

KIC 010457101

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})
010457101-01	OBS	No	574.721948	245.712562	462.9	23.329	11.6	12.2	0.88	5815	2.05	0.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010457101-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—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.

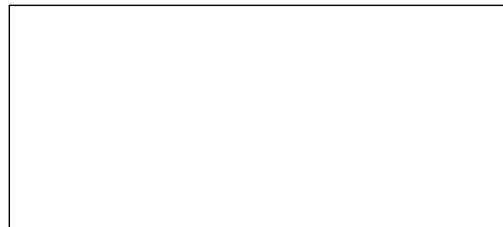
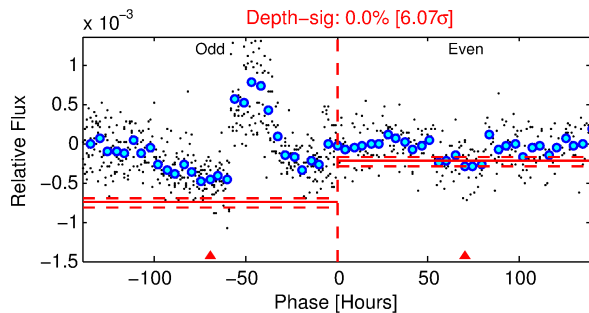
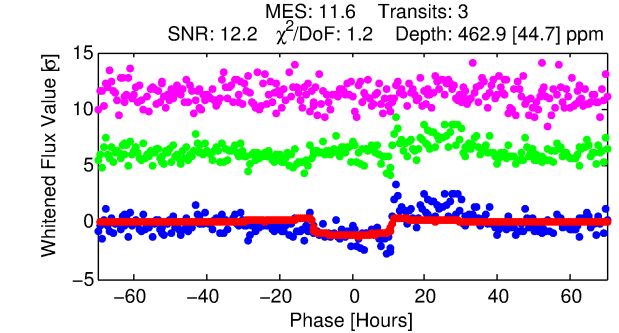
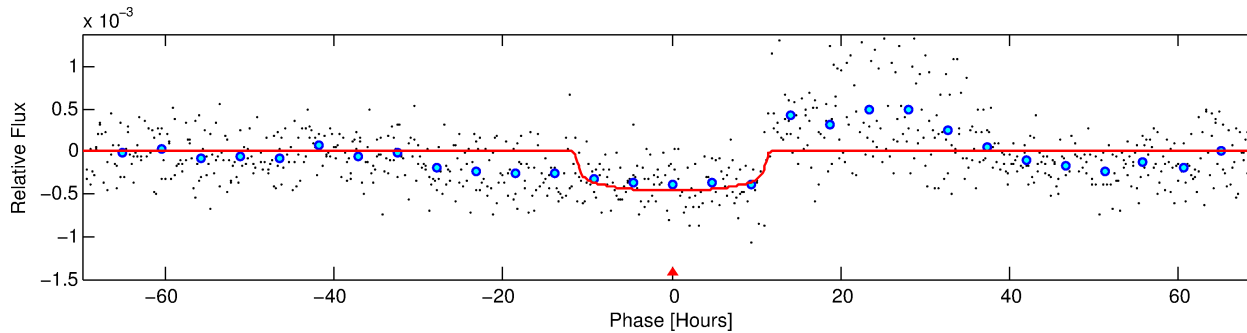
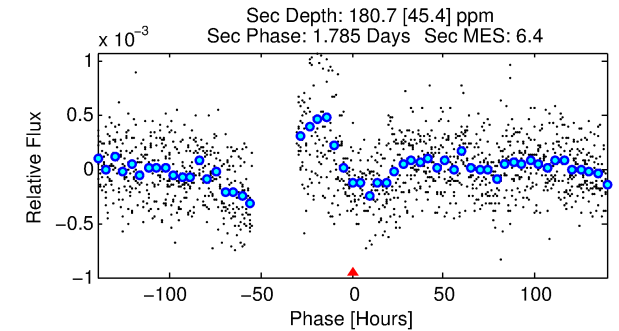
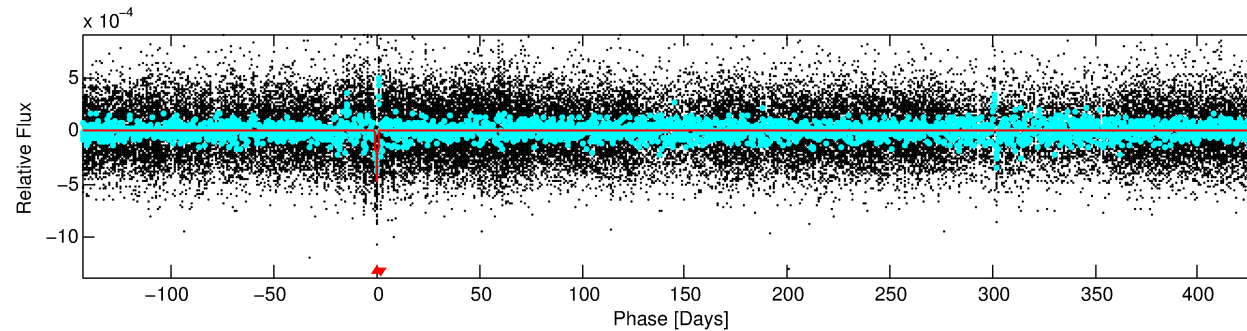
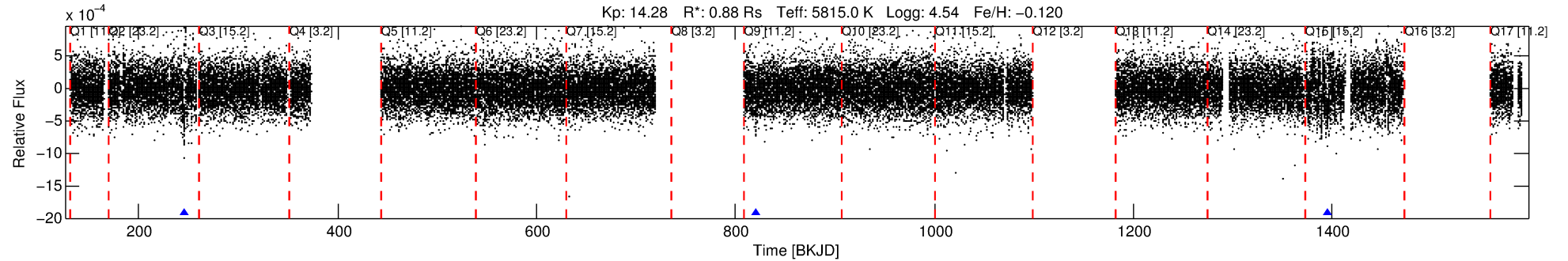
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010457101-01

