

# KIC 005564597

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005564597-01	OBS	No	0.522548	131.974880	20.0	3.185	8.9	2.3	0.81	5491	0.37	3561.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005564597-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

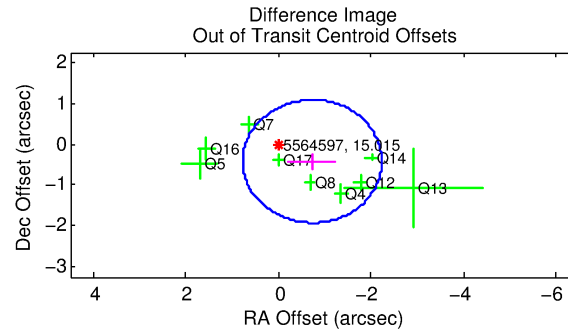
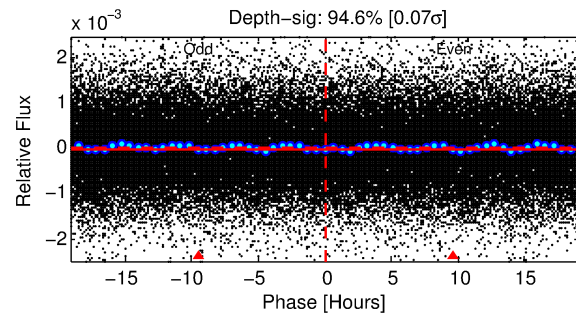
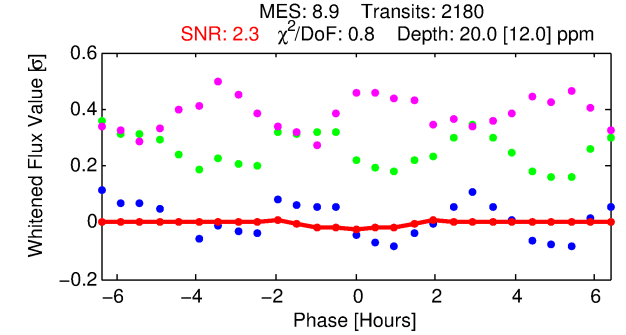
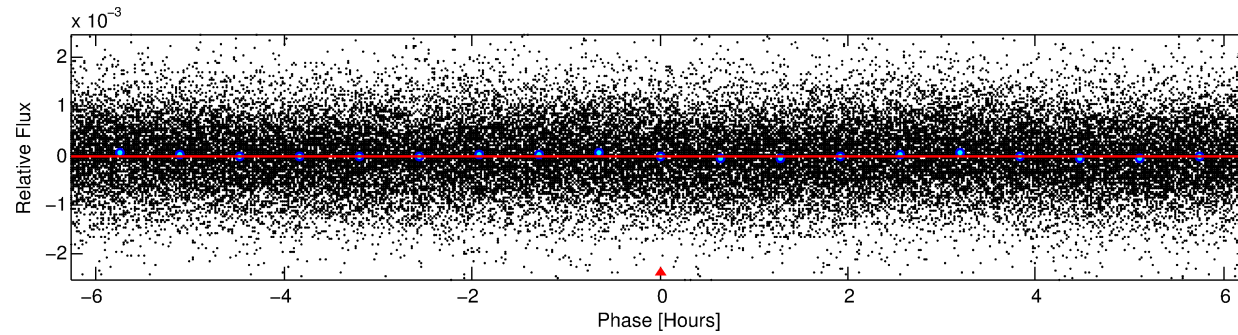
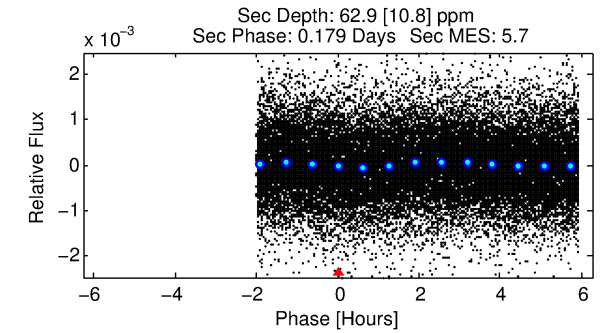
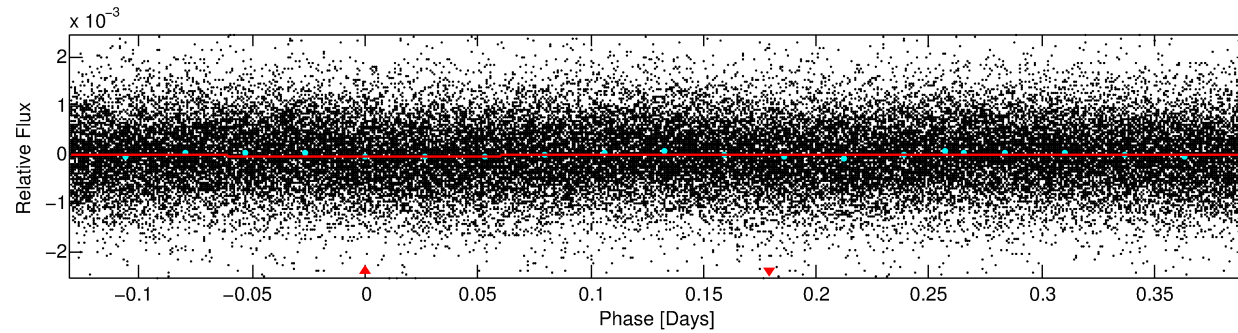
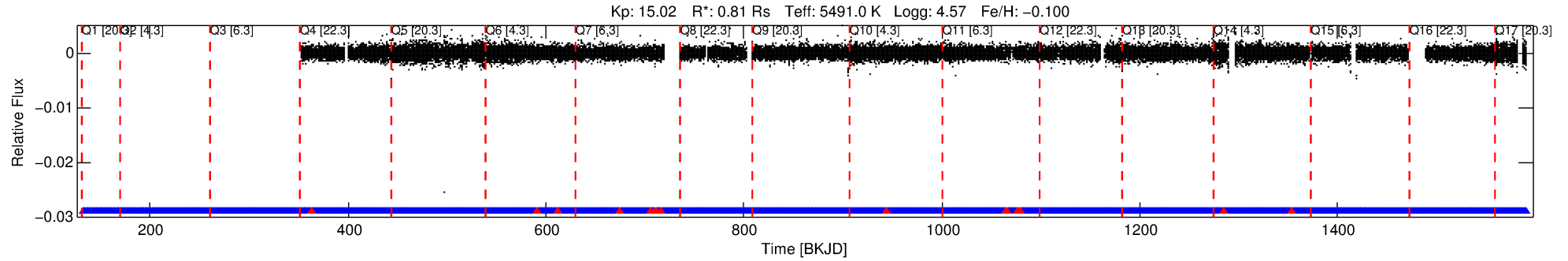
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005564597-01

No Significant Match Found

# DV One-Page Summary

KIC: 5564597 Candidate: 1 of 1 Period: 0.523 d



## DV Fit Results:

Period = 0.52255 [0.00004] d  
Epoch = 131.9749 [0.0132] BKJD  
Rp/R\* = 0.0042 [0.0109]  
a/R\* = 1.31 [5.81]  
b = 0.51 [15.79]  
Seff = 3561.68 [1101.12]  
Teq = 1970 [152] K  
Rp = 0.37 [0.97] Re  
a = 0.0122 [0.0024] AU  
Ag = 37.98 [198.04] [0.19σ]  
Teffp = 7561 [9846] K [0.57σ]

