

KIC 011757451

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})
011757451-01	OBS	4745.01	177.668842	264.242343	825.0	9.098	9.2	10.3	0.70	4721	2.17	0.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011757451-01	OBS	PC	0.88	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.

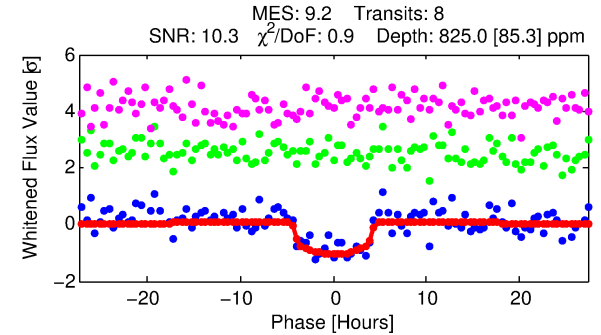
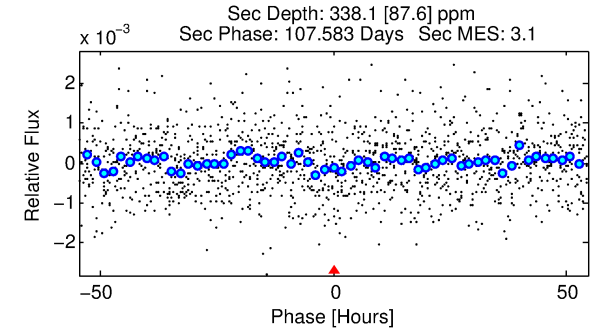
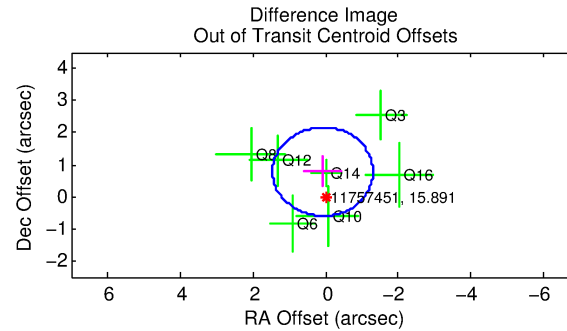
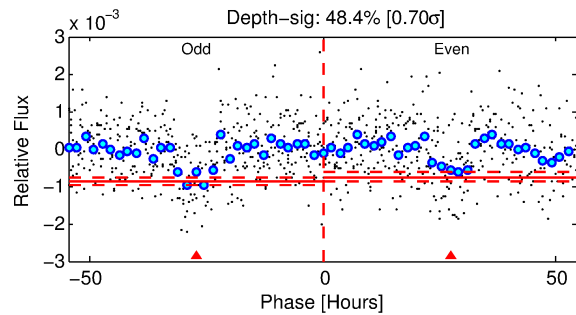
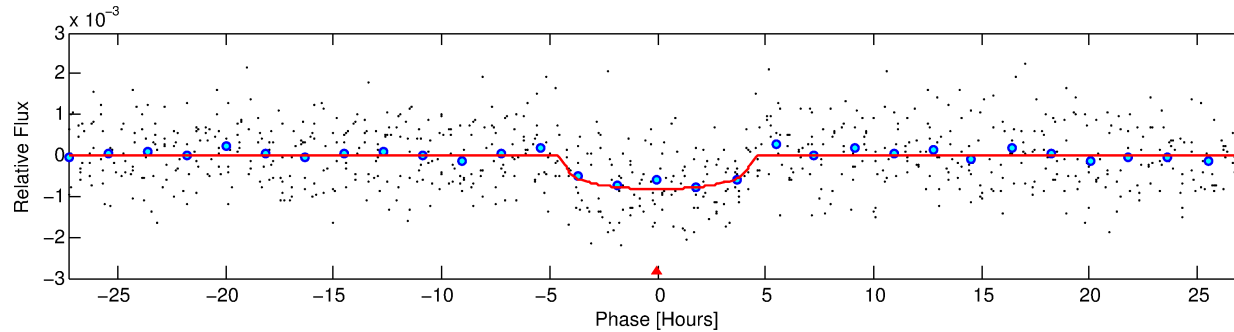
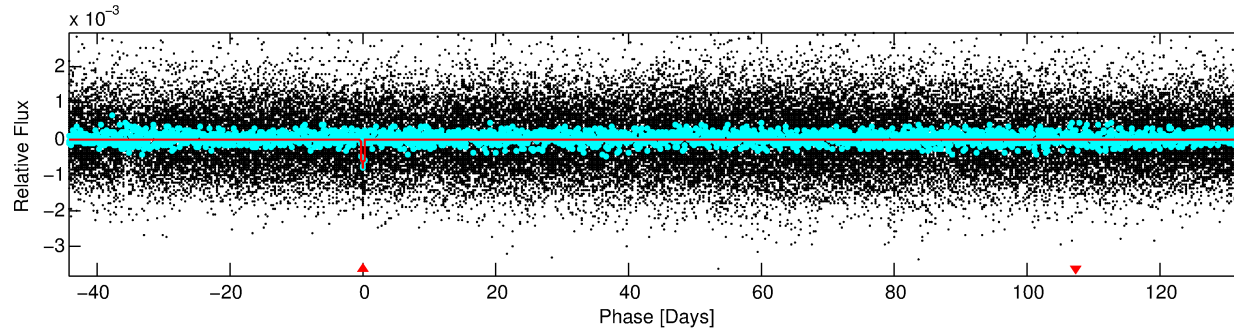
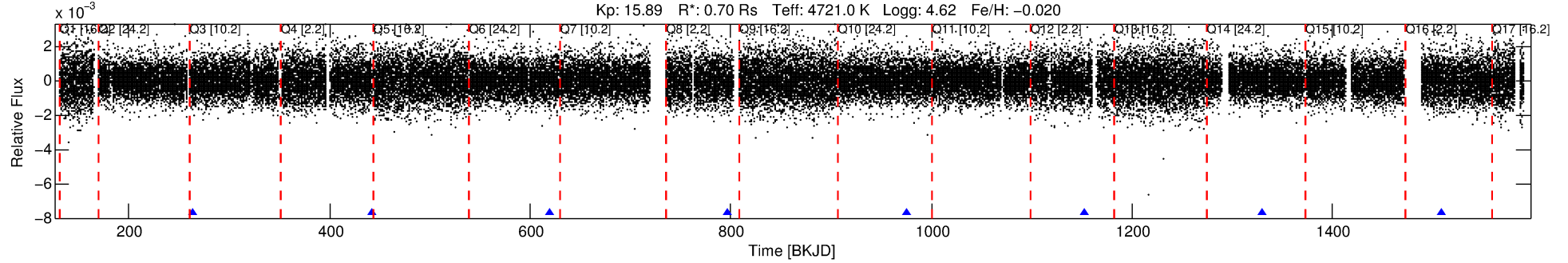
Ephemeris Match Information For 011757451-01

No Significant Match Found

DV One-Page Summary

KIC: 11757451 Candidate: 1 of 1 Period: 177.669 d
KOI: K04745.01 Name: Kepler-443b Corr: 0.983

Kp: 15.89 R*: 0.70 Rs Teff: 4721.0 K Logg: 4.62 Fe/H: -0.020



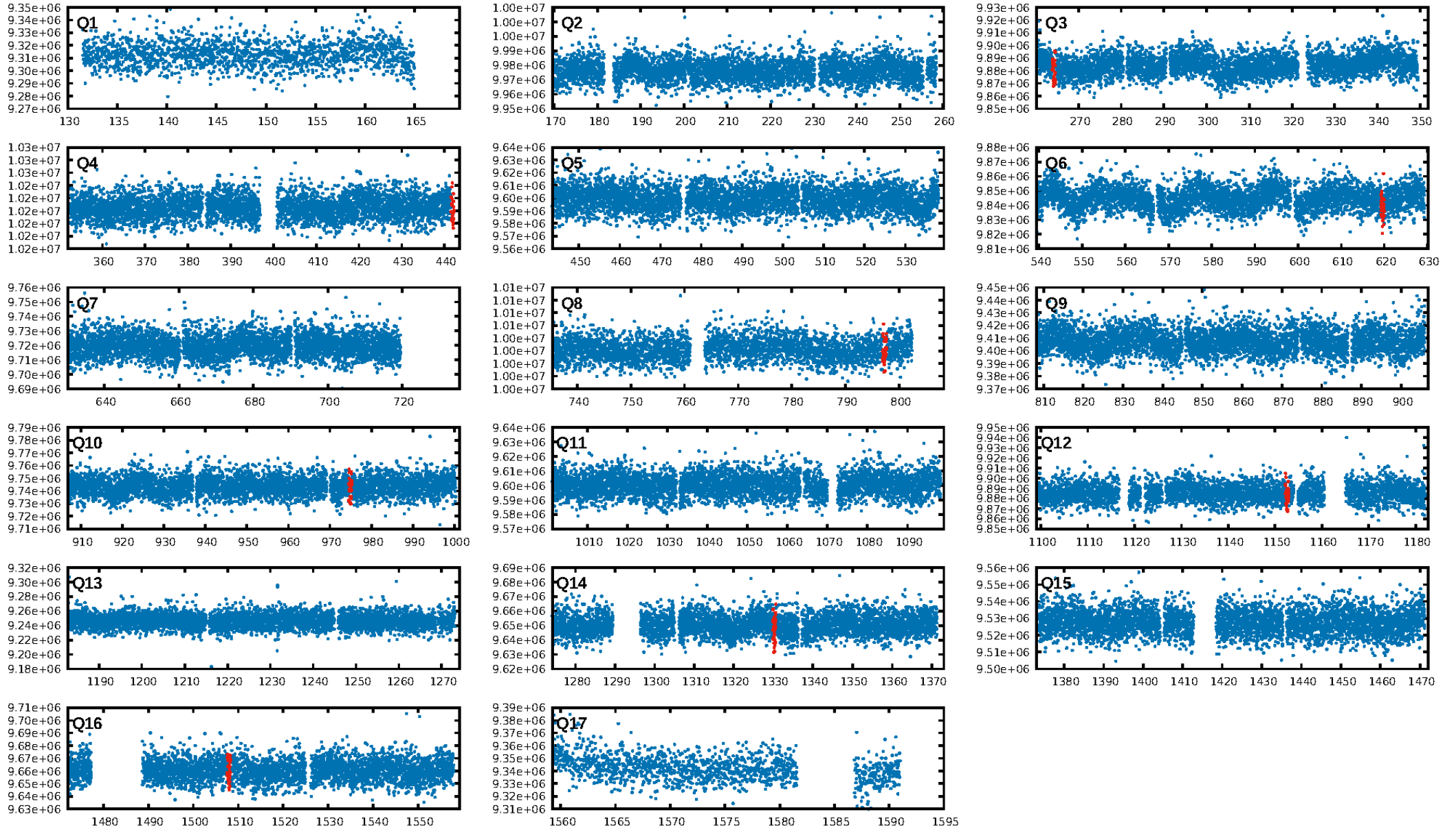
DV Fit Results:

