

# KIC 003748535

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003748535-01	OBS	No	556.238905	265.331255	126.7	20.298	7.5	7.1	1.46	6401	1.79	1.59

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003748535-01	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.

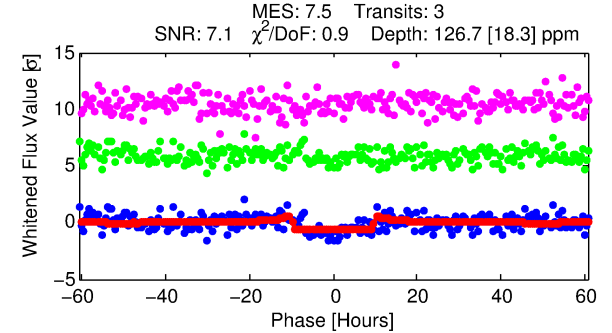
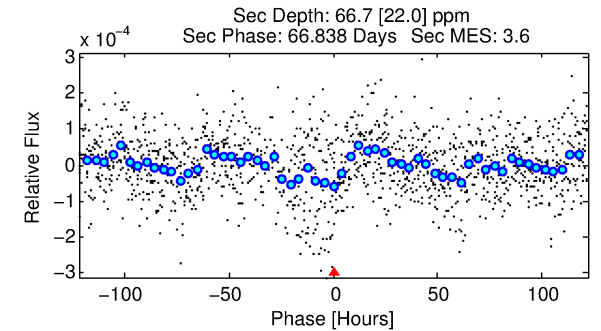
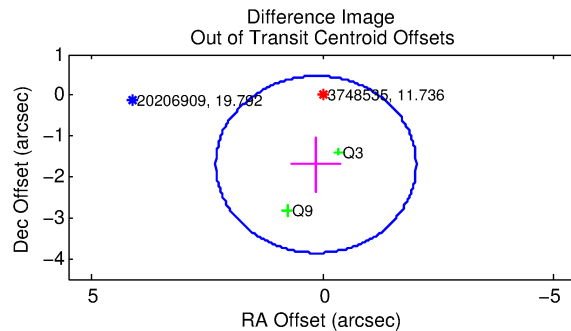
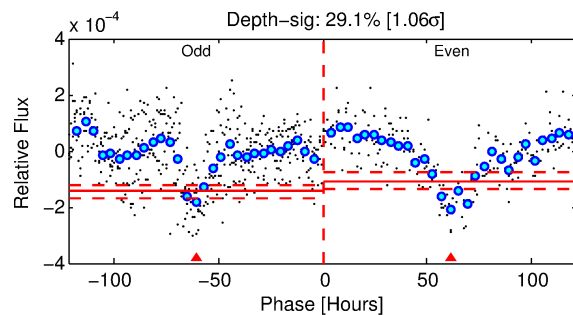
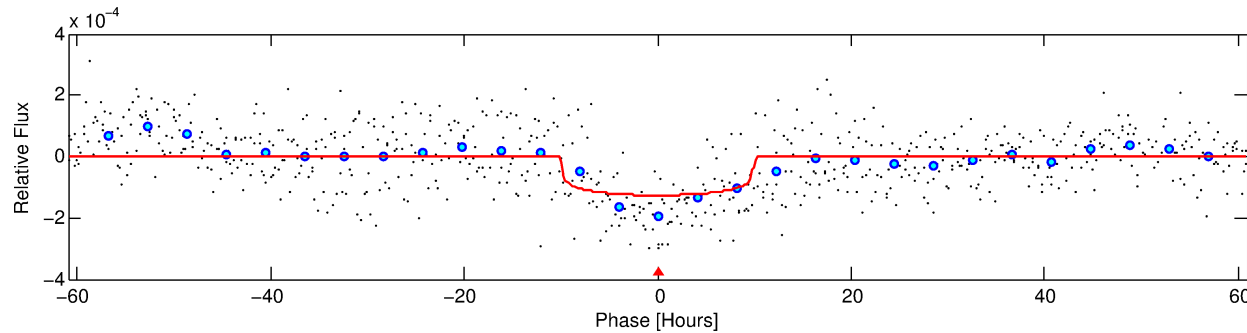
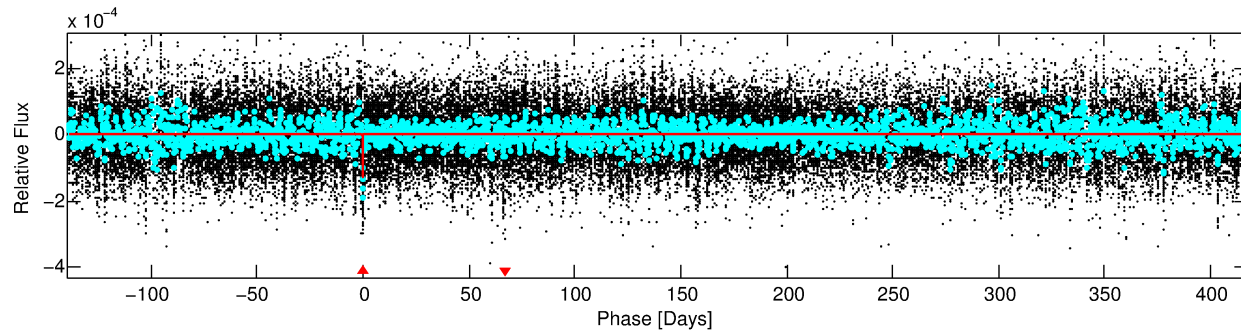
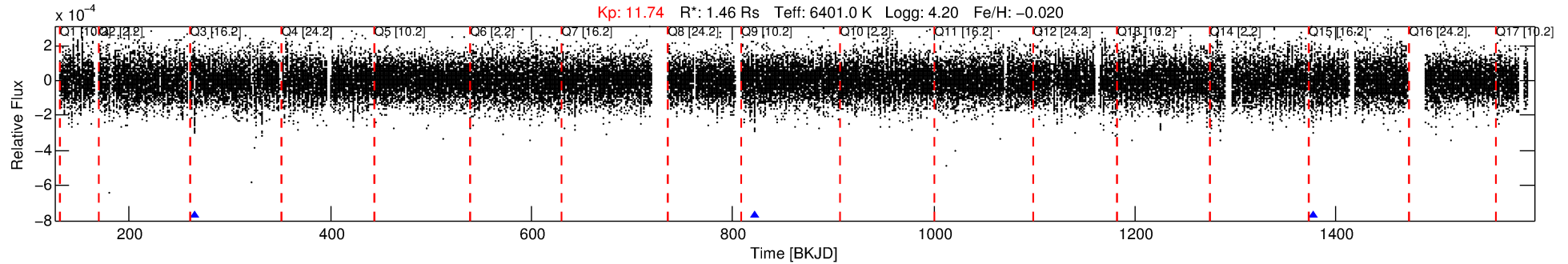
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003748535-01

