

KIC 012646843

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})
012646843-02	OBS	No	260.301583	203.025009	2335.6	88.873	7.2	13.1	0.58	3938	5.31	0.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012646843-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

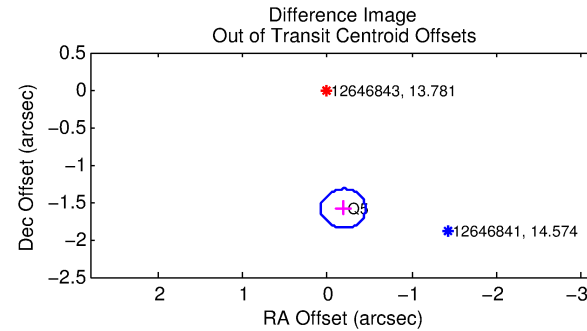
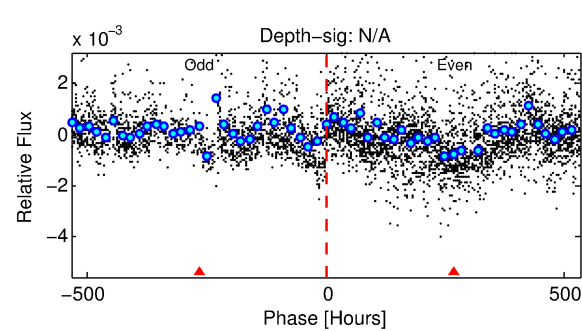
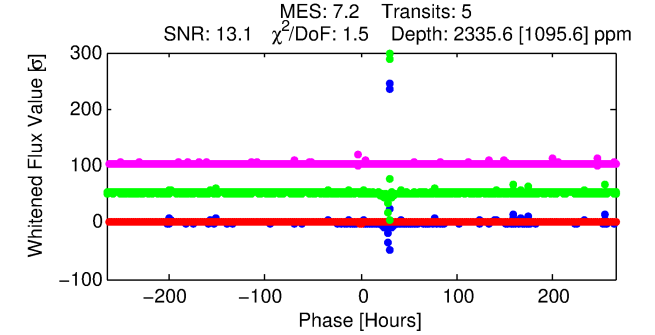
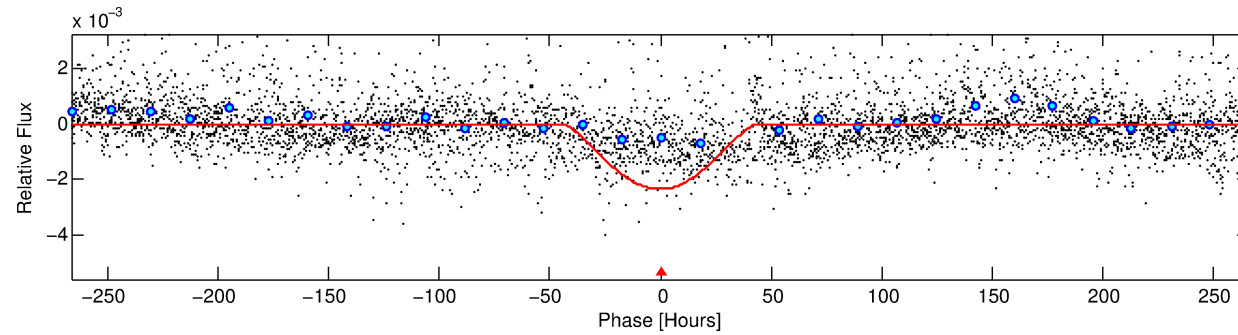
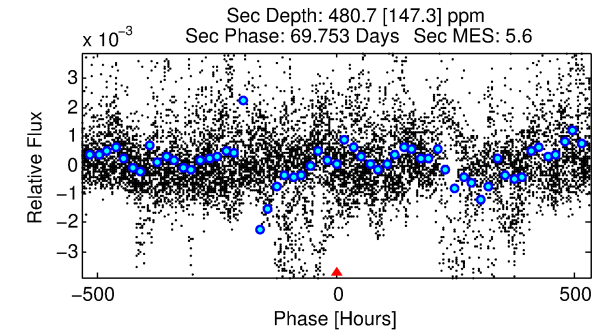
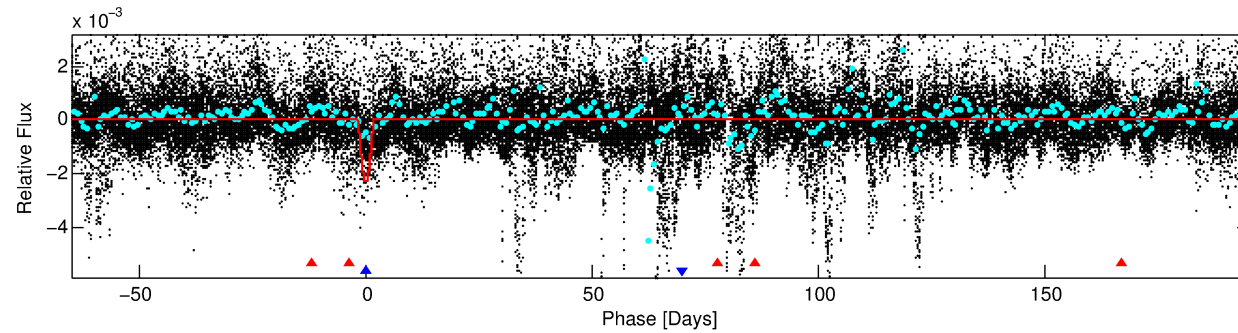
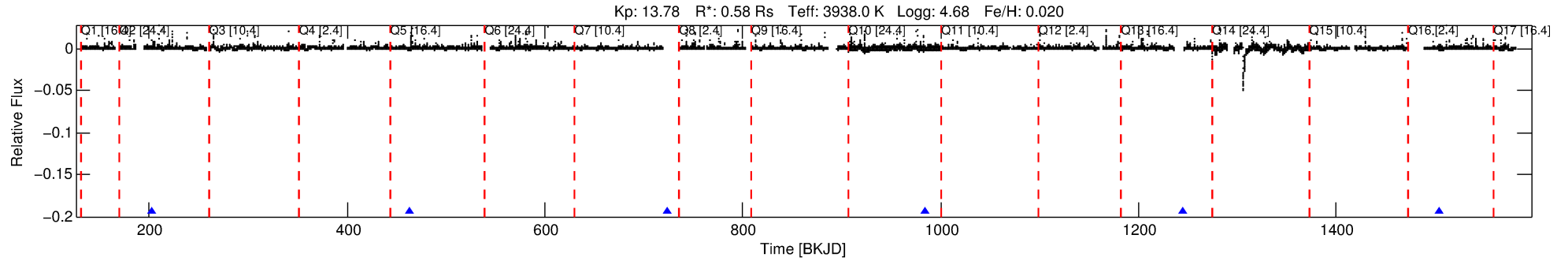
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012646843-02

