

# KIC 009456985

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009456985-01	OBS	No	1.336988	132.890222	0.0	4.938	9.8	0.0	1.70	7308	0.01	9672.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009456985-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_KIC_POS

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

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

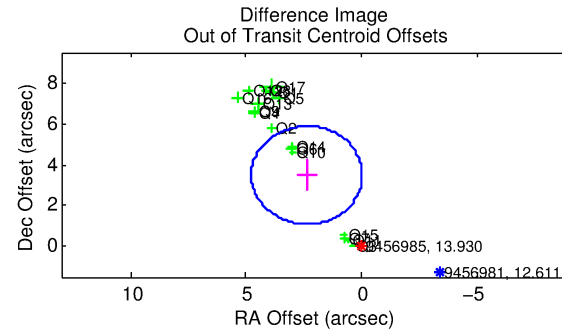
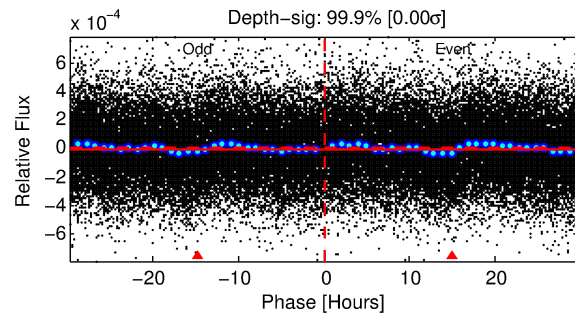
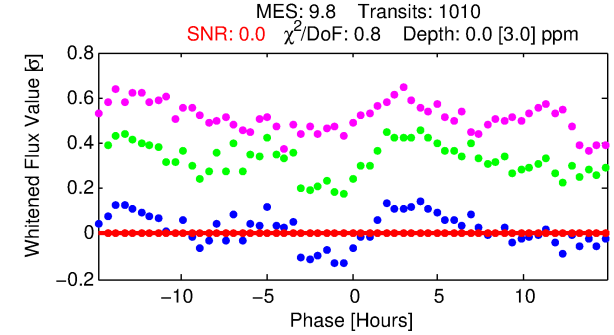
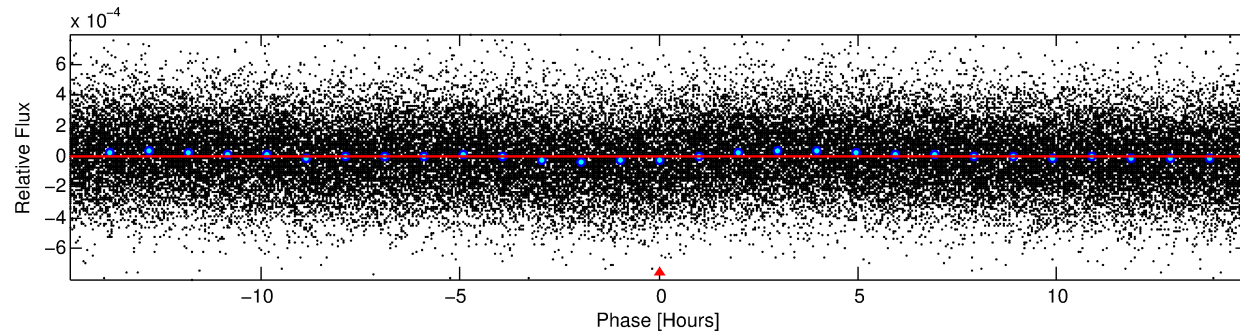
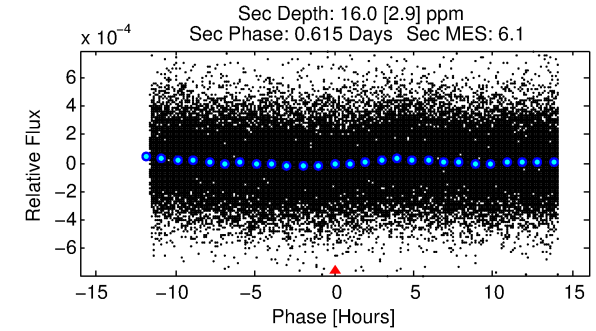
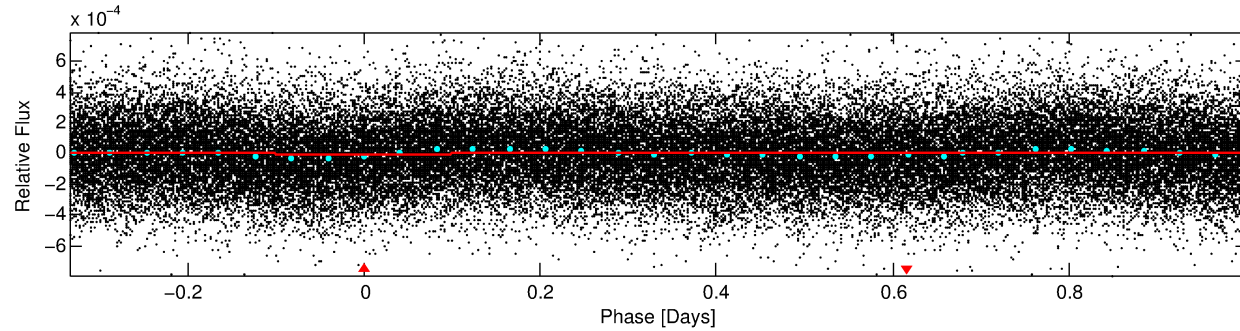
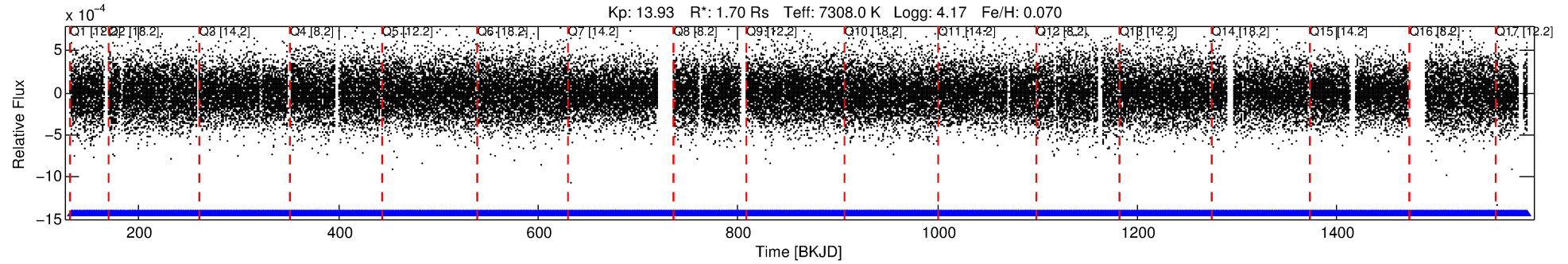
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009456985-01

No Significant Match Found

# DV One-Page Summary

KIC: 9456985 Candidate: 1 of 1 Period: 1.337 d



## DV Fit Results:

Period = 1.33699 [0.15001] d  
Epoch = 132.8902 [45.6476] BKJD  
Rp/R\* = 0.0001 [0.0293]  
a/R\* = 1.32 [86.69]  
b = 0.89 [54.66]  
Seff = 9672.78 [4264.59]  
Teq = 2529 [279] K  
Rp = 0.01 [5.44] Re  
a = 0.0276 [0.0078] AU  
Ag = 60247.44 [61973285.16] [0.00σ]  
Teffp = 61255 [15753208] K [0.00σ]

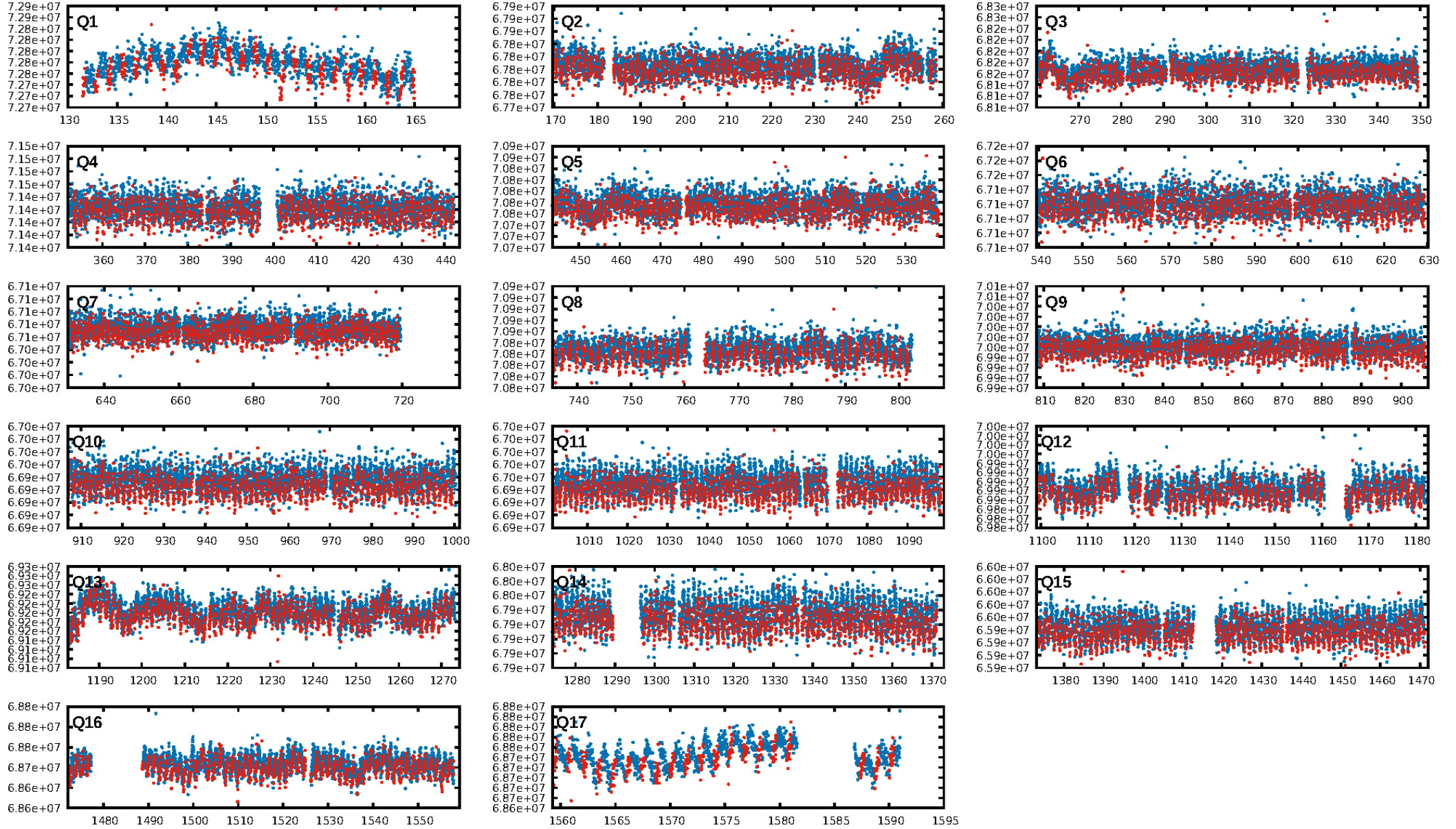
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.58e-19  
RollingBand-fgt: 1.00 [964/964]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 4.219 arcsec [5.27σ]  
KicOffset-rm: 0.341 arcsec [2.47σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

