

KIC 009777556

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})
009777556-01	OBS	4814.01	1.332556	132.053397	497.3	3.385	9.7	10.5	13.78	4894	40.08	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009777556-01	OBS	FP	0.00	0	0	0	1	PLANET_IN_STAR—CENT_FEW_DIFFS—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 009777556-01

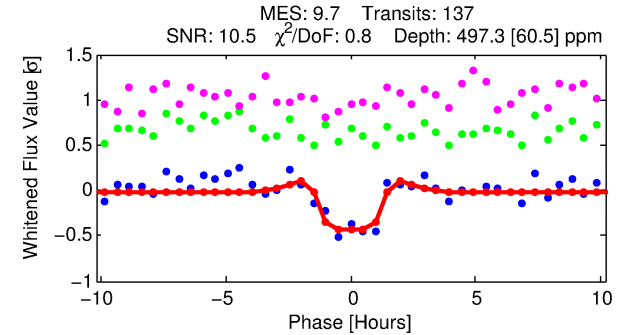
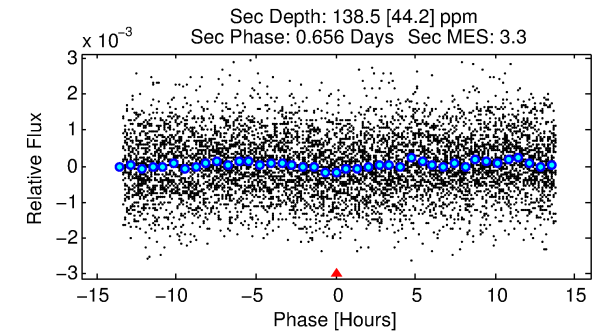
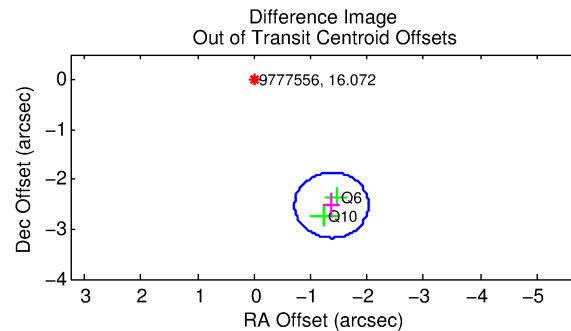
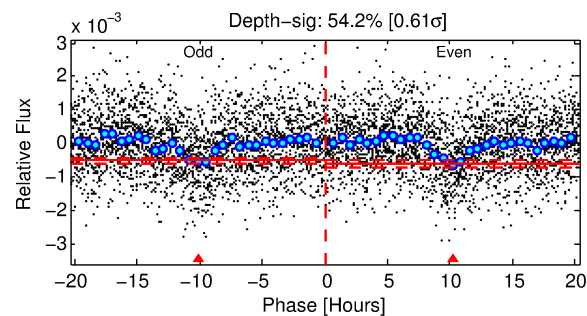
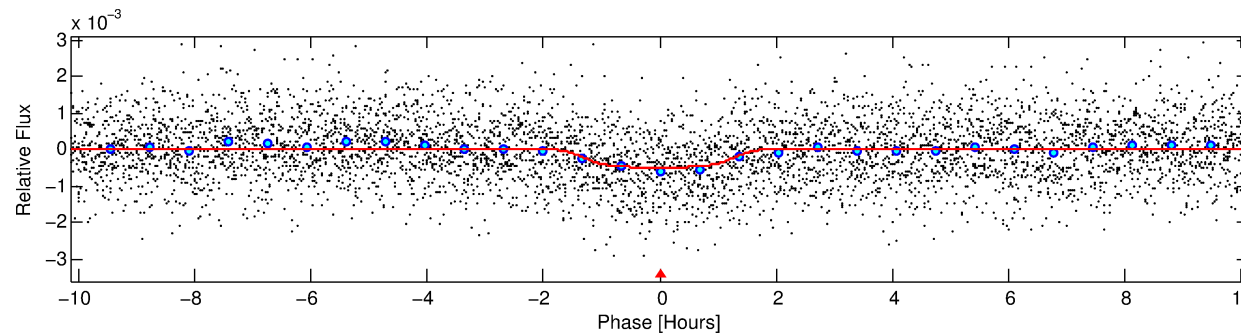
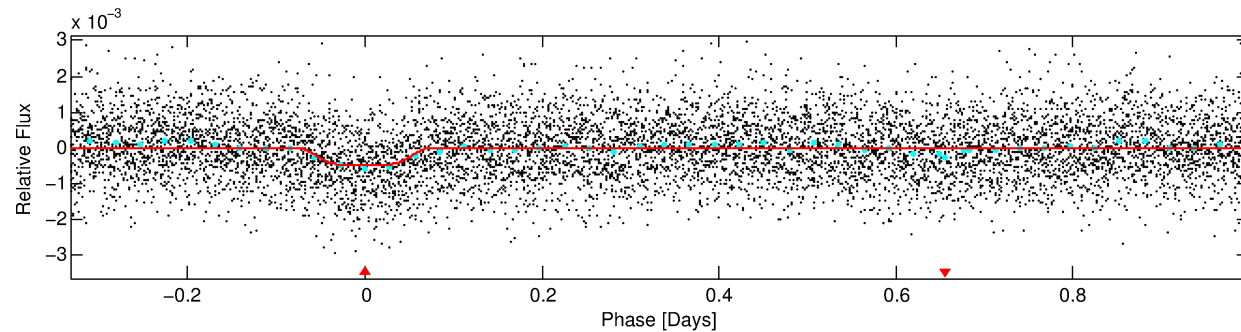
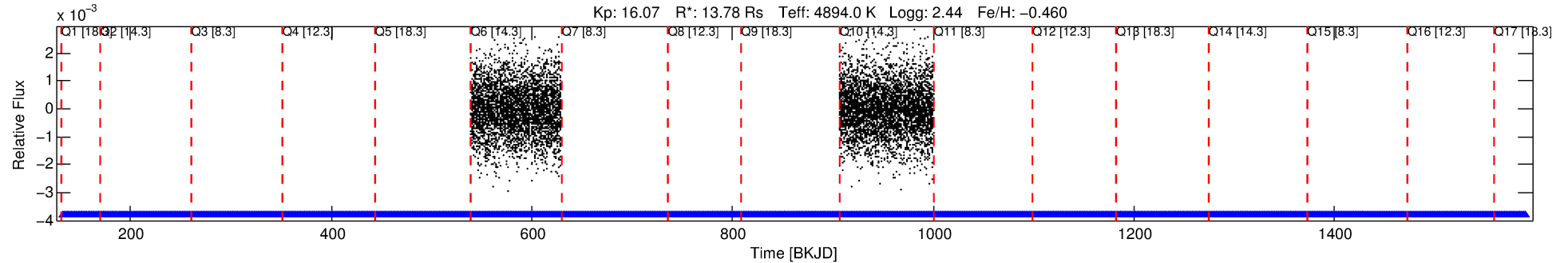
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist ($''$)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
009777556-01	9777556	BR-Cyg-pri	9899416	1:1	1676.0	421	3	10.03	16.07	1345.80	Col-Anomaly	0	0.50	0.26

Notes: P₁:P₂ 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. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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: 9777556 Candidate: 1 of 1 Period: 1.333 d
KOI: K04814.01 Corr: 0.956

Kp: 16.07 R*: 13.78 Rs Teff: 4894.0 K Logg: 2.44 Fe/H: -0.460



DV Fit Results:

Period = 1.33256 [0.00001] d
Epoch = 132.0534 [0.0036] BKJD
Rp/R* = 0.0267 [0.0027]
a/R* = 1.54 [0.27]
b = 0.95 [0.03]
Seff = N/A
Teq = N/A
Rp = 40.08 [11.18] Re
a = N/A
Ag = N/A
Teff = N/A

