

# KIC 007362573

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007362573-01	OBS	No	0.566686	131.967968	0.1	4.816	10.4	0.0	0.91	5794	0.03	4940.18

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007362573-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—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.

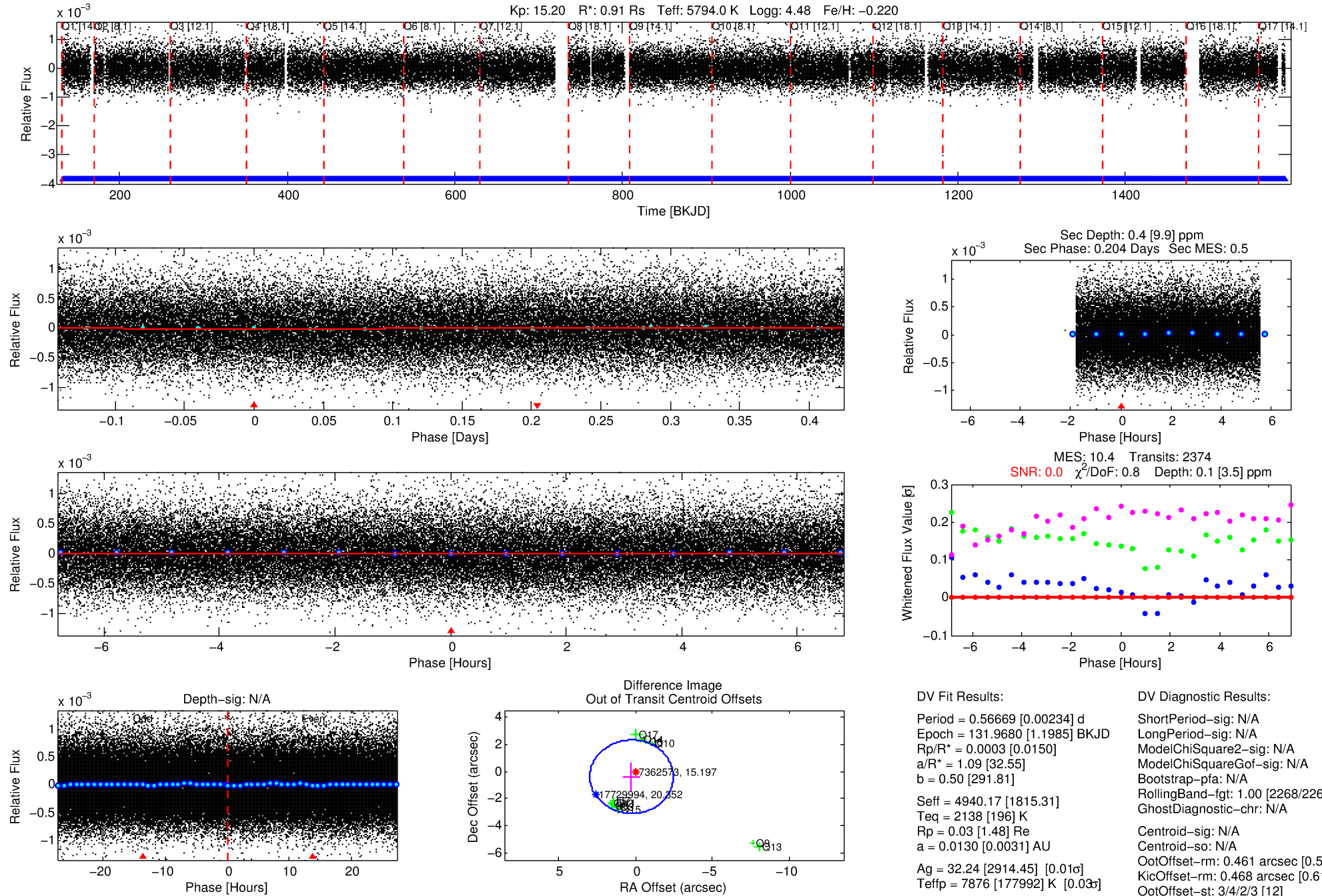
## Ephemeris Match Information For 007362573-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
007362573-01	7362573	RR-Lyr-pri	7198959	1:1	1147.3	-15	288	7.86	15.19	623300.00	Direct-PRF	0	3.67	12.73

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 7362573 Candidate: 1 of 1 Period: 0.567 d



## DV Fit Results:

Period = 0.56669 [0.00234] d  
Epoch = 131.9680 [1.1985] BKJD  
Rp/R\* = 0.0003 [0.0150]  
a/R\* = 1.09 [32.55]  
b = 0.50 [291.81]  
Seff = 4940.17 [1815.31]  
Teff = 2138 [196] K  
Rp = 0.03 [1.48] Re  
a = 0.0130 [0.0031] AU  
Ag = 32.24 [2914.45] [0.01] $\sigma$   
Teffp = 7876 [177992] K [0.03] $\sigma$

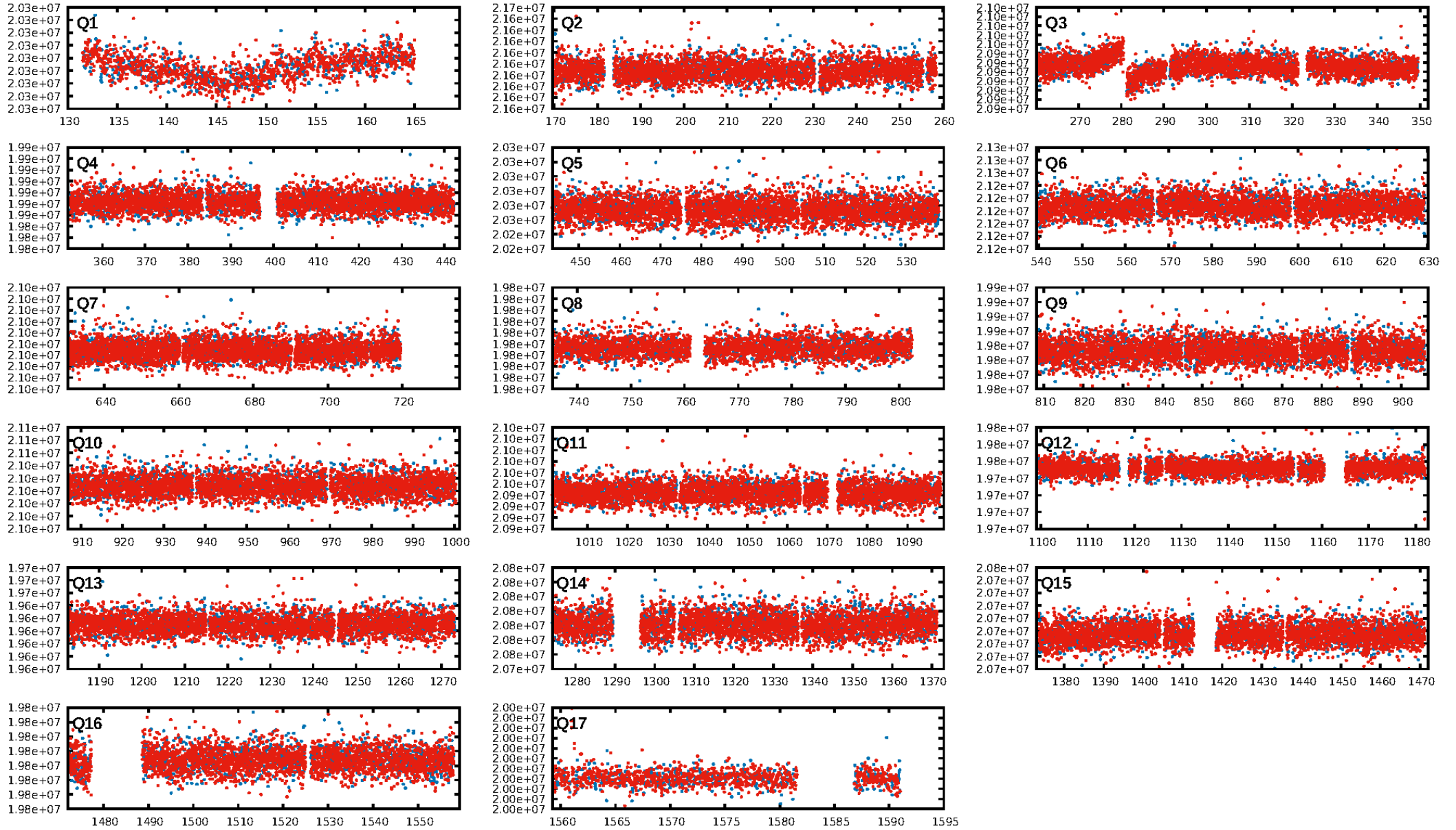
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2268/2268]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.461 arcsec [0.51] $\sigma$   
KicOffset-rm: 0.468 arcsec [0.61] $\sigma$   
OotOffset-st: 3/4/2/3 [12]  
KicOffset-st: 3/4/2/3 [12]  
DiffImageQuality-fgm: 0.42 [5/12]  
DiffImageOverlap-fno: 1.00 [17/17]

