

KIC 009515113

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})
009515113-01	OBS	No	353.036447	451.500811	322.2	3.020	8.2	6.7	1.68	5899	3.15	3.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009515113-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

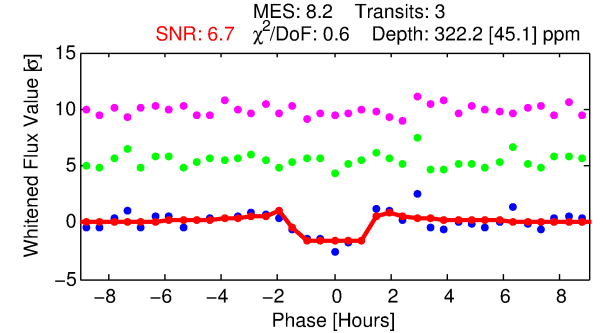
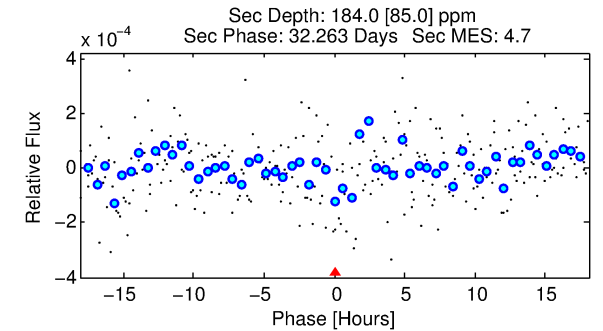
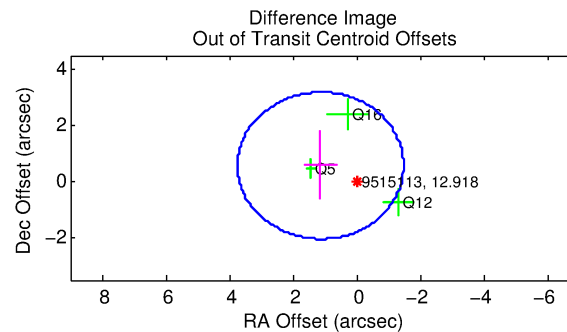
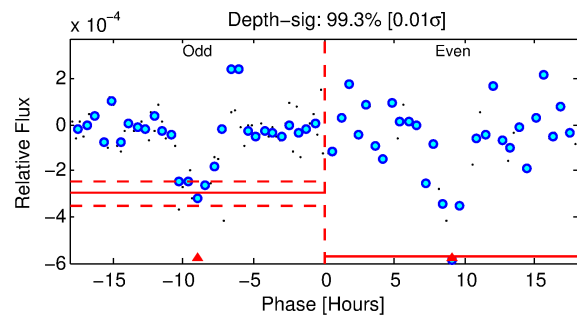
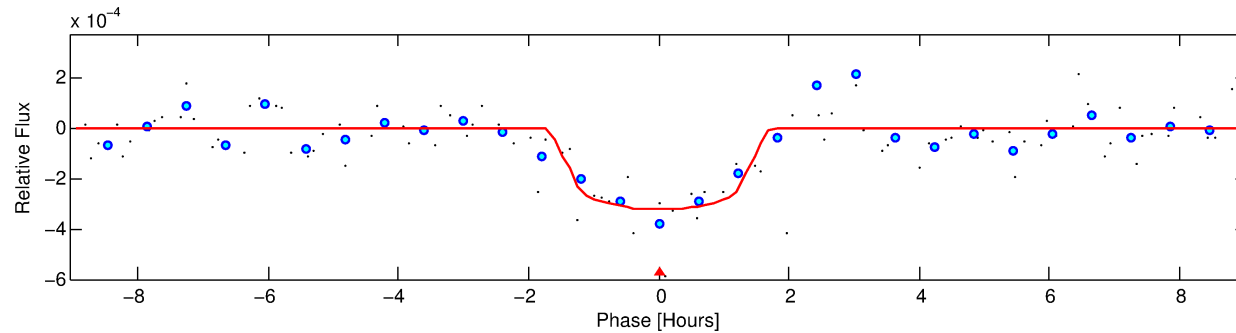
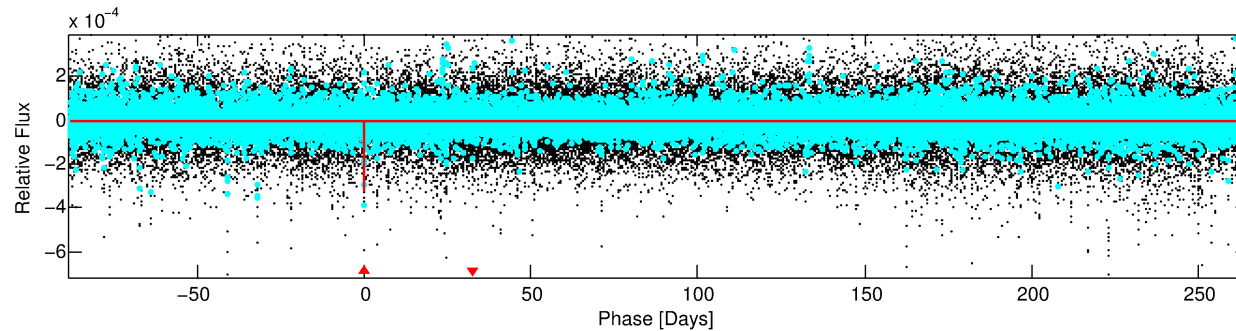
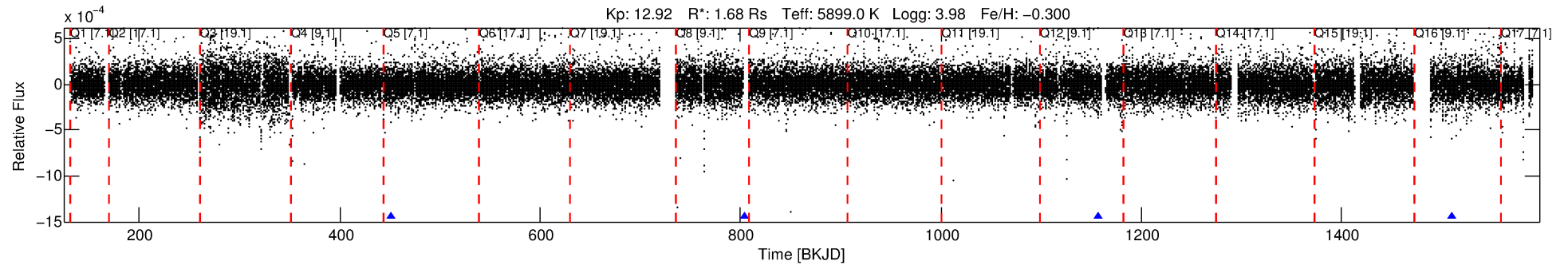
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009515113-01

