

KIC 009535080

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})
009535080-01	OBS	1509.01	49.645676	153.055965	843.7	23.051	99.4	108.1	1.49	6273	8.28	41.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009535080-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—DEEP_V_SHAPED

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 009535080-01

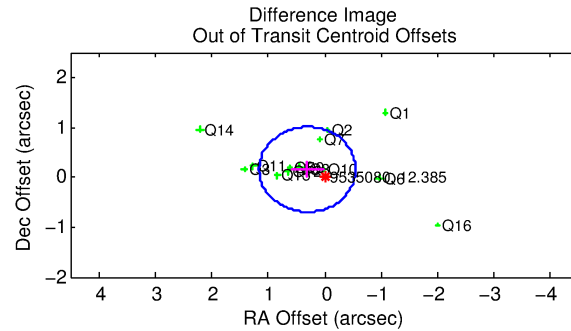
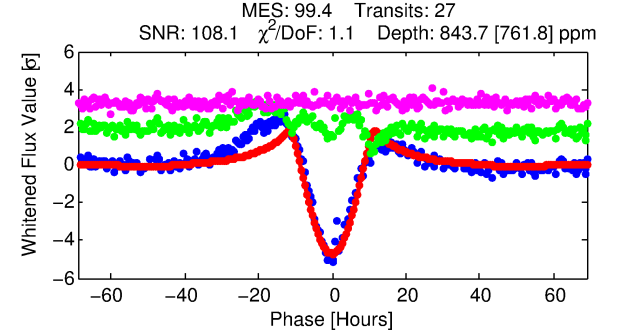
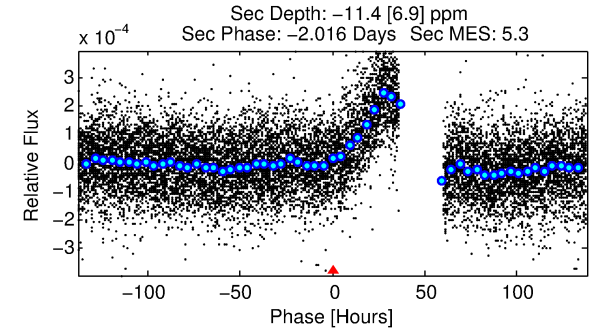
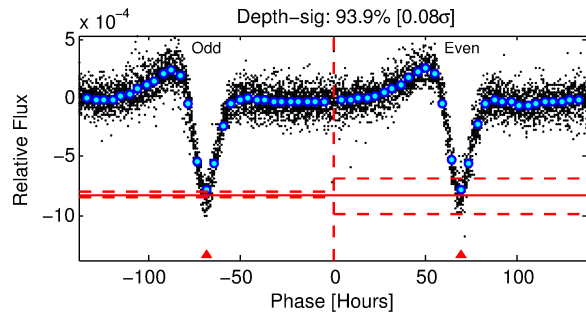
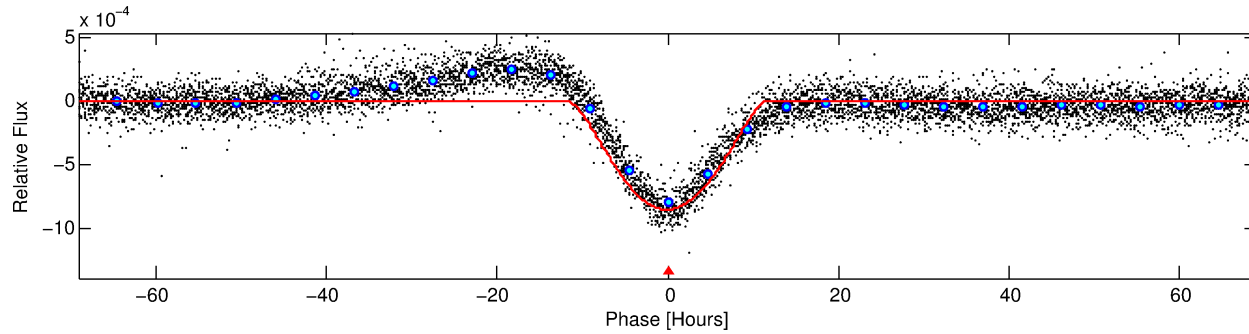
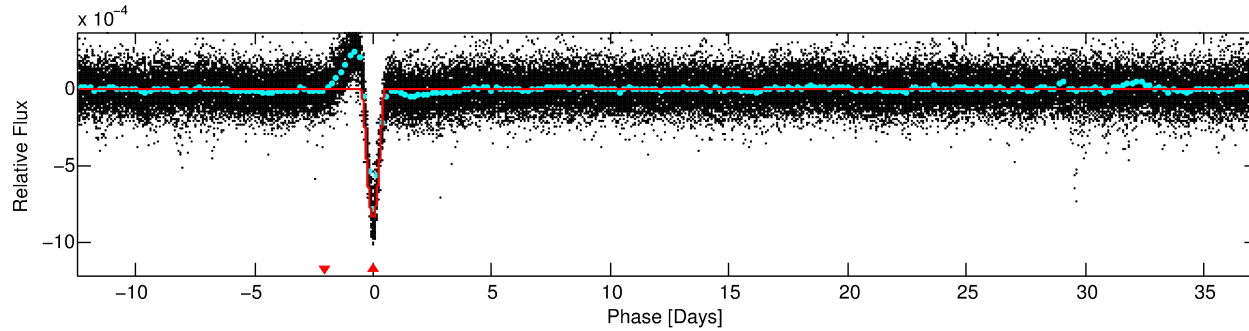
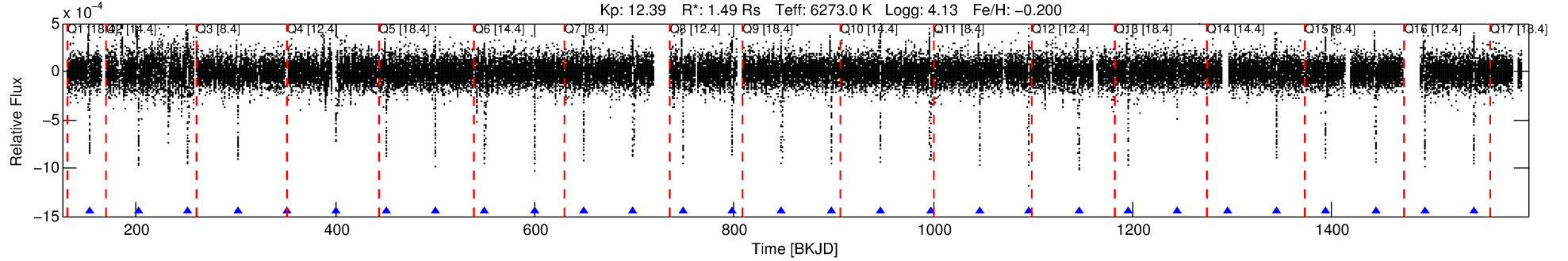
No Significant Match Found

DV One-Page Summary

KIC: 9535080 Candidate: 1 of 1 Period: 49.646 d

KOI: K01509 Corr: No Ephemeris Match

Kp: 12.39 R*: 1.49 Rs Teff: 6273.0 K Logg: 4.13 Fe/H: -0.200



DV Fit Results:

Period = 49.64568 [0.00027] d
Epoch = 153.0560 [0.0045] BKJD
Rp/R* = 0.0508 [0.0123]
a/R* = 5.41 [0.30]
b = 1.00 [0.05]
Seff = 41.65 [15.47]
Teff = 648 [60] K
Rp = 8.28 [2.89] Re
a = 0.2725 [0.0625] AU
Ag = N/A
Teffp = N/A

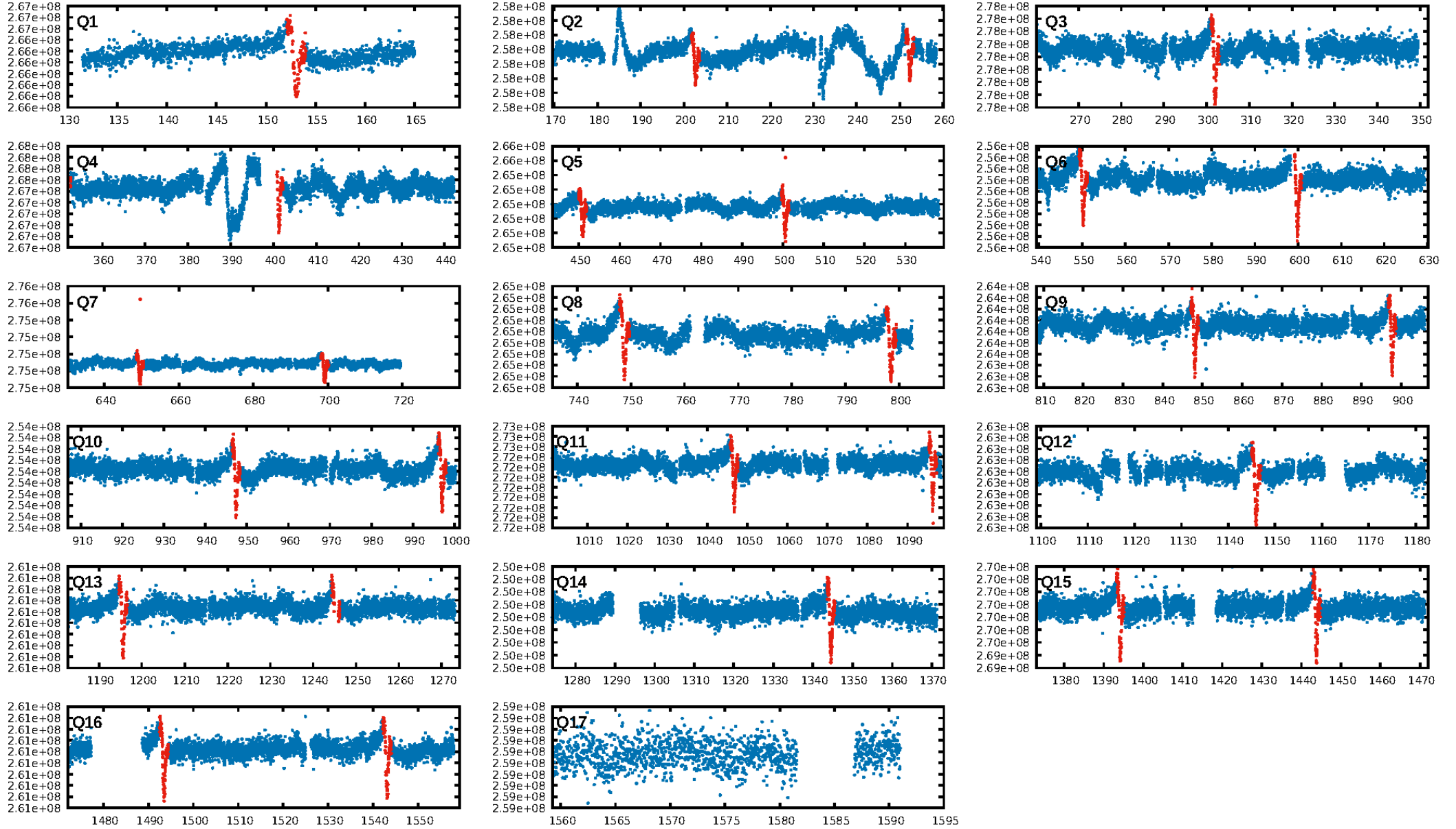
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [26/26]
GhostDiagnostic-chr: 5.69
Centroid-sig: 63.6%
Centroid-so: 0.049 arcsec [0.69σ]
OotOffset-rm: 0.344 arcsec [1.21σ]
KicOffset-rm: 0.362 arcsec [1.32σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

