

KIC 009468551

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})
009468551-01	OBS	2980.01	1.638639	132.292846	135.3	2.036	13.5	13.5	0.98	6119	1.34	1590.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009468551-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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.

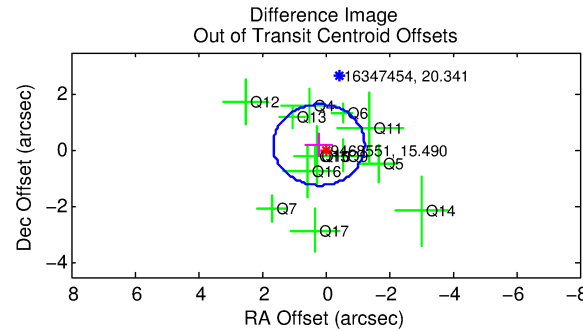
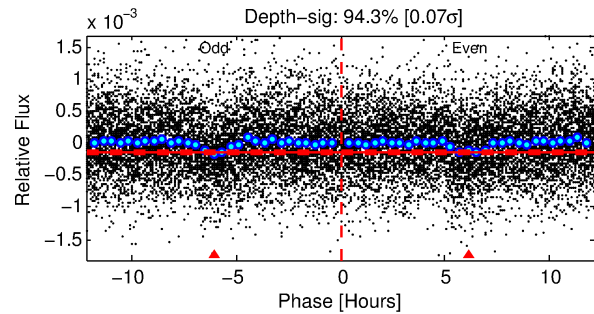
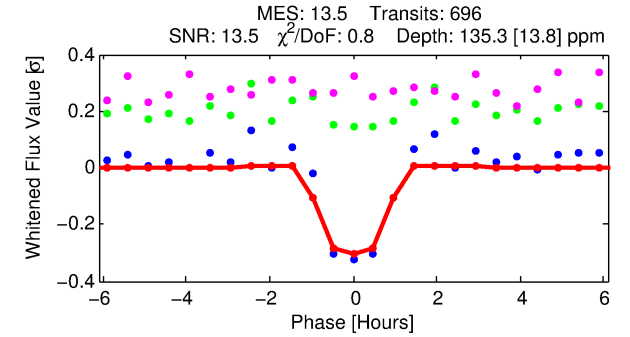
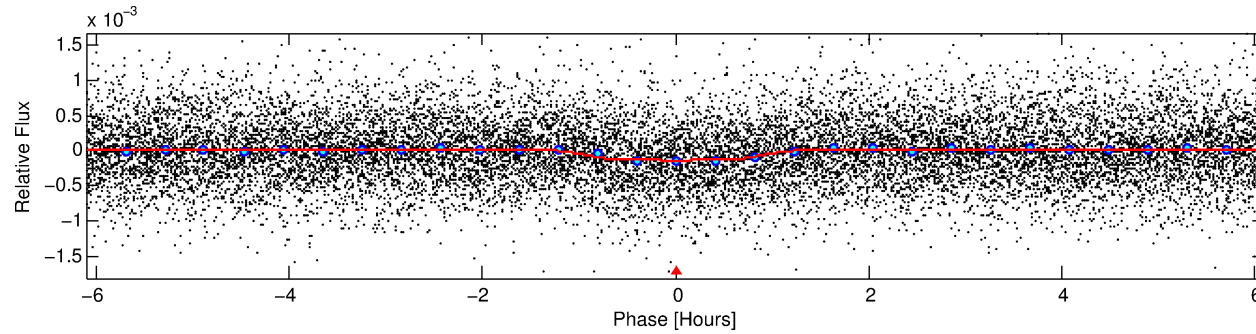
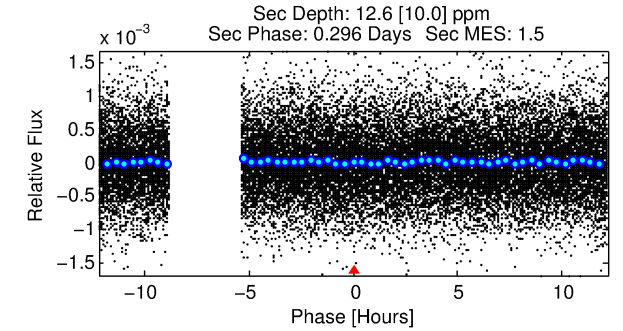
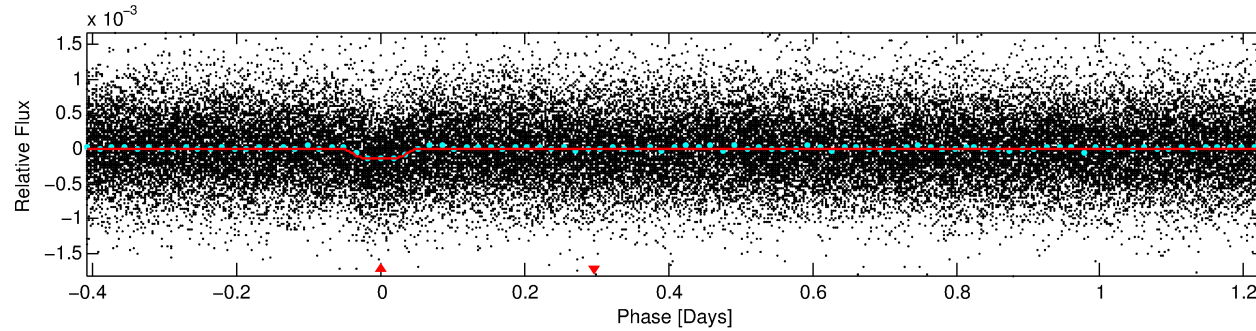
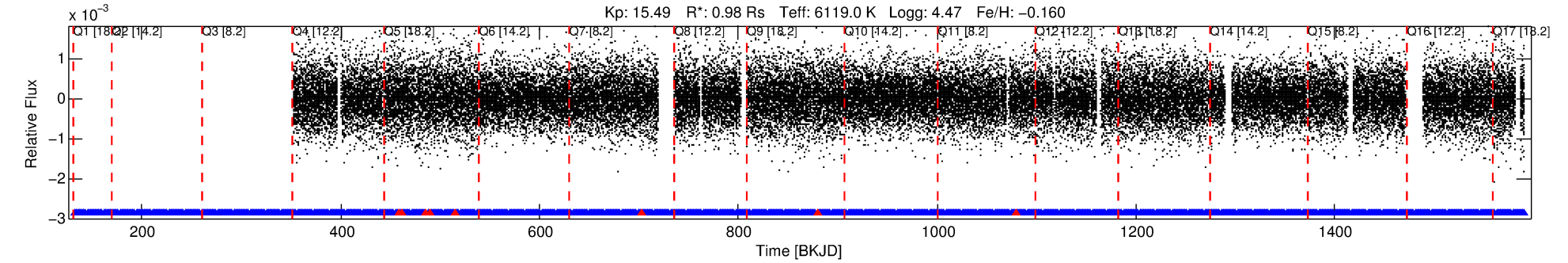
Ephemeris Match Information For 009468551-01

No Significant Match Found

DV One-Page Summary

KIC: 9468551 Candidate: 1 of 1 Period: 1.639 d

KOI: K02980.01 Corr: 0.947



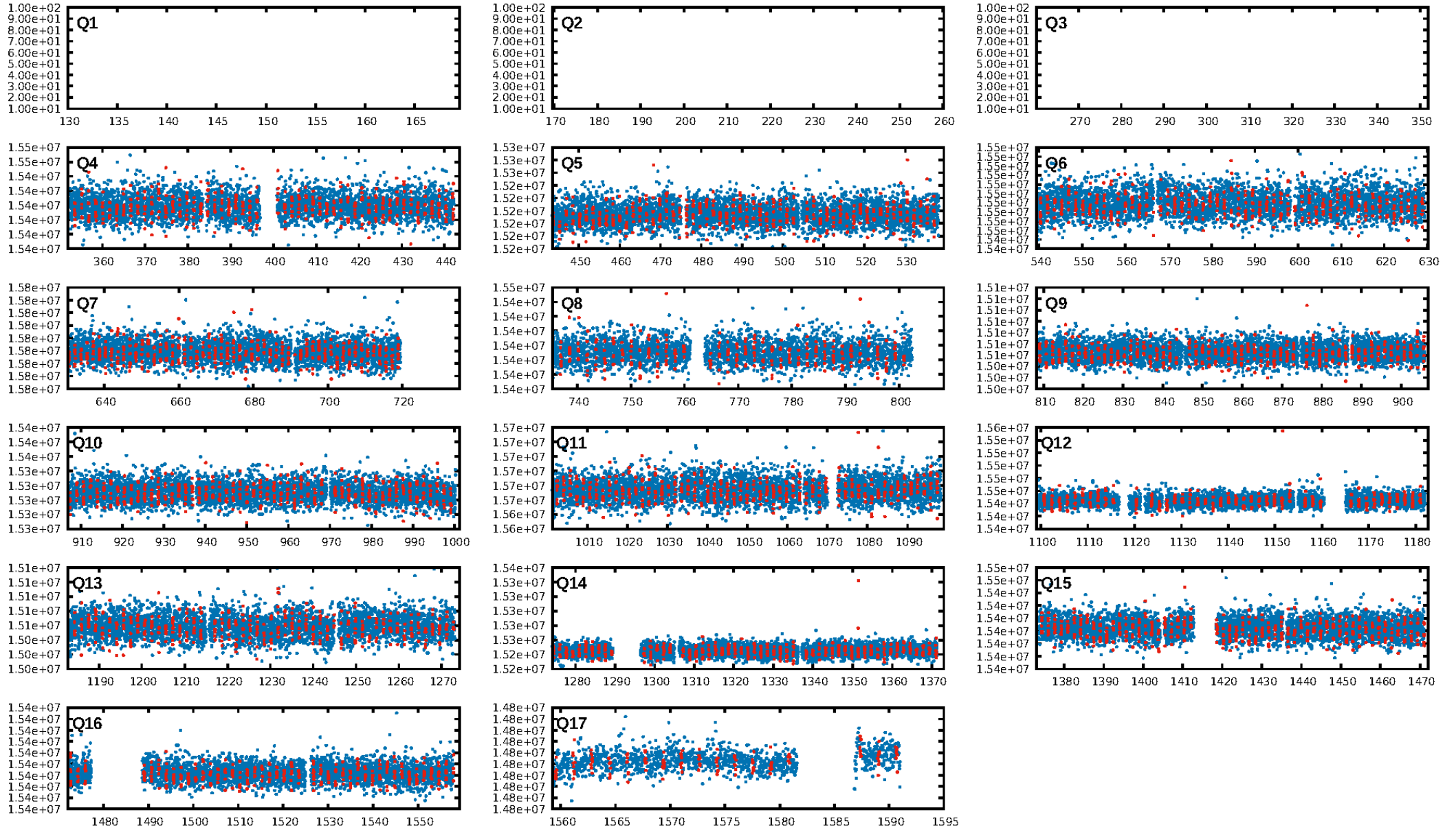
DV Fit Results:

Period = 1.63864 [0.00001] d
Epoch = 132.2928 [0.0023] BKJD
Rp/R* = 0.0125 [0.0065]
a/R* = 3.01 [7.32]
b = 0.90 [0.59]
Seff = 1590.08 [688.79]
Teff = 1610 [174] K
Rp = 1.34 [0.82] Re
a = 0.0276 [0.0076] AU
Ag = 2.92 [3.97] [0.48σ]
Teffp = 3253 [1063] K [1.53σ]

