

# KIC 005517424

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005517424-01	OBS	No	255.906556	373.616276	7.6	0.916	18.2	0.1	121.91	3284	31.98	2600.76

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005517424-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_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.

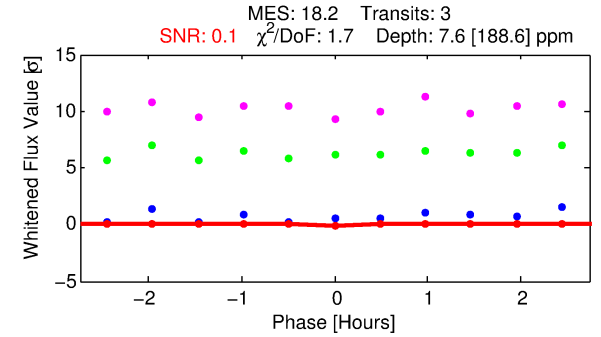
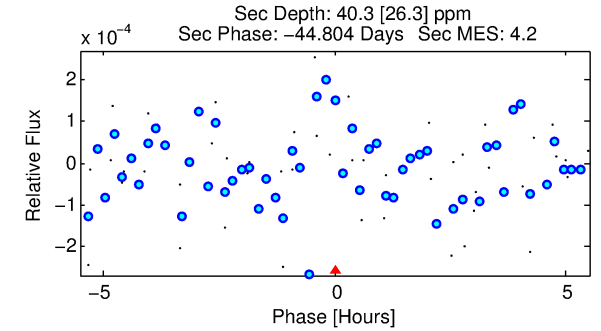
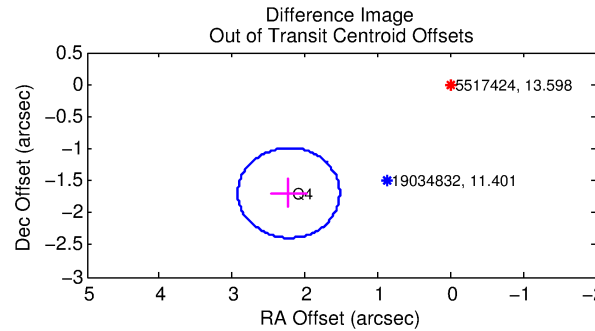
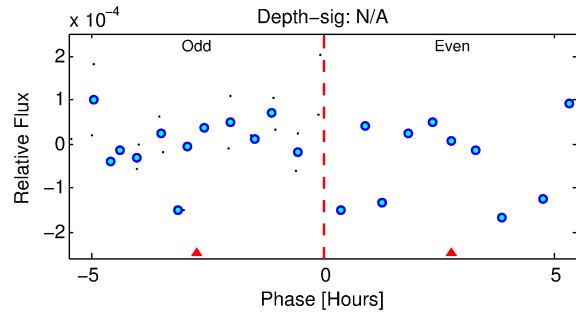
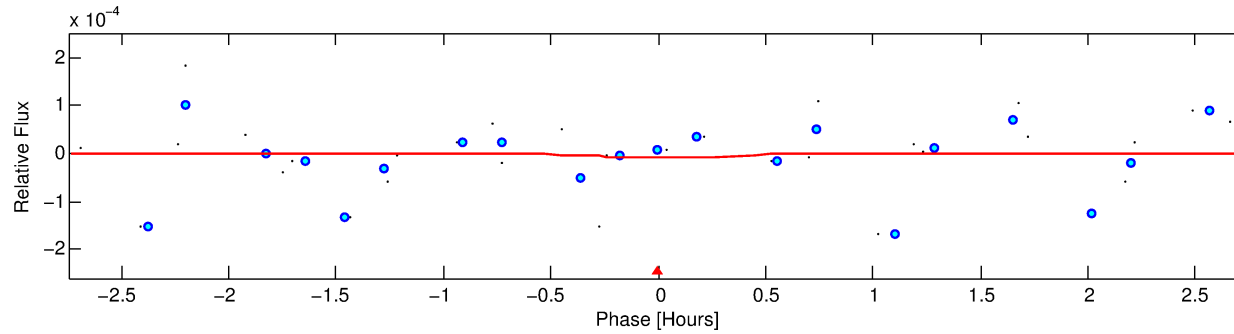
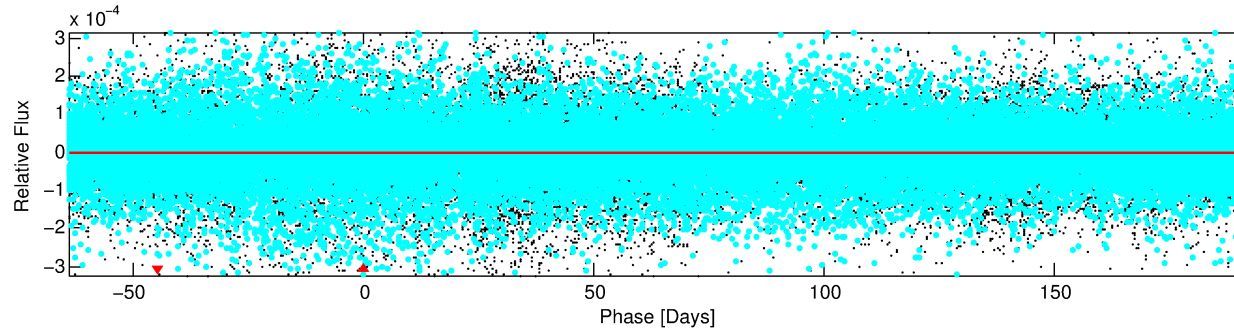
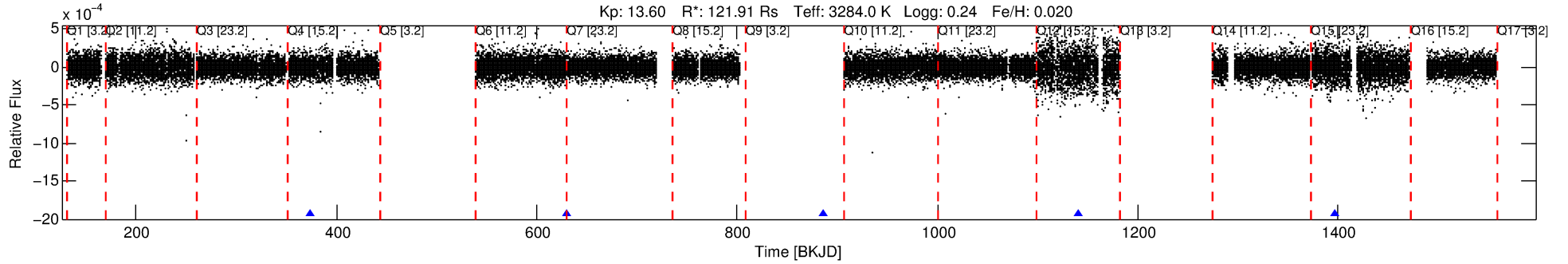
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005517424-01

No Significant Match Found

# DV One-Page Summary

KIC: 5517424 Candidate: 1 of 1 Period: 255.907 d



## DV Fit Results:

Period = 255.90656 [0.09972] d  
Epoch = 373.6163 [0.3774] BKJD  
Rp/R\* = 0.0024 [0.3375]  
a/R\* = 2082.31 [623325.66]  
b = 0.23 [1235.60]  
Seff = 2600.76 [509.49]  
Teq = 1821 [89] K  
Rp = 31.99 [4489.97] Re  
a = 0.7717 [0.1040] AU  
Ag = 12.90 [3622.29] [0.00σ]  
Teffp = 5336 [374515] K [0.01σ]