No Significant Match Found

DV One-Page Summary

KIC: 9515113 Candidate: 1 of 1 Period: 353.036 d



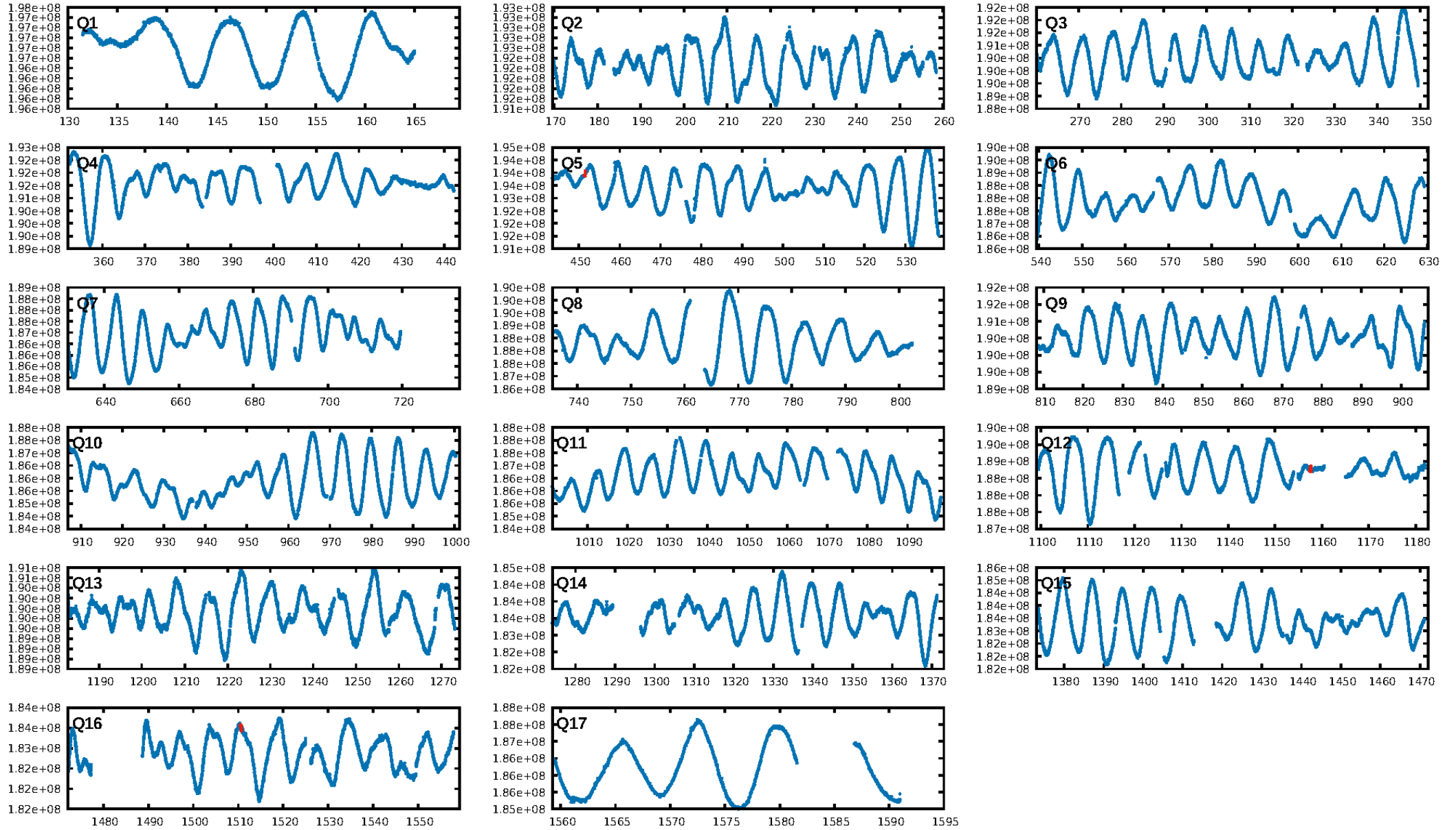
DV Fit Results:

Period = 353.03645 [0.00336] d
Epoch = 451.5008 [0.0045] BKJD
Rp/R* = 0.0172 [0.0357]
a/R* = 730.04 [7280.75]
b = 0.61 [10.54]
Seff = 3.22 [2.49]
Teq = 341 [66] K
Rp = 3.15 [6.70] Re
a = 0.9764 [0.4506] AU
Ag = 9697.82 [41164.87] [0.24σ]
Teffp = 5239 [5472] K [0.90σ]

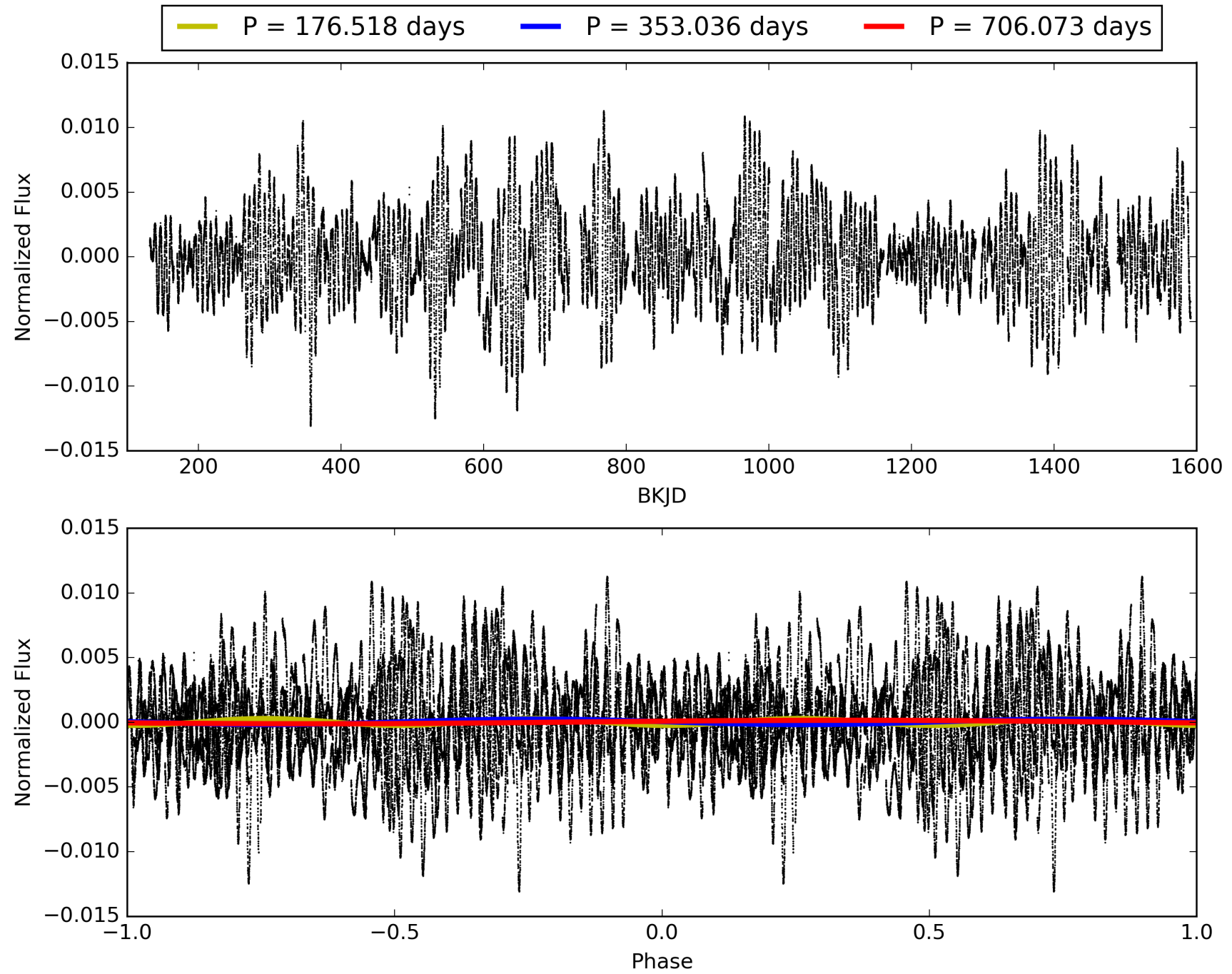
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 28.1%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 6.97e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.4537
Centroid-sig: 51.7%
Centroid-so: 0.747 arcsec [0.88σ]
OotOffset-rm: 1.265 arcsec [1.45σ]
OotOffset-st: 0/0/2/1 [3]
KicOffset-rm: 1.402 arcsec [1.58σ]
KicOffset-st: 0/0/2/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 009515113-01, PDC Light Curves