No Significant Match Found

DV One-Page Summary

KIC: 10457101 Candidate: 1 of 1 Period: 574.722 d



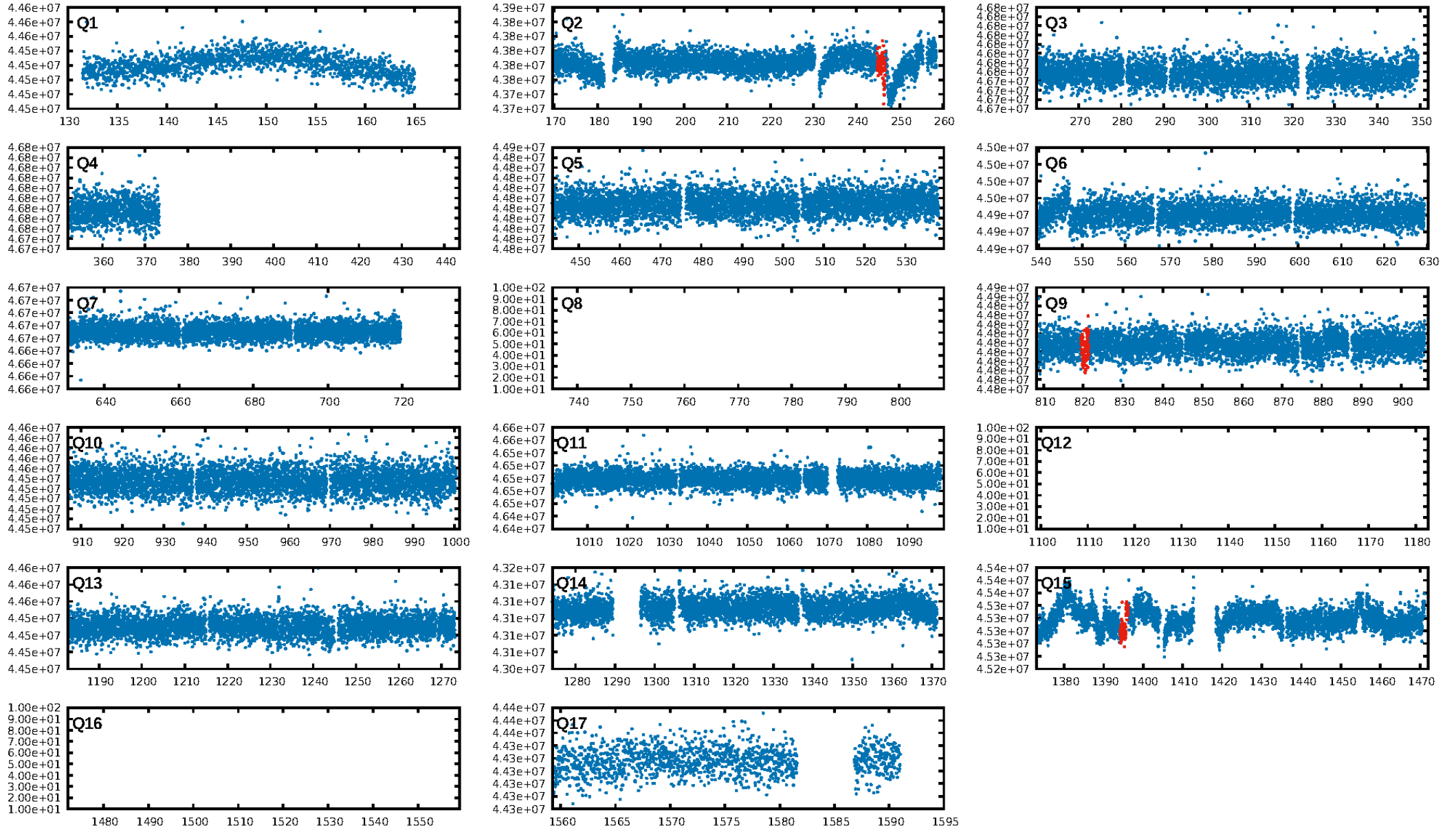
DV Fit Results:

Period = 574.72195 [0.01732] d
Epoch = 245.7126 [0.0219] BKJD
Rp/R* = 0.0214 [0.0036]
a/R* = 131.05 [97.40]
b = 0.75 [0.44]
Seff = 0.44 [0.15]
Teq = 207 [17] K
Rp = 2.05 [0.62] Re
a = 1.3407 [0.2882] AU
Ag = 42665.33 [22581.03] [1.89σ]
Teffp = 4610 [504] K [8.74σ]

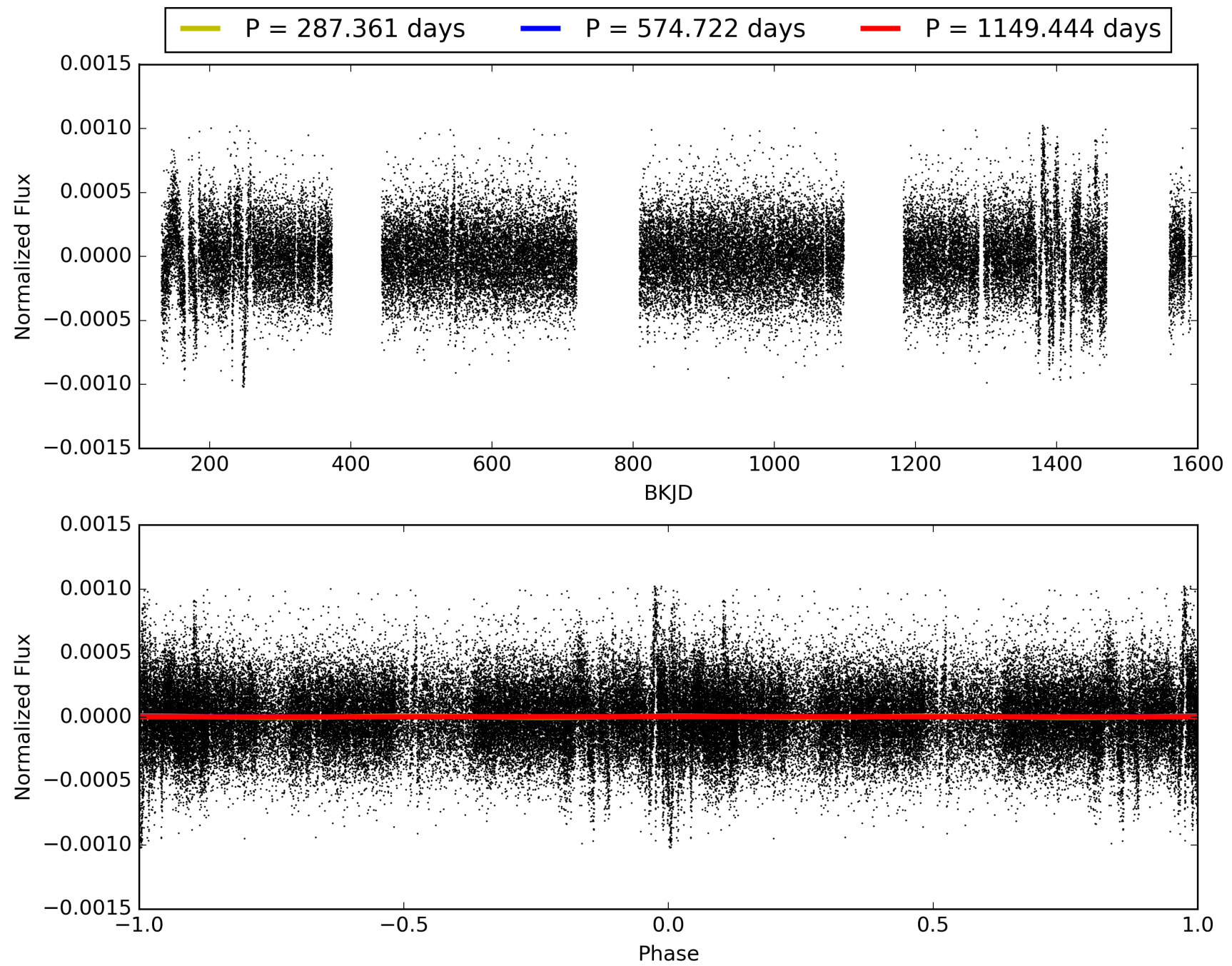
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 98.0%
Bootstrap-pfa: 3.37e-21
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.7376
Centroid-sig: 65.4%
Centroid-so: 0.428 arcsec [0.51σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [1/1]