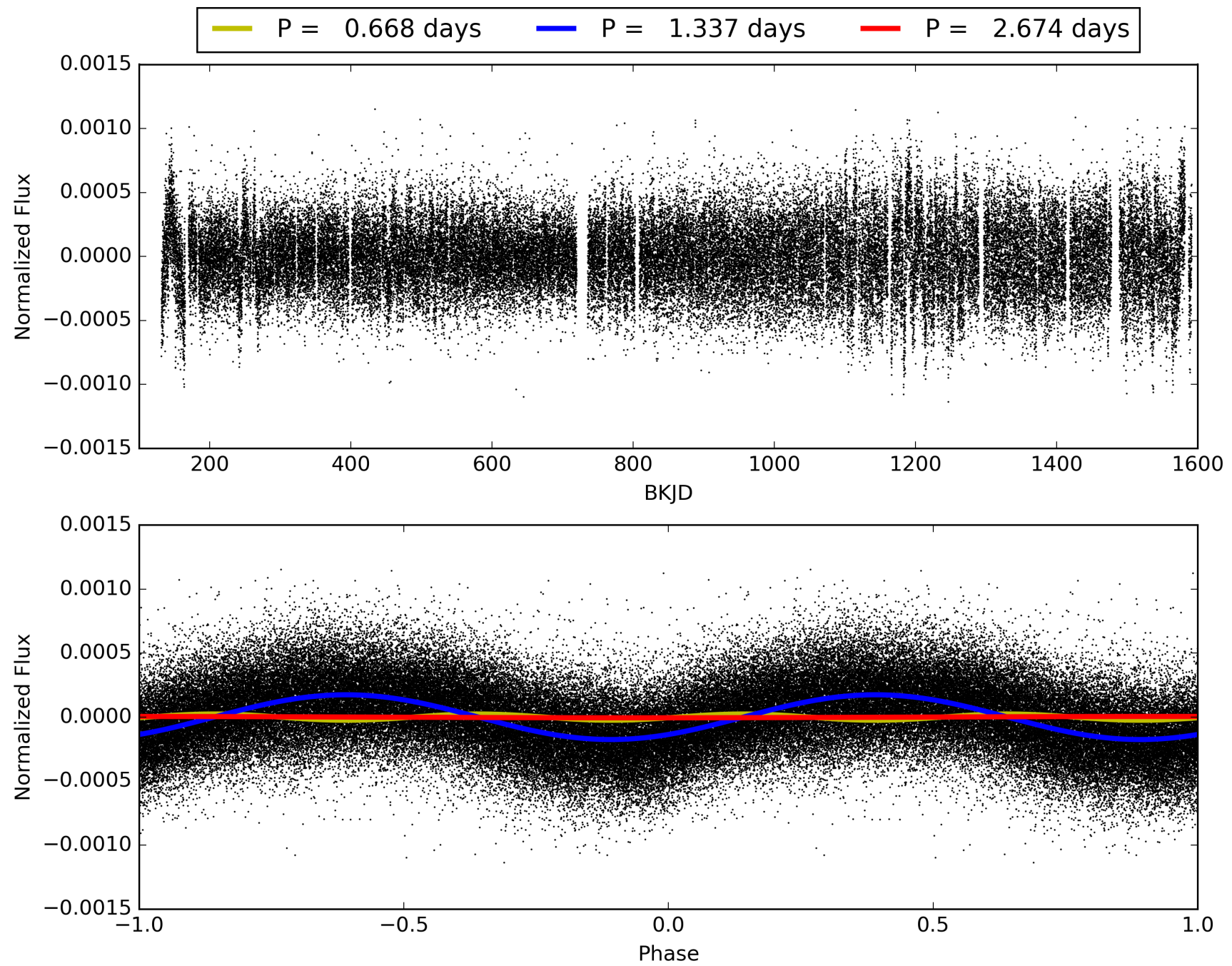
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 23:52:08 Z