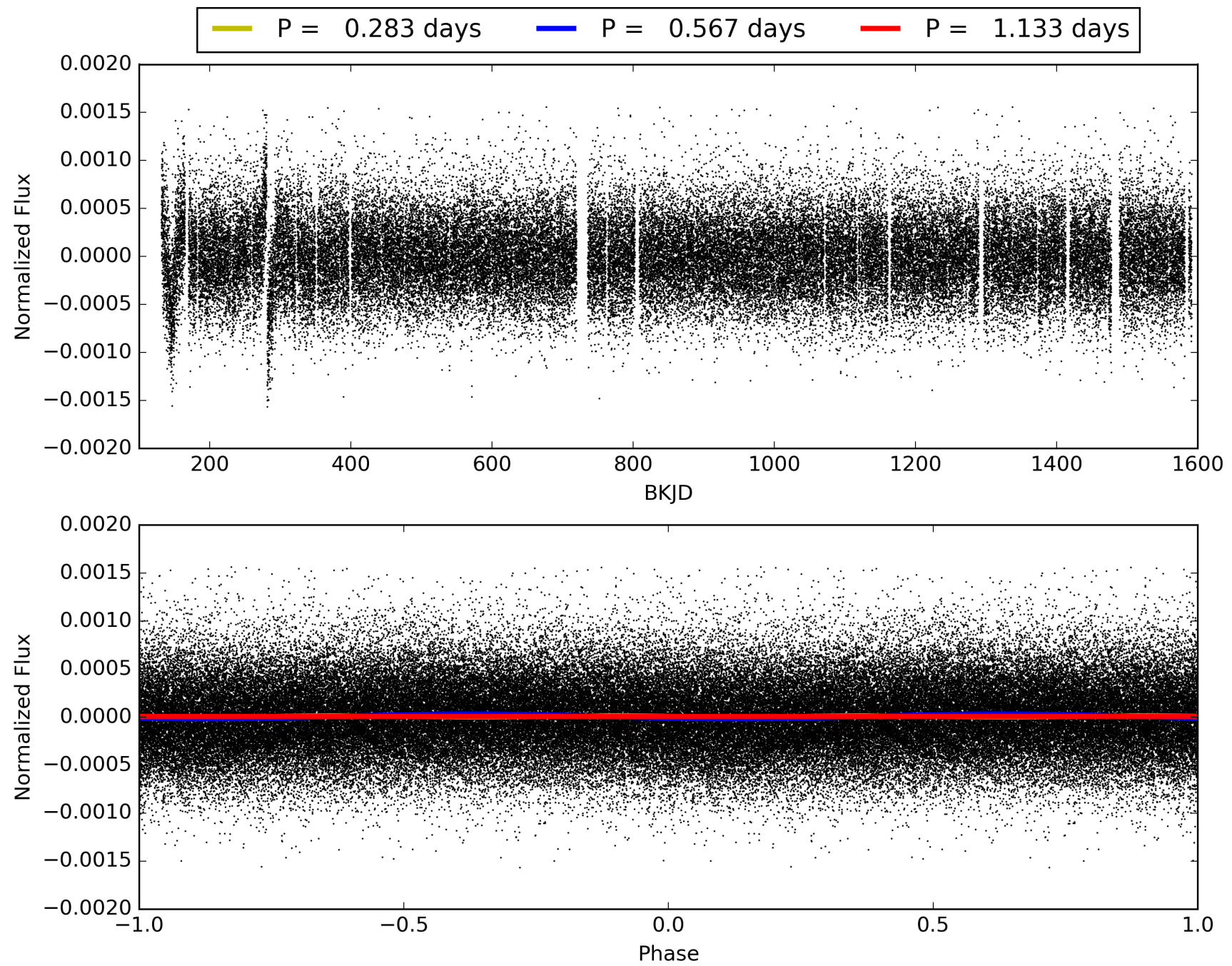
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 13:03:21 Z

