

KIC 009947389

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})
009947389-01	OBS	4460.01	284.726859	142.083464	356.9	10.812	10.7	11.5	1.08	5497	2.07	1.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009947389-01	OBS	PC	0.97	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.

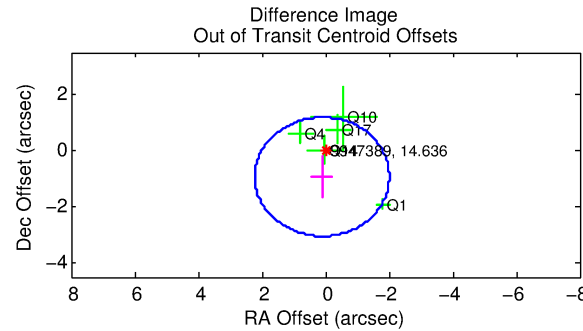
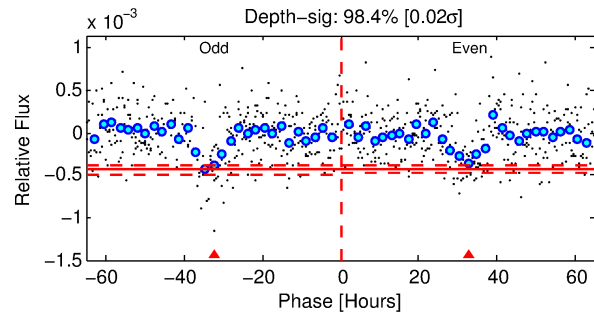
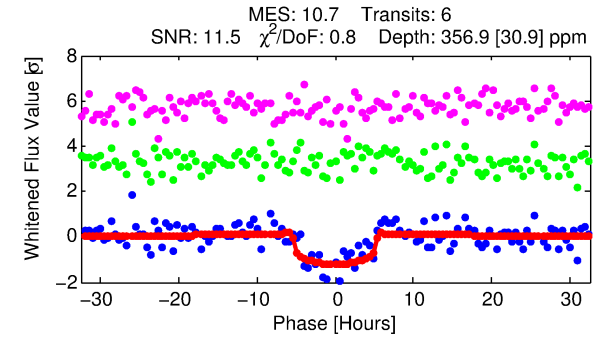
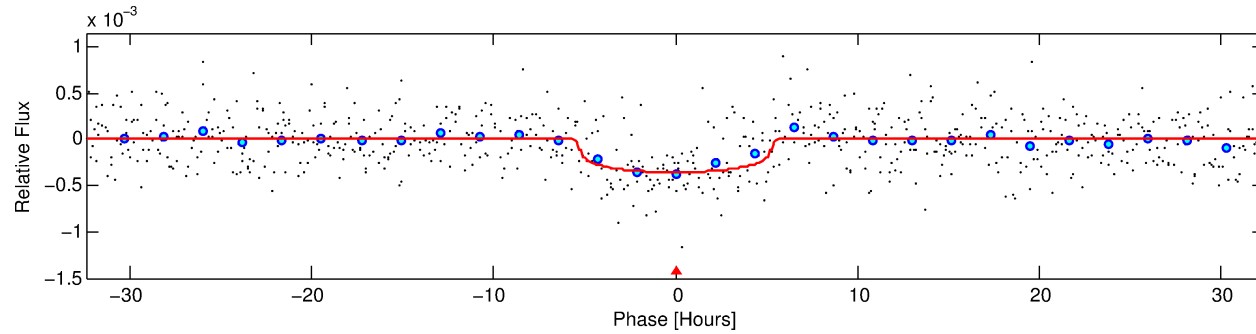
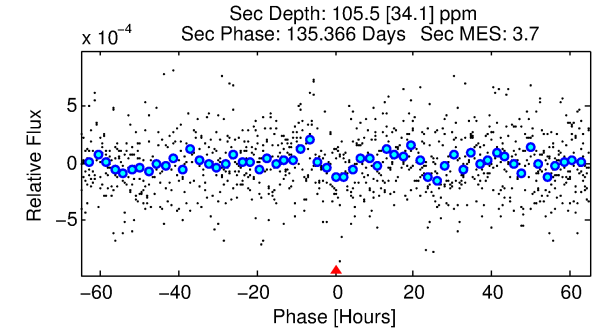
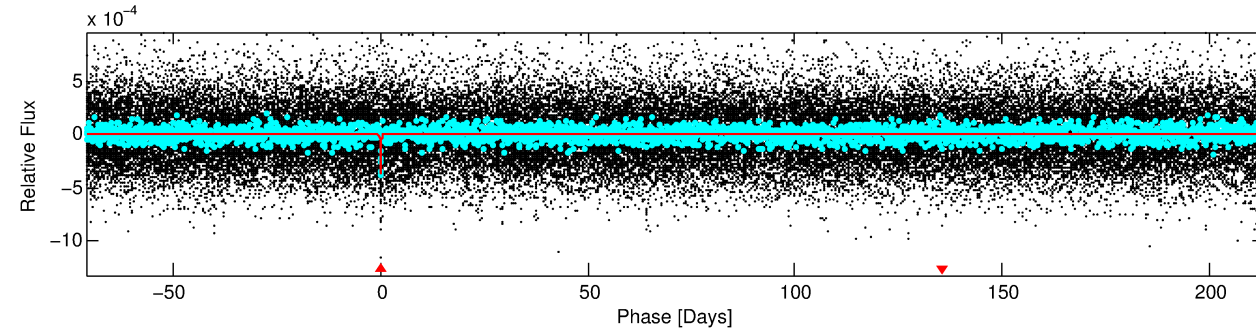
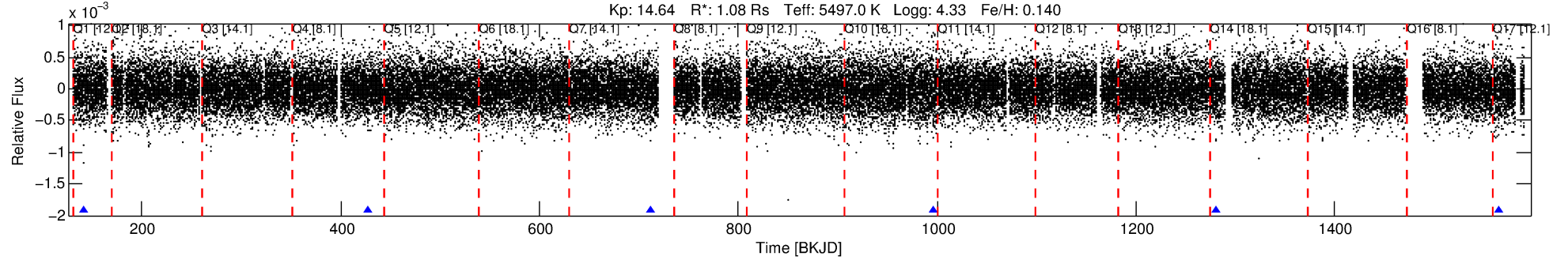
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009947389-01

