

# KIC 006311637

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006311637-01	OBS	6688.01	1.620803	132.729593	91226.1	4.728	2577.4	1472.6	1.18	5757	36.97	2137.42

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006311637-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT

**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.

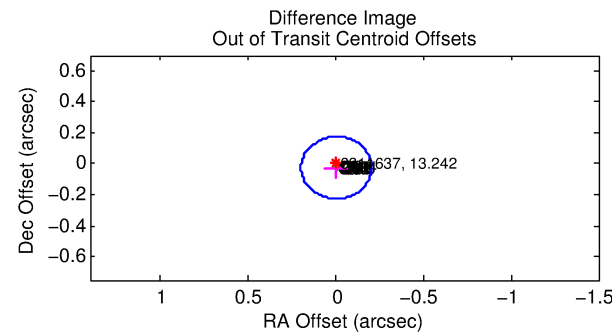
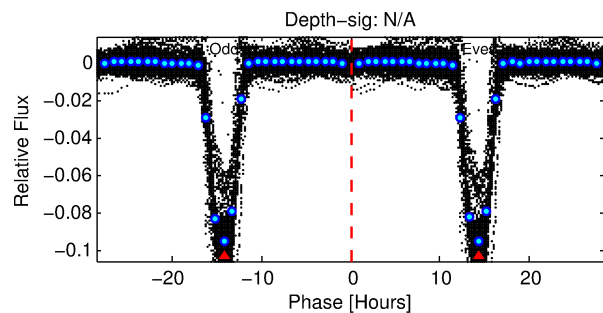
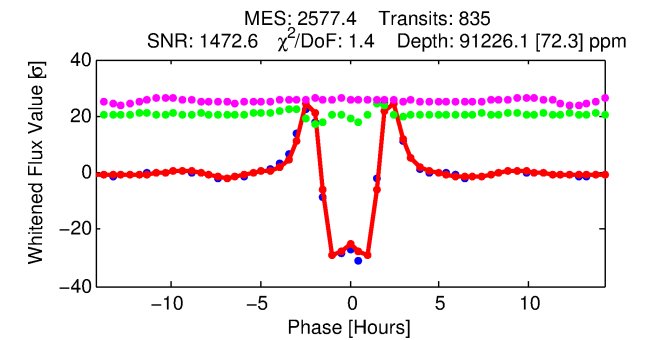
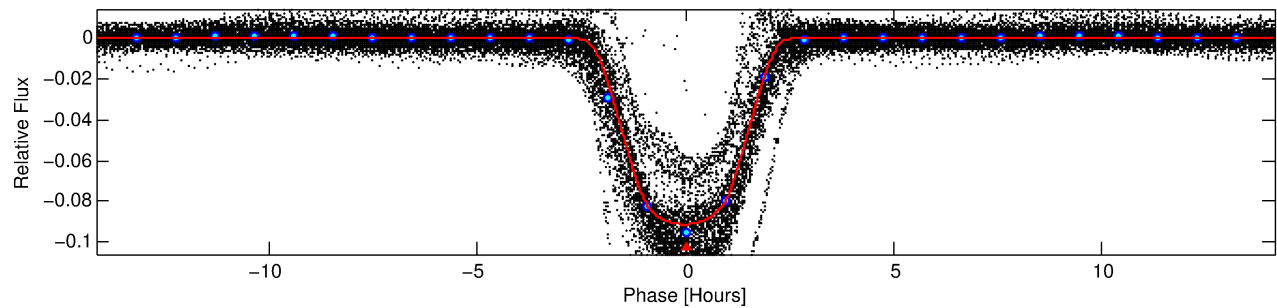
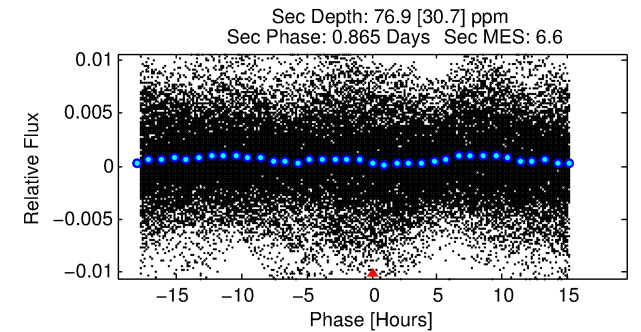
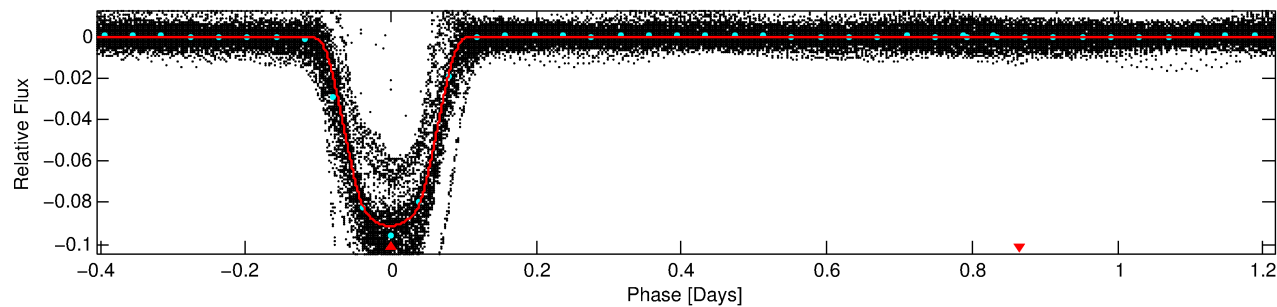
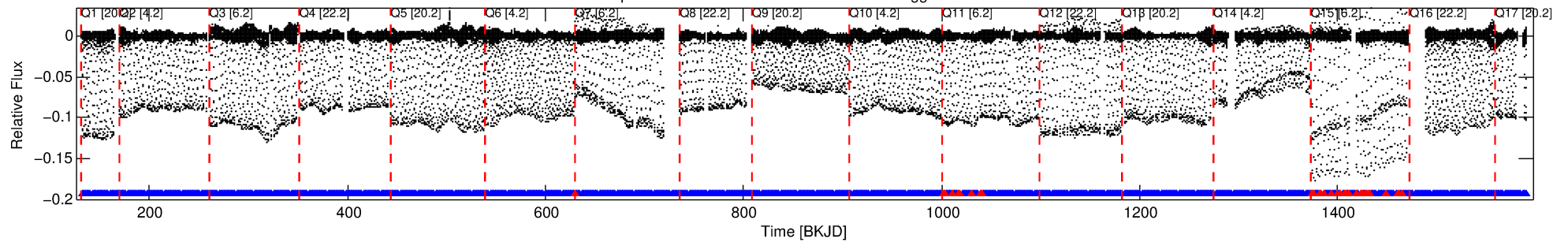
## Ephemeris Match Information For 006311637-01

No Significant Match Found

# DV One-Page Summary

KIC: 6311637 Candidate: 1 of 1 Period: 1.621 d  
KOI: K06688.01 Corr: 0.910

Kp: 13.24 R\*: 1.18 Rs Teff: 5757.0 K Logg: 4.21 Fe/H: -0.400



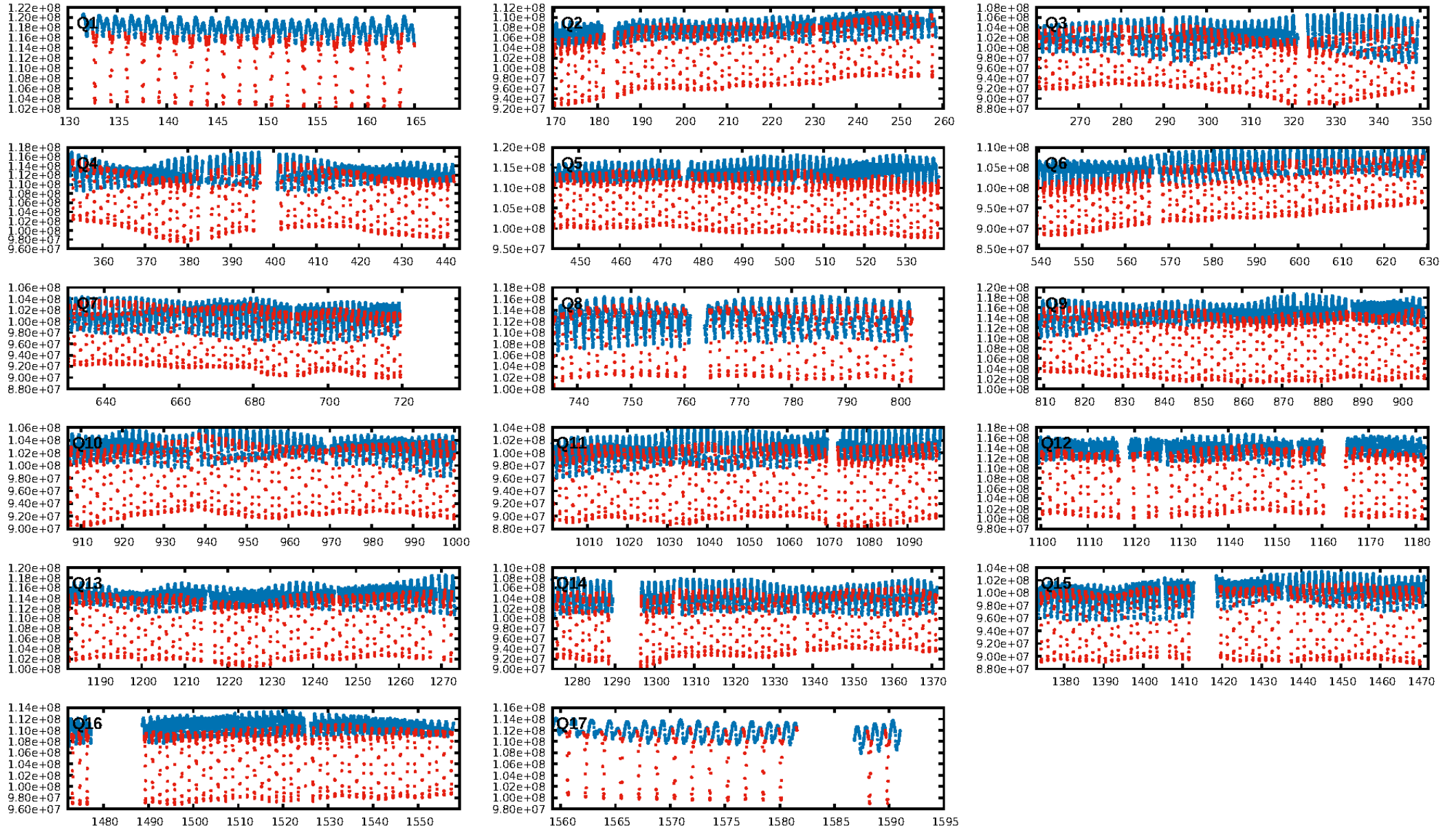
## DV Fit Results:

Period = 1.62080 [0.00000] d  
Epoch = 132.7296 [0.0000] BKJD  
Rp/R\* = 0.2878 [0.0001]  
a/R\* = 3.19 [0.00]  
b = 0.53 [0.00]  
Seff = 2137.42 [1118.94]  
Teff = 1734 [227] K  
Rp = 36.96 [11.34] Re  
a = 0.0253 [0.0079] AU  
Ag = 0.02 [0.01] [-76.41σ]  
Teffp = 1005 [104] K [-2.92σ]

