

KIC 009959492

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 _⊕)
009959492-01	OBS	3051.02	1.332500	132.096837	63.4	3.813	12.1	11.7	1.29	5576	1.24	2627.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009959492-01	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.

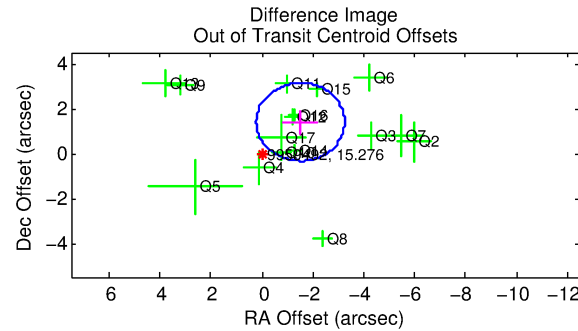
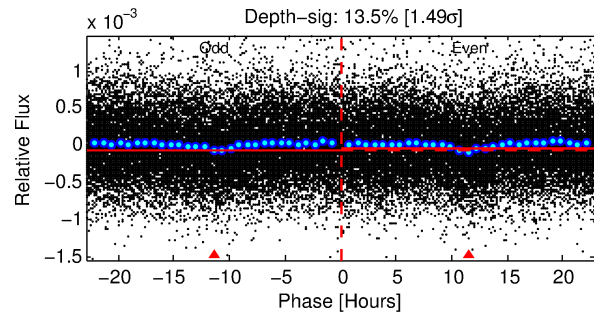
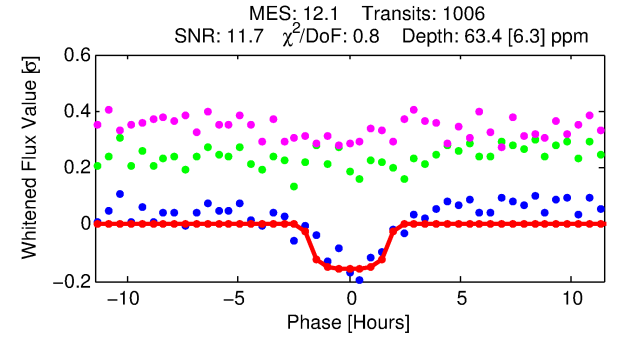
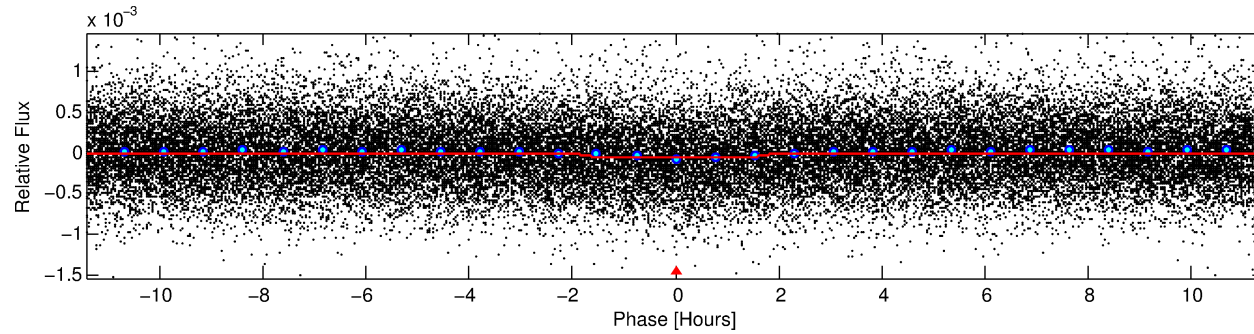
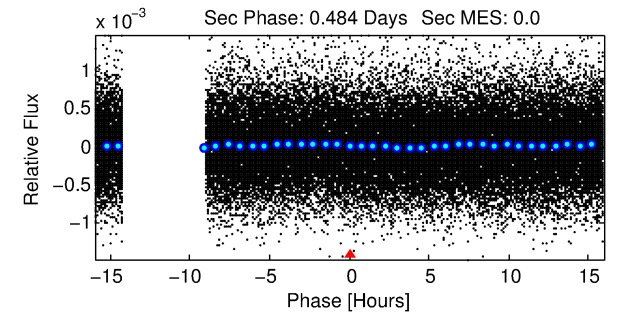
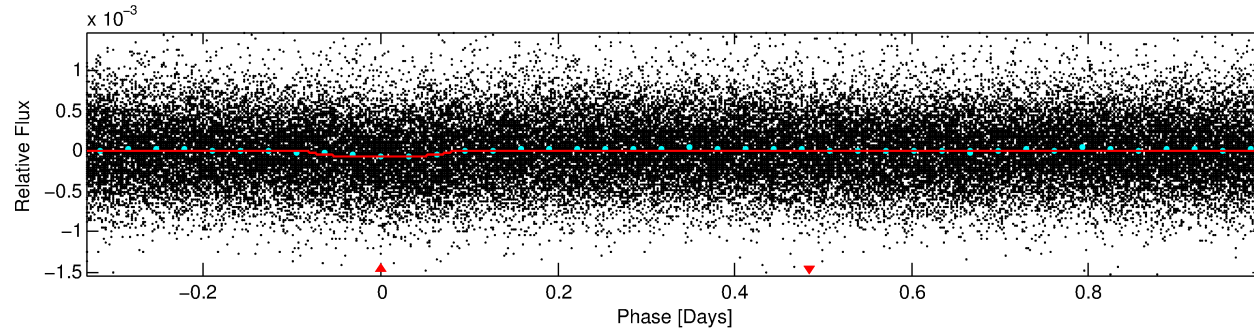
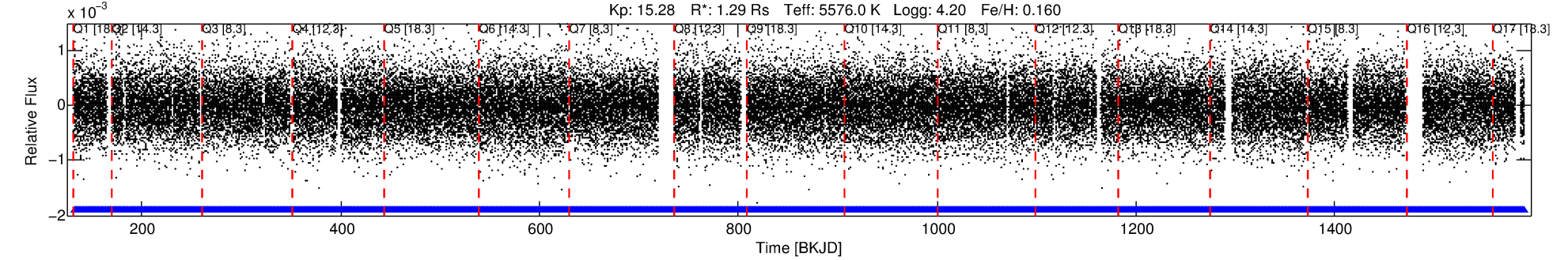
Ephemeris Match Information For 009959492-01

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
009959492-01	9959492	BR-Cyg-pri	9899416	1:1	184.6	-6	-46	10.03	15.28	10617.00	Direct-PRF	0	3.94	3.29

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: 9959492 Candidate: 1 of 1 Period: 1.333 d
KOI: K03051.02 Corr: 0.928



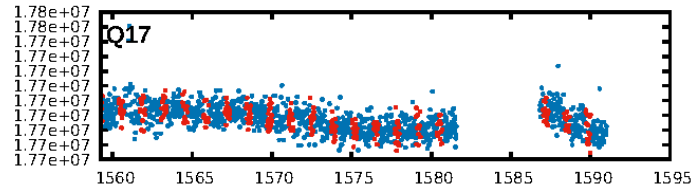
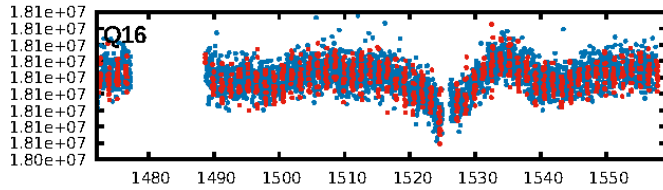
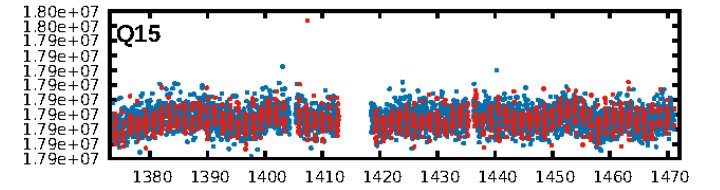
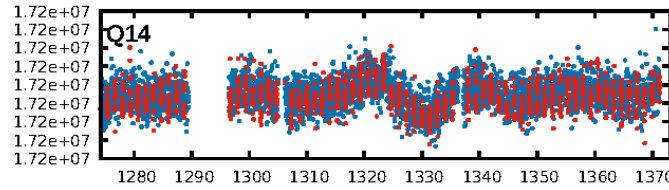
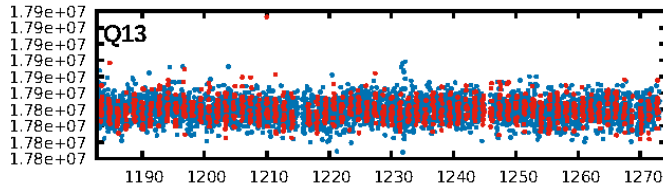
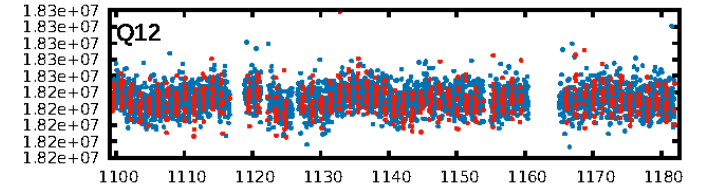
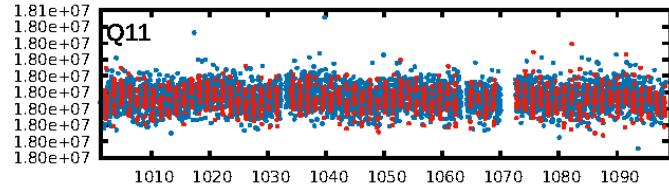
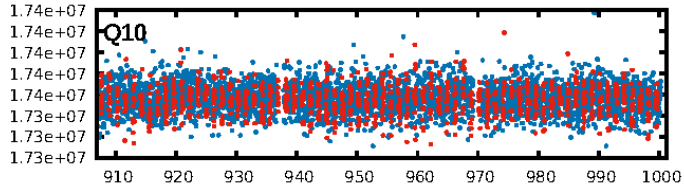
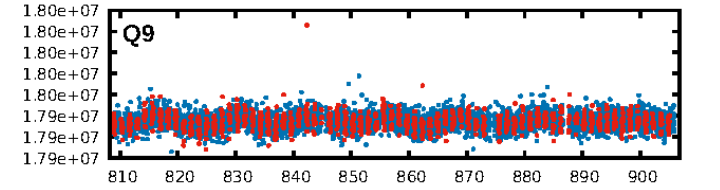
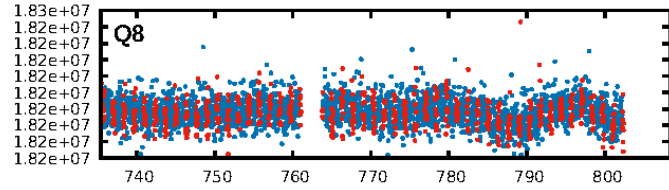
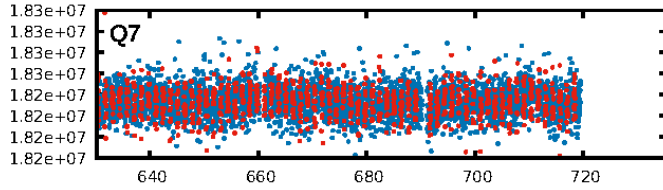
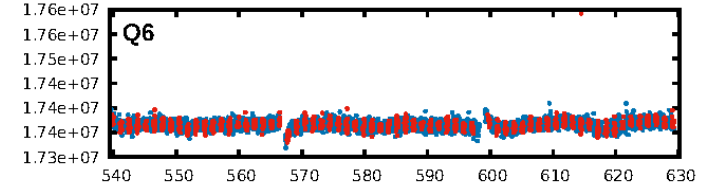
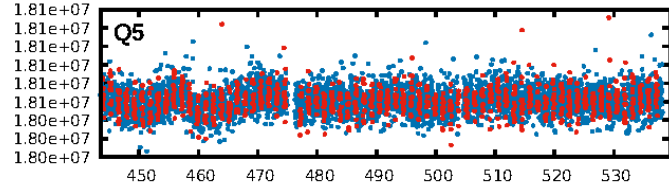
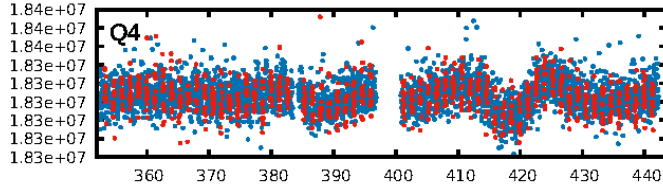
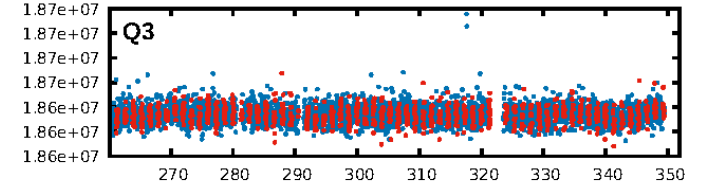
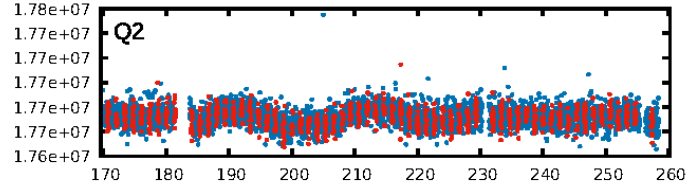
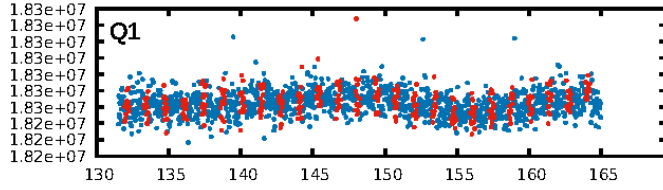
DV Fit Results:

