

KIC 010686814

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})
010686814-01	OBS	2978.01	2.618423	134.037828	278.2	4.629	15.1	16.5	0.64	4266	1.52	119.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010686814-01	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.

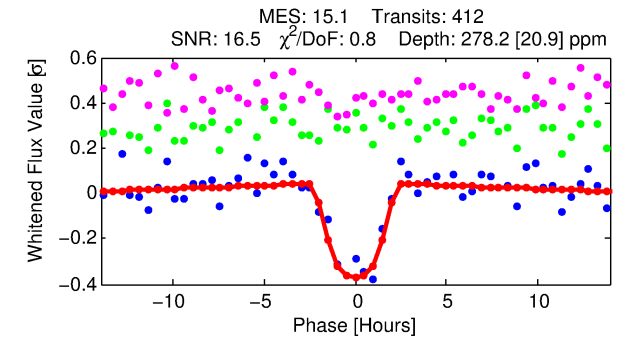
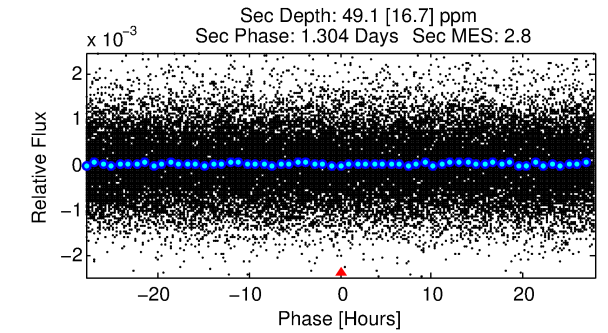
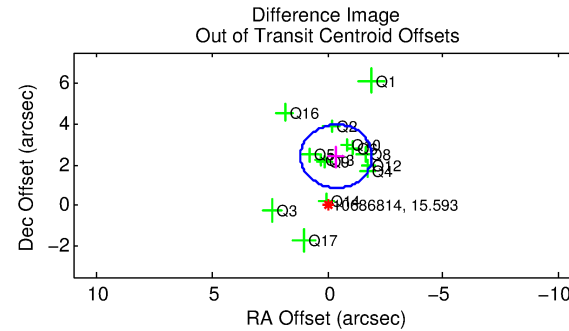
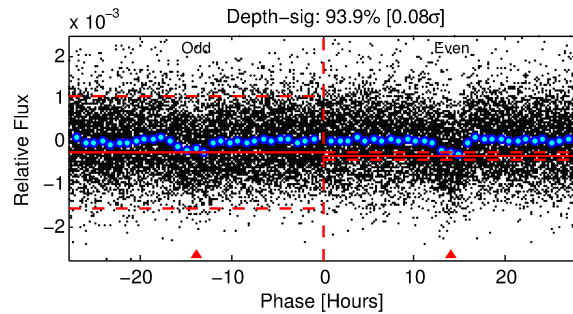
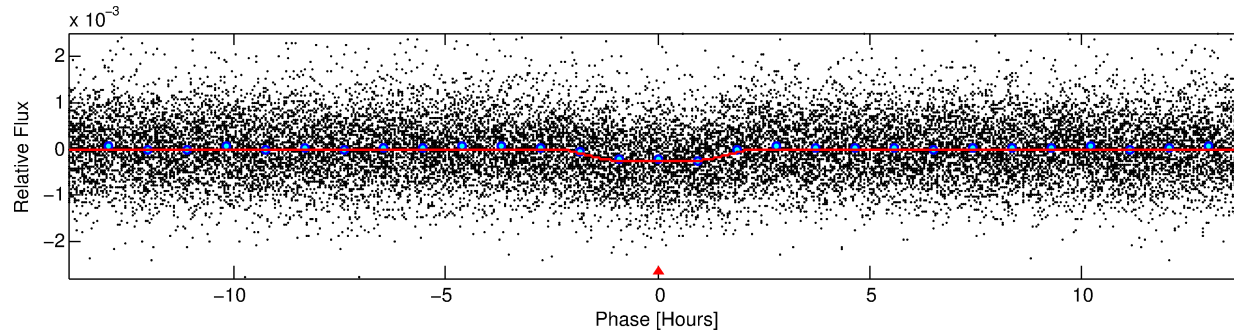
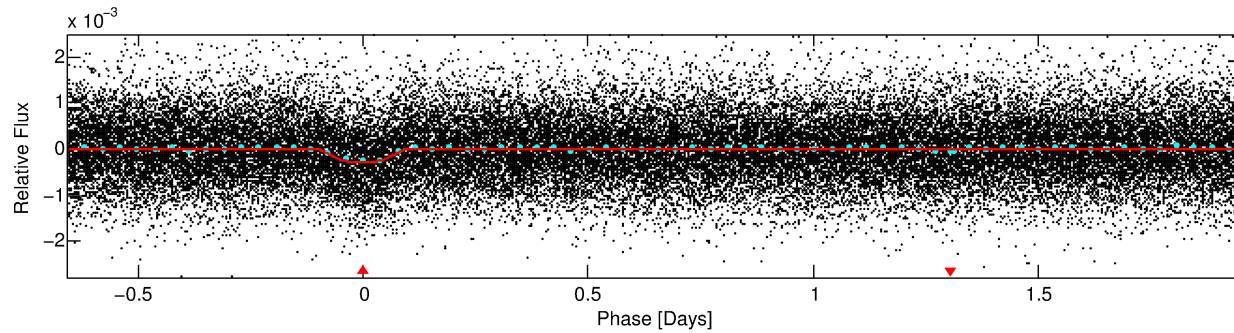
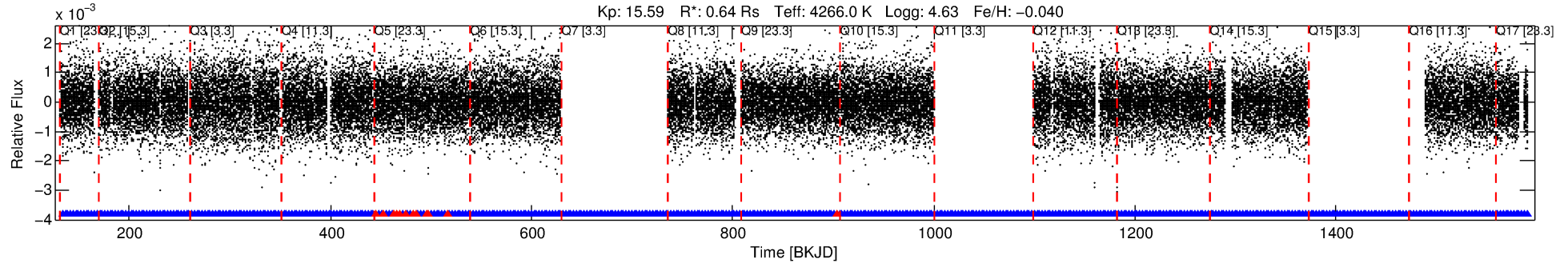
Ephemeris Match Information For 010686814-01

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
010686814-01	10686814	7363.01	10686876	1:1	56.1	14	-3	11.73	15.60	833.42	Direct-PRF	0	0.21	0.34

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: 10686814 Candidate: 1 of 1 Period: 2.618 d
KOI: K02978.01 Corr: 0.886



DV Fit Results:

Period = 2.61842 [0.00002] d
Epoch = 134.0378 [0.0046] BKJD
Rp/R* = 0.0216 [0.0013]
a/R* = 1.69 [0.17]
b = 0.97 [0.01]
Seff = 119.78 [18.34]
Teq = 844 [32] K
Rp = 1.52 [0.17] Re
a = 0.0320 [0.0023] AU
Ag = 11.98 [4.48] [2.45 σ]
Teffp = 2427 [231] K [6.79 σ]

