

KIC 012357103

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})
012357103-01	OBS	No	0.518960	131.826173	63.1	1.998	10.3	11.3	2.08	7237	1.70	51962.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012357103-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

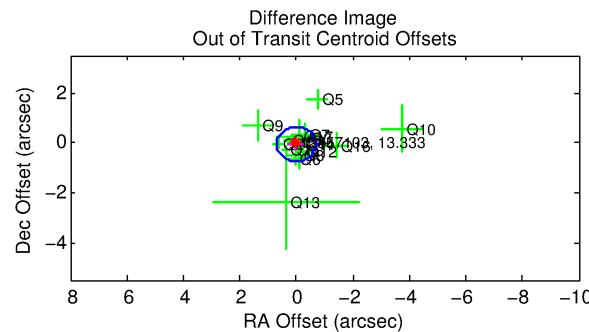
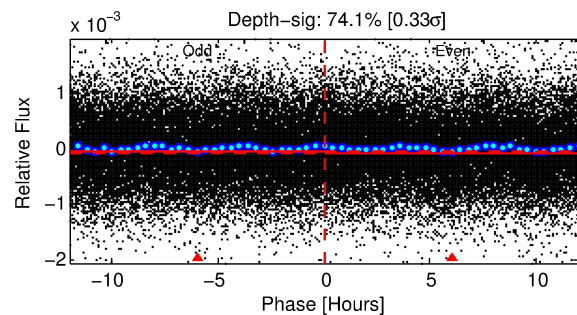
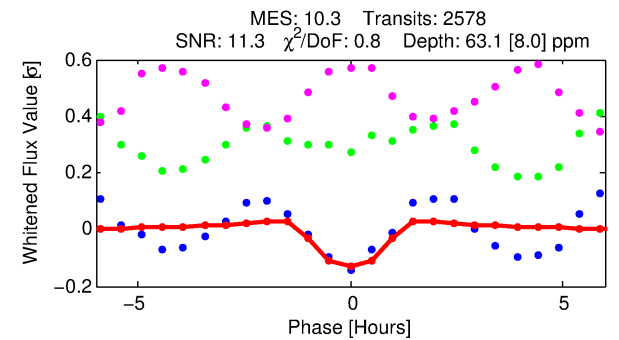
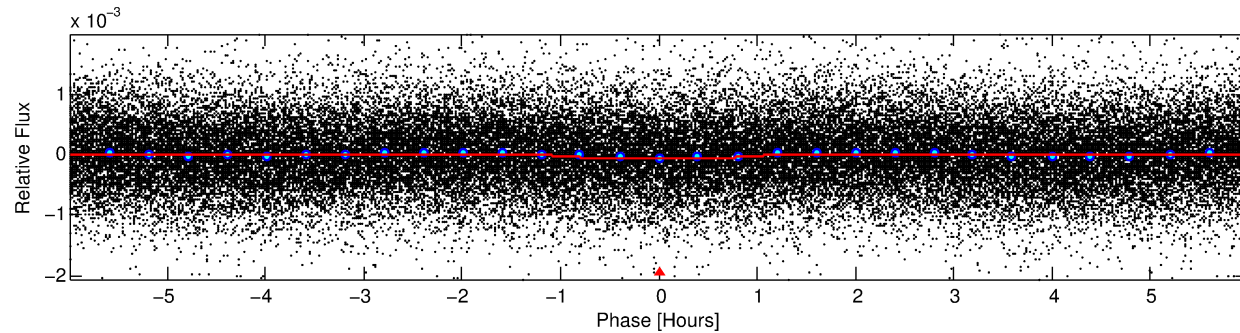
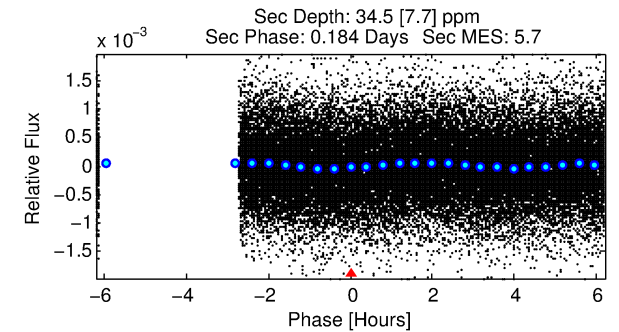
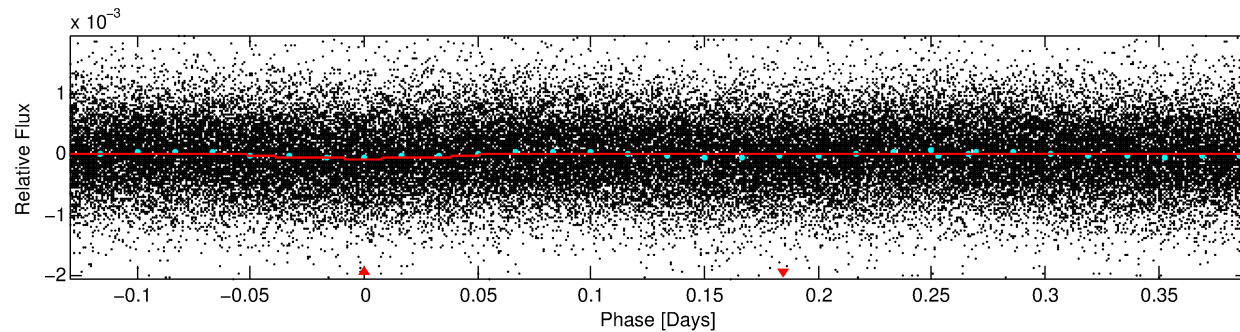
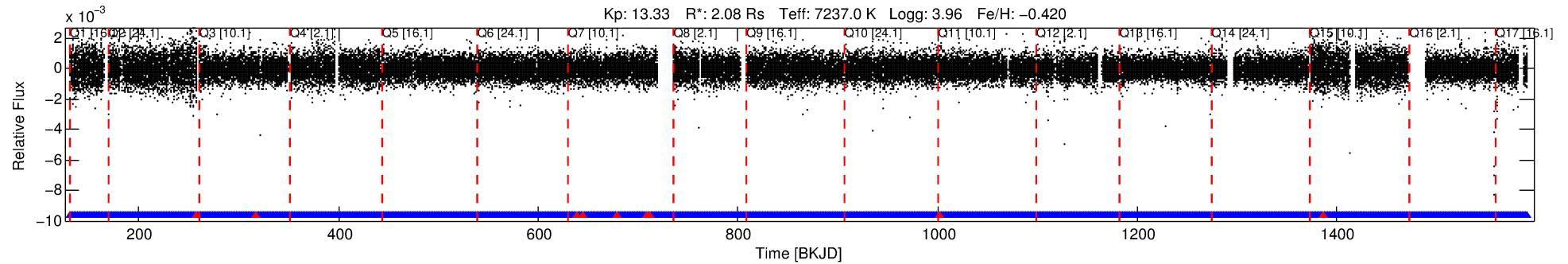
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012357103-01

No Significant Match Found

DV One-Page Summary

KIC: 12357103 Candidate: 1 of 1 Period: 0.519 d



DV Fit Results:

Period = 0.51896 [0.00001] d
Epoch = 131.8262 [0.0022] BKJD
Rp/R* = 0.0075 [0.0046]
a/R* = 1.99 [5.35]
b = 0.35 [9.05]
Seff = 51962.15 [29603.21]
Teff = 3850 [548] K
Rp = 1.70 [1.23] Re
a = 0.0143 [0.0050] AU
Ag = 1.35 [1.86] [0.19σ]
Teffp = 6420 [2040] K [1.22σ]

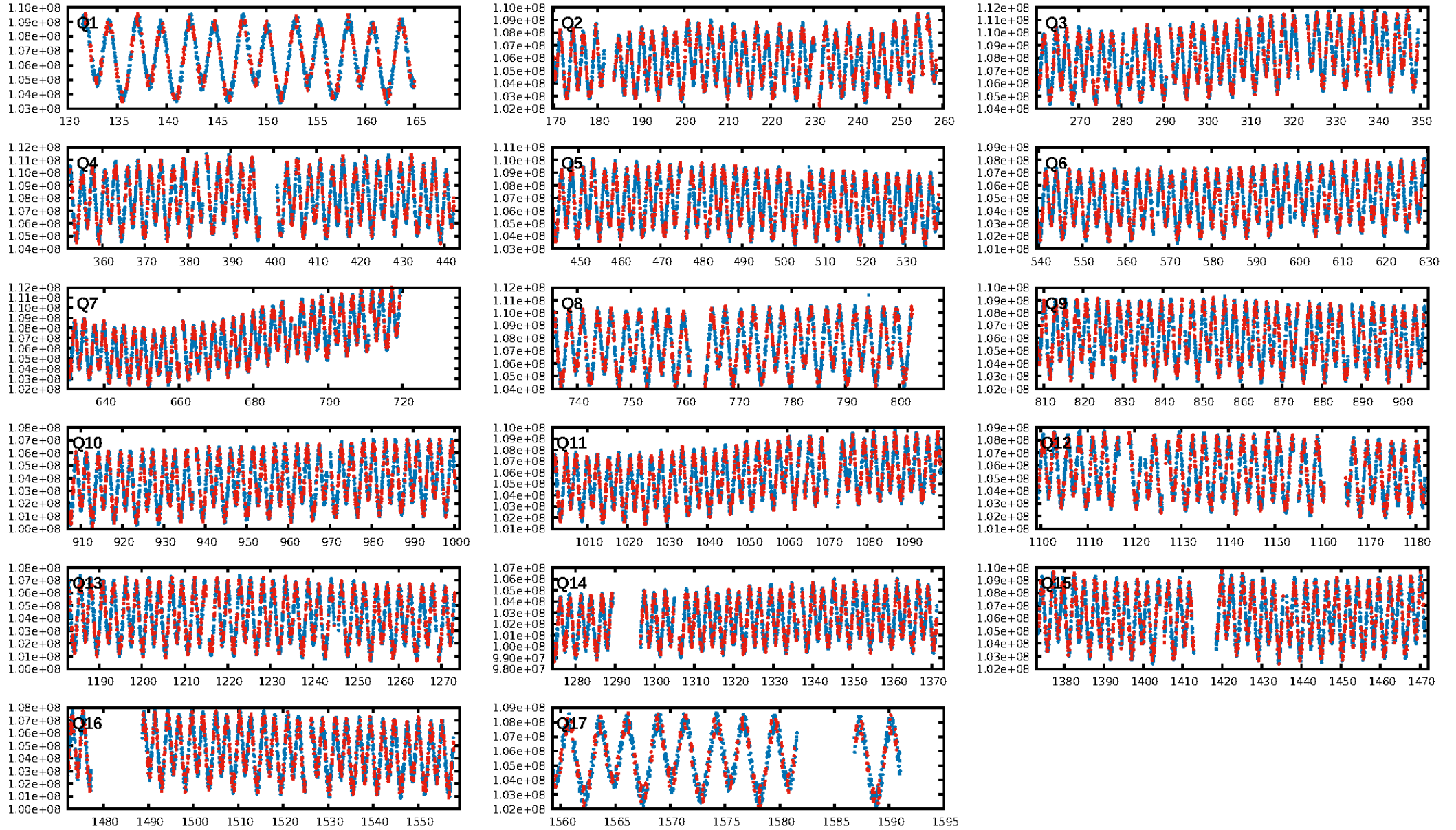
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.25e-26
RollingBand-fgt: 1.00 [2454/2463]
GhostDiagnostic-chr: -0.939
Centroid-sig: 0.3%
Centroid-so: 0.742 arcsec [1.75σ]
OotOffset-rm: 0.065 arcsec [0.28σ]
KicOffset-rm: 0.135 arcsec [0.60σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.44 [7/16]
DiffImageOverlap-fno: 1.00 [17/17]