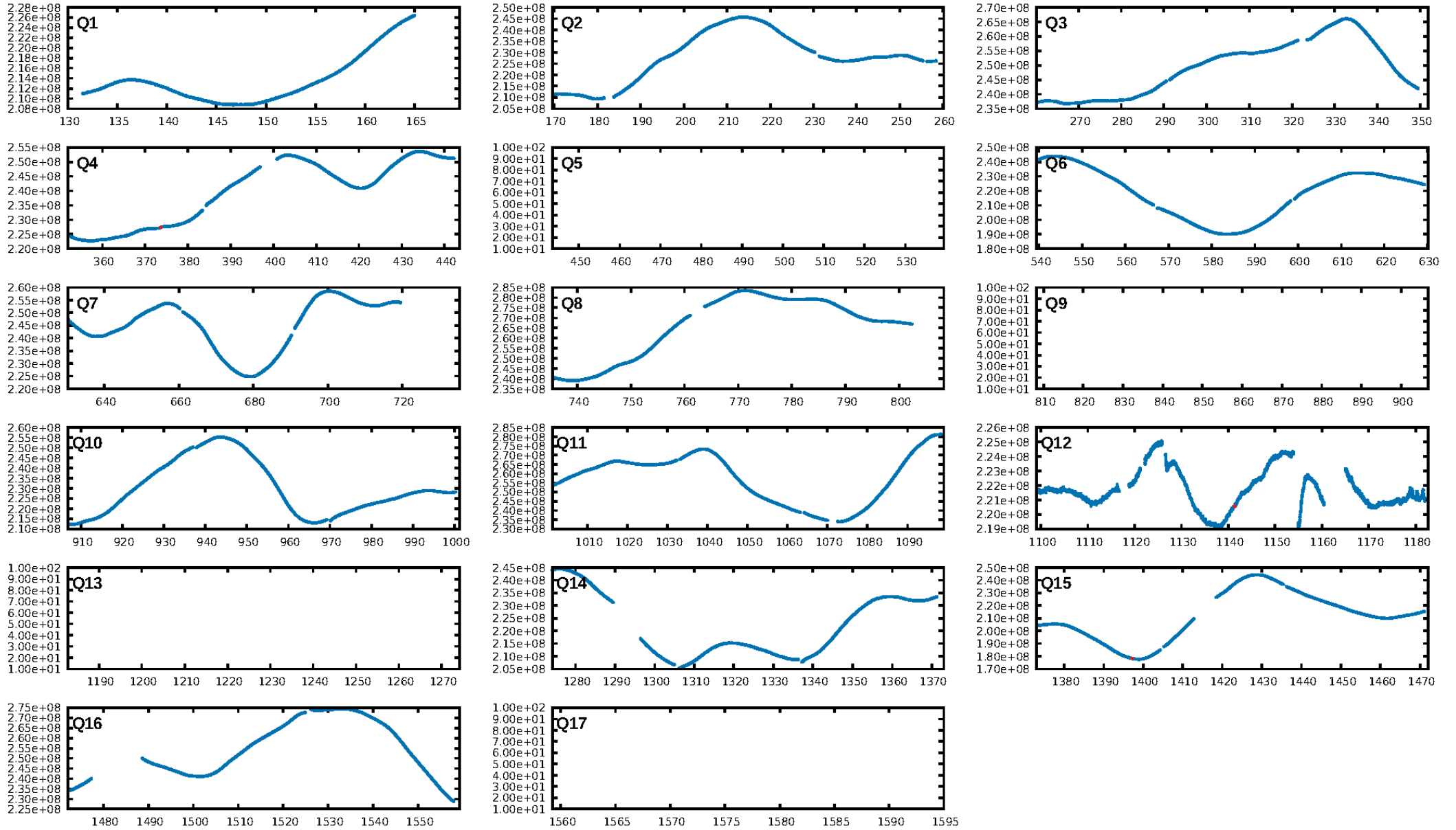
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 93.7%  
ModelChiSquareGof-sig: 98.6%  
Bootstrap-pfa: 8.61e-13  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -0.9916  
Centroid-sig: 81.6%  
Centroid-so: 30.612 arcsec [0.34σ]  
OotOffset-rm: 2.794 arcsec [11.96σ]  
KicOffset-rm: 2.864 arcsec [12.29σ]  
OotOffset-st: 0/0/1/0 [1]  
KicOffset-st: 0/0/1/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [2/2]

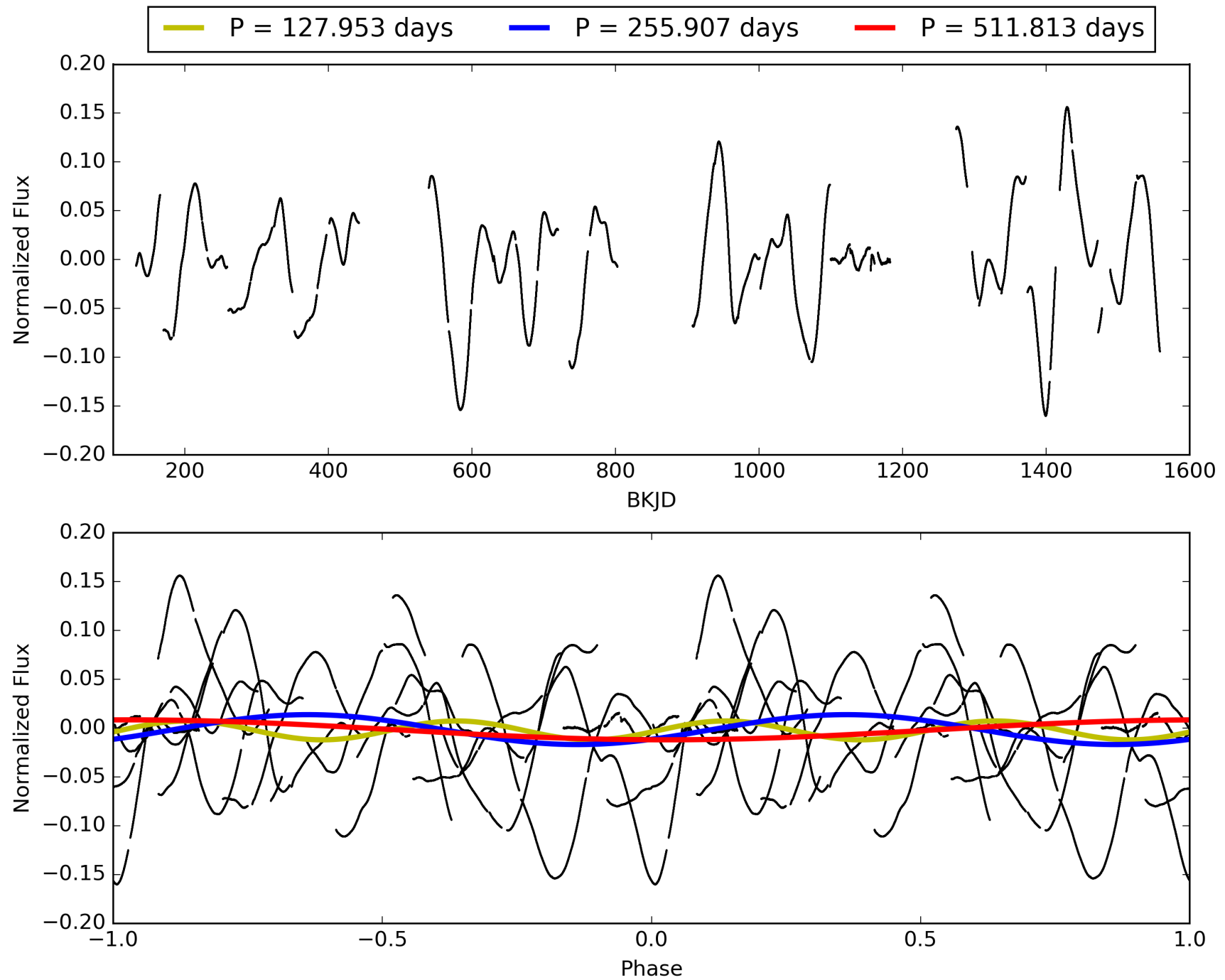
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:33:39 Z

