

# KIC 007700561

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
007700561-01	OBS	5414.01	1.507072	132.104892	474.9	2.542	53.2	49.9	0.80	5762	2.08	1040.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007700561-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

**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 007700561-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	ΔRow	ΔCol	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	σ <sub>P</sub>	σ <sub>T</sub>
007700561-01	7700561	6908.01	7700578	1:1	16.9	2	3	14.15	15.54	1053.90	Direct-PRF	0	1.17	0.35

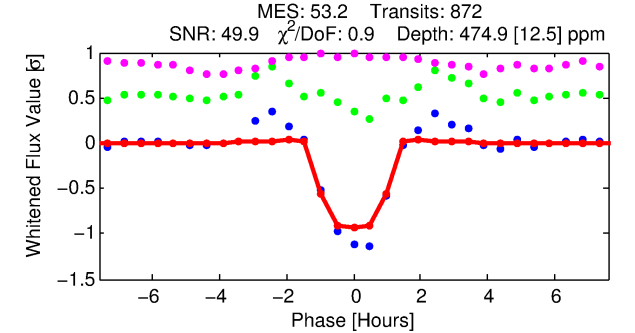
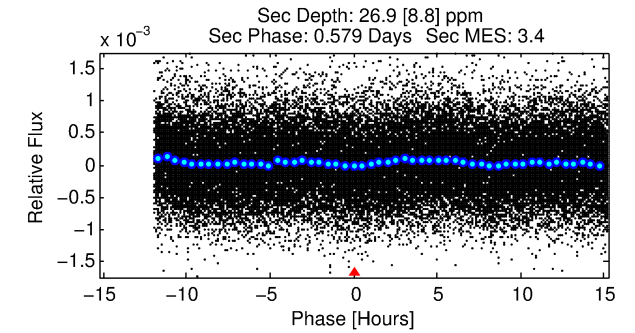
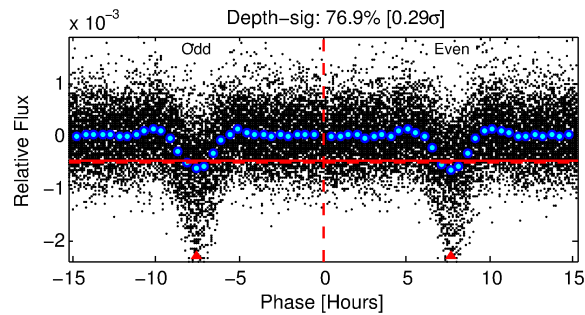
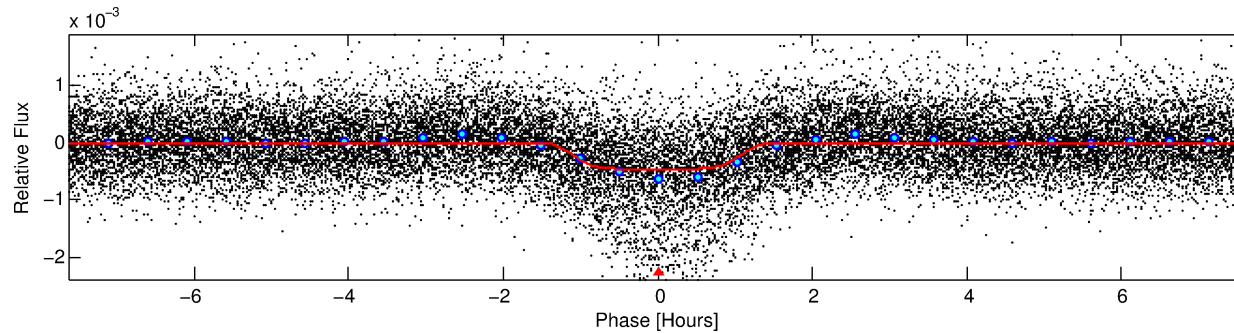
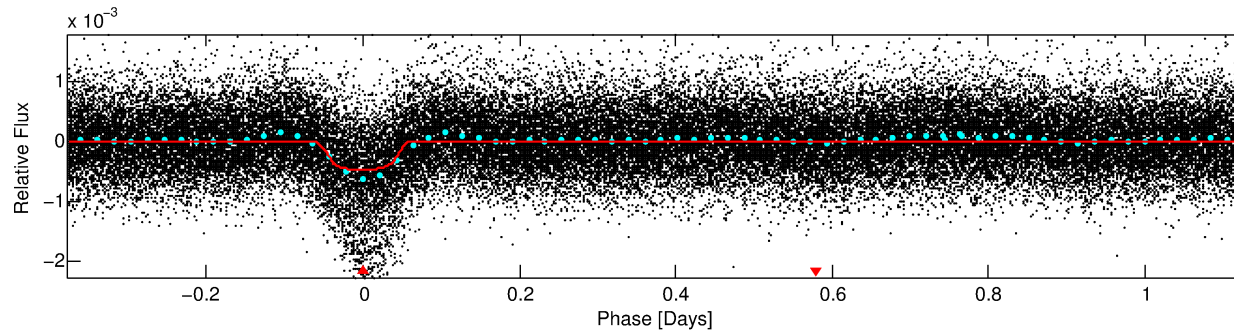
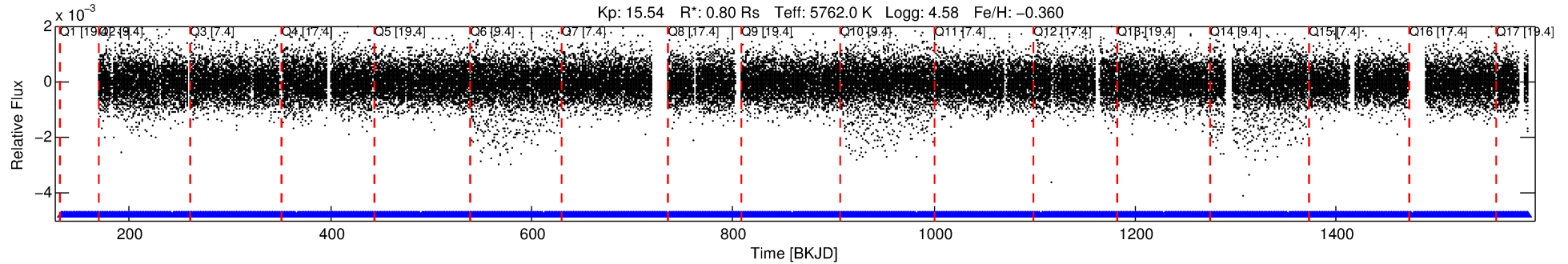
**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 7700561 Candidate: 1 of 1 Period: 1.507 d

KOI: K05414 Corr: No Ephemeris Match

Kp: 15.54 R\*: 0.80 Rs Teff: 5762.0 K Logg: 4.58 Fe/H: -0.360



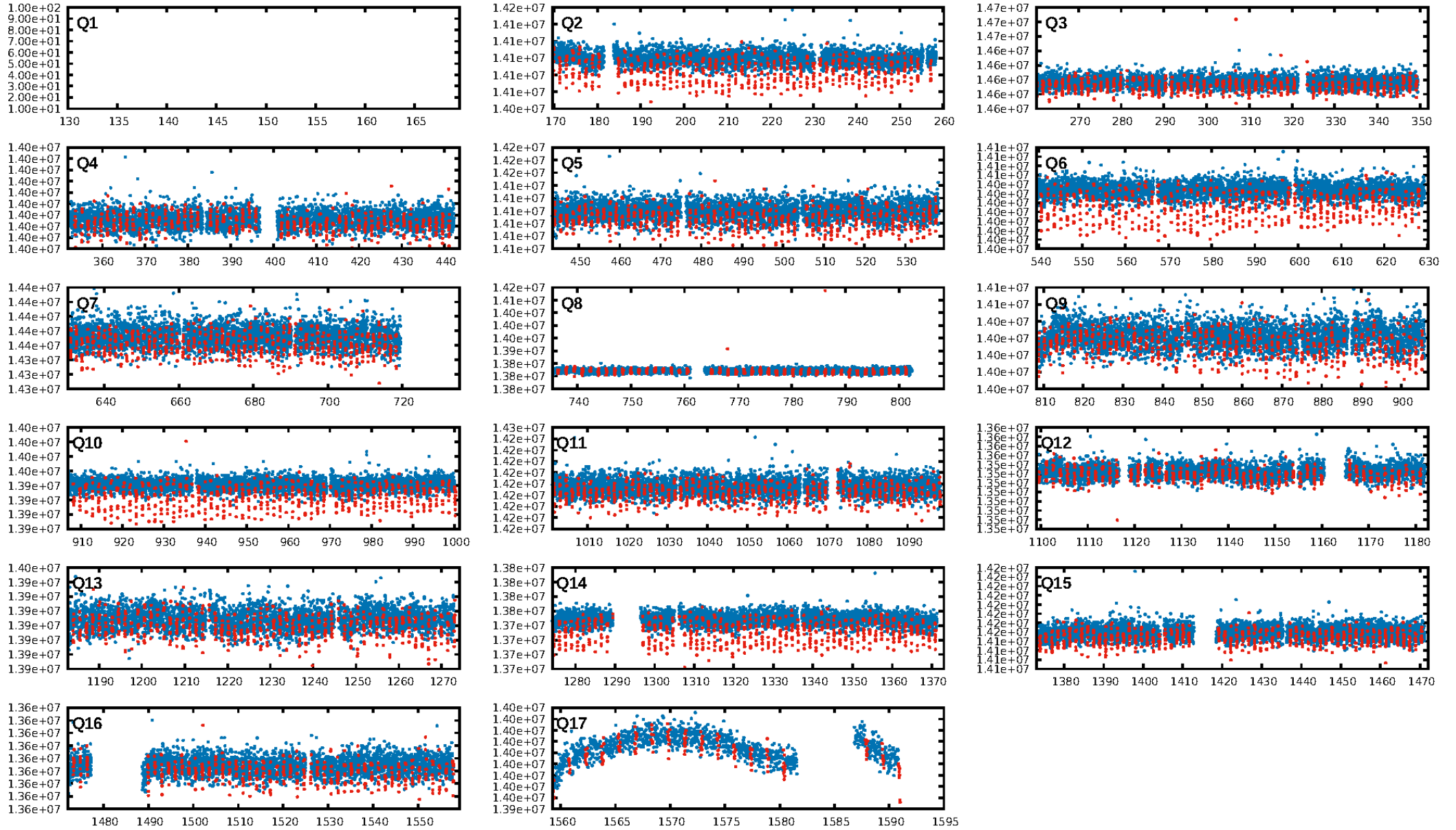
## DV Fit Results:

Period = 1.50707 [0.00000] d  
Epoch = 132.1049 [0.0007] BKJD  
Rp/R\* = 0.0237 [0.0016]  
a/R\* = 2.37 [0.63]  
b = 0.90 [0.07]  
Seff = 1040.95 [345.31]  
Teq = 1448 [120] K  
Rp = 2.08 [0.55] Re  
a = 0.0247 [0.0053] AU  
Ag = 2.09 [0.98] [1.11σ]  
Teffp = 2693 [251] K [4.47σ]

