

KIC 007461521

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})
007461521-01	OBS	6882.01	0.773545	132.169247	160.7	1.568	10.9	12.8	1.35	6296	2.02	8872.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007461521-01	OBS	PC	1.00	0	0	0	0	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.

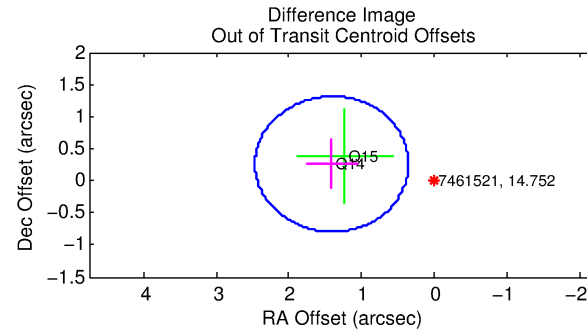
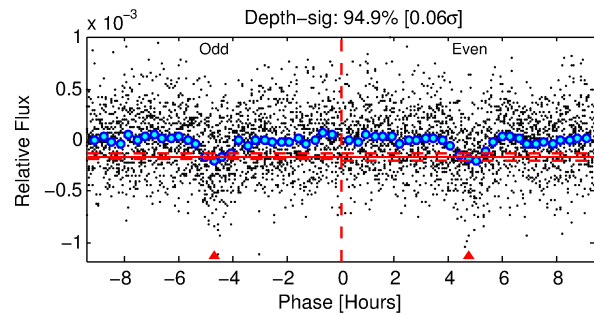
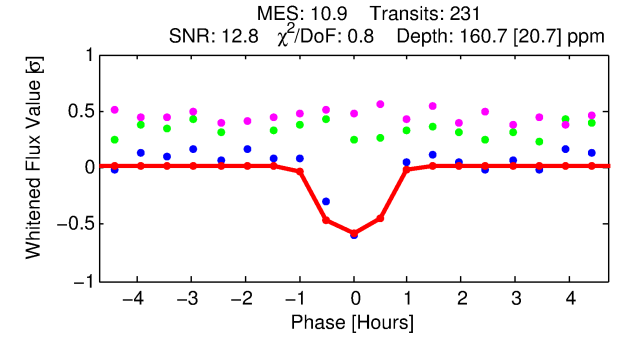
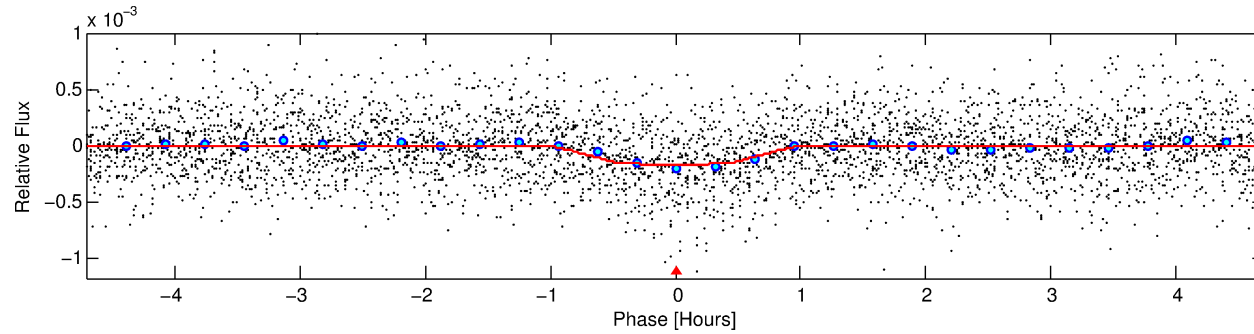
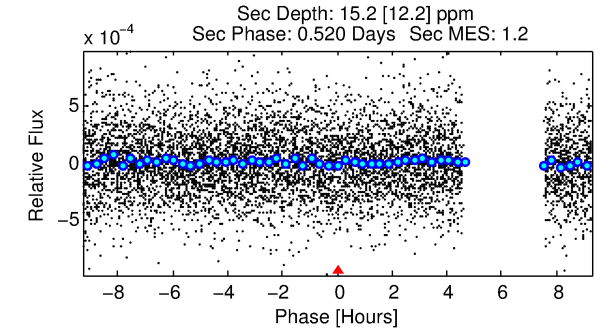
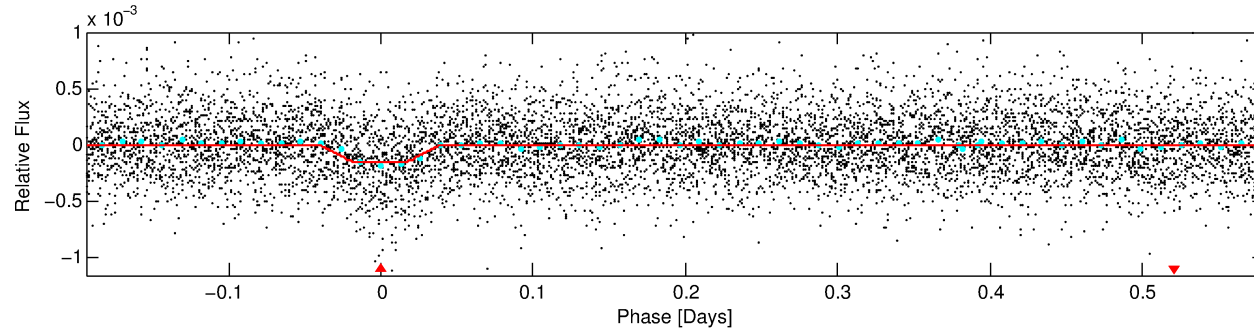
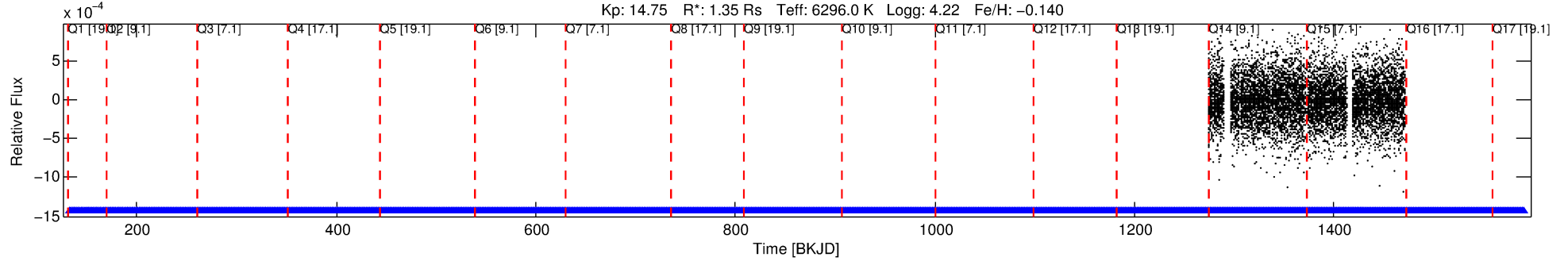
Ephemeris Match Information For 007461521-01