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

# TCE 005517424-01, PDC Light Curves

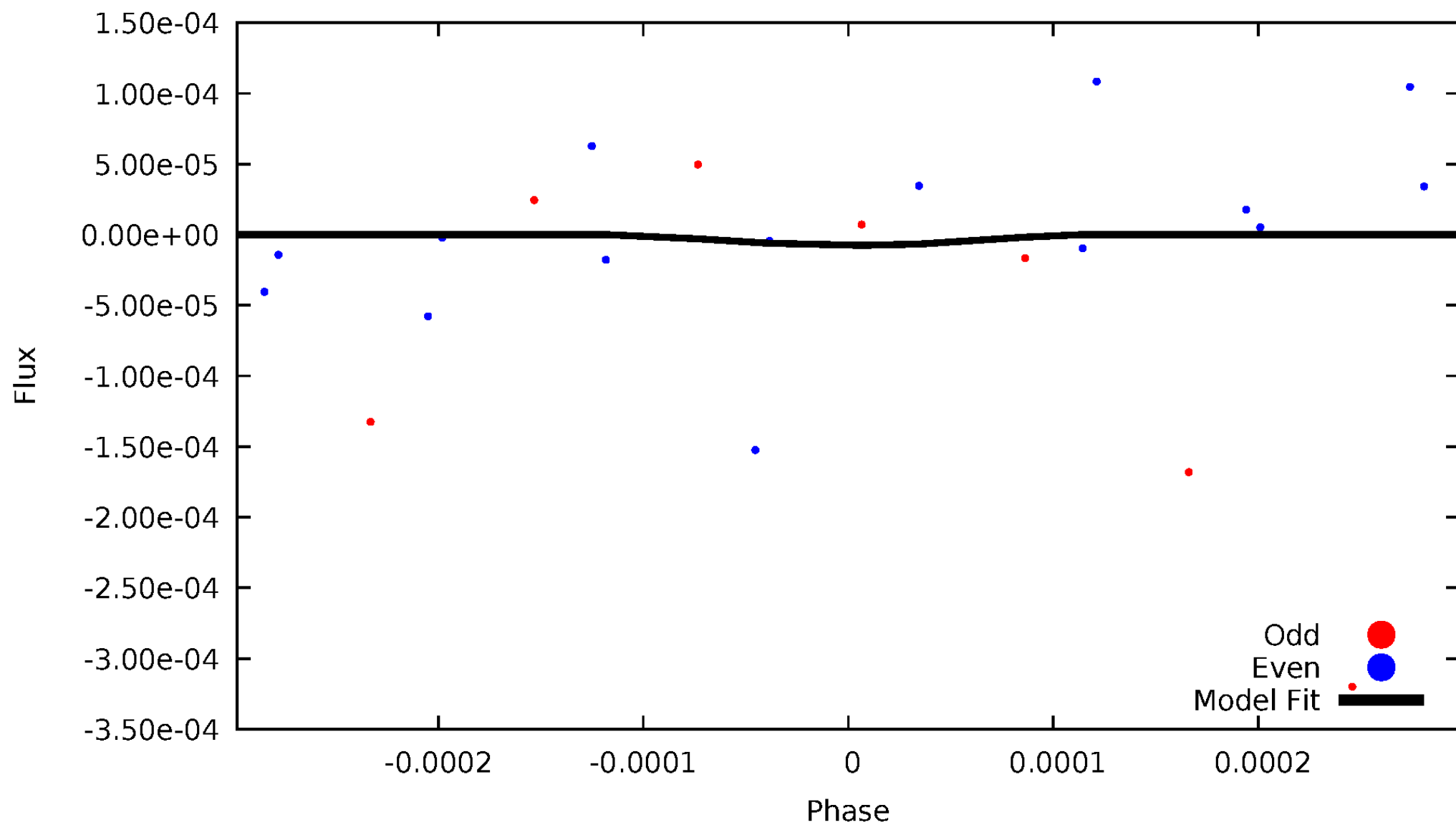


TCE 005517424-01



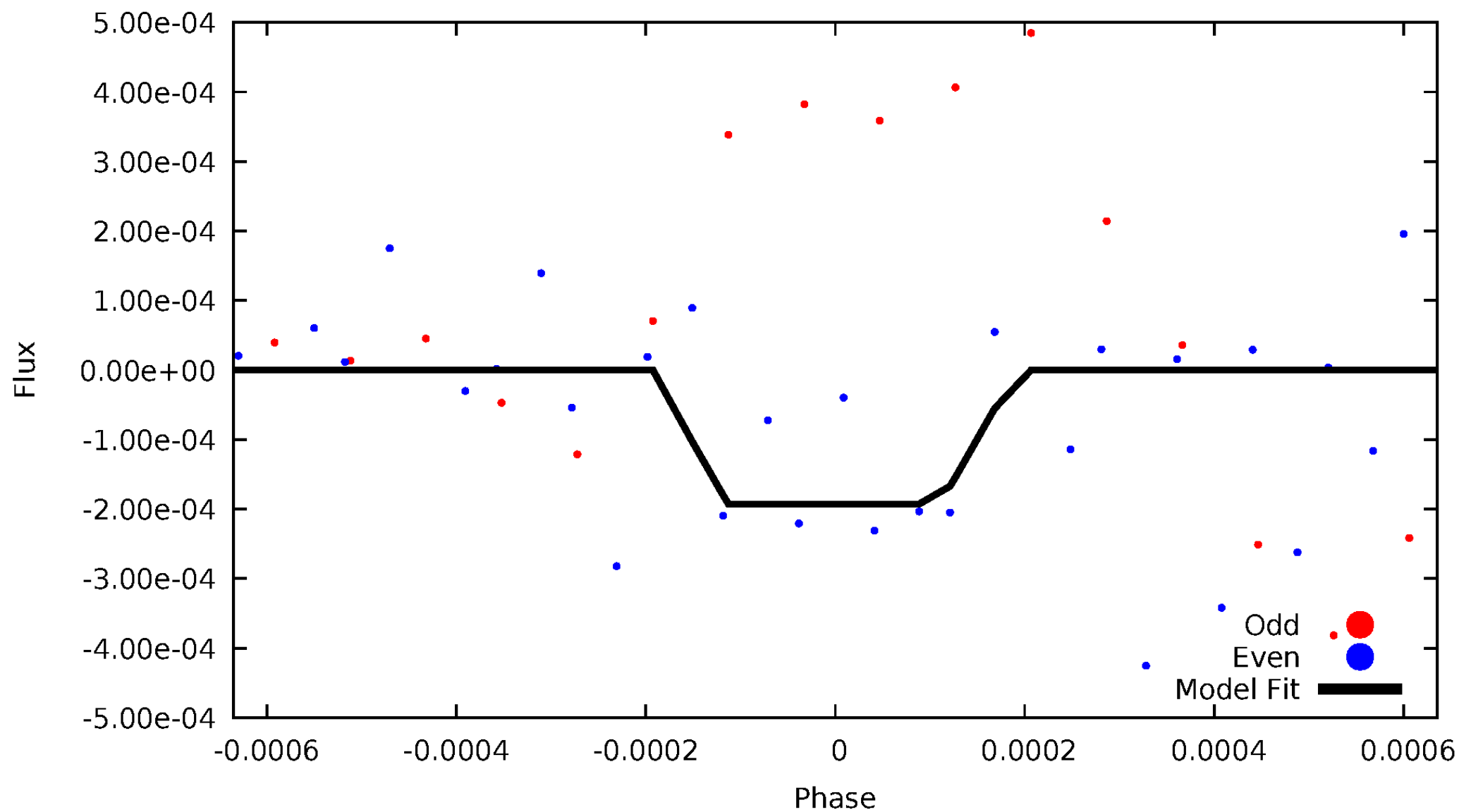
# DV Odd/Even

TCE 005517424-01



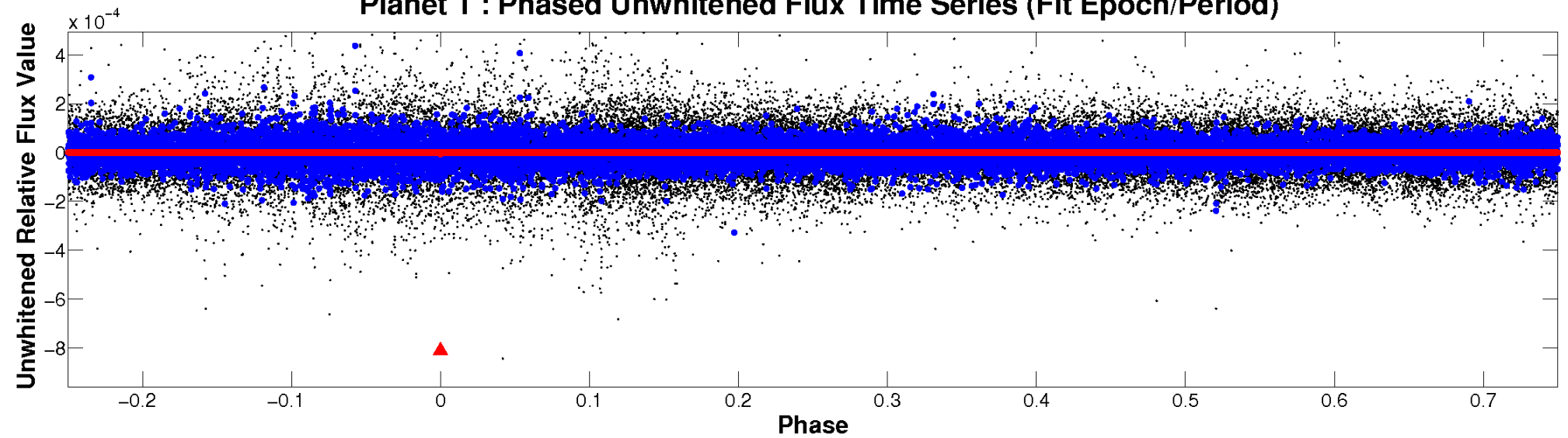
# ALT Odd/Even

TCE 005517424-01

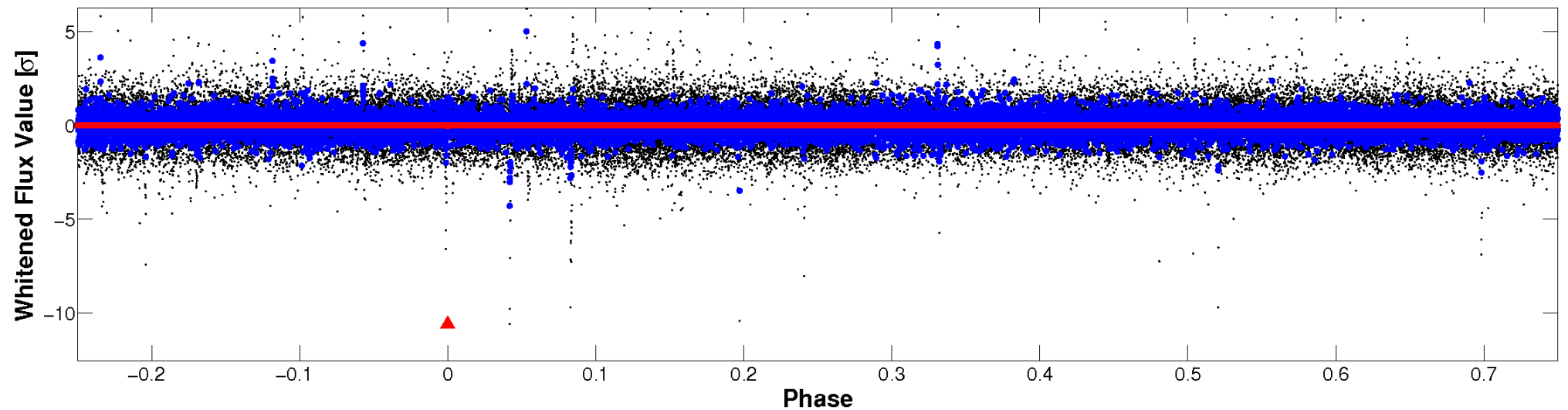


