

KIC 004946049

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})
004946049-01	OBS	4658.01	1.878810	133.107002	27.7	3.530	13.5	13.8	3.34	8046	2.05	29137.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004946049-01	OBS	FP	0.00	0	0	0	1	EPHEM_MATCH

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 004946049-01

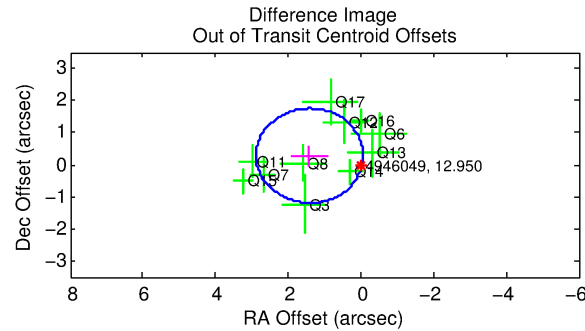
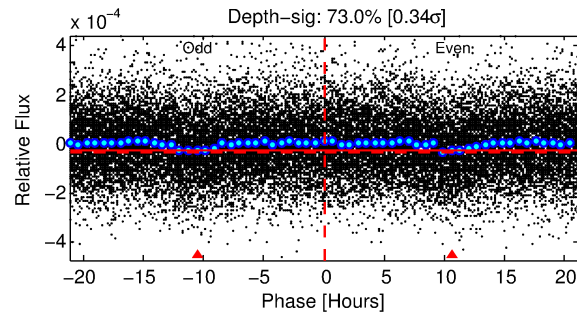
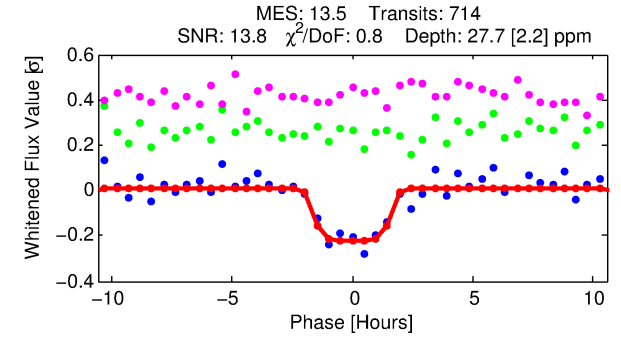
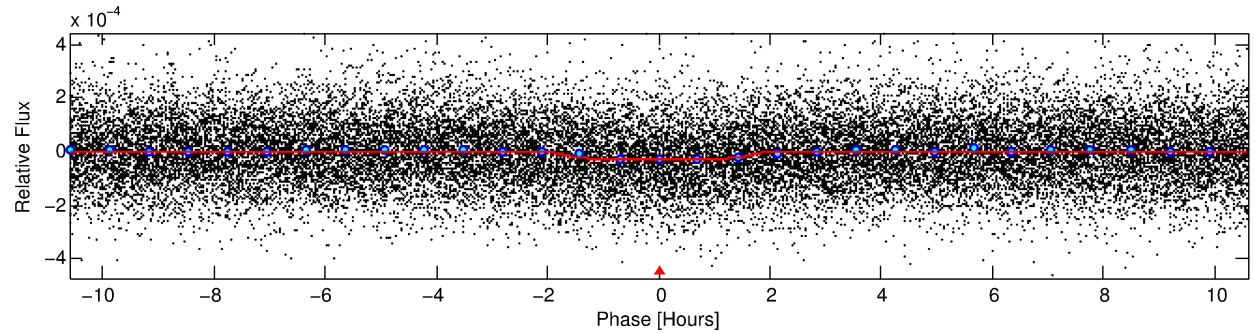
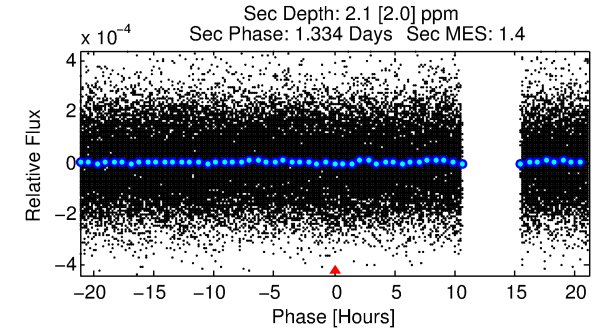
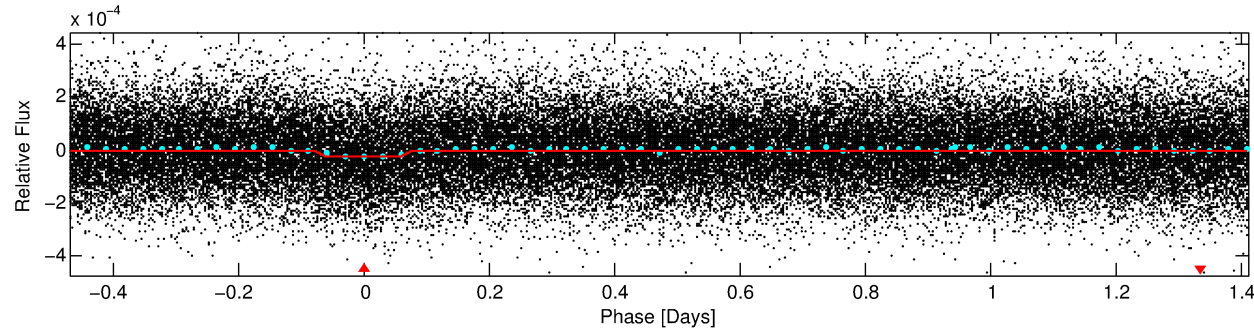
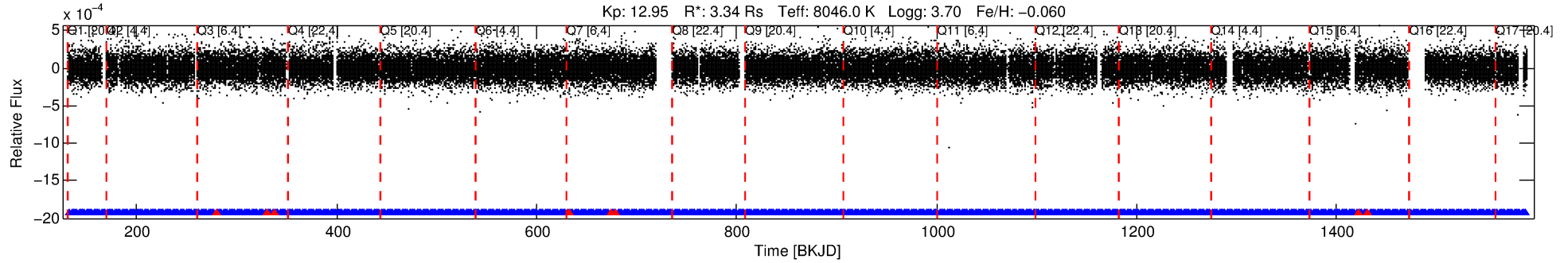
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004946049-01	4946049	004678875-01	4678875	1:1	1061.1	267	0	13.24	12.95	28625.00	Col-Anomaly	0	2.21	1.71

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 4946049 Candidate: 1 of 1 Period: 1.879 d

KOI: K04658.01 Corr: 0.859



DV Fit Results:

Period = 1.87881 [0.00001] d
Epoch = 133.1070 [0.0033] BKJD
Rp/R* = 0.0056 [0.0016]
a/R* = 2.04 [2.73]
b = 0.90 [0.37]
Seff = 29137.23 [21641.59]
Teq = 3331 [619] K
Rp = 2.05 [1.16] Re
a = 0.0379 [0.0175] AU
Ag = 0.40 [0.52] [-1.15σ]
Teffp = 4095 [1129] K [0.59σ]

