

KIC 009641076

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})
009641076-01	OBS	4250.01	2.178144	132.024449	112.0	2.800	13.9	14.8	0.93	5584	1.16	780.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009641076-01	OBS	FP	0.00	0	0	1	1	CENT_UNRESOLVED_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.

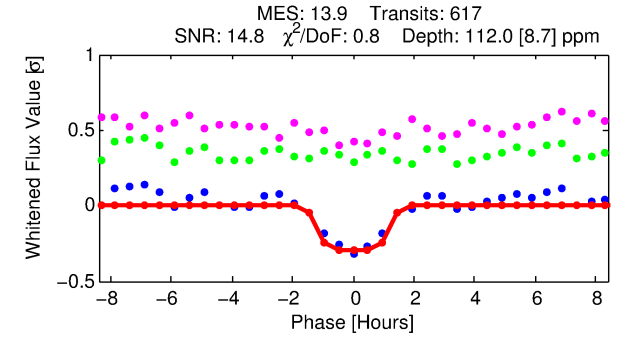
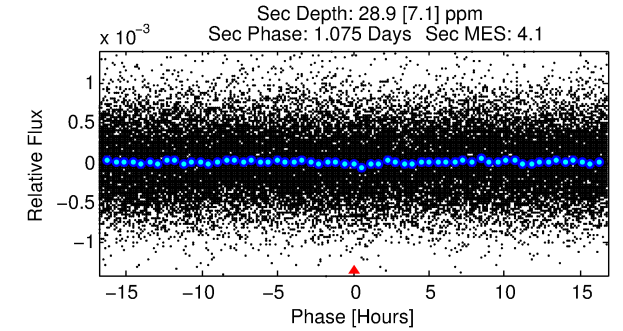
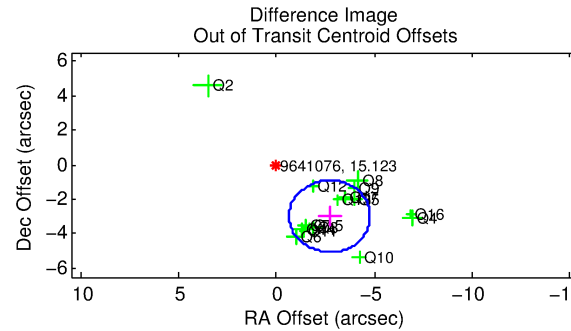
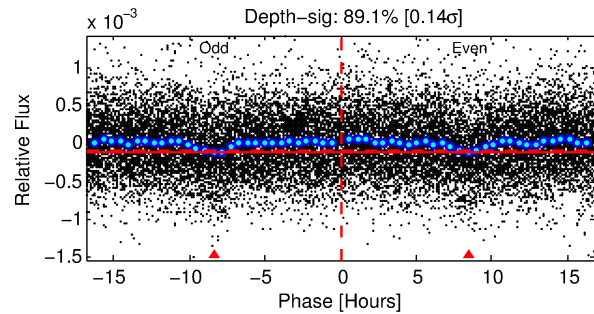
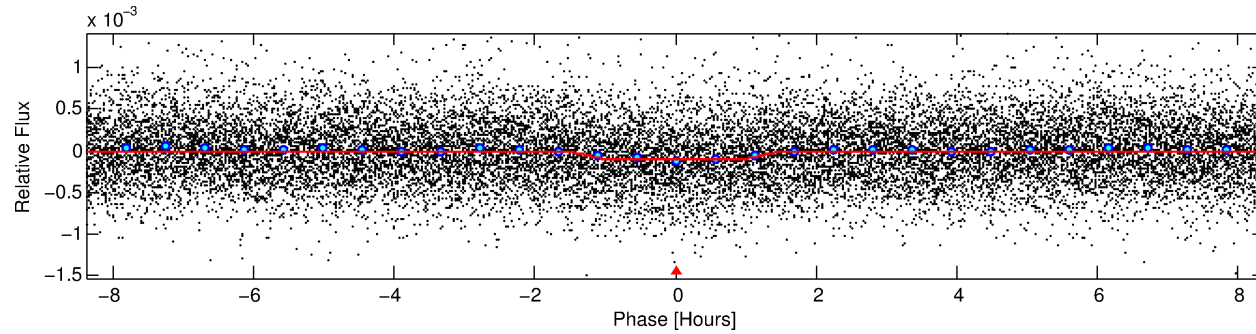
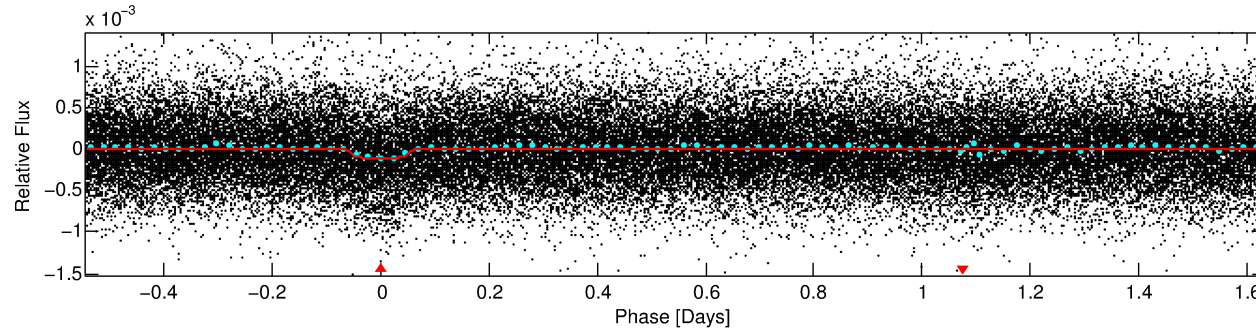
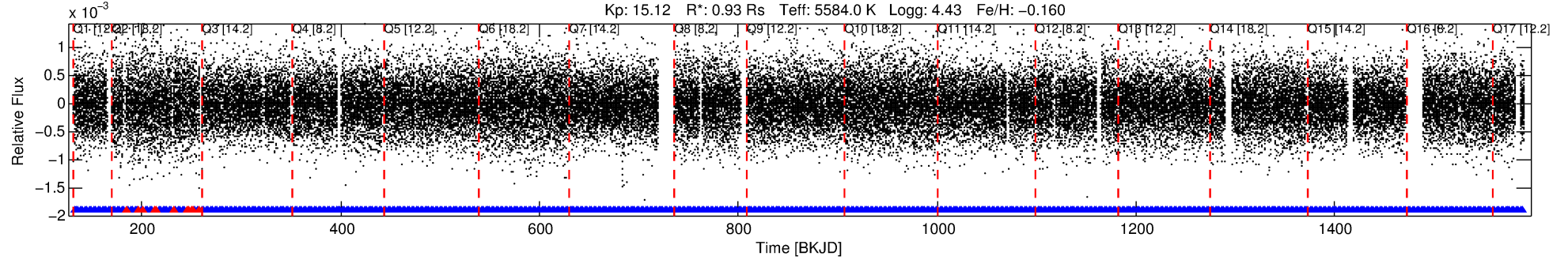
Ephemeris Match Information For 009641076-01

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
009641076-01	9641076	FL-Lyr-pri	9641031	1:1	143.3	15	33	9.18	15.13	3884.50	Direct-PRF	0	0.30	0.10

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol 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: 9641076 Candidate: 1 of 1 Period: 2.178 d
KOI: K04250.01 Corr: 0.950



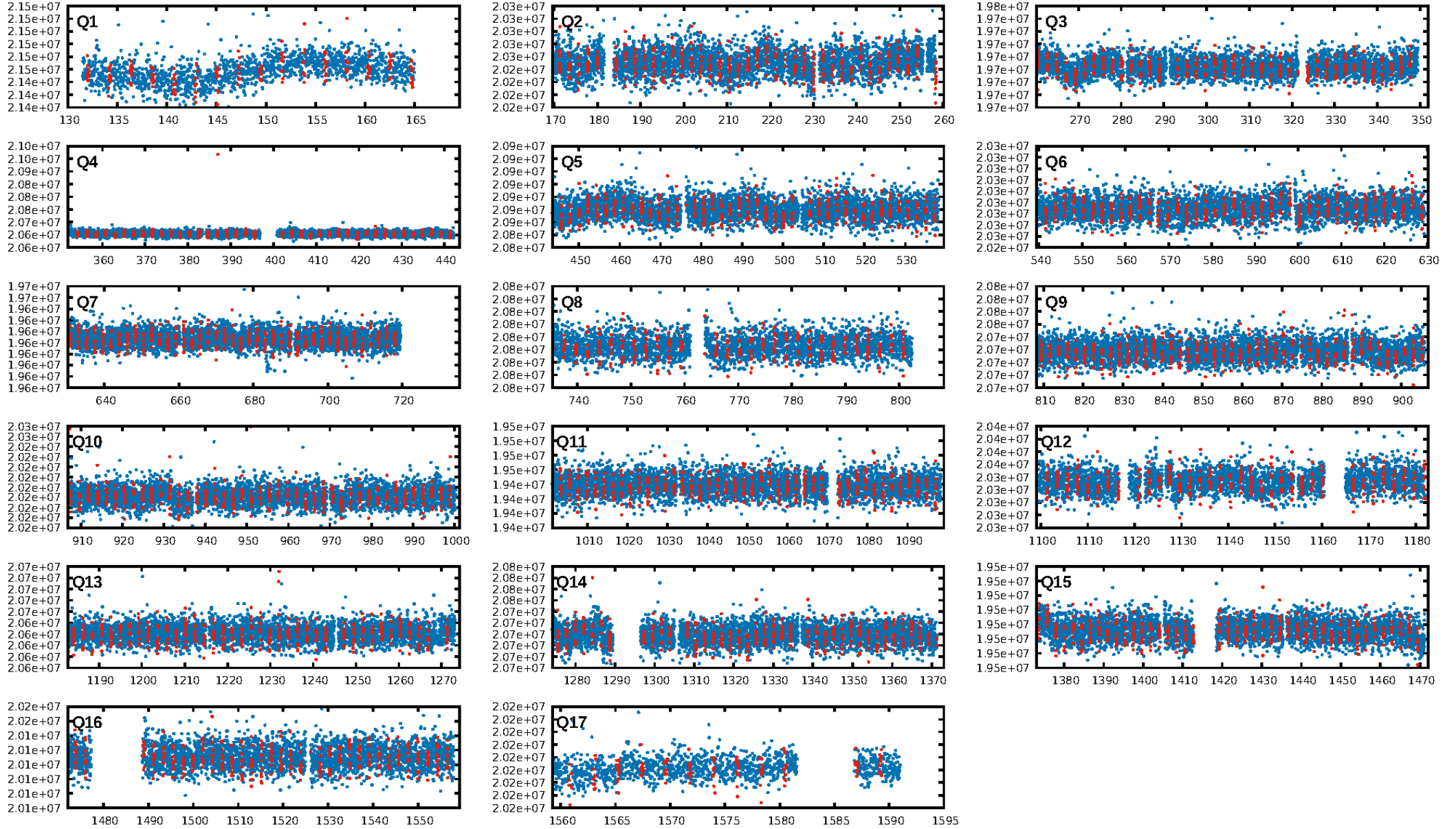
DV Fit Results:

