

# KIC 004447461

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004447461-01	OBS	No	0.532730	131.903821	148.4	0.942	7.4	9.9	1.72	6948	2.46	28543.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004447461-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

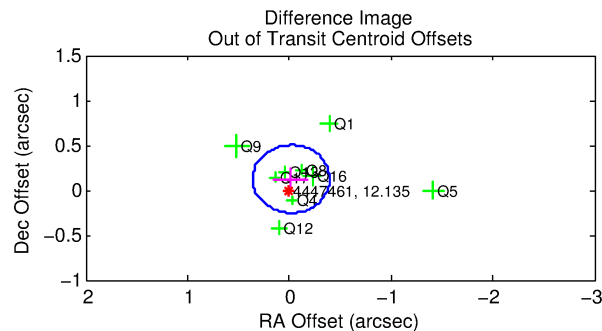
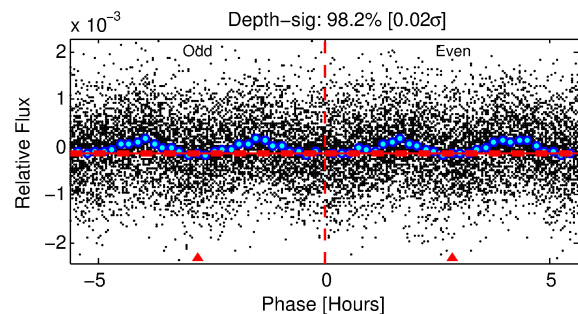
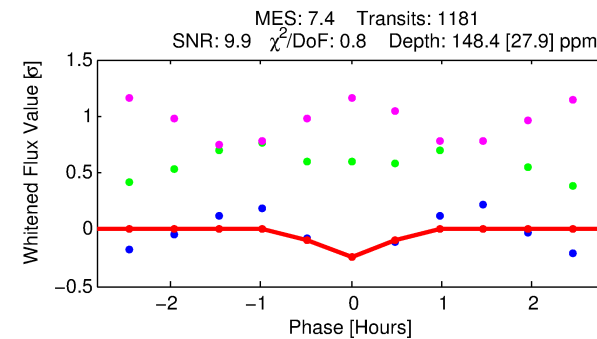
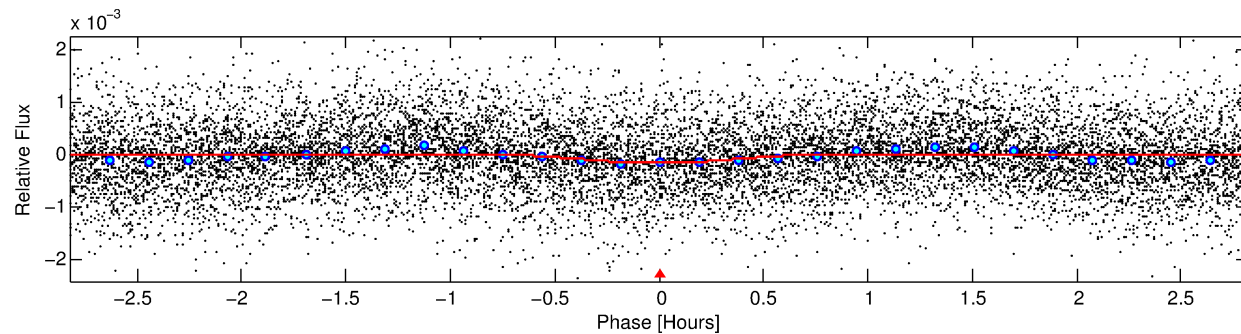
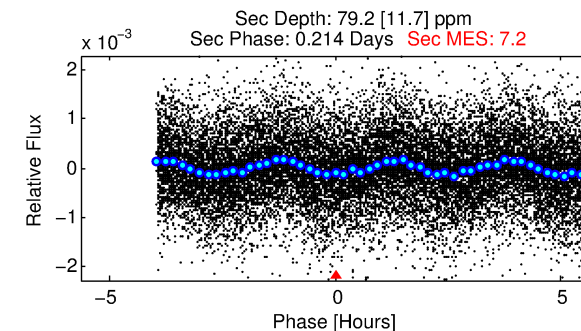
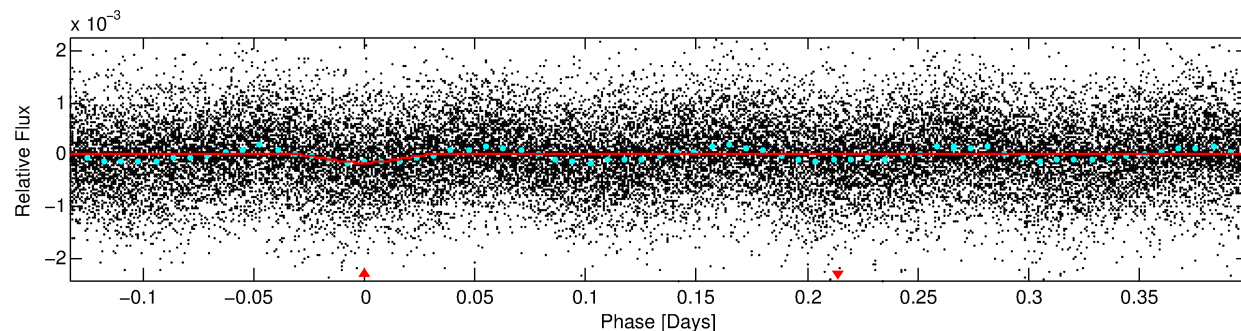
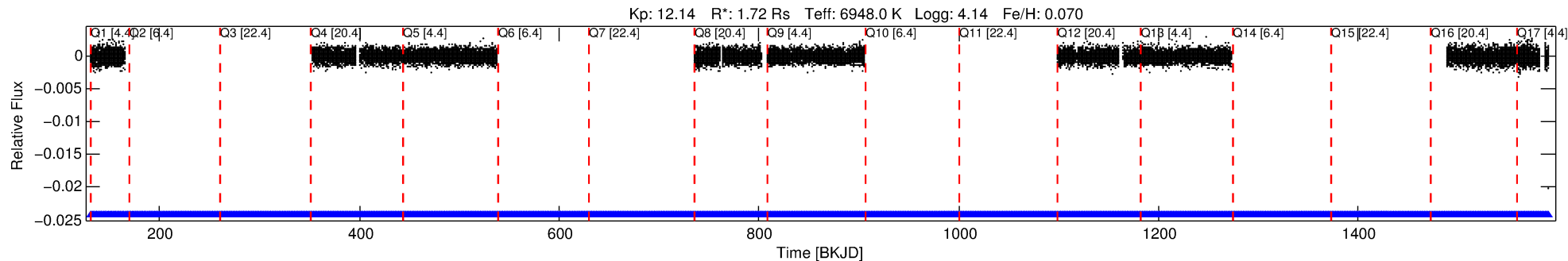
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004447461-01

No Significant Match Found

# DV One-Page Summary

KIC: 4447461 Candidate: 1 of 1 Period: 0.533 d



## DV Fit Results:

Period = 0.53273 [0.00001] d  
Epoch = 131.9038 [0.0018] BKJD  
Rp/R\* = 0.0131 [0.0093]  
a/R\* = 2.21 [7.48]  
b = 0.90 [0.90]  
Seff = 28543.28 [11710.40]  
Teq = 3314 [340] K  
Rp = 2.46 [1.91] Re  
a = 0.0147 [0.0038] AU  
Ag = 1.56 [2.29] [0.24σ]  
Teff = 5726 [2054] K [1.16σ]

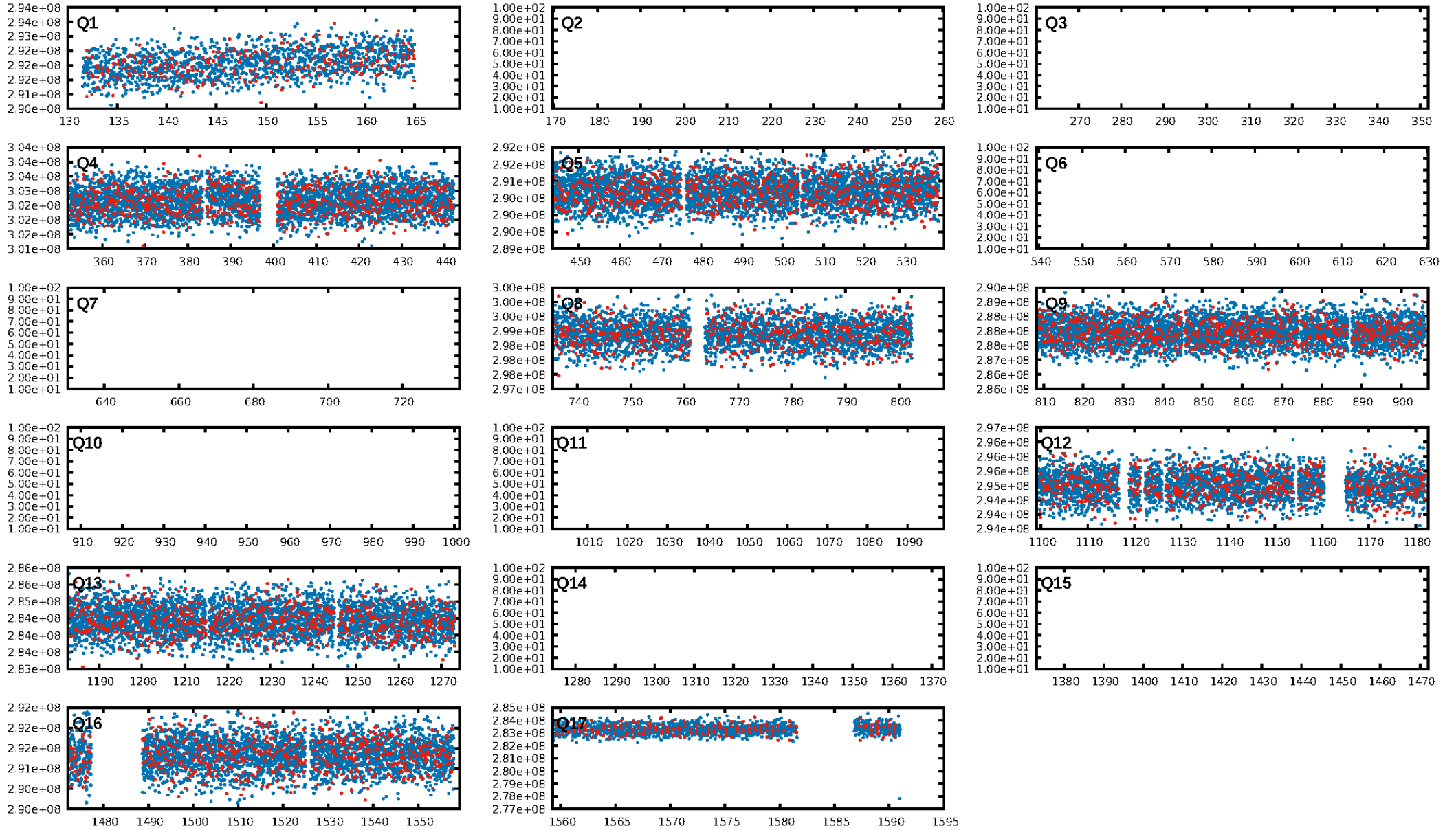
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.59e-15  
RollingBand-fgt: 1.00 [1069/1069]  
GhostDiagnostic-chr: -2.56  
Centroid-sig: 5.0%  
Centroid-so: 0.184 arcsec [1.13σ]  
OotOffset-rm: 0.125 arcsec [0.99σ]  
KicOffset-rm: 0.198 arcsec [1.63σ]  
OotOffset-st: 0/0/4/5 [9]  
KicOffset-st: 0/0/4/5 [9]  
DiffImageQuality-fgm: 1.00 [9/9]  
DiffImageOverlap-fno: 1.00 [9/9]