Period = 177.66884 [0.00370] d
Epoch = 264.2423 [0.0150] BKJD
Rp/R* = 0.0283 [0.0152]
a/R* = 109.53 [194.05]
b = 0.72 [1.21]
Seff = 0.70 [0.07]
Teq = 233 [6] K
Rp = 2.17 [1.17] Re
a = 0.5592 [0.0259] AU
Ag = 12393.63 [13731.46] [0.90σ]
Teff = 3804 [1054] K [3.39σ]

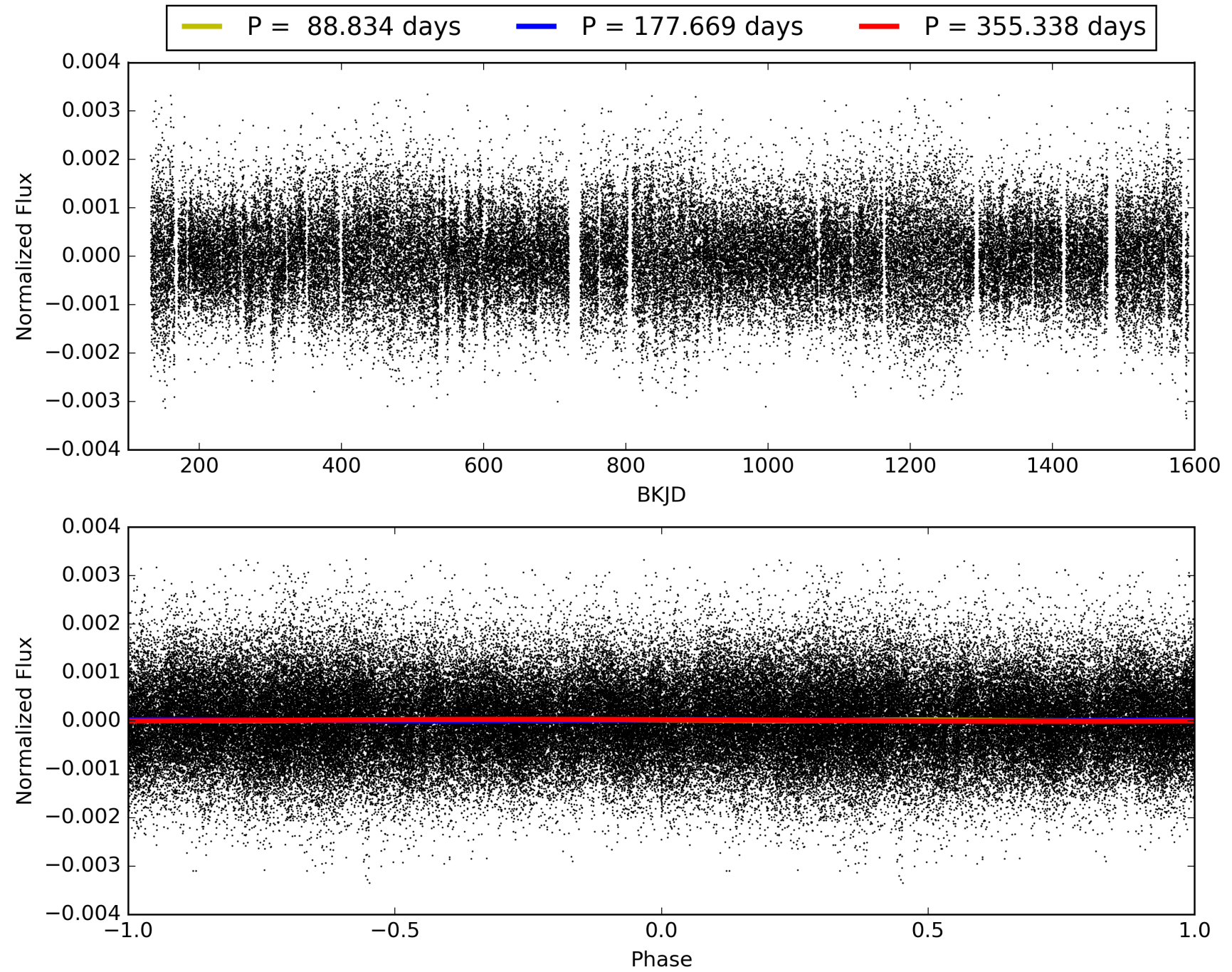
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 88.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.95e-18
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -3.15
Centroid-sig: 79.0%
Centroid-so: 0.862 arcsec [0.57σ]
OotOffset-rm: 0.786 arcsec [1.71σ]
OotOffset-st: 3/1/3/0 [7]
KicOffset-rm: 0.627 arcsec [1.38σ]
KicOffset-st: 3/1/3/0 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 1.00 [7/7]