Period = 1.33250 [0.00001] d
Epoch = 132.0968 [0.0043] BKJD
Rp/R* = 0.0088 [0.0049]
a/R* = 1.51 [2.18]
b = 0.91 [0.51]
Seff = 2627.03 [847.55]
Teff = 1826 [147] K
Rp = 1.24 [0.74] Re
a = 0.0234 [0.0046] AU
Ag = N/A
Teffp = N/A

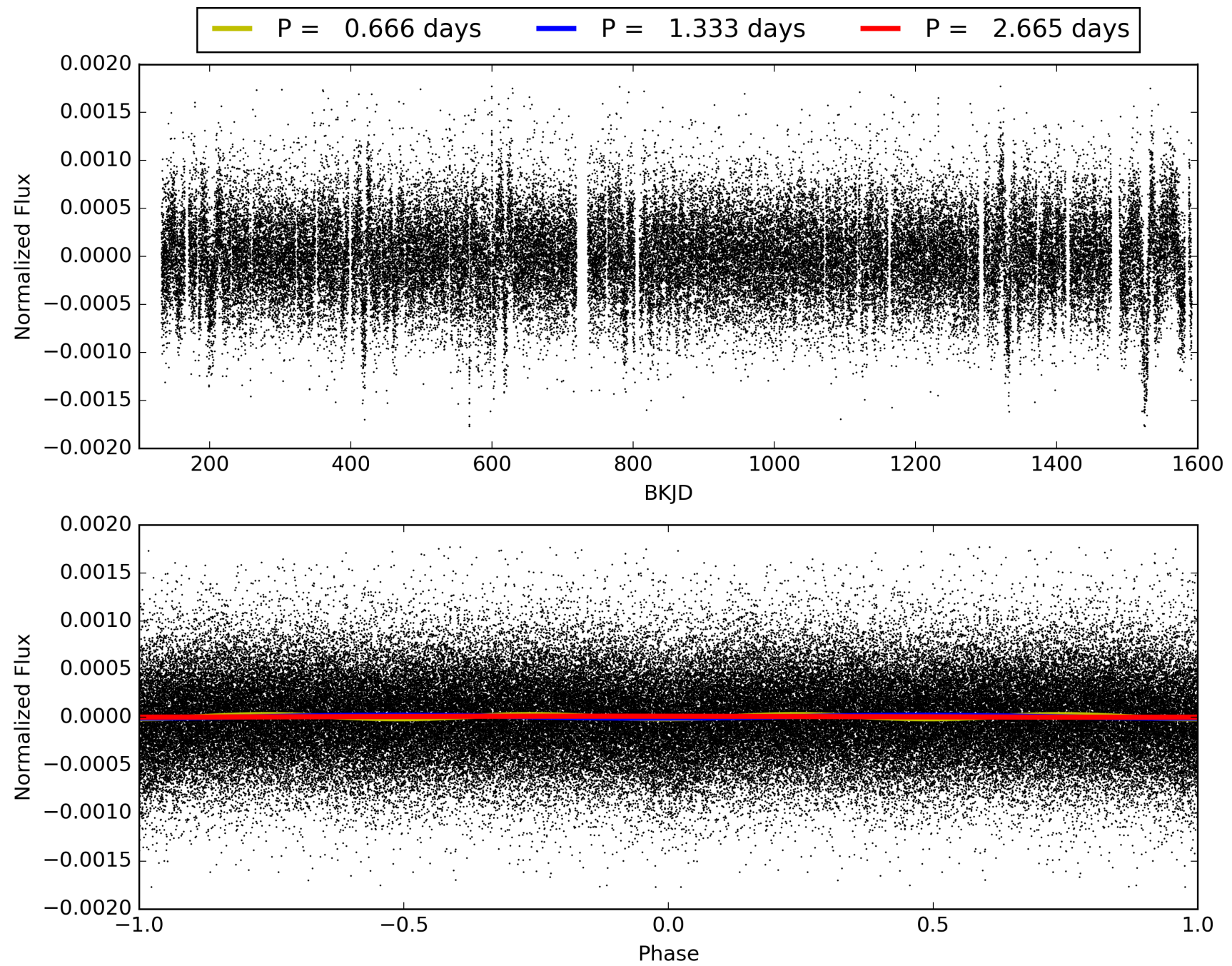
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.70e-32
RollingBand-fgt: 1.00 [961/961]
GhostDiagnostic-chr: 0.09326
Centroid-sig: 44.7%
Centroid-so: 0.803 arcsec [0.78 σ]
OotOffset-rm: 2.062 arcsec [3.56 σ]
KicOffset-rm: 1.965 arcsec [3.24 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 009959492-01, PDC Light Curves

