

KIC 007357531

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})
007357531-01	OBS	1368.01	251.059546	230.027965	7415.2	5.036	91.5	105.0	1.09	5714	15.79	1.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007357531-01	OBS	FP	0.00	0	1	1	0	DEEP_V_SHAPED—CENT_UNRESOLVED_OFFSET

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.

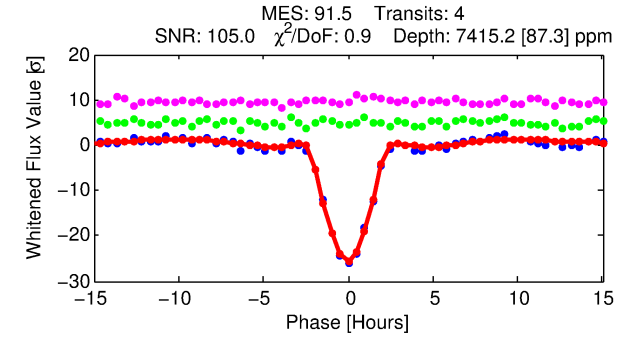
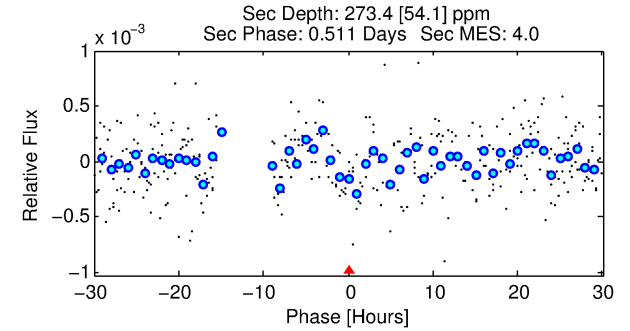
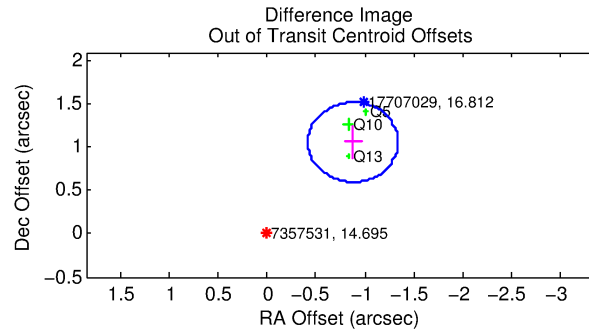
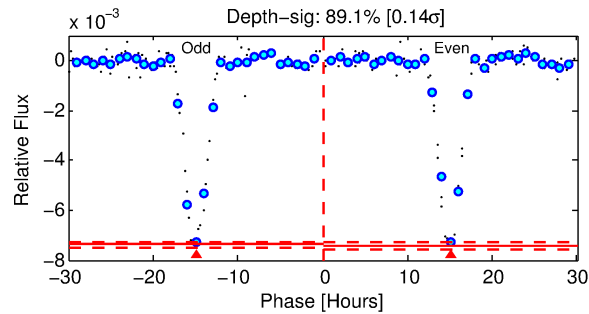
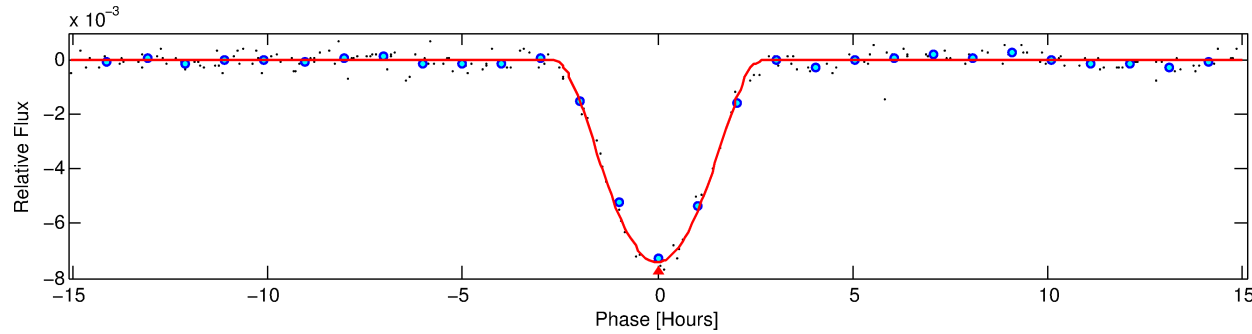
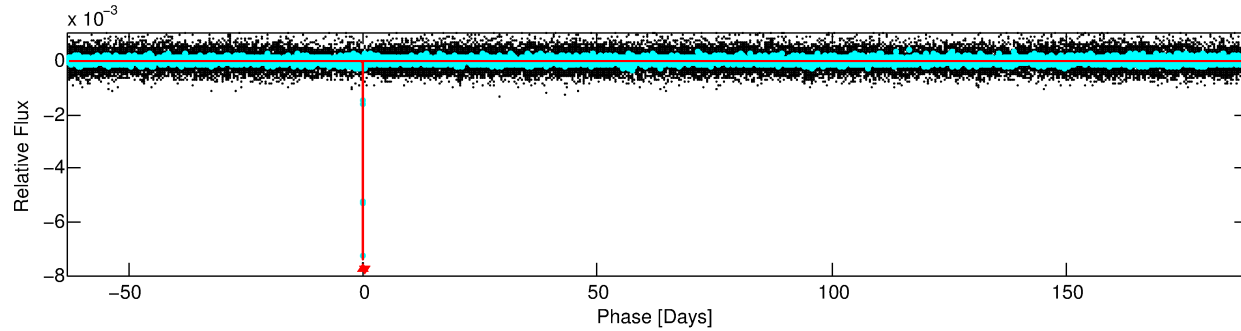
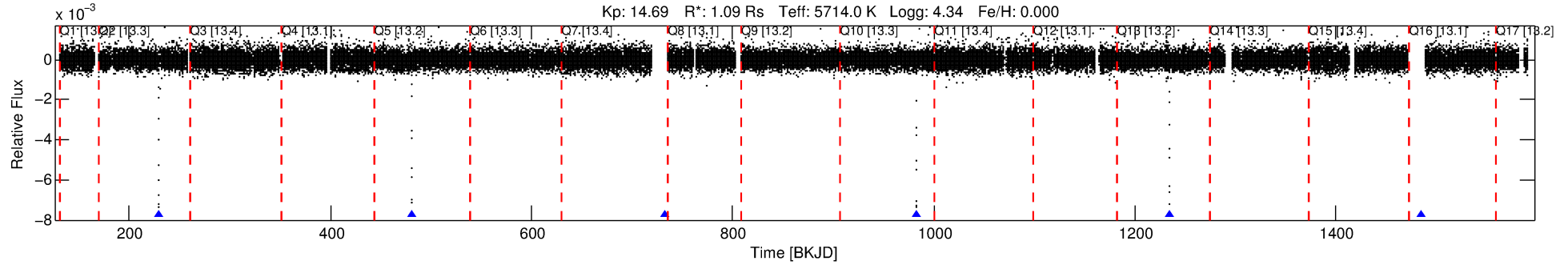
Ephemeris Match Information For 007357531-01

