

# KIC 007663357

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007663357-01	OBS	No	710.103095	142.398153	182.7	15.005	7.4	7.3	1.11	6362	1.64	0.73

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007663357-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—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.

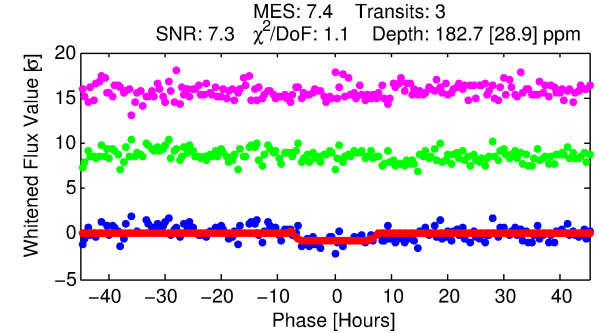
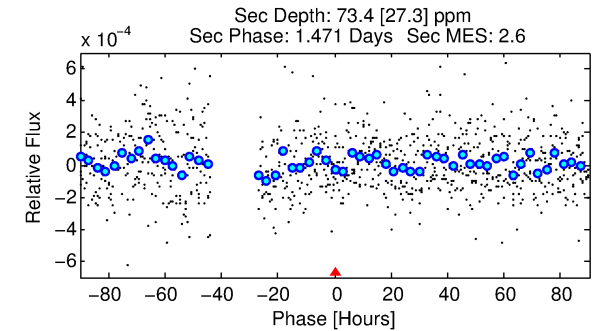
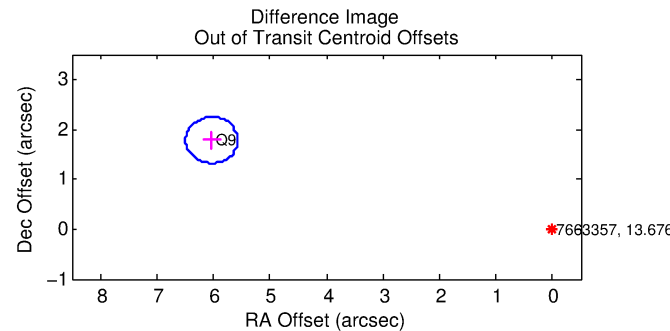
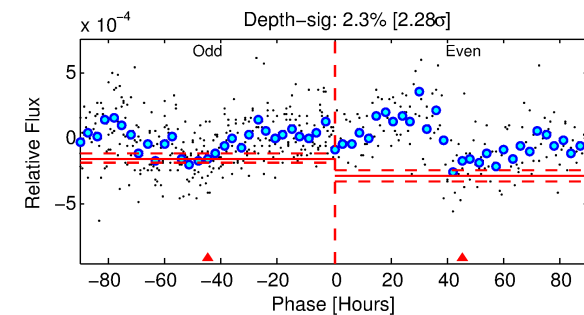
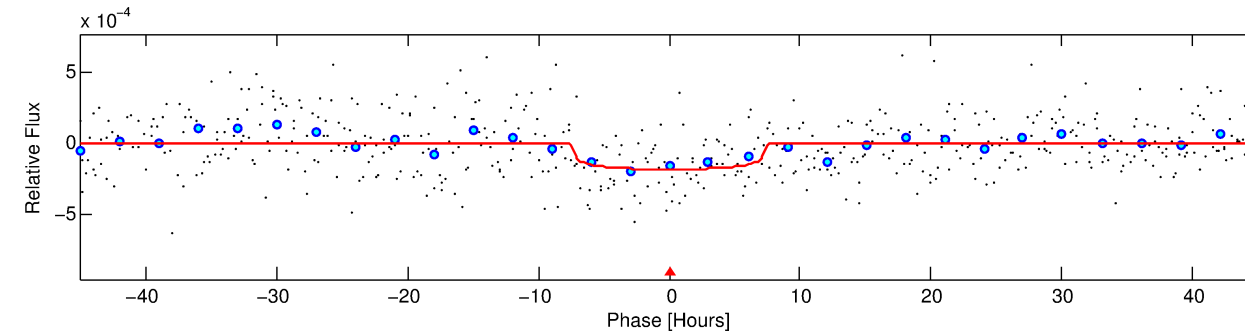
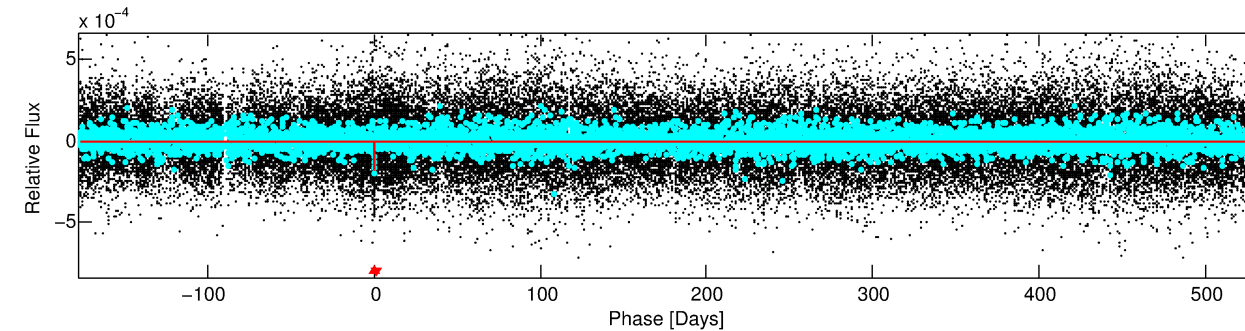
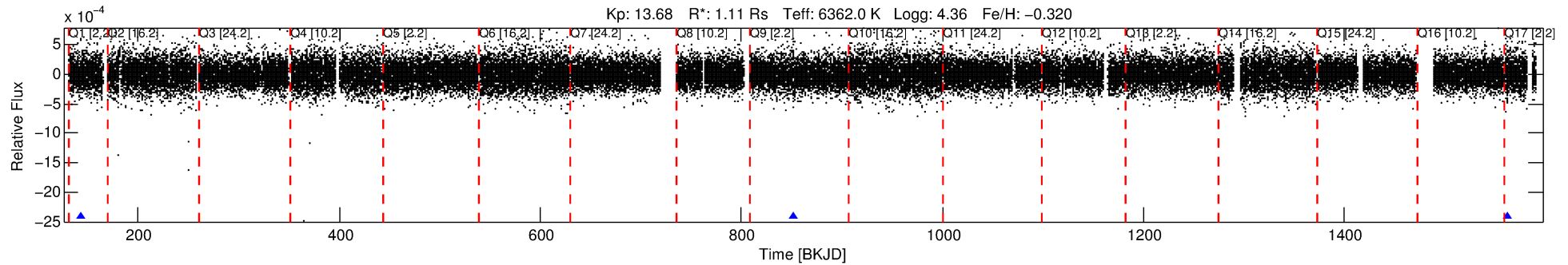
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007663357-01

No Significant Match Found

# DV One-Page Summary

KIC: 7663357 Candidate: 1 of 1 Period: 710.103 d



## DV Fit Results:

Period = 710.10310 [0.01986] d  
Epoch = 142.3982 [0.0245] BKJD  
Rp/R\* = 0.0136 [0.0061]  
a/R\* = 234.30 [573.76]  
b = 0.78 [1.23]  
Seff = 0.73 [0.27]  
Teq = 236 [22] K  
Rp = 1.64 [0.89] Re  
a = 1.5696 [0.3909] AU  
Ag = 36811.76 [38178.00] [0.96 $\sigma$ ]  
Teffp = 5055 [1242] K [3.88 $\sigma$ ]

