

# KIC 005598639

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005598639-01	OBS	6602.01	0.648778	131.744896	108794.3	4.339	9970.4	3398.1	0.78	5143	38.95	2042.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005598639-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—CENT_SATURATED

**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 005598639-01

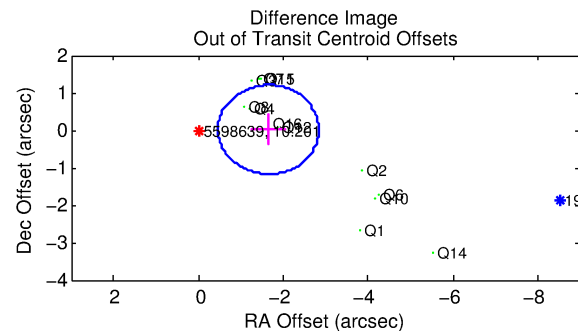
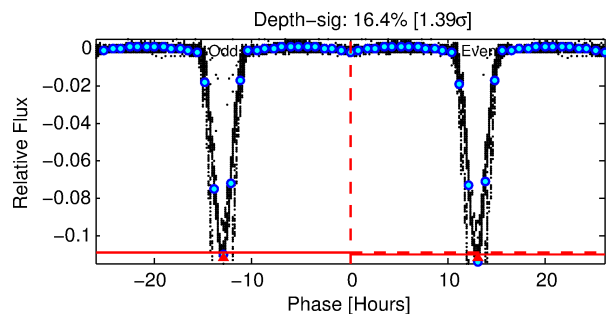
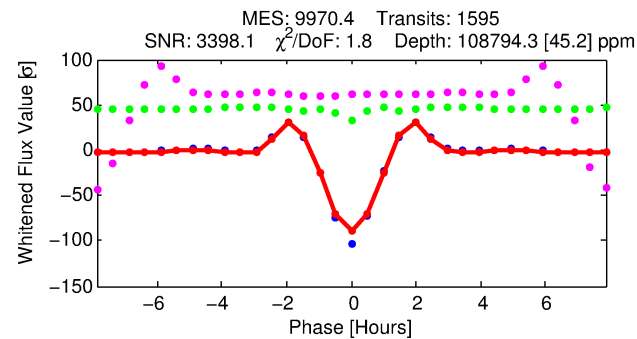
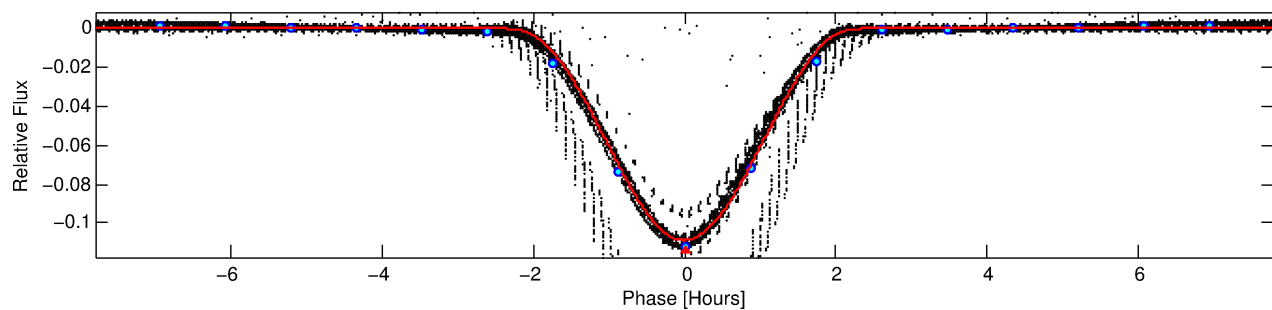
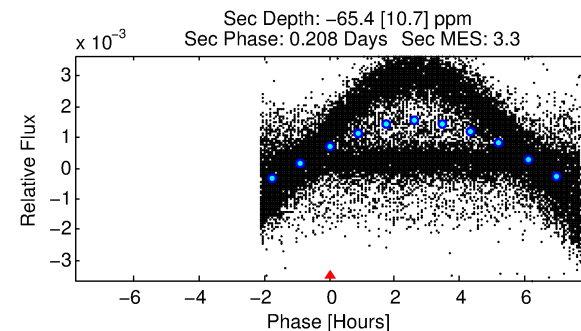
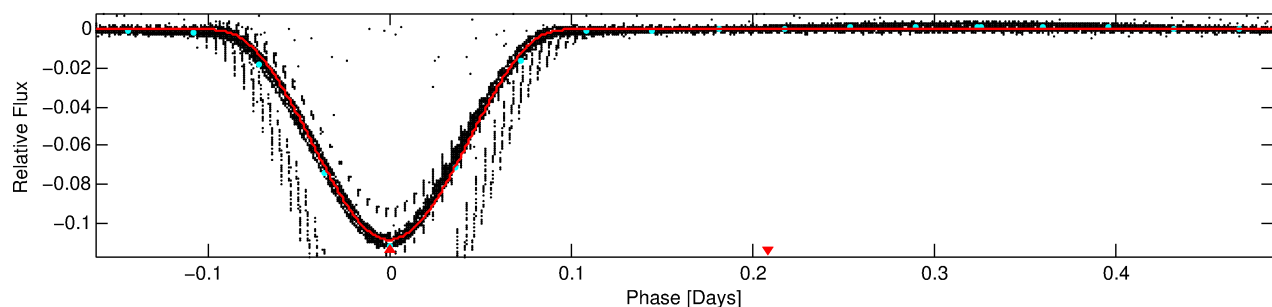
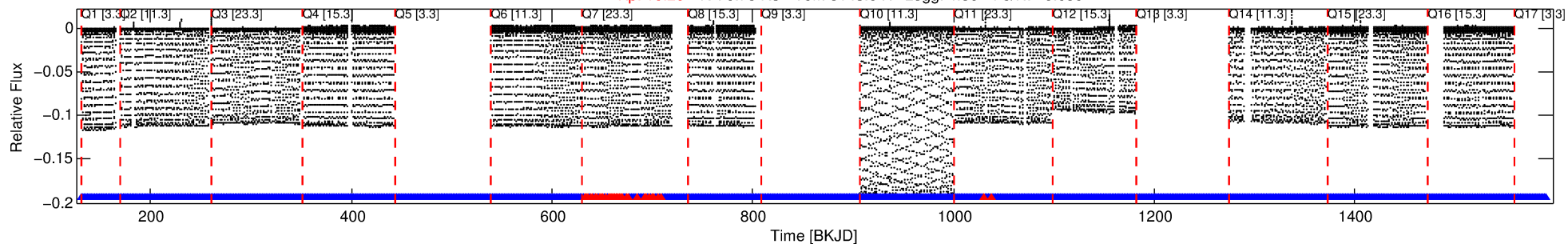
No Significant Match Found

# DV One-Page Summary

KIC: 5598639 Candidate: 1 of 1 Period: 0.649 d

KOI: K06602.01 Corr: 0.993

Kp: 10.20 R\*: 0.78 Rs Teff: 5143.0 K Logg: 4.56 Fe/H: -0.080



## DV Fit Results:

Period = 0.64878 [0.00000] d  
Epoch = 131.7449 [0.0000] BKJD  
Rp/R\* = 0.4600 [0.0077]  
a/R\* = 1.74 [0.01]  
b = 0.92 [0.01]  
Seff = 2042.71 [420.61]  
Teff = 1714 [88] K  
Rp = 38.95 [4.91] Re  
a = 0.0136 [0.0014] AU  
Ag = N/A  
Teffp = N/A