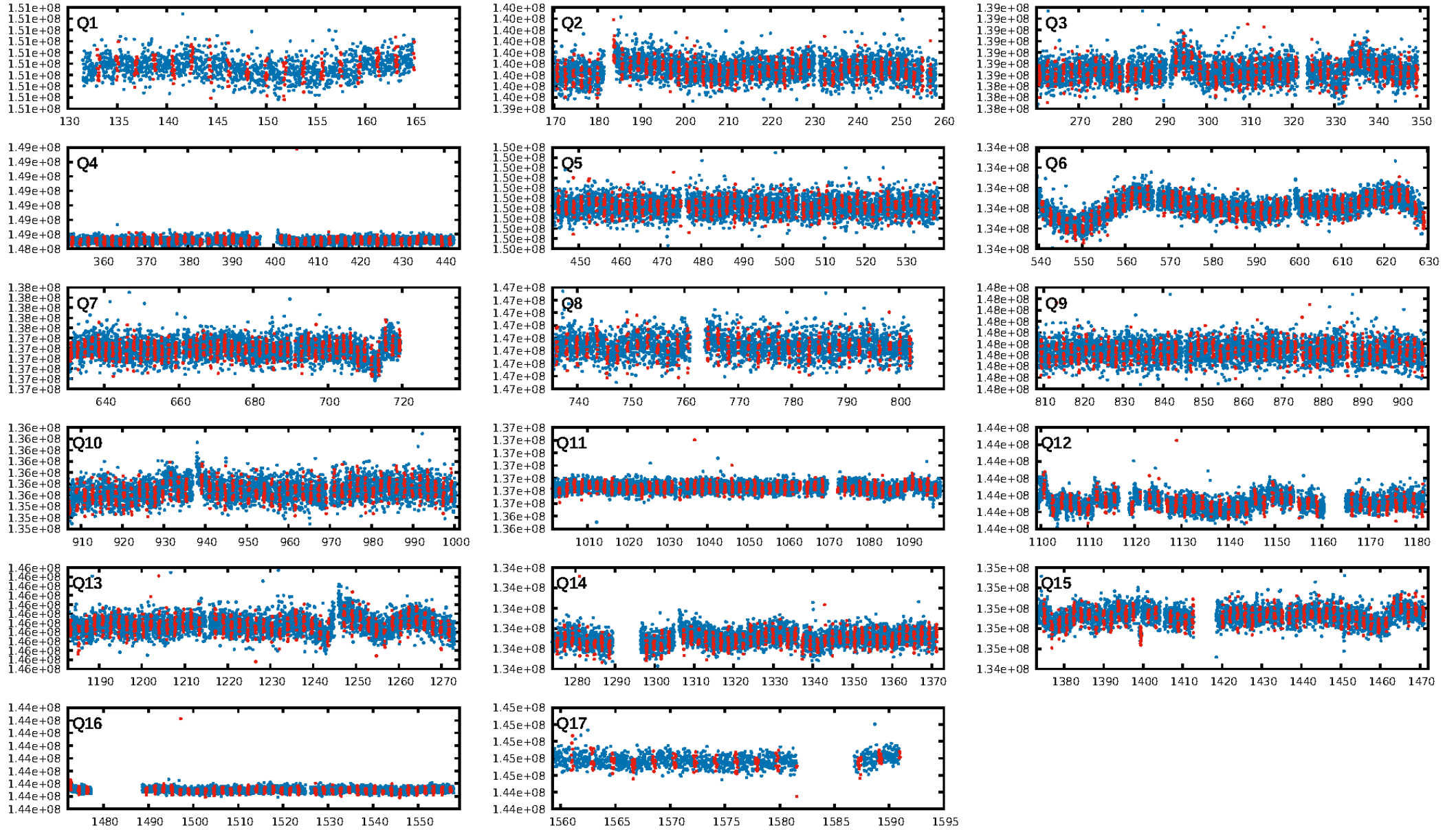
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.18e-40
RollingBand-fgt: 0.99 [674/682]
GhostDiagnostic-chr: 4.478
Centroid-sig: N/A
Centroid-so: 0.736 arcsec [0.63σ]
OotOffset-rm: 1.443 arcsec [2.94σ]
OotOffset-st: 2/4/3/2 [11]
KicOffset-rm: 1.475 arcsec [3.03σ]
KicOffset-st: 2/4/3/2 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 1.00 [17/17]

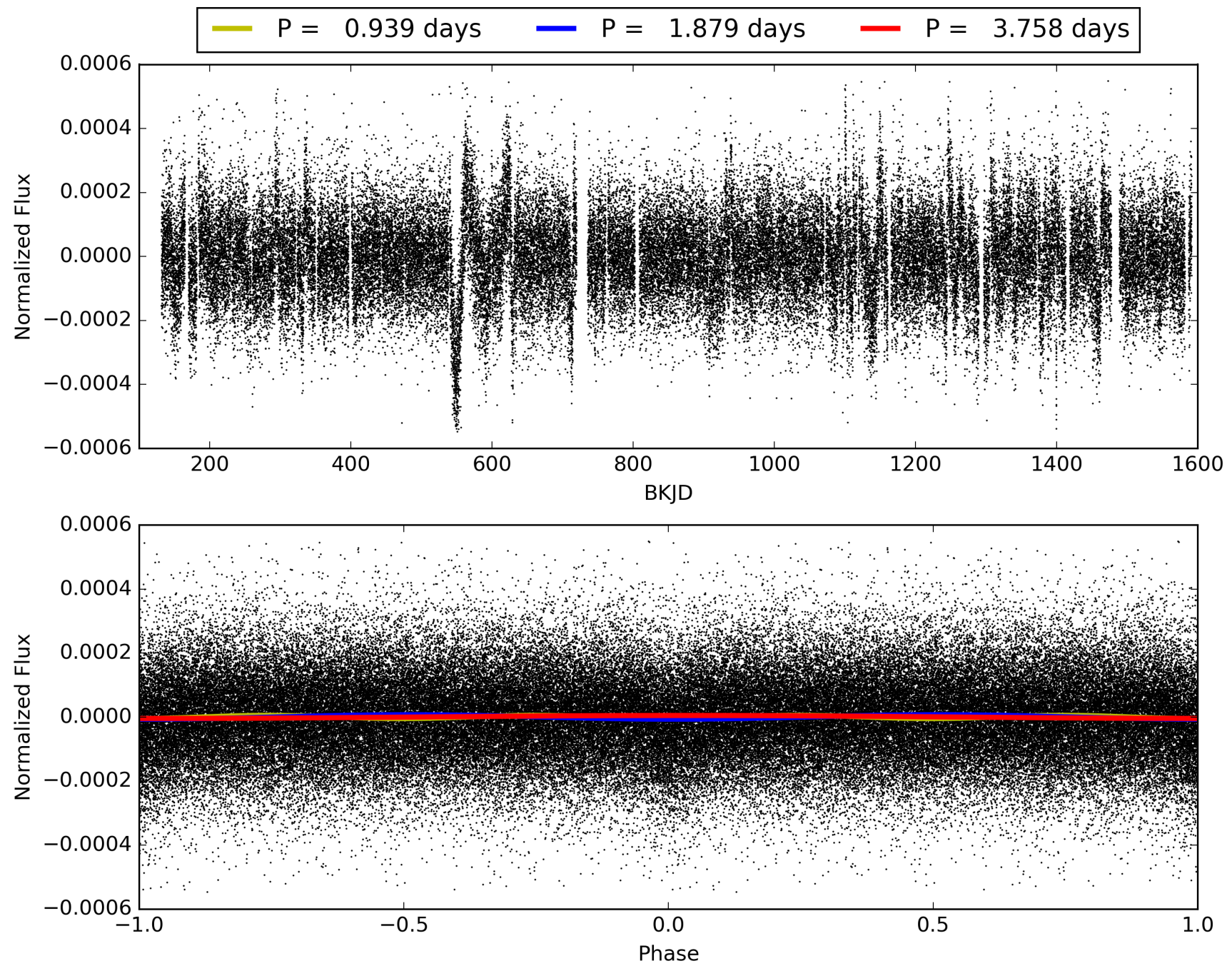
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:38:48 Z