No Significant Match Found

DV One-Page Summary

KIC: 9947389 Candidate: 1 of 1 Period: 284.727 d
KOI: K04460.01 Corr: 0.910



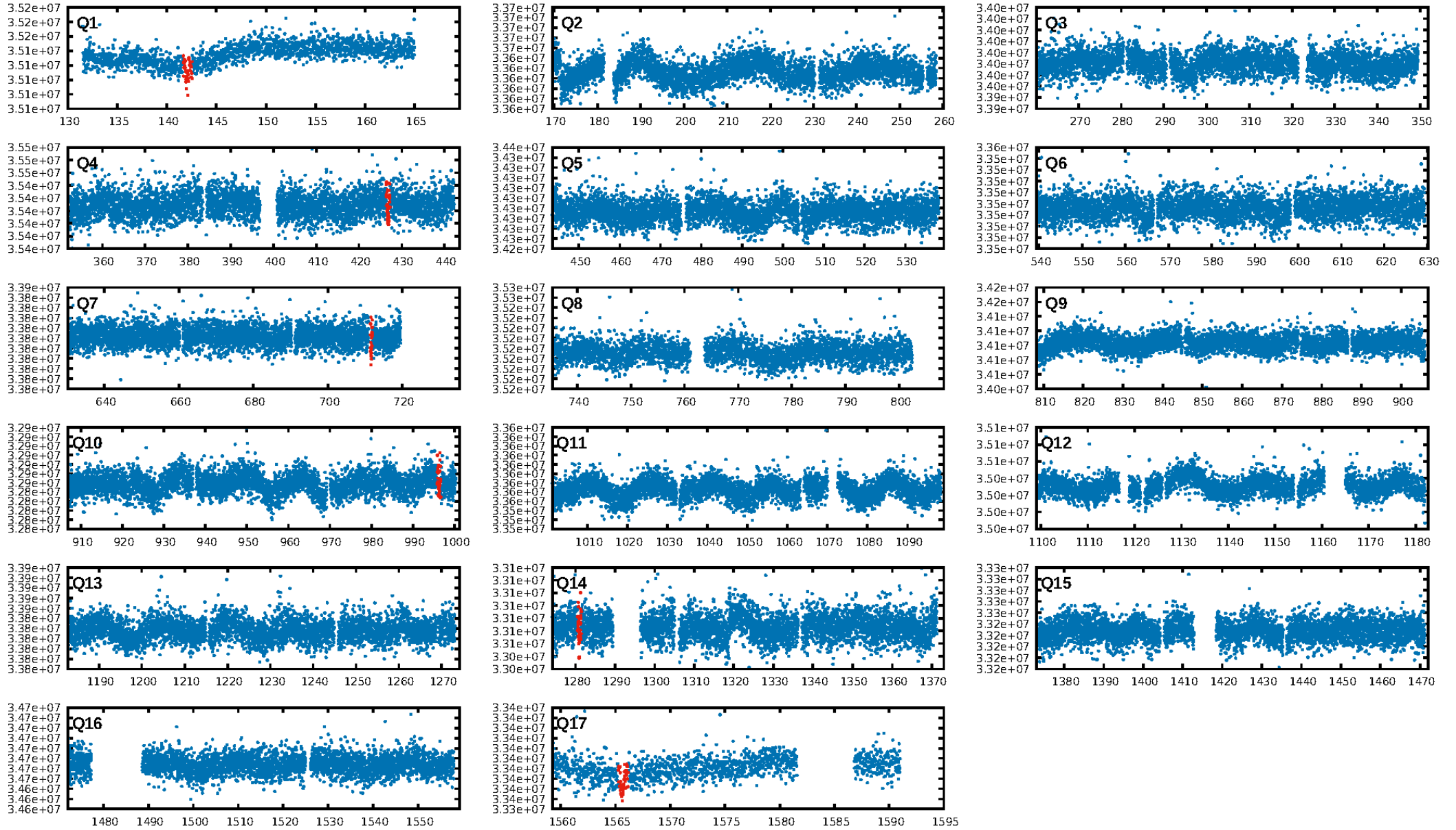
DV Fit Results:

Period = 284.72686 [0.00431] d
Epoch = 142.0835 [0.0129] BKJD
Rp/R* = 0.0175 [0.0162]
a/R* = 180.17 [656.05]
b = 0.48 [5.82]
Seff = 1.41 [0.34]
Teq = 278 [17] K
Rp = 2.07 [1.93] Re
a = 0.8221 [0.1179] AU
Ag = 9185.20 [17318.18] [0.53 σ]
Teffp = 4207 [1969] K [2.00 σ]

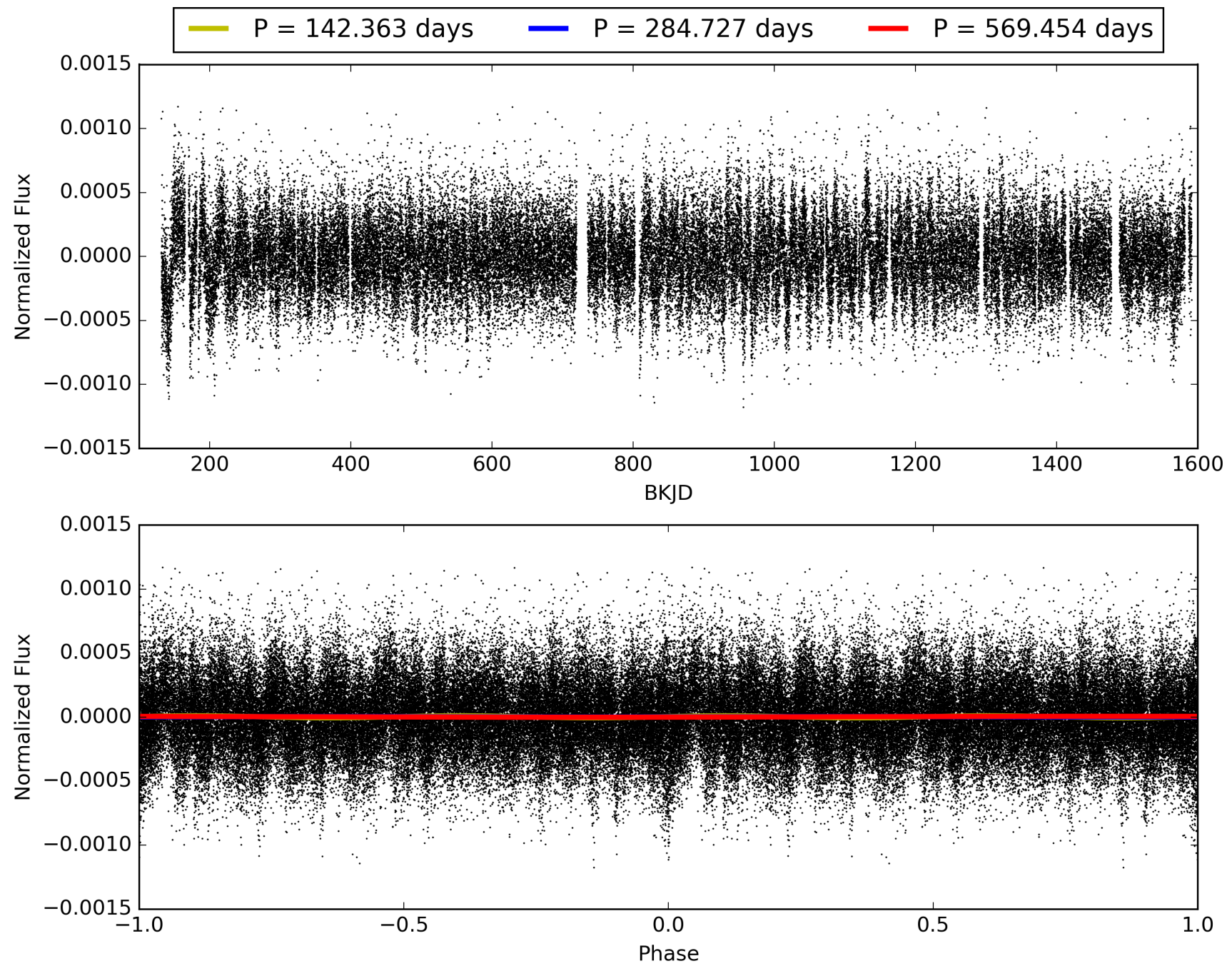
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 94.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.25e-22
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -3.028
Centroid-sig: 9.1%
Centroid-so: 1.133 arcsec [1.12 σ]
OotOffset-rm: 0.937 arcsec [1.33 σ]
KicOffset-rm: 0.864 arcsec [1.23 σ]
OotOffset-st: 2/0/1/2 [5]
KicOffset-st: 2/0/1/2 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [5/5]