# Non-Whitened Vs. Whitened Light Curve

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

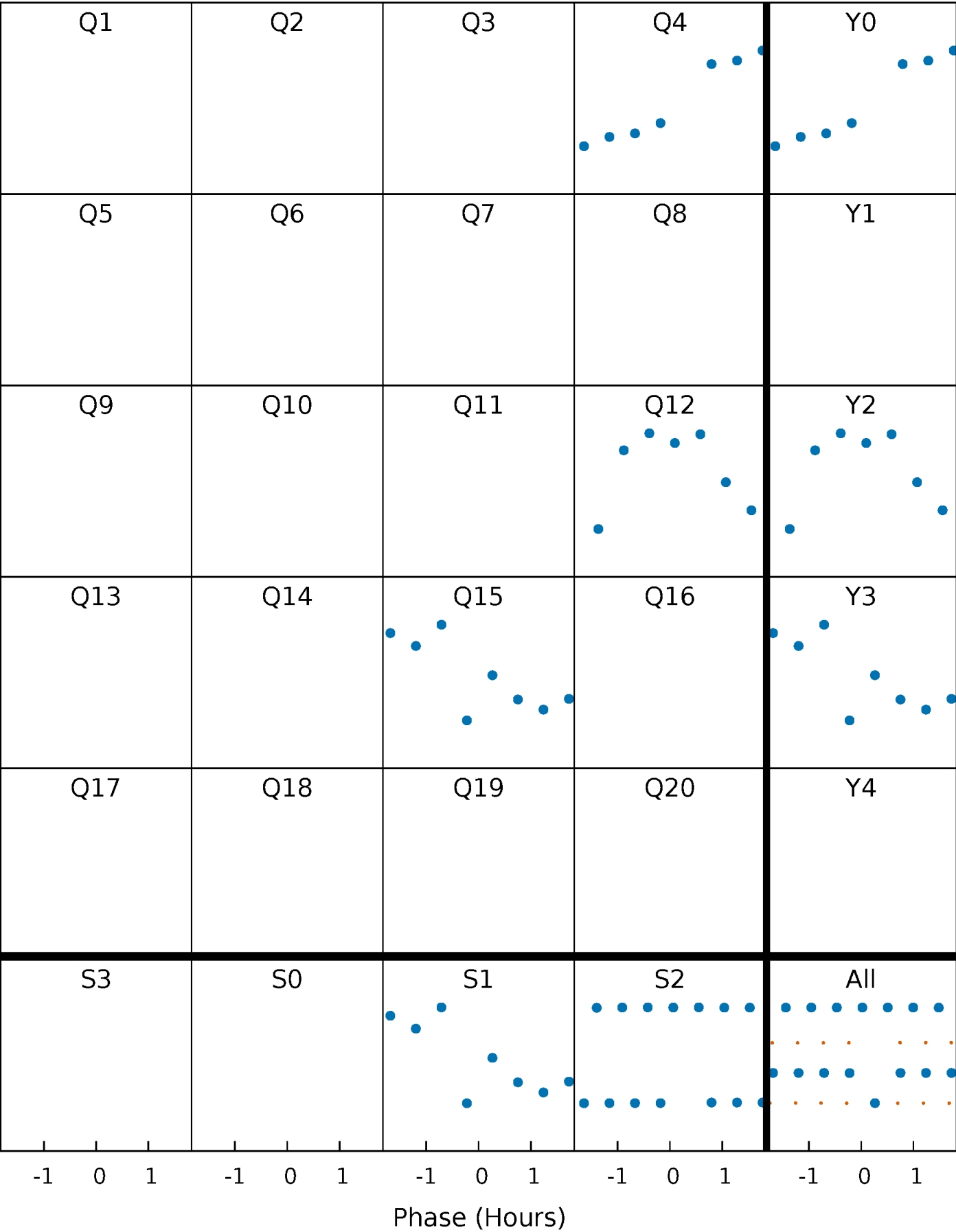


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



PDC Quarter-Phased Transit Curves

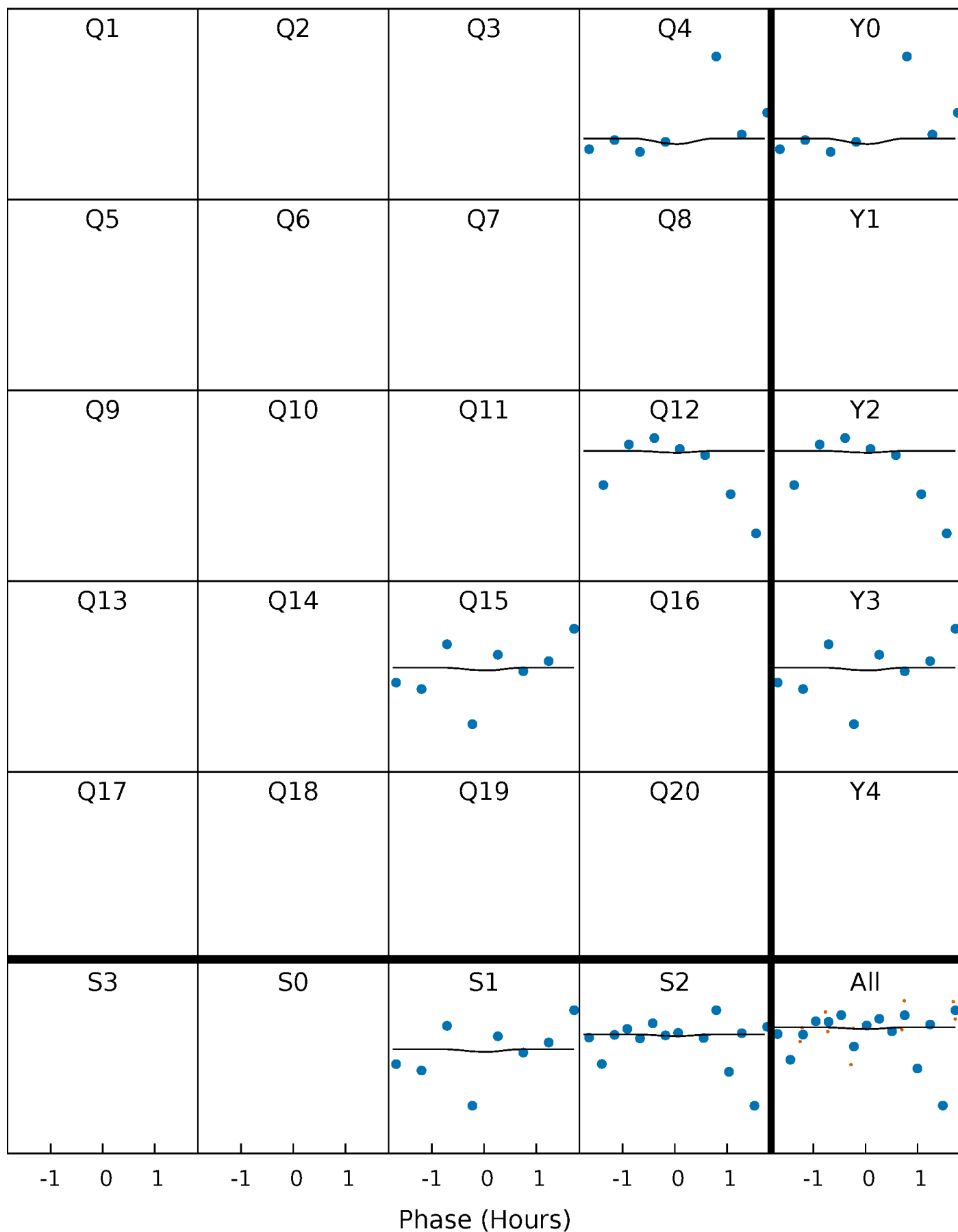
TCE 005517424-01    P=255.906556 Days    T<sub>0</sub>=373.616276 (BKJD)