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

TCE 004946049-01, PDC Light Curves

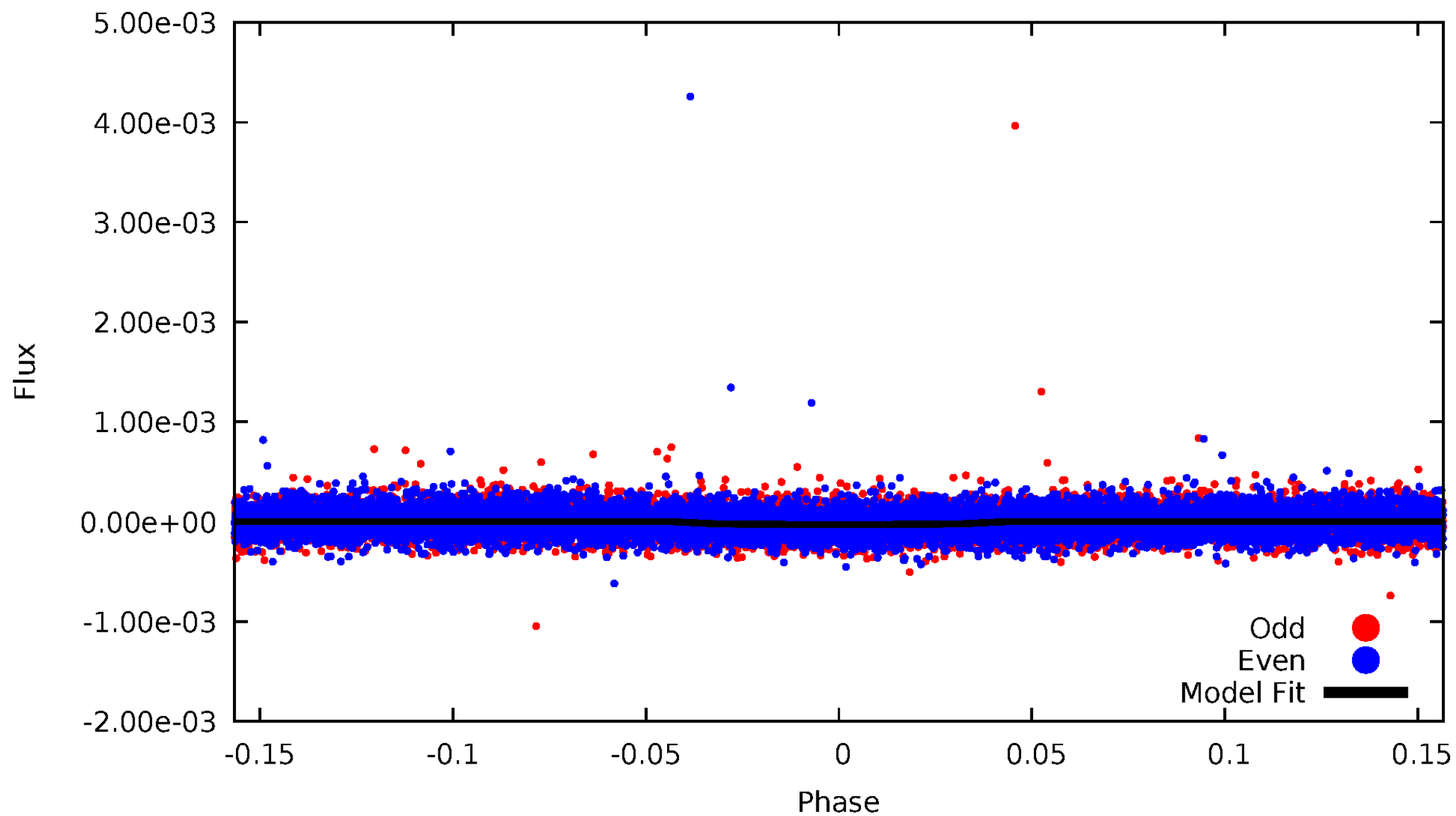


TCE 004946049-01



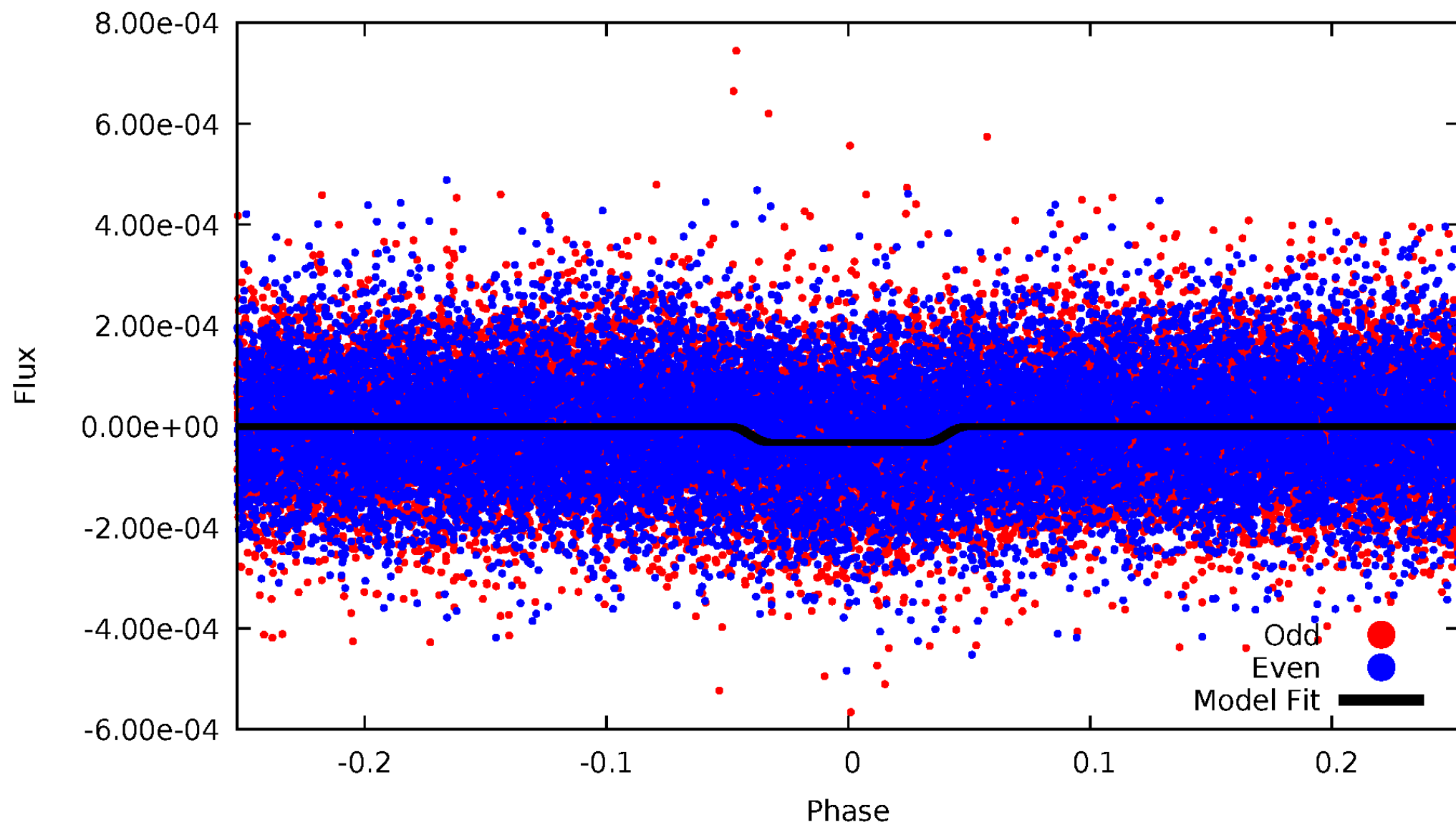
DV Odd/Even

TCE 004946049-01



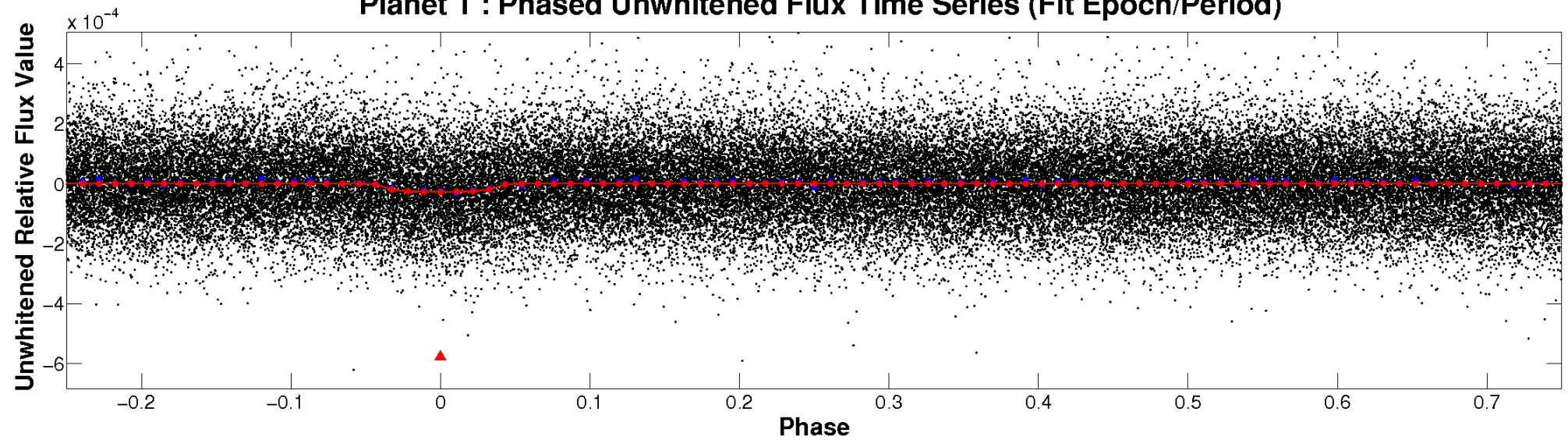
ALT Odd/Even

TCE 004946049-01

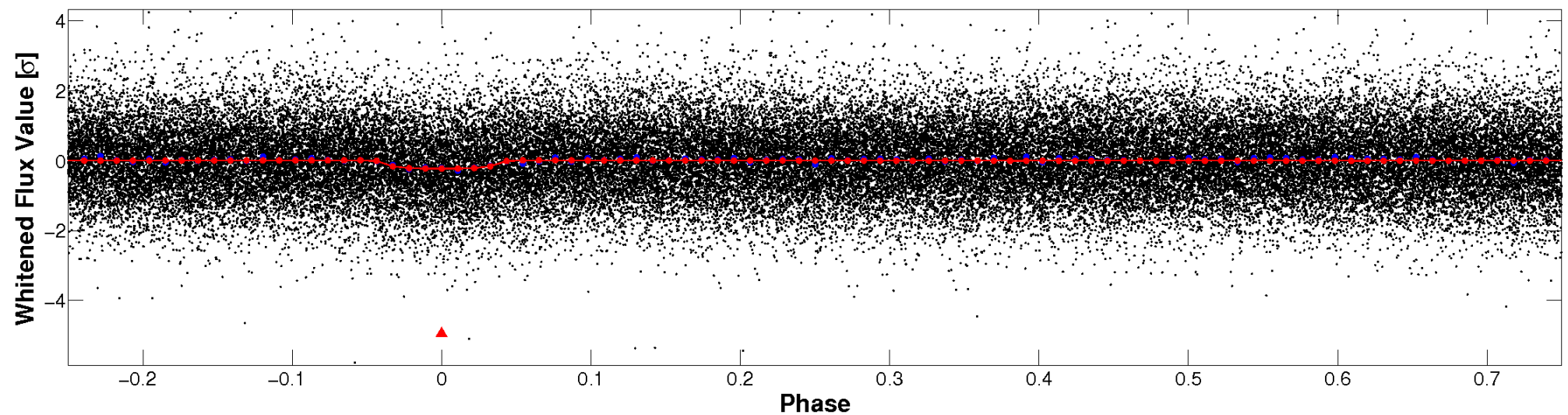


Non-Whitened Vs. Whitened Light Curve

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