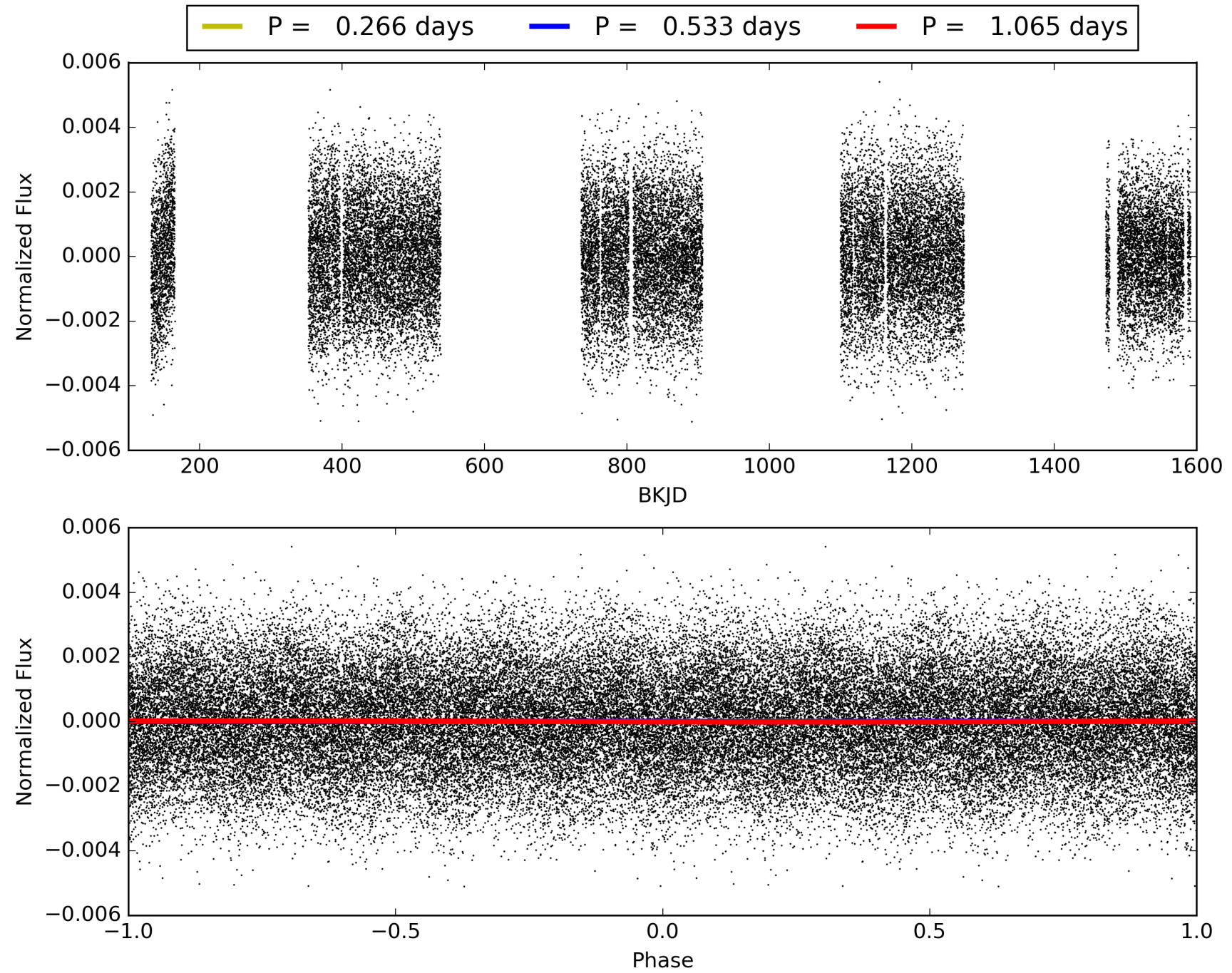
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:54:00 Z