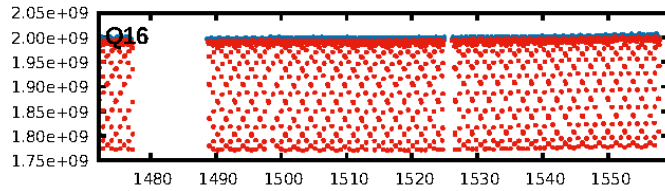
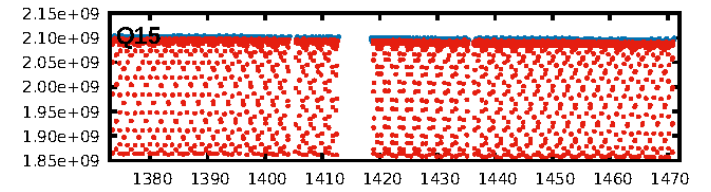
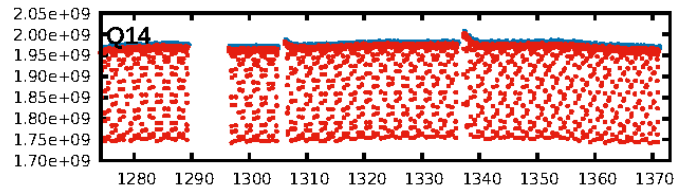
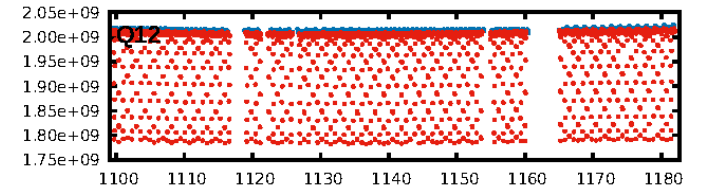
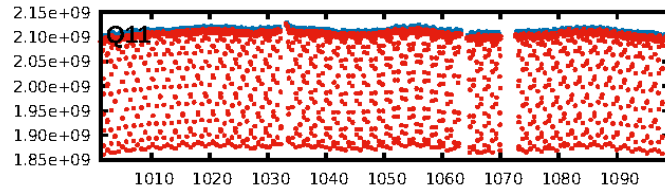
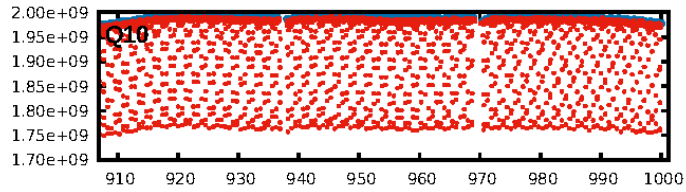
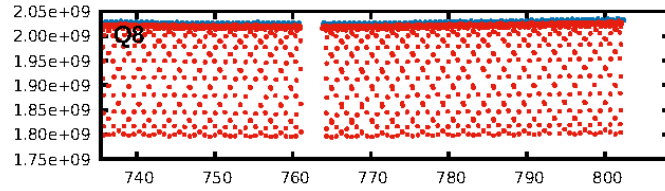
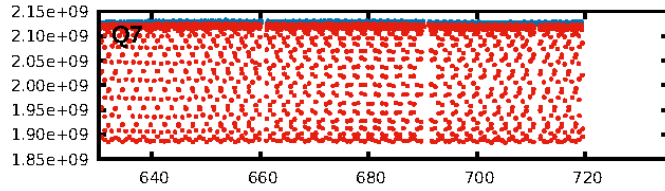
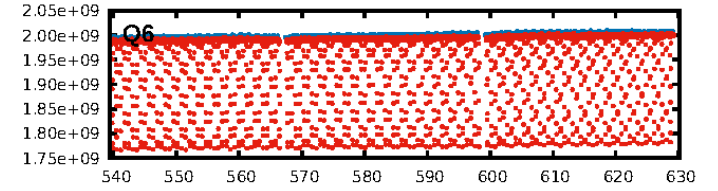
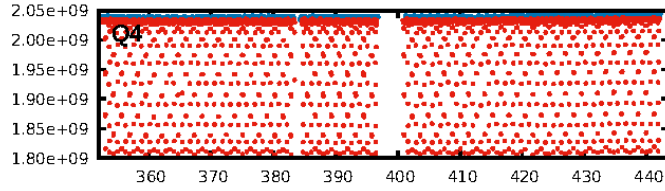
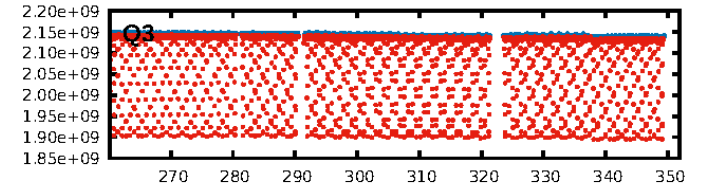
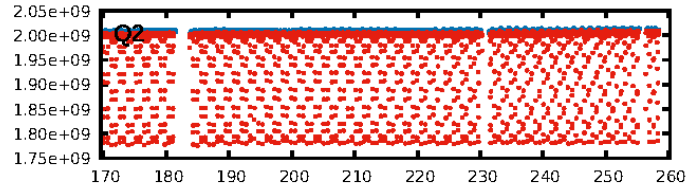
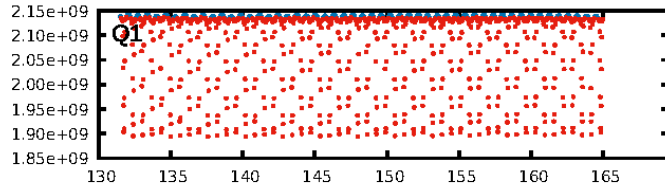
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.97 [1498/1543]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 1.651 arcsec [4.17σ]  
KicOffset-rm: 2.547 arcsec [5.87σ]  
OotOffset-st: 4/4/4/1 [13]  
KicOffset-st: 4/4/4/1 [13]  
DiffImageQuality-fgm: 0.08 [1/13]  
DiffImageOverlap-fno: 1.00 [13/13]

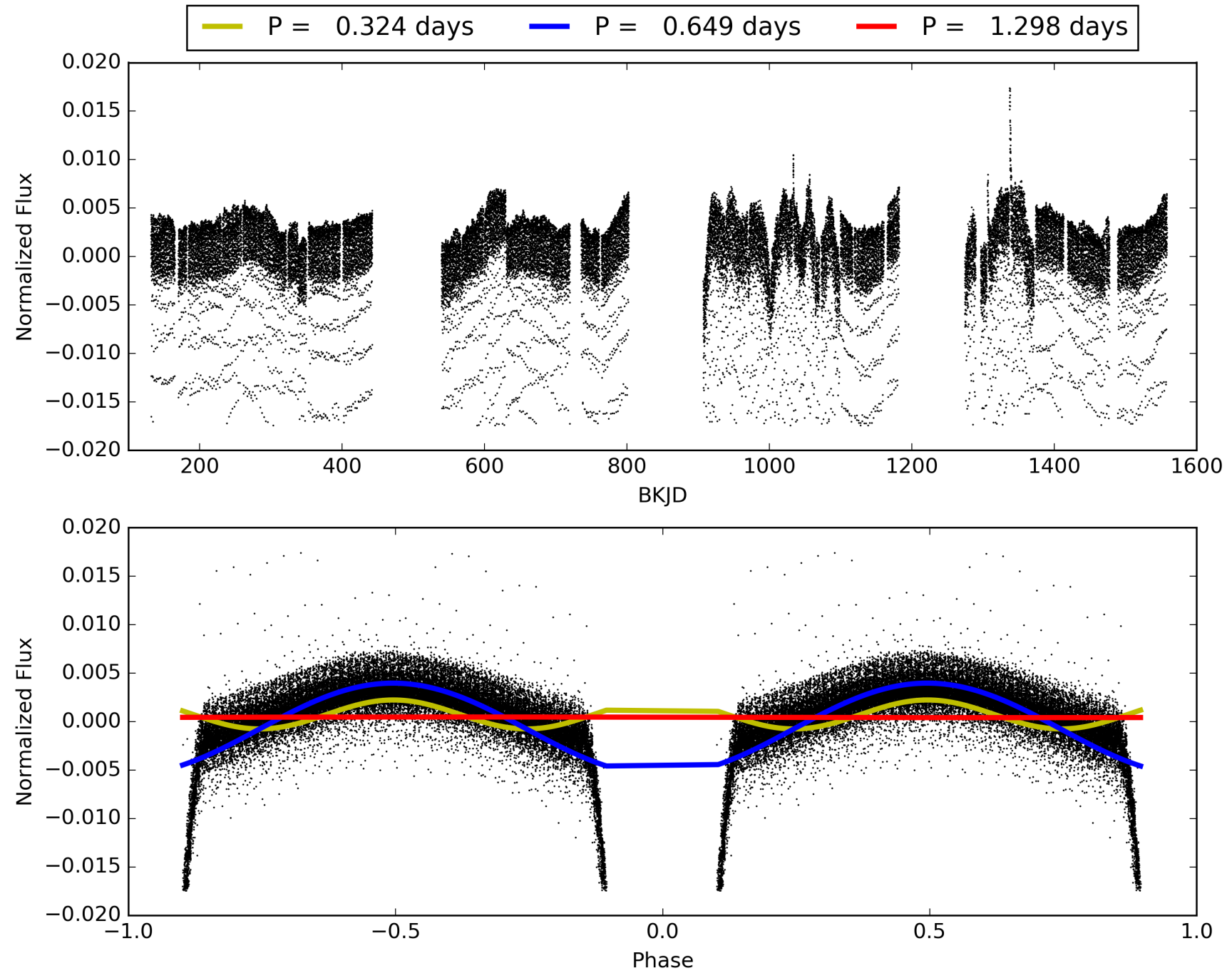
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 04:30:56 Z