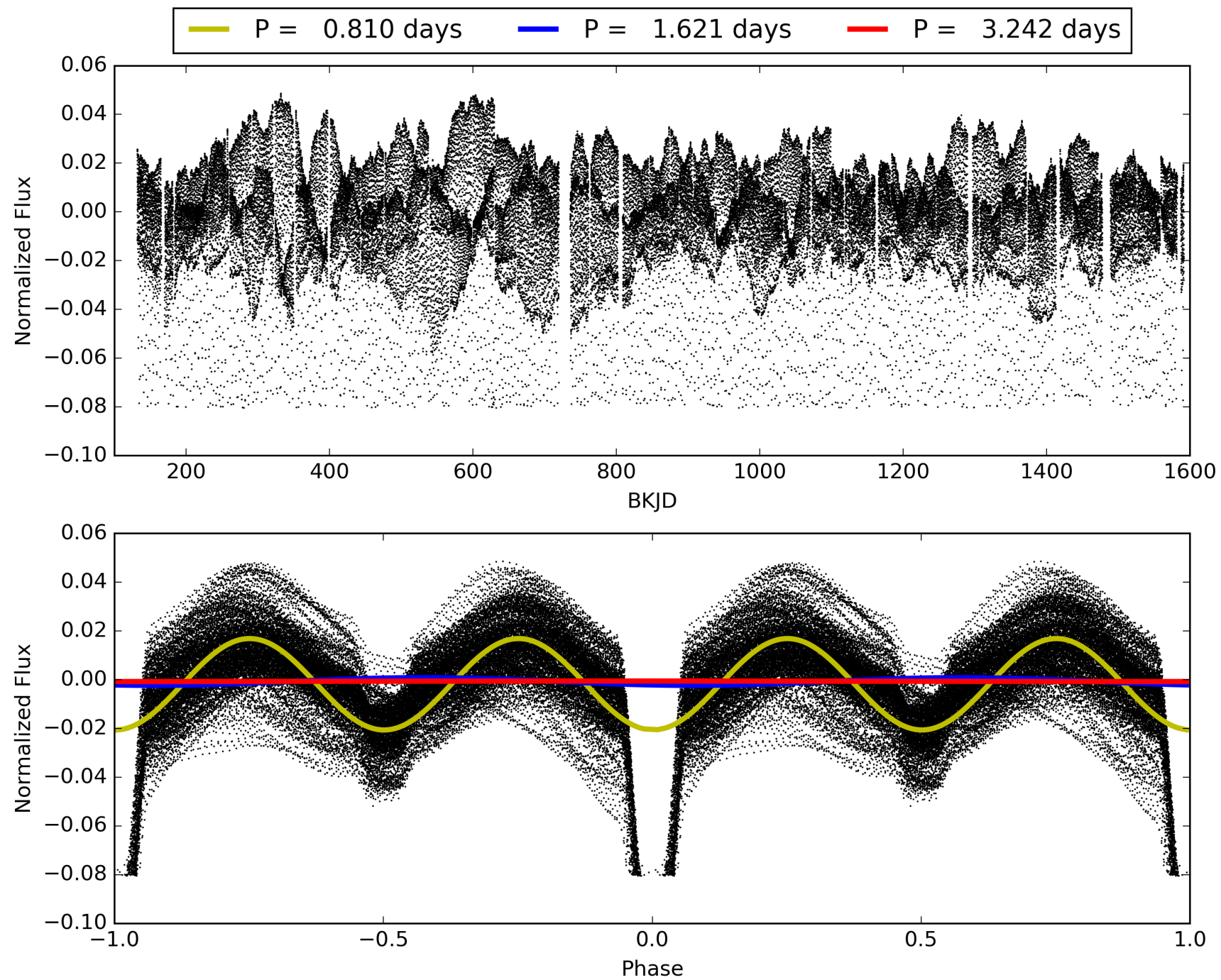
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.96 [769/800]  
GhostDiagnostic-chr: 1.294  
Centroid-sig: 0.0%  
Centroid-so: 0.202 arcsec [345.28σ]  
OotOffset-rm: 0.026 arcsec [0.38σ]  
KicOffset-rm: 0.134 arcsec [1.99σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006311637-01, PDC Light Curves

