

KIC 009514372

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})
009514372-01	OBS	4242.01	145.786105	215.047244	415.9	6.294	12.1	12.7	0.95	5578	2.58	2.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009514372-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

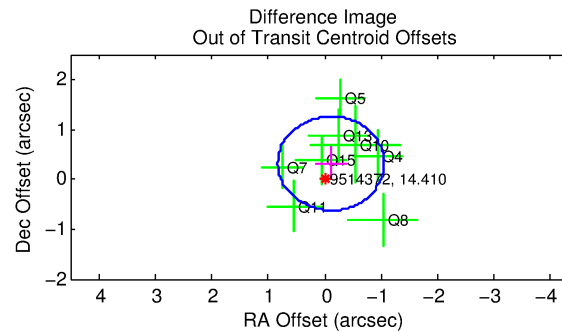
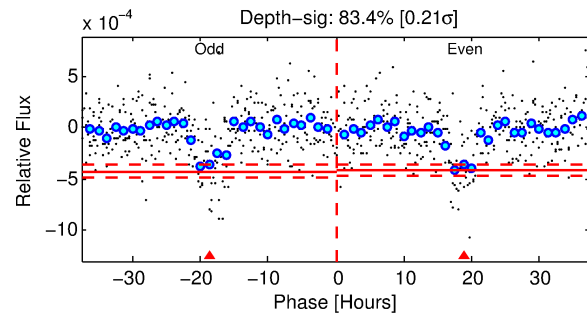
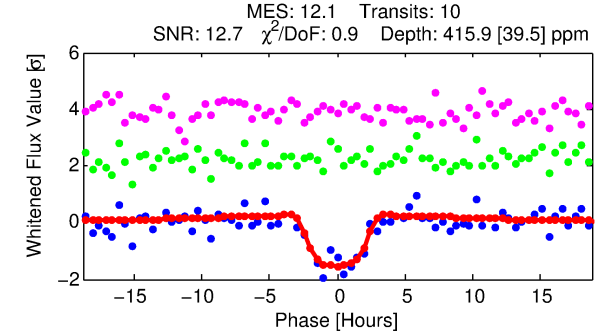
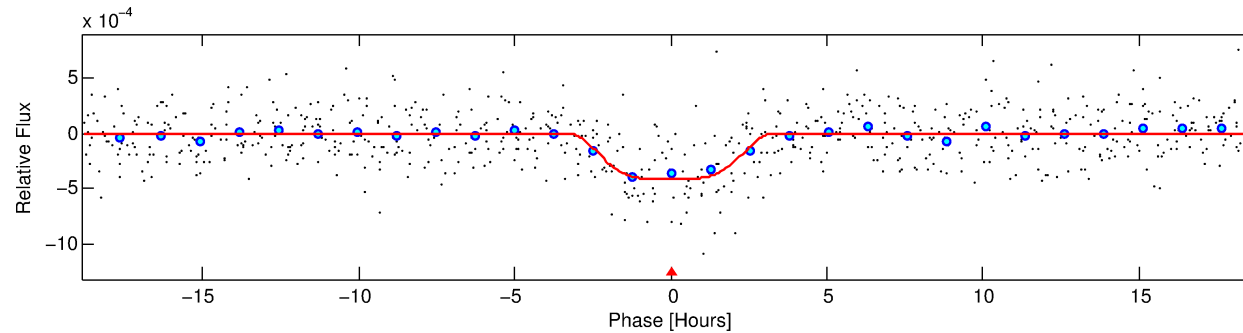
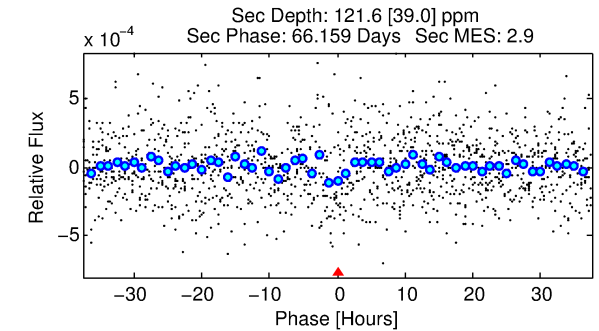
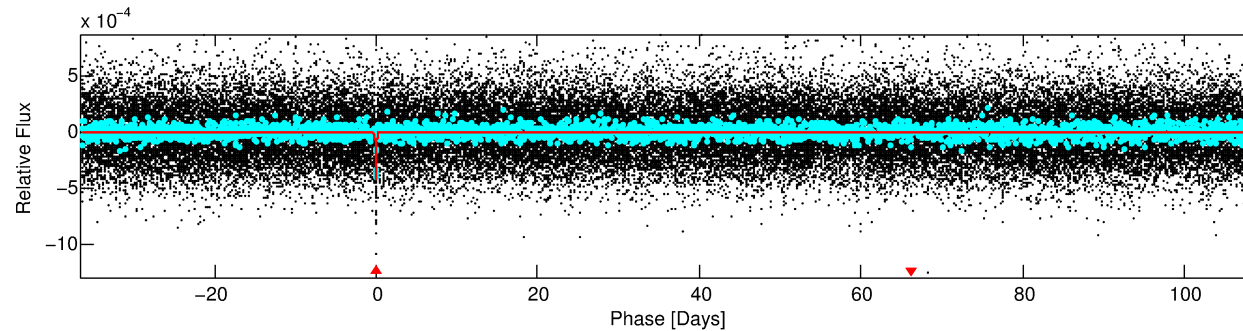
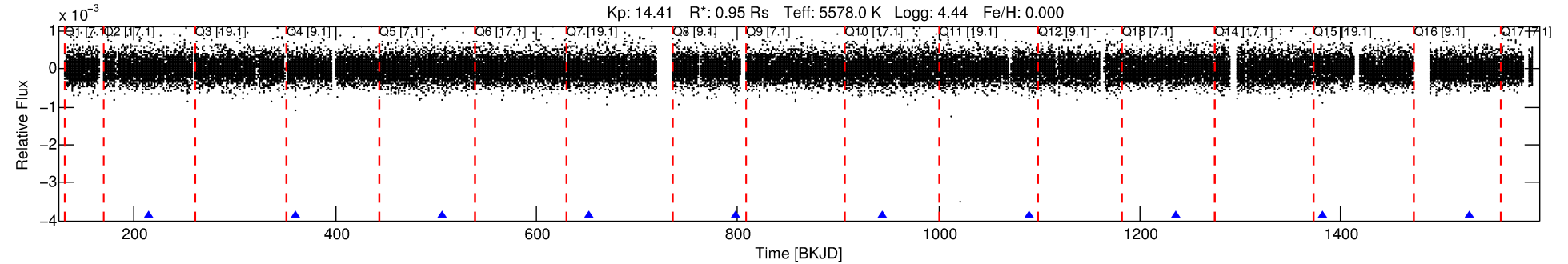
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009514372-01

No Significant Match Found

DV One-Page Summary

KIC: 9514372 Candidate: 1 of 1 Period: 145.786 d
KOI: K04242.01 Corr: 0.861



DV Fit Results:

Period = 145.78611 [0.00181] d
Epoch = 215.0472 [0.0101] BKJD
Rp/R* = 0.0249 [0.0018]
a/R* = 60.48 [10.88]
b = 0.97 [0.01]
Seff = 2.84 [0.55]
Teq = 331 [16] K
Rp = 2.58 [0.38] Re
a = 0.5248 [0.0603] AU
Ag = 2764.37 [1085.92] [2.54σ]
Teffp = 3712 [335] K [10.09σ]

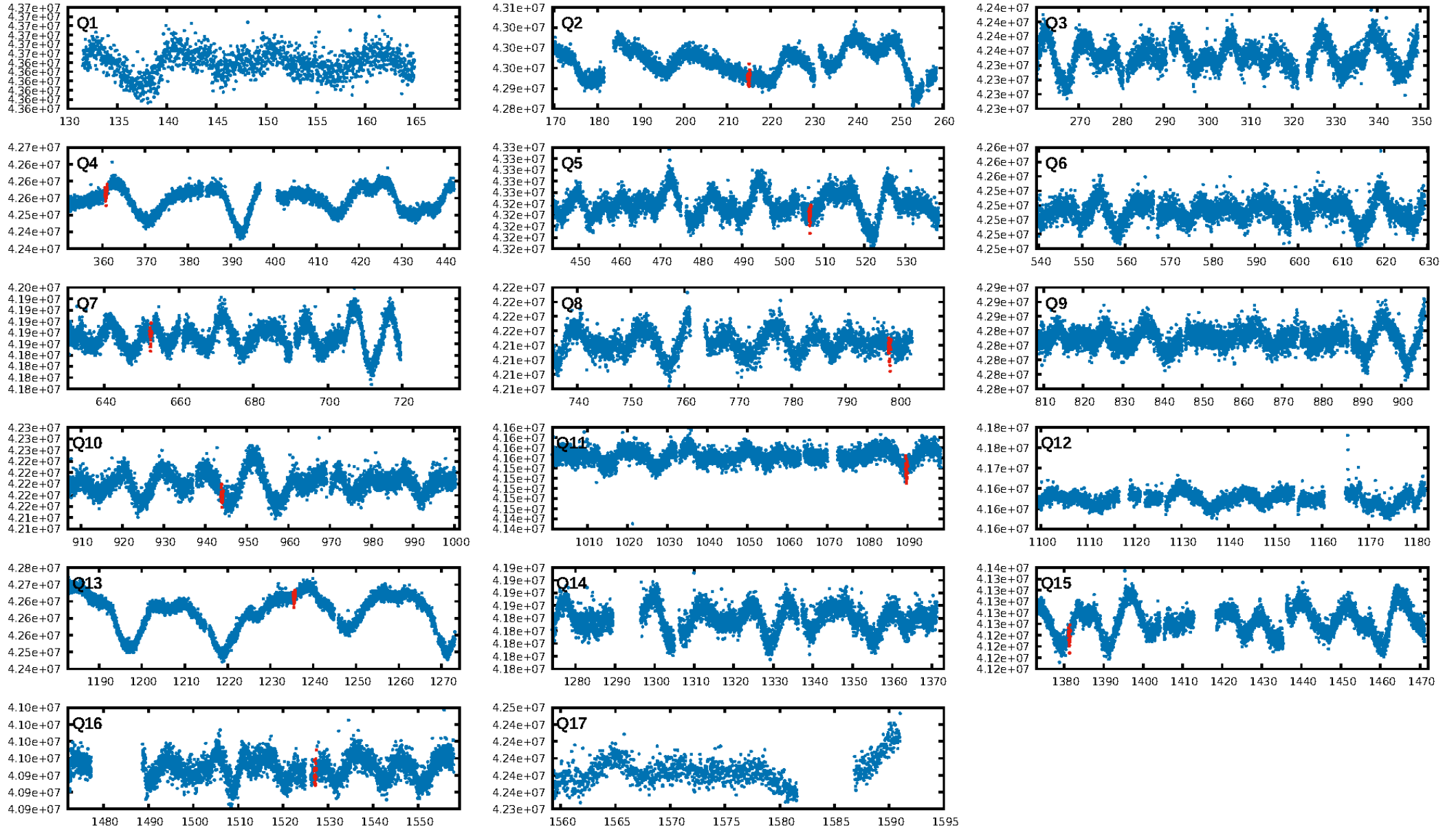
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 81.3%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 8.27e-28
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 8.858
Centroid-sig: 40.8%
Centroid-so: 0.801 arcsec [0.97σ]
OotOffset-rm: 0.332 arcsec [1.06σ]
KicOffset-rm: 0.323 arcsec [1.03σ]
OotOffset-st: 1/3/2/2 [8]
KicOffset-st: 1/3/2/2 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [9/9]

