

# KIC 009899505

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
009899505-01	OBS	3064.01	1.332485	132.091428	92.7	2.969	14.6	9.6	0.97	6091	1.10	1990.90

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009899505-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH

**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 009899505-01

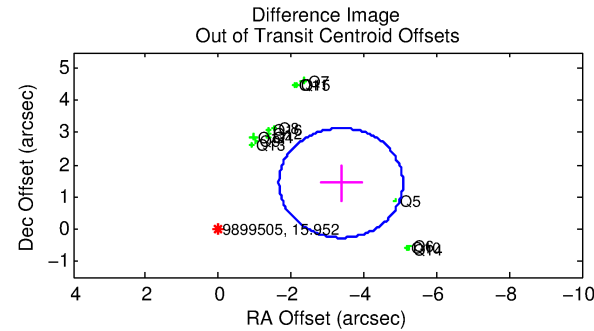
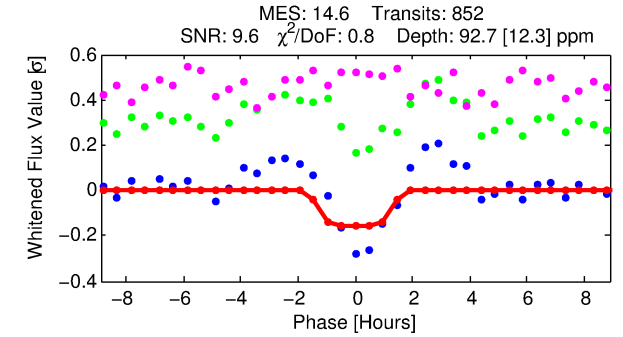
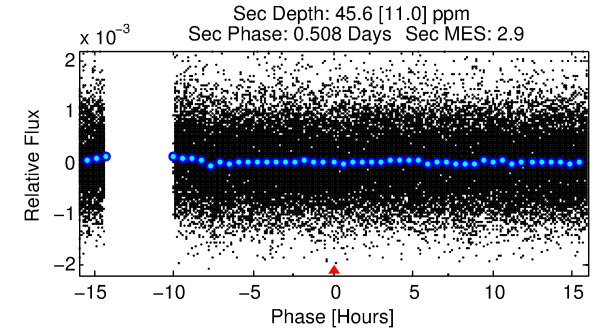
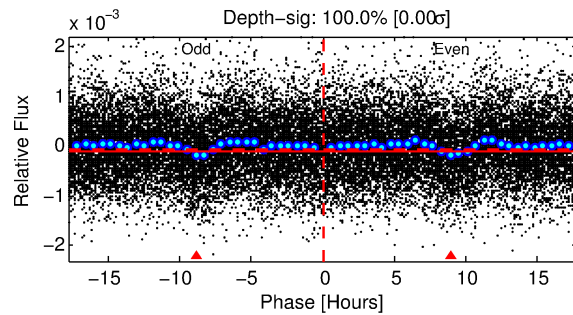
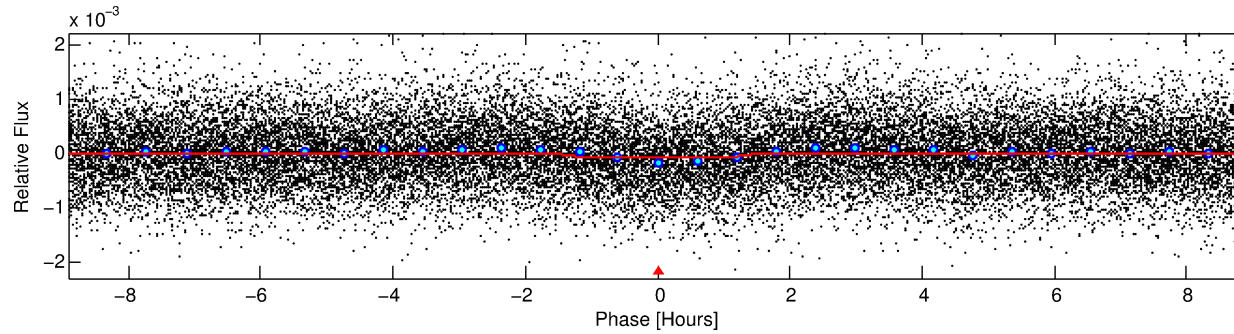
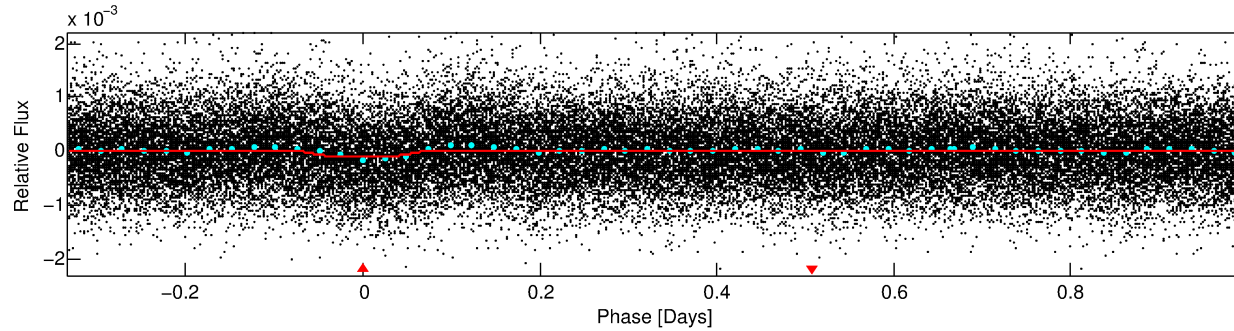
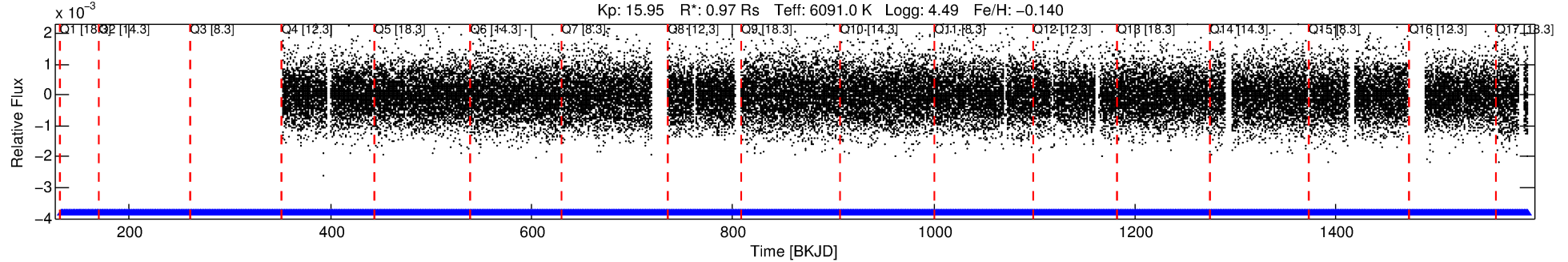
TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	ΔRow	ΔCol	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	σ <sub>P</sub>	σ <sub>T</sub>
009899505-01	9899505	BR-Cyg-pri	9899416	1:1	85.2	-17	13	10.03	15.95	7192.10	Direct-PRF	0	4.92	2.99

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 9899505 Candidate: 1 of 1 Period: 1.332 d  
KOI: K03064 Corr: No Ephemeris Match

Kp: 15.95 R\*: 0.97 Rs Teff: 6091.0 K Logg: 4.49 Fe/H: -0.140



## DV Fit Results:

Period = 1.33248 [0.00001] d  
Epoch = 132.0914 [0.0042] BKJD  
Rp/R\* = 0.0104 [0.0070]  
a/R\* = 1.83 [4.58]  
b = 0.90 [0.76]  
Seff = 1990.90 [815.87]  
Teq = 1703 [175] K  
Rp = 1.10 [0.81] Re  
a = 0.0241 [0.0063] AU  
Ag = 12.08 [17.10] [0.65σ]  
Teff = 4909 [1684] K [1.89σ]

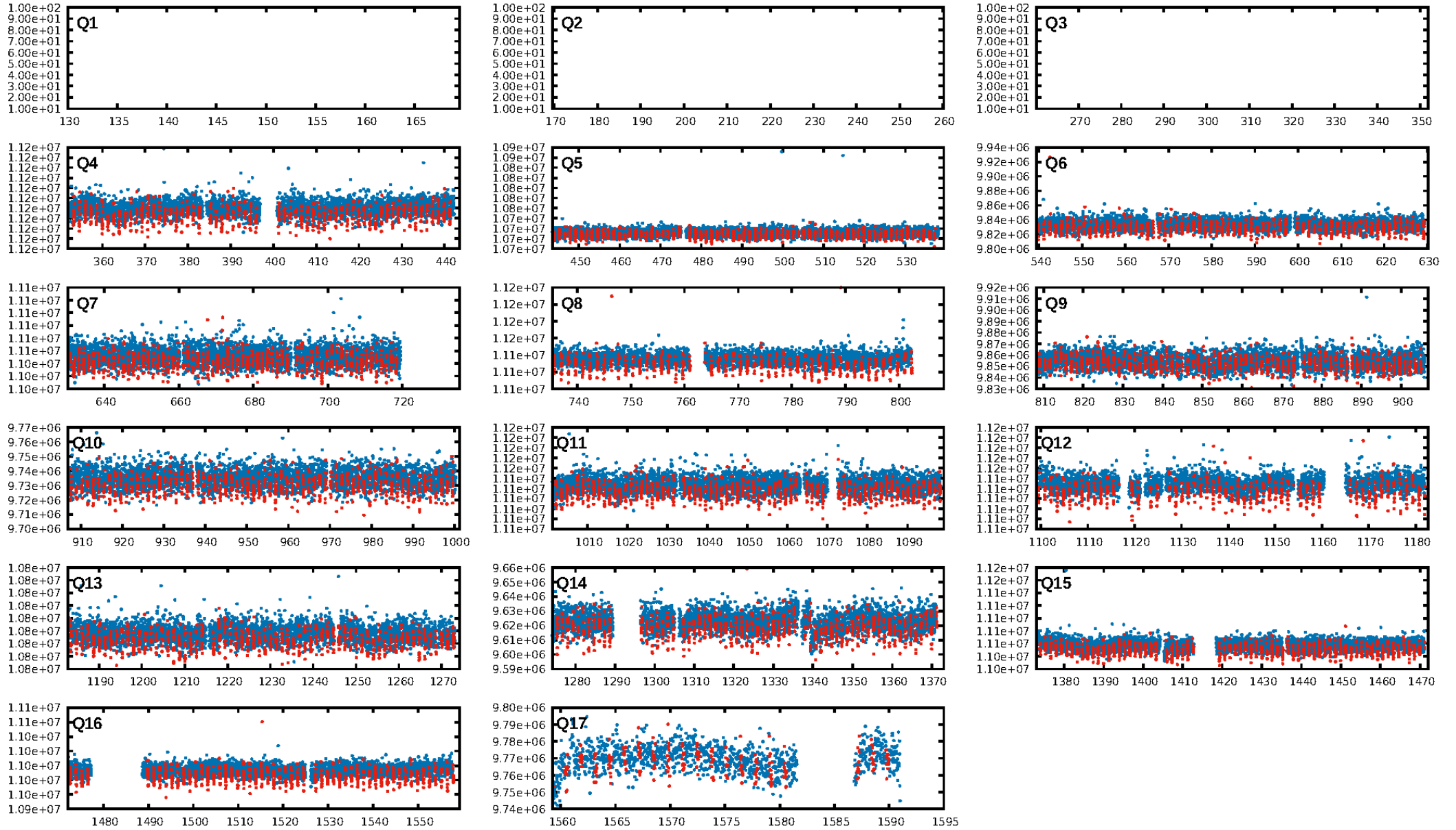
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.30e-46  
RollingBand-fgt: 1.00 [832/832]  
GhostDiagnostic-chr: 0.01362  
Centroid-sig: 0.0%  
Centroid-so: 11.021 arcsec [8.77σ]  
OotOffset-rm: 3.658 arcsec [6.43σ]  
KicOffset-rm: 3.367 arcsec [5.98σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 0.00 [0/14]  
DiffImageOverlap-fno: 1.00 [14/14]