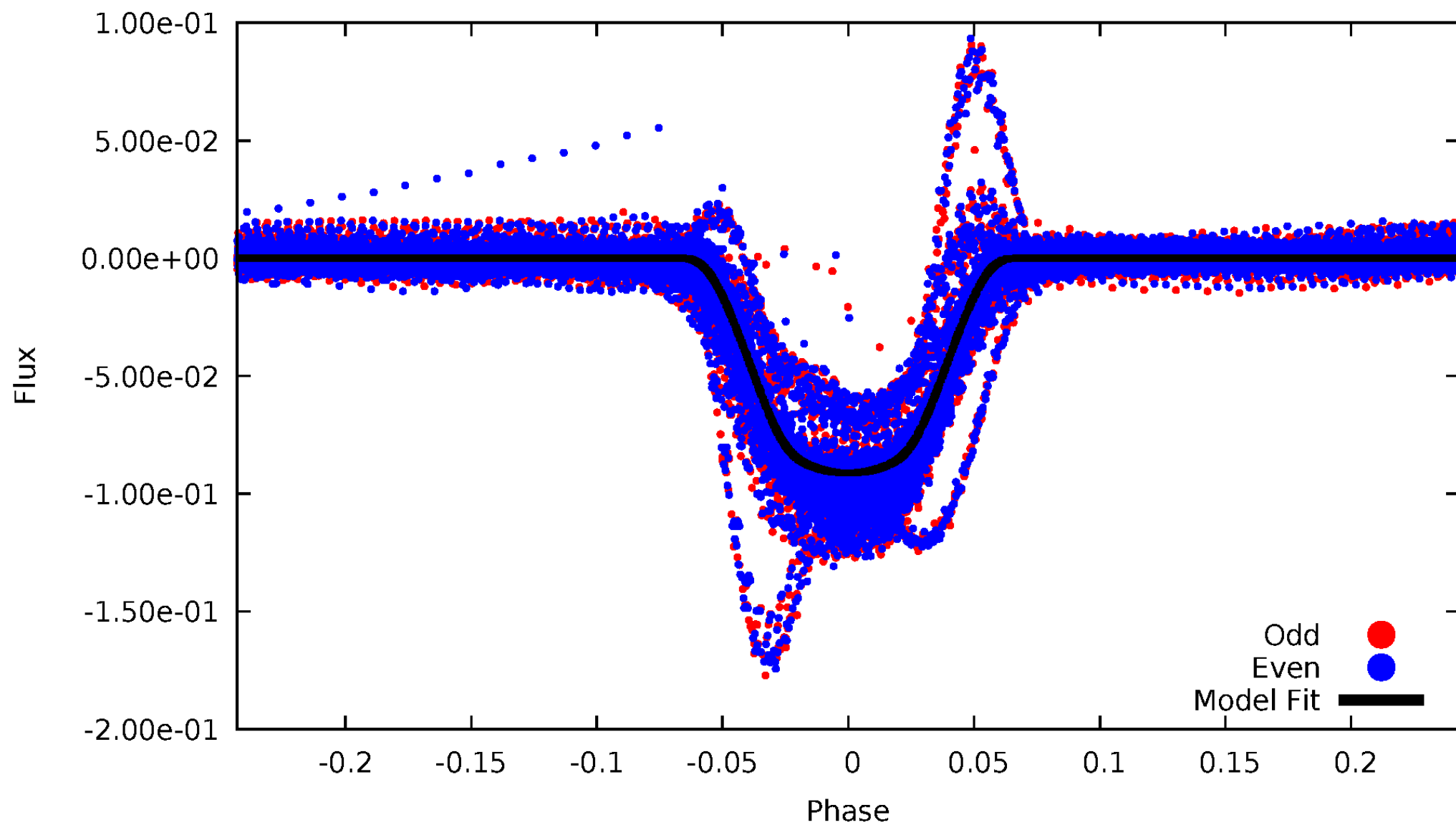


TCE 006311637-01



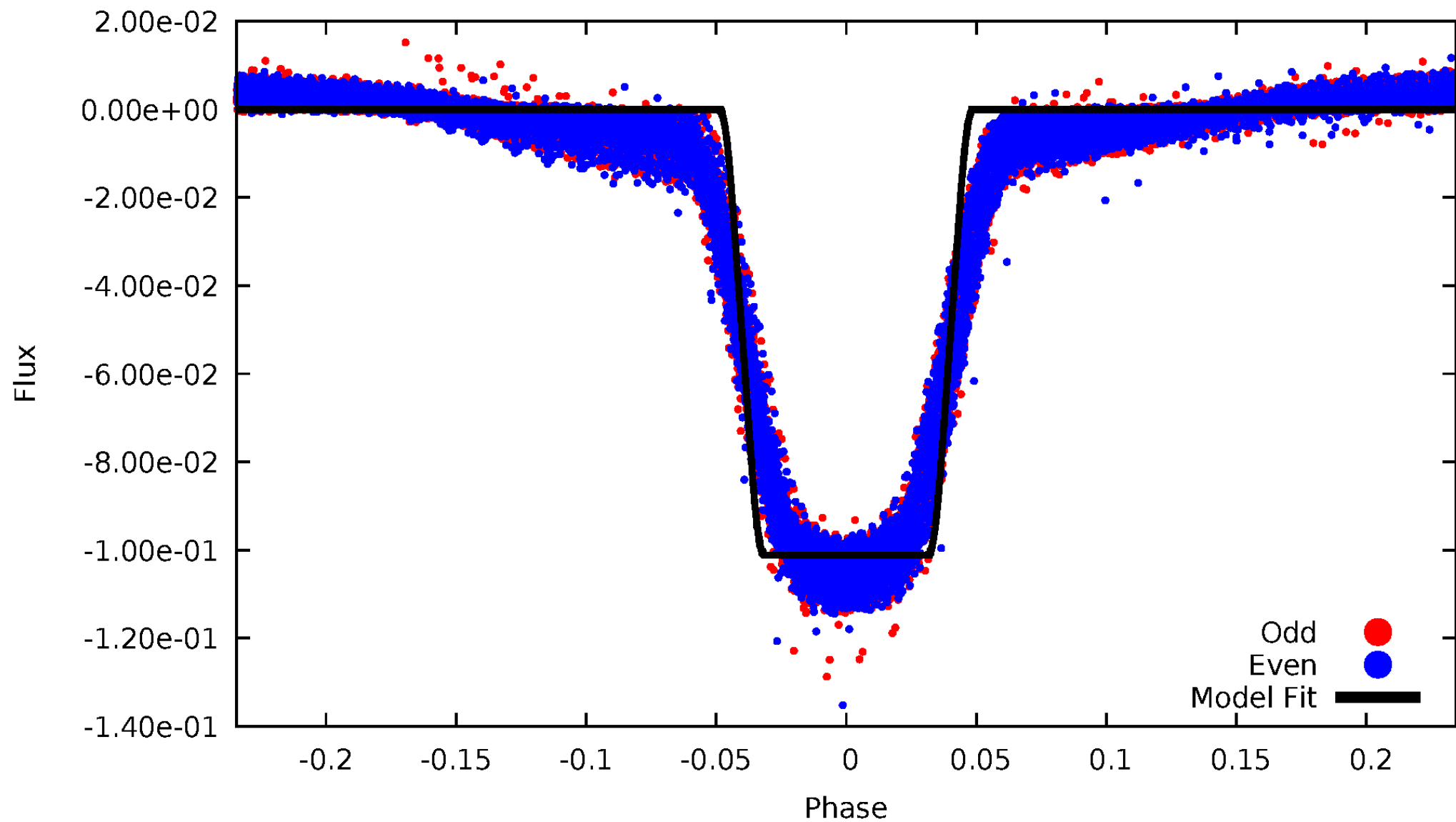
# DV Odd/Even

TCE 006311637-01



# ALT Odd/Even

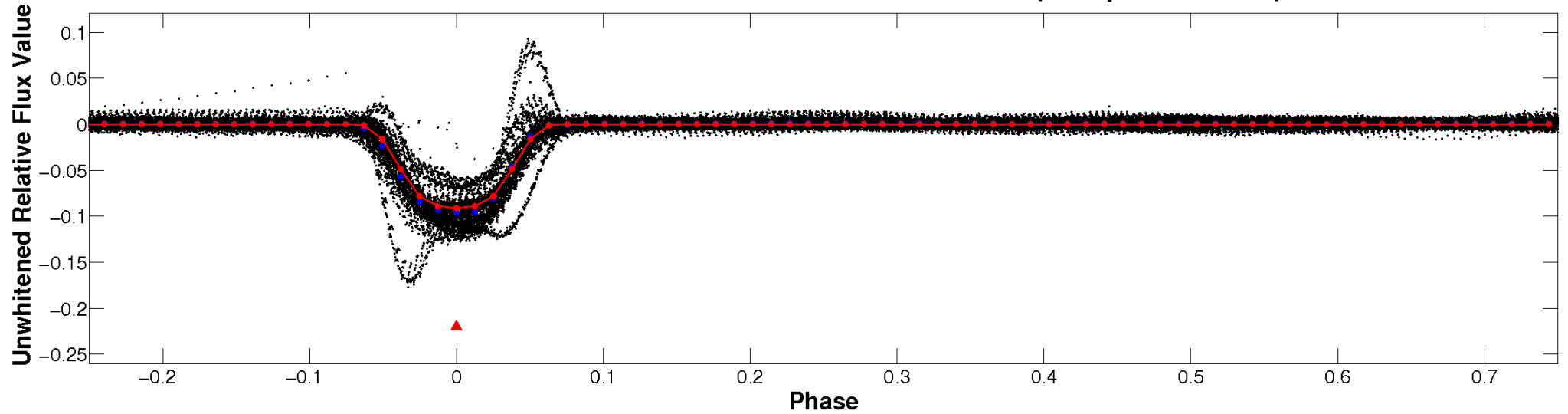
TCE 006311637-01



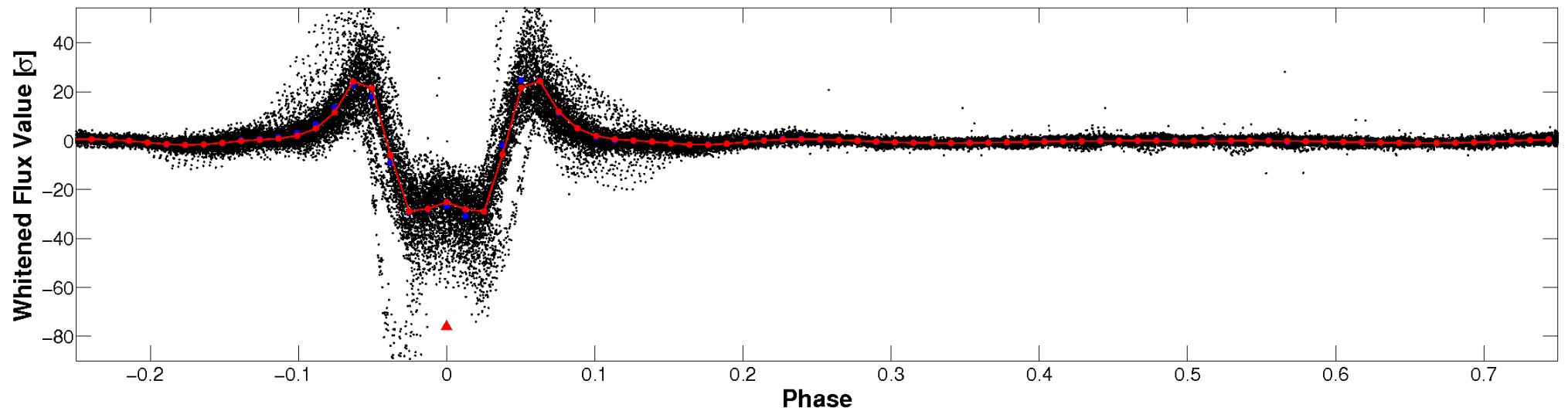


# Non-Whitened Vs. Whitened Light Curve

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

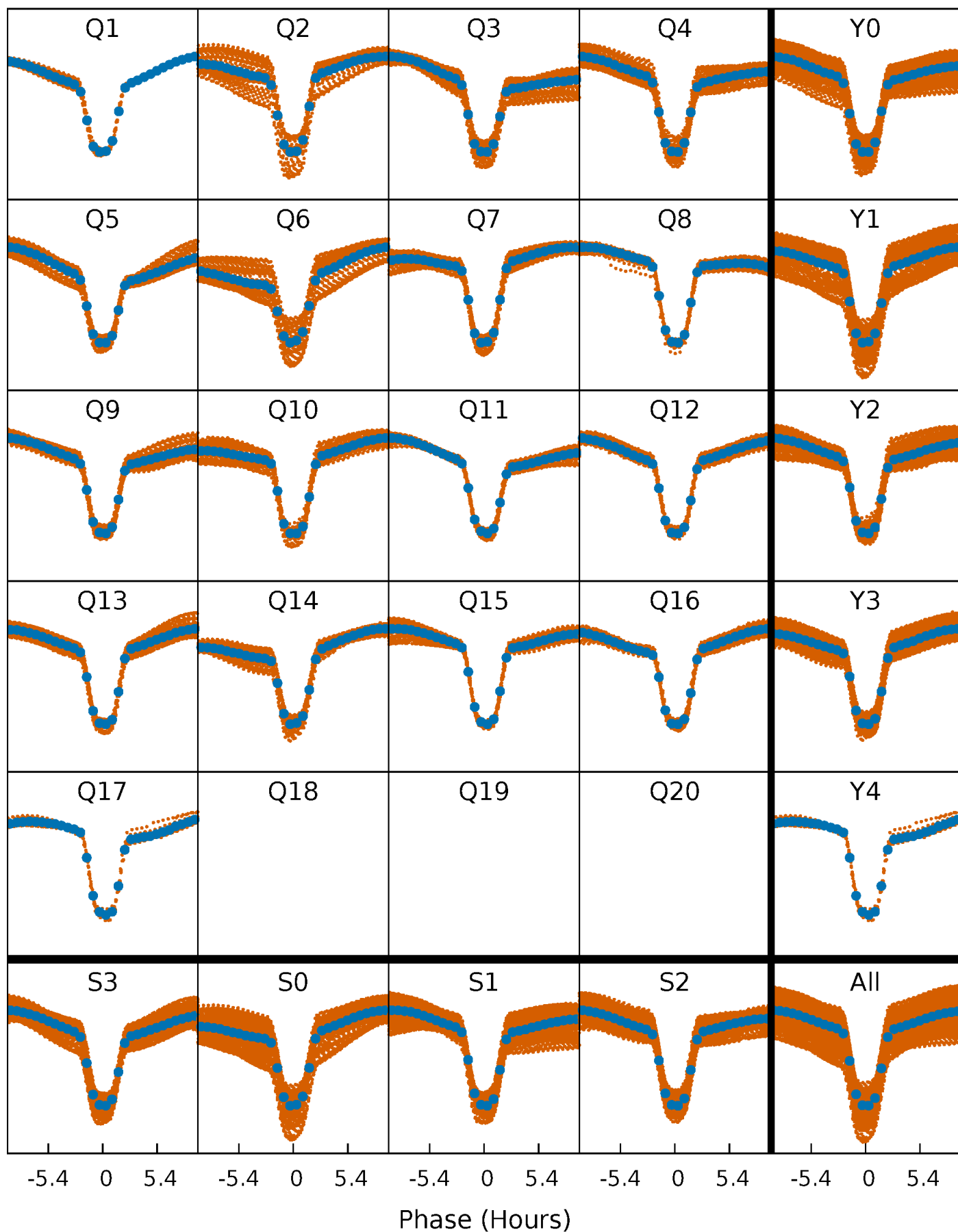


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

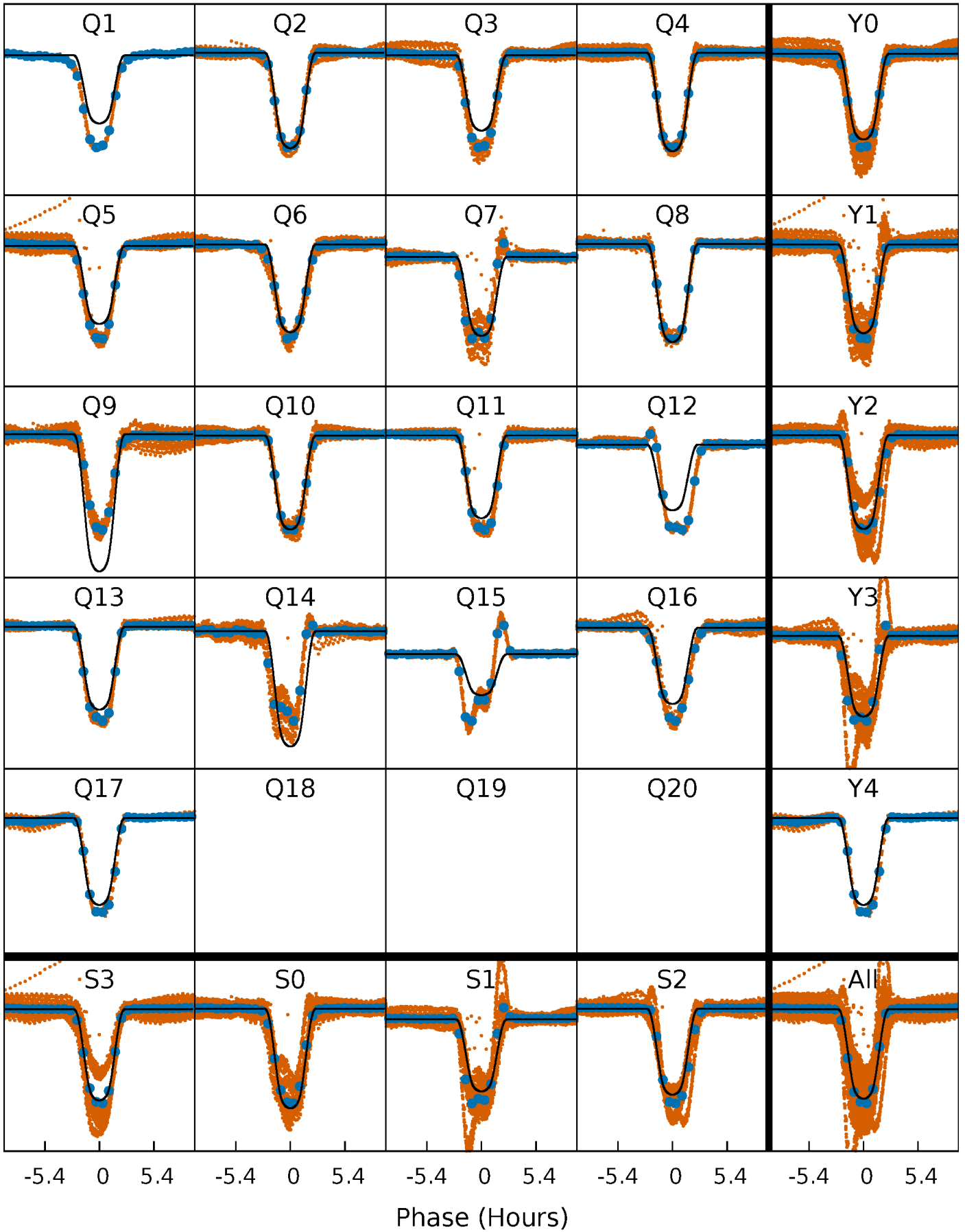
TCE 006311637-01 P= 1.620803 Days  $T_0=132.729593$  (BKJD)





