

KIC 009641018

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})
009641018-01	OBS	1504.01	2.178105	132.039914	198.8	2.255	42.0	43.2	0.88	5947	1.46	889.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009641018-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—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.

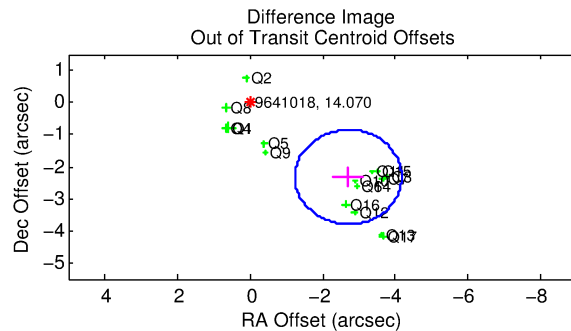
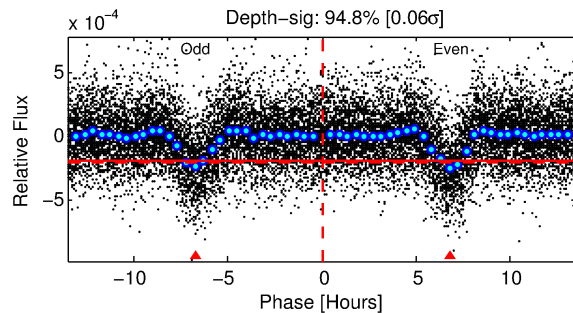
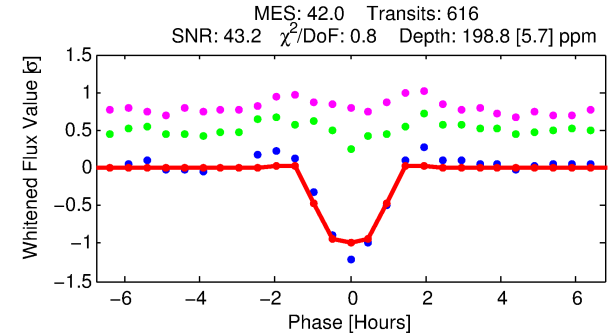
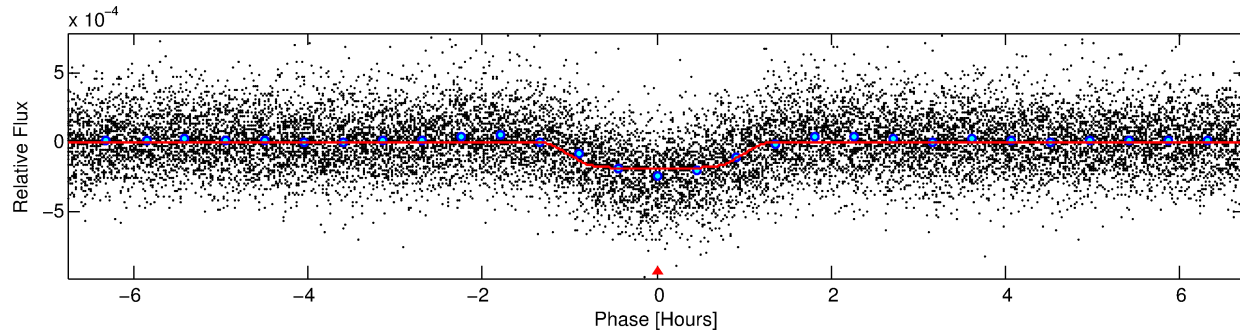
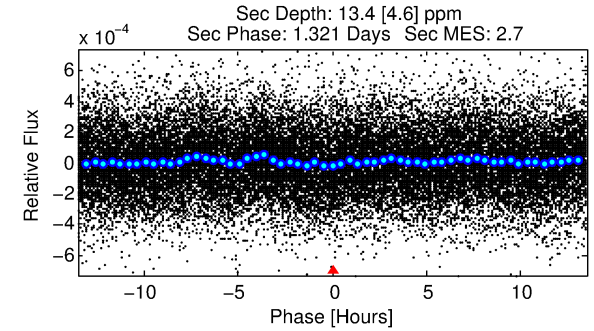
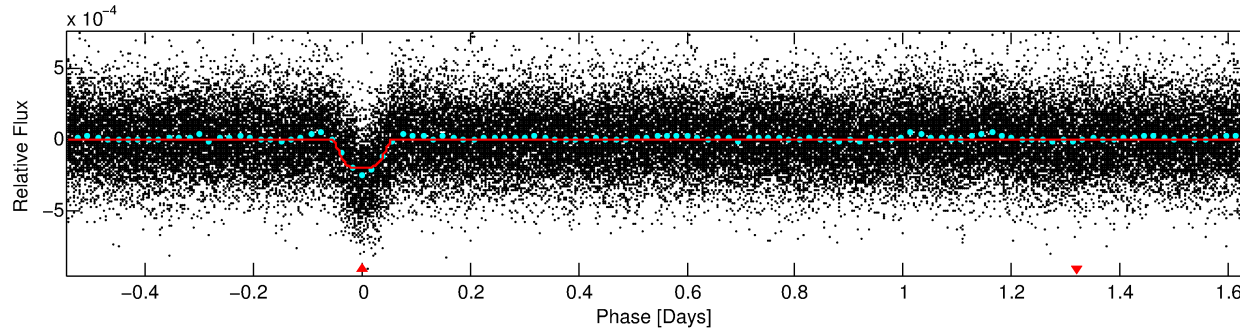
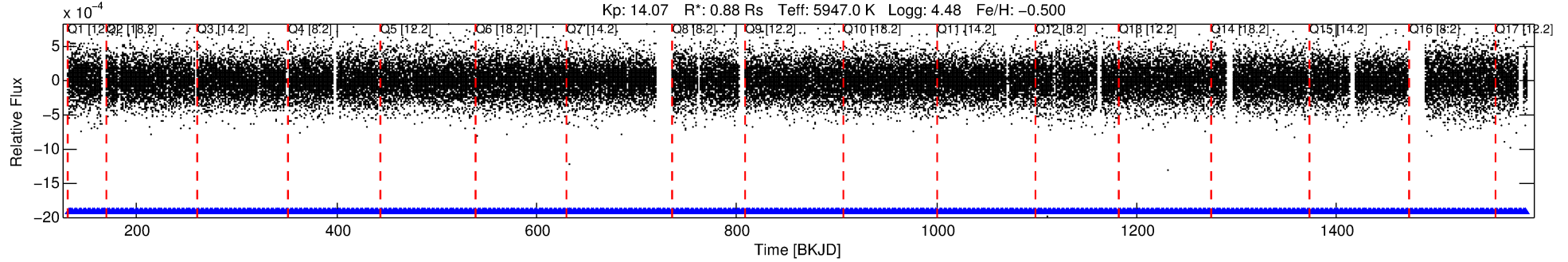
Ephemeris Match Information For 009641018-01

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
009641018-01	9641018	FL-Lyr-pri	9641031	1:1	90.3	21	10	9.18	14.07	2186.20	Direct-PRF	0	1.56	1.02

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: 9641018 Candidate: 1 of 1 Period: 2.178 d
KOI: K01504.01 Corr: 0.798



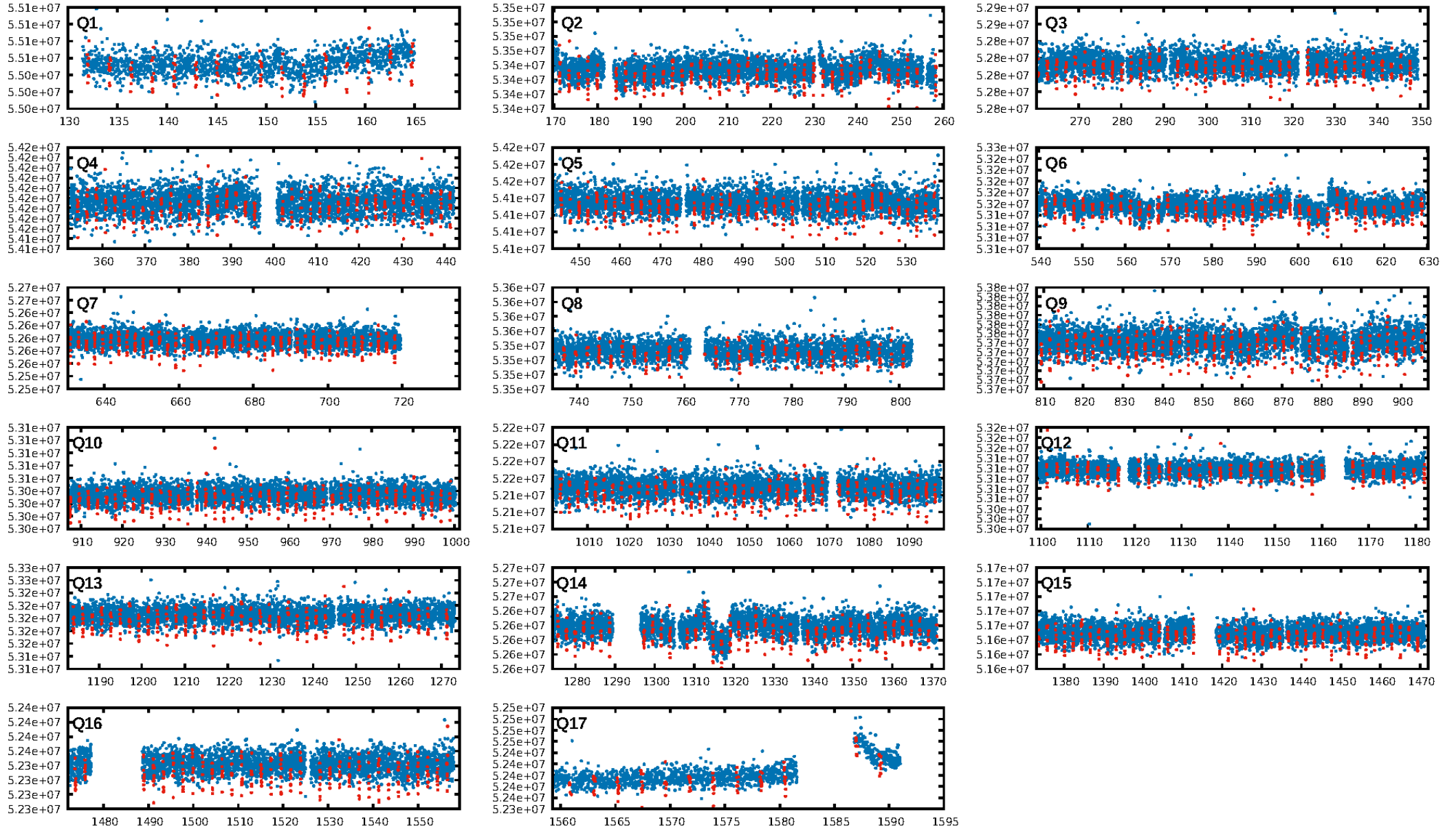
DV Fit Results:

Period = 2.17810 [0.00000] d
Epoch = 132.0399 [0.0008] BKJD
Rp/R* = 0.0152 [0.0021]
a/R* = 3.58 [2.40]
b = 0.90 [0.16]
Seff = 889.81 [308.49]
Teq = 1393 [121] K
Rp = 1.46 [0.42] Re
a = 0.0313 [0.0068] AU
Ag = 3.38 [1.84] [1.29σ]
Teffp = 2919 [331] K [4.34σ]

