

# KIC 008108551

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008108551-01	OBS	No	369.351425	233.361596	355.1	9.785	7.5	7.6	0.82	5595	1.64	0.62

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008108551-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS

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

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

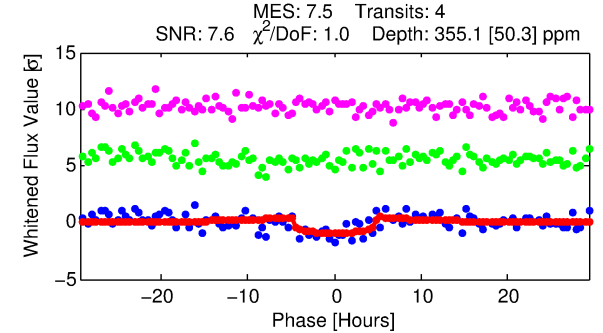
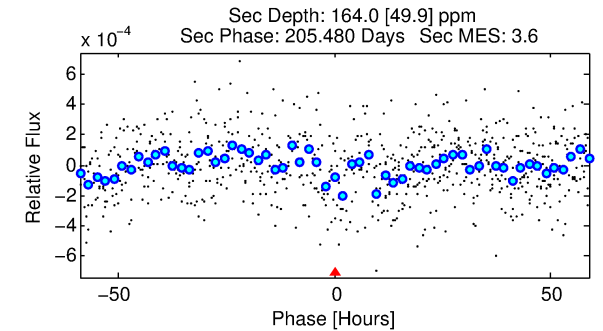
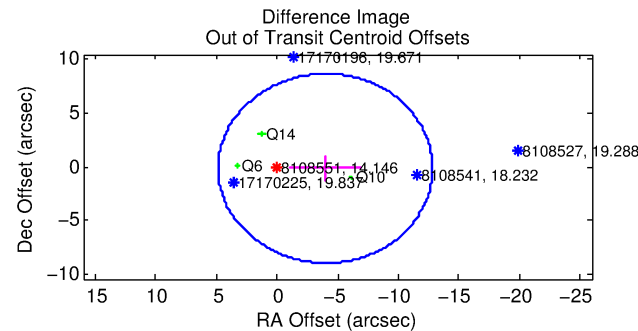
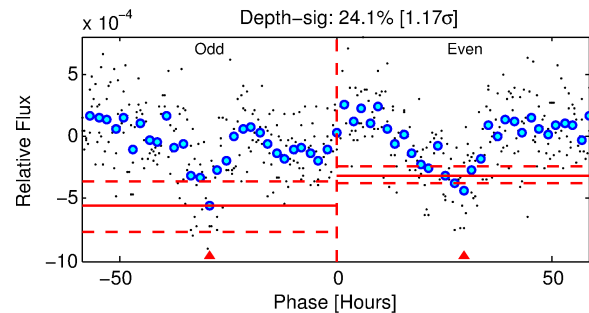
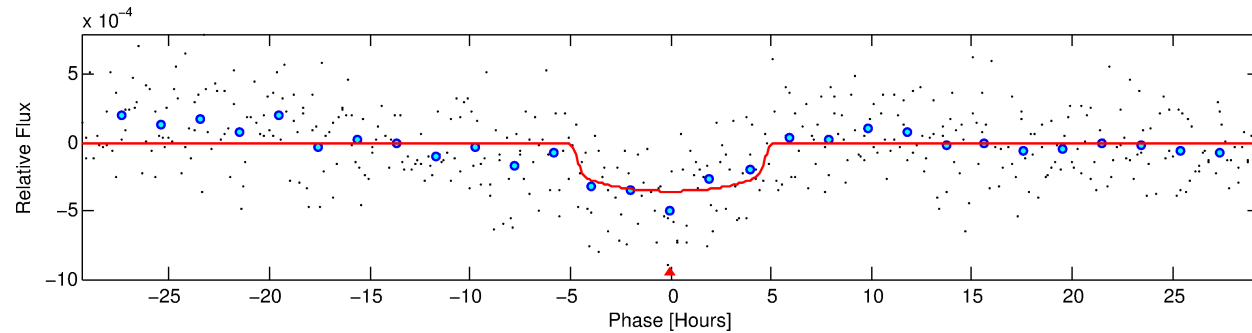
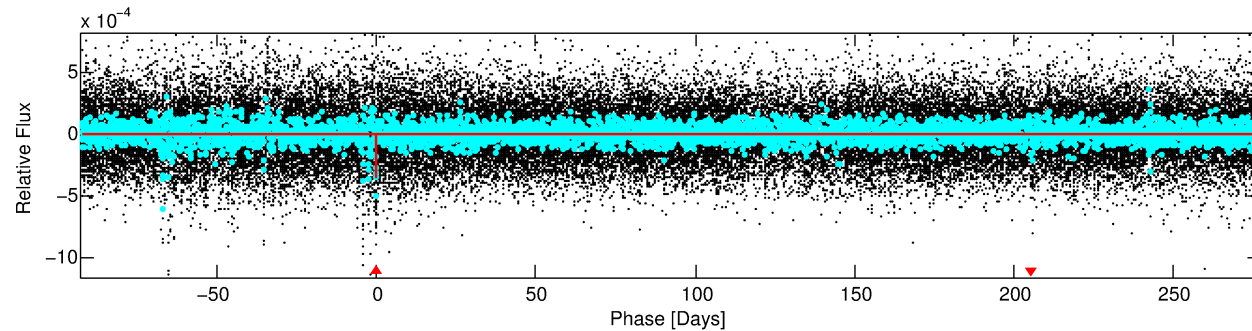
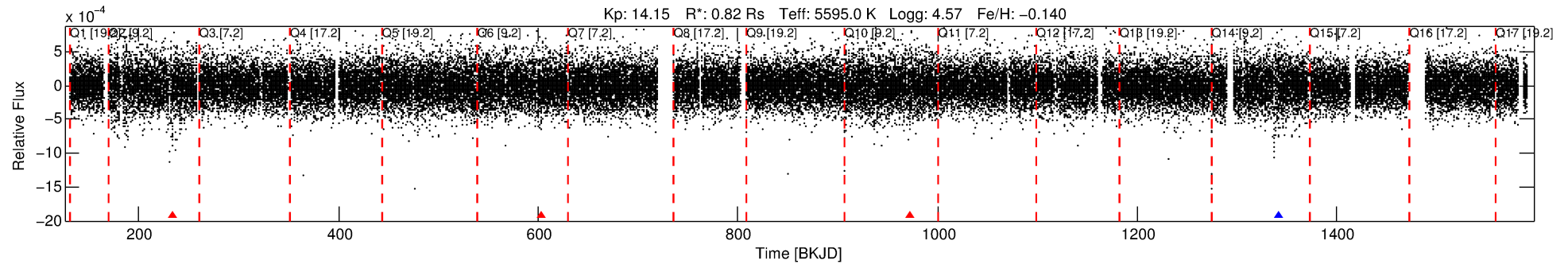
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008108551-01

No Significant Match Found

# DV One-Page Summary

KIC: 8108551 Candidate: 1 of 1 Period: 369.351 d



## DV Fit Results:

Period = 369.35143 [0.00699] d  
Epoch = 233.3616 [0.0141] BKJD  
Rp/R\* = 0.0183 [0.0139]  
a/R\* = 217.14 [699.41]  
b = 0.69 [2.51]  
Seff = 0.62 [0.18]  
Teff = 226 [17] K  
Rp = 1.64 [1.29] Re  
a = 0.9769 [0.1804] AU  
Ag = 31965.38 [50232.10] [0.64 $\sigma$ ]  
Teffp = 4675 [1814] K [2.45 $\sigma$ ]

