

KIC 008474898

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})
008474898-01	OBS	0576.01	199.442638	240.849887	6466.3	6.853	118.9	58.9	1.15	5646	16.12	2.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008474898-01	OBS	FP	0.00	0	1	1	1	DEEP_V_SHAPED—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

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 008474898-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
008474898-01	8474898	5520.01	8474892	1:1	7.5	-1	2	14.37	14.54	4.98	Direct-PRF	0	0.01	0.02

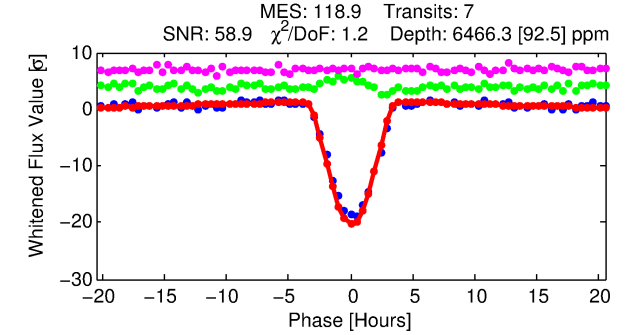
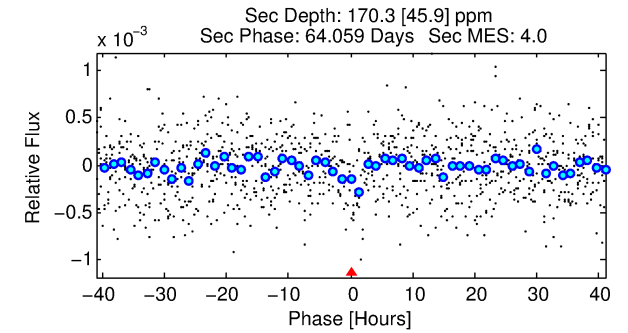
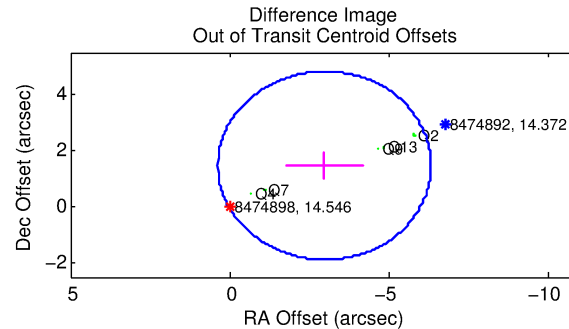
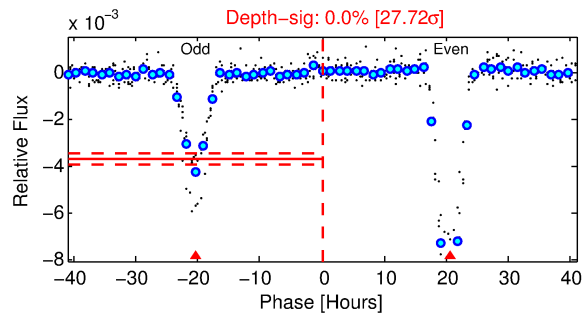
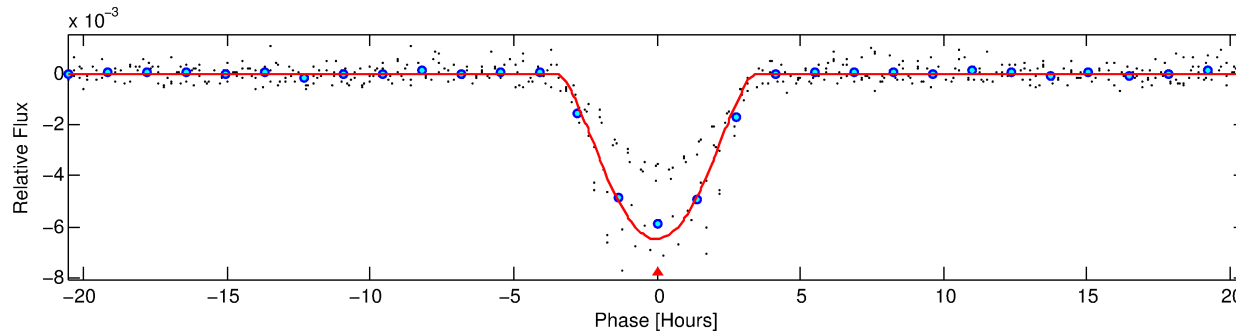
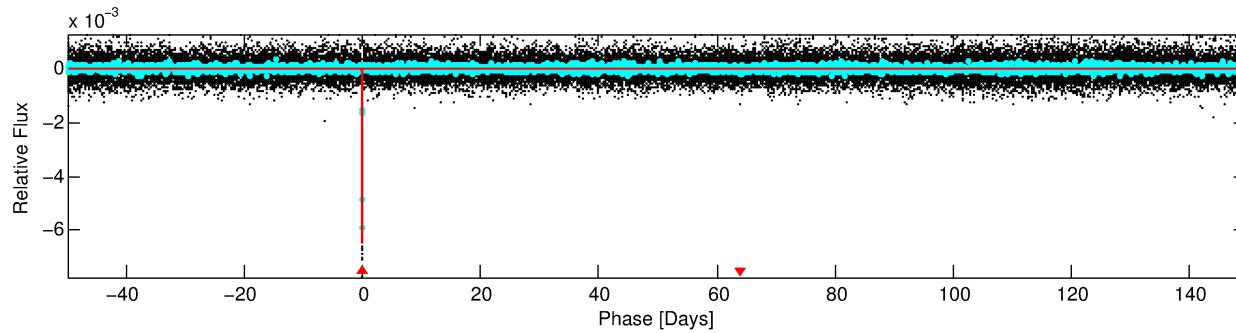
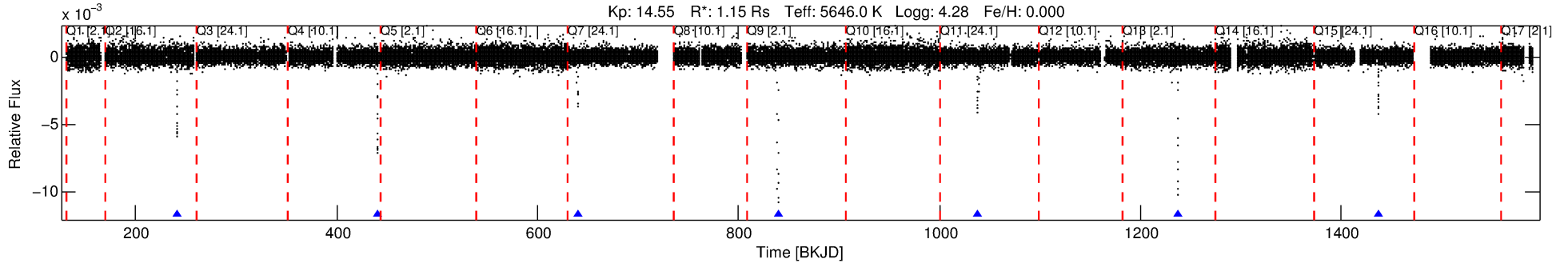
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 8474898 Candidate: 1 of 1 Period: 199.443 d

KOI: K00576.01 Corr: 0.979

Kp: 14.55 R*: 1.15 Rs Teff: 5646.0 K Logg: 4.28 Fe/H: 0.000



DV Fit Results:

Period = 199.44264 [0.00043] d
Epoch = 240.8499 [0.0017] BKJD
Rp/R* = 0.1281 [0.0588]
a/R* = 120.72 [10.37]
b = 0.99 [0.09]
Seff = 2.87 [0.82]
Teq = 332 [24] K
Rp = 16.12 [7.92] Re
a = 0.6498 [0.1109] AU
Ag = 152.17 [151.46] [1.00σ]
Teff = 1802 [432] K [3.39σ]

