

KIC 009489947

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})
009489947-01	OBS	3385.01	54.061336	181.788014	79442.8	4.499	1085.2	1041.2	1.11	5786	45.28	16.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009489947-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED

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.

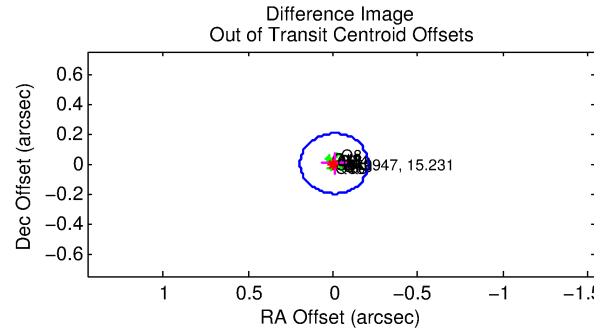
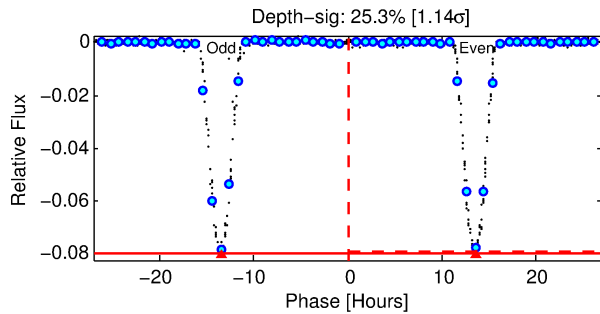
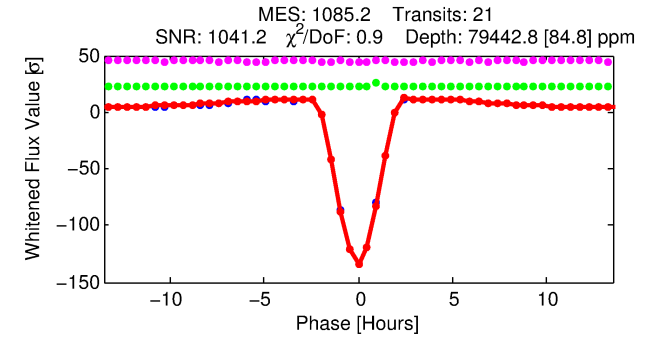
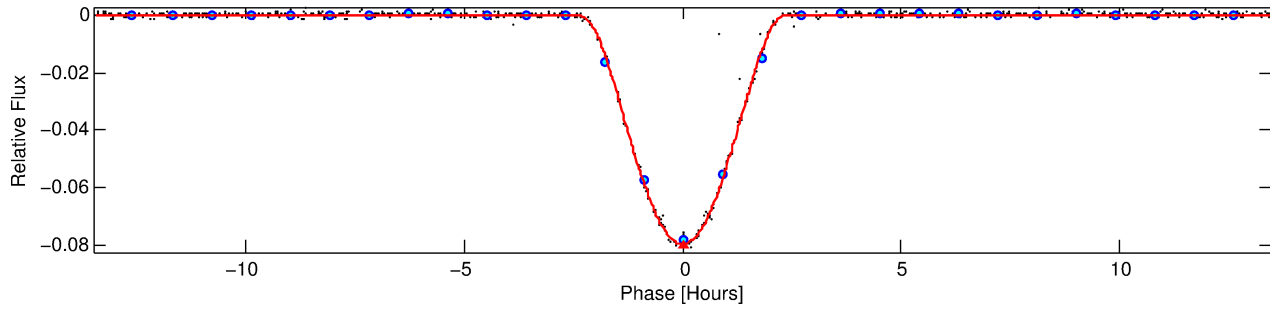
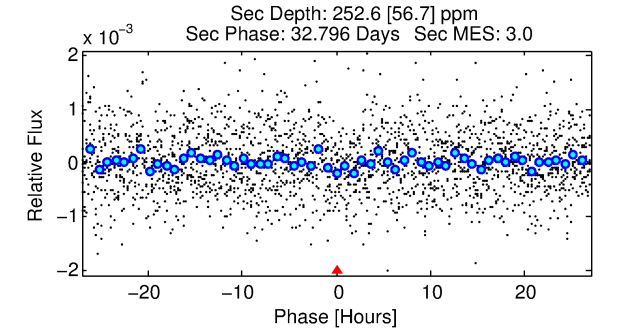
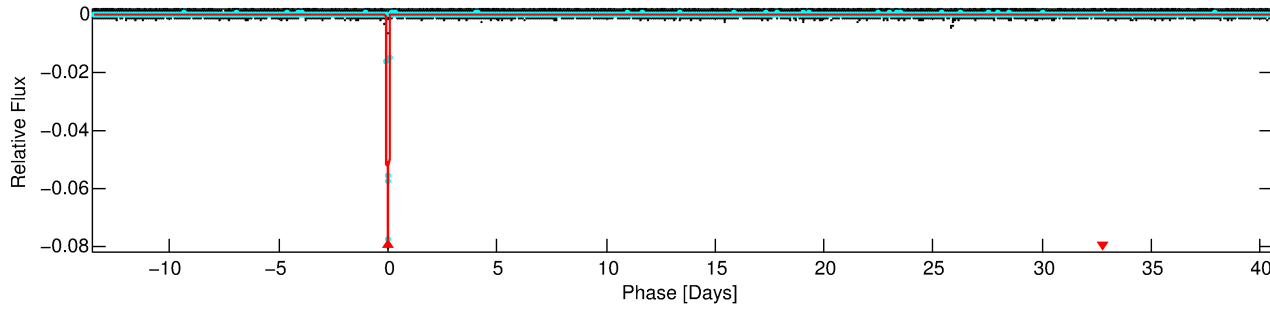
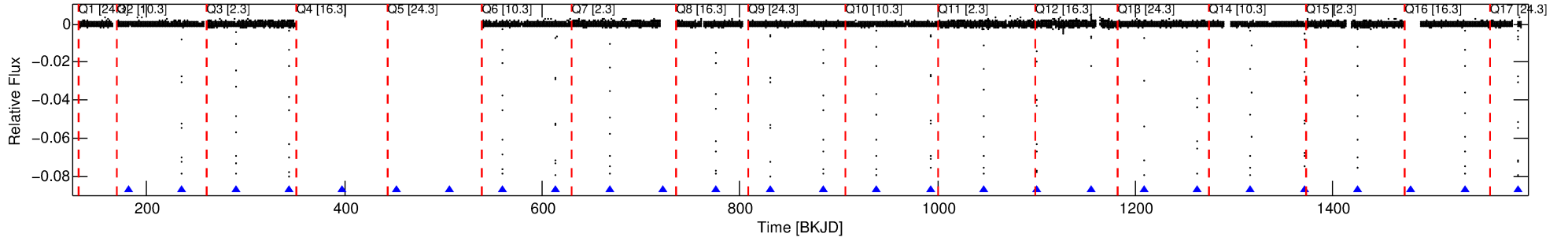
Ephemeris Match Information For 009489947-01

No Significant Match Found

DV One-Page Summary

KIC: 9489947 Candidate: 1 of 1 Period: 54.061 d
KOI: K03385.01 Corr: 0.998

Kp: 15.23 R*: 1.11 Rs Teff: 5786.0 K Logg: 4.32 Fe/H: -0.080



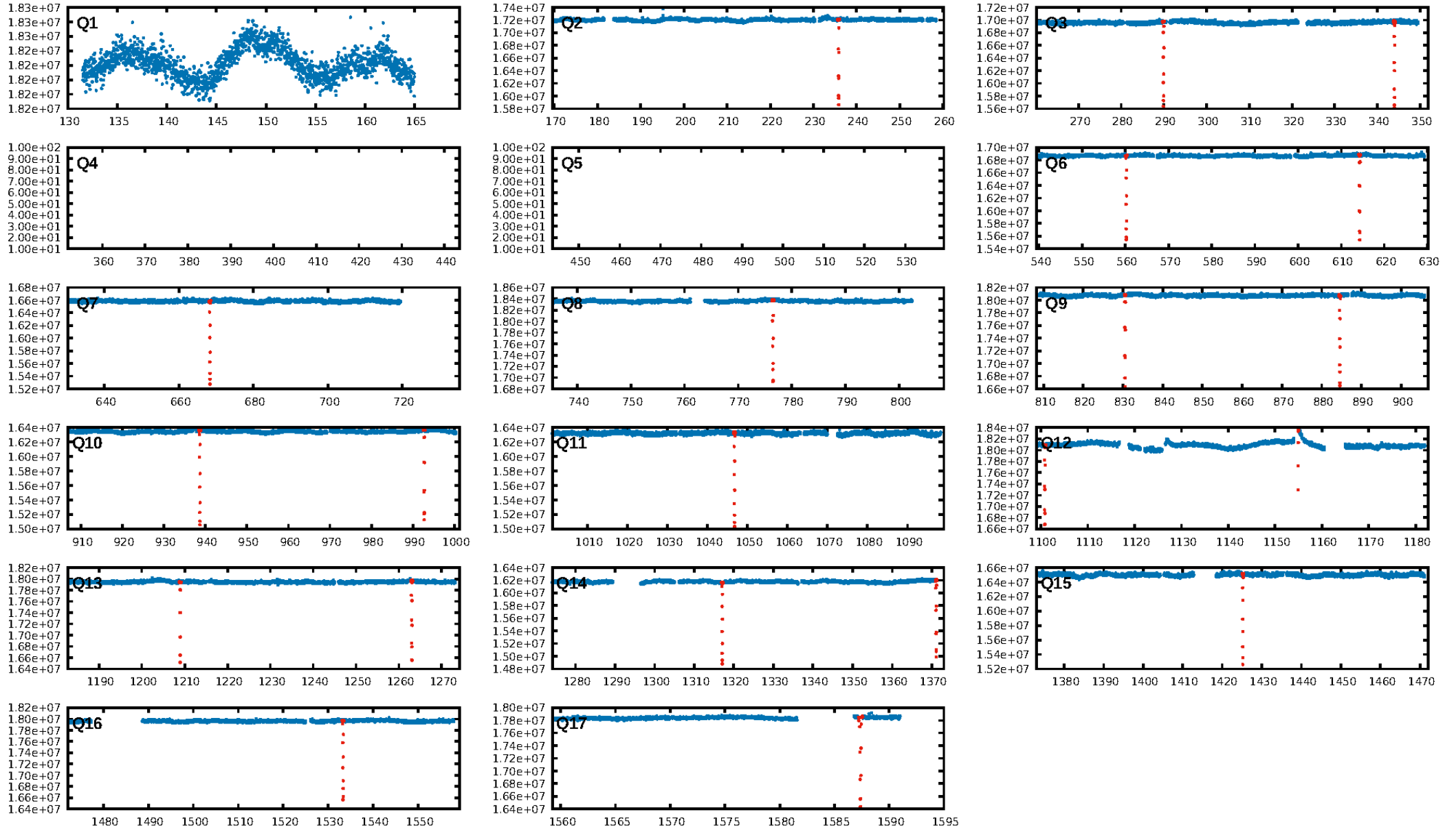
DV Fit Results:

