

KIC 007023973

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})
007023973-01	OBS	No	0.772822	131.720250	10.1	2.232	10.2	10.3	0.65	4441	0.24	728.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007023973-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_KIC_POS—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.

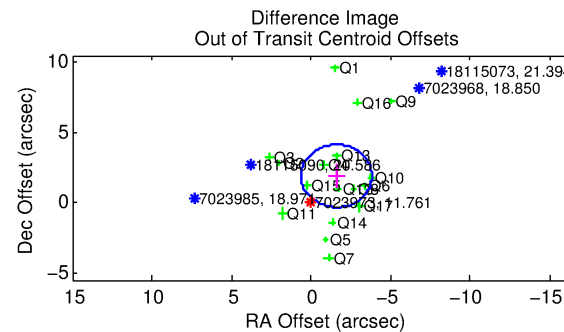
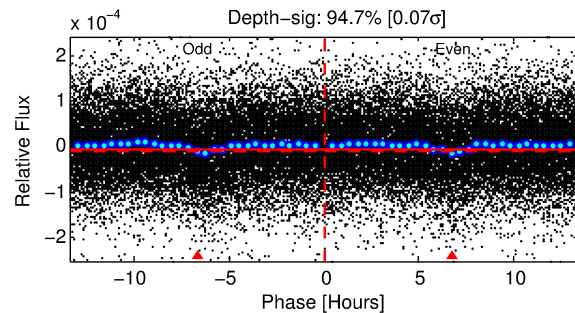
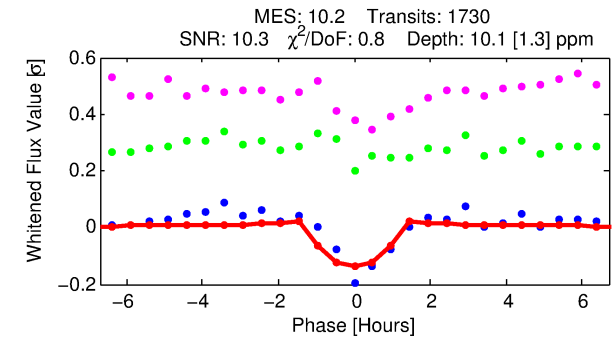
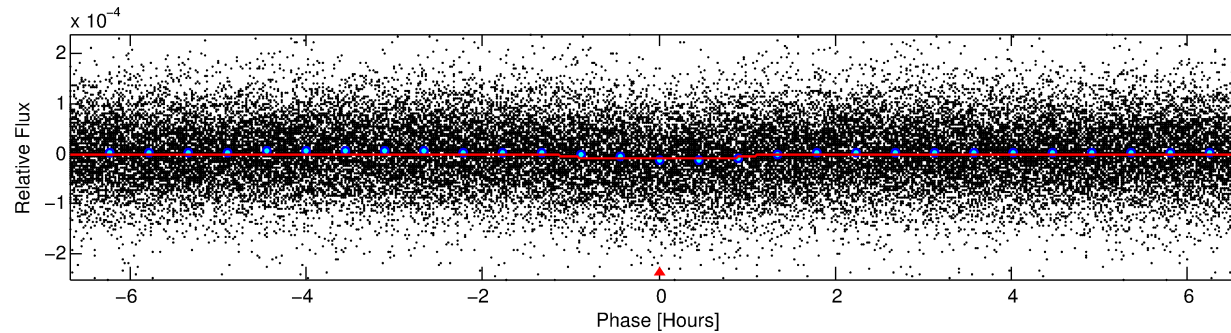
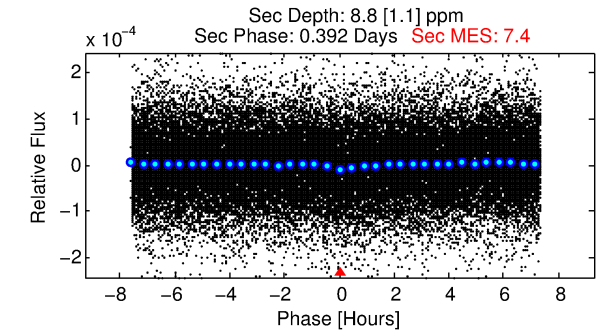
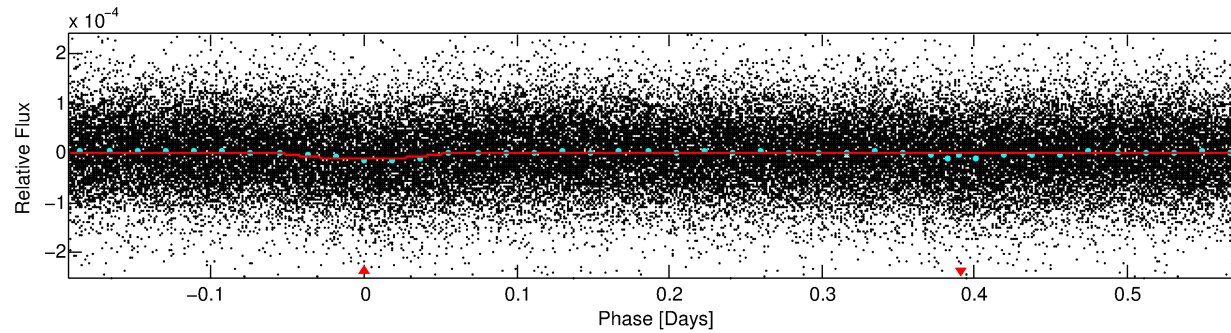
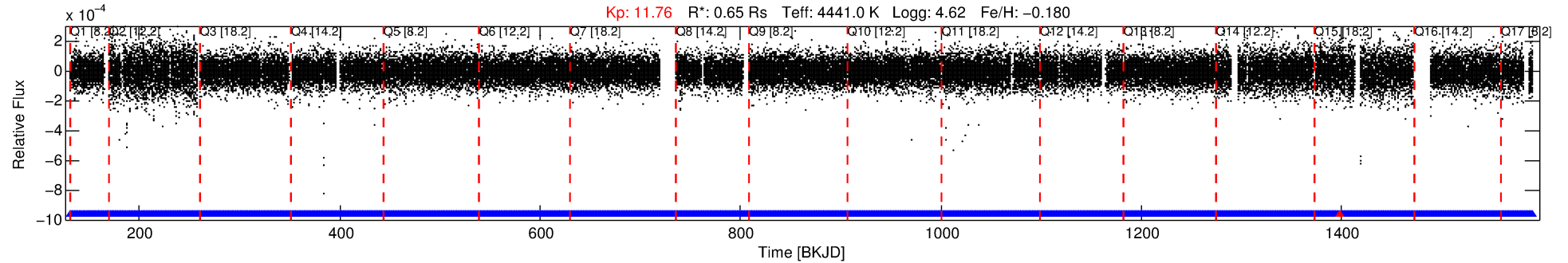
Ephemeris Match Information For 007023973-01

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
007023973-01	7023973	007023917-pri	7023917	1:1	47.9	-11	-3	10.12	11.77	7350.00	Direct-PRF	0	2.69	0.96

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: 7023973 Candidate: 1 of 1 Period: 0.773 d



DV Fit Results:

Period = 0.77282 [0.00001] d
Epoch = 131.7203 [0.0027] BKJD
Rp/R* = 0.0034 [0.0009]
a/R* = 1.63 [0.89]
b = 0.86 [0.27]
Seff = 728.88 [74.72]
Teq = 1325 [34] K
Rp = 0.24 [0.06] Re
a = 0.0142 [0.0007] AU
Ag = 16.41 [8.49] [1.81σ]
Teffp = 4123 [533] K [5.24σ]

