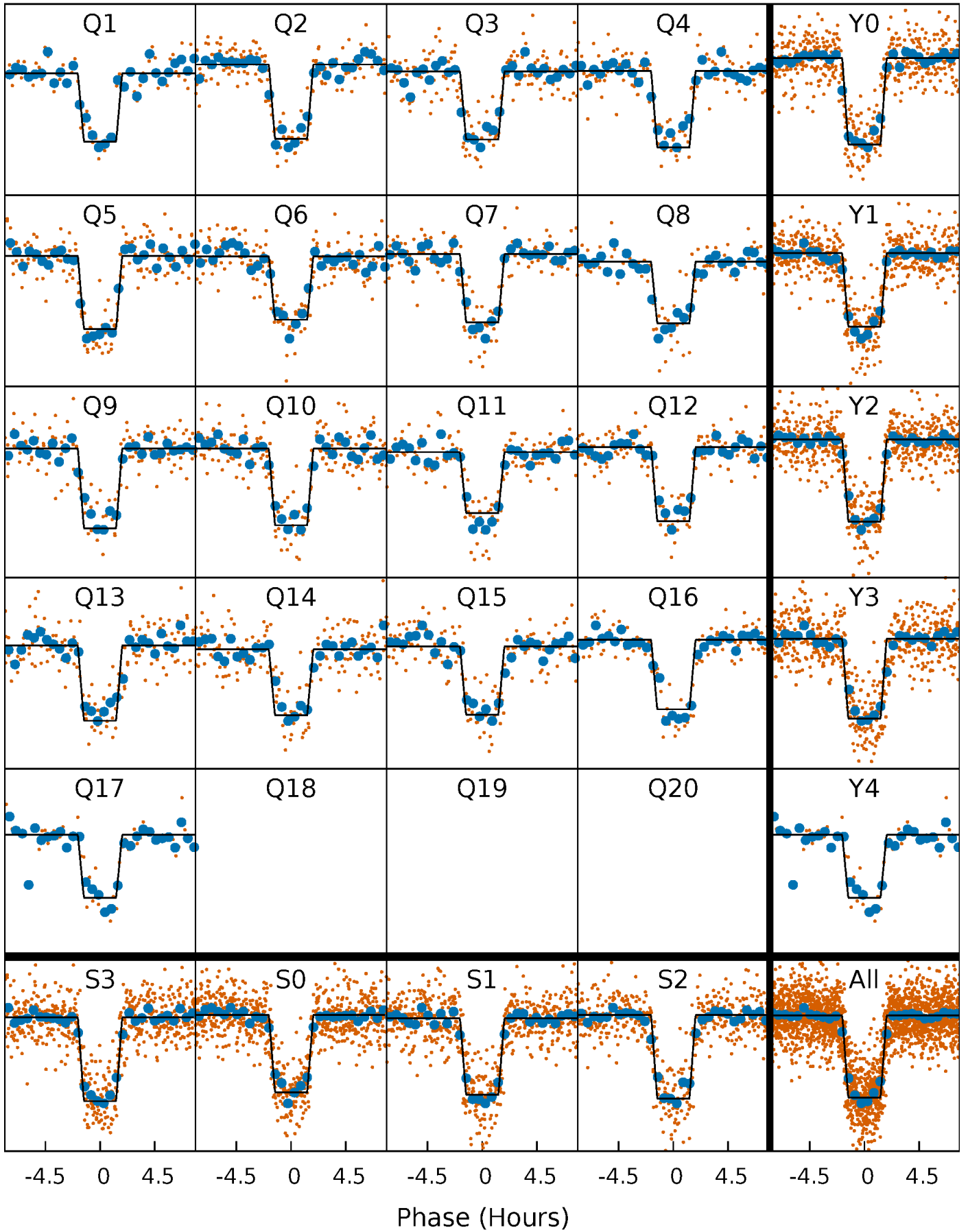
# DV Quarter-Phased Transit Curves

TCE 011187837-01 P= 17.604623 Days  $T_0=135.288354$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

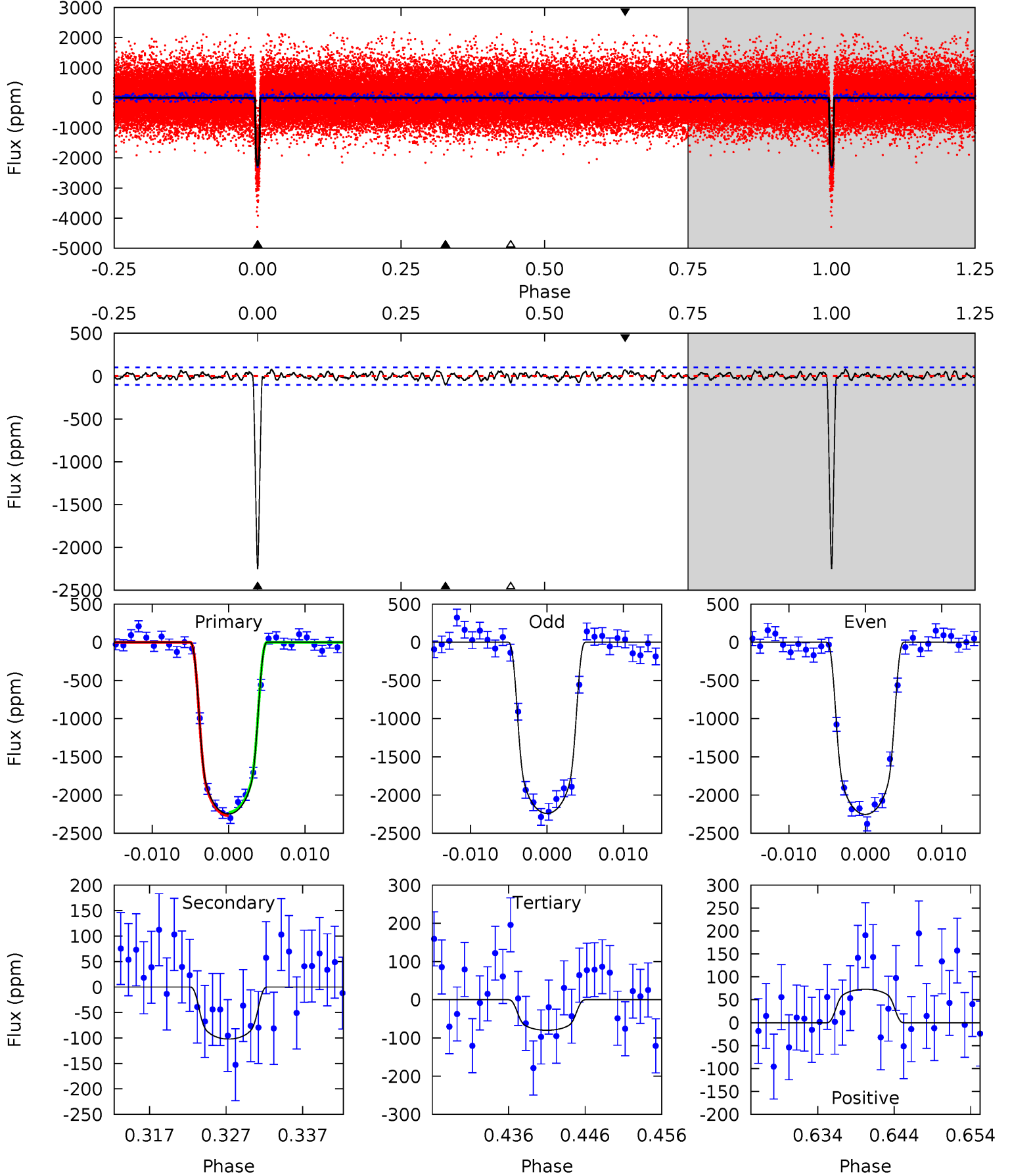
TCE 011187837-01 P= 17.604405 Days  $T_0=135.296974$  (BKJD)