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

# TCE 005598639-01, PDC Light Curves

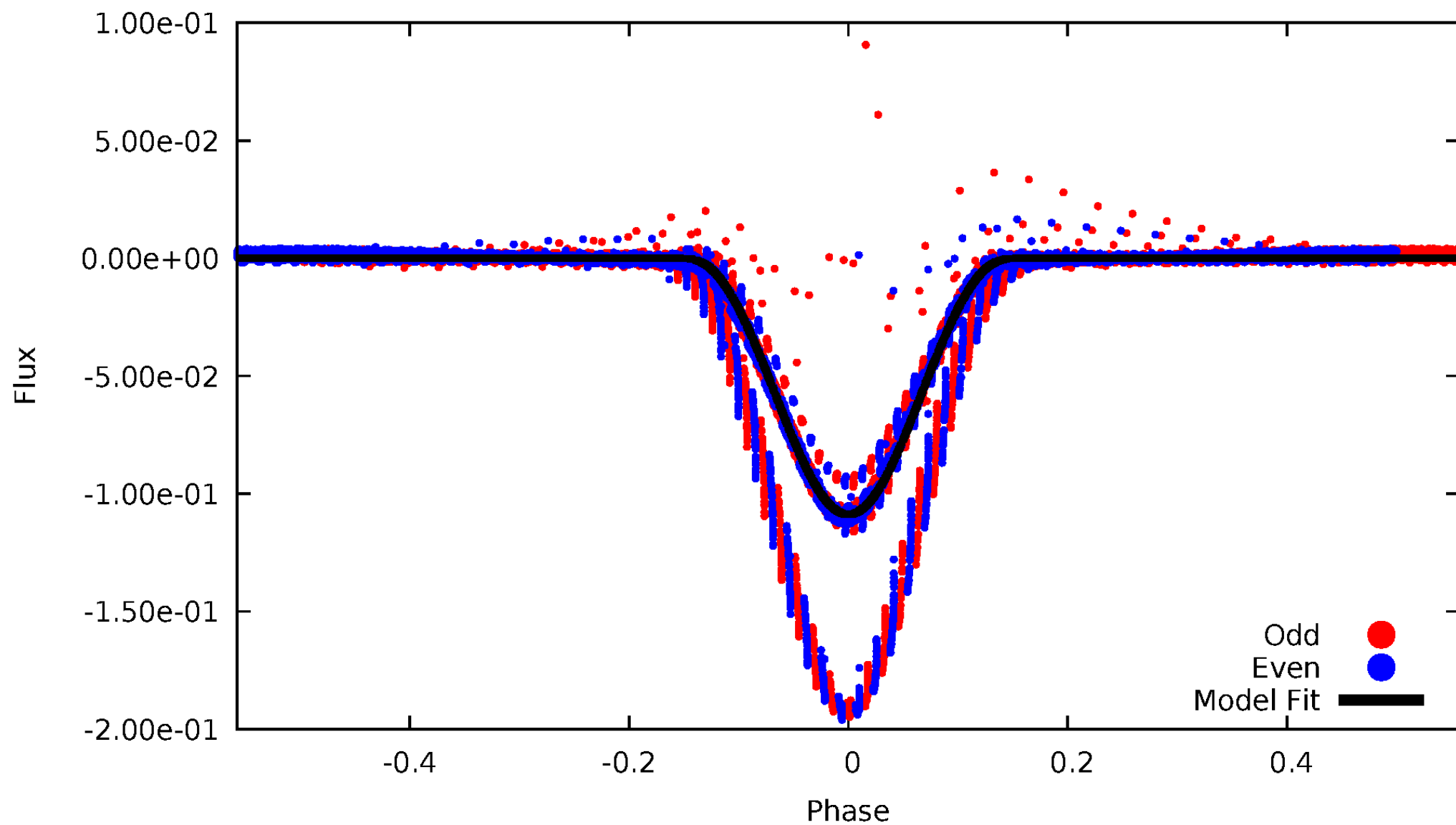


TCE 005598639-01



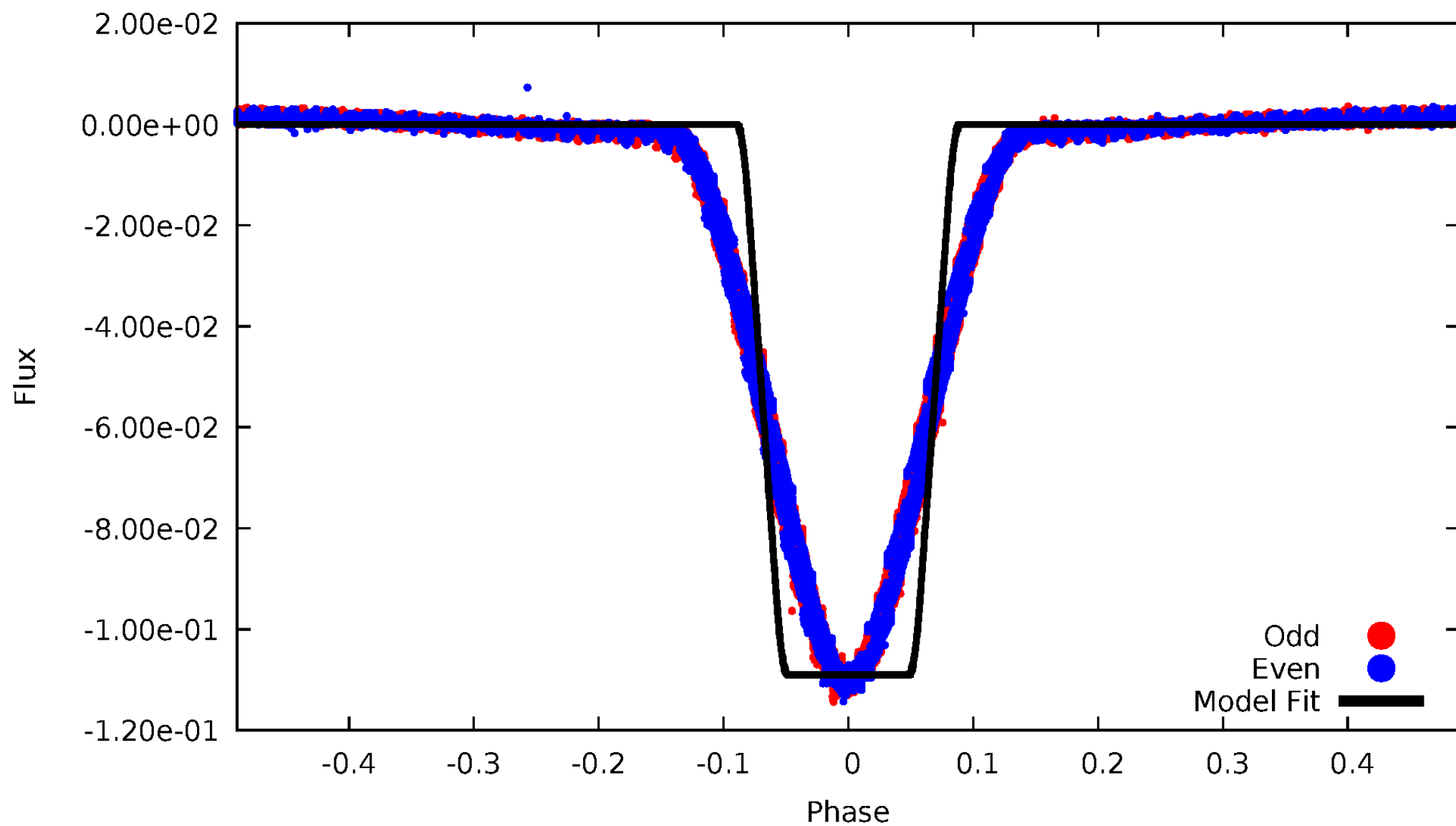
# DV Odd/Even

TCE 005598639-01



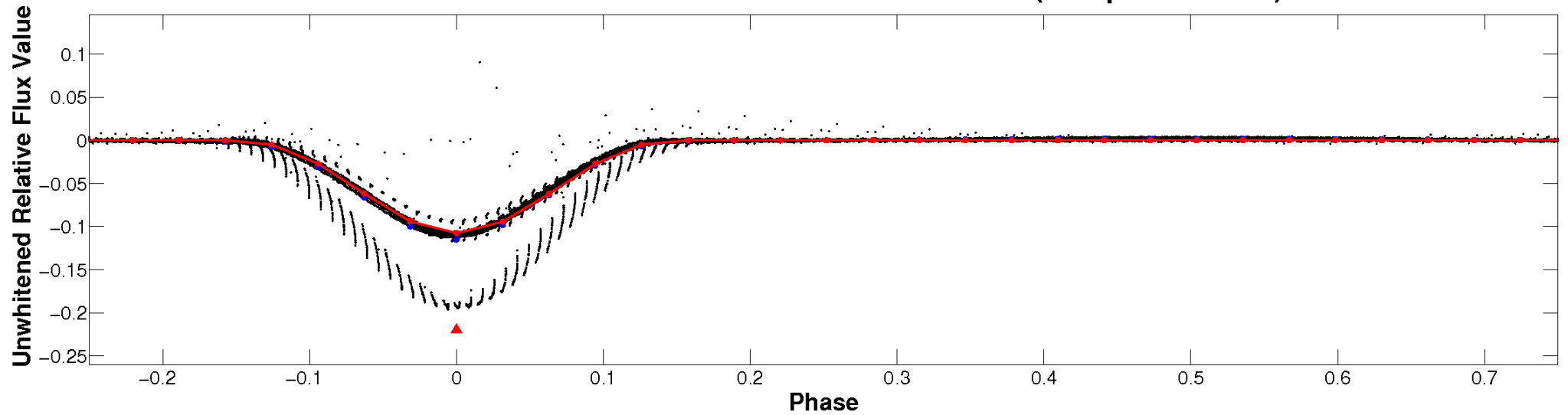
# ALT Odd/Even

TCE 005598639-01

