

KIC 008552587

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 _⊕)
008552587-01	OBS	3941.01	1.061915	131.731320	75.8	1.893	22.7	22.5	1.06	6274	1.09	3502.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008552587-01	OBS	FP	0.00	1	0	1	1	LPP_DV—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.

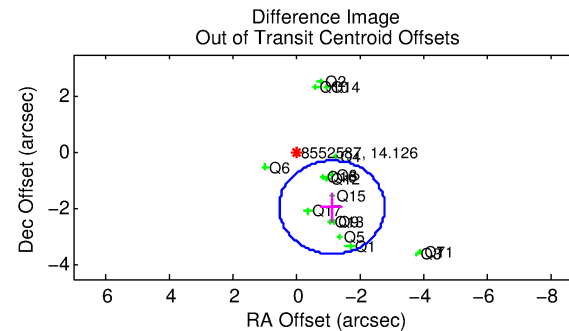
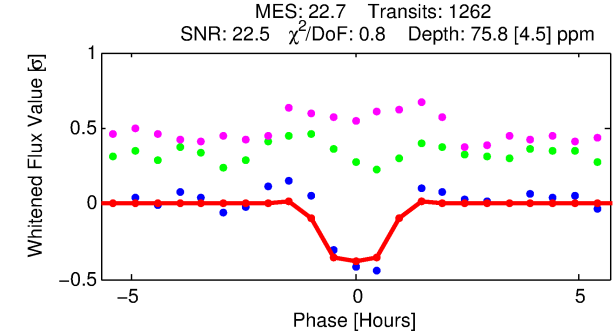
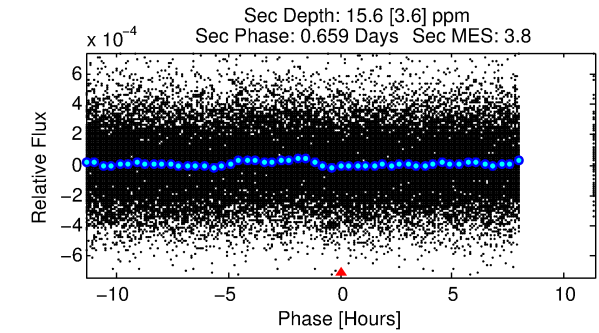
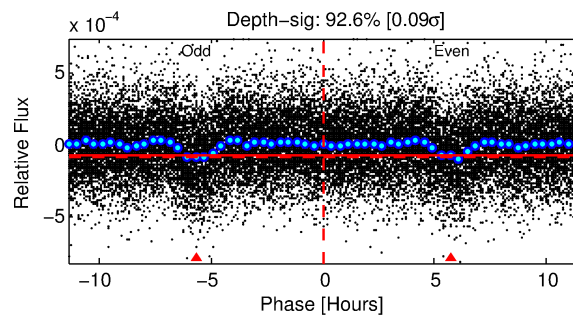
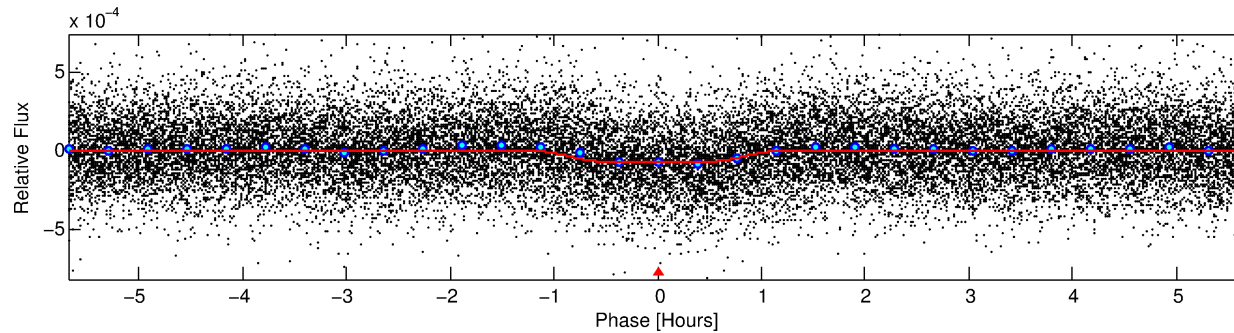
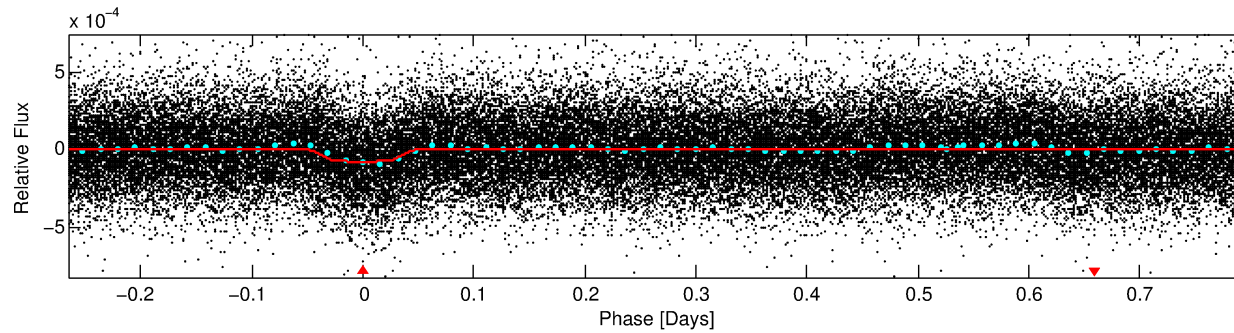
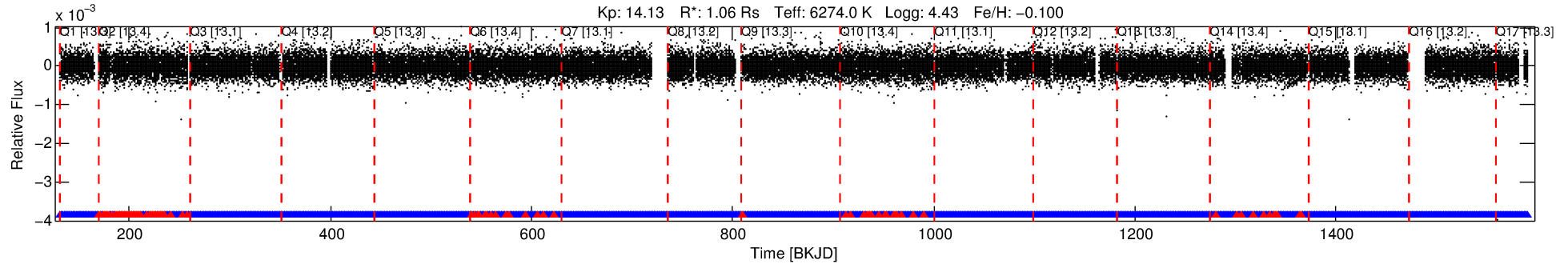
Ephemeris Match Information For 008552587-01

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
008552587-01	8552587	008552540-01	8552540	1:1	58.7	6	13	10.29	14.12	6116.20	Direct-PRF	0	1.86	0.86

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: 8552587 Candidate: 1 of 1 Period: 1.062 d
KOI: K03941.01 Corr: 0.754



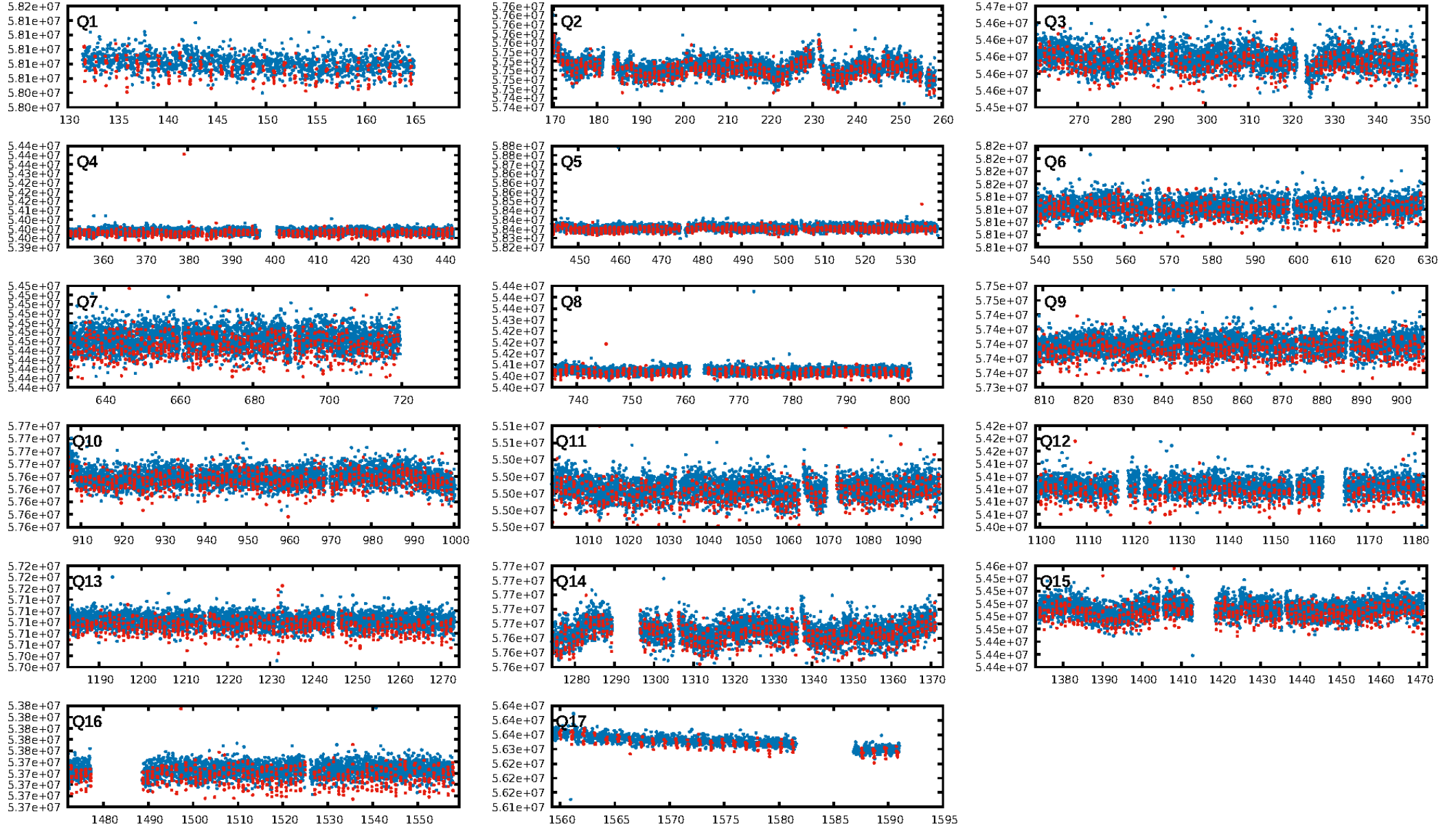
DV Fit Results:

Period = 1.06191 [0.00000] d
Epoch = 131.7313 [0.0012] BKJD
Rp/R* = 0.0094 [0.0024]
a/R* = 2.15 [2.37]
b = 0.90 [0.29]
Seff = 3502.43 [1465.95]
Teff = 1962 [205] K
Rp = 1.09 [0.45] Re
a = 0.0211 [0.0058] AU
Ag = 3.23 [2.22] [1.00σ]
Teffp = 4065 [587] K [3.38σ]