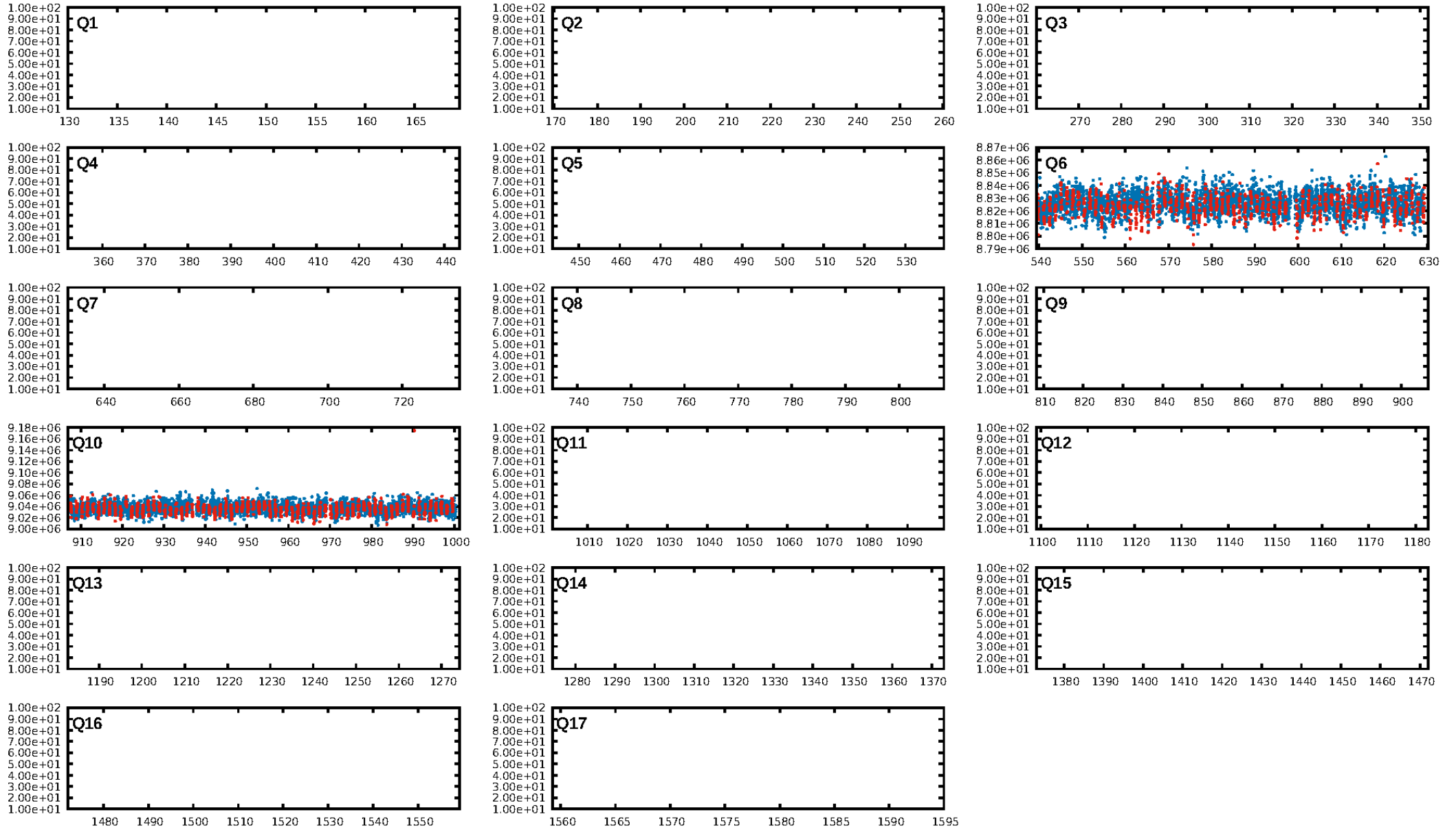
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 3.71e-18
RollingBand-fgt: 1.00 [137/137]
GhostDiagnostic-chr: -1.48
Centroid-sig: 0.0%
Centroid-so: 3.864 arcsec [4.10σ]
OotOffset-rm: 2.870 arcsec [13.17σ]
KicOffset-rm: 3.094 arcsec [13.84σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

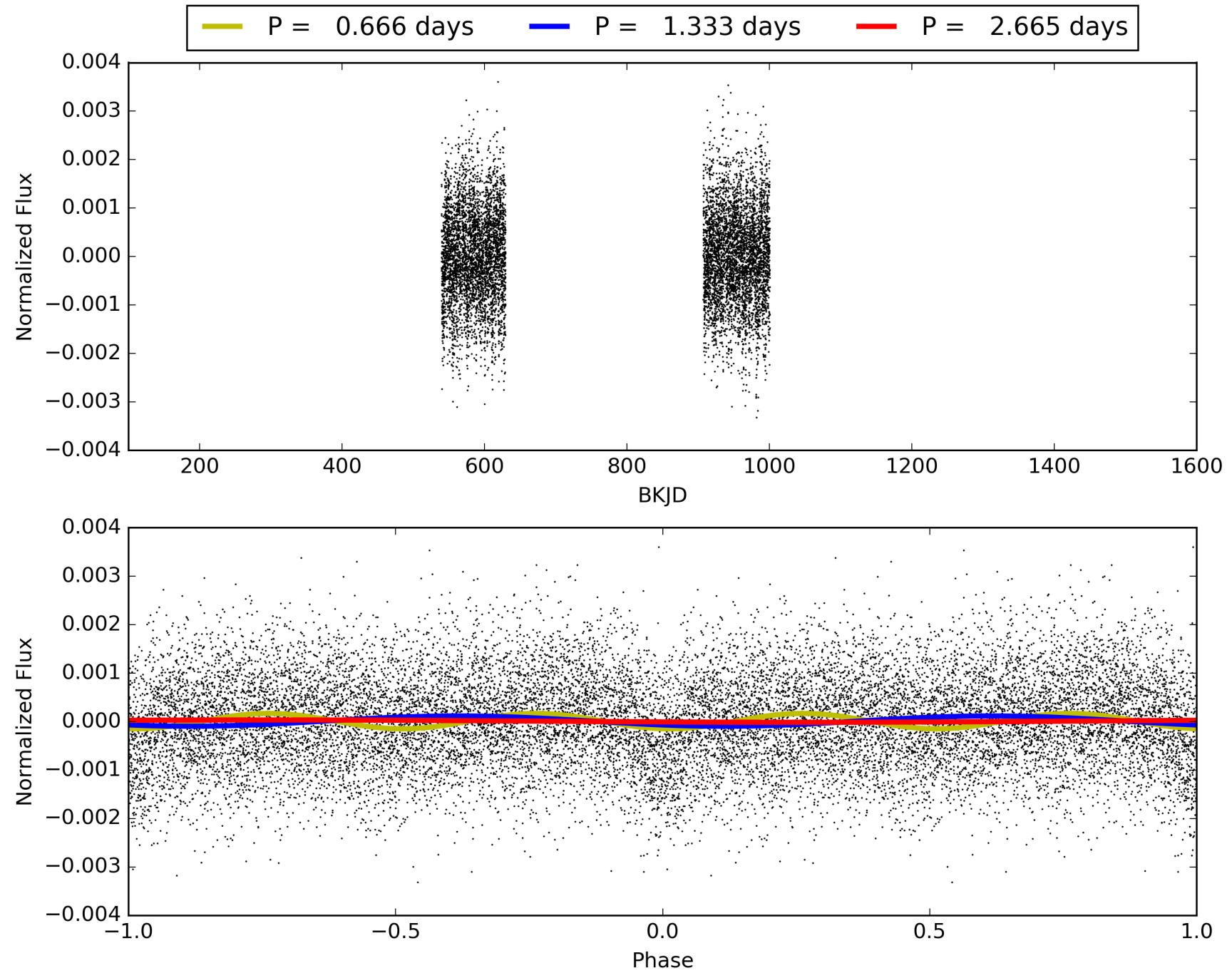
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:58:49 Z