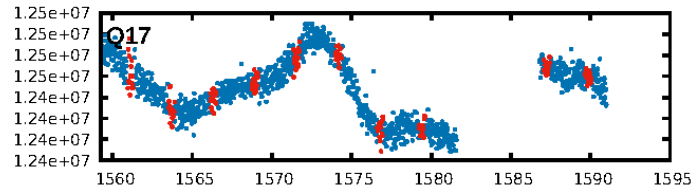
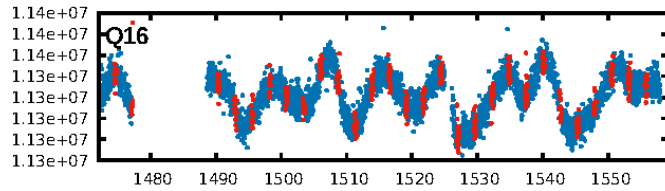
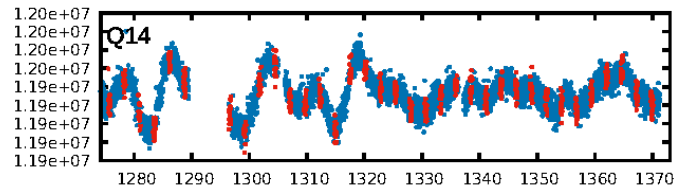
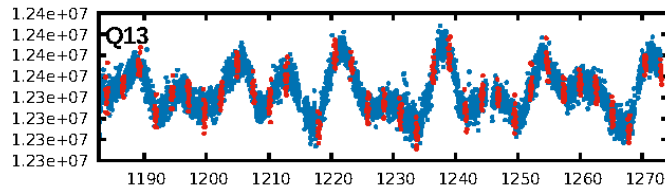
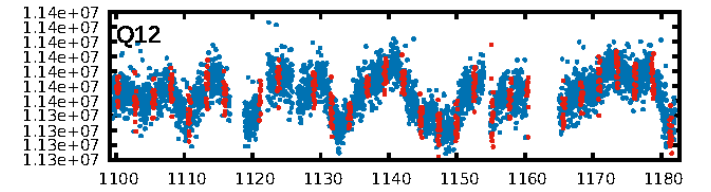
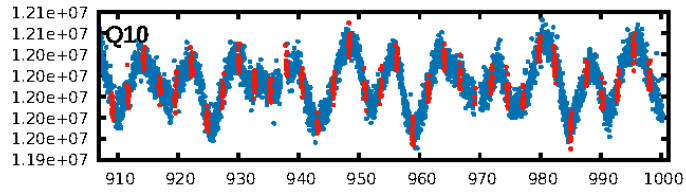
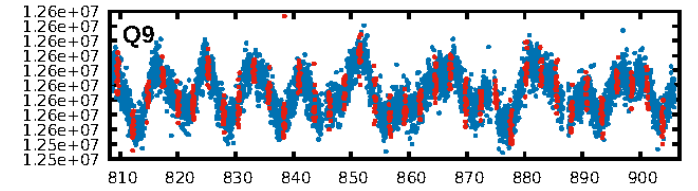
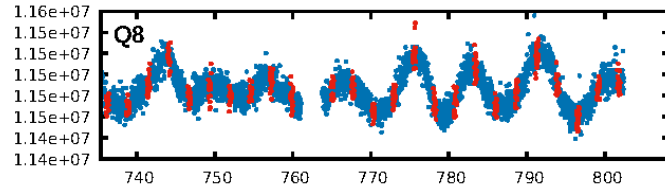
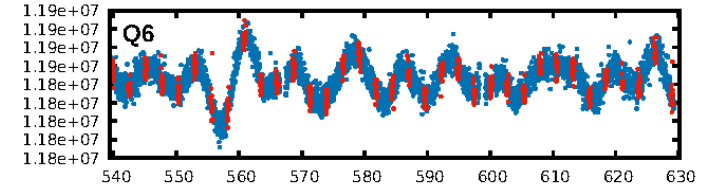
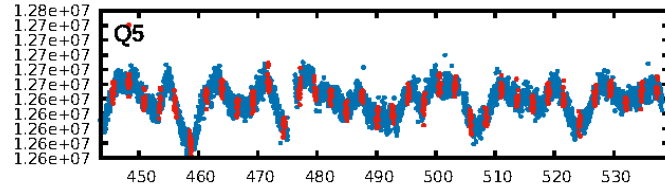
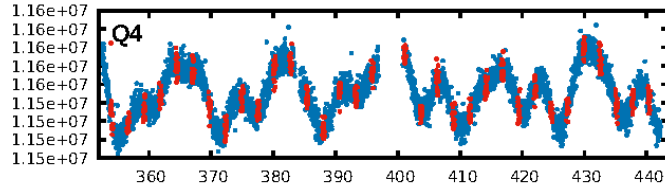
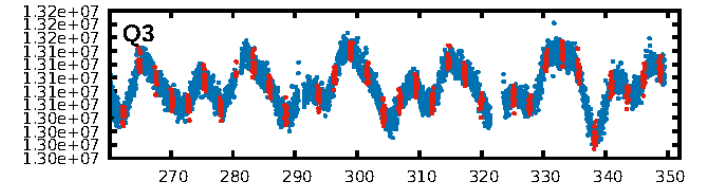
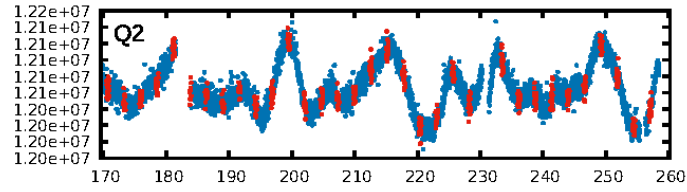
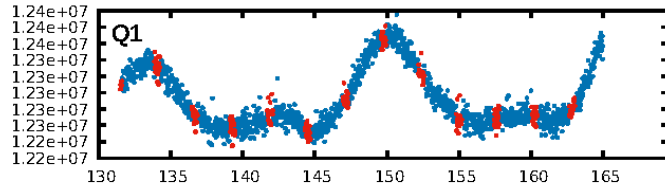
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.34e-49
RollingBand-fgt: 0.97 [377/389]
GhostDiagnostic-chr: -0.04506
Centroid-sig: 0.0%
Centroid-so: 3.476 arcsec [3.79 σ]
OotOffset-rm: 2.438 arcsec [4.73 σ]
KicOffset-rm: 2.133 arcsec [4.28 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 1.00 [14/14]

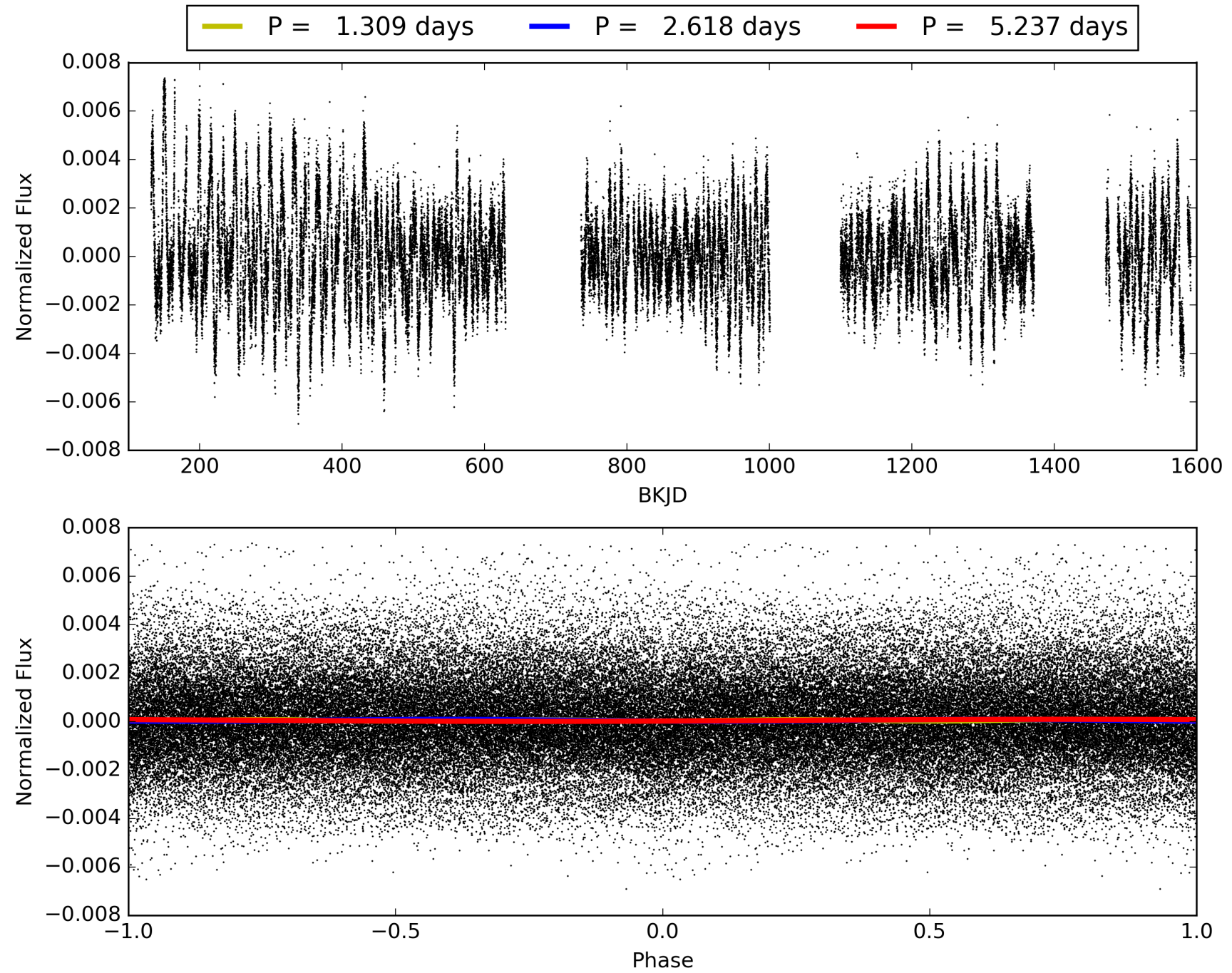
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010686814-01, PDC Light Curves