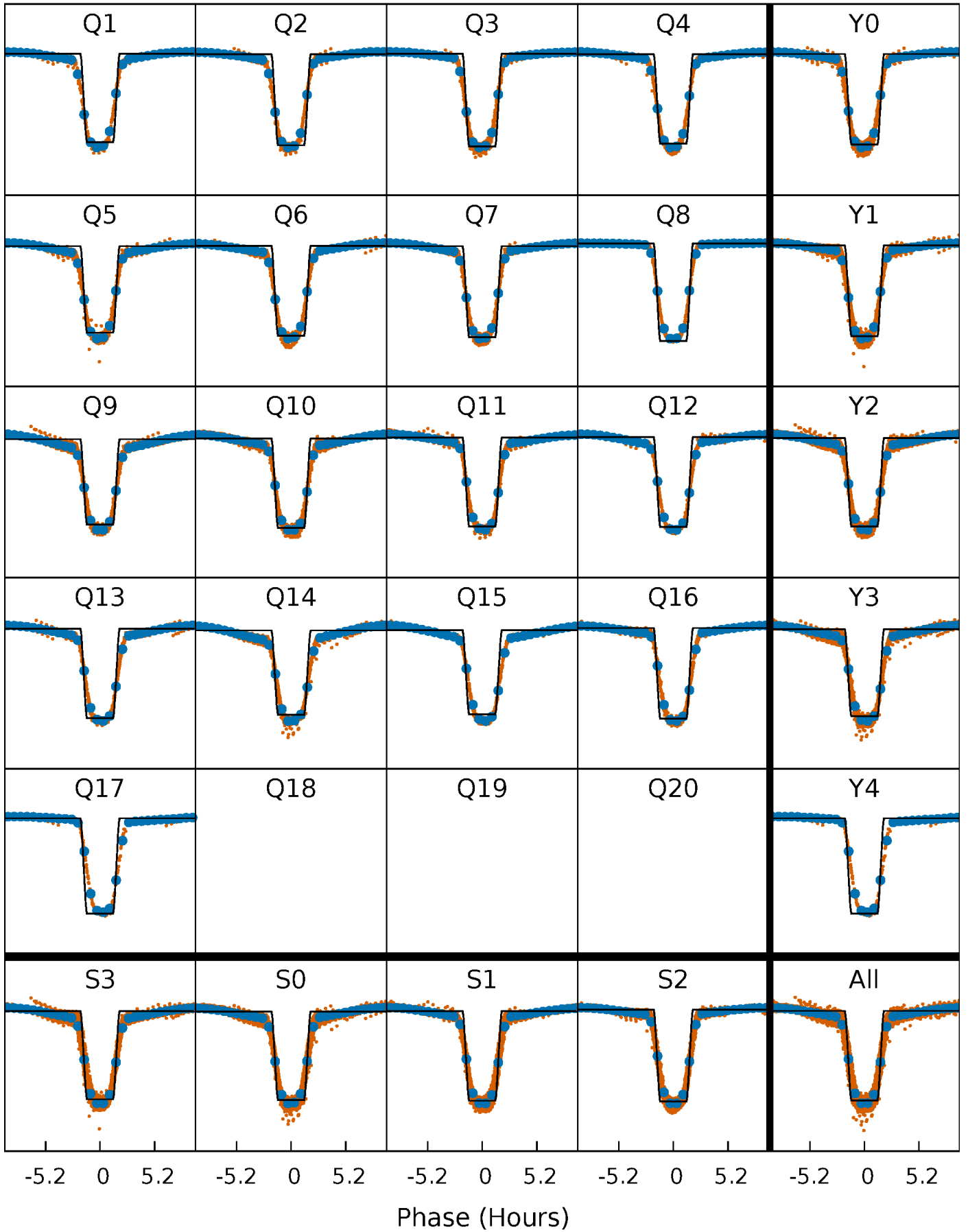
# DV Quarter-Phased Transit Curves

TCE 006311637-01 P= 1.620803 Days  $T_0=132.729593$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

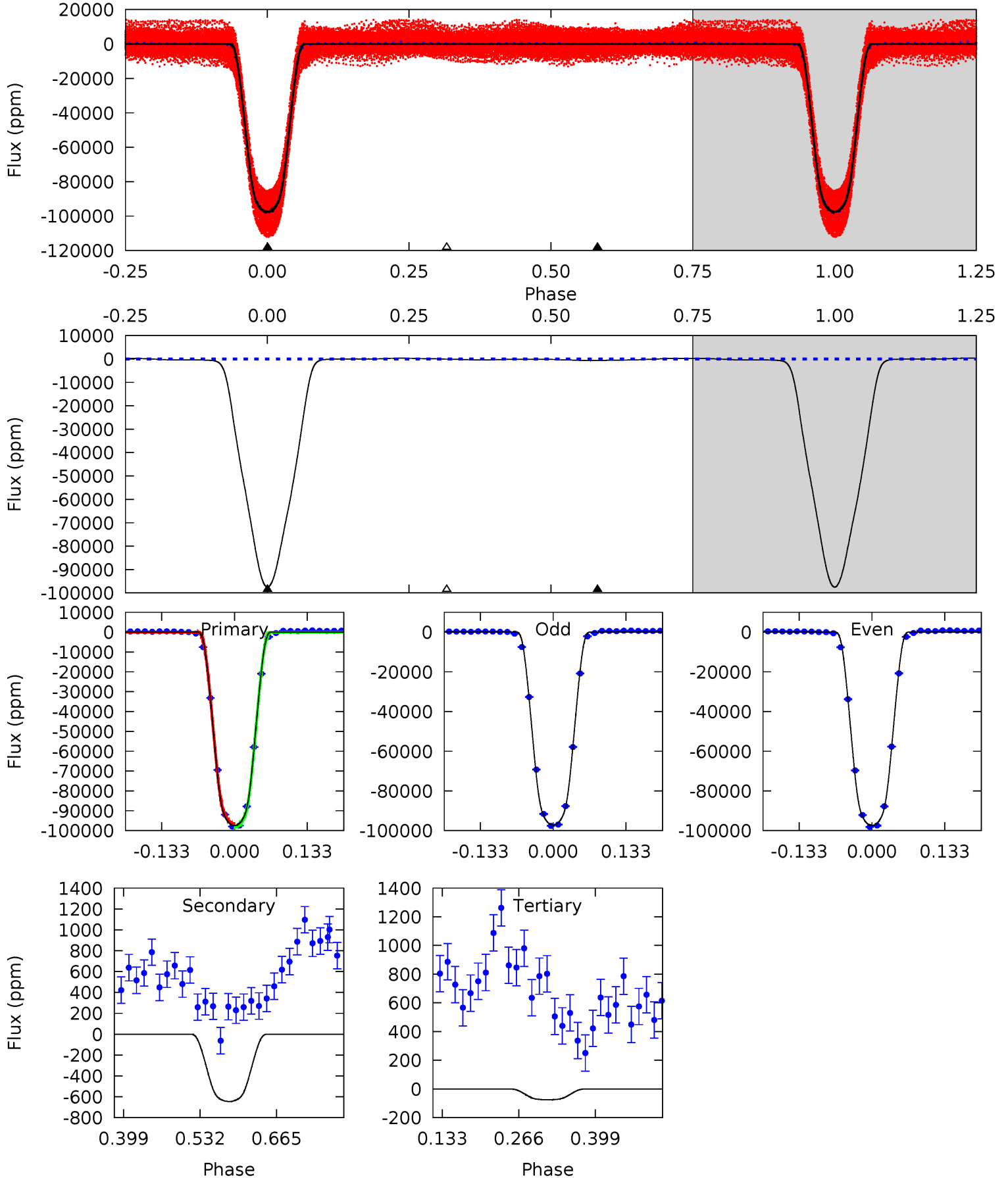
TCE 006311637-01 P= 1.620797 Days  $T_0=132.733601$  (BKJD)



# DV Model-Shift Uniqueness Test

006311637-01, P = 1.620803 Days, E = 131.108790 Days

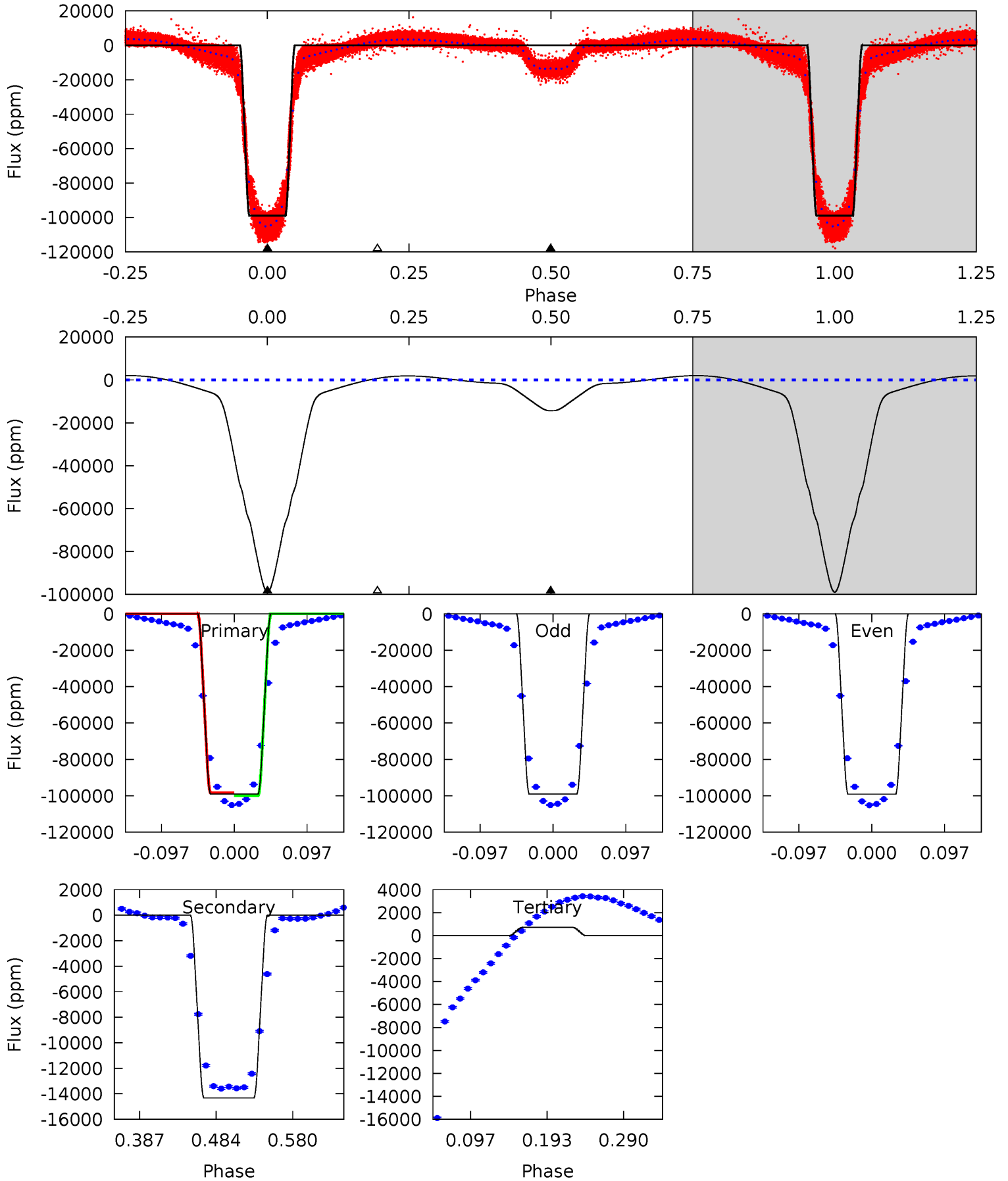
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2139	14.2	1.66	0	4.50	1.50	5.41	2138	2139	12.5	14.2	3.23	0.97	0.00	0



