

KIC 012554212

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})
012554212-01	OBS	5974.01	4.768174	131.855697	62.7	2.283	8.3	10.0	0.65	4680	0.63	79.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012554212-01	OBS	PC	0.99	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.

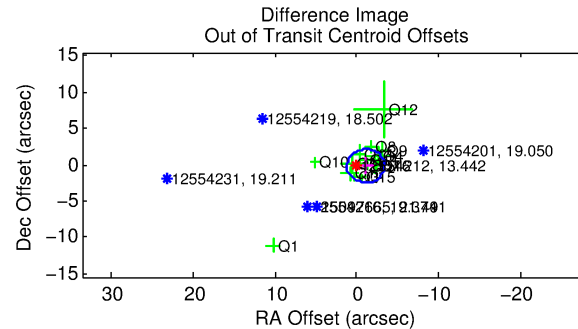
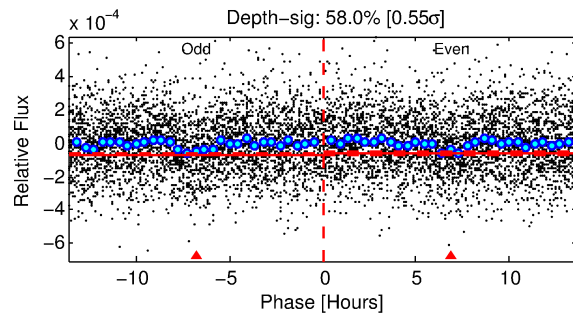
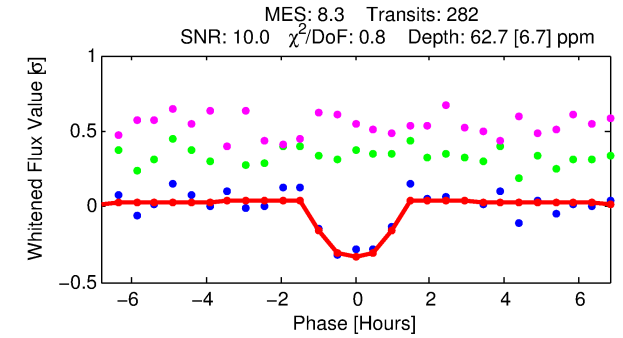
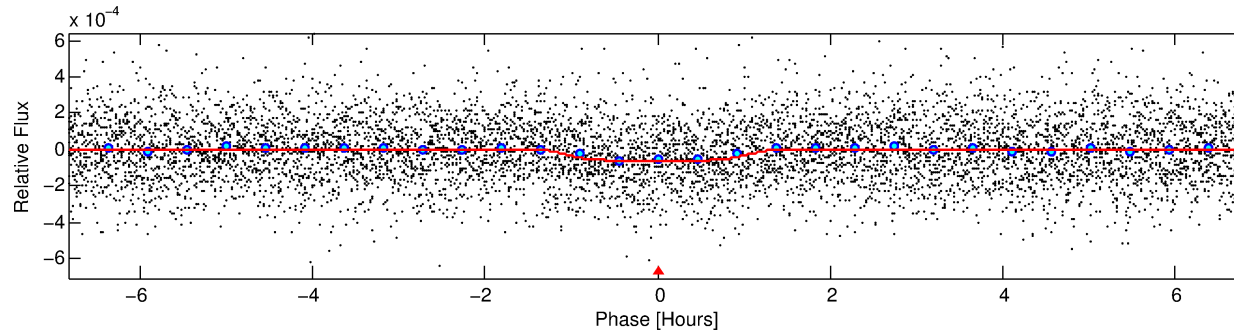
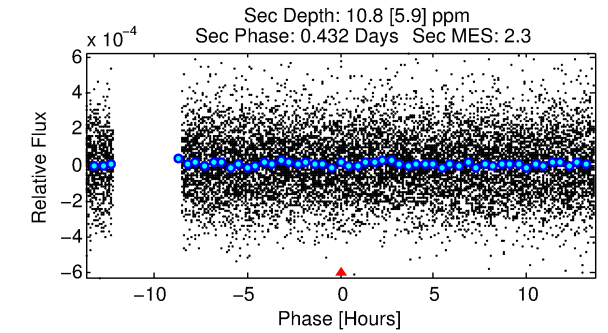
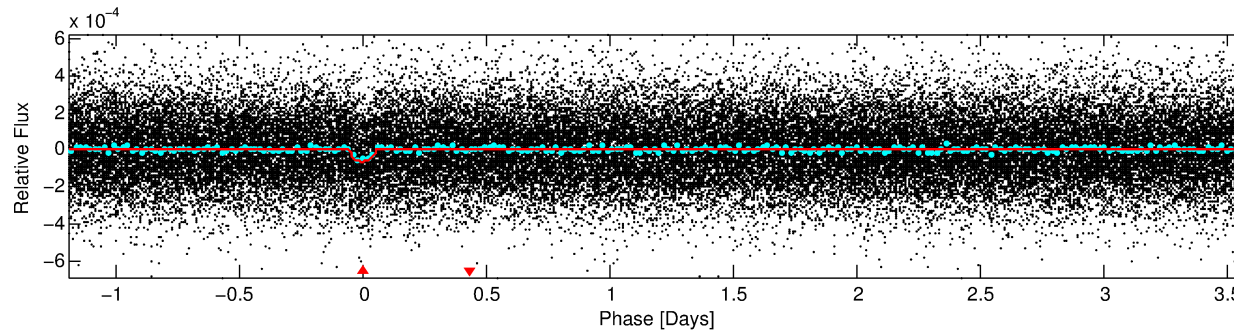
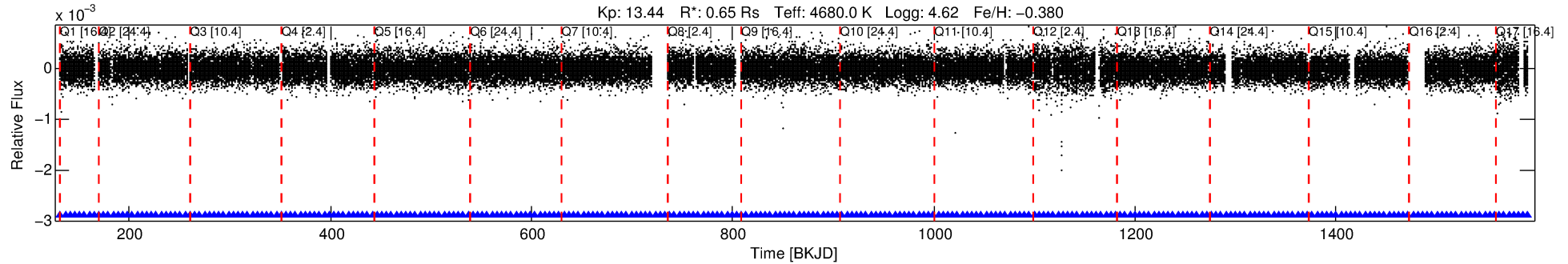
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012554212-01

No Significant Match Found

DV One-Page Summary

KIC: 12554212 Candidate: 1 of 1 Period: 4.768 d
KOI: K05974.01 Corr: 0.983



DV Fit Results:

Period = 4.76817 [0.00003] d
Epoch = 131.8557 [0.0041] BKJD
Rp/R* = 0.0089 [0.0066]
a/R* = 7.30 [21.10]
b = 0.90 [0.64]
Seff = 79.48 [14.04]
Teq = 761 [34] K
Rp = 0.63 [0.47] Re
a = 0.0477 [0.0035] AU
Ag = 34.24 [54.39] [0.61 σ]
Teffp = 2848 [1133] K [1.84 σ]

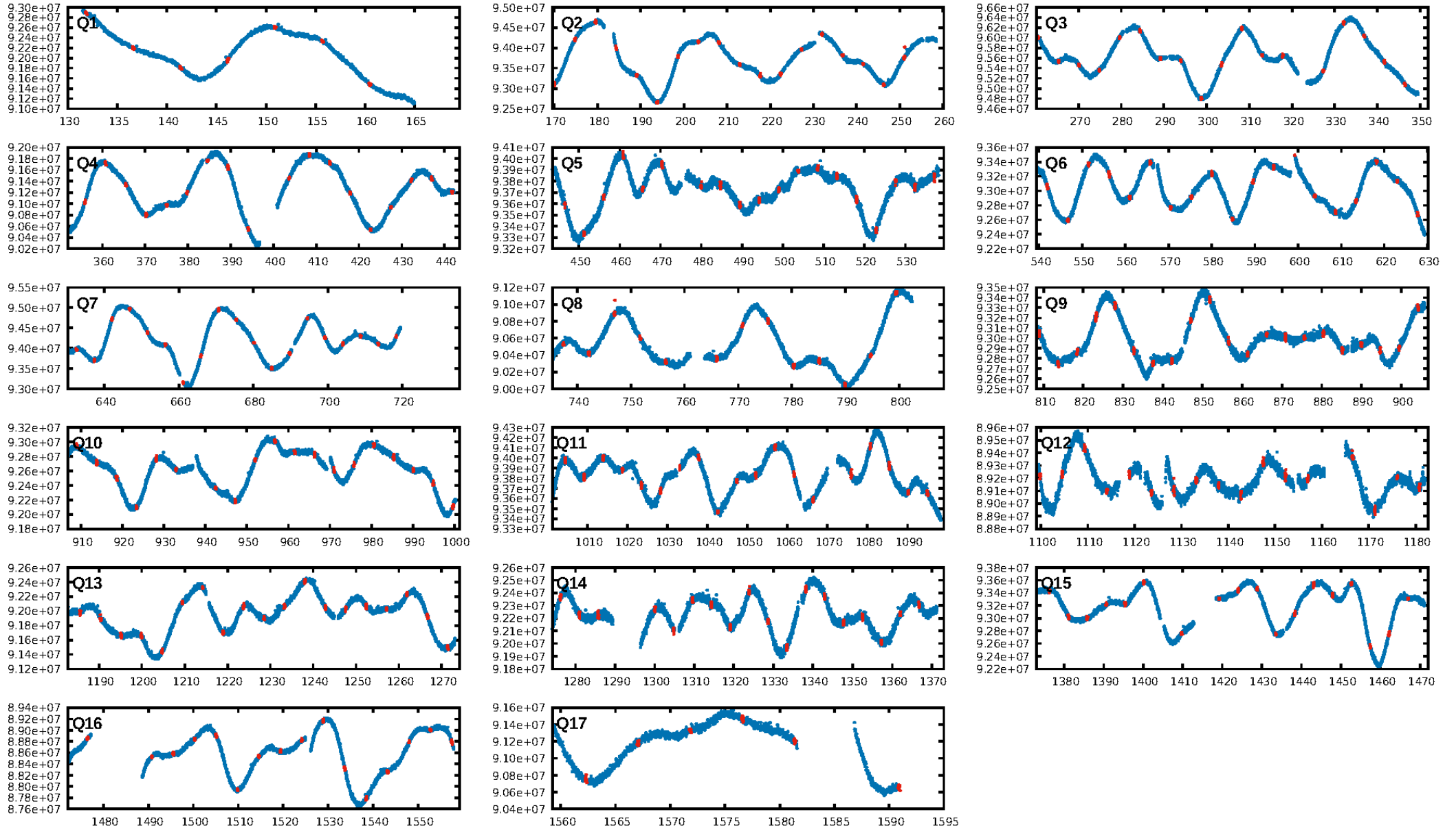
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.48e-16
RollingBand-fgt: 1.00 [269/269]
GhostDiagnostic-chr: 1.066
Centroid-sig: 1.4%
Centroid-so: 2.169 arcsec [1.61 σ]
OotOffset-rm: 1.078 arcsec [1.41 σ]
KicOffset-rm: 1.119 arcsec [1.32 σ]
OotOffset-st: 2/4/4/5 [15]
KicOffset-st: 2/4/4/5 [15]
DiffImageQuality-fgm: 0.33 [5/15]
DiffImageOverlap-fno: 1.00 [17/17]