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

TCE 009777556-01, PDC Light Curves

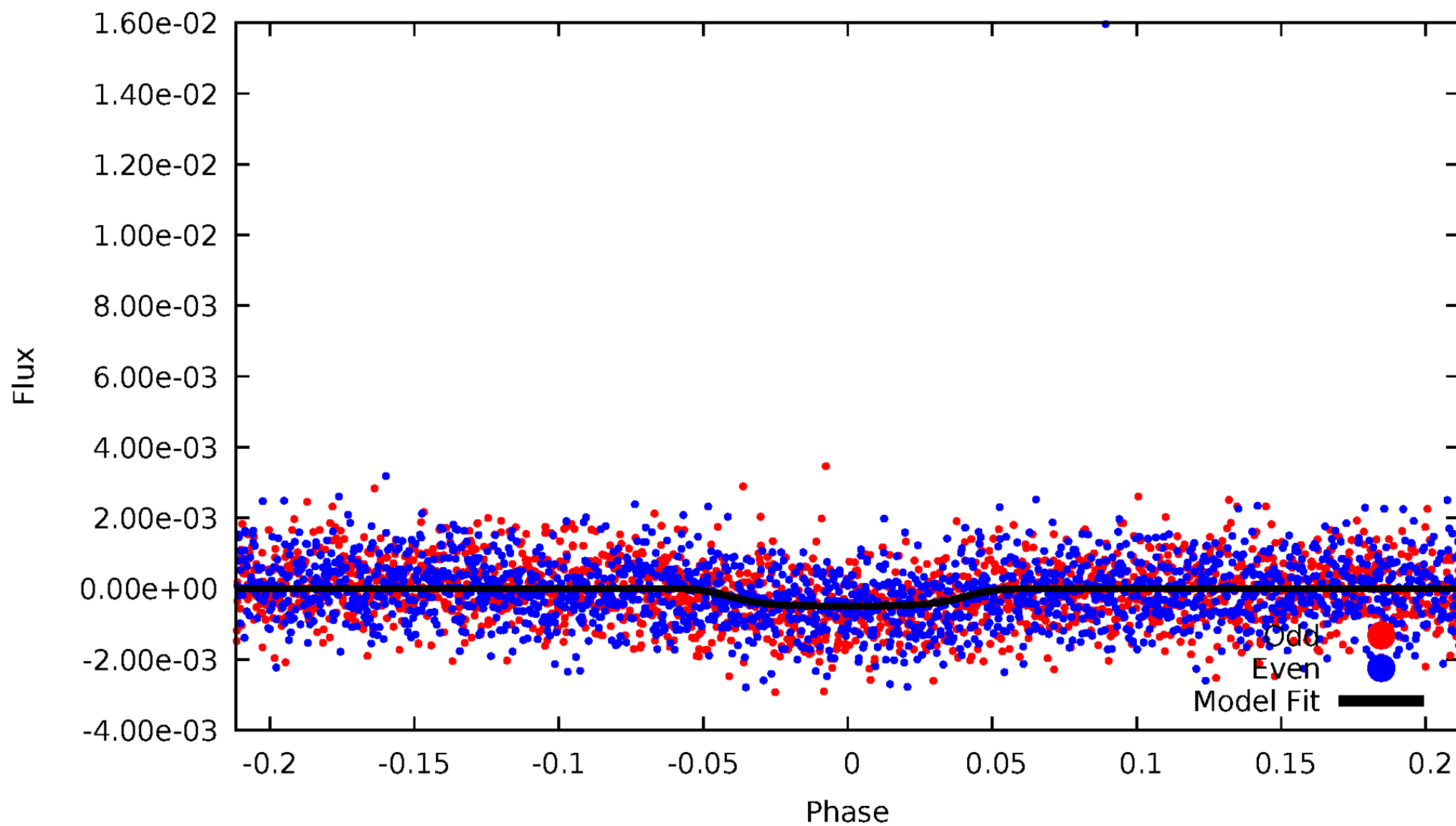


TCE 009777556-01