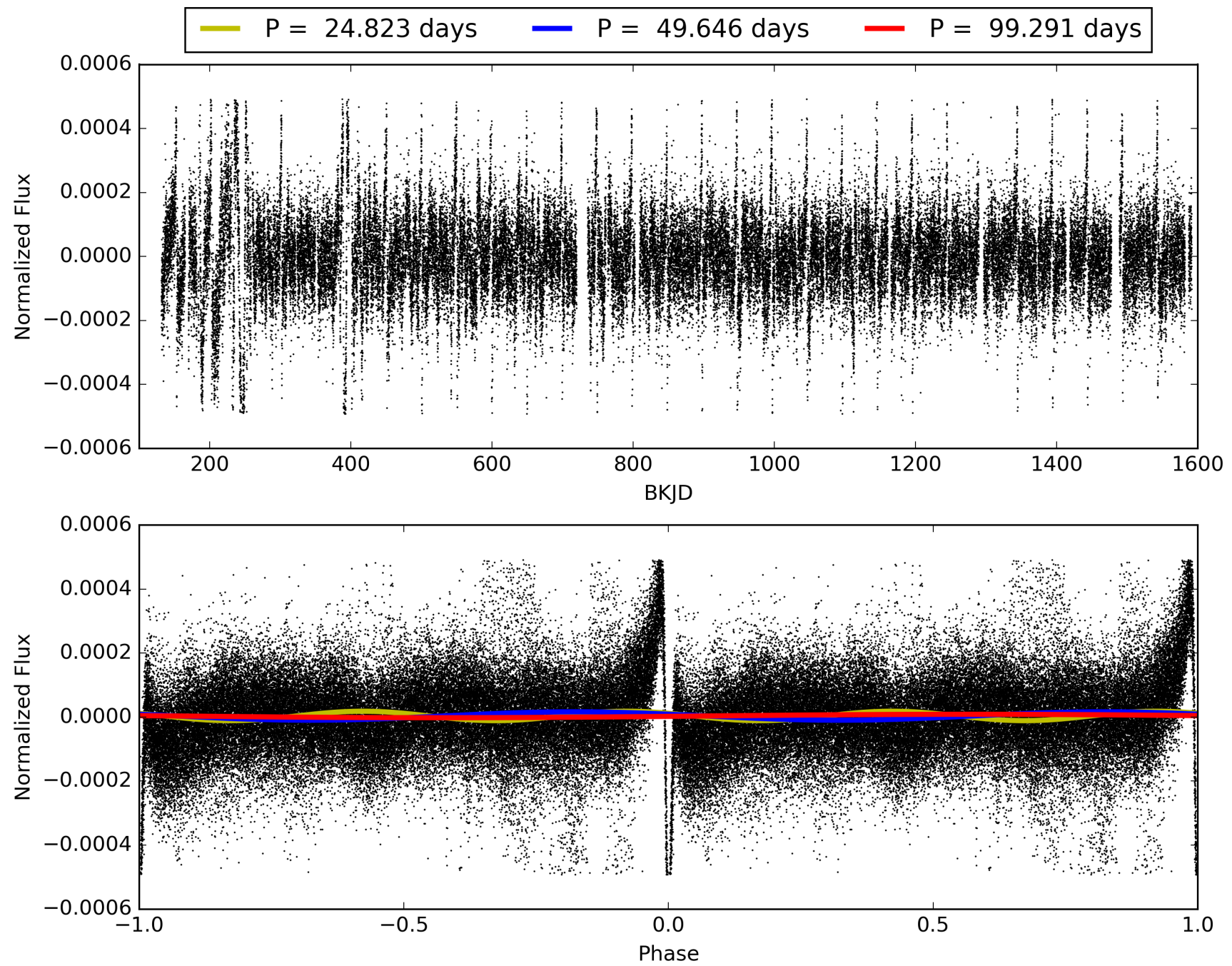
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:13:24 Z