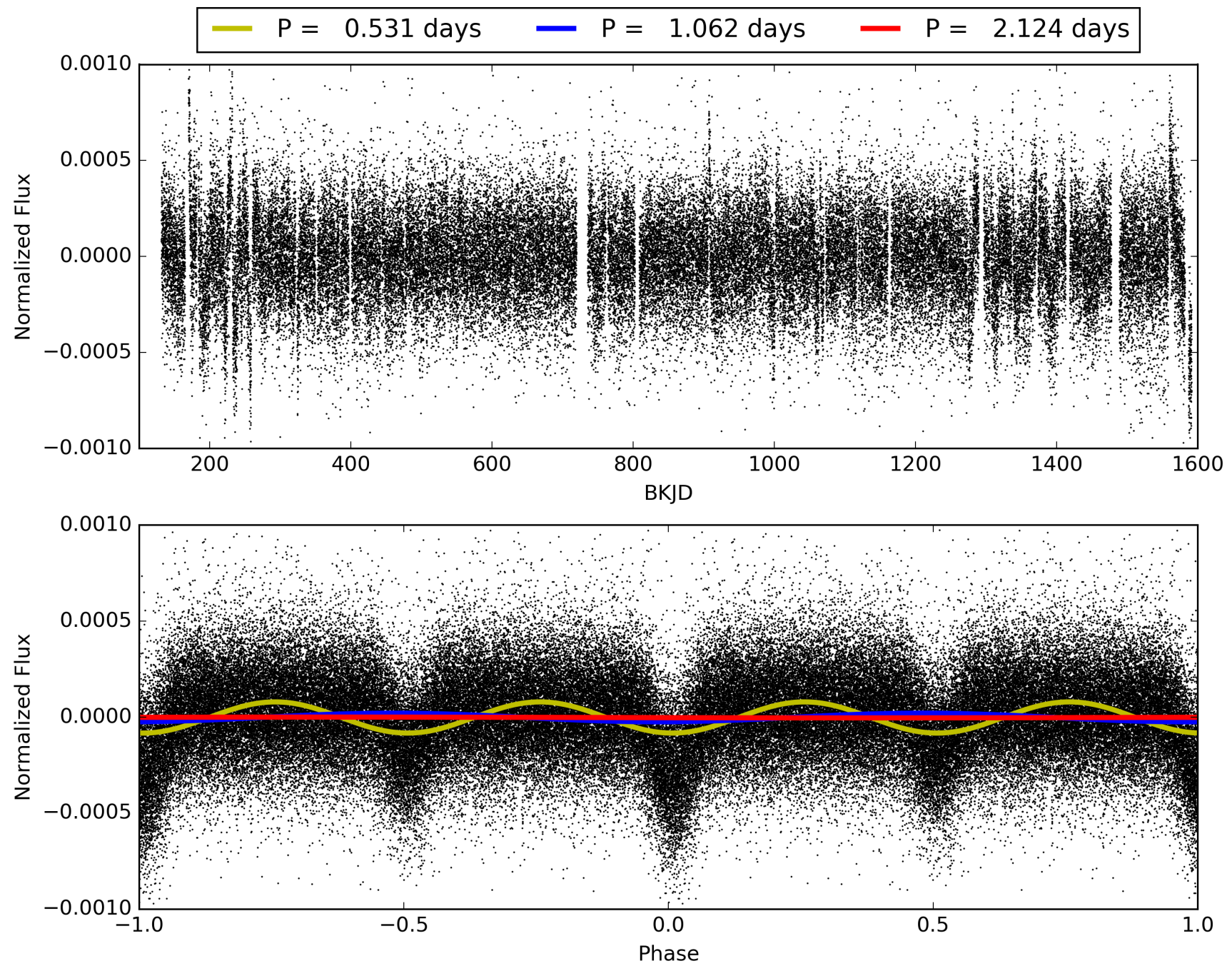
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.89e-105
RollingBand-fgt: 0.92 [1108/1205]
GhostDiagnostic-chr: -0.04535
Centroid-sig: 0.0%
Centroid-so: 4.514 arcsec [7.97σ]
OotOffset-rm: 2.259 arcsec [4.08σ]
KicOffset-rm: 2.164 arcsec [3.88σ]
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 008552587-01, PDC Light Curves