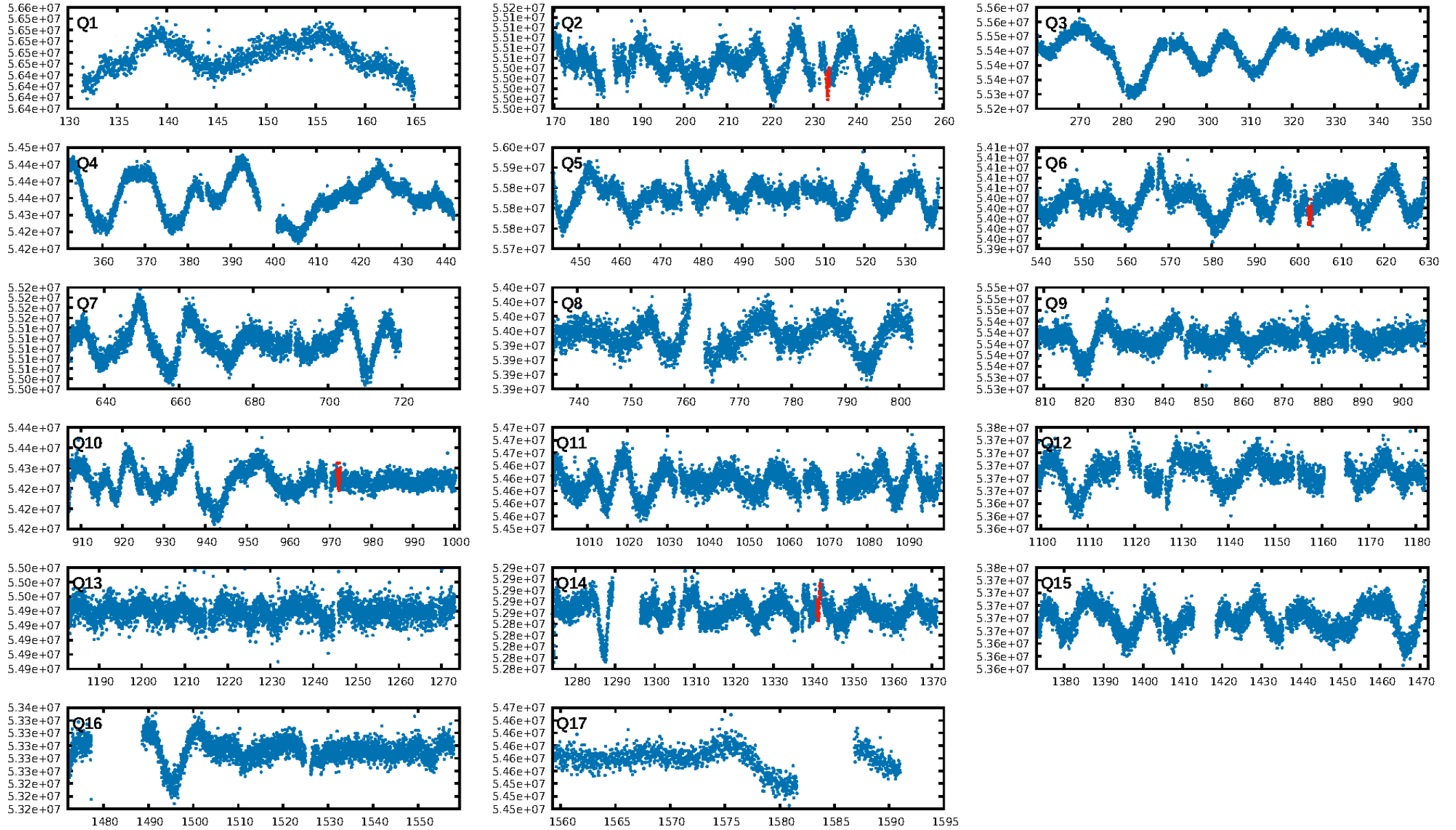
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 36.4%  
ModelChiSquareGof-sig: 78.5%  
Bootstrap-pfa: 1.84e-11  
RollingBand-fgt: 0.25 [1/4]  
GhostDiagnostic-chr: -0.3715  
Centroid-sig: 0.0%  
Centroid-so: 7.506 arcsec [3.46 $\sigma$ ]  
OotOffset-rm: 3.996 arcsec [1.36 $\sigma$ ]  
KicOffset-rm: 4.127 arcsec [1.40 $\sigma$ ]  
OotOffset-st: 3/0/0/0 [3]  
KicOffset-st: 3/0/0/0 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [4/4]

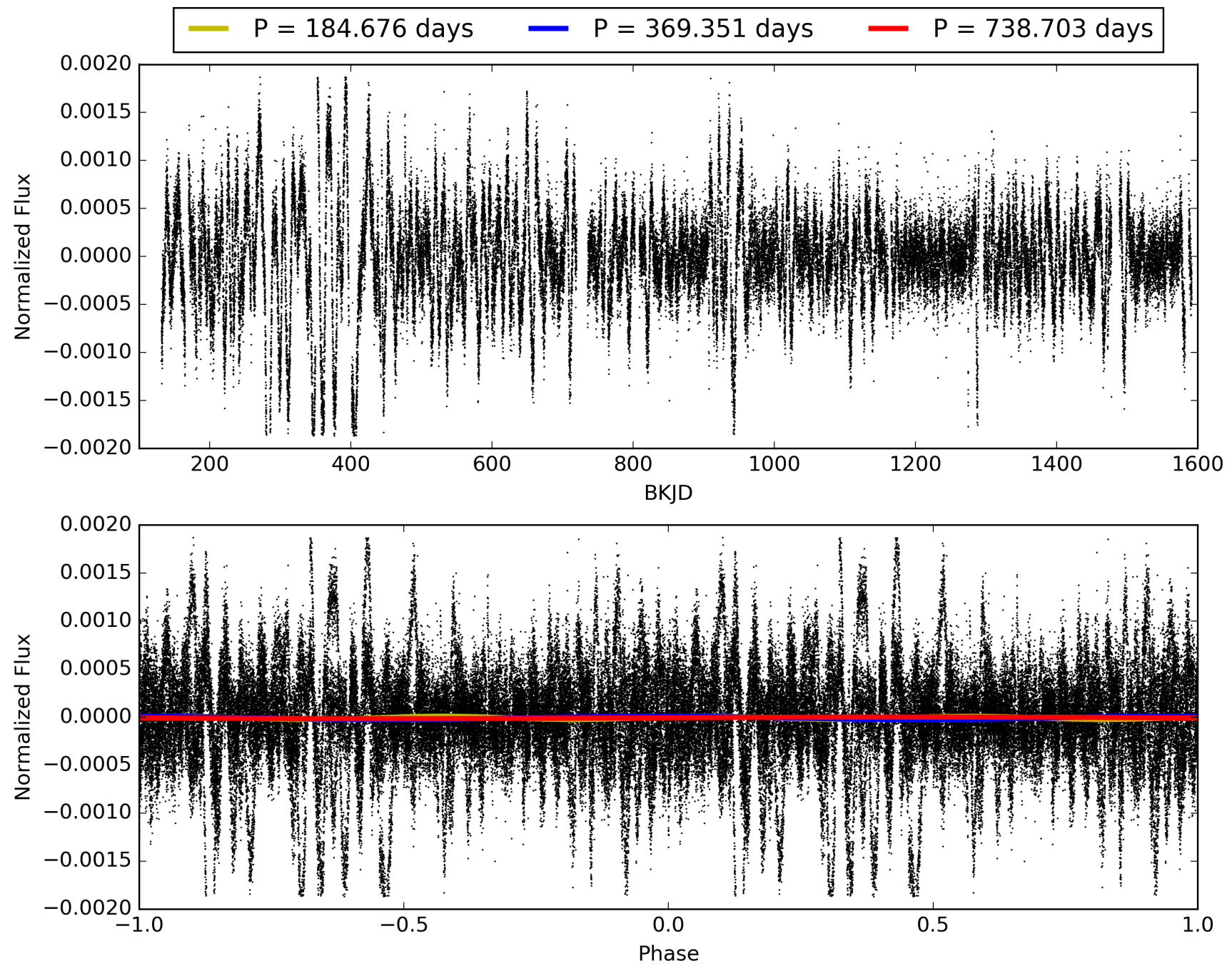
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:56:22 Z

