

# KIC 005024447

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005024447-01	OBS	No	385.908214	434.601150	43522.7	43.489	84.1	286.5	0.80	6133	16.96	0.97

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005024447-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_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.

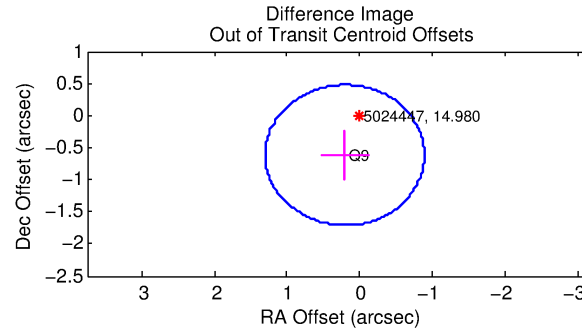
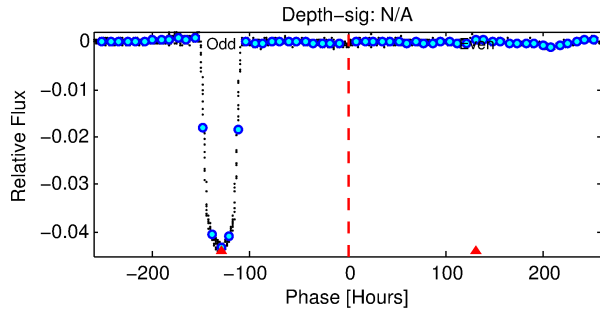
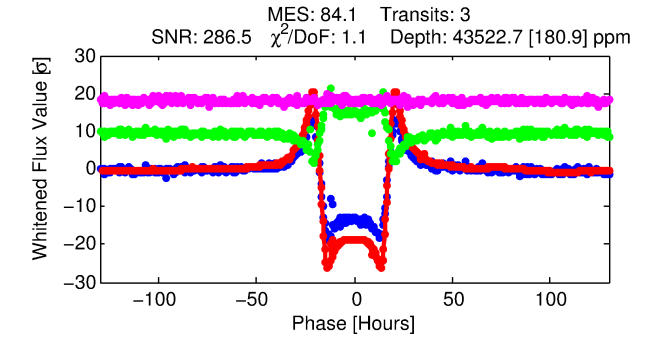
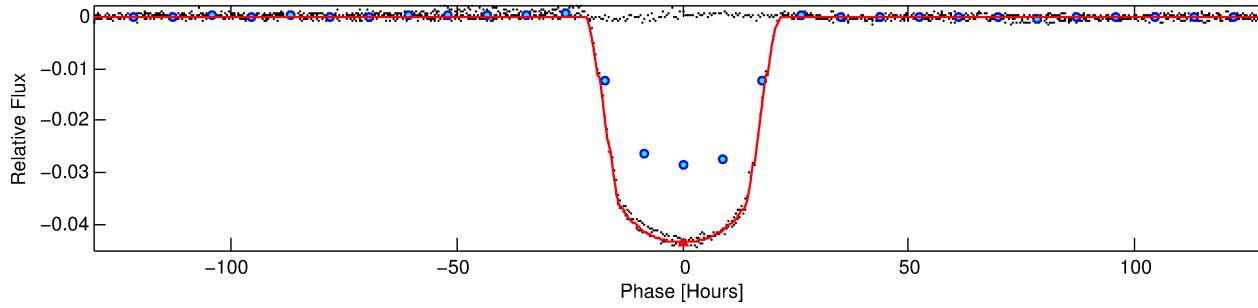
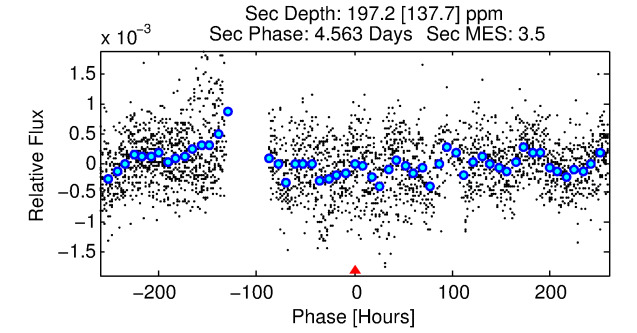
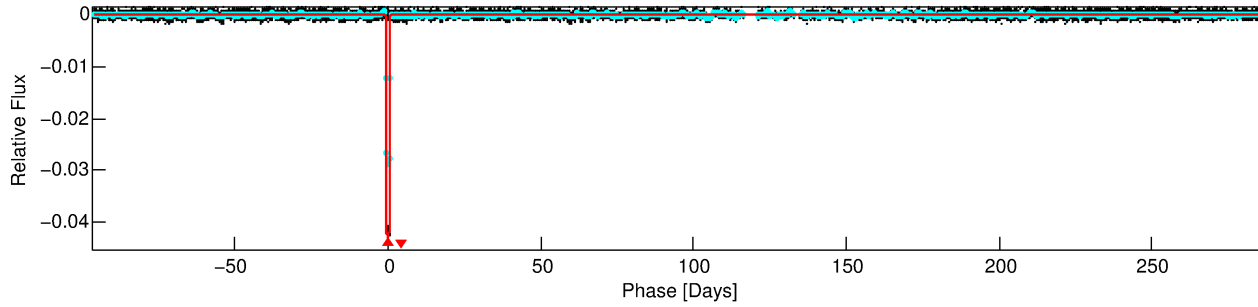
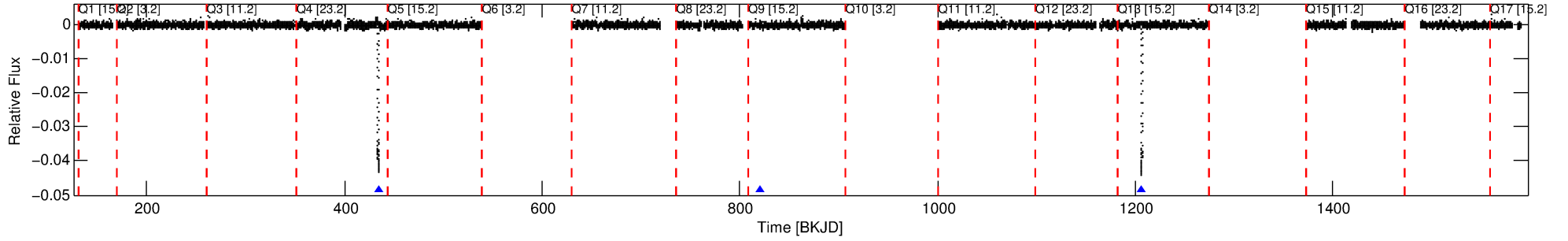
## Ephemeris Match Information For 005024447-01