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

TCE 009535080-01, PDC Light Curves

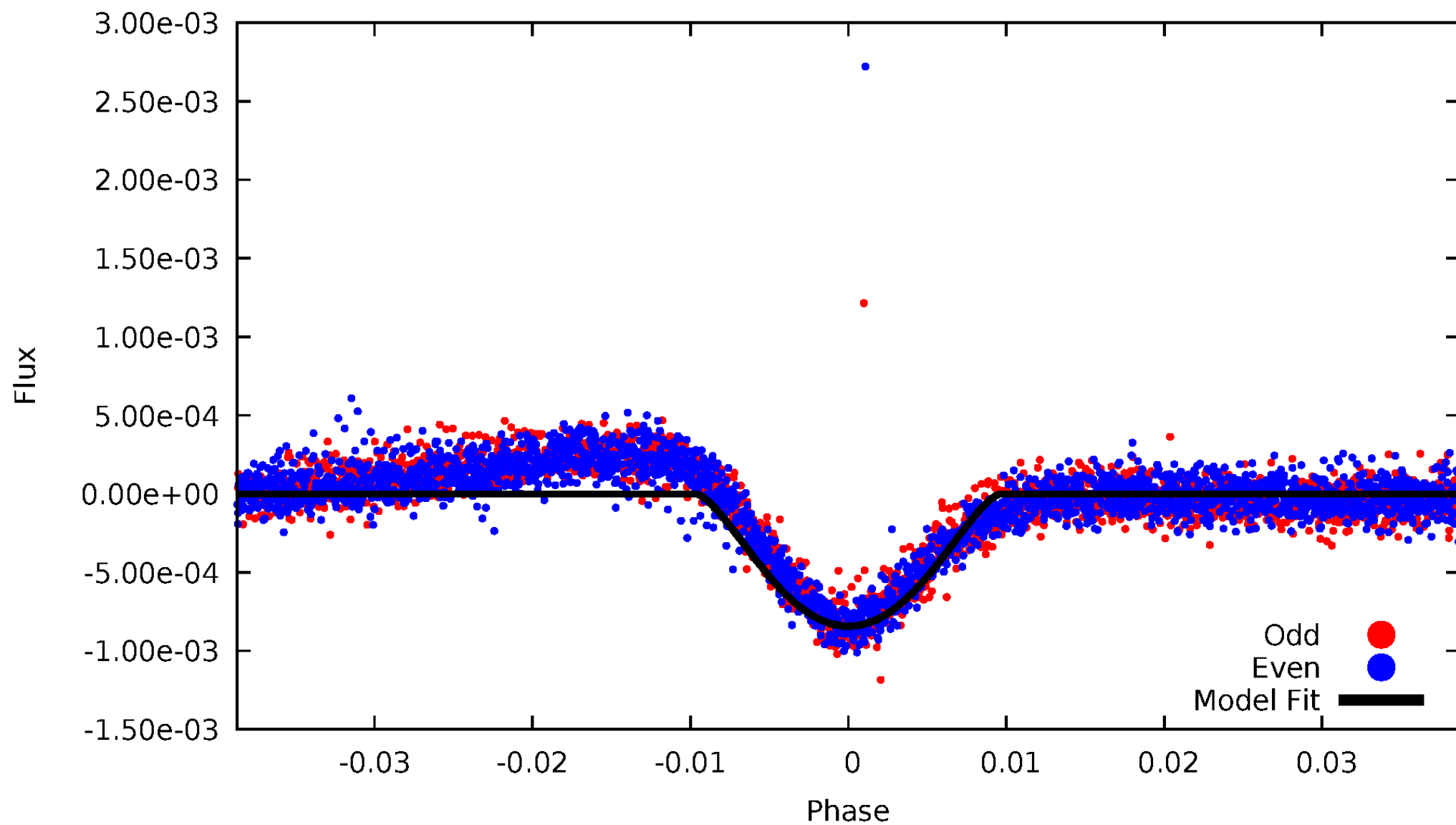


TCE 009535080-01



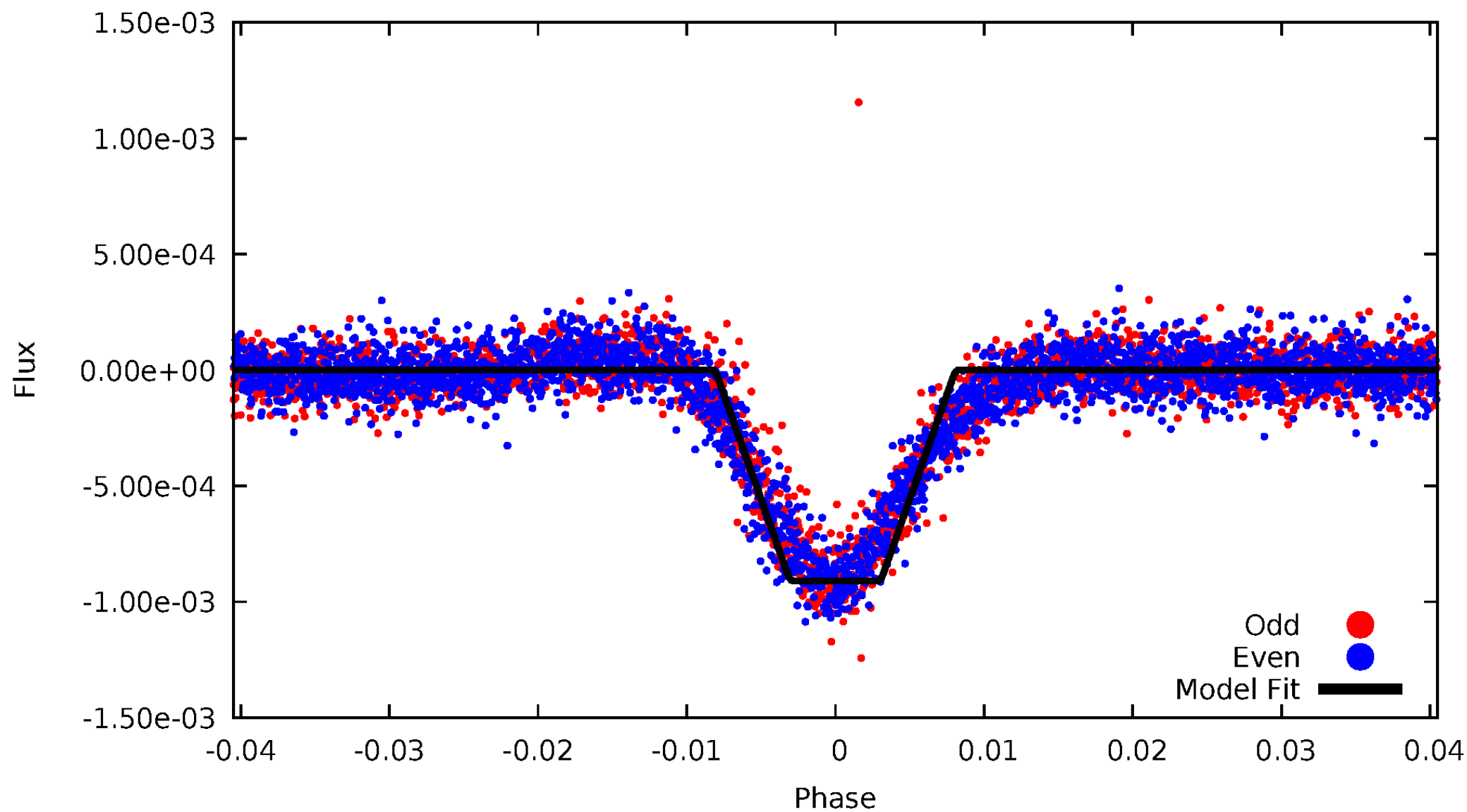
DV Odd/Even

TCE 009535080-01



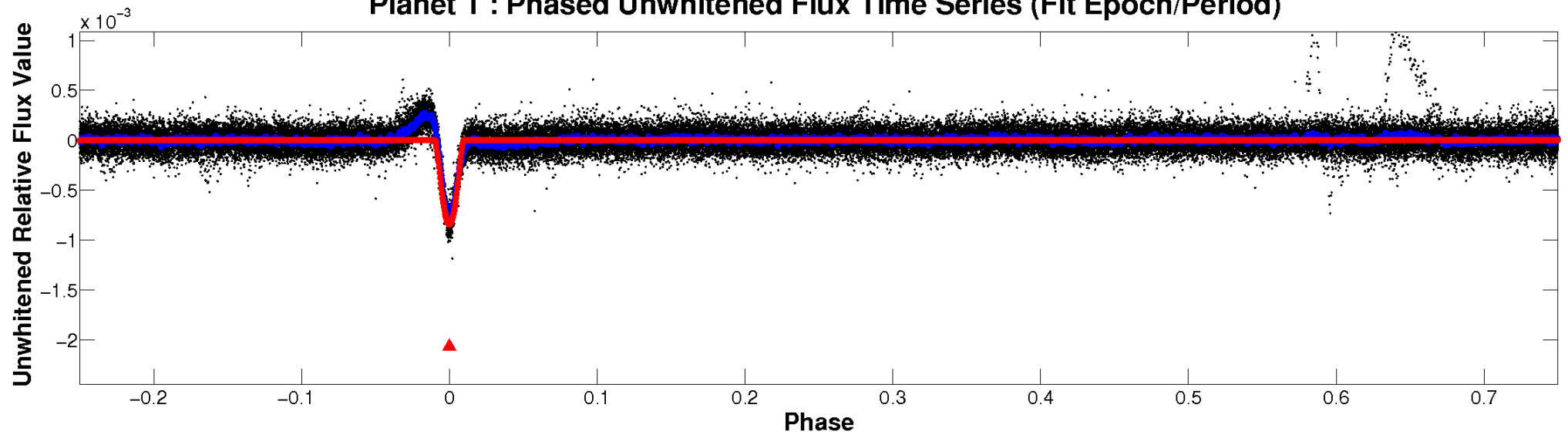
ALT Odd/Even

TCE 009535080-01

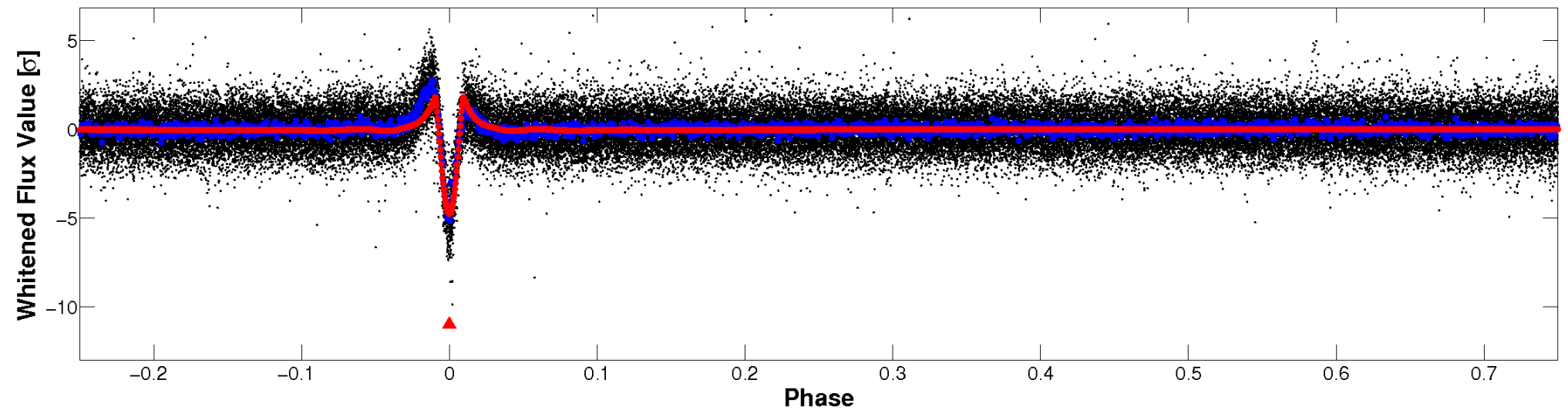


Non-Whitened Vs. Whitened Light Curve

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

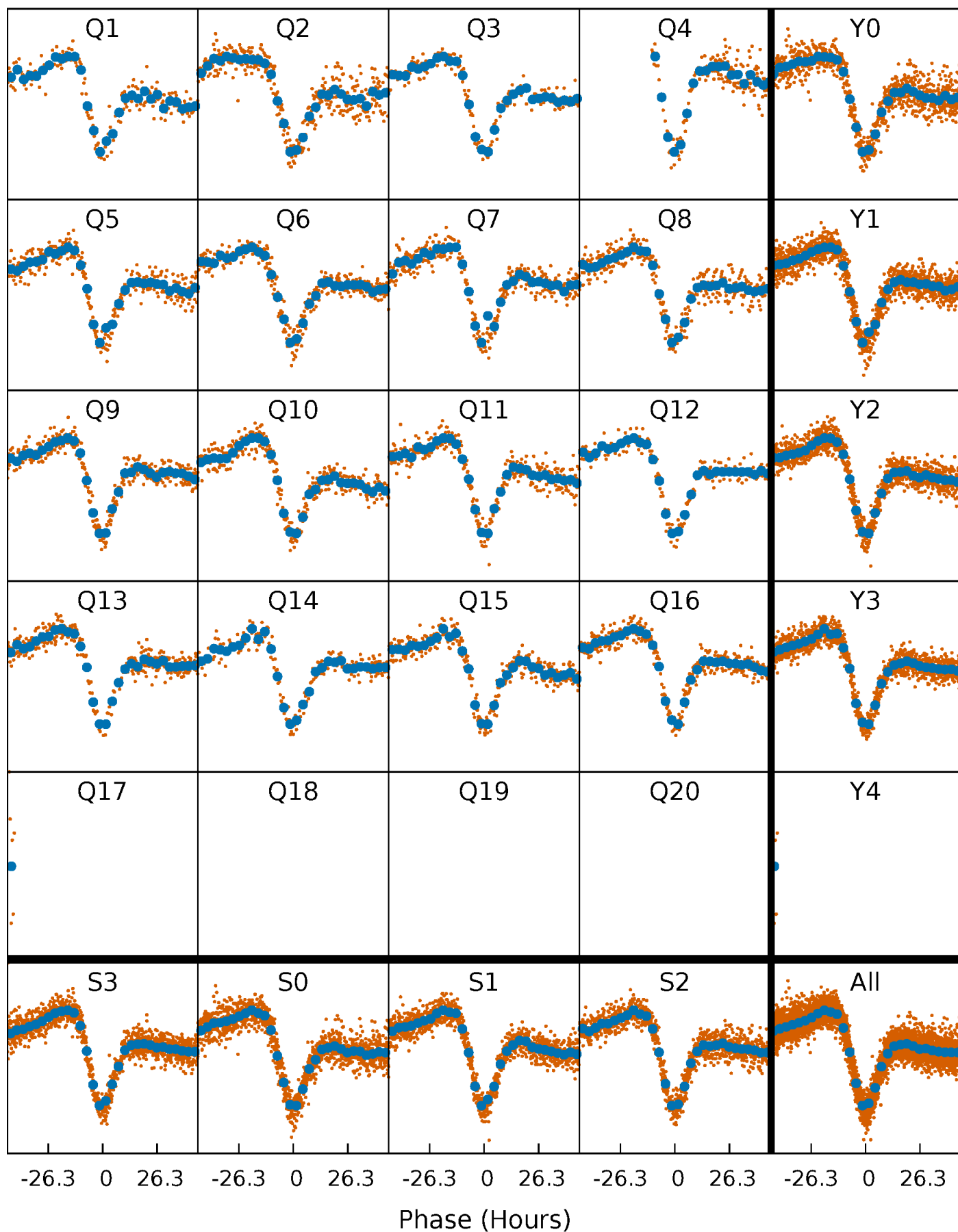