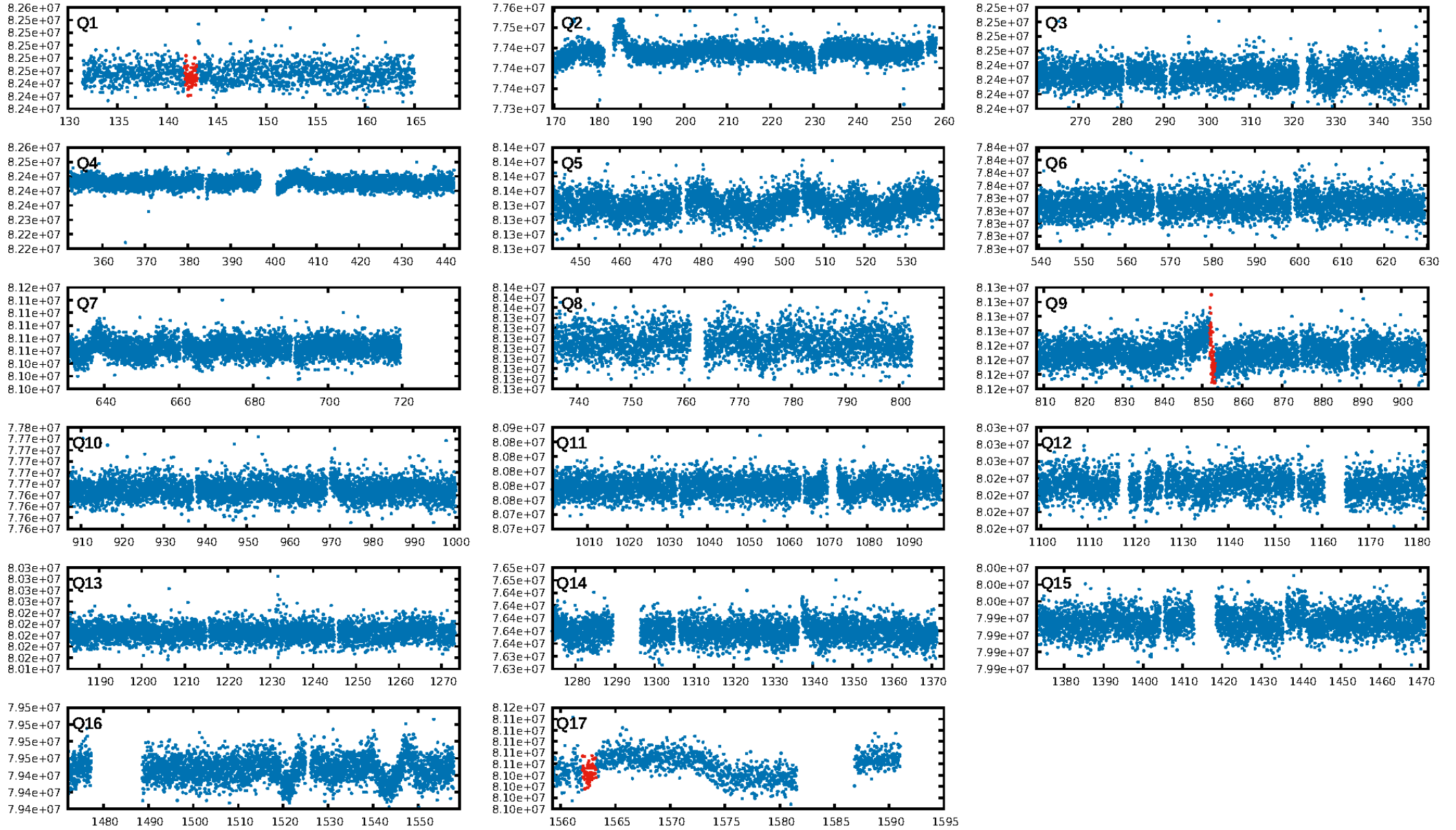
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 7.1%  
ModelChiSquareGof-sig: 99.4%  
Bootstrap-pfa: 6.33e-13  
RollingBand-fgt: 1.00 [1/1]  
**GhostDiagnostic-chr: 0.8955**  
Centroid-sig: 11.8%  
Centroid-so: 2.606 arcsec [1.29 $\sigma$ ]  
**OotOffset-rm: 6.286 arcsec [40.88 $\sigma$ ]**  
**KicOffset-rm: 6.357 arcsec [41.33 $\sigma$ ]**  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [3/3]

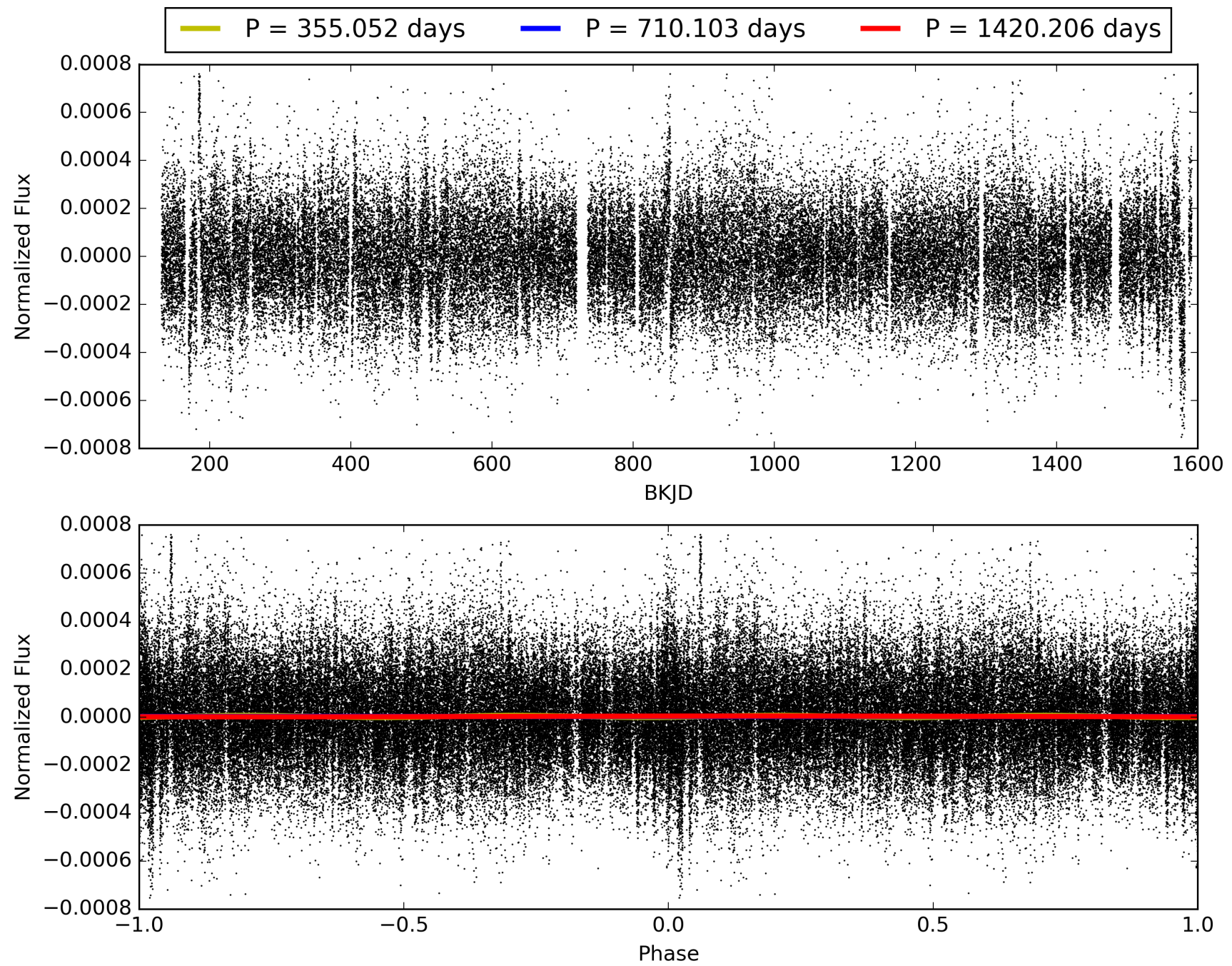
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:46:10 Z