No Significant Match Found

# DV One-Page Summary

KIC: 5024447 Candidate: 1 of 1 Period: 385.908 d

Kp: 14.98 R\*: 0.80 Rs Teff: 6133.0 K Logg: 4.47 Fe/H: -1.940



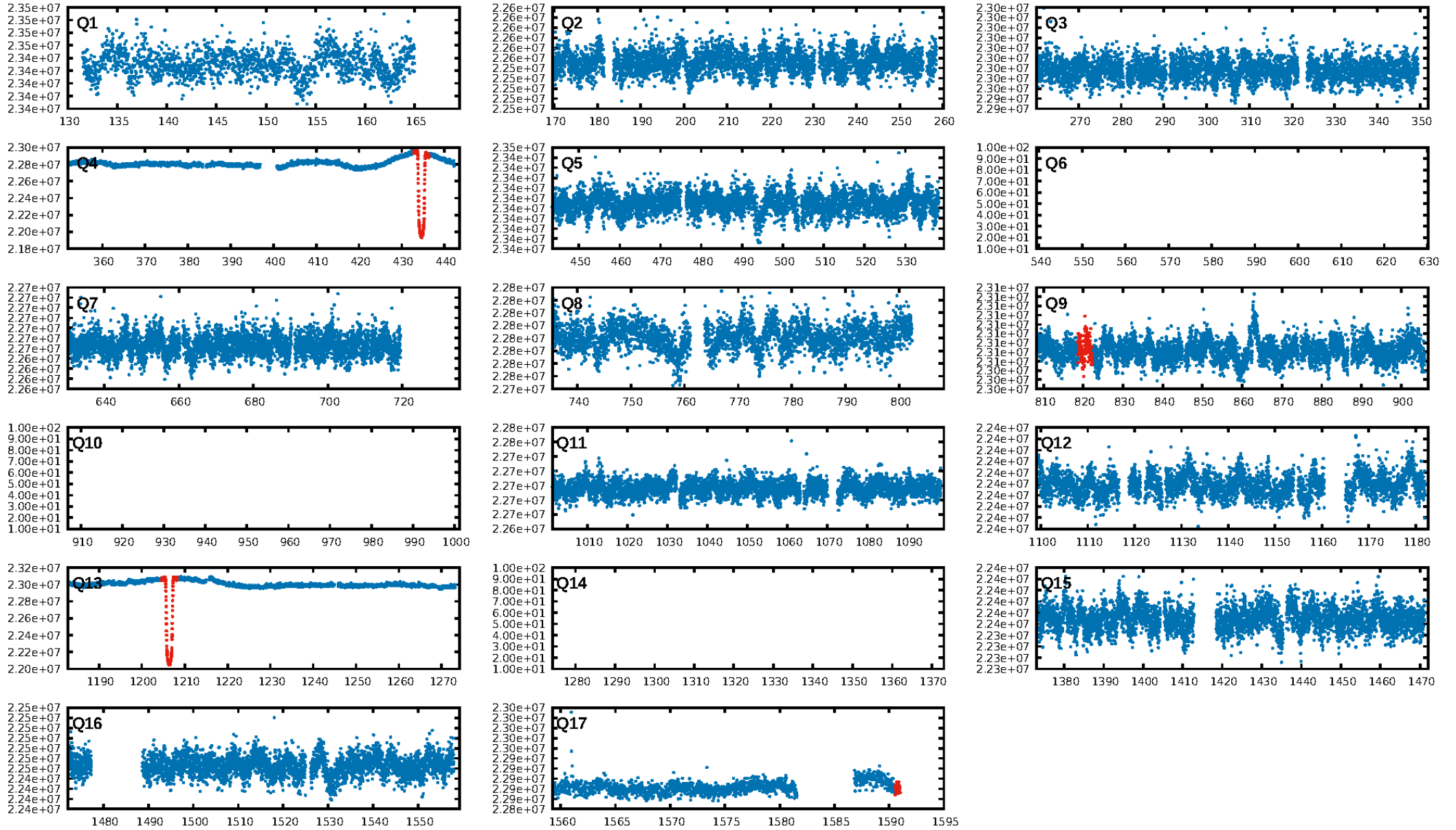
## DV Fit Results:

Period = 385.90821 [0.00100] d  
Epoch = 434.6012 [0.0014] BKJD  
Rp/R\* = 0.1941 [0.0005]  
a/R\* = 78.94 [0.33]  
b = 0.26 [0.01]  
Seff = 0.97 [0.29]  
Teq = 253 [19] K  
Rp = 16.96 [2.37] Re  
a = 0.9157 [0.1423] AU  
Ag = 316.25 [236.24] [1.33σ]  
Teffp = 1650 [294] K [4.74σ]

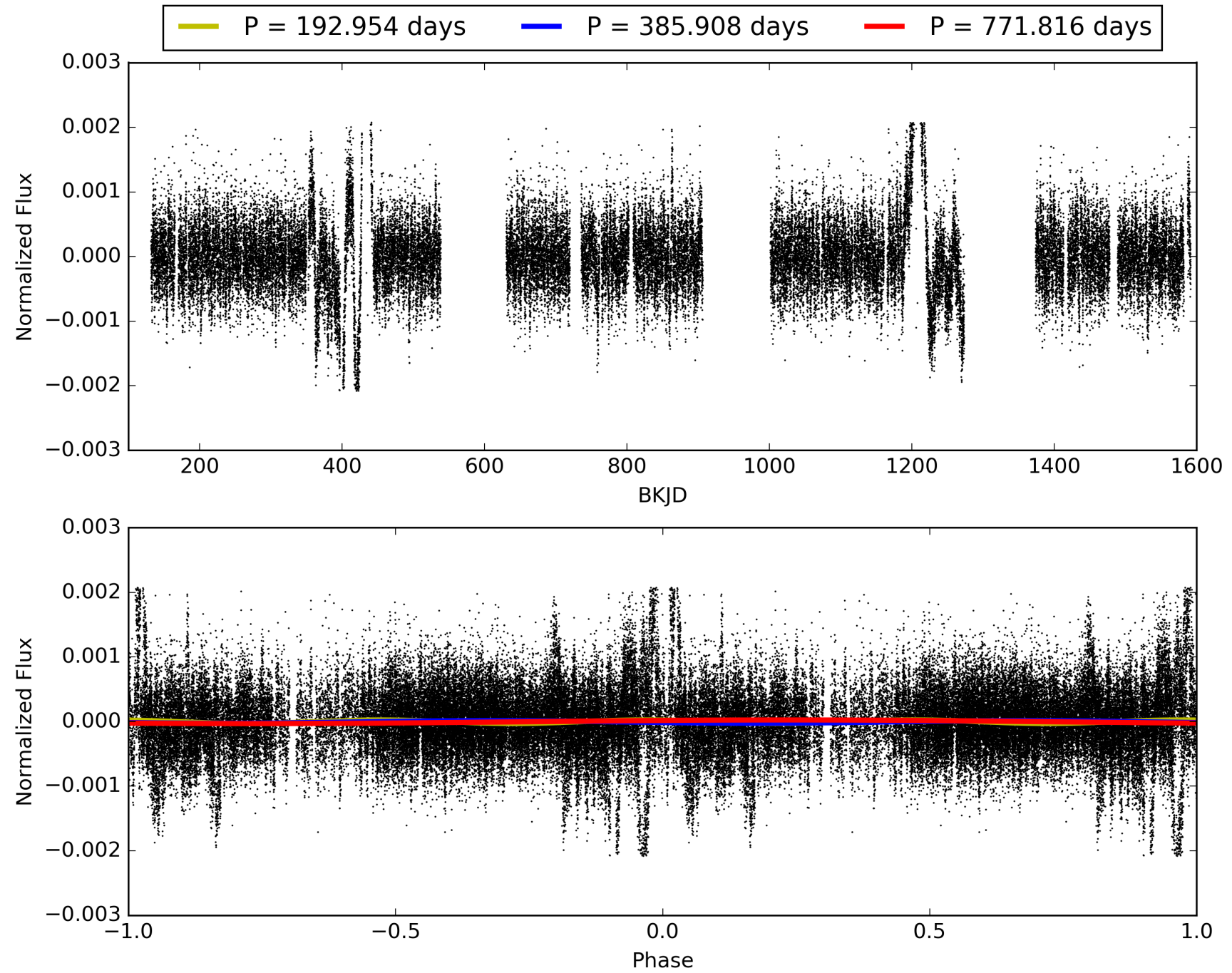
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -6.657  
Centroid-sig: 9.5%  
Centroid-so: 0.078 arcsec [7.67σ]  
OotOffset-rm: 0.650 arcsec [1.78σ]  
KicOffset-rm: 0.641 arcsec [1.74σ]  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [1/1]