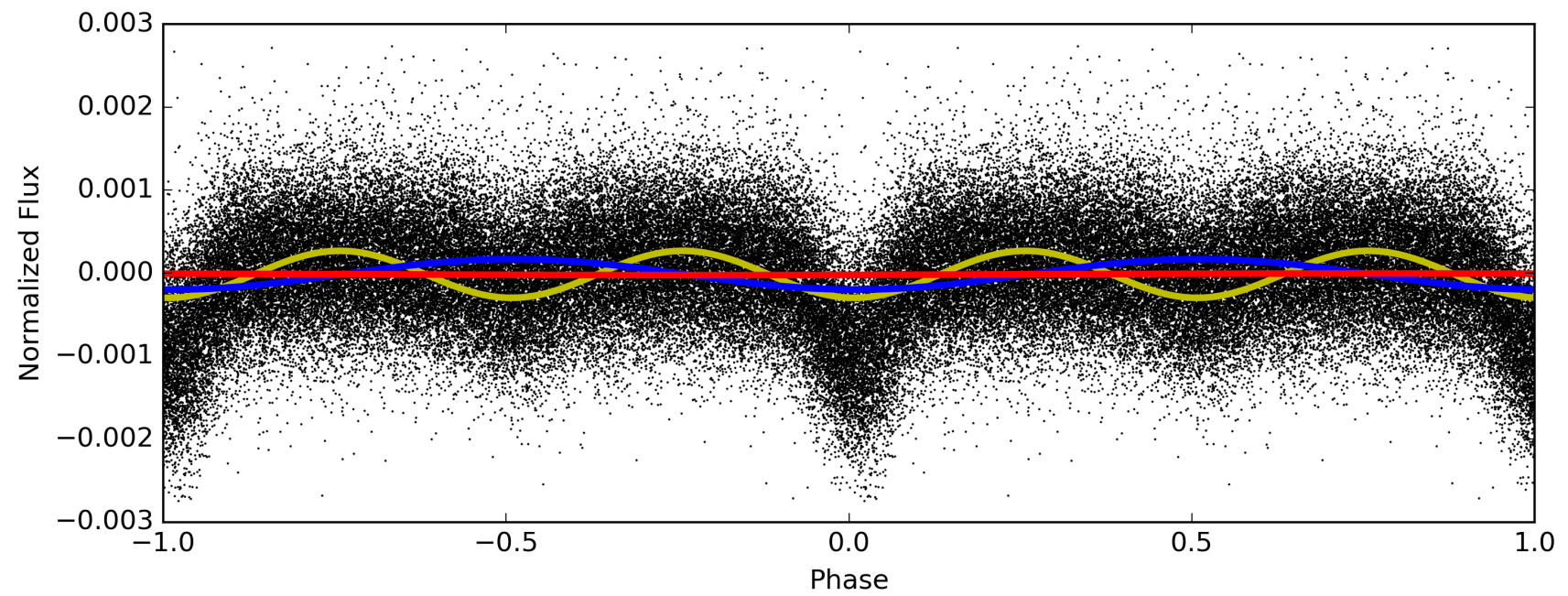
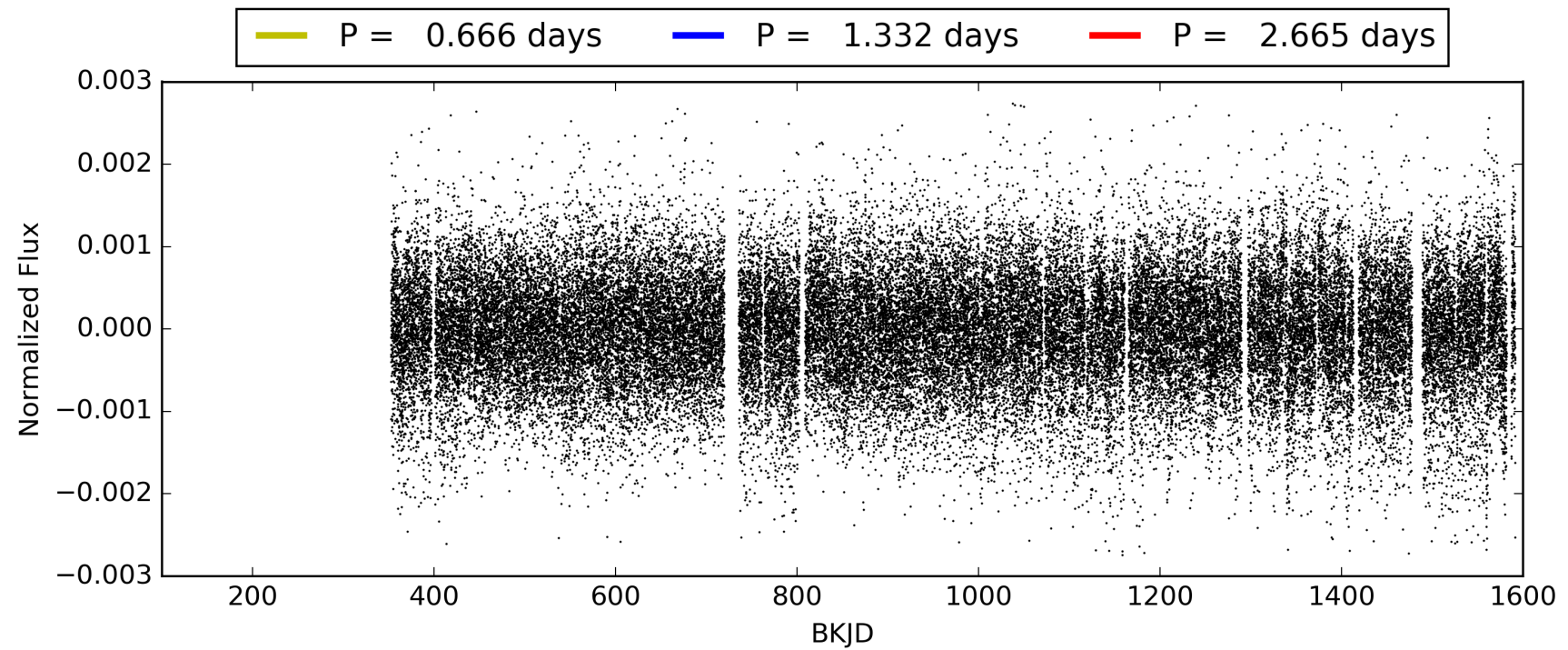
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:51:52 Z