No Significant Match Found

DV One-Page Summary

KIC: 7461521 Candidate: 1 of 1 Period: 0.774 d

KOI: K06882.01 Corr: 0.781



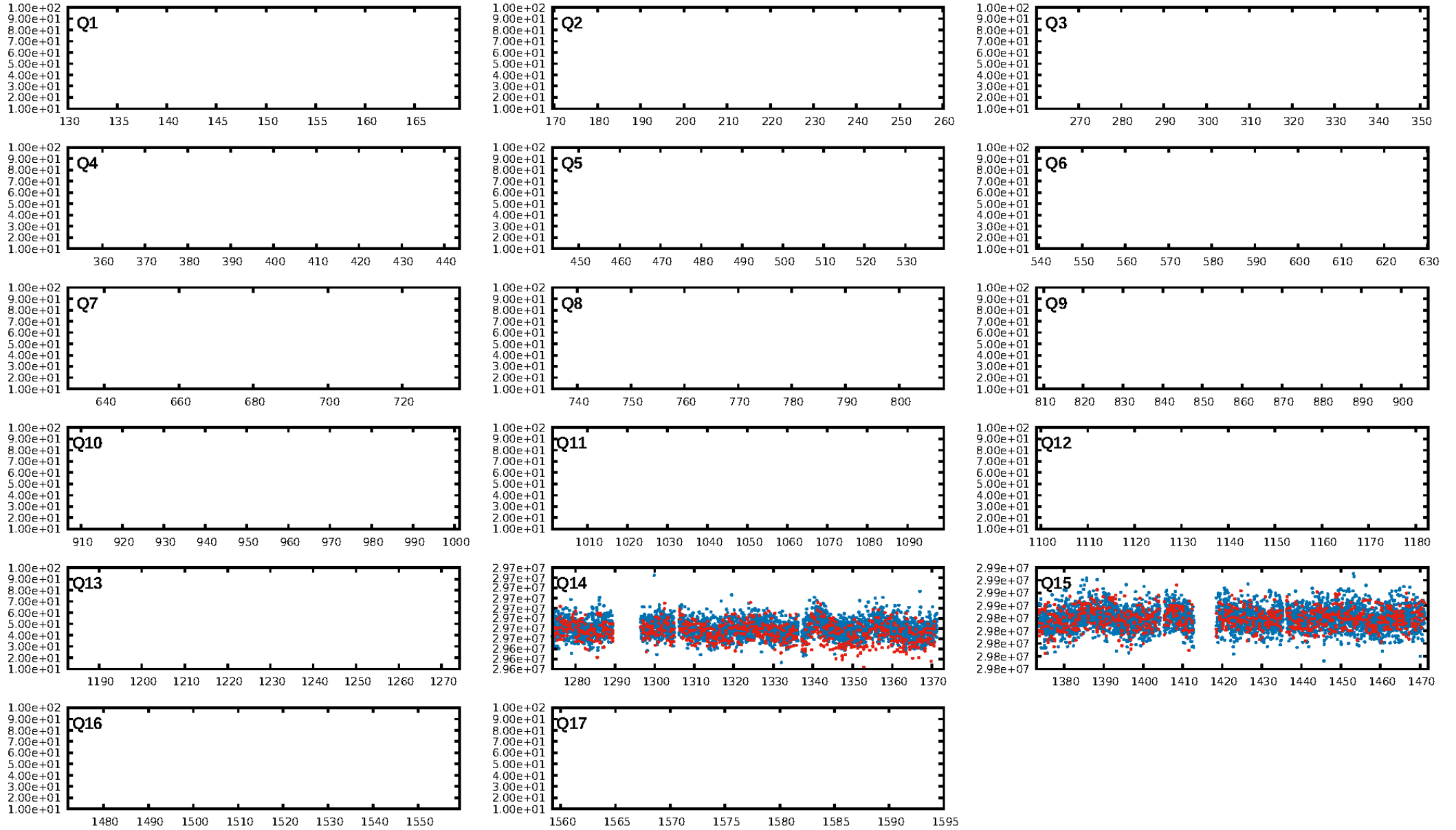
DV Fit Results:

Period = 0.77355 [0.00001] d
Epoch = 132.1692 [0.0018] BKJD
Rp/R* = 0.0137 [0.0083]
a/R* = 1.98 [4.87]
b = 0.90 [0.69]
Seff = 8872.82 [3424.33]
Teq = 2475 [239] K
Rp = 2.02 [1.37] Re
a = 0.0170 [0.0043] AU
Ag = 0.59 [0.89] [-0.46σ]
Teffp = 3360 [1223] K [0.71σ]

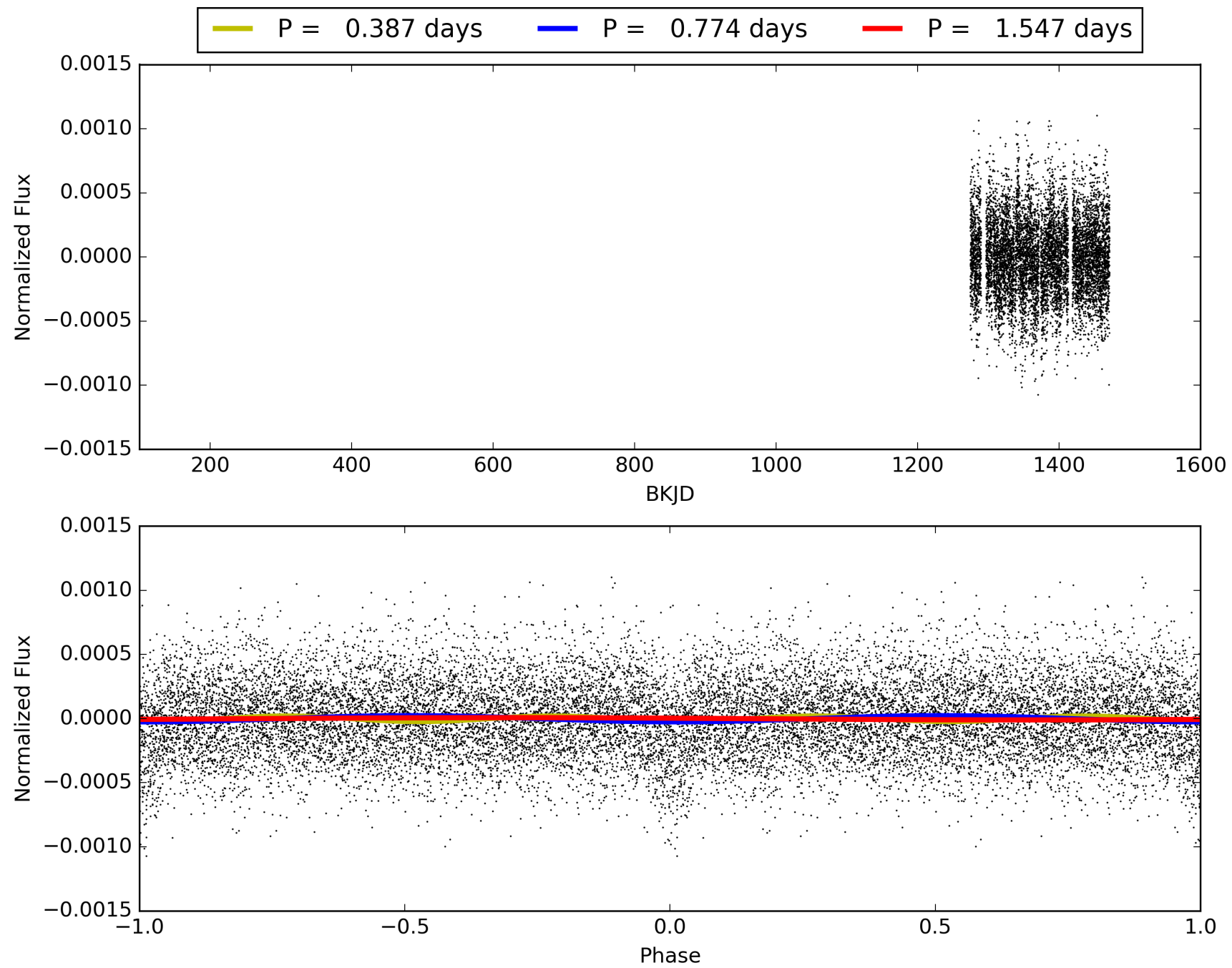
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.92e-30
RollingBand-fgt: 1.00 [231/231]
GhostDiagnostic-chr: 23.17
Centroid-sig: 0.0%
Centroid-so: 3.457 arcsec [2.81σ]
OotOffset-rm: 1.434 arcsec [4.08σ]
KicOffset-rm: 1.323 arcsec [3.70σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 007461521-01, PDC Light Curves