Period = 54.06134 [0.00001] d
Epoch = 181.7880 [0.0001] BKJD
Rp/R* = 0.3732 [0.0230]
a/R* = 94.95 [0.16]
b = 0.90 [0.03]
Seff = 16.54 [6.11]
Teq = 514 [48] K
Rp = 45.28 [12.93] Re
a = 0.2740 [0.0651] AU
Ag = 5.09 [2.21] [1.85σ]
Teffp = 1194 [84] K [7.02σ]

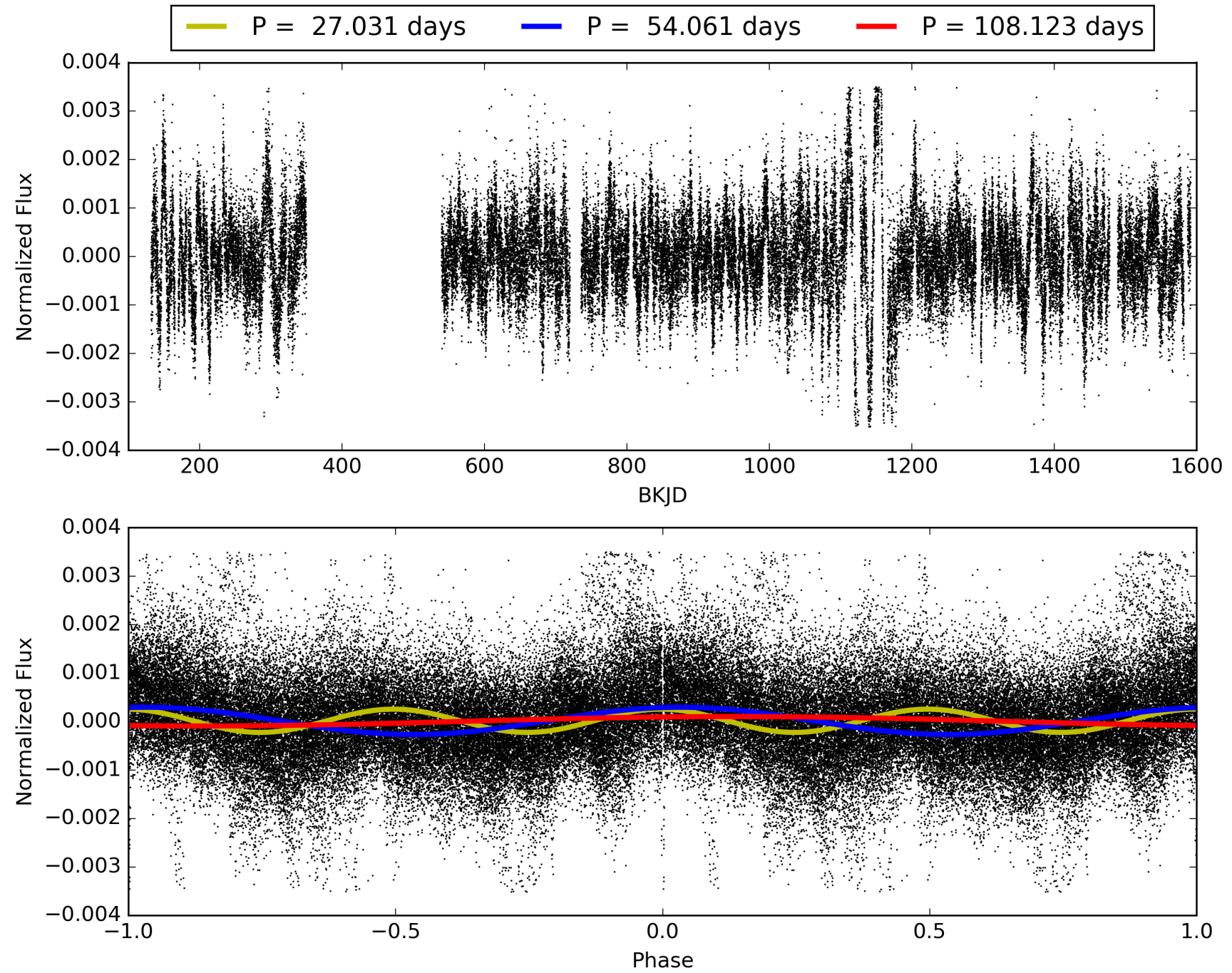
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [20/20]
GhostDiagnostic-chr: 2.947
Centroid-sig: 0.0%
Centroid-so: 0.742 arcsec [62.57σ]
OotOffset-rm: 0.006 arcsec [0.09σ]
KicOffset-rm: 0.091 arcsec [1.35σ]
OotOffset-st: 4/4/2/2 [12]
KicOffset-st: 4/4/2/2 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [12/12]