No Significant Match Found

# DV One-Page Summary

KIC: 3748535 Candidate: 1 of 1 Period: 556.239 d



## DV Fit Results:

Period = 556.23890 [0.01191] d  
Epoch = 265.3313 [0.0131] BKJD  
Rp/R\* = 0.0112 [0.0021]  
a/R\* = 140.88 [123.18]  
b = 0.75 [0.50]  
Seff = 1.59 [0.36]  
Teq = 286 [16] K  
Rp = 1.79 [0.47] Re  
a = 1.4216 [0.2193] AU  
Ag = 23242.75 [12578.76] [1.85σ]  
Teffp = 5463 [678] K [7.63σ]

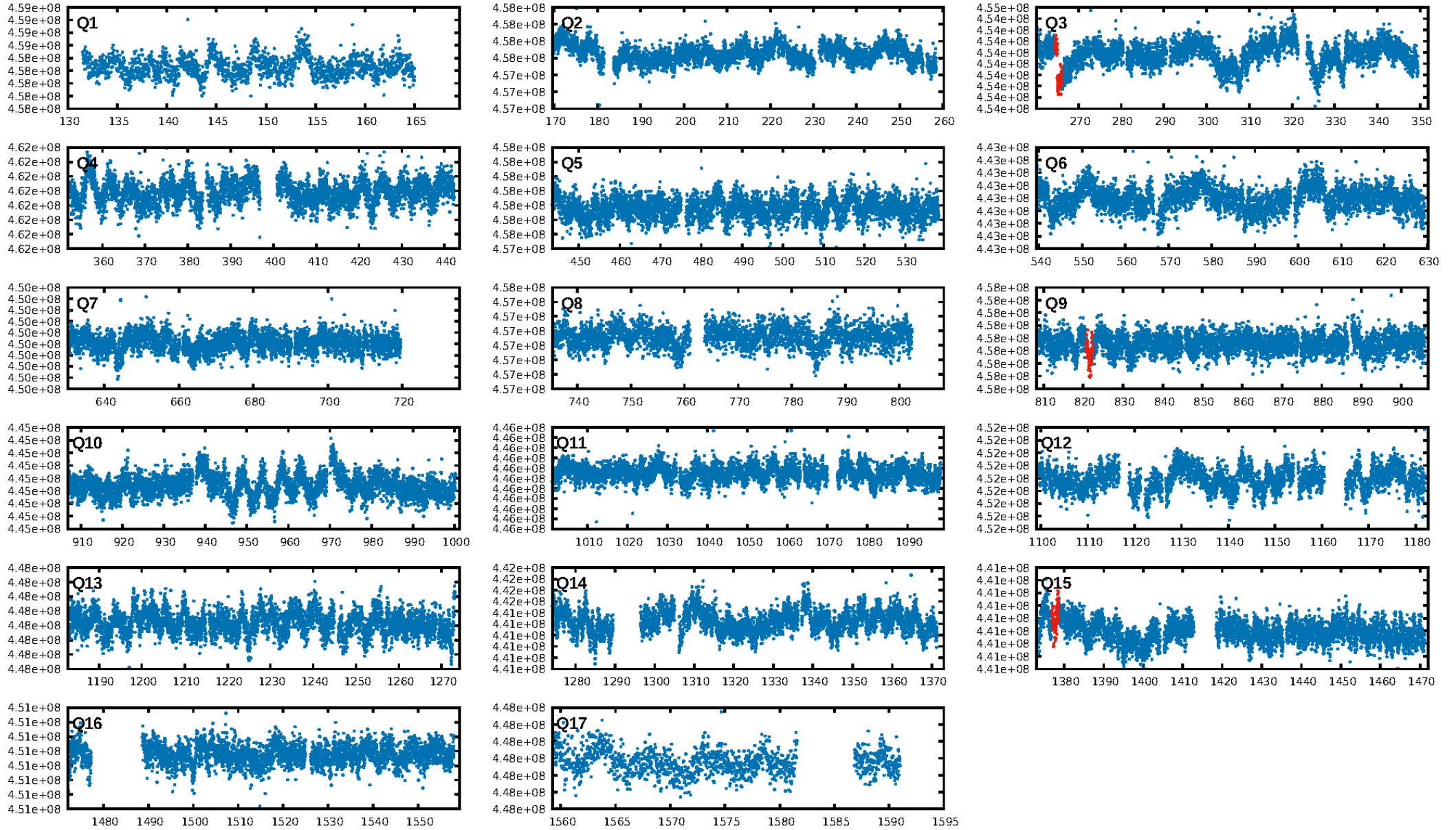
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 34.9%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 5.65e-14  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 3.442  
Centroid-sig: 35.4%  
Centroid-so: 1.042 arcsec [0.72σ]  
OotOffset-rm: 1.705 arcsec [2.36σ]  
OotOffset-st: 0/1/0/1 [2]  
KicOffset-rm: 1.710 arcsec [2.03σ]  
KicOffset-st: 0/1/0/1 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