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

# TCE 009899505-01, PDC Light Curves



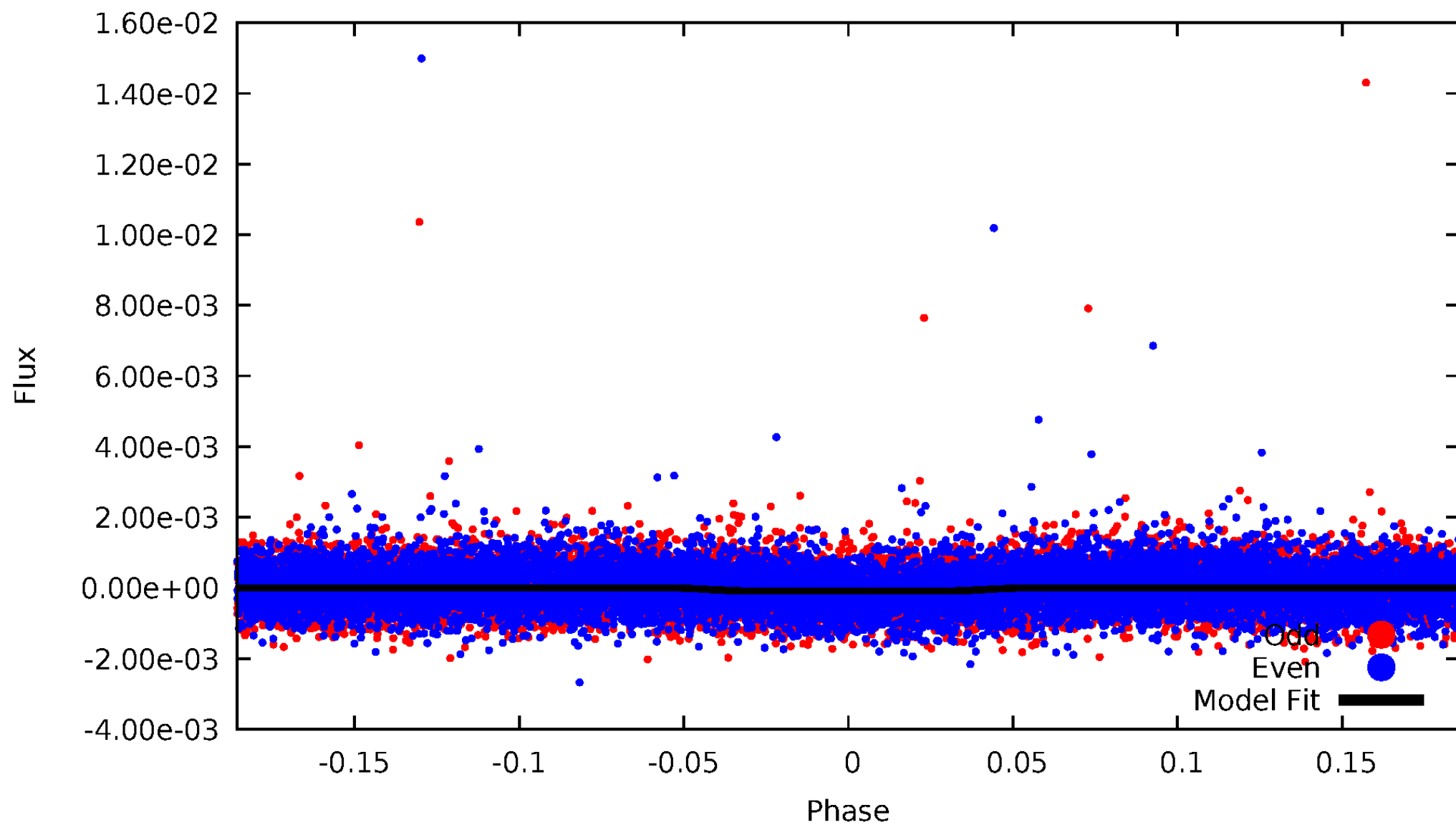
TCE 009899505-01





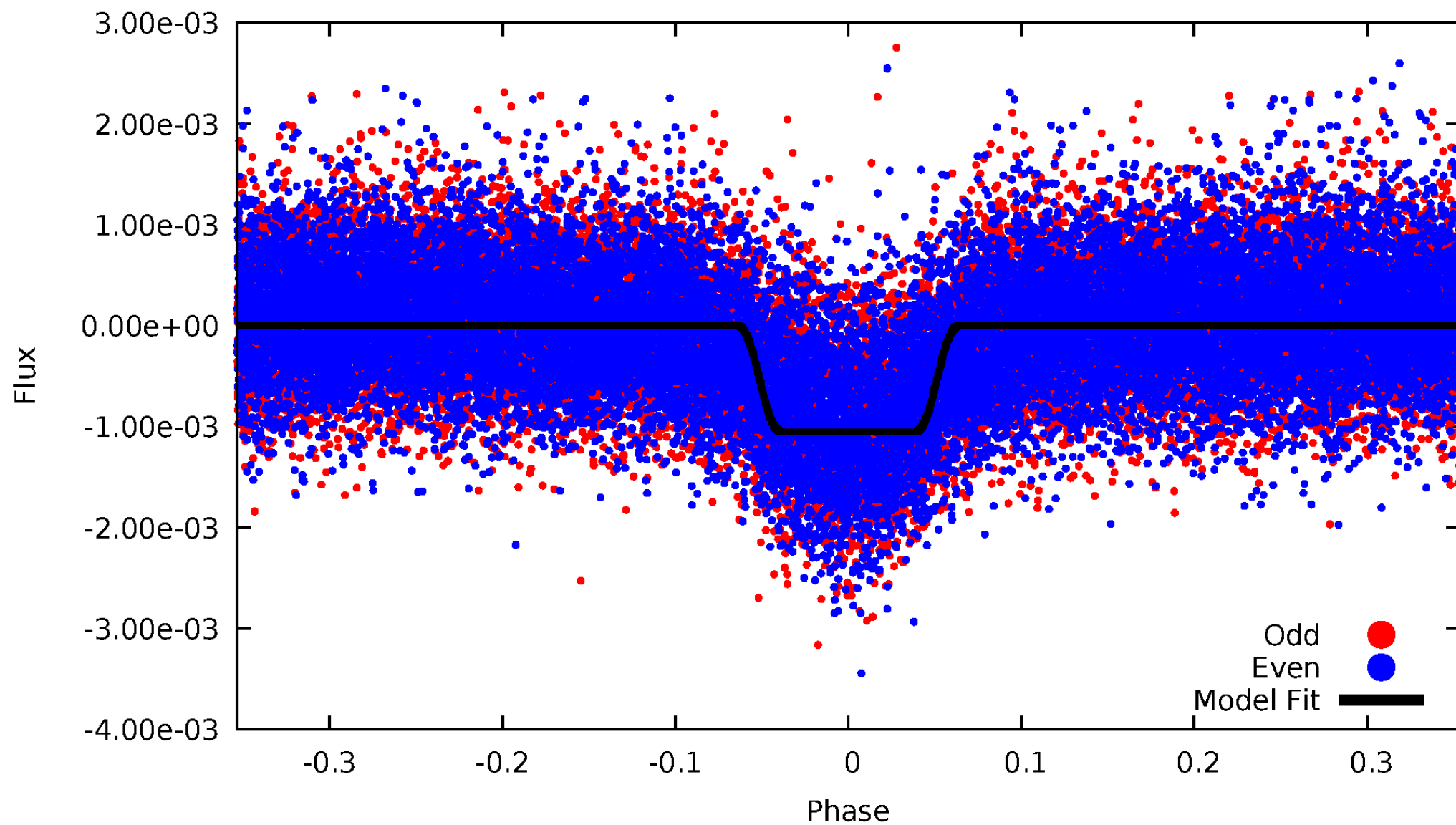
# DV Odd/Even

TCE 009899505-01



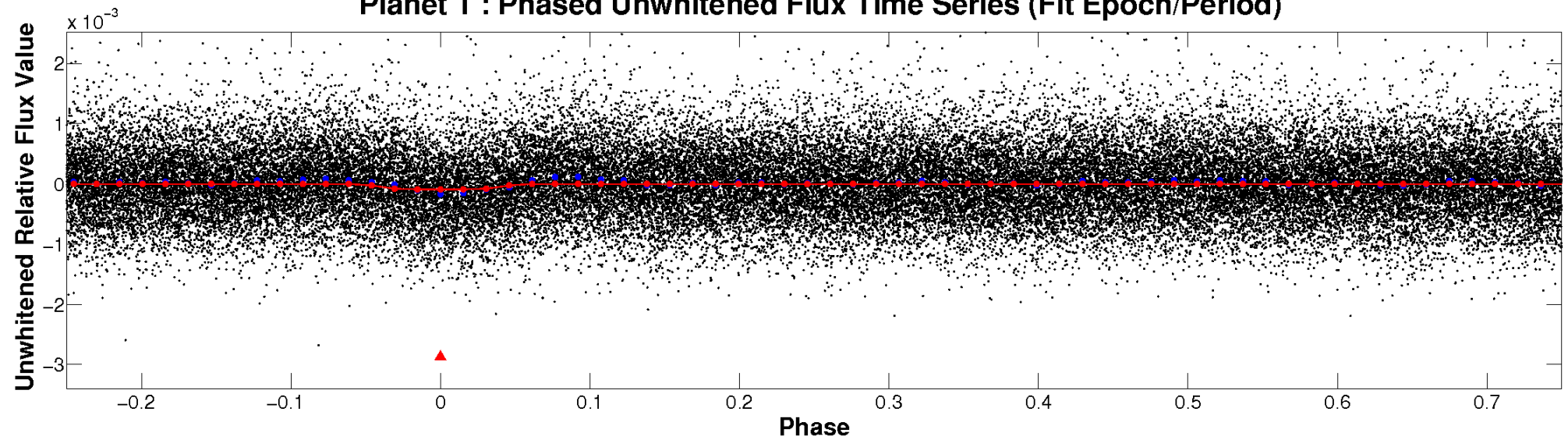
# ALT Odd/Even

TCE 009899505-01