No Significant Match Found

DV One-Page Summary

KIC: 12646843 Candidate: 2 of 2 Period: 260.302 d



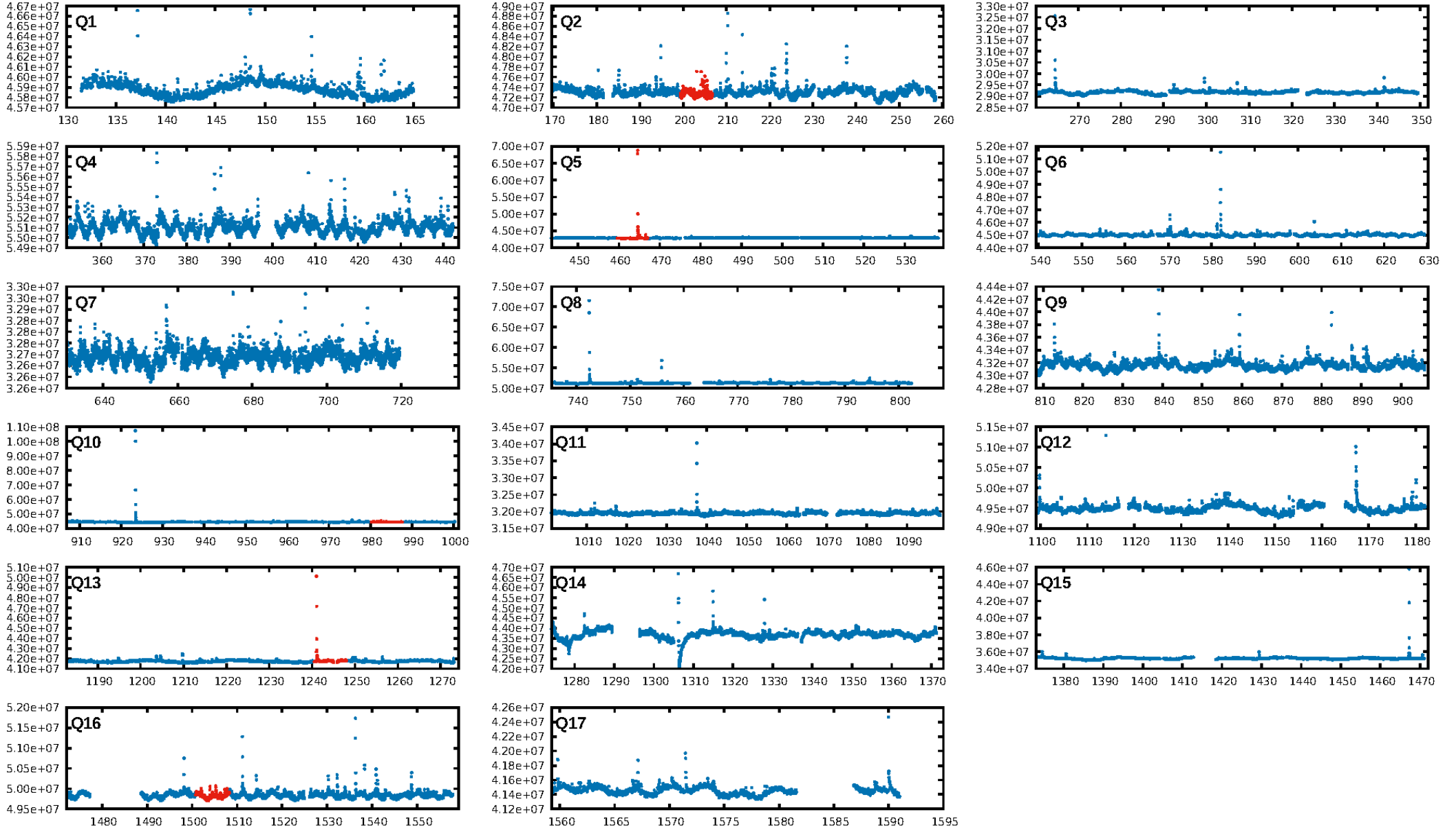
DV Fit Results:

Period = 260.30158 [0.15694] d
Epoch = 203.0250 [0.5032] BKJD
Rp/R* = 0.0843 [0.5617]
a/R* = 9.58 [12.84]
b = 1.00 [0.82]
Seff = 0.16 [0.03]
Teq = 162 [8] K
Rp = 5.31 [35.37] Re
a = 0.6639 [0.0683] AU
Ag = 4138.31 [55168.40] [0.07σ]
Teffp = 2008 [6694] K [0.28σ]

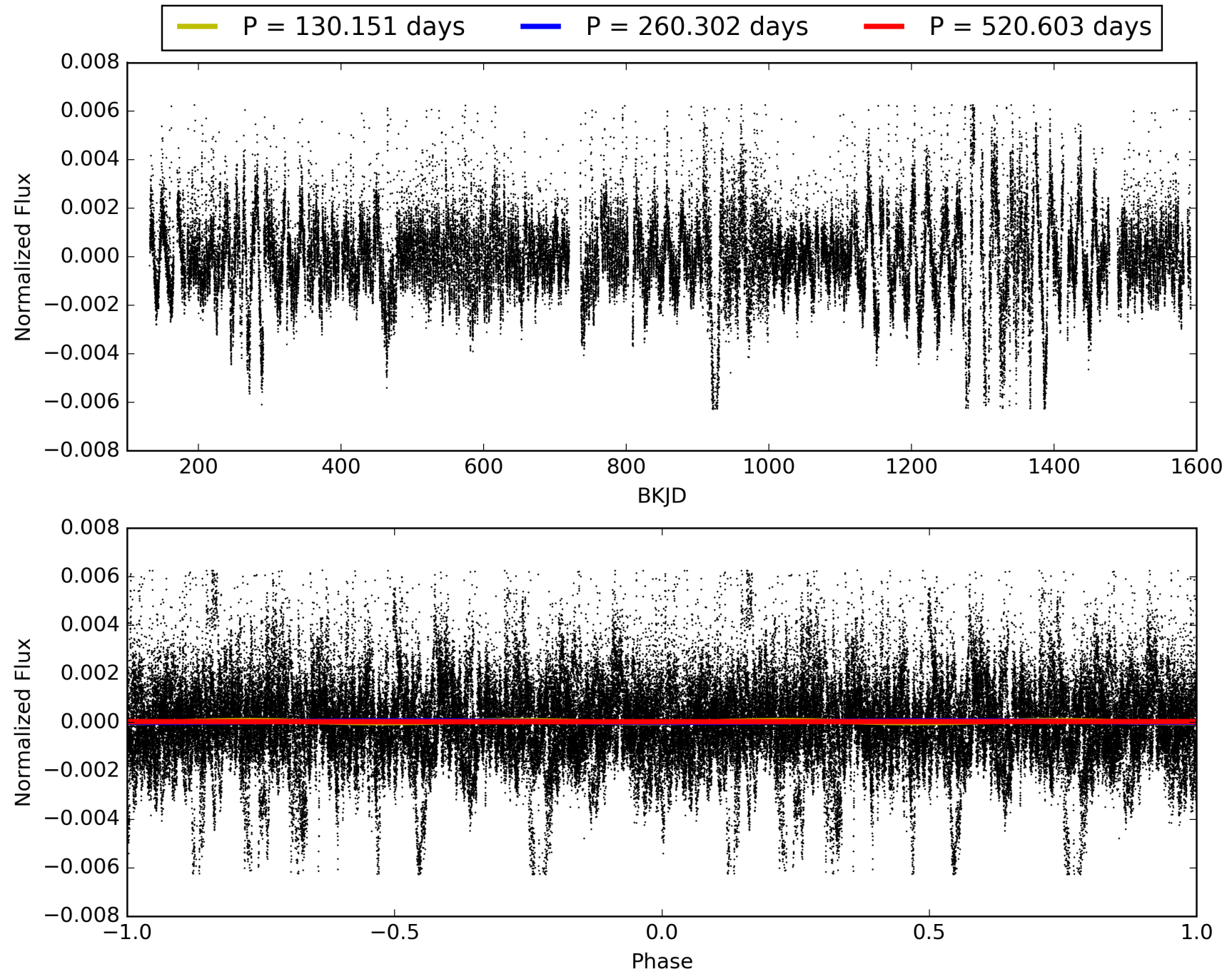
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [18.78σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.93e-07
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -1.527
Centroid-sig: 0.0%
Centroid-so: 1.339 arcsec [6.96σ]
OotOffset-rm: 1.597 arcsec [18.26σ]
KicOffset-rm: 2.066 arcsec [23.65σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 012646843-02, PDC Light Curves