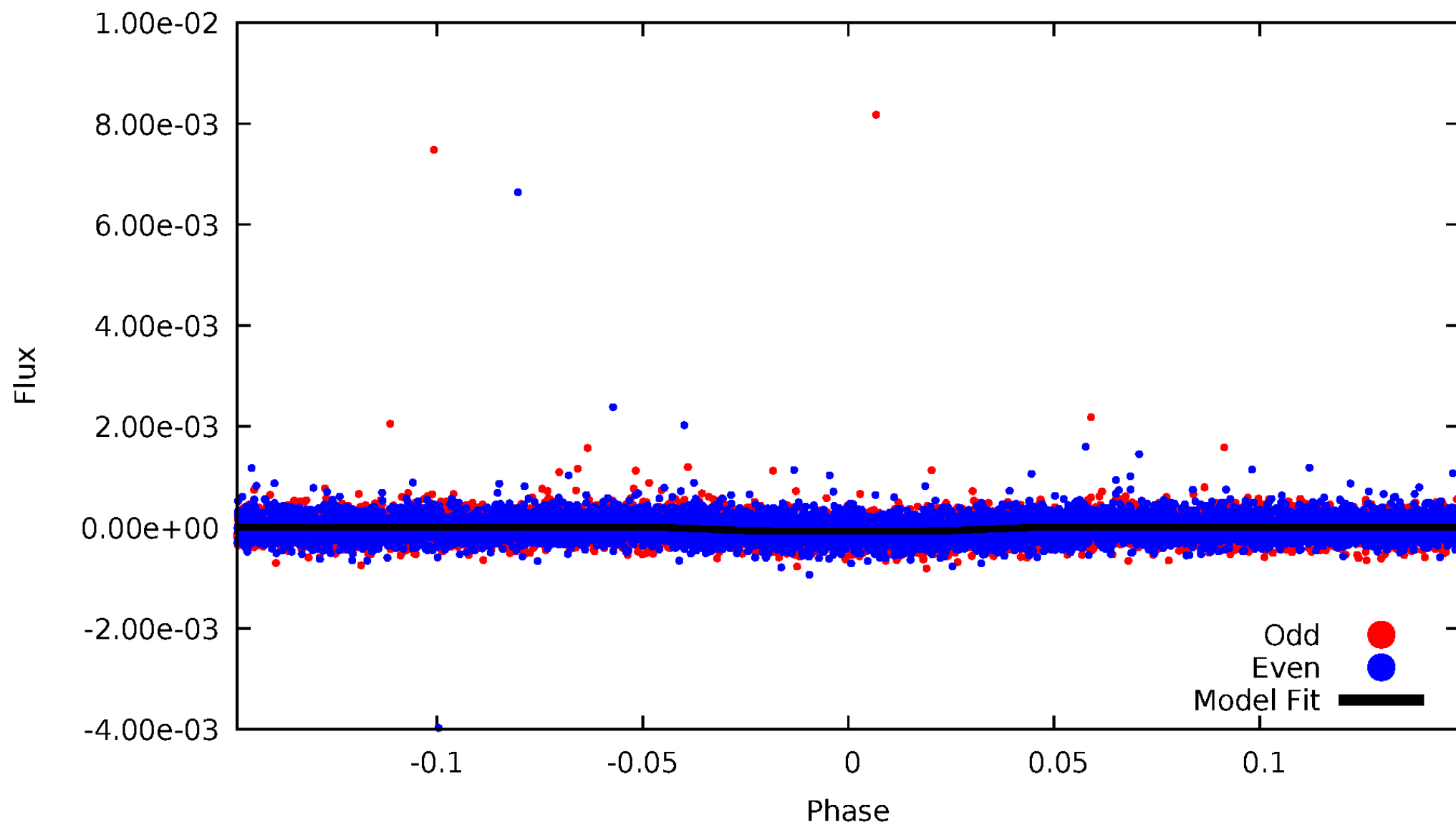


TCE 008552587-01



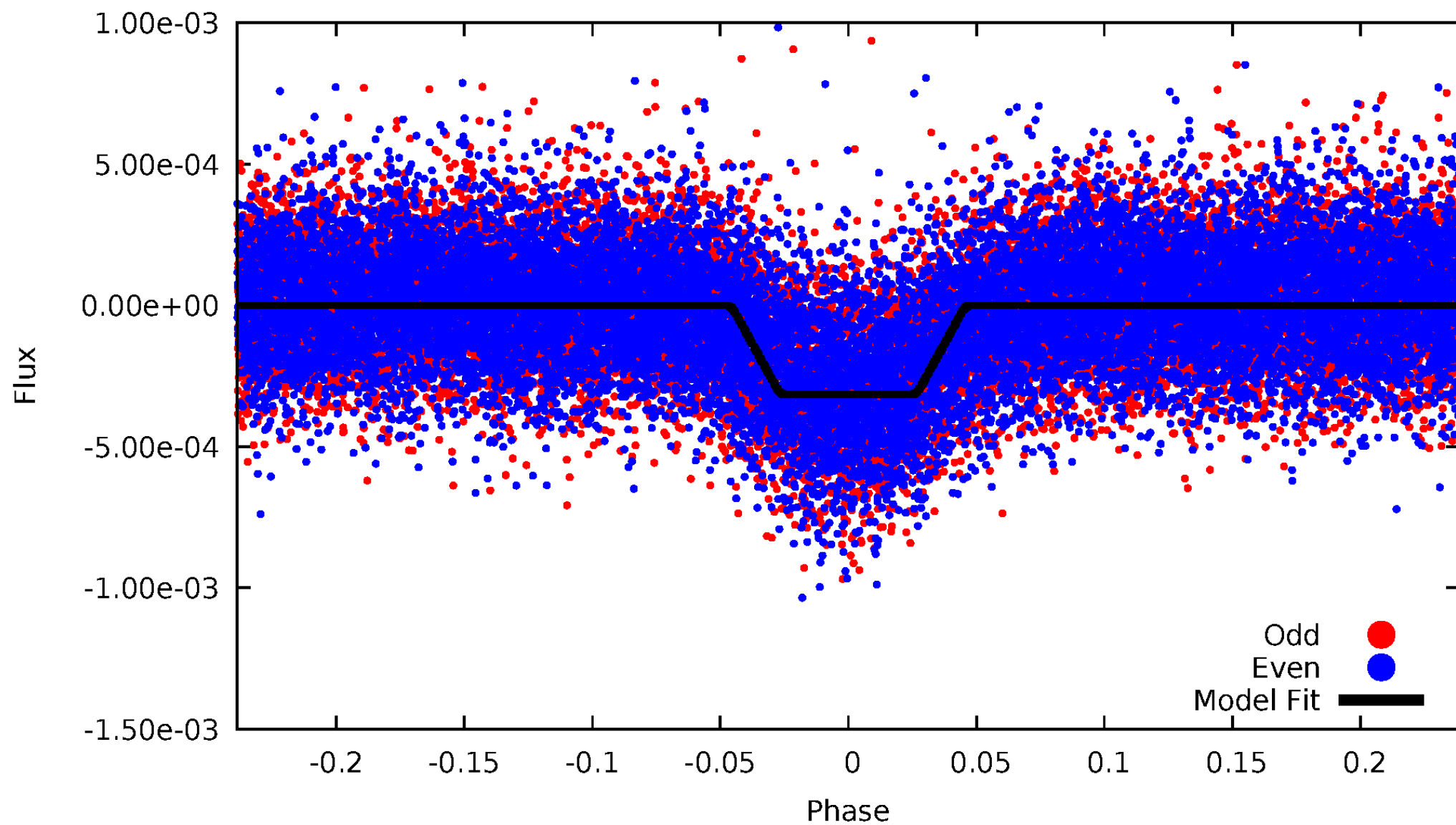
DV Odd/Even

TCE 008552587-01



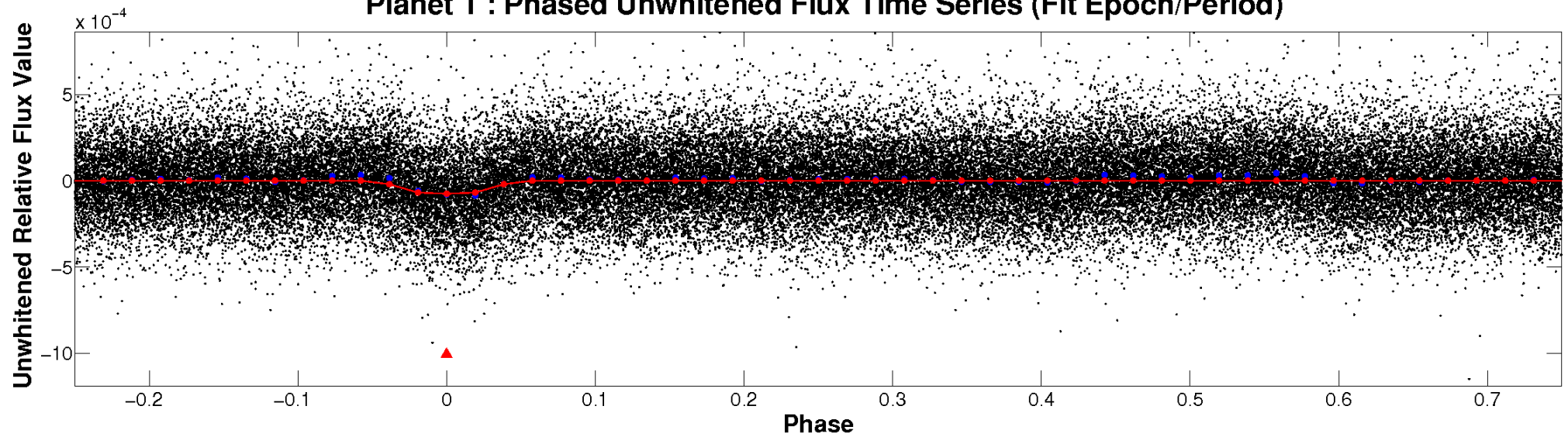
ALT Odd/Even

TCE 008552587-01

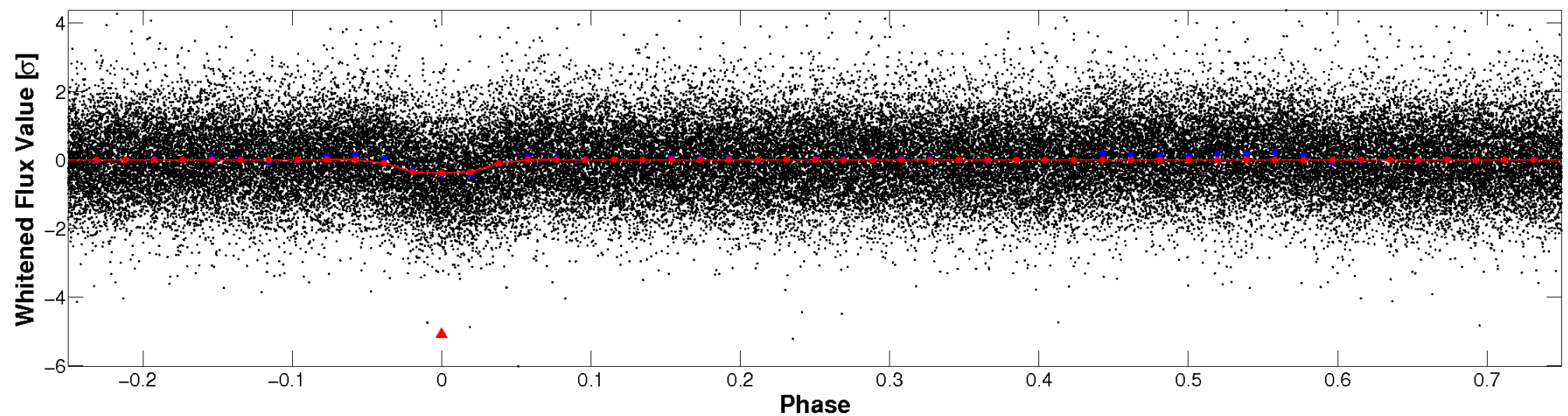


Non-Whitened Vs. Whitened Light Curve

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

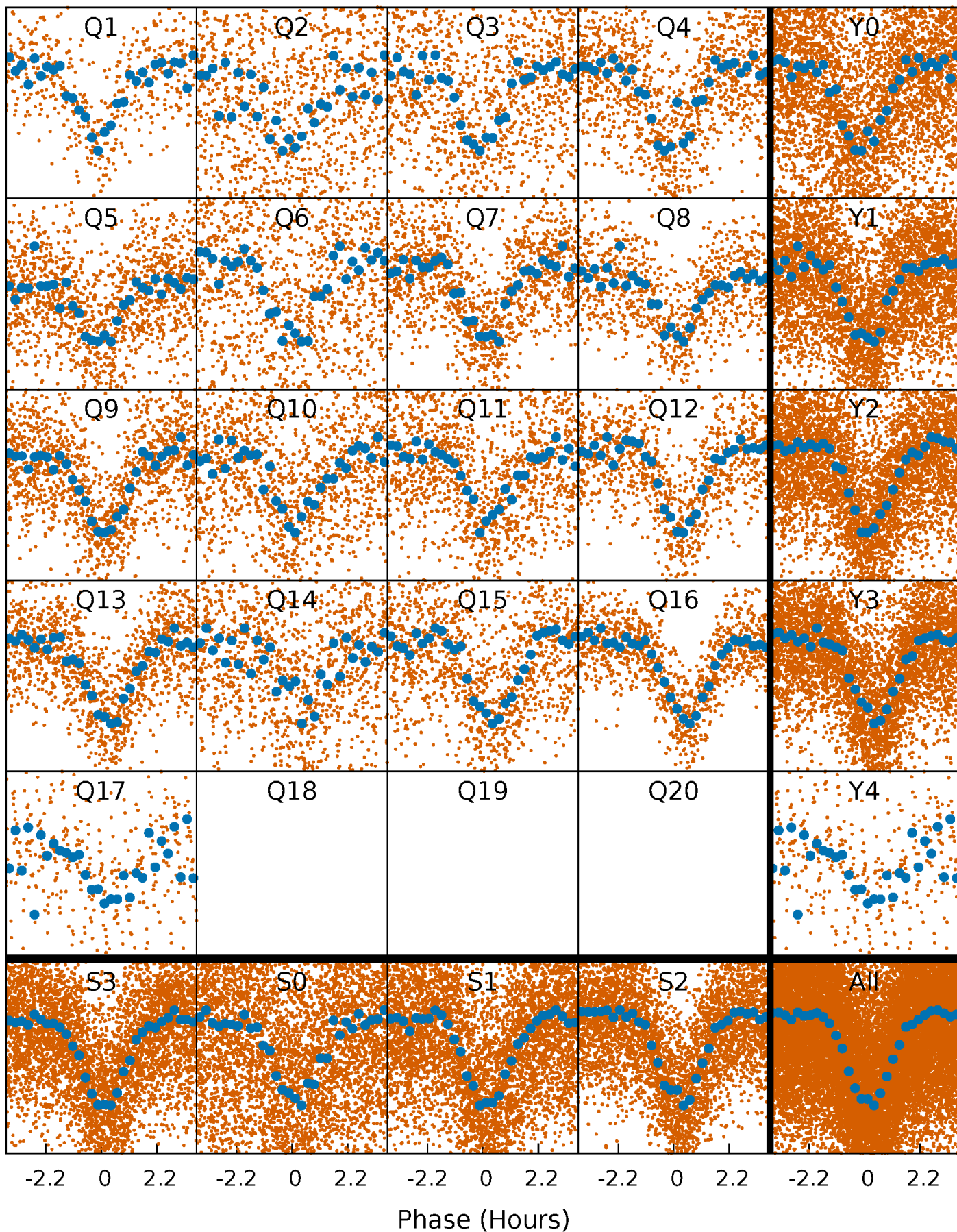


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



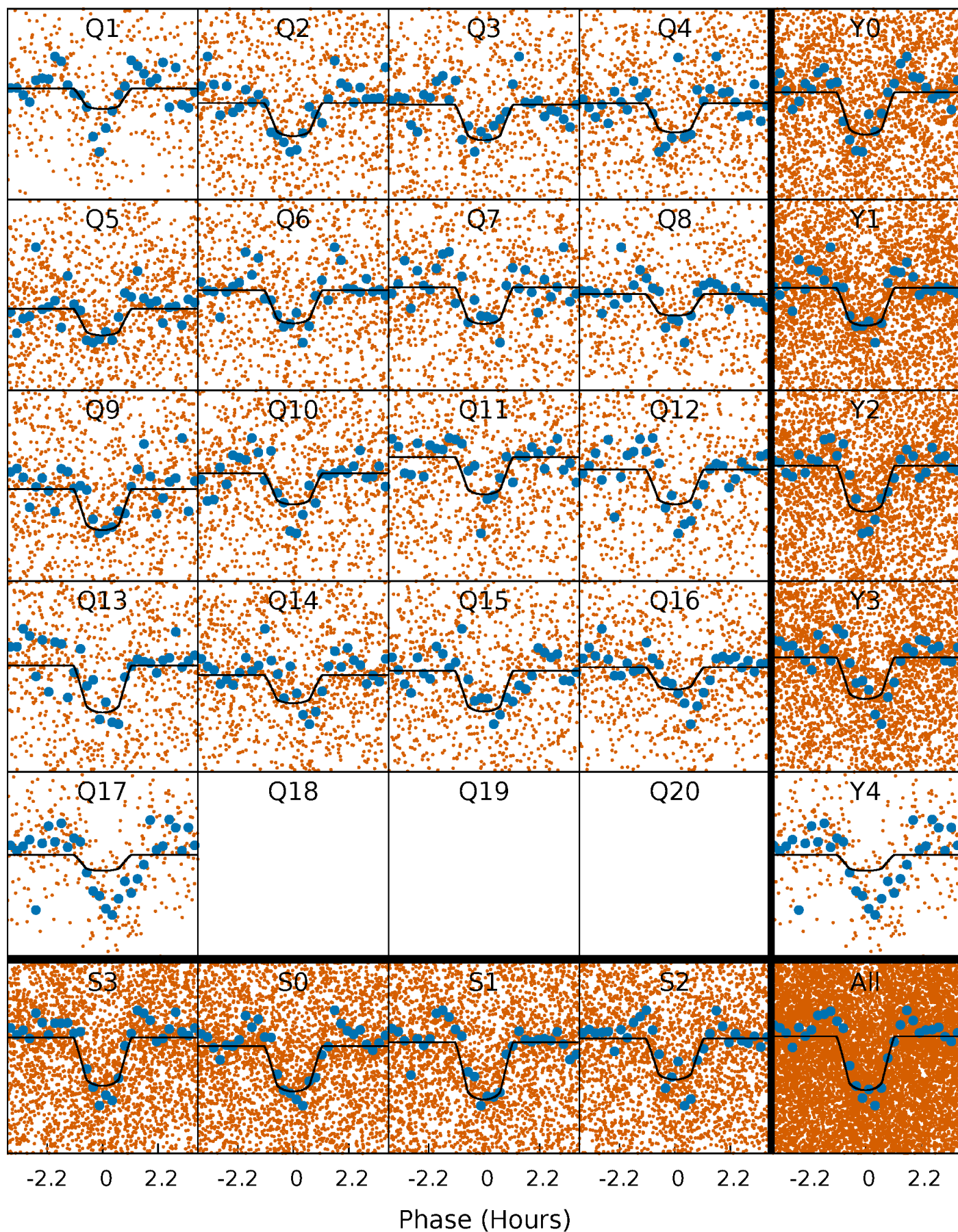
PDC Quarter-Phased Transit Curves

TCE 008552587-01 P= 1.061915 Days $T_0=131.731320$ (BKJD)



