

KIC 008432151

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})
008432151-01	OBS	No	358.502284	374.664594	345.5	16.599	8.5	10.1	1.10	6299	2.23	1.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008432151-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

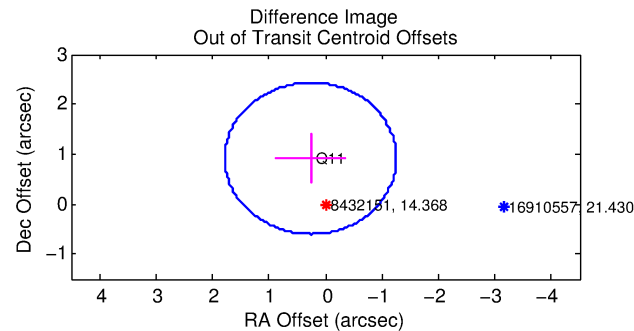
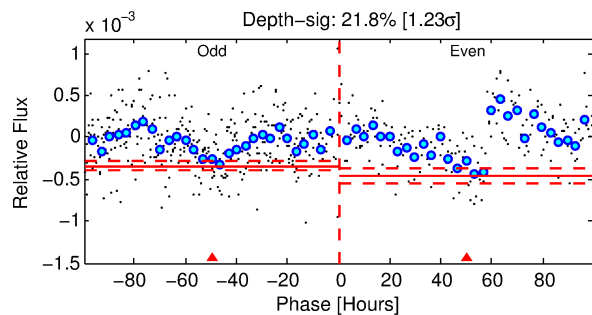
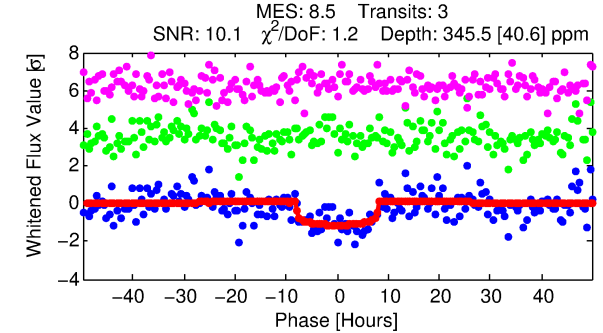
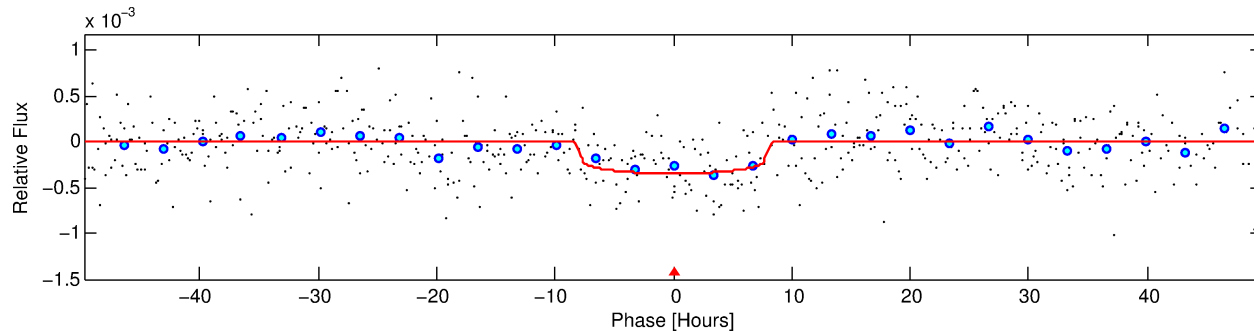
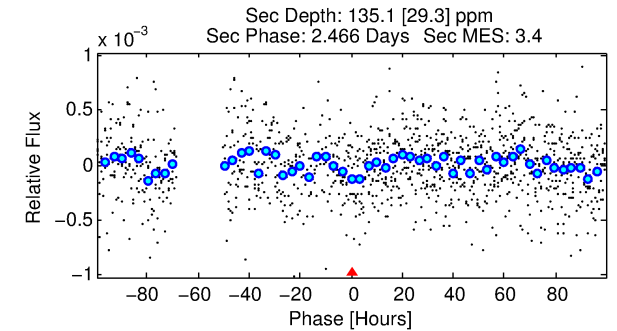
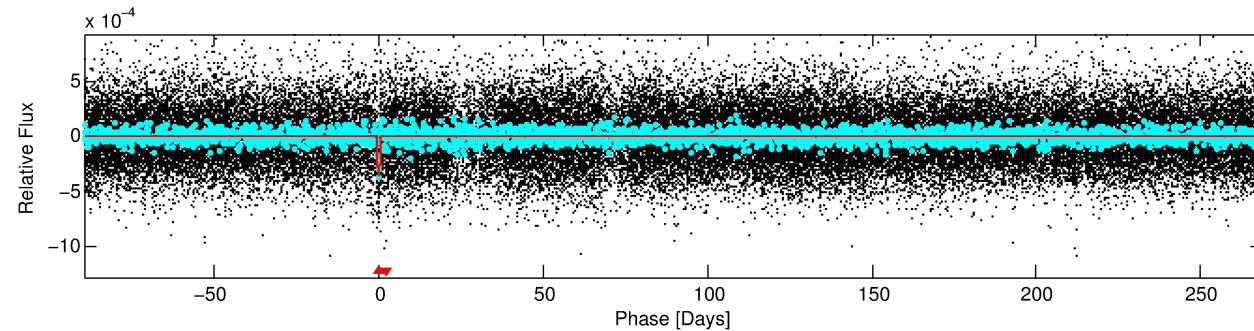
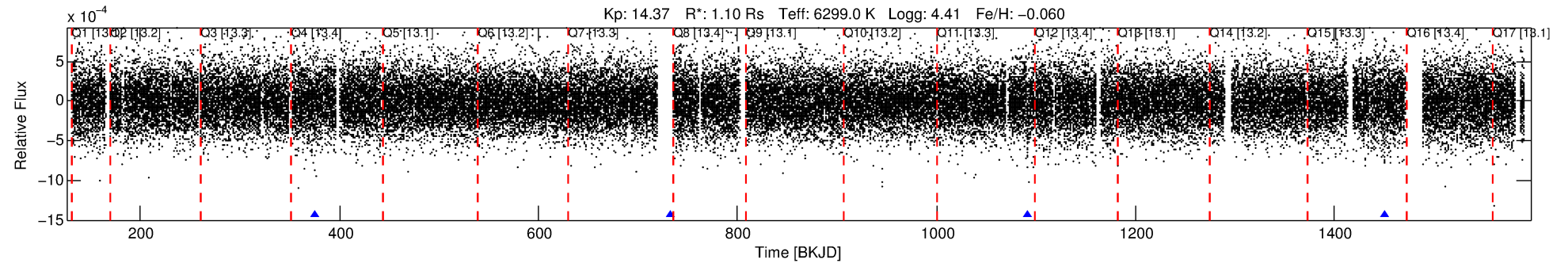
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008432151-01