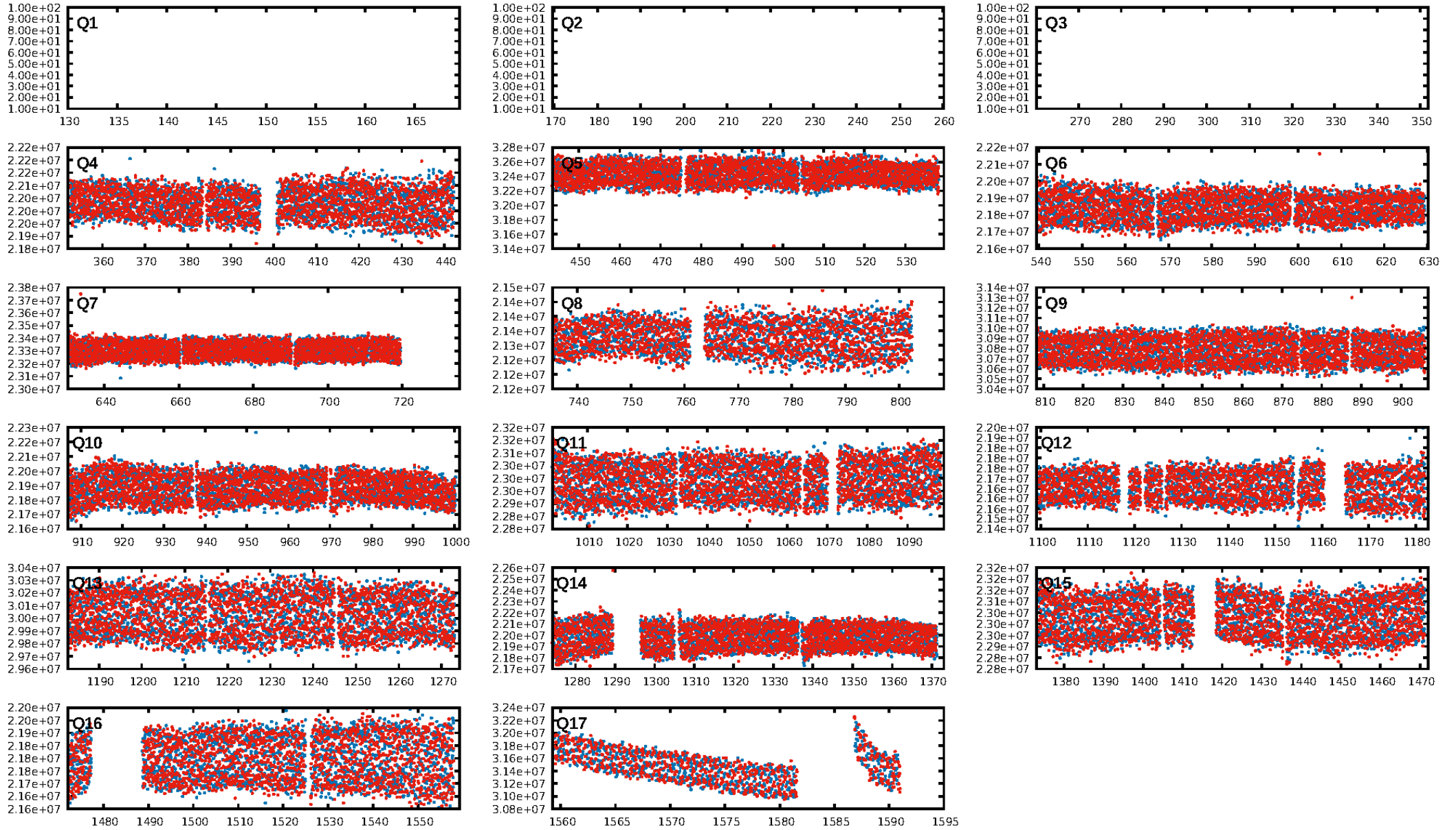
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.26e-09  
RollingBand-fgt: 0.99 [2112/2129]  
GhostDiagnostic-chr: 0.2391  
Centroid-sig: 26.7%  
Centroid-so: 3.836 arcsec [4.90σ]  
OotOffset-rm: 0.840 arcsec [1.67σ]  
KicOffset-rm: 5.076 arcsec [32.76σ]  
OotOffset-st: 1/1/4/3 [9]  
KicOffset-st: 1/1/4/3 [9]  
DiffImageQuality-fgm: 0.44 [4/9]  
DiffImageOverlap-fno: 1.00 [14/14]

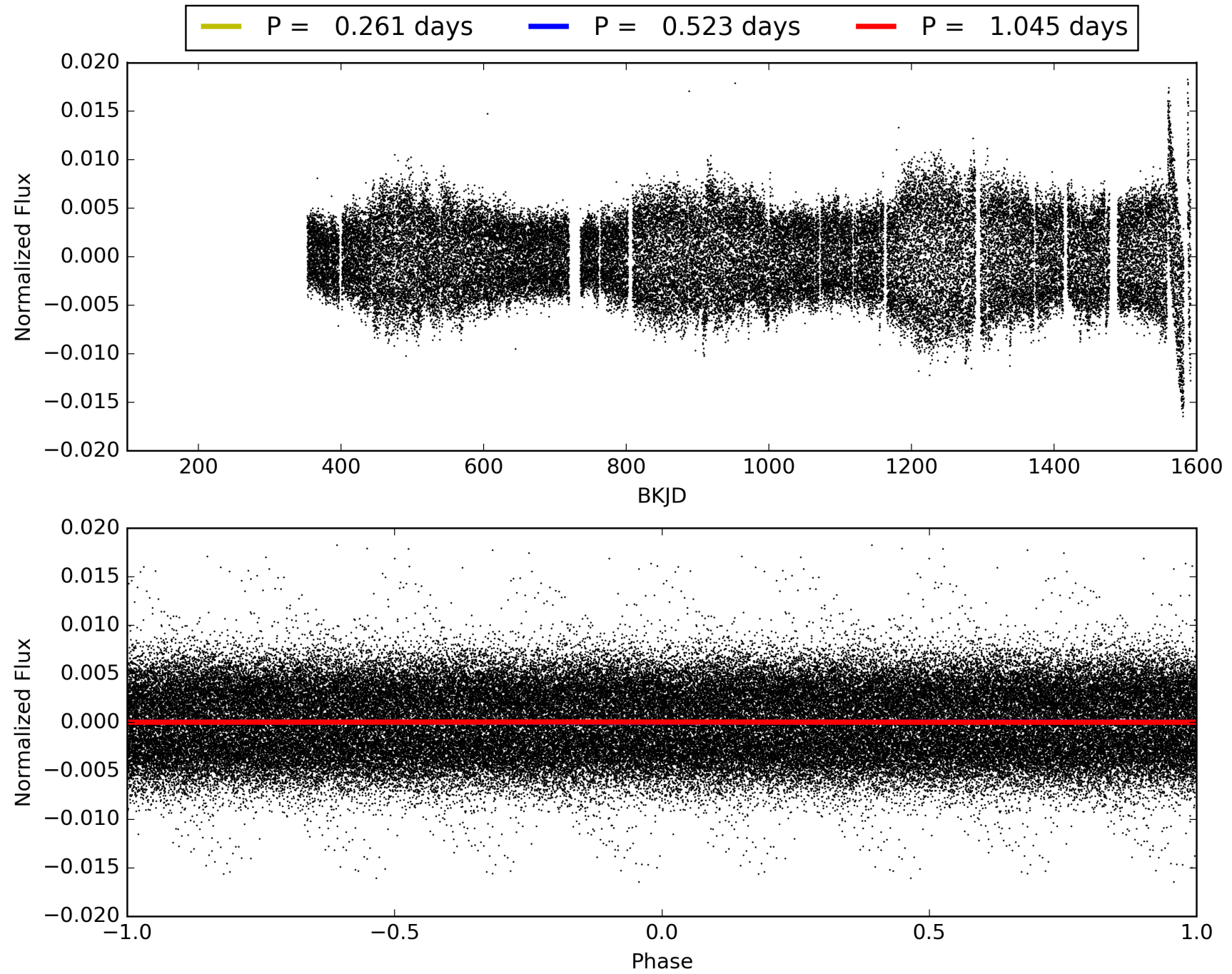
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:25:19 Z

