

# KIC 007107505

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007107505-01	OBS	No	169.272737	277.976558	814.9	3.086	7.8	7.2	6.55	4983	18.57	76.14

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007107505-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

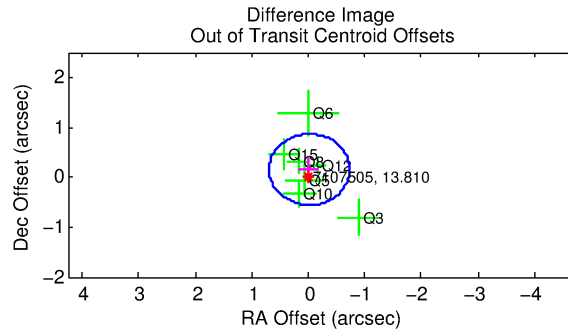
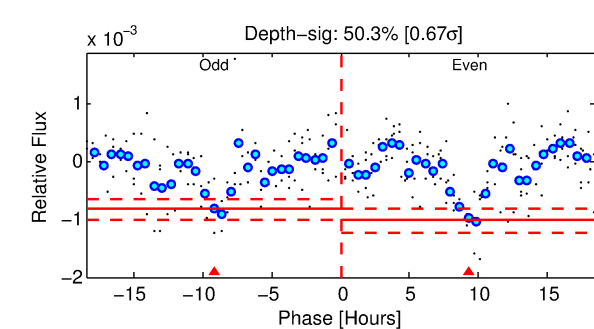
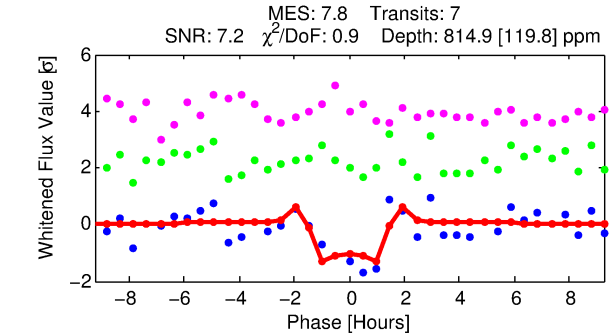
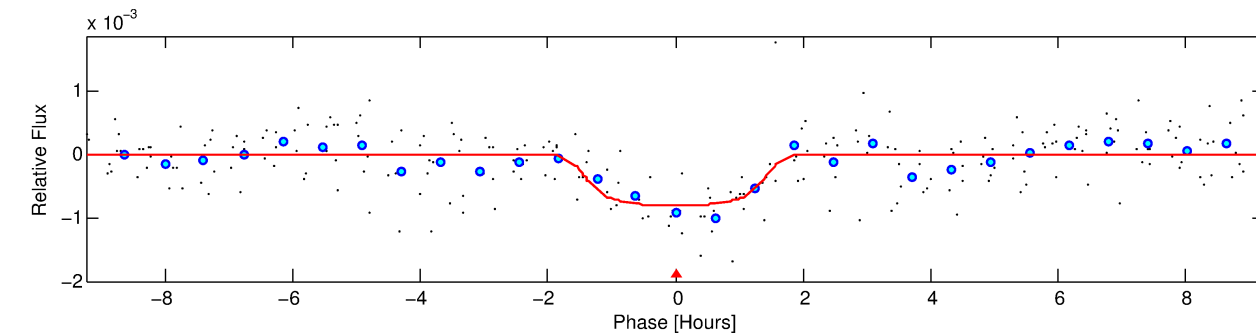
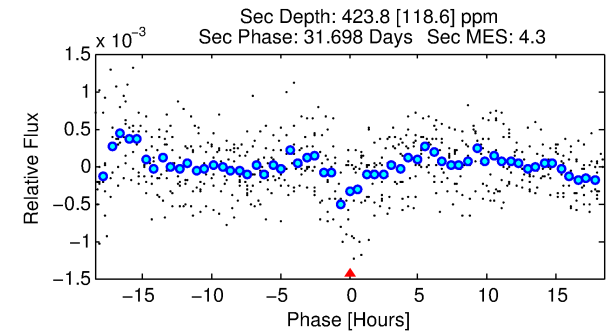
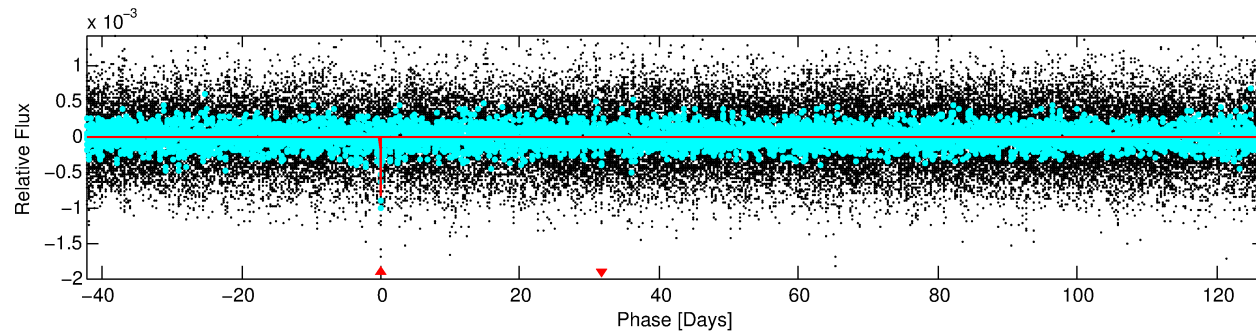
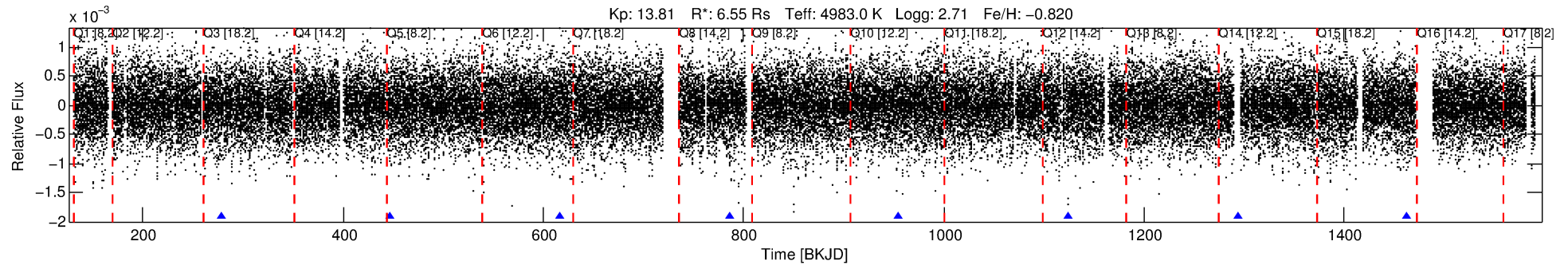
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007107505-01

No Significant Match Found

# DV One-Page Summary

KIC: 7107505 Candidate: 1 of 1 Period: 169.273 d



## DV Fit Results:

Period = 169.27274 [0.00125] d  
Epoch = 277.9766 [0.0050] BKJD  
Rp/R\* = 0.0260 [0.0450]  
a/R\* = 409.31 [2766.76]  
b = 0.31 [19.66]  
Seff = 76.14 [13.65]  
Teq = 753 [34] K  
Rp = 18.57 [32.45] Re  
a = 0.5580 [0.0862] AU  
Ag = 210.45 [732.23] [0.29σ]  
Teffp = 4436 [3855] K [0.96σ]