No Significant Match Found

DV One-Page Summary

KIC: 8432151 Candidate: 1 of 1 Period: 358.502 d



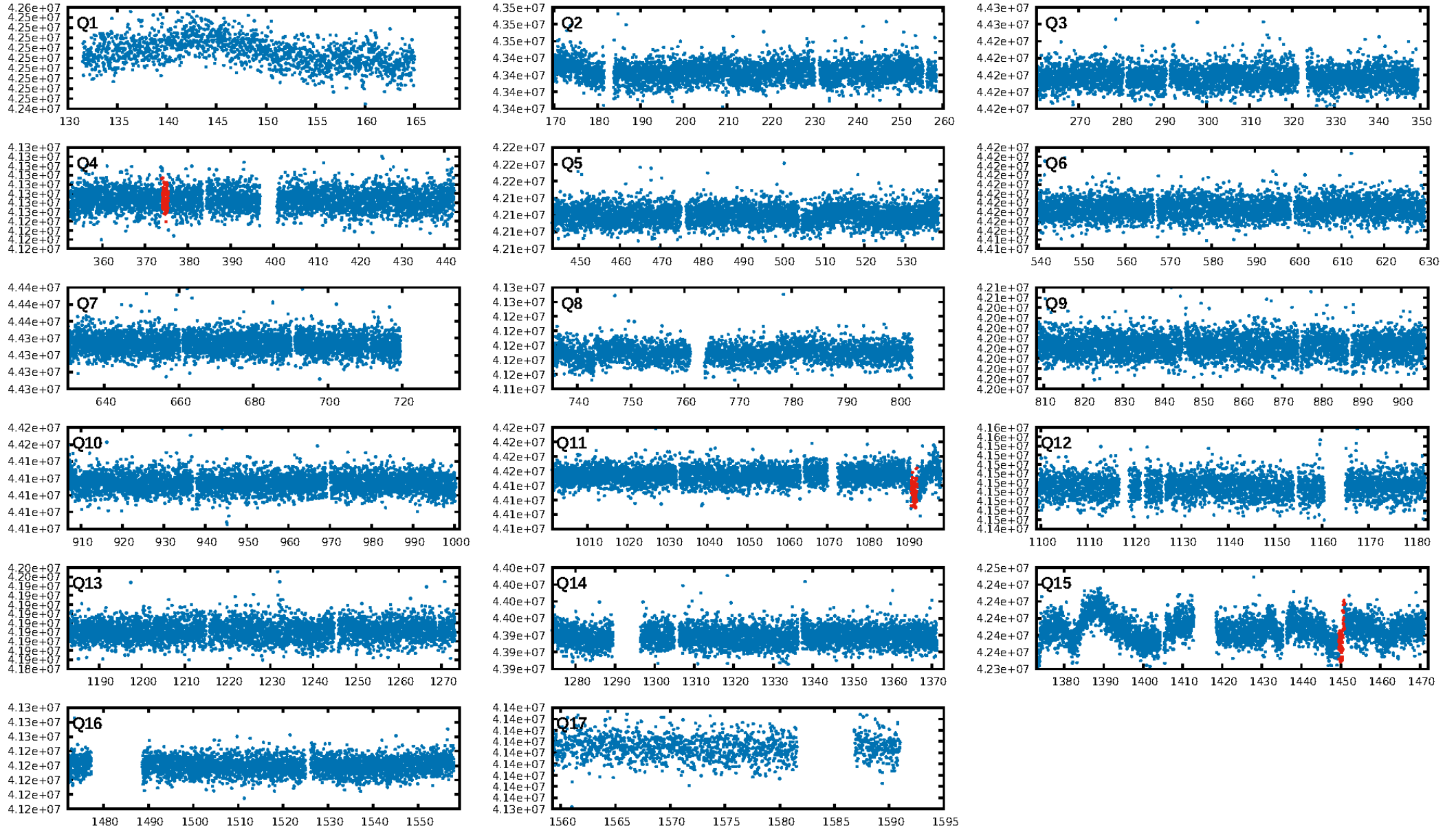
DV Fit Results:

Period = 358.50228 [0.01371] d
Epoch = 374.6646 [0.0254] BKJD
Rp/R* = 0.0186 [0.0056]
a/R* = 111.47 [172.01]
b = 0.76 [0.85]
Seff = 1.61 [0.68]
Teff = 287 [31] K
Rp = 2.23 [1.01] Re
a = 1.0311 [0.2885] AU
Ag = 15918.13 [12005.81] [1.33 σ]
Teffp = 4985 [814] K [5.77 σ]

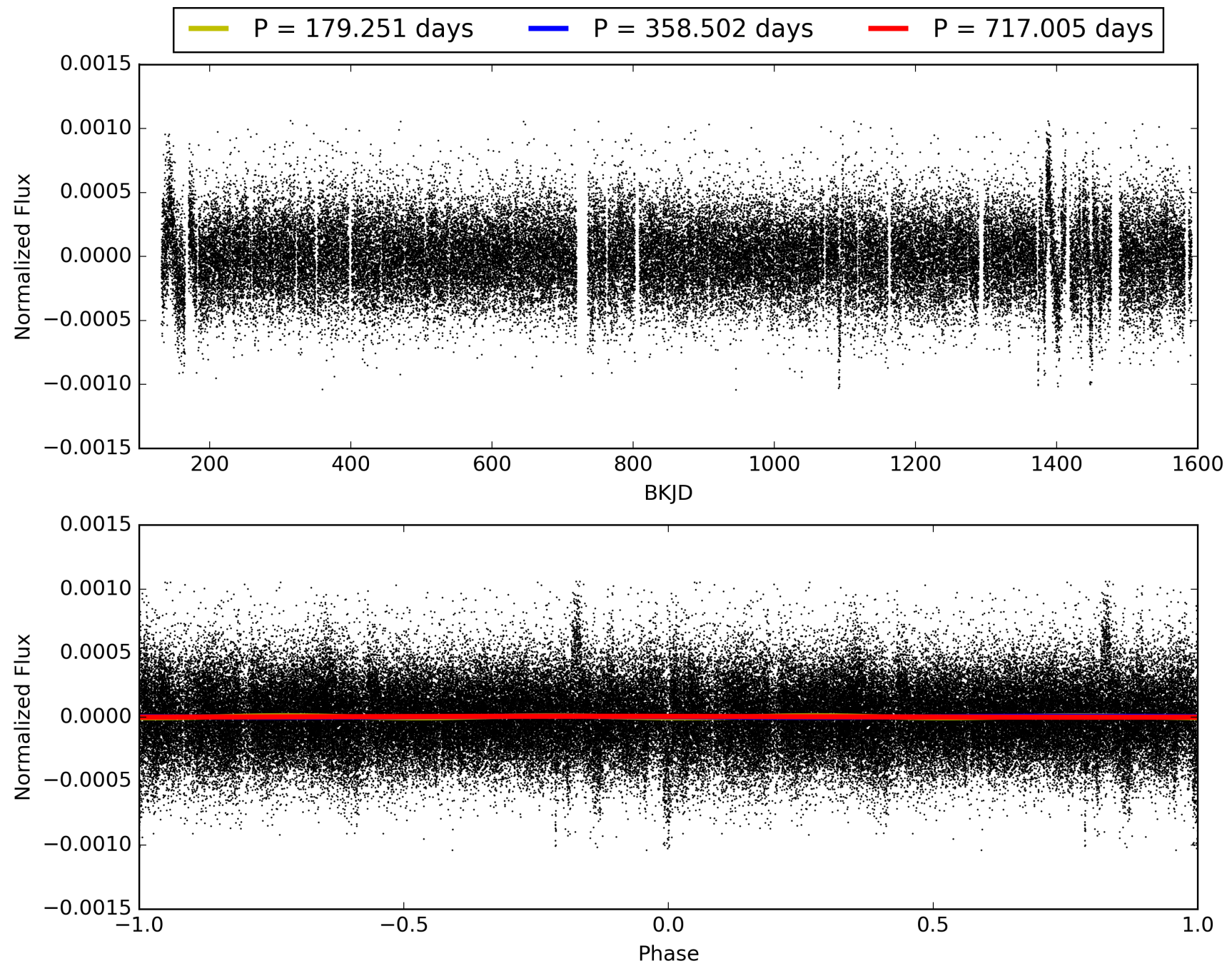
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 90.0%
Bootstrap-pfa: 9.74e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -10.3
Centroid-sig: 6.4%
Centroid-so: 2.213 arcsec [1.65 σ]
OotOffset-rm: 0.954 arcsec [1.89 σ]
KicOffset-rm: 0.927 arcsec [1.82 σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 008432151-01, PDC Light Curves