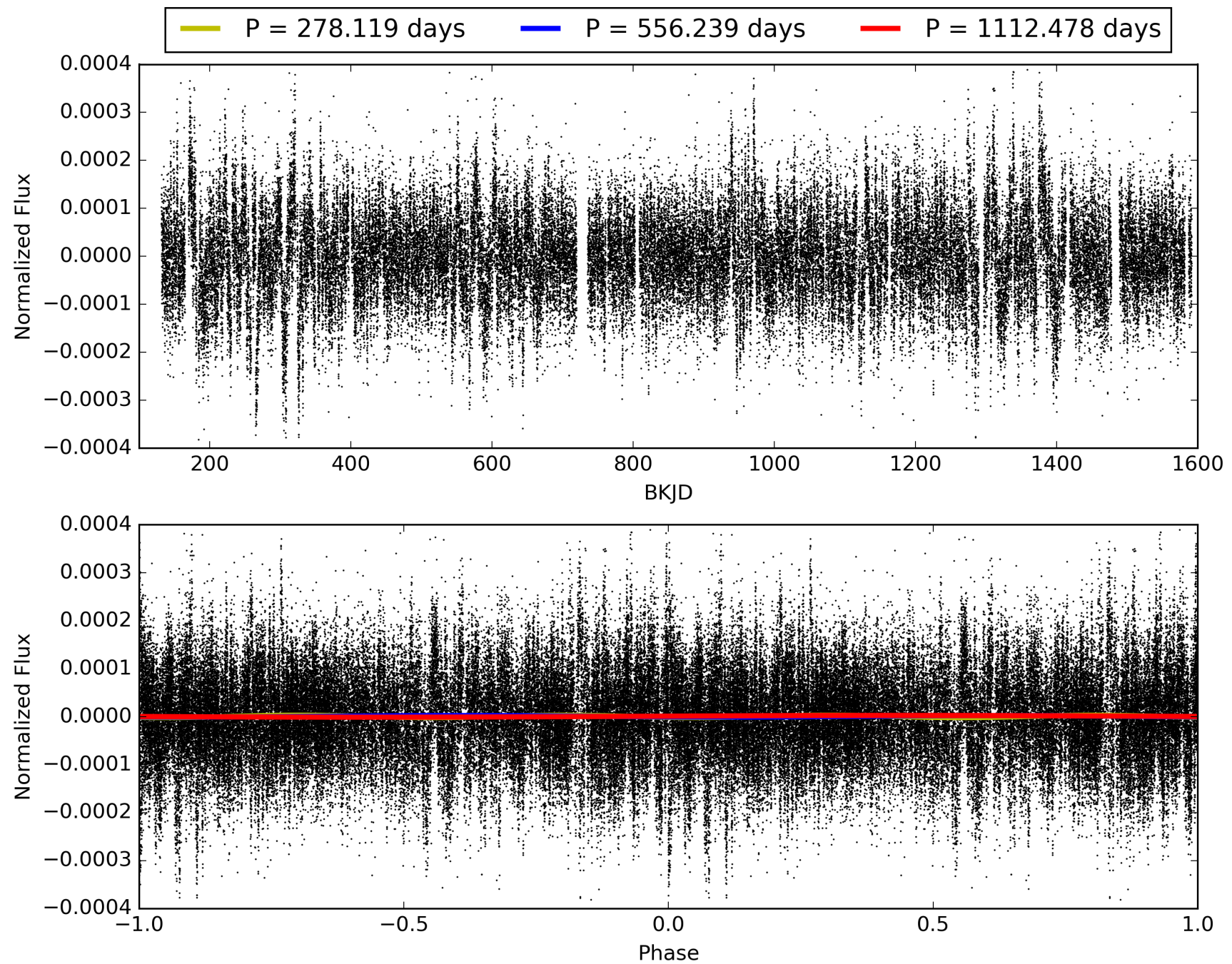
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:49:05 Z