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

# TCE 004447461-01, PDC Light Curves

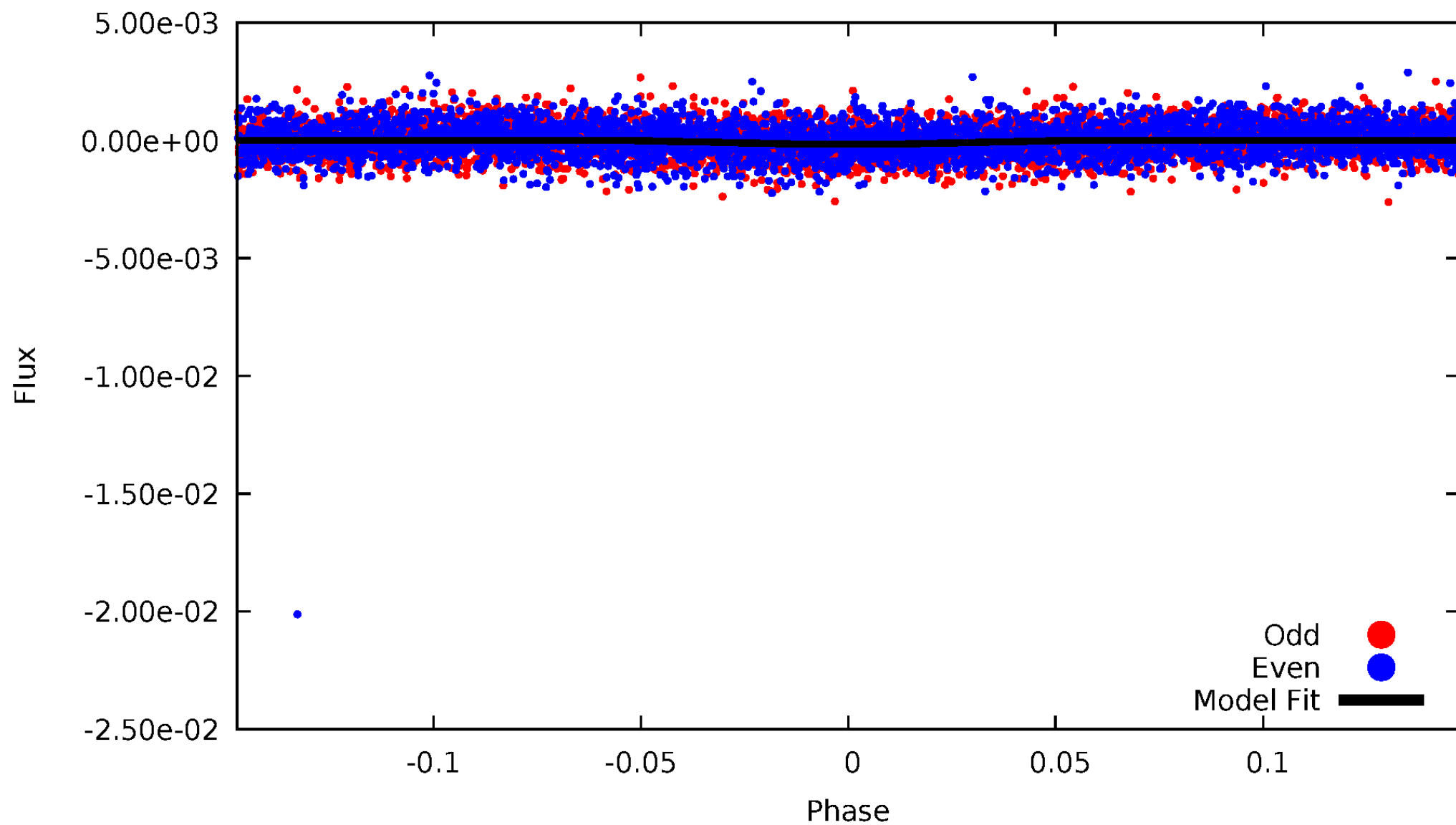


TCE 004447461-01



# DV Odd/Even

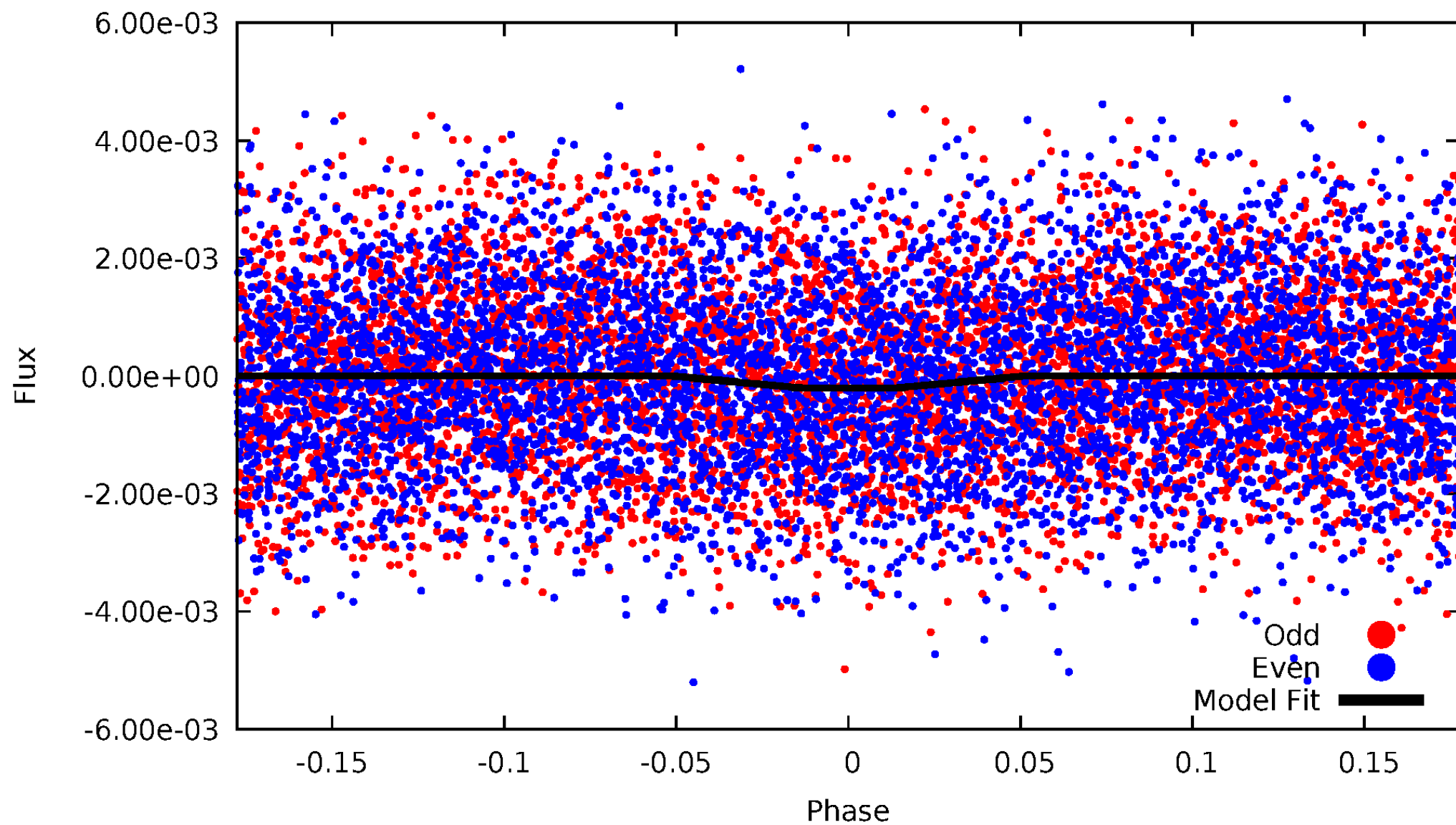
TCE 004447461-01





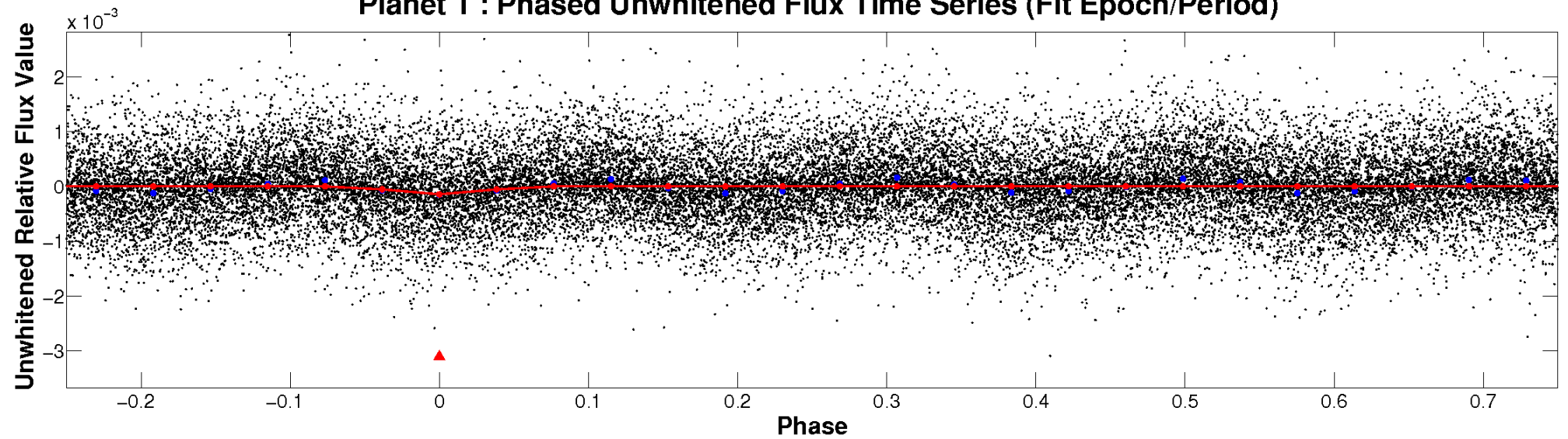
# ALT Odd/Even

TCE 004447461-01

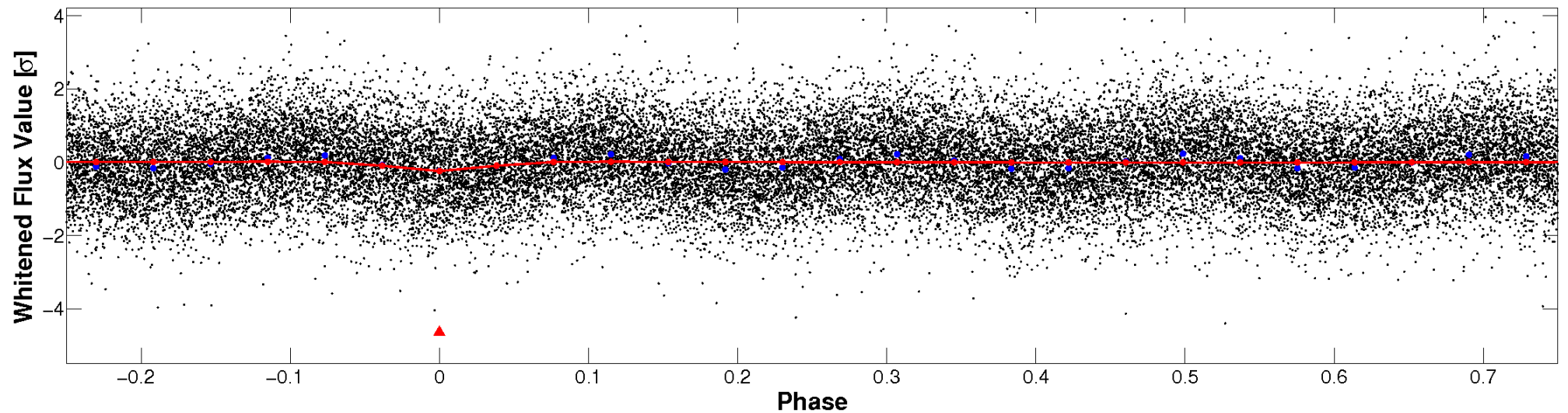


# Non-Whitened Vs. Whitened Light Curve

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