TCE 009947389-01, PDC Light Curves

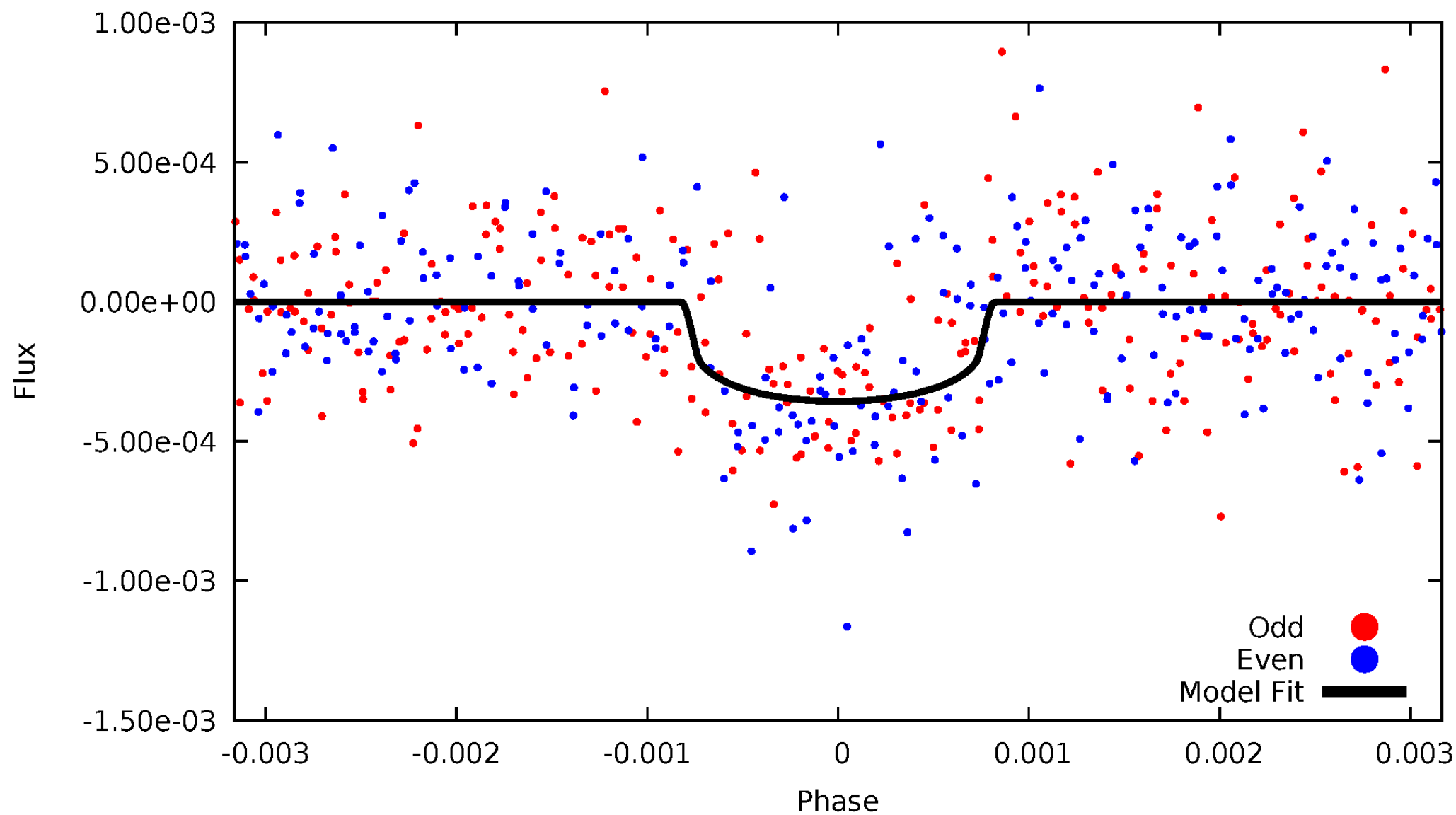


TCE 009947389-01



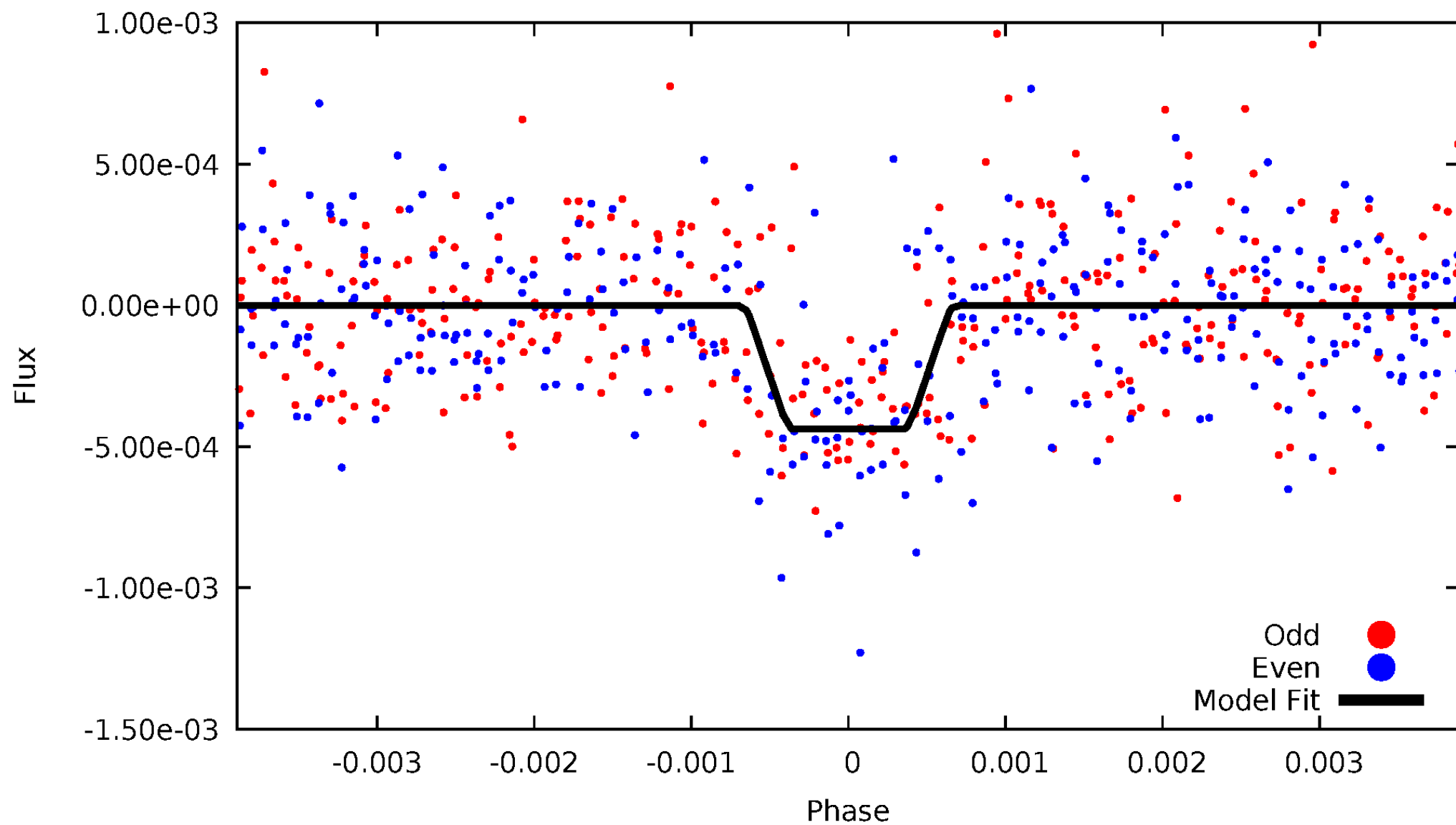
DV Odd/Even

TCE 009947389-01



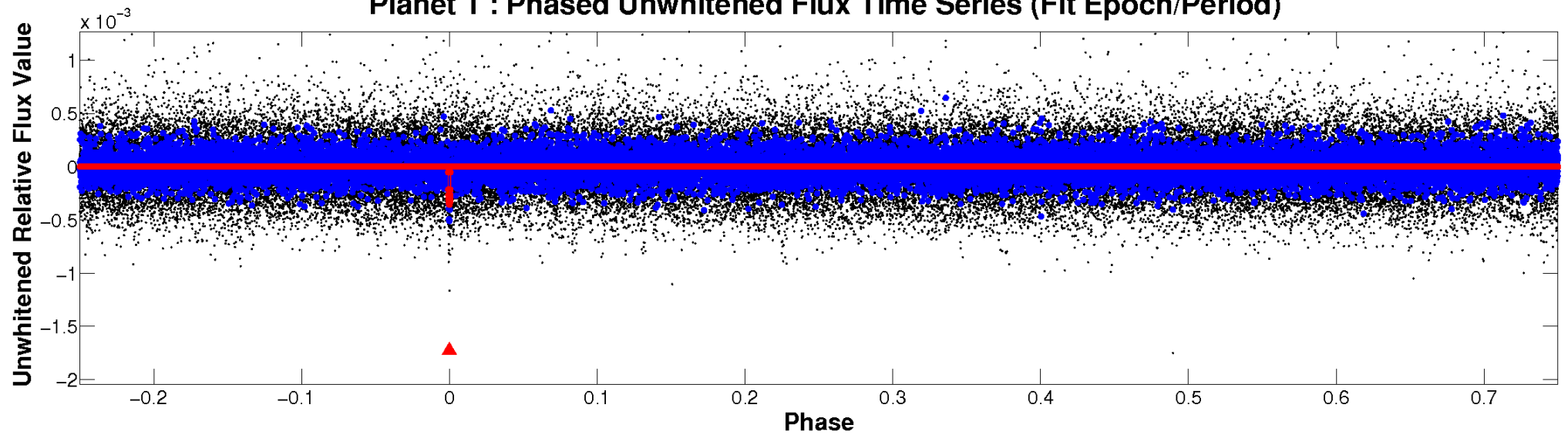
ALT Odd/Even

TCE 009947389-01

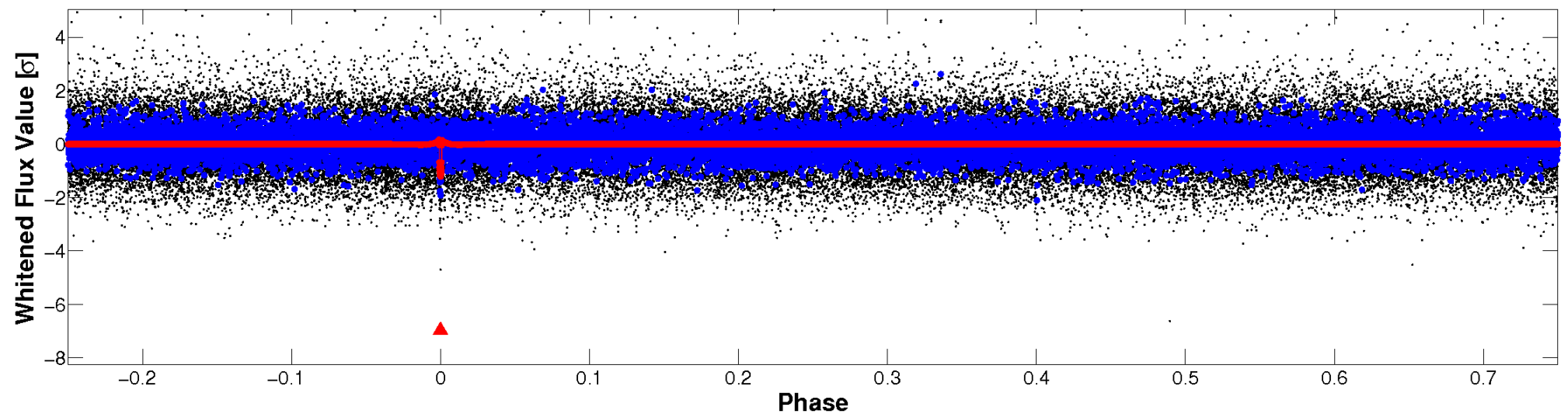


Non-Whitened Vs. Whitened Light Curve

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



