

KIC 009459162

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})
009459162-01	OBS	4818.01	3.798923	133.290592	46.9	4.103	9.3	10.1	2.11	6831	1.68	2890.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009459162-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

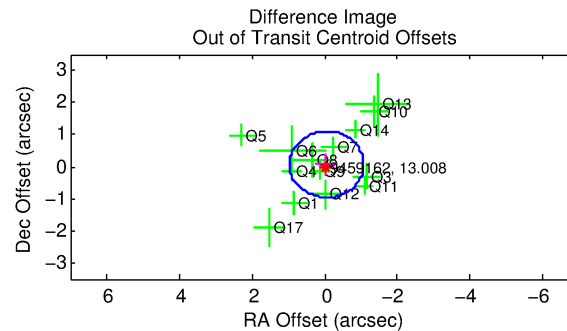
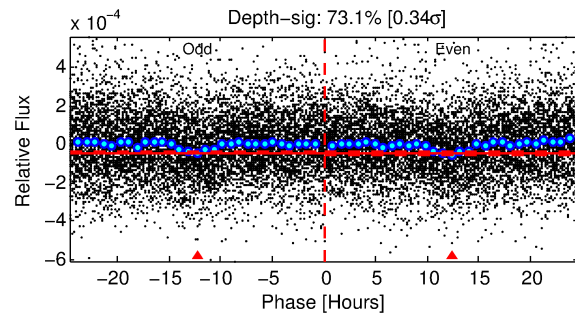
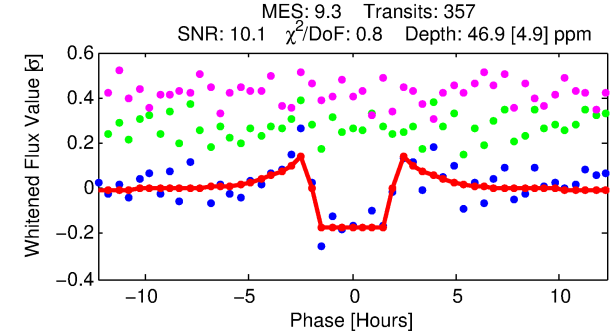
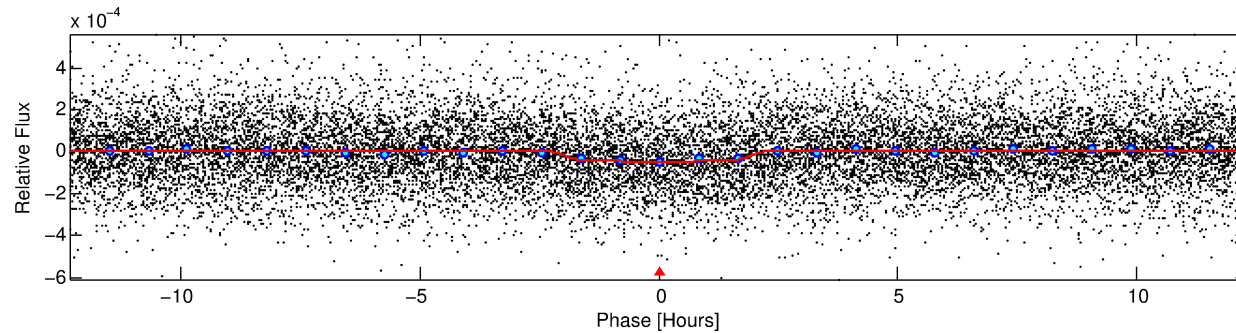
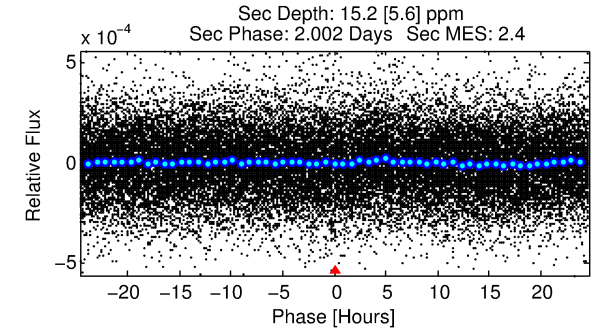
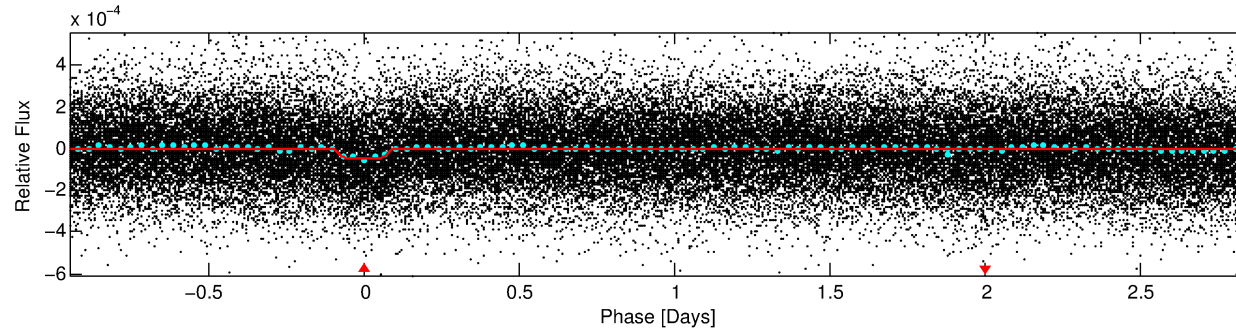
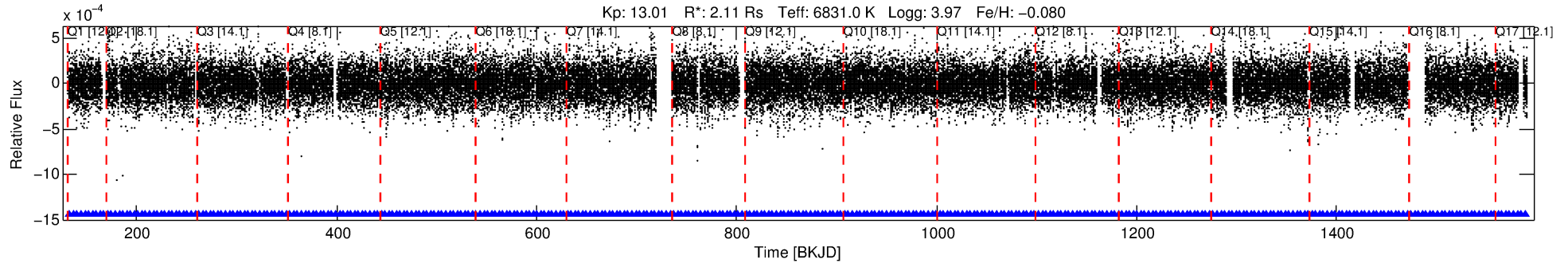
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009459162-01

No Significant Match Found

DV One-Page Summary

KIC: 9459162 Candidate: 1 of 1 Period: 3.799 d
KOI: K04818.01 Corr: 0.987



DV Fit Results:

Period = 3.79892 [0.00002] d
Epoch = 133.2906 [0.0032] BKJD
Rp/R* = 0.0073 [0.0017]
a/R* = 3.35 [4.12]
b = 0.90 [0.29]
Seff = 2890.17 [1198.48]
Teq = 1870 [194] K
Rp = 1.68 [0.59] Re
a = 0.0547 [0.0137] AU
Ag = 8.89 [6.31] [1.25σ]
Teffp = 4991 [756] K [4.00σ]