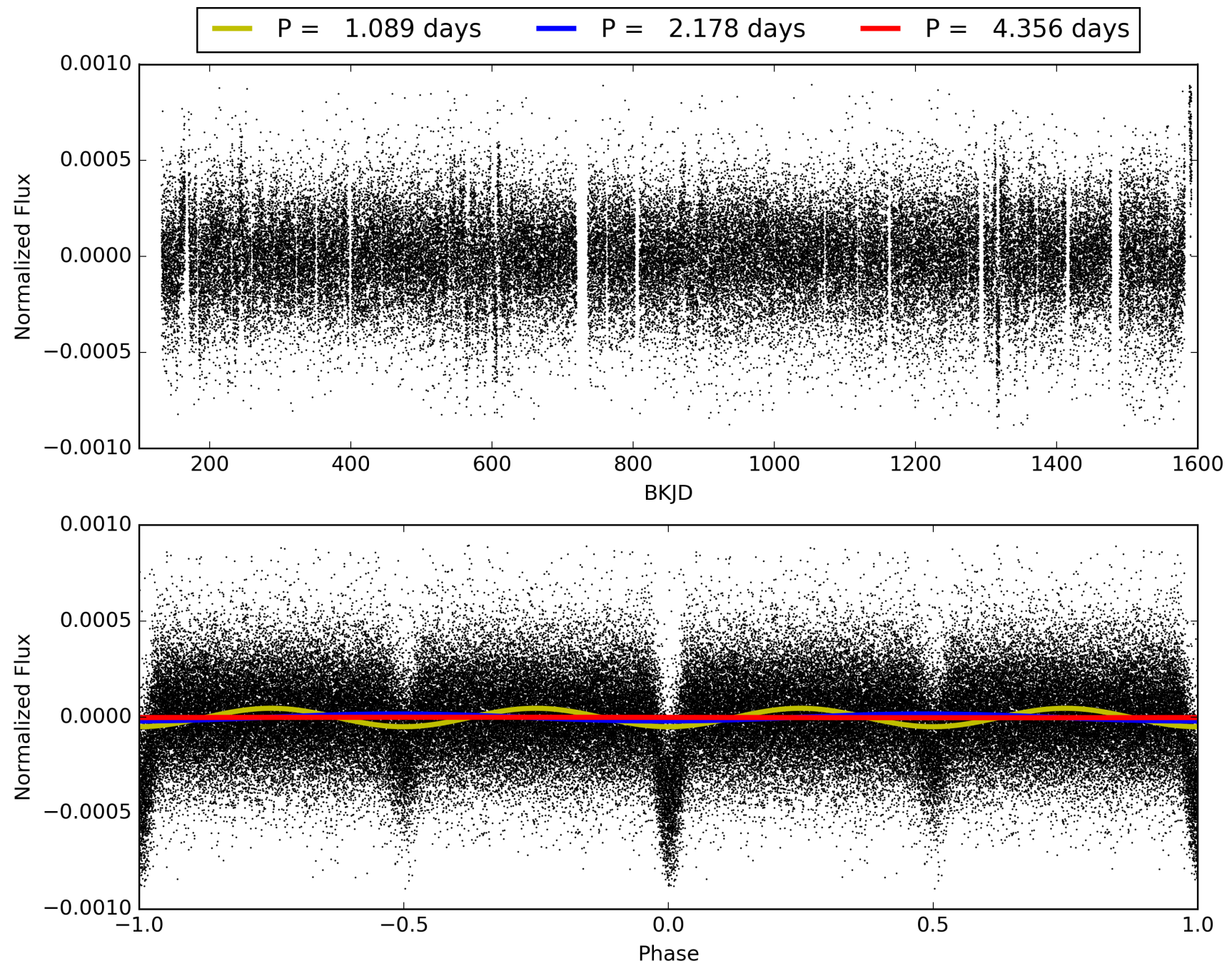
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [588/588]
GhostDiagnostic-chr: -0.02629
Centroid-sig: 0.0%
Centroid-so: 1.894 arcsec [6.64σ]
OotOffset-rm: 3.564 arcsec [7.27σ]
KicOffset-rm: 3.651 arcsec [6.97σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009641018-01, PDC Light Curves

