

KIC 012418891

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
012418891-01	OBS	4321.01	0.760933	131.625784	122.0	1.857	12.1	10.2	0.87	5629	1.15	2581.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012418891-01	OBS	FP	0.00	0	0	1	1	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.

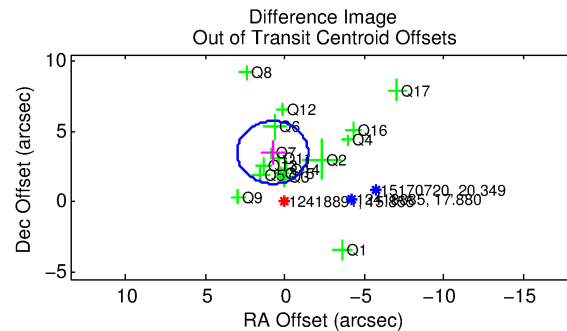
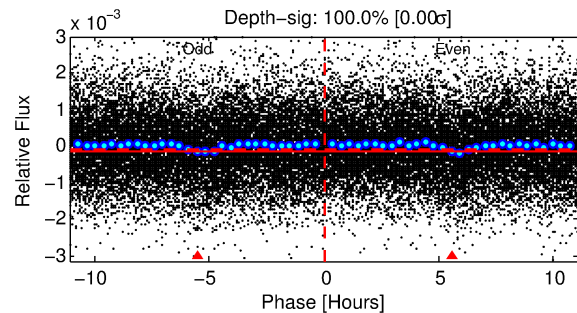
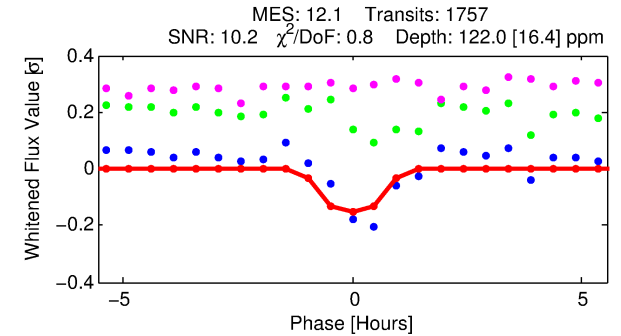
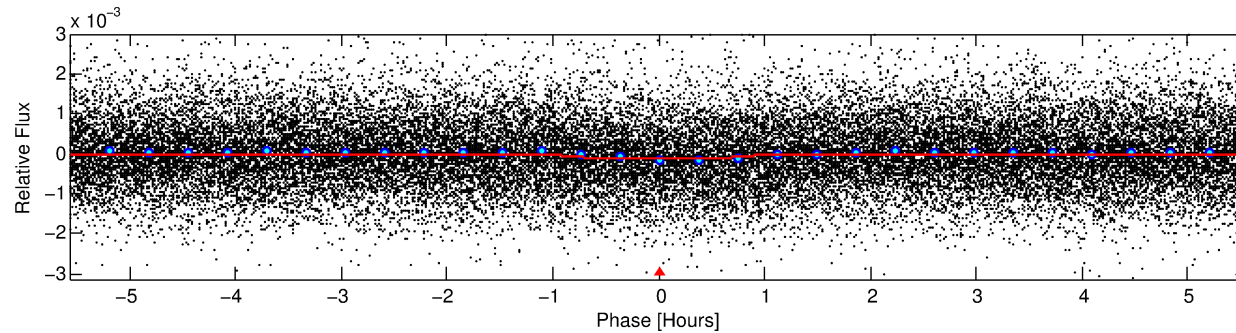
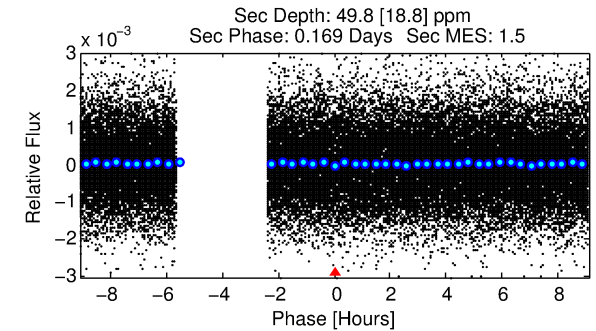
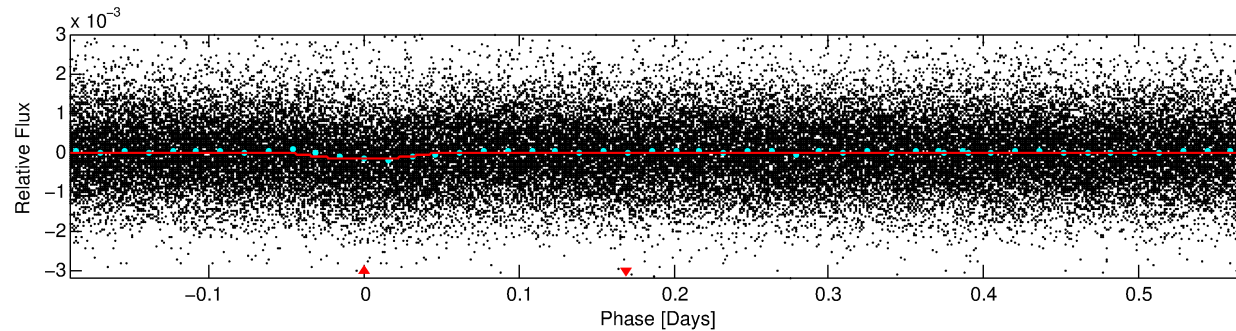
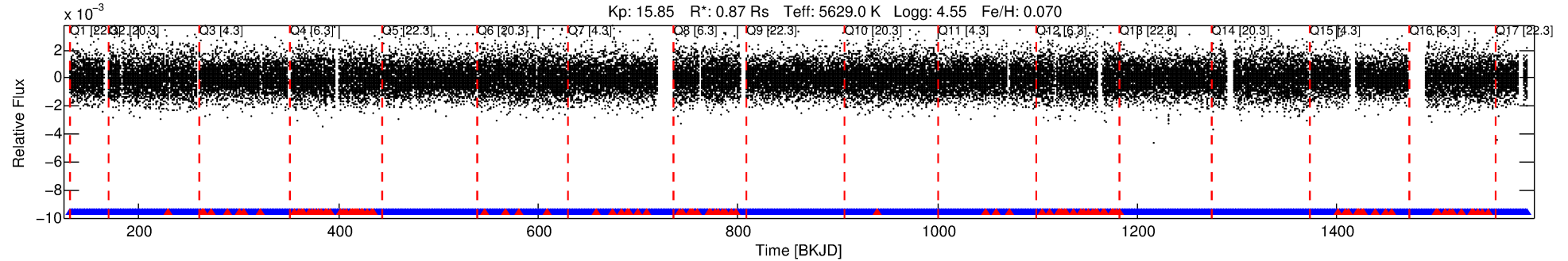
Ephemeris Match Information For 012418891-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
012418891-01	12418891	7533.01	12418816	1:1	73.4	-11	15	12.40	15.85	3050.70	Direct-PRF	0	0.28	0.81

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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 σ_P < 5.0 and σ_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: 12418891 Candidate: 1 of 1 Period: 0.761 d
KOI: K04321.01 Corr: 0.843



DV Fit Results:

Period = 0.76093 [0.00001] d
Epoch = 131.6258 [0.0026] BKJD
Rp/R* = 0.0121 [0.0116]
a/R* = 1.73 [5.04]
b = 0.90 [0.95]
Seff = 2581.29 [777.55]
Teq = 1818 [137] K
Rp = 1.15 [1.13] Re
a = 0.0162 [0.0031] AU
Ag = 5.46 [10.73] [0.42σ]
Teffp = 4295 [2094] K [1.18σ]

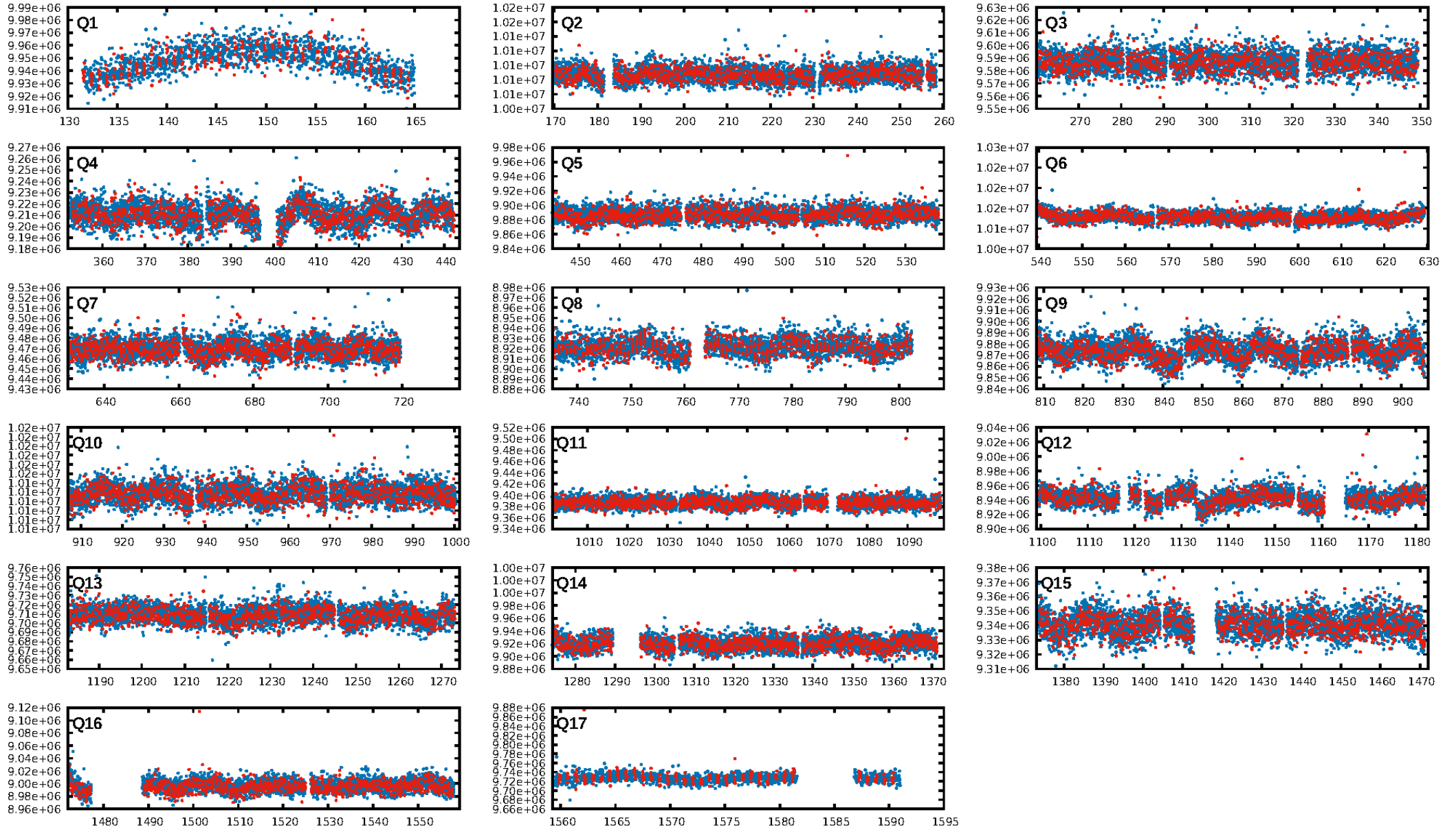
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.54e-35
RollingBand-fgt: 0.93 [1569/1679]
GhostDiagnostic-chr: 0.1761
Centroid-sig: 1.6%
Centroid-so: 3.274 arcsec [2.41σ]
OotOffset-rm: 3.596 arcsec [4.83σ]
KicOffset-rm: 3.659 arcsec [4.86σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.06 [1/16]
DiffImageOverlap-fno: 1.00 [17/17]