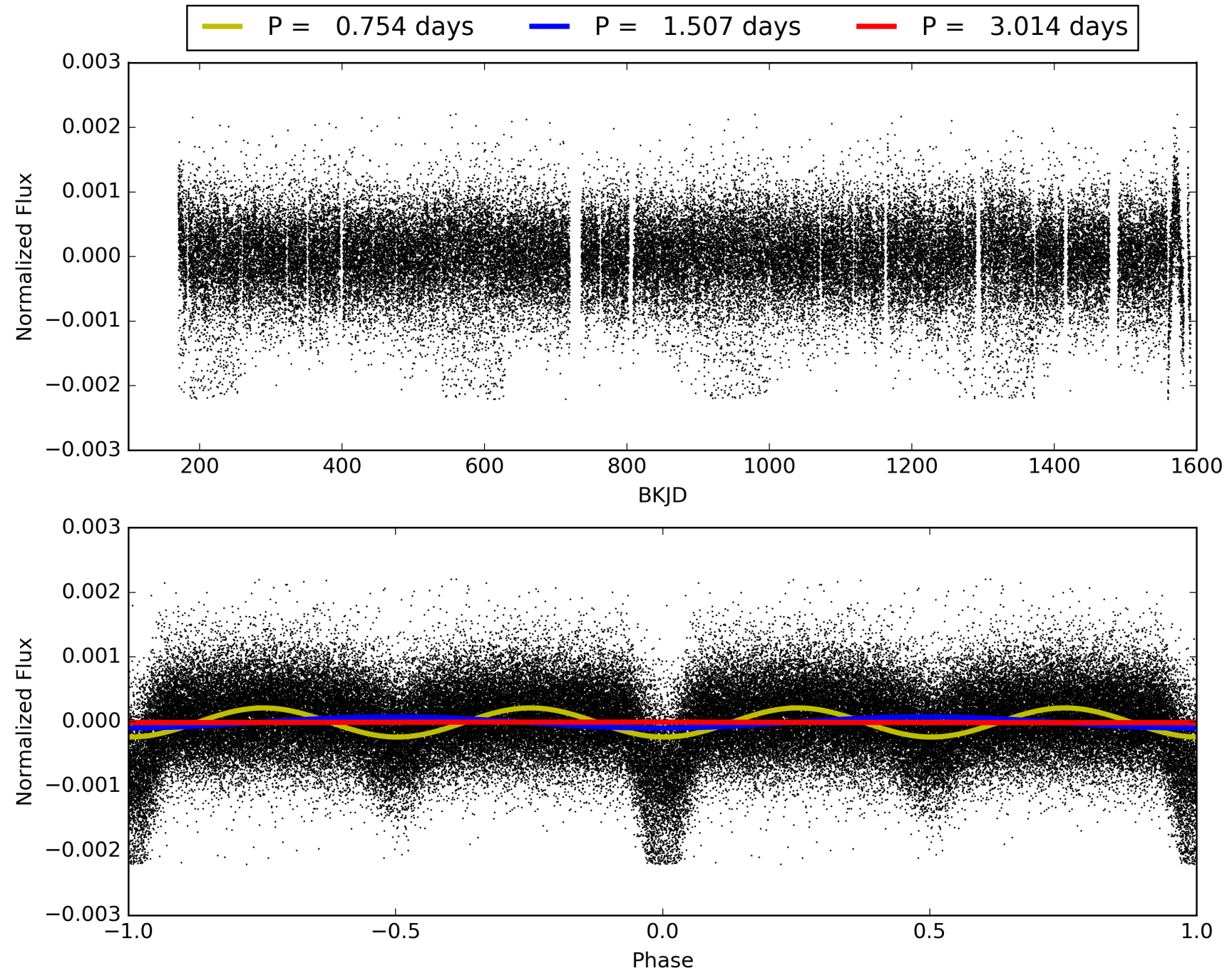
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [854/854]  
GhostDiagnostic-chr: -0.1699  
Centroid-sig: 0.0%  
Centroid-so: 69.167 arcsec [254.05σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [16/16]

