

KIC 004736644

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})
004736644-01	OBS	3330.01	16.295181	144.803962	204.2	3.972	11.4	12.1	0.81	4915	1.41	25.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004736644-01	OBS	PC	0.99	0	0	0	0	CENT_KIC_POS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

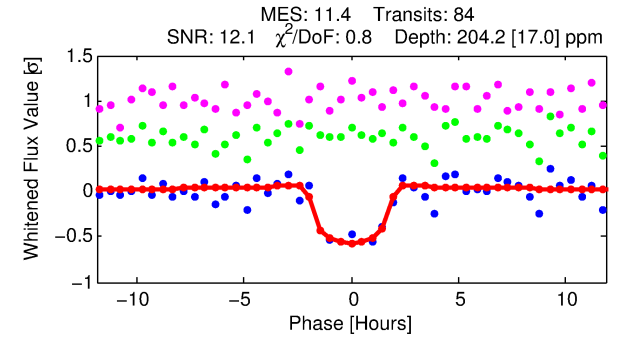
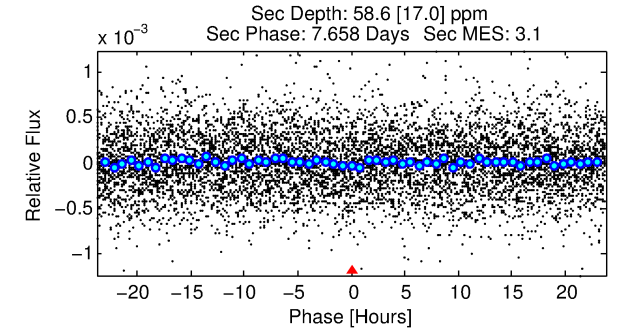
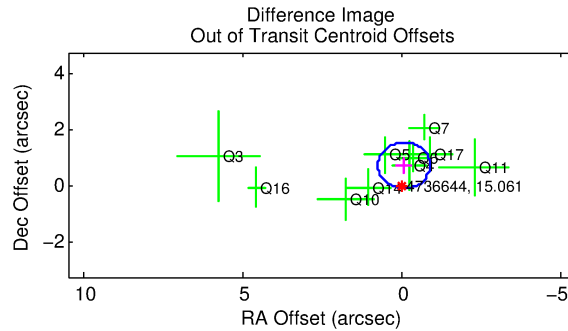
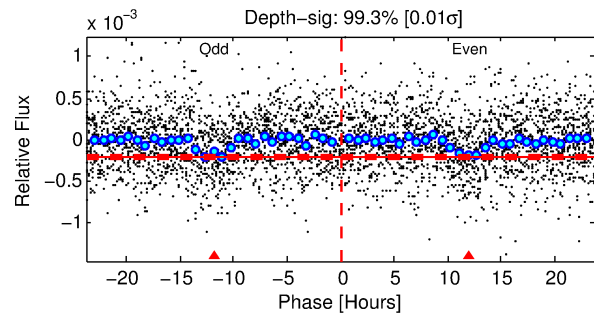
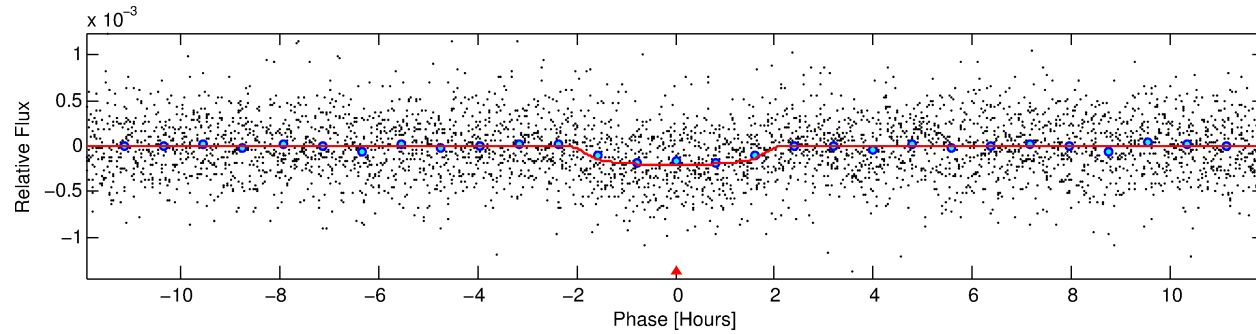
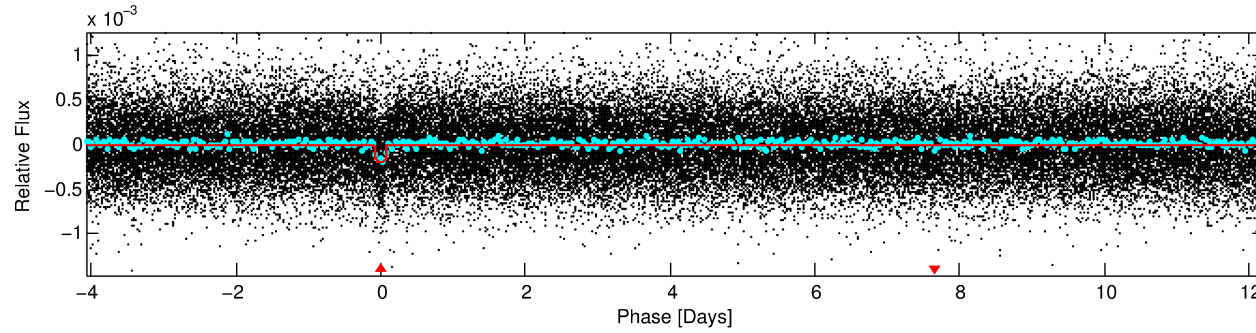
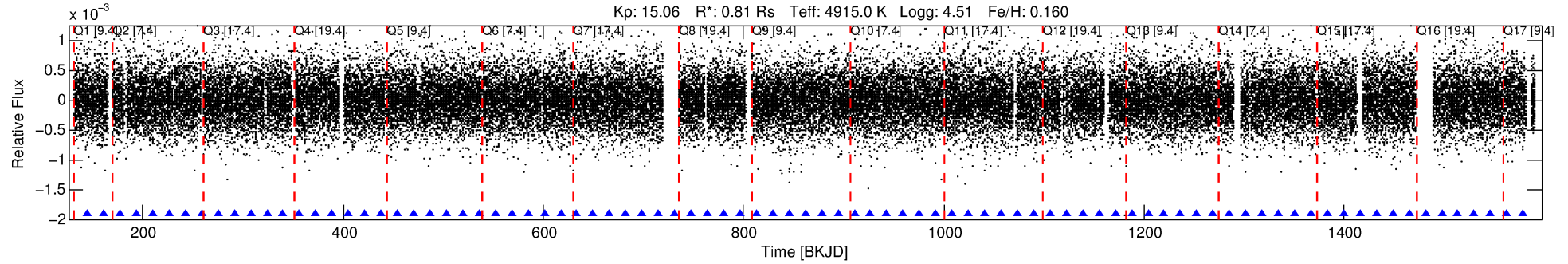
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004736644-01

No Significant Match Found

DV One-Page Summary

KIC: 4736644 Candidate: 1 of 1 Period: 16.295 d
KOI: K03330.01 Corr: 0.958



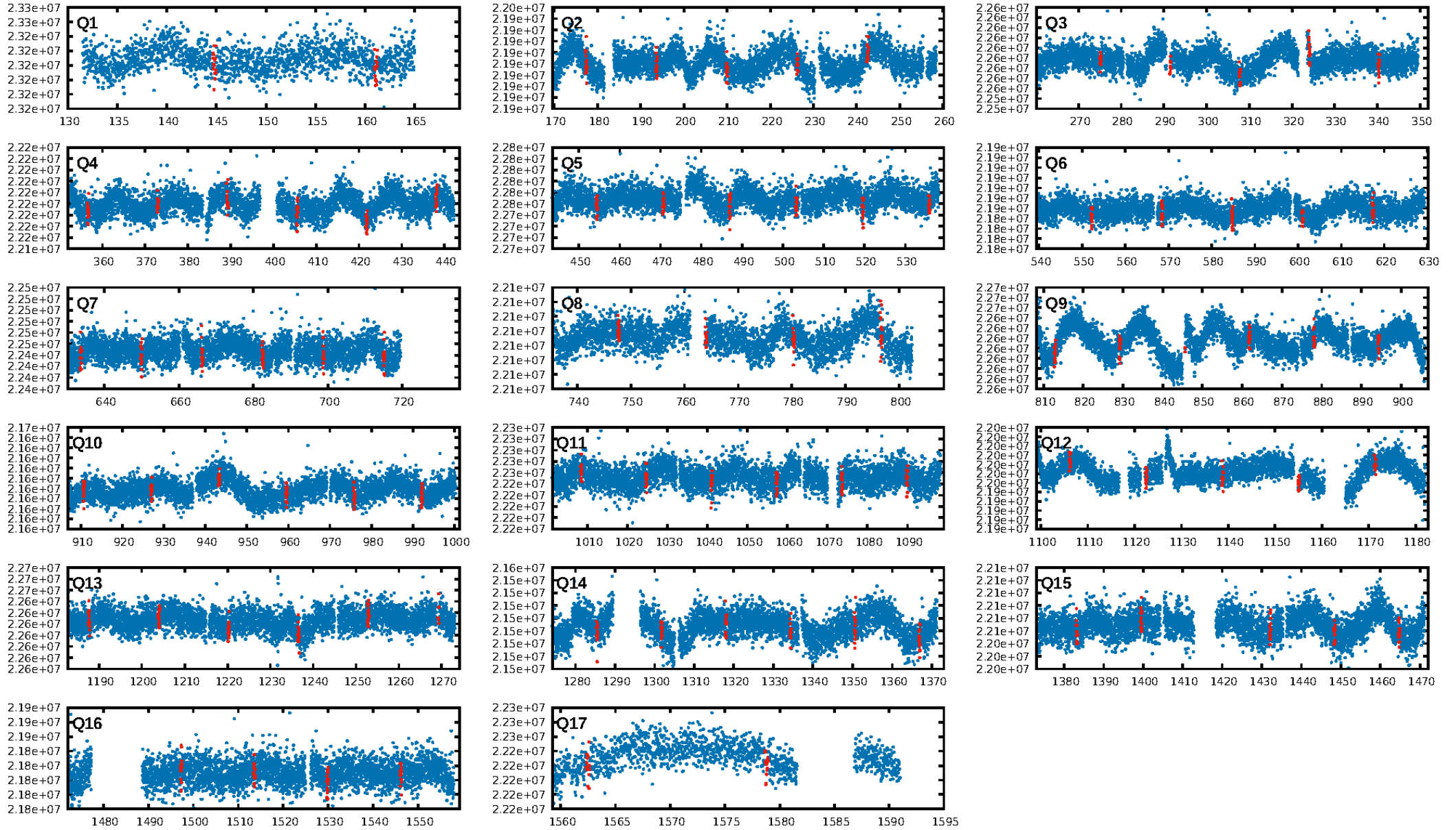
DV Fit Results:

Period = 16.29518 [0.00014] d
Epoch = 144.8040 [0.0070] BKJD
Rp/R* = 0.0159 [0.0071]
a/R* = 15.05 [25.79]
b = 0.90 [0.39]
Seff = 25.66 [3.31]
Teq = 574 [19] K
Rp = 1.41 [0.63] Re
a = 0.1159 [0.0079] AU
Ag = 217.27 [204.37] [1.06 σ]
Teffp = 3407 [797] K [3.55 σ]