TCE 010457101-01, PDC Light Curves

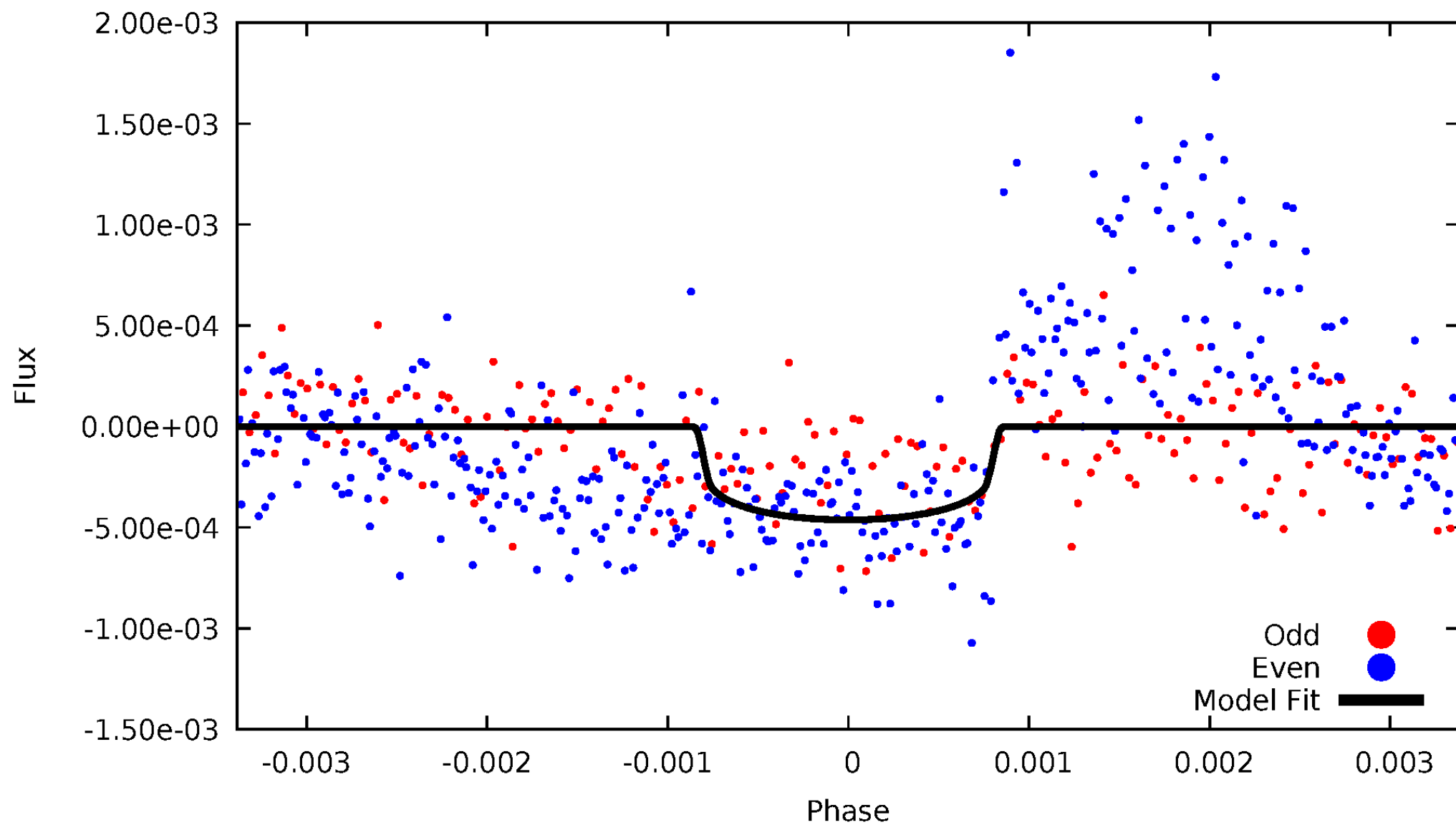


TCE 010457101-01



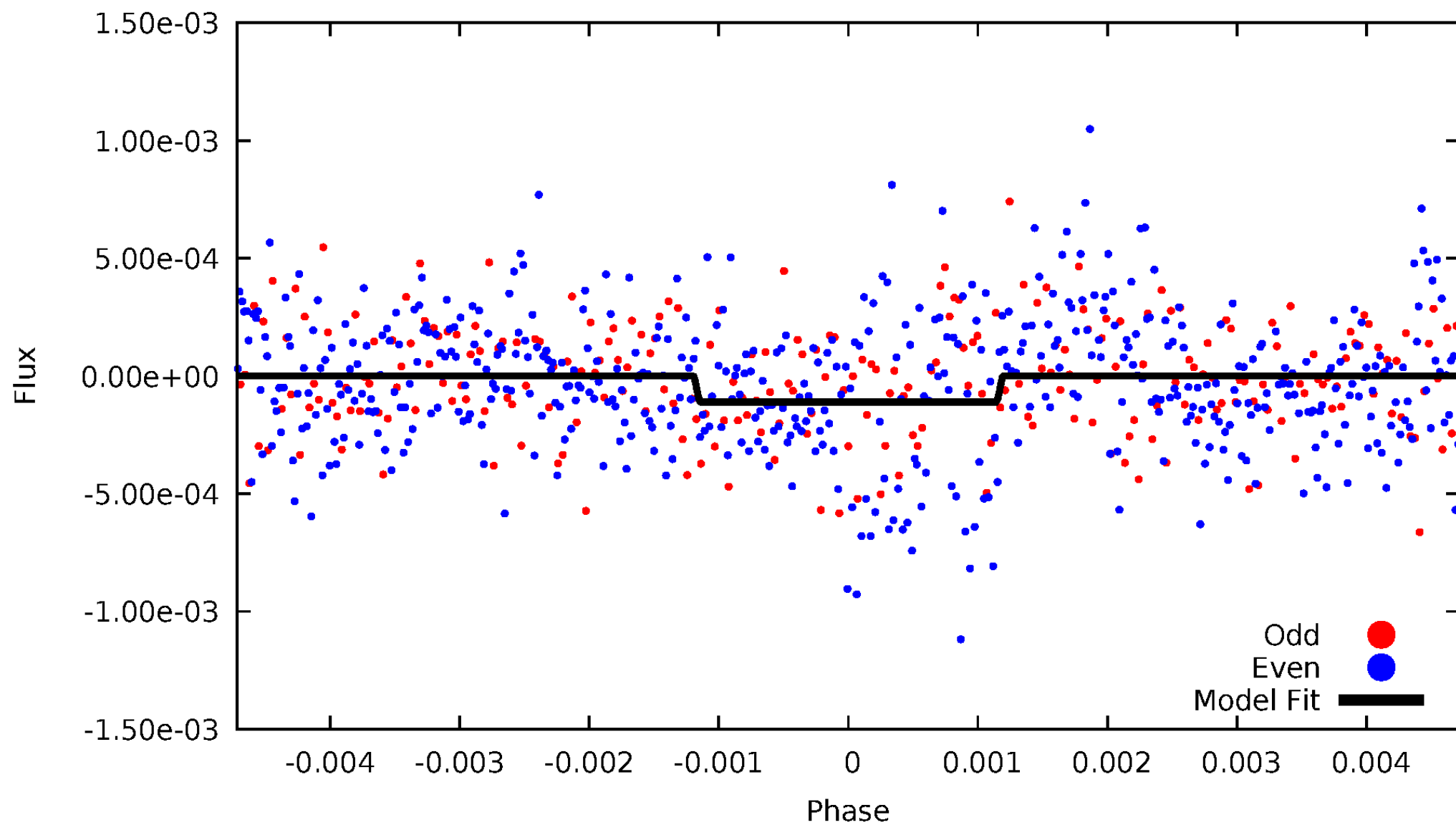
DV Odd/Even

TCE 010457101-01



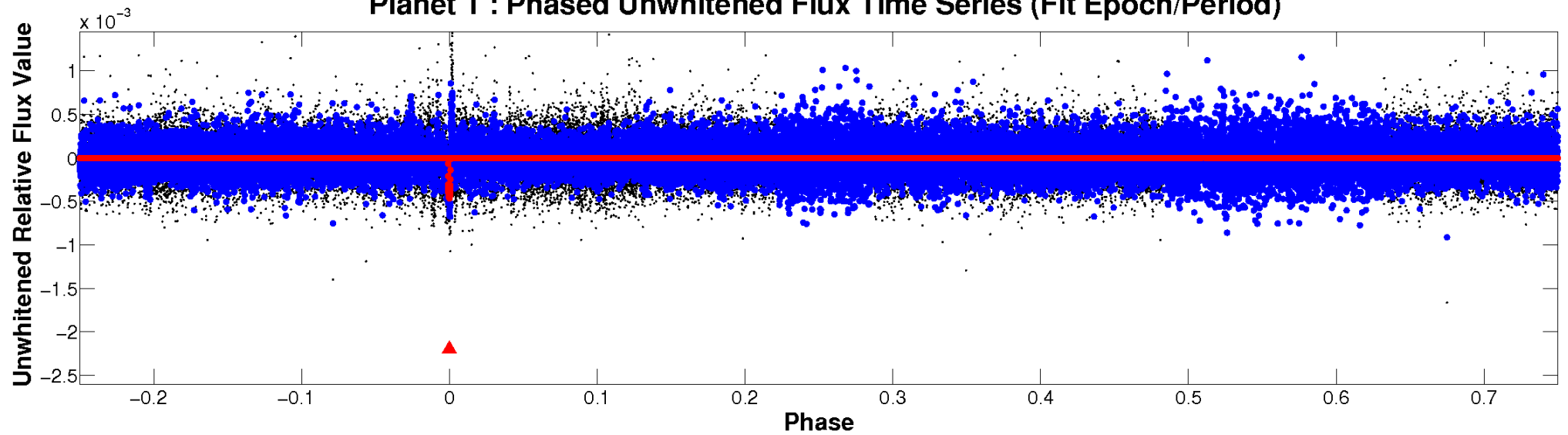