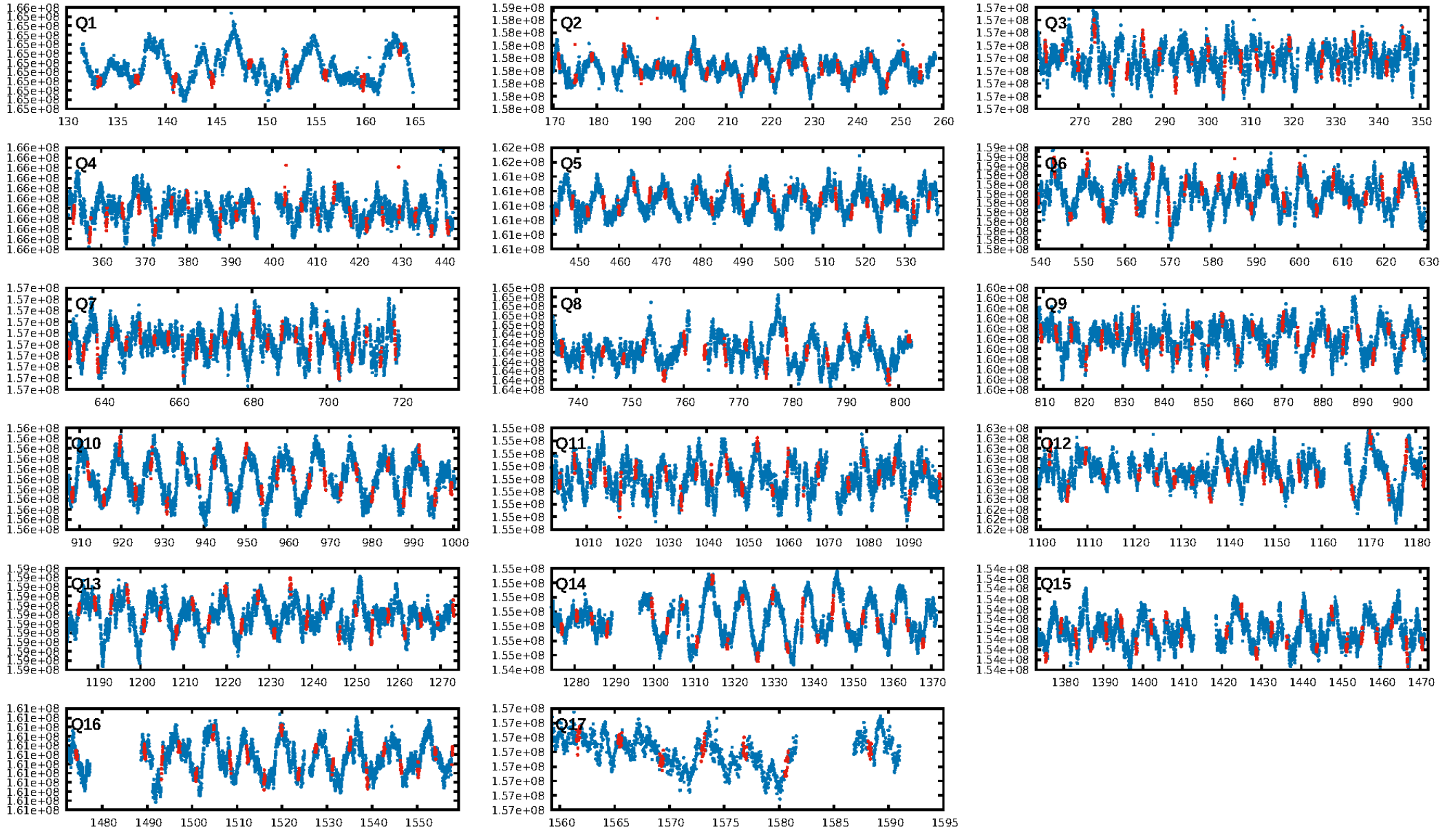
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.92e-20
RollingBand-fgt: 1.00 [341/341]
GhostDiagnostic-chr: 3.282
Centroid-sig: 7.9%
Centroid-so: 0.947 arcsec [1.15σ]
OotOffset-rm: 0.088 arcsec [0.26σ]
KicOffset-rm: 0.137 arcsec [0.40σ]
OotOffset-st: 3/3/3/5 [14]
KicOffset-st: 3/3/3/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [17/17]

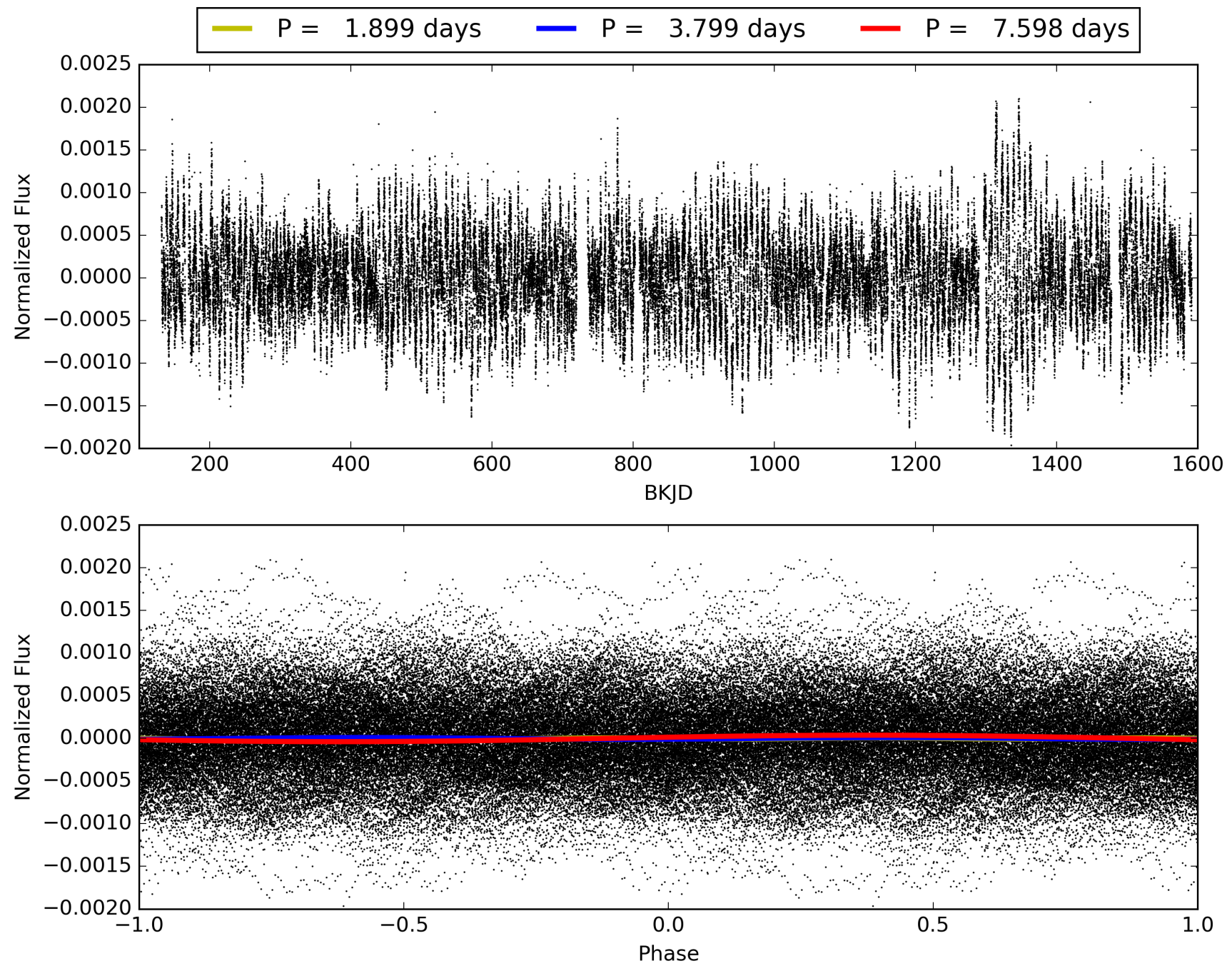
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:55:47 Z