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

# TCE 009456985-01, PDC Light Curves



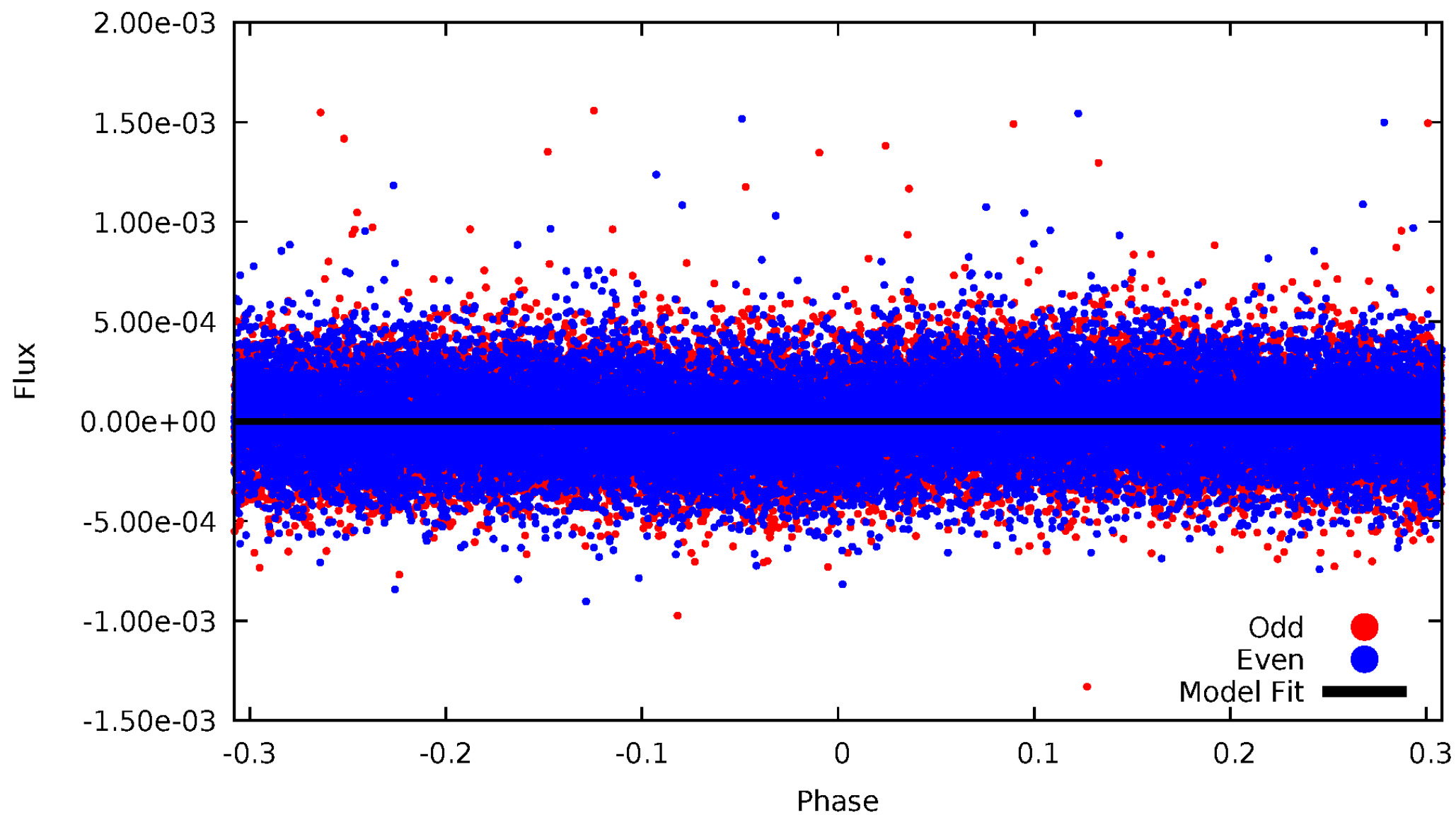
TCE 009456985-01





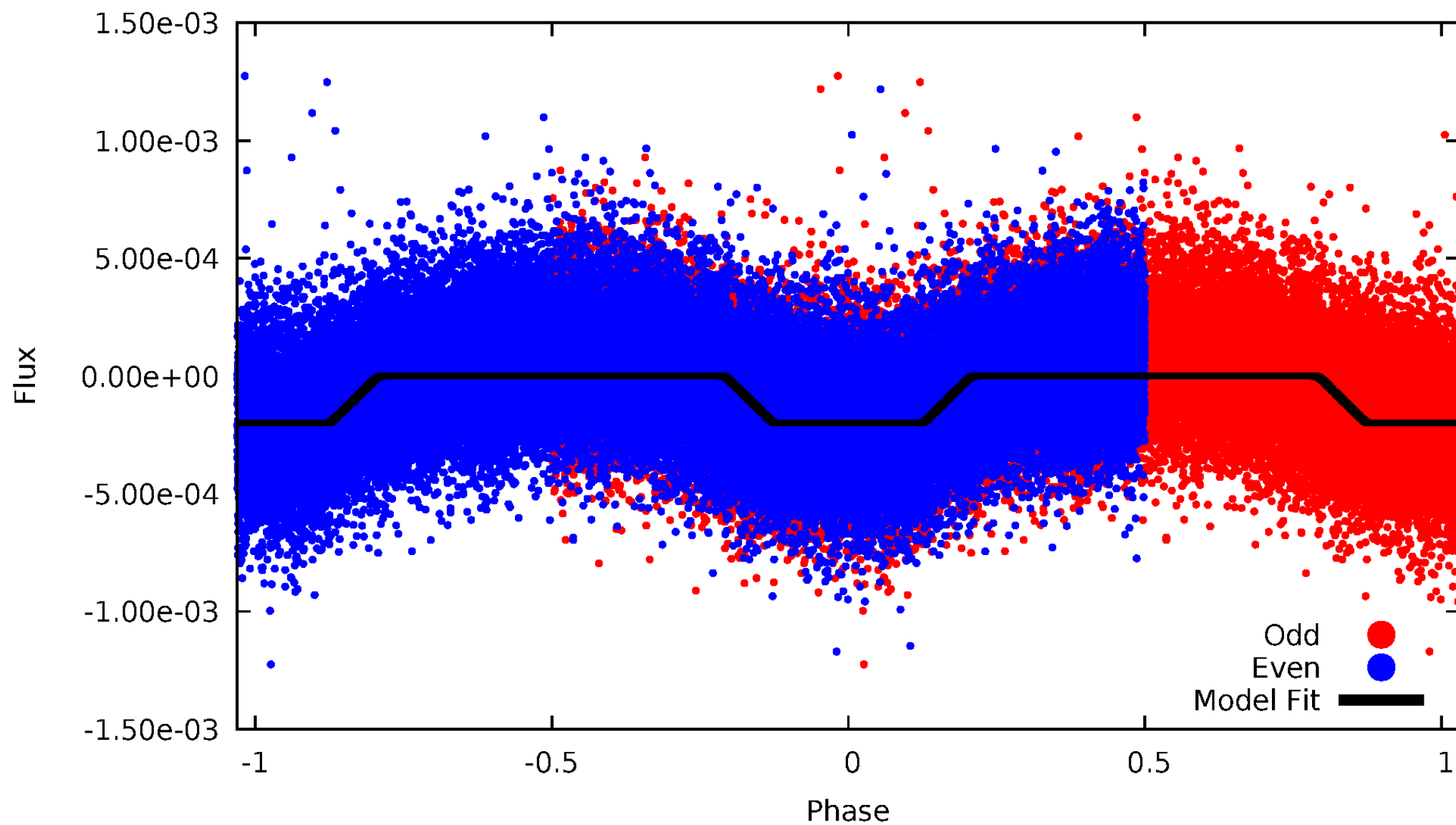
# DV Odd/Even

TCE 009456985-01

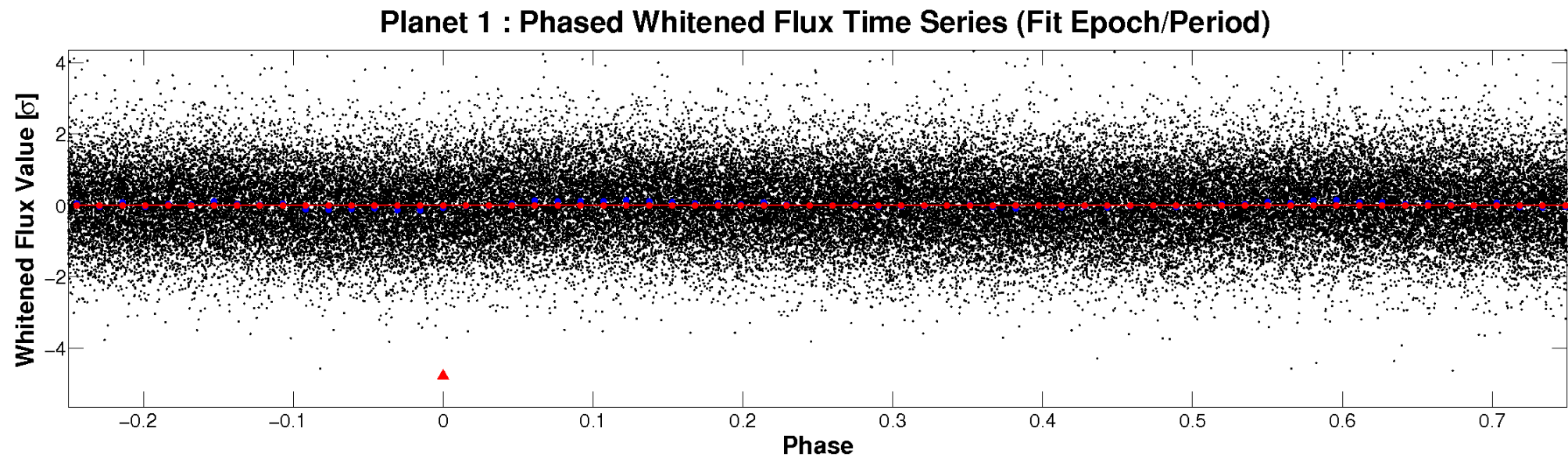
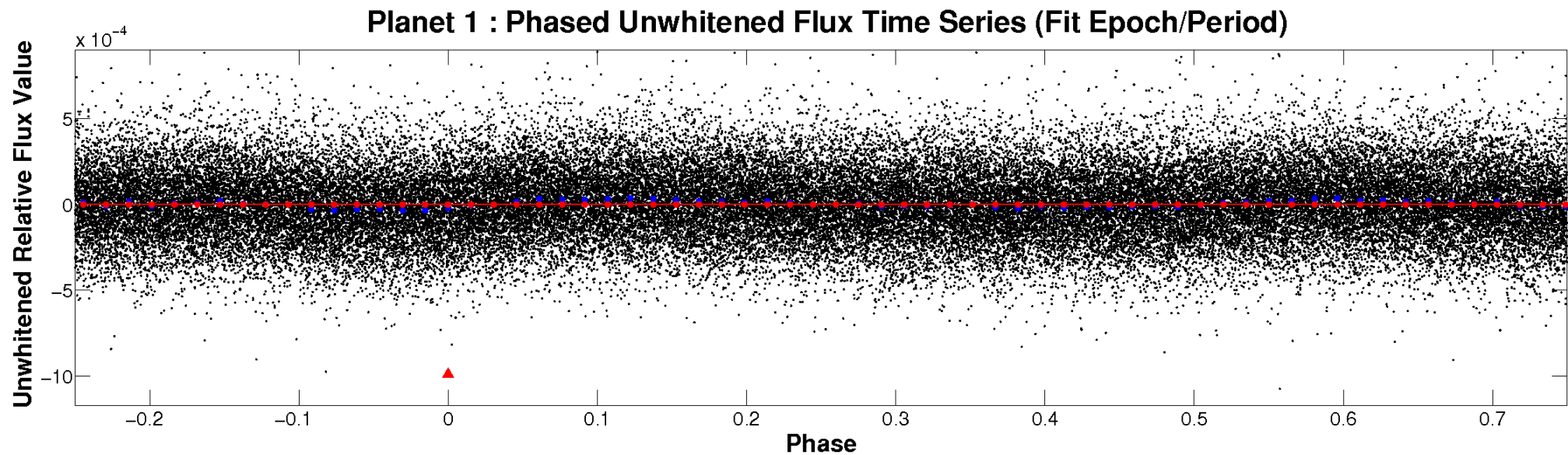