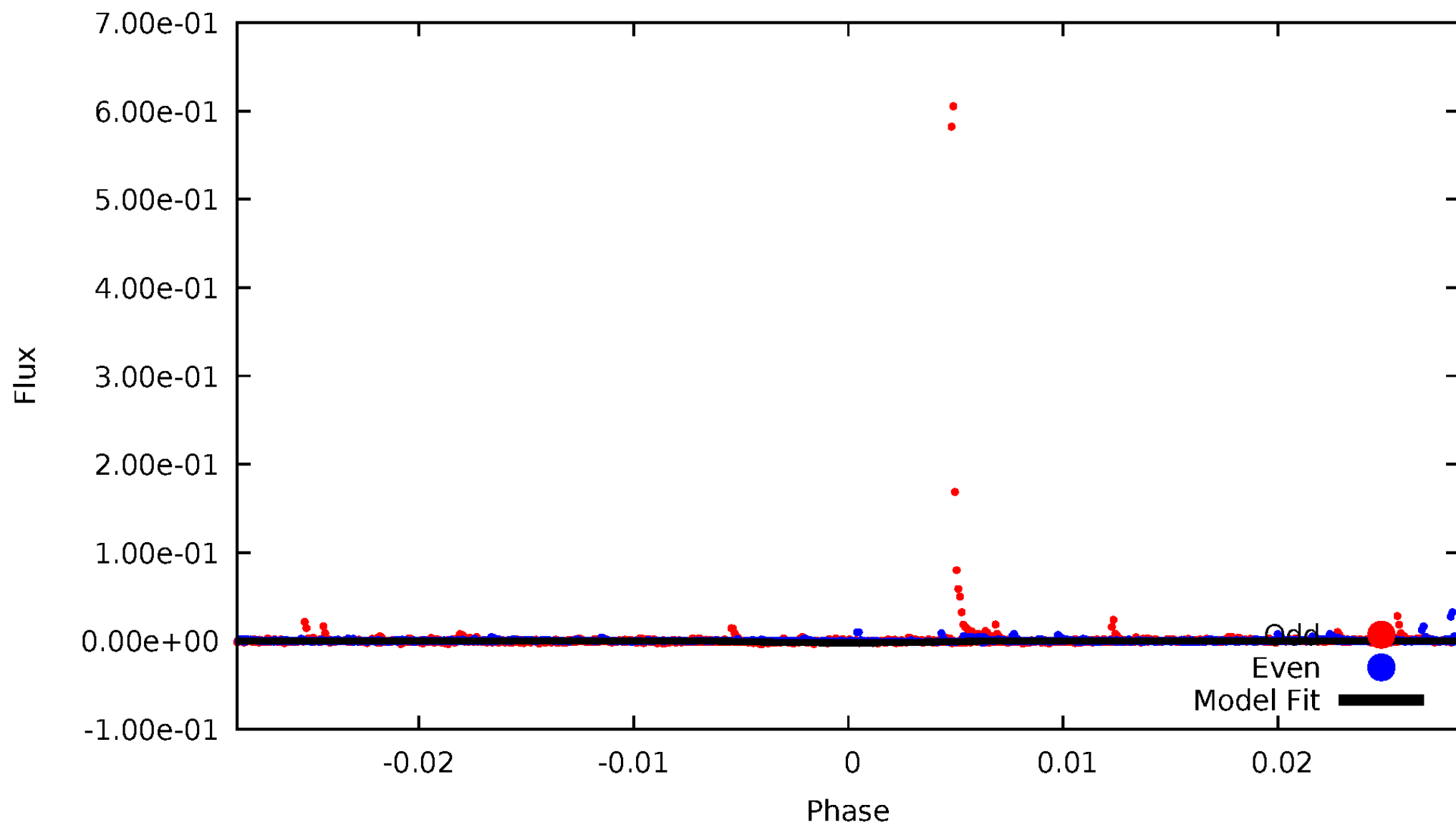


TCE 012646843-02



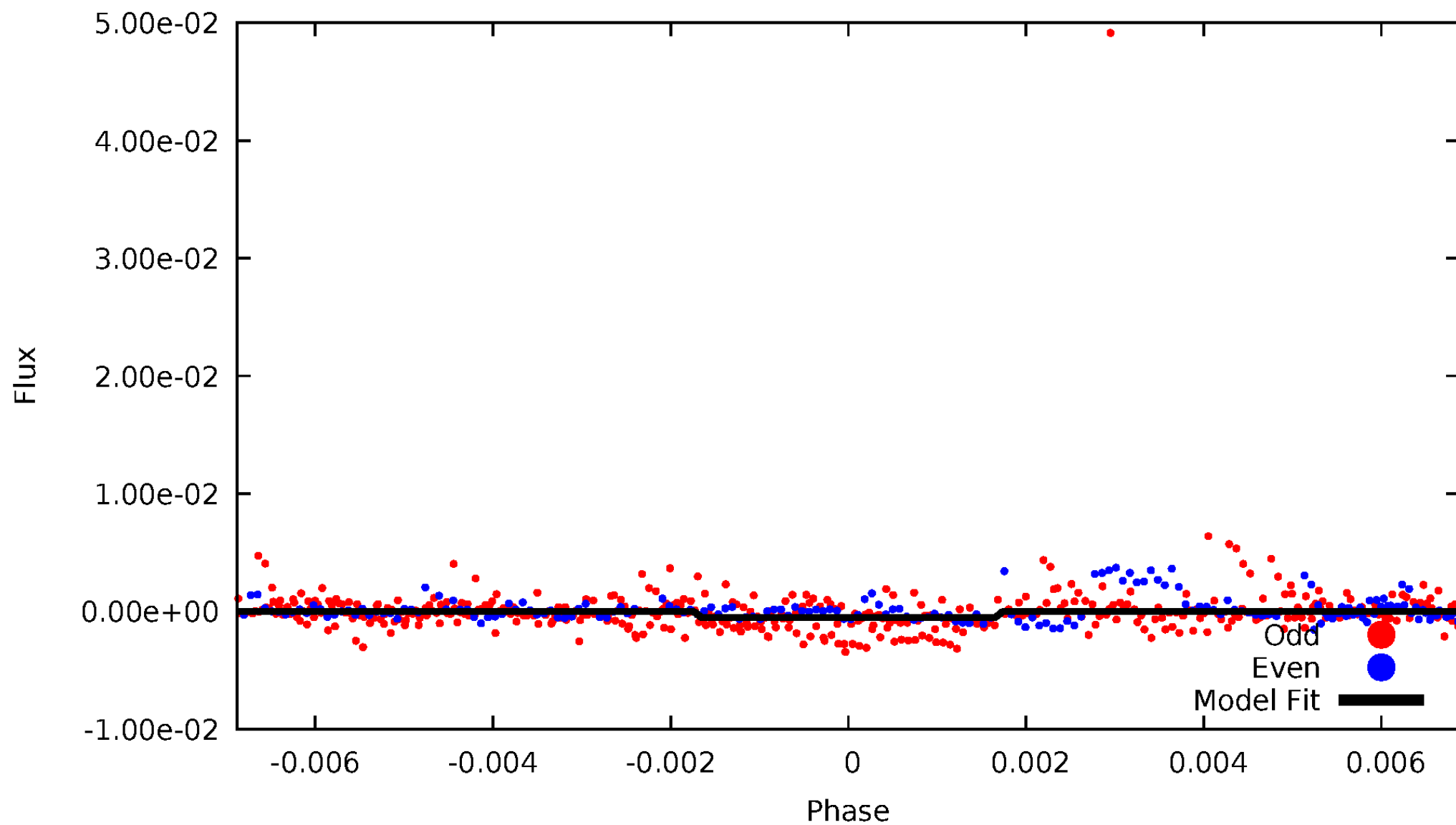
DV Odd/Even

TCE 012646843-02



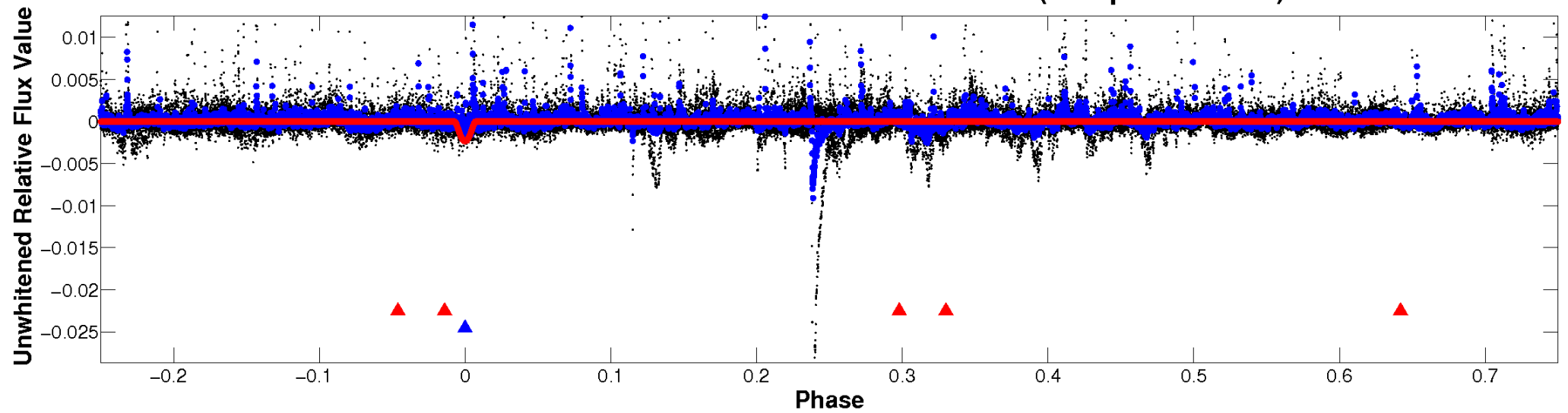
ALT Odd/Even

TCE 012646843-02

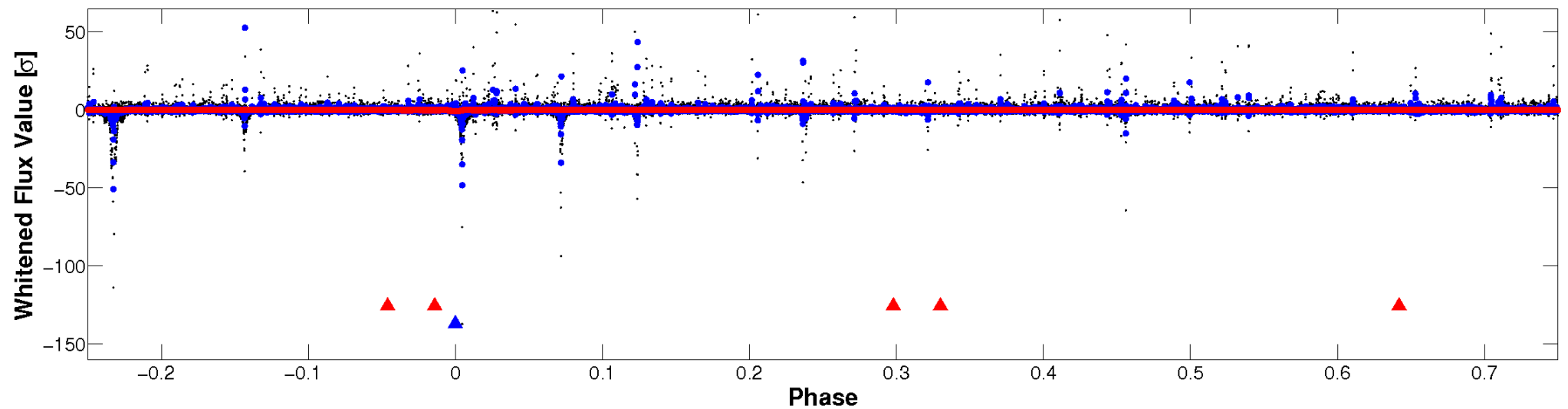