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

# TCE 008108551-01, PDC Light Curves

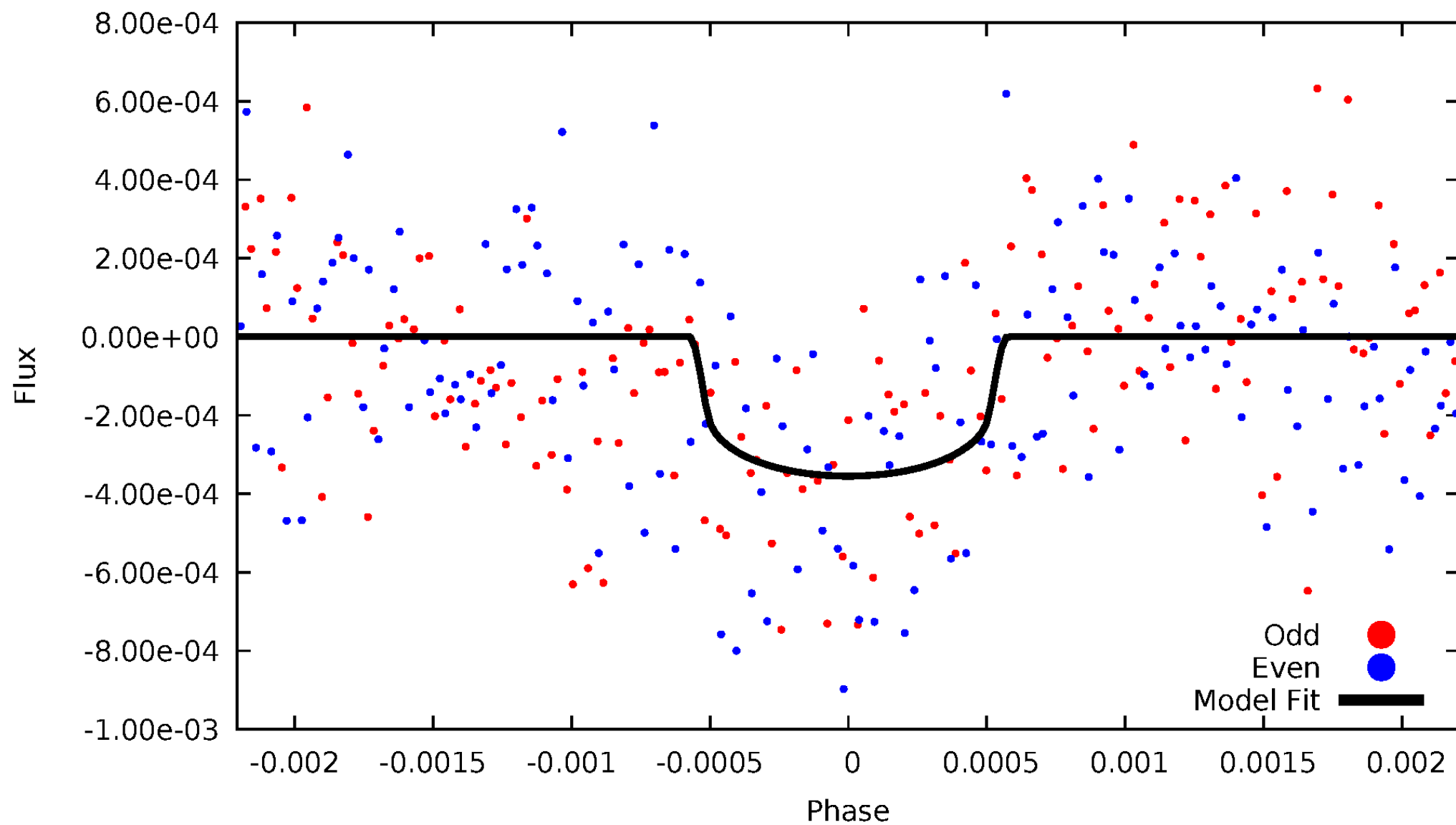


# TCE 008108551-01



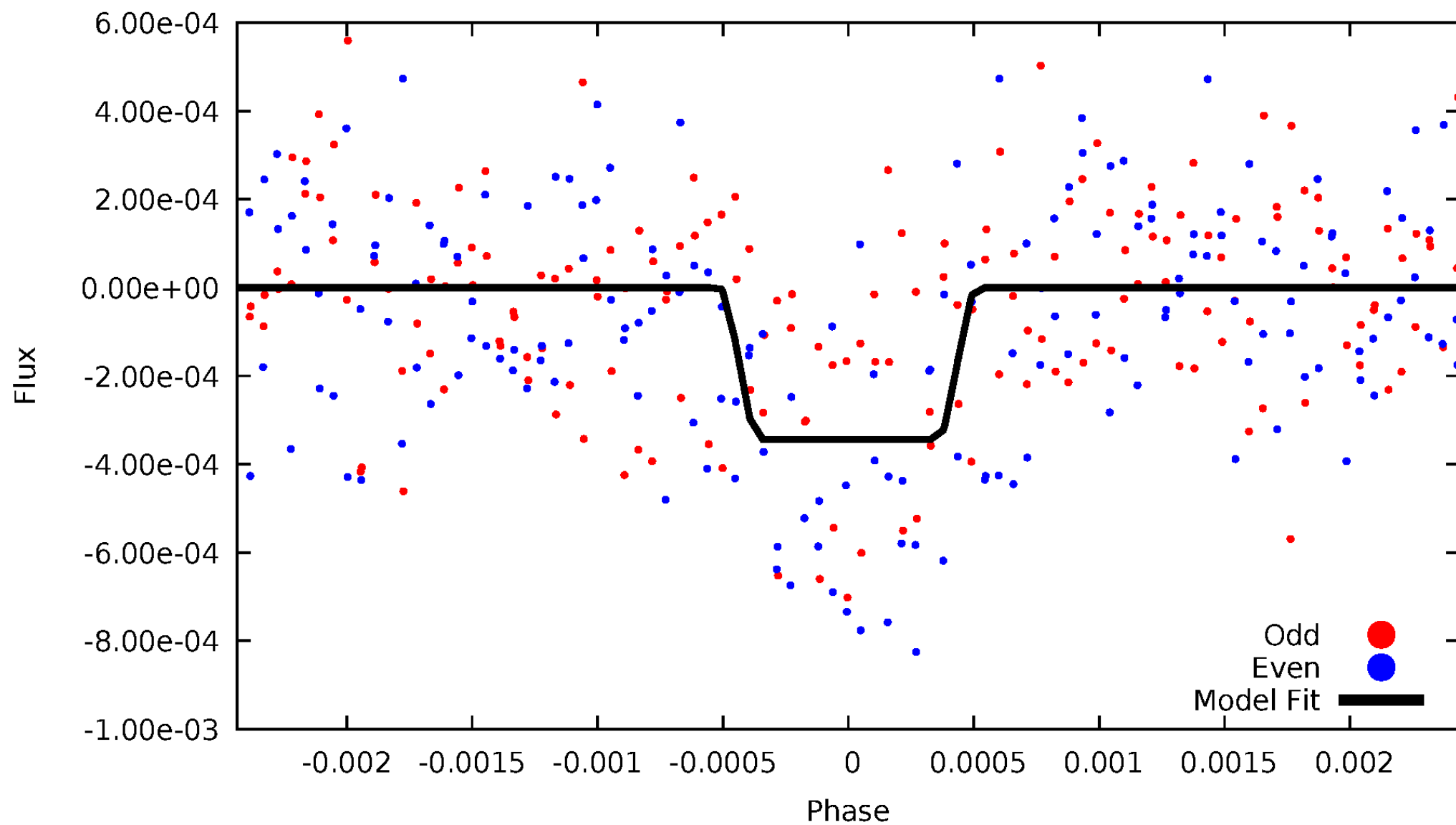
# DV Odd/Even

TCE 008108551-01



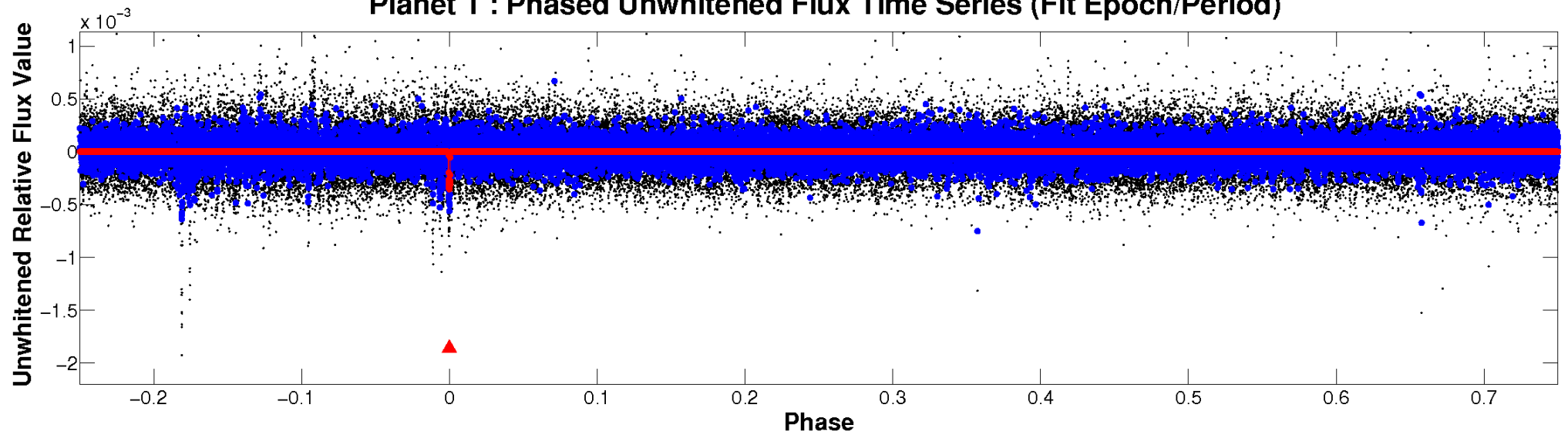
# ALT Odd/Even

TCE 008108551-01