TCE 011757451-01, PDC Light Curves

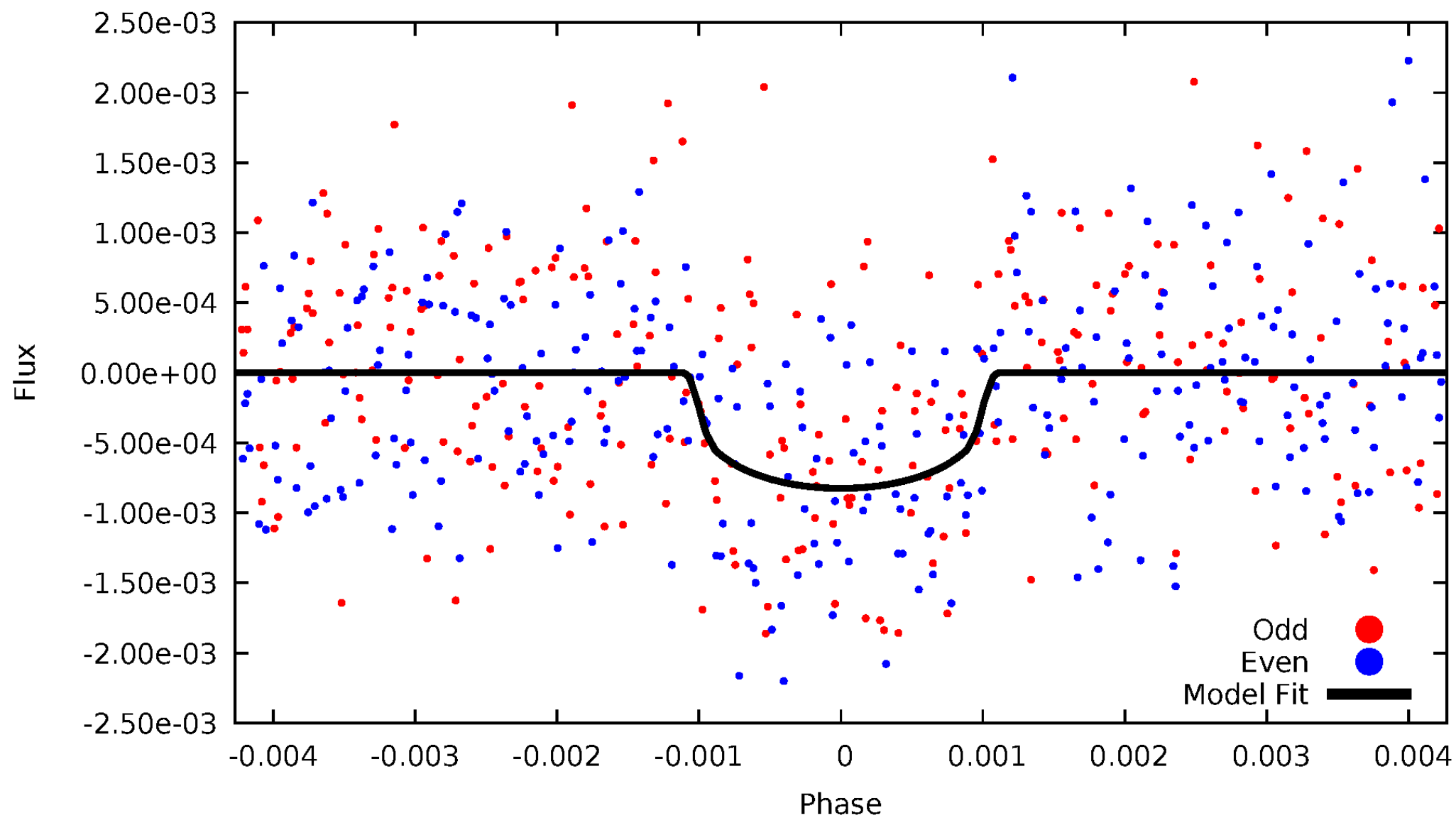


TCE 011757451-01



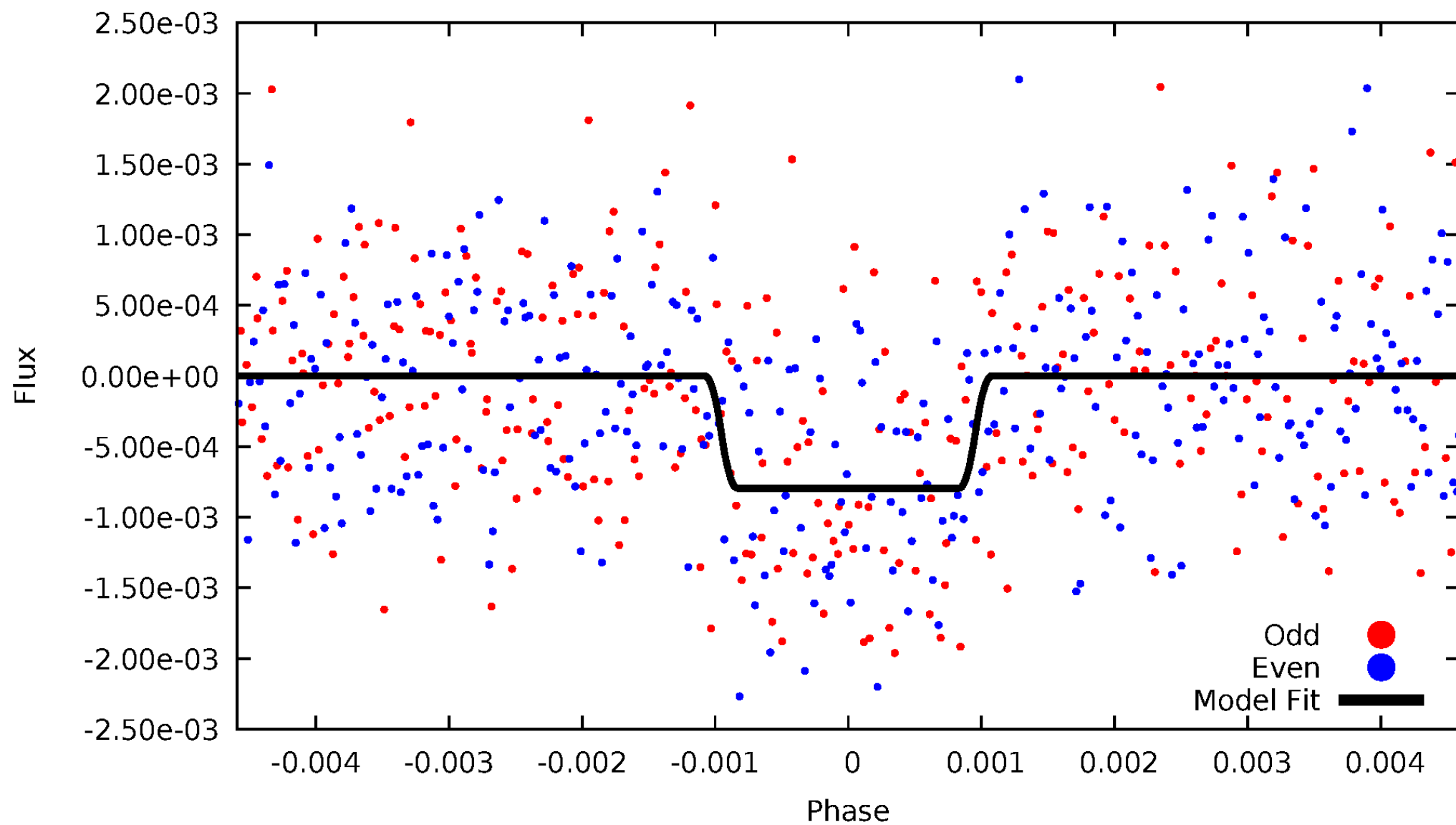
DV Odd/Even

TCE 011757451-01



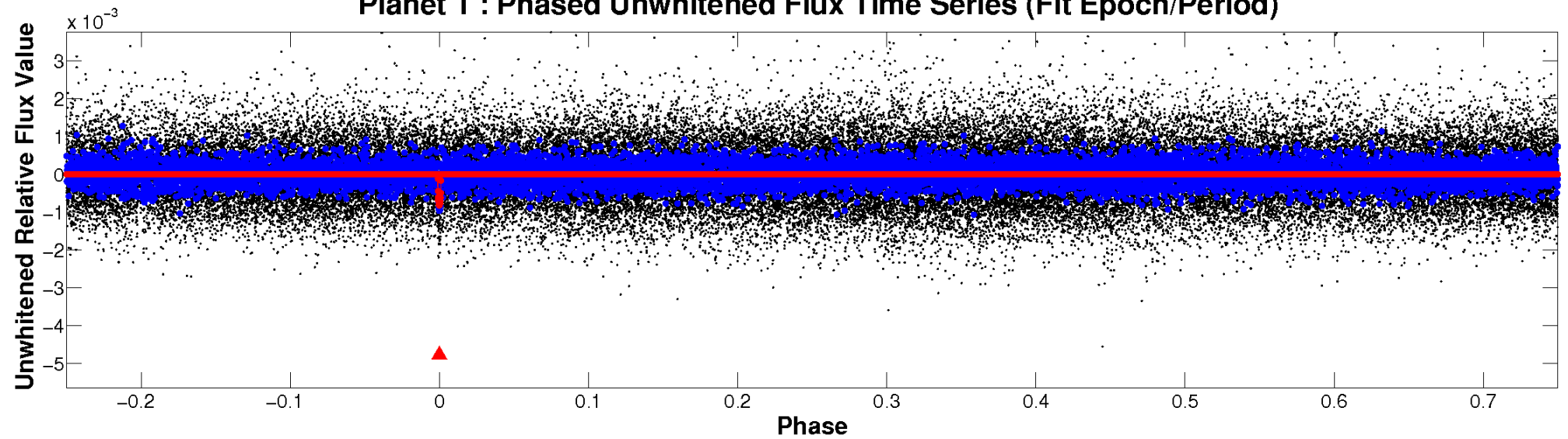
ALT Odd/Even

TCE 011757451-01

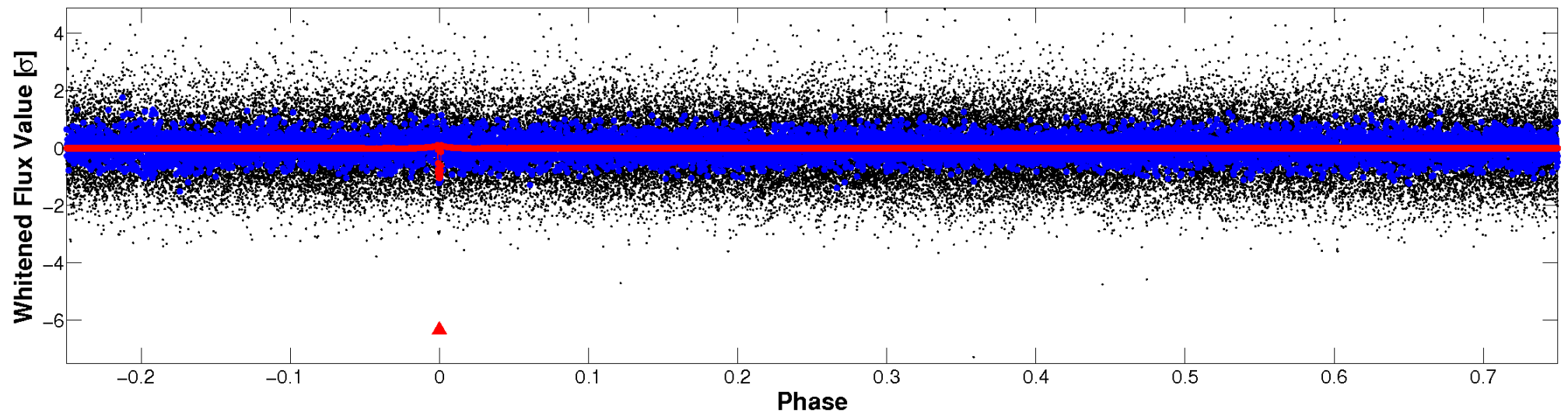


Non-Whitened Vs. Whitened Light Curve