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



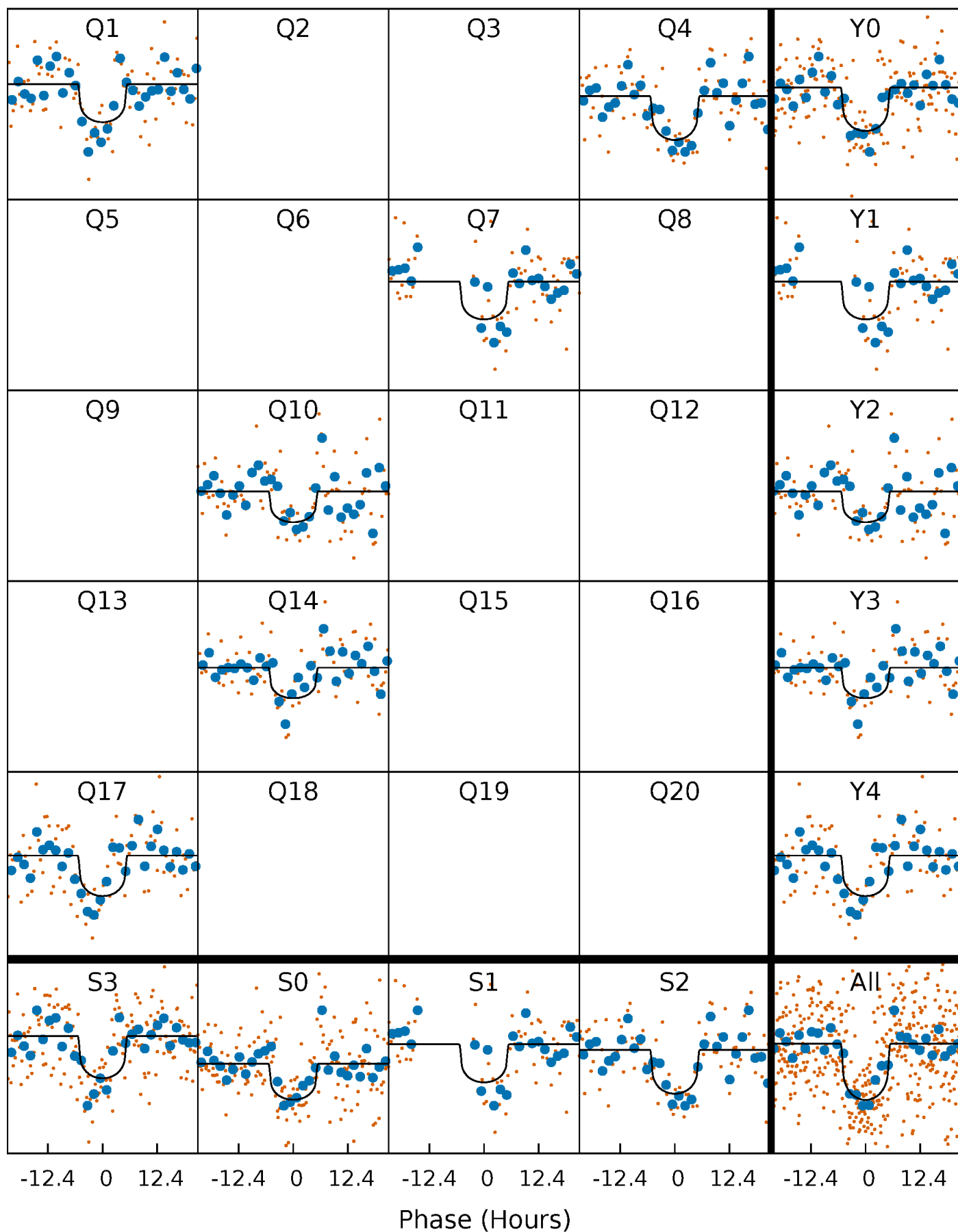
PDC Quarter-Phased Transit Curves

TCE 009947389-01 P=284.726859 Days $T_0=142.083464$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009947389-01 P=284.726859 Days $T_0=142.083464$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