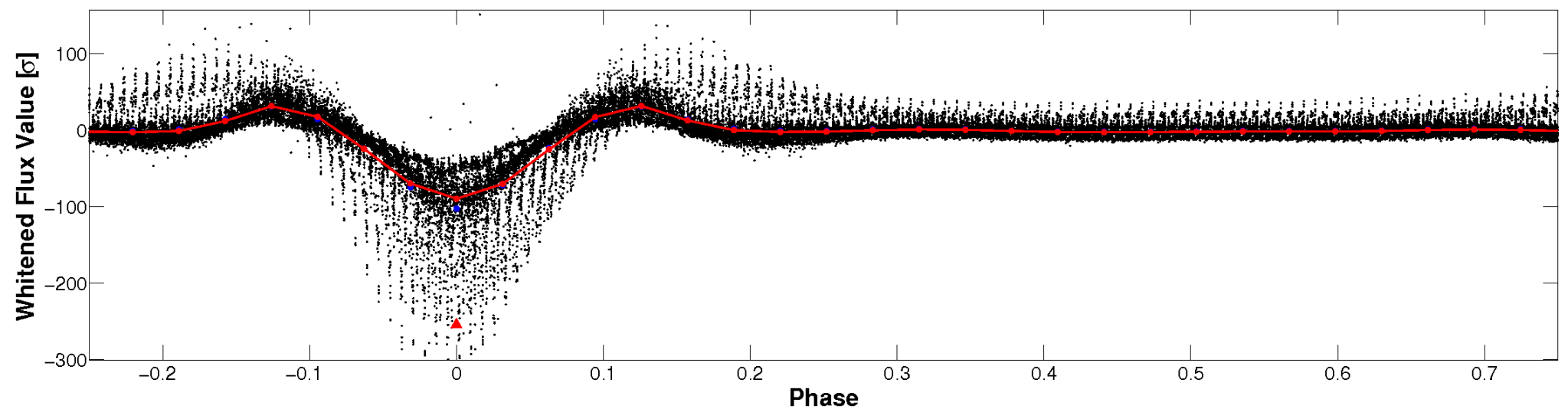


# Non-Whitened Vs. Whitened Light Curve

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

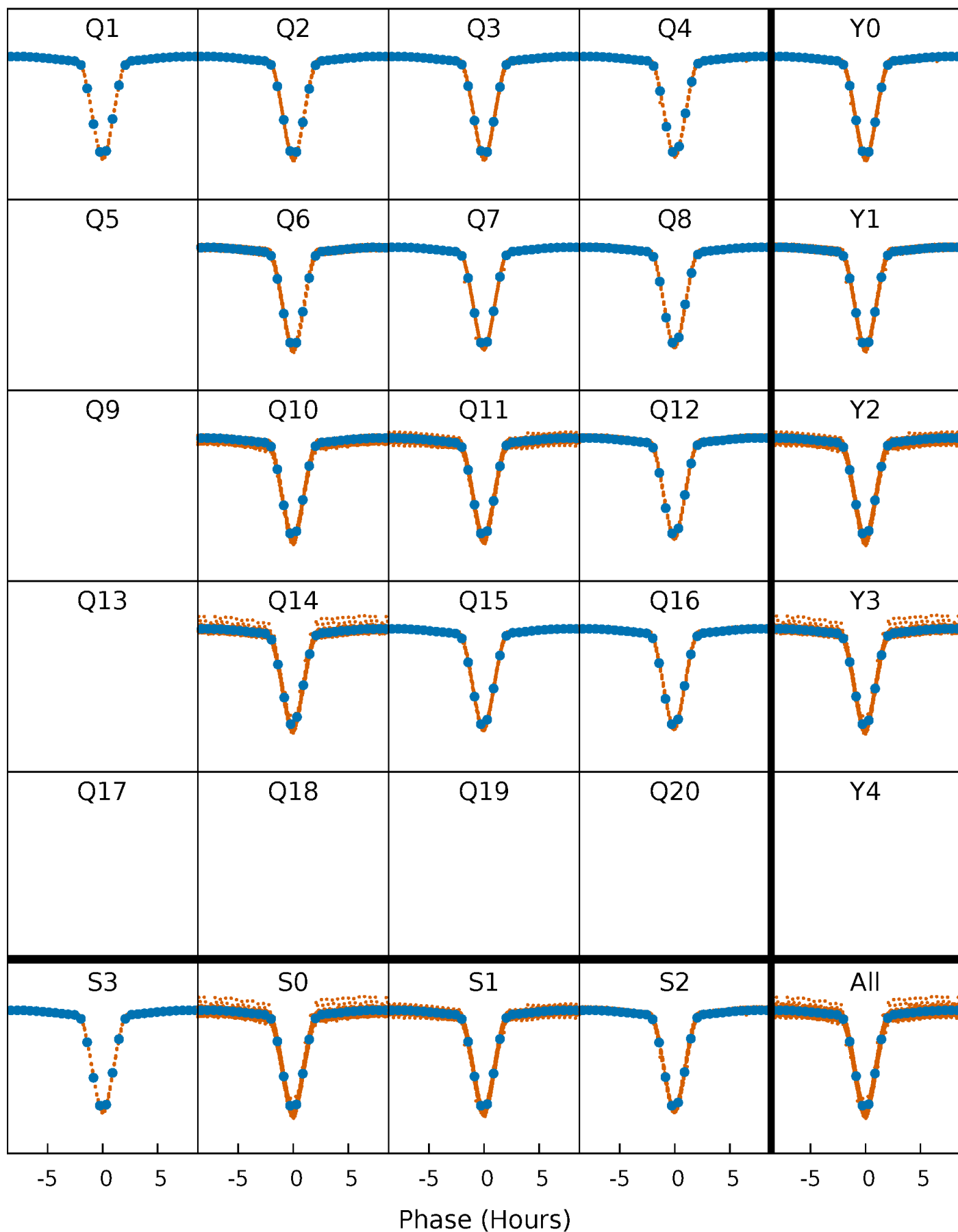


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

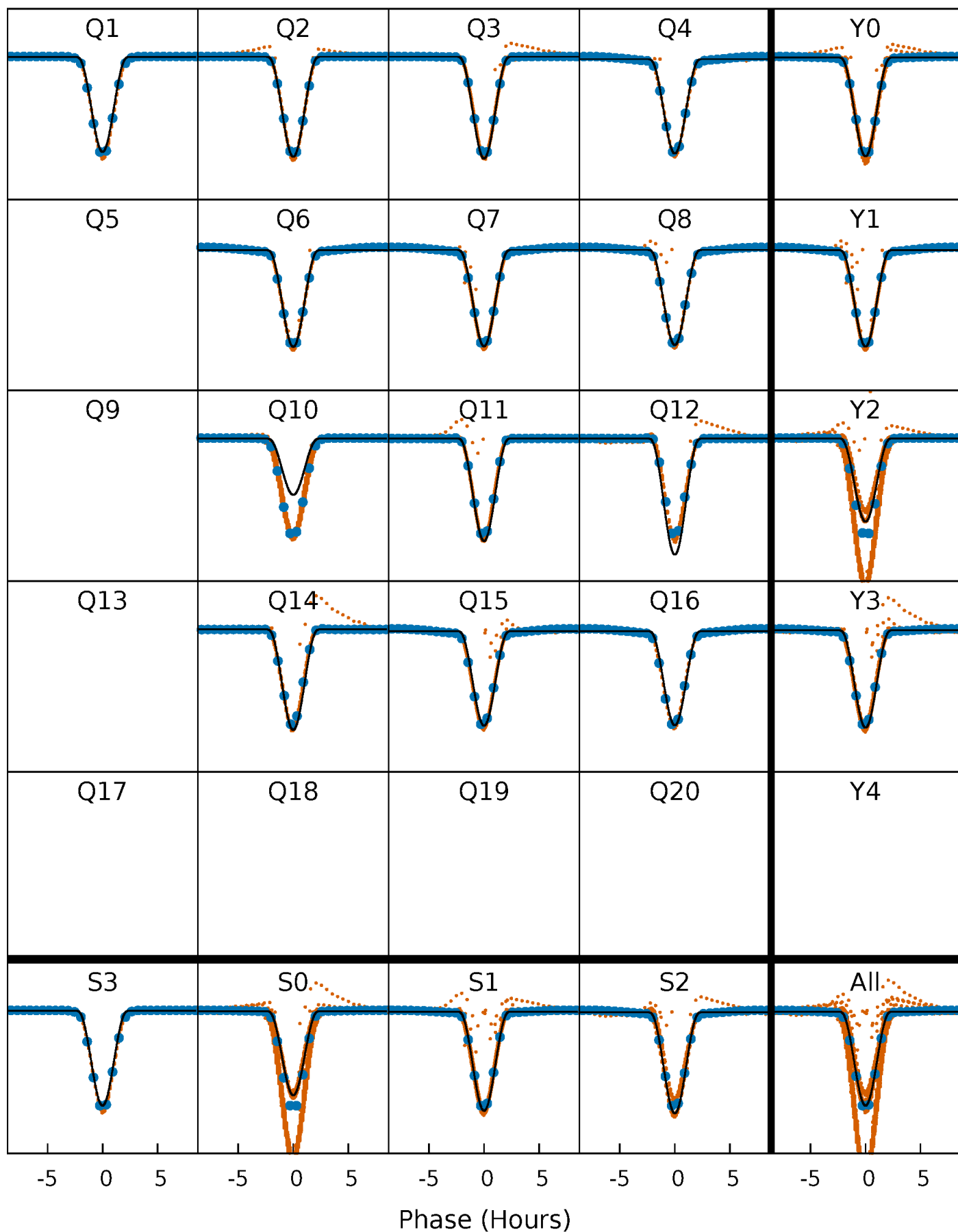
TCE 005598639-01   P= 0.648778 Days    $T_0=131.744896$  (BKJD)