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

TCE 009459162-01, PDC Light Curves

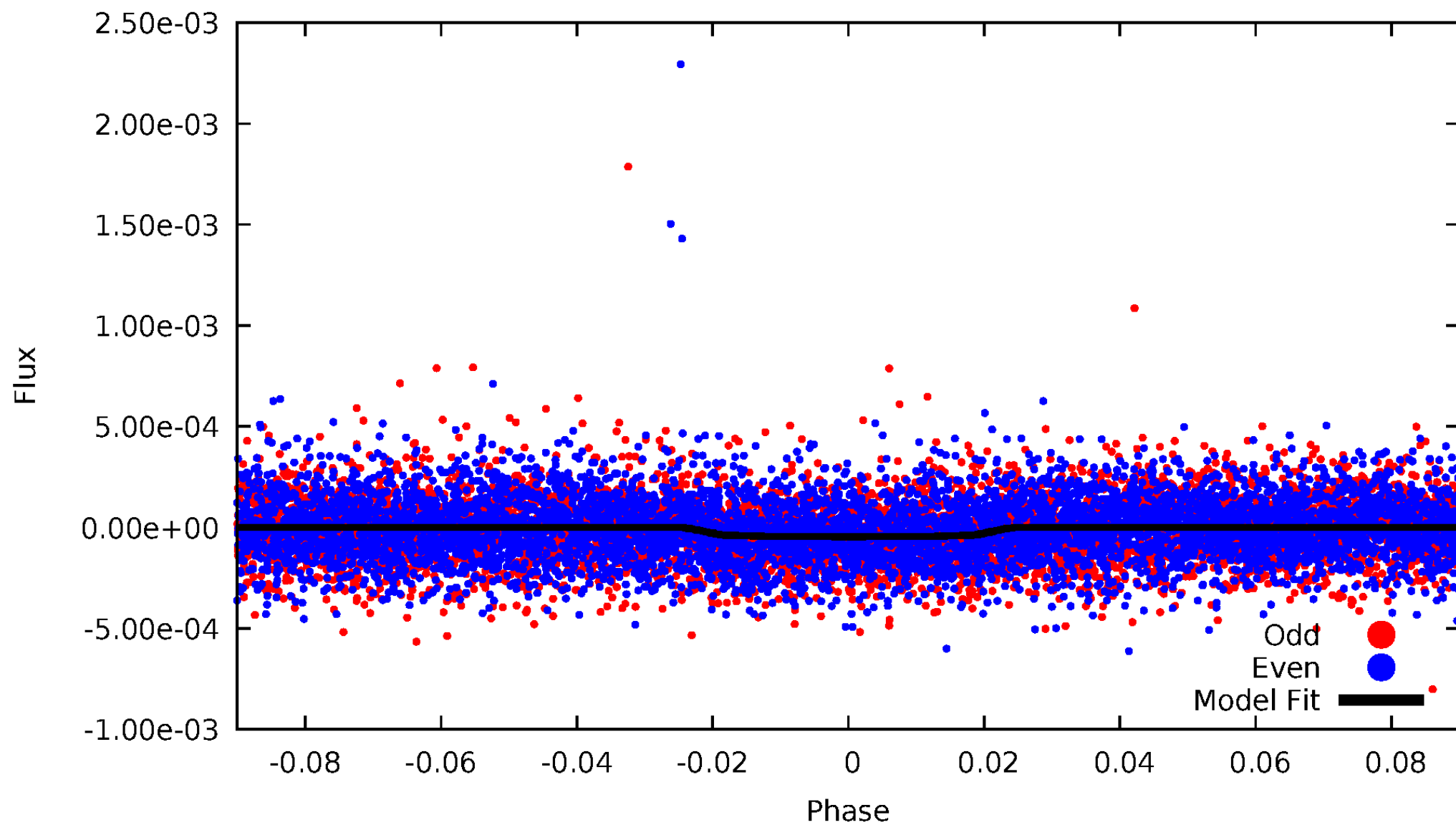


TCE 009459162-01



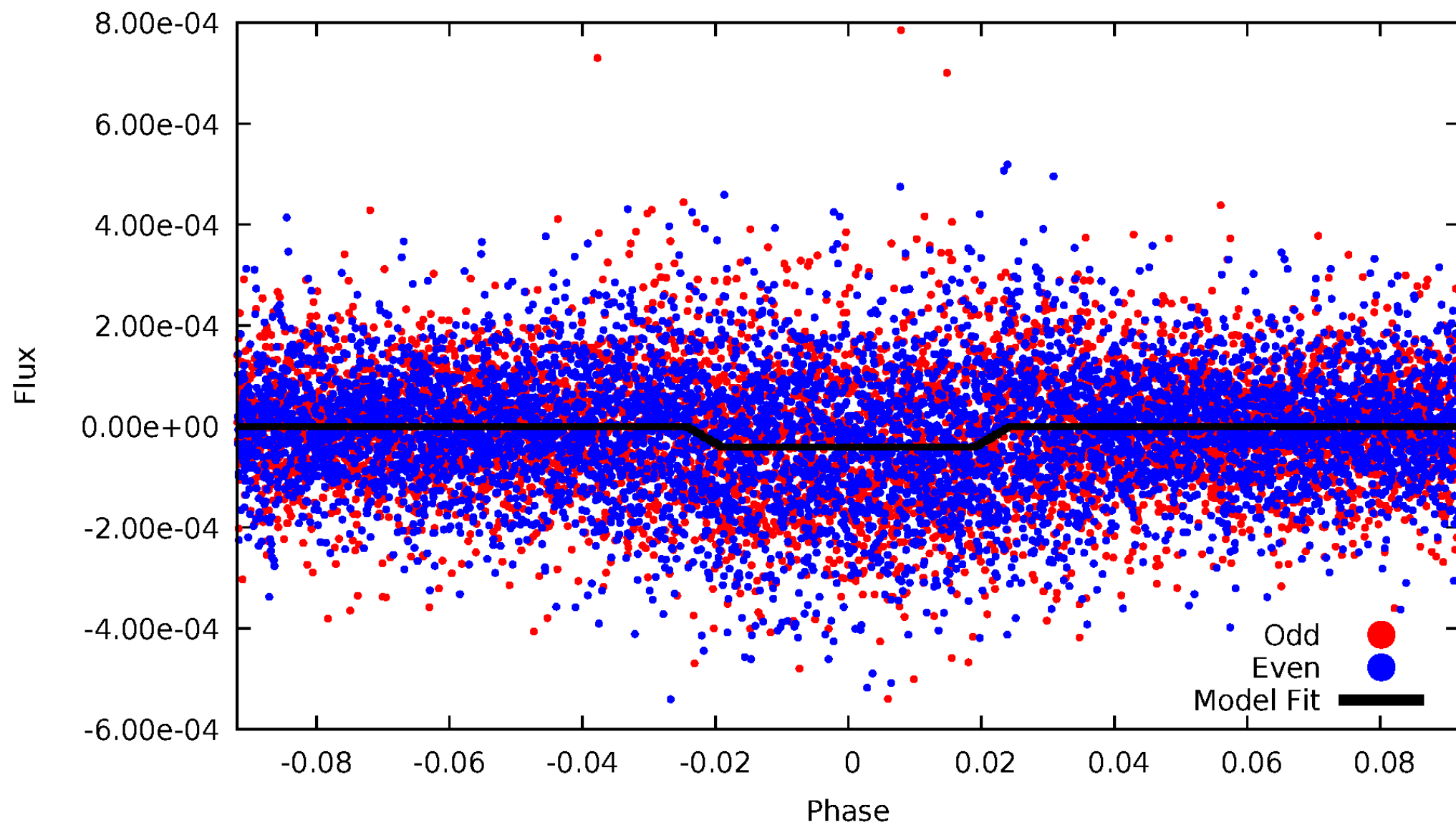
DV Odd/Even

TCE 009459162-01



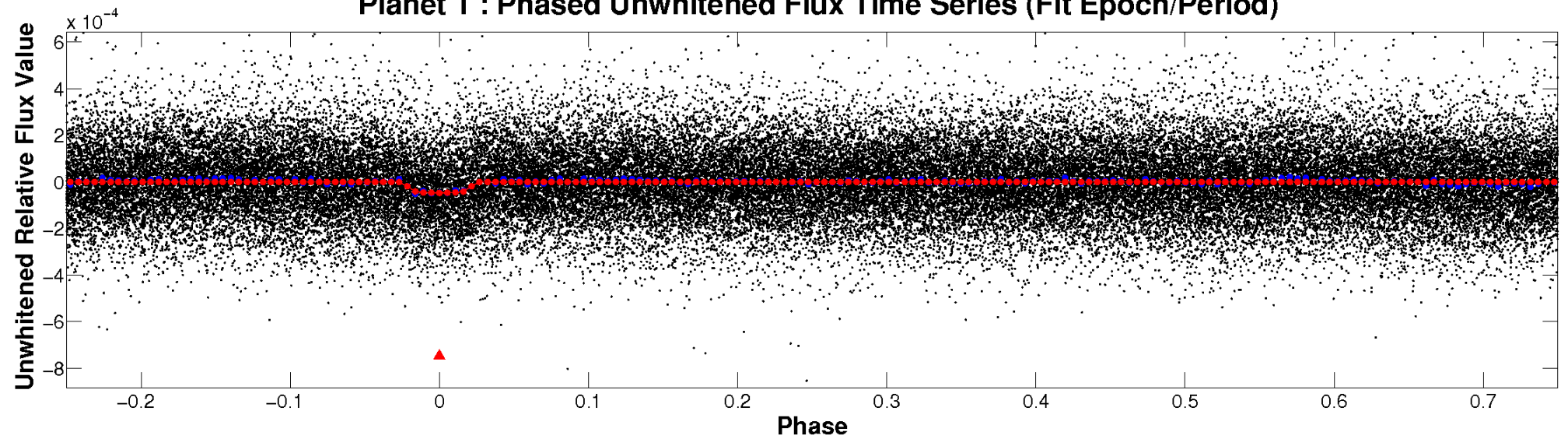
ALT Odd/Even

TCE 009459162-01

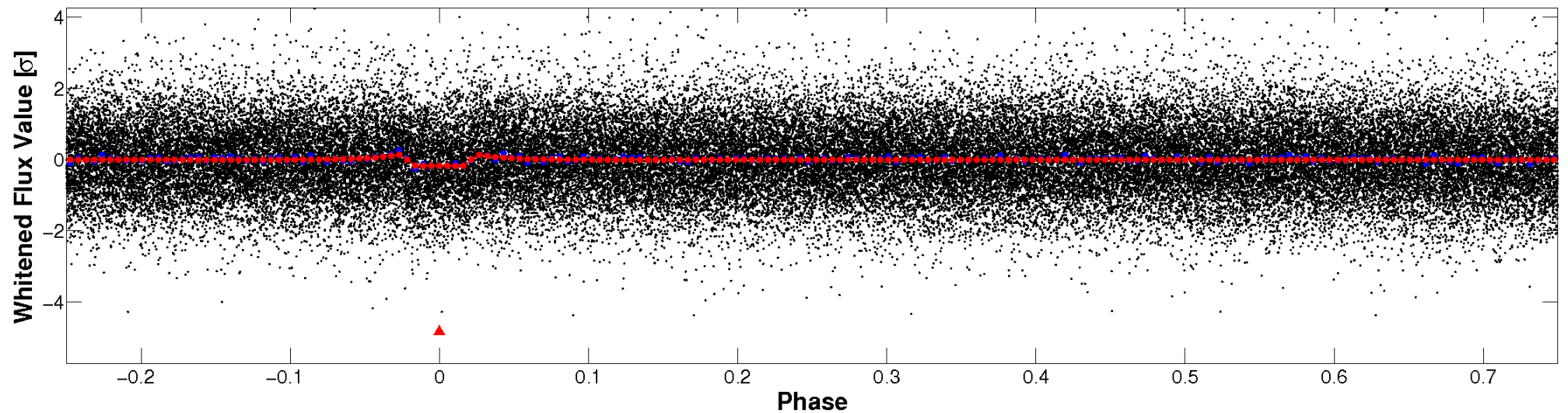