# DV Model-Shift Uniqueness Test

011187837-01,  $P = 17.604623$  Days,  $E = 117.683731$  Days

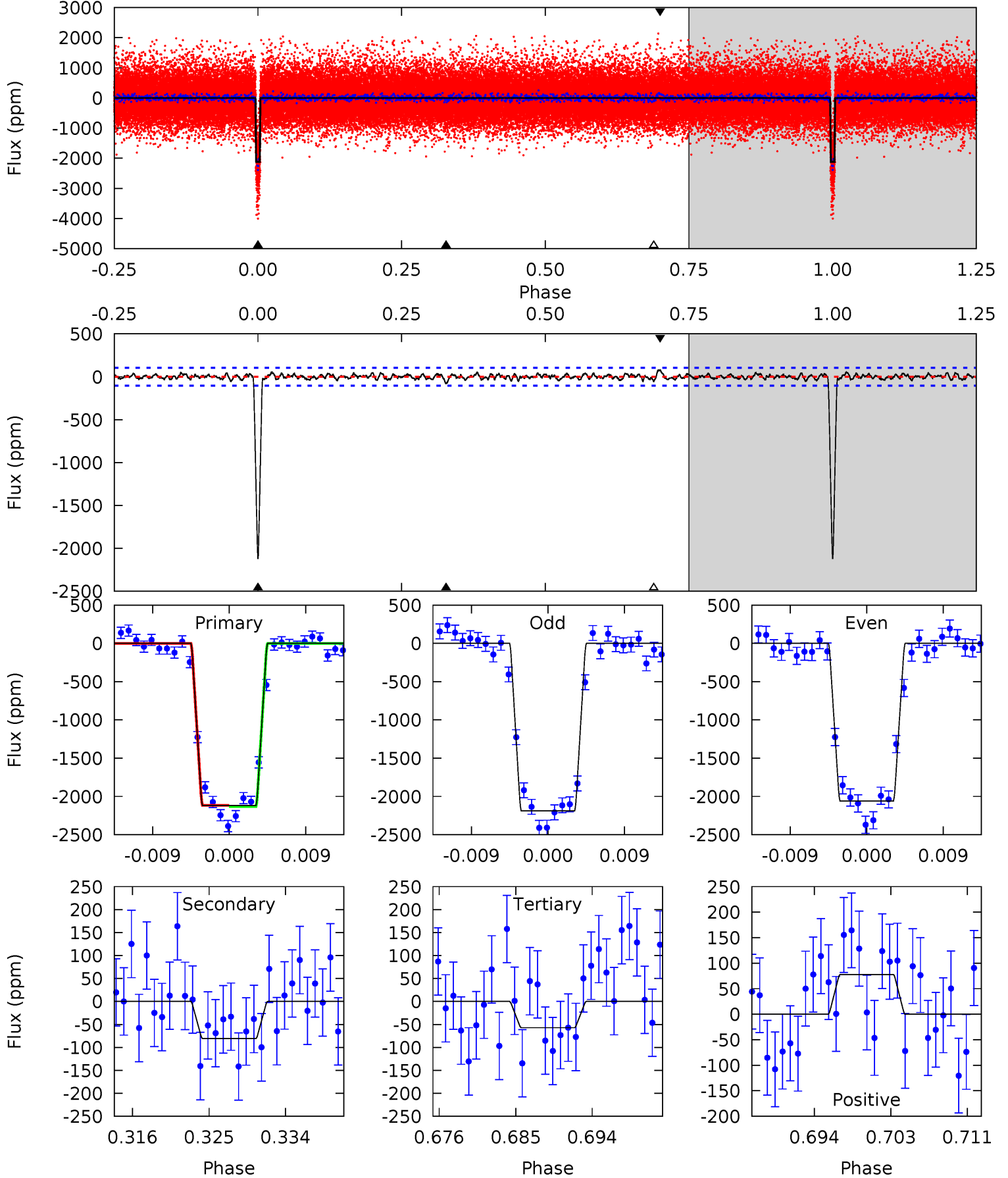
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
109.4	4.98	3.89	3.55	5.03	2.58	1.43	105.5	105.9	1.09	1.43	0.32	0.99	0.03	1.04



# Alt Model-Shift Uniqueness Test

011187837-01,  $P = 17.604405$  Days,  $E = 117.692569$  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
102.5	3.90	2.75	3.75	5.05	2.62	1.04	99.7	98.7	1.14	0.15	3.13	1.03	0.04	0.32



### Stellar Parameters For KIC 011187837

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3744^{+75}_{-83}$	$4.737^{+0.046}_{-0.028}$	$0.060^{+0.150}_{-0.150}$	$0.516^{+0.030}_{-0.046}$	$0.529^{+0.035}_{-0.043}$	$5.431^{+1.152}_{-0.576}$
	+2%/-2%	+1%/-1%	+250%/-250%	+6%/-9%	+7%/-8%	+21%/-11%
Source	SPE70	SPE60	SPE70	DSEP		

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

### Secondary Eclipse Parameters for KIC 011187837-01 / KOI 0252.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	-102±21	$2.69^{+0.15}_{-0.16}$	$504^{+13}_{-13}$	$2416^{+71}_{-72}$	$91^{+21}_{-20}$
Alt.	-81±21	$2.61^{+0.17}_{-0.15}$	$505^{+13}_{-14}$	$2361^{+80}_{-90}$	$74^{+21}_{-20}$