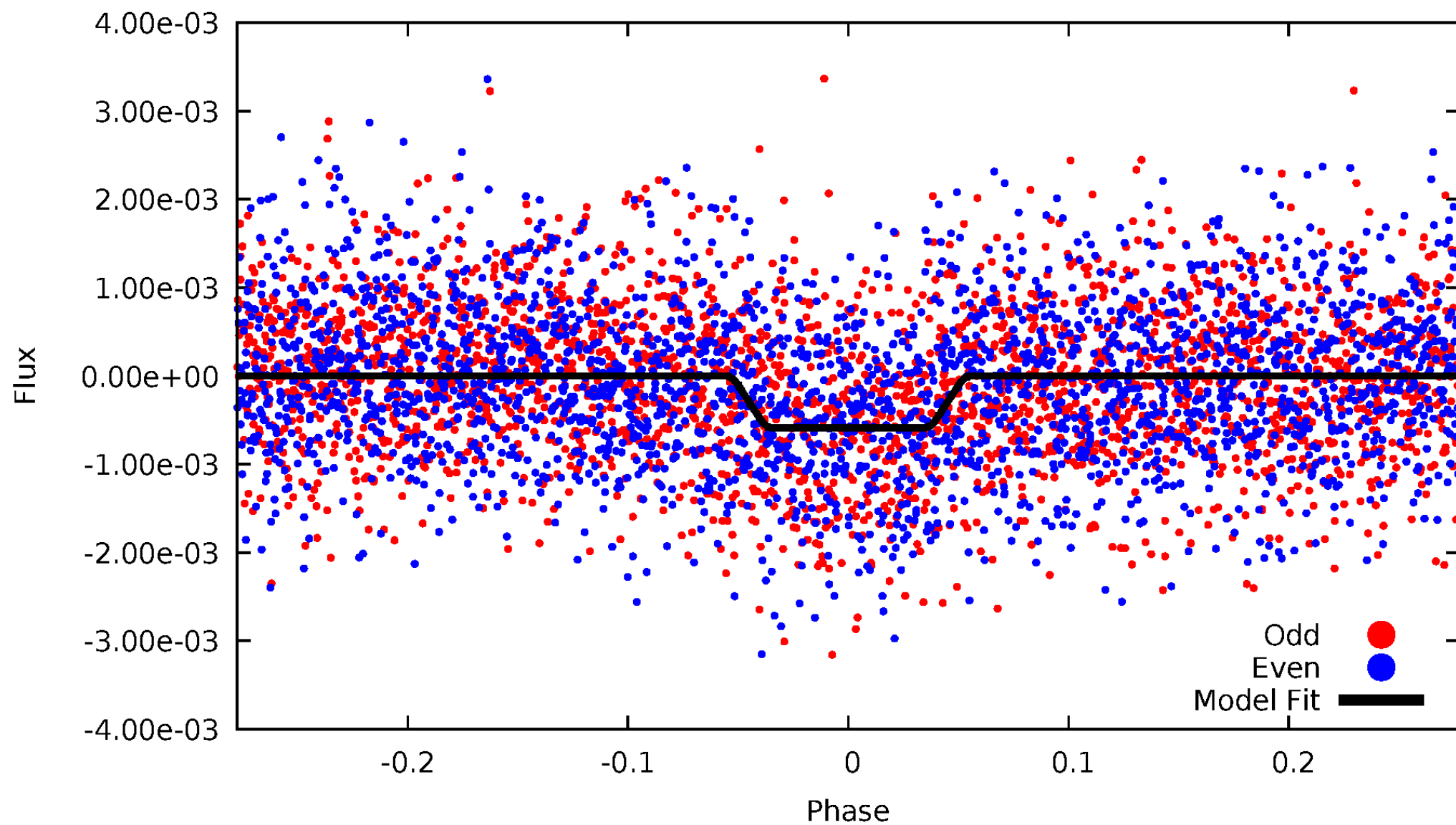
DV Odd/Even

TCE 009777556-01

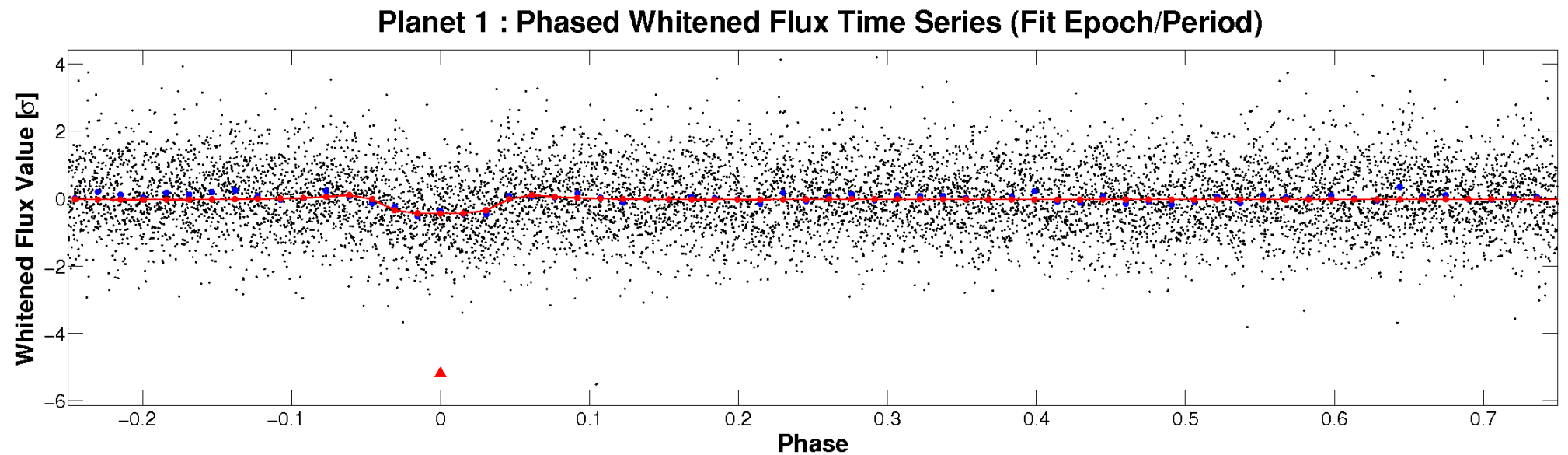
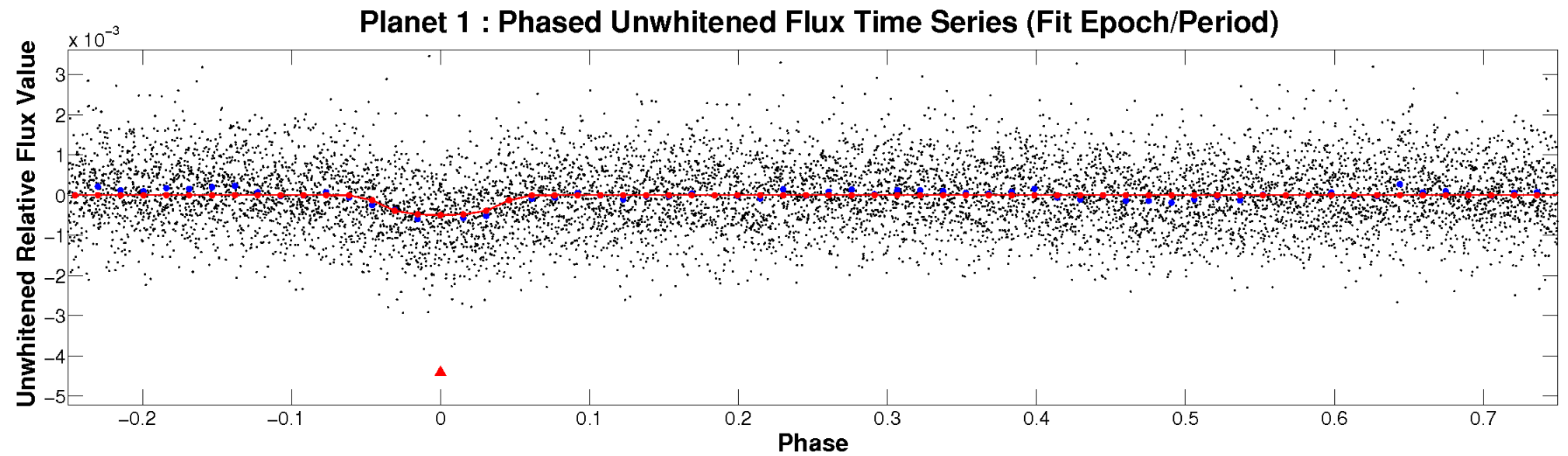