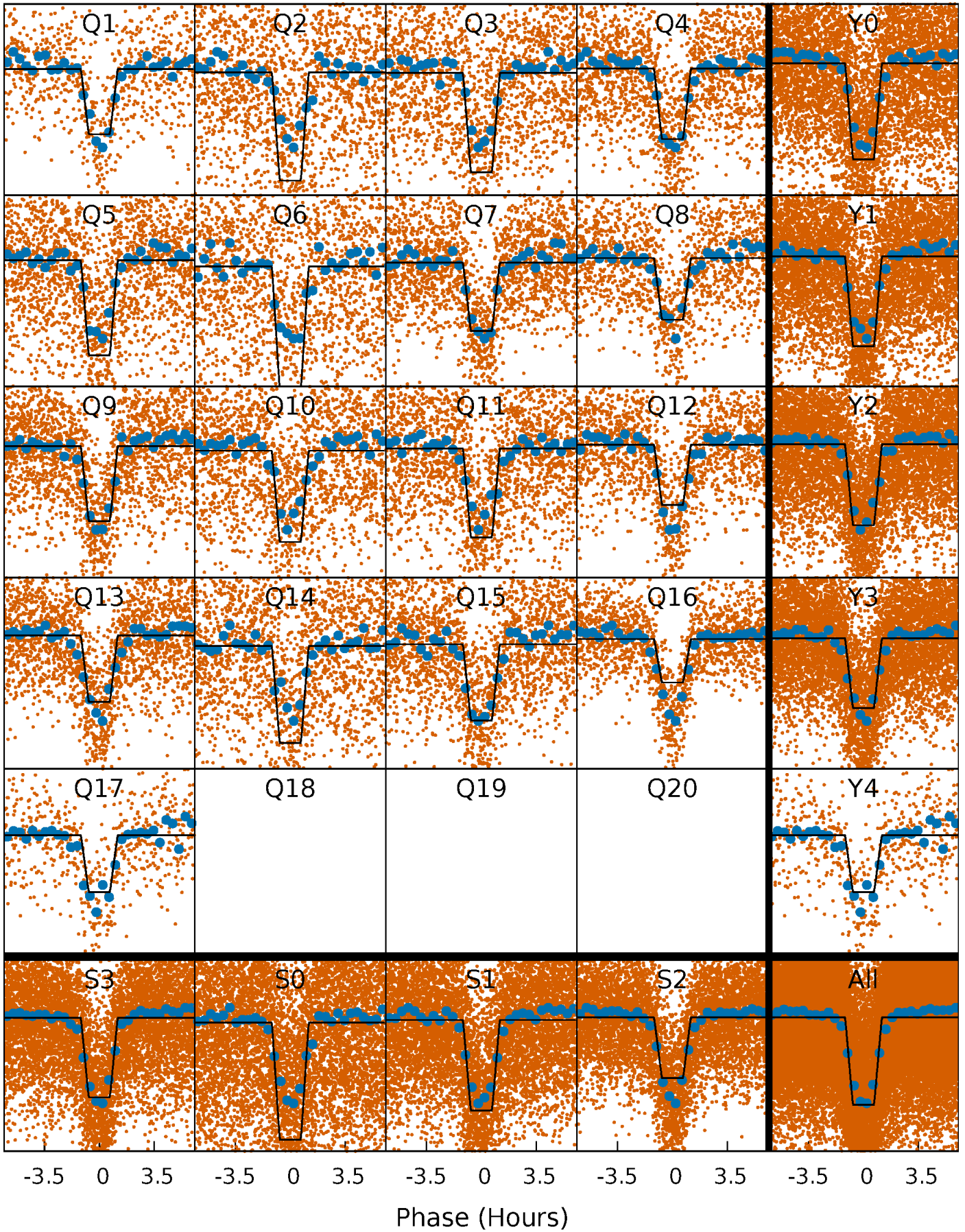
DV Quarter-Phased Transit Curves

TCE 008552587-01 P= 1.061915 Days $T_0=131.731320$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

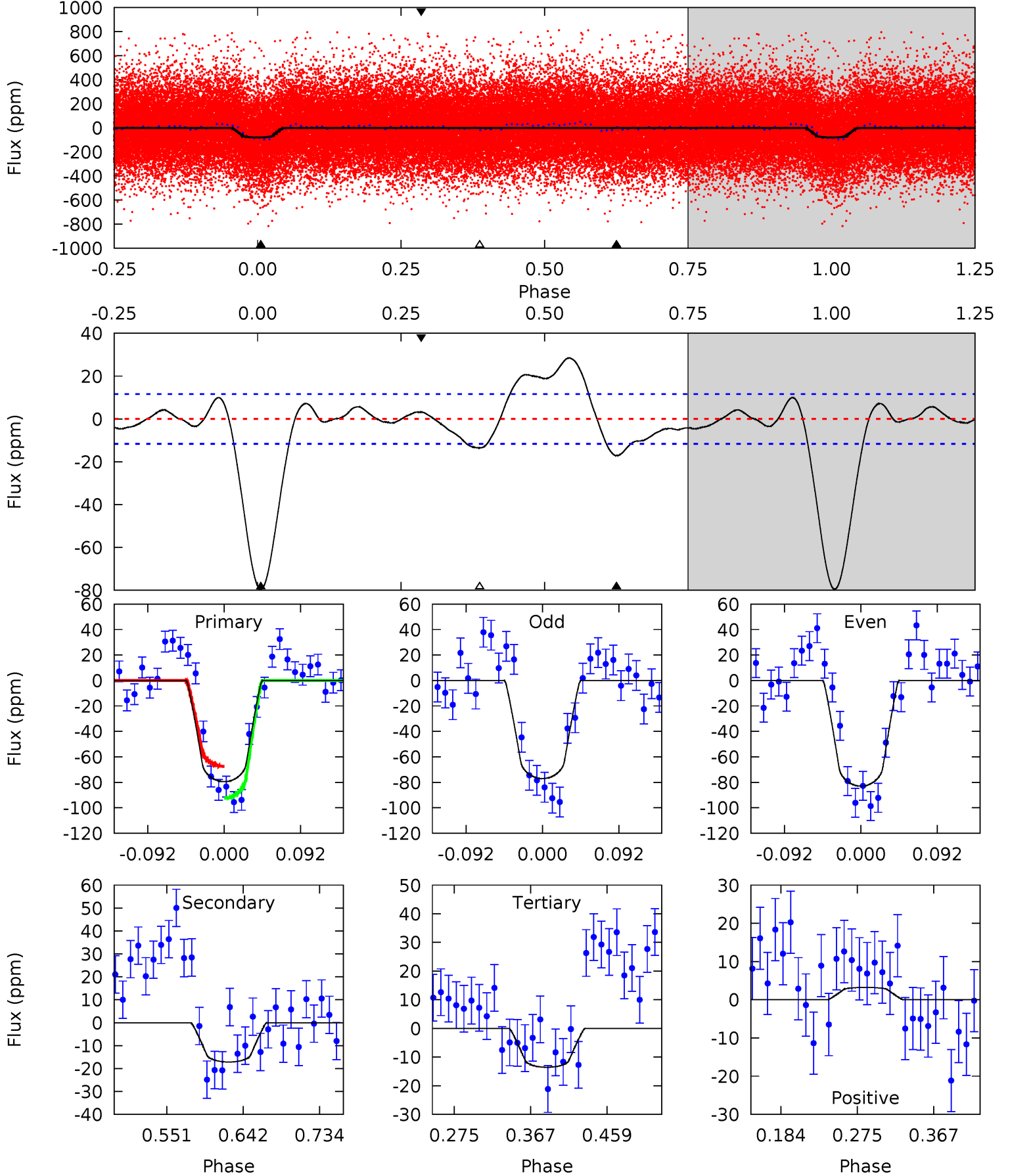
TCE 008552587-01 P= 1.061939 Days $T_0=131.721863$ (BKJD)



DV Model-Shift Uniqueness Test

008552587-01, P = 1.061915 Days, E = 130.669405 Days

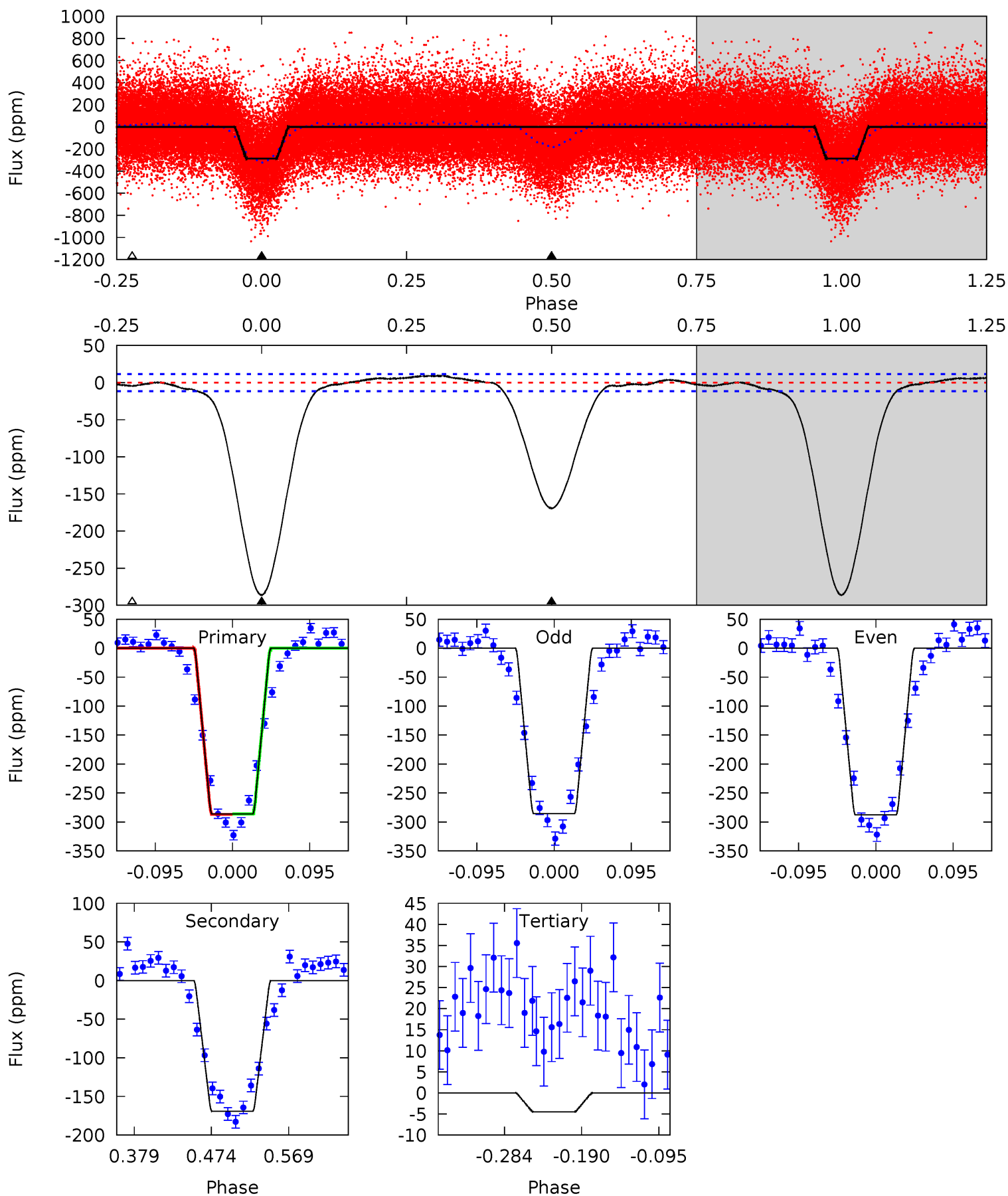
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.4	6.78	5.36	1.28	4.58	1.69	3.49	26.0	30.1	1.42	5.50	1.18	1.01	0.26	4.97



