

KIC 009163674

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})
009163674-01	OBS	7139.01	0.773142	131.640983	207853.3	3.923	17189.7	10014.4	1.91	6413	92.10	15854.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009163674-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT

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.

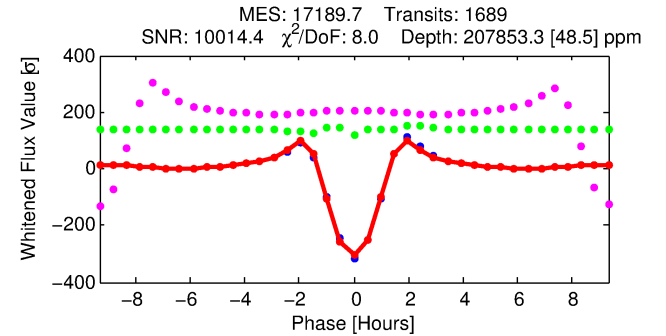
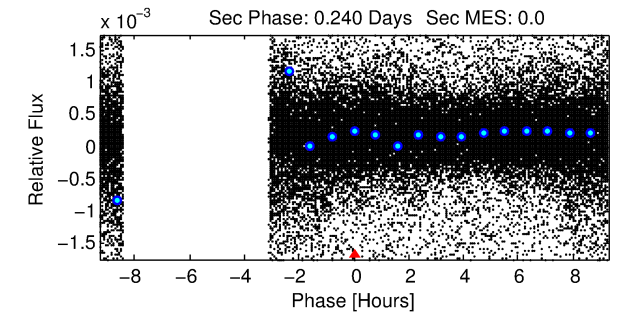
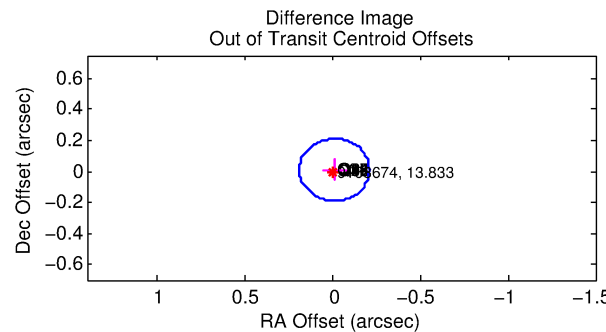
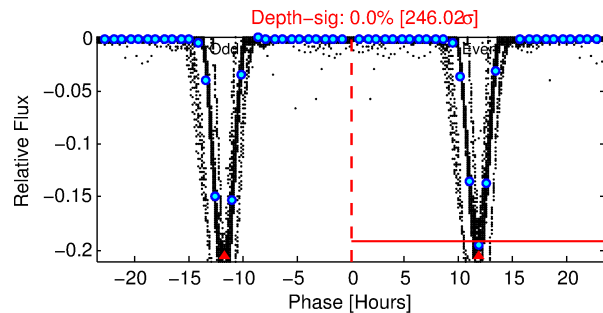
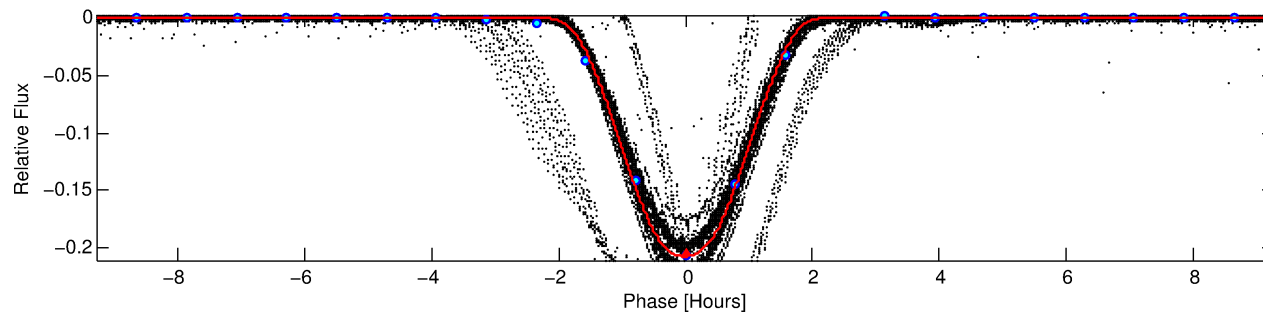
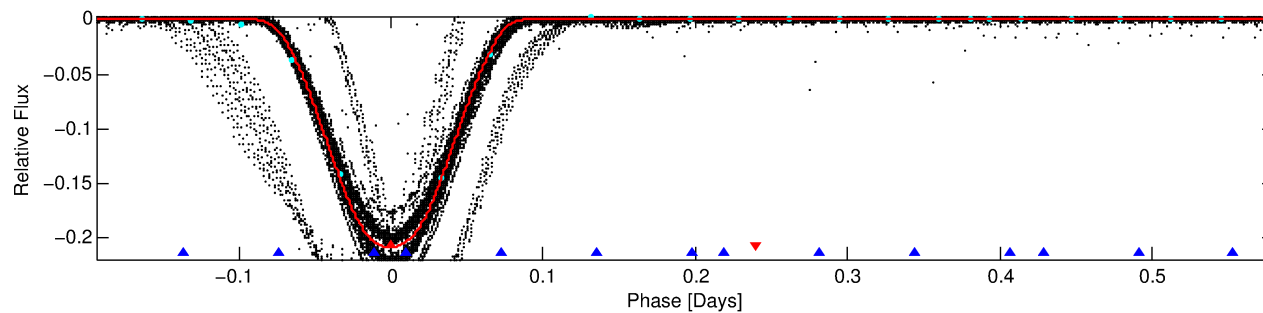
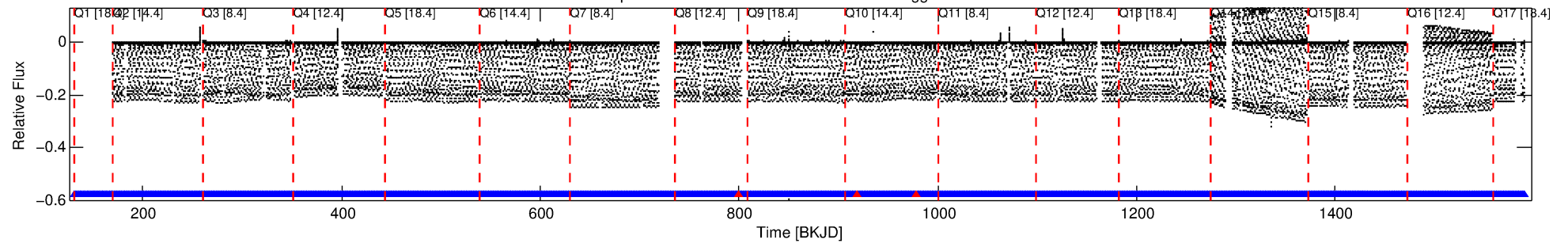
Ephemeris Match Information For 009163674-01

No Significant Match Found

DV One-Page Summary

KIC: 9163674 Candidate: 1 of 2 Period: 0.773 d
KOI: K07139.01 Corr: 0.985

Kp: 13.83 R*: 1.91 Rs Teff: 6413.0 K Logg: 4.04 Fe/H: 0.210



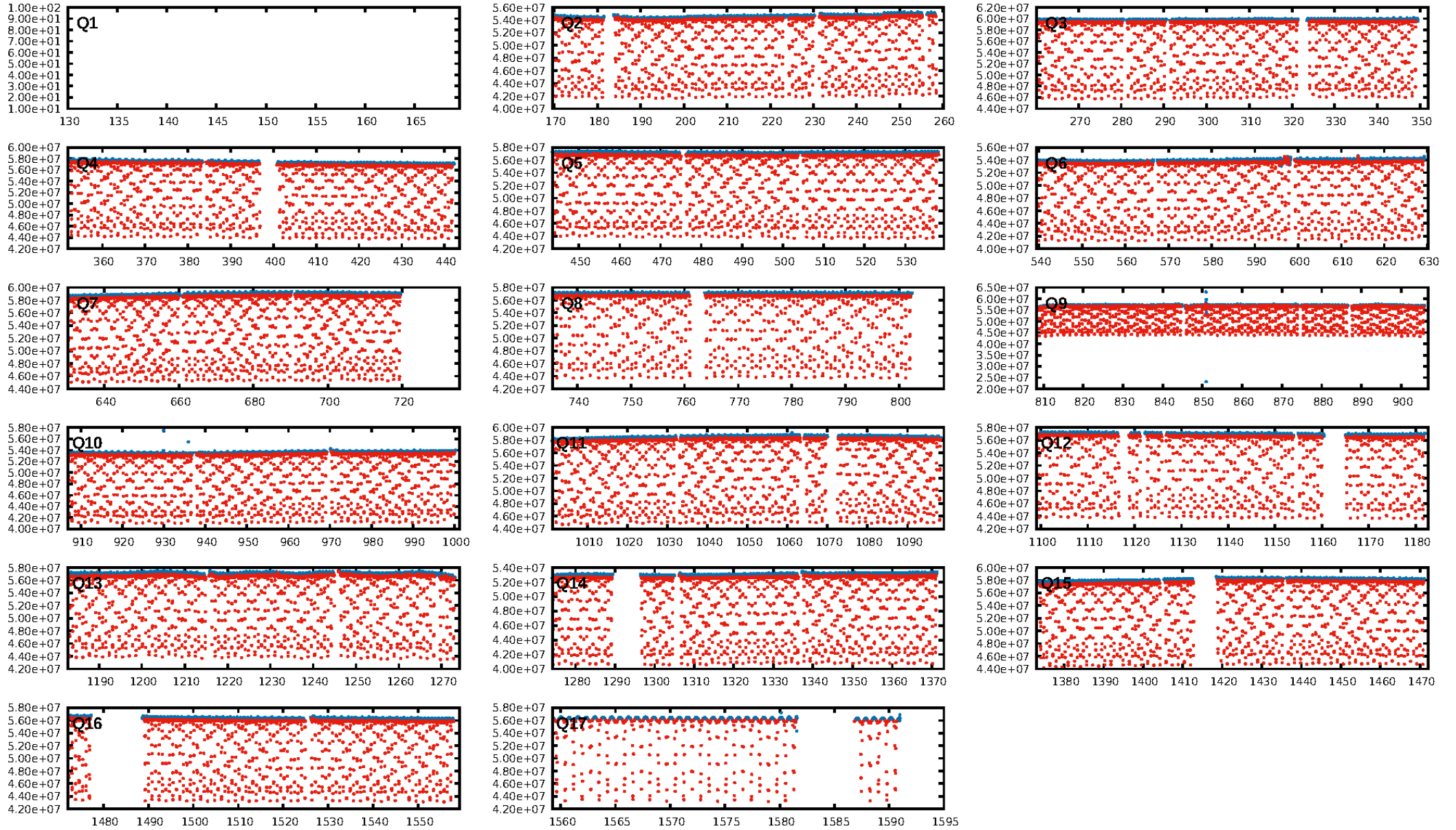
DV Fit Results:

Period = 0.77314 [0.00000] d
Epoch = 131.6410 [0.0000] BKJD
Rp/R* = 0.4419 [0.0001]
a/R* = 2.24 [0.00]
b = 0.52 [0.00]
Seff = 15854.38 [7525.49]
Teq = 2861 [340] K
Rp = 92.10 [29.46] Re
a = 0.0187 [0.0054] AU
Ag = N/A
Teffp = N/A

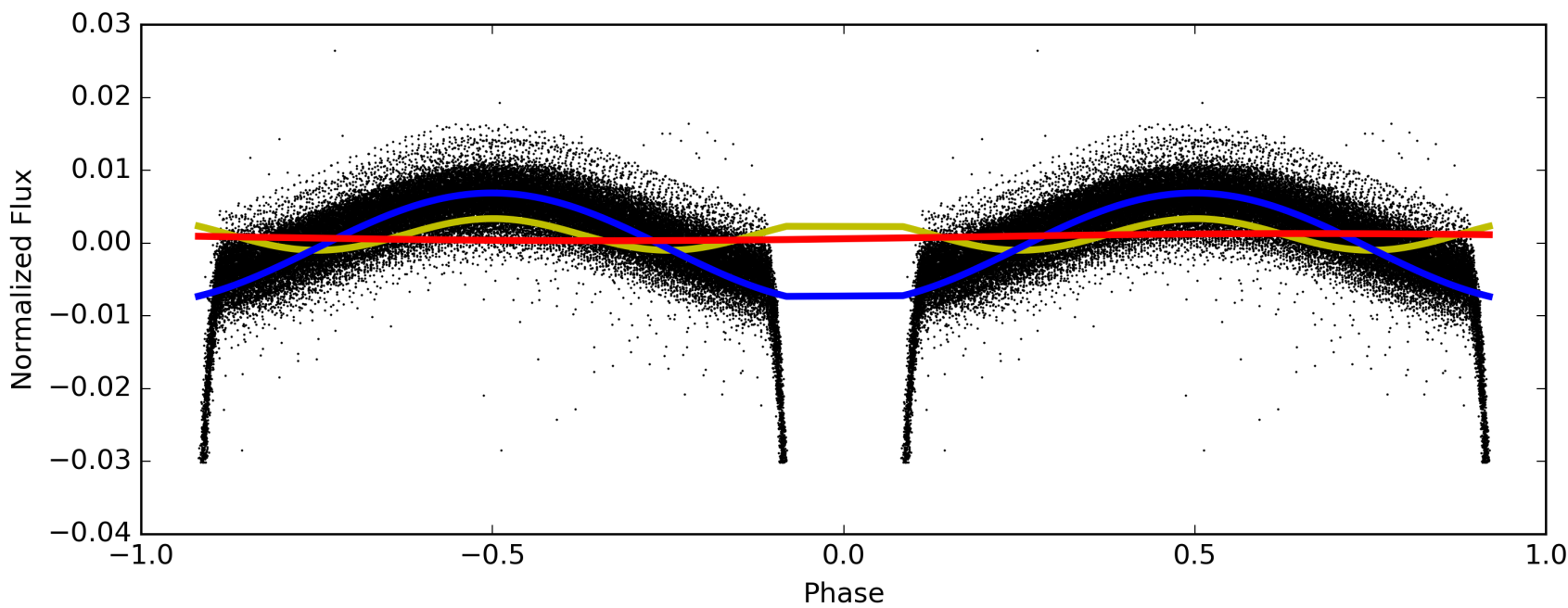
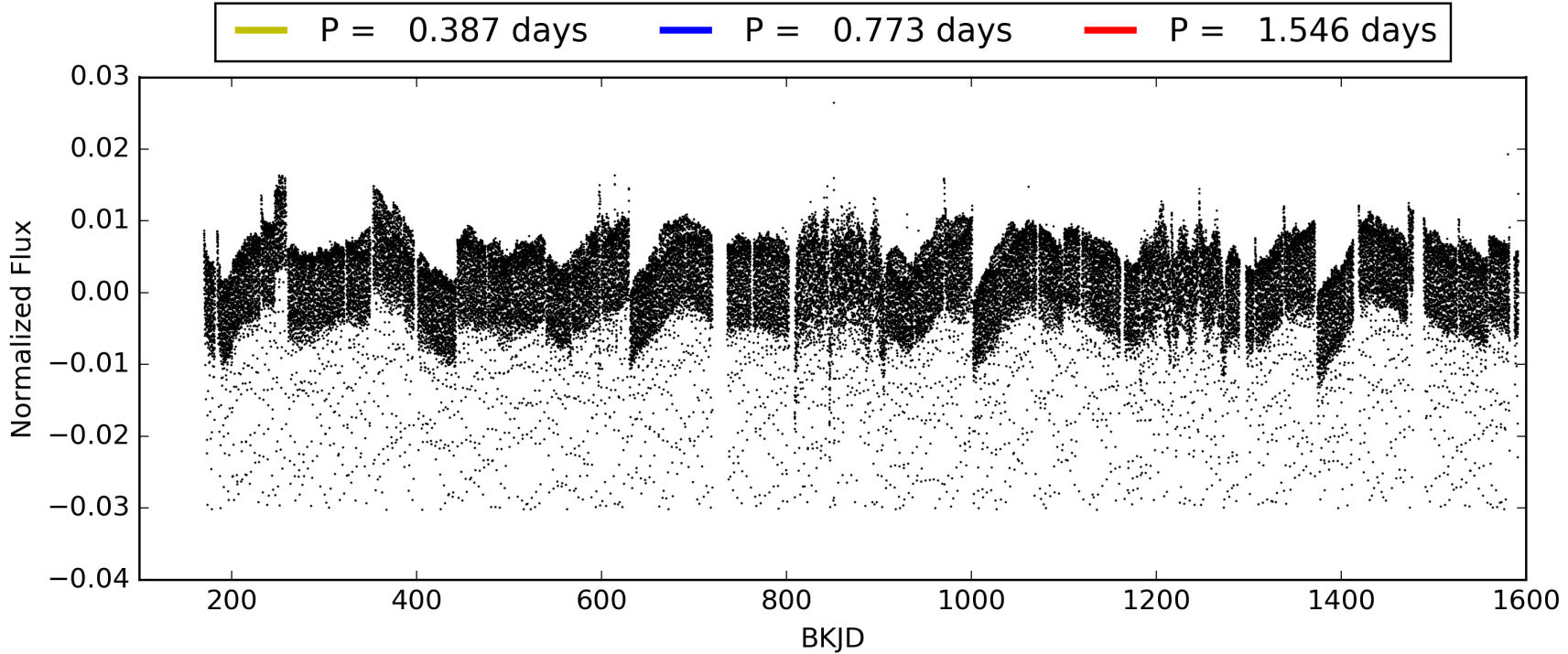
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [533.44σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1652/1655]
GhostDiagnostic-chr: 1.622
Centroid-sig: 0.0%
Centroid-so: 0.142 arcsec [375.29σ]
OotOffset-rm: 0.015 arcsec [0.22σ]
KicOffset-rm: 0.052 arcsec [0.77σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 009163674-01, PDC Light Curves