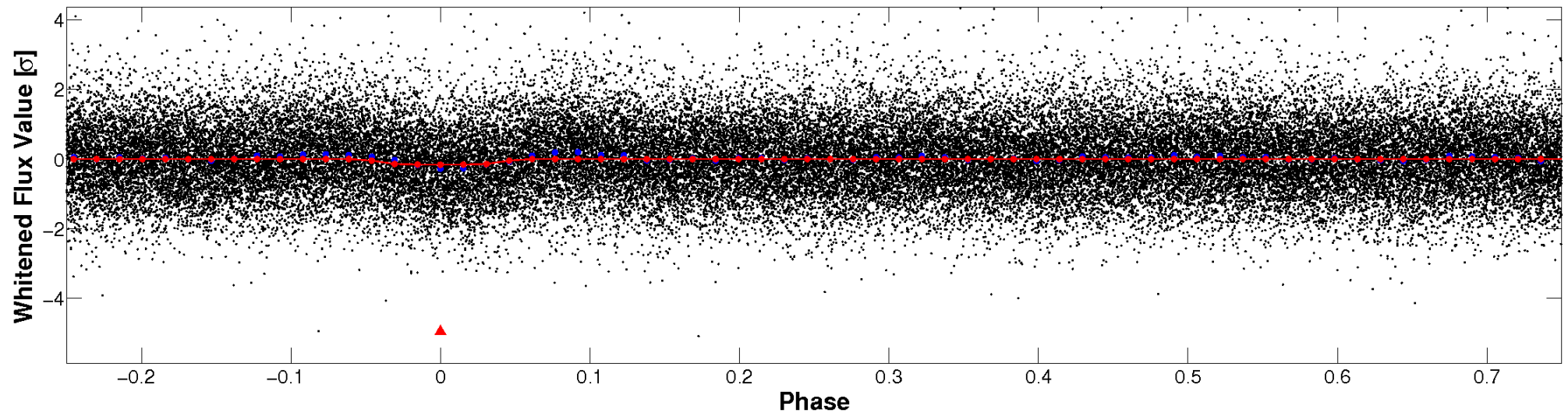


# Non-Whitened Vs. Whitened Light Curve

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

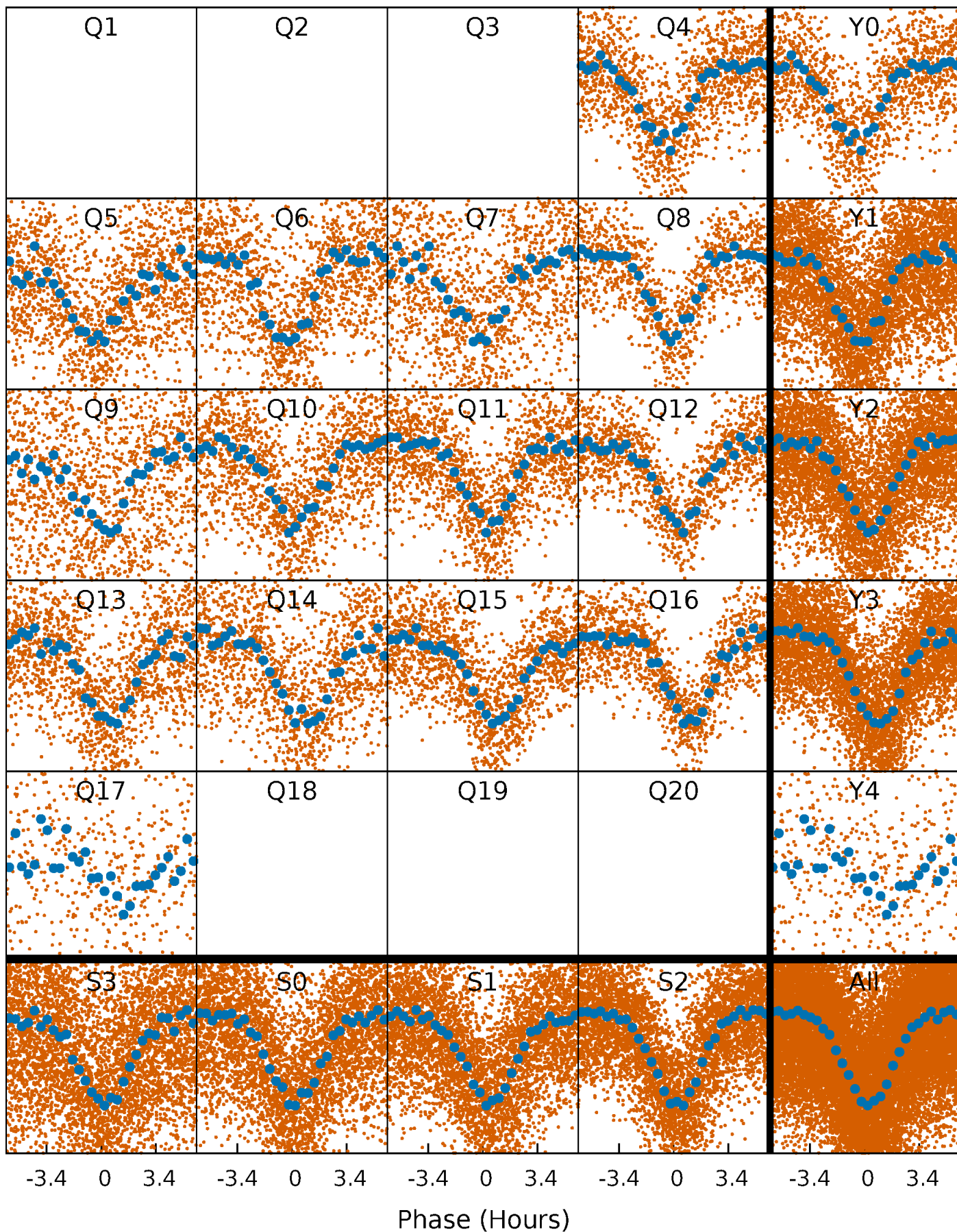


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

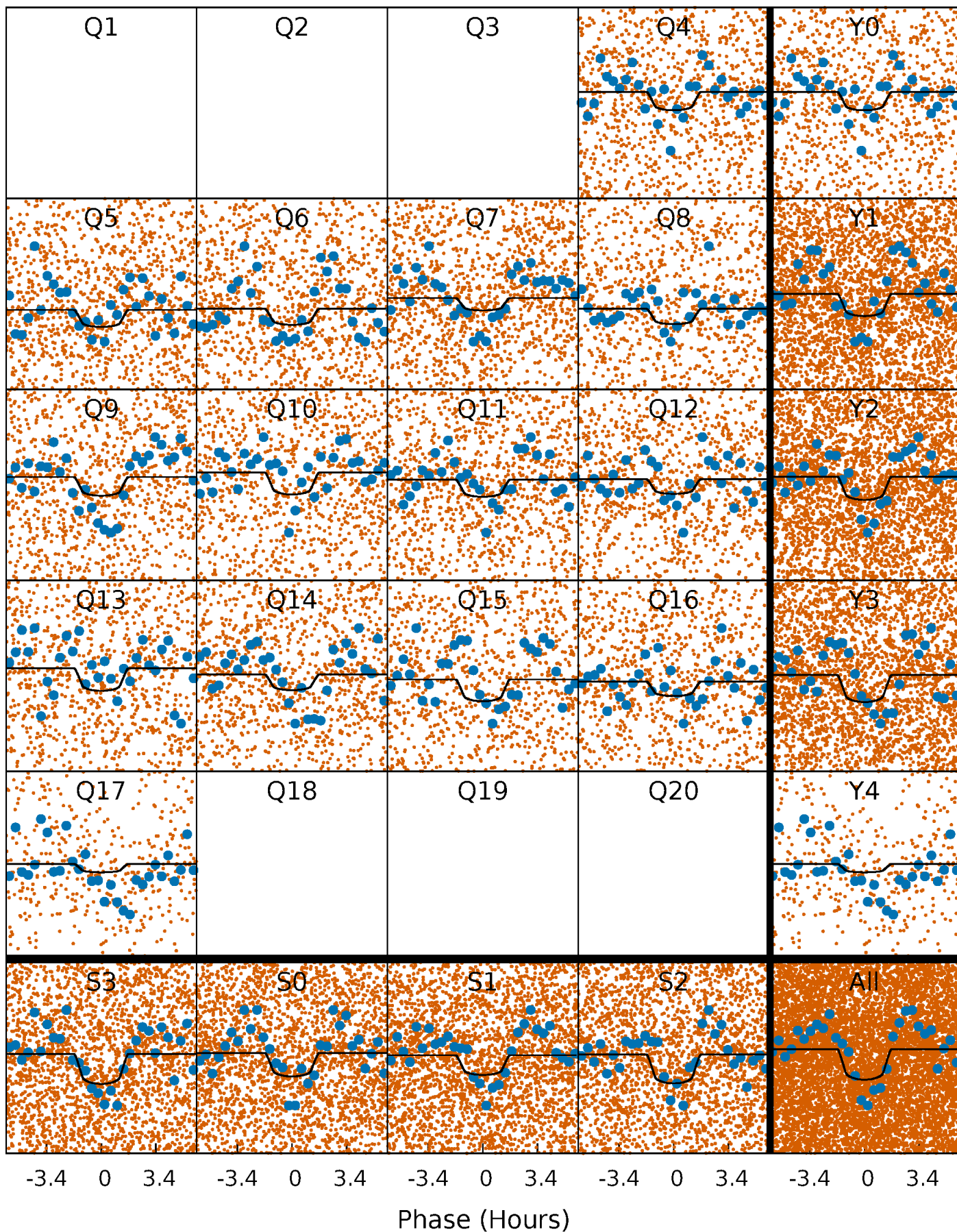
TCE 009899505-01 P= 1.332485 Days  $T_0=132.091428$  (BKJD)





