

KIC 009474483

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 _⊕)
009474483-01	OBS	4697.01	0.512576	131.780038	79.1	1.784	12.5	13.1	1.00	6077	1.05	7385.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009474483-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—CENT_RESOLVED_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 009474483-01

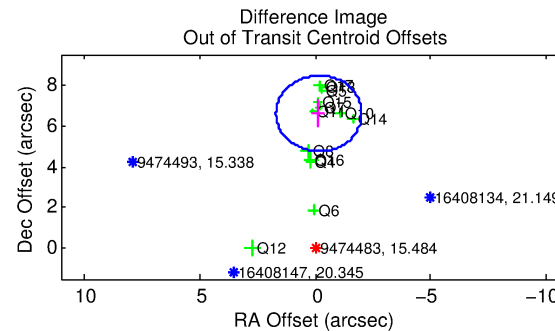
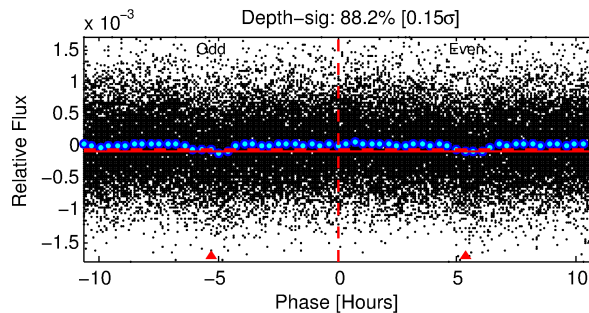
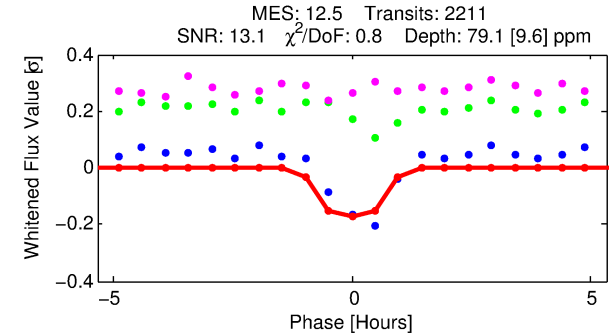
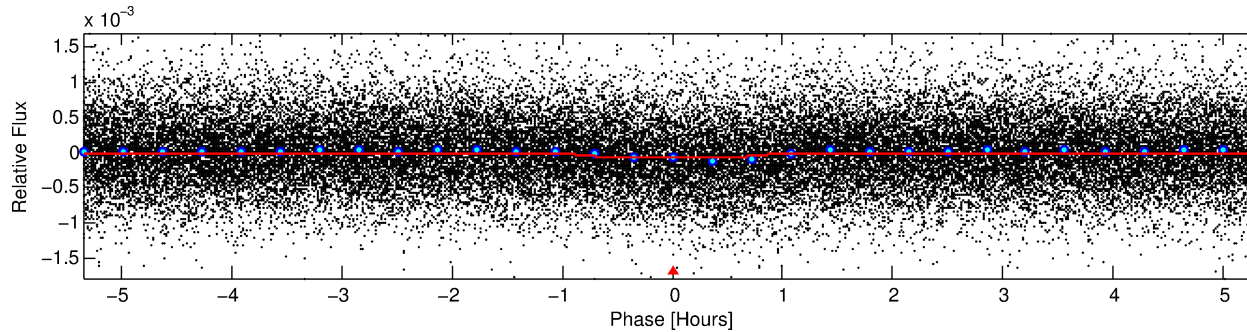
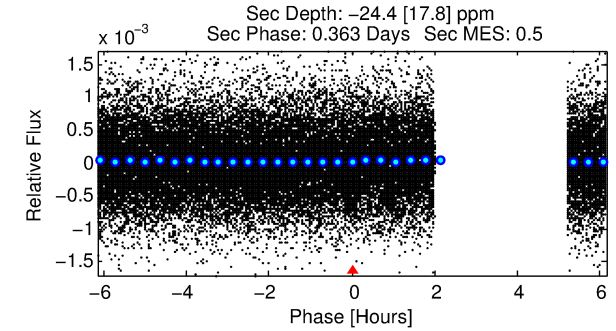
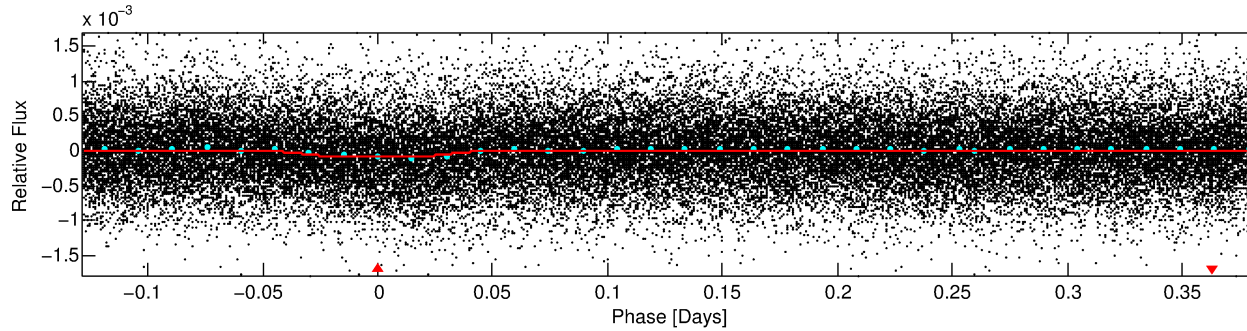
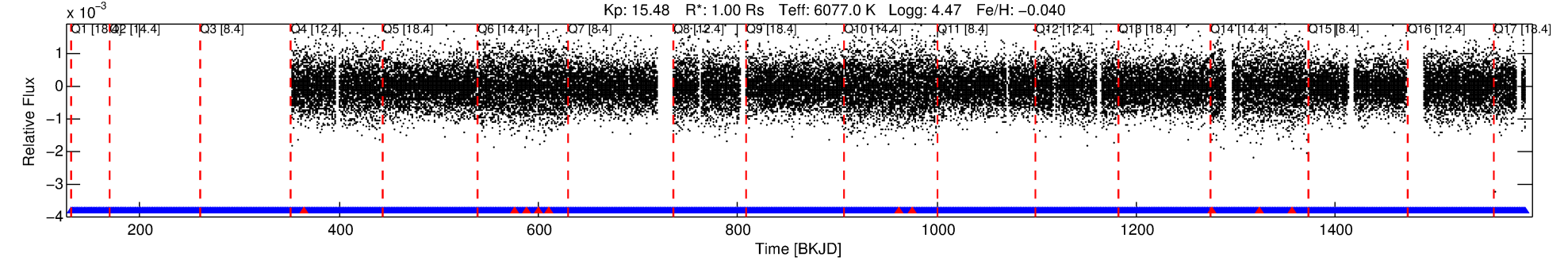
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
009474483-01	9474483	5683.01	9474485	1:1	20.9	3	-4	14.88	15.48	5126.60	Direct-PRF	0	1.40	0.10

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: 9474483 Candidate: 1 of 1 Period: 0.513 d
KOI: K04697.01 Corr: 0.879