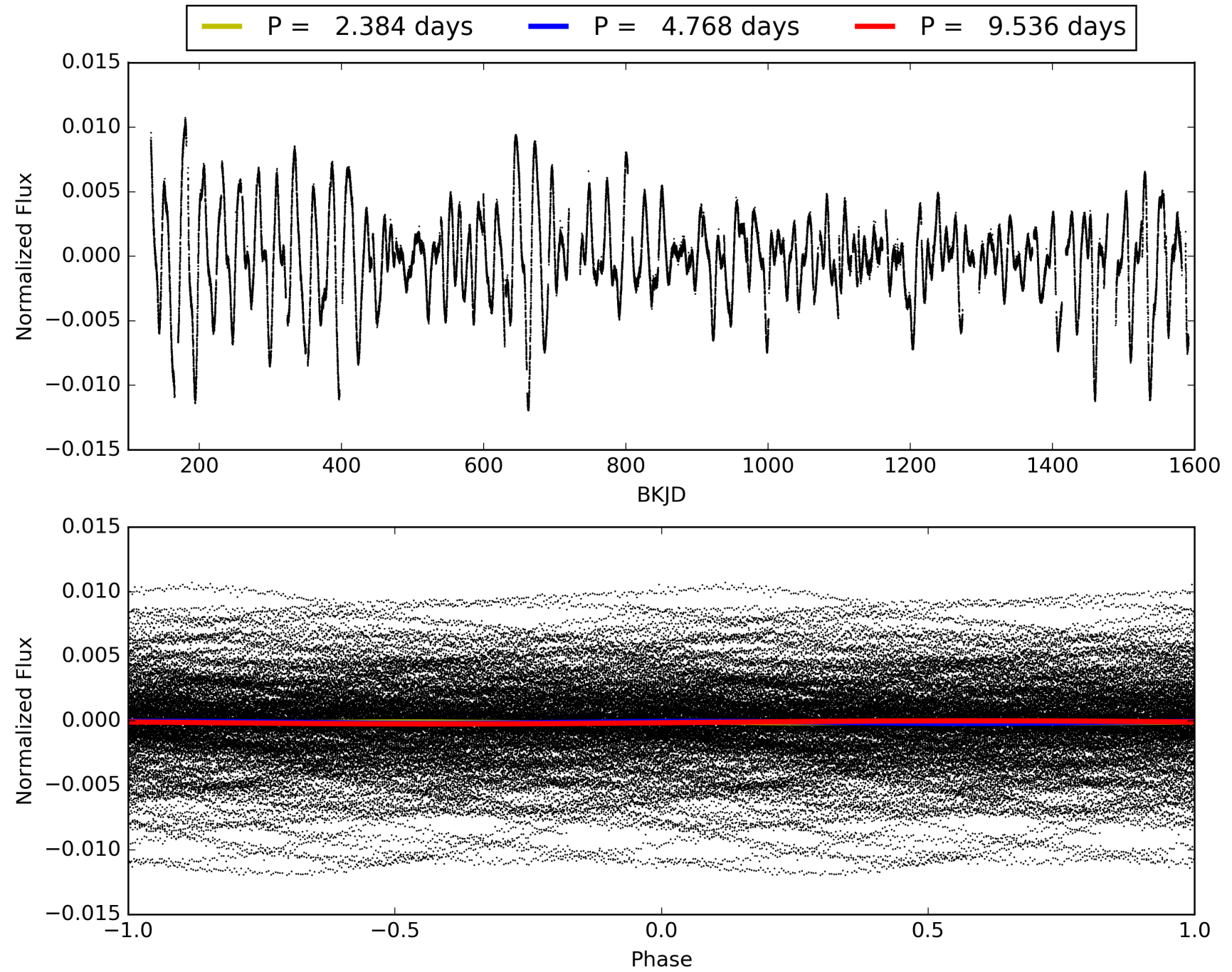
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:42:54 Z