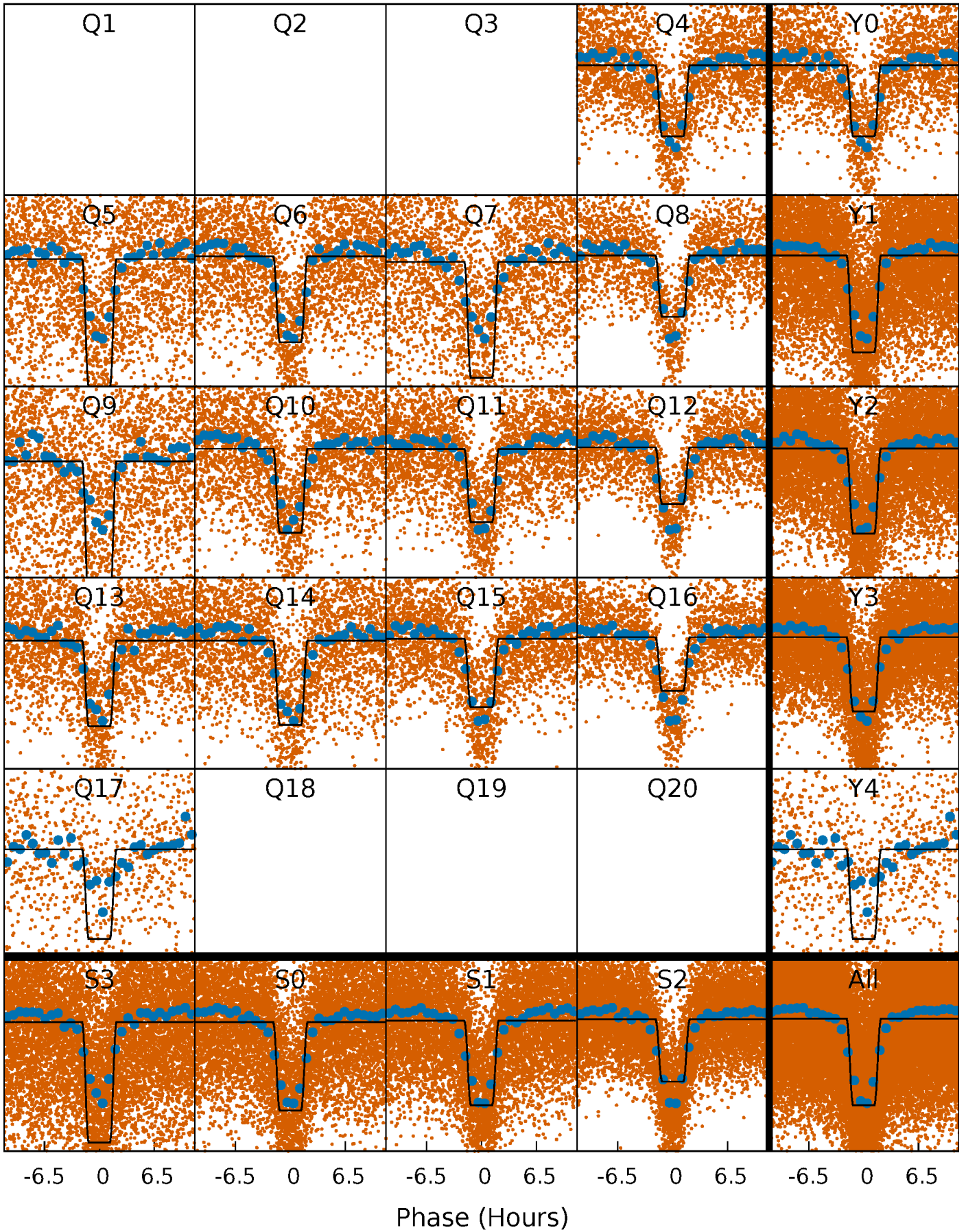
# DV Quarter-Phased Transit Curves

TCE 009899505-01 P= 1.332485 Days  $T_0=132.091428$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

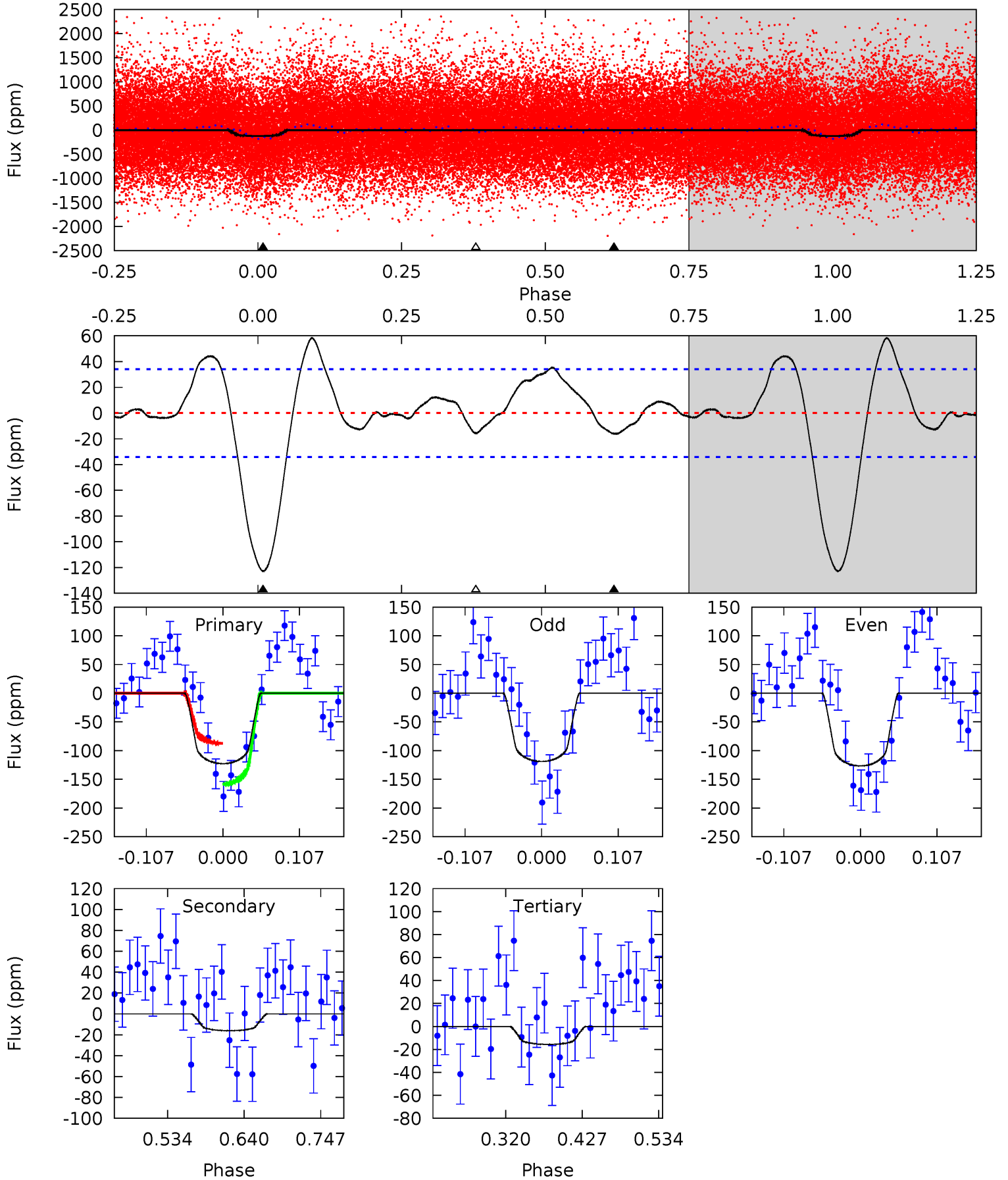
TCE 009899505-01   P= 1.332562 Days    $T_0=132.052065$  (BKJD)



# DV Model-Shift Uniqueness Test

009899505-01, P = 1.332485 Days, E = 132.091428 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
16.4	2.15	2.09	0	4.55	1.61	1.71	14.3	16.4	0.06	2.15	0.51	0.94	0.32	4.77

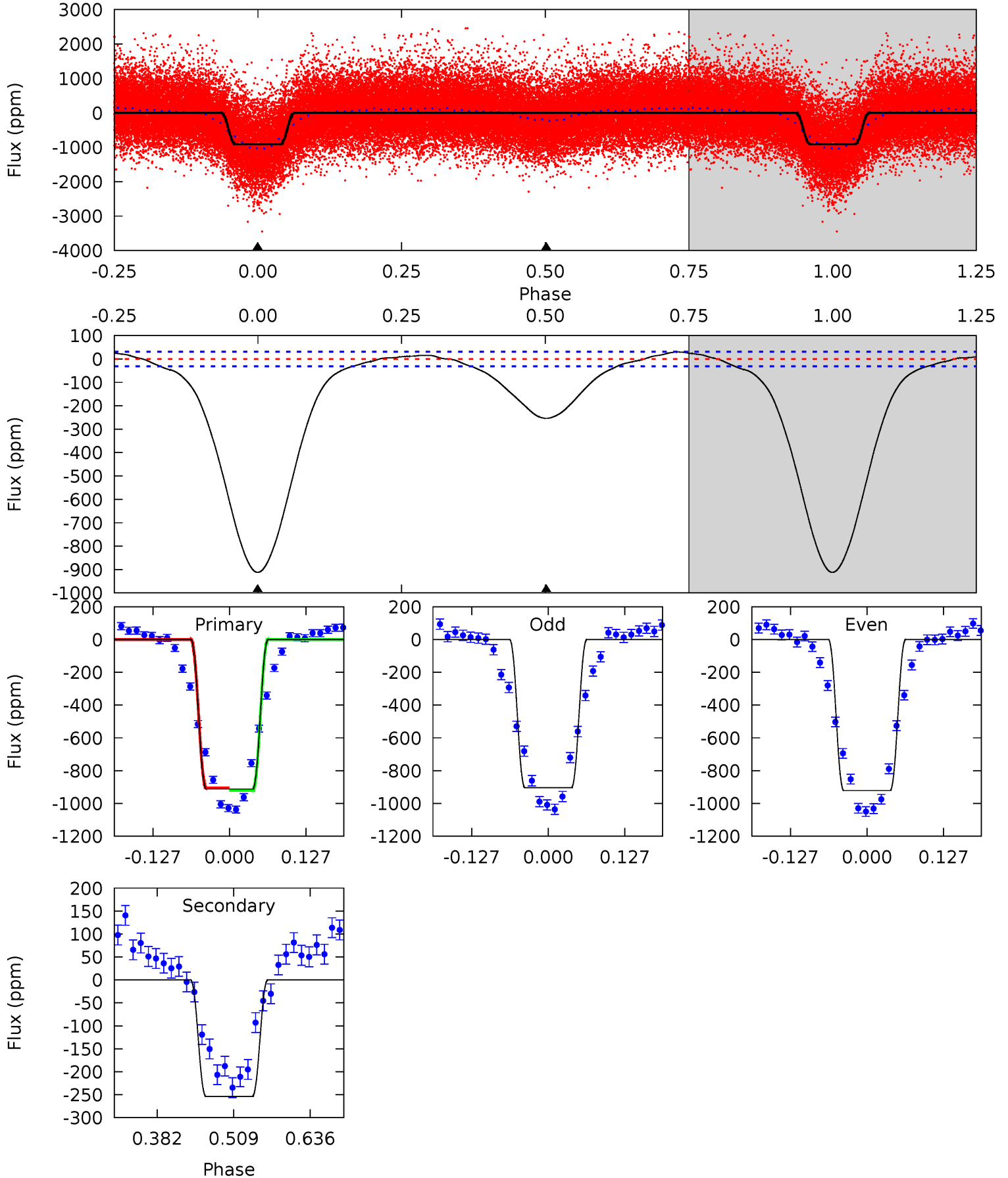




# Alt Model-Shift Uniqueness Test

009899505-01, P = 1.332562 Days, E = 132.052065 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
132.0	36.7	0	0	4.51	1.52	3.70	132.0	132.0	36.7	36.7	1.18	0.99	0.03	1.21