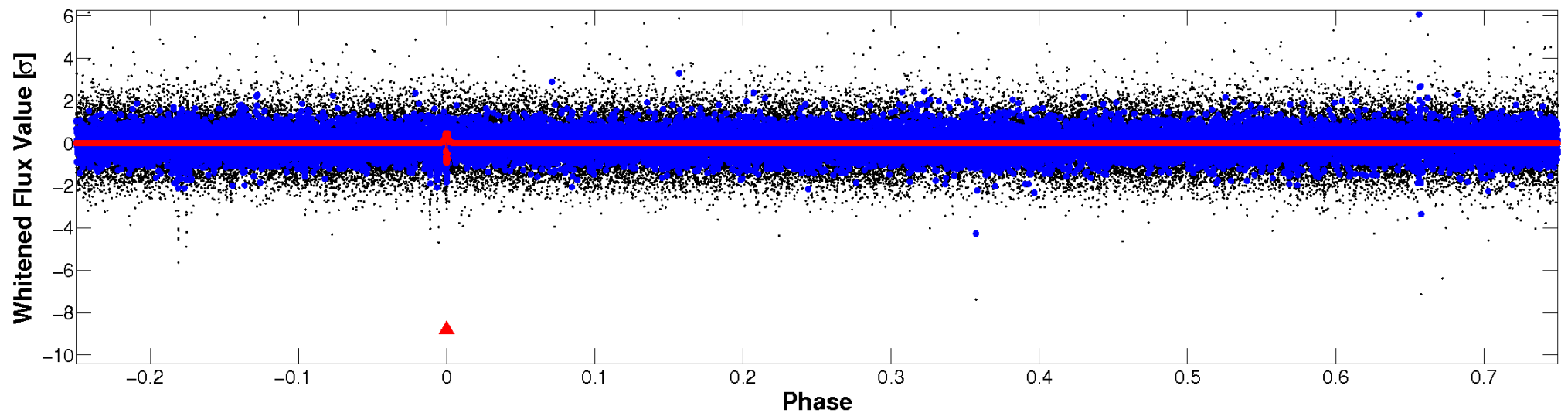


# Non-Whitened Vs. Whitened Light Curve

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



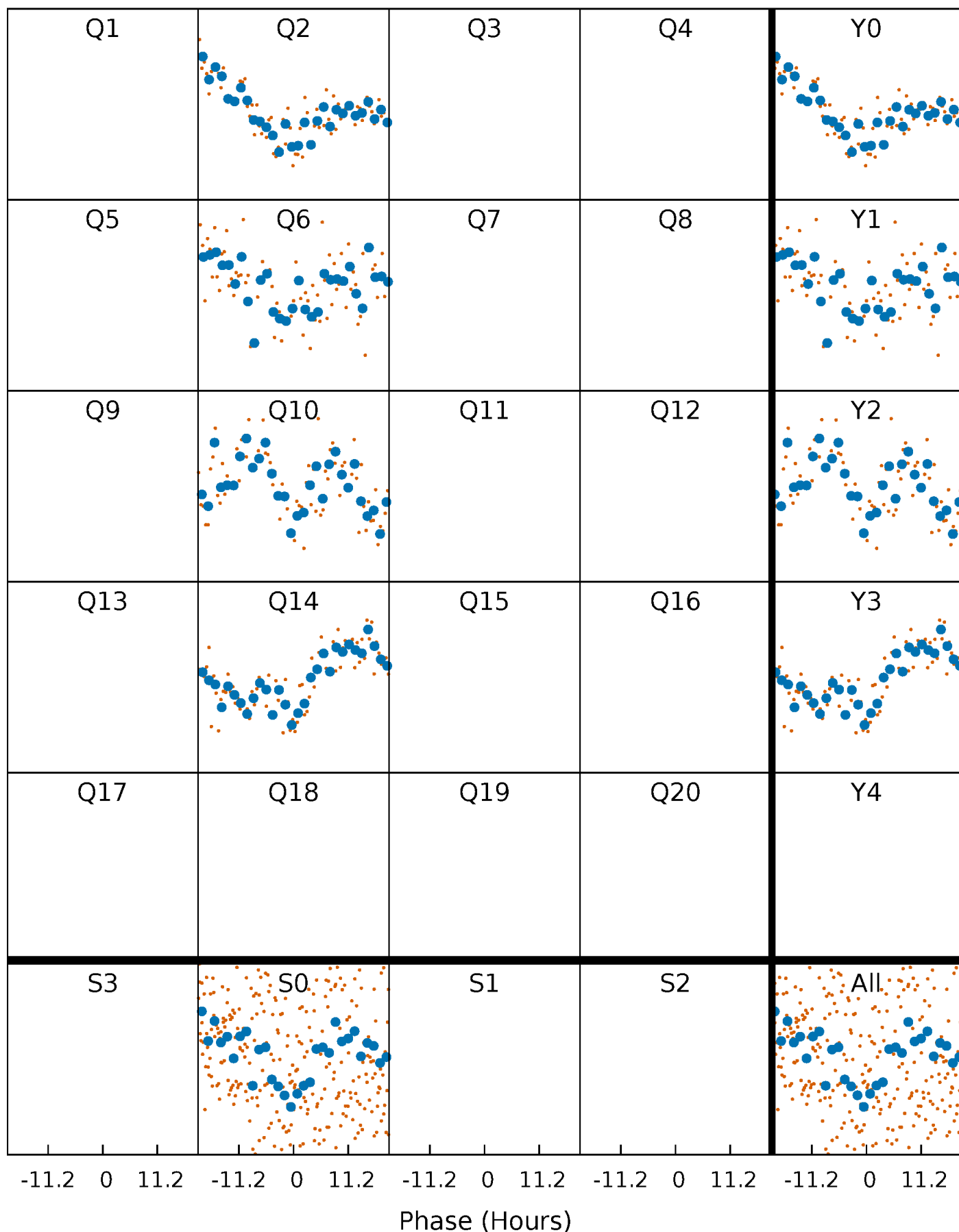
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

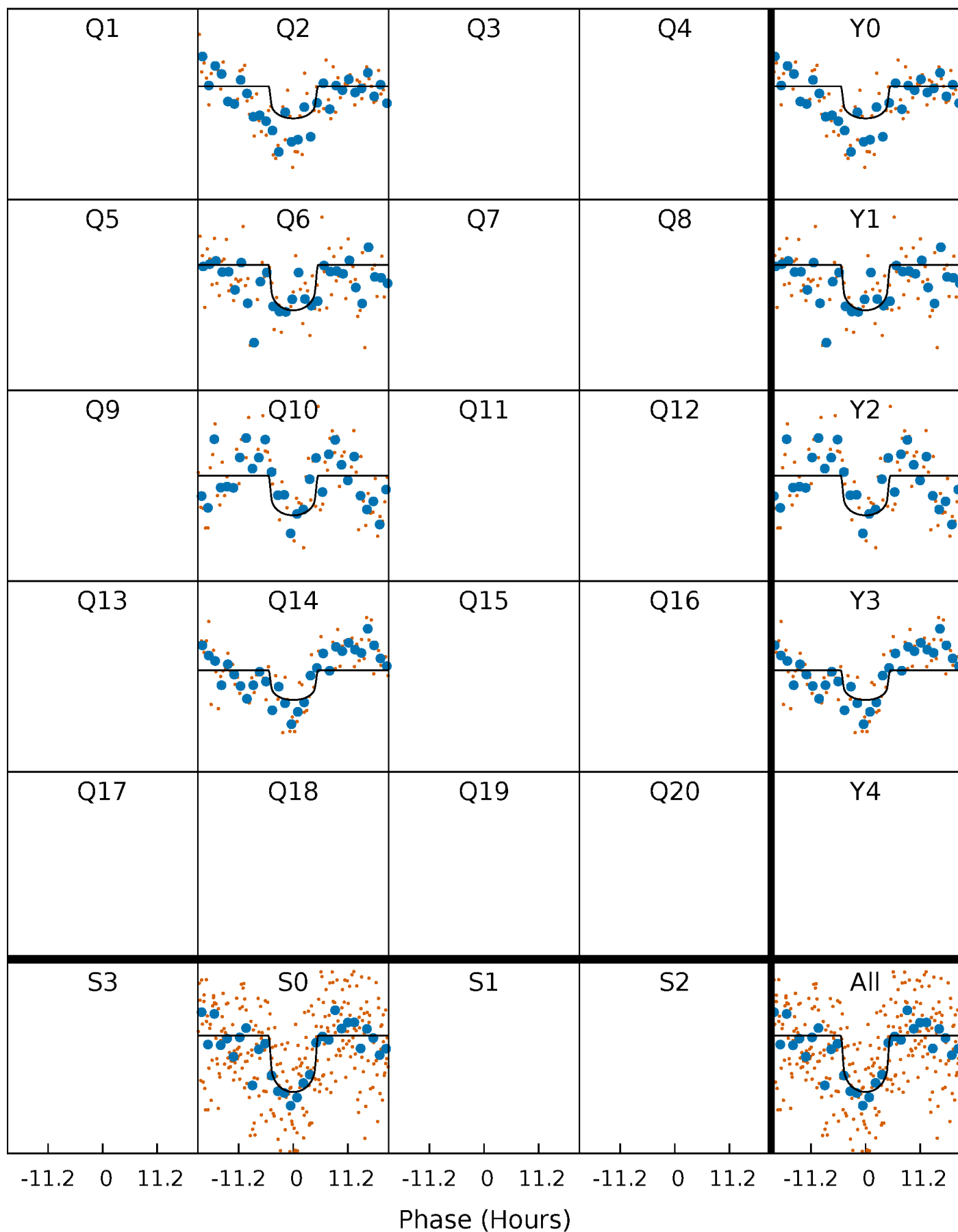
TCE 008108551-01 P=369.351425 Days  $T_0=233.361596$  (BKJD)





