

KIC 012454461

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})
012454461-01	OBS	2463.01	7.467202	136.393487	78.8	3.817	16.5	17.9	1.17	6161	1.27	271.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012454461-01	OBS	PC	0.74	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.

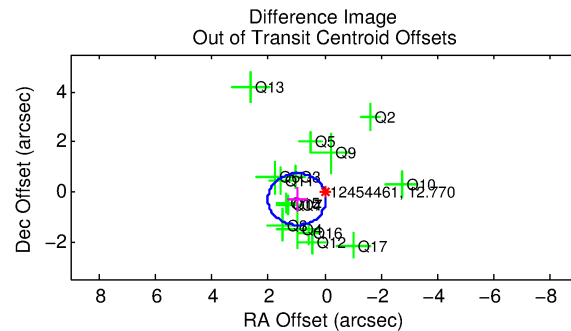
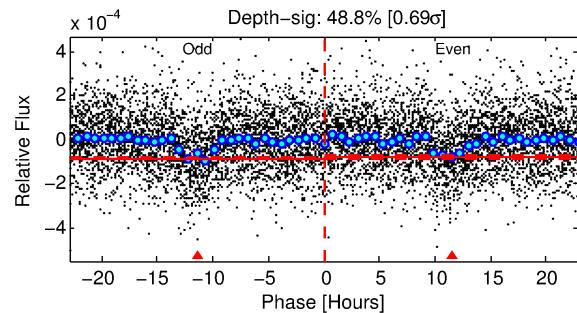
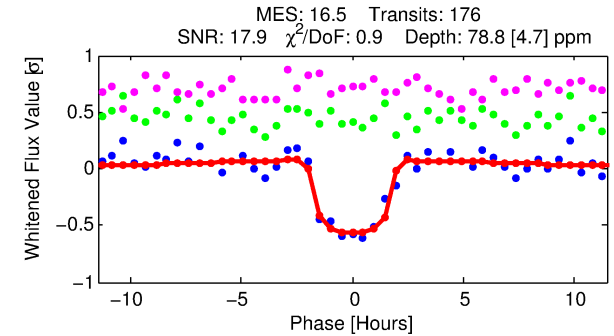
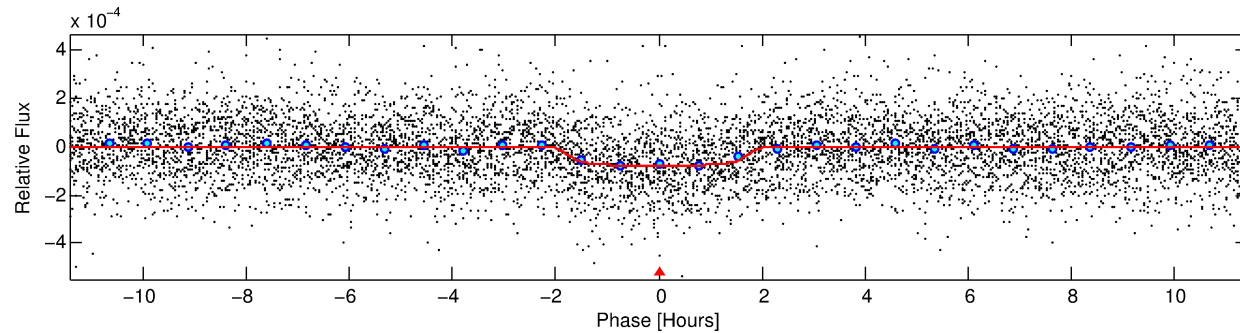
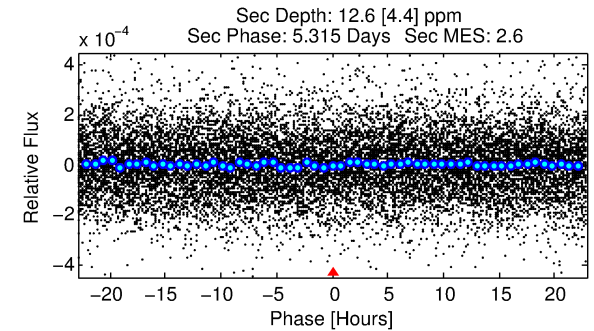
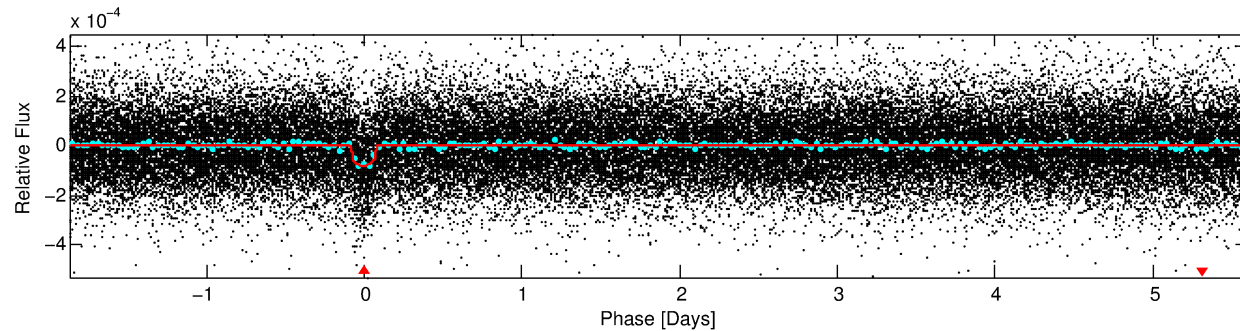
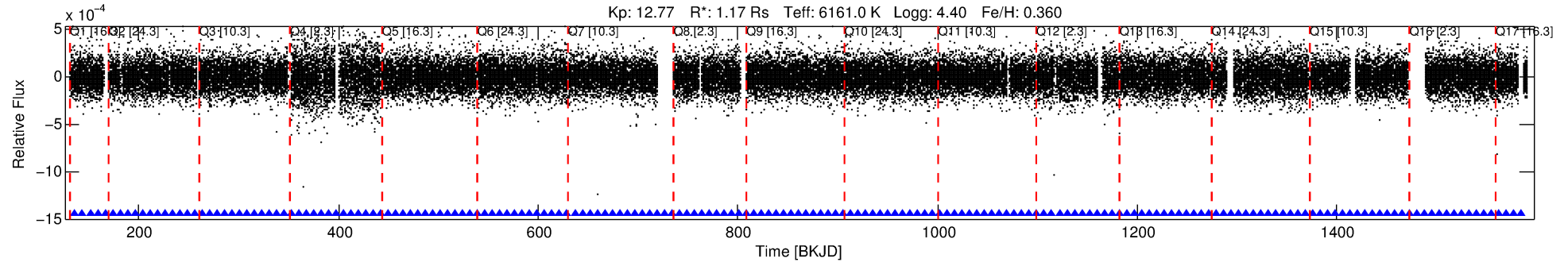
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012454461-01

No Significant Match Found

DV One-Page Summary

KIC: 12454461 Candidate: 1 of 1 Period: 7.467 d
KOI: K02463.01 Corr: 0.976



DV Fit Results:

Period = 7.46720 [0.00004] d
Epoch = 136.3935 [0.0039] BKJD
Rp/R* = 0.0099 [0.0021]
a/R* = 5.99 [6.41]
b = 0.93 [0.16]
Seff = 271.96 [66.80]
Teq = 1036 [64] K
Rp = 1.27 [0.34] Re
a = 0.0805 [0.0120] AU
Ag = 28.07 [16.67] [1.62σ]
Teffp = 3685 [513] K [5.12σ]

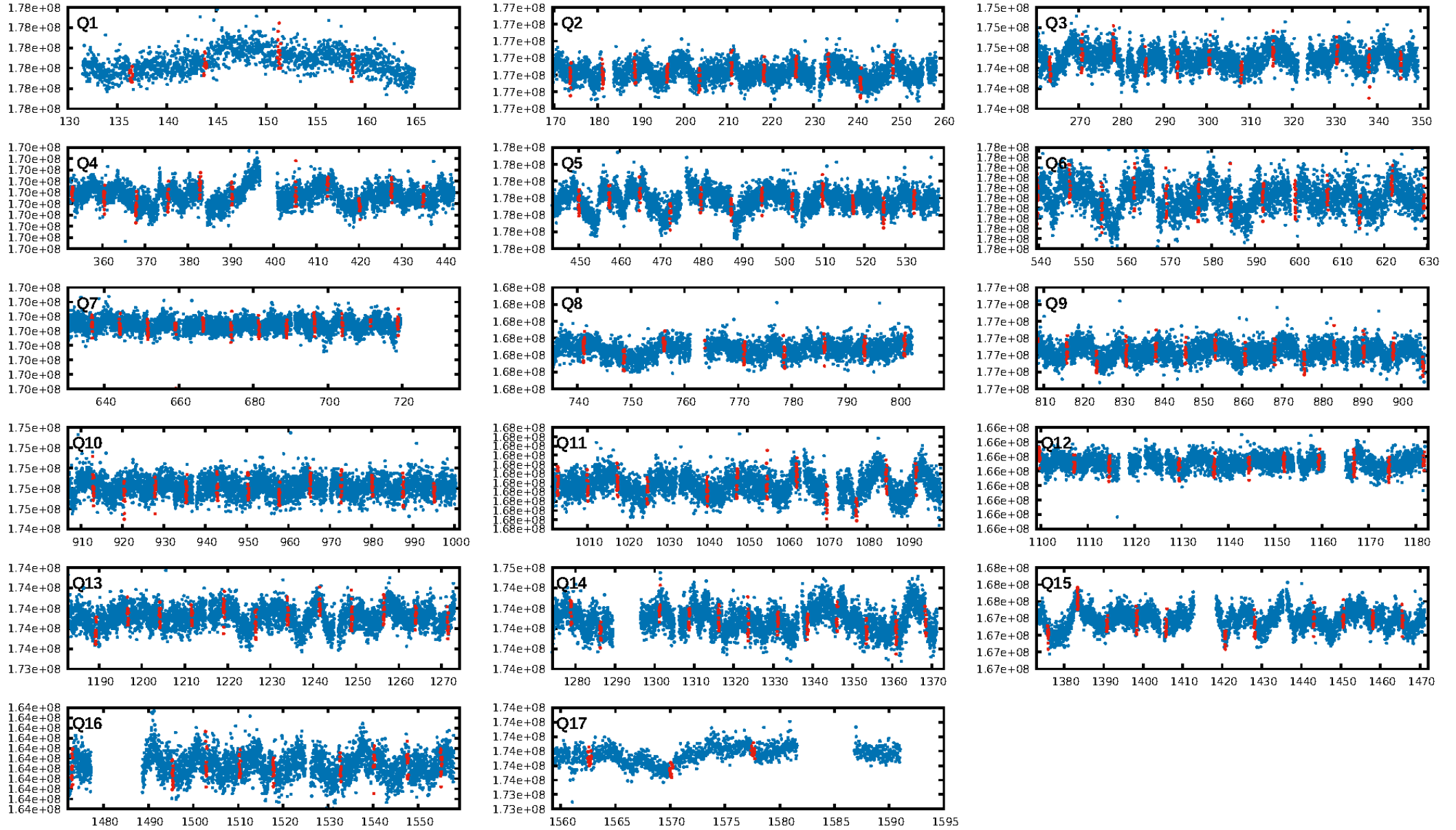
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.97e-59
RollingBand-fgt: 1.00 [169/169]
GhostDiagnostic-chr: 1.975
Centroid-sig: 39.5%
Centroid-so: 0.649 arcsec [0.98σ]
OotOffset-rm: 1.025 arcsec [2.98σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-rm: 1.024 arcsec [2.83σ]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [17/17]