No Significant Match Found

DV One-Page Summary

KIC: 7357531 Candidate: 1 of 1 Period: 251.060 d

KOI: K01368.01 Corr: 0.995



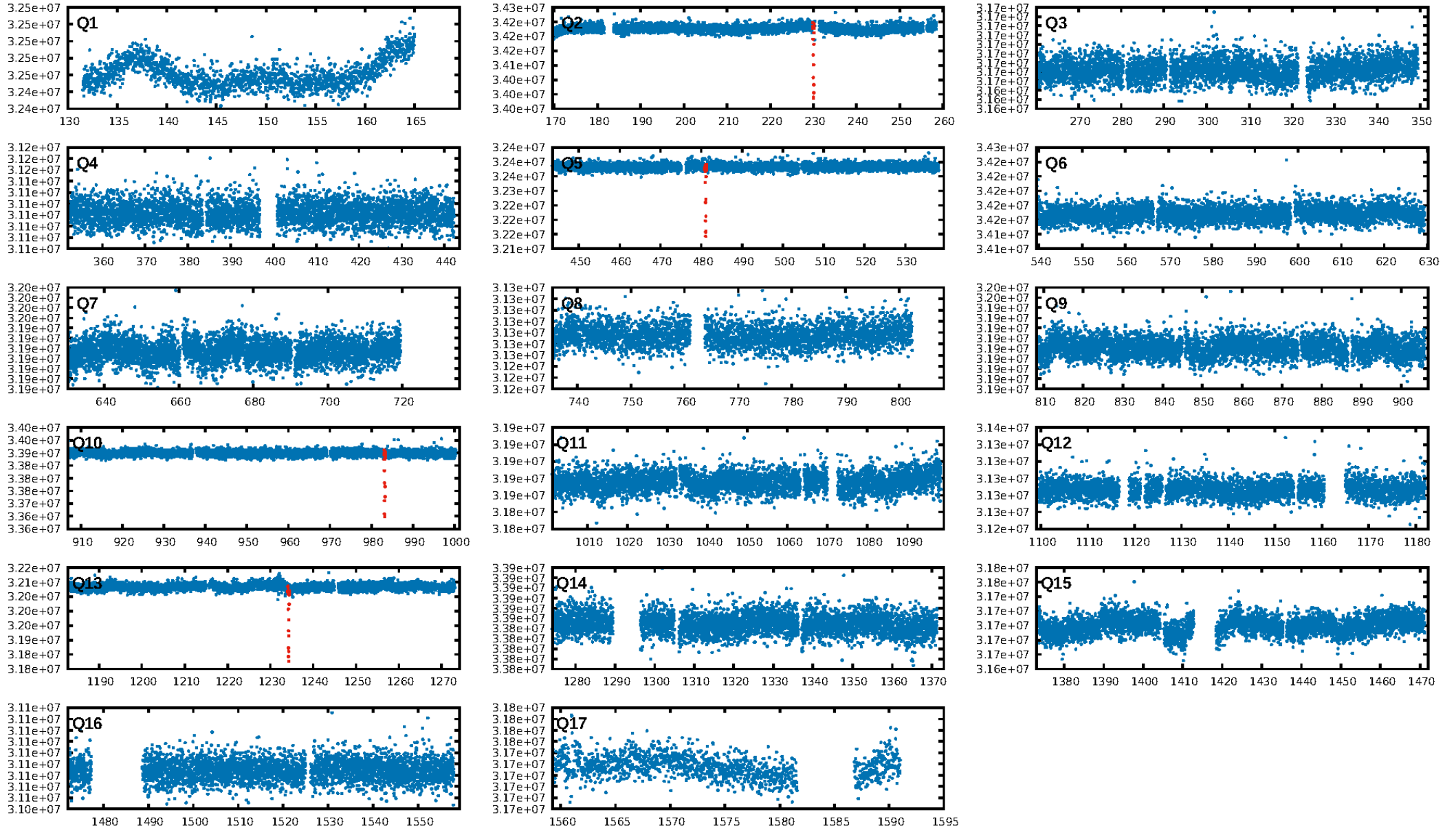
DV Fit Results:

Period = 251.05955 [0.00041] d
Epoch = 230.0280 [0.0010] BKJD
Rp/R* = 0.1333 [0.0522]
a/R* = 214.45 [16.22]
b = 0.98 [0.08]
Seff = 1.93 [0.43]
Teq = 301 [17] K
Rp = 15.79 [6.62] Re
a = 0.7634 [0.1038] AU
Ag = 351.38 [293.17] [1.20 σ]
Teffp = 2013 [408] K [4.19 σ]

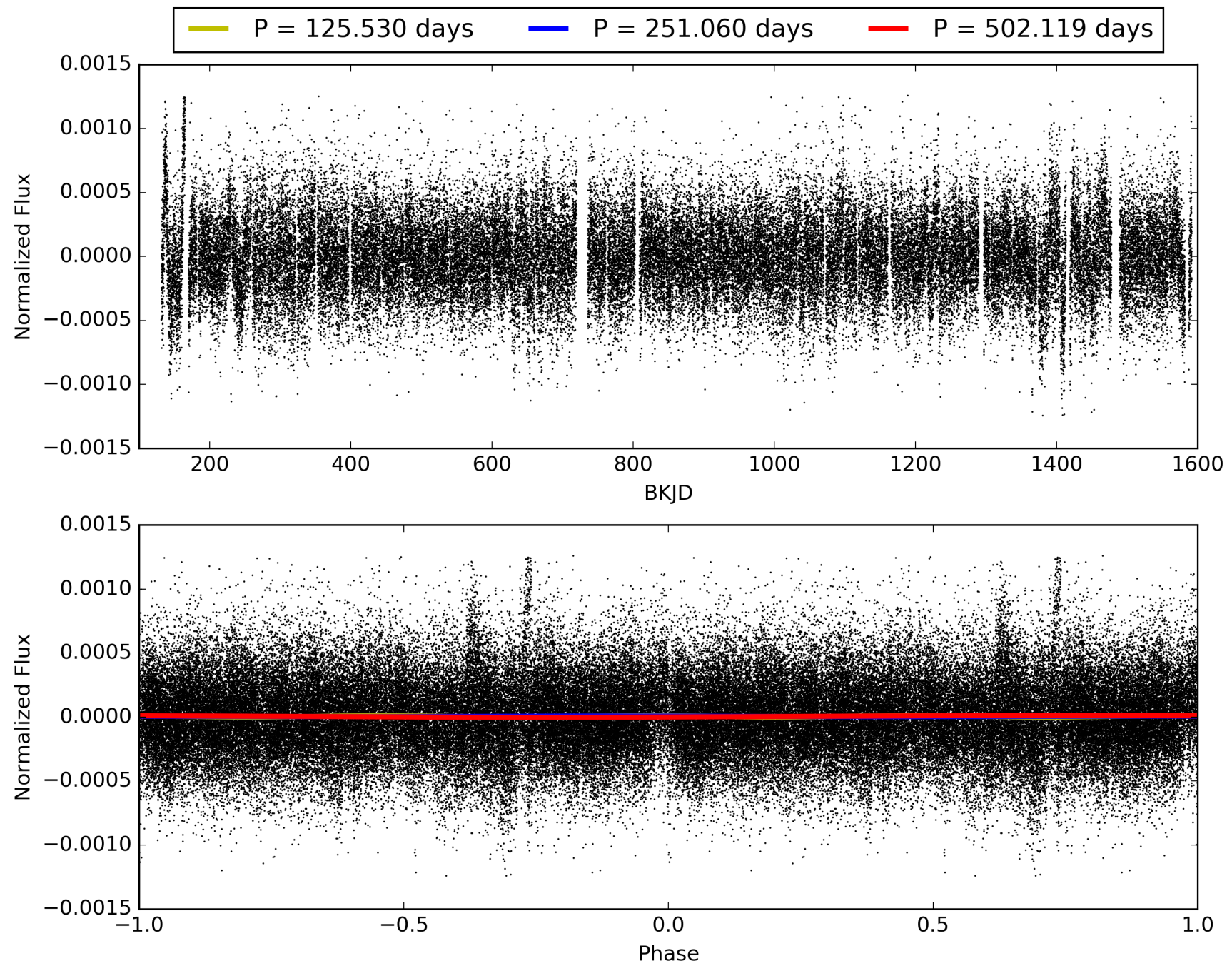
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 50.8%
ModelChiSquareGof-sig: 97.4%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 3.403
Centroid-sig: 0.0%
Centroid-so: 1.426 arcsec [13.13 σ]
OotOffset-rm: 1.376 arcsec [8.94 σ]
KicOffset-rm: 1.197 arcsec [6.66 σ]
OotOffset-st: 1/0/0/2 [3]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 007357531-01, PDC Light Curves