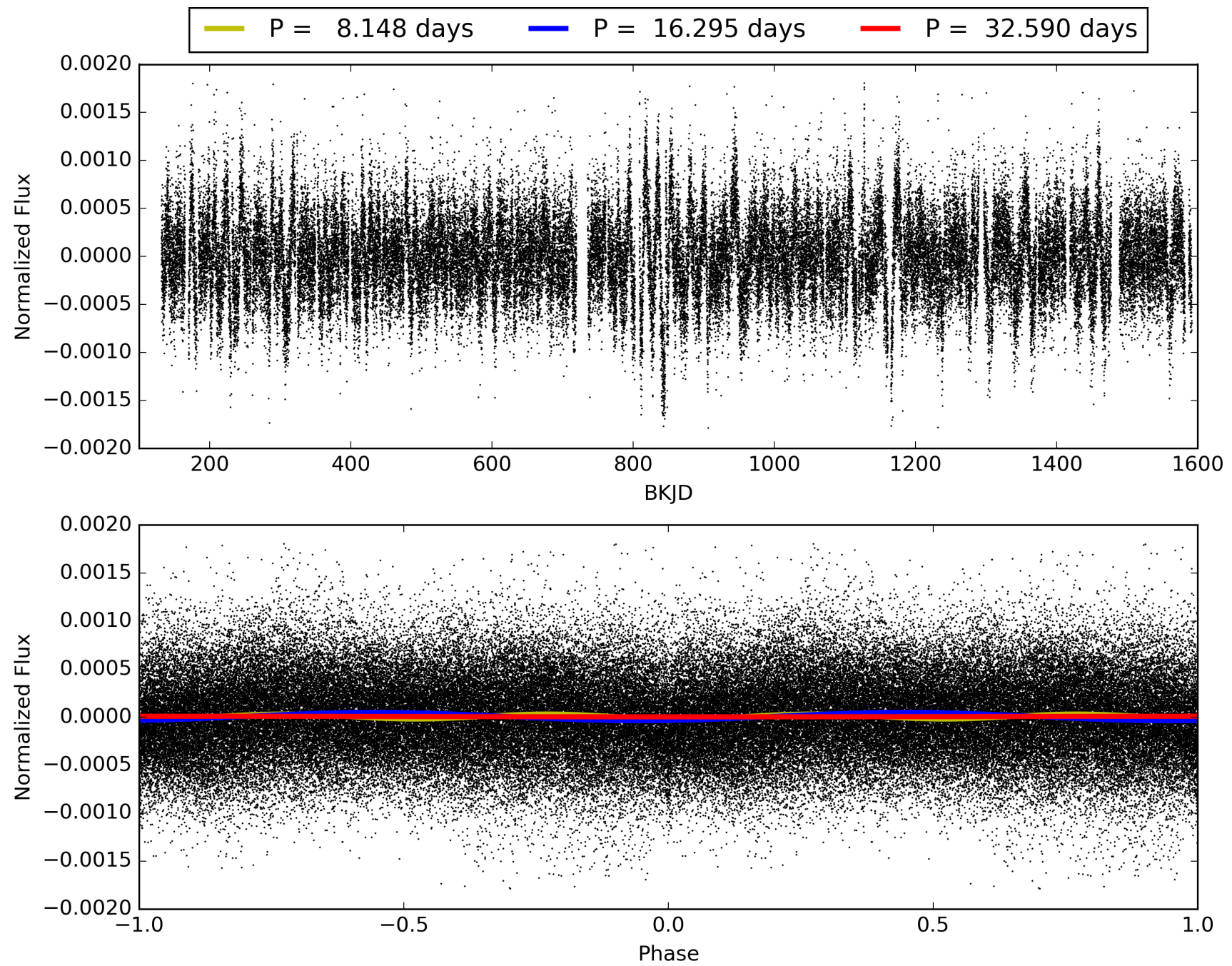
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.93e-30
RollingBand-fgt: 1.00 [80/80]
GhostDiagnostic-chr: 3.635
Centroid-sig: 0.0%
Centroid-so: 2.401 arcsec [2.29 σ]
OotOffset-rm: 0.730 arcsec [2.67 σ]
KicOffset-rm: 0.550 arcsec [1.26 σ]
OotOffset-st: 3/3/2/2 [10]
KicOffset-st: 3/3/2/2 [10]
DiffImageQuality-fgm: 0.80 [8/10]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 004736644-01, PDC Light Curves