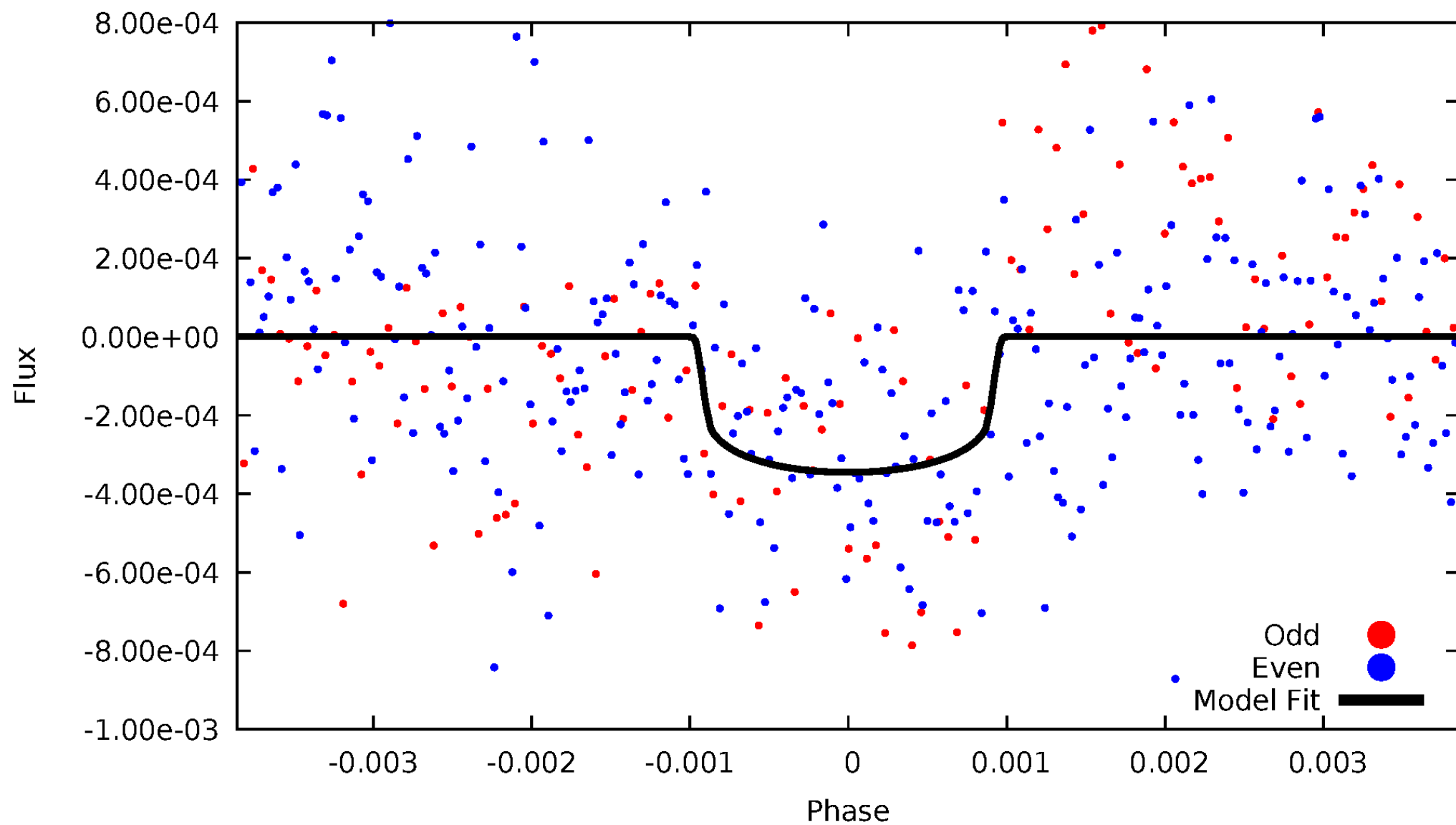


TCE 008432151-01



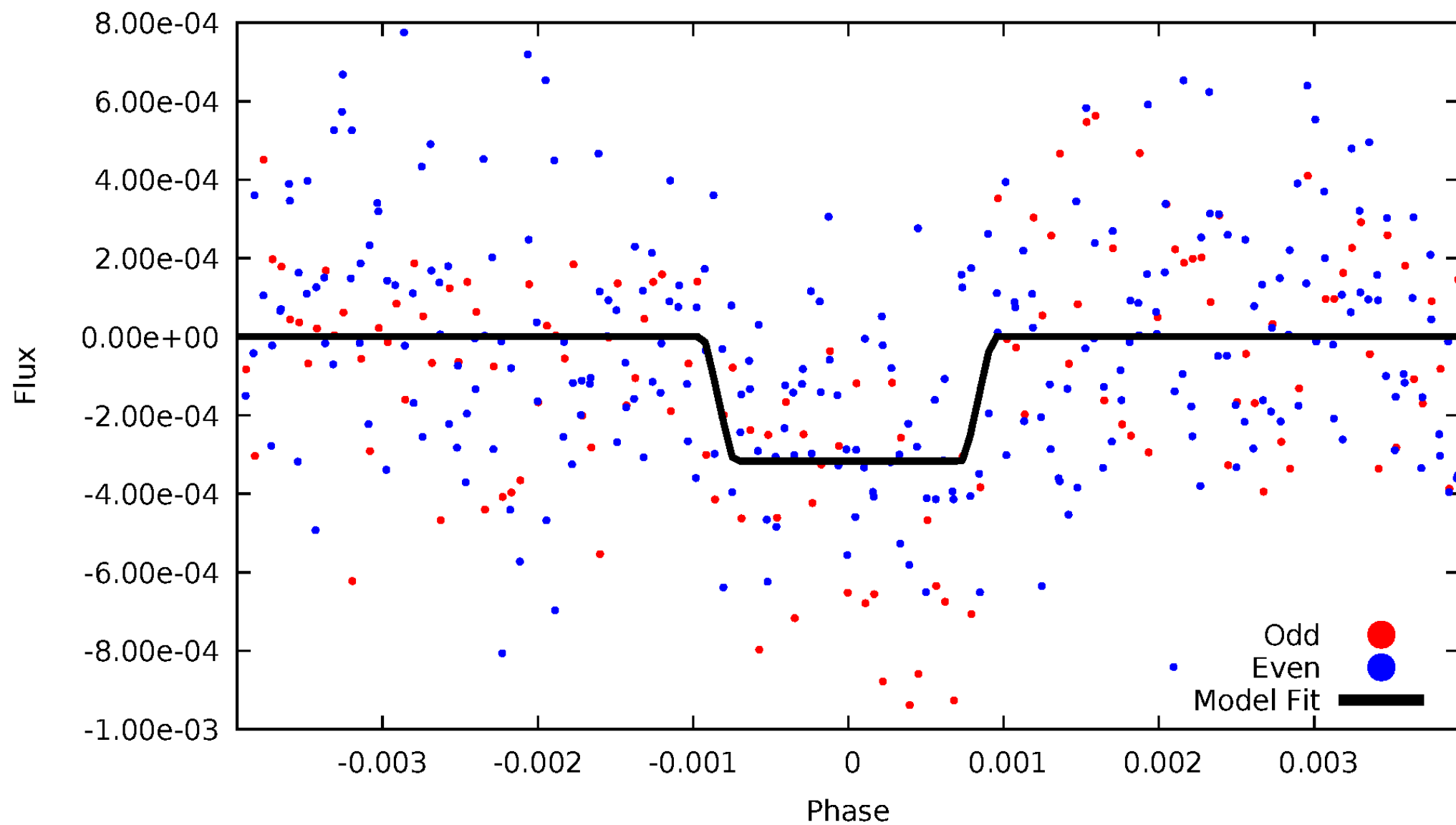