# ALT Odd/Even

TCE 009456985-01

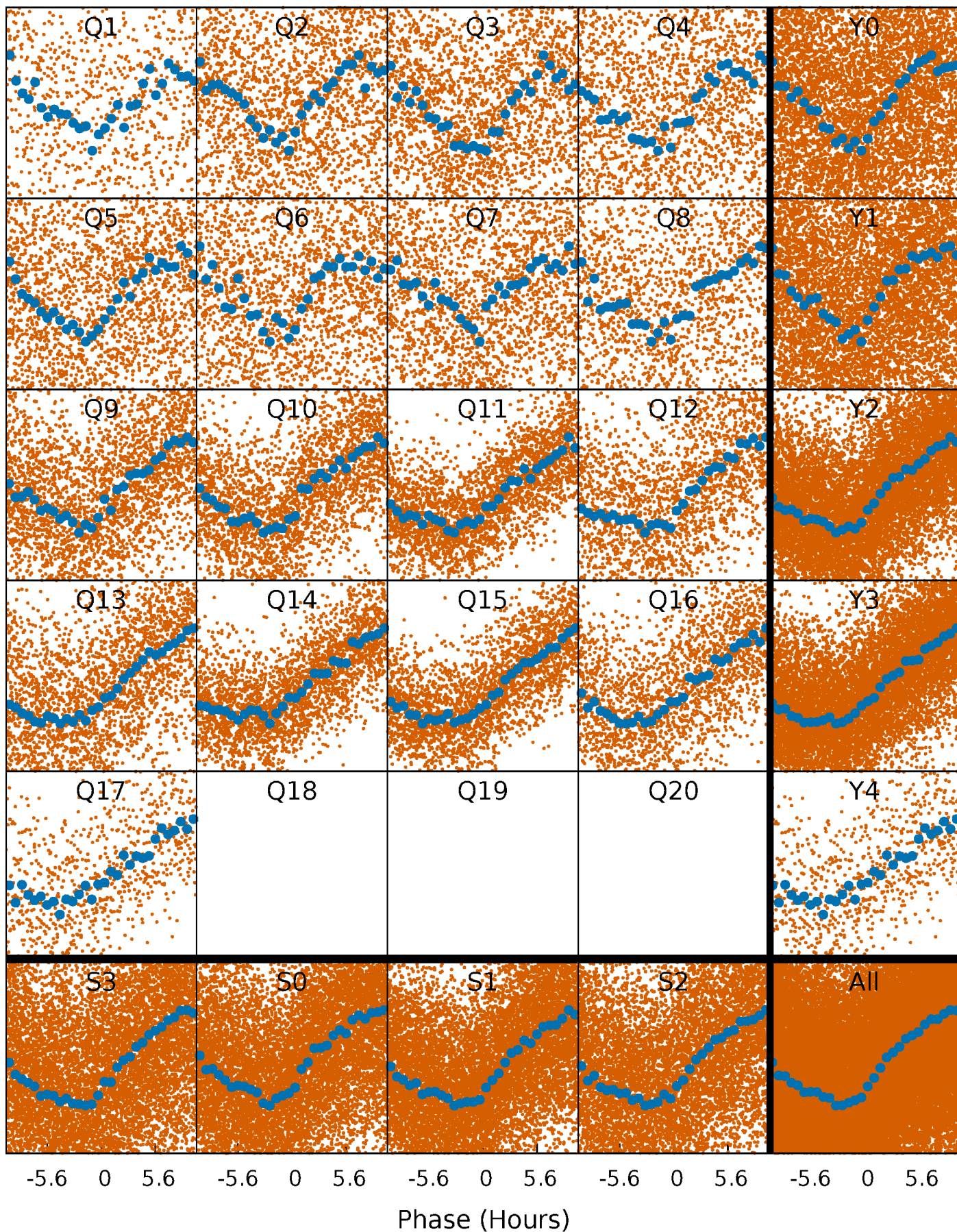


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

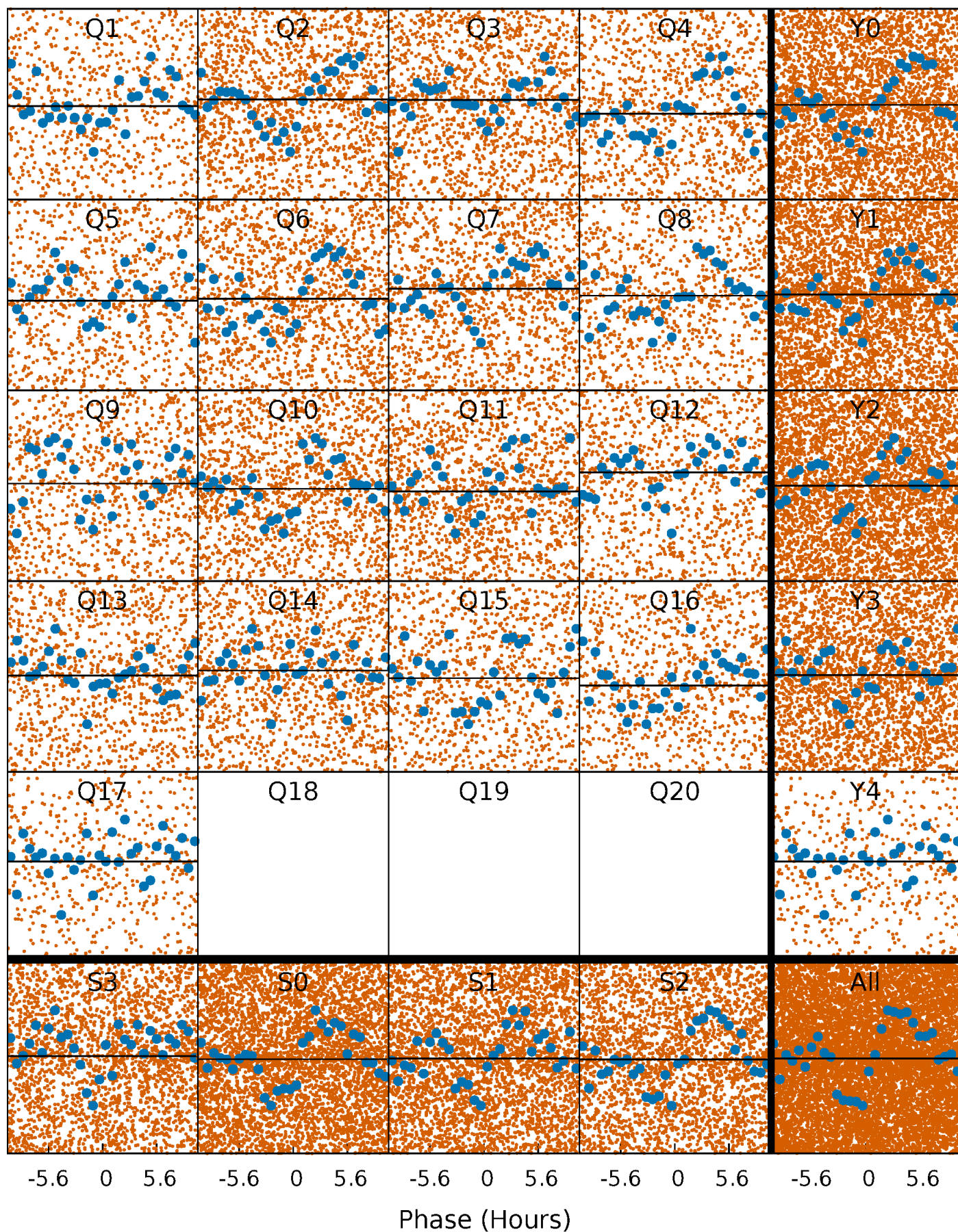
TCE 009456985-01 P= 1.336988 Days  $T_0=132.890222$  (BKJD)





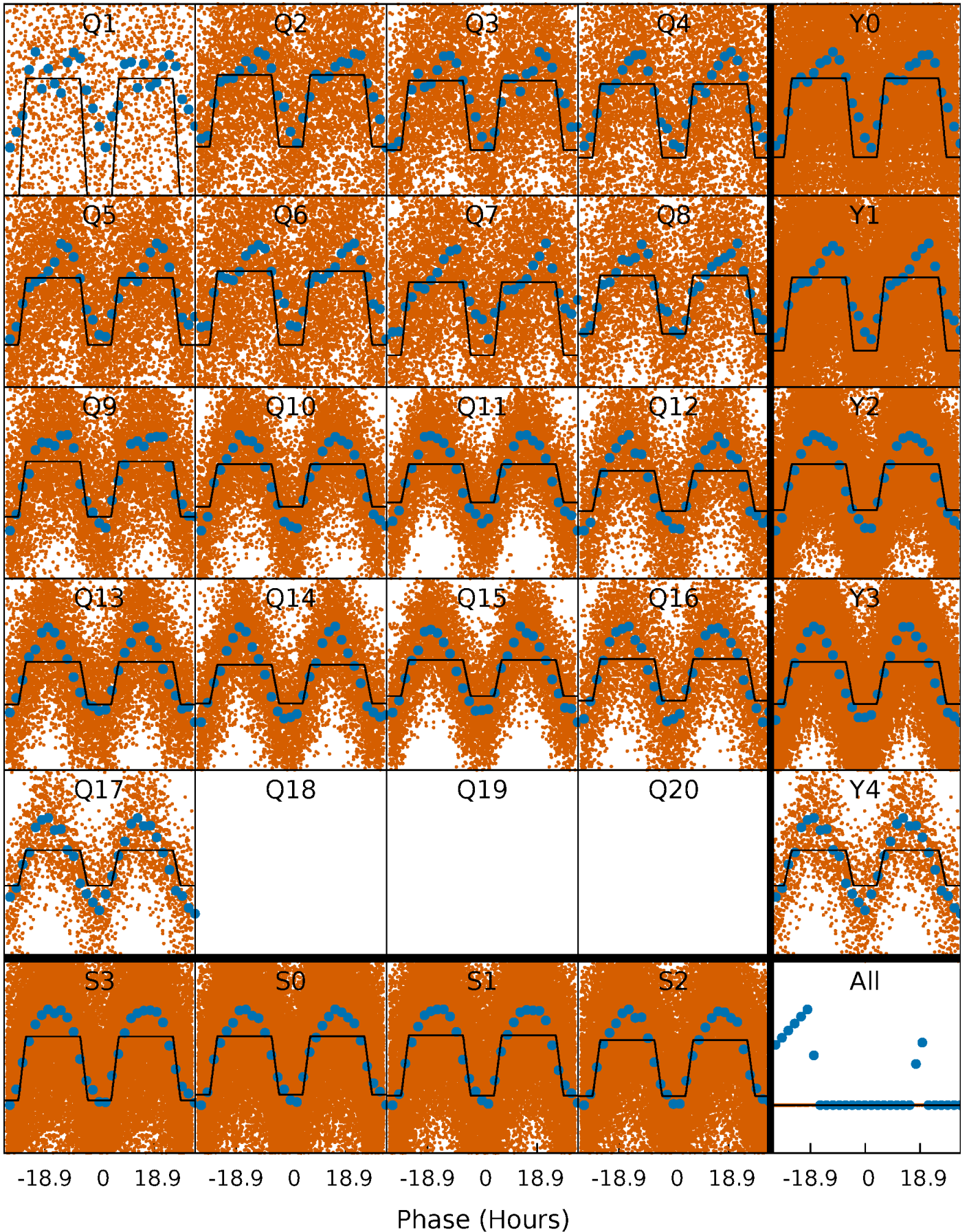
# DV Quarter-Phased Transit Curves

TCE 009456985-01 P= 1.336988 Days  $T_0=132.890222$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

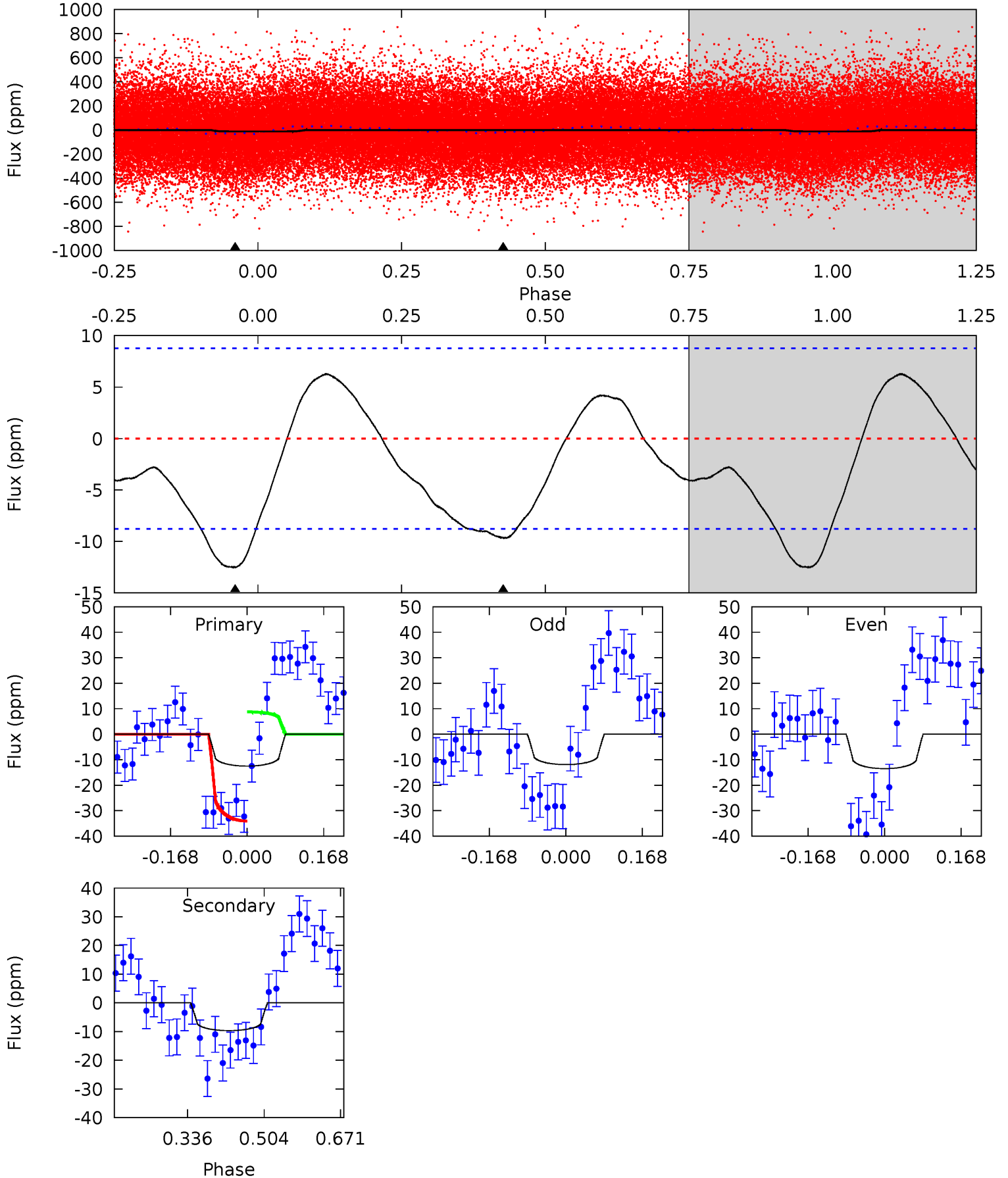
TCE 009456985-01   P= 1.336971 Days    $T_0=132.763470$  (BKJD)



# DV Model-Shift Uniqueness Test

009456985-01, P = 1.336988 Days, E = 130.216246 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
6.35	4.91	0	0	4.45	1.38	1.67	6.35	6.35	4.91	4.91	0.41	0.69	0.33	6.43