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

# TCE 007663357-01, PDC Light Curves

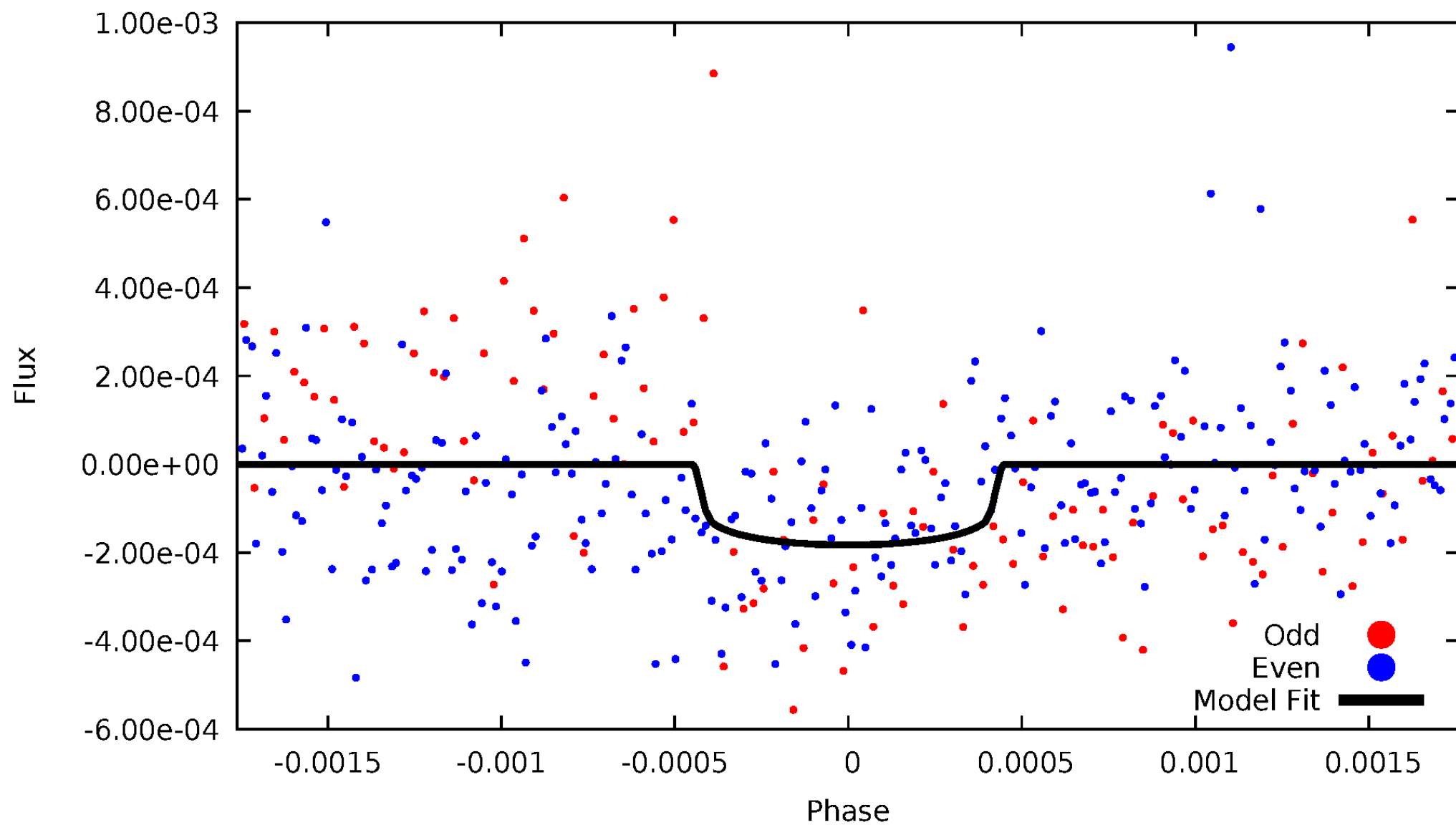


TCE 007663357-01



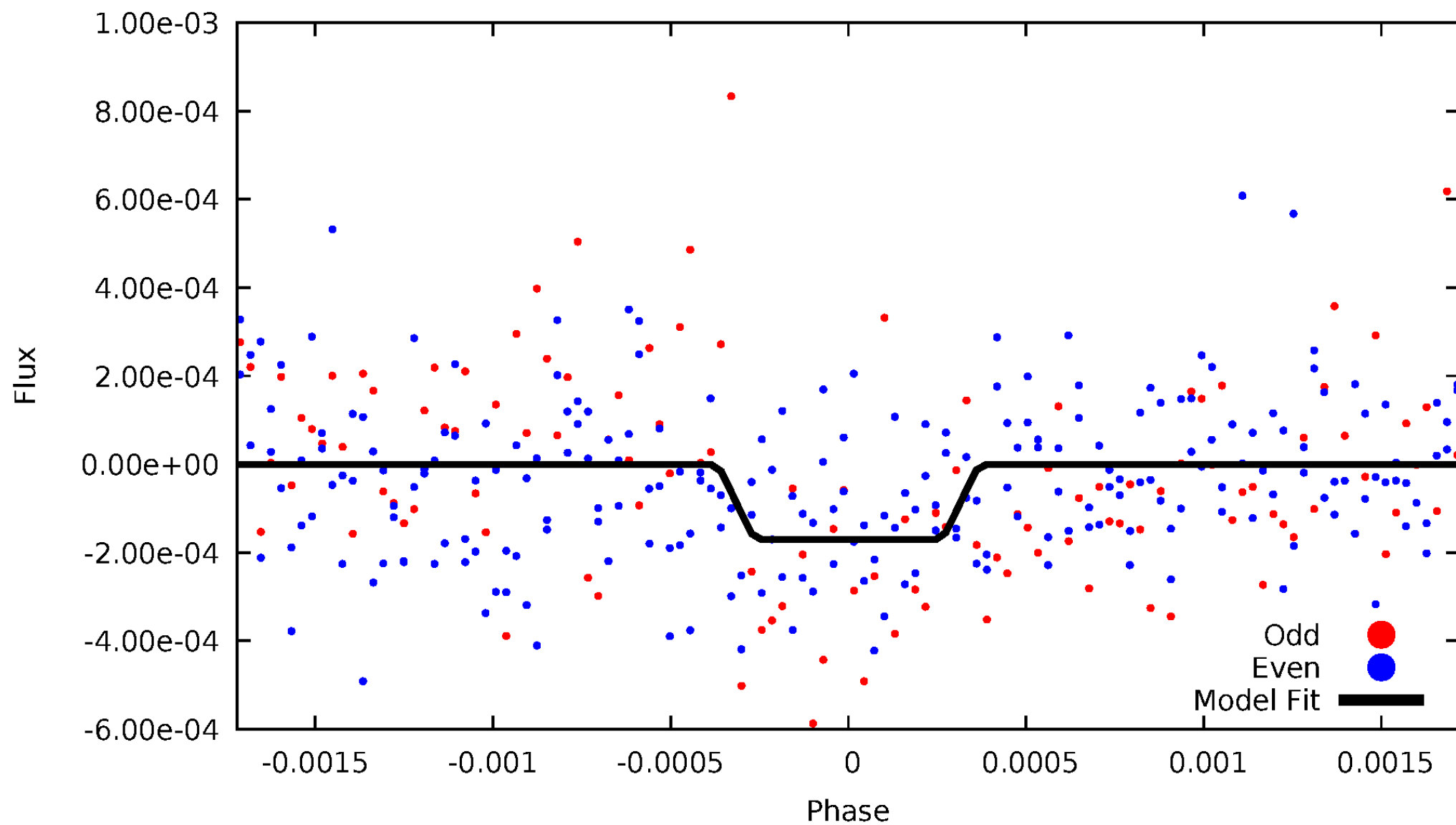
# DV Odd/Even

TCE 007663357-01



# ALT Odd/Even

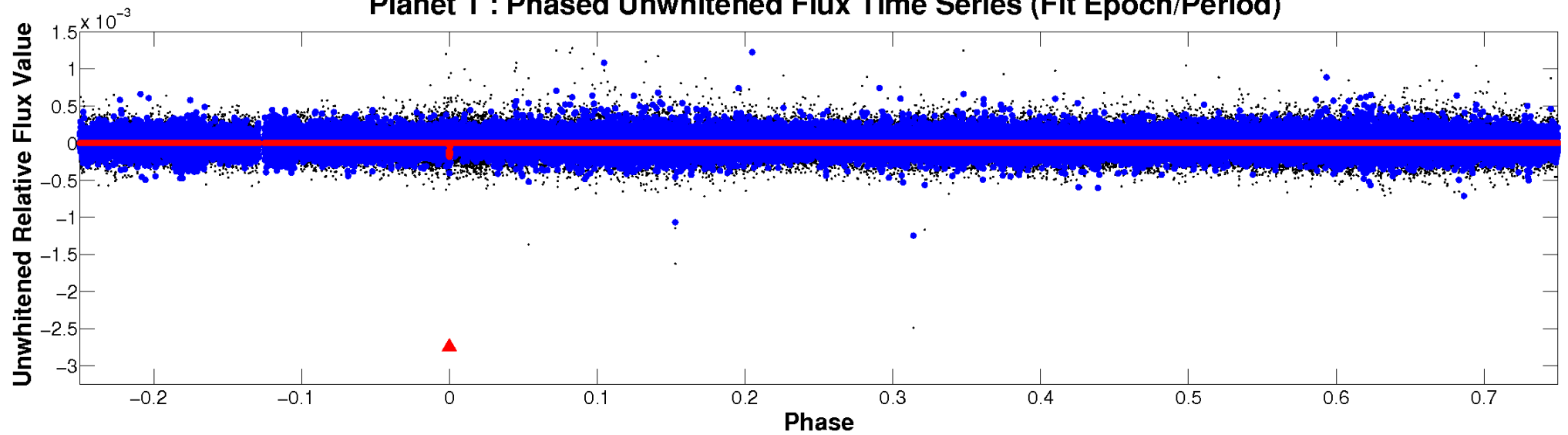
