

KIC 009777256

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 _⊕)
009777256-01	OBS	2997.01	1.332519	132.079351	113.4	4.121	15.6	16.9	1.07	5701	1.34	2205.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009777256-01	OBS	FP	0.00	0	0	0	1	CENT_FEW_DIFFS—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.

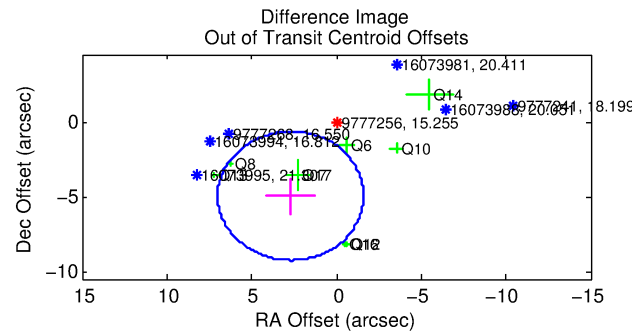
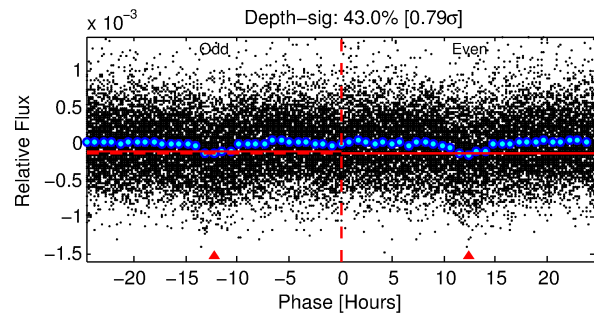
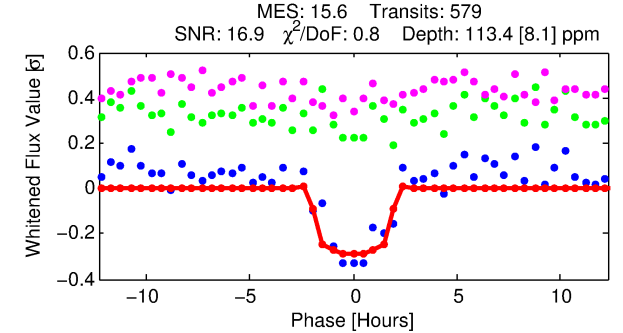
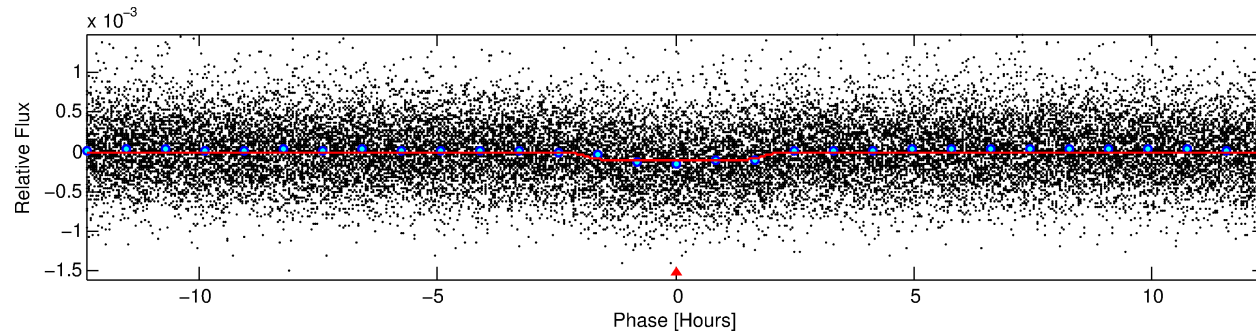
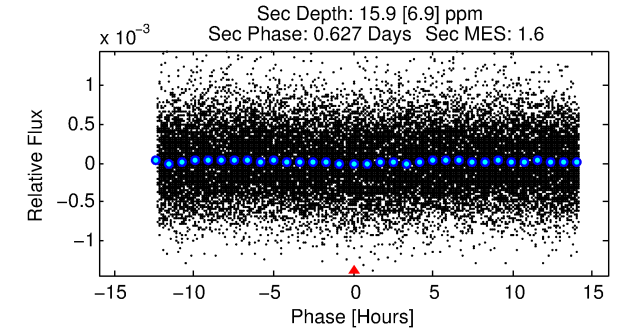
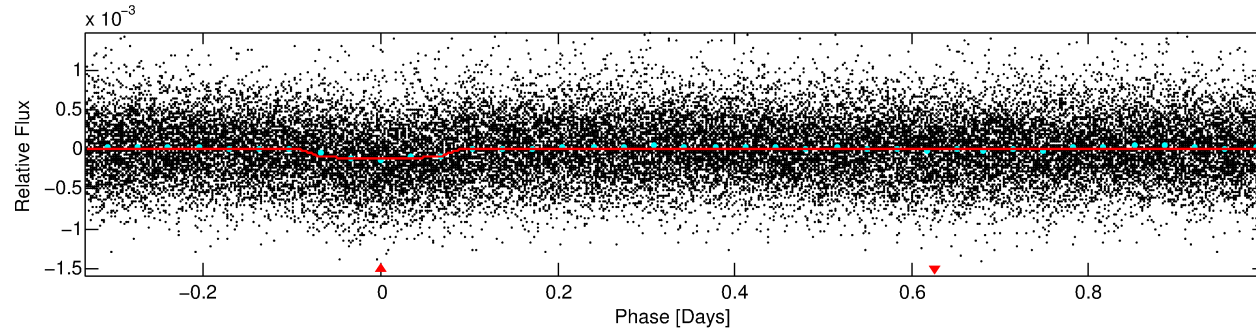
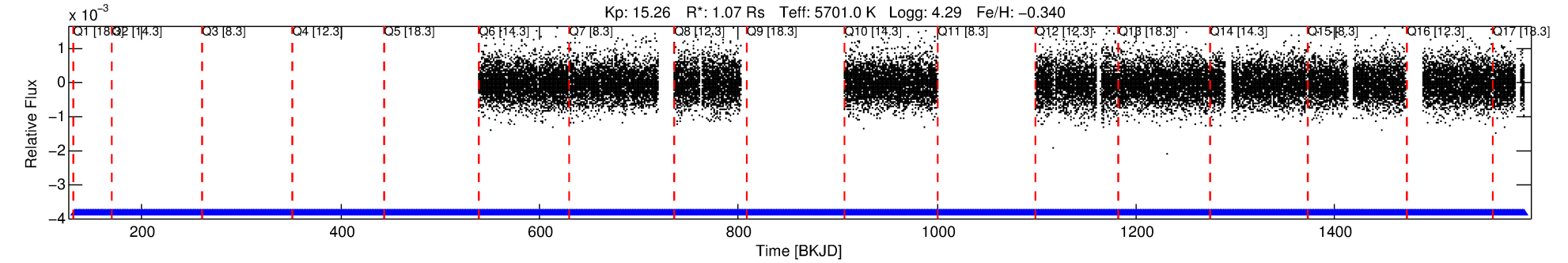
Ephemeris Match Information For 009777256-01

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
009777256-01	9777256	BR-Cyg-pri	9899416	1:1	1975.9	496	1	10.03	15.26	5919.20	Col-Anomaly	0	2.81	2.09

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: 977256 Candidate: 1 of 1 Period: 1.333 d
KOI: K02997.01 Corr: 0.973