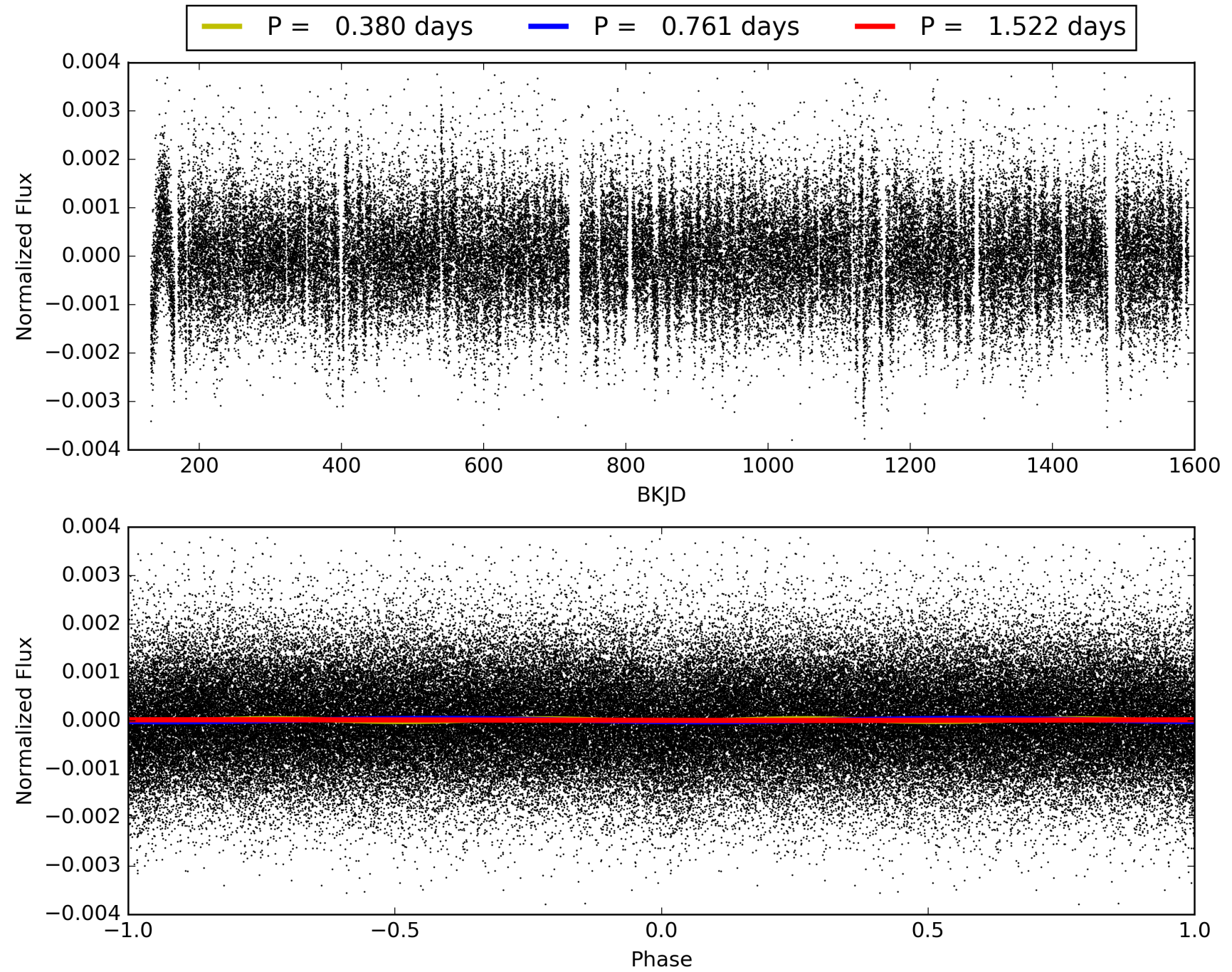
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:25:52 Z