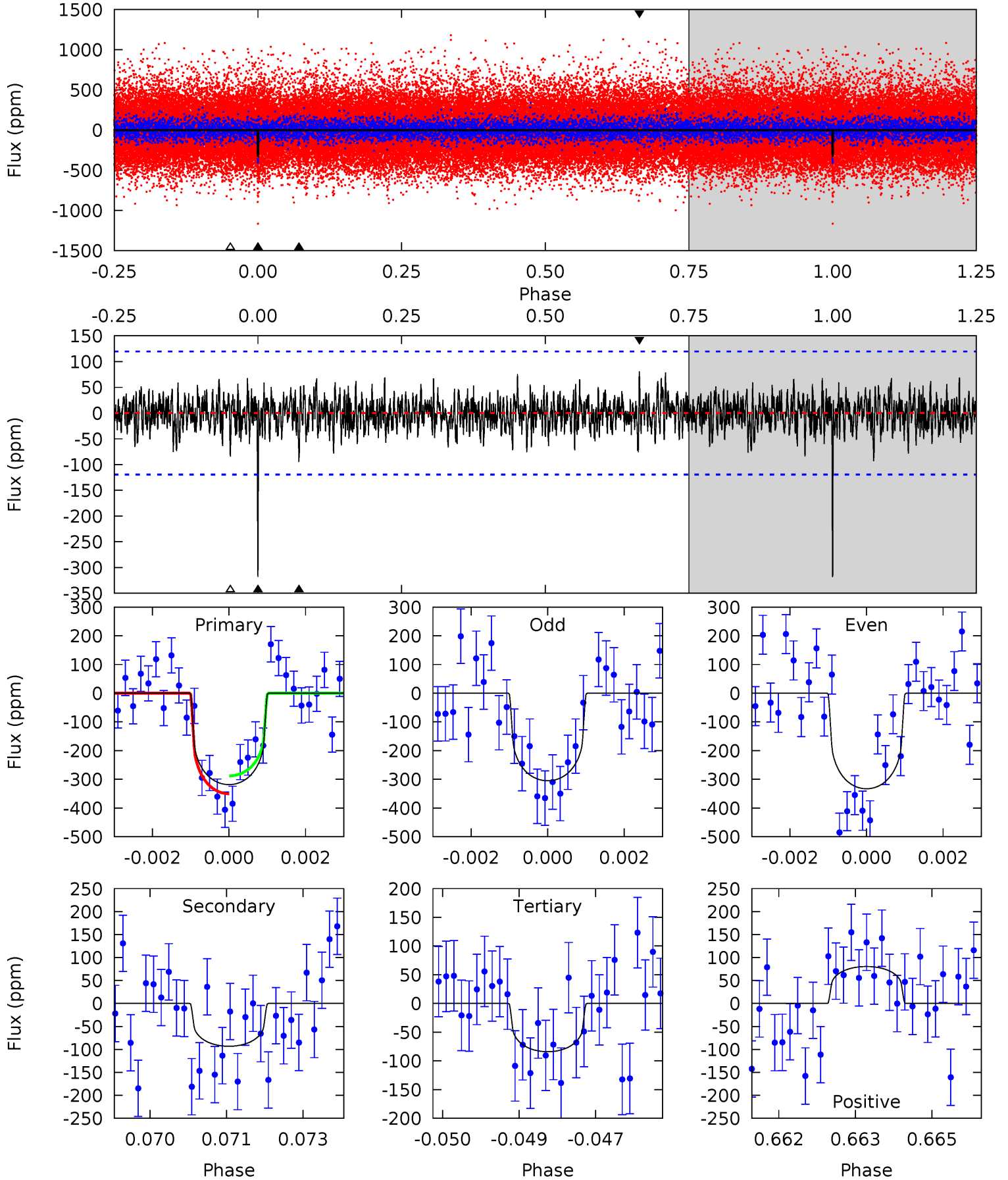
TCE 009947389-01 P=284.721225 Days $T_0=142.075469$ (BKJD)



DV Model-Shift Uniqueness Test

009947389-01, P = 284.726859 Days, E = 142.083464 Days

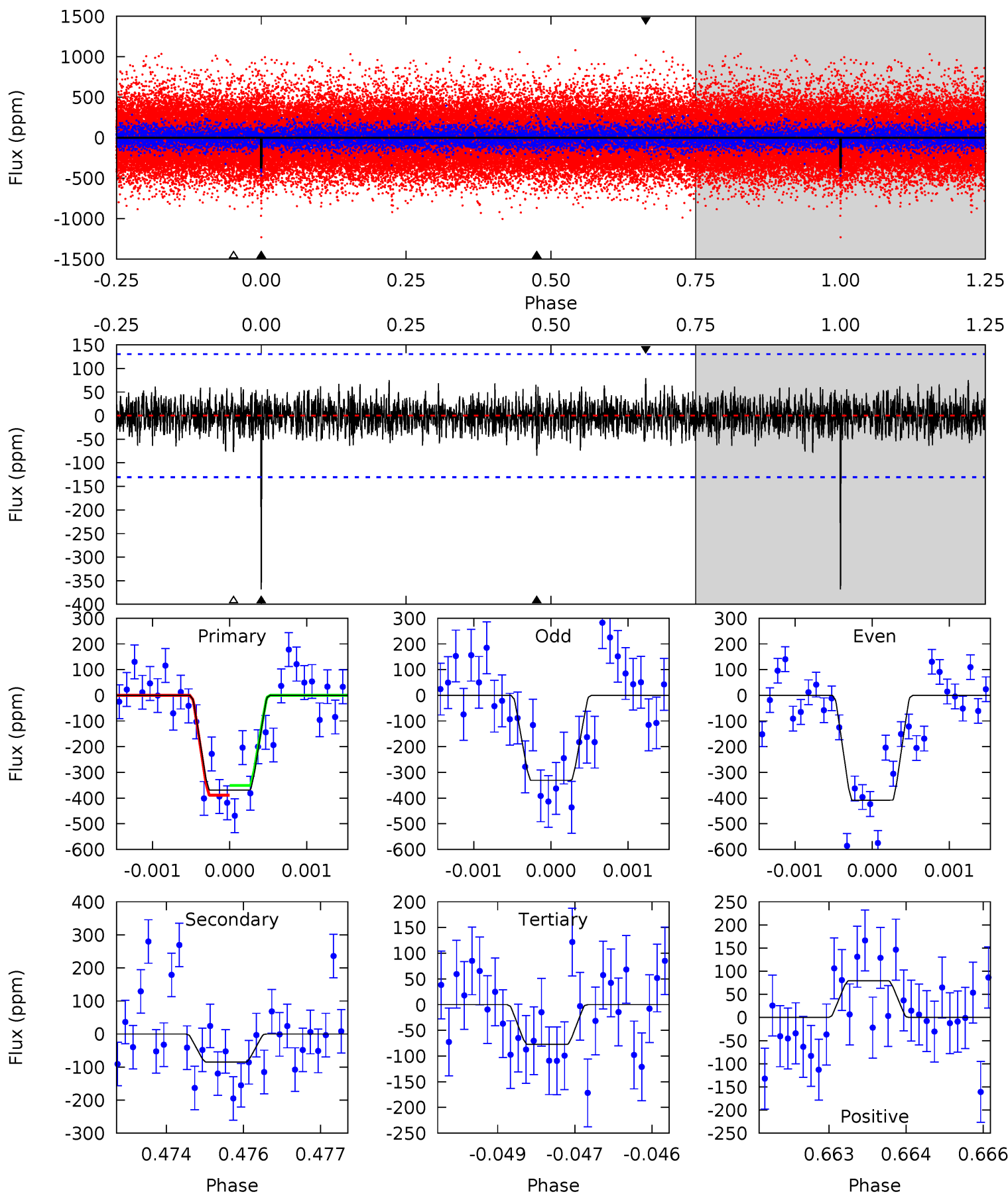
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	4.18	3.77	3.61	5.36	3.15	1.10	10.5	10.7	0.41	0.57	0.62	1.01	0.20	1.40



Alt Model-Shift Uniqueness Test

009947389-01, P = 284.721225 Days, E = 142.075469 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	3.50	3.19	3.28	5.40	3.20	0.94	12.1	12.0	0.31	0.23	1.61	1.00	0.18	0.78



Stellar Parameters For KIC 009947389

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5497^{+82}_{-74}	$4.332^{+0.137}_{-0.100}$	$0.140^{+0.150}_{-0.100}$	$1.080^{+0.158}_{-0.158}$	$0.913^{+0.066}_{-0.038}$	$1.020^{+0.630}_{-0.332}$
	+1%/-1%	+3%/-2%	+107%/-71%	+15%/-15%	+7%/-4%	+62%/-33%
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 009947389-01 / KOI 4460.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-93 ± 22	$2.47^{+1.86}_{-1.56}$	388^{+17}_{-18}	3994^{+2070}_{-687}	5612^{+35759}_{-3913}
Alt.	-85 ± 24	$2.64^{+1.89}_{-1.54}$	387^{+15}_{-17}	3846^{+1551}_{-607}	4450^{+20968}_{-2875}