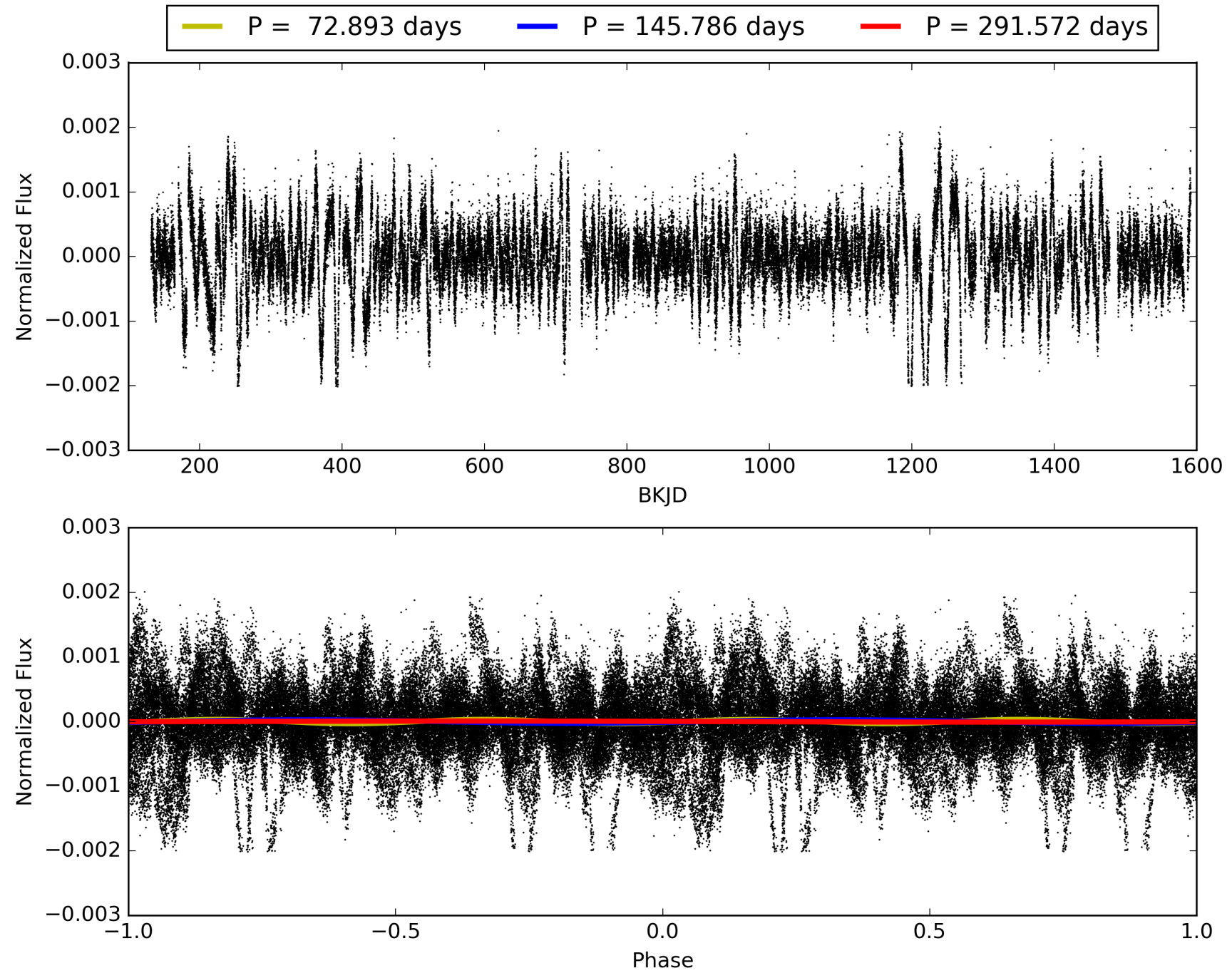
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:05:31 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009514372-01, PDC Light Curves