TCE 009489947-01, PDC Light Curves

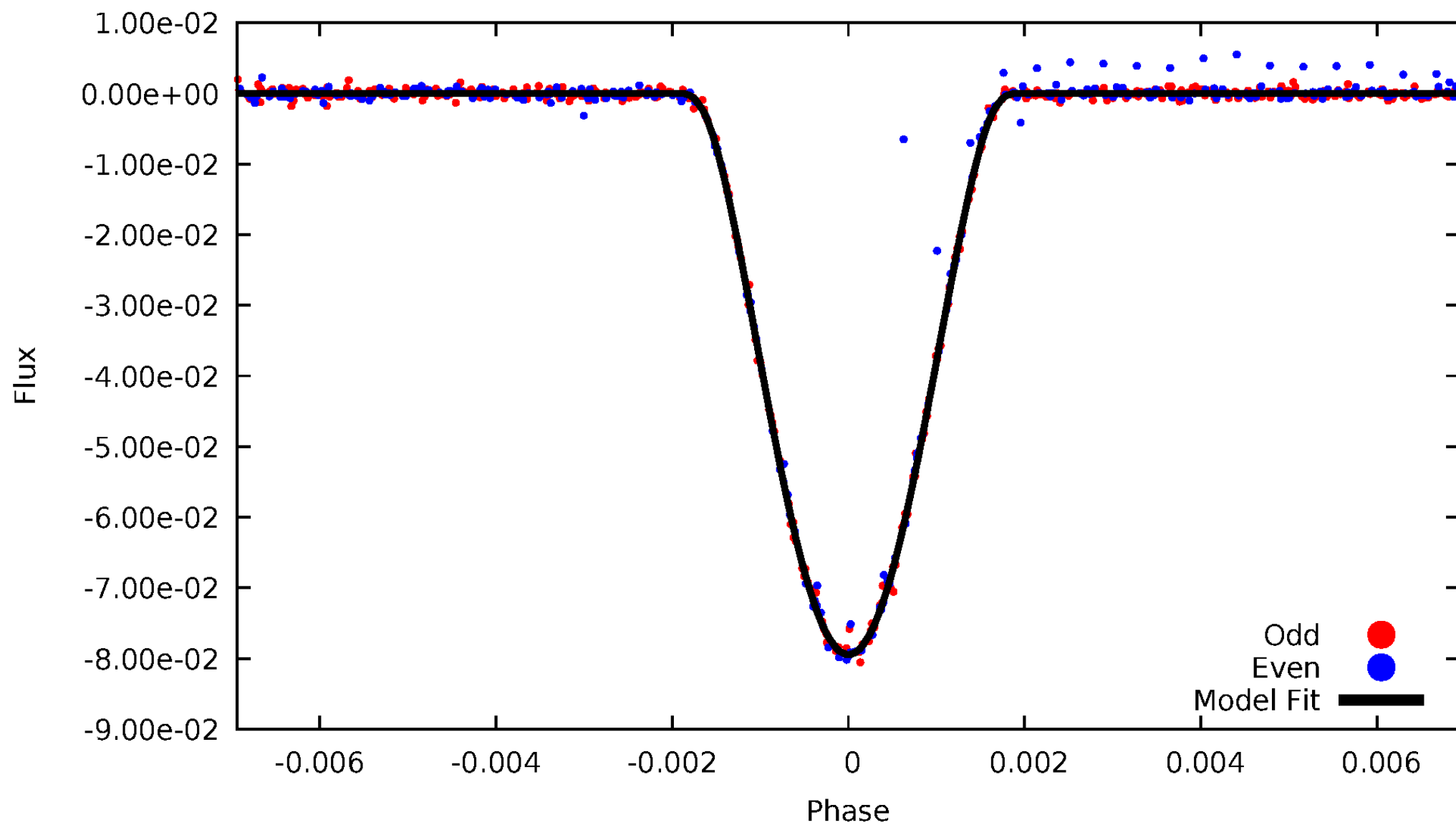


TCE 009489947-01



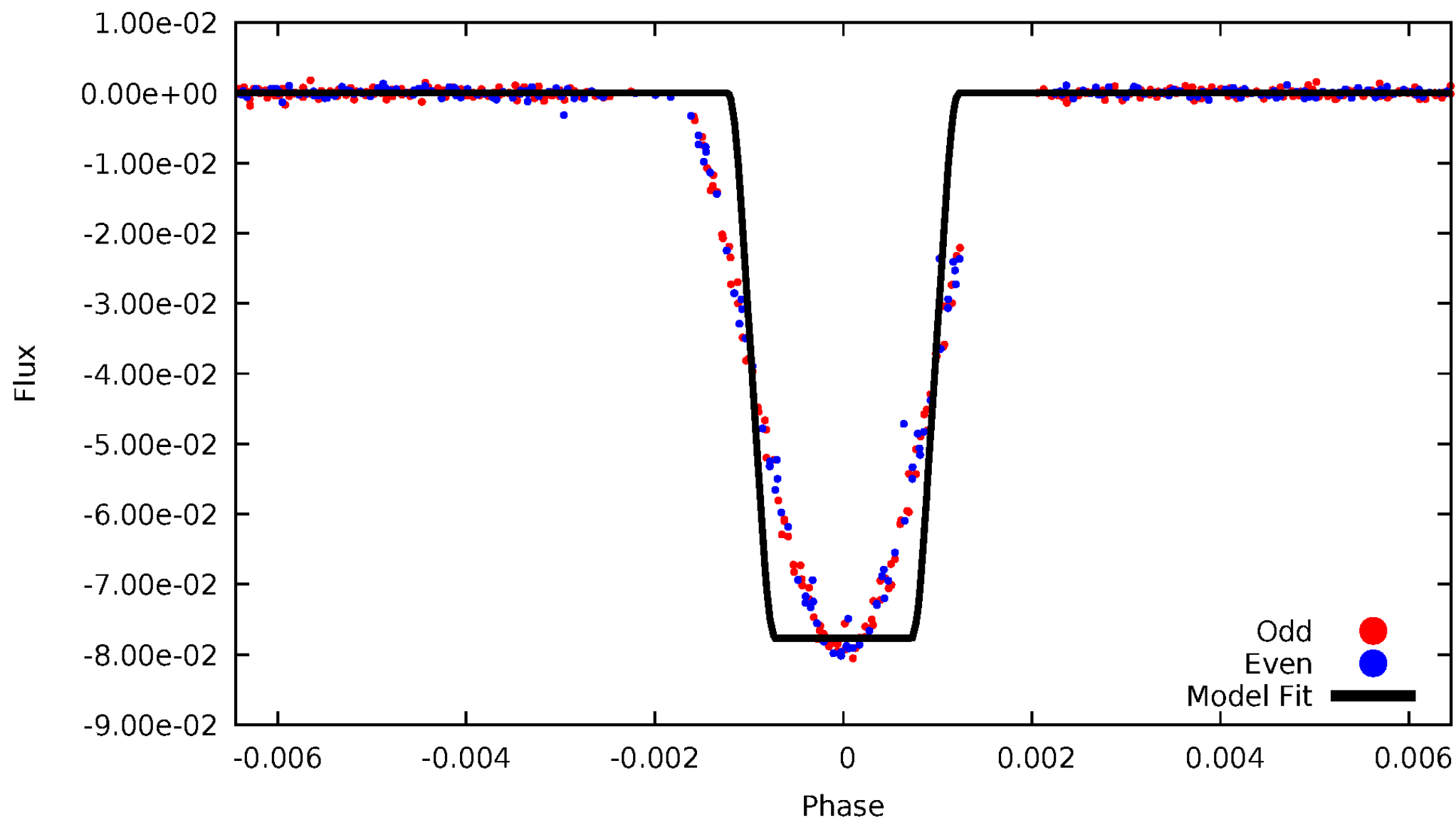
DV Odd/Even

TCE 009489947-01



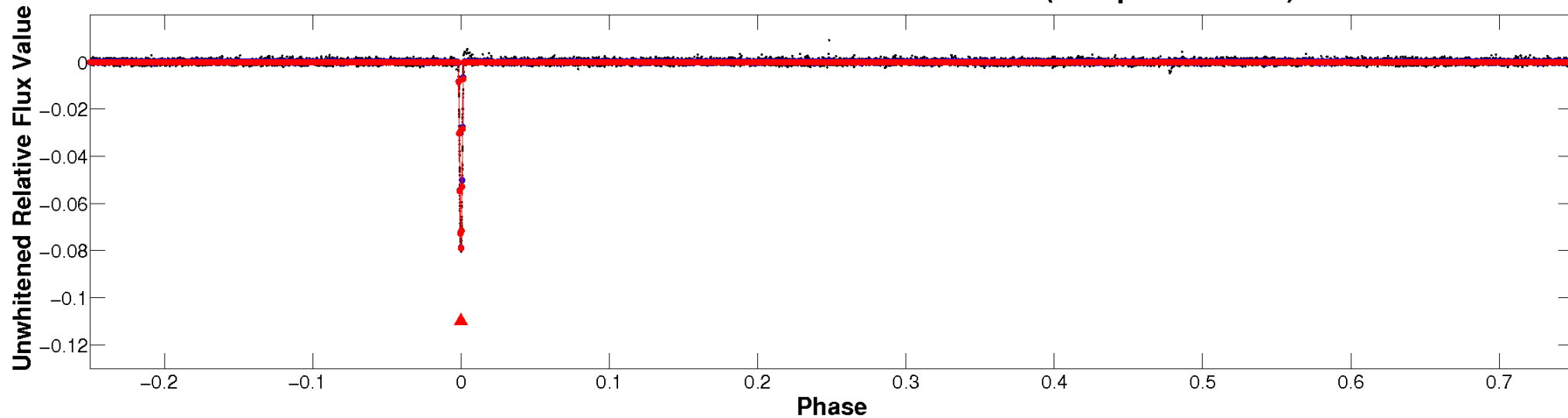
ALT Odd/Even

TCE 009489947-01

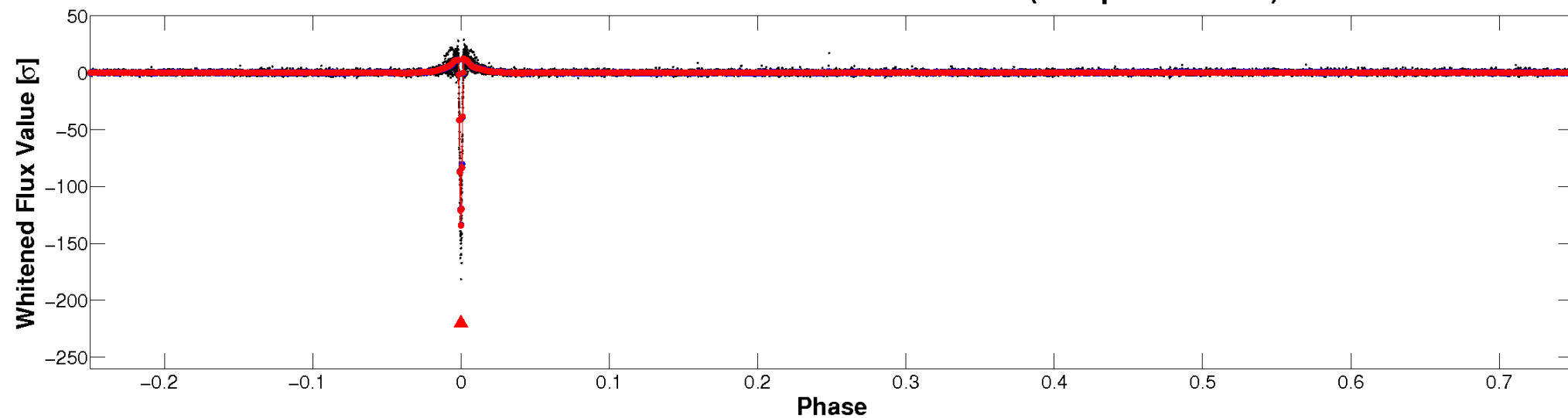


Non-Whitened Vs. Whitened Light Curve