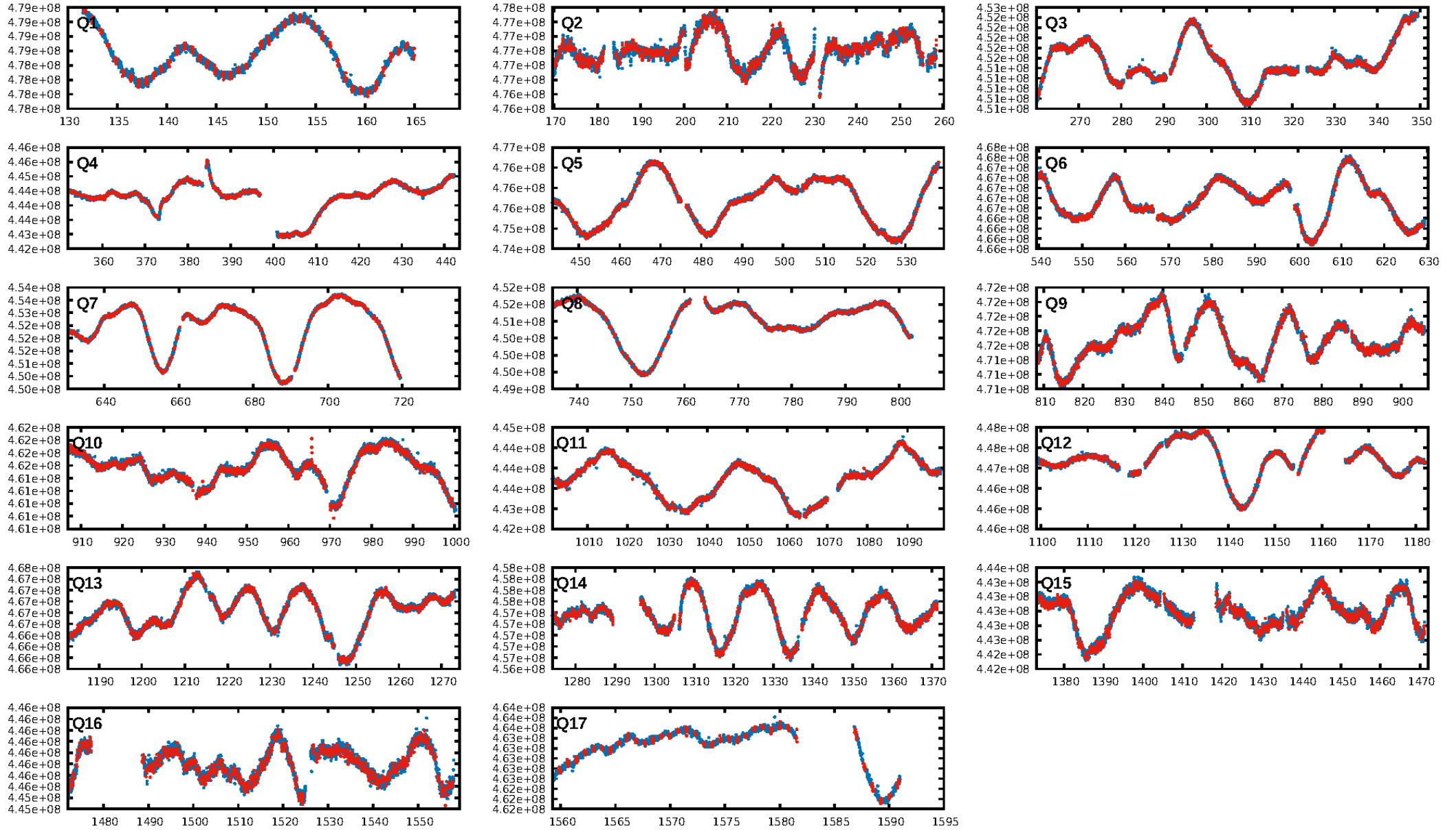
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.51e-21
RollingBand-fgt: 1.00 [1650/1651]
GhostDiagnostic-chr: -0.1289
Centroid-sig: 0.2%
Centroid-so: 0.286 arcsec [0.29σ]
OotOffset-rm: 2.497 arcsec [3.36σ]
KicOffset-rm: 1.979 arcsec [3.65σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.12 [2/17]
DiffImageOverlap-fno: 1.00 [17/17]

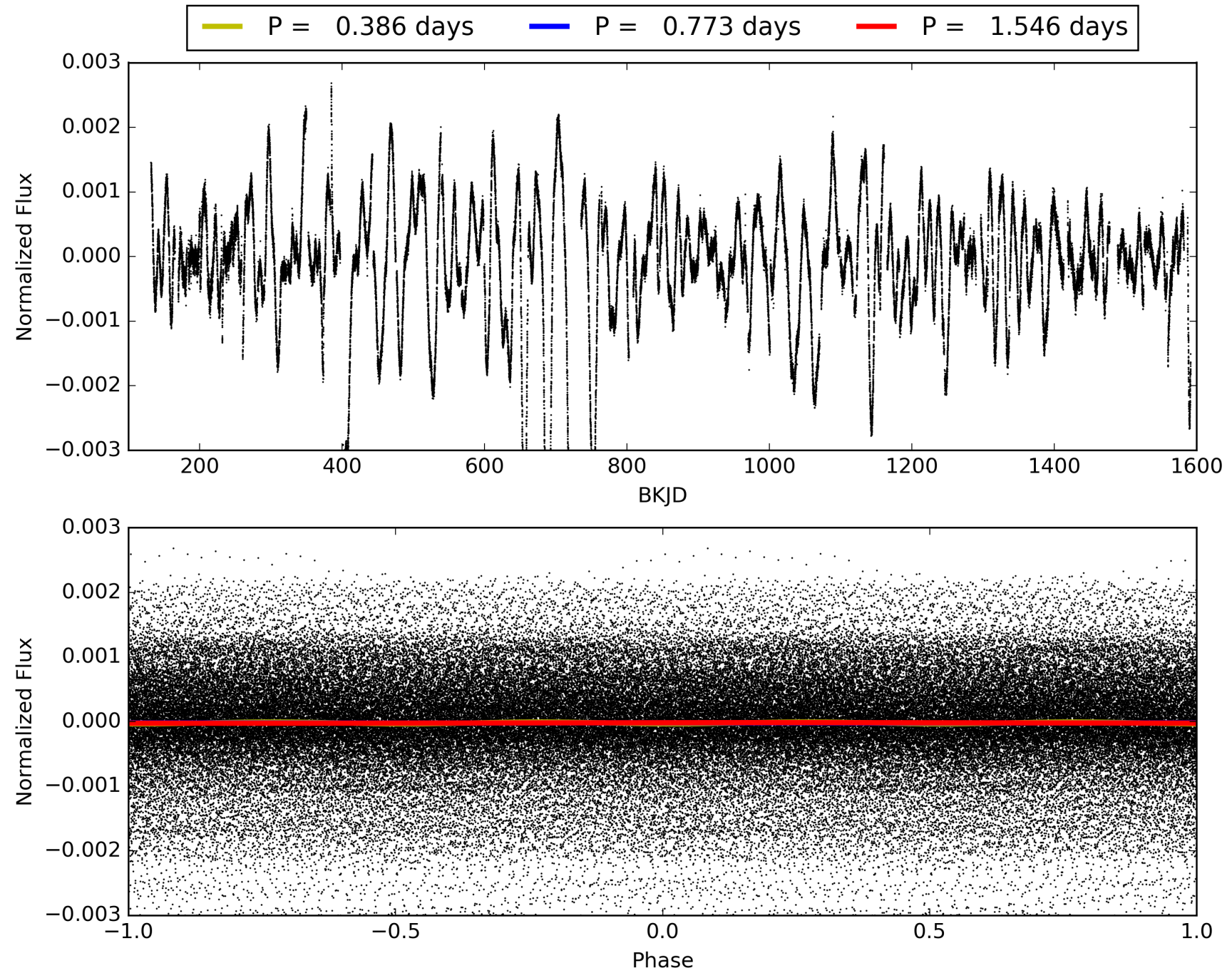
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:35:00 Z