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

# TCE 003748535-01, PDC Light Curves

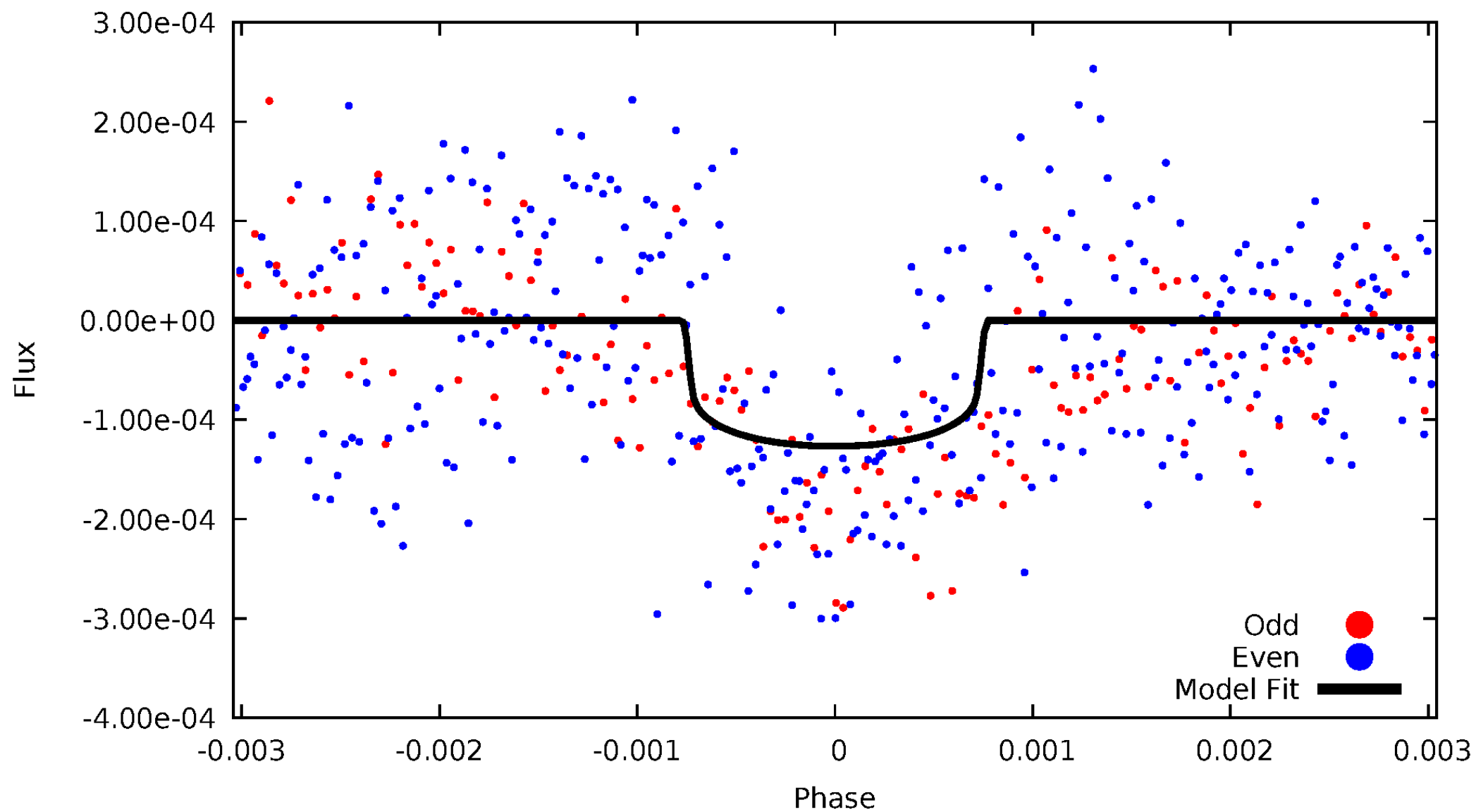


# TCE 003748535-01



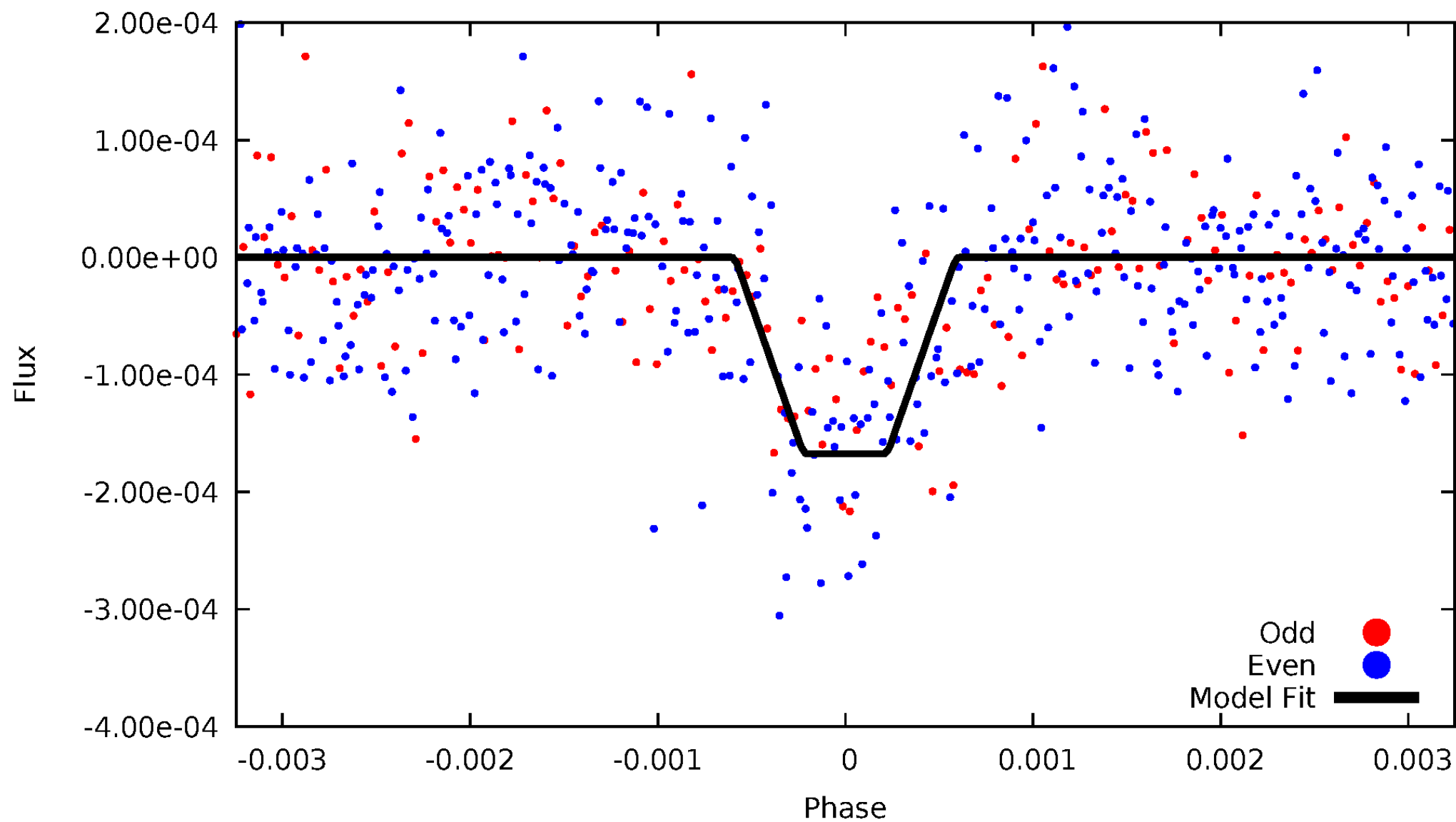
# DV Odd/Even

TCE 003748535-01



# ALT Odd/Even

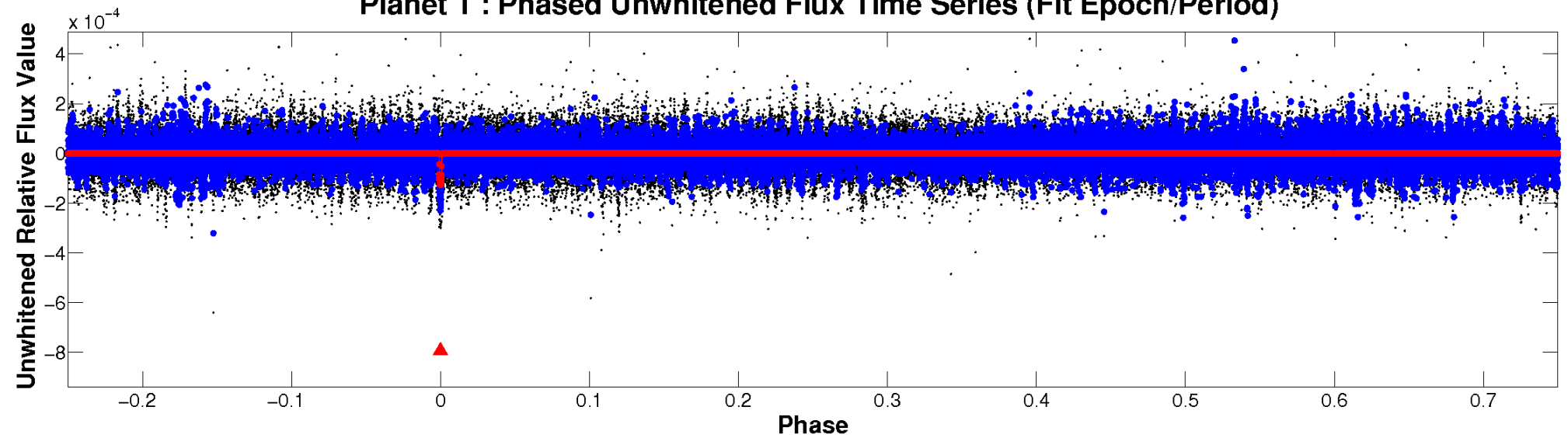
TCE 003748535-01



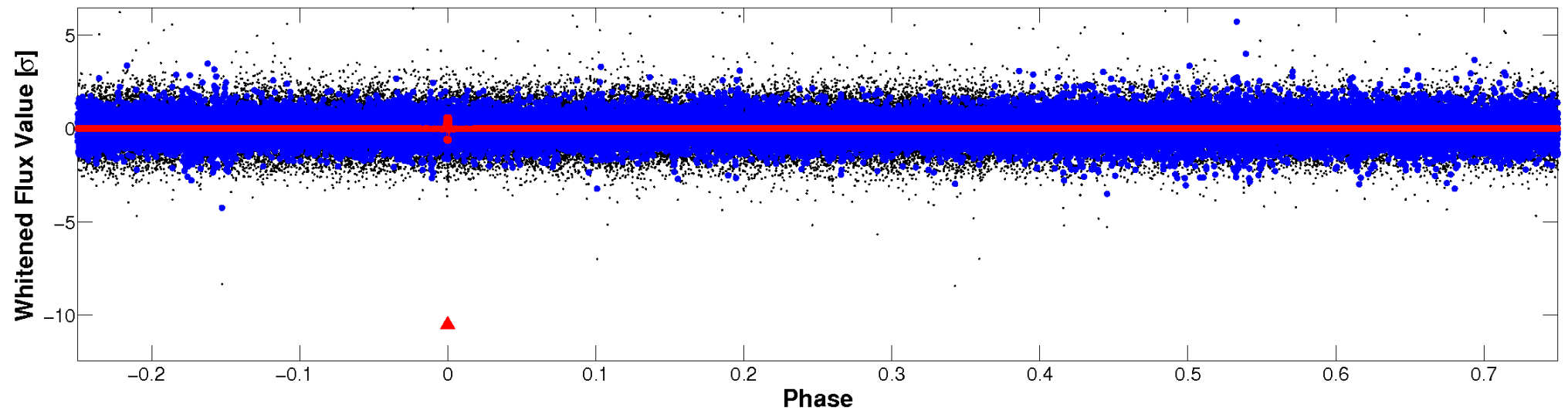


# Non-Whitened Vs. Whitened Light Curve

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