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

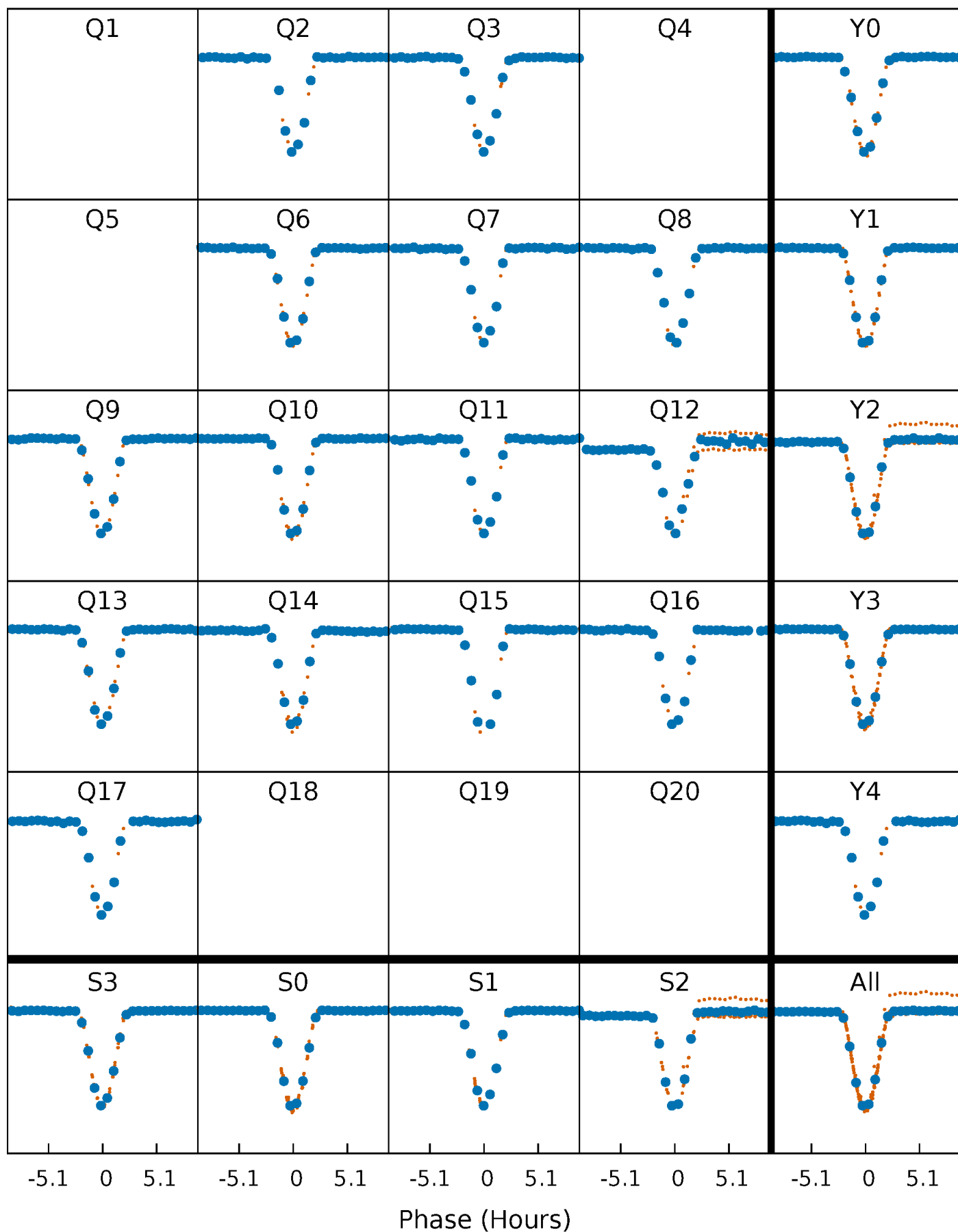


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



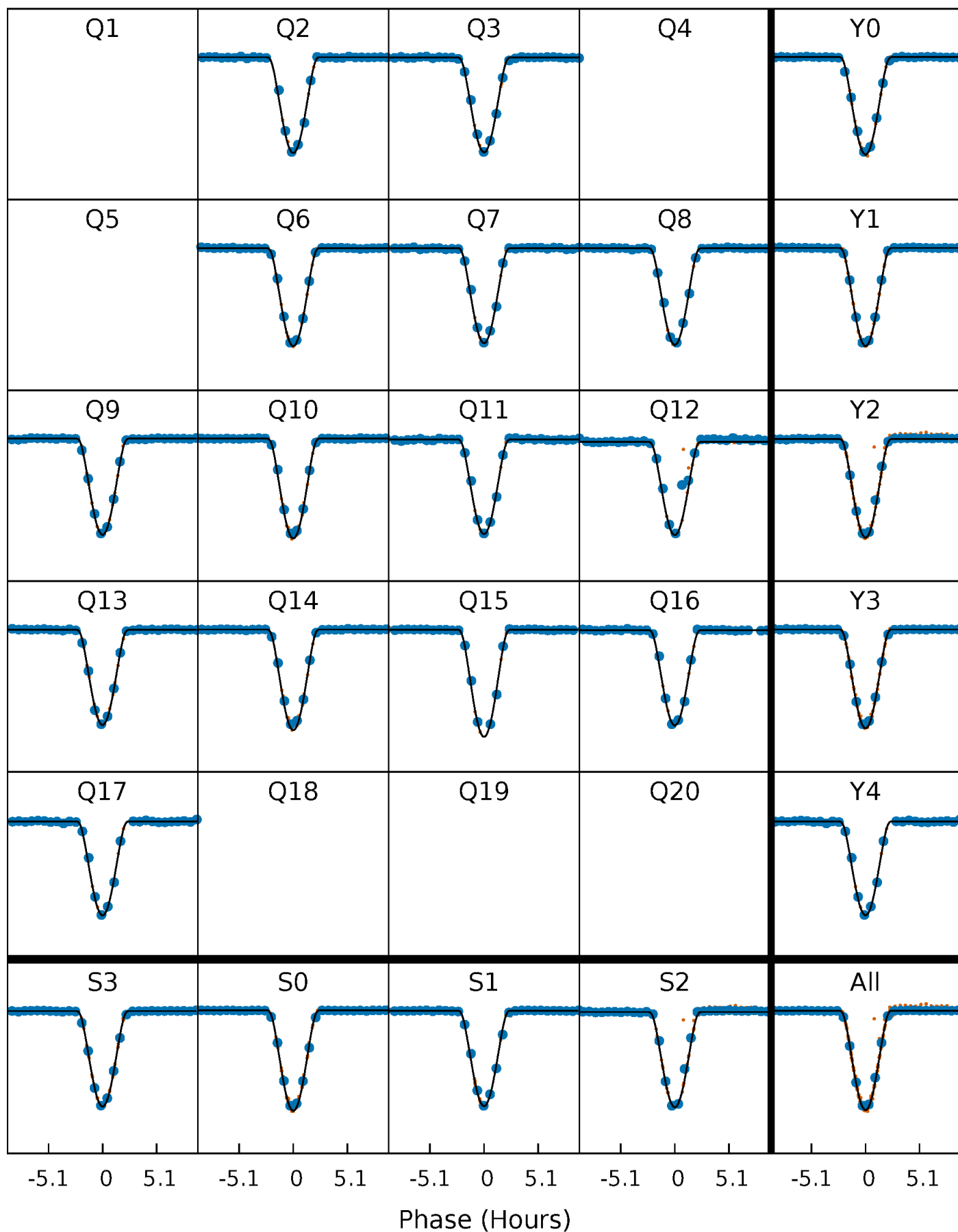
PDC Quarter-Phased Transit Curves

TCE 009489947-01 P= 54.061336 Days $T_0=181.788015$ (BKJD)