ALT Odd/Even

TCE 010457101-01

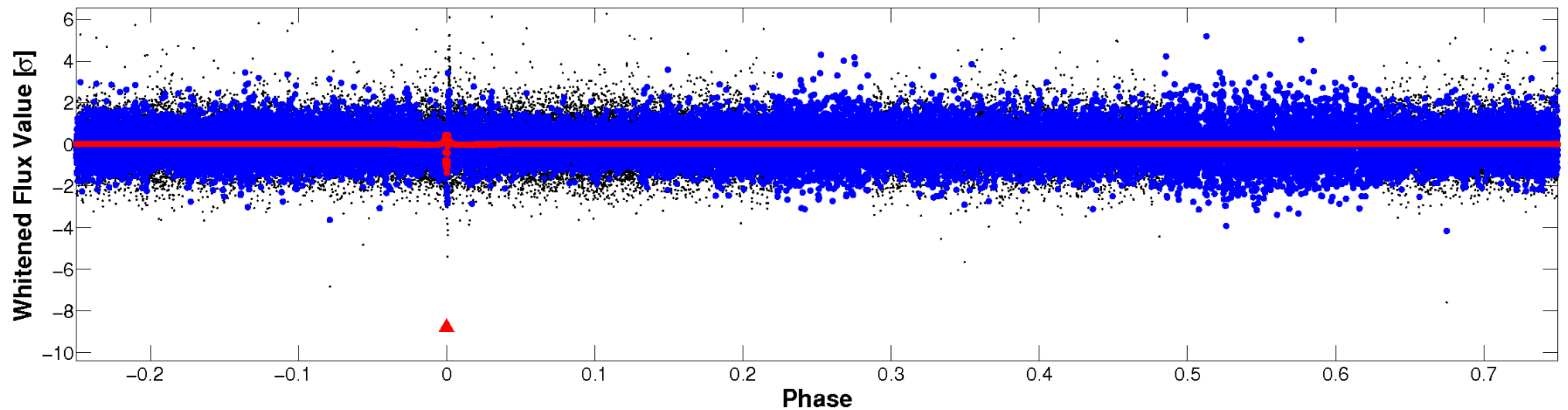


Non-Whitened Vs. Whitened Light Curve

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 010457101-01 P=574.721948 Days $T_0=245.712562$ (BKJD)