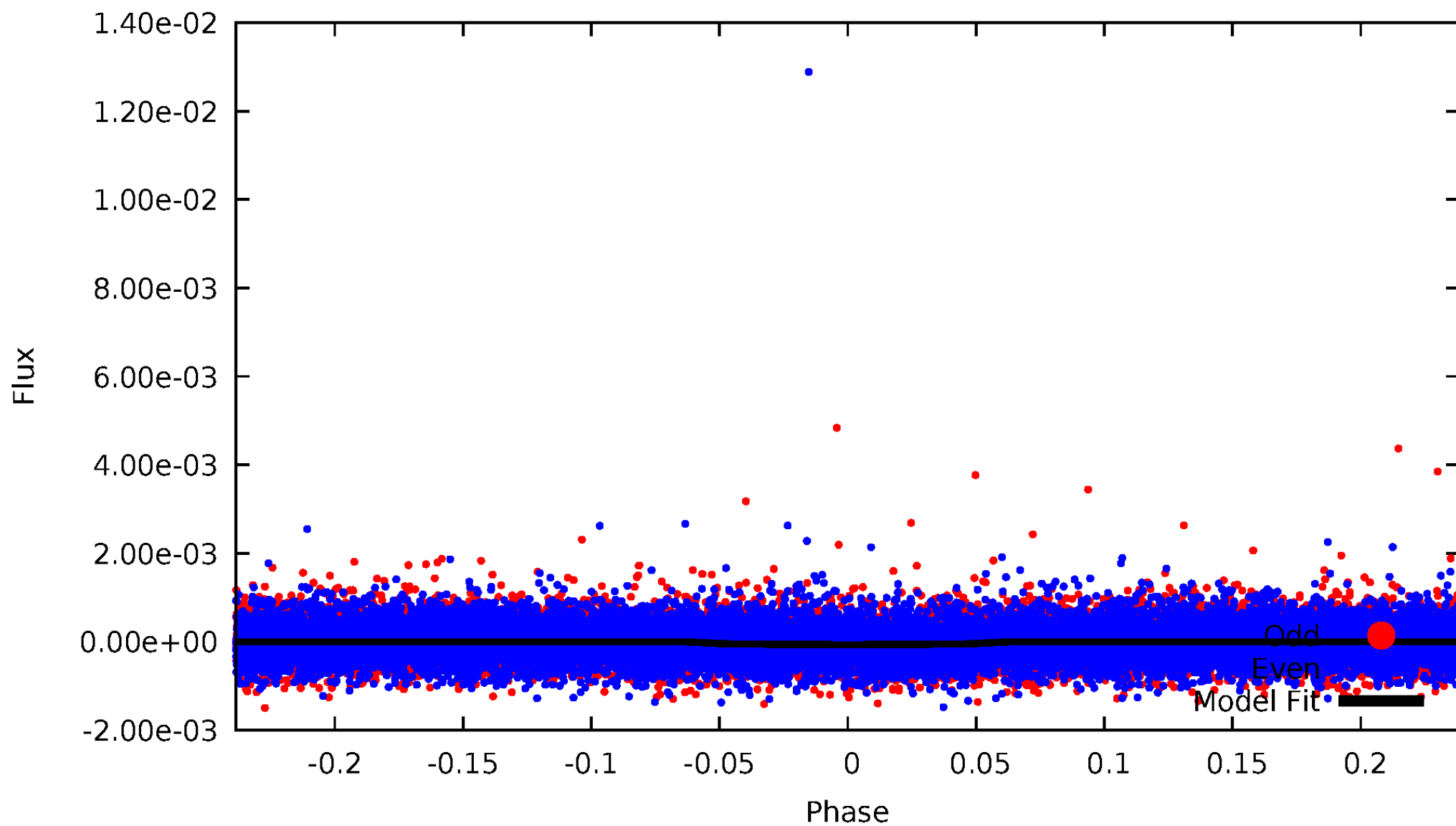


TCE 009959492-01



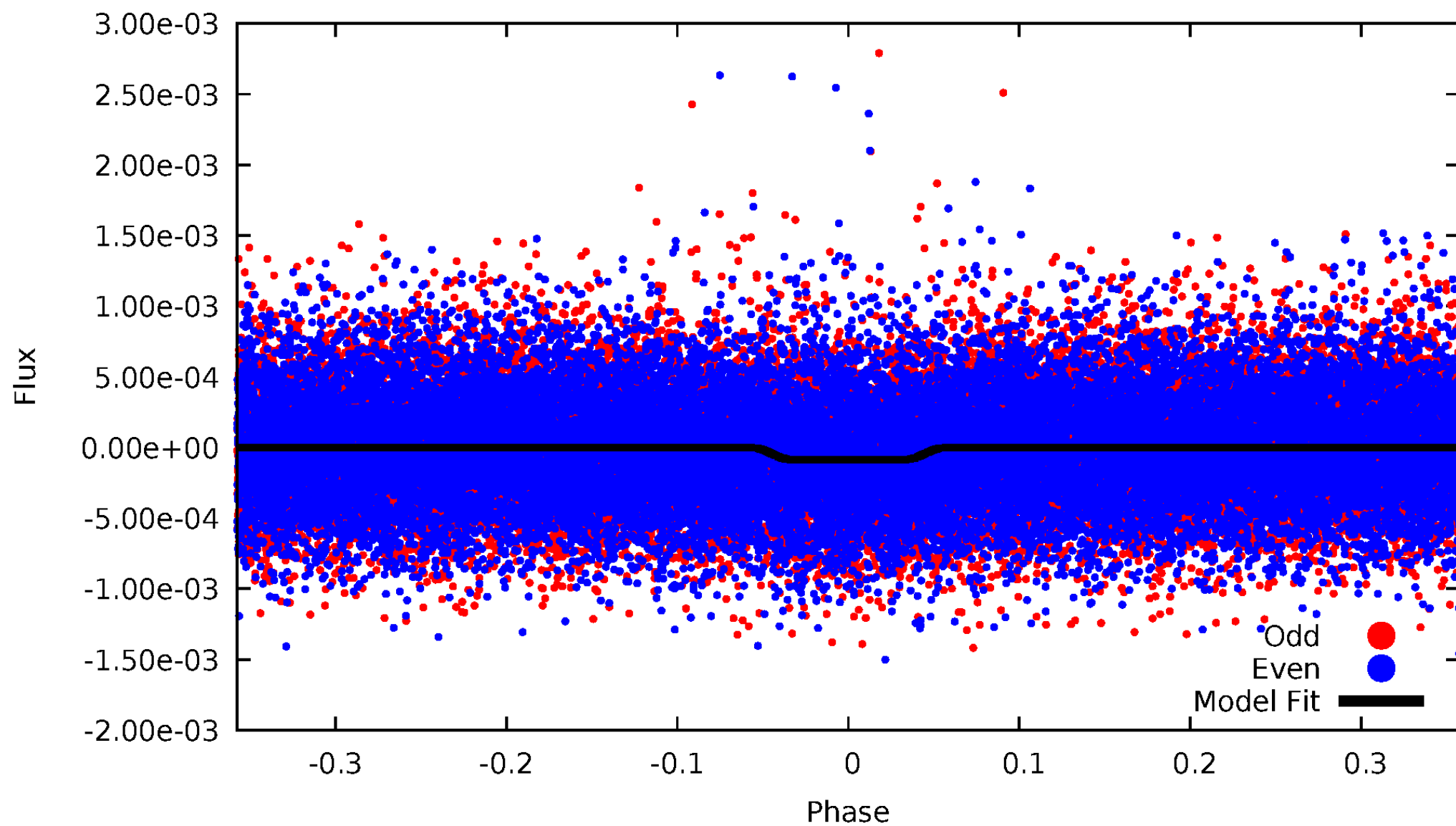
DV Odd/Even

TCE 009959492-01

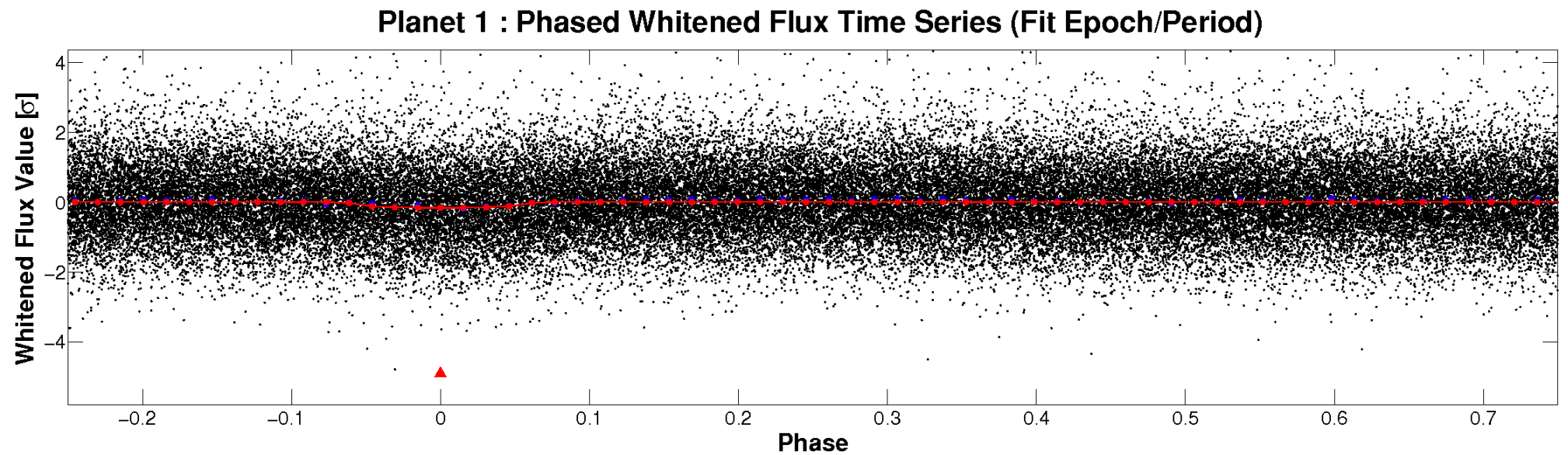
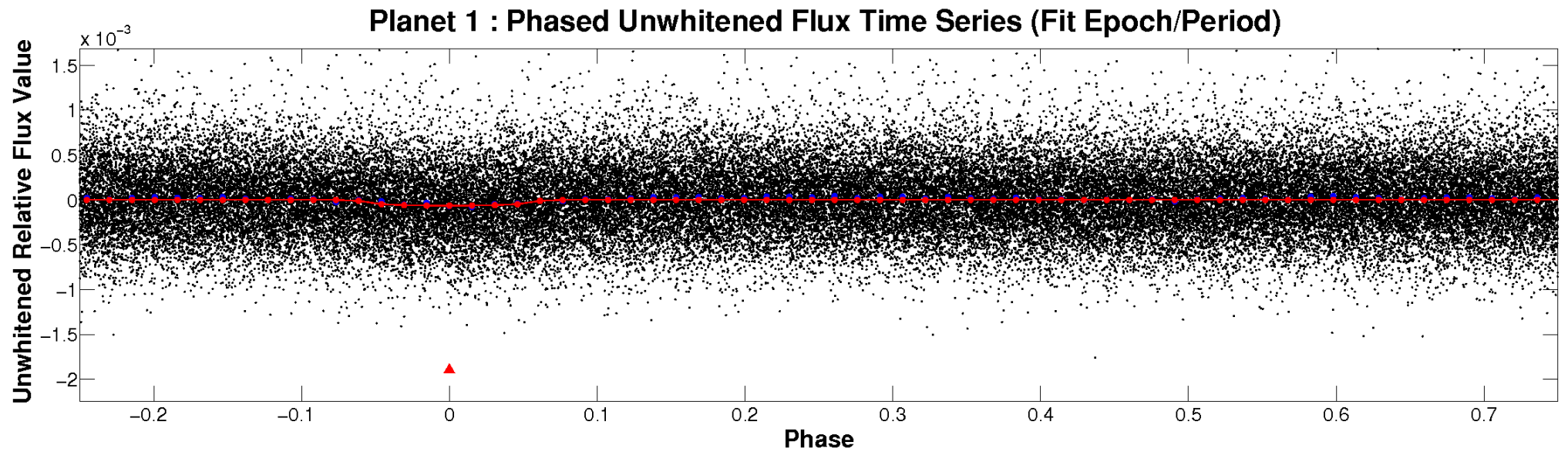