# Alt Model-Shift Uniqueness Test

006311637-01, P = 1.620797 Days, E = 131.112804 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
2597	376.1	-18.7	0	4.57	1.66	53.2	2616	2597	394.8	376.1	1.24	1.00	0.02	21.0



### Stellar Parameters For KIC 006311637

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5757^{+155}_{-155}$	$4.209^{+0.306}_{-0.204}$	$-0.400^{+0.300}_{-0.250}$	$1.177^{+0.361}_{-0.361}$	$0.818^{+0.123}_{-0.061}$	$0.707^{+1.415}_{-0.374}$
	+3%/-3%	+7%/-5%	+75%/-62%	+31%/-31%	+15%/-7%	+200%/-53%
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 006311637-01 / KOI 6688.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-645 \pm 46$	$37.11^{+6.55}_{-6.60}$	$2407^{+224}_{-227}$	$-2467^{+340}_{-208}$	$0.169^{+0.078}_{-0.049}$
Alt.	$-14329 \pm 38$	$40.90^{+7.44}_{-6.75}$	$2416^{+204}_{-216}$	$3827^{+76}_{-80}$	$3.092^{+1.336}_{-0.831}$

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

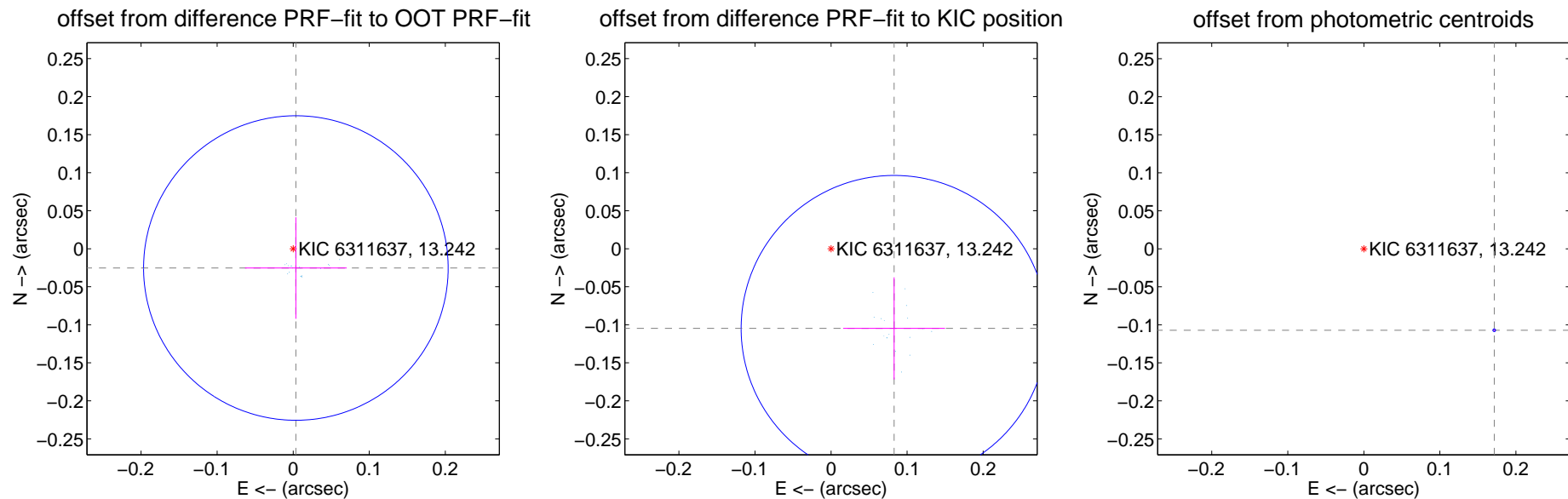
## DV Centroid Data

Supplemental centroid analysis for 006311637-01. Kepler magnitude: 13.24. Transit SNR 1472.65

There are 17 quarters with good PRF difference image offsets

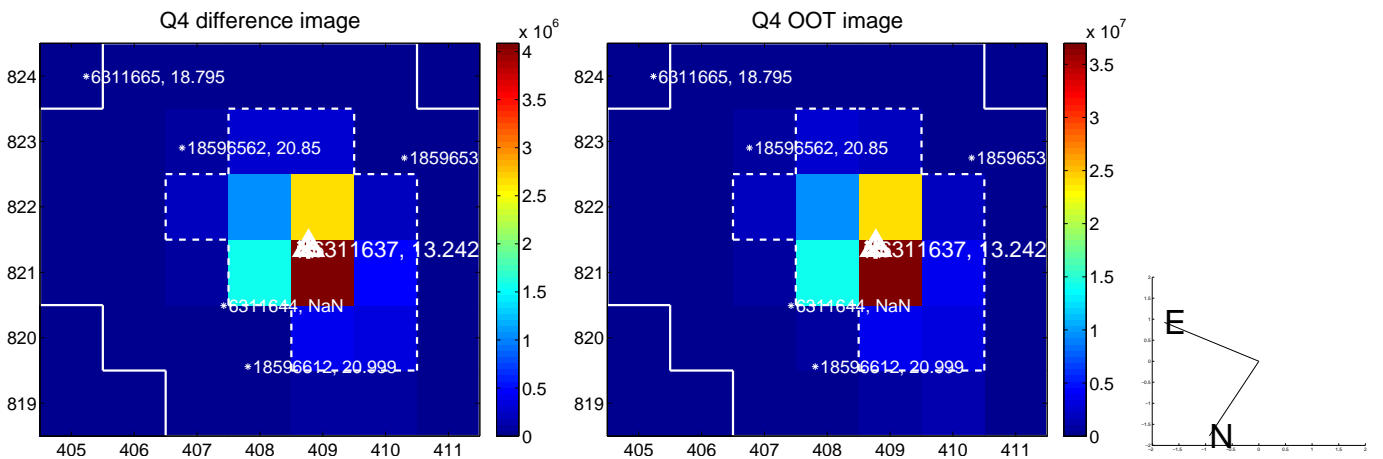
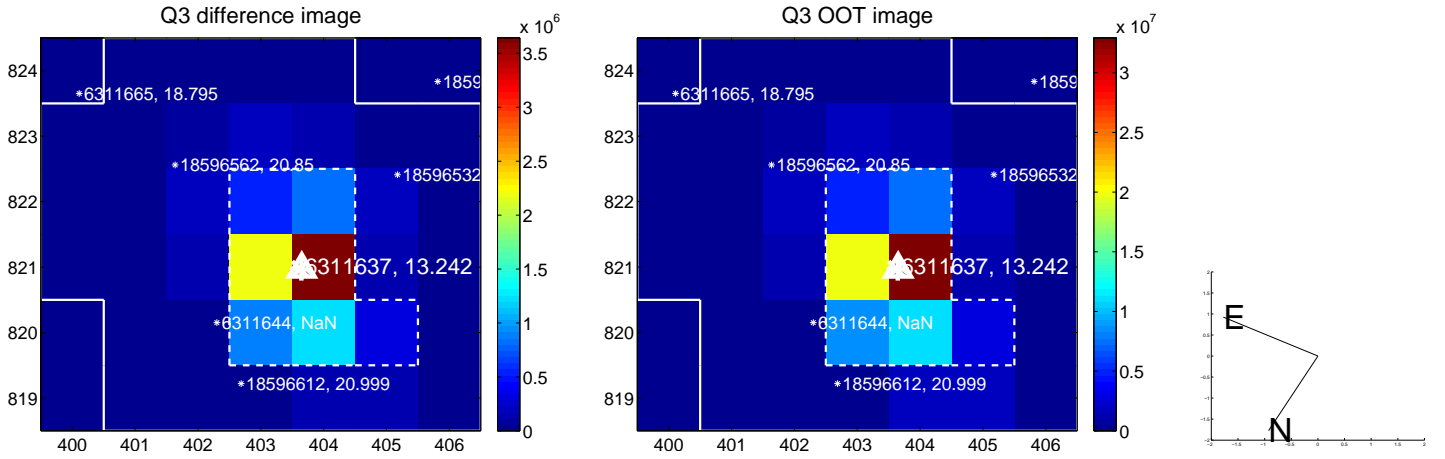
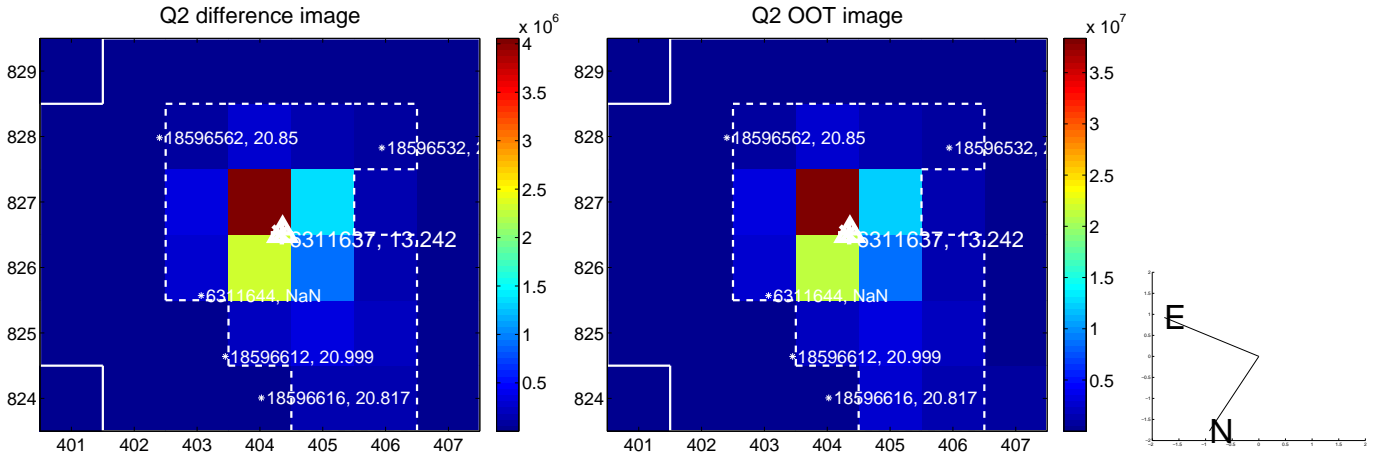
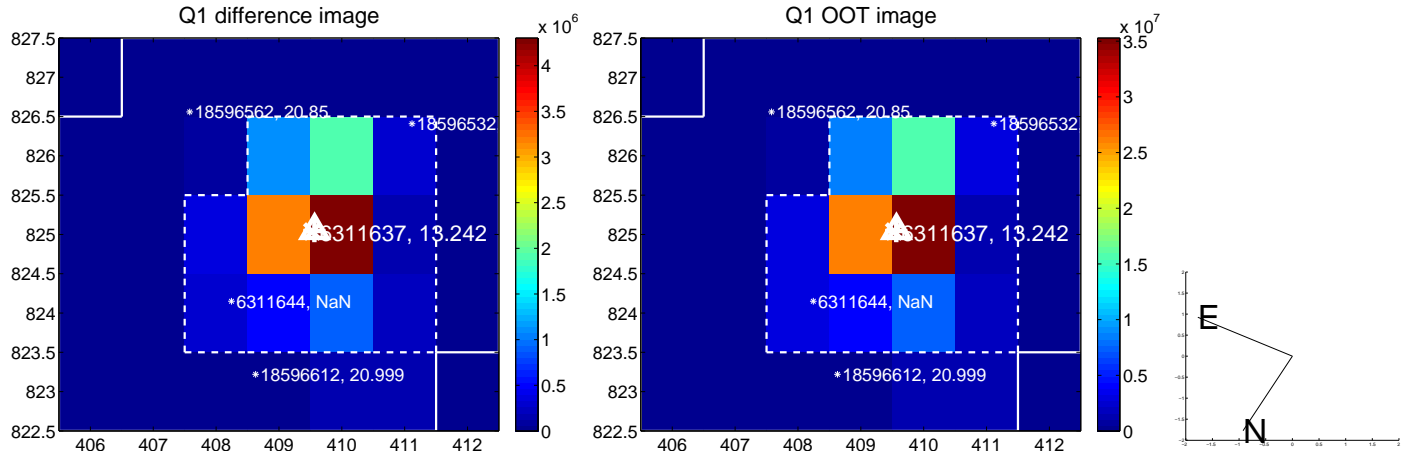
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.026 \pm 0.067$	0.38	$-0.004 \pm 0.067$	$-0.025 \pm 0.067$
PRF-fit source offset from KIC position	$0.134 \pm 0.067$	1.99	$-0.083 \pm 0.067$	$-0.105 \pm 0.067$
photometric centroid source offset	$0.20 \pm 0.00$	345.28	$-0.17 \pm 0.00$	$-0.11 \pm 0.00$