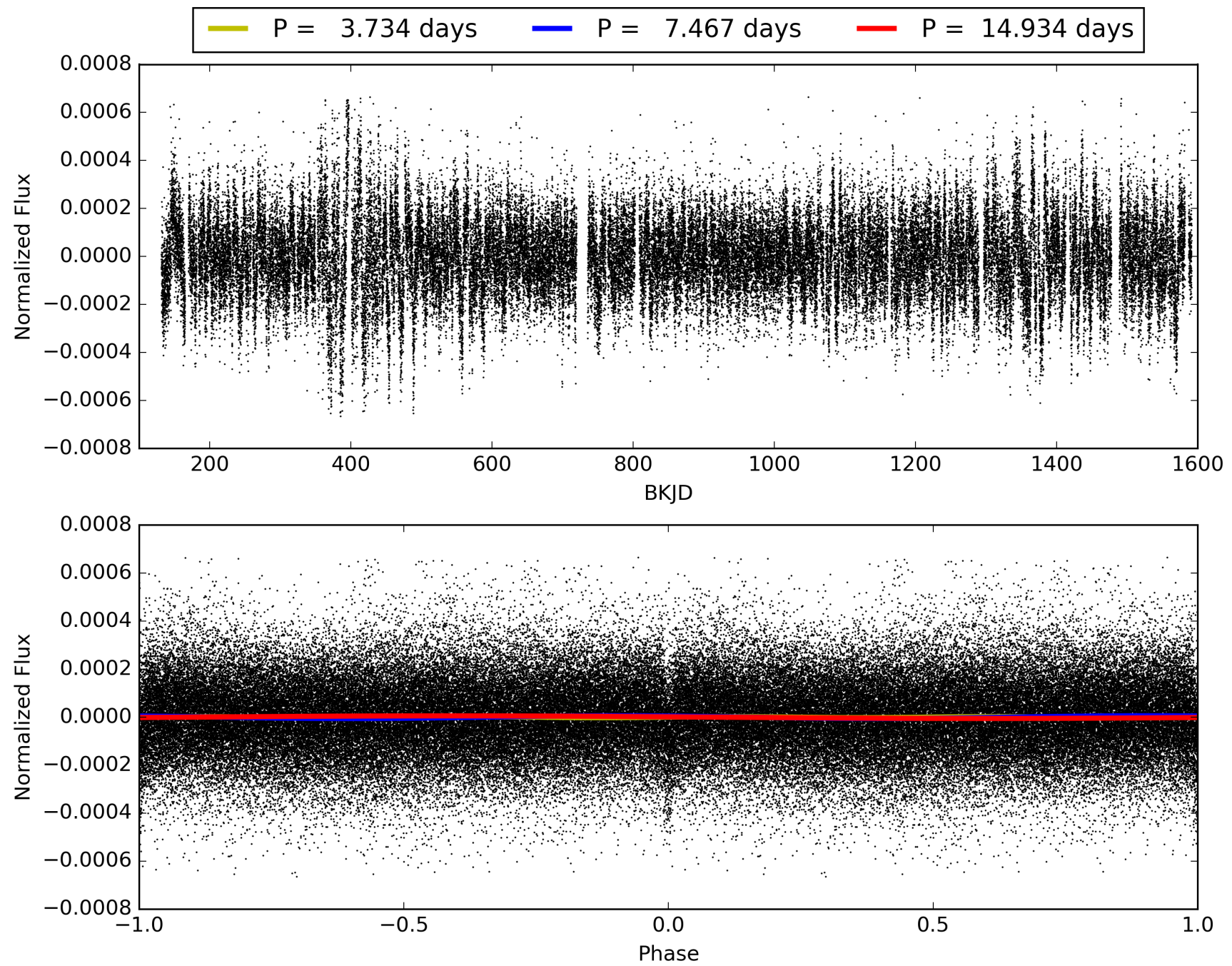
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:31:36 Z