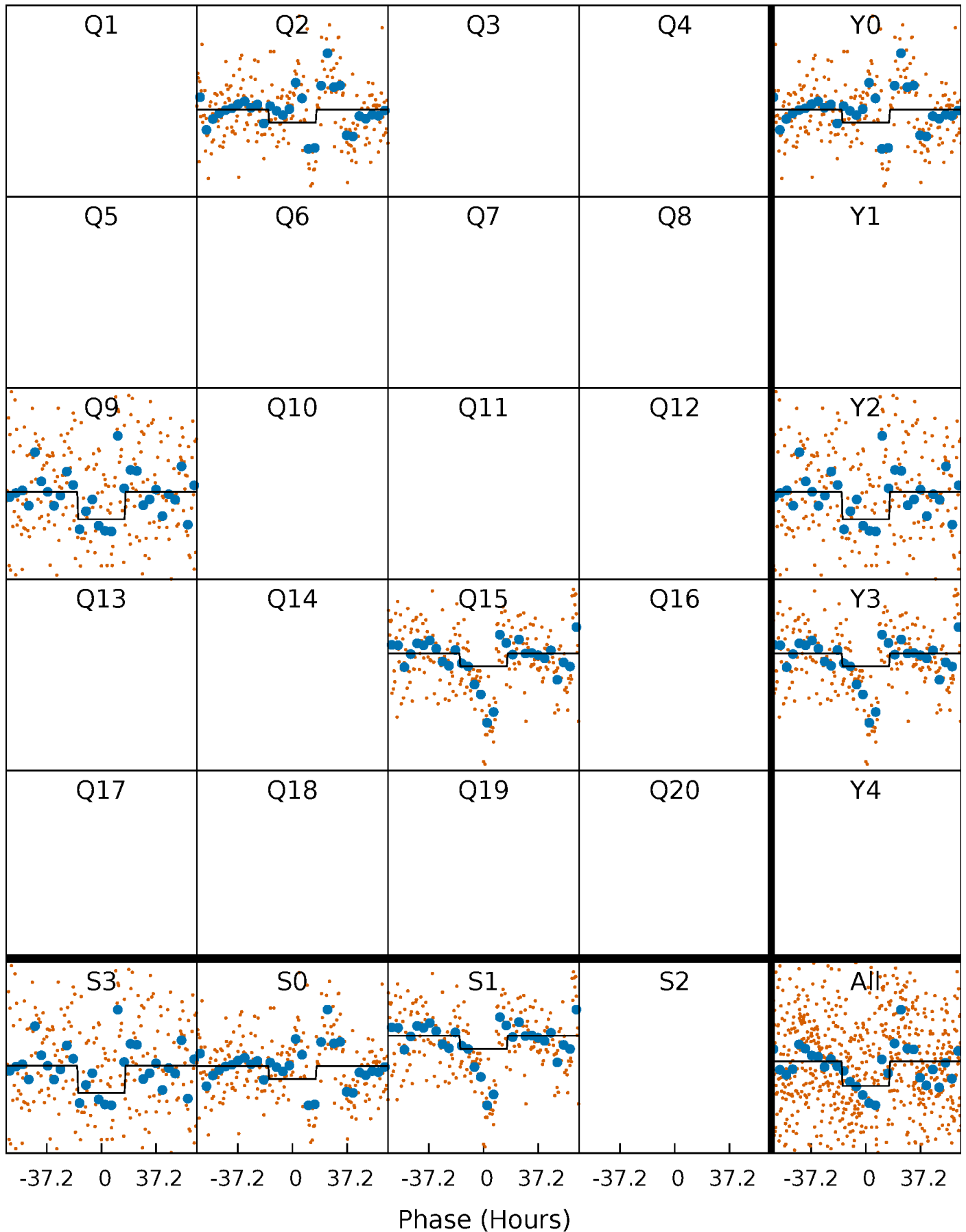
DV Quarter-Phased Transit Curves

TCE 010457101-01 P=574.721948 Days $T_0=245.712562$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

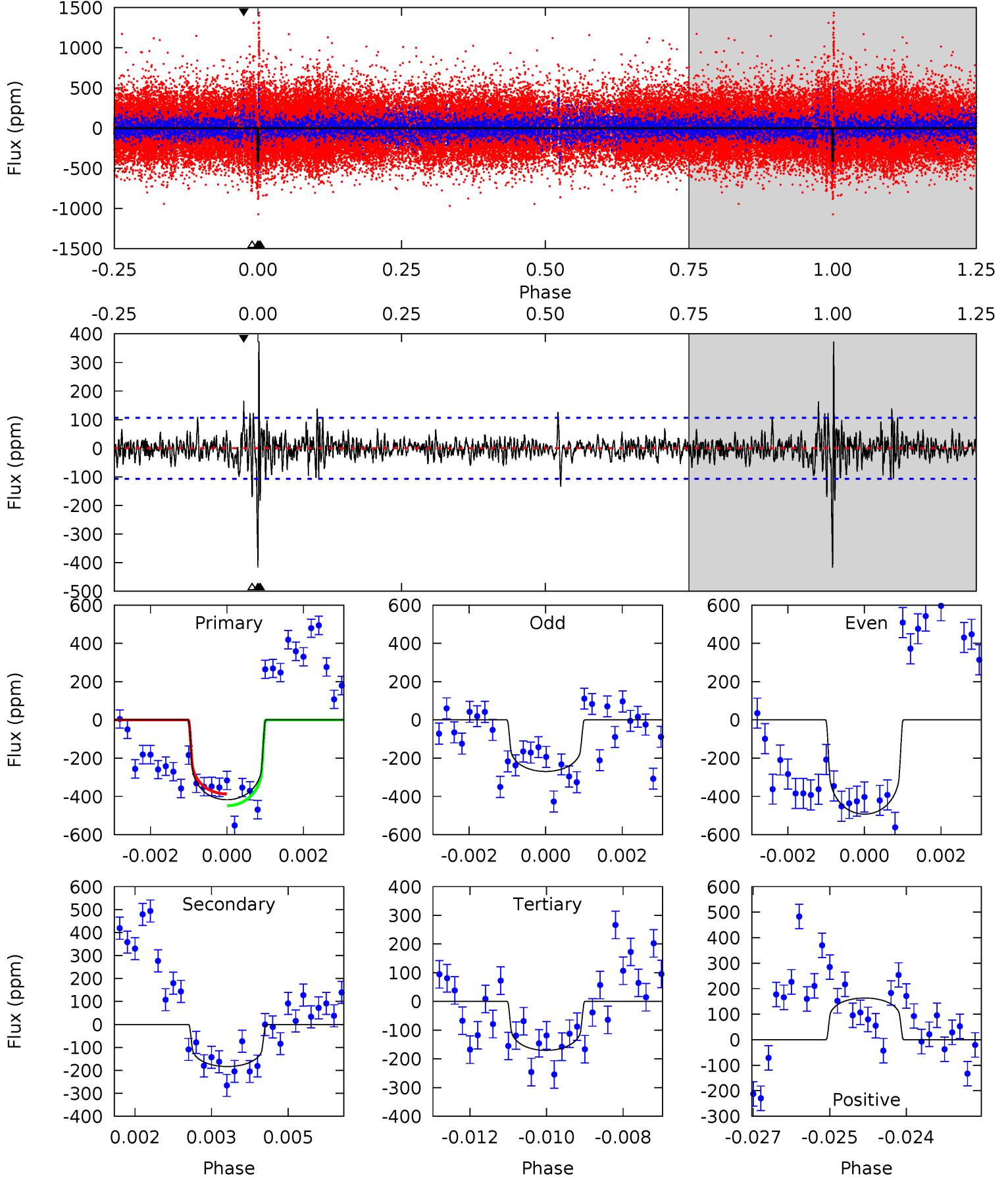
TCE 010457101-01 P=574.721120 Days $T_0=245.810187$ (BKJD)