ALT Odd/Even

TCE 009959492-01

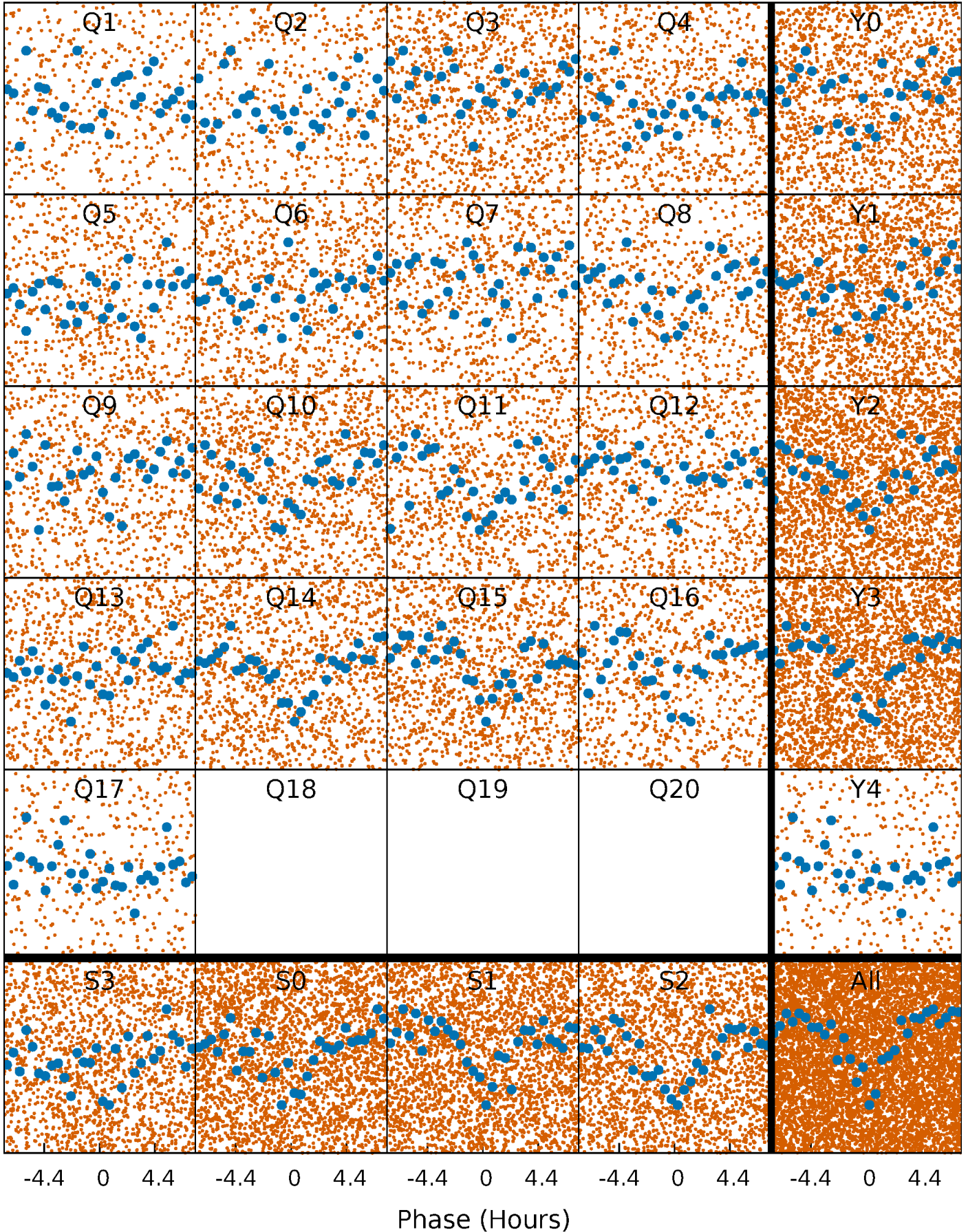


Non-Whitened Vs. Whitened Light Curve



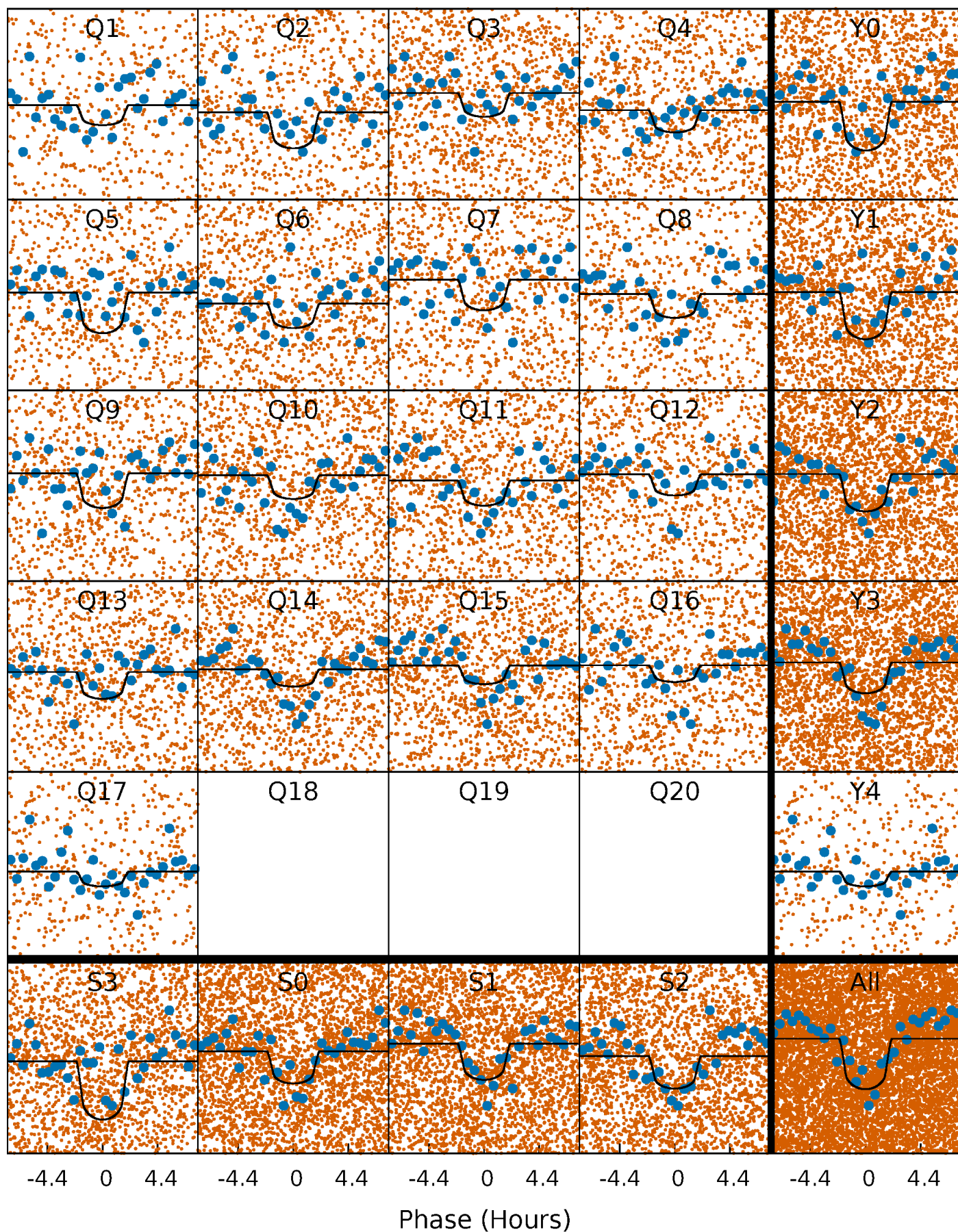
PDC Quarter-Phased Transit Curves

TCE 009959492-01 P= 1.332500 Days $T_0=132.096837$ (BKJD)



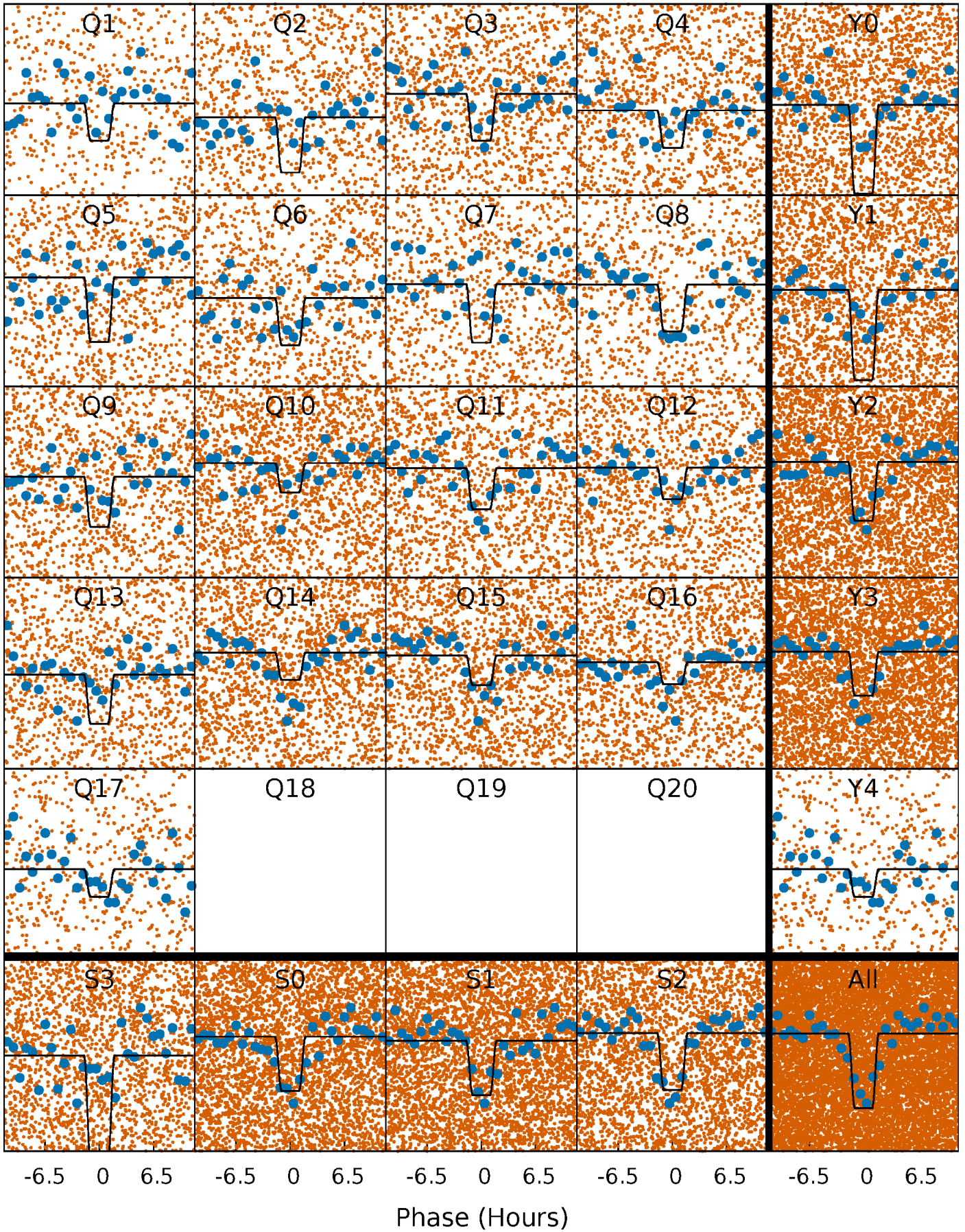
DV Quarter-Phased Transit Curves

TCE 009959492-01 P= 1.332500 Days $T_0=132.096837$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