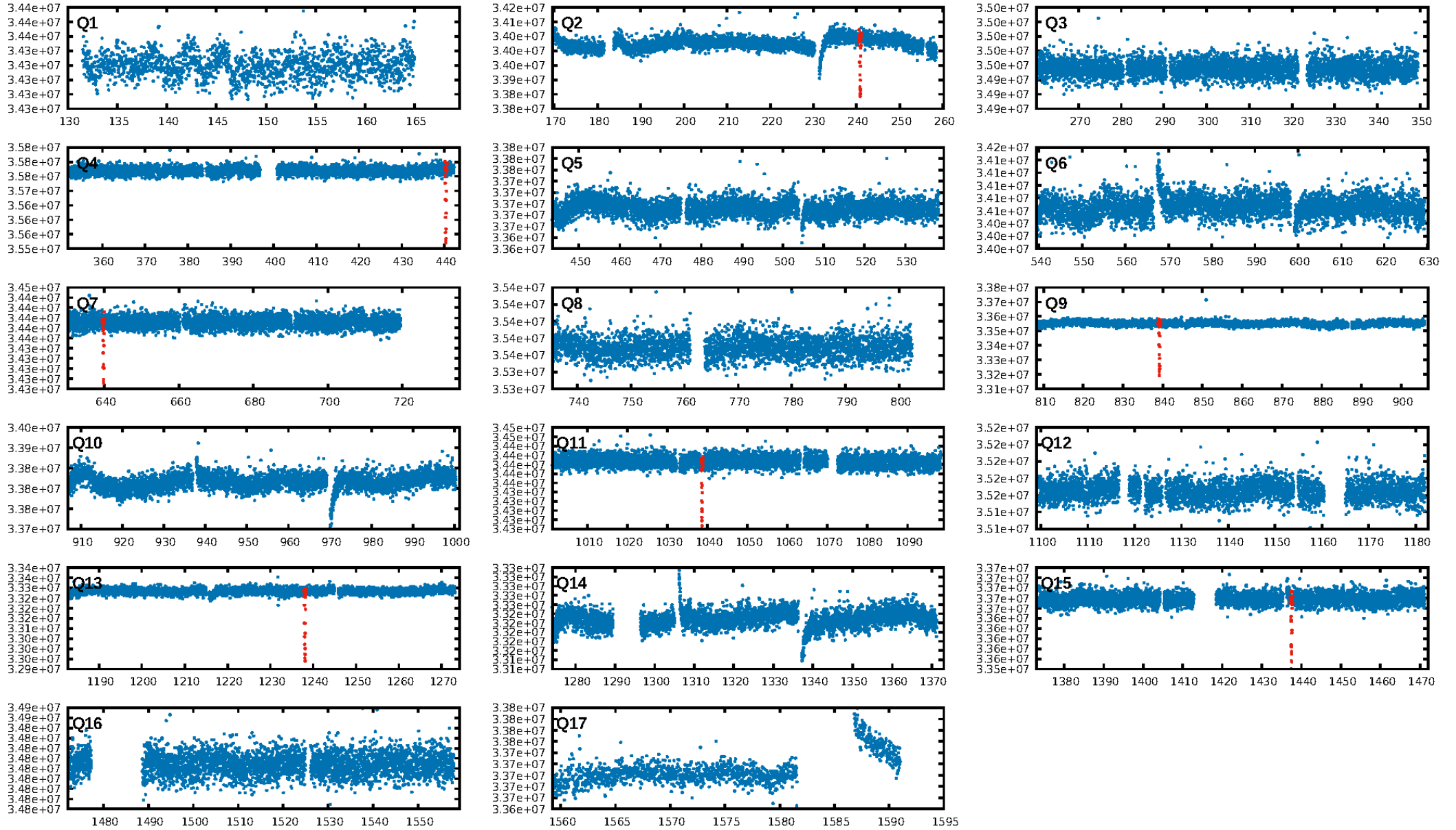
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.5%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -0.04502
Centroid-sig: 0.0%
Centroid-so: 11.075 arcsec [141.62σ]
OotOffset-rm: 3.333 arcsec [2.98σ]
KicOffset-rm: 7.494 arcsec [103.25σ]
OotOffset-st: 1/1/1/2 [5]
KicOffset-st: 1/1/1/2 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [5/5]

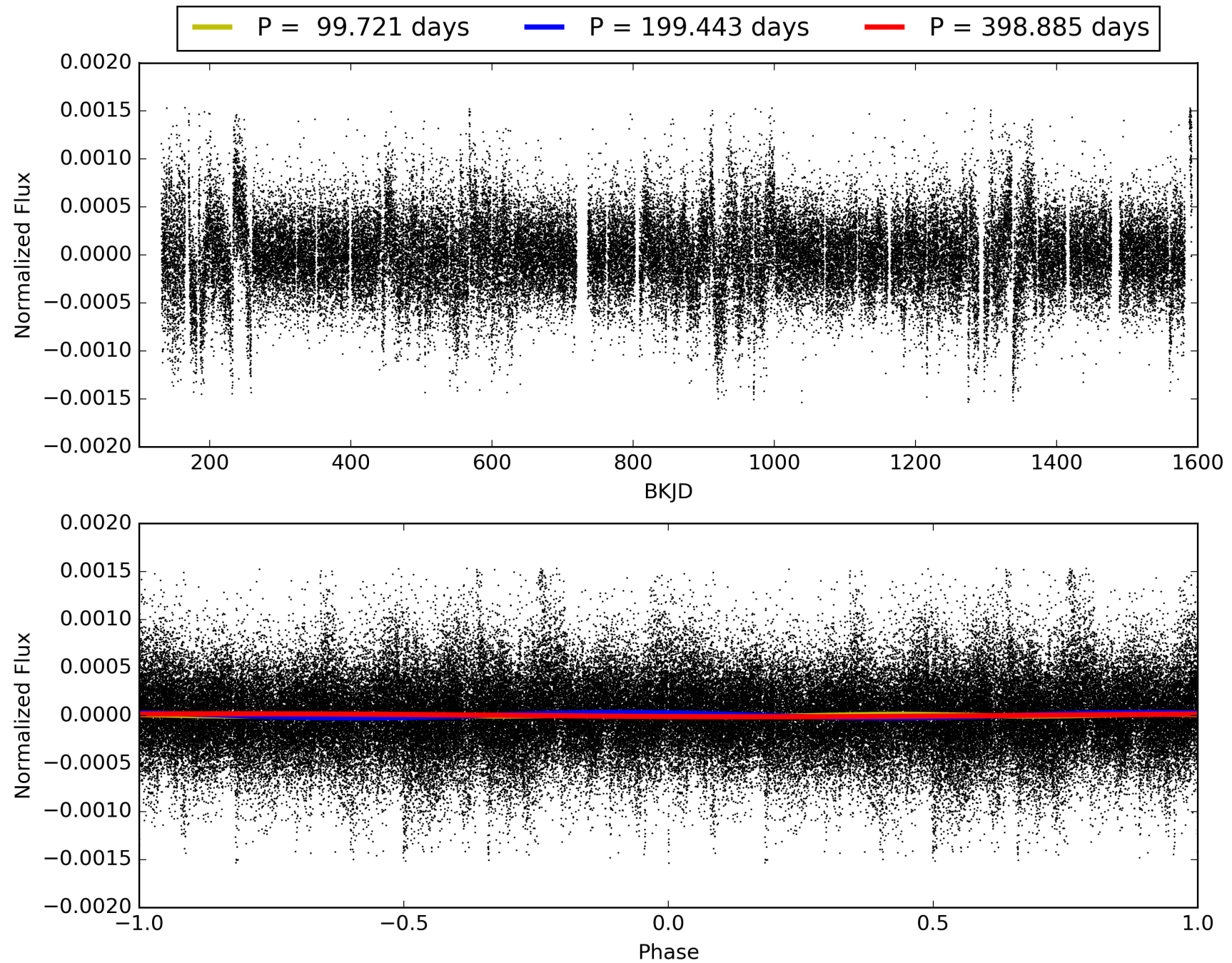
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:06:33 Z