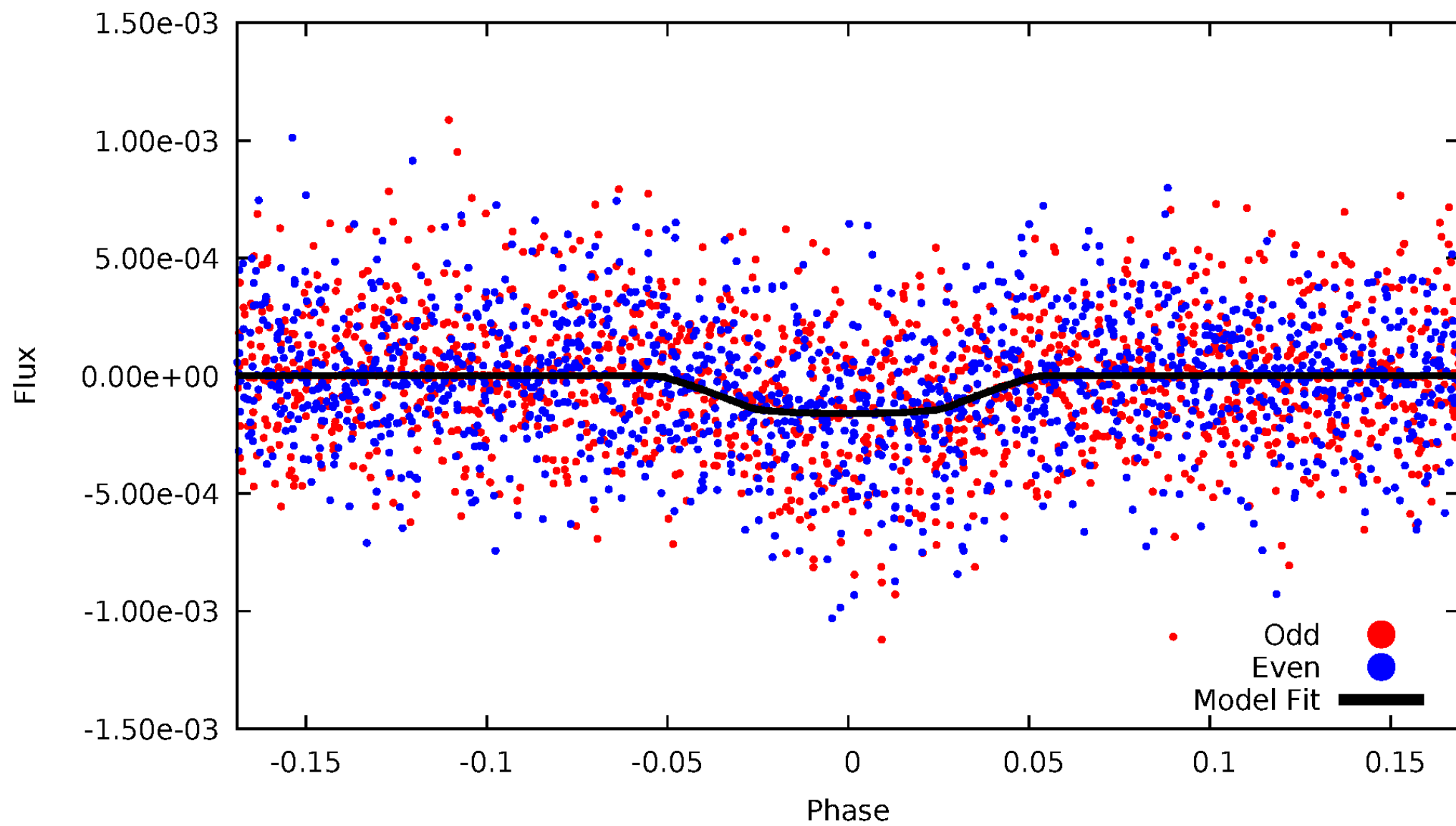


TCE 007461521-01



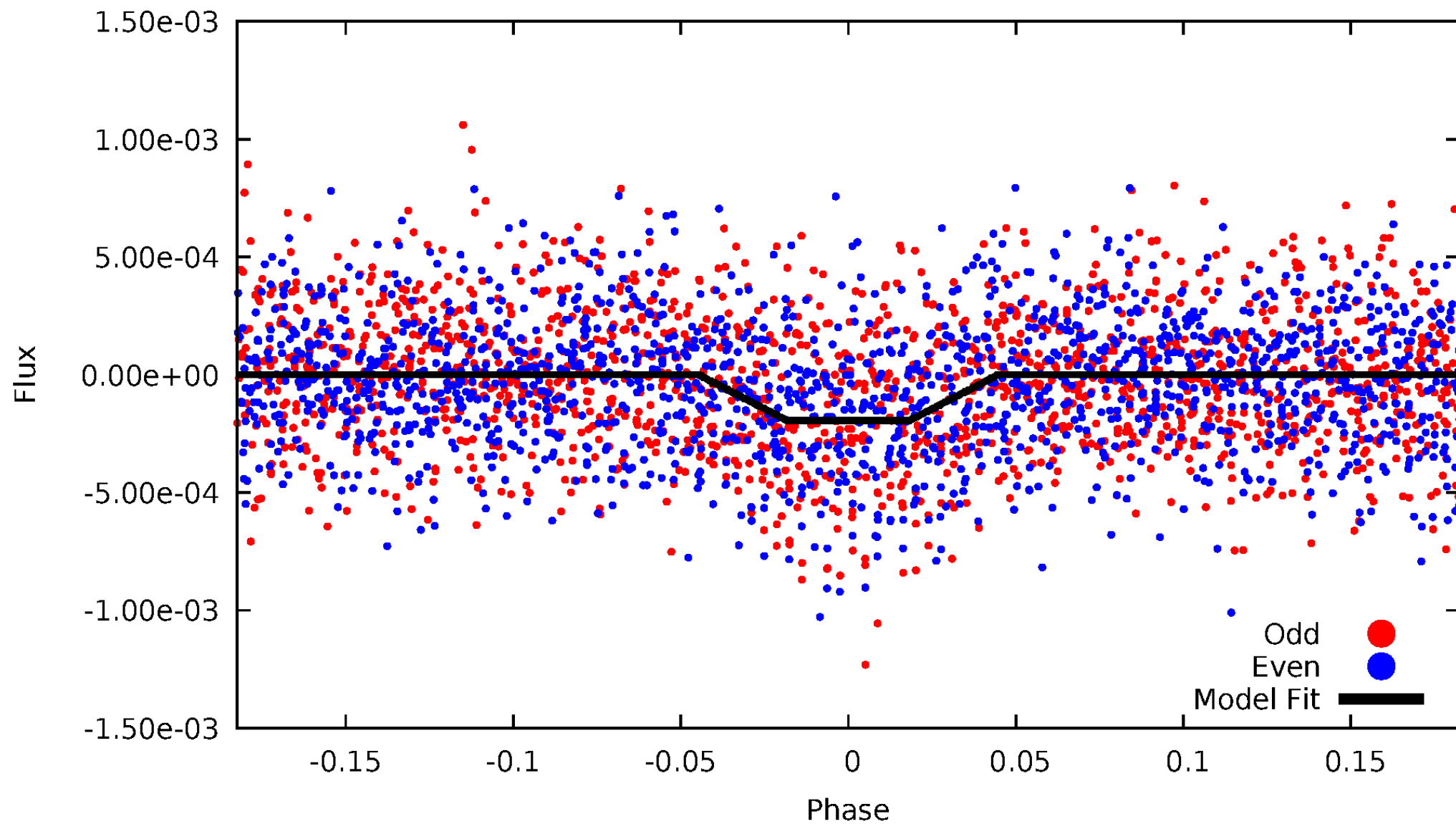
DV Odd/Even

TCE 007461521-01



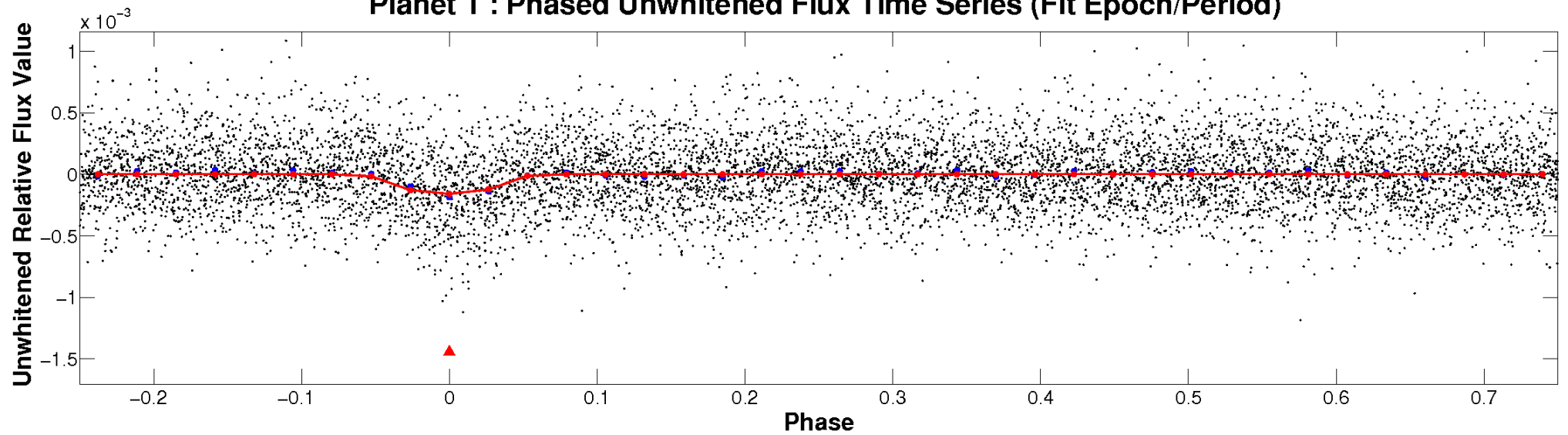
ALT Odd/Even