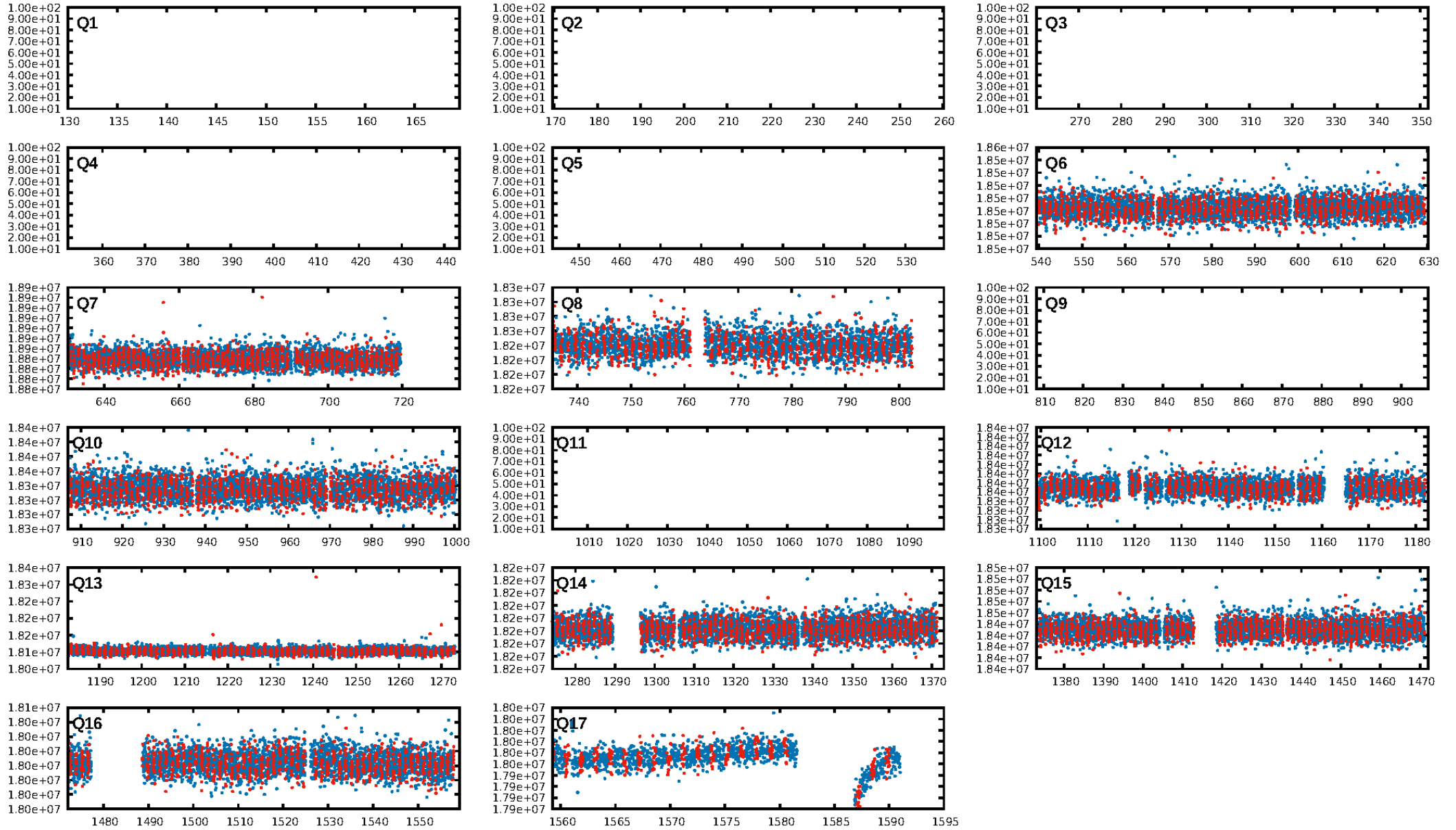
DV Fit Results:

Period = 1.33252 [0.00001] d
Epoch = 132.0794 [0.0031] BKJD
Rp/R* = 0.0115 [0.0040]
a/R* = 1.50 [1.41]
b = 0.89 [0.39]
Seff = 2205.54 [1007.17]
Teff = 1747 [199] K
Rp = 1.34 [0.64] Re
a = 0.0221 [0.0064] AU
Ag = 2.39 [2.21] [0.63σ]
Teffp = 3358 [694] K [2.23σ]

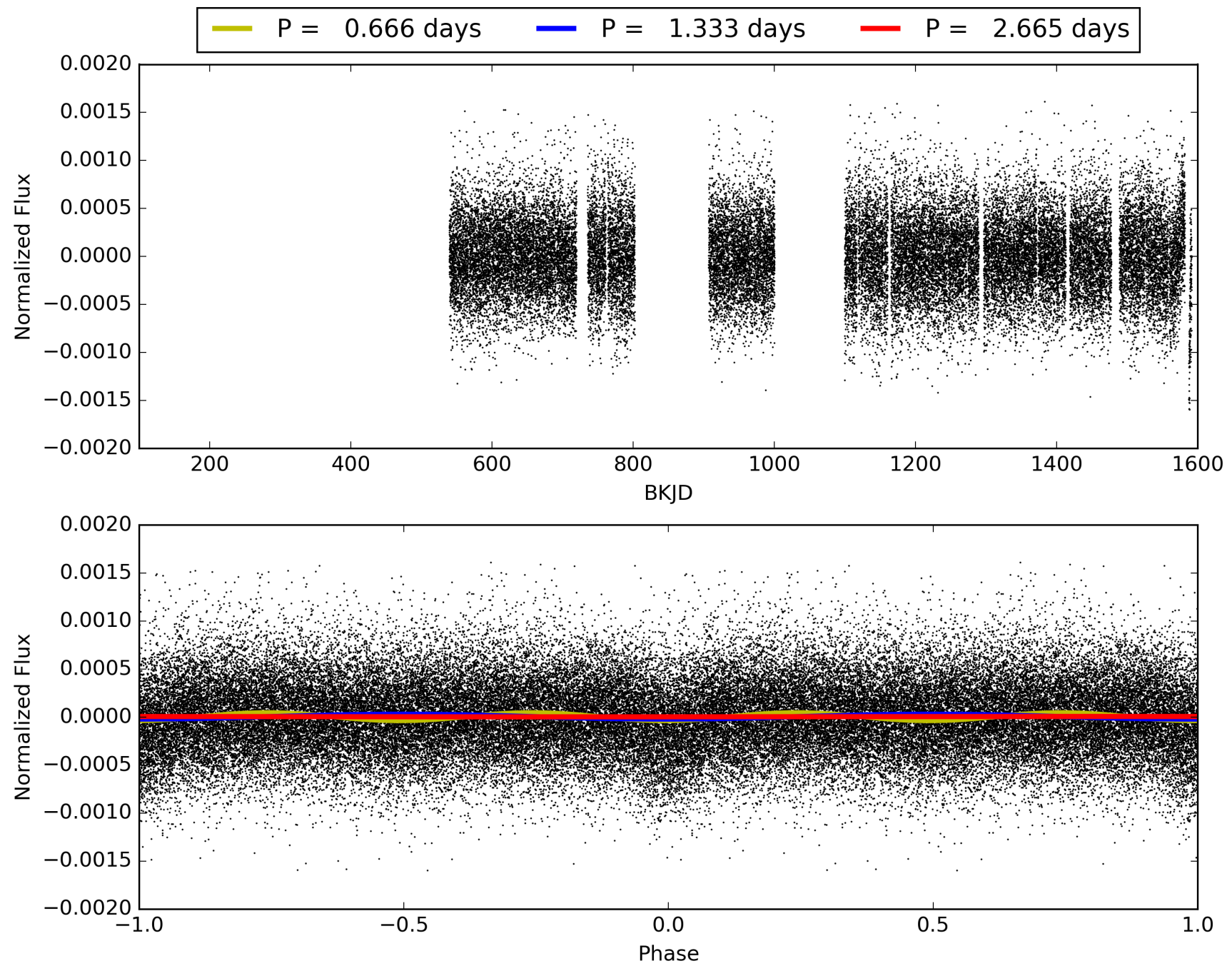
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.34e-55
RollingBand-fgt: 1.00 [559/559]
GhostDiagnostic-chr: 2.176
Centroid-sig: 0.0%
Centroid-so: 4.652 arcsec [6.03σ]
OotOffset-rm: 5.643 arcsec [3.94σ]
KicOffset-rm: 5.584 arcsec [4.31σ]
OotOffset-st: 3/0/3/2 [8]
KicOffset-st: 3/0/3/2 [8]
DiffImageQuality-fgm: 0.00 [0/8]
DiffImageOverlap-fno: 1.00 [10/10]