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

TCE 007023973-01, PDC Light Curves

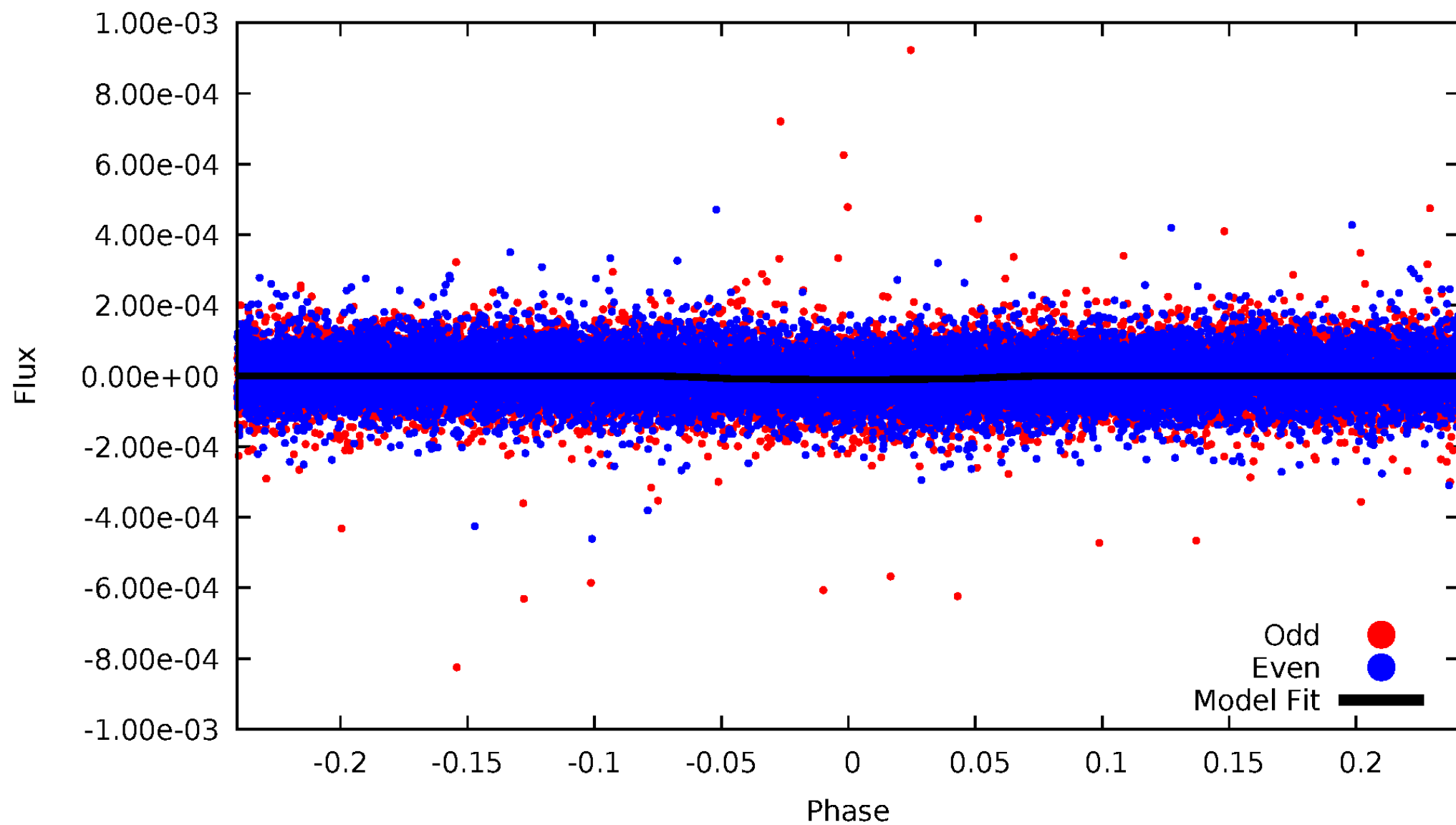


TCE 007023973-01



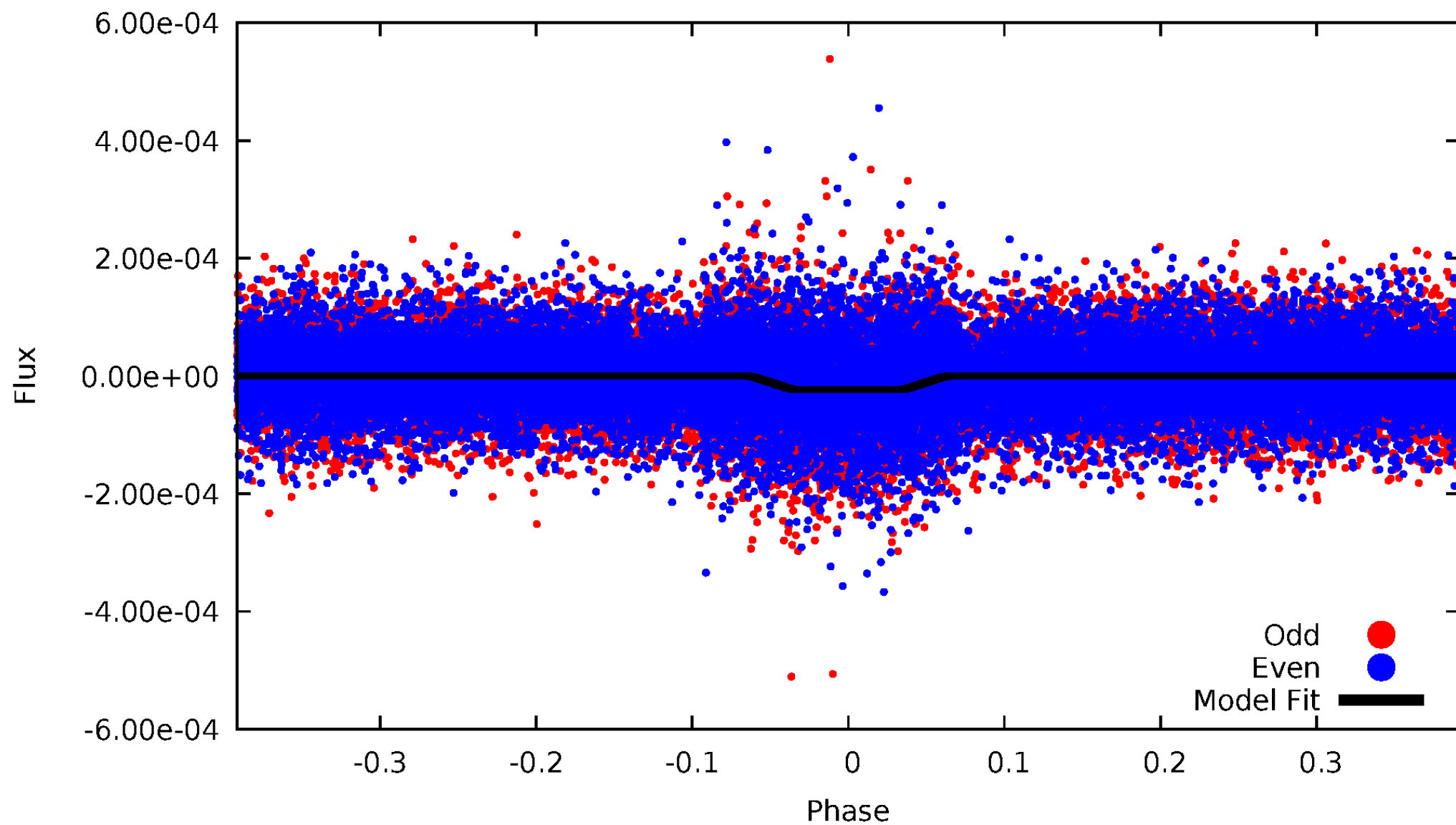
DV Odd/Even

TCE 007023973-01



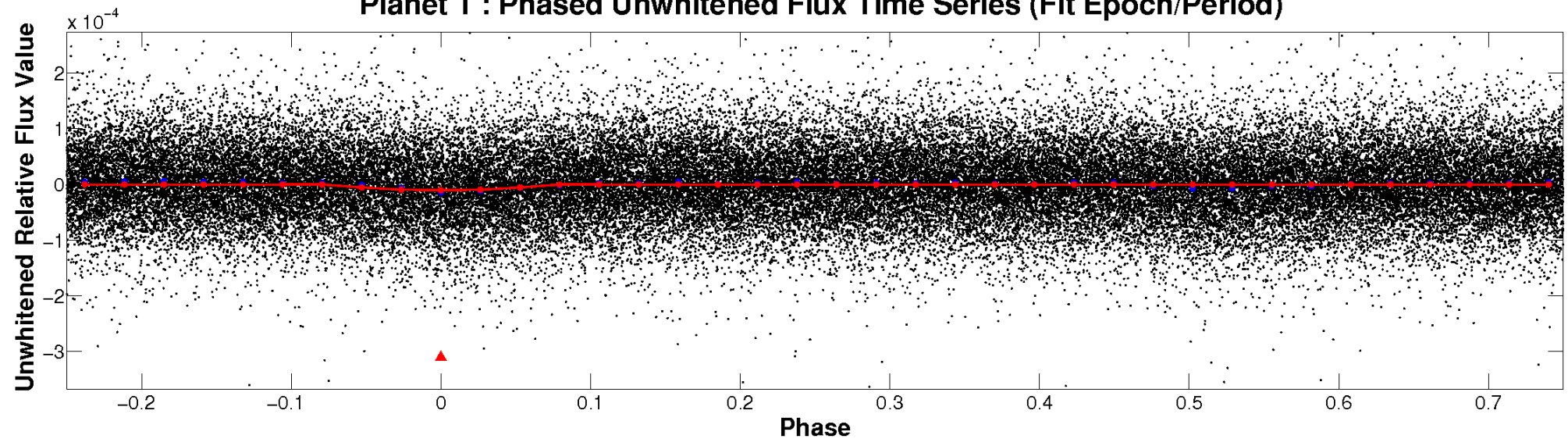
ALT Odd/Even

TCE 007023973-01

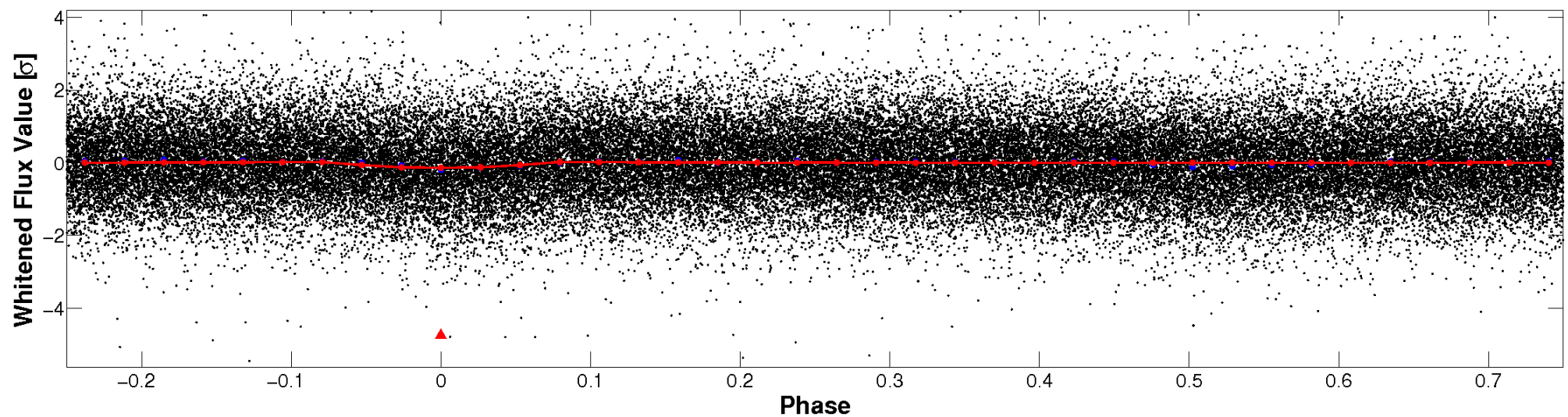


Non-Whitened Vs. Whitened Light Curve

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