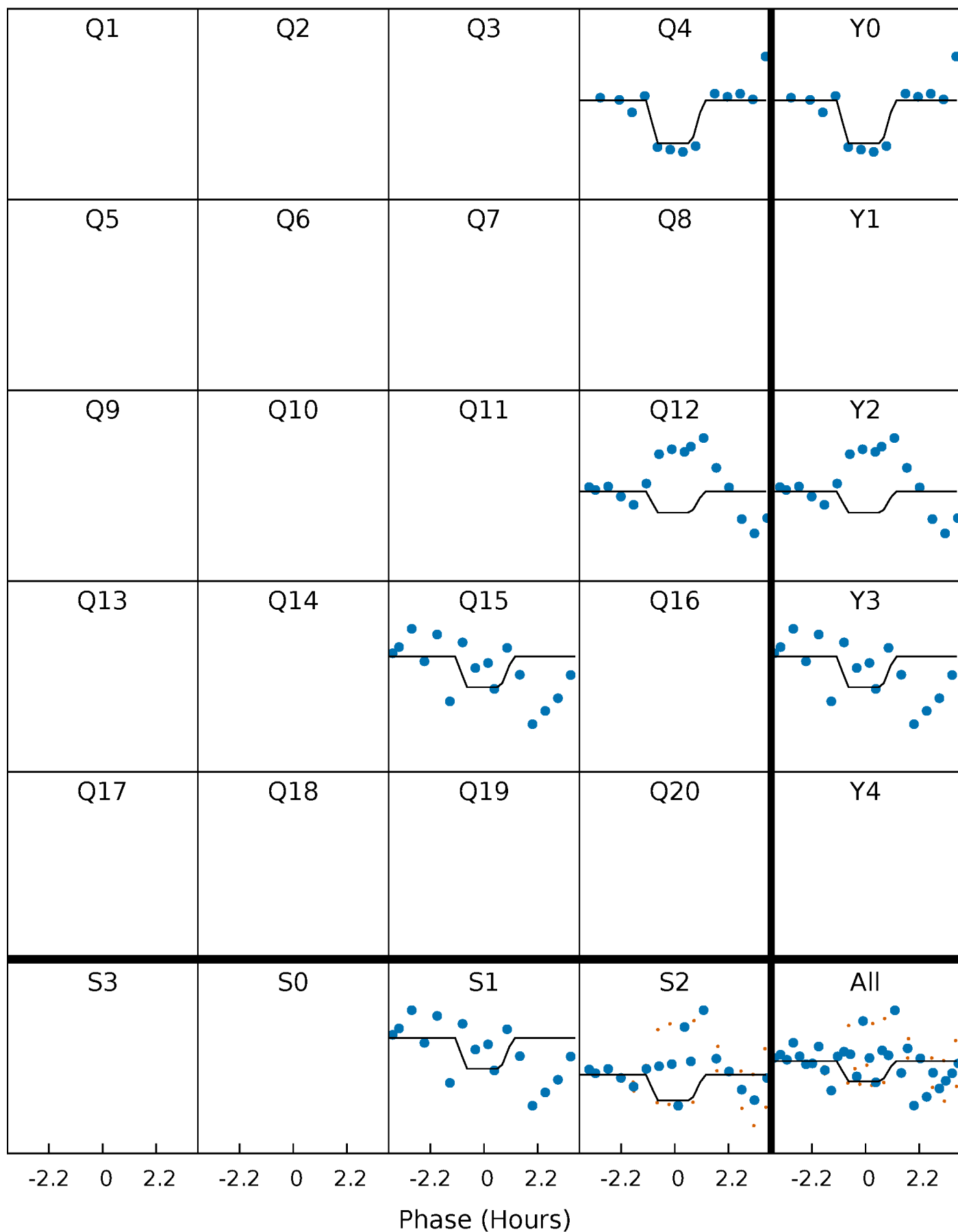
# DV Quarter-Phased Transit Curves

TCE 005517424-01 P=255.906556 Days  $T_0=373.616276$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

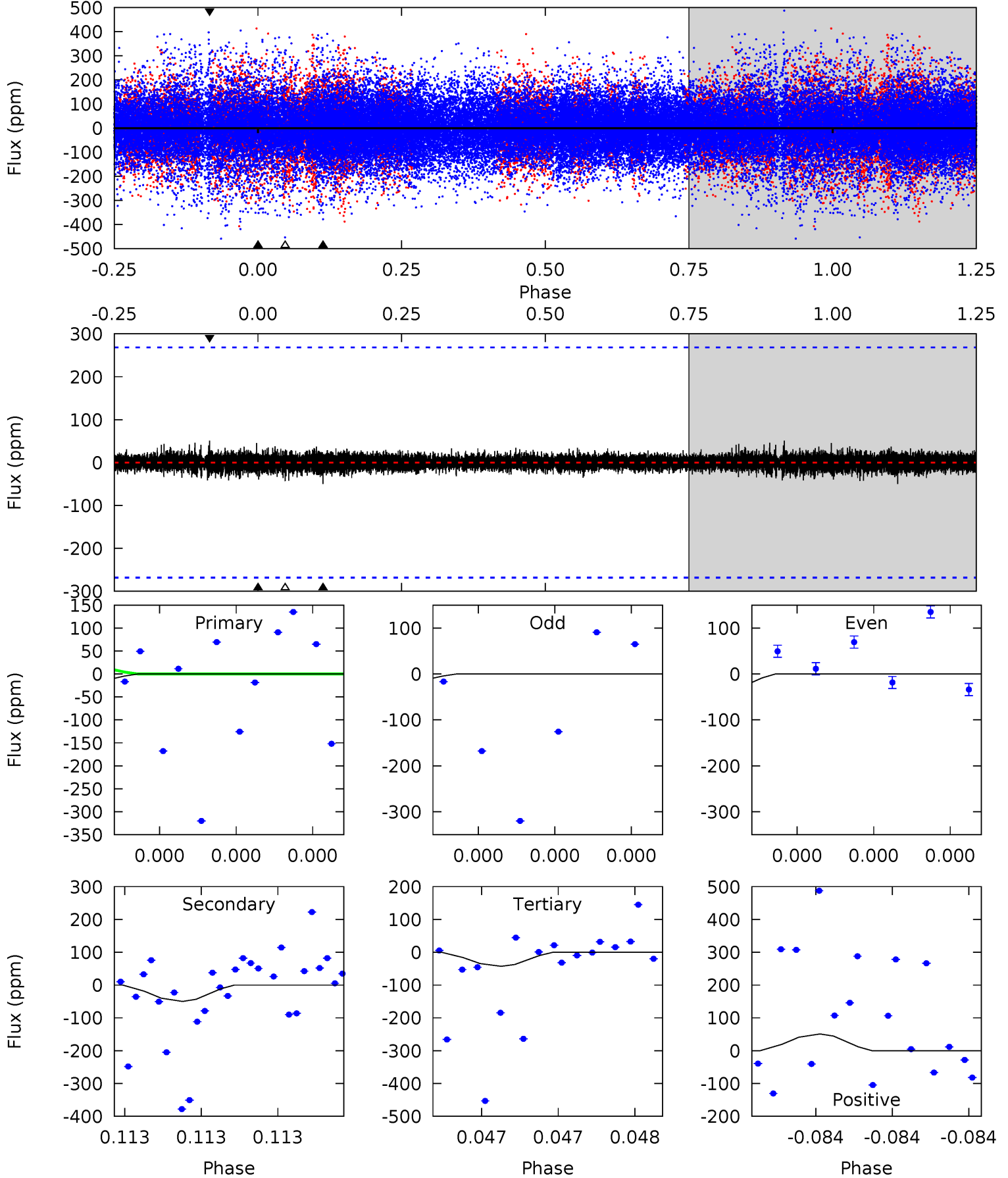
TCE 005517424-01 P=255.964395 Days  $T_0=373.575416$  (BKJD)