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



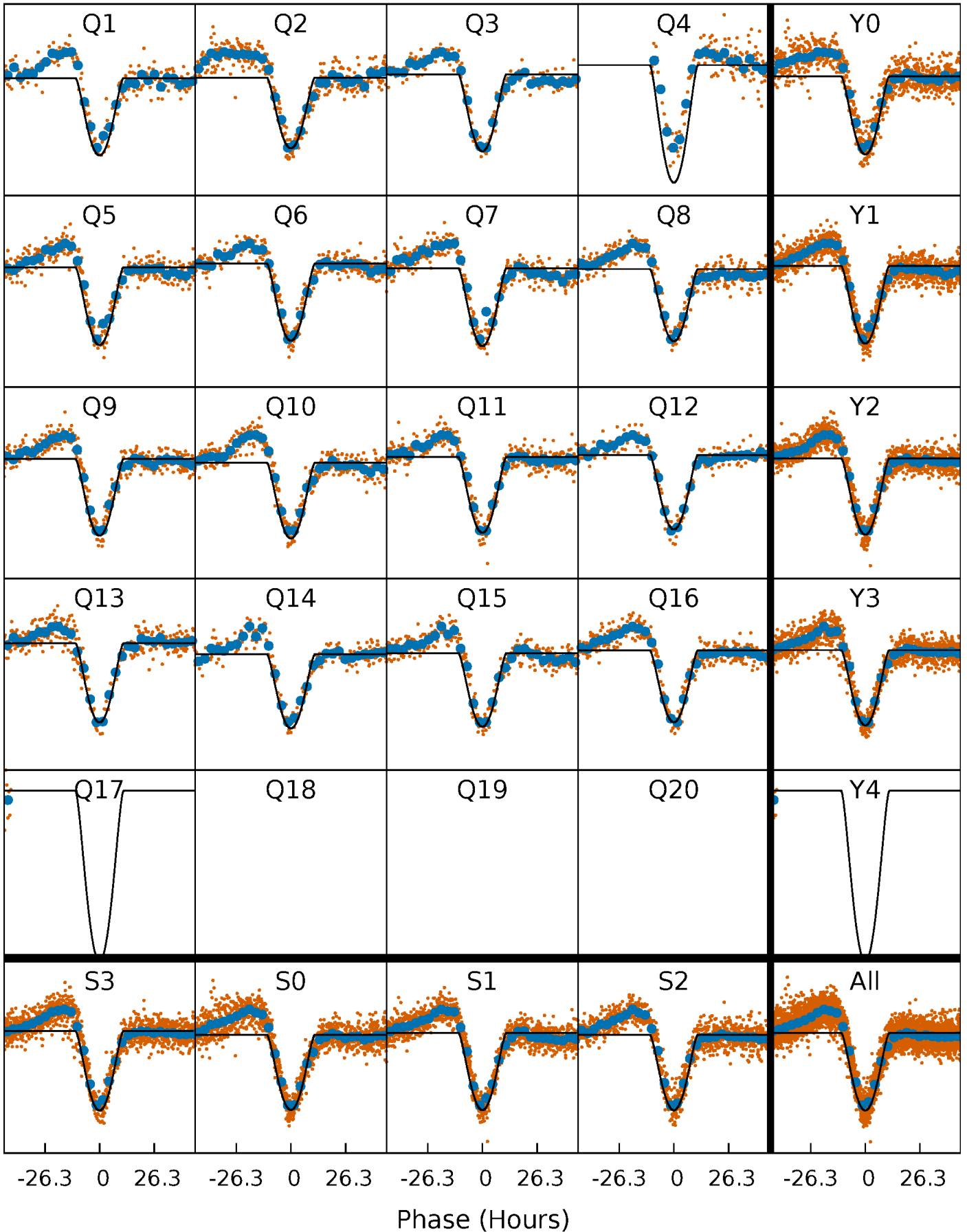
PDC Quarter-Phased Transit Curves

TCE 009535080-01 P= 49.645676 Days $T_0=153.055965$ (BKJD)



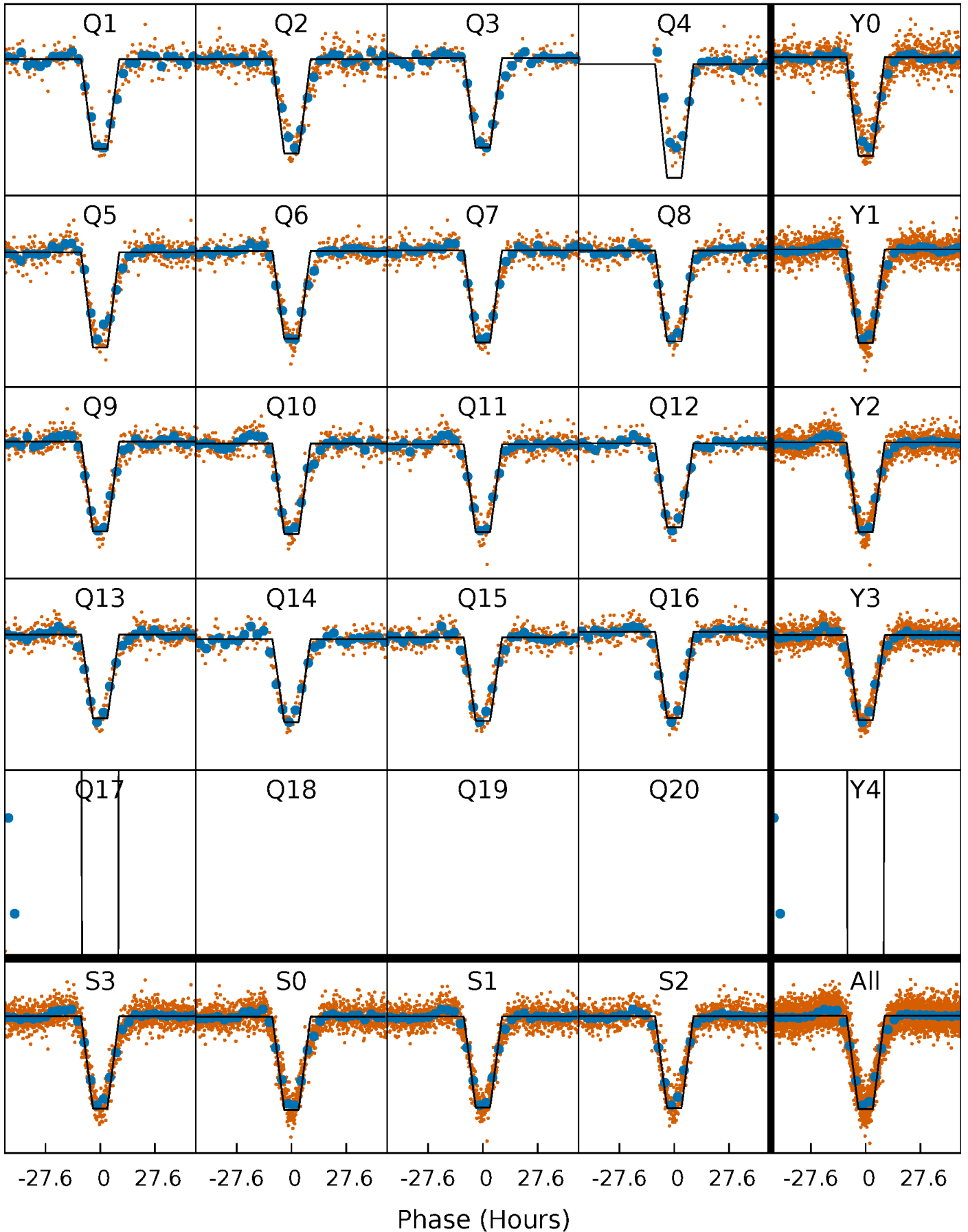
DV Quarter-Phased Transit Curves

TCE 009535080-01 P= 49.645676 Days $T_0=153.055965$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

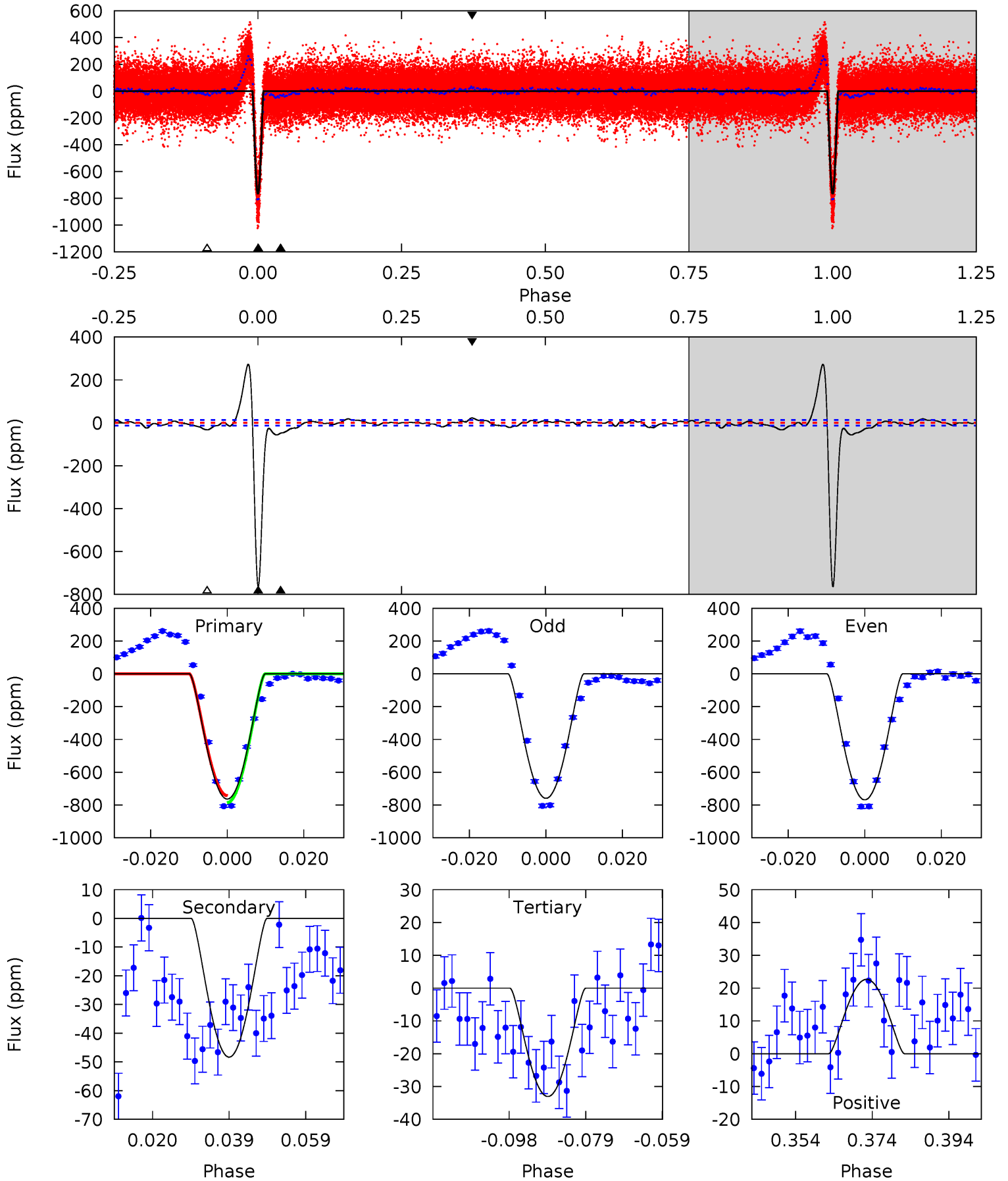
TCE 009535080-01 P= 49.649348 Days $T_0=153.001373$ (BKJD)