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

# TCE 007362573-01, PDC Light Curves



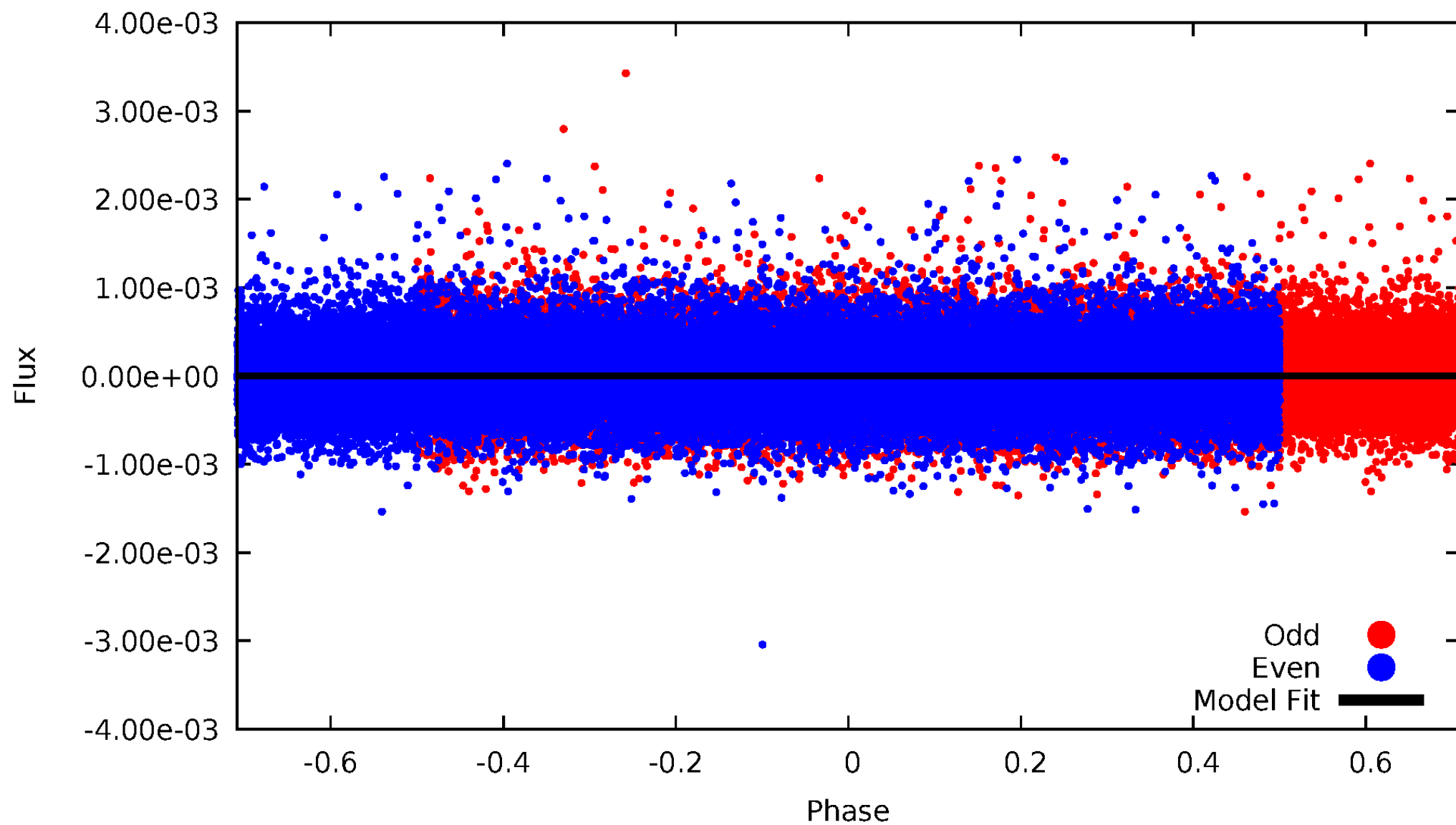
TCE 007362573-01





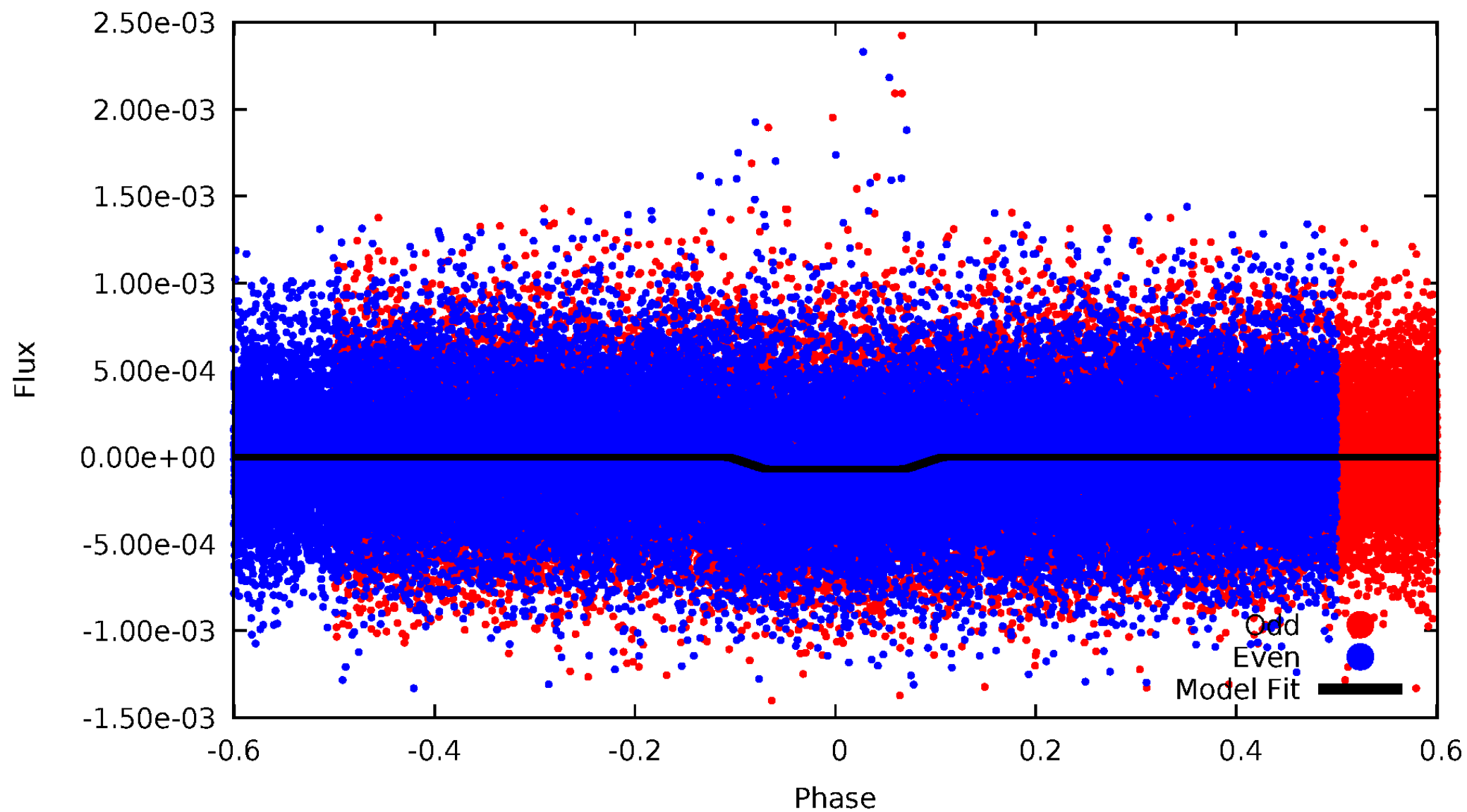
# DV Odd/Even

TCE 007362573-01



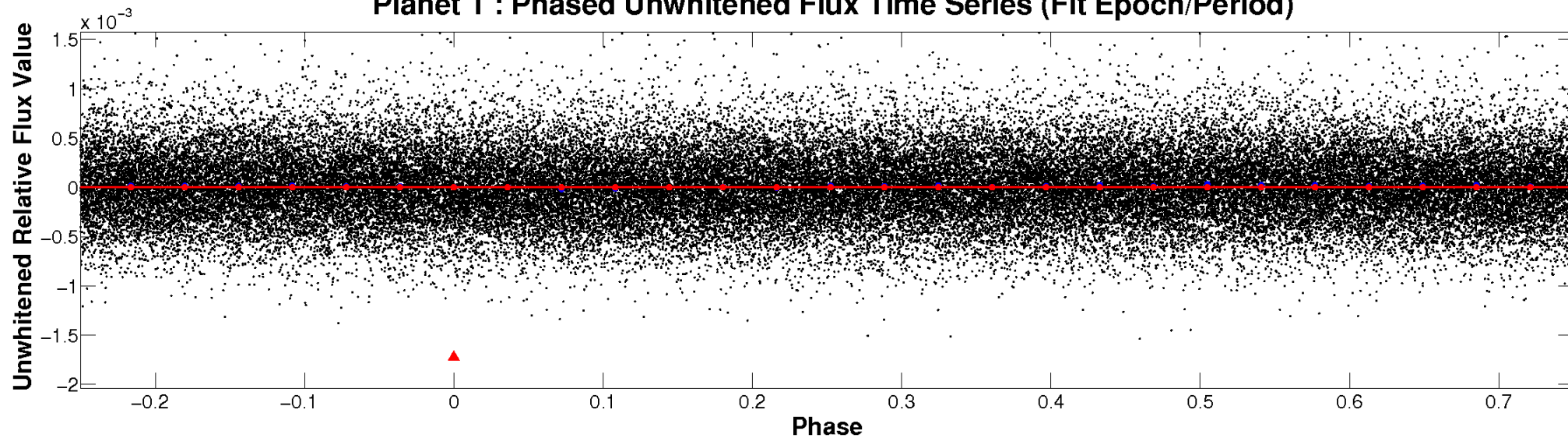
# ALT Odd/Even

TCE 007362573-01

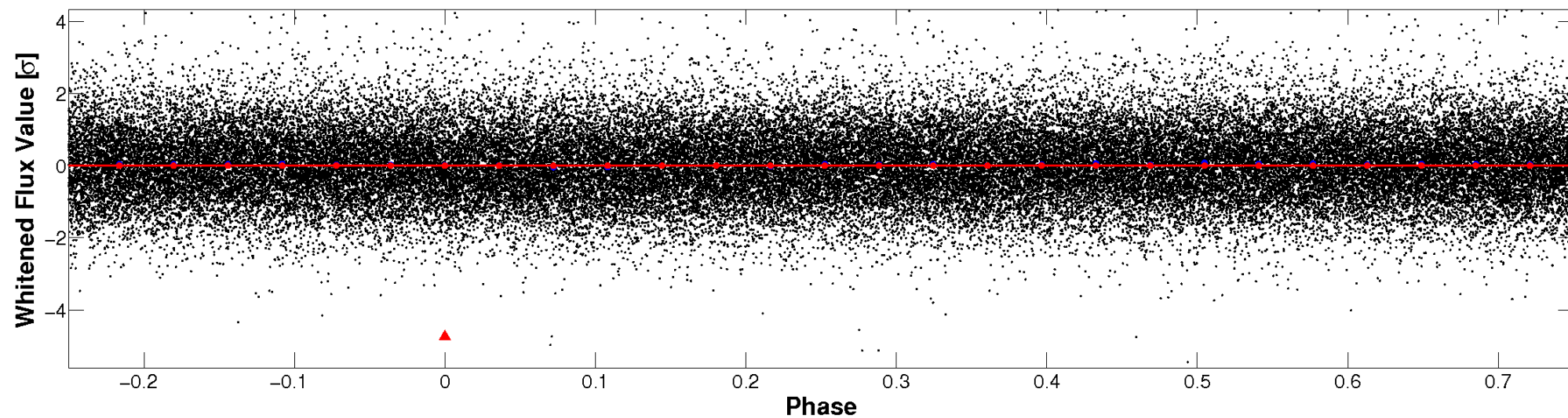


# Non-Whitened Vs. Whitened Light Curve

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

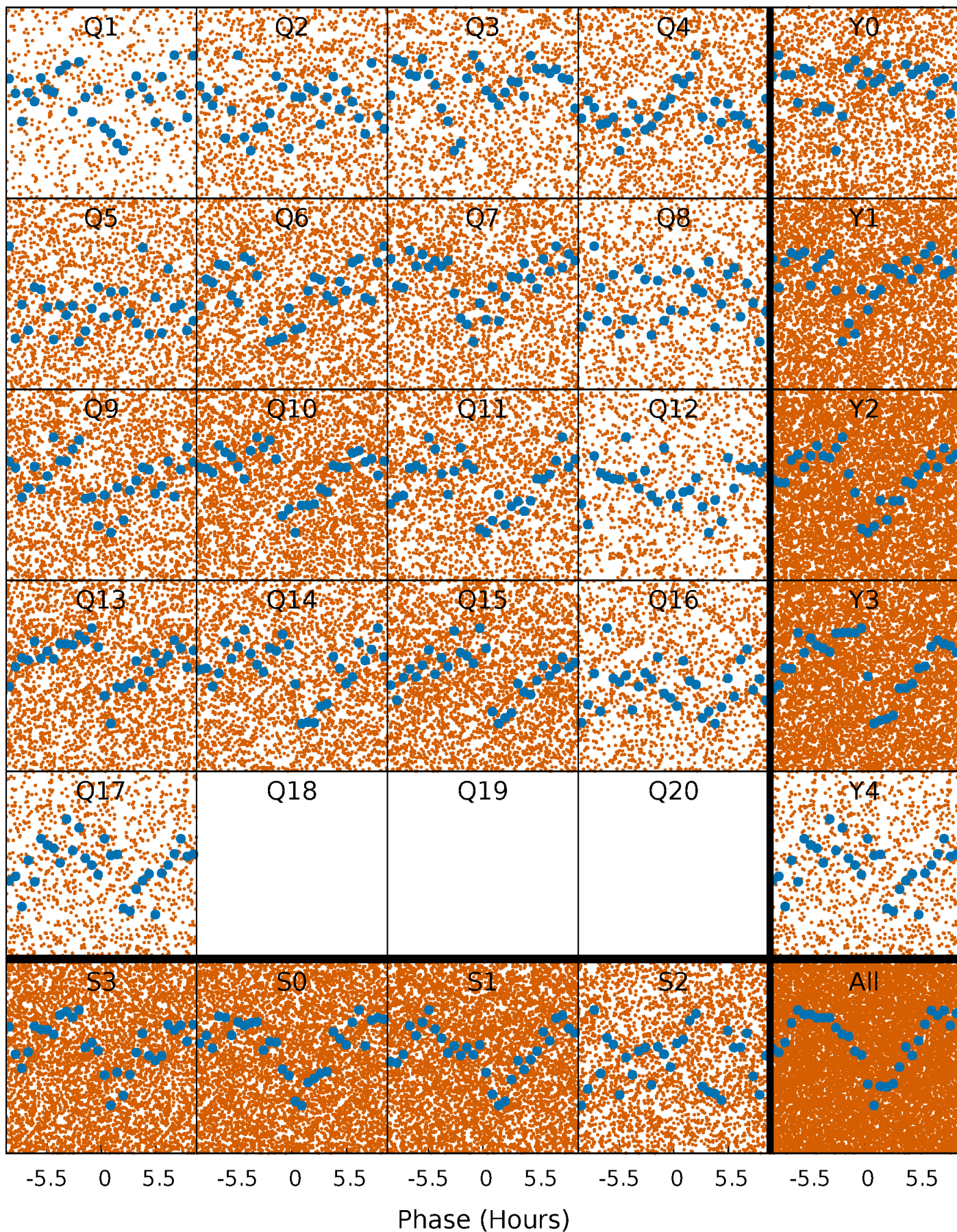


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

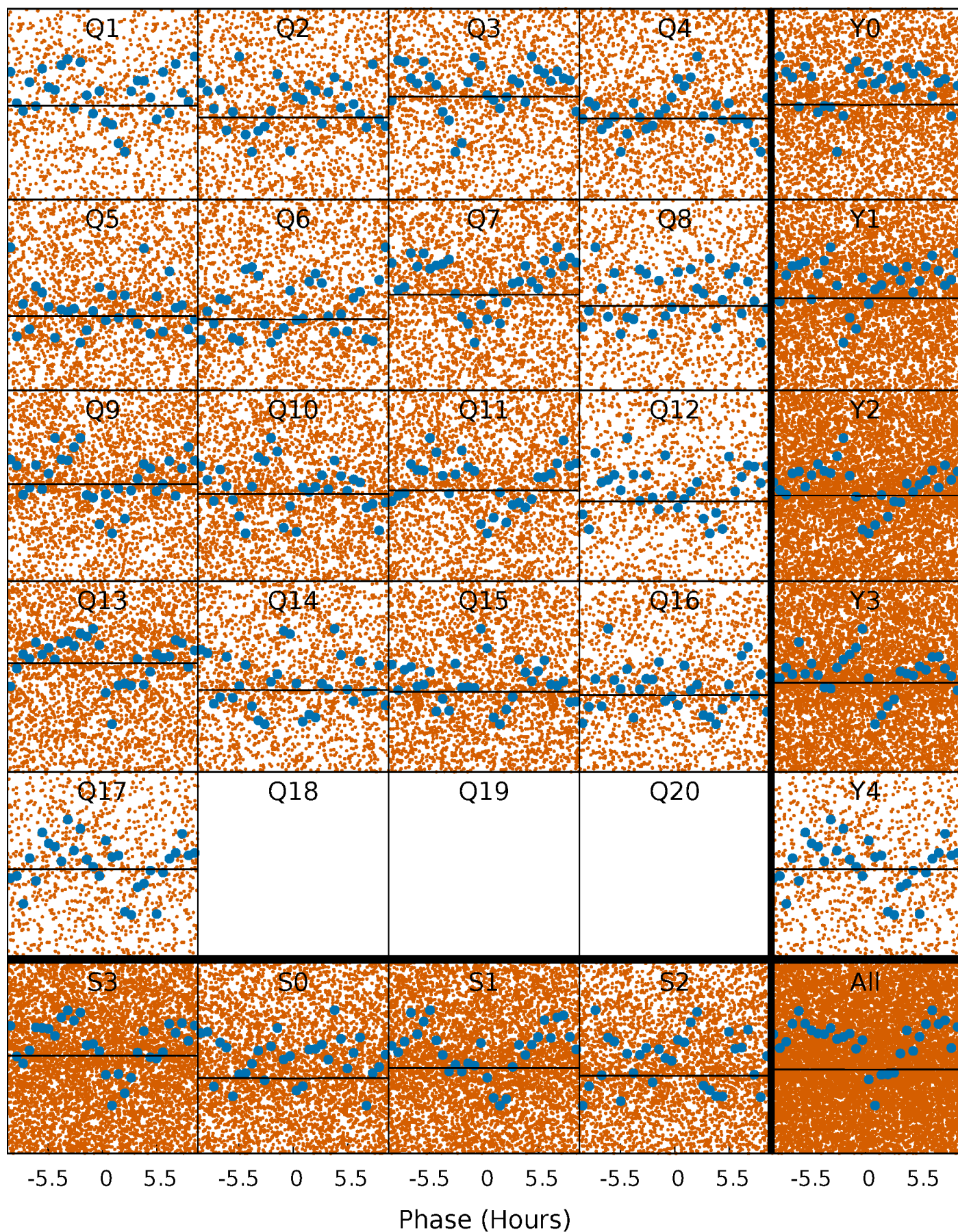
TCE 007362573-01 P= 0.566686 Days  $T_0=131.967968$  (BKJD)