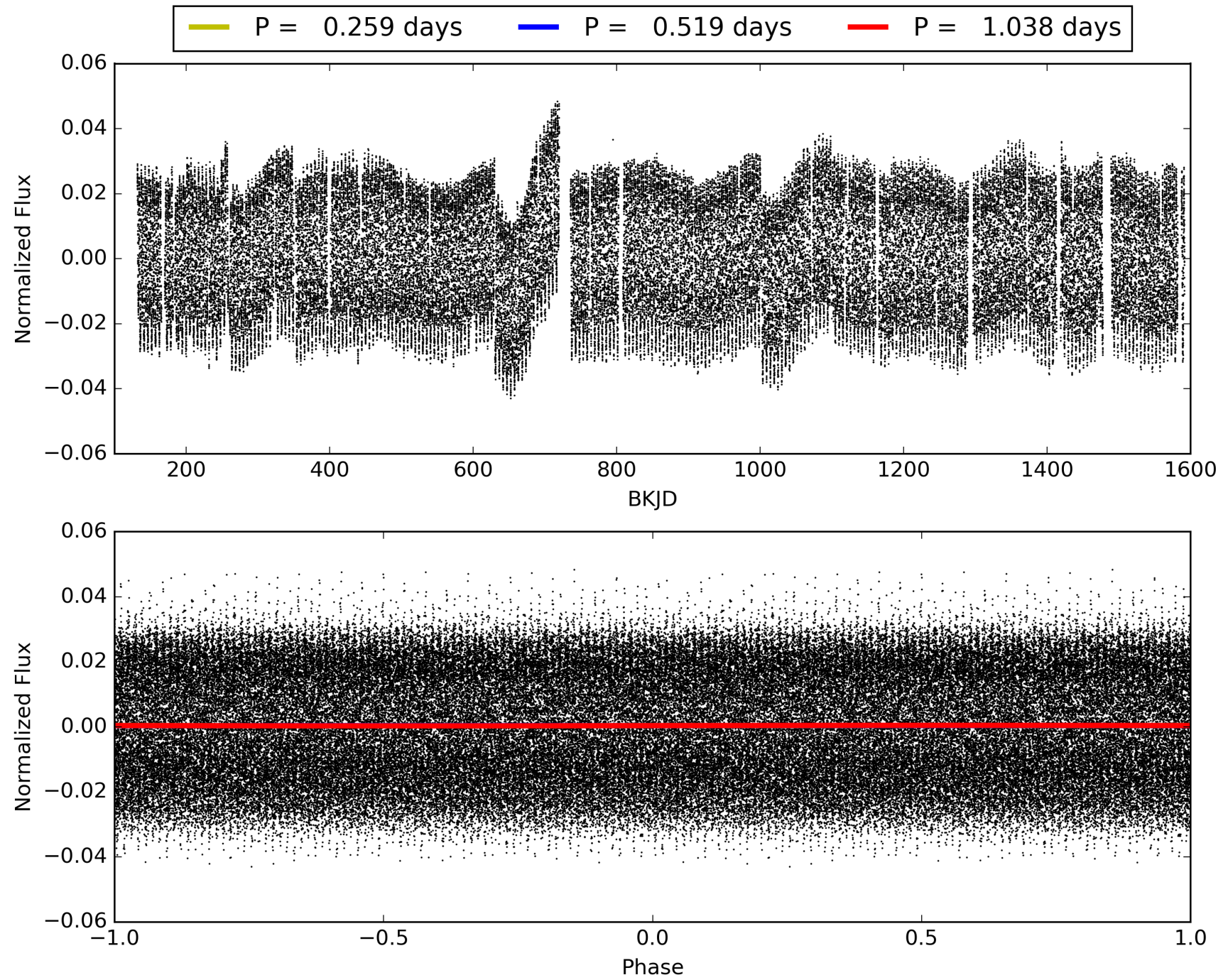
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:35:59 Z