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

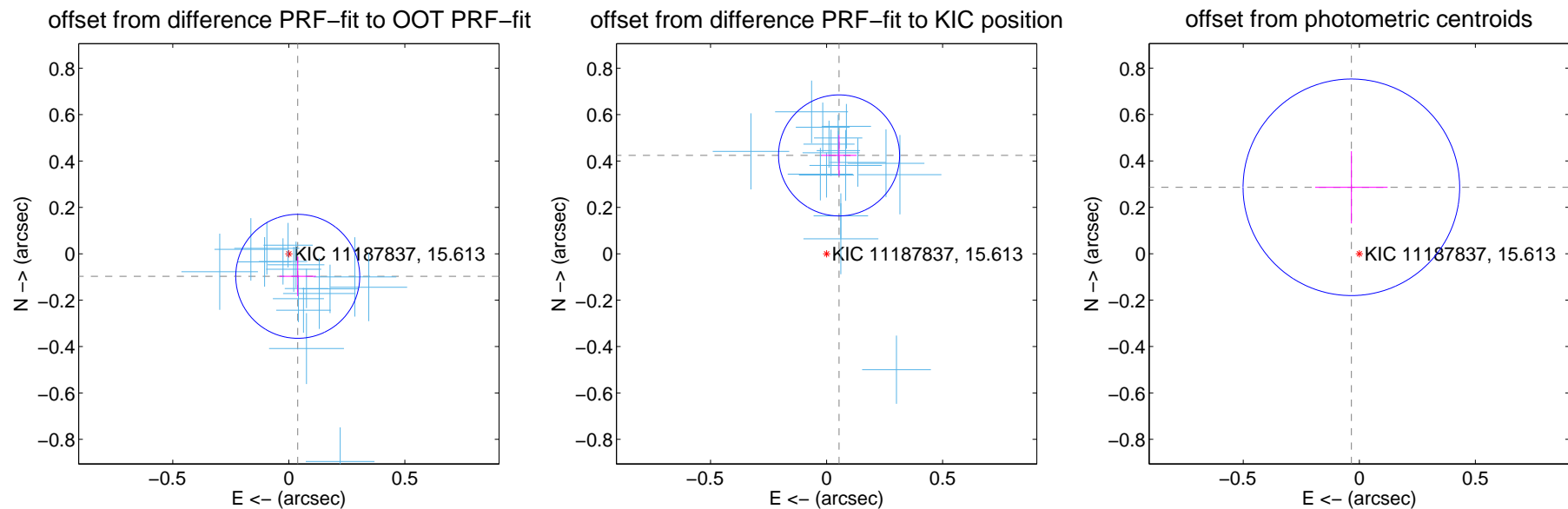
## DV Centroid Data

Supplemental centroid analysis for 011187837-01. Kepler magnitude: 15.61. Transit SNR 72.04

There are 17 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.60 arcsec

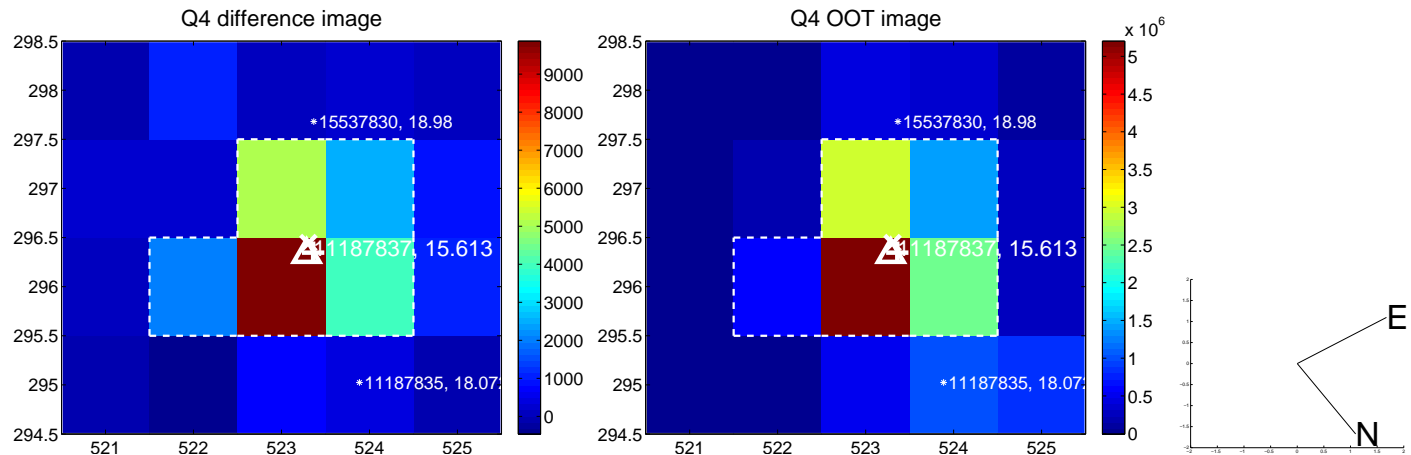
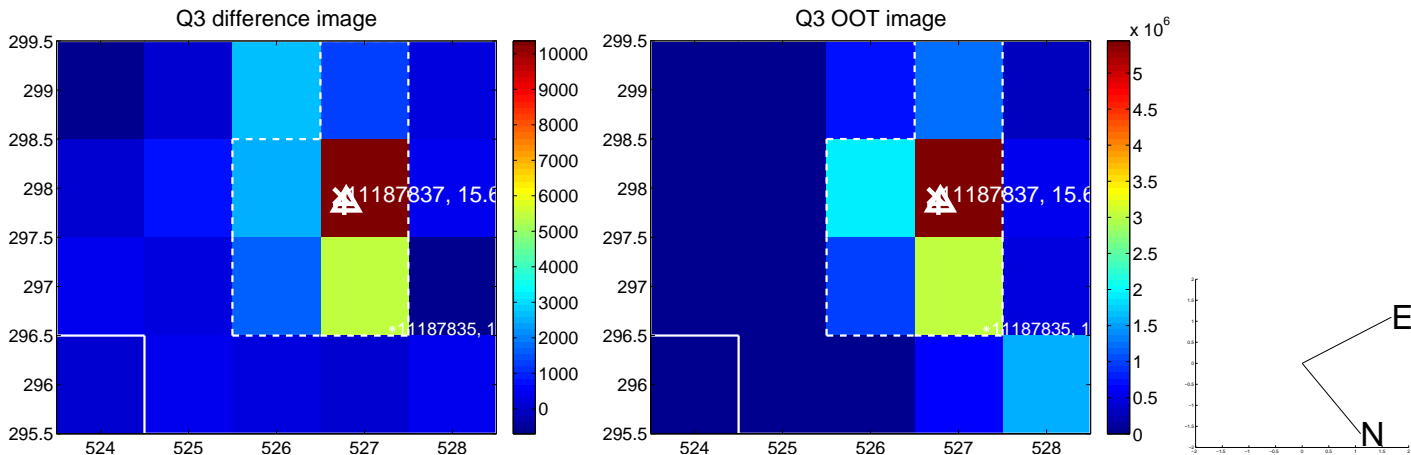
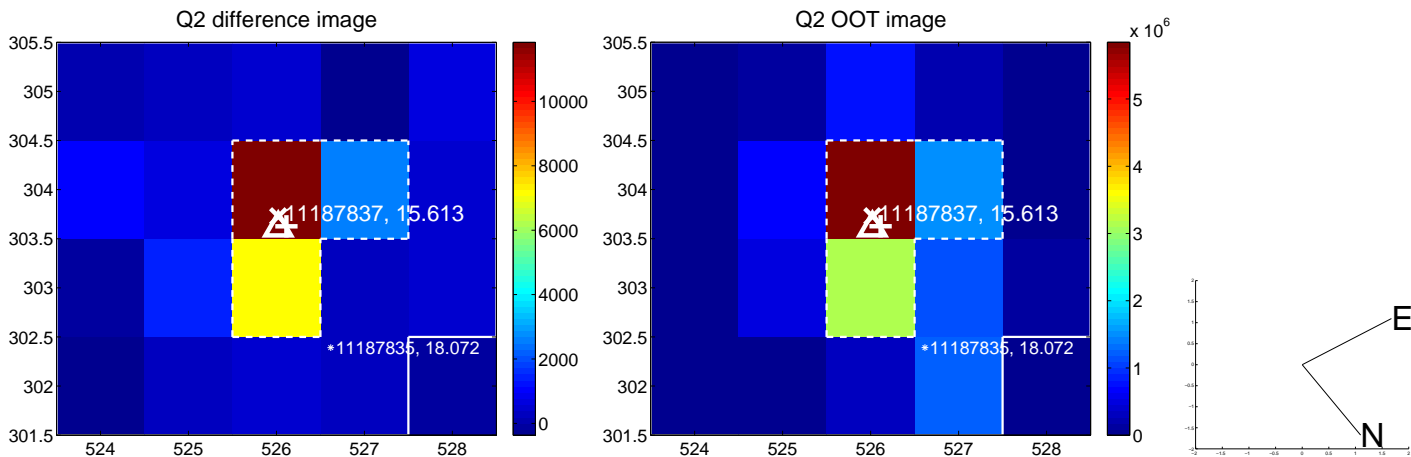
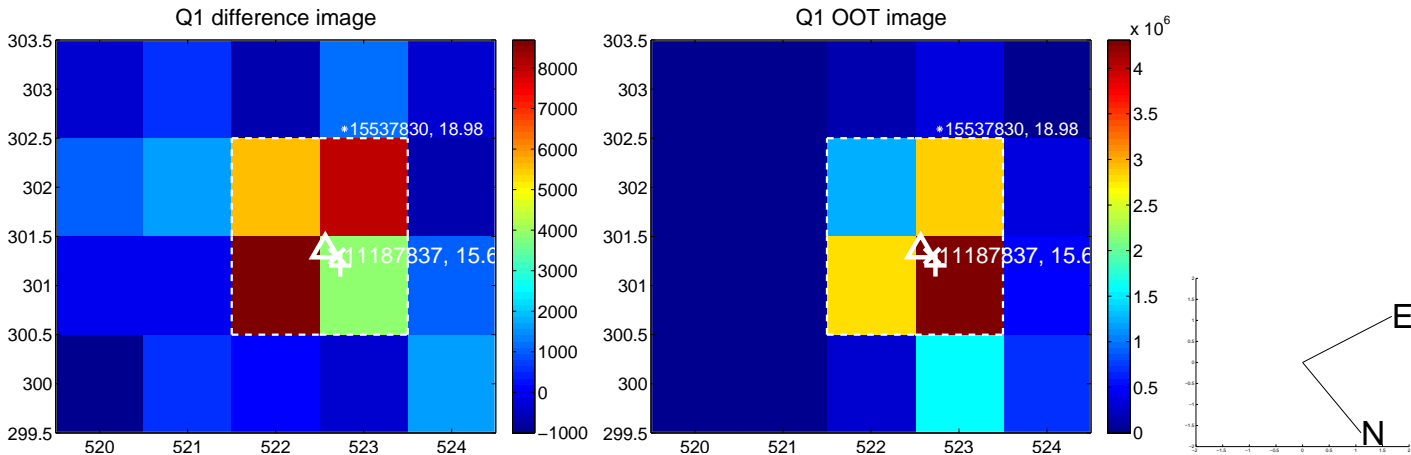
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.105 \pm 0.089$	1.17	$-0.039 \pm 0.079$	$-0.097 \pm 0.085$
PRF-fit source offset from KIC position	<b><math>0.428 \pm 0.087</math></b>	<b>4.92</b>	$-0.054 \pm 0.076$	$0.424 \pm 0.088$
photometric centroid source offset	$0.29 \pm 0.16$	1.85	$0.03 \pm 0.16$	$0.29 \pm 0.16$



