

# KIC 011084738

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011084738-01	OBS	No	607.935727	174.148651	540.3	4.667	7.5	7.6	1.07	6090	3.02	0.65

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011084738-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—MOD_NONUNIQ_ALT—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.

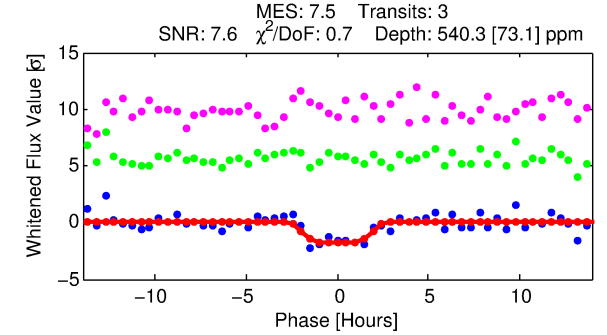
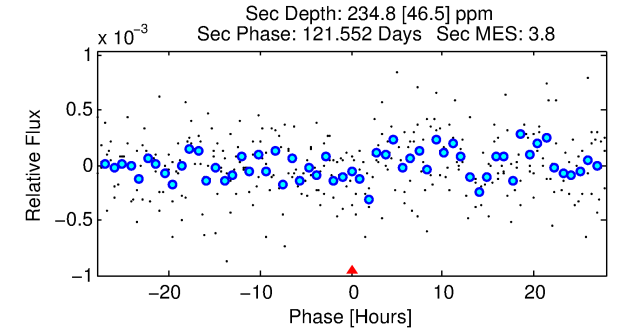
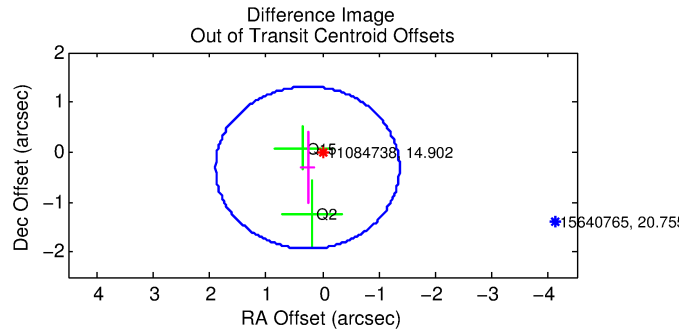
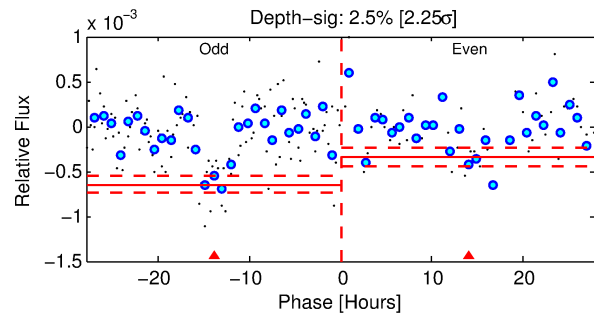
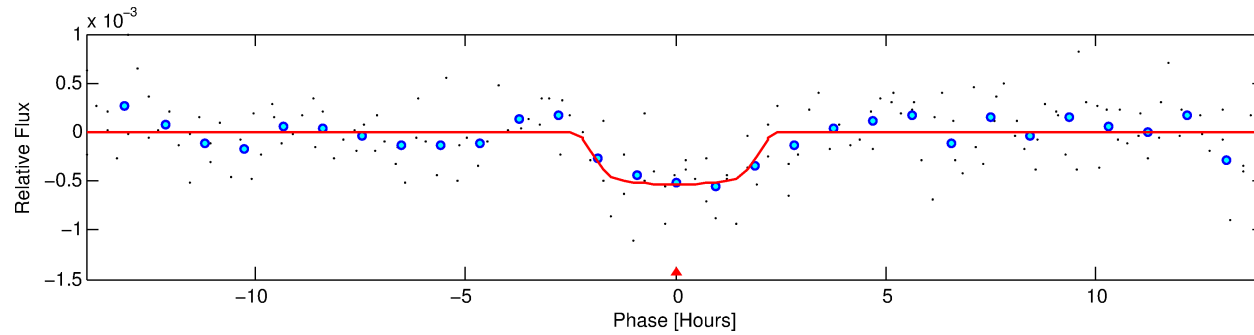
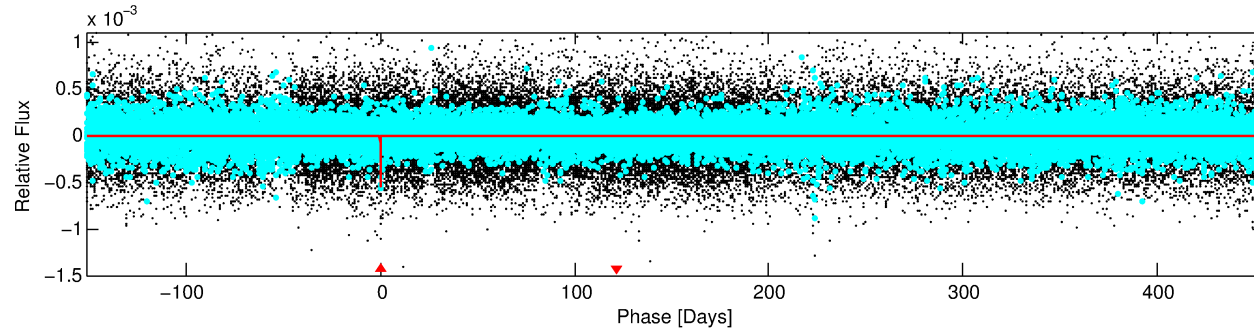
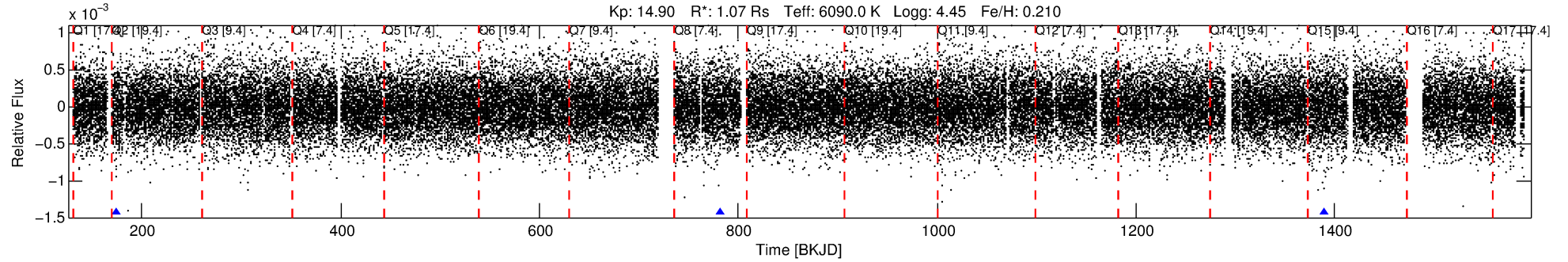
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011084738-01

