

KIC 009842906

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})
009842906-01	OBS	1493.01	4.988386	133.757744	466.7	8.751	29.4	33.8	1.17	6418	3.09	552.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009842906-01	OBS	FP	0.00	0	0	1	1	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 009842906-01

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
009842906-01	9842906	009842890-pri	9842890	1:1	10.3	3	-1	15.75	15.44	1.71	Direct-PRF	0	0.11	0.90

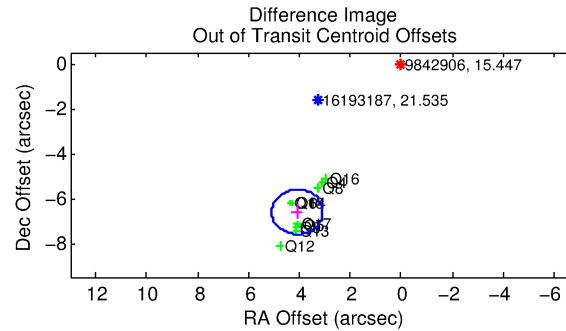
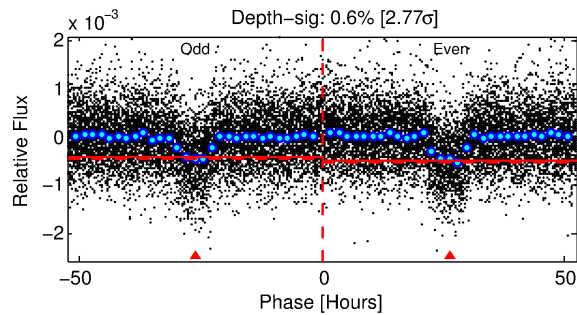
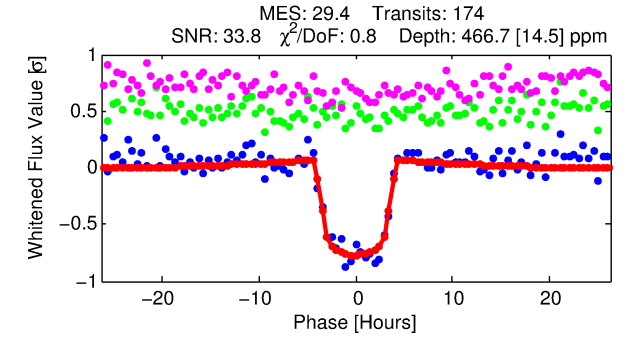
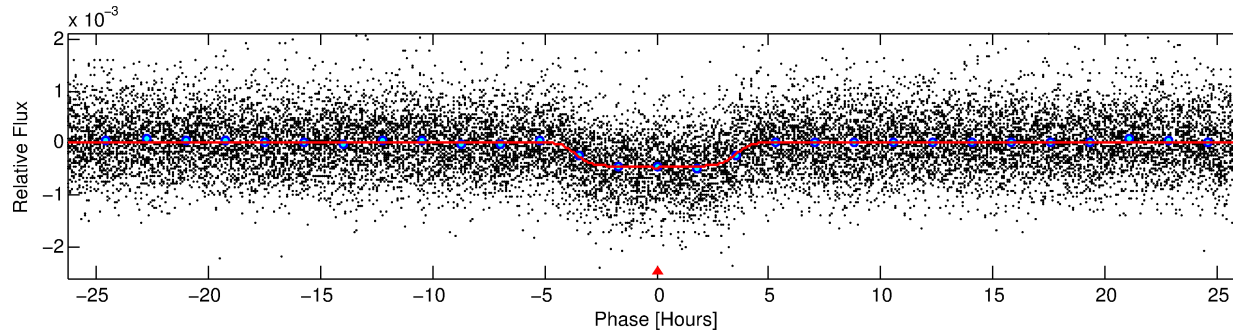
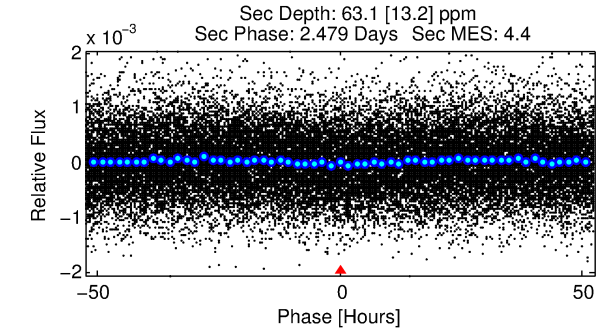
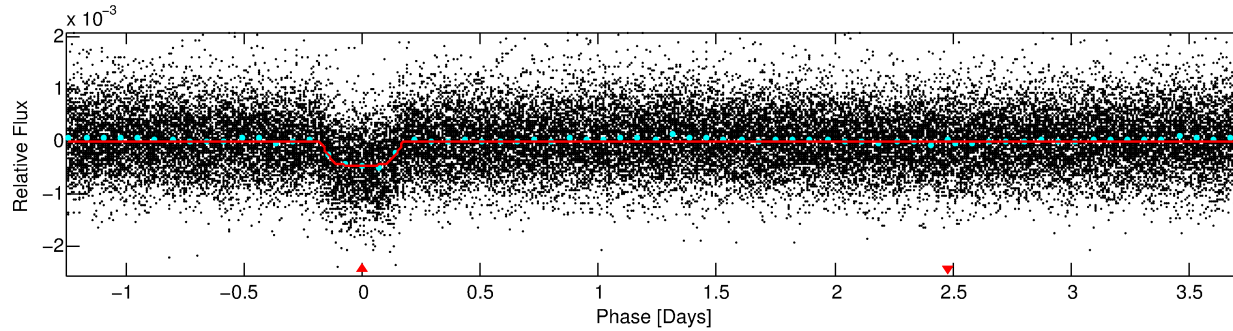
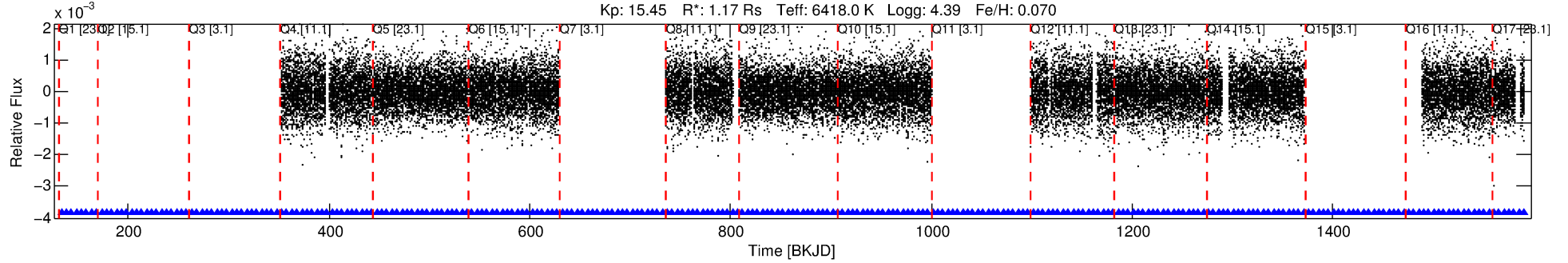
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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: 9842906 Candidate: 1 of 1 Period: 4.988 d

KOI: K01493.01 Corr: 0.997

Kp: 15.45 R*: 1.17 Rs Teff: 6418.0 K Logg: 4.39 Fe/H: 0.070



DV Fit Results:

Period = 4.98839 [0.00003] d
Epoch = 133.7577 [0.0057] BKJD
Rp/R* = 0.0242 [0.0007]
a/R* = 2.03 [0.18]
b = 0.94 [0.01]
Seff = 552.40 [233.73]
Teq = 1236 [131] K
Rp = 3.09 [0.99] Re
a = 0.0614 [0.0166] AU
Ag = 13.71 [6.17] [2.06σ]
Teff = 3678 [244] K [8.8σ]

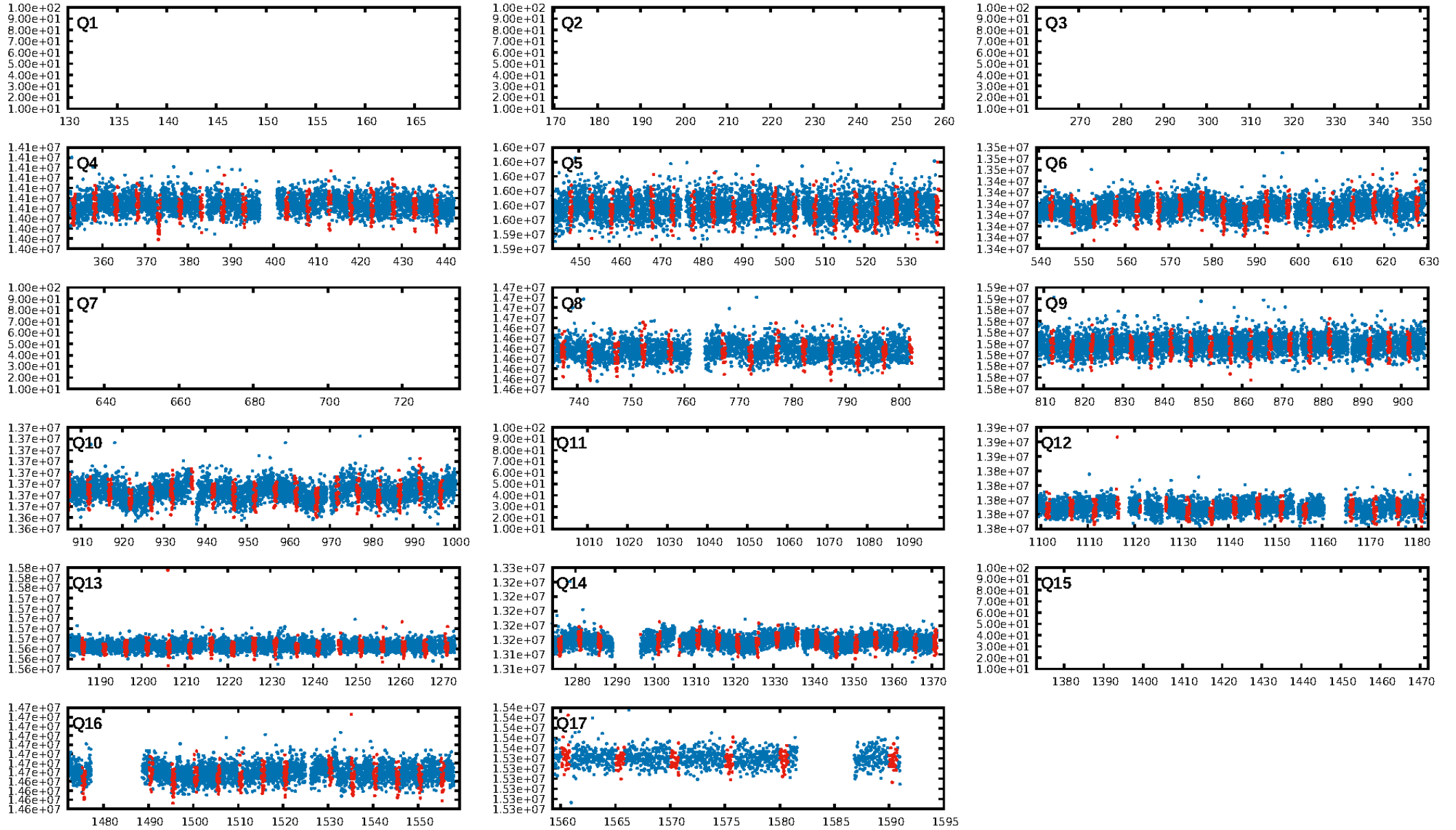
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 68.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.31e-174
RollingBand-fgt: 1.00 [168/168]
GhostDiagnostic-chr: 0.07754
Centroid-sig: 0.0%
Centroid-so: 1.216 arcsec [7.17σ]
OotOffset-rm: 7.766 arcsec [23.33σ]
KicOffset-rm: 4.999 arcsec [12.63σ]
OotOffset-st: 3/0/4/4 [11]
KicOffset-st: 3/0/4/4 [11]
DiffImageQuality-fgm: 0.00 [0/11]
DiffImageOverlap-fno: 1.00 [11/11]