Kp: 15.48 R*: 1.00 Rs Teff: 6077.0 K Logg: 4.47 Fe/H: -0.040



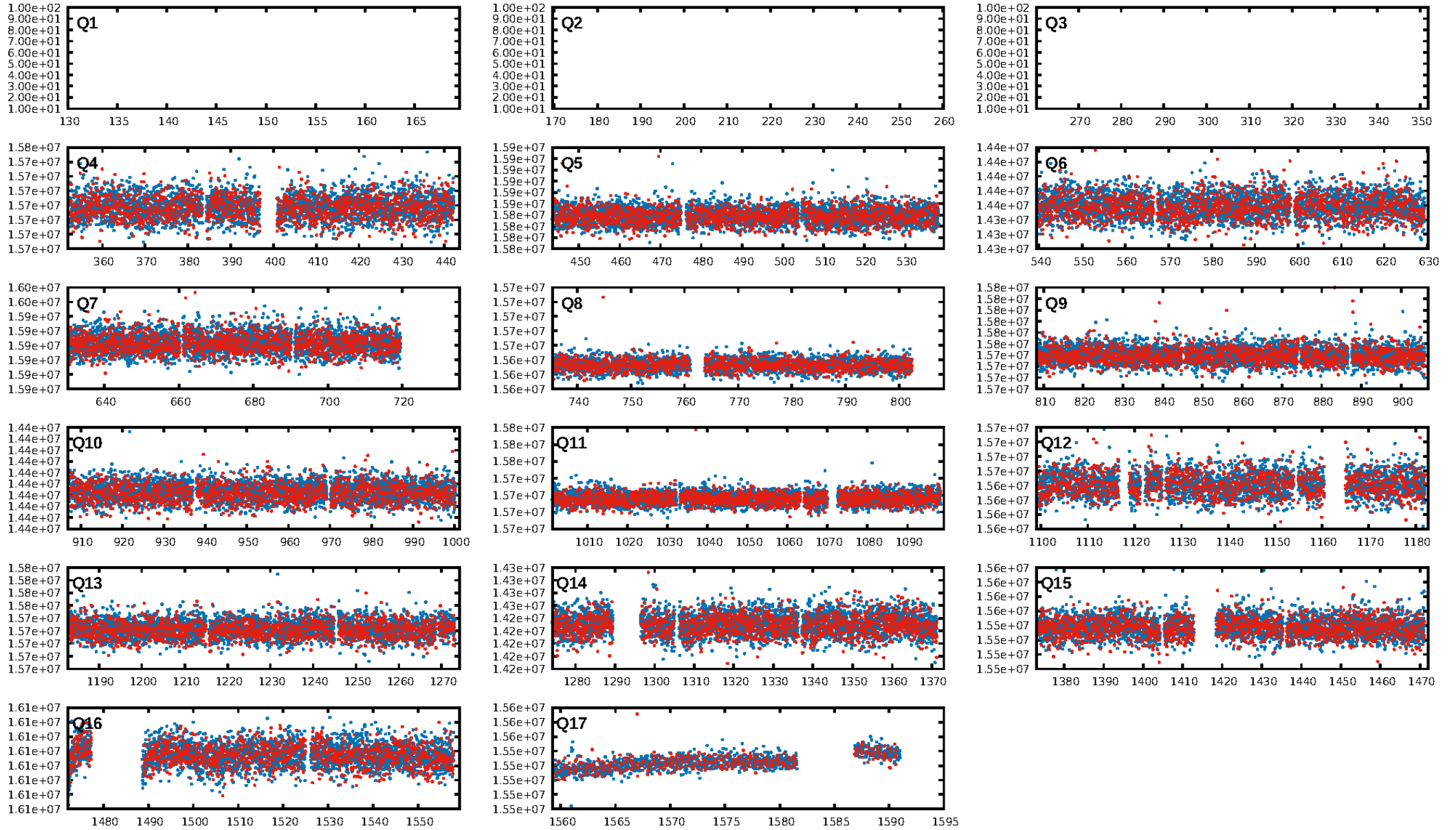
DV Fit Results:

Period = 0.51258 [0.00001] d
Epoch = 131.7800 [0.0020] BKJD
Rp/R* = 0.0097 [0.0052]
a/R* = 1.37 [1.79]
b = 0.90 [0.59]
Seff = 7385.01 [3226.98]
Teq = 2364 [258] K
Rp = 1.05 [0.67] Re
a = 0.0129 [0.0036] AU
Ag = N/A
Teffp = N/A

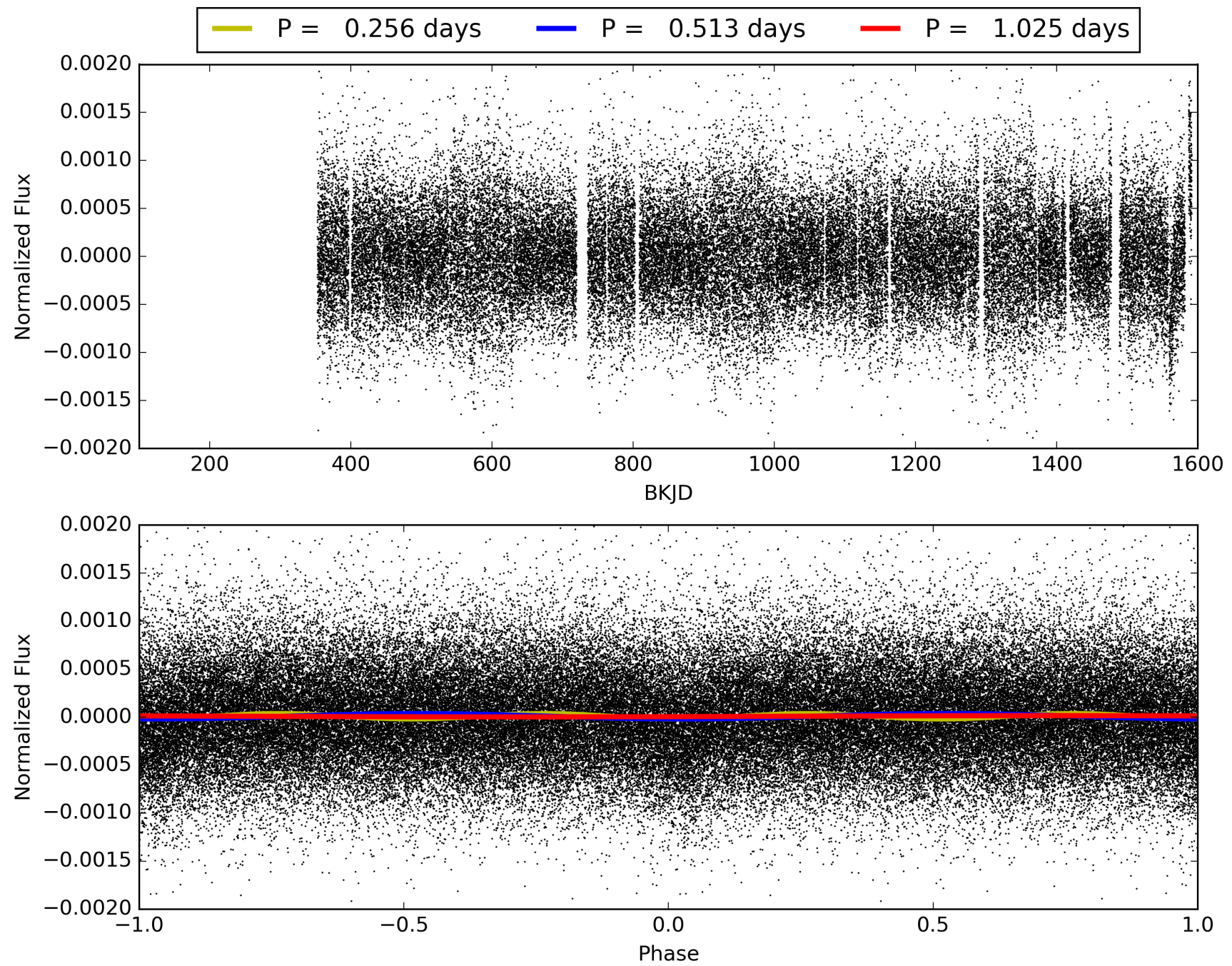
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.49e-37
RollingBand-fgt: 1.00 [2149/2159]
GhostDiagnostic-chr: 0.07934
Centroid-sig: 0.0%
Centroid-so: 10.526 arcsec [9.47σ]
OotOffset-rm: 6.604 arcsec [10.67σ]
KicOffset-rm: 6.943 arcsec [11.44σ]
OotOffset-st: 3/3/4/3 [13]
KicOffset-st: 3/3/4/3 [13]
DiffImageQuality-fgm: 0.85 [11/13]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 009474483-01, PDC Light Curves