DV Model-Shift Uniqueness Test

009535080-01, P = 49.645676 Days, E = 103.410289 Days

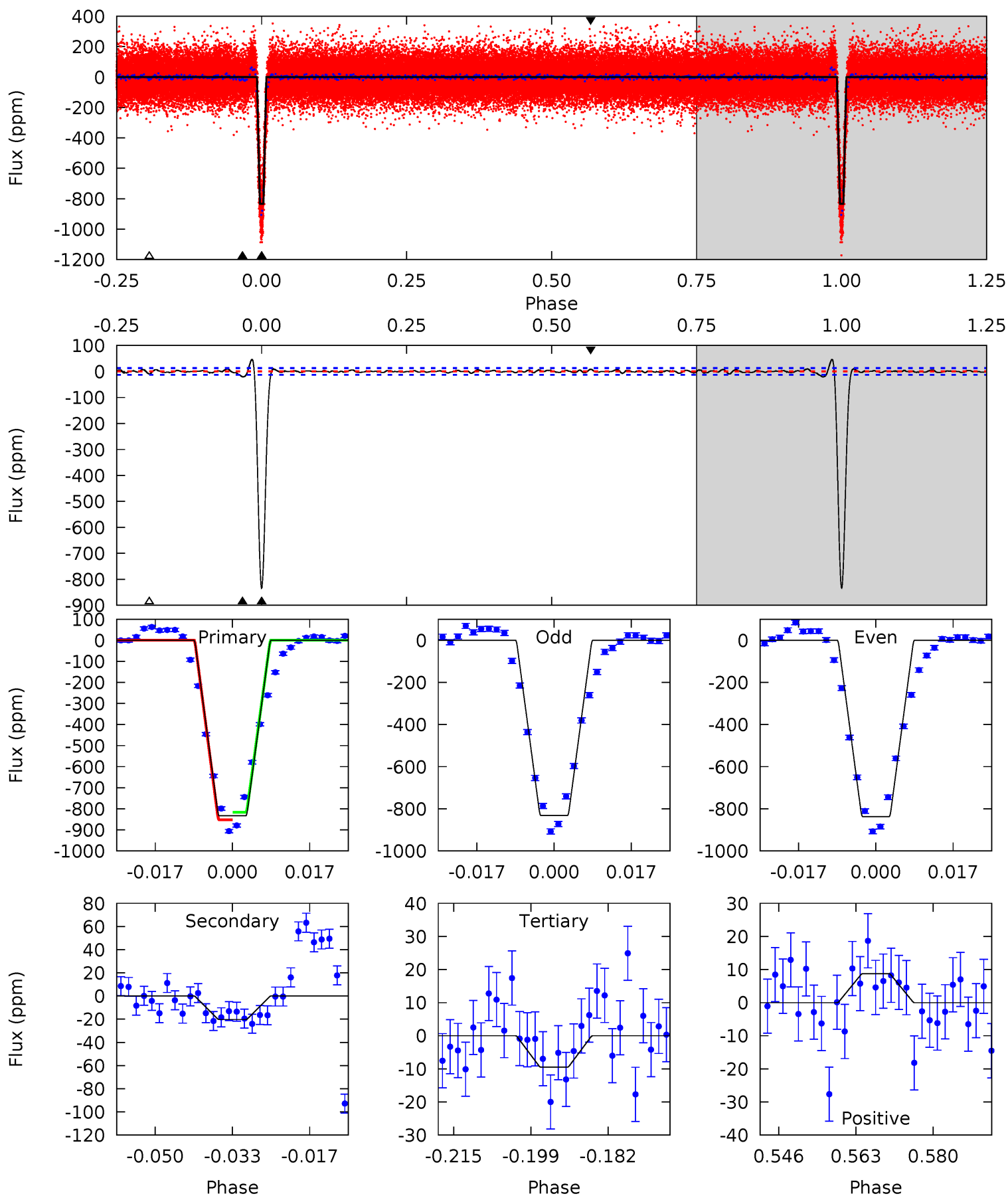
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
281.6	17.8	12.2	8.36	4.89	2.33	8.41	269.5	273.3	5.63	9.46	1.76	1.00	0.26	7.93



Alt Model-Shift Uniqueness Test

009535080-01, P = 49.649348 Days, E = 103.352025 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
315.2	7.67	3.58	3.29	4.93	2.40	1.18	311.6	311.9	4.09	4.38	0.88	1.08	0.05	6.87



Stellar Parameters For KIC 009535080

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6273^{+170}_{-170}	$4.129^{+0.204}_{-0.136}$	$-0.200^{+0.250}_{-0.300}$	$1.493^{+0.341}_{-0.375}$	$1.095^{+0.182}_{-0.136}$	$0.464^{+0.514}_{-0.184}$
	+3%/-3%	+5%/-3%	+125%/-150%	+23%/-25%	+17%/-12%	+111%/-40%
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 009535080-01 / KOI 1509.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-48 ± 3	$8.08^{+2.52}_{-2.27}$	896^{+62}_{-59}	2988^{+277}_{-183}	30^{+28}_{-13}
Alt.	-20 ± 3	$4.79^{+2.13}_{-2.00}$	899^{+55}_{-58}	3058^{+548}_{-276}	36^{+79}_{-19}

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 $A_{\text{obs}} \gg 1.0$

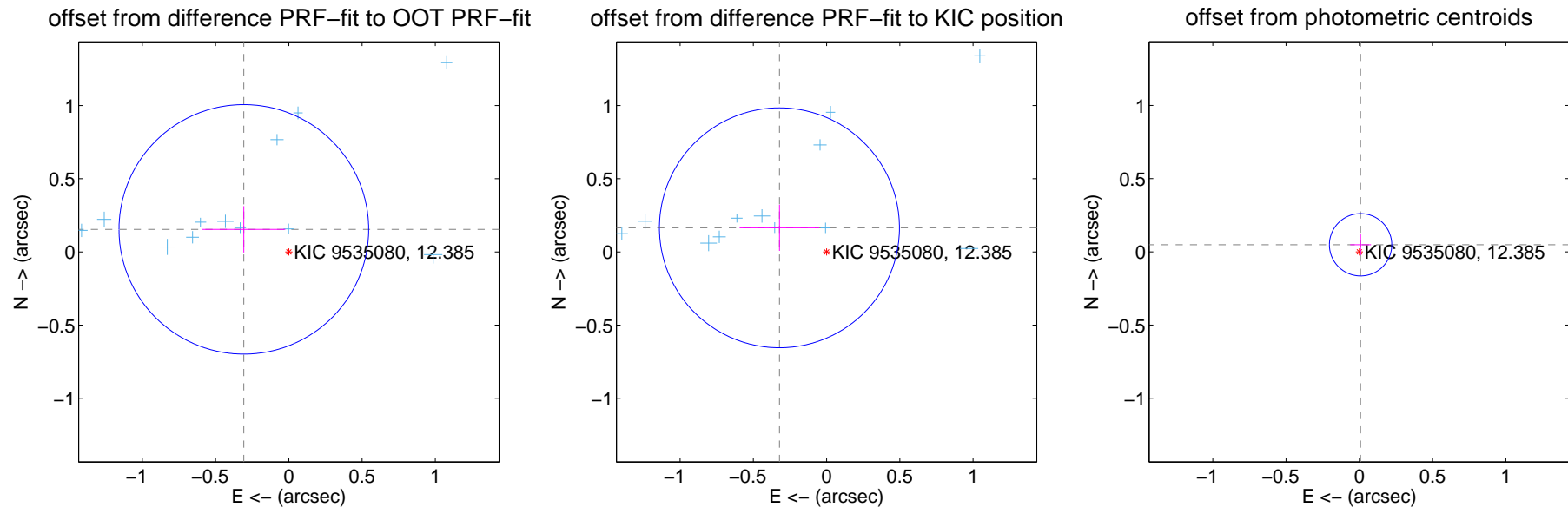
DV Centroid Data

Supplemental centroid analysis for 009535080-01. Kepler magnitude: 12.38. Transit SNR 108.11