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

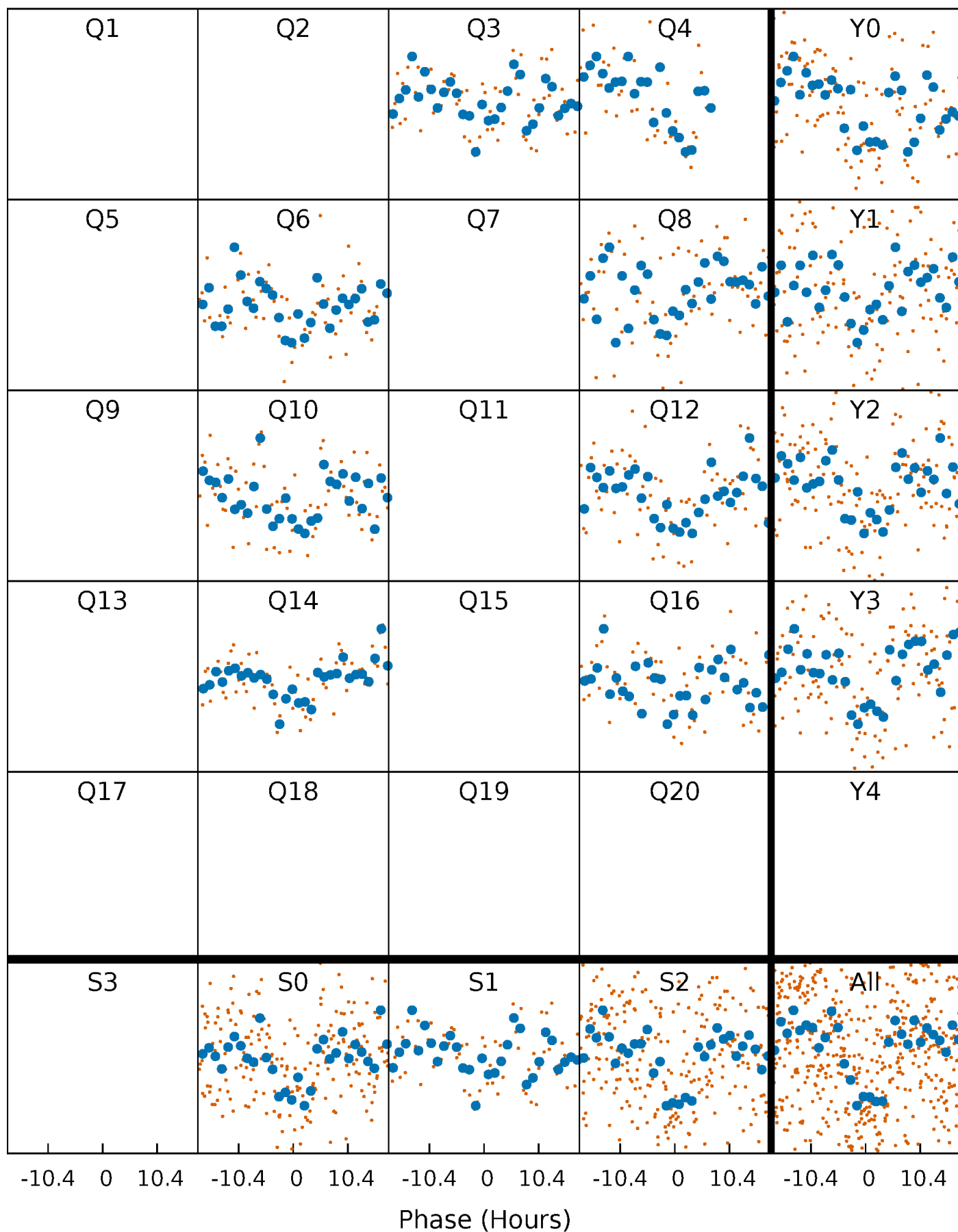


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



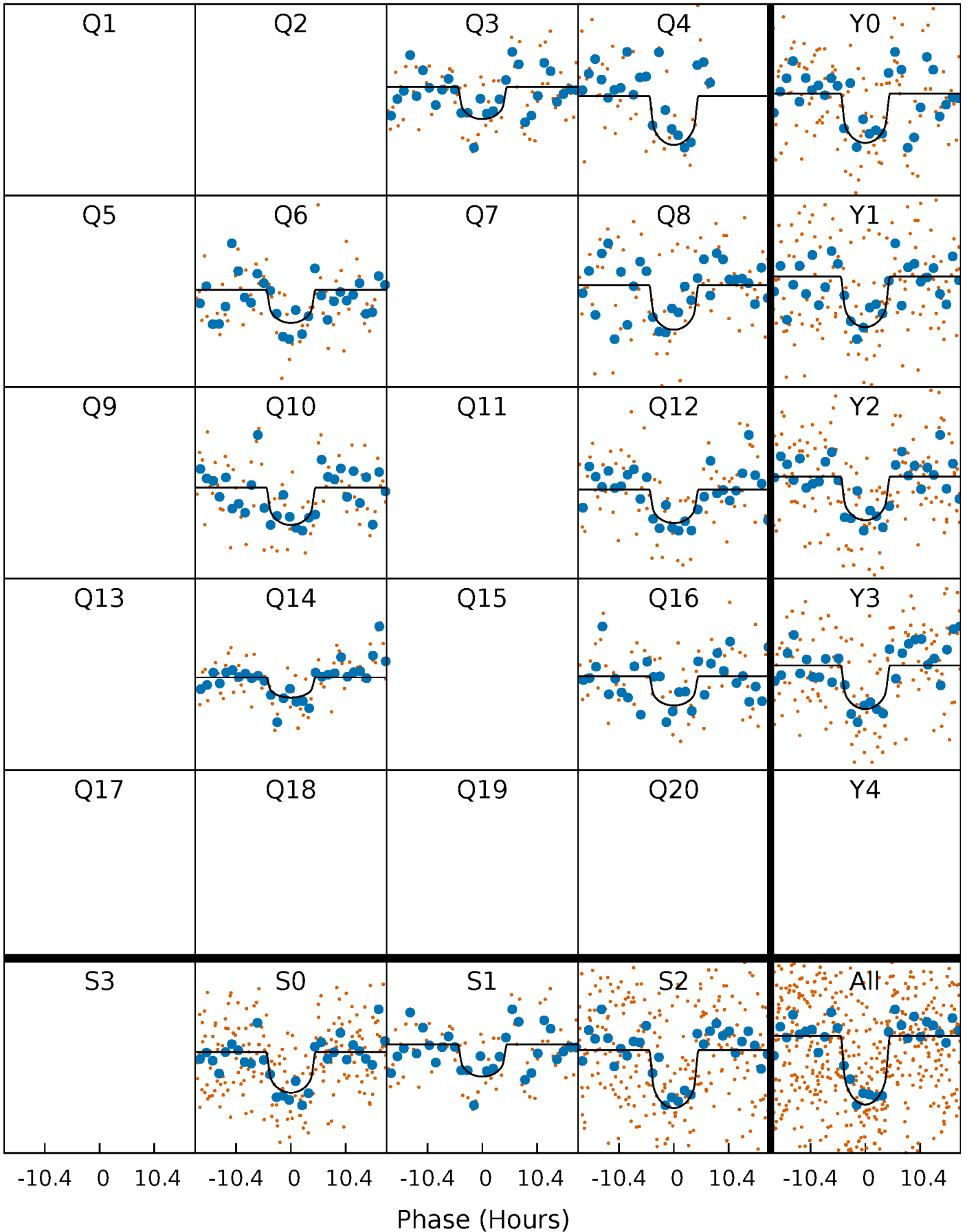
PDC Quarter-Phased Transit Curves

TCE 011757451-01 P=177.668842 Days $T_0=264.242343$ (BKJD)