TCE 007663357-01



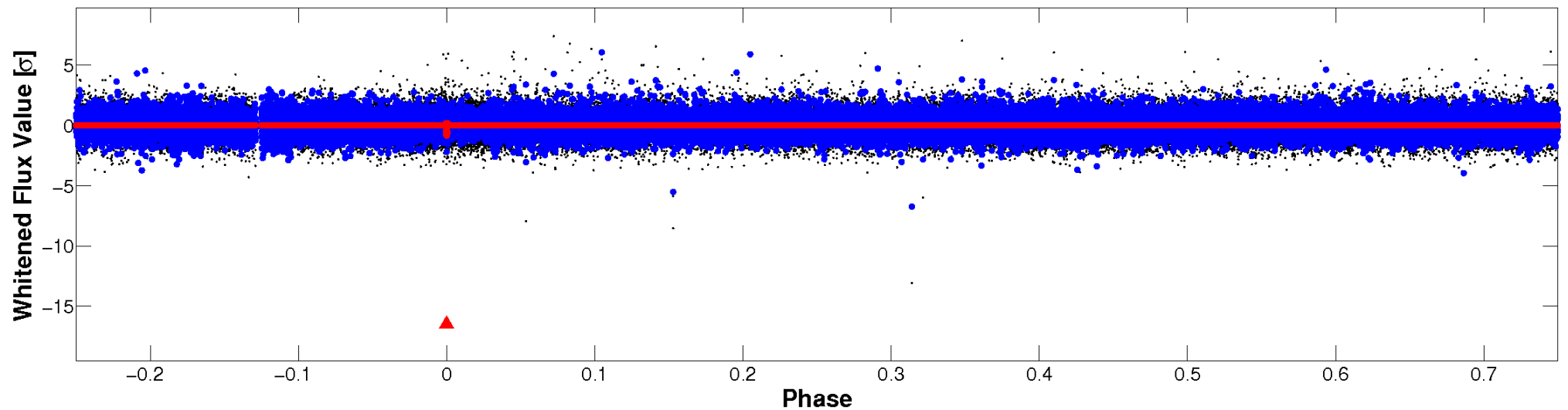


# Non-Whitened Vs. Whitened Light Curve

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

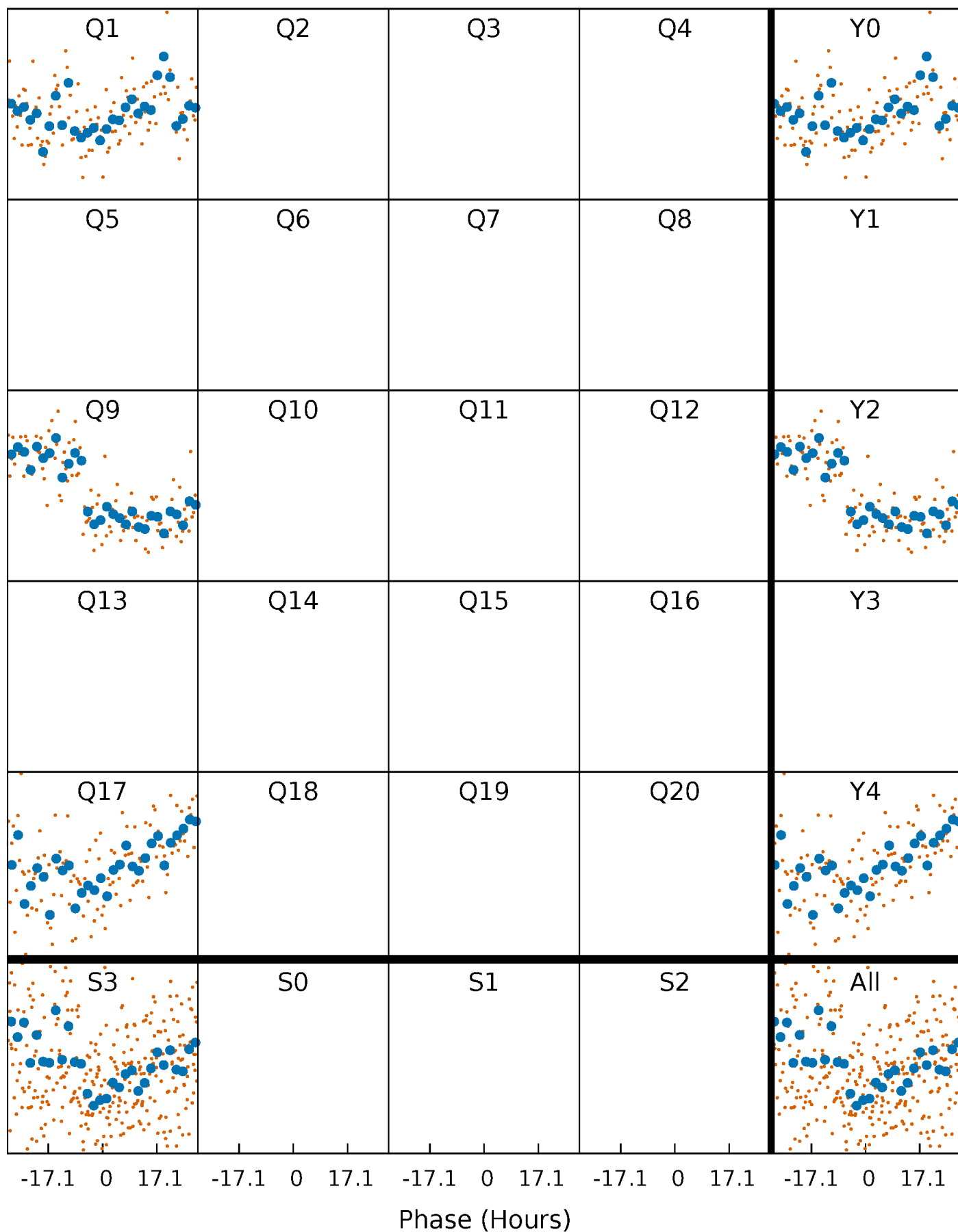


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