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

TCE 012454461-01, PDC Light Curves

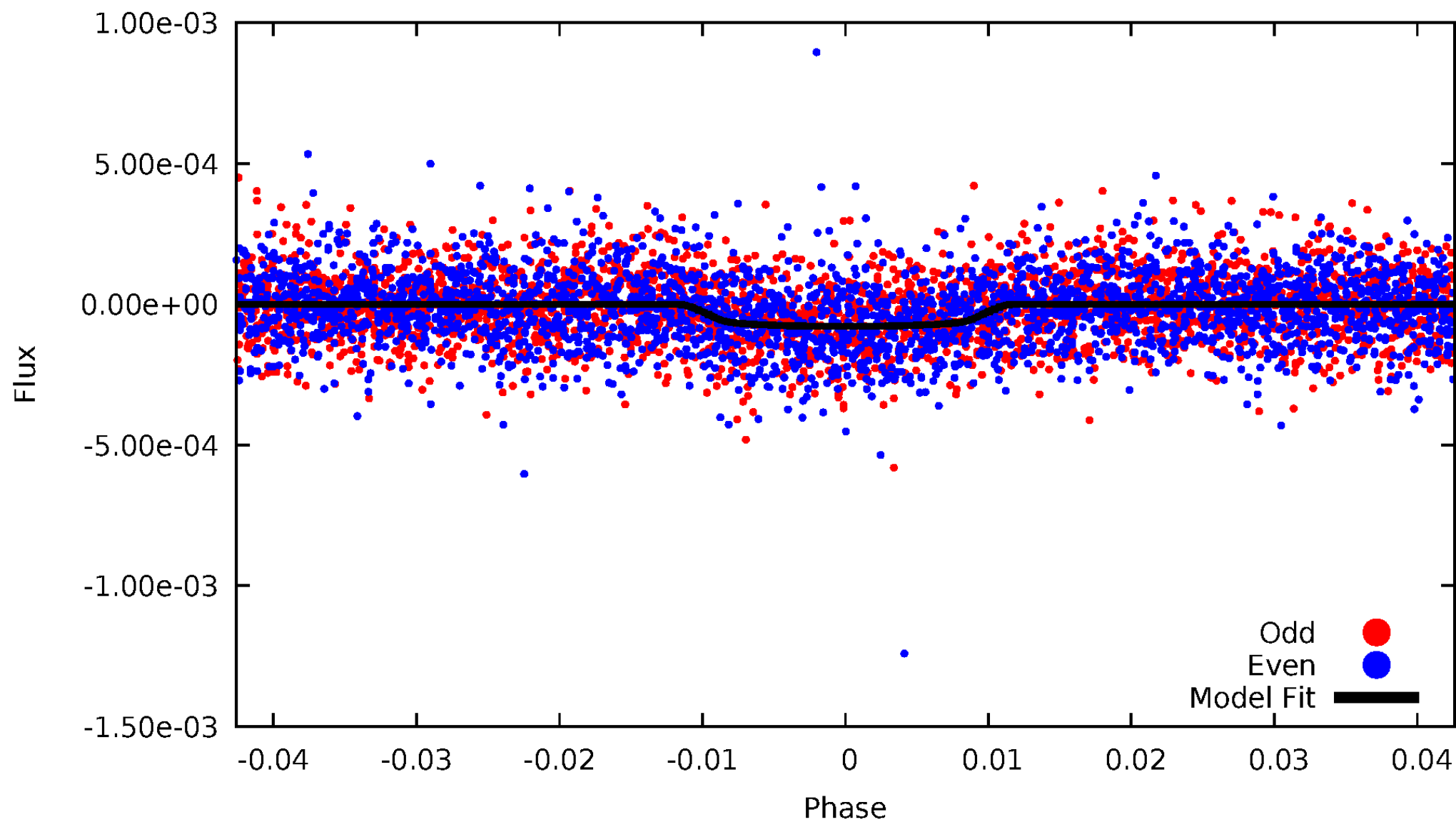


TCE 012454461-01



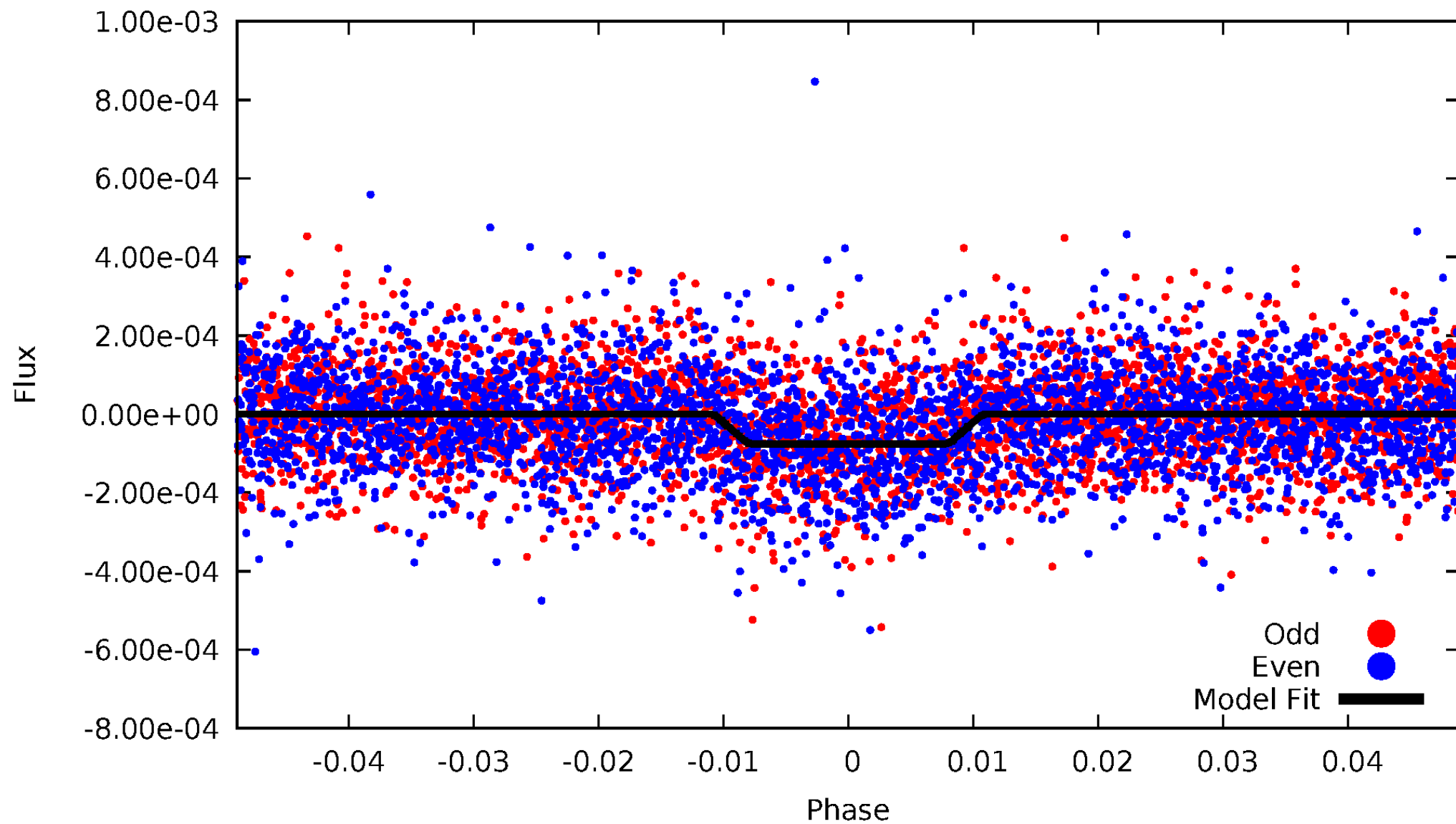
DV Odd/Even

TCE 012454461-01



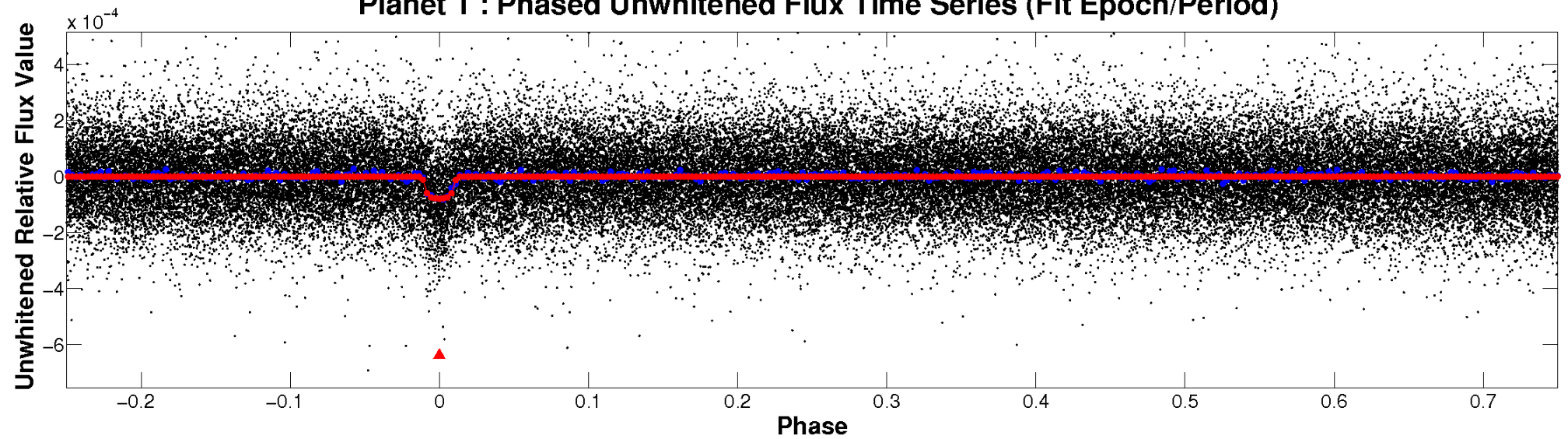
ALT Odd/Even

TCE 012454461-01

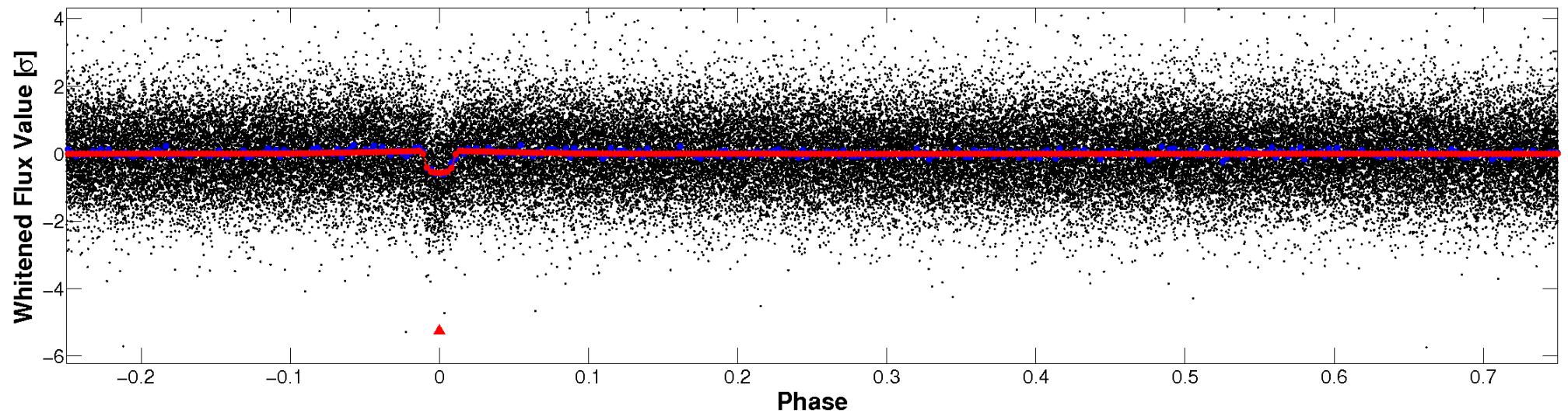


Non-Whitened Vs. Whitened Light Curve

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