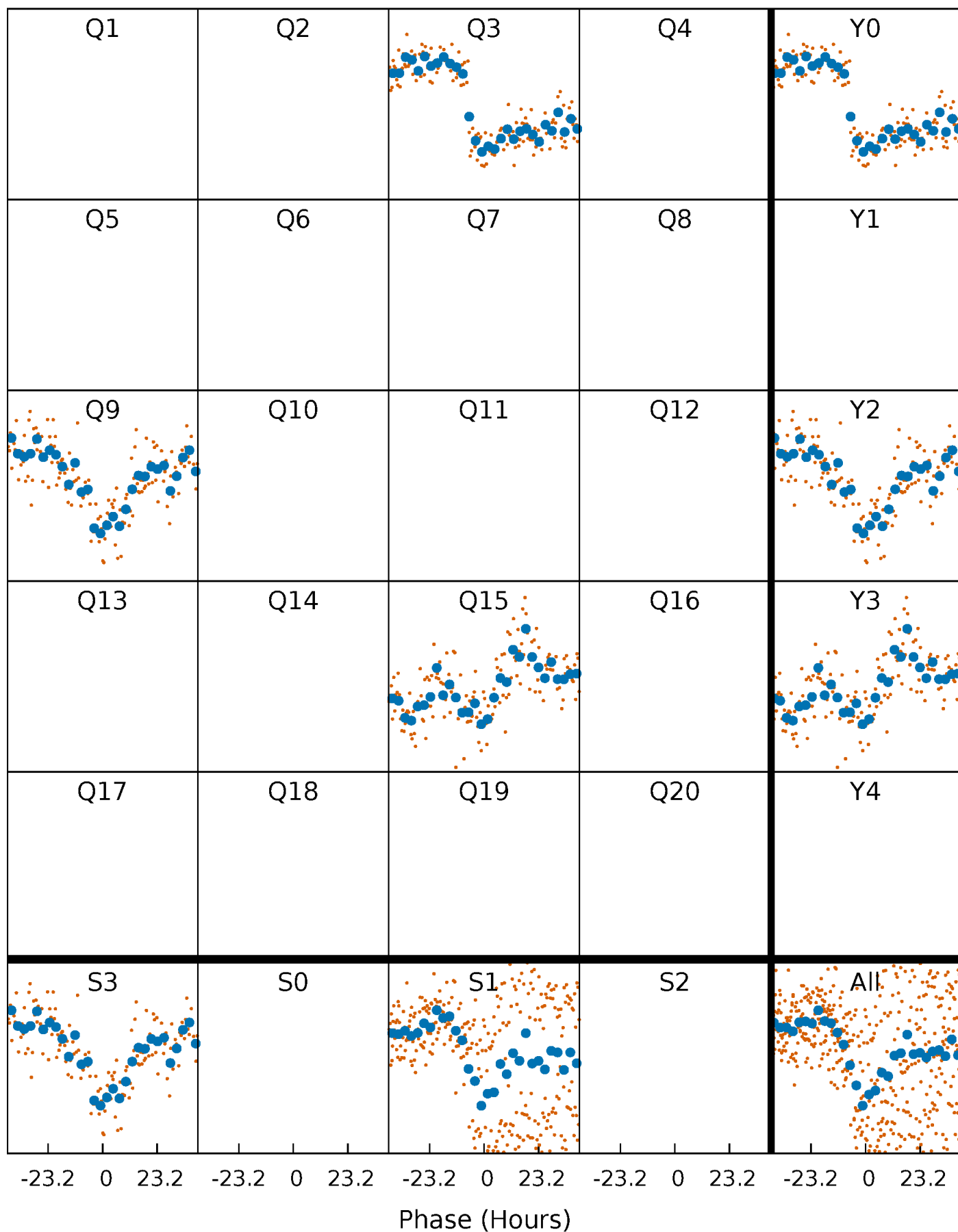


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

TCE 003748535-01 P=556.238905 Days  $T_0=265.331255$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 003748535-01 P=556.238905 Days  $T_0=265.331255$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

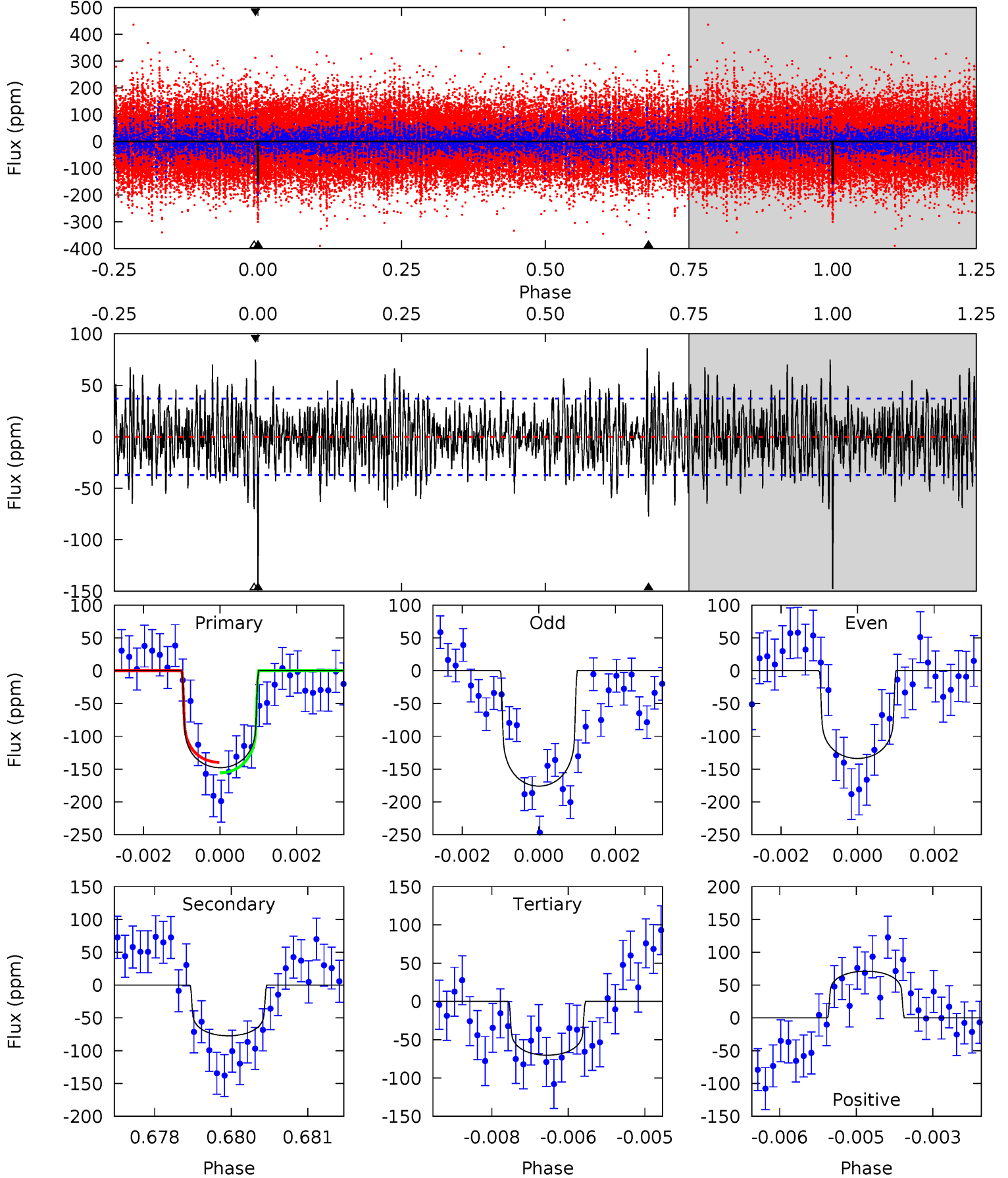
TCE 003748535-01 P=556.296860 Days  $T_0=265.283561$  (BKJD)