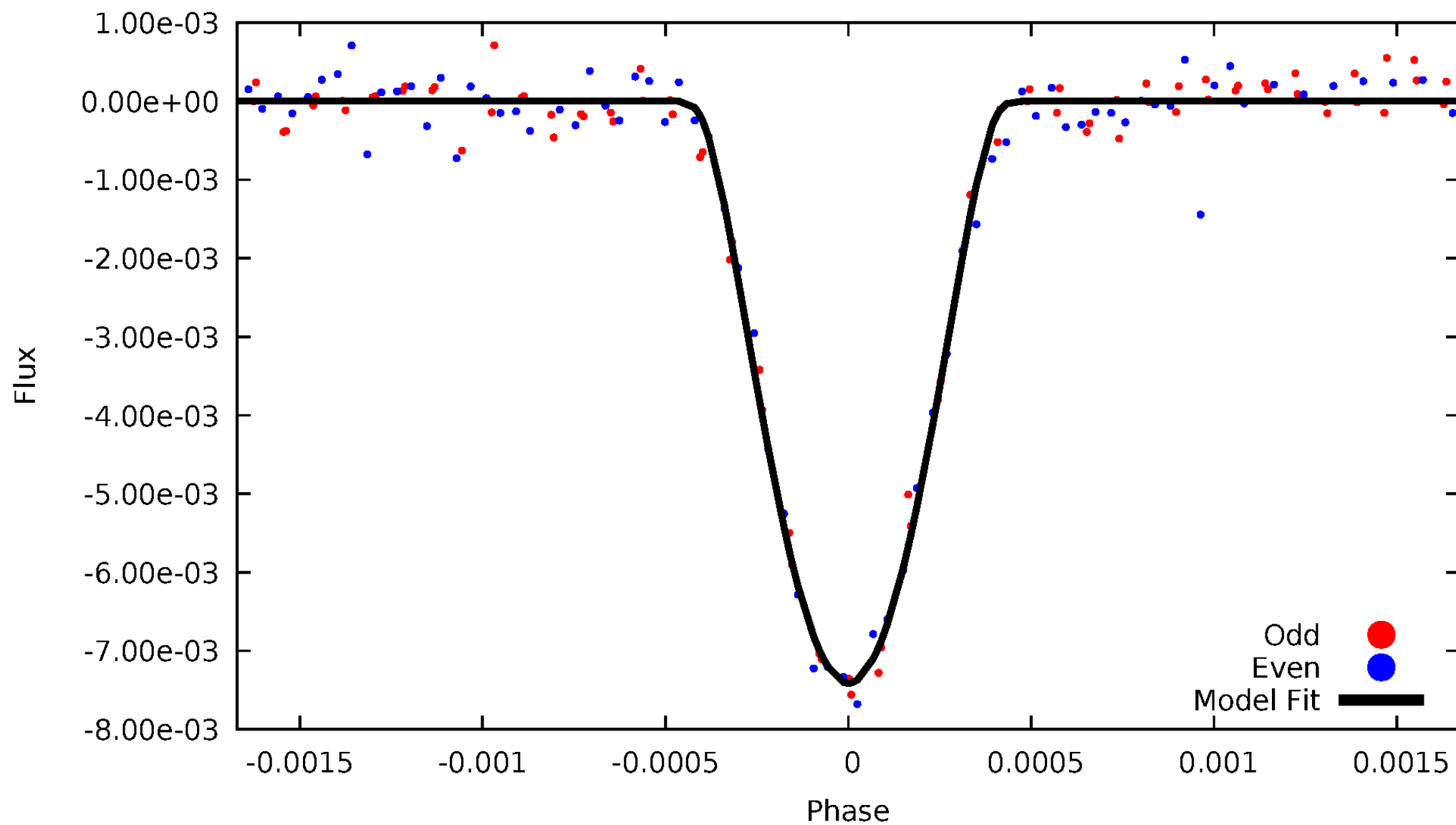


TCE 007357531-01



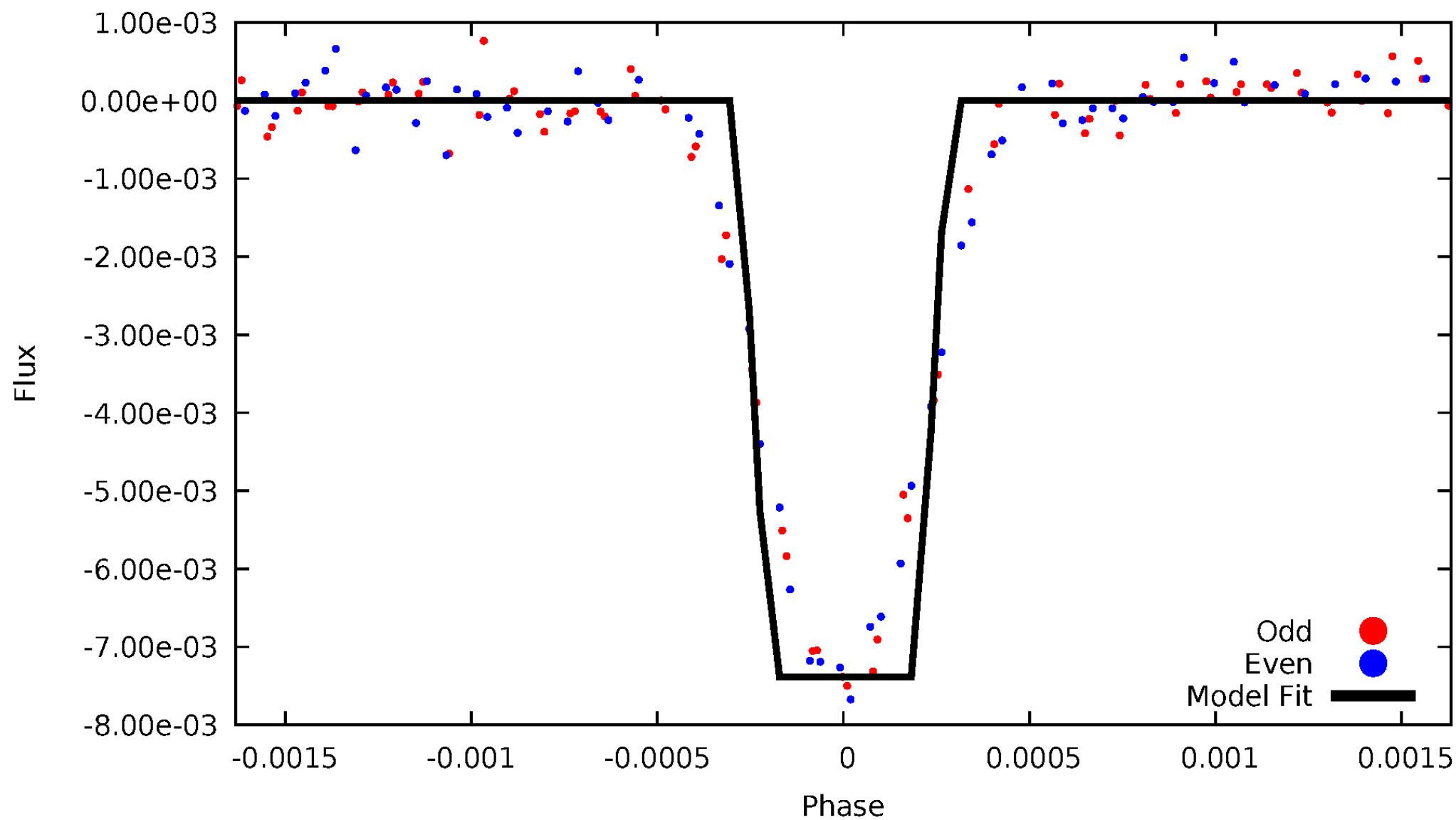
DV Odd/Even

TCE 007357531-01



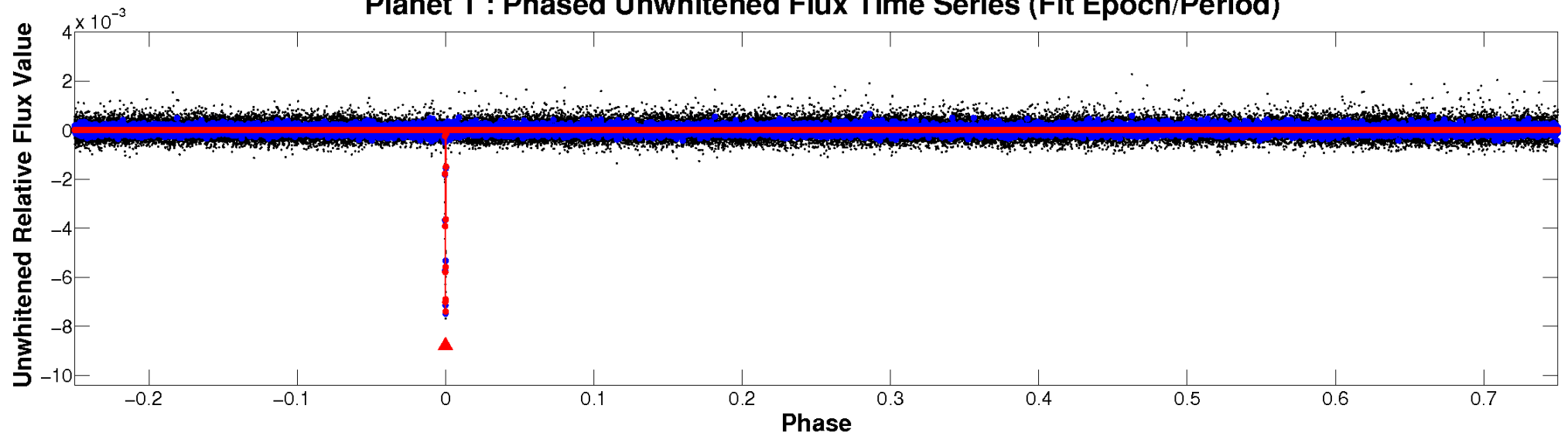
ALT Odd/Even

TCE 007357531-01

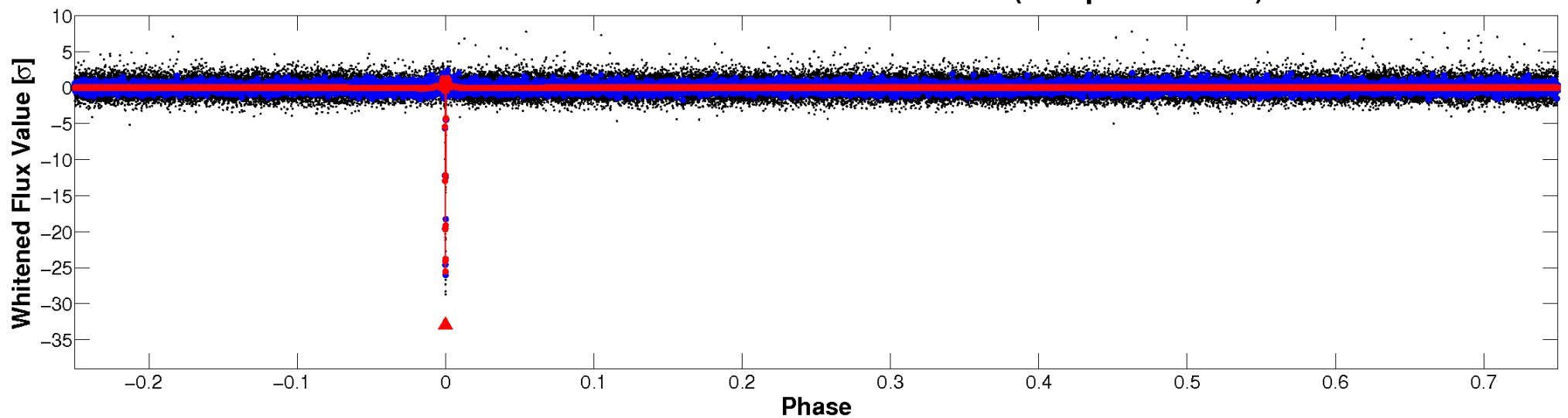