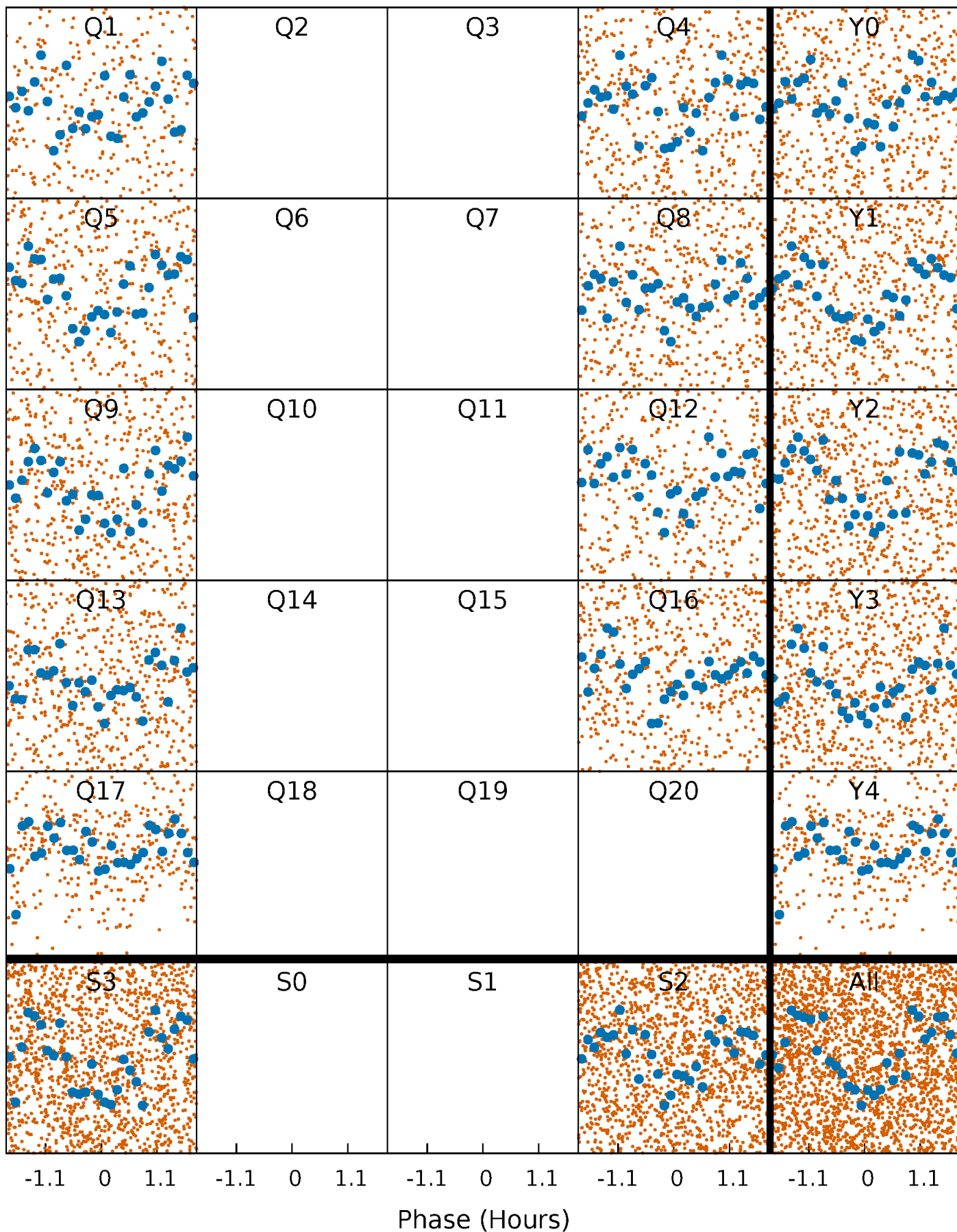


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

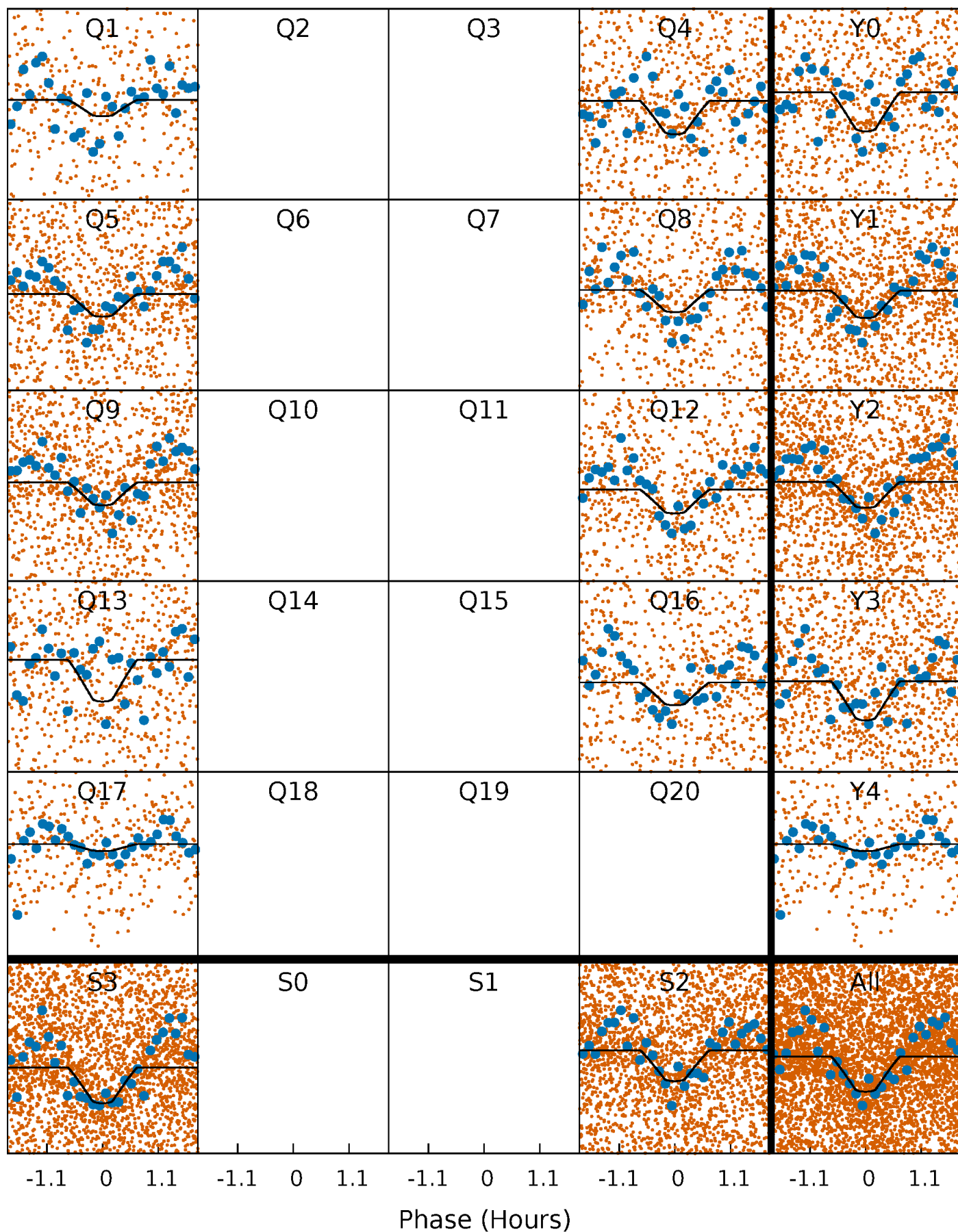
TCE 004447461-01 P= 0.532730 Days  $T_0=131.903821$  (BKJD)





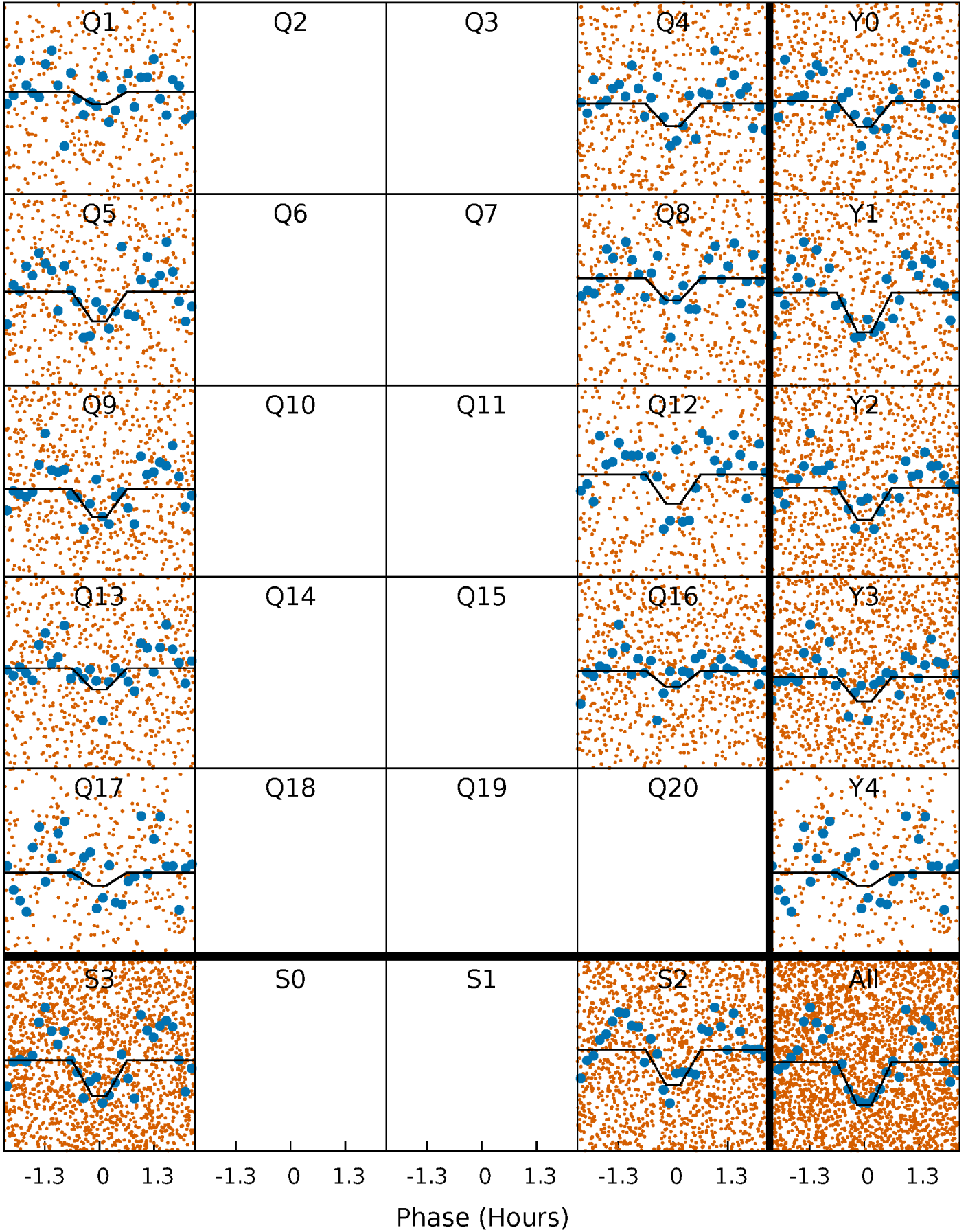
# DV Quarter-Phased Transit Curves

TCE 004447461-01   P= 0.532730 Days    $T_0=131.903821$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