Period = 2.17814 [0.00001] d
Epoch = 132.0244 [0.0029] BKJD
Rp/R* = 0.0114 [0.0062]
a/R* = 3.11 [7.00]
b = 0.88 [0.66]
Seff = 780.14 [269.93]
Teq = 1348 [117] K
Rp = 1.16 [0.70] Re
a = 0.0311 [0.0068] AU
Ag = 11.58 [13.51] [0.78 σ]
Teffp = 3843 [1083] K [2.29 σ]

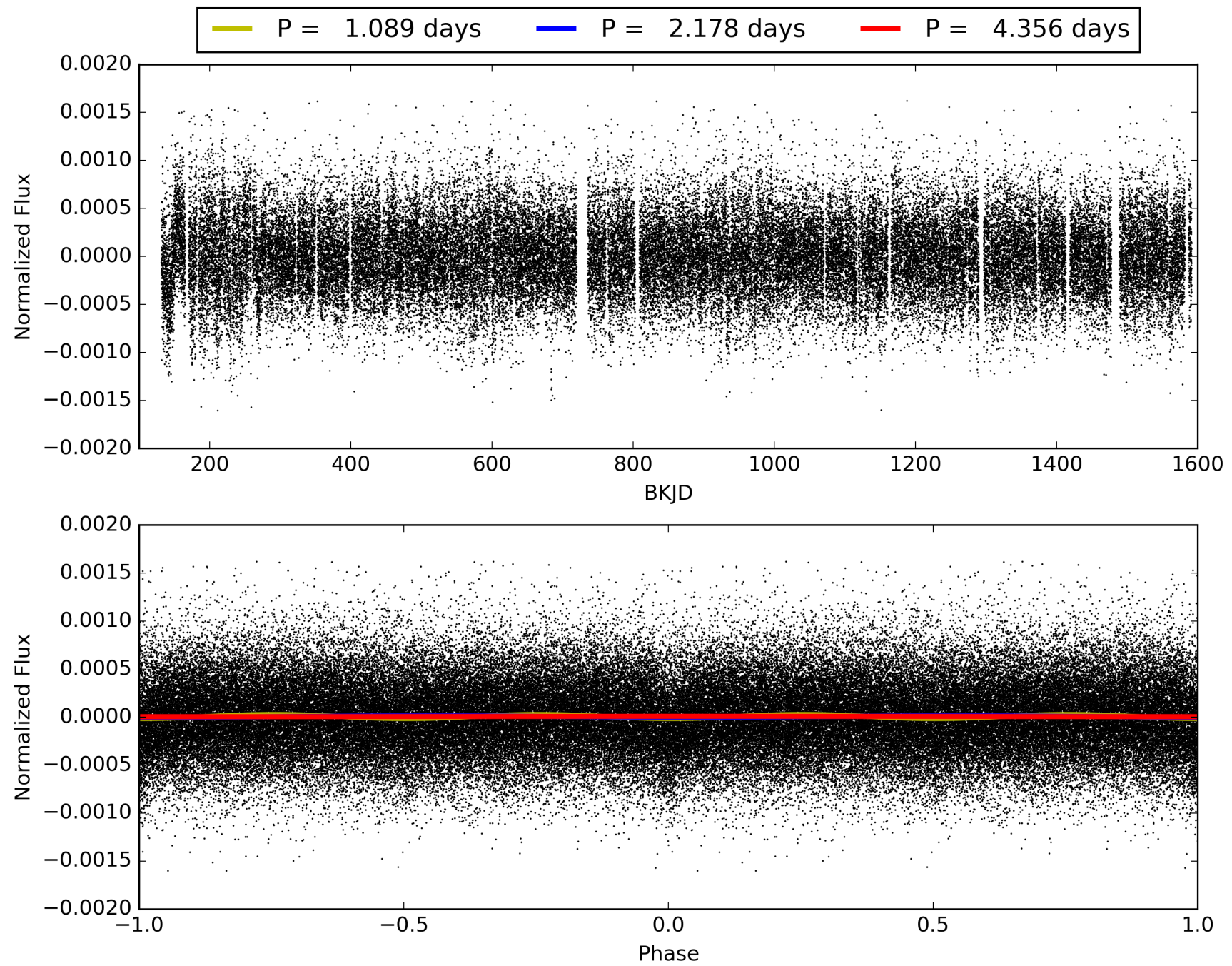
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.53e-43
RollingBand-fgt: 0.98 [578/589]
GhostDiagnostic-chr: -0.07964
Centroid-sig: 0.4%
Centroid-so: 2.236 arcsec [2.30 σ]
OotOffset-rm: 4.032 arcsec [5.83 σ]
KicOffset-rm: 4.287 arcsec [6.51 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009641076-01, PDC Light Curves