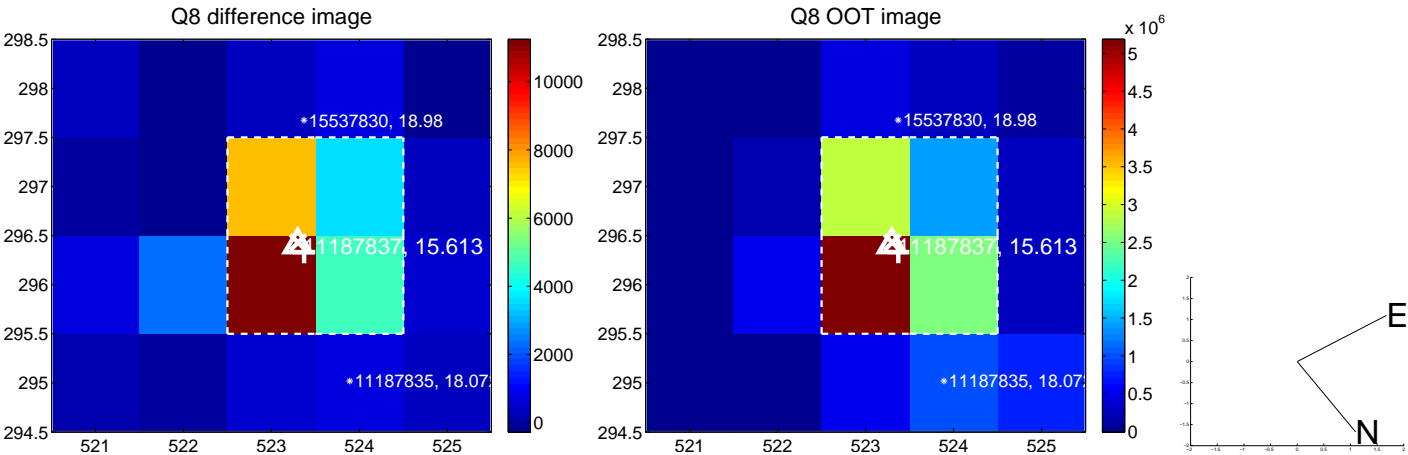
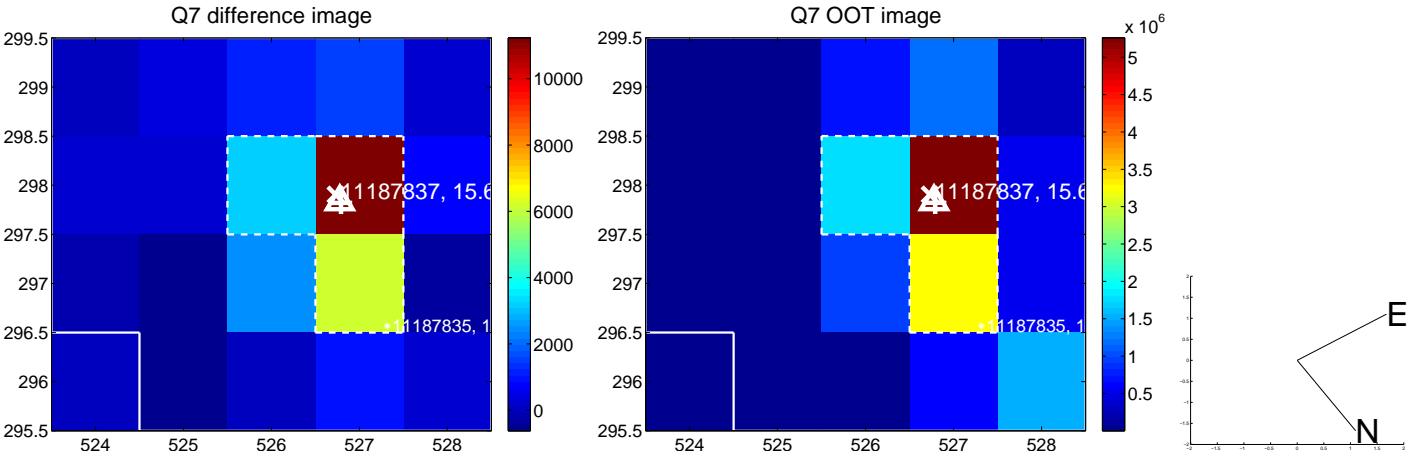
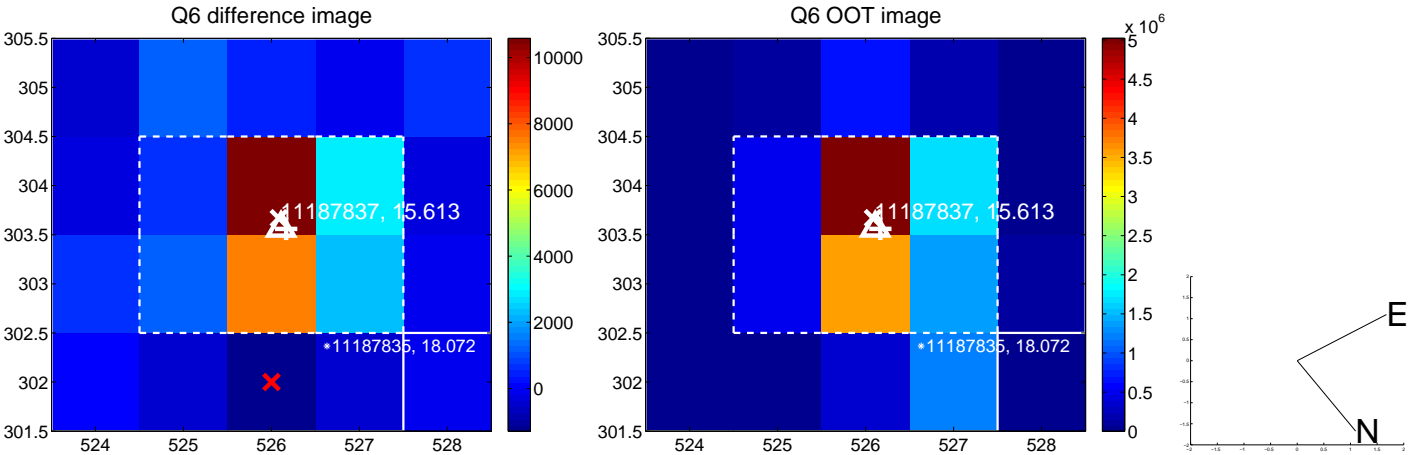
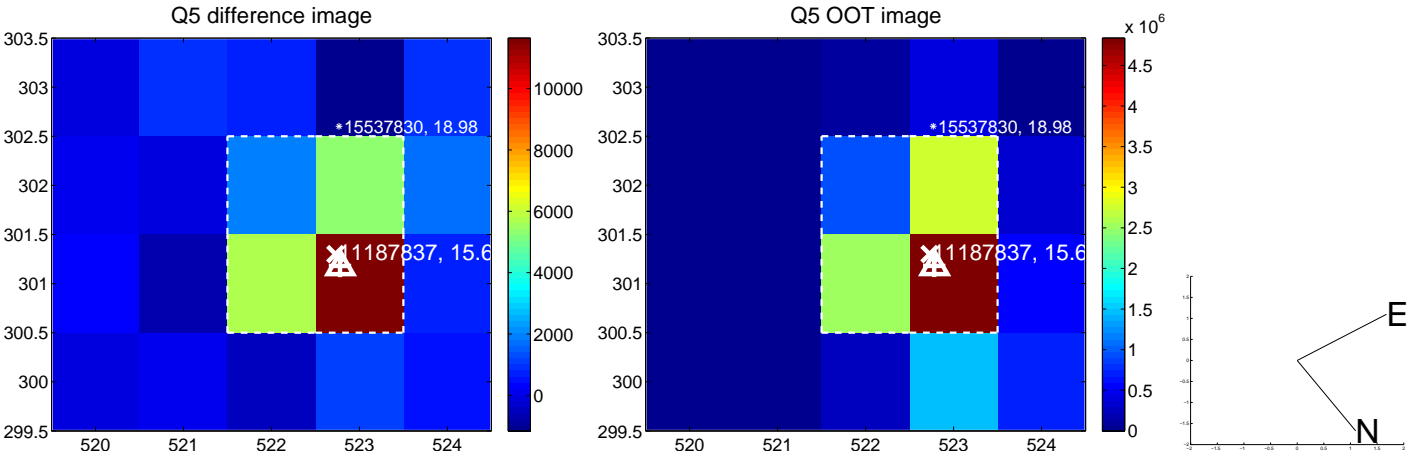
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