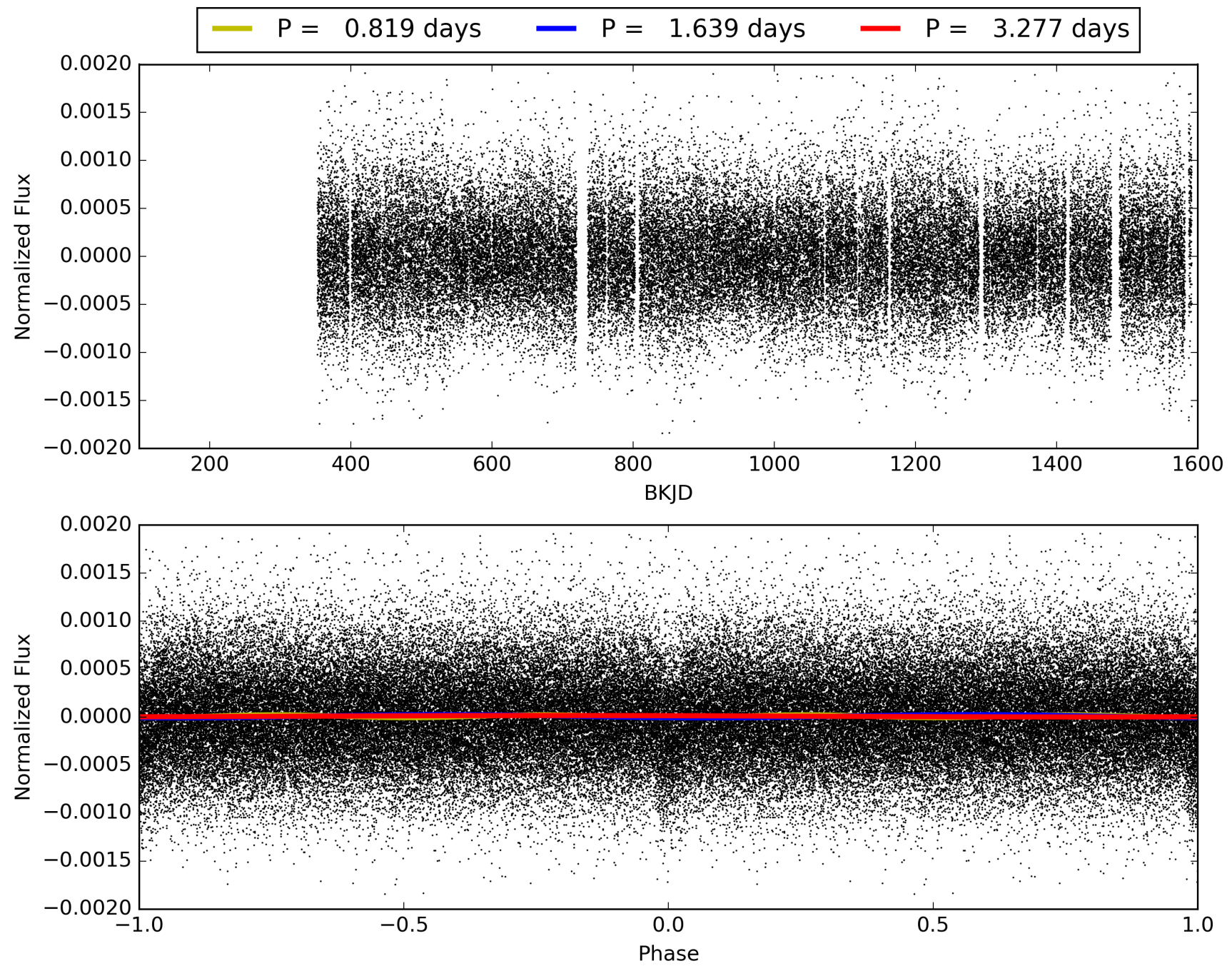
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.24e-41
RollingBand-fgt: 0.99 [671/679]
GhostDiagnostic-chr: 2.265
Centroid-sig: 13.6%
Centroid-so: 1.455 arcsec [1.40σ]
OotOffset-rm: 0.289 arcsec [0.60σ]
KicOffset-rm: 0.329 arcsec [0.70σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 0.77 [10/13]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 009468551-01, PDC Light Curves