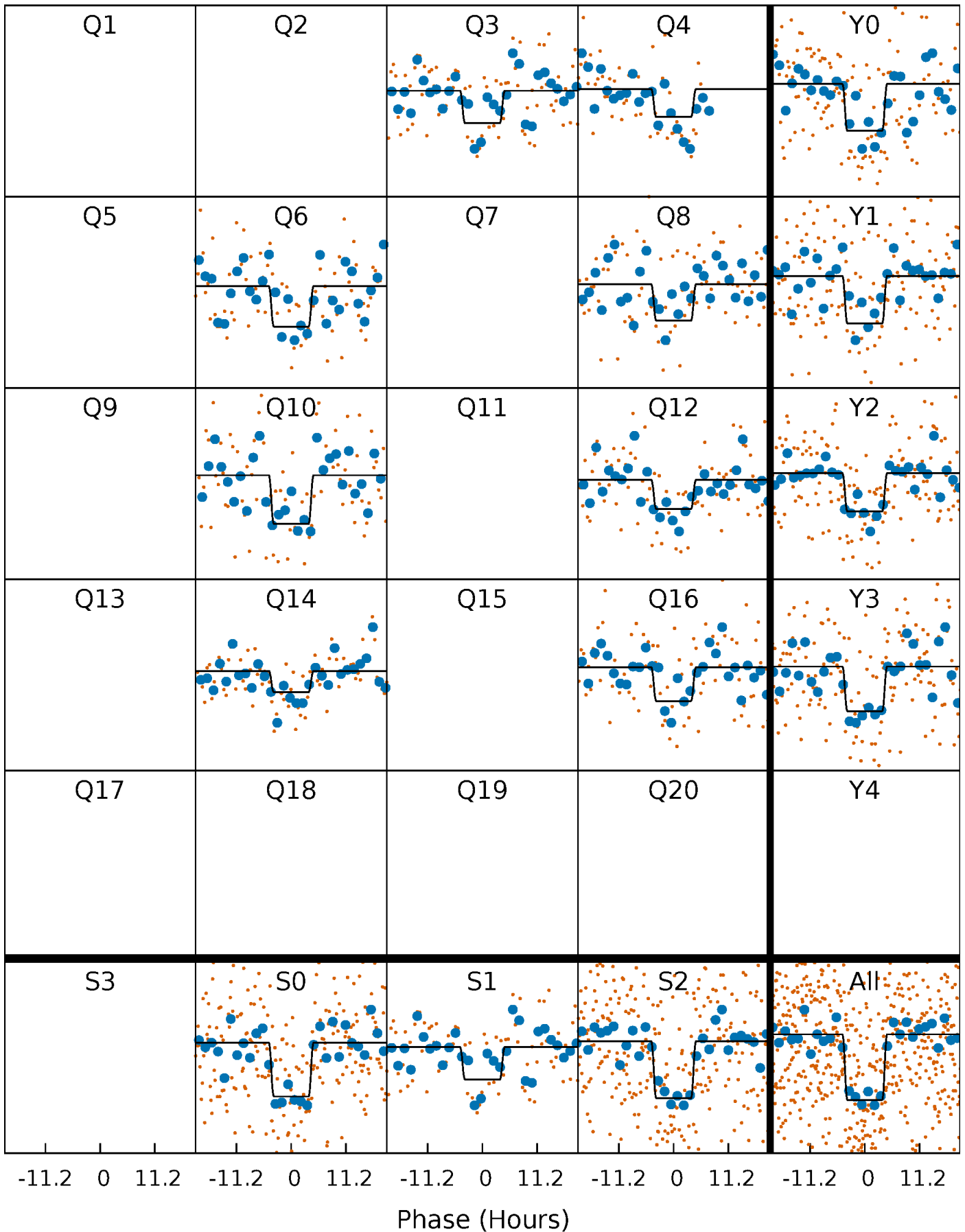
DV Quarter-Phased Transit Curves

TCE 011757451-01 P=177.668842 Days $T_0=264.242343$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

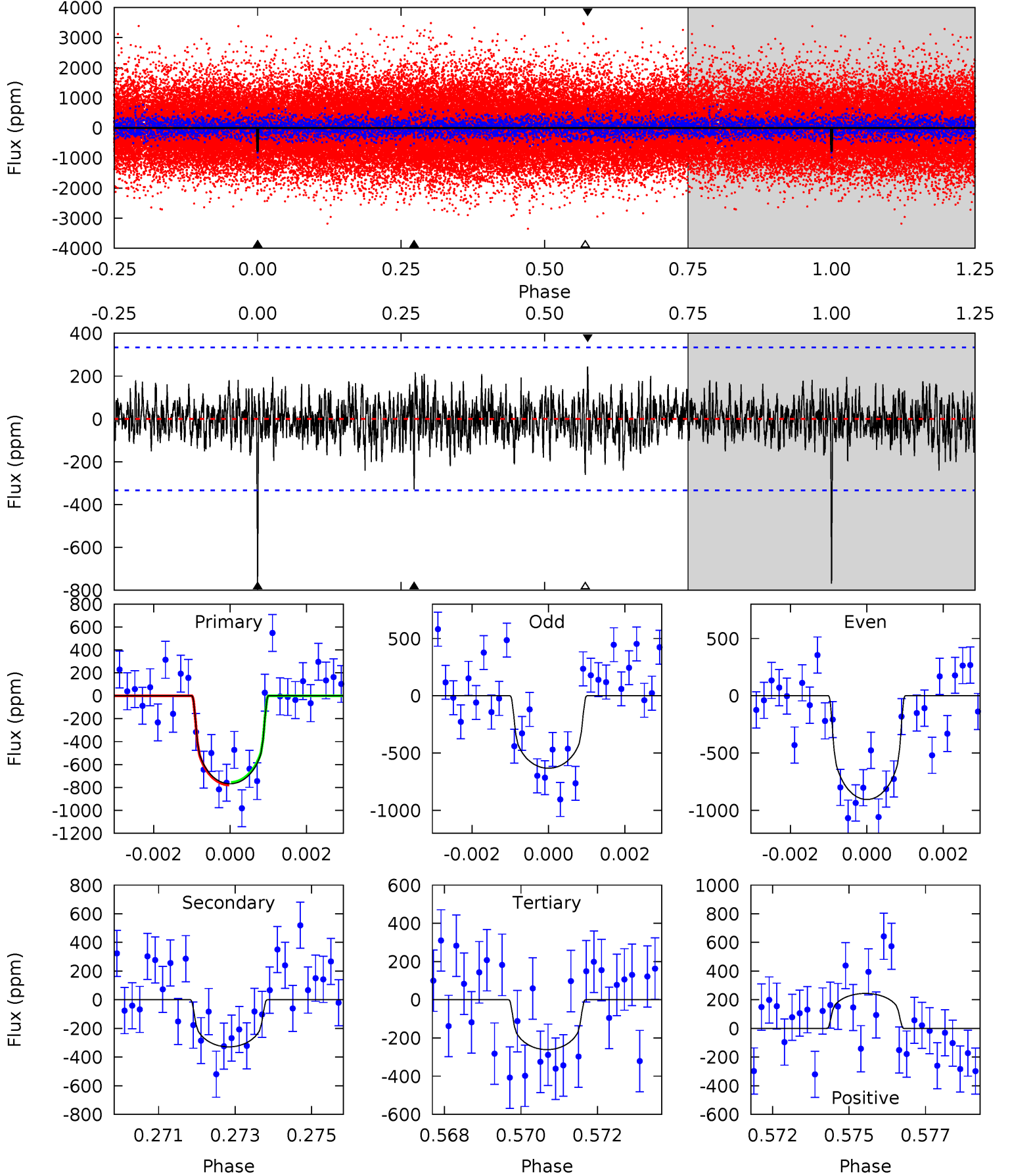
TCE 011757451-01 P=177.676615 Days $T_0=264.213560$ (BKJD)



DV Model-Shift Uniqueness Test

011757451-01, $P = 177.668842$ Days, $E = 86.573501$ Days

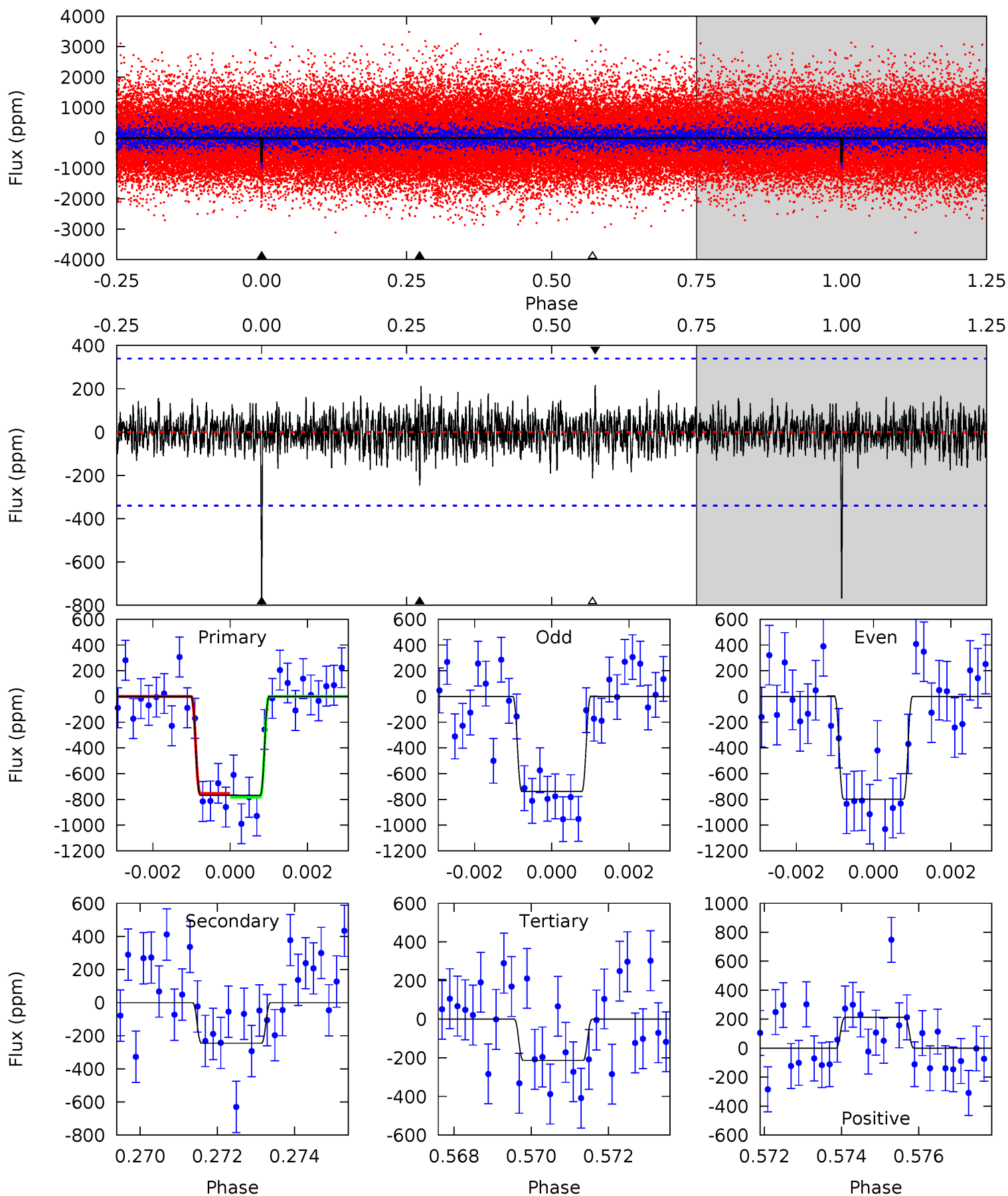
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	5.23	4.15	3.88	5.31	3.06	1.16	8.07	8.34	1.08	1.35	2.17	1.01	0.24	0.18