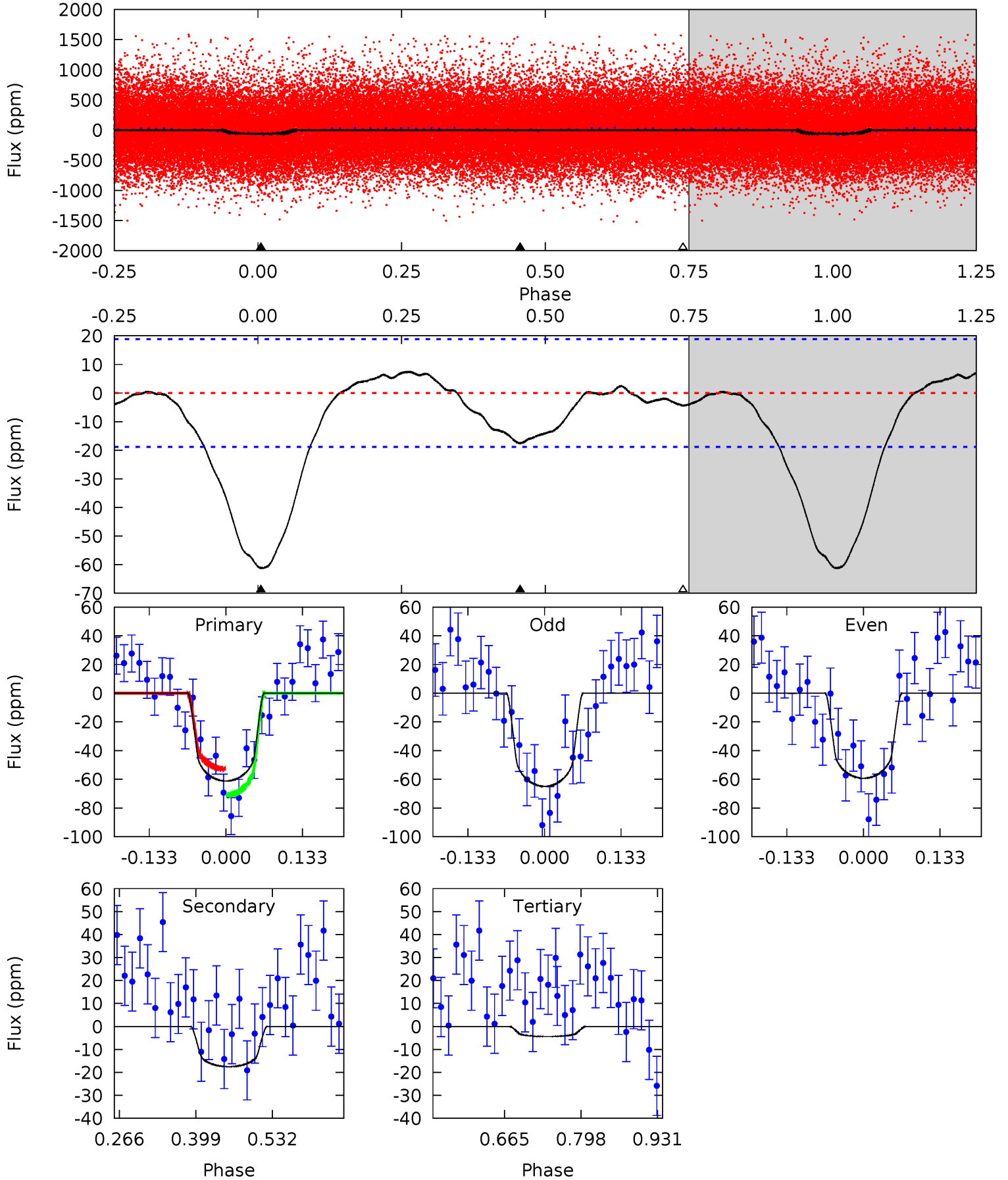
TCE 009959492-01 P= 1.332568 Days $T_0=132.055372$ (BKJD)



DV Model-Shift Uniqueness Test

009959492-01, P = 1.332500 Days, E = 130.764337 Days

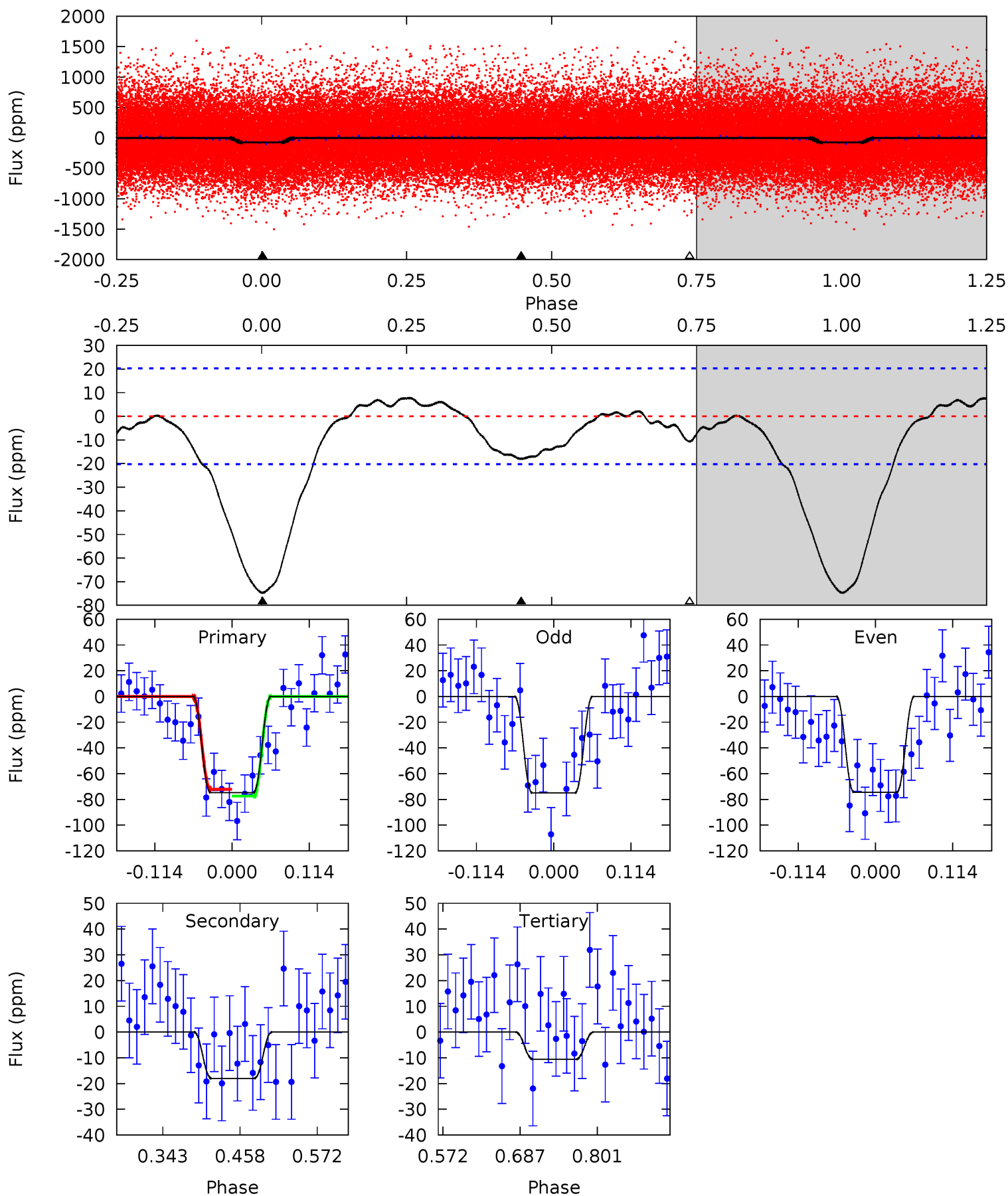
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	4.20	1.05	0	4.50	1.50	0.88	13.6	14.7	3.15	4.20	0.68	0.97	0.11	2.18



Alt Model-Shift Uniqueness Test

009959492-01, P = 1.332568 Days, E = 130.722804 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	4.03	2.38	0	4.54	1.58	1.11	14.3	16.7	1.65	4.03	0.07	0.99	0.09	0.58



Stellar Parameters For KIC 009959492

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5576^{+83}_{-75}	$4.201^{+0.188}_{-0.101}$	$0.160^{+0.150}_{-0.150}$	$1.289^{+0.208}_{-0.254}$	$0.963^{+0.073}_{-0.053}$	$0.633^{+0.601}_{-0.190}$
	+1%/-1%	+4%/-2%	+94%/-94%	+16%/-20%	+8%/-6%	+95%/-30%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009959492-01 / KOI 3051.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-18 ± 4	$1.23^{+0.72}_{-0.66}$	2535^{+119}_{-157}	4008^{+1422}_{-678}	$3.449^{+11.625}_{-2.160}$
Alt.	-18 ± 4	$1.28^{+0.73}_{-0.65}$	2537^{+128}_{-146}	3949^{+1488}_{-602}	$3.142^{+10.467}_{-1.815}$

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

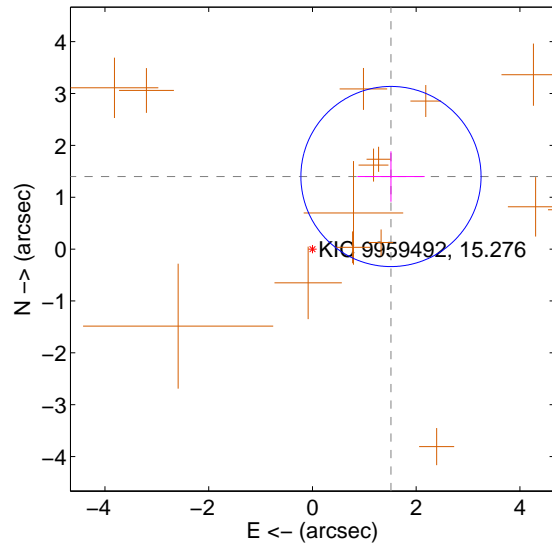
Supplemental centroid analysis for 009959492-01. Kepler magnitude: 15.28. Transit SNR 11.69

There are 0 quarters with good PRF difference image offsets

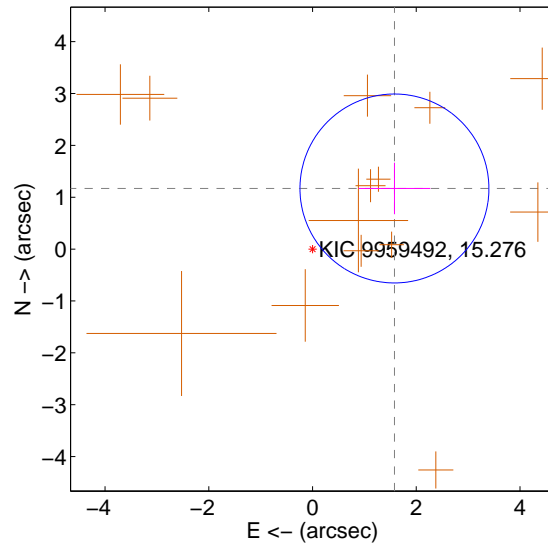
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.062 ± 0.579	3.56	-1.514 ± 0.648	1.400 ± 0.486
PRF-fit source offset from KIC position	1.965 ± 0.607	3.24	-1.580 ± 0.692	1.169 ± 0.498
photometric centroid source offset	0.80 ± 1.03	0.78	-0.77 ± 1.02	-0.22 ± 1.17

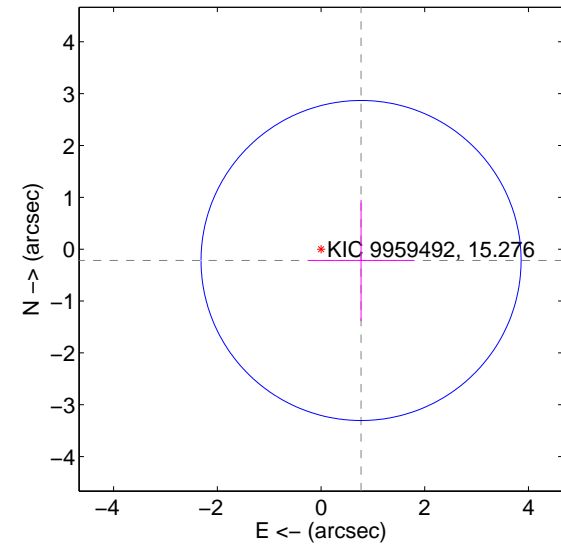
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