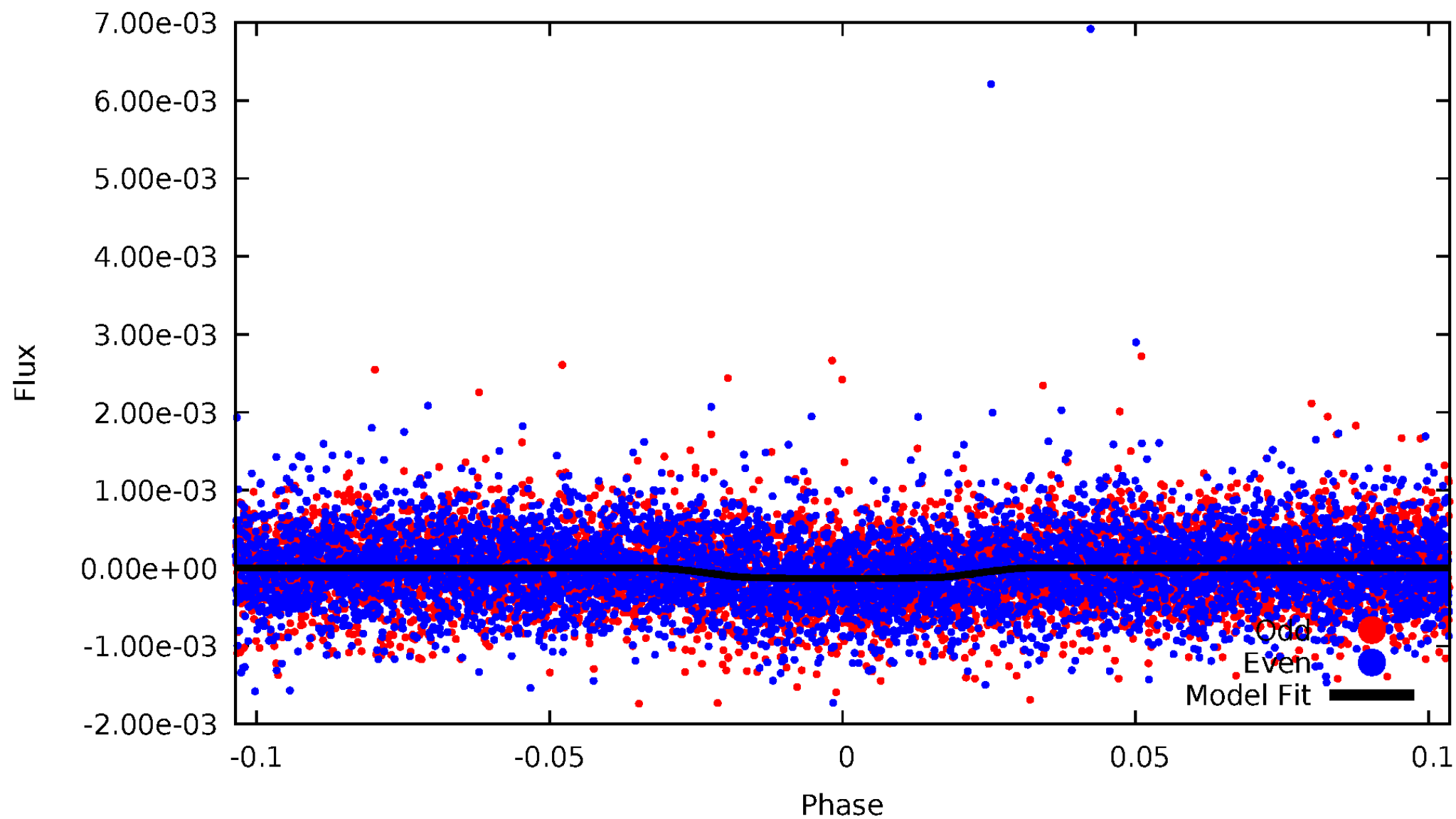


TCE 009468551-01



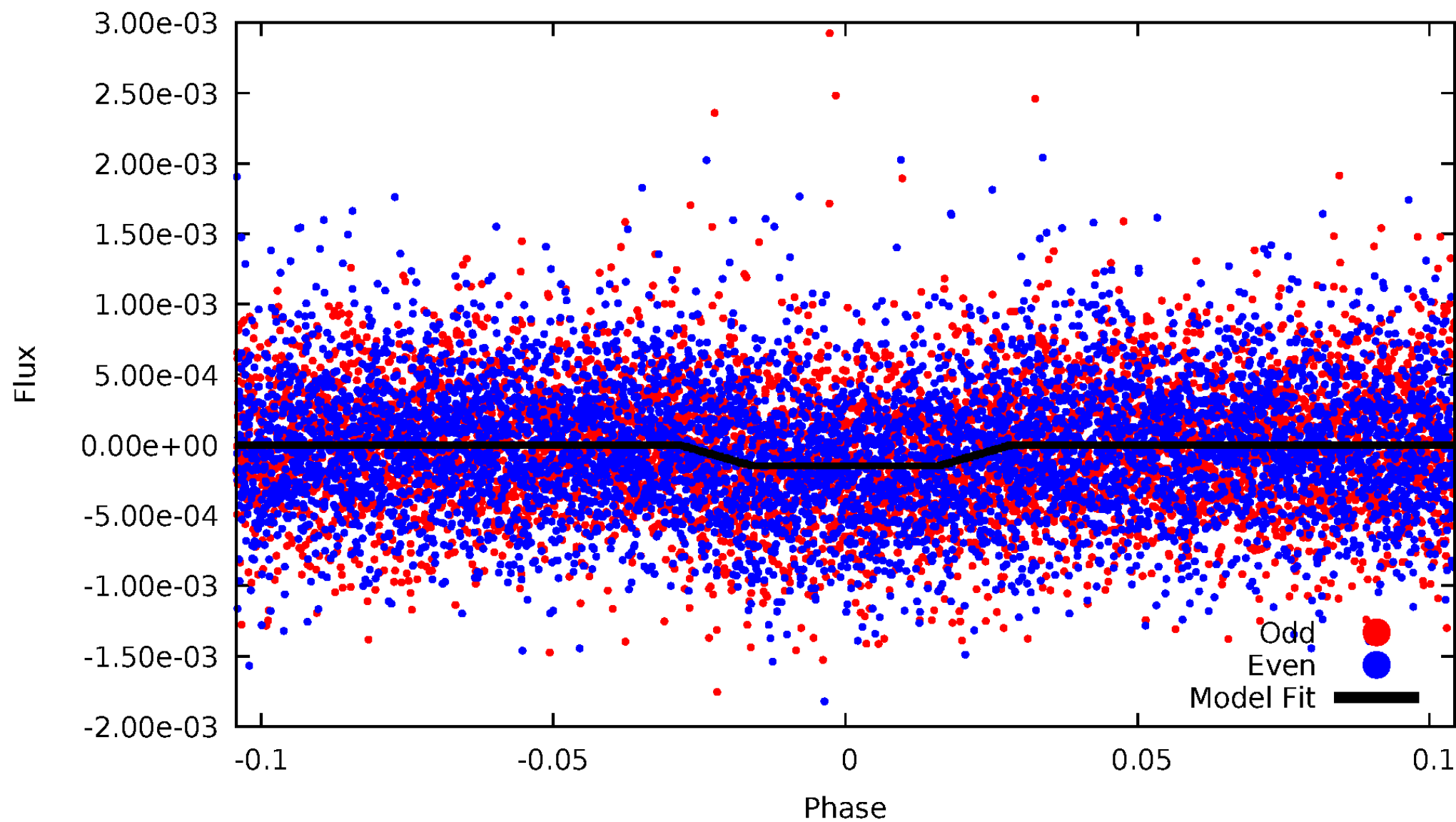
DV Odd/Even

TCE 009468551-01



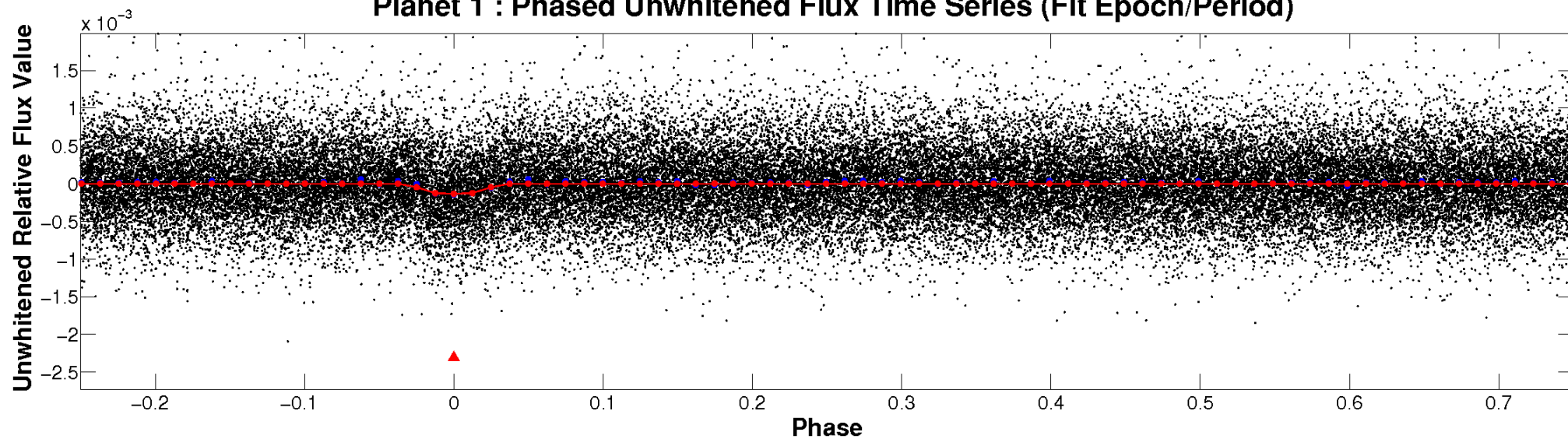
ALT Odd/Even

TCE 009468551-01

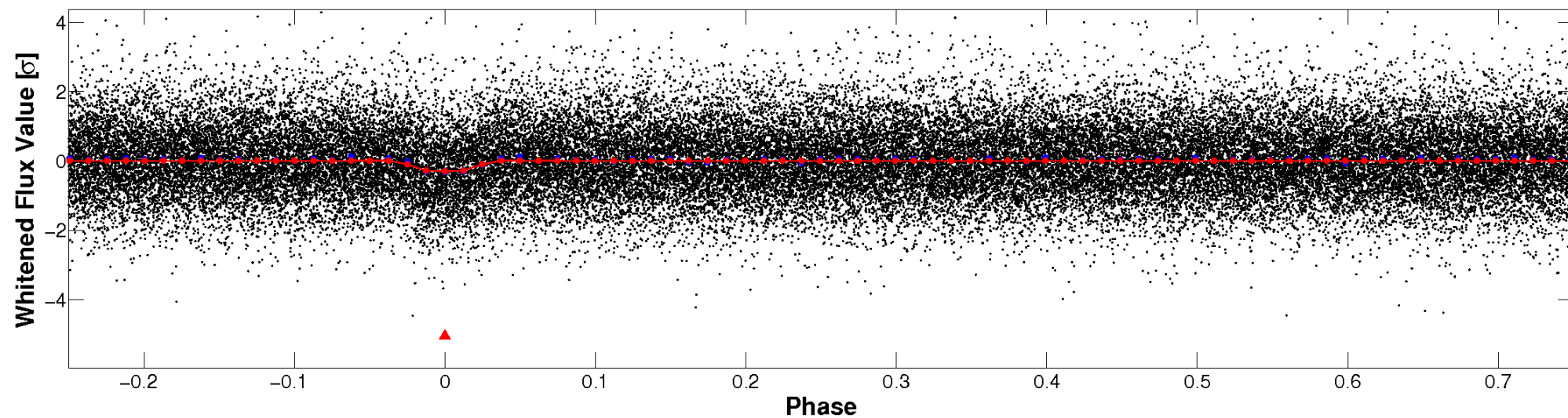


Non-Whitened Vs. Whitened Light Curve

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

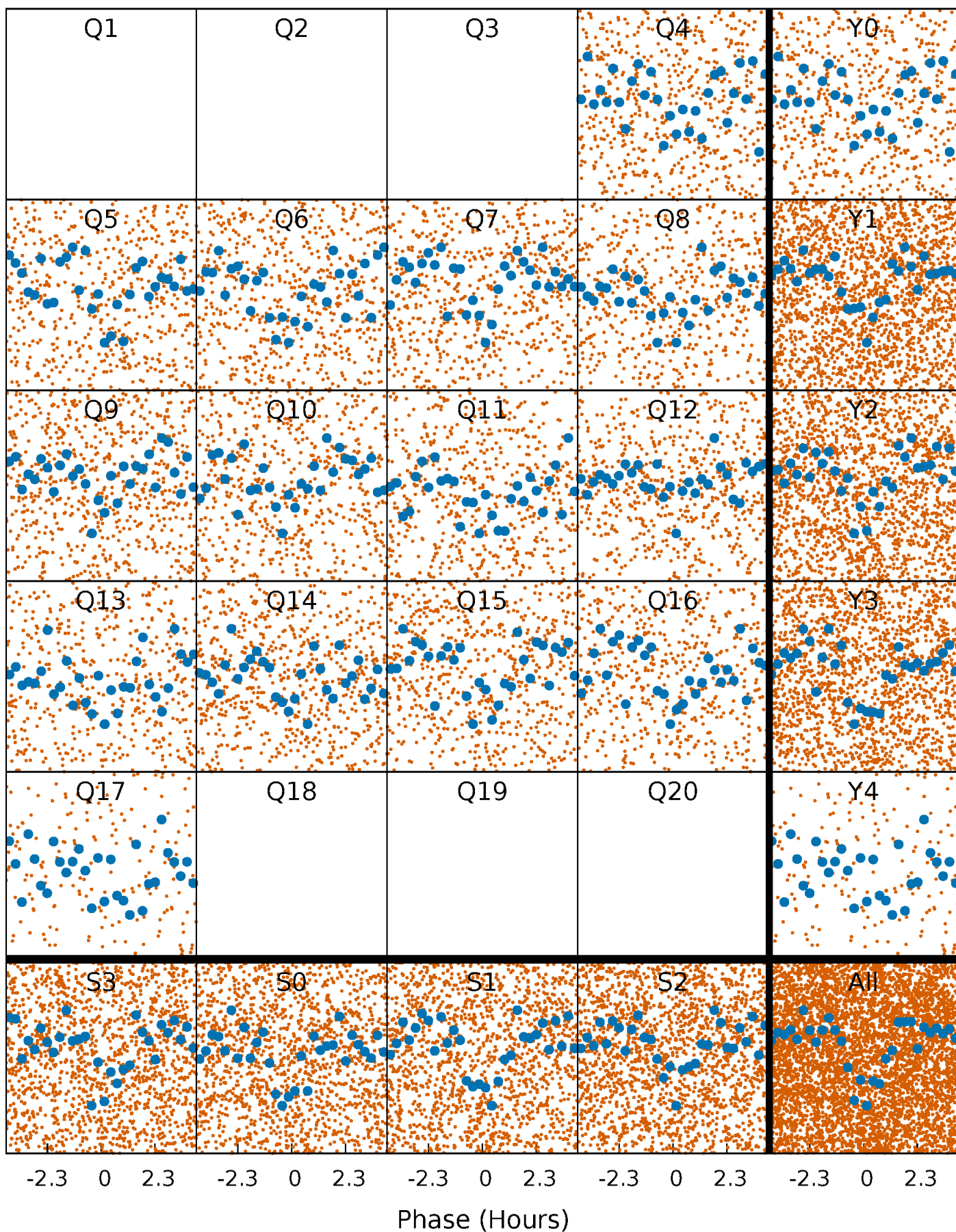


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



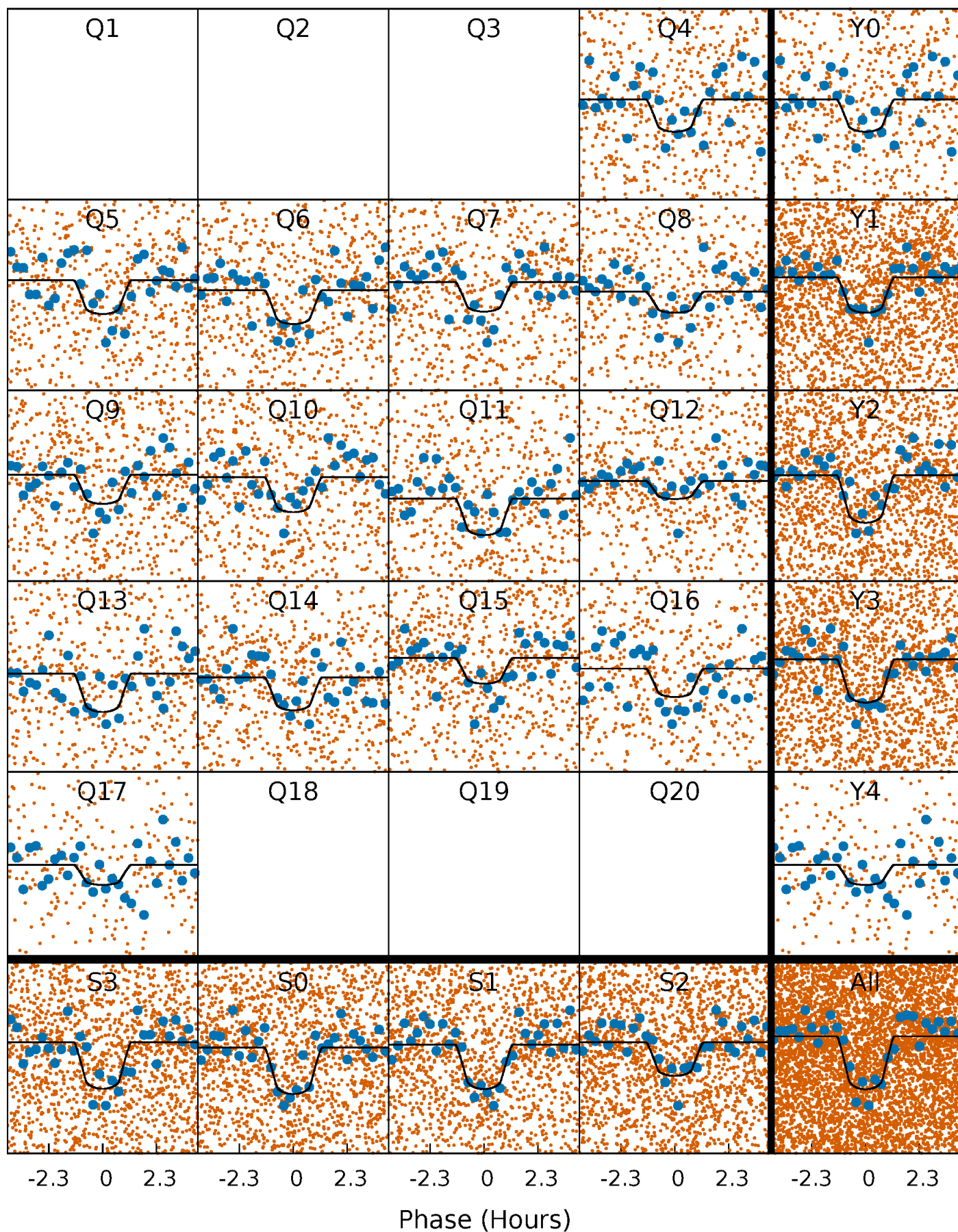
PDC Quarter-Phased Transit Curves

TCE 009468551-01 P= 1.638639 Days $T_0=132.292846$ (BKJD)