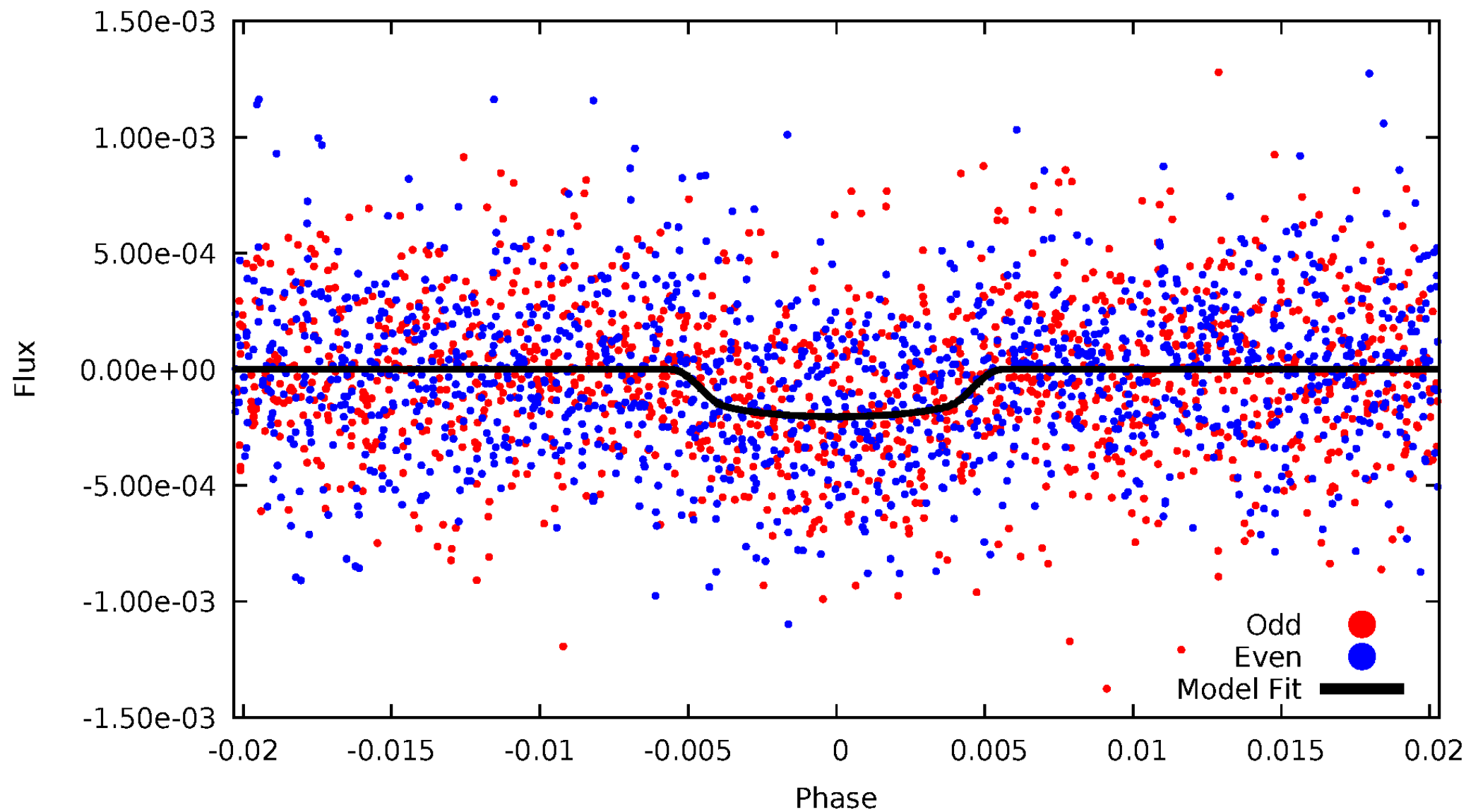


TCE 004736644-01



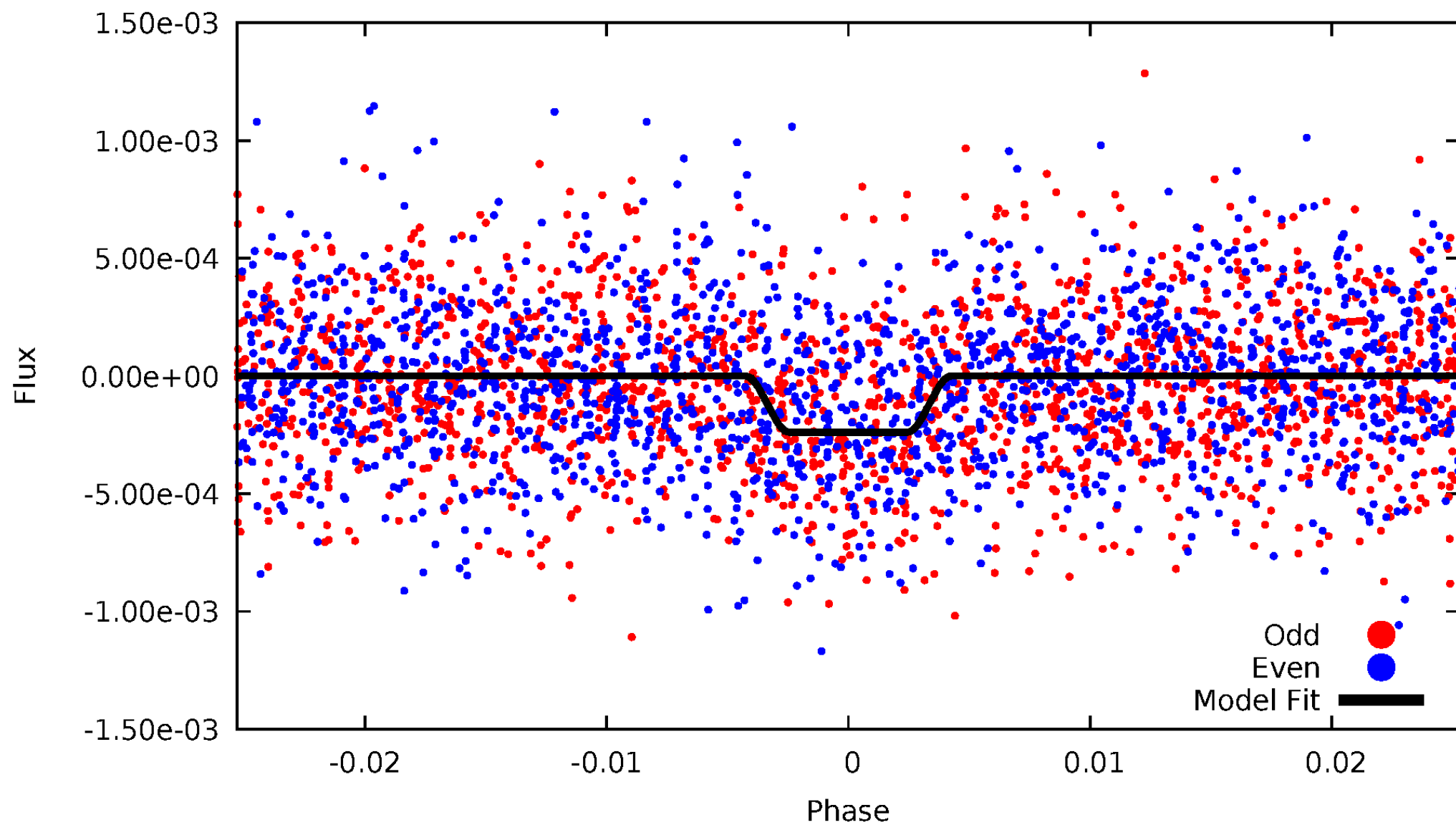
DV Odd/Even

TCE 004736644-01



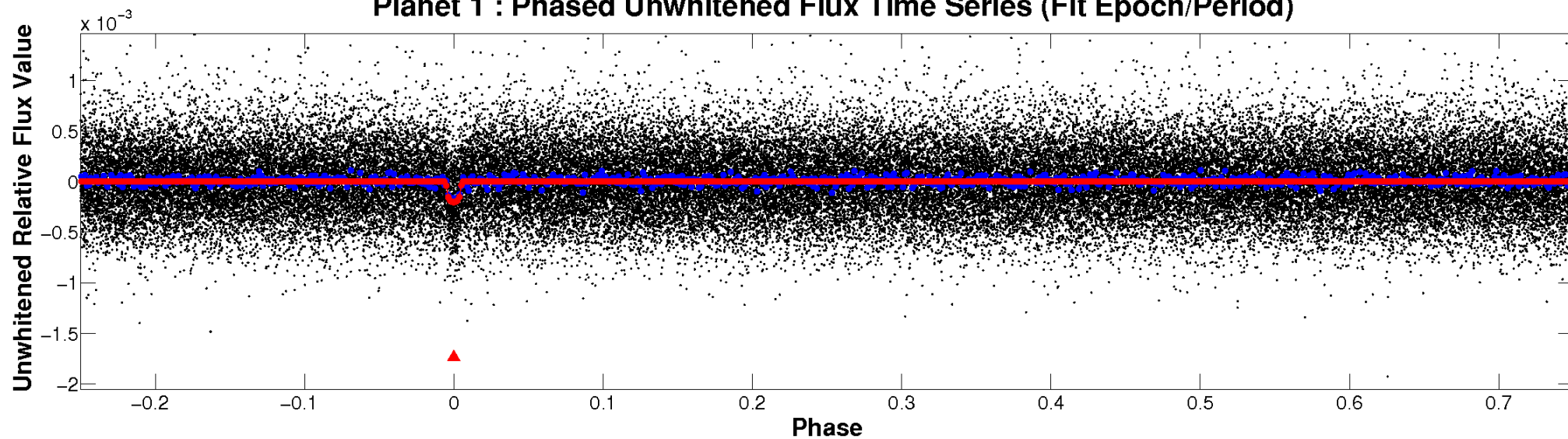
ALT Odd/Even

TCE 004736644-01

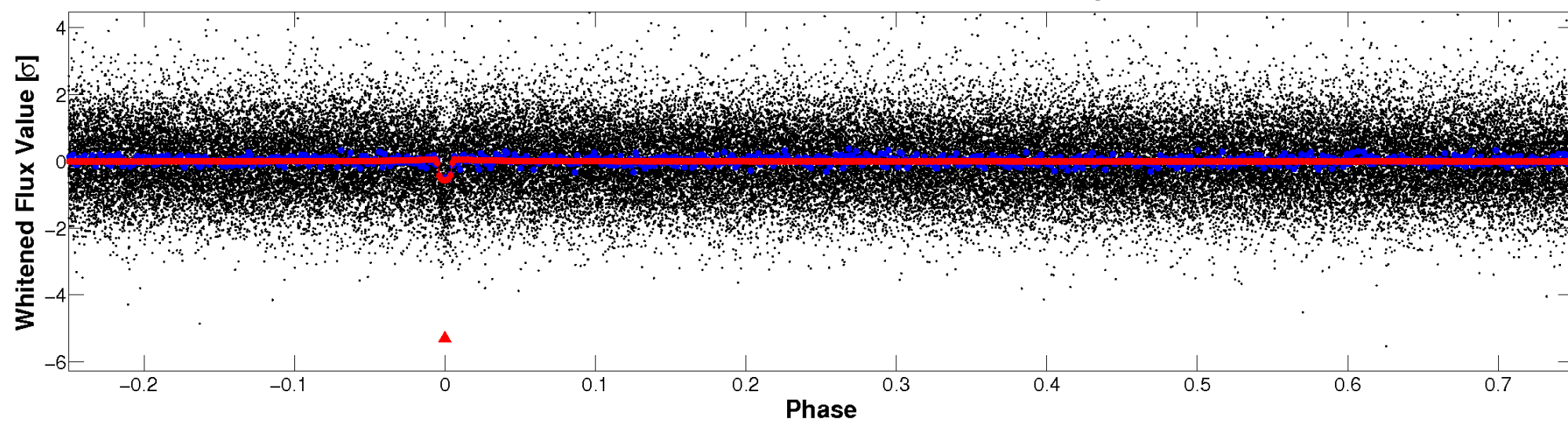


Non-Whitened Vs. Whitened Light Curve

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

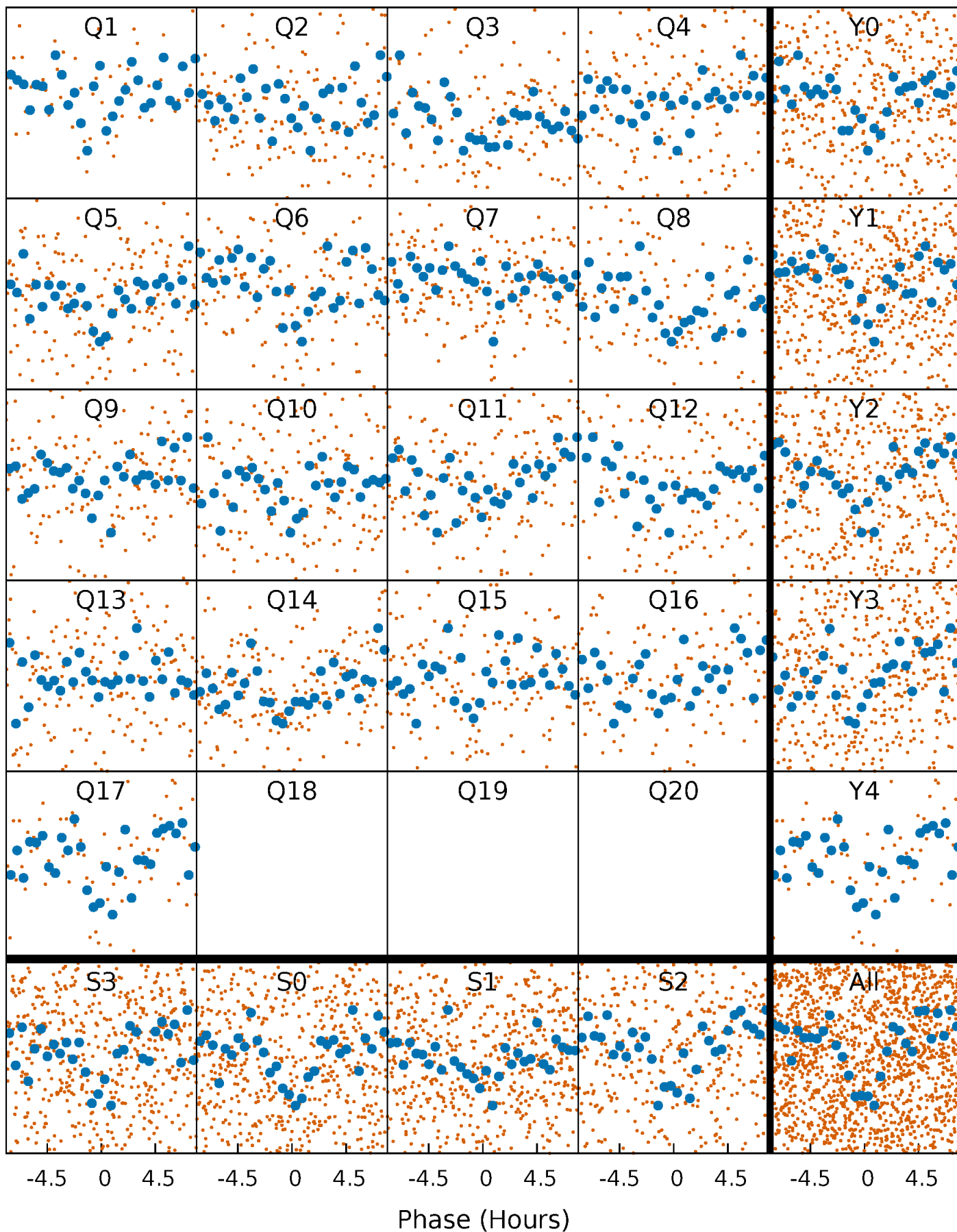


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



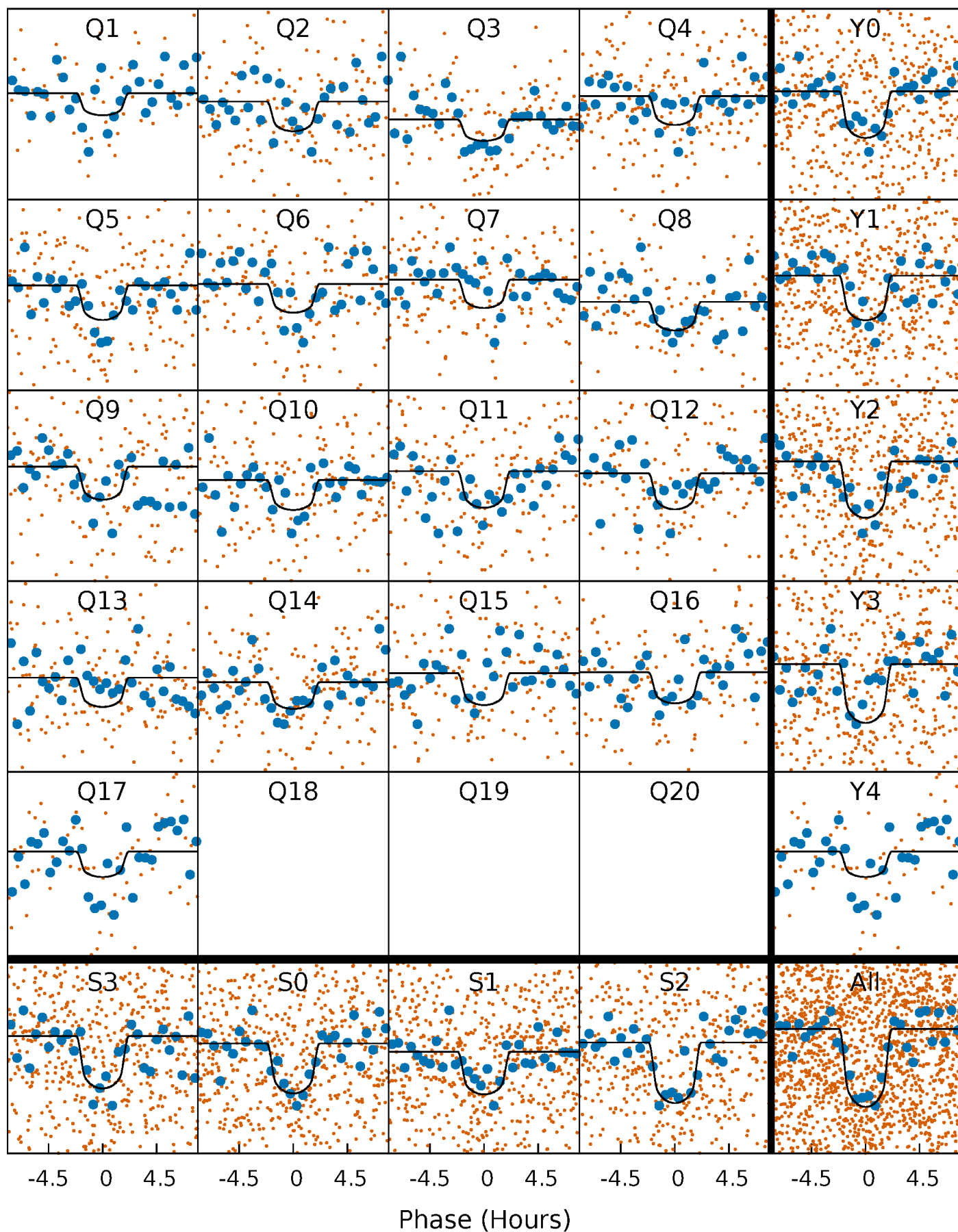
PDC Quarter-Phased Transit Curves

TCE 004736644-01 P= 16.295181 Days $T_0=144.803962$ (BKJD)