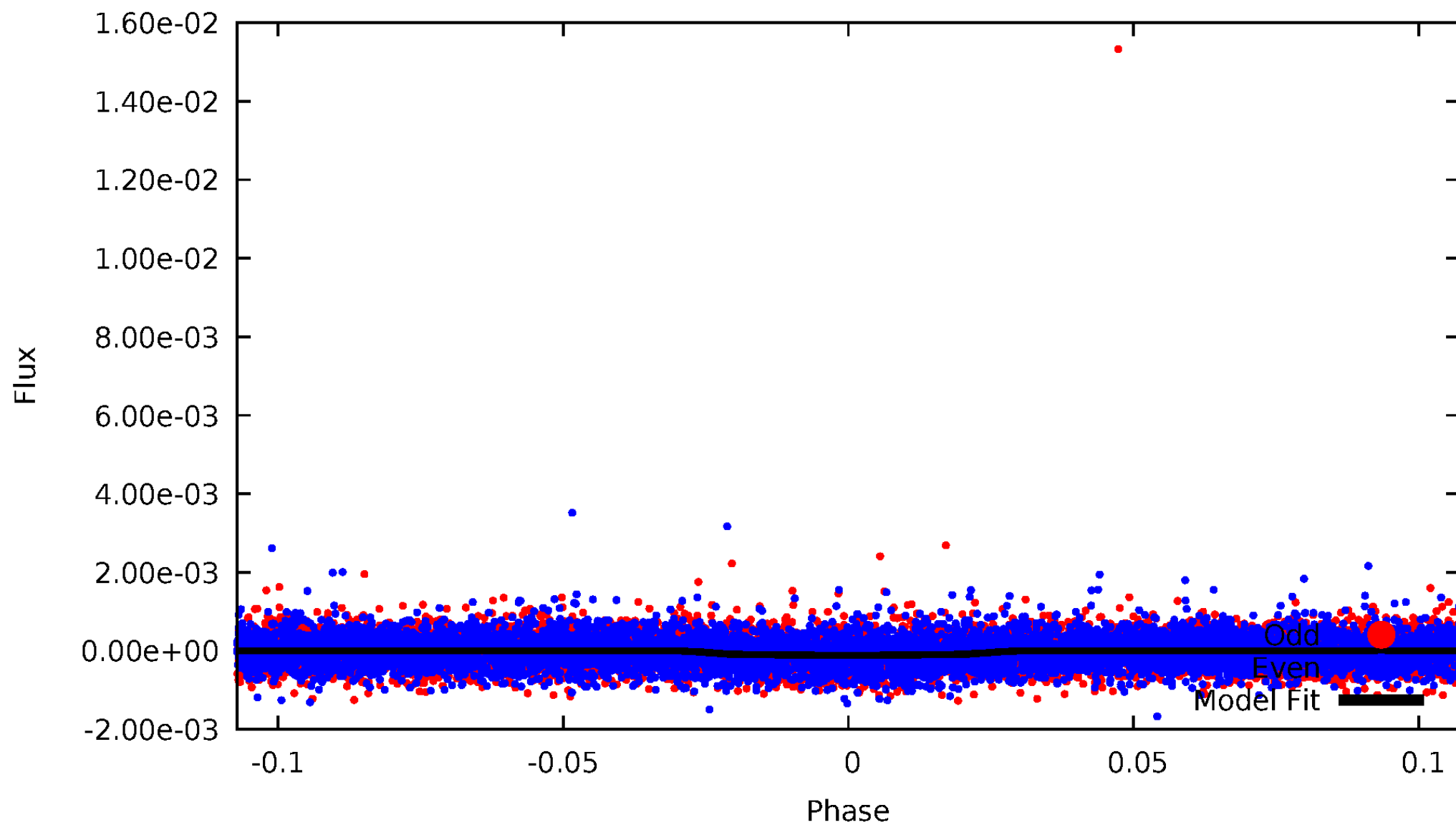


TCE 009641076-01



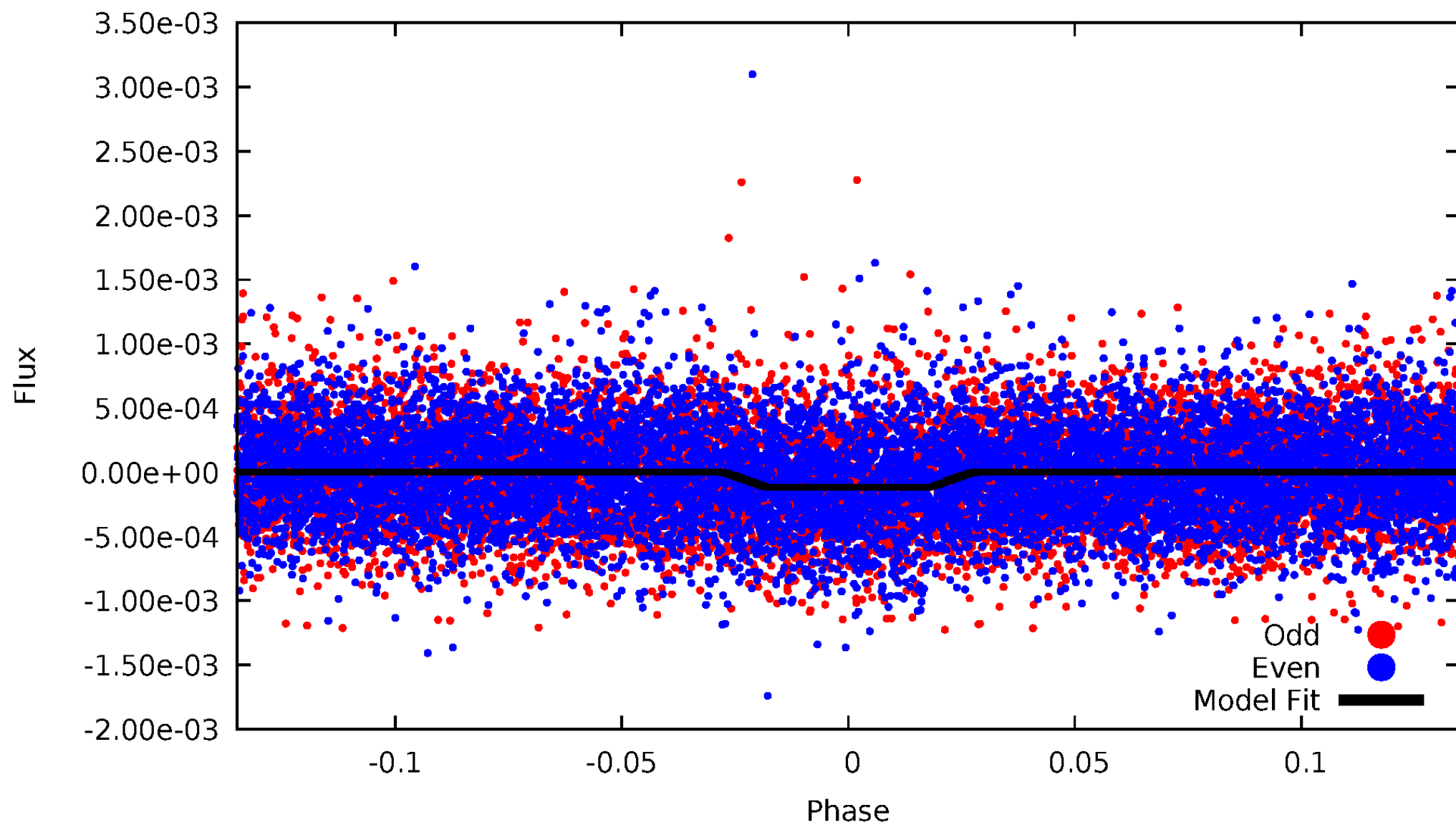
DV Odd/Even

TCE 009641076-01



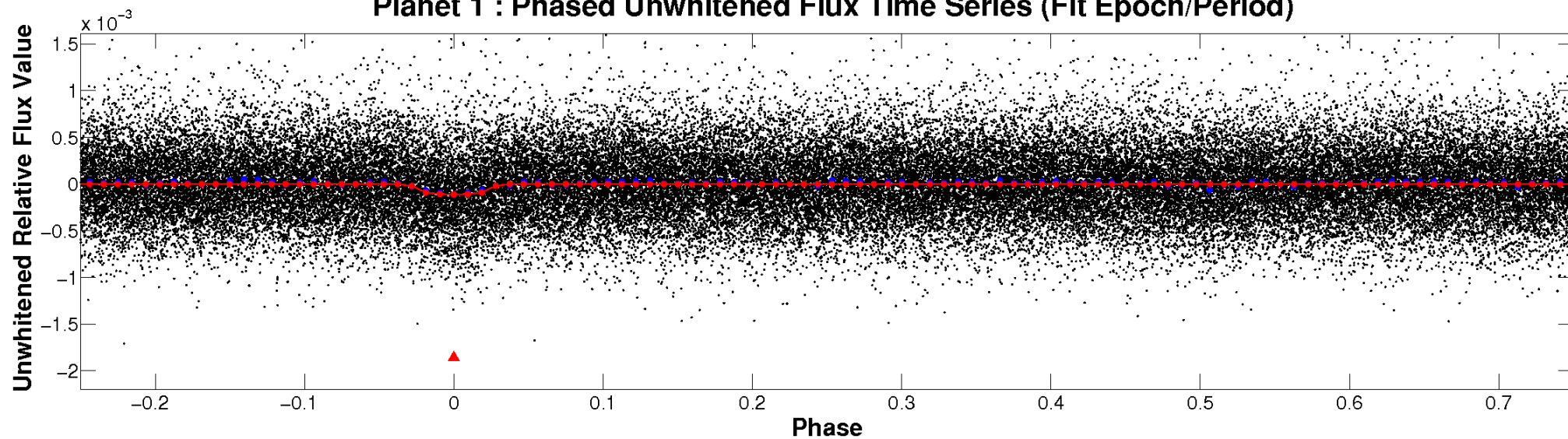
ALT Odd/Even

TCE 009641076-01

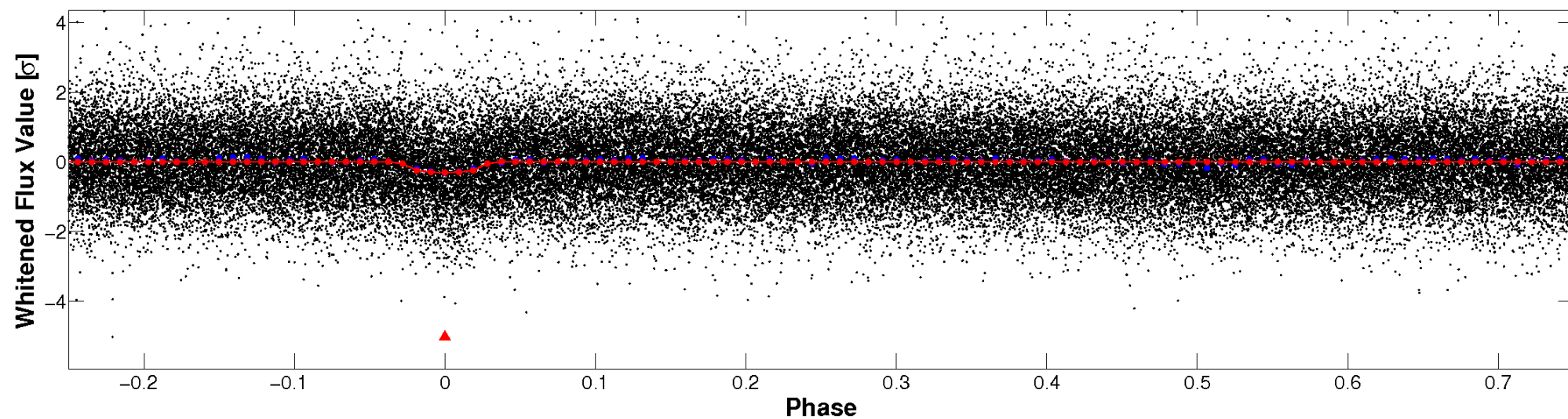


Non-Whitened Vs. Whitened Light Curve

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

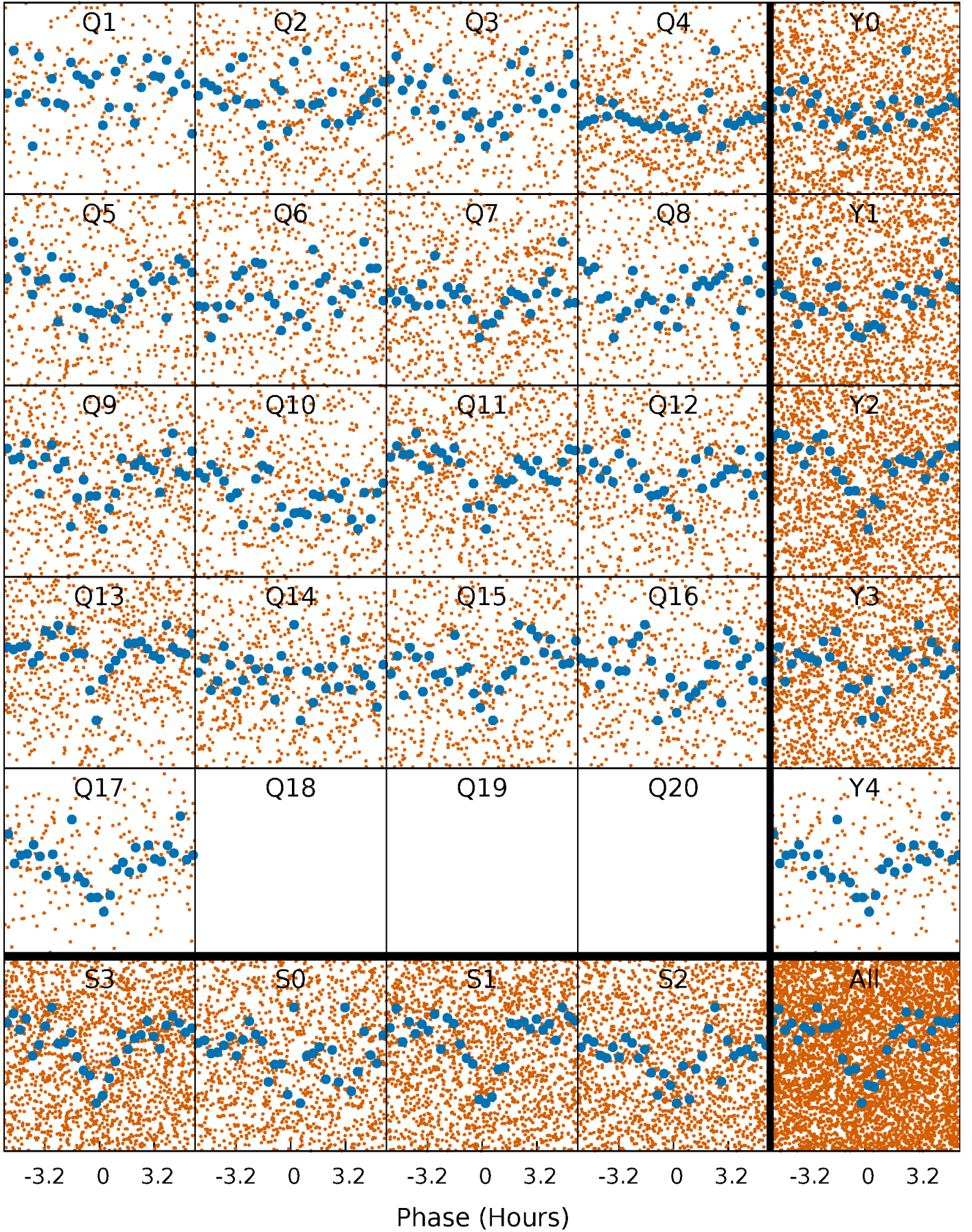


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



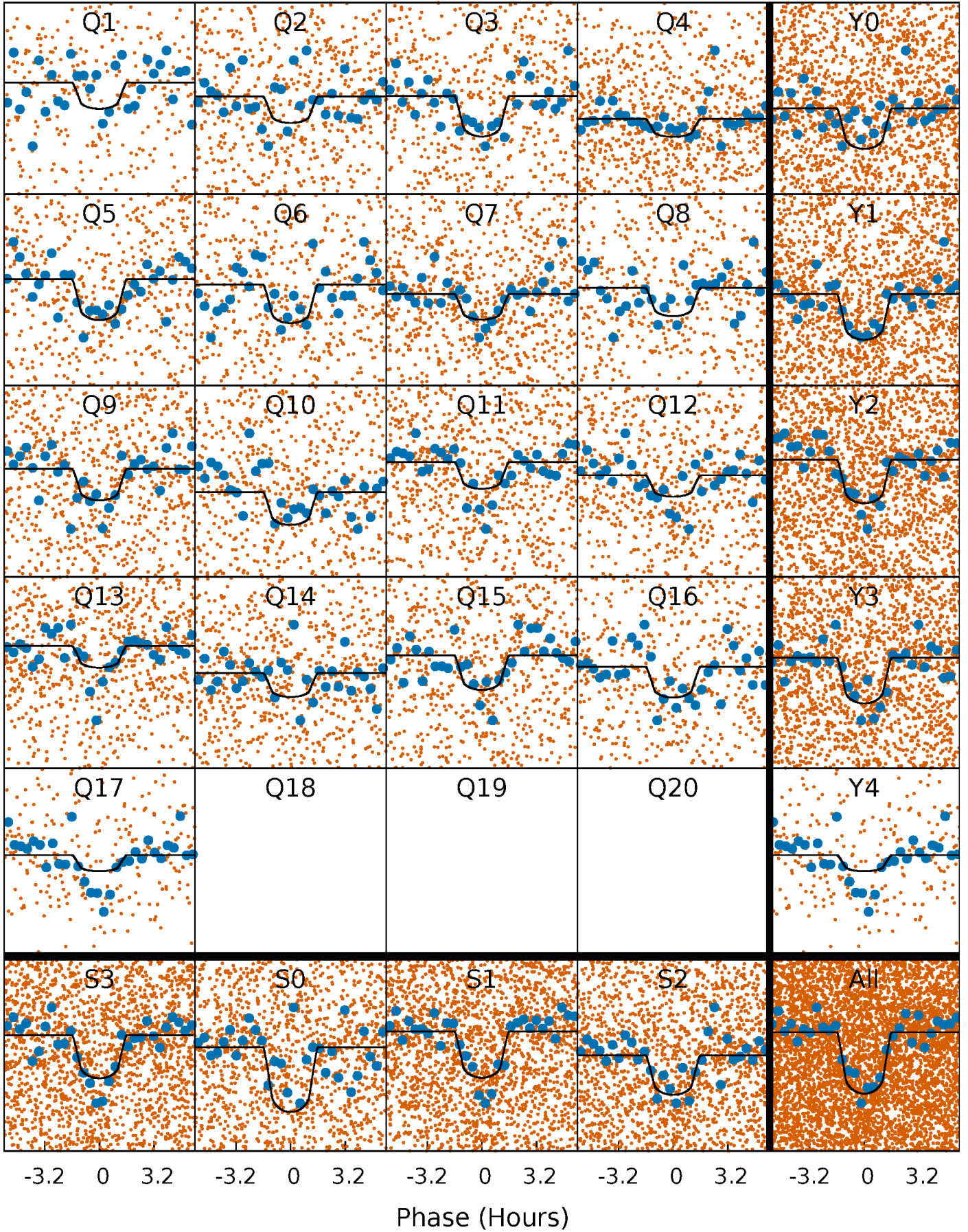
PDC Quarter-Phased Transit Curves

TCE 009641076-01 P= 2.178144 Days $T_0=132.024449$ (BKJD)