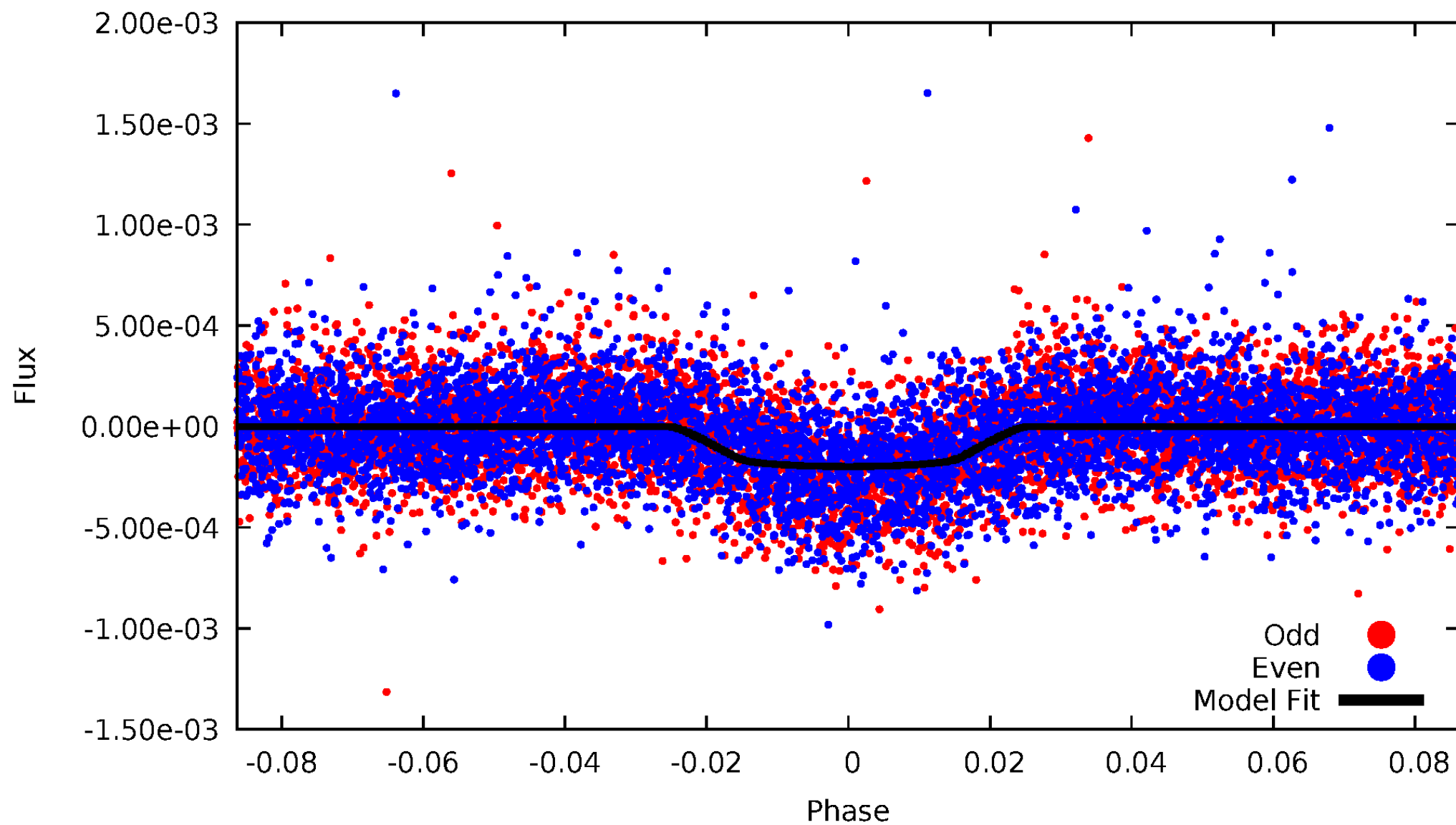


TCE 009641018-01



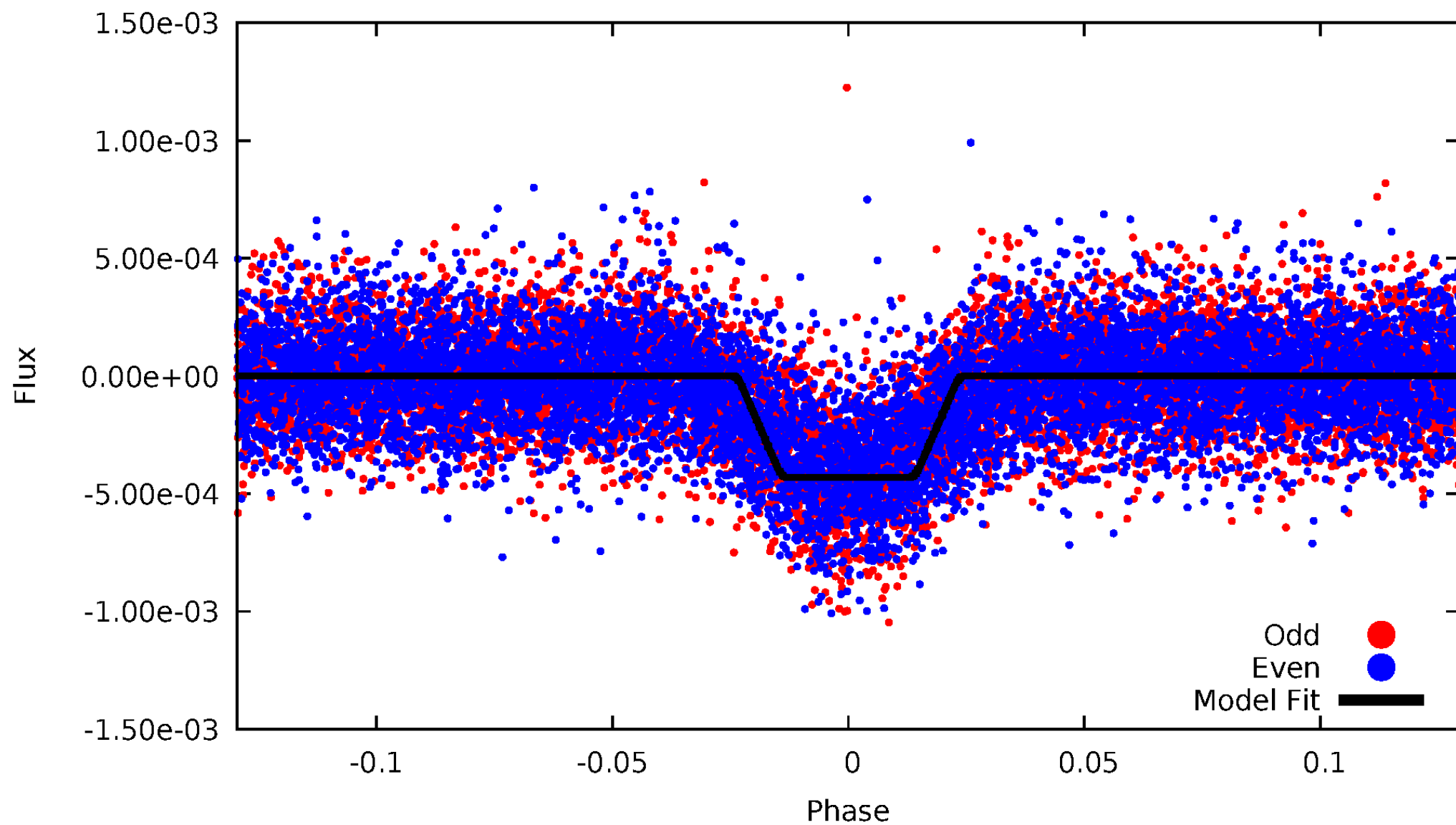
DV Odd/Even

TCE 009641018-01



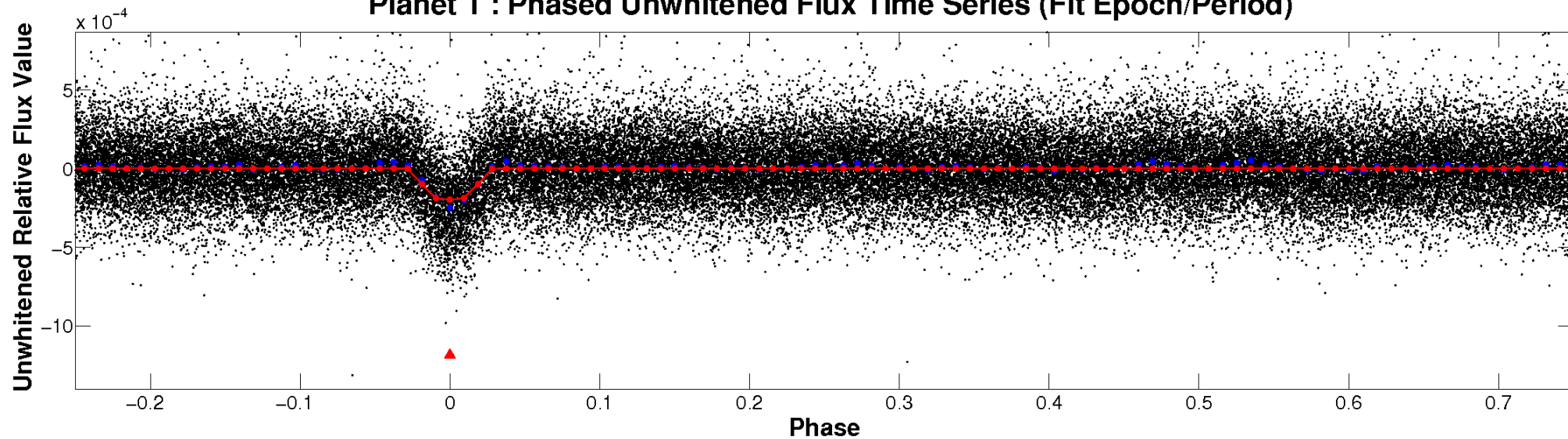
ALT Odd/Even

TCE 009641018-01

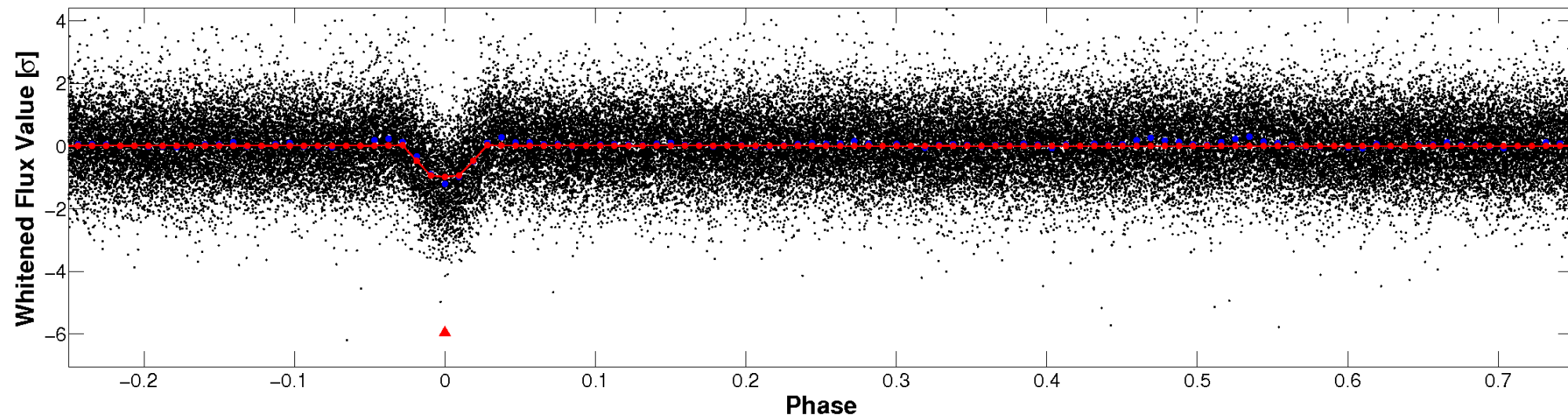


Non-Whitened Vs. Whitened Light Curve

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

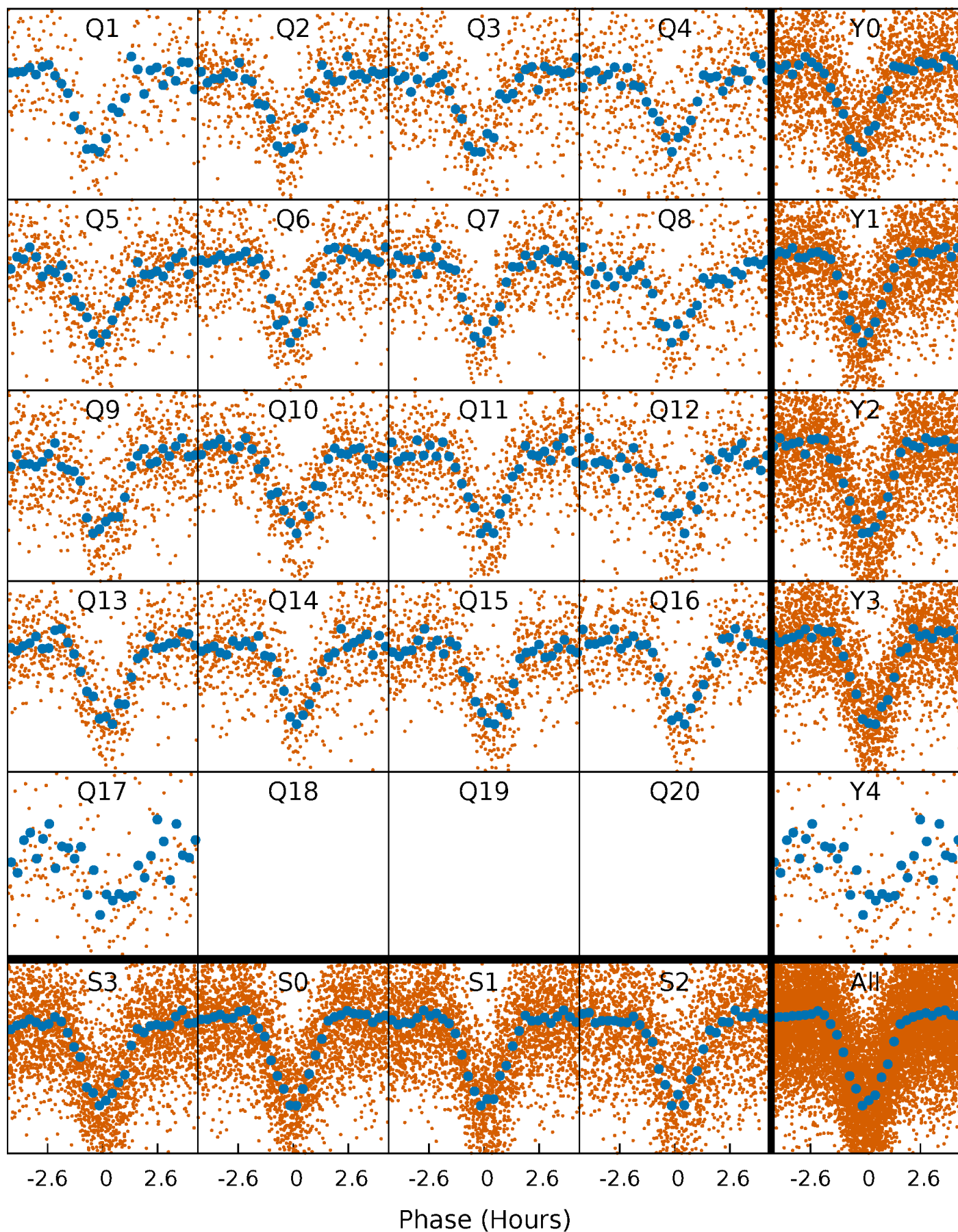


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



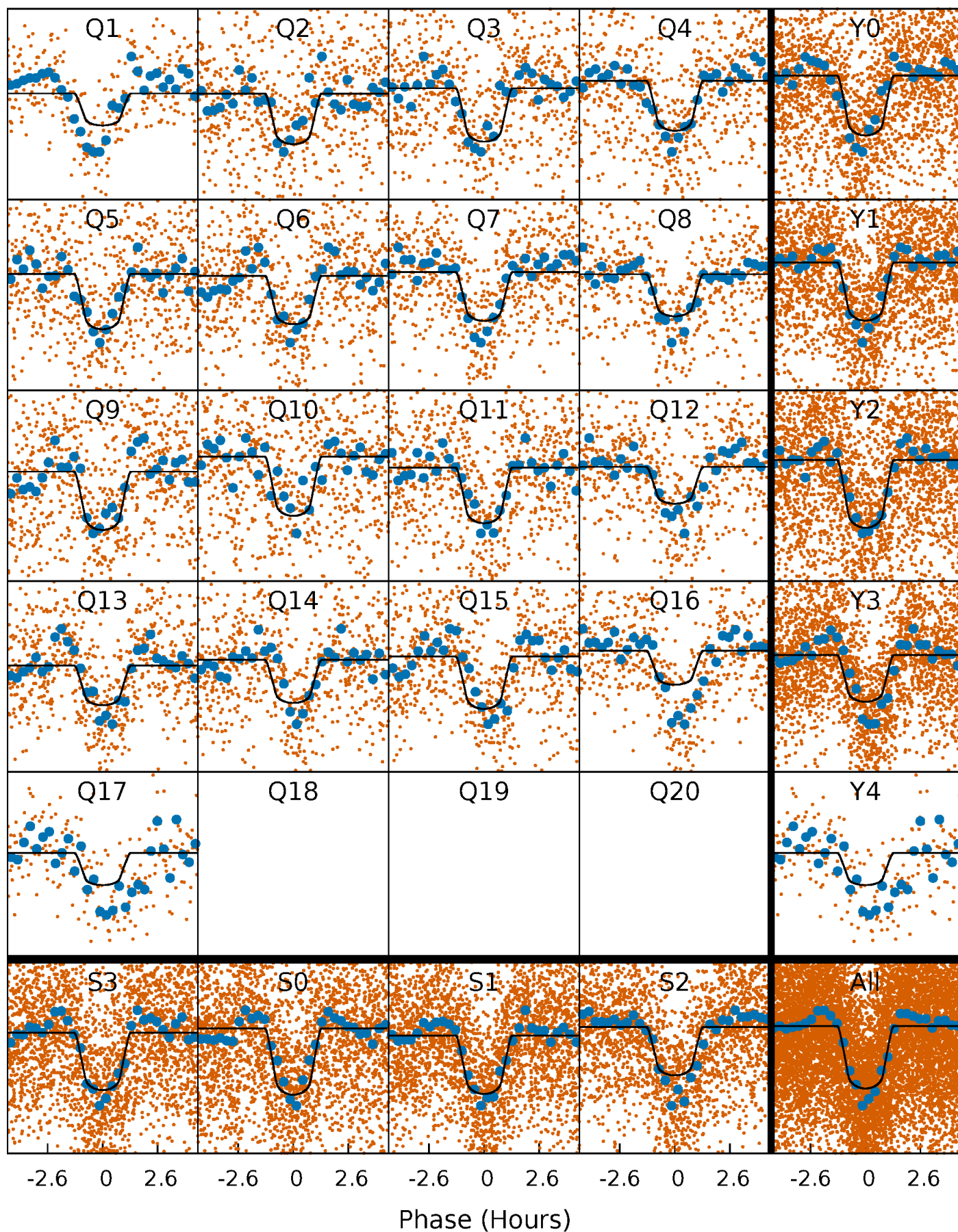
PDC Quarter-Phased Transit Curves

TCE 009641018-01 P= 2.178105 Days $T_0=132.039914$ (BKJD)