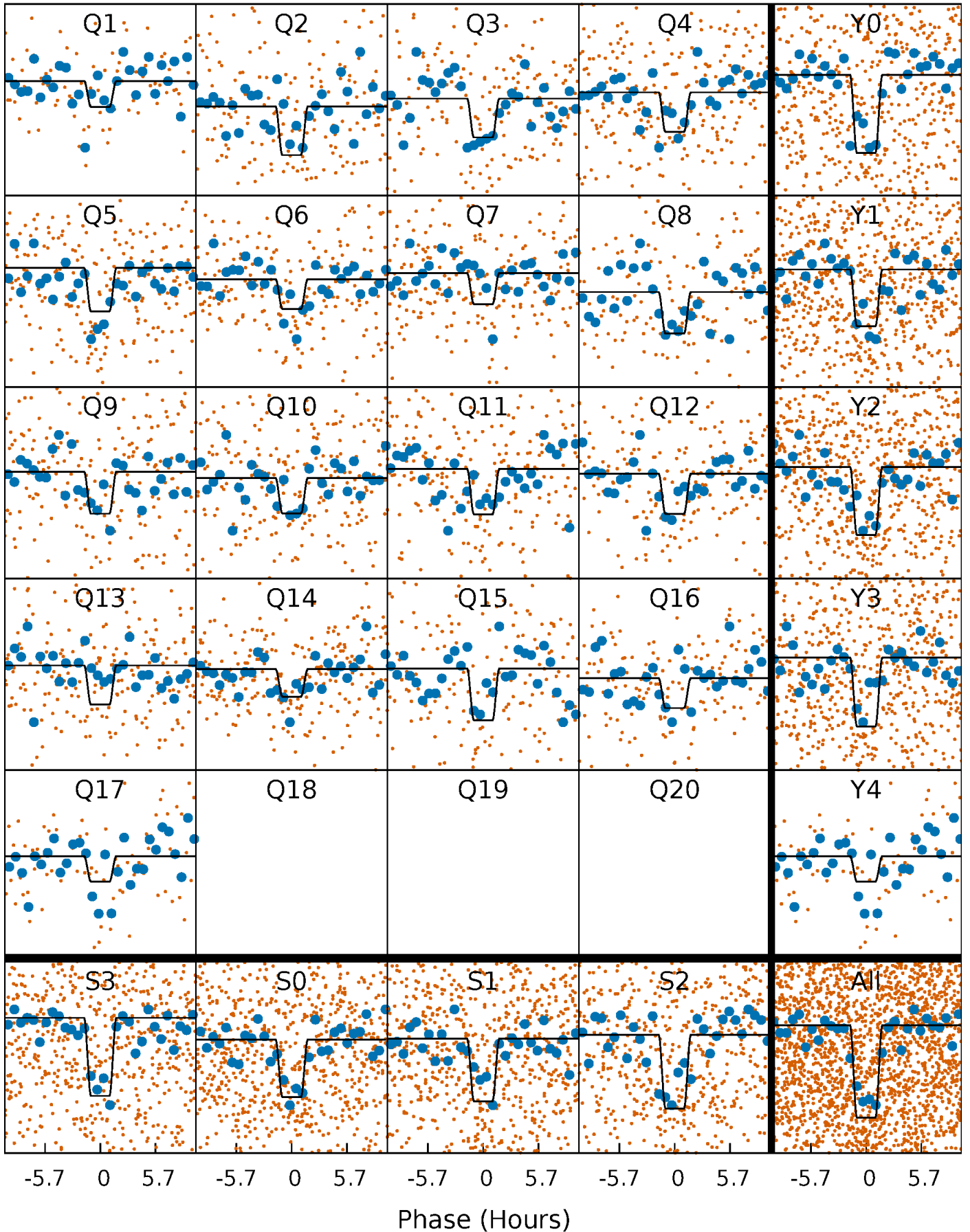
DV Quarter-Phased Transit Curves

TCE 004736644-01 P= 16.295181 Days $T_0=144.803962$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

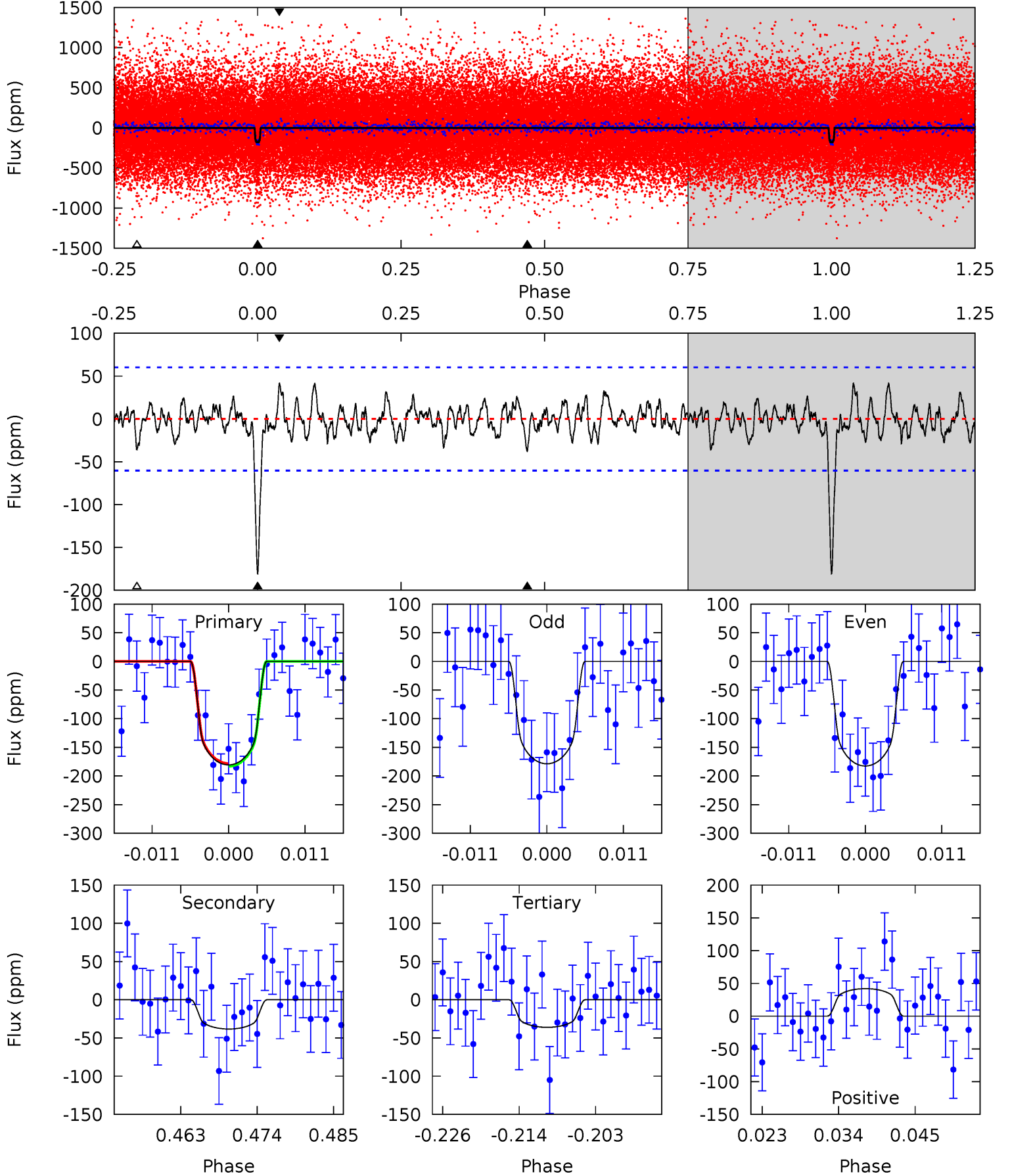
TCE 004736644-01 P= 16.294897 Days $T_0=144.815572$ (BKJD)



DV Model-Shift Uniqueness Test

004736644-01, $P = 16.295181$ Days, $E = 128.508781$ Days

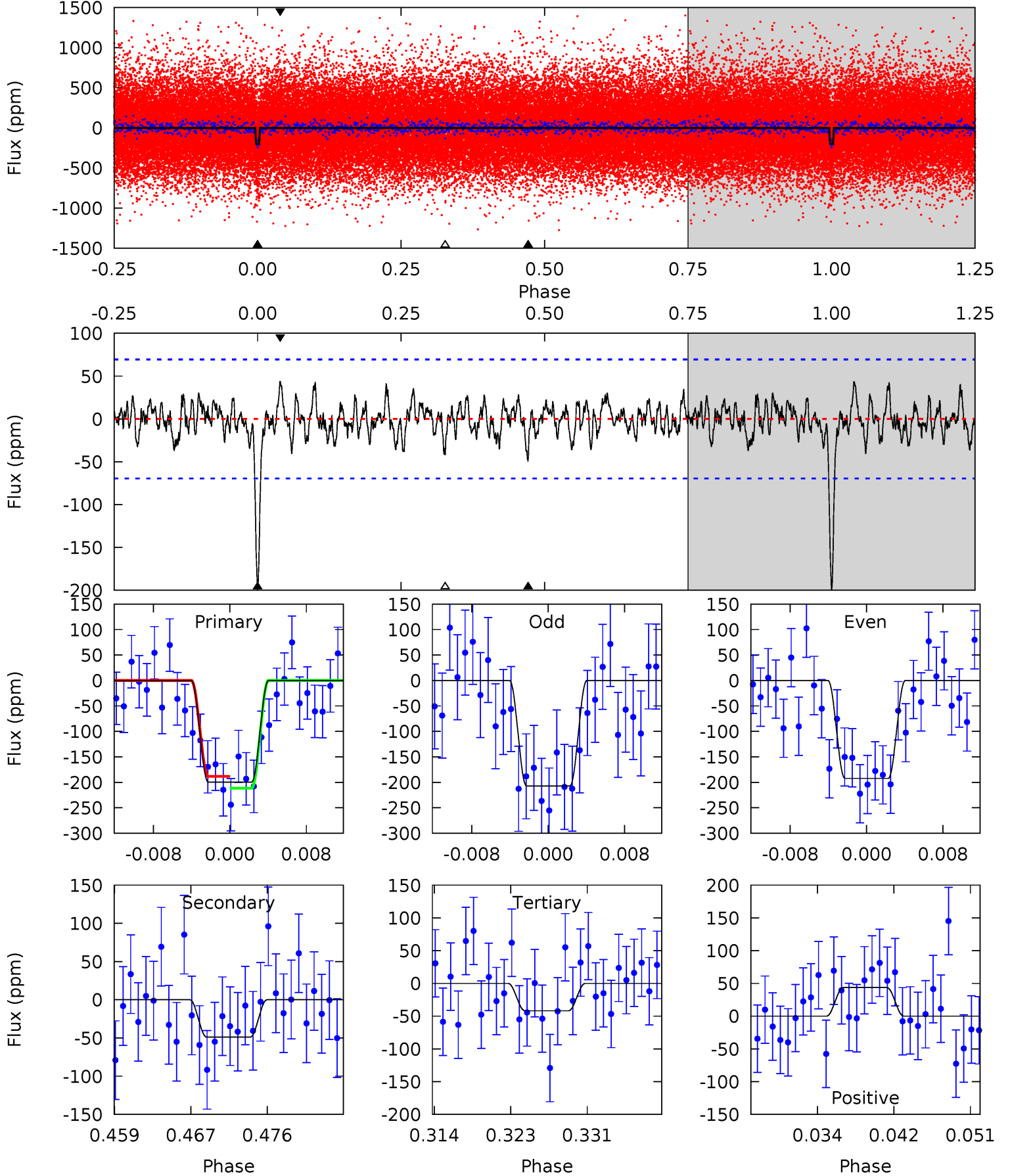
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	3.18	2.99	3.48	5.00	2.53	1.12	12.0	11.5	0.18	-0.31	0.16	0.98	0.19	0.19