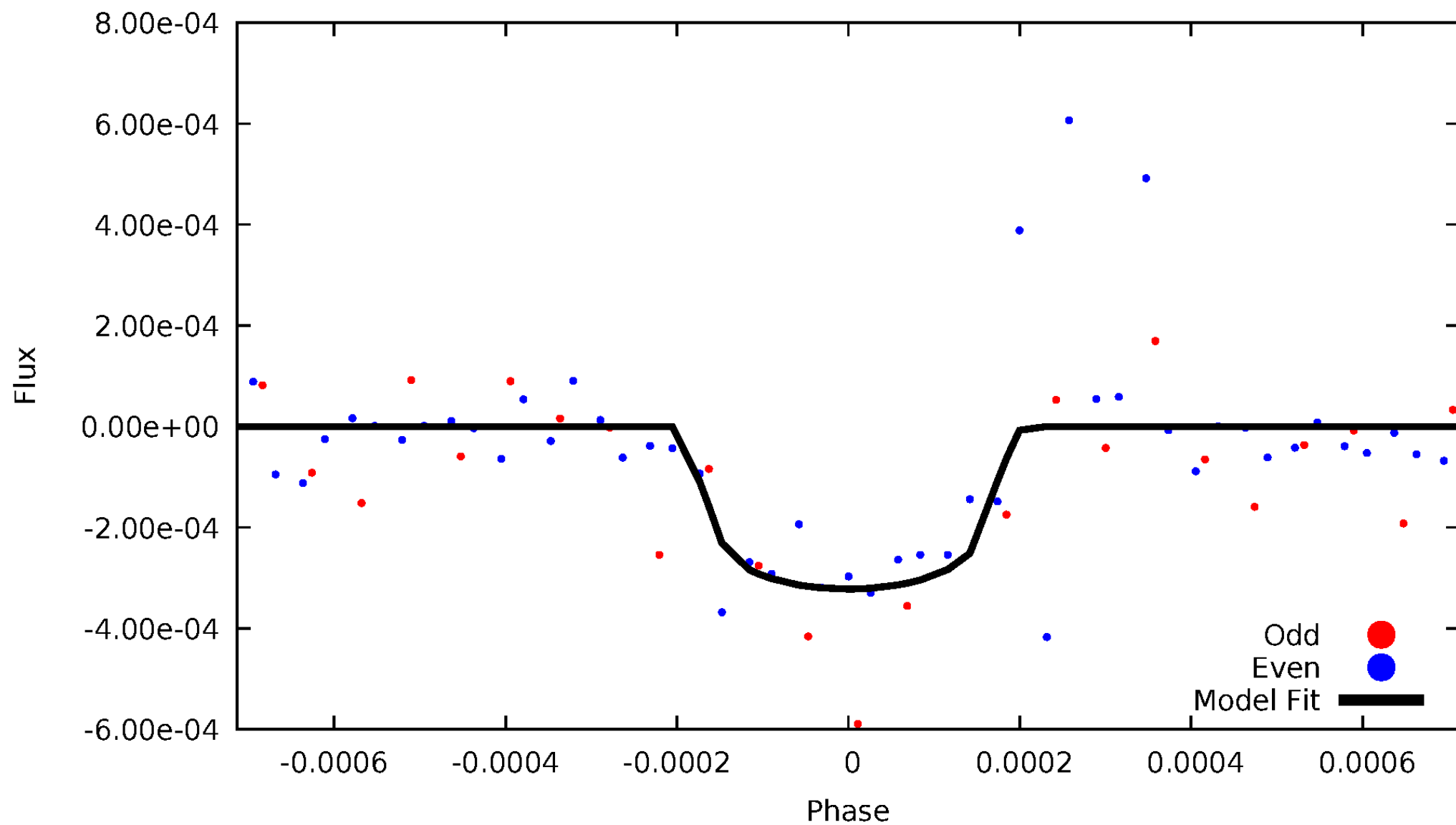


TCE 009515113-01



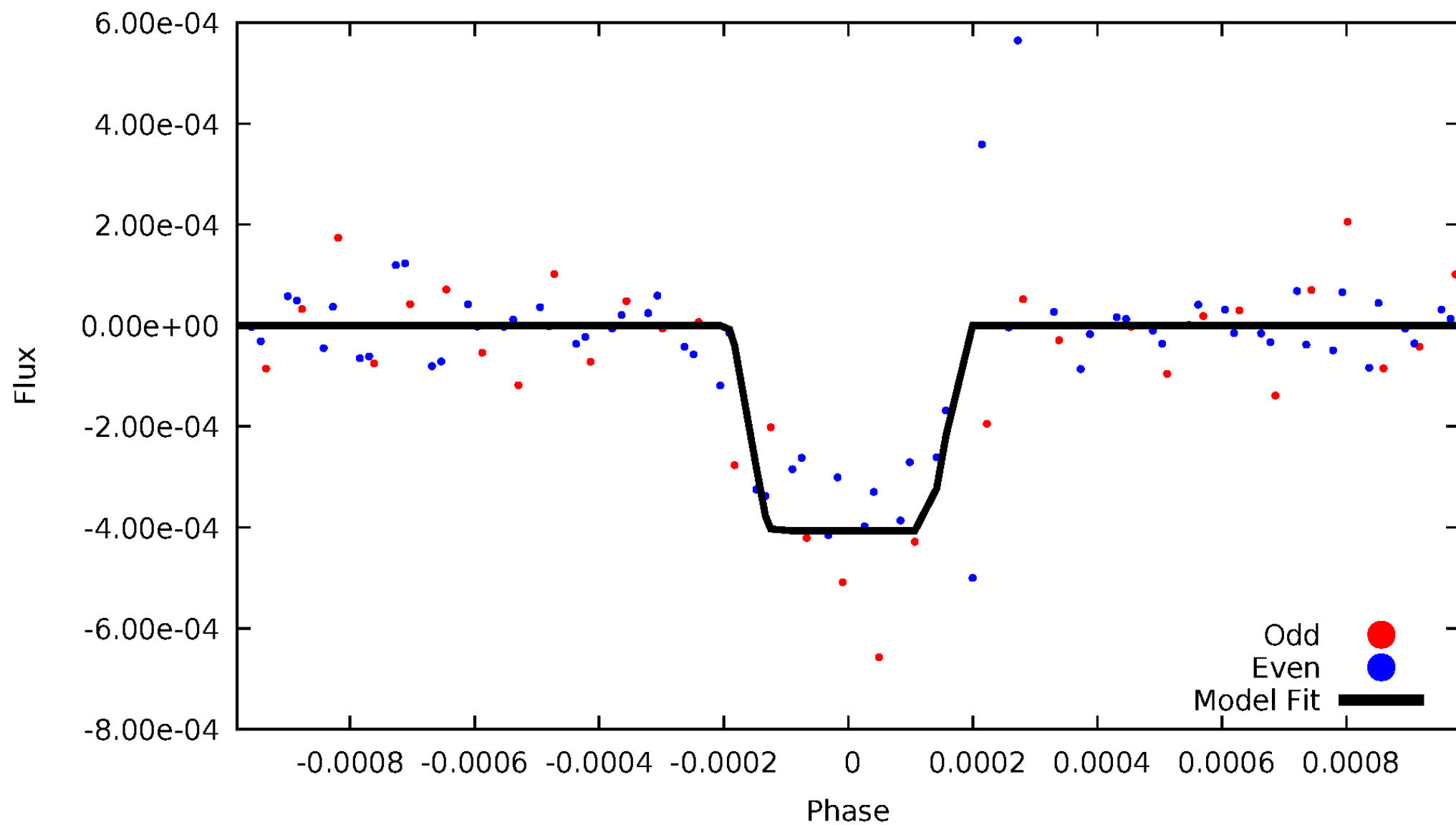
DV Odd/Even

TCE 009515113-01

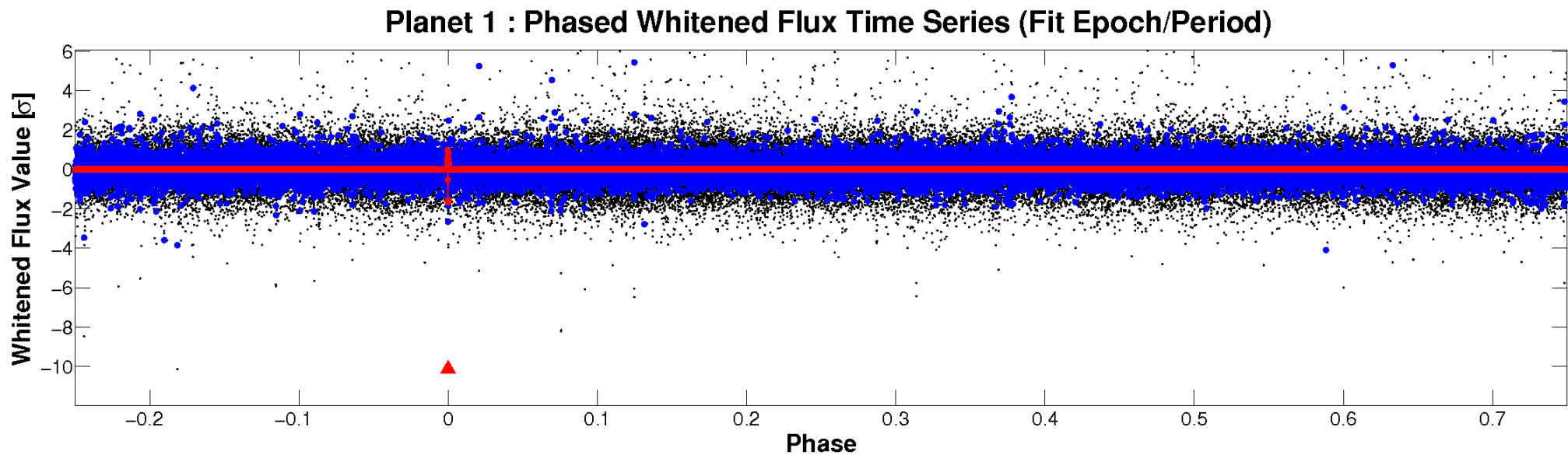
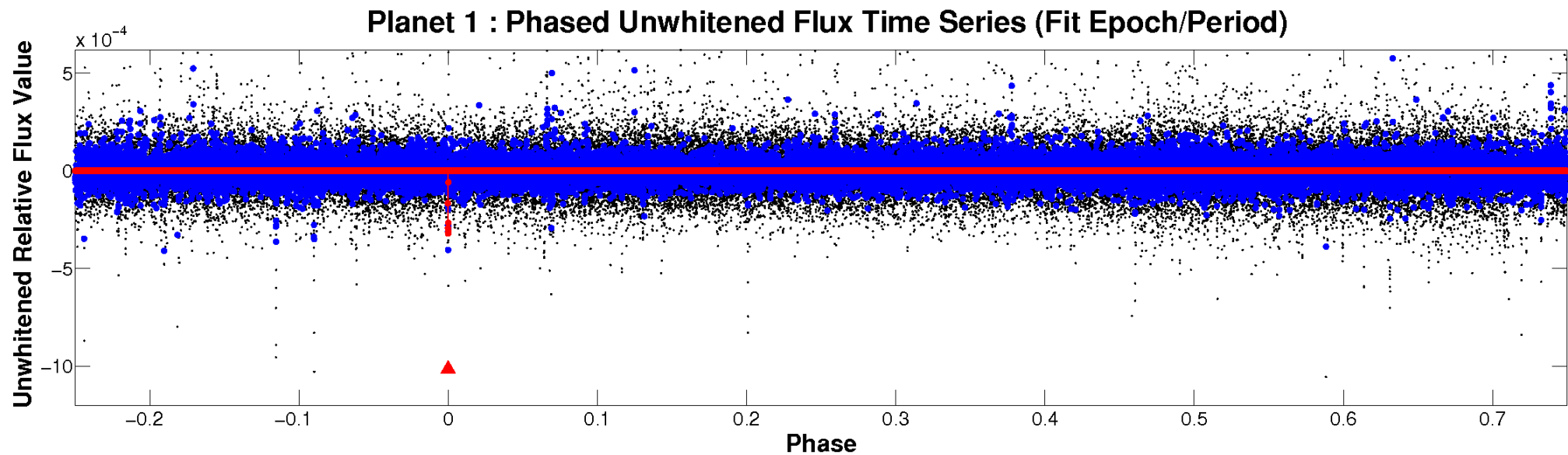