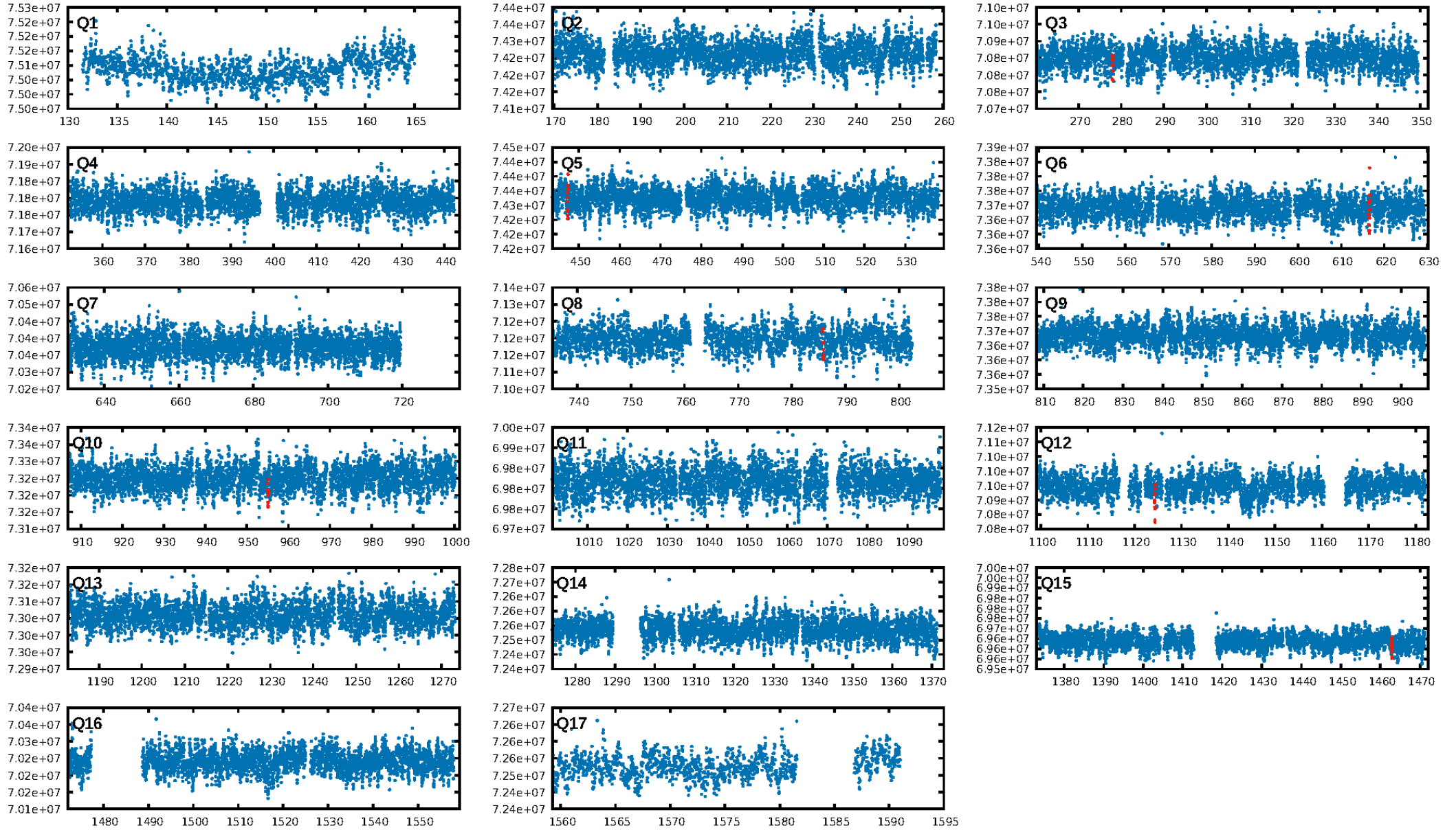
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 90.3%  
ModelChiSquareGof-sig: 99.7%  
**Bootstrap-pfa: 4.69e-11**  
RollingBand-fgt: 1.00 [7/7]  
GhostDiagnostic-chr: 1.349  
Centroid-sig: 75.2%  
Centroid-so: 0.251 arcsec [0.46σ]  
OotOffset-rm: 0.153 arcsec [0.65σ]  
KicOffset-rm: 0.189 arcsec [0.84σ]  
OotOffset-st: 2/2/2/1 [7]  
KicOffset-st: 2/2/2/1 [7]  
DiffImageQuality-fgm: 1.00 [7/7]  
DiffImageOverlap-fno: 1.00 [7/7]

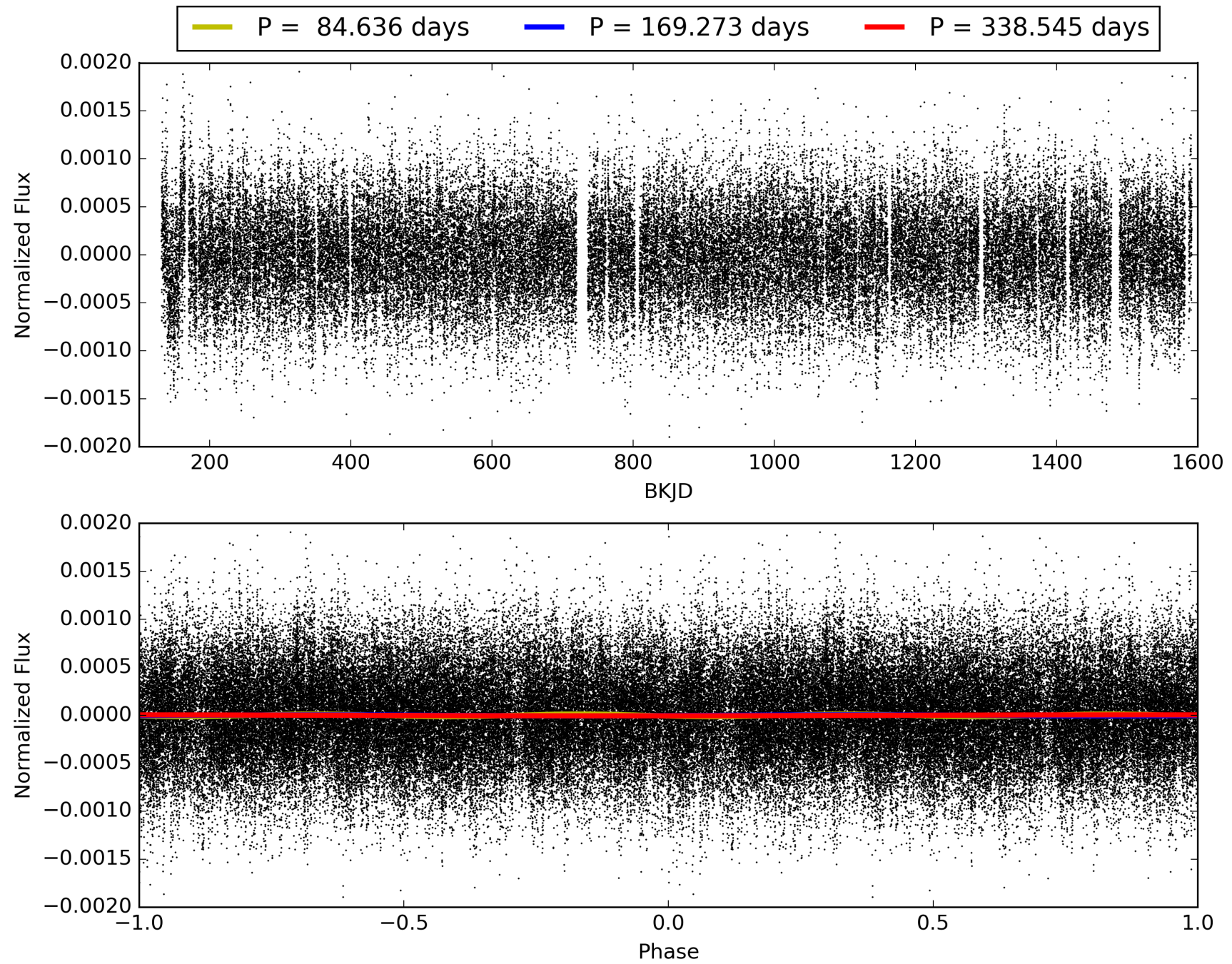
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:59:07 Z