No Significant Match Found

# DV One-Page Summary

KIC: 11084738 Candidate: 1 of 1 Period: 607.936 d



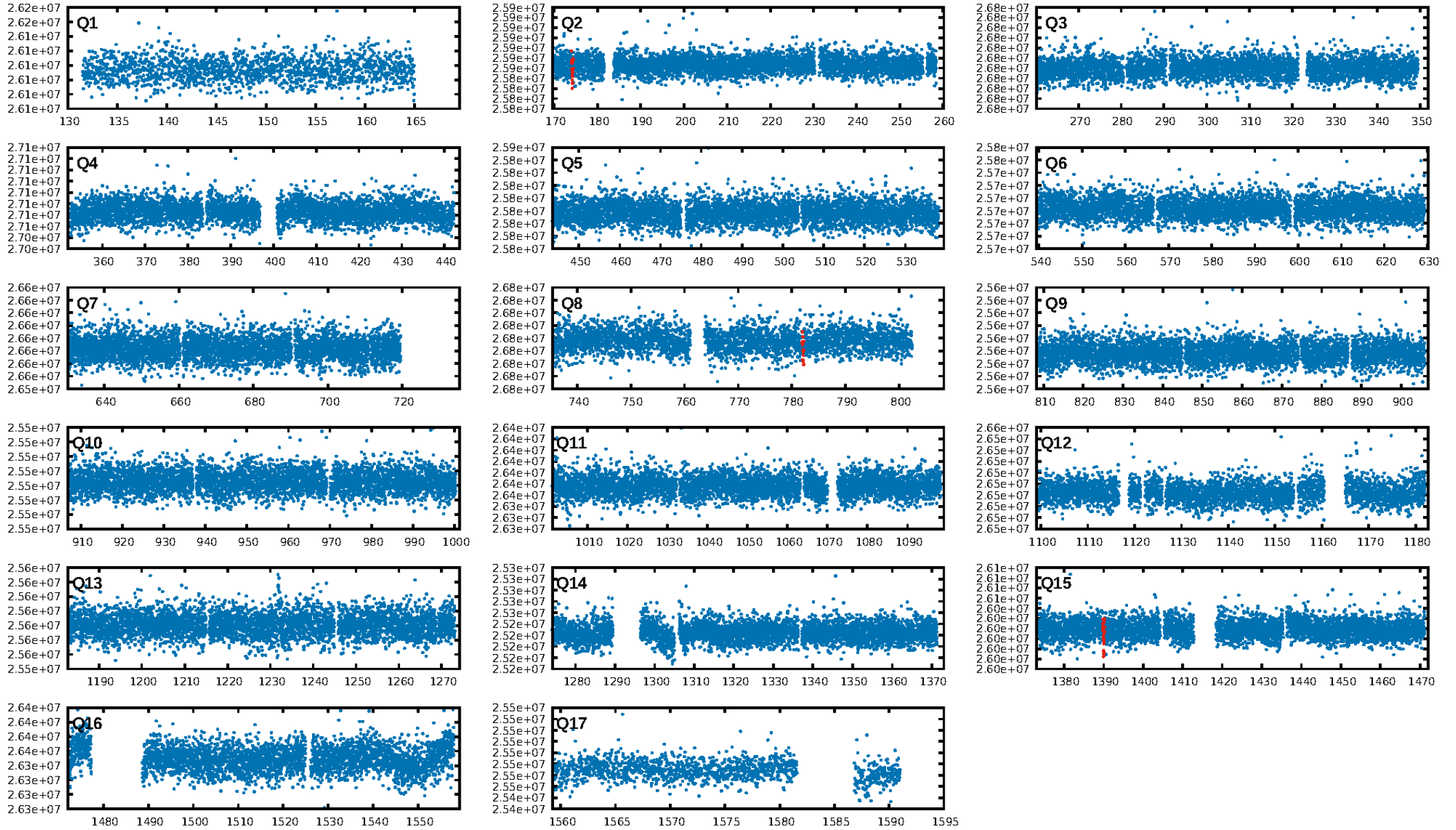
## DV Fit Results:

Period = 607.93573 [0.00859] d  
Epoch = 174.1487 [0.0117] BKJD  
Rp/R\* = 0.0258 [0.0046]  
a/R\* = 446.83 [343.16]  
b = 0.92 [0.13]  
Seff = 0.64 [0.26]  
Teff = 228 [23] K  
Rp = 3.01 [1.03] Re  
a = 1.4807 [0.3701] AU  
Ag = 31158.80 [17116.38] [1.82σ]  
Teffp = 4694 [516] K [8.65σ]

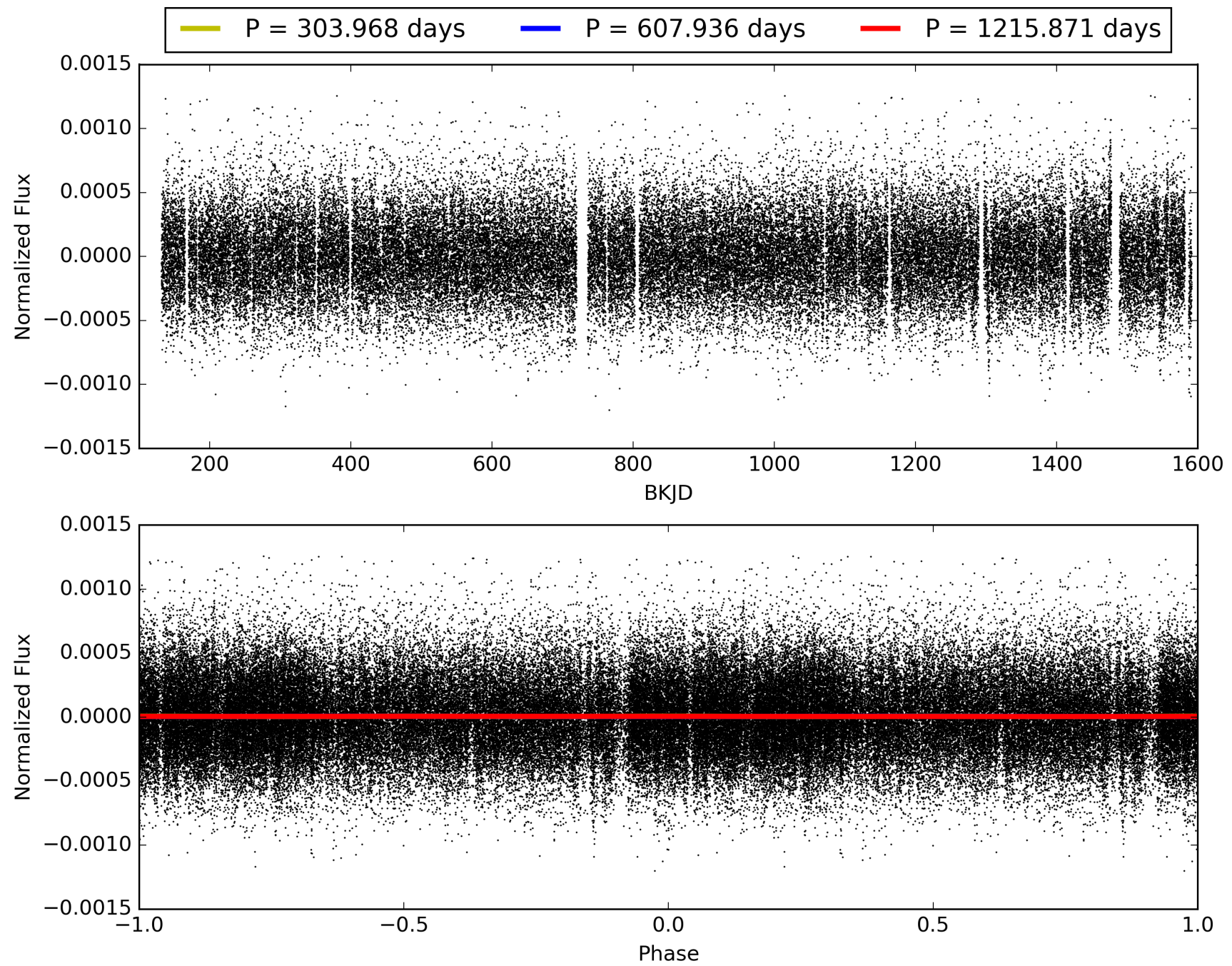
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 12.2%  
ModelChiSquareGof-sig: 97.6%  
Bootstrap-pfa: 8.85e-16  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 4.088  
Centroid-sig: 2.2%  
Centroid-so: 2.457 arcsec [1.41σ]  
OotOffset-rm: 0.408 arcsec [0.75σ]  
KicOffset-rm: 0.576 arcsec [0.91σ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 011084738-01, PDC Light Curves