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

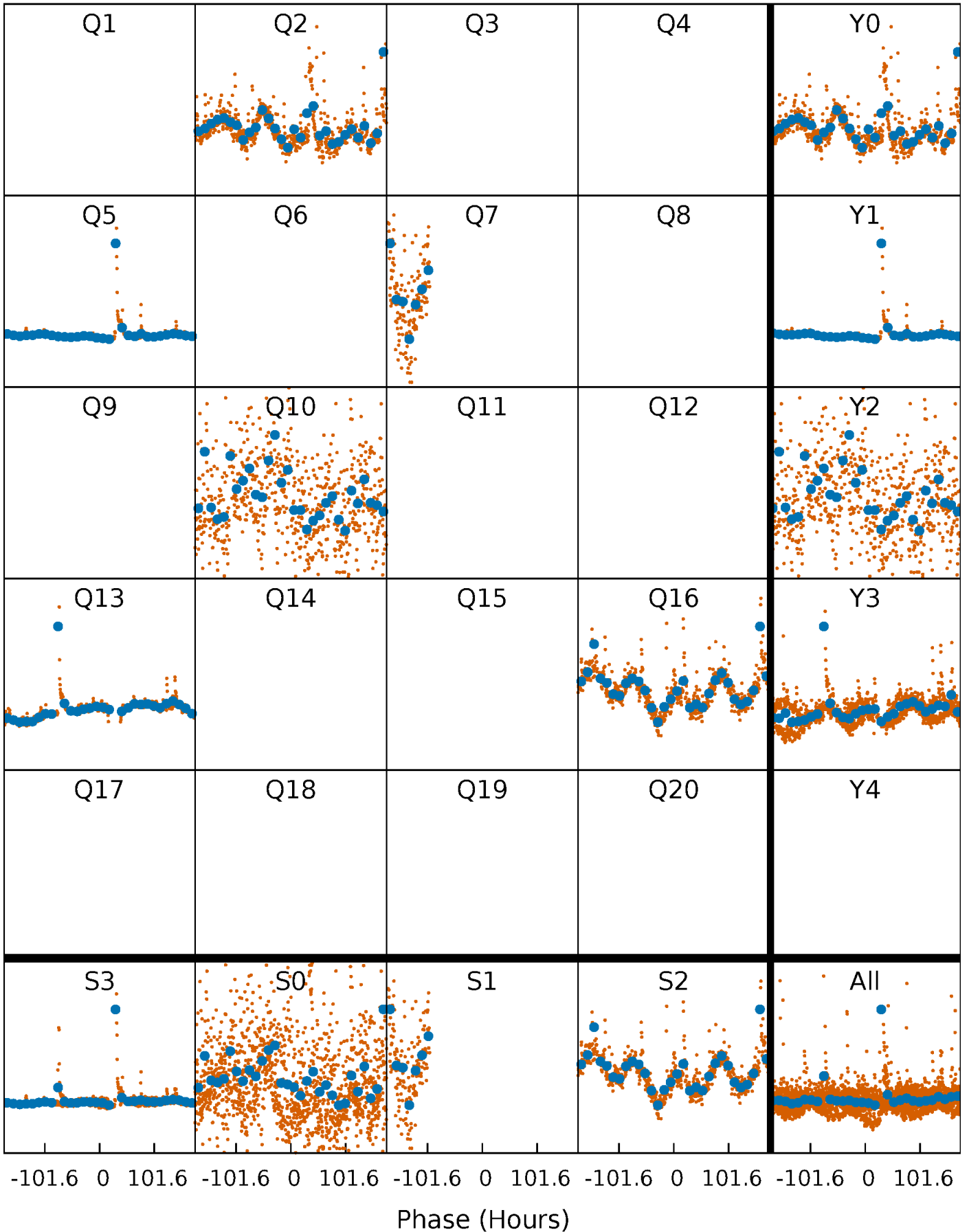


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



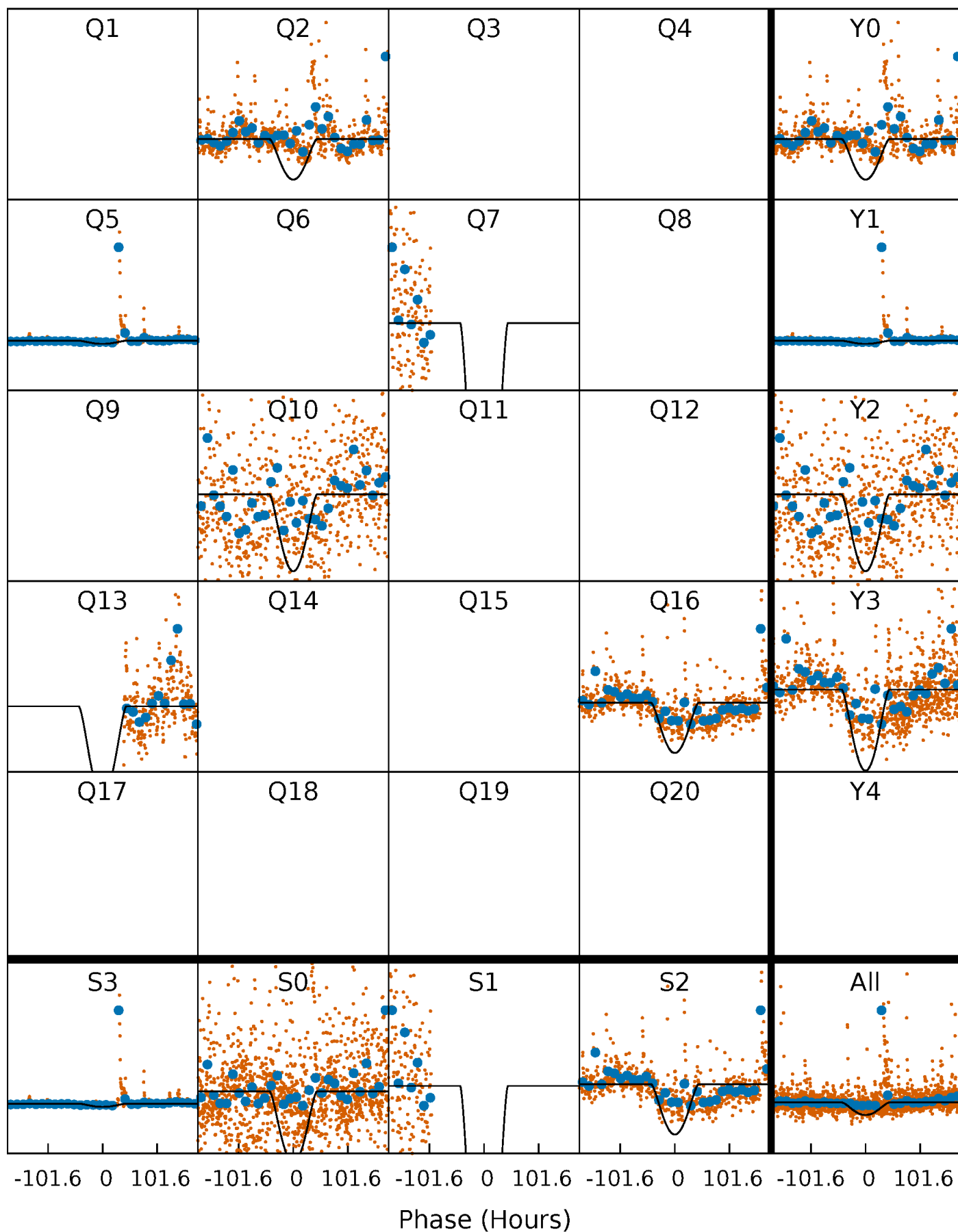
PDC Quarter-Phased Transit Curves