### Stellar Parameters For KIC 009899505

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6091^{+189}_{-232}$	$4.487^{+0.052}_{-0.208}$	$-0.140^{+0.300}_{-0.300}$	$0.967^{+0.300}_{-0.100}$	$1.045^{+0.139}_{-0.139}$	$1.627^{+0.455}_{-0.849}$
	+3%/-4%	+1%/-5%	+214%/-214%	+31%/-10%	+13%/-13%	+28%/-52%
Source	KIC0	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 009899505-01 / KOI 3064.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-16 \pm 8$	$1.24^{+0.74}_{-0.65}$	$2429^{+177}_{-122}$	$3808^{+1479}_{-744}$	$2.860^{+10.597}_{-1.866}$
Alt.	$-254 \pm 7$	$3.64^{+0.89}_{-0.80}$	$2438^{+169}_{-123}$	$4384^{+467}_{-329}$	$5.955^{+3.981}_{-2.071}$

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

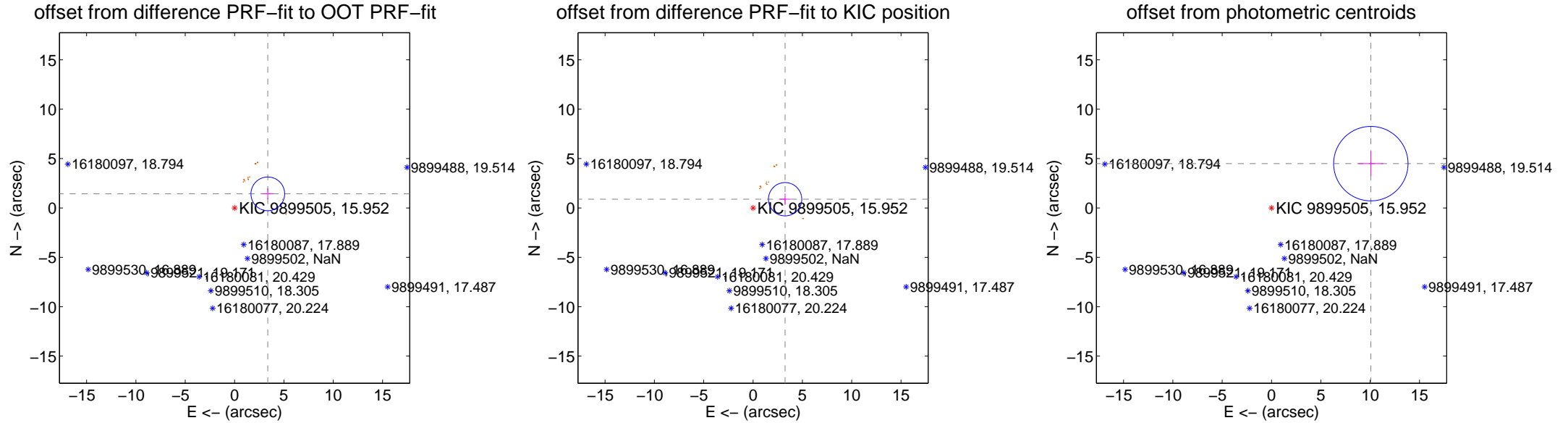
## DV Centroid Data

Supplemental centroid analysis for 009899505-01. Kepler magnitude: 15.95. Transit SNR 9.62

There are 0 quarters with good PRF difference image offsets

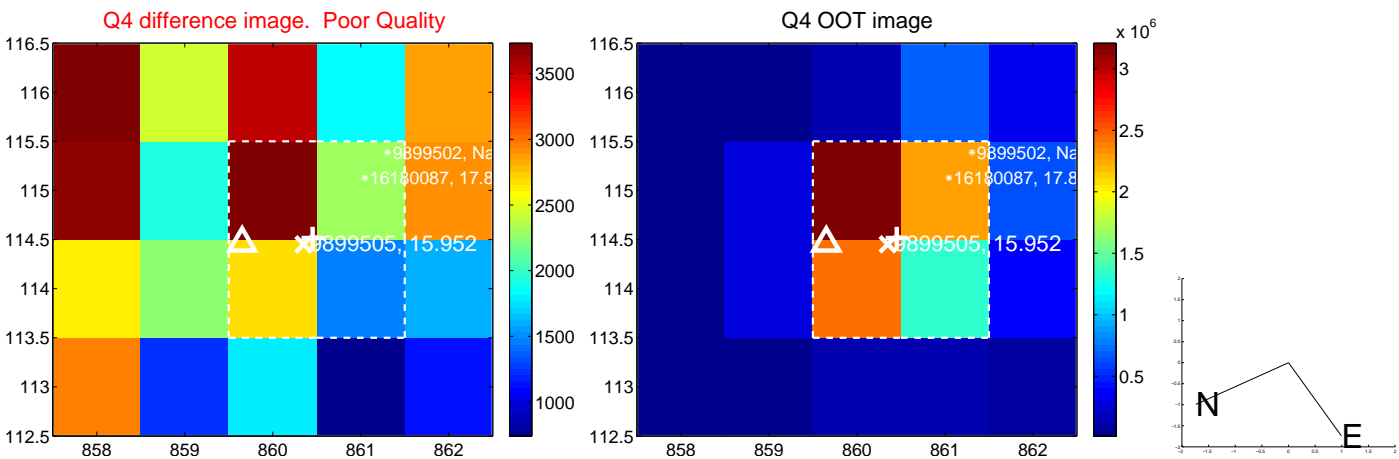
The direct PRF centroid is offset from the target star catalog position by about 0.71 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.658 \pm 0.569$	6.43	$-3.368 \pm 0.570$	$1.428 \pm 0.565$
PRF-fit source offset from KIC position	$3.367 \pm 0.563$	5.98	$-3.249 \pm 0.562$	$0.884 \pm 0.566$
photometric centroid source offset	$11.02 \pm 1.26$	8.77	$-10.07 \pm 1.26$	$4.49 \pm 1.25$

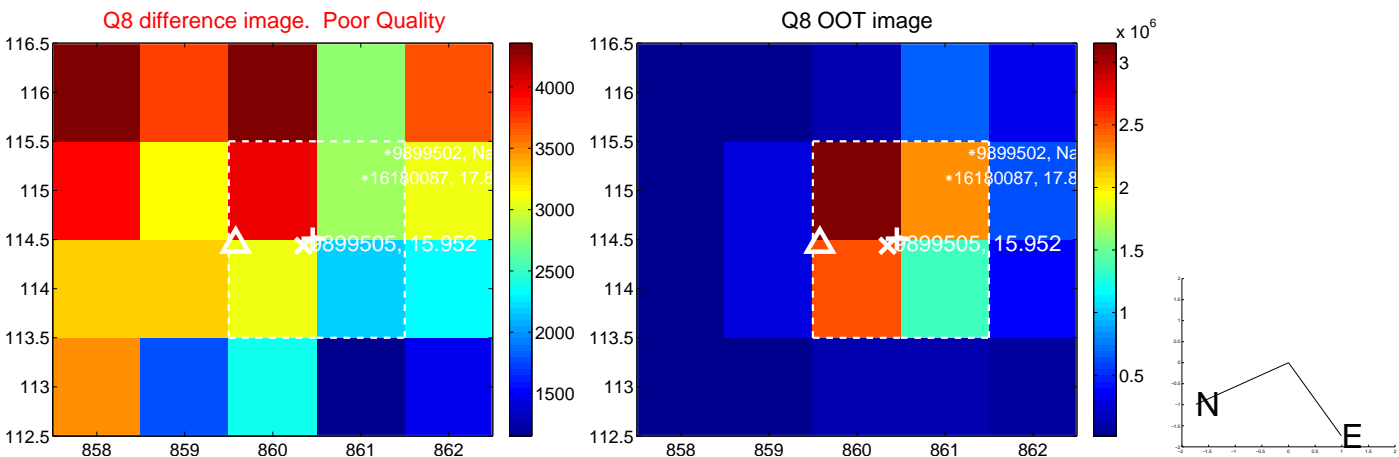
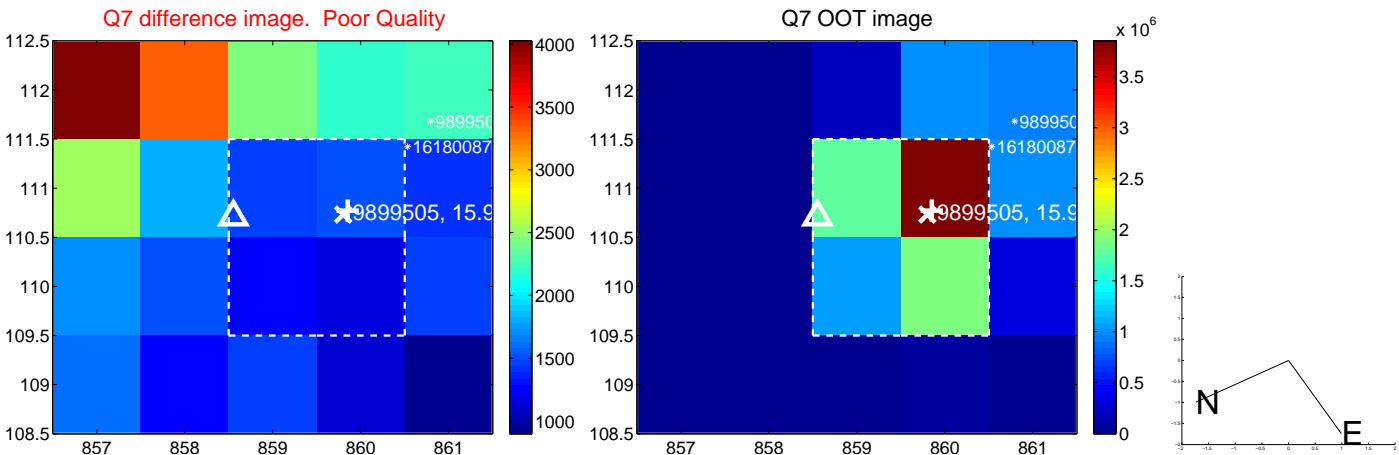
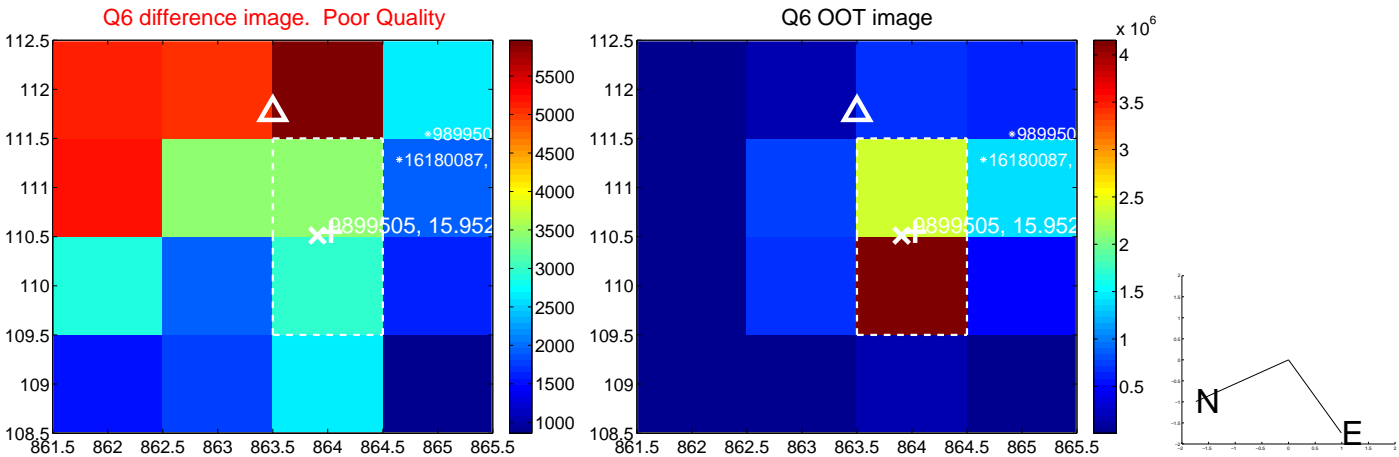
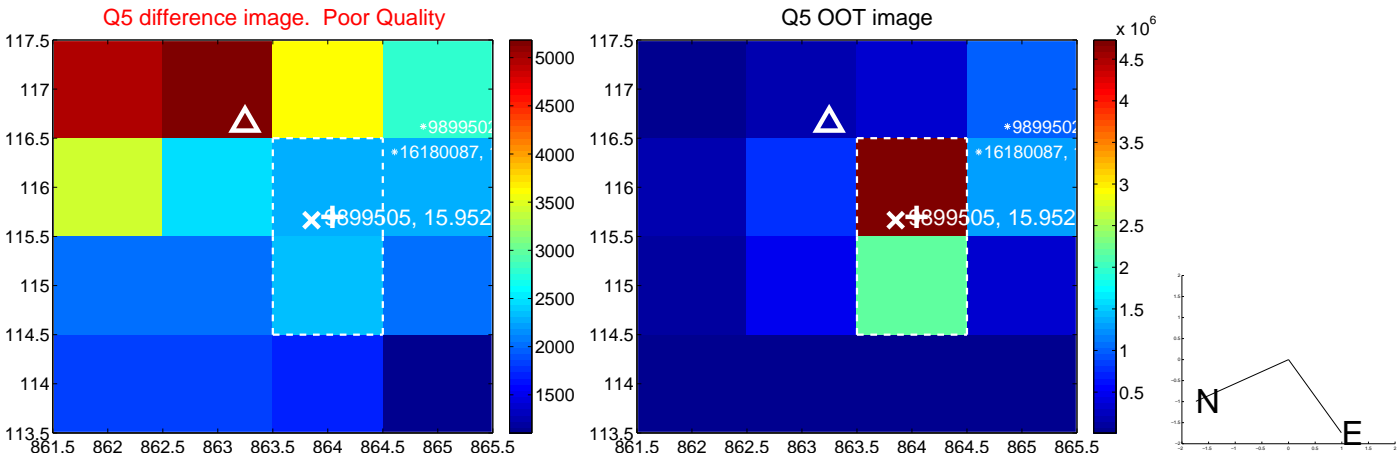