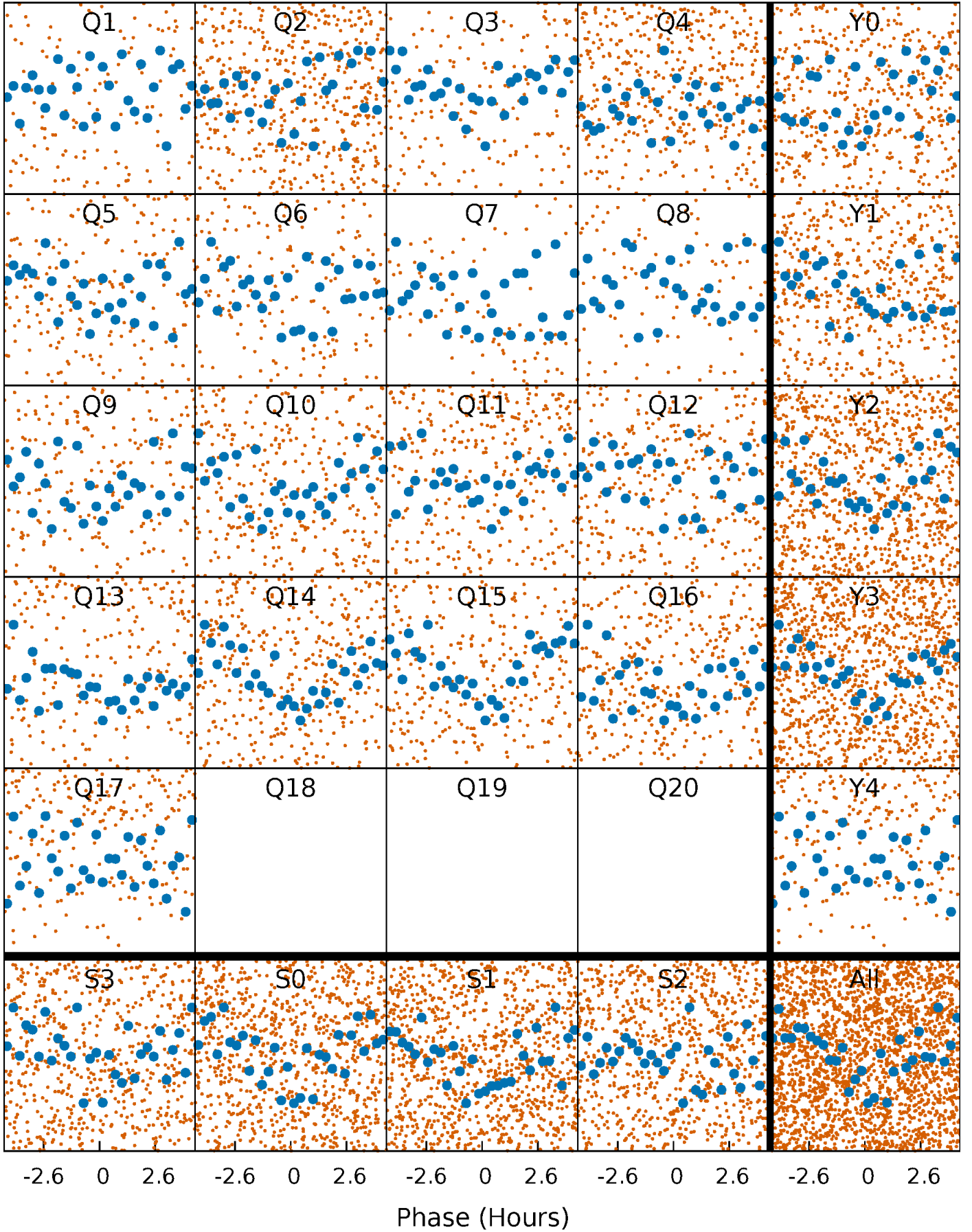


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



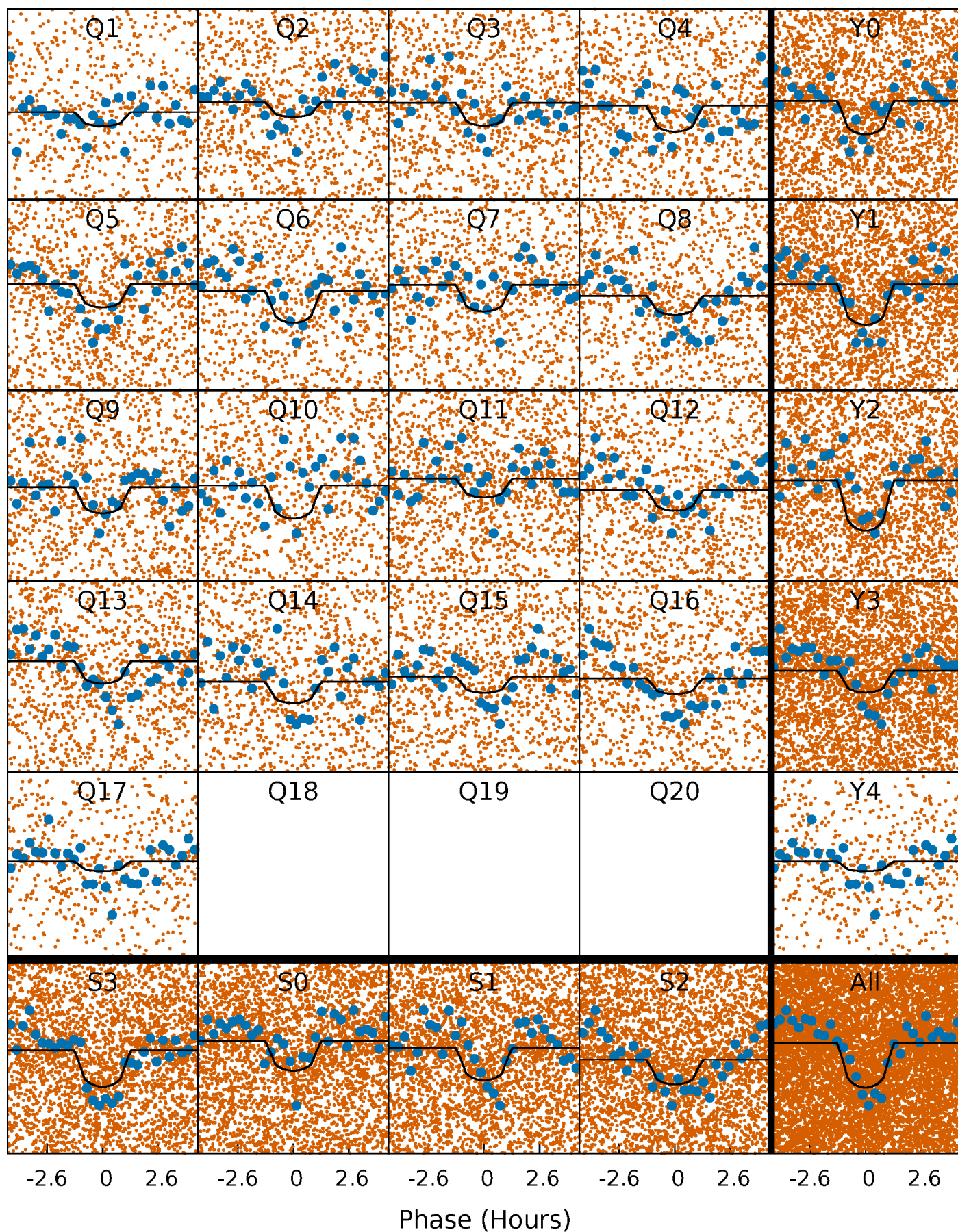
PDC Quarter-Phased Transit Curves

TCE 007023973-01 P= 0.772822 Days $T_0=131.720250$ (BKJD)



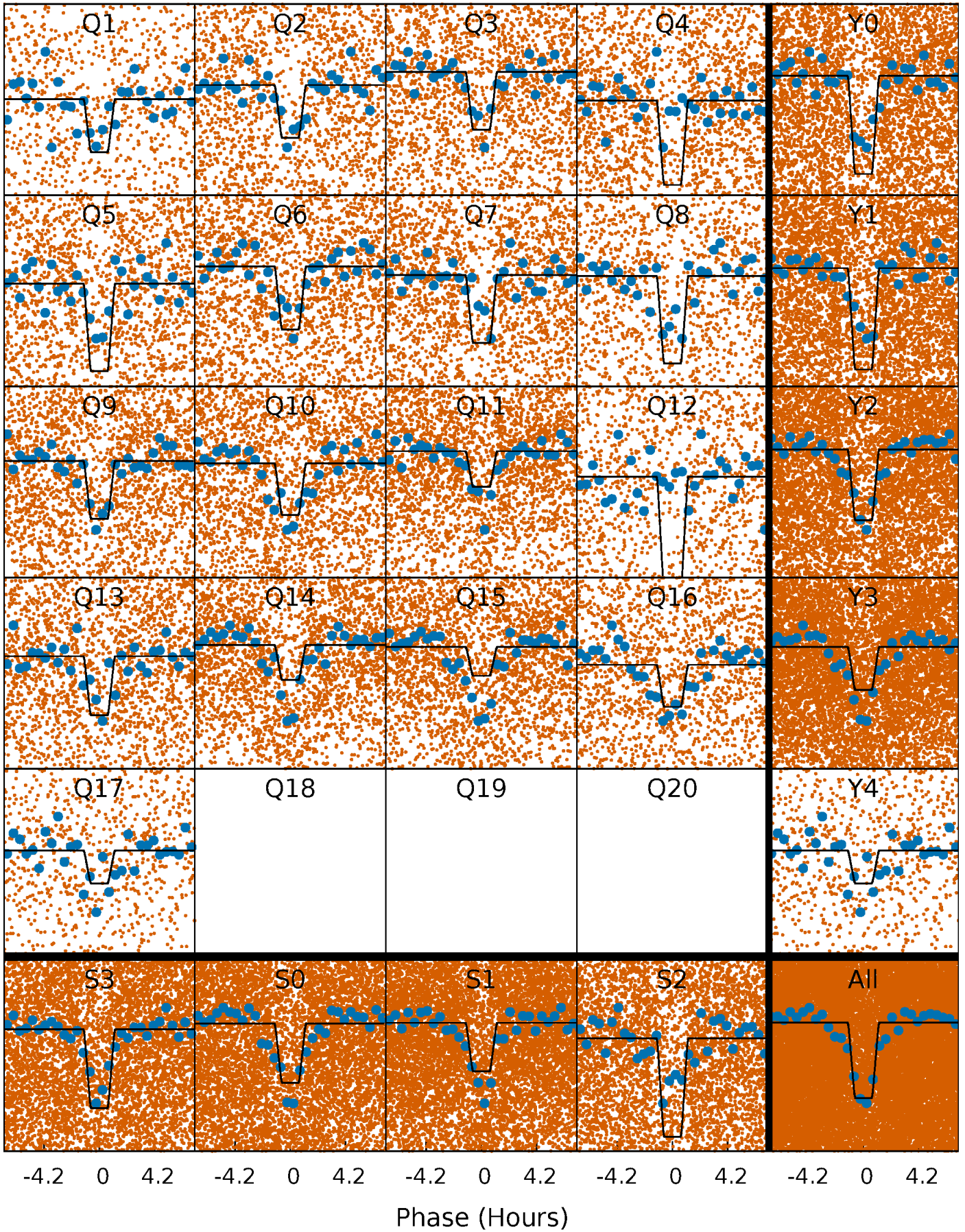
DV Quarter-Phased Transit Curves

TCE 007023973-01 P= 0.772822 Days $T_0=131.720250$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