Alt Model-Shift Uniqueness Test

008552587-01, P = 1.061939 Days, E = 130.659924 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
113.6	67.2	1.78	0	4.58	1.67	2.13	111.8	113.6	65.4	67.2	0.39	1.02	0.03	0.14



Stellar Parameters For KIC 008552587

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6274^{+169}_{-206}	$4.434^{+0.054}_{-0.216}$	$-0.100^{+0.250}_{-0.300}$	$1.062^{+0.349}_{-0.116}$	$1.115^{+0.158}_{-0.144}$	$1.313^{+0.374}_{-0.691}$
	+3%/-3%	+1%/-5%	+250%/-300%	+33%/-11%	+14%/-13%	+29%/-53%
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 008552587-01 / KOI 3941.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-17 ± 3	$1.14^{+0.33}_{-0.33}$	2811^{+180}_{-142}	4274^{+637}_{-392}	$3.117^{+2.989}_{-1.327}$
Alt.	-169 ± 3	$2.15^{+0.45}_{-0.34}$	2800^{+225}_{-142}	5348^{+425}_{-325}	$8.757^{+3.475}_{-2.726}$

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

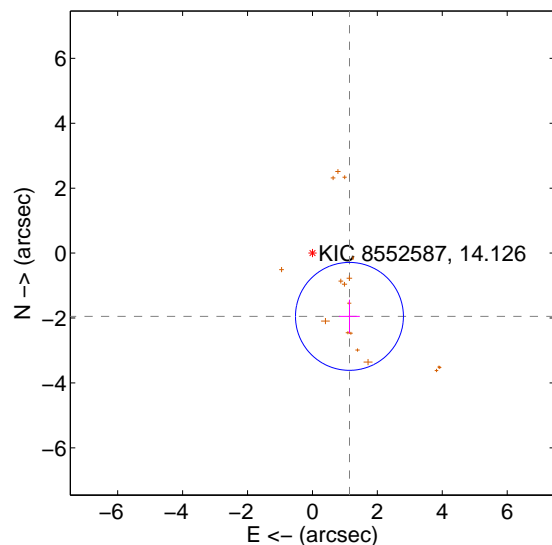
Supplemental centroid analysis for 008552587-01. Kepler magnitude: 14.13. Transit SNR 22.48

There are 0 quarters with good PRF difference image offsets

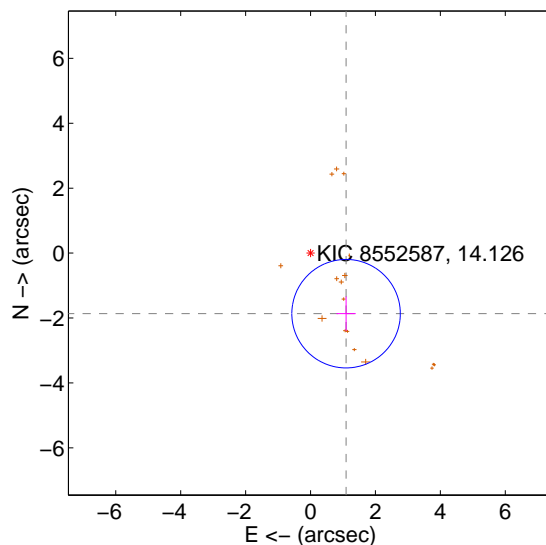
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.259 ± 0.554	4.08	-1.140 ± 0.319	-1.950 ± 0.515
PRF-fit source offset from KIC position	2.164 ± 0.557	3.88	-1.095 ± 0.298	-1.867 ± 0.531
photometric centroid source offset	4.51 ± 0.57	7.97	-2.33 ± 0.54	-3.87 ± 0.58

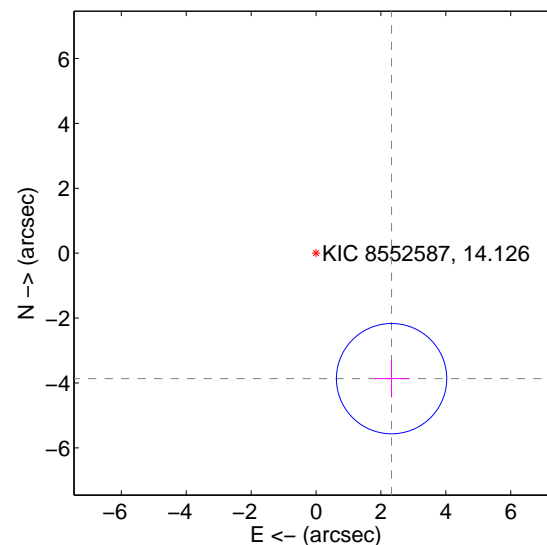
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

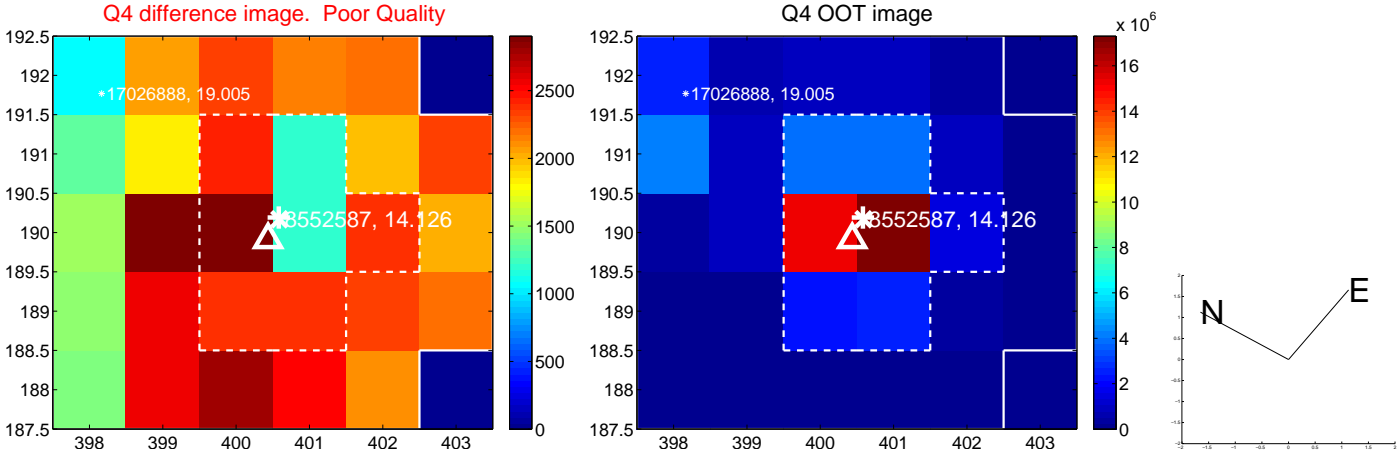
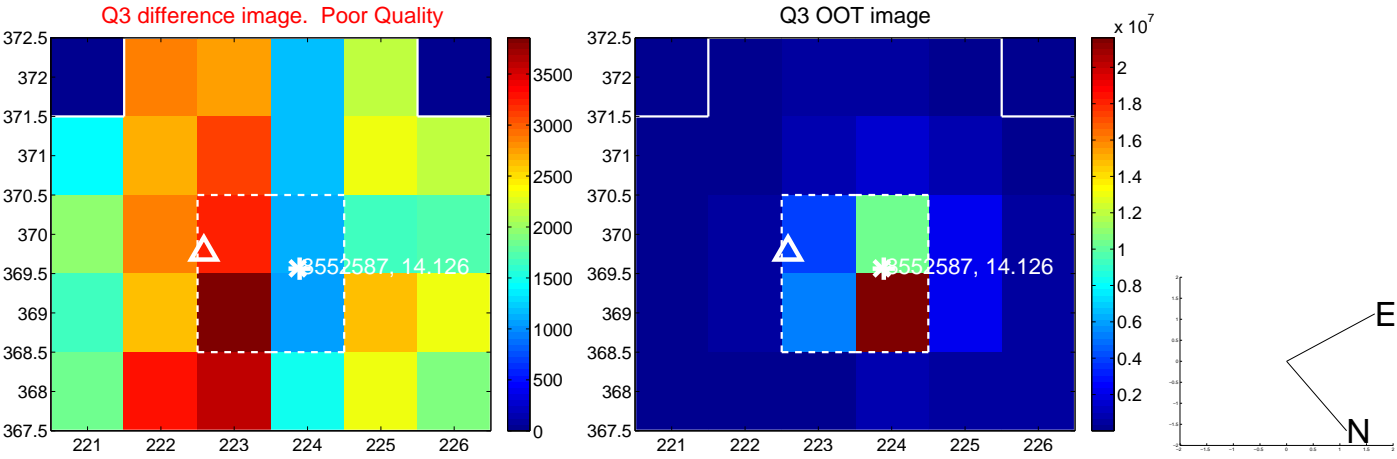
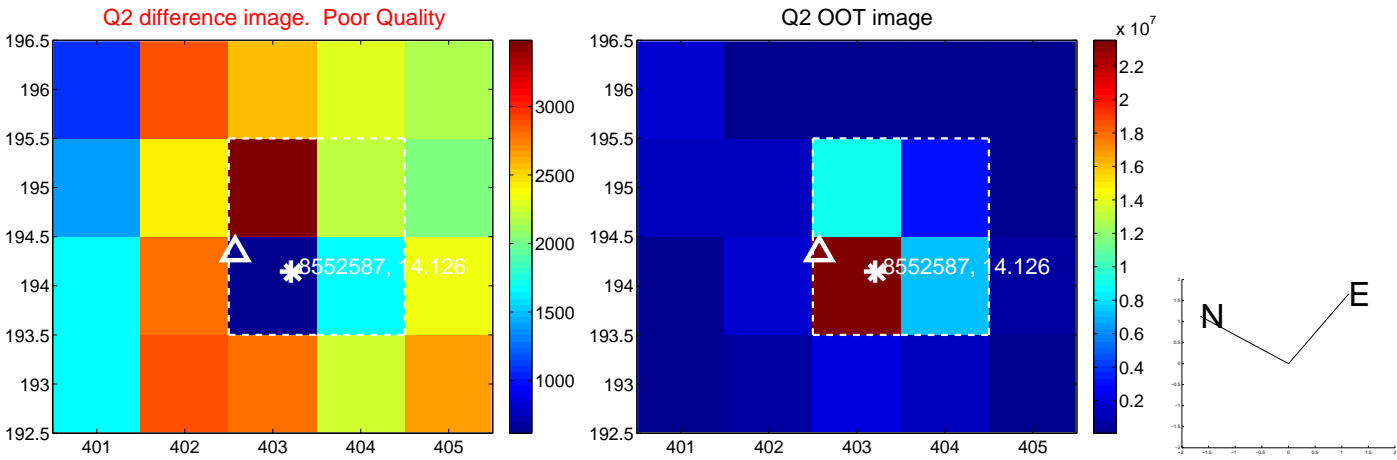
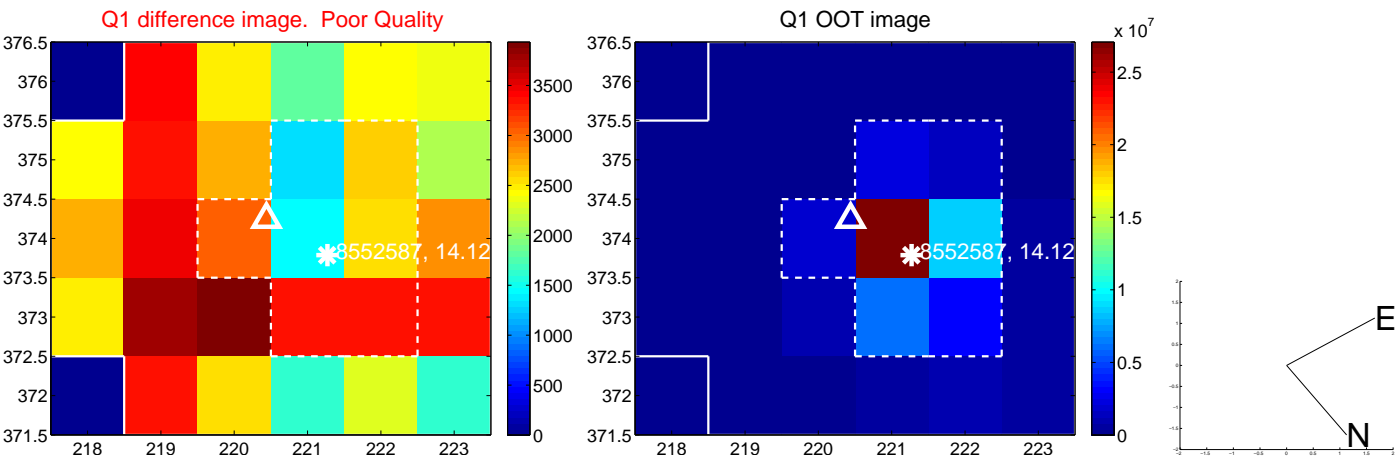