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

TCE 012357103-01, PDC Light Curves

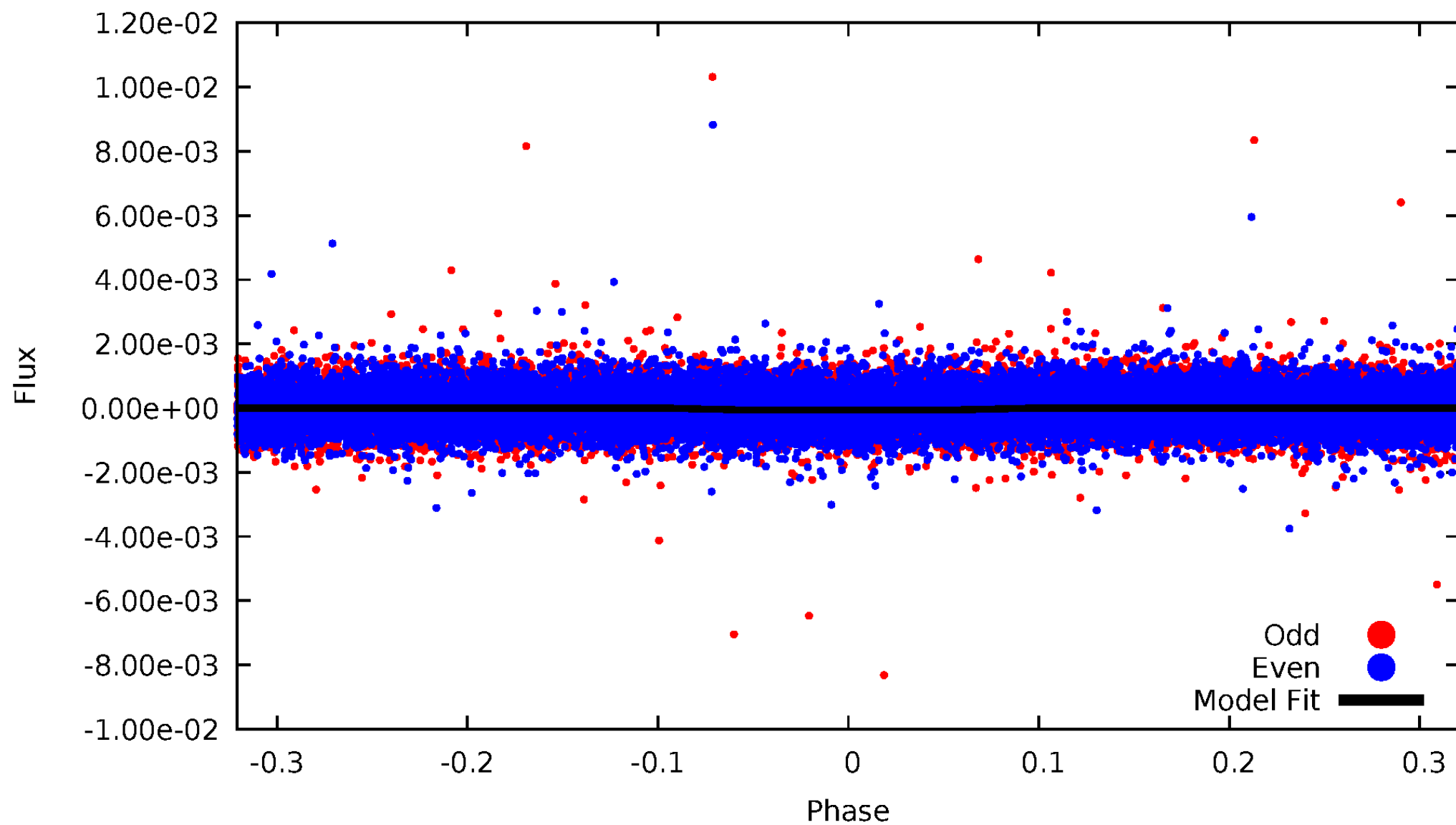


TCE 012357103-01



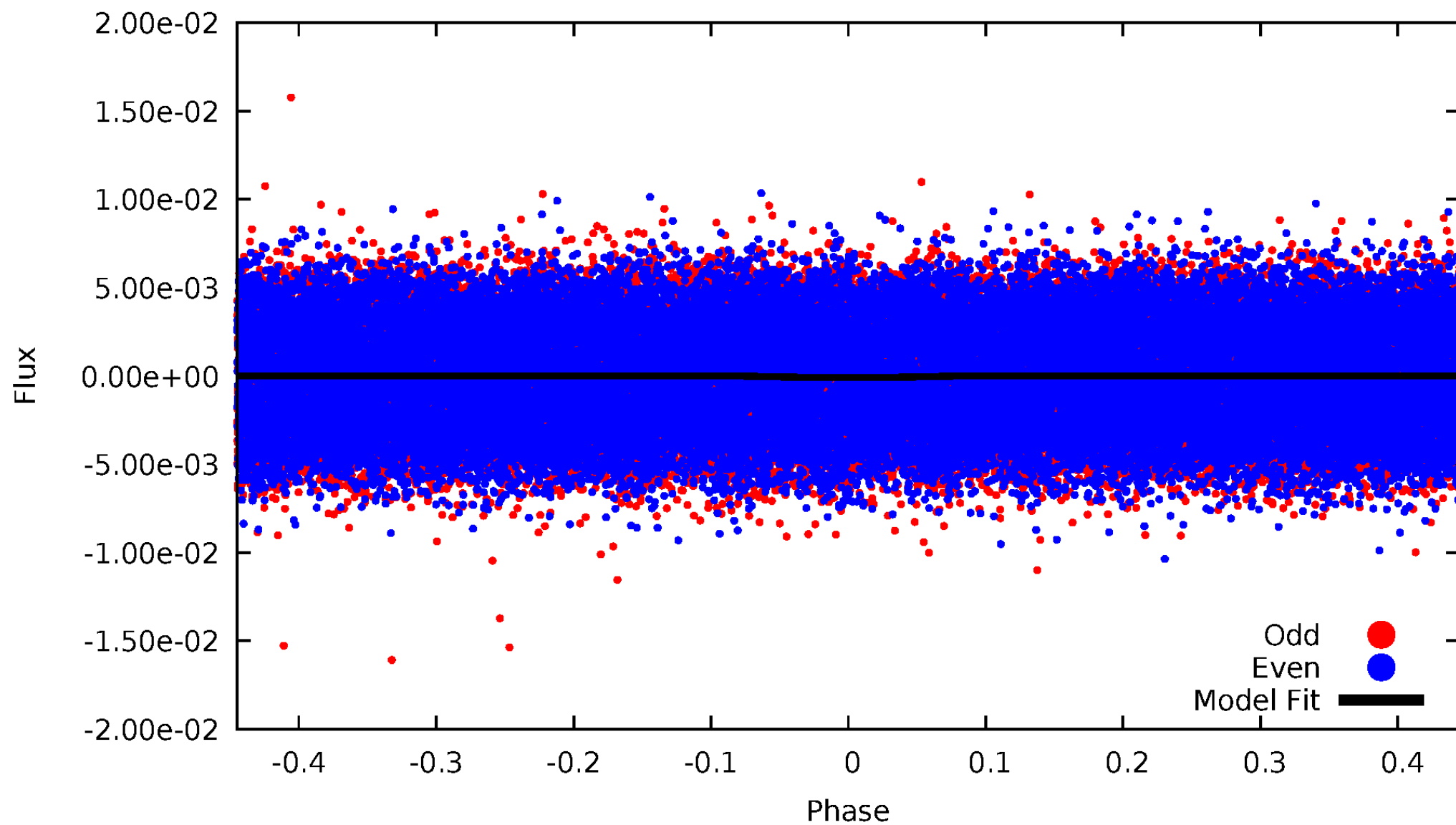
DV Odd/Even

TCE 012357103-01



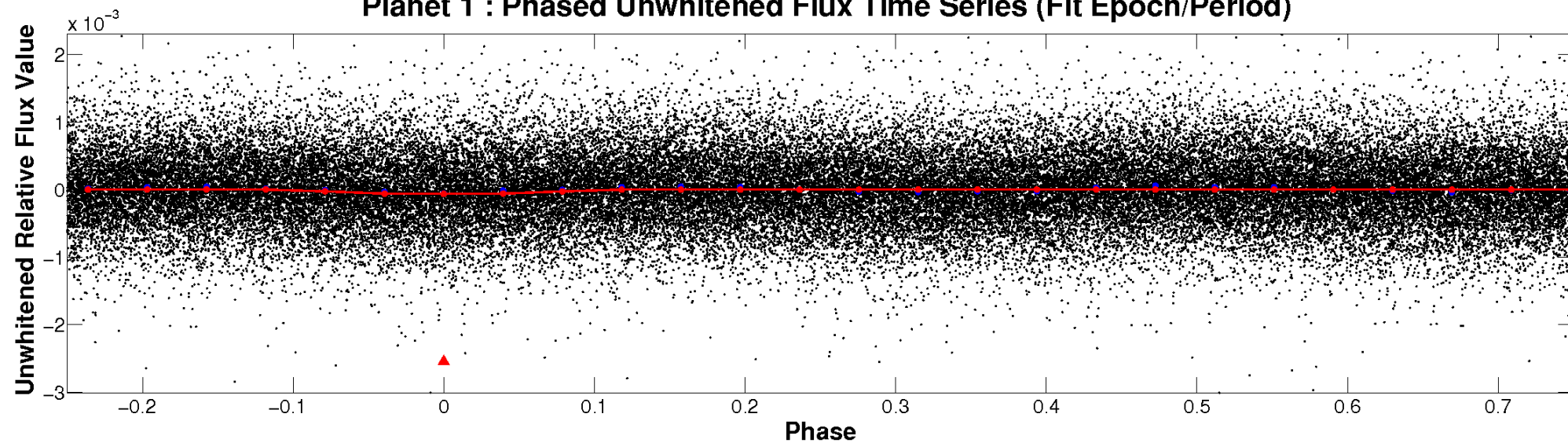
ALT Odd/Even

TCE 012357103-01

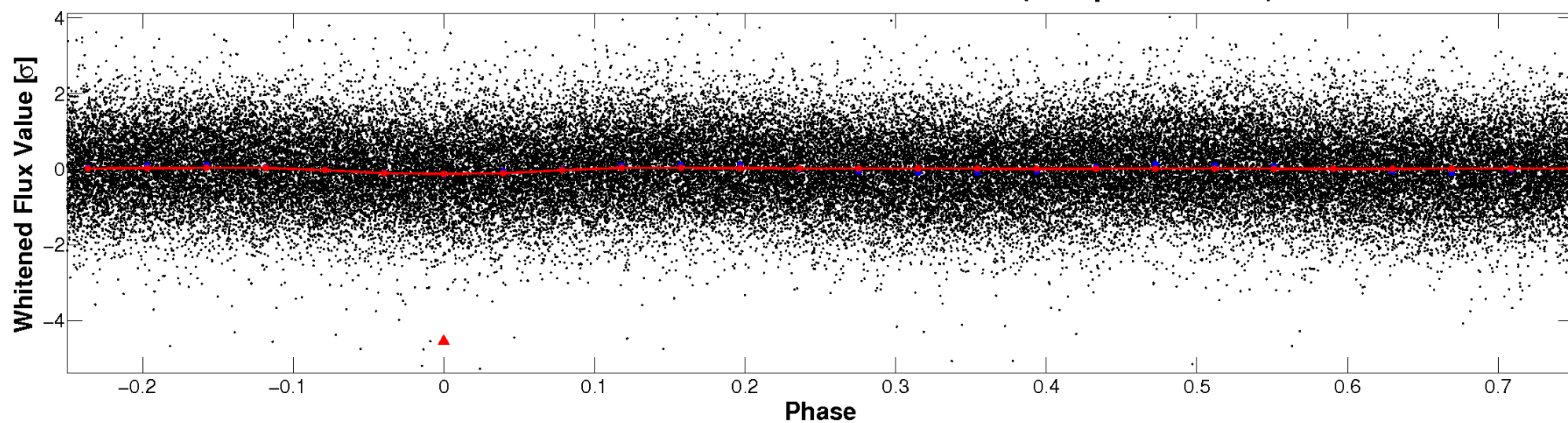


Non-Whitened Vs. Whitened Light Curve

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