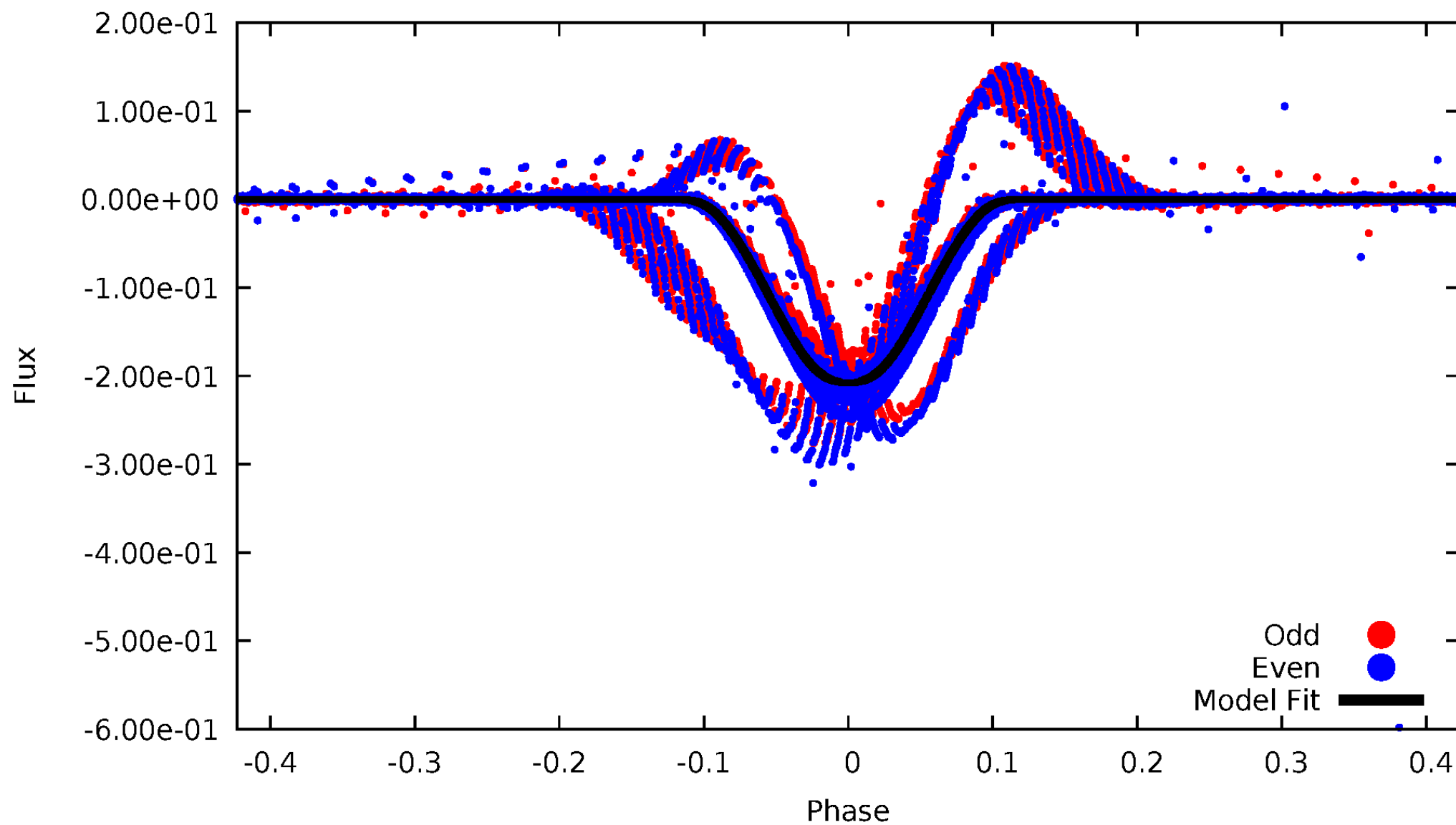


TCE 009163674-01



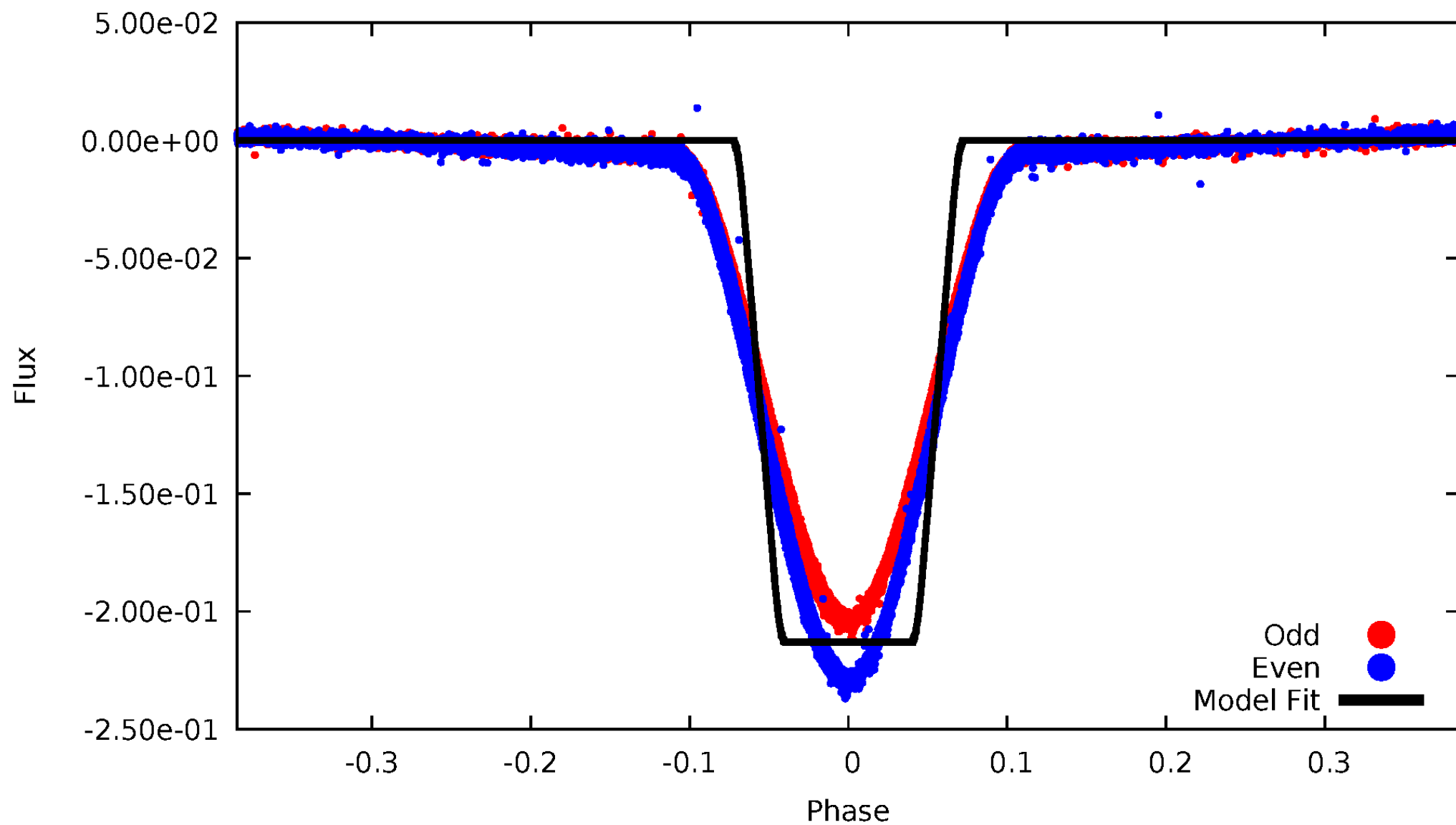
DV Odd/Even

TCE 009163674-01



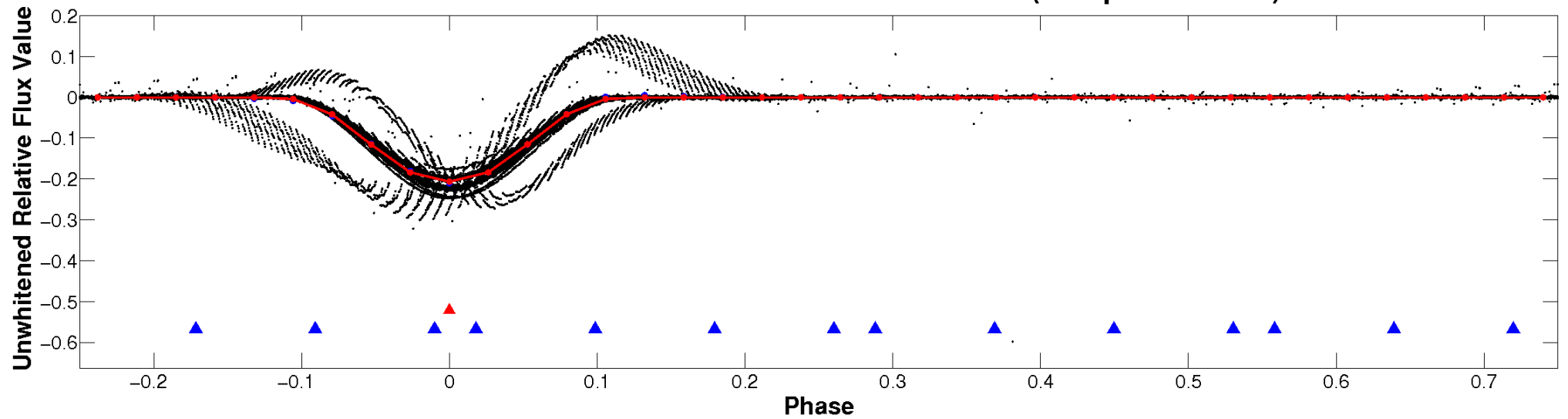
ALT Odd/Even

TCE 009163674-01

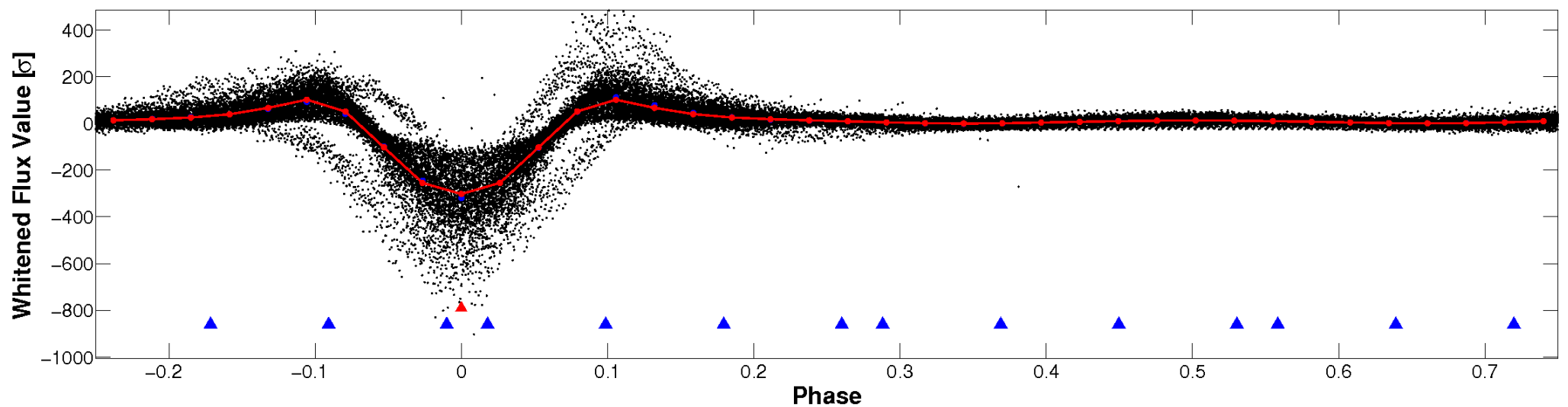


Non-Whitened Vs. Whitened Light Curve