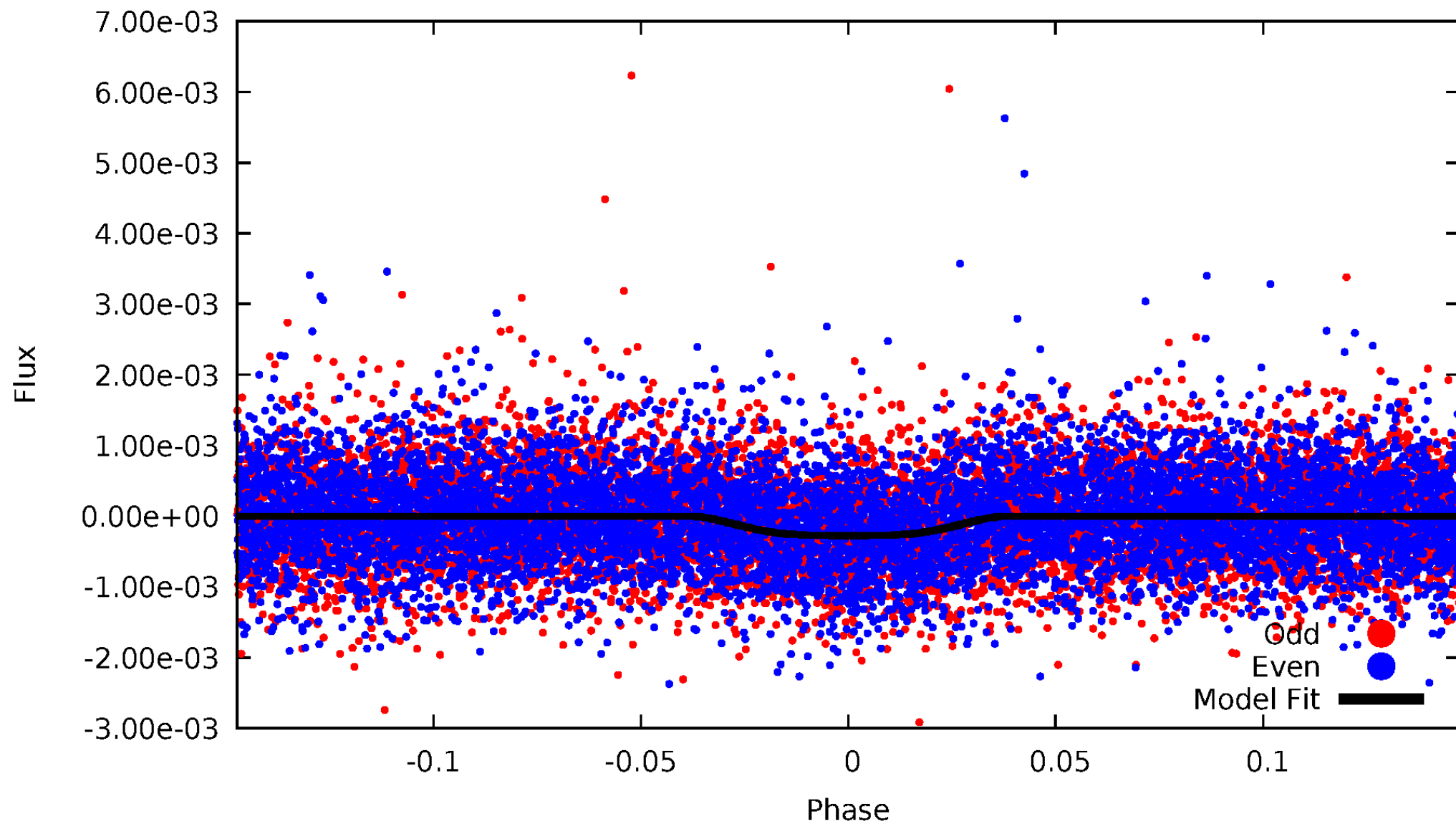


TCE 010686814-01



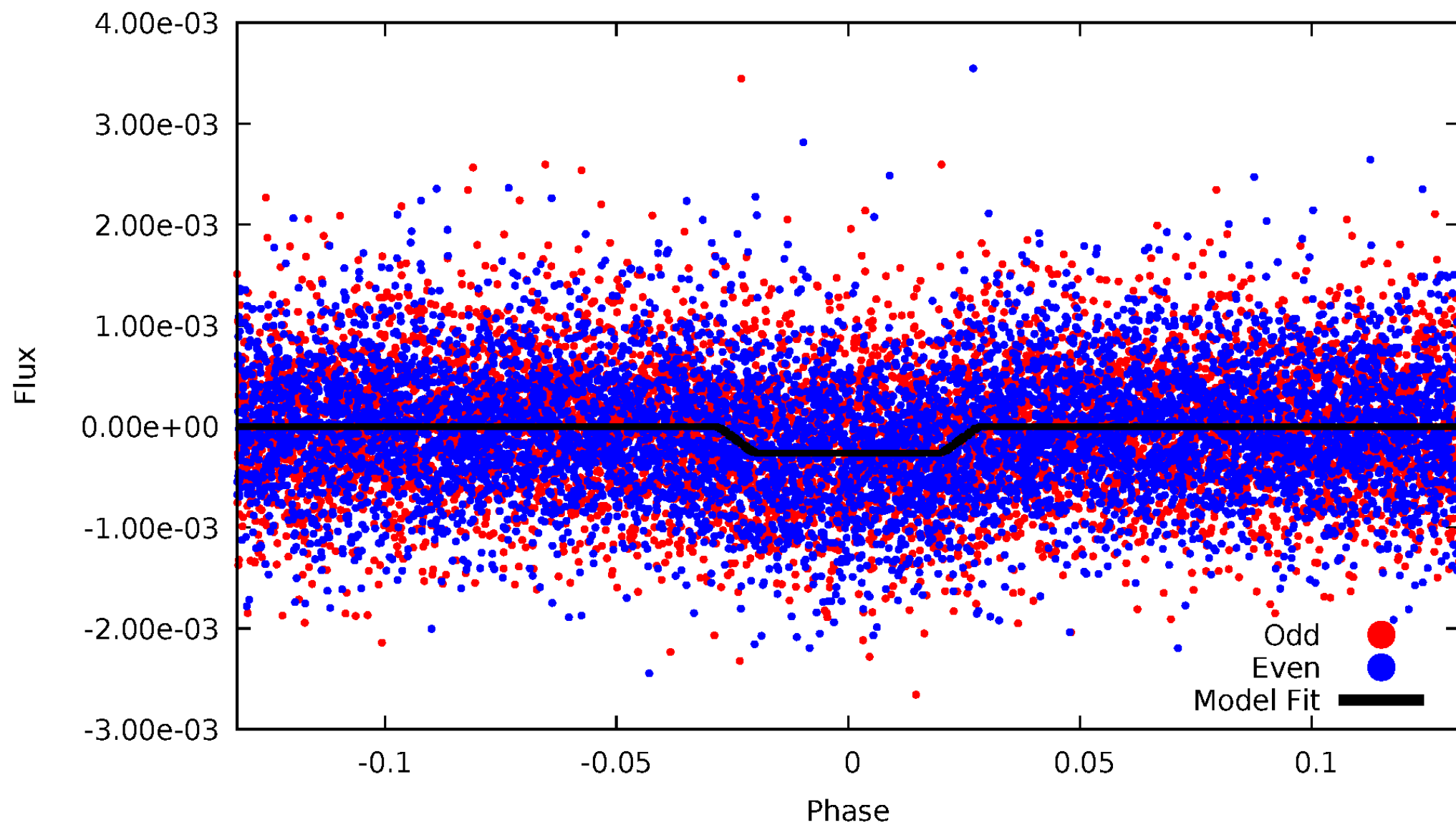
DV Odd/Even

TCE 010686814-01



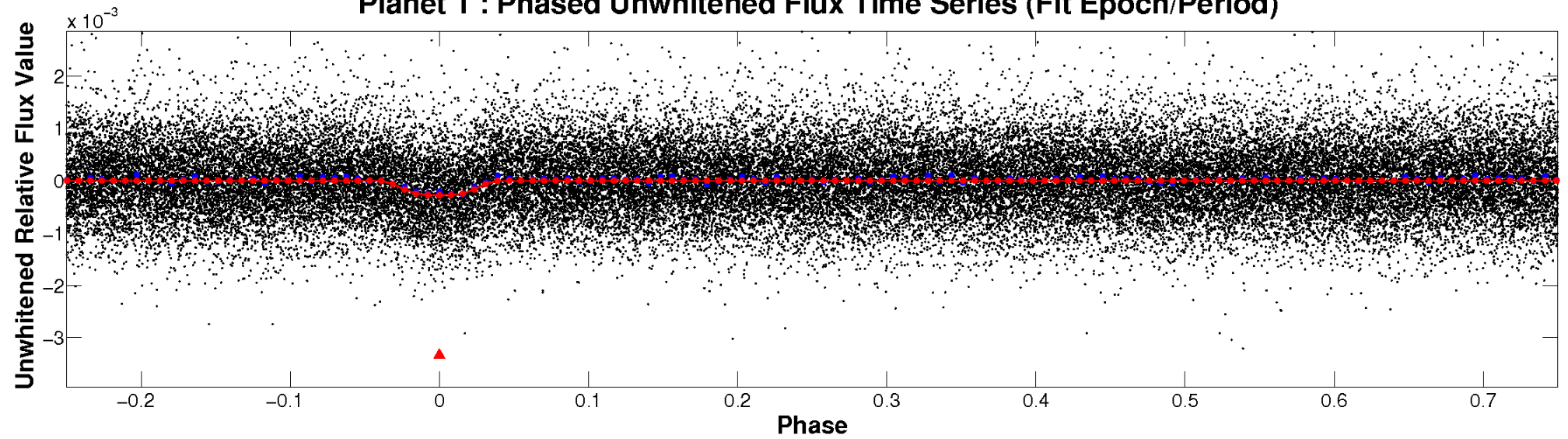
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TCE 010686814-01