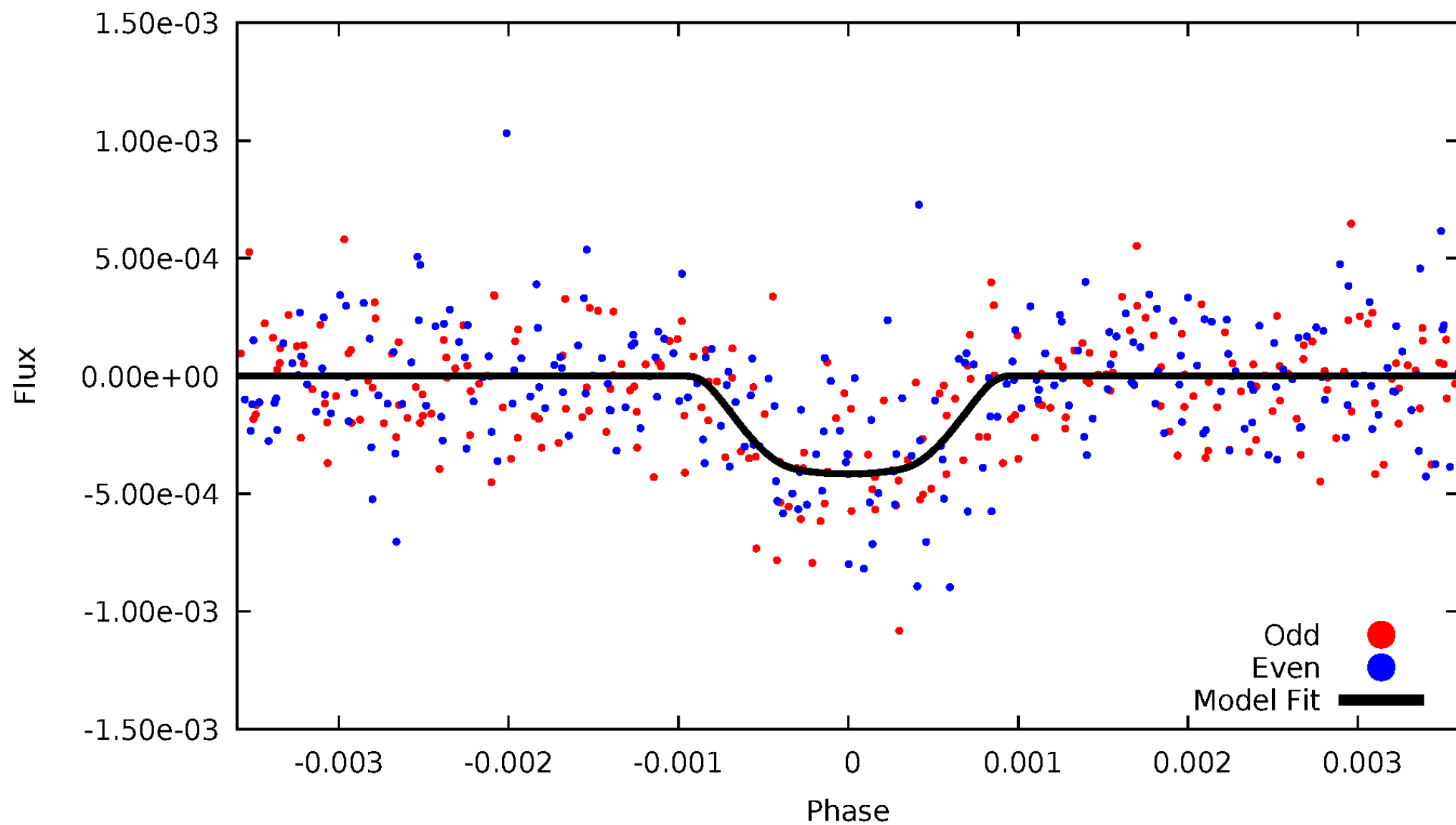


TCE 009514372-01



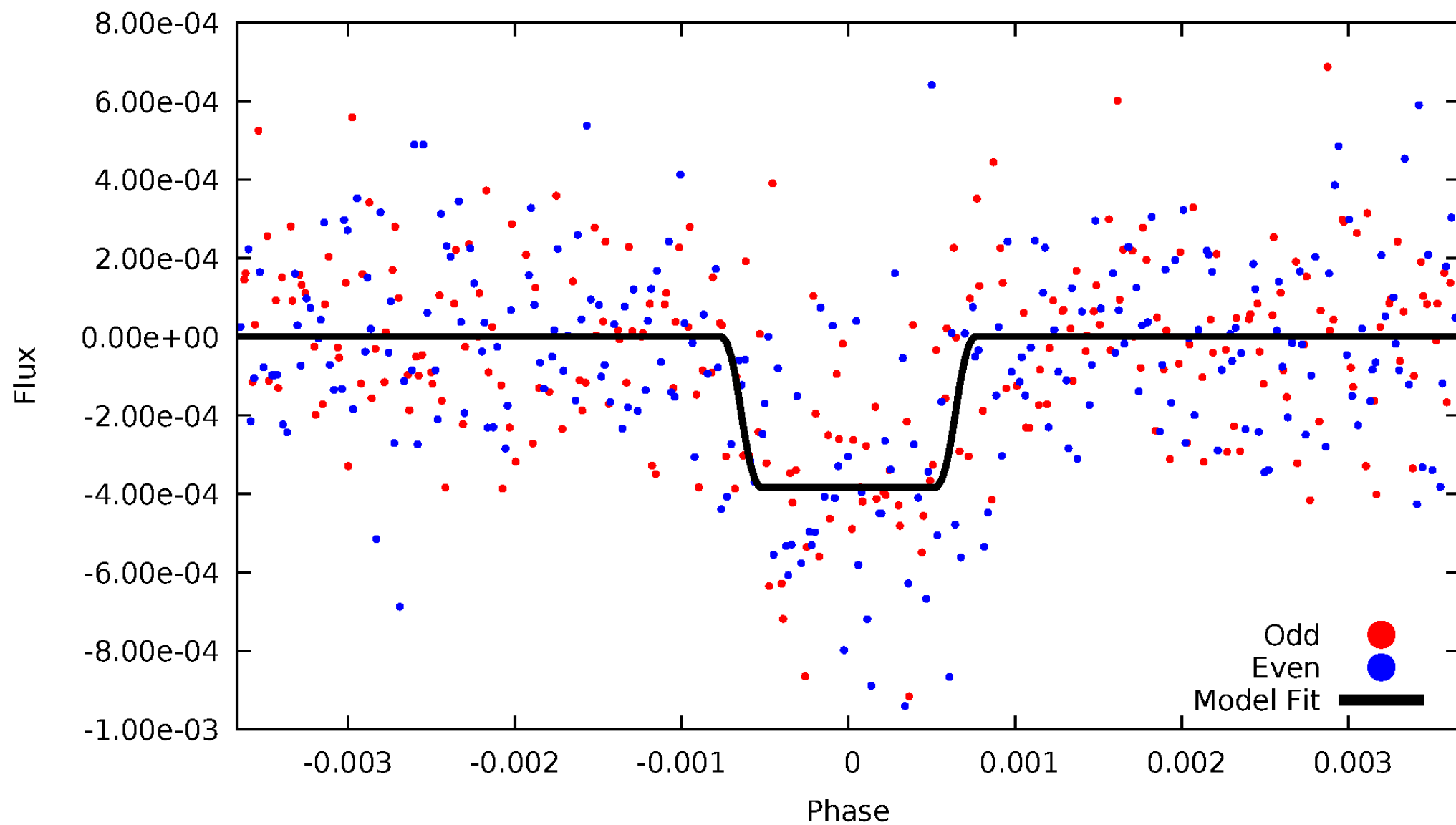
DV Odd/Even

TCE 009514372-01



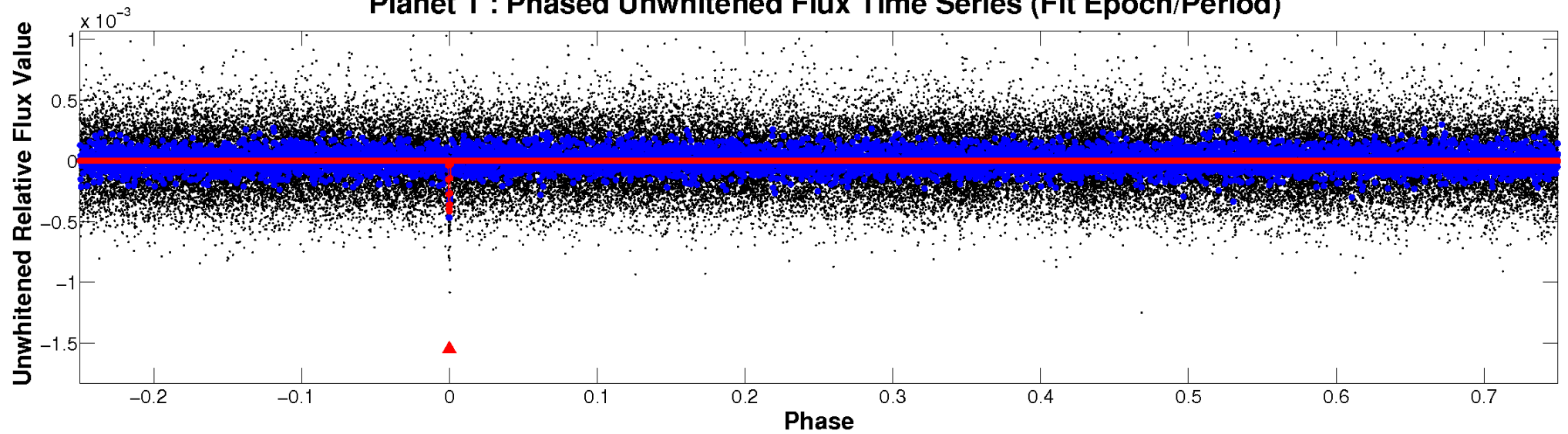
ALT Odd/Even

TCE 009514372-01

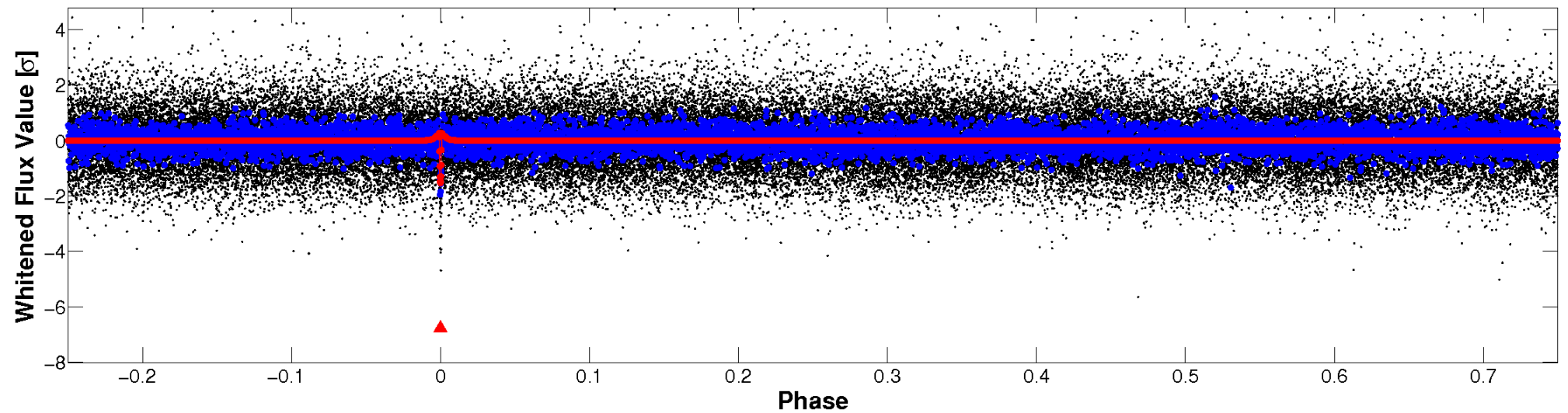


Non-Whitened Vs. Whitened Light Curve

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

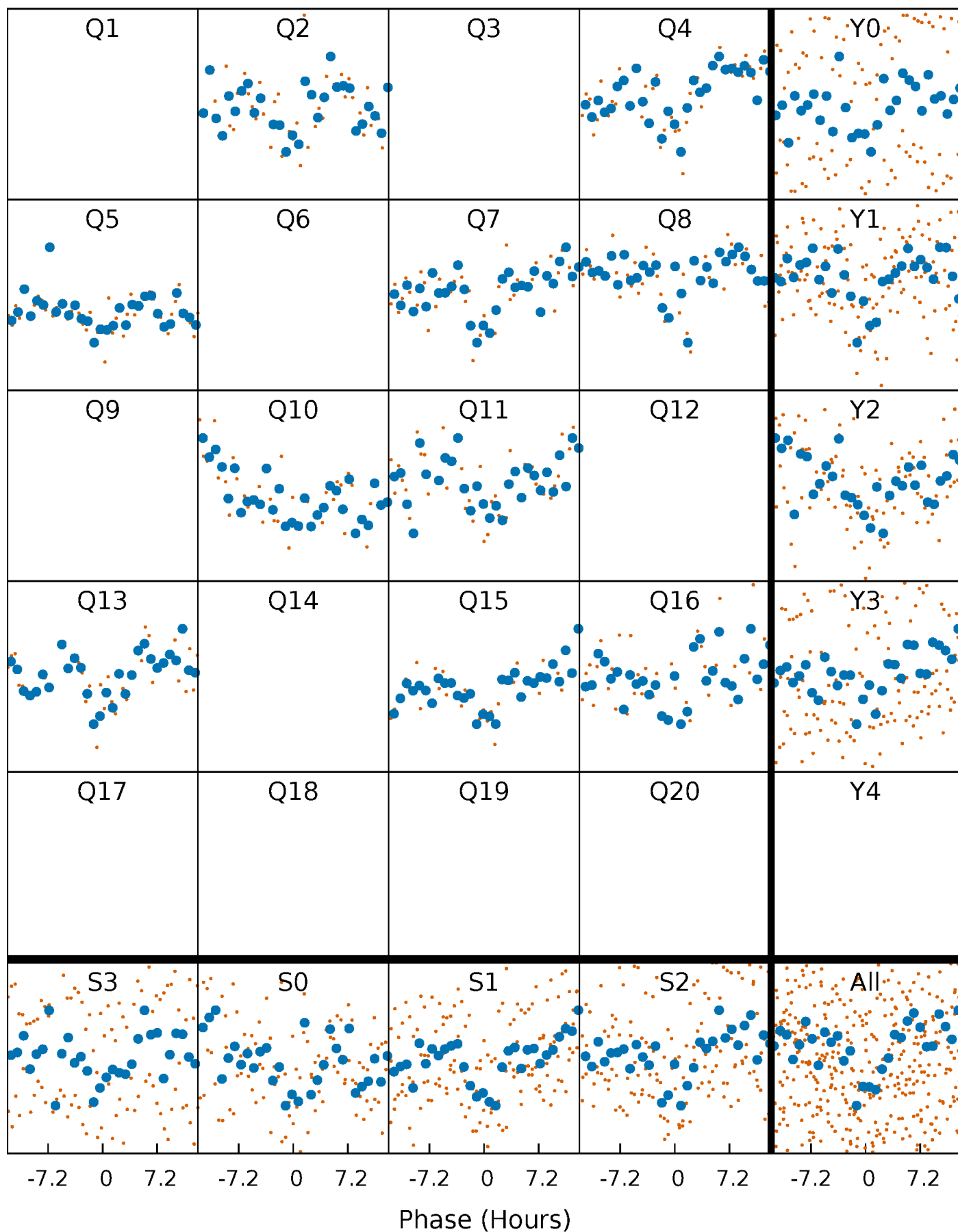