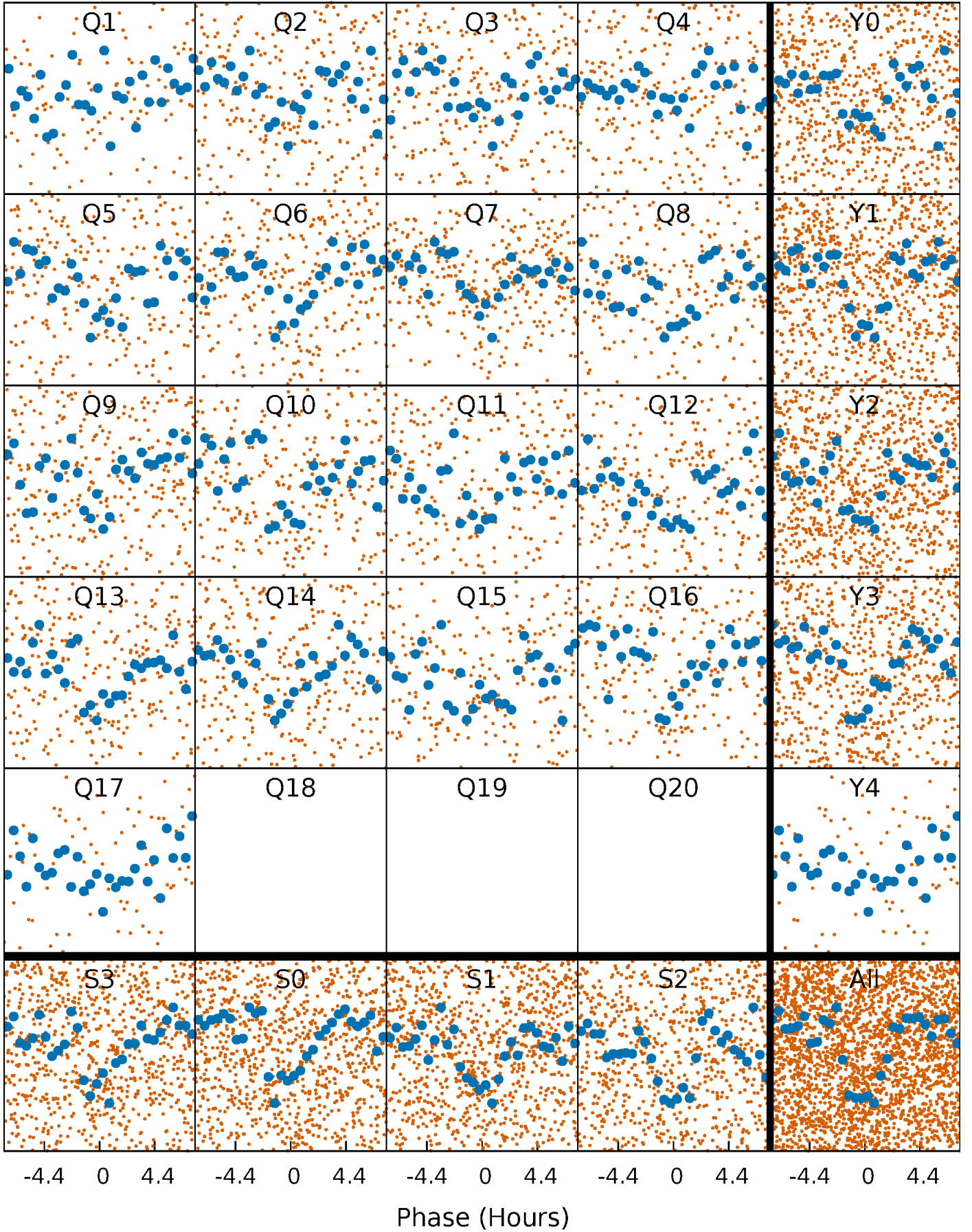


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



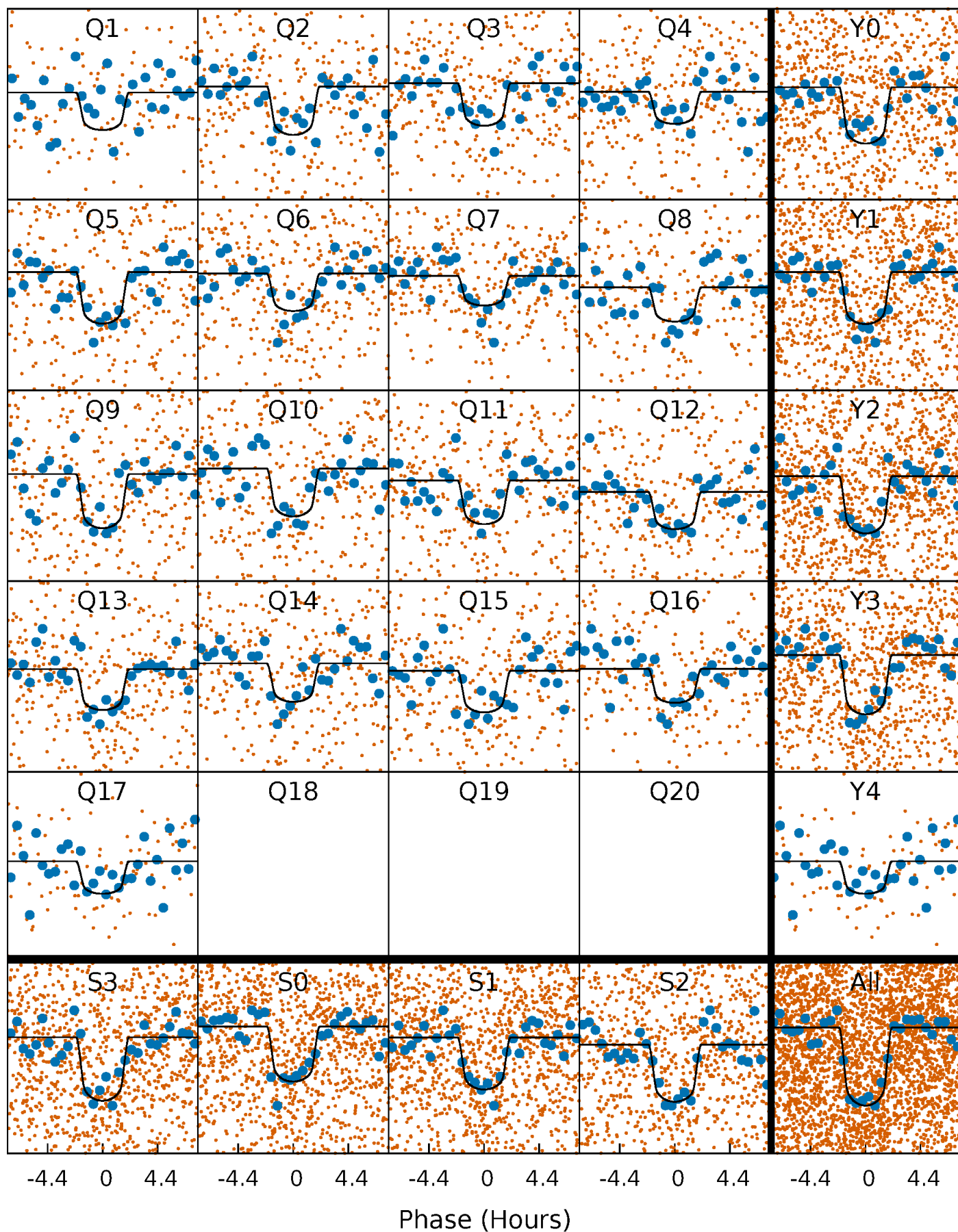
PDC Quarter-Phased Transit Curves

TCE 012454461-01 P= 7.467202 Days $T_0=136.393487$ (BKJD)



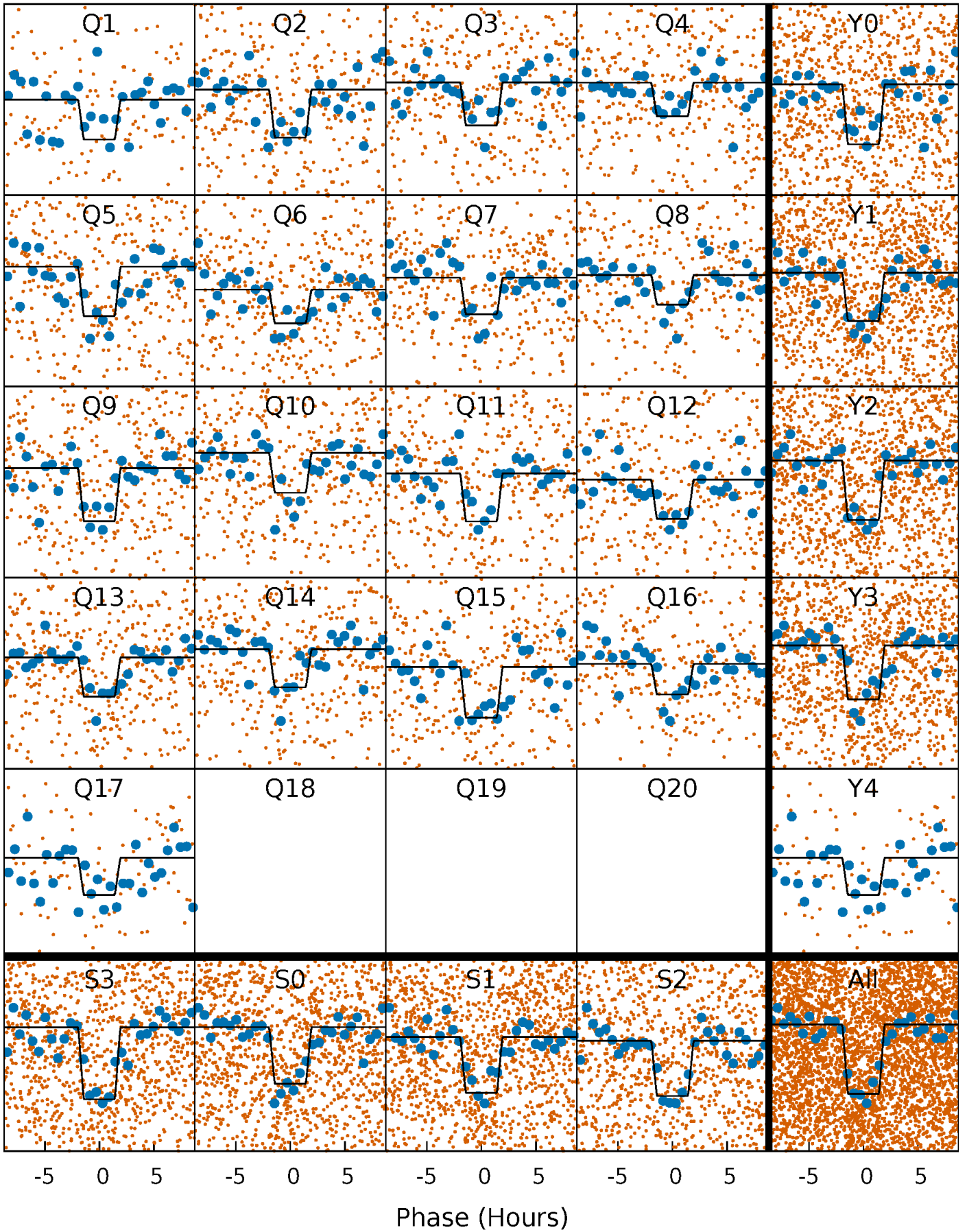
DV Quarter-Phased Transit Curves

TCE 012454461-01 P= 7.467202 Days $T_0=136.393487$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