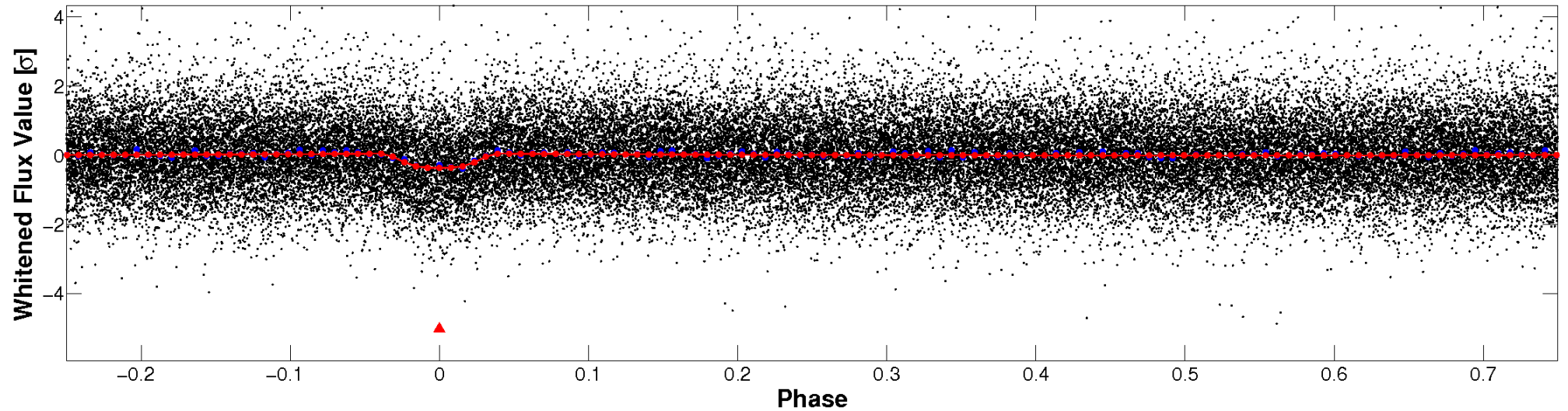


Non-Whitened Vs. Whitened Light Curve

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

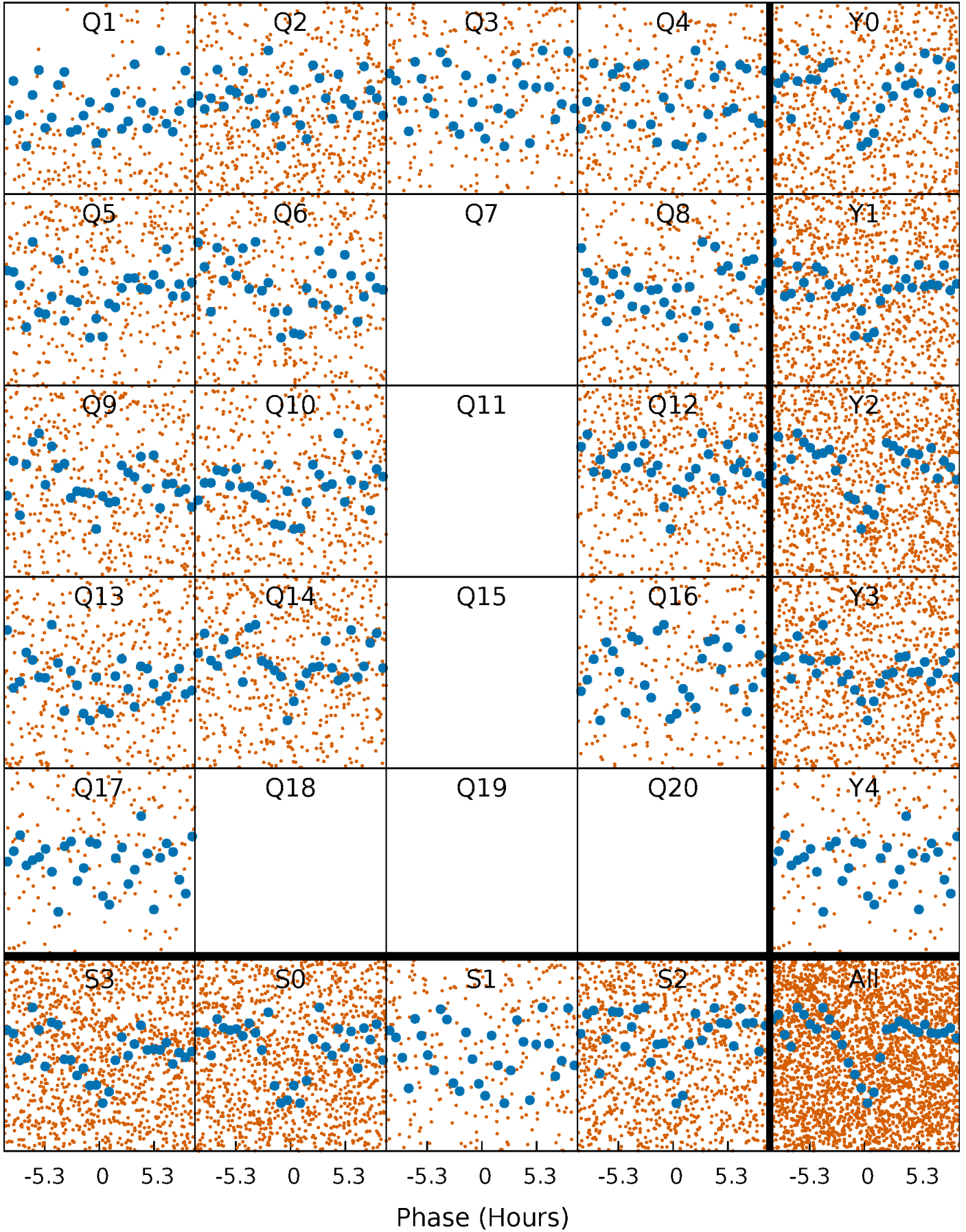


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



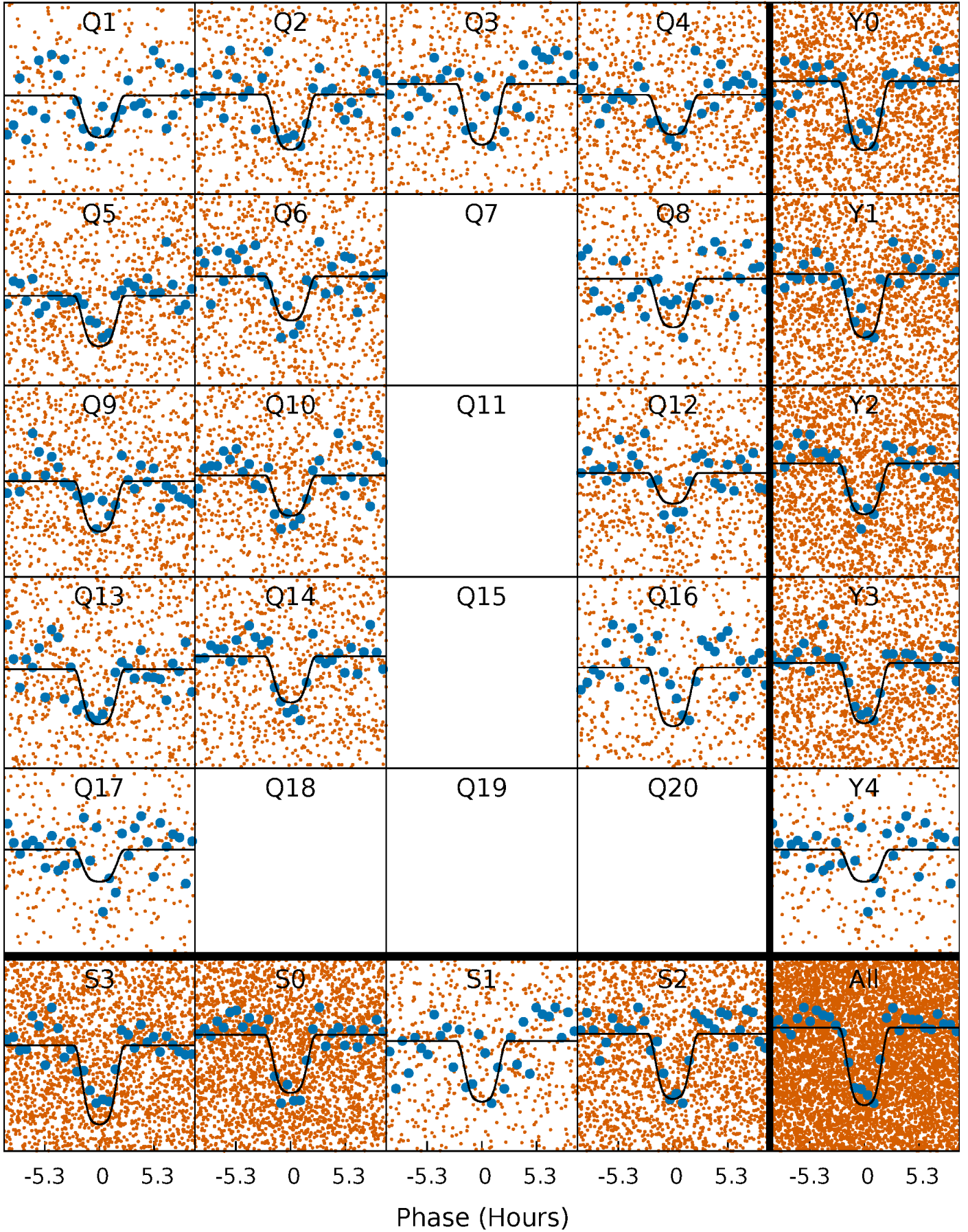
PDC Quarter-Phased Transit Curves

TCE 010686814-01 P= 2.618423 Days $T_0=134.037828$ (BKJD)



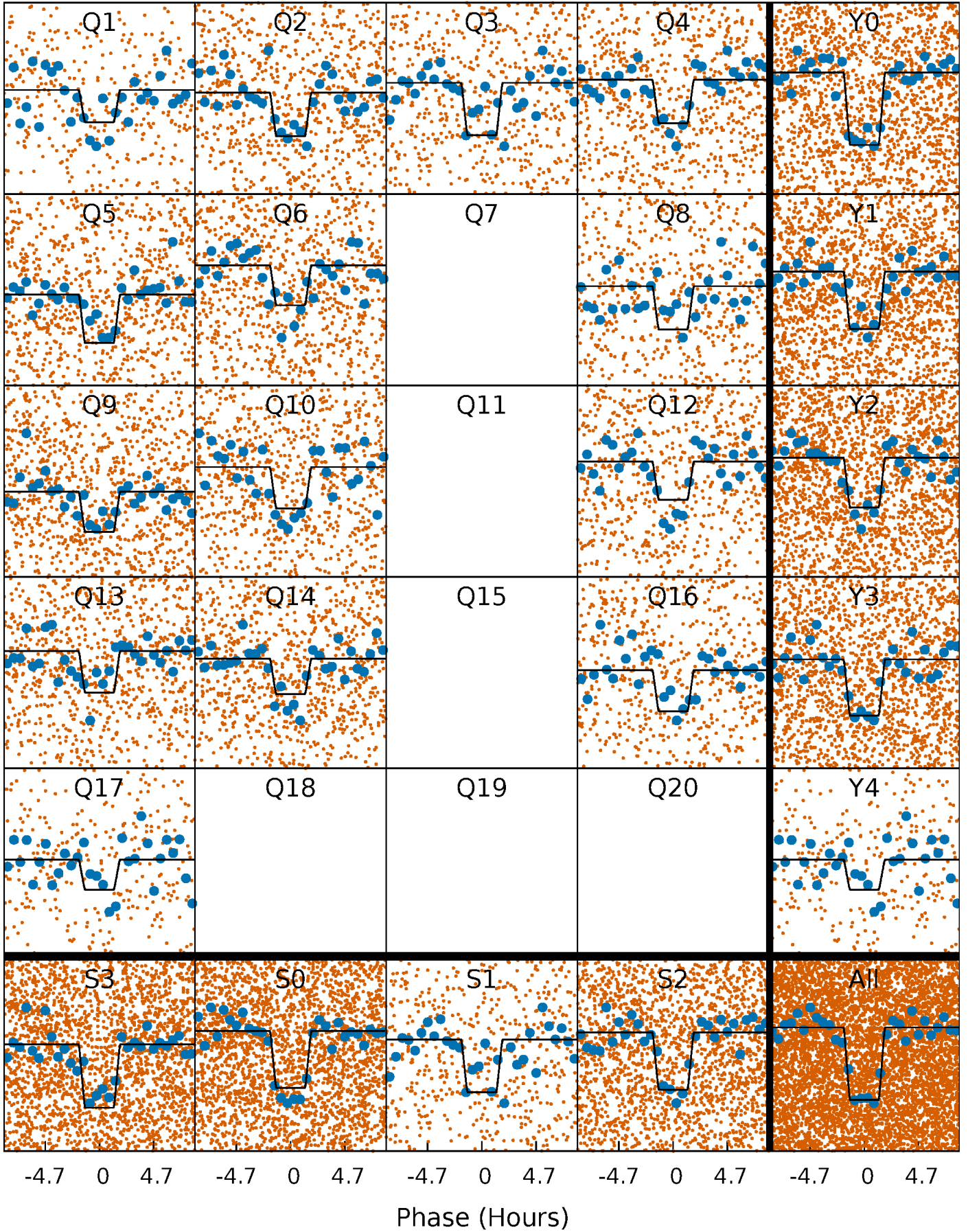
DV Quarter-Phased Transit Curves

TCE 010686814-01 P= 2.618423 Days $T_0=134.037828$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