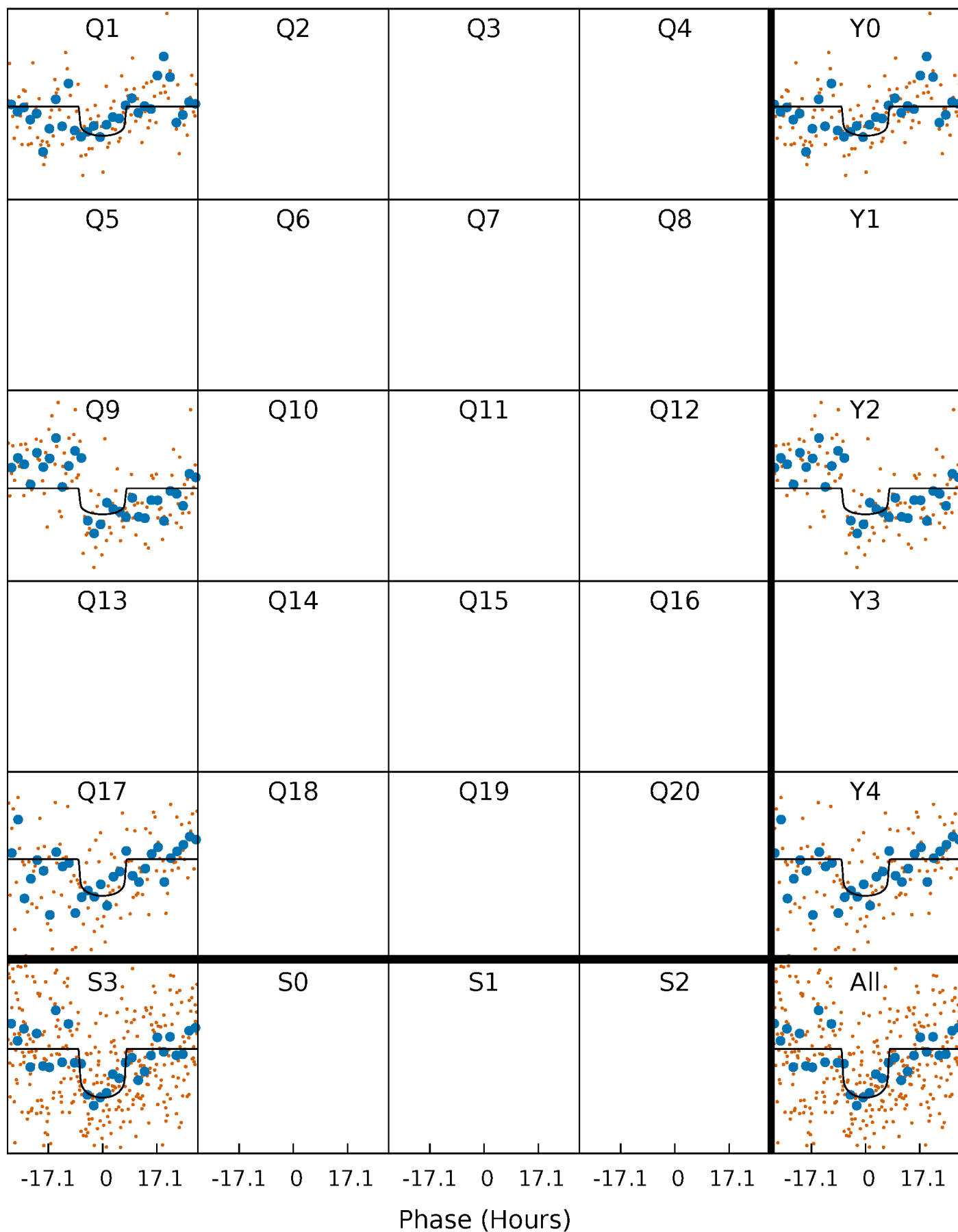
TCE 007663357-01 P=710.103095 Days  $T_0=142.398153$  (BKJD)





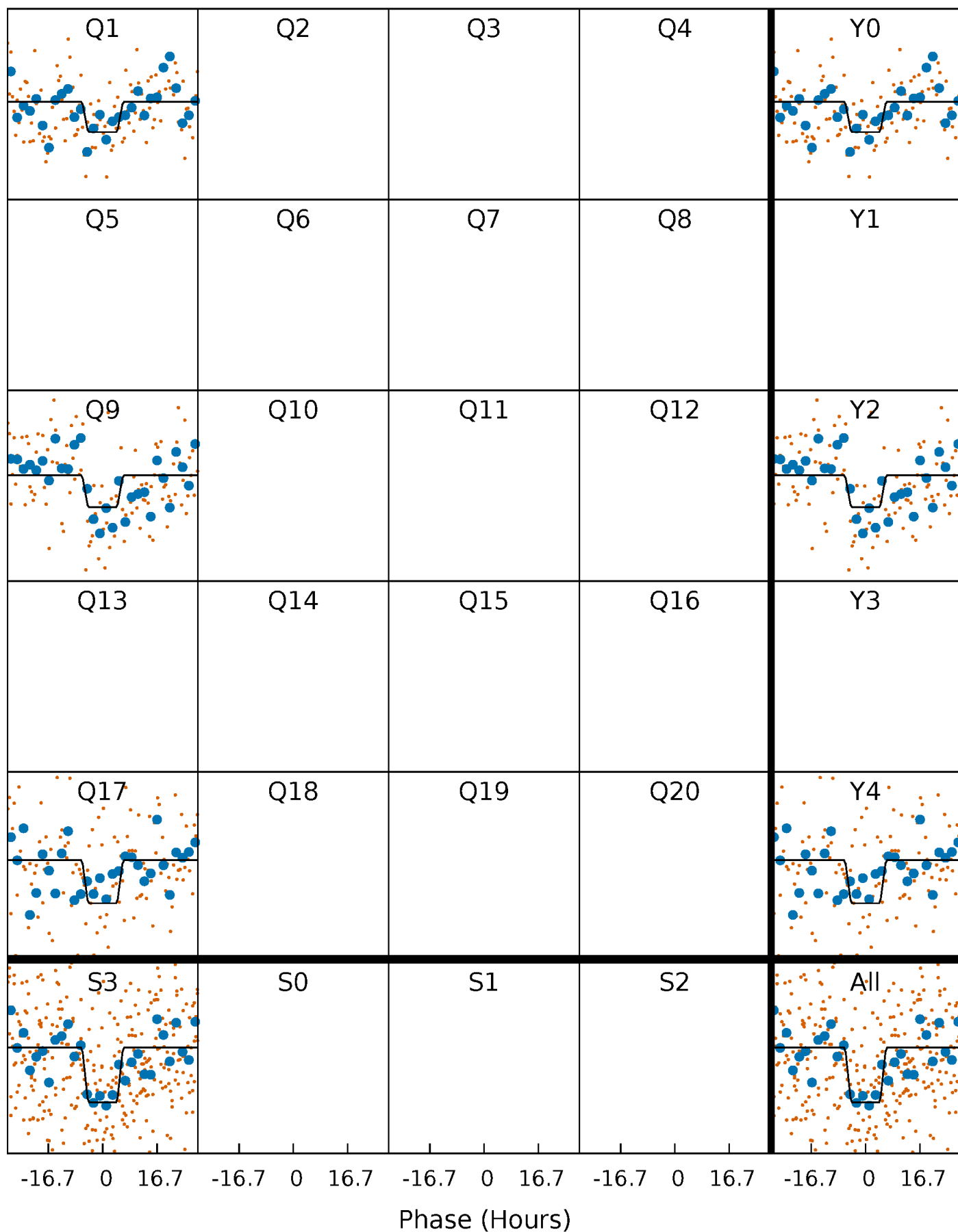
# DV Quarter-Phased Transit Curves

TCE 007663357-01     $P=710.103095$  Days     $T_0=142.398153$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