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

TCE 008474898-01, PDC Light Curves

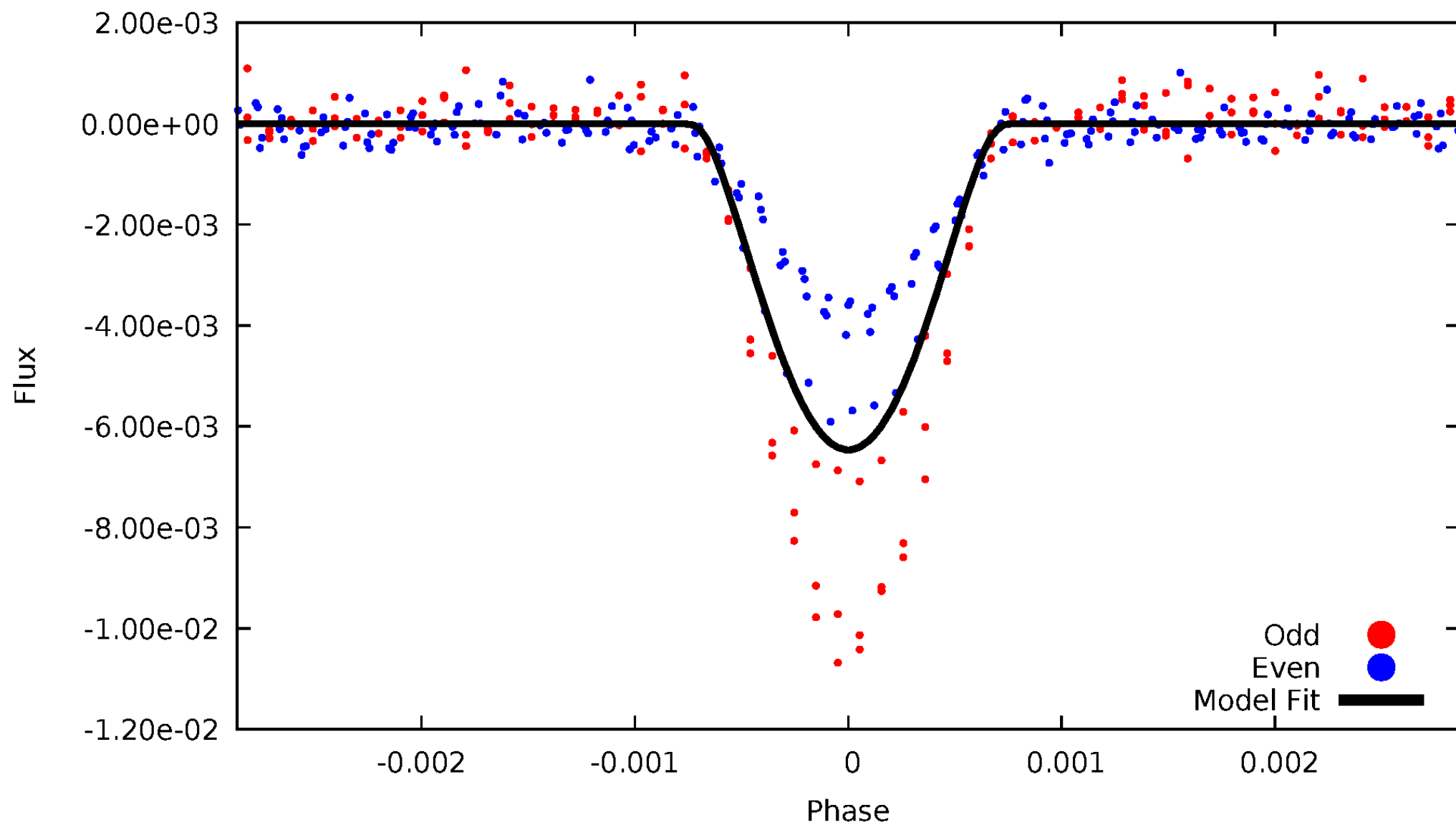


TCE 008474898-01



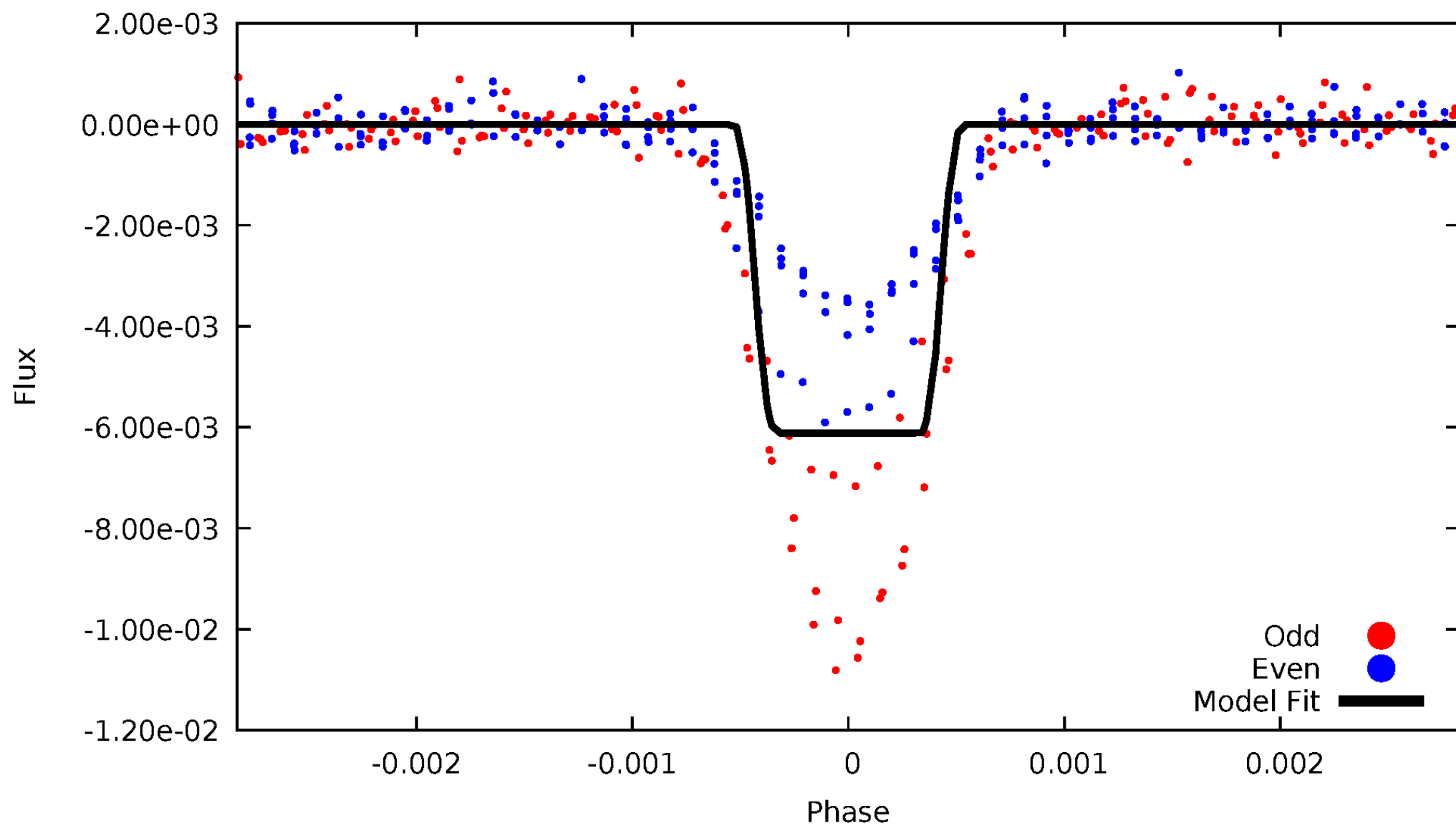
DV Odd/Even

TCE 008474898-01



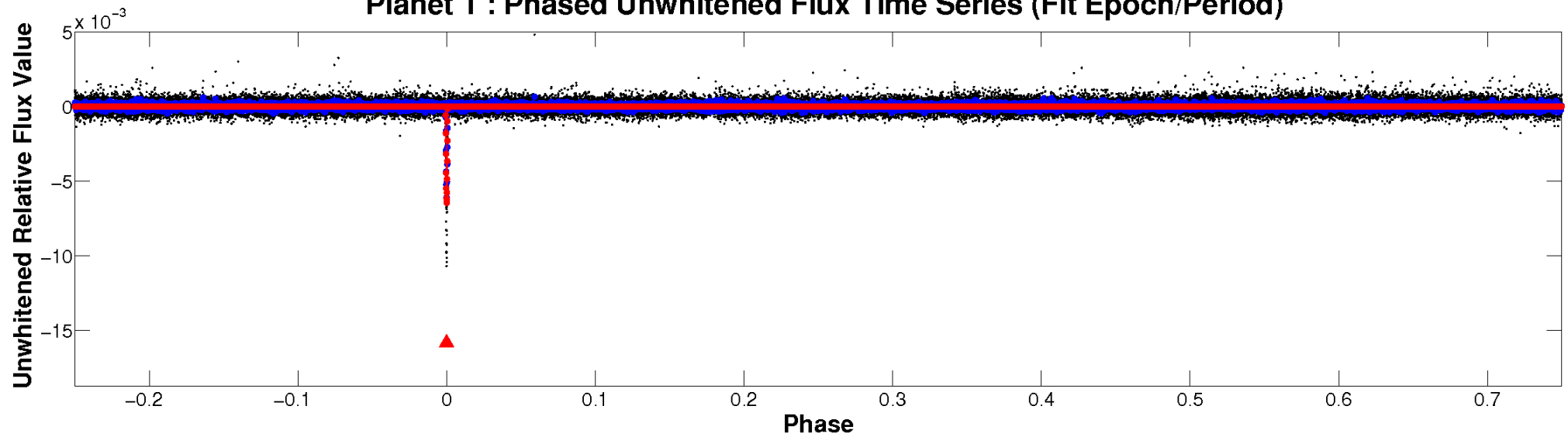
ALT Odd/Even

TCE 008474898-01