Alt Model-Shift Uniqueness Test

004736644-01, P = 16.294897 Days, E = 128.520675 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	3.56	3.05	3.18	5.06	2.63	1.09	11.5	11.4	0.51	0.38	0.55	0.95	0.18	0.86



Stellar Parameters For KIC 004736644

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4915^{+78}_{-78}	$4.512^{+0.067}_{-0.022}$	$0.160^{+0.150}_{-0.150}$	$0.812^{+0.031}_{-0.055}$	$0.781^{+0.052}_{-0.028}$	$2.055^{+0.517}_{-0.176}$
	+2%/-2%	+1%/-0%	+94%/-94%	+4%/-7%	+7%/-4%	+25%/-9%
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 004736644-01 / KOI 3330.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-38 ± 12	$1.40^{+0.61}_{-0.58}$	797^{+17}_{-19}	3470^{+759}_{-398}	141^{+300}_{-78}
Alt.	-49 ± 14	$1.35^{+0.64}_{-0.61}$	796^{+17}_{-19}	3657^{+922}_{-453}	195^{+488}_{-108}

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 $A_{obs} \gg 1.0$

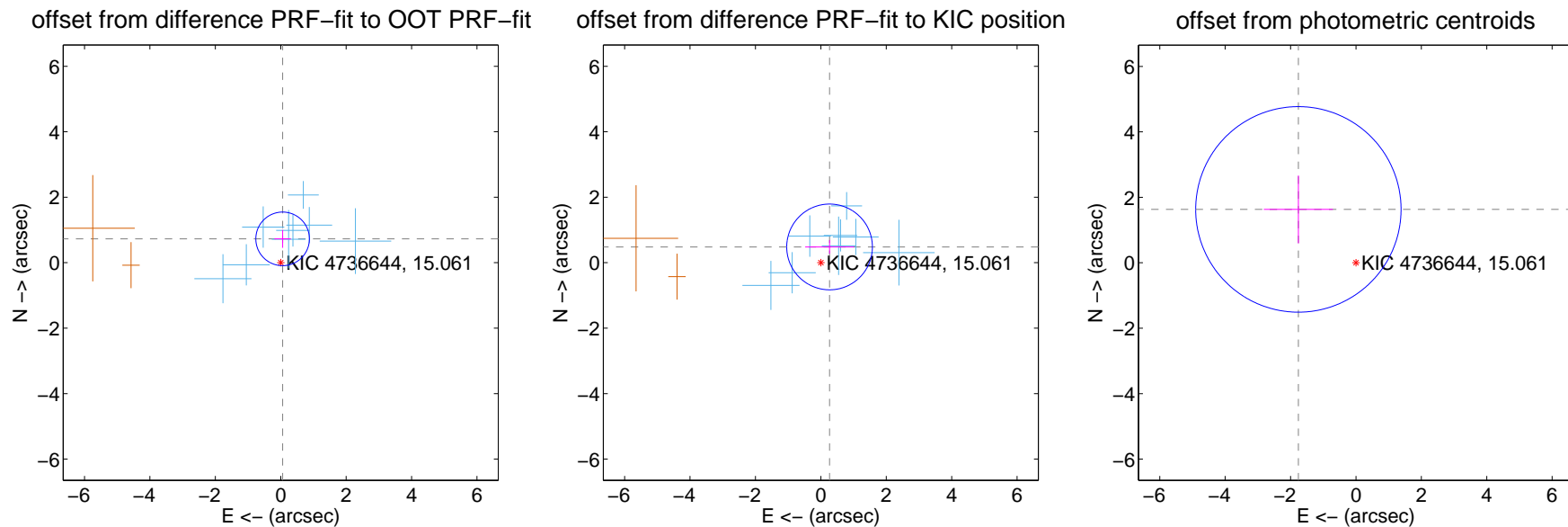
DV Centroid Data

Supplemental centroid analysis for 004736644-01. Kepler magnitude: 15.06. Transit SNR 12.13

There are 8 quarters with good PRF difference image offsets

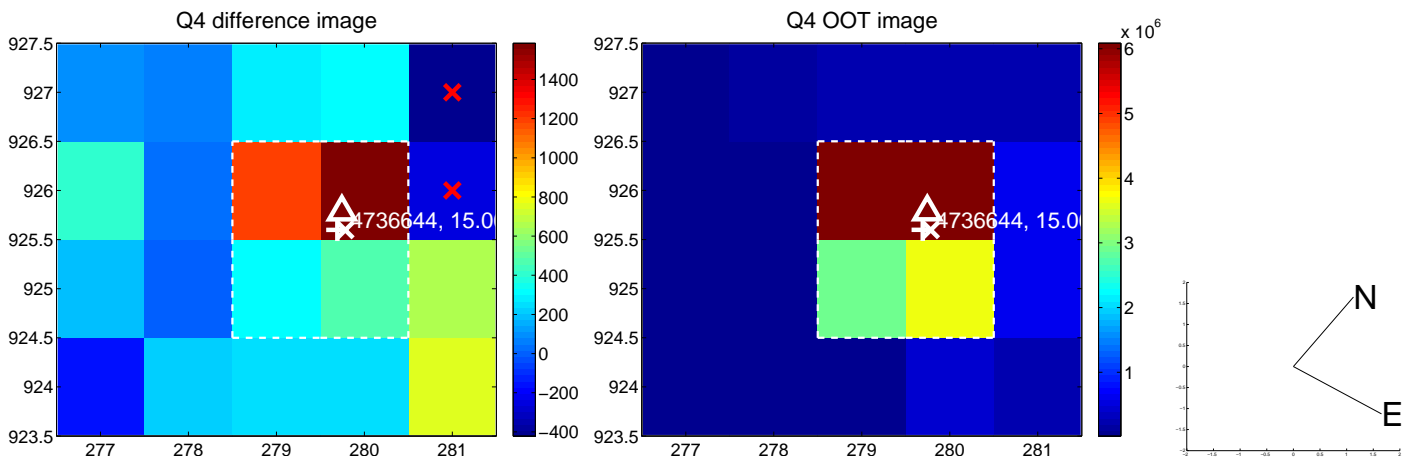
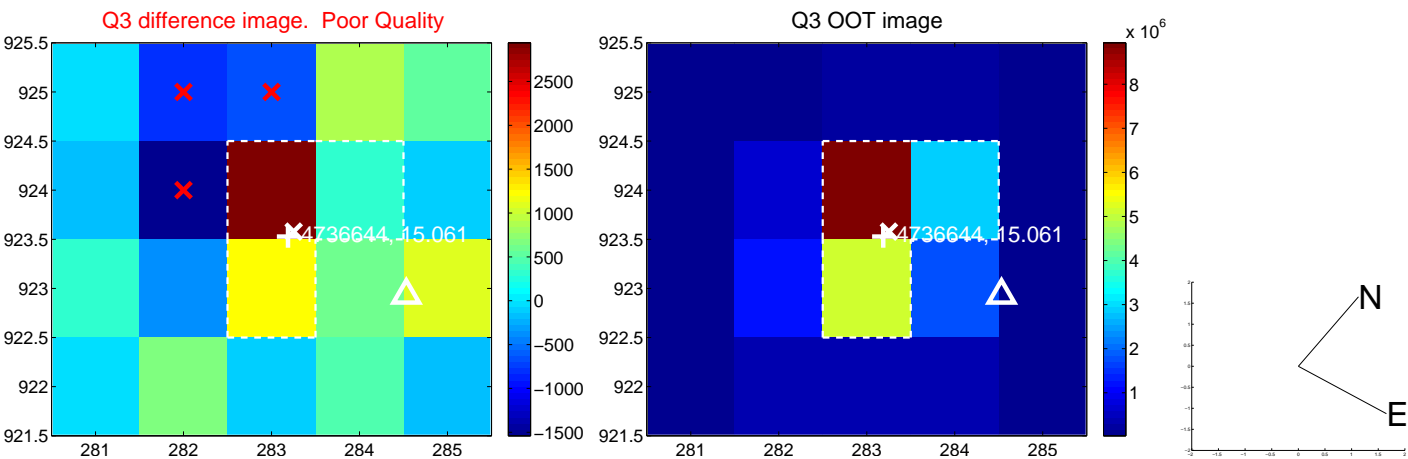
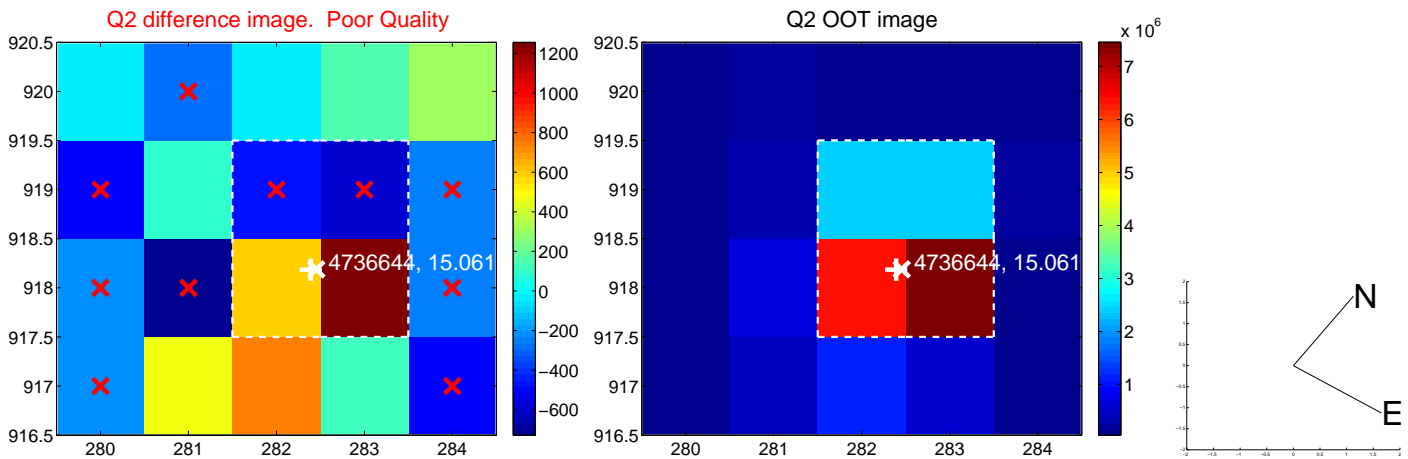
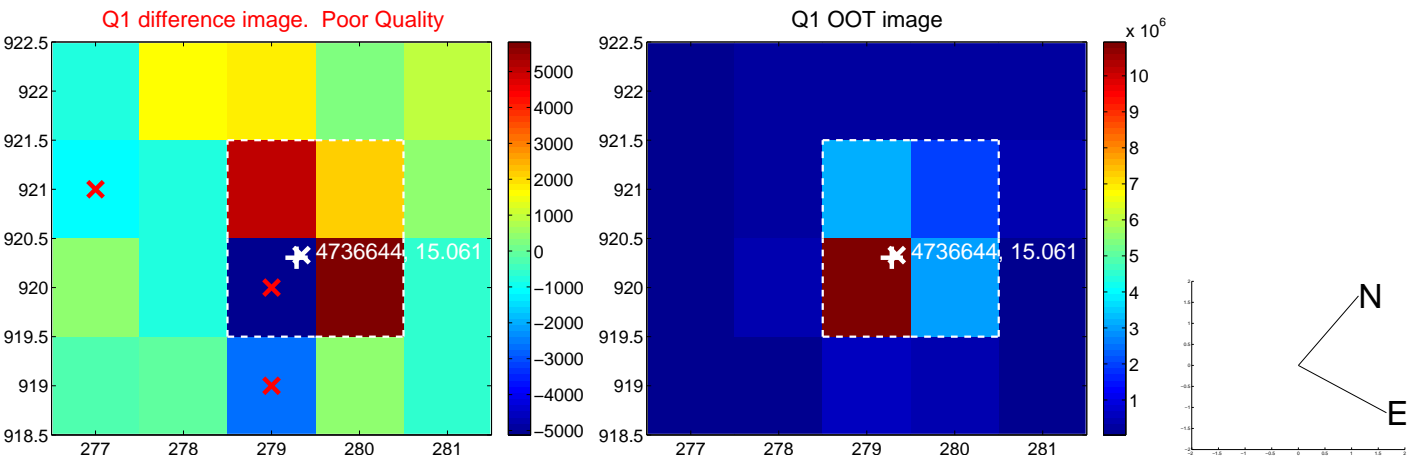
The direct PRF centroid is offset from the target star catalog position by about 0.41 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.730 ± 0.273	2.67	-0.057 ± 0.251	0.728 ± 0.273
PRF-fit source offset from KIC position	0.550 ± 0.437	1.26	-0.266 ± 0.747	0.481 ± 0.208
photometric centroid source offset	2.40 ± 1.05	2.29	1.76 ± 1.06	1.63 ± 1.04