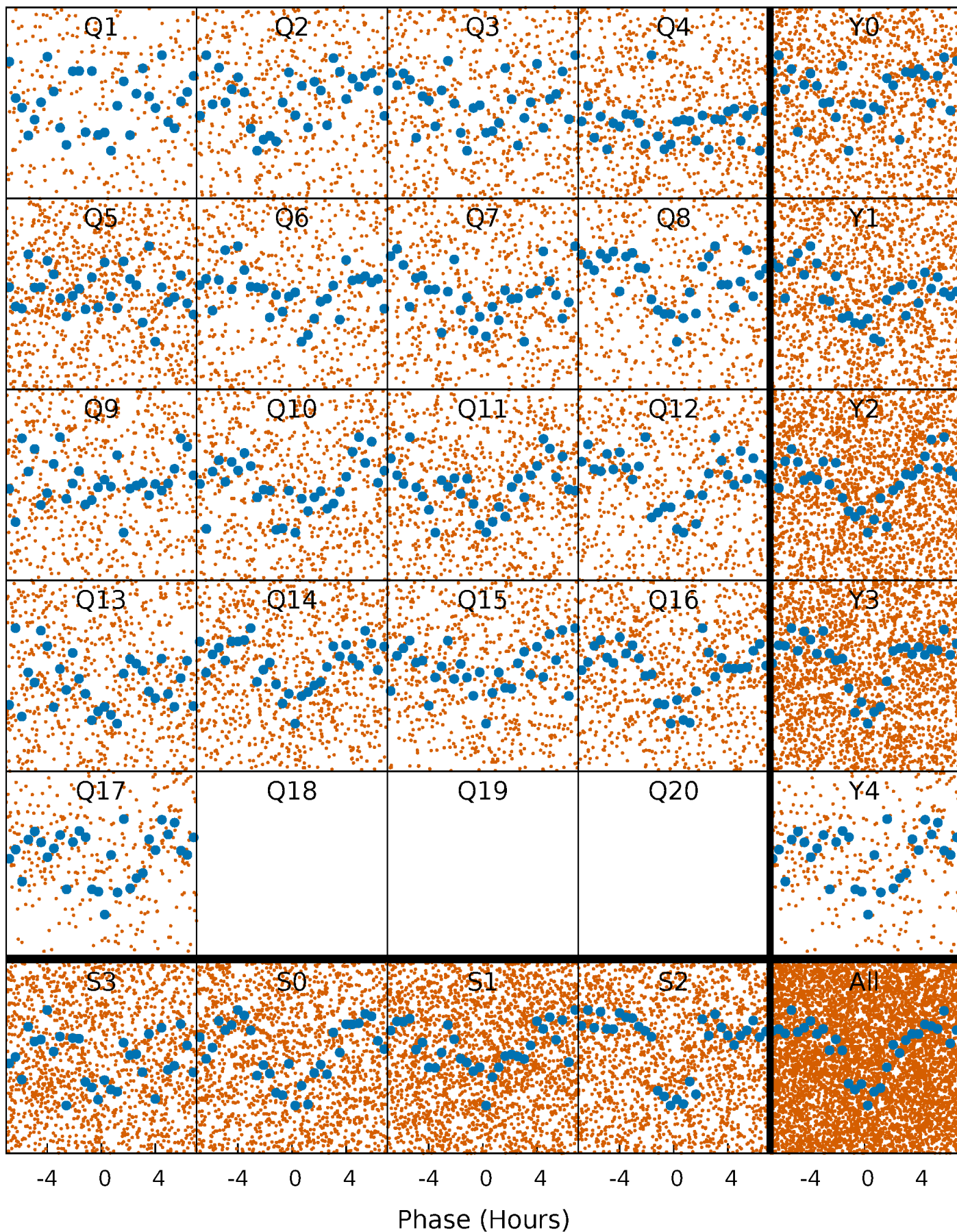


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



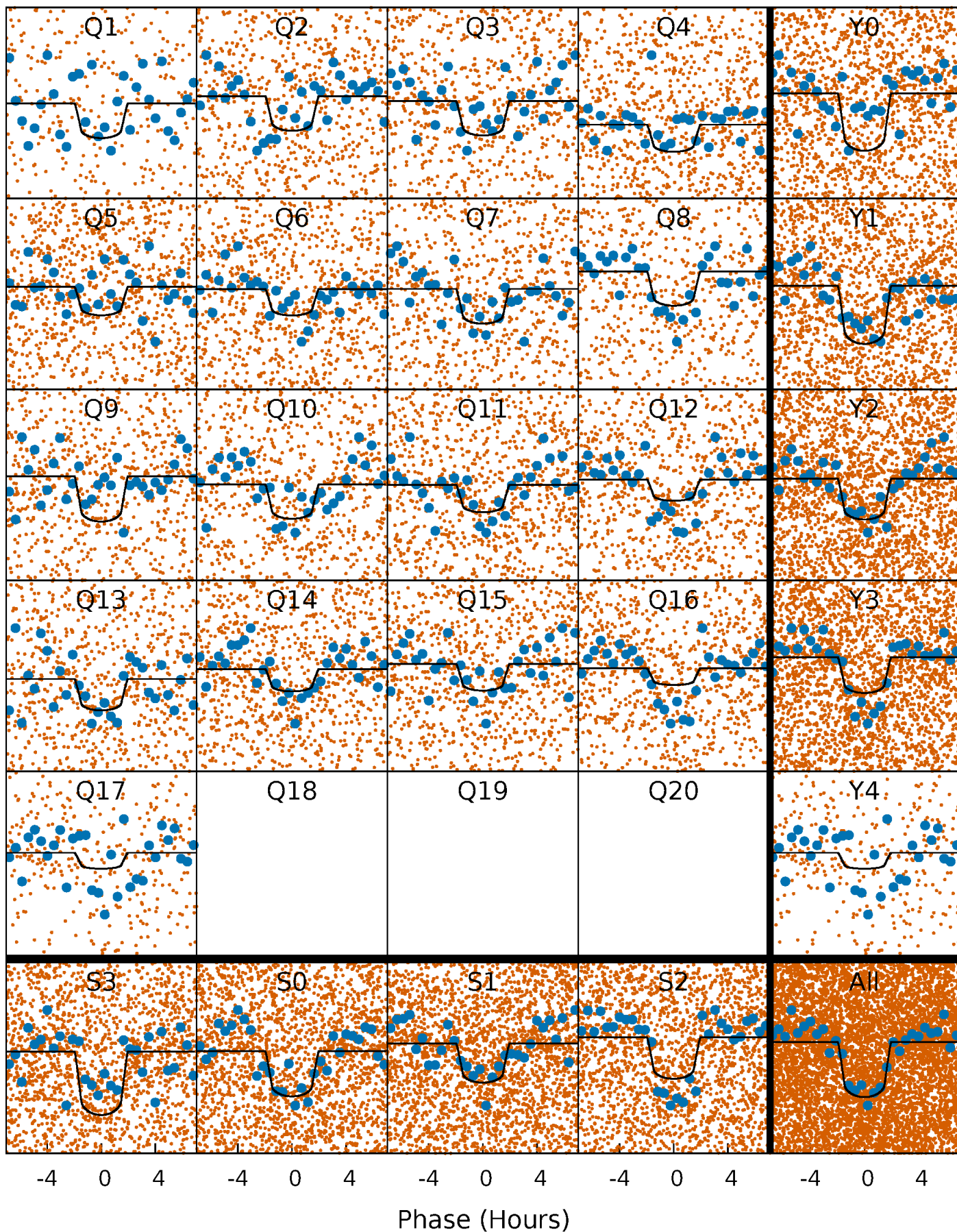
PDC Quarter-Phased Transit Curves

TCE 004946049-01 P= 1.878810 Days $T_0=133.107001$ (BKJD)



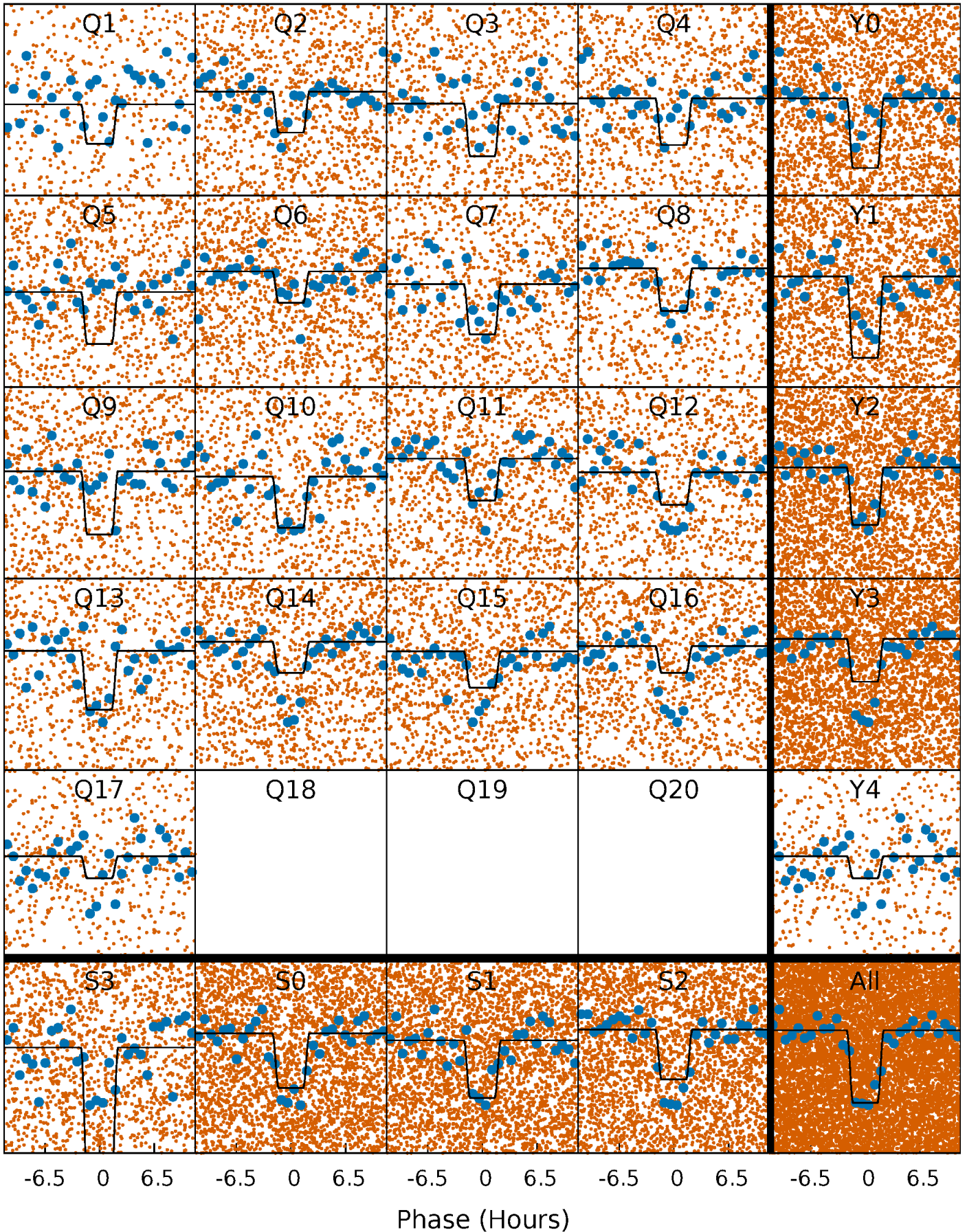
DV Quarter-Phased Transit Curves

TCE 004946049-01 P= 1.878810 Days $T_0=133.107001$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