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

# TCE 007107505-01, PDC Light Curves

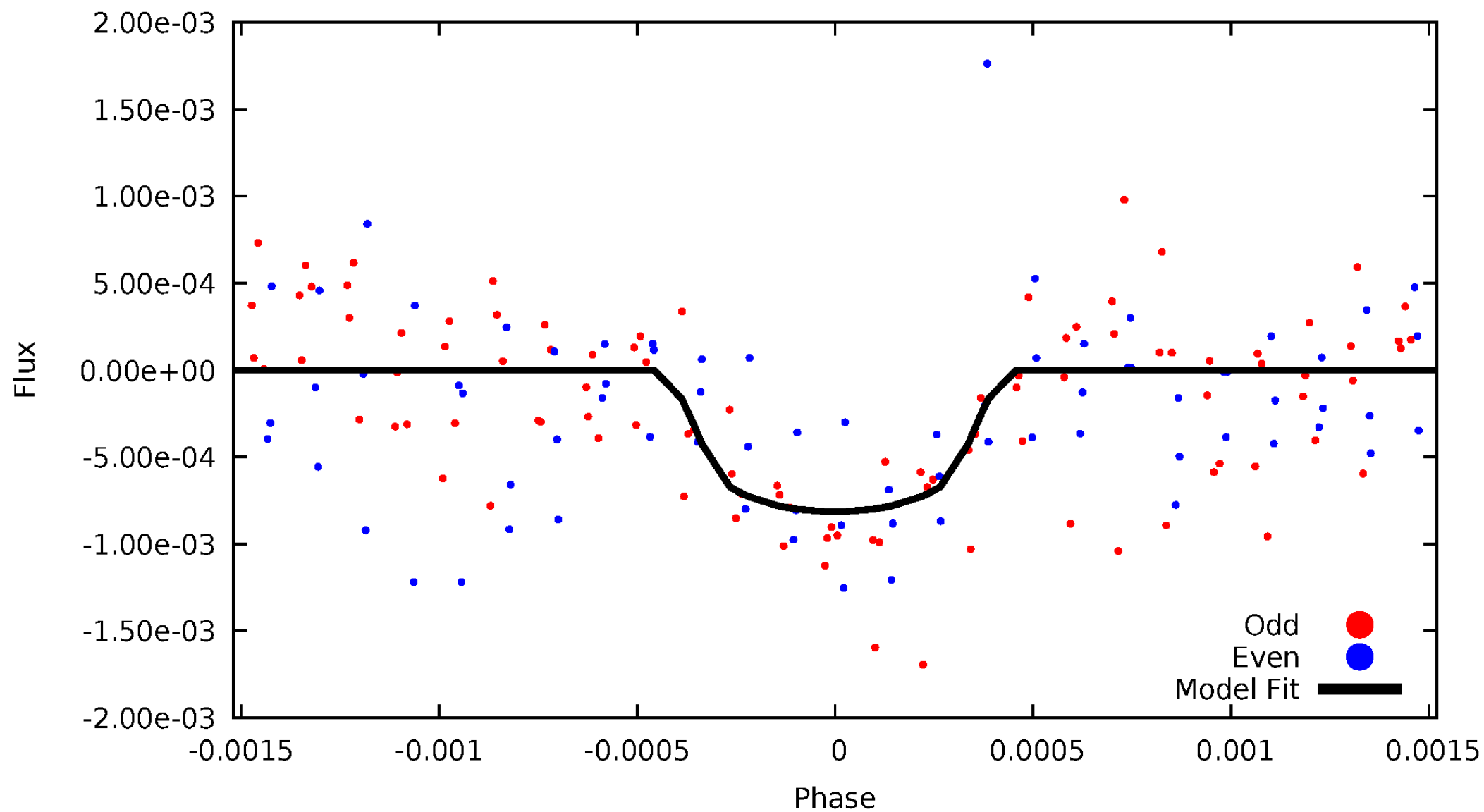


TCE 007107505-01



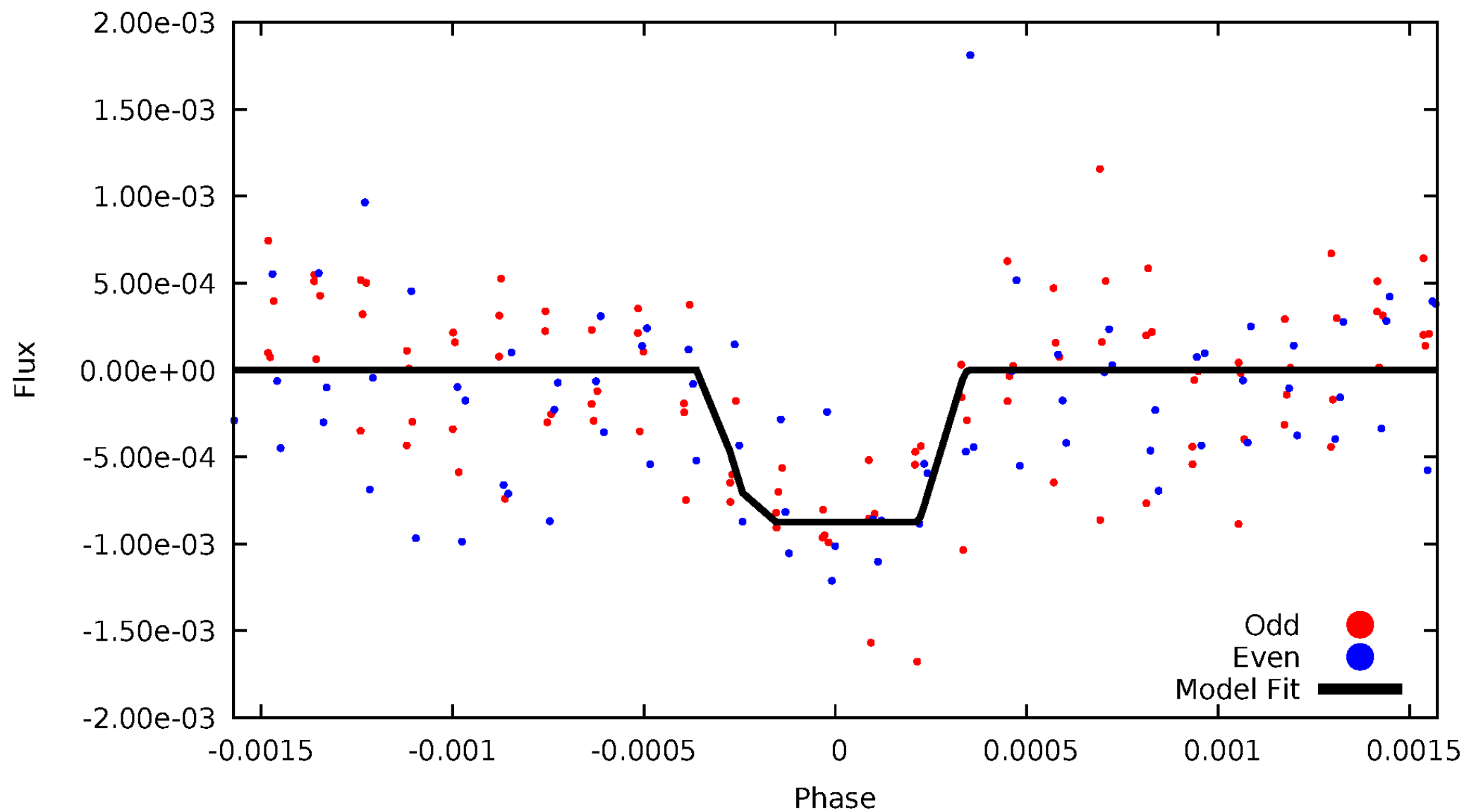
# DV Odd/Even

TCE 007107505-01



# ALT Odd/Even

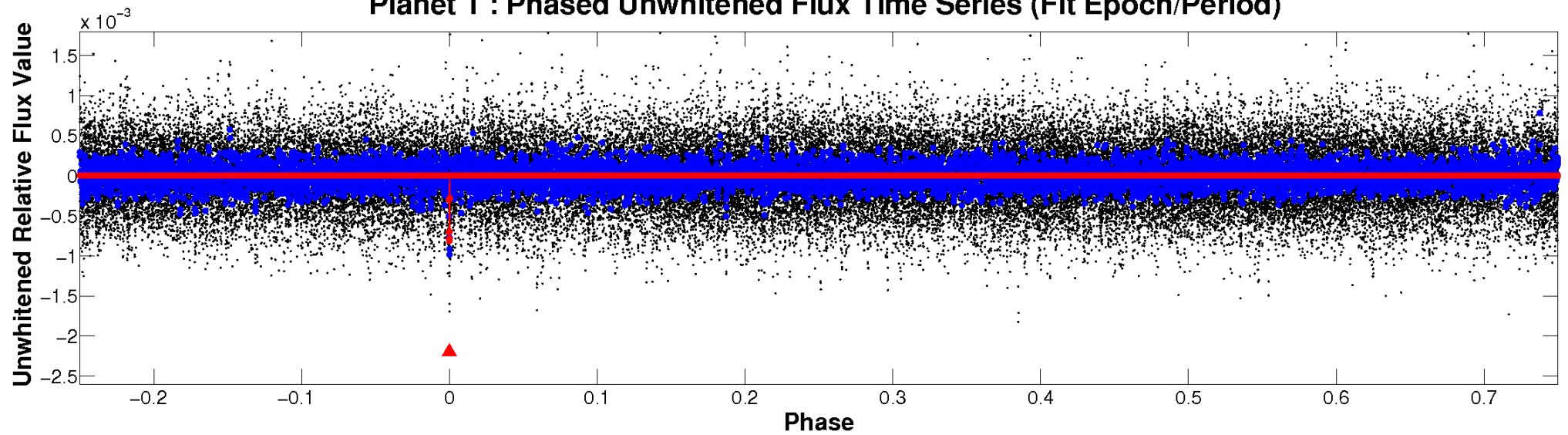
TCE 007107505-01



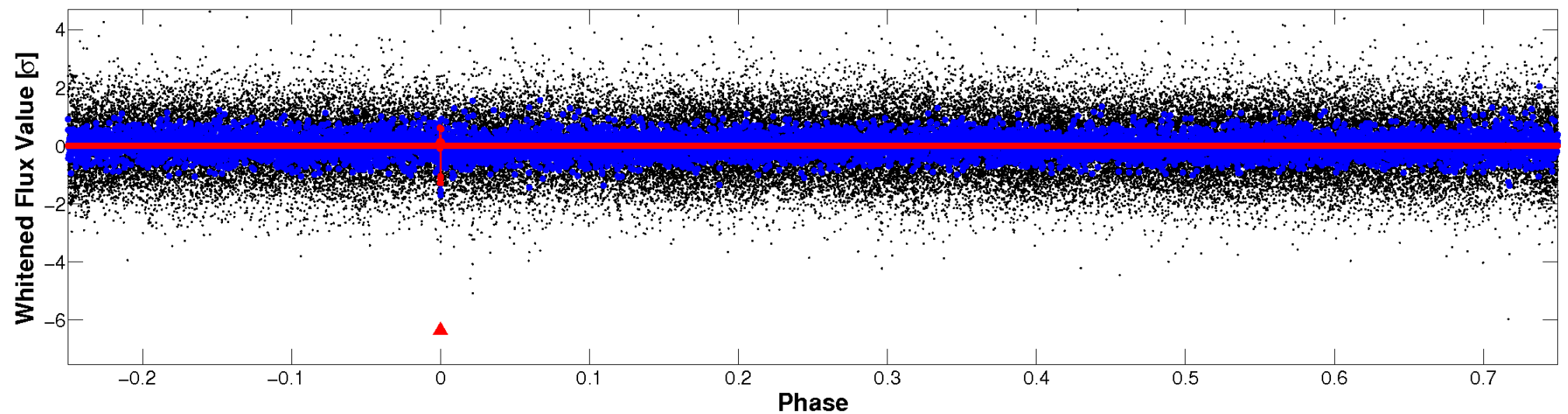


# Non-Whitened Vs. Whitened Light Curve

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