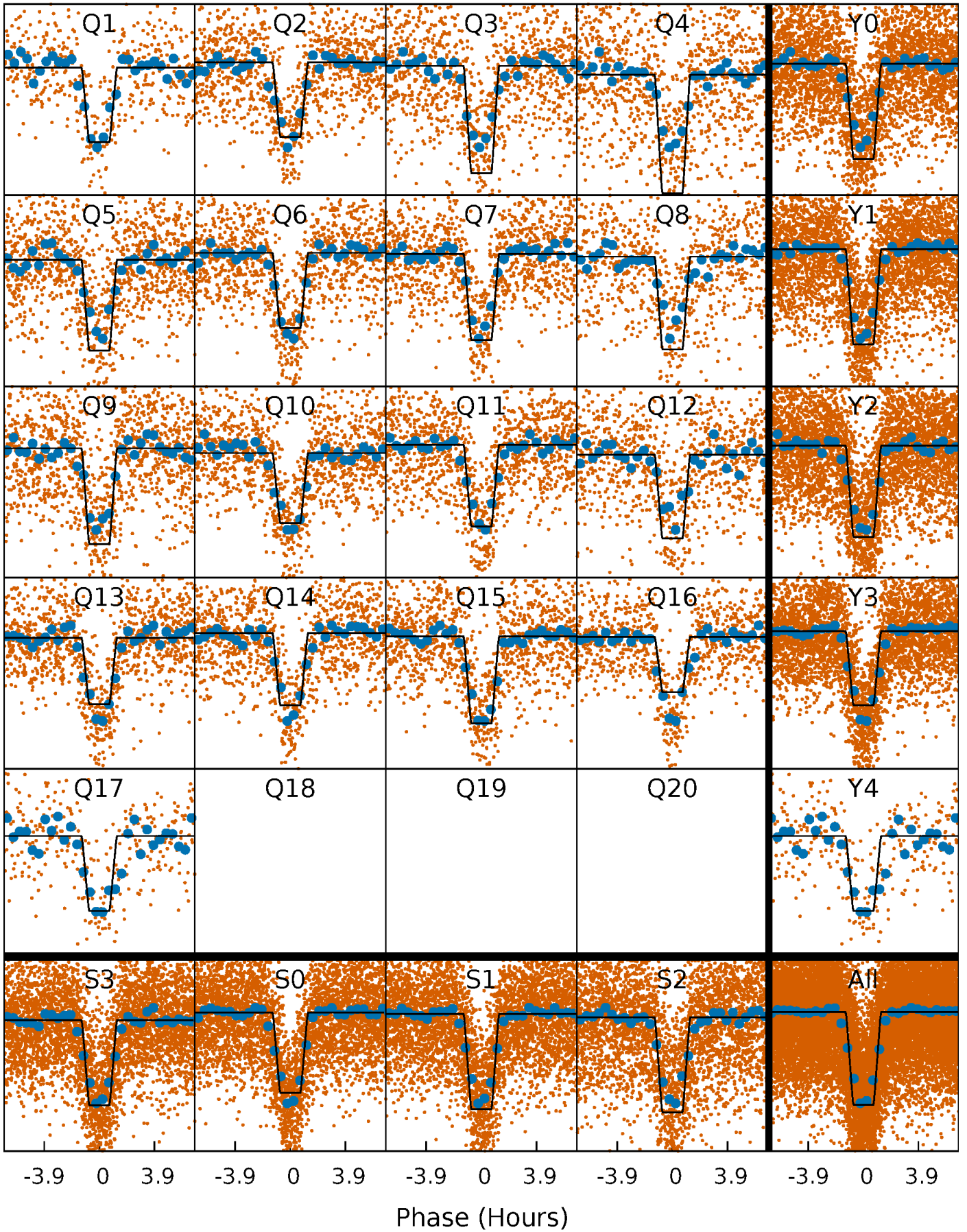
DV Quarter-Phased Transit Curves

TCE 009641018-01 P= 2.178105 Days $T_0=132.039914$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

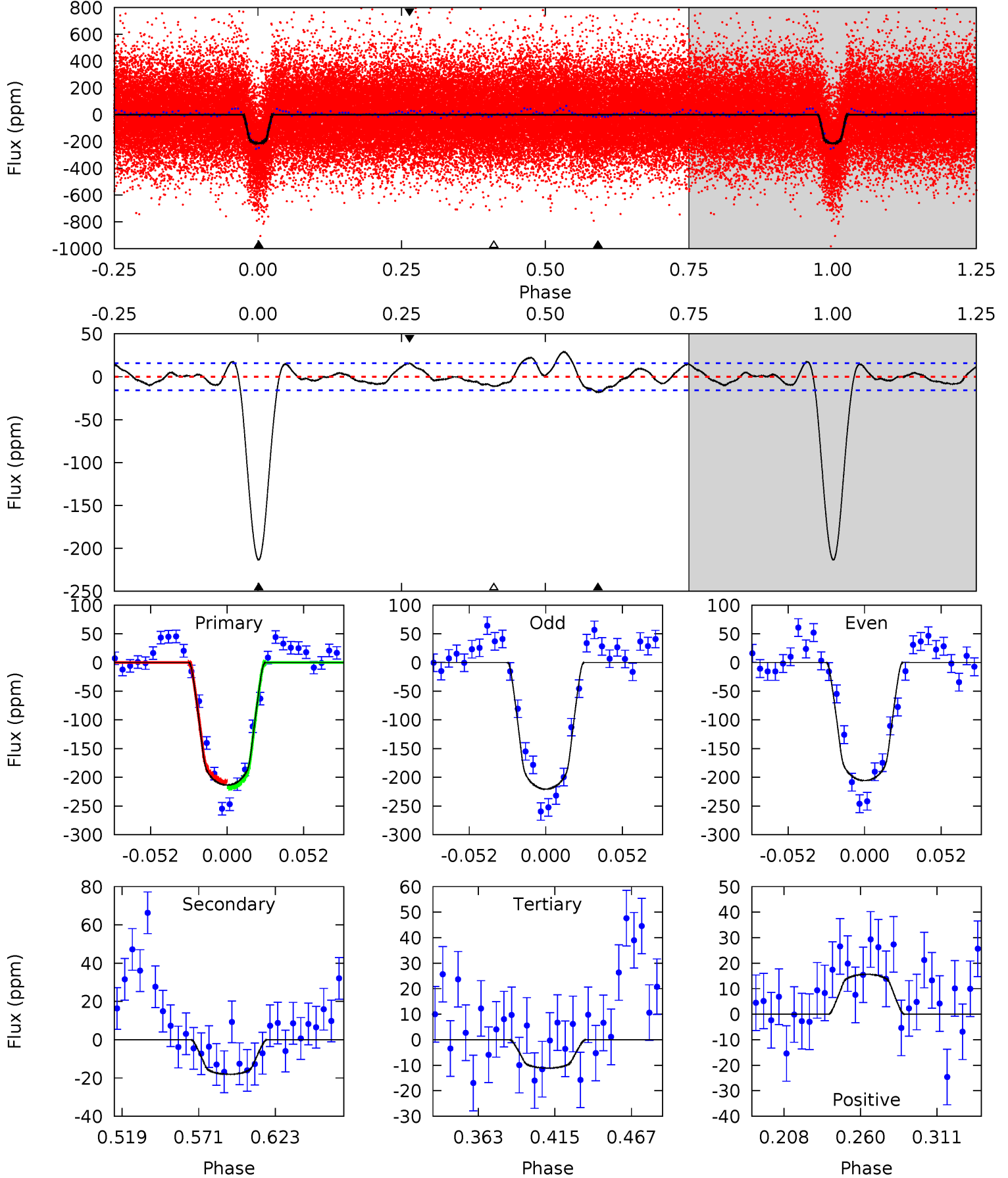
TCE 009641018-01 P= 2.178142 Days $T_0=132.029050$ (BKJD)



DV Model-Shift Uniqueness Test

009641018-01, P = 2.178105 Days, E = 129.861809 Days

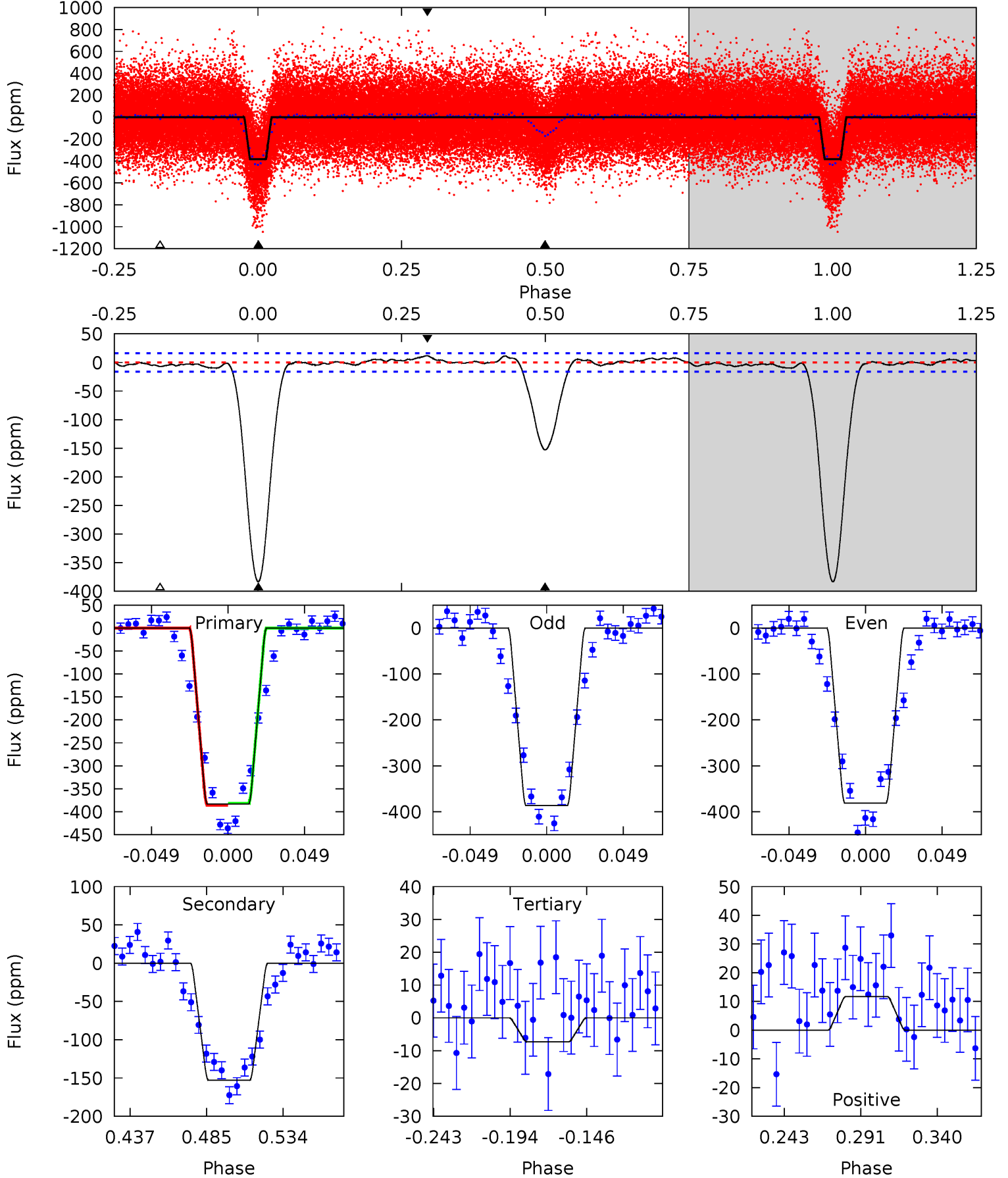
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
63.8	5.40	3.32	4.68	4.70	1.94	2.53	60.5	59.1	2.07	0.72	2.20	1.03	0.12	1.50