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



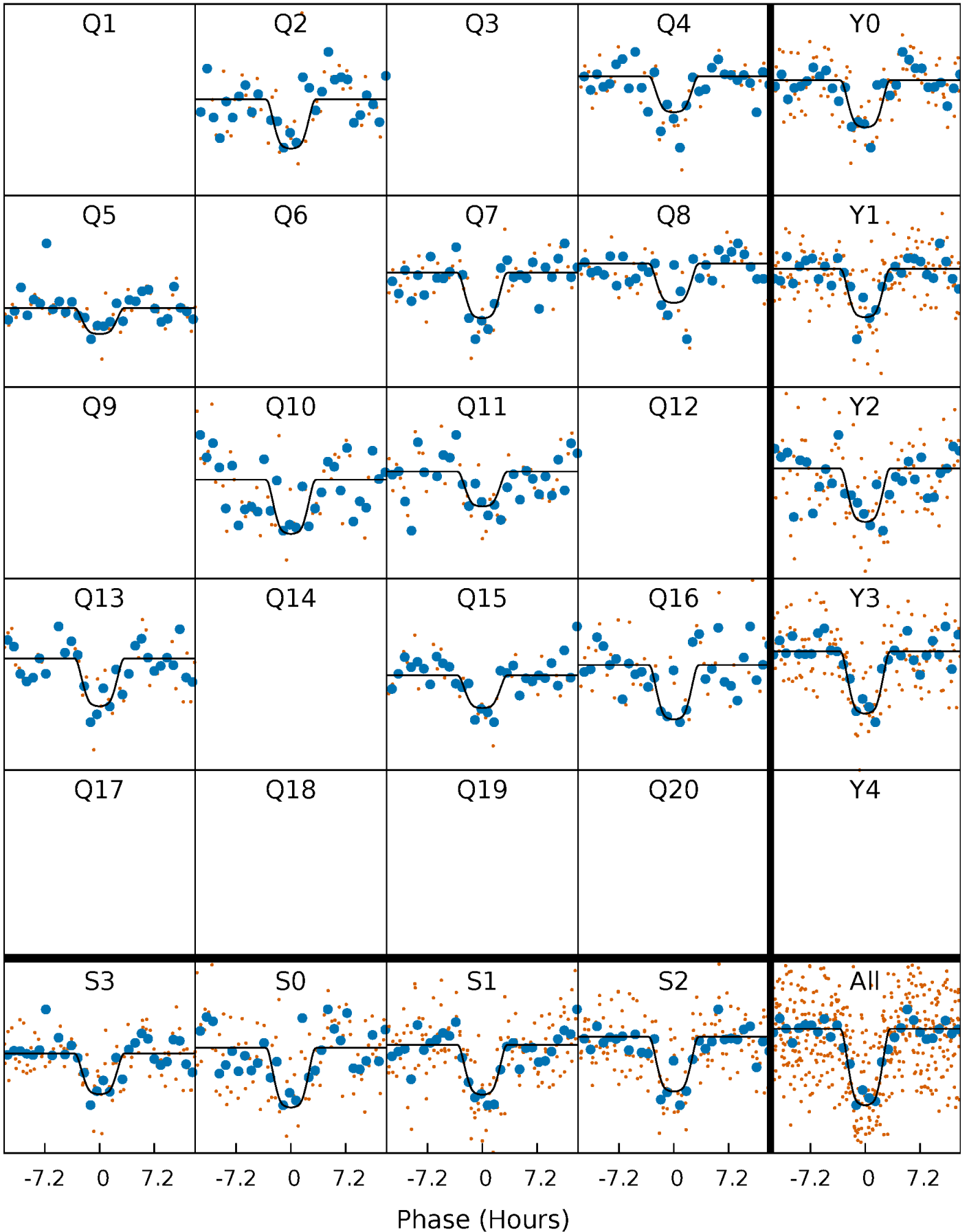
PDC Quarter-Phased Transit Curves

TCE 009514372-01 P=145.786105 Days $T_0=215.047244$ (BKJD)



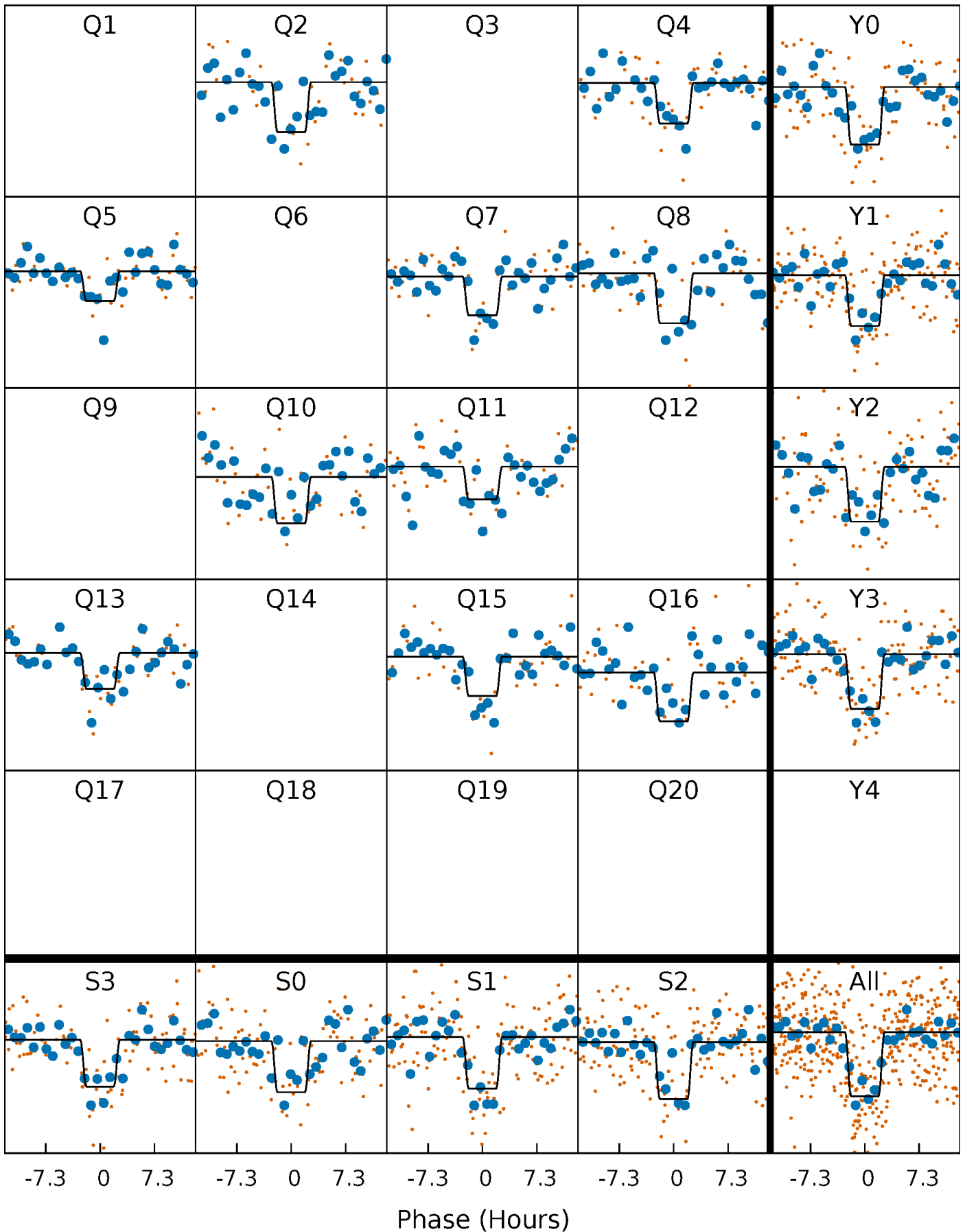
DV Quarter-Phased Transit Curves

TCE 009514372-01 P=145.786105 Days $T_0=215.047244$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