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

# TCE 005564597-01, PDC Light Curves

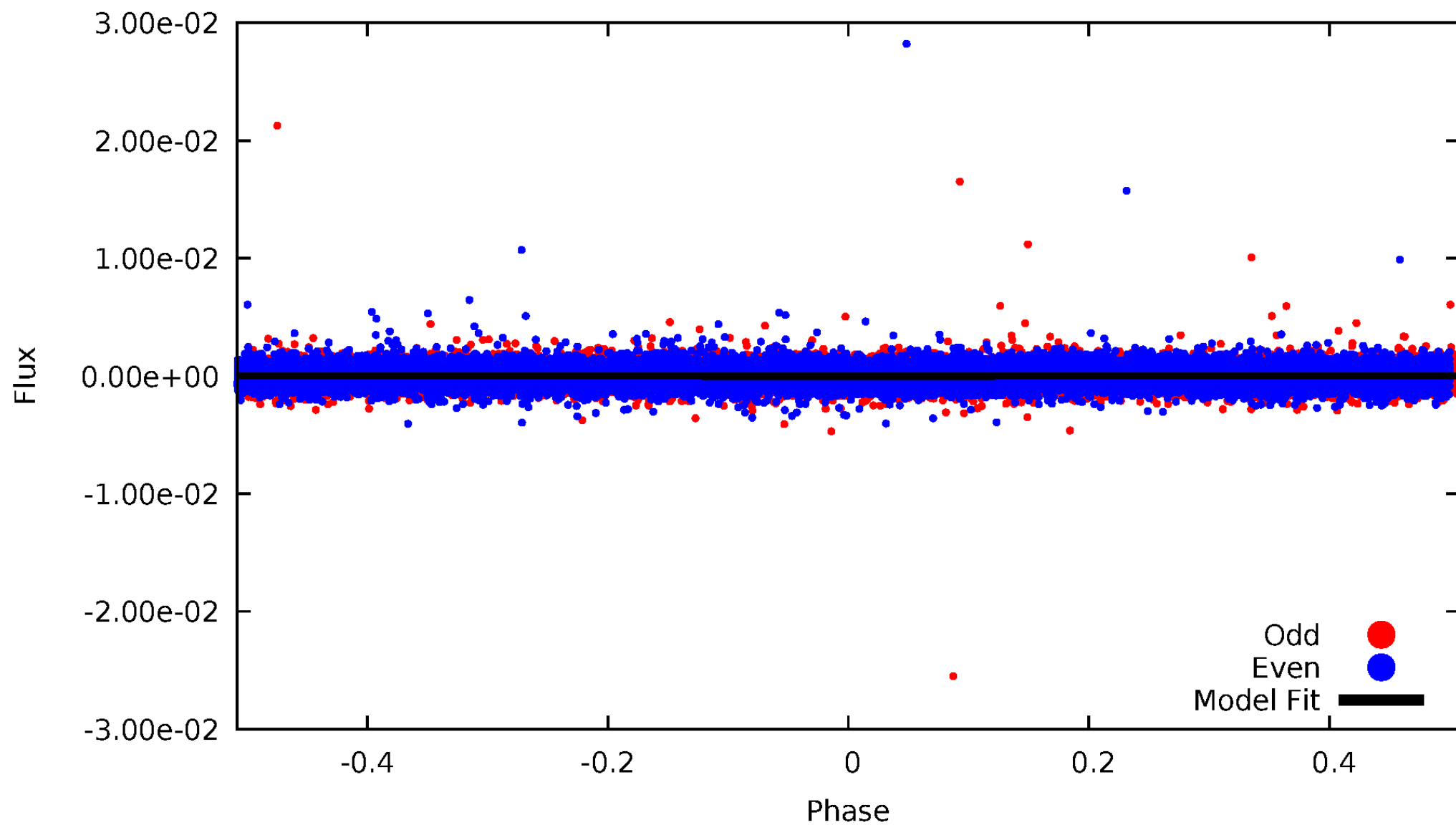


TCE 005564597-01



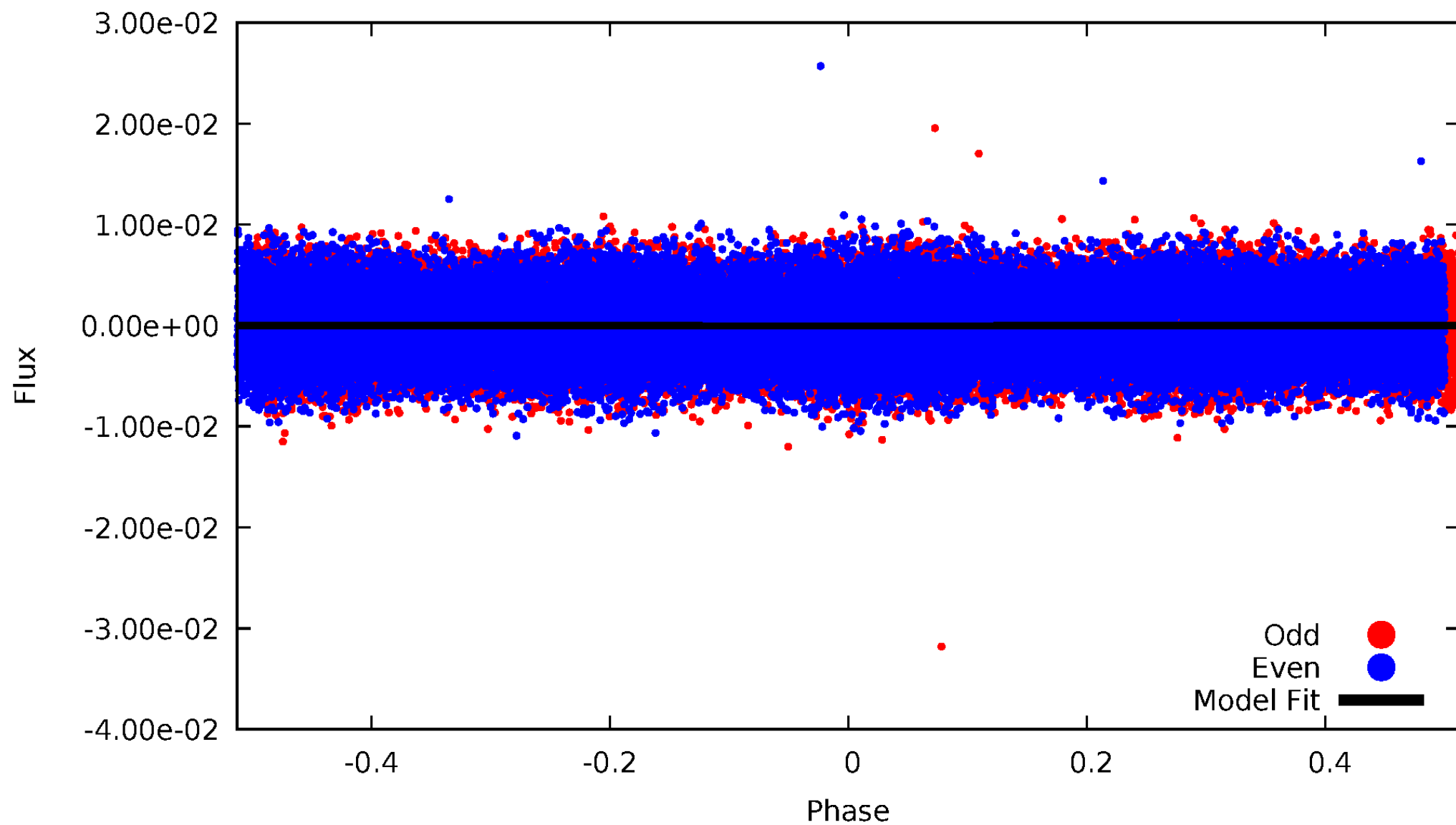
# DV Odd/Even

TCE 005564597-01



# ALT Odd/Even

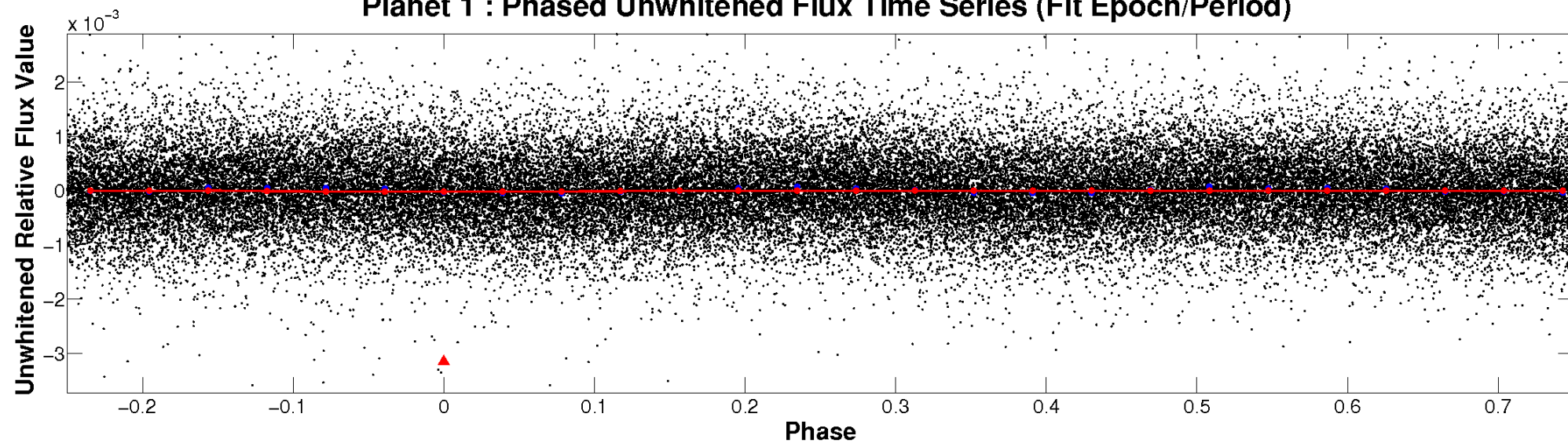
TCE 005564597-01