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

TCE 012554212-01, PDC Light Curves

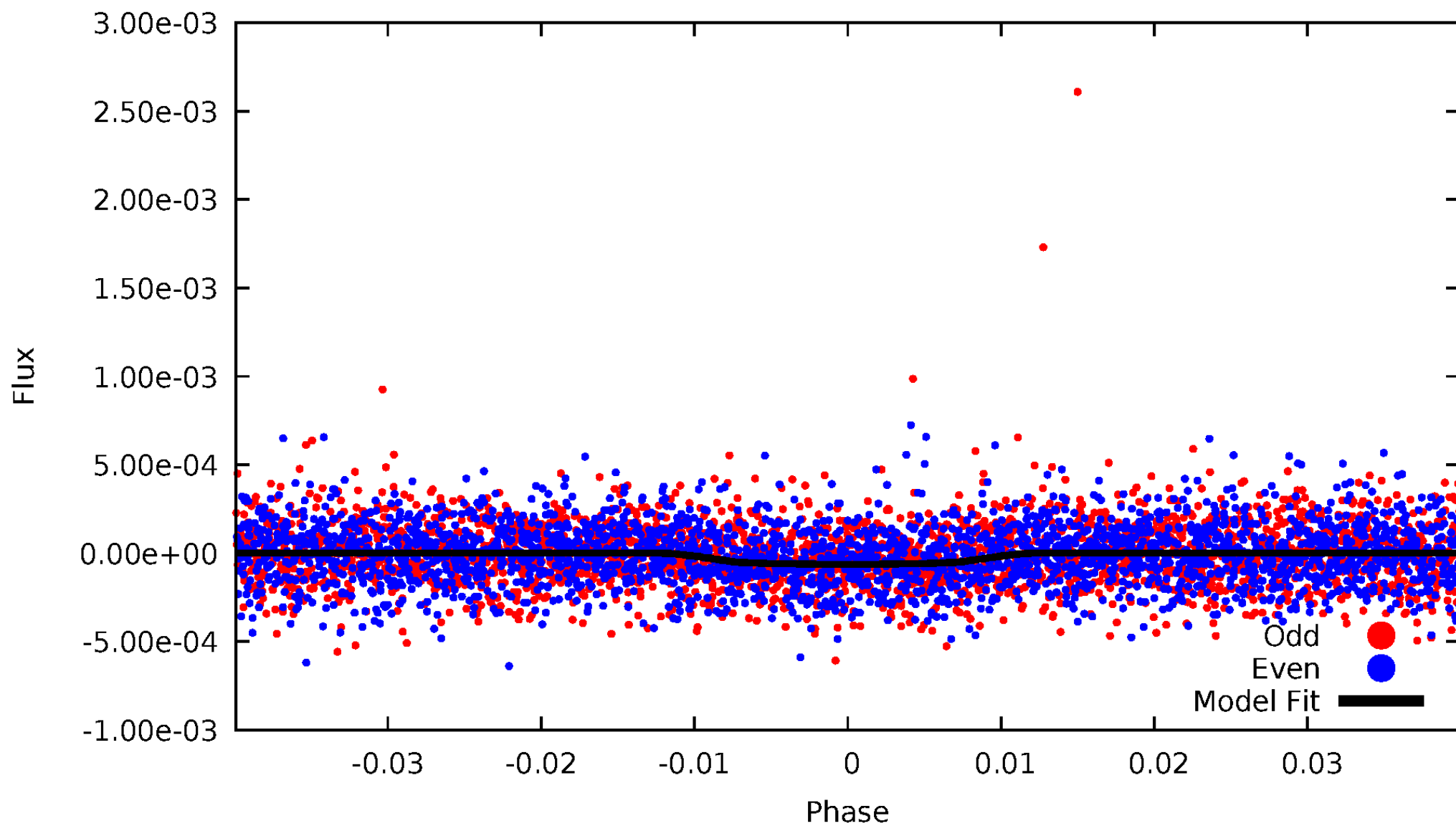


TCE 012554212-01



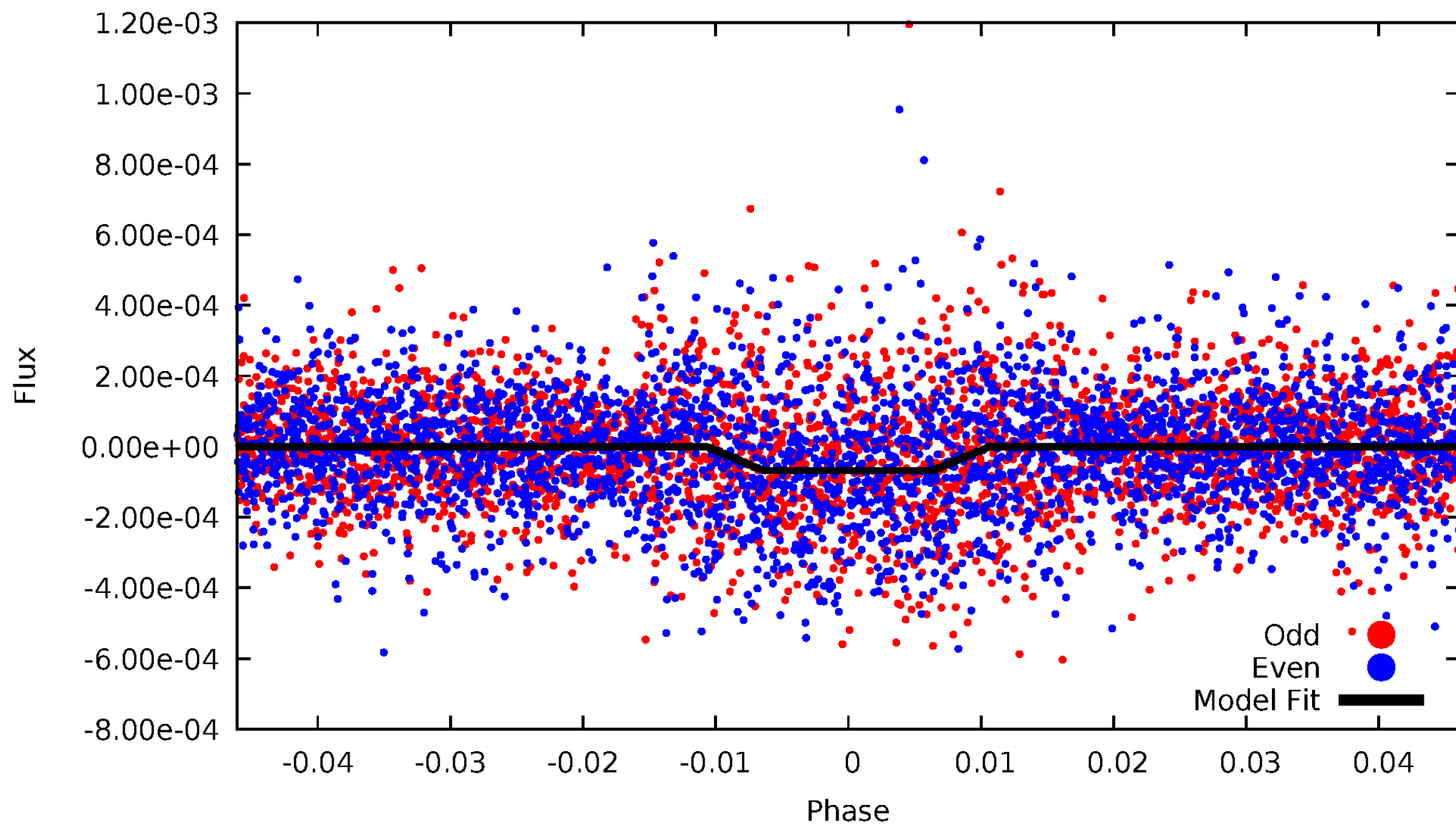
DV Odd/Even

TCE 012554212-01



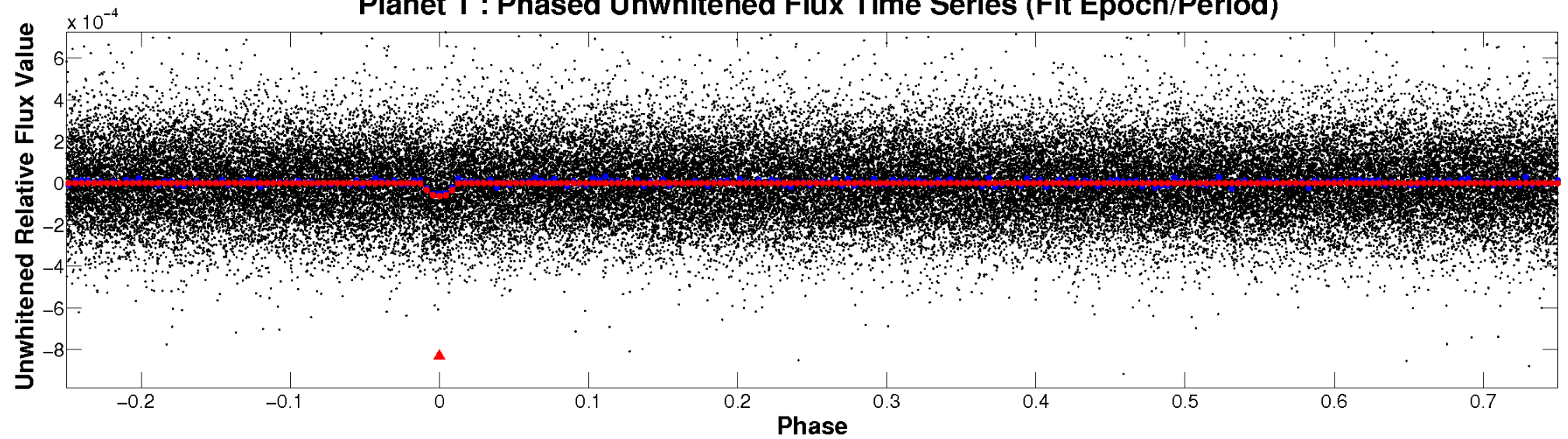
ALT Odd/Even

TCE 012554212-01

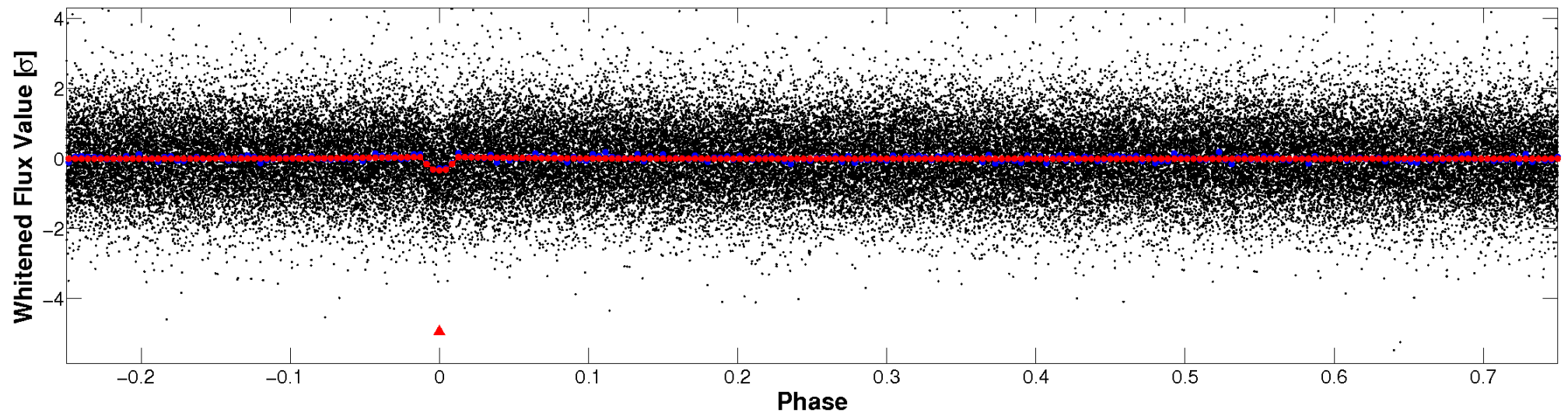


Non-Whitened Vs. Whitened Light Curve

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