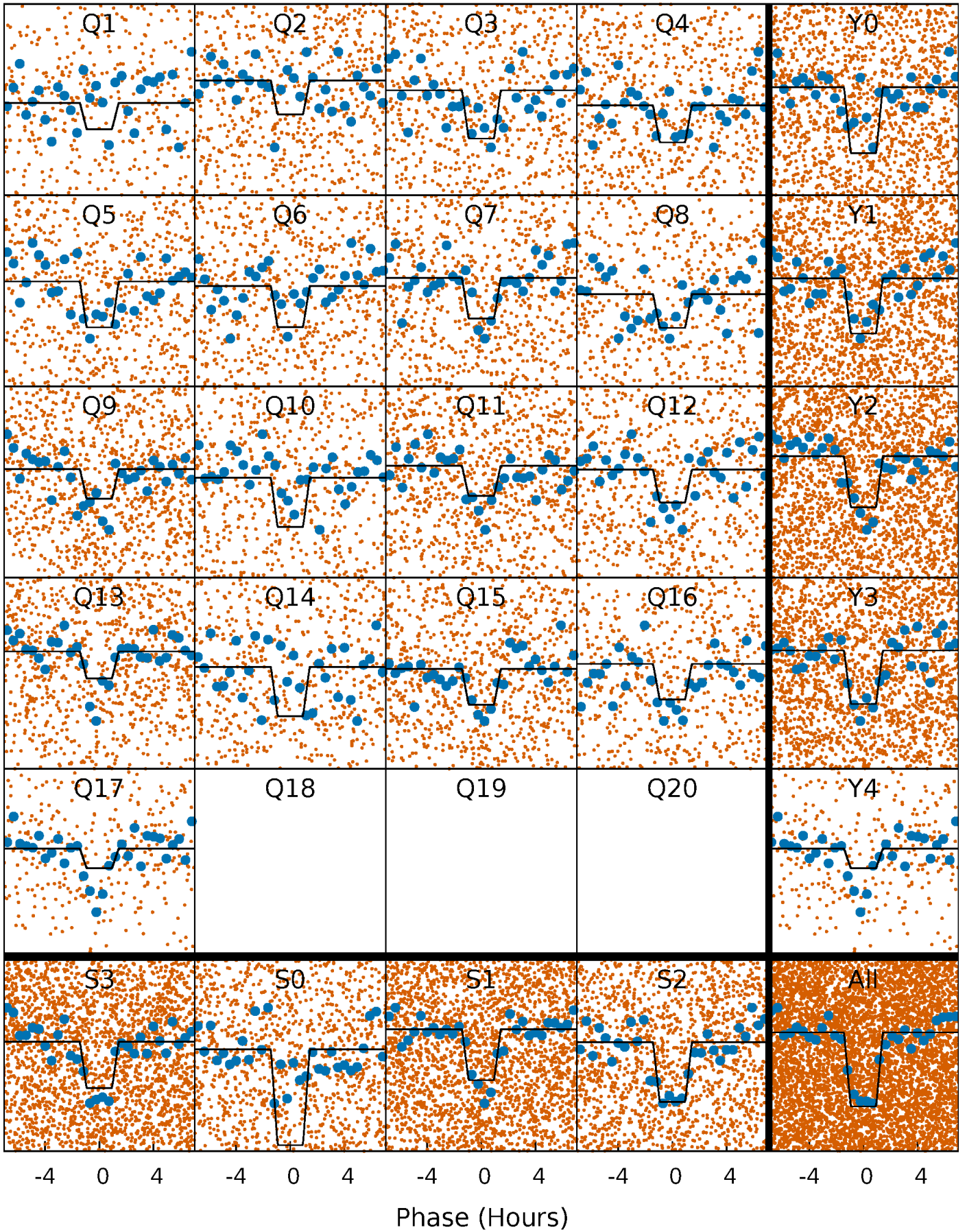
DV Quarter-Phased Transit Curves

TCE 009641076-01 P= 2.178144 Days $T_0=132.024449$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

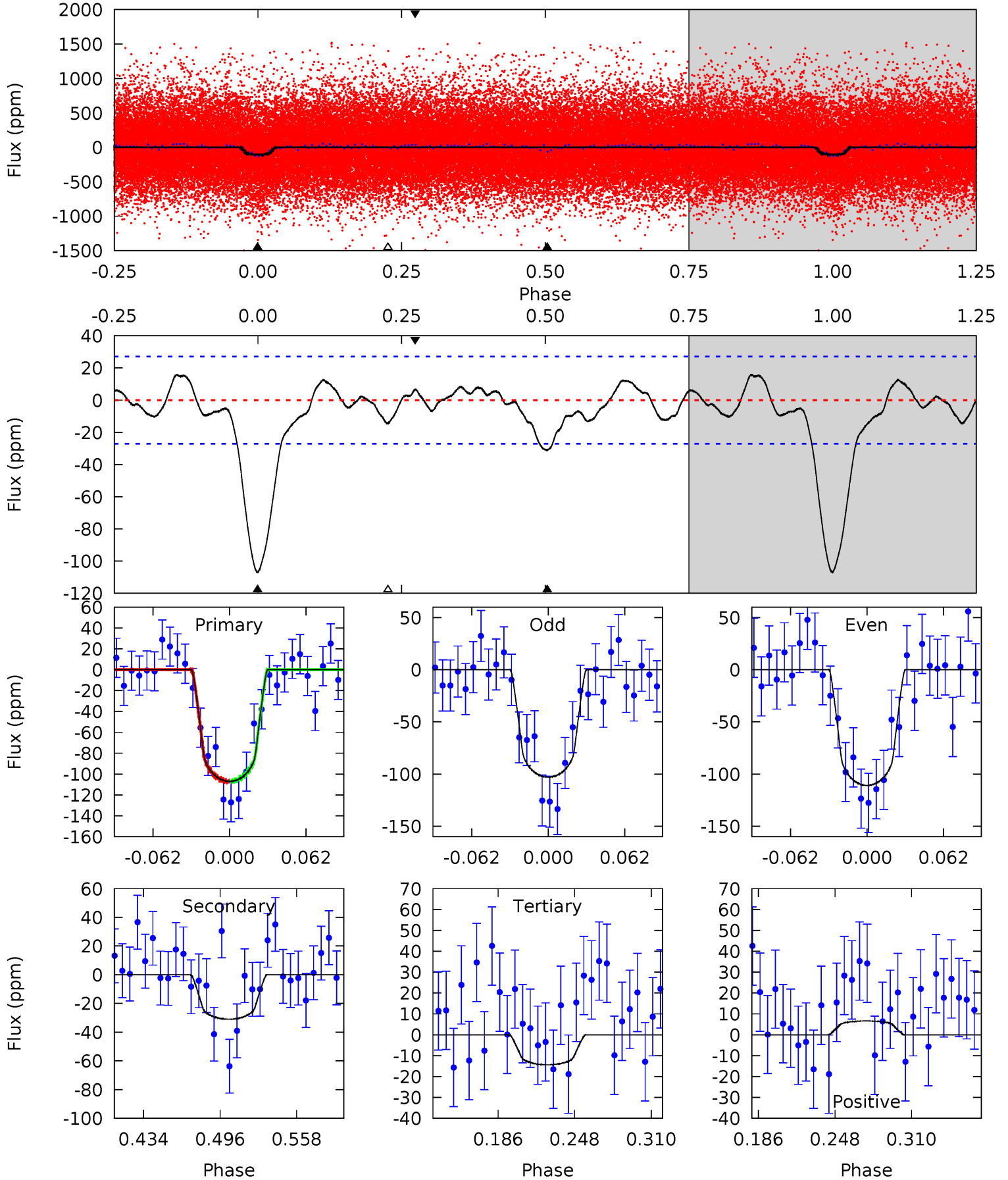
TCE 009641076-01 P= 2.178192 Days $T_0=132.007516$ (BKJD)



DV Model-Shift Uniqueness Test

009641076-01, P = 2.178144 Days, E = 129.846305 Days

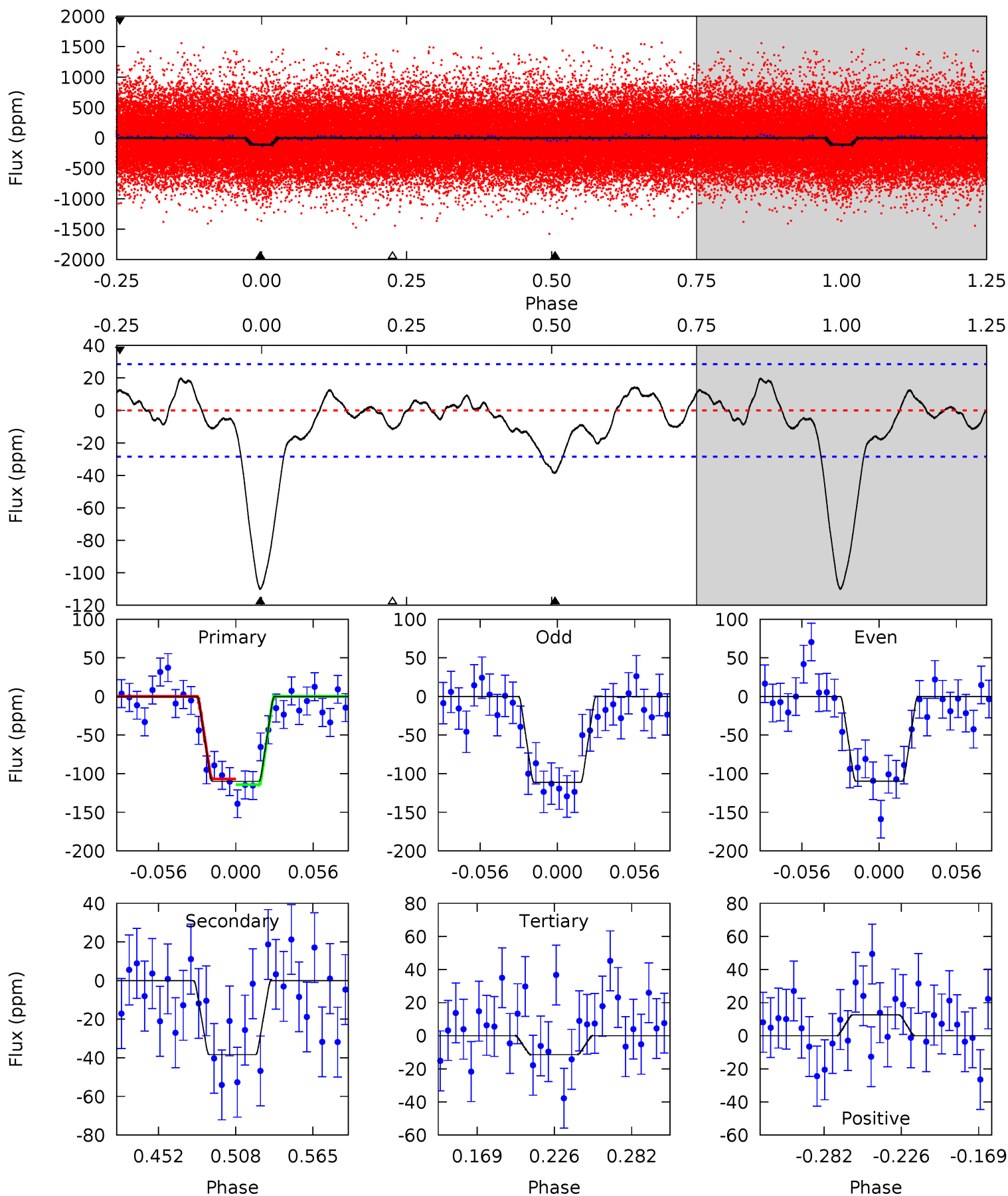
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.4	5.33	2.48	1.14	4.66	1.87	1.28	15.9	17.3	2.85	4.20	0.68	1.00	0.13	0.03