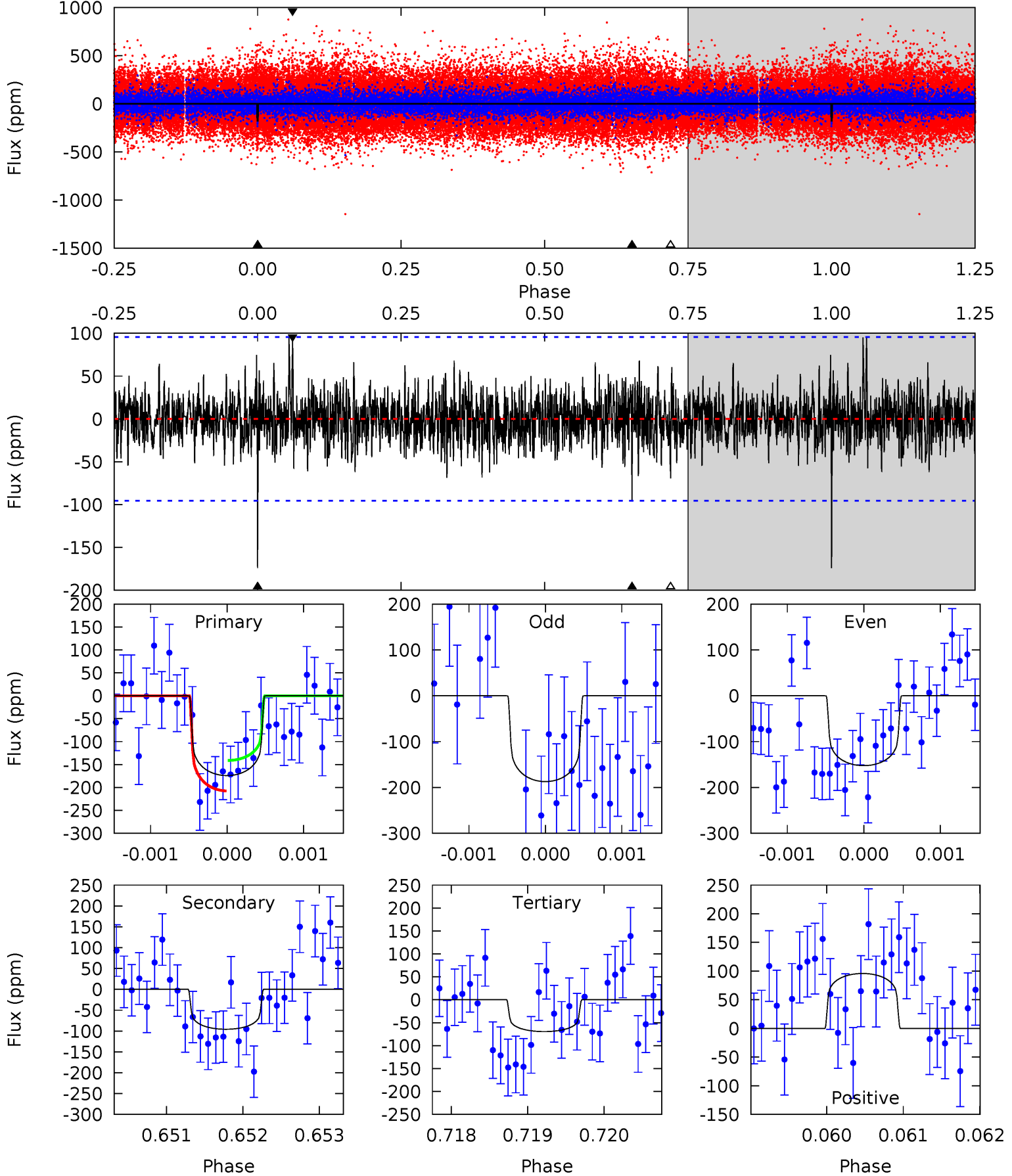
TCE 007663357-01 P=710.107077 Days  $T_0=142.352484$  (BKJD)



# DV Model-Shift Uniqueness Test

007663357-01, P = 710.103095 Days, E = 142.398153 Days

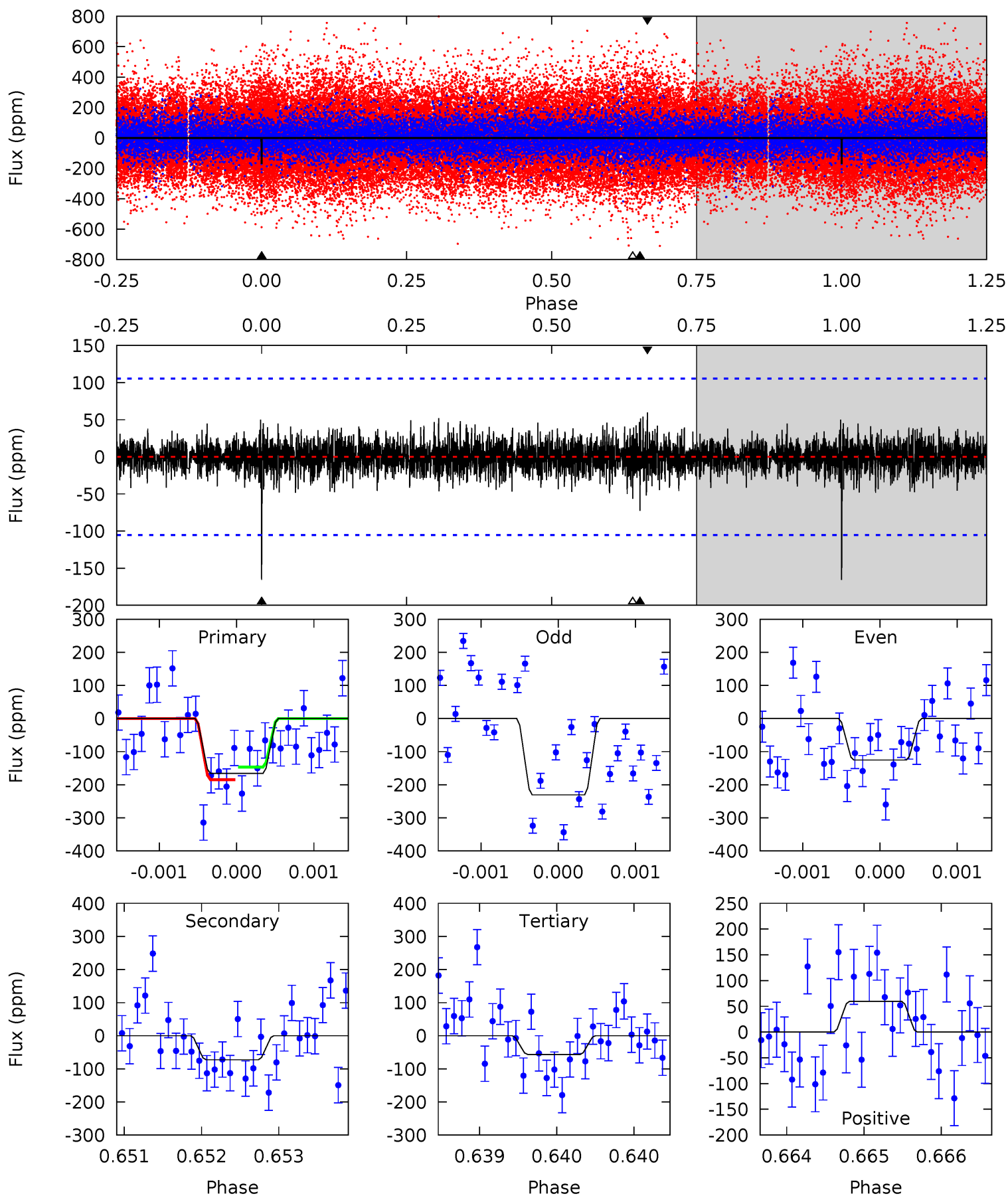
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.96	5.48	3.97	5.48	5.47	3.32	1.22	5.99	4.48	1.51	-0.00	0.95	1.04	0.35	1.90