ALT Odd/Even

TCE 009515113-01

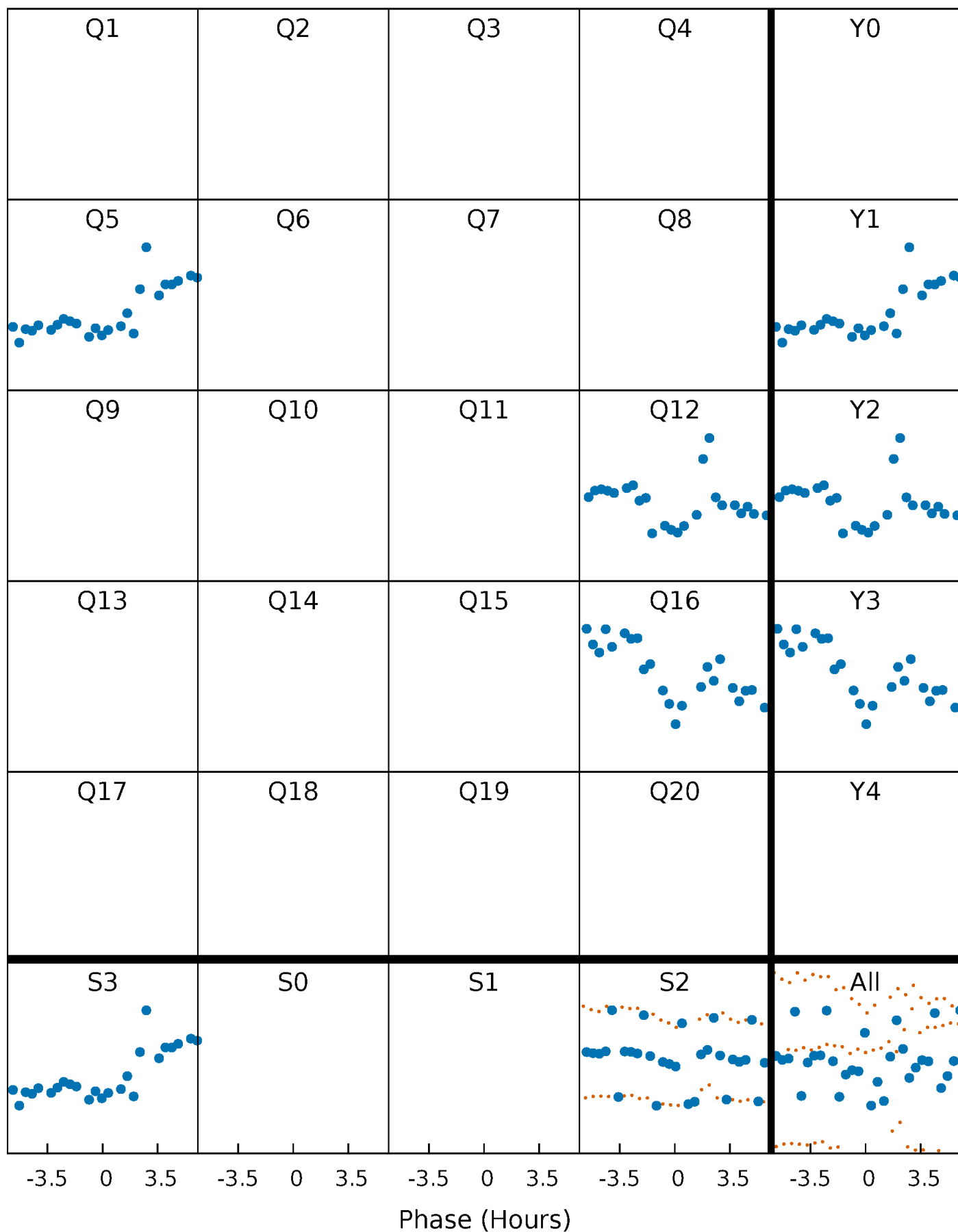


Non-Whitened Vs. Whitened Light Curve



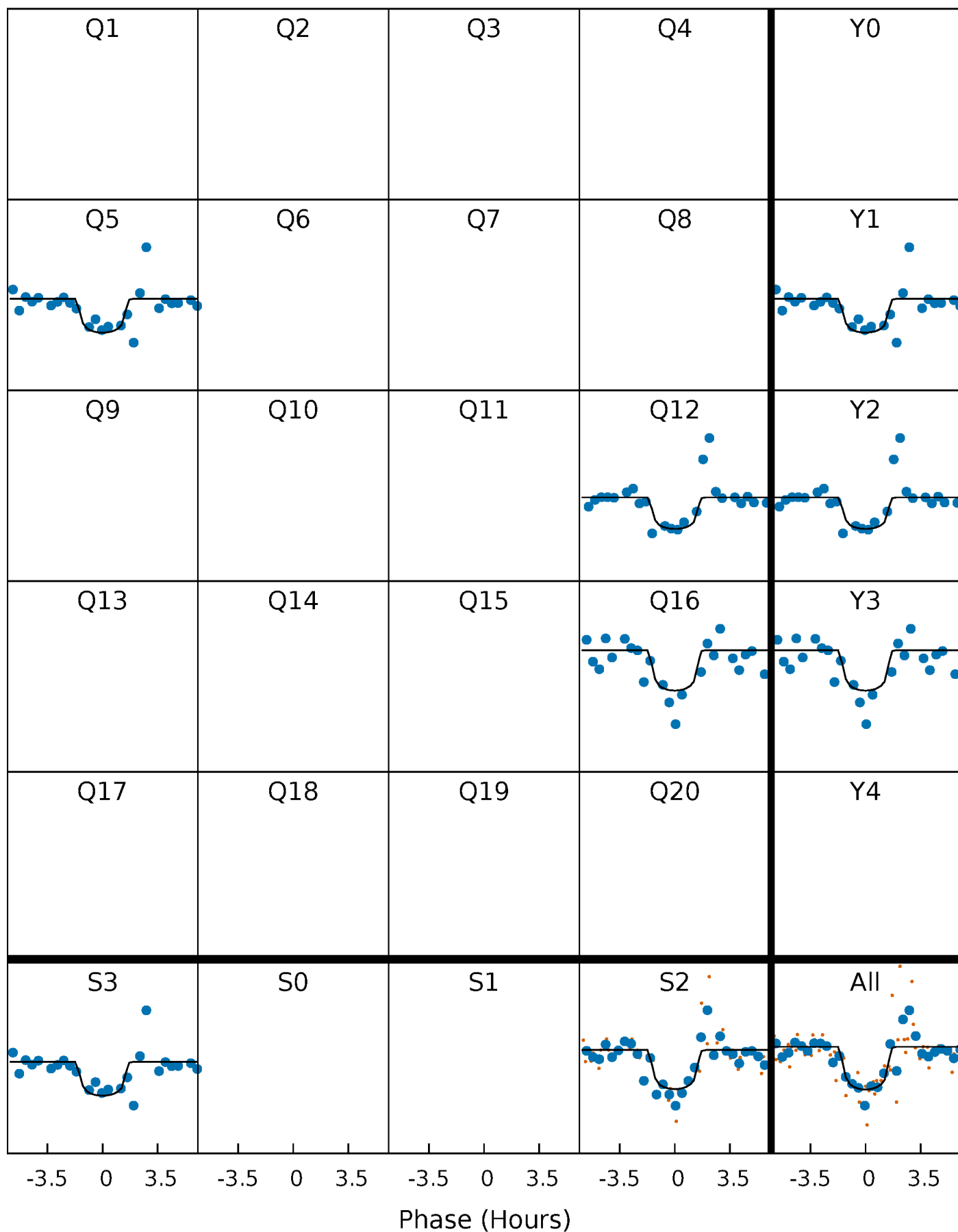
PDC Quarter-Phased Transit Curves

TCE 009515113-01 P=353.036447 Days $T_0=451.500811$ (BKJD)