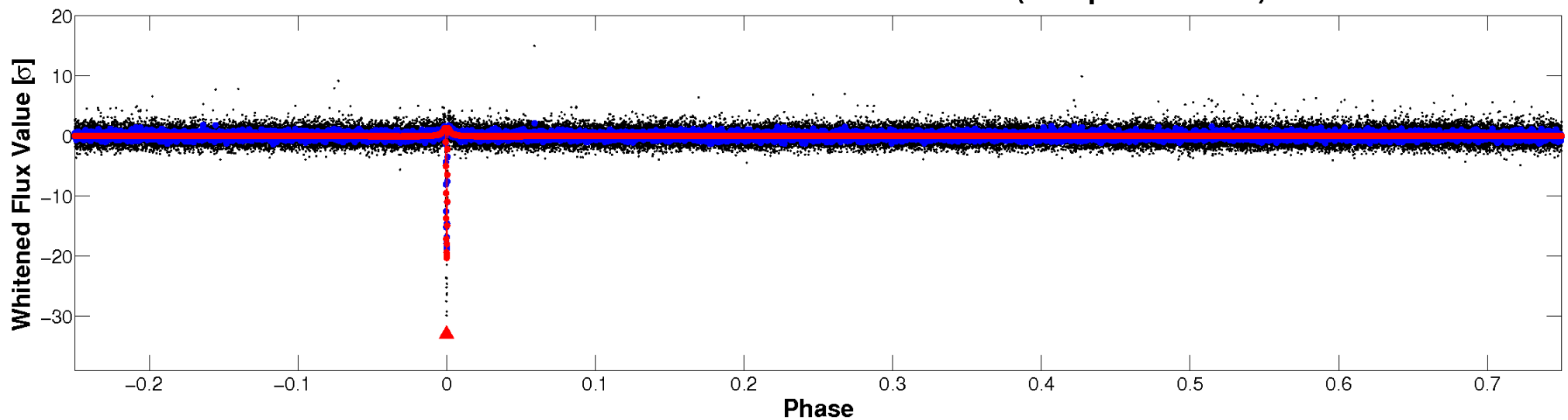


Non-Whitened Vs. Whitened Light Curve

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

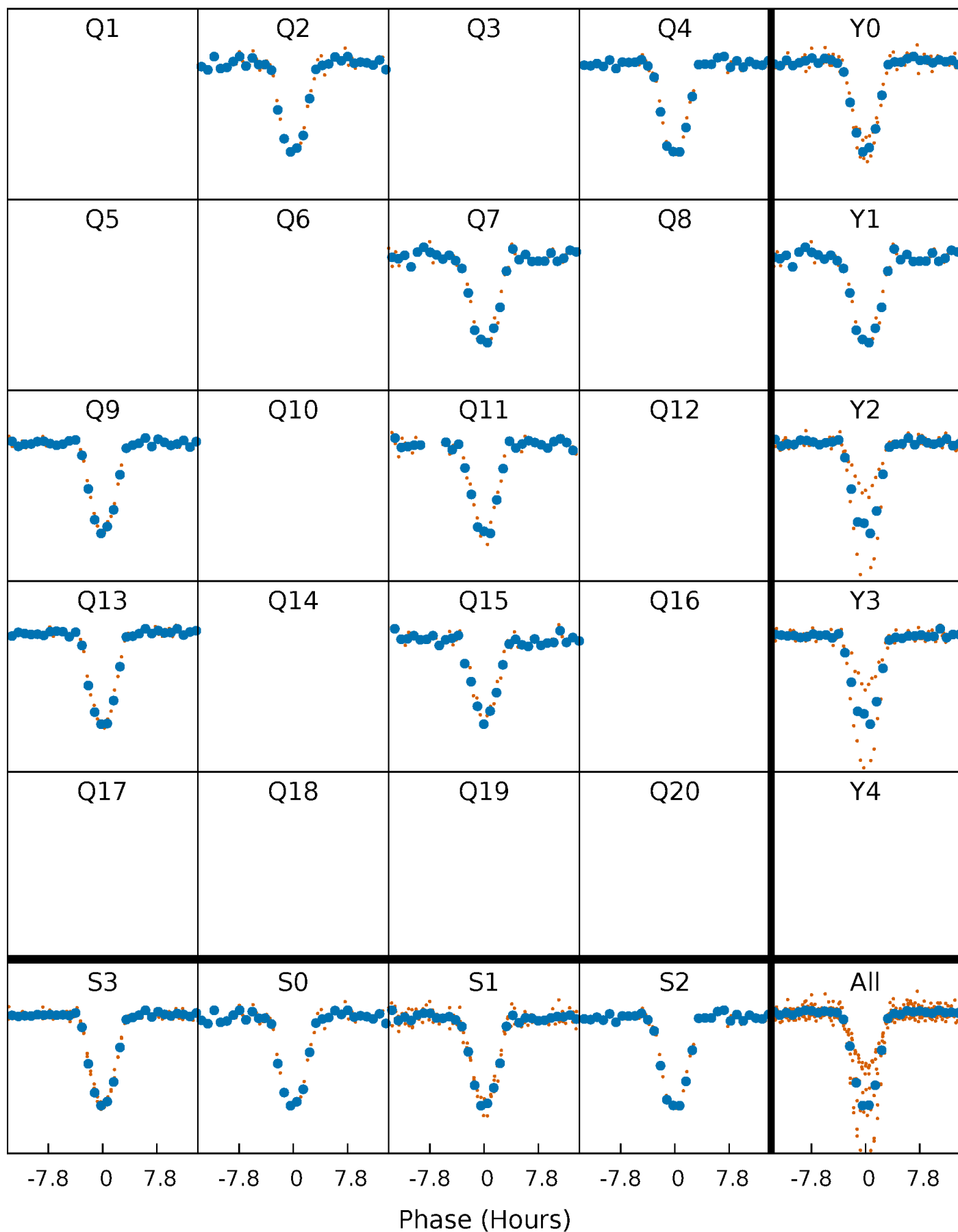


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



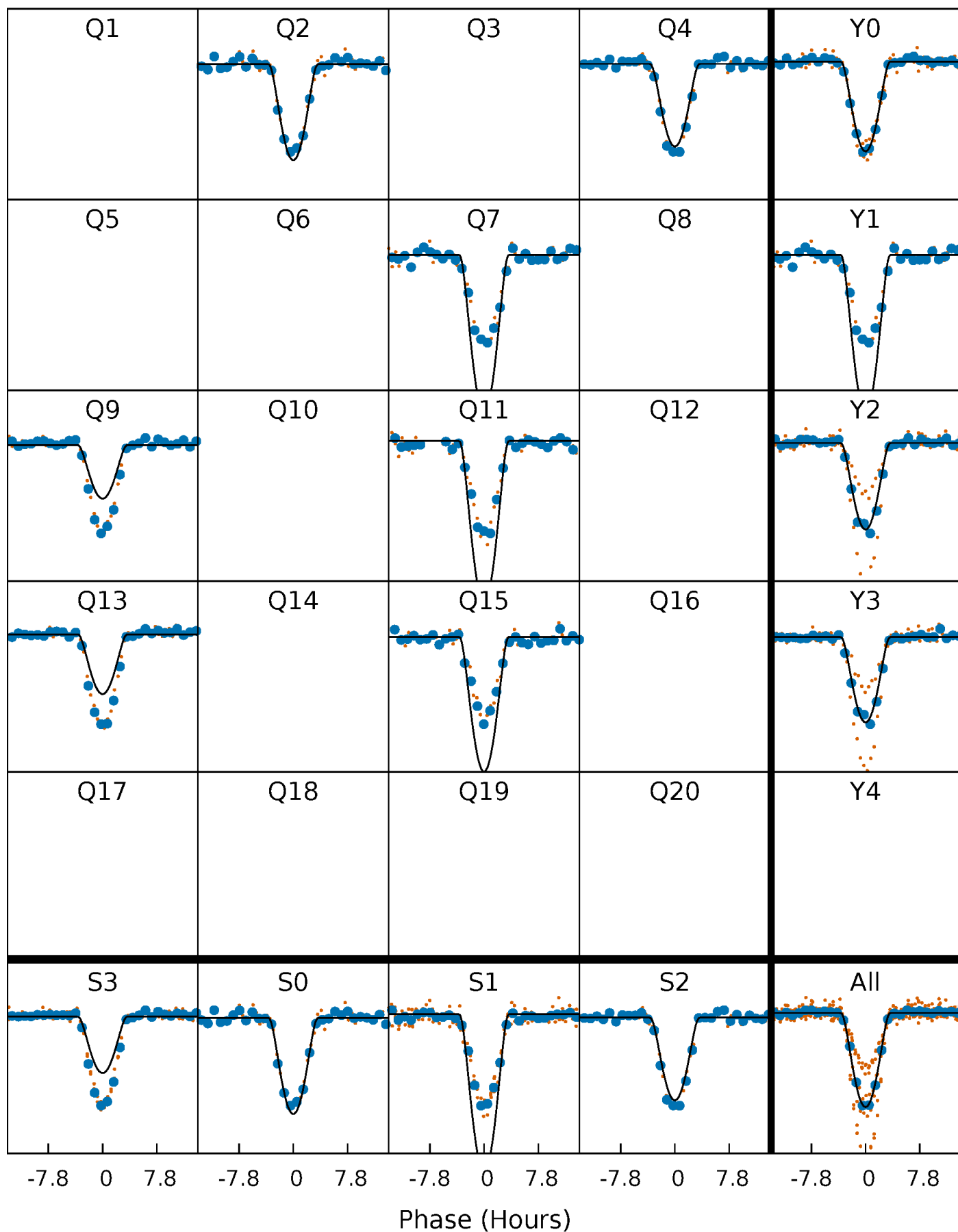
PDC Quarter-Phased Transit Curves