# DV Quarter-Phased Transit Curves

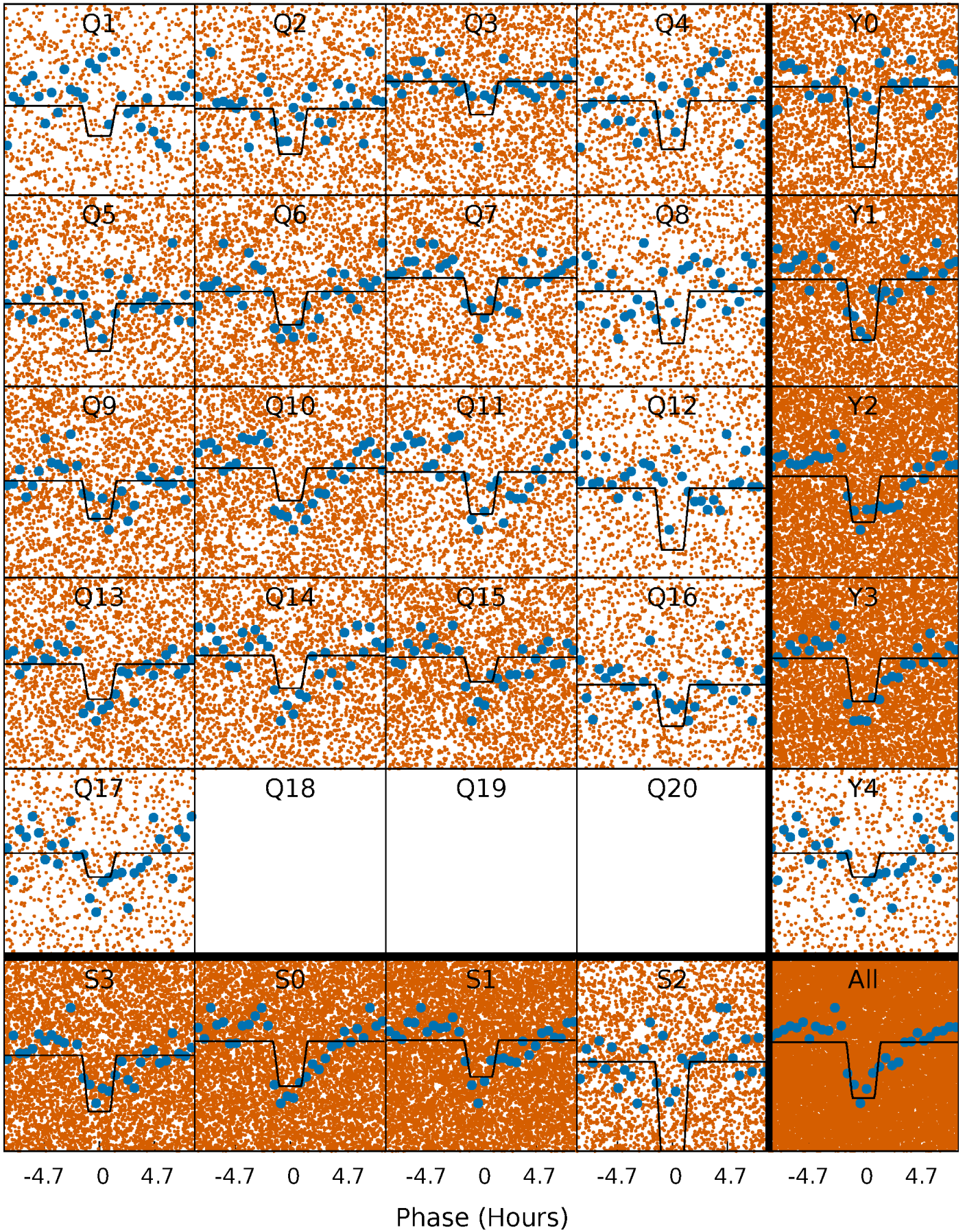
TCE 007362573-01 P= 0.566686 Days  $T_0=131.967968$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

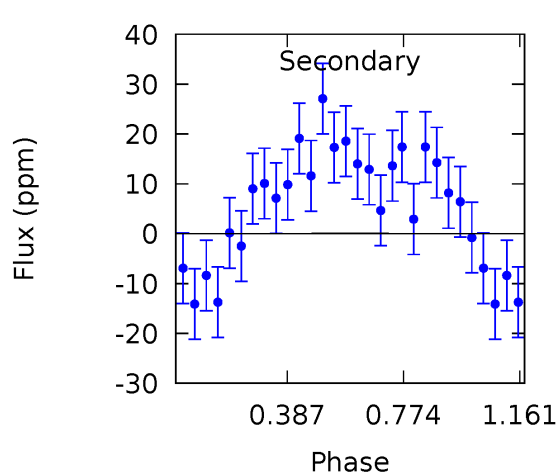
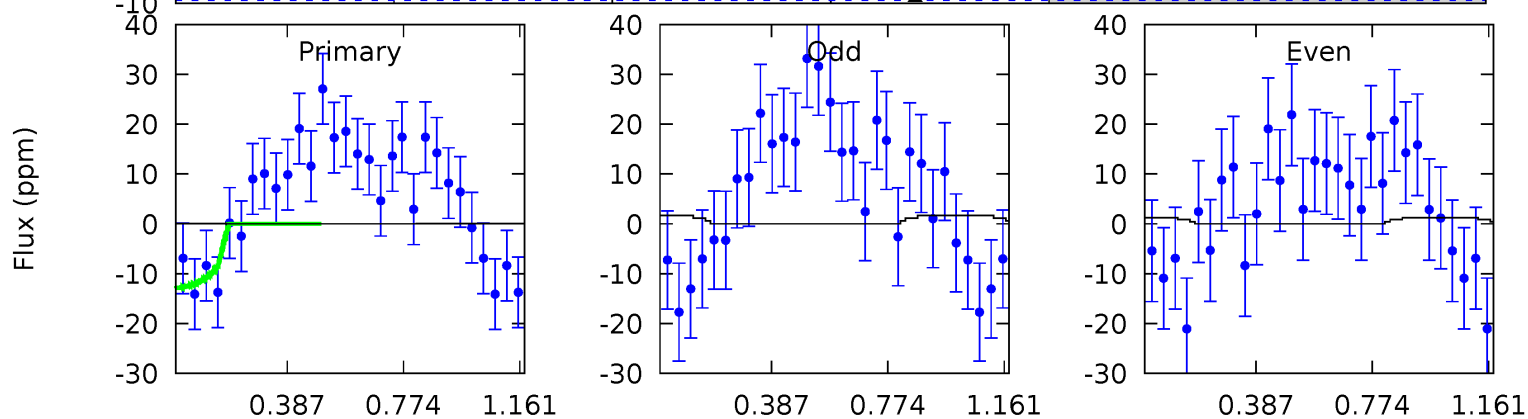
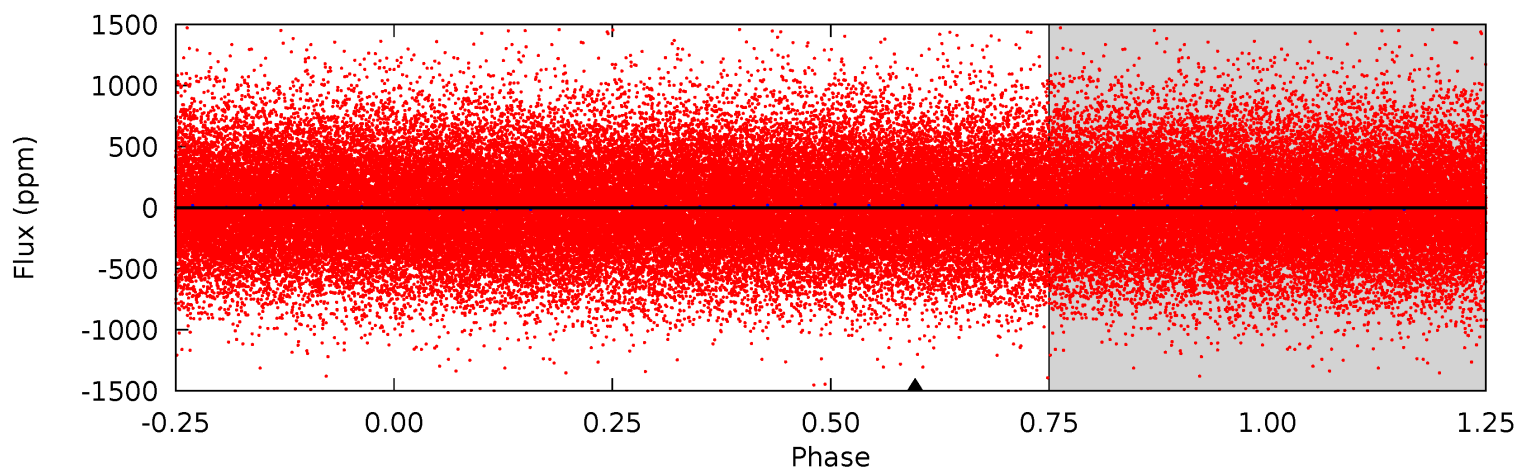
TCE 007362573-01 P= 0.566795 Days  $T_0=131.819622$  (BKJD)