Alt Model-Shift Uniqueness Test

011757451-01, $P = 177.676615$ Days, $E = 86.536945$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	3.84	3.34	3.33	5.31	3.07	0.92	8.68	8.69	0.50	0.51	0.46	1.08	0.22	0.22



Stellar Parameters For KIC 011757451

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4721^{+75}_{-85}	$4.615^{+0.021}_{-0.036}$	$-0.020^{+0.150}_{-0.150}$	$0.701^{+0.039}_{-0.029}$	$0.740^{+0.037}_{-0.037}$	$3.020^{+0.290}_{-0.357}$
	+2%/-2%	+0%/-1%	+750%/-750%	+6%/-4%	+5%/-5%	+10%/-12%
Source	SPE85	SPE85	SPE85	DSEP		

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

Secondary Eclipse Parameters for KIC 011757451-01 / KOI 4745.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-329 ± 63	$2.19^{+1.25}_{-1.17}$	327^{+6}_{-7}	3950^{+1328}_{-538}	11225^{+38837}_{-6469}
Alt.	-245 ± 64	$2.13^{+1.14}_{-1.01}$	327^{+6}_{-6}	3788^{+1066}_{-502}	8688^{+24715}_{-5080}

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

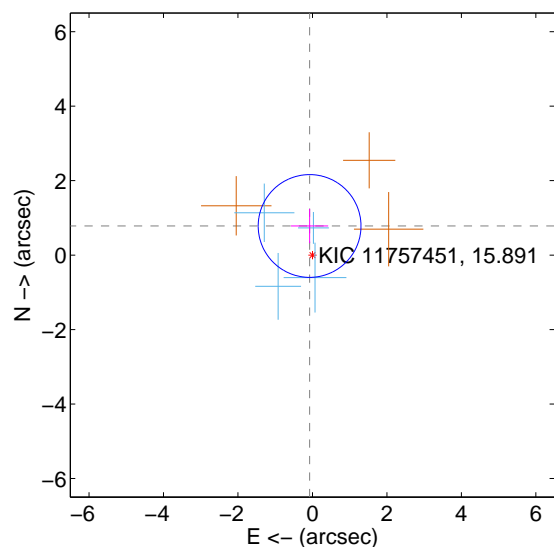
Supplemental centroid analysis for 011757451-01. Kepler magnitude: 15.89. Transit SNR 10.25

There are 4 quarters with good PRF difference image offsets

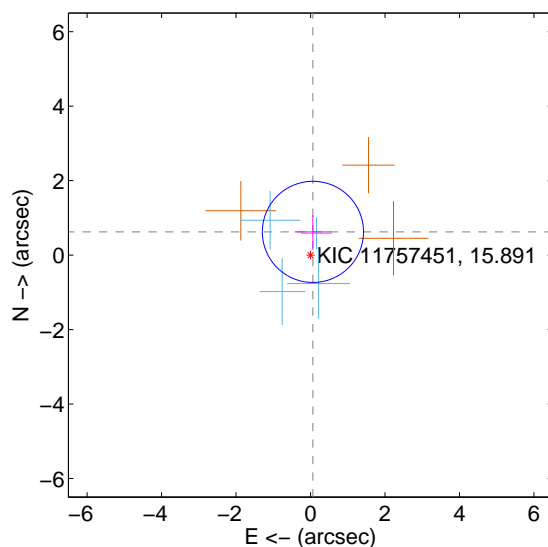
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.786 ± 0.460	1.71	0.076 ± 0.501	0.782 ± 0.460
PRF-fit source offset from KIC position	0.627 ± 0.453	1.38	-0.064 ± 0.491	0.624 ± 0.452
photometric centroid source offset	0.86 ± 1.52	0.57	-0.86 ± 1.52	-0.11 ± 1.40

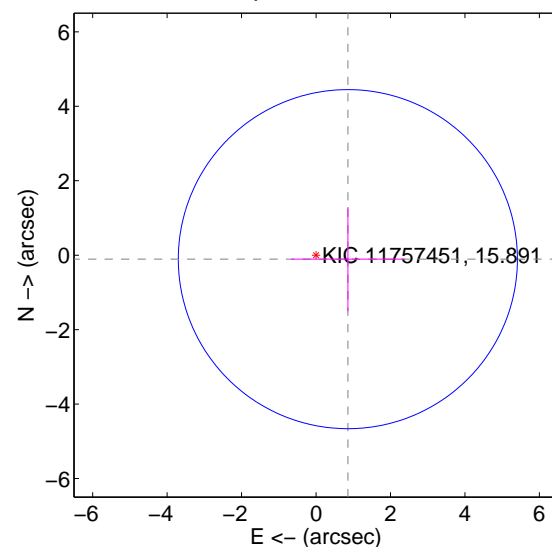
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