TCE 008474898-01 P=199.442638 Days $T_0=240.849887$ (BKJD)



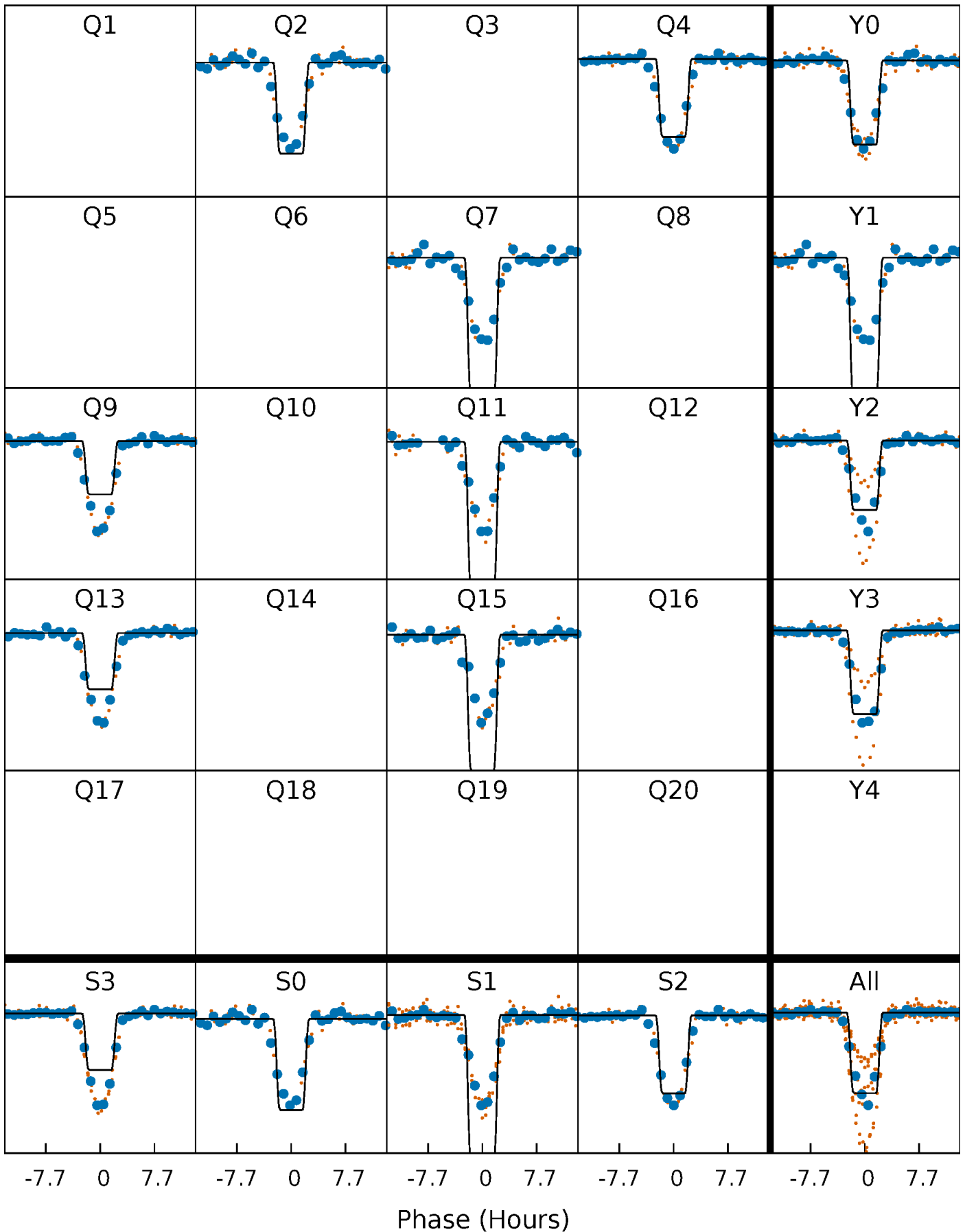
DV Quarter-Phased Transit Curves

TCE 008474898-01 P=199.442638 Days $T_0=240.849887$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

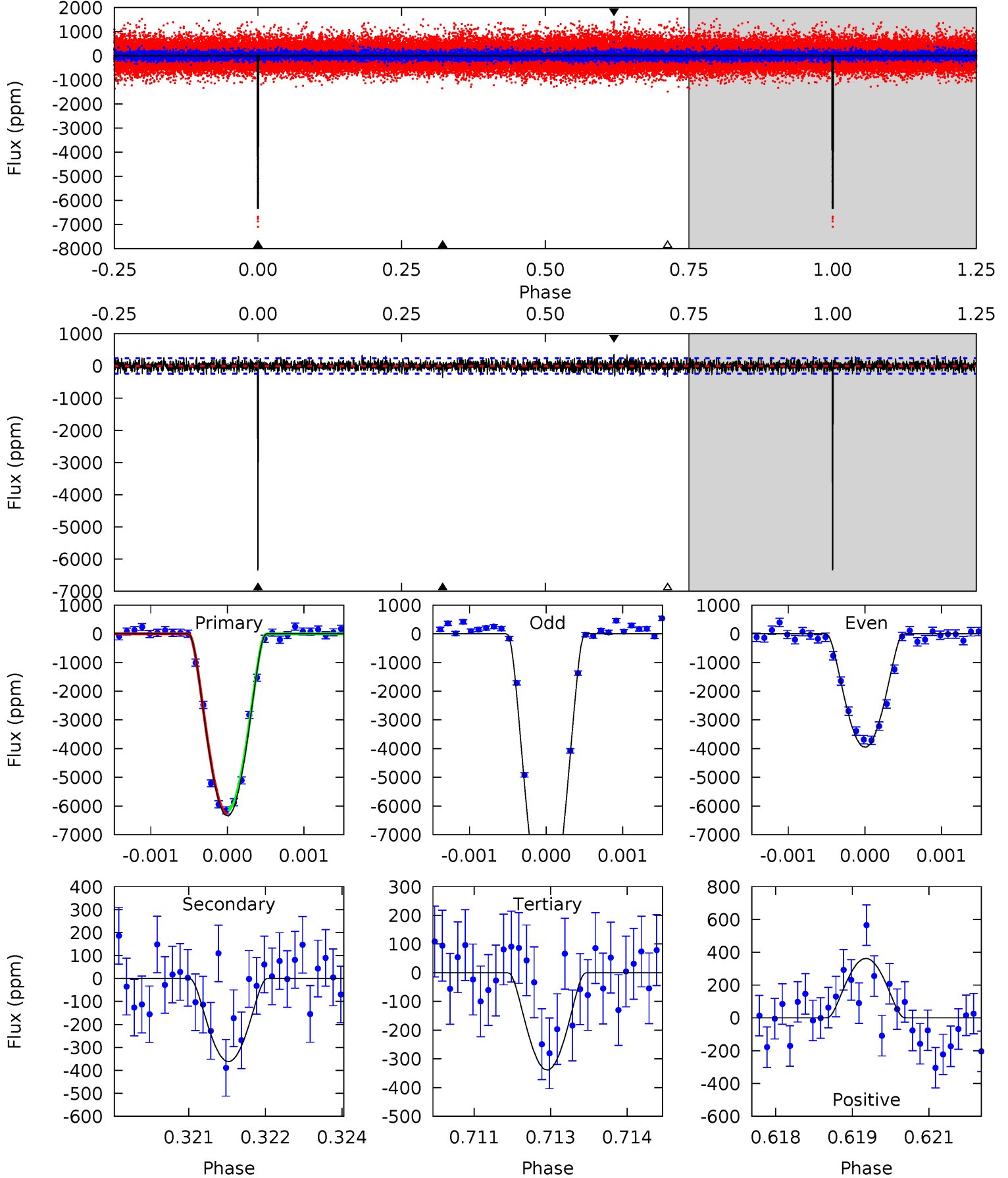
TCE 008474898-01 P=199.441569 Days $T_0=240.854898$ (BKJD)