Non-Whitened Vs. Whitened Light Curve

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

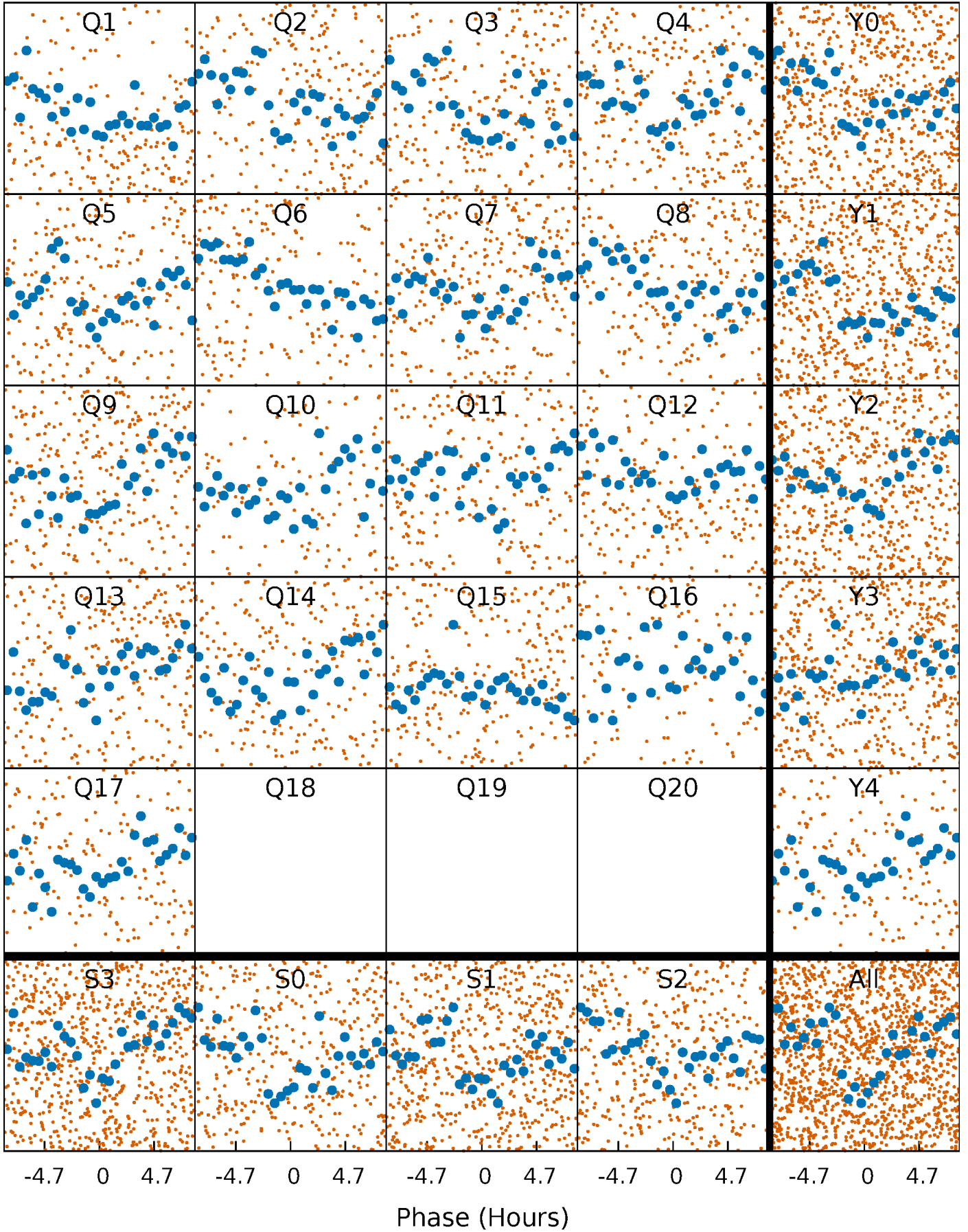


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



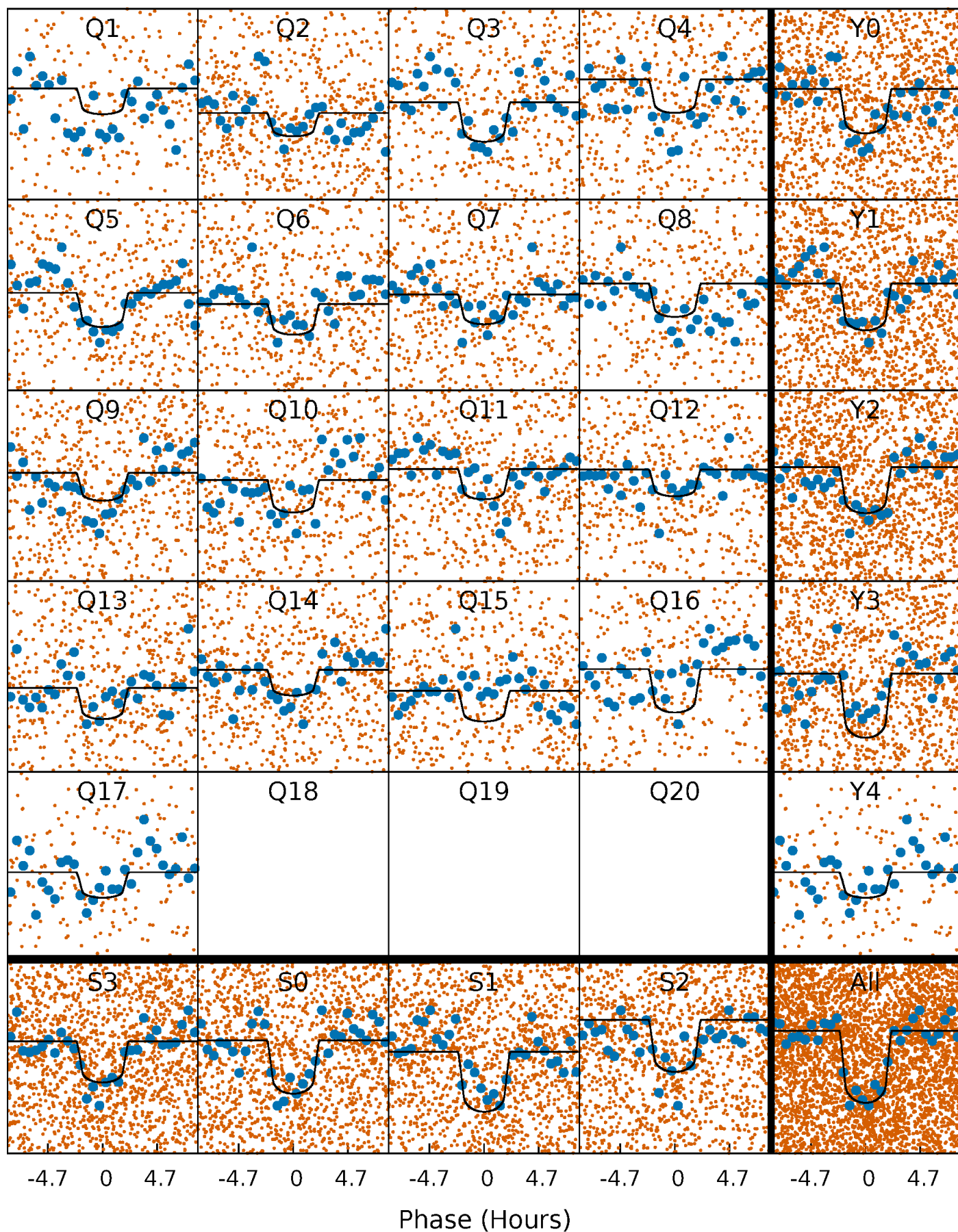
PDC Quarter-Phased Transit Curves

TCE 009459162-01 P= 3.798923 Days $T_0=133.290592$ (BKJD)