ALT Odd/Even

TCE 009777556-01

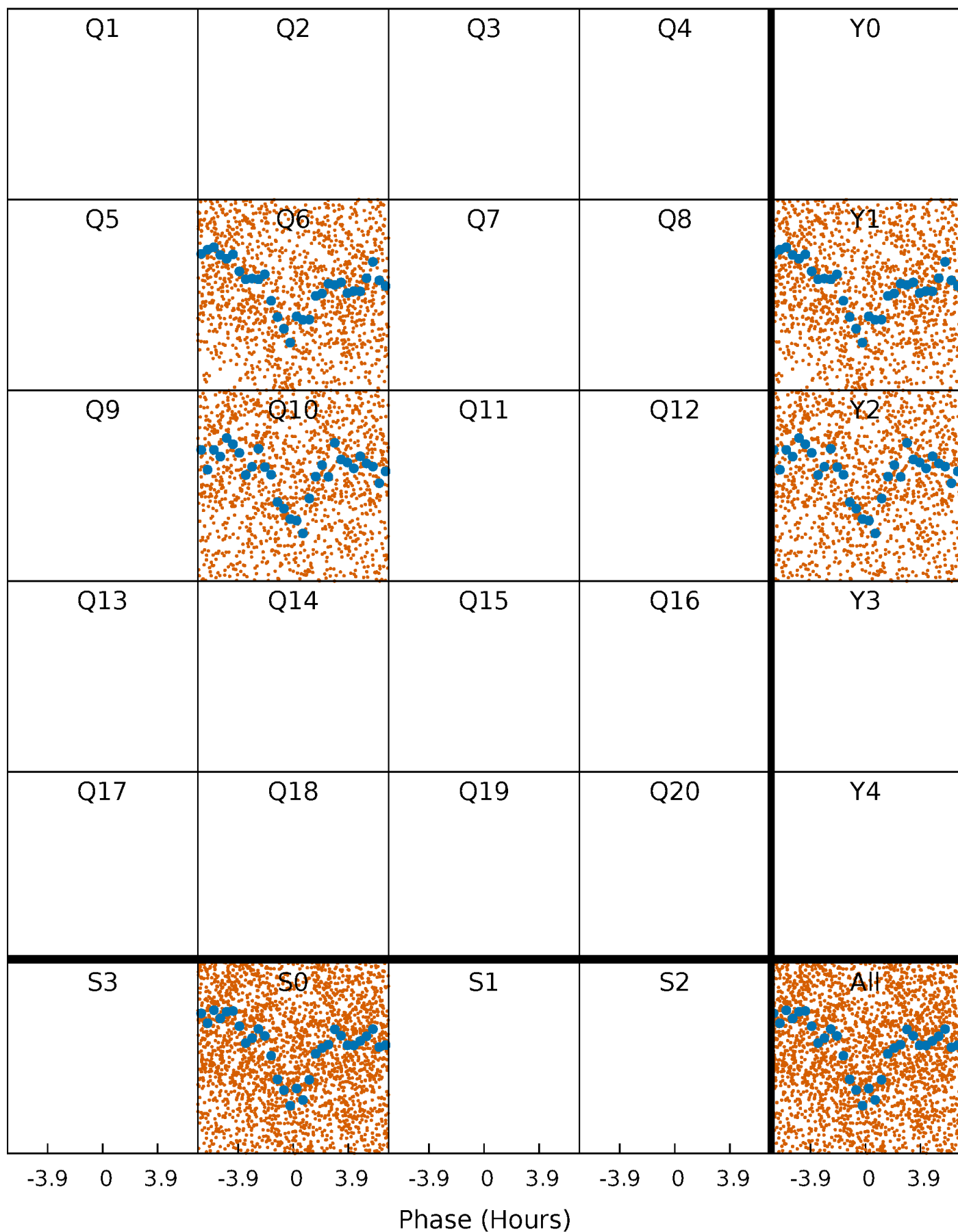


Non-Whitened Vs. Whitened Light Curve



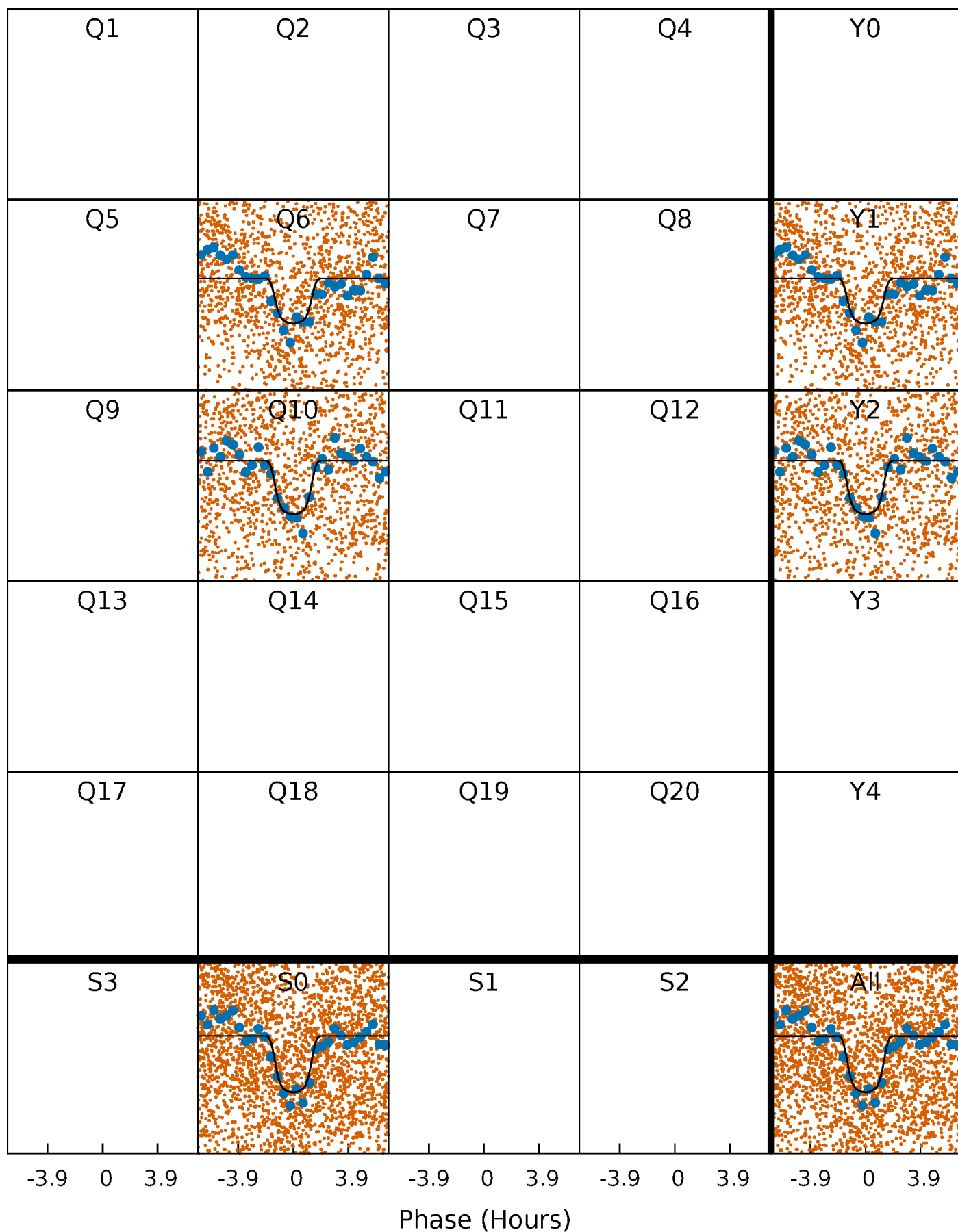
PDC Quarter-Phased Transit Curves

TCE 009777556-01 P= 1.332556 Days $T_0=132.053397$ (BKJD)



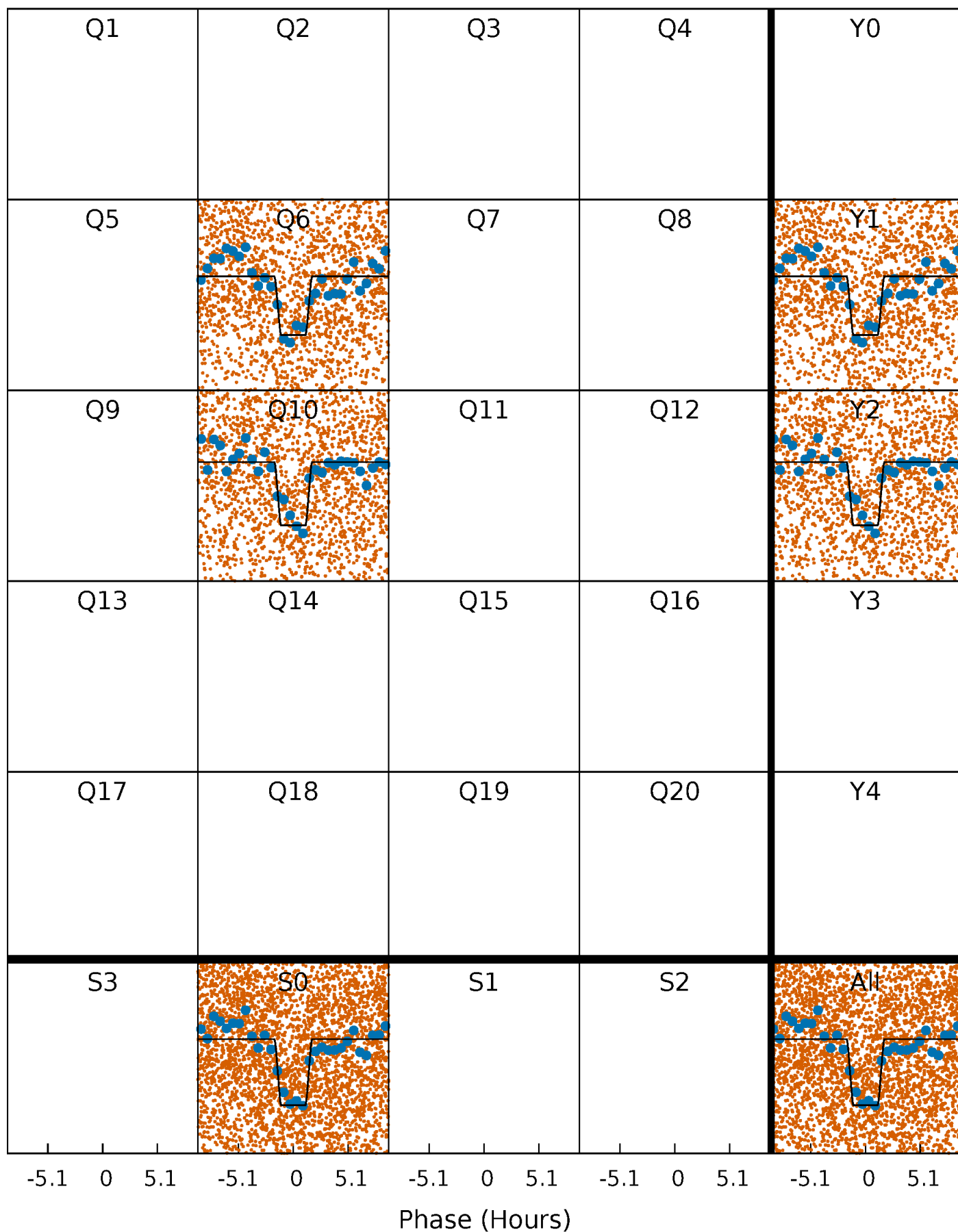
DV Quarter-Phased Transit Curves

TCE 009777556-01 P= 1.332556 Days $T_0=132.053397$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