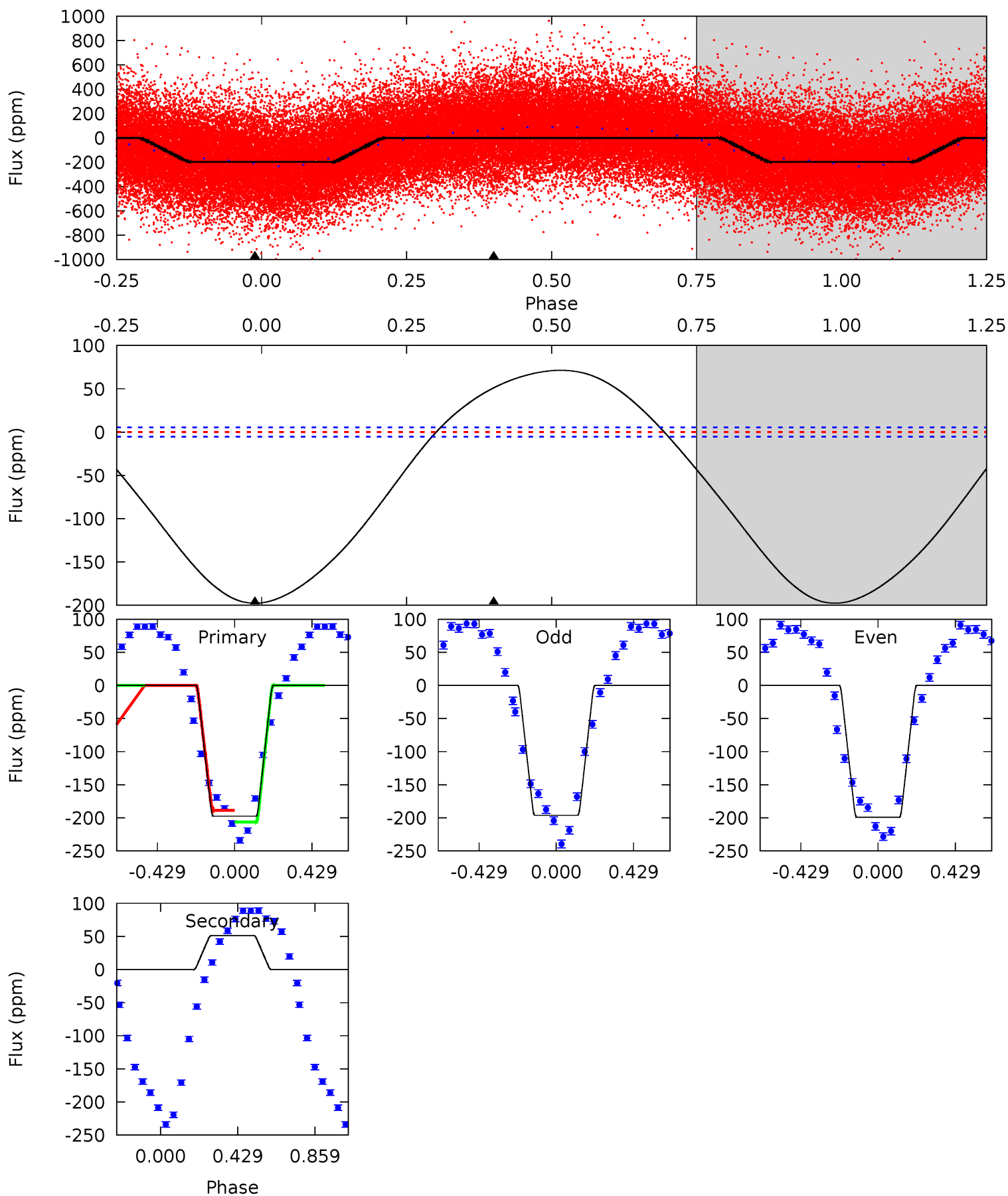




# Alt Model-Shift Uniqueness Test

009456985-01, P = 1.336971 Days, E = 131.426499 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
154.4	-39.9	0	0	4.25	0.79	16.8	154.4	154.4	-39.9	-39.9	1.13	1.04	0.27	7.04





### Stellar Parameters For KIC 009456985

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7308^{+203}_{-319}$	$4.174^{+0.090}_{-0.195}$	$0.070^{+0.200}_{-0.350}$	$1.700^{+0.581}_{-0.249}$	$1.573^{+0.226}_{-0.226}$	$0.451^{+0.218}_{-0.231}$
	+3%/-4%	+2%/-5%	+286%/-500%	+34%/-15%	+14%/-14%	+48%/-51%
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 009456985-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-10 \pm 2$	$4.04^{+4.52}_{-2.99}$	$3587^{+287}_{-268}$	$-2707^{+7914}_{-650}$	$0.241^{+3.108}_{-0.187}$
Alt.	$51 \pm 1$	$5.08^{+5.21}_{-3.39}$	$3582^{+332}_{-258}$	$-4337^{+604}_{-2071}$	$-0.813^{+0.615}_{-6.105}$

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

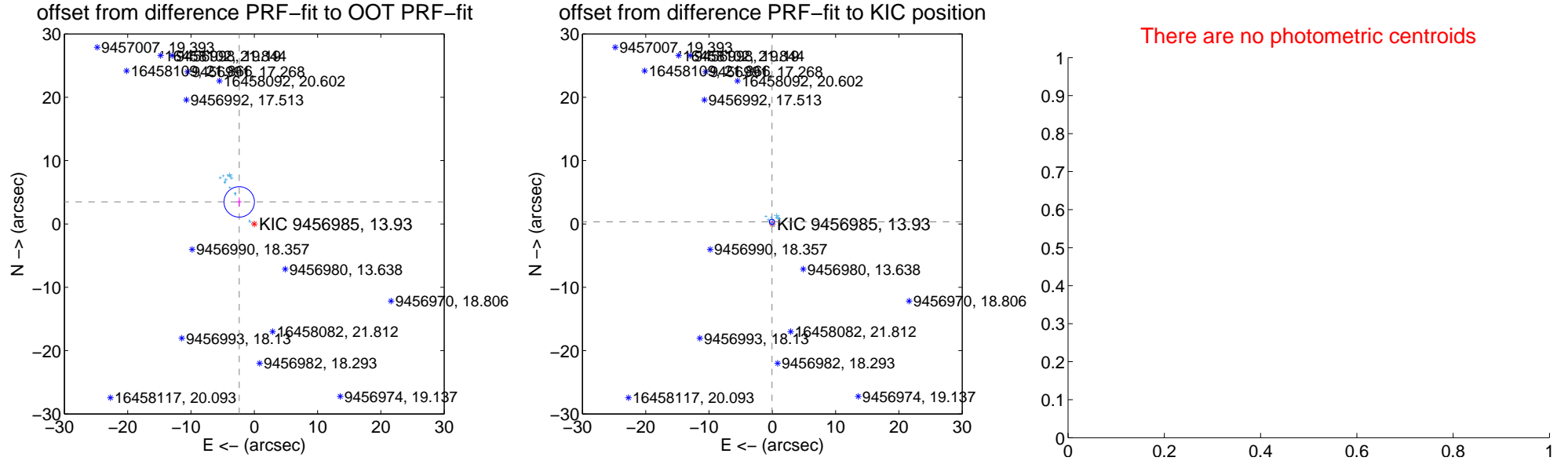
## DV Centroid Data

Supplemental centroid analysis for 009456985-01. Kepler magnitude: 13.93. Transit SNR 0.00