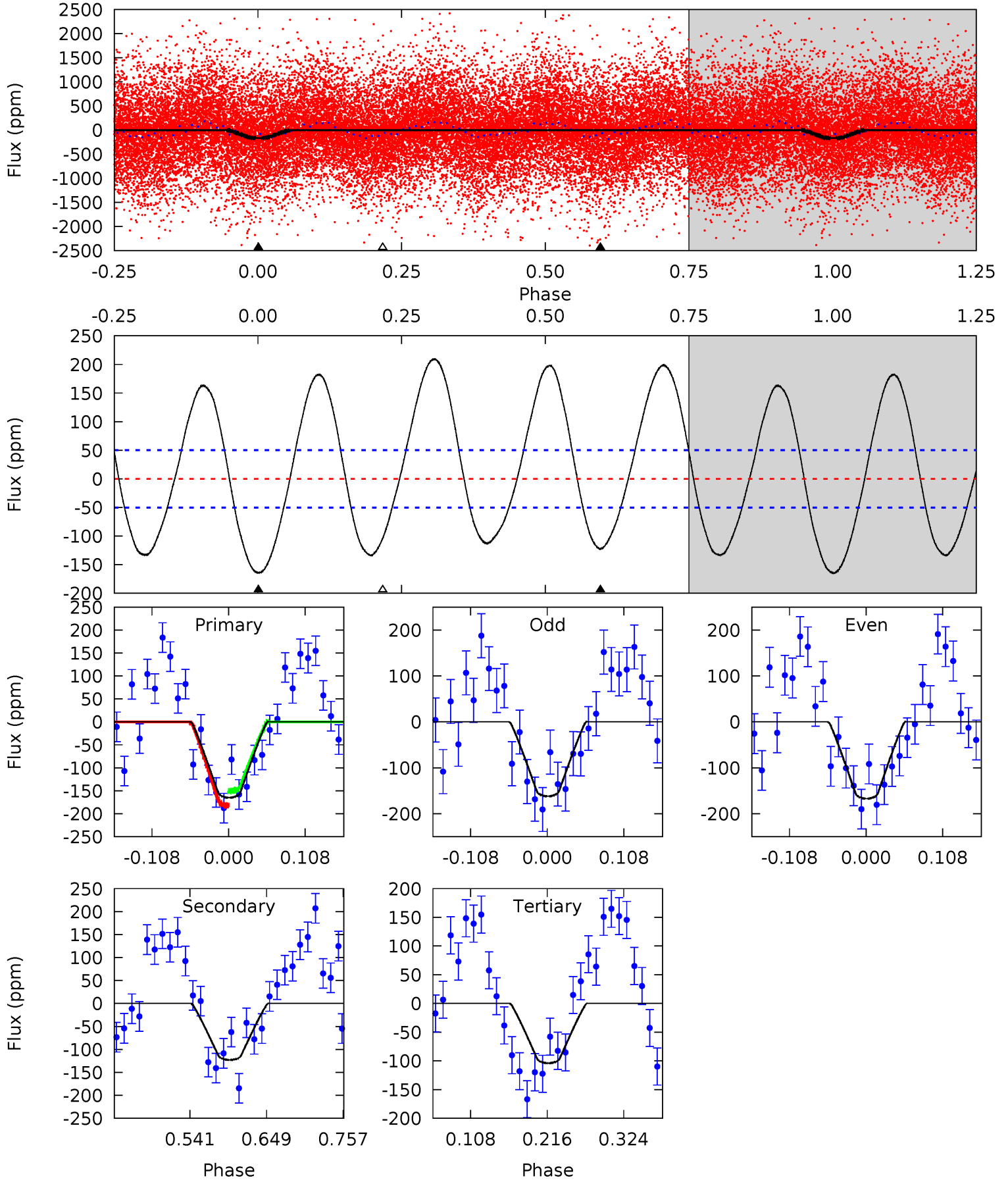
TCE 004447461-01 P= 0.532731 Days  $T_0=131.901646$  (BKJD)



# DV Model-Shift Uniqueness Test

004447461-01, P = 0.532730 Days, E = 131.371091 Days

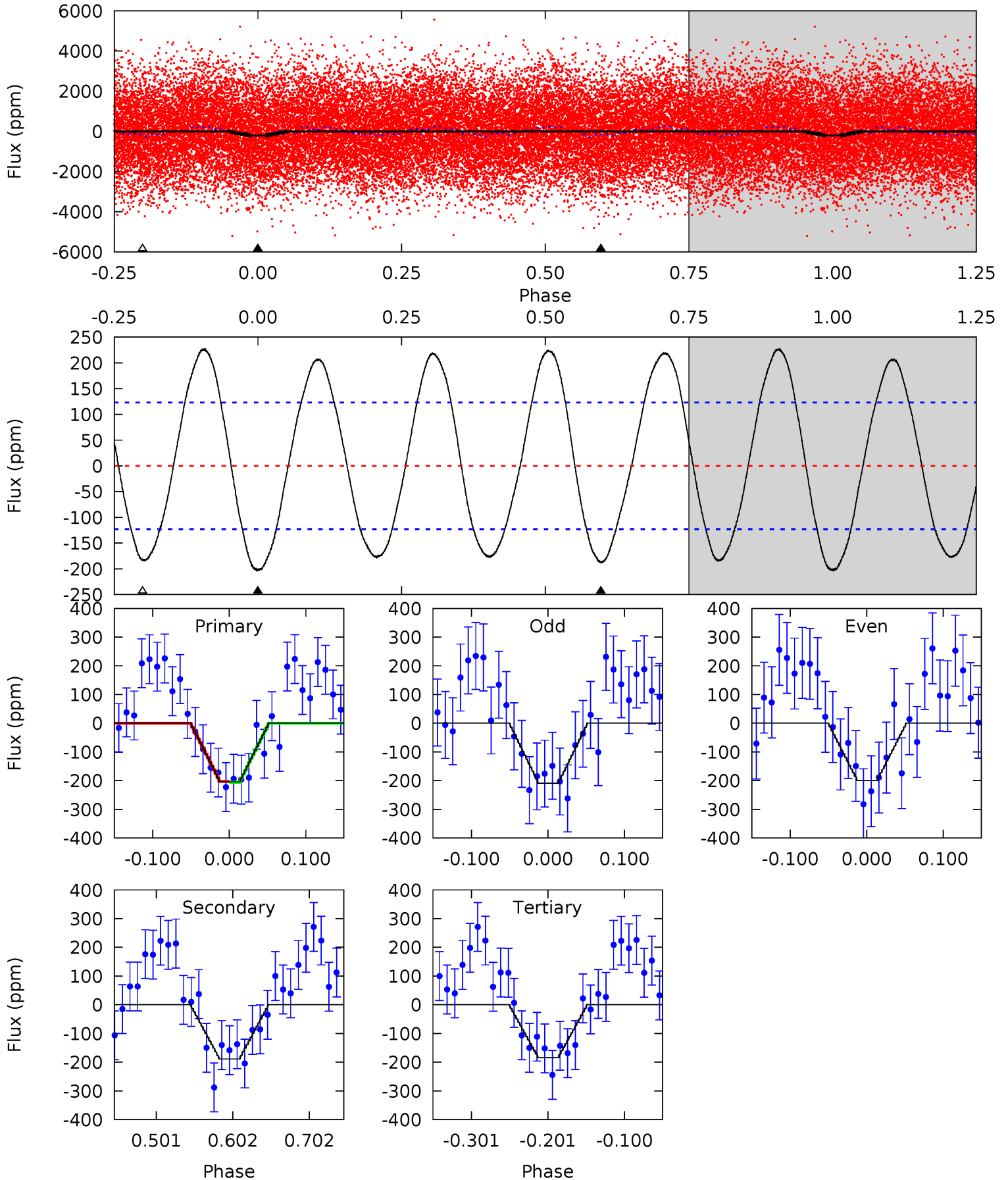
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	11.1	9.41	0	4.55	1.61	9.99	5.55	15.0	1.72	11.1	0.24	0.91	0.56	1.44



# Alt Model-Shift Uniqueness Test

004447461-01, P = 0.532731 Days, E = 131.368915 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
7.59	7.02	6.84	0	4.56	1.64	5.20	0.74	7.59	0.17	7.02	0.17	0.92	0.53	0.05



### Stellar Parameters For KIC 004447461

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6948^{+194}_{-305}$	$4.141^{+0.132}_{-0.198}$	$0.070^{+0.200}_{-0.350}$	$1.717^{+0.547}_{-0.365}$	$1.488^{+0.216}_{-0.238}$	$0.414^{+0.316}_{-0.206}$
	+3%/-4%	+3%/-5%	+286%/-500%	+32%/-21%	+15%/-16%	+76%/-50%
Source	PHO54	PHO54	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 004447461-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-123 \pm 11$	$2.69^{+1.93}_{-1.54}$	$4678^{+359}_{-319}$	$5837^{+4090}_{-1550}$	$1.937^{+9.236}_{-1.245}$
Alt.	$-189 \pm 27$	$2.97^{+1.89}_{-1.62}$	$4662^{+379}_{-320}$	$6223^{+4313}_{-1437}$	$2.506^{+9.505}_{-1.562}$

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



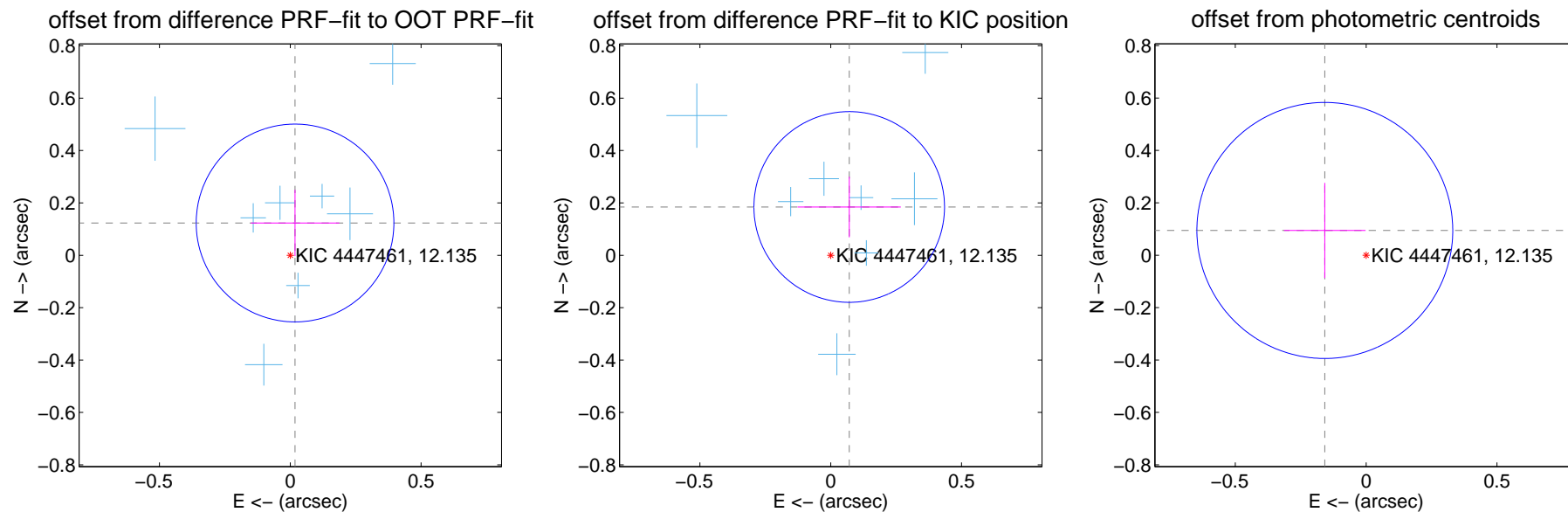
## DV Centroid Data

Supplemental centroid analysis for 004447461-01. Kepler magnitude: 12.13. Transit SNR 9.94