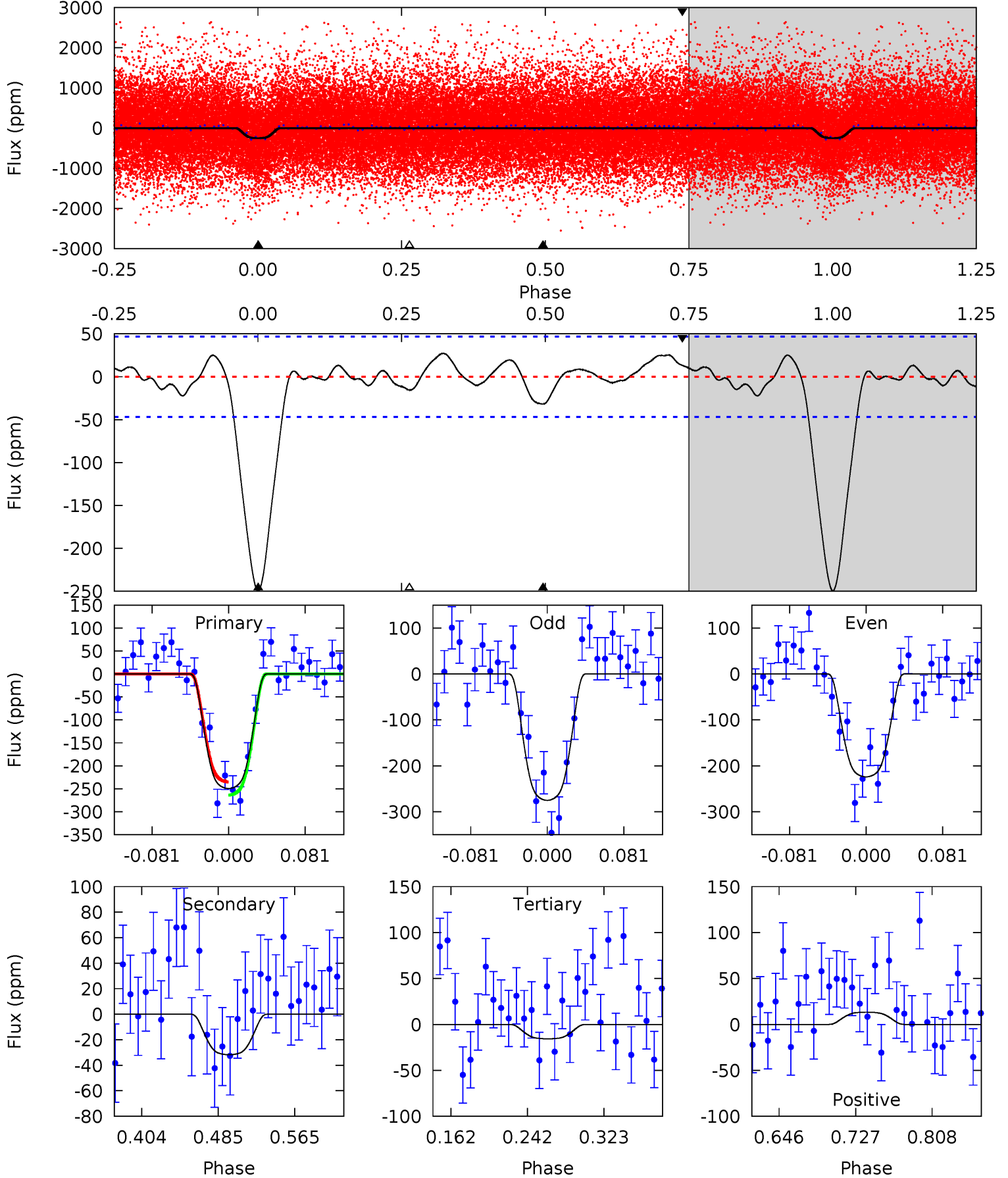
TCE 010686814-01 P= 2.618457 Days $T_0=134.031318$ (BKJD)



DV Model-Shift Uniqueness Test

010686814-01, P = 2.618423 Days, E = 131.419405 Days

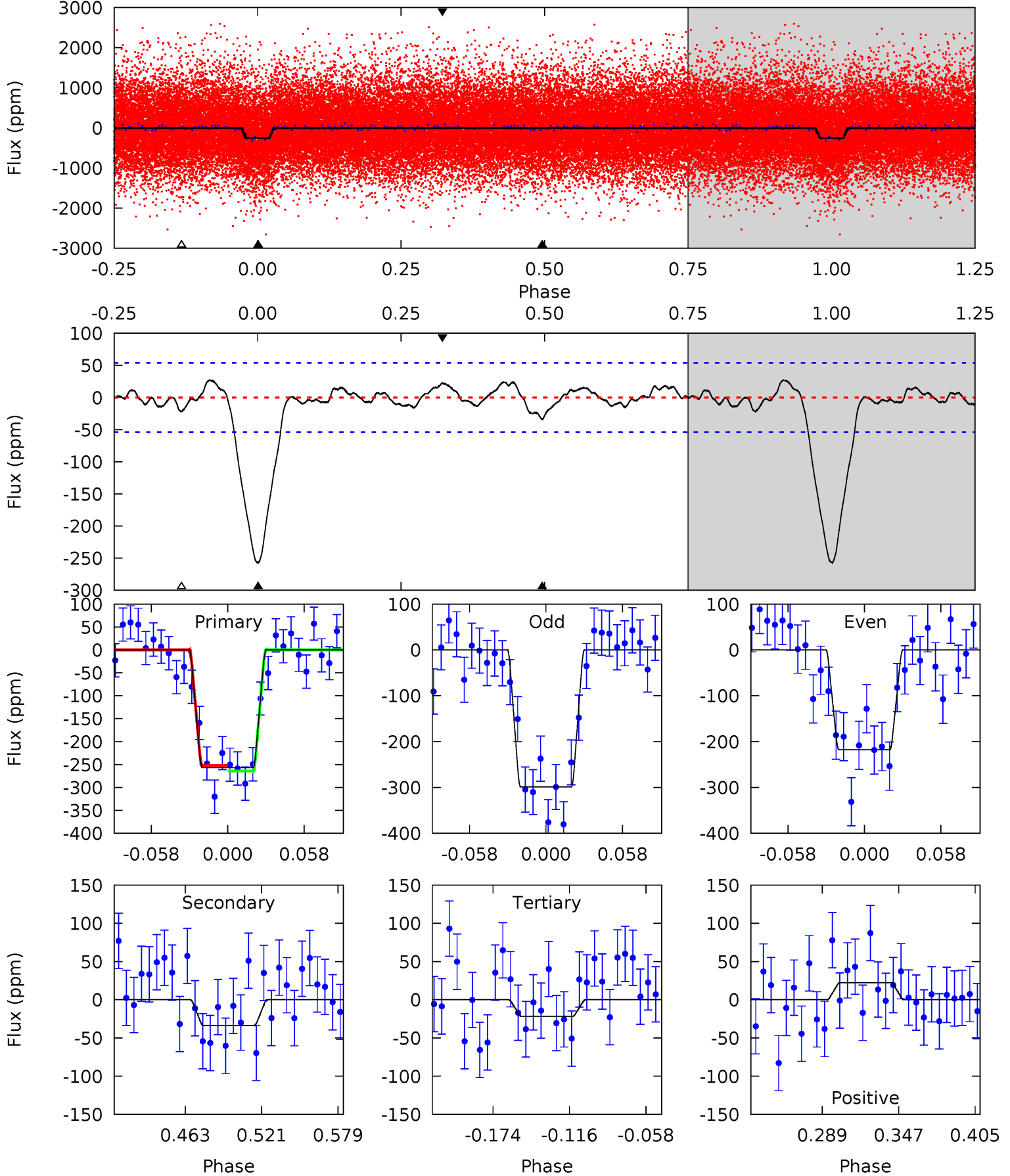
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.6	3.12	1.54	1.31	4.61	1.75	1.13	23.0	23.3	1.58	1.82	2.53	0.95	0.10	1.41



Alt Model-Shift Uniqueness Test

010686814-01, P = 2.618457 Days, E = 131.412861 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.3	2.92	1.88	1.94	4.68	1.90	0.93	20.4	20.4	1.04	0.98	3.53	1.01	0.09	0.52



Stellar Parameters For KIC 010686814

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4266^{+128}_{-128}	$4.626^{+0.048}_{-0.021}$	$-0.040^{+0.300}_{-0.300}$	$0.643^{+0.036}_{-0.058}$	$0.638^{+0.056}_{-0.056}$	$3.378^{+0.727}_{-0.337}$
	+3%/-3%	+1%/-0%	+750%/-750%	+6%/-9%	+9%/-9%	+22%/-10%
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 010686814-01 / KOI 2978.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-32 ± 10	$1.51^{+0.11}_{-0.11}$	1172^{+40}_{-39}	2780^{+125}_{-148}	$7.872^{+2.918}_{-2.512}$
Alt.	-34 ± 12	$1.14^{+0.10}_{-0.10}$	1174^{+39}_{-38}	3046^{+167}_{-199}	15^{+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 $A_{\text{obs}} \gg 1.0$

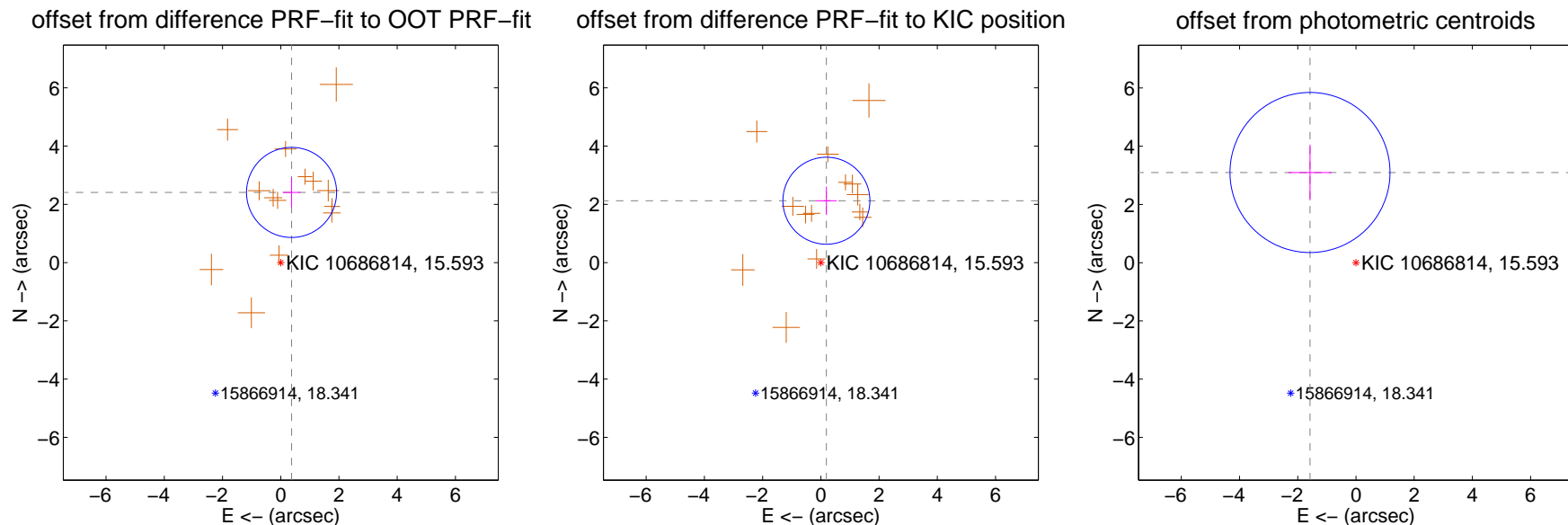
DV Centroid Data

Supplemental centroid analysis for 010686814-01. Kepler magnitude: 15.59. Transit SNR 16.52