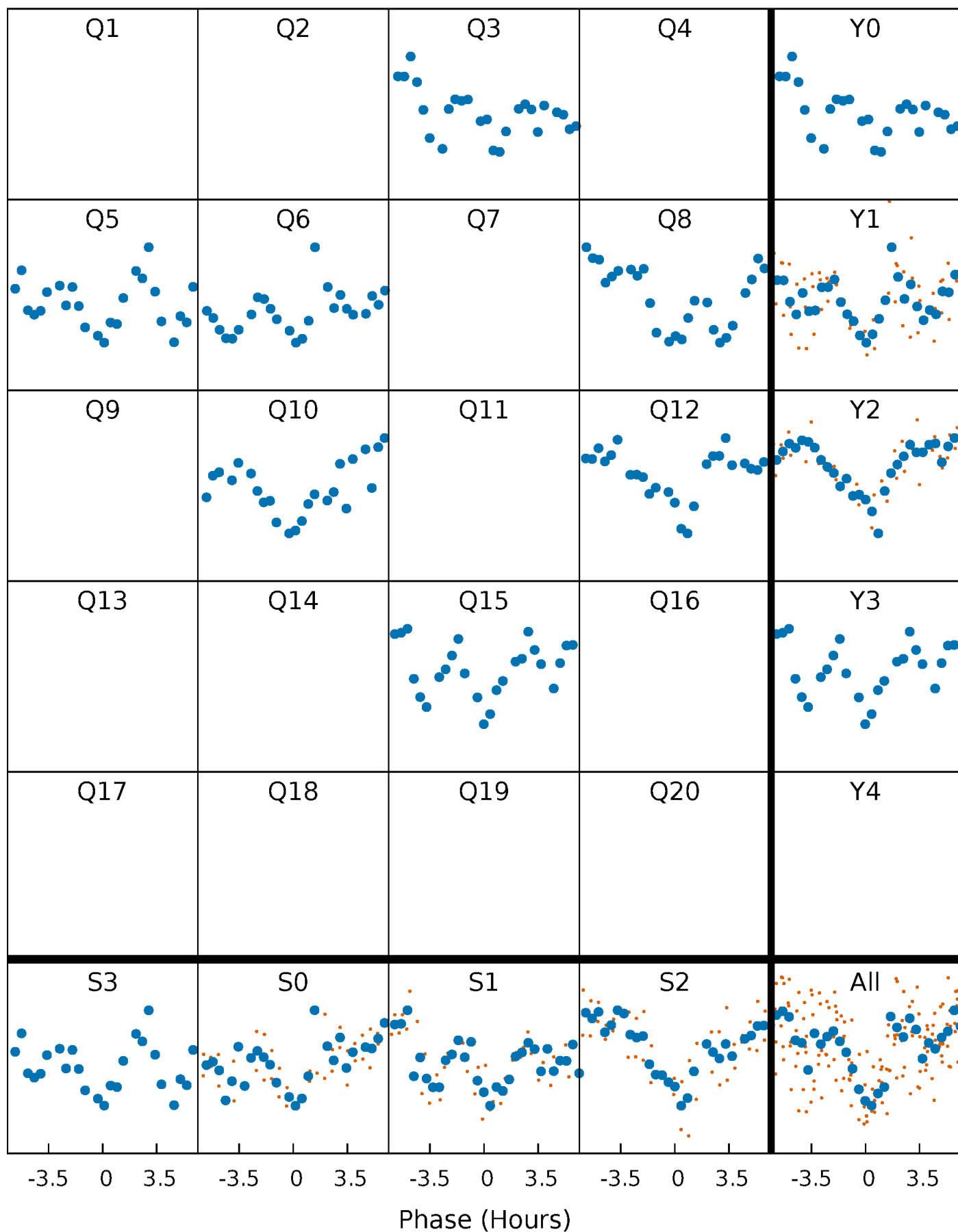


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

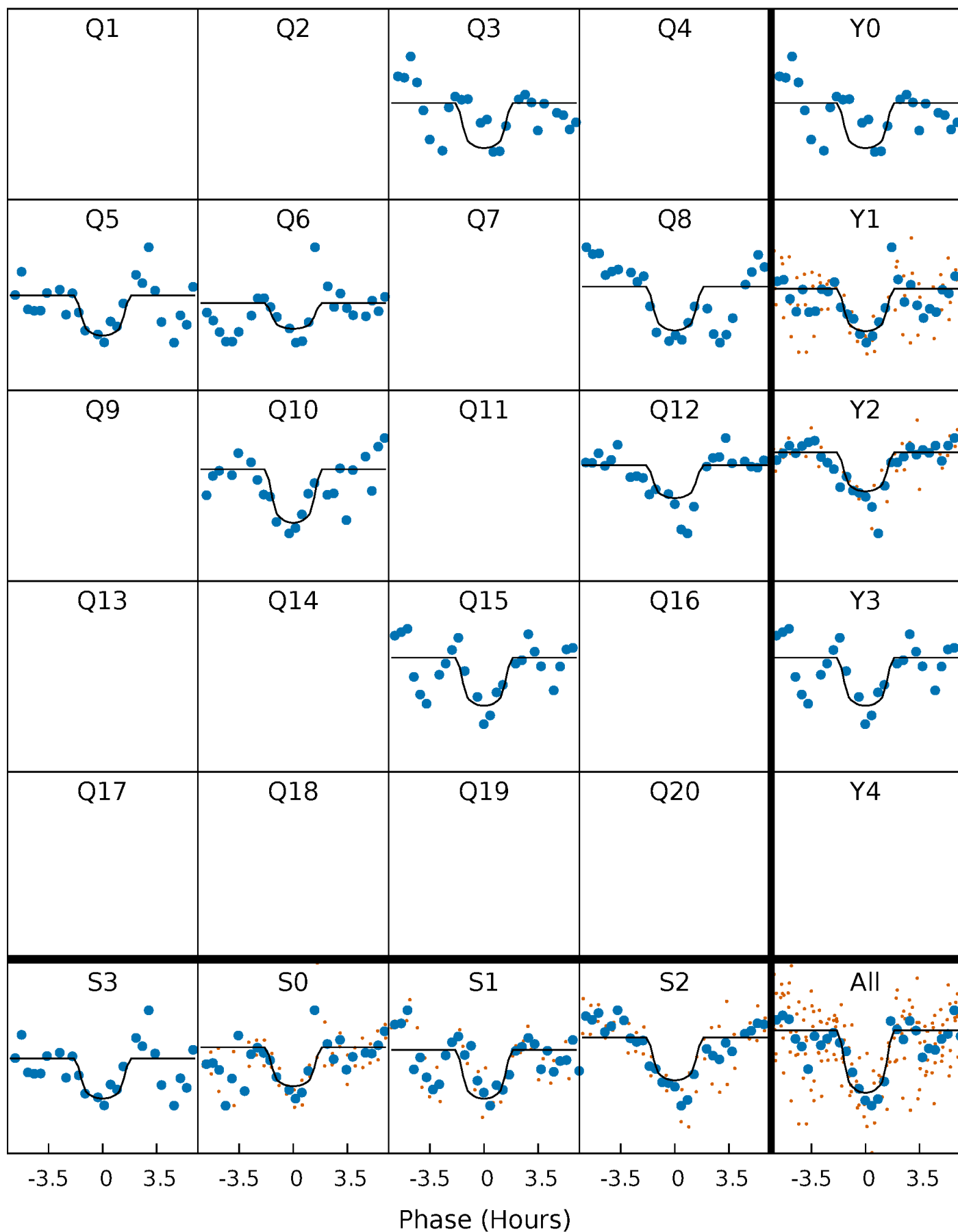
TCE 007107505-01 P=169.272737 Days  $T_0=277.976558$  (BKJD)





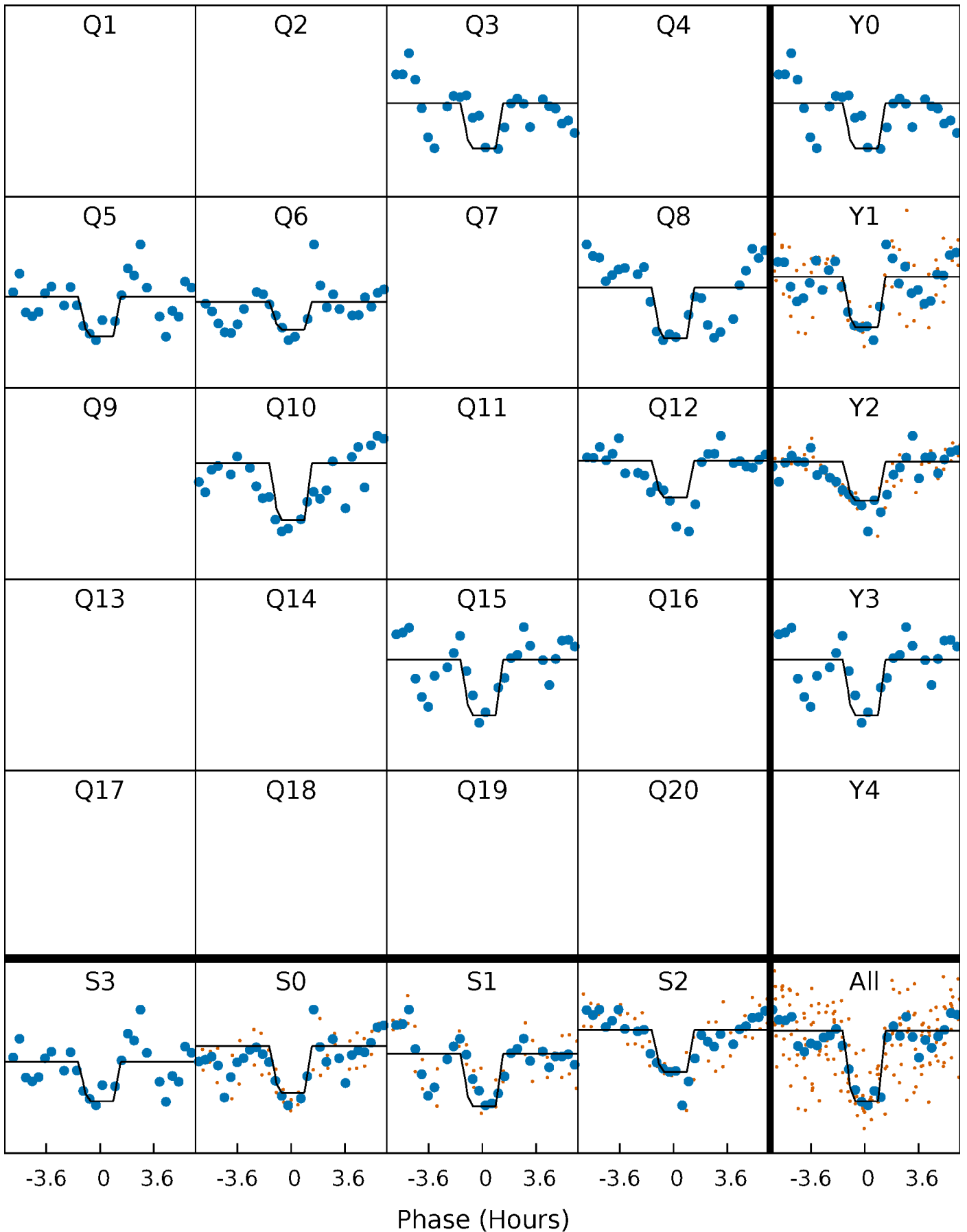
# DV Quarter-Phased Transit Curves

TCE 007107505-01 P=169.272737 Days  $T_0=277.976558$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