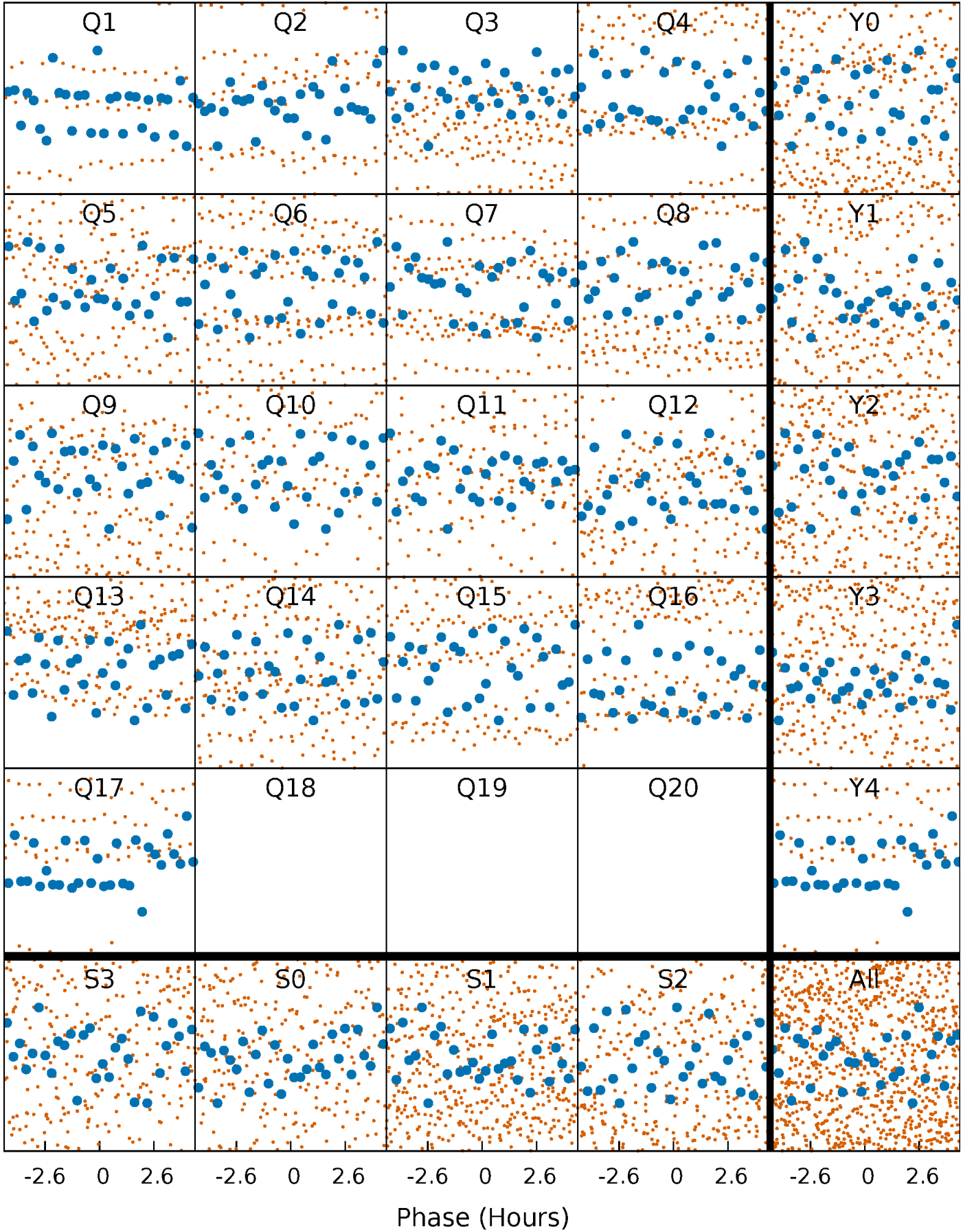


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



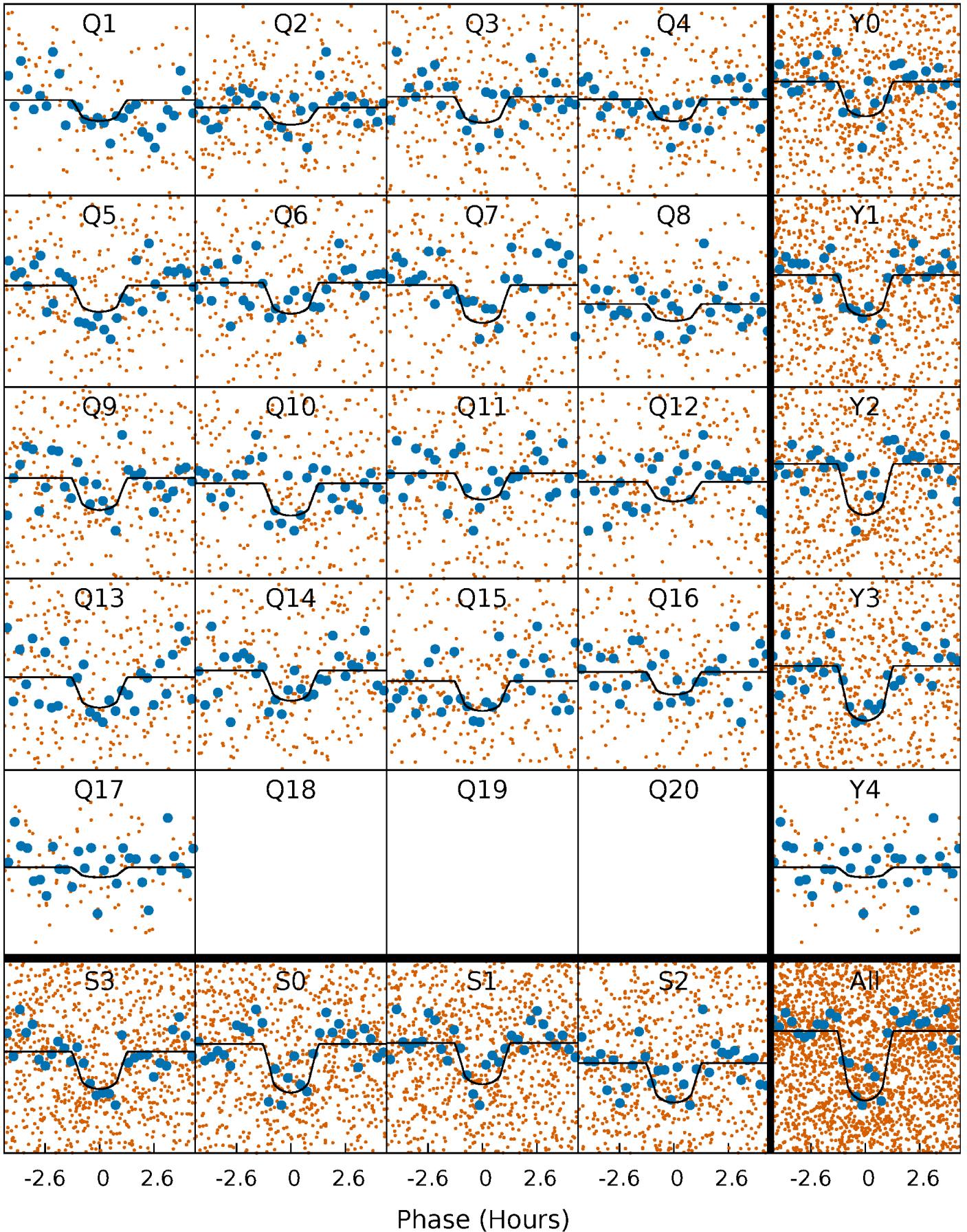
PDC Quarter-Phased Transit Curves

TCE 012554212-01 P= 4.768174 Days $T_0=131.855697$ (BKJD)



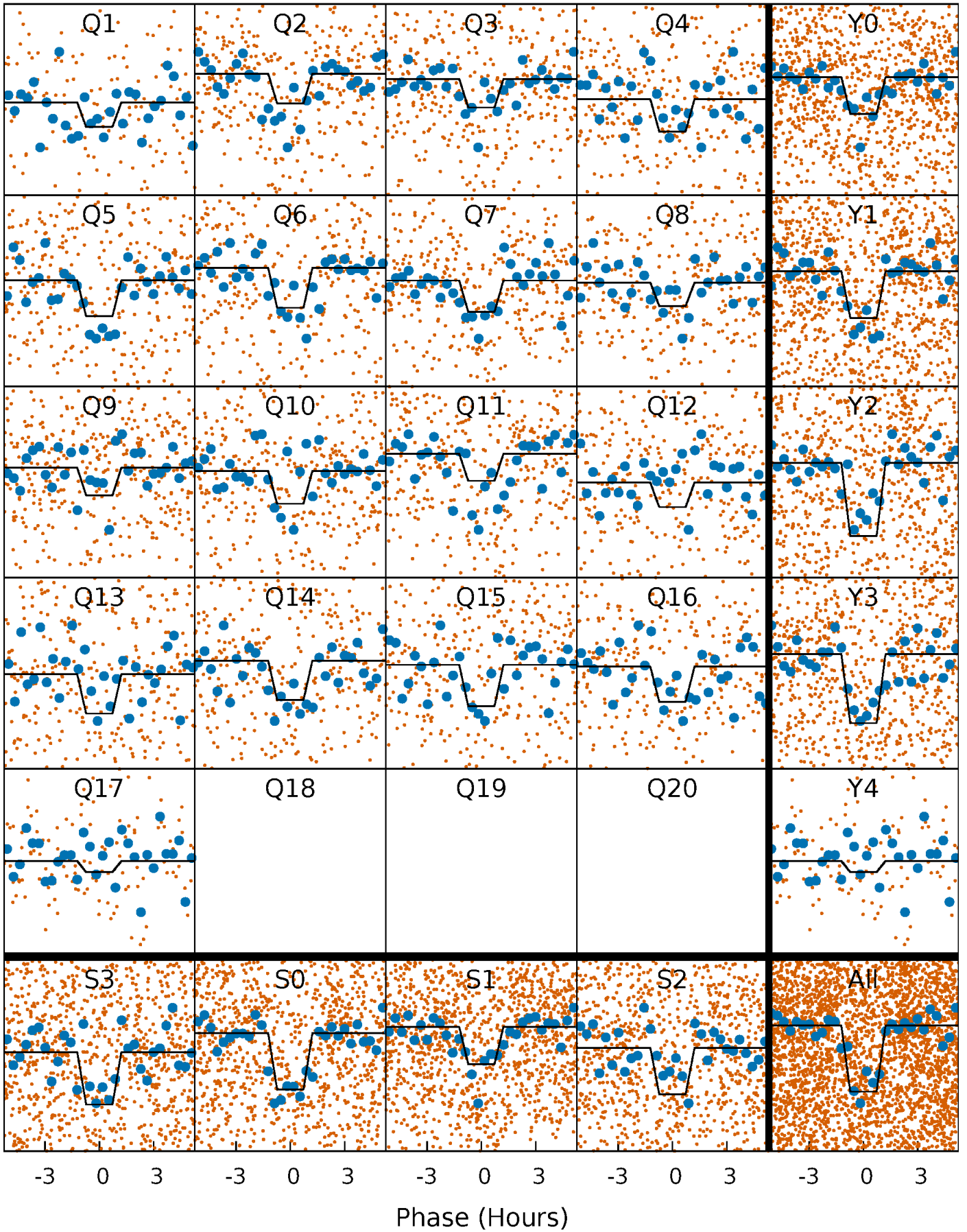
DV Quarter-Phased Transit Curves

TCE 012554212-01 P= 4.768174 Days $T_0=131.855697$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