TCE 009777256-01, PDC Light Curves

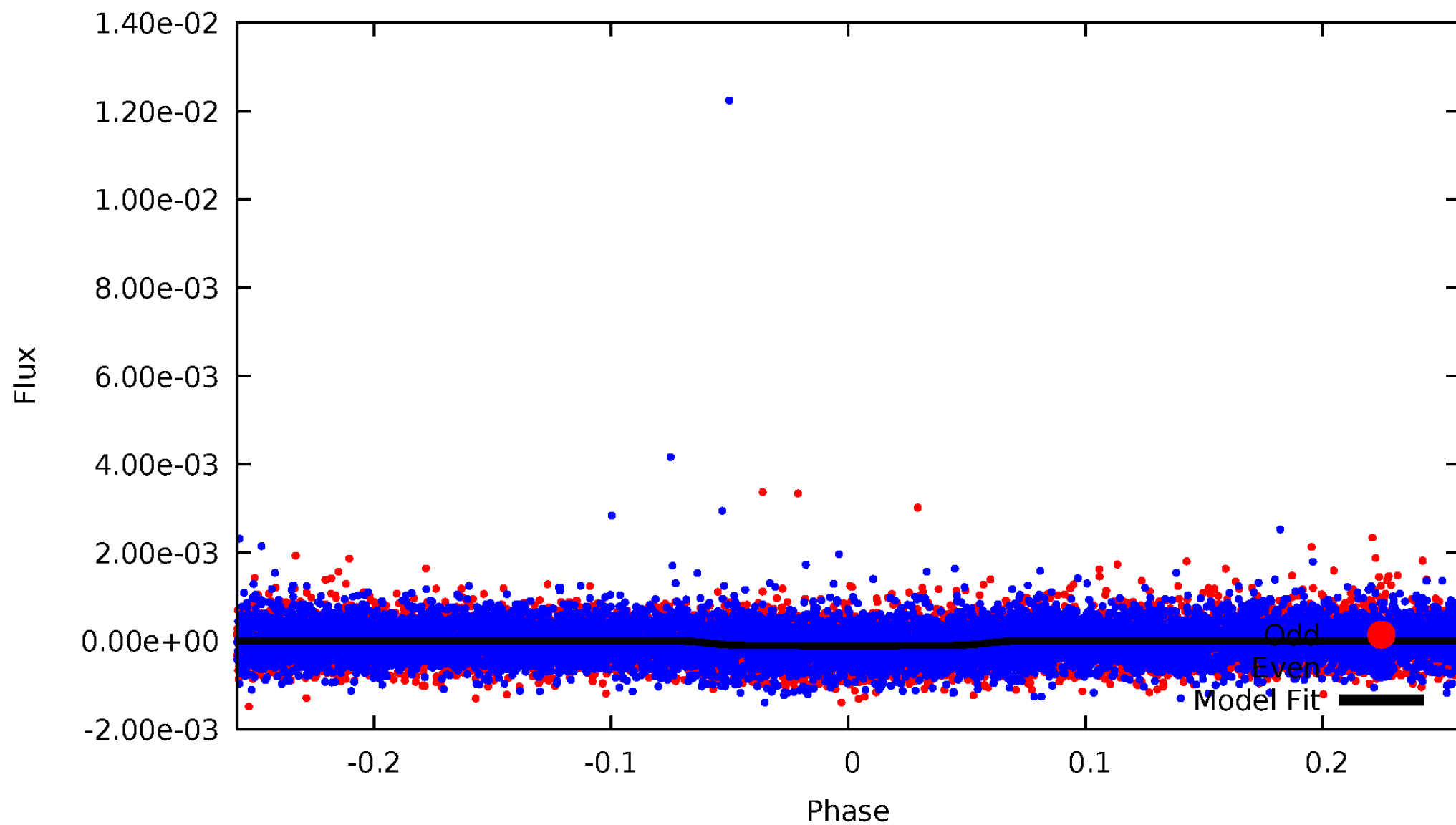


TCE 009777256-01



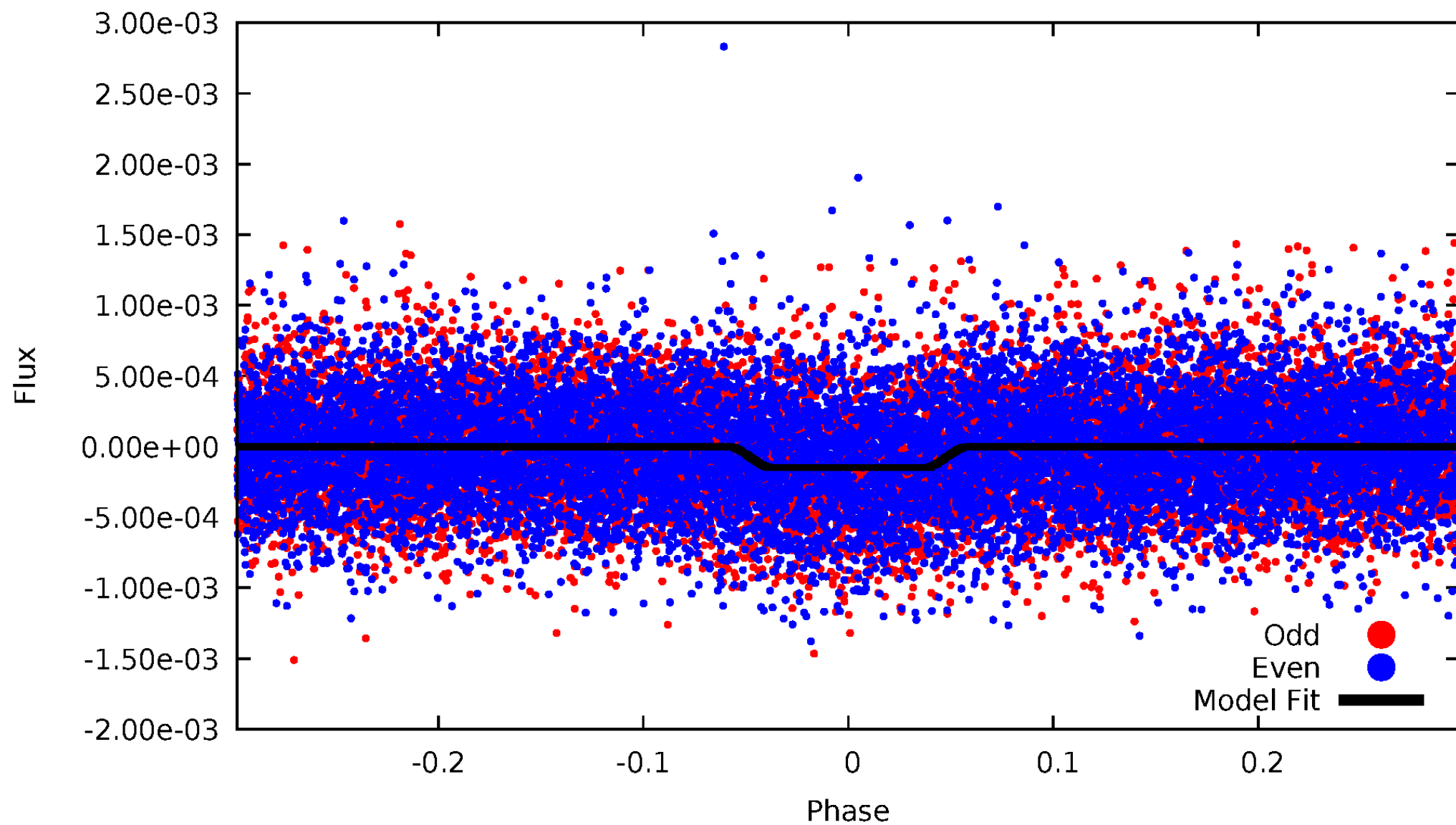
DV Odd/Even

TCE 009777256-01

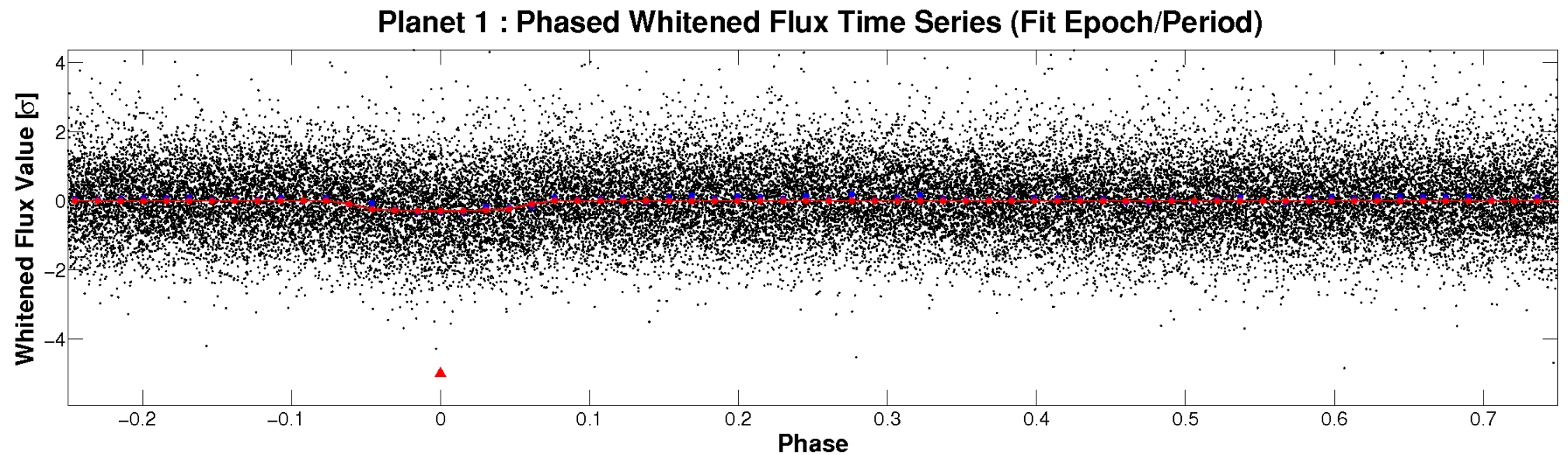
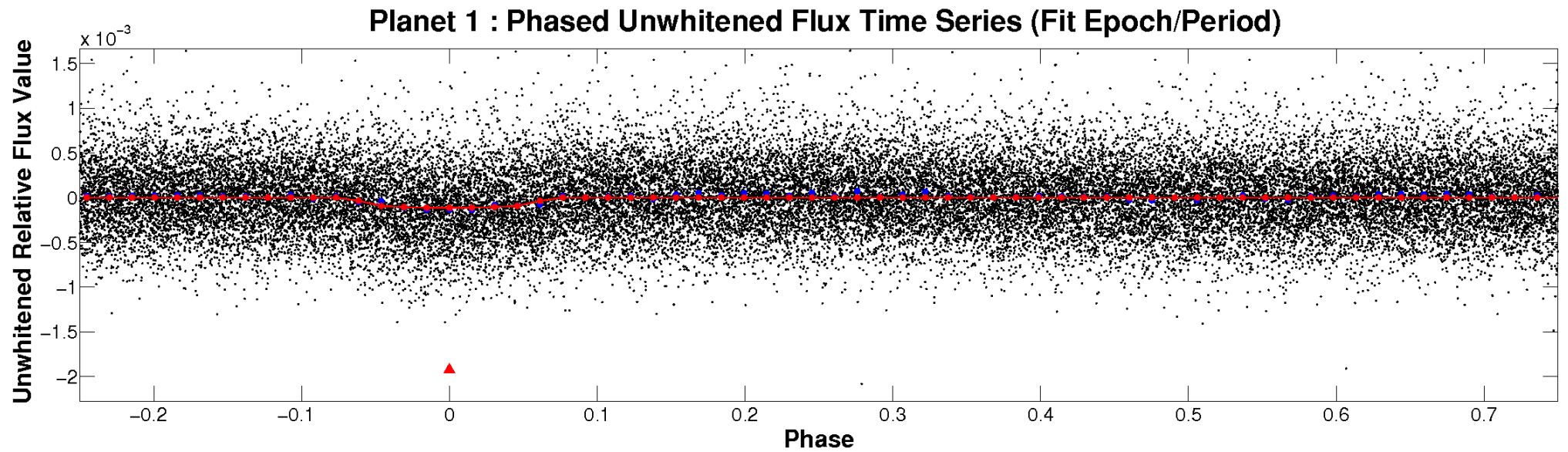