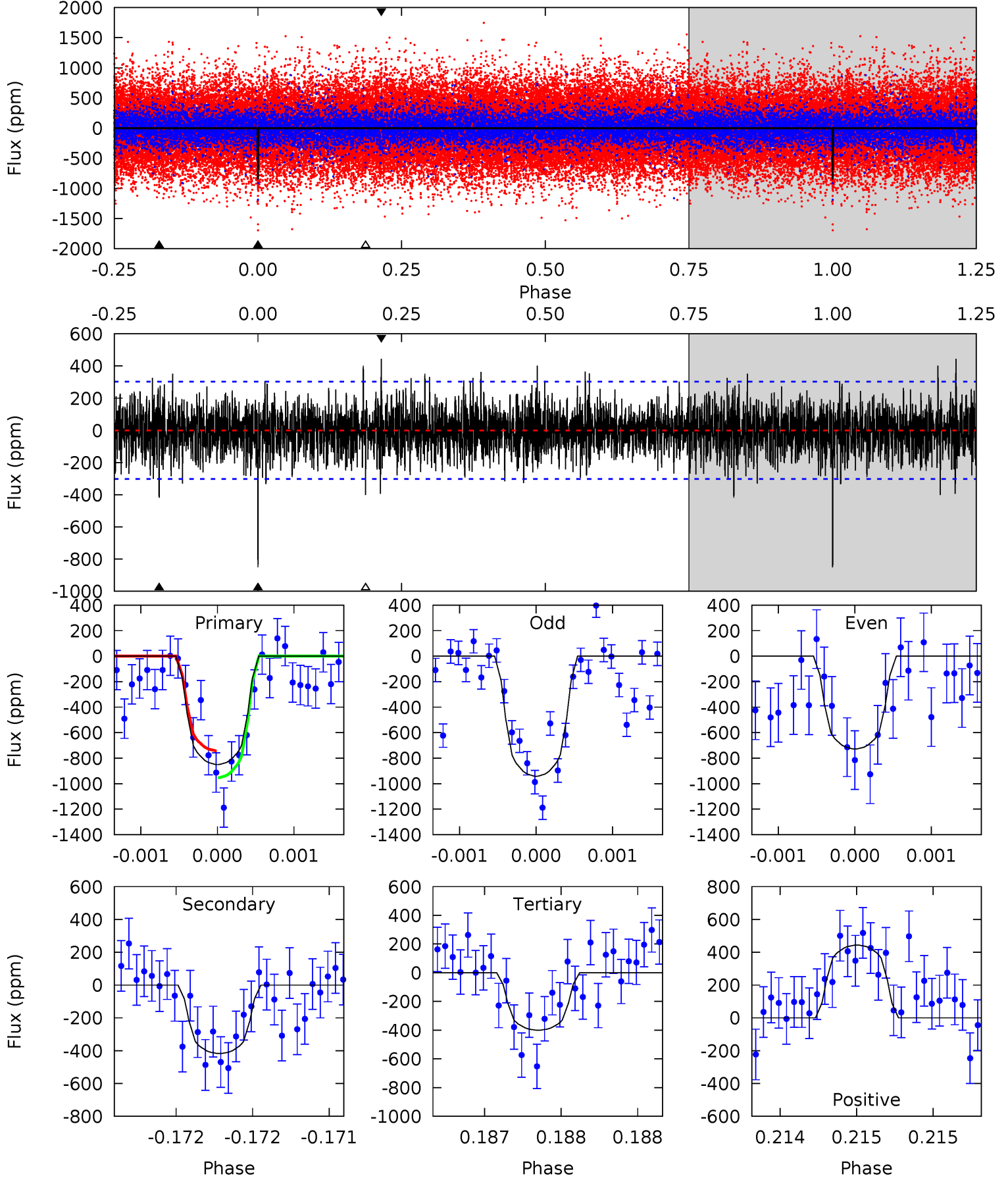
TCE 007107505-01 P=169.271440 Days  $T_0=277.984478$  (BKJD)



# DV Model-Shift Uniqueness Test

007107505-01, P = 169.272737 Days, E = 108.703821 Days

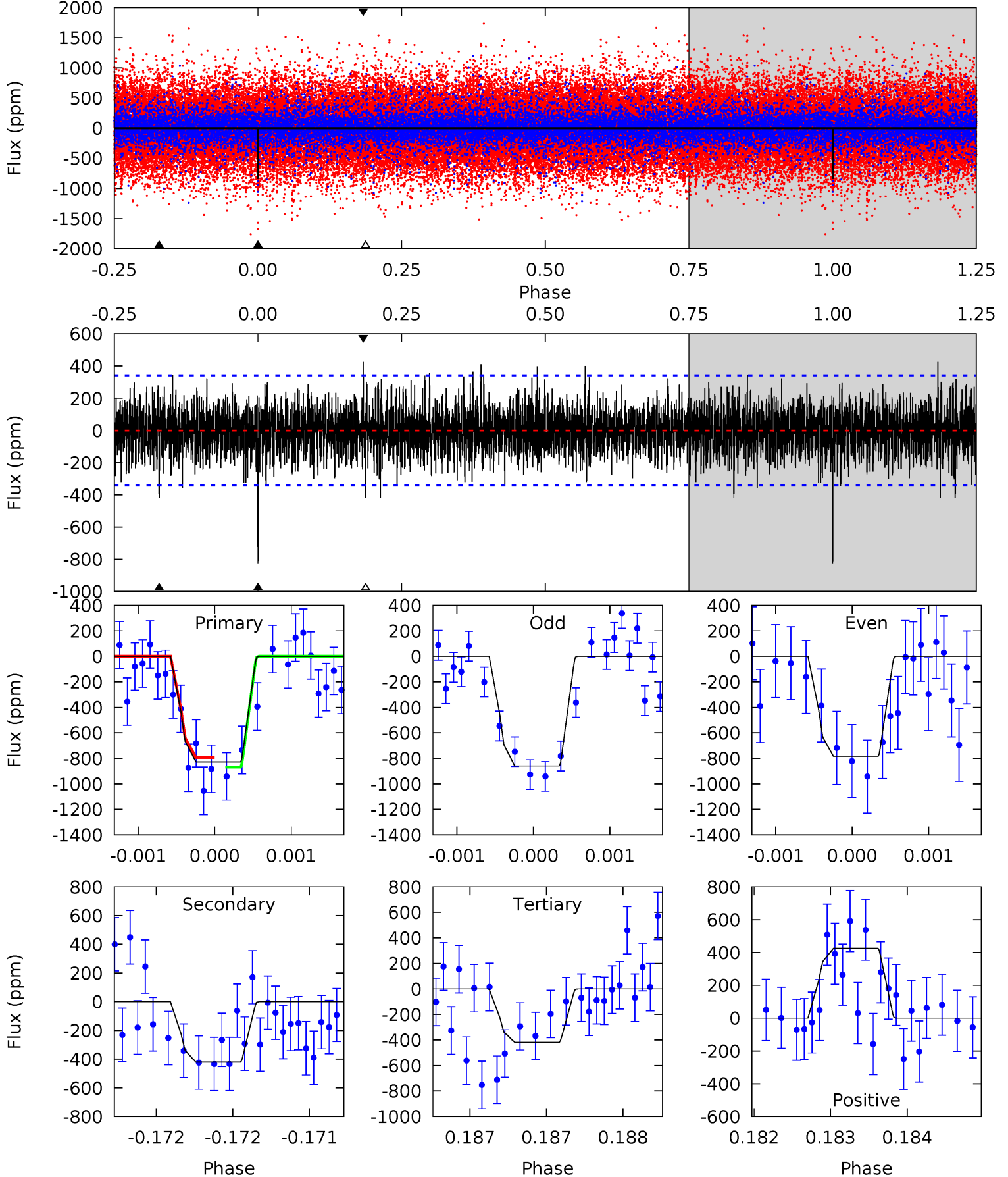
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	7.57	7.26	8.05	5.48	3.34	1.94	8.16	7.37	0.31	-0.48	1.91	1.03	0.34	1.92



# Alt Model-Shift Uniqueness Test

007107505-01, P = 169.271440 Days, E = 108.713038 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
13.4	6.80	6.75	6.87	5.53	3.42	1.75	6.62	6.50	0.05	-0.08	0.59	1.03	0.34	0.61



### Stellar Parameters For KIC 007107505

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4983^{+99}_{-69}$	$2.713^{+0.033}_{-0.027}$	$-0.820^{+0.300}_{-0.150}$	$6.551^{+1.498}_{-0.166}$	$0.808^{+0.416}_{-0.022}$	$0.004^{+0.000}_{-0.001}$
	+2%/-1%	+1%/-1%	+37%/-18%	+23%/-3%	+51%/-3%	+8%/-20%
Source	PHO56	AST56	PHO56	DSEP		