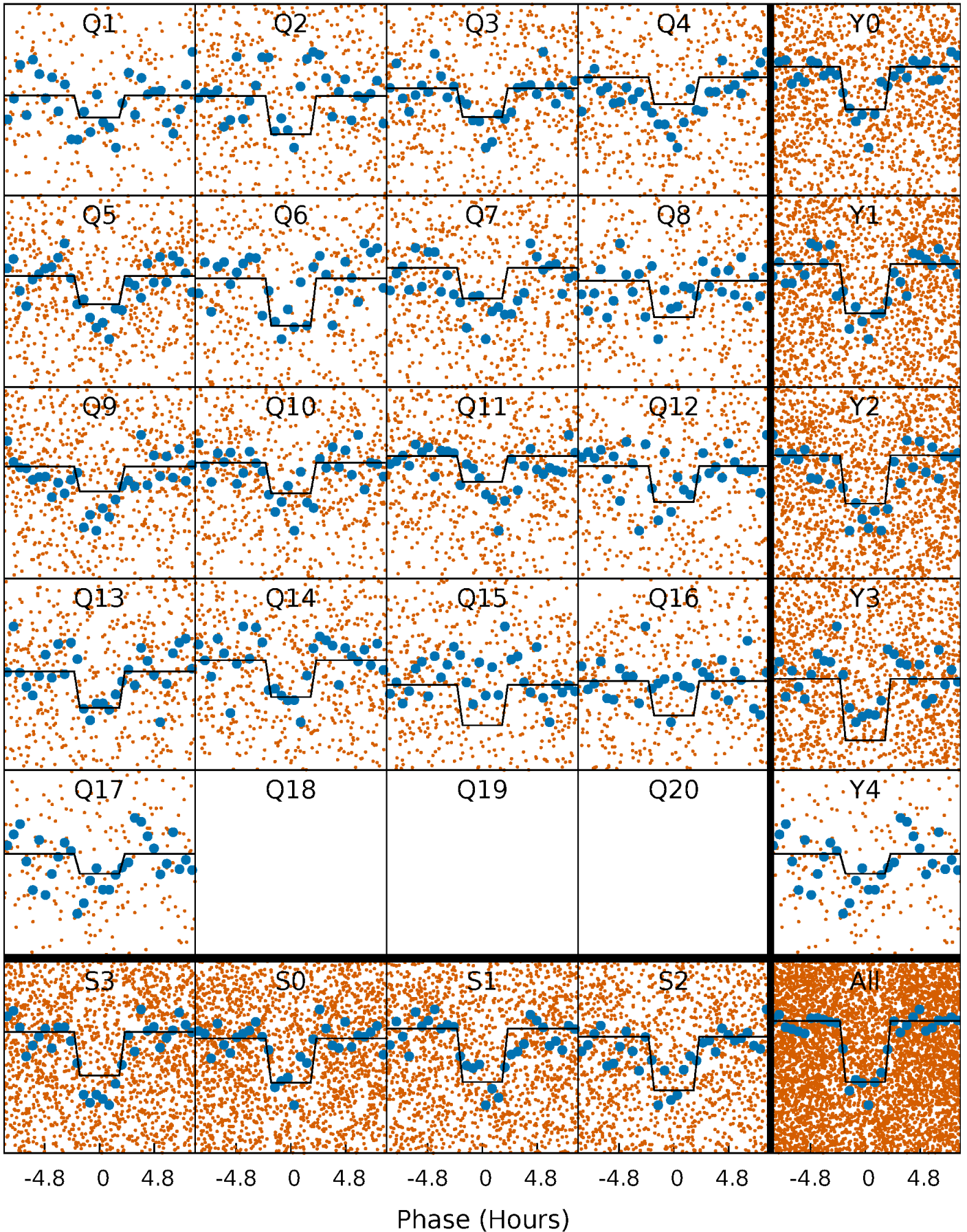
DV Quarter-Phased Transit Curves

TCE 009459162-01 P= 3.798923 Days $T_0=133.290592$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

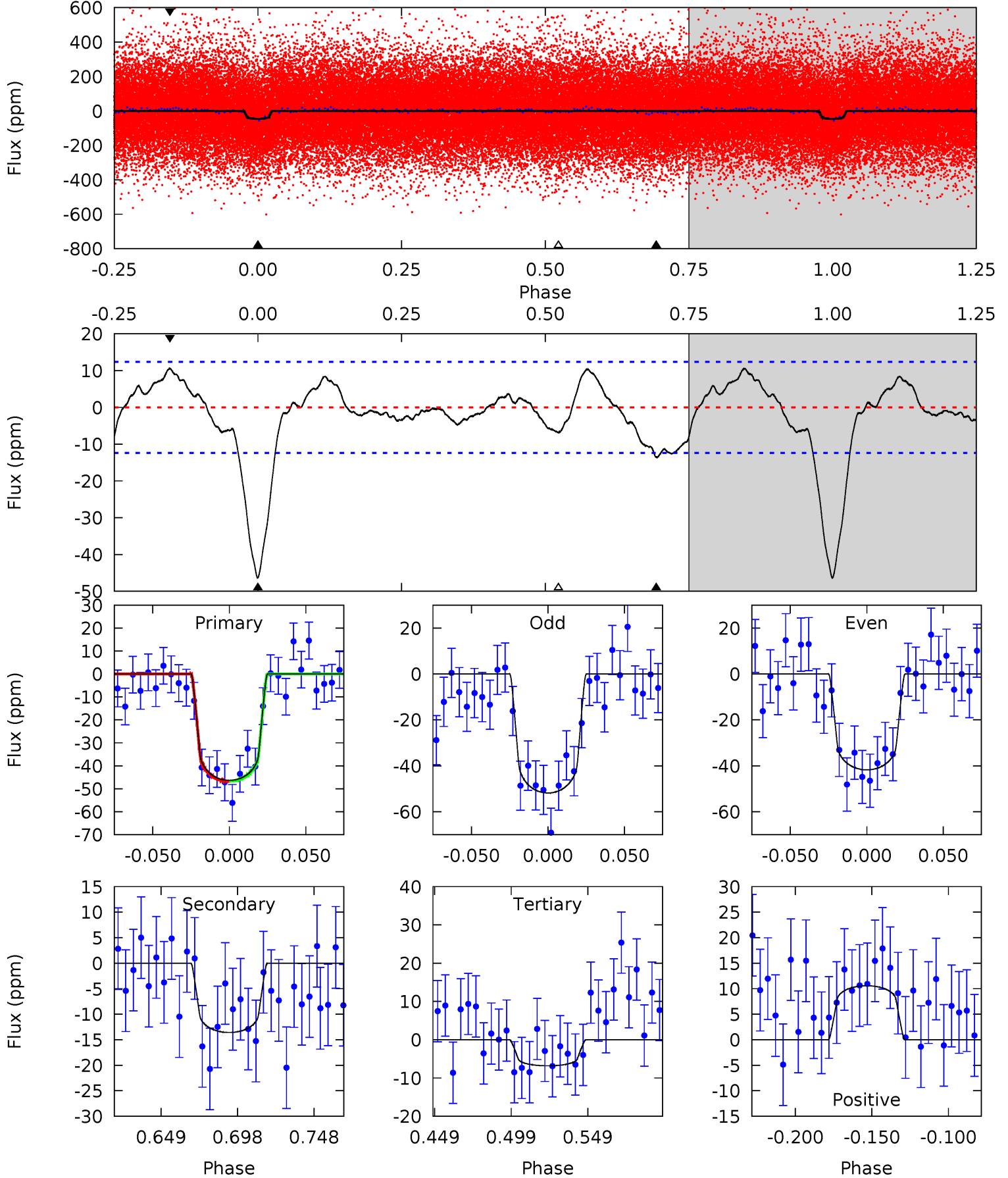
TCE 009459162-01 P= 3.799006 Days $T_0=133.273277$ (BKJD)



DV Model-Shift Uniqueness Test

009459162-01, P = 3.798923 Days, E = 129.491669 Days

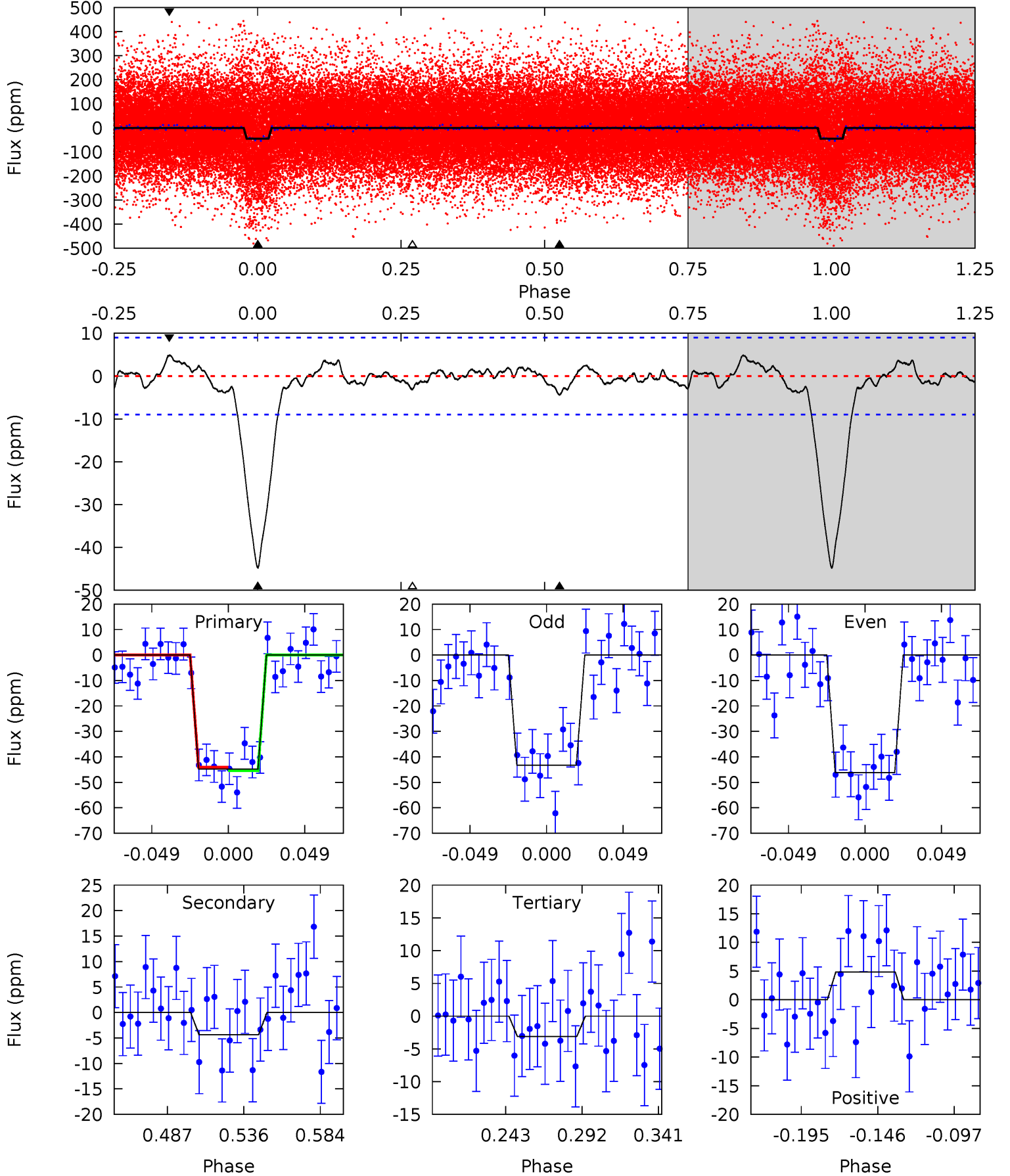
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.6	5.17	2.59	4.03	4.71	1.96	1.67	15.0	13.6	2.58	1.14	1.92	0.81	0.19	0.03