DV Odd/Even

TCE 008432151-01

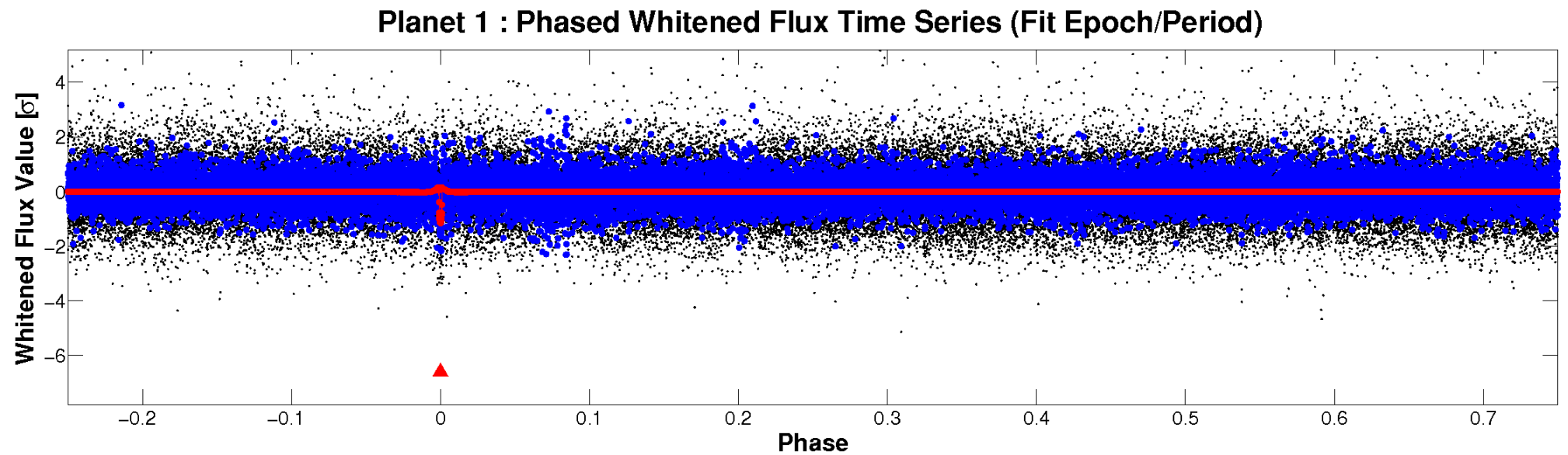
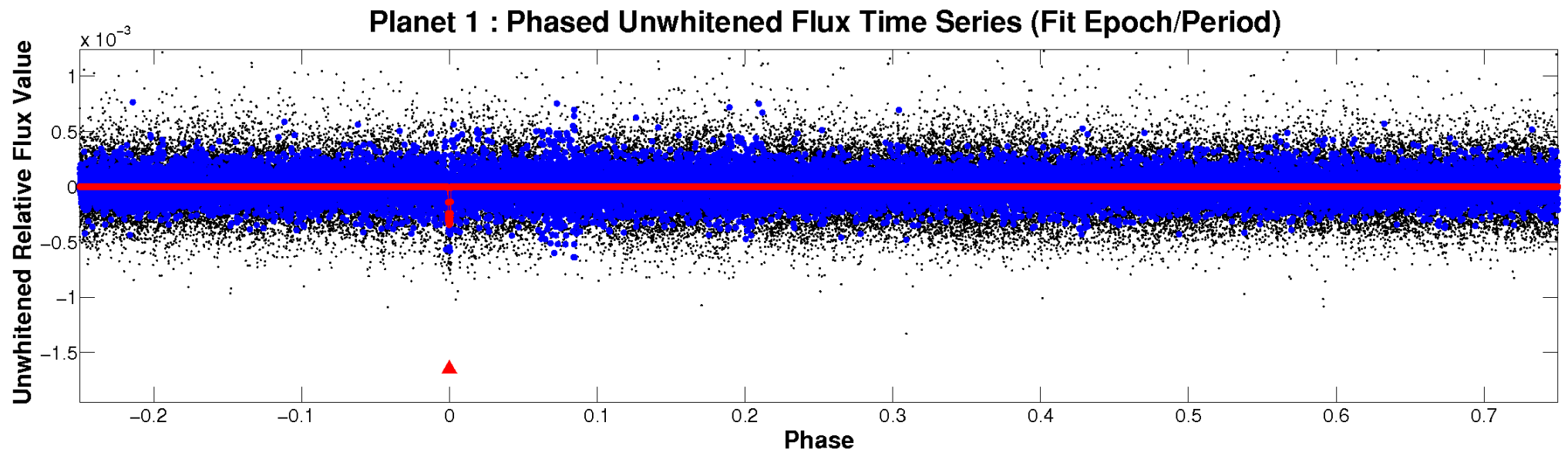