# DV Model-Shift Uniqueness Test

003748535-01, P = 556.238905 Days, E = 265.331255 Days

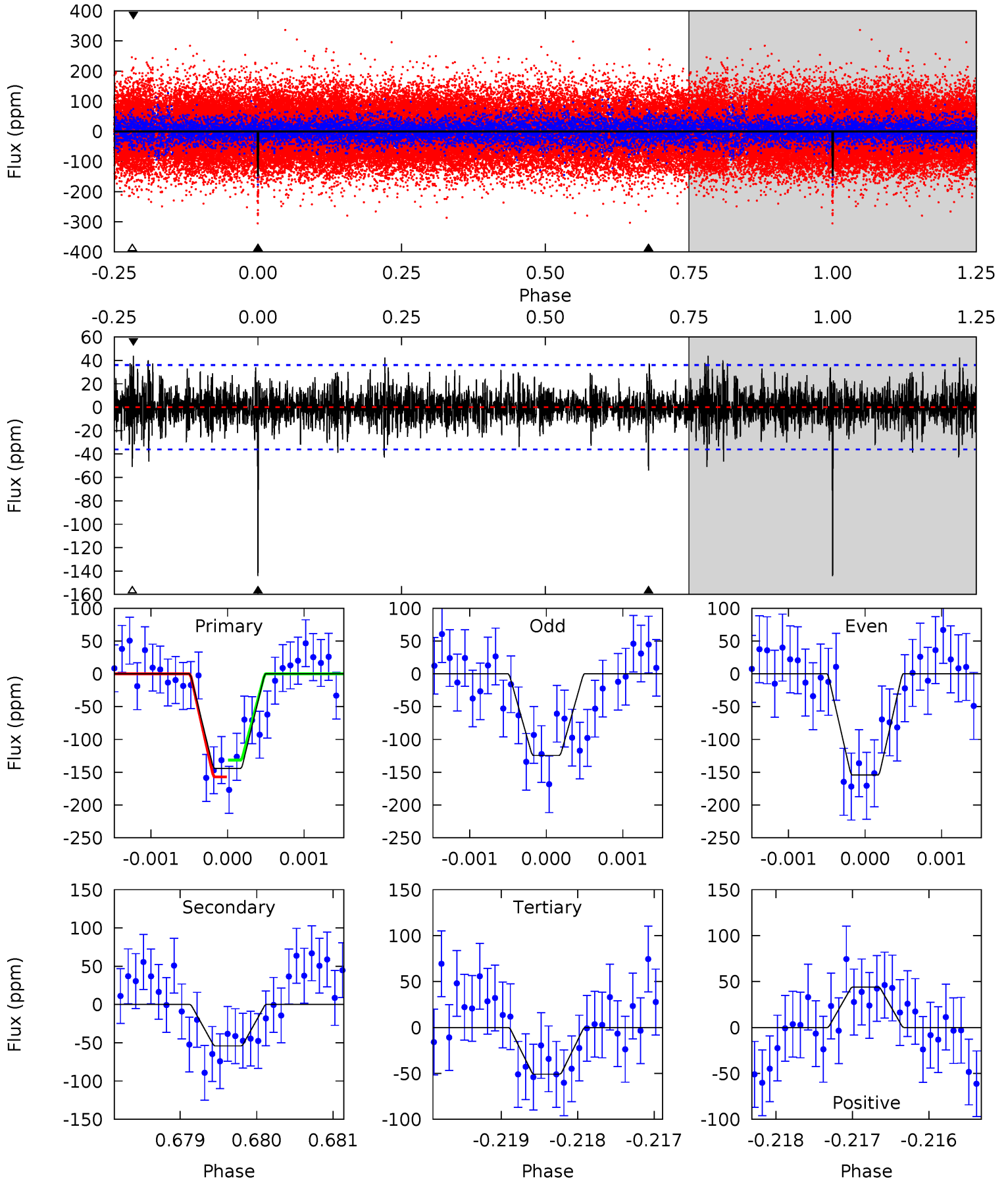
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	11.2	10.2	10.3	5.37	3.17	3.31	11.2	11.1	1.03	0.90	2.93	0.91	0.37	1.14



# Alt Model-Shift Uniqueness Test

003748535-01, P = 556.296860 Days, E = 265.283561 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
21.7	8.13	7.64	6.60	5.42	3.24	1.67	14.0	15.1	0.49	1.53	2.09	1.16	0.23	1.92



### Stellar Parameters For KIC 003748535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6401^{+83}_{-76}$	$4.202^{+0.120}_{-0.120}$	$-0.020^{+0.150}_{-0.150}$	$1.460^{+0.271}_{-0.246}$	$1.239^{+0.098}_{-0.108}$	$0.561^{+0.316}_{-0.202}$
	+1%/-1%	+3%/-3%	+750%/-750%	+19%/-17%	+8%/-9%	+56%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 003748535-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-77 \pm 7$	$1.77^{+0.38}_{-0.39}$	$399^{+18}_{-16}$	$5684^{+682}_{-428}$	$27223^{+17193}_{-8810}$
Alt.	$-54 \pm 7$	$2.08^{+0.39}_{-0.36}$	$401^{+19}_{-18}$	$4914^{+414}_{-334}$	$13712^{+7118}_{-4125}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