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 $A_{obs} \gg 1.0$

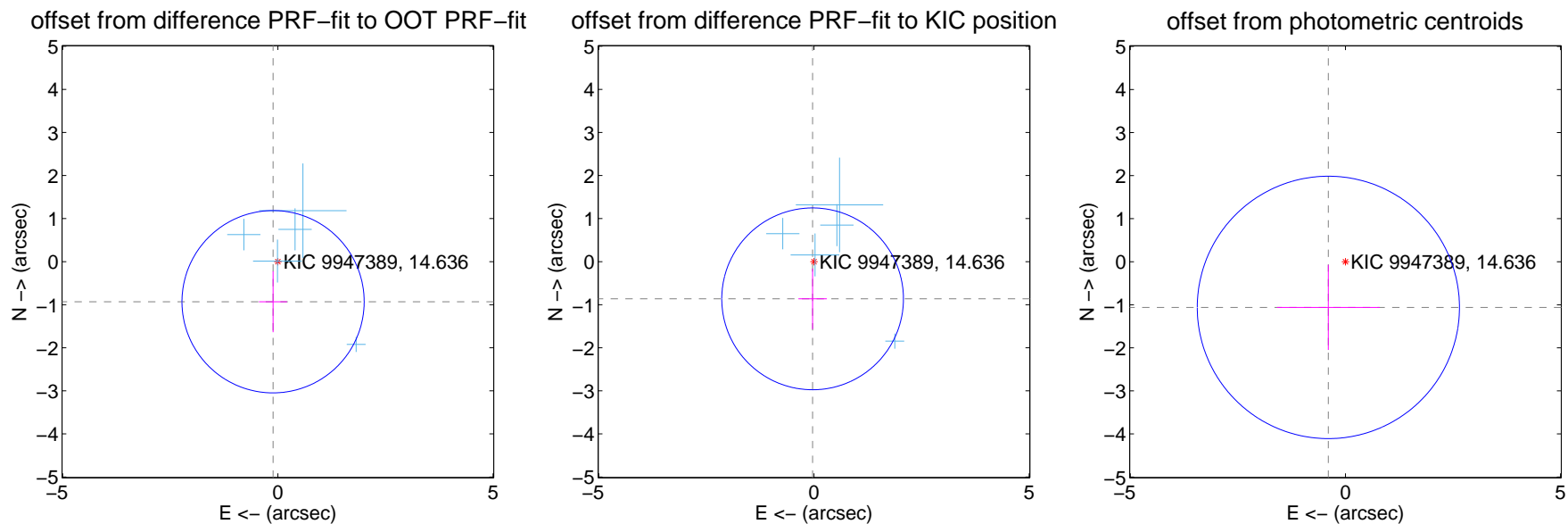
DV Centroid Data

Supplemental centroid analysis for 009947389-01. Kepler magnitude: 14.64. Transit SNR 11.46

There are 5 quarters with good PRF difference image offsets

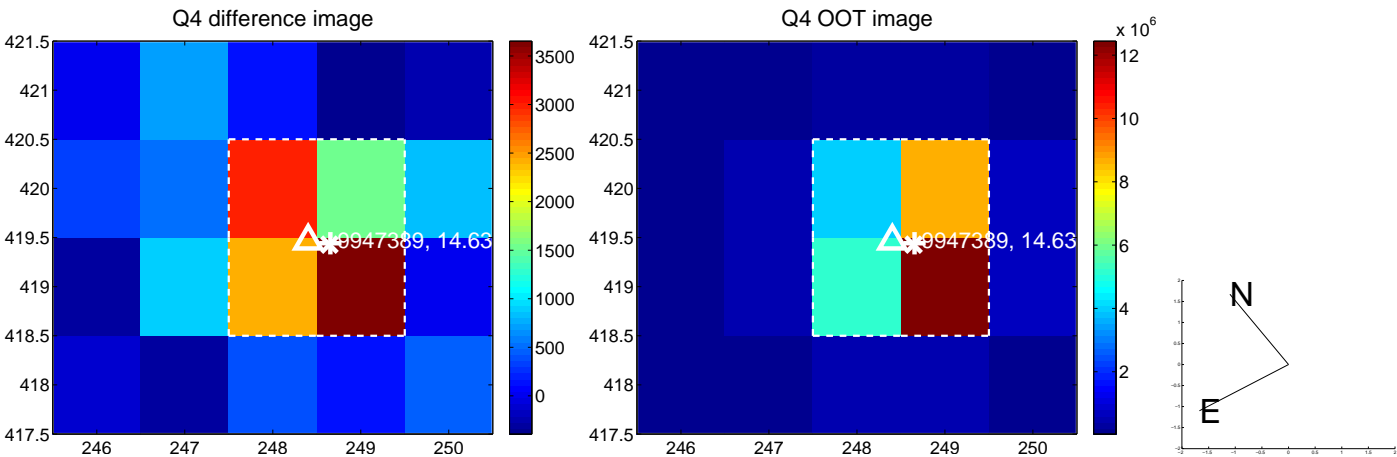
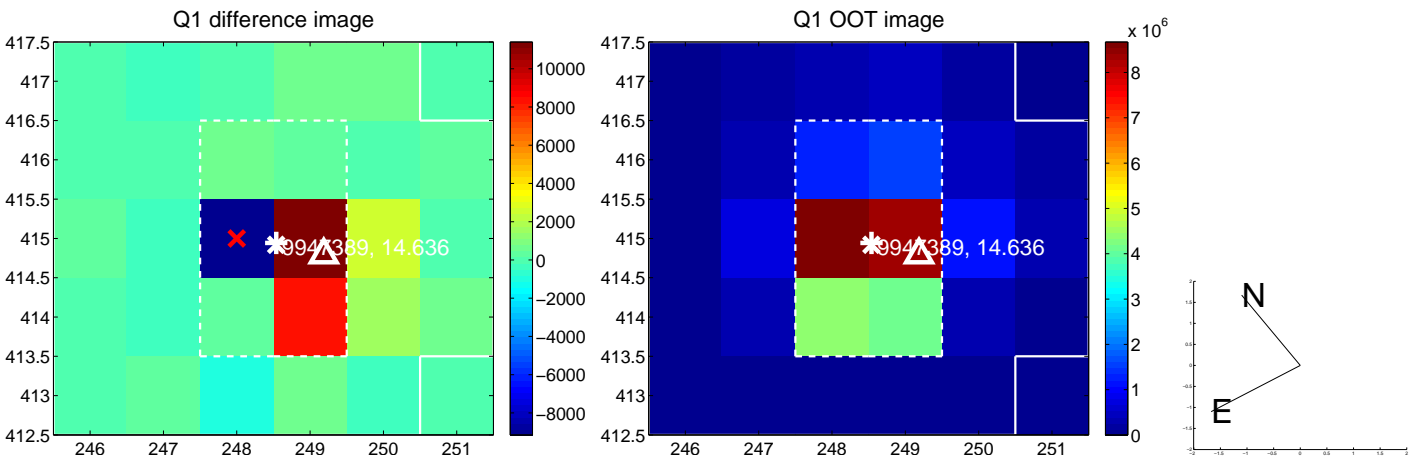
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.937 ± 0.706	1.33	0.111 ± 0.326	-0.931 ± 0.710
PRF-fit source offset from KIC position	0.864 ± 0.704	1.23	0.032 ± 0.330	-0.864 ± 0.704
photometric centroid source offset	1.13 ± 1.02	1.12	0.40 ± 1.19	-1.06 ± 0.99



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.