Alt Model-Shift Uniqueness Test

009459162-01, P = 3.799006 Days, E = 129.474271 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.5	2.29	1.62	2.54	4.71	1.97	0.89	21.9	20.9	0.67	-0.25	0.77	0.90	0.10	0.38



Stellar Parameters For KIC 009459162

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6831^{+163}_{-225}	$3.971^{+0.228}_{-0.123}$	$-0.080^{+0.300}_{-0.300}$	$2.106^{+0.463}_{-0.566}$	$1.511^{+0.183}_{-0.252}$	$0.228^{+0.309}_{-0.083}$
	+2%/-3%	+6%/-3%	+375%/-375%	+22%/-27%	+12%/-17%	+136%/-37%
Source	PHO1	FLK73	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 009459162-01 / KOI 4818.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-14 ± 3	$1.60^{+0.47}_{-0.44}$	2576^{+163}_{-192}	4900^{+641}_{-509}	$8.730^{+7.438}_{-3.729}$
Alt.	-4 ± 2	$1.40^{+0.46}_{-0.38}$	2582^{+161}_{-186}	4047^{+609}_{-536}	$3.369^{+3.725}_{-1.807}$

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

DV Centroid Data

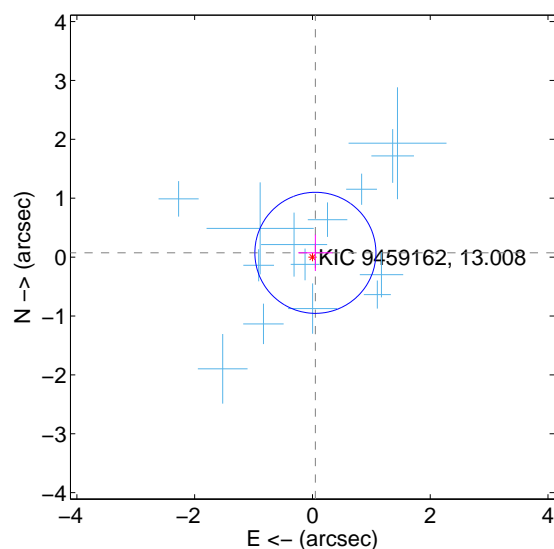
Supplemental centroid analysis for 009459162-01. Kepler magnitude: 13.01. Transit SNR 10.08

There are 14 quarters with good PRF difference image offsets

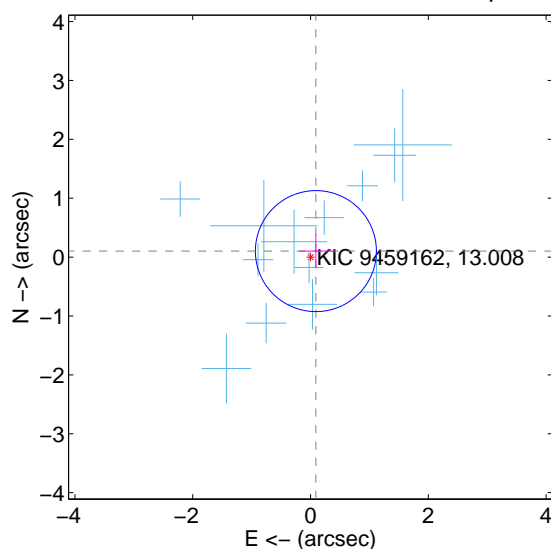
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.088 ± 0.343	0.26	-0.050 ± 0.291	0.072 ± 0.309
PRF-fit source offset from KIC position	0.137 ± 0.342	0.40	-0.091 ± 0.287	0.102 ± 0.289
photometric centroid source offset	0.95 ± 0.83	1.15	-0.29 ± 0.94	0.90 ± 0.81

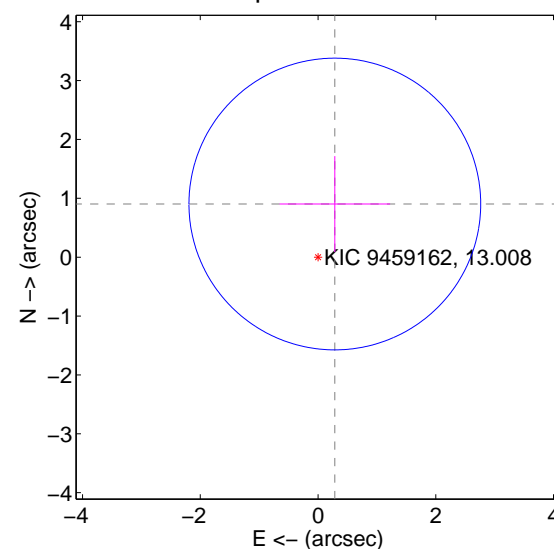
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