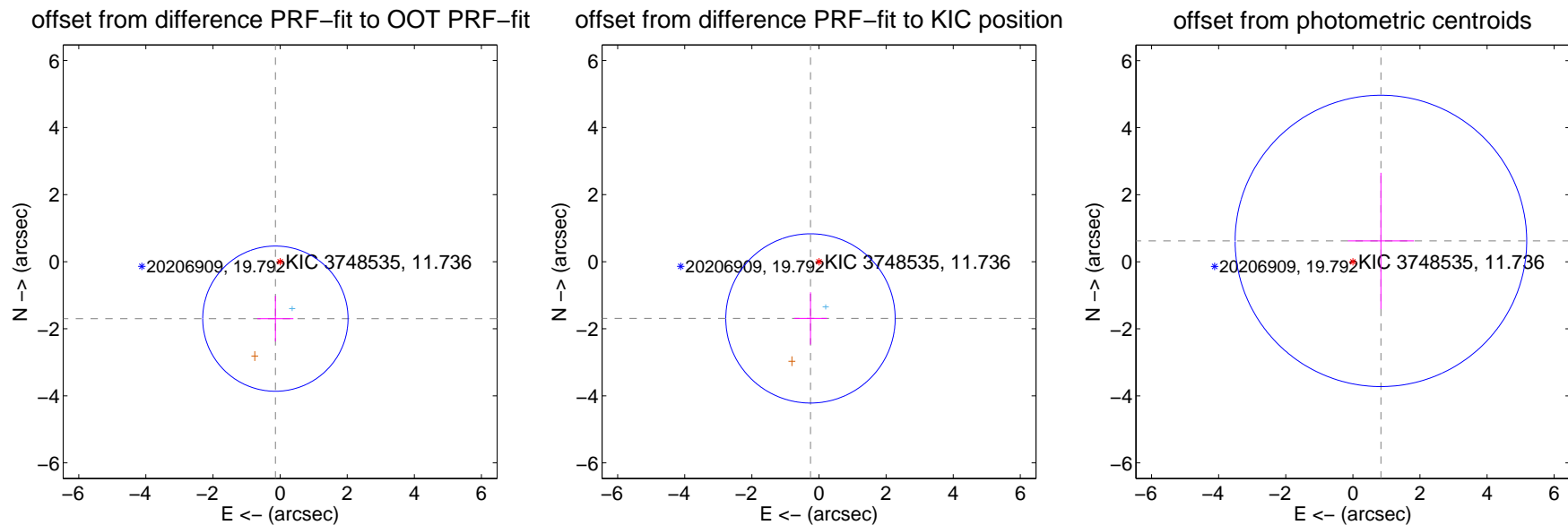
## DV Centroid Data

Supplemental centroid analysis for 003748535-01. **Kepler magnitude: 11.74.** Transit SNR 7.11

**There are 1 quarters with good PRF difference image offsets**

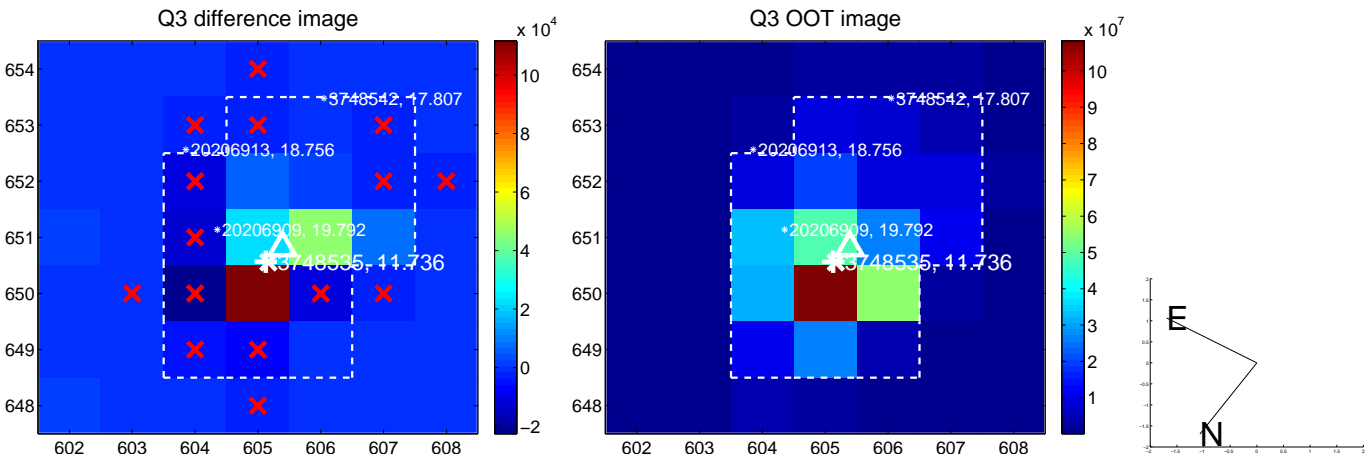
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.705 \pm 0.722$	2.36	$0.141 \pm 0.538$	$-1.699 \pm 0.680$
PRF-fit source offset from KIC position	$1.710 \pm 0.841$	2.03	$0.253 \pm 0.487$	$-1.691 \pm 0.779$
photometric centroid source offset	$1.04 \pm 1.45$	0.72	$-0.84 \pm 0.99$	$0.62 \pm 2.03$



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.