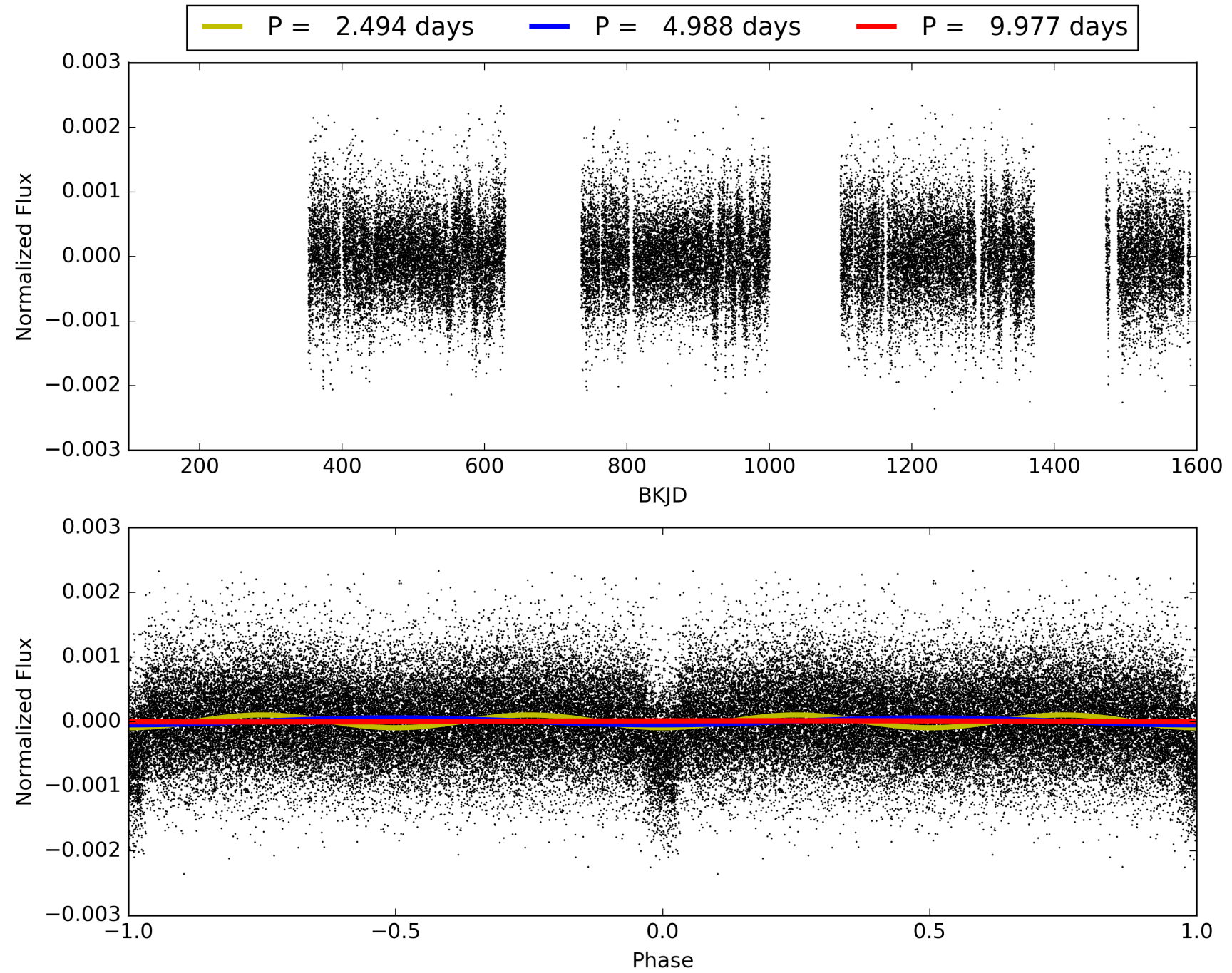
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:27:15 Z