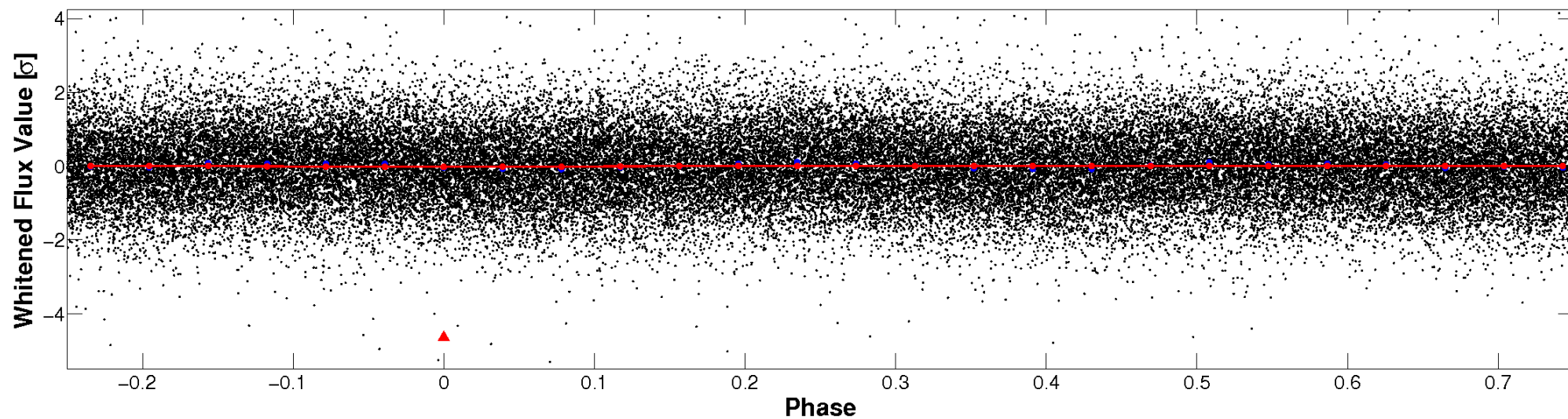


# Non-Whitened Vs. Whitened Light Curve

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

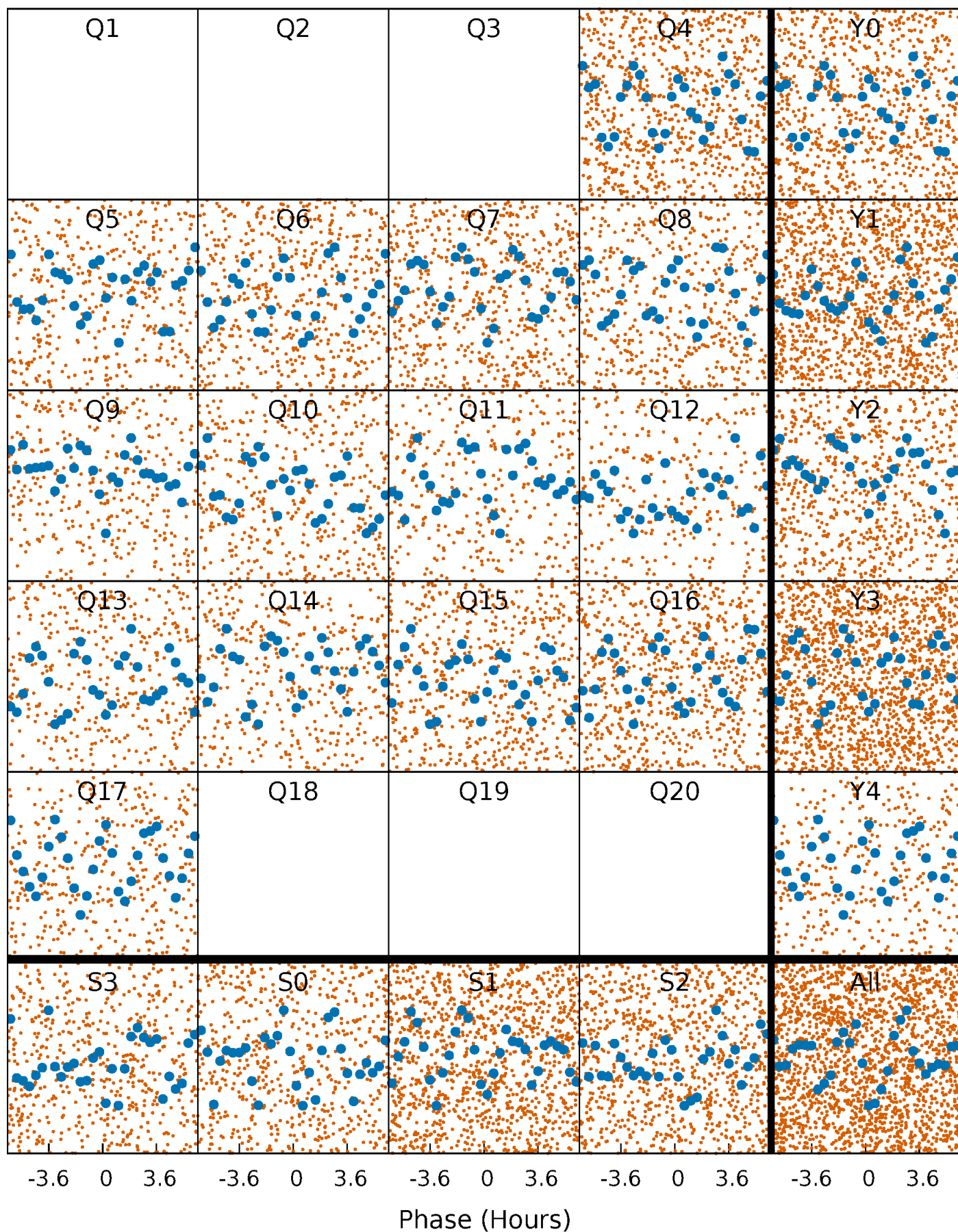


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

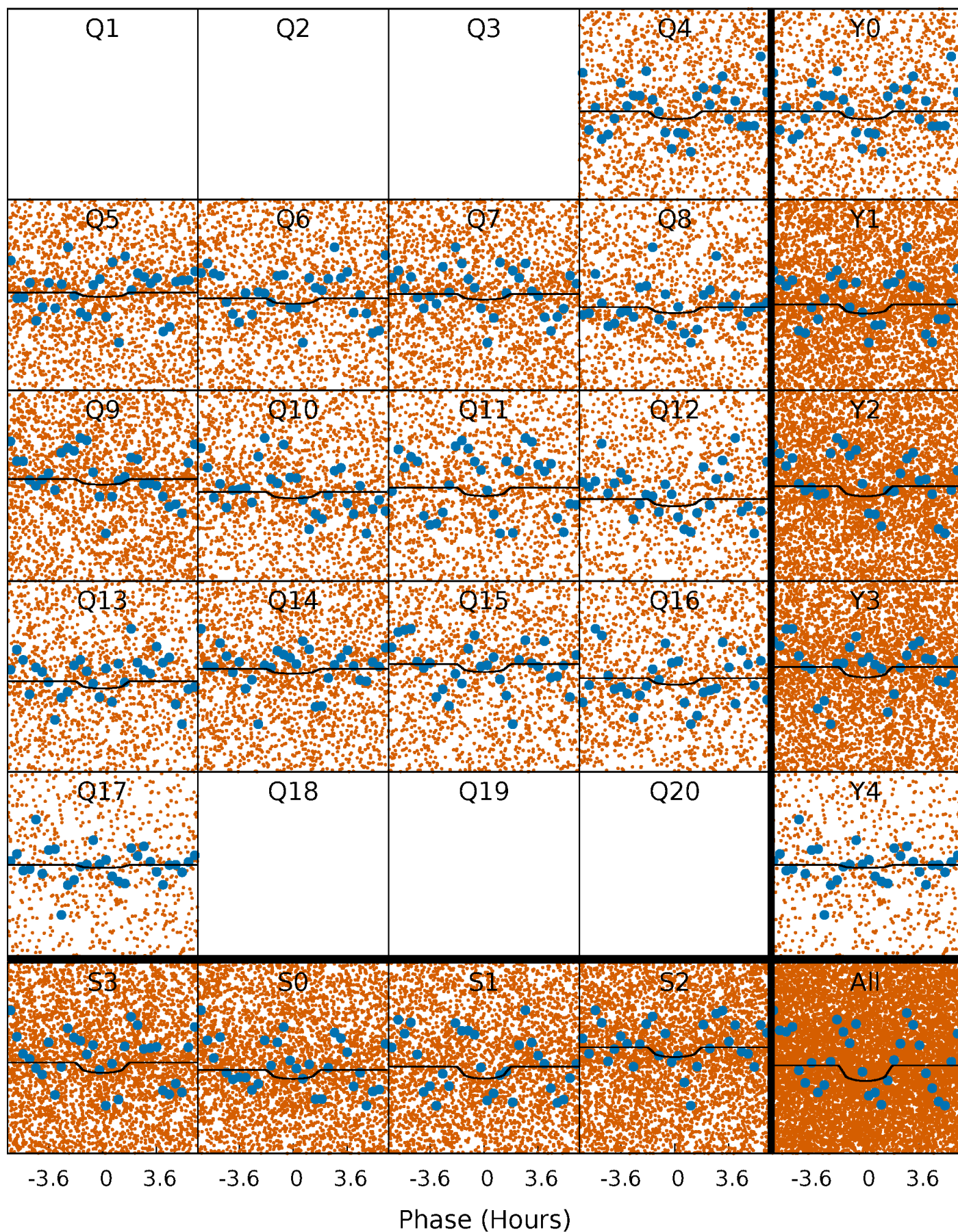
TCE 005564597-01   P= 0.522548 Days    $T_0=131.974880$  (BKJD)