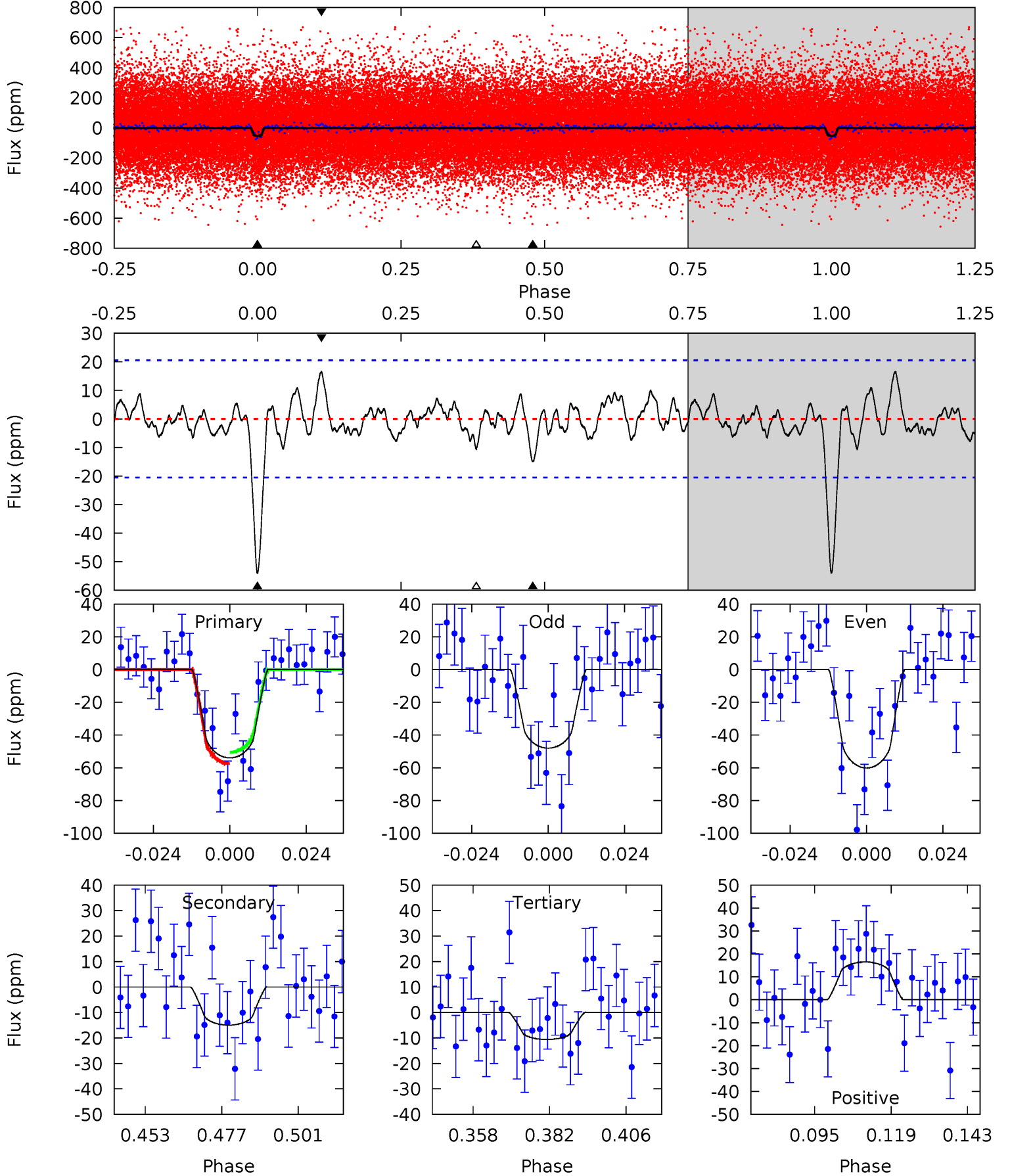
TCE 012554212-01 P= 4.768160 Days $T_0=131.857191$ (BKJD)



DV Model-Shift Uniqueness Test

012554212-01, P = 4.768174 Days, E = 127.087523 Days

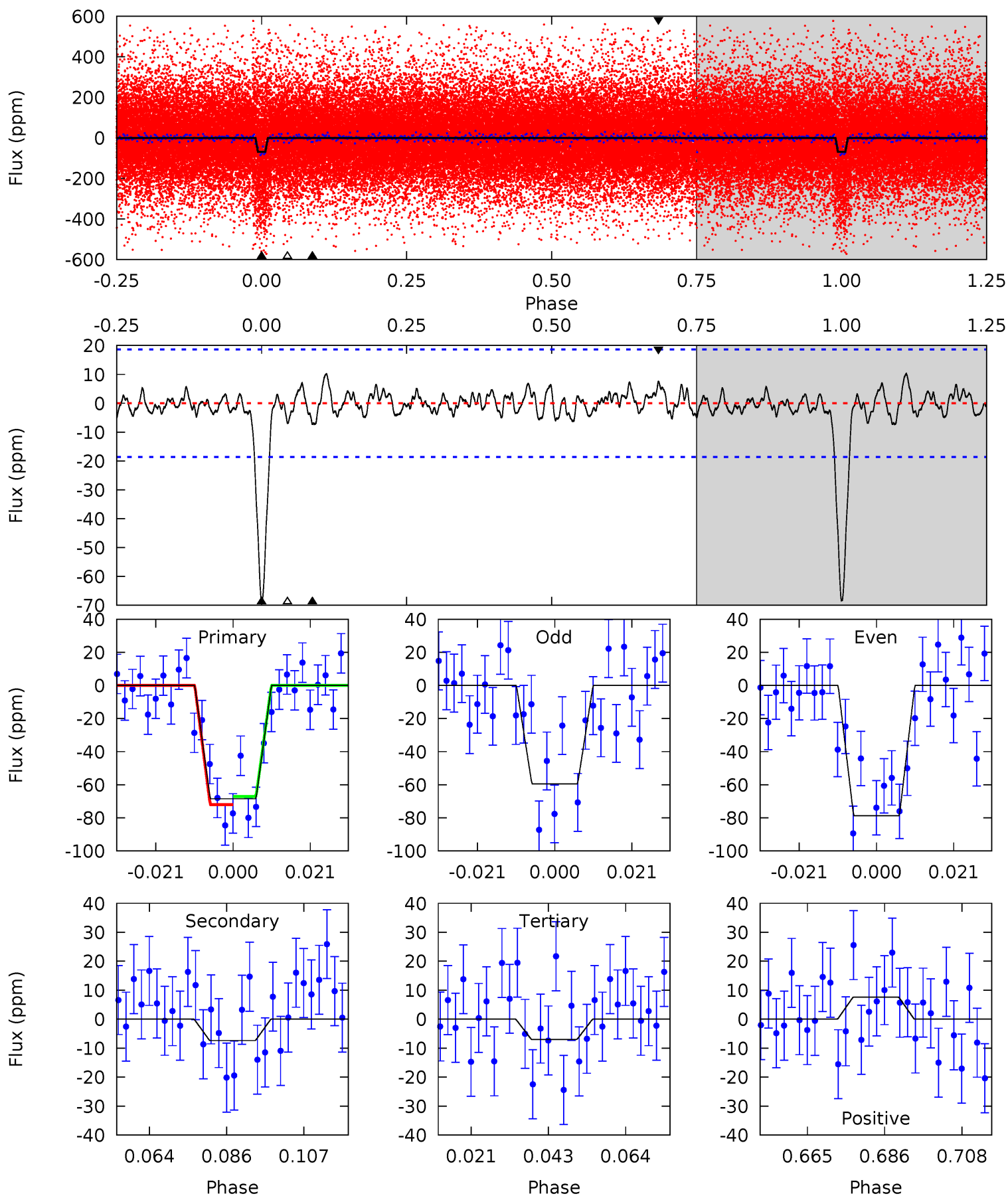
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	3.54	2.51	3.89	4.86	2.26	1.09	10.2	8.86	1.03	-0.35	1.43	0.98	0.23	0.82



Alt Model-Shift Uniqueness Test

012554212-01, P = 4.768160 Days, E = 127.089031 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	1.93	1.82	1.99	4.88	2.30	0.79	16.1	15.9	0.11	-0.05	2.53	0.85	0.13	0.65



Stellar Parameters For KIC 012554212

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4680^{+167}_{-167}	$4.618^{+0.056}_{-0.032}$	$-0.380^{+0.300}_{-0.300}$	$0.649^{+0.057}_{-0.057}$	$0.638^{+0.080}_{-0.046}$	$3.288^{+0.811}_{-0.449}$
	+4%/-4%	+1%/-1%	+79%/-79%	+9%/-9%	+13%/-7%	+25%/-14%
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 012554212-01 / KOI 5974.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-15 ± 4	$0.70^{+0.44}_{-0.42}$	1059^{+44}_{-41}	3369^{+1297}_{-493}	38^{+210}_{-24}
Alt.	-7 ± 4	$0.61^{+0.47}_{-0.36}$	1055^{+45}_{-41}	3089^{+1082}_{-531}	23^{+110}_{-18}

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

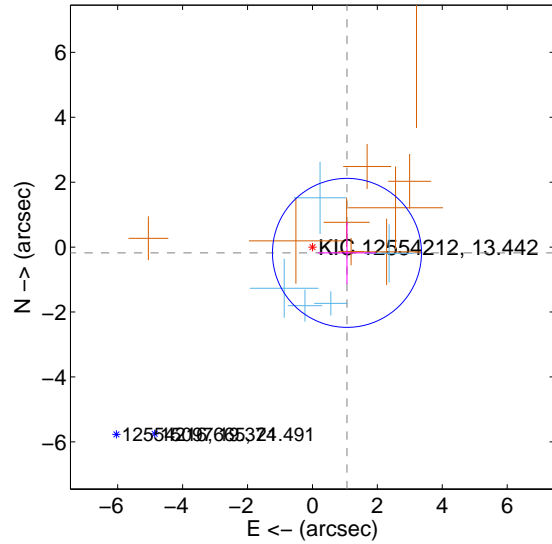
Supplemental centroid analysis for 012554212-01. Kepler magnitude: 13.44. Transit SNR 10.00

There are 5 quarters with good PRF difference image offsets

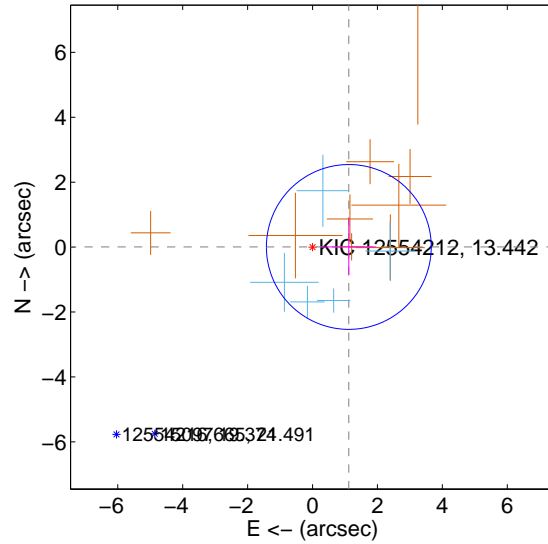
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.078 ± 0.765	1.41	-1.064 ± 0.897	-0.178 ± 0.953
PRF-fit source offset from KIC position	1.119 ± 0.847	1.32	-1.119 ± 0.844	0.004 ± 0.879
photometric centroid source offset	2.17 ± 1.35	1.61	1.87 ± 1.33	-1.09 ± 1.41