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

TCE 012418891-01, PDC Light Curves

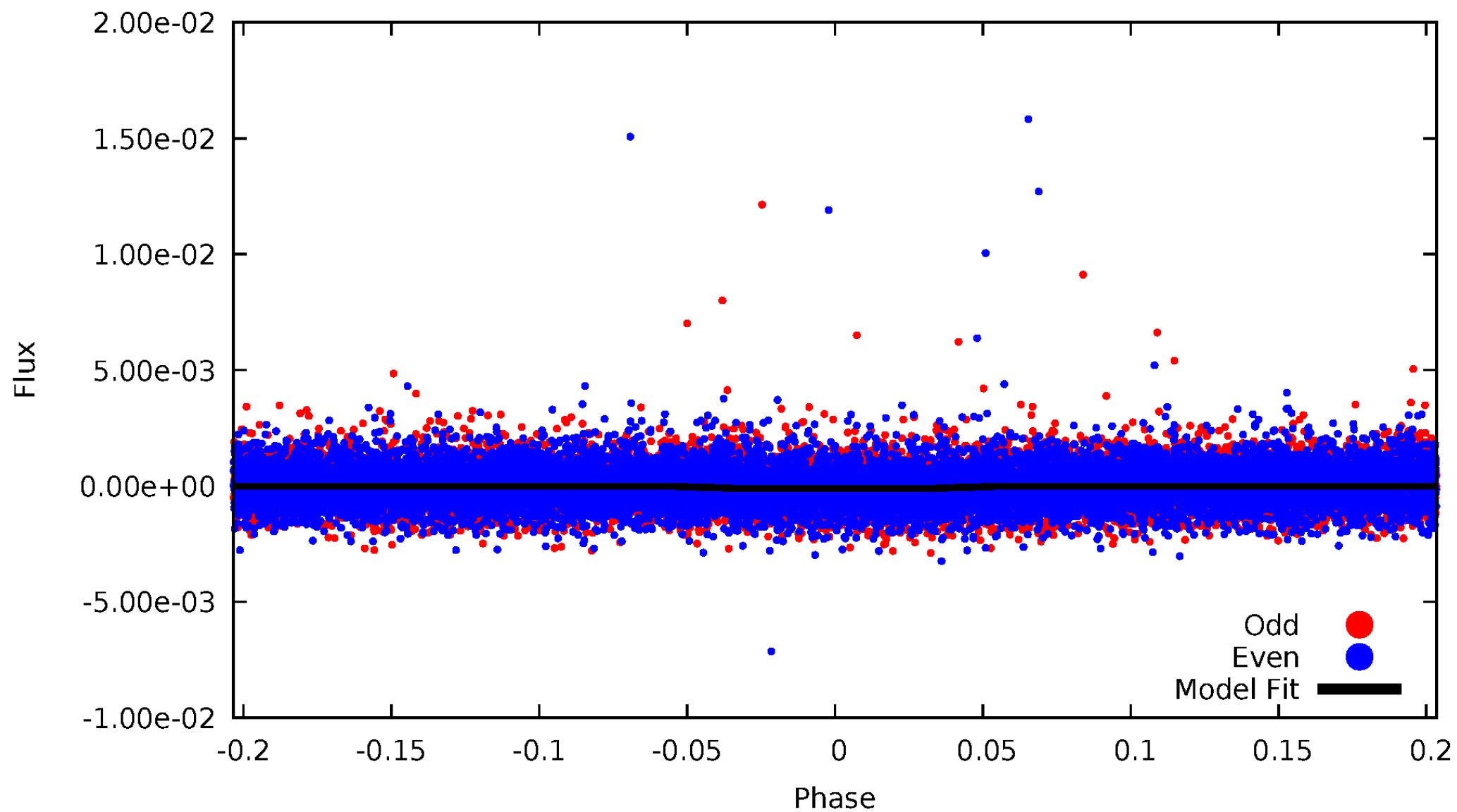


TCE 012418891-01



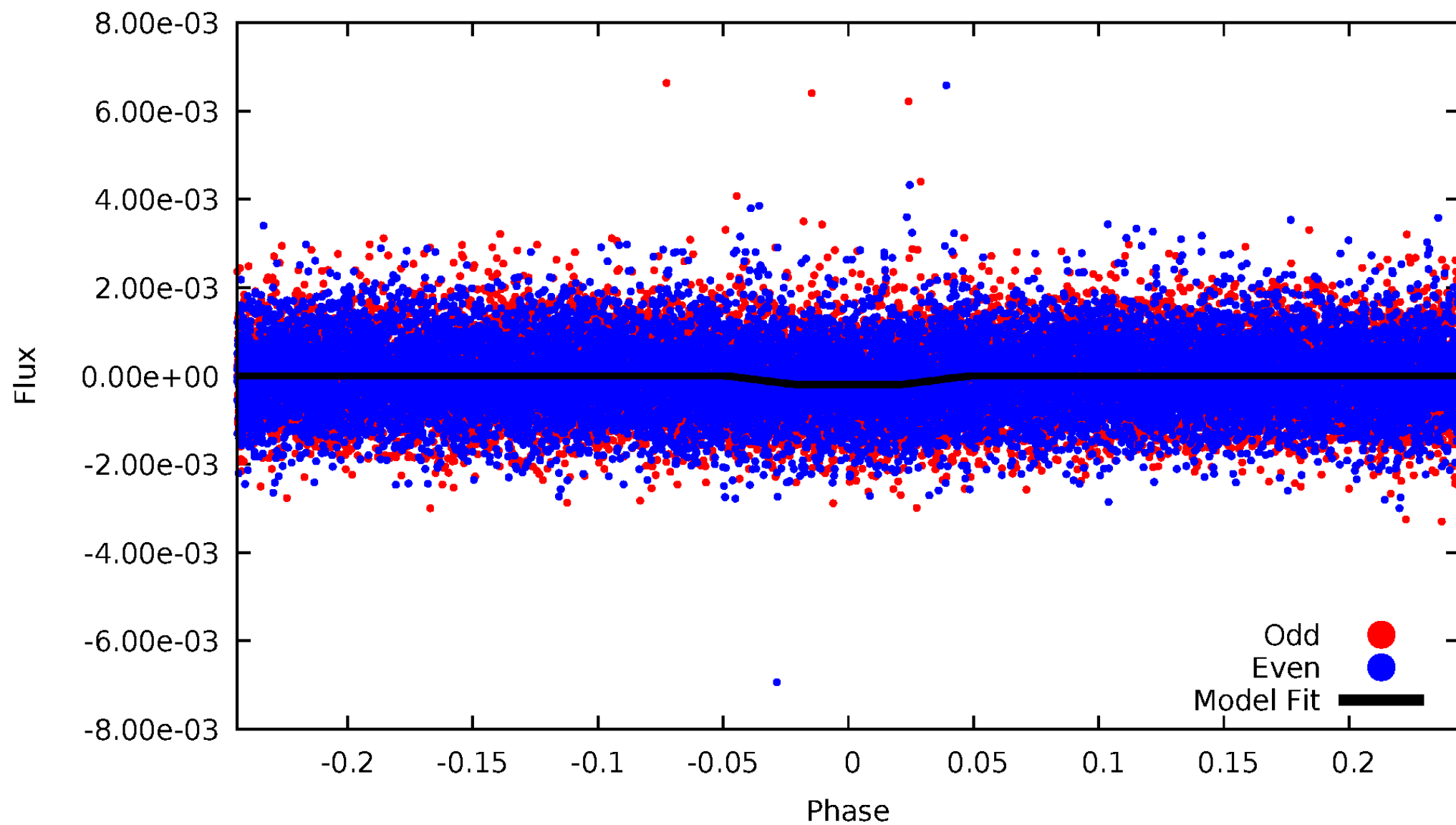
DV Odd/Even

TCE 012418891-01



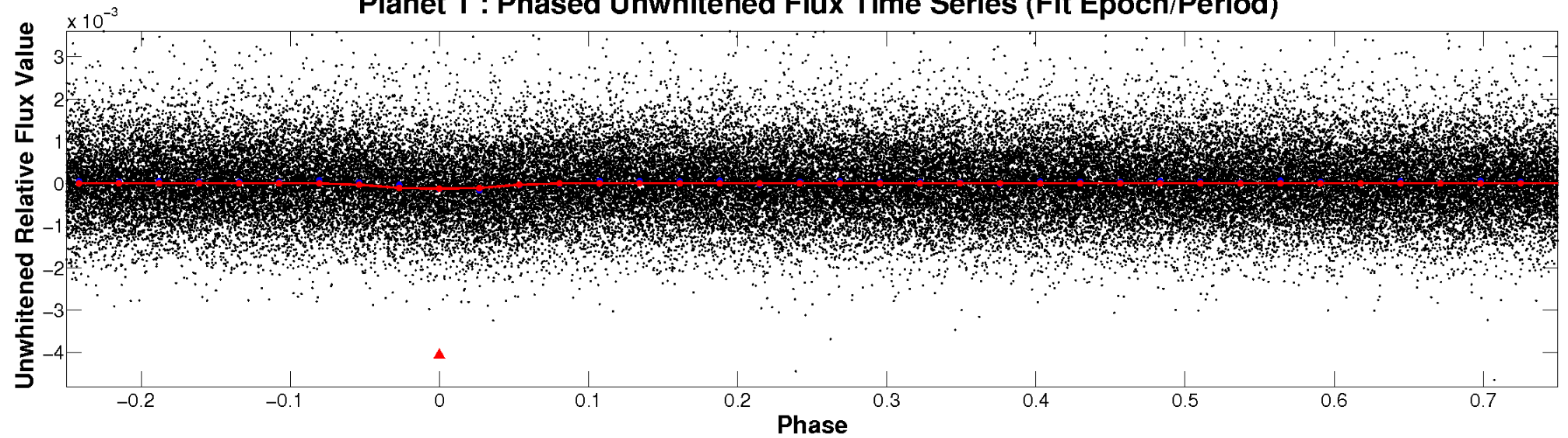
ALT Odd/Even

TCE 012418891-01

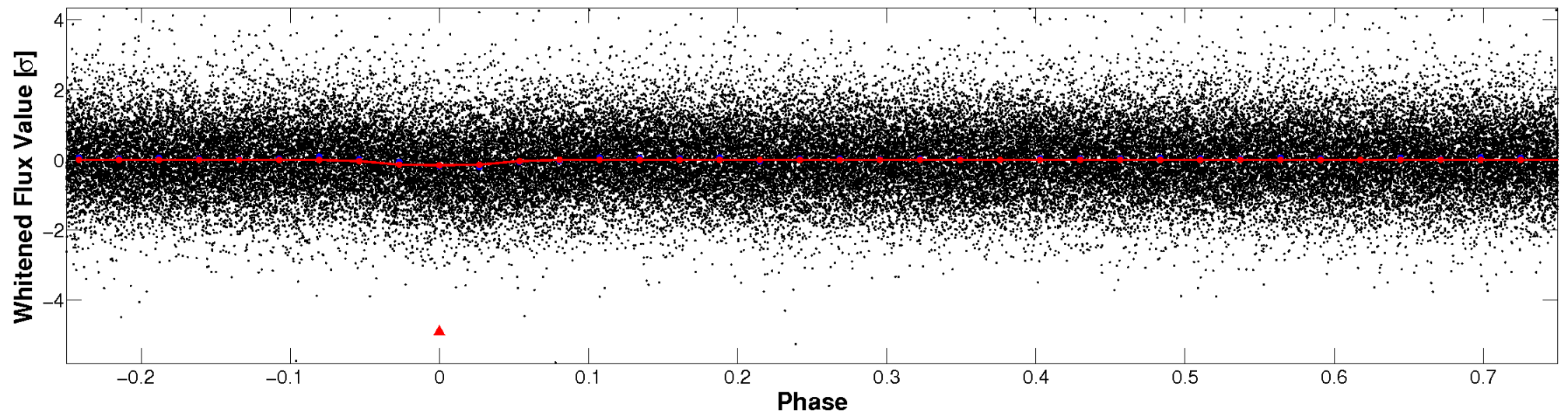


Non-Whitened Vs. Whitened Light Curve

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

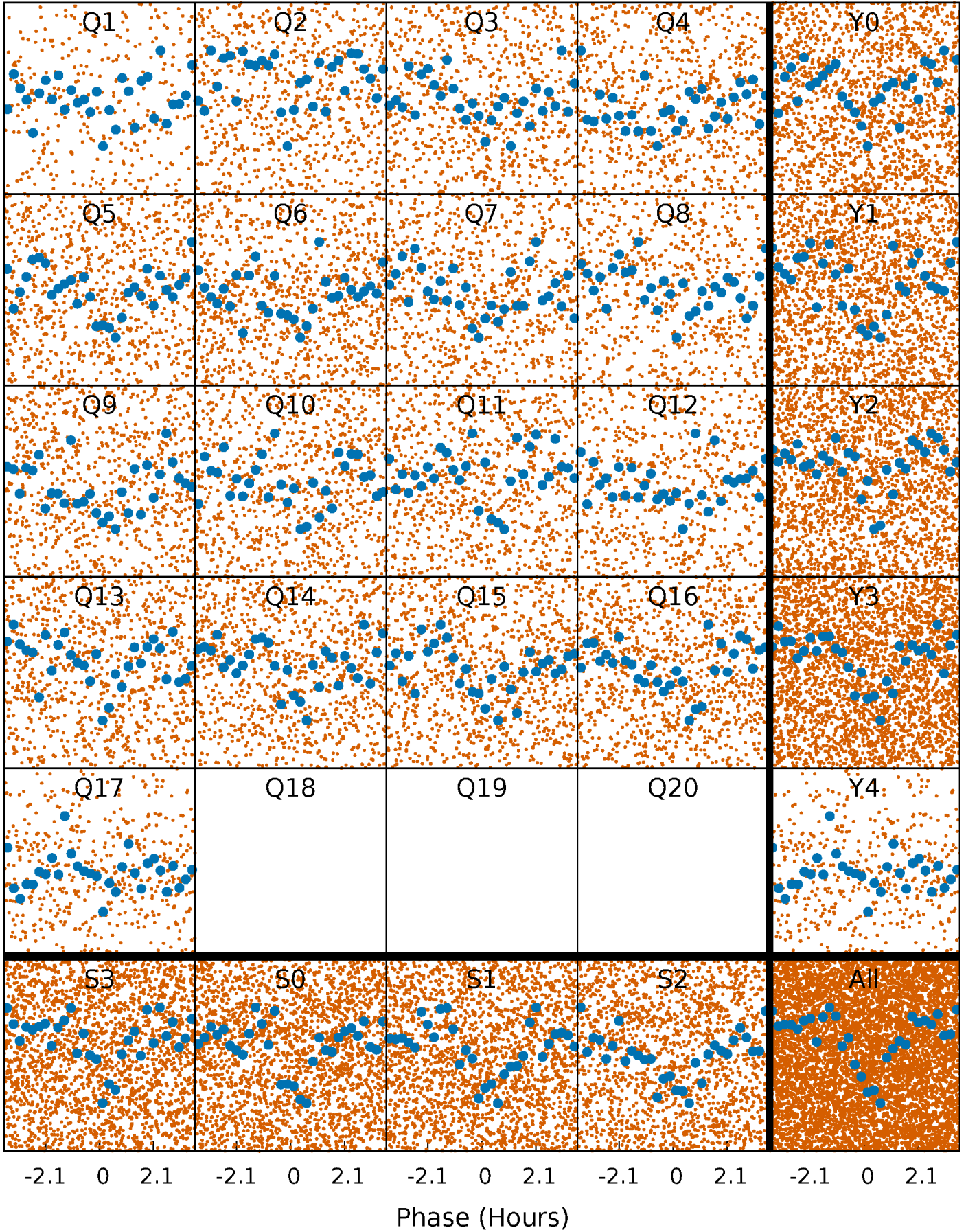


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



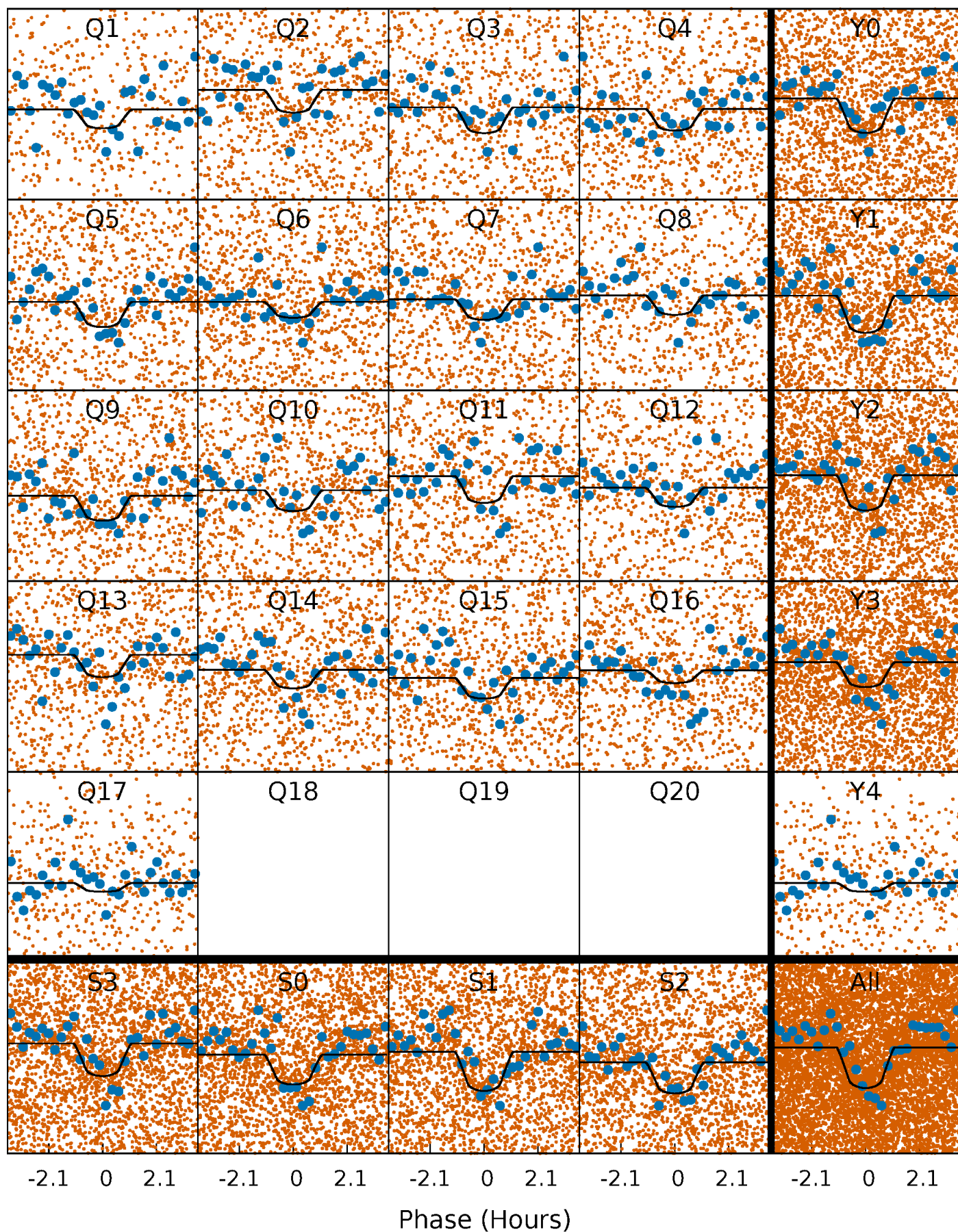
PDC Quarter-Phased Transit Curves

TCE 012418891-01 P= 0.760933 Days $T_0=131.625784$ (BKJD)