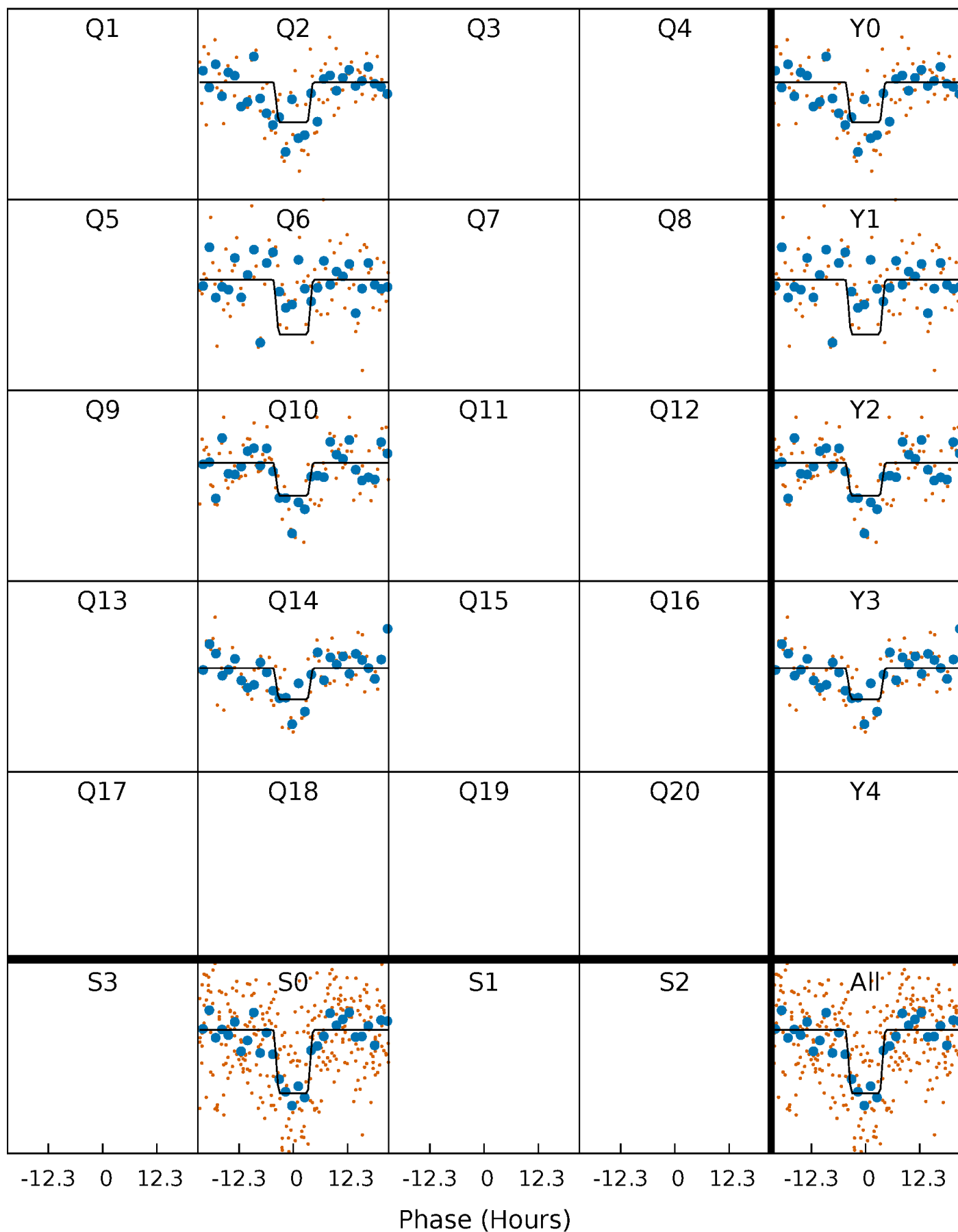
# DV Quarter-Phased Transit Curves

TCE 008108551-01 P=369.351425 Days  $T_0=233.361596$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

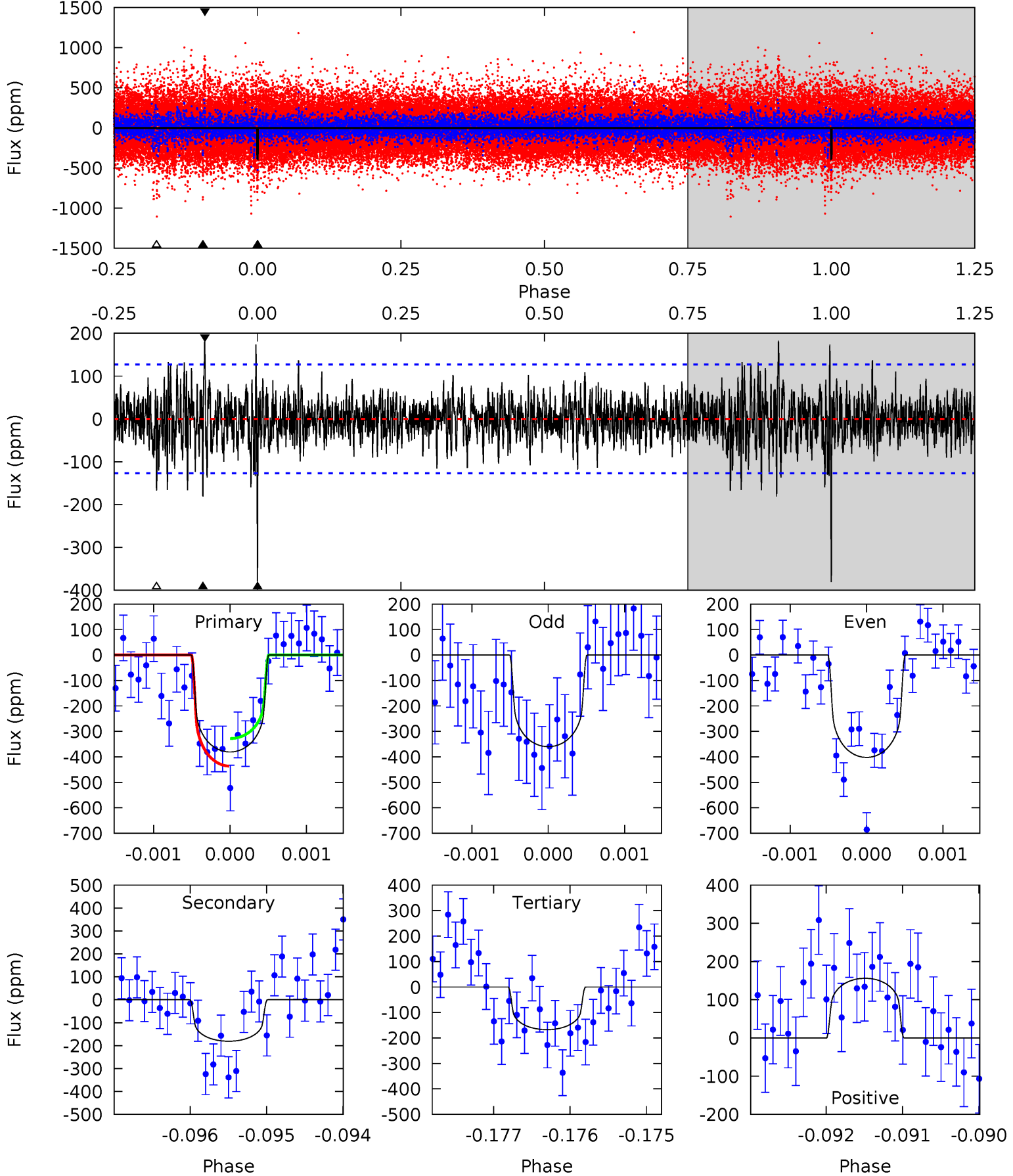
TCE 008108551-01 P=369.377464 Days  $T_0=233.297592$  (BKJD)



# DV Model-Shift Uniqueness Test

008108551-01, P = 369.351425 Days, E = 233.361596 Days

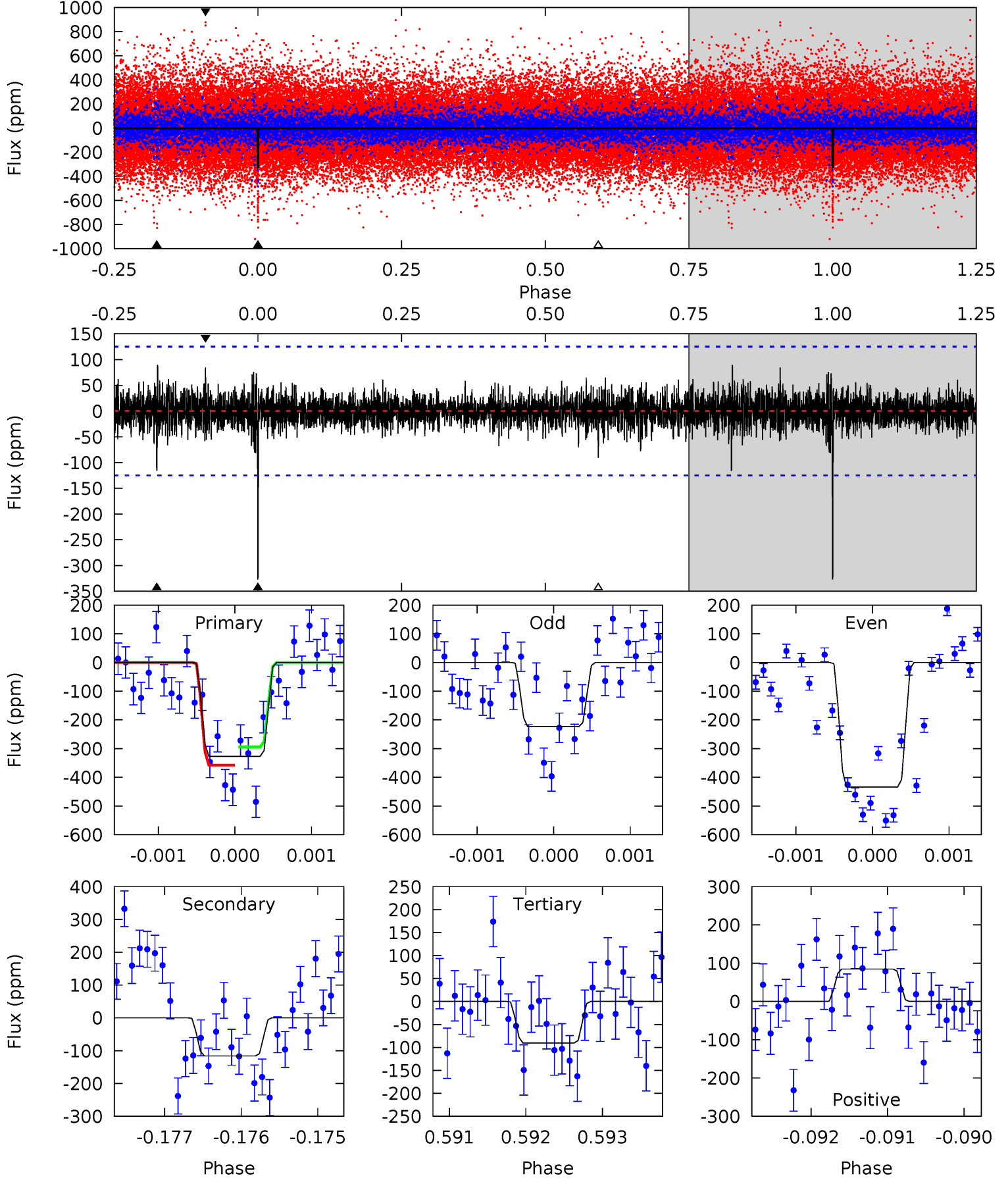
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.3	7.74	7.16	6.68	5.43	3.25	1.75	9.13	9.60	0.58	1.06	0.90	1.05	0.32	2.31