# TCE 007700561-01, PDC Light Curves

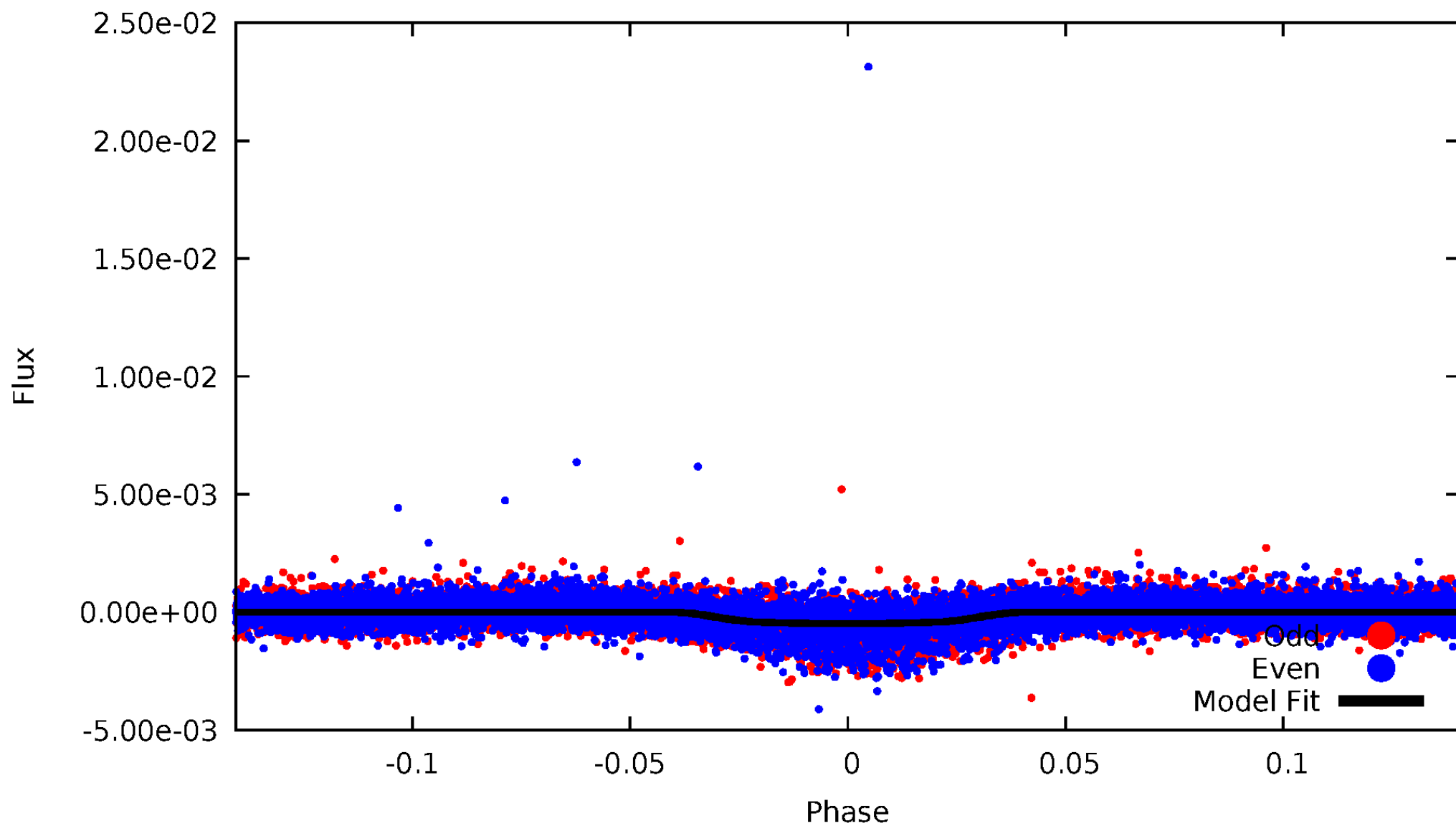


TCE 007700561-01



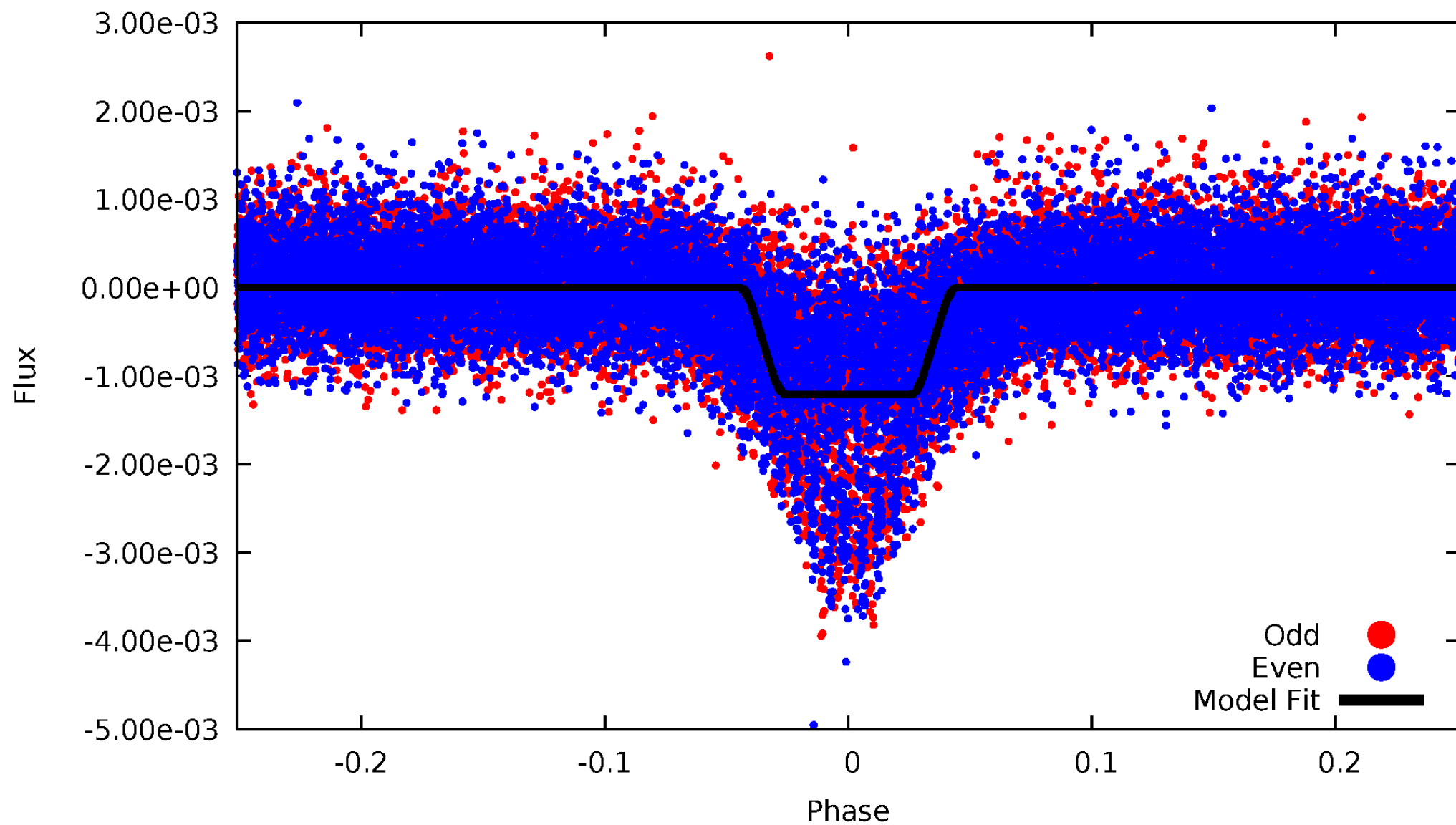
# DV Odd/Even

TCE 007700561-01



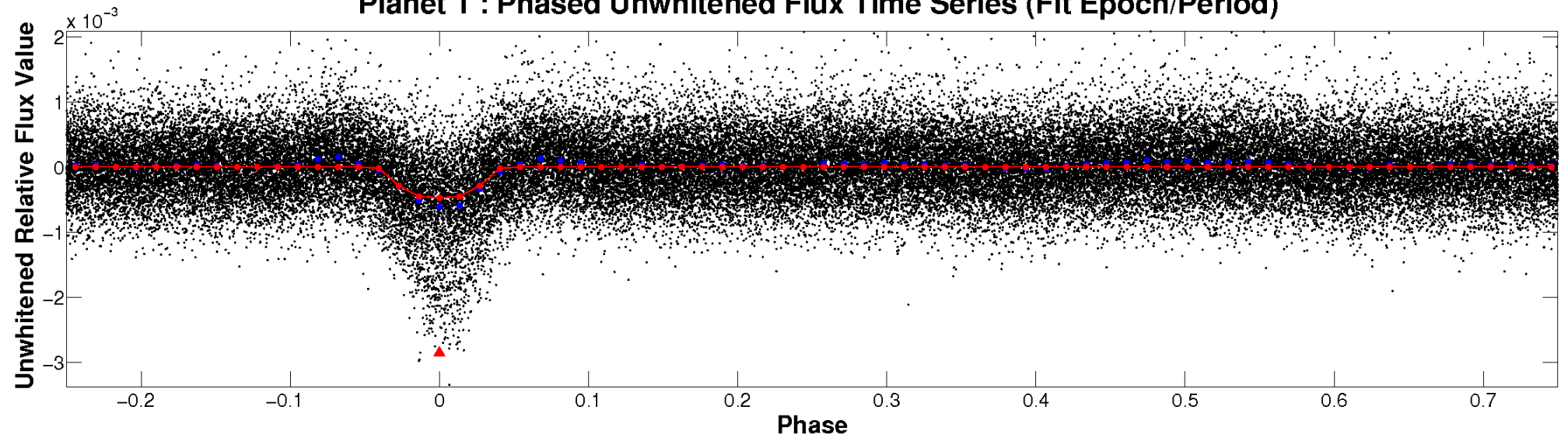
# ALT Odd/Even

TCE 007700561-01

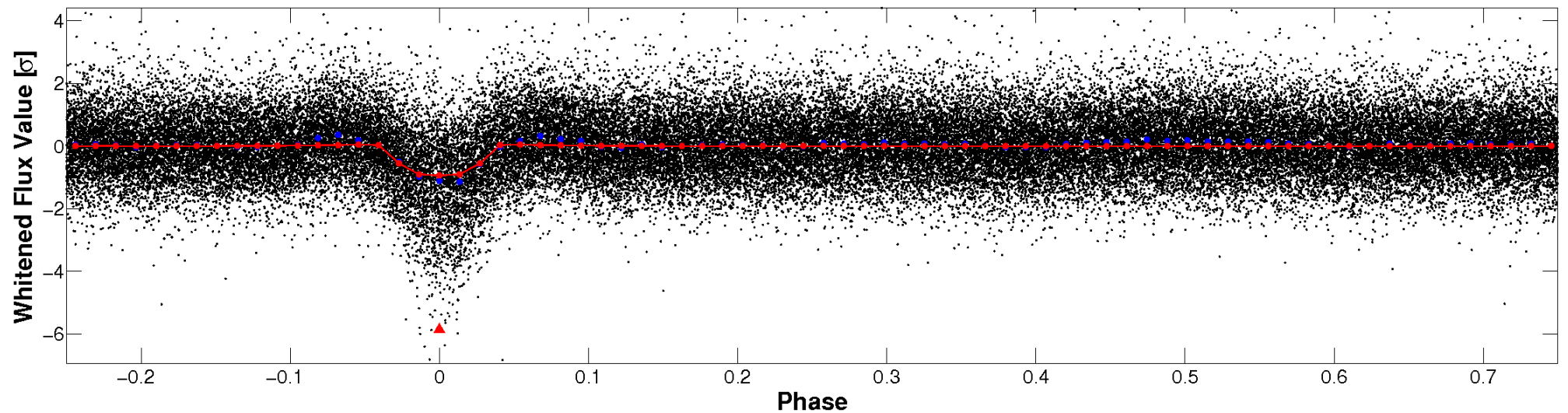


# Non-Whitened Vs. Whitened Light Curve

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

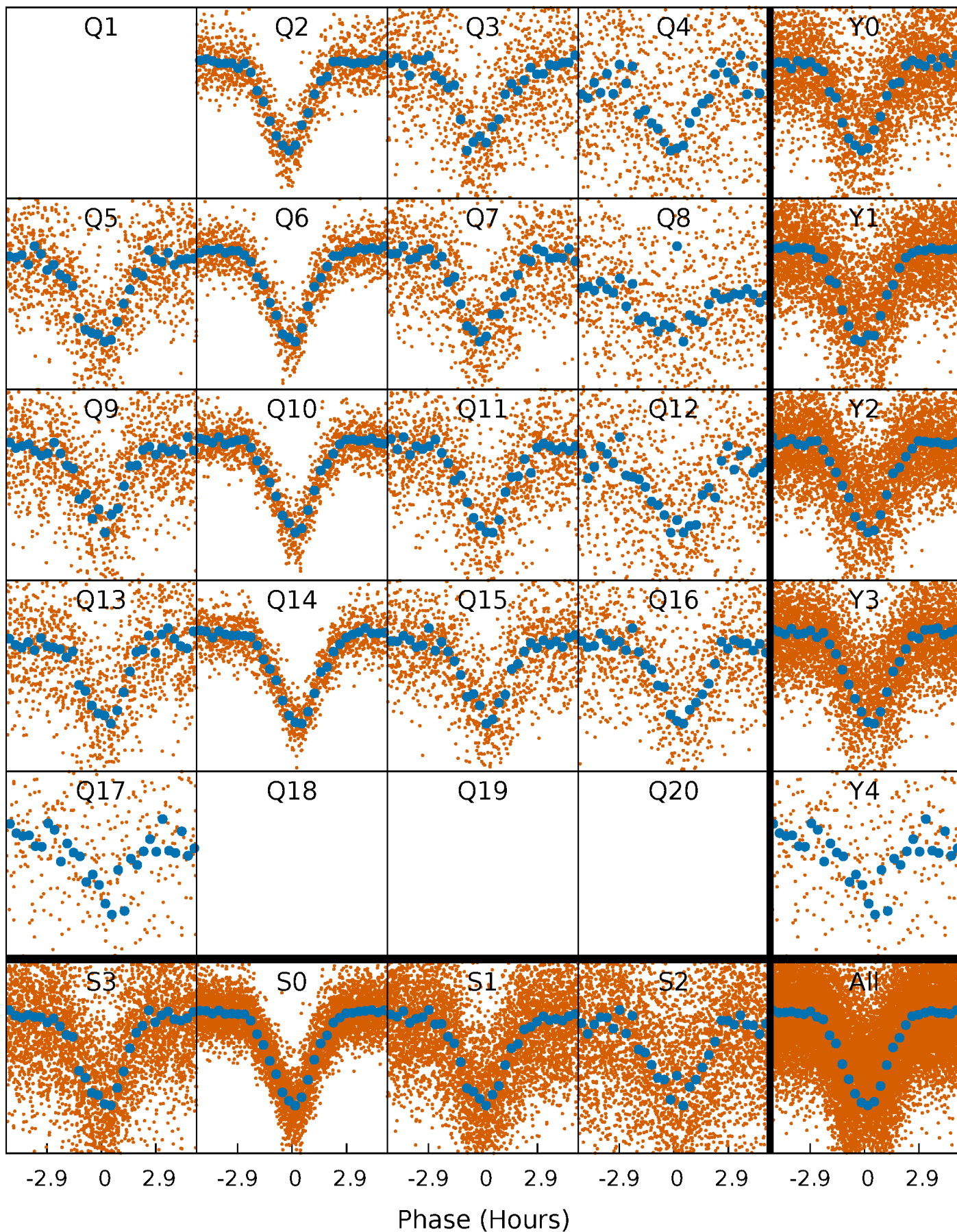