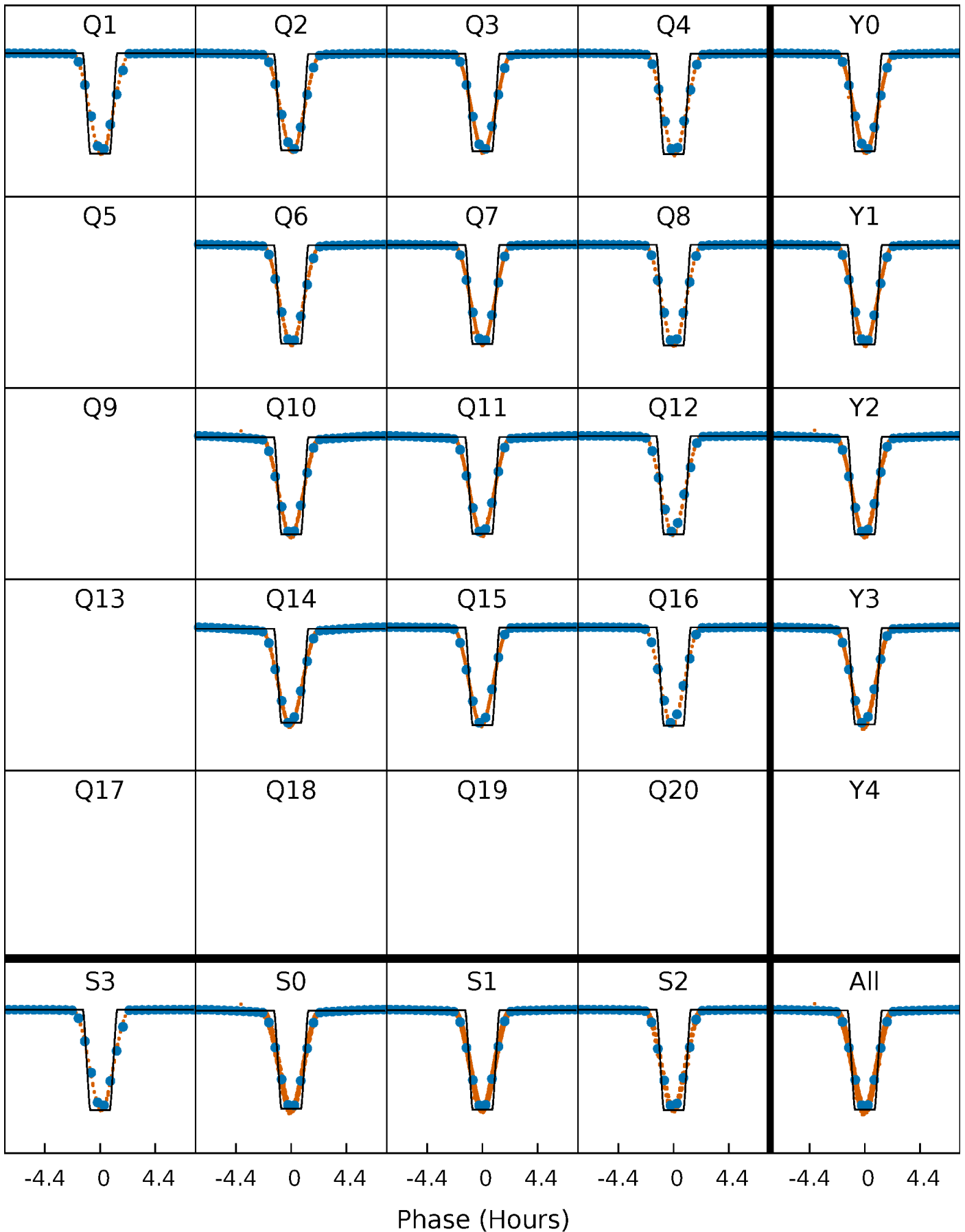
# DV Quarter-Phased Transit Curves

TCE 005598639-01 P= 0.648778 Days  $T_0=131.744896$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

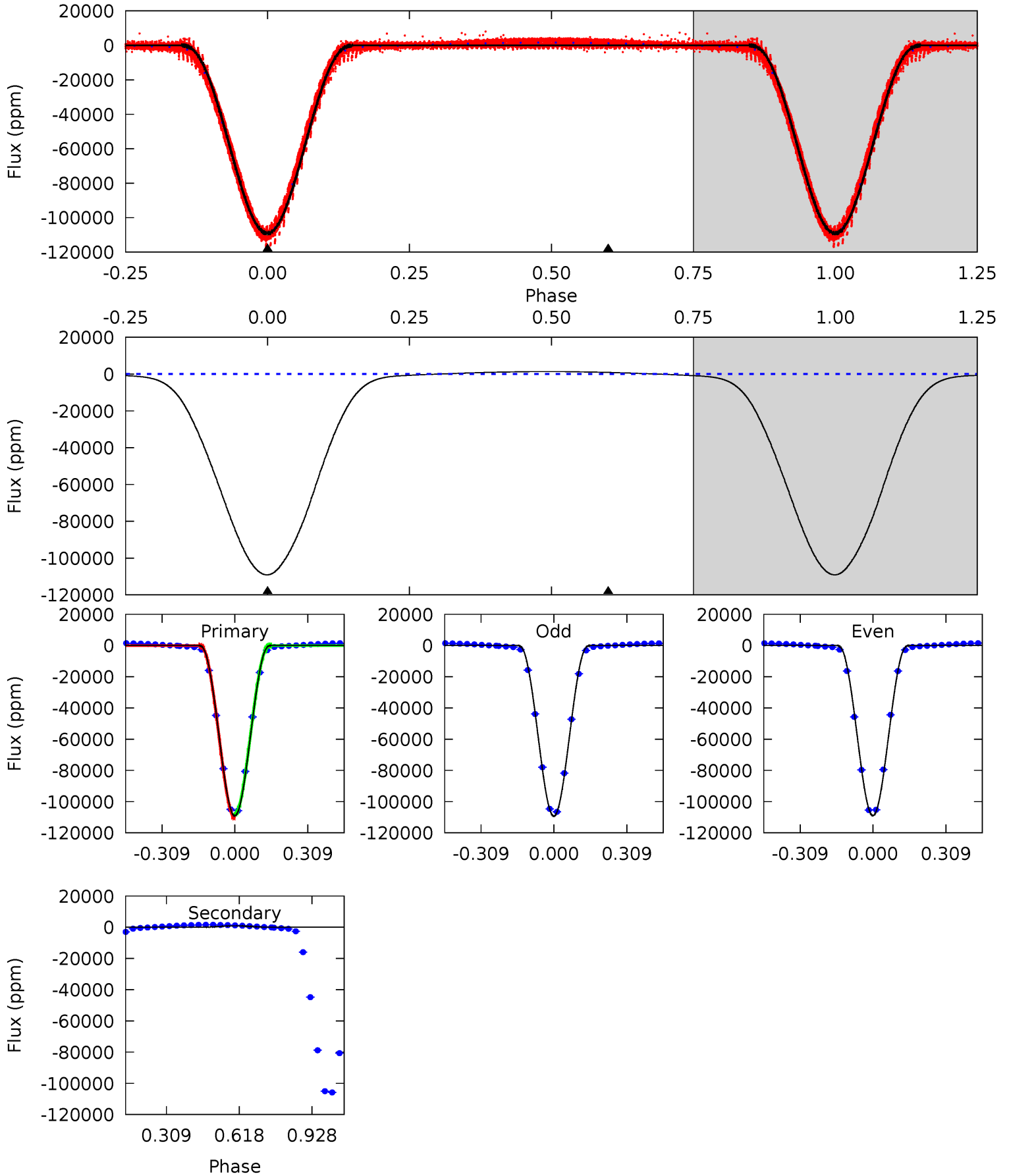
TCE 005598639-01   P= 0.648780 Days    $T_0=131.741395$  (BKJD)