# Alt Model-Shift Uniqueness Test

008108551-01, P = 369.377464 Days, E = 233.297592 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
14.3	5.07	3.94	3.69	5.45	3.29	0.88	10.3	10.6	1.13	1.37	4.61	0.85	0.22	1.39



### Stellar Parameters For KIC 008108551

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5595^{+149}_{-166}$	$4.570^{+0.038}_{-0.152}$	$-0.140^{+0.300}_{-0.300}$	$0.820^{+0.176}_{-0.075}$	$0.917^{+0.083}_{-0.111}$	$2.341^{+0.459}_{-0.973}$
	+3%/-3%	+1%/-3%	+214%/-214%	+21%/-9%	+9%/-12%	+20%/-42%
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 008108551-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-181 \pm 23$	$1.84^{+1.26}_{-1.04}$	$321^{+17}_{-13}$	$4675^{+2357}_{-781}$	$27483^{+116049}_{-17852}$
Alt.	$-116 \pm 23$	$1.85^{+1.19}_{-1.07}$	$322^{+16}_{-14}$	$4329^{+2045}_{-700}$	$17731^{+80968}_{-11403}$

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

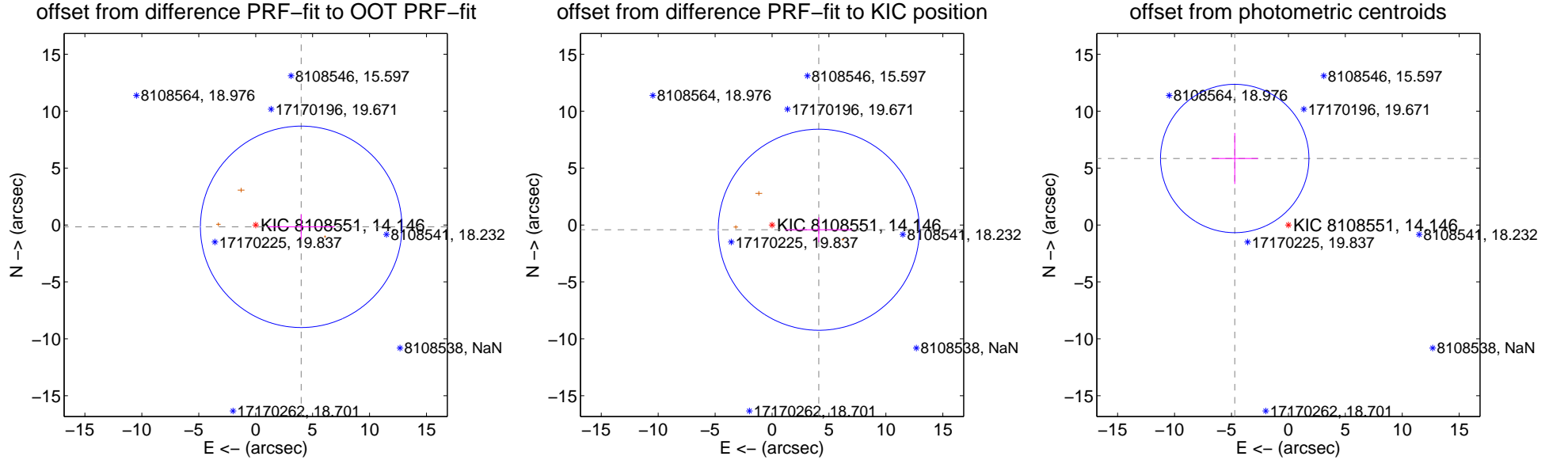
## DV Centroid Data

Supplemental centroid analysis for 008108551-01. Kepler magnitude: 14.15. Transit SNR 7.56

There are 0 quarters with good PRF difference image offsets

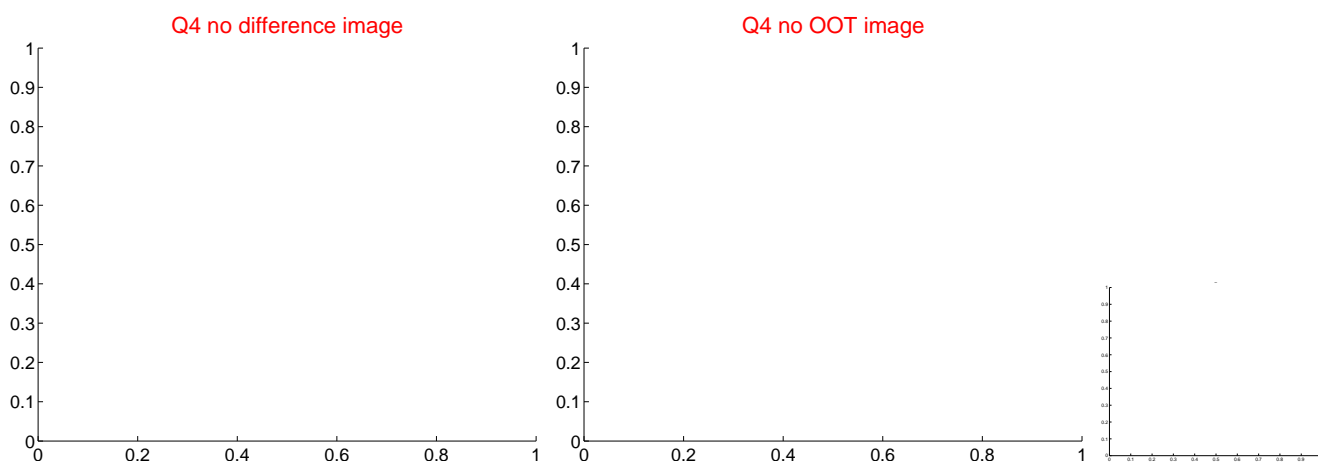
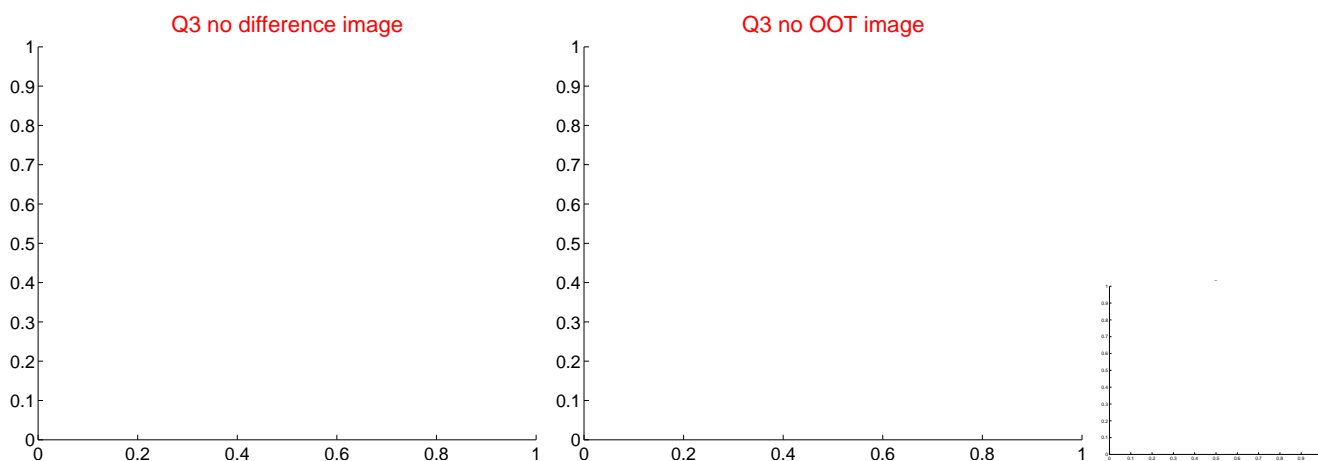
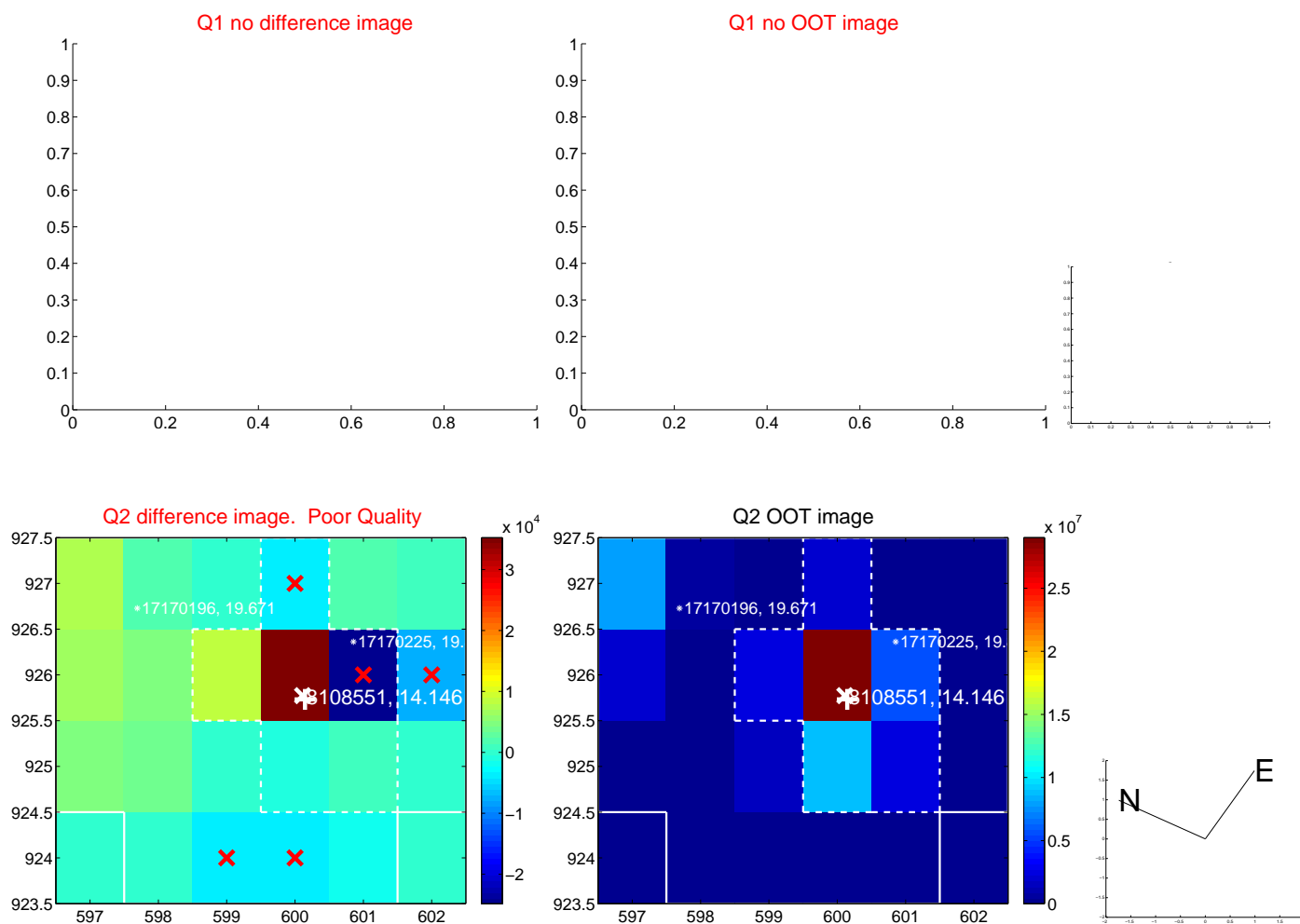
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.996 \pm 2.948$	1.36	$-3.993 \pm 2.950$	$-0.161 \pm 1.106$
PRF-fit source offset from KIC position	$4.127 \pm 2.943$	1.40	$-4.106 \pm 2.956$	$-0.417 \pm 1.099$
photometric centroid source offset	$7.51 \pm 2.17$	3.46	$4.71 \pm 2.05$	$5.84 \pm 2.25$