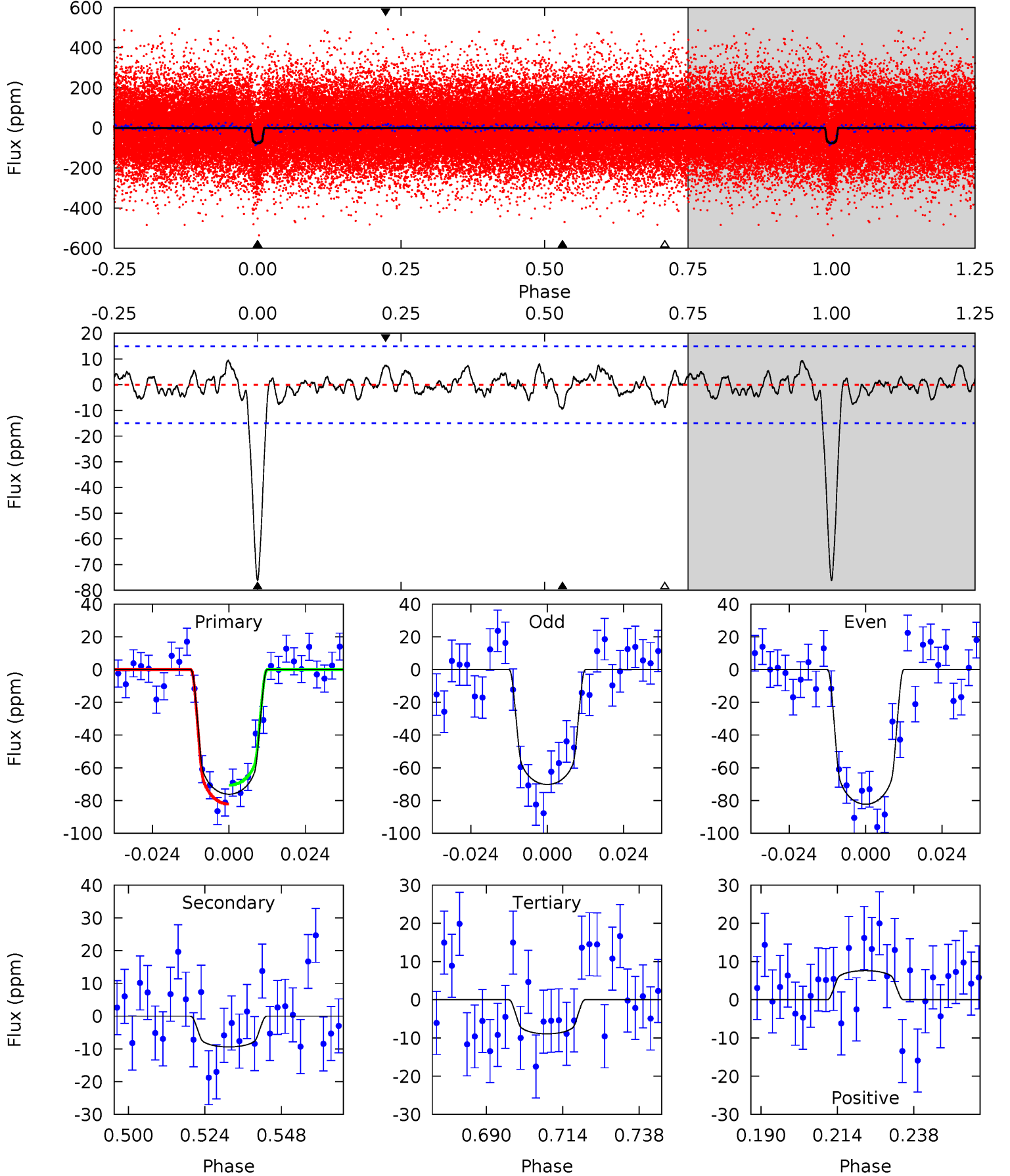
TCE 012454461-01 P= 7.467125 Days $T_0=136.401076$ (BKJD)



DV Model-Shift Uniqueness Test

012454461-01, P = 7.467202 Days, E = 128.926285 Days

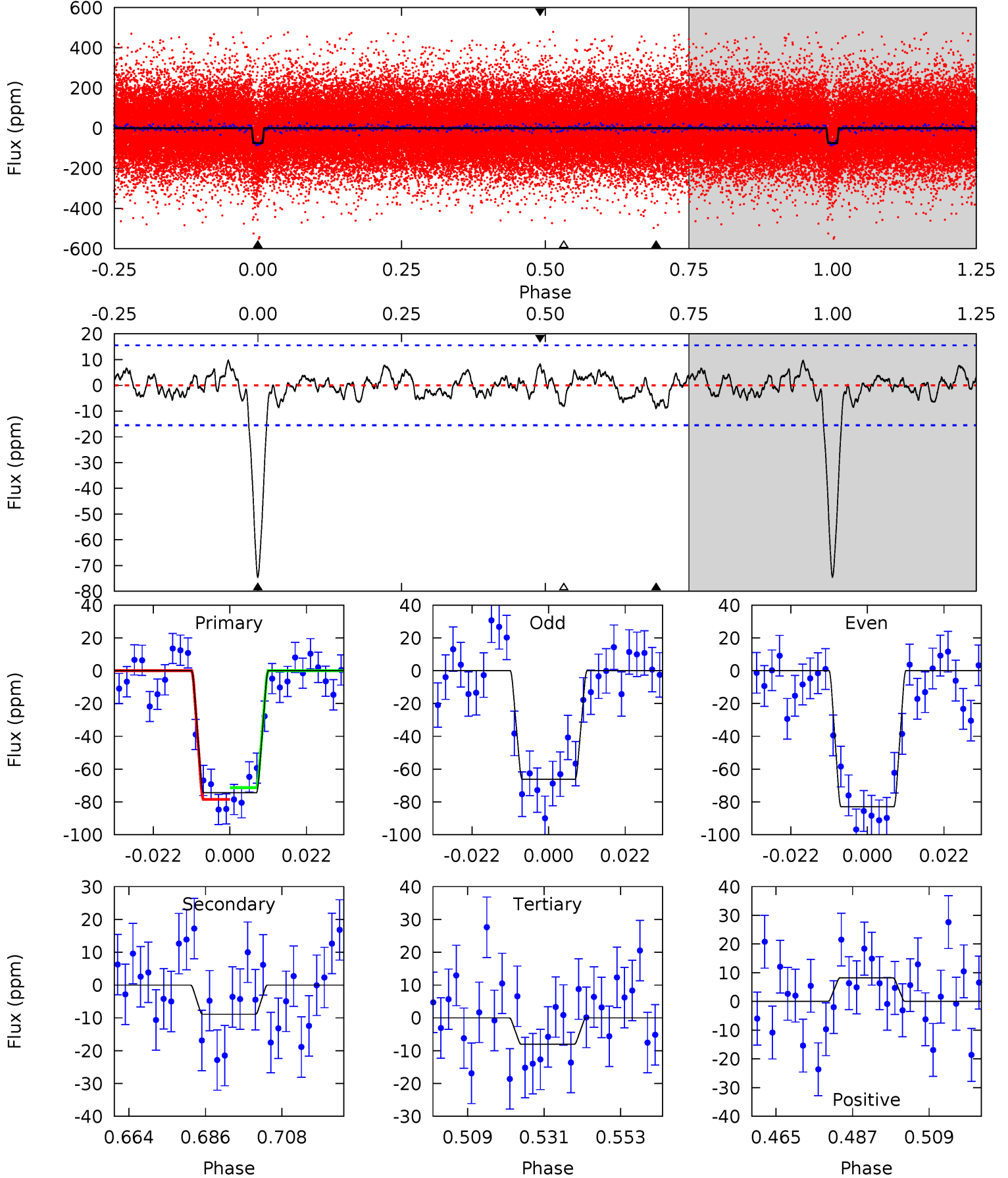
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.7	3.05	2.90	2.47	4.86	2.26	1.11	21.8	22.3	0.15	0.58	1.97	1.00	0.11	1.87



Alt Model-Shift Uniqueness Test

012454461-01, P = 7.467125 Days, E = 128.933951 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.4	2.80	2.52	2.58	4.87	2.29	1.09	20.9	20.8	0.28	0.22	2.61	0.95	0.11	1.13



Stellar Parameters For KIC 012454461

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6161^{+98}_{-147}	$4.399^{+0.032}_{-0.128}$	$0.360^{+0.100}_{-0.200}$	$1.169^{+0.197}_{-0.070}$	$1.251^{+0.061}_{-0.084}$	$1.102^{+0.162}_{-0.391}$
	+2%/-2%	+1%/-3%	+28%/-56%	+17%/-6%	+5%/-7%	+15%/-35%
Source	SPE59	SPE59	SPE59	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 012454461-01 / KOI 2463.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-9 ± 3	$1.30^{+0.28}_{-0.30}$	1462^{+62}_{-43}	3795^{+449}_{-338}	20^{+17}_{-9}
Alt.	-9 ± 3	$1.15^{+0.29}_{-0.29}$	1459^{+64}_{-43}	3932^{+462}_{-404}	24^{+21}_{-11}

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

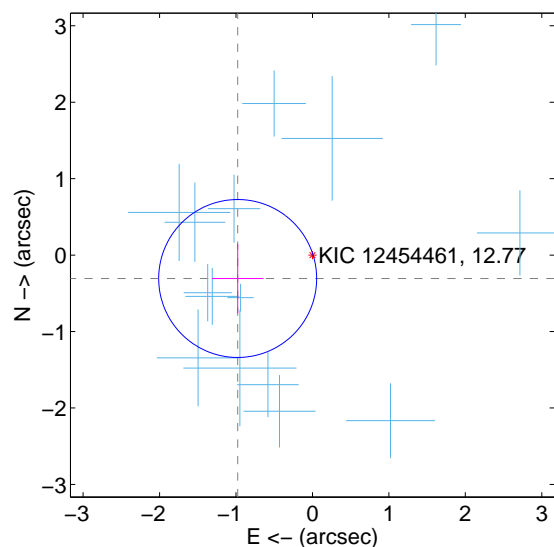
Supplemental centroid analysis for 012454461-01. Kepler magnitude: 12.77. Transit SNR 17.93

There are 15 quarters with good PRF difference image offsets

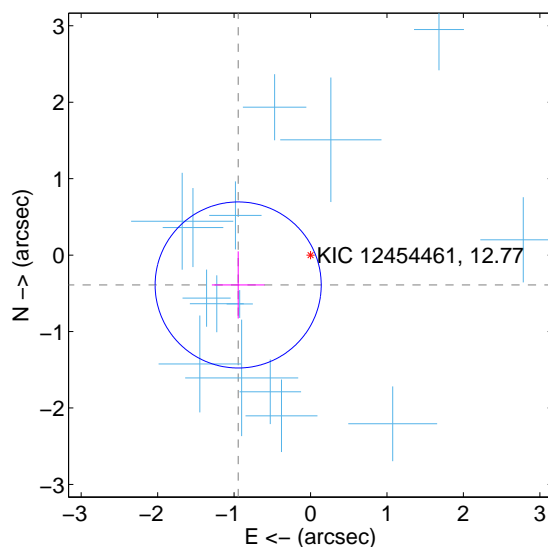
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.025 ± 0.344	2.98	0.978 ± 0.337	-0.306 ± 0.452
PRF-fit source offset from KIC position	1.024 ± 0.362	2.83	0.947 ± 0.344	-0.391 ± 0.439
photometric centroid source offset	0.65 ± 0.66	0.98	0.55 ± 0.65	0.35 ± 0.70