There are 0 quarters with good PRF difference image offsets

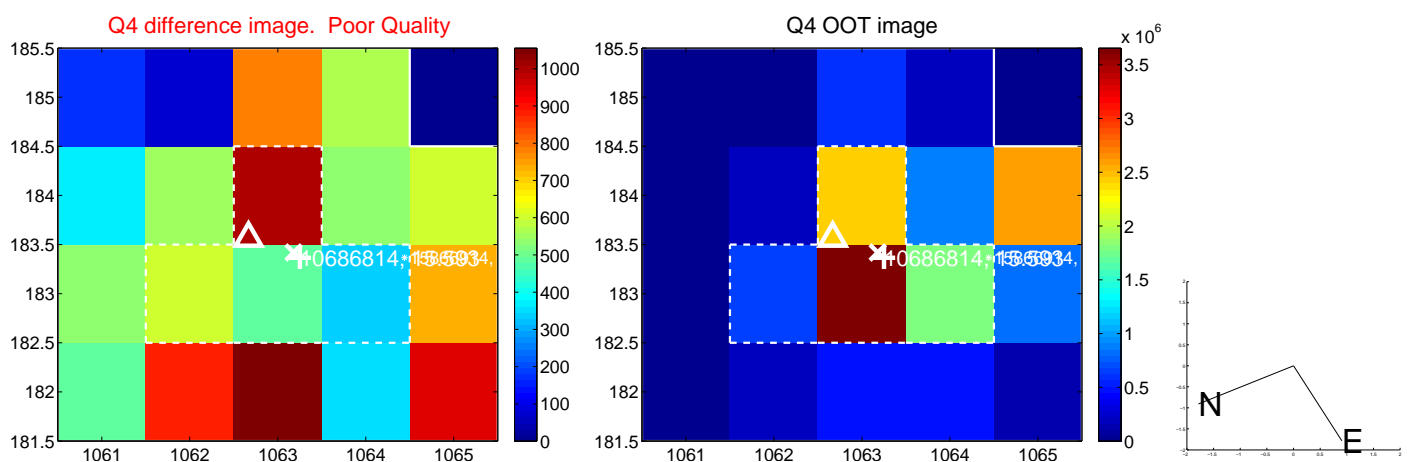
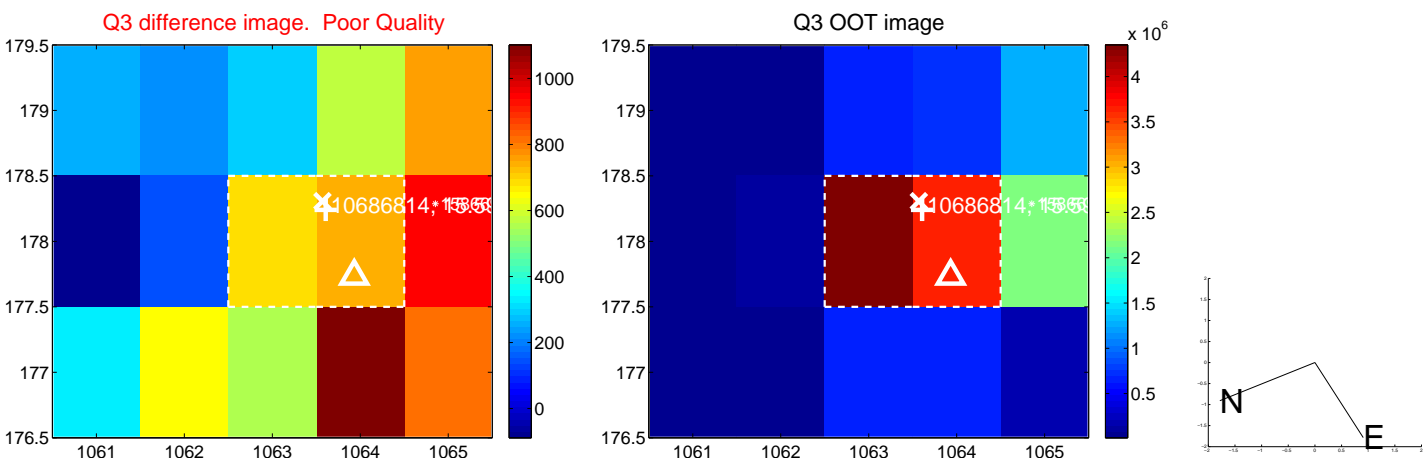
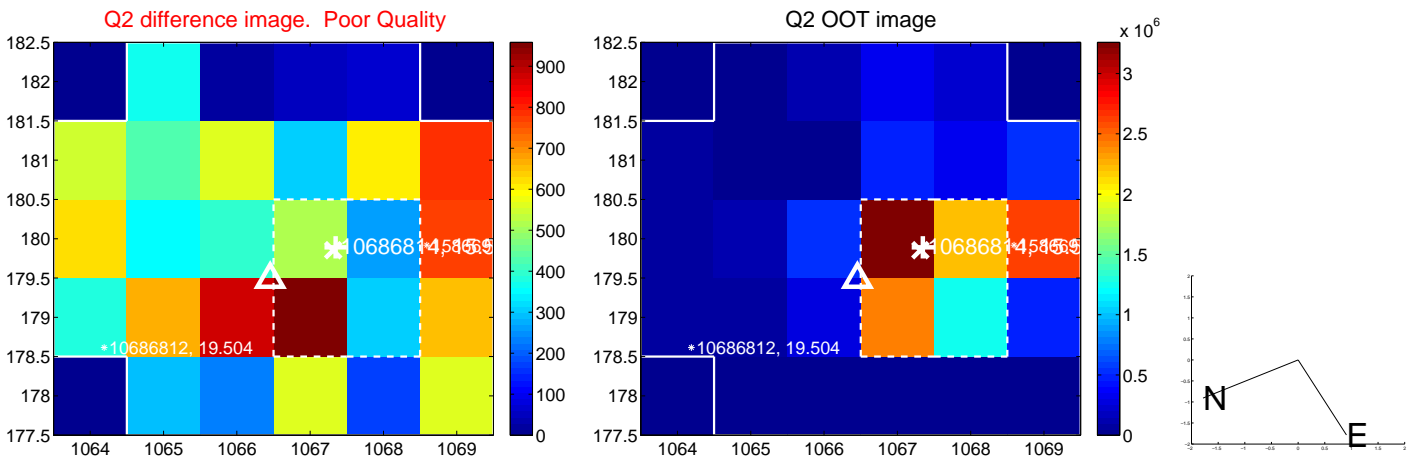
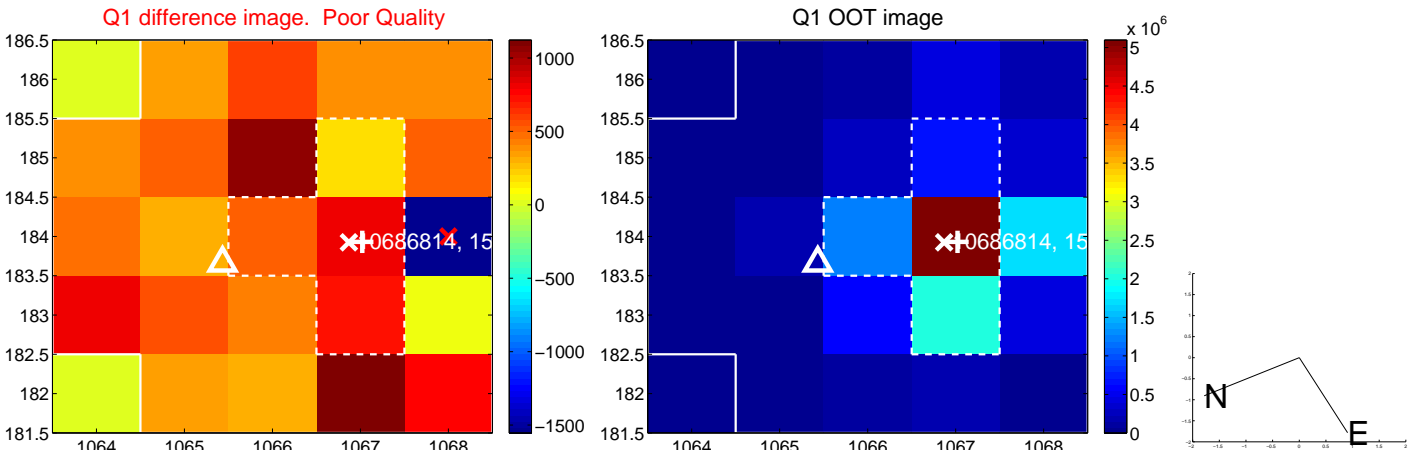
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.438 ± 0.516	4.73	-0.371 ± 0.307	2.410 ± 0.504
PRF-fit source offset from KIC position	2.133 ± 0.498	4.28	-0.191 ± 0.357	2.124 ± 0.485
photometric centroid source offset	3.48 ± 0.92	3.79	1.58 ± 0.74	3.10 ± 0.96