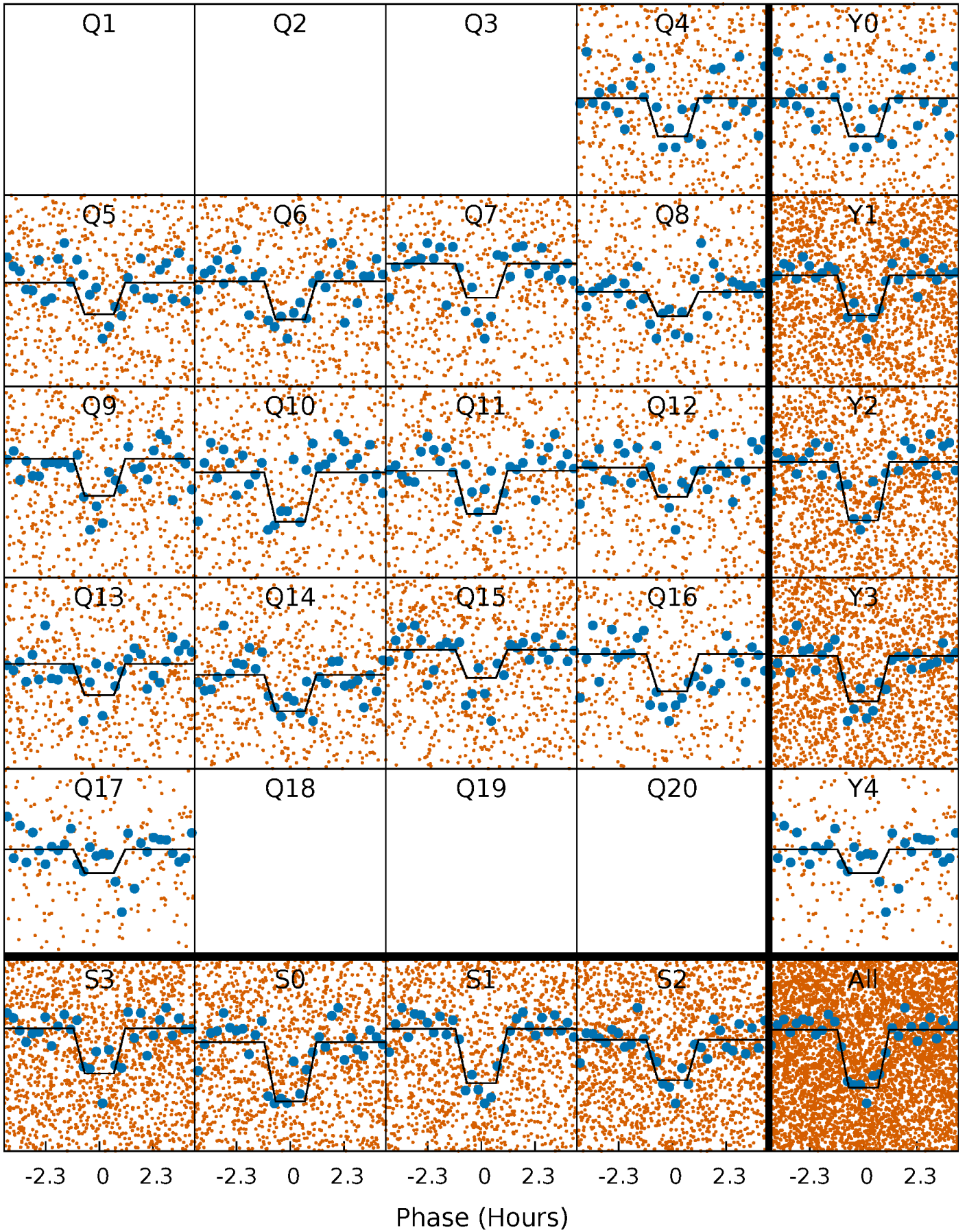
DV Quarter-Phased Transit Curves

TCE 009468551-01 P= 1.638639 Days $T_0=132.292846$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

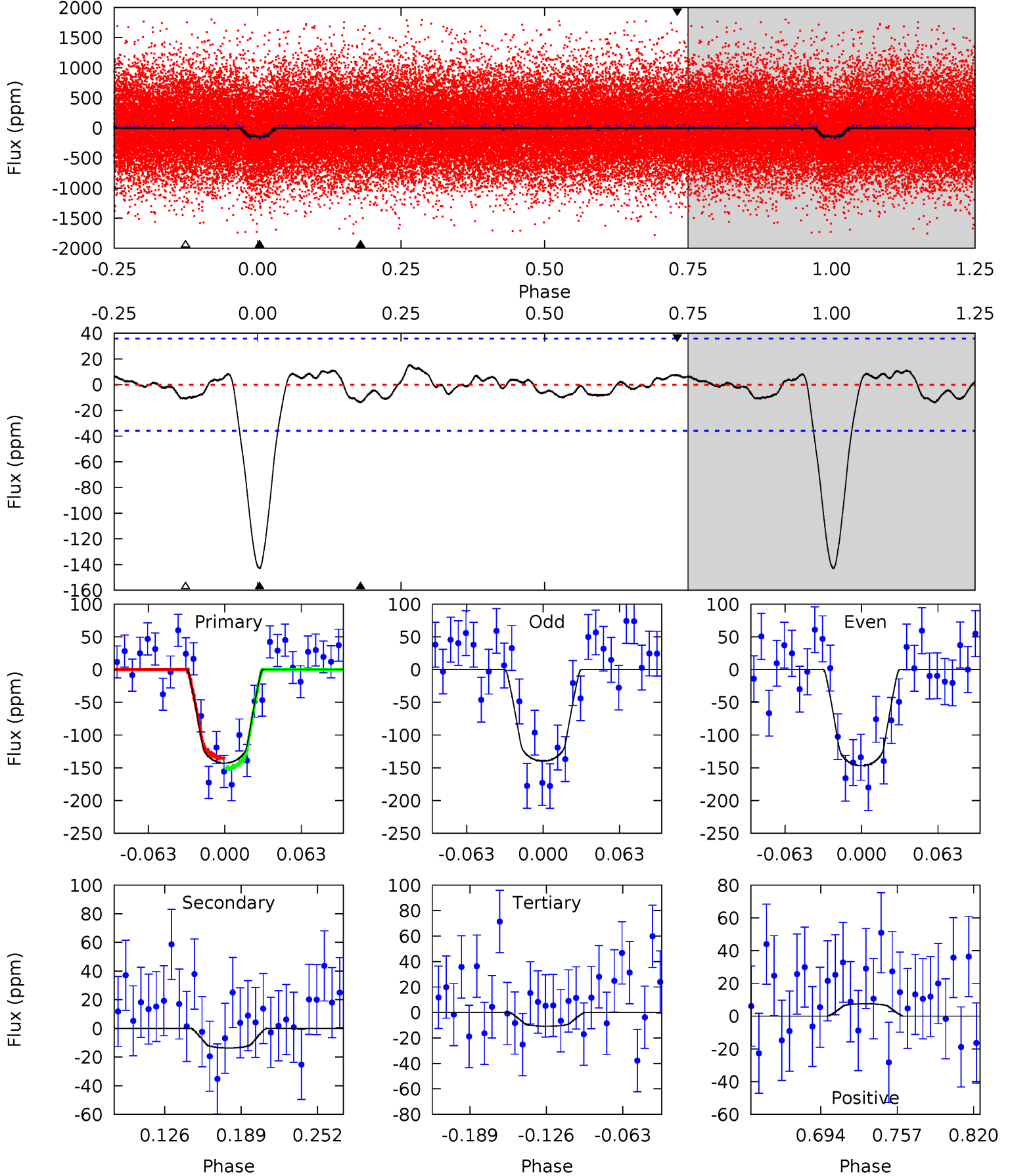
TCE 009468551-01 P= 1.638647 Days $T_0=132.292397$ (BKJD)



DV Model-Shift Uniqueness Test

009468551-01, P = 1.638639 Days, E = 132.292846 Days

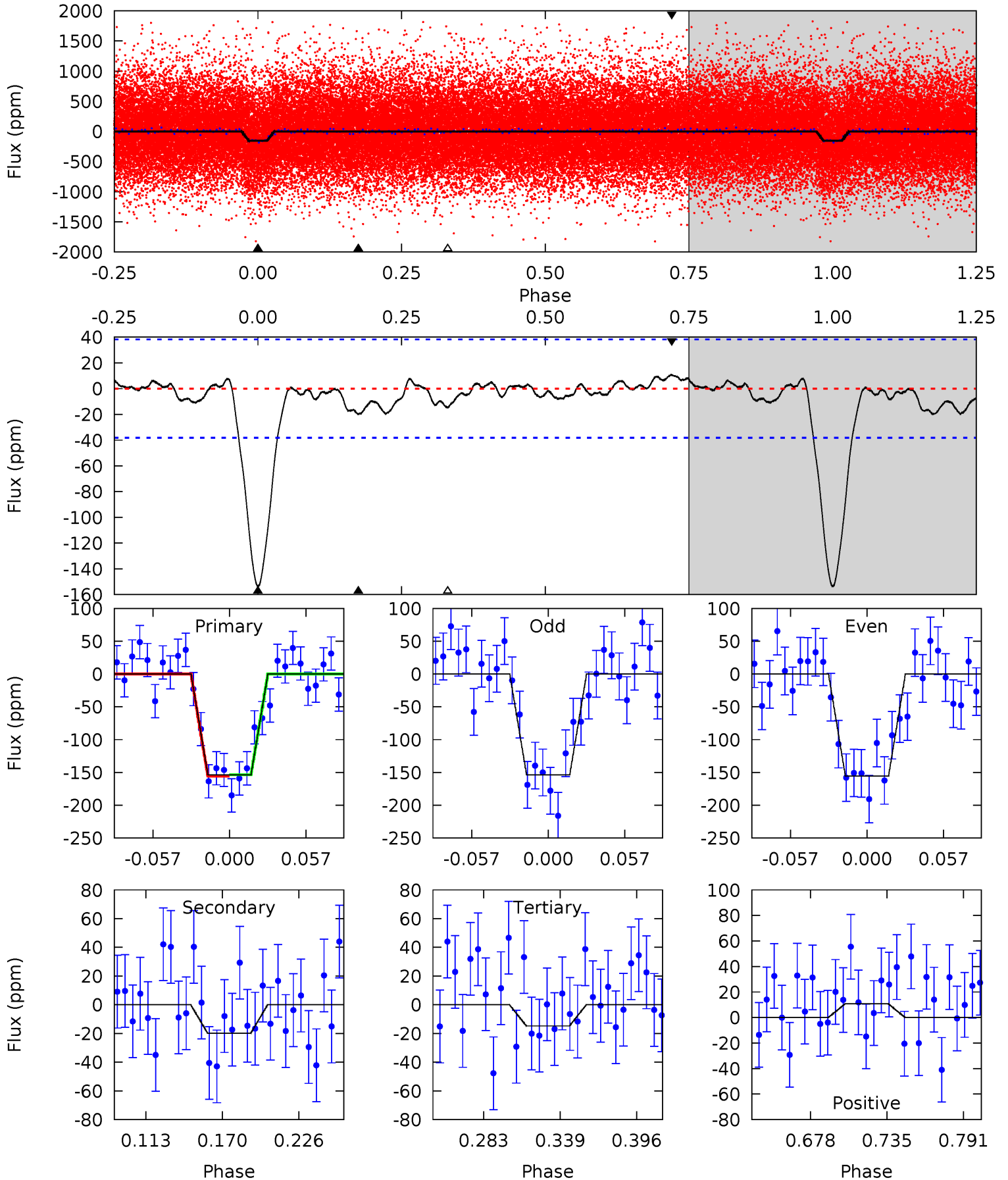
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	1.78	1.40	0.98	4.66	1.86	0.76	17.2	17.6	0.38	0.80	0.45	0.97	0.10	1.03