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

TCE 009842906-01, PDC Light Curves

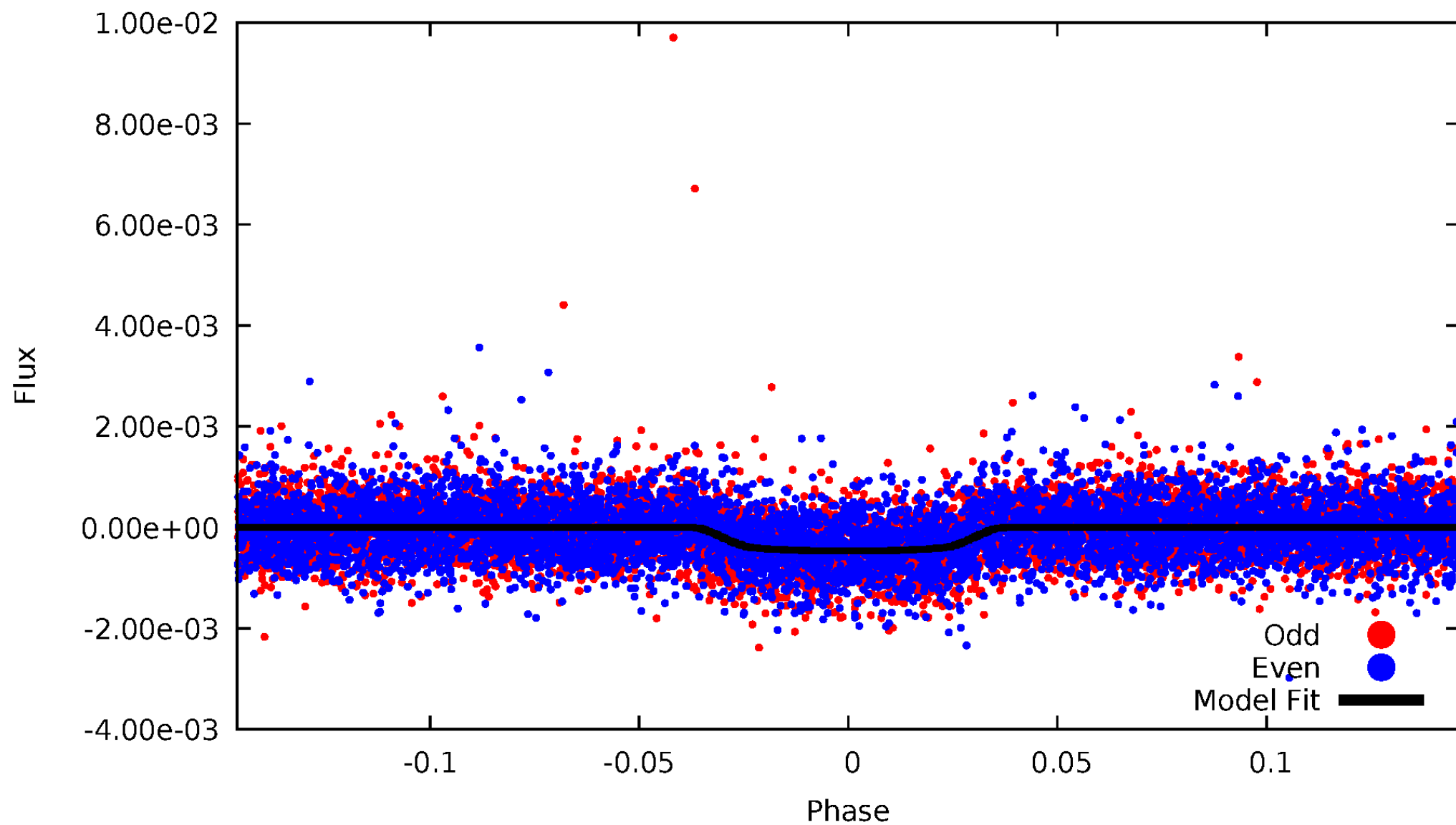


TCE 009842906-01



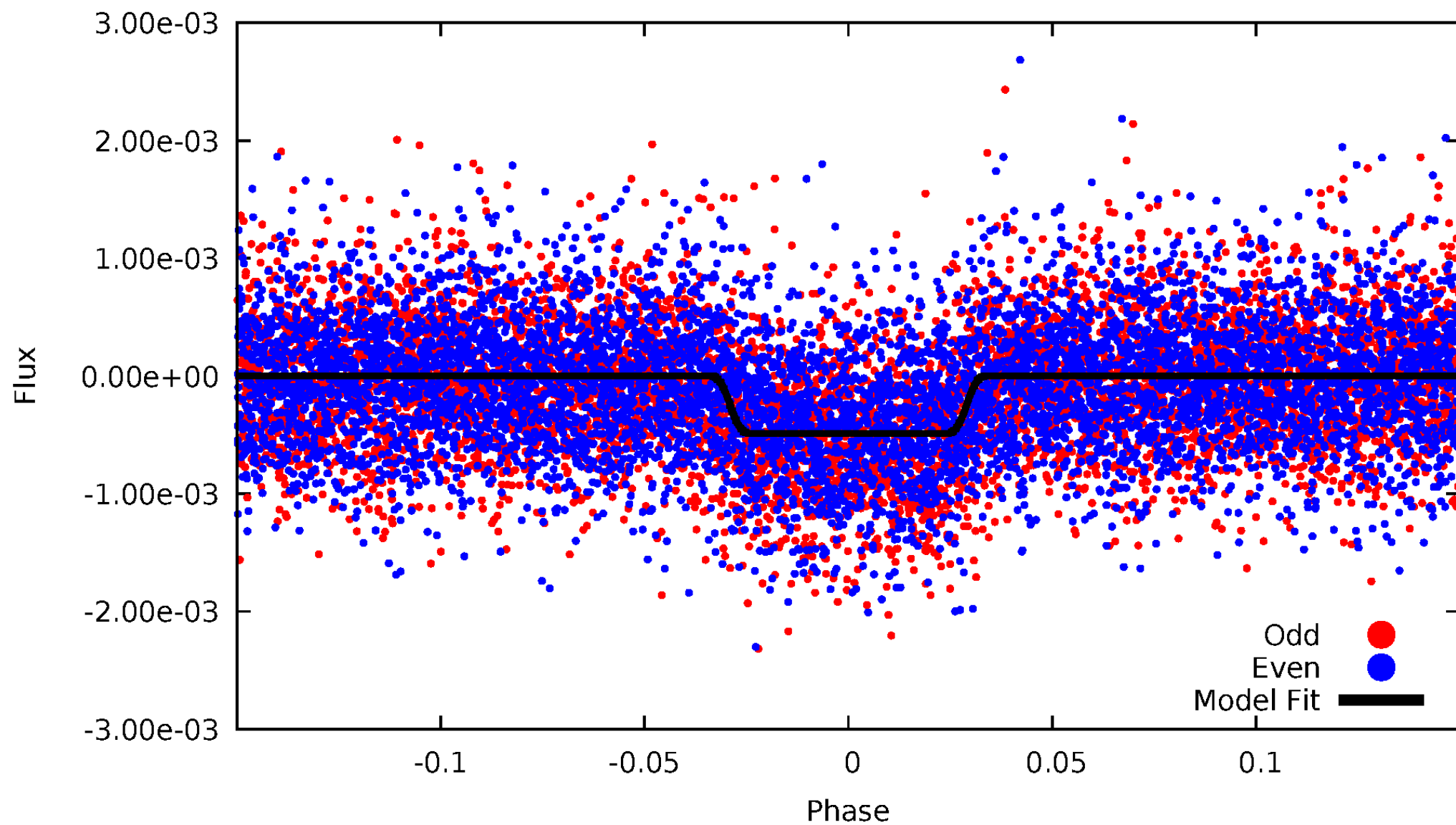
DV Odd/Even

TCE 009842906-01



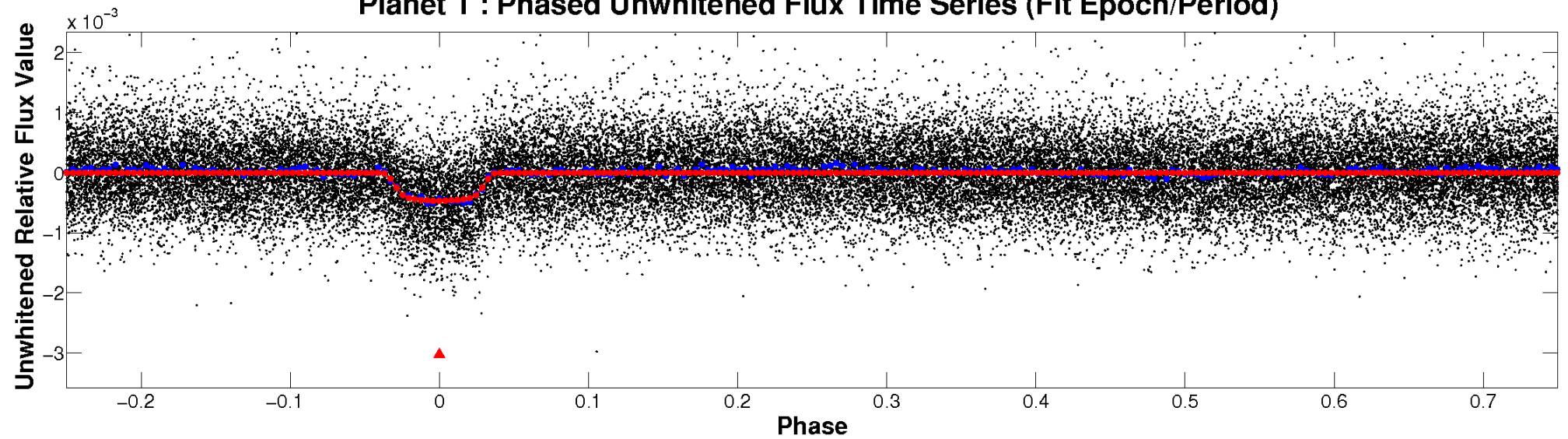
ALT Odd/Even

TCE 009842906-01

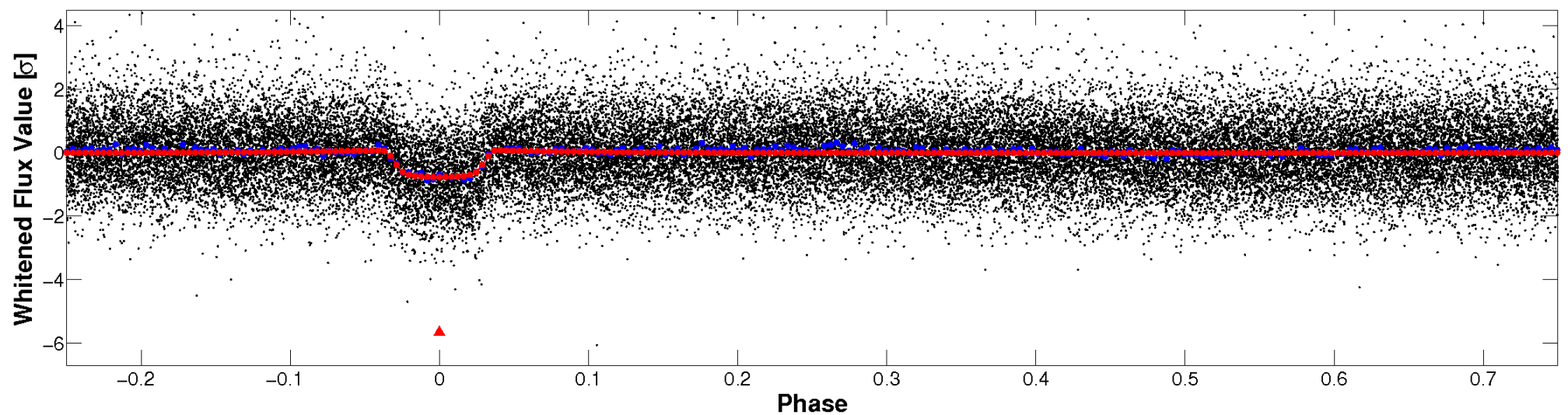


Non-Whitened Vs. Whitened Light Curve

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

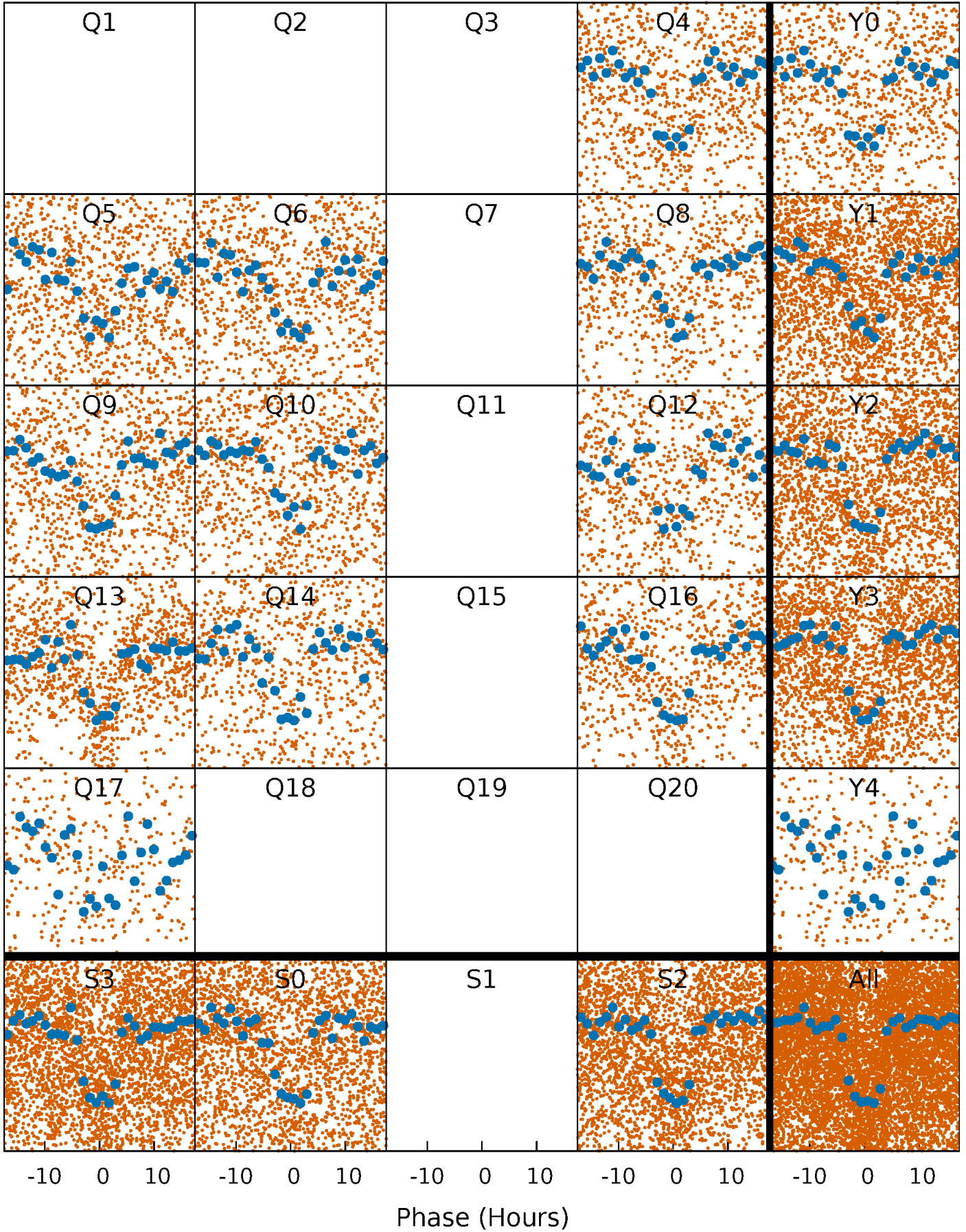