There are 14 quarters with good PRF difference image offsets

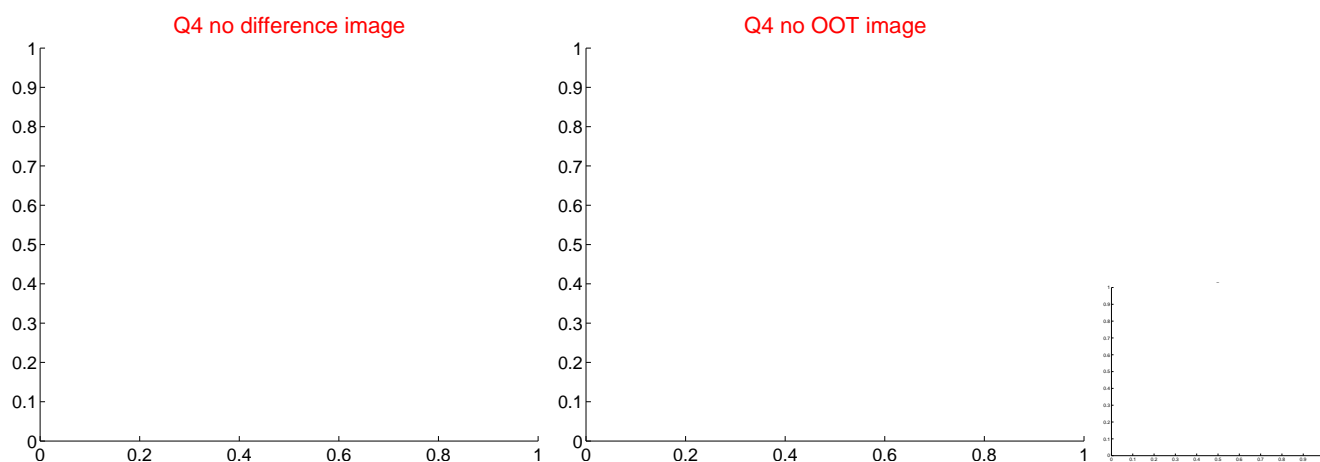
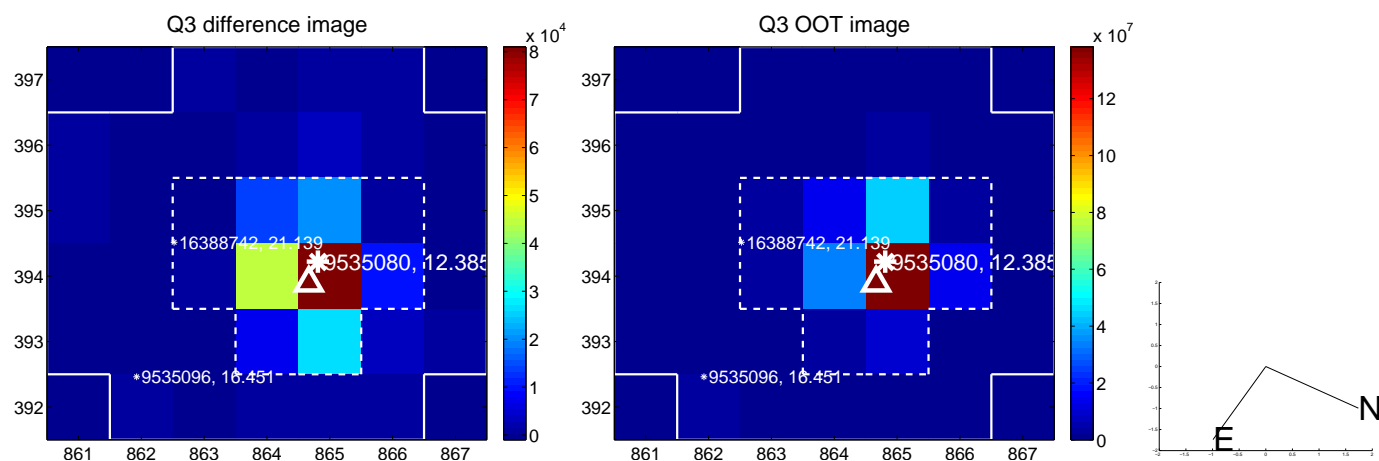
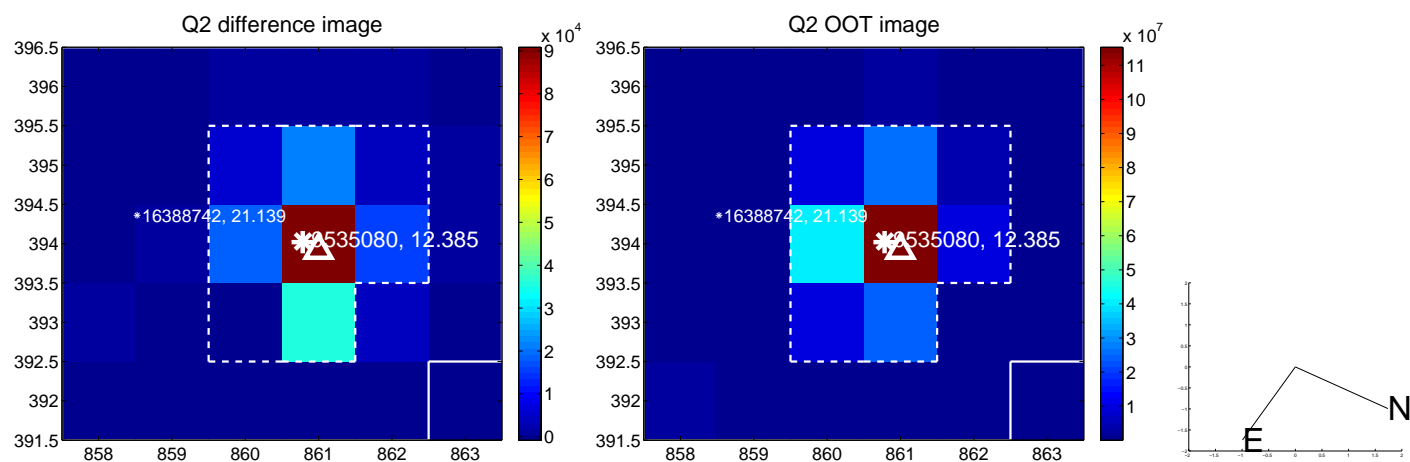
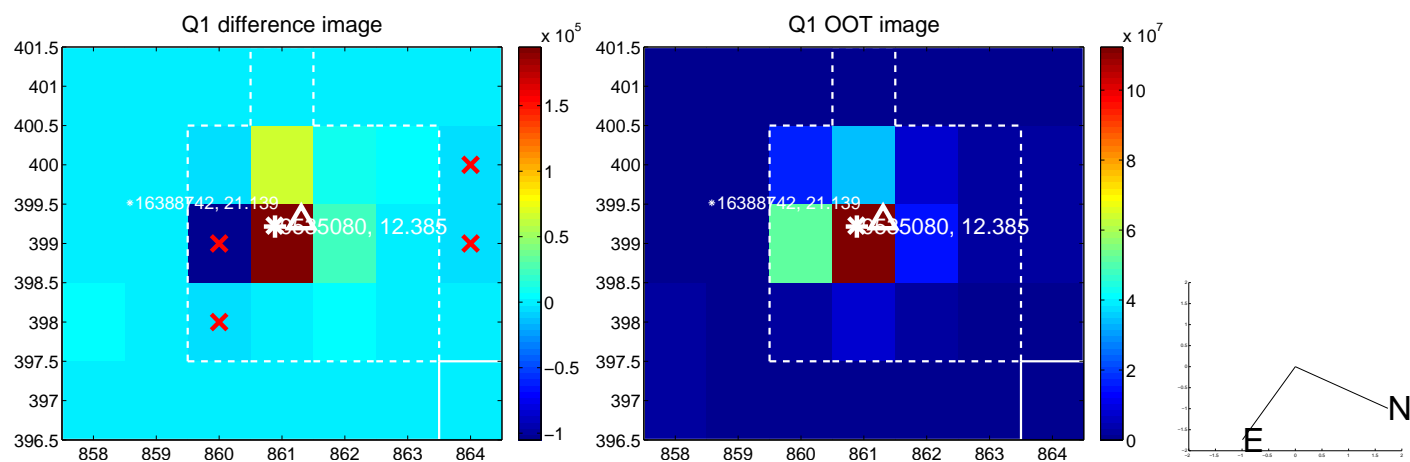
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.344 ± 0.284	1.21	0.307 ± 0.283	0.154 ± 0.158
PRF-fit source offset from KIC position	0.362 ± 0.273	1.32	0.322 ± 0.272	0.165 ± 0.158
photometric centroid source offset	0.05 ± 0.07	0.69	-0.01 ± 0.07	0.05 ± 0.07