# TCE 005024447-01, PDC Light Curves

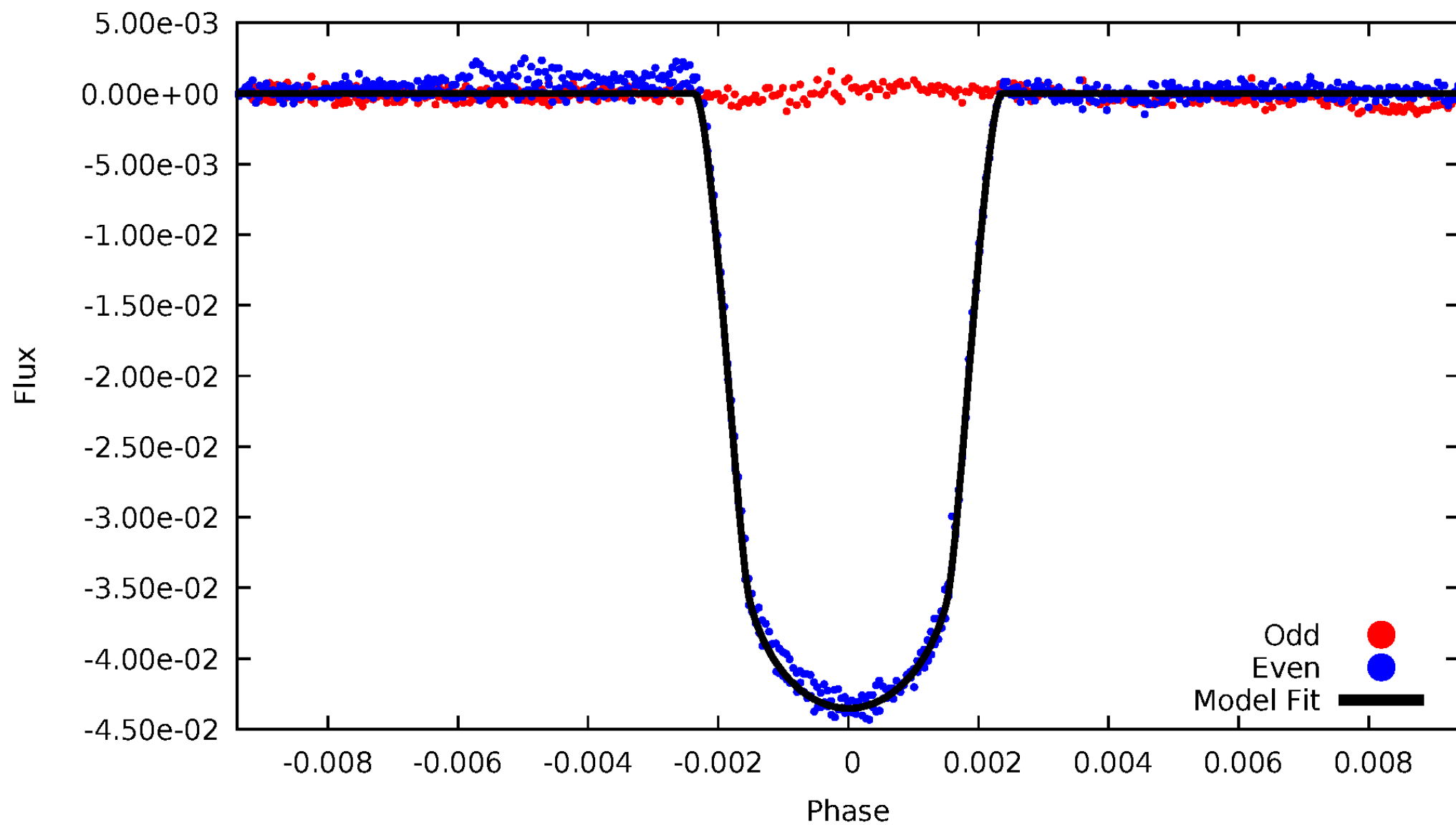


TCE 005024447-01



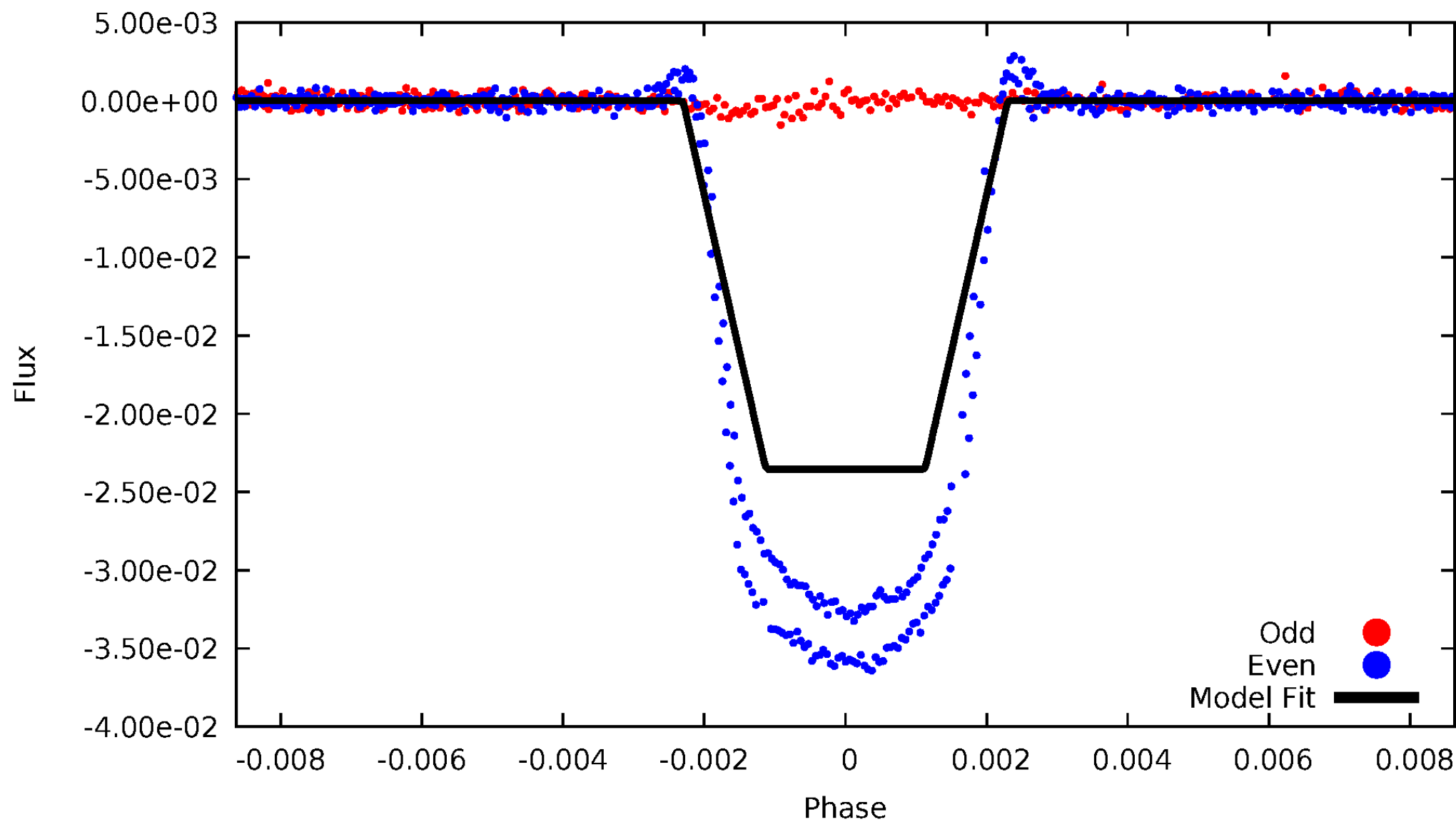
# DV Odd/Even

TCE 005024447-01



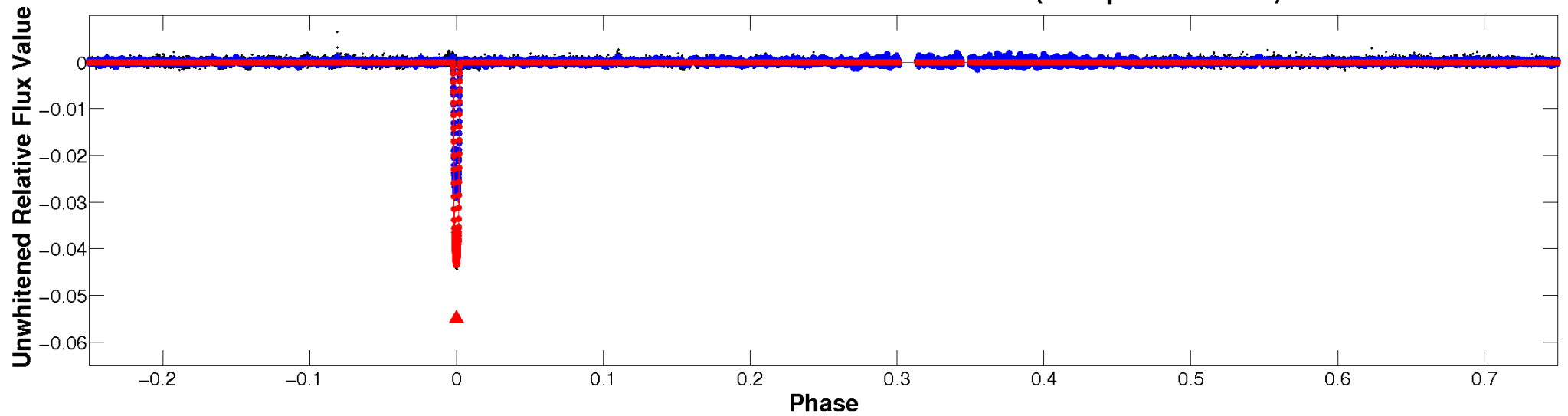
# ALT Odd/Even

TCE 005024447-01