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



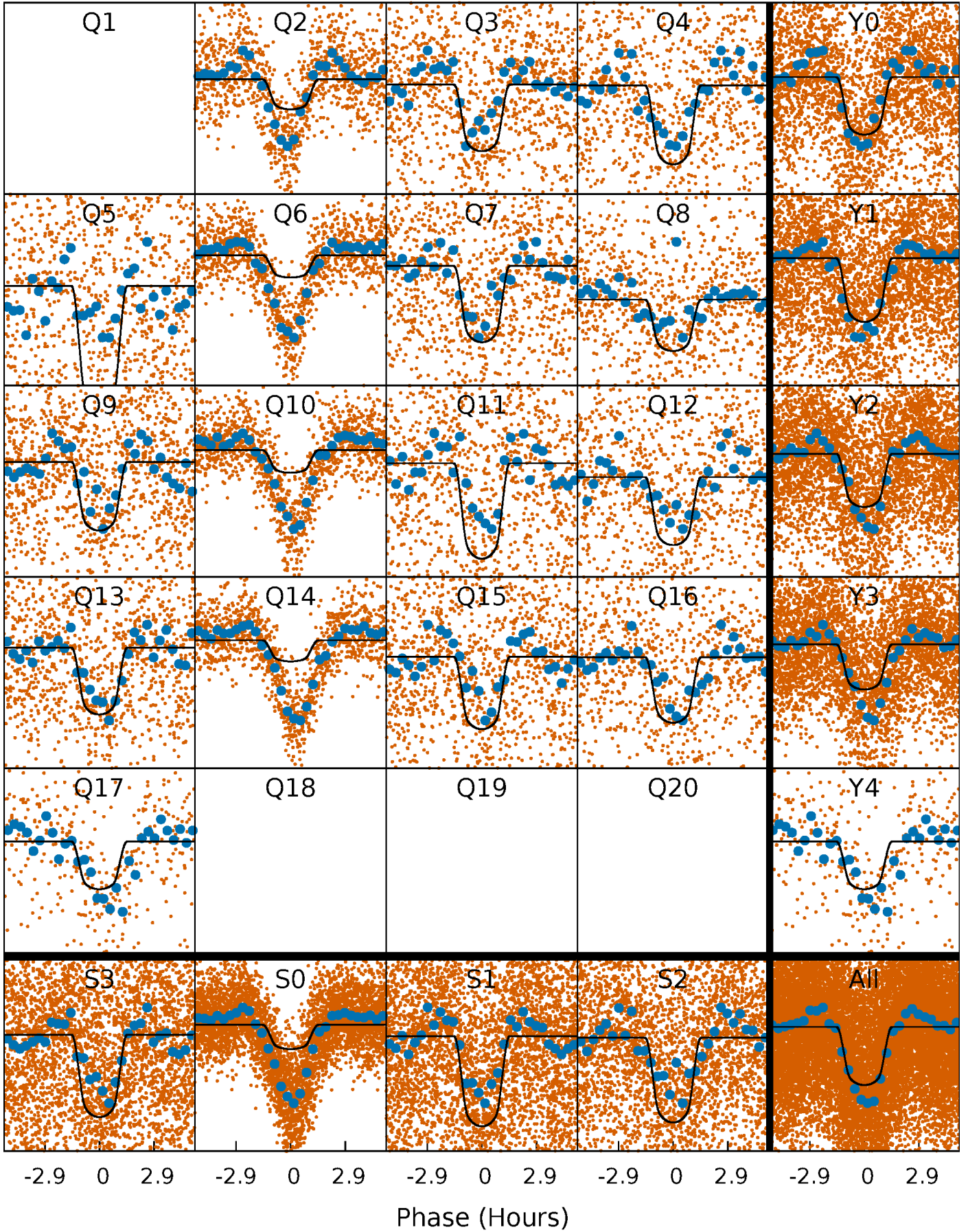
# PDC Quarter-Phased Transit Curves

TCE 007700561-01 P= 1.507072 Days  $T_0=132.104892$  (BKJD)



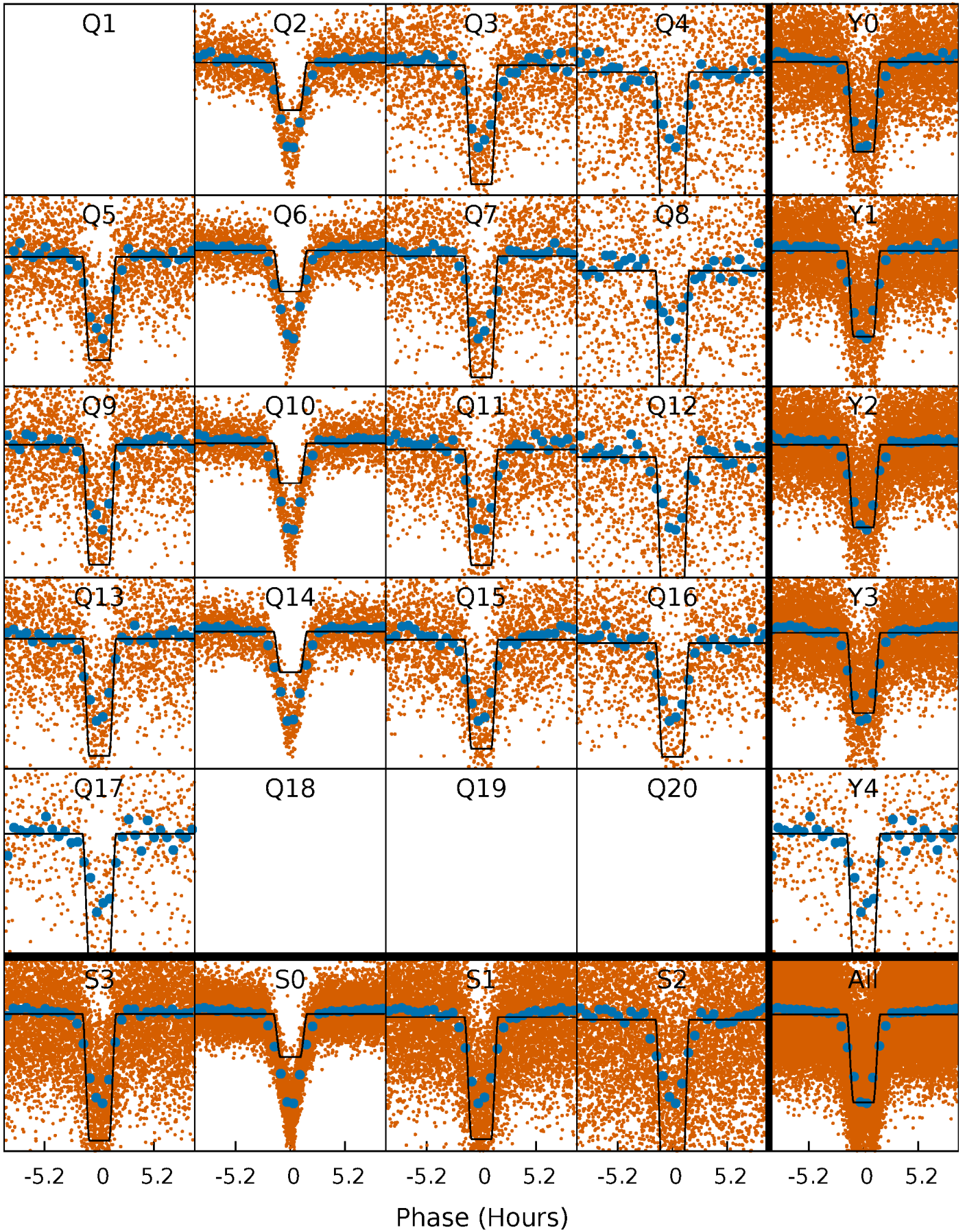
# DV Quarter-Phased Transit Curves

TCE 007700561-01   P= 1.507072 Days    $T_0=132.104892$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

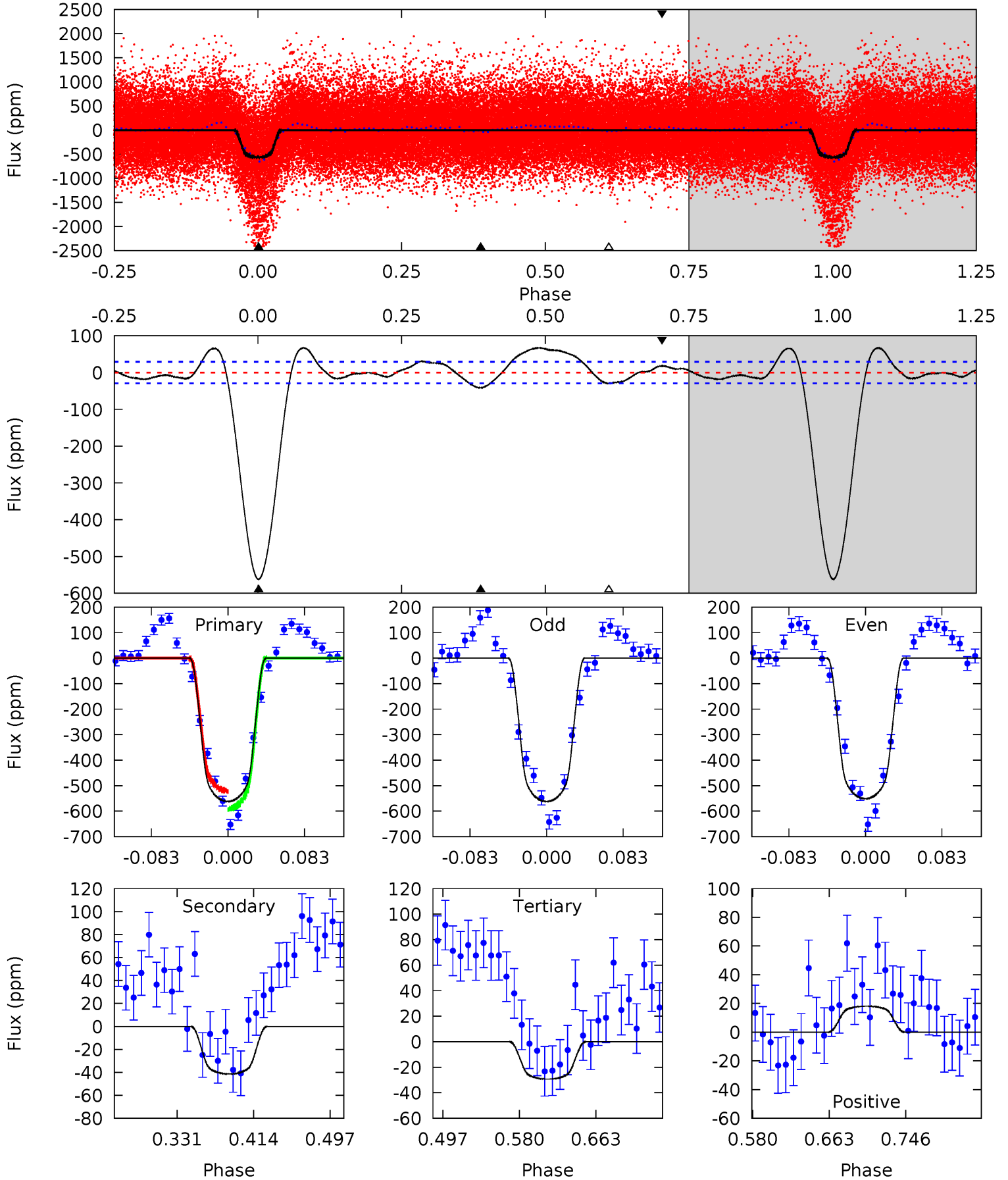
TCE 007700561-01 P= 1.507103 Days  $T_0=132.091704$  (BKJD)