TCE 012646843-02 P=260.301583 Days $T_0=203.025009$ (BKJD)



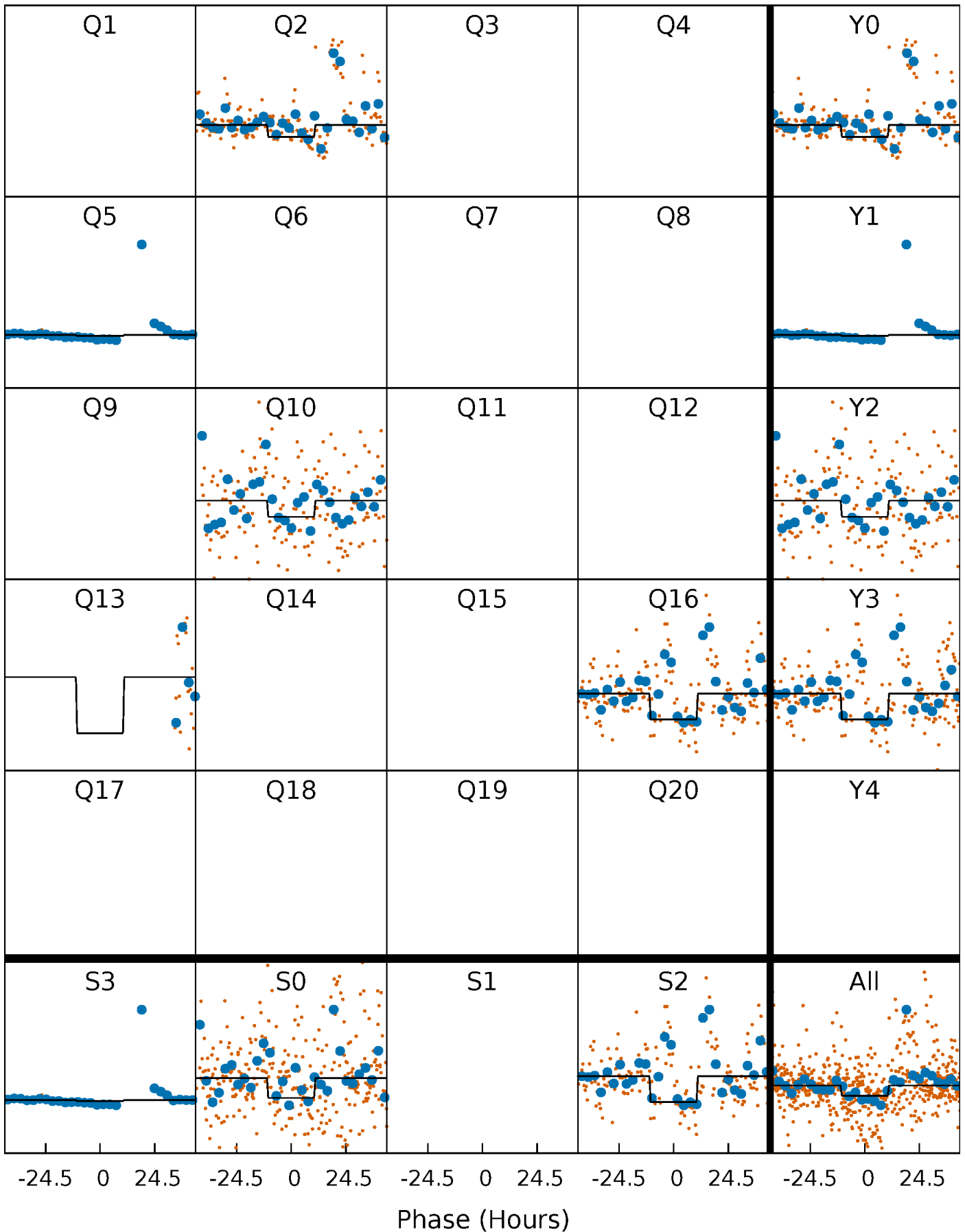
DV Quarter-Phased Transit Curves

TCE 012646843-02 P=260.301583 Days $T_0=203.025009$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