ALT Odd/Even

TCE 009777256-01

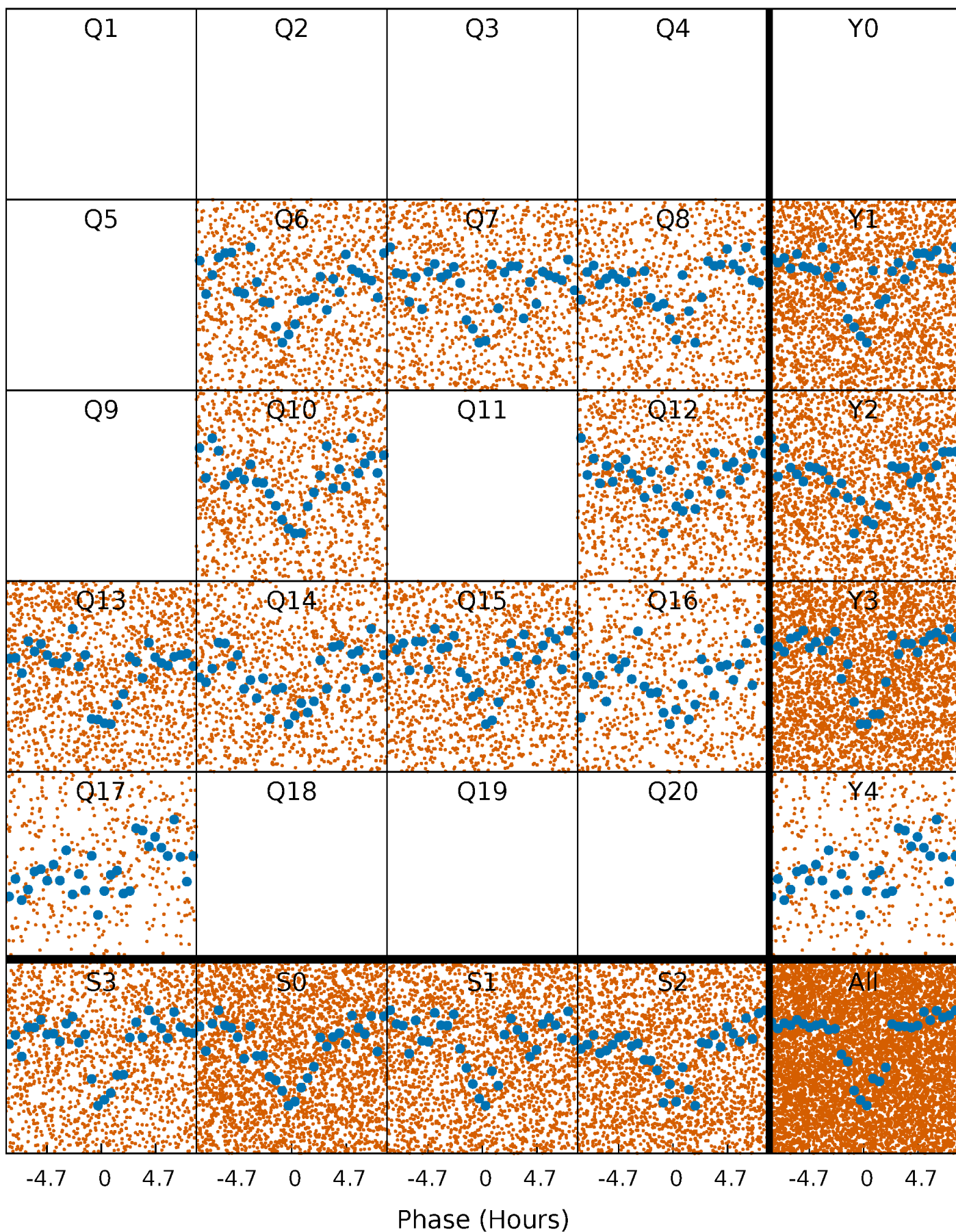


Non-Whitened Vs. Whitened Light Curve



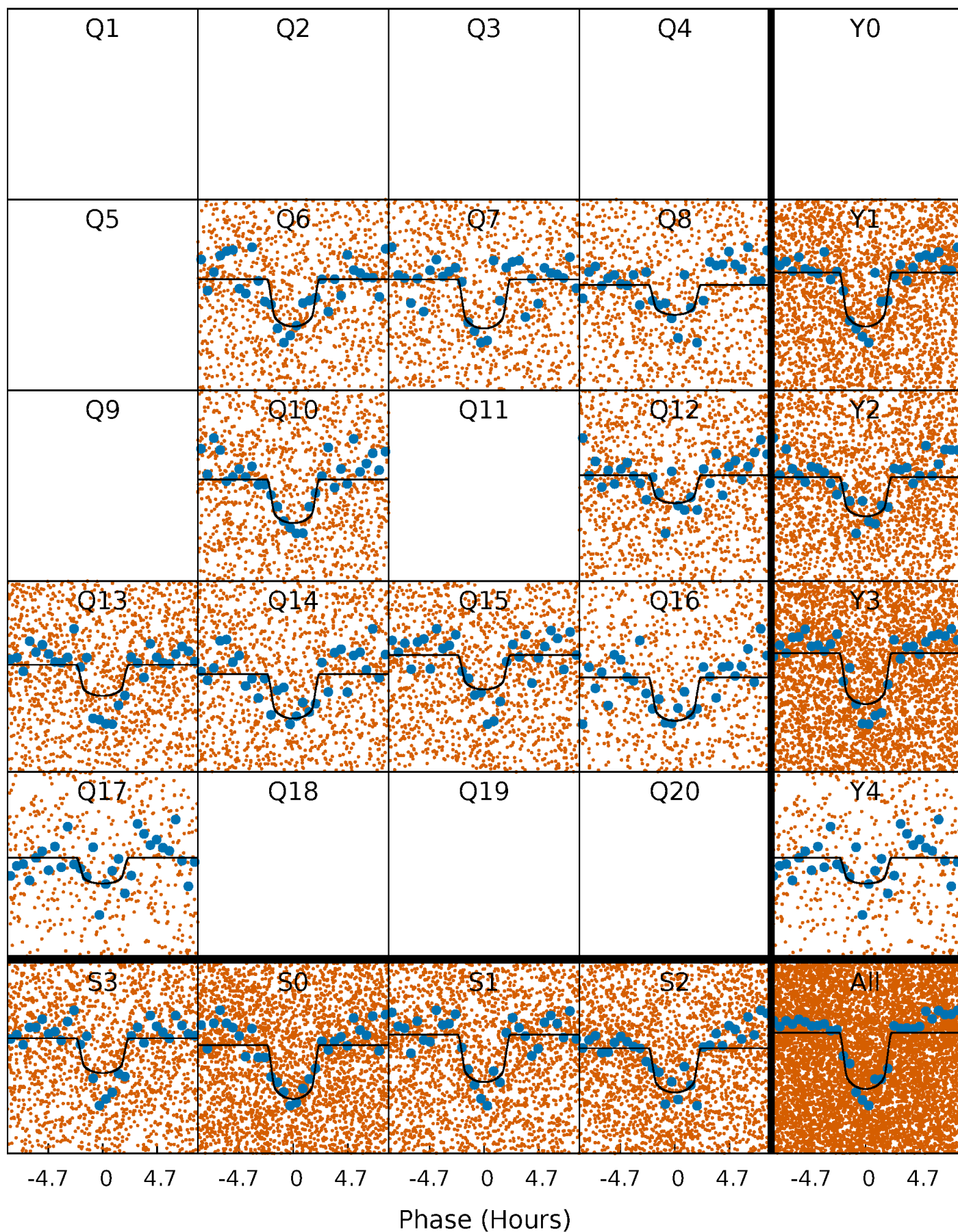
PDC Quarter-Phased Transit Curves

TCE 009777256-01 P= 1.332519 Days $T_0=132.079352$ (BKJD)