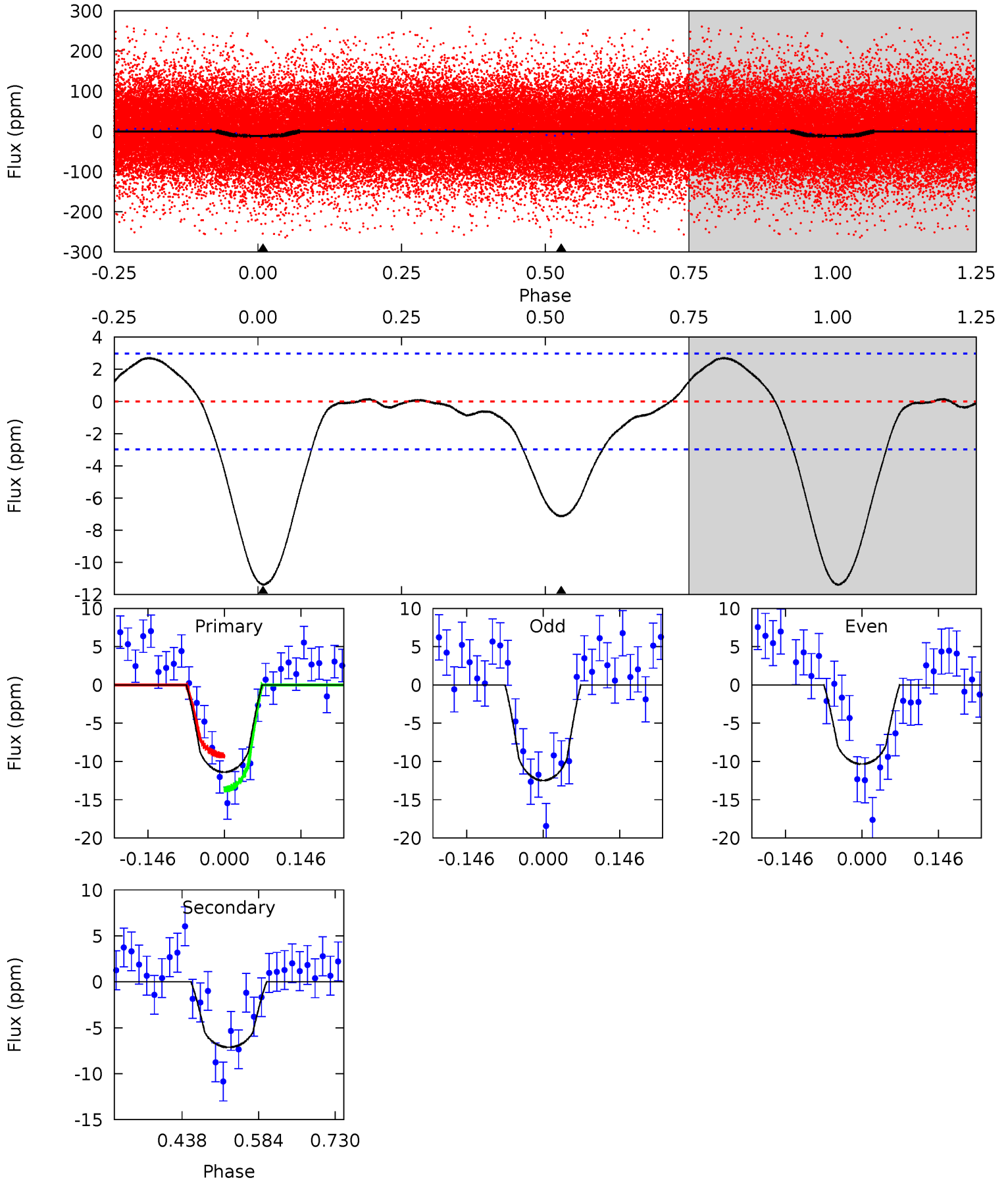
TCE 007023973-01 P= 0.772842 Days $T_0=131.706212$ (BKJD)



DV Model-Shift Uniqueness Test

007023973-01, P = 0.772822 Days, E = 130.947428 Days

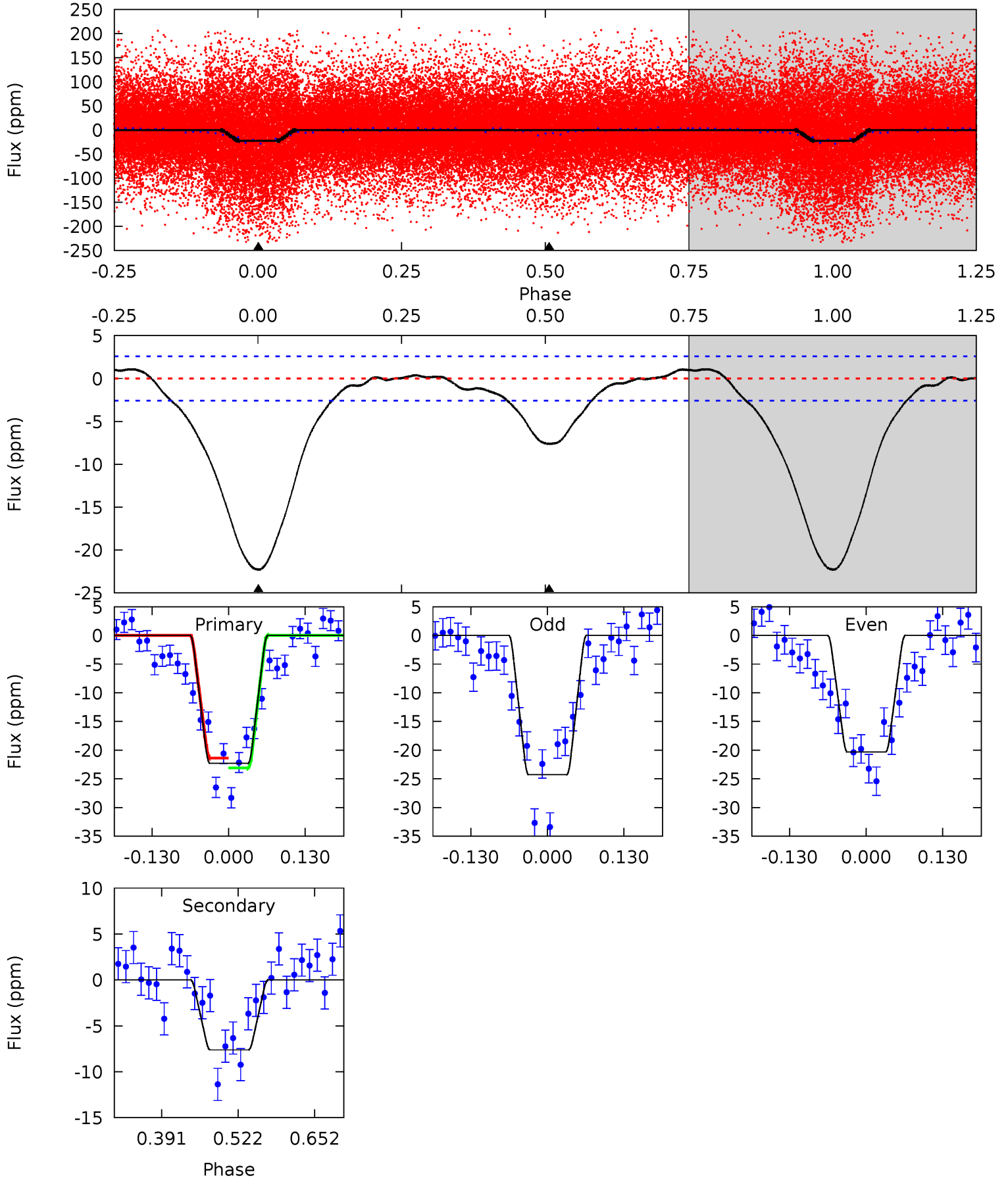
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	10.7	0	0	4.48	1.45	1.69	17.2	17.2	10.7	10.7	1.62	0.96	0.19	3.34



Alt Model-Shift Uniqueness Test

007023973-01, P = 0.772842 Days, E = 130.933370 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.9	13.3	0	0	4.51	1.51	1.78	38.9	38.9	13.3	13.3	3.43	1.00	0.05	1.51



Stellar Parameters For KIC 007023973

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4441^{+79}_{-79}	$4.619^{+0.042}_{-0.015}$	$-0.180^{+0.150}_{-0.150}$	$0.650^{+0.025}_{-0.035}$	$0.641^{+0.041}_{-0.025}$	$3.285^{+0.515}_{-0.231}$
	+2%/-2%	+1%/-0%	+83%/-83%	+4%/-5%	+6%/-4%	+16%/-7%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 007023973-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7 ± 1	$0.25^{+0.06}_{-0.06}$	1842^{+38}_{-37}	3996^{+467}_{-294}	13^{+10}_{-4}
Alt.	-8 ± 1	$0.34^{+0.06}_{-0.06}$	1843^{+37}_{-41}	3619^{+247}_{-199}	$7.339^{+3.476}_{-2.064}$