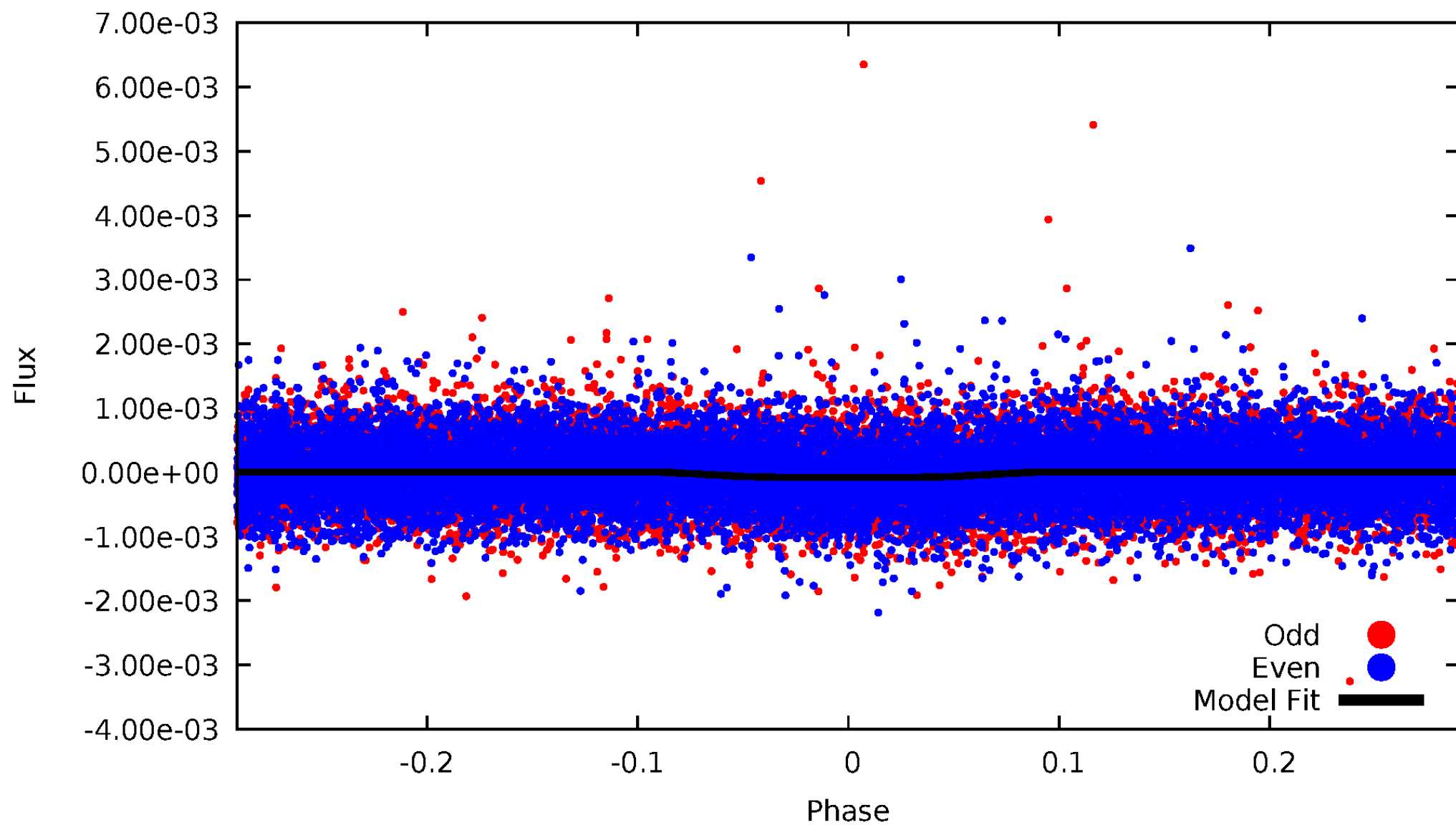


TCE 009474483-01



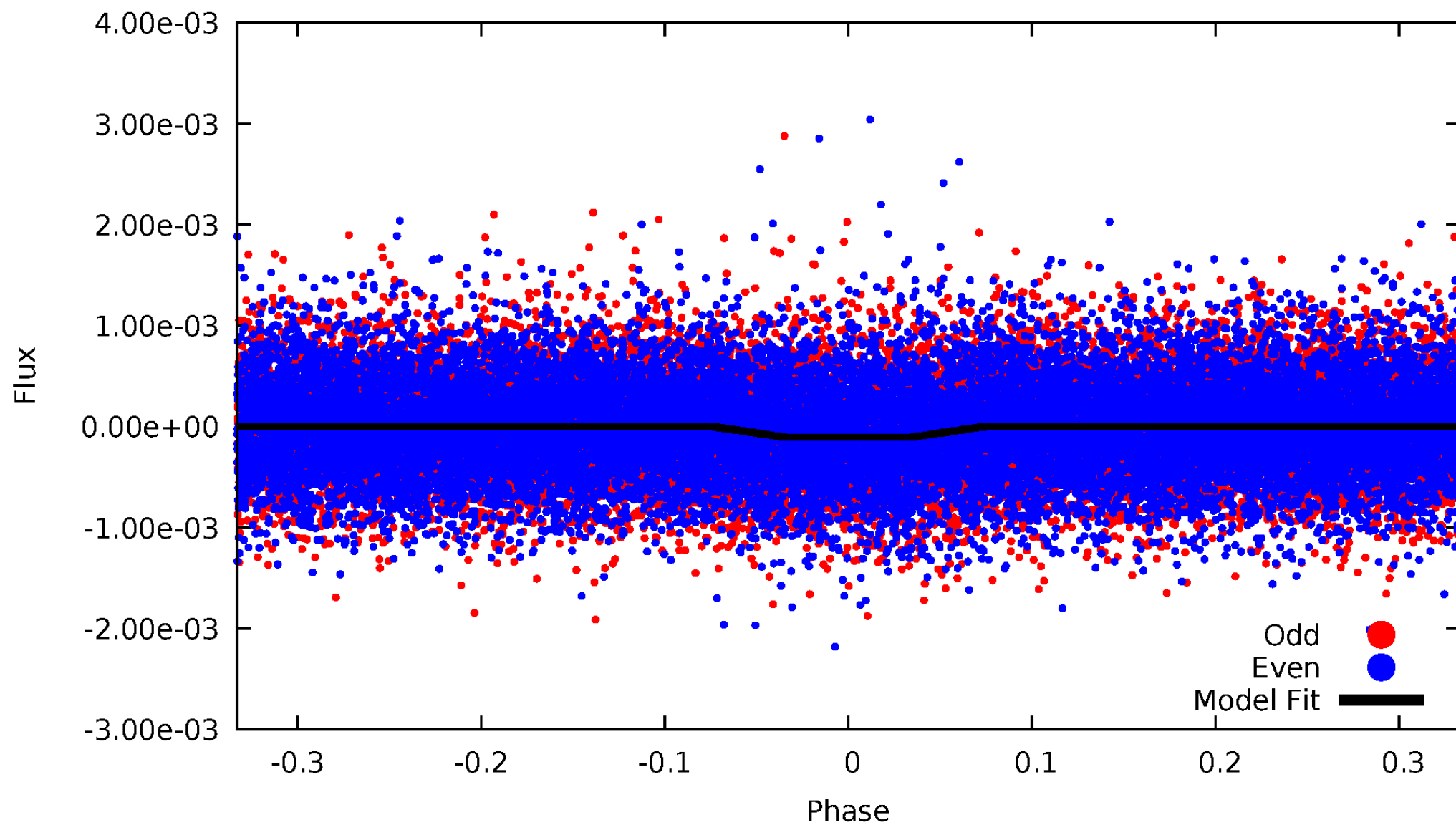
DV Odd/Even

TCE 009474483-01



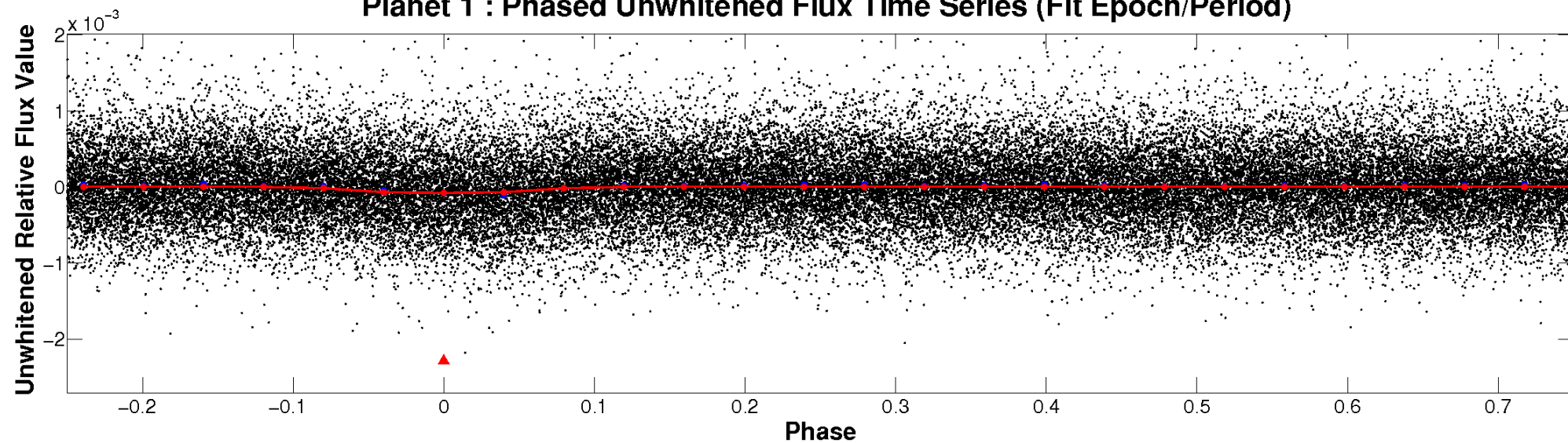
ALT Odd/Even

TCE 009474483-01

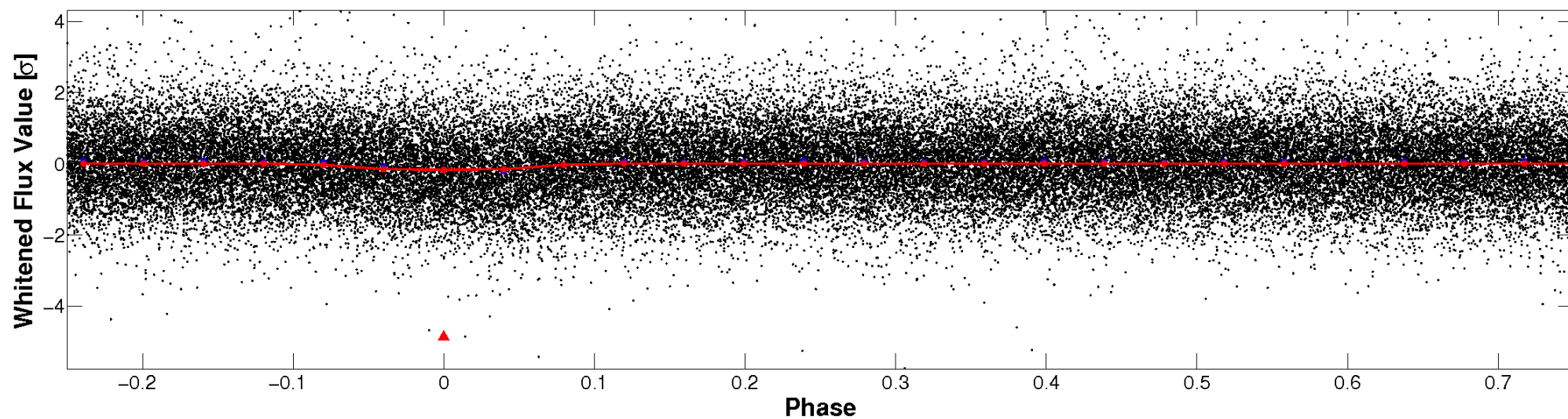