# DV Model-Shift Uniqueness Test

007700561-01, P = 1.507072 Days, E = 132.104892 Days

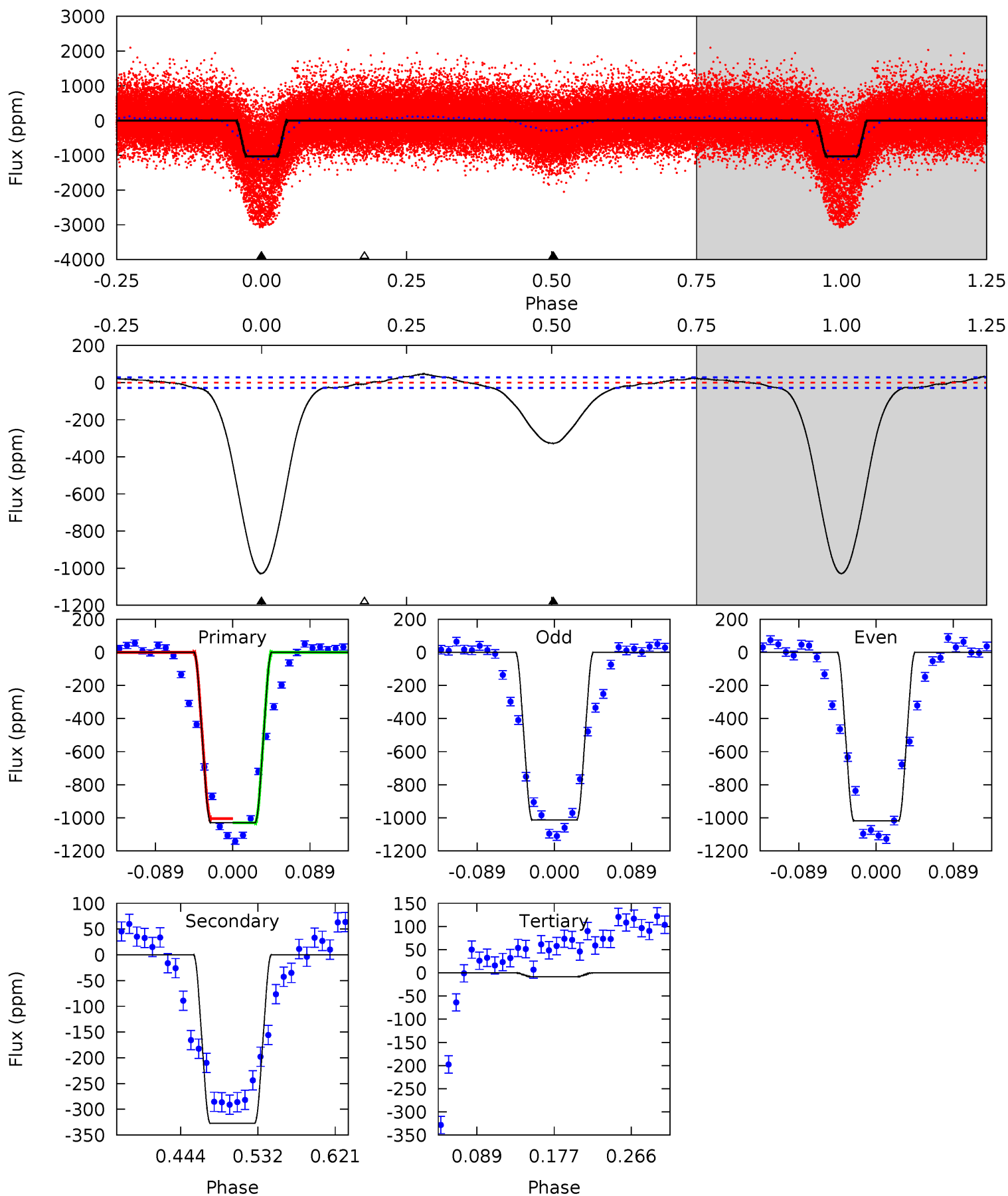
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
88.2	6.51	4.60	2.84	4.60	1.73	4.15	83.6	85.4	1.91	3.67	0.87	1.36	0.11	5.57



# Alt Model-Shift Uniqueness Test

007700561-01, P = 1.507103 Days, E = 132.091704 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
166.5	52.9	1.37	0	4.59	1.70	3.85	165.2	166.5	51.6	52.9	0.48	1.29	0.04	2.09



### Stellar Parameters For KIC 007700561

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5762^{+173}_{-173}$	$4.576^{+0.042}_{-0.168}$	$-0.360^{+0.300}_{-0.300}$	$0.801^{+0.205}_{-0.064}$	$0.892^{+0.087}_{-0.106}$	$2.443^{+0.401}_{-1.113}$
	+3%/-3%	+1%/-4%	+83%/-83%	+26%/-8%	+10%/-12%	+16%/-46%
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 007700561-01 / KOI 5414.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-41 \pm 6$	$2.14^{+0.30}_{-0.20}$	$2064^{+131}_{-87}$	$3431^{+144}_{-132}$	$2.979^{+0.775}_{-0.752}$
Alt.	$-327 \pm 6$	$3.13^{+0.42}_{-0.26}$	$2070^{+103}_{-90}$	$4344^{+139}_{-131}$	$11^{+2}_{-2}$

$T_{\text{max}}$  = 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

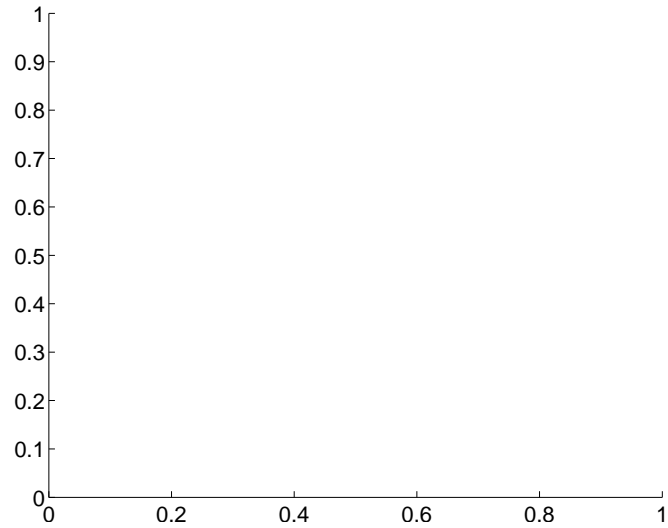
Supplemental centroid analysis for 007700561-01. Kepler magnitude: 15.54. Transit SNR 49.93

There are 0 quarters with good PRF difference image offsets

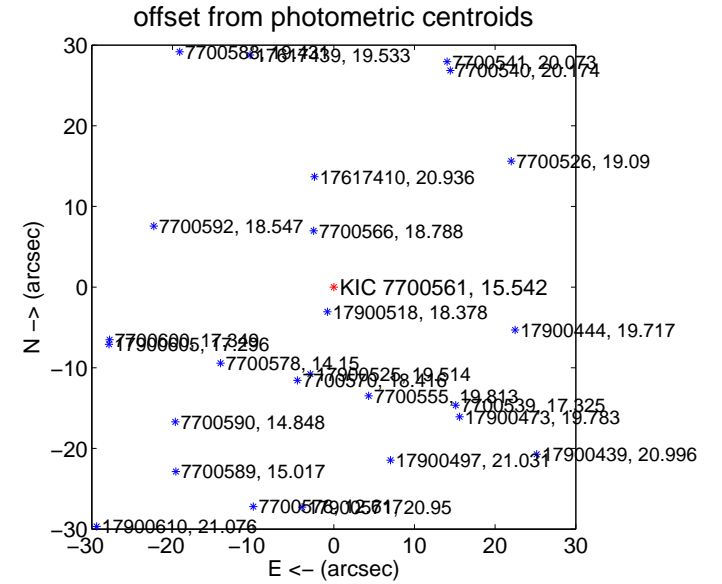
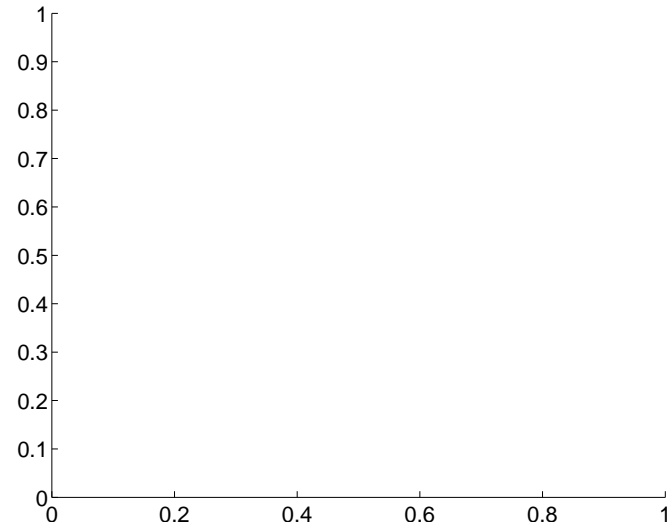
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$69.17 \pm 0.27$	$254.05$	$47.21 \pm 0.27$	$-50.56 \pm 0.27$