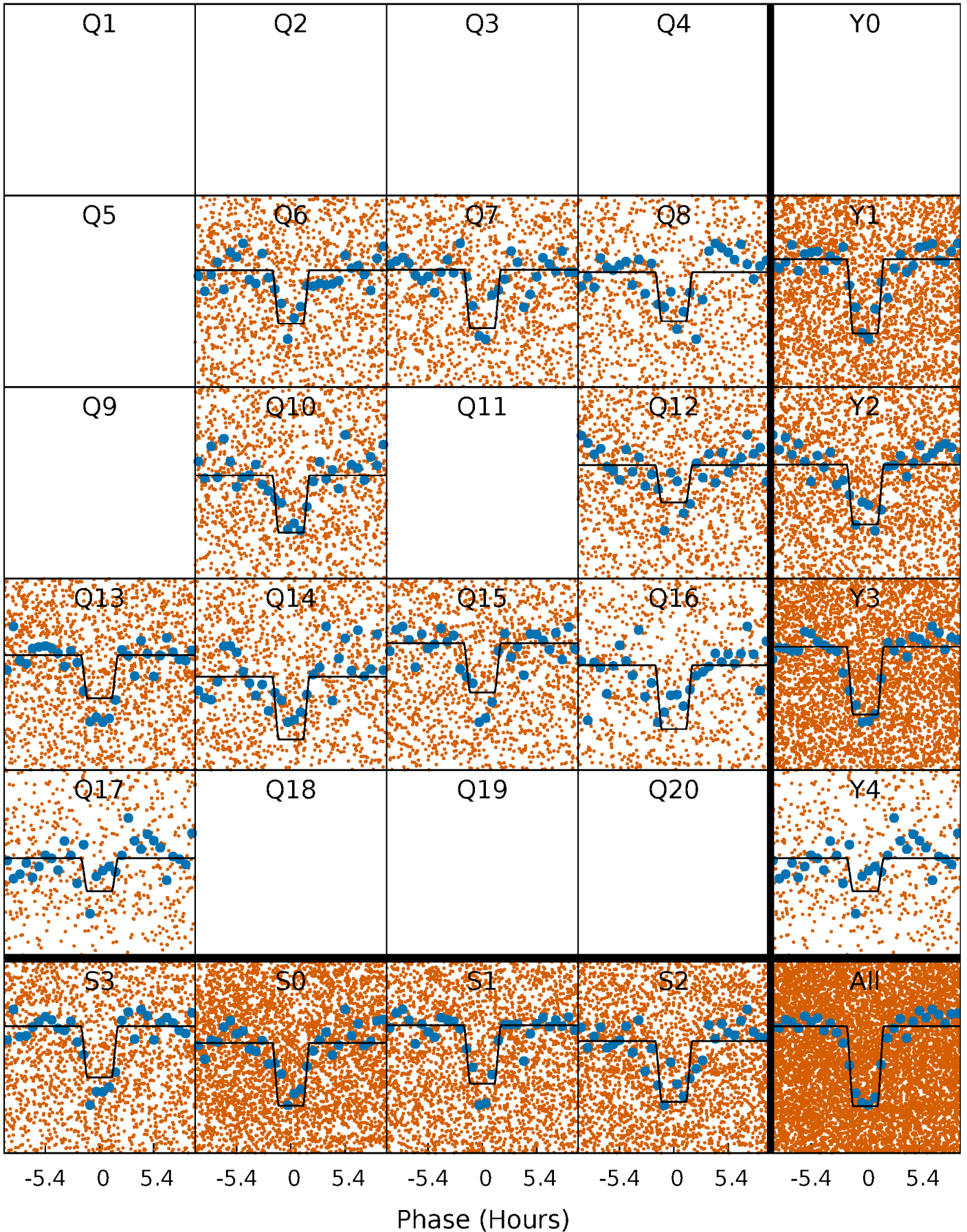
DV Quarter-Phased Transit Curves

TCE 009777256-01 P= 1.332519 Days $T_0=132.079352$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

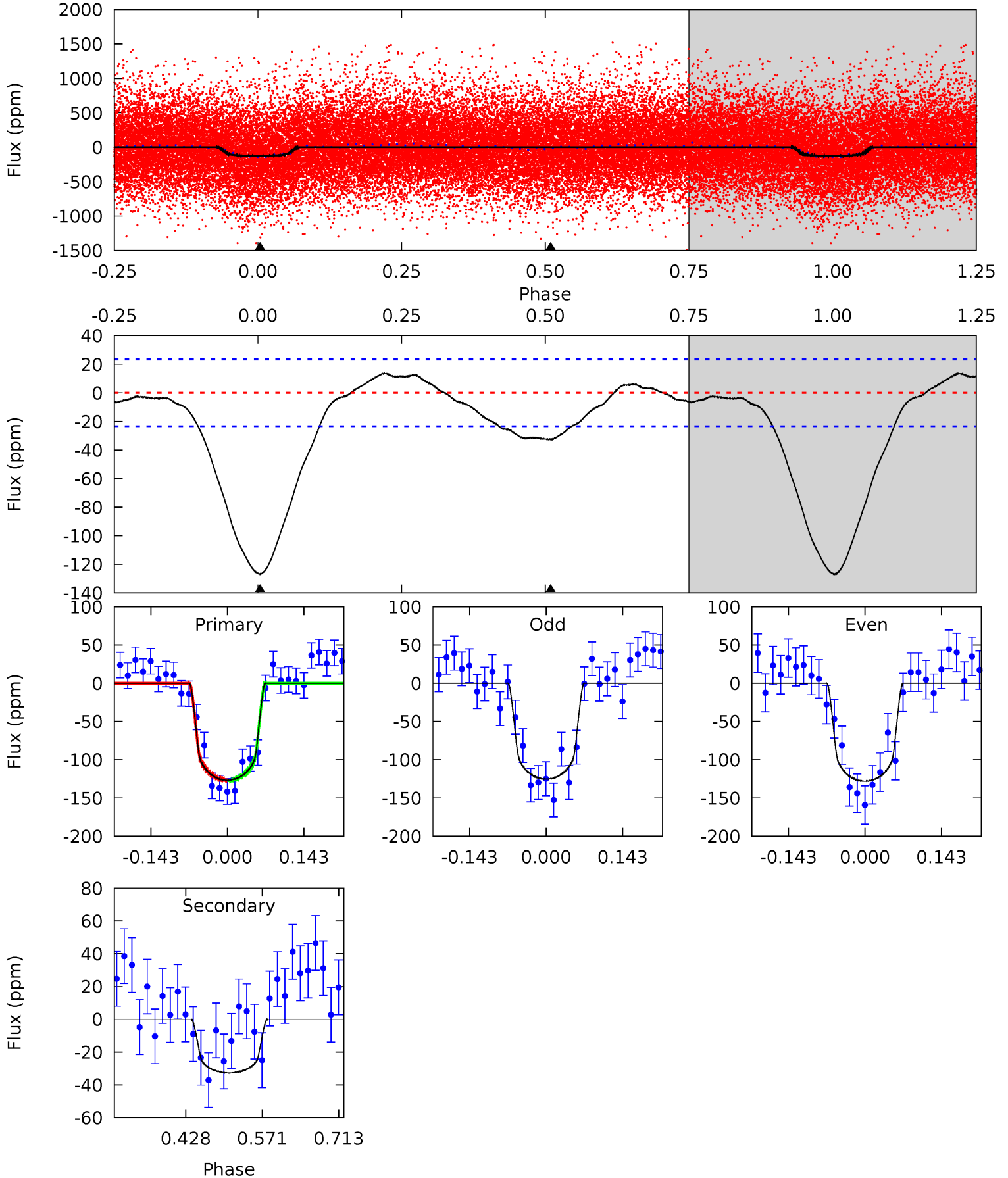
TCE 009777256-01 P= 1.332579 Days $T_0=132.037657$ (BKJD)