Non-Whitened Vs. Whitened Light Curve

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

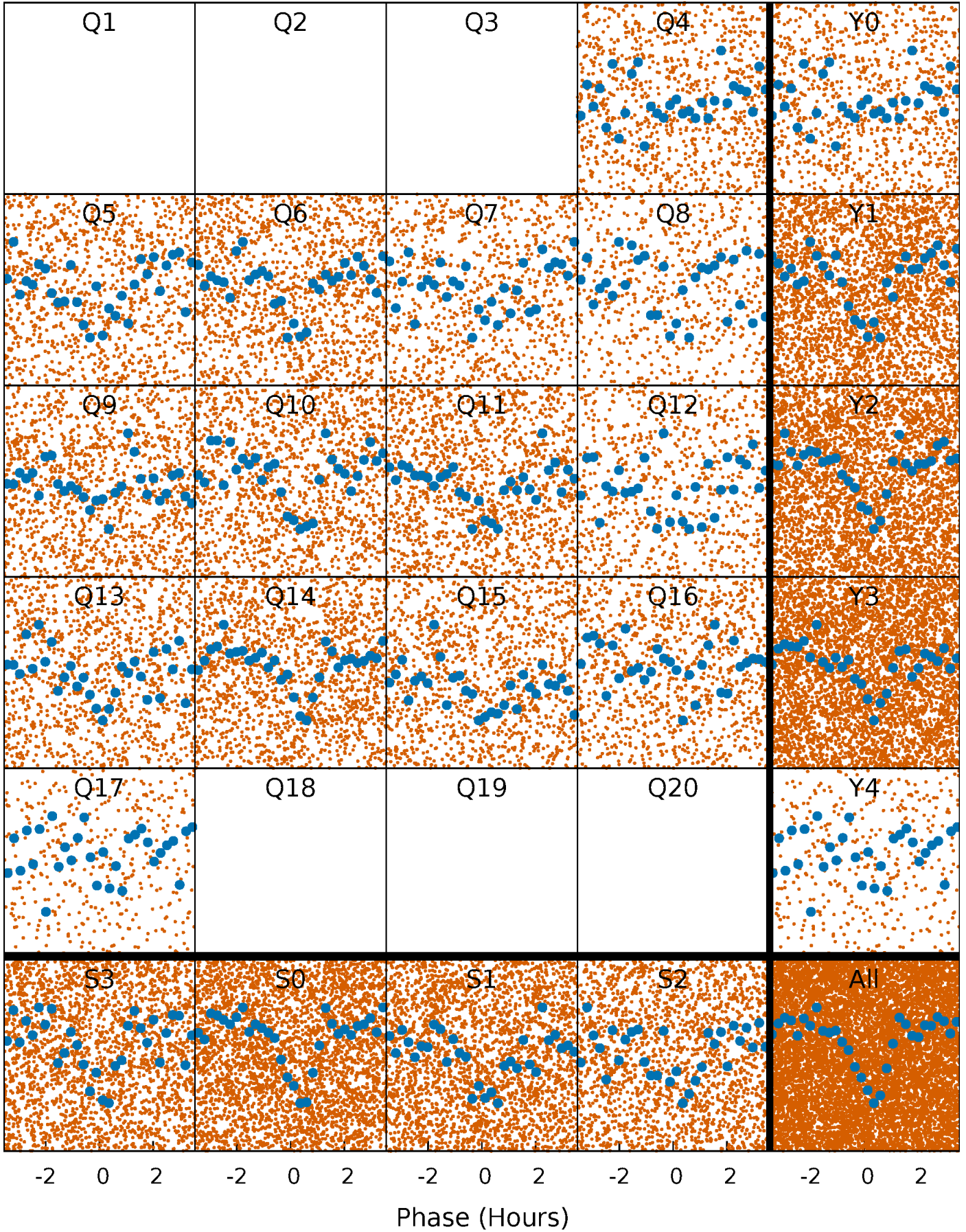


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



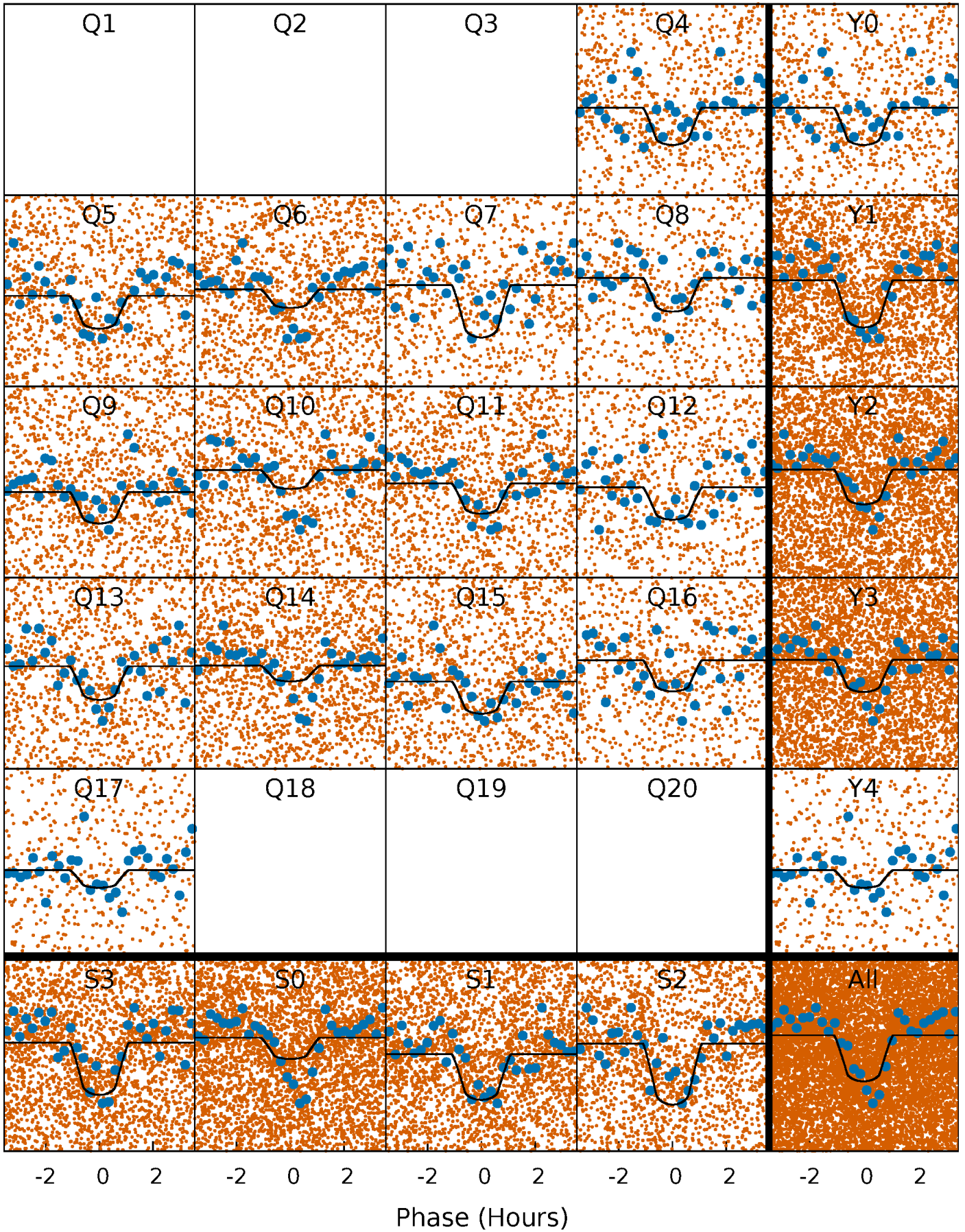
PDC Quarter-Phased Transit Curves