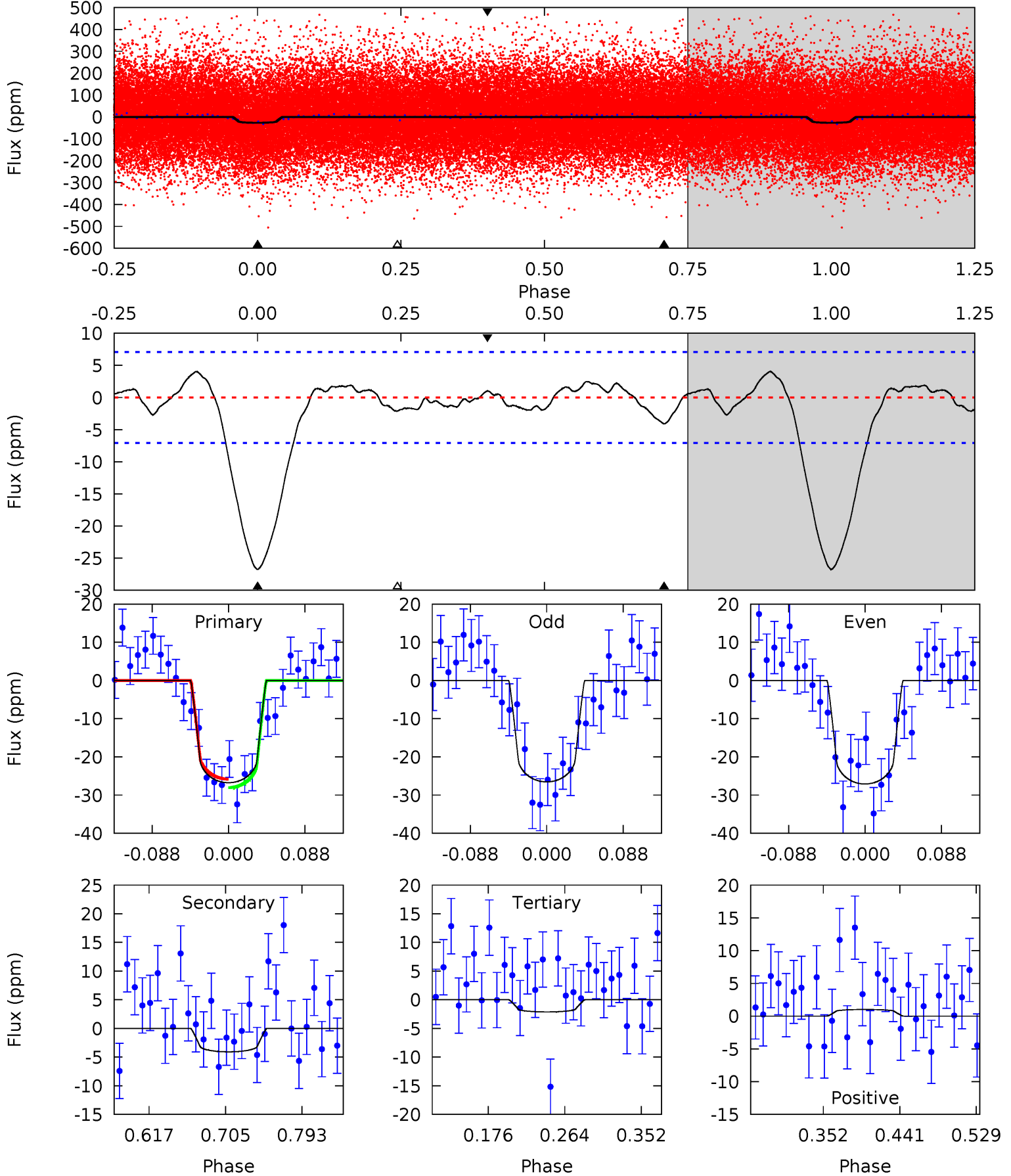
TCE 004946049-01 P= 1.878867 Days $T_0=133.080018$ (BKJD)



DV Model-Shift Uniqueness Test

004946049-01, P = 1.878810 Days, E = 131.228191 Days

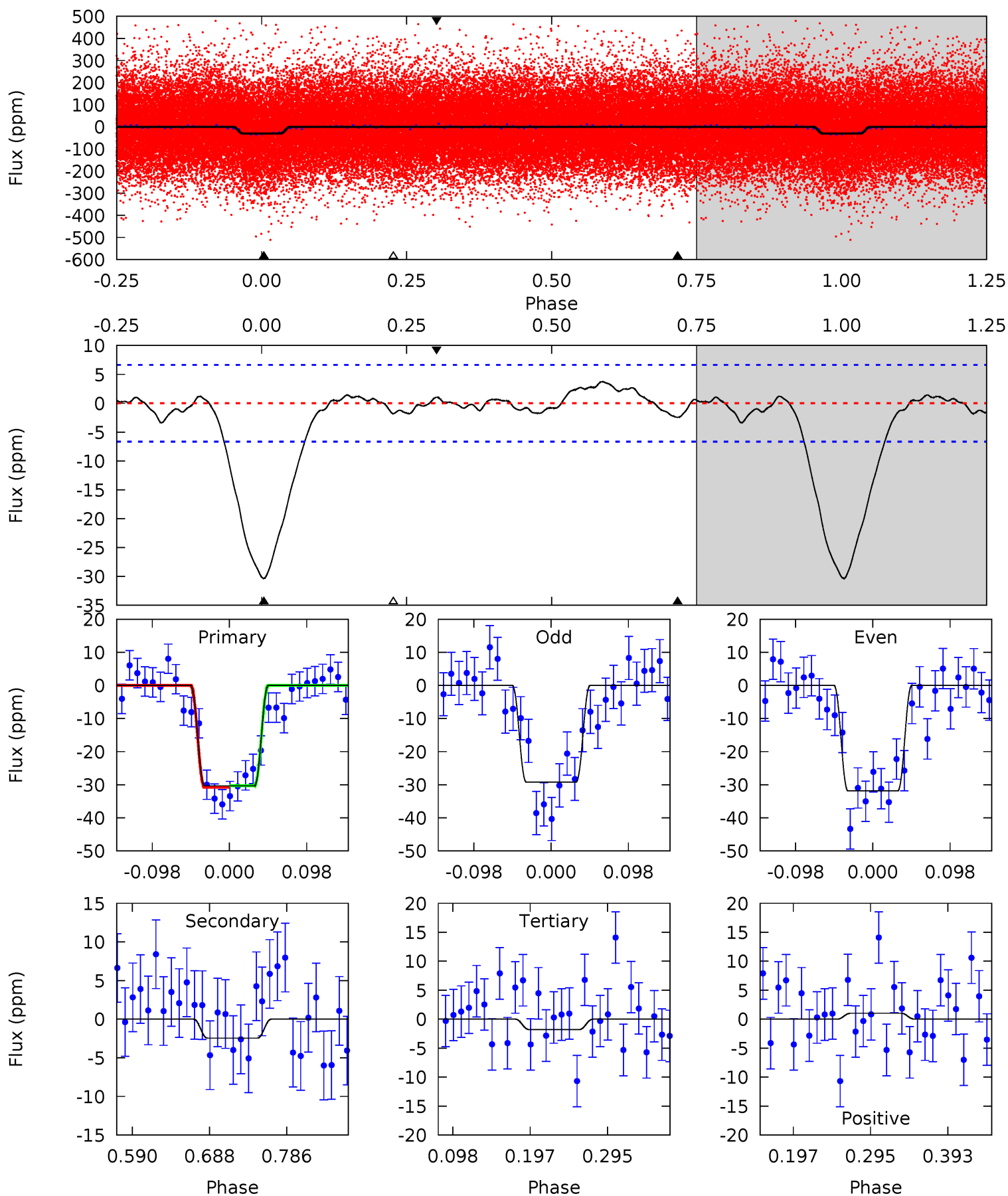
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	2.65	1.38	0.66	4.59	1.71	1.01	16.0	16.7	1.27	1.99	0.18	1.07	0.13	0.71



Alt Model-Shift Uniqueness Test

004946049-01, P = 1.878867 Days, E = 131.201151 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	1.68	1.24	0.72	4.57	1.65	1.02	19.6	20.1	0.45	0.97	0.92	1.11	0.11	0.17



Stellar Parameters For KIC 004946049

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8046^{+223}_{-335}	$3.704^{+0.420}_{-0.112}$	$-0.060^{+0.200}_{-0.350}$	$3.339^{+0.824}_{-1.648}$	$2.060^{+0.336}_{-0.504}$	$0.078^{+0.313}_{-0.033}$
	+3%/-4%	+11%/-3%	+333%/-583%	+25%/-49%	+16%/-24%	+402%/-42%
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 004946049-01 / KOI 4658.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4 ± 2	$1.86^{+0.74}_{-0.65}$	4517^{+326}_{-550}	4379^{+1019}_{-1064}	$0.890^{+1.319}_{-0.488}$
Alt.	-2 ± 1	$1.91^{+0.69}_{-0.64}$	4509^{+354}_{-552}	3621^{+1034}_{-7149}	$0.493^{+0.717}_{-0.334}$