DV Model-Shift Uniqueness Test

010457101-01, P = 574.721948 Days, E = 245.712562 Days

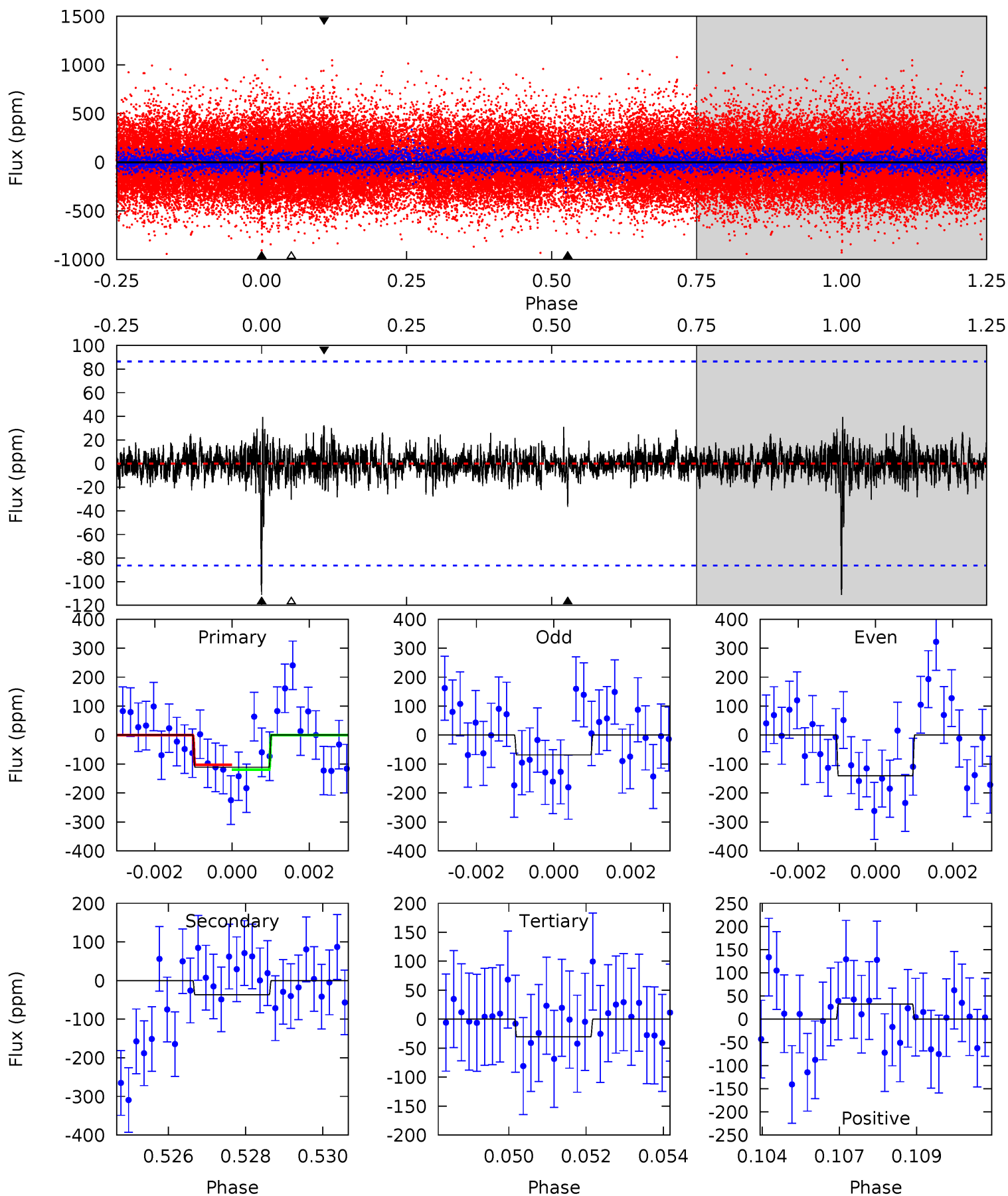
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.0	9.20	8.56	8.21	5.36	3.14	1.63	12.4	12.7	0.65	0.99	5.36	0.95	0.47	1.55



Alt Model-Shift Uniqueness Test

010457101-01, P = 574.721120 Days, E = 245.810187 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.81	2.25	1.86	1.99	5.30	3.04	0.51	4.95	4.82	0.38	0.26	2.11	1.70	0.26	0.50



Stellar Parameters For KIC 010457101

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5815^{+140}_{-158}	$4.540^{+0.044}_{-0.176}$	$-0.120^{+0.300}_{-0.300}$	$0.877^{+0.220}_{-0.088}$	$0.973^{+0.100}_{-0.122}$	$2.032^{+0.445}_{-0.948}$
	+2%/-3%	+1%/-4%	+250%/-250%	+25%/-10%	+10%/-13%	+22%/-47%
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 010457101-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-183 ± 20	$2.13^{+0.43}_{-0.41}$	296^{+19}_{-13}	4756^{+431}_{-311}	39397^{+21305}_{-12345}
Alt.	-37 ± 16	$1.07^{+0.38}_{-0.41}$	295^{+18}_{-13}	4498^{+986}_{-663}	30036^{+48568}_{-17663}