There are 9 quarters with good PRF difference image offsets

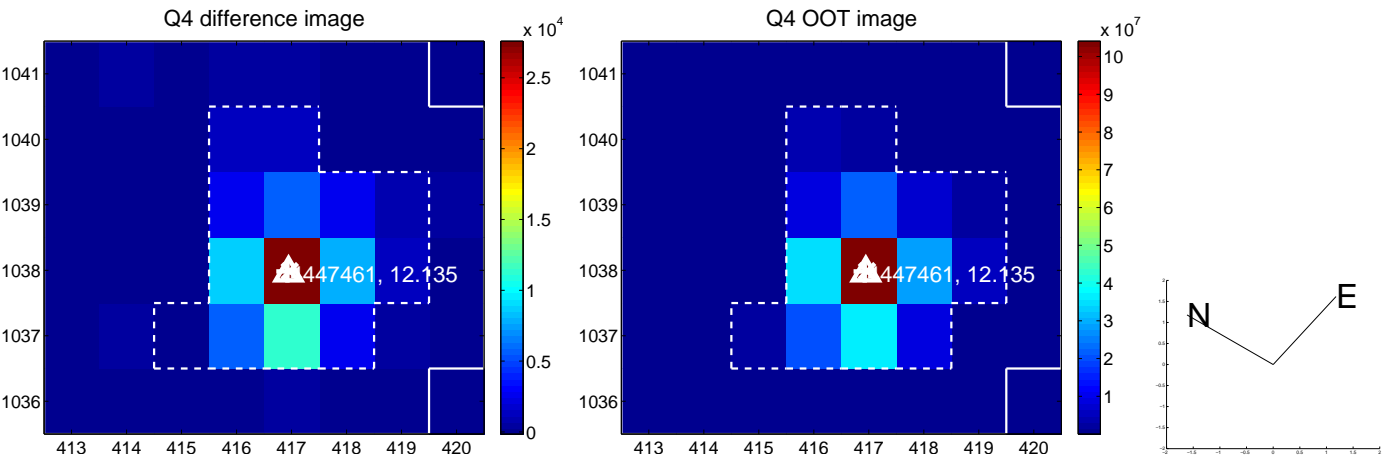
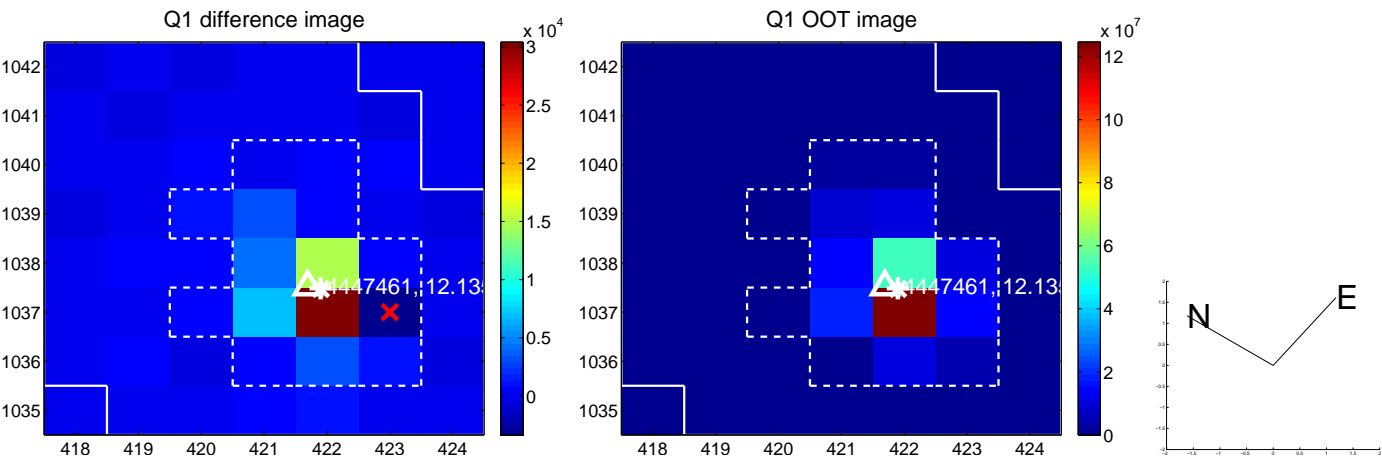
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.125 \pm 0.126$	0.99	$-0.018 \pm 0.169$	$0.123 \pm 0.126$
PRF-fit source offset from KIC position	$0.198 \pm 0.121$	1.63	$-0.071 \pm 0.197$	$0.184 \pm 0.116$
photometric centroid source offset	$0.18 \pm 0.16$	1.13	$0.16 \pm 0.16$	$0.09 \pm 0.18$

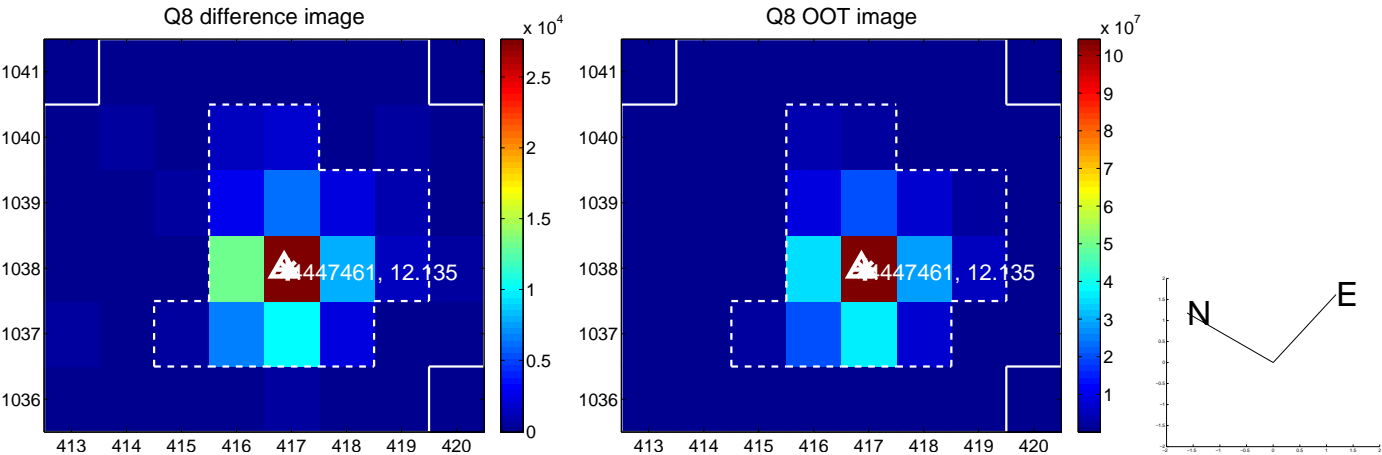
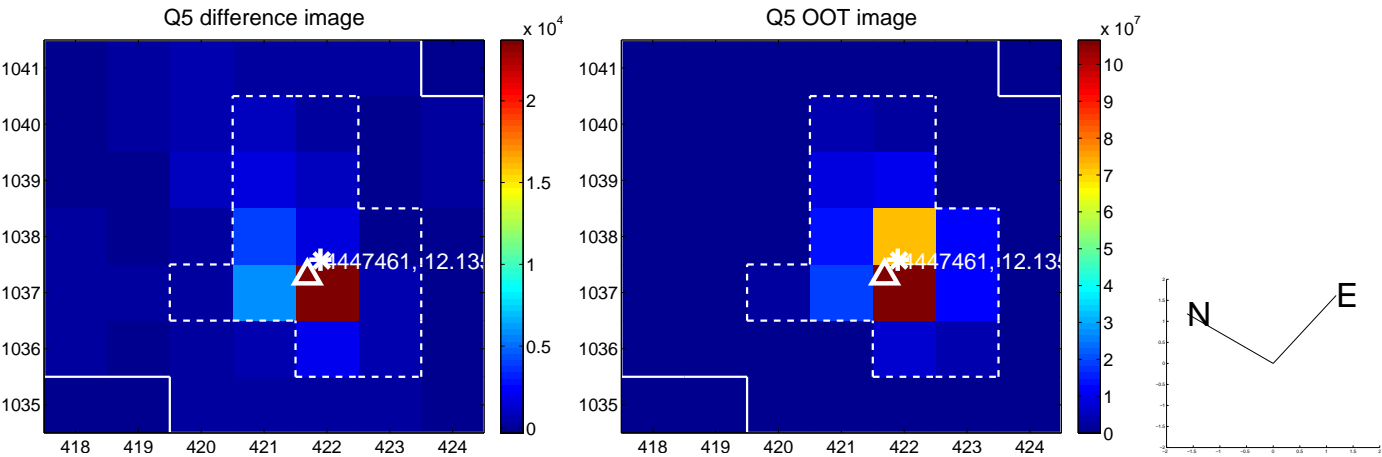


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: 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.