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

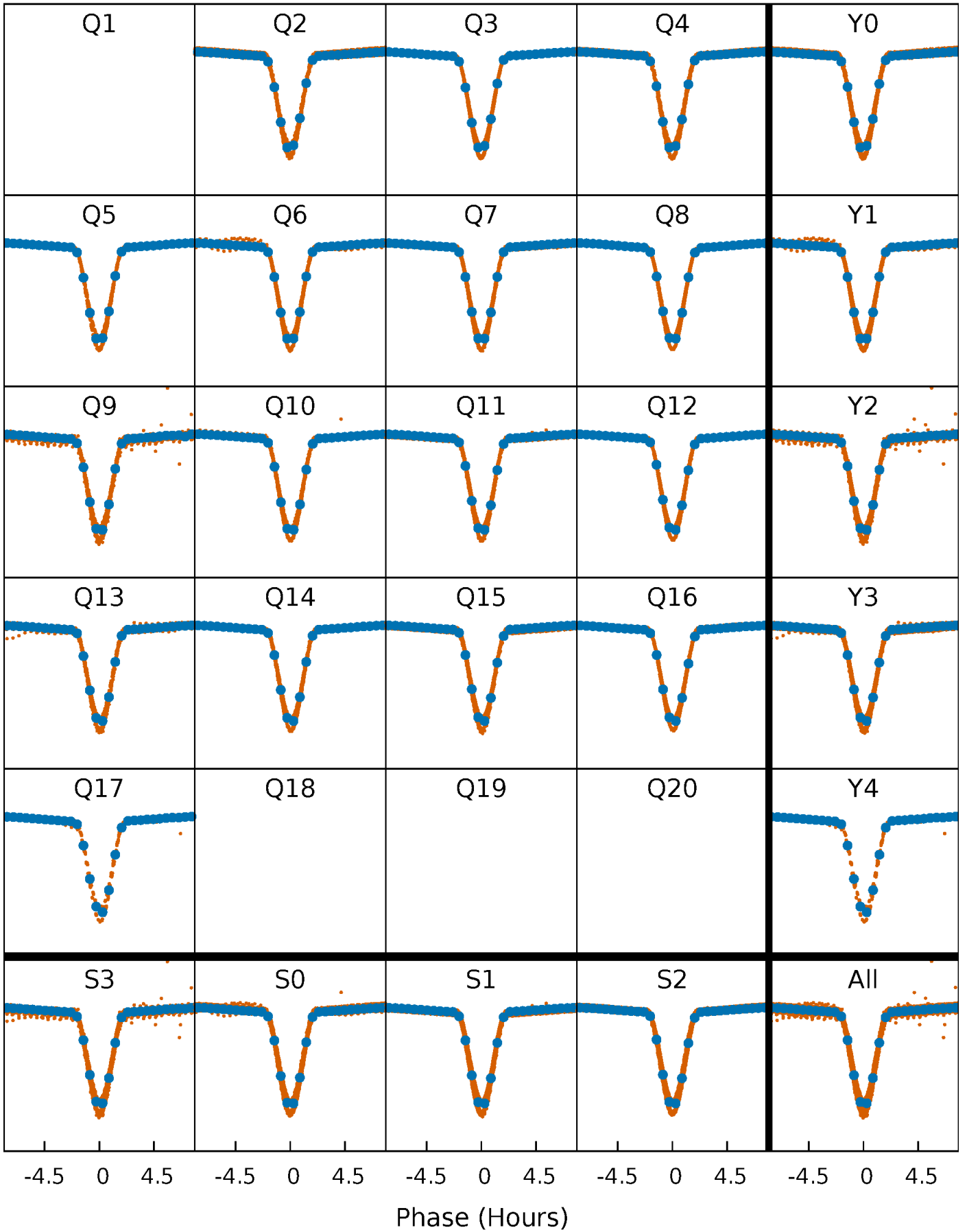


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



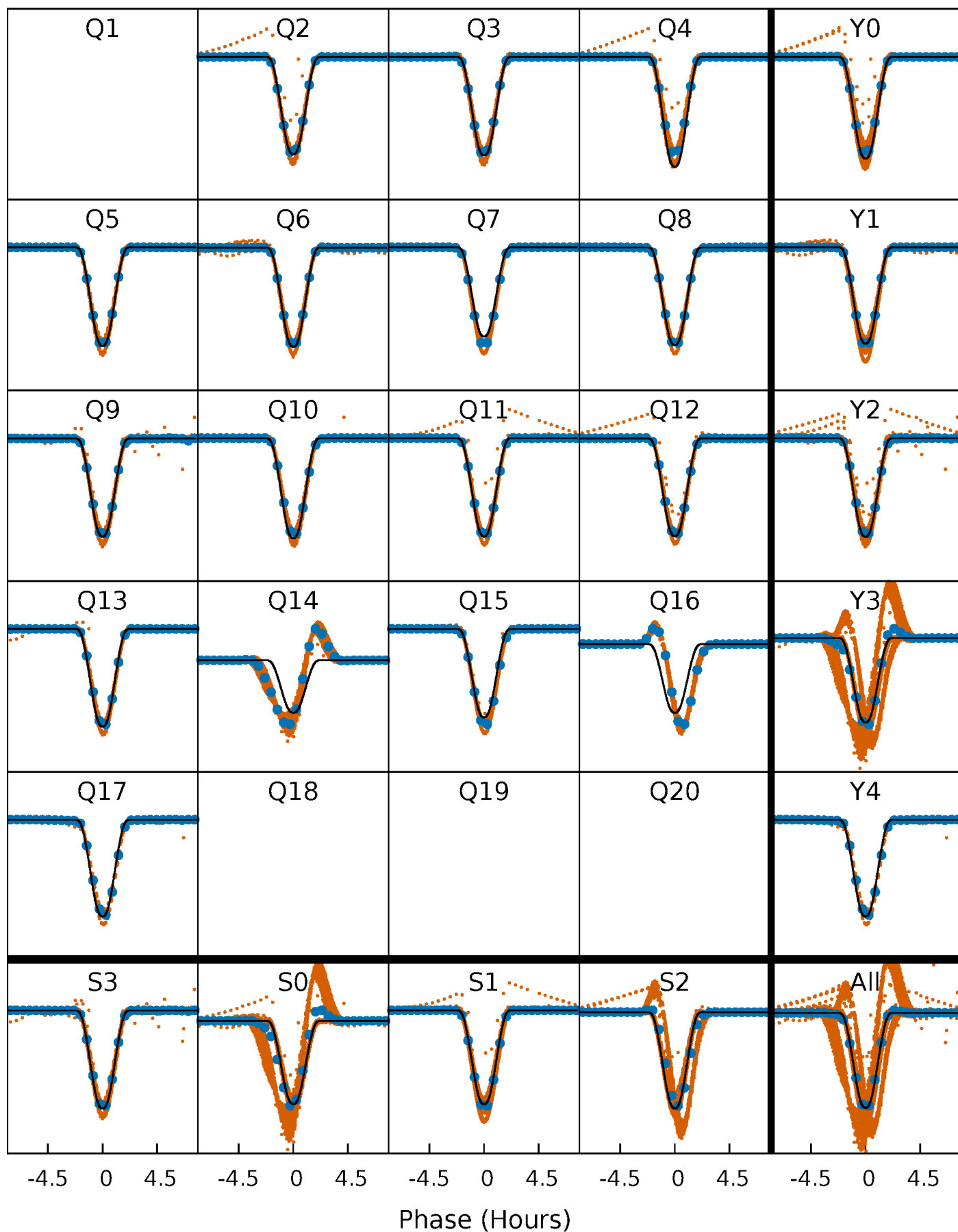
PDC Quarter-Phased Transit Curves

TCE 009163674-01 P= 0.773142 Days $T_0=131.640983$ (BKJD)