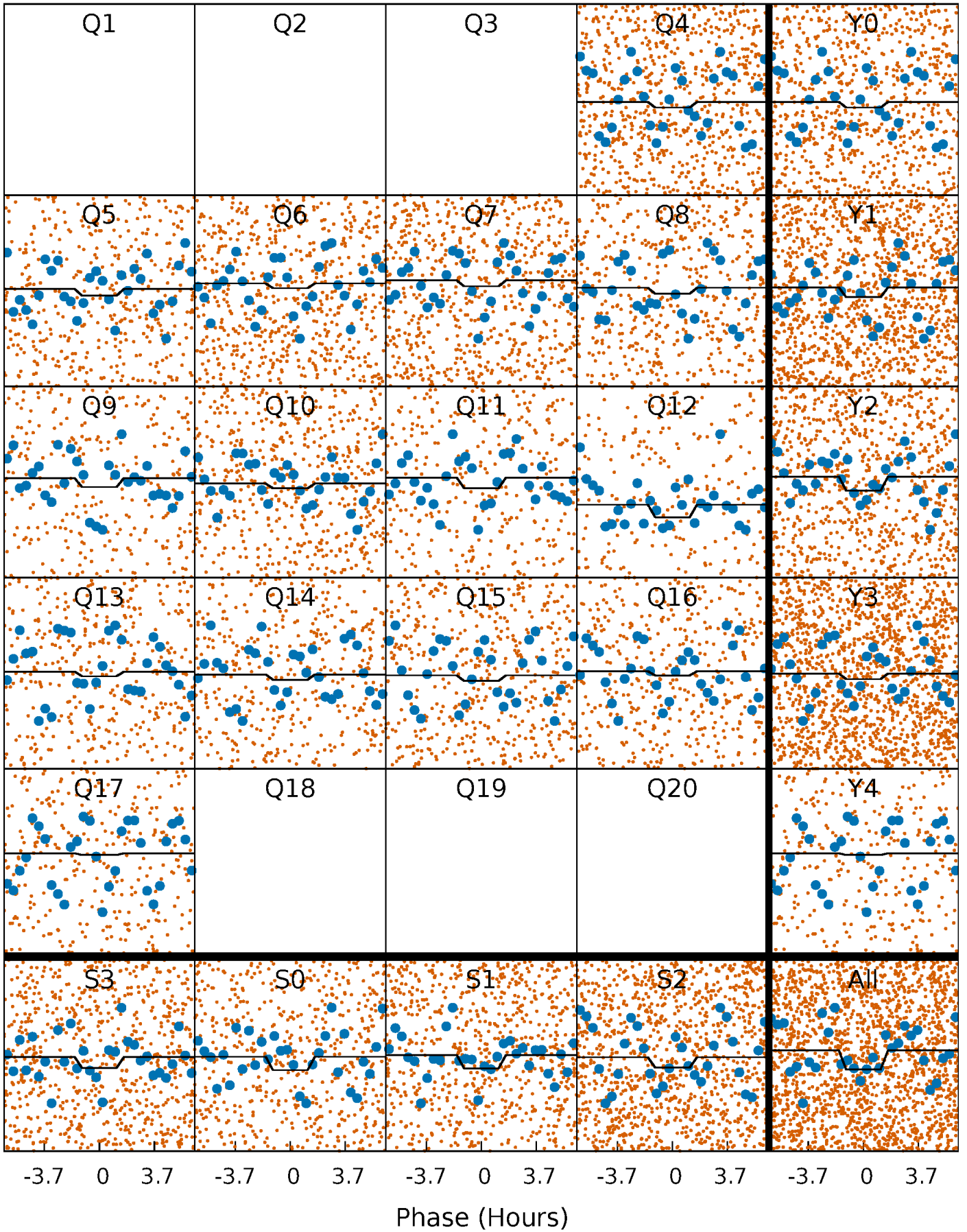
# DV Quarter-Phased Transit Curves

TCE 005564597-01 P= 0.522548 Days  $T_0=131.974880$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

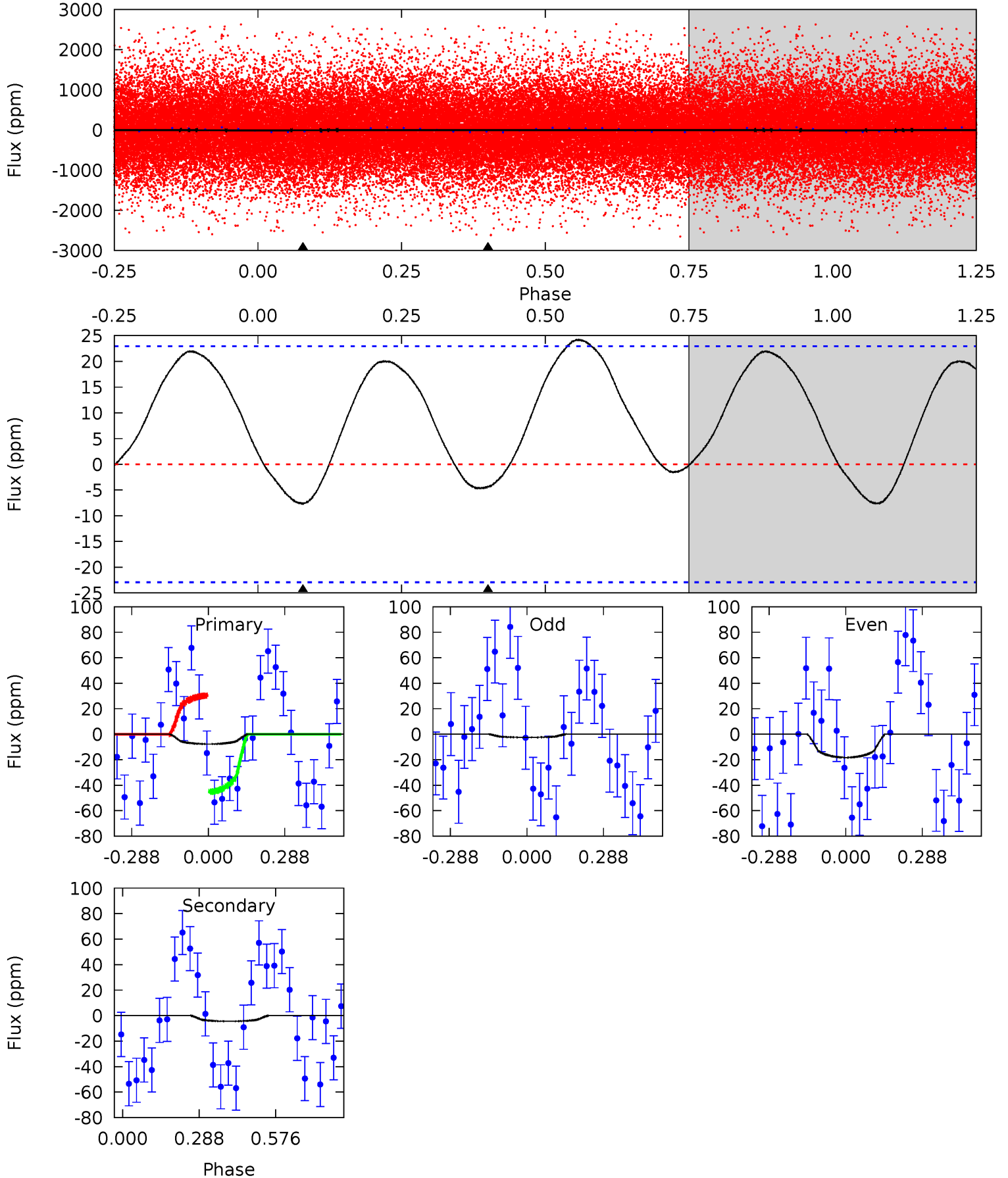
TCE 005564597-01   P= 0.522570 Days    $T_0=131.964637$  (BKJD)



# DV Model-Shift Uniqueness Test

005564597-01, P = 0.522548 Days, E = 131.974880 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
1.46	0.84	0	0	4.34	1.06	0.36	1.46	1.46	0.84	0.84	1.50	0.82	0.76	1.40