Alt Model-Shift Uniqueness Test

009641076-01, P = 2.178192 Days, E = 129.829324 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.1	6.31	1.88	2.06	4.68	1.91	1.45	16.2	16.0	4.43	4.25	0.13	1.06	0.15	0.59



Stellar Parameters For KIC 009641076

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5584^{+166}_{-149}	$4.428^{+0.120}_{-0.180}$	$-0.160^{+0.300}_{-0.250}$	$0.932^{+0.239}_{-0.147}$	$0.849^{+0.120}_{-0.074}$	$1.480^{+0.786}_{-0.701}$
	+3%/-3%	+3%/-4%	+188%/-156%	+26%/-16%	+14%/-9%	+53%/-47%
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 009641076-01 / KOI 4250.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-31 ± 6	$1.24^{+0.62}_{-0.67}$	1894^{+128}_{-101}	4073^{+1541}_{-544}	11^{+41}_{-6}
Alt.	-38 ± 6	$1.13^{+0.73}_{-0.57}$	1902^{+132}_{-108}	4401^{+1512}_{-717}	16^{+48}_{-10}

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 $A_{obs} \gg 1.0$

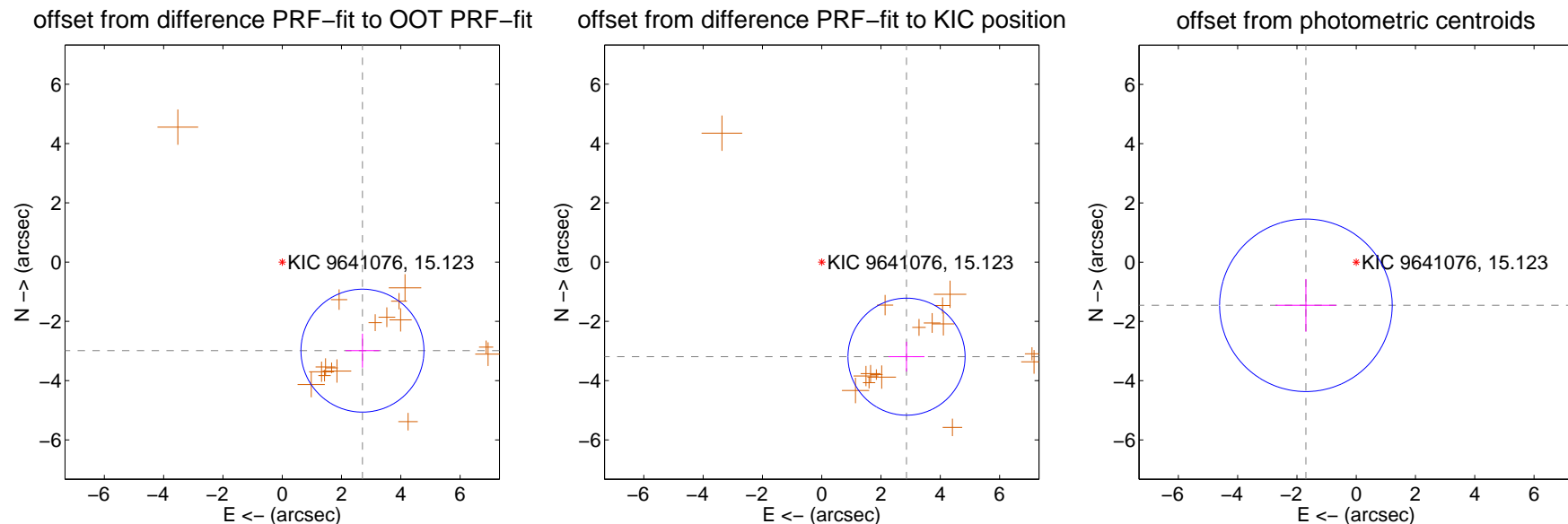
DV Centroid Data

Supplemental centroid analysis for 009641076-01. Kepler magnitude: 15.12. Transit SNR 14.81

There are 0 quarters with good PRF difference image offsets

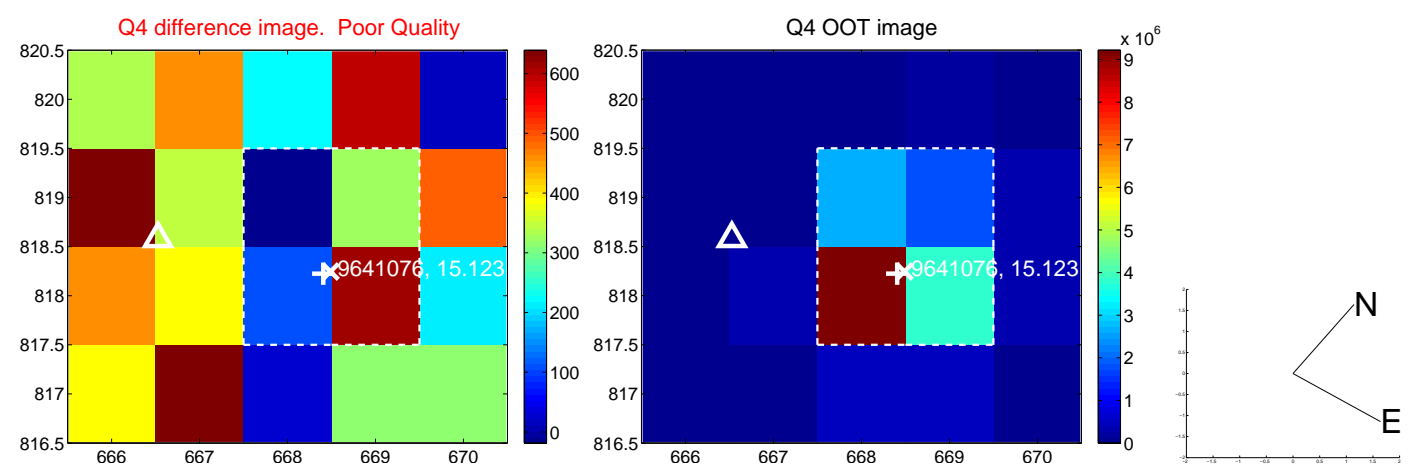
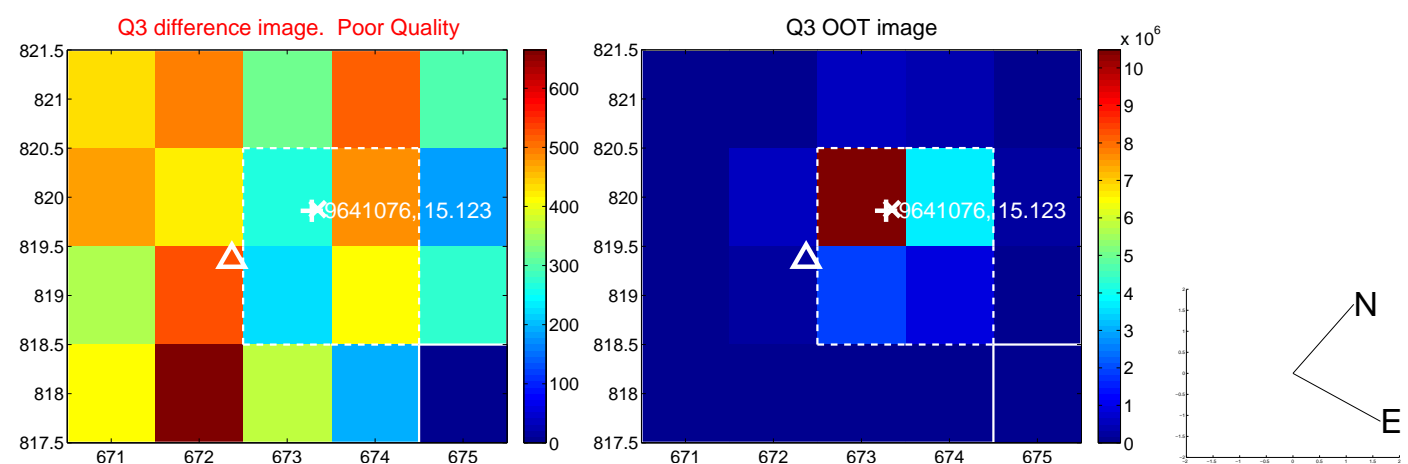
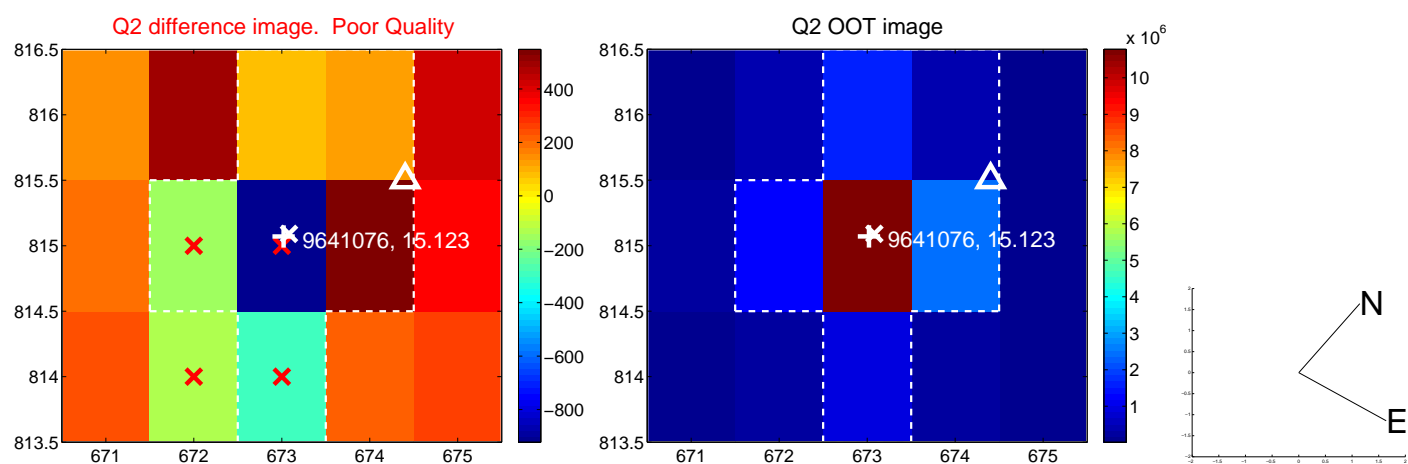
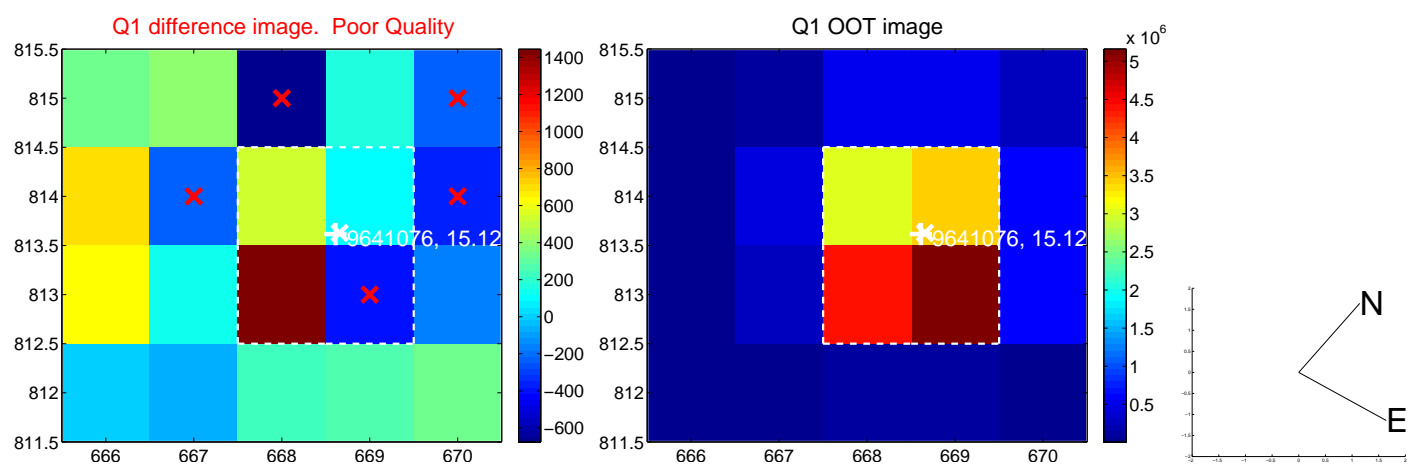
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.032 ± 0.692	5.83	-2.707 ± 0.568	-2.989 ± 0.573
PRF-fit source offset from KIC position	4.287 ± 0.658	6.51	-2.861 ± 0.607	-3.193 ± 0.503
photometric centroid source offset	2.24 ± 0.97	2.30	1.70 ± 1.03	-1.46 ± 0.89