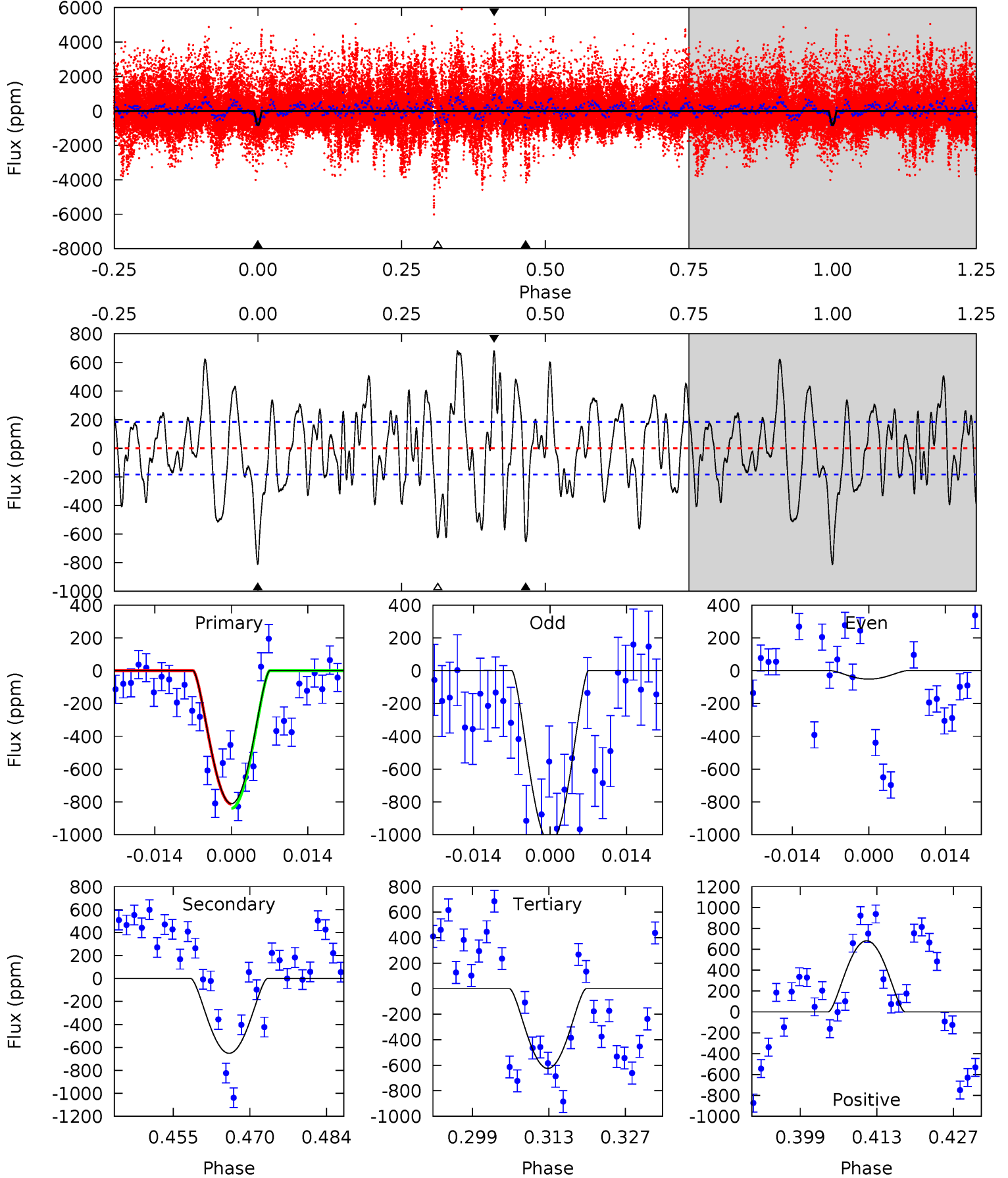
TCE 012646843-02 P=260.194142 Days $T_0=203.718463$ (BKJD)



DV Model-Shift Uniqueness Test

012646843-02, P = 260.301583 Days, E = 203.025009 Days

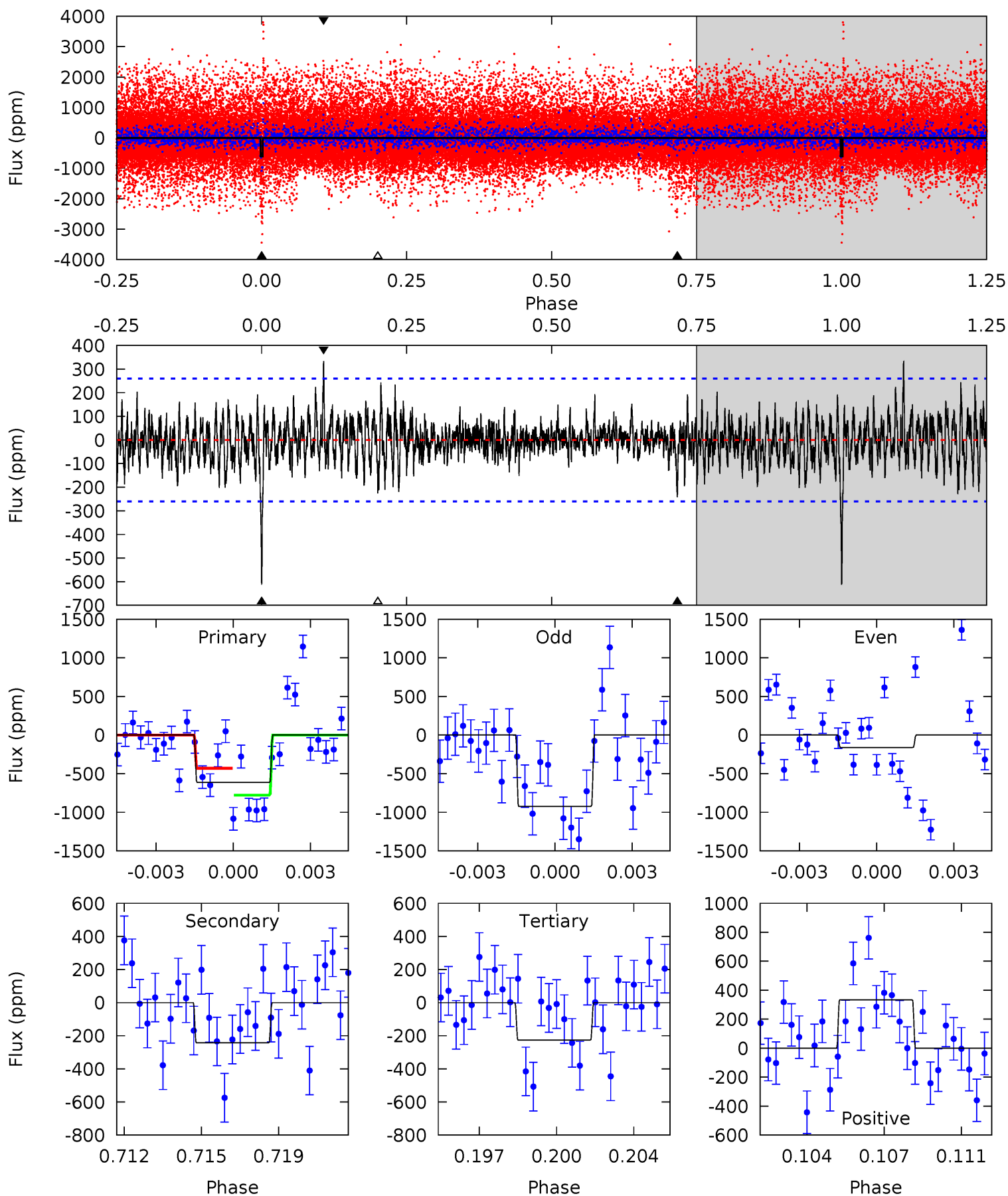
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	17.6	16.8	18.4	4.96	2.45	7.02	5.01	3.50	0.70	-0.81	10.5	2.57	0.46	0.36



Alt Model-Shift Uniqueness Test

012646843-02, P = 260.194142 Days, E = 203.718463 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	4.87	4.54	6.72	5.23	2.92	1.32	7.78	5.59	0.33	-1.85	6.88	2.61	0.35	3.52



Stellar Parameters For KIC 012646843

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3938^{+124}_{-152}	$4.676^{+0.070}_{-0.025}$	$0.020^{+0.250}_{-0.300}$	$0.577^{+0.041}_{-0.076}$	$0.576^{+0.050}_{-0.075}$	$4.218^{+1.433}_{-0.498}$
	+3%/-4%	+1%/-1%	+1250%/-1500%	+7%/-13%	+9%/-13%	+34%/-12%
Source	PHO54	PHO54	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 012646843-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-651 ± 37	$24.65^{+28.98}_{-16.73}$	223^{+8}_{-10}	1922^{+527}_{-260}	262^{+2282}_{-207}
Alt.	-242 ± 50	$23.74^{+27.11}_{-16.76}$	224^{+9}_{-9}	1763^{+502}_{-223}	103^{+1073}_{-81}