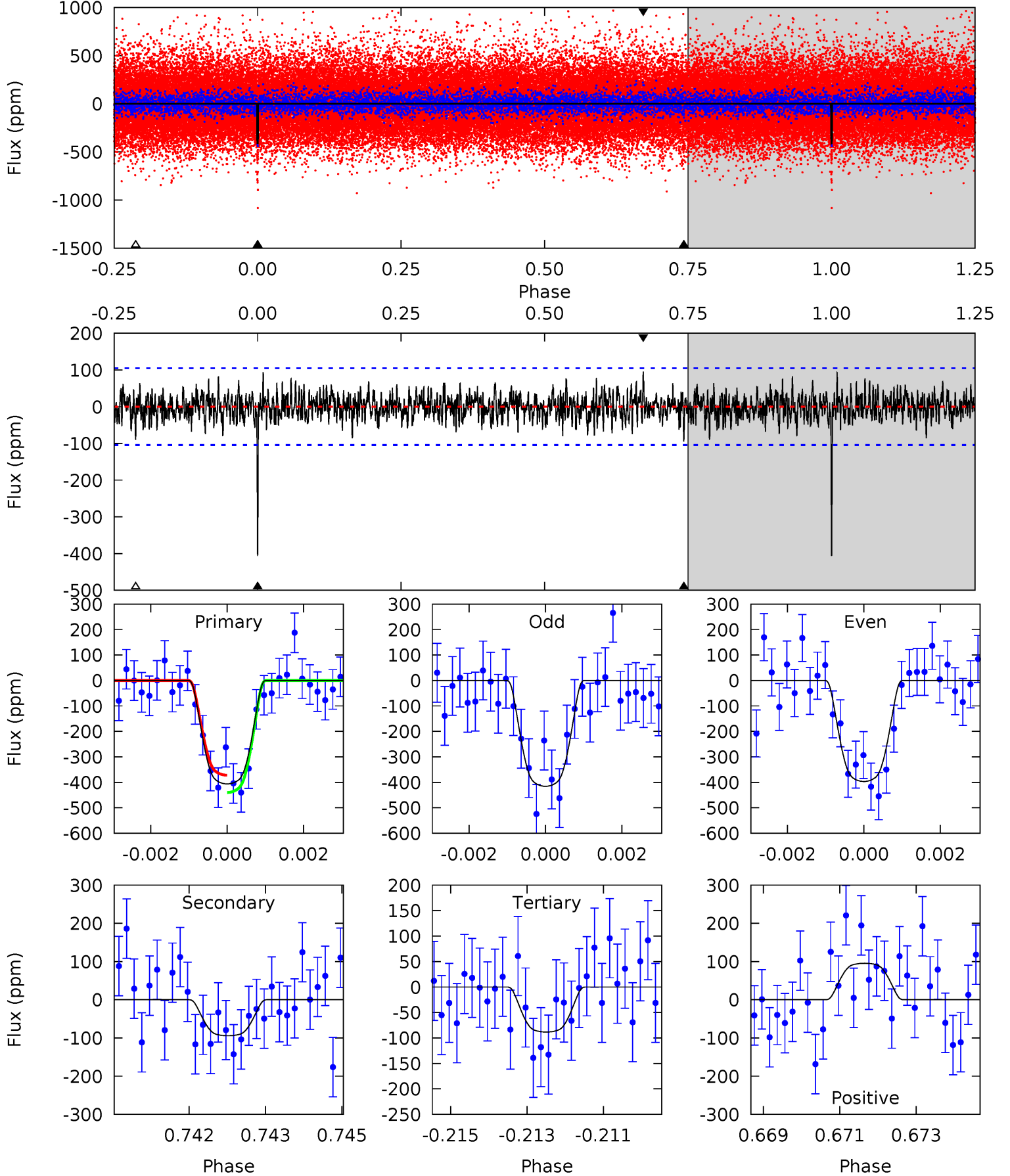
TCE 009514372-01 P=145.788863 Days $T_0=215.034885$ (BKJD)



DV Model-Shift Uniqueness Test

009514372-01, P = 145.786105 Days, E = 69.261139 Days

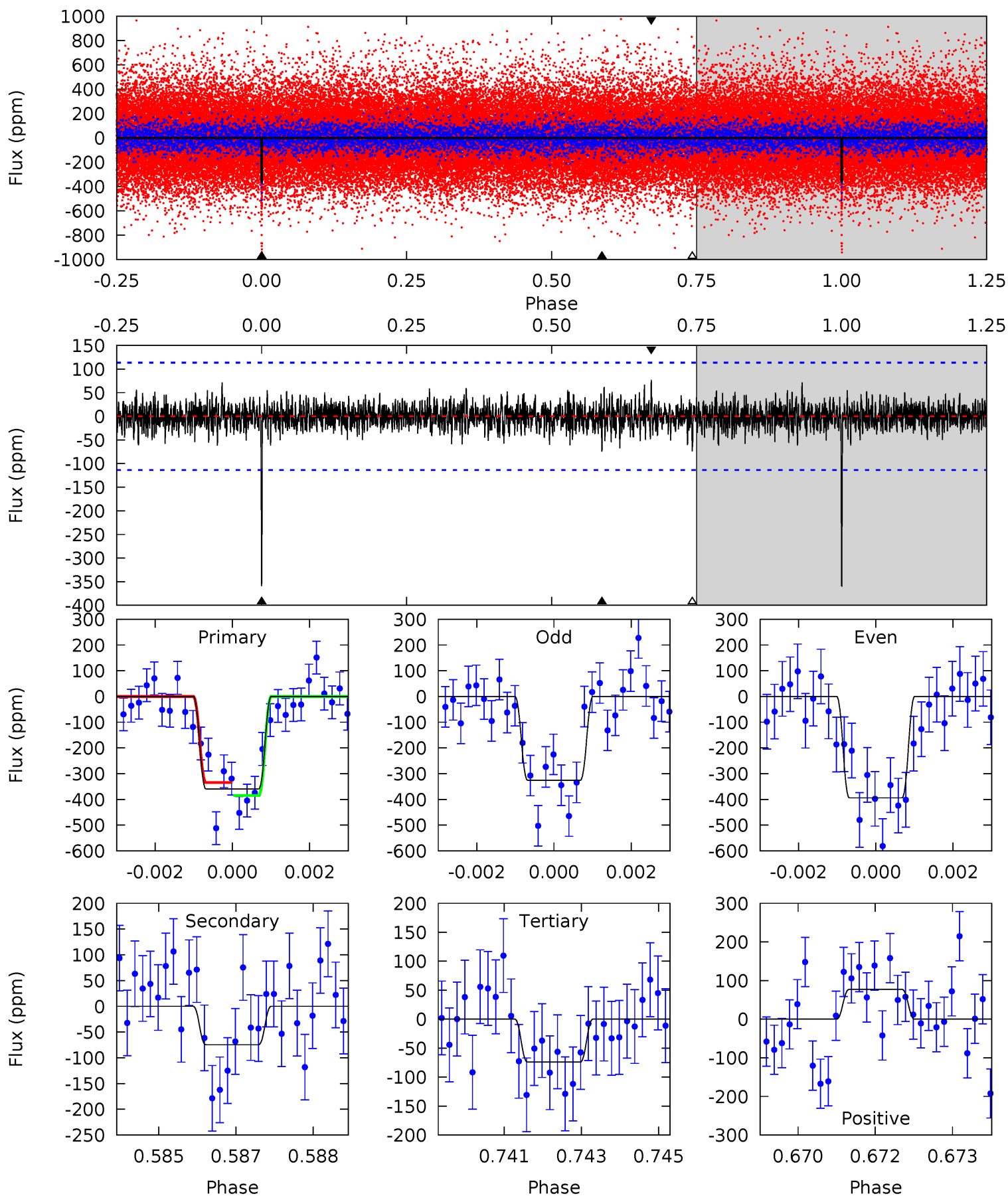
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.7	4.80	4.51	4.87	5.34	3.11	1.41	16.2	15.8	0.30	-0.07	0.49	0.96	0.19	1.74



Alt Model-Shift Uniqueness Test

009514372-01, $P = 145.788863$ Days, $E = 69.246022$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	3.53	3.50	3.65	5.38	3.17	0.93	13.5	13.3	0.02	-0.12	1.62	0.95	0.18	1.19



Stellar Parameters For KIC 009514372

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5578^{+100}_{-111}	$4.440^{+0.081}_{-0.099}$	$0.000^{+0.150}_{-0.150}$	$0.950^{+0.123}_{-0.082}$	$0.905^{+0.062}_{-0.051}$	$1.488^{+0.481}_{-0.431}$
	+2%/-2%	+2%/-2%	+inf%/-inf%	+13%/-9%	+7%/-6%	+32%/-29%
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 009514372-01 / KOI 4242.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-94 ± 20	$2.60^{+0.25}_{-0.23}$	463^{+17}_{-16}	3837^{+163}_{-190}	2106^{+661}_{-586}
Alt.	-75 ± 21	$2.03^{+0.24}_{-0.22}$	463^{+19}_{-16}	4002^{+257}_{-252}	2667^{+1233}_{-878}

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

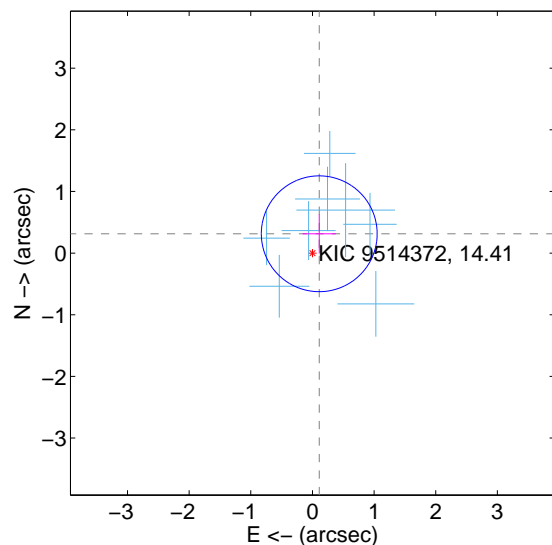
Supplemental centroid analysis for 009514372-01. Kepler magnitude: 14.41. Transit SNR 12.73