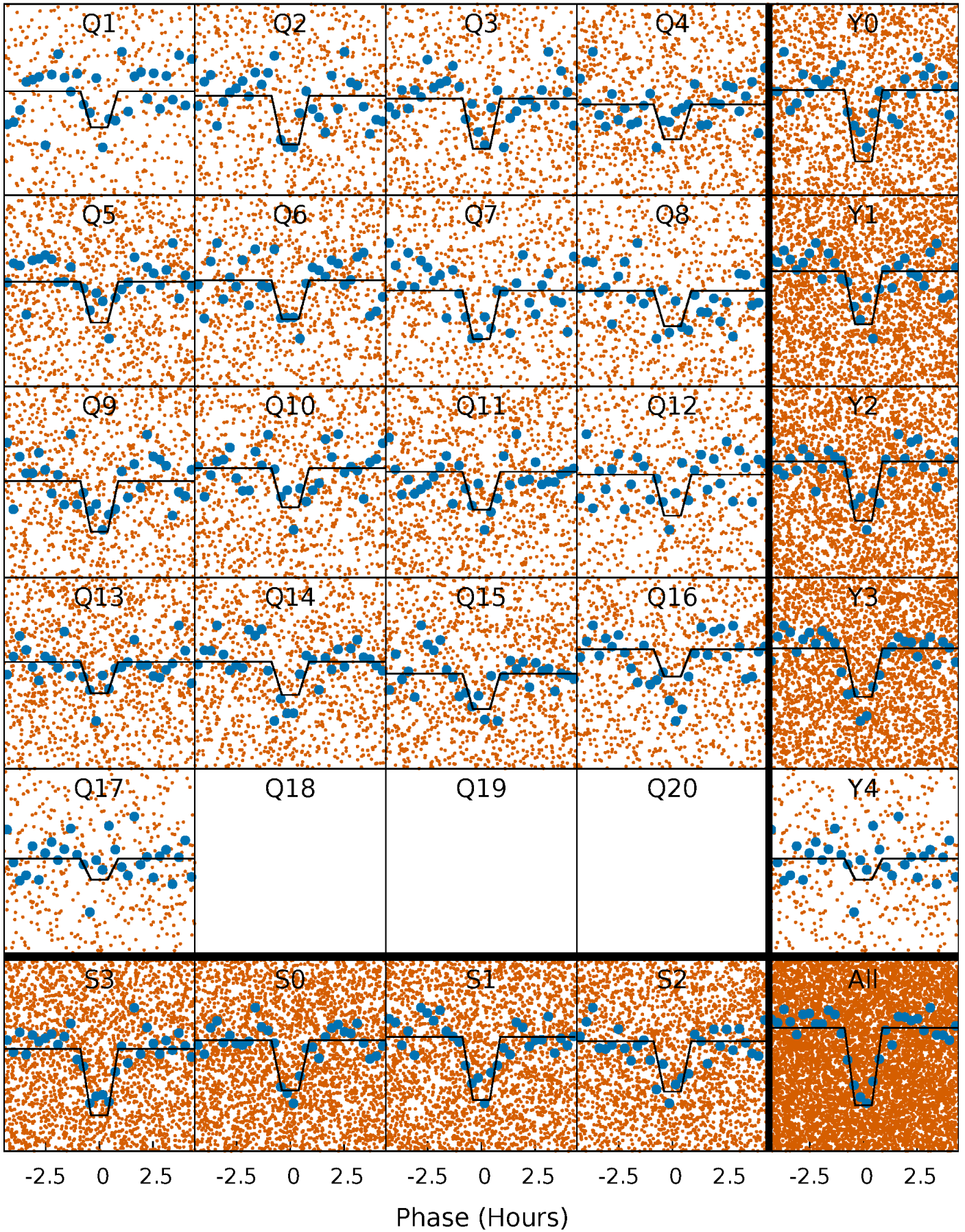
DV Quarter-Phased Transit Curves

TCE 012418891-01 P= 0.760933 Days $T_0=131.625784$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

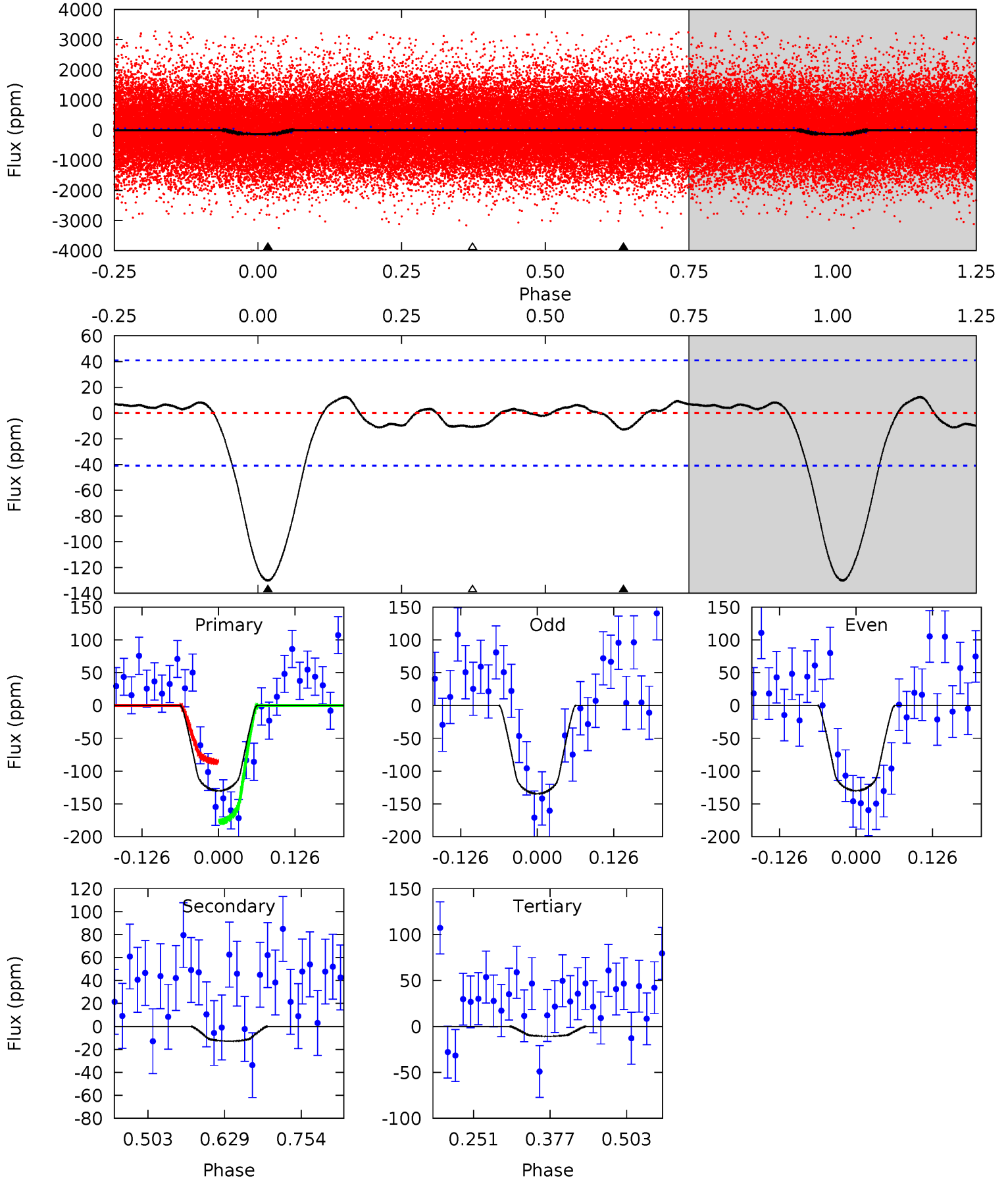
TCE 012418891-01 P= 0.760948 Days $T_0=131.623474$ (BKJD)



DV Model-Shift Uniqueness Test

012418891-01, P = 0.760933 Days, E = 130.864851 Days

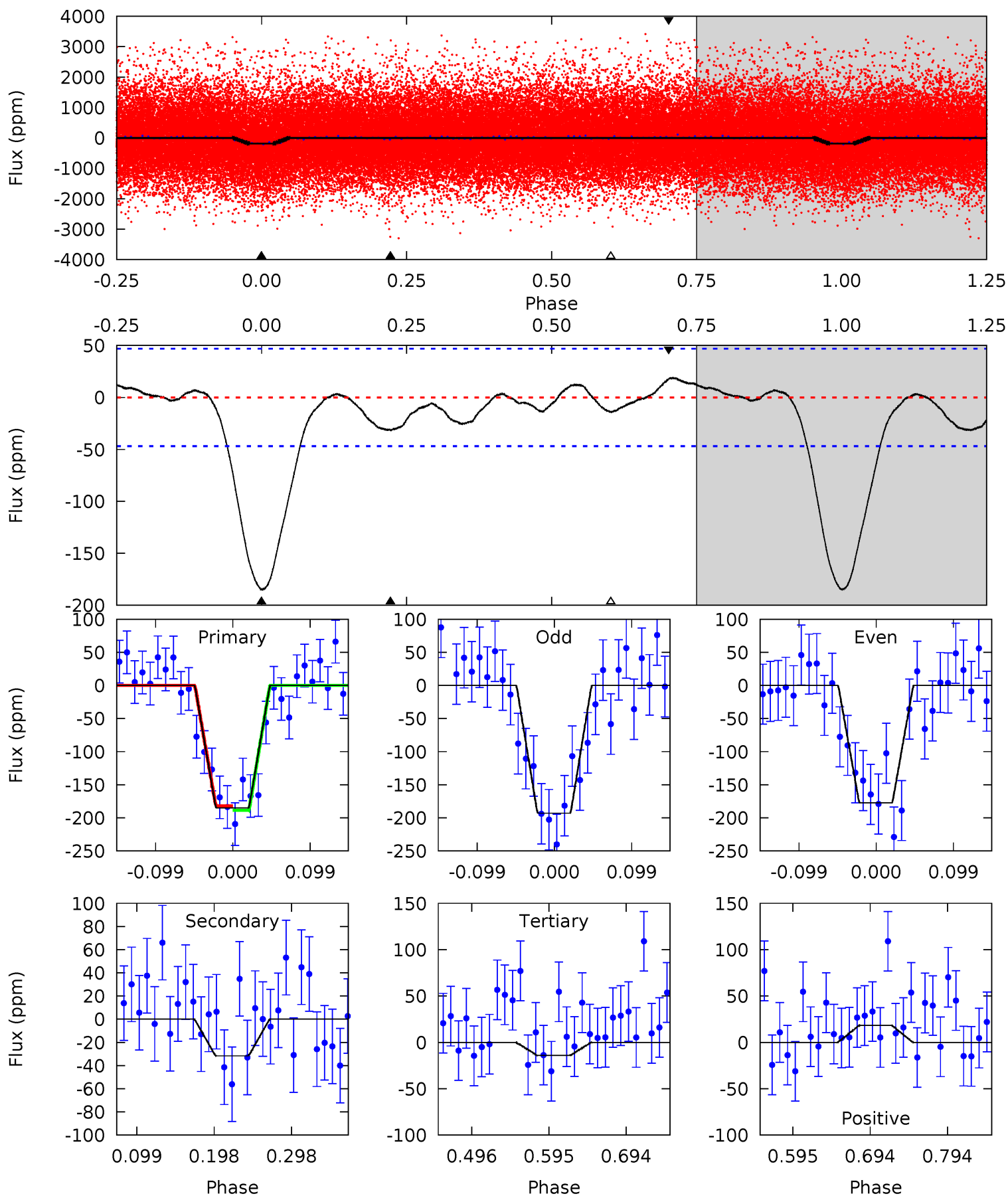
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	1.41	1.18	0	4.52	1.53	0.73	13.2	14.4	0.23	1.41	0.26	0.90	0.09	5.08