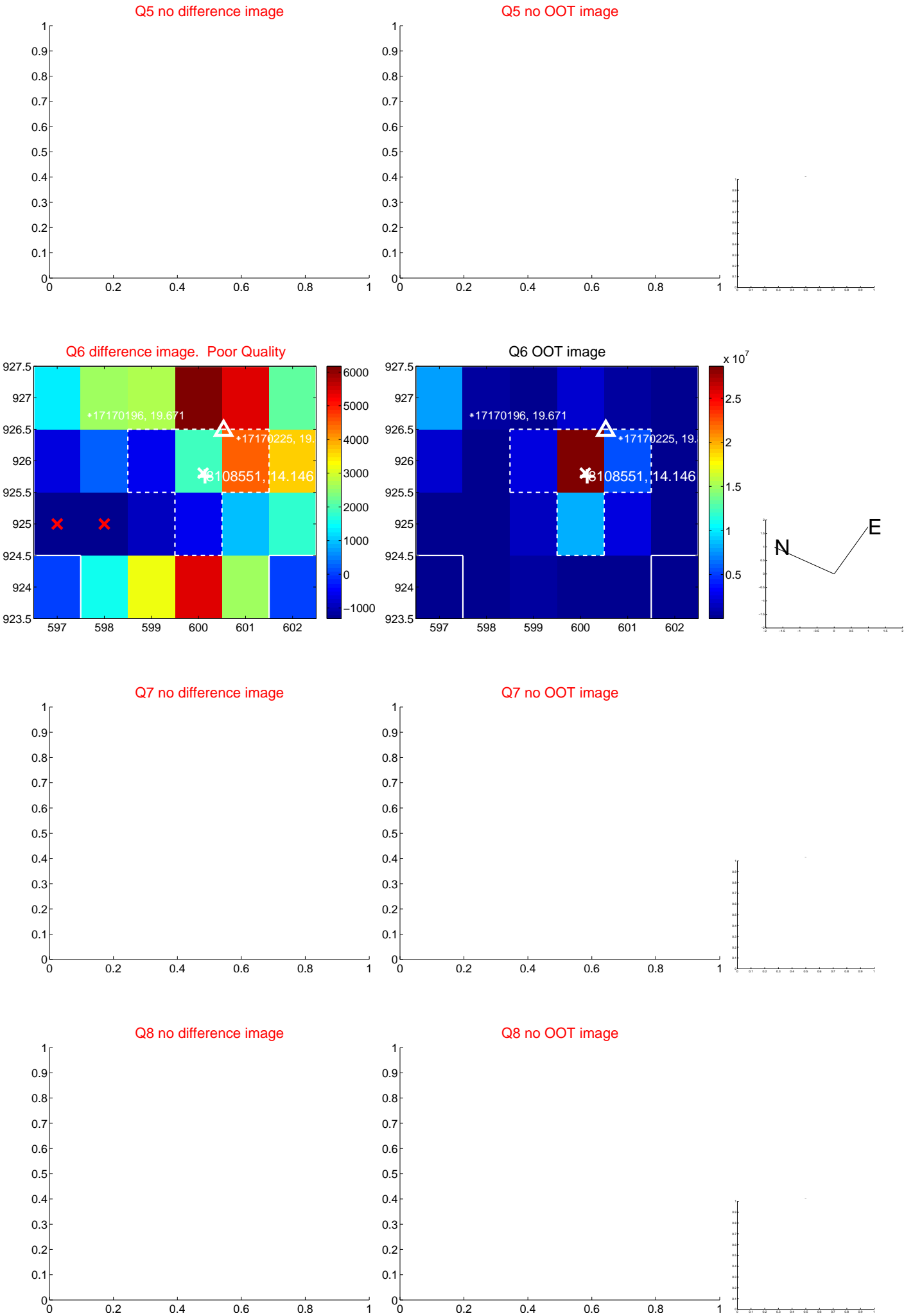
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value