offset from photometric centroids

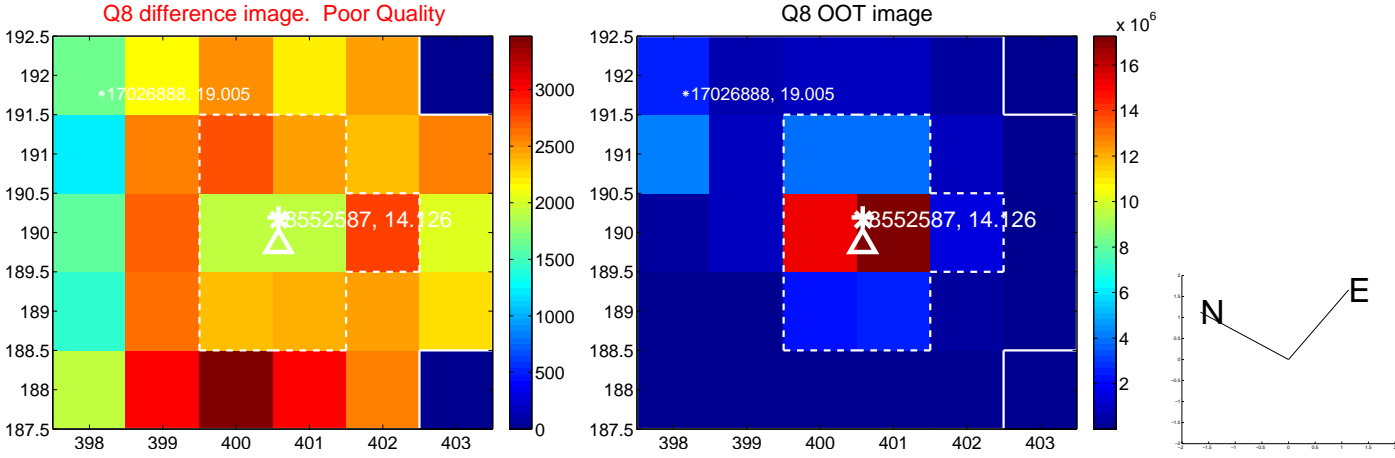
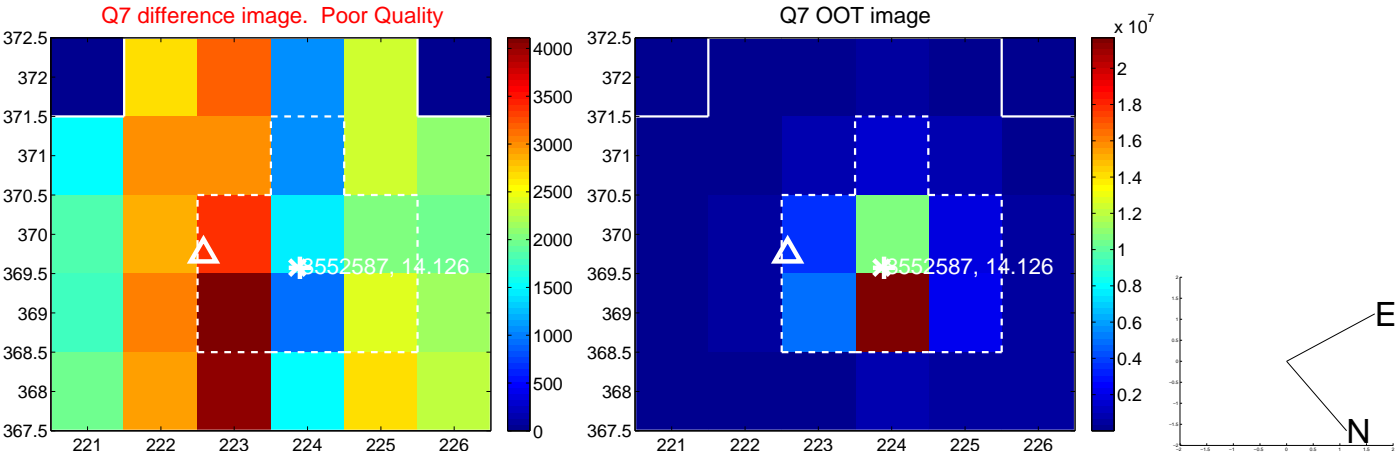
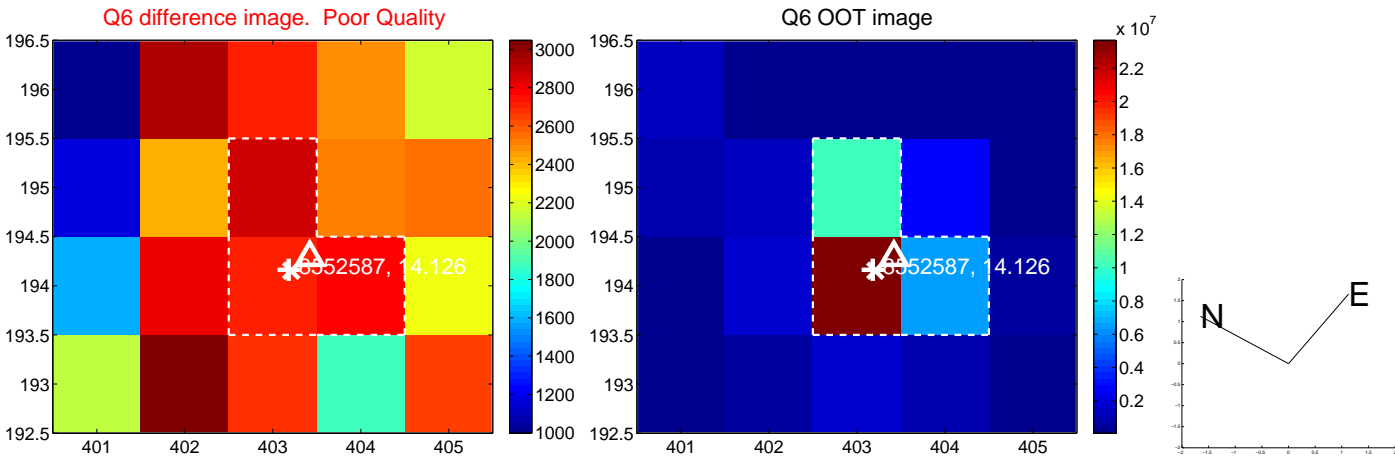
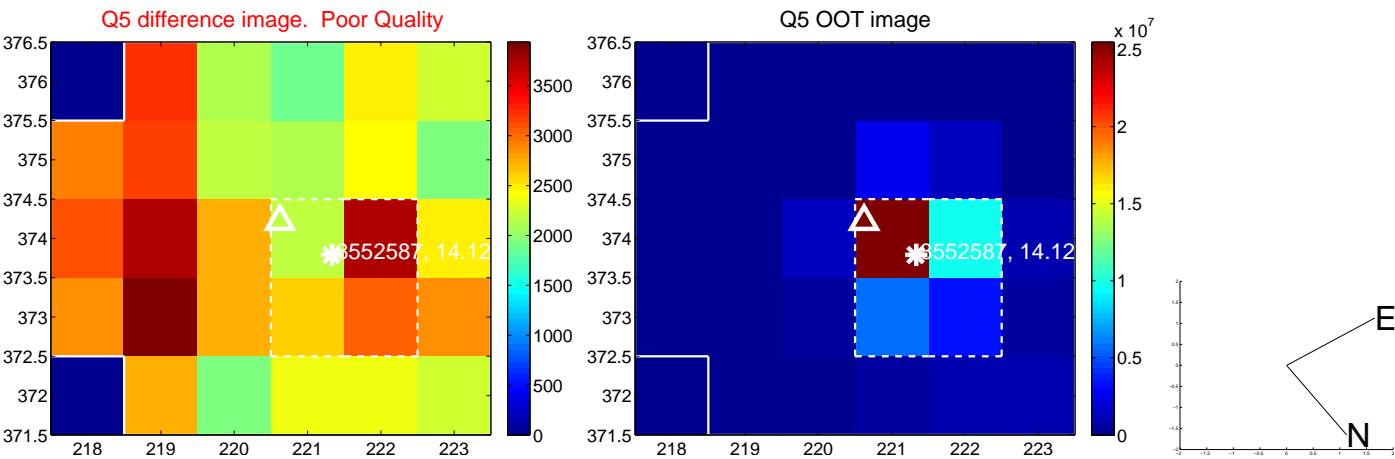