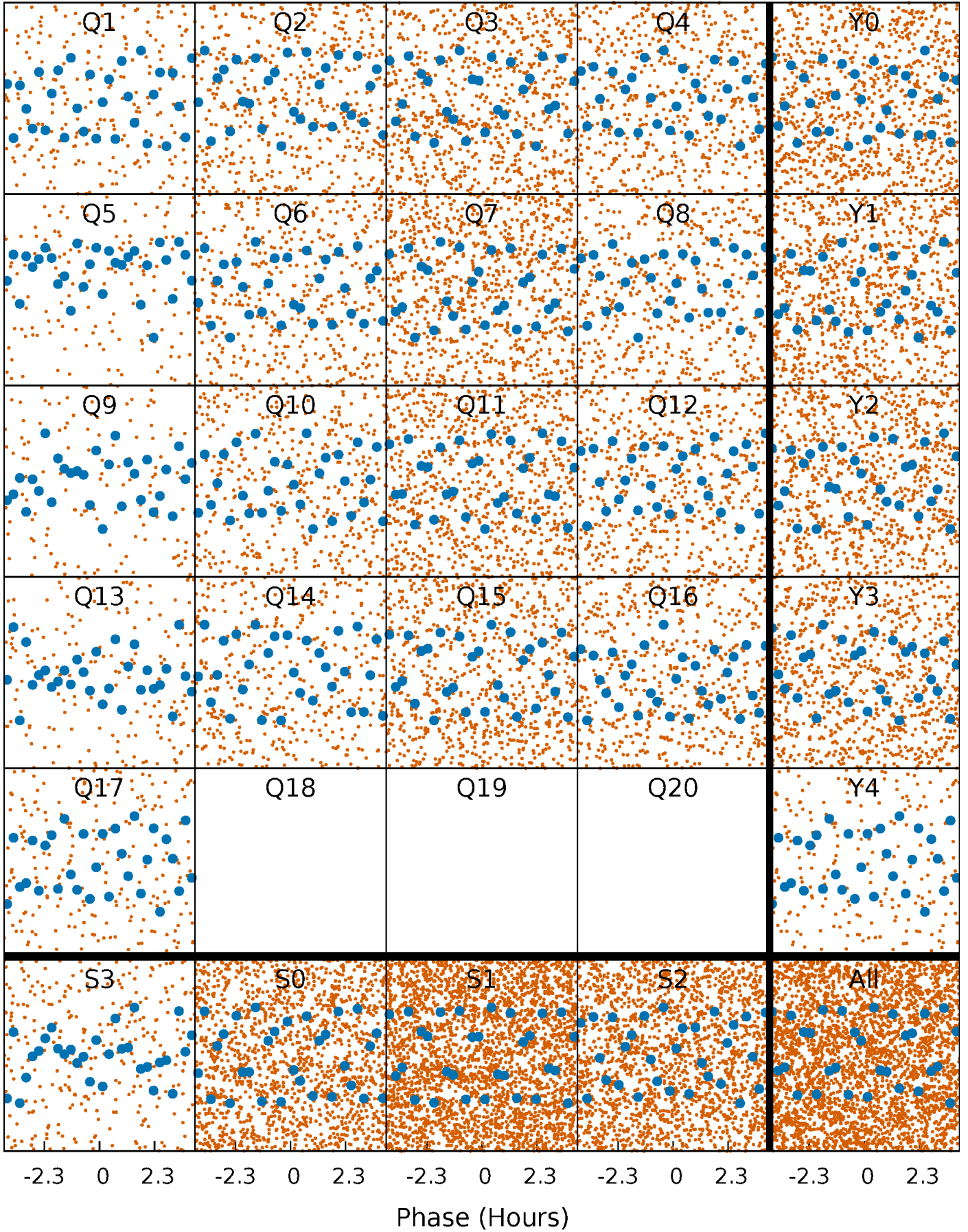


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



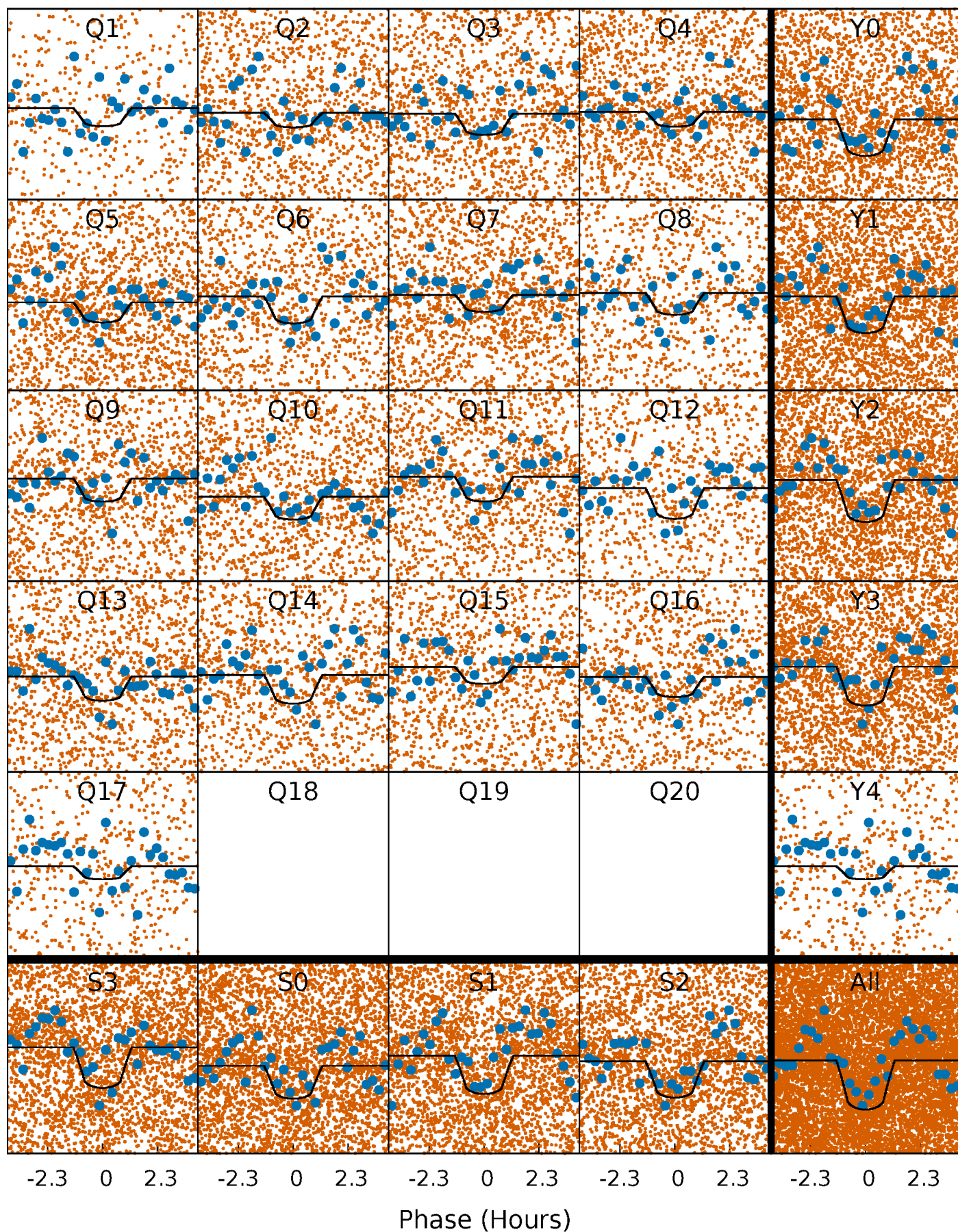
PDC Quarter-Phased Transit Curves

TCE 012357103-01 P= 0.518960 Days $T_0=131.826173$ (BKJD)



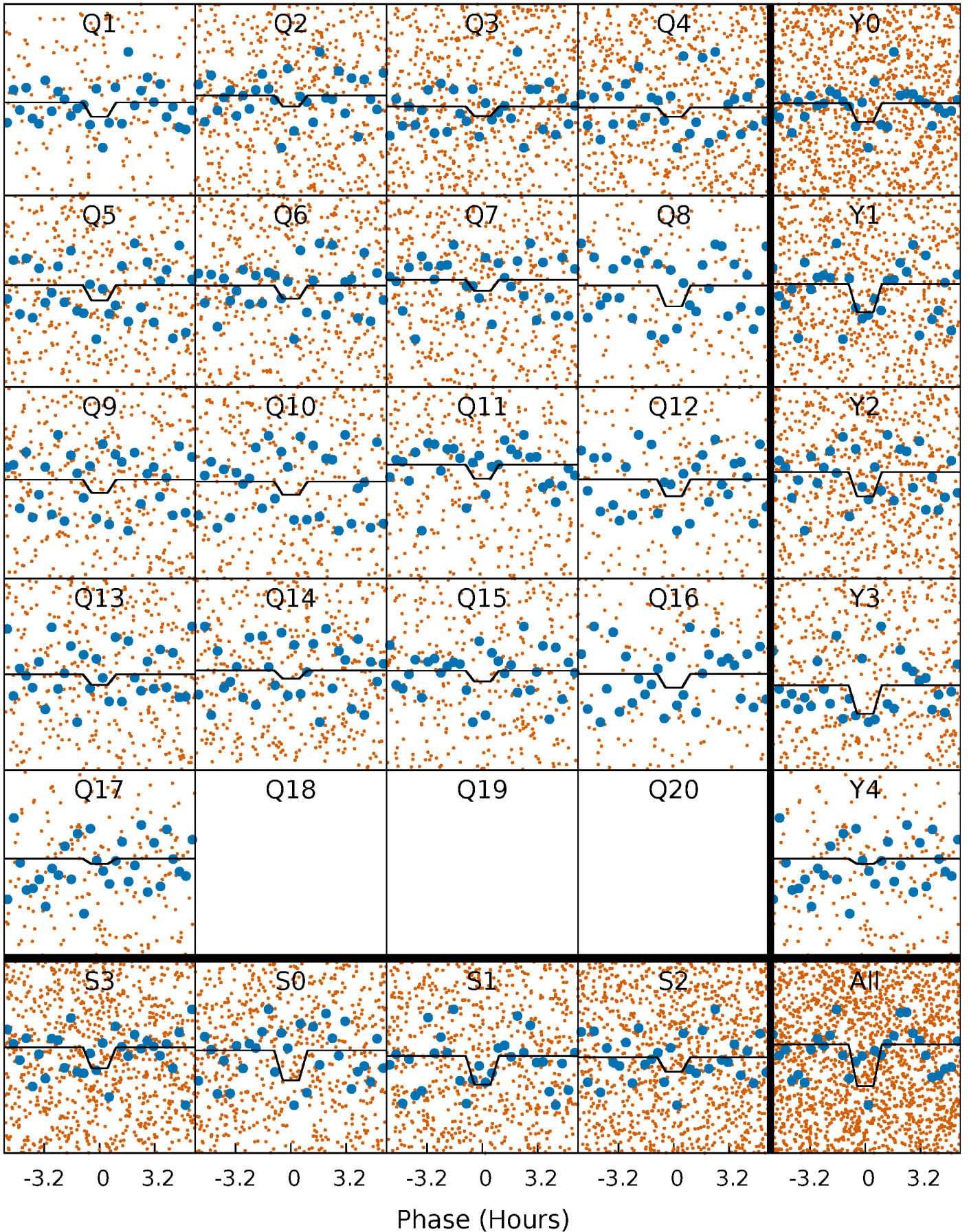
DV Quarter-Phased Transit Curves

TCE 012357103-01 P= 0.518960 Days $T_0=131.826173$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