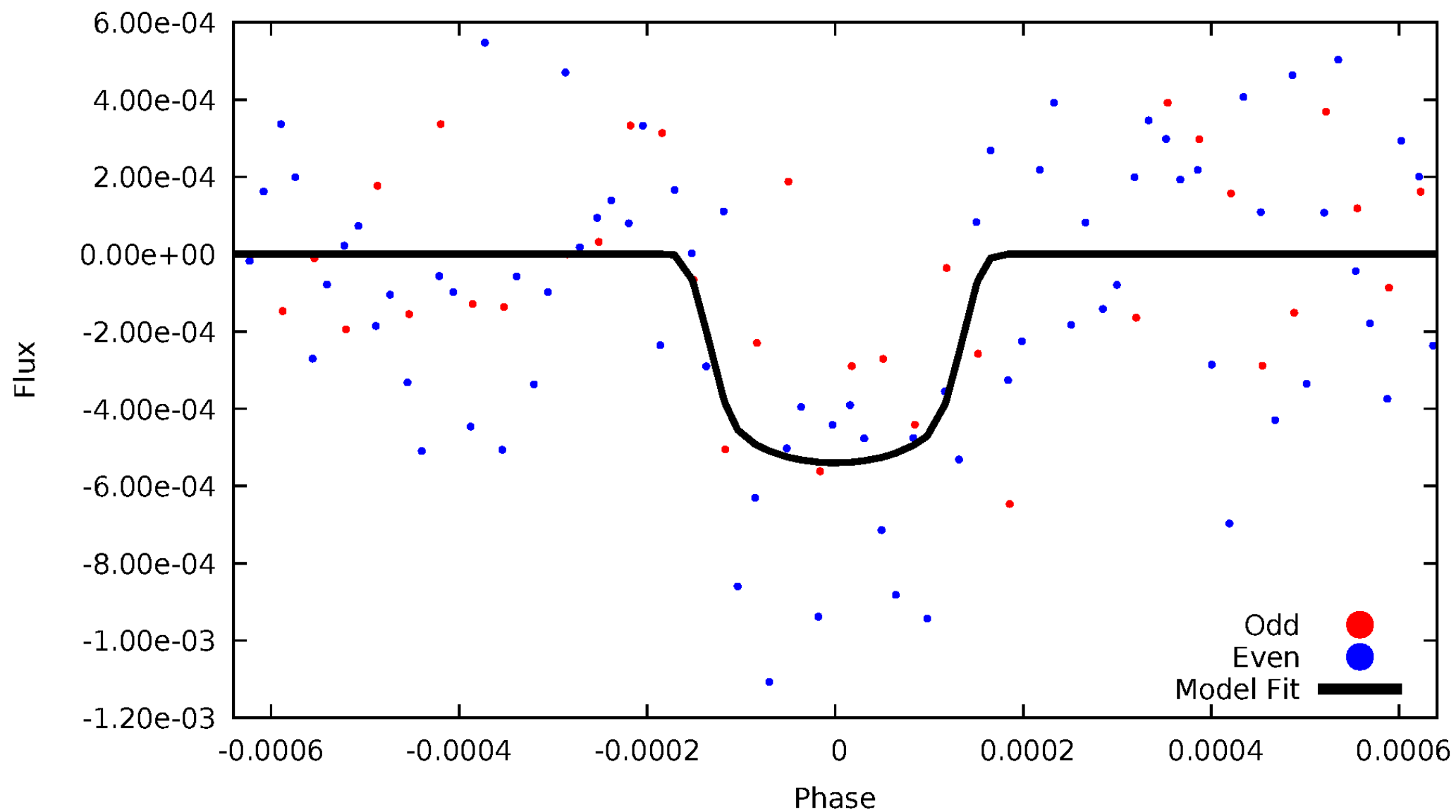


TCE 011084738-01



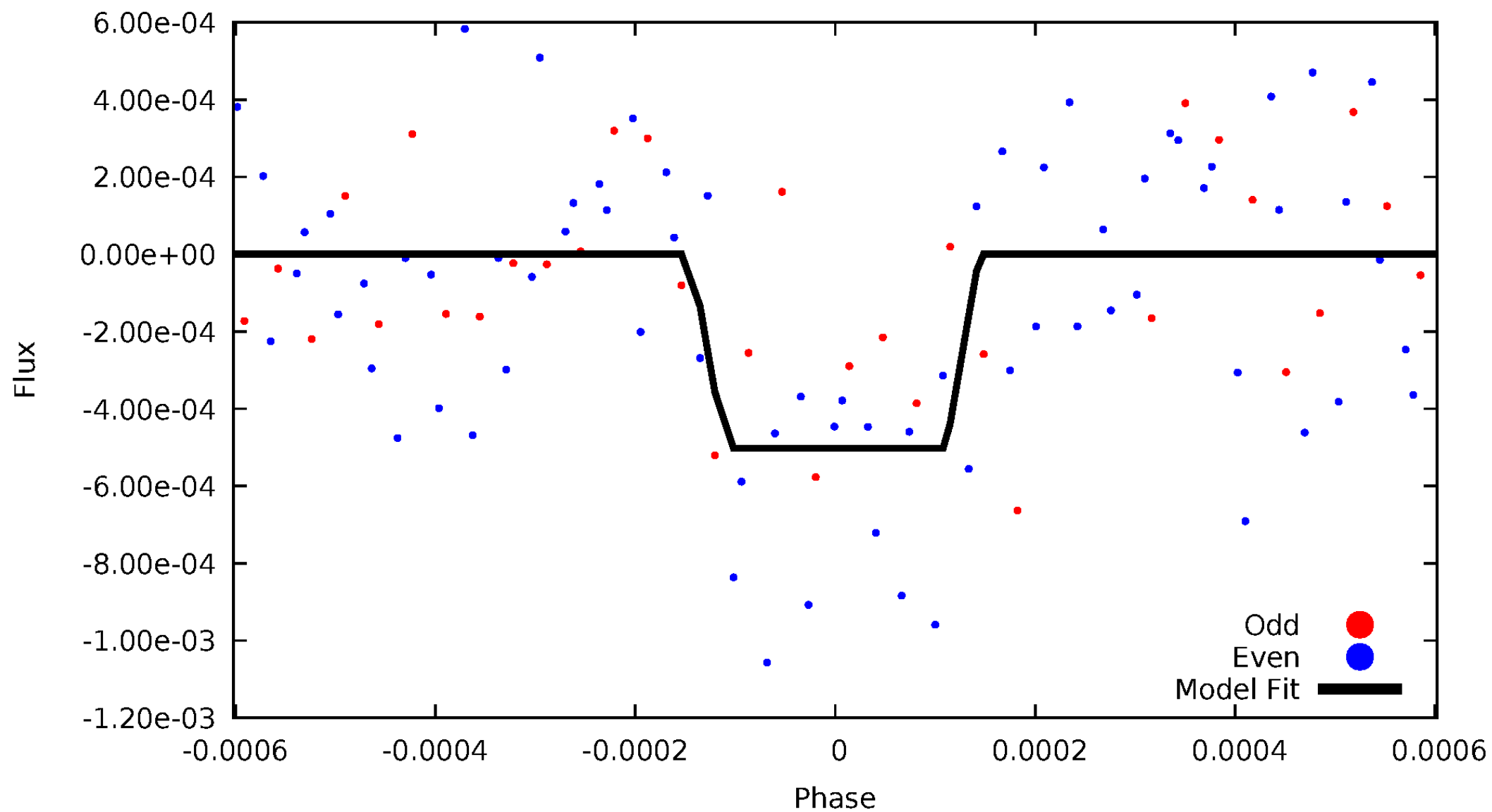
# DV Odd/Even

TCE 011084738-01



# ALT Odd/Even

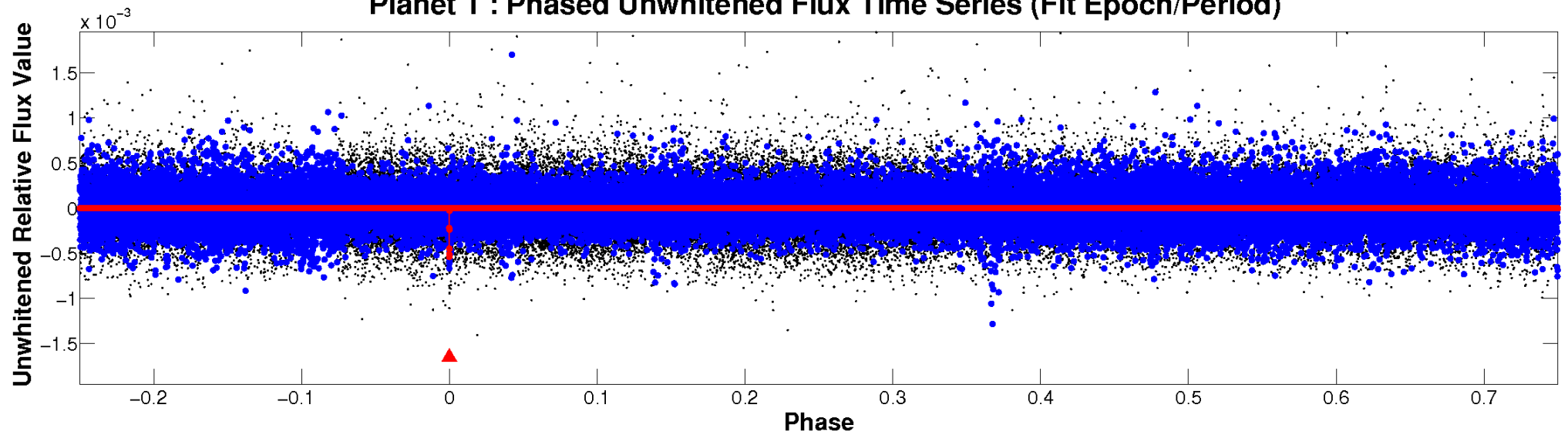
TCE 011084738-01



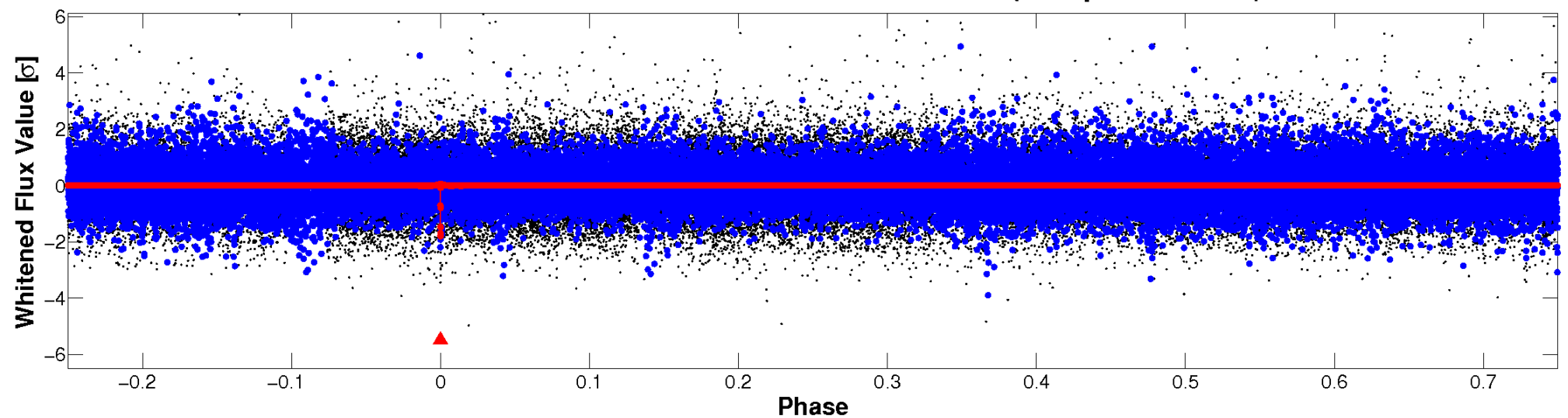