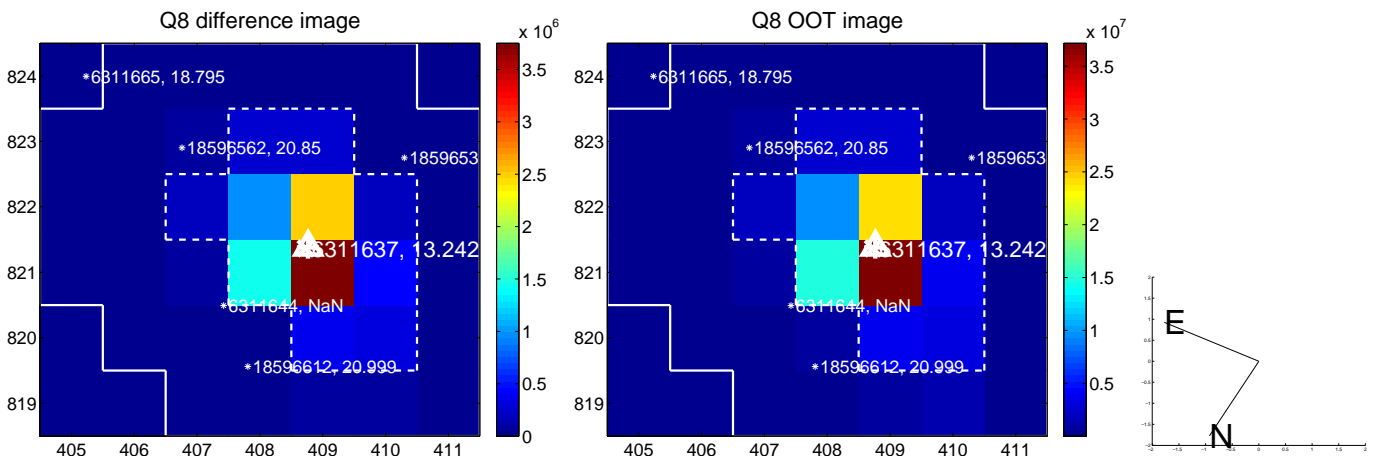
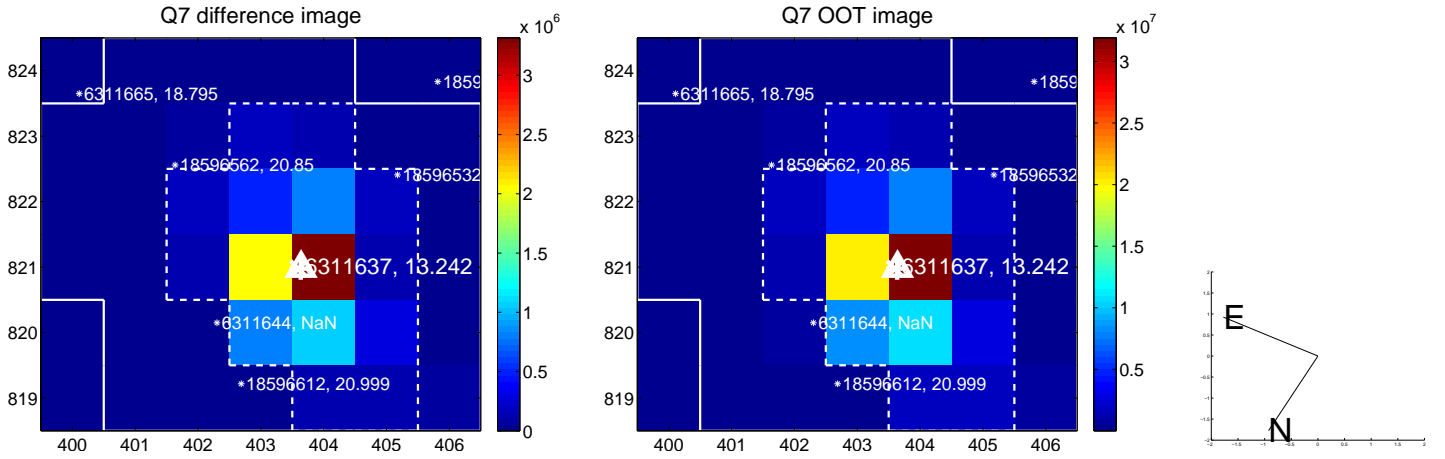
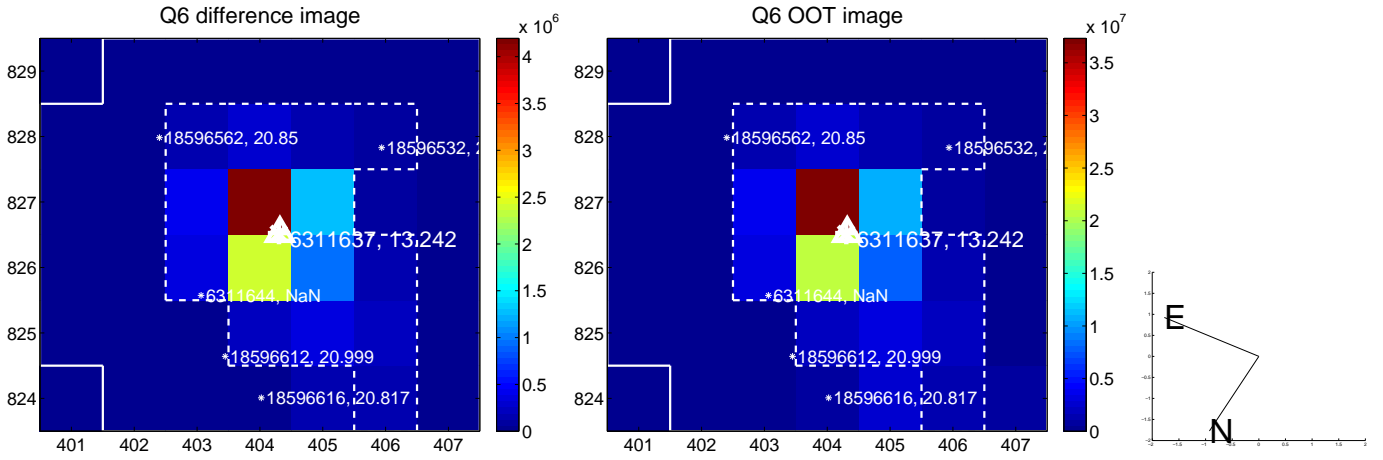
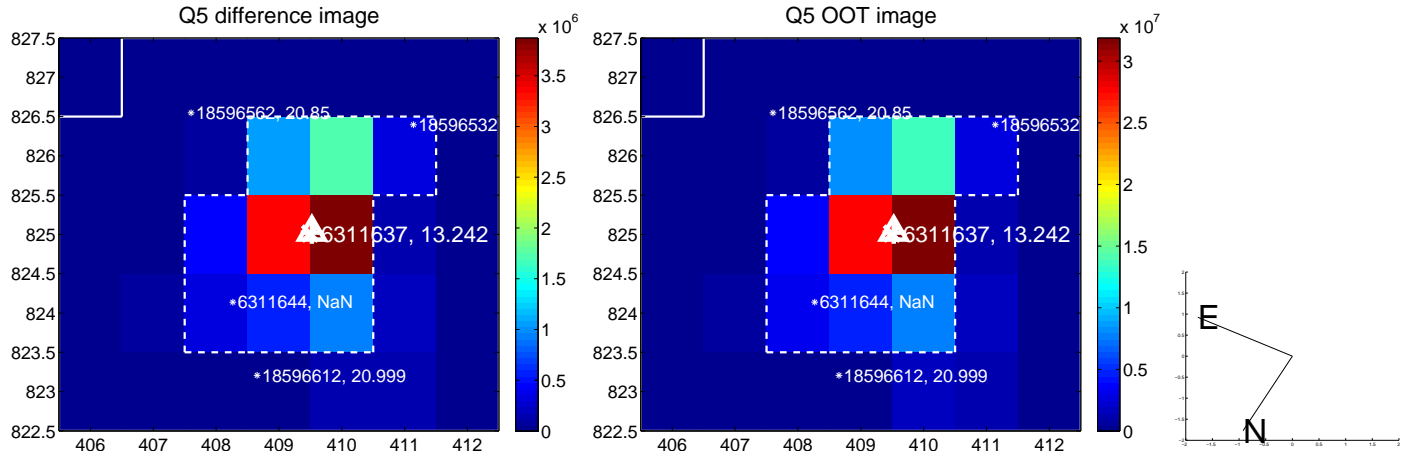
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