Non-Whitened Vs. Whitened Light Curve

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

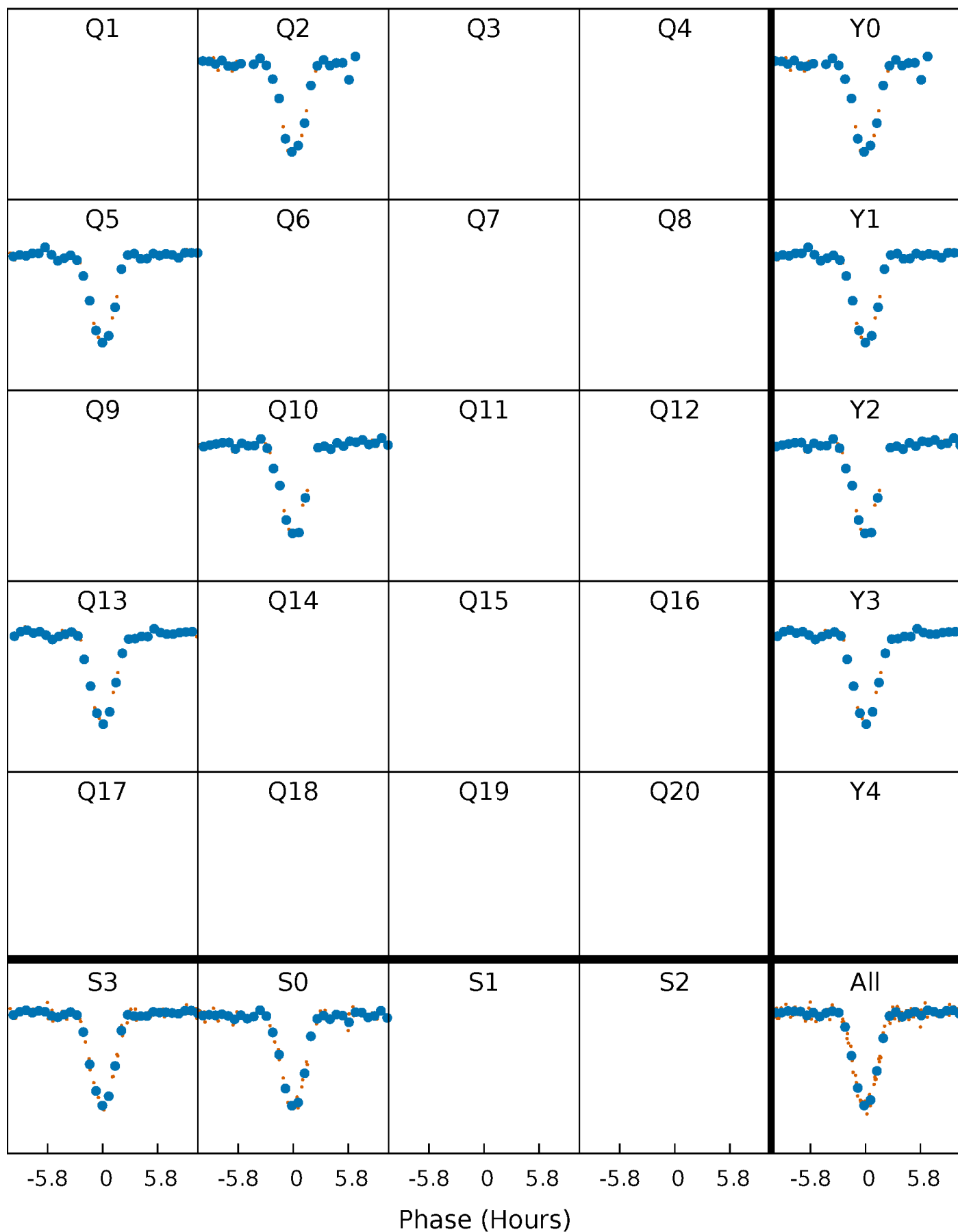


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



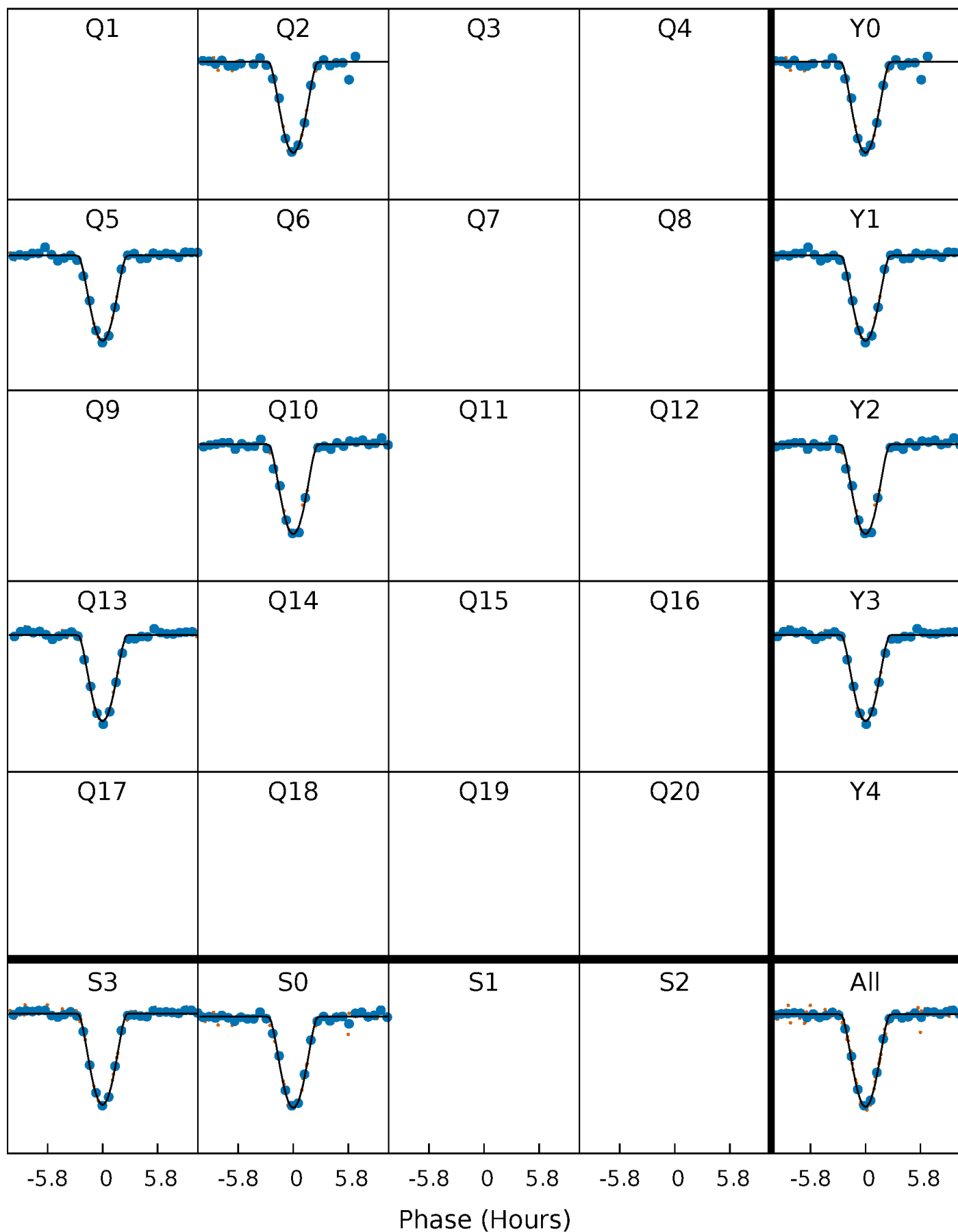
PDC Quarter-Phased Transit Curves