There is no PRF-fit offset from OOT-fit

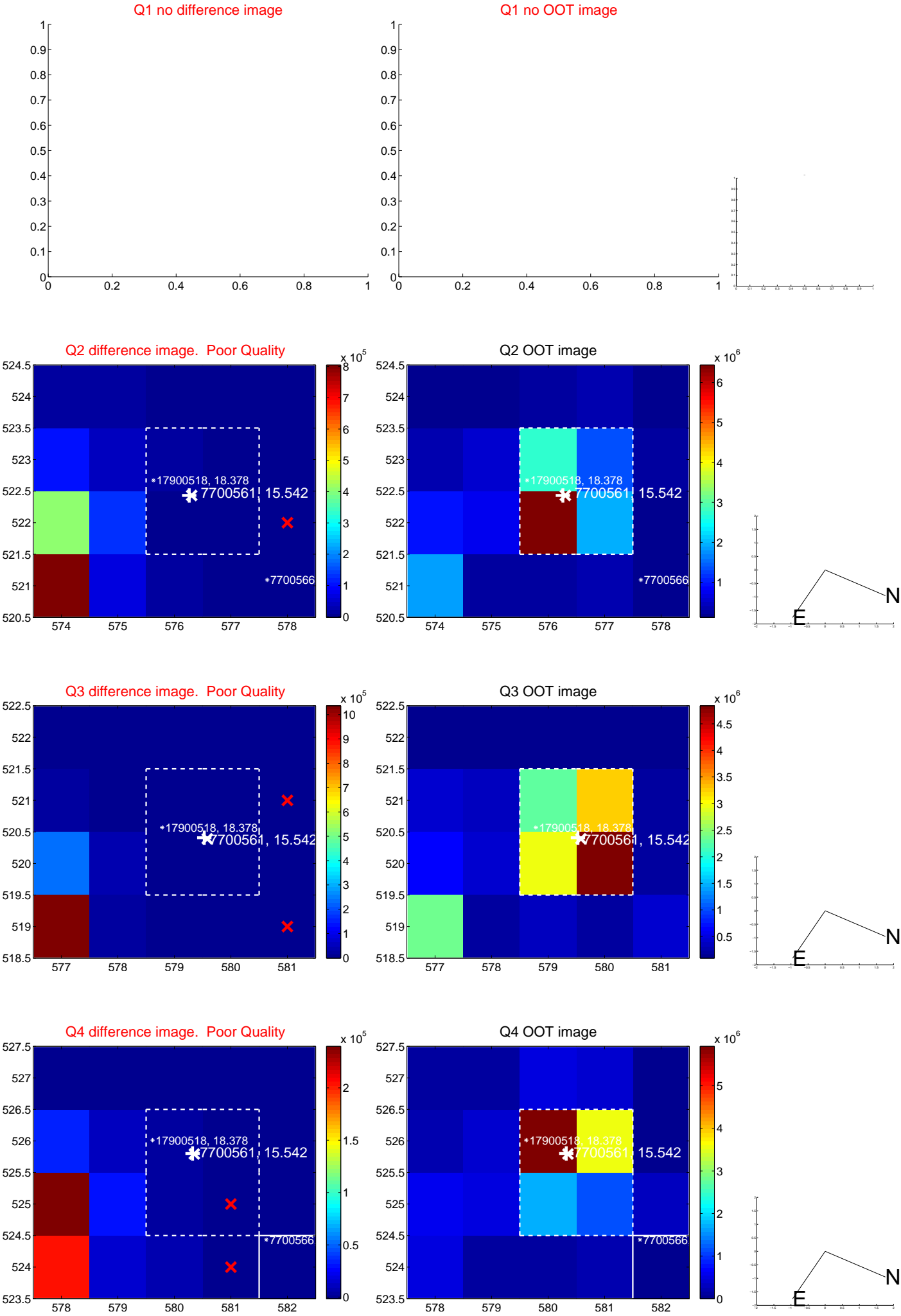


There is no PRF-fit offset from KIC

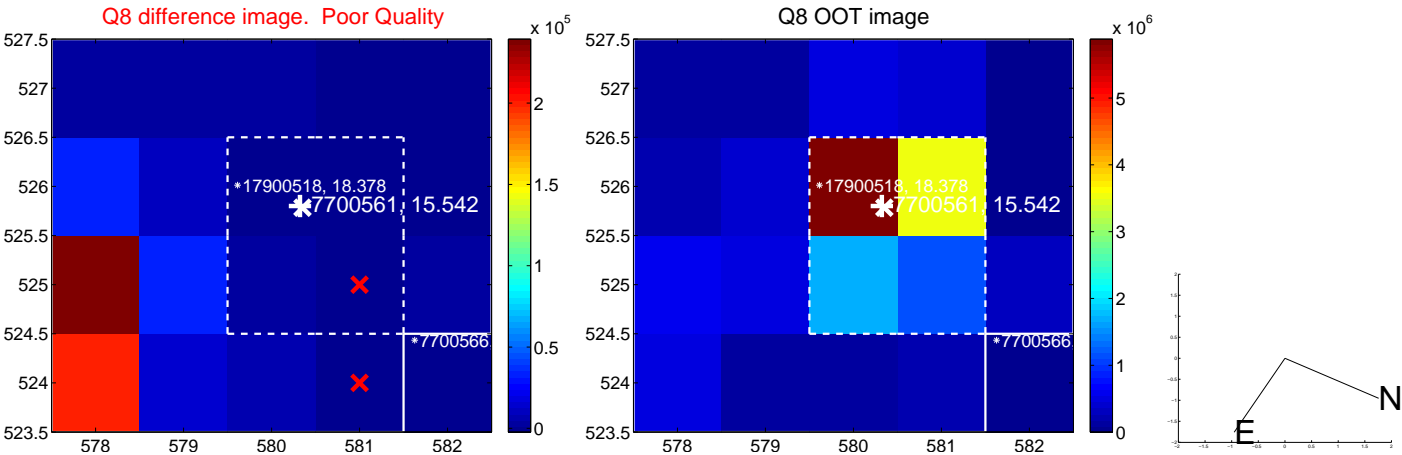
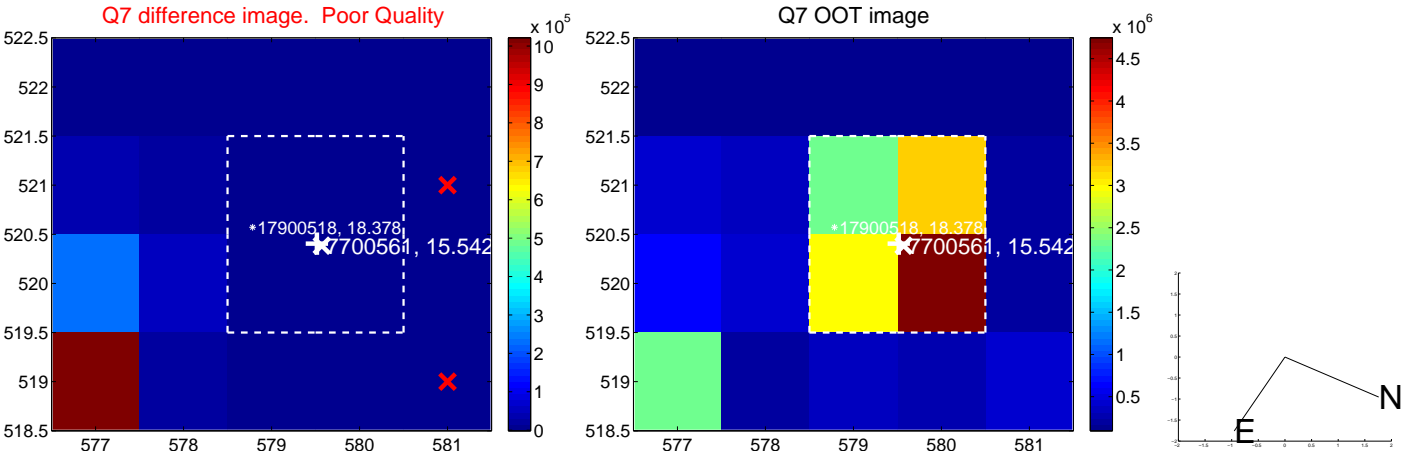
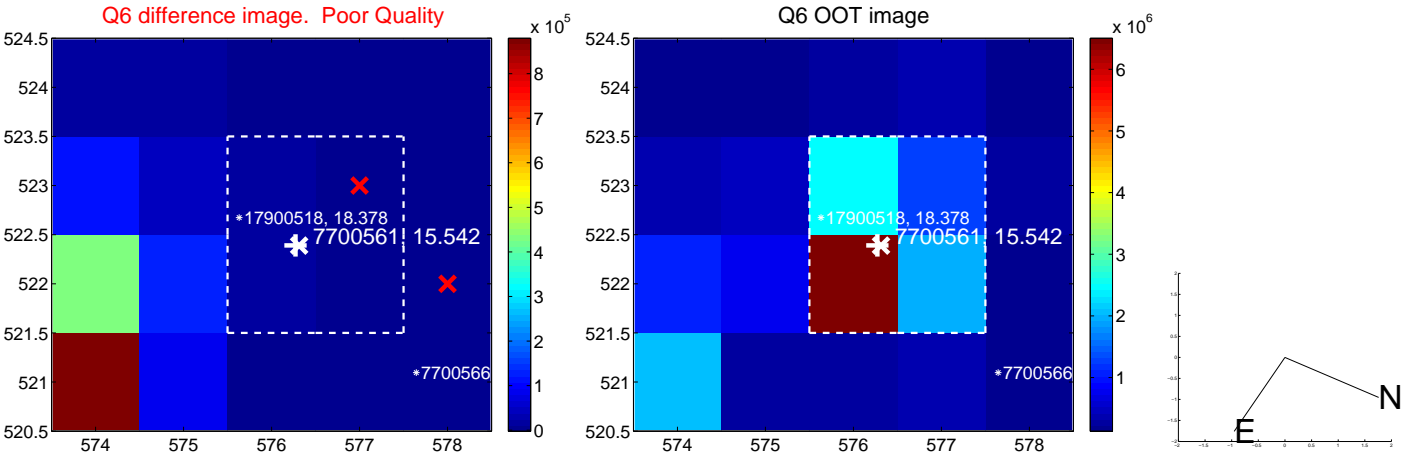
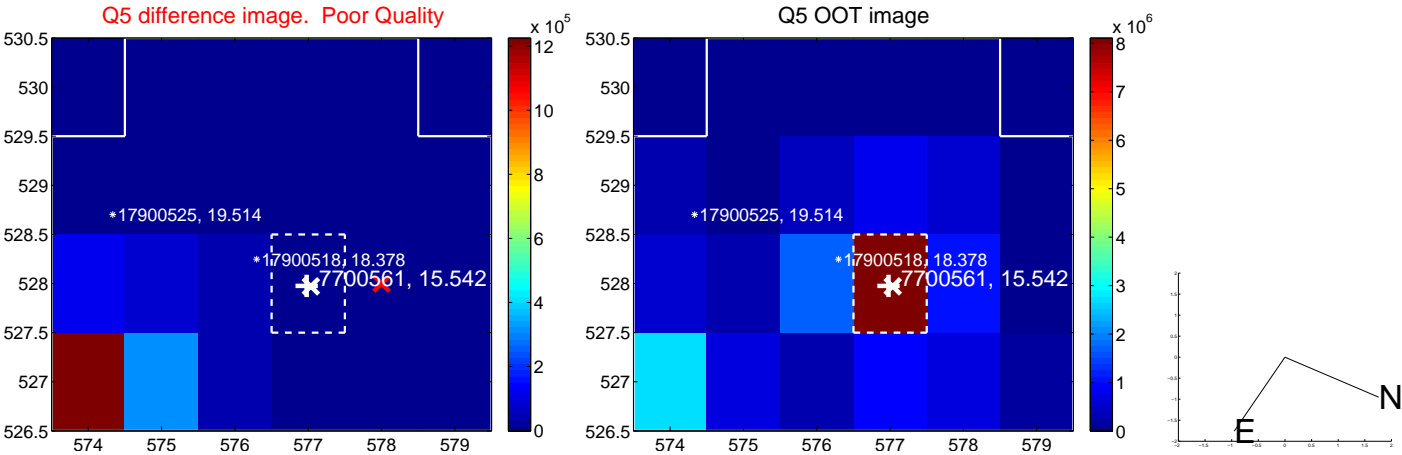