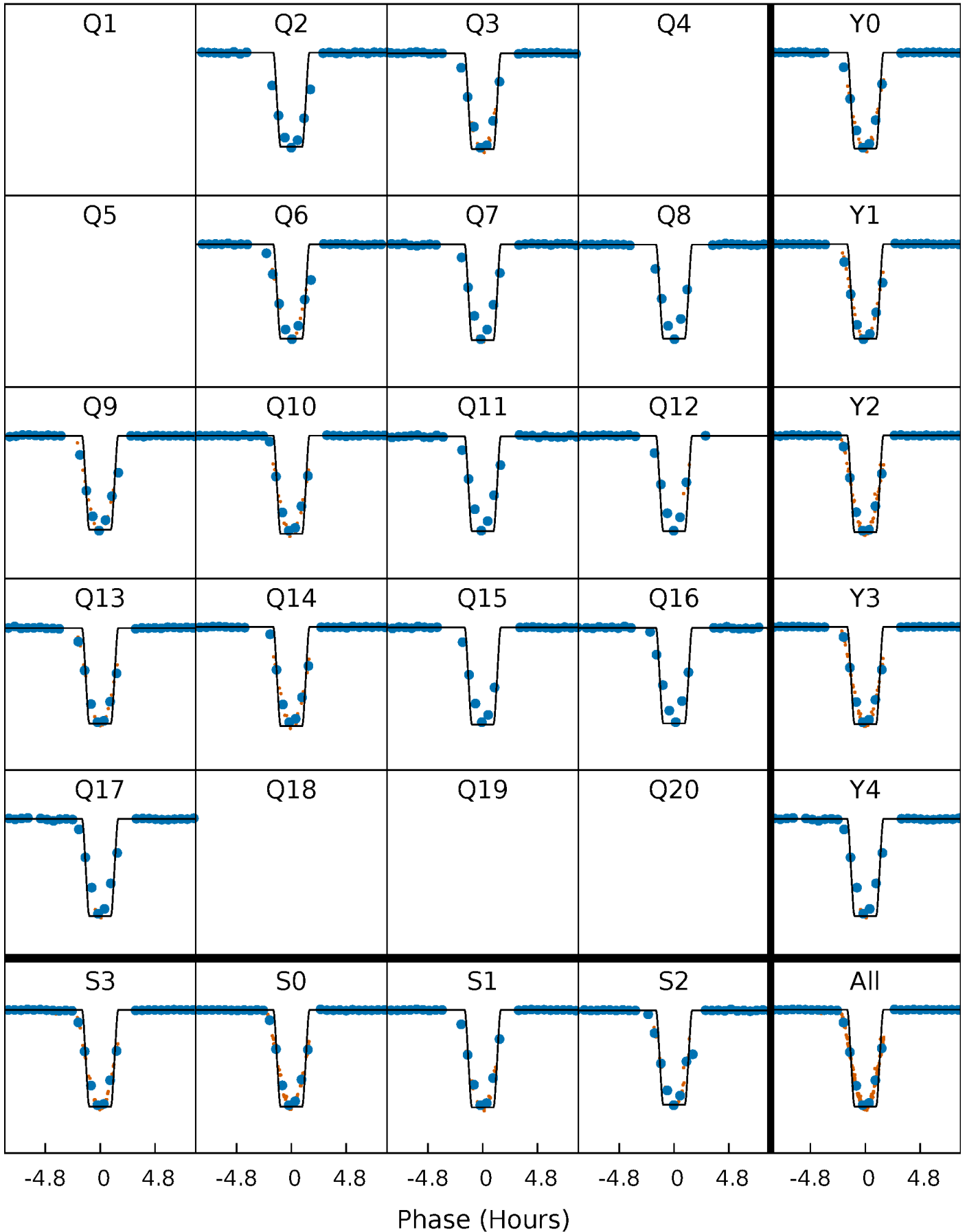
DV Quarter-Phased Transit Curves

TCE 009489947-01 P= 54.061336 Days $T_0=181.788015$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

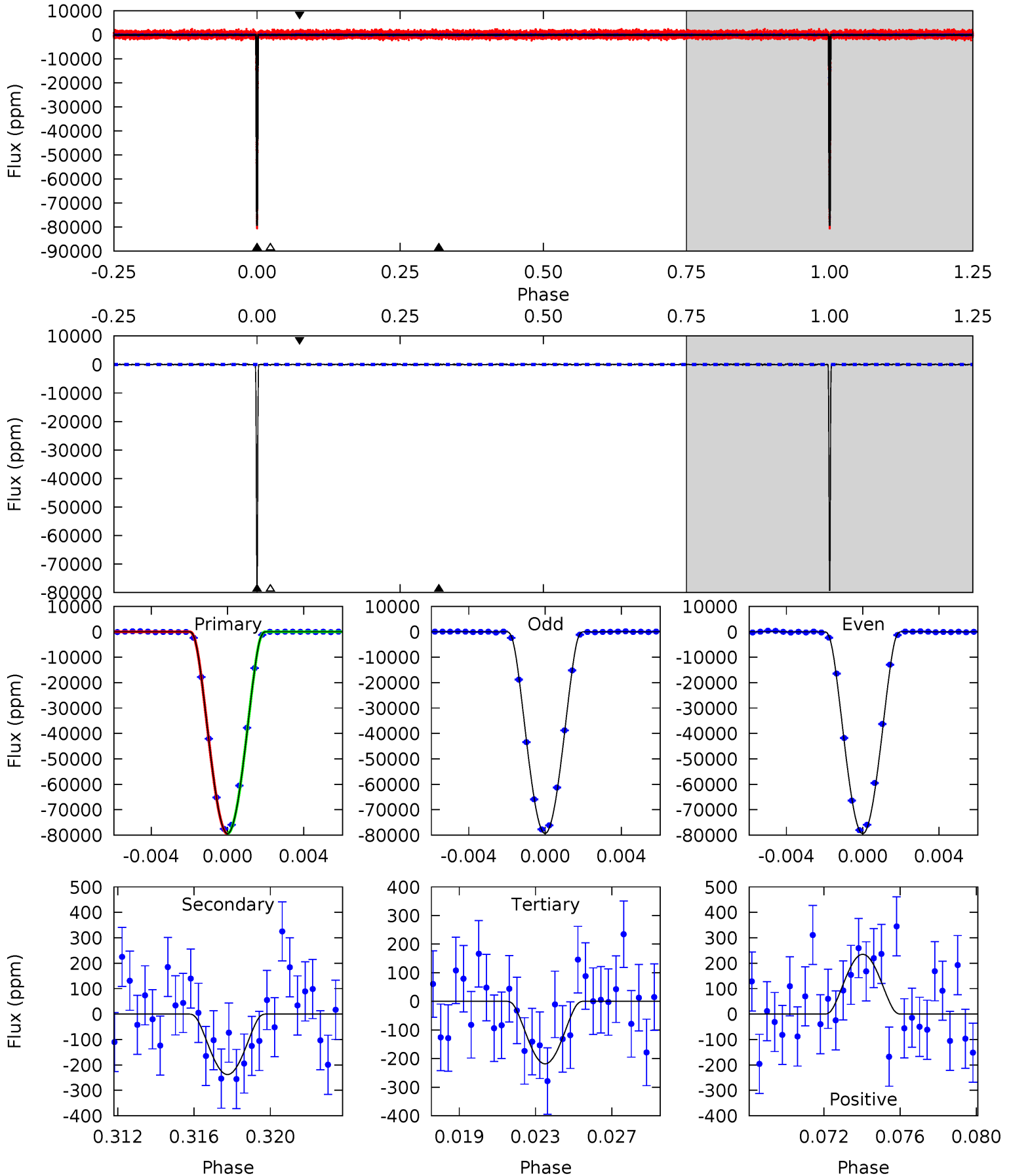
TCE 009489947-01 P= 54.061170 Days $T_0=181.790267$ (BKJD)



DV Model-Shift Uniqueness Test

009489947-01, P = 54.061336 Days, E = 127.726679 Days

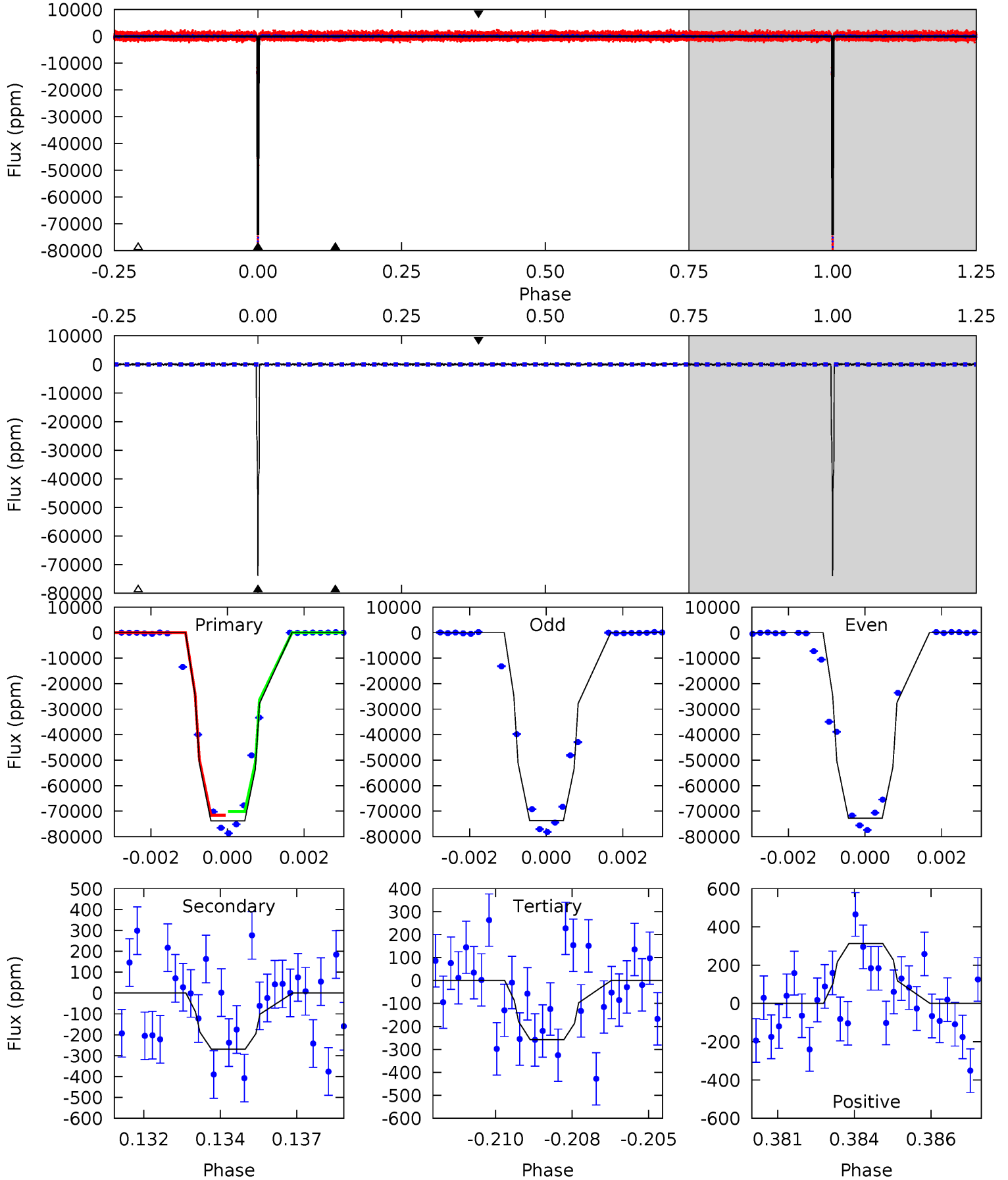
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1932	5.78	5.31	5.72	5.21	2.89	1.78	1926	1926	0.47	0.07	0.86	0.96	0.00	0.77