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



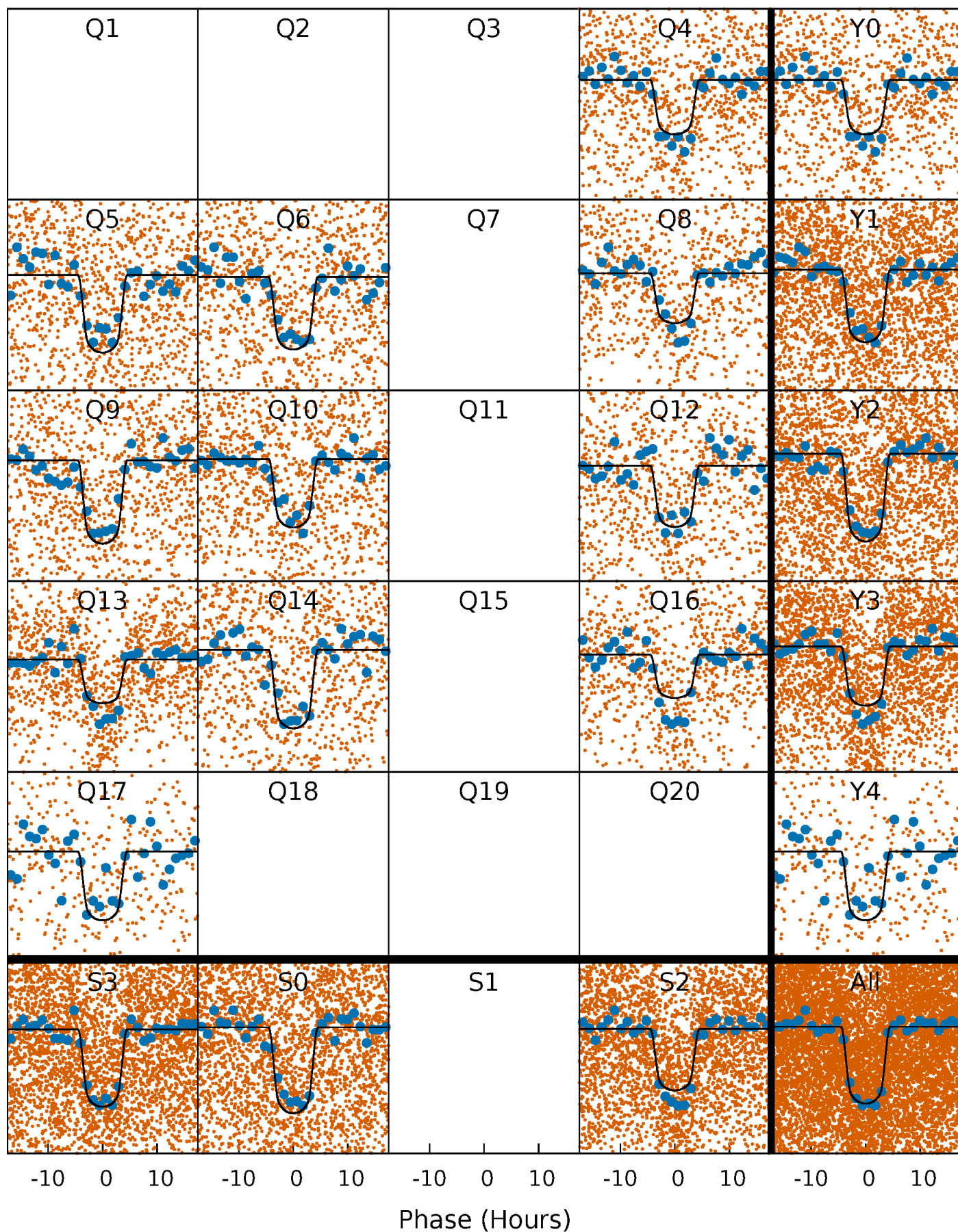
PDC Quarter-Phased Transit Curves

TCE 009842906-01 P= 4.988386 Days $T_0=133.757744$ (BKJD)



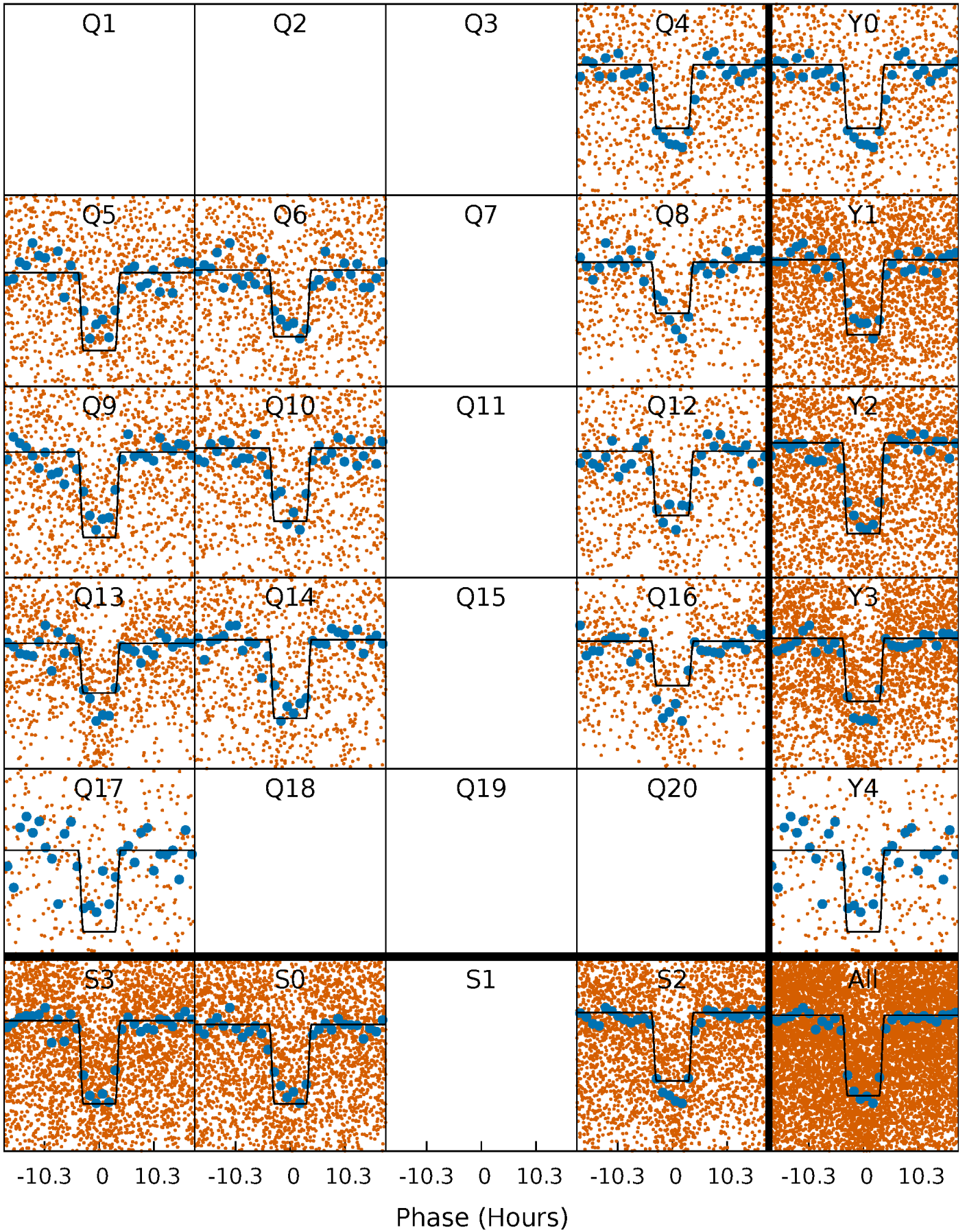
DV Quarter-Phased Transit Curves

TCE 009842906-01 P= 4.988386 Days $T_0=133.757744$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

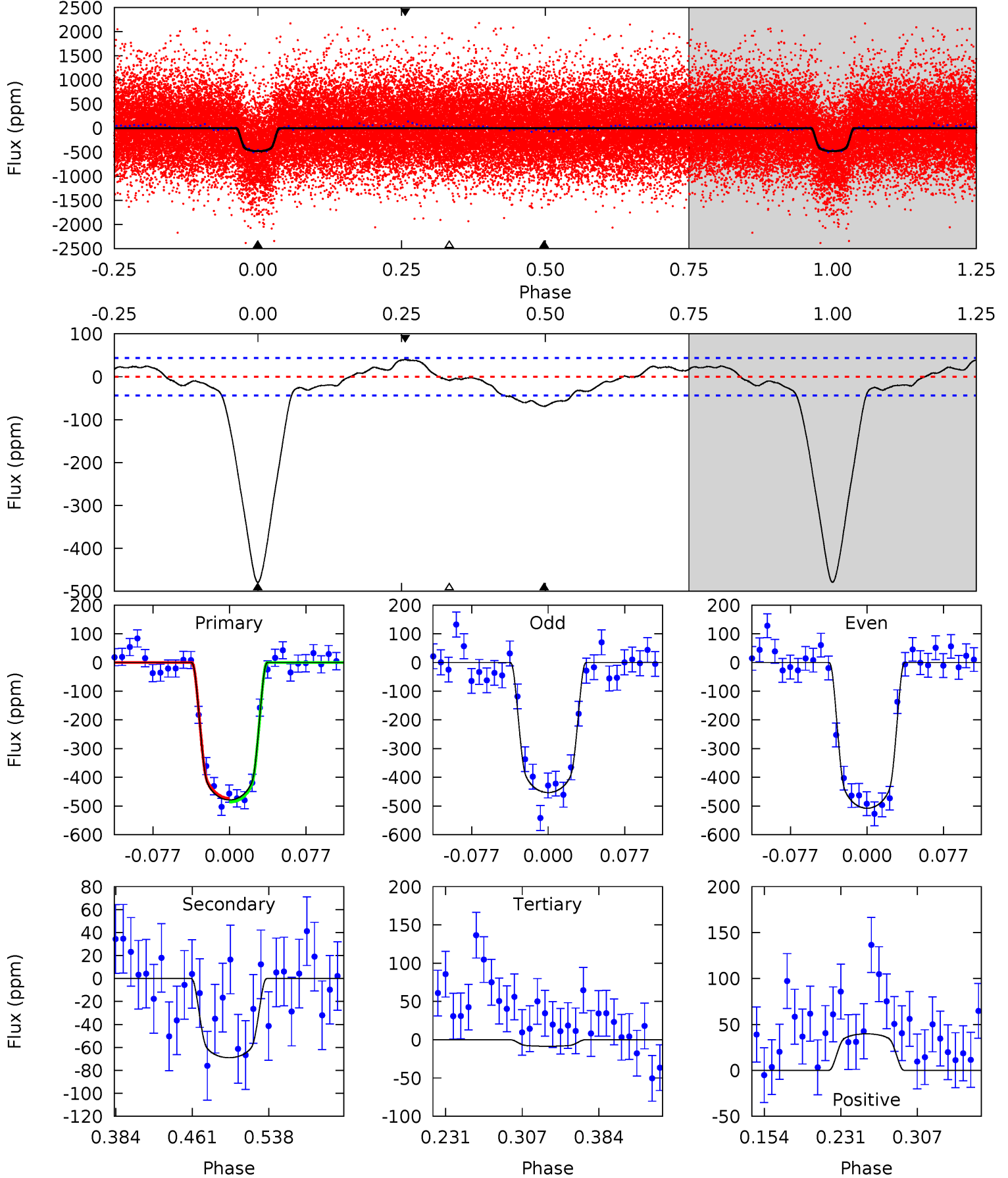
TCE 009842906-01 P= 4.988475 Days $T_0=133.742182$ (BKJD)