TCE 007357531-01 P=251.059546 Days $T_0=230.027964$ (BKJD)



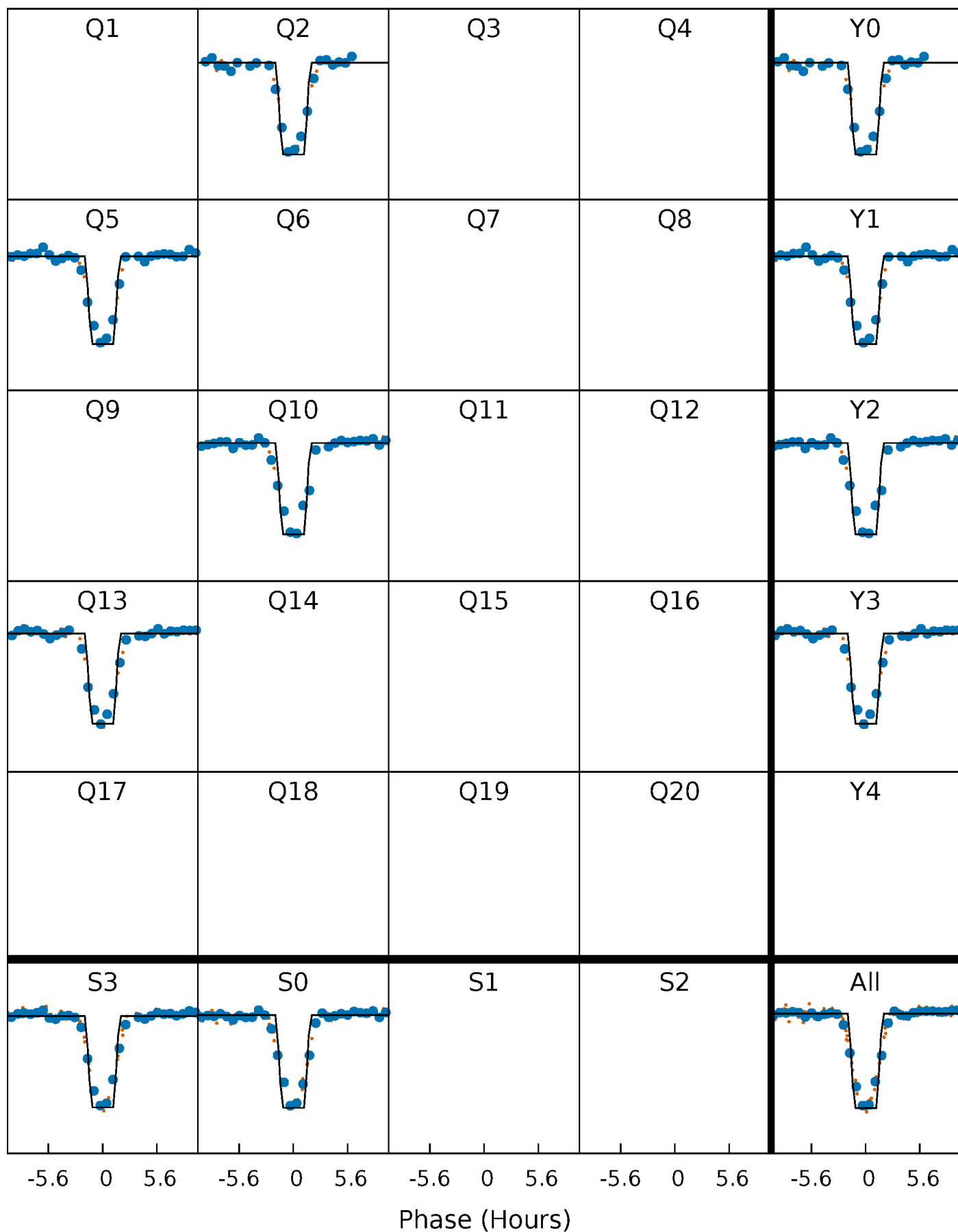
DV Quarter-Phased Transit Curves

TCE 007357531-01 P=251.059546 Days $T_0=230.027964$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