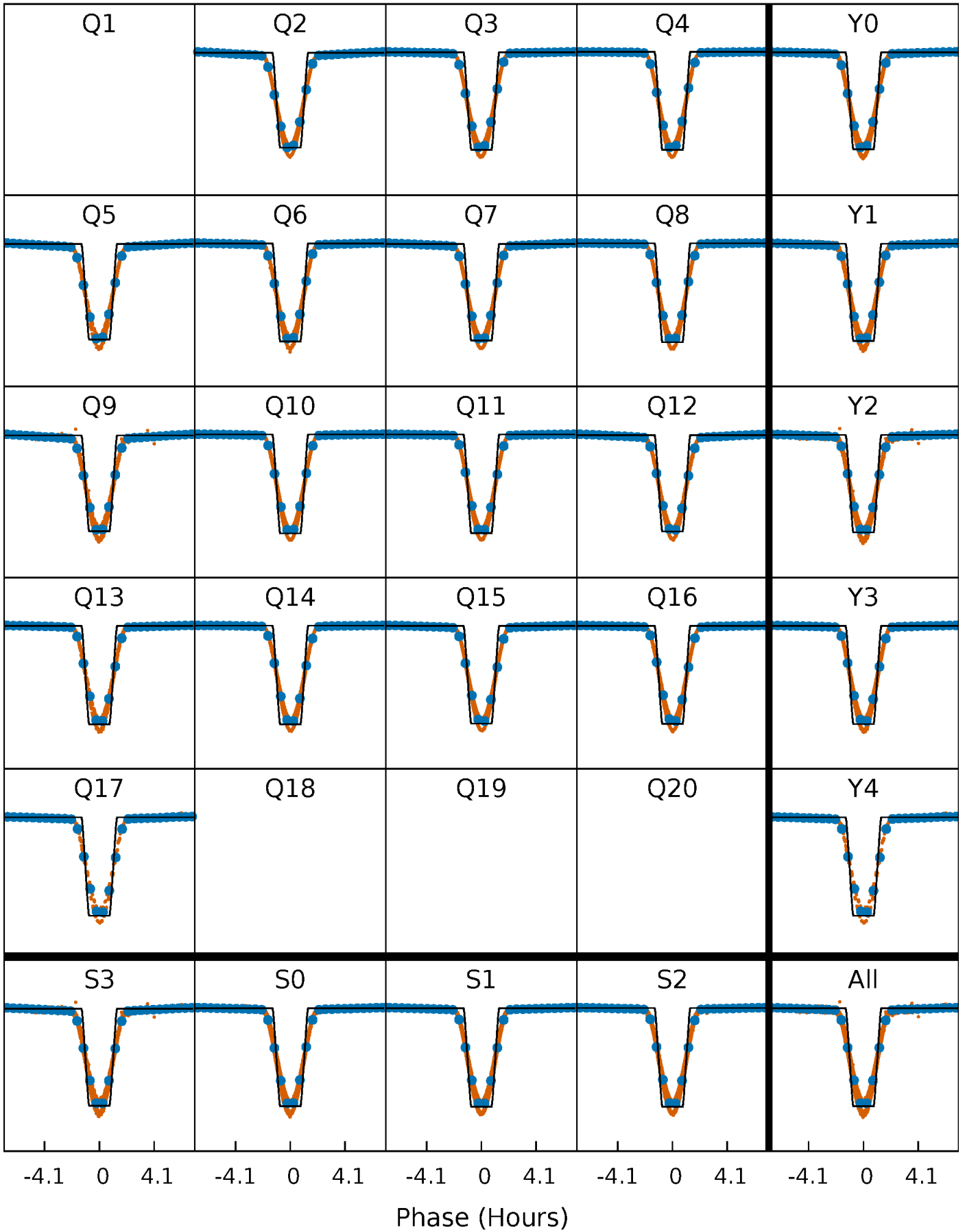
DV Quarter-Phased Transit Curves

TCE 009163674-01 P= 0.773142 Days $T_0=131.640983$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

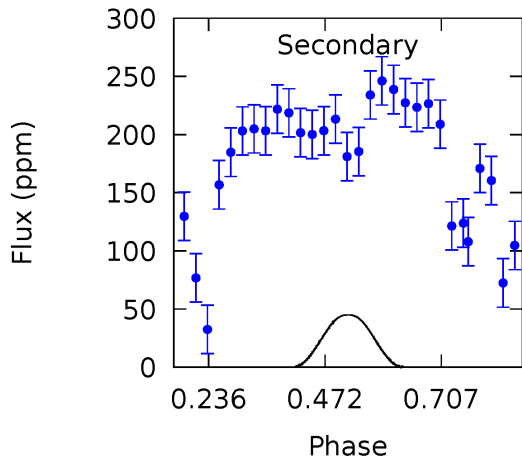
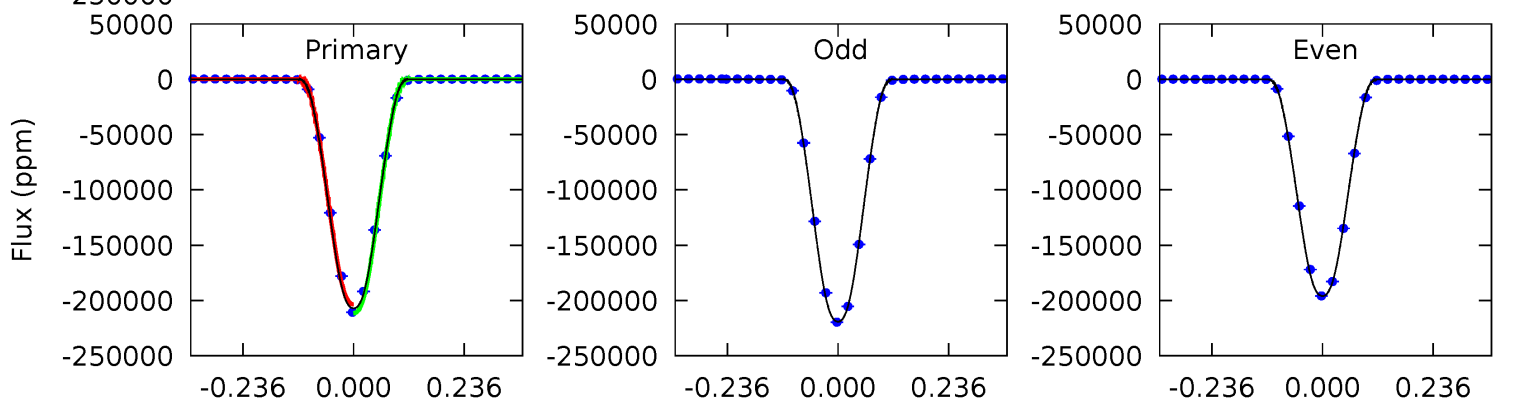
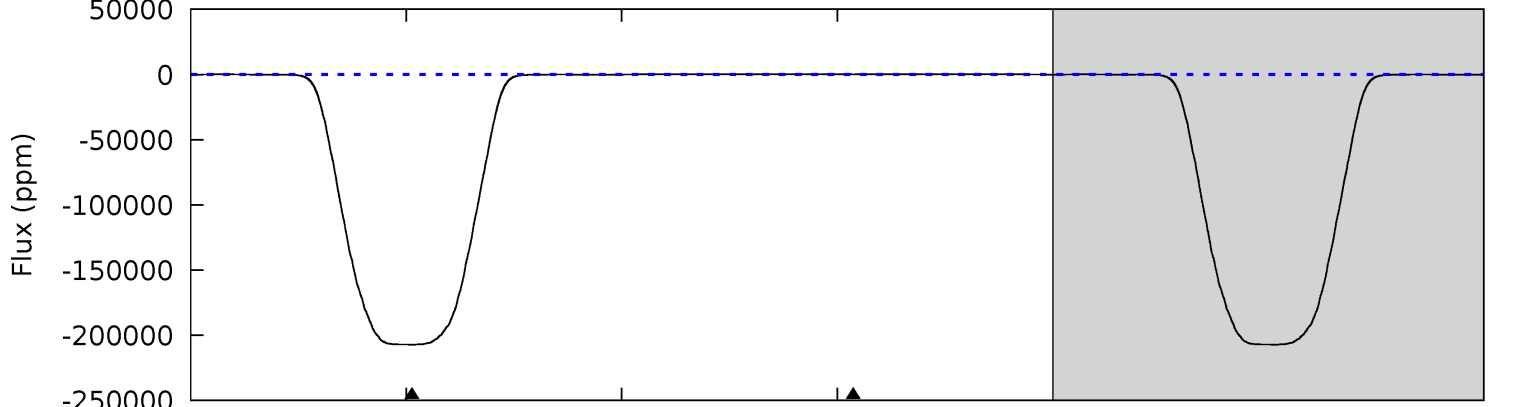
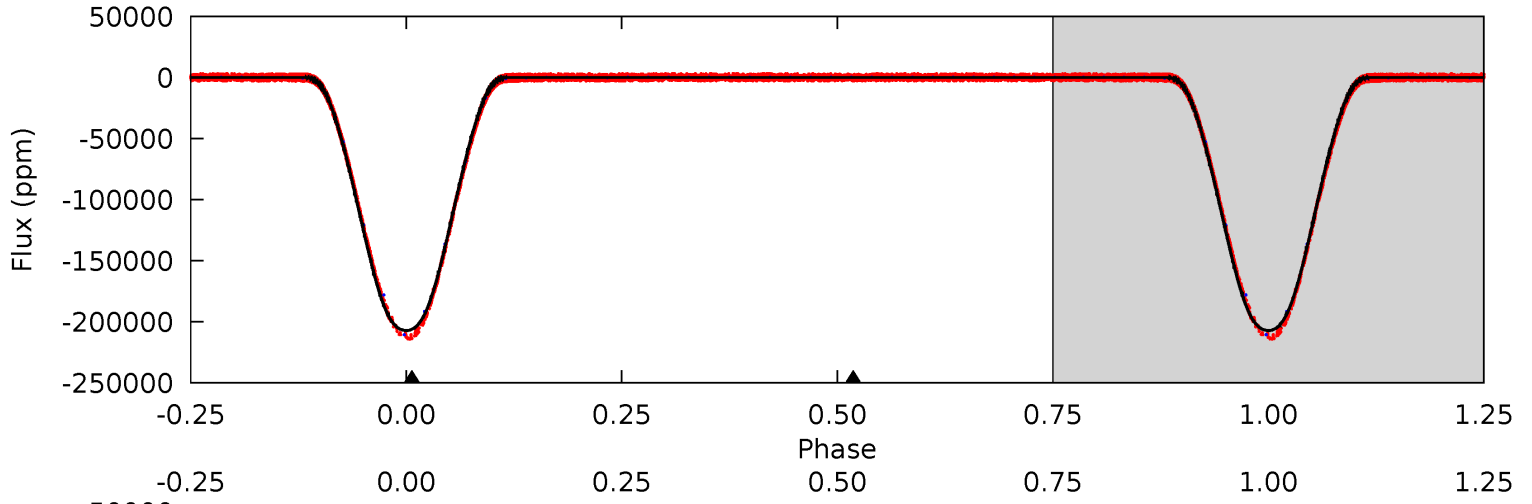
TCE 009163674-01 $P = 0.773143$ Days $T_0 = 131.640962$ (BKJD)