TCE 007461521-01

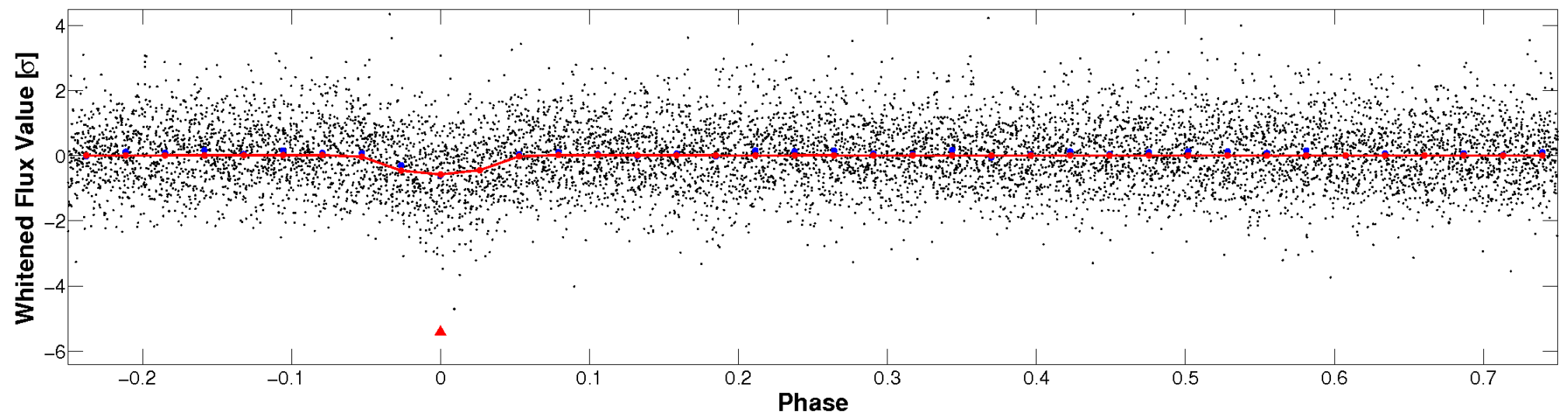


Non-Whitened Vs. Whitened Light Curve

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

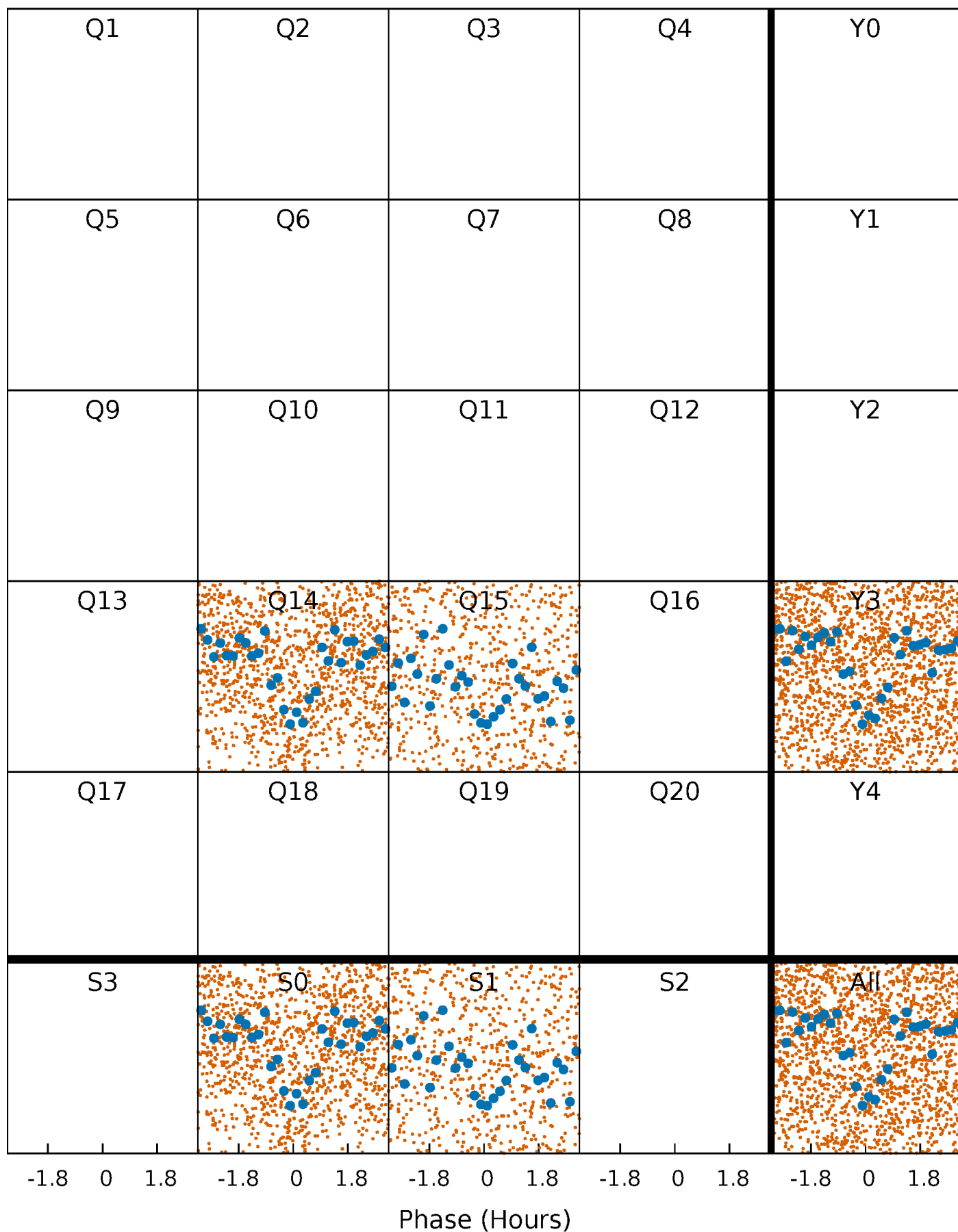