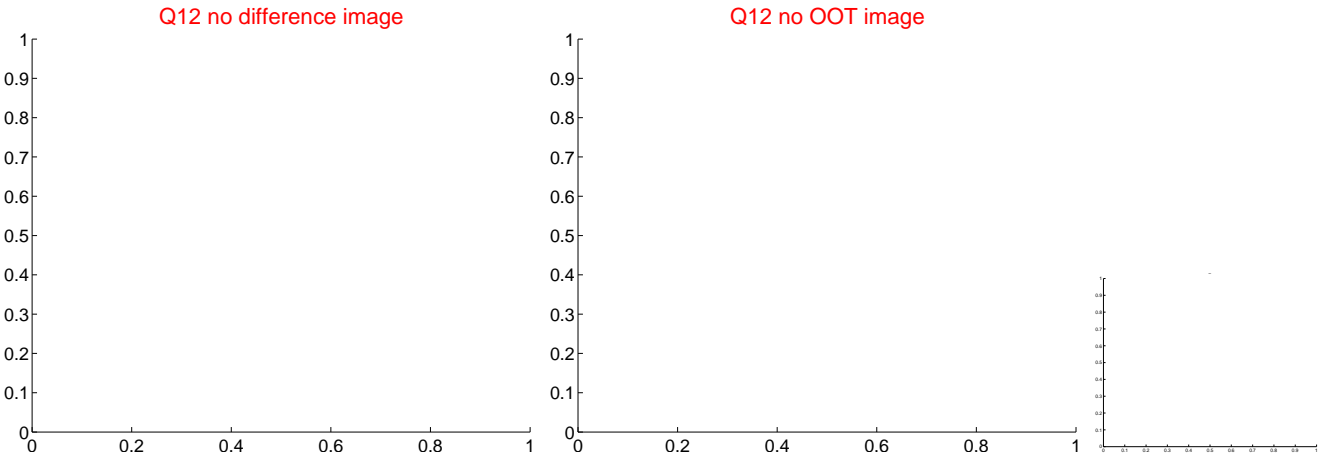
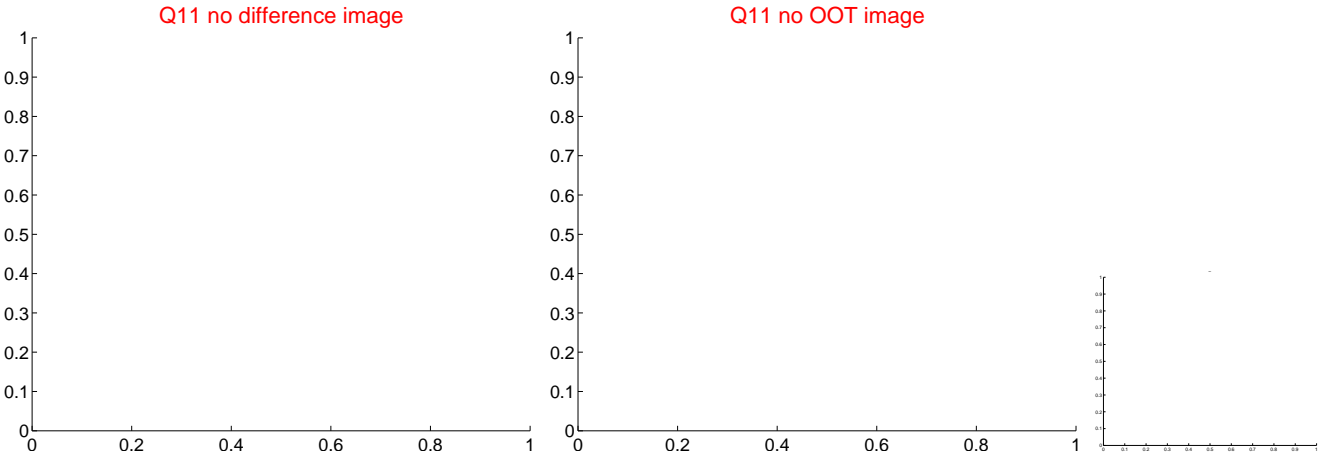
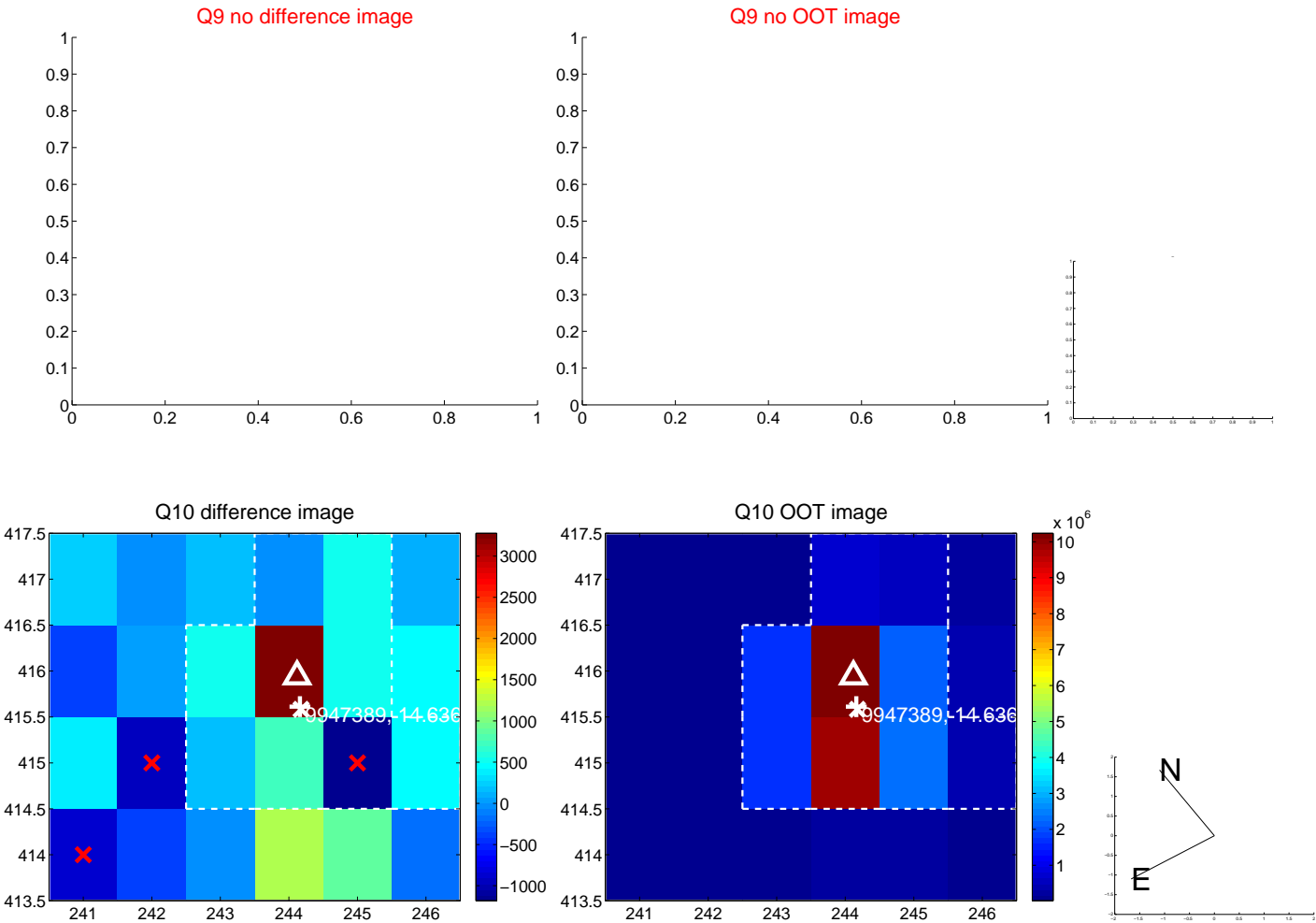
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