There are 17 quarters with good PRF difference image offsets

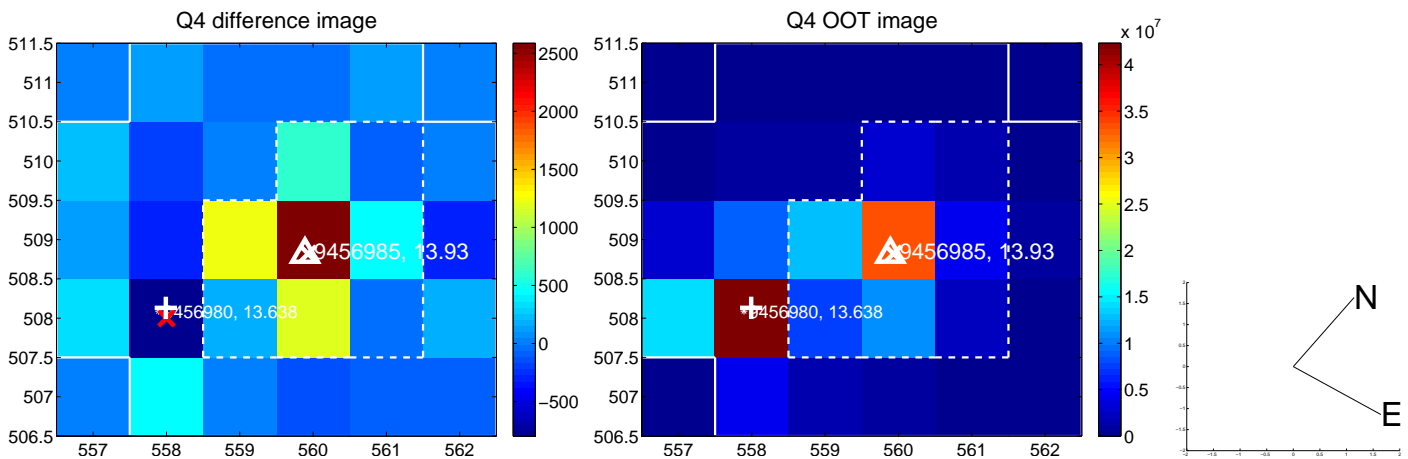
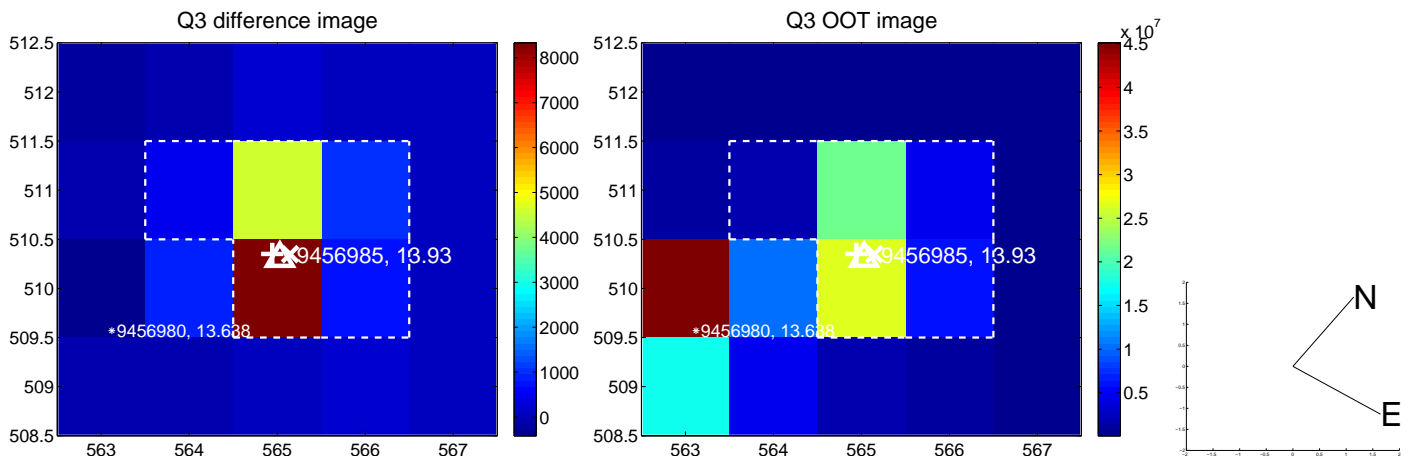
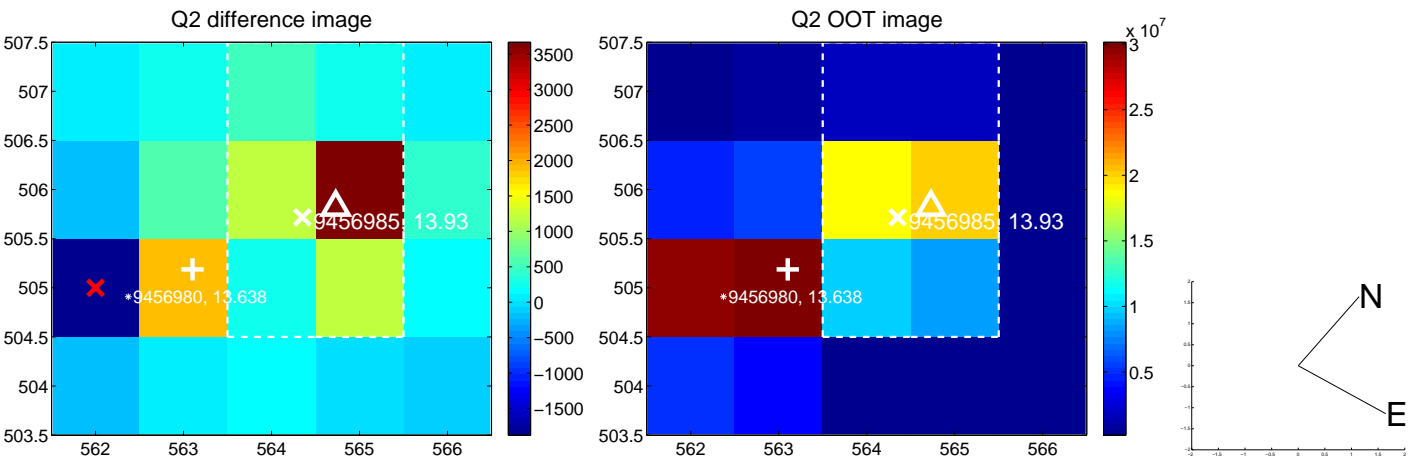
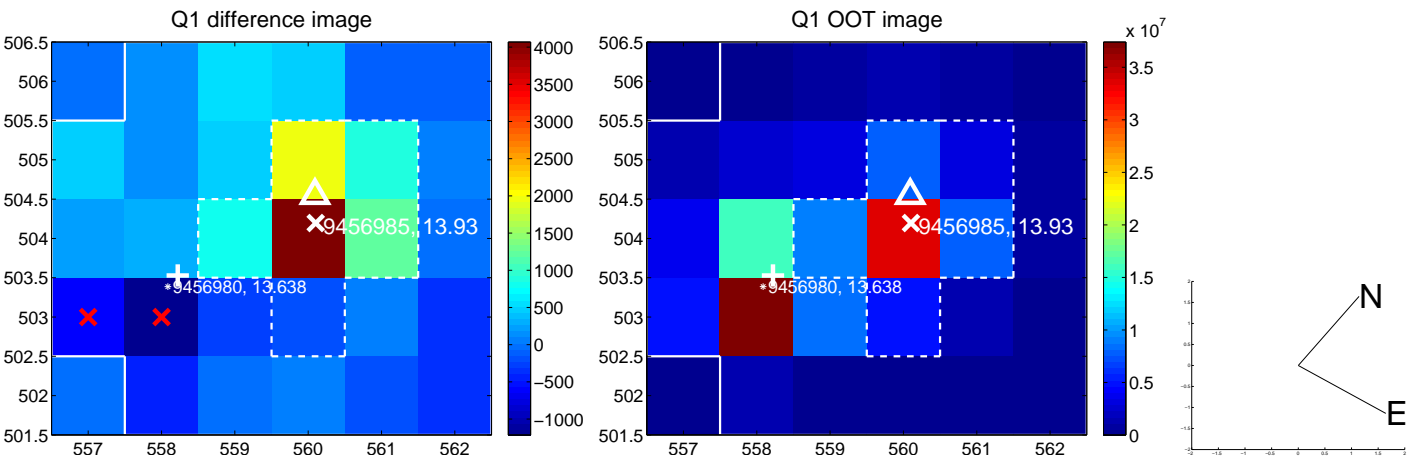
The OOT PRF centroid is offset from the target star catalog position by about 7.89 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	4.219 $\pm$ 0.801	5.27	2.383 $\pm$ 0.407	3.481 $\pm$ 0.704
PRF-fit source offset from KIC position	0.341 $\pm$ 0.138	2.47	0.055 $\pm$ 0.140	0.336 $\pm$ 0.142
photometric centroid source offset	—	—	—	—

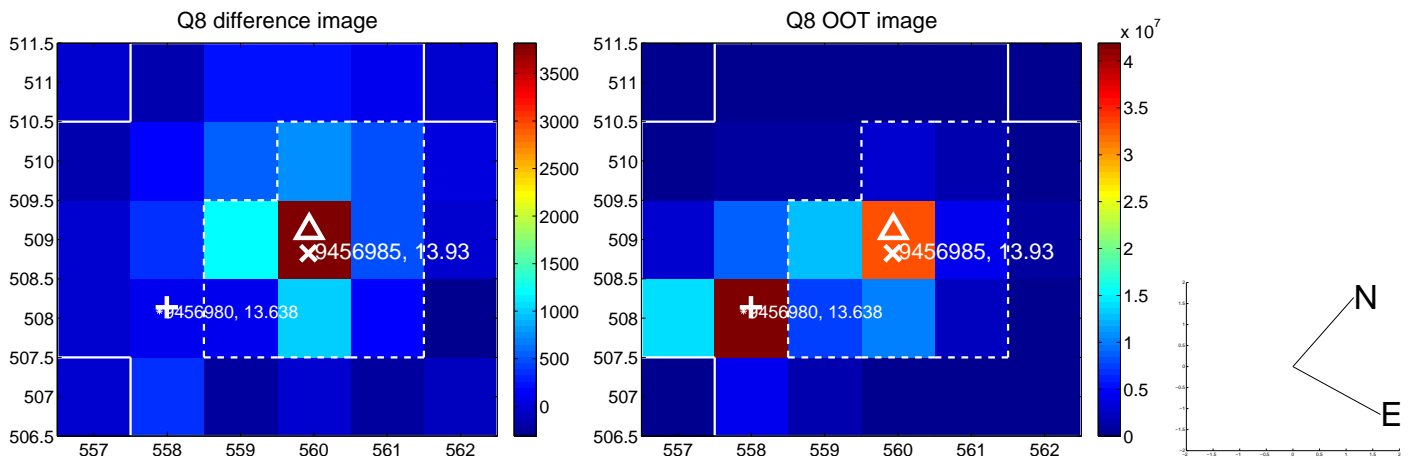
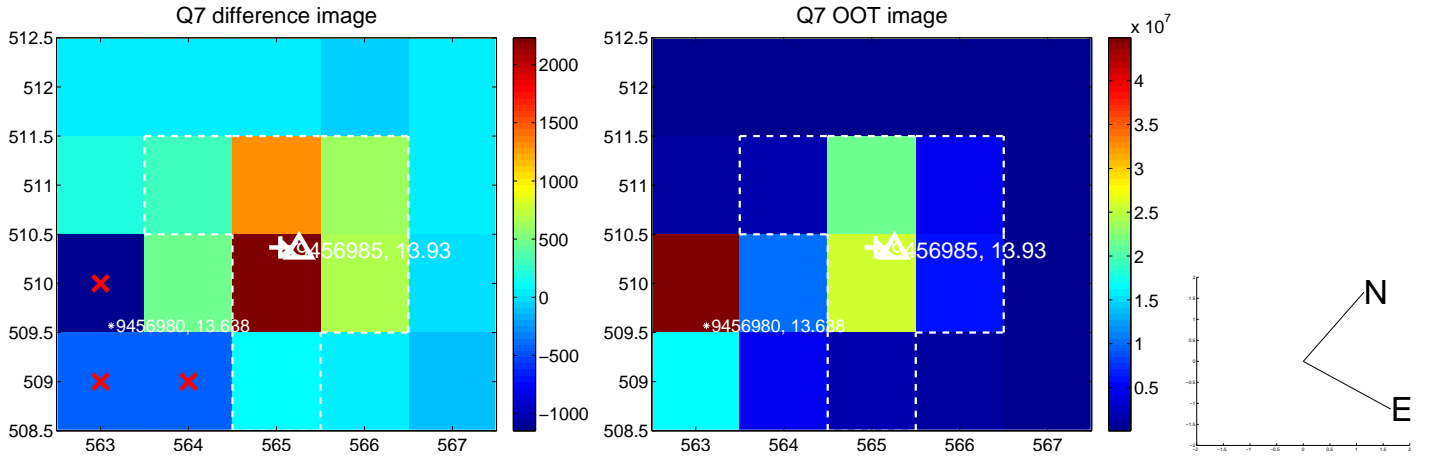
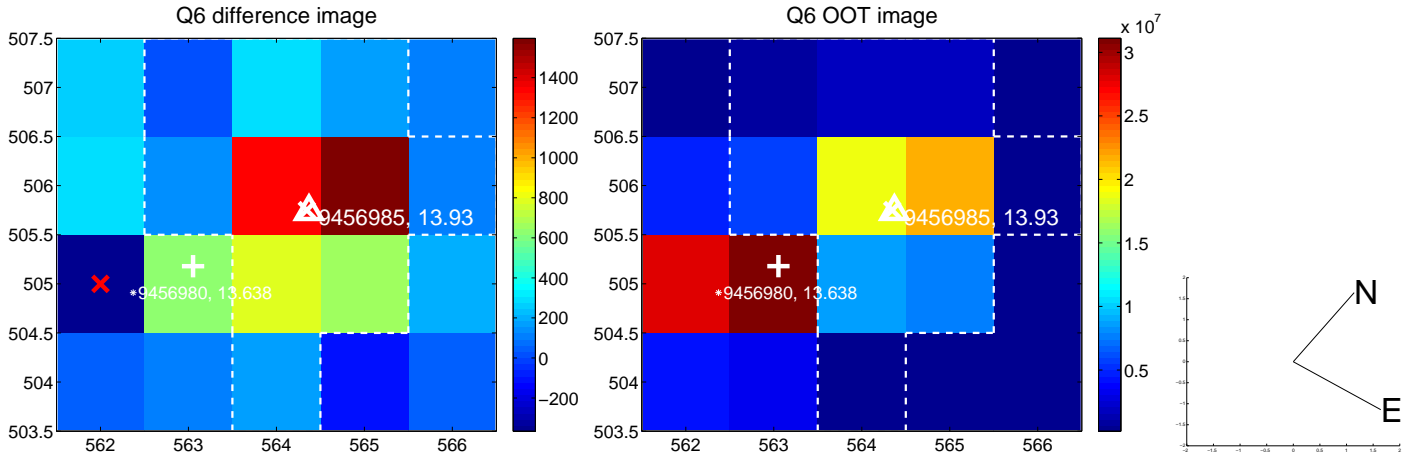
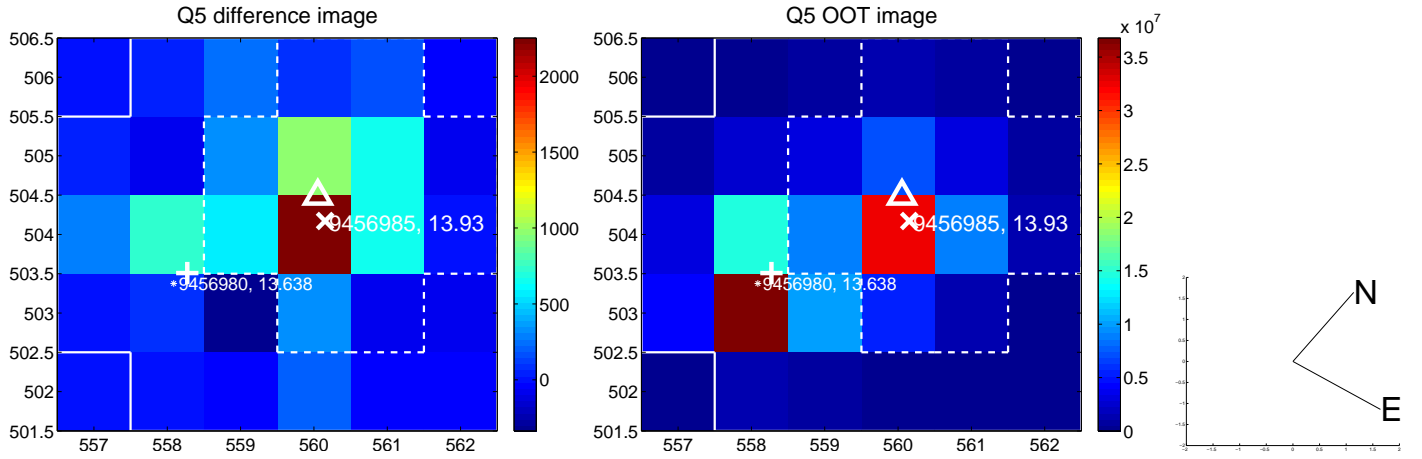