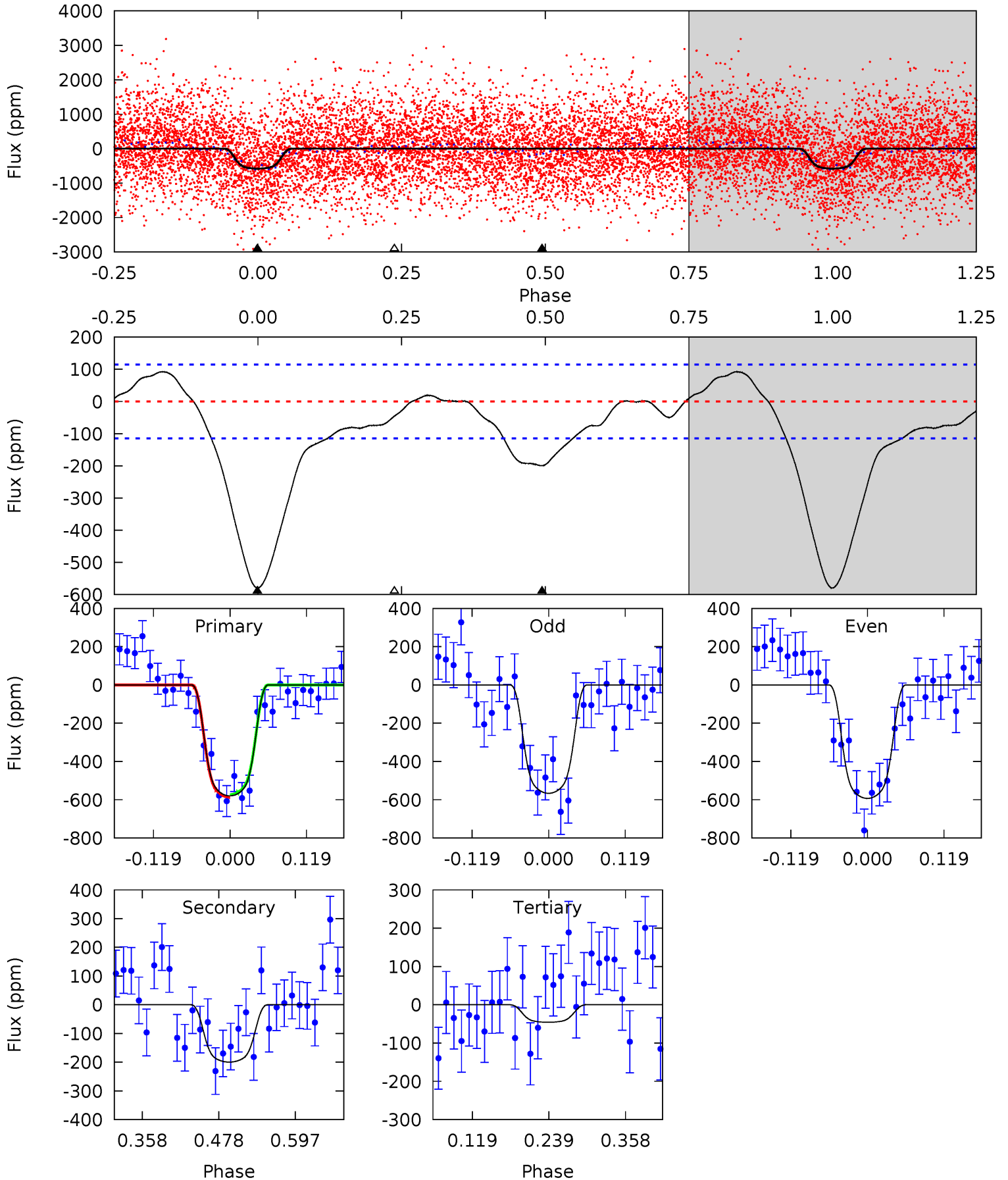
TCE 009777556-01 P= 1.332534 Days $T_0=132.066018$ (BKJD)



DV Model-Shift Uniqueness Test

009777556-01, P = 1.332556 Days, E = 132.053397 Days

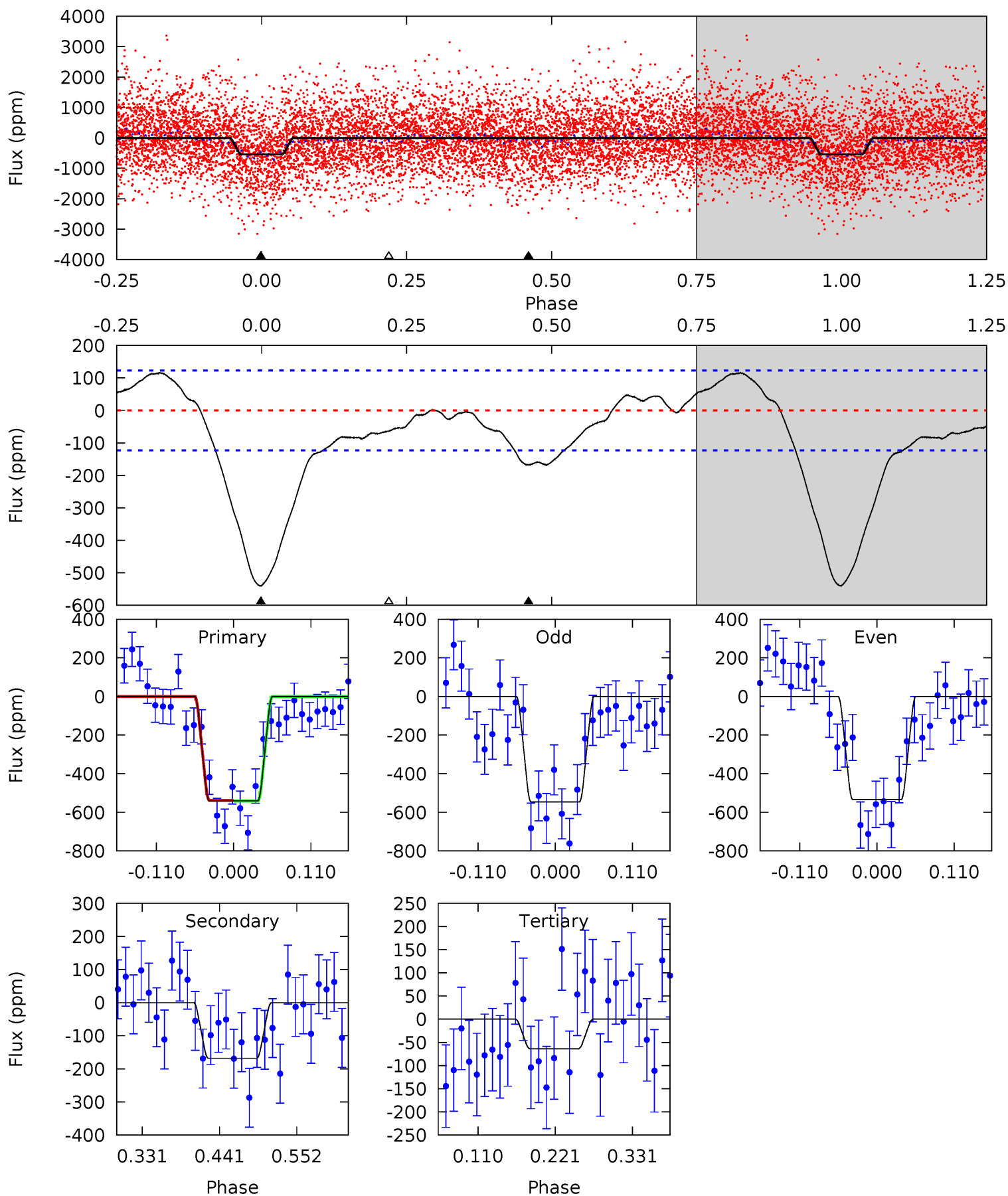
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.9	7.88	1.81	0	4.53	1.56	2.07	21.1	22.9	6.08	7.88	0.53	1.00	0.14	0.25