# Non-Whitened Vs. Whitened Light Curve

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

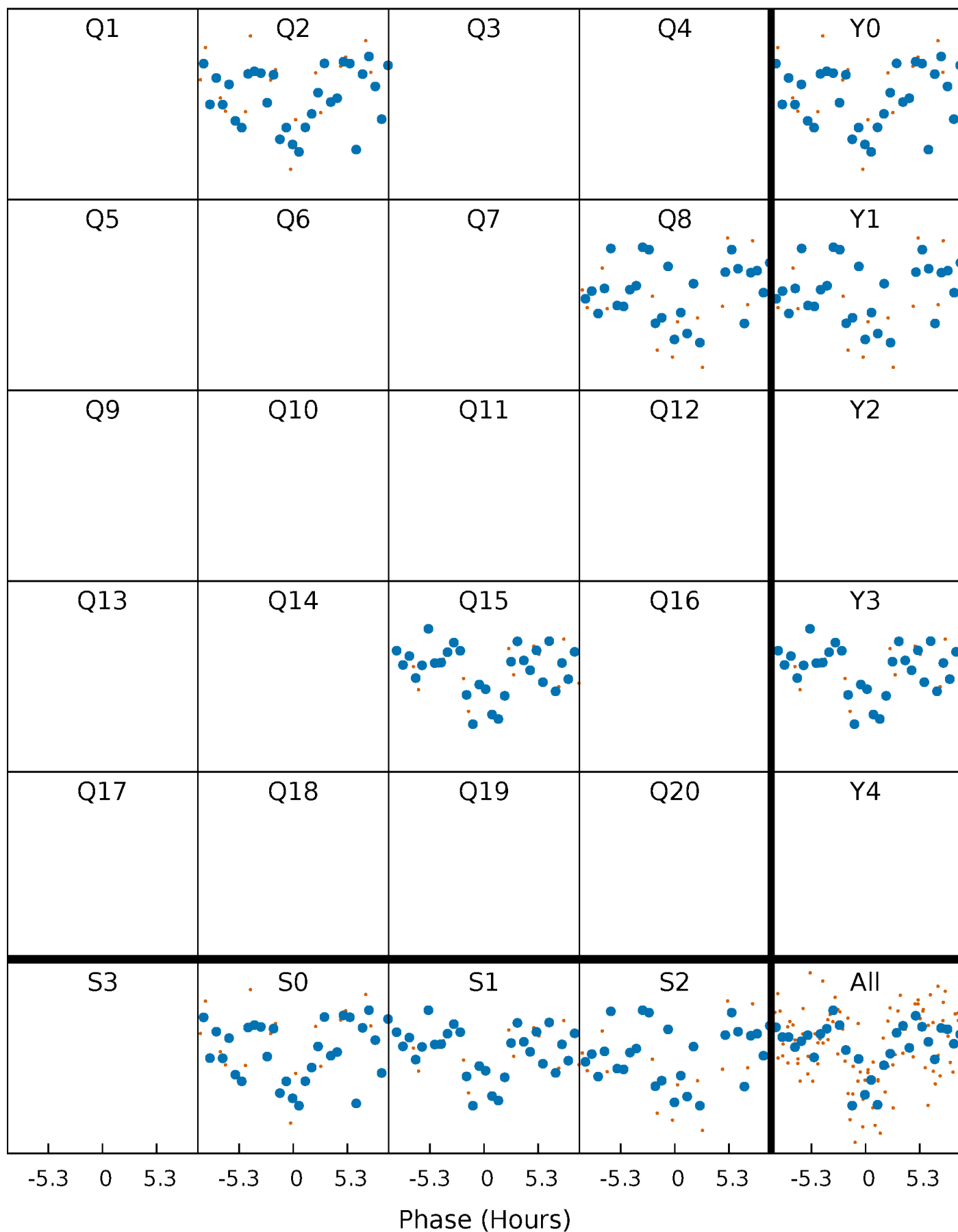


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

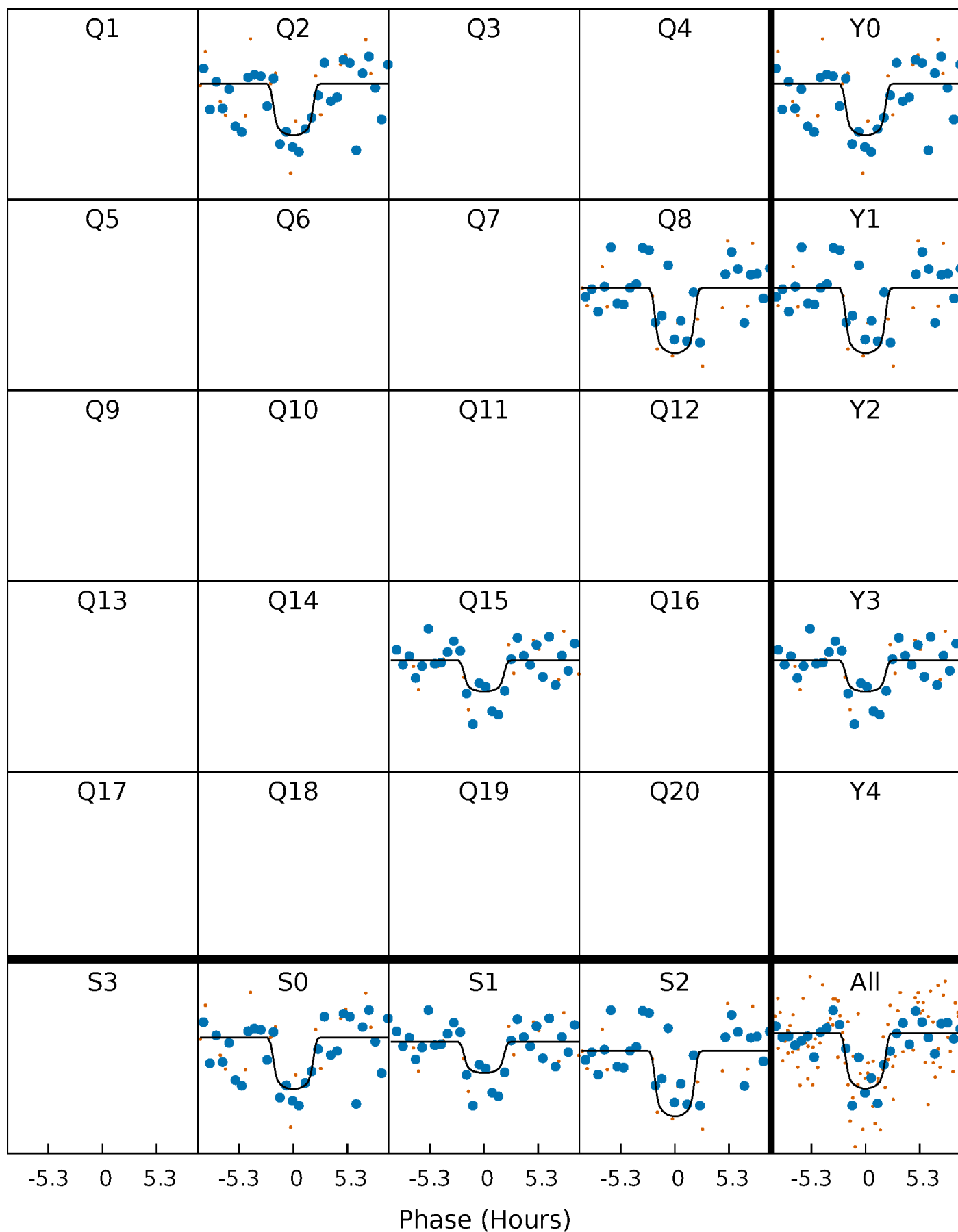
TCE 011084738-01 P=607.935727 Days  $T_0=174.148651$  (BKJD)