Alt Model-Shift Uniqueness Test

009641018-01, P = 2.178142 Days, E = 129.850908 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
111.3	44.4	2.12	3.41	4.71	1.97	1.35	109.2	107.9	42.3	41.0	0.80	1.02	0.03	0.58



Stellar Parameters For KIC 009641018

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5947^{+159}_{-177}	$4.482^{+0.078}_{-0.182}$	$-0.500^{+0.300}_{-0.300}$	$0.881^{+0.221}_{-0.102}$	$0.860^{+0.105}_{-0.079}$	$1.770^{+0.687}_{-0.805}$
	+3%/-3%	+2%/-4%	+60%/-60%	+25%/-12%	+12%/-9%	+39%/-45%
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 009641018-01 / KOI 1504.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-18 ± 3	$1.51^{+0.29}_{-0.26}$	1977^{+126}_{-93}	3541^{+235}_{-207}	$4.148^{+2.135}_{-1.343}$
Alt.	-153 ± 3	$2.06^{+0.32}_{-0.27}$	1972^{+127}_{-99}	4716^{+235}_{-206}	20^{+6}_{-5}

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

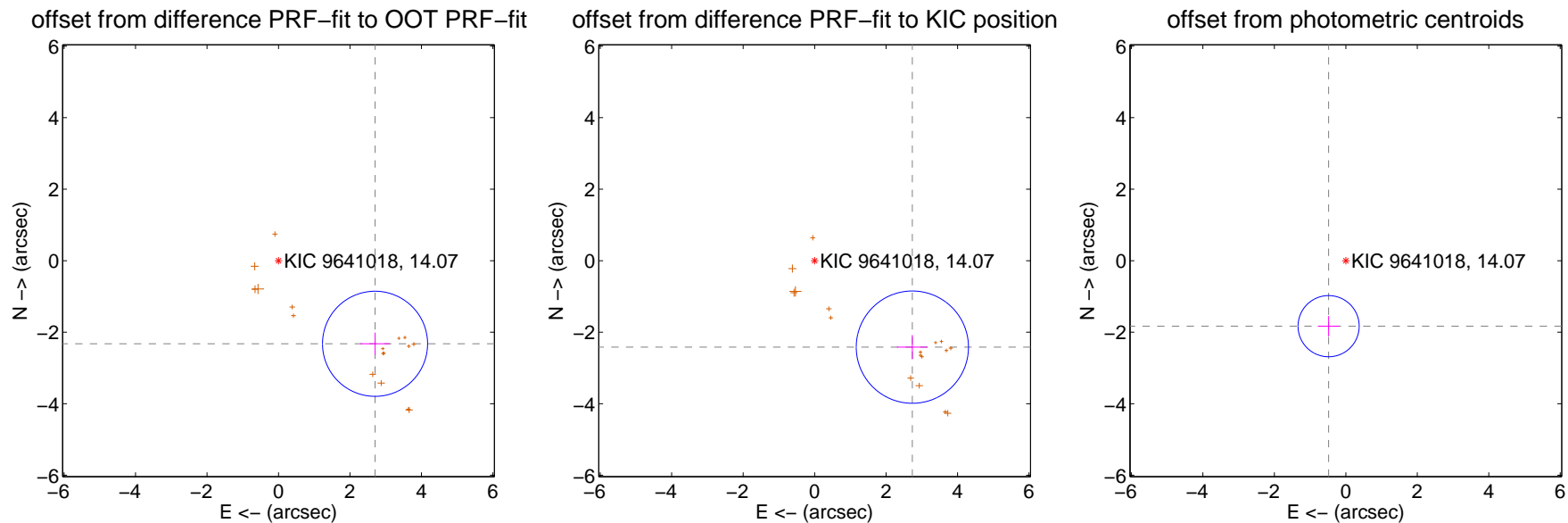
DV Centroid Data

Supplemental centroid analysis for 009641018-01. Kepler magnitude: 14.07. Transit SNR 43.20

There are 0 quarters with good PRF difference image offsets

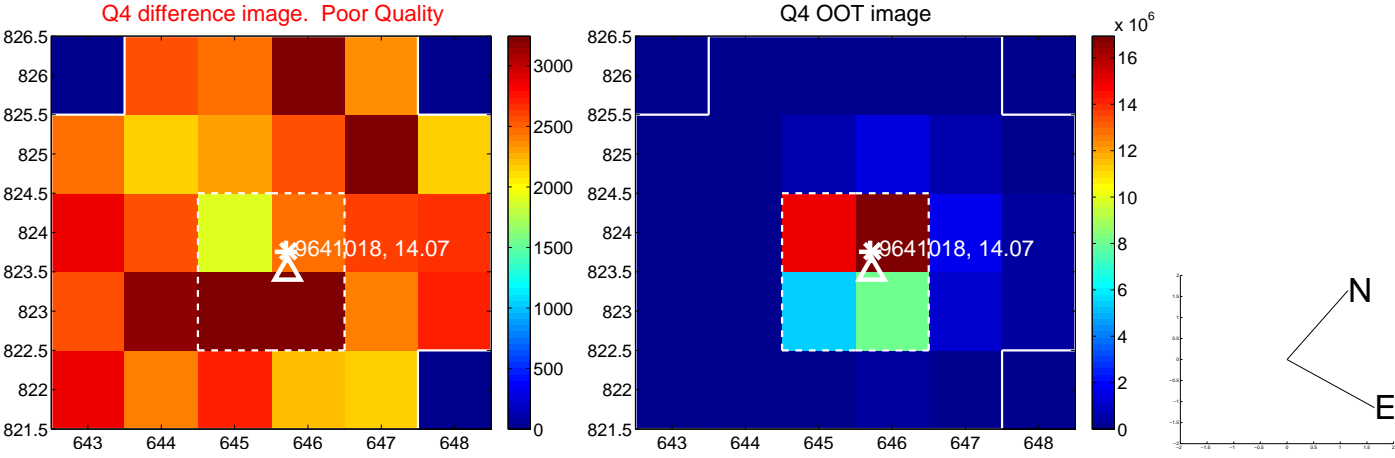
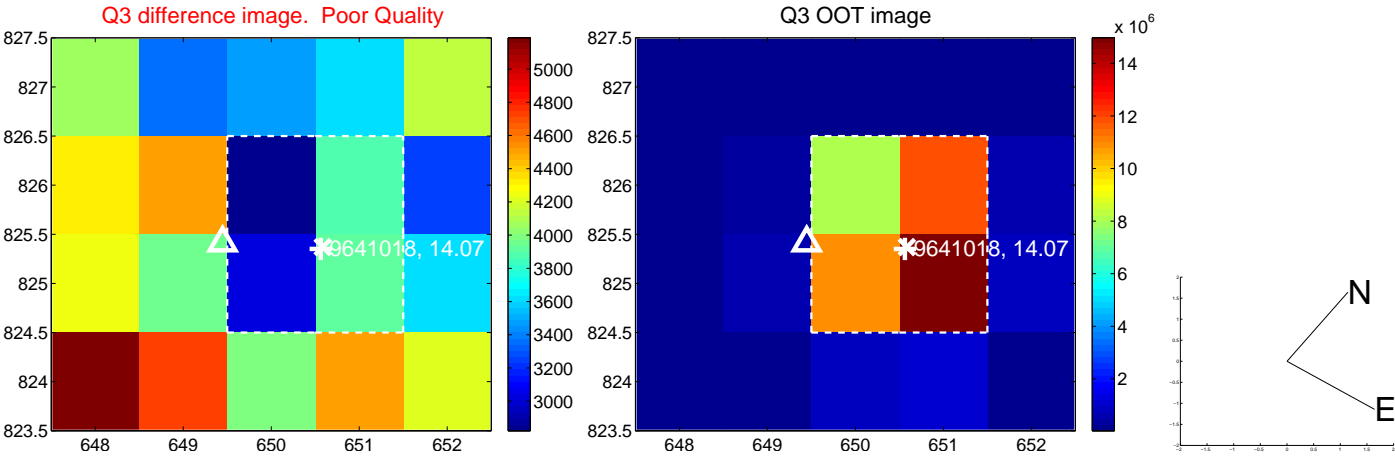
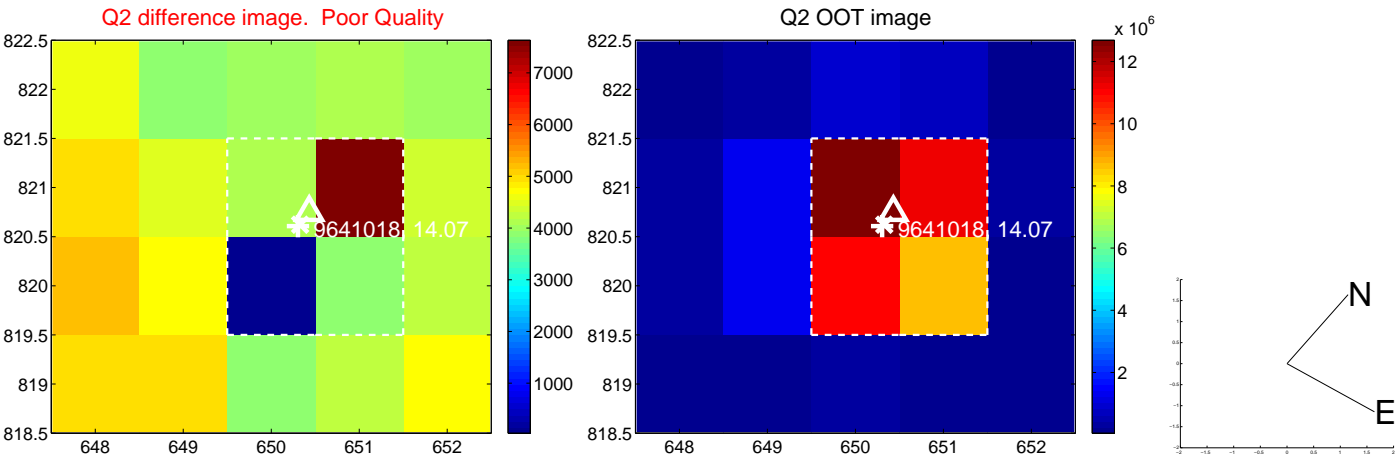
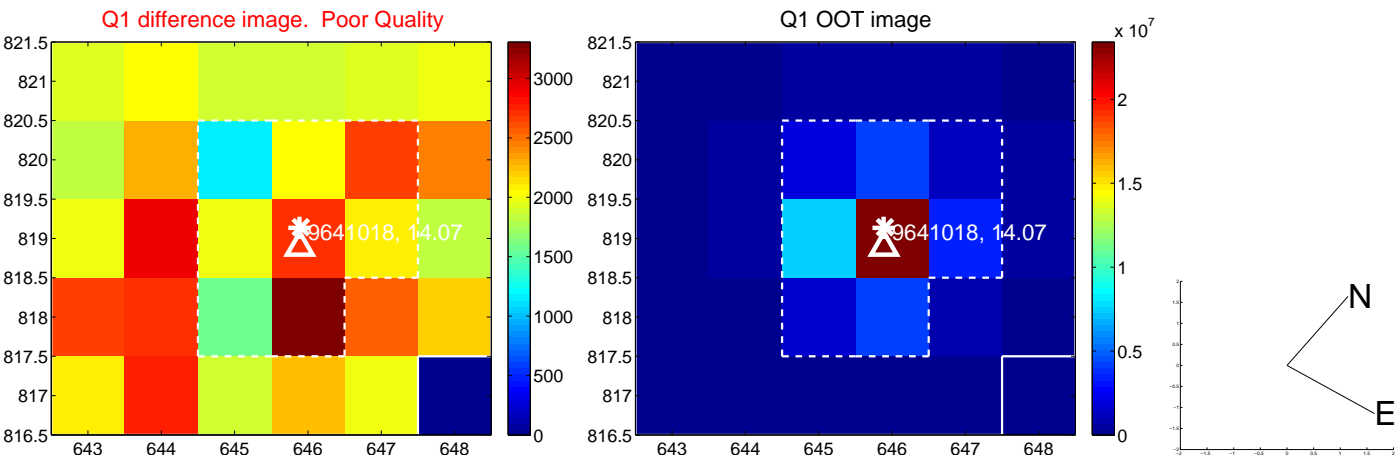
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.564 ± 0.490	7.27	-2.702 ± 0.413	-2.324 ± 0.312
PRF-fit source offset from KIC position	3.651 ± 0.523	6.97	-2.735 ± 0.432	-2.418 ± 0.337
photometric centroid source offset	1.89 ± 0.29	6.64	0.48 ± 0.30	-1.83 ± 0.28