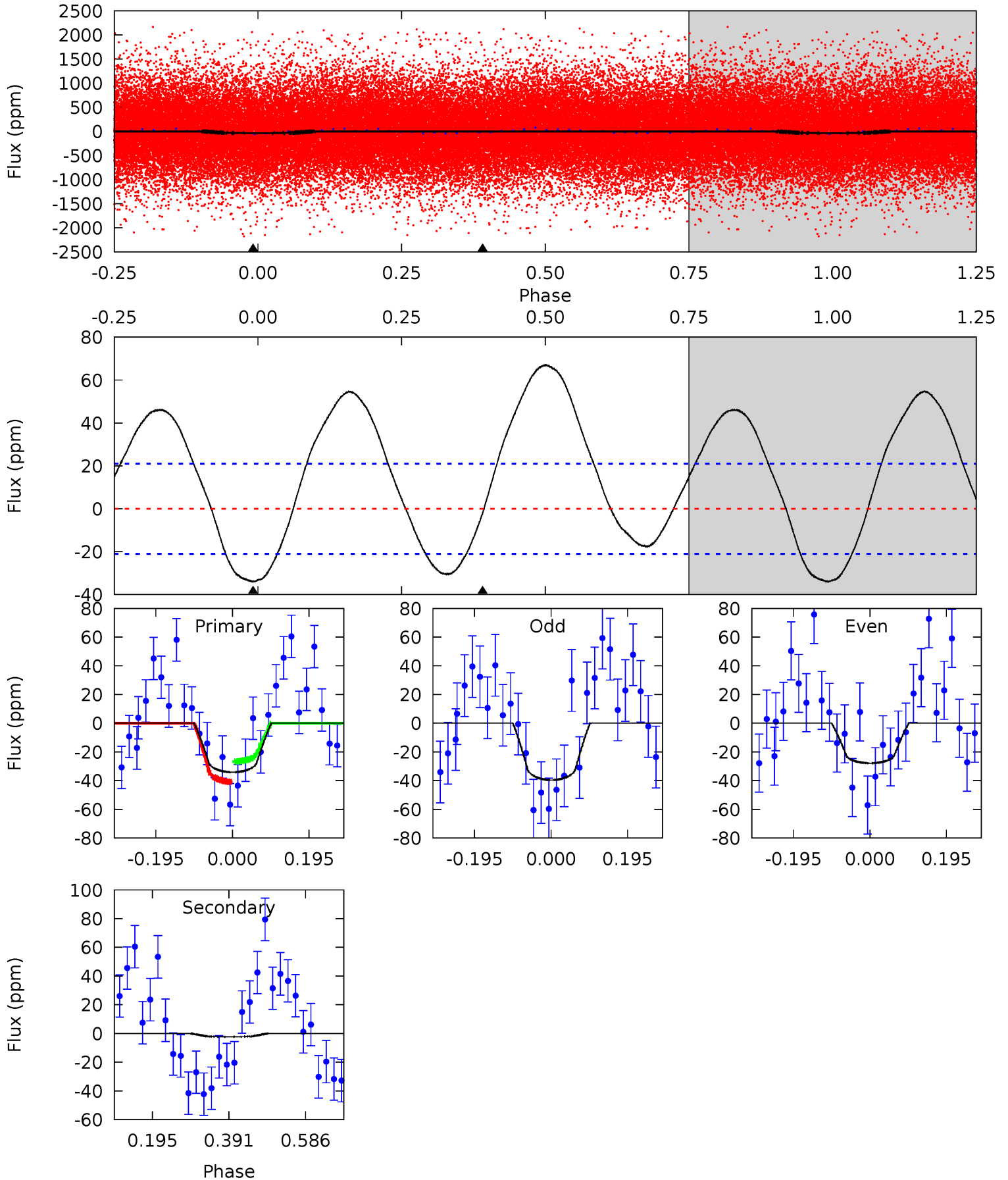
TCE 012357103-01 P= 0.518958 Days $T_0=131.823058$ (BKJD)



DV Model-Shift Uniqueness Test

012357103-01, P = 0.518960 Days, E = 131.307213 Days

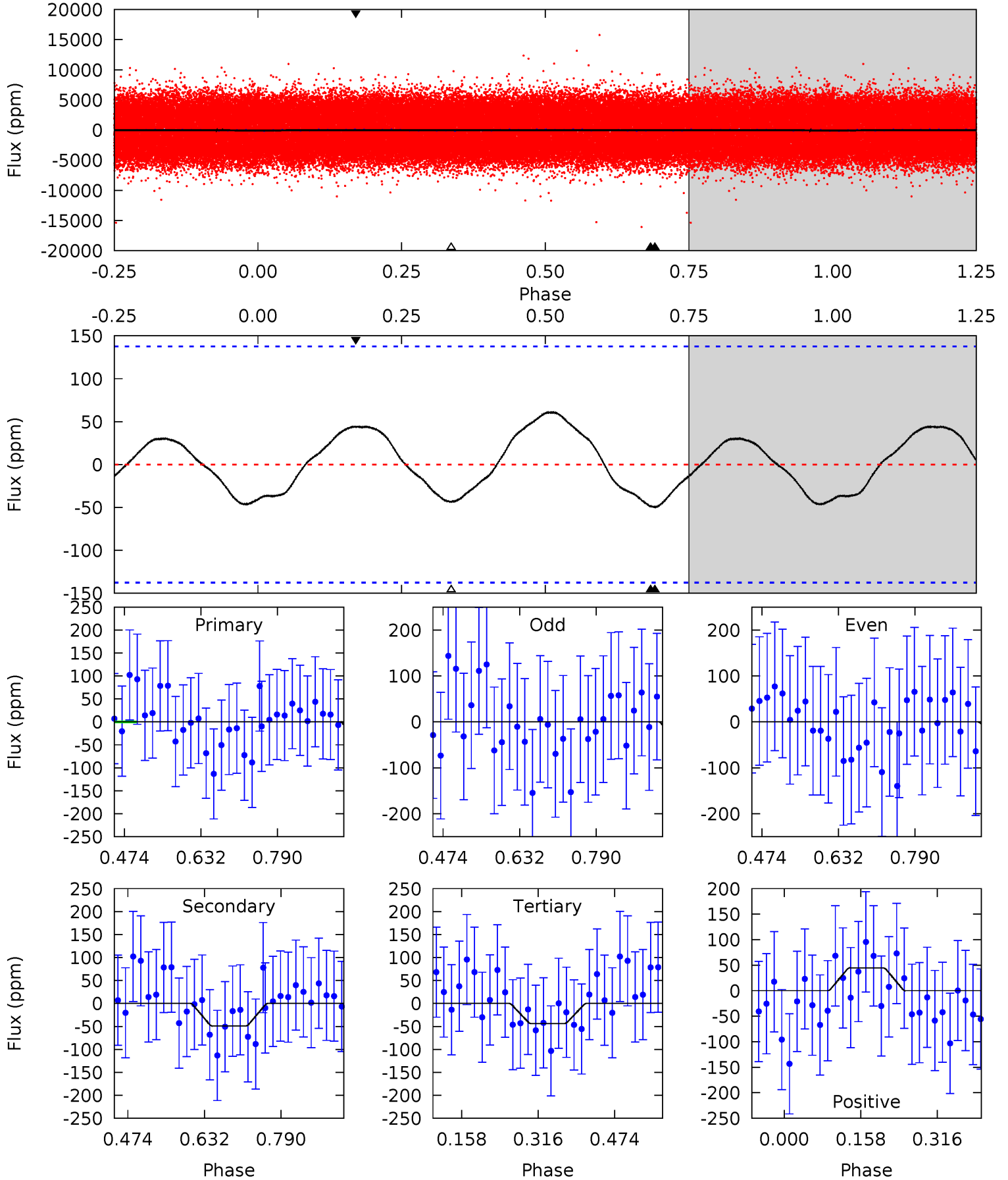
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.19	0.49	0	0	4.42	1.29	3.87	7.19	7.19	0.49	0.49	1.23	0.90	0.66	1.50



Alt Model-Shift Uniqueness Test

012357103-01, P = 0.518958 Days, E = 131.304100 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.62	1.59	1.42	1.45	4.47	1.41	1.06	0.20	0.17	0.17	0.14	0.38	0.91	0.55	0.31



Stellar Parameters For KIC 012357103

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7237^{+228}_{-304}	$3.964^{+0.315}_{-0.135}$	$-0.420^{+0.300}_{-0.300}$	$2.085^{+0.521}_{-0.782}$	$1.458^{+0.204}_{-0.306}$	$0.227^{+0.512}_{-0.088}$
	+3%/-4%	+8%/-3%	+71%/-71%	+25%/-38%	+14%/-21%	+226%/-39%
Source	PHO1	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 012357103-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2 ± 5	$1.65^{+1.11}_{-0.88}$	5291^{+399}_{-566}	-4168^{+8300}_{-684}	$0.077^{+0.475}_{-0.172}$
Alt.	-49 ± 31	$1.82^{+1.18}_{-0.97}$	5257^{+441}_{-462}	5911^{+3875}_{-2605}	$1.515^{+5.684}_{-1.168}$

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

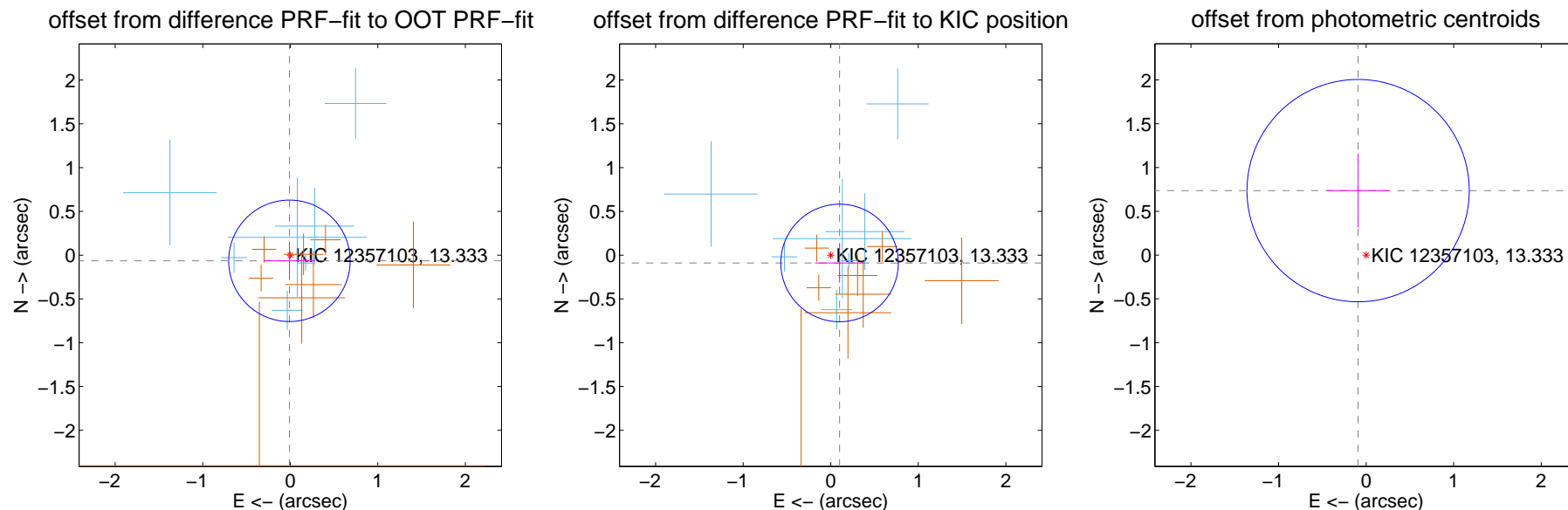
DV Centroid Data

Supplemental centroid analysis for 012357103-01. Kepler magnitude: 13.33. Transit SNR 11.26