Alt Model-Shift Uniqueness Test

009468551-01, P = 1.638647 Days, E = 132.292397 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	2.43	1.80	1.32	4.68	1.91	0.68	17.0	17.5	0.62	1.11	0.13	0.99	0.07	0.14



Stellar Parameters For KIC 009468551

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6119^{+211}_{-232}	$4.472^{+0.056}_{-0.224}$	$-0.160^{+0.300}_{-0.300}$	$0.981^{+0.317}_{-0.106}$	$1.039^{+0.140}_{-0.140}$	$1.550^{+0.465}_{-0.849}$
	+3%/-4%	+1%/-5%	+188%/-188%	+32%/-11%	+13%/-13%	+30%/-55%
Source	KIC0	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 009468551-01 / KOI 2980.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-14 ± 8	$1.43^{+0.77}_{-0.74}$	2307^{+193}_{-128}	3636^{+1153}_{-783}	$2.753^{+8.235}_{-2.005}$
Alt.	-20 ± 8	$1.42^{+0.77}_{-0.66}$	2296^{+173}_{-122}	3922^{+1131}_{-715}	$3.878^{+10.821}_{-2.554}$

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

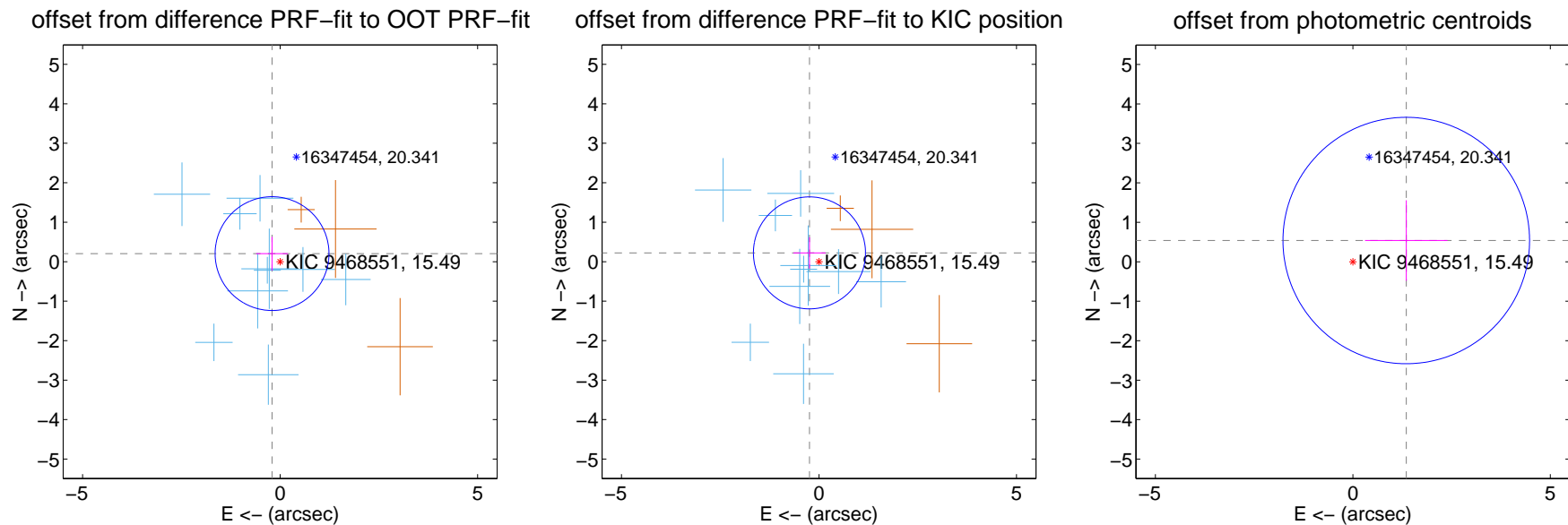
DV Centroid Data

Supplemental centroid analysis for 009468551-01. Kepler magnitude: 15.49. Transit SNR 13.45

There are 10 quarters with good PRF difference image offsets

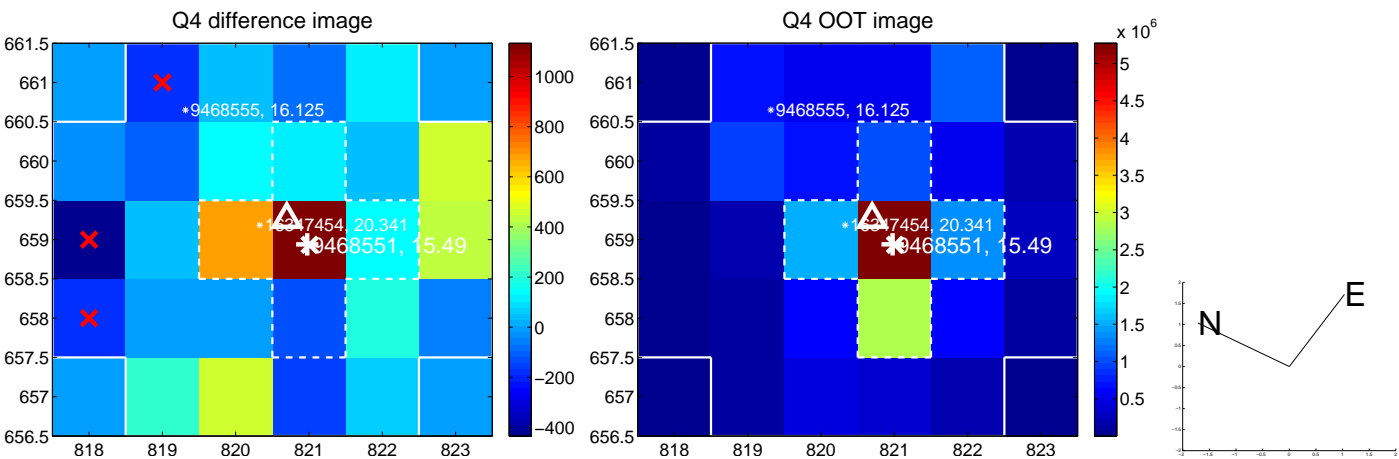
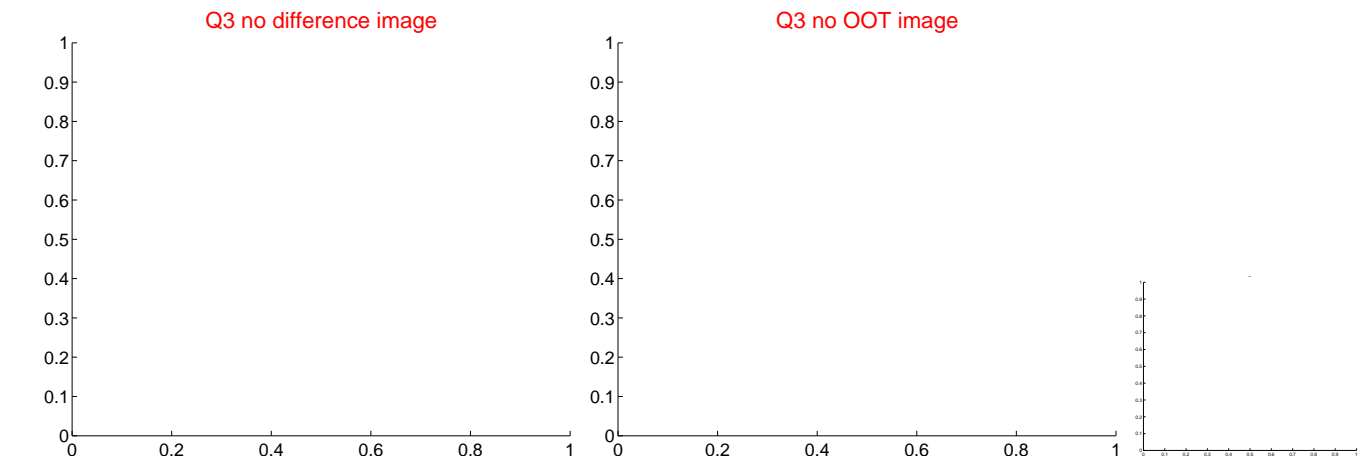
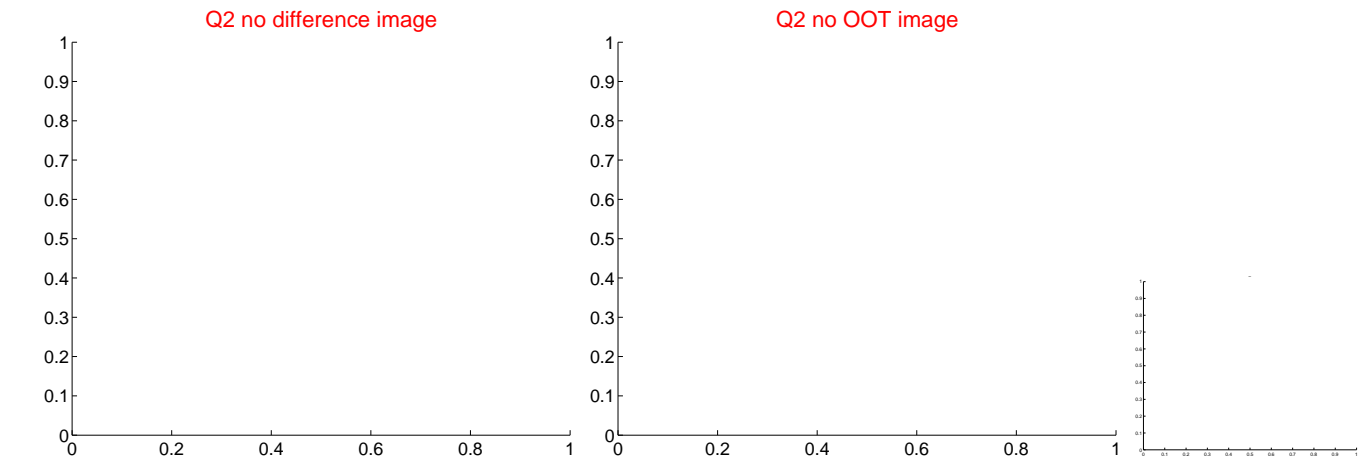
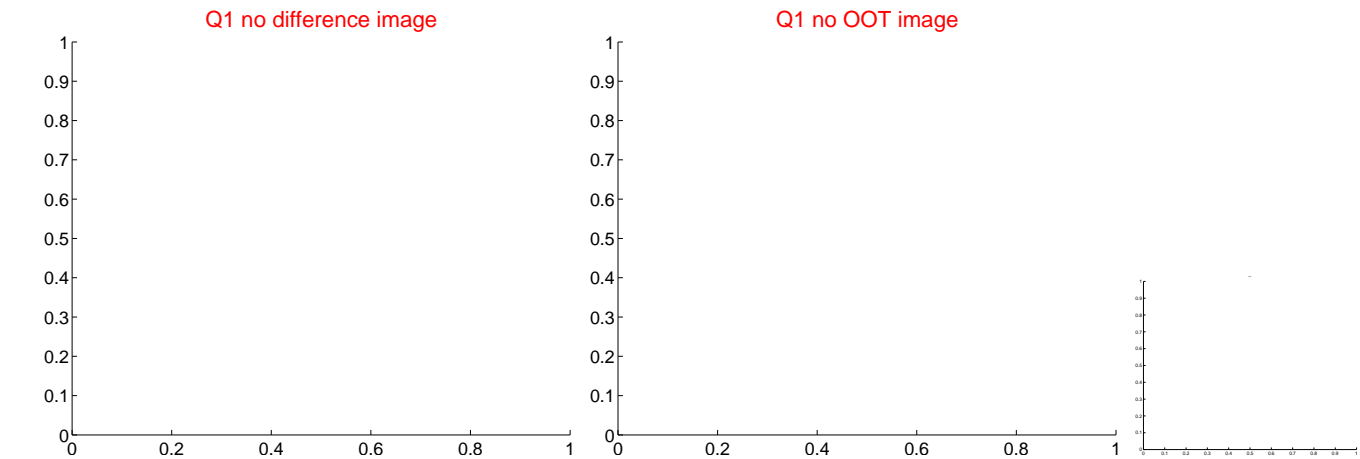
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.289 ± 0.480	0.60	0.204 ± 0.404	0.205 ± 0.427
PRF-fit source offset from KIC position	0.329 ± 0.473	0.70	0.241 ± 0.408	0.223 ± 0.397
photometric centroid source offset	1.46 ± 1.04	1.40	-1.35 ± 1.04	0.54 ± 1.02