There are 8 quarters with good PRF difference image offsets

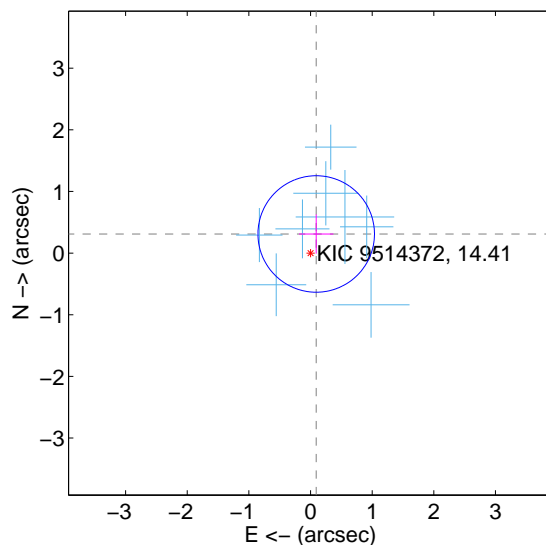
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.332 ± 0.313	1.06	-0.110 ± 0.270	0.313 ± 0.318
PRF-fit source offset from KIC position	0.323 ± 0.315	1.03	-0.092 ± 0.279	0.310 ± 0.318
photometric centroid source offset	0.80 ± 0.82	0.97	-0.69 ± 0.80	0.40 ± 0.88

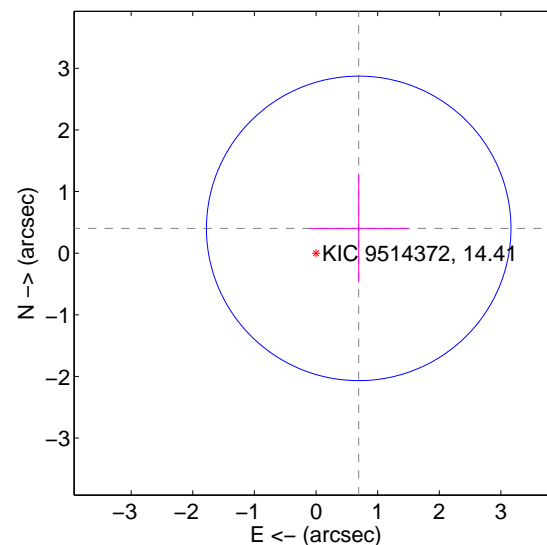
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