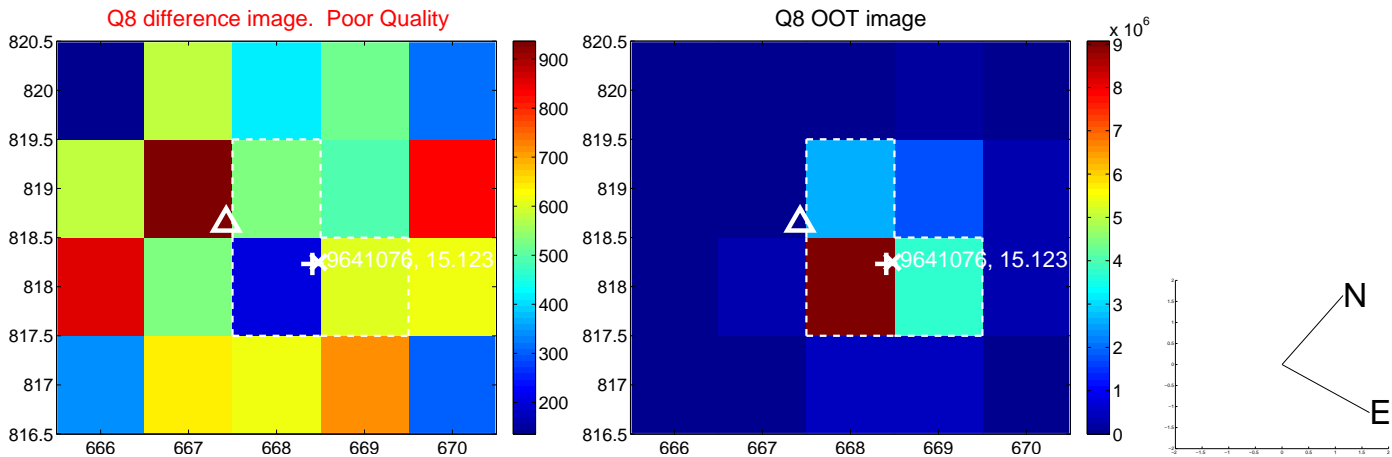
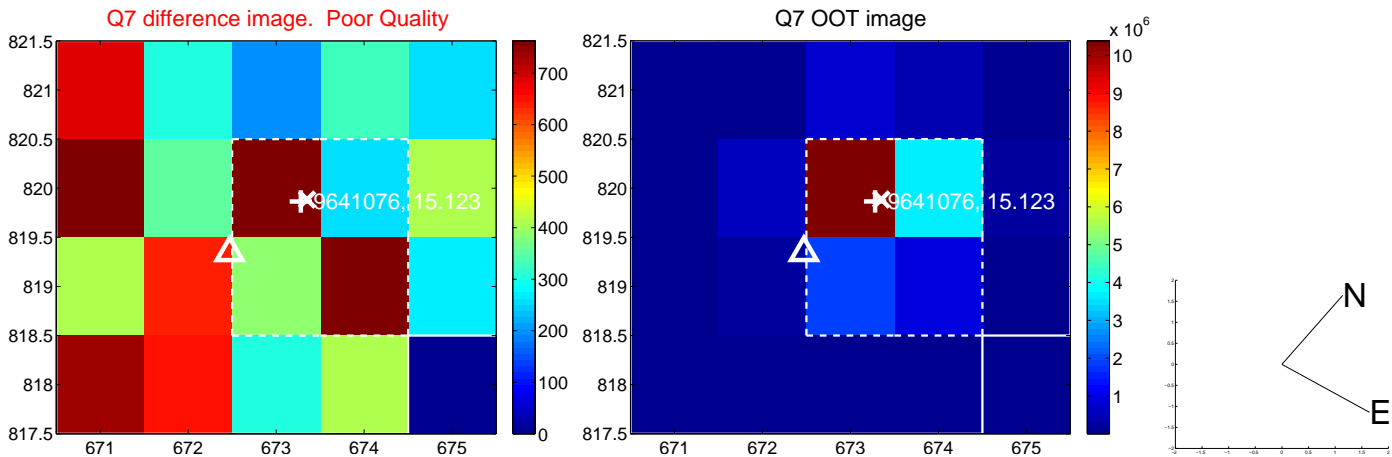
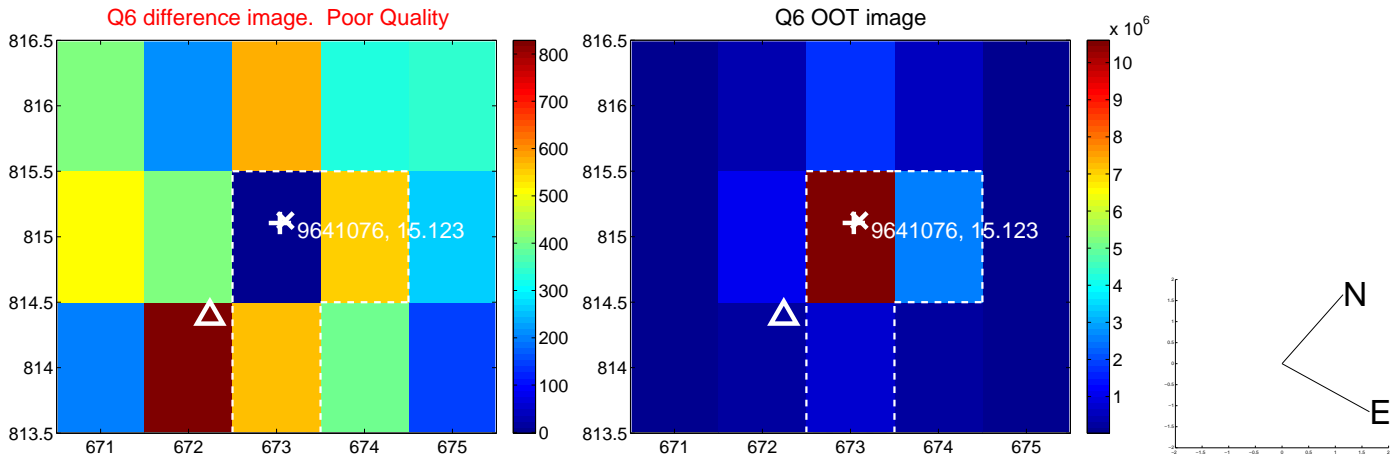
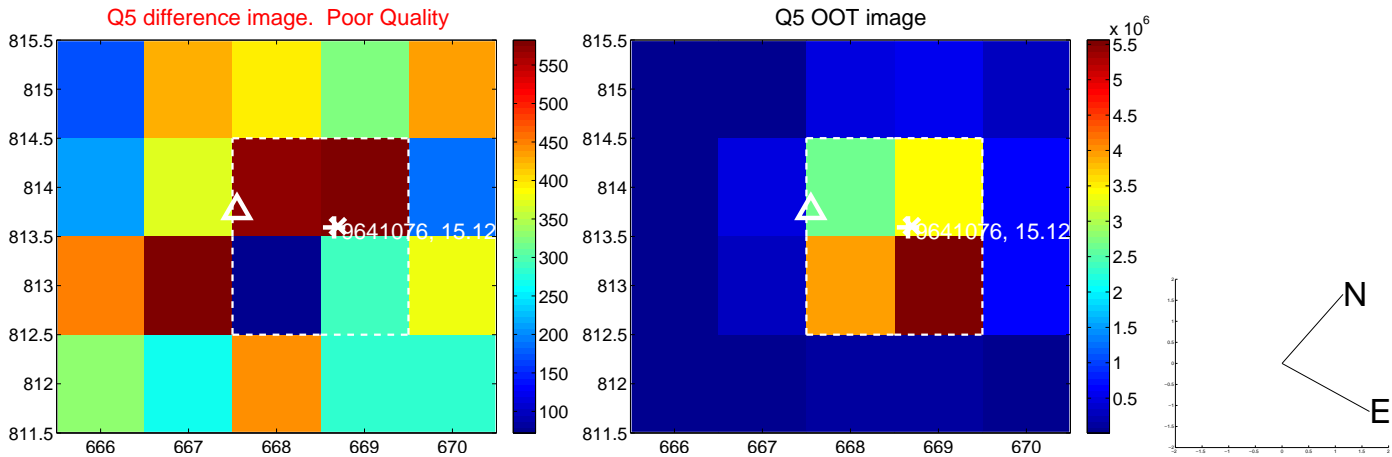