# DV Model-Shift Uniqueness Test

007362573-01, P = 0.566686 Days, E = 131.401282 Days

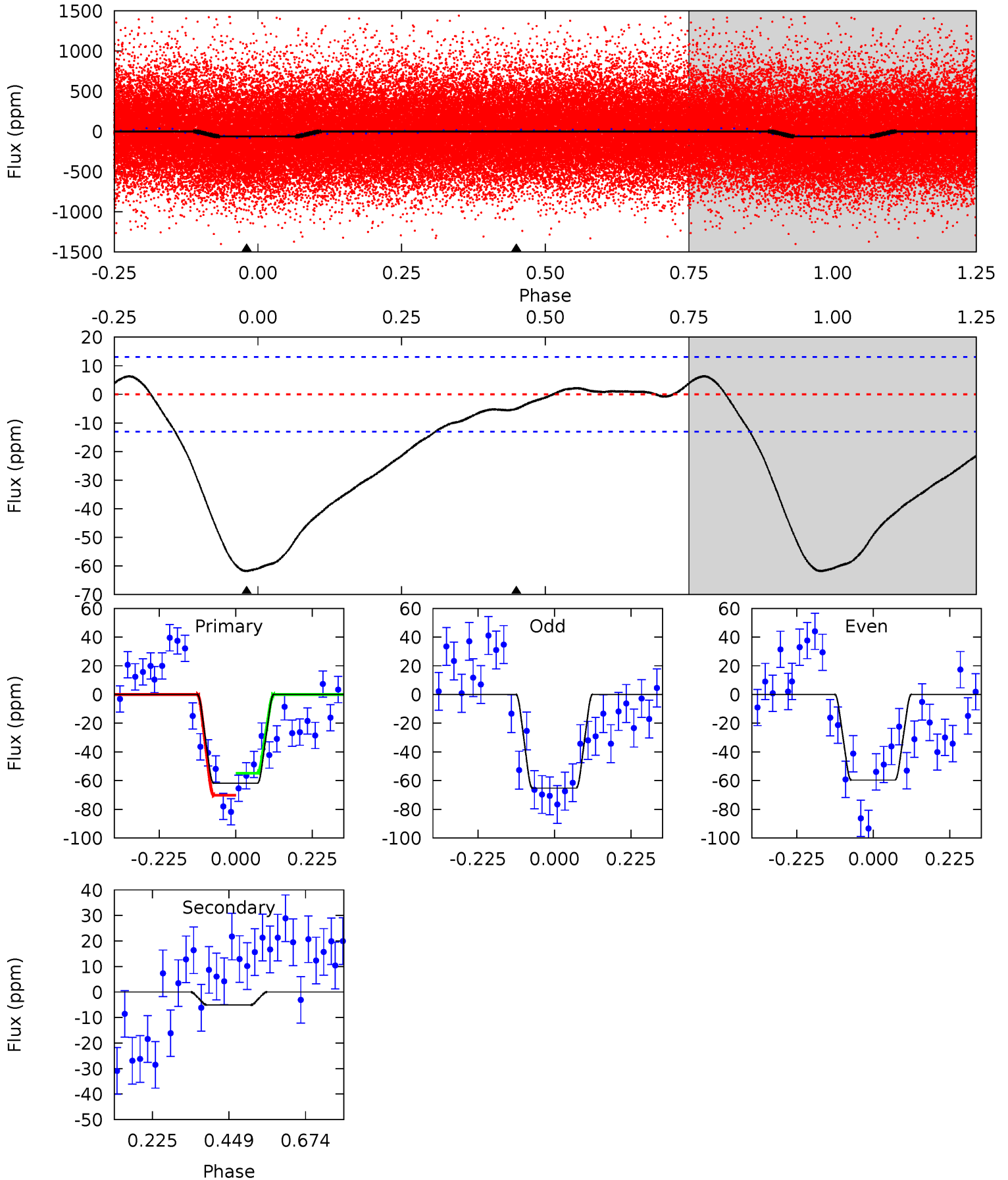
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.01	0.01	0	0	4.27	0.86	0.00	0.01	0.01	0.01	0.01	0.11	5.95	0.06	0.11



# Alt Model-Shift Uniqueness Test

007362573-01, P = 0.566795 Days, E = 131.252827 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
20.8	1.70	0	0	4.39	1.21	3.67	20.8	20.8	1.70	1.70	0.95	0.89	0.09	2.55





### Stellar Parameters For KIC 007362573

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5794^{+155}_{-172}$	$4.480^{+0.067}_{-0.189}$	$-0.220^{+0.300}_{-0.300}$	$0.908^{+0.261}_{-0.105}$	$0.908^{+0.110}_{-0.100}$	$1.710^{+0.565}_{-0.826}$
	+3%/-3%	+1%/-4%	+136%/-136%	+29%/-12%	+12%/-11%	+33%/-48%
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 007362573-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-0 \pm 2$	$1.06^{+1.08}_{-0.75}$	$3025^{+205}_{-144}$	$-3109^{+5608}_{-418}$	$0.003^{+0.362}_{-0.348}$
Alt.	$-5 \pm 3$	$1.38^{+1.34}_{-0.96}$	$3024^{+227}_{-141}$	$-2582^{+6898}_{-498}$	$0.222^{+2.409}_{-0.182}$

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

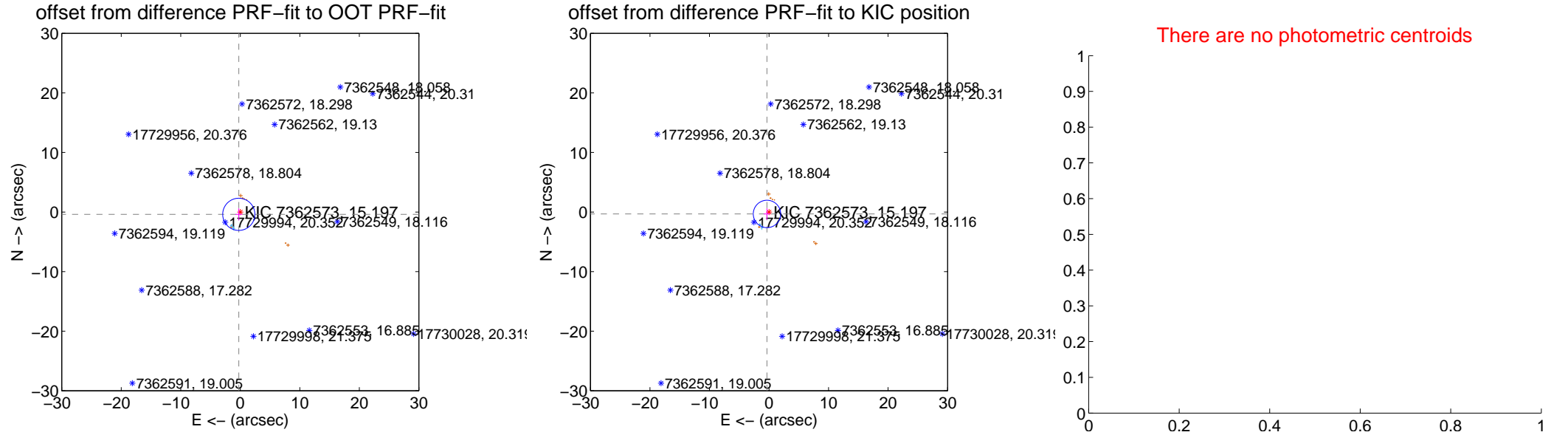
## DV Centroid Data

Supplemental centroid analysis for 007362573-01. Kepler magnitude: 15.20. Transit SNR 0.05