# Alt Model-Shift Uniqueness Test

007663357-01, P = 710.107077 Days, E = 142.352484 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
8.67	3.78	2.95	3.11	5.51	3.38	0.77	5.72	5.55	0.83	0.67	2.61	1.03	0.26	1.01



### Stellar Parameters For KIC 007663357

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6362^{+157}_{-189}$	$4.357^{+0.101}_{-0.188}$	$-0.320^{+0.250}_{-0.300}$	$1.110^{+0.338}_{-0.145}$	$1.017^{+0.159}_{-0.106}$	$1.048^{+0.493}_{-0.540}$
	+2%/-3%	+2%/-4%	+78%/-94%	+30%/-13%	+16%/-10%	+47%/-52%
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 007663357-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-96 \pm 17$	$1.69^{+0.78}_{-0.74}$	$334^{+22}_{-17}$	$5409^{+1923}_{-802}$	$43599^{+96001}_{-23621}$
Alt.	$-72 \pm 19$	$1.62^{+0.85}_{-0.73}$	$332^{+22}_{-17}$	$5162^{+1808}_{-777}$	$35192^{+84823}_{-20108}$

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

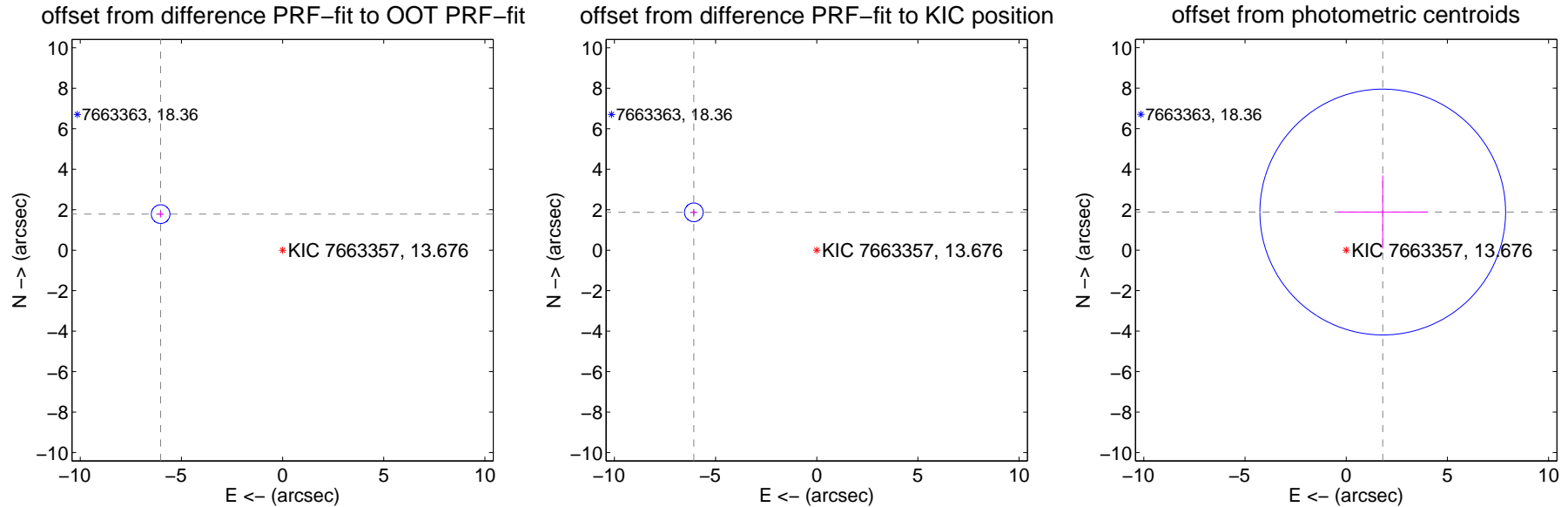
## DV Centroid Data

Supplemental centroid analysis for 007663357-01. Kepler magnitude: 13.68. Transit SNR 7.26

There are 1 quarters with good PRF difference image offsets

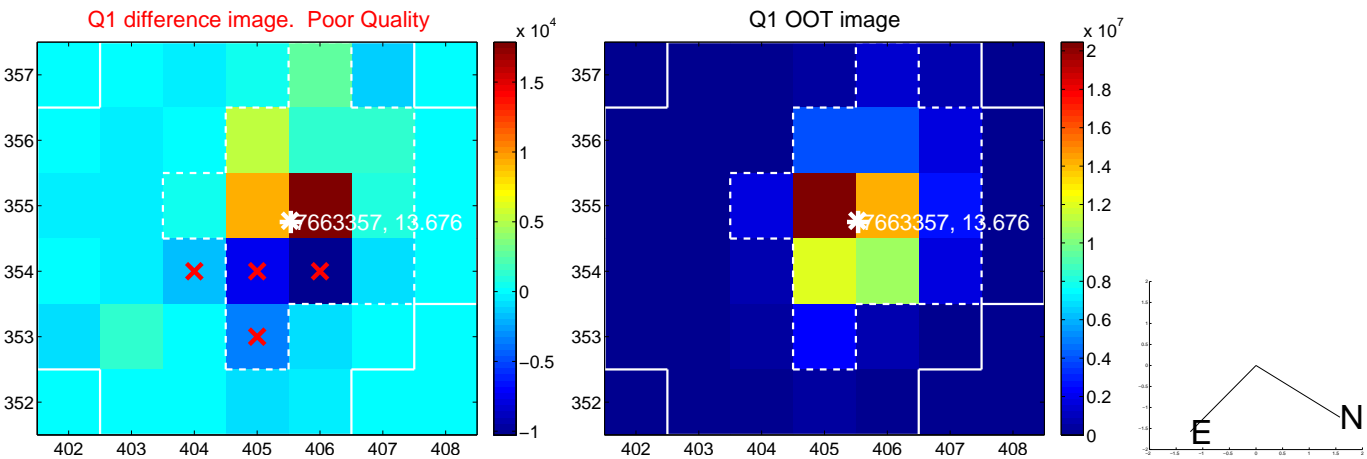
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.286 \pm 0.154$	40.88	$6.028 \pm 0.153$	$1.781 \pm 0.163$
PRF-fit source offset from KIC position	$6.357 \pm 0.154$	41.33	$6.076 \pm 0.153$	$1.868 \pm 0.163$
photometric centroid source offset	$2.61 \pm 2.02$	1.29	$-1.81 \pm 2.23$	$1.88 \pm 1.81$



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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