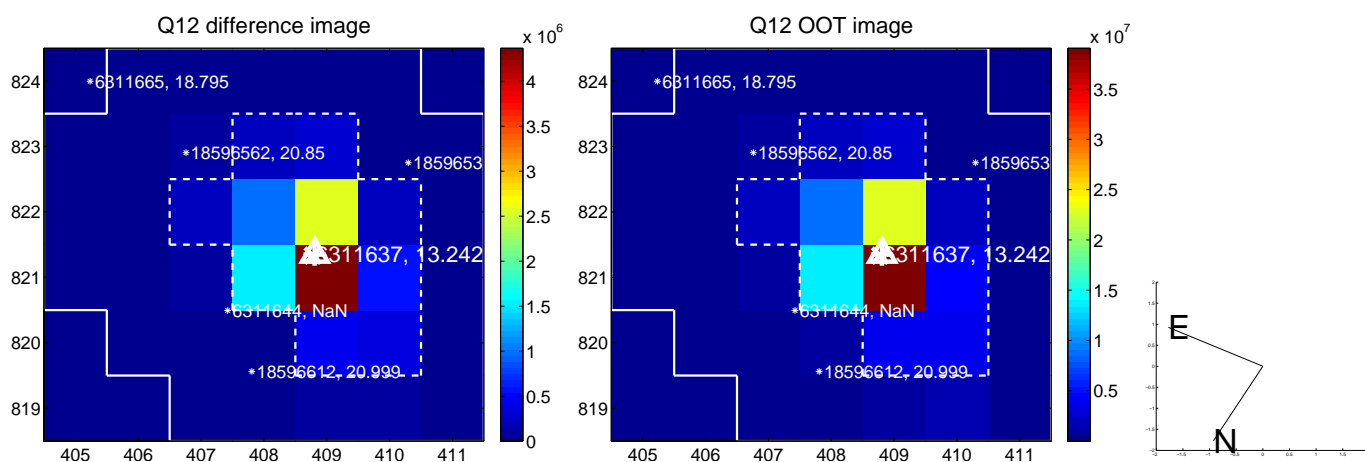
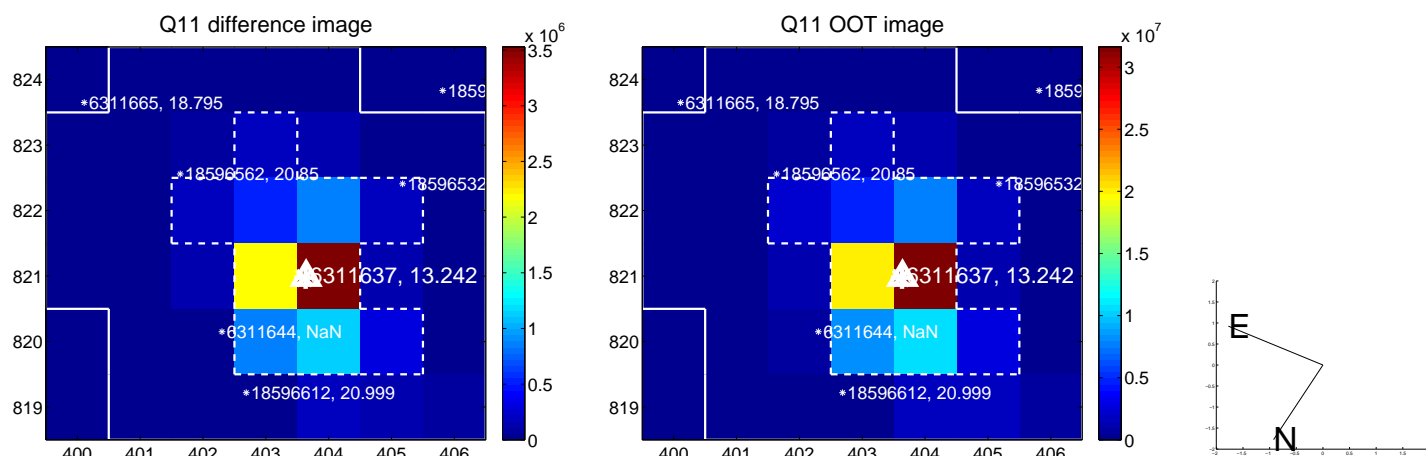
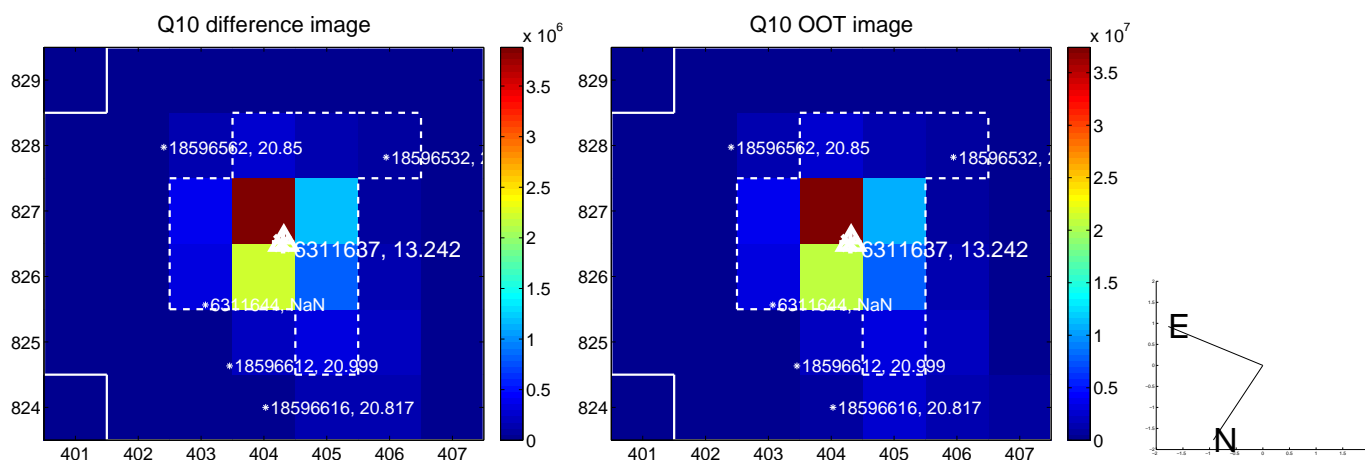
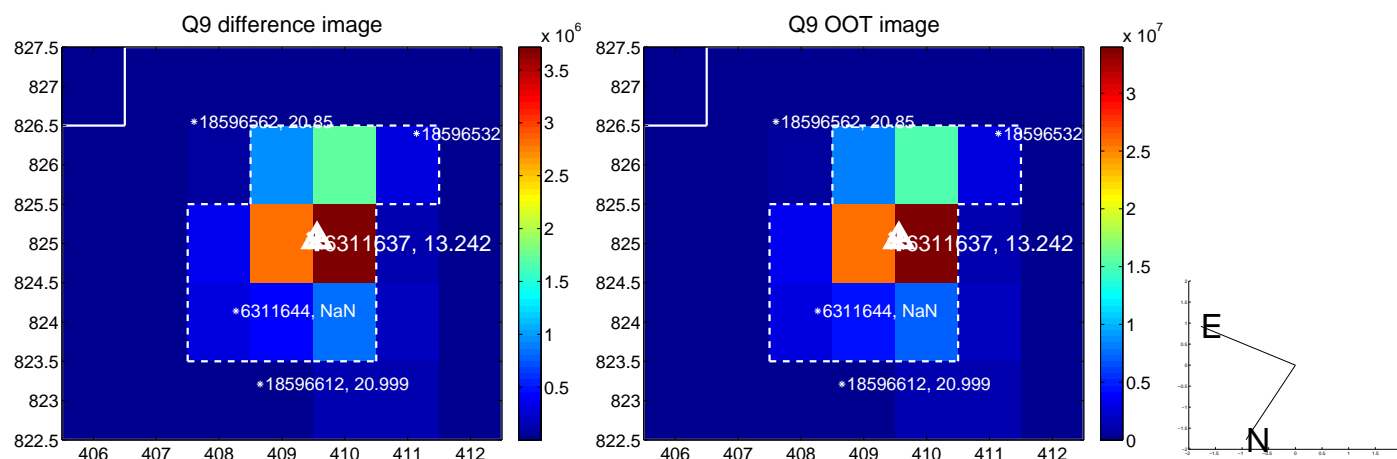