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

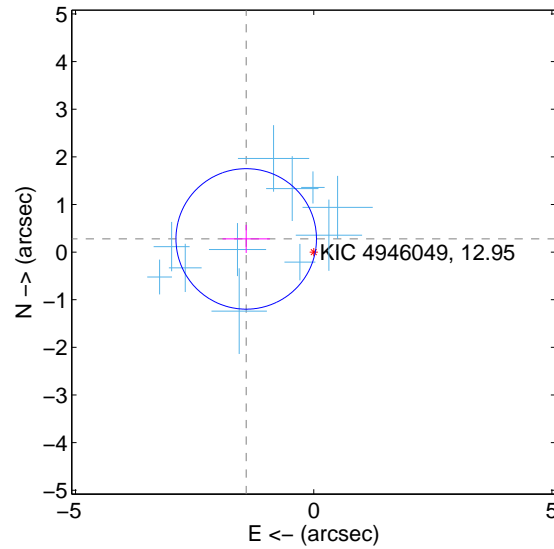
Supplemental centroid analysis for 004946049-01. Kepler magnitude: 12.95. Transit SNR 13.85

There are 11 quarters with good PRF difference image offsets

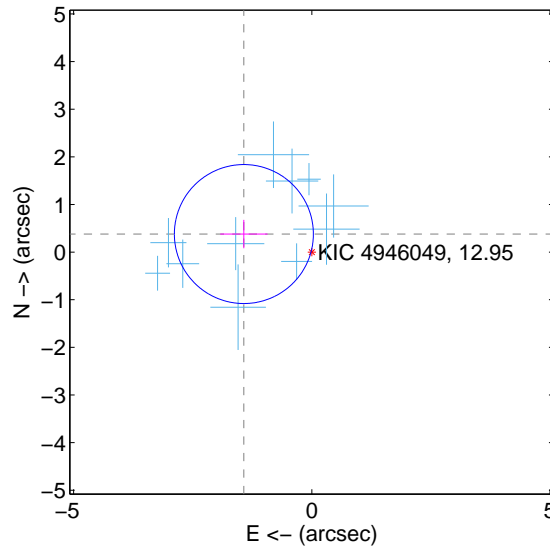
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.443 ± 0.491	2.94	1.417 ± 0.497	0.277 ± 0.295
PRF-fit source offset from KIC position	1.475 ± 0.486	3.03	1.426 ± 0.497	0.379 ± 0.299
photometric centroid source offset	0.74 ± 1.17	0.63	0.66 ± 1.20	0.33 ± 1.00

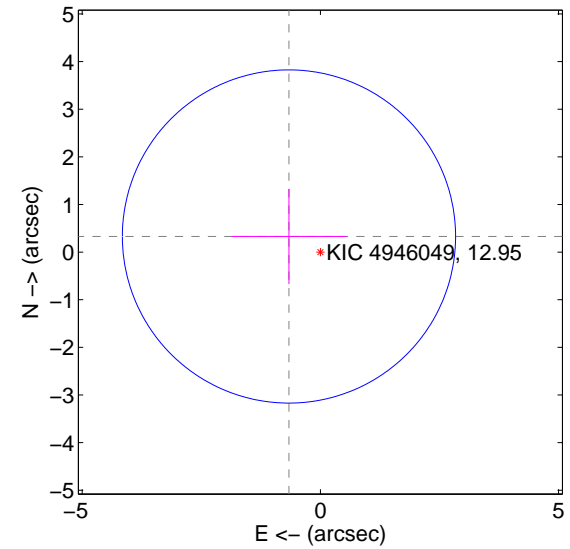
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