# DV Model-Shift Uniqueness Test

005598639-01, P = 0.648778 Days, E = 131.096118 Days

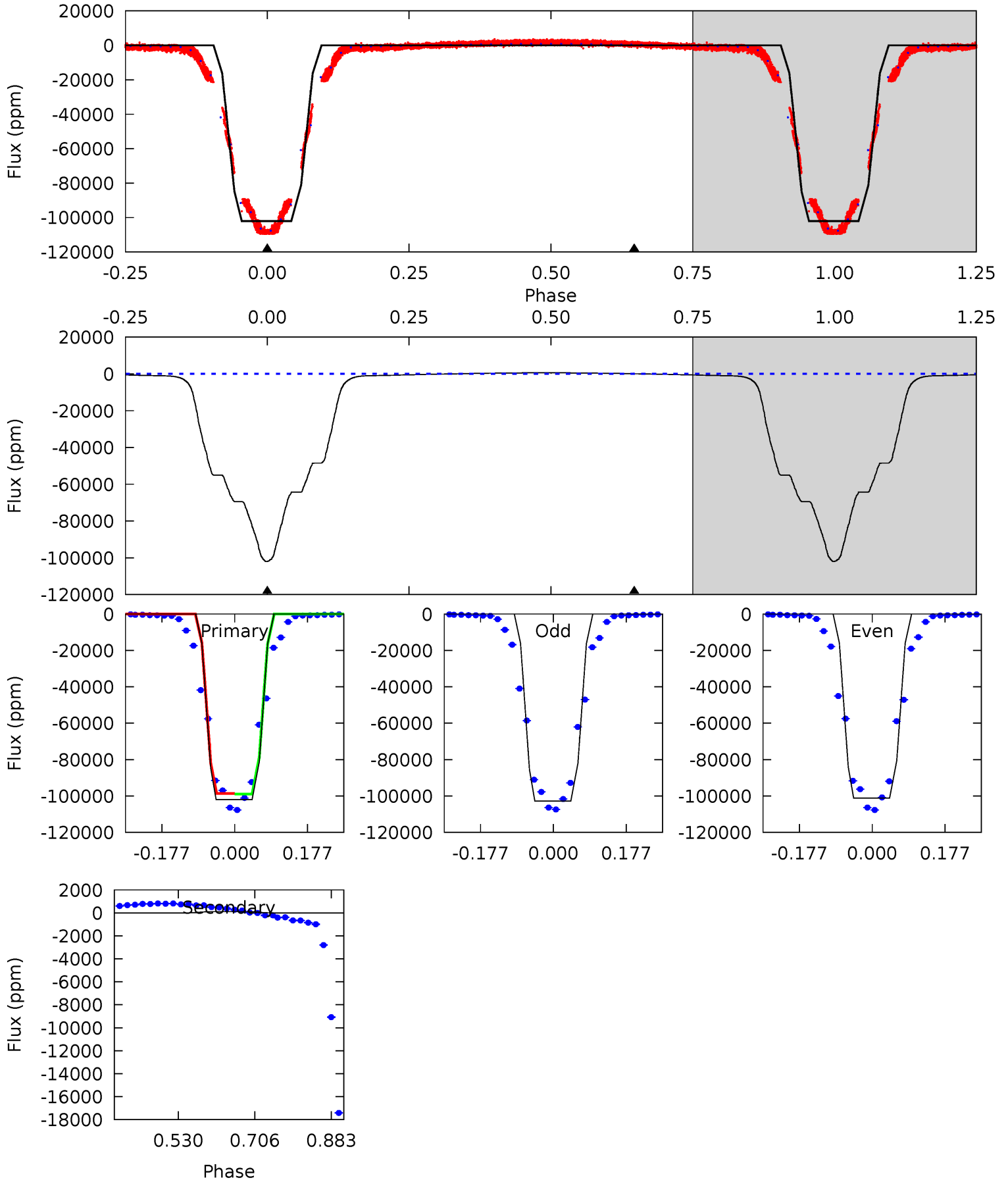
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14564	-121.0	0	0	4.32	1.02	45.5	14564	14564	-121.0	-121.0	20.7	1.04	0.01	210.5



# Alt Model-Shift Uniqueness Test

005598639-01, P = 0.648780 Days, E = 131.092615 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
8085	-8.32	0	0	4.44	1.35	39.5	8085	8085	-8.32	-8.32	67.4	1.00	0.01	13.2



### Stellar Parameters For KIC 005598639

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5143^{+196}_{-179}$	$4.559^{+0.048}_{-0.072}$	$-0.080^{+0.300}_{-0.300}$	$0.776^{+0.097}_{-0.071}$	$0.796^{+0.082}_{-0.073}$	$2.401^{+0.586}_{-0.607}$
	+4%/-3%	+1%/-2%	+375%/-375%	+12%/-9%	+10%/-9%	+24%/-25%
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 005598639-01 / KOI 6602.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$907 \pm 7$	$39.32^{+2.63}_{-2.26}$	$2407^{+110}_{-98}$	$-2786^{+62}_{-74}$	$-0.060^{+0.007}_{-0.005}$
Alt.	$105 \pm 13$	$28.28^{+1.96}_{-1.70}$	$2418^{+108}_{-104}$	$-2745^{+69}_{-71}$	$-0.013^{+0.002}_{-0.002}$

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

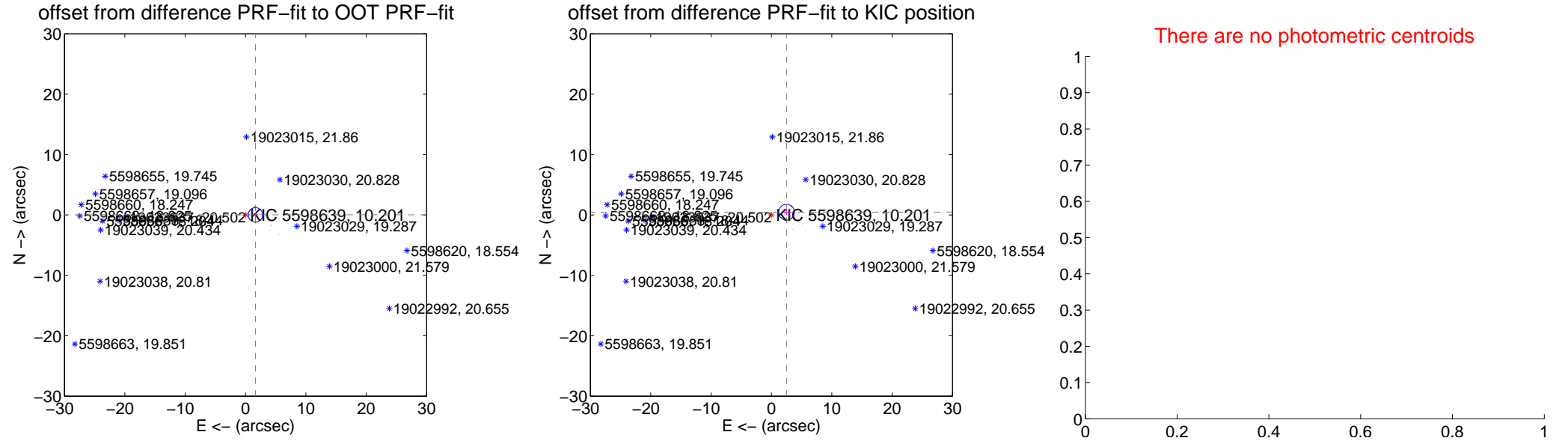
## DV Centroid Data

Supplemental centroid analysis for 005598639-01. **Kepler magnitude: 10.20.** Transit SNR 3398.14