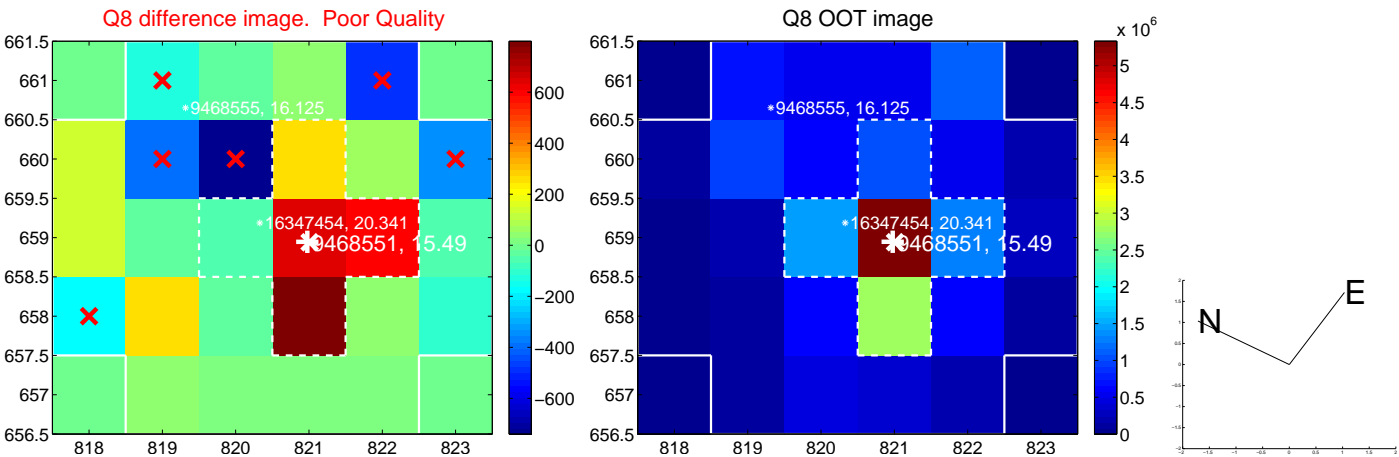
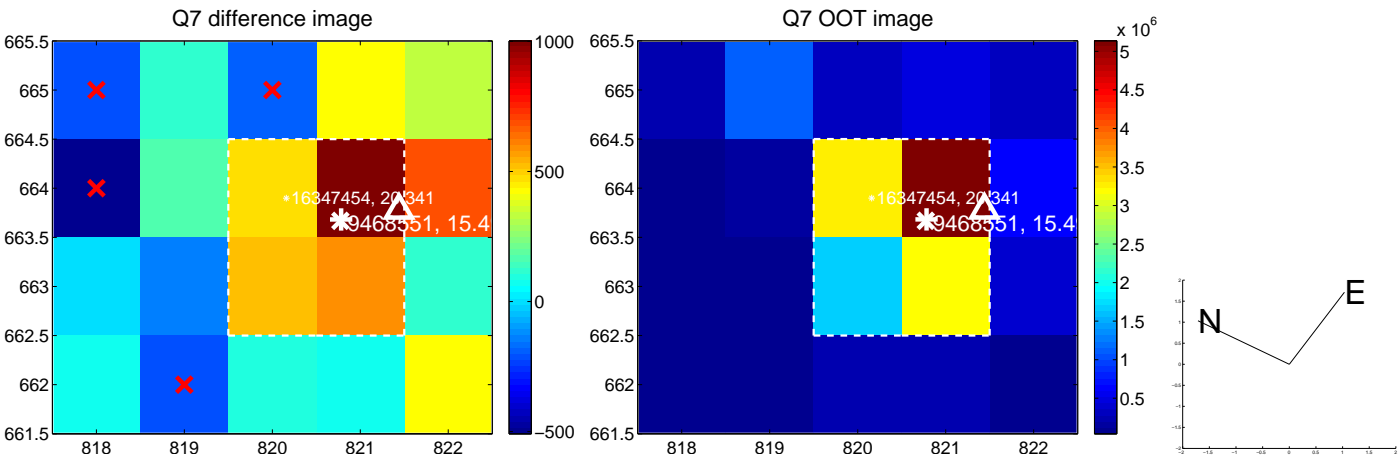
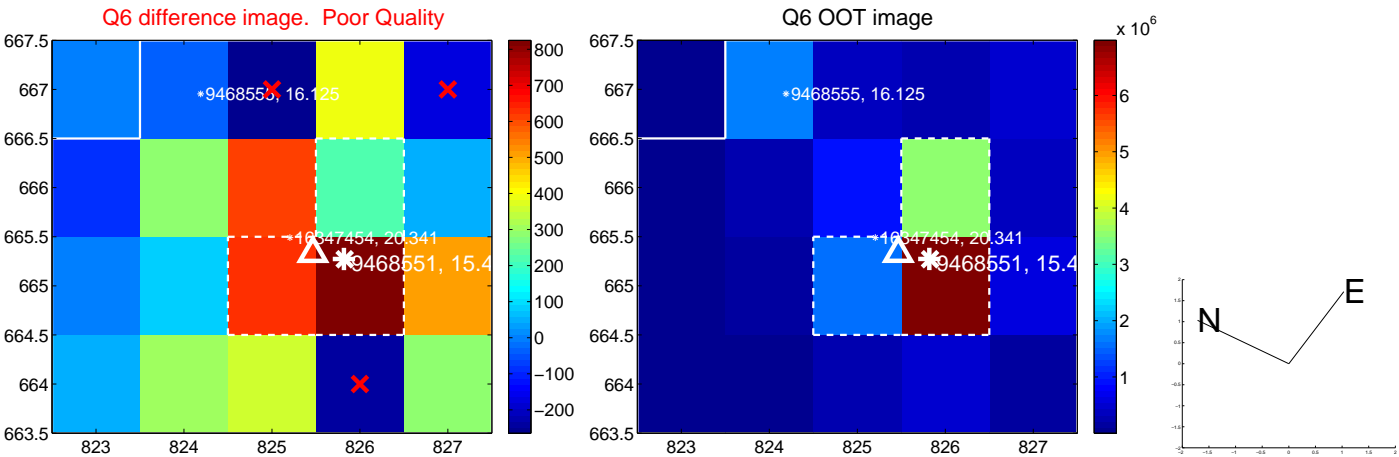
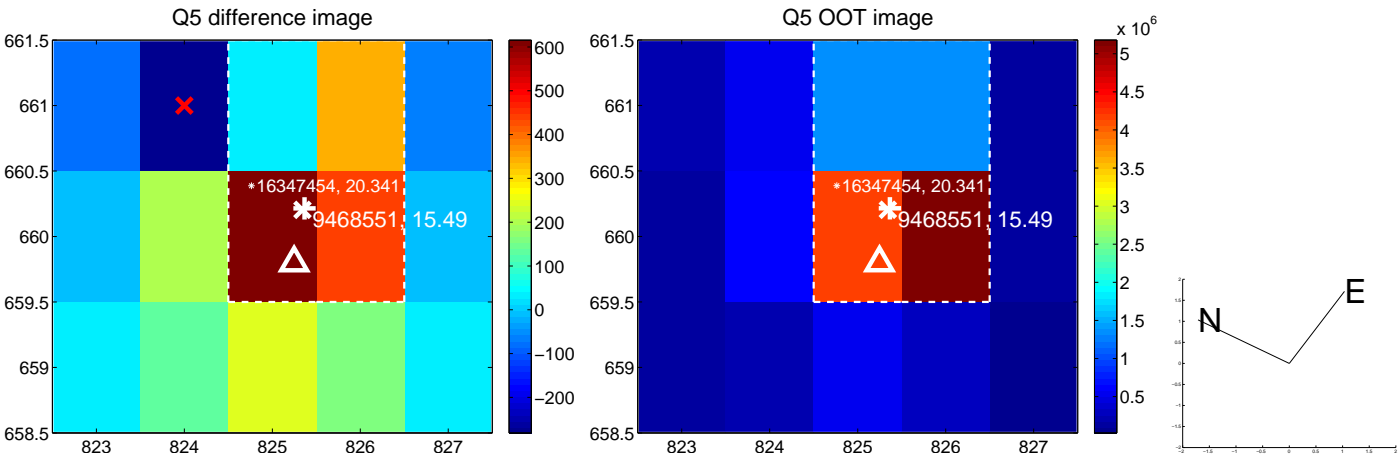