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

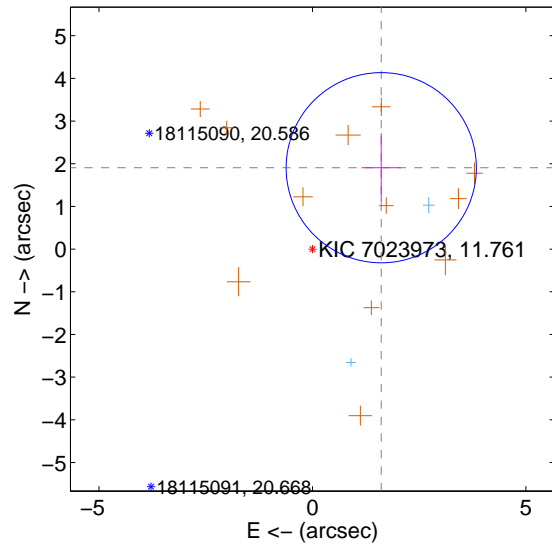
Supplemental centroid analysis for 007023973-01. **Kepler magnitude: 11.76.** Transit SNR 10.26

There are 2 quarters with good PRF difference image offsets

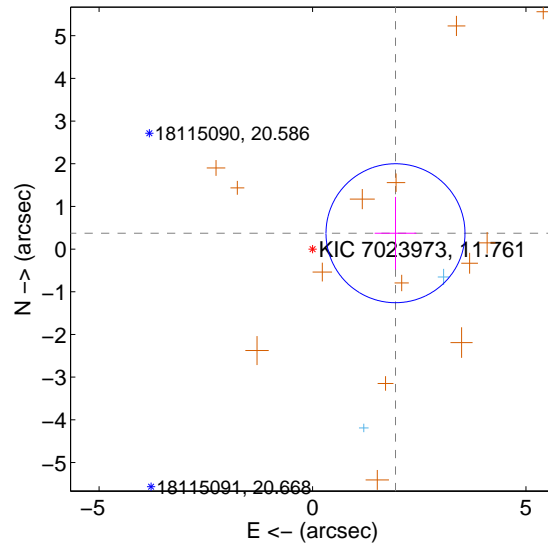
The direct PRF centroid is offset from the target star catalog position by about 1.97 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.497 ± 0.743	3.36	-1.612 ± 0.461	1.907 ± 0.808
PRF-fit source offset from KIC position	1.979 ± 0.543	3.65	-1.944 ± 0.489	0.372 ± 0.850
photometric centroid source offset	0.29 ± 0.98	0.29	0.25 ± 0.98	0.13 ± 0.98

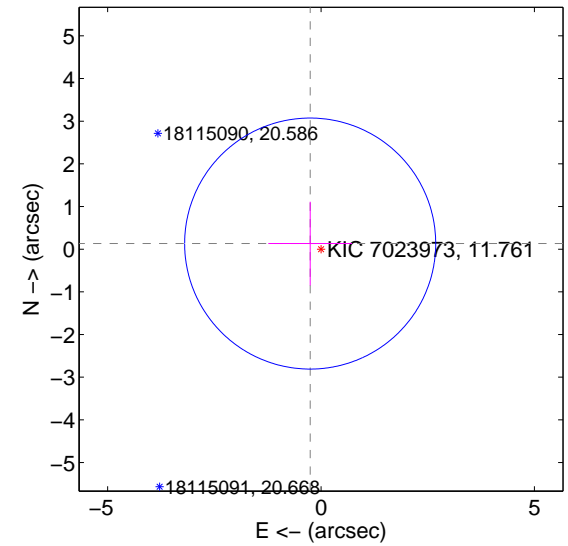
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