Alt Model-Shift Uniqueness Test

009777556-01, P = 1.332534 Days, E = 132.066018 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.0	6.22	2.35	0	4.54	1.60	2.26	17.6	20.0	3.86	6.22	0.22	1.03	0.18	0.06



Stellar Parameters For KIC 009777556

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4894^{+96}_{-169}	$2.445^{+0.033}_{-0.033}$	$-0.460^{+0.200}_{-0.300}$	$13.777^{+2.393}_{-3.589}$	$1.928^{+0.726}_{-0.807}$	$0.001^{+0.000}_{-0.000}$
	+2%/-3%	+1%/-1%	+43%/-65%	+17%/-26%	+38%/-42%	+36%/-10%
Source	PHO54	AST54	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 009777556-01 / KOI 4814.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-200 ± 25	$40.97^{+6.94}_{-6.39}$	6508^{+237}_{-281}	-5006^{+238}_{-209}	$0.059^{+0.017}_{-0.013}$
Alt.	-168 ± 27	$37.80^{+6.23}_{-6.74}$	6527^{+203}_{-249}	-5012^{+214}_{-192}	$0.060^{+0.020}_{-0.015}$

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

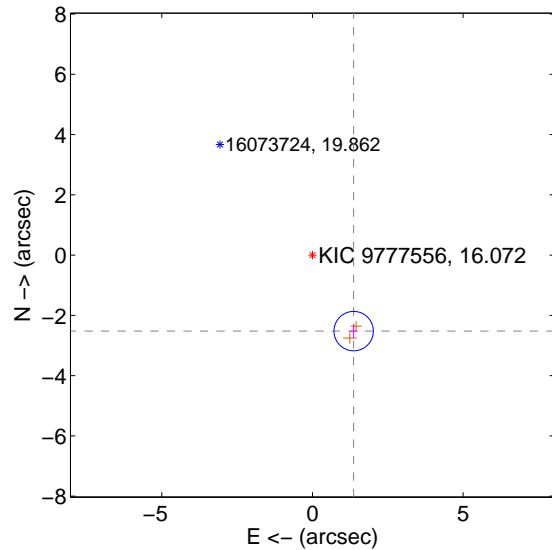
Supplemental centroid analysis for 009777556-01. Kepler magnitude: 16.07. Transit SNR 10.47

There are 0 quarters with good PRF difference image offsets

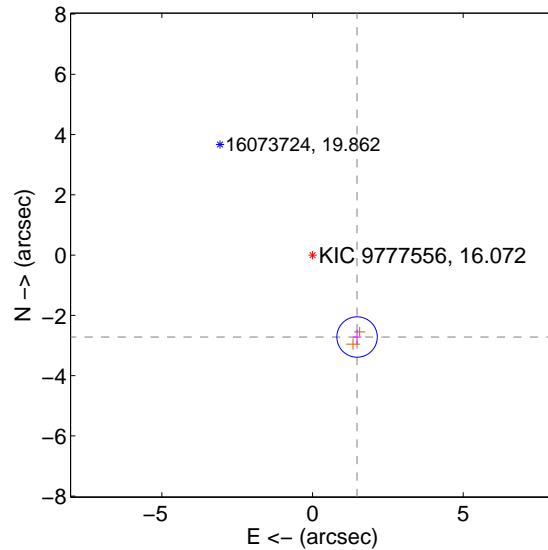
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.870 ± 0.218	13.17	-1.368 ± 0.136	-2.522 ± 0.237
PRF-fit source offset from KIC position	3.094 ± 0.223	13.84	-1.478 ± 0.142	-2.718 ± 0.242
photometric centroid source offset	3.86 ± 0.94	4.10	3.69 ± 0.93	-1.16 ± 1.09

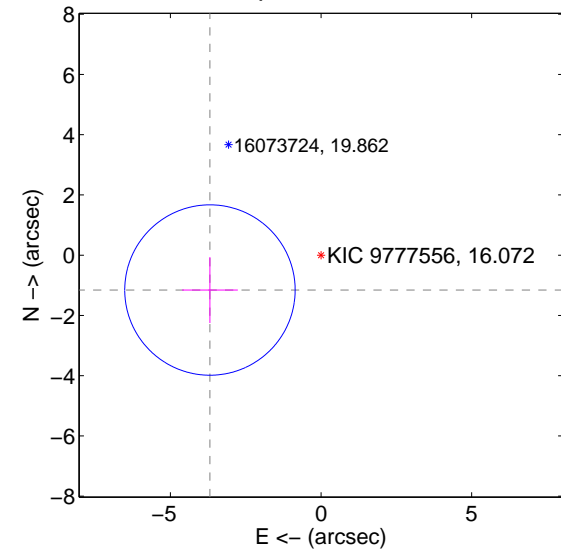
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