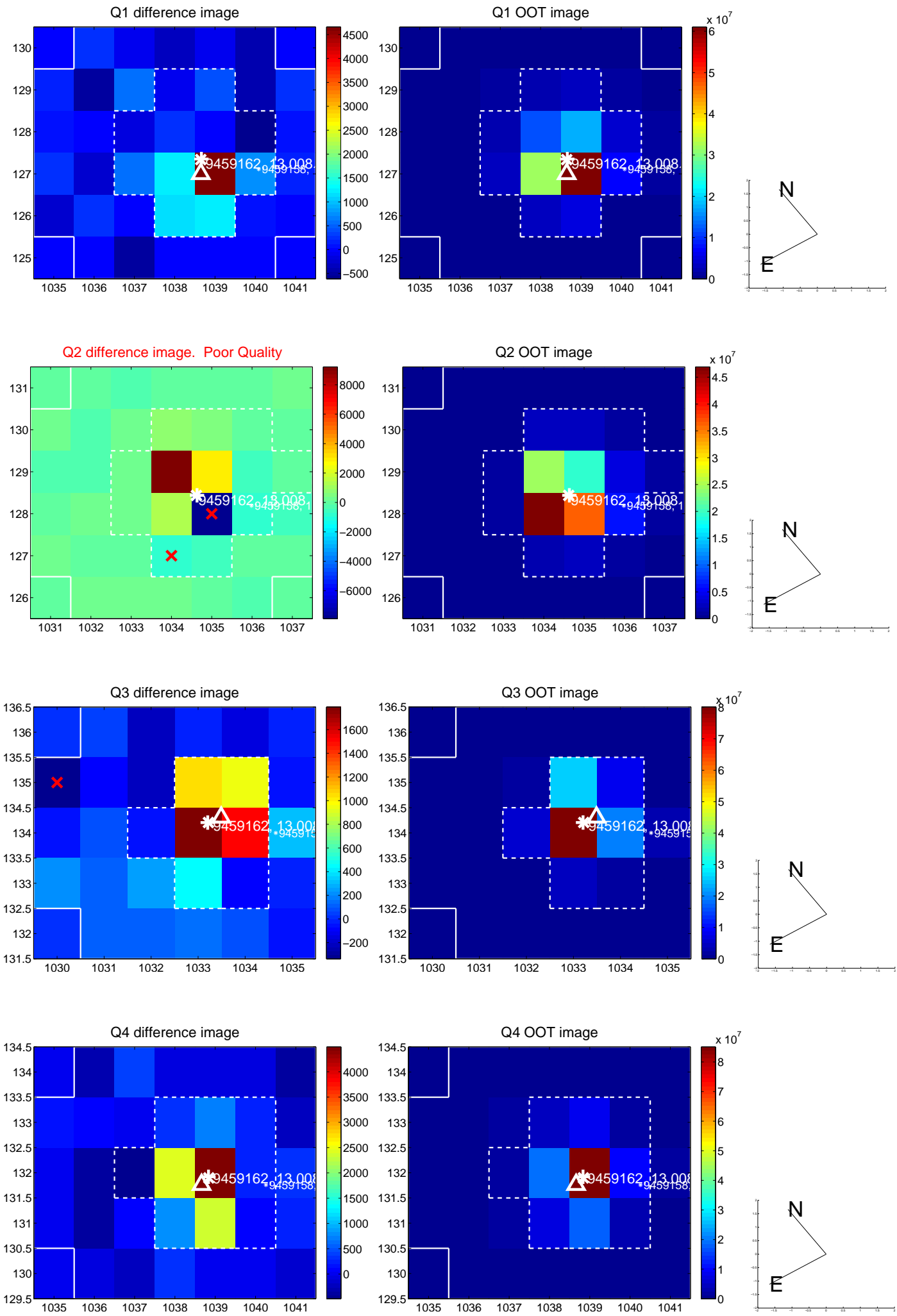


offset from photometric centroids

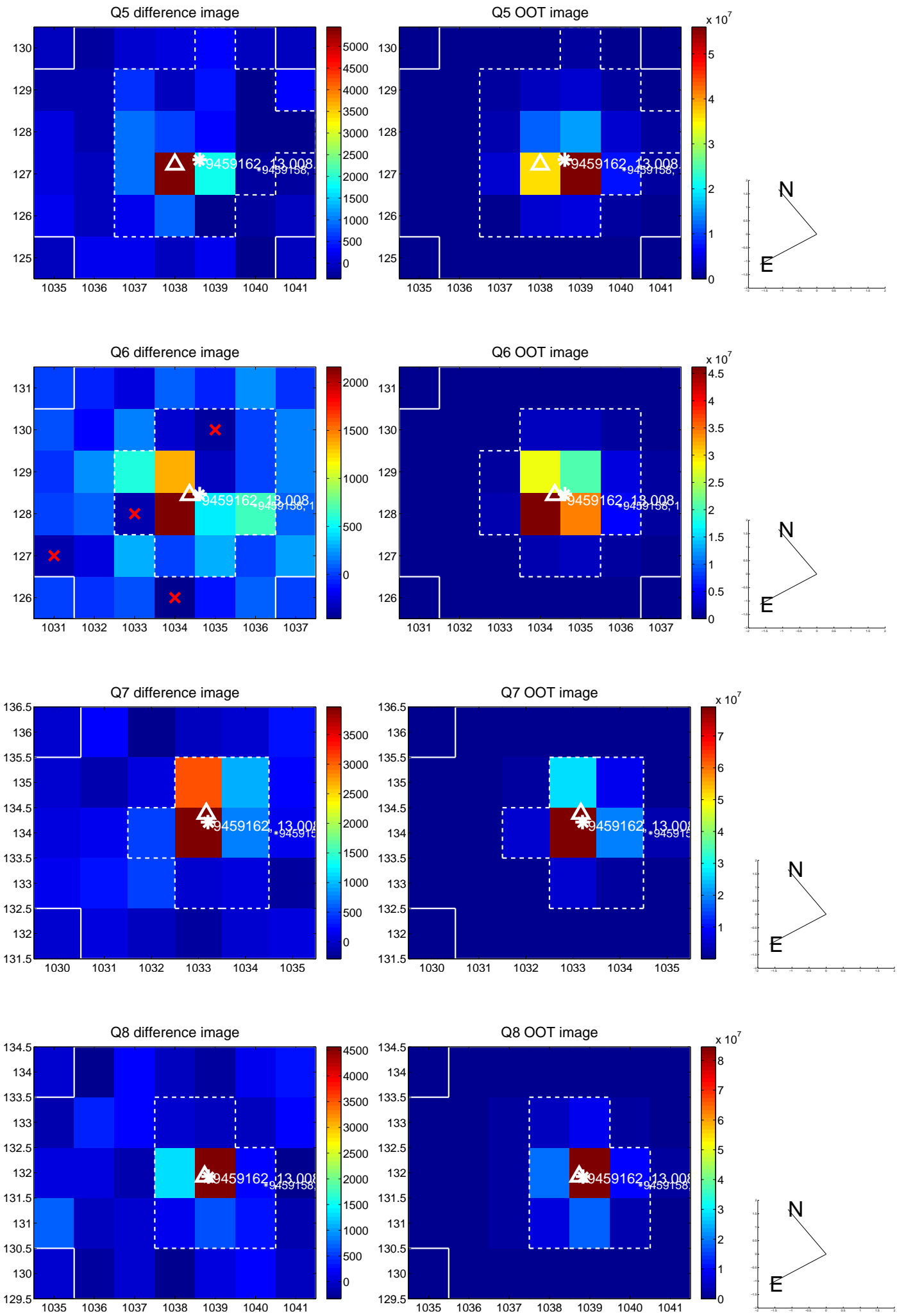


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

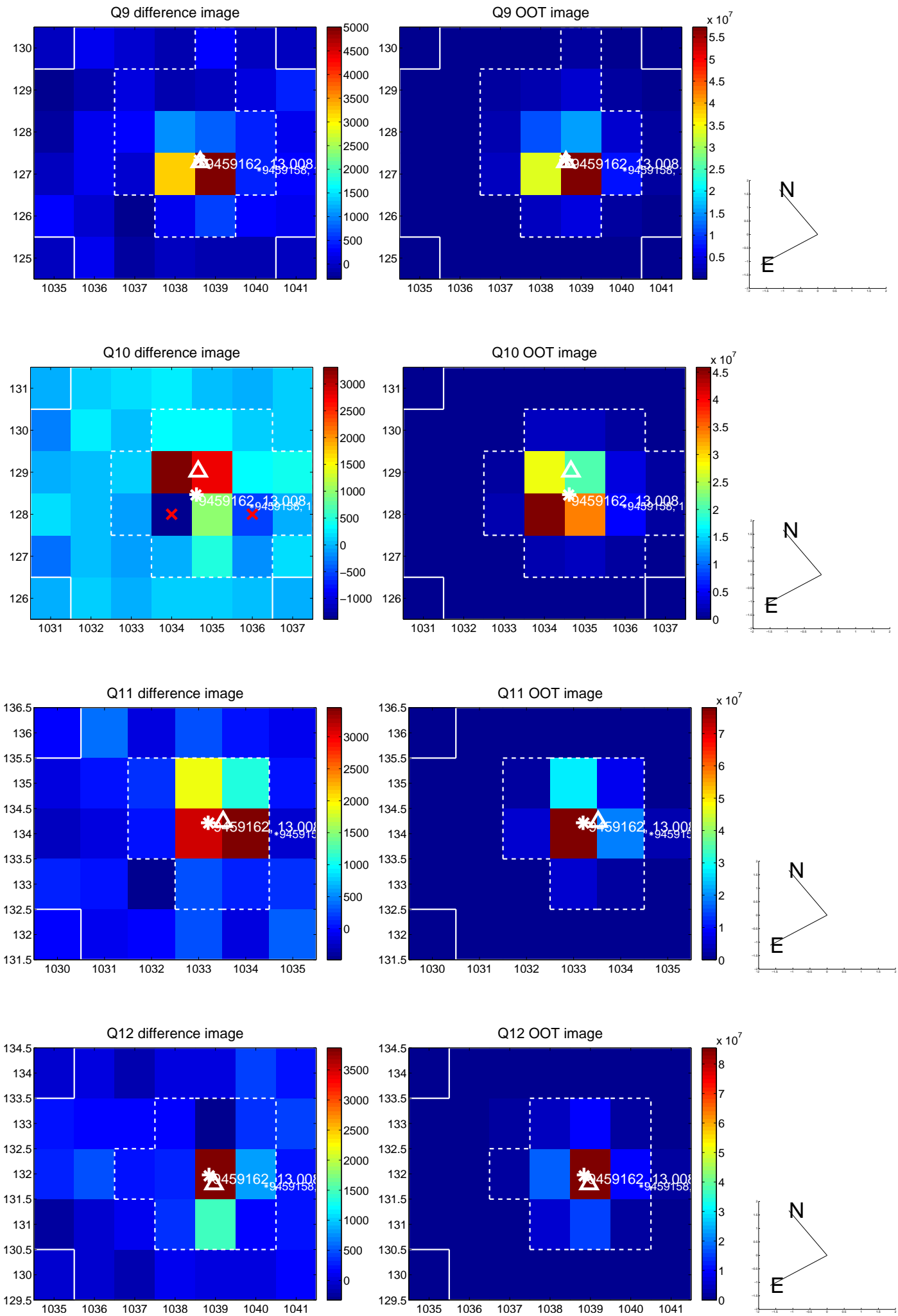
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