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

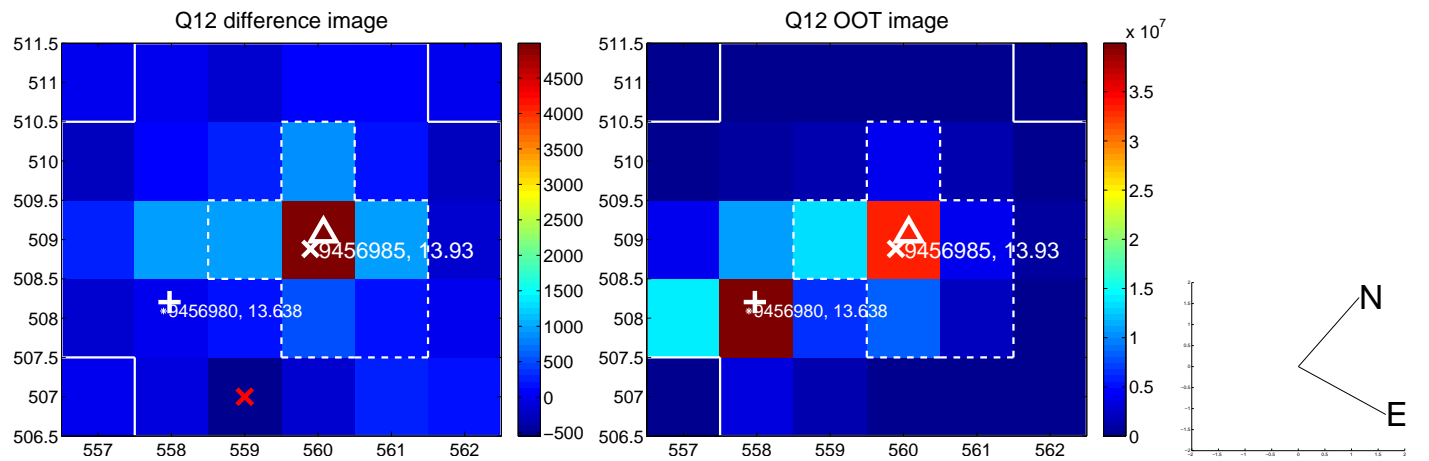
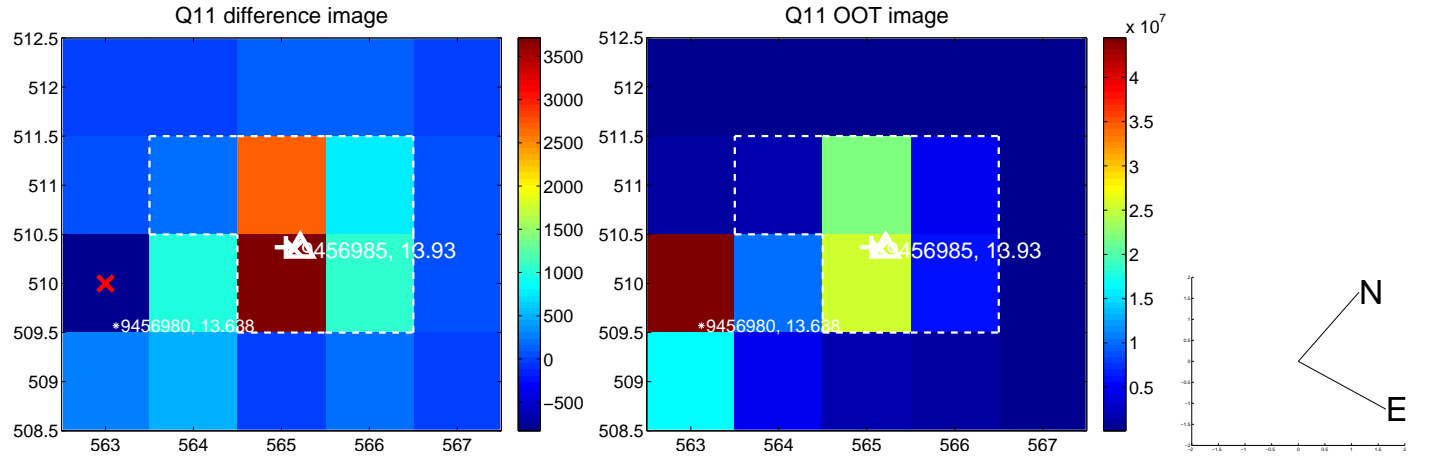
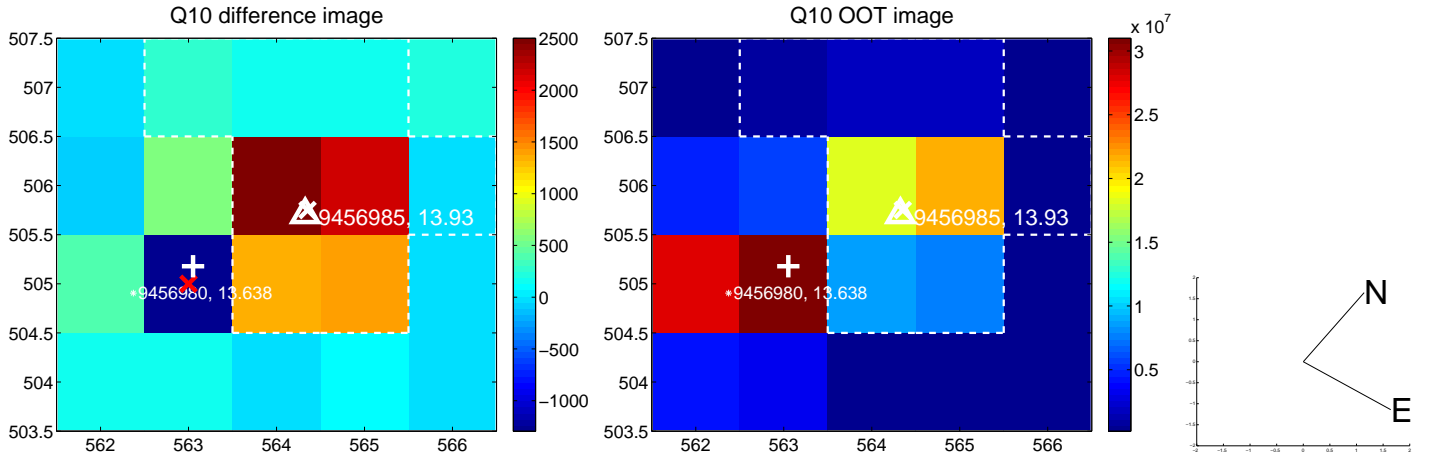
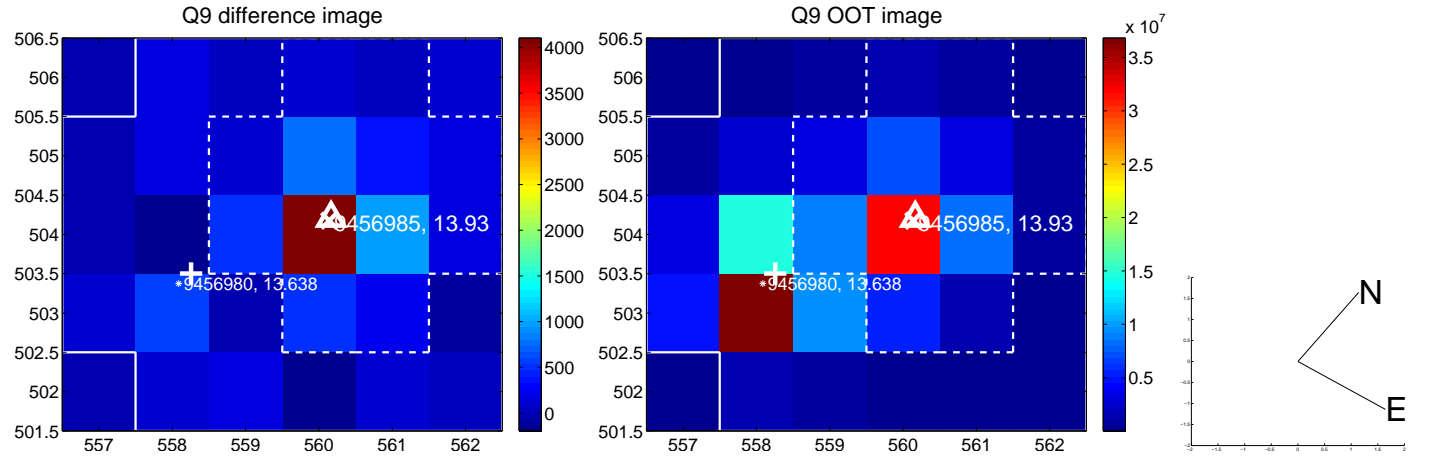