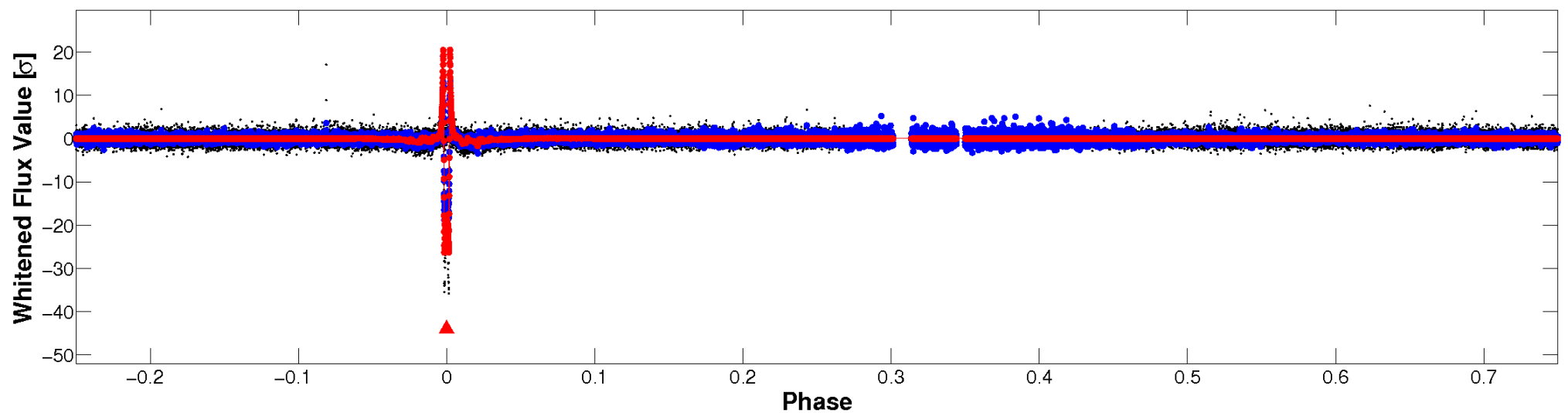


# Non-Whitened Vs. Whitened Light Curve

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

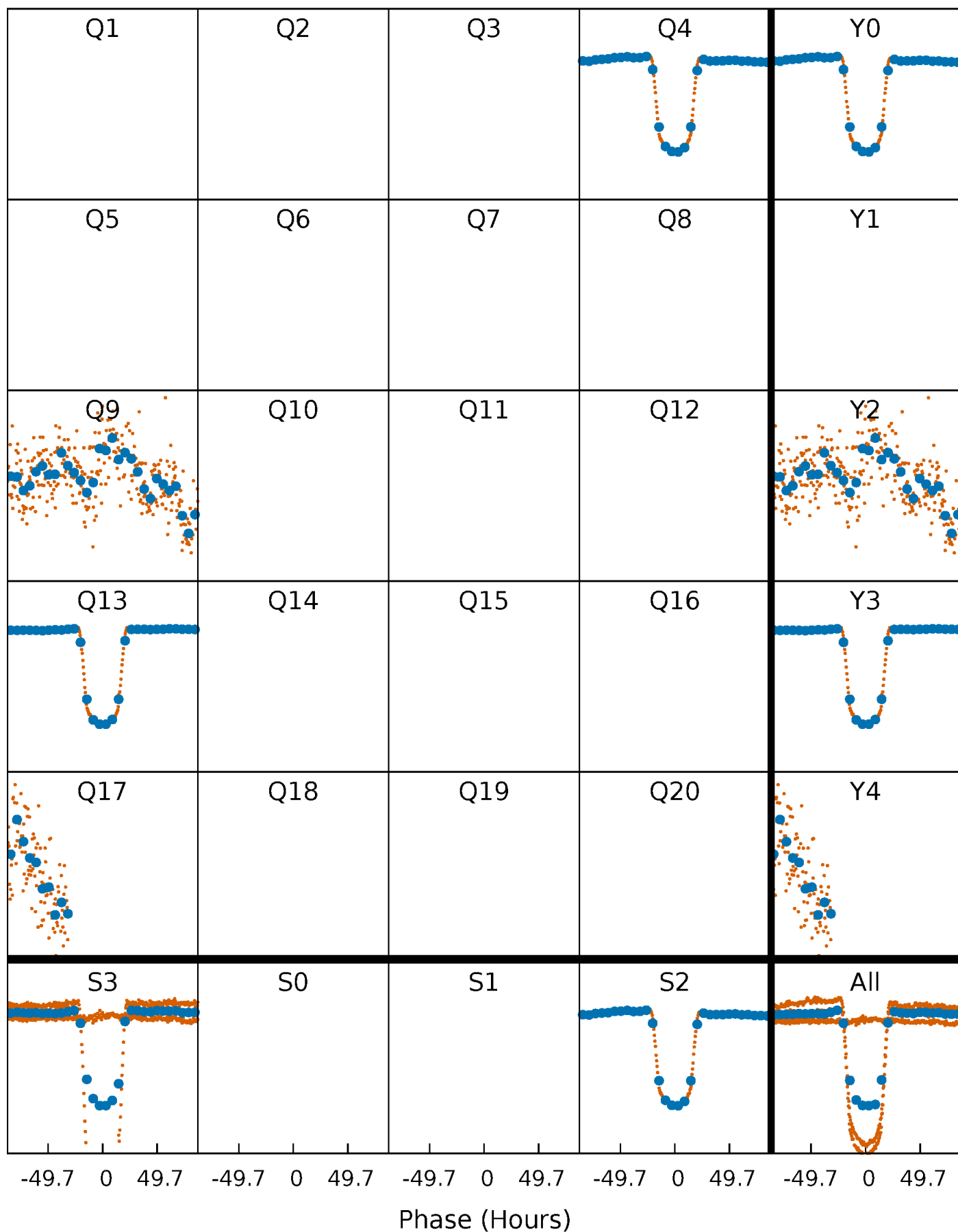


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

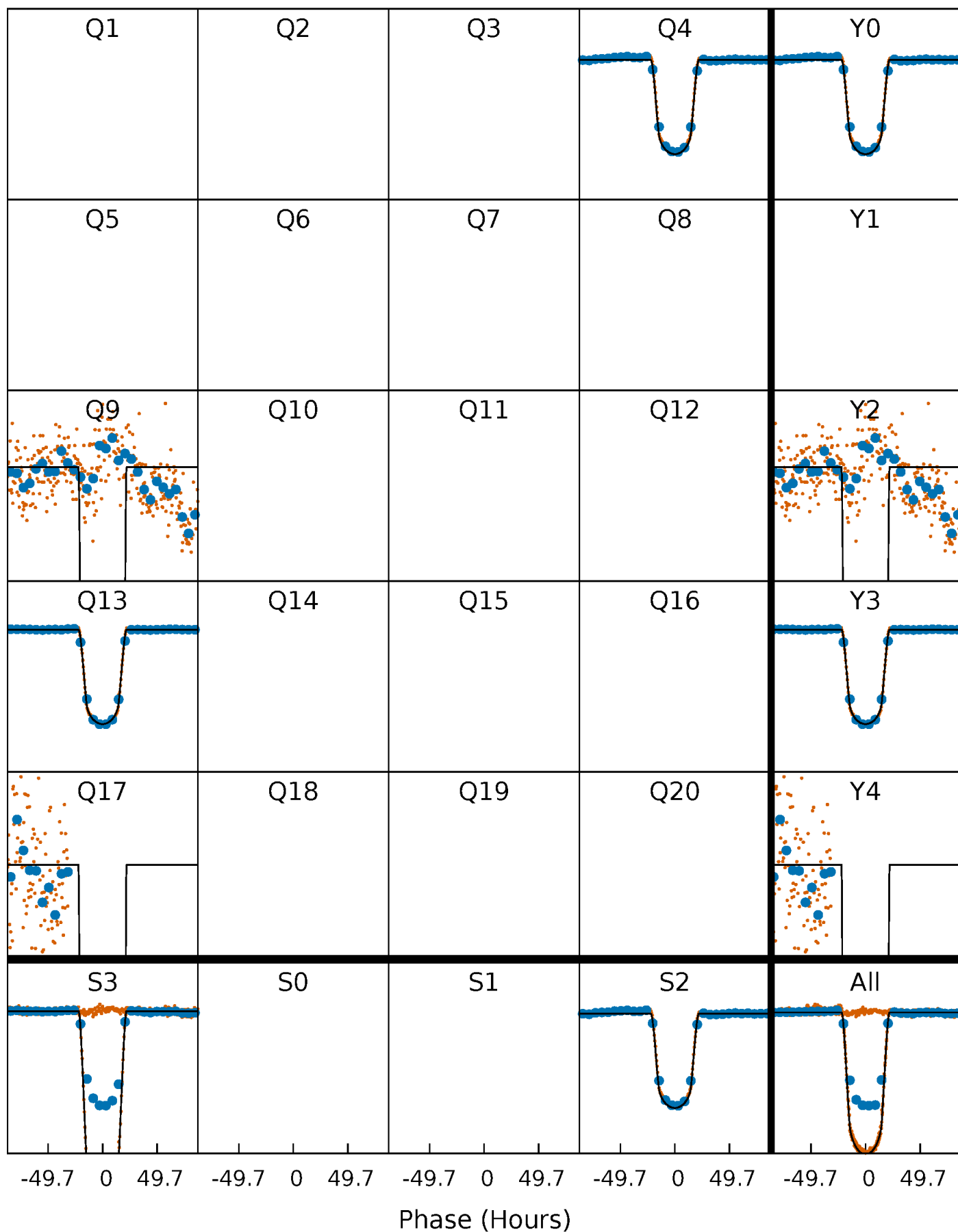