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

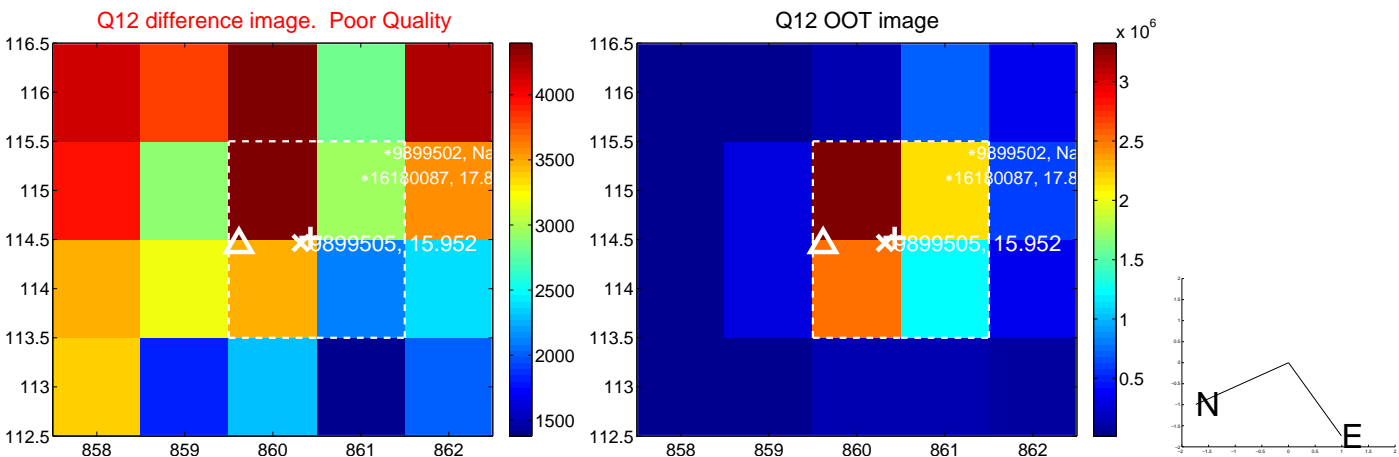
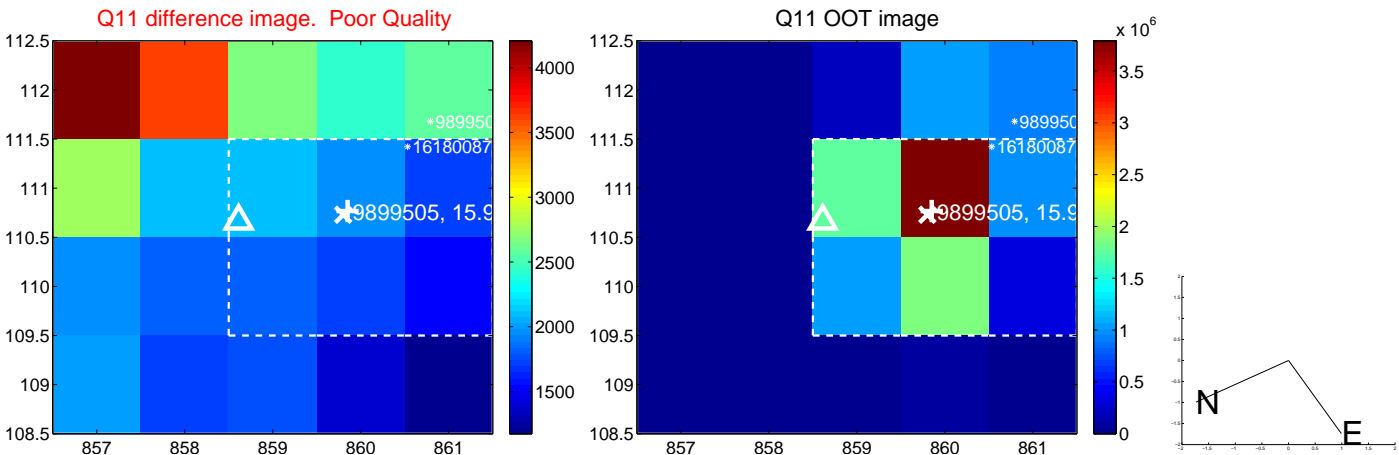
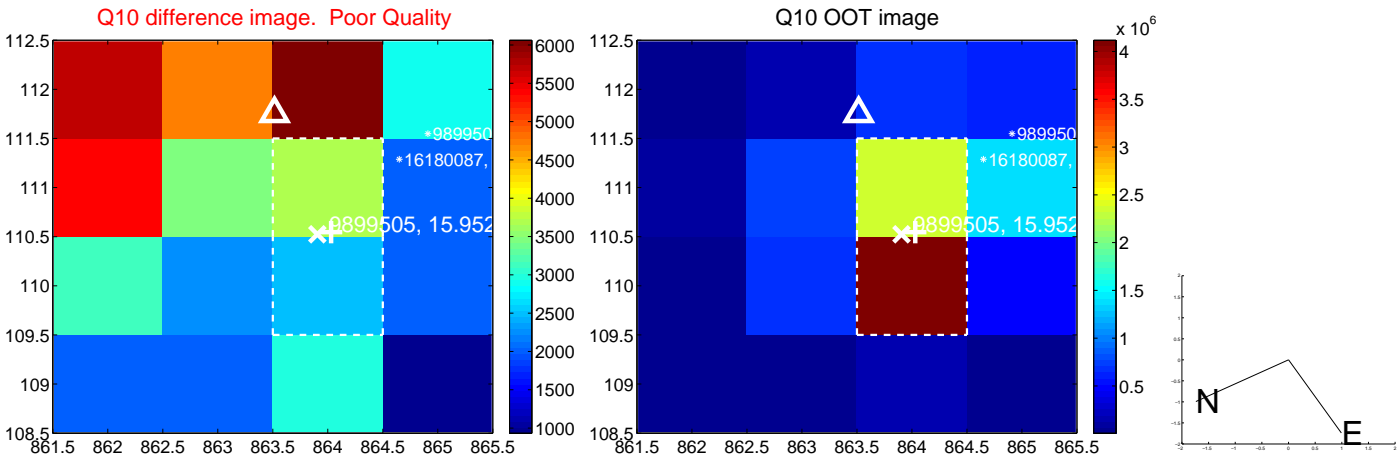
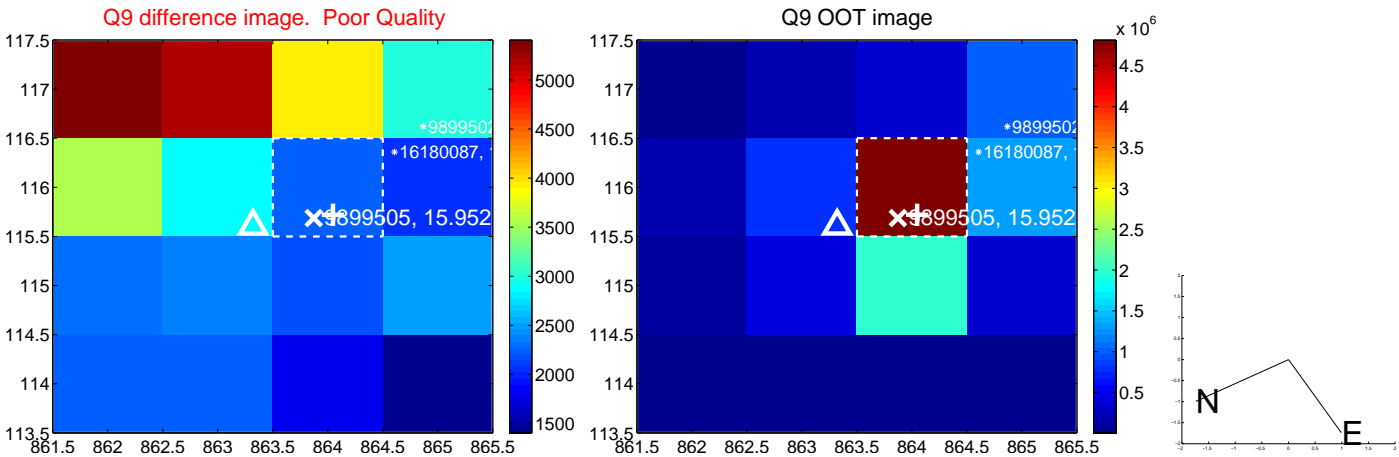