**There are 1 quarters with good PRF difference image offsets**

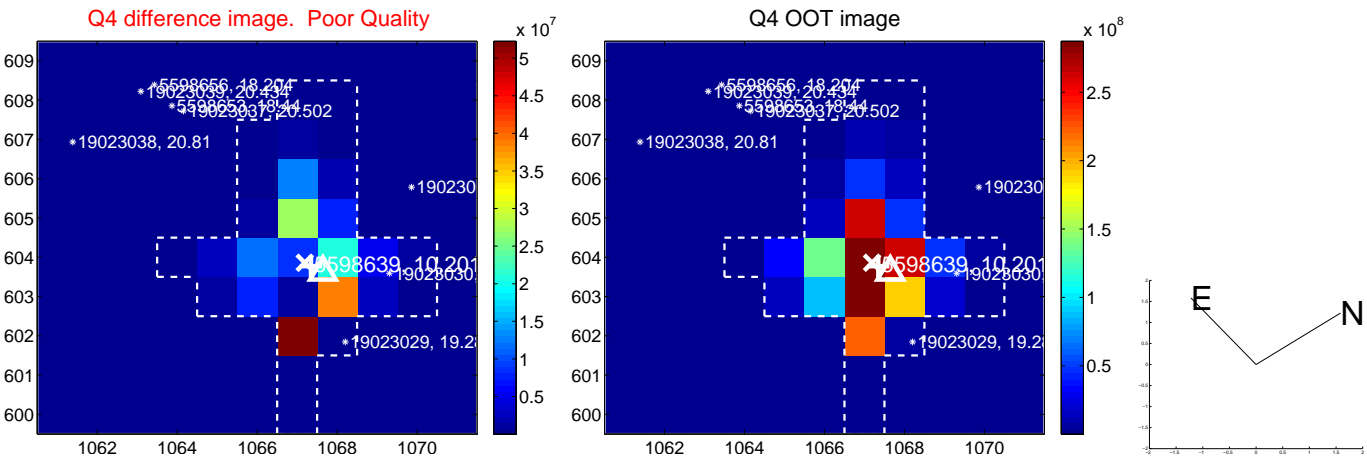
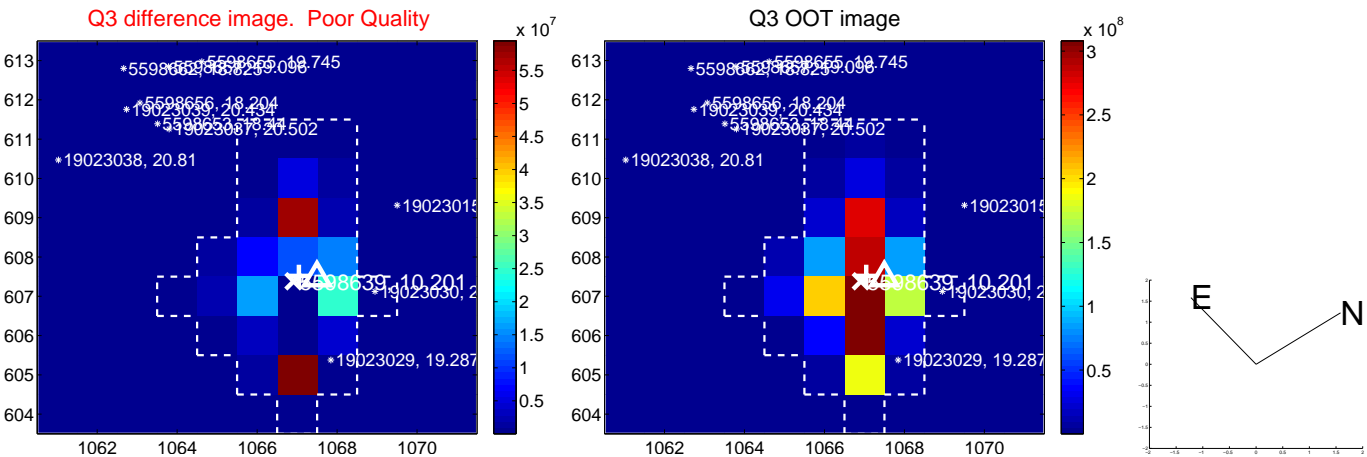
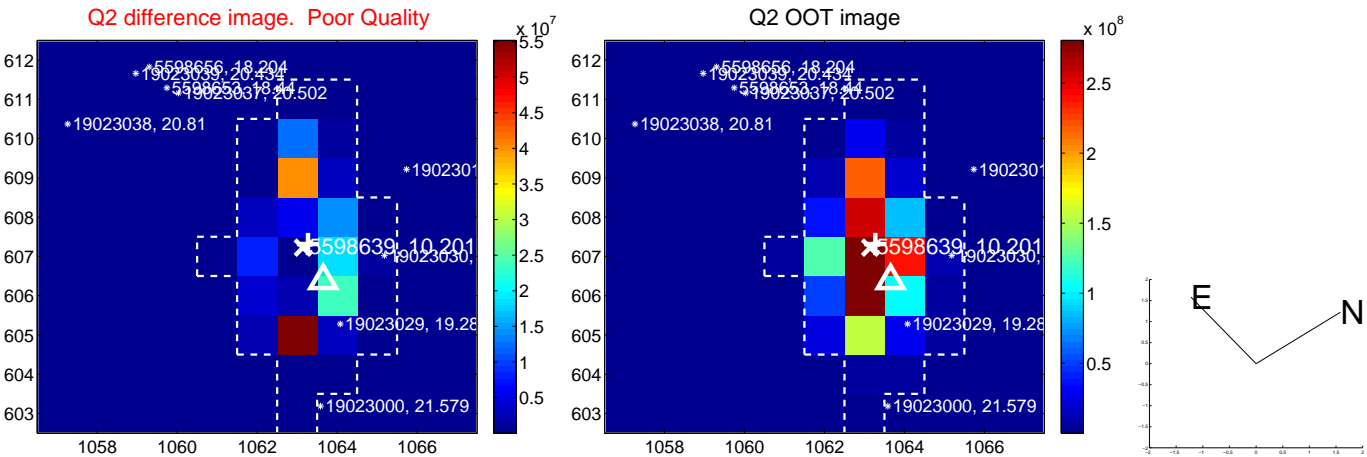
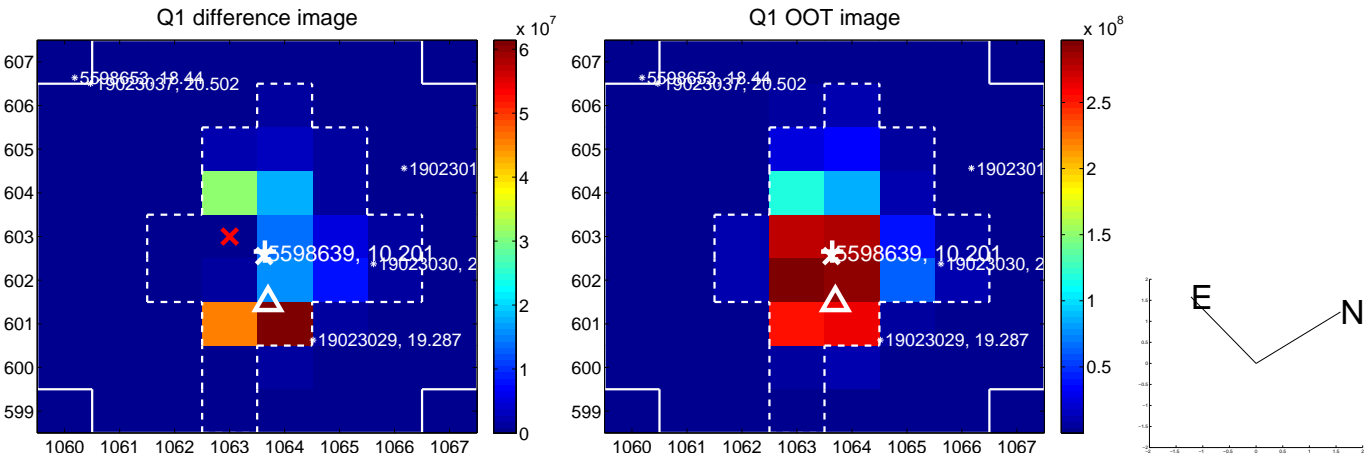
The direct PRF centroid is offset from the target star catalog position by about 0.60 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>1.651 \pm 0.396</math></b>	<b>4.17</b>	$-1.651 \pm 0.400$	$0.017 \pm 0.412$
PRF-fit source offset from KIC position	<b><math>2.547 \pm 0.434</math></b>	<b>5.87</b>	$-2.504 \pm 0.431$	$0.464 \pm 0.499$
photometric centroid source offset	—	—	—	—