TCE 009474483-01 P= 0.512576 Days $T_0=131.780038$ (BKJD)



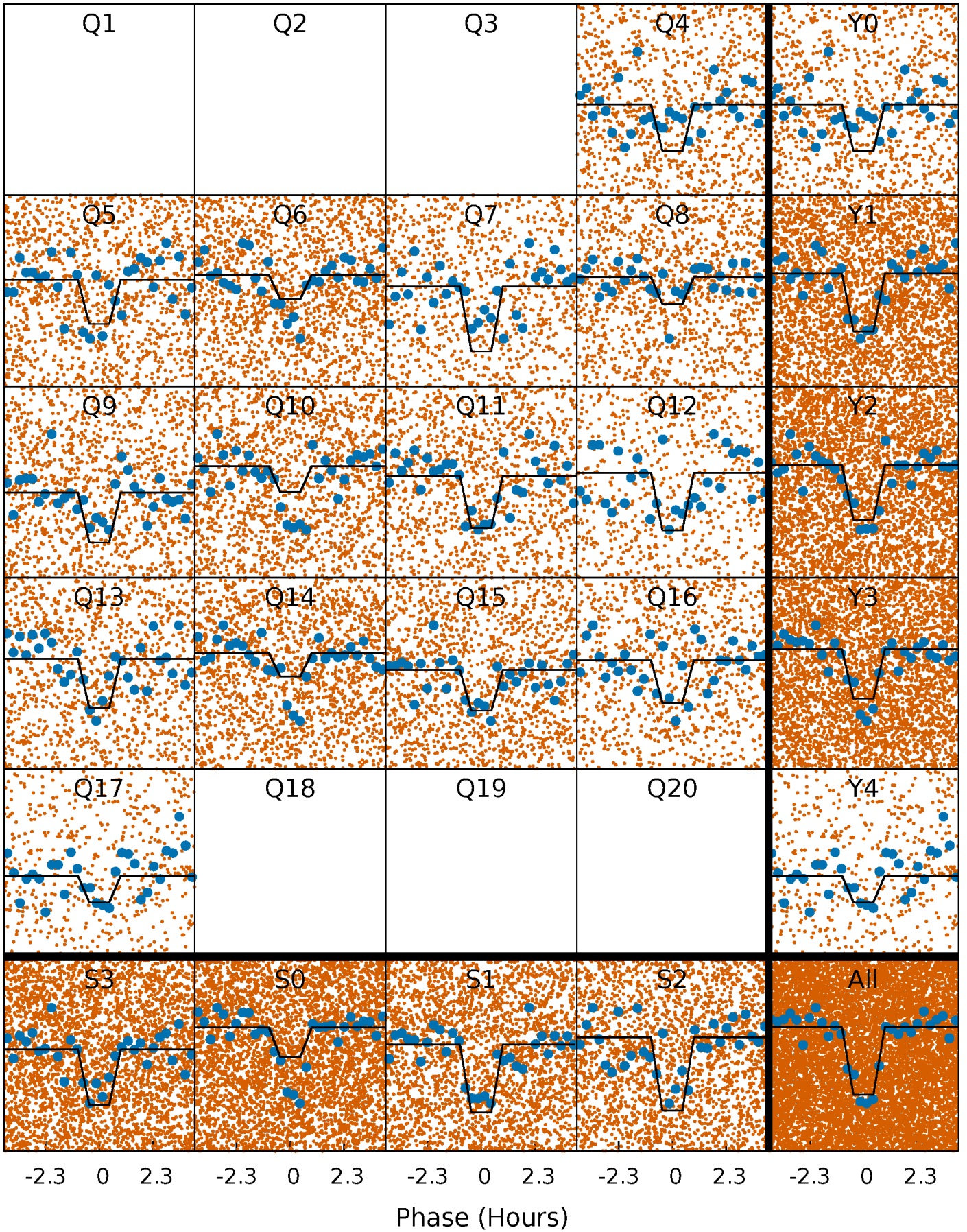
DV Quarter-Phased Transit Curves

TCE 009474483-01 P= 0.512576 Days $T_0=131.780038$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