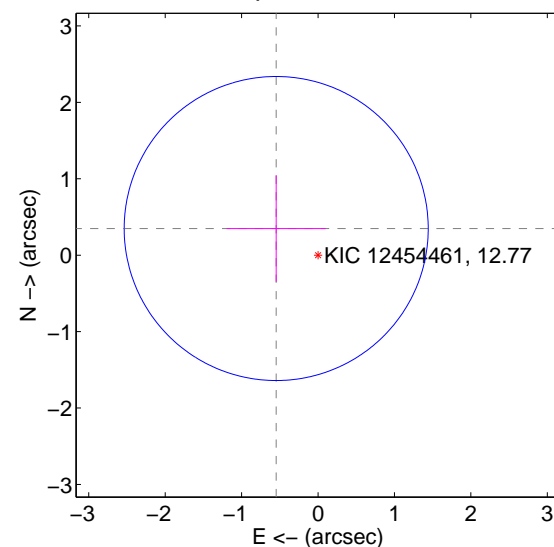
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

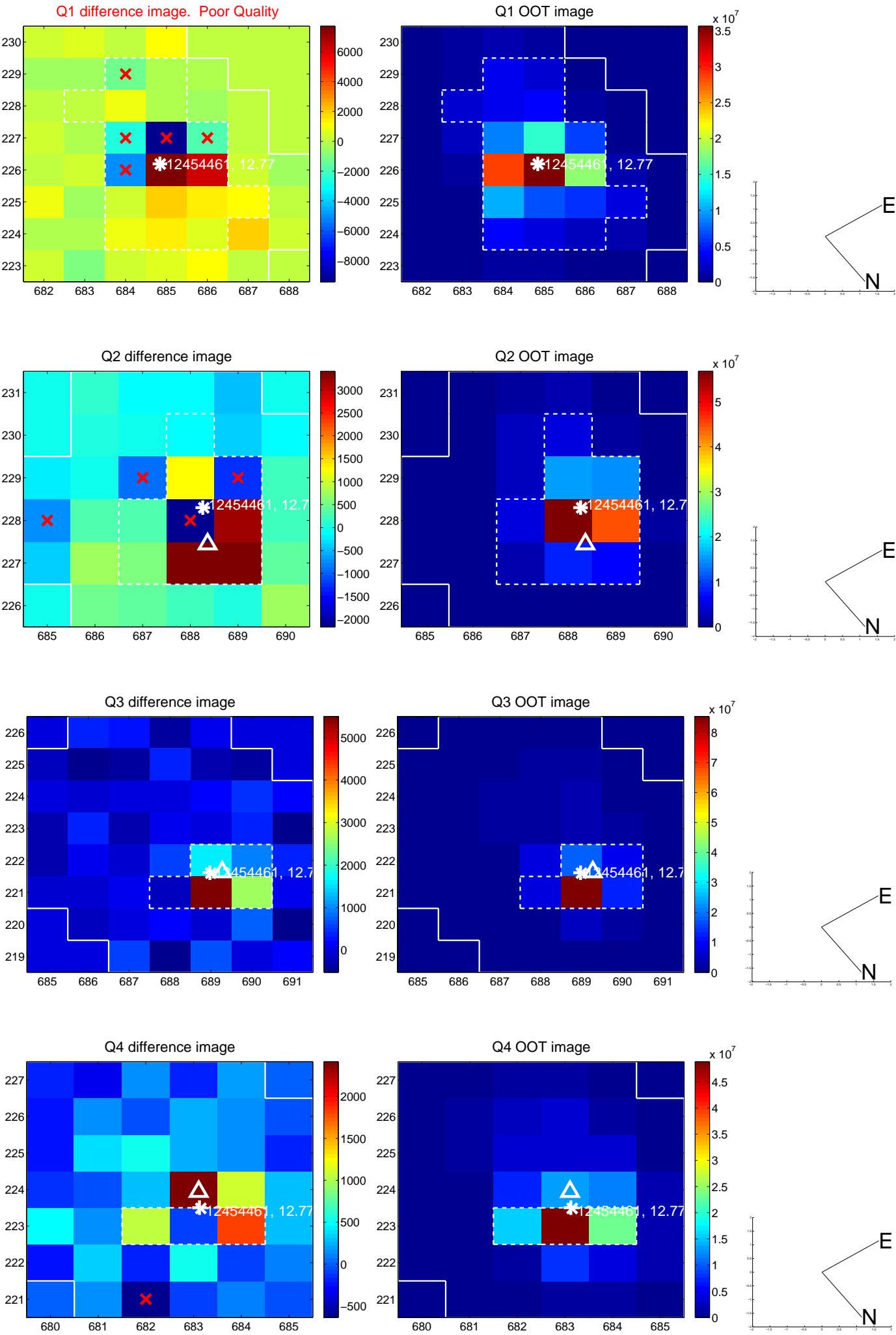


offset from photometric centroids

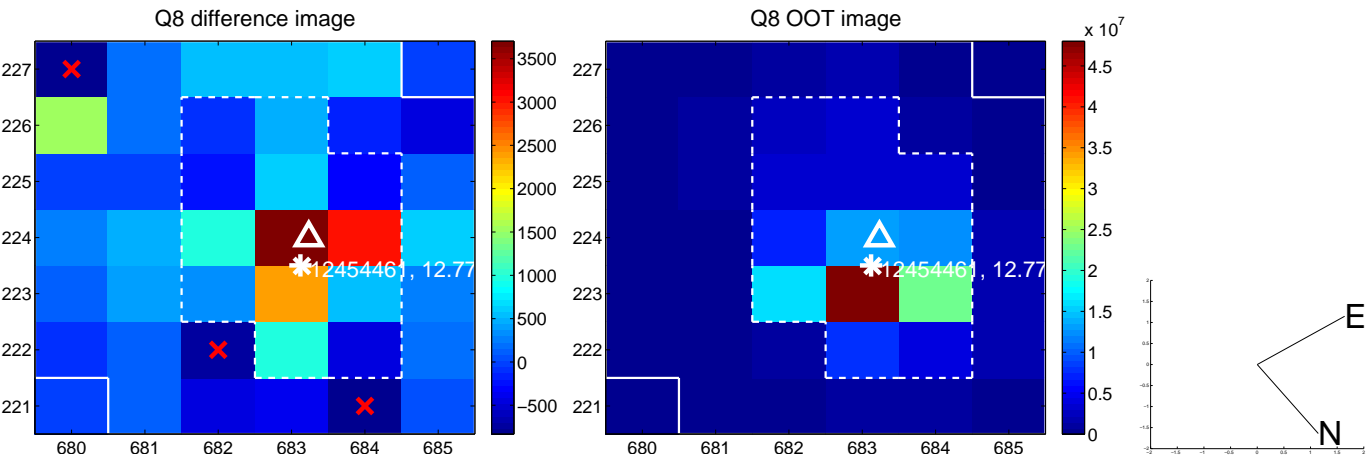
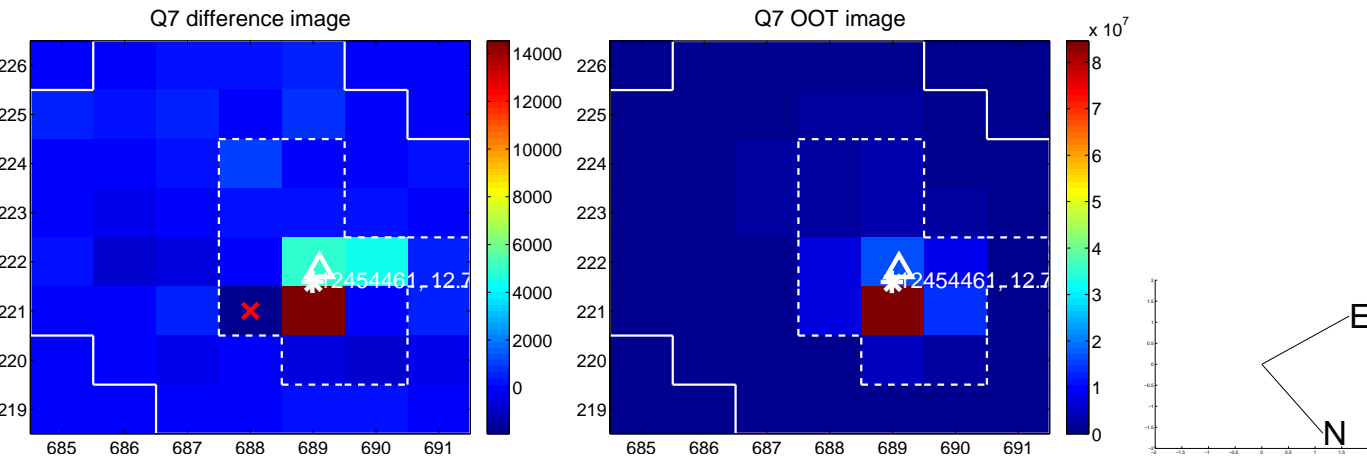
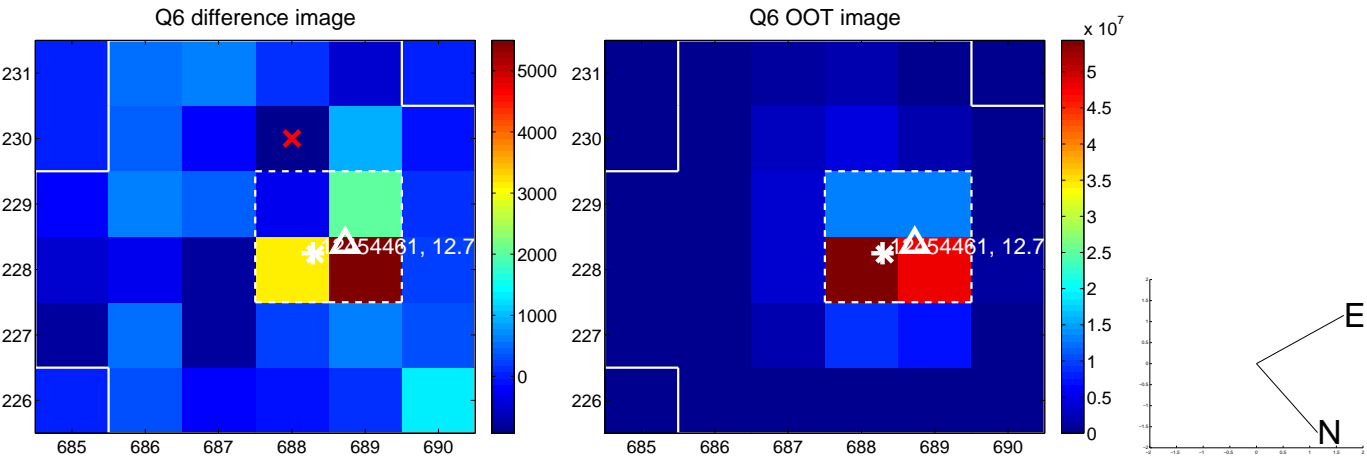
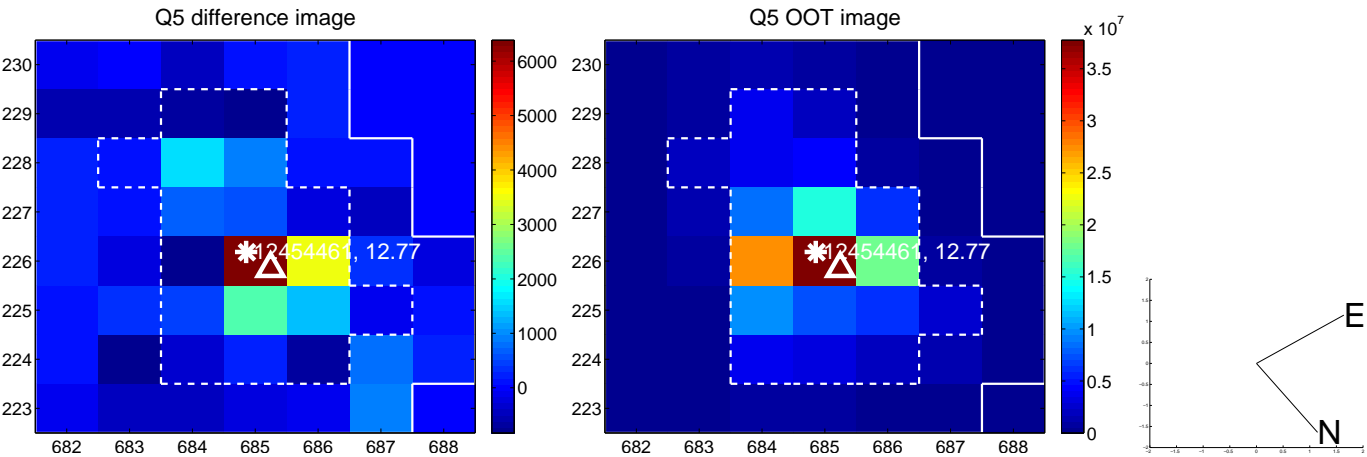