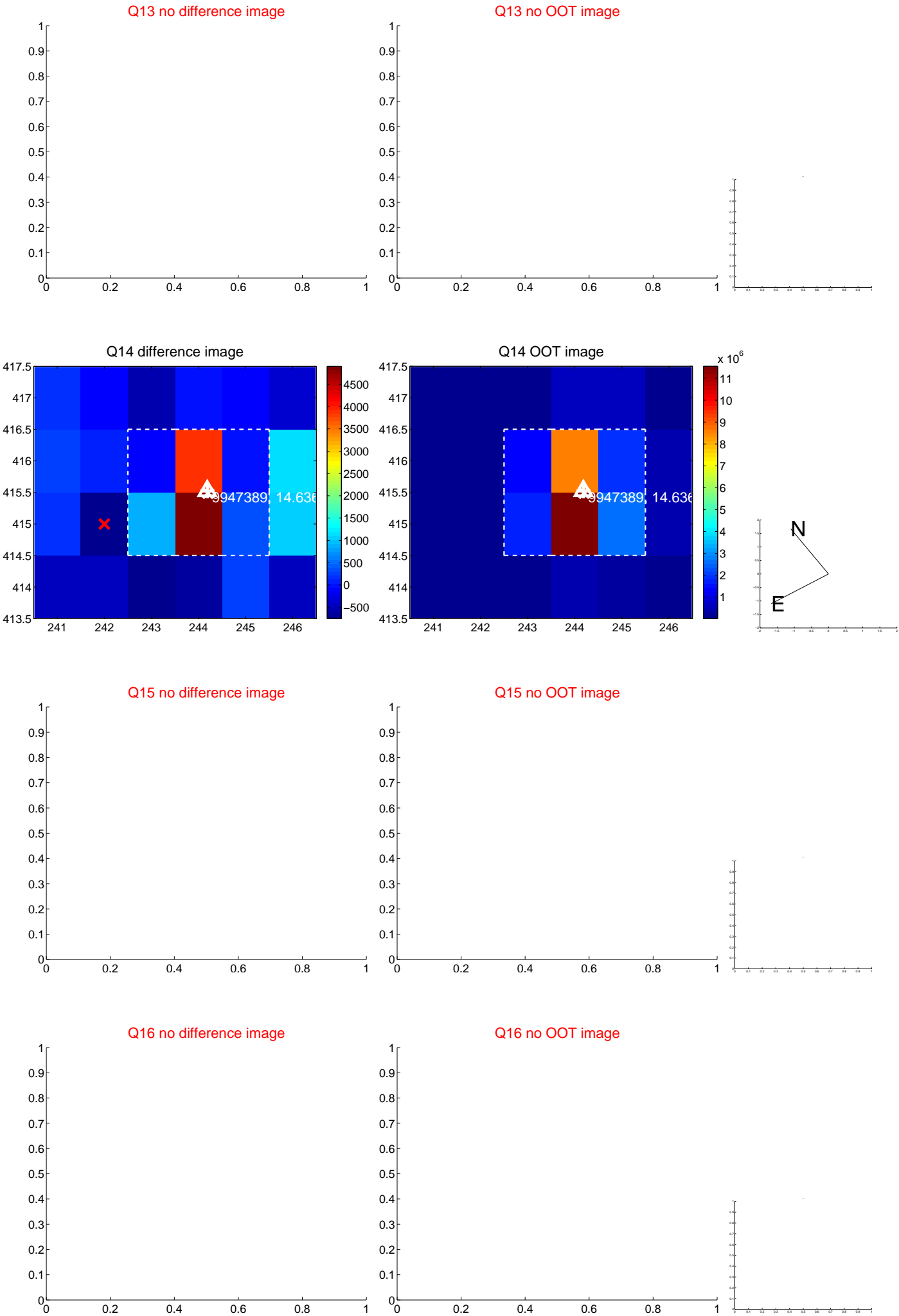
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



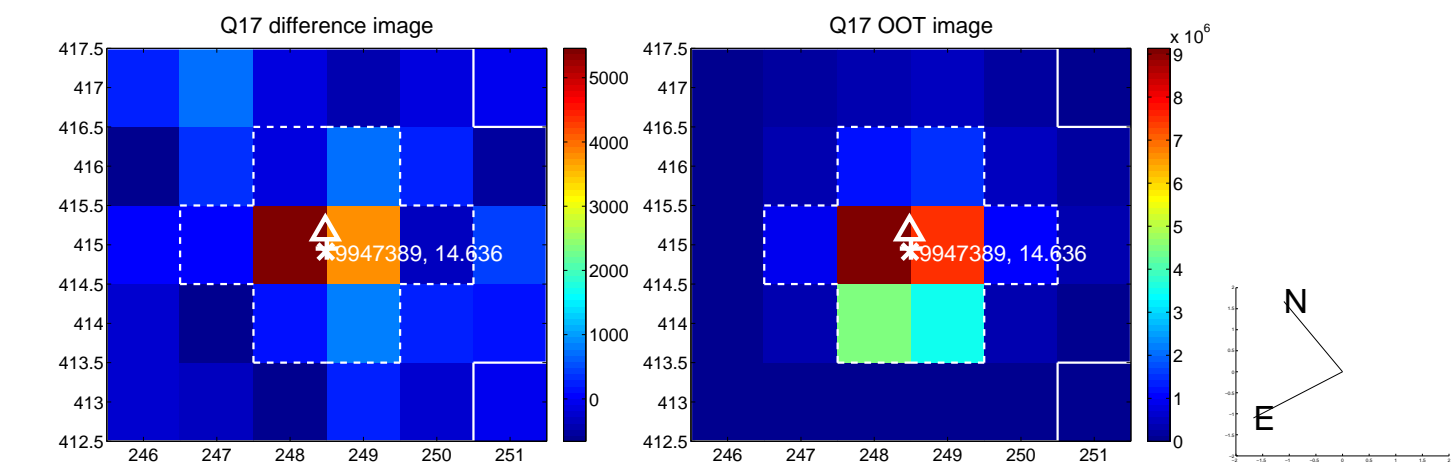
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



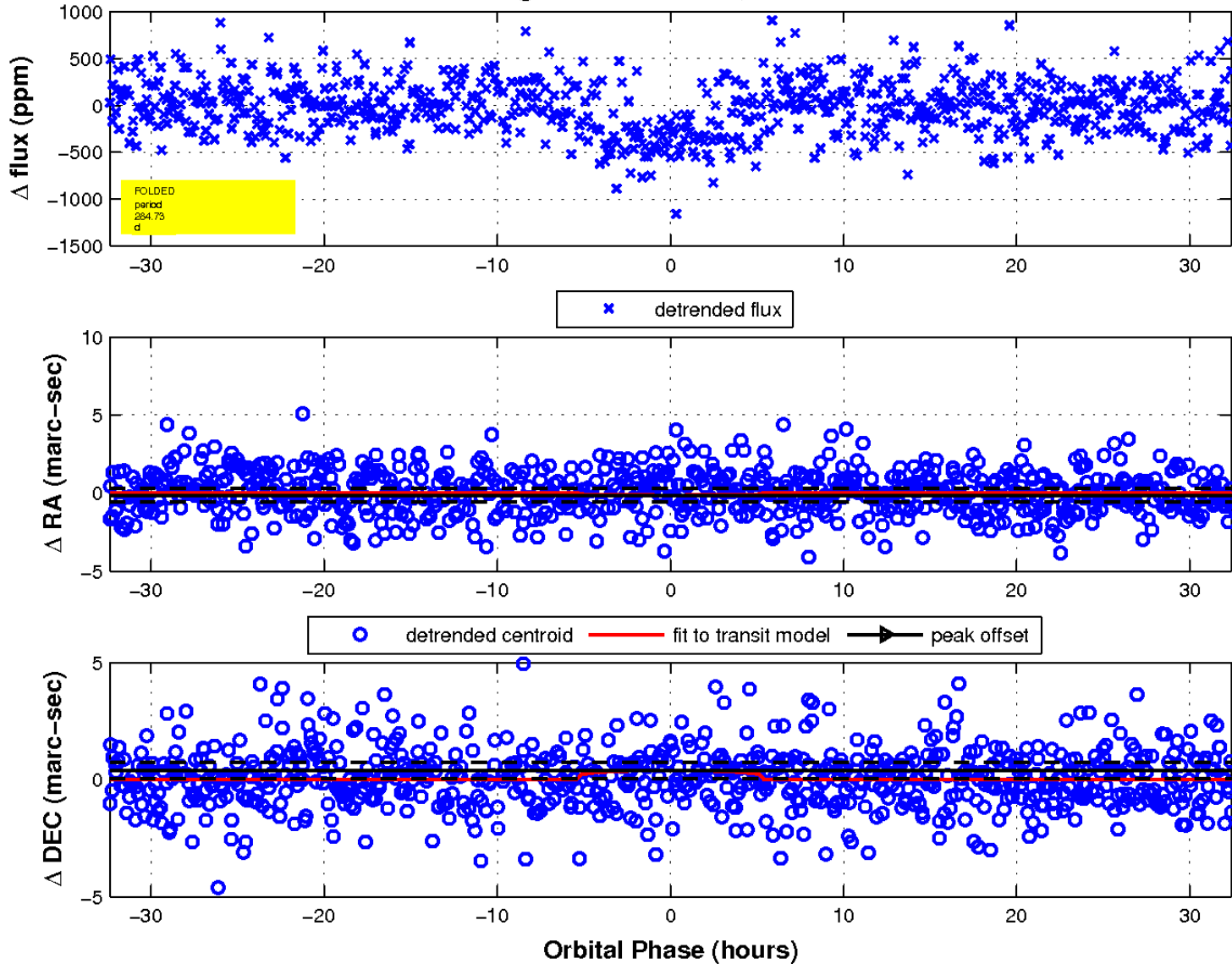
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