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

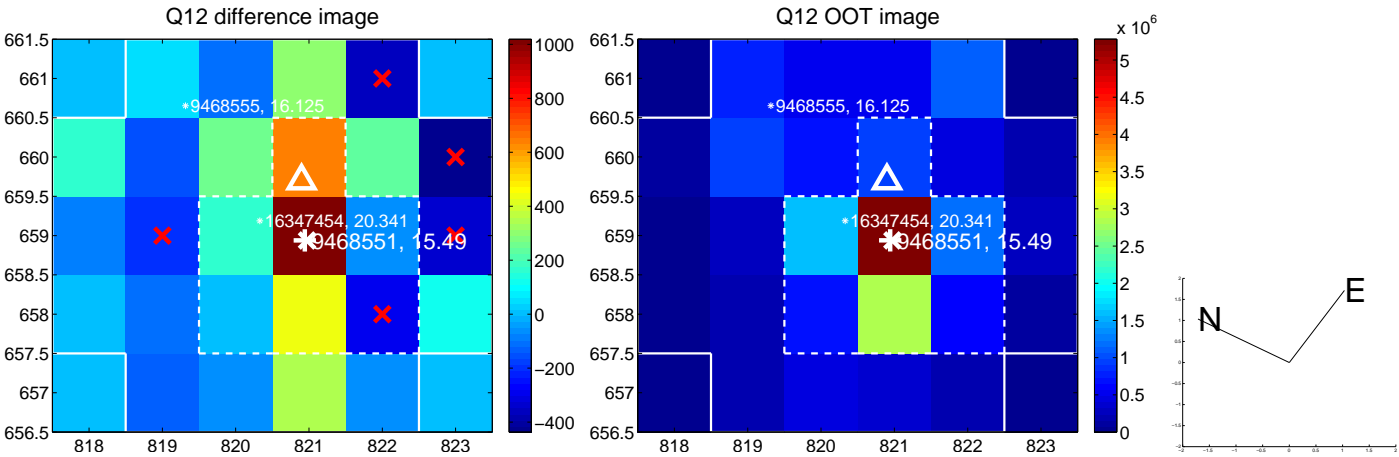
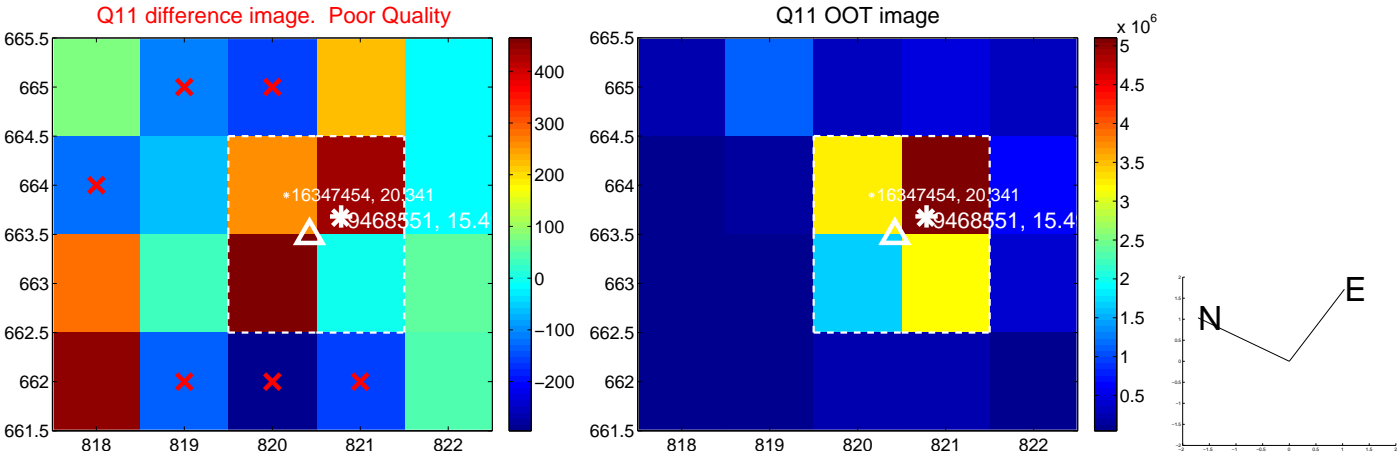
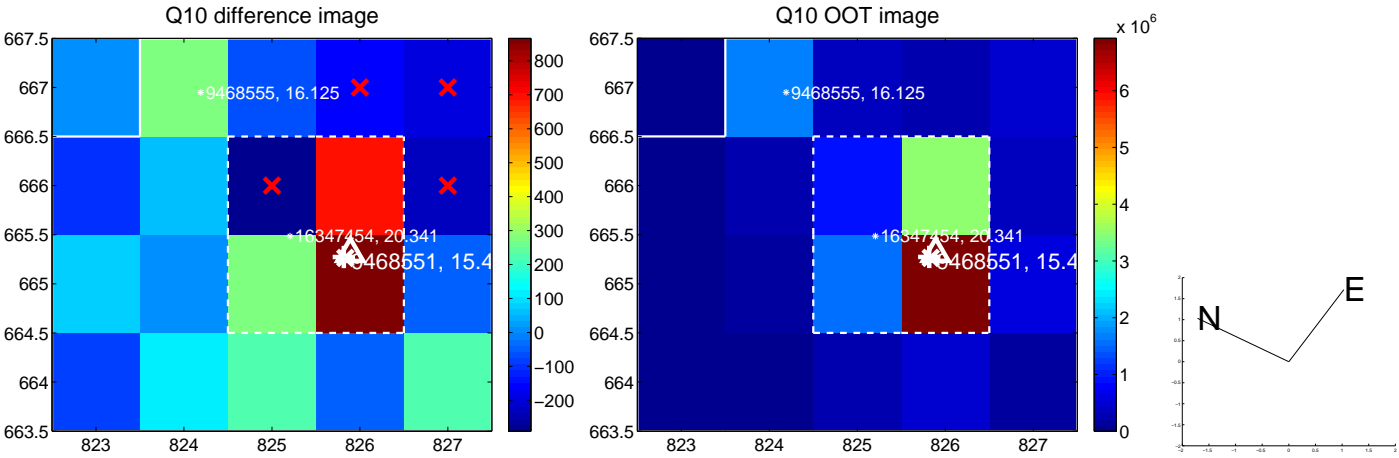
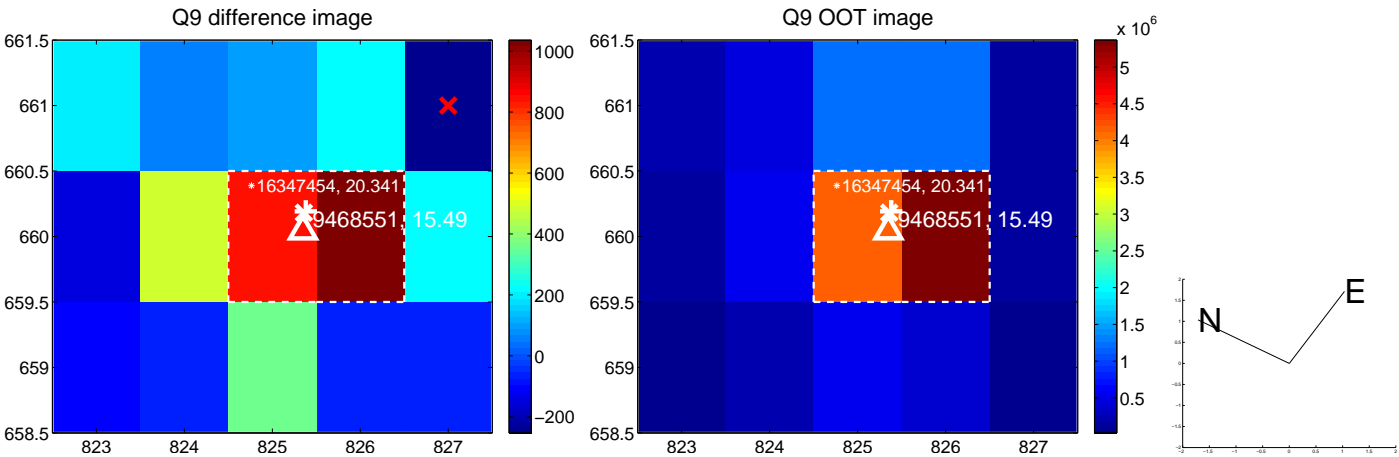
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