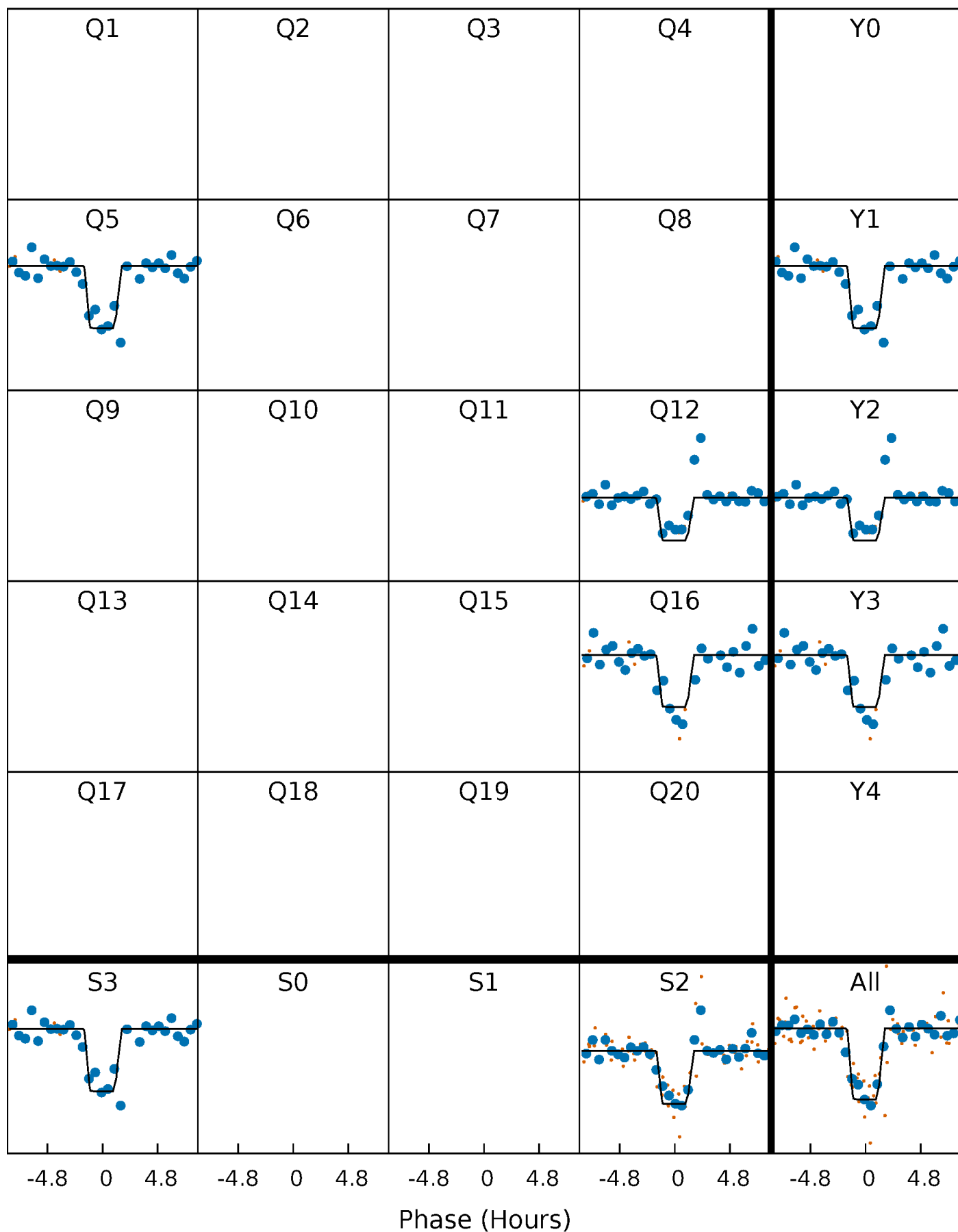
DV Quarter-Phased Transit Curves

TCE 009515113-01 P=353.036447 Days $T_0=451.500811$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

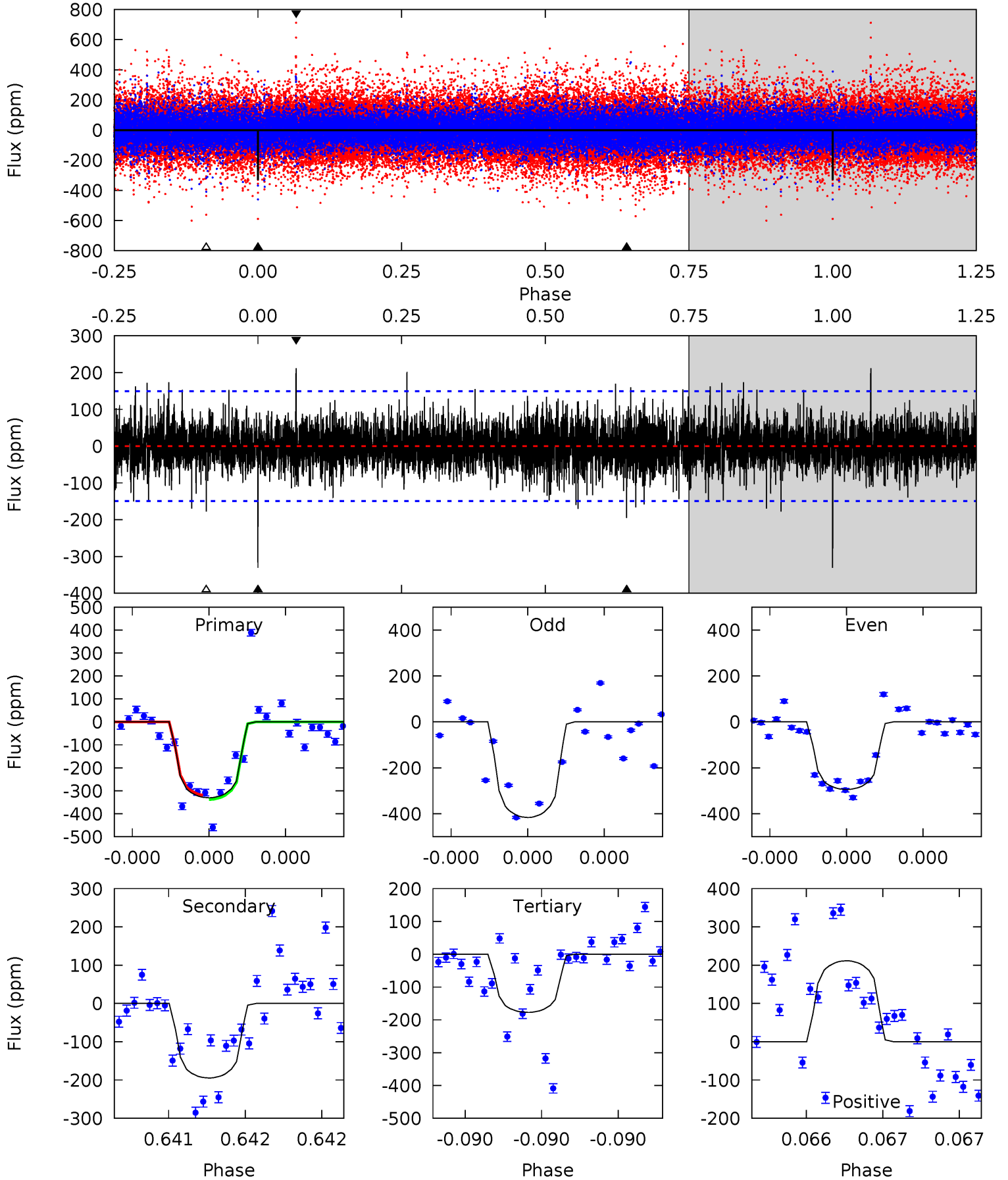
TCE 009515113-01 P=353.028184 Days $T_0=451.512167$ (BKJD)