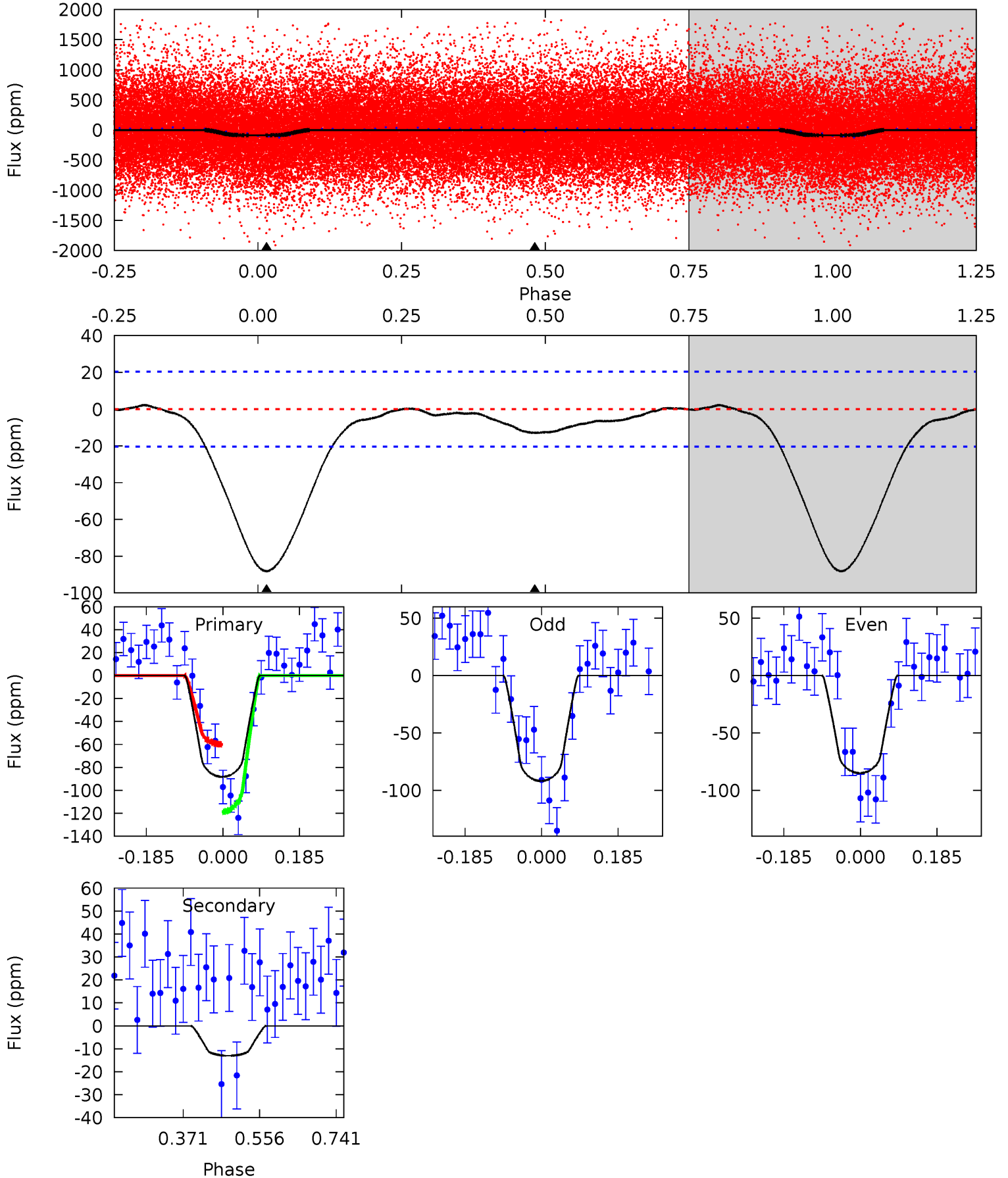
TCE 009474483-01 P= 0.512581 Days $T_0=131.779250$ (BKJD)



DV Model-Shift Uniqueness Test

009474483-01, P = 0.512576 Days, E = 131.780038 Days

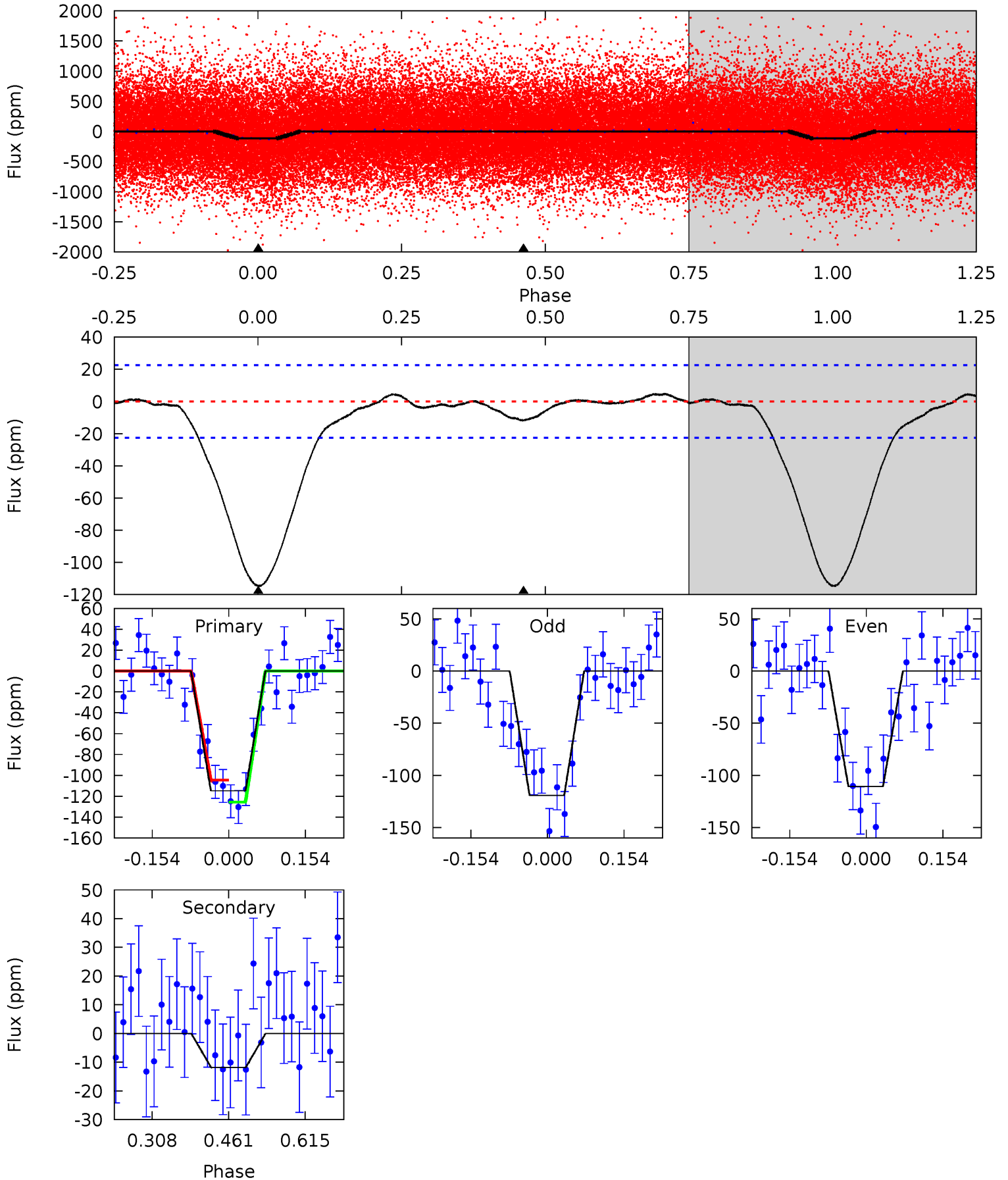
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	2.83	0	0	4.43	1.32	0.33	19.2	19.2	2.83	2.83	0.75	0.92	0.03	6.40



Alt Model-Shift Uniqueness Test

009474483-01, P = 0.512581 Days, E = 131.779250 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	2.34	0	0	4.47	1.43	0.58	22.8	22.8	2.34	2.34	0.85	0.97	0.04	2.11



Stellar Parameters For KIC 009474483

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6077^{+190}_{-232}	$4.471^{+0.056}_{-0.224}$	$-0.040^{+0.250}_{-0.300}$	$0.999^{+0.333}_{-0.111}$	$1.077^{+0.140}_{-0.156}$	$1.519^{+0.367}_{-0.852}$
	+3%/-4%	+1%/-5%	+625%/-750%	+33%/-11%	+13%/-14%	+24%/-56%
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 009474483-01 / KOI 4697.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-13 ± 5	$1.12^{+0.66}_{-0.61}$	3370^{+243}_{-181}	3648^{+1715}_{-1125}	$0.870^{+3.315}_{-0.531}$
Alt.	-12 ± 5	$1.18^{+0.60}_{-0.54}$	3374^{+241}_{-181}	3496^{+1311}_{-6054}	$0.727^{+1.975}_{-0.469}$