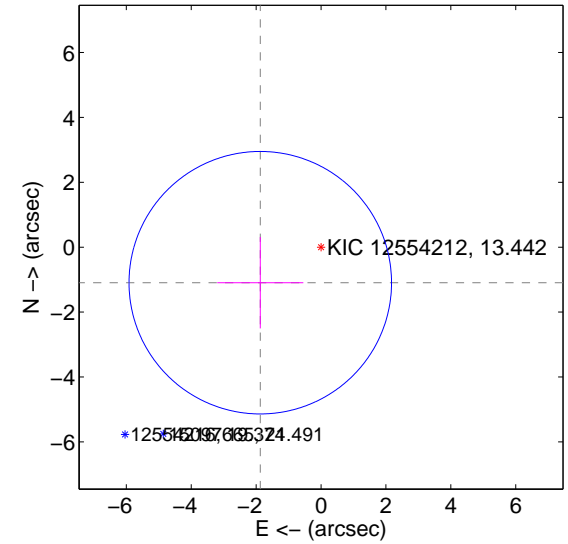
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

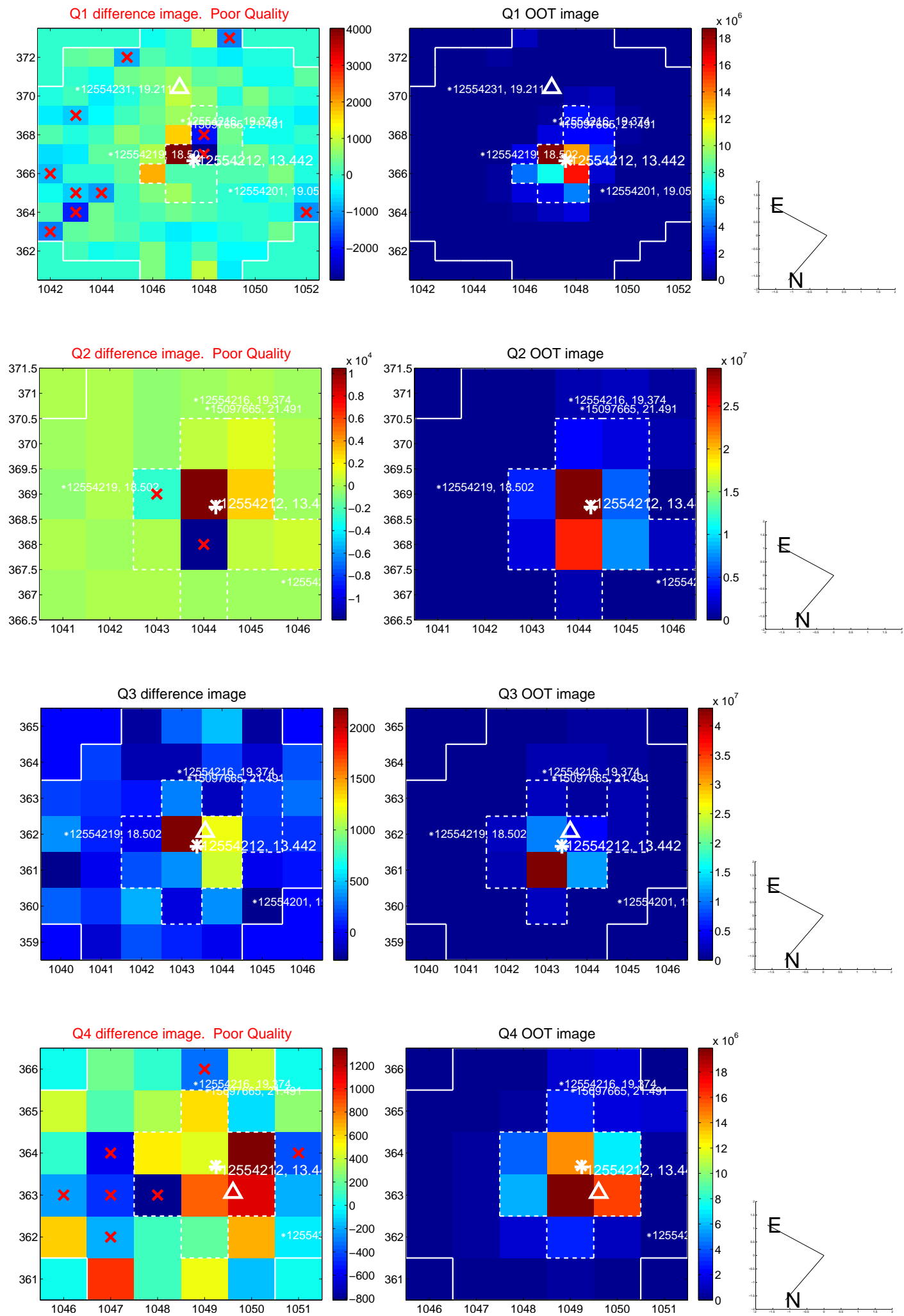


offset from photometric centroids

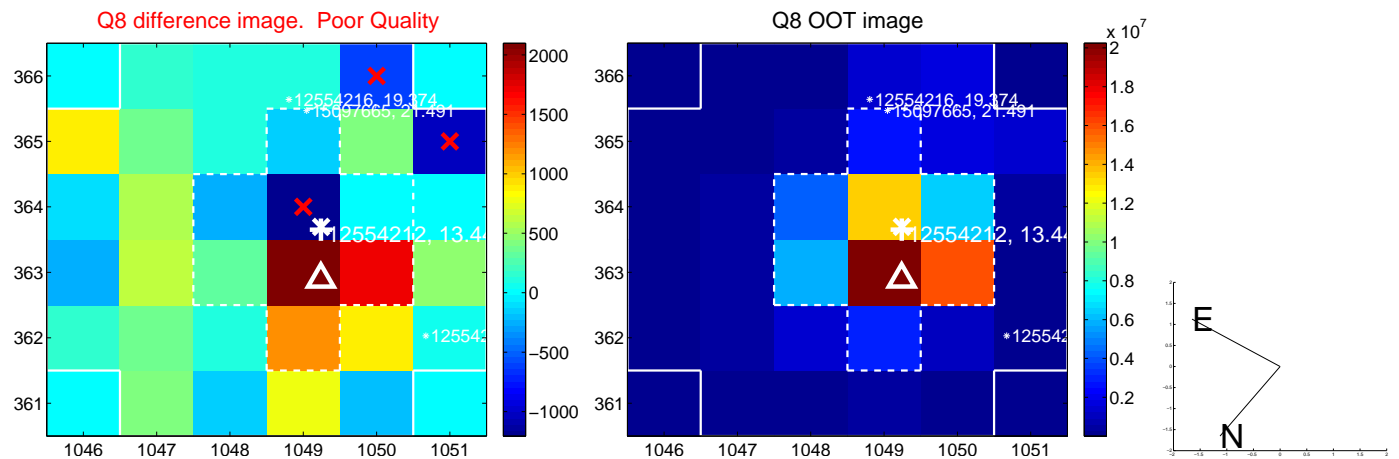
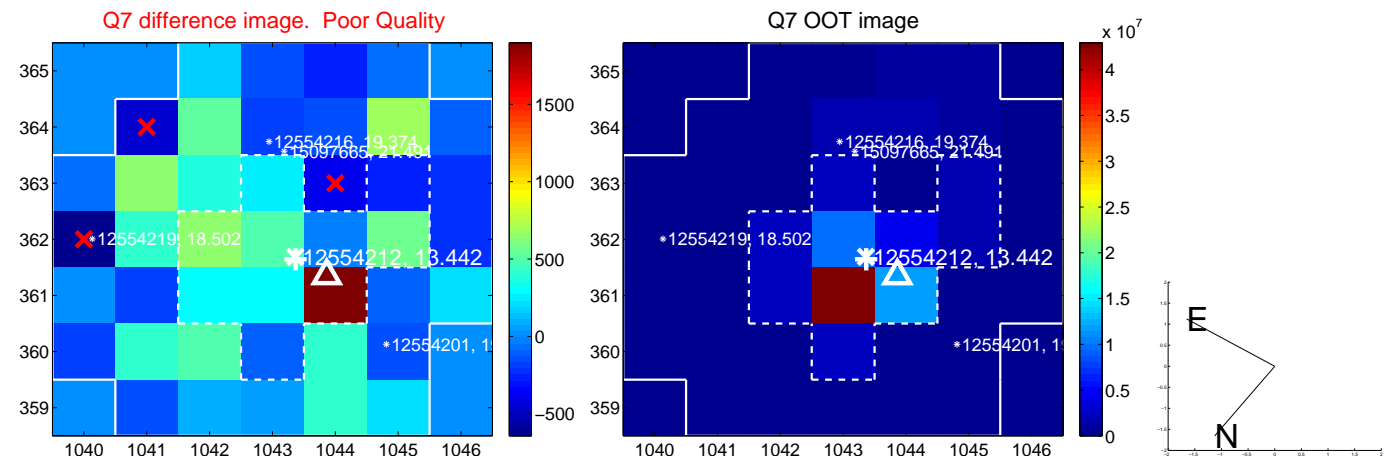
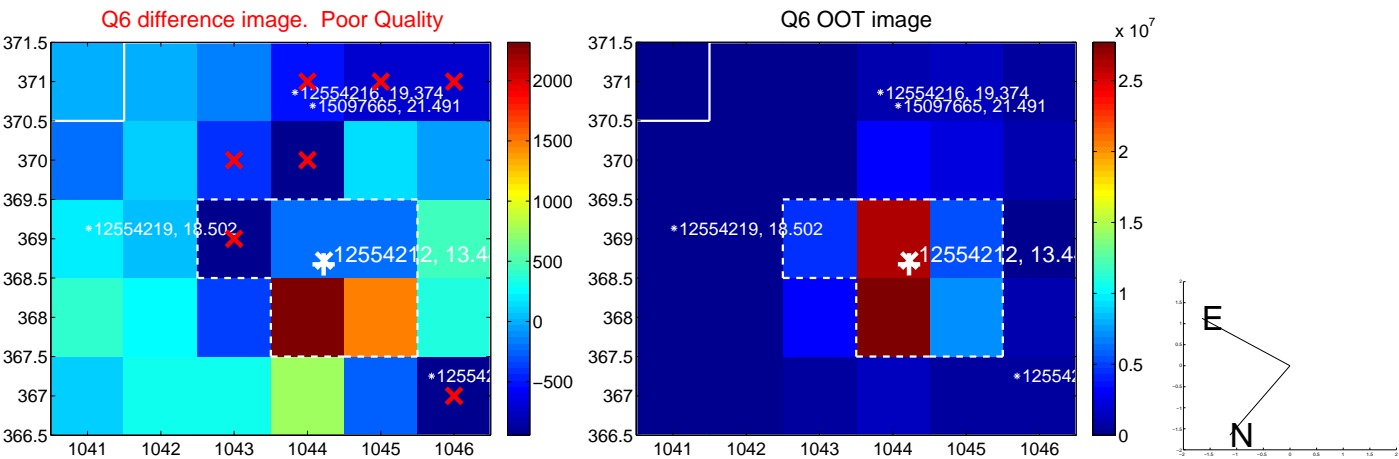
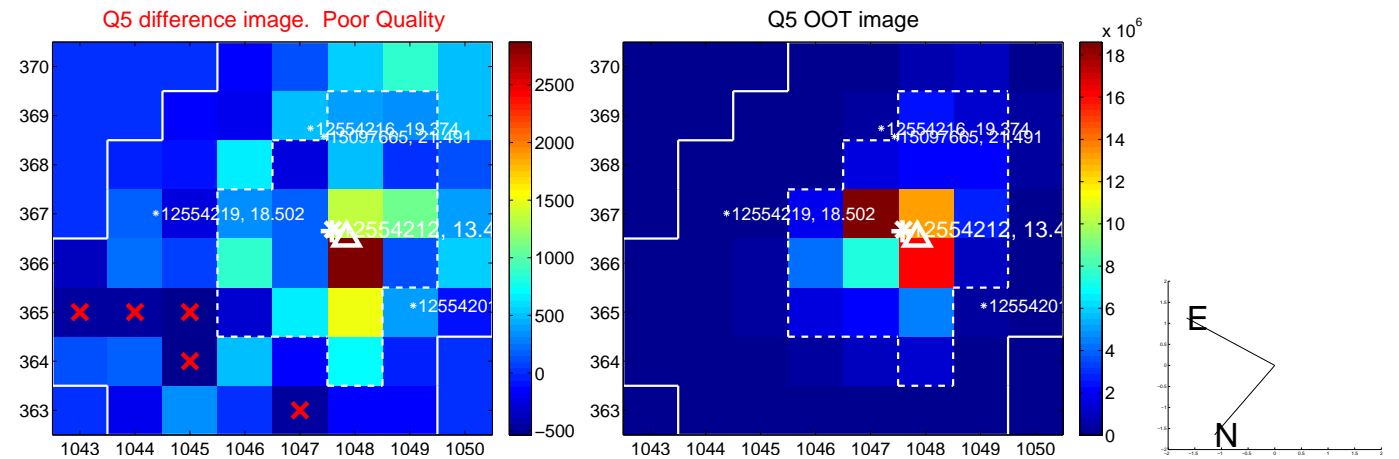