Alt Model-Shift Uniqueness Test

009489947-01, P = 54.061170 Days, E = 127.729097 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
992.8	3.61	3.46	4.21	5.29	3.03	3.38	989.3	988.6	0.16	-0.60	5.85	0.99	0.00	0



Stellar Parameters For KIC 009489947

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5786^{+173}_{-173}	$4.318^{+0.175}_{-0.193}$	$-0.080^{+0.300}_{-0.300}$	$1.112^{+0.310}_{-0.232}$	$0.937^{+0.136}_{-0.091}$	$0.961^{+0.780}_{-0.471}$
	+3%/-3%	+4%/-4%	+375%/-375%	+28%/-21%	+15%/-10%	+81%/-49%
Source	PHO1	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 009489947-01 / KOI 3385.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-238 ± 41	$45.42^{+8.34}_{-6.21}$	720^{+57}_{-52}	2127^{+60}_{-62}	$4.789^{+1.787}_{-1.516}$
Alt.	-269 ± 74	$34.16^{+6.01}_{-4.96}$	718^{+56}_{-45}	2303^{+90}_{-92}	$9.478^{+4.378}_{-3.359}$

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 $A_{obs} \gg 1.0$

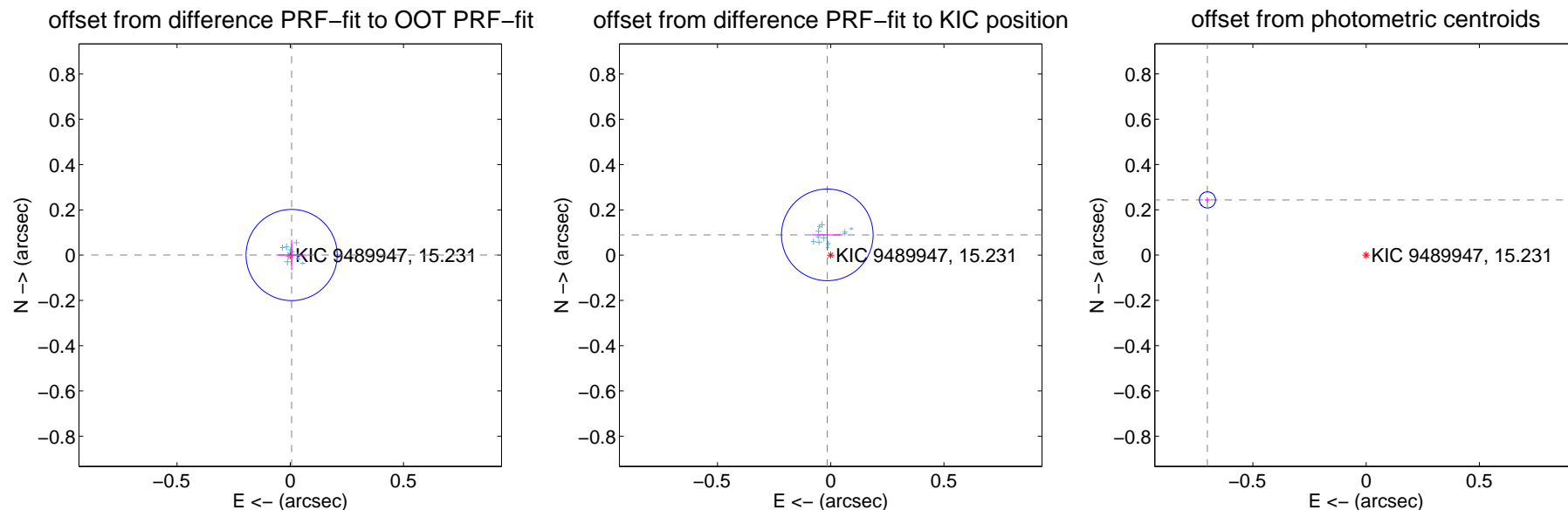
DV Centroid Data

Supplemental centroid analysis for 009489947-01. Kepler magnitude: 15.23. Transit SNR 1041.18

There are 12 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	0.006 ± 0.067	0.09	-0.006 ± 0.067	0.001 ± 0.067
PRF-fit source offset from KIC position	0.091 ± 0.067	1.35	0.015 ± 0.069	0.090 ± 0.067
photometric centroid source offset	0.74 ± 0.01	62.57	0.70 ± 0.01	0.24 ± 0.01



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.