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

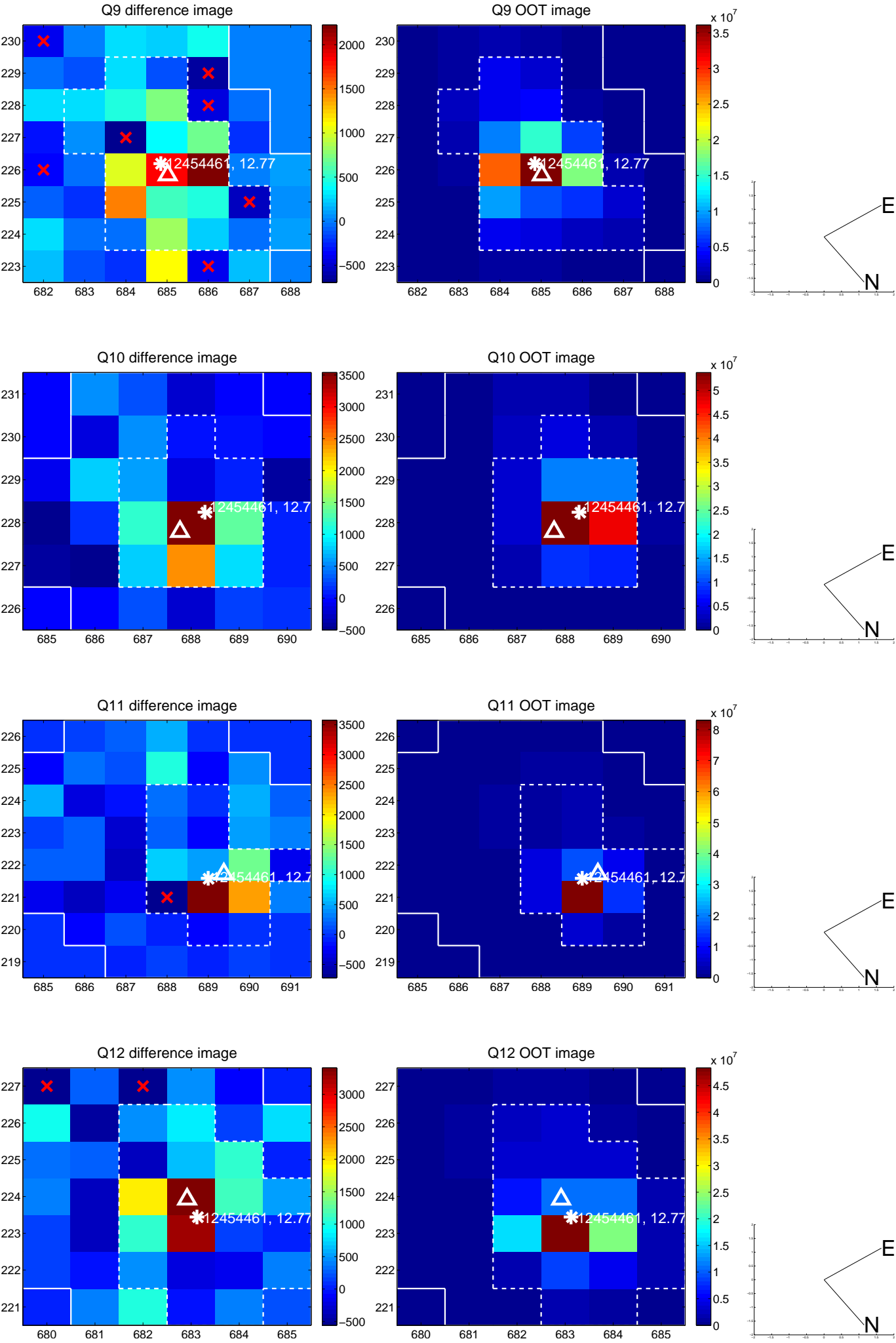
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