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

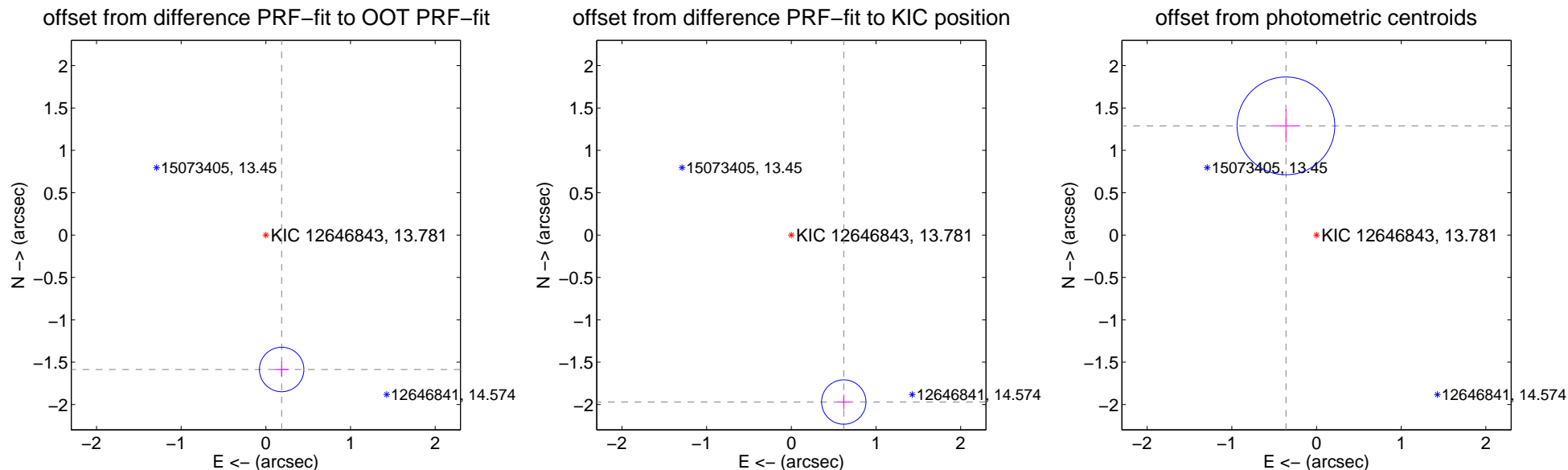
DV Centroid Data

Supplemental centroid analysis for 012646843-02. Kepler magnitude: 13.78. Transit SNR 13.13

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.58 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.597 ± 0.087	18.26	-0.187 ± 0.085	-1.586 ± 0.088
PRF-fit source offset from KIC position	2.066 ± 0.087	23.65	-0.619 ± 0.085	-1.971 ± 0.088
photometric centroid source offset	1.34 ± 0.19	6.96	0.36 ± 0.17	1.29 ± 0.19