There are 5 quarters with good PRF difference image offsets

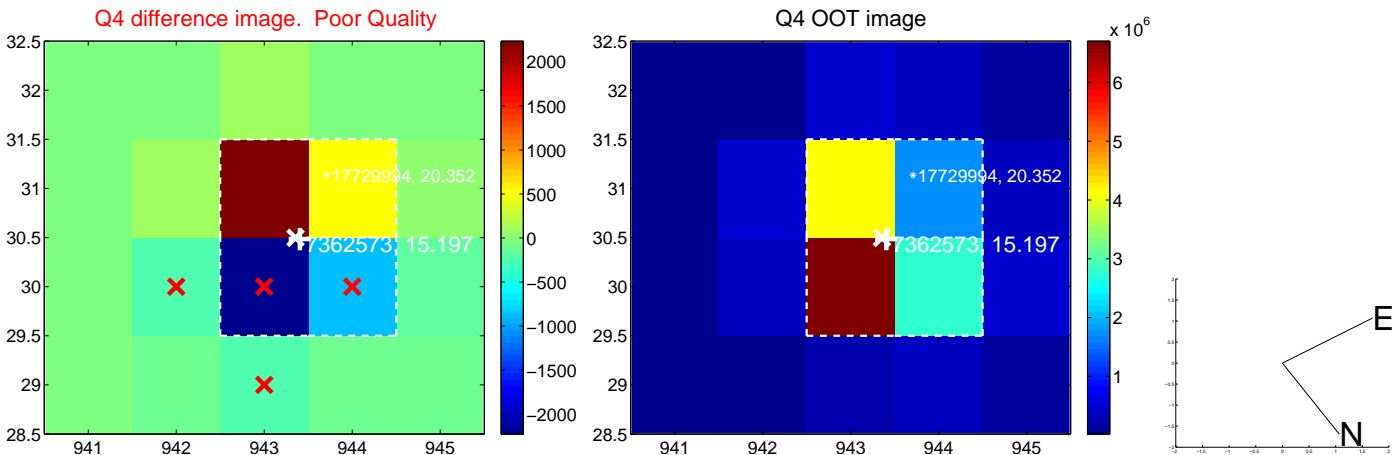
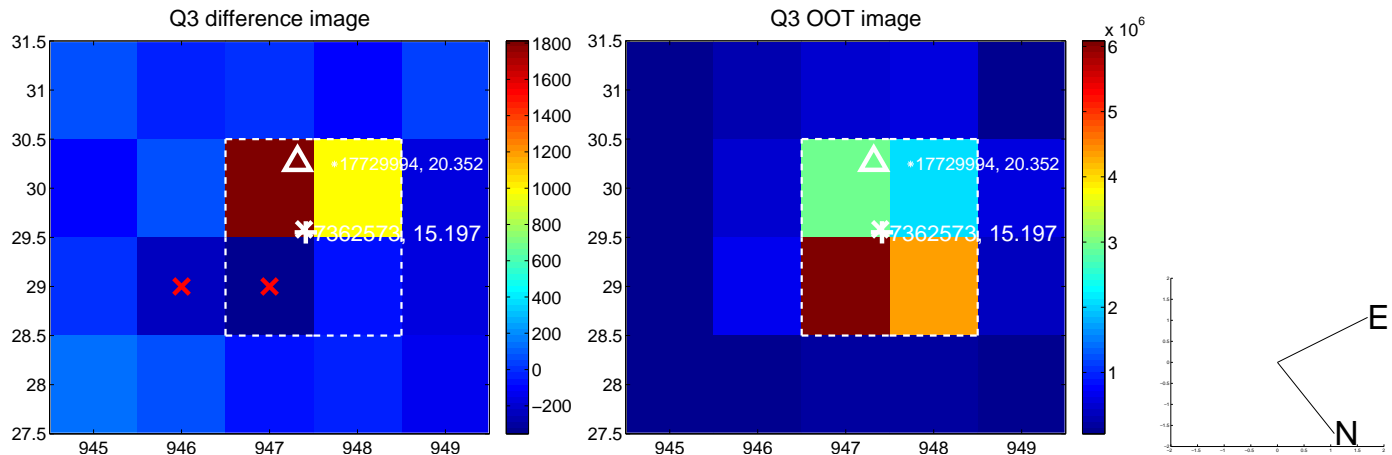
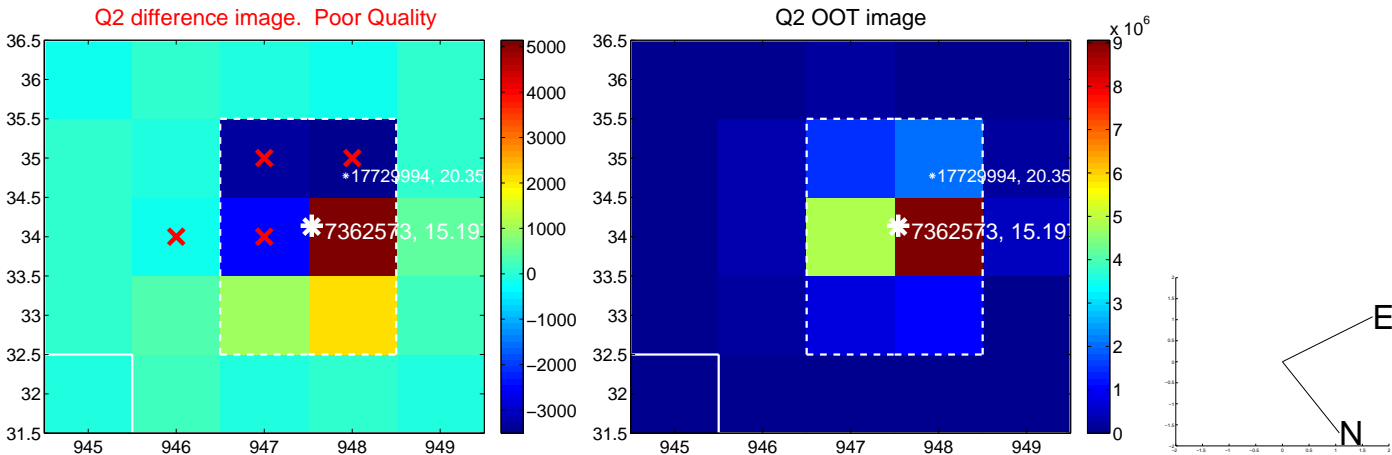
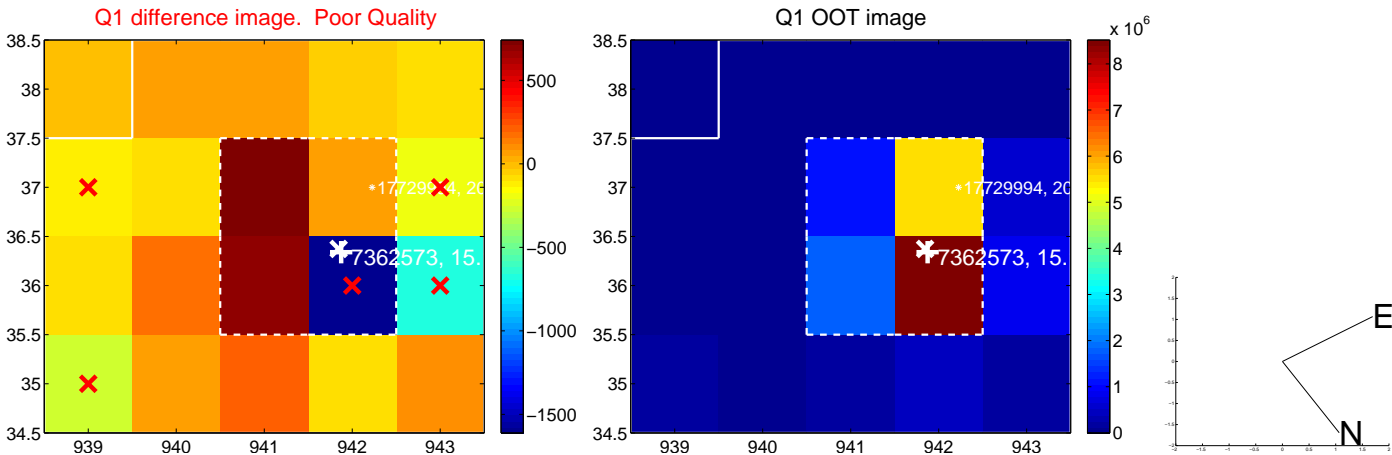
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.461 \pm 0.900$	0.51	$0.253 \pm 0.555$	$-0.385 \pm 1.014$
PRF-fit source offset from KIC position	$0.468 \pm 0.767$	0.61	$0.341 \pm 0.537$	$-0.321 \pm 0.963$
photometric centroid source offset	—	—	—	—

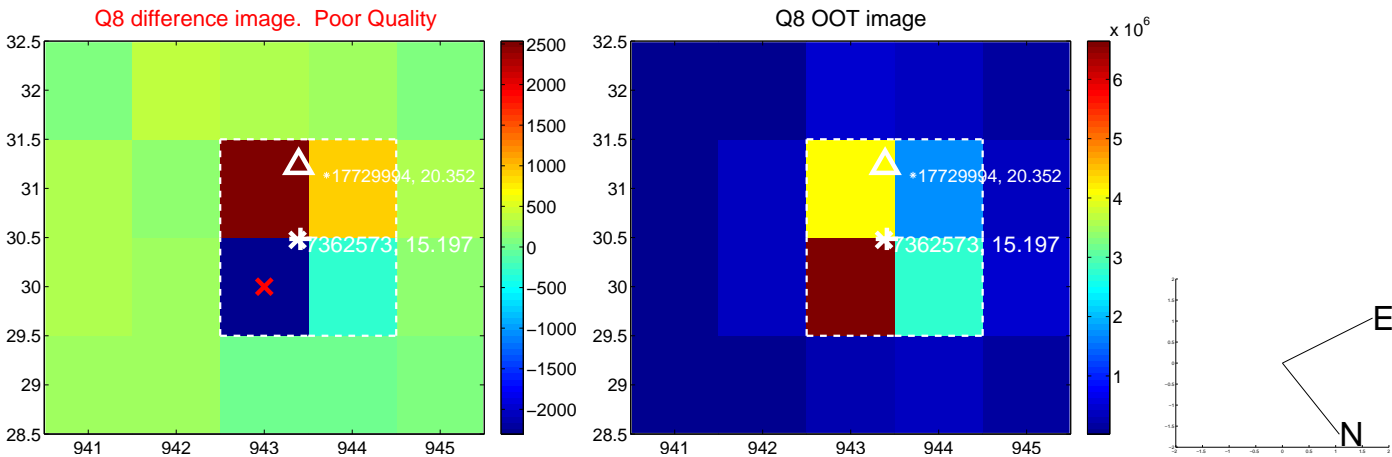
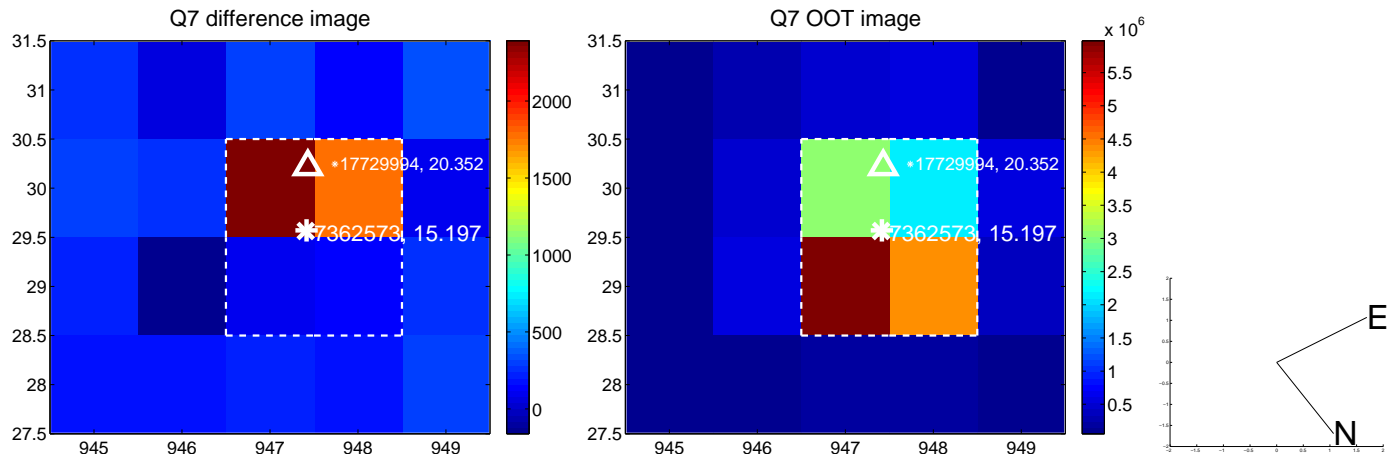
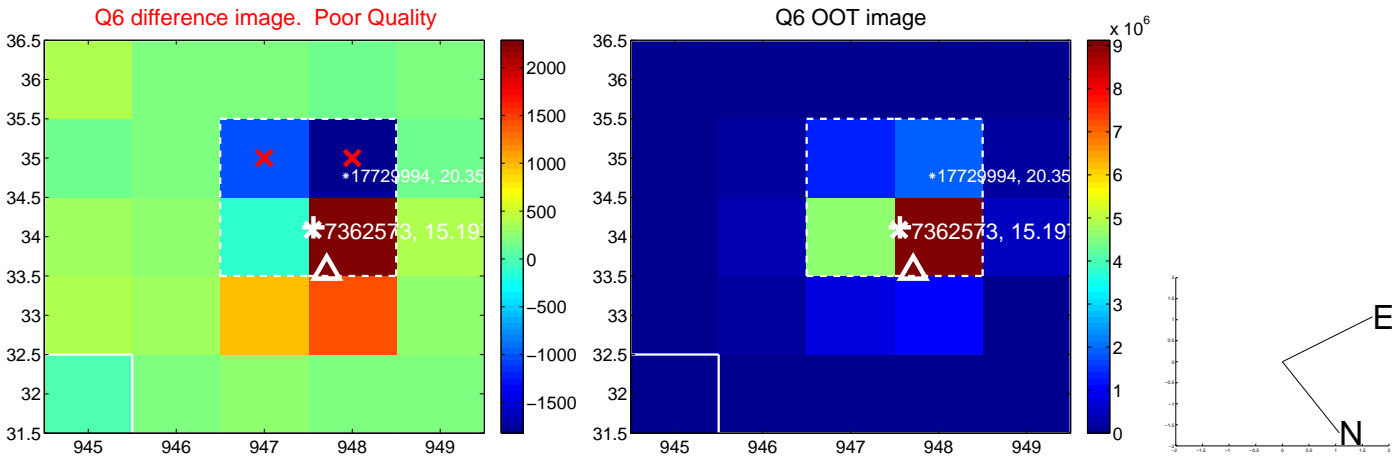
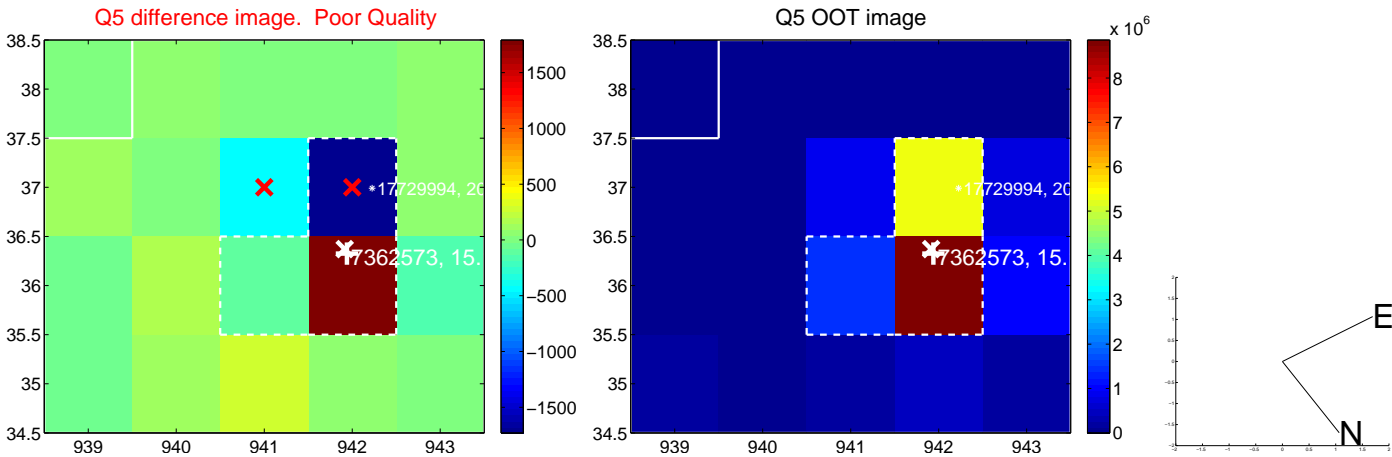