DV Model-Shift Uniqueness Test

009515113-01, P = 353.036447 Days, E = 98.464364 Days

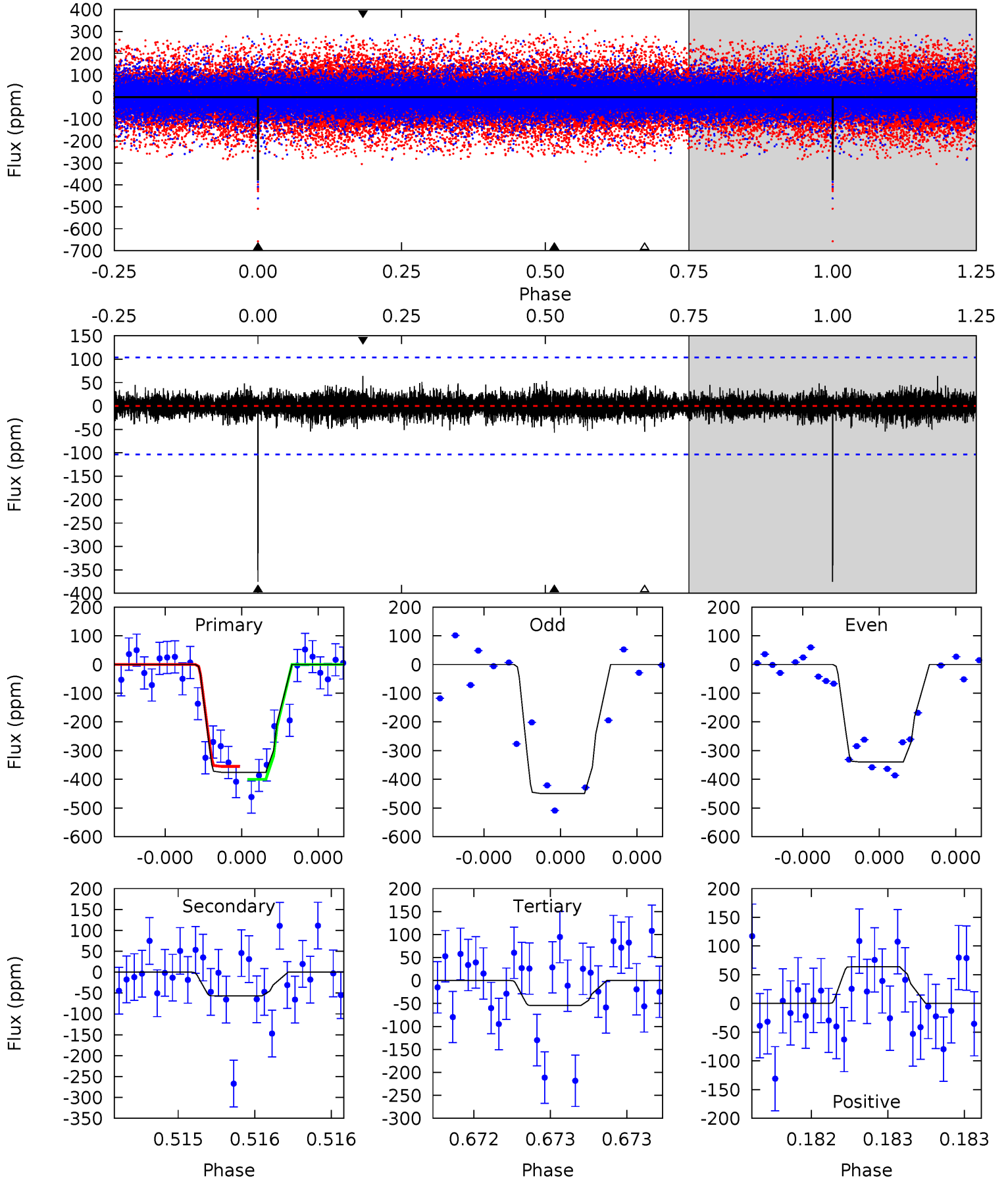
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	7.33	6.67	7.97	5.61	3.54	1.55	5.77	4.48	0.66	-0.63	2.00	1.07	0.39	0.34



Alt Model-Shift Uniqueness Test

009515113-01, P = 353.028184 Days, E = 98.483983 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.4	3.09	2.96	3.49	5.64	3.58	0.68	17.5	16.9	0.13	-0.39	2.81	1.00	0.15	1.22



Stellar Parameters For KIC 009515113

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5899^{+196}_{-178}	$3.985^{+0.458}_{-0.153}$	$-0.300^{+0.300}_{-0.300}$	$1.681^{+0.406}_{-0.754}$	$0.995^{+0.139}_{-0.139}$	$0.295^{+1.138}_{-0.117}$
	+3%/-3%	+11%/-4%	+100%/-100%	+24%/-45%	+14%/-14%	+386%/-40%
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 009515113-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-195 ± 27	$5.29^{+5.60}_{-3.67}$	470^{+38}_{-53}	4163^{+3002}_{-812}	3576^{+36959}_{-2670}
Alt.	-57 ± 18	$5.85^{+6.00}_{-3.88}$	470^{+38}_{-58}	3304^{+1564}_{-611}	861^{+6563}_{-665}

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

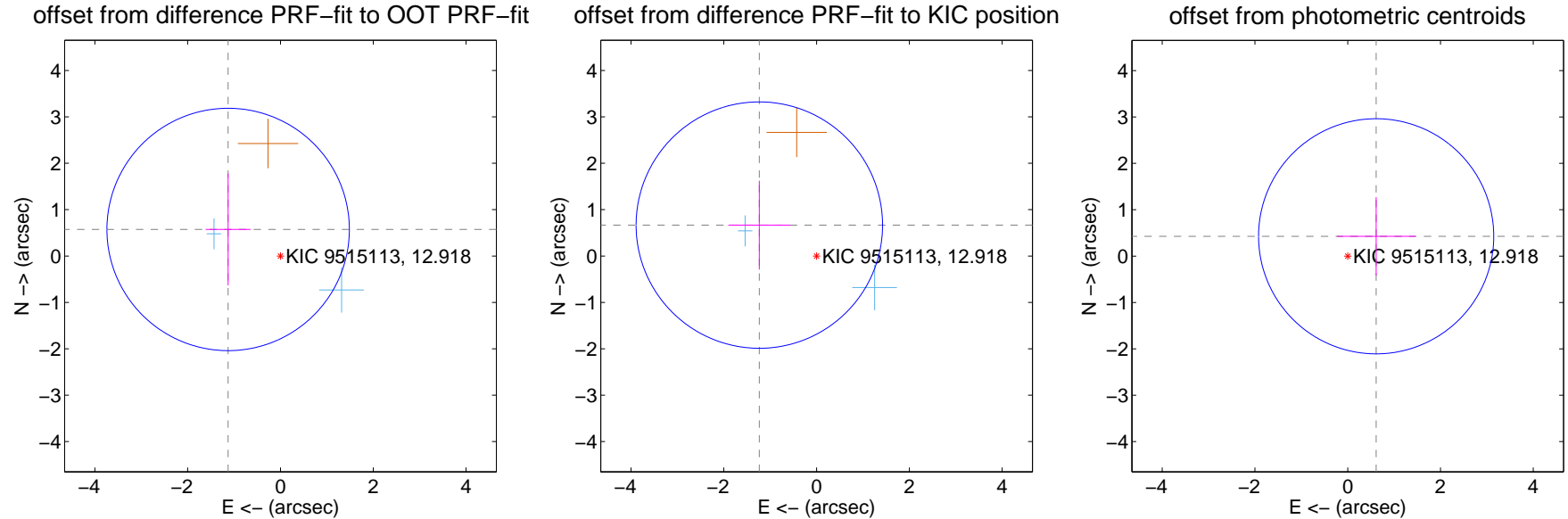
DV Centroid Data

Supplemental centroid analysis for 009515113-01. Kepler magnitude: 12.92. Transit SNR 6.69

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.265 ± 0.871	1.45	1.128 ± 0.485	0.573 ± 1.205
PRF-fit source offset from KIC position	1.402 ± 0.885	1.58	1.234 ± 0.668	0.667 ± 0.958
photometric centroid source offset	0.75 ± 0.85	0.88	-0.61 ± 0.85	0.43 ± 0.85