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

### Secondary Eclipse Parameters for KIC 007107505-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-418 \pm 55$	$31.13^{+27.33}_{-20.65}$	$1052^{+25}_{-18}$	$3776^{+1908}_{-660}$	$76^{+568}_{-54}$
Alt.	$-420 \pm 62$	$31.17^{+27.34}_{-20.38}$	$1052^{+23}_{-19}$	$3795^{+1975}_{-725}$	$76^{+550}_{-55}$

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

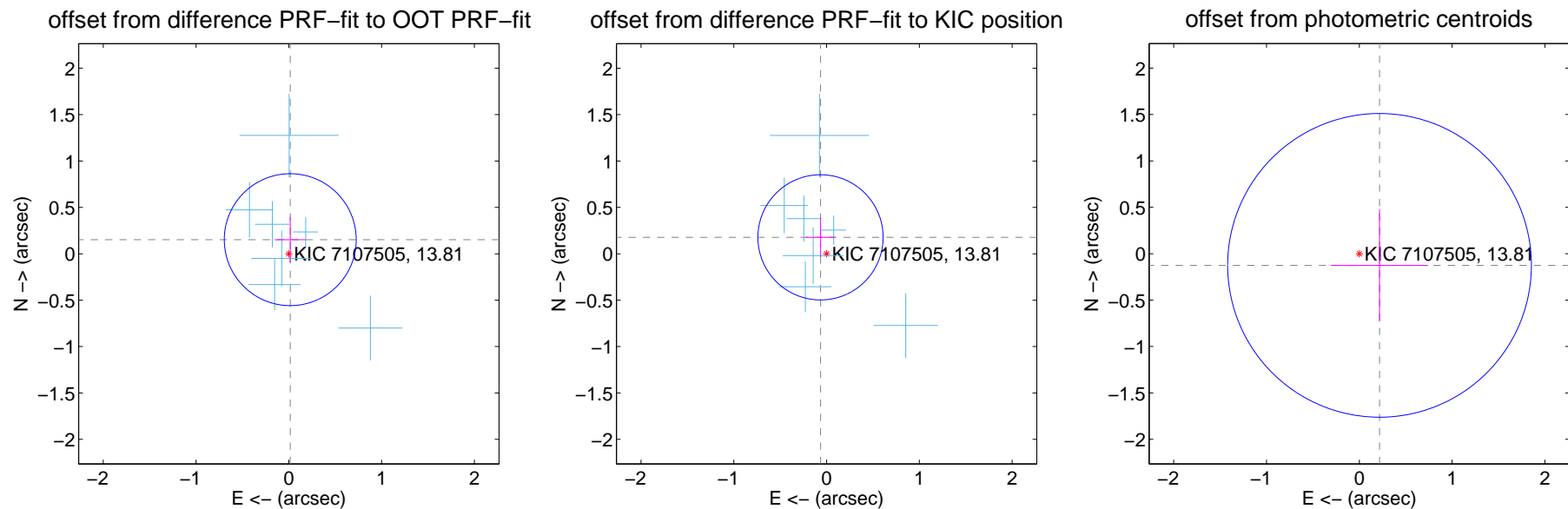
## DV Centroid Data

Supplemental centroid analysis for 007107505-01. Kepler magnitude: 13.81. Transit SNR 7.20

There are 7 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.153 \pm 0.237$	0.65	$-0.015 \pm 0.168$	$0.152 \pm 0.247$
PRF-fit source offset from KIC position	$0.189 \pm 0.225$	0.84	$0.065 \pm 0.160$	$0.177 \pm 0.212$
photometric centroid source offset	$0.25 \pm 0.55$	0.46	$-0.22 \pm 0.52$	$-0.13 \pm 0.60$



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



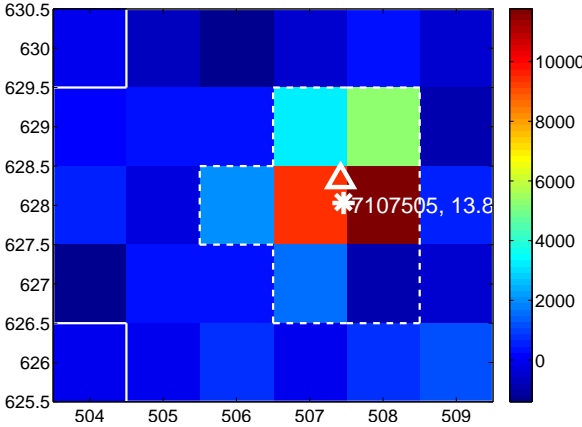
Q2 no difference image



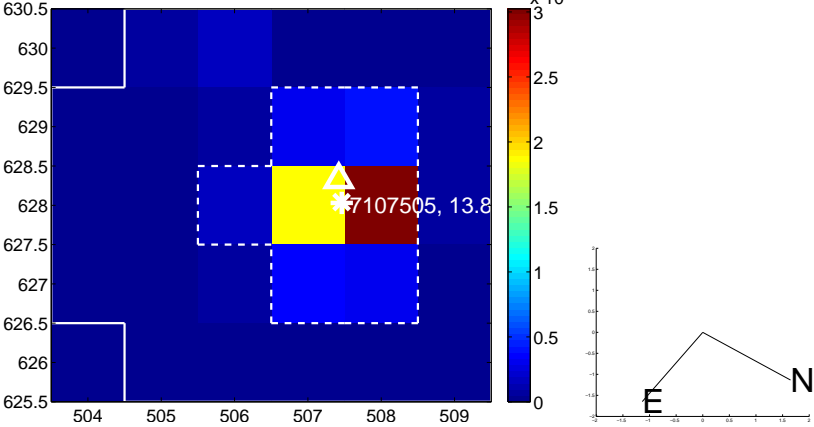
Q2 no OOT image



Q3 difference image



Q3 OOT image



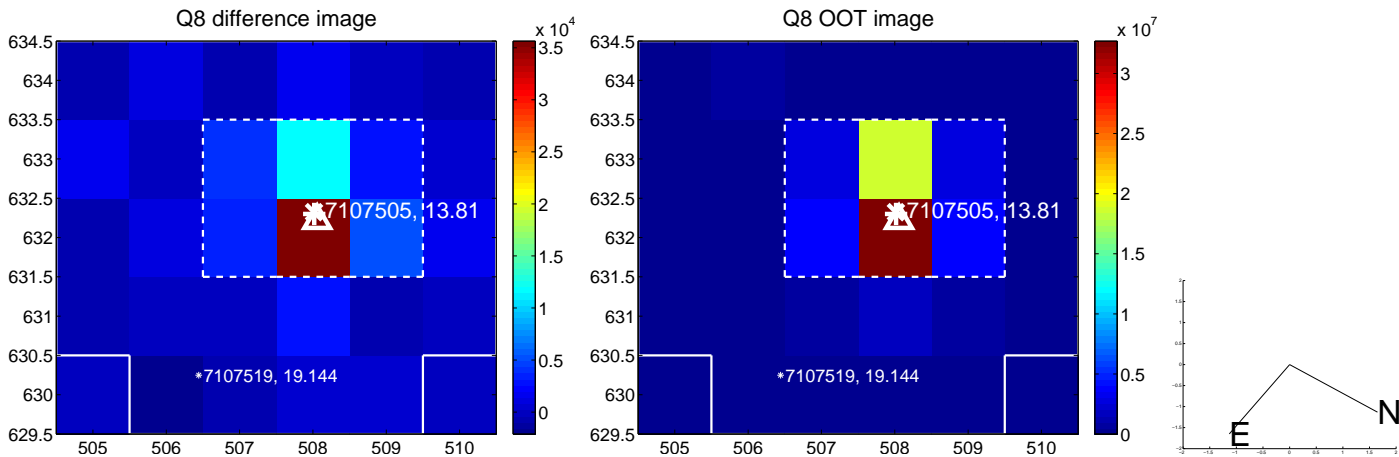
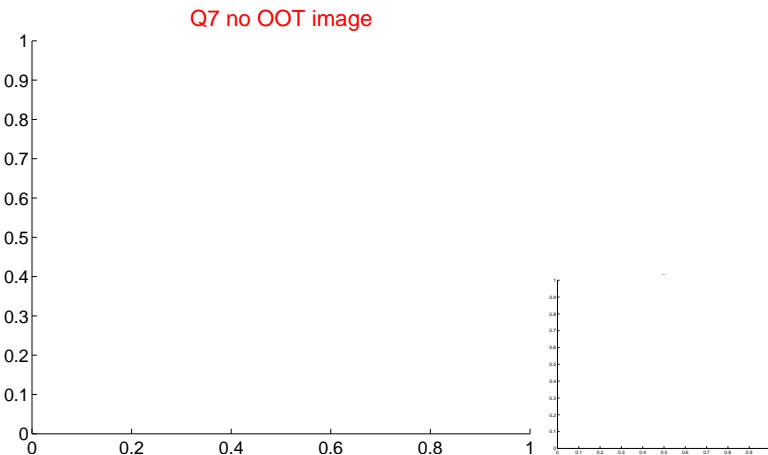
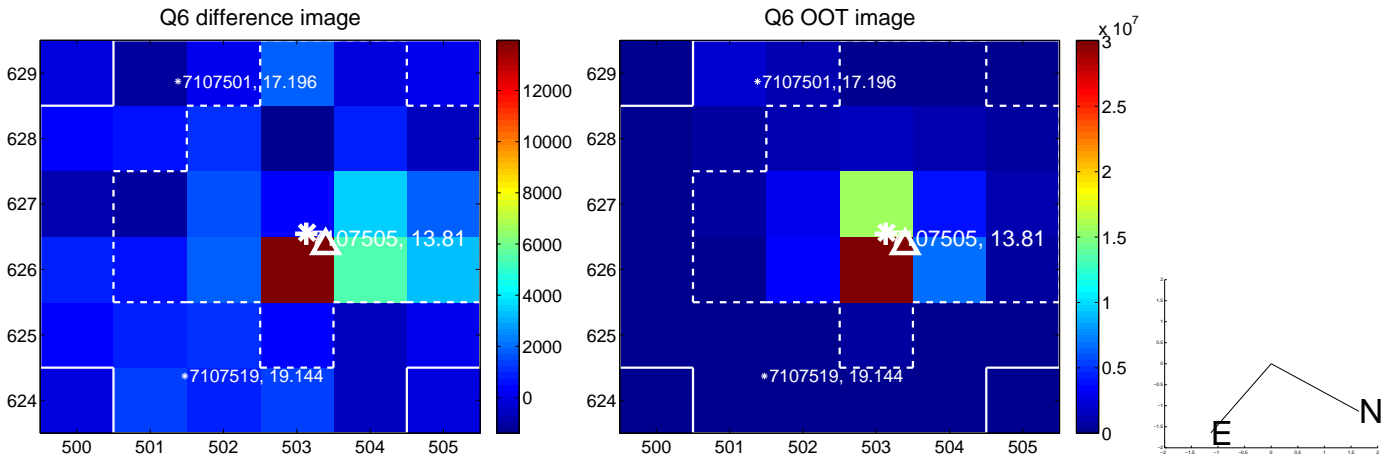
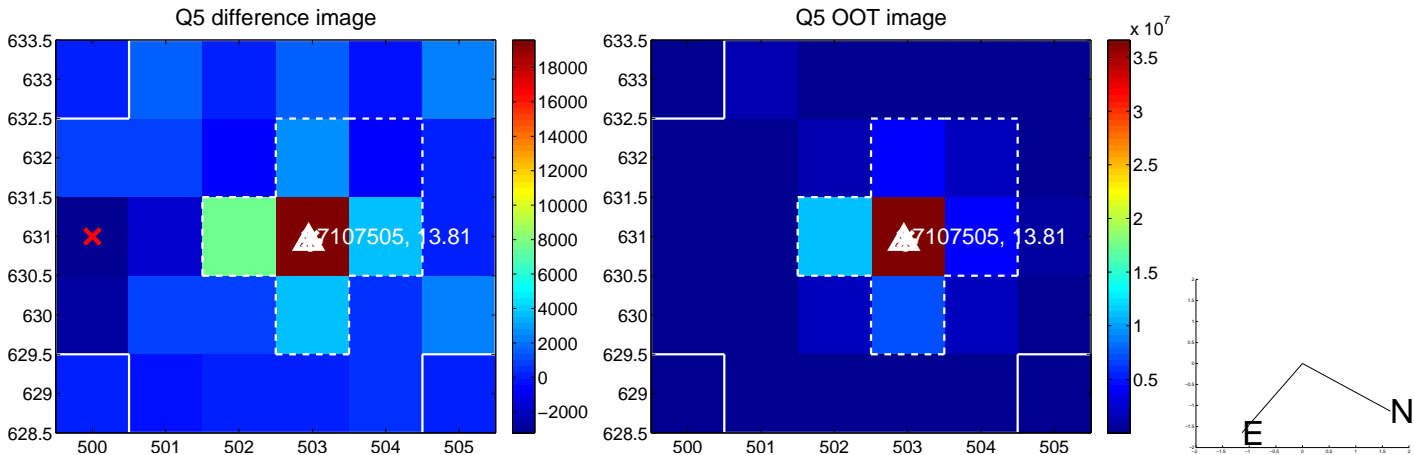
Q4 no difference image