Alt Model-Shift Uniqueness Test

012418891-01, P = 0.760948 Days, E = 130.862526 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	3.09	1.38	1.77	4.57	1.65	1.02	16.7	16.3	1.71	1.31	0.76	0.94	0.09	0.33



Stellar Parameters For KIC 012418891

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5629^{+152}_{-169}	$4.553^{+0.038}_{-0.152}$	$0.070^{+0.200}_{-0.350}$	$0.870^{+0.193}_{-0.083}$	$0.987^{+0.073}_{-0.125}$	$2.107^{+0.428}_{-0.899}$
	+3%/-3%	+1%/-3%	+286%/-500%	+22%/-10%	+7%/-13%	+20%/-43%
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 012418891-01 / KOI 4321.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-13 ± 9	$1.46^{+1.02}_{-0.89}$	2595^{+148}_{-106}	3023^{+1433}_{-5669}	$0.775^{+4.191}_{-0.635}$
Alt.	-32 ± 10	$1.58^{+1.02}_{-0.96}$	2581^{+134}_{-98}	3586^{+1613}_{-739}	$1.688^{+8.967}_{-1.091}$

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 $A_{obs} \gg 1.0$

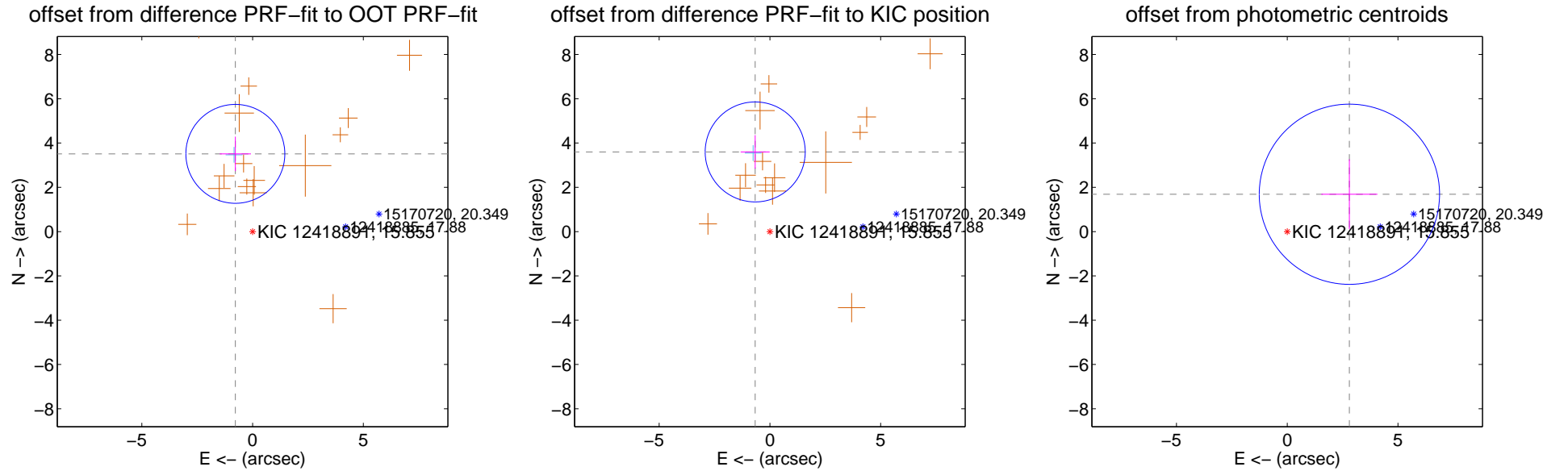
DV Centroid Data

Supplemental centroid analysis for 012418891-01. Kepler magnitude: 15.86. Transit SNR 10.16

There are 1 quarters with good PRF difference image offsets

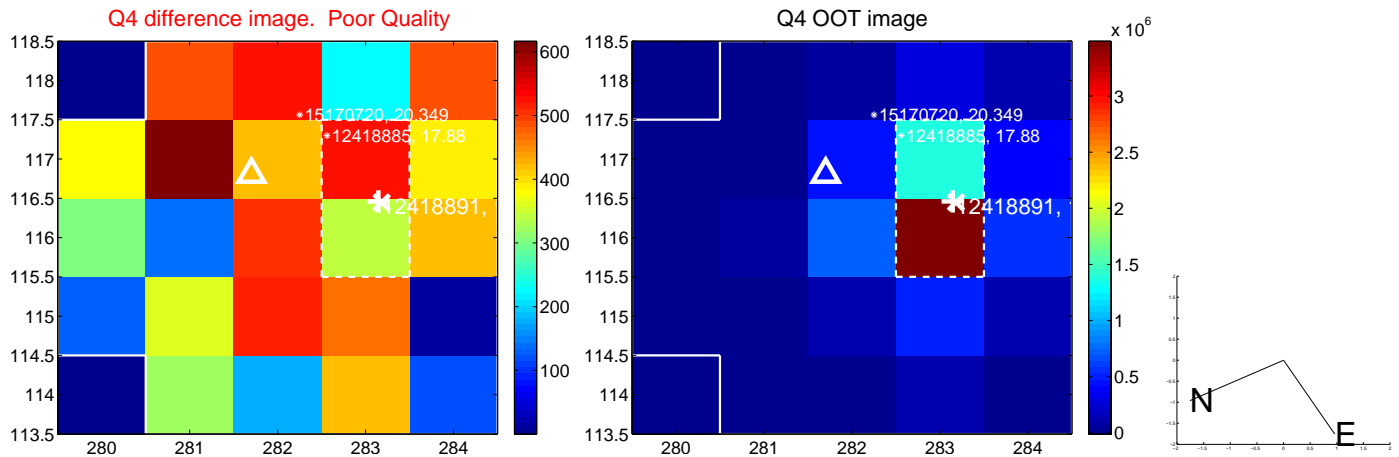
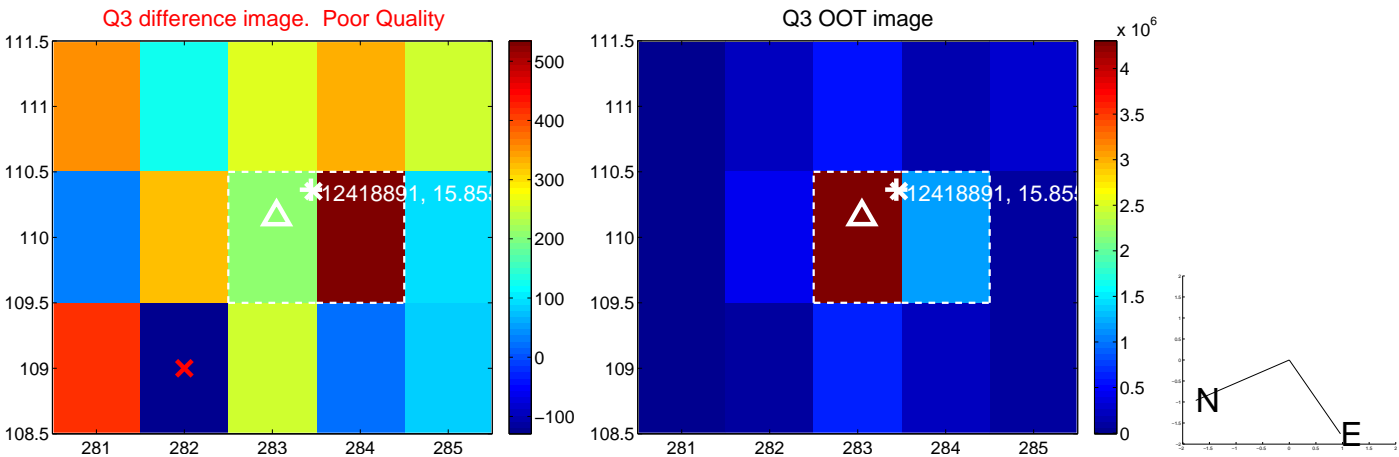
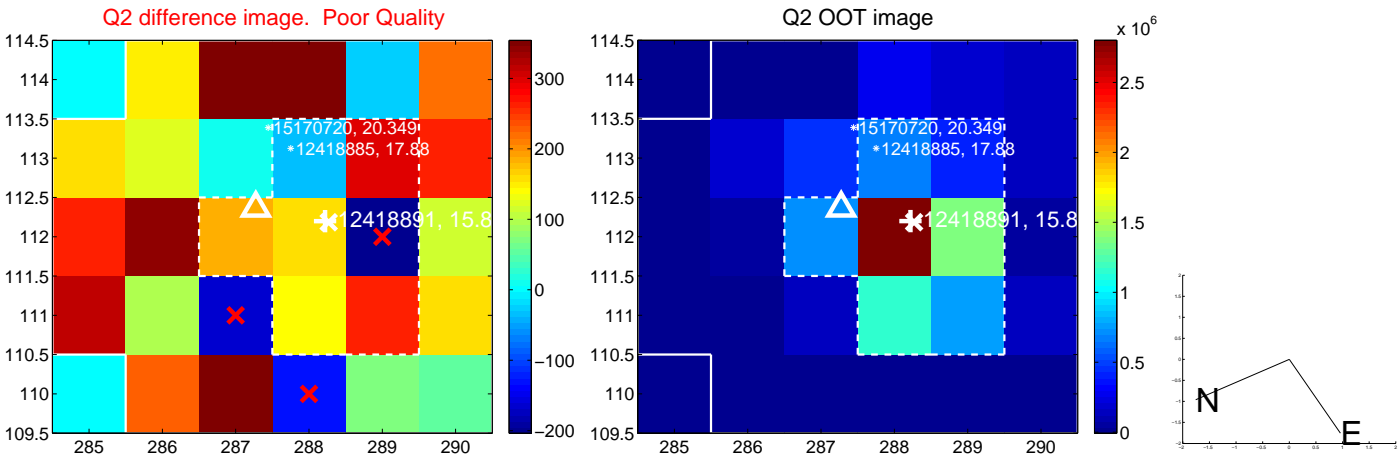
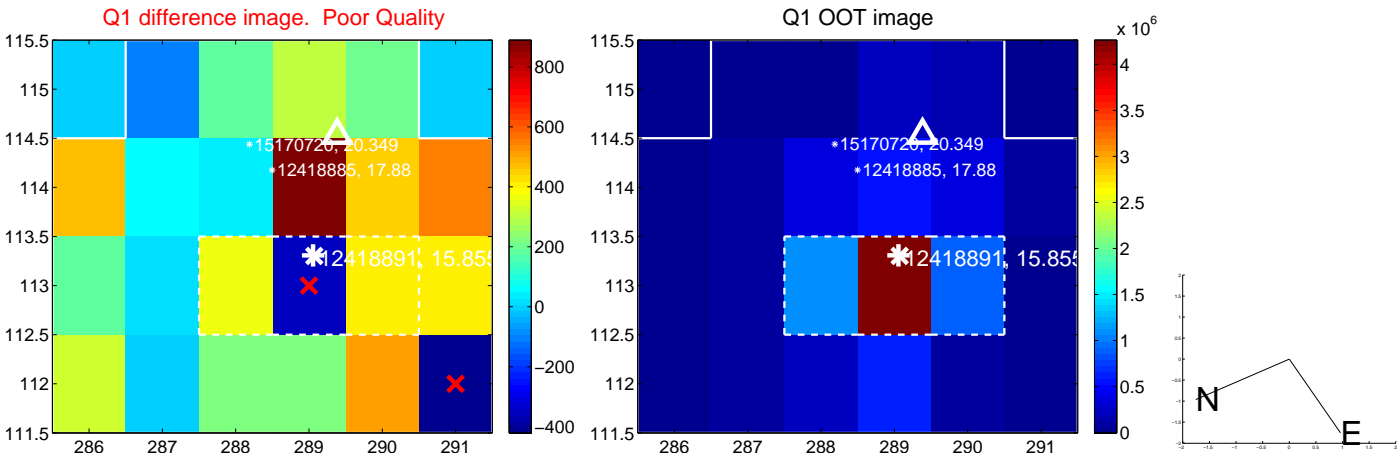
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.596 ± 0.744	4.83	0.778 ± 0.705	3.511 ± 0.778
PRF-fit source offset from KIC position	3.659 ± 0.752	4.86	0.664 ± 0.654	3.598 ± 0.756
photometric centroid source offset	3.27 ± 1.36	2.41	-2.81 ± 1.27	1.69 ± 1.58