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

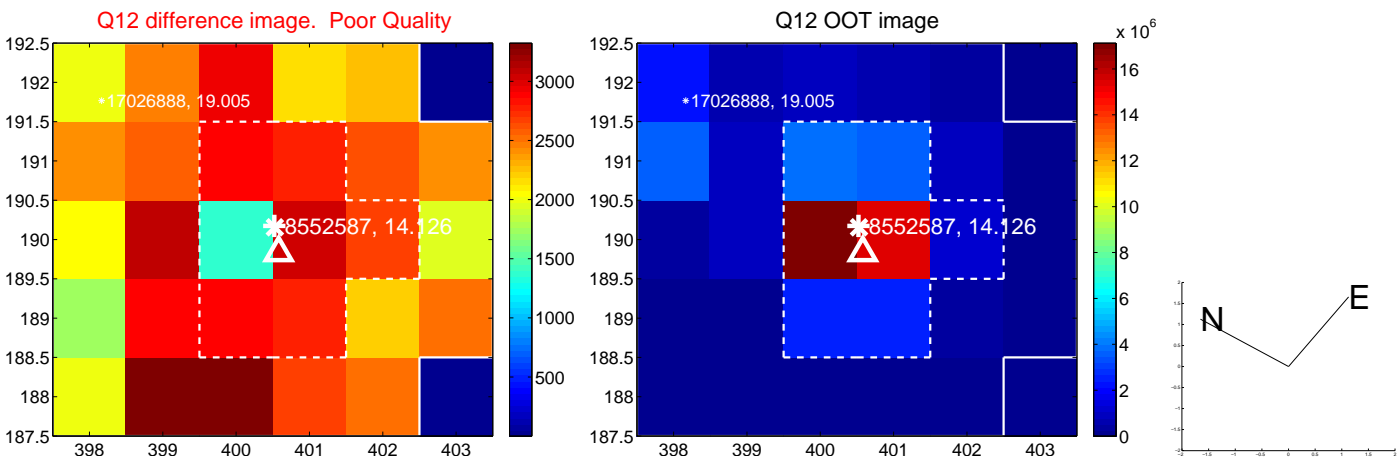
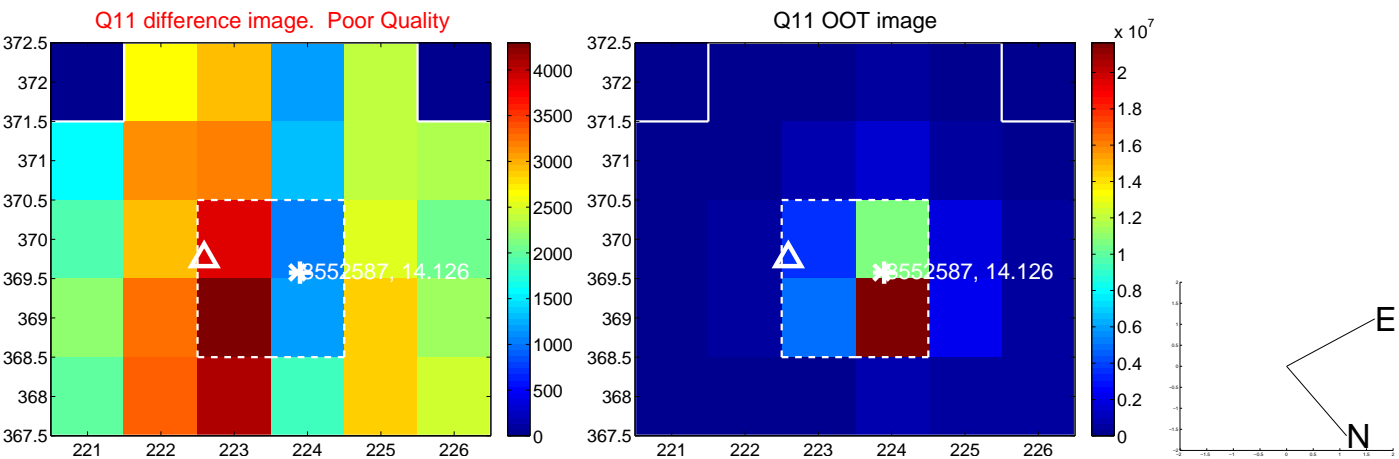
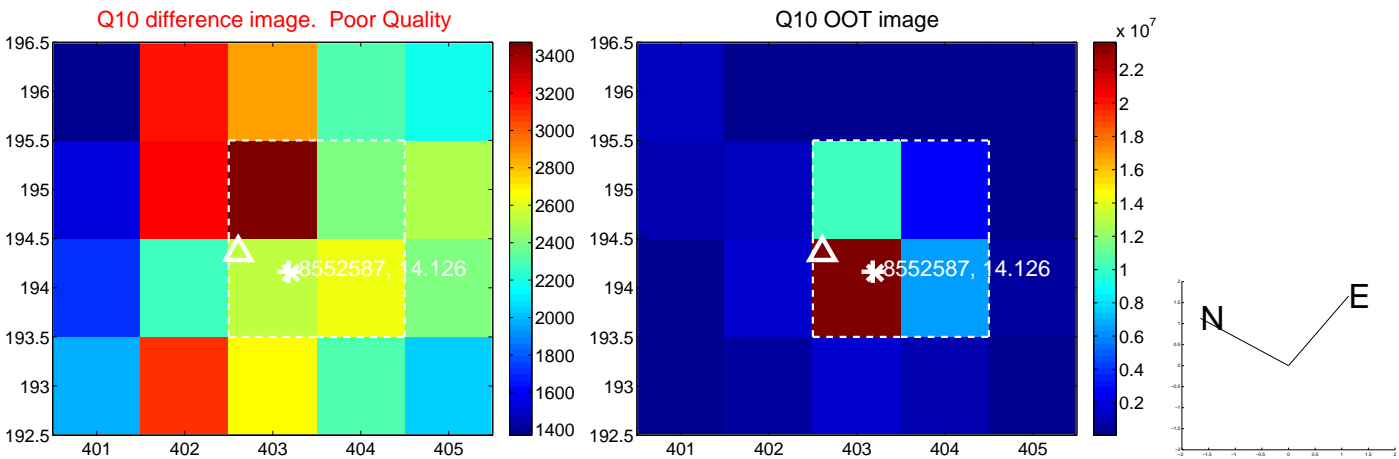
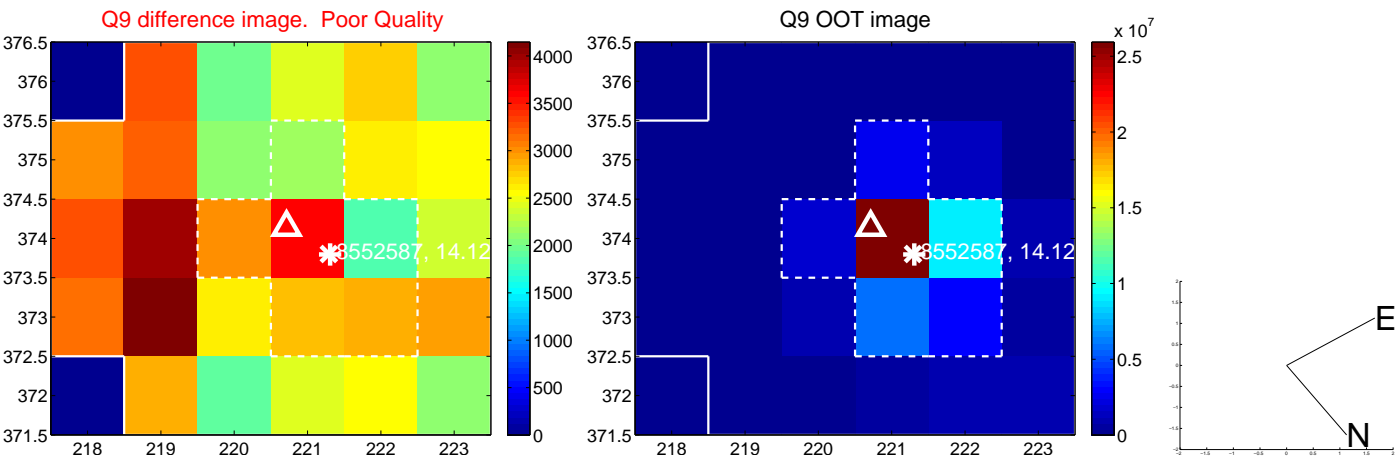
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