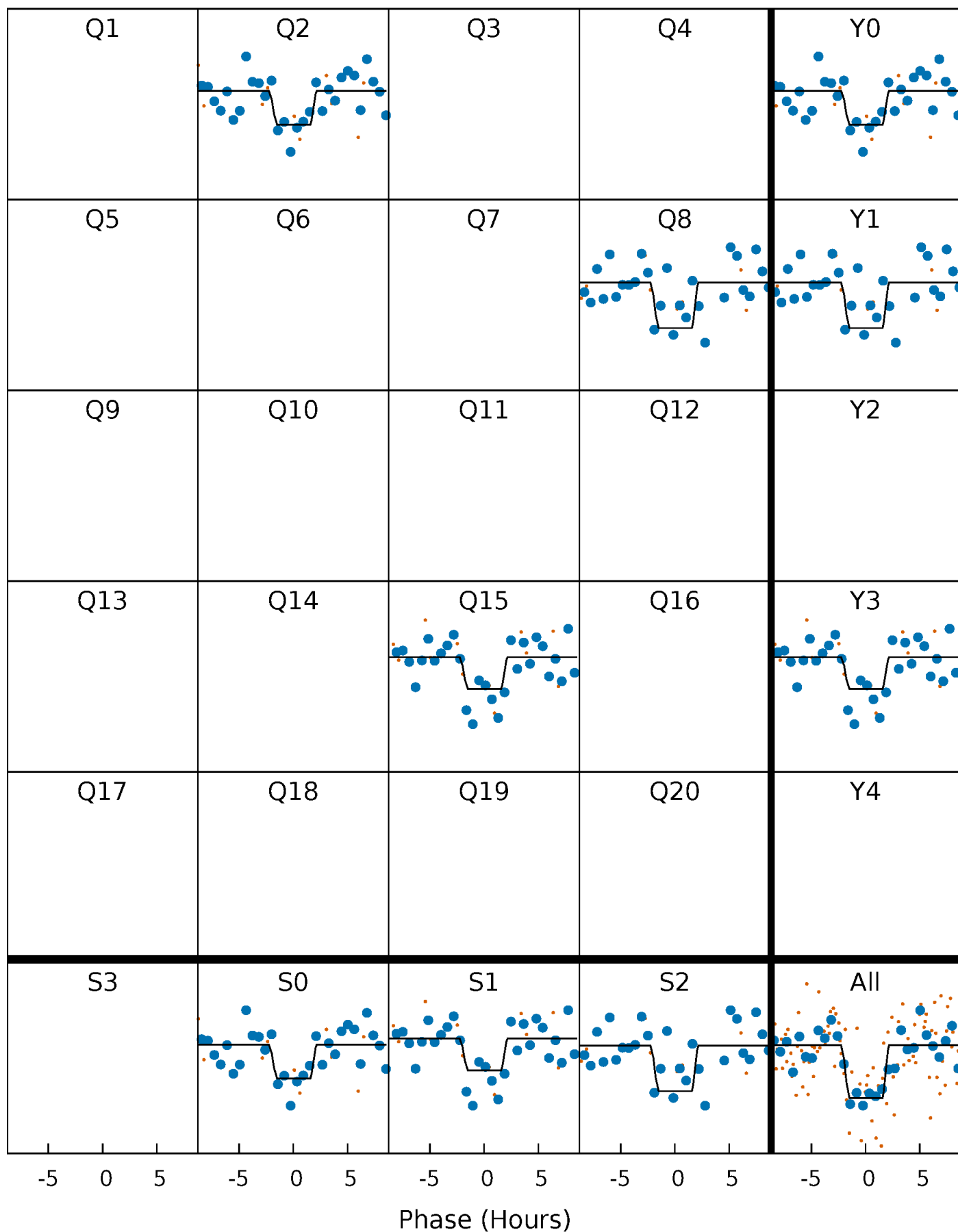
# DV Quarter-Phased Transit Curves

TCE 011084738-01 P=607.935727 Days  $T_0=174.148651$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

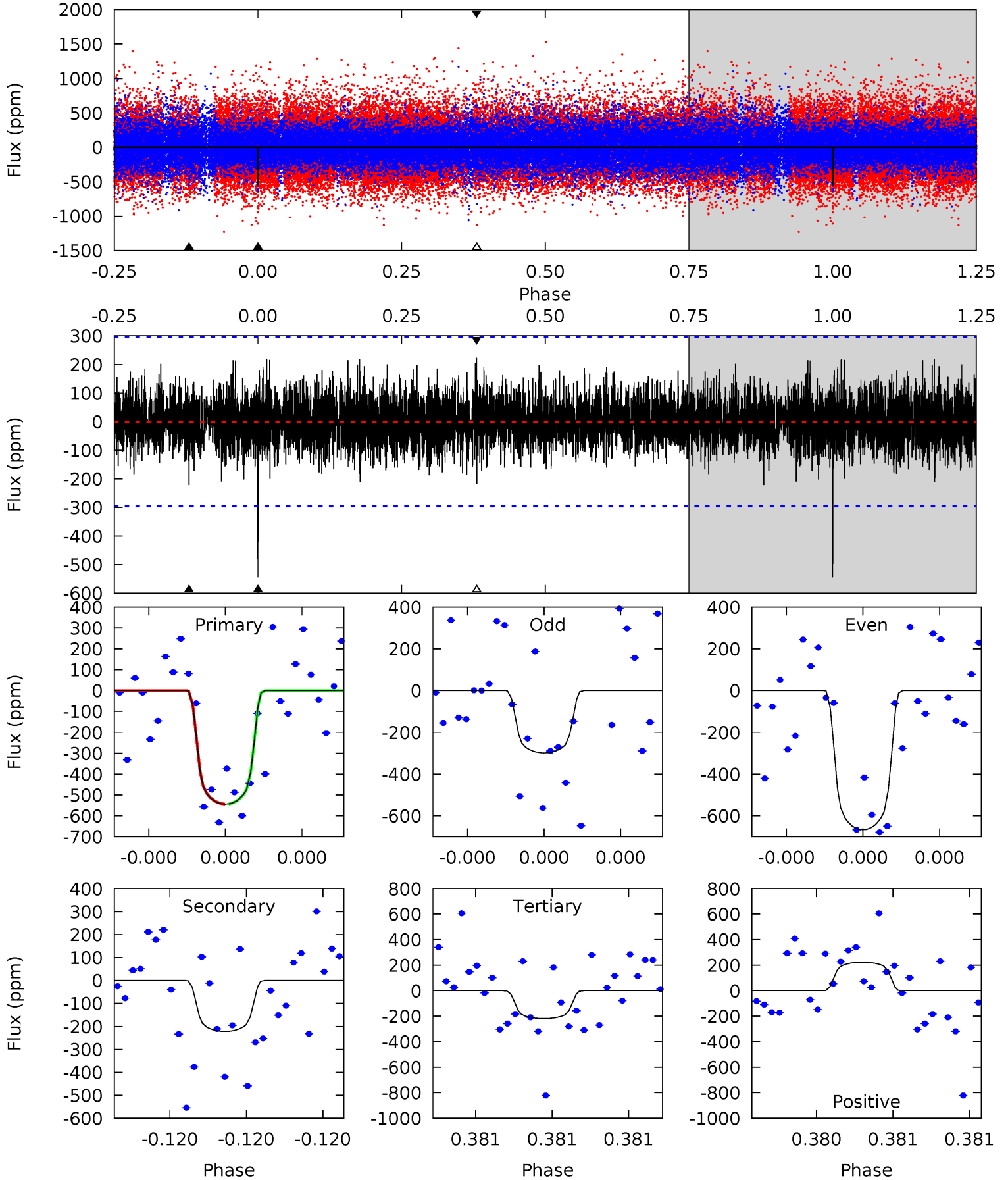
TCE 011084738-01 P=607.932466 Days  $T_0=174.153984$  (BKJD)