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

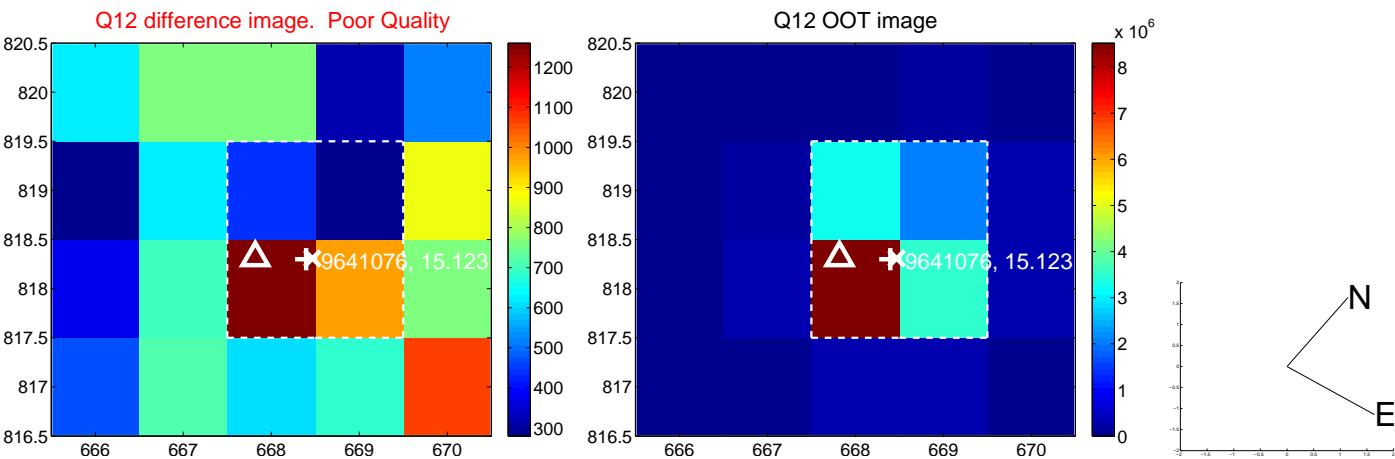
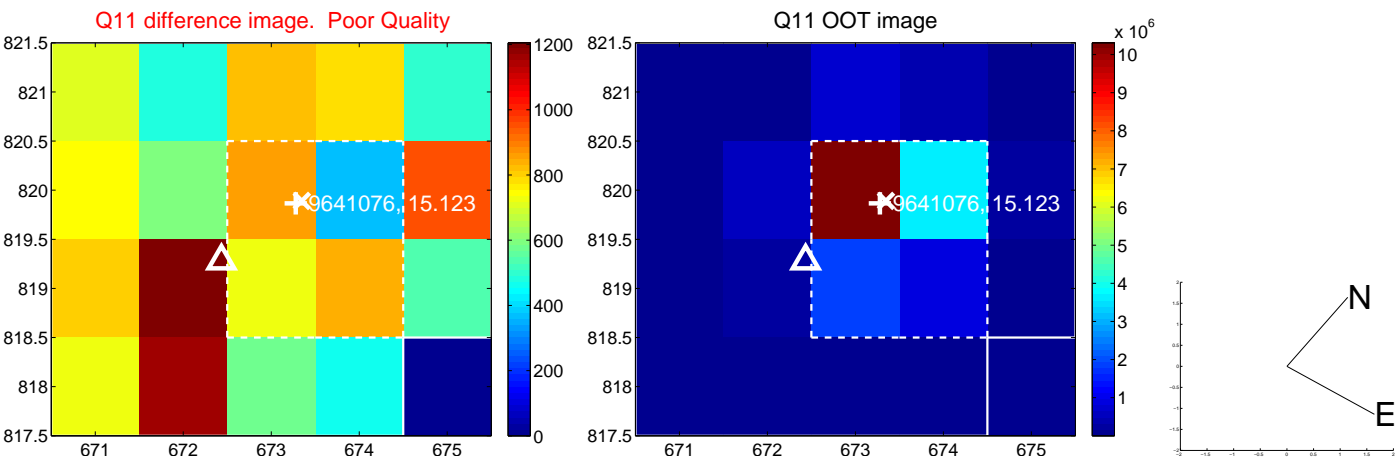
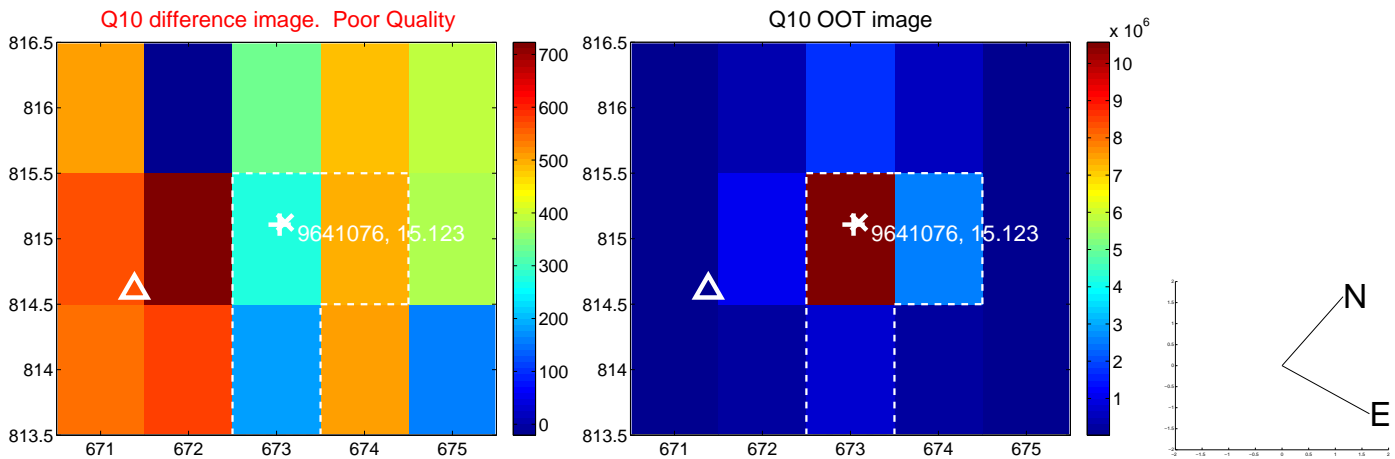
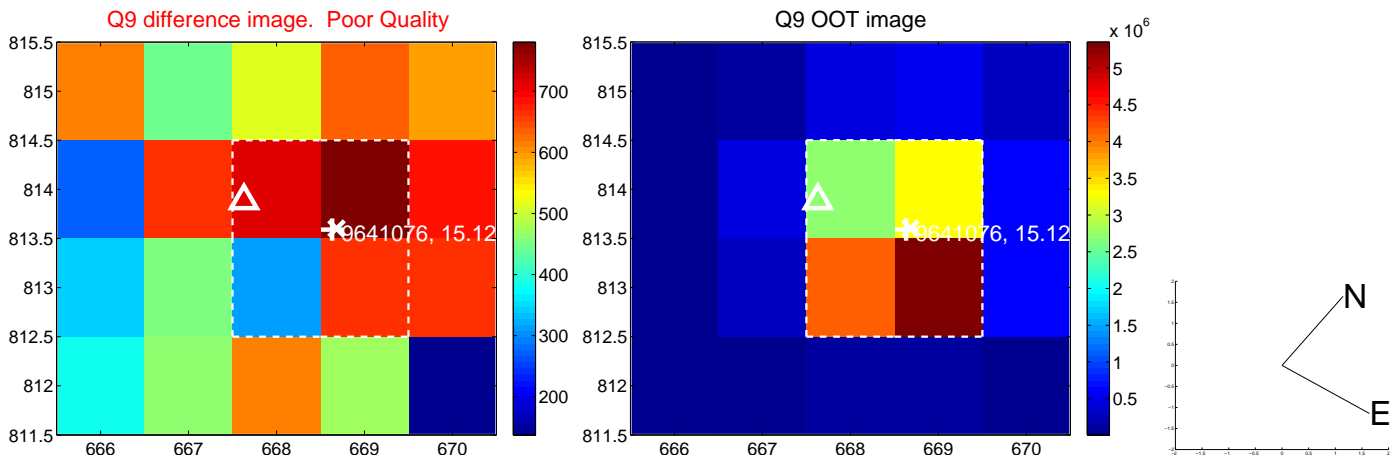
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