DV Model-Shift Uniqueness Test

009163674-01, P = 0.773142 Days, E = 131.640983 Days

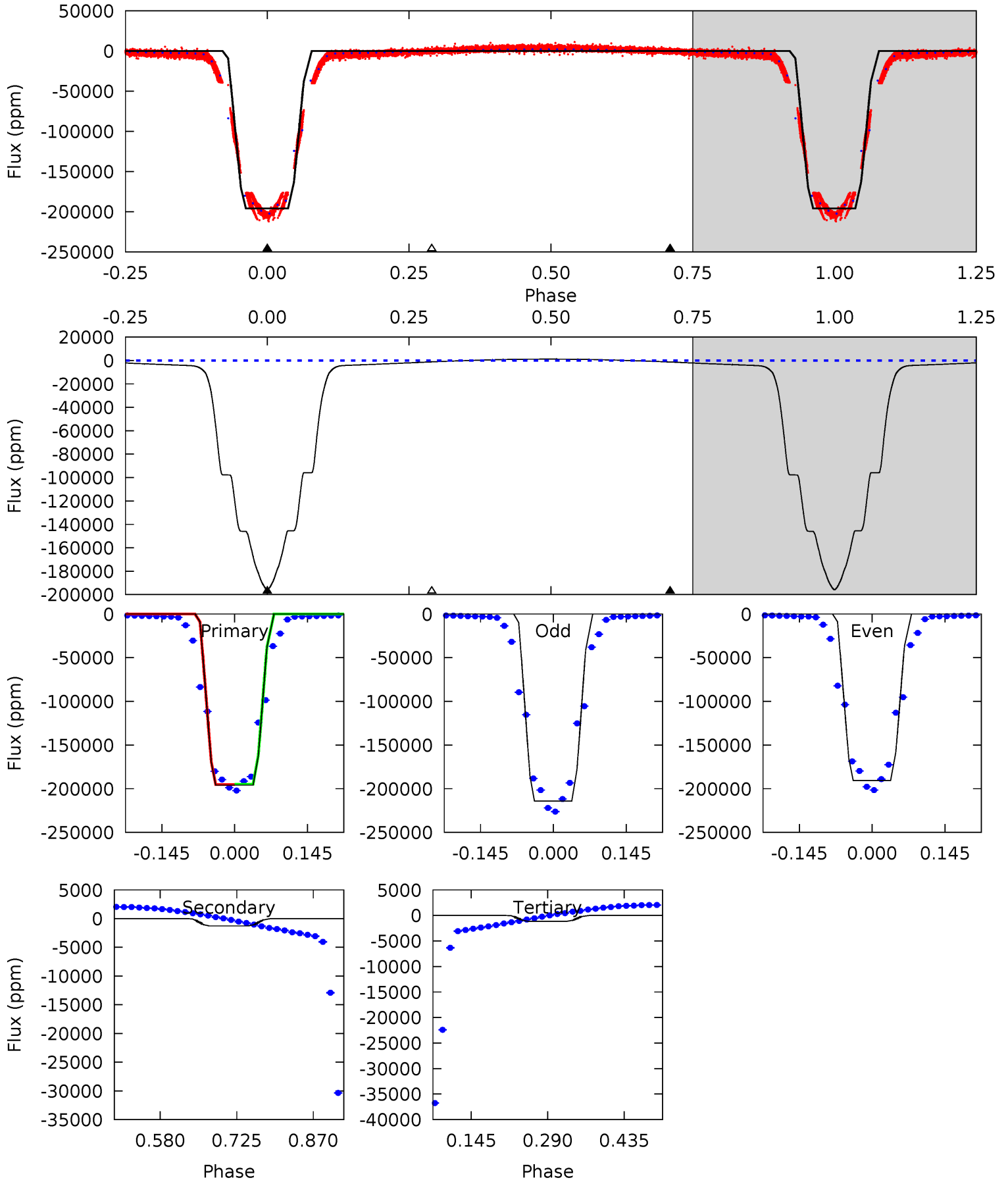
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19055	-4.15	0	0	4.38	1.19	7.48	19055	19055	-4.15	-4.15	1264	0.98	0.00	0



Alt Model-Shift Uniqueness Test

009163674-01, P = 0.773143 Days, E = 131.640962 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5625	36.4	32.5	0	4.49	1.46	48.5	5592	5625	3.87	36.4	419.7	1.00	0.01	0



Stellar Parameters For KIC 009163674

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6413^{+177}_{-243}	$4.038^{+0.258}_{-0.172}$	$0.210^{+0.200}_{-0.300}$	$1.910^{+0.611}_{-0.611}$	$1.453^{+0.190}_{-0.285}$	$0.294^{+0.454}_{-0.148}$
	+3%/-4%	+6%/-4%	+95%/-143%	+32%/-32%	+13%/-20%	+155%/-50%
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 009163674-01 / KOI 7139.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	45 ± 11	$90.54^{+15.37}_{-14.96}$	3958^{+324}_{-356}	-3669^{+214}_{-201}	$-0.001^{+0.000}_{-0.000}$
Alt.	-1267 ± 35	$94.07^{+16.23}_{-15.27}$	3945^{+324}_{-322}	-3603^{+209}_{-213}	$0.027^{+0.010}_{-0.007}$

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

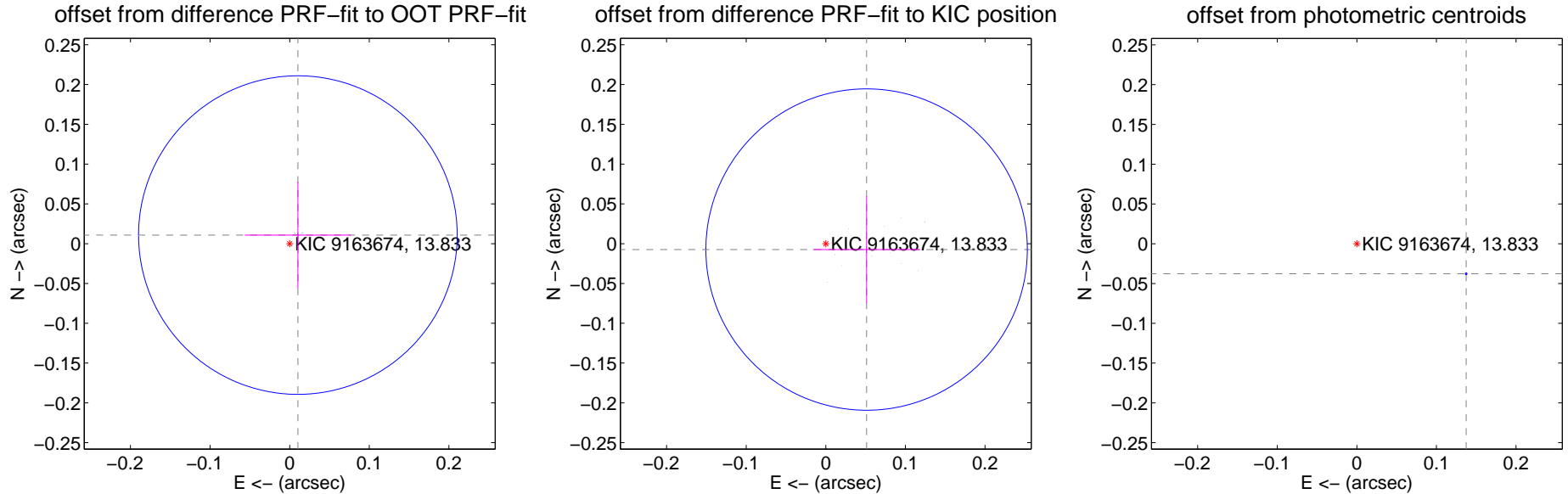
DV Centroid Data

Supplemental centroid analysis for 009163674-01. Kepler magnitude: 13.83. Transit SNR 10014.41