ALT Odd/Even

TCE 008432151-01



Non-Whitened Vs. Whitened Light Curve



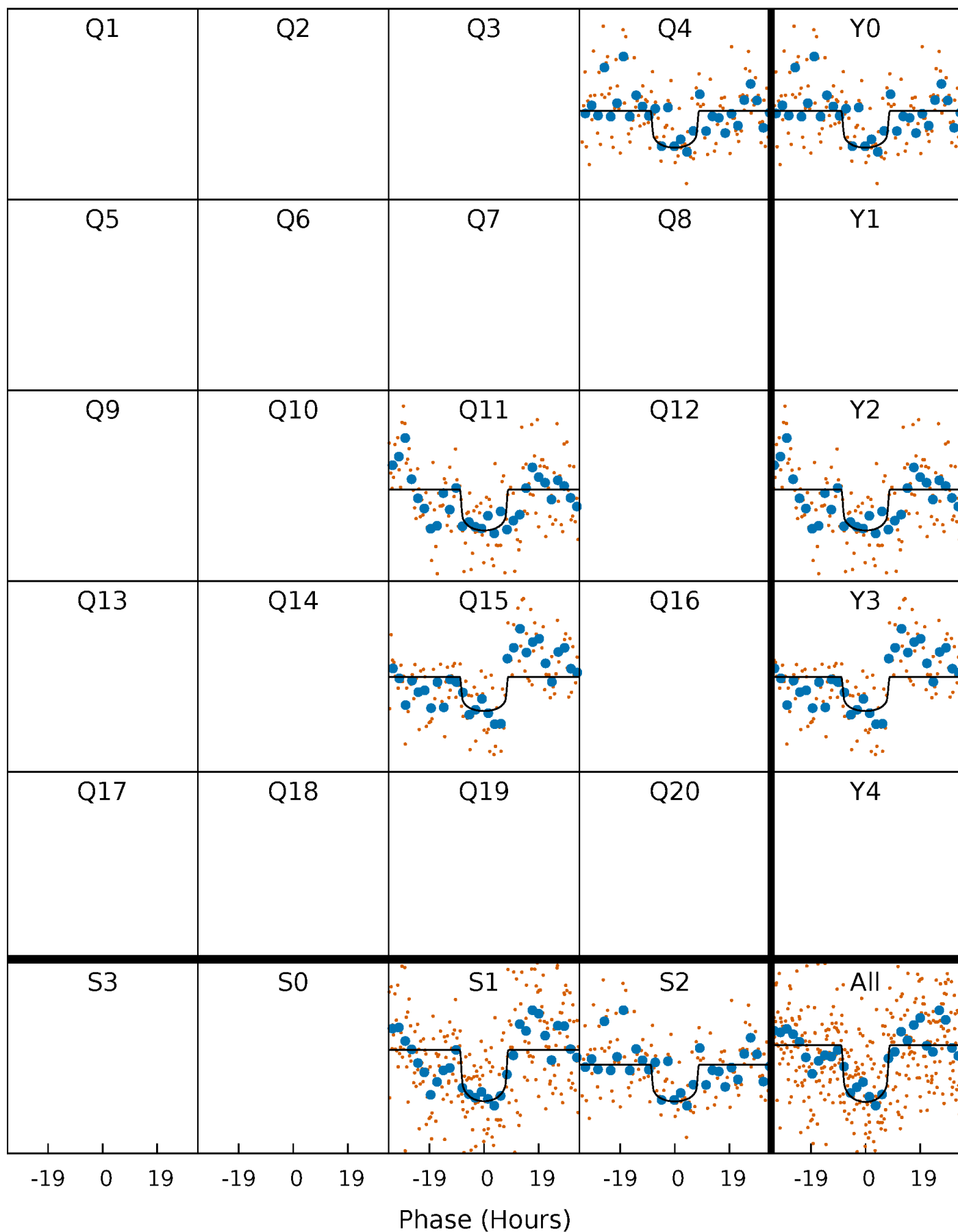
PDC Quarter-Phased Transit Curves

TCE 008432151-01 P=358.502284 Days $T_0=374.664594$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008432151-01 P=358.502284 Days $T_0=374.664594$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

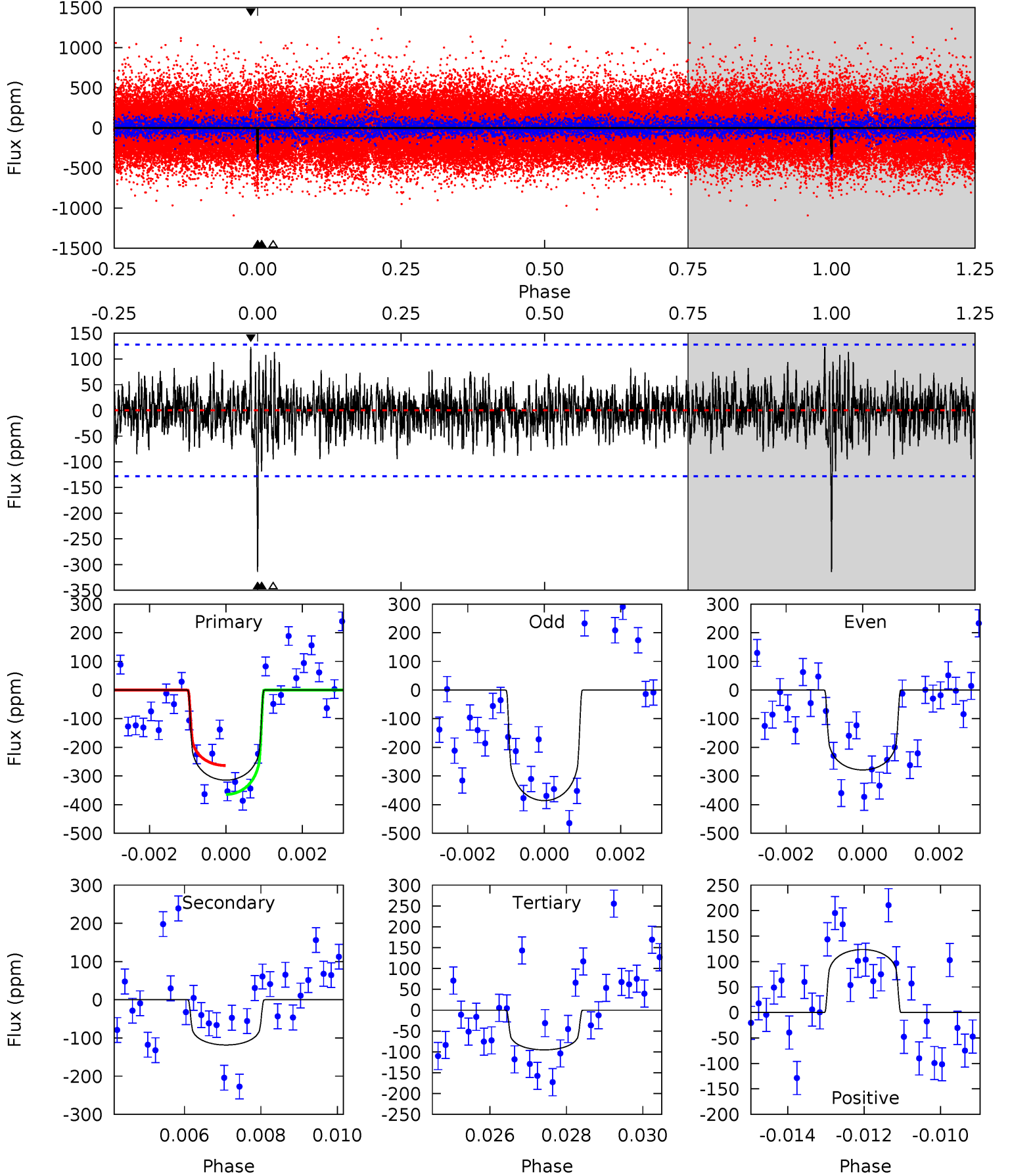
TCE 008432151-01 P=358.506810 Days $T_0=374.653483$ (BKJD)