DV Model-Shift Uniqueness Test

008474898-01, P = 199.442638 Days, E = 41.407249 Days

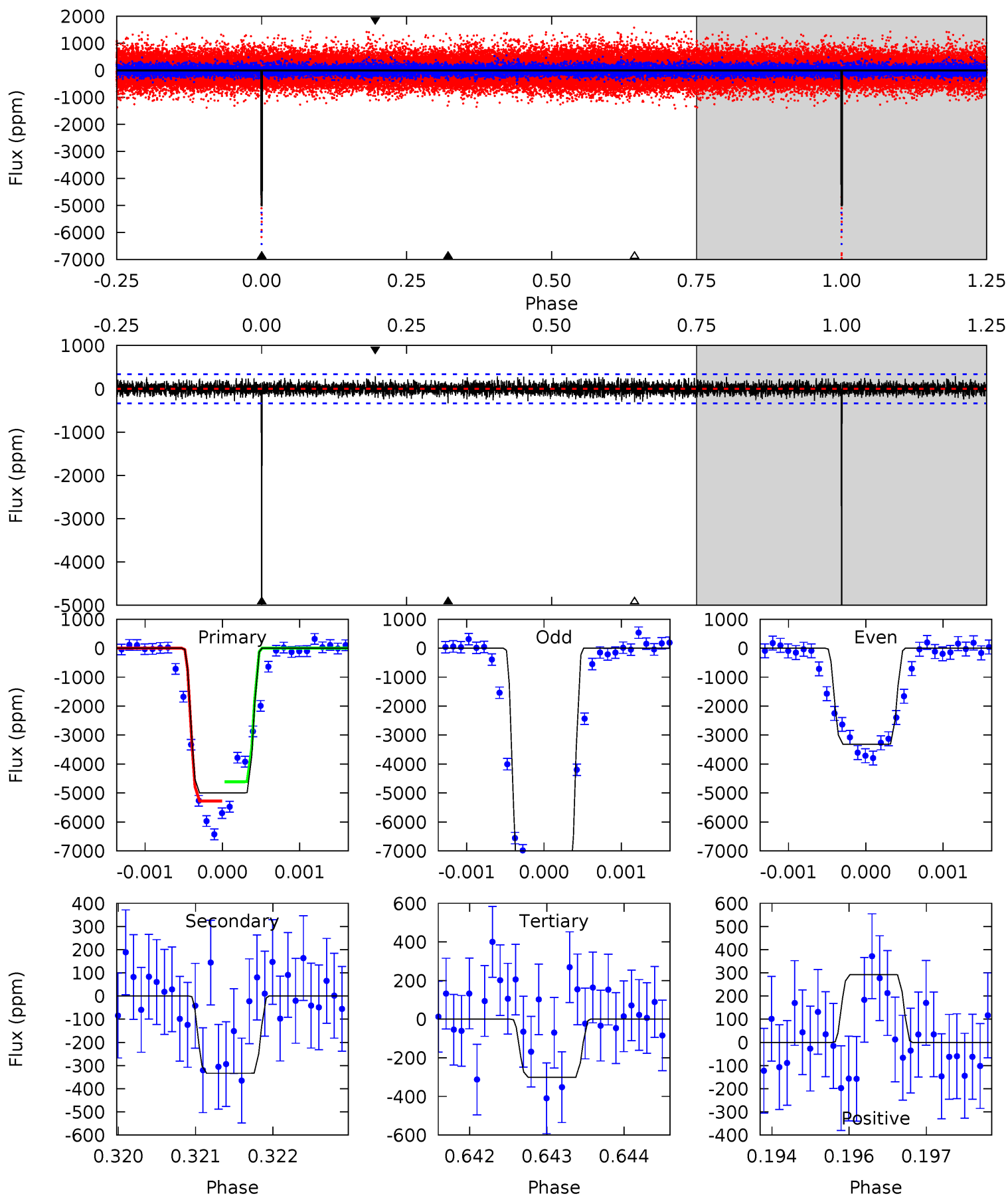
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
143.3	8.17	7.65	8.18	5.38	3.18	2.08	135.7	135.2	0.52	-0.01	82.4	1.07	0.05	0



Alt Model-Shift Uniqueness Test

008474898-01, P = 199.441569 Days, E = 41.413329 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
80.5	5.37	4.86	4.71	5.44	3.27	1.26	75.6	75.8	0.51	0.66	58.8	1.07	0.06	5.50



Stellar Parameters For KIC 008474898

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5646^{+112}_{-101}	$4.278^{+0.162}_{-0.108}$	$0.000^{+0.150}_{-0.150}$	$1.153^{+0.184}_{-0.202}$	$0.918^{+0.077}_{-0.045}$	$0.845^{+0.655}_{-0.267}$
	+2%/-2%	+4%/-3%	+inf%/-inf%	+16%/-18%	+8%/-5%	+78%/-32%
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 008474898-01 / KOI 0576.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-362 ± 44	$16.27^{+7.47}_{-7.47}$	463^{+21}_{-25}	2864^{+570}_{-254}	310^{+763}_{-160}
Alt.	-333 ± 62	$10.29^{+7.15}_{-6.04}$	462^{+21}_{-25}	3248^{+1065}_{-469}	743^{+3455}_{-483}

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 $A_{obs} \gg 1.0$

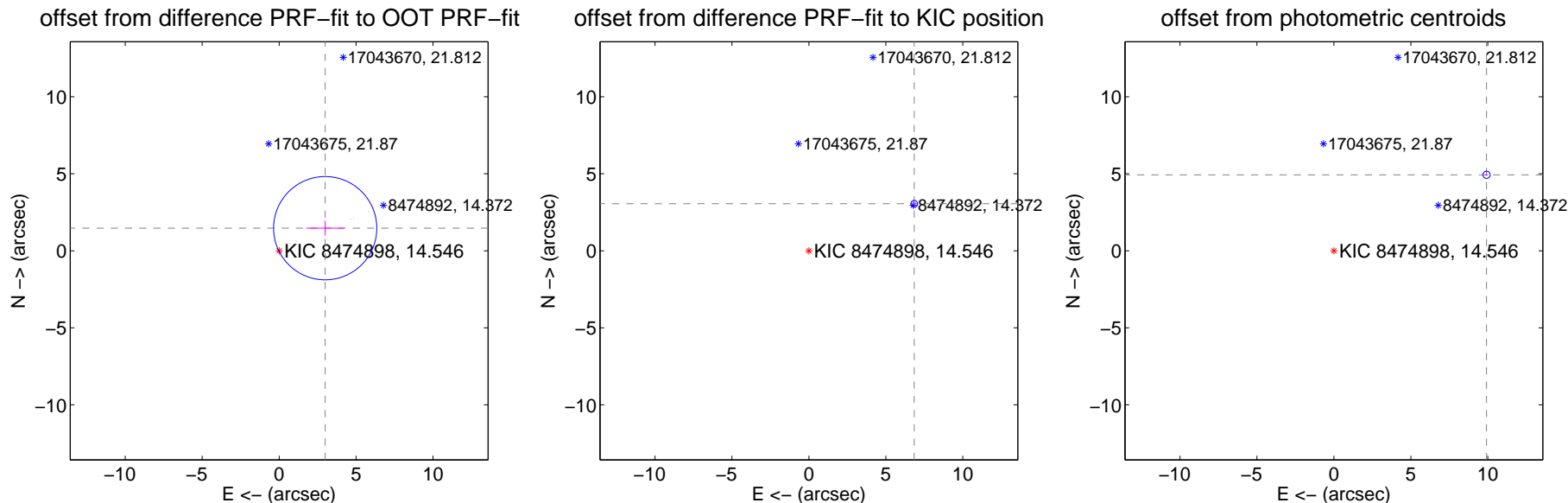
DV Centroid Data

Supplemental centroid analysis for 008474898-01. Kepler magnitude: 14.55. Transit SNR 58.90

There are 5 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 2.19 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.333 ± 1.117	2.98	-2.992 ± 1.222	1.467 ± 0.482
PRF-fit source offset from KIC position	7.494 ± 0.073	103.25	-6.844 ± 0.071	3.053 ± 0.072
photometric centroid source offset	11.08 ± 0.08	141.62	-9.92 ± 0.08	4.93 ± 0.07



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.