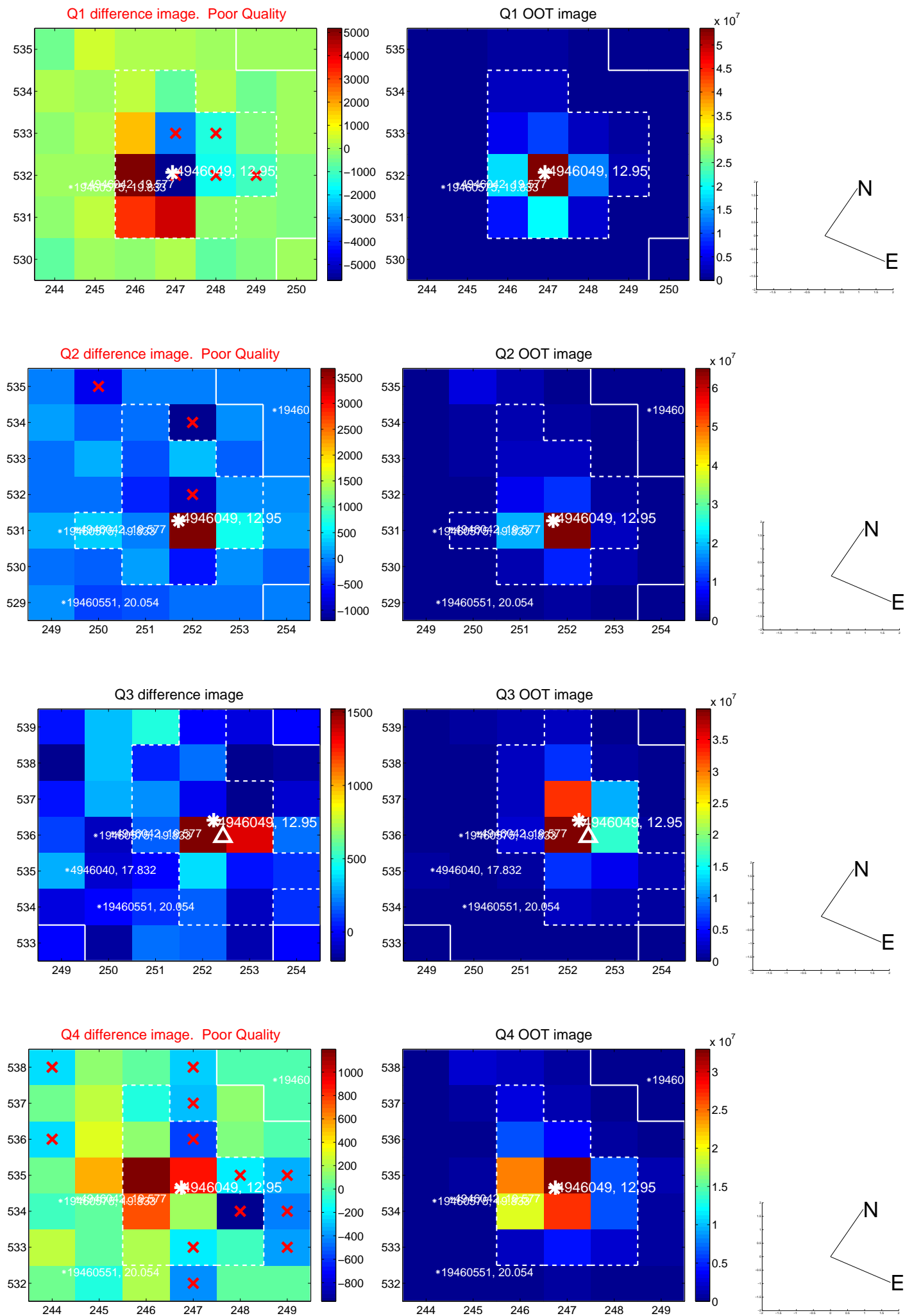


offset from photometric centroids

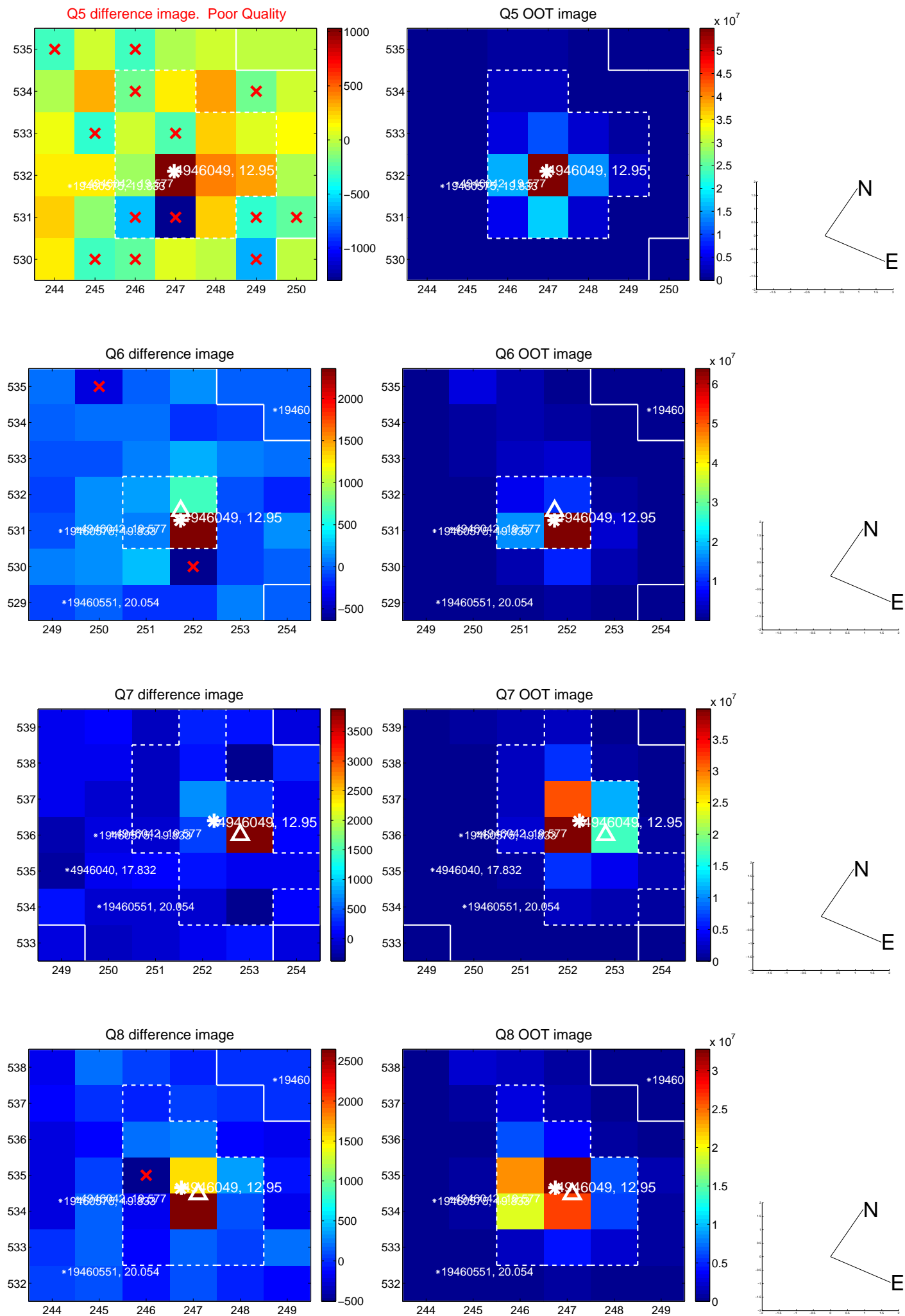


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

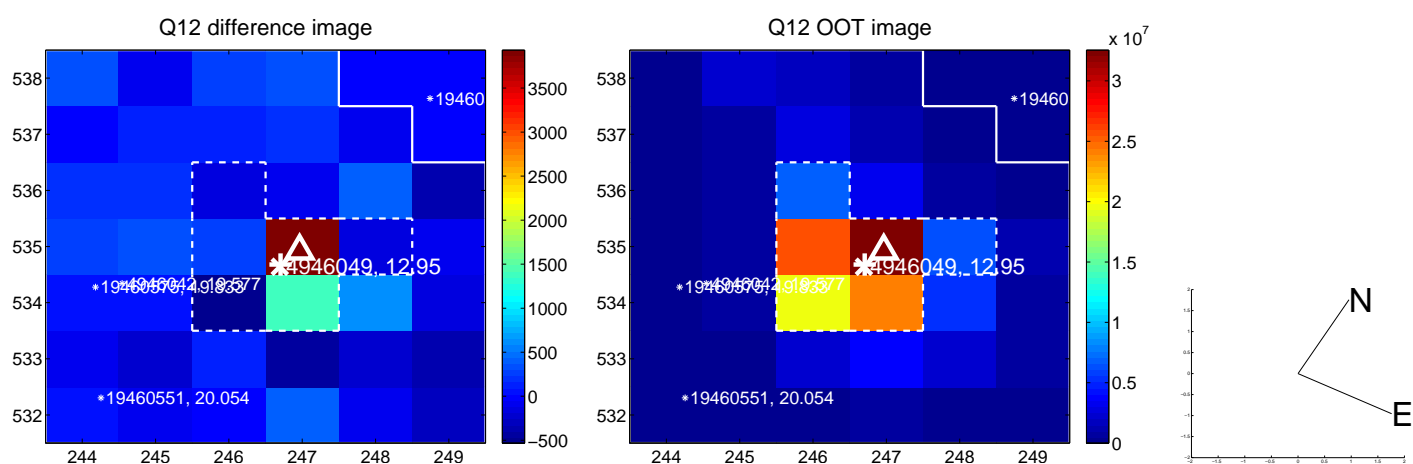
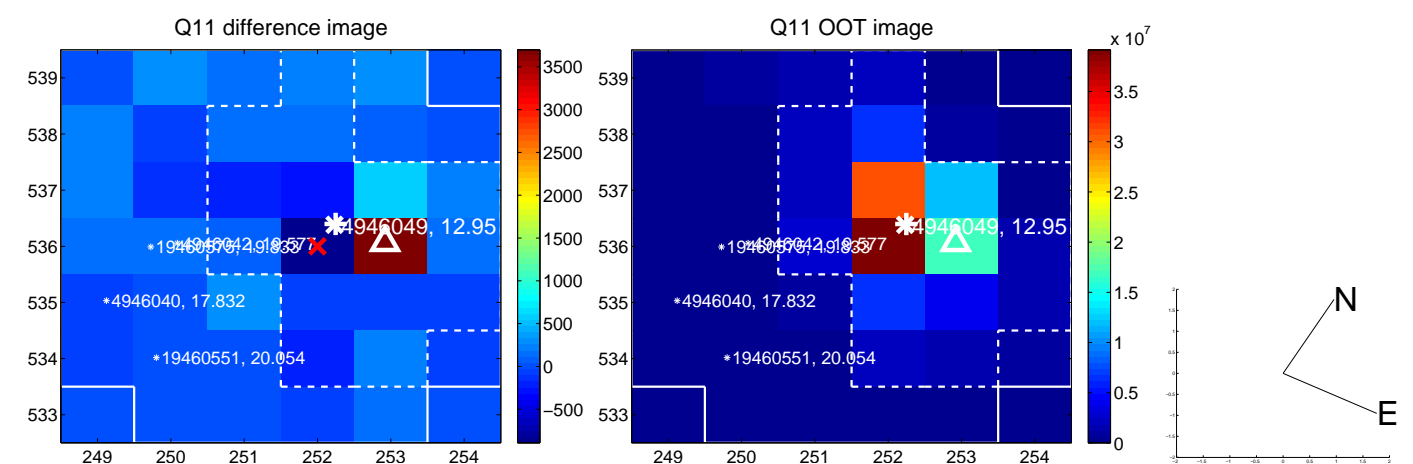
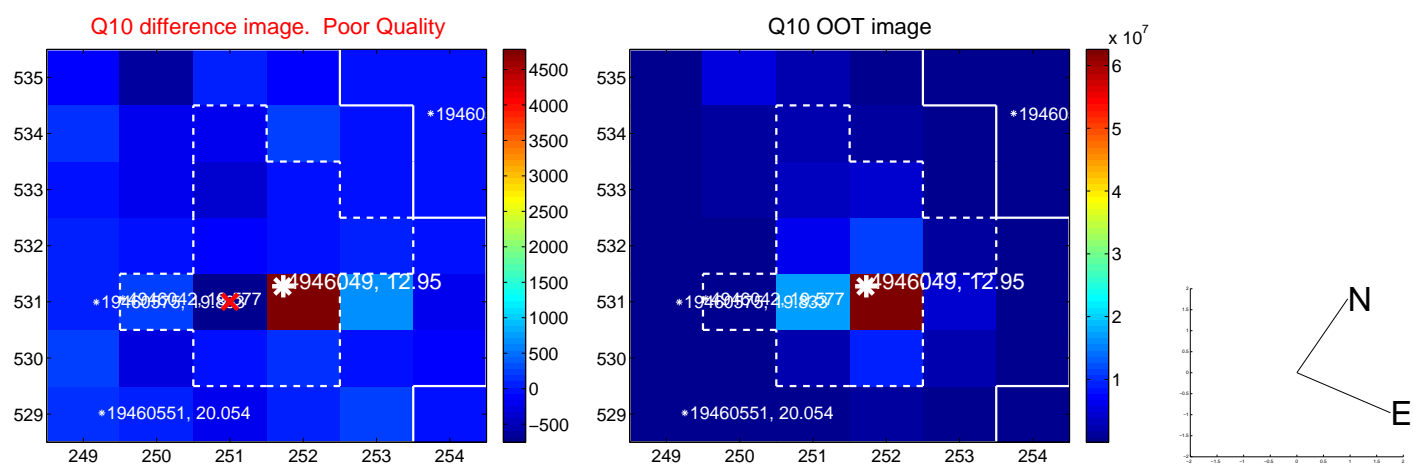
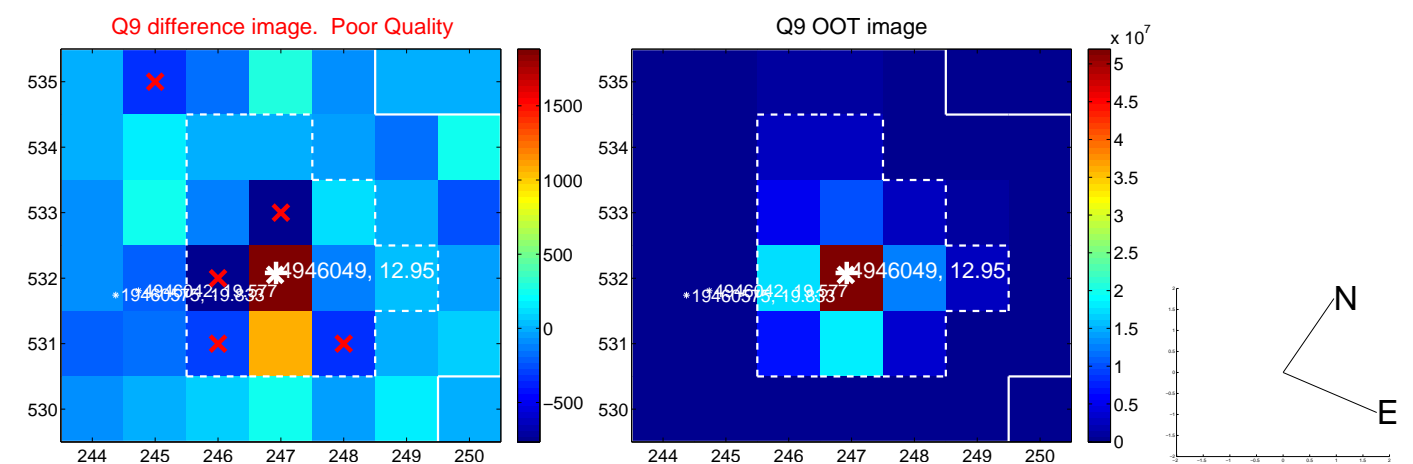
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