DV Model-Shift Uniqueness Test

009842906-01, P = 4.988386 Days, E = 133.757744 Days

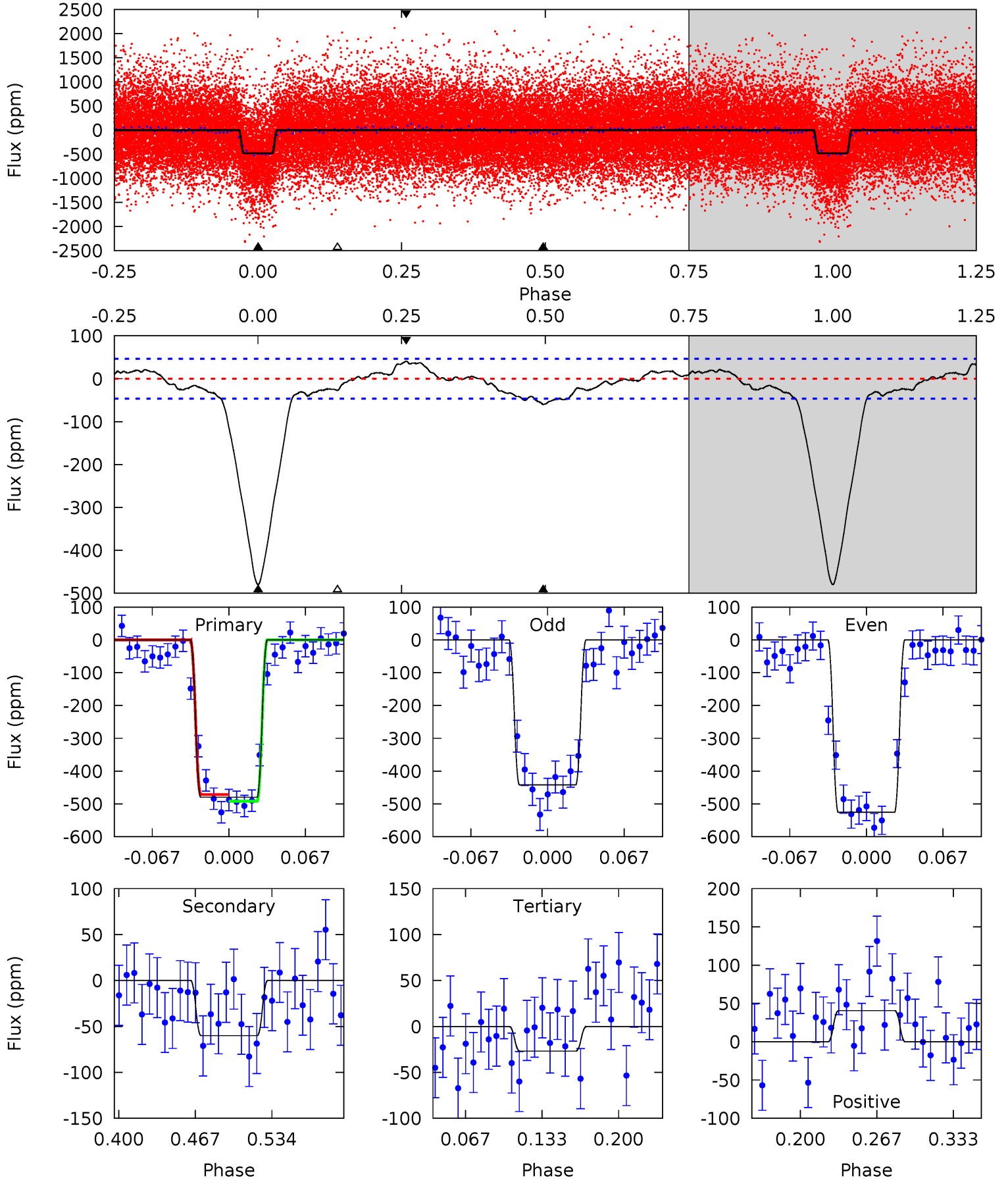
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.8	7.31	0.90	4.21	4.62	1.77	2.03	49.9	46.5	6.41	3.10	2.89	1.06	0.08	0.66



Alt Model-Shift Uniqueness Test

009842906-01, P = 4.988475 Days, E = 133.742182 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.1	6.02	2.69	4.07	4.65	1.83	1.94	45.4	44.0	3.32	1.94	4.20	1.04	0.08	1.03



Stellar Parameters For KIC 009842906

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6418^{+179}_{-246}	$4.395^{+0.054}_{-0.216}$	$0.070^{+0.250}_{-0.350}$	$1.171^{+0.375}_{-0.150}$	$1.241^{+0.167}_{-0.184}$	$1.090^{+0.303}_{-0.566}$
	+3%/-4%	+1%/-5%	+357%/-500%	+32%/-13%	+13%/-15%	+28%/-52%
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 009842906-01 / KOI 1493.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-69 ± 9	$3.19^{+0.60}_{-0.29}$	1766^{+127}_{-92}	4037^{+140}_{-146}	14^{+3}_{-4}
Alt.	-60 ± 10	$2.91^{+0.52}_{-0.27}$	1766^{+125}_{-91}	4075^{+145}_{-169}	14^{+4}_{-4}

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

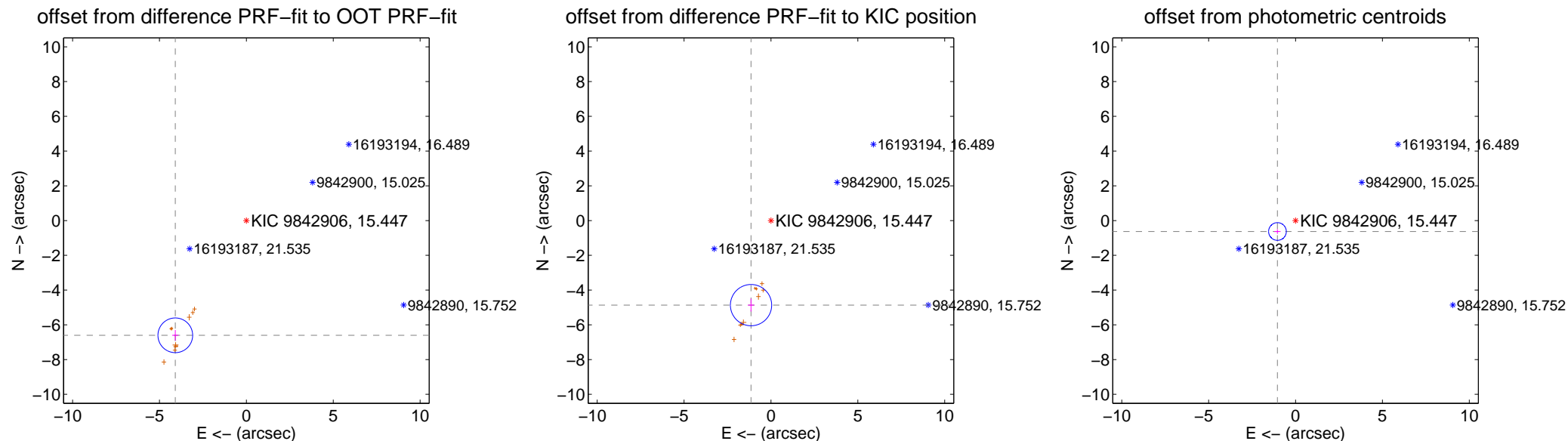
DV Centroid Data

Supplemental centroid analysis for 009842906-01. Kepler magnitude: 15.45. Transit SNR 33.81

There are 0 quarters with good PRF difference image offsets

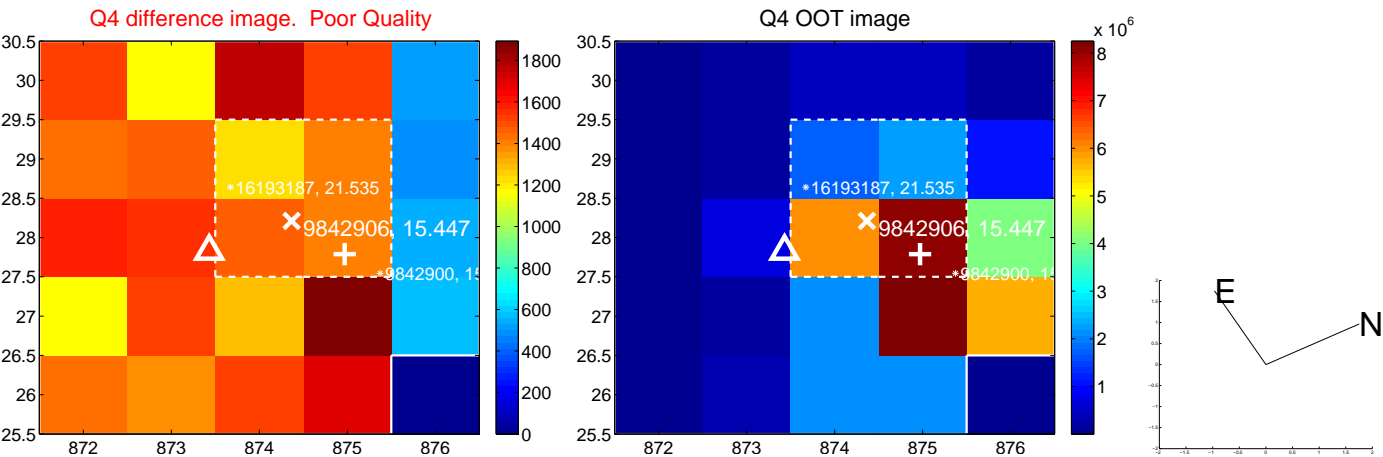
The OOT PRF centroid is offset from the target star catalog position by about 2.81 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.766 ± 0.333	23.33	4.089 ± 0.181	-6.603 ± 0.302
PRF-fit source offset from KIC position	4.999 ± 0.396	12.63	1.146 ± 0.188	-4.866 ± 0.367
photometric centroid source offset	1.22 ± 0.17	7.17	1.04 ± 0.18	-0.63 ± 0.13