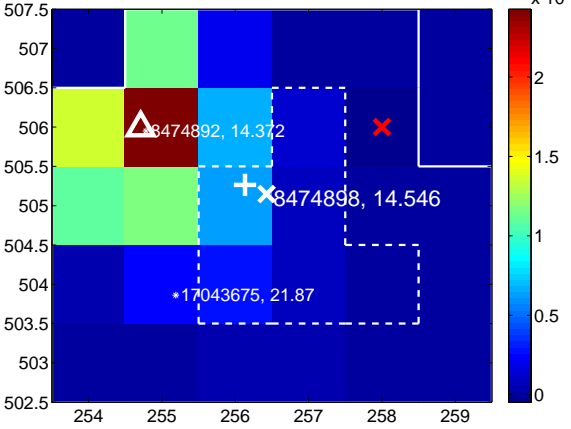
Q1 no difference image



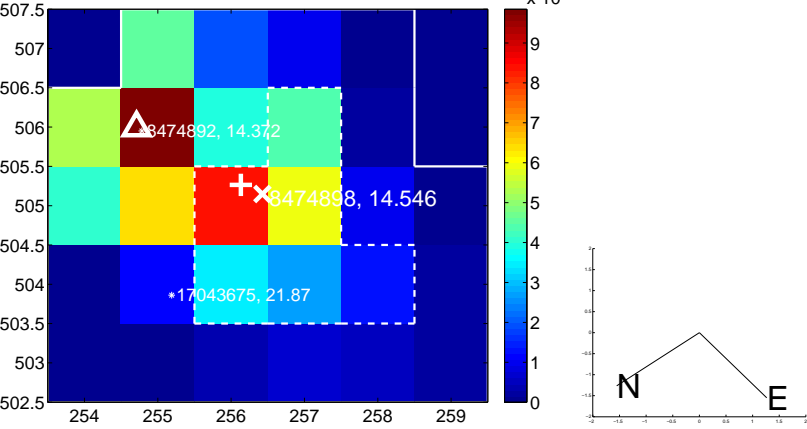
Q1 no OOT image



Q2 difference image



Q2 OOT image



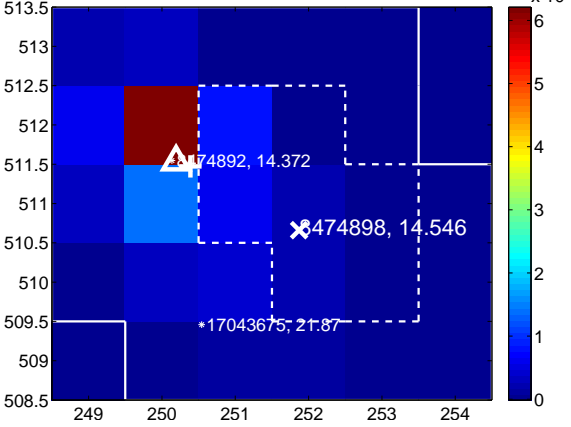
Q3 no difference image



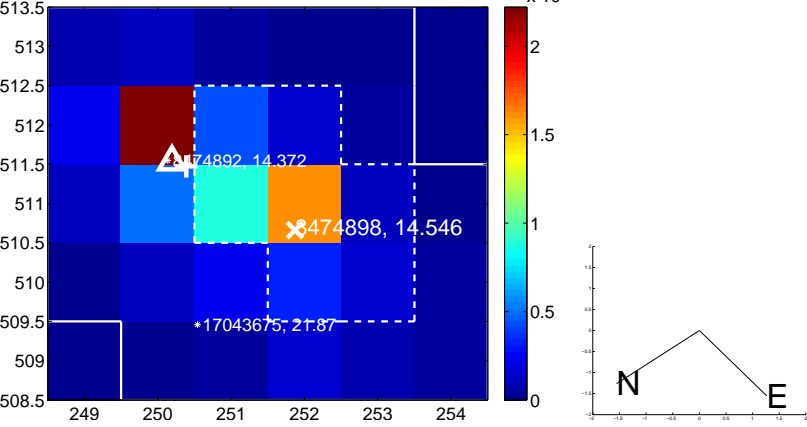
Q3 no OOT image



Q4 difference image



Q4 OOT image



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

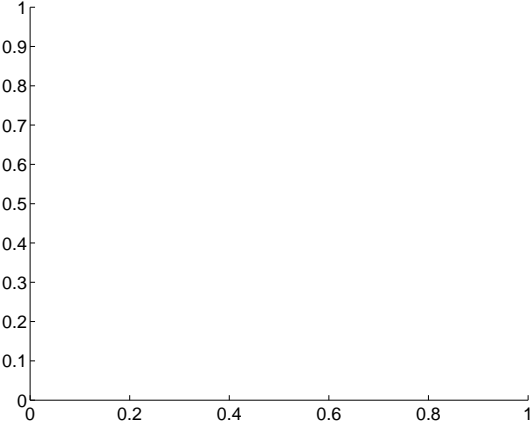
Q5 no difference image



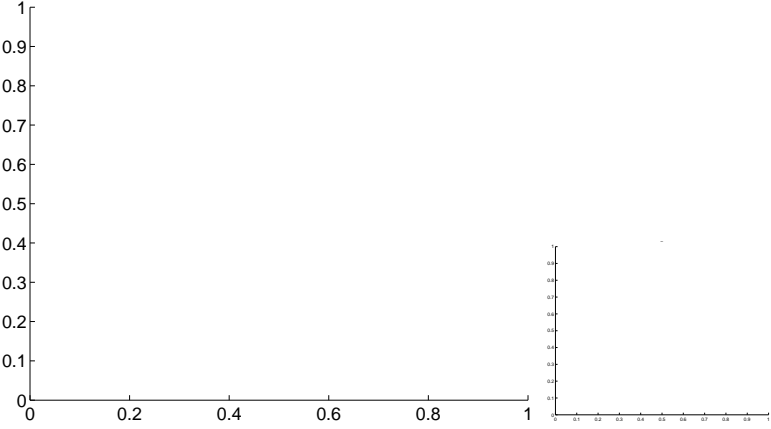