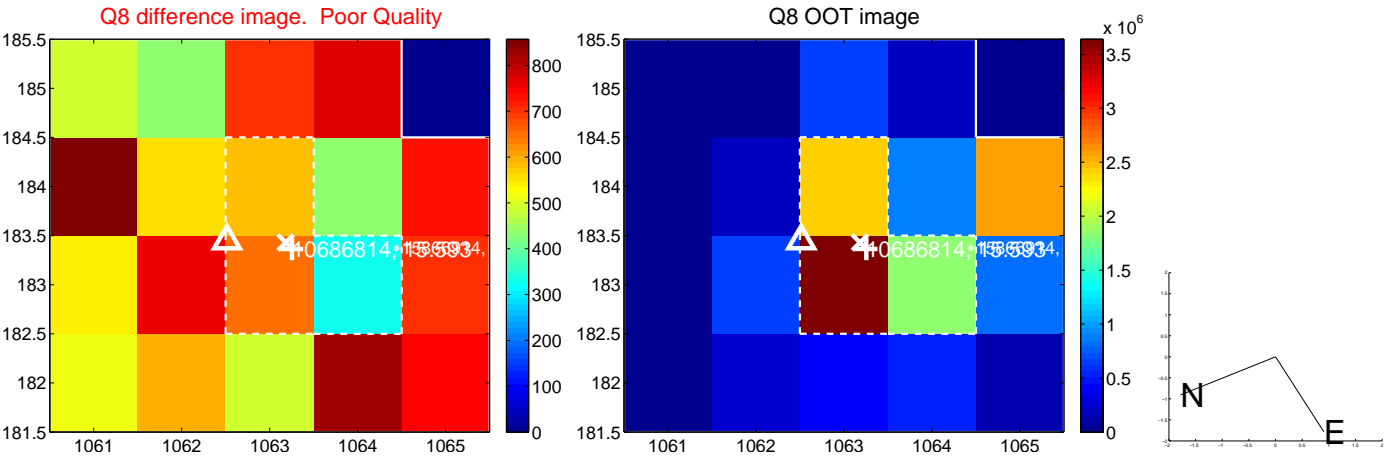
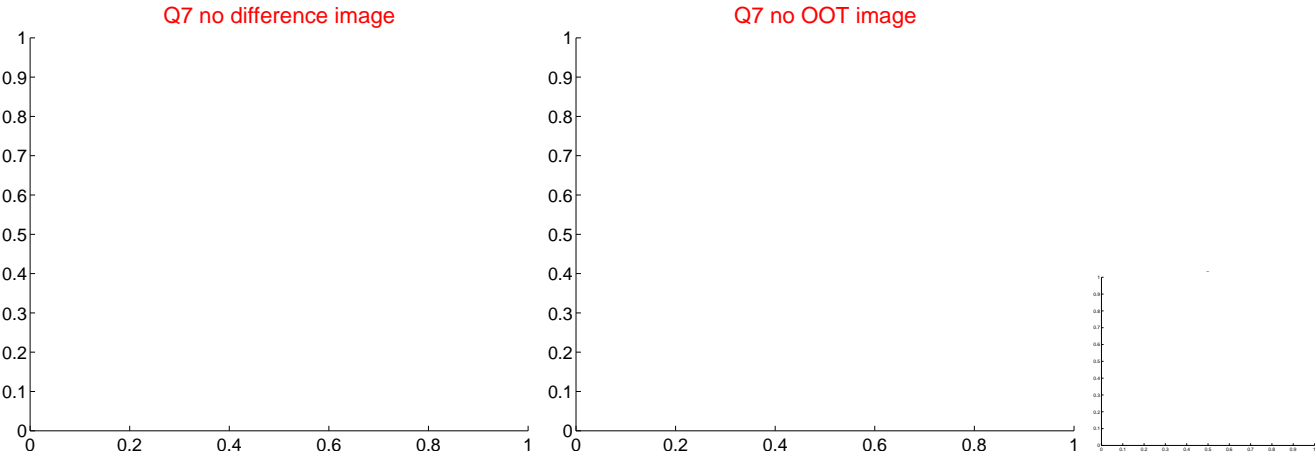
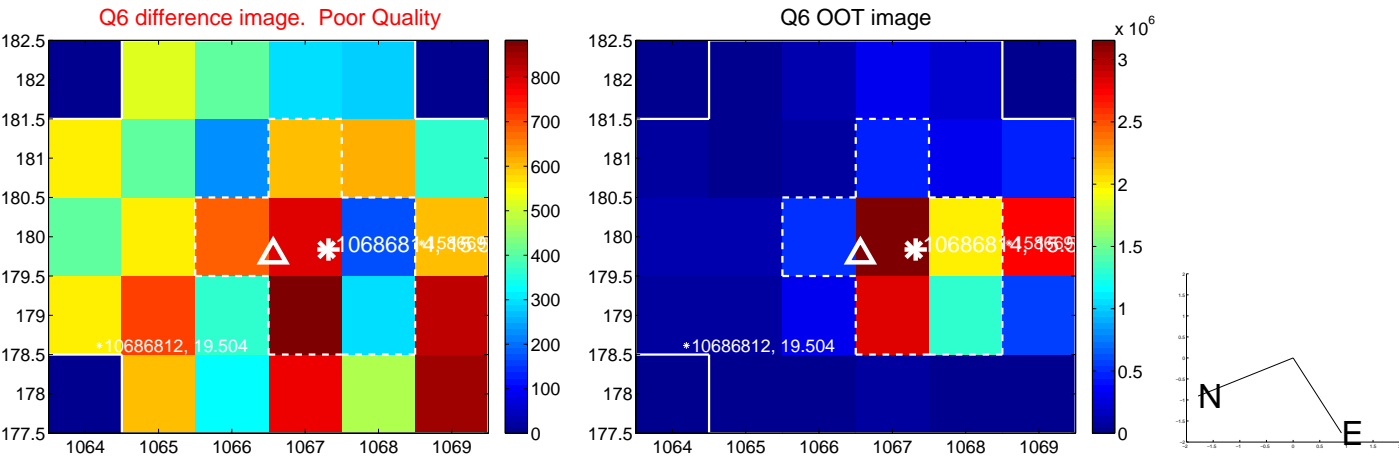
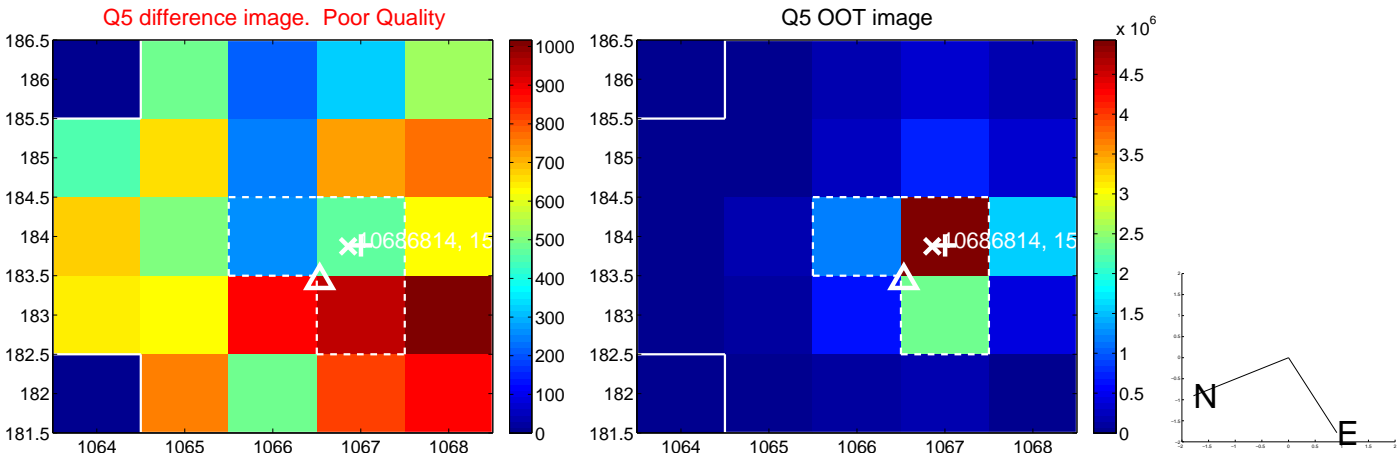


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

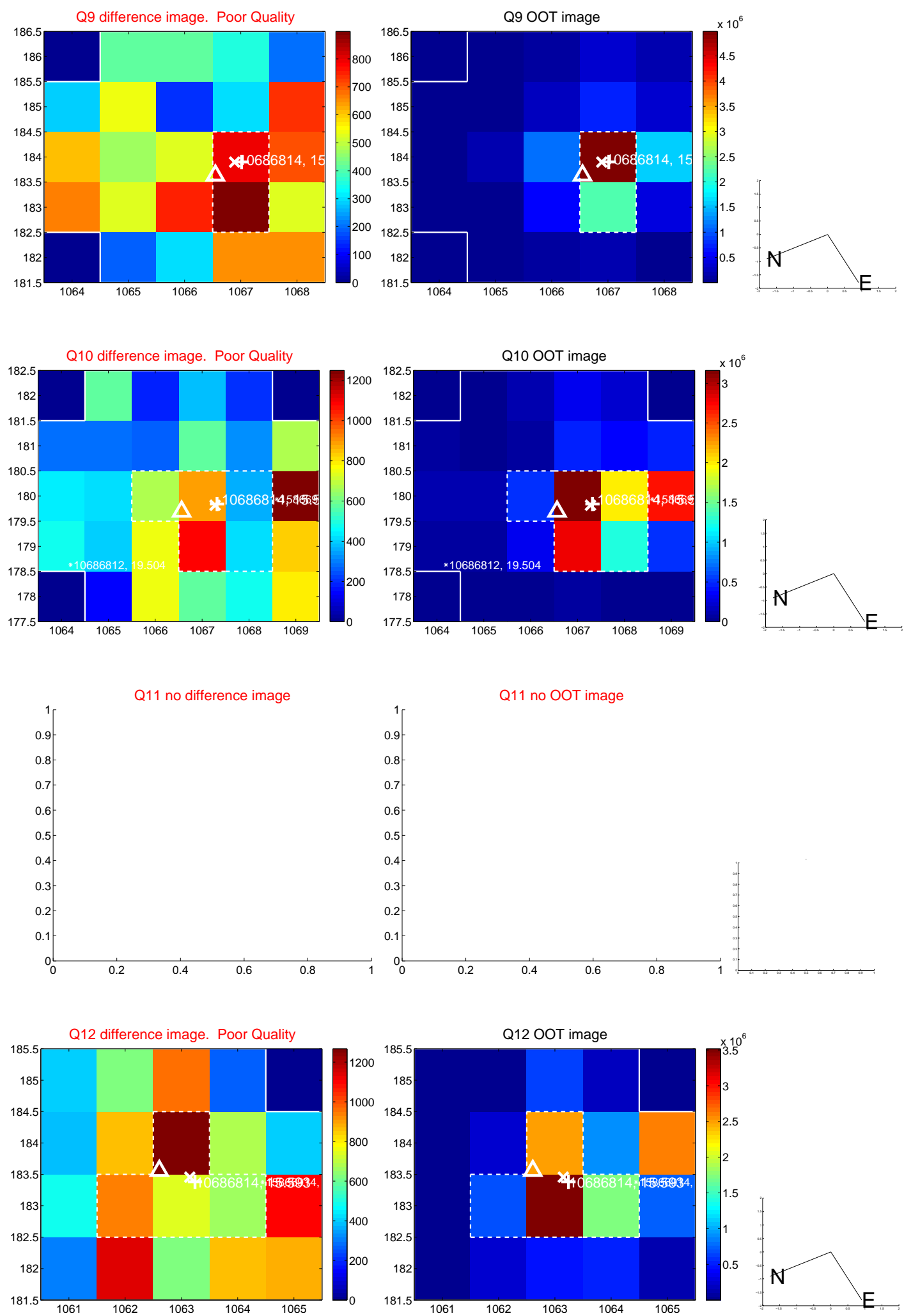
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