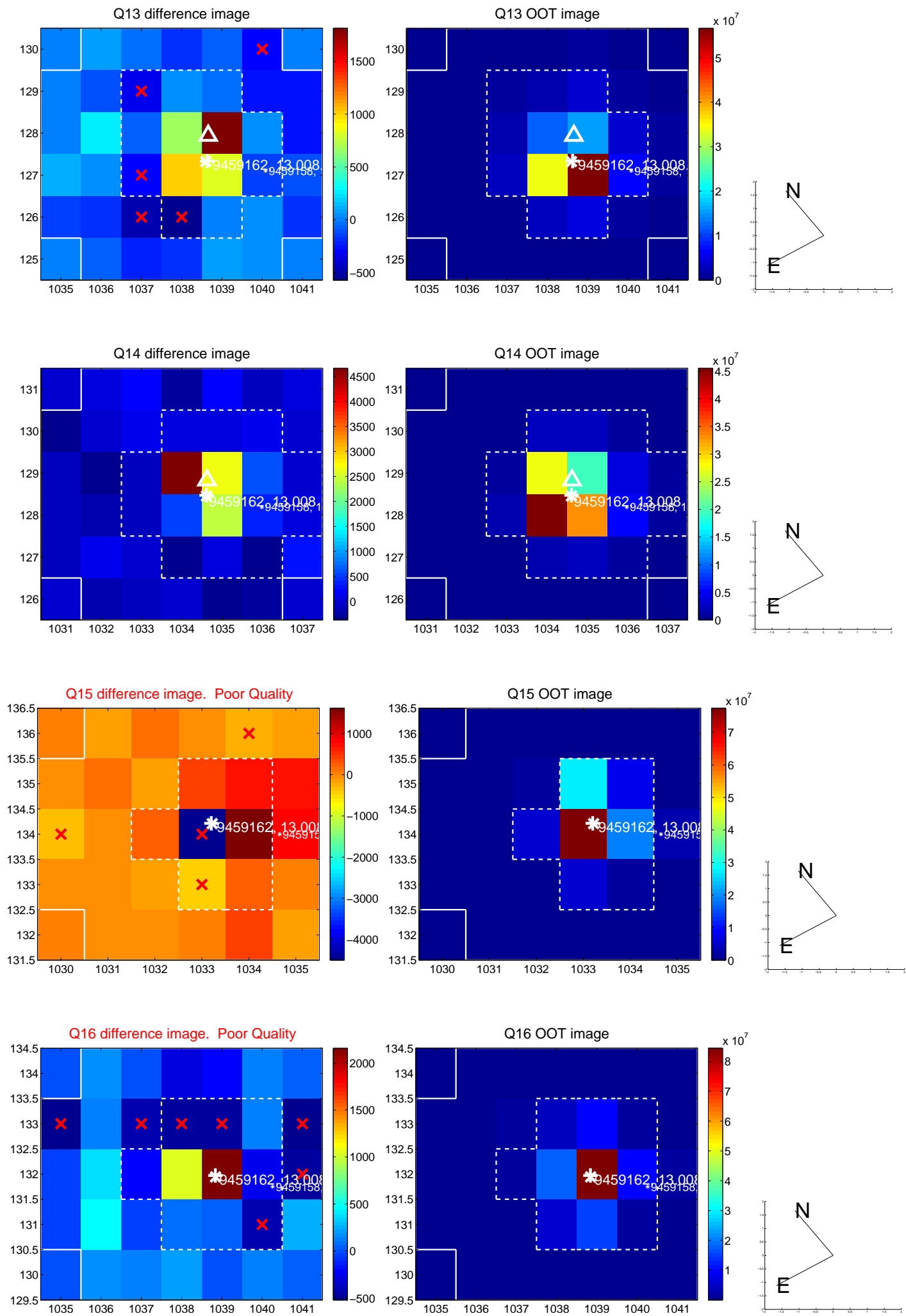
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



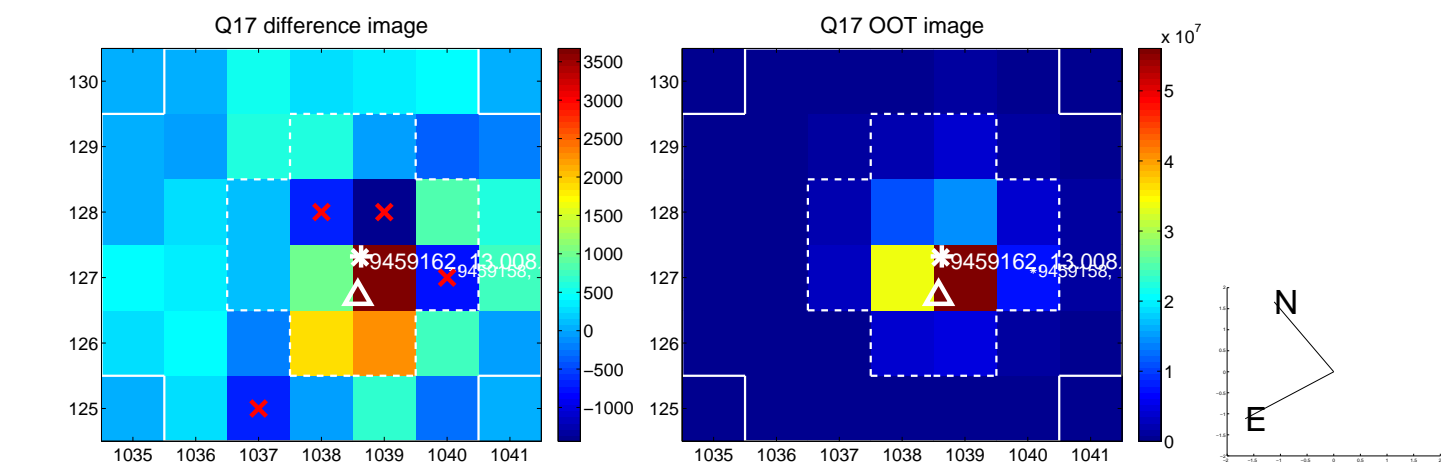
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



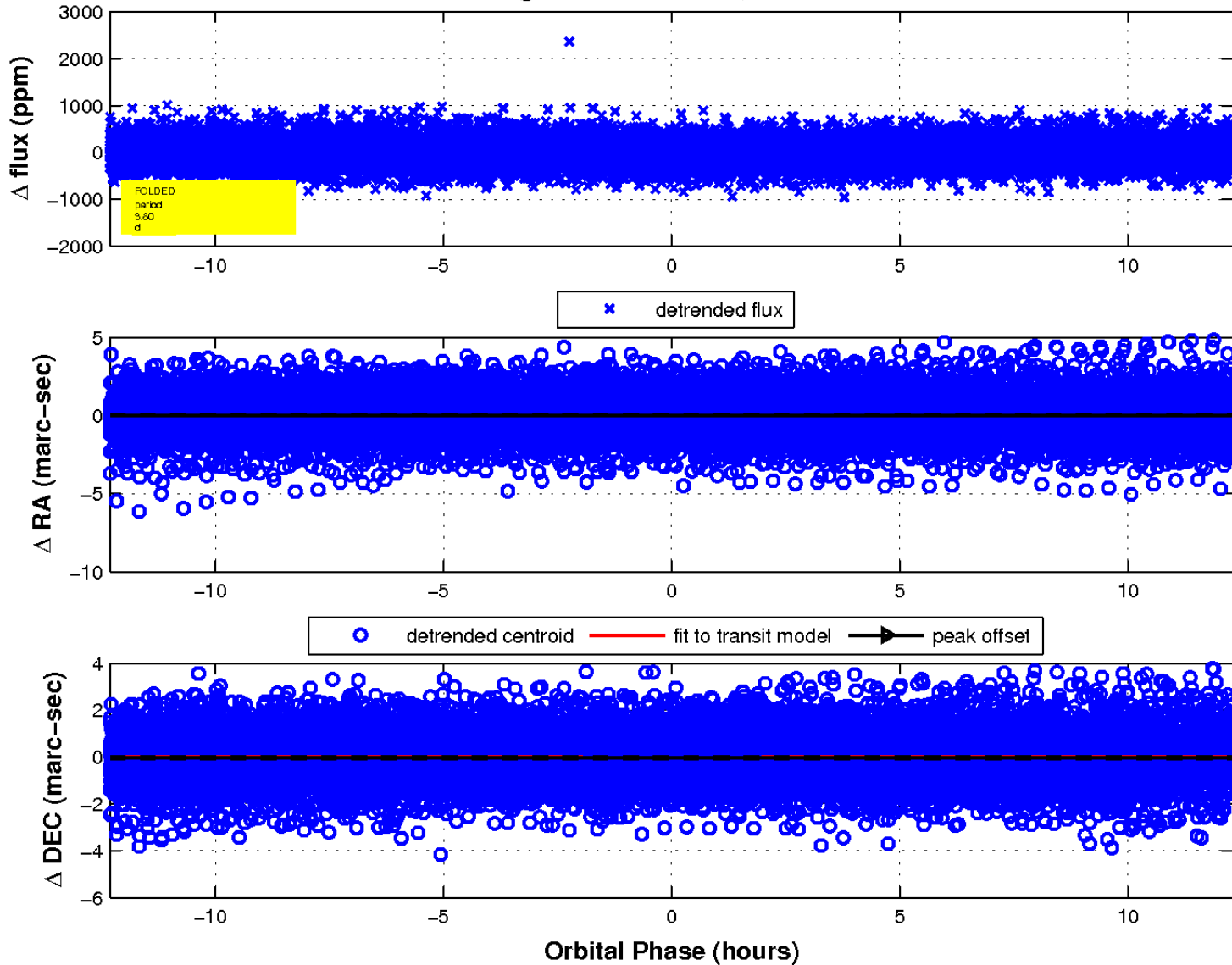
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