DV Model-Shift Uniqueness Test

008432151-01, P = 358.502284 Days, E = 16.162310 Days

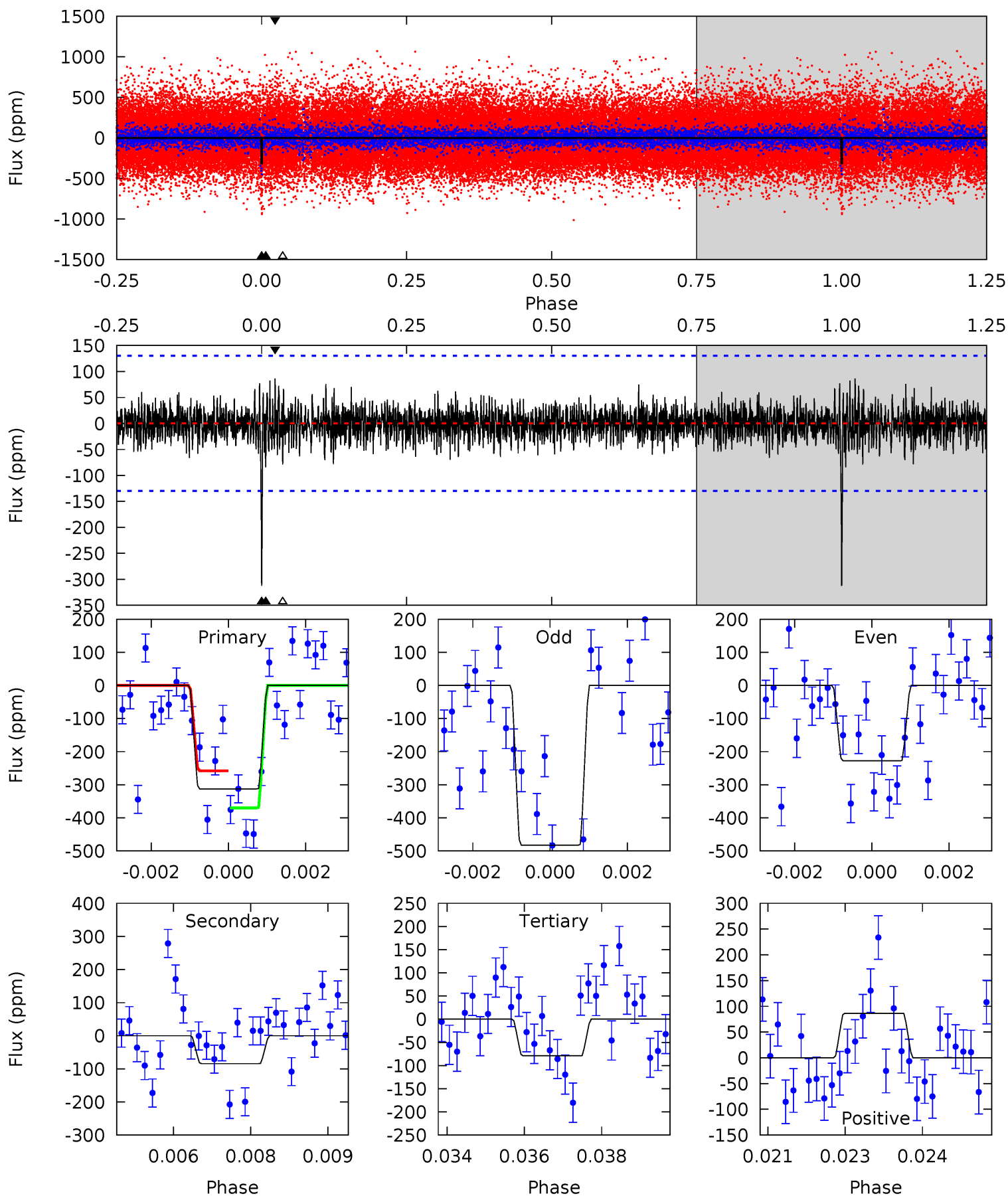
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	4.93	3.96	5.14	5.33	3.09	1.23	9.13	7.95	0.96	-0.22	2.09	0.94	0.28	2.10



Alt Model-Shift Uniqueness Test

008432151-01, P = 358.506810 Days, E = 16.146673 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	3.46	3.24	3.55	5.34	3.11	0.89	9.59	9.28	0.22	-0.09	4.93	1.23	0.22	2.30



Stellar Parameters For KIC 008432151

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6299^{+174}_{-218}	$4.411^{+0.072}_{-0.217}$	$-0.060^{+0.250}_{-0.300}$	$1.100^{+0.371}_{-0.132}$	$1.136^{+0.168}_{-0.151}$	$1.204^{+0.361}_{-0.653}$
	+3%/-3%	+2%/-5%	+417%/-500%	+34%/-12%	+15%/-13%	+30%/-54%
Source	PHO1	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 008432151-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-118 ± 24	$2.30^{+0.79}_{-0.67}$	408^{+30}_{-23}	4890^{+781}_{-489}	12558^{+12919}_{-5803}
Alt.	-84 ± 24	$2.19^{+0.81}_{-0.69}$	407^{+35}_{-23}	4639^{+893}_{-503}	9687^{+12052}_{-4618}

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

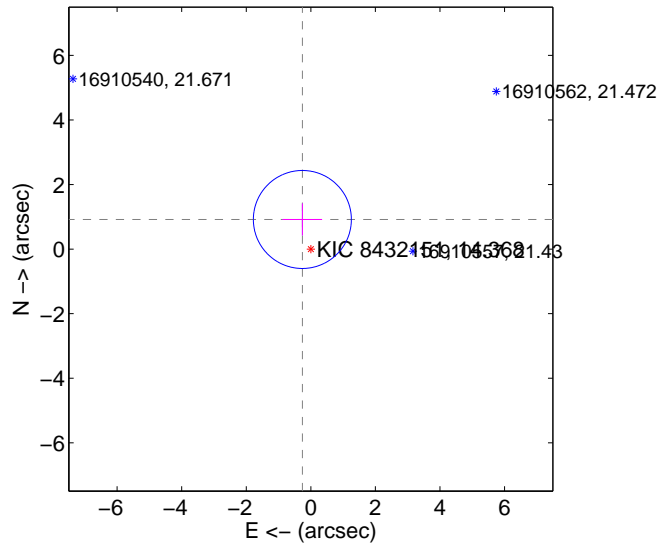
Supplemental centroid analysis for 008432151-01. Kepler magnitude: 14.37. Transit SNR 10.10

There are 1 quarters with good PRF difference image offsets

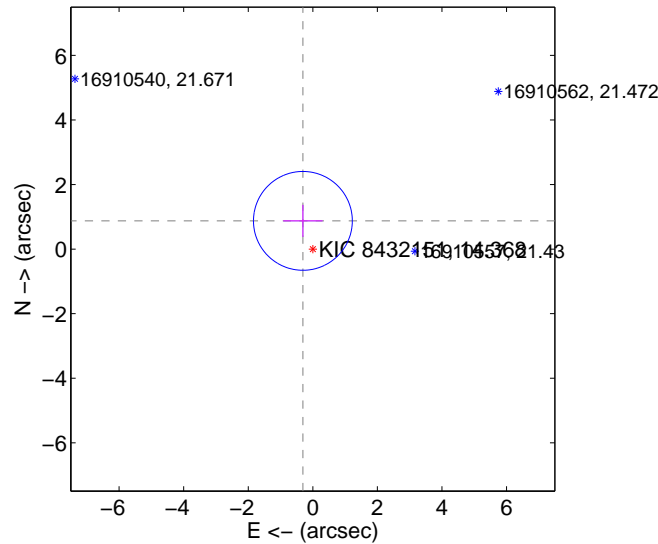
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.954 ± 0.506	1.89	0.262 ± 0.611	0.917 ± 0.496
PRF-fit source offset from KIC position	0.927 ± 0.510	1.82	0.307 ± 0.611	0.874 ± 0.496
photometric centroid source offset	2.21 ± 1.34	1.65	-2.11 ± 1.33	0.66 ± 1.49