There are 7 quarters with good PRF difference image offsets

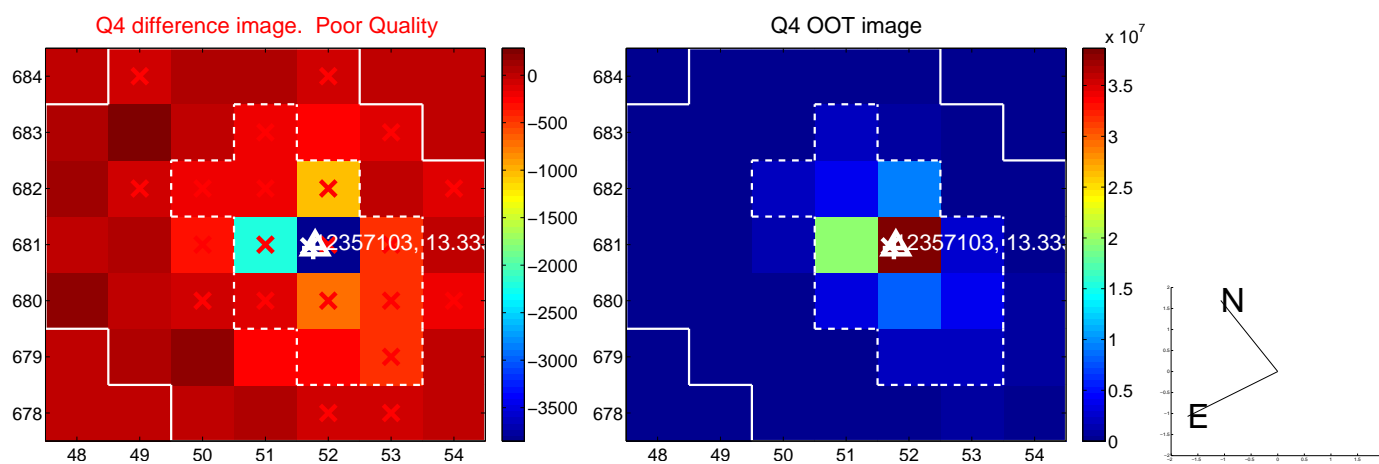
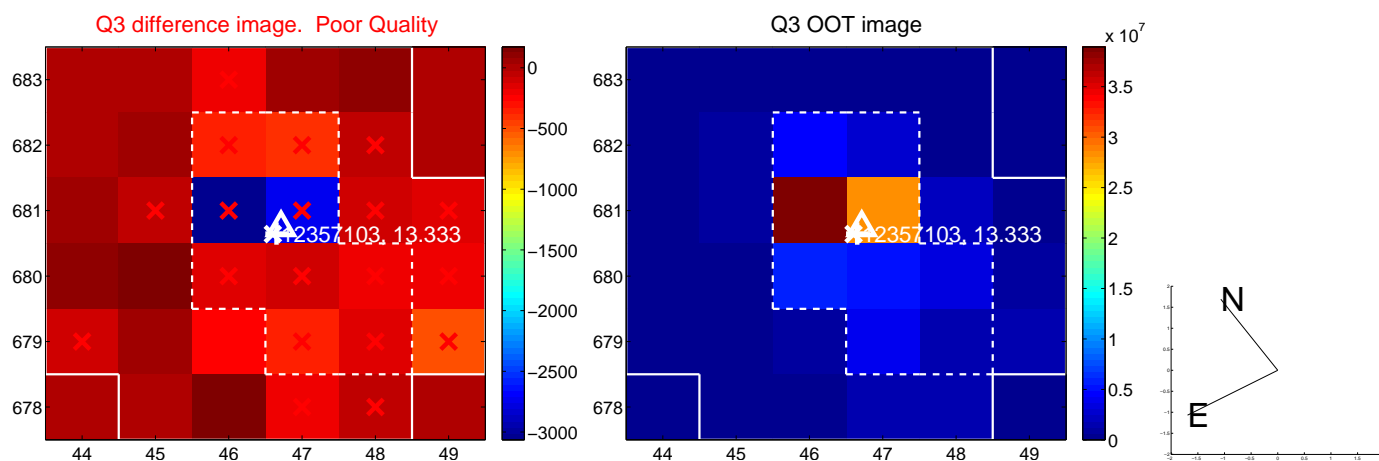
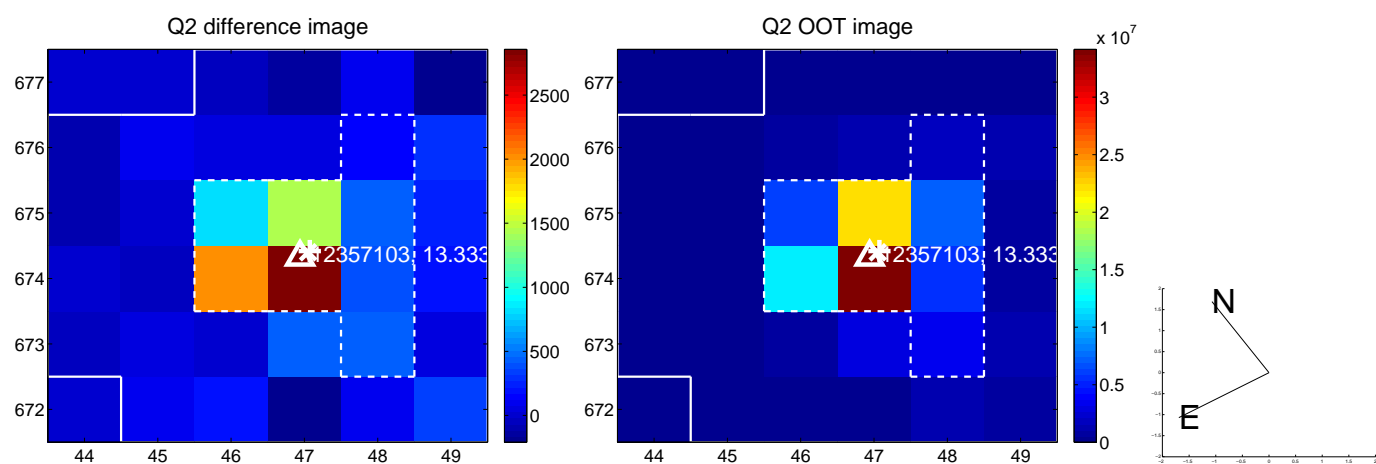
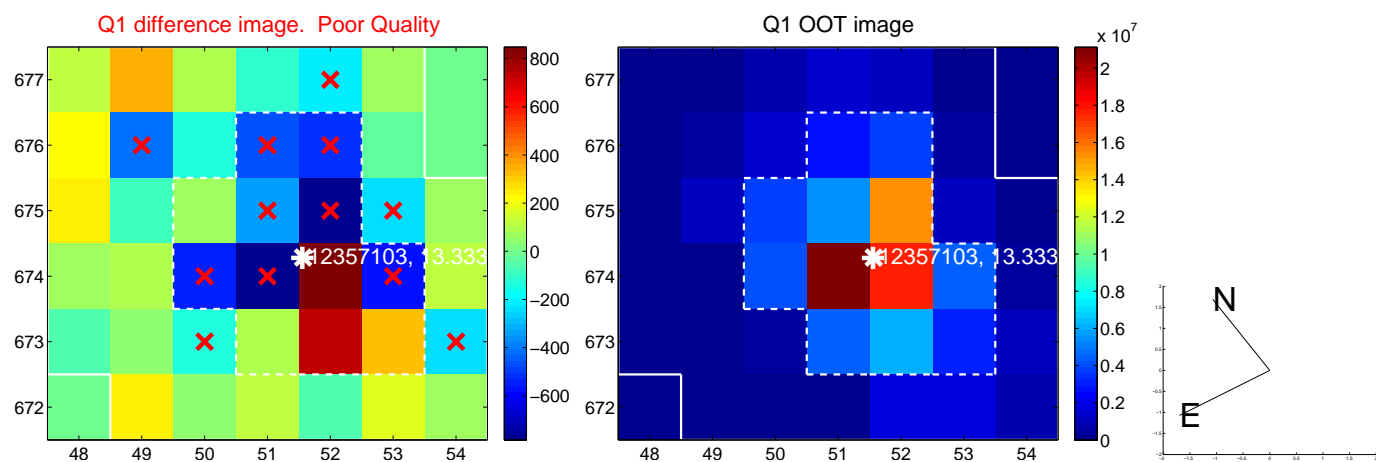
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.065 ± 0.231	0.28	0.010 ± 0.289	-0.064 ± 0.219
PRF-fit source offset from KIC position	0.135 ± 0.224	0.60	-0.101 ± 0.280	-0.089 ± 0.226
photometric centroid source offset	0.74 ± 0.42	1.75	0.09 ± 0.36	0.74 ± 0.42