DV Model-Shift Uniqueness Test

009777256-01, P = 1.332519 Days, E = 132.079352 Days

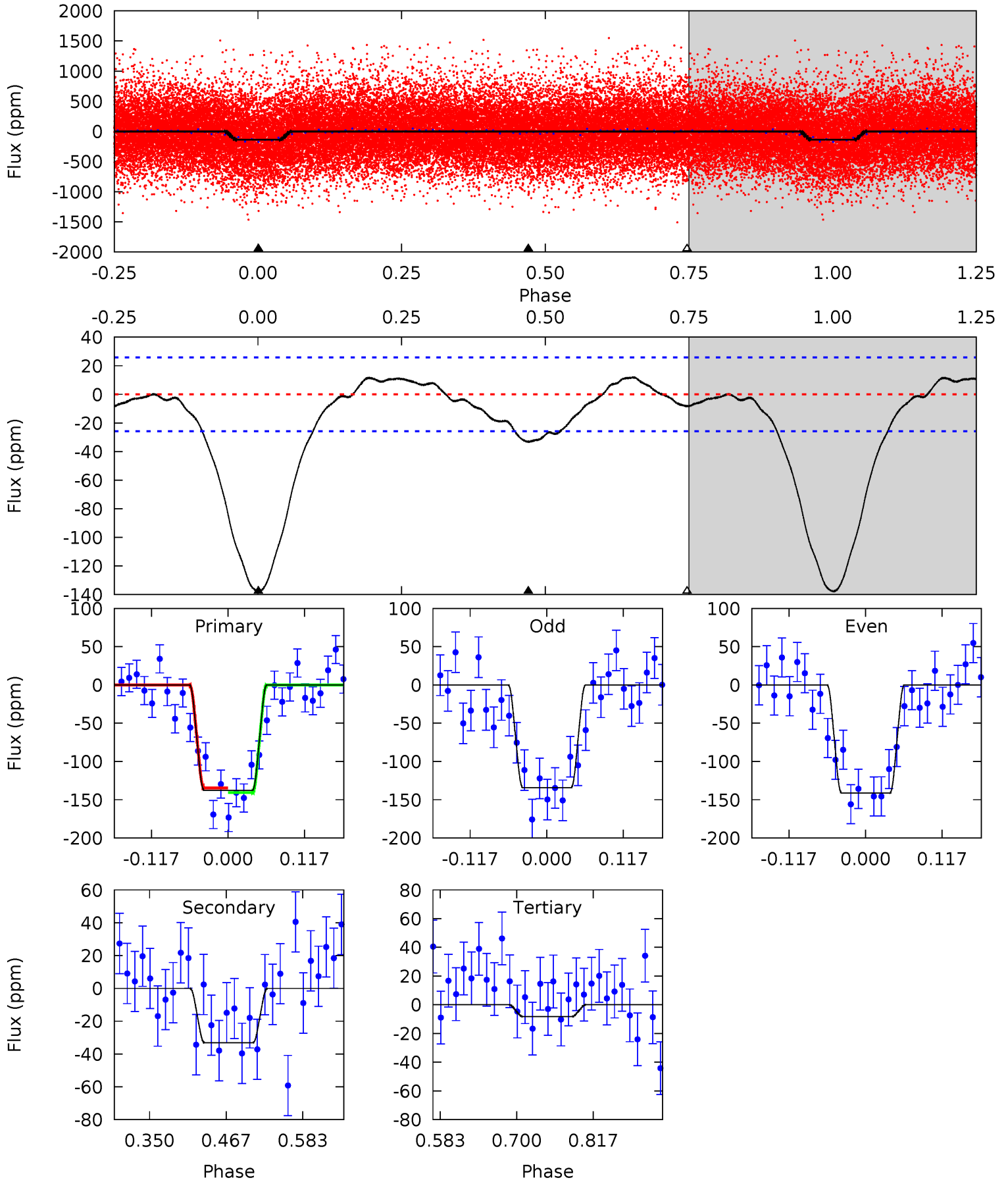
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.4	6.27	0	0	4.49	1.47	1.26	24.4	24.4	6.27	6.27	0.27	1.05	0.10	0.08



Alt Model-Shift Uniqueness Test

009777256-01, P = 1.332579 Days, E = 132.037657 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.2	5.82	1.46	0	4.53	1.57	1.17	22.7	24.2	4.36	5.82	0.63	1.06	0.08	0.52



Stellar Parameters For KIC 009777256

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5701^{+172}_{-189}	$4.291^{+0.247}_{-0.202}$	$-0.340^{+0.300}_{-0.300}$	$1.068^{+0.348}_{-0.261}$	$0.813^{+0.127}_{-0.063}$	$0.941^{+1.301}_{-0.511}$
	+3%/-3%	+6%/-5%	+88%/-88%	+33%/-24%	+16%/-8%	+138%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009777256-01 / KOI 2997.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-33 ± 5	$1.29^{+0.54}_{-0.45}$	2427^{+205}_{-194}	4216^{+854}_{-494}	$5.249^{+8.024}_{-2.631}$
Alt.	-33 ± 6	$1.44^{+0.54}_{-0.49}$	2437^{+213}_{-201}	4085^{+740}_{-417}	$4.405^{+6.006}_{-2.199}$

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

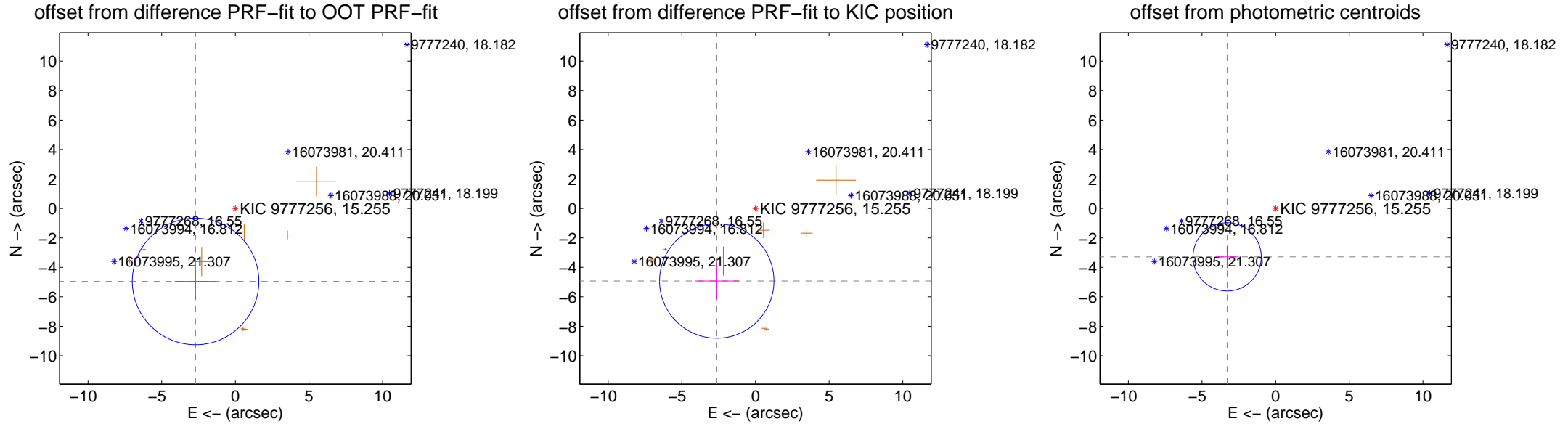
DV Centroid Data

Supplemental centroid analysis for 009777256-01. Kepler magnitude: 15.26. Transit SNR 16.86

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.643 ± 1.432	3.94	2.700 ± 1.404	-4.956 ± 1.194
PRF-fit source offset from KIC position	5.584 ± 1.295	4.31	2.630 ± 1.492	-4.926 ± 1.233
photometric centroid source offset	4.65 ± 0.77	6.03	3.29 ± 0.78	-3.29 ± 0.76