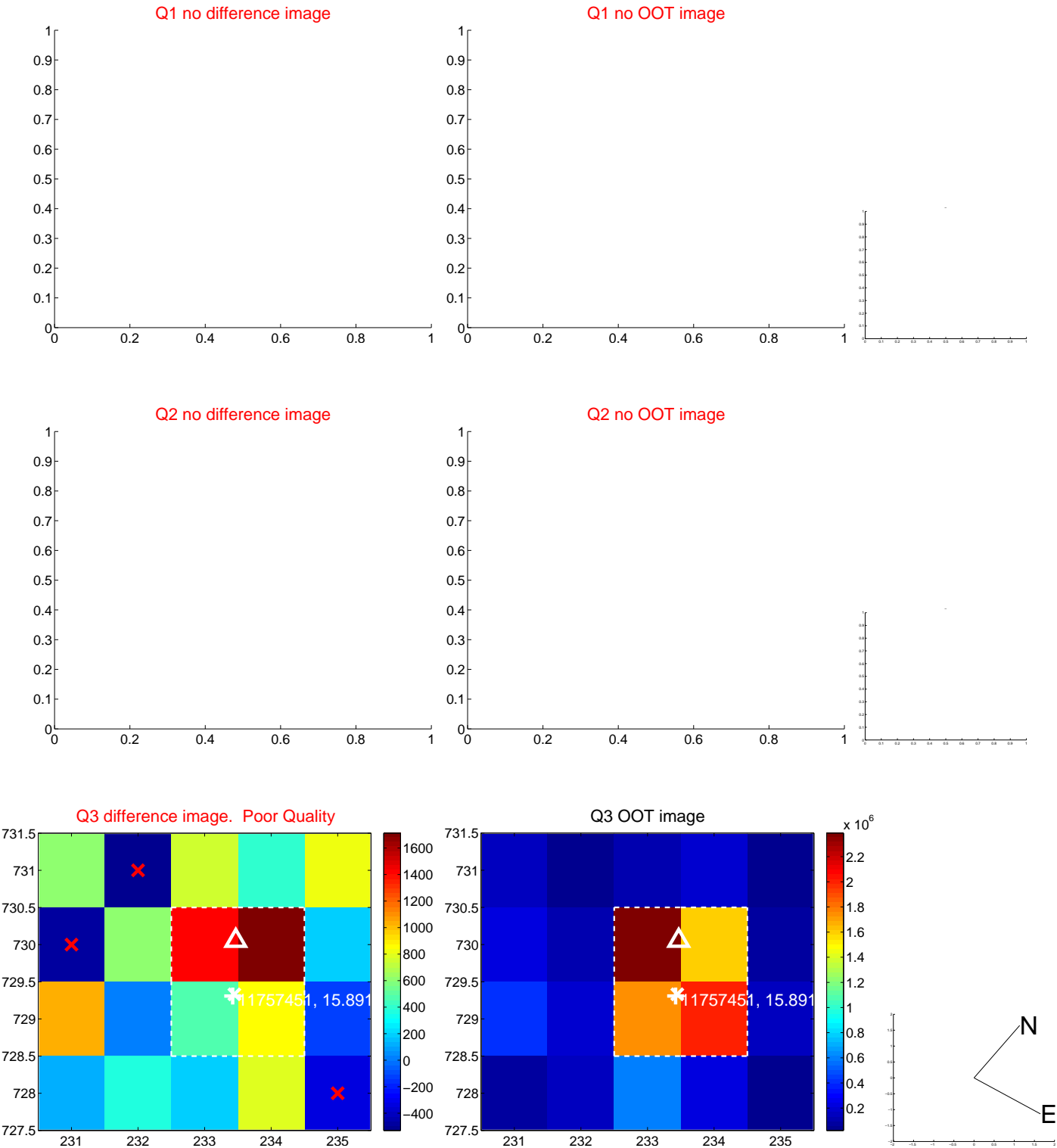


offset from photometric centroids

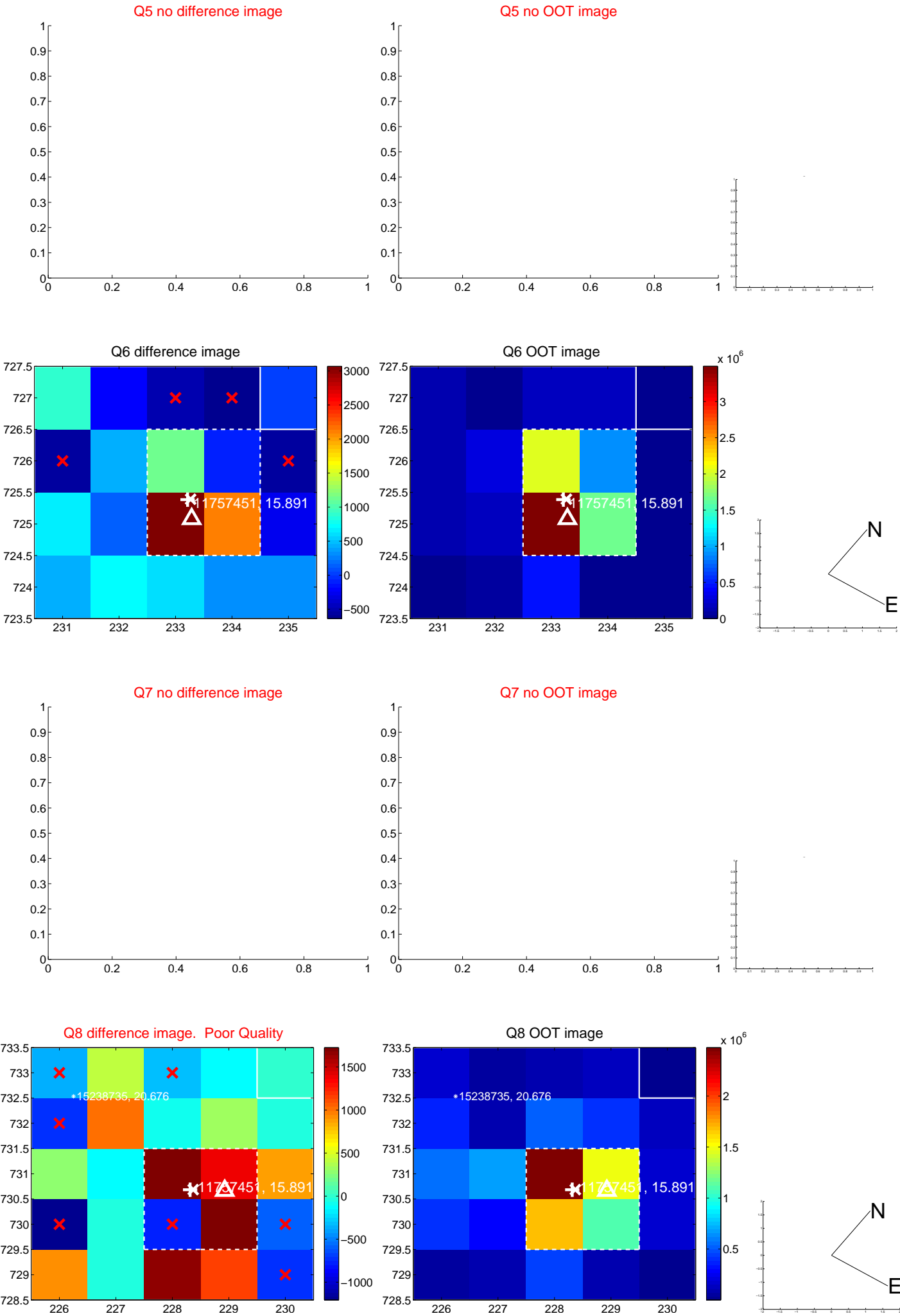


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

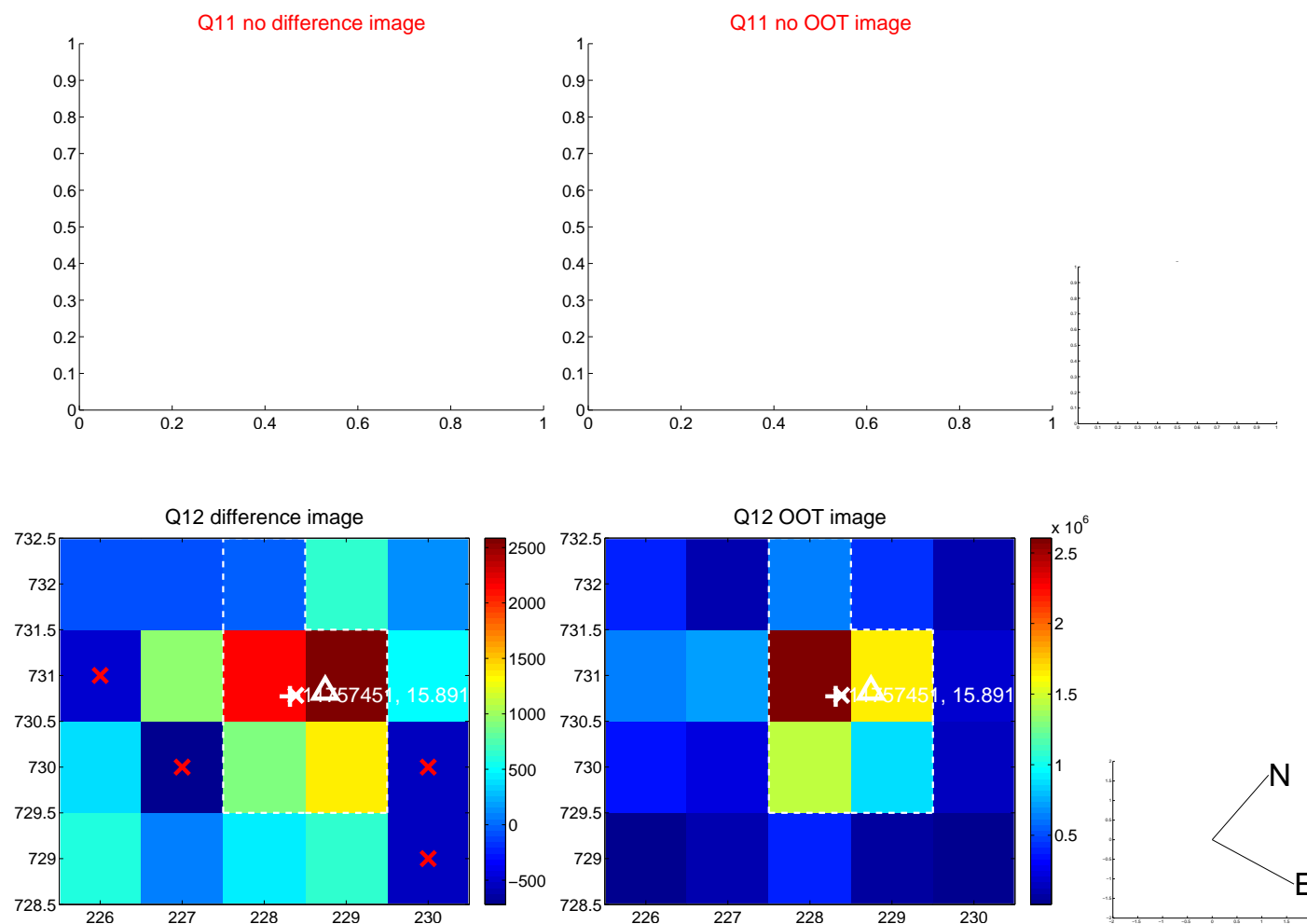
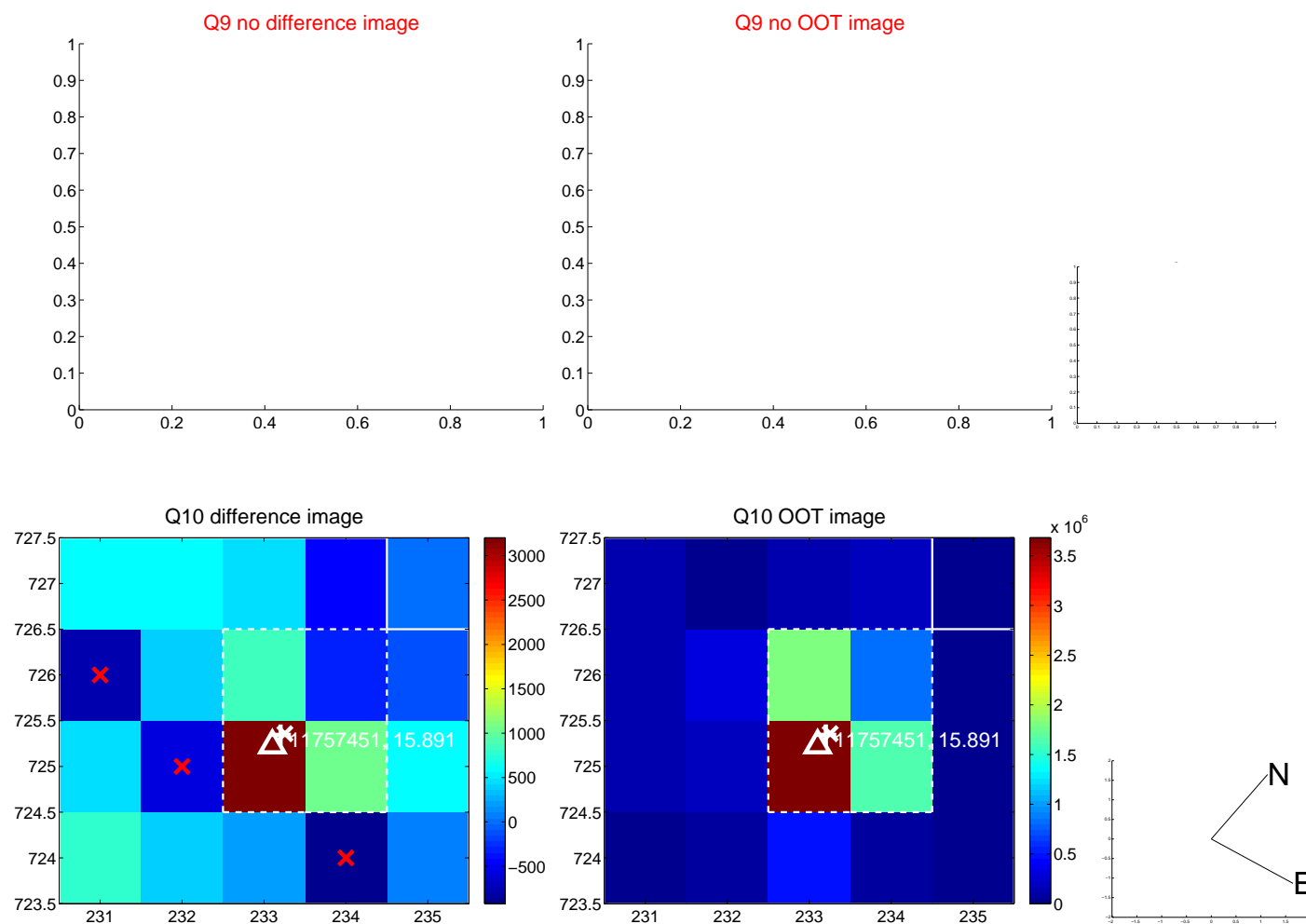
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