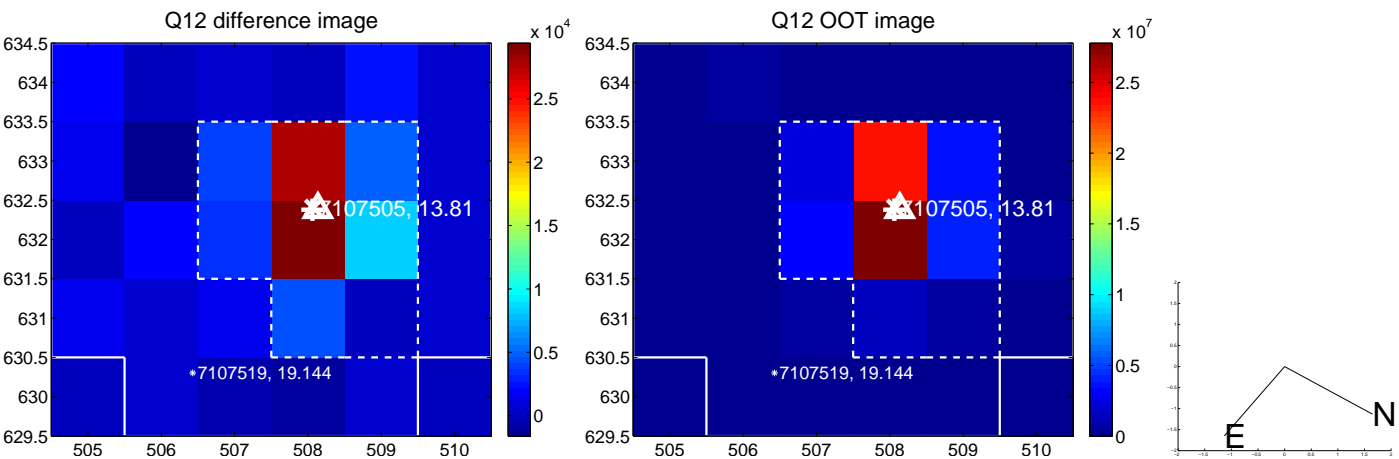
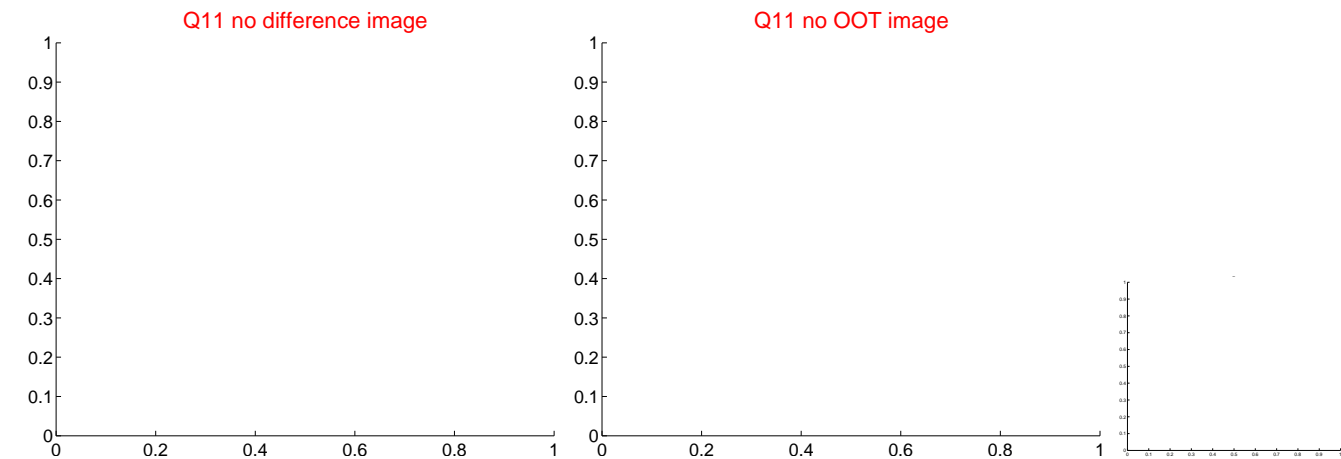
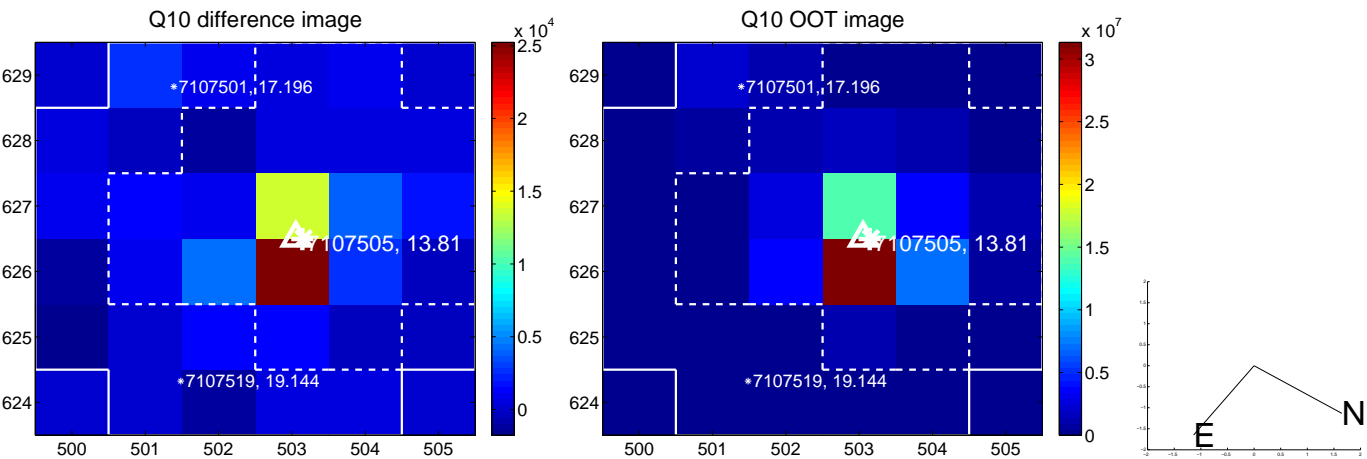
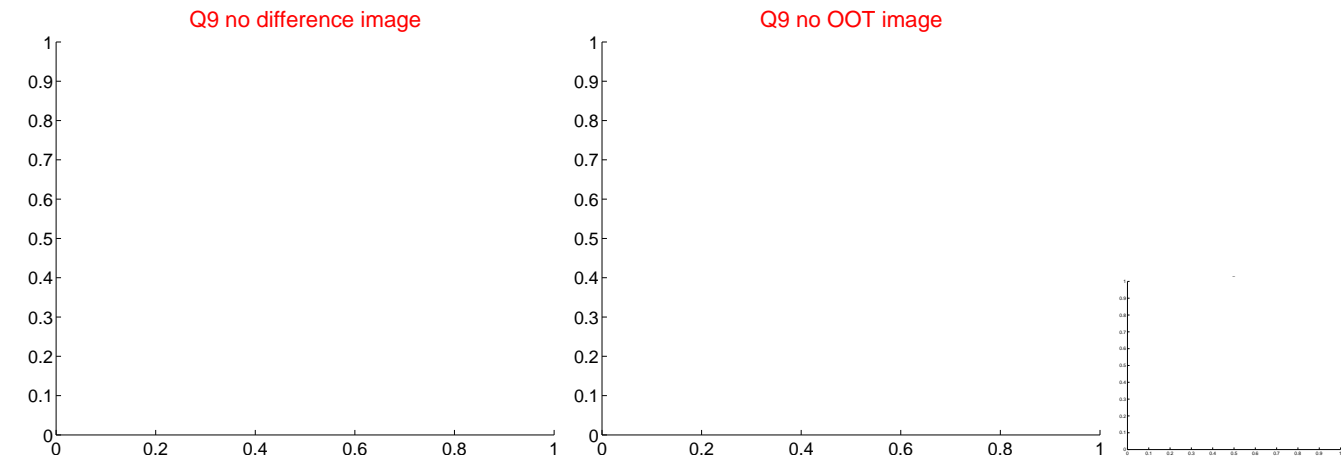
Q4 no OOT image