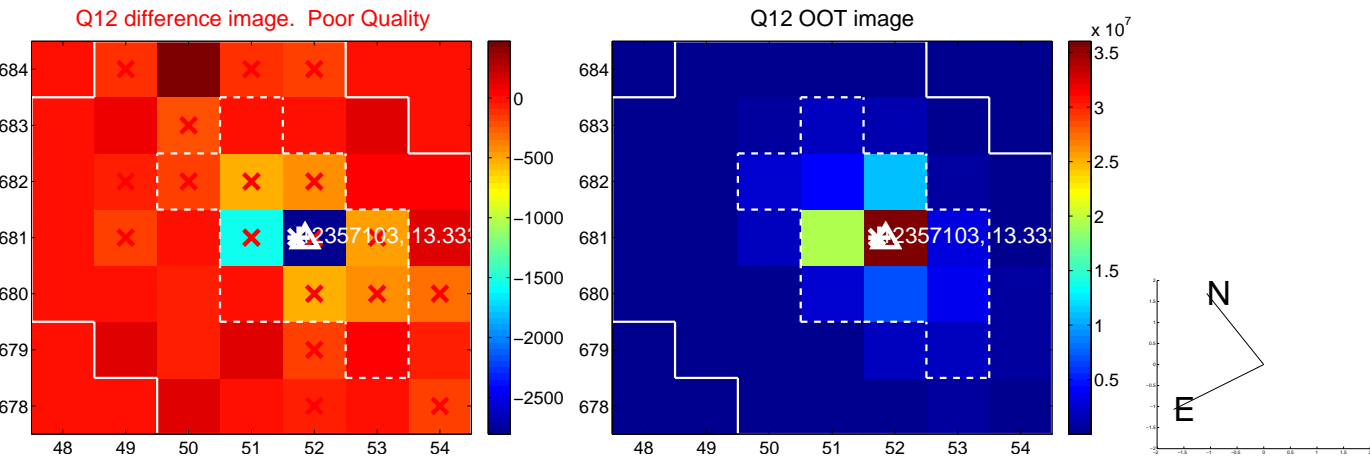
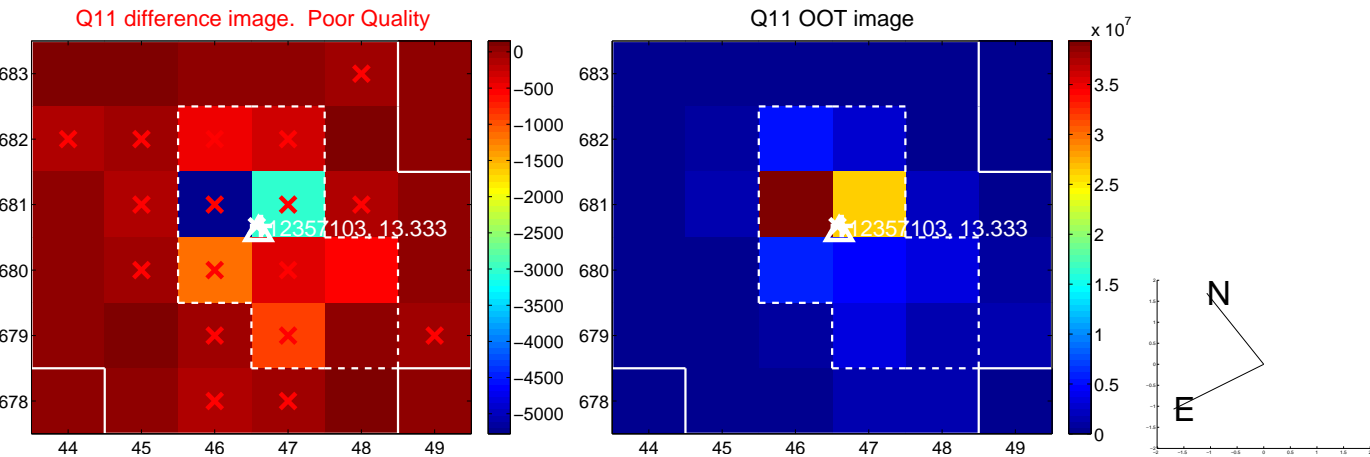
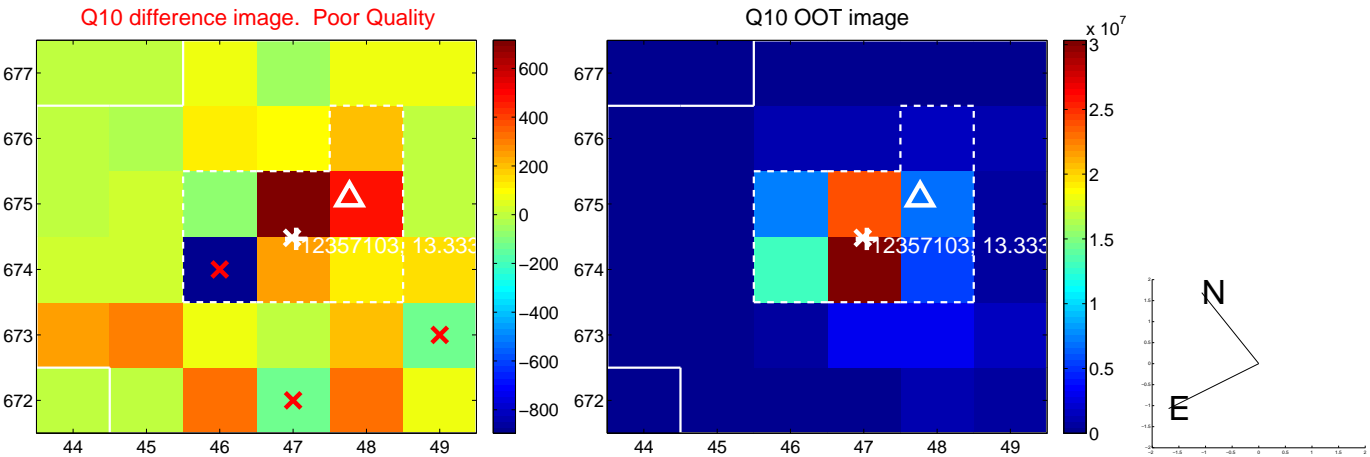
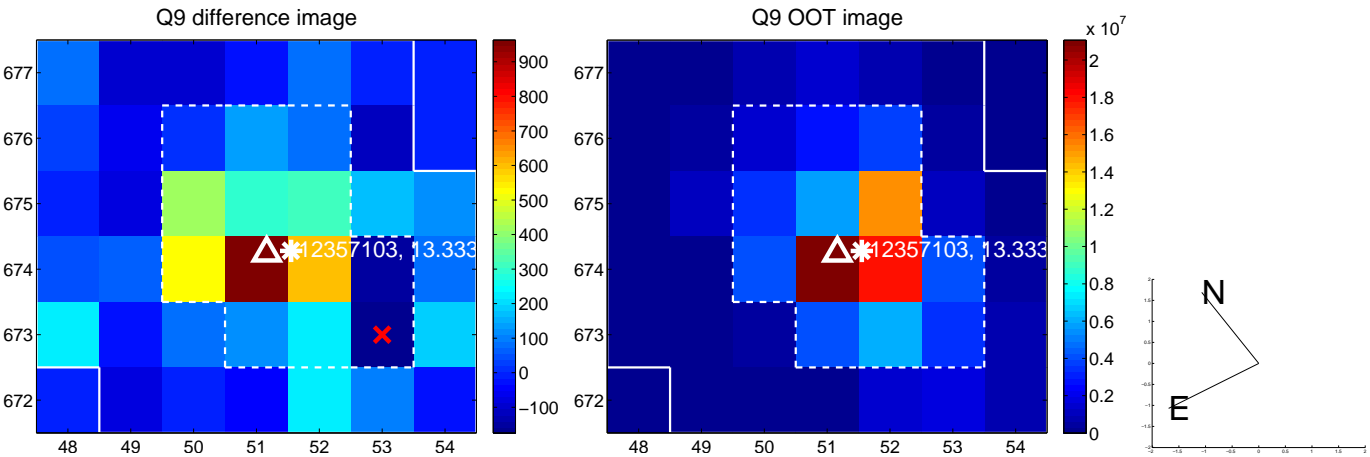