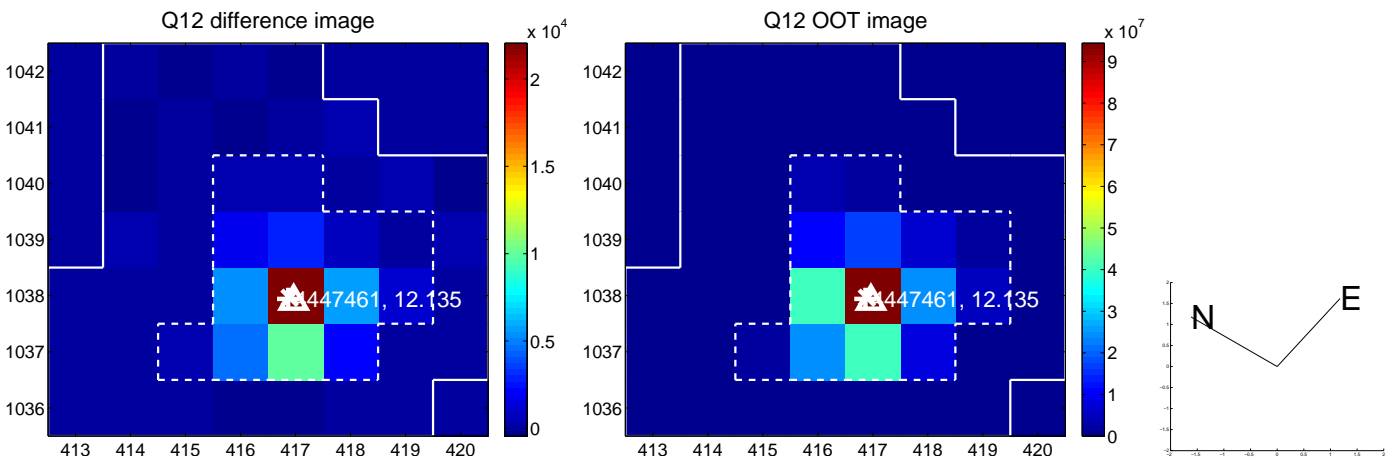
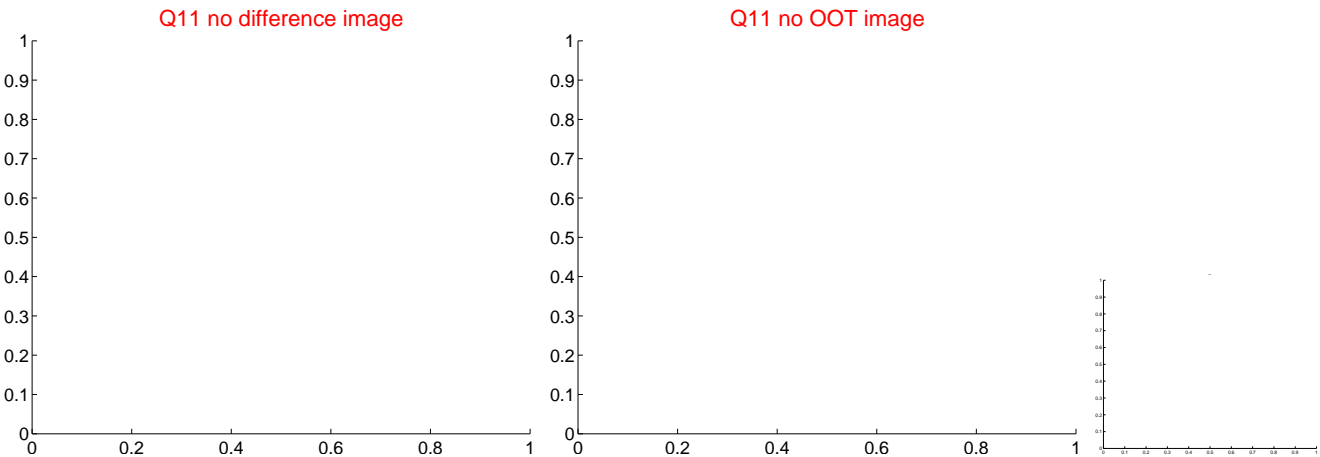
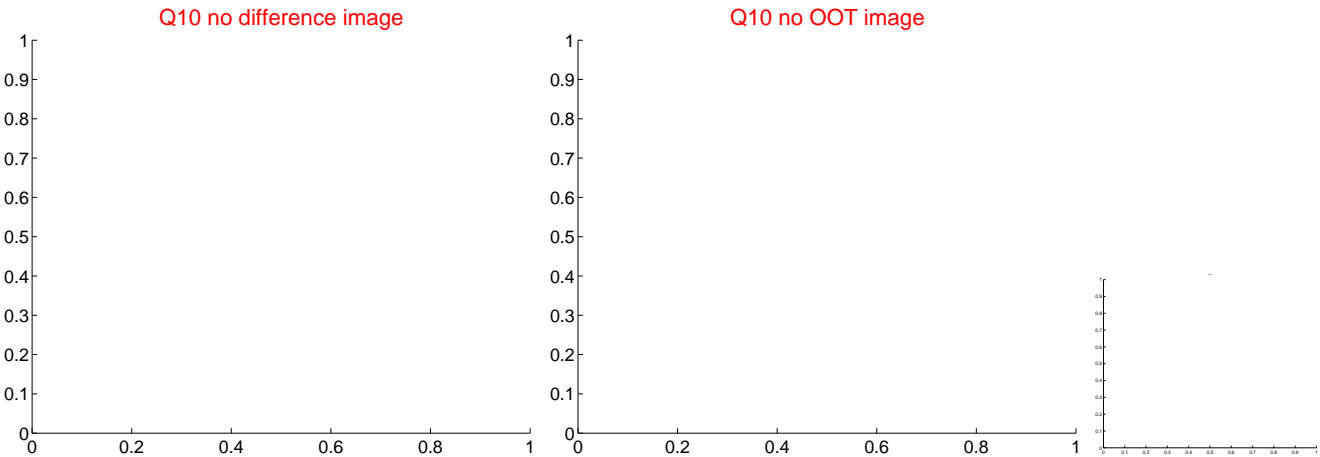
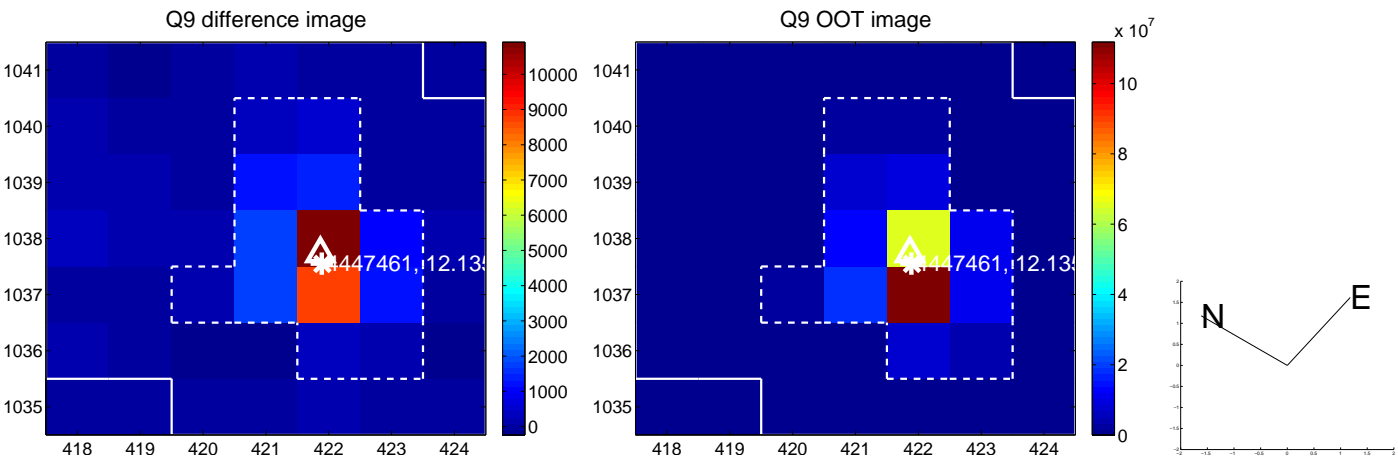
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