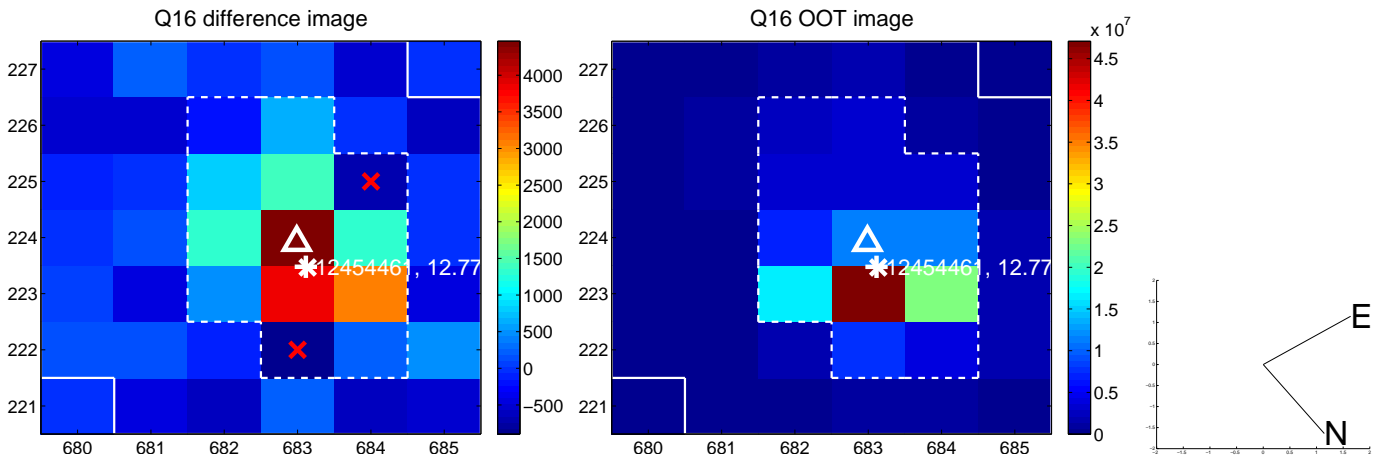
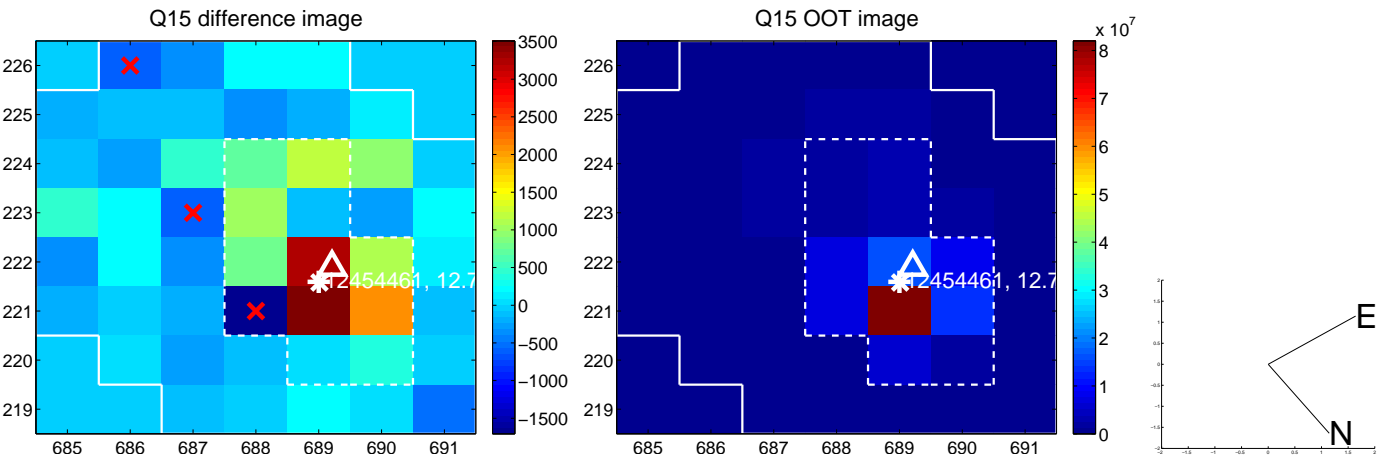
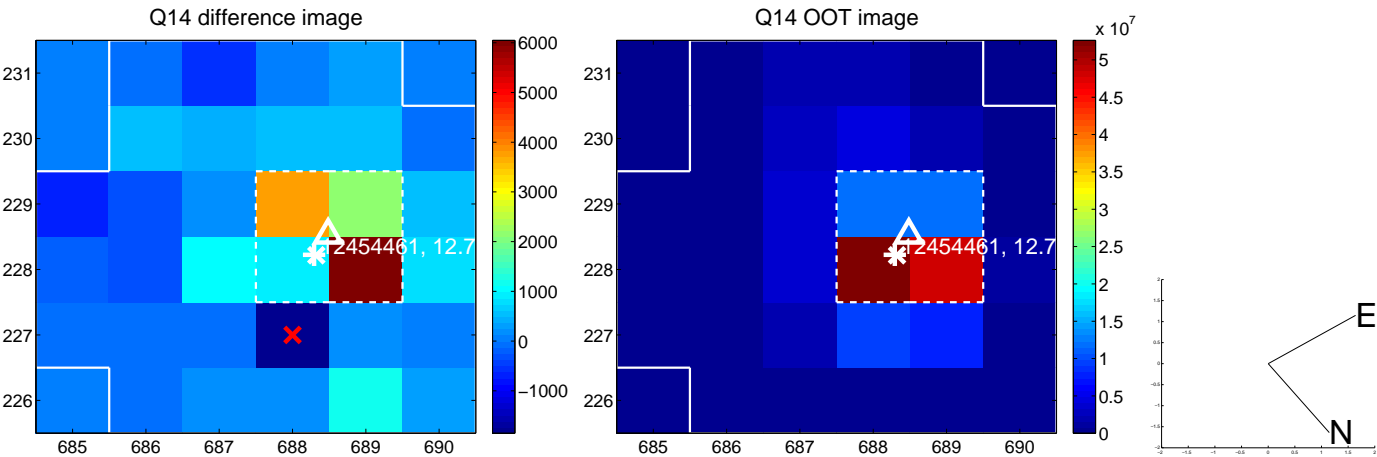
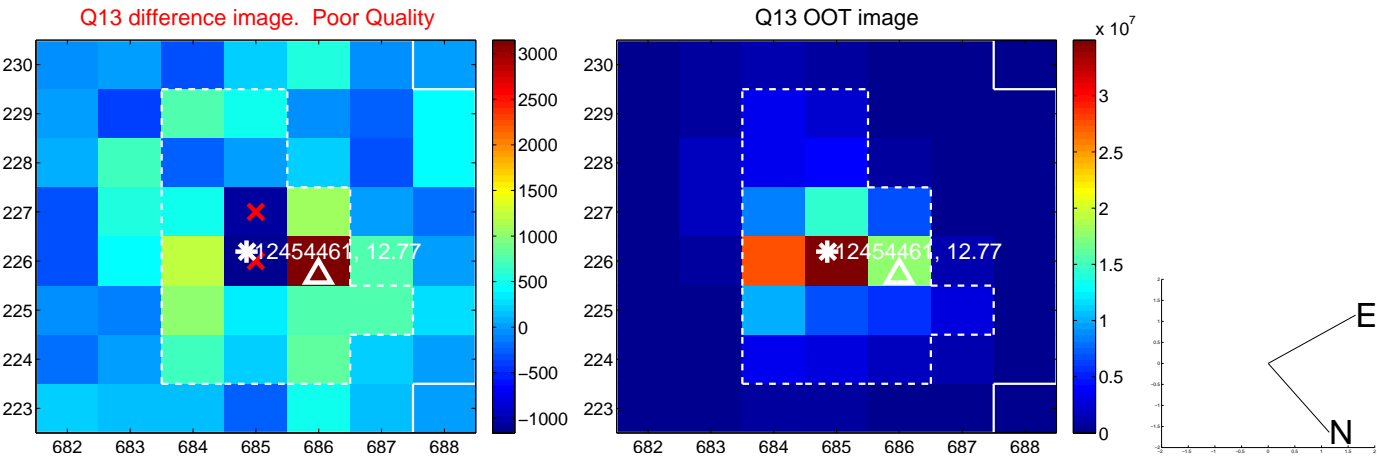
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



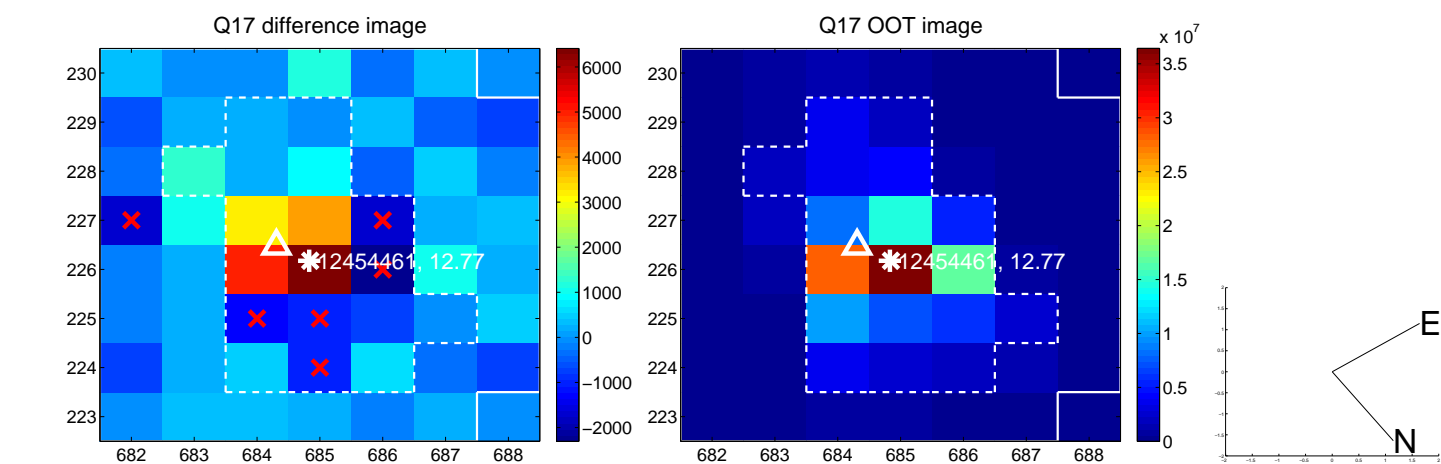
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



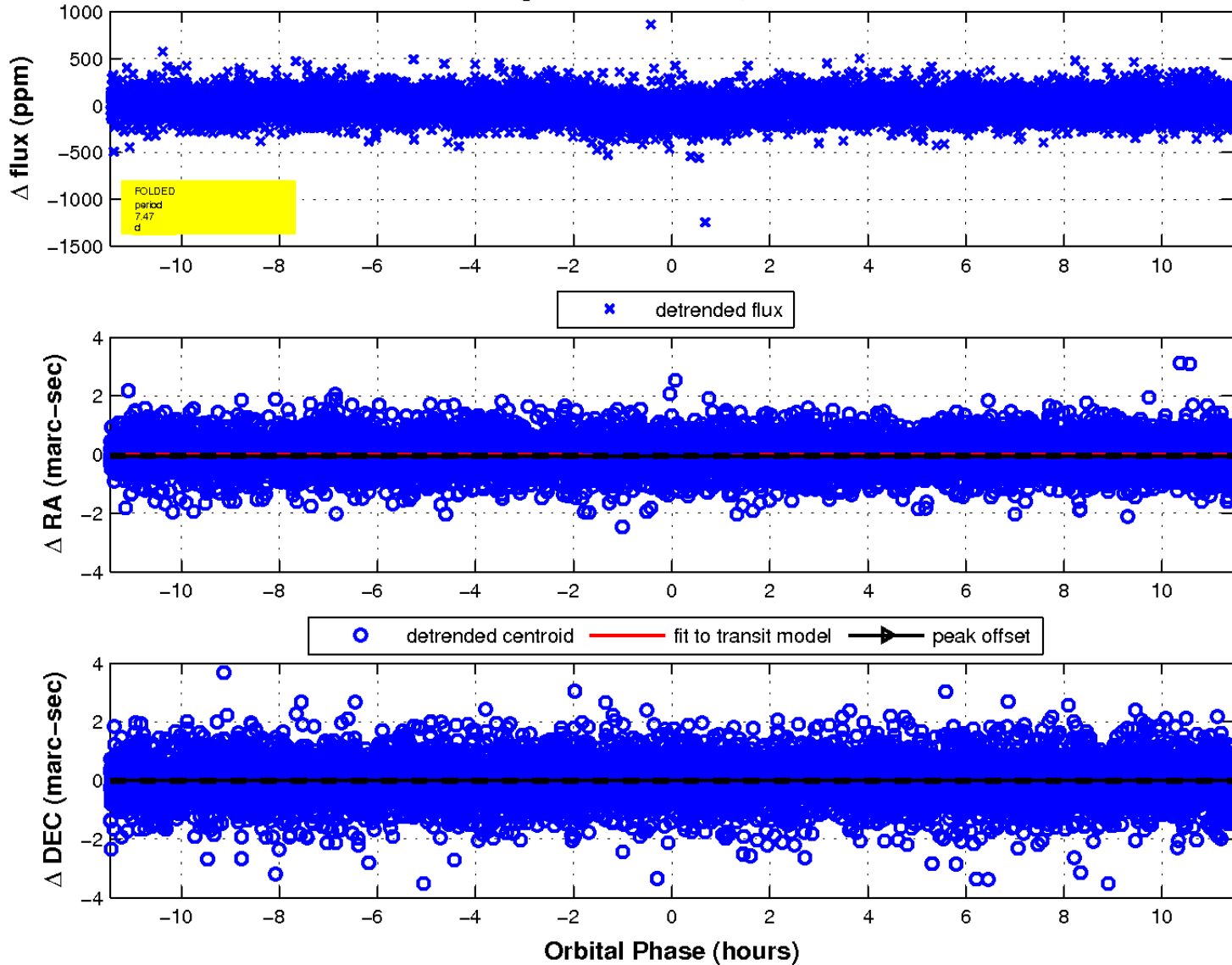
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