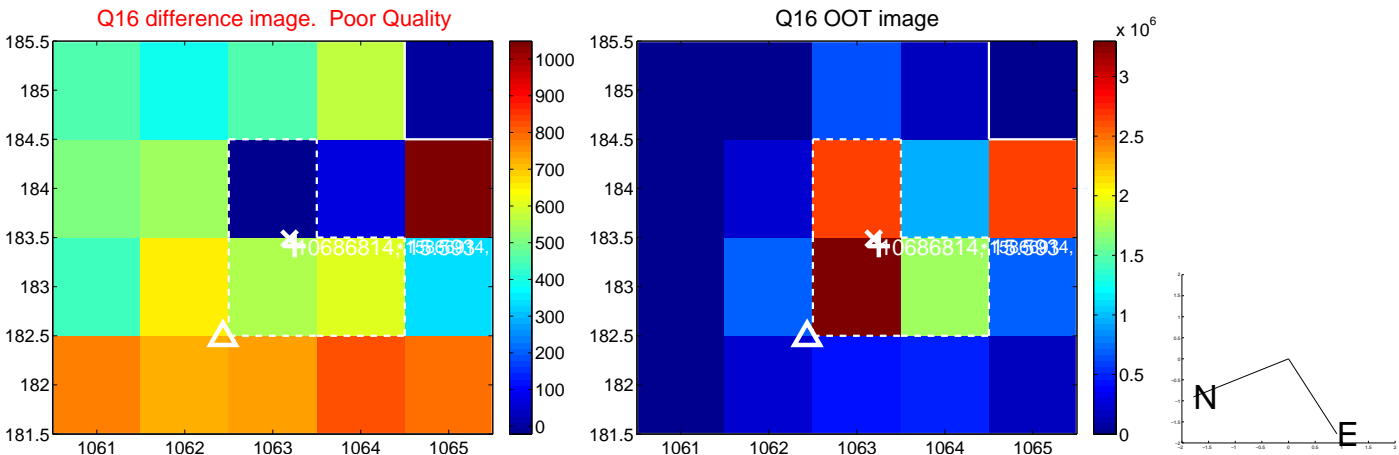
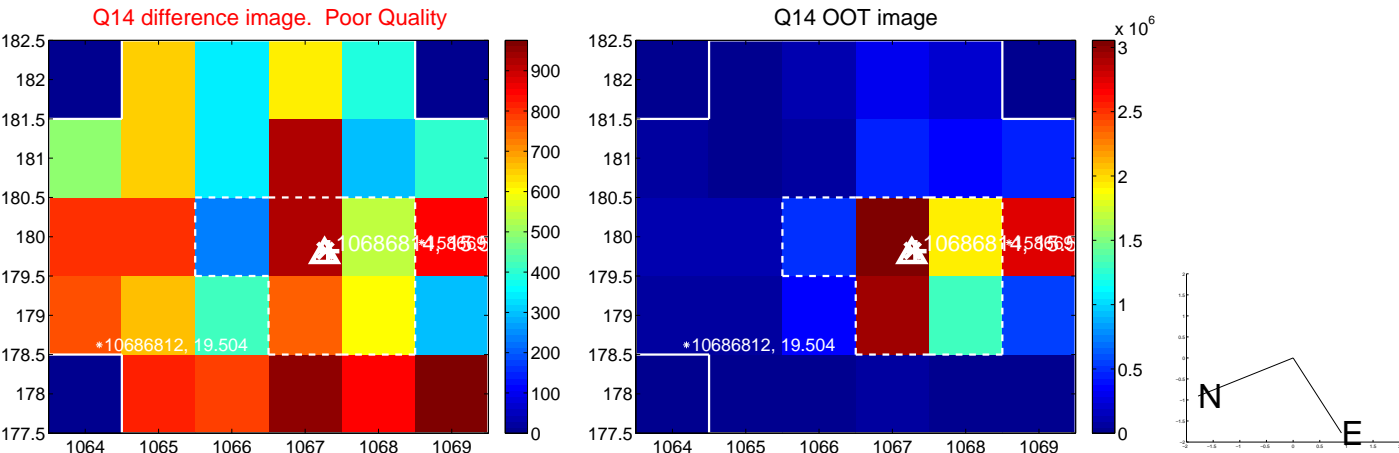
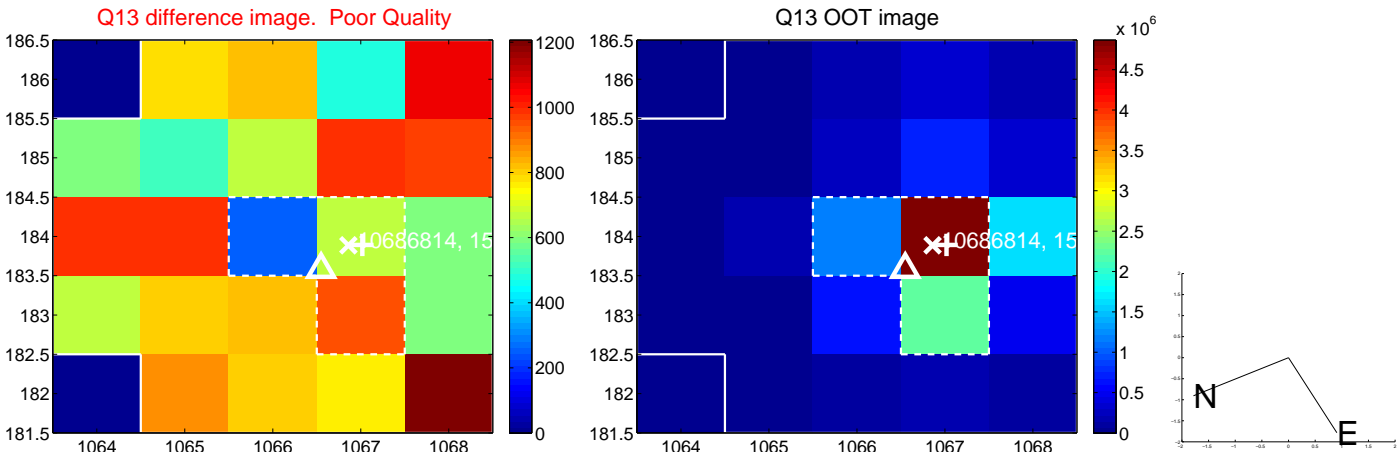
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



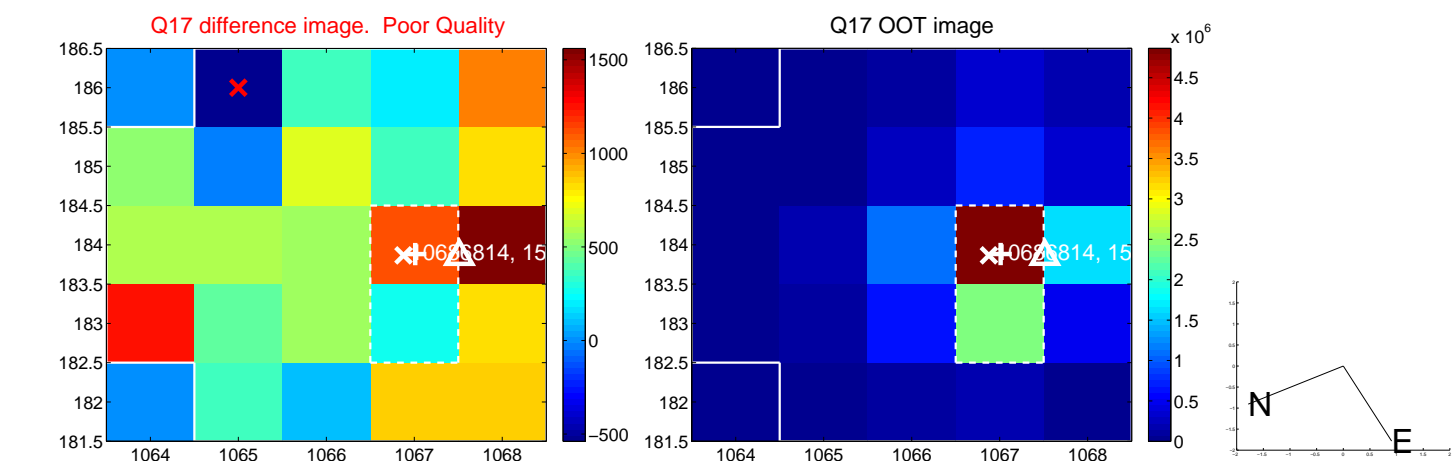
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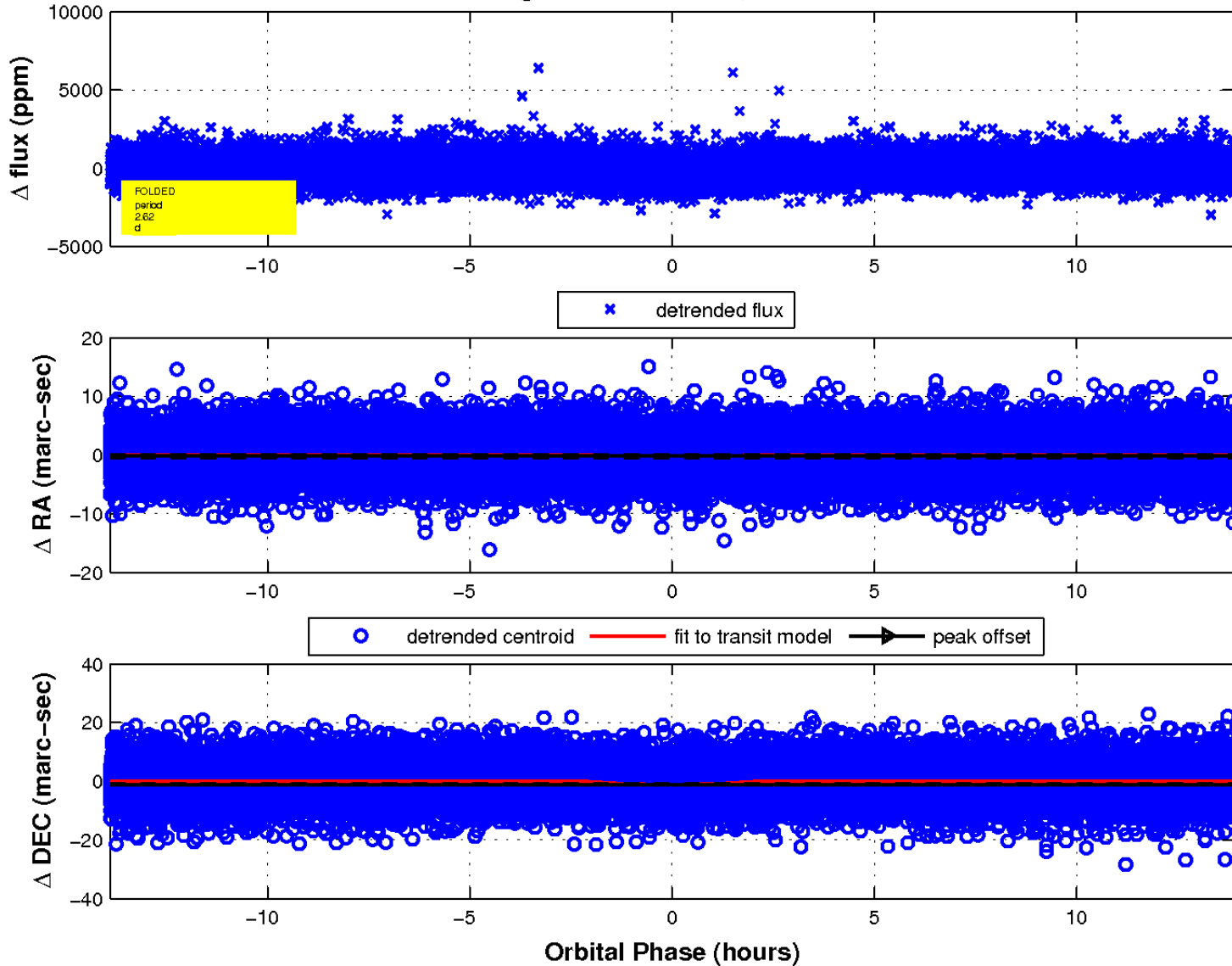
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