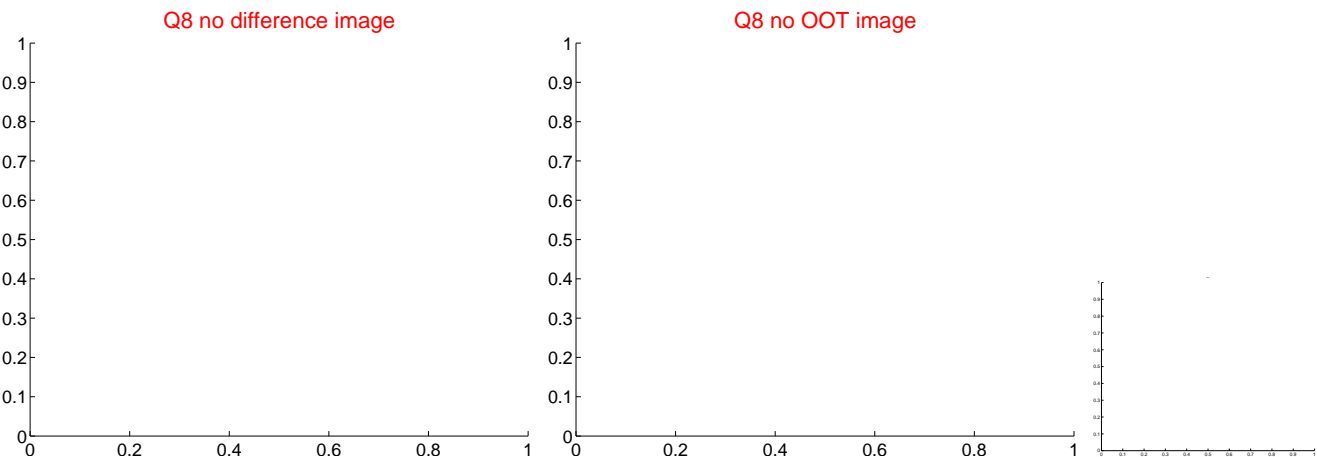
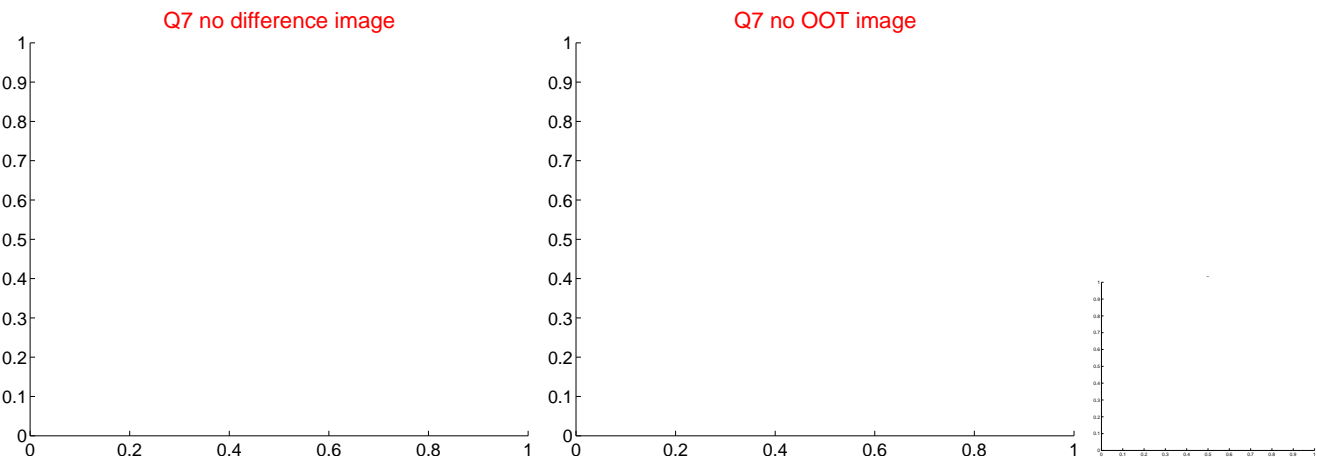
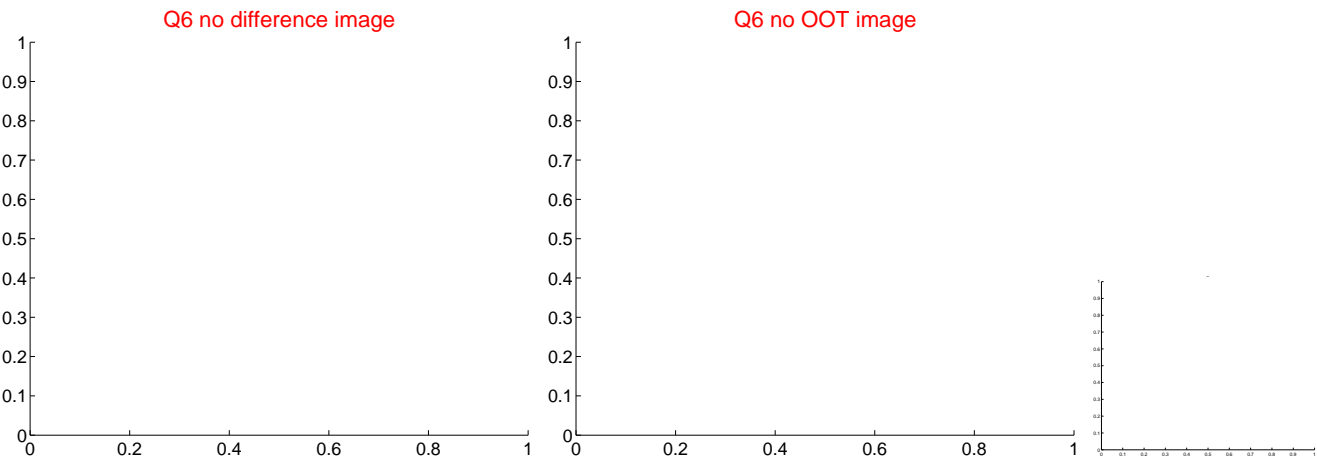
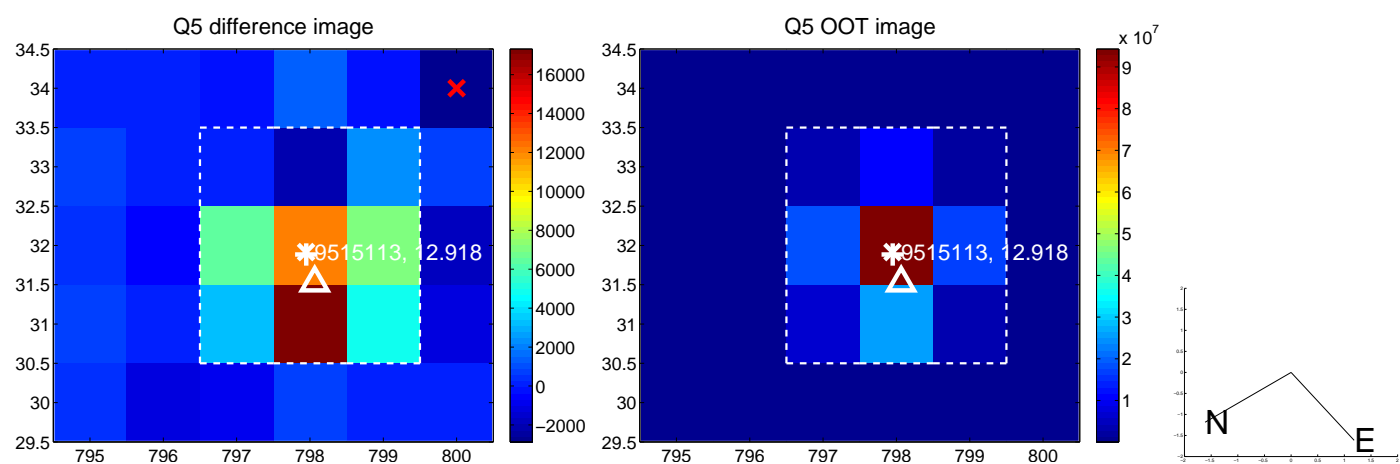