# DV Model-Shift Uniqueness Test

005517424-01, P = 255.906556 Days, E = 117.709720 Days

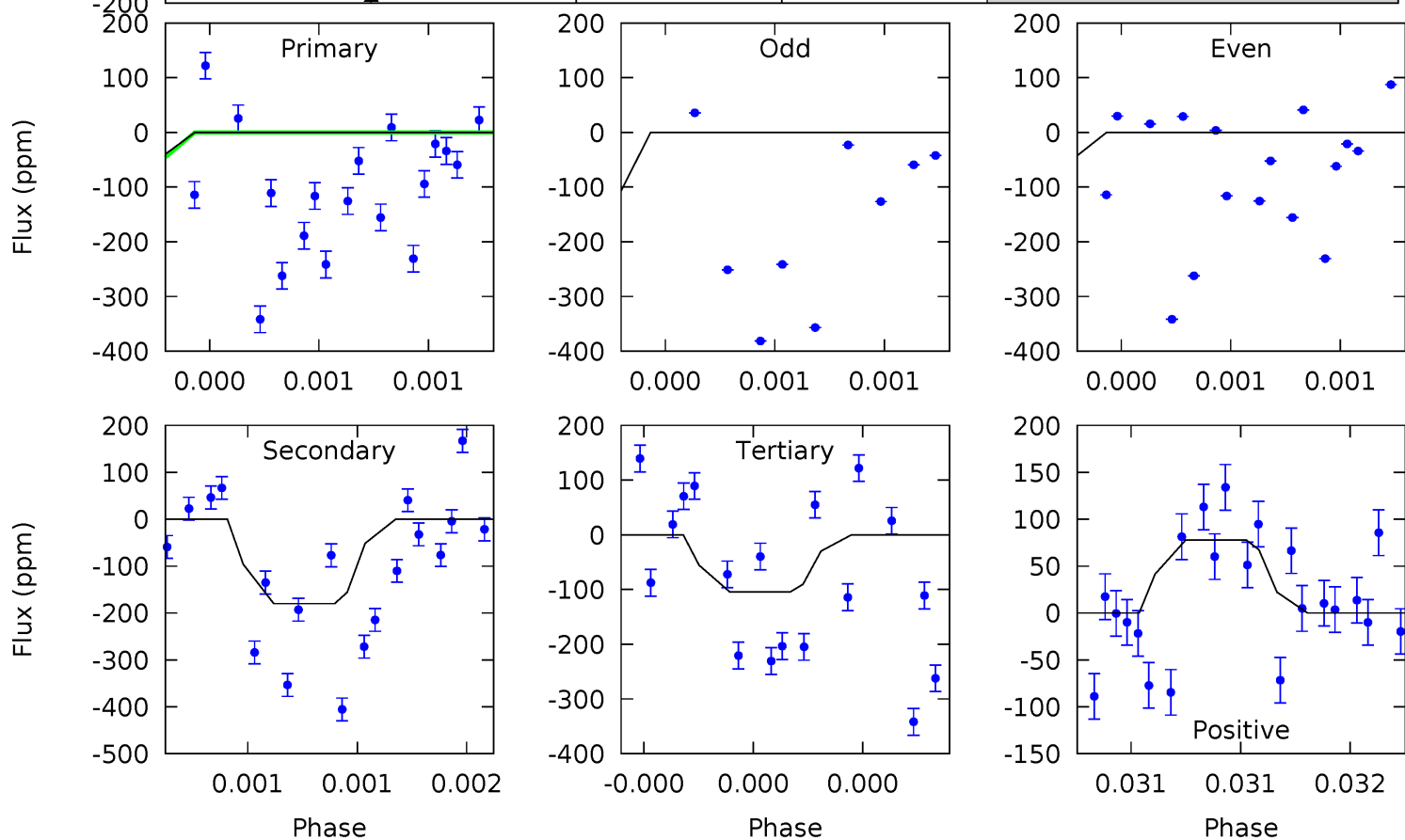
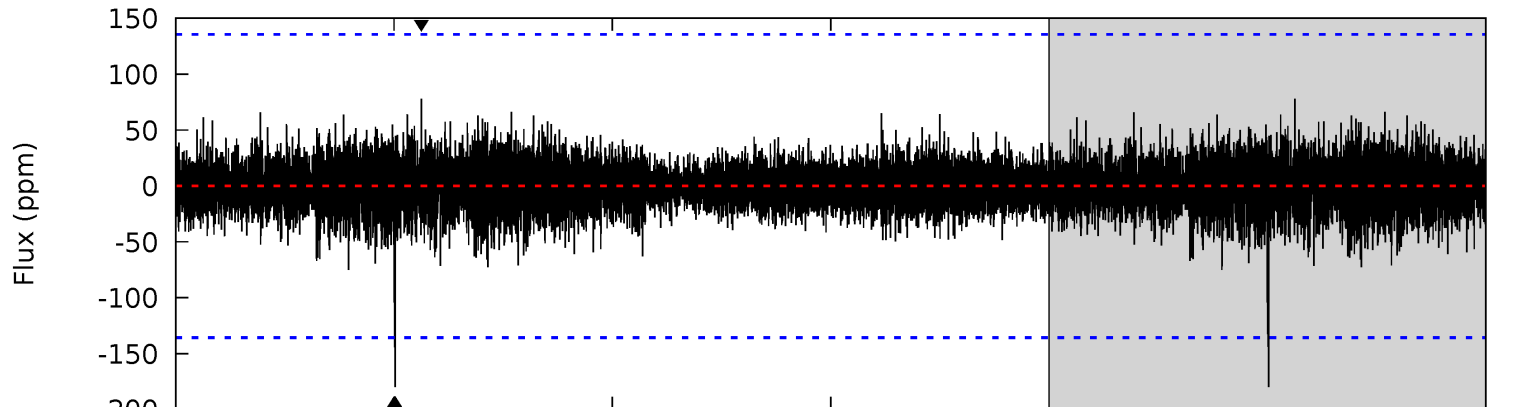
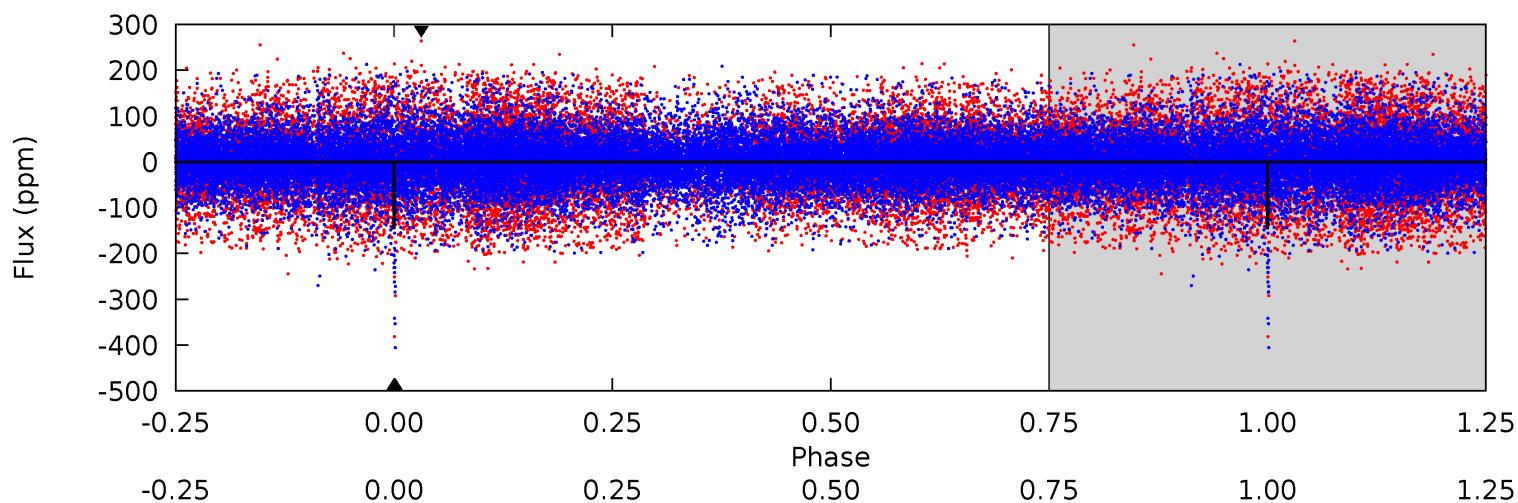
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.42	1.07	0.92	1.10	5.77	3.78	0.20	-0.51	-0.68	0.15	-0.02	0.20	1.00	0.51	0.38