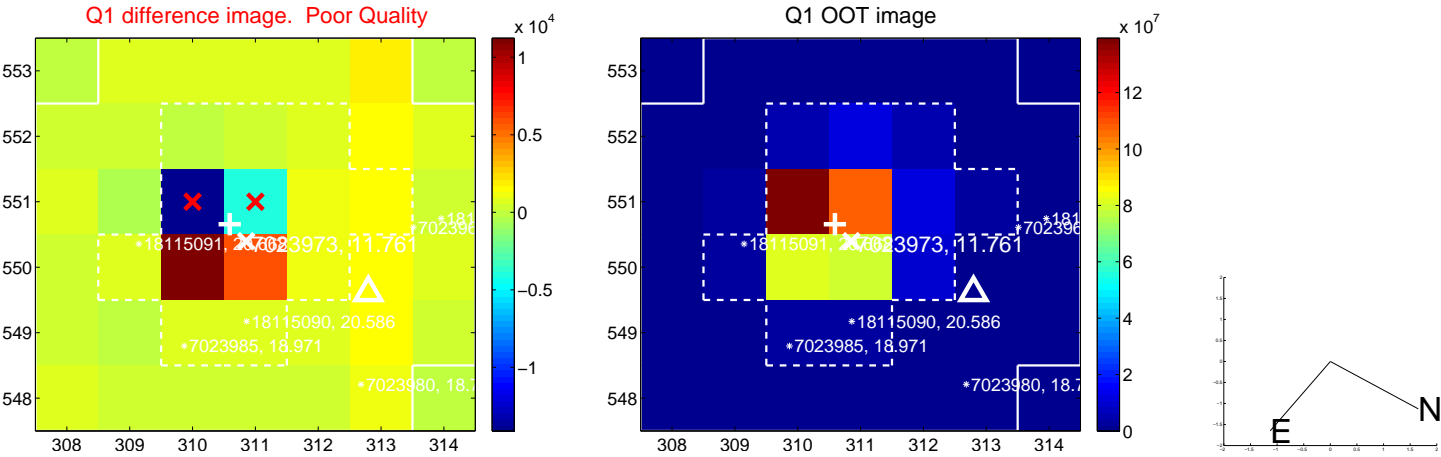


offset from photometric centroids

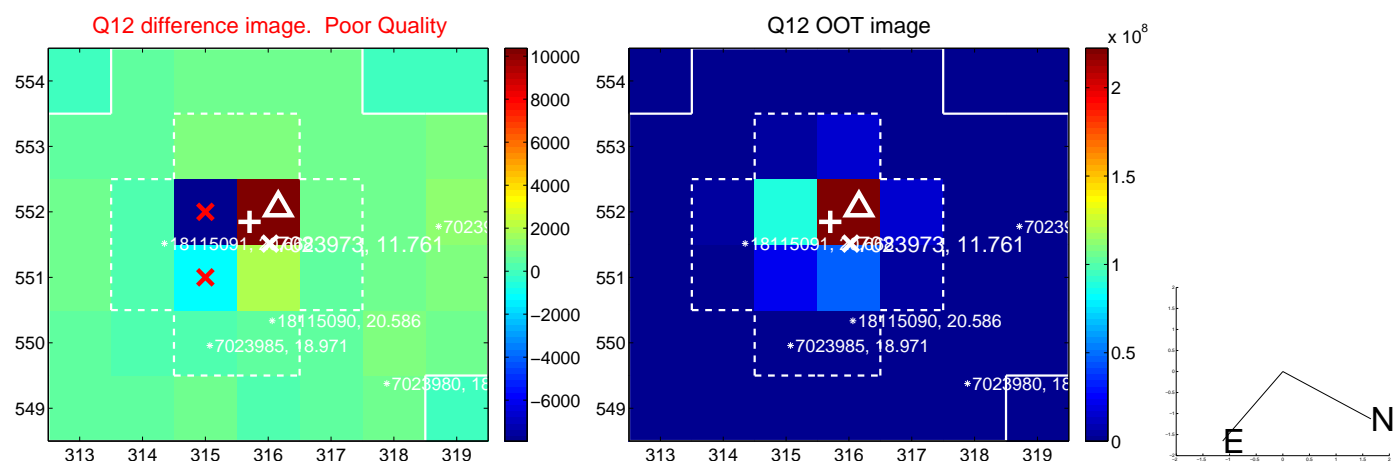
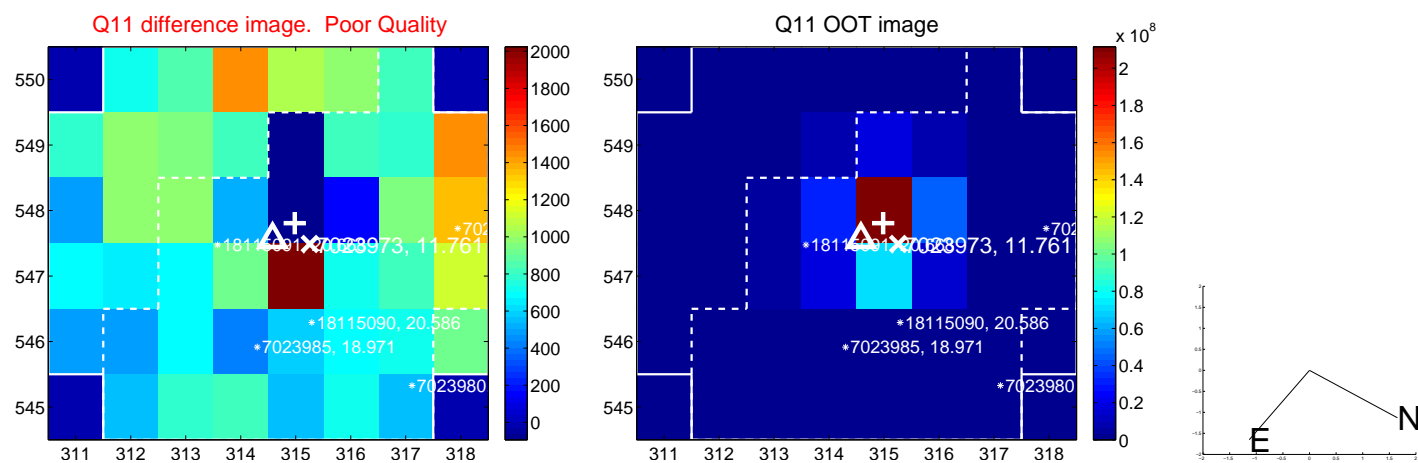
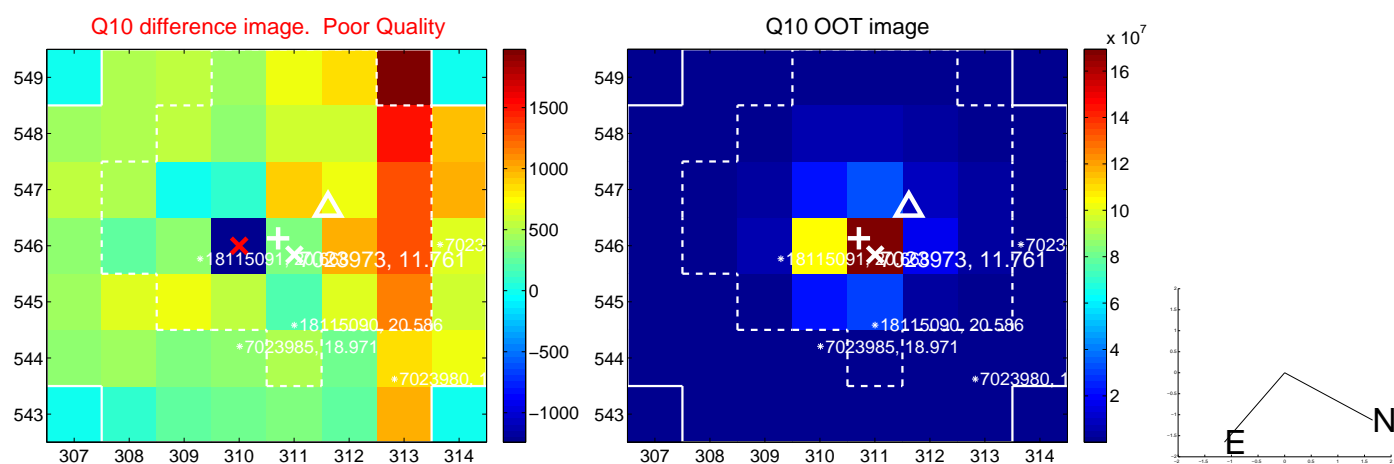
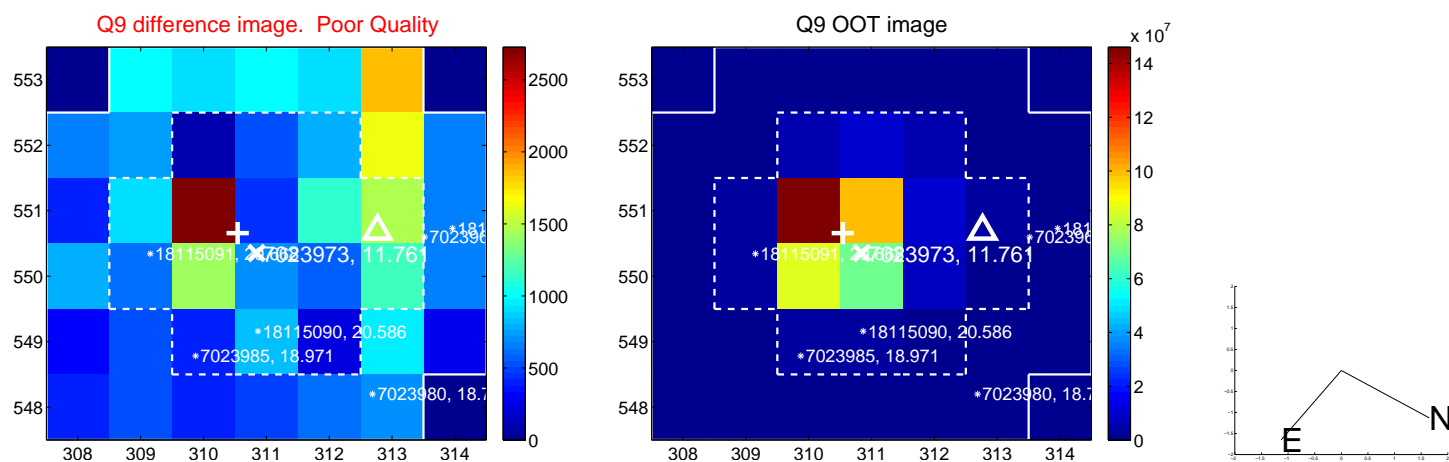


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

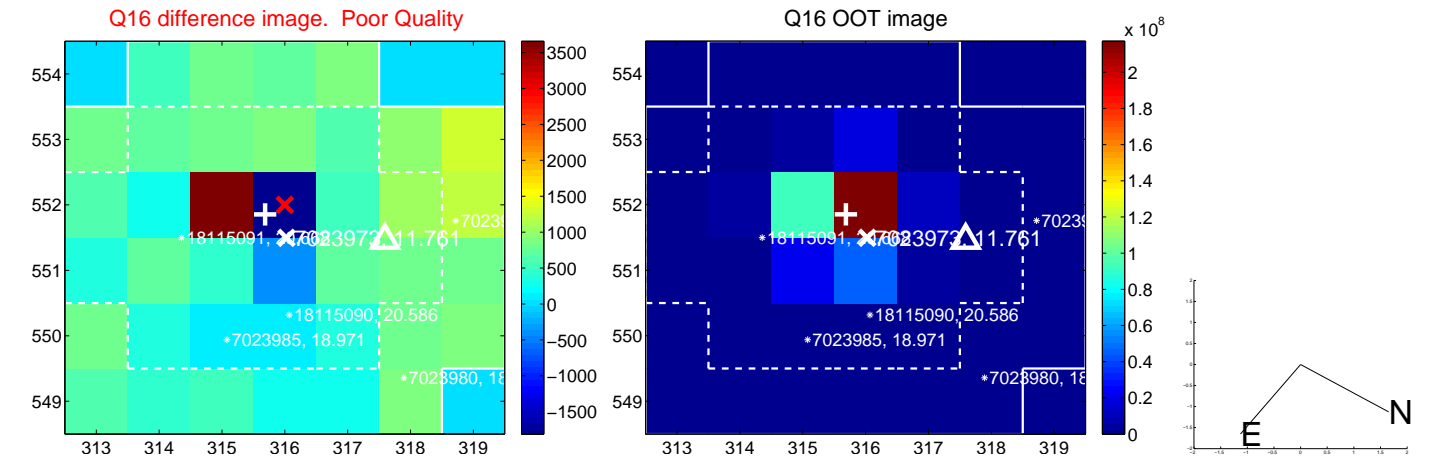
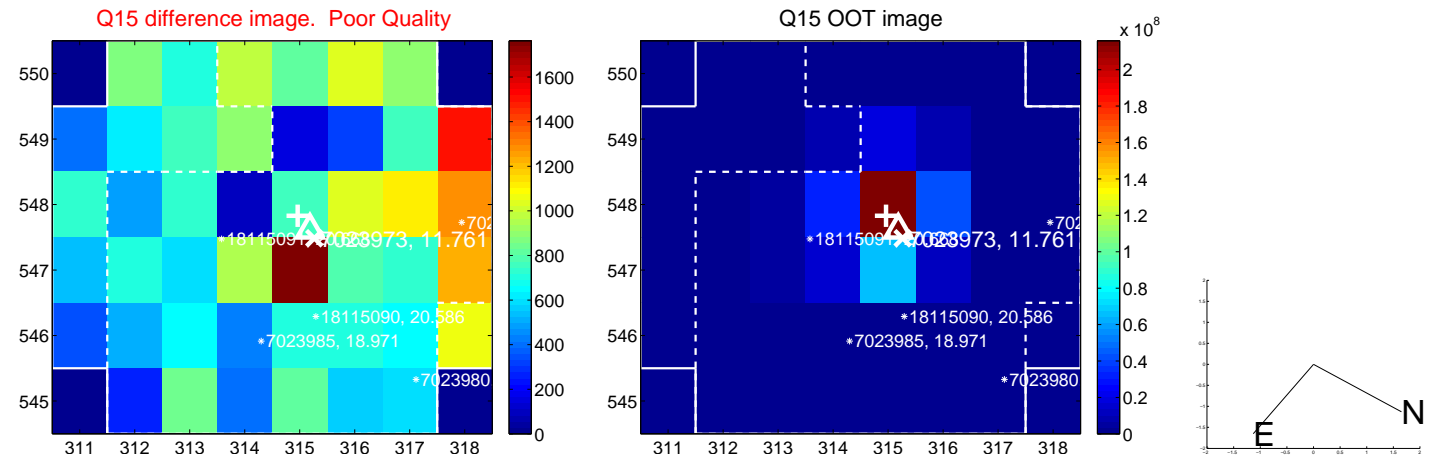
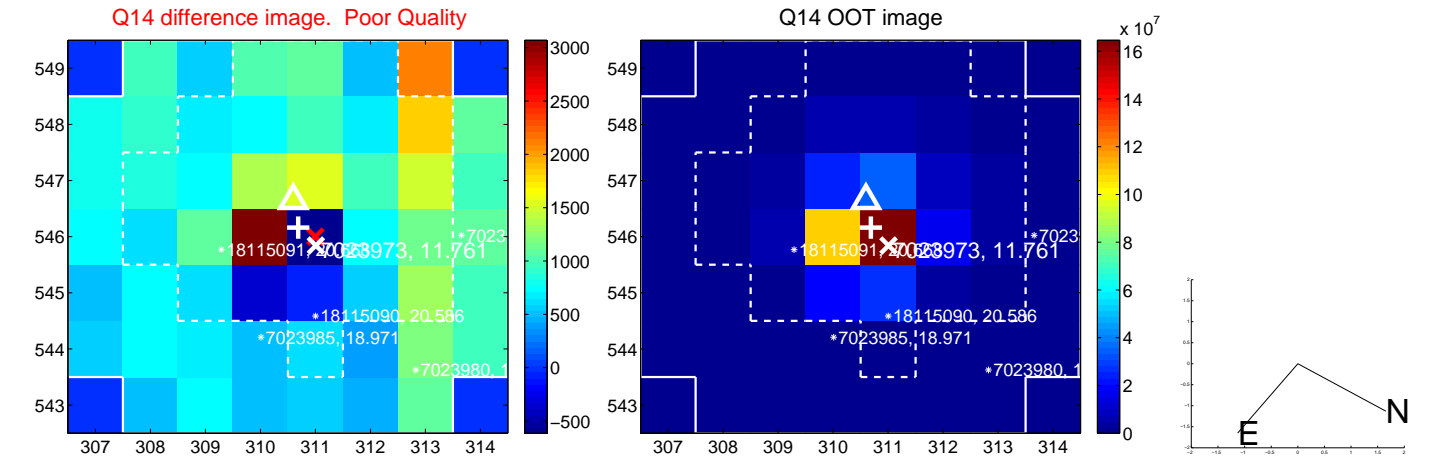
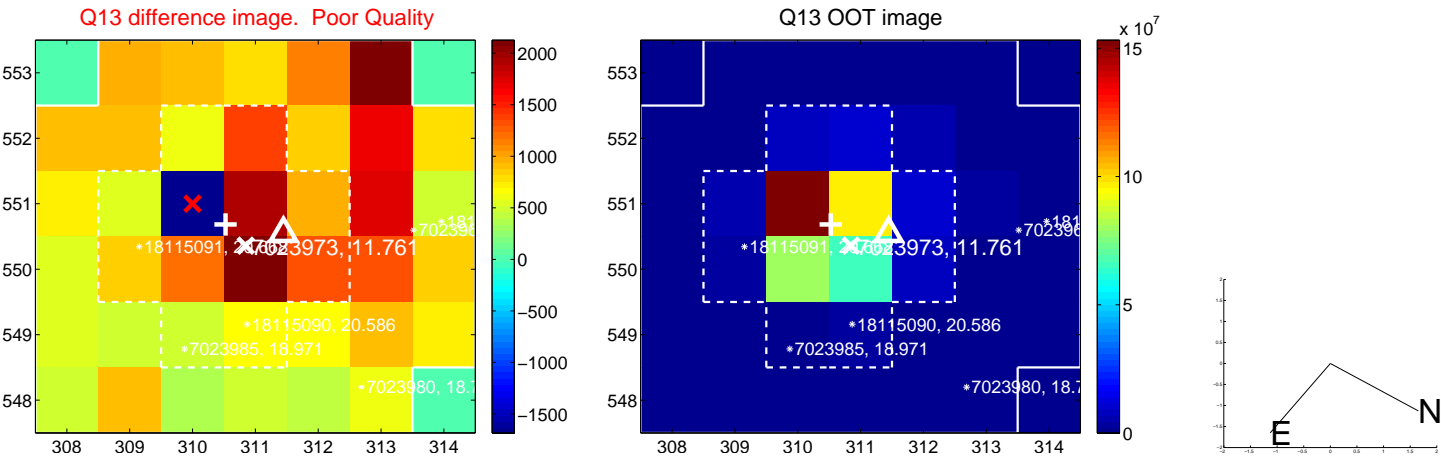
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