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

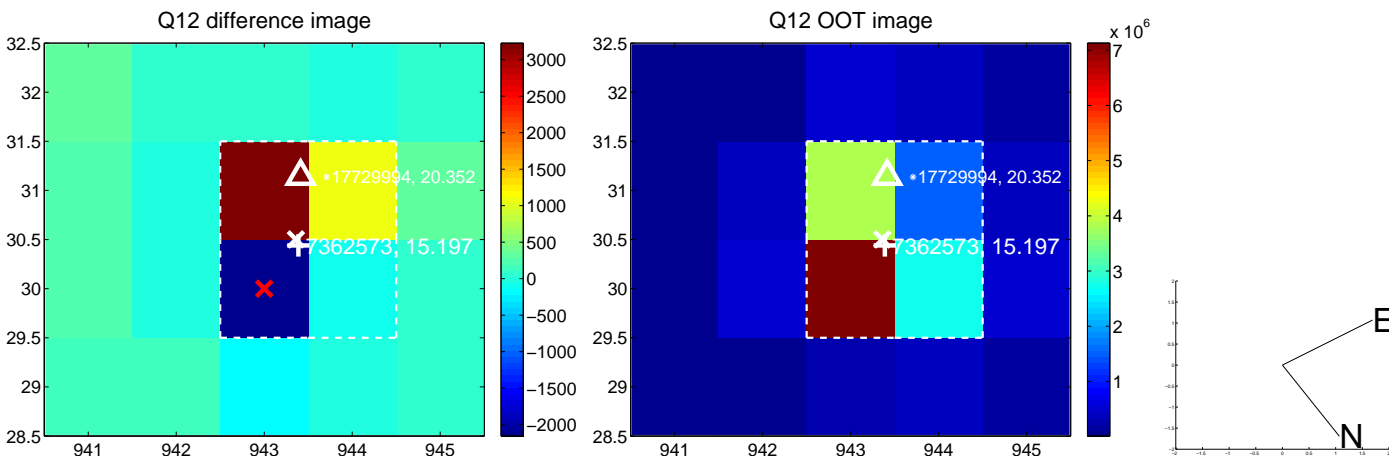
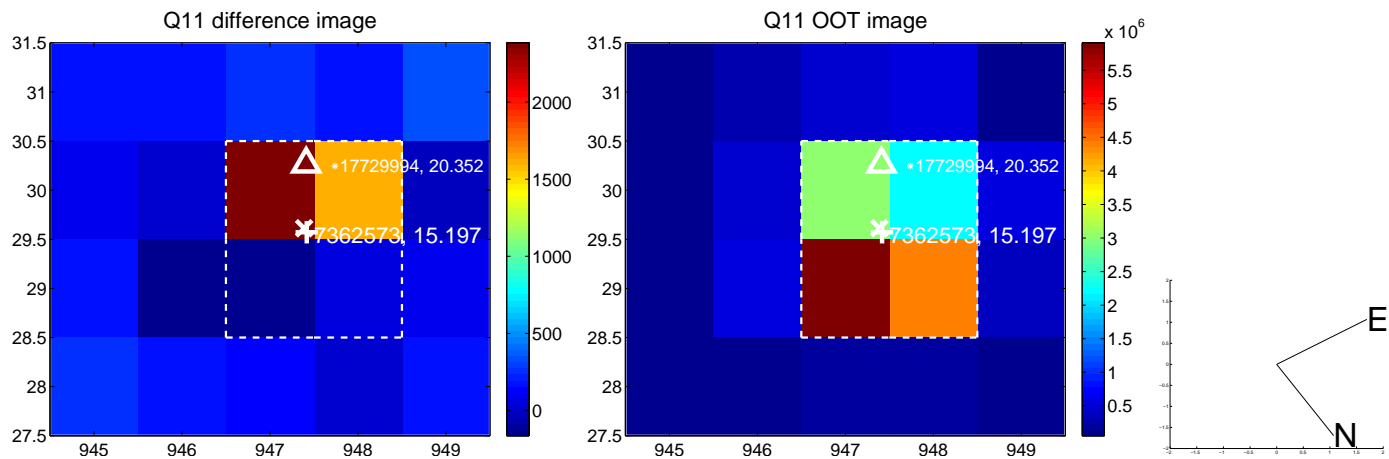
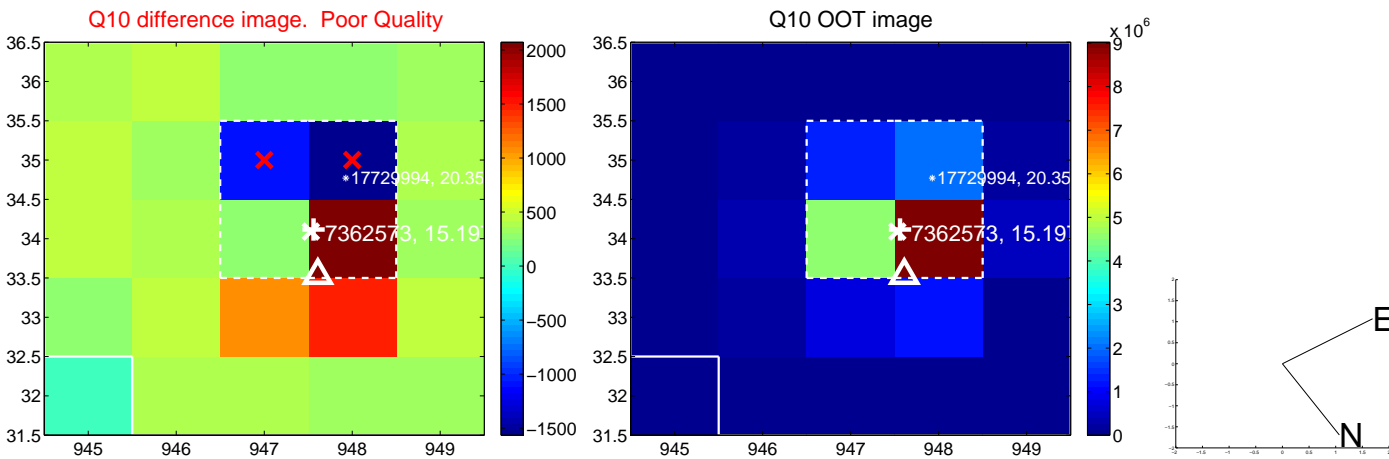
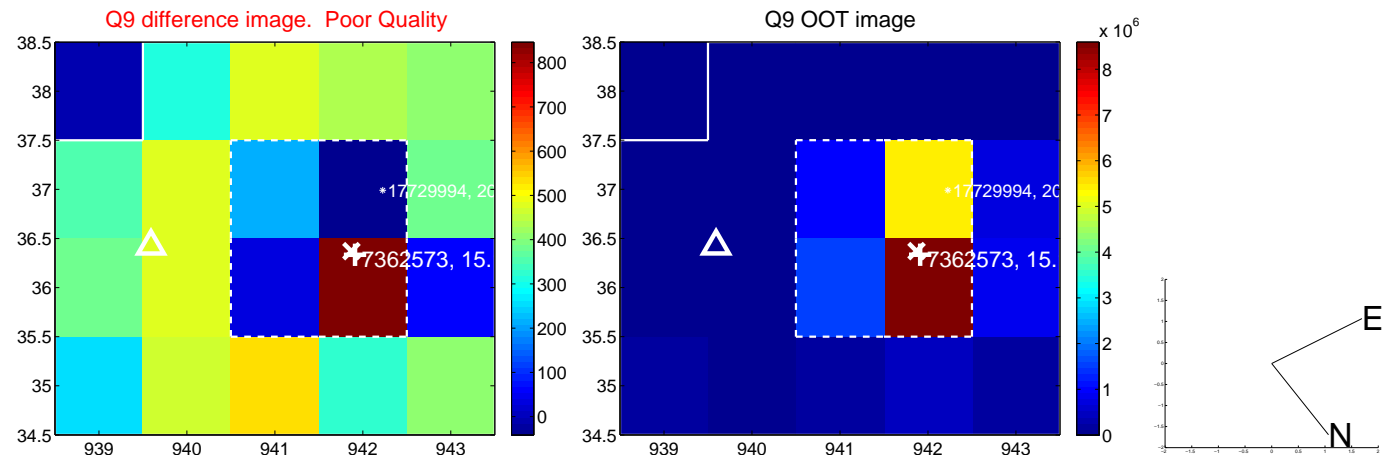