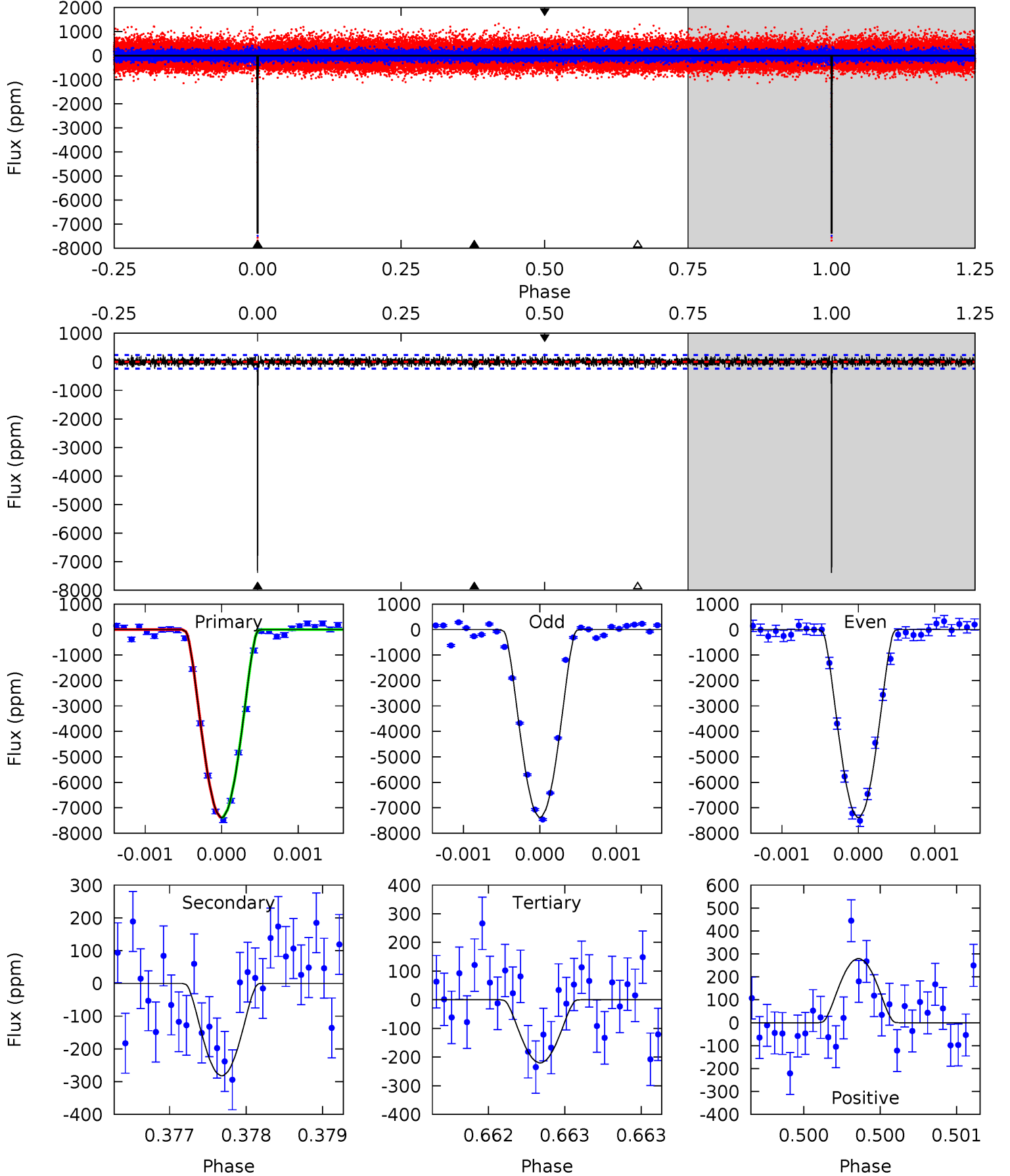
TCE 007357531-01 P=251.060164 Days $T_0=230.026796$ (BKJD)



DV Model-Shift Uniqueness Test

007357531-01, $P = 251.059546$ Days, $E = 230.027964$ Days

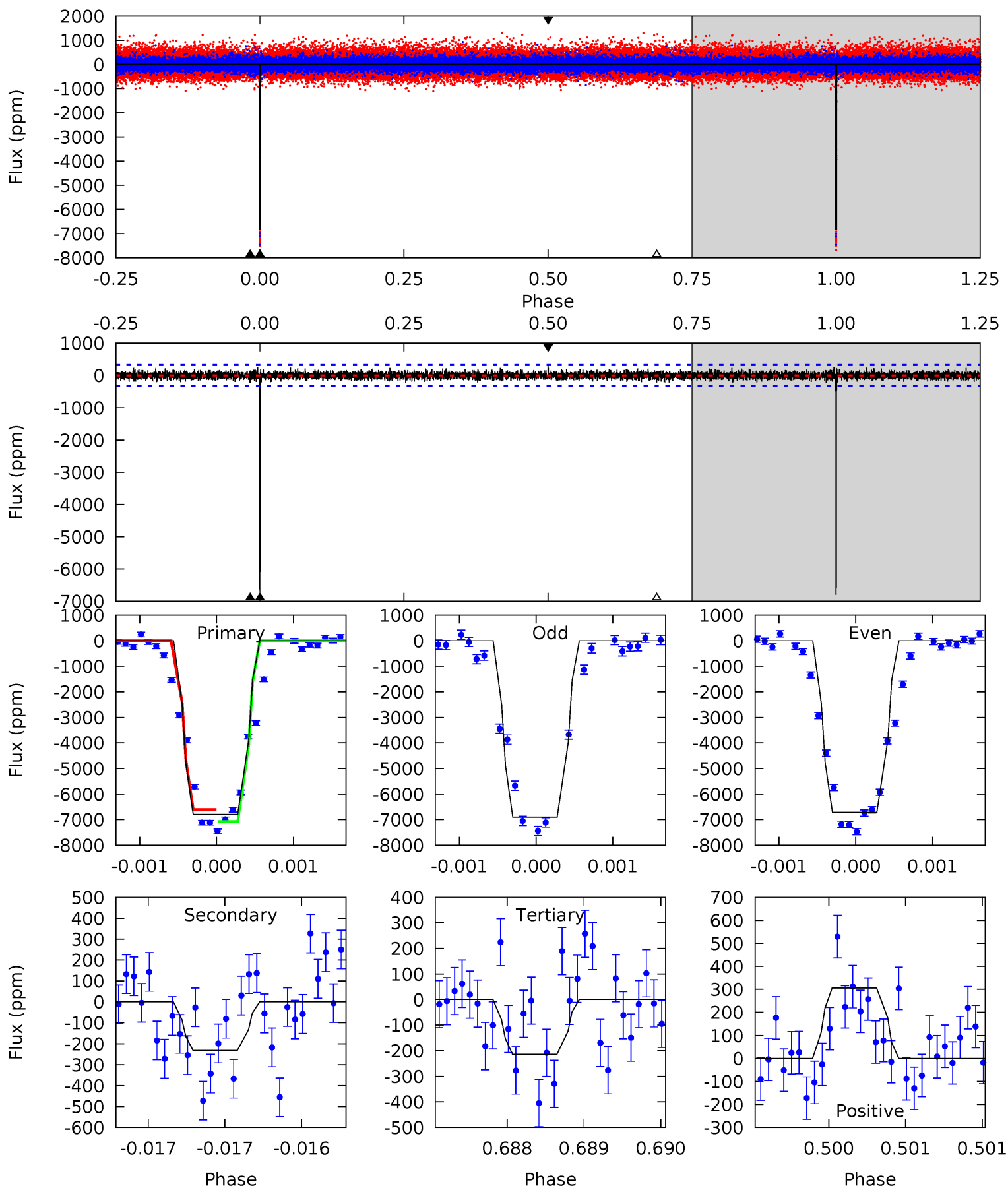
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
170.6	6.52	5.09	6.46	5.47	3.32	1.50	165.5	164.1	1.43	0.06	0.11	1.00	0.04	0.00



Alt Model-Shift Uniqueness Test

007357531-01, P = 251.060164 Days, E = 230.026796 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
116.9	3.97	3.68	5.26	5.55	3.45	1.08	113.2	111.6	0.30	-1.28	1.59	1.00	0.04	4.01



Stellar Parameters For KIC 007357531

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5714^{+103}_{-114}	$4.340^{+0.120}_{-0.108}$	$0.000^{+0.150}_{-0.150}$	$1.086^{+0.163}_{-0.147}$	$0.940^{+0.071}_{-0.057}$	$1.035^{+0.599}_{-0.352}$
	+2%/-2%	+3%/-2%	+inf%/-inf%	+15%/-14%	+8%/-6%	+58%/-34%
Source	SPE57	SPE57	SPE57	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007357531-01 / KOI 1368.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-282 ± 43	$15.90^{+6.44}_{-5.68}$	420^{+19}_{-18}	2767^{+367}_{-238}	353^{+538}_{-177}
Alt.	-231 ± 58	$10.22^{+6.38}_{-5.71}$	419^{+18}_{-18}	3026^{+860}_{-372}	709^{+3028}_{-455}

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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