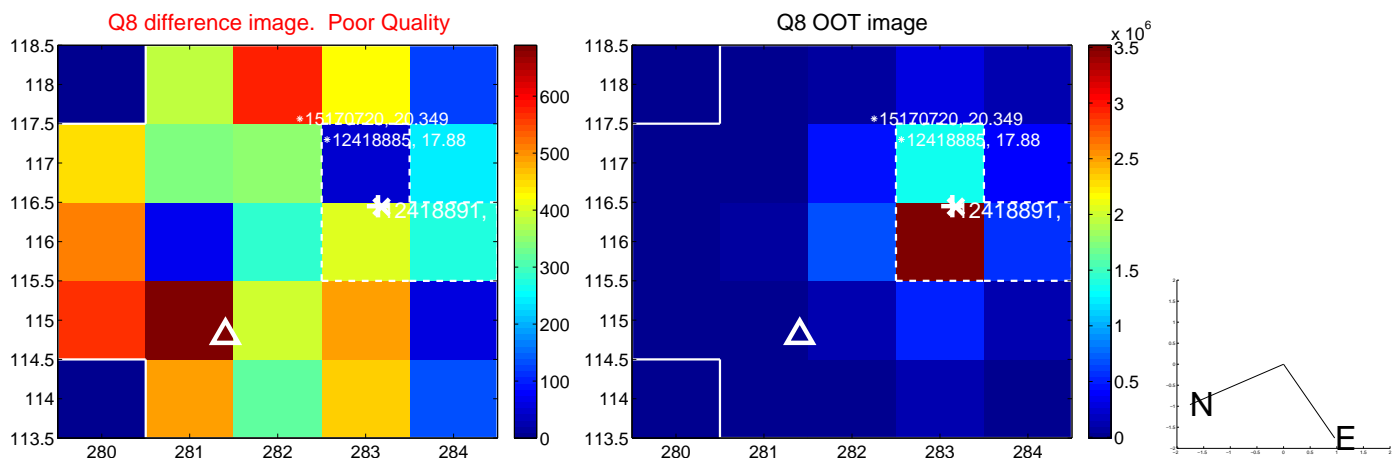
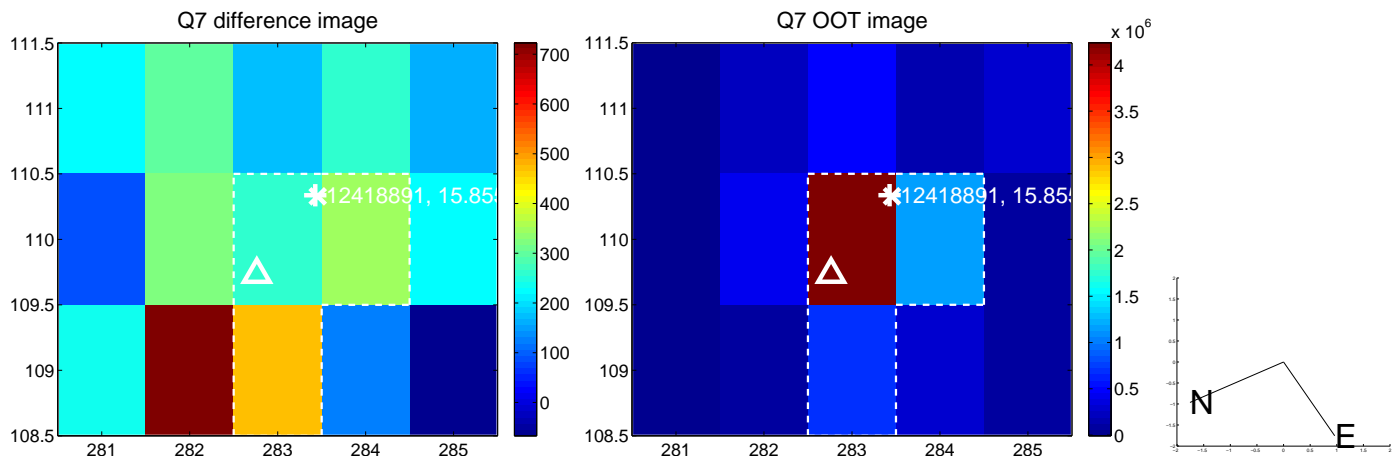
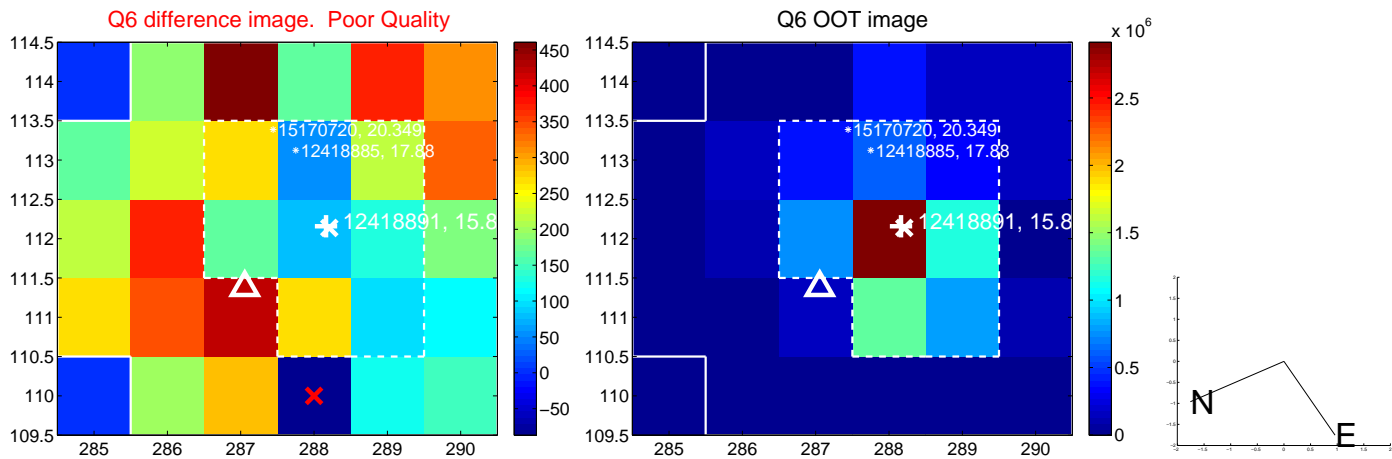
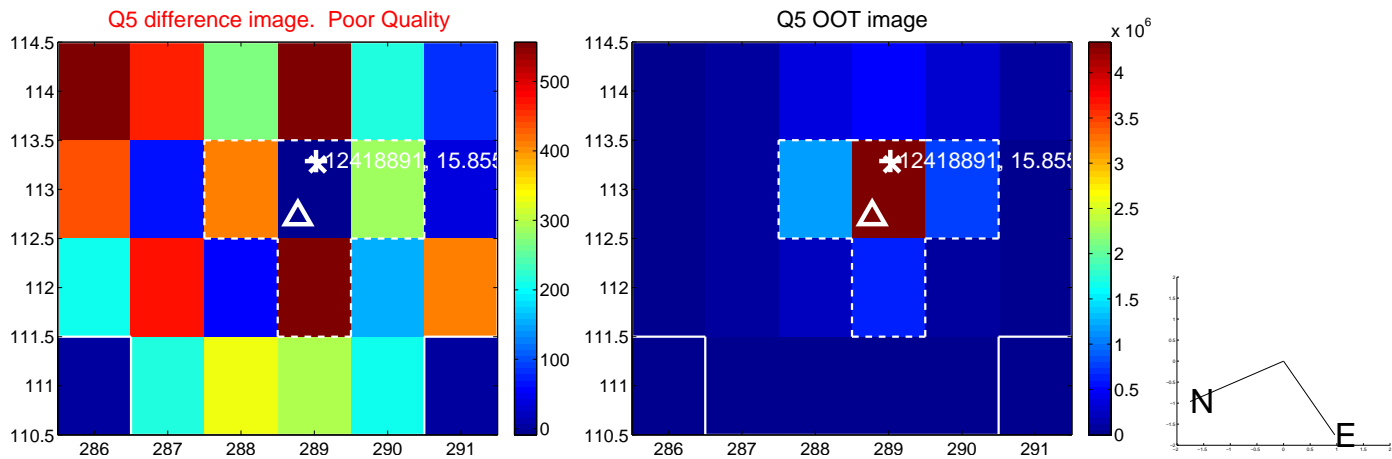