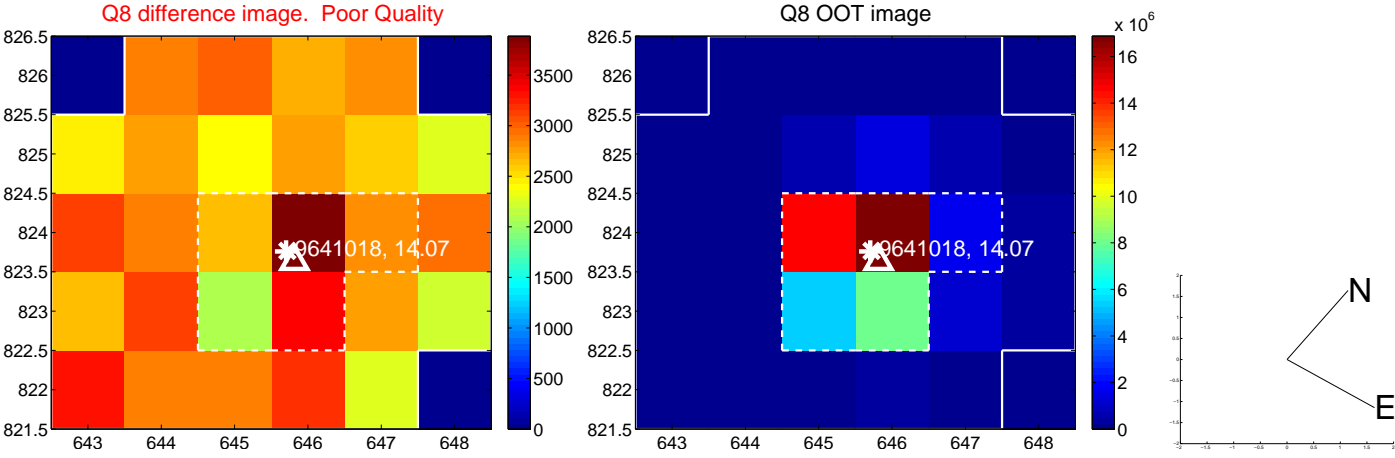
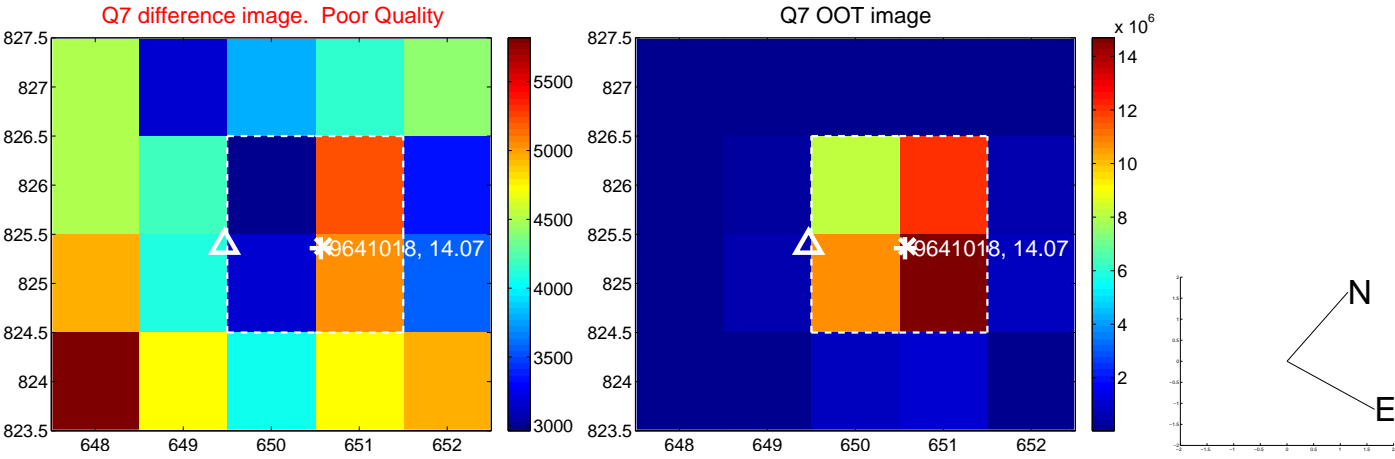
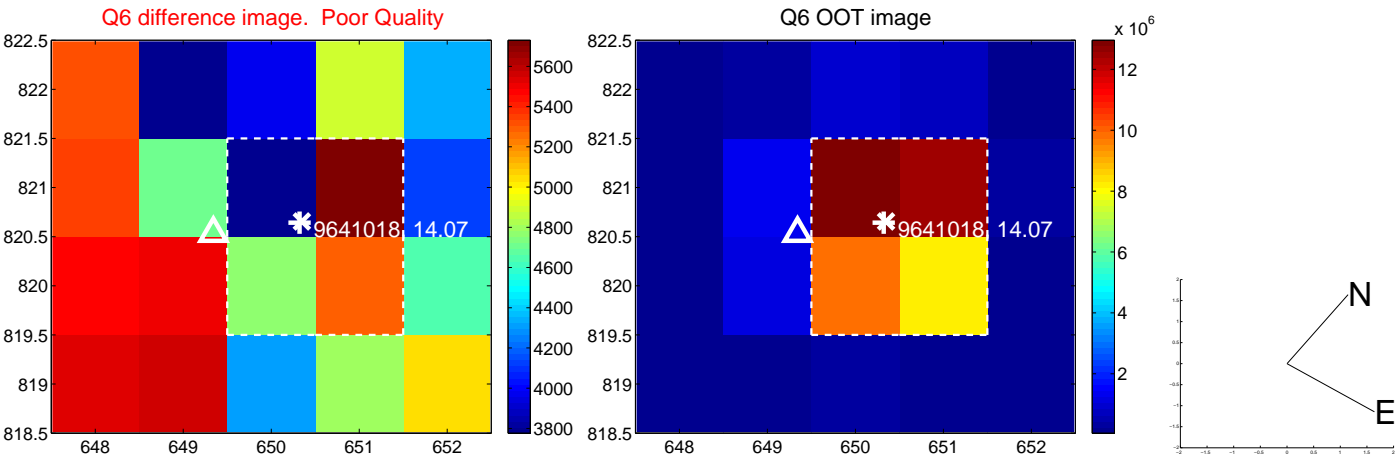
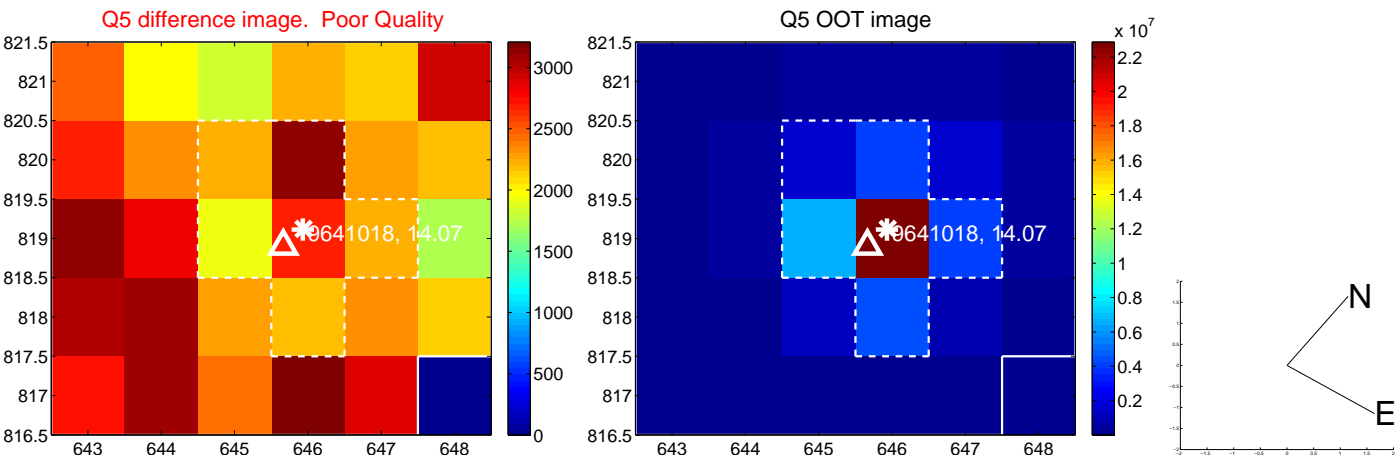