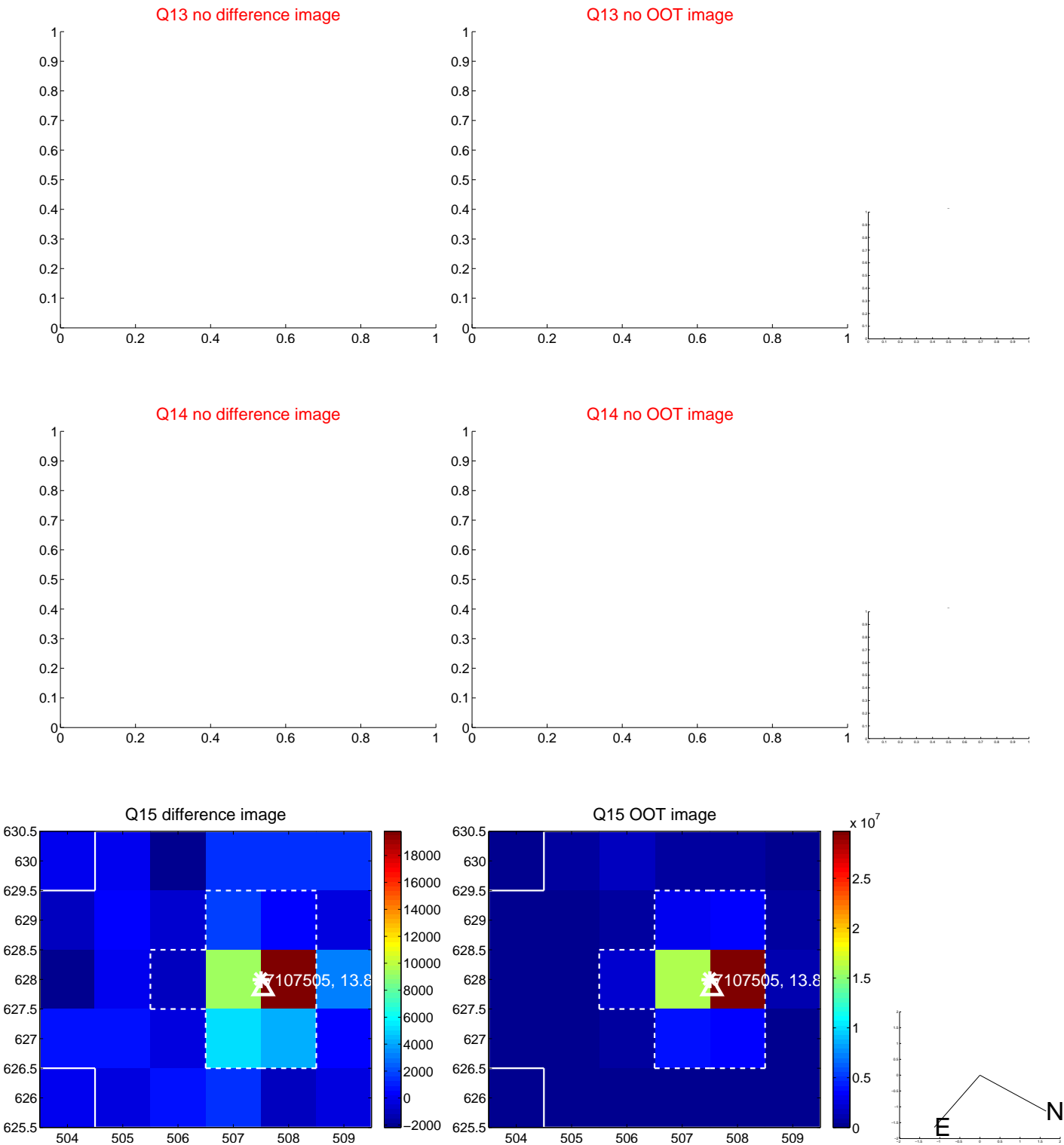
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



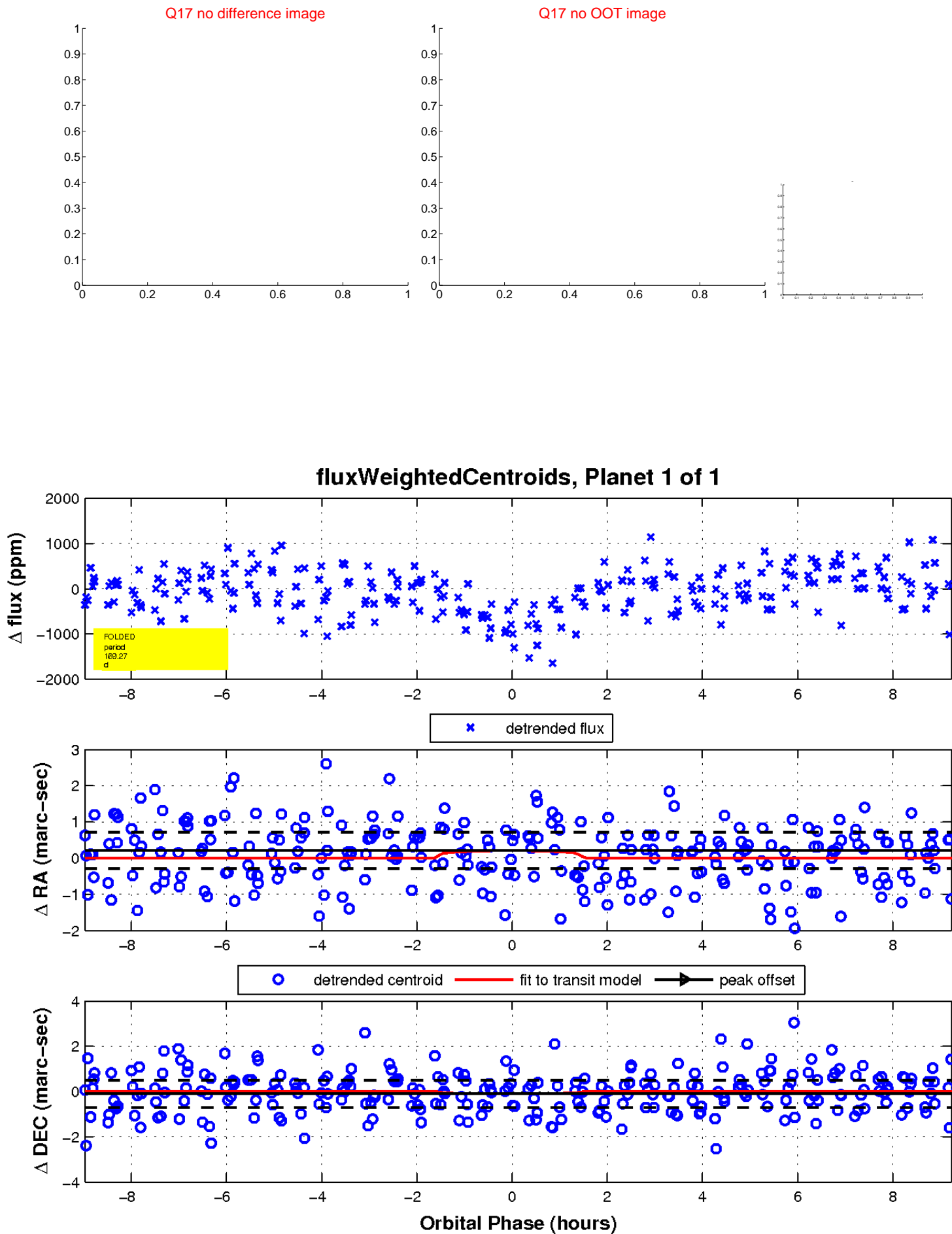
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