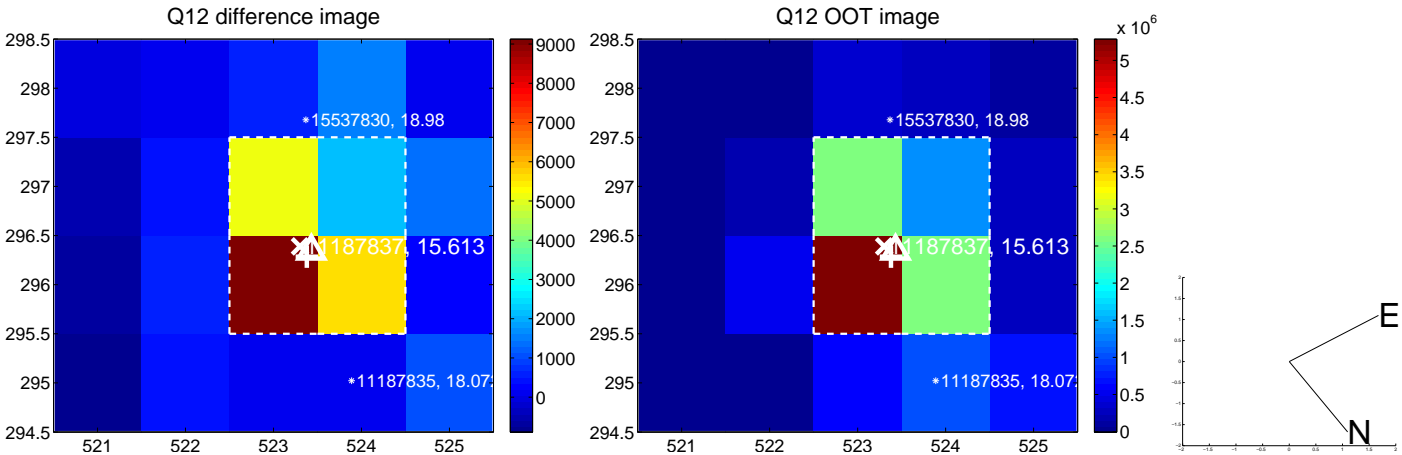
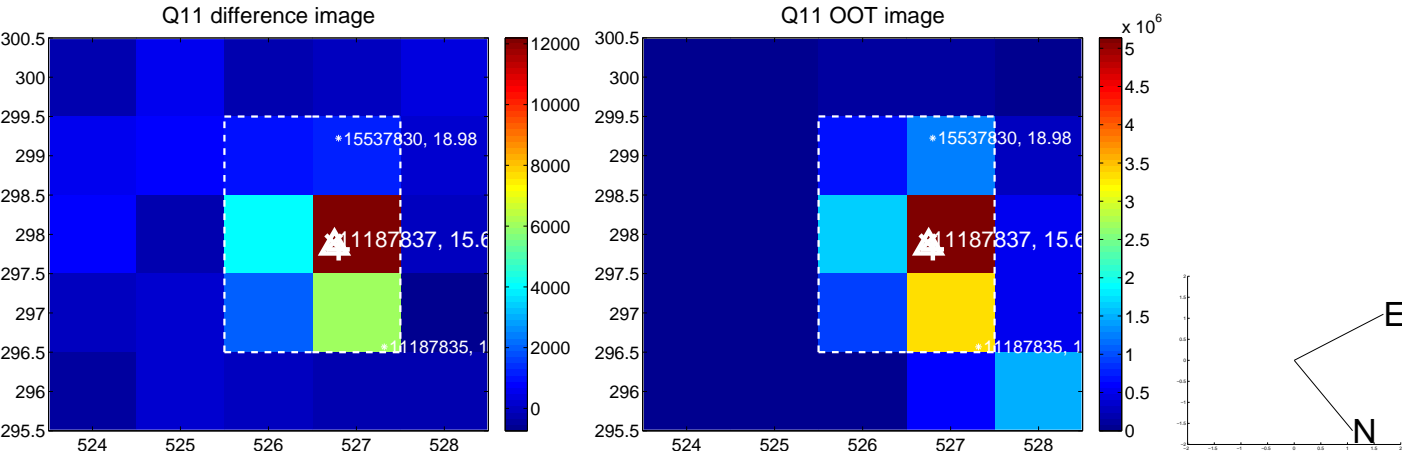
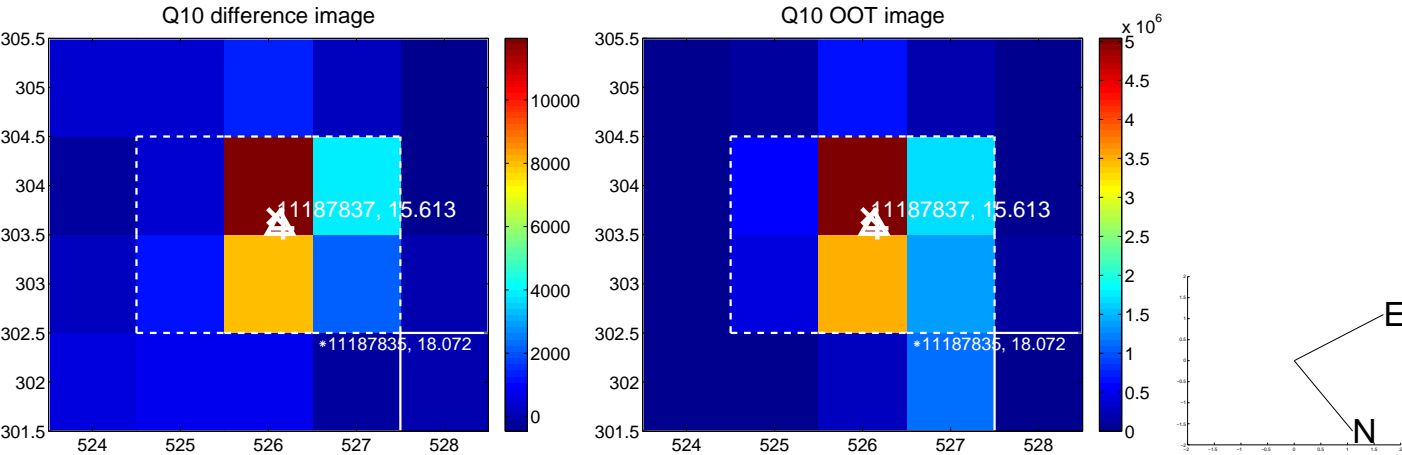
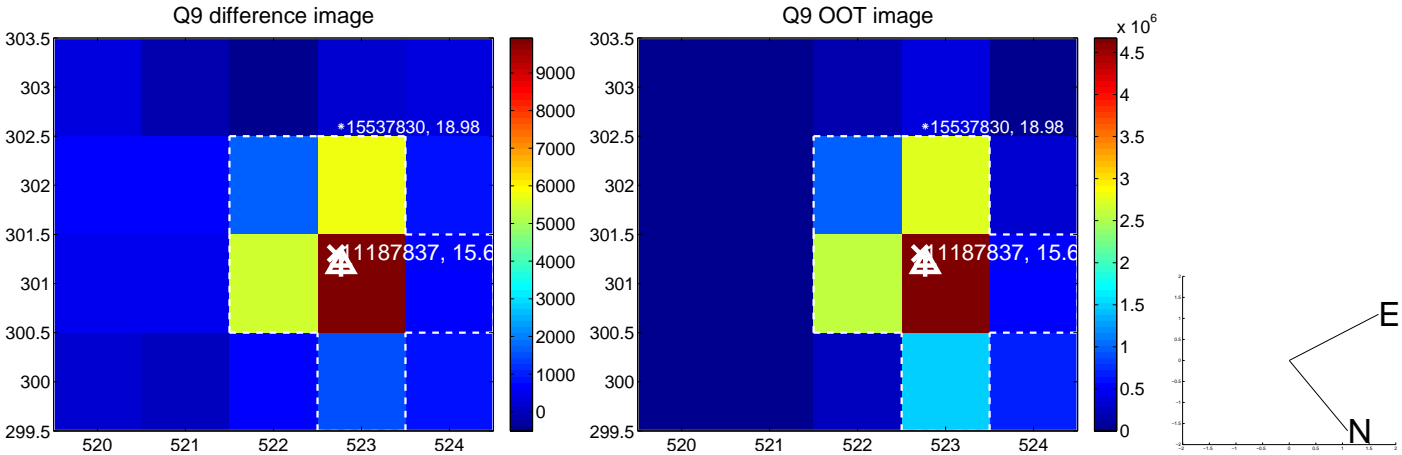
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