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

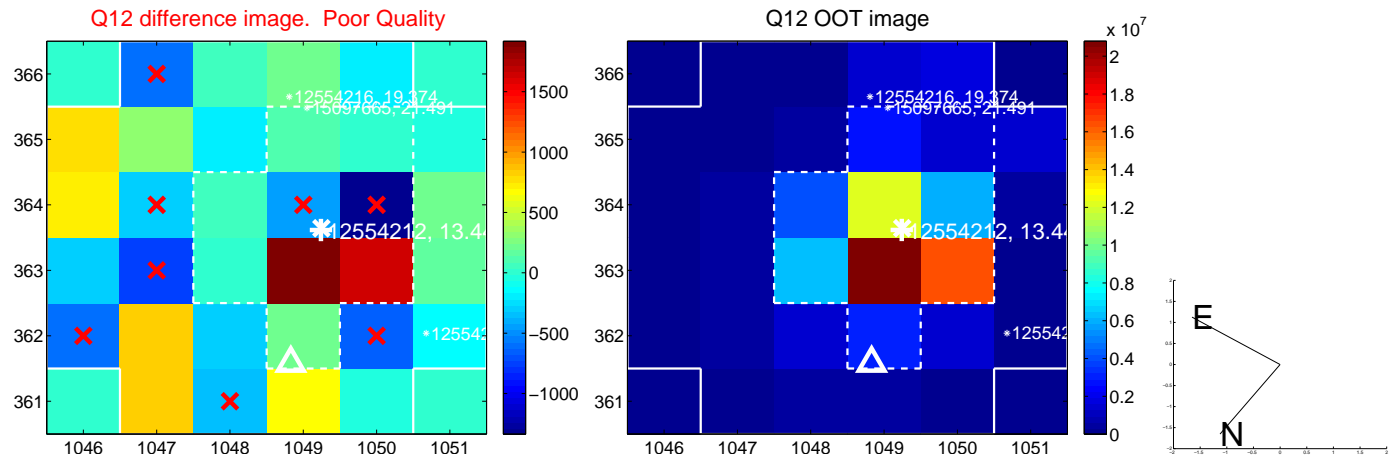
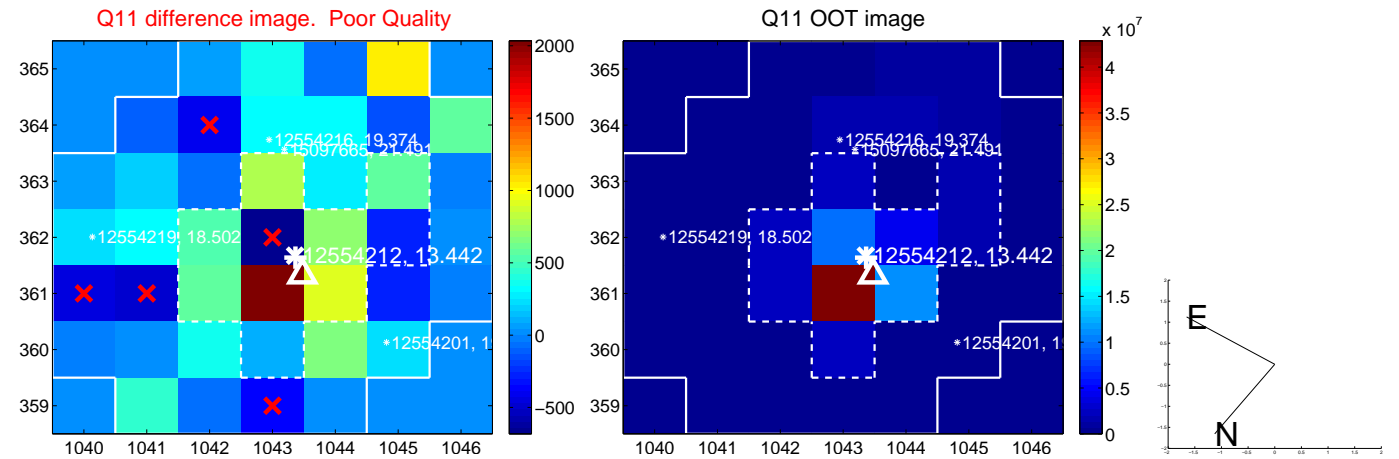
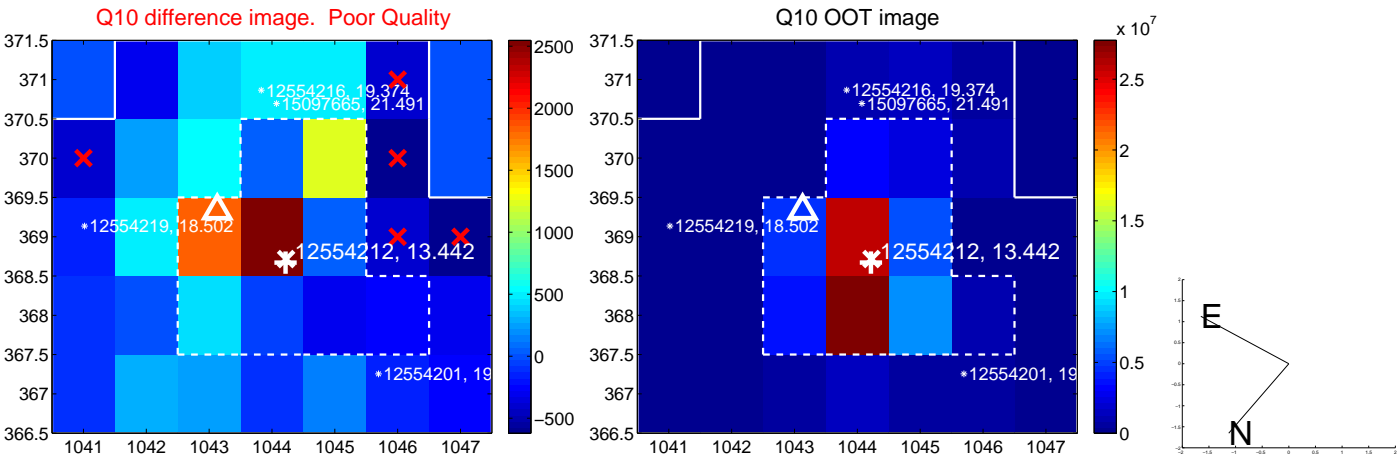
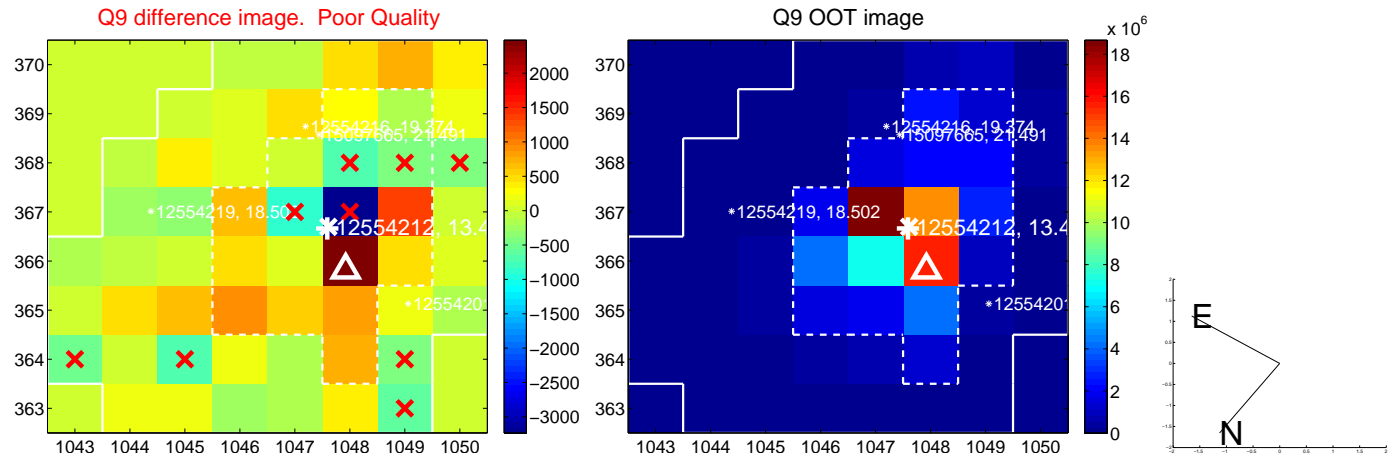
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