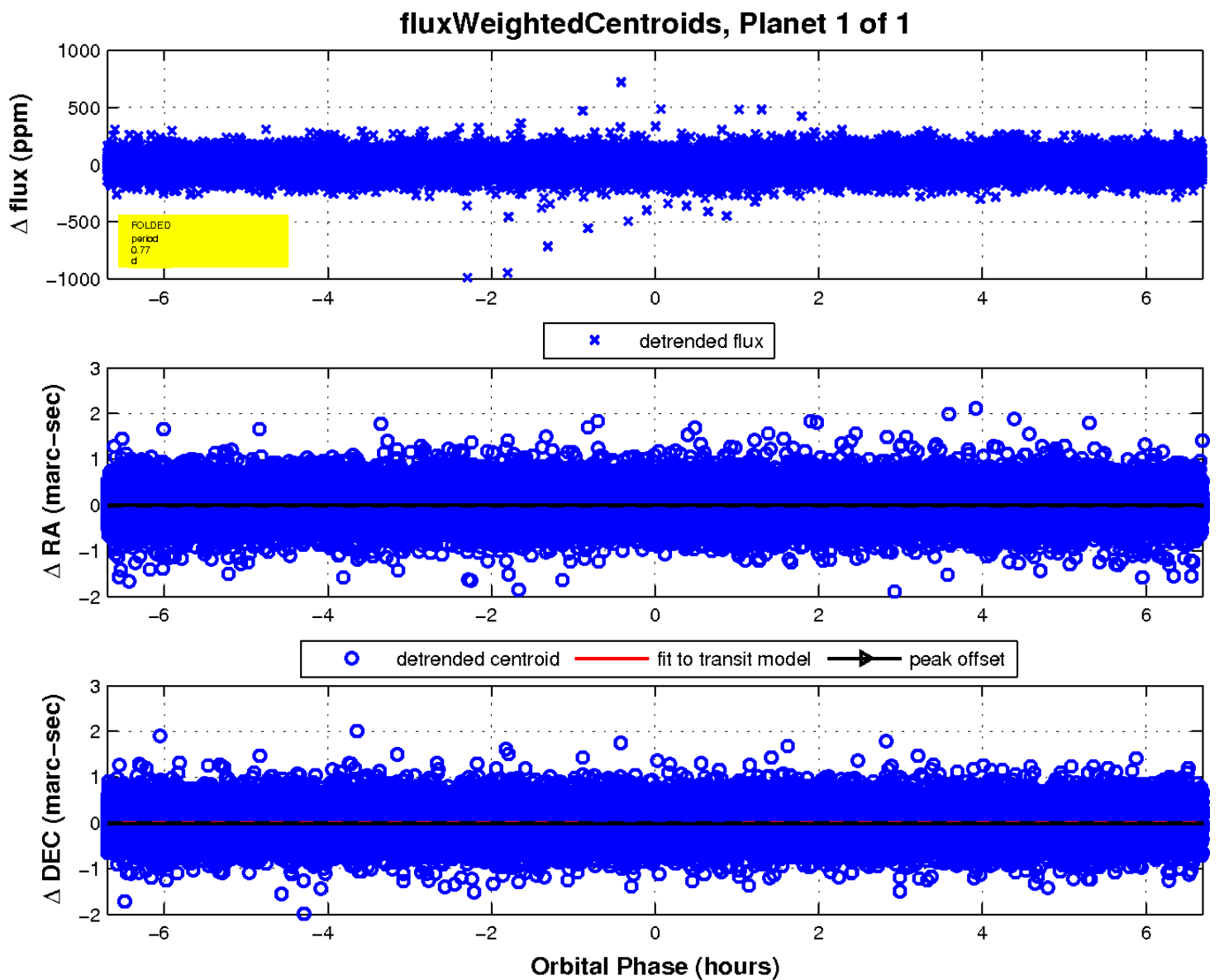
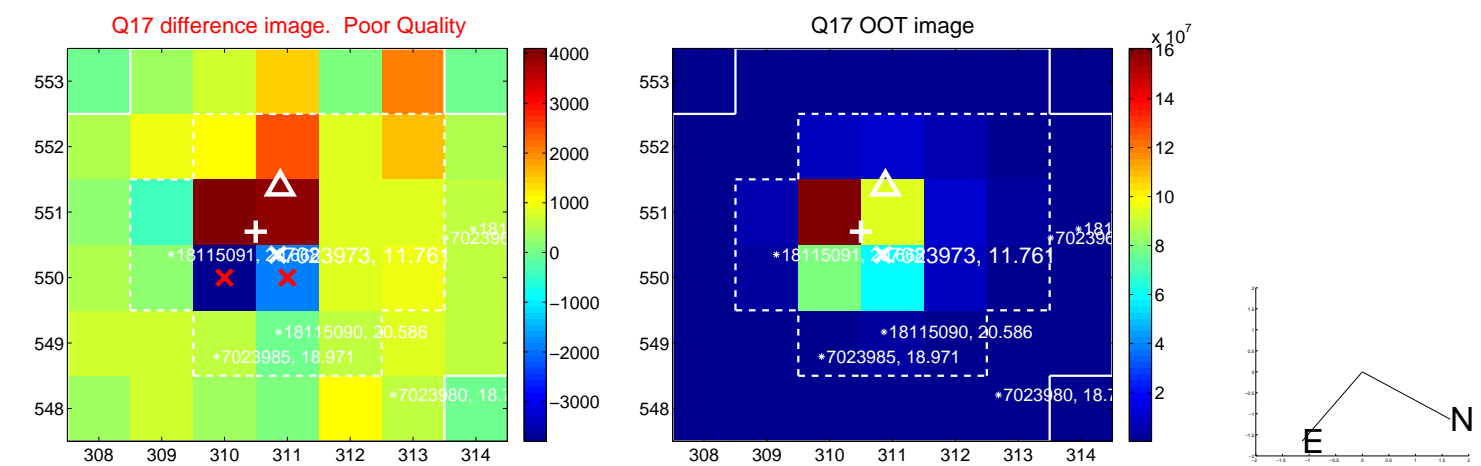
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