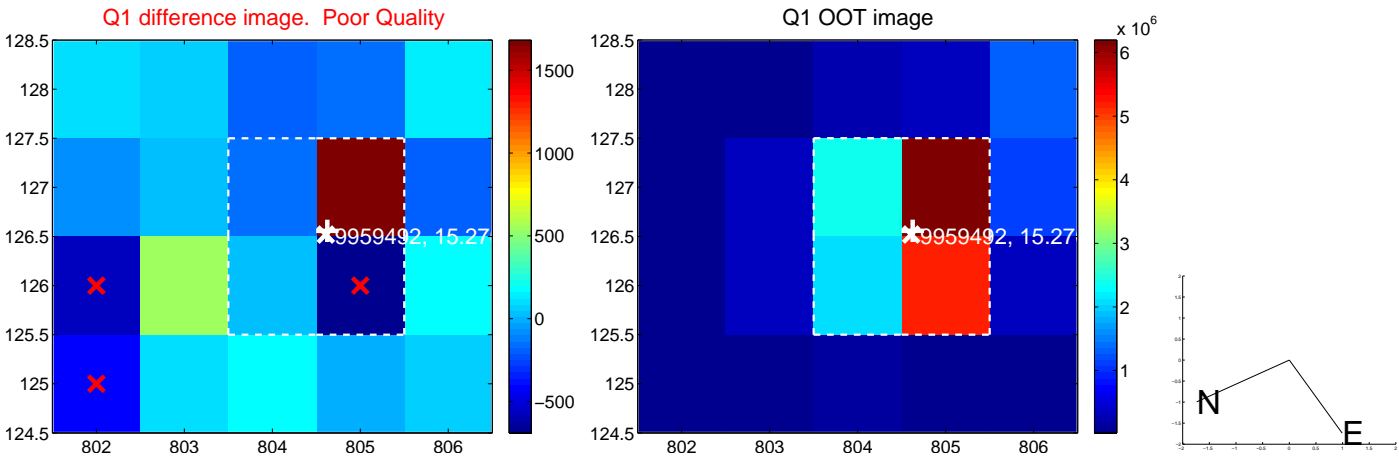


offset from photometric centroids

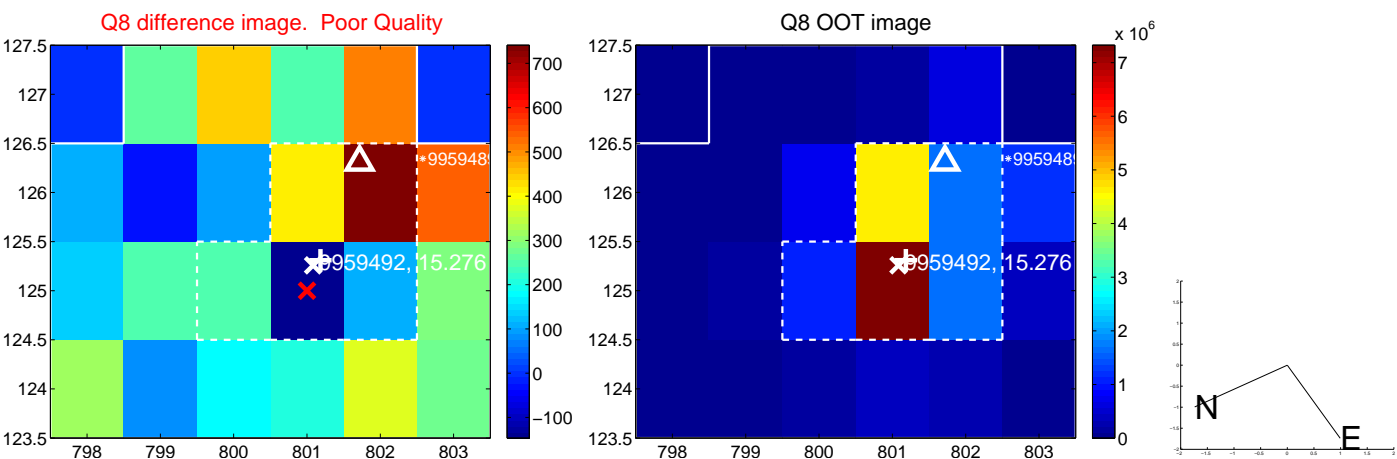
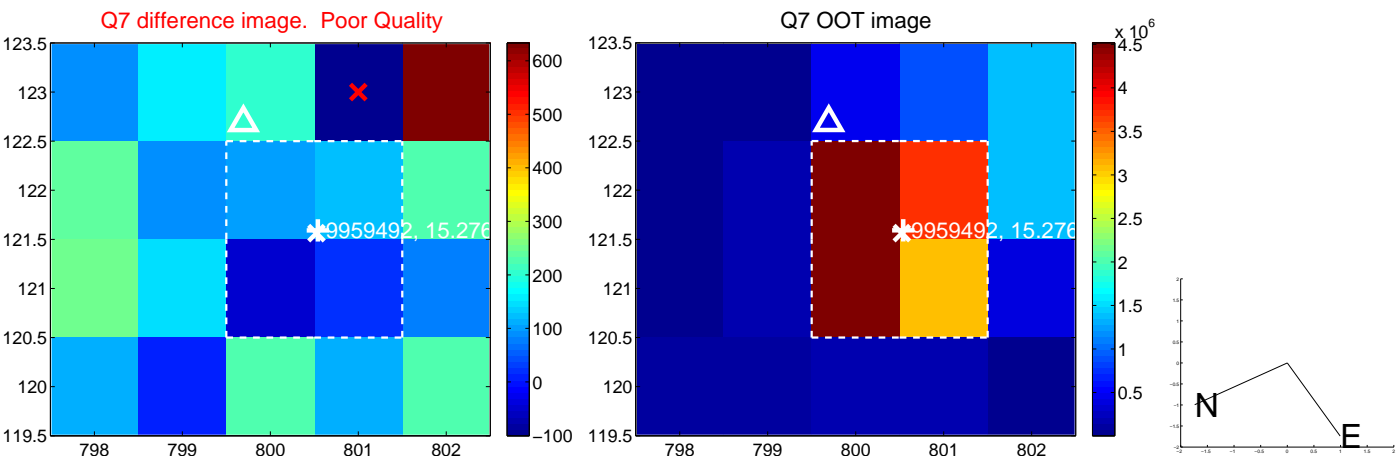
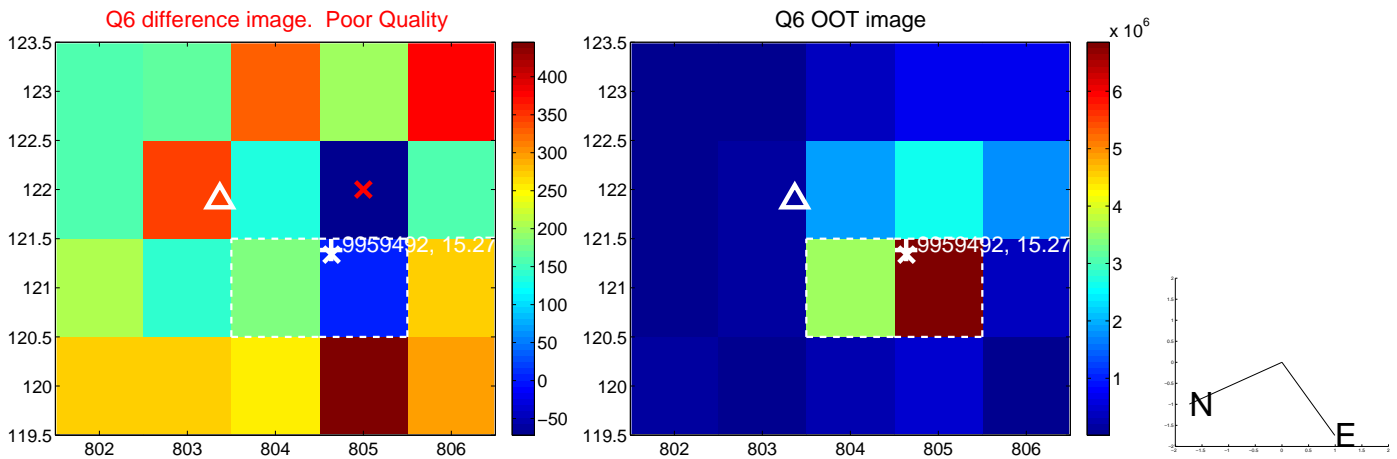
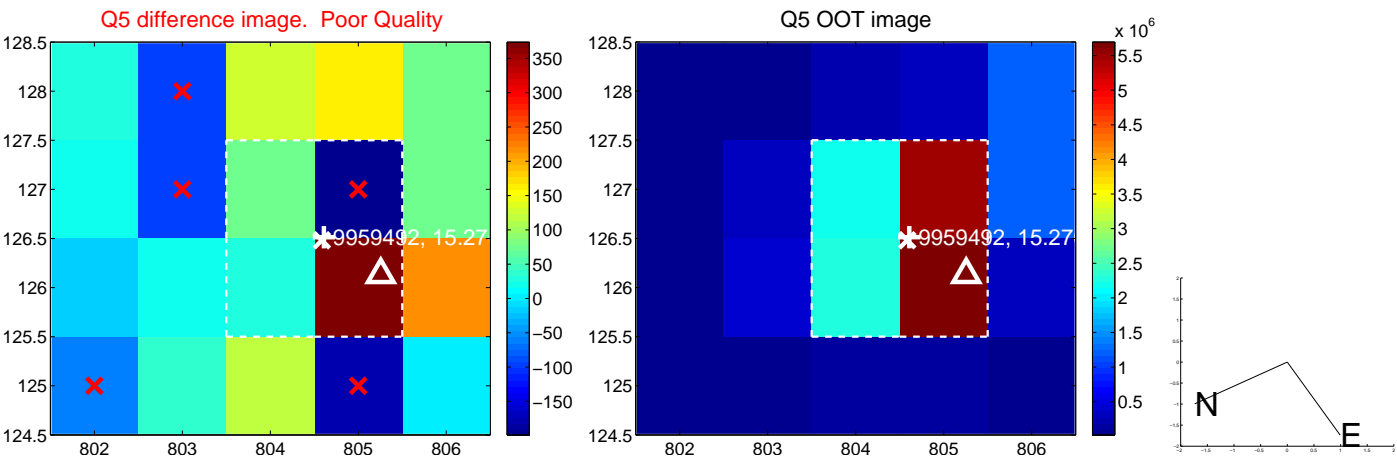