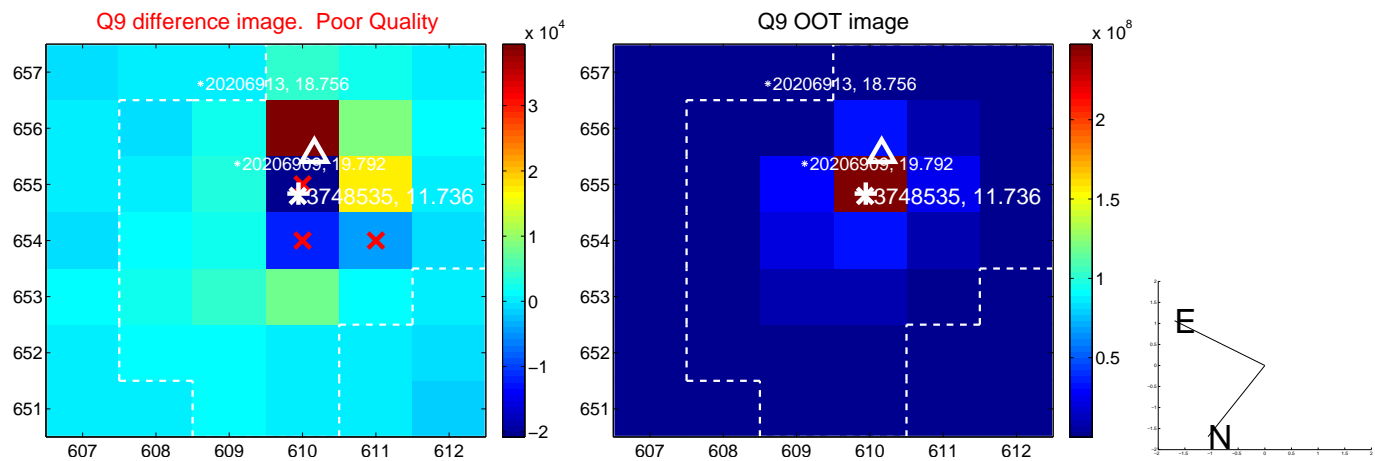




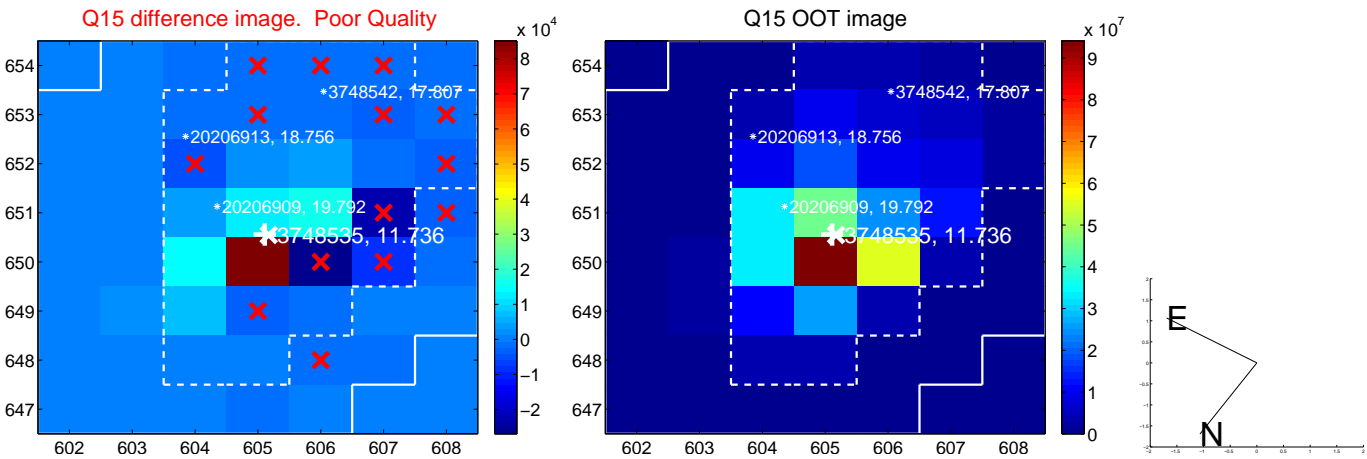
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



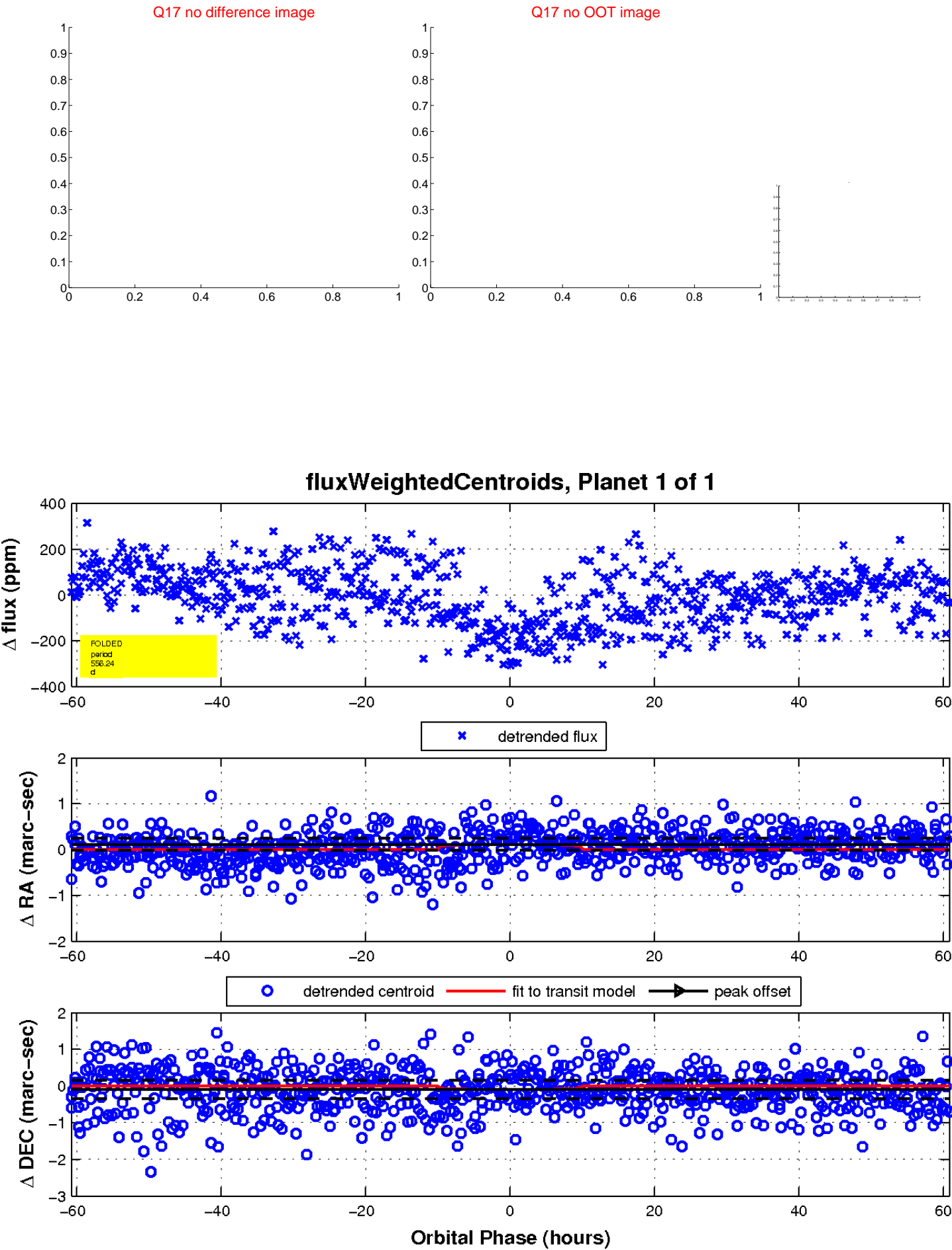
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