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 $A_{obs} \gg 1.0$

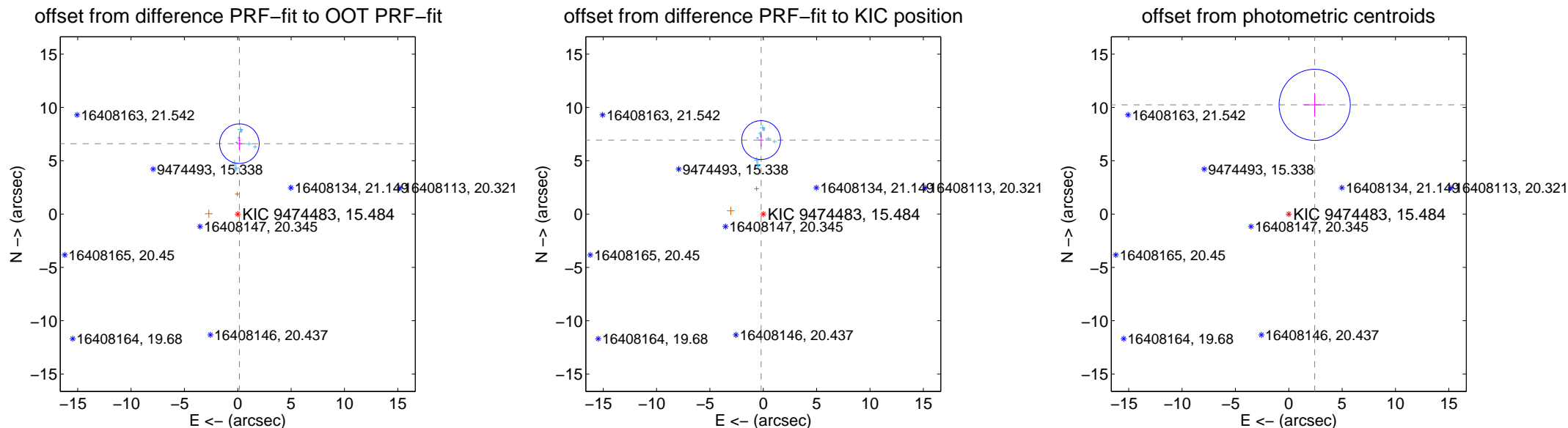
DV Centroid Data

Supplemental centroid analysis for 009474483-01. Kepler magnitude: 15.48. Transit SNR 13.11

There are 11 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.604 ± 0.619	10.67	-0.153 ± 0.250	6.603 ± 0.615
PRF-fit source offset from KIC position	6.943 ± 0.607	11.44	0.201 ± 0.238	6.940 ± 0.612
photometric centroid source offset	10.53 ± 1.11	9.47	-2.43 ± 1.00	10.24 ± 1.12



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



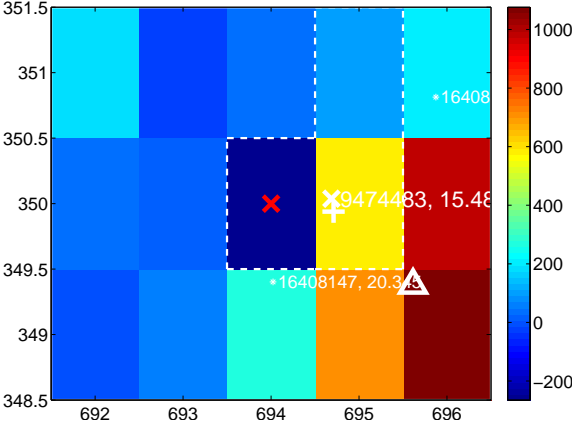
Q3 no difference image



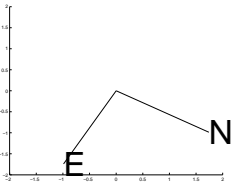
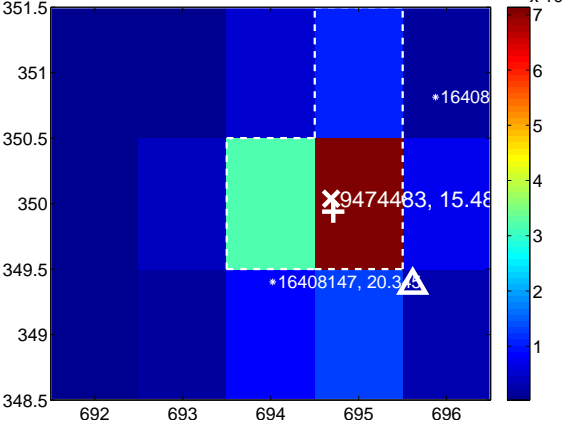
Q3 no OOT image