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

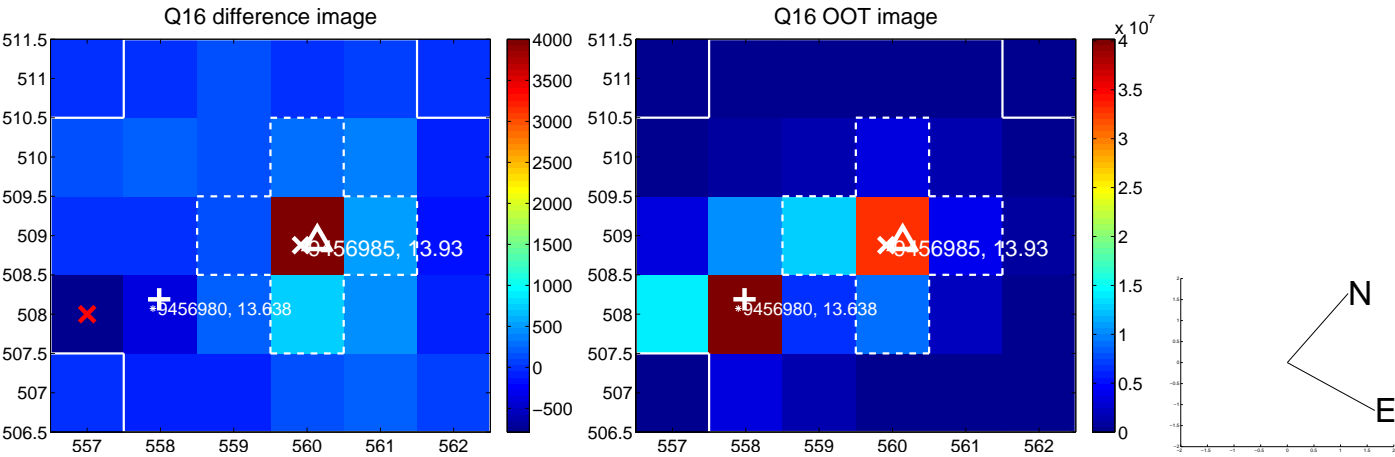
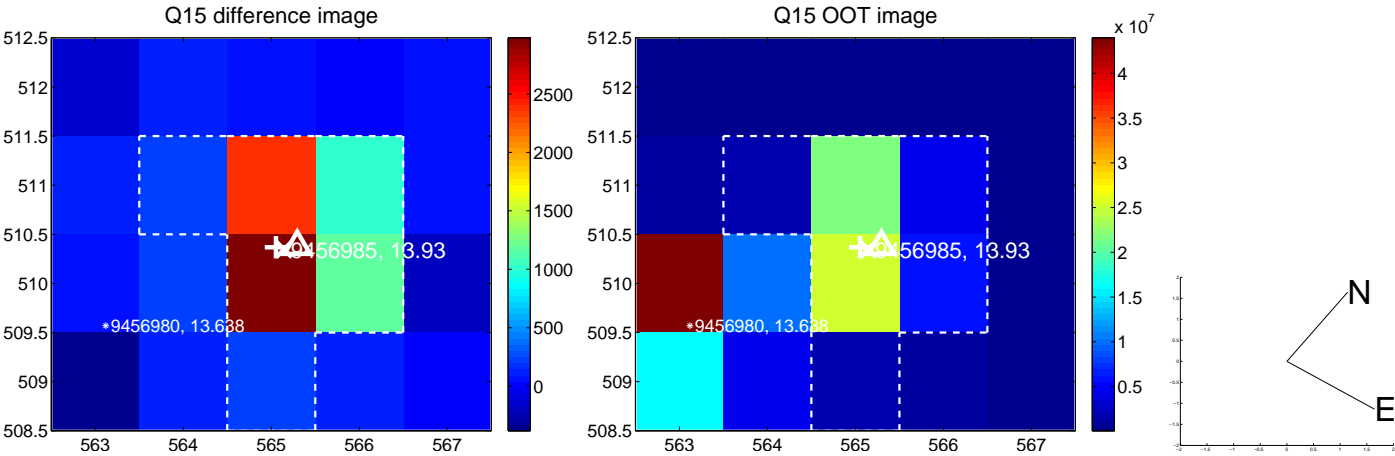
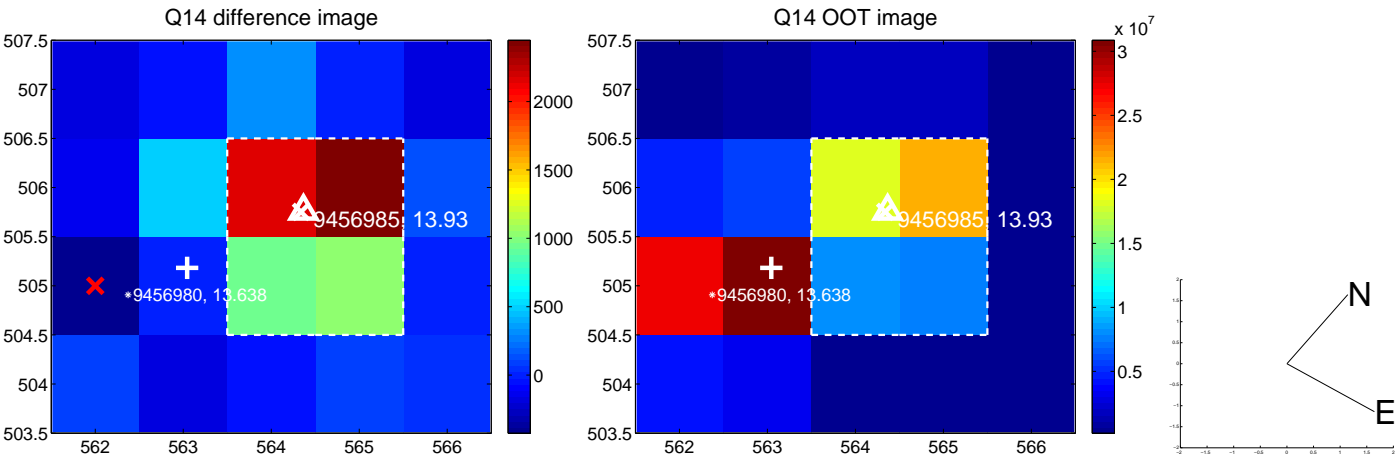
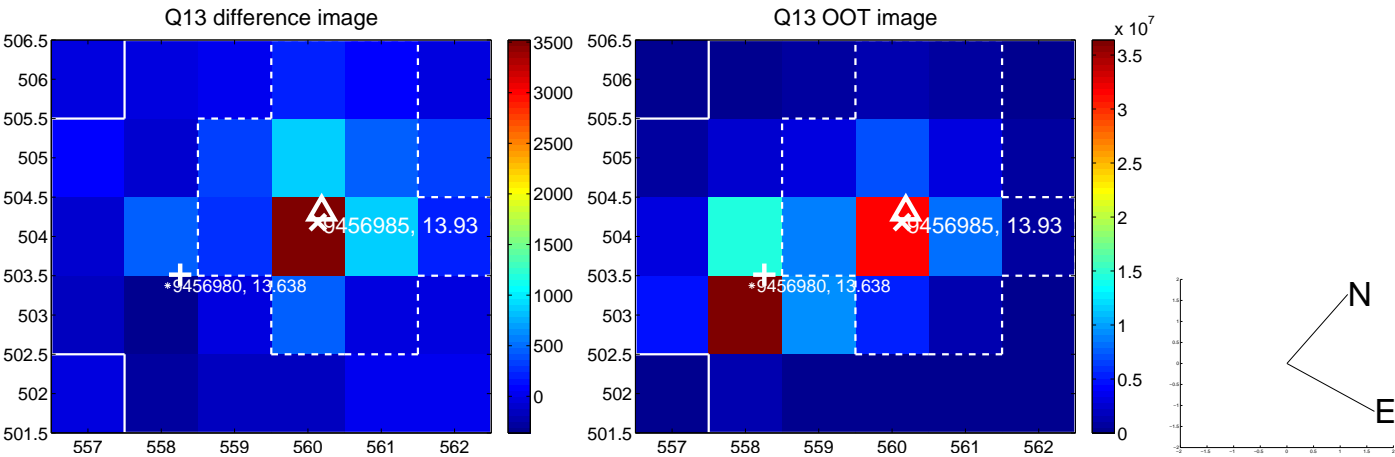




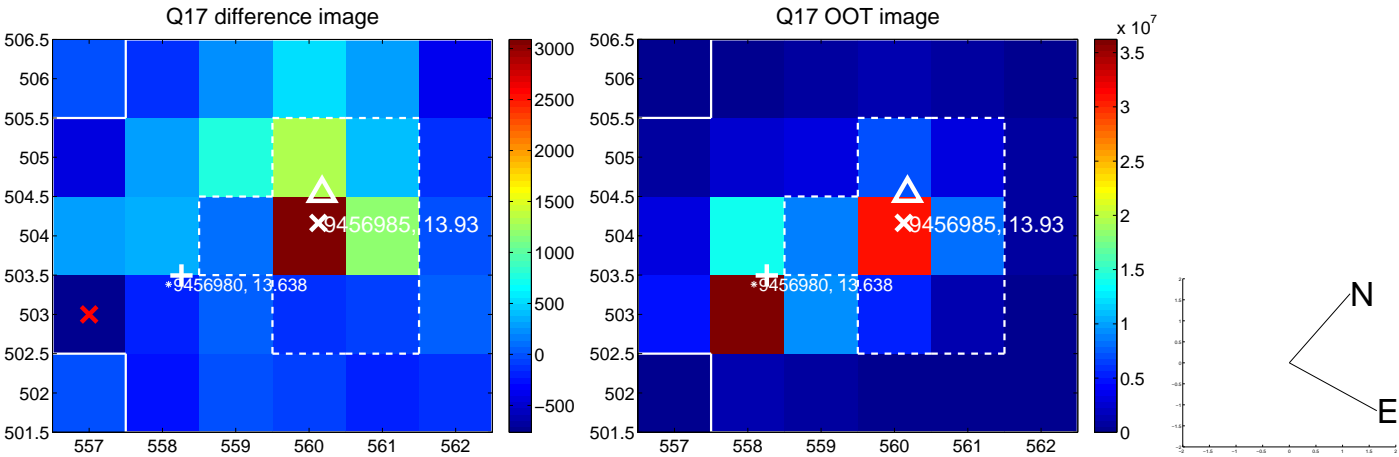
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