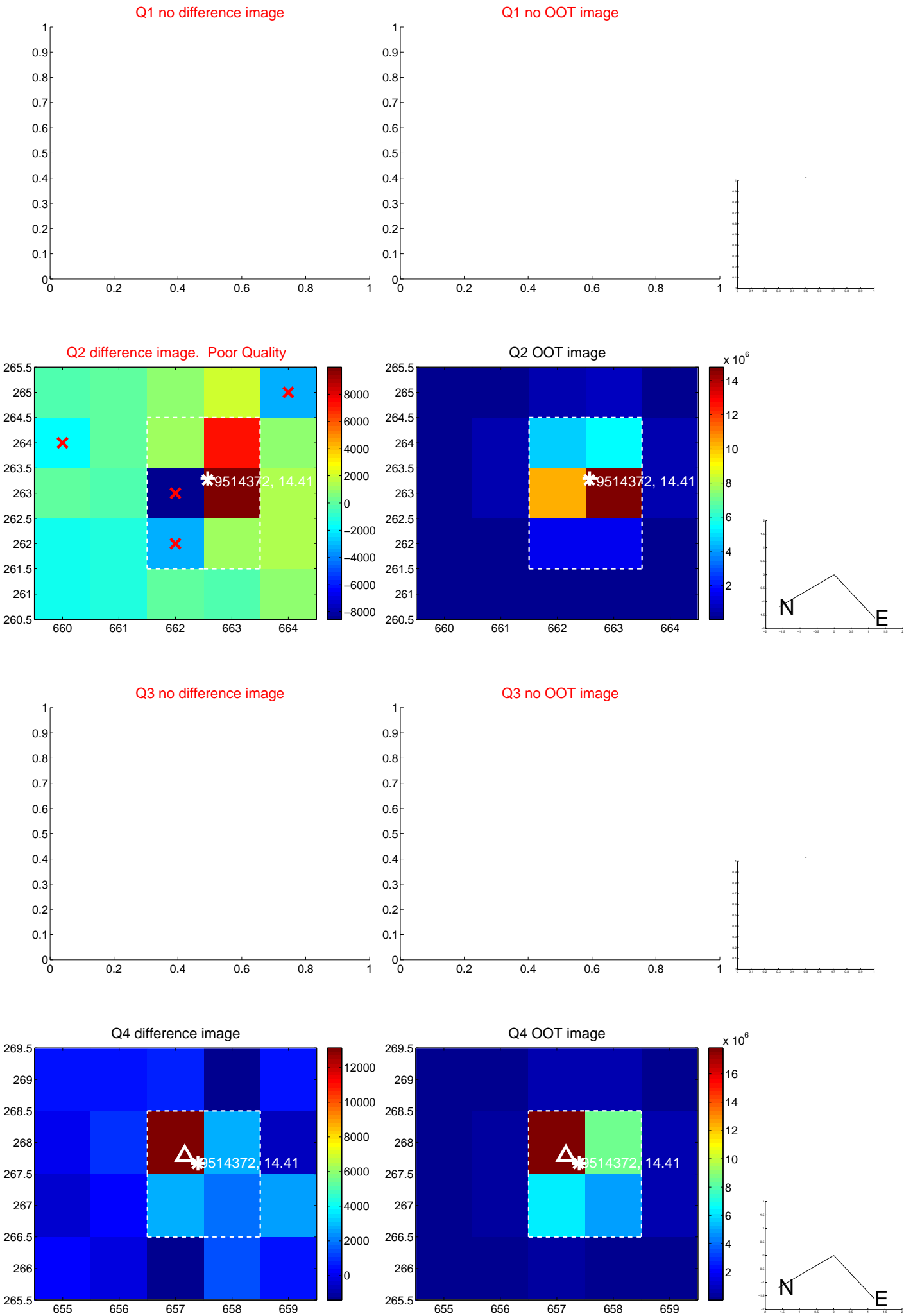


offset from photometric centroids

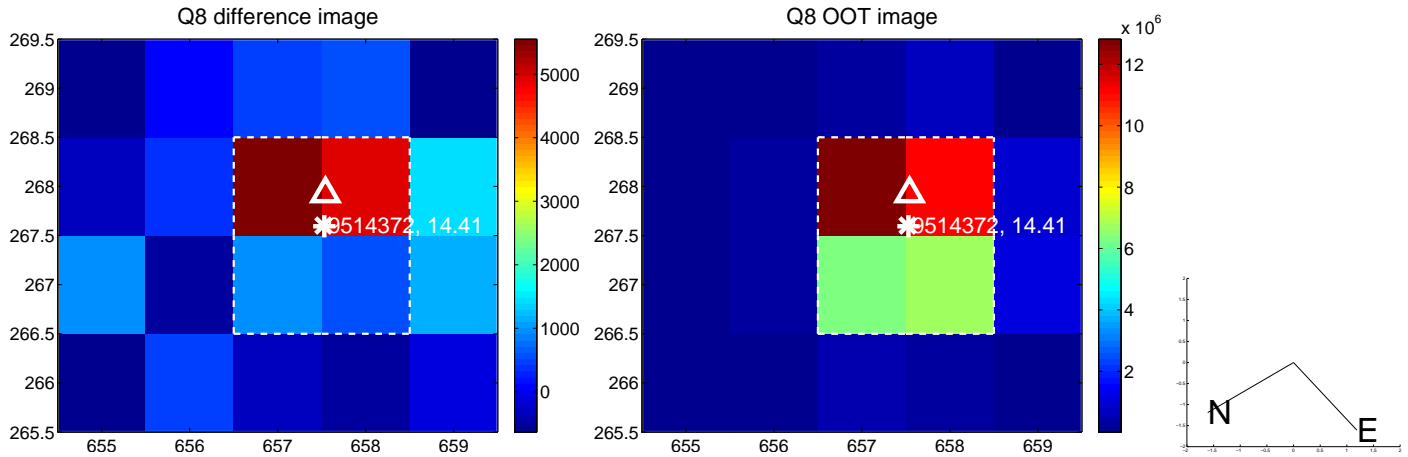
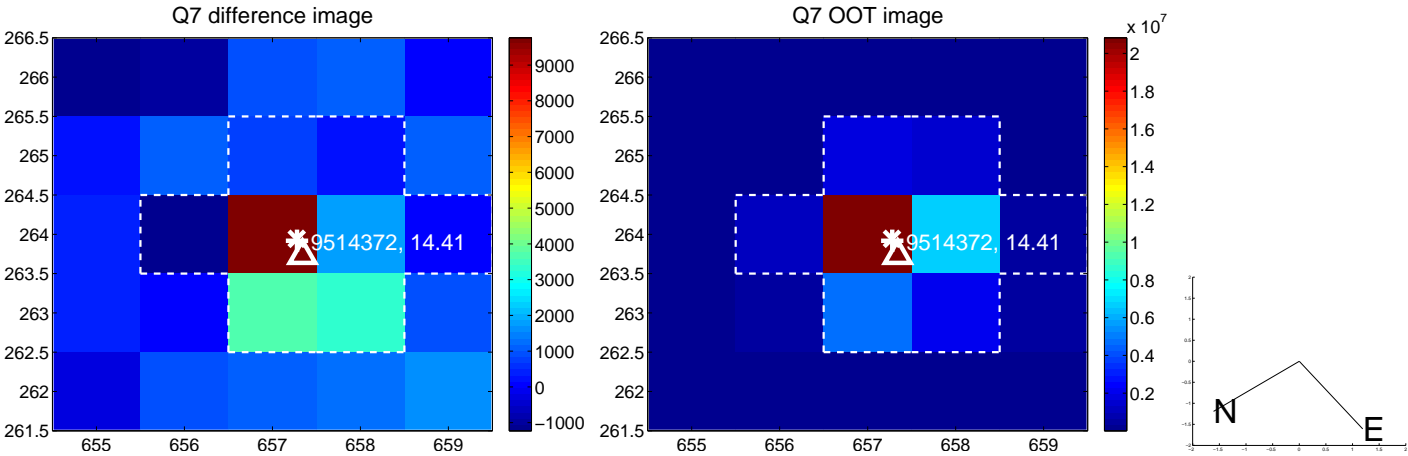
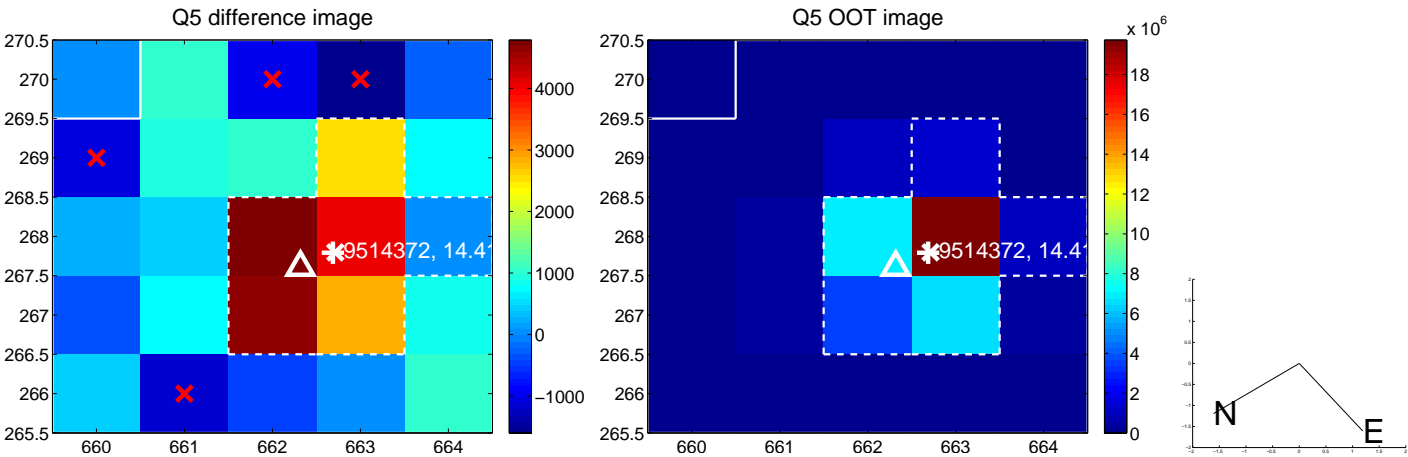


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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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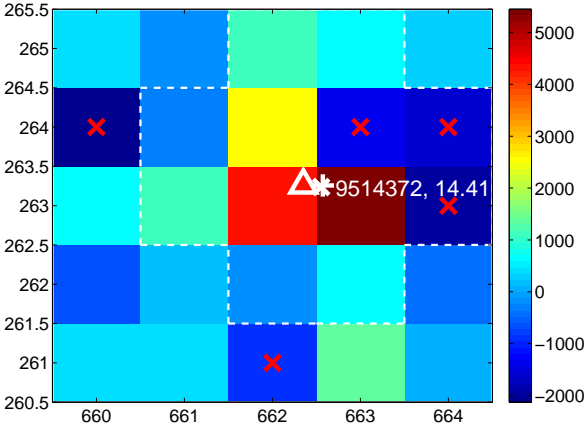
Q9 no difference image