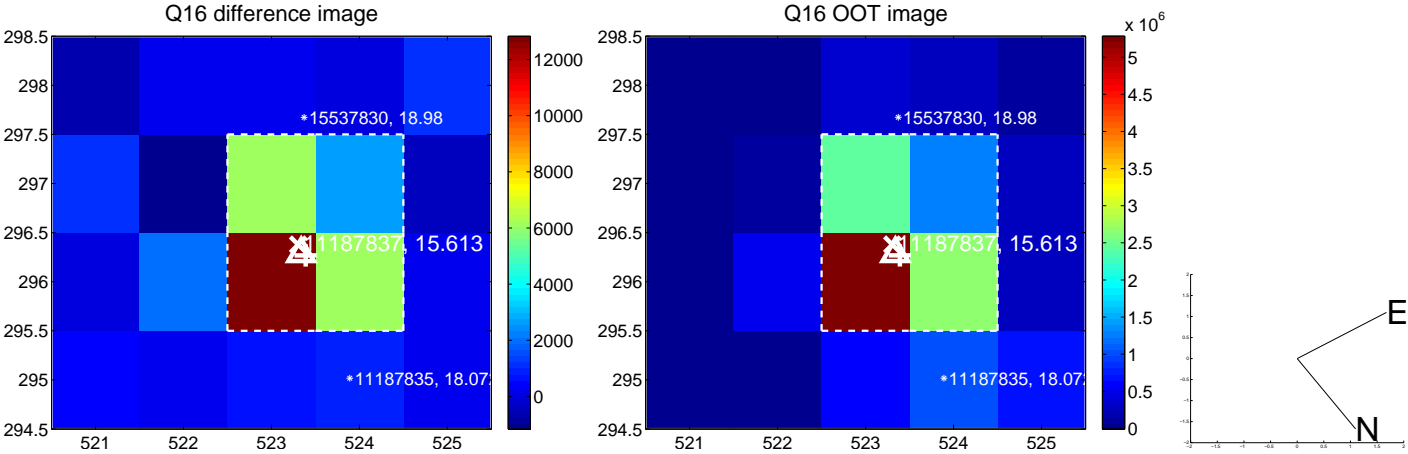
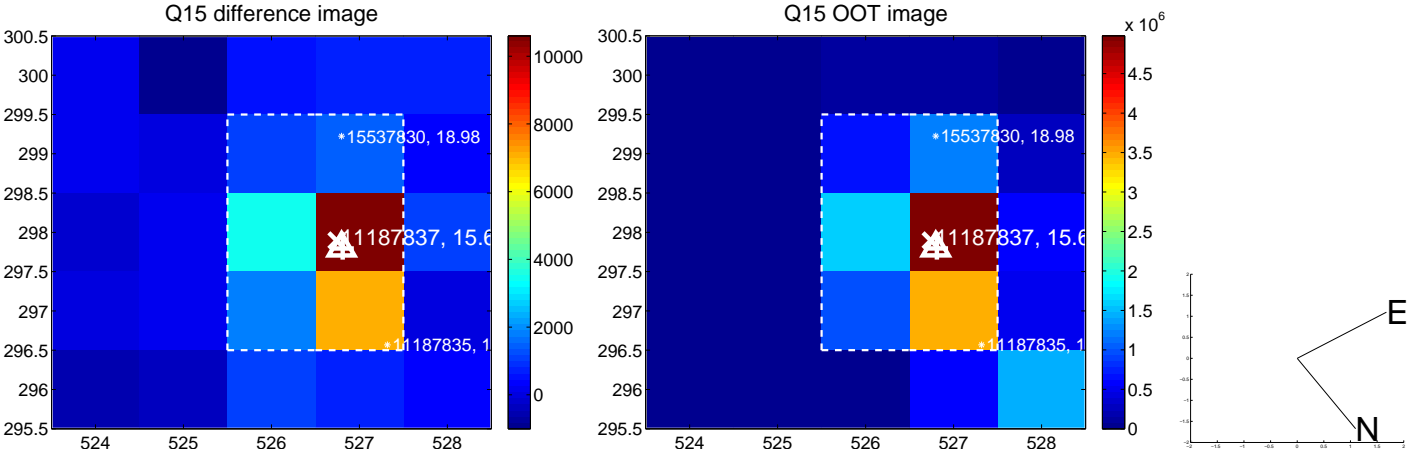
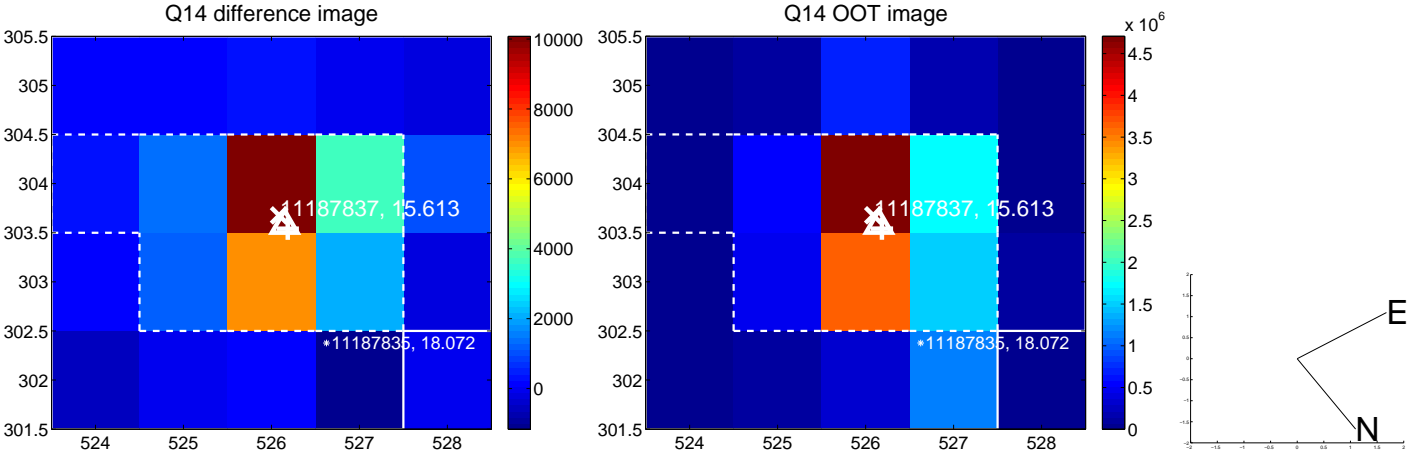
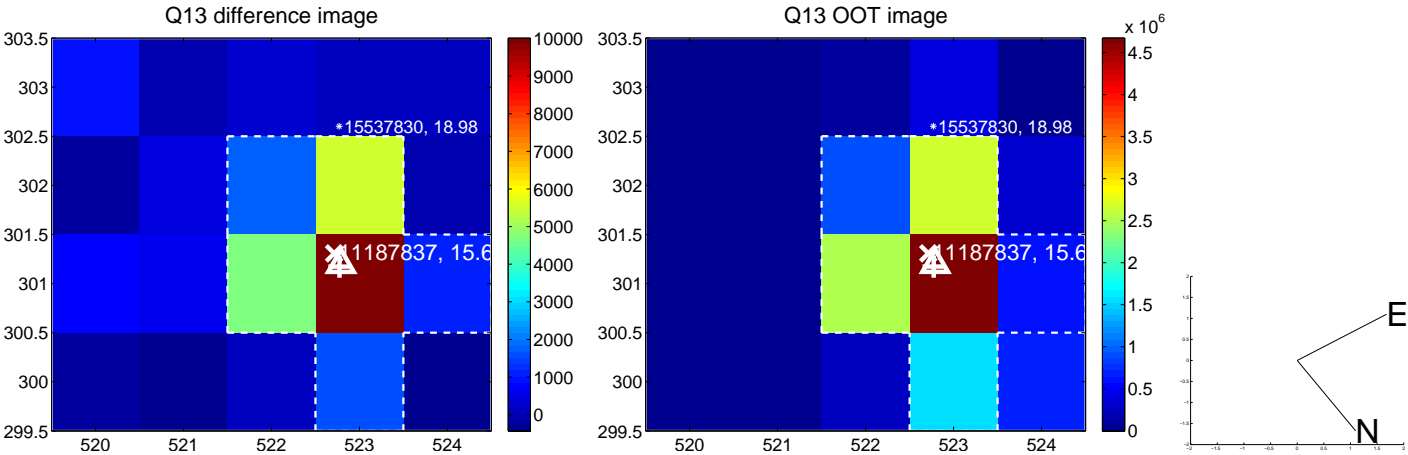
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