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

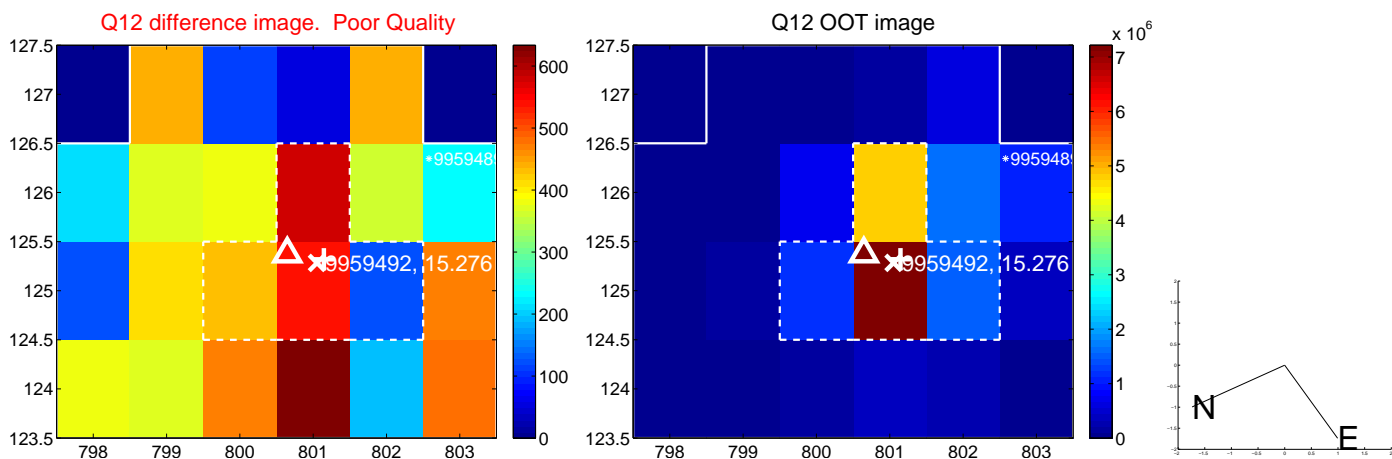
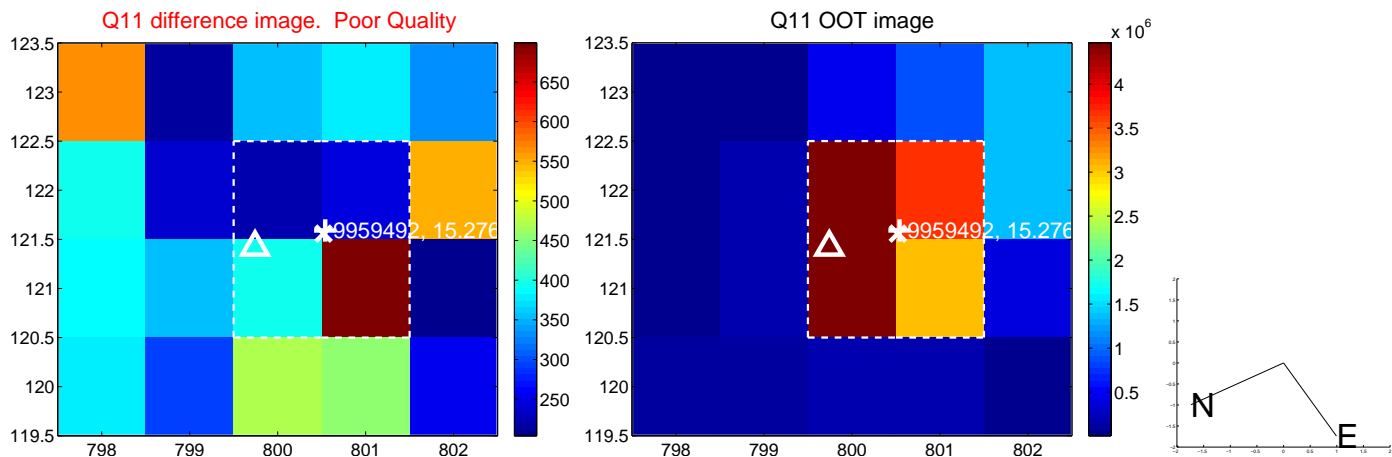
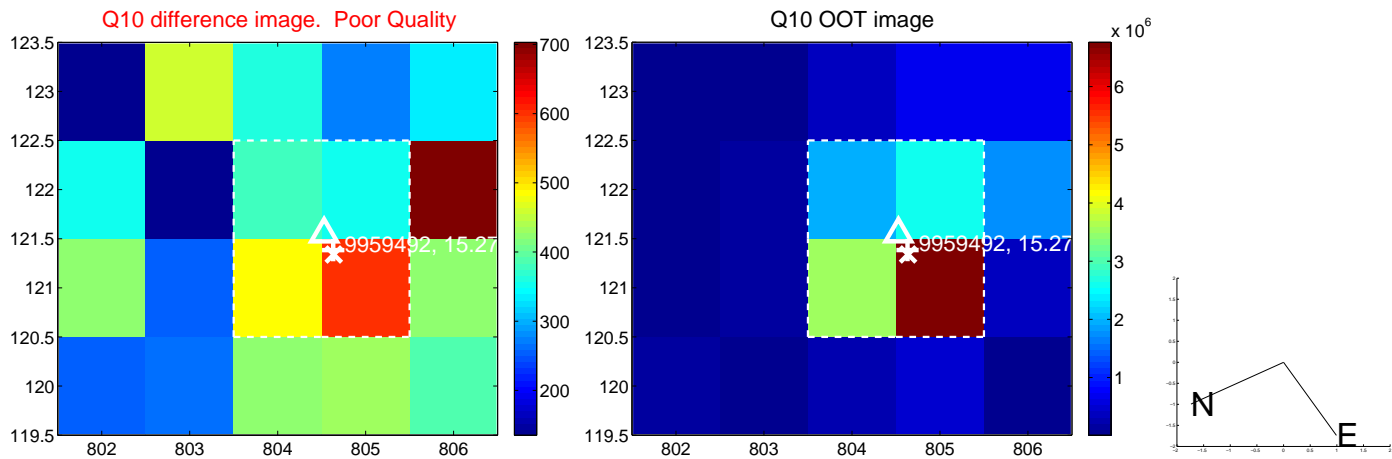
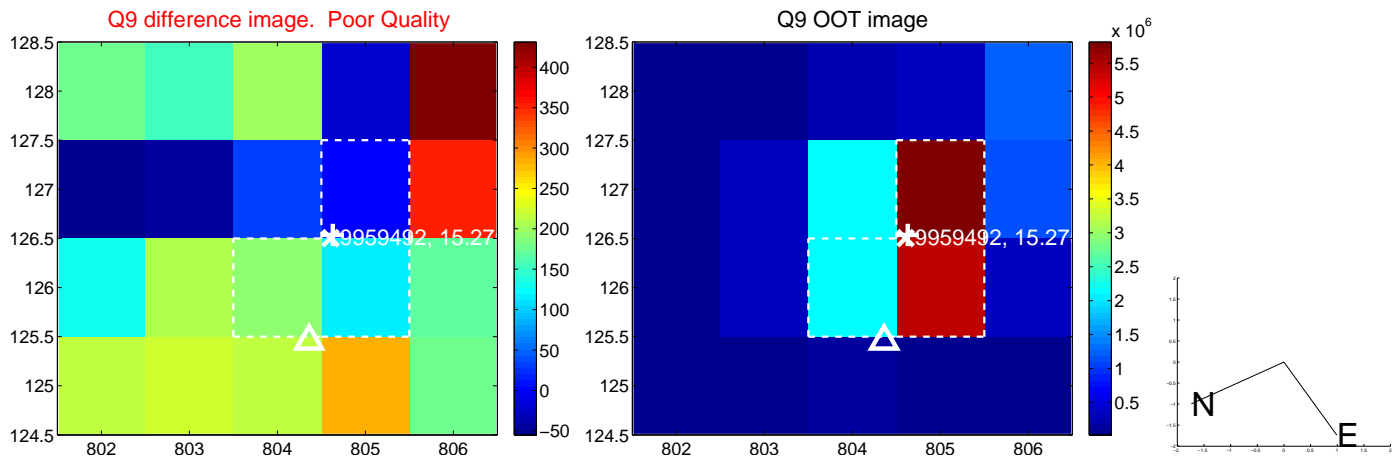
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