# Alt Model-Shift Uniqueness Test

005517424-01, P = 255.964395 Days, E = 117.611021 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
6.02	7.52	4.35	3.25	5.67	3.63	0.65	1.67	2.77	3.17	4.28	6.37	-0.37	0.30	0



### Stellar Parameters For KIC 005517424

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$3284^{+111}_{-70}$	$0.237^{+0.027}_{-0.033}$	$0.020^{+0.250}_{-0.200}$	$121.914^{+24.213}_{-3.823}$	$0.935^{+0.362}_{-0.038}$	$0.000^{+0.000}_{-0.000}$
	+3%/-2%	+11%/-14%	+1250%/-1000%	+20%/-3%	+39%/-4%	+8%/-20%
Source	PHO54	AST54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 005517424-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-50 \pm 46$	$2996.90^{+3250.46}_{-2073.04}$	$2545^{+96}_{-63}$	$-2552^{+62}_{-75}$	$0.001^{+0.016}_{-0.001}$
Alt.	$-180 \pm 24$	$3163.25^{+3382.80}_{-2213.46}$	$2549^{+87}_{-63}$	$-2545^{+92}_{-67}$	$0.006^{+0.059}_{-0.005}$

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

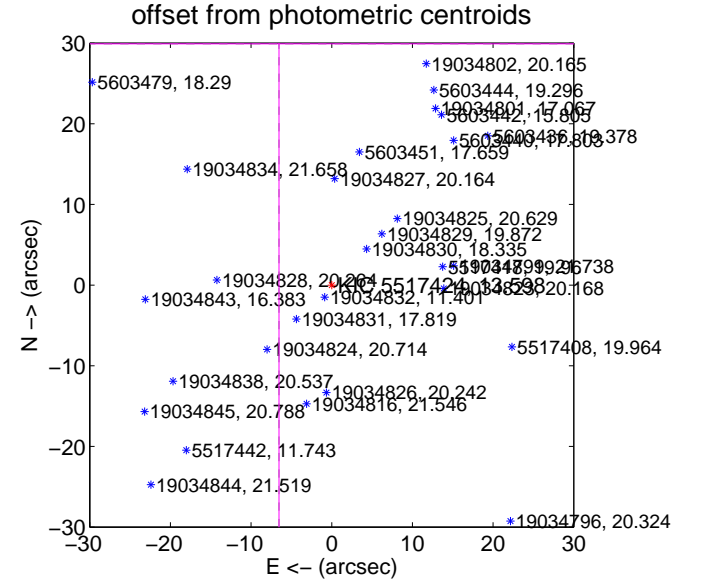
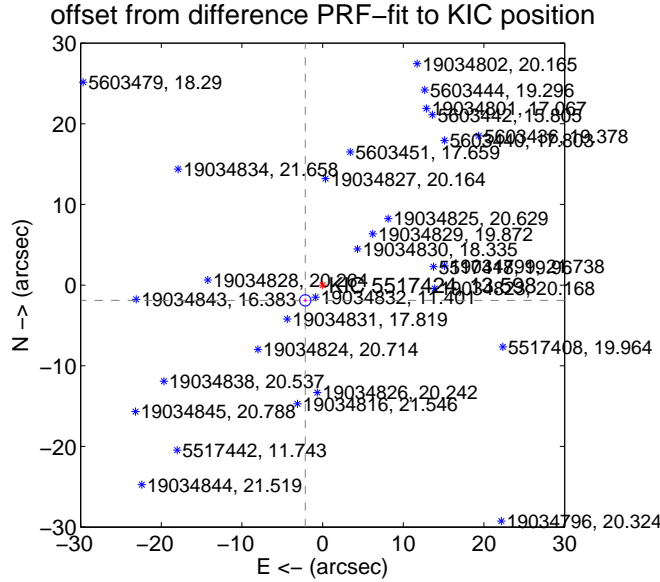
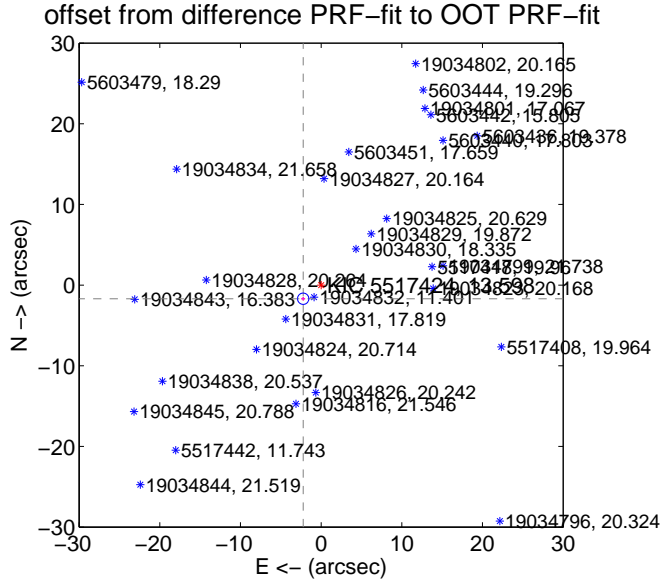
## DV Centroid Data

Supplemental centroid analysis for 005517424-01. Kepler magnitude: 13.60. Transit SNR 0.10

There are 0 quarters with good PRF difference image offsets

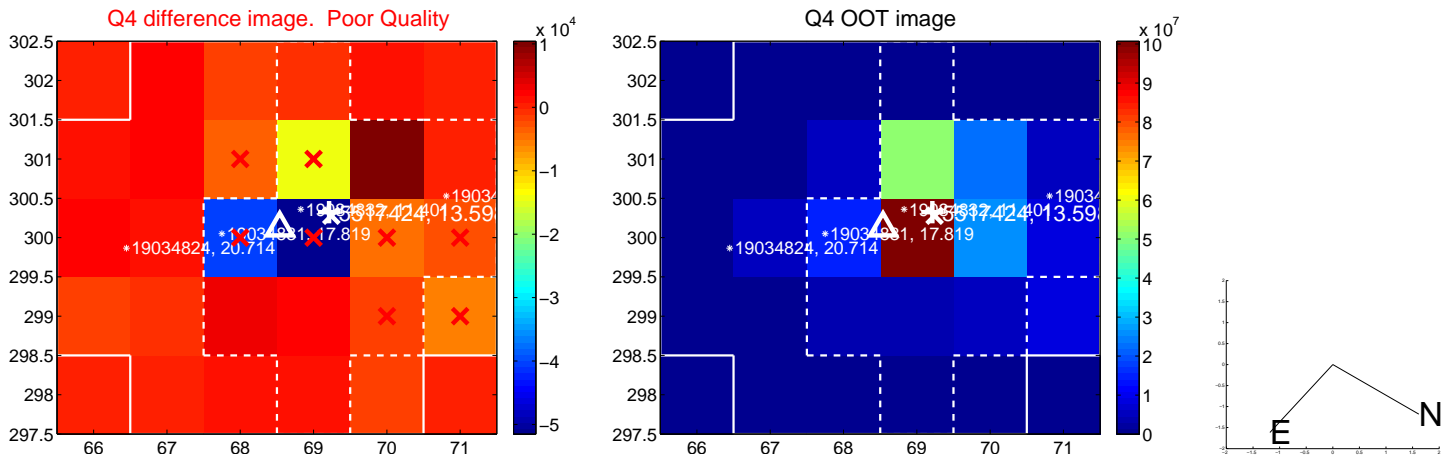
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	2.794 $\pm$ 0.234	11.96	2.224 $\pm$ 0.237	-1.691 $\pm$ 0.228
PRF-fit source offset from KIC position	2.864 $\pm$ 0.233	12.29	2.149 $\pm$ 0.237	-1.893 $\pm$ 0.228
photometric centroid source offset	30.61 $\pm$ 88.87	0.34	6.54 $\pm$ 67.41	29.90 $\pm$ 89.77