There are 16 quarters with good PRF difference image offsets

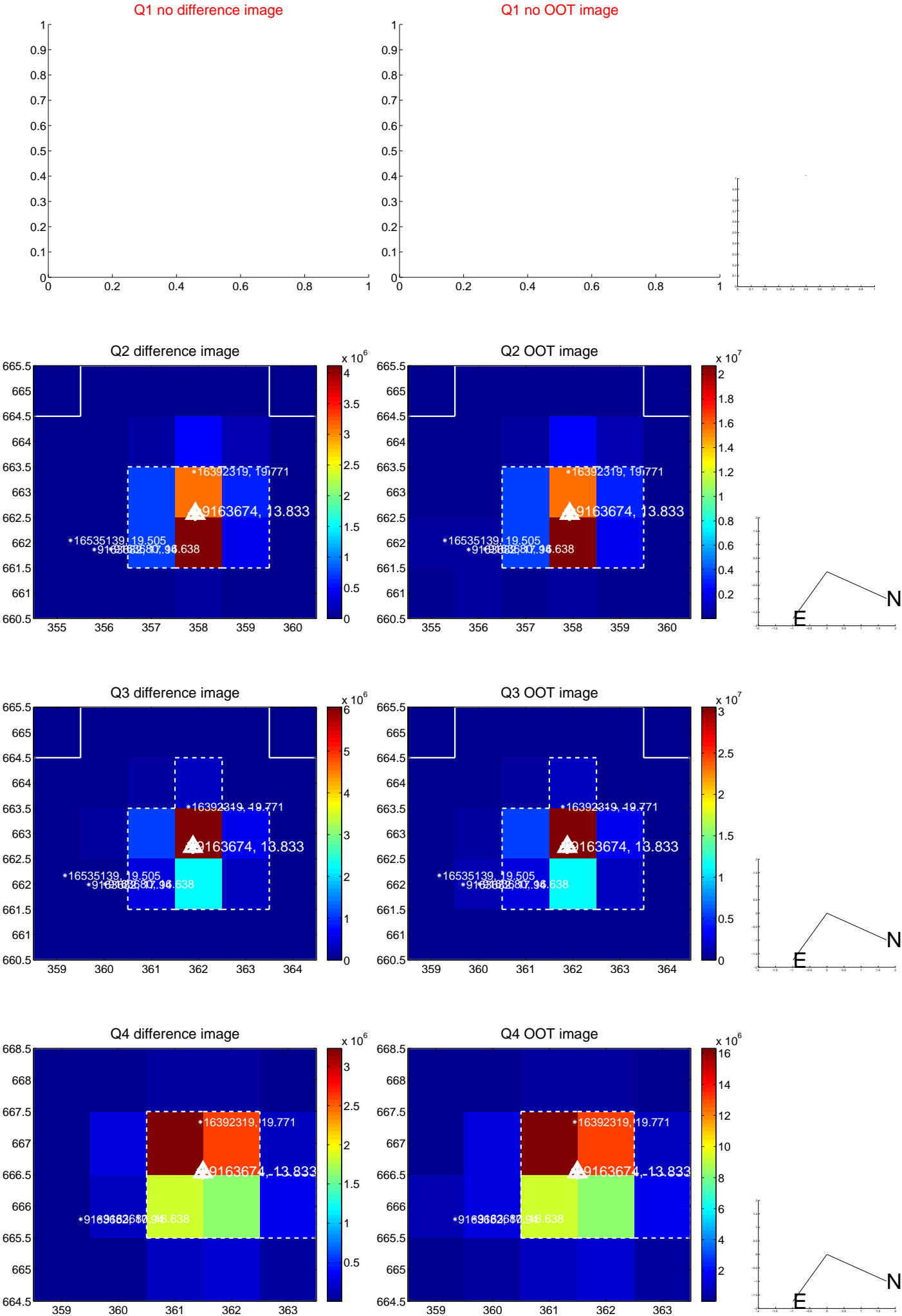
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.015 ± 0.067	0.22	-0.010 ± 0.067	0.011 ± 0.067
PRF-fit source offset from KIC position	0.052 ± 0.067	0.77	-0.051 ± 0.067	-0.007 ± 0.067
photometric centroid source offset	0.14 ± 0.00	375.29	-0.14 ± 0.00	-0.04 ± 0.00

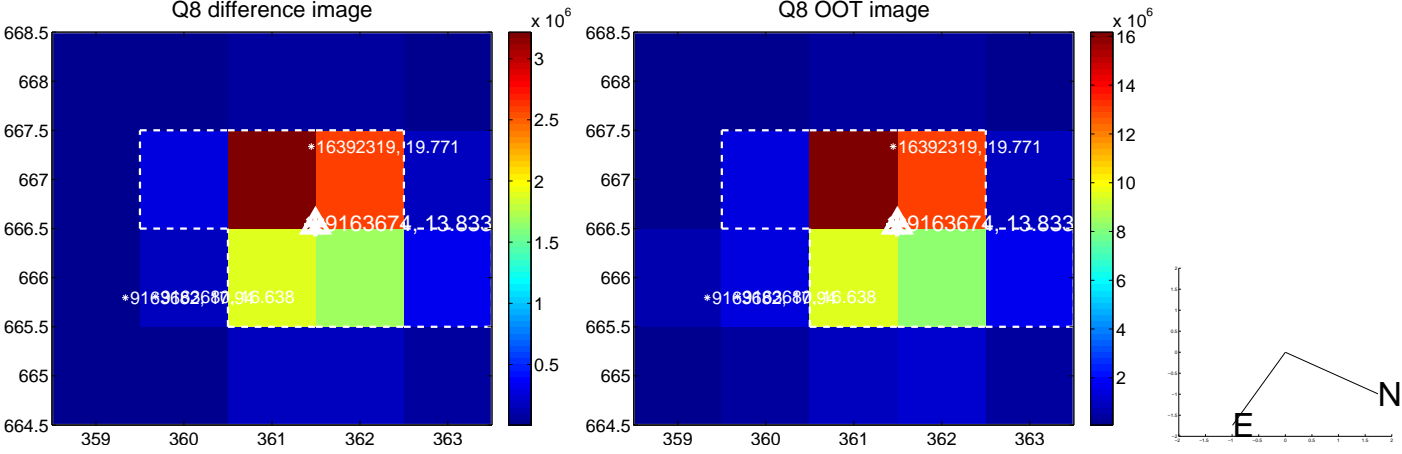
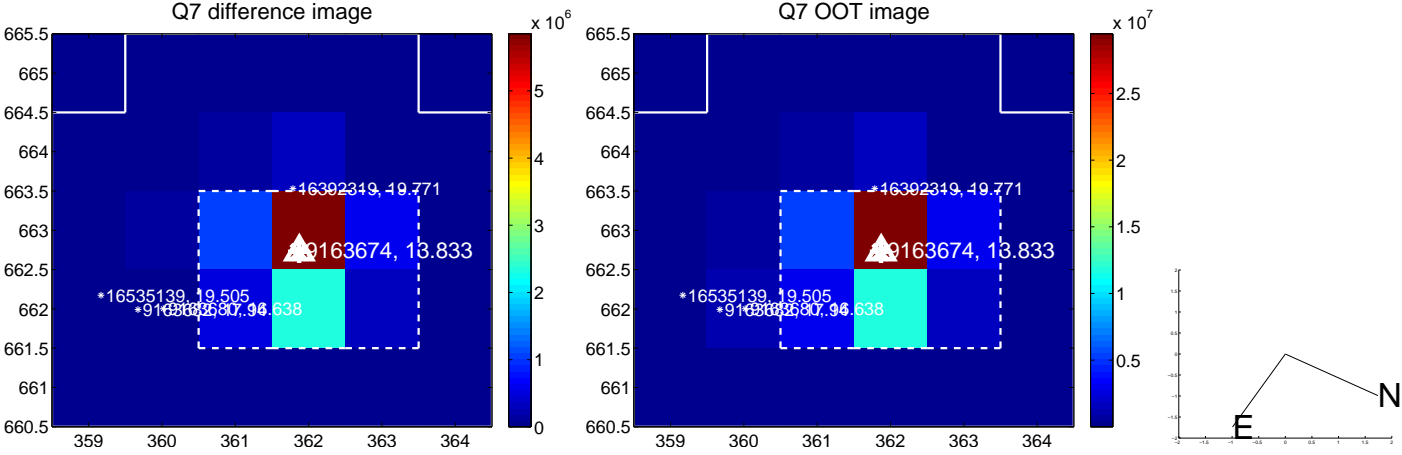
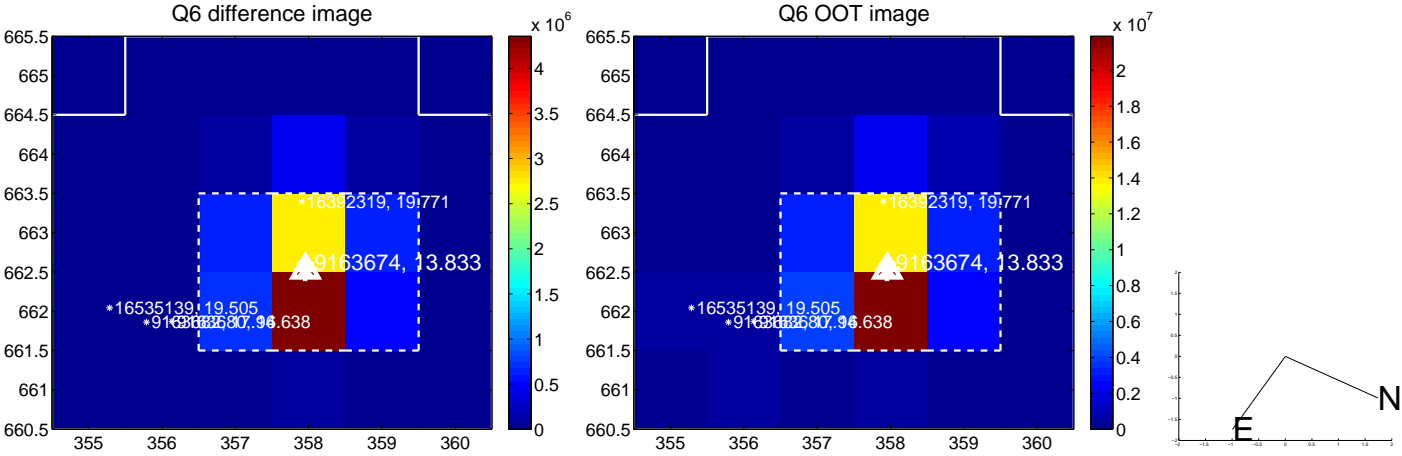
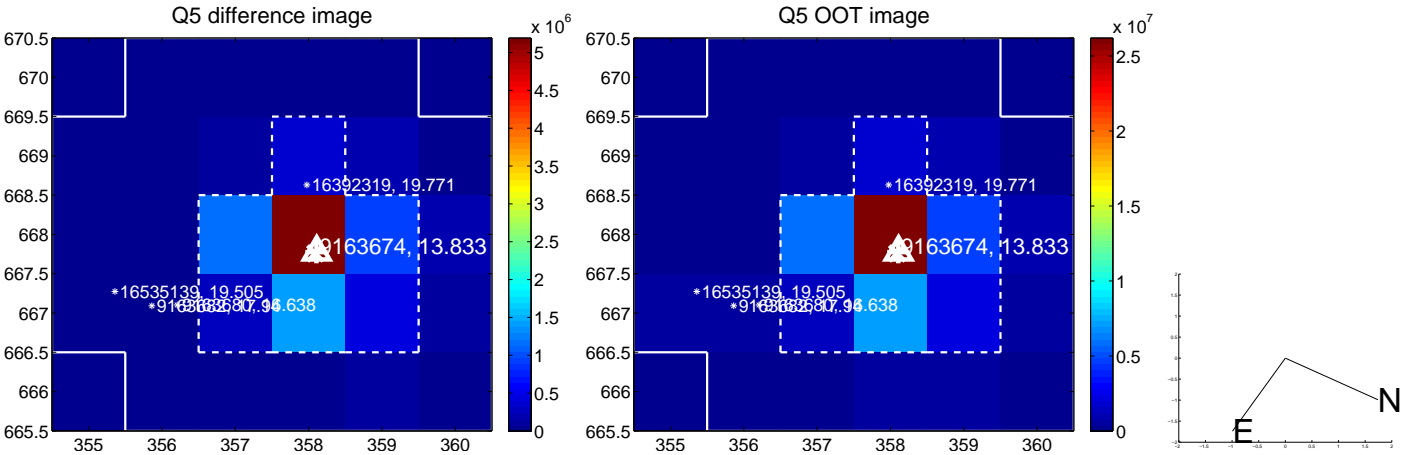