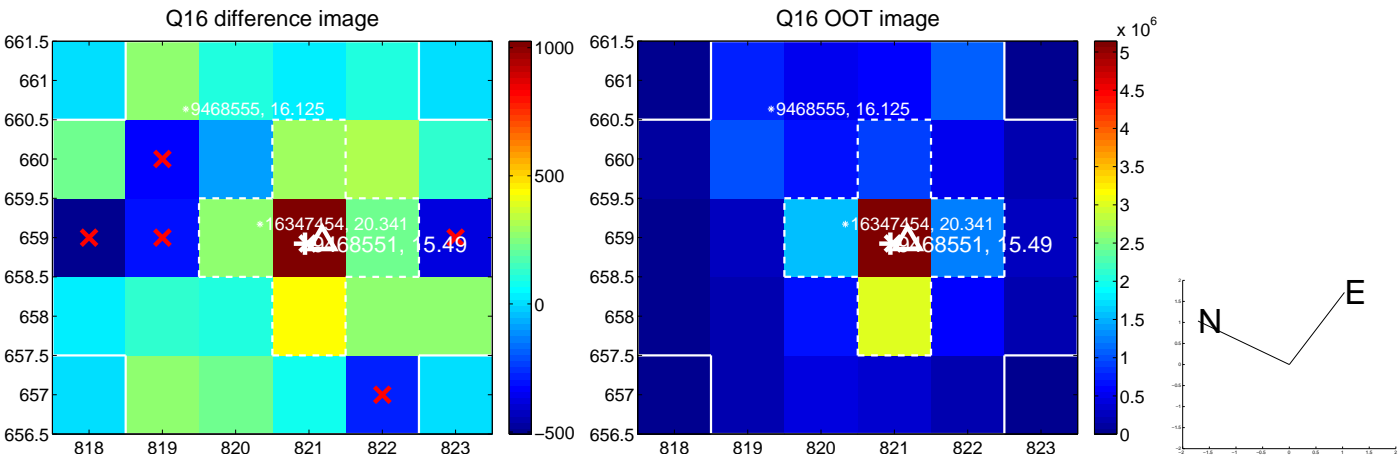
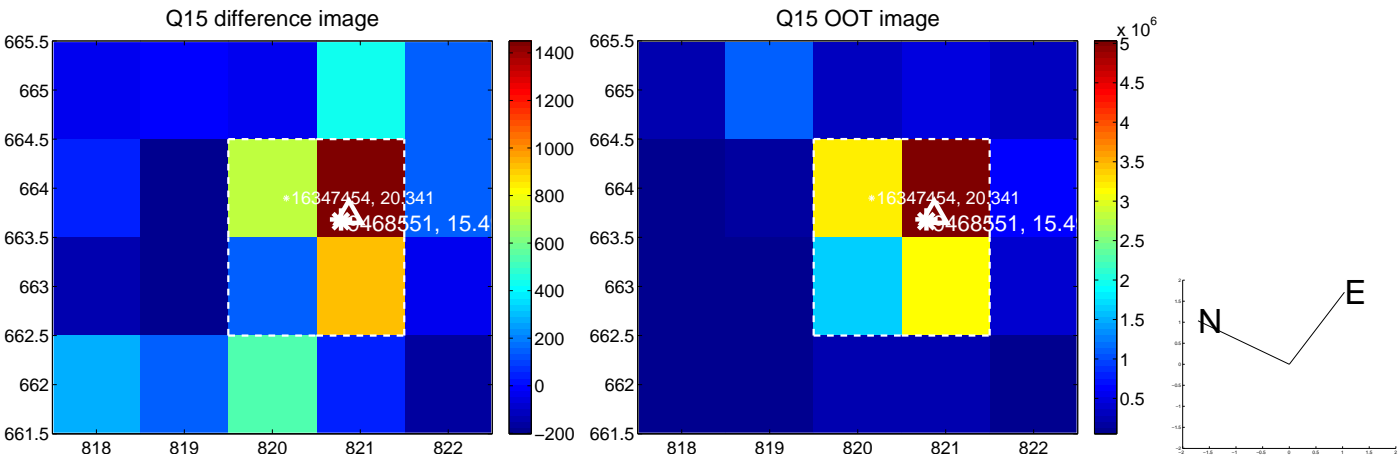
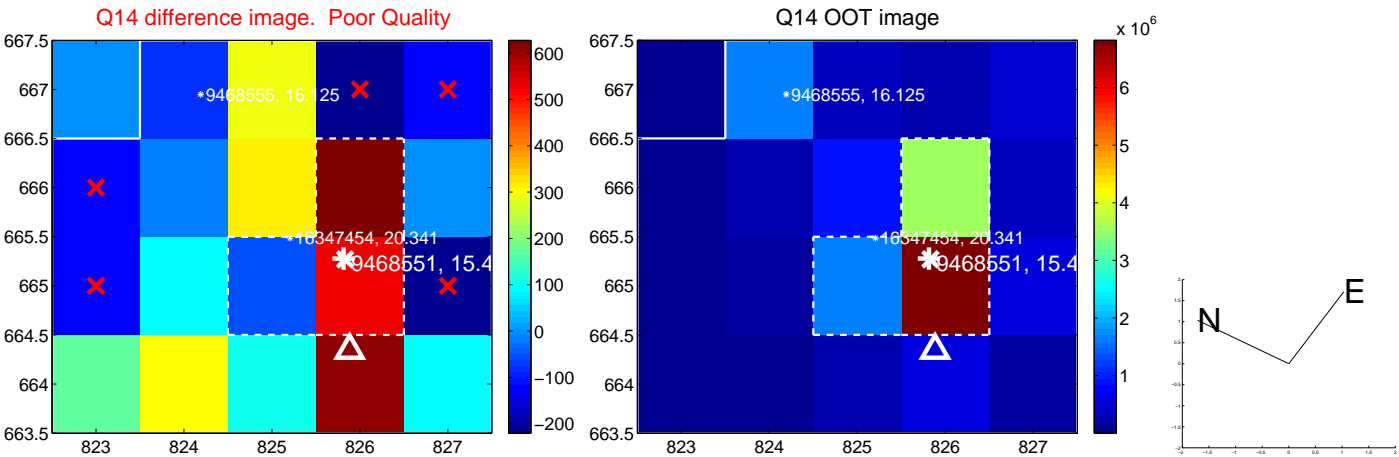
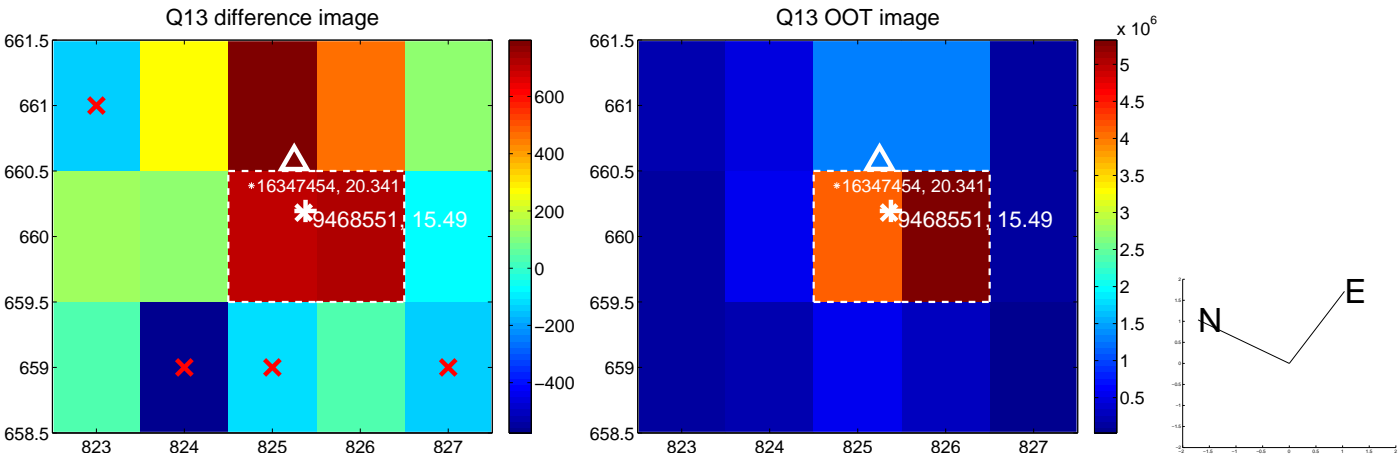
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



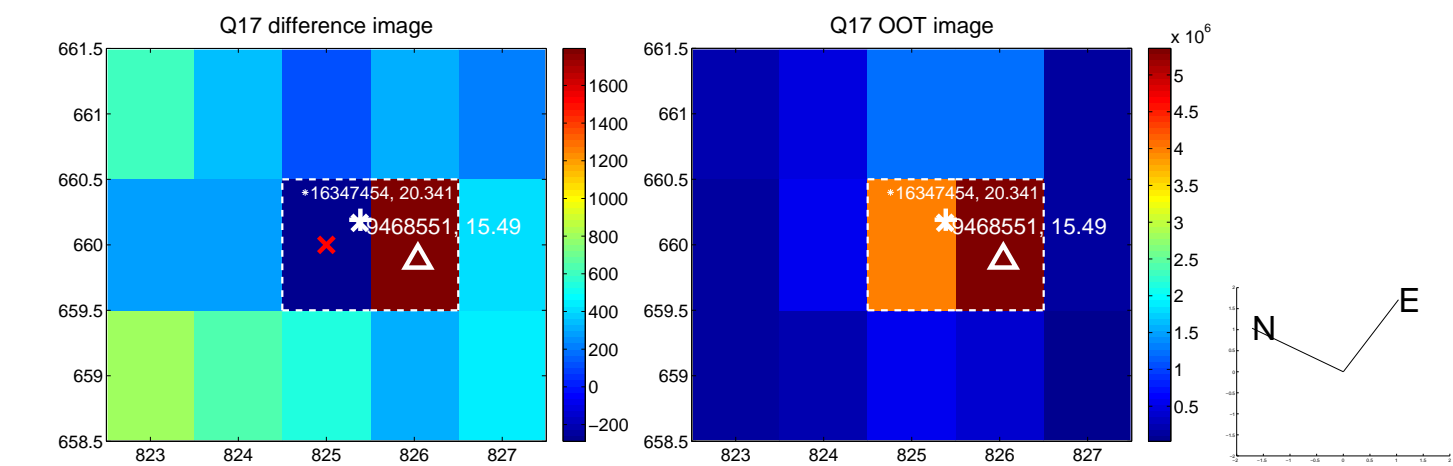
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



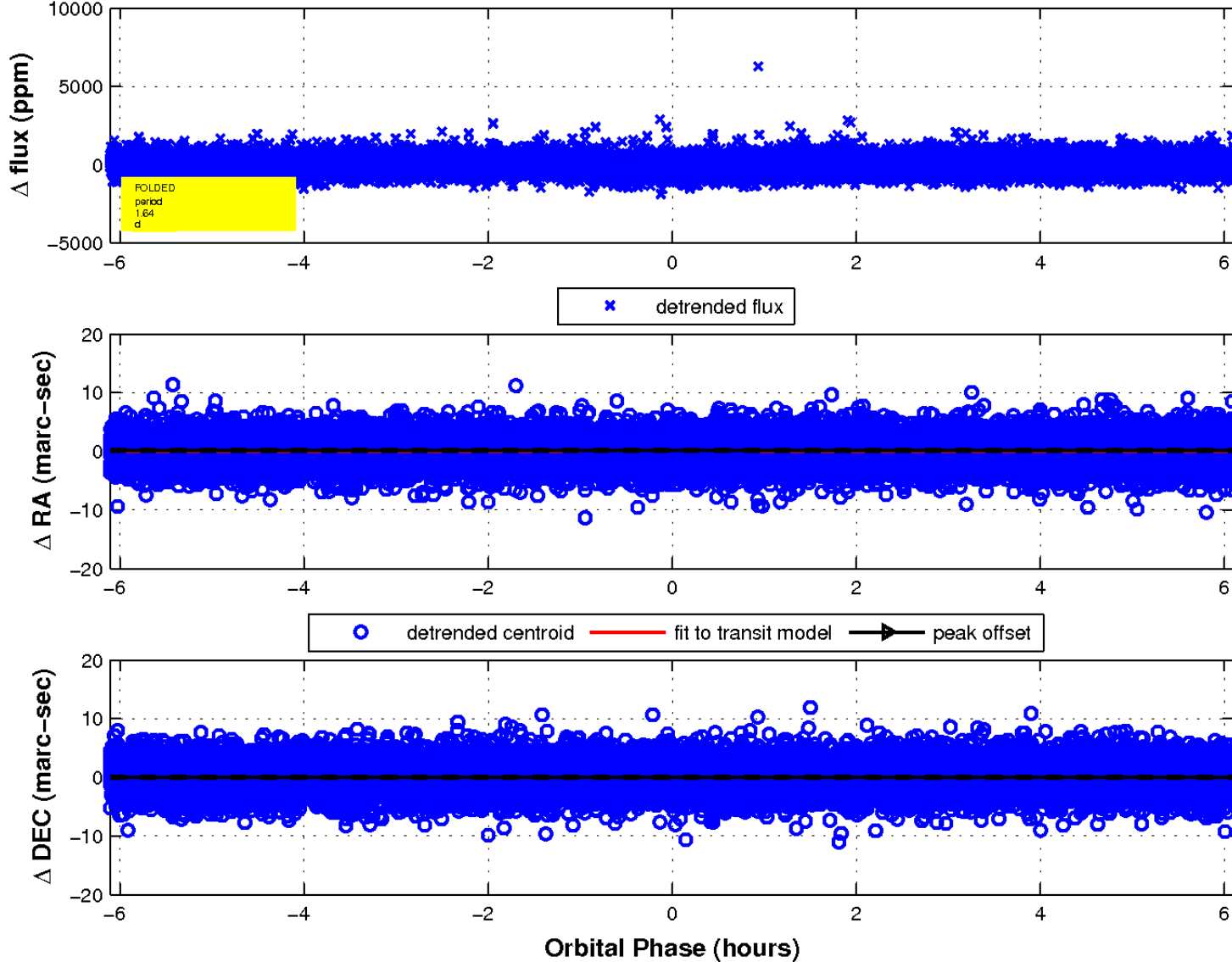
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