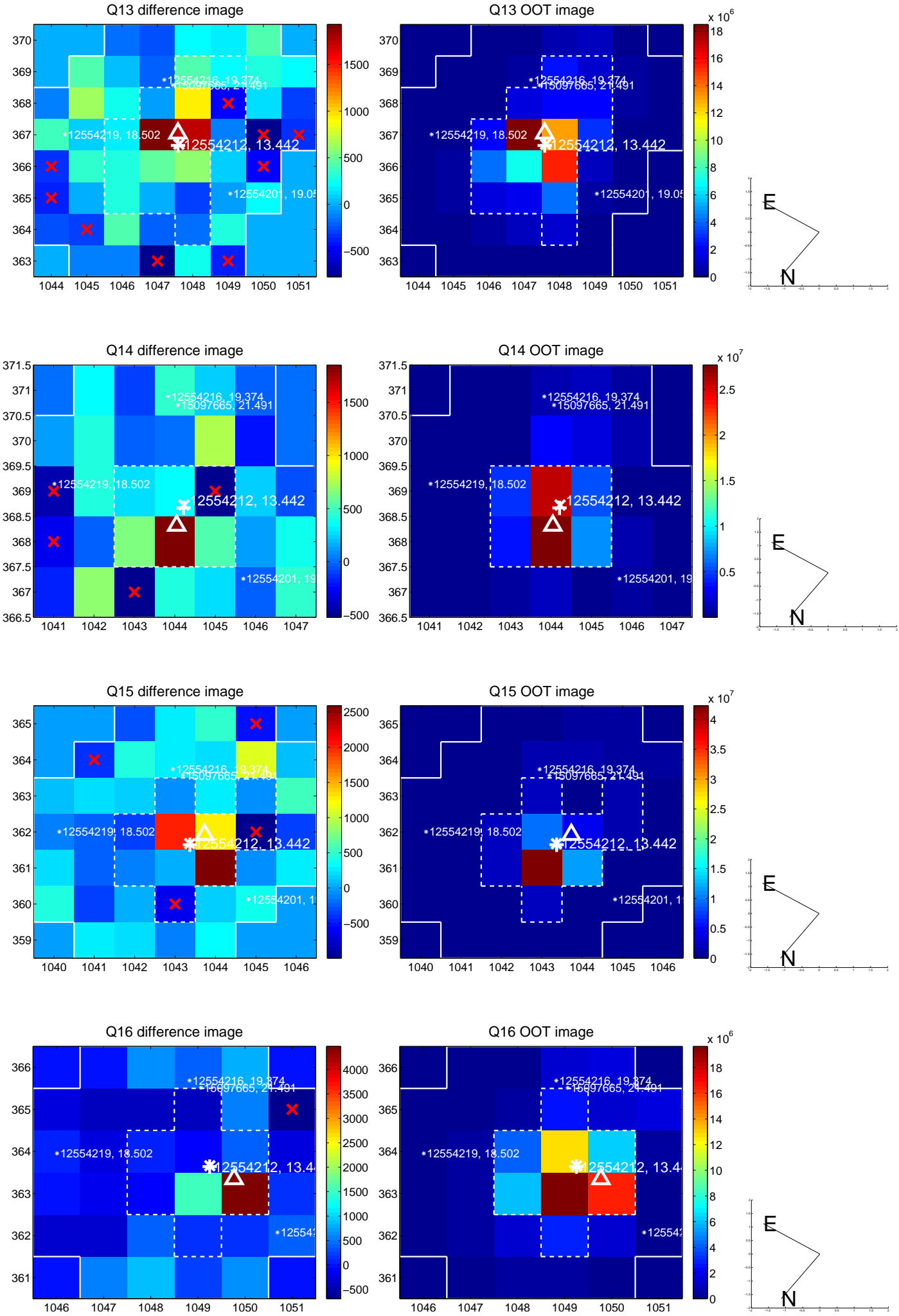
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



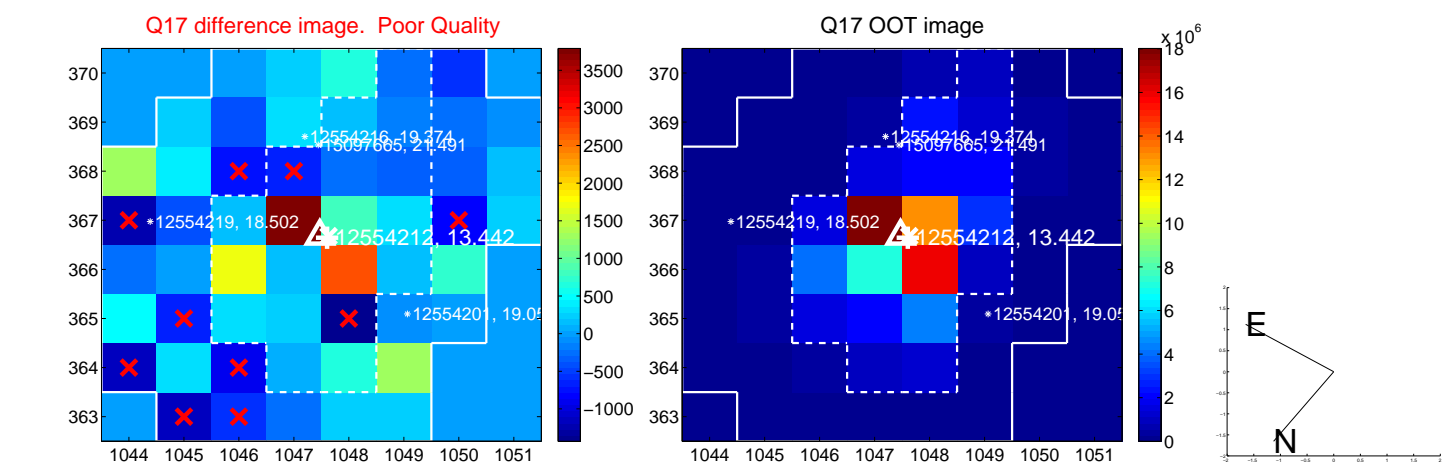
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



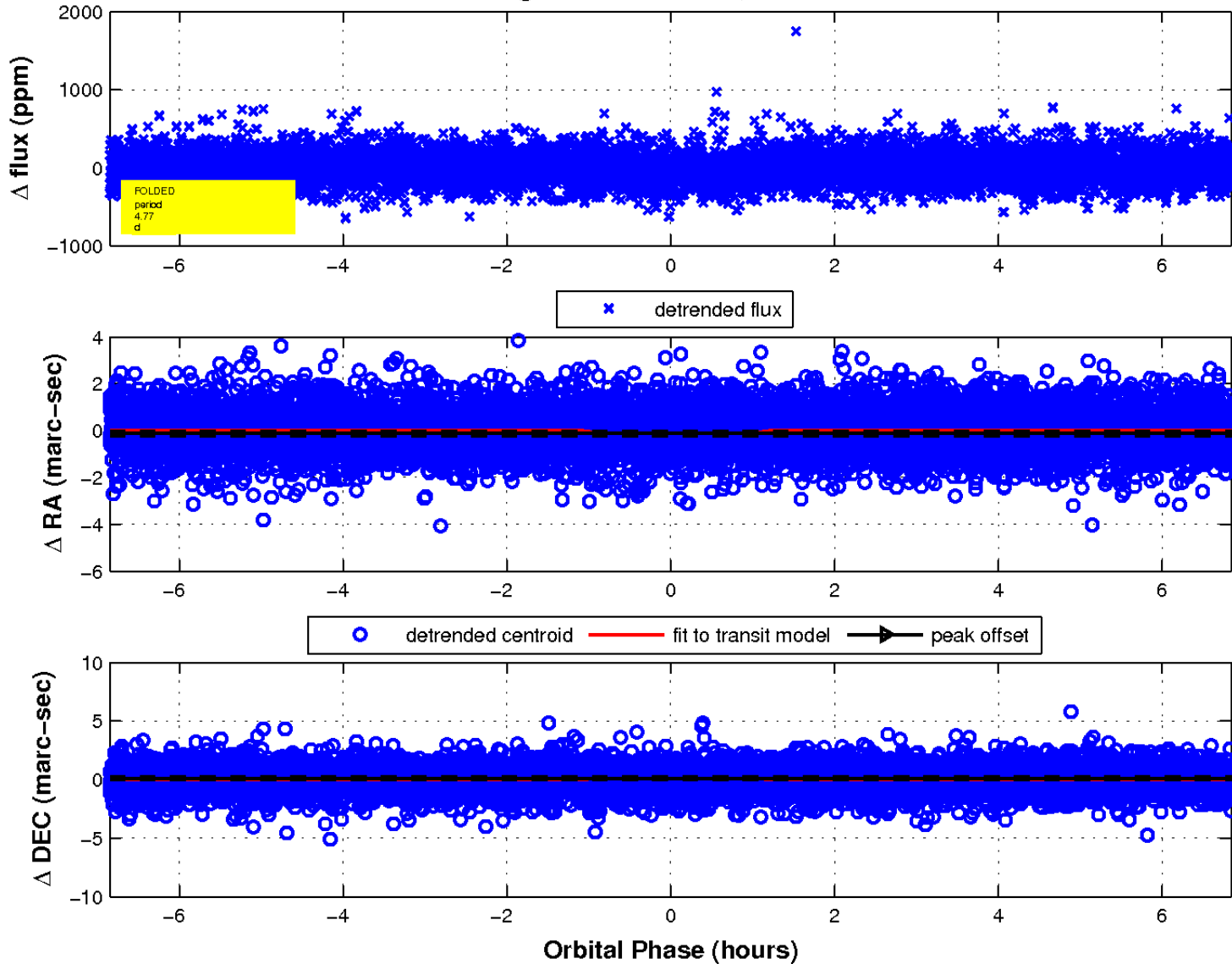
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