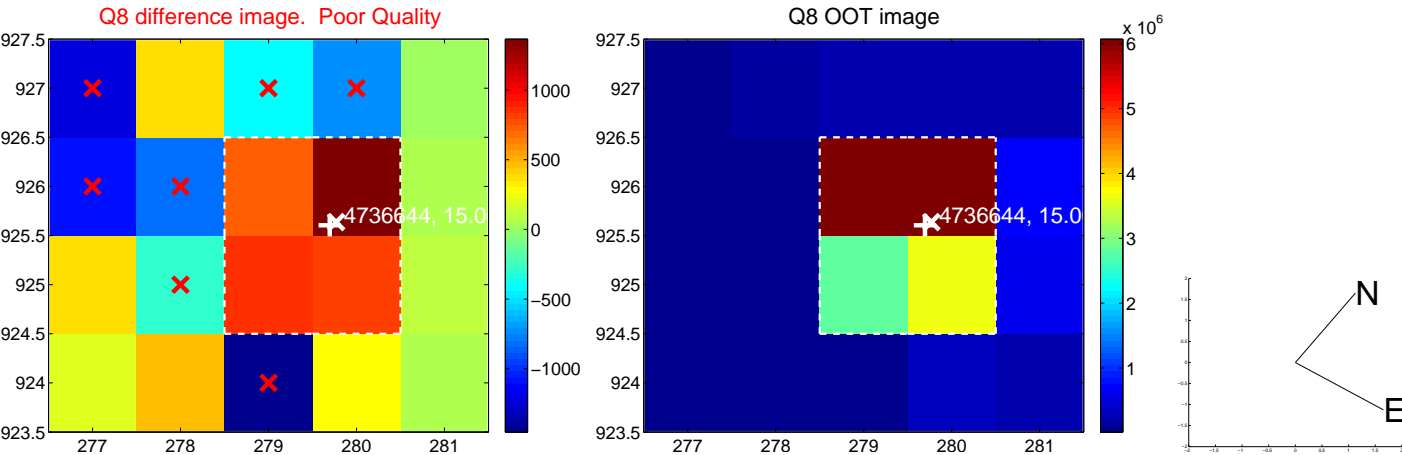
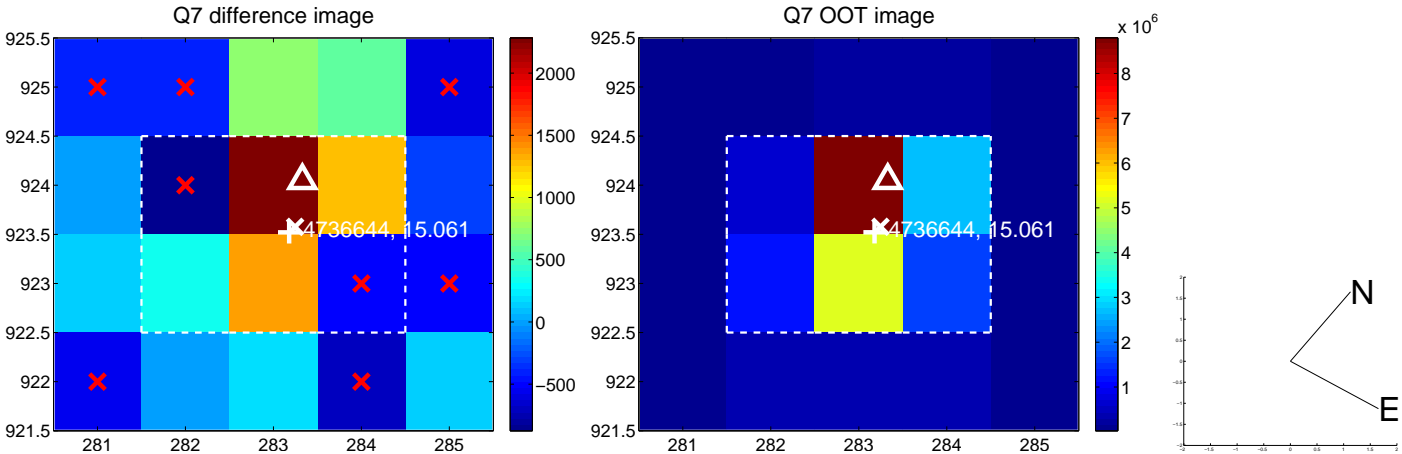
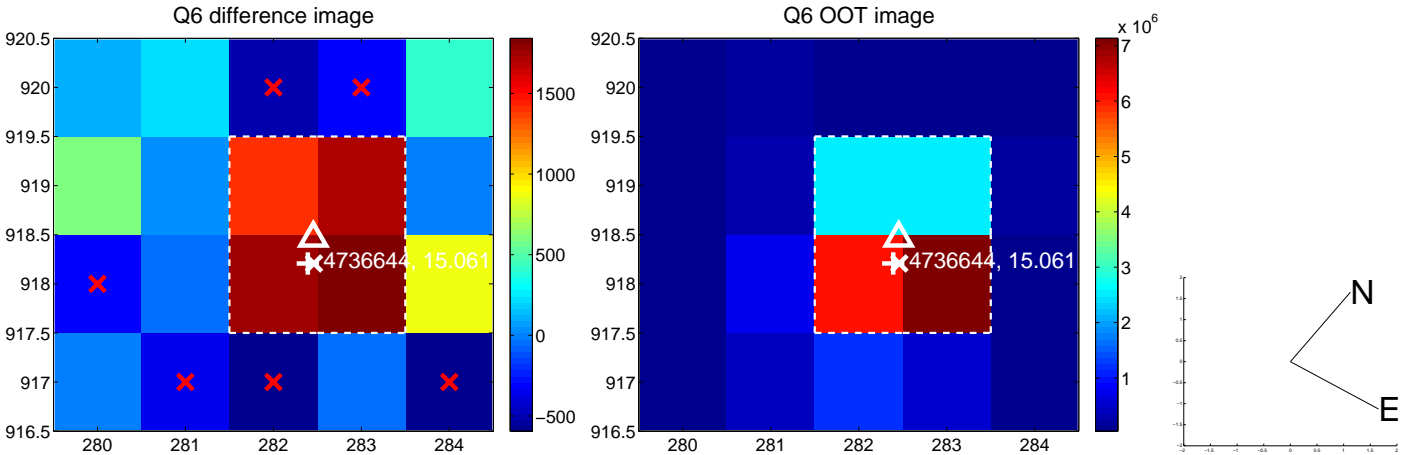
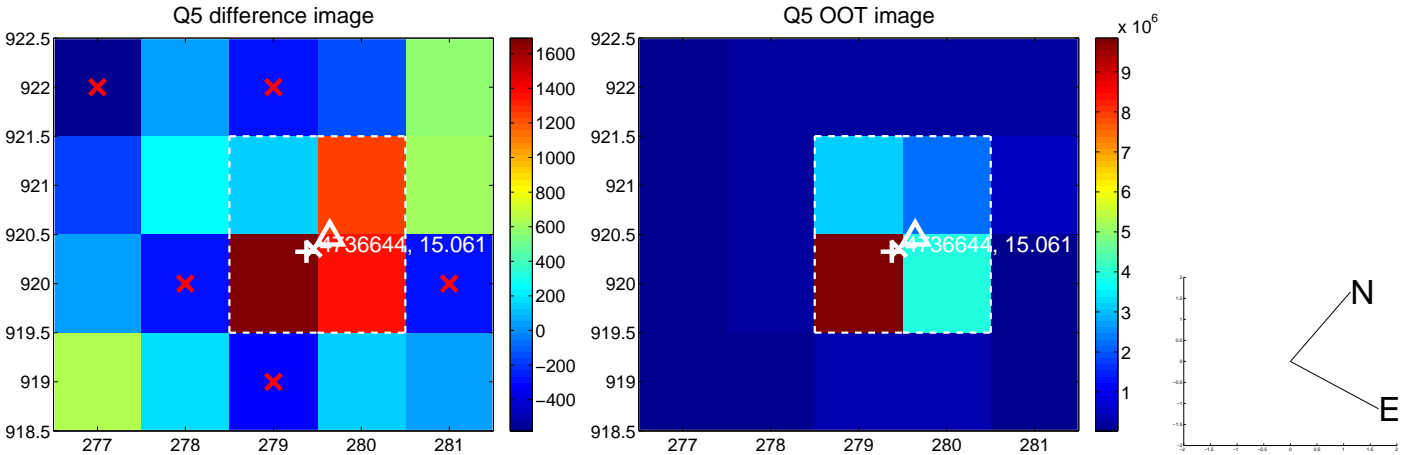