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



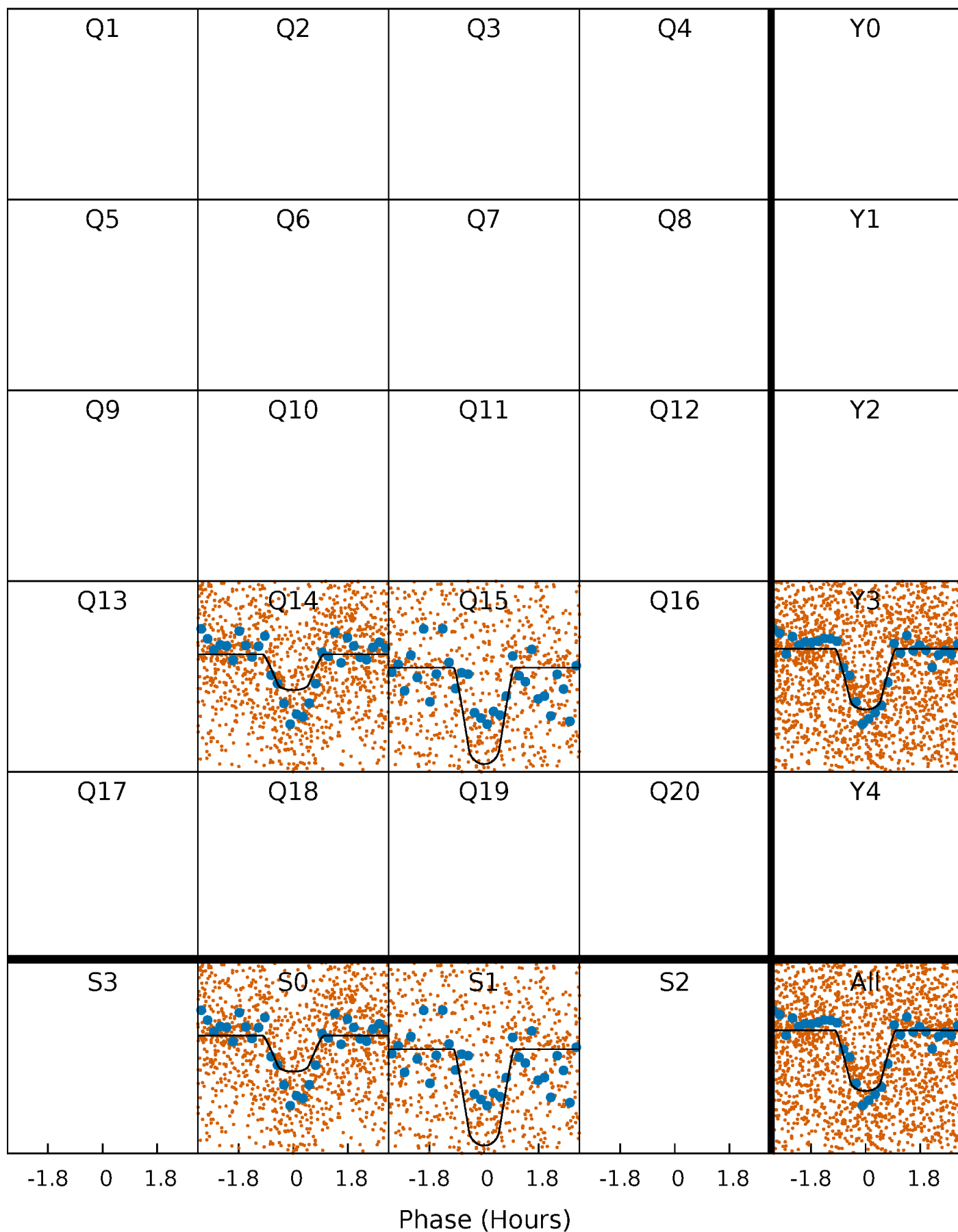
PDC Quarter-Phased Transit Curves

TCE 007461521-01 P= 0.773545 Days $T_0=132.169248$ (BKJD)