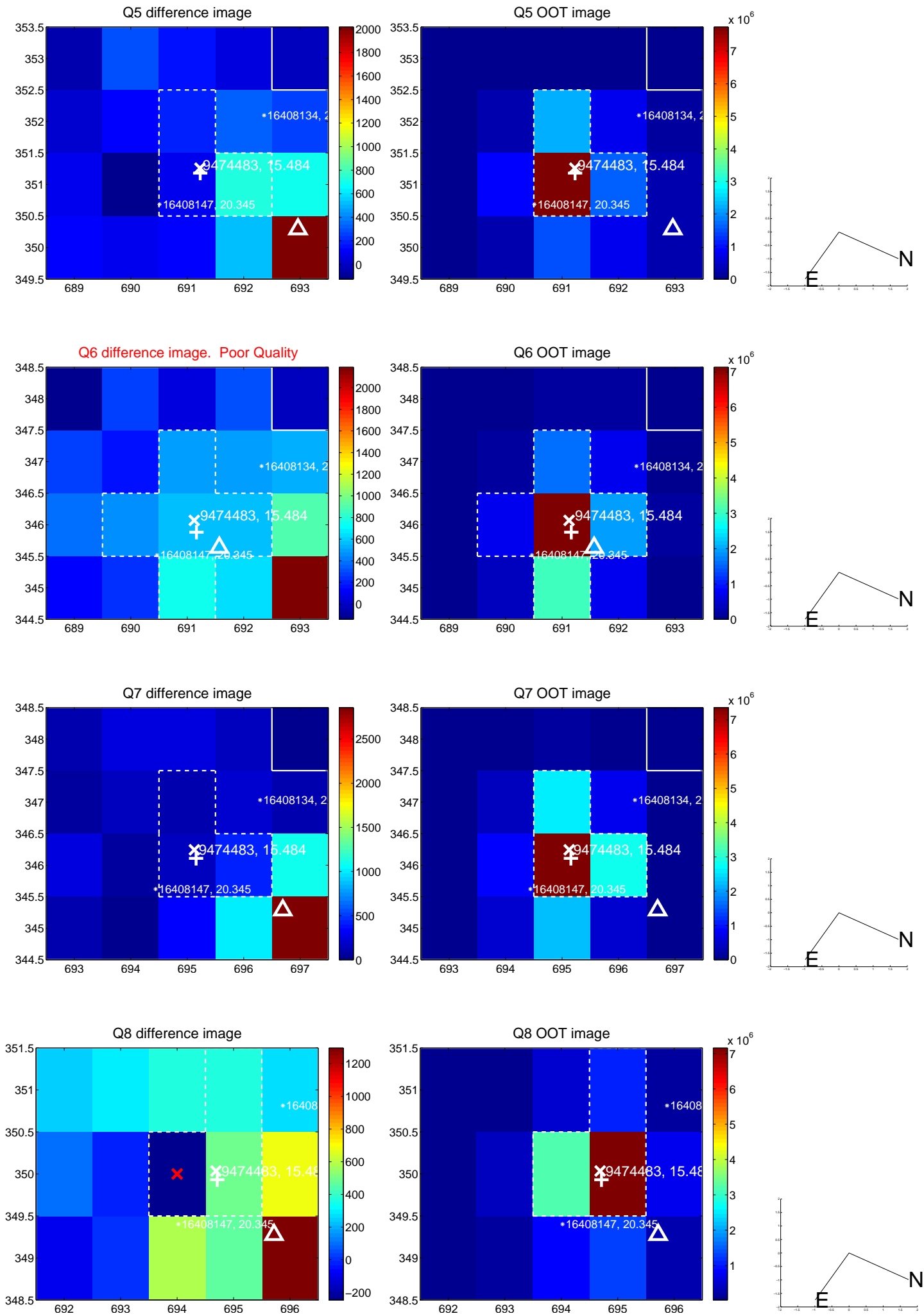
Q4 difference image



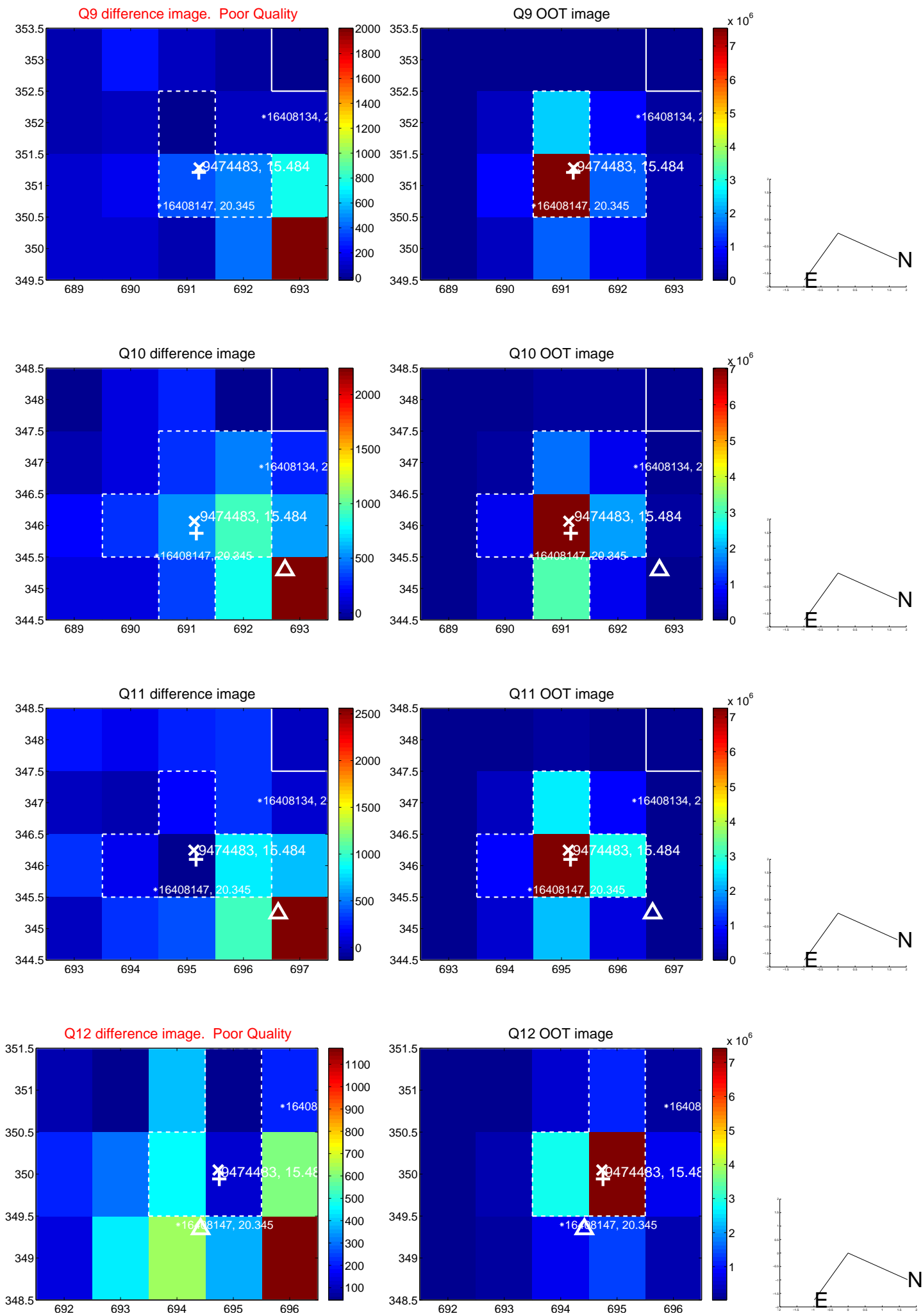
Q4 OOT image



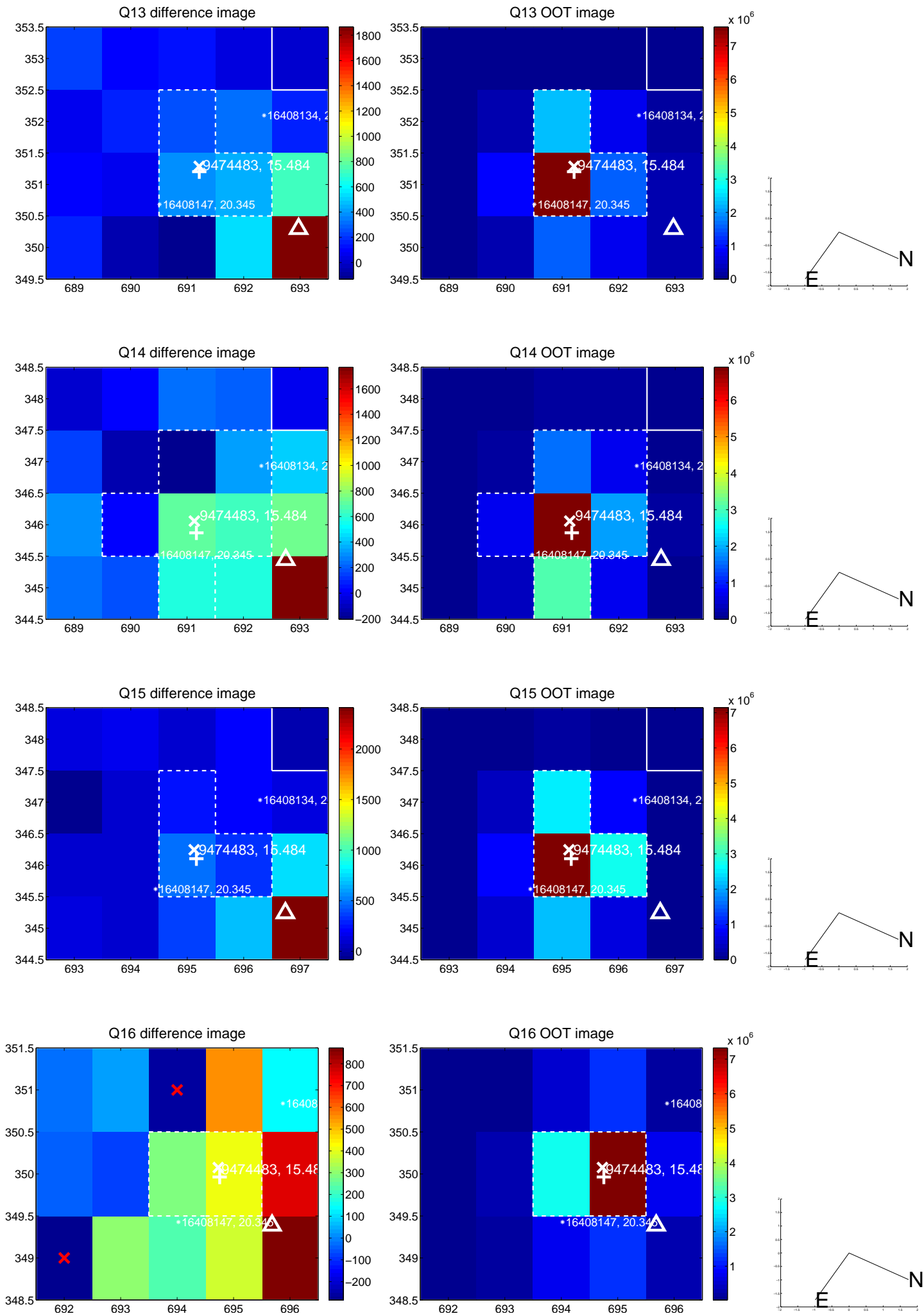
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