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

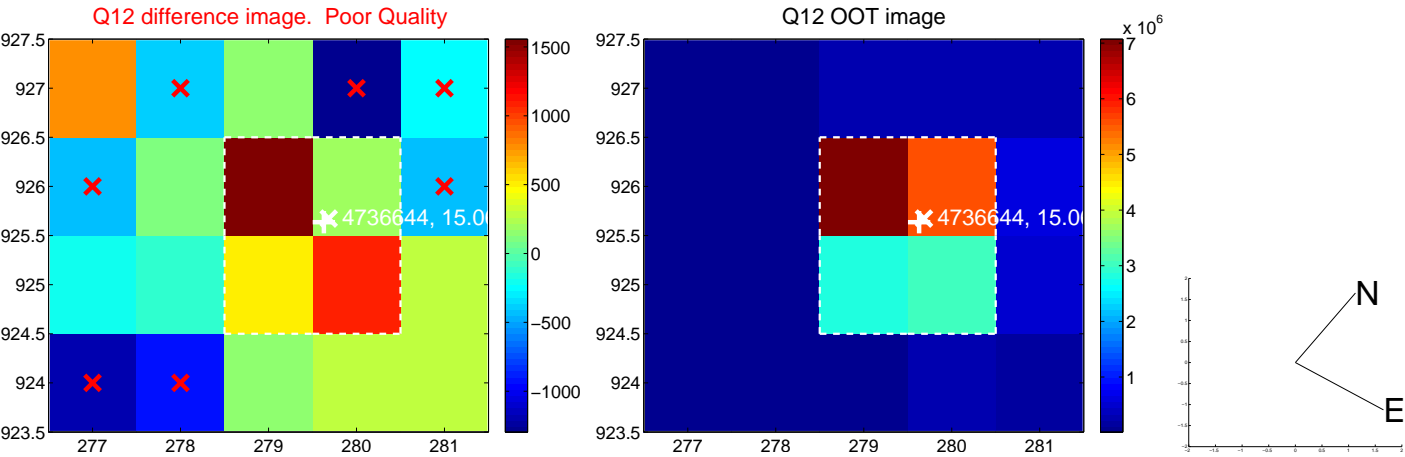
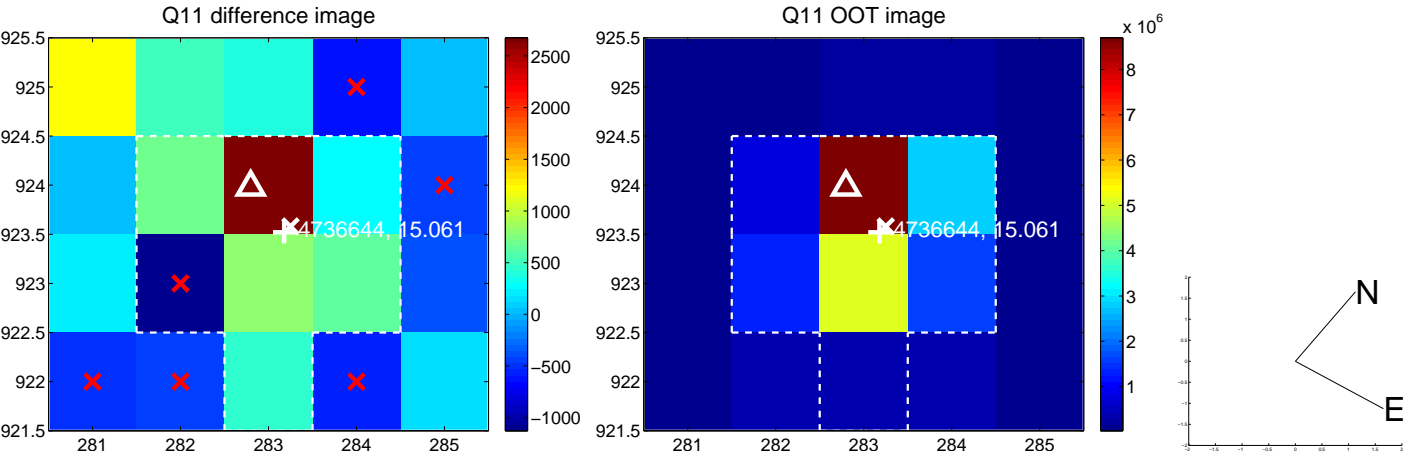
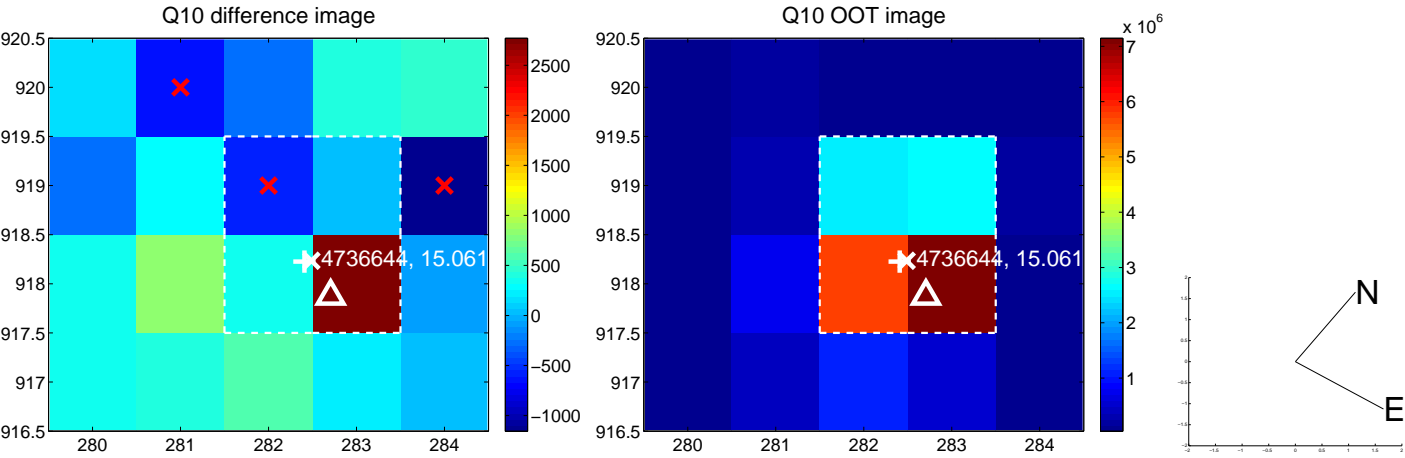
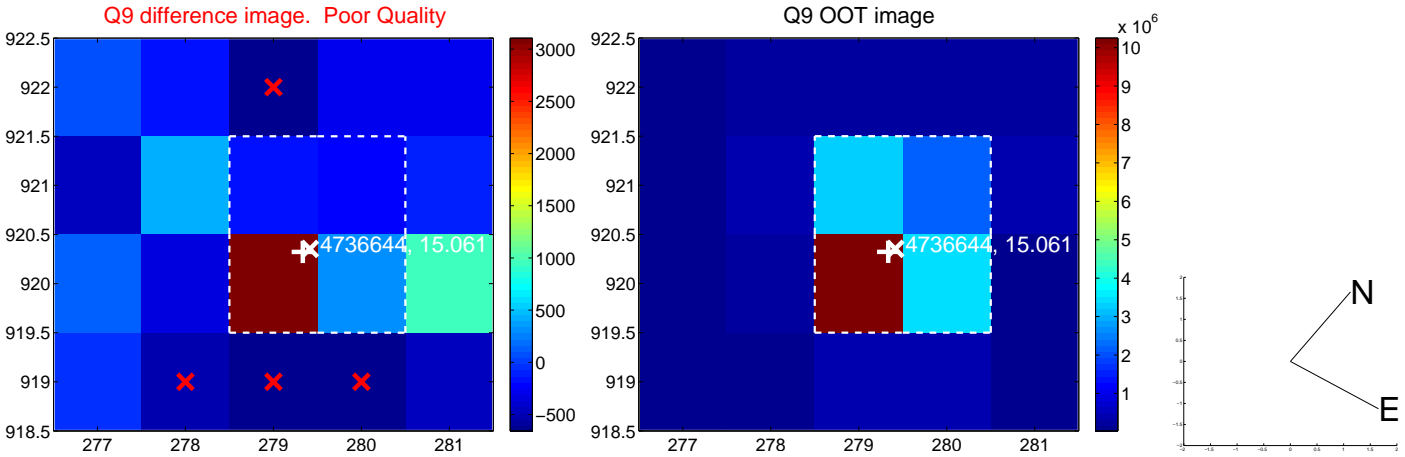
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