# DV Model-Shift Uniqueness Test

011084738-01, P = 607.935727 Days, E = 174.148651 Days

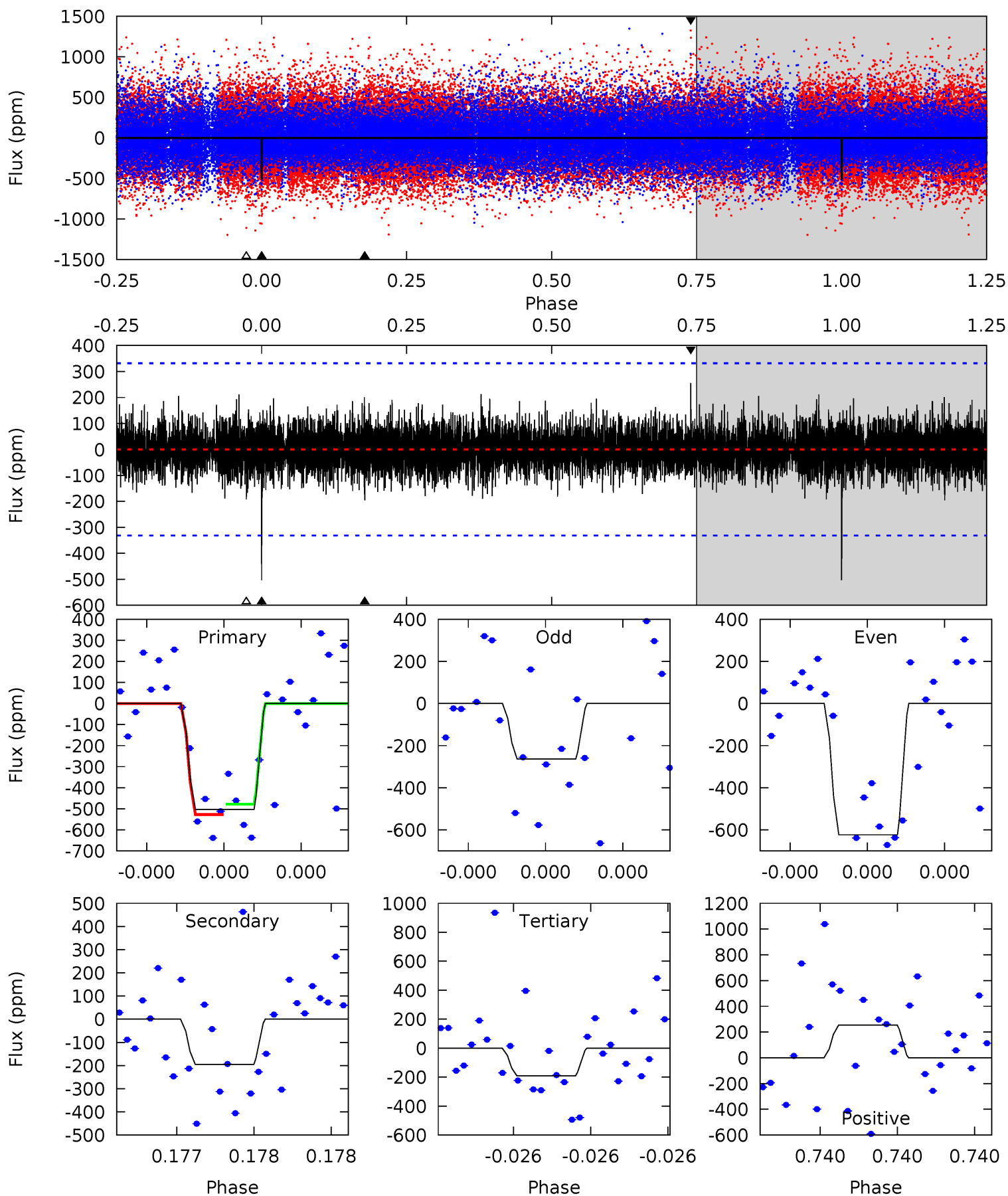
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	4.22	4.15	4.24	5.63	3.57	1.15	6.19	6.10	0.07	-0.02	3.30	0.97	0.29	0.00



# Alt Model-Shift Uniqueness Test

011084738-01, P = 607.932466 Days, E = 174.153984 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
8.61	3.34	3.29	4.36	5.68	3.64	0.95	5.33	4.25	0.06	-1.02	2.94	0.98	0.34	0.41



### Stellar Parameters For KIC 011084738

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6090^{+169}_{-253}$	$4.447^{+0.048}_{-0.204}$	$0.210^{+0.150}_{-0.350}$	$1.071^{+0.313}_{-0.125}$	$1.173^{+0.121}_{-0.181}$	$1.345^{+0.358}_{-0.683}$
	+3%/-4%	+1%/-5%	+71%/-167%	+29%/-12%	+10%/-15%	+27%/-51%
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 011084738-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-222 \pm 53$	$3.15^{+0.74}_{-0.65}$	$327^{+22}_{-18}$	$4720^{+519}_{-396}$	$25999^{+16066}_{-10176}$
Alt.	$-195 \pm 58$	$2.72^{+0.71}_{-0.53}$	$326^{+25}_{-17}$	$4890^{+627}_{-507}$	$29832^{+21292}_{-12575}$

$T_{\text{max}}$  = 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

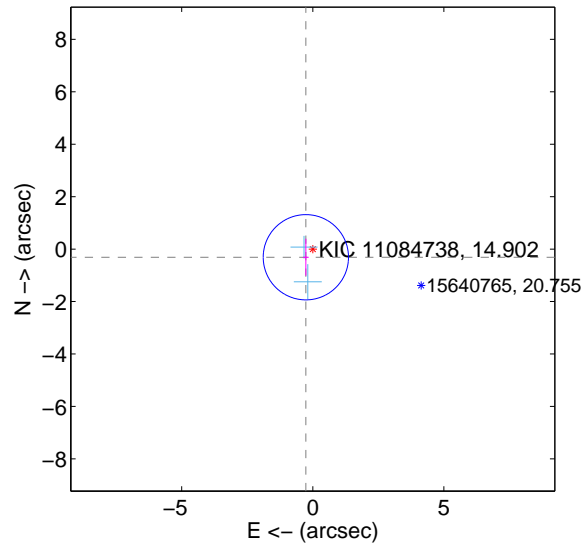
Supplemental centroid analysis for 011084738-01. Kepler magnitude: 14.90. Transit SNR 7.62

There are 2 quarters with good PRF difference image offsets

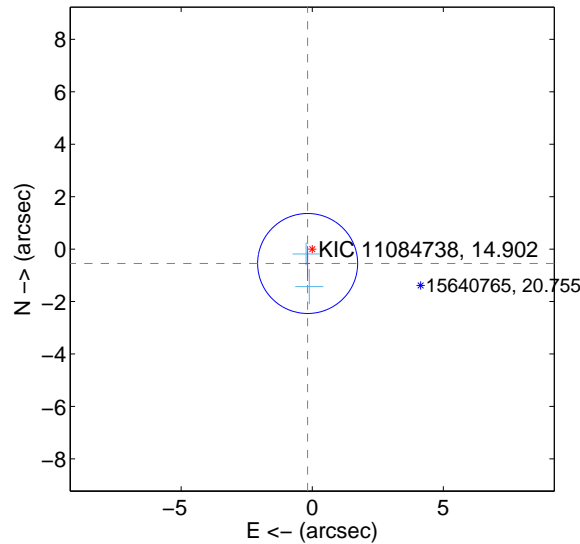
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.408 \pm 0.542$	0.75	$0.264 \pm 0.108$	$-0.311 \pm 0.705$
PRF-fit source offset from KIC position	$0.576 \pm 0.636$	0.91	$0.175 \pm 0.096$	$-0.549 \pm 0.666$
photometric centroid source offset	$2.46 \pm 1.74$	1.41	$-1.63 \pm 1.96$	$1.84 \pm 1.56$

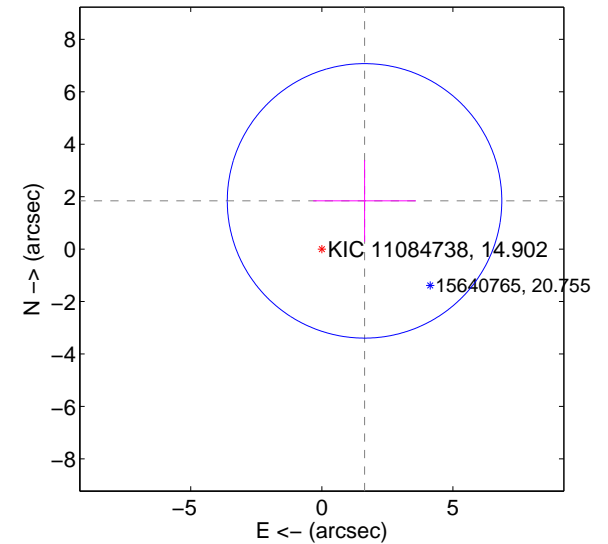
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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.

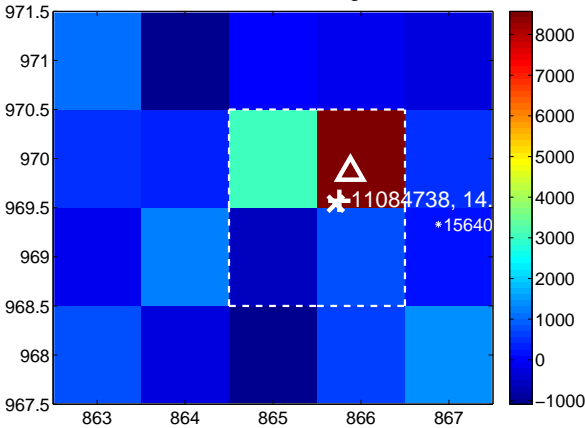
Q1 no difference image



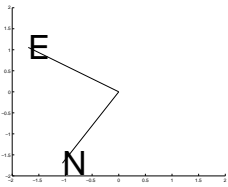
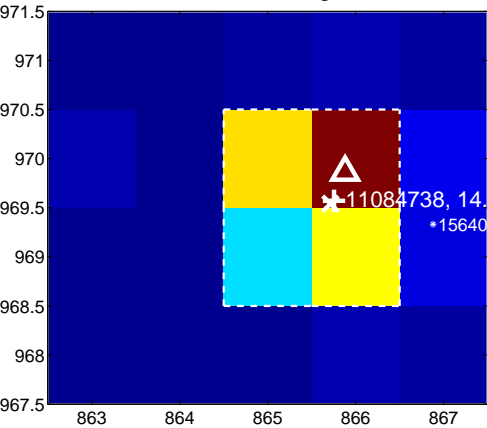
Q1 no OOT image