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



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

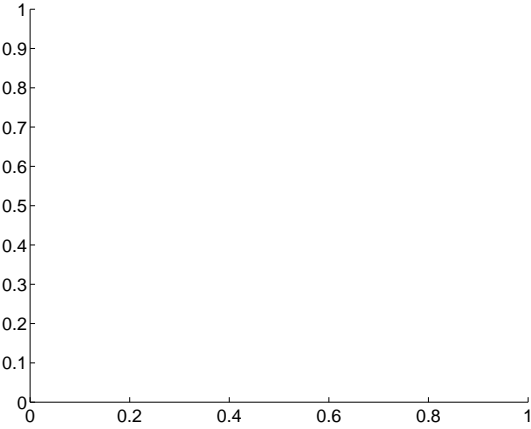
Q9 no difference image



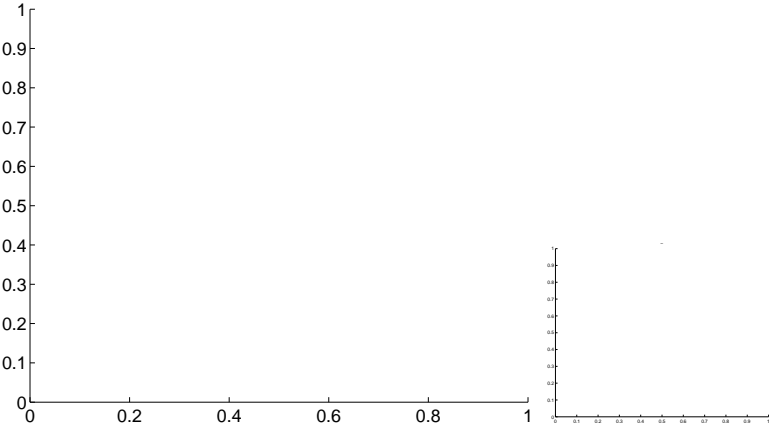
Q9 no OOT image



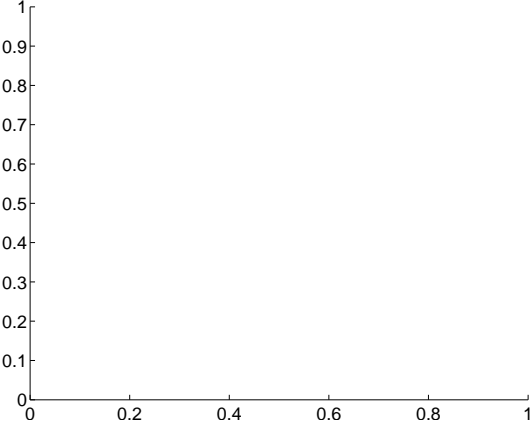
Q10 no difference image



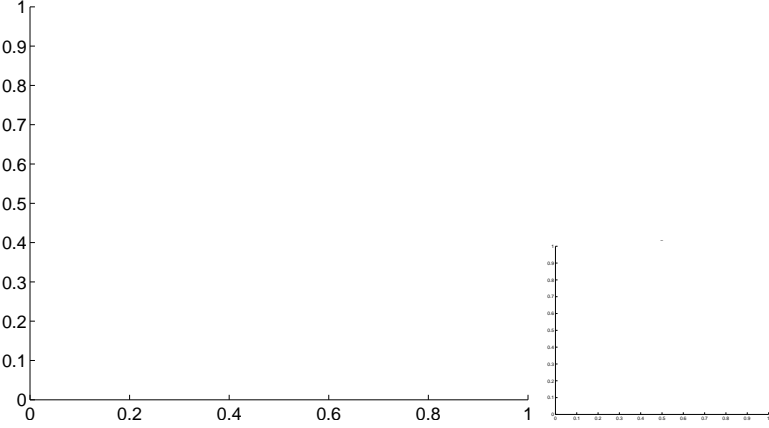
Q10 no OOT image



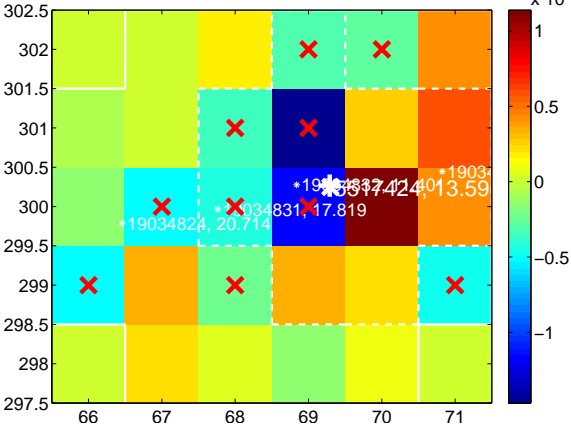
Q11 no difference image



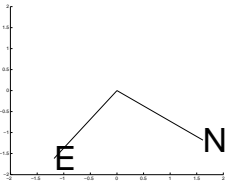
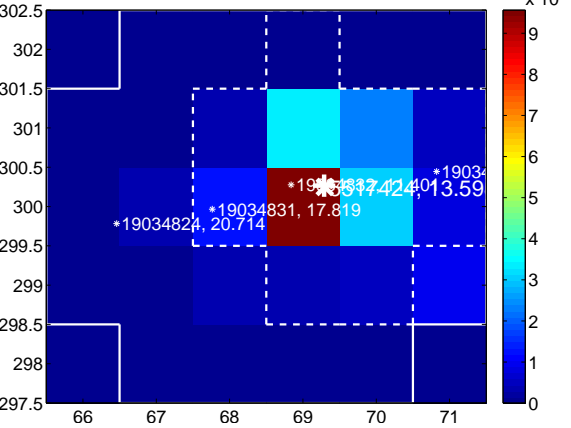
Q11 no OOT image



Q12 difference image. Poor Quality



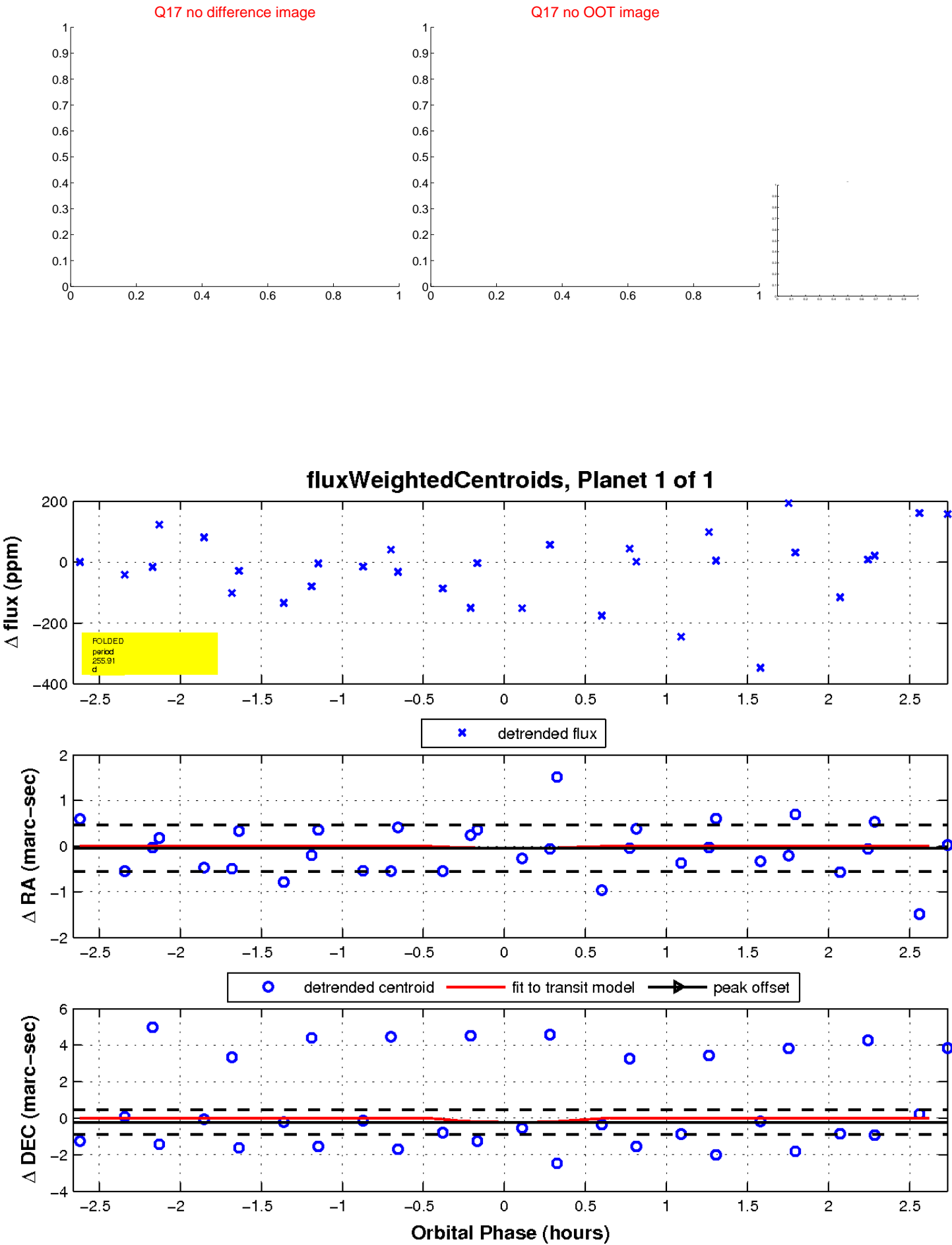
Q12 OOT image



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.



UKIRT Image