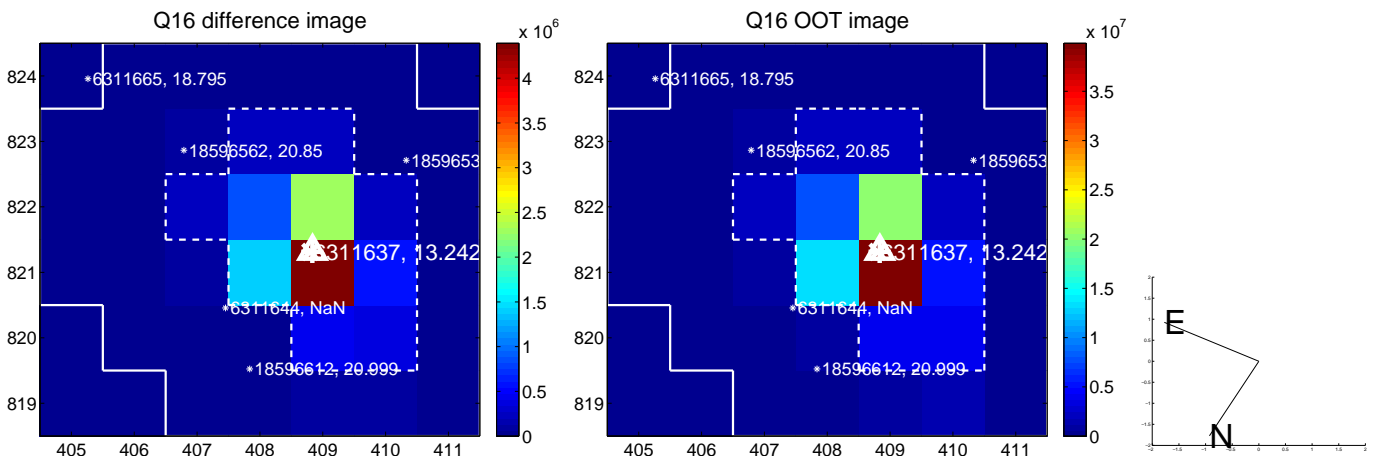
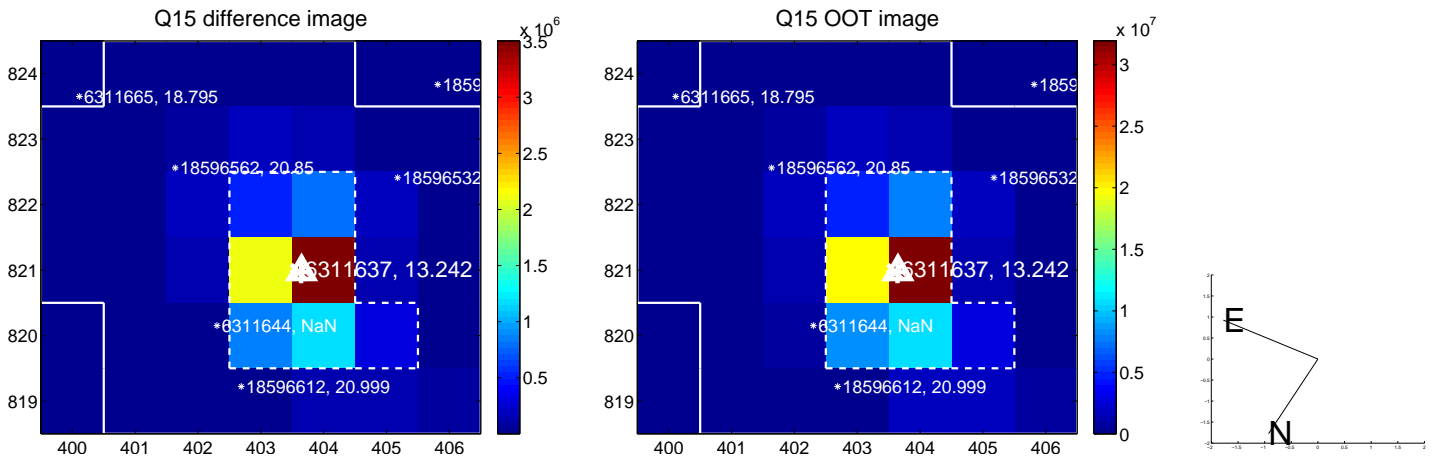
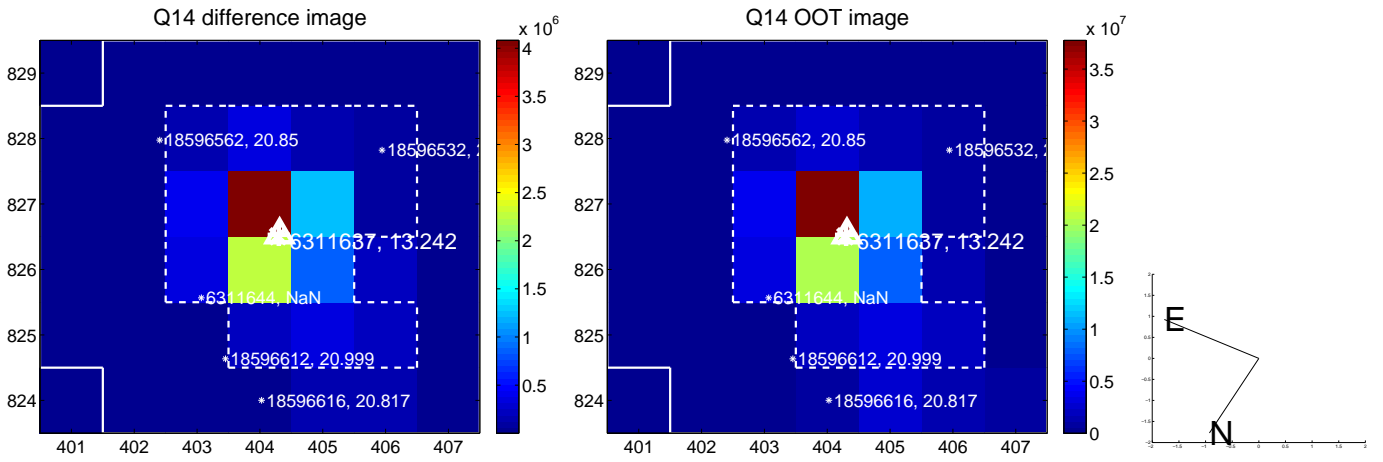
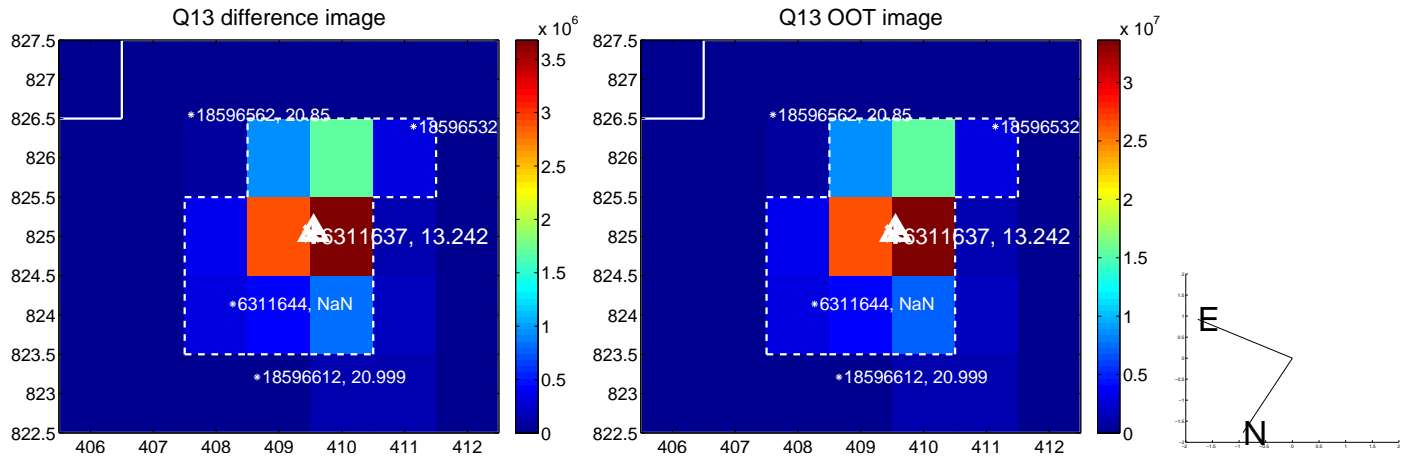
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



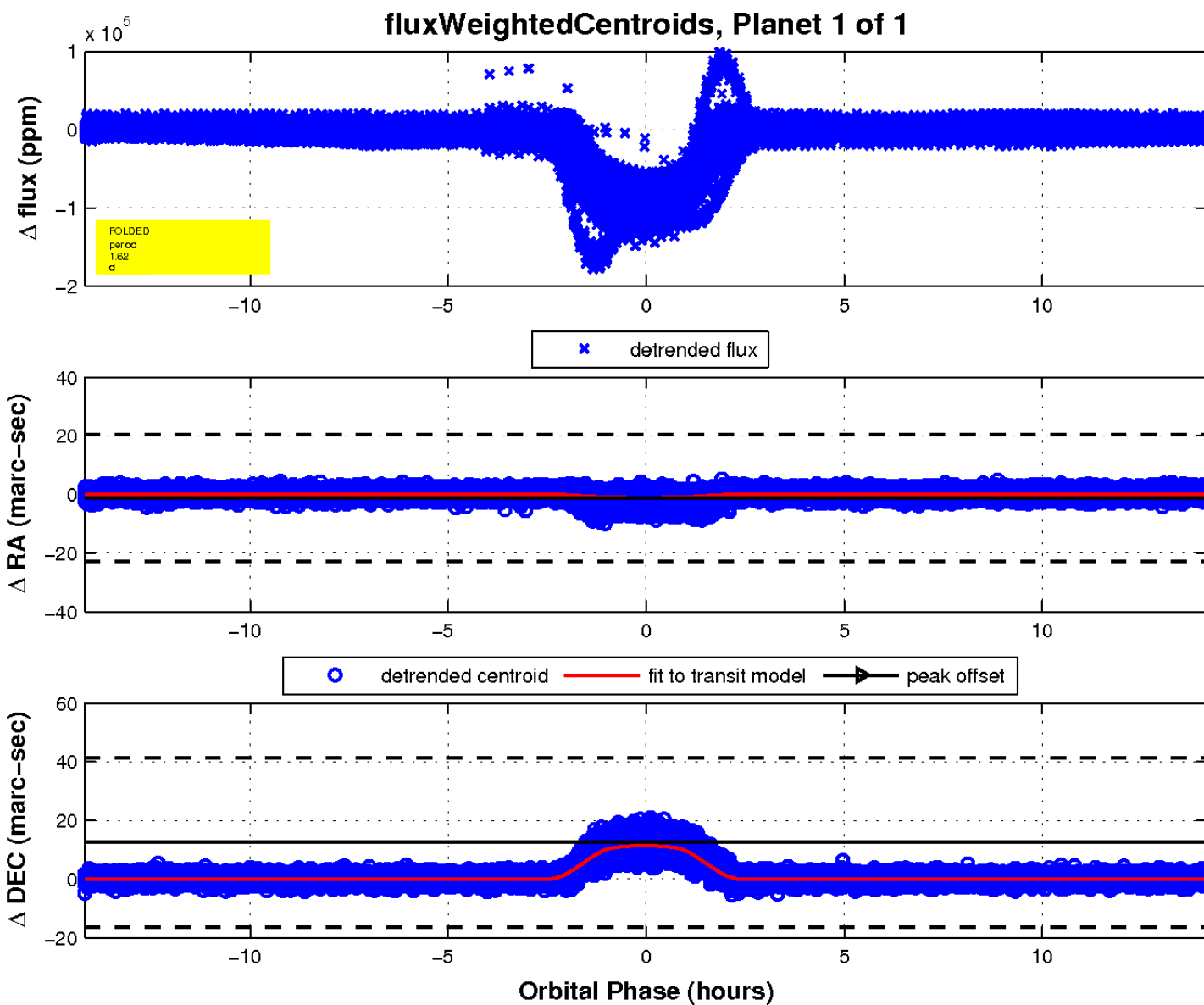
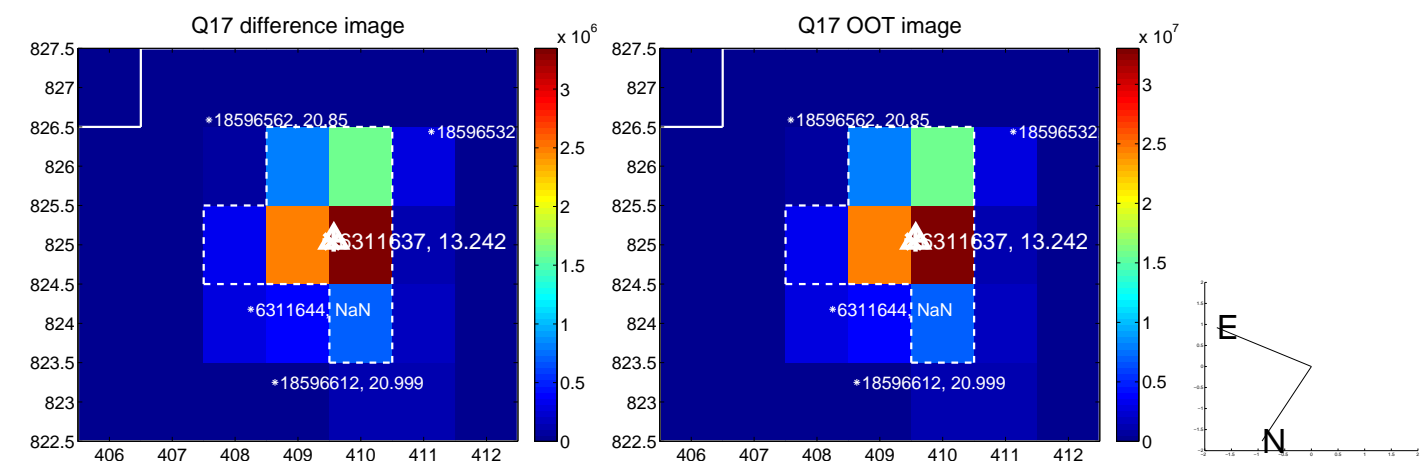
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

Declination