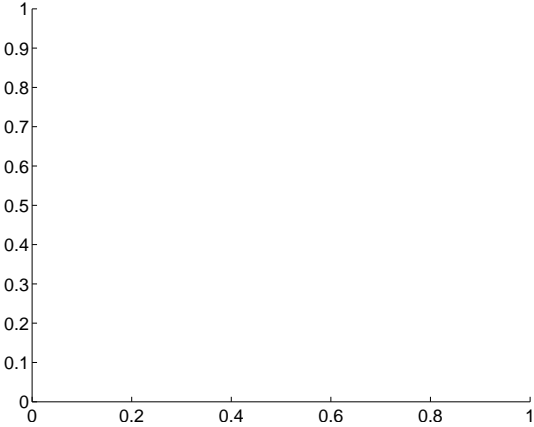
Q2 difference image



Q2 OOT image



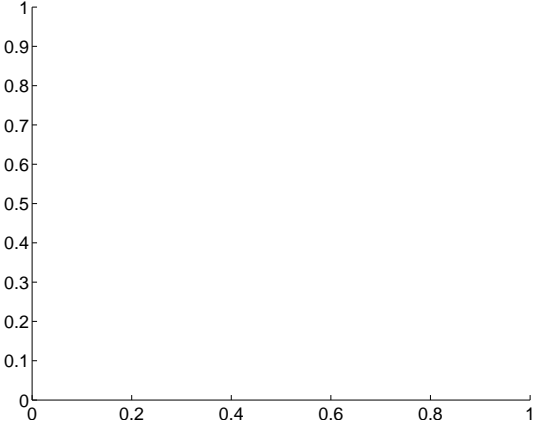
Q3 no difference image



Q3 no OOT image



Q4 no difference image

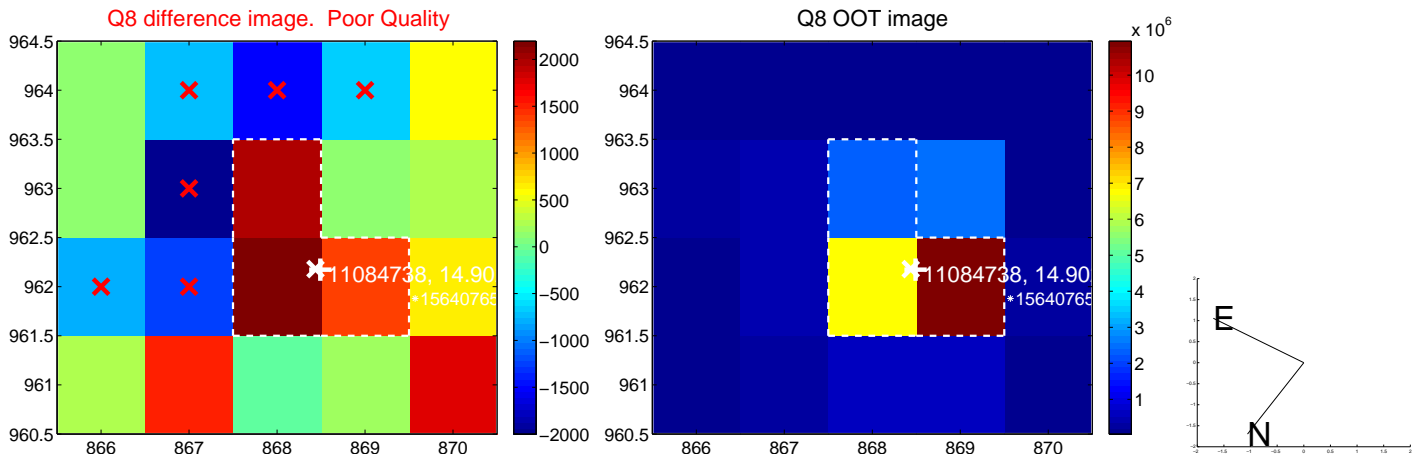
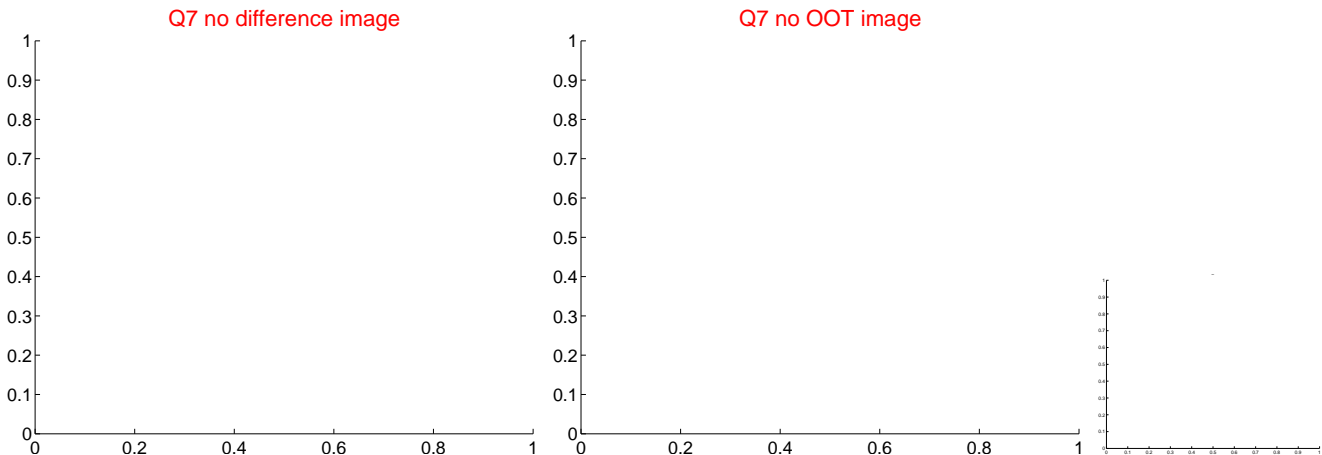
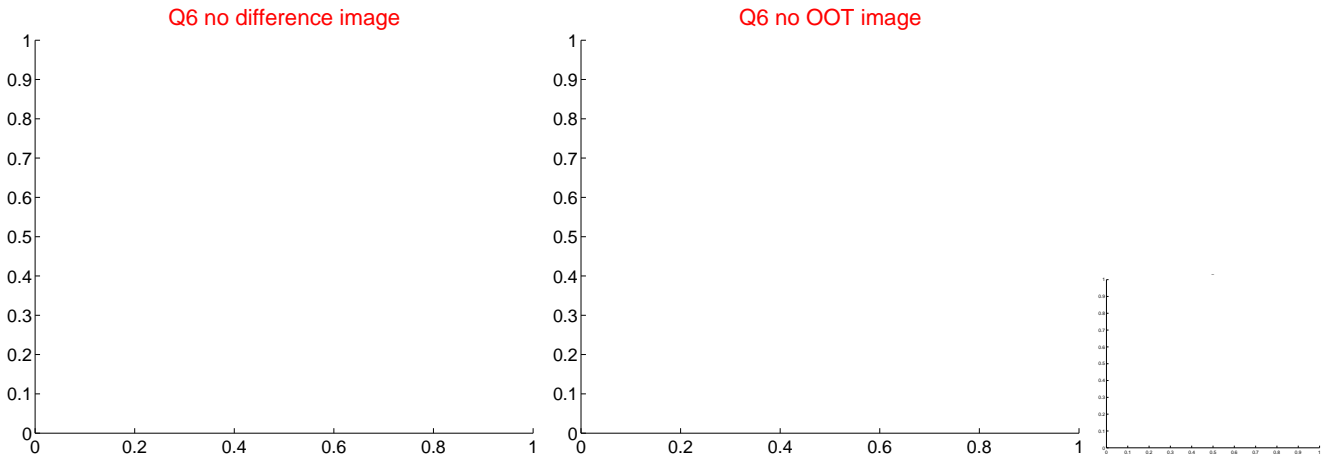
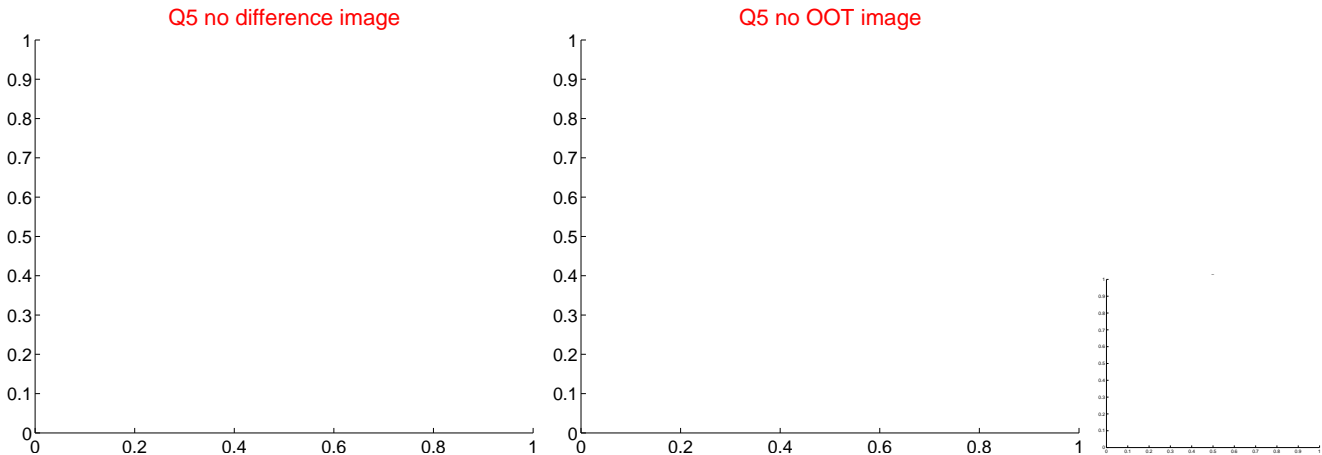