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

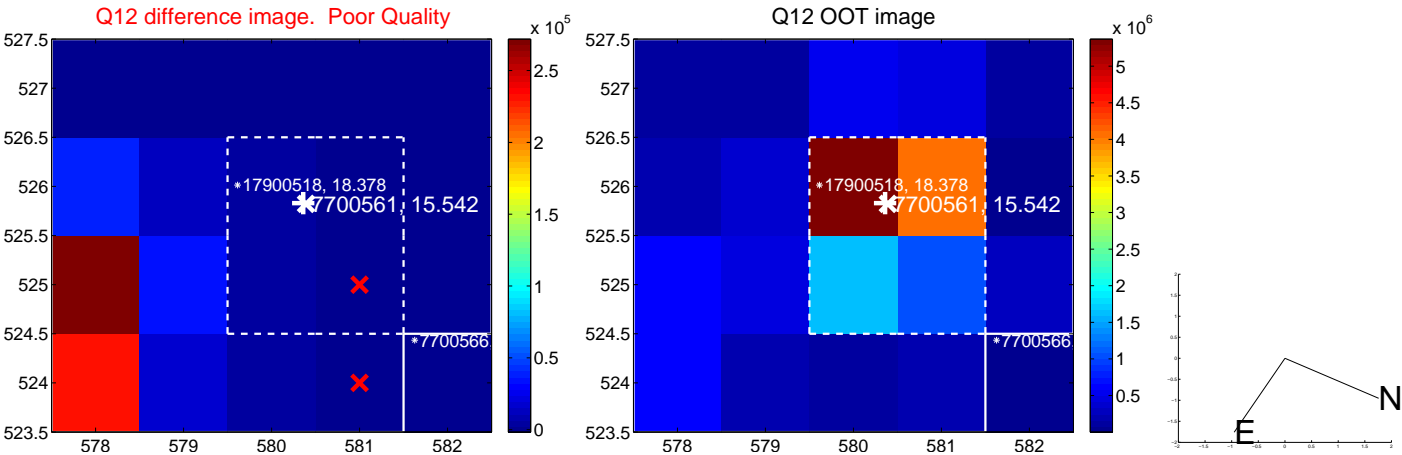
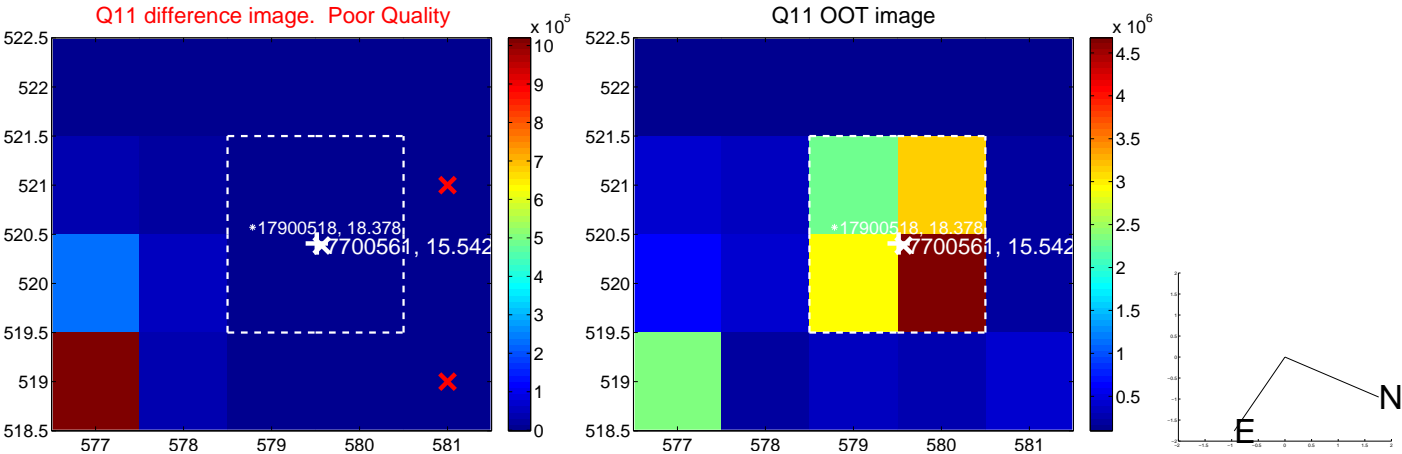
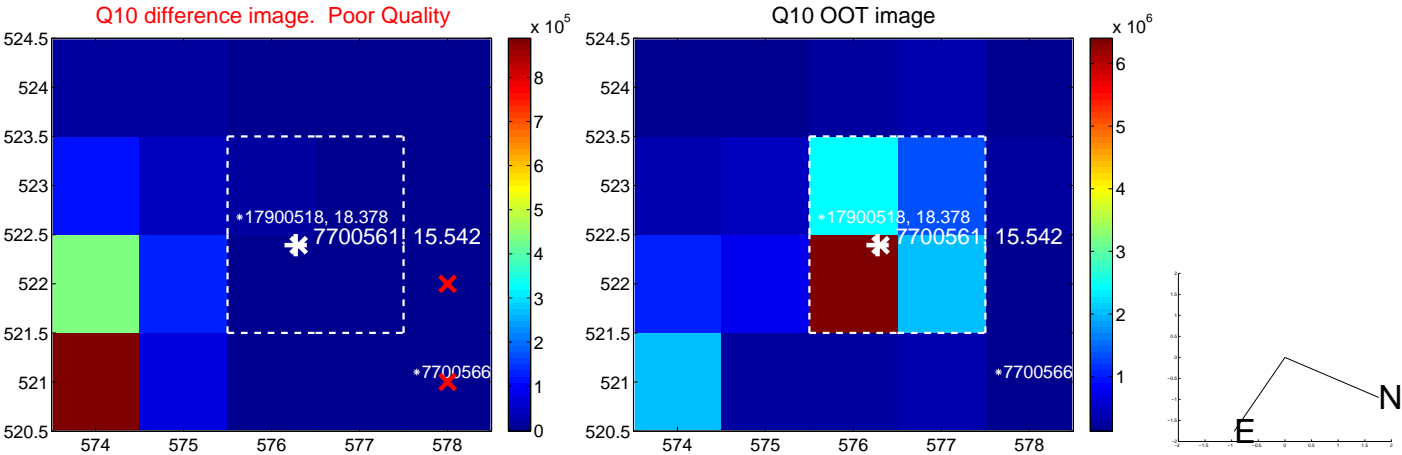
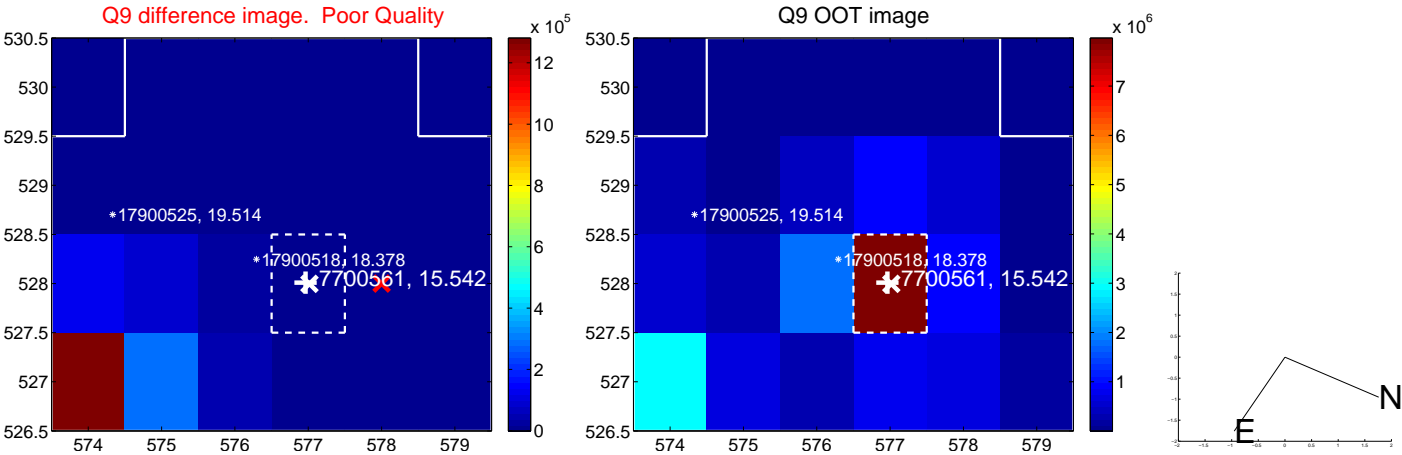
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