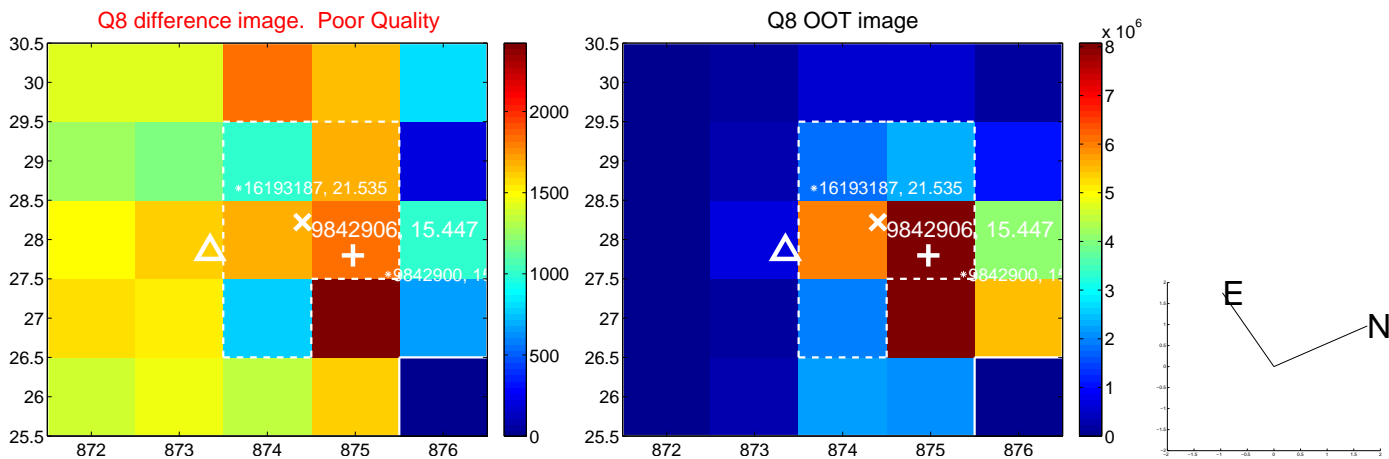
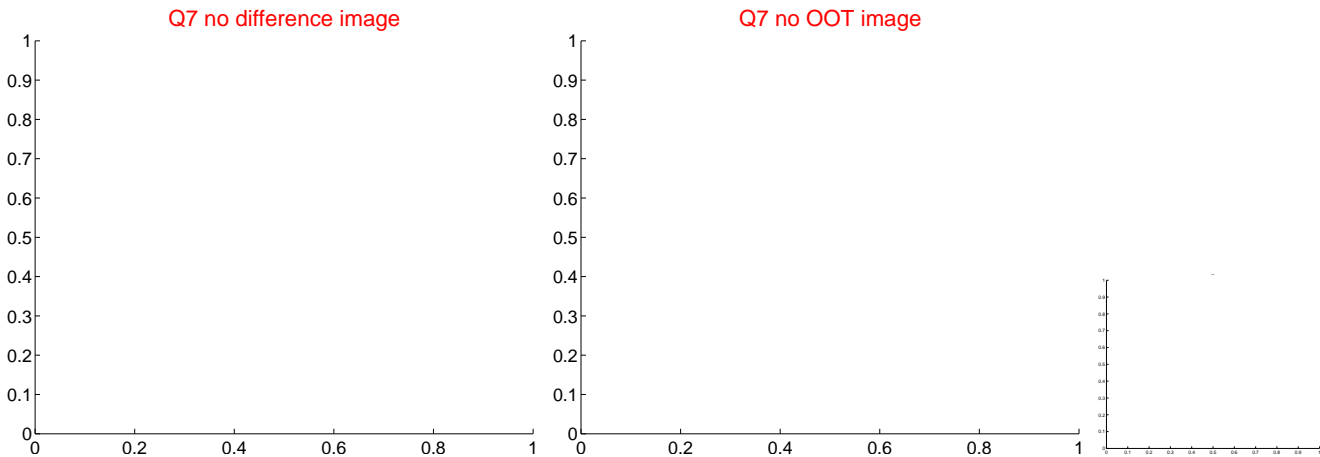
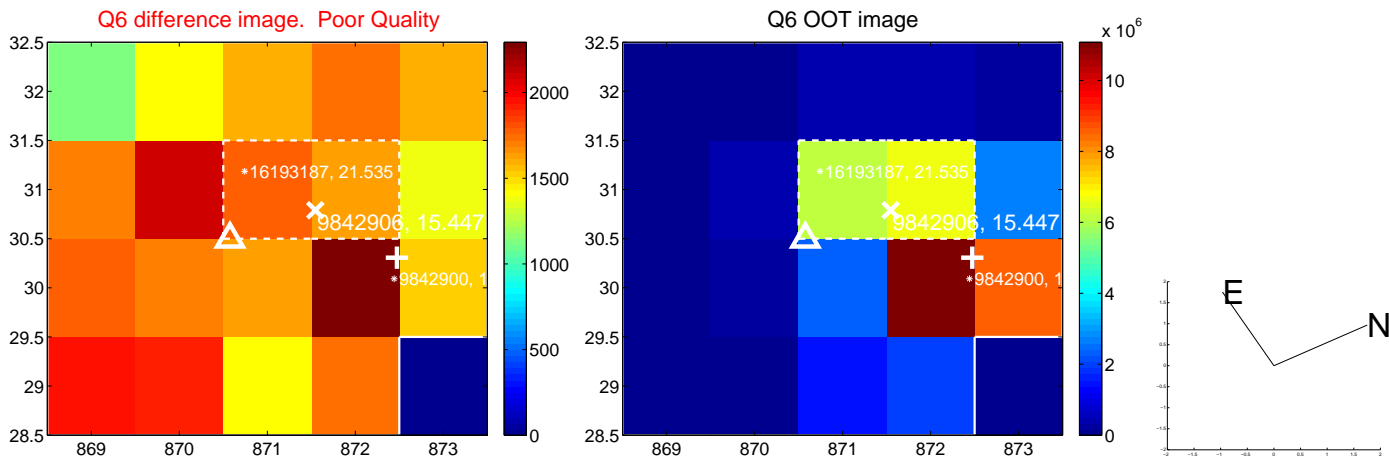
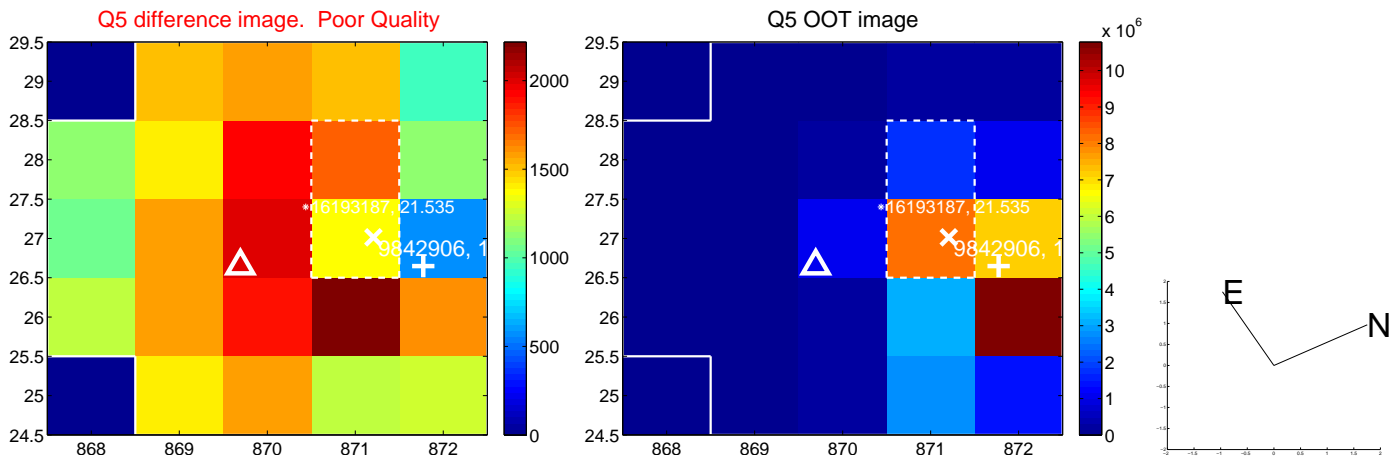