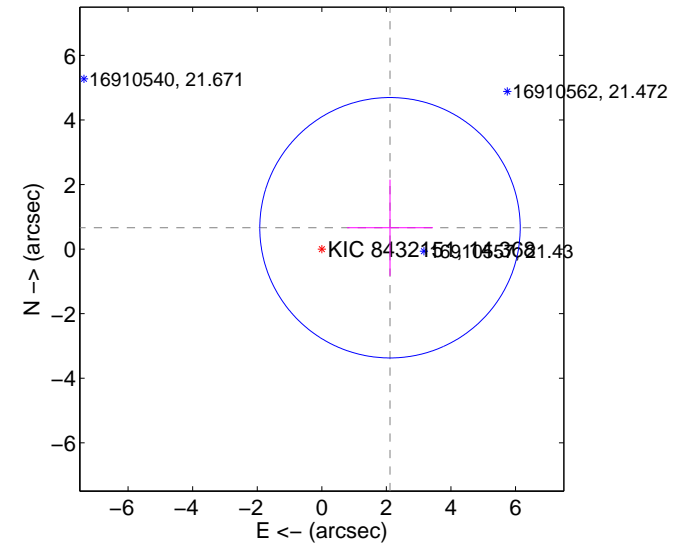
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

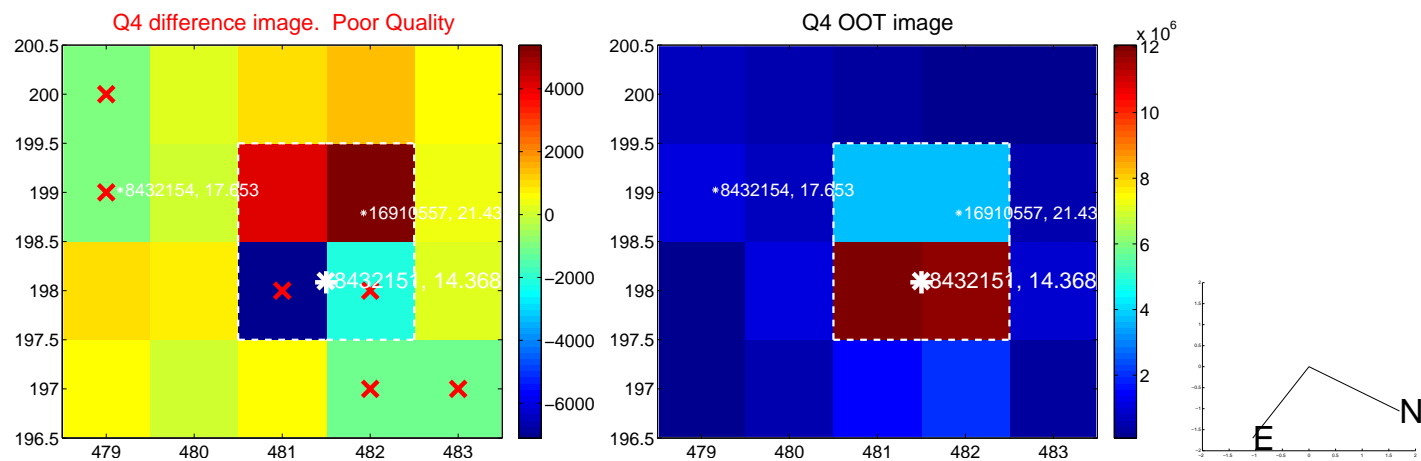
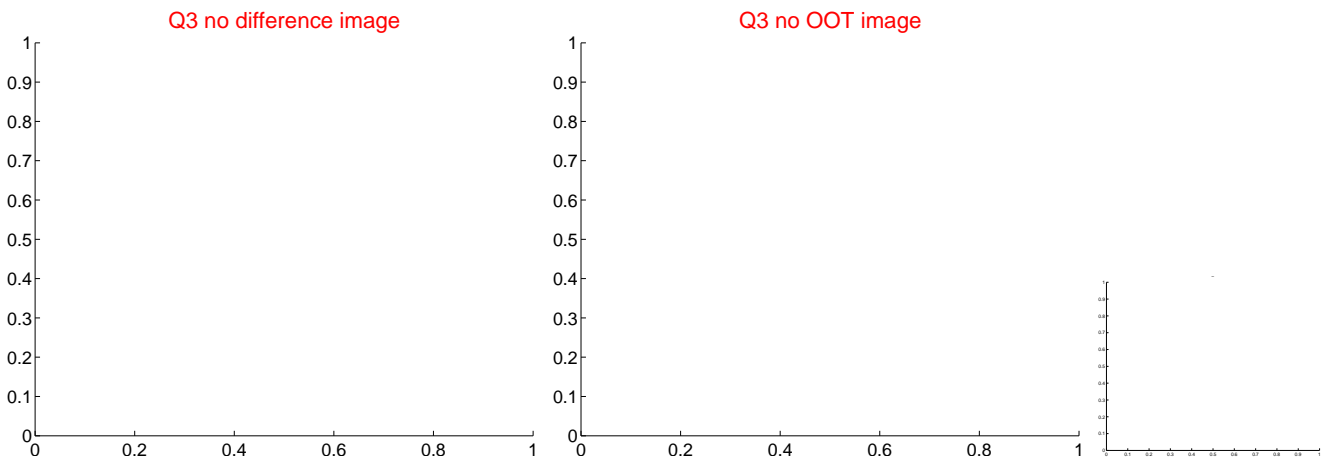
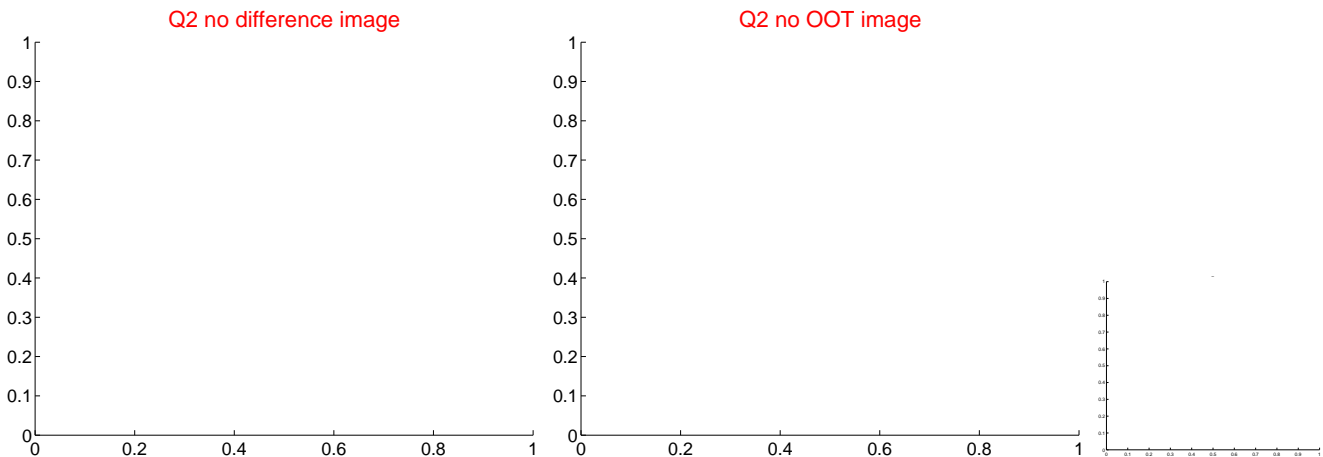


offset from photometric centroids



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.