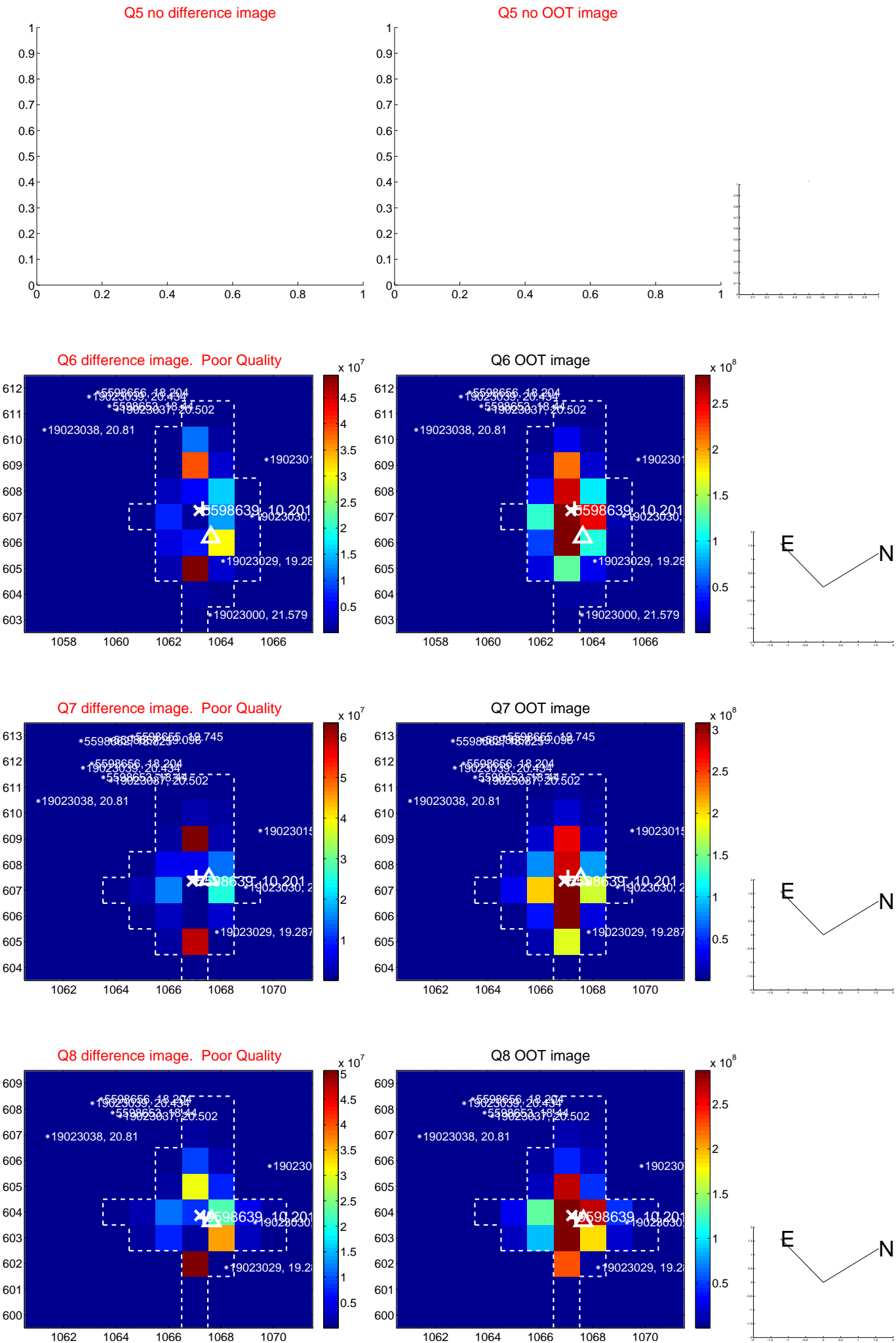


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

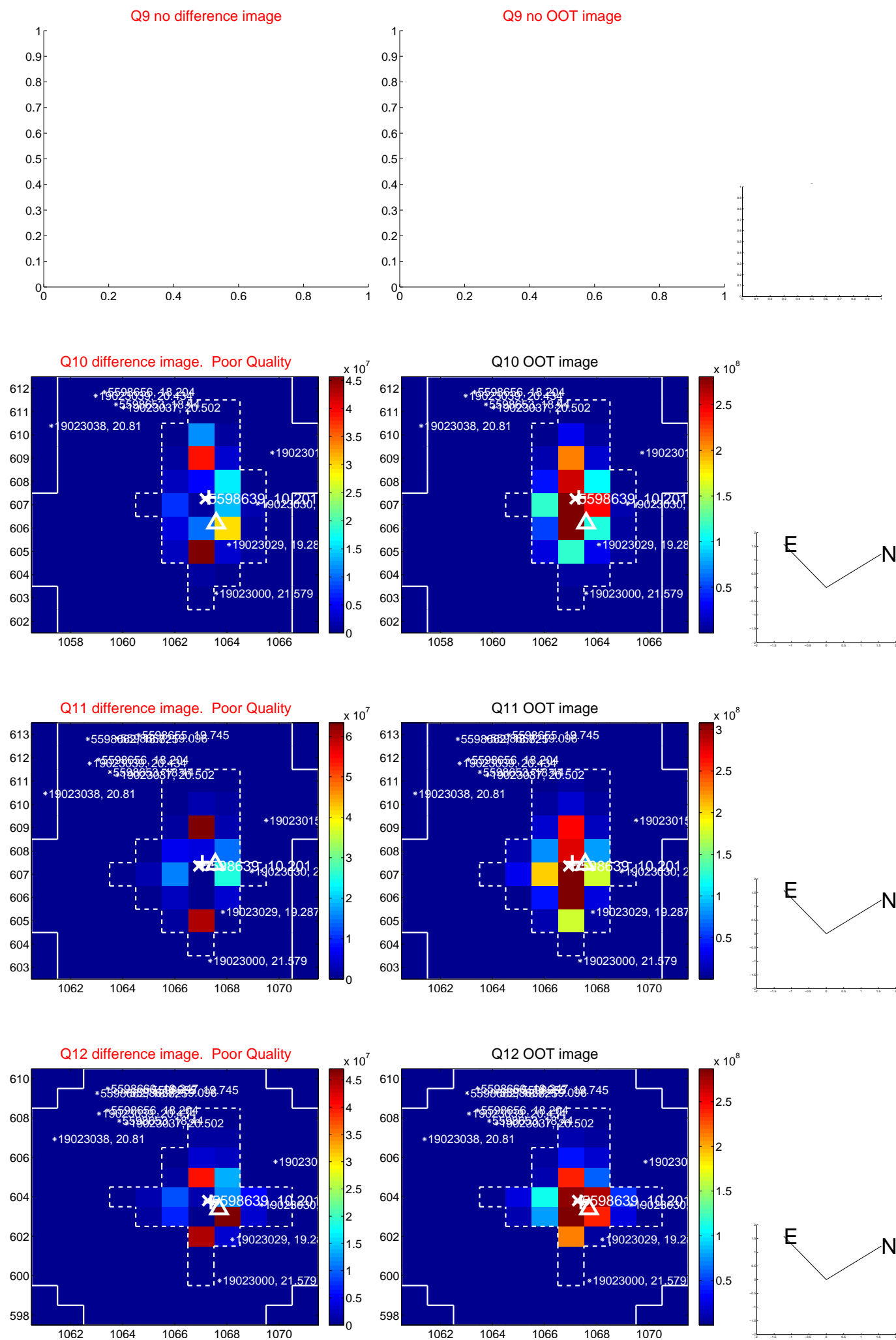


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

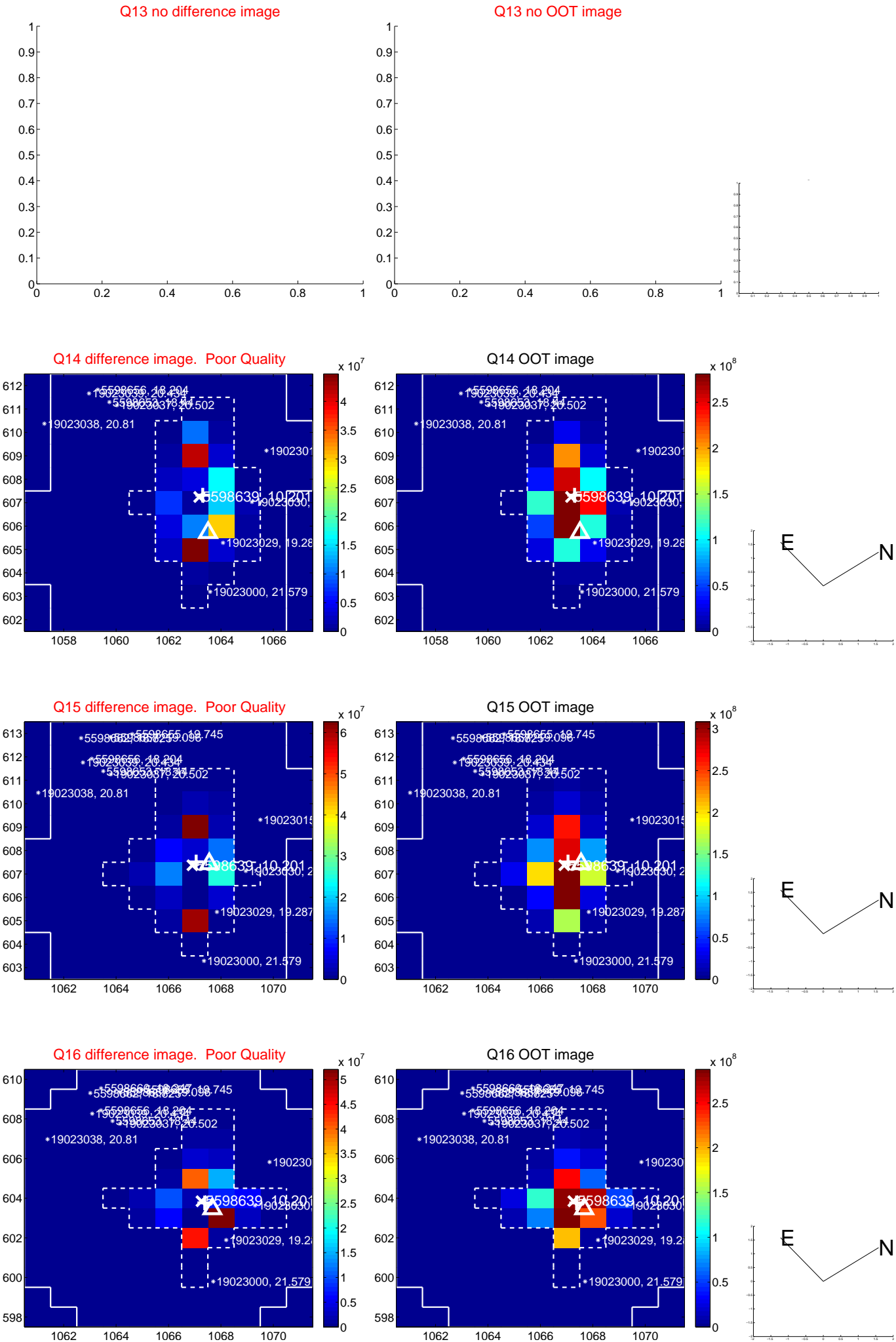




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