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

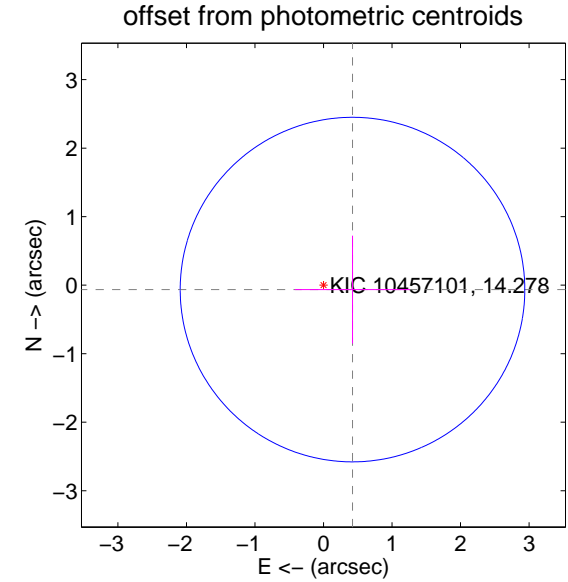
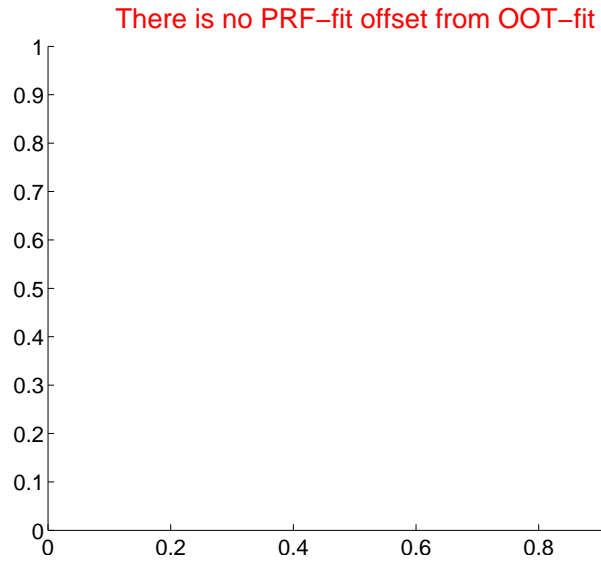
DV Centroid Data

Supplemental centroid analysis for 010457101-01. Kepler magnitude: 14.28. Transit SNR 12.24

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	0.43 ± 0.84	0.51	-0.42 ± 0.84	-0.06 ± 0.79



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.

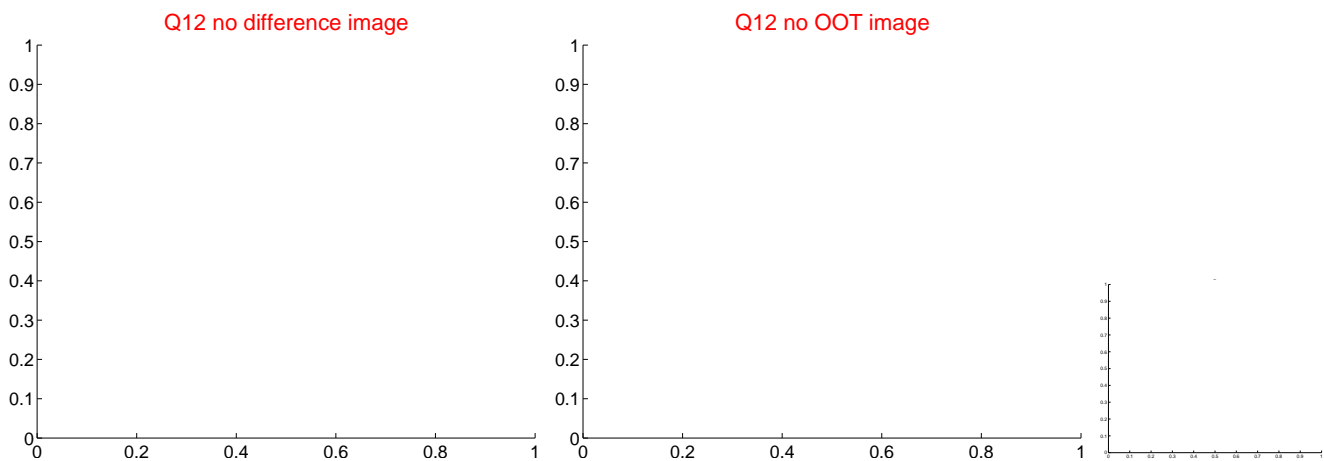
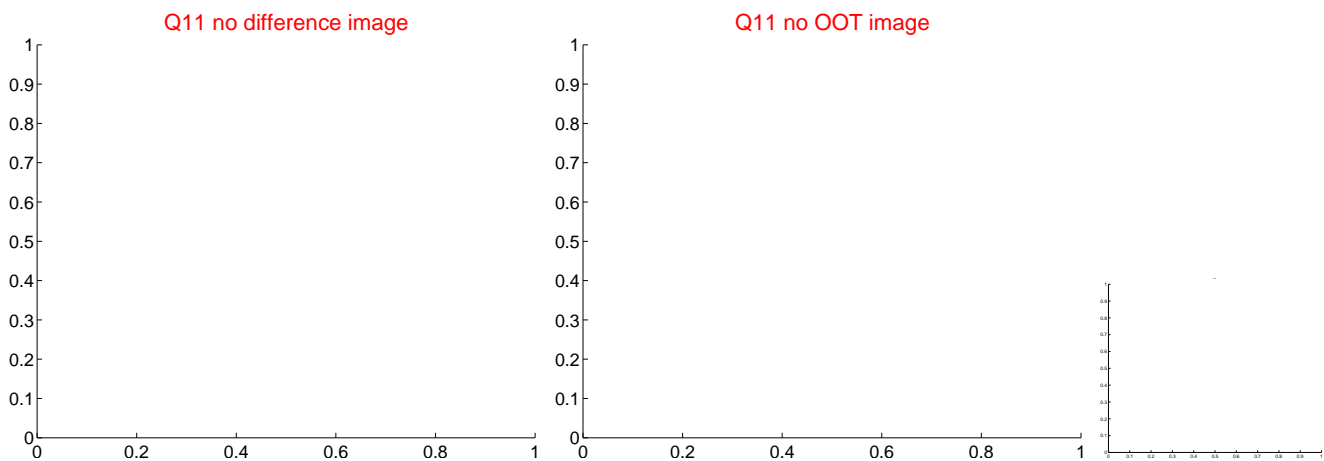
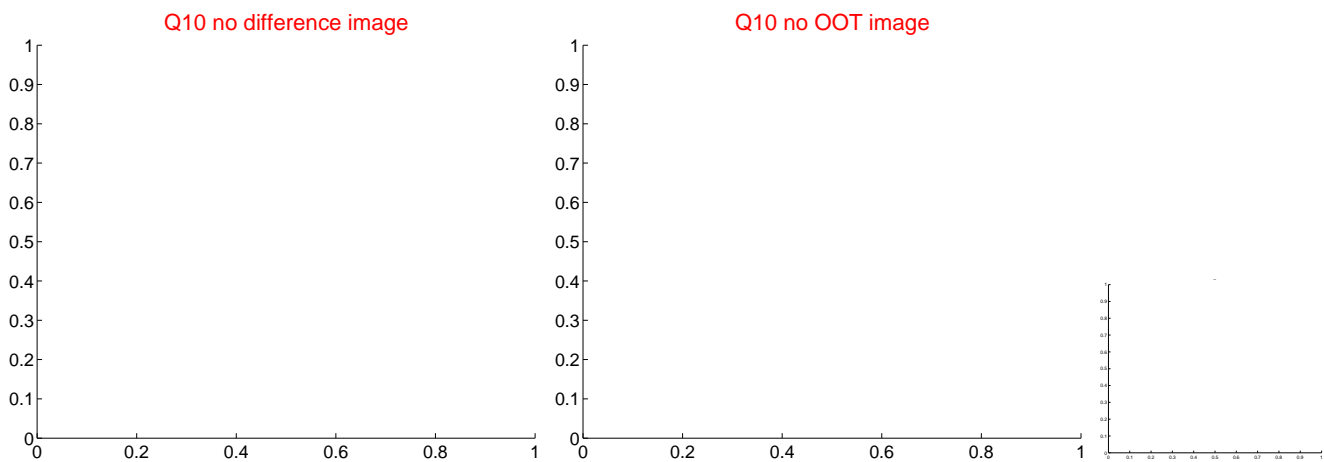
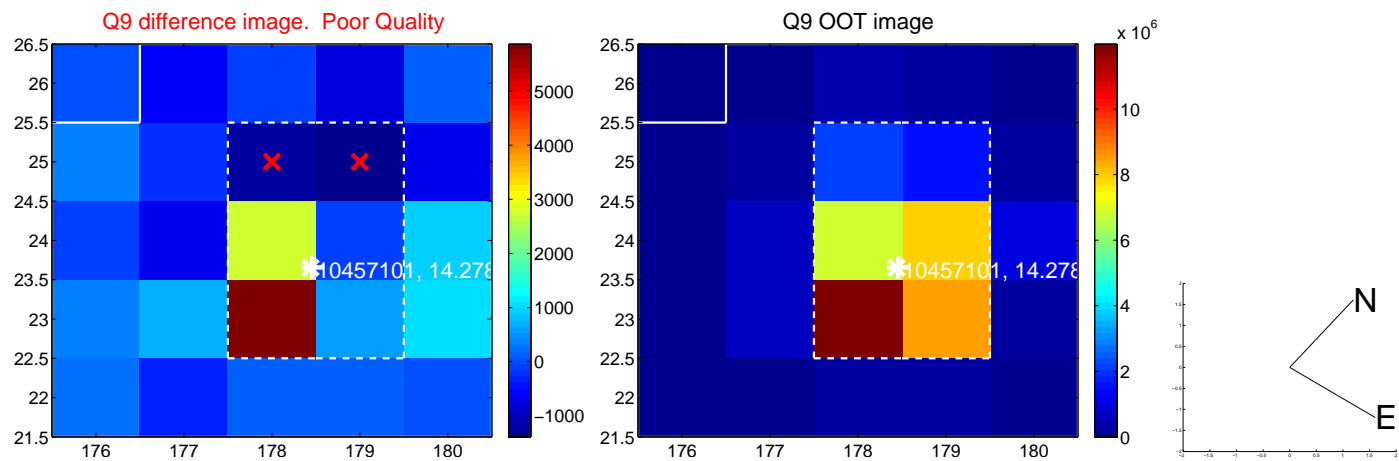
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