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

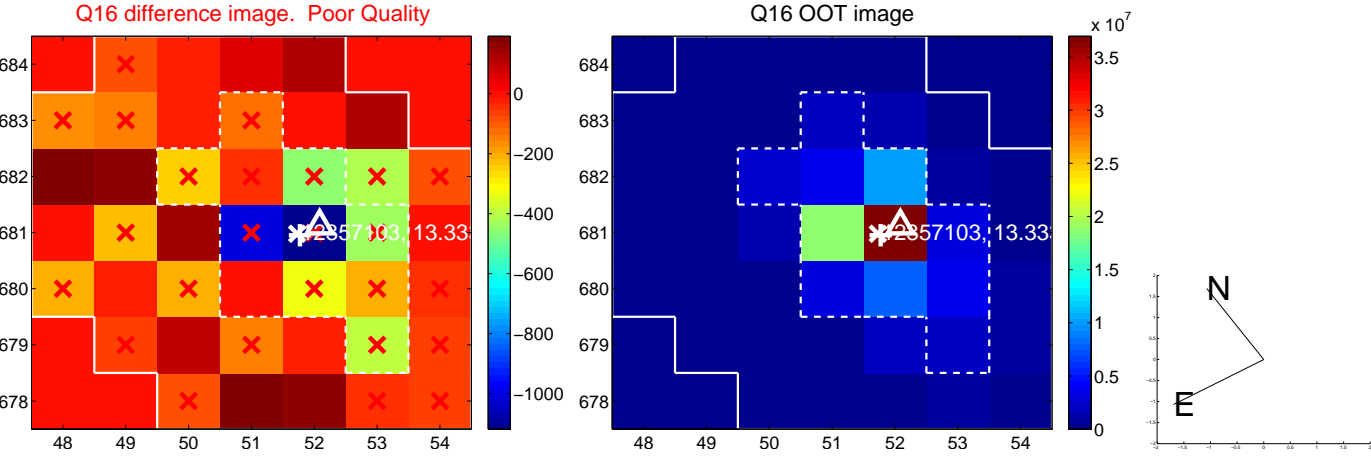
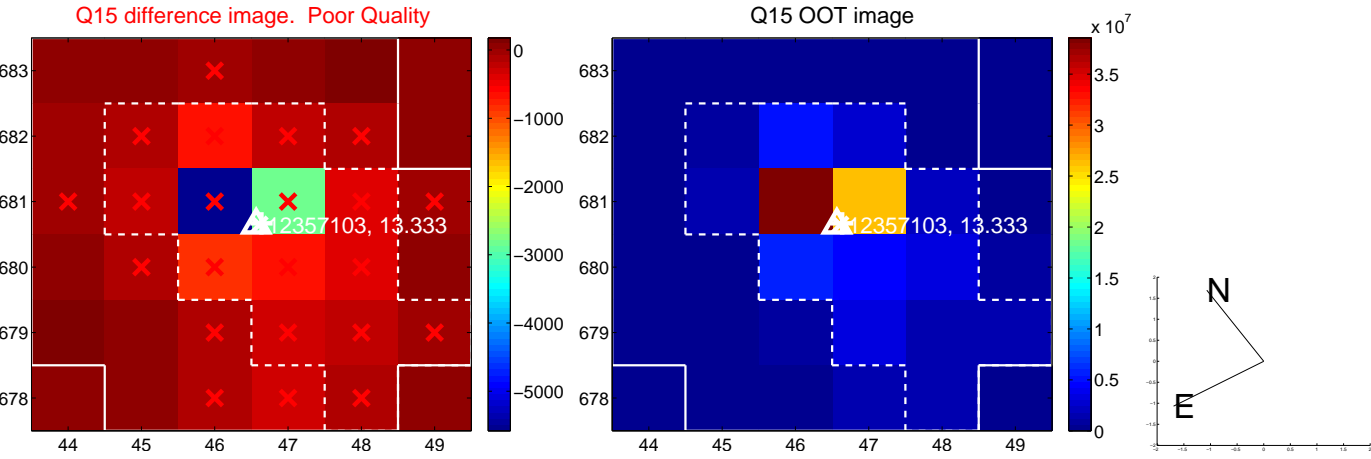
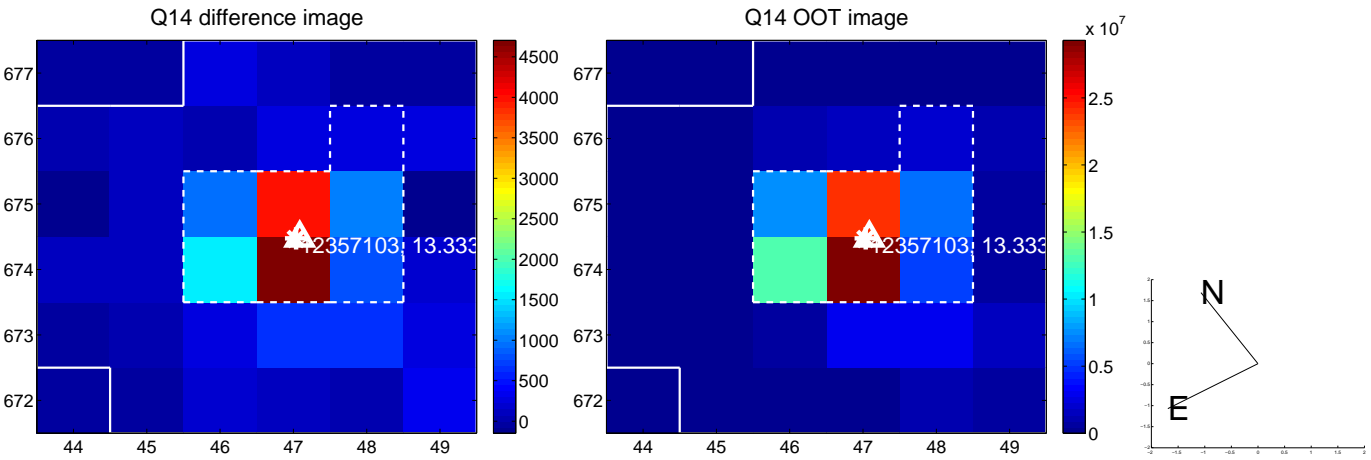
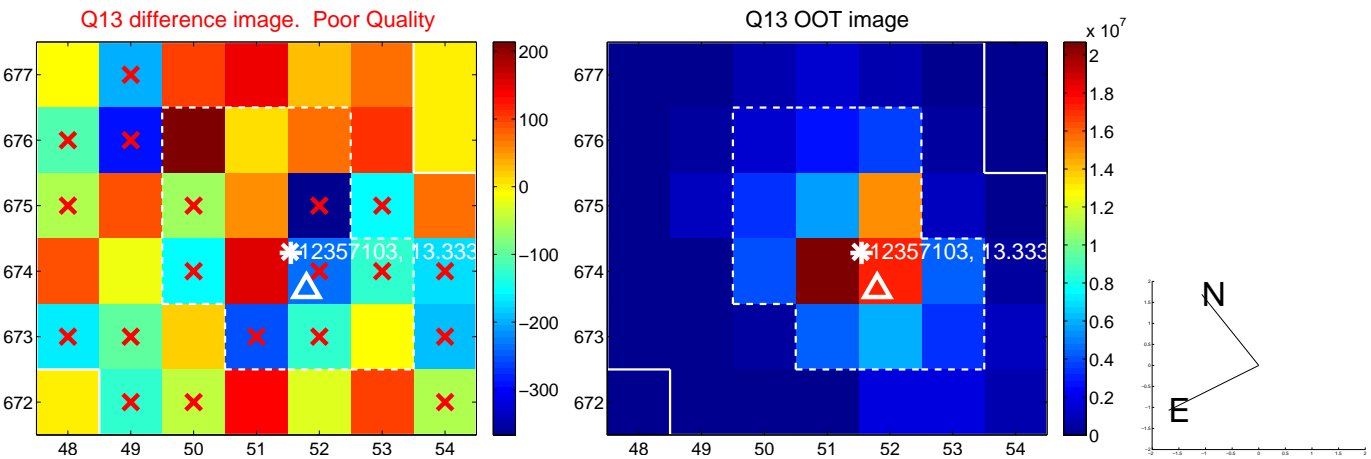
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



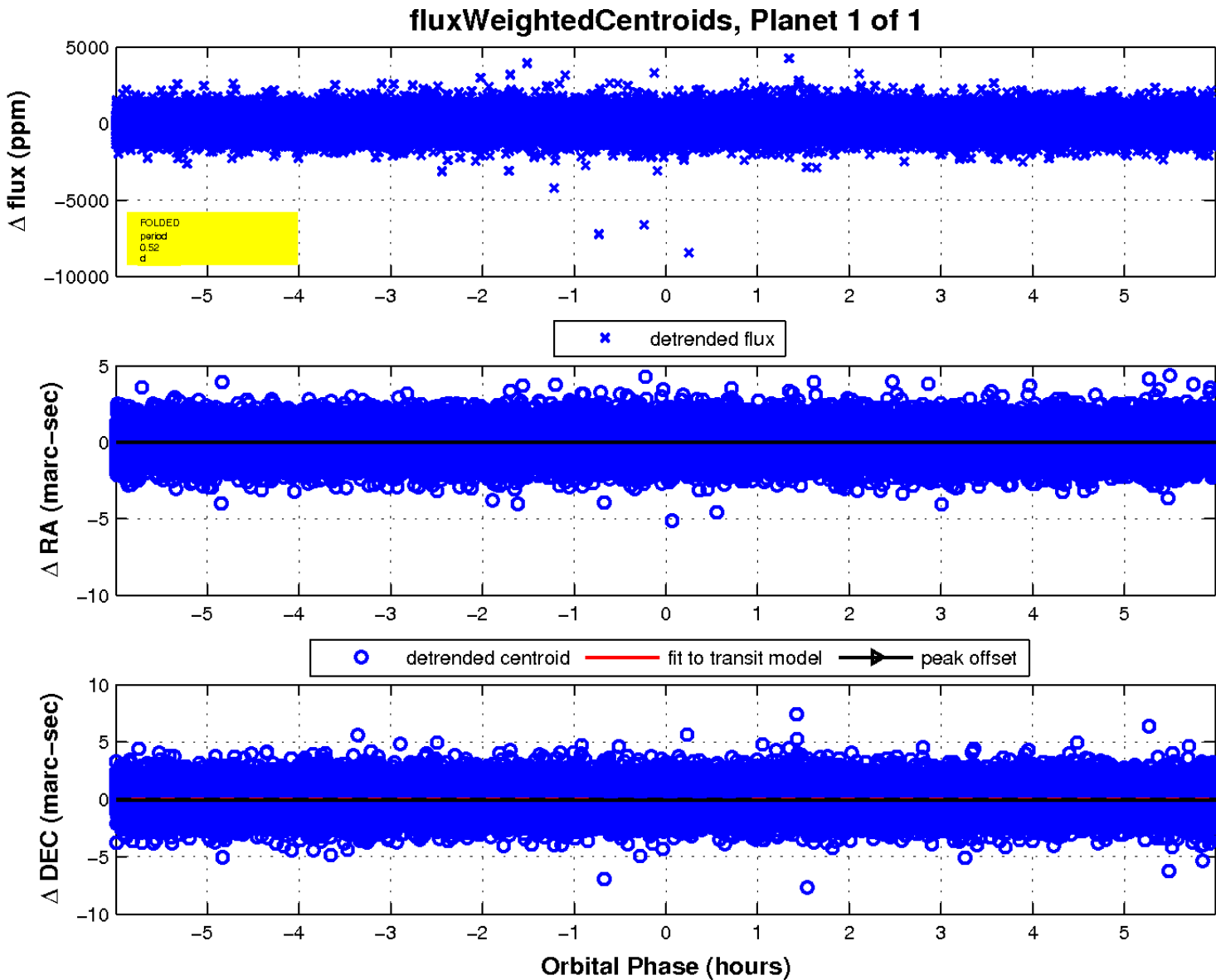
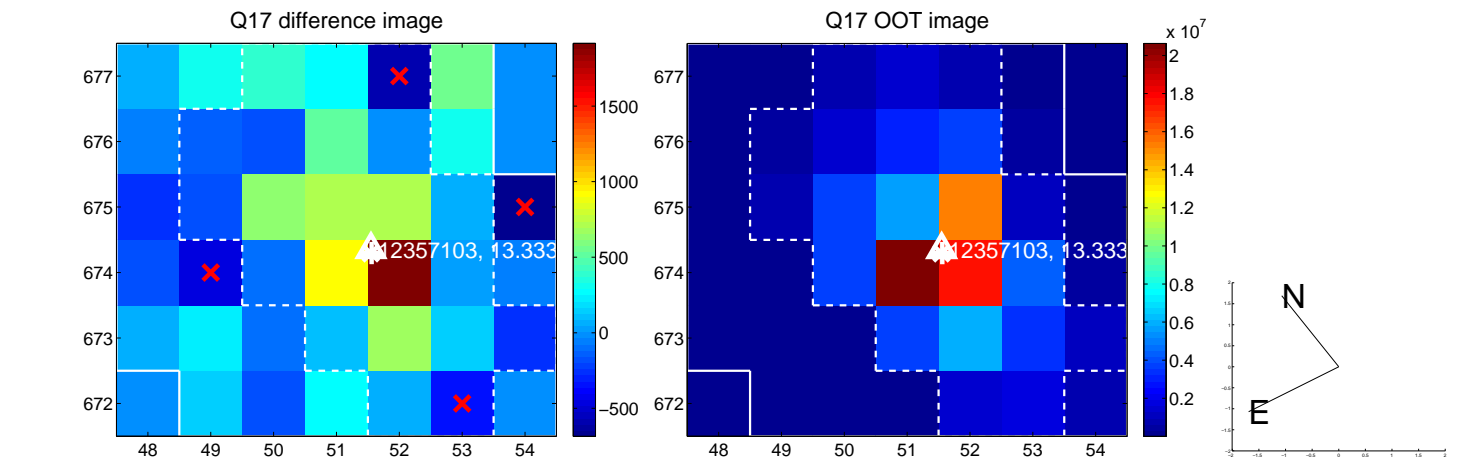
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