TCE 005024447-01 P=385.908214 Days  $T_0=434.601150$  (BKJD)





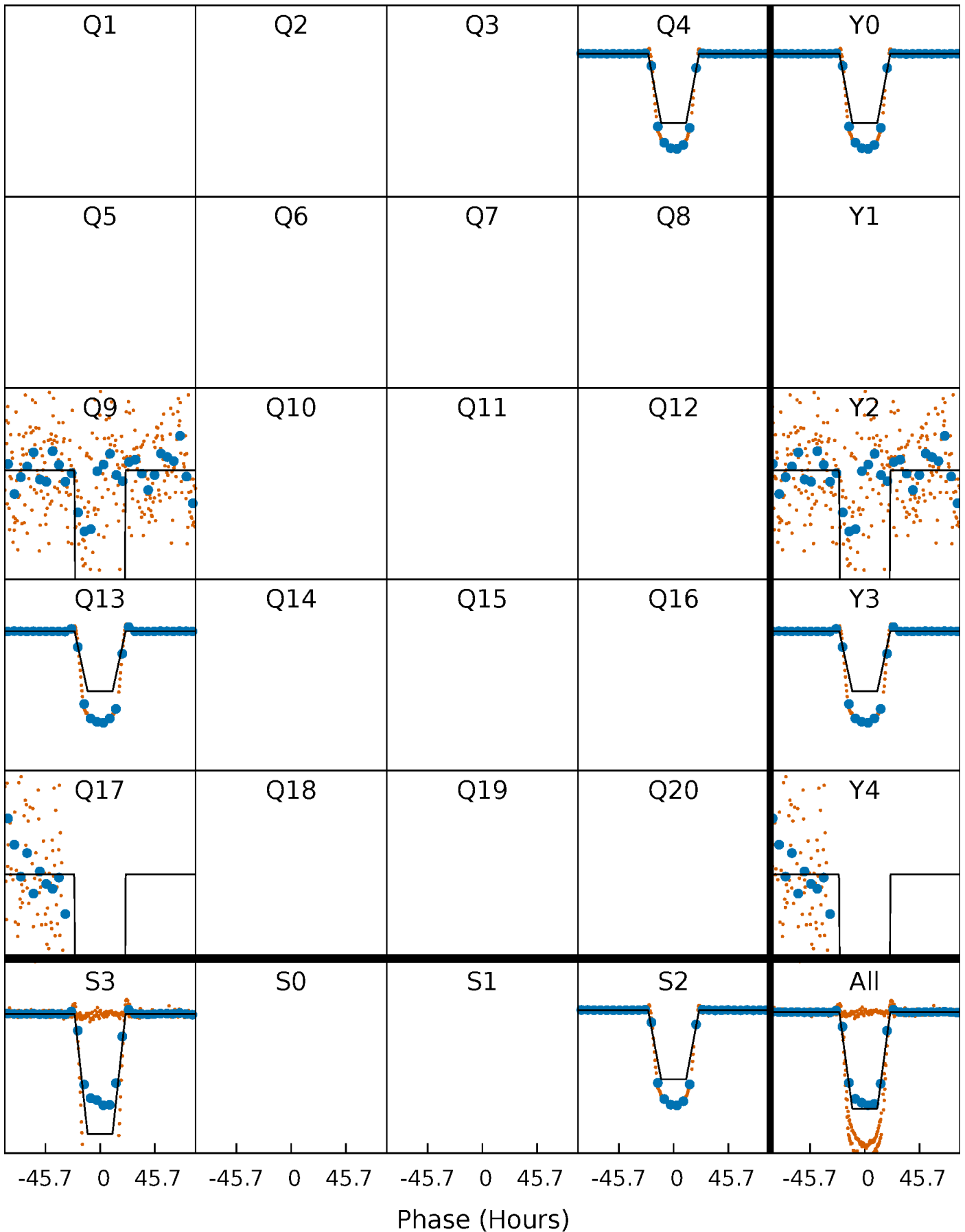
# DV Quarter-Phased Transit Curves

TCE 005024447-01 P=385.908214 Days  $T_0=434.601150$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