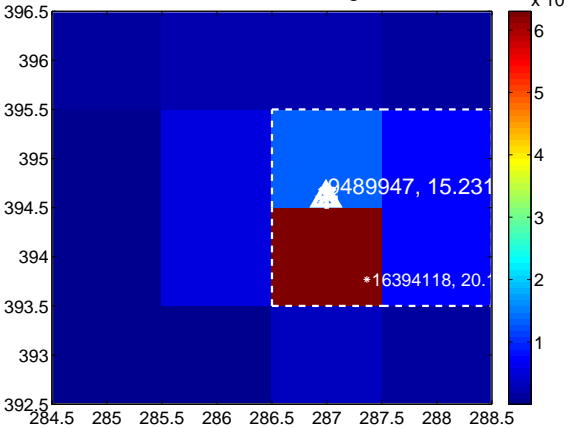
Q1 no difference image



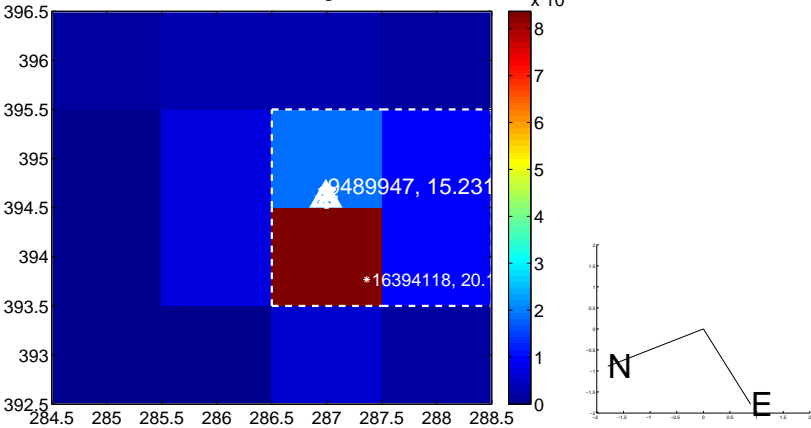
Q1 no OOT image



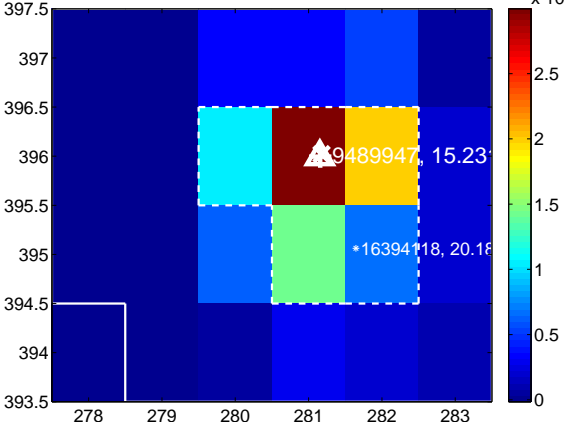
Q2 difference image



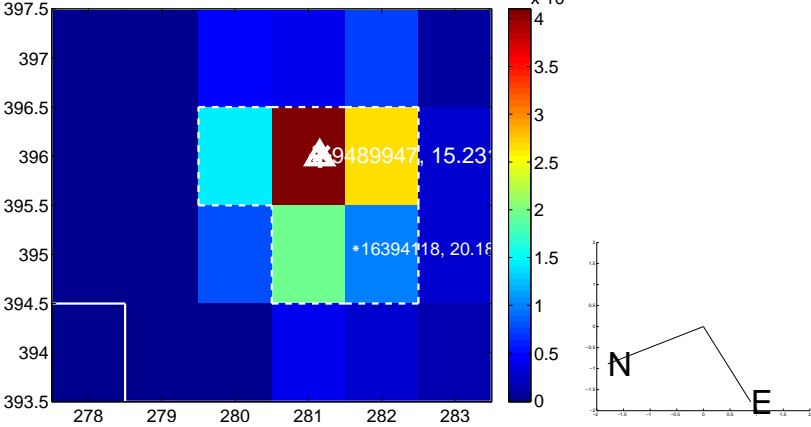
Q2 OOT image



Q3 difference image



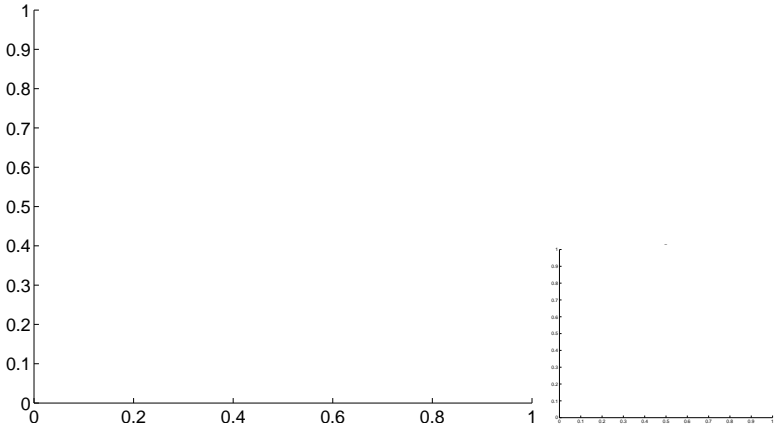
Q3 OOT image



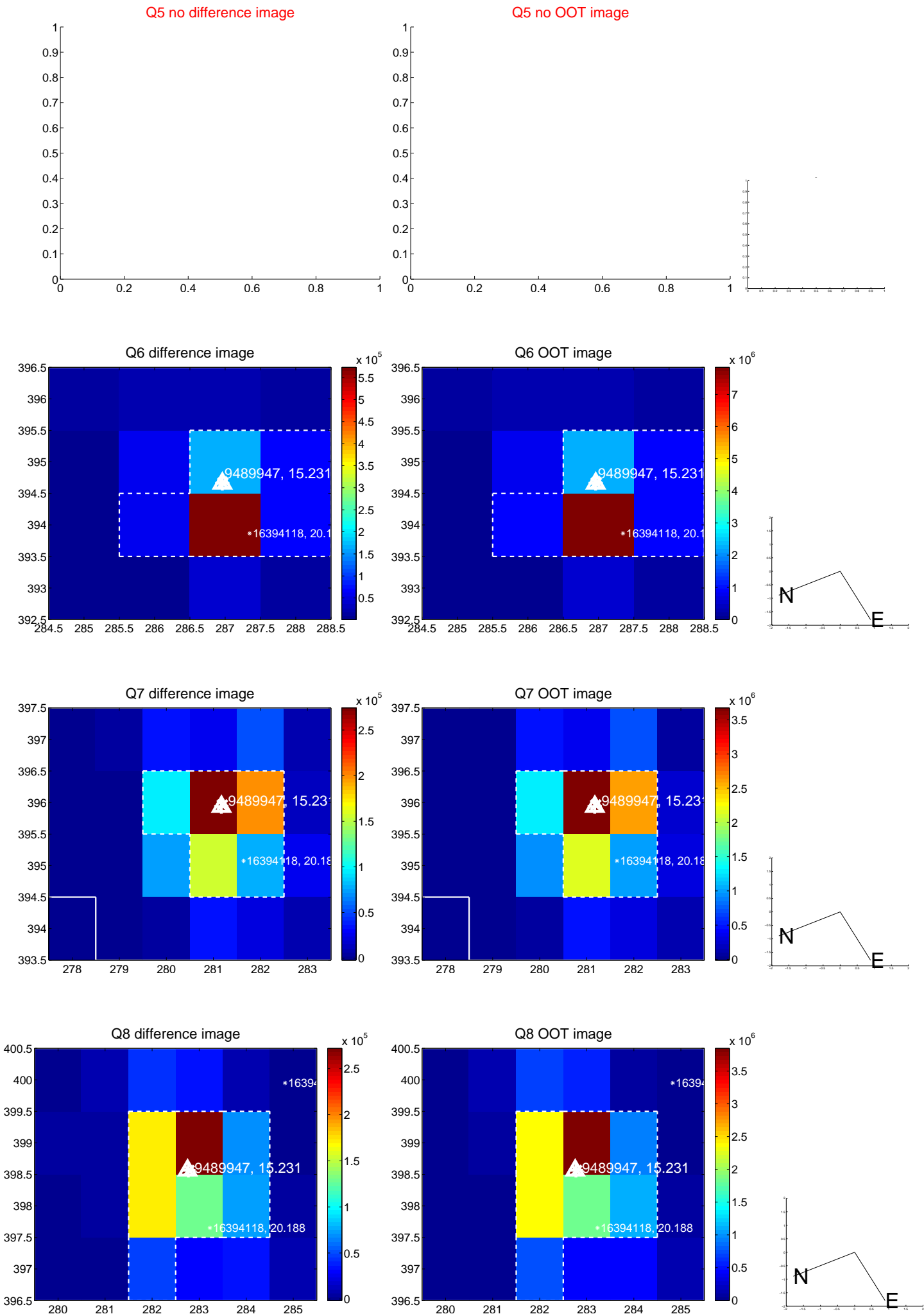