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

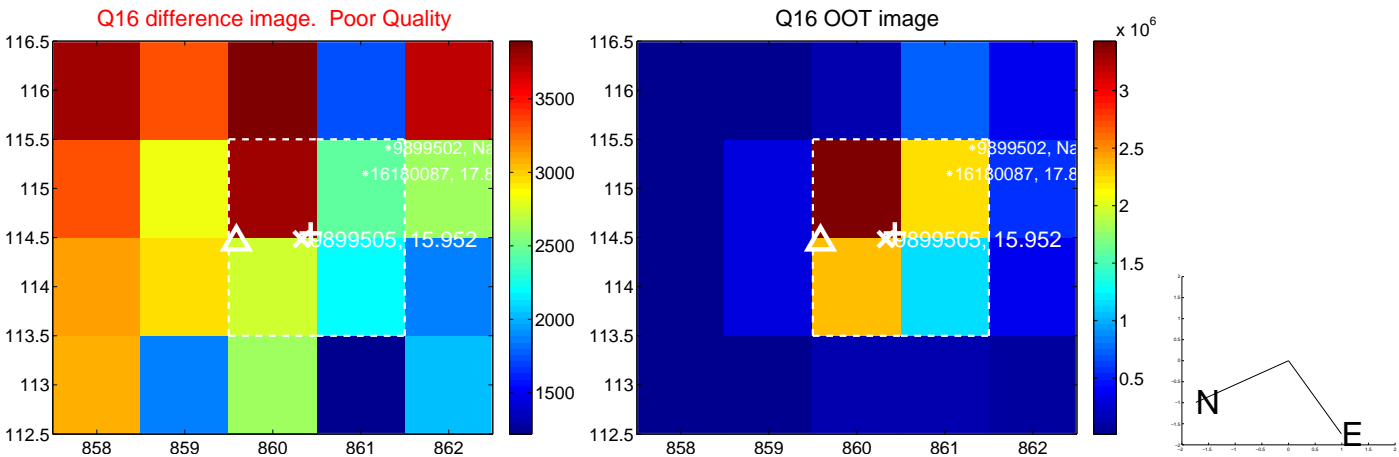
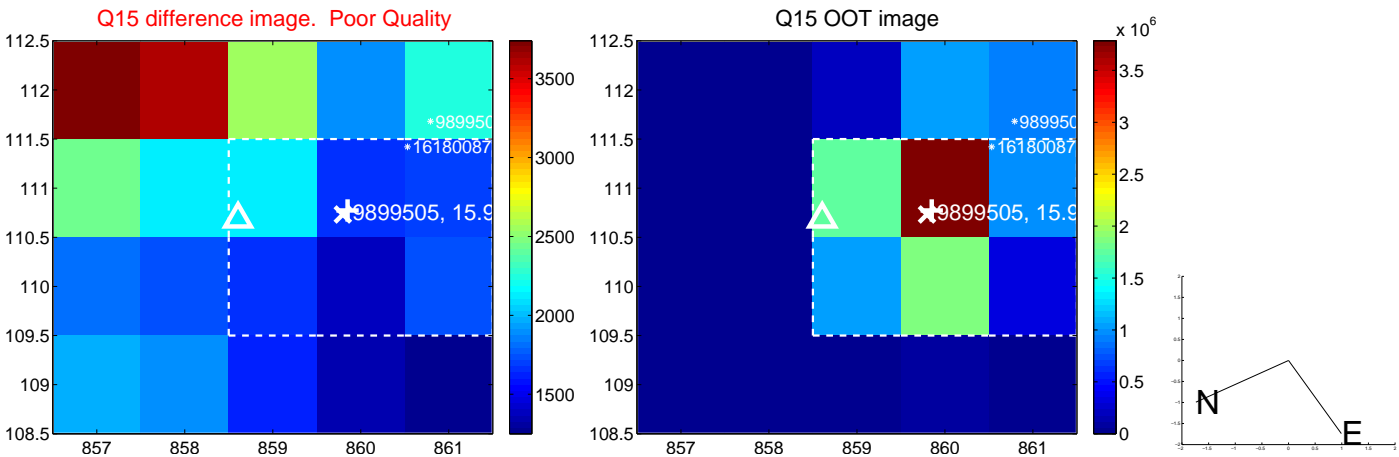
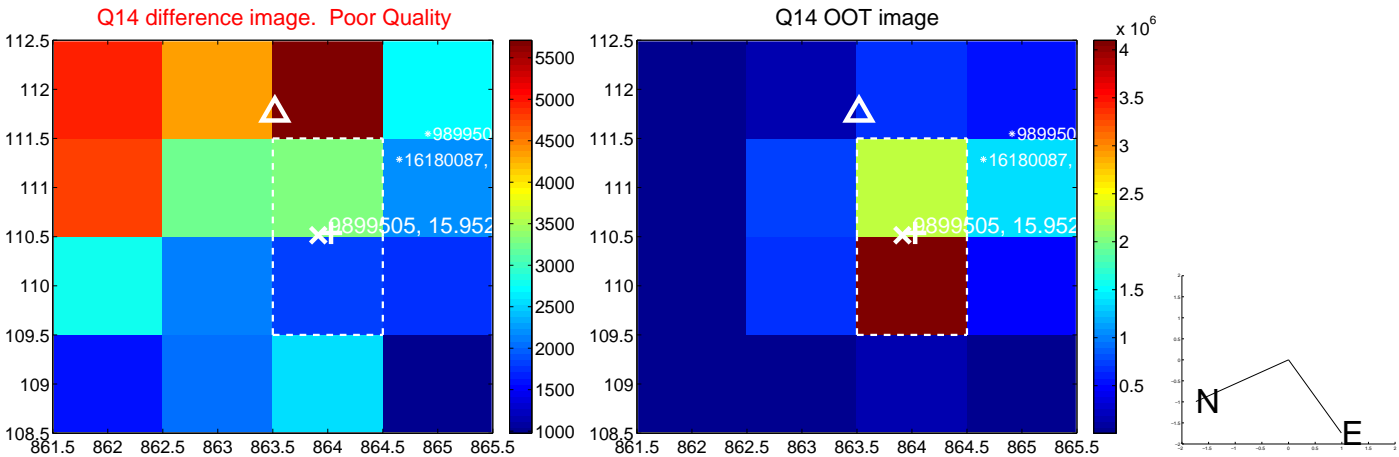
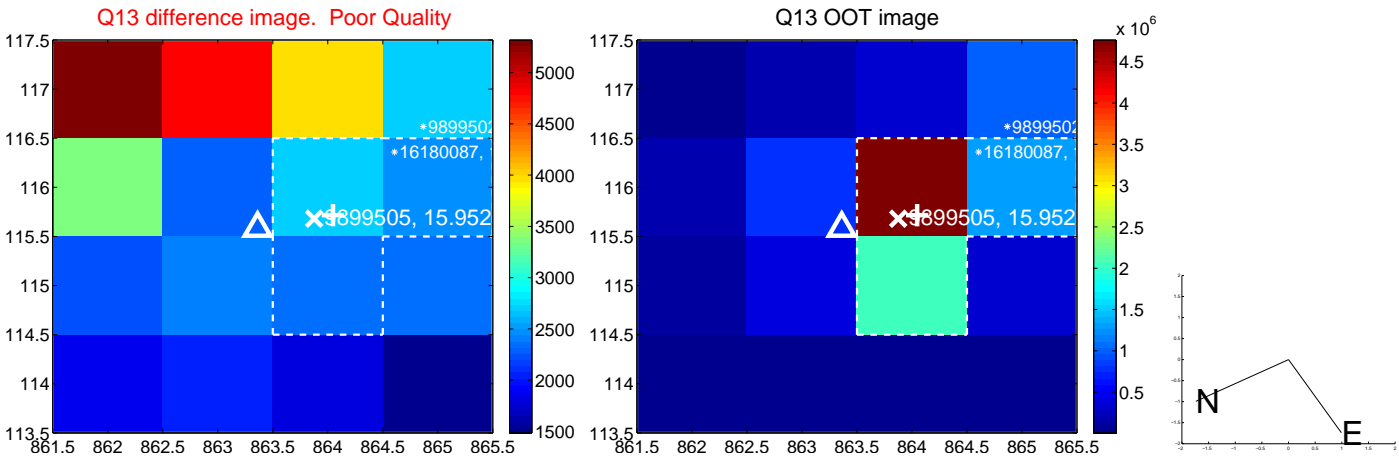




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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





UKIRT Image

Declination