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

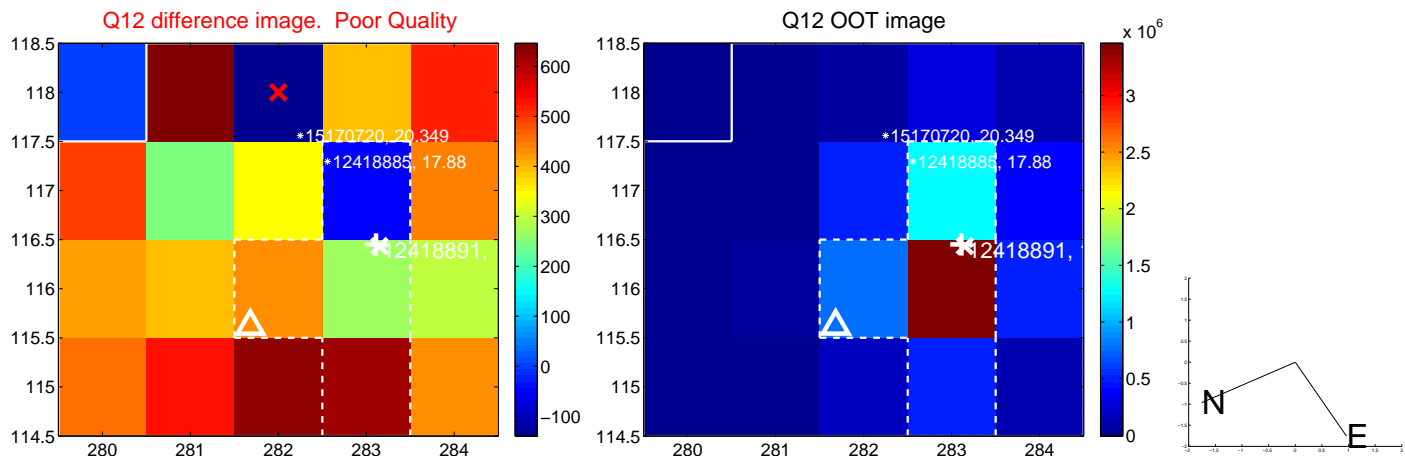
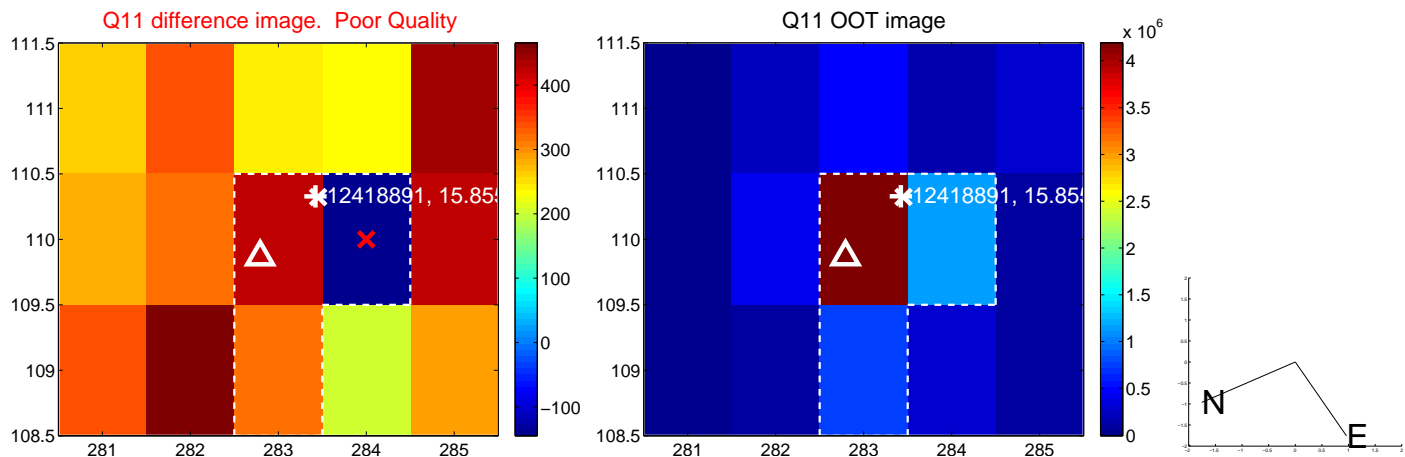
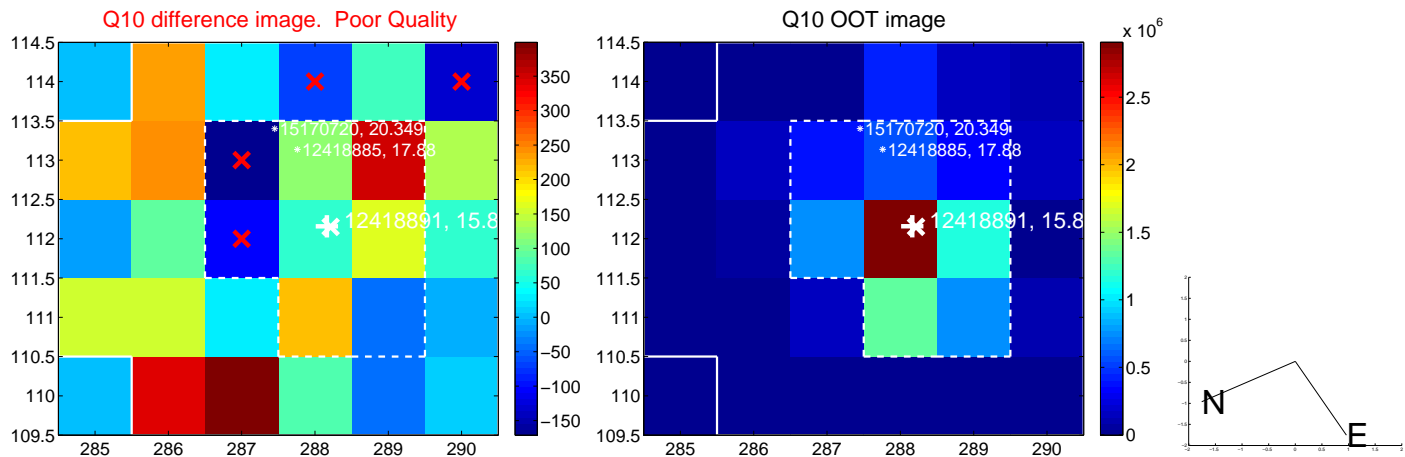
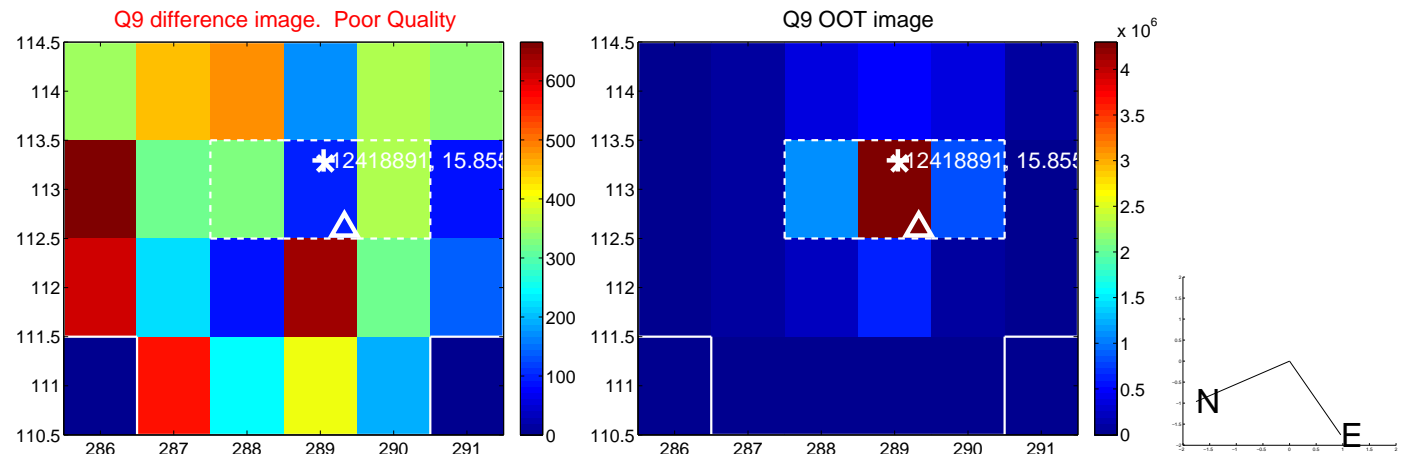
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