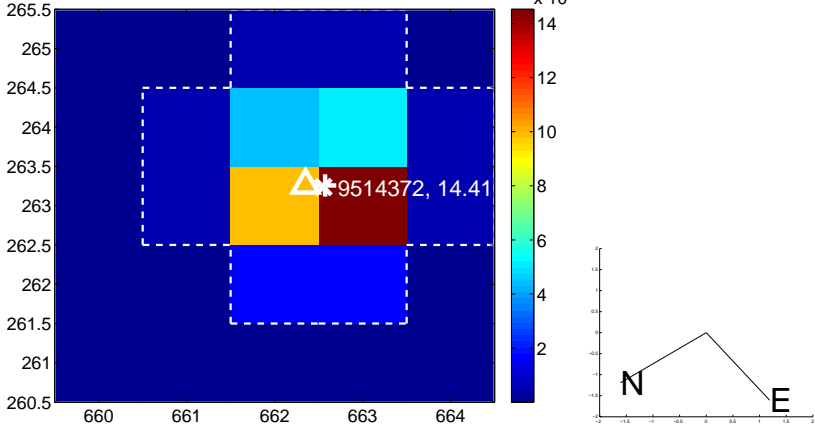
Q9 no OOT image



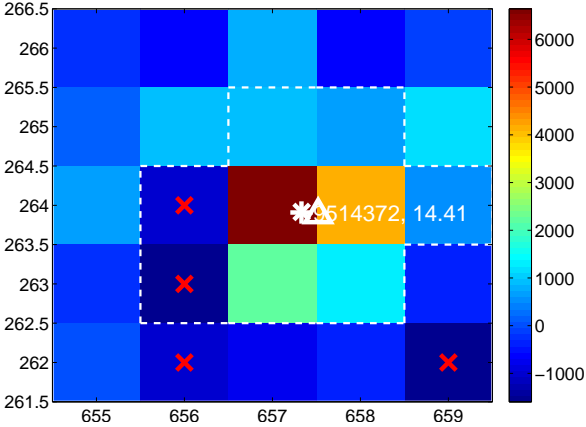
Q10 difference image



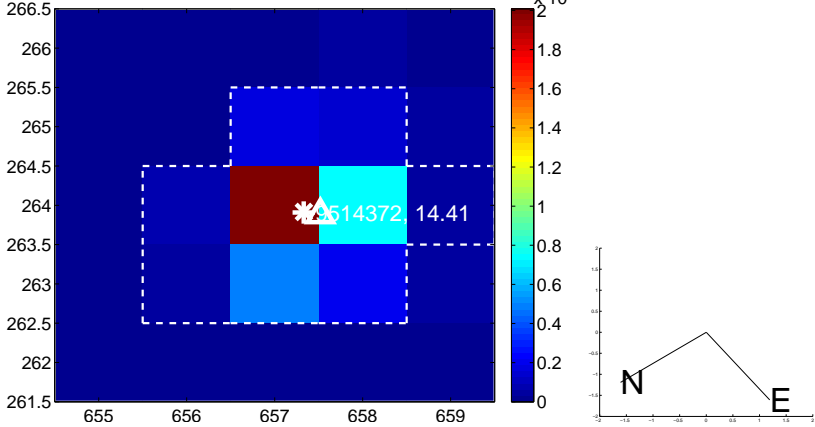
Q10 OOT image



Q11 difference image



Q11 OOT image



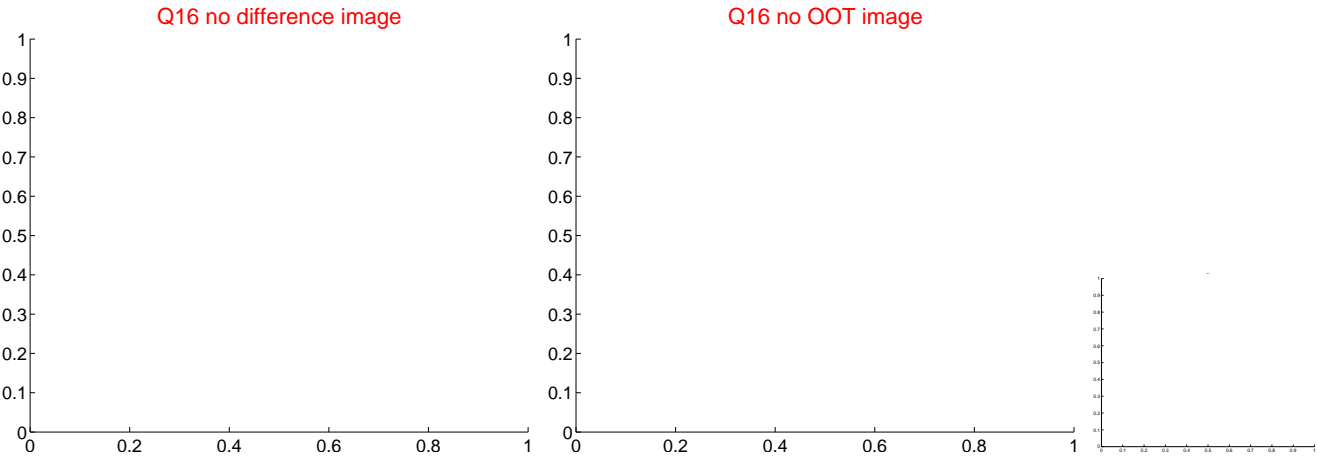
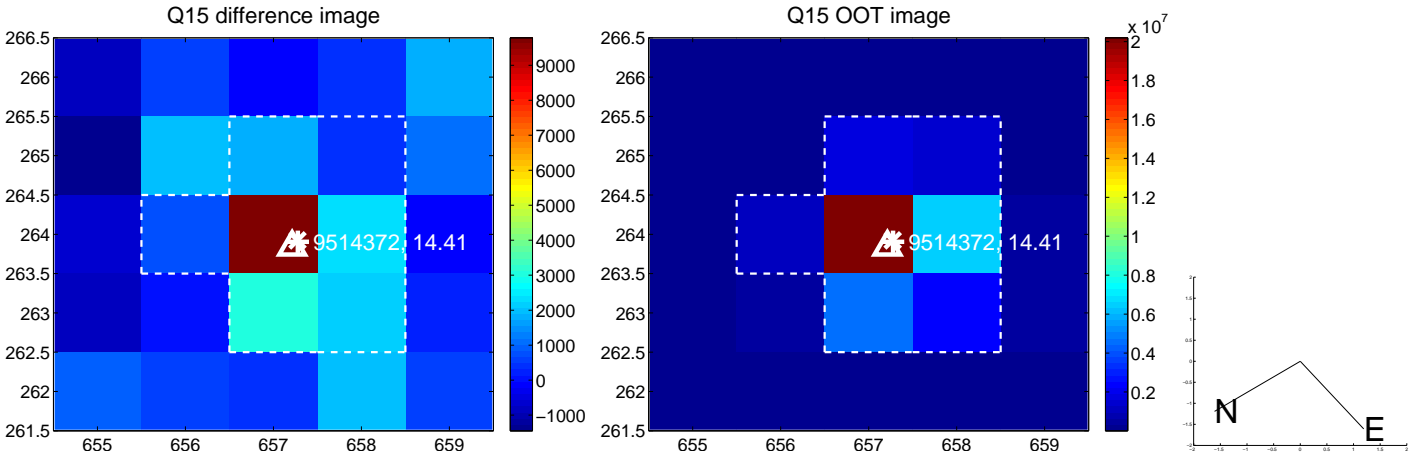
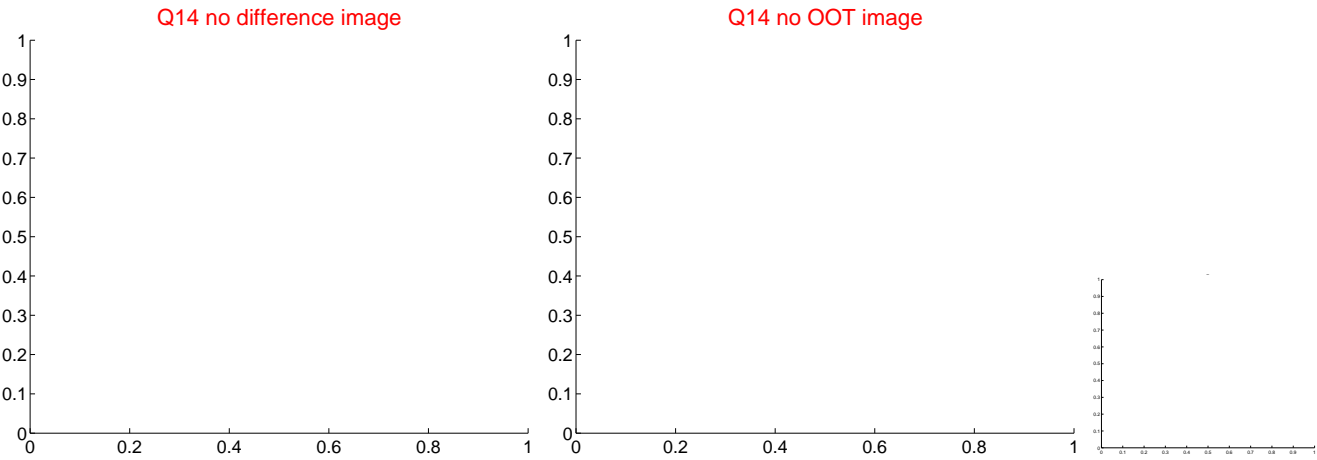
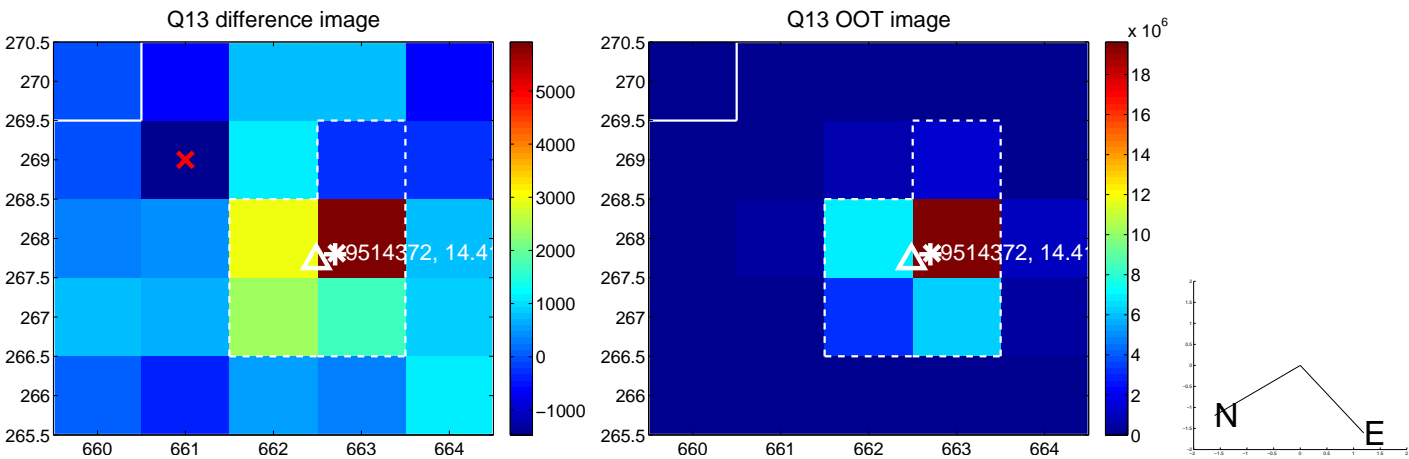
Q12 no difference image



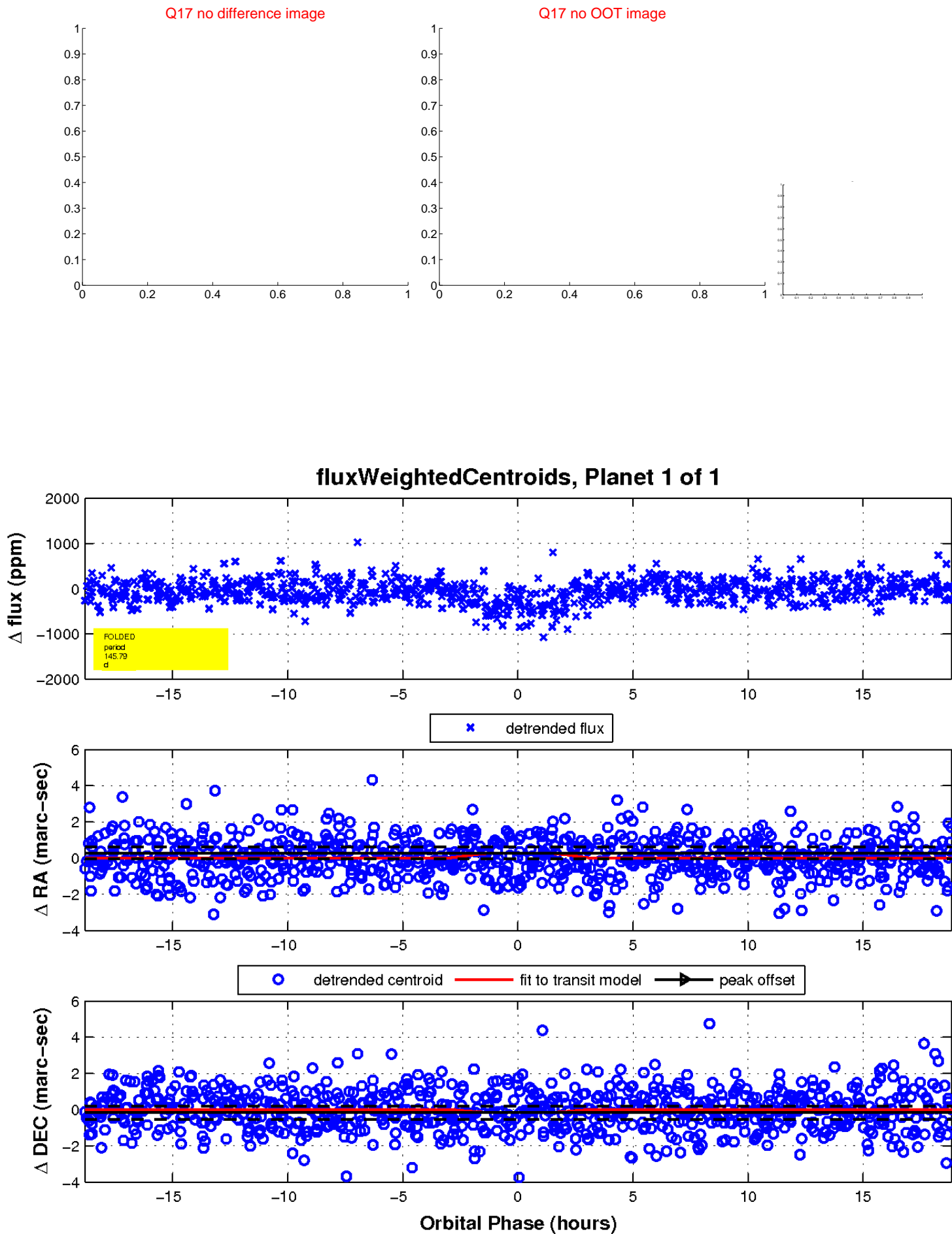
Q12 no OOT image



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