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

Q9 no difference image



Q9 no OOT image



Q10 no difference image



Q10 no OOT image



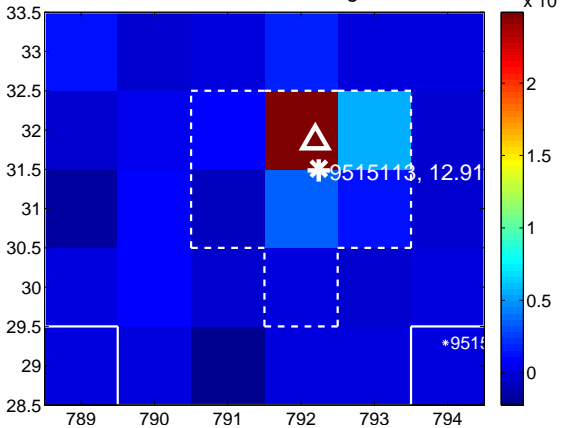
Q11 no difference image



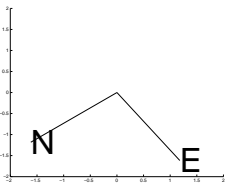
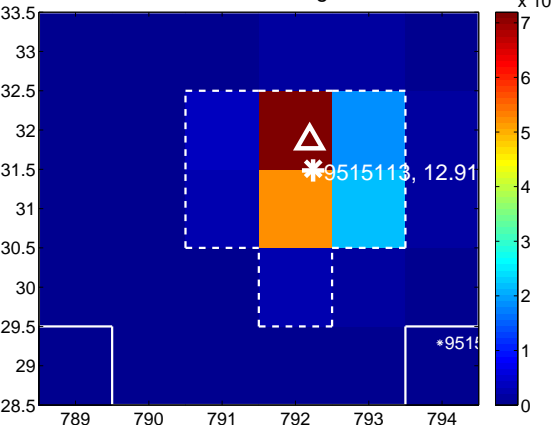
Q11 no OOT image



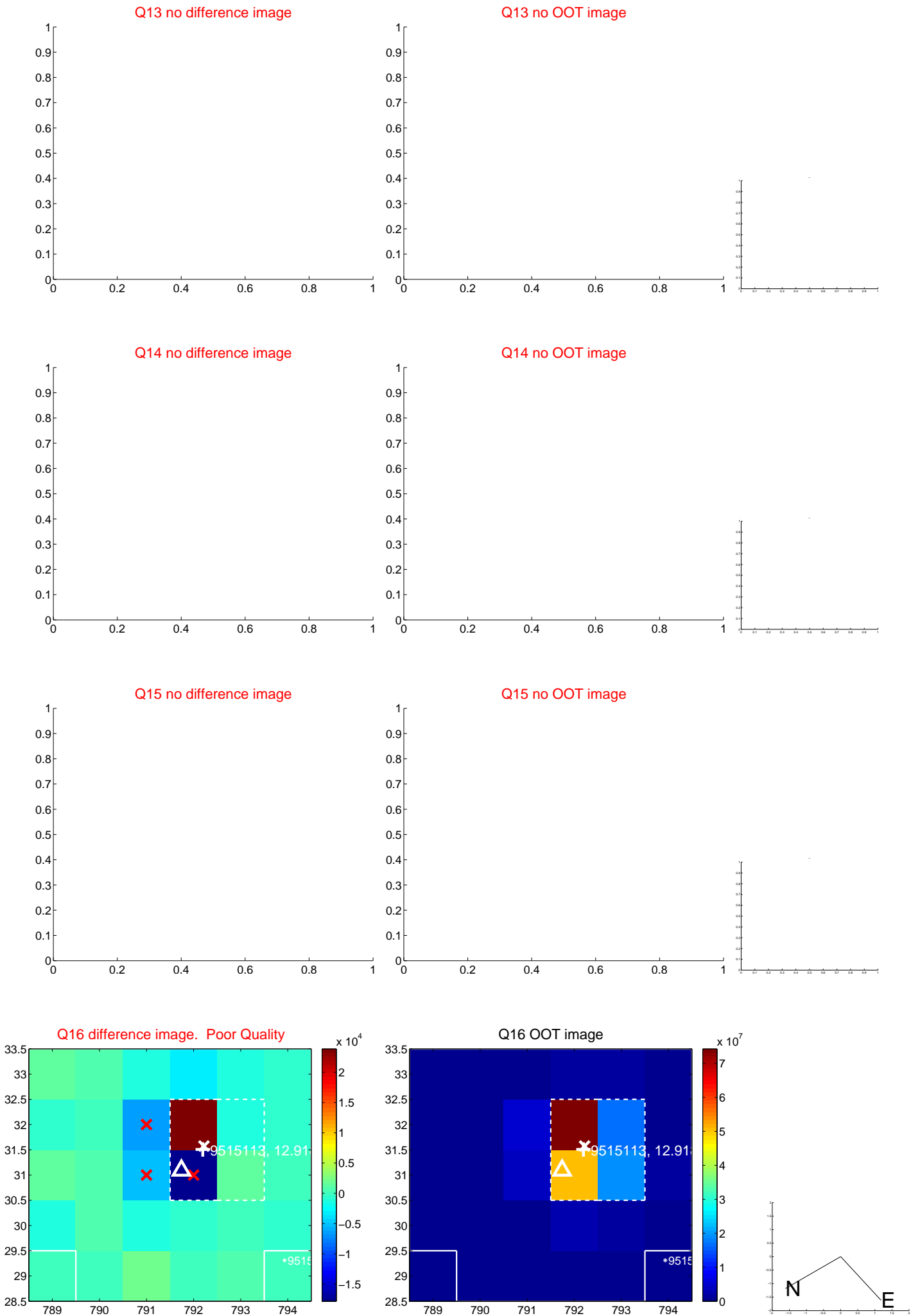
Q12 difference image



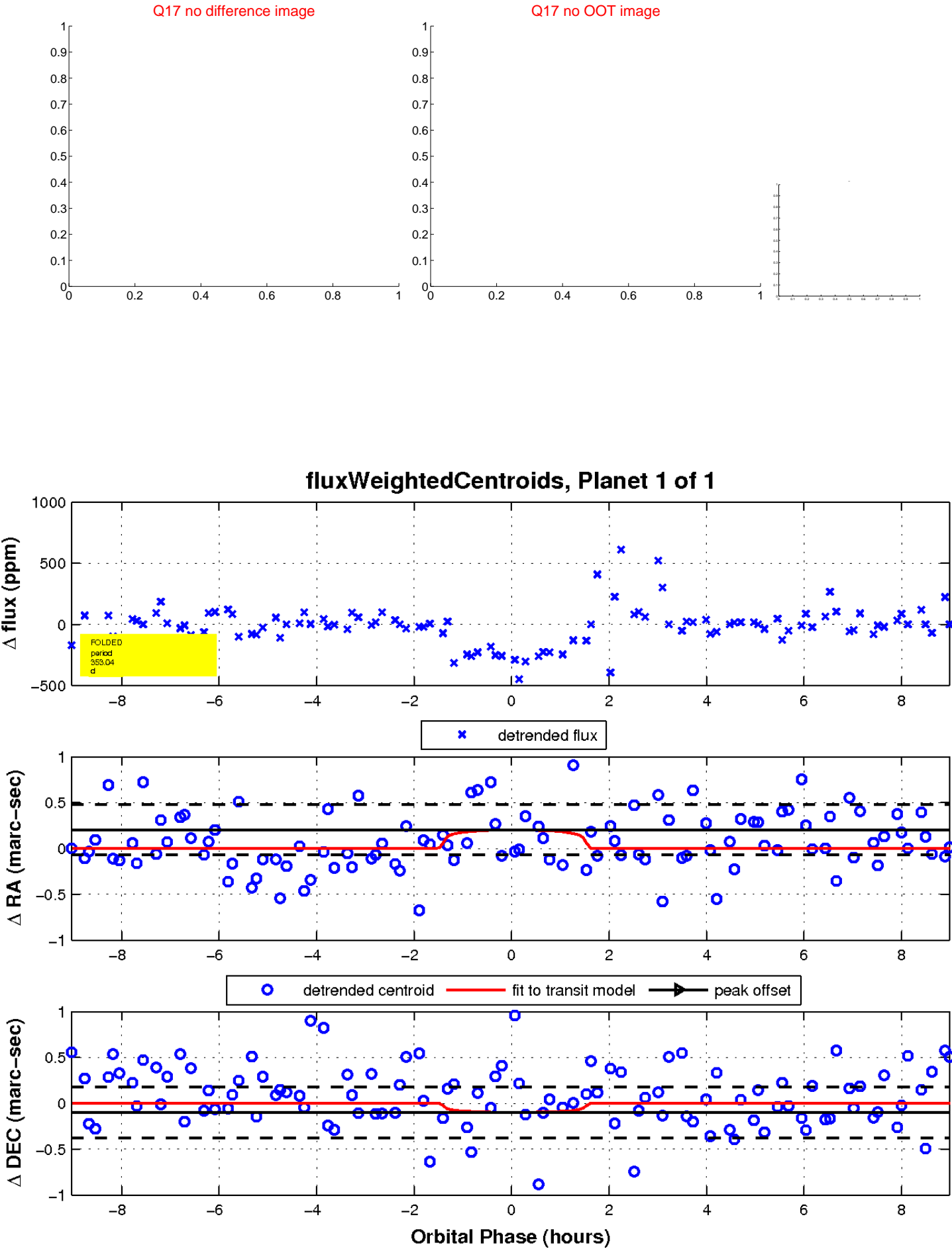
Q12 OOT image



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