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

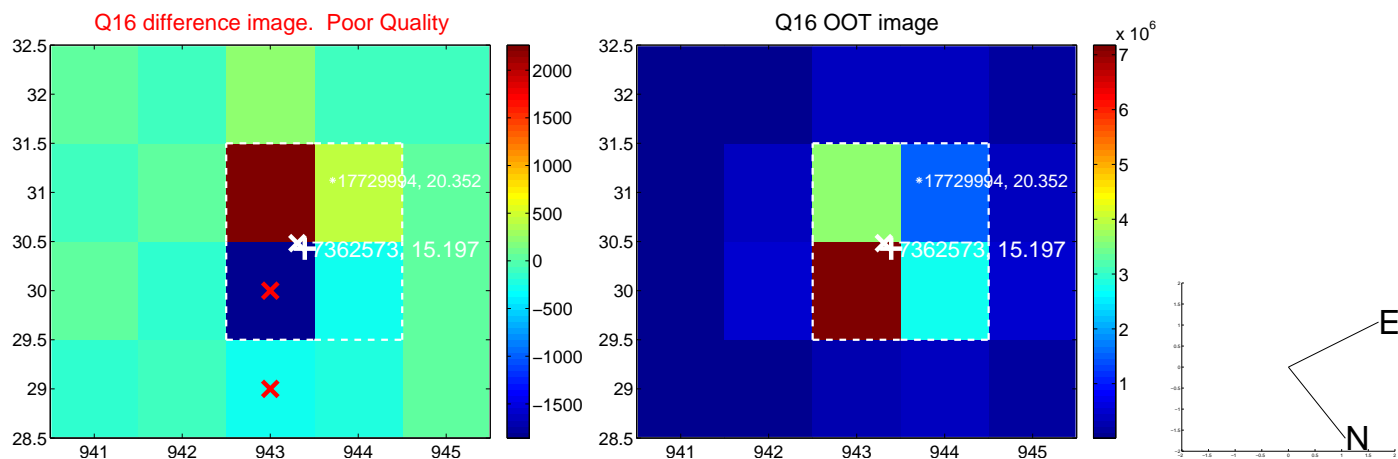
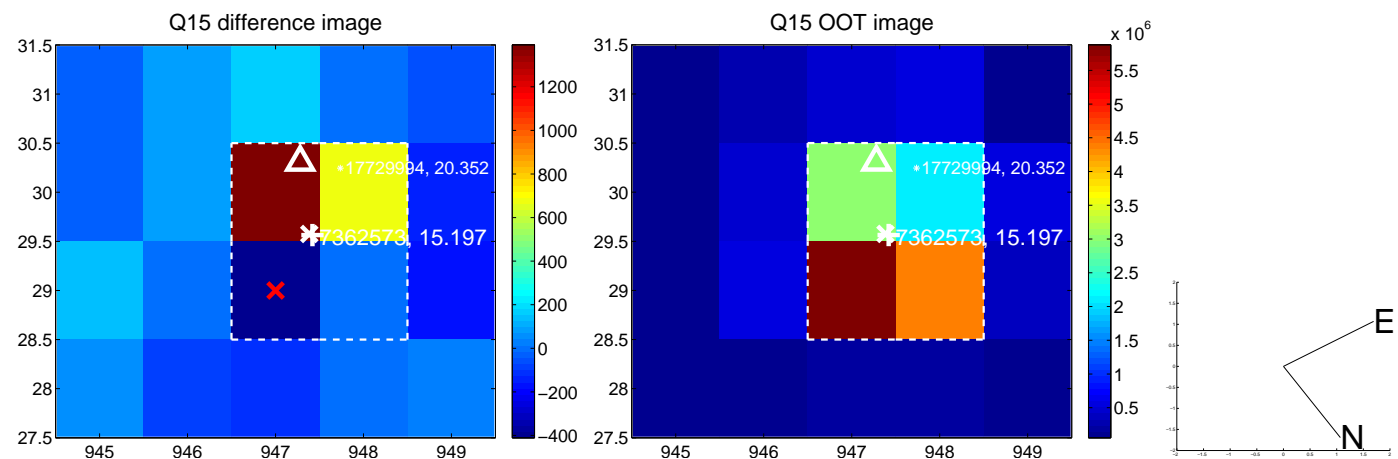
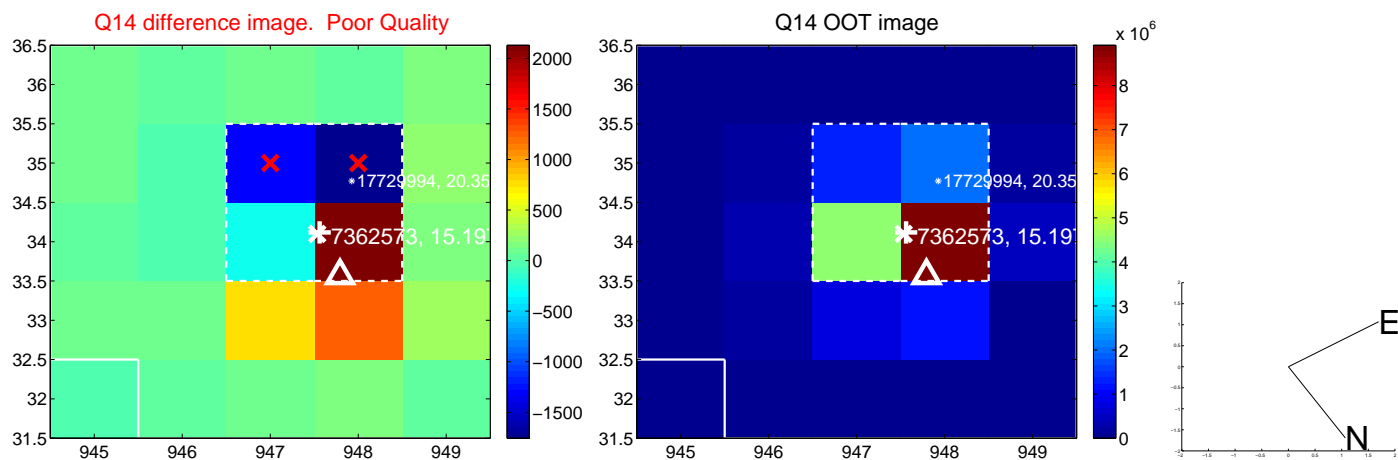
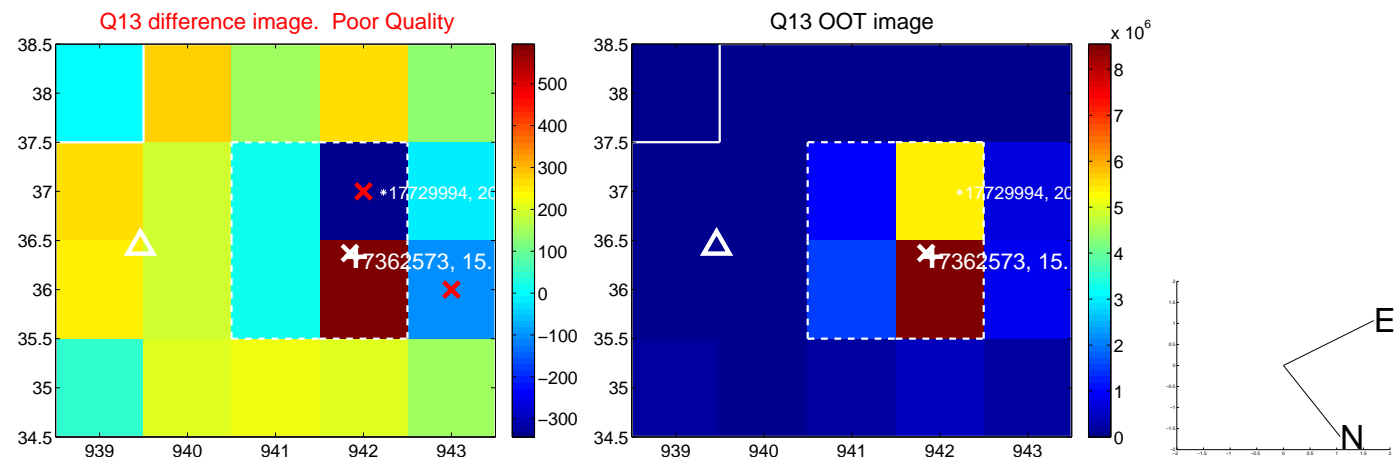




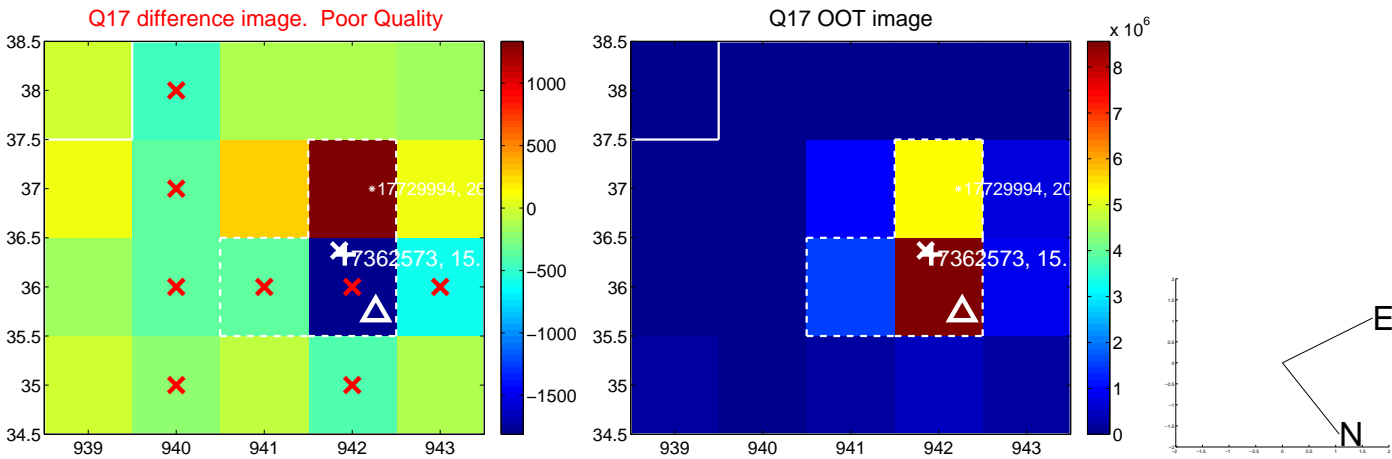
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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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