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

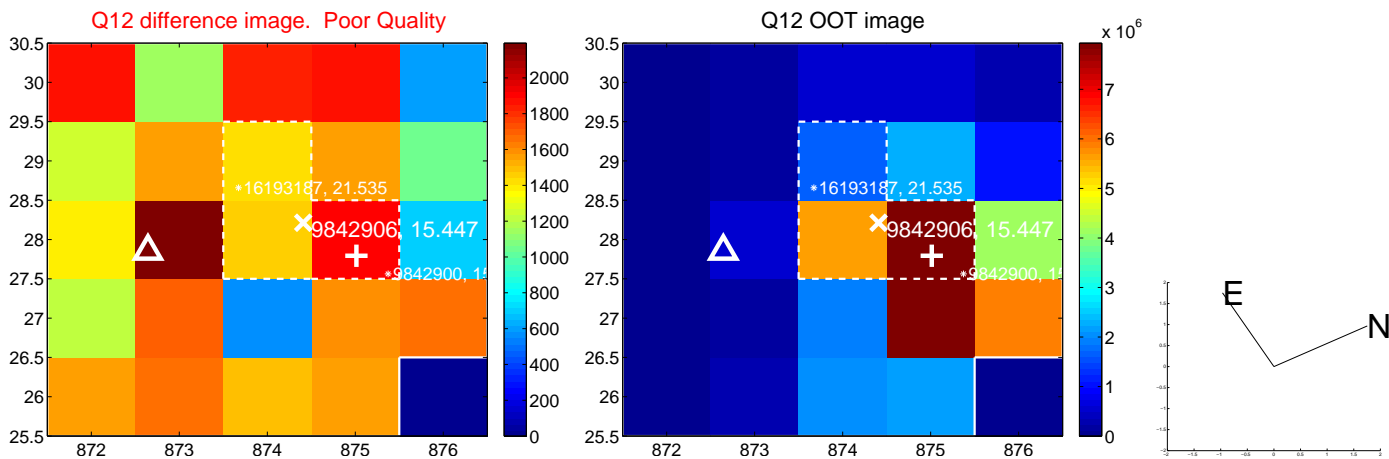
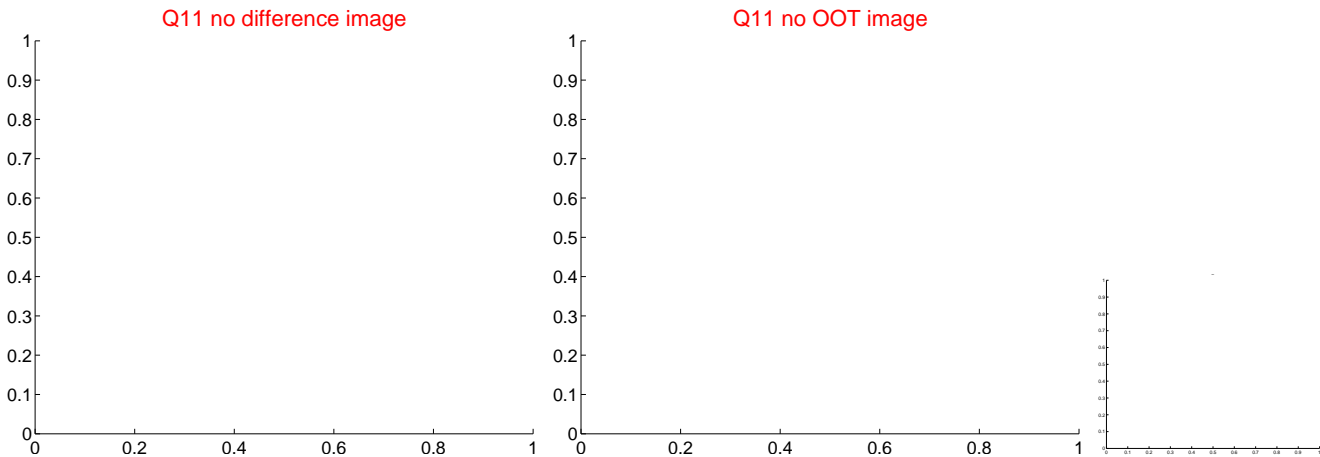
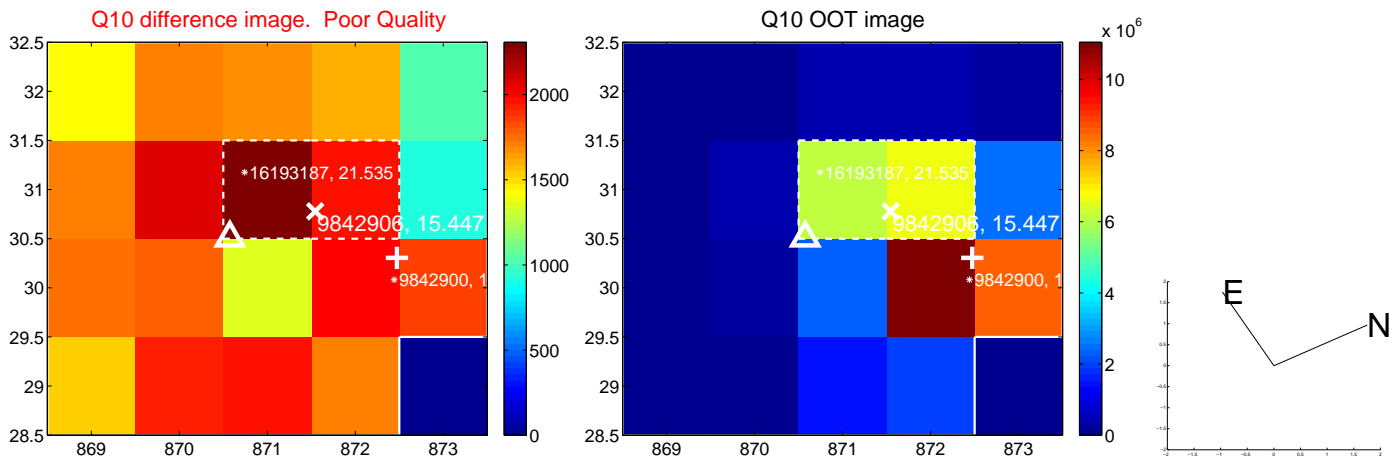
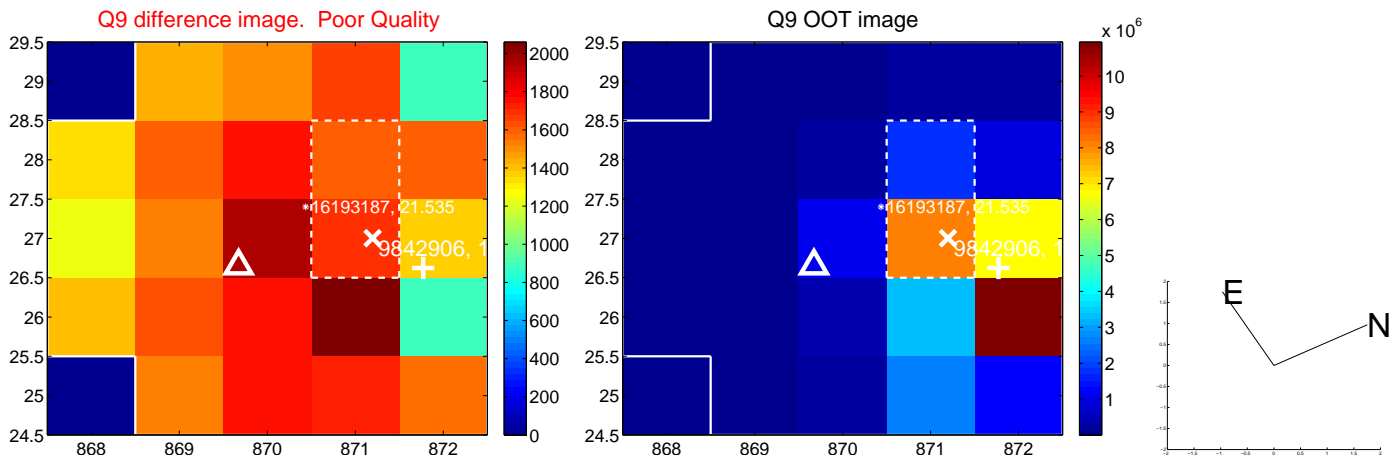
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