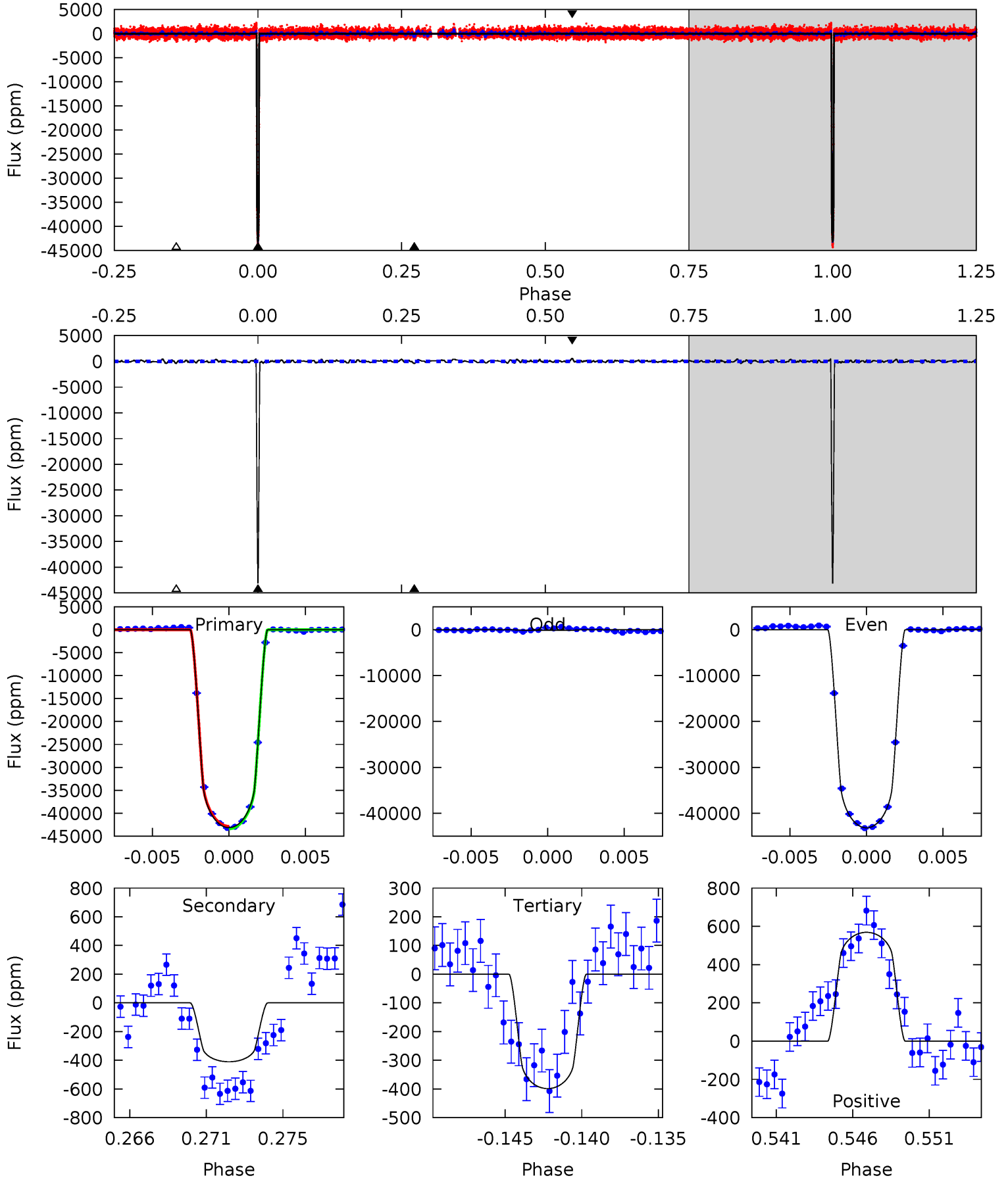
TCE 005024447-01 P=385.901403 Days  $T_0=434.594912$  (BKJD)



# DV Model-Shift Uniqueness Test

005024447-01, P = 385.908214 Days, E = 48.692936 Days

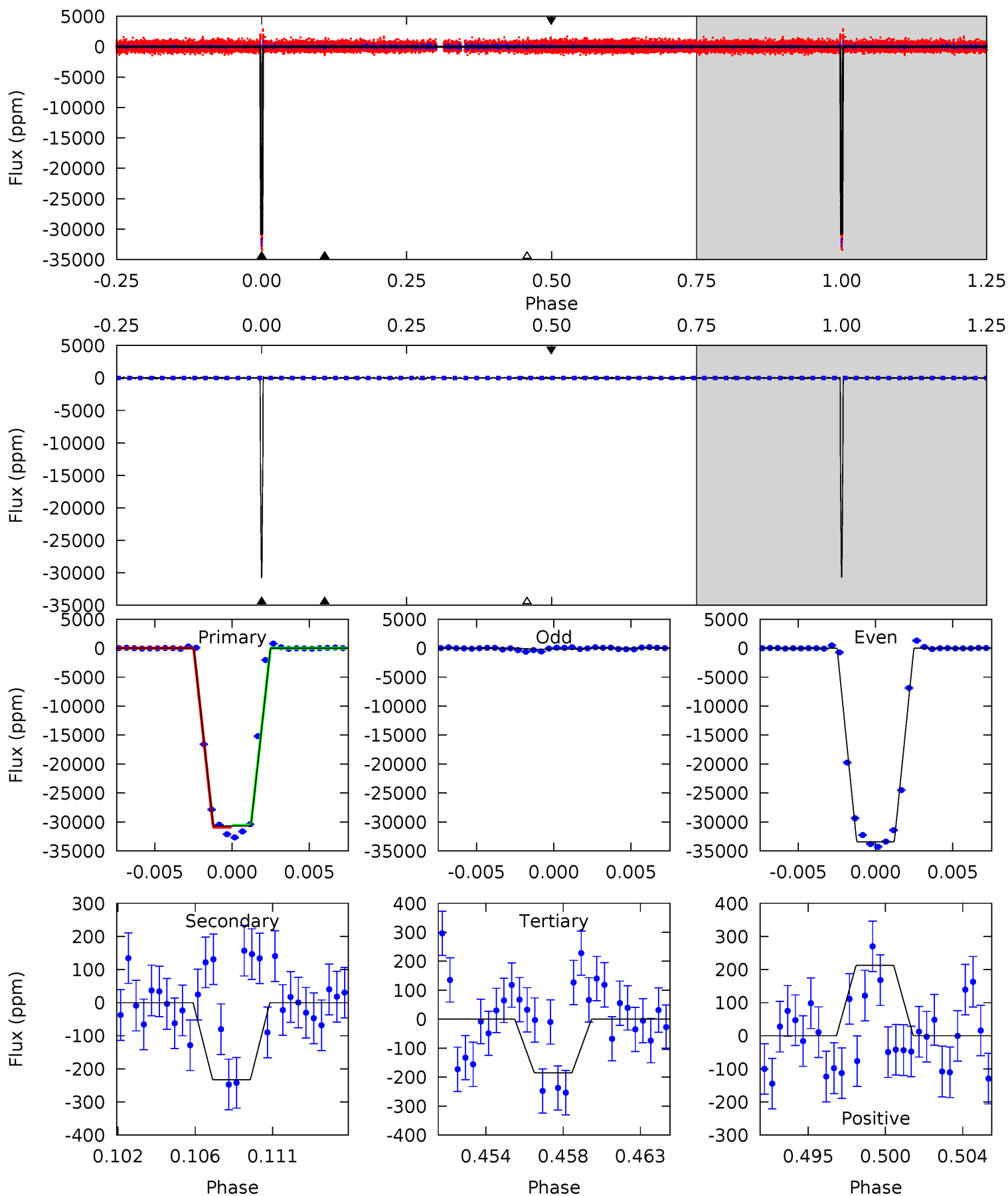
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1300	12.4	12.0	17.1	5.17	2.83	4.30	1288	1282	0.36	-4.77	756.7	0.68	0.01	8.28