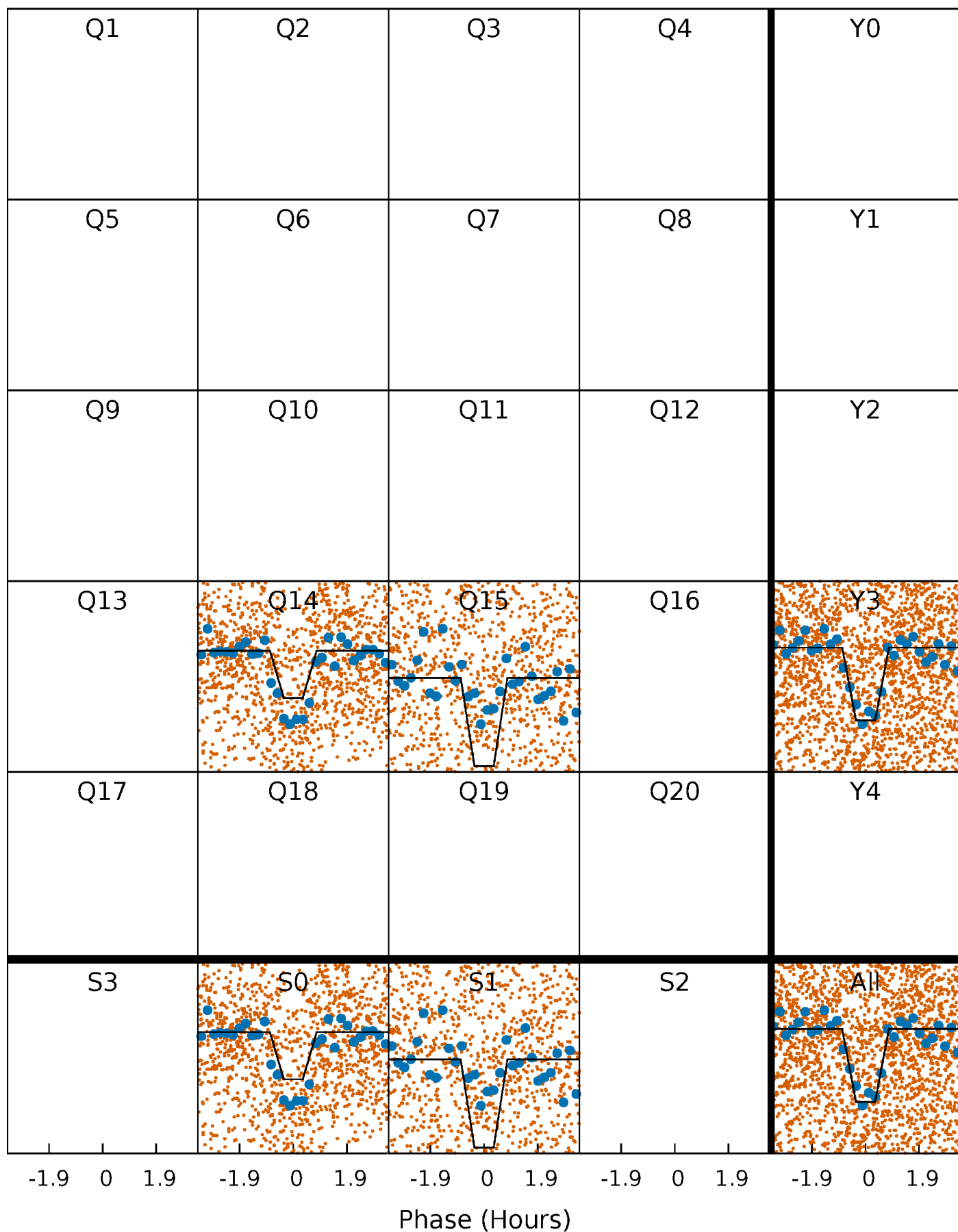
DV Quarter-Phased Transit Curves

TCE 007461521-01 P= 0.773545 Days $T_0=132.169248$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

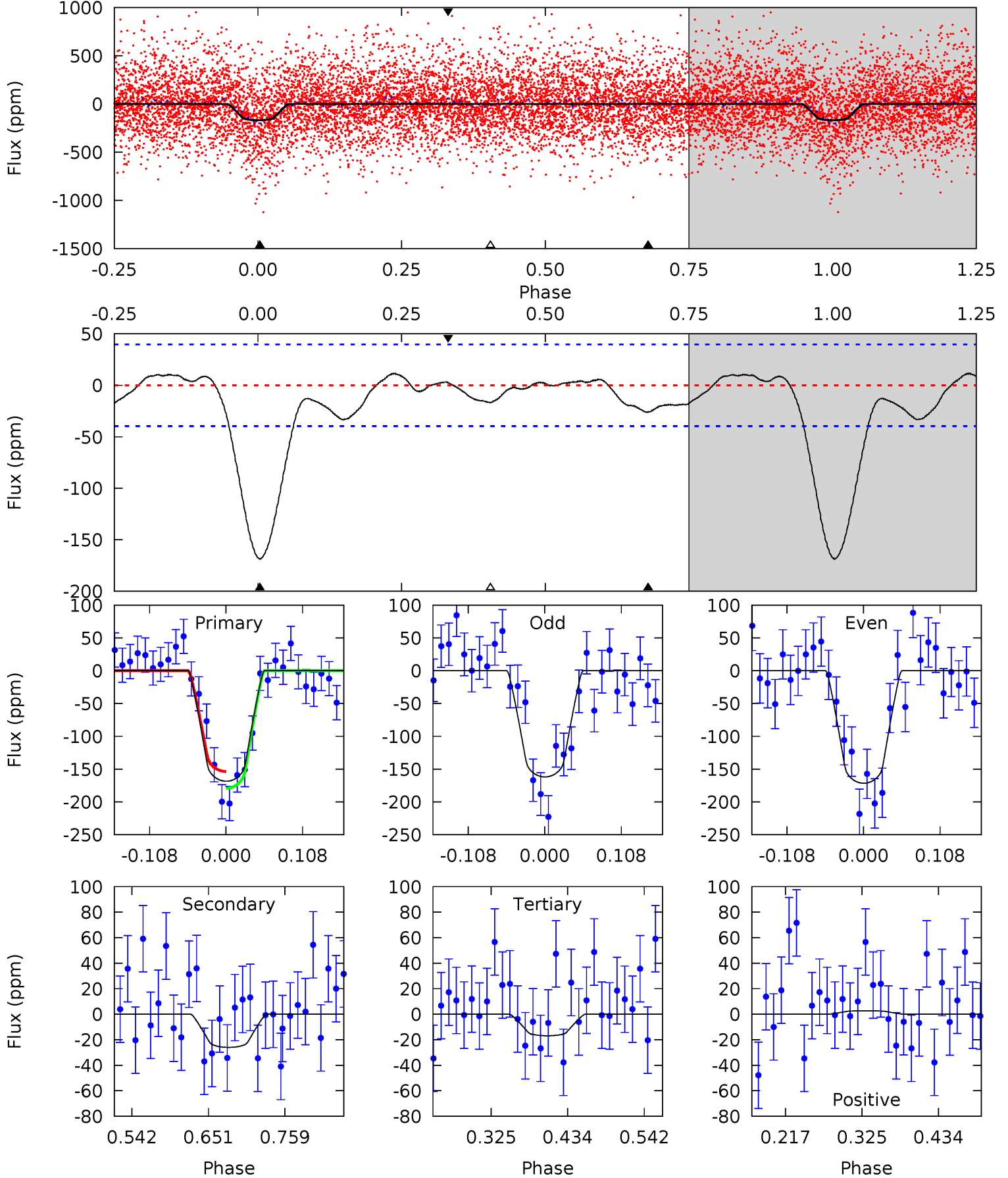
TCE 007461521-01 P= 0.773547 Days $T_0=132.169016$ (BKJD)



DV Model-Shift Uniqueness Test

007461521-01, P = 0.773545 Days, E = 132.169248 Days

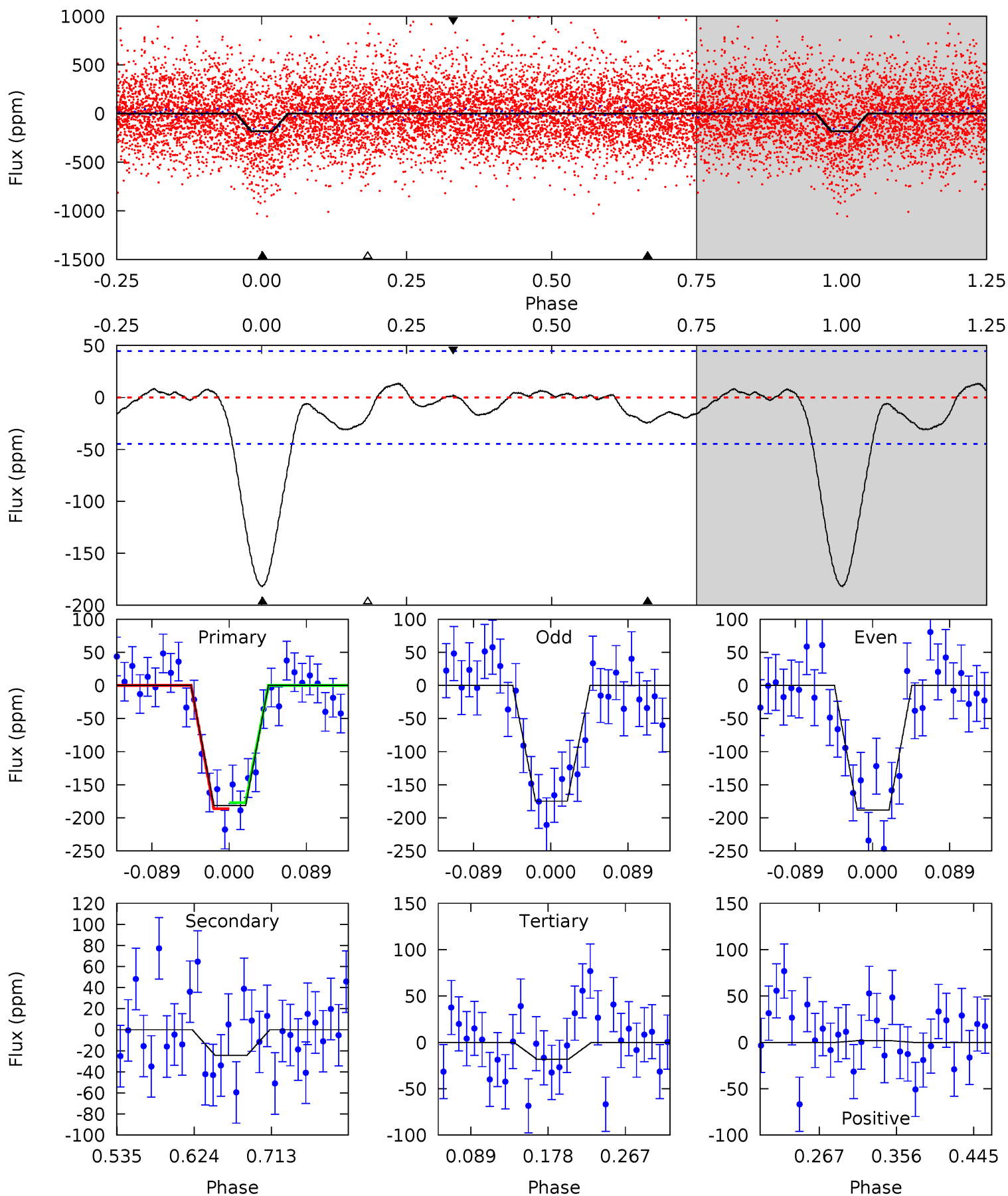
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	2.98	1.94	0.30	4.55	1.61	1.31	17.4	19.0	1.04	2.68	0.56	1.20	0.06	1.51