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

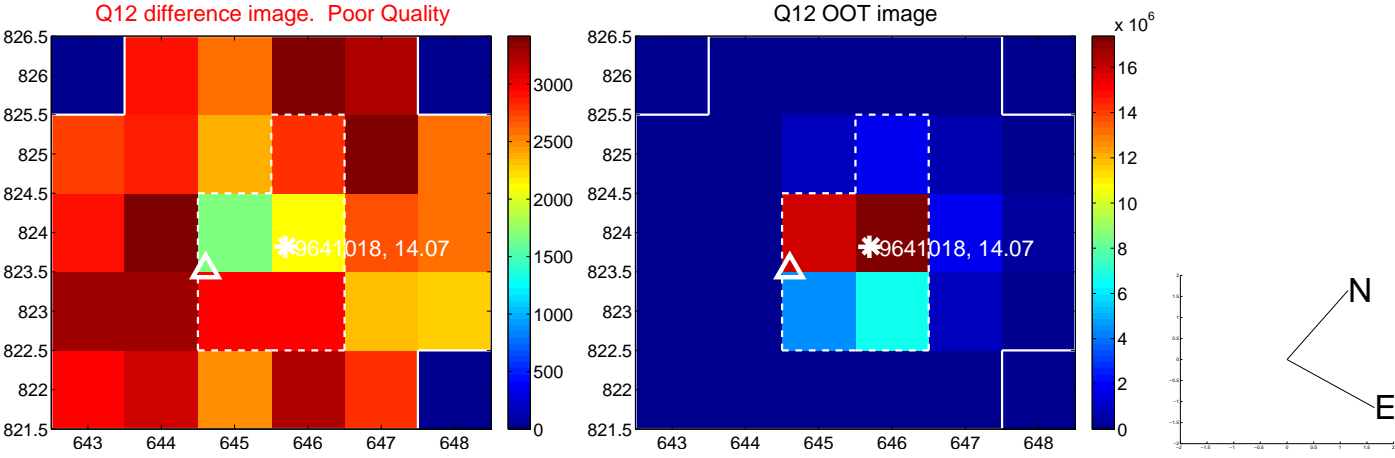
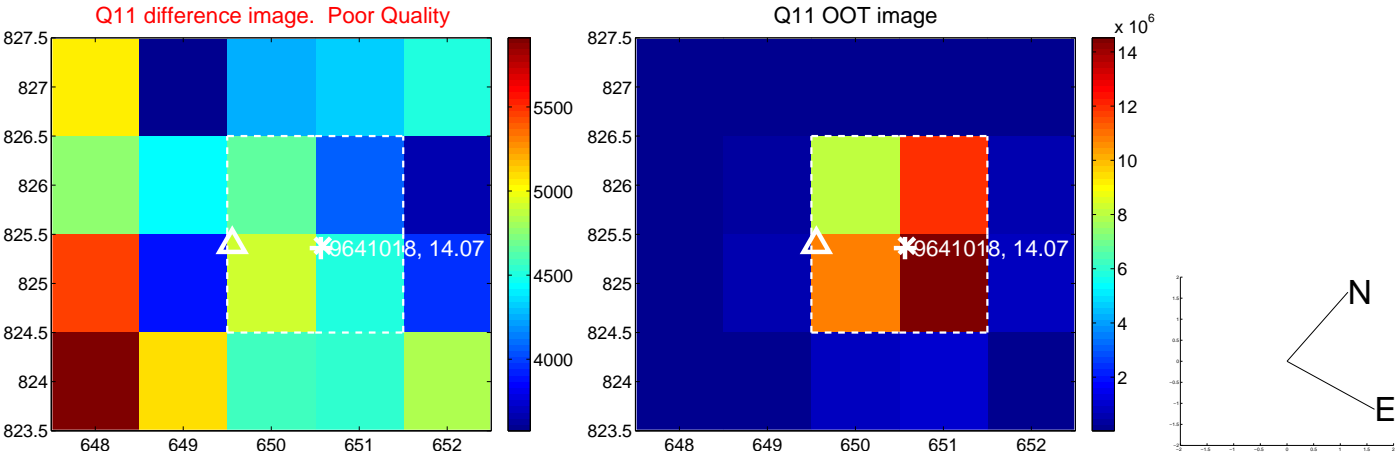
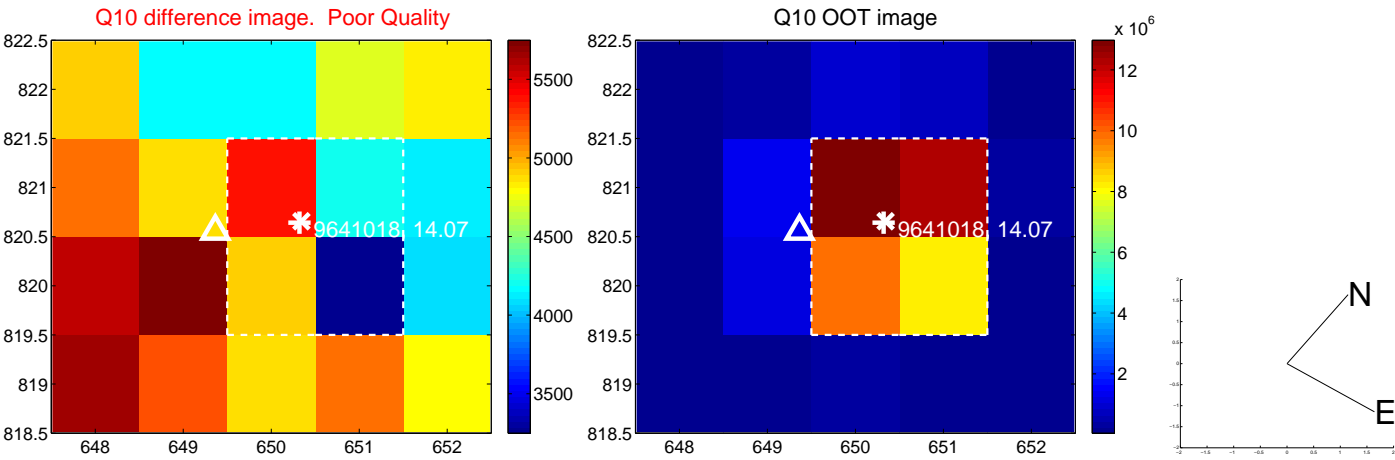
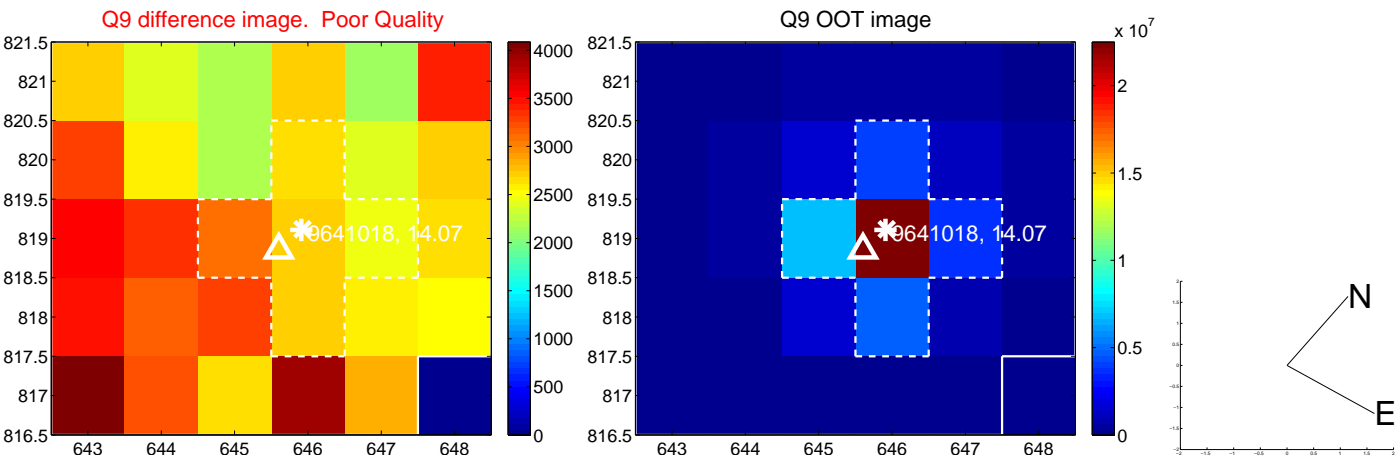
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