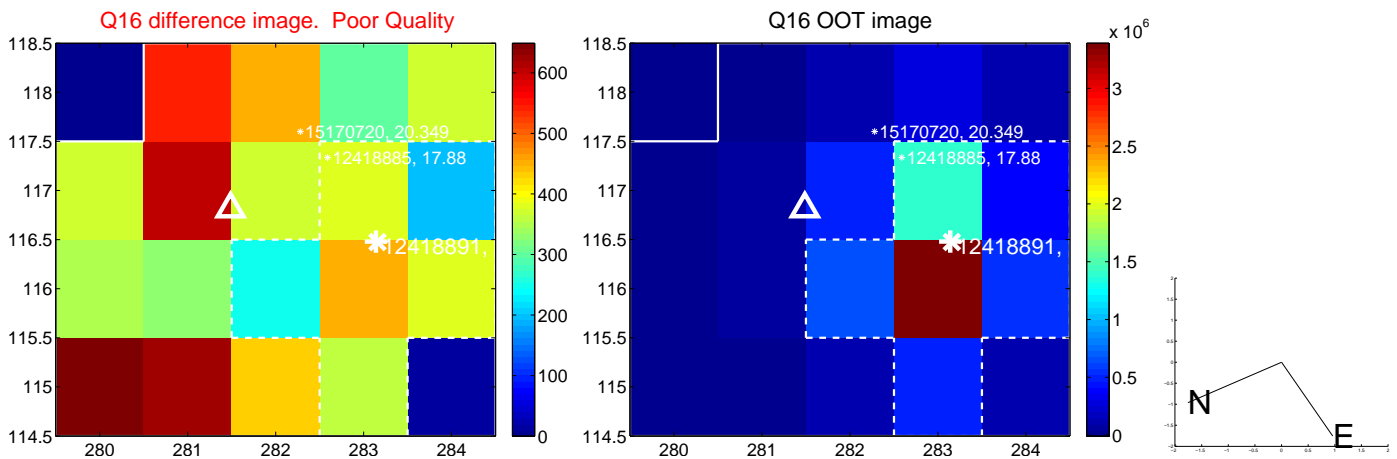
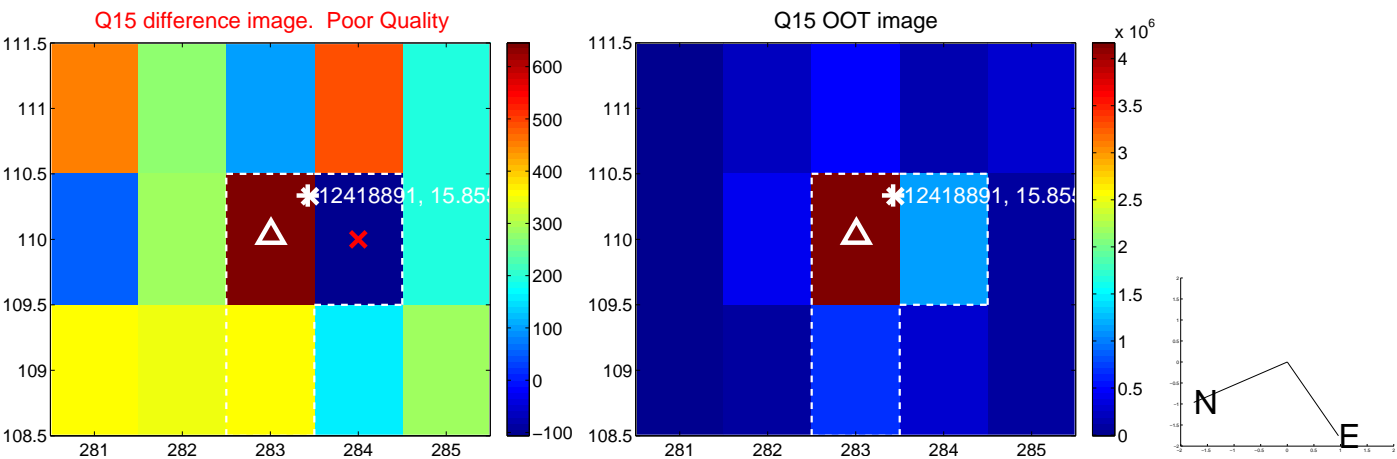
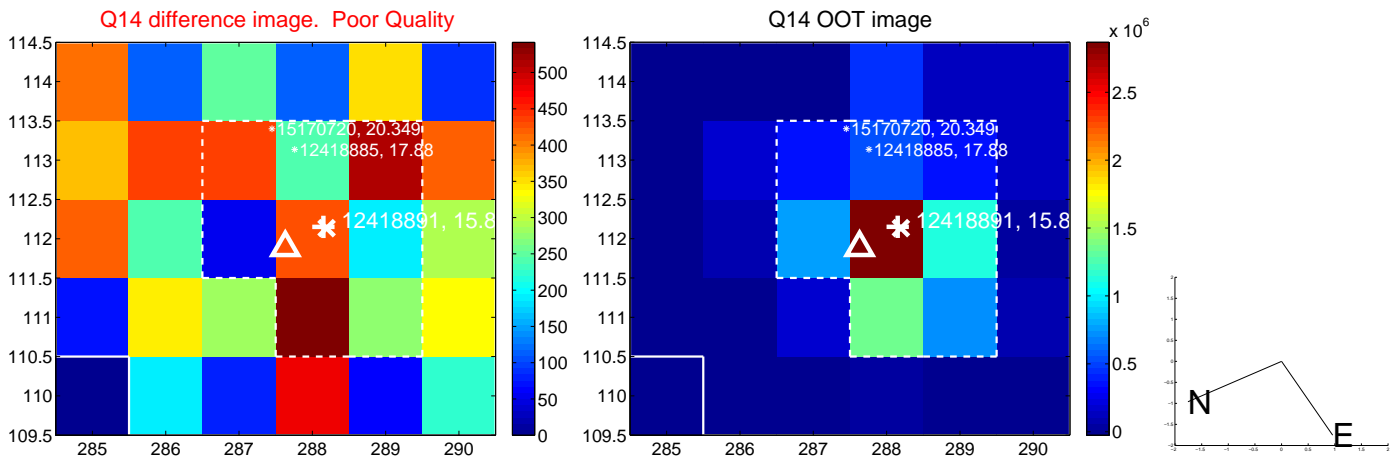
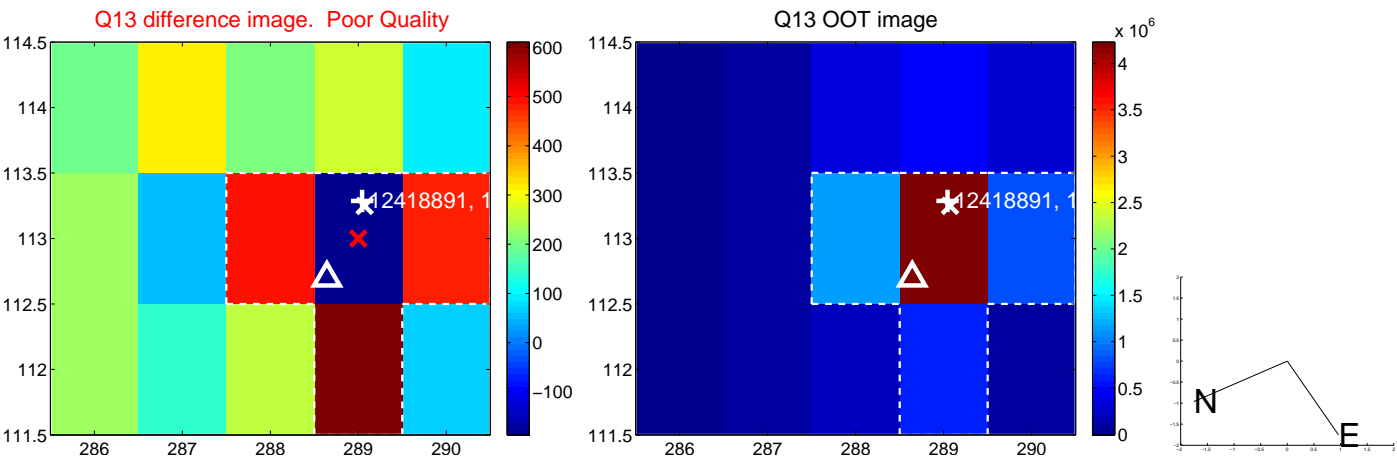
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



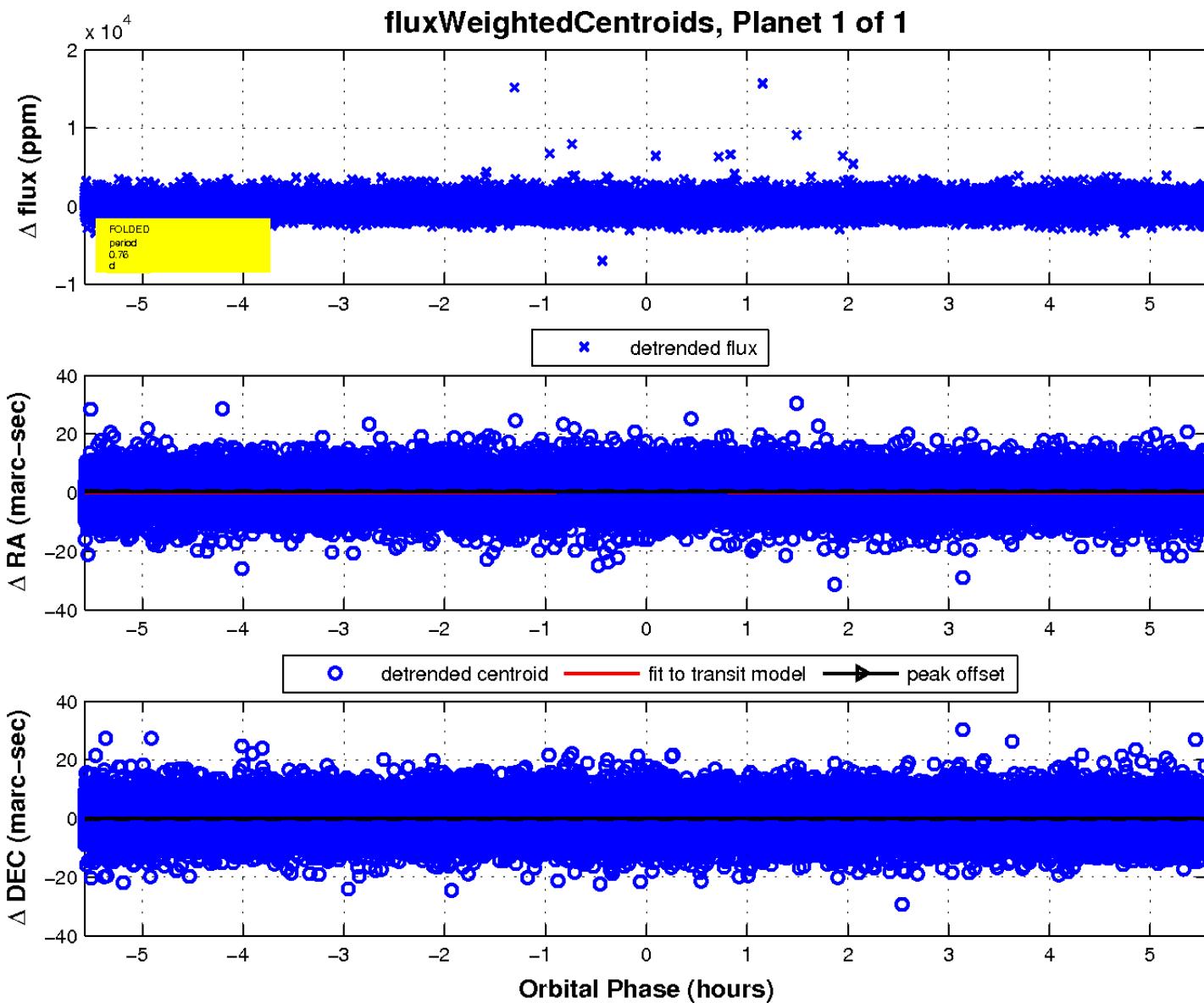
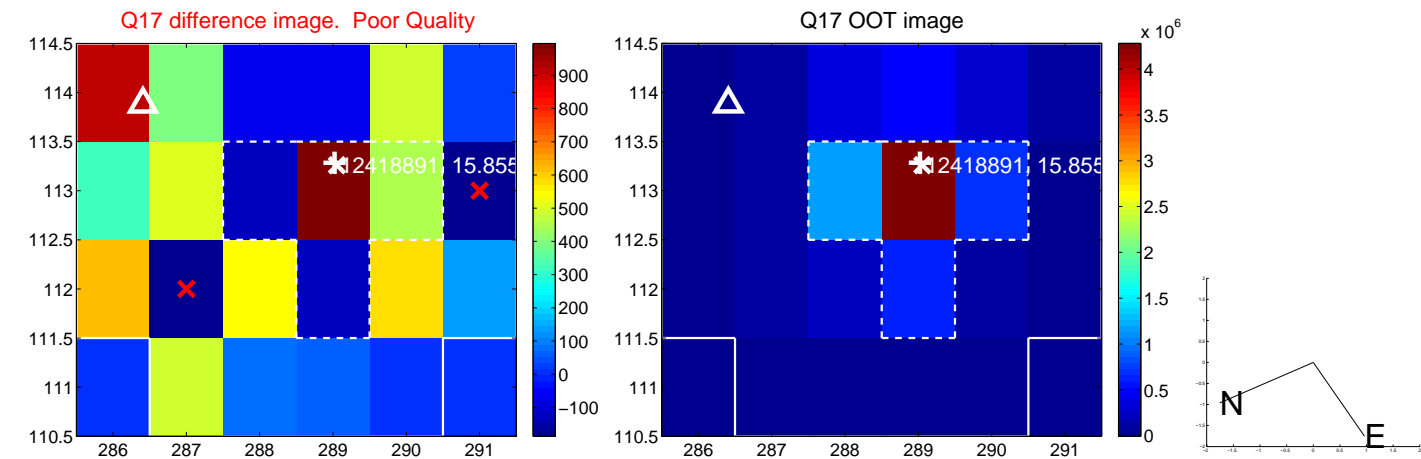
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