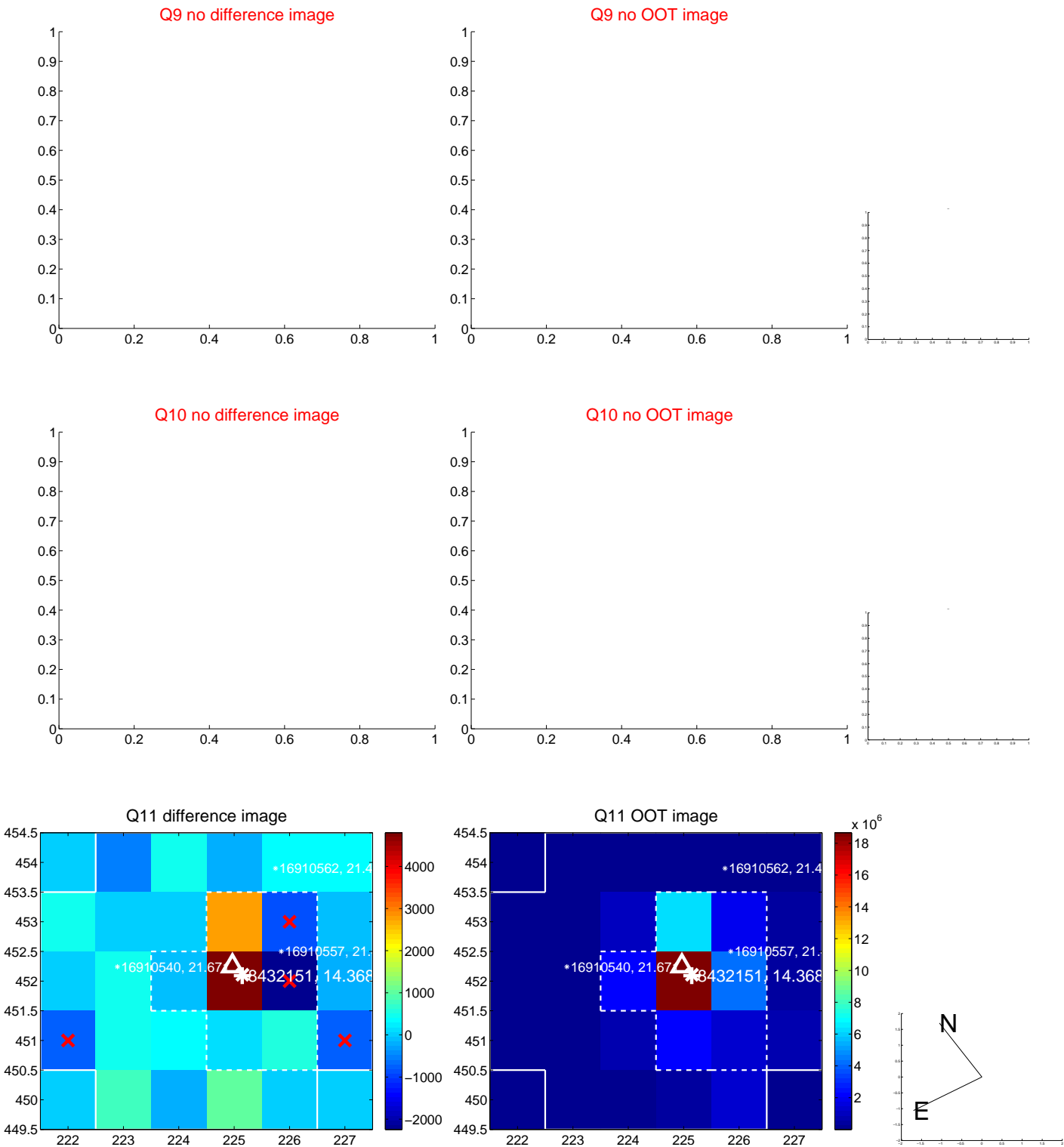
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



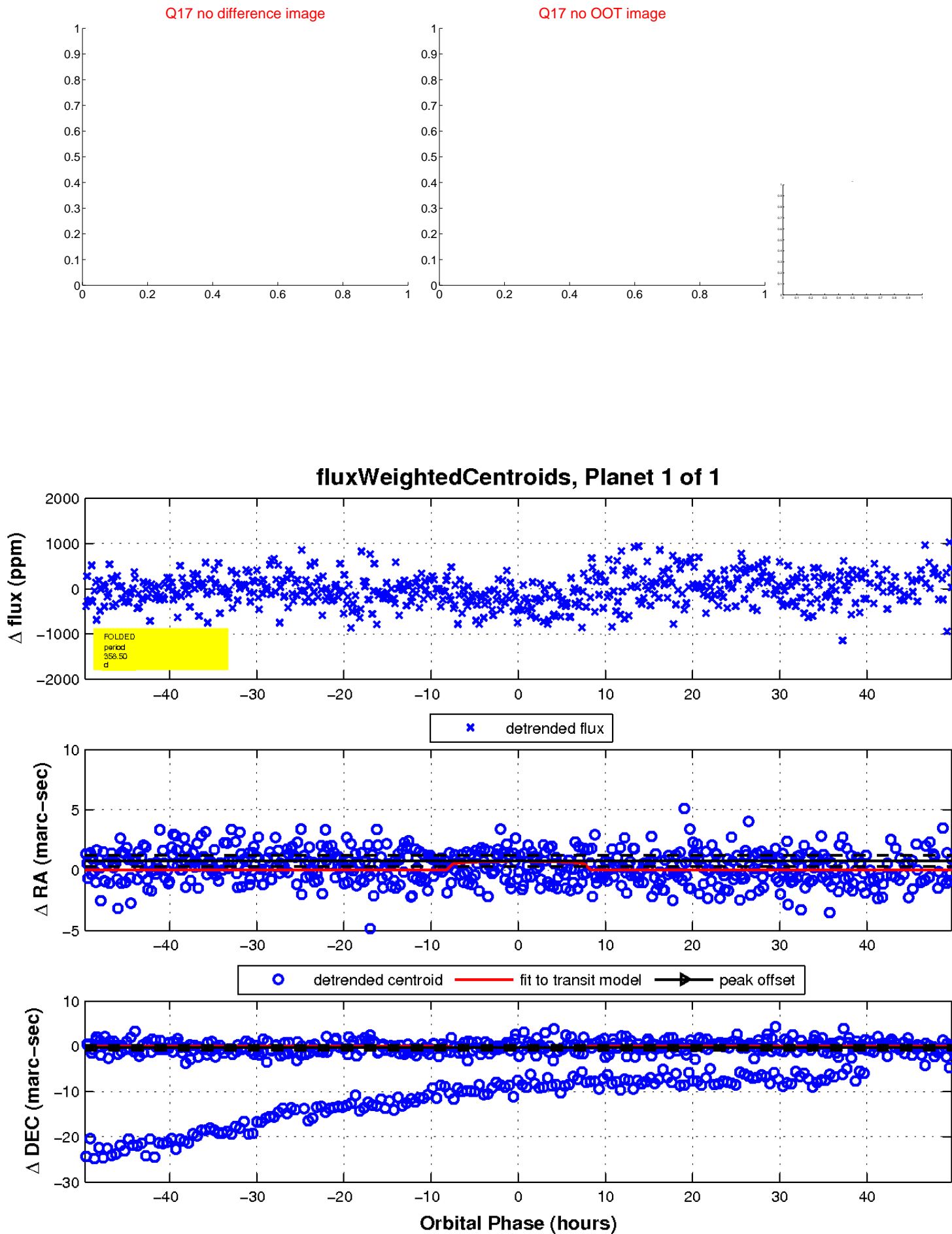
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