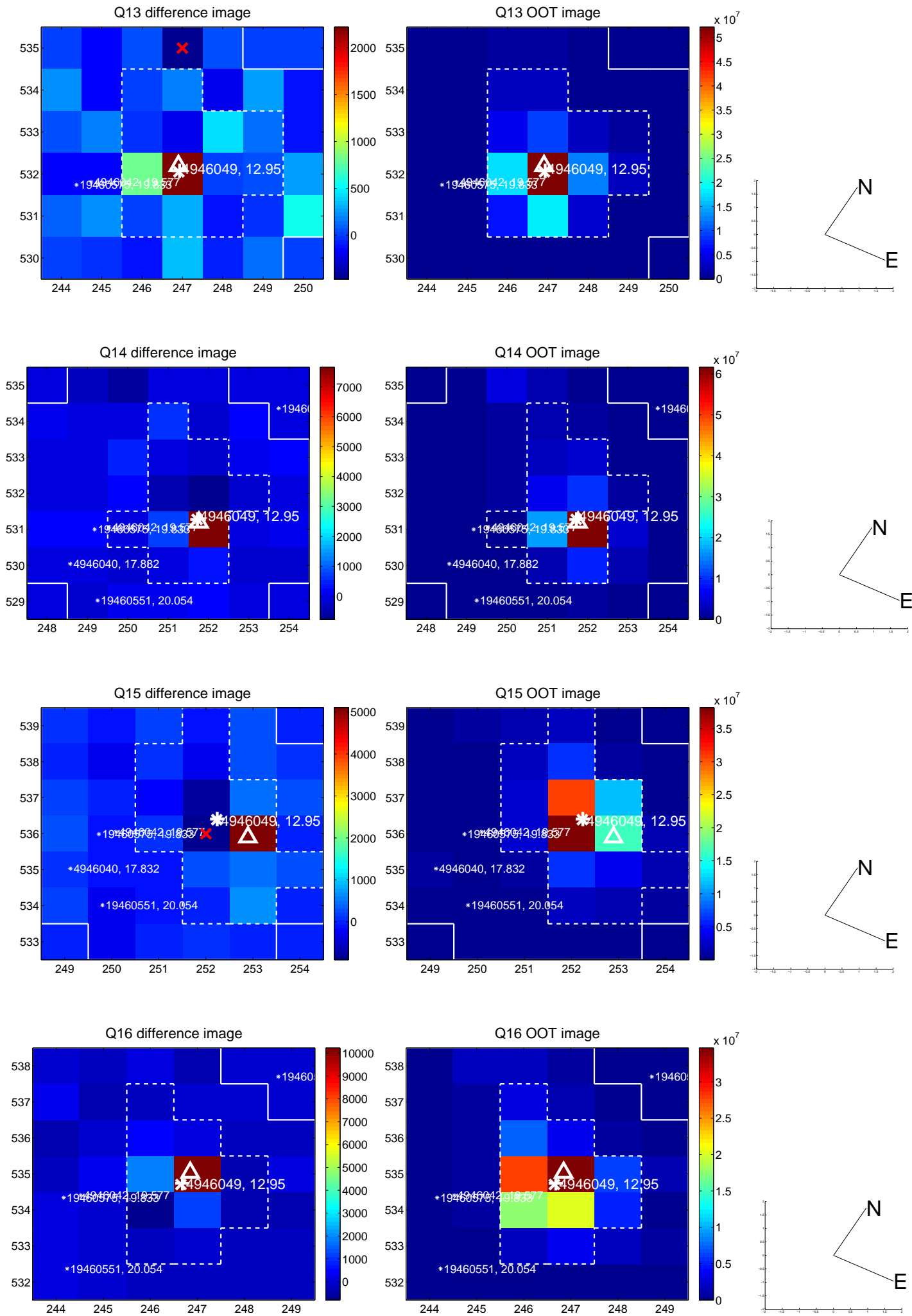
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



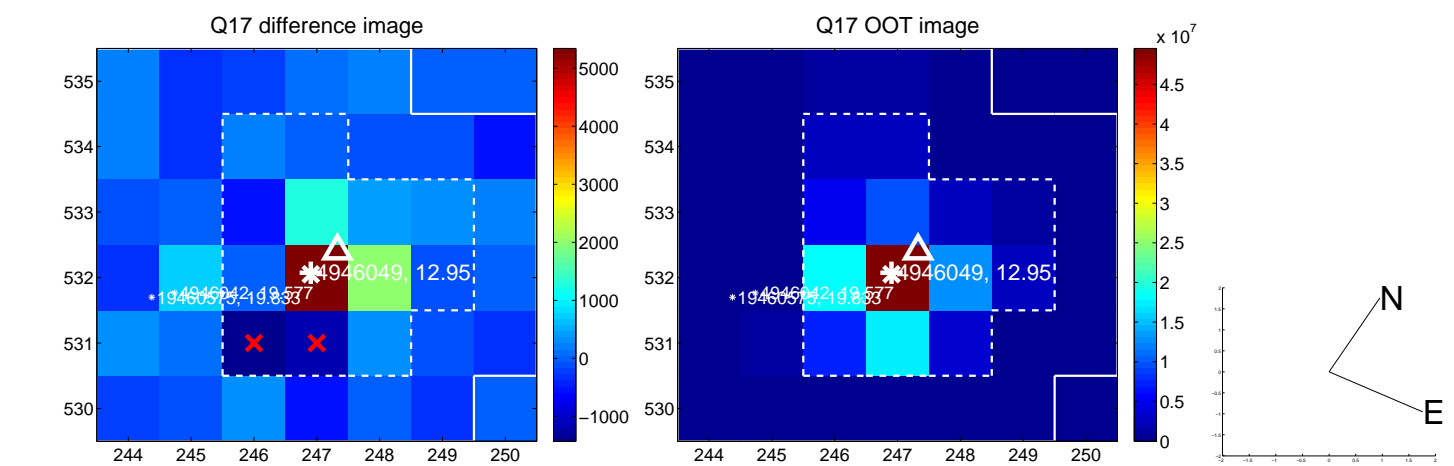
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



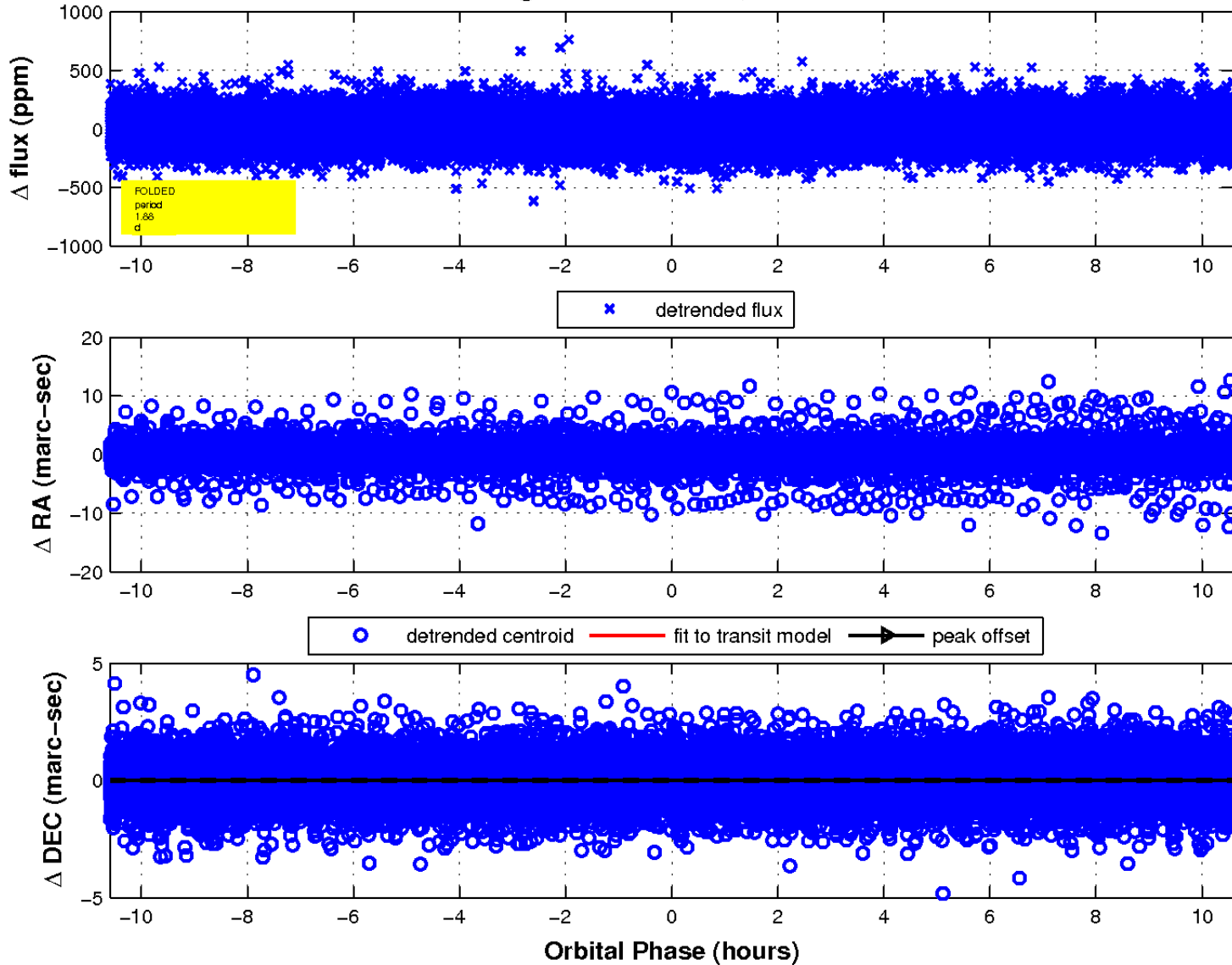
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