# Alt Model-Shift Uniqueness Test

005024447-01,  $P = 385.901403$  Days,  $E = 48.693509$  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
878.5	6.67	5.30	6.08	5.17	2.83	1.46	873.2	872.4	1.37	0.59	686.1	0.71	0.01	0



### Stellar Parameters For KIC 005024447

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6133^{+216}_{-194}$	$4.468^{+0.162}_{-0.108}$	$-1.940^{+0.300}_{-0.050}$	$0.801^{+0.112}_{-0.112}$	$0.687^{+0.079}_{-0.017}$	$1.884^{+1.224}_{-0.637}$
	+4%/-3%	+4%/-2%	+15%/-3%	+14%/-14%	+11%/-2%	+65%/-34%
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 005024447-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-411 \pm 33$	$17.00^{+1.43}_{-1.71}$	$351^{+19}_{-20}$	$2749^{+56}_{-54}$	$678^{+152}_{-122}$
Alt.	$-233 \pm 35$	$13.38^{+1.27}_{-1.22}$	$351^{+19}_{-21}$	$2711^{+79}_{-69}$	$611^{+165}_{-126}$

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

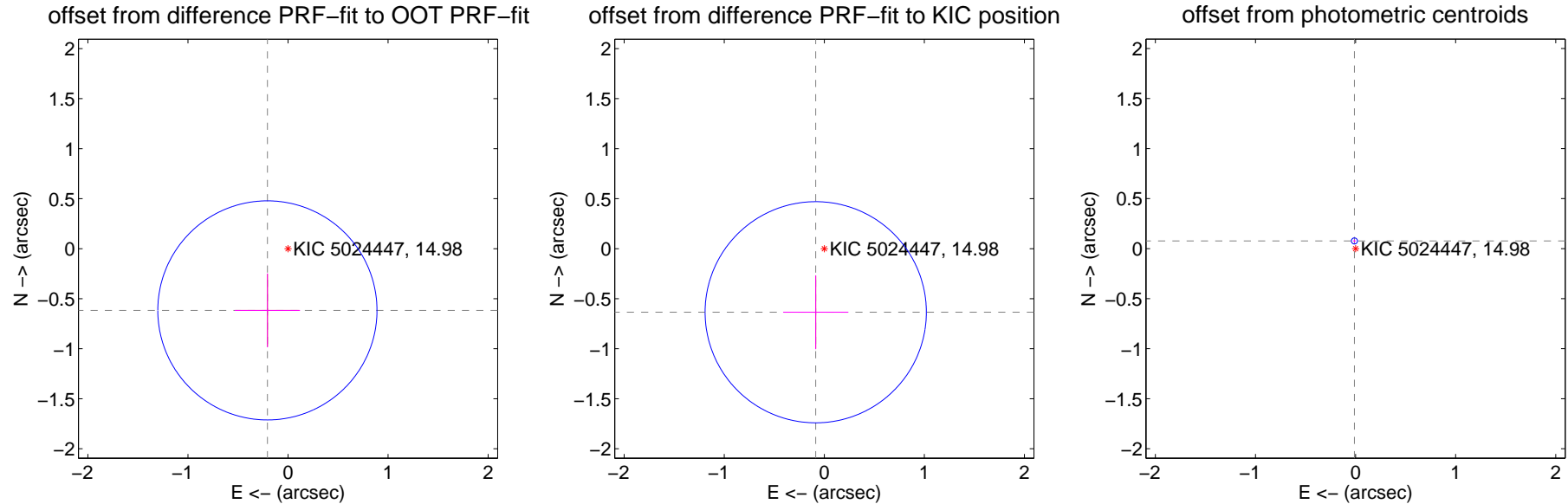
## DV Centroid Data

Supplemental centroid analysis for 005024447-01. Kepler magnitude: 14.98. Transit SNR 286.52

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.650 \pm 0.365$	1.78	$0.206 \pm 0.325$	$-0.617 \pm 0.369$
PRF-fit source offset from KIC position	$0.641 \pm 0.368$	1.74	$0.086 \pm 0.325$	$-0.635 \pm 0.369$
photometric centroid source offset	$0.08 \pm 0.01$	7.67	$0.01 \pm 0.01$	$0.08 \pm 0.01$



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.