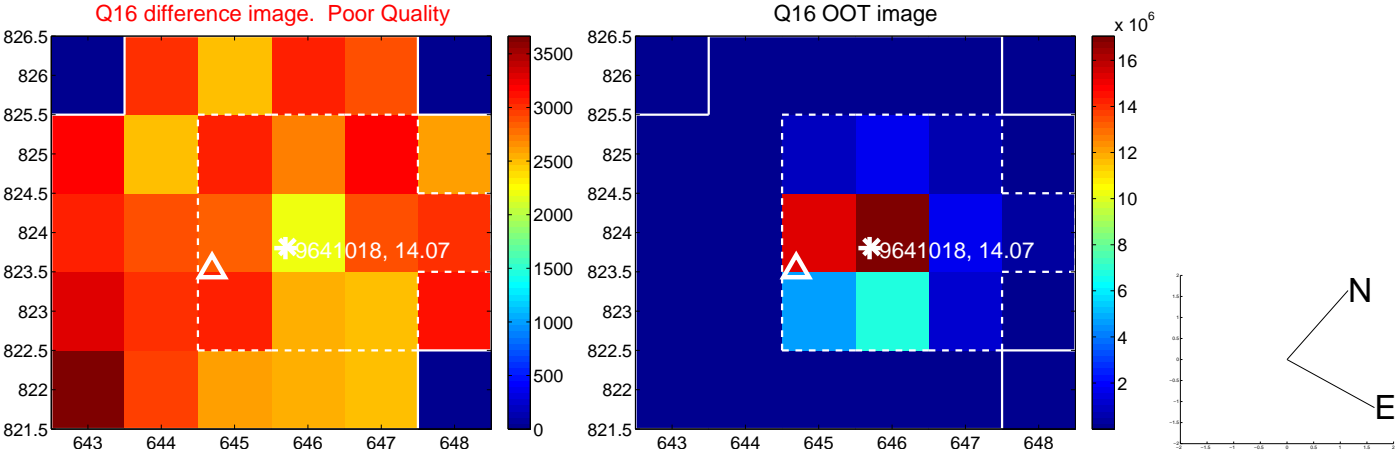
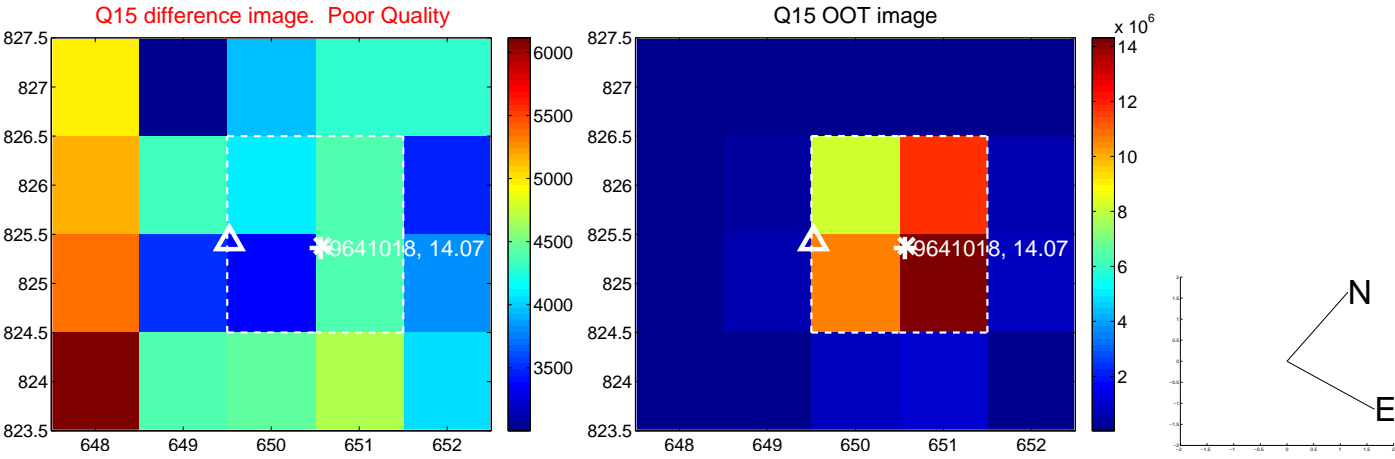
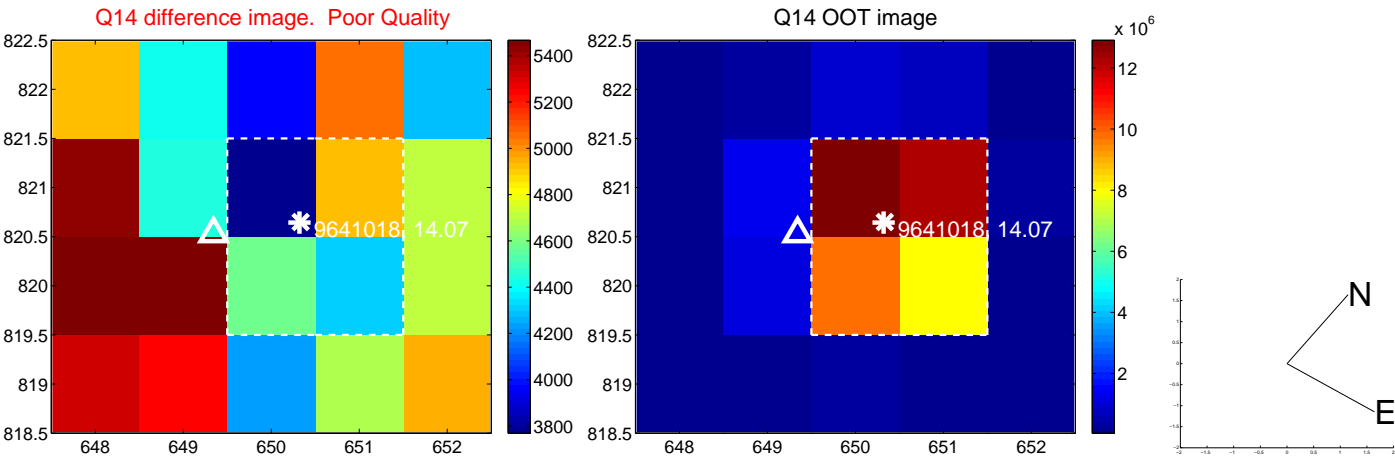
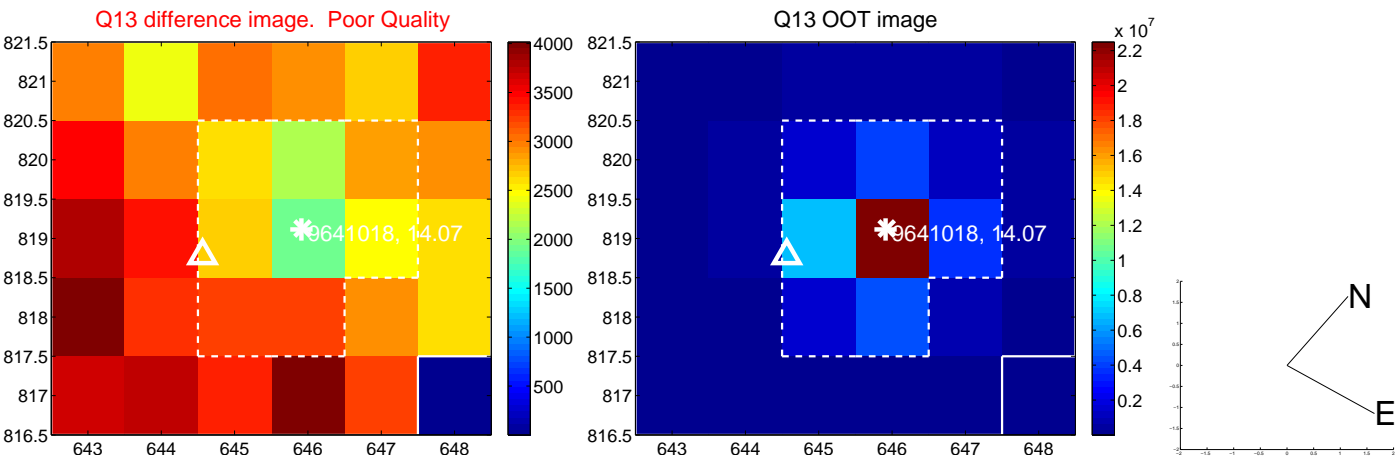
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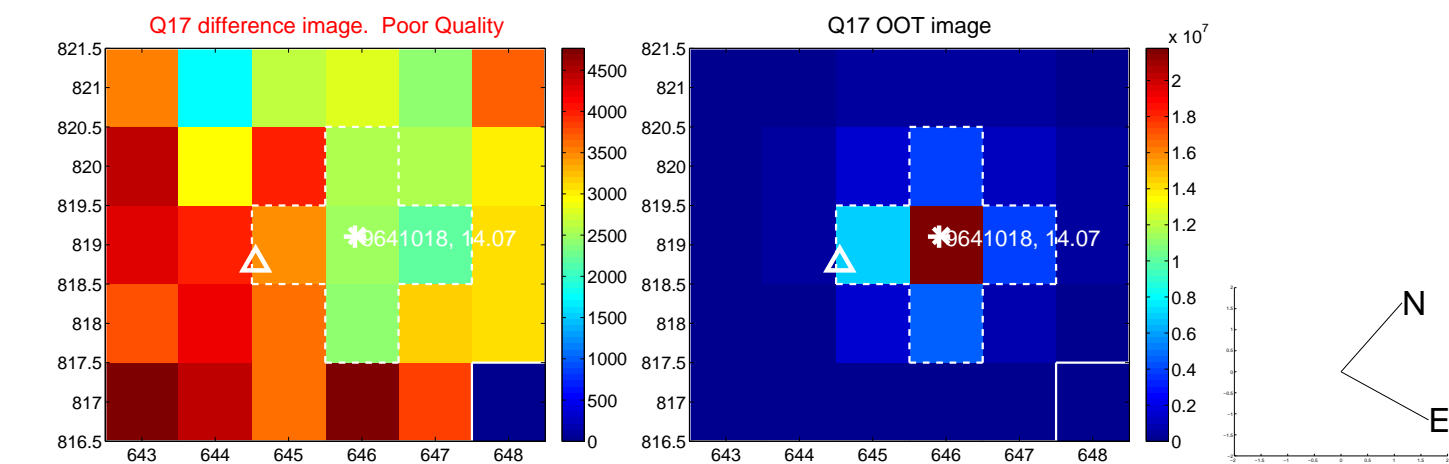
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



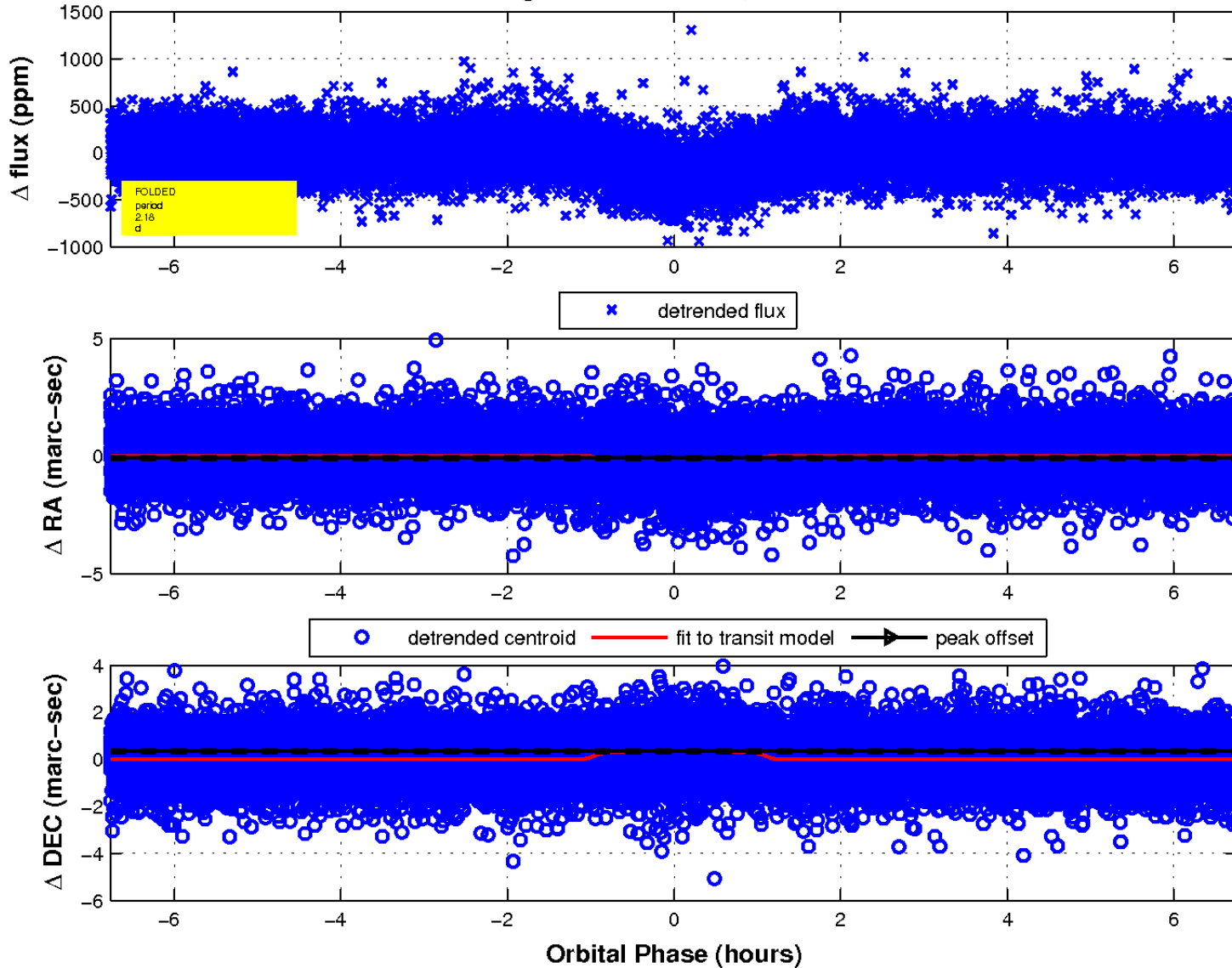
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