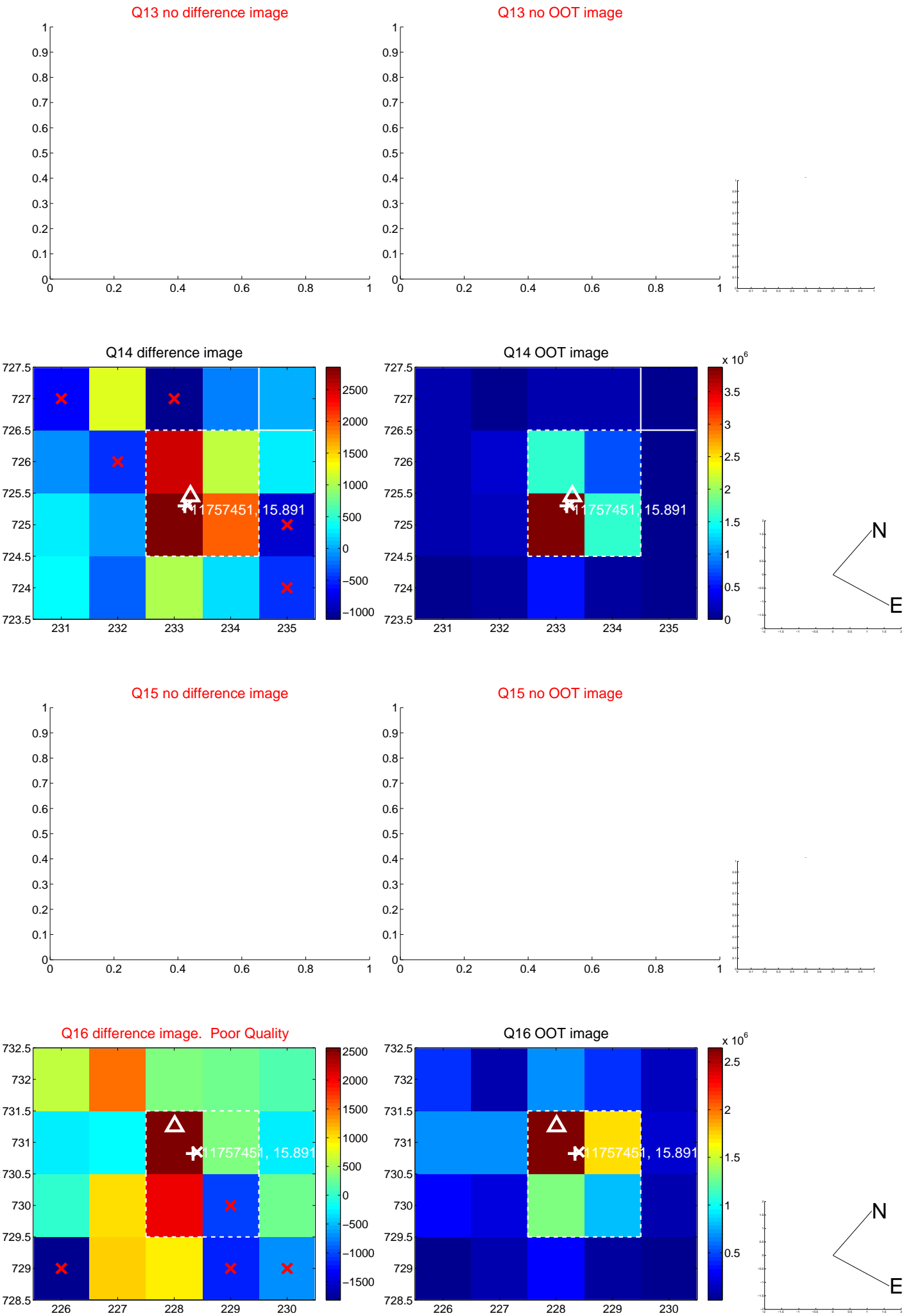
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



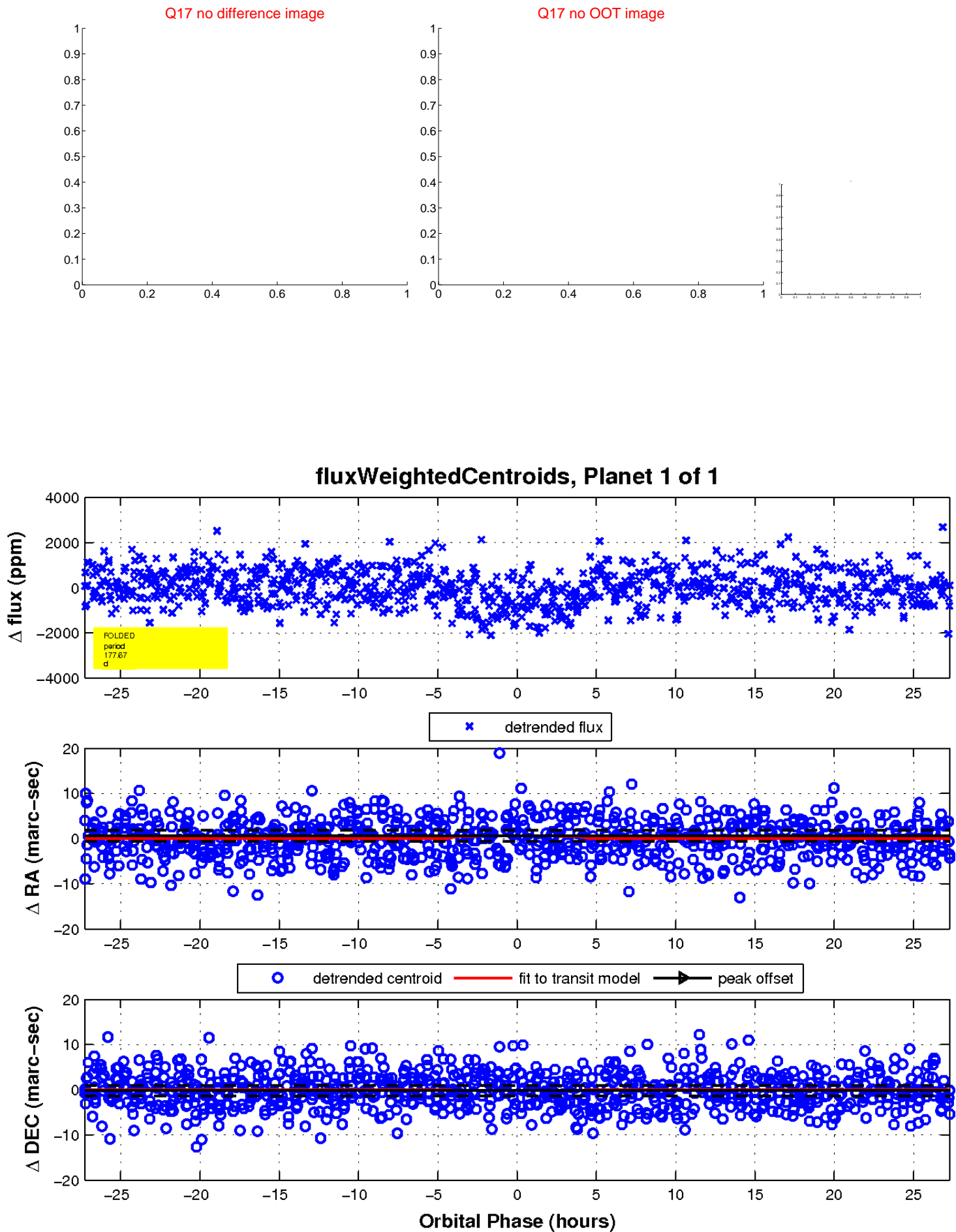
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image