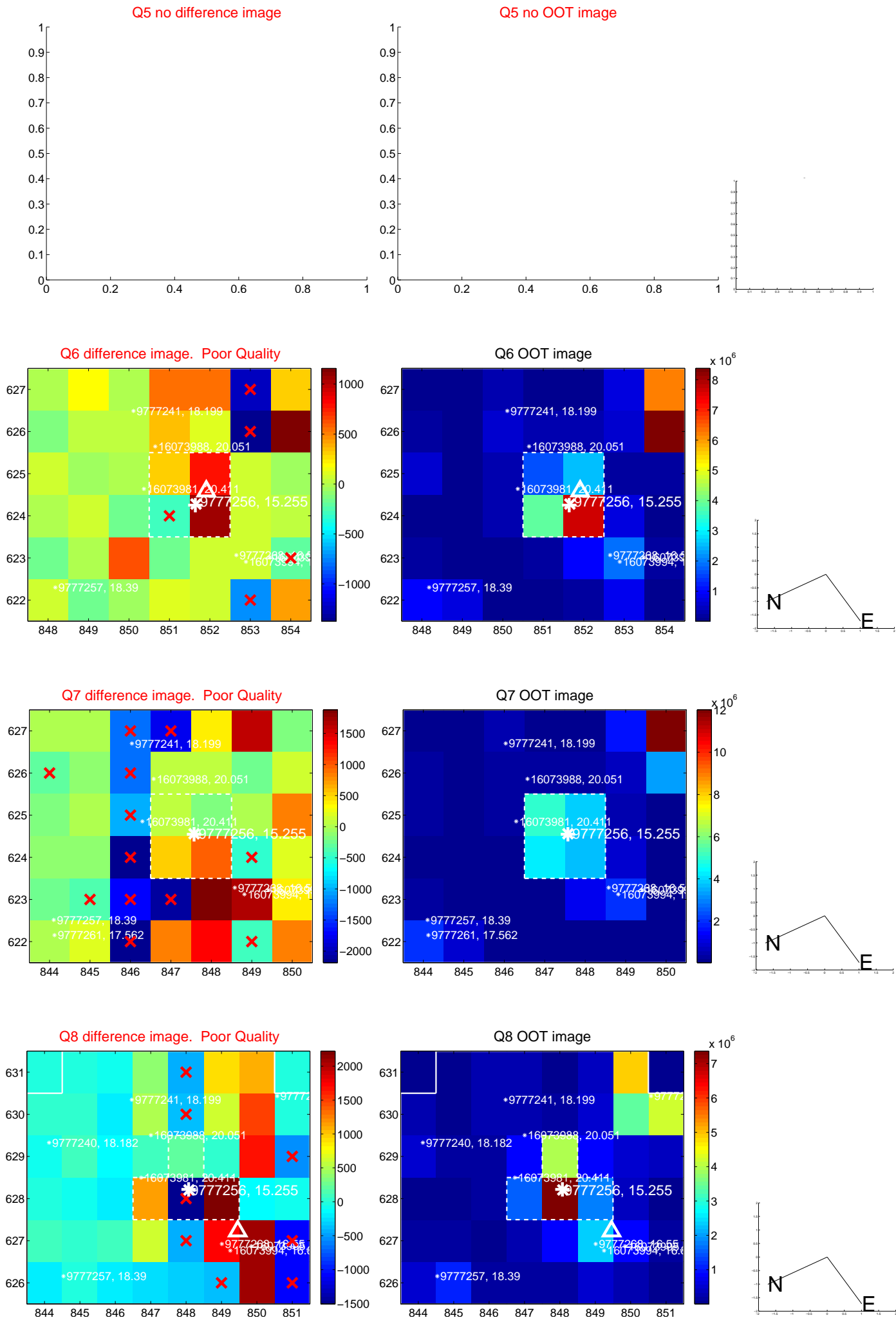


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

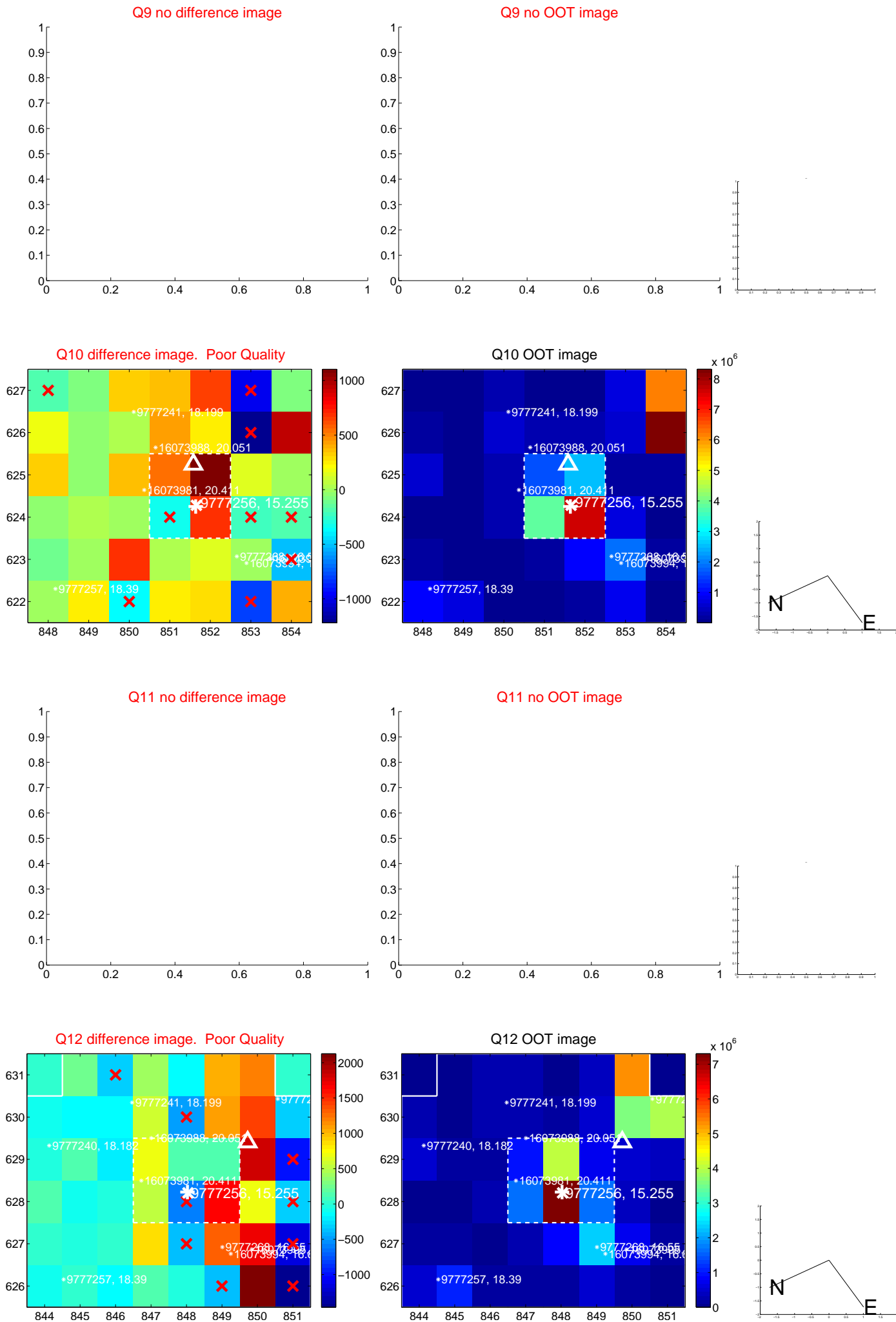
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