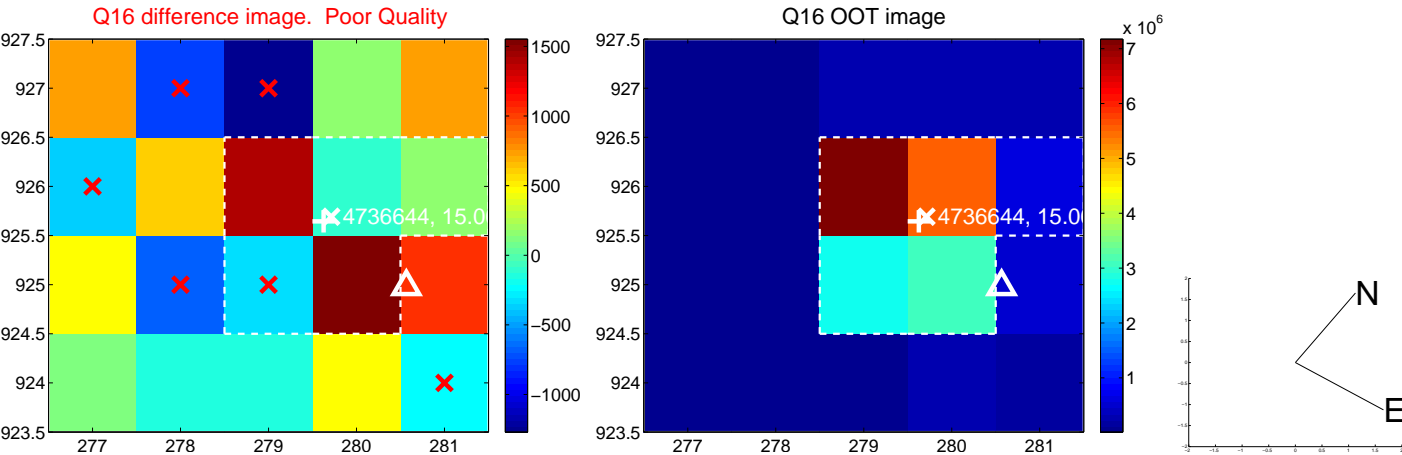
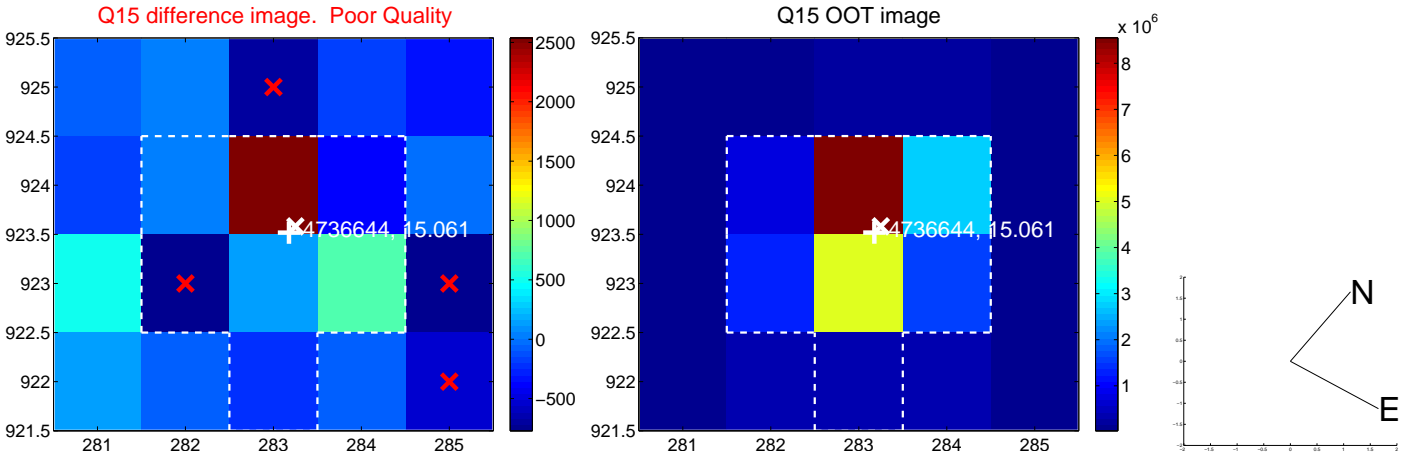
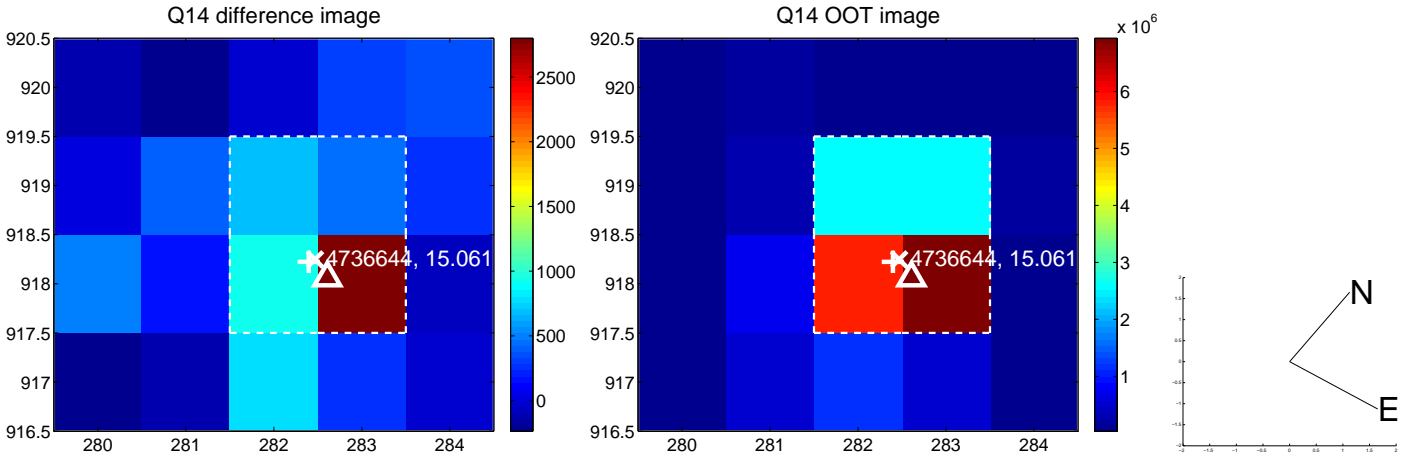
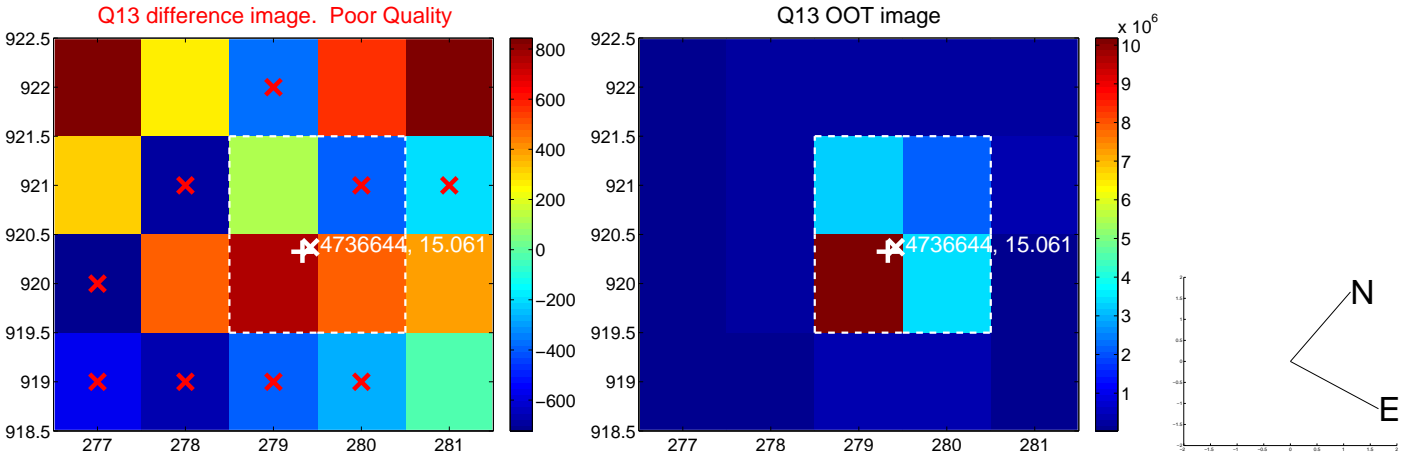
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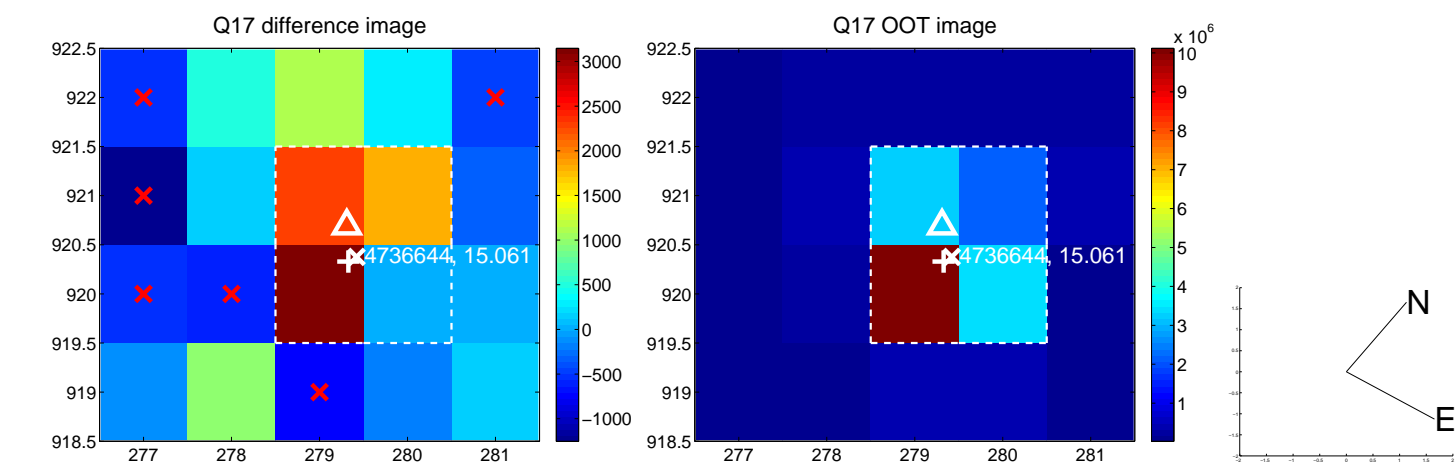
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



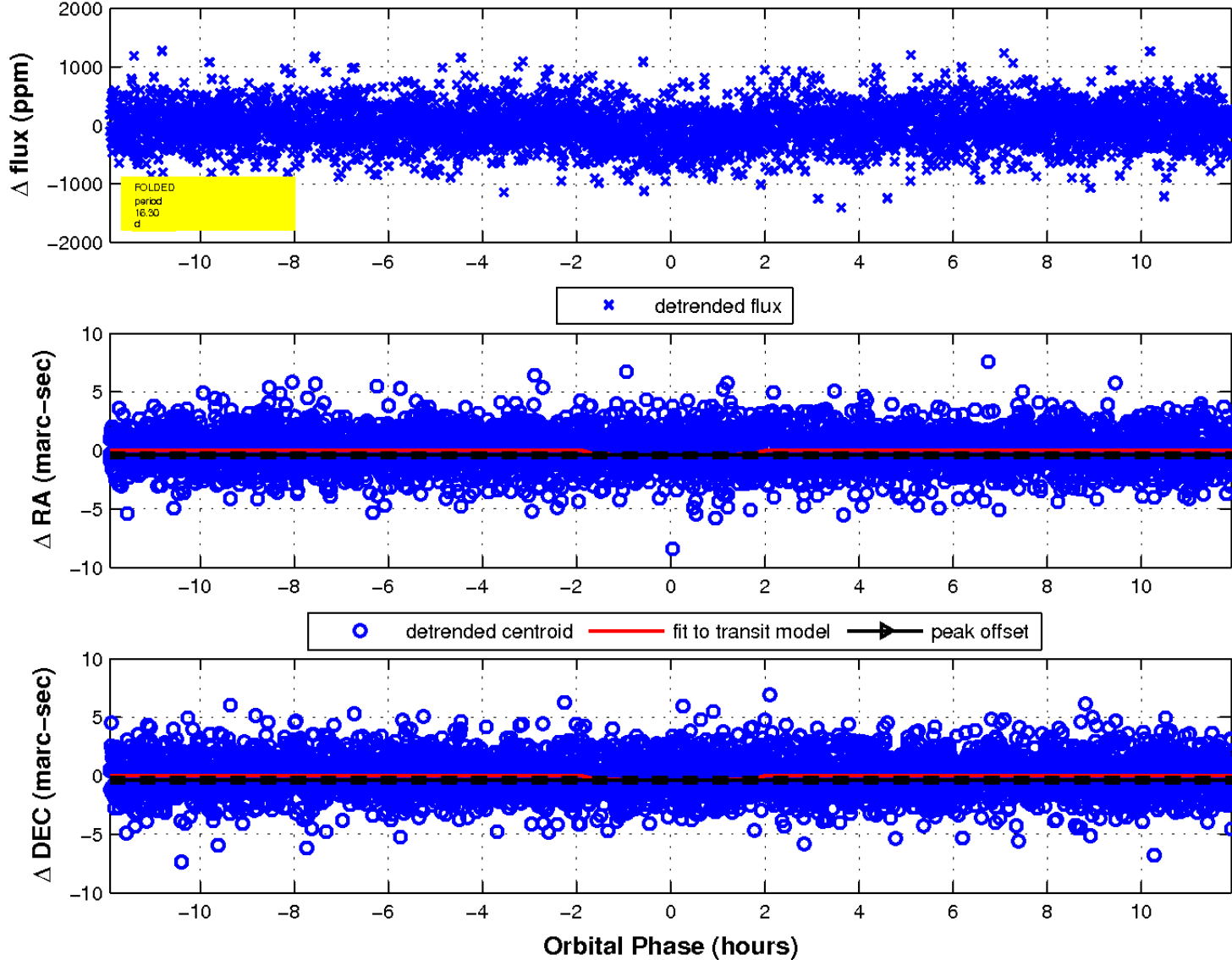
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