Q5 no OOT image



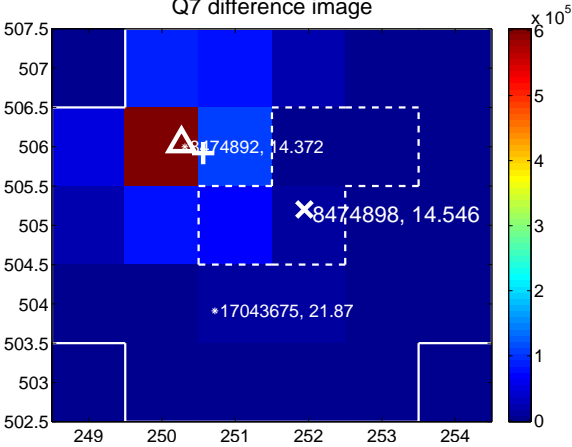
Q6 no difference image



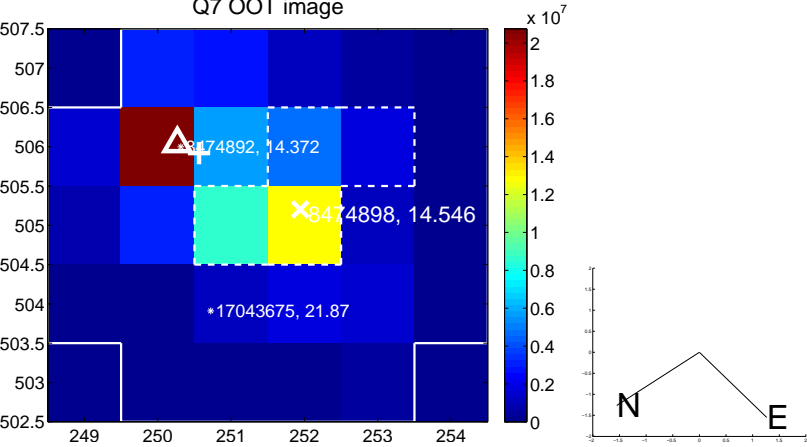
Q6 no OOT image



Q7 difference image



Q7 OOT image



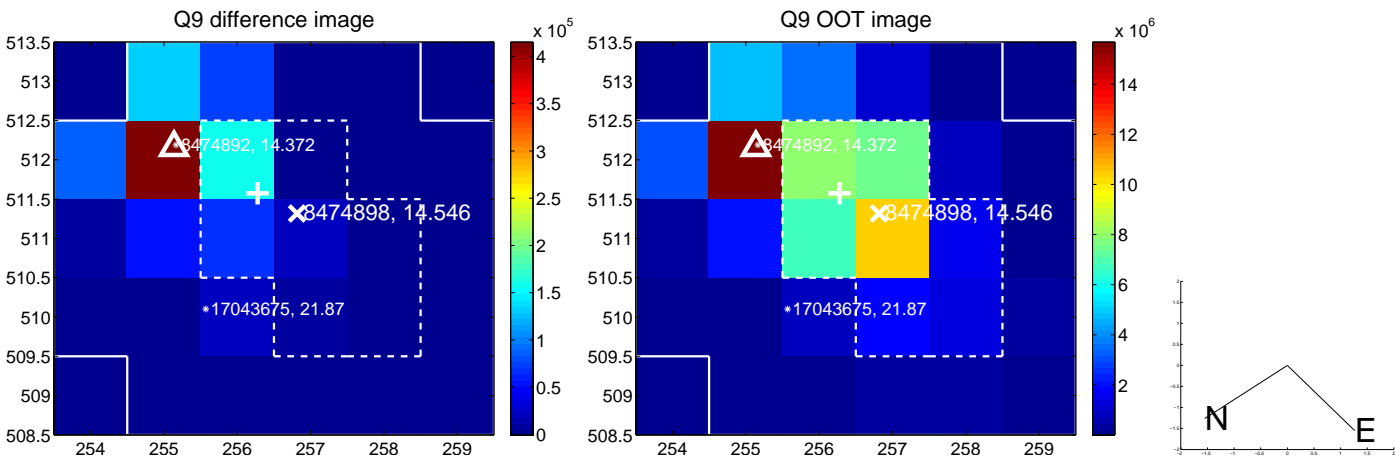
Q8 no difference image



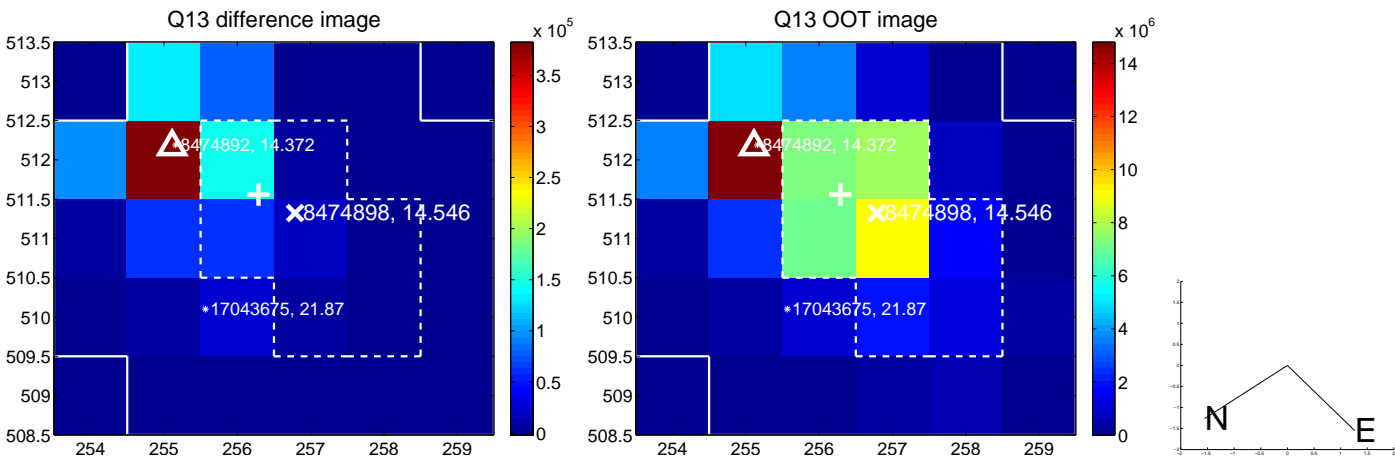
Q8 no OOT image



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.



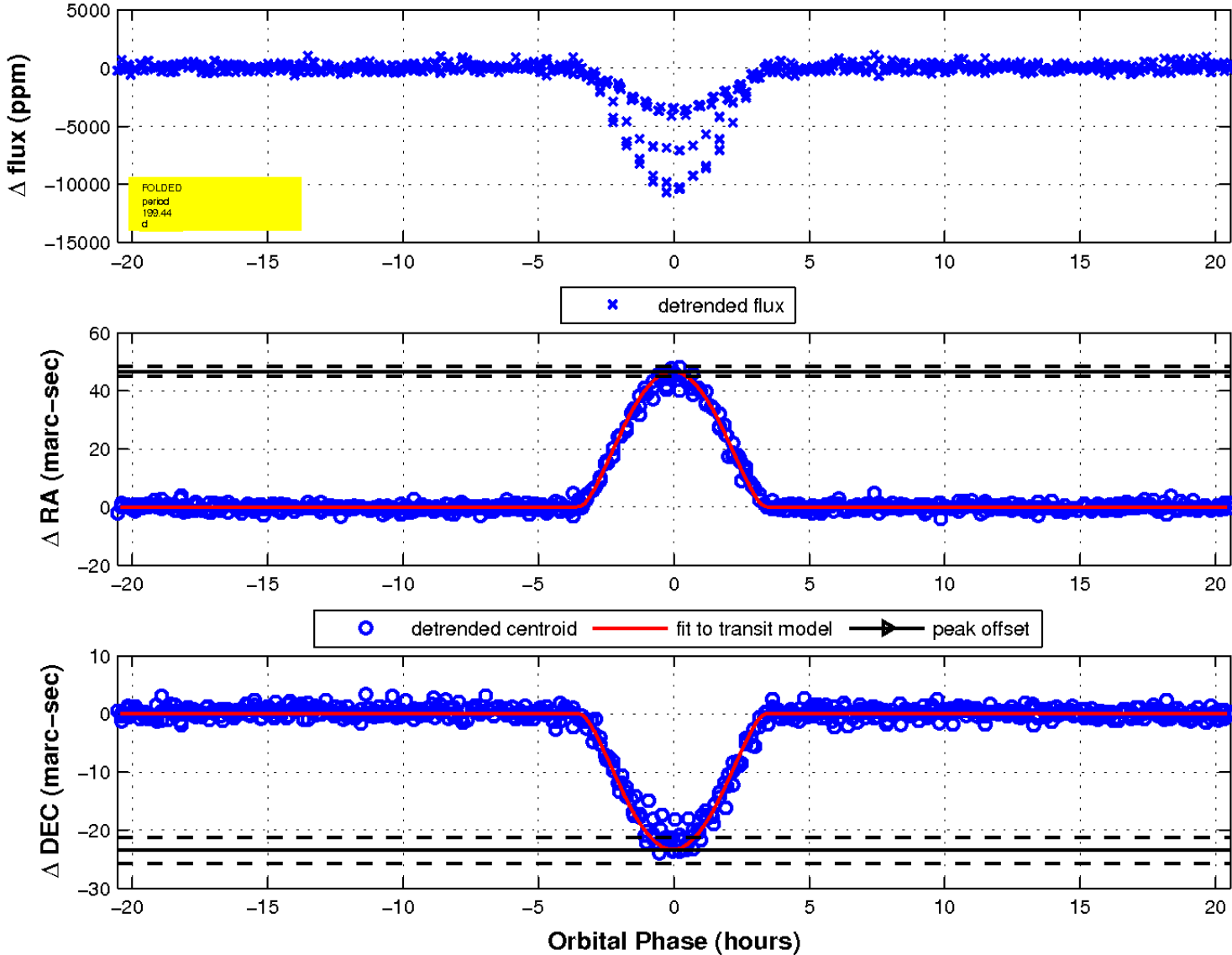
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