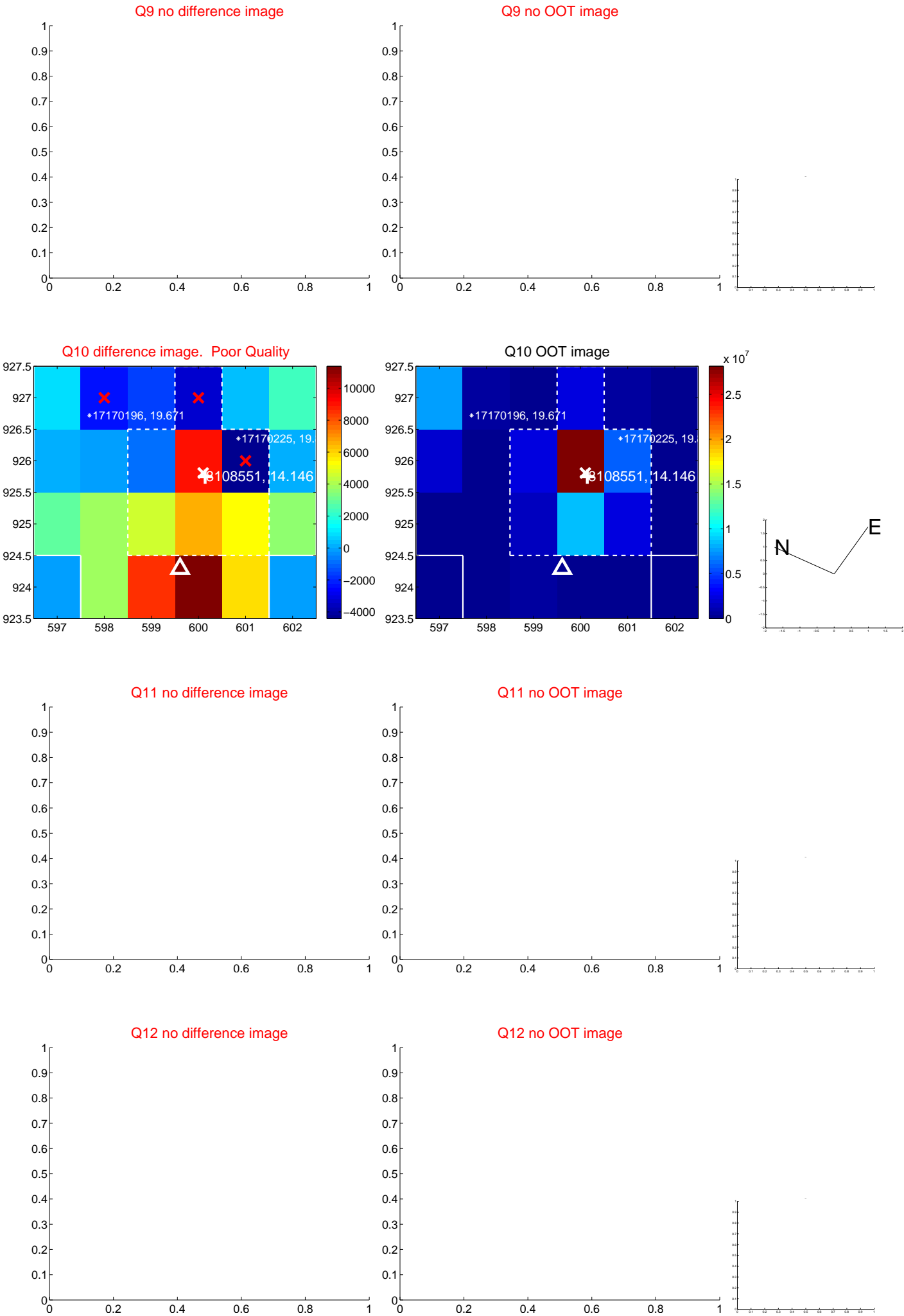




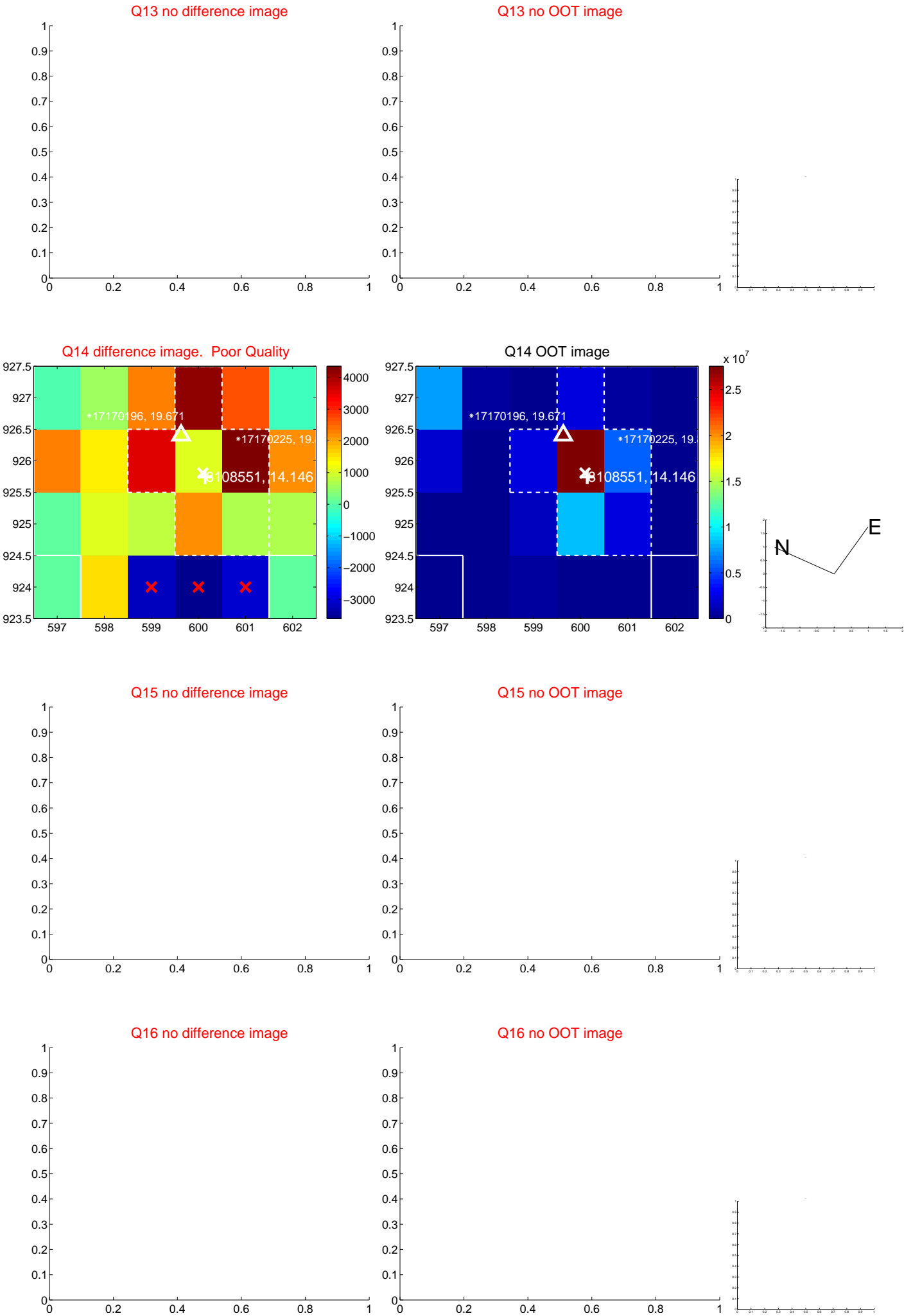
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



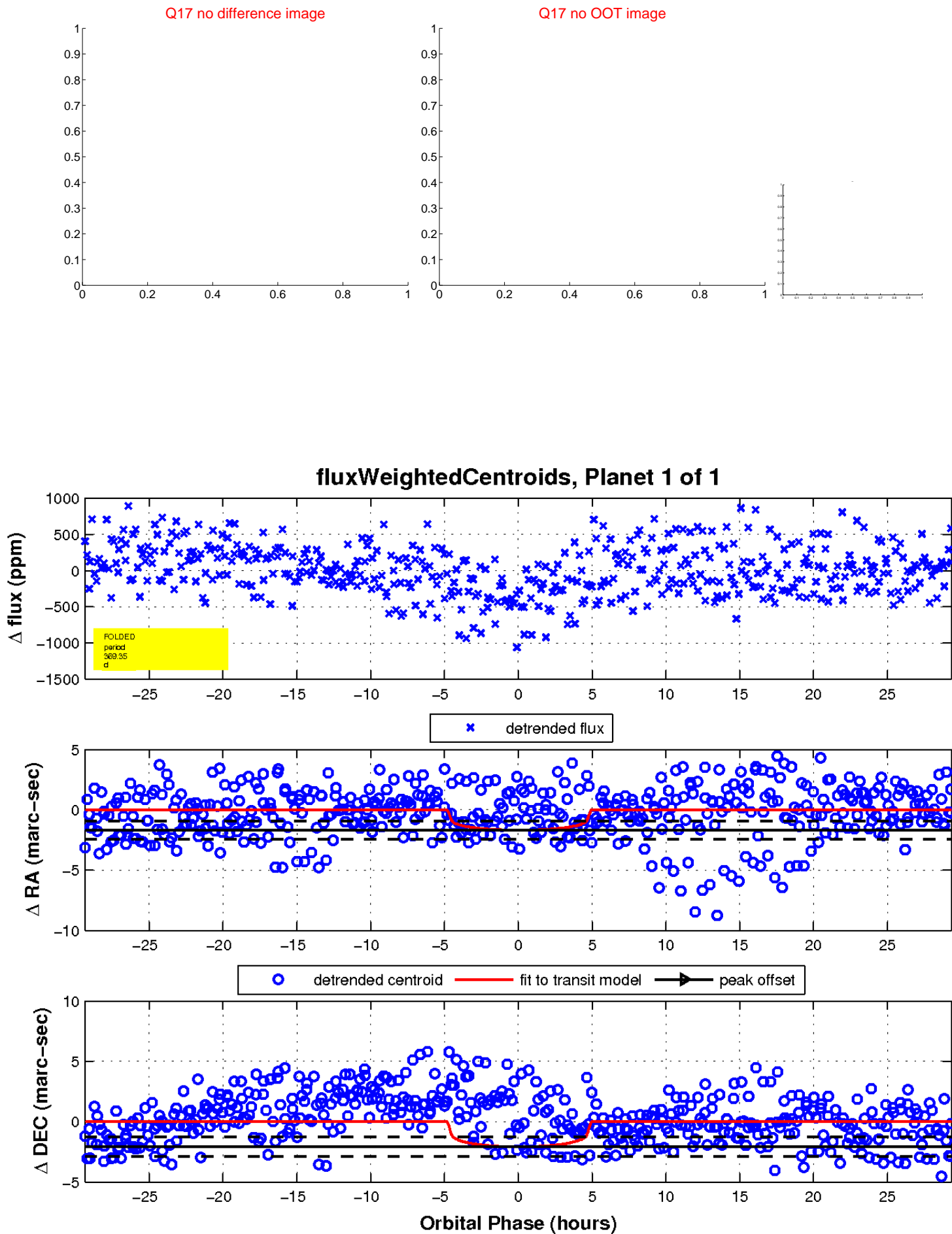
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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.



UKIRT Image

Declination