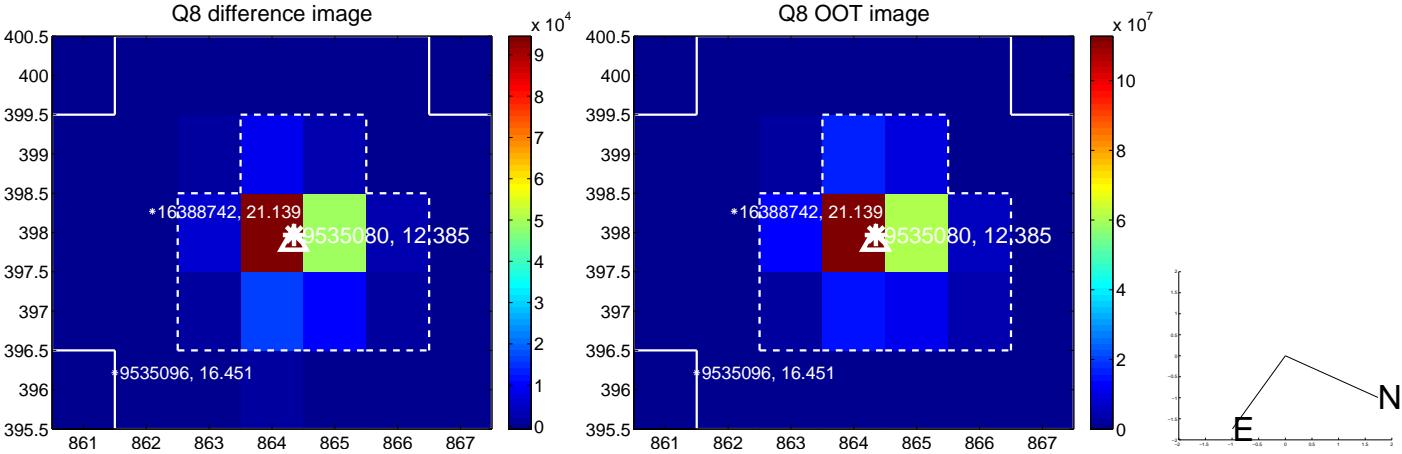
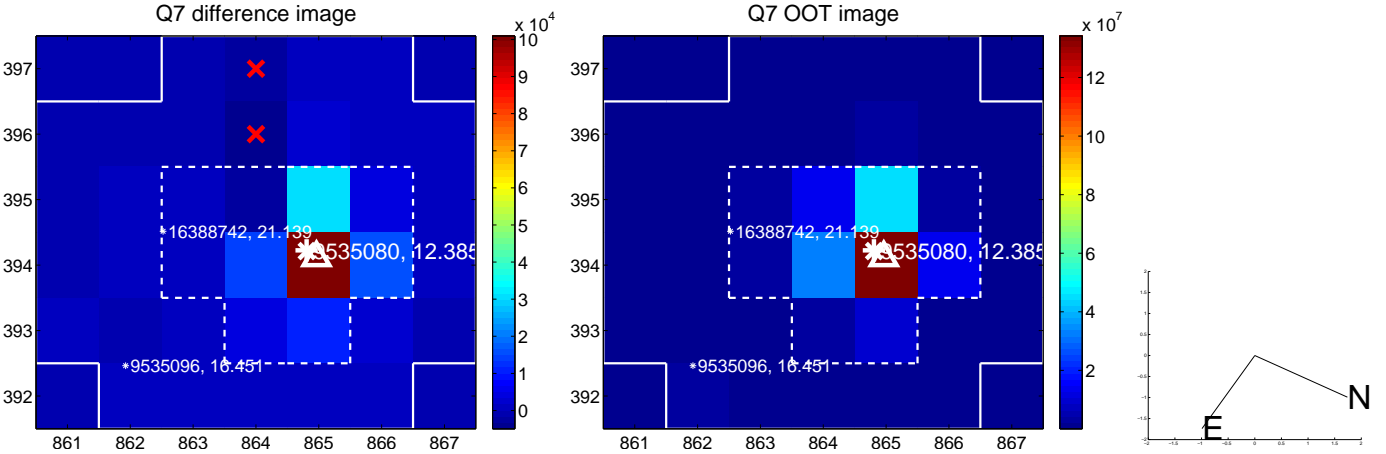
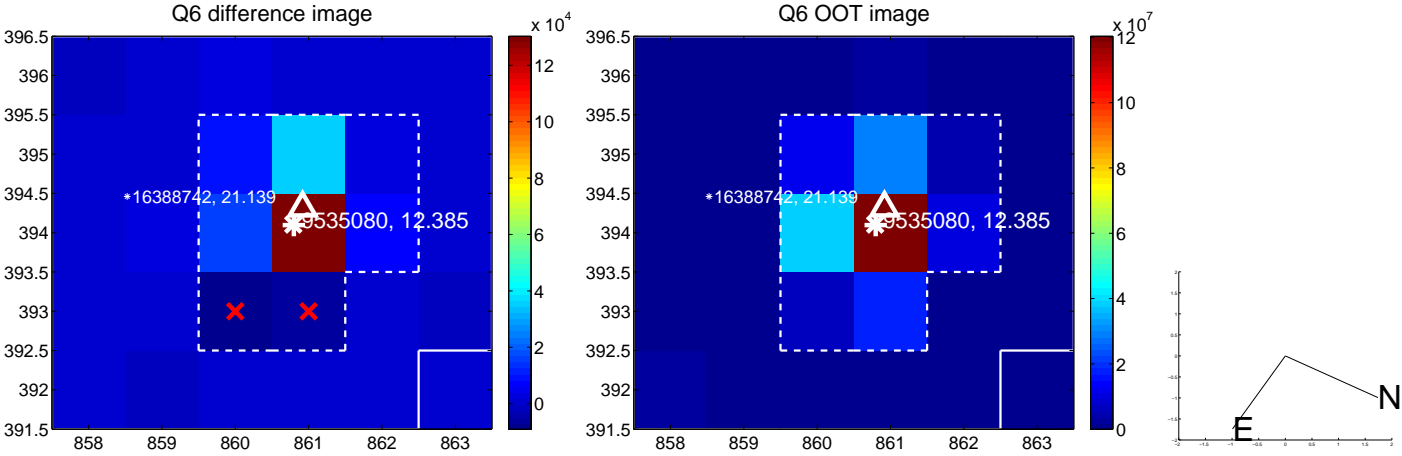
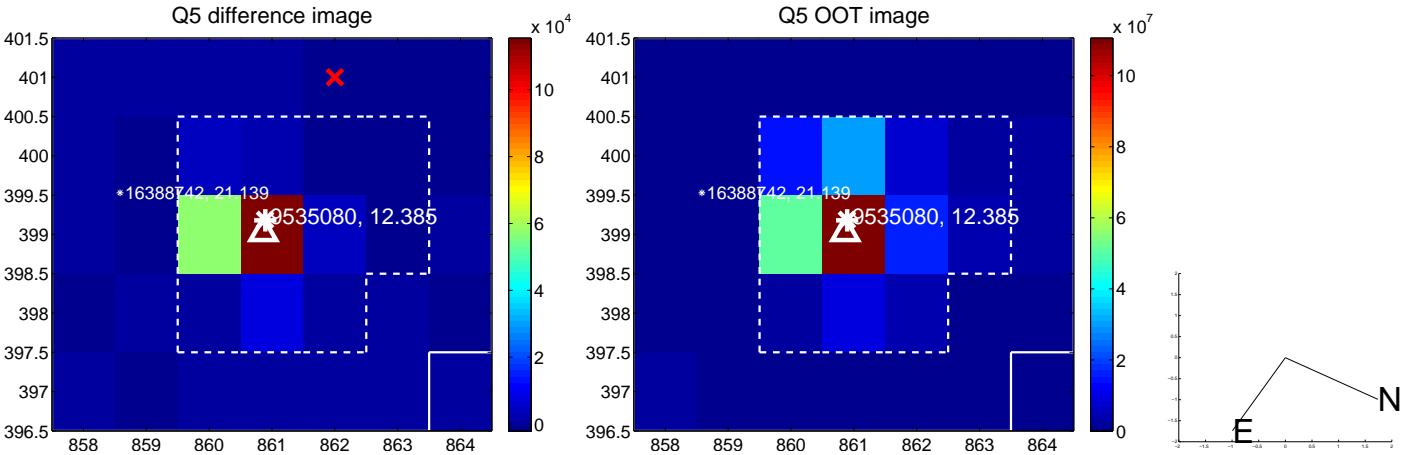


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

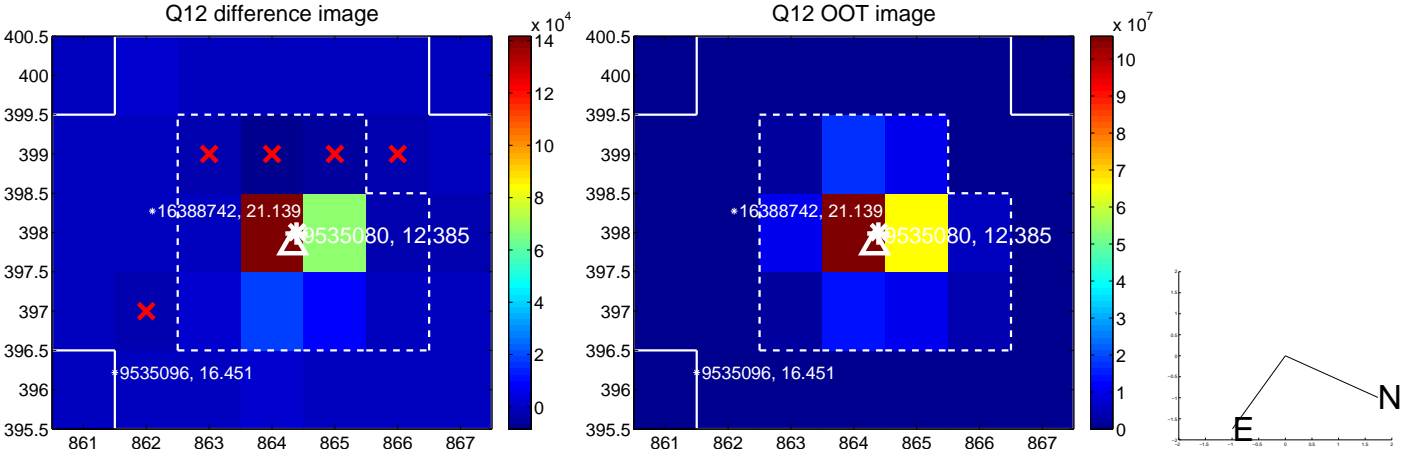
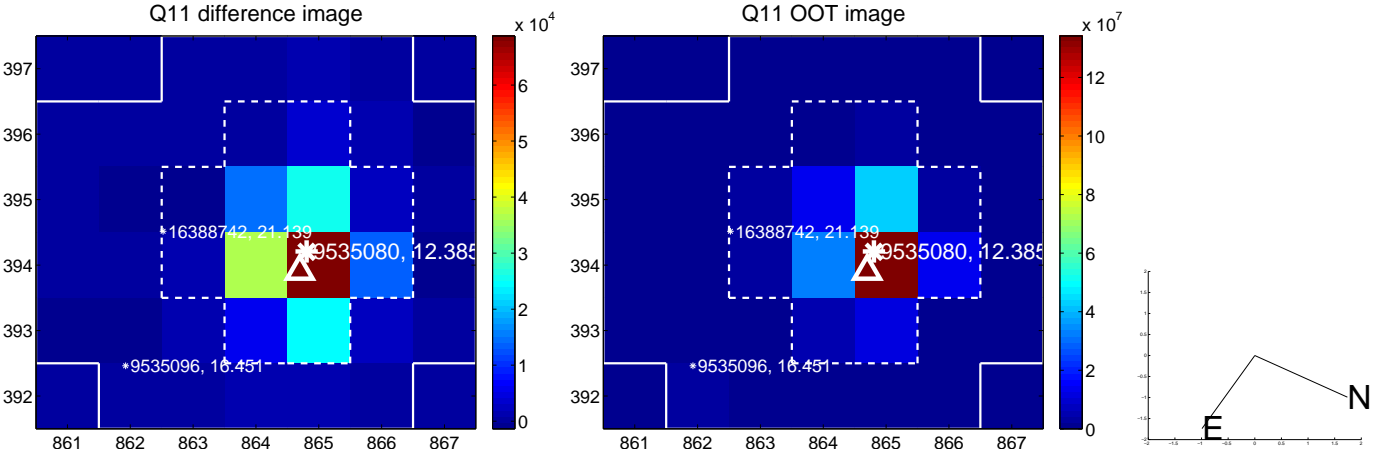
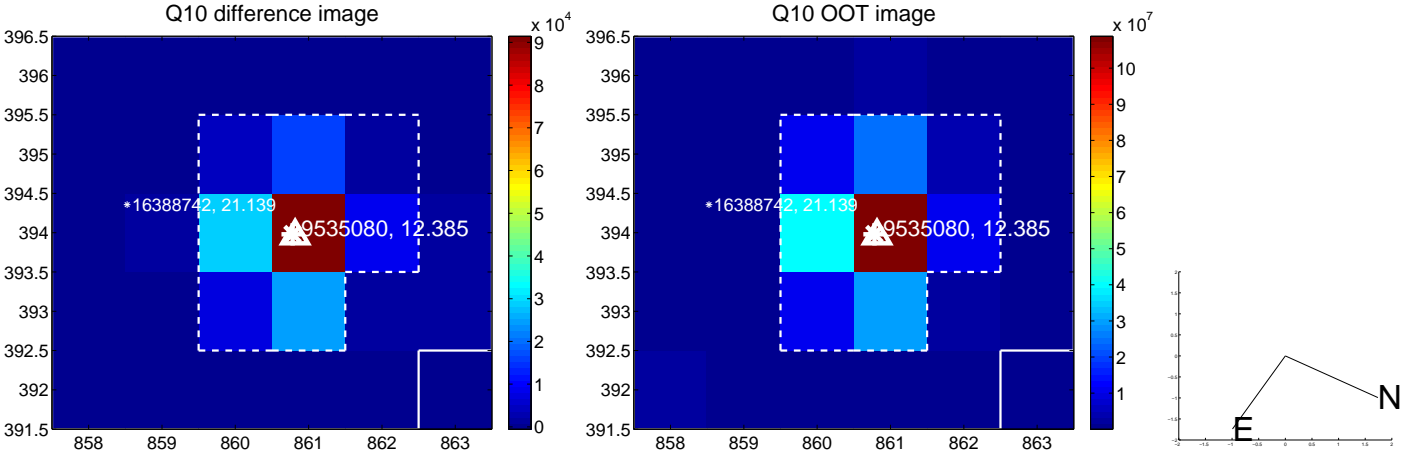
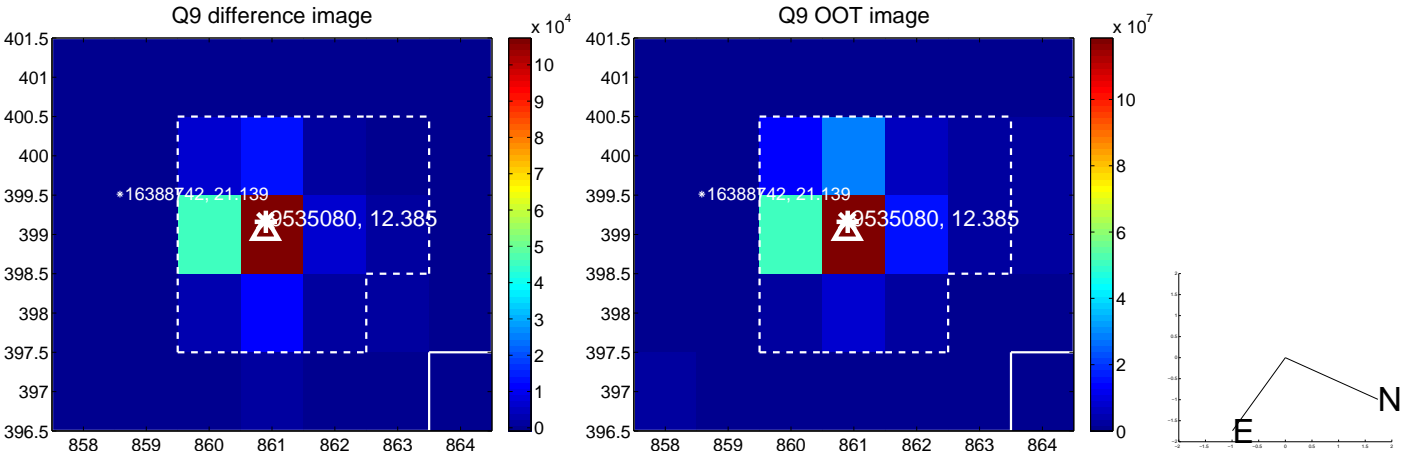
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