Alt Model-Shift Uniqueness Test

007461521-01, P = 0.773547 Days, E = 132.169016 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.7	2.51	1.87	0.19	4.59	1.70	1.10	16.8	18.5	0.65	2.33	0.70	1.18	0.07	0.46



Stellar Parameters For KIC 007461521

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6296^{+177}_{-243}	$4.217^{+0.185}_{-0.185}$	$-0.140^{+0.250}_{-0.300}$	$1.350^{+0.427}_{-0.320}$	$1.093^{+0.181}_{-0.148}$	$0.625^{+0.637}_{-0.319}$
	+3%/-4%	+4%/-4%	+179%/-214%	+32%/-24%	+17%/-14%	+102%/-51%
Source	KIC0	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 007461521-01 / KOI 6882.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-26 ± 9	$2.13^{+1.19}_{-1.15}$	3452^{+277}_{-255}	3770^{+1670}_{-1349}	$0.924^{+3.215}_{-0.600}$
Alt.	-24 ± 10	$2.08^{+1.33}_{-1.08}$	3445^{+261}_{-236}	3669^{+1487}_{-5966}	$0.834^{+2.858}_{-0.551}$

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

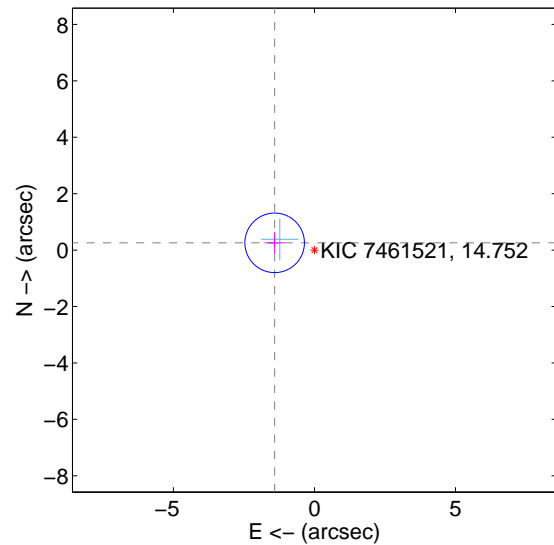
Supplemental centroid analysis for 007461521-01. Kepler magnitude: 14.75. Transit SNR 12.81

There are 2 quarters with good PRF difference image offsets

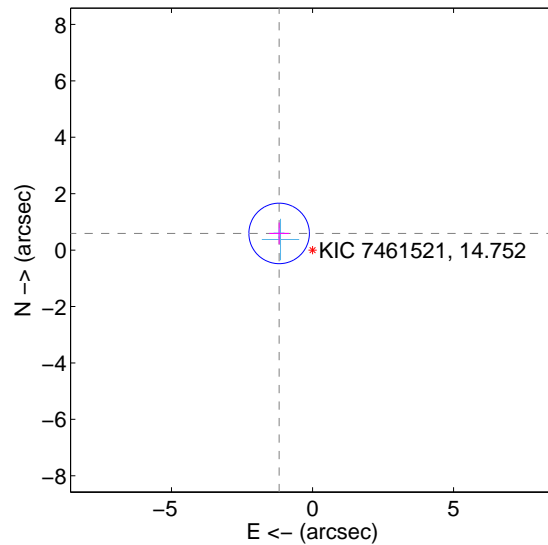
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.434 ± 0.352	4.08	1.410 ± 0.351	0.258 ± 0.383
PRF-fit source offset from KIC position	1.323 ± 0.357	3.70	1.183 ± 0.351	0.591 ± 0.383
photometric centroid source offset	3.46 ± 1.23	2.81	1.72 ± 1.12	3.00 ± 1.26

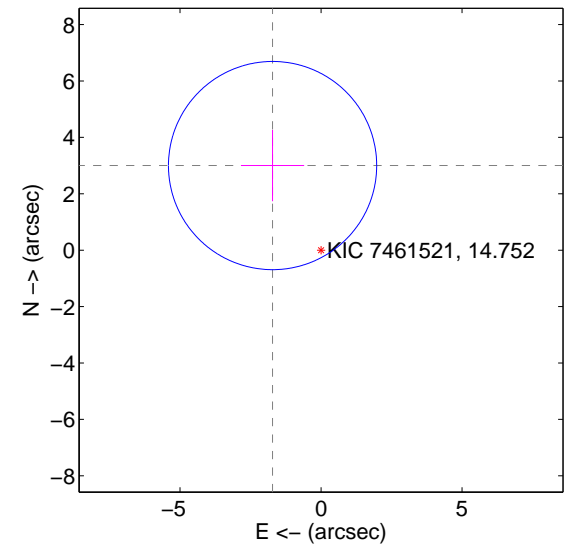
offset from difference PRF-fit to OOT PRF-fit



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.



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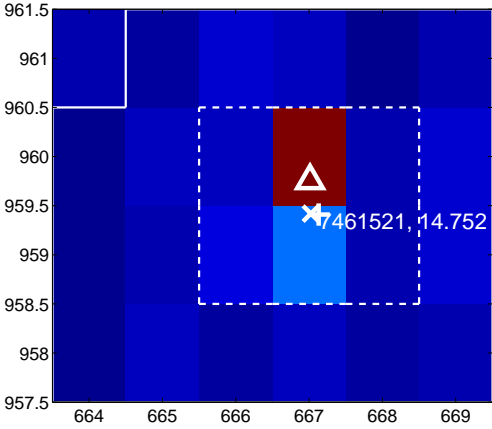
Q13 no difference image



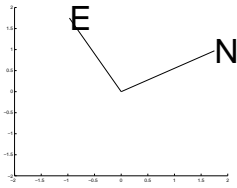
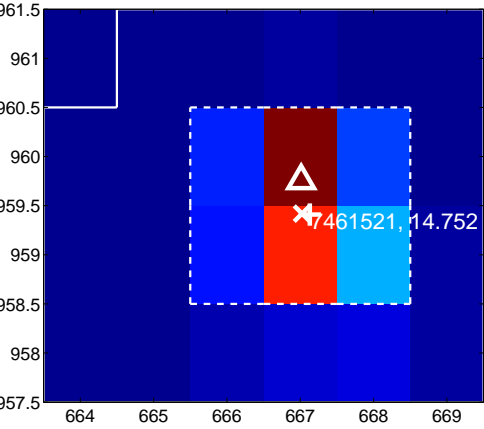
Q13 no OOT image