Q4 no OOT image





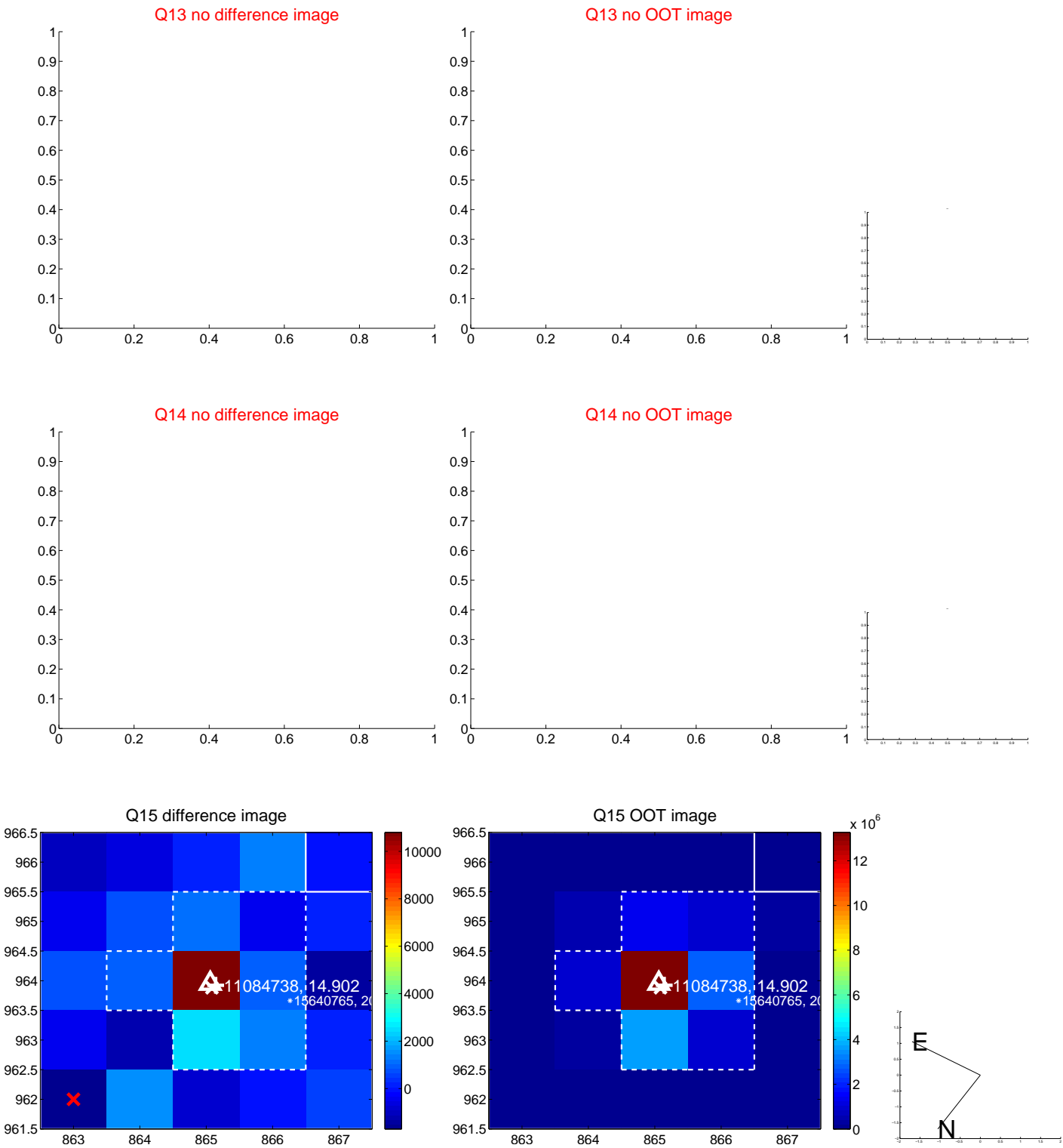
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



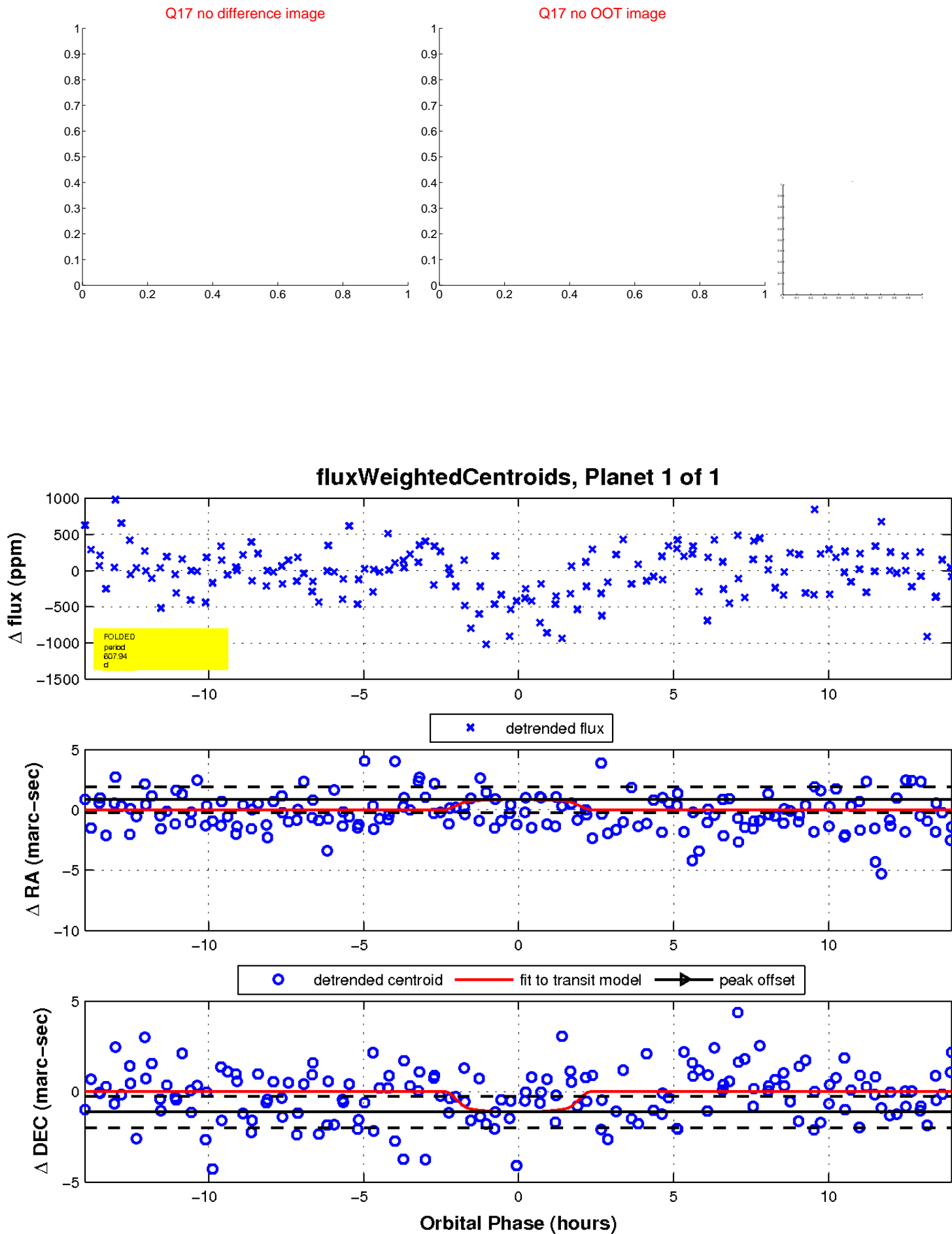
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