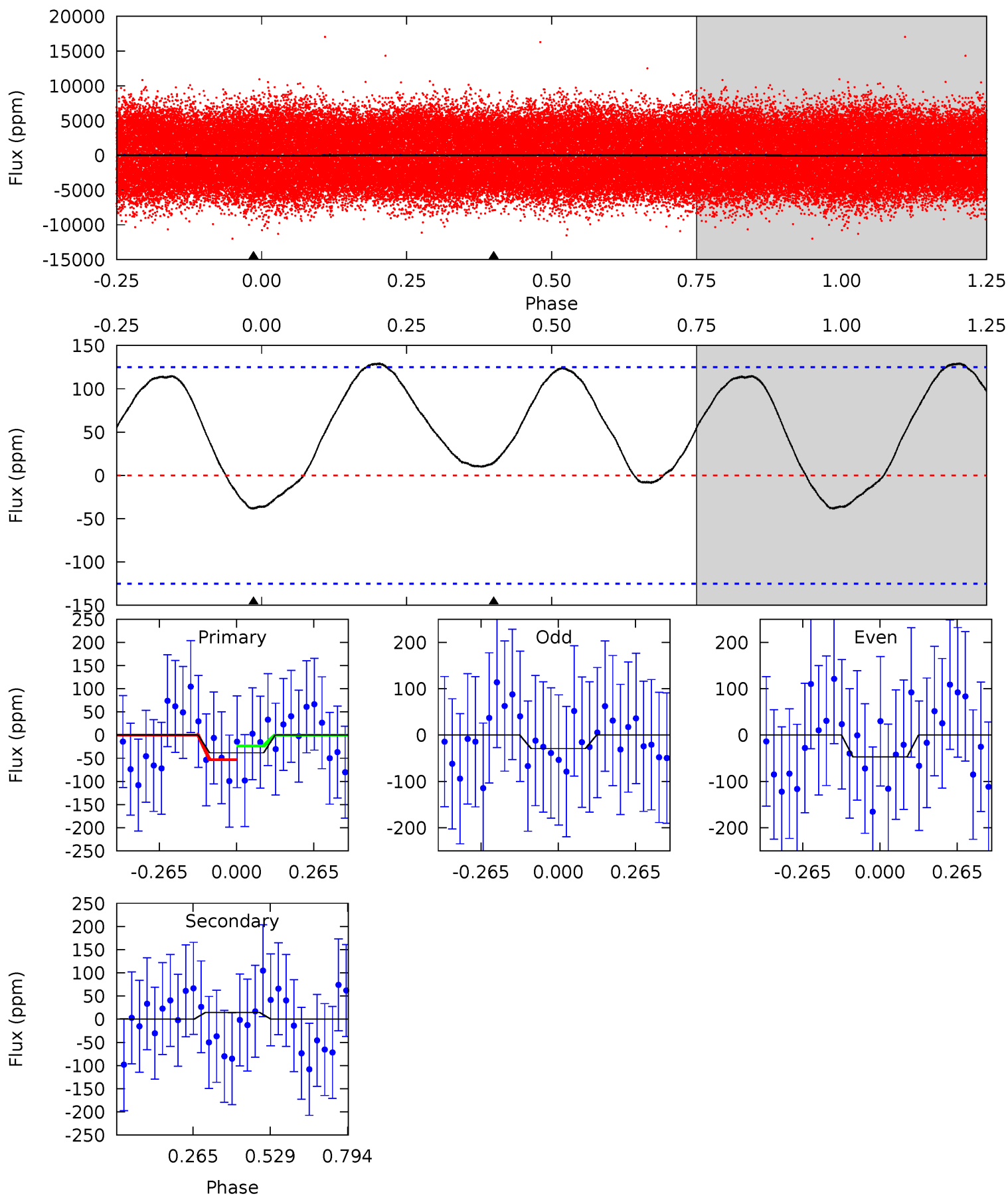




# Alt Model-Shift Uniqueness Test

005564597-01, P = 0.522570 Days, E = 131.964637 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
1.33	-0.51	0	0	4.36	1.12	0.55	1.33	1.33	-0.51	-0.51	0.31	0.60	0.77	0.47



### Stellar Parameters For KIC 005564597

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5491^{+180}_{-180}$	$4.574^{+0.038}_{-0.152}$	$-0.100^{+0.300}_{-0.300}$	$0.810^{+0.188}_{-0.075}$	$0.904^{+0.082}_{-0.101}$	$2.394^{+0.473}_{-1.054}$
	+3%/-3%	+1%/-3%	+300%/-300%	+23%/-9%	+9%/-11%	+20%/-44%
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 005564597-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-4 \pm 5$	$0.84^{+0.91}_{-0.56}$	$2806^{+156}_{-129}$	$2139^{+2358}_{-5233}$	$0.323^{+3.915}_{-0.404}$
Alt.	$15 \pm 29$	$0.90^{+0.83}_{-0.58}$	$2813^{+168}_{-128}$	$-3649^{+7367}_{-2028}$	$-0.763^{+2.399}_{-9.319}$

$T_{\text{max}}$  = 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

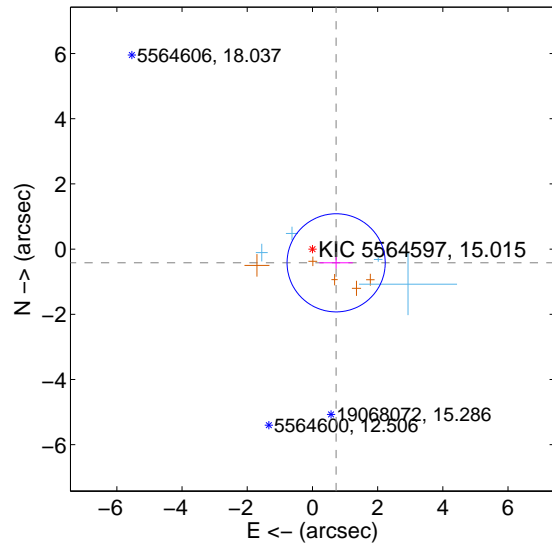
Supplemental centroid analysis for 005564597-01. Kepler magnitude: 15.02. Transit SNR 2.32

There are 4 quarters with good PRF difference image offsets

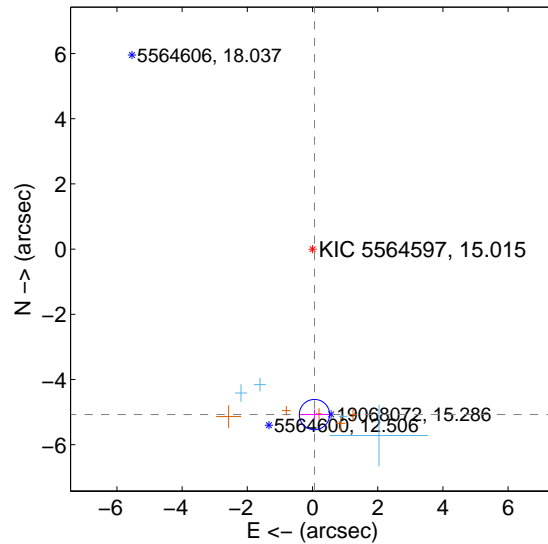
The OOT PRF centroid is offset from the target star catalog position by about 4.65 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.840 \pm 0.502$	1.67	$-0.727 \pm 0.513$	$-0.421 \pm 0.178$
PRF-fit source offset from KIC position	$5.076 \pm 0.155$	32.76	$-0.060 \pm 0.475$	$-5.076 \pm 0.152$
photometric centroid source offset	$3.84 \pm 0.78$	4.90	$1.66 \pm 0.64$	$-3.46 \pm 0.81$

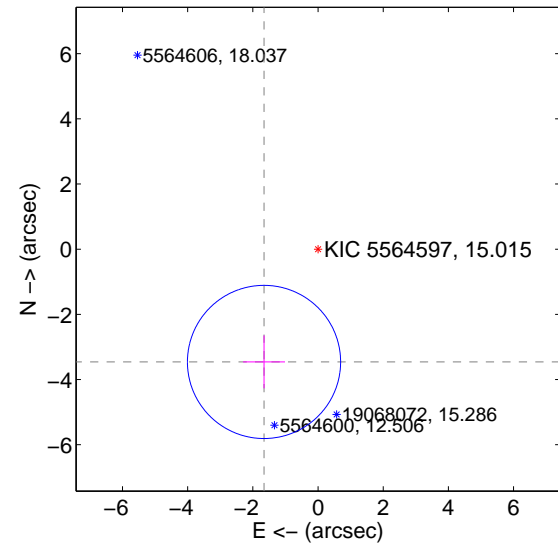
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