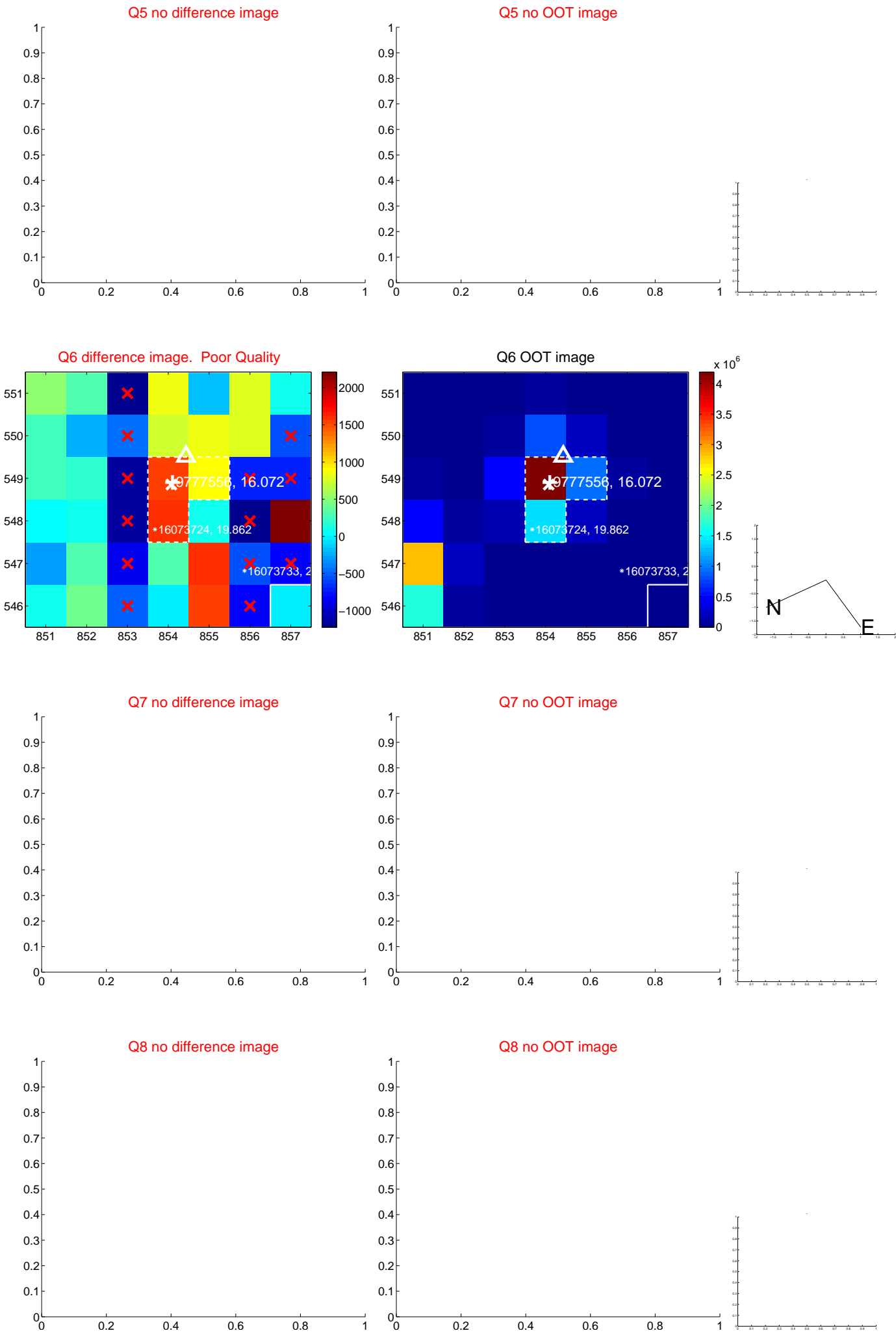


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

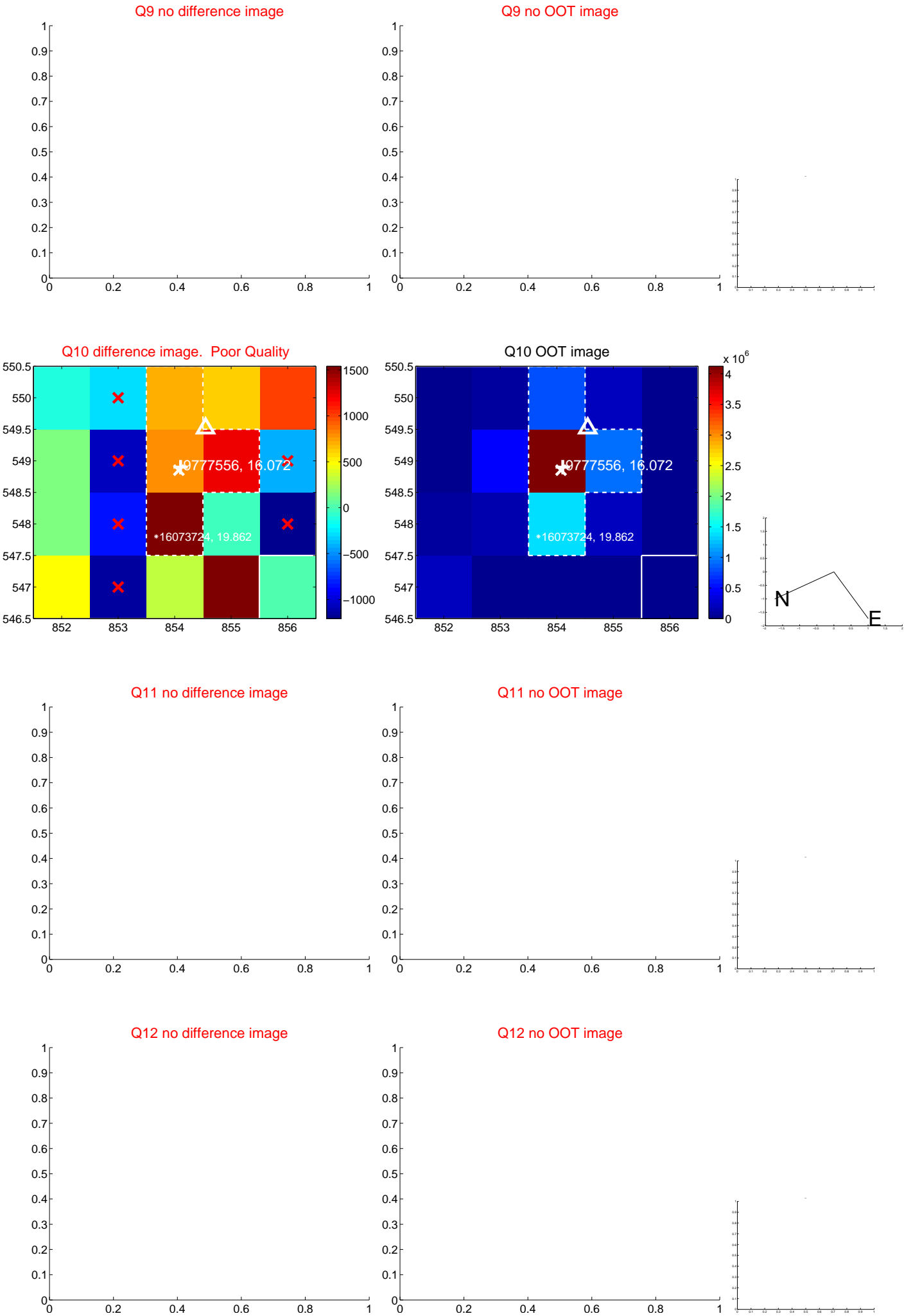
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



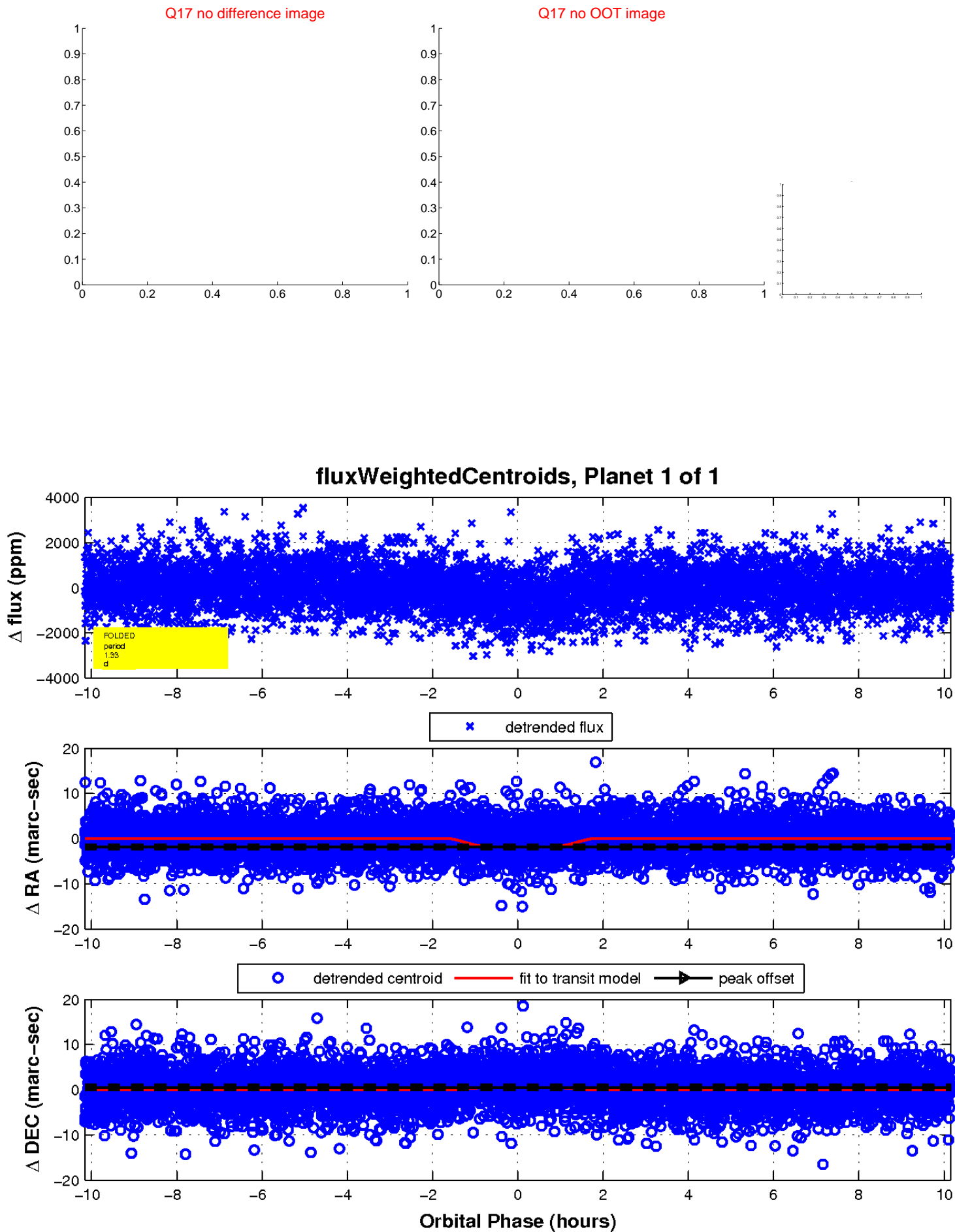
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



UKIRT Image

Declination