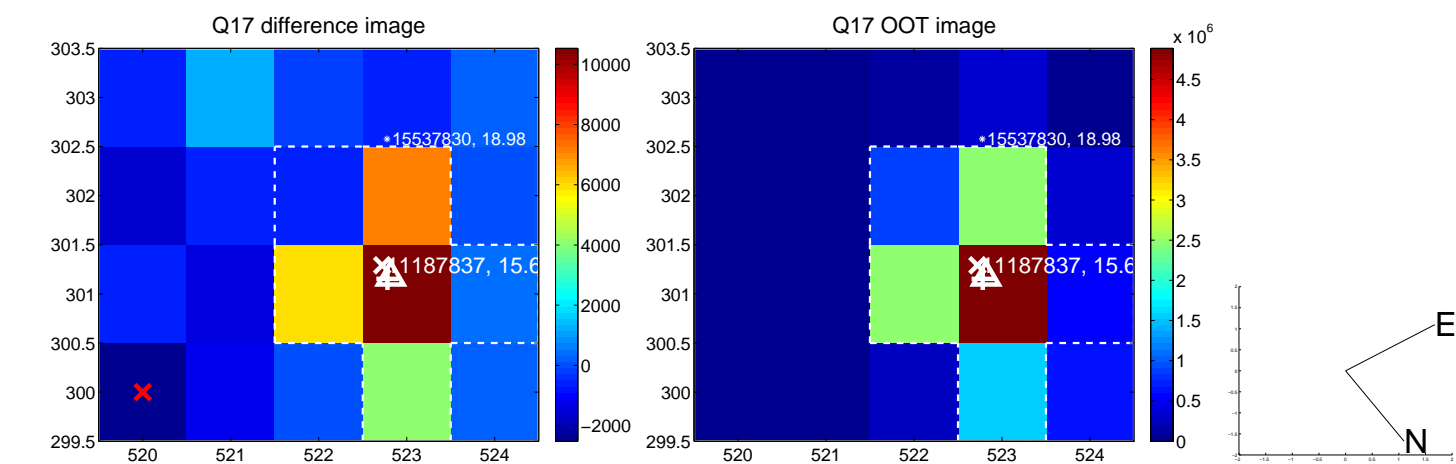
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