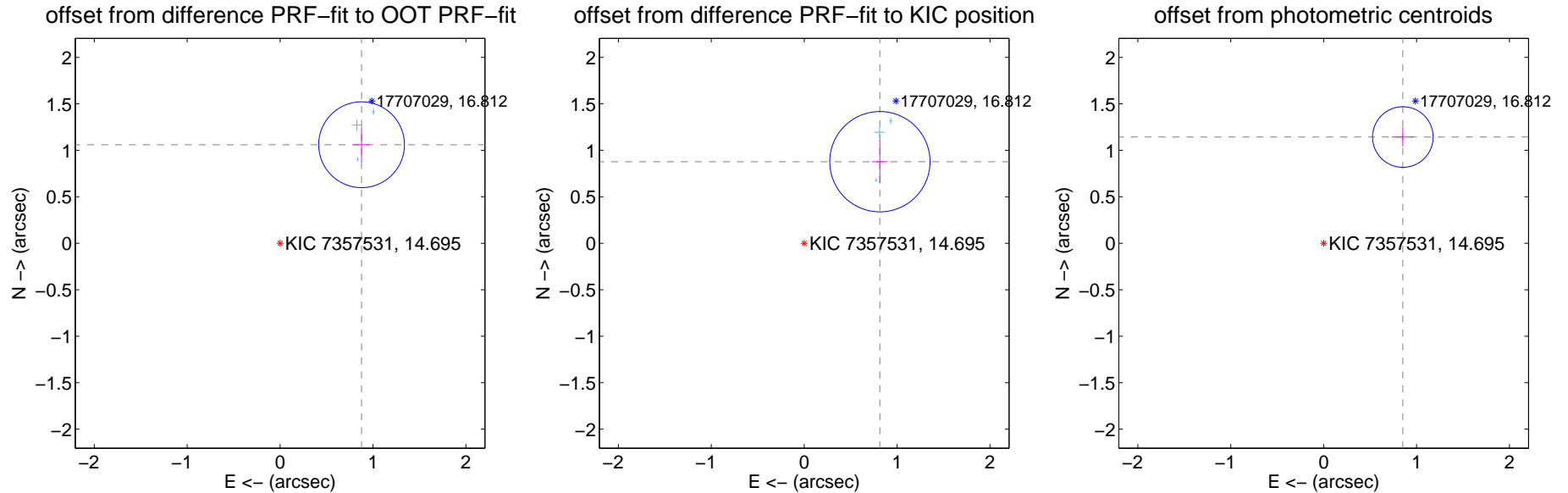
DV Centroid Data

Supplemental centroid analysis for 007357531-01. Kepler magnitude: 14.70. Transit SNR 105.04

There are 3 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	1.376 ± 0.154	8.94	-0.877 ± 0.087	1.060 ± 0.186
PRF-fit source offset from KIC position	1.197 ± 0.180	6.66	-0.815 ± 0.084	0.878 ± 0.233
photometric centroid source offset	1.43 ± 0.11	13.13	-0.85 ± 0.12	1.14 ± 0.10

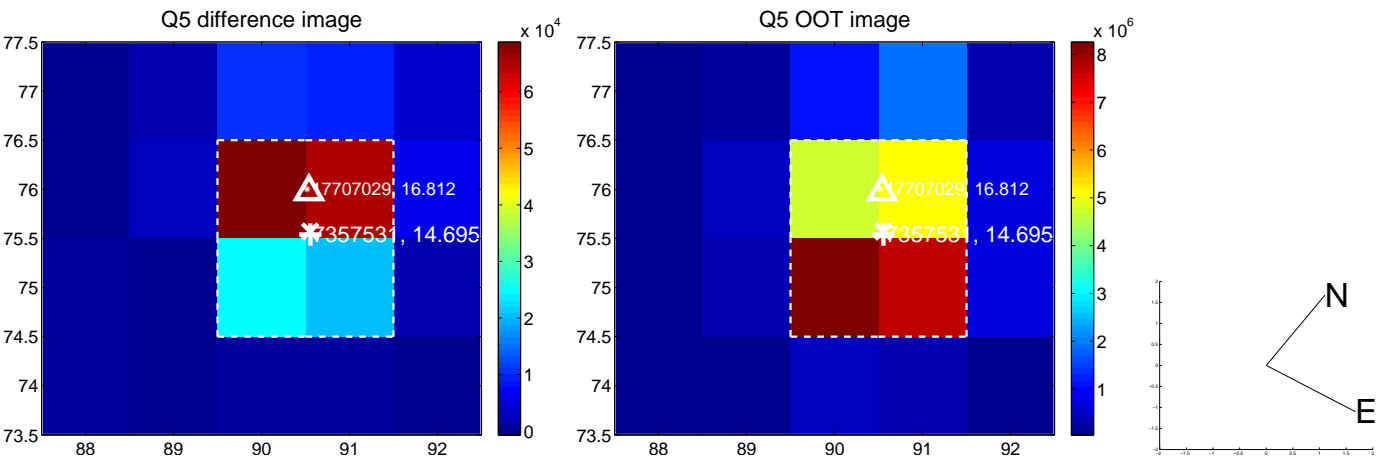


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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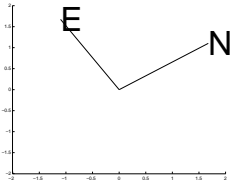
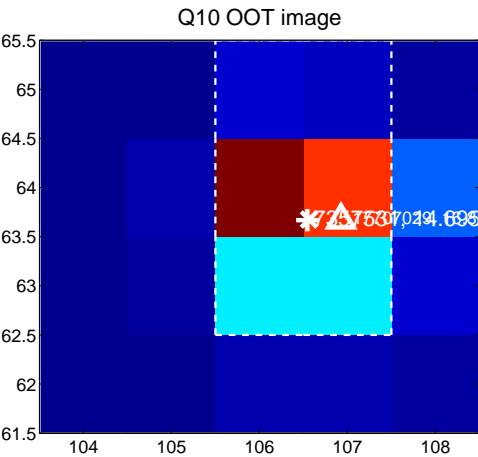
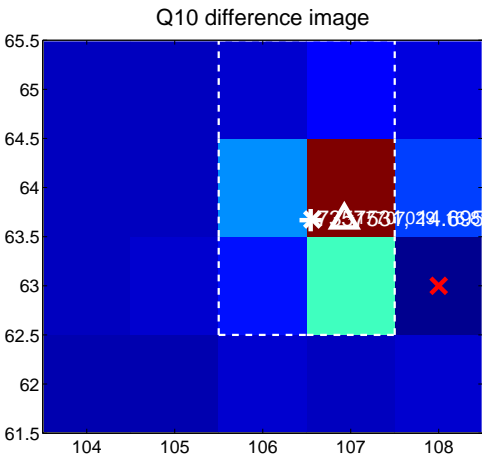