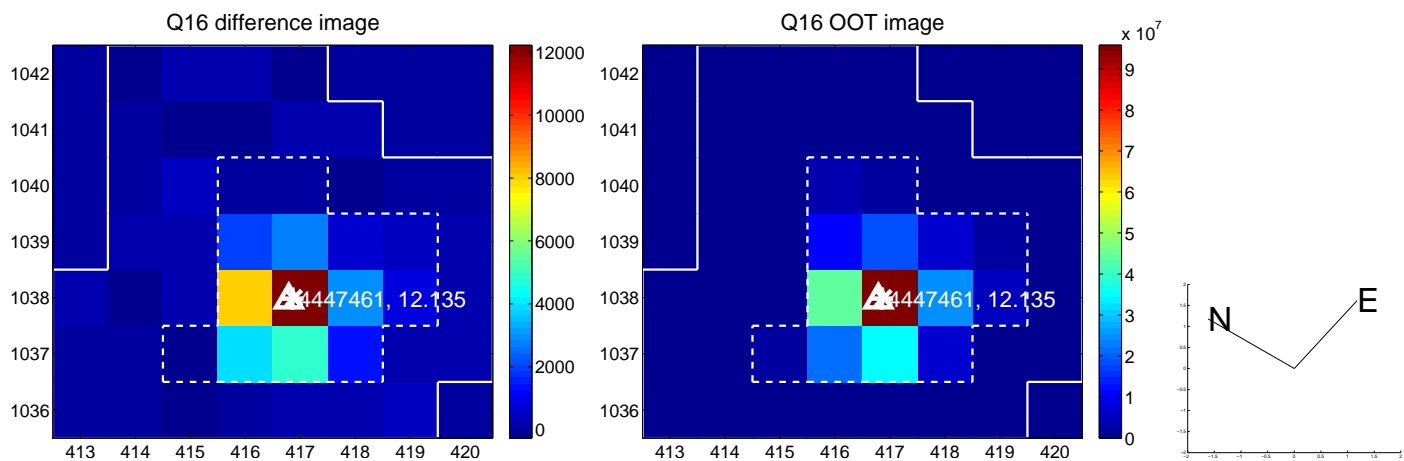
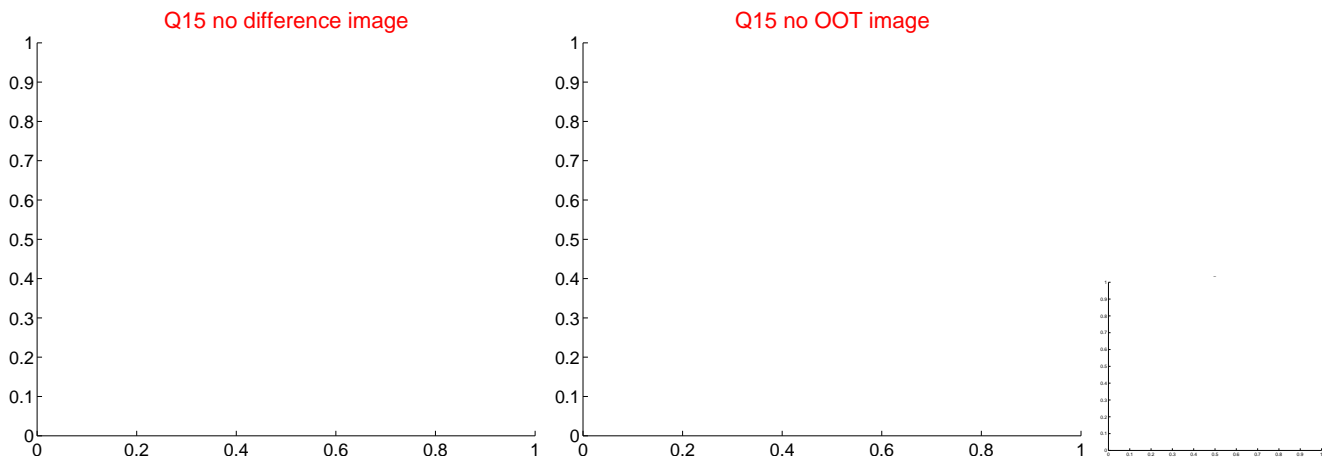
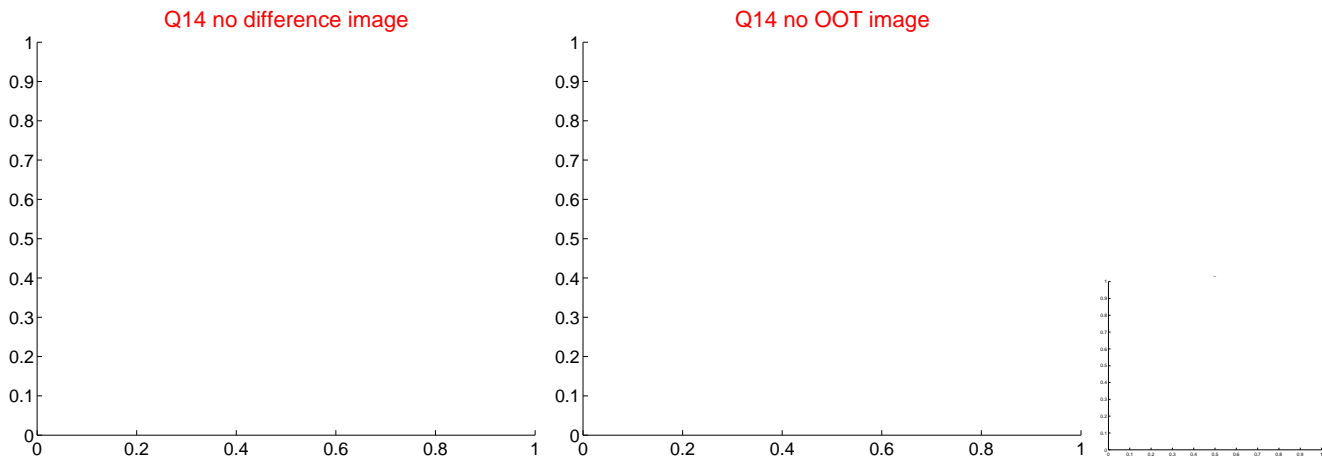
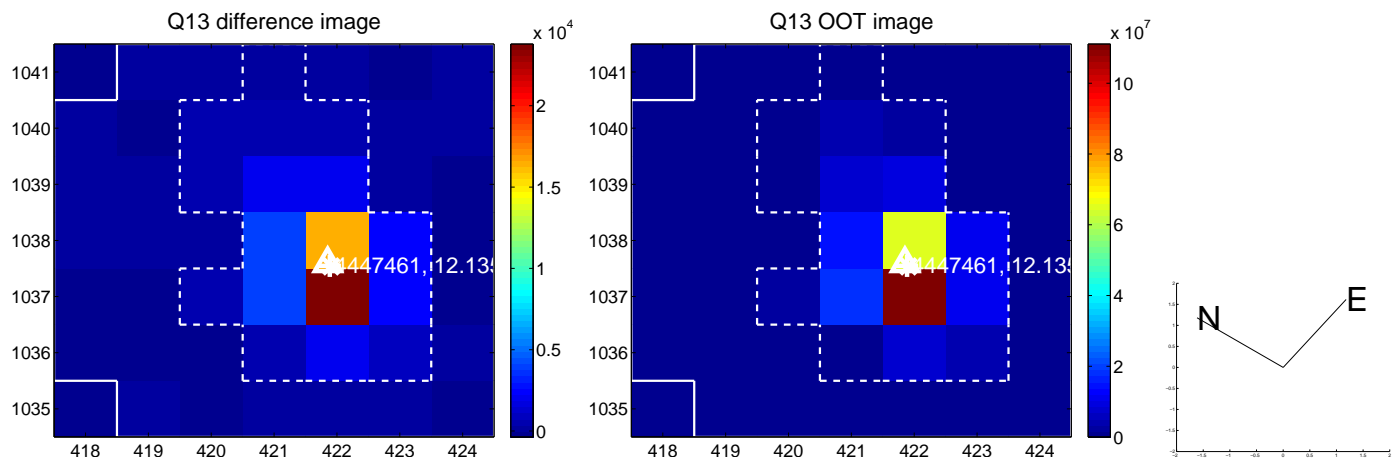
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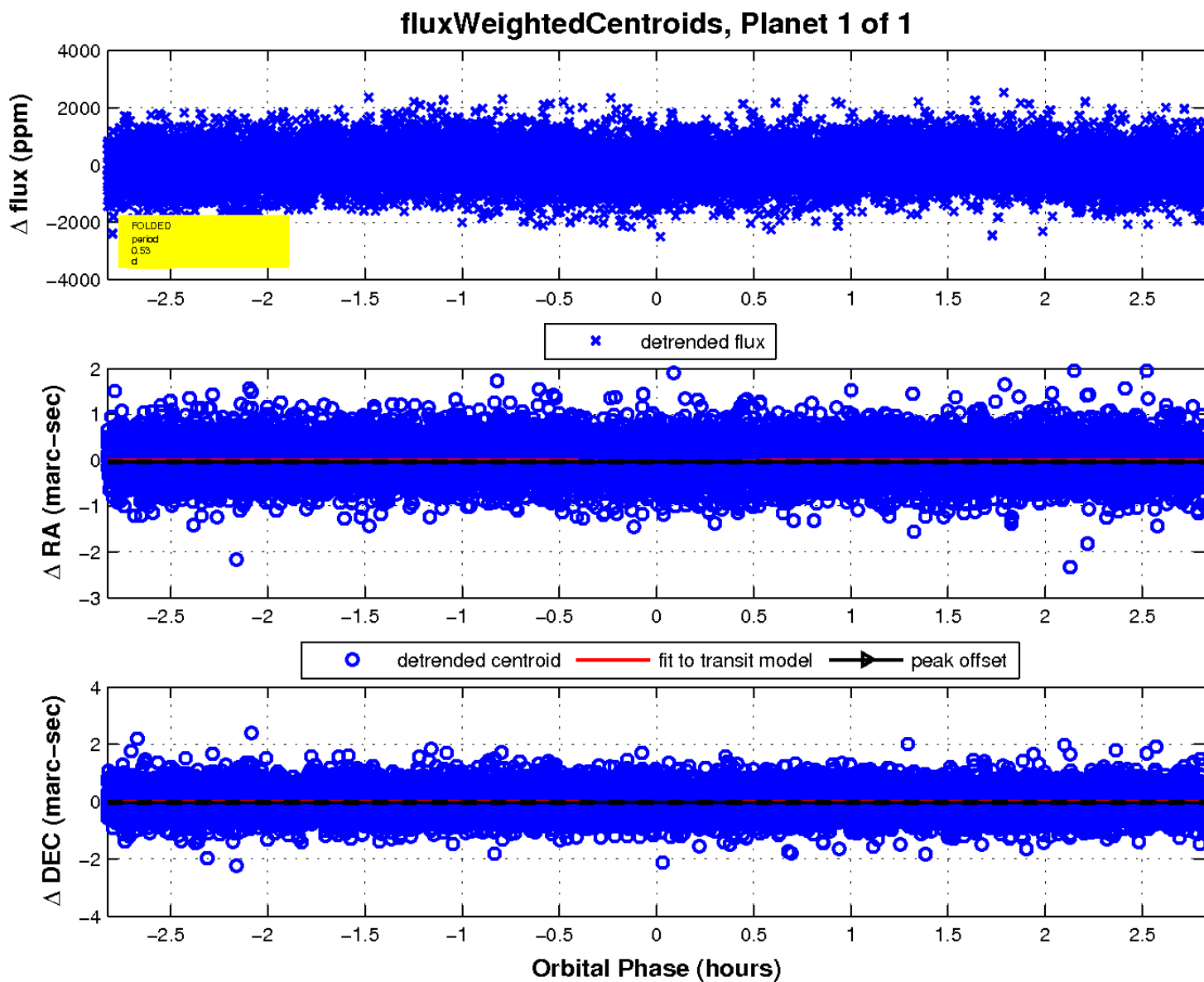
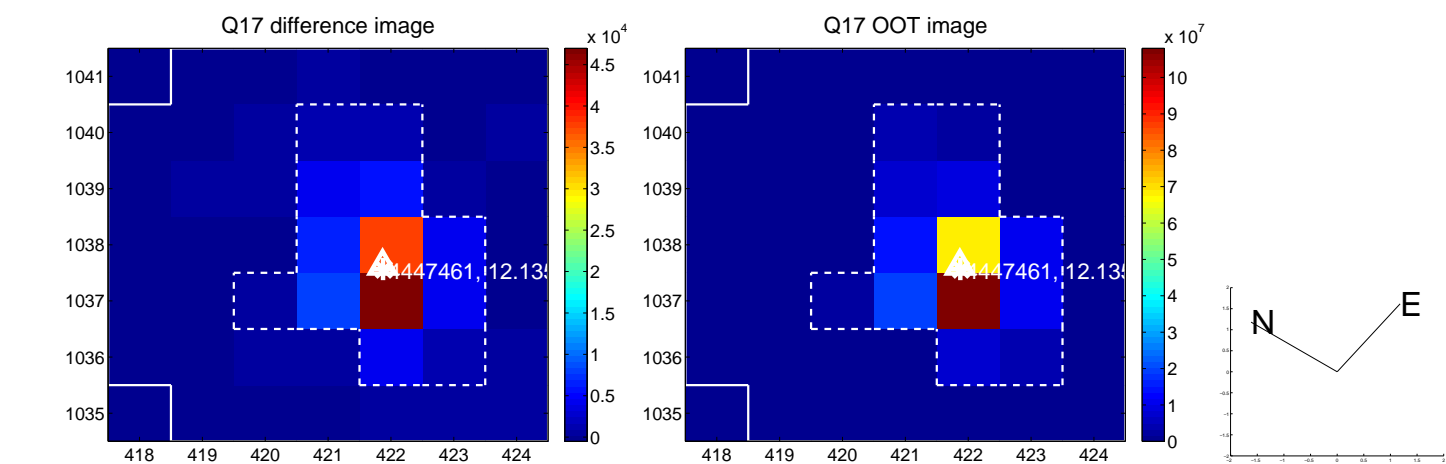


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