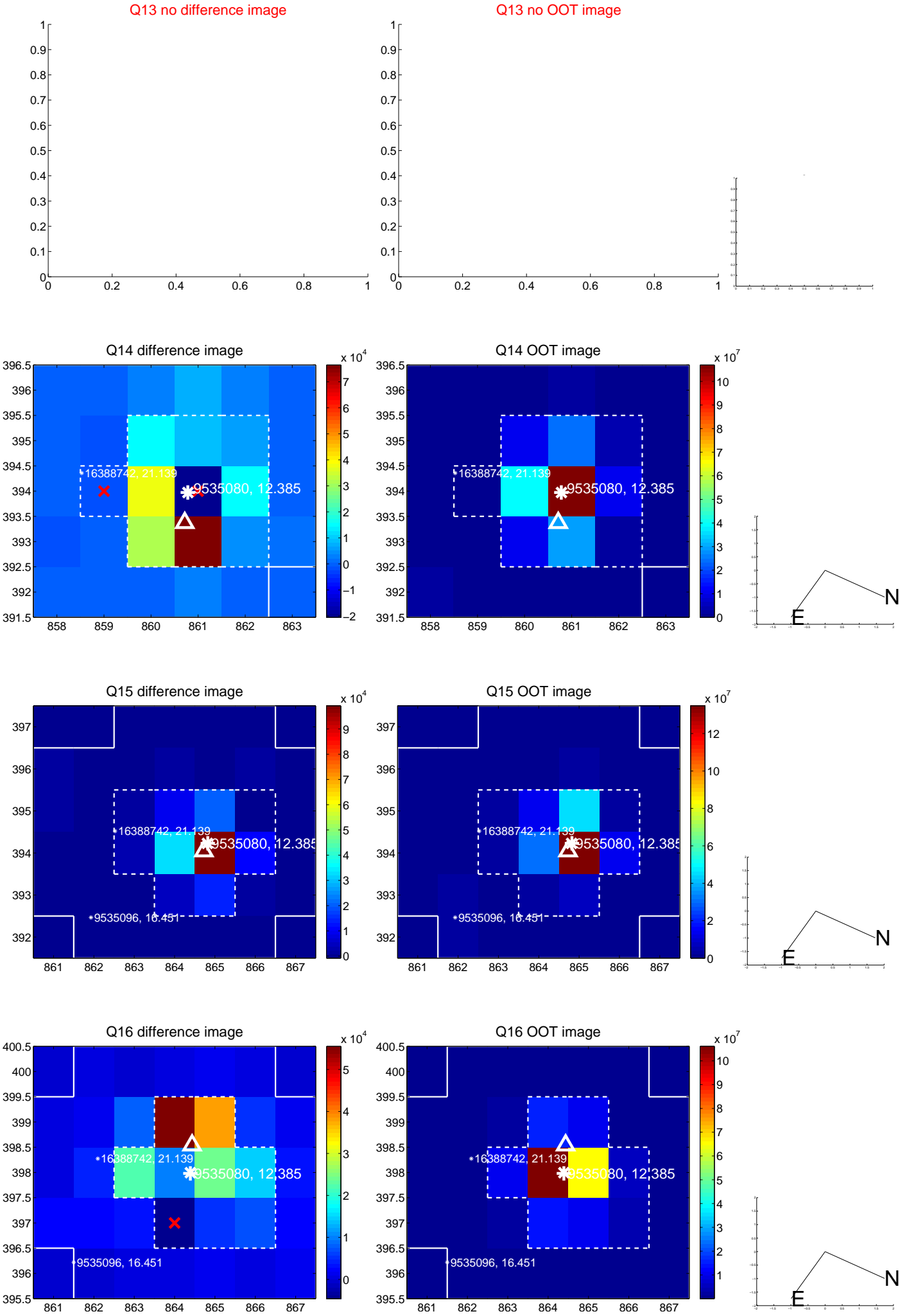
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



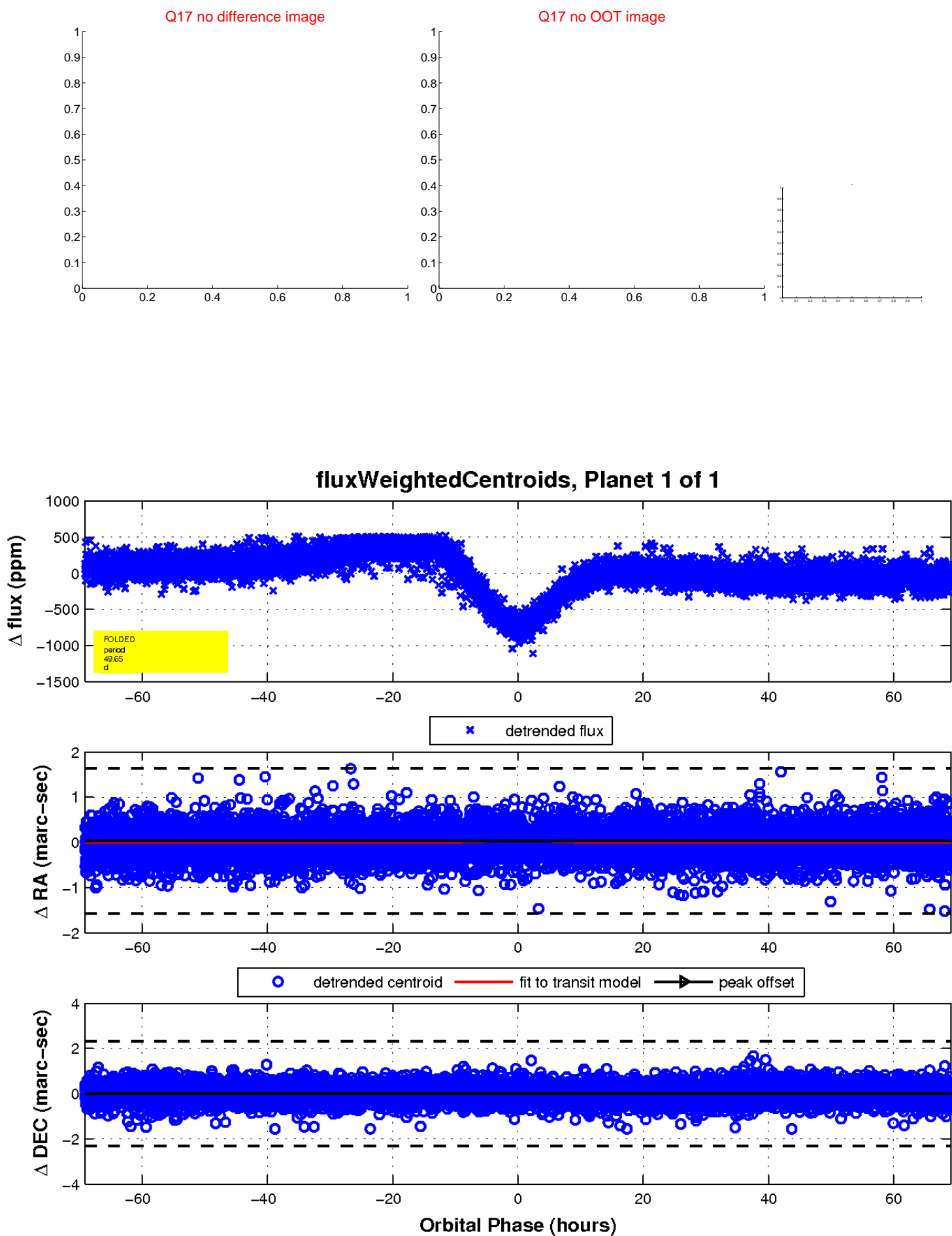
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