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

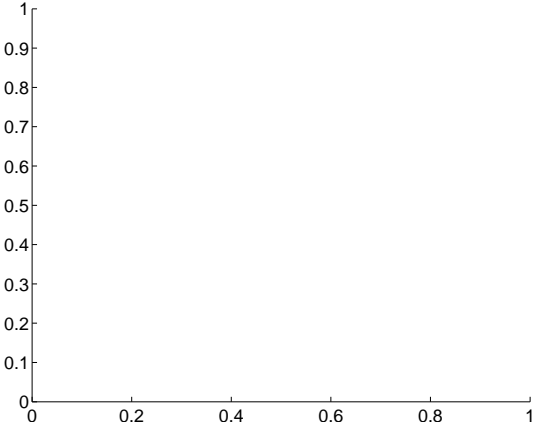
Q9 no difference image



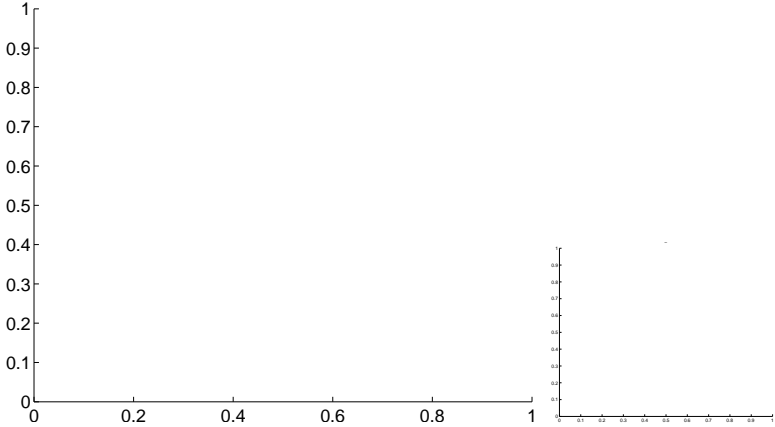
Q9 no OOT image



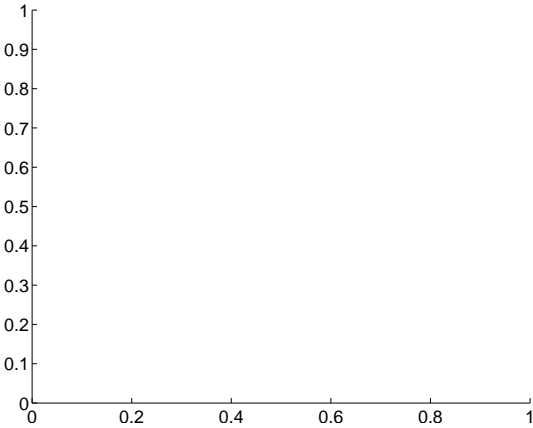
Q11 no difference image



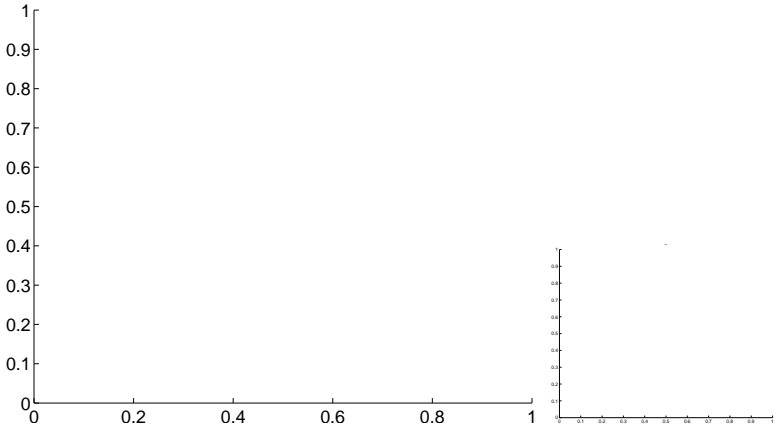
Q11 no OOT image



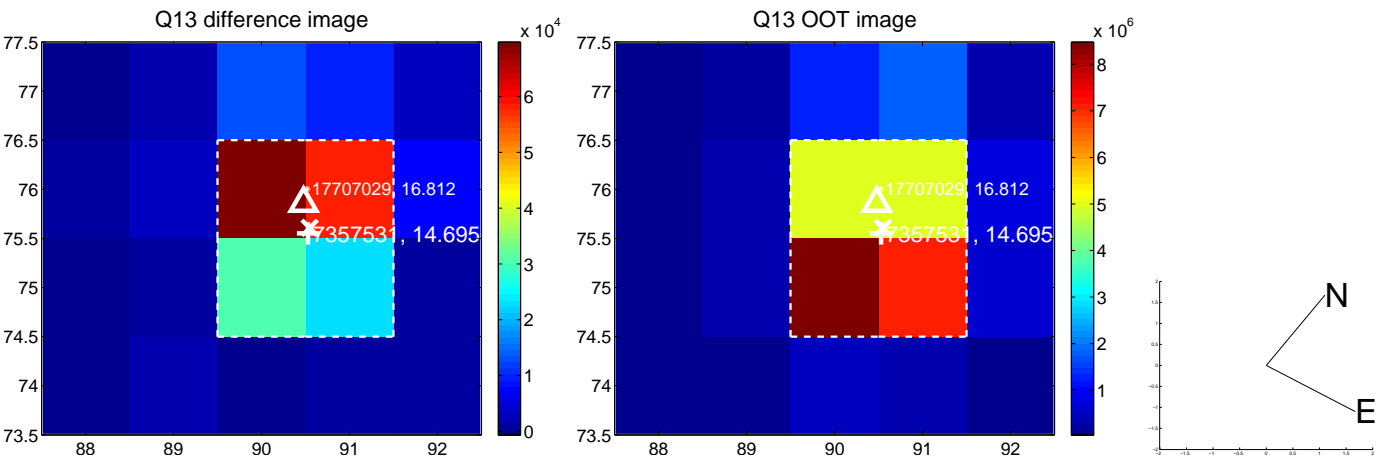
Q12 no difference image



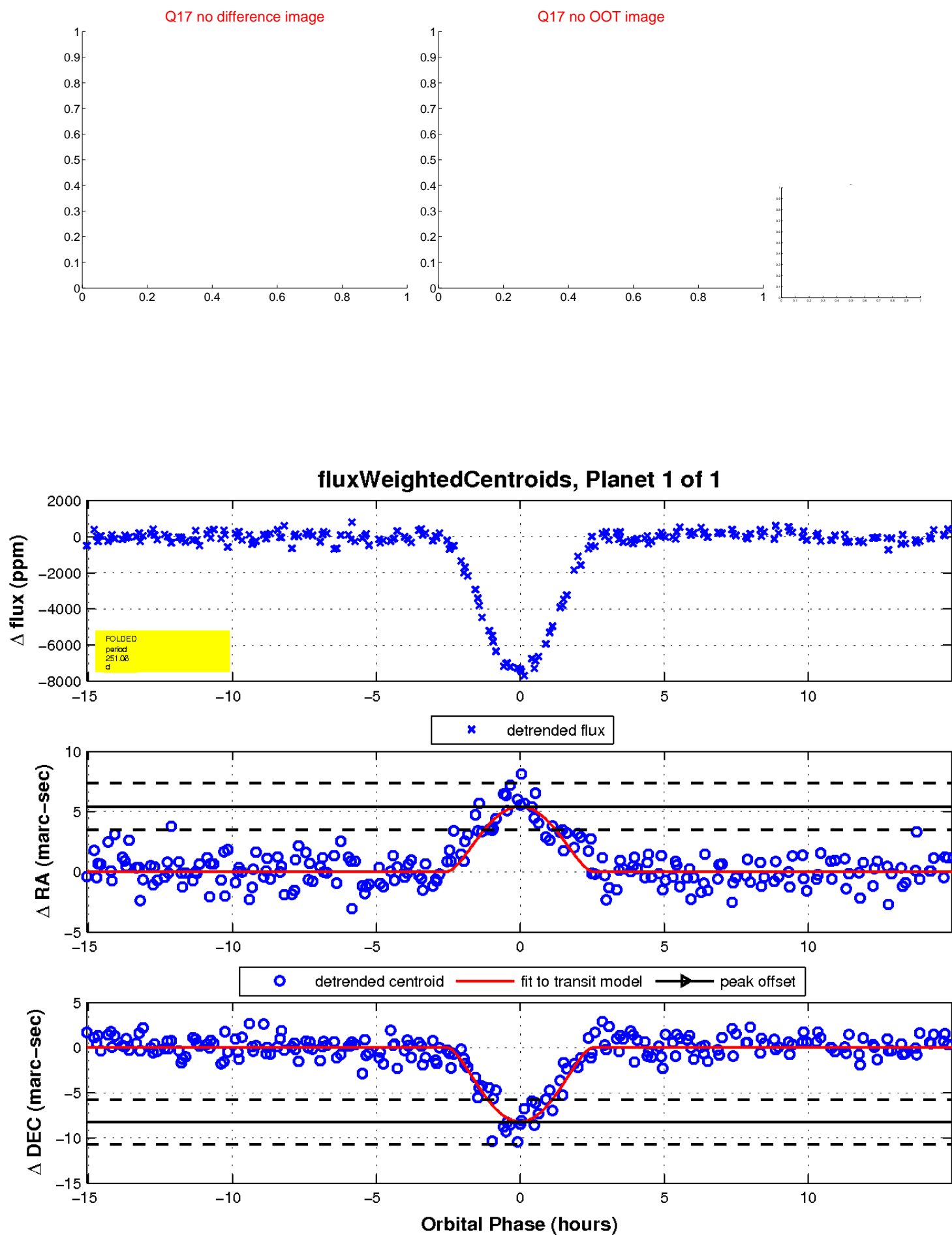
Q12 no OOT image



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