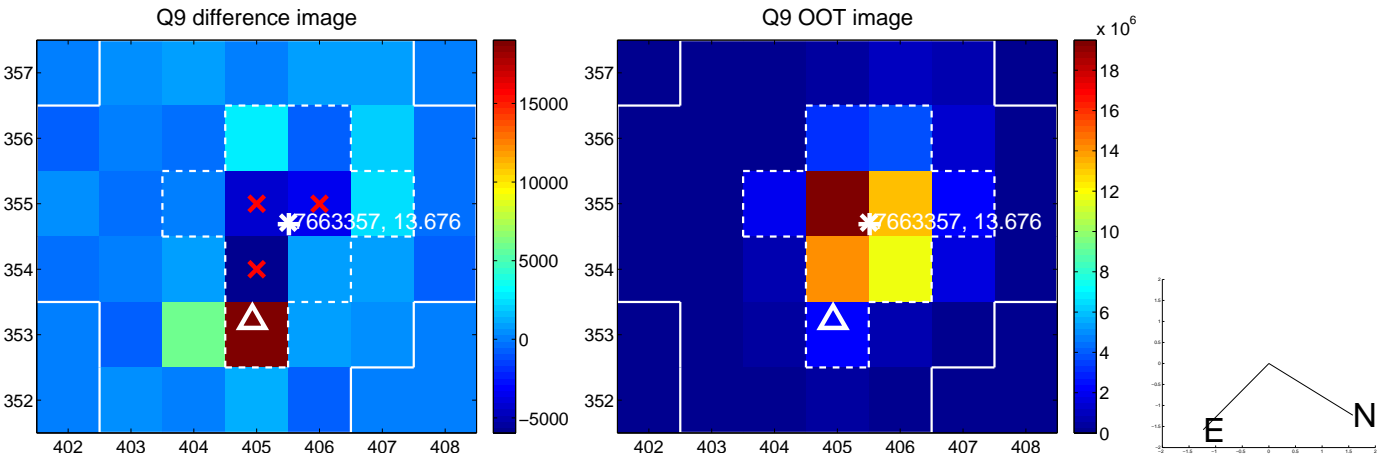




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



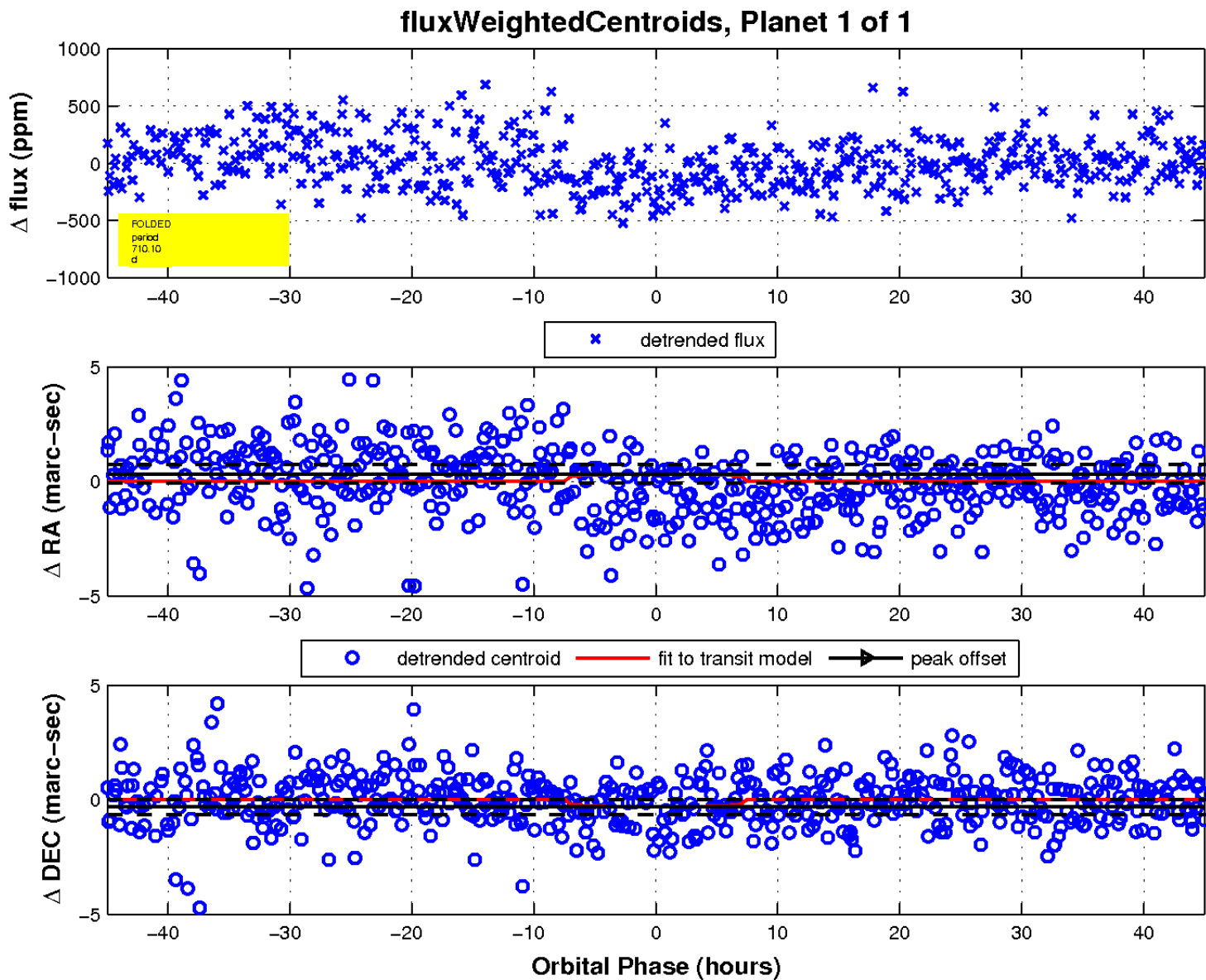
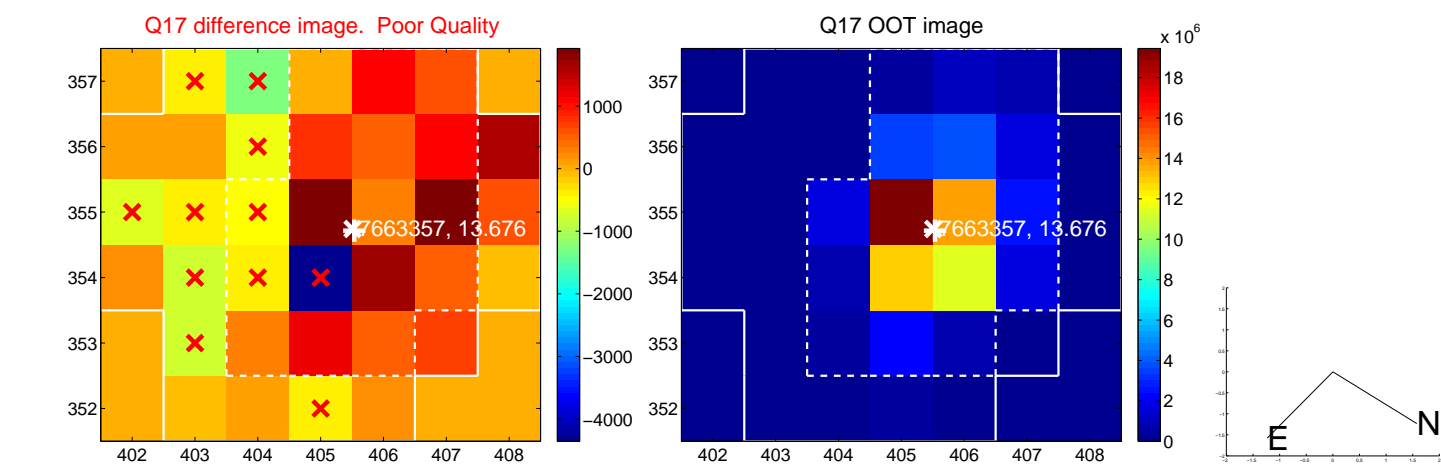
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