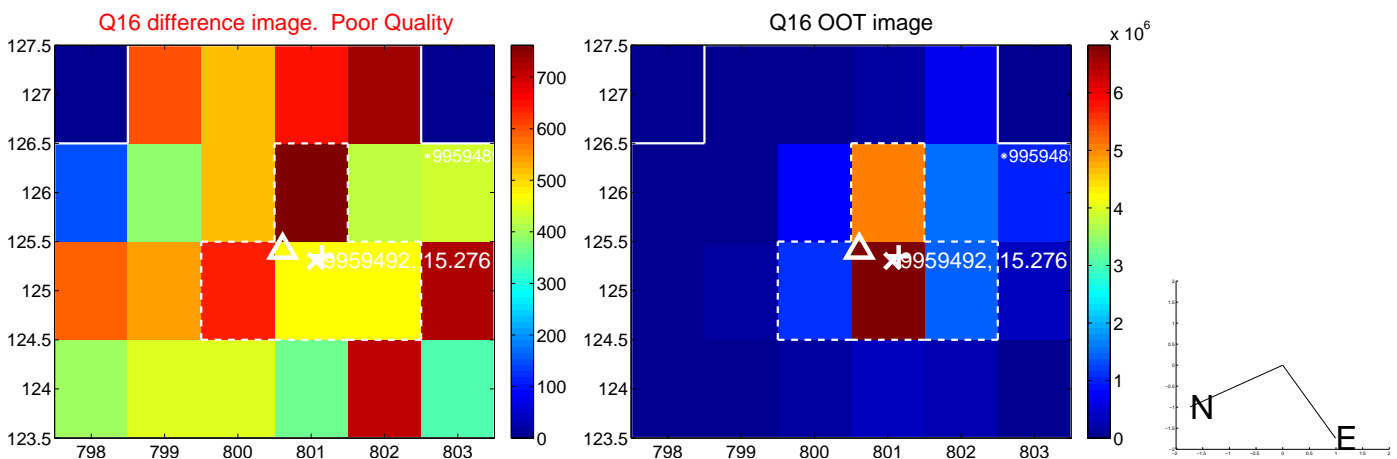
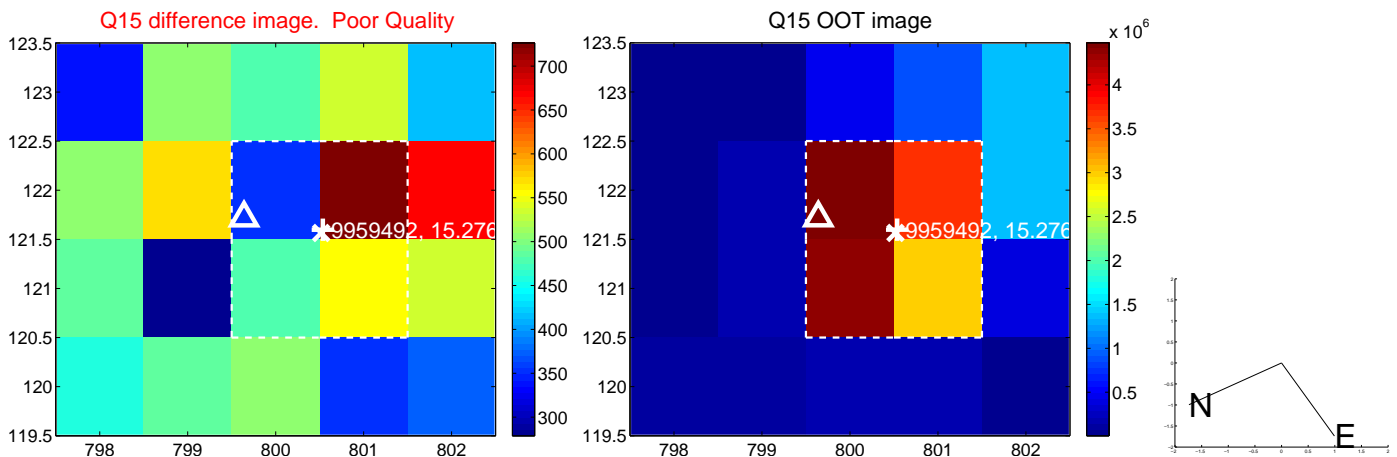
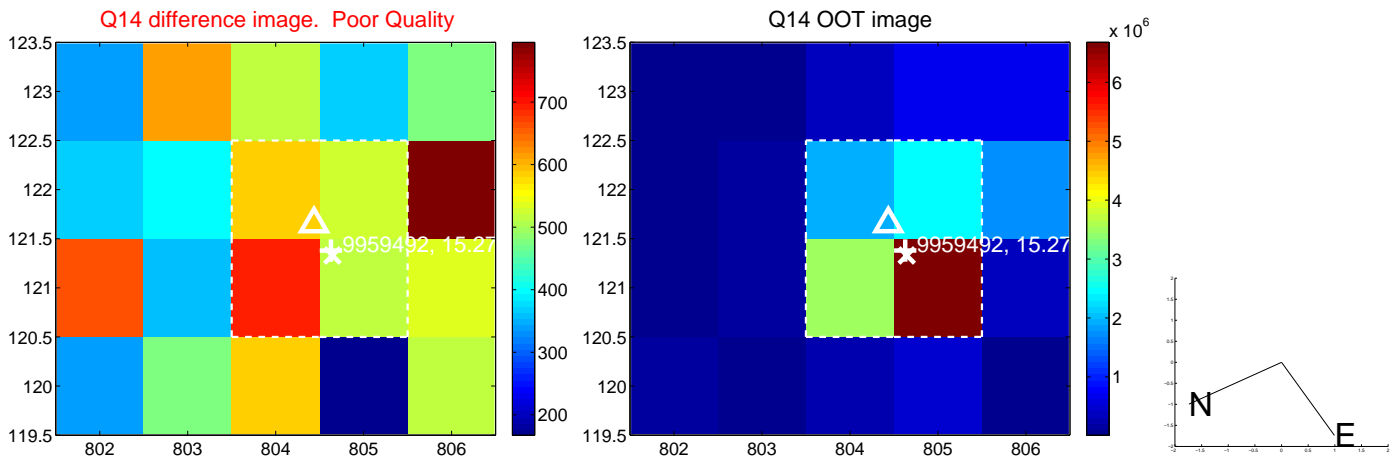
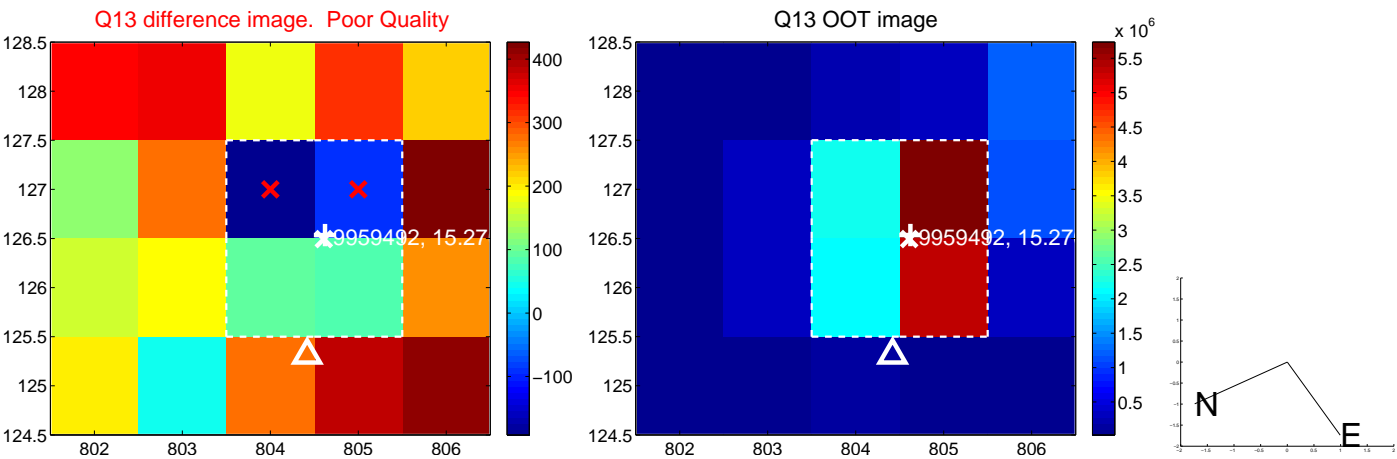
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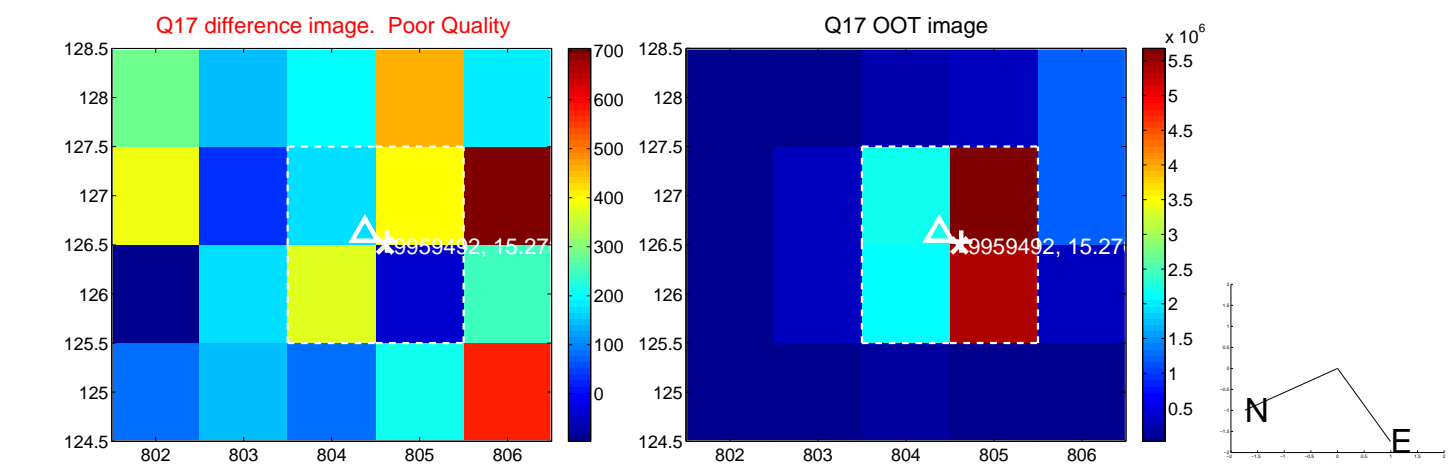
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



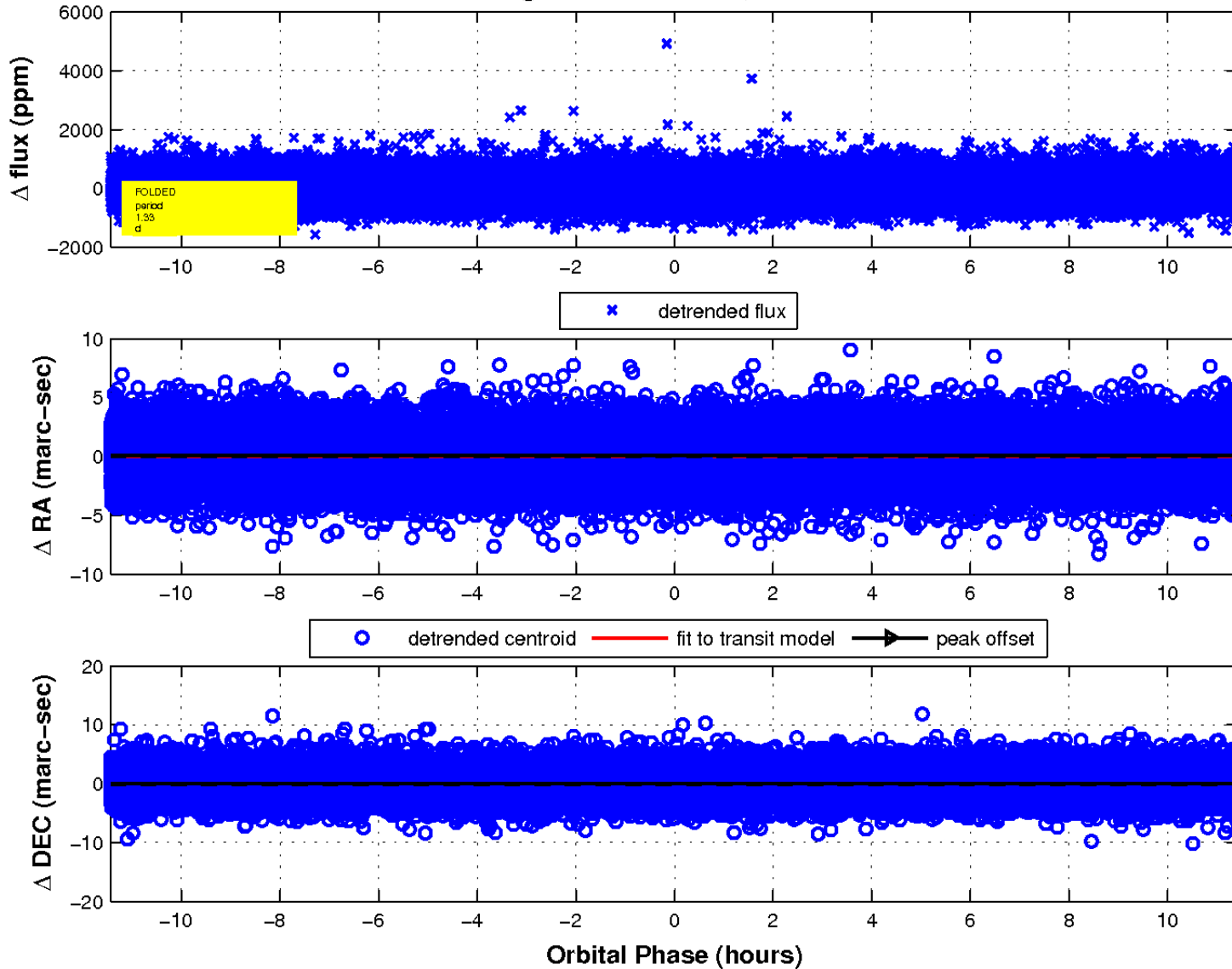
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