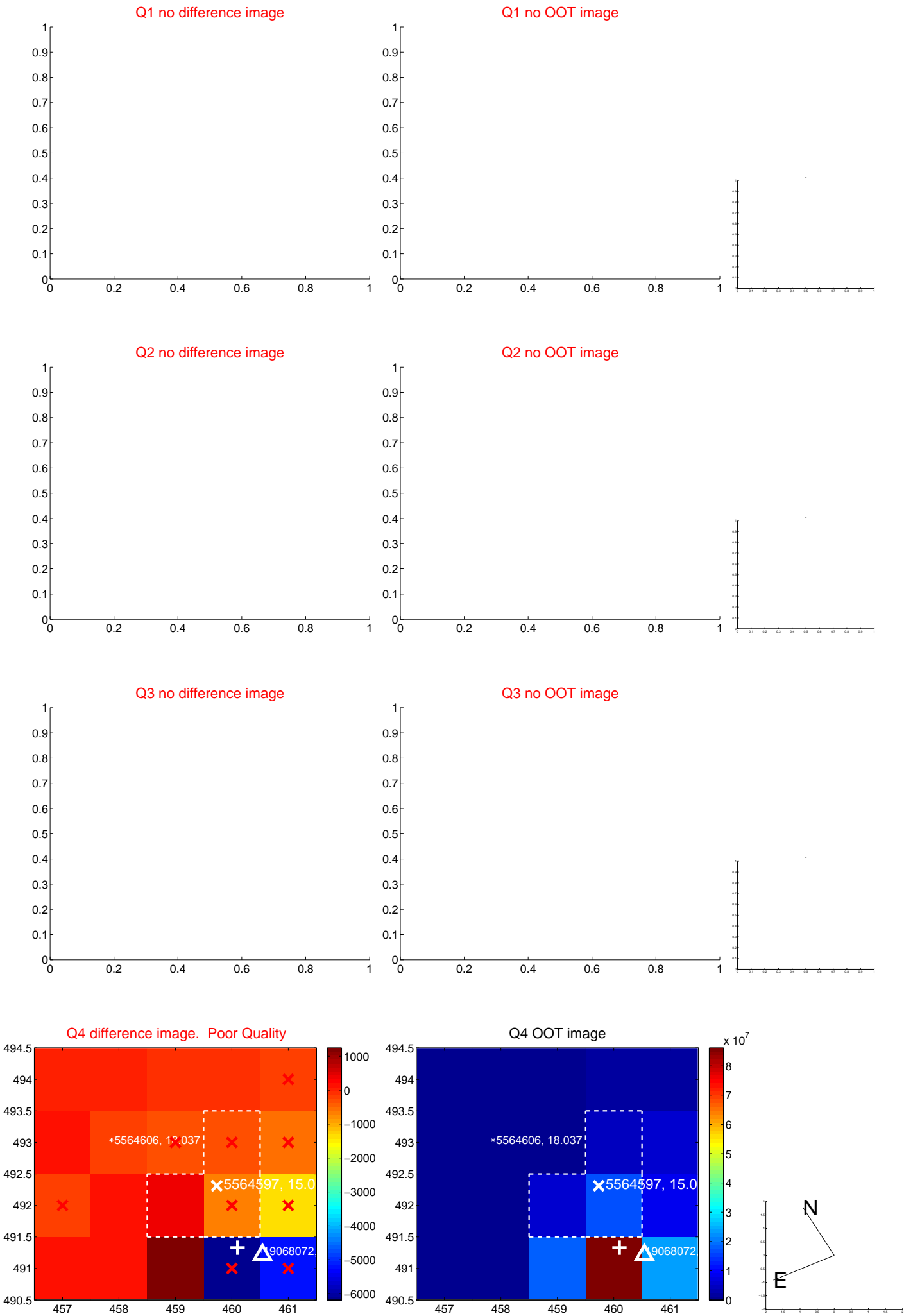


offset from photometric centroids

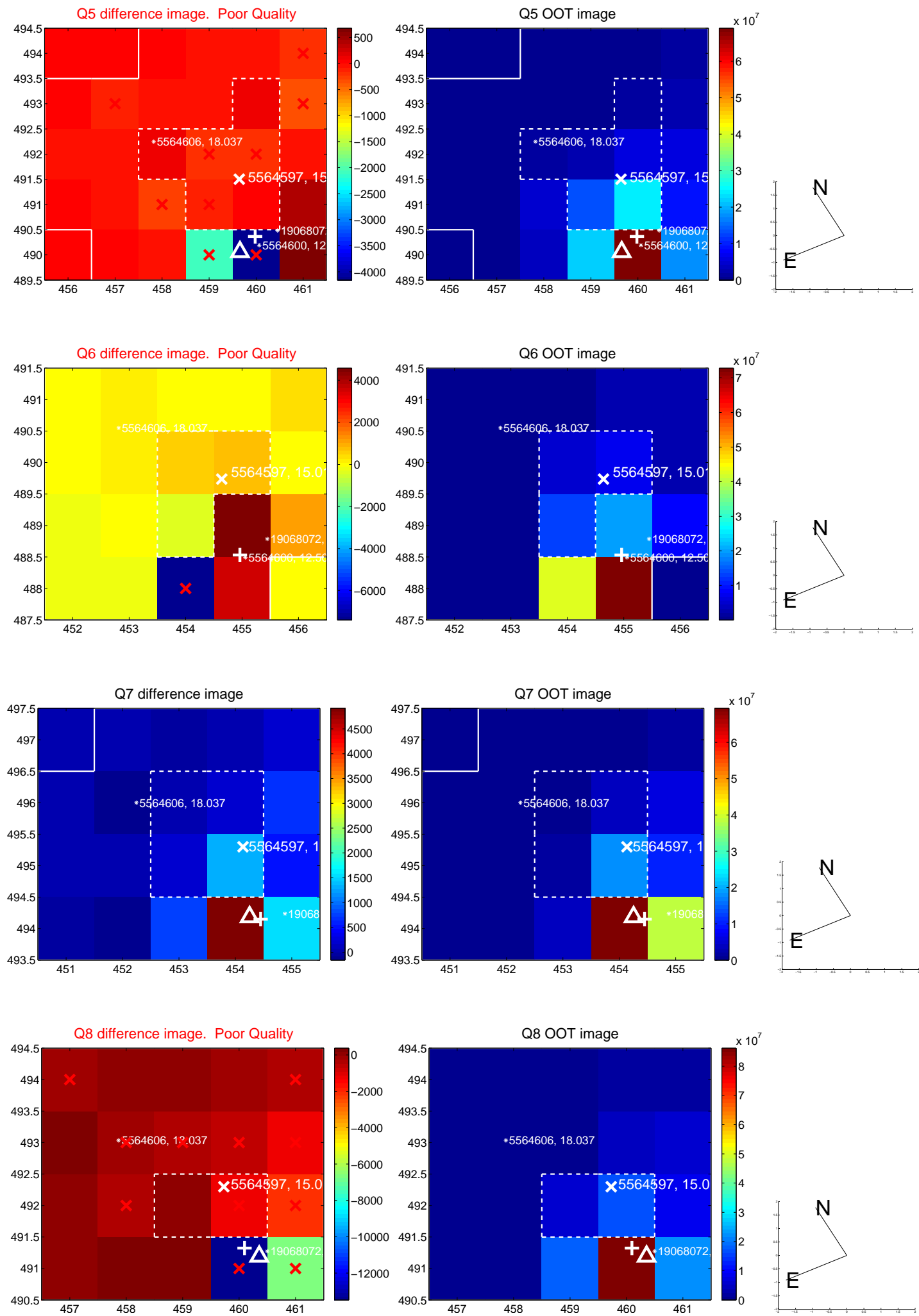


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

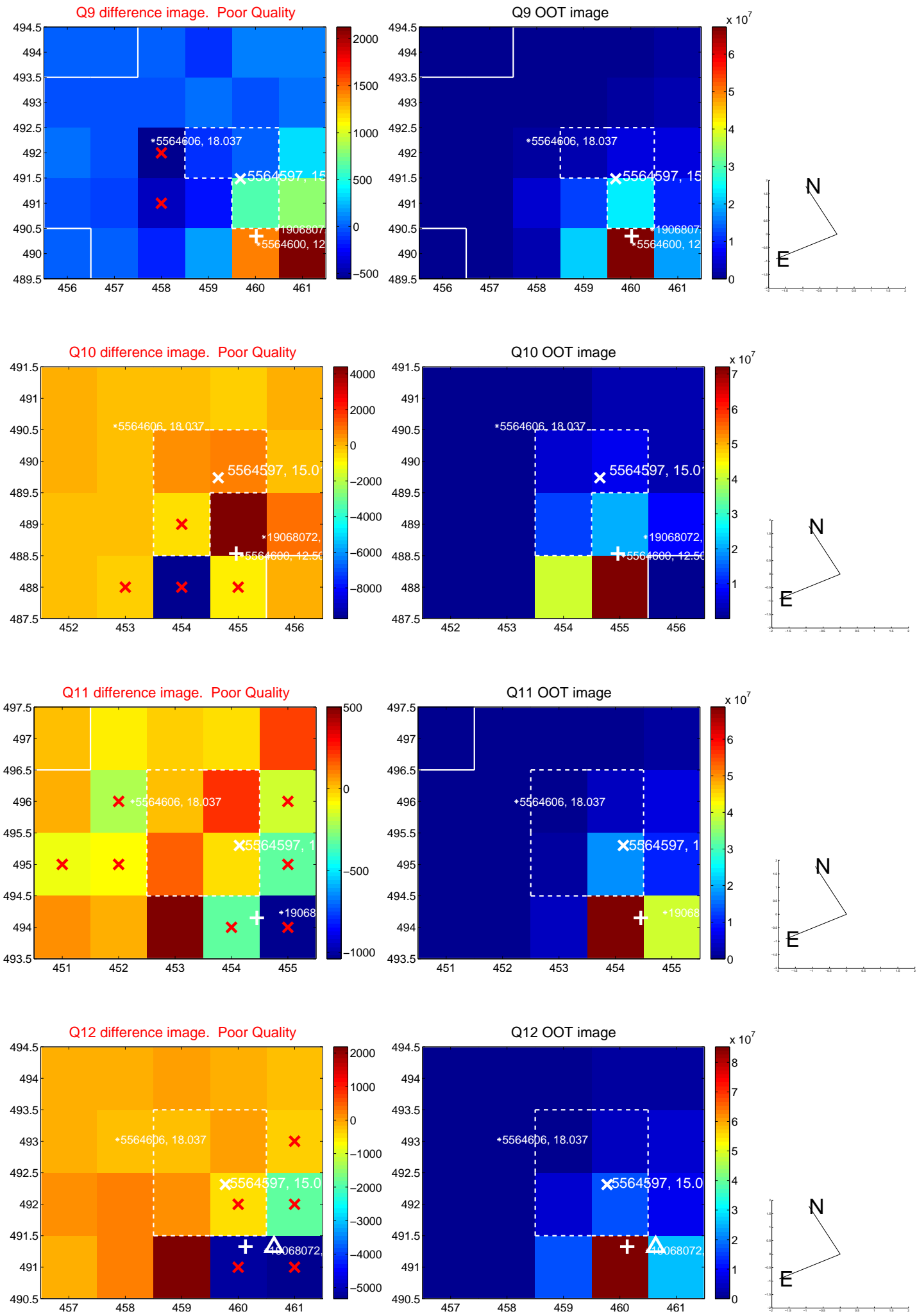
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