Q4 no difference image



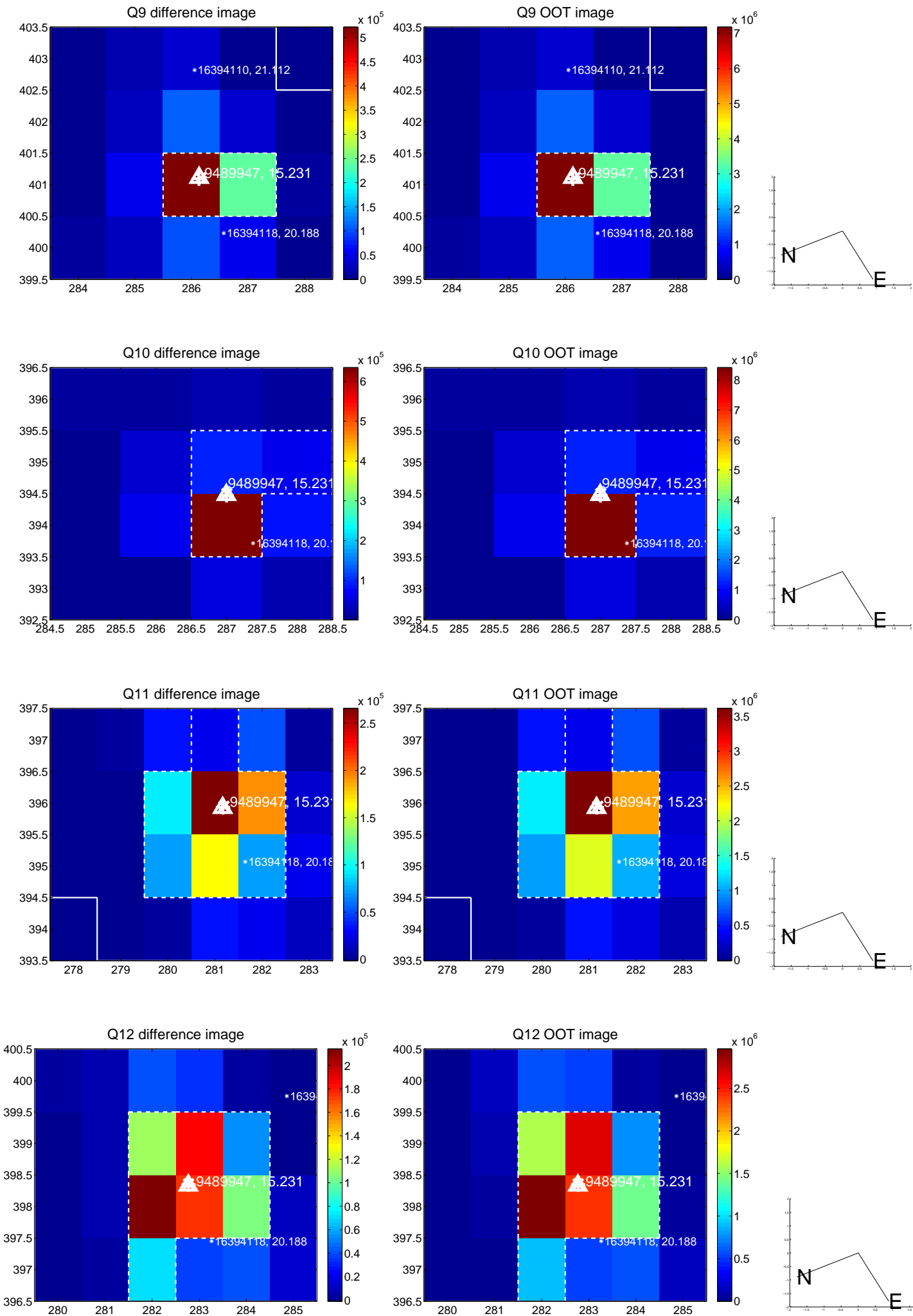
Q4 no OOT image



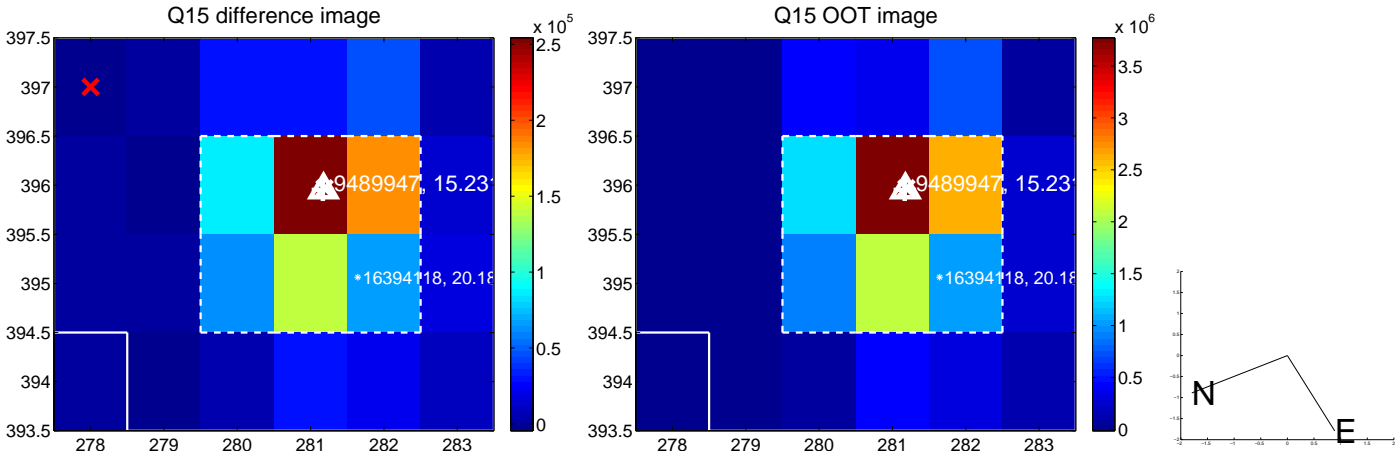
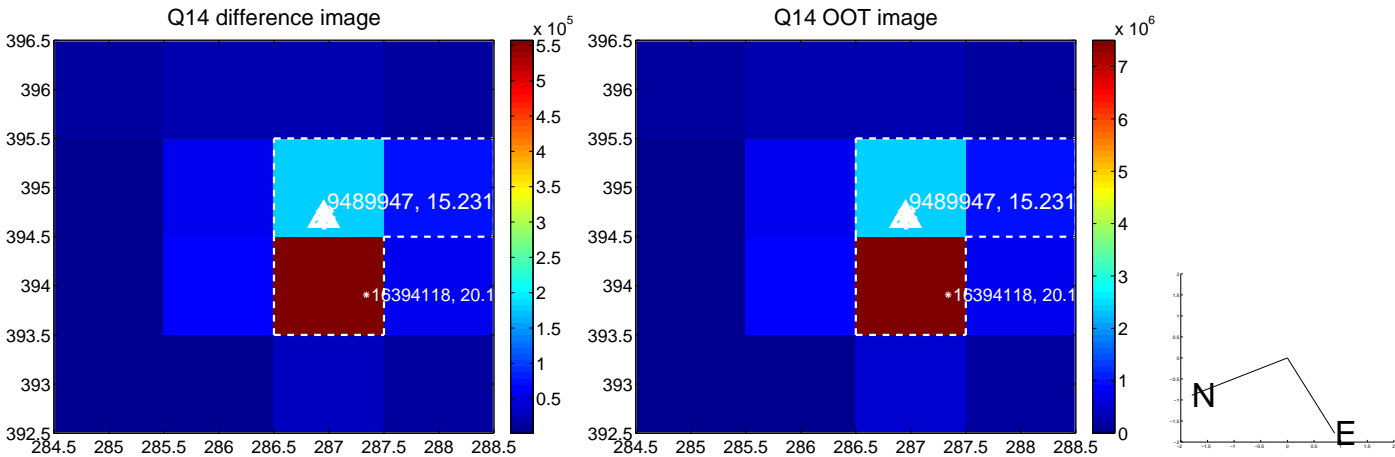
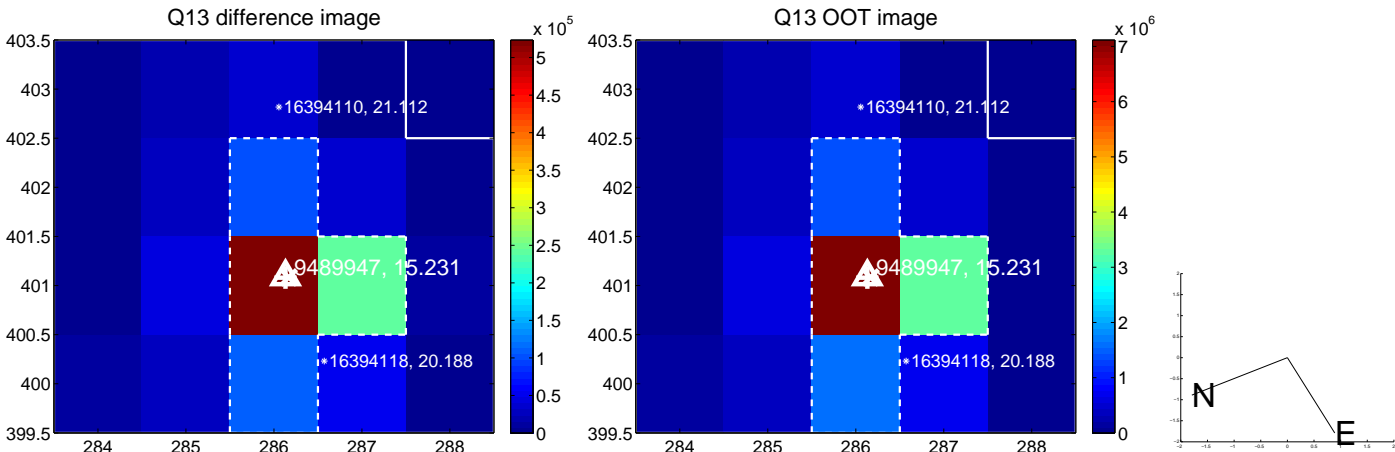
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



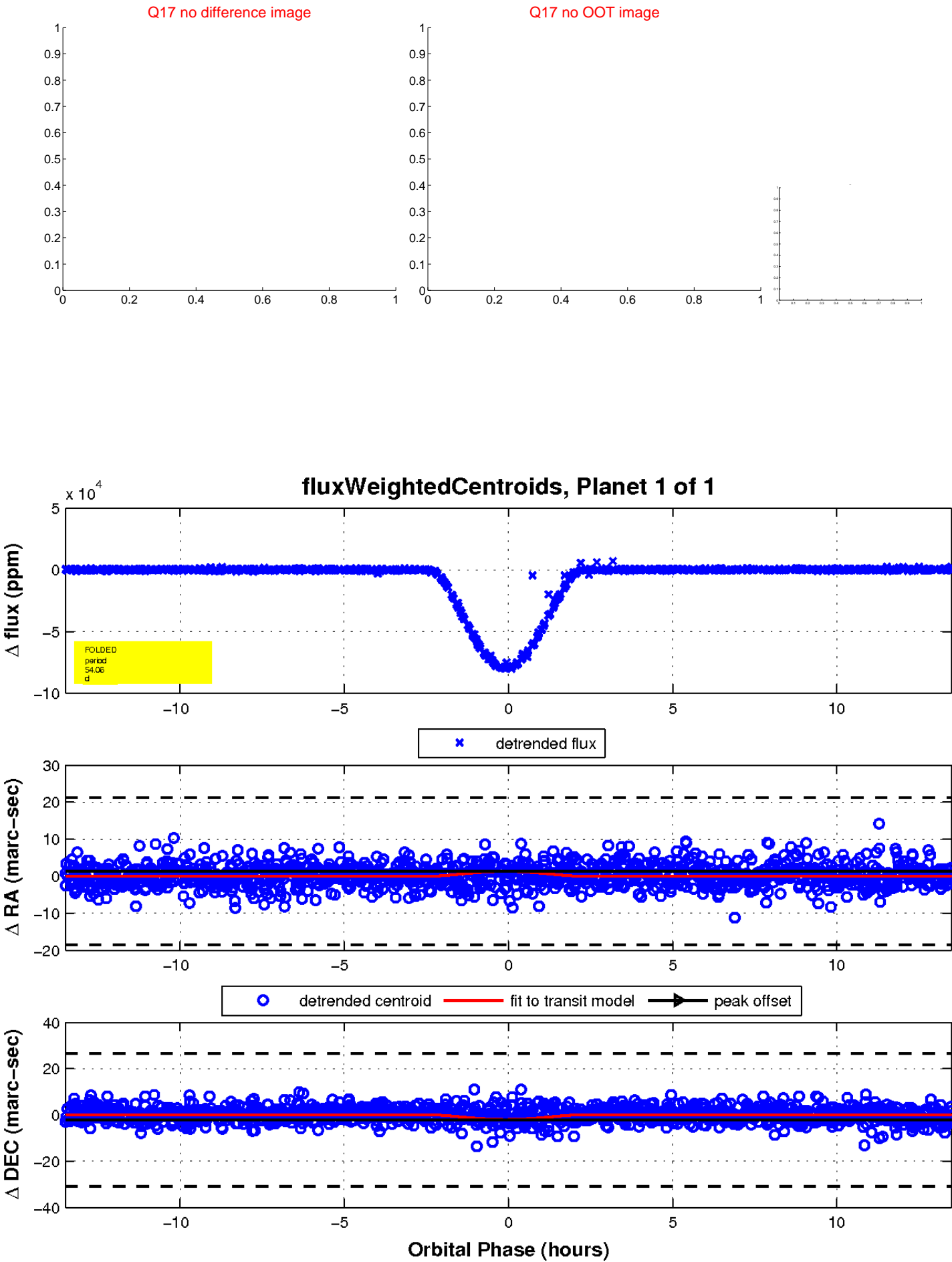
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