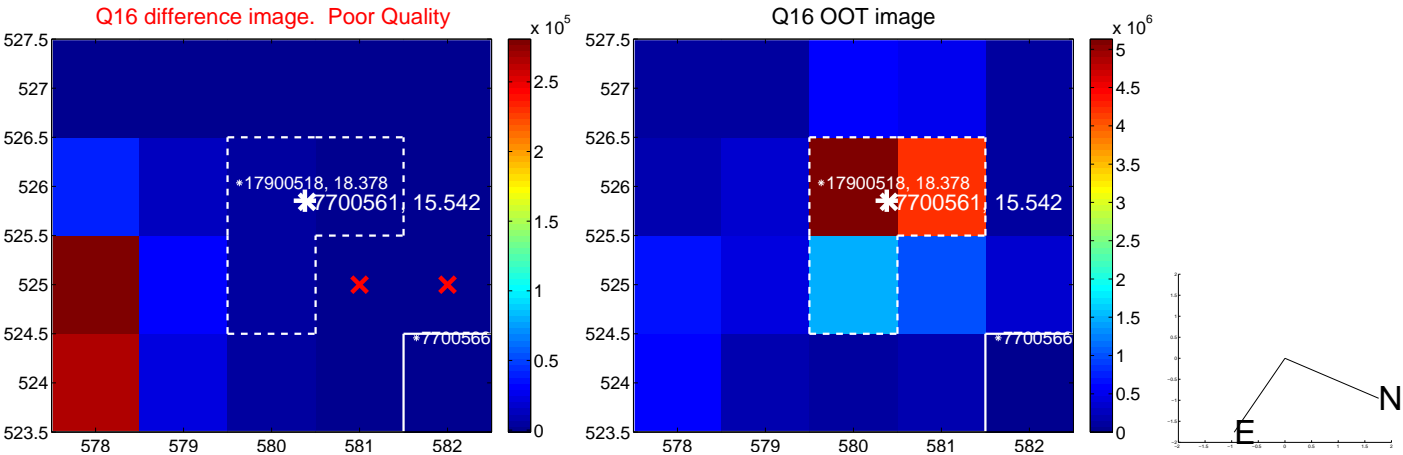
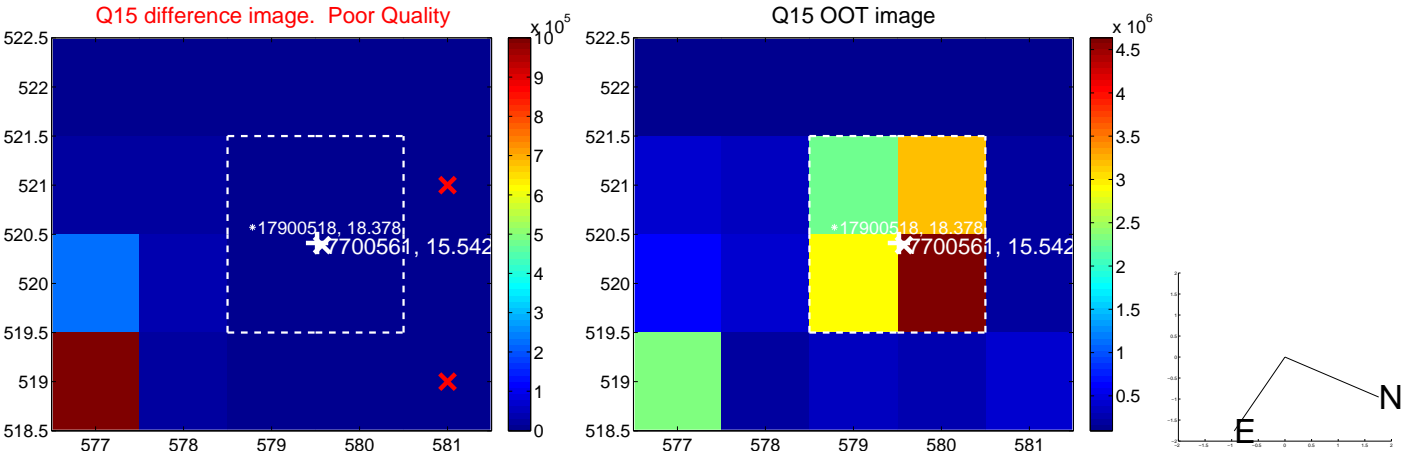
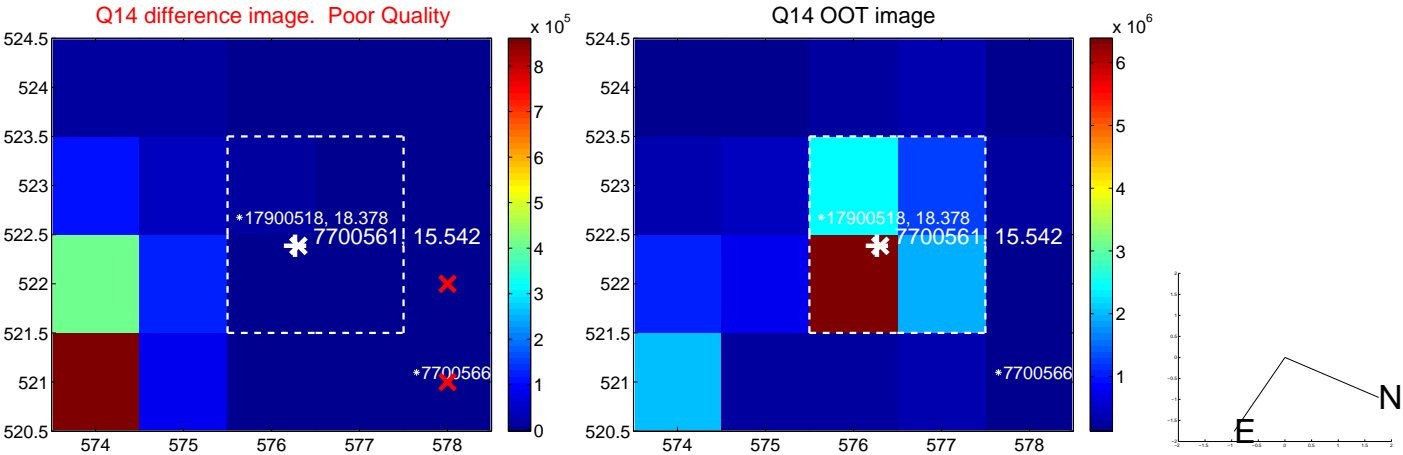
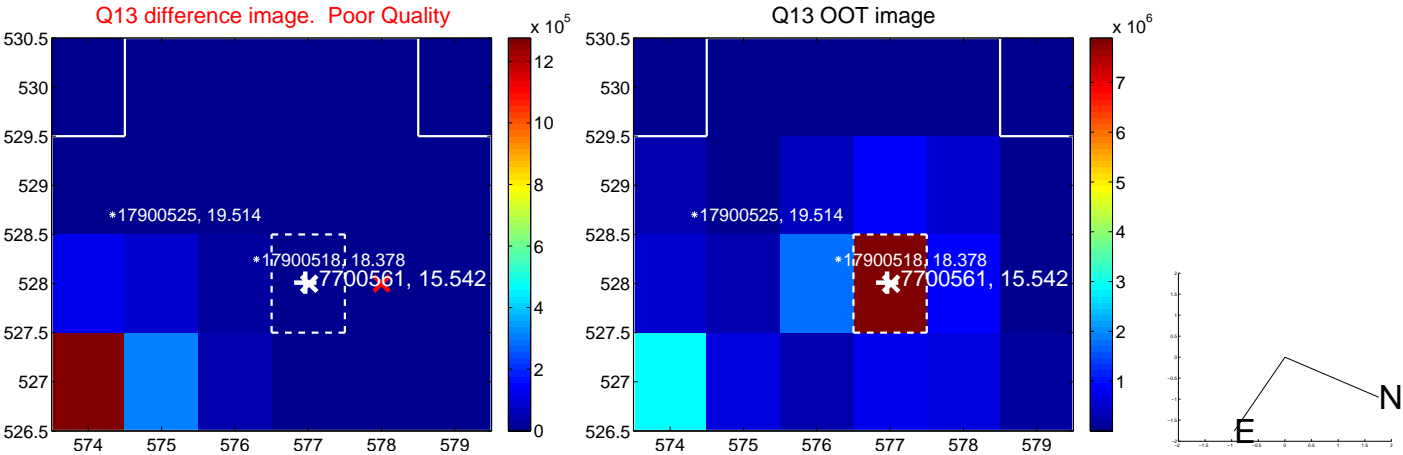
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



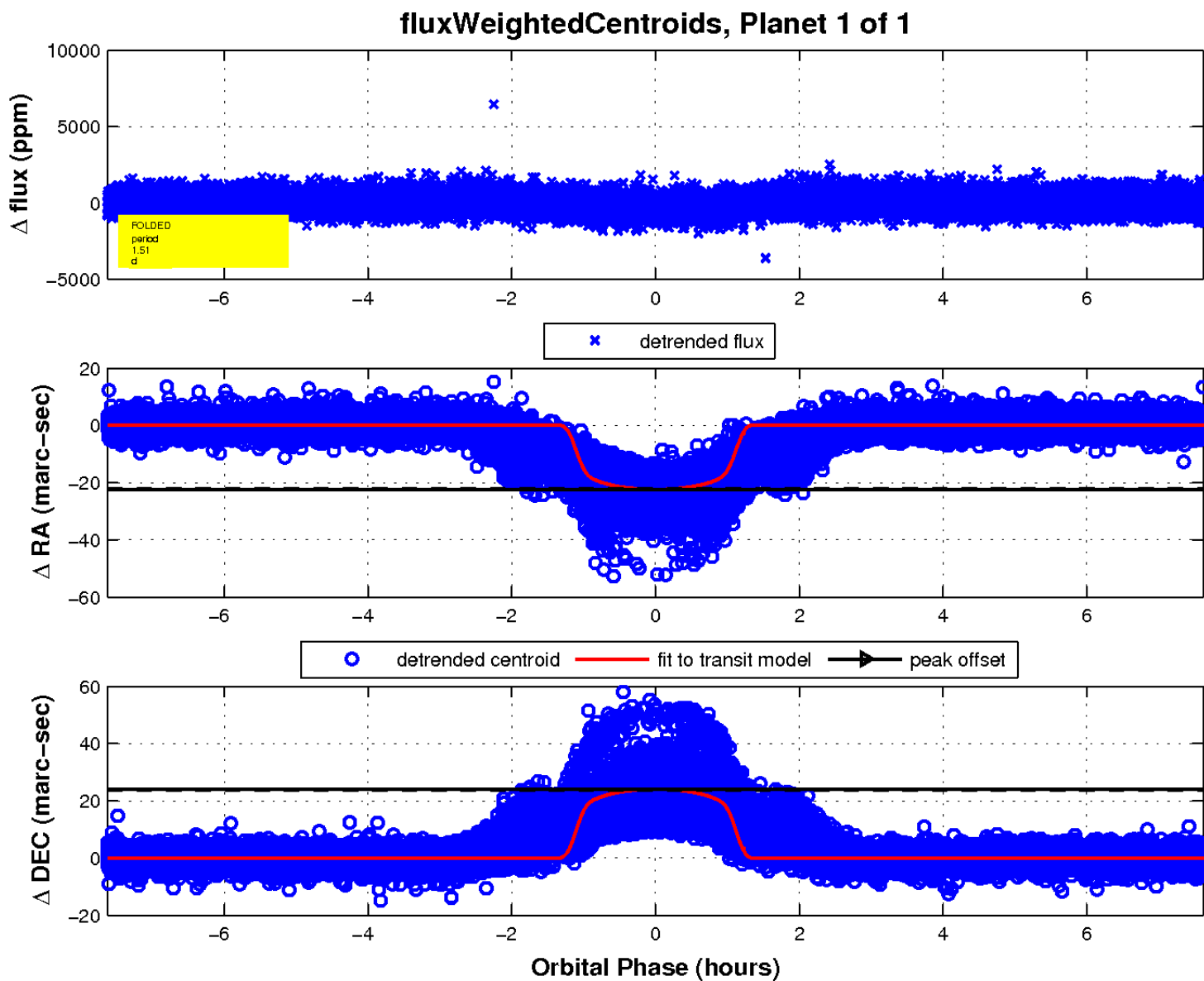
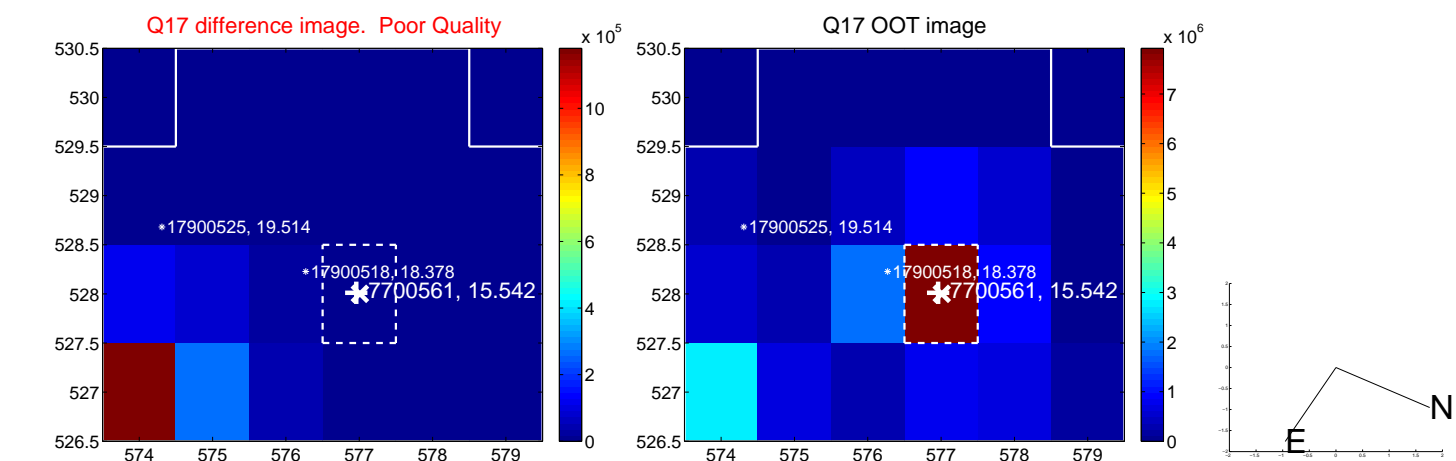
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination