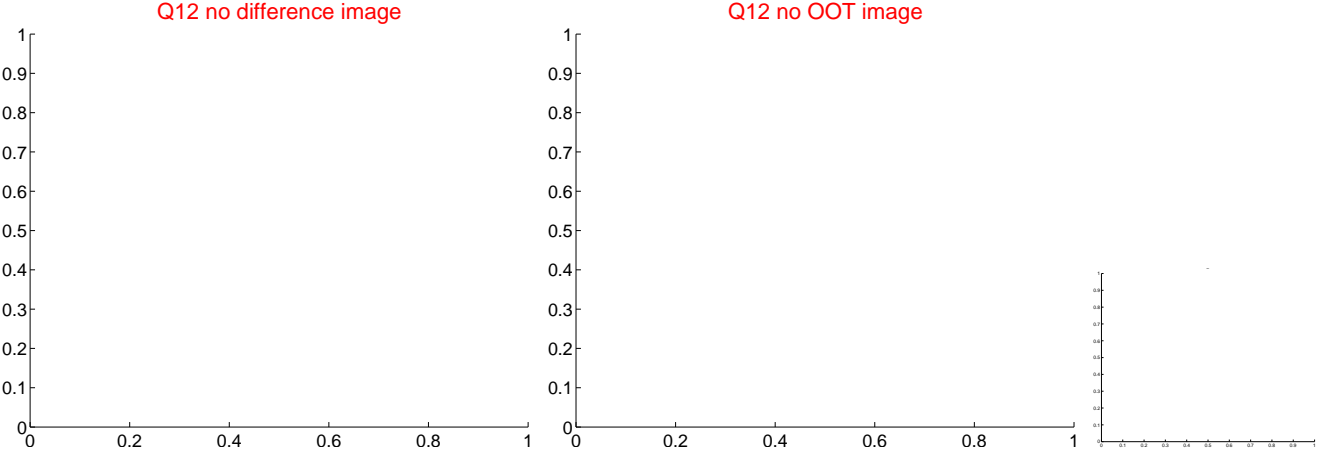
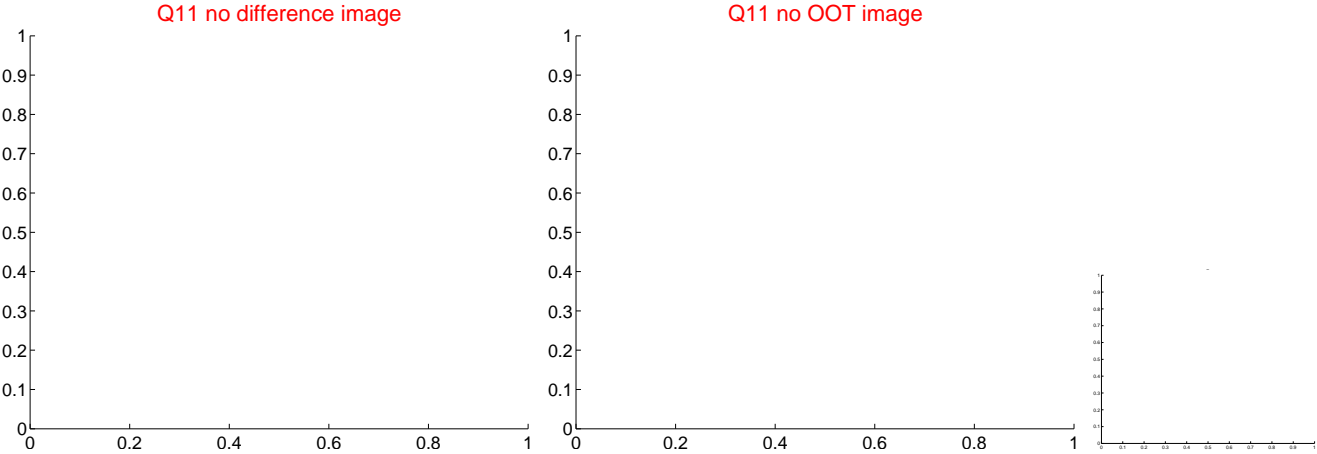
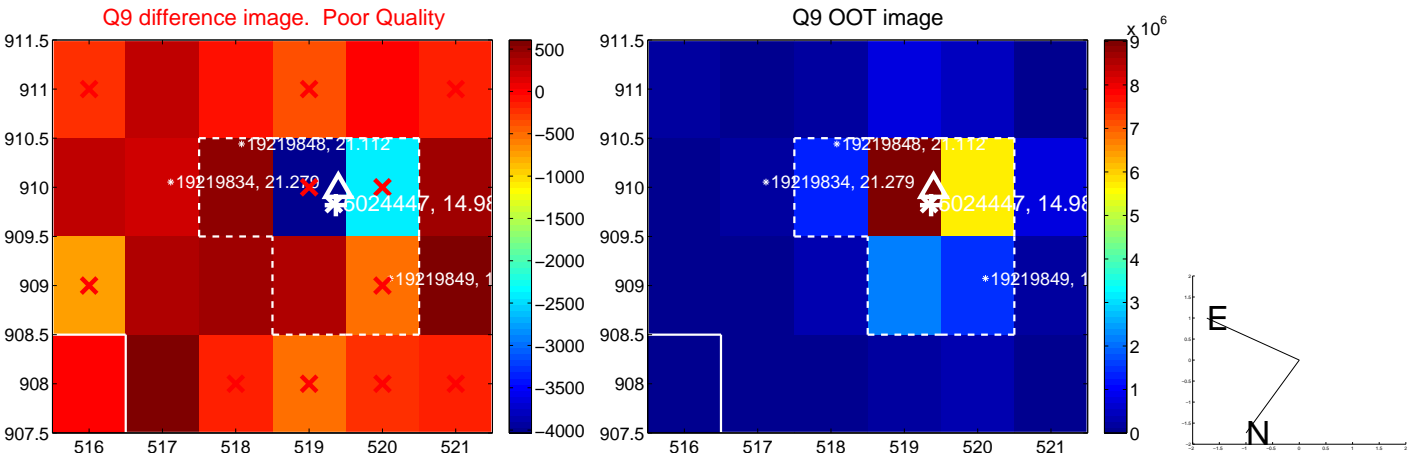


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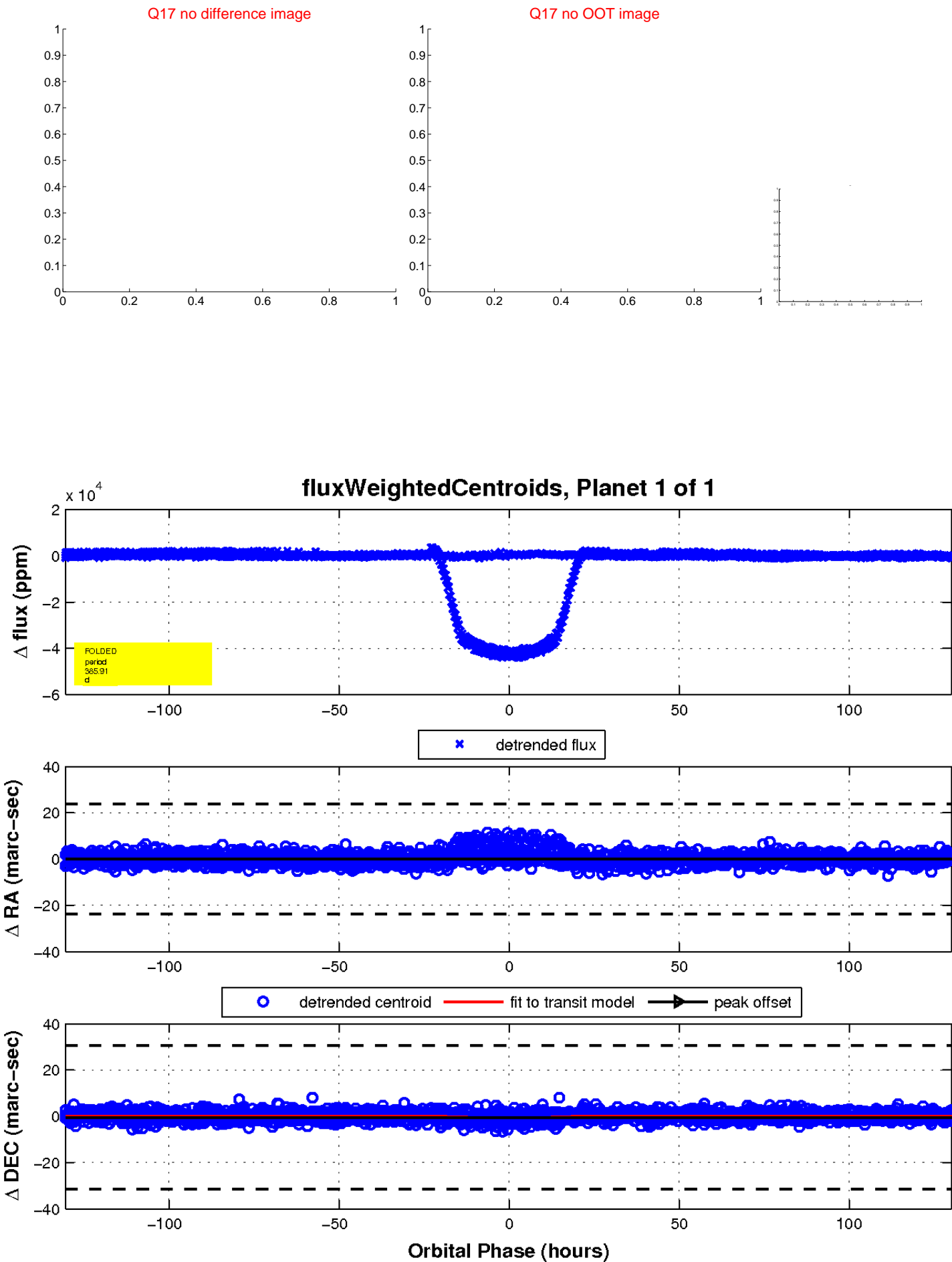
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UKIRT Image

Declination