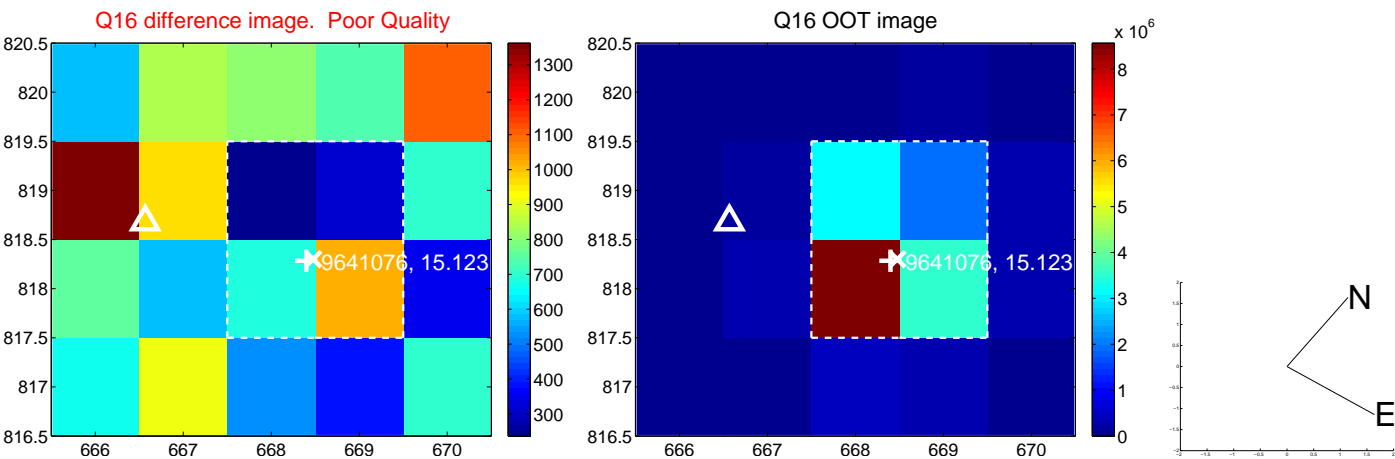
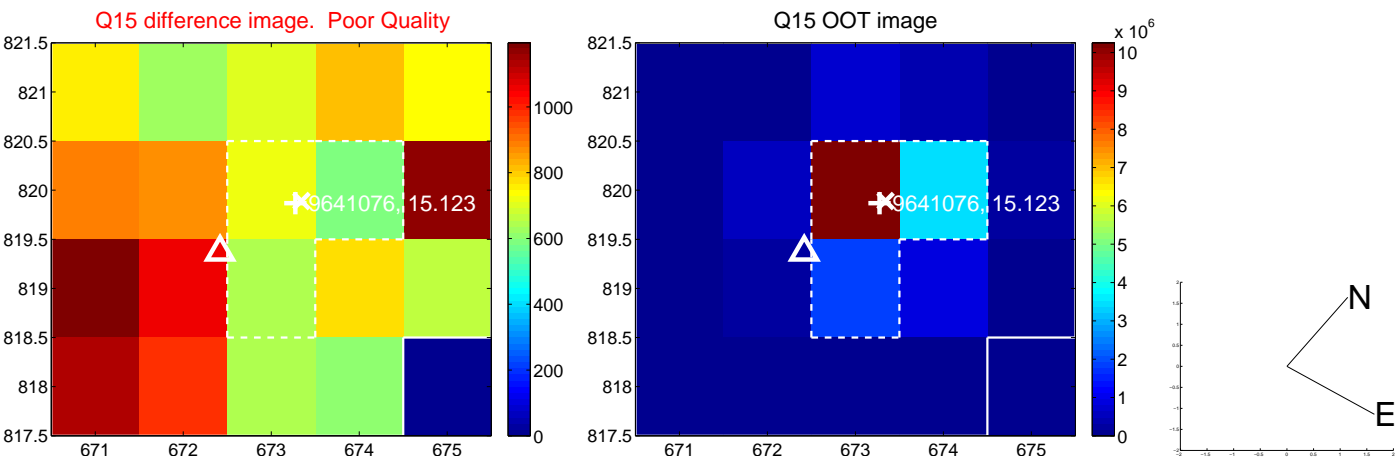
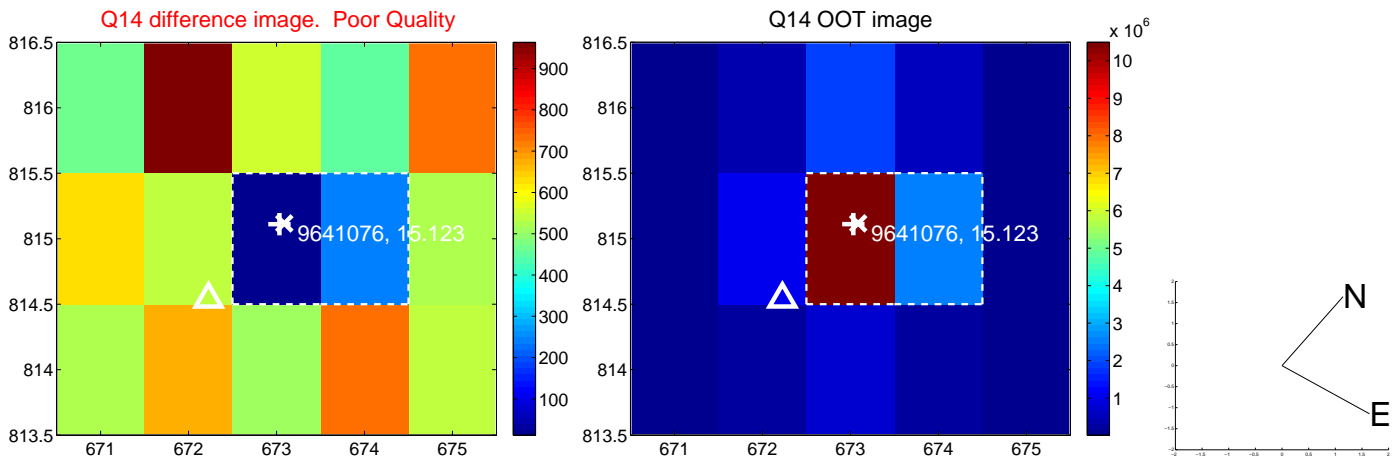
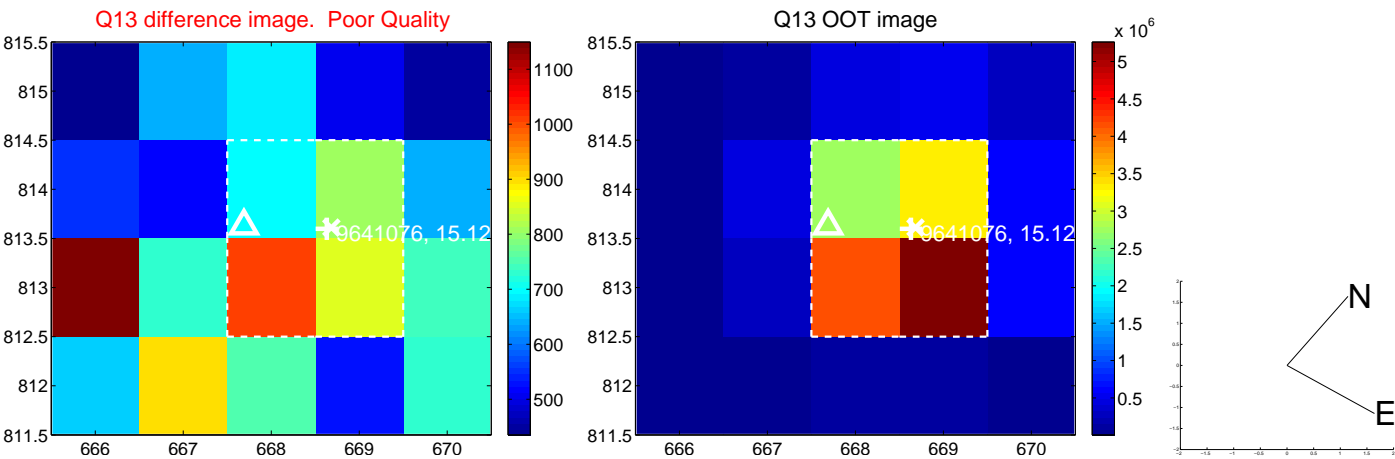
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



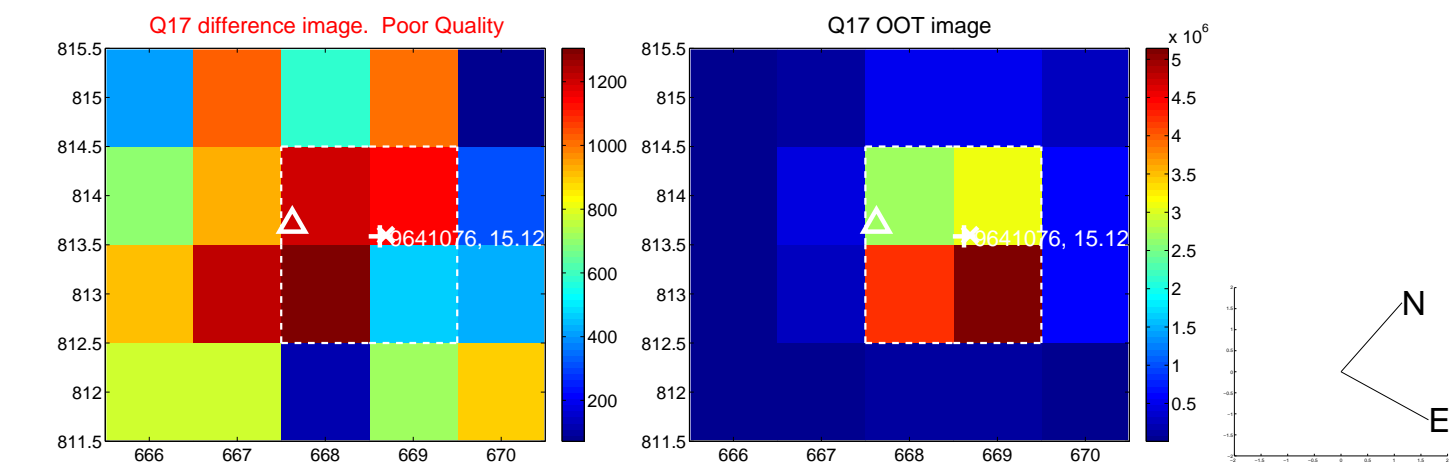
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



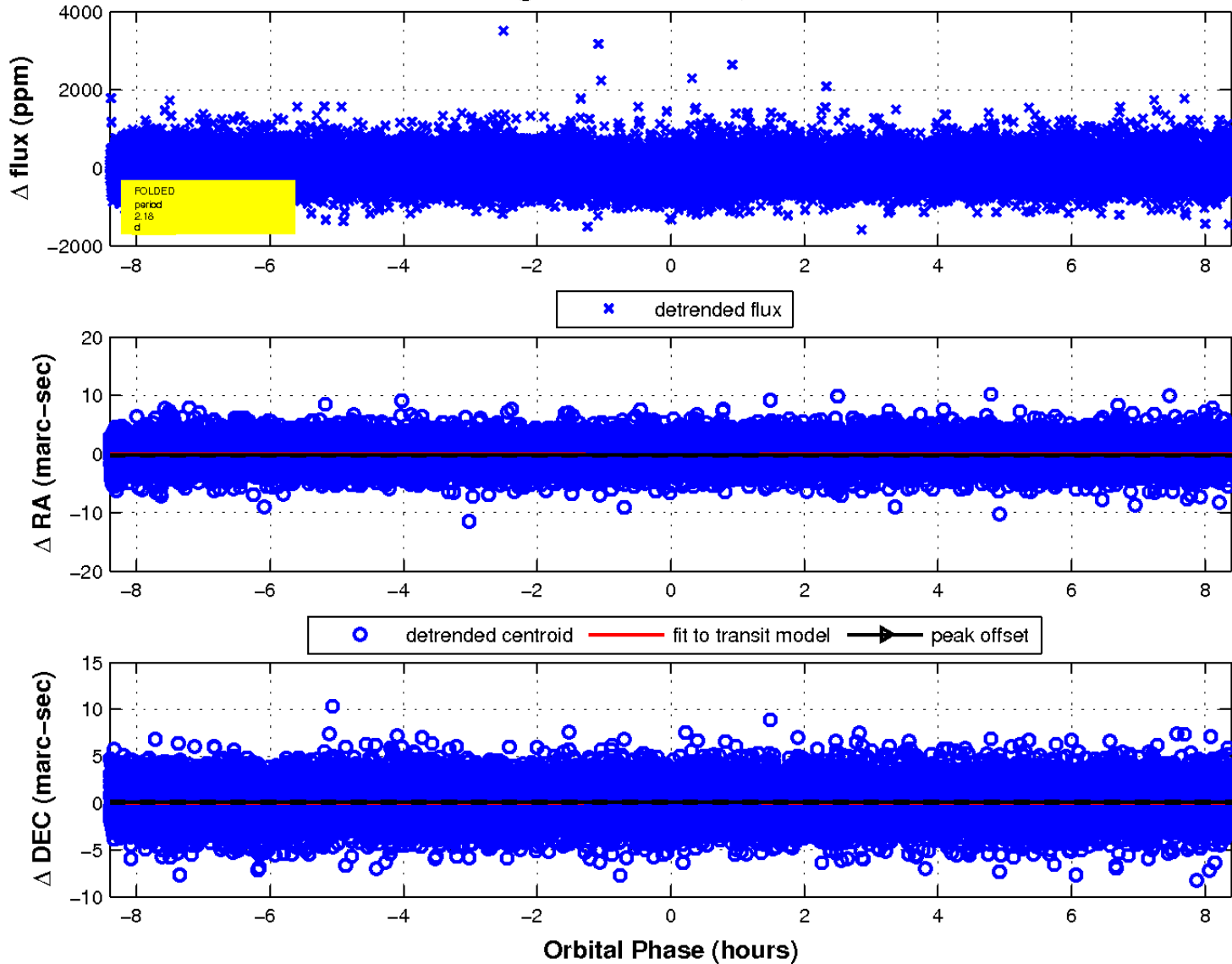
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