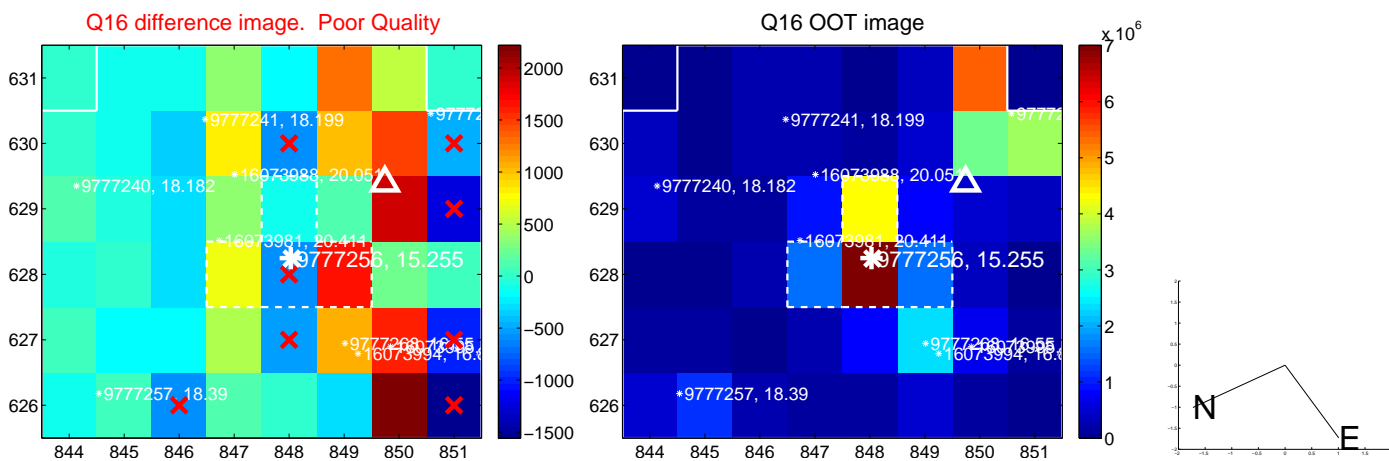
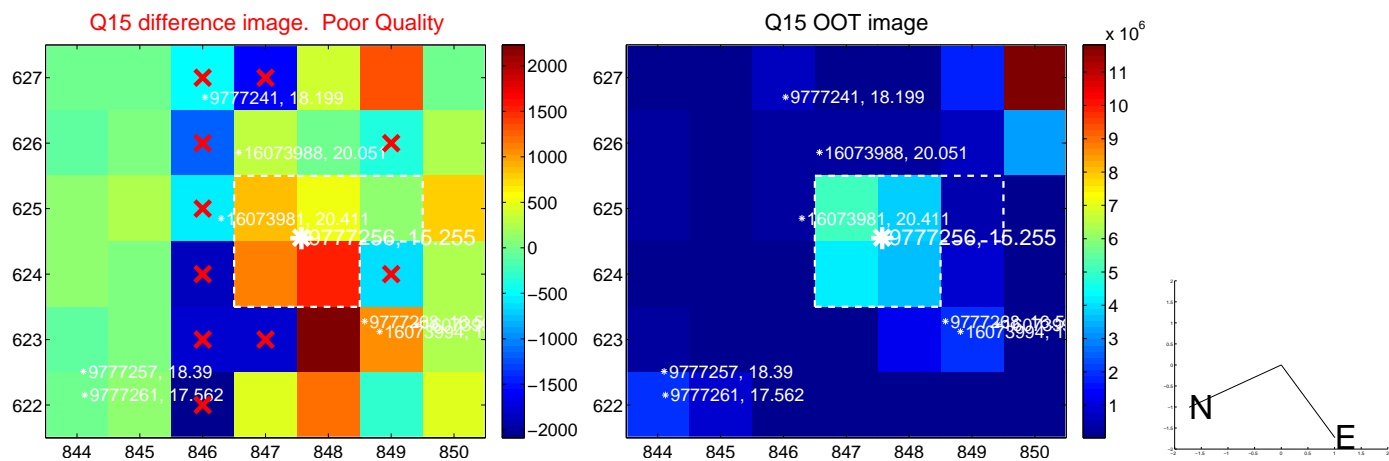
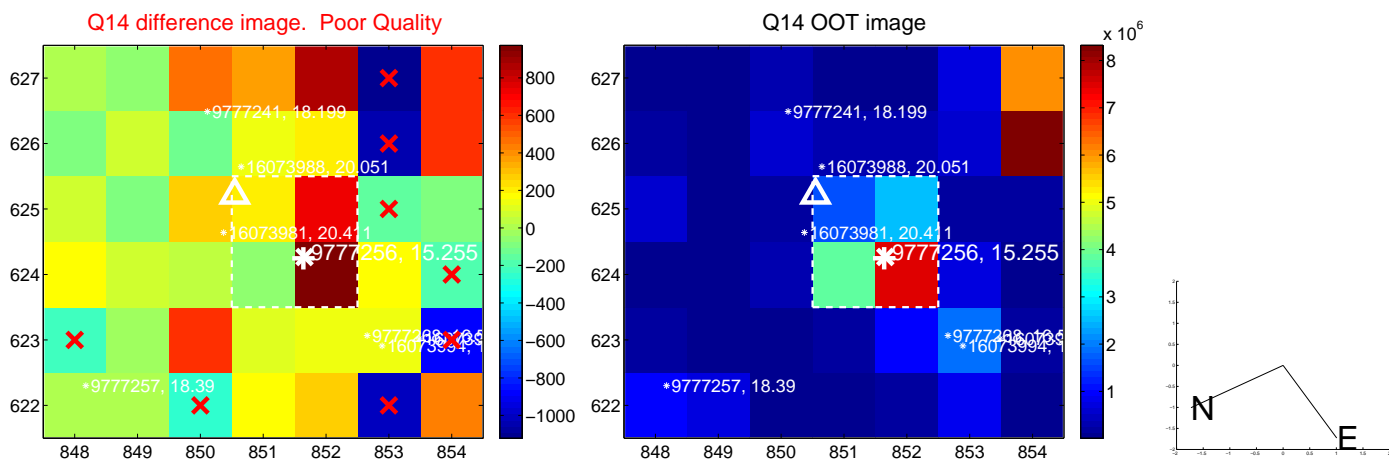
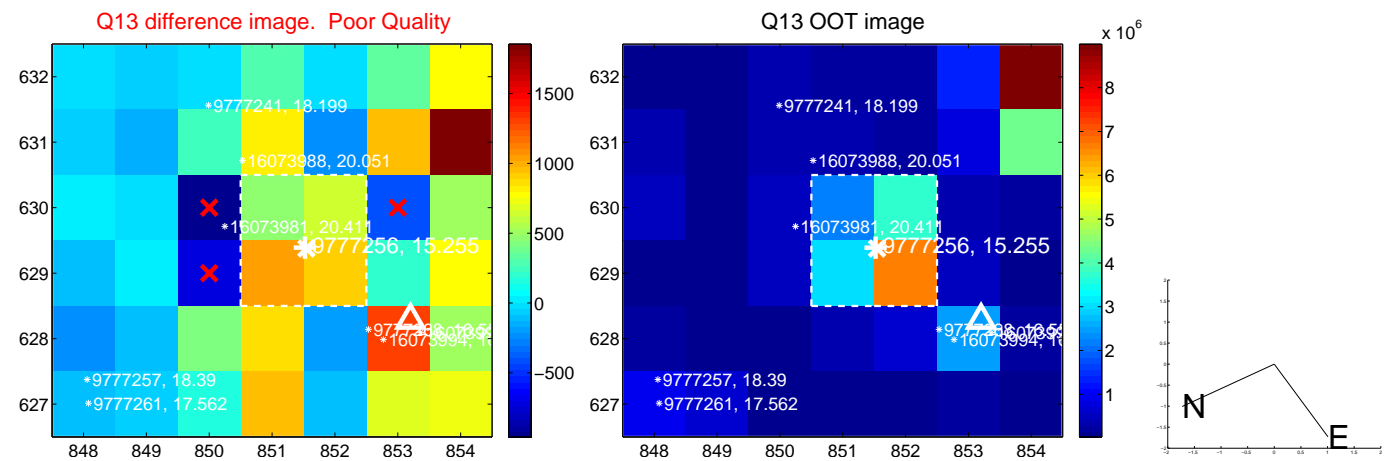
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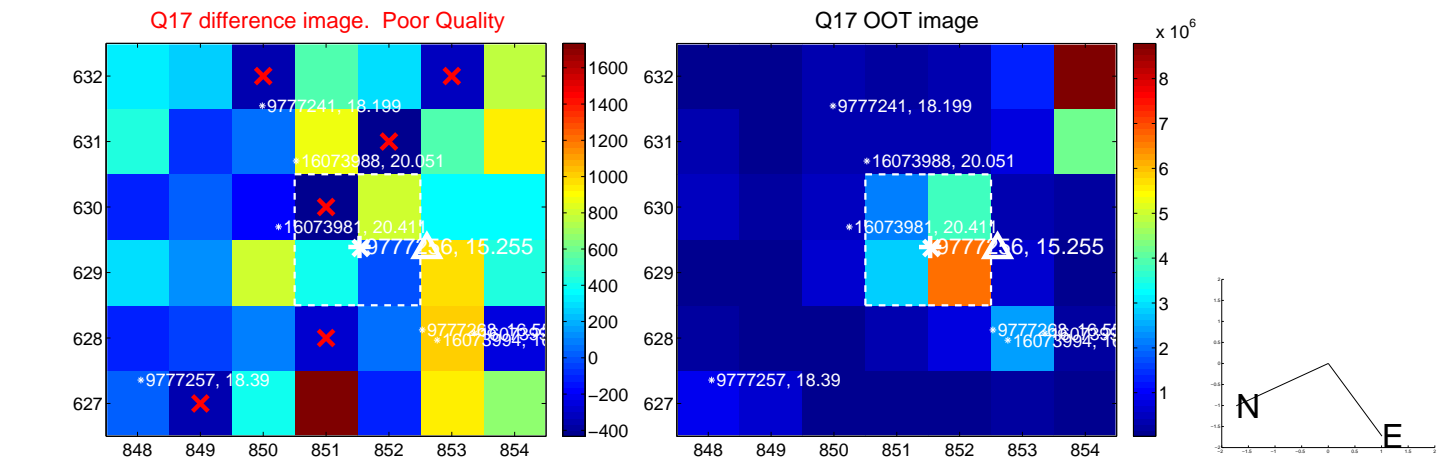
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



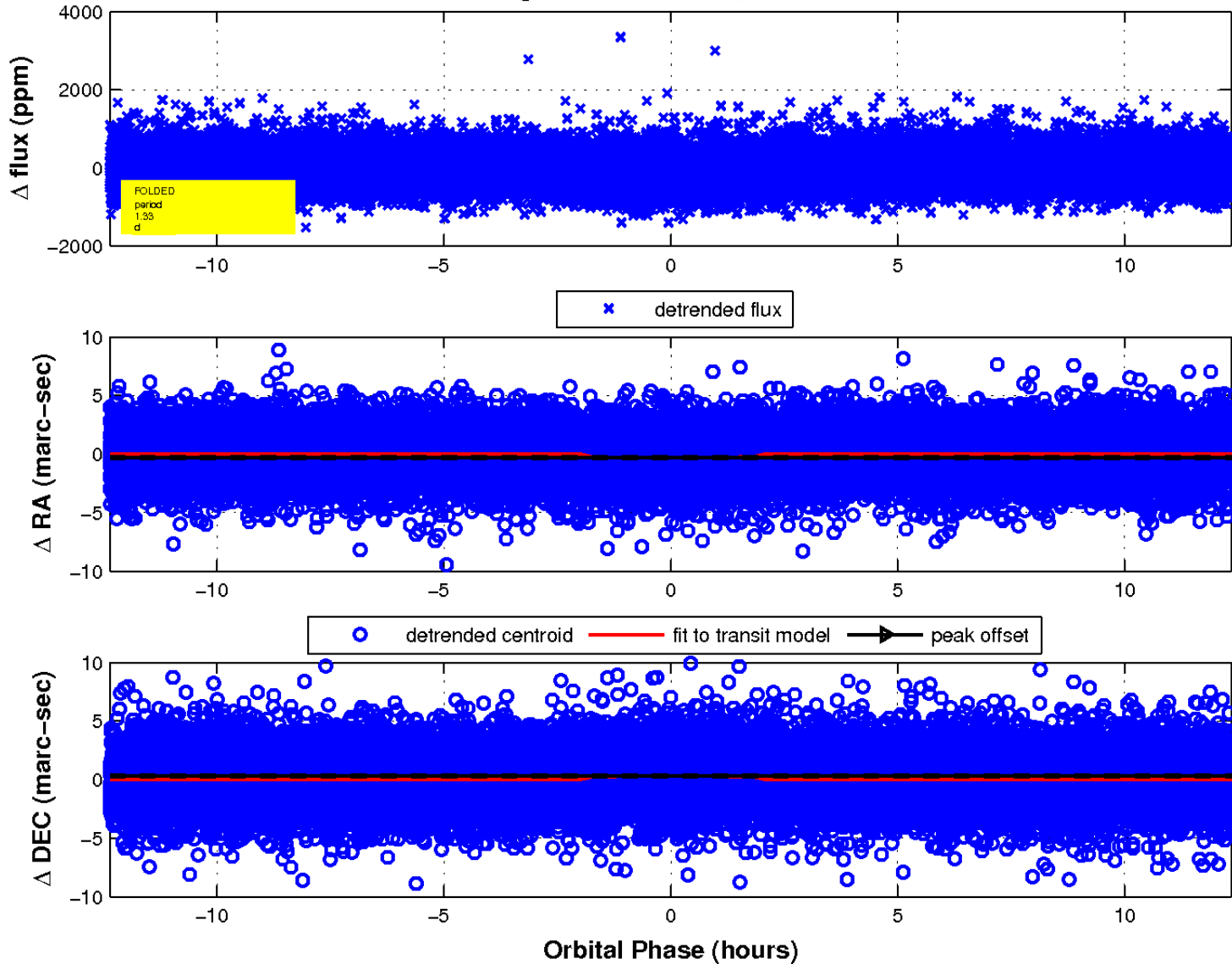
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