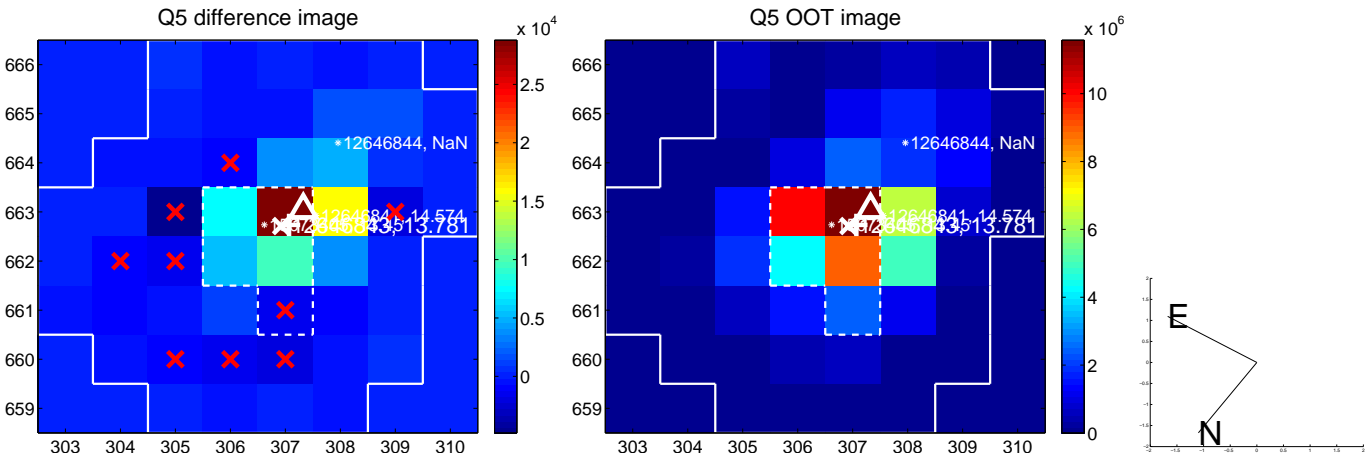


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

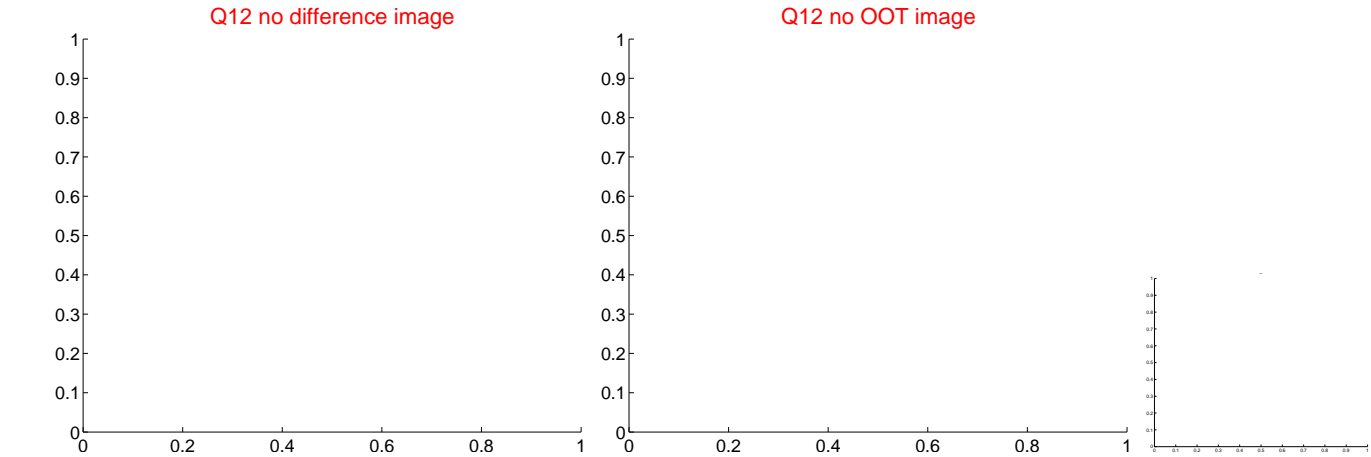
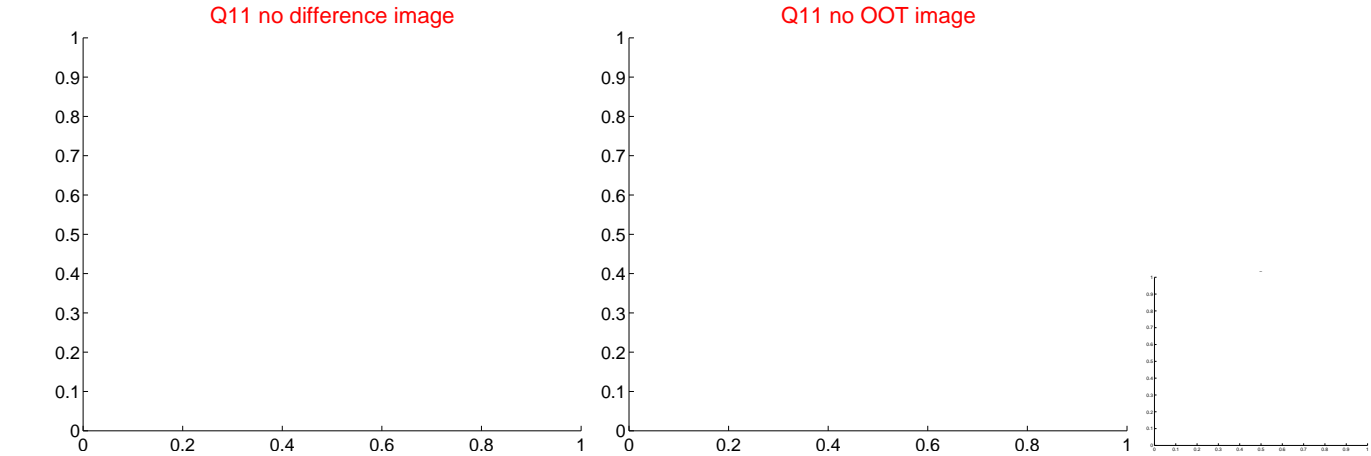
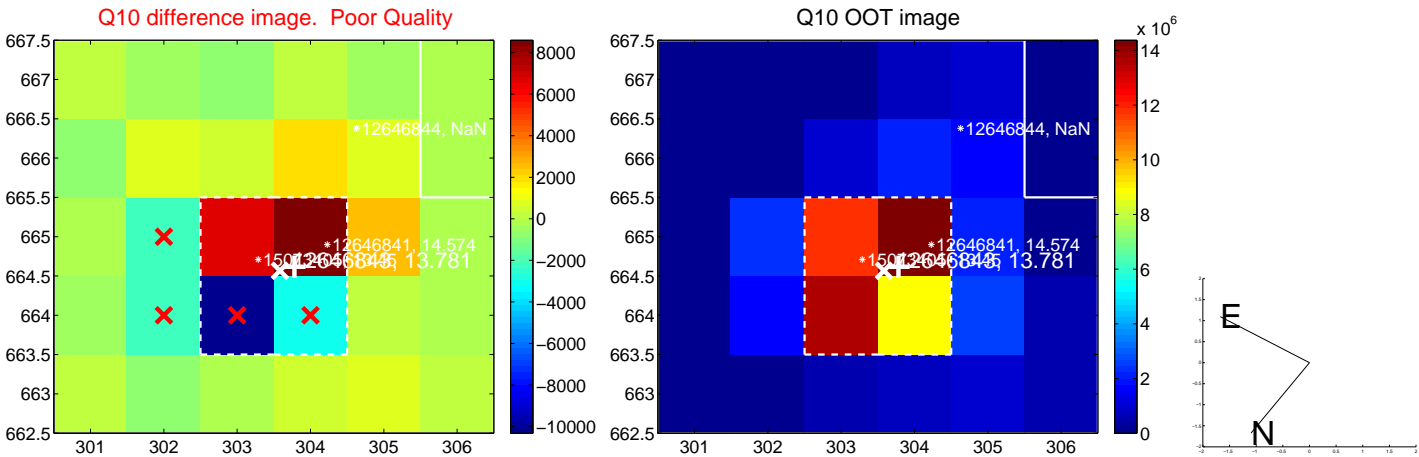
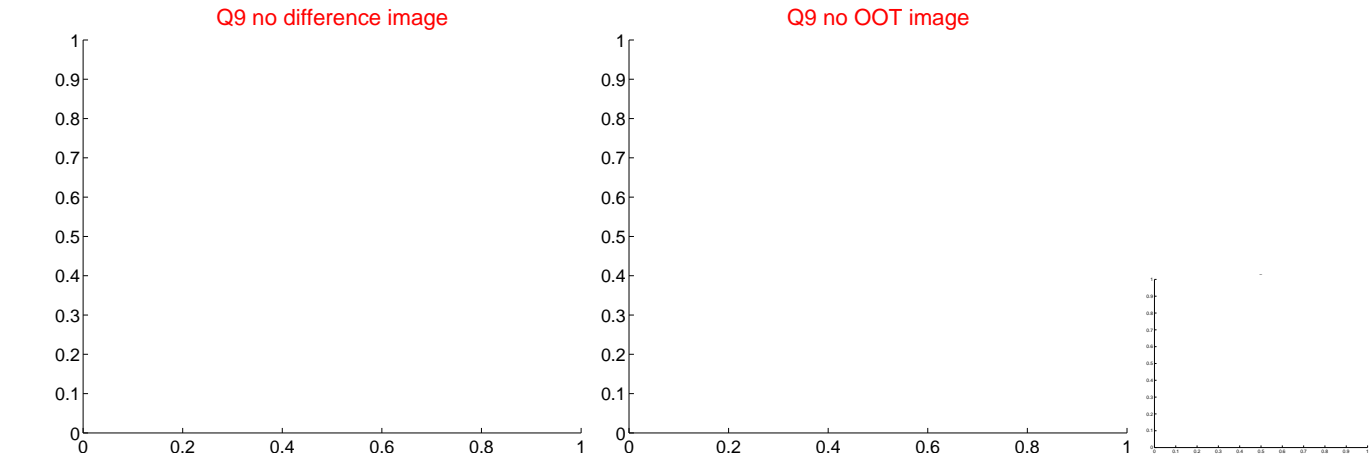
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



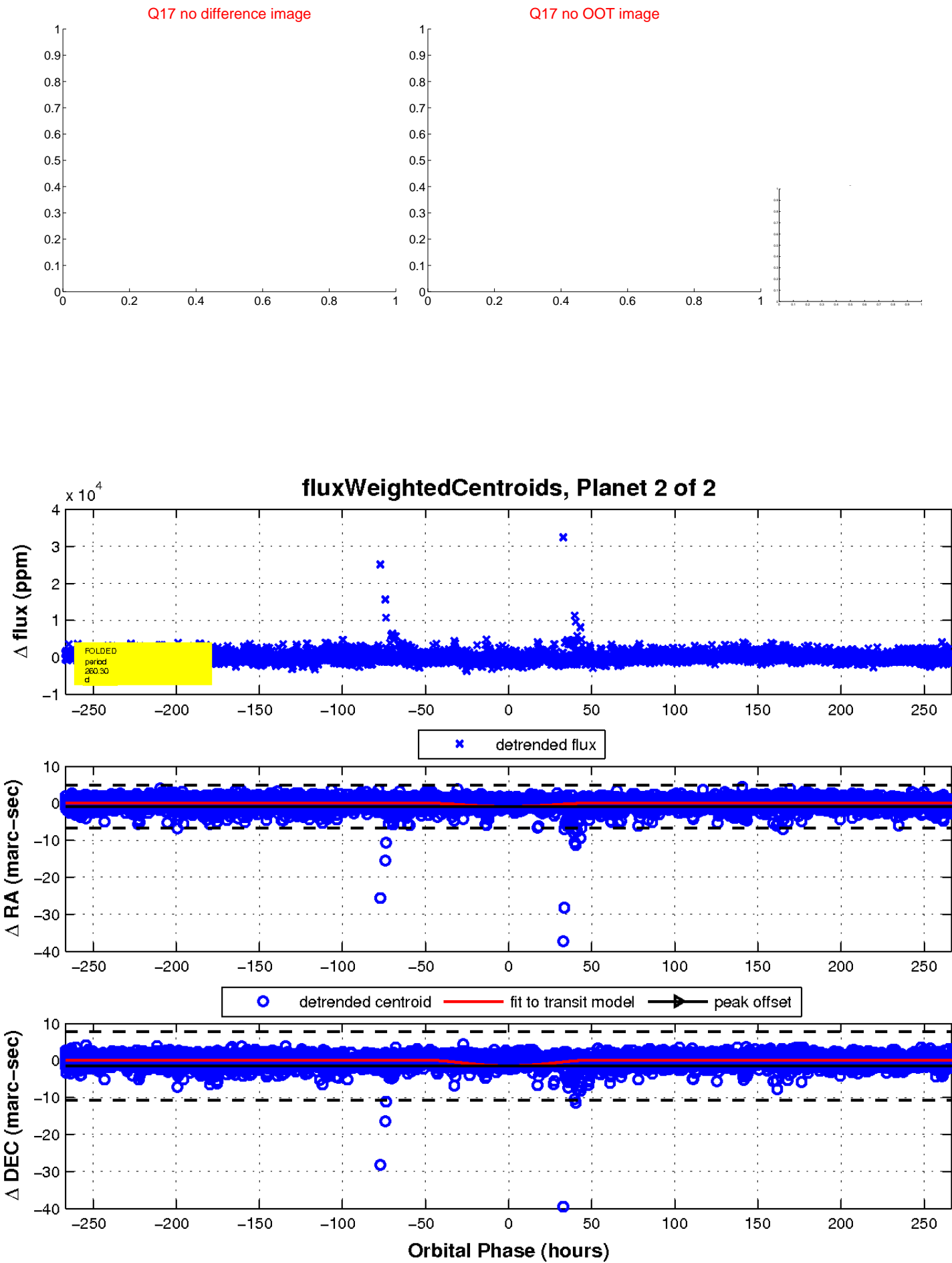
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