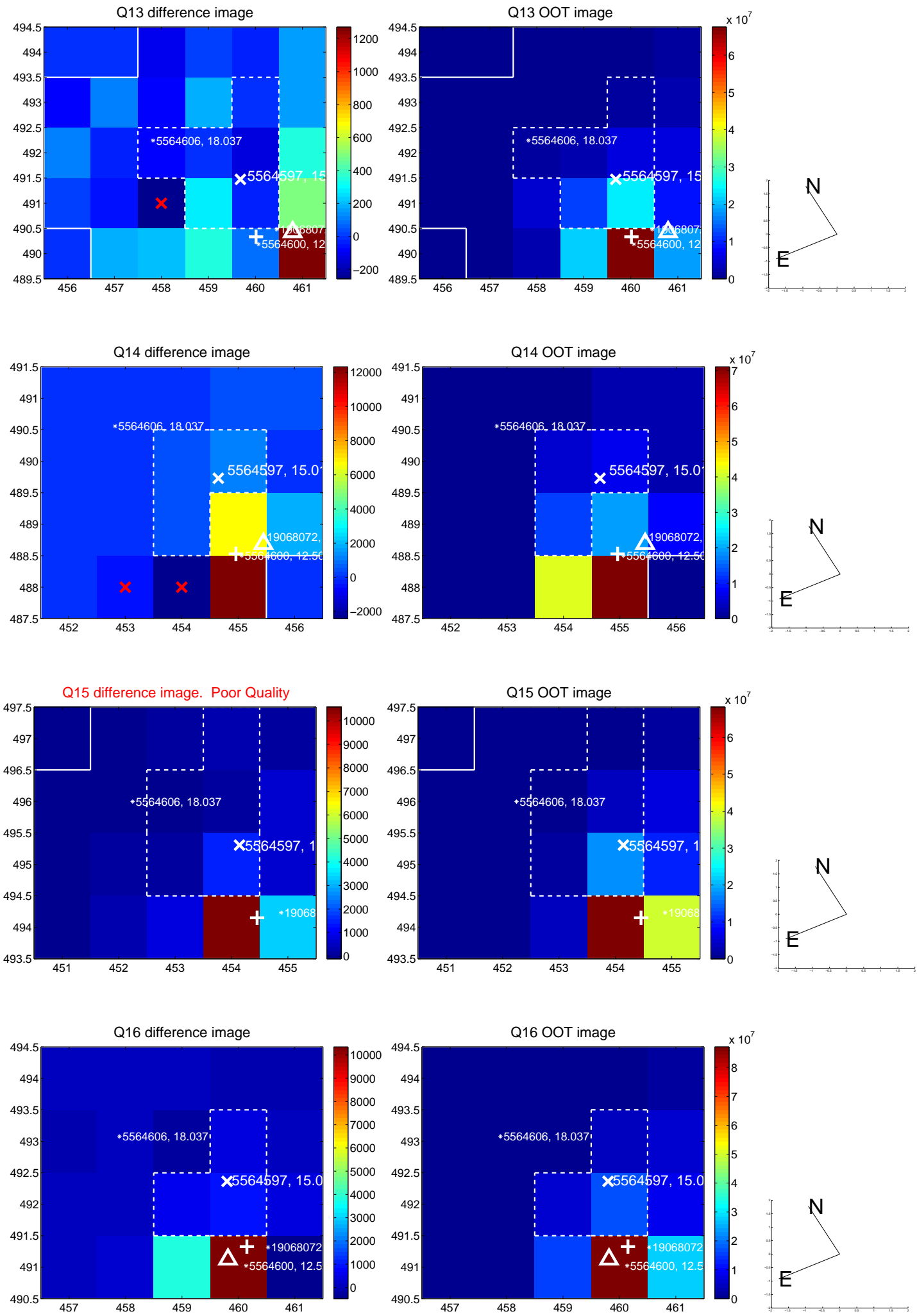
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

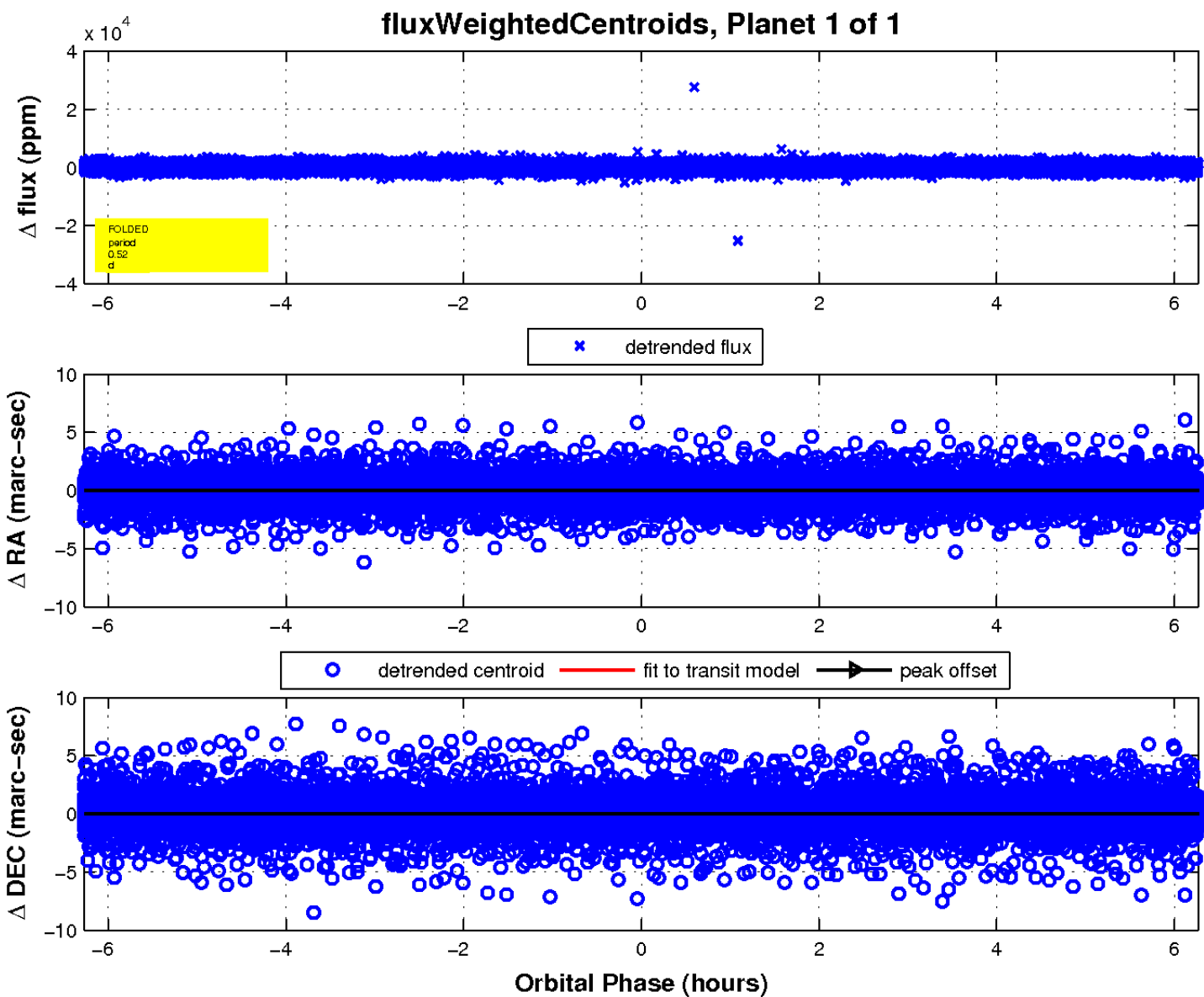
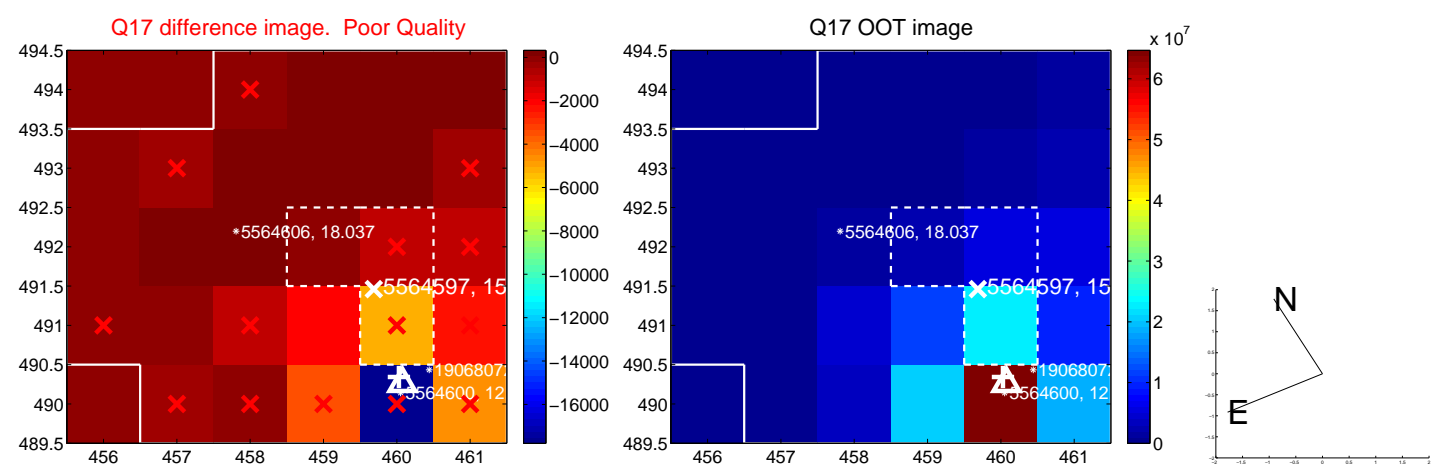


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