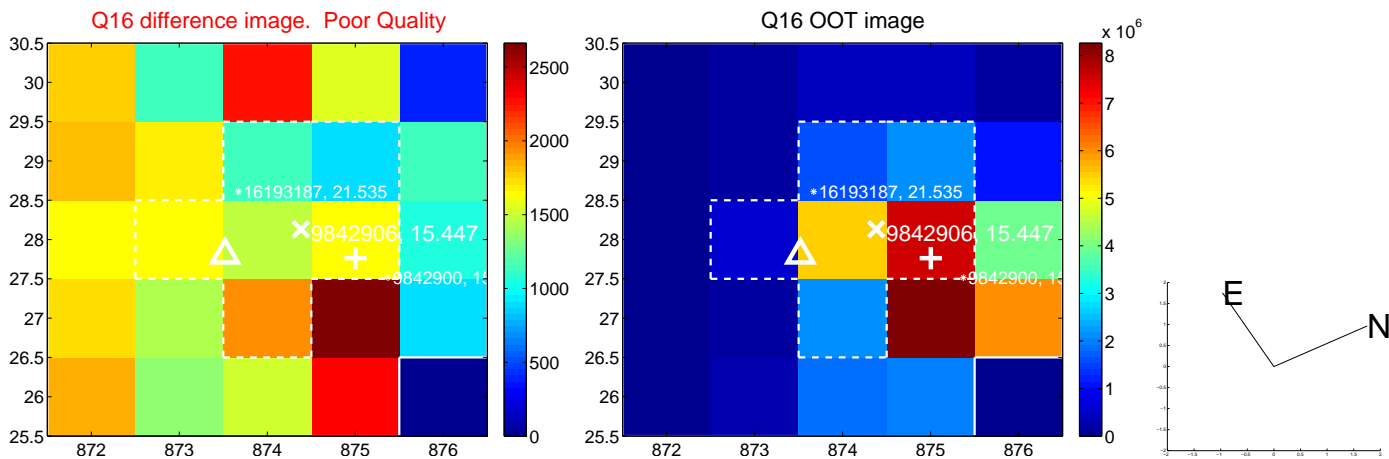
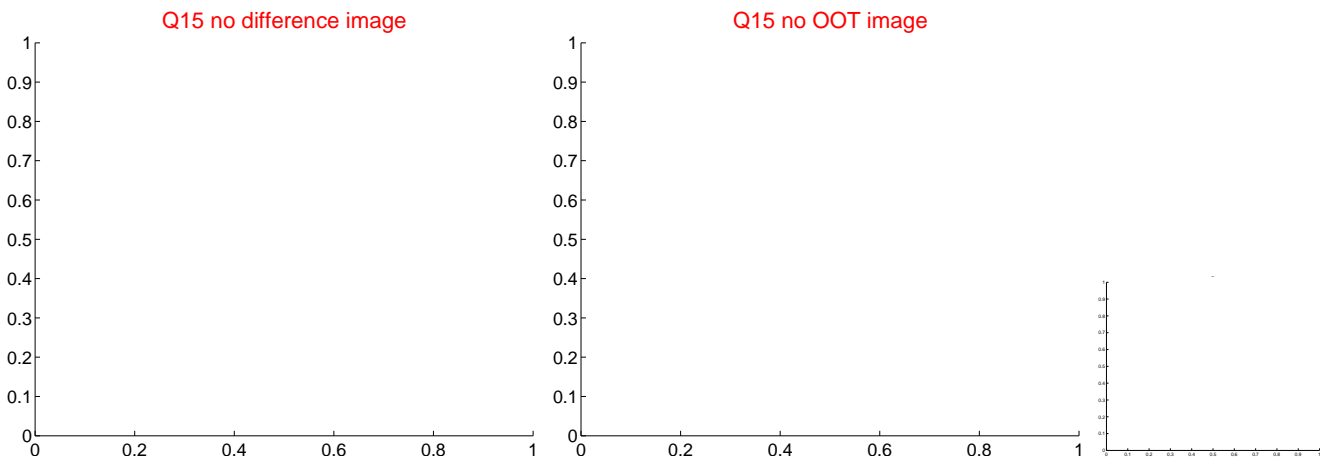
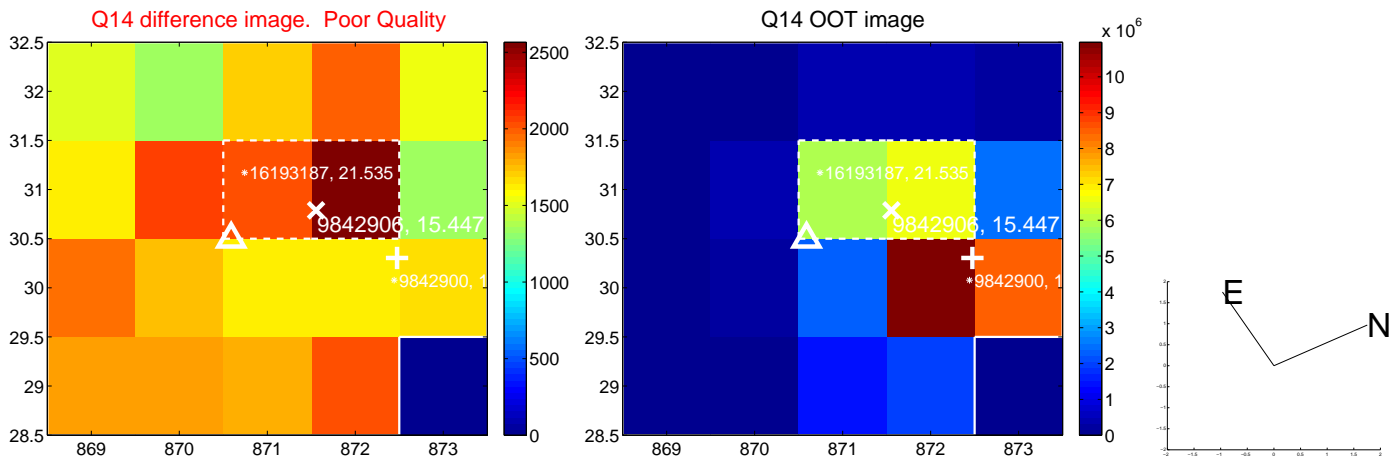
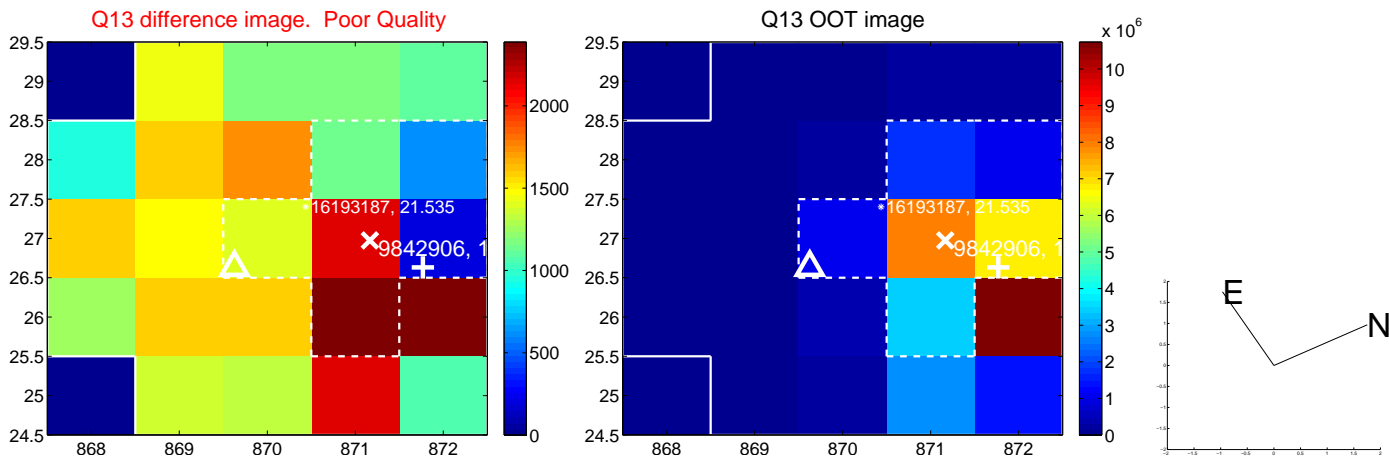
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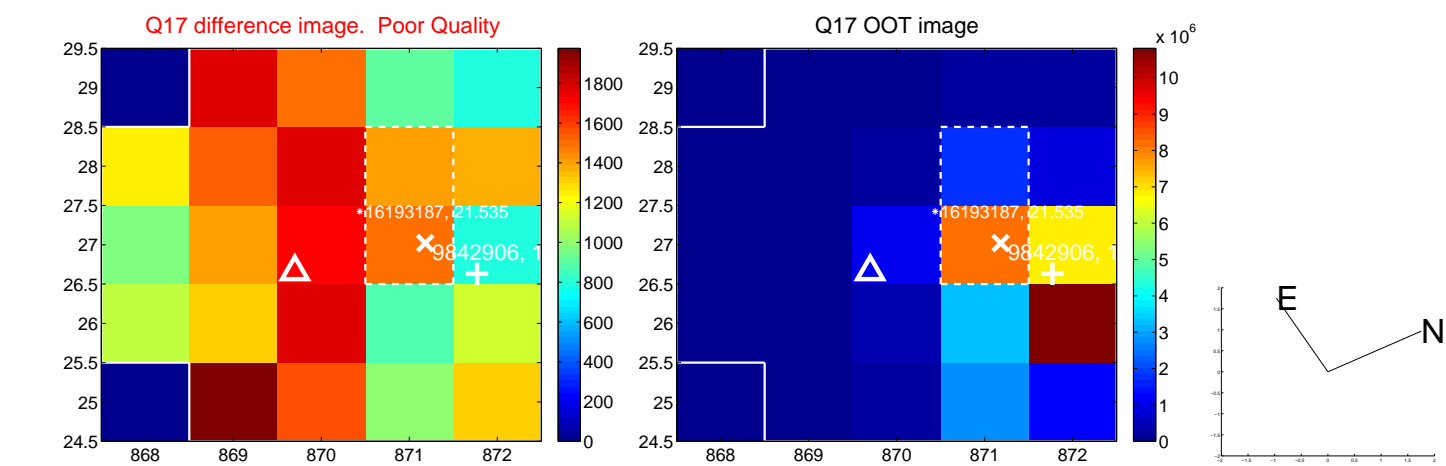
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



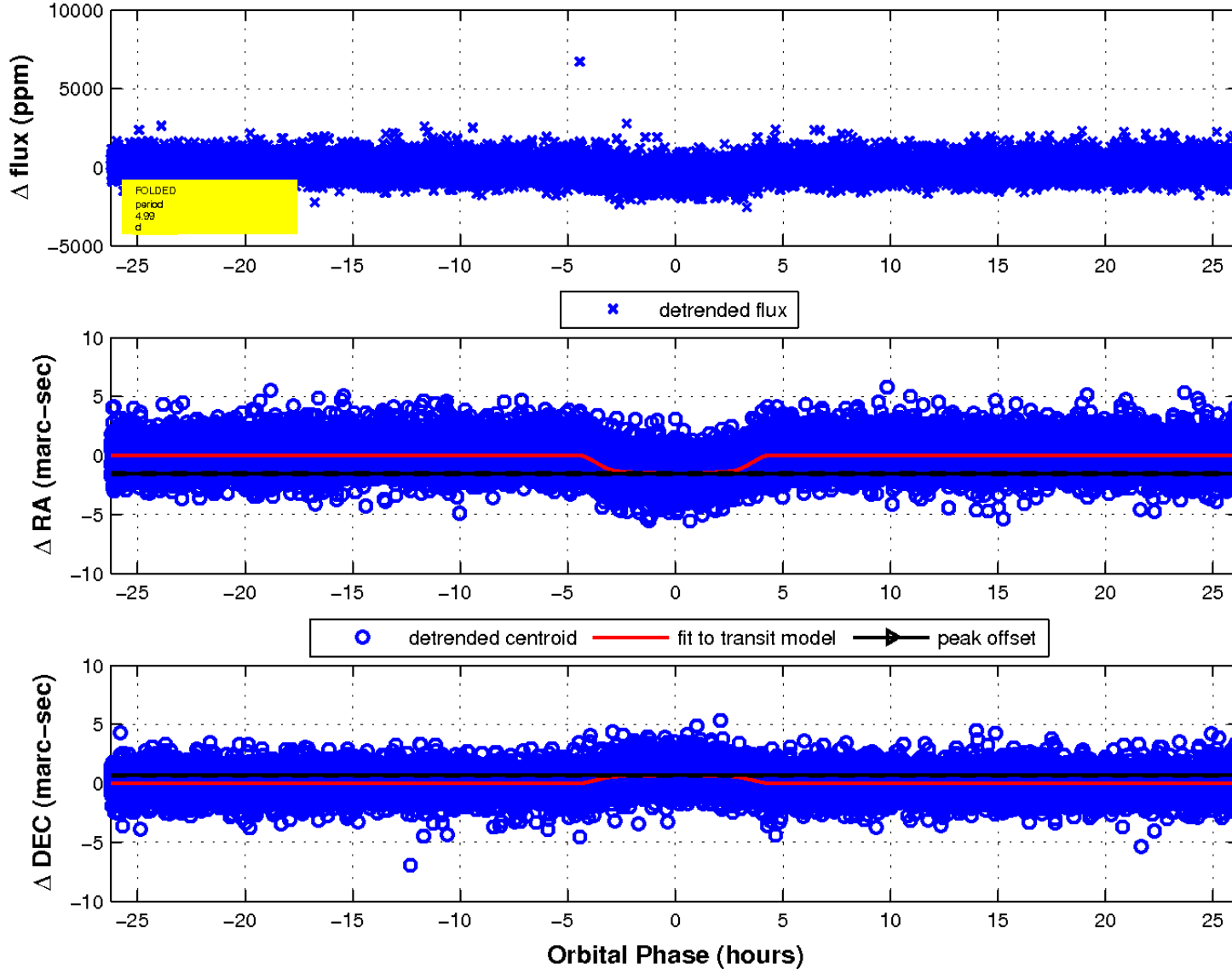
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