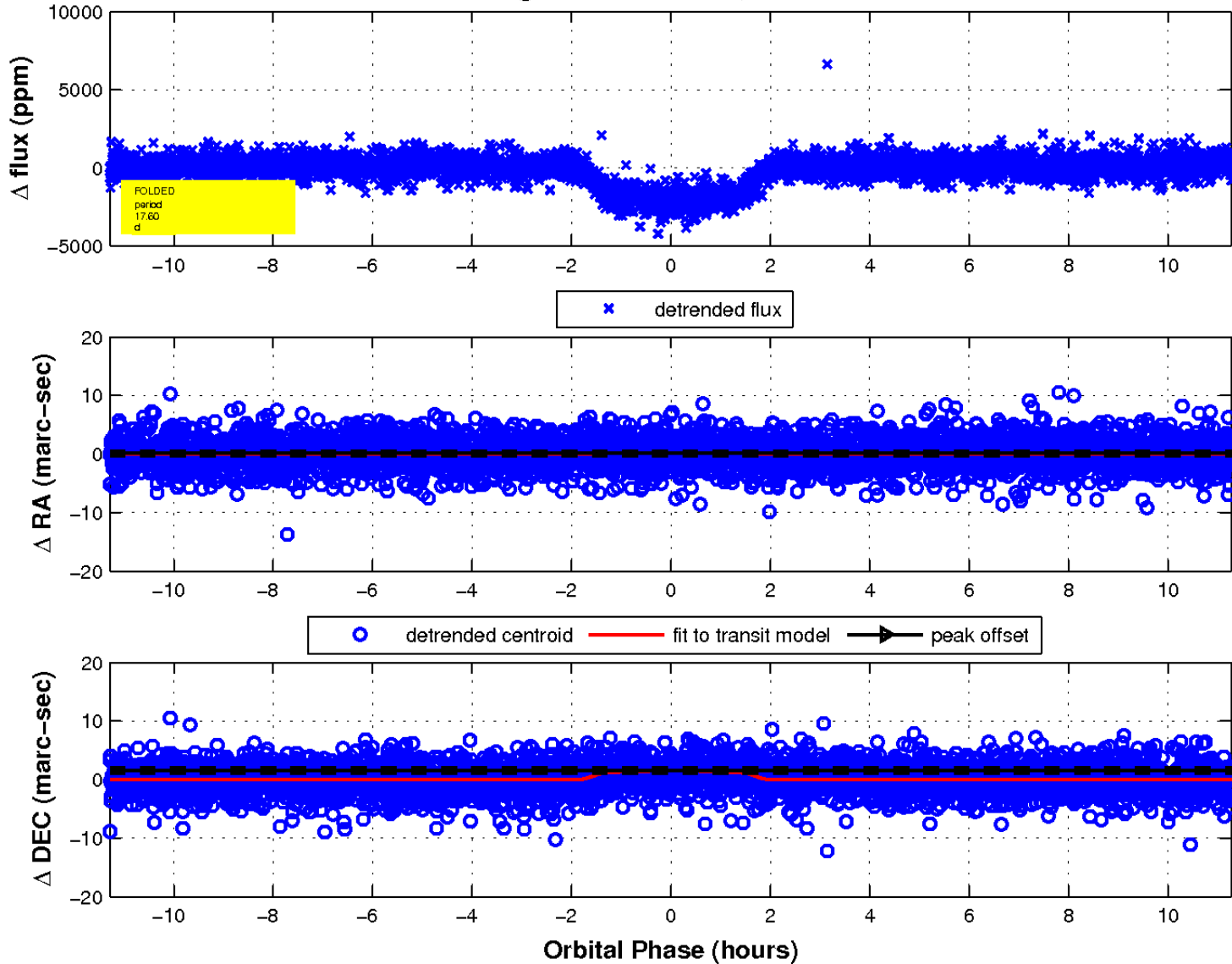
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