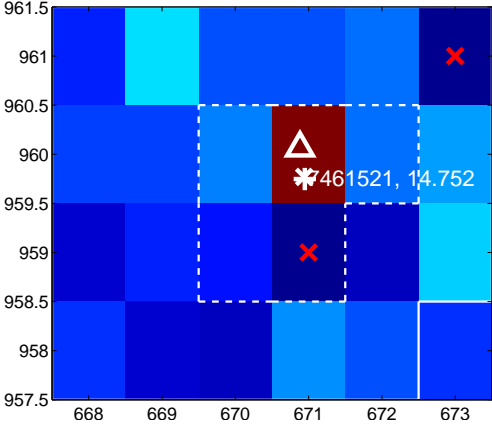
Q14 difference image



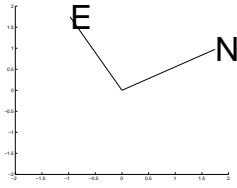
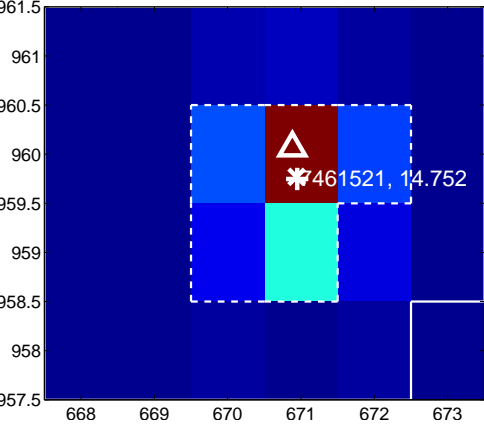
Q14 OOT image



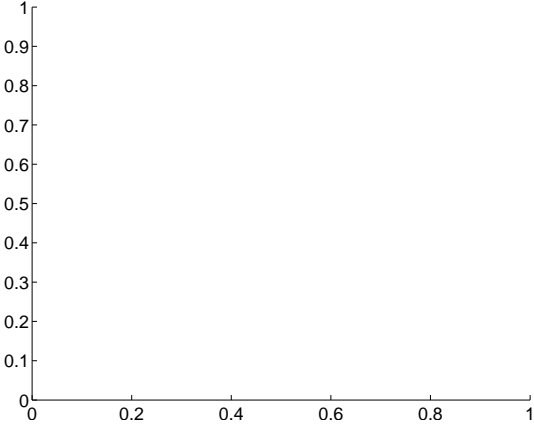
Q15 difference image



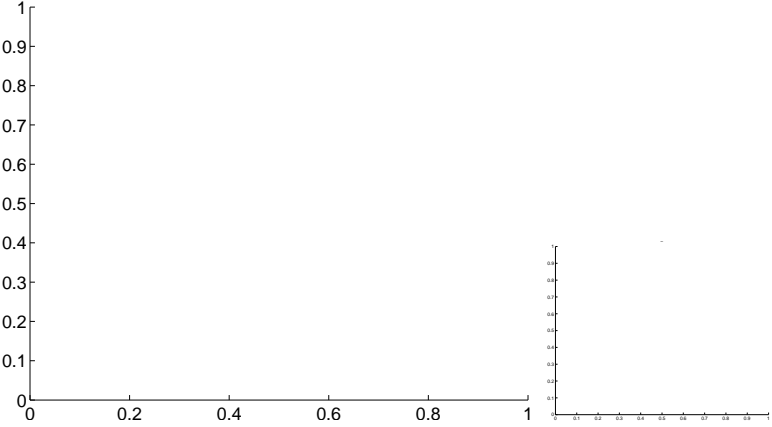
Q15 OOT image



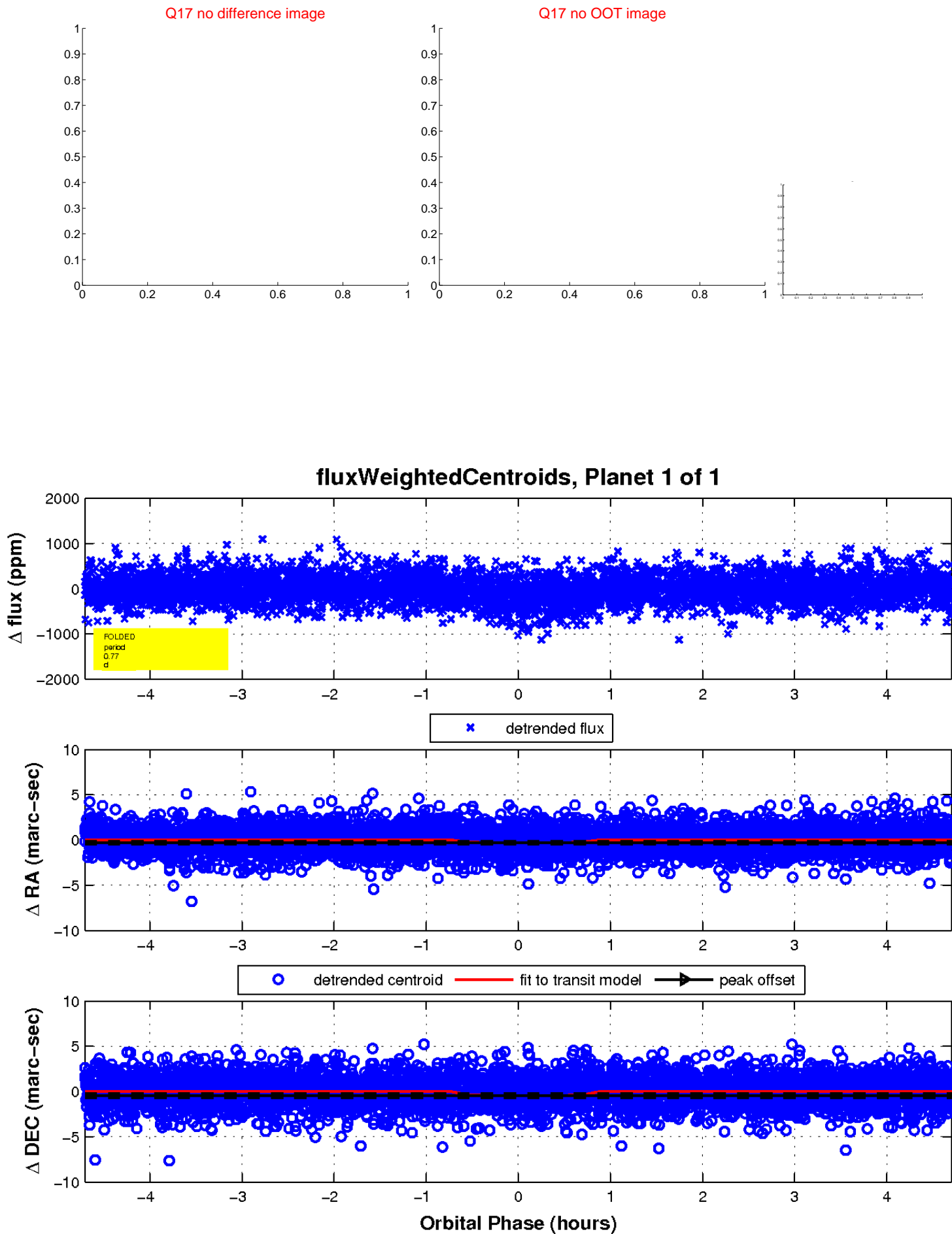
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