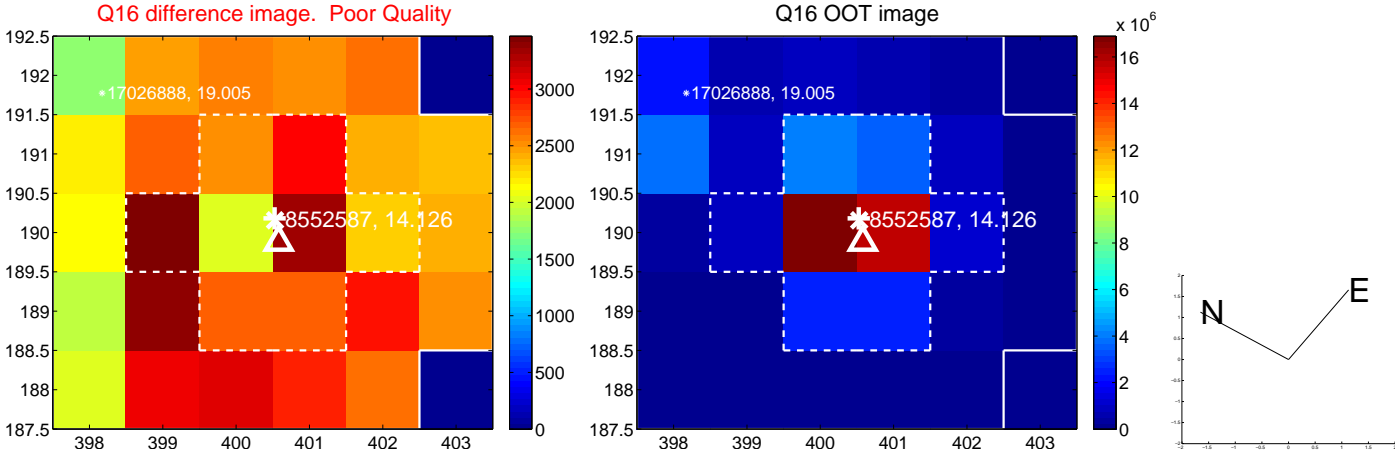
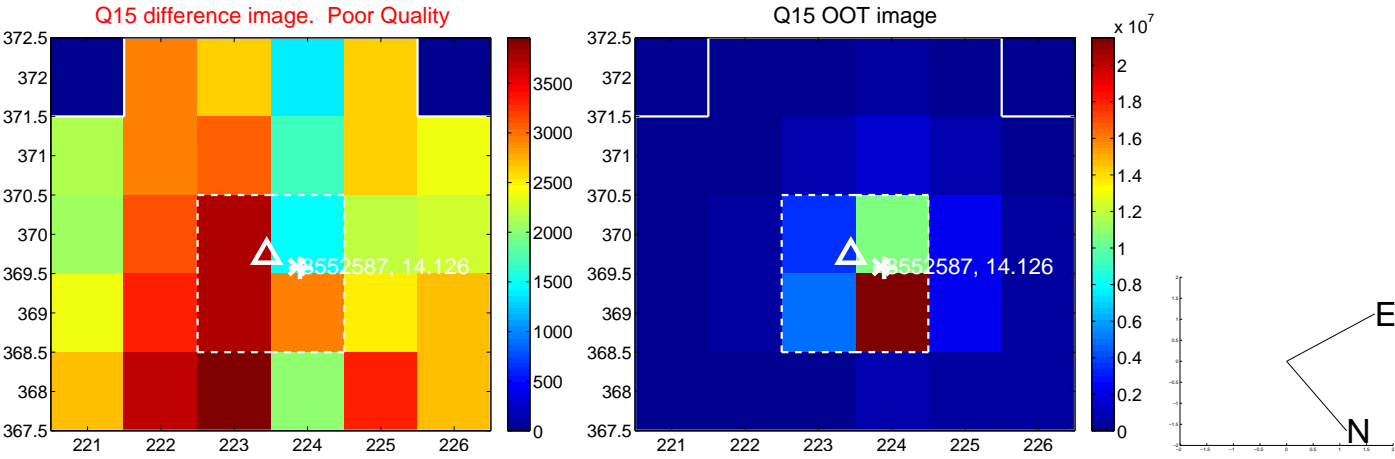
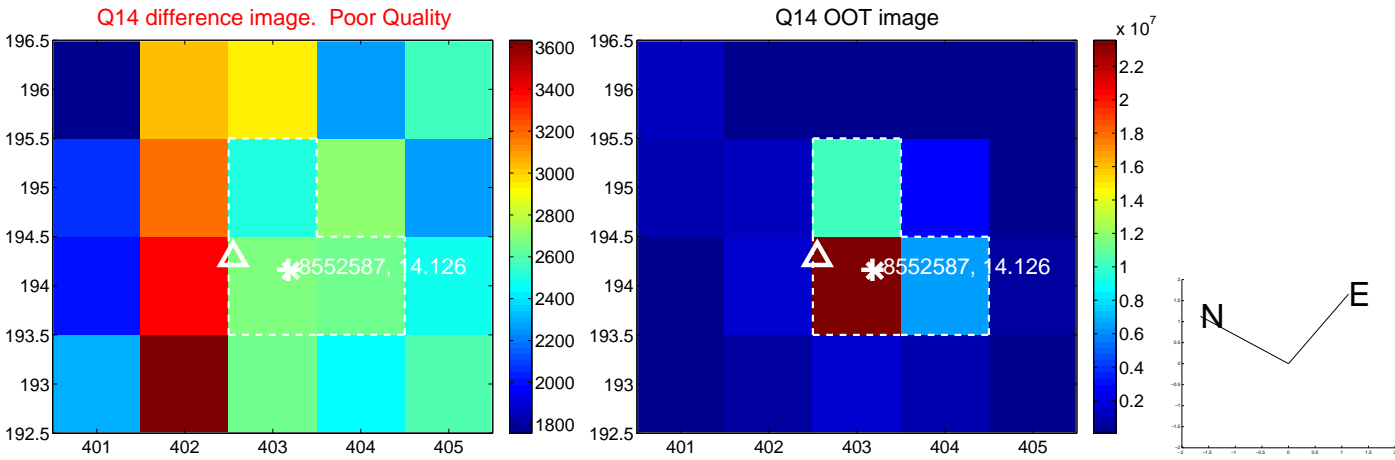
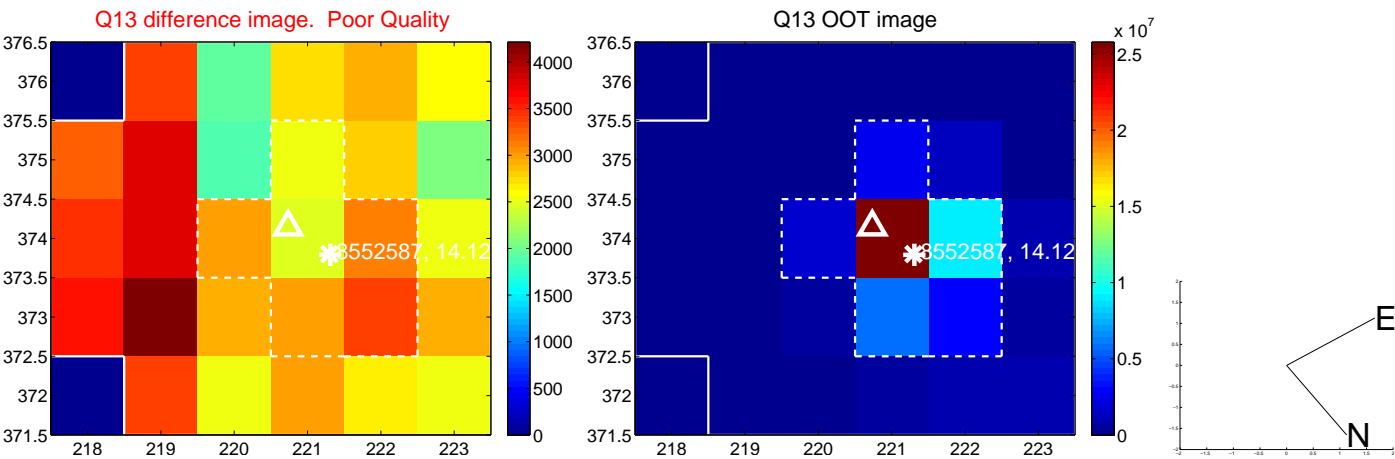
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



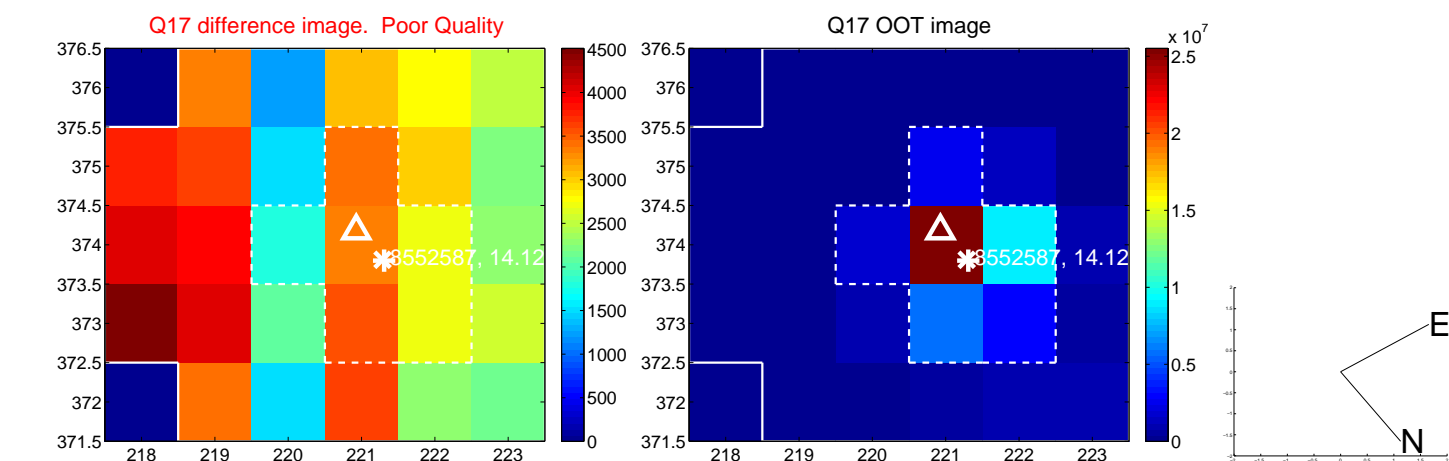
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



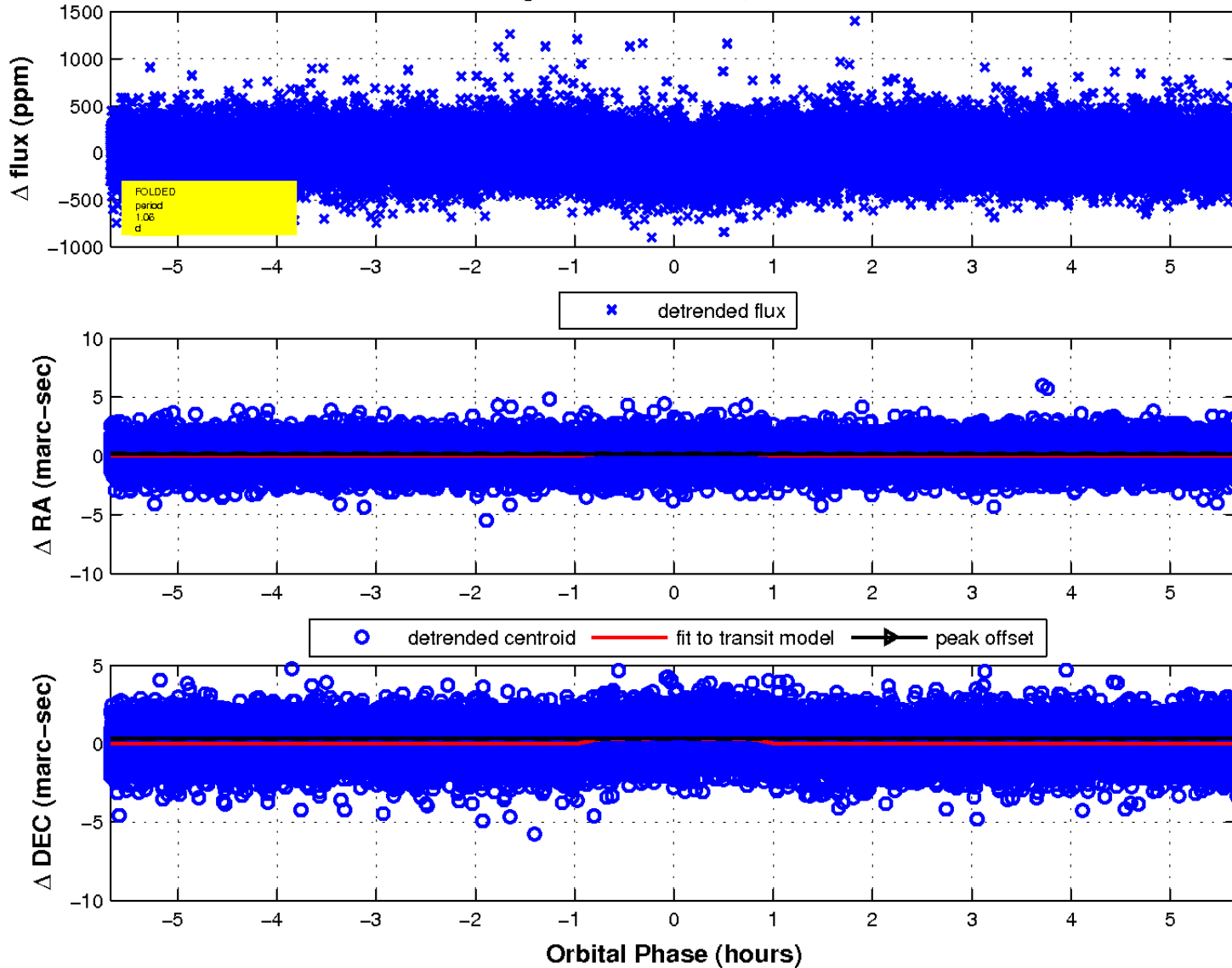
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