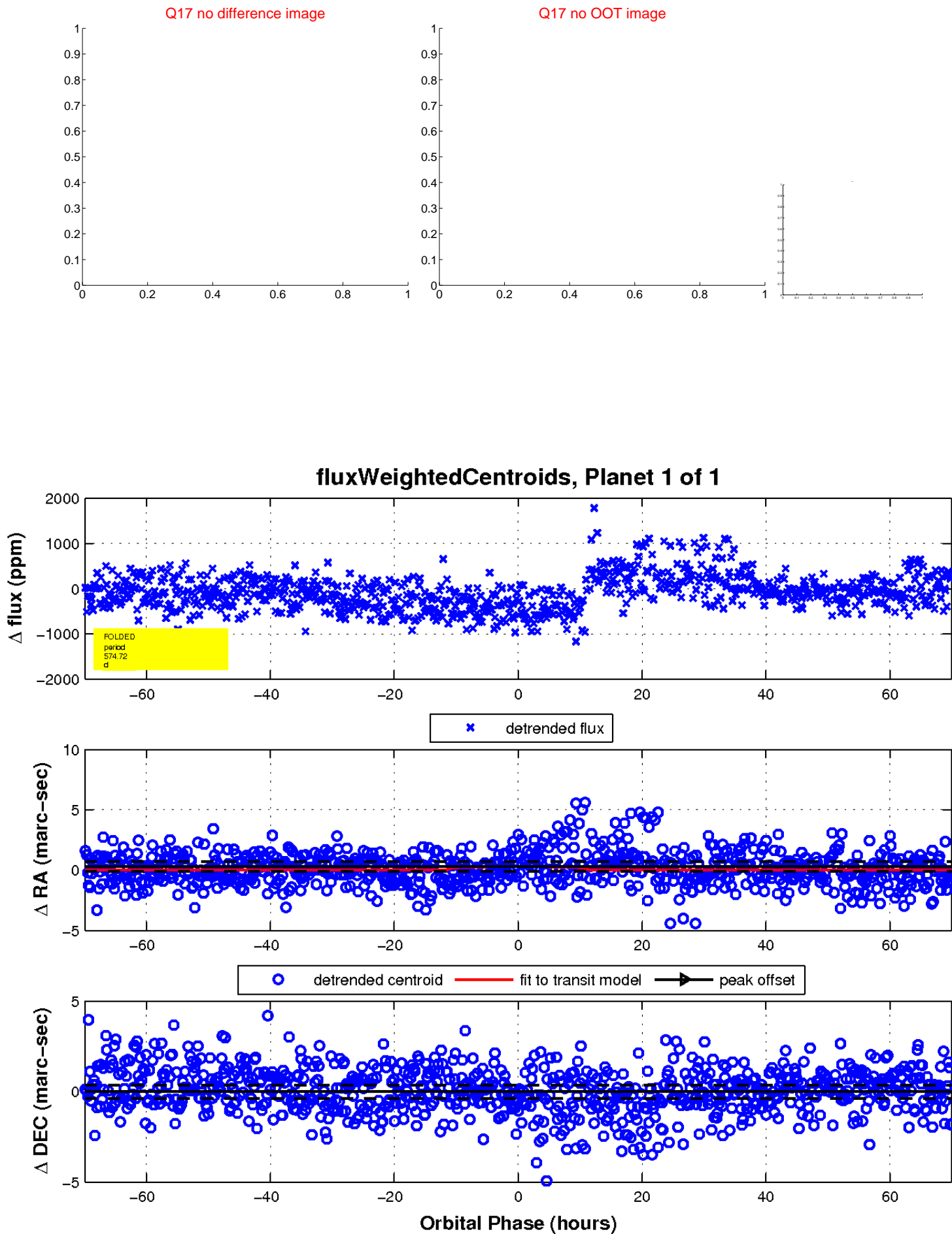
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