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

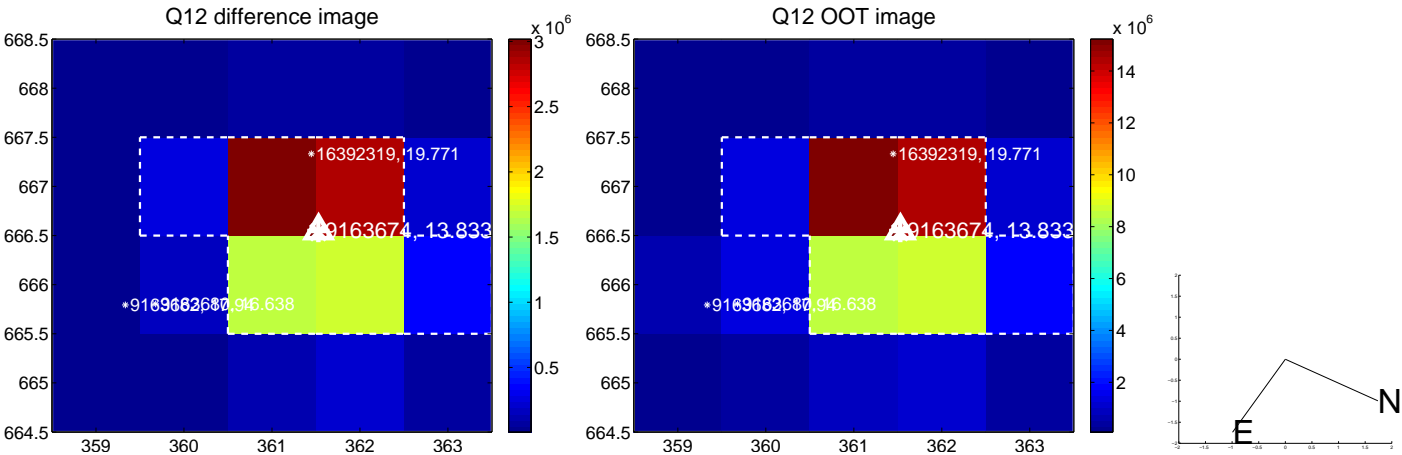
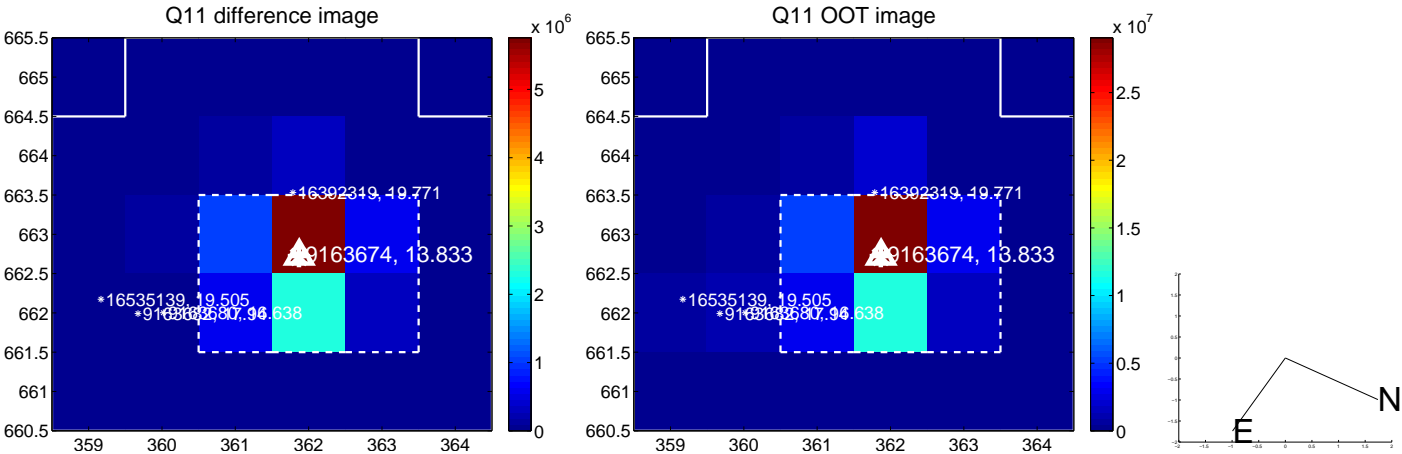
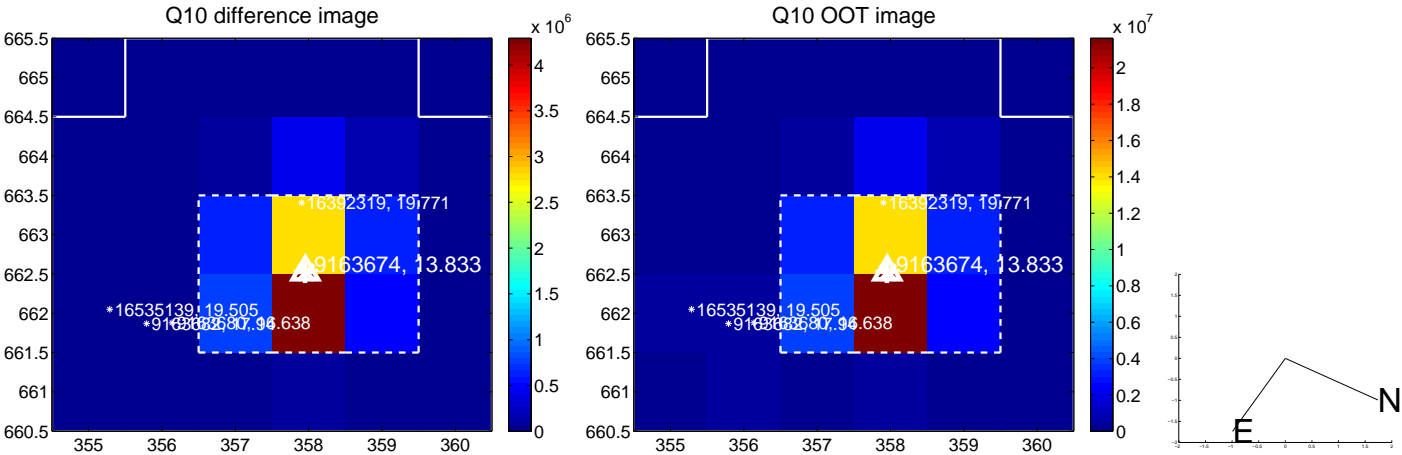
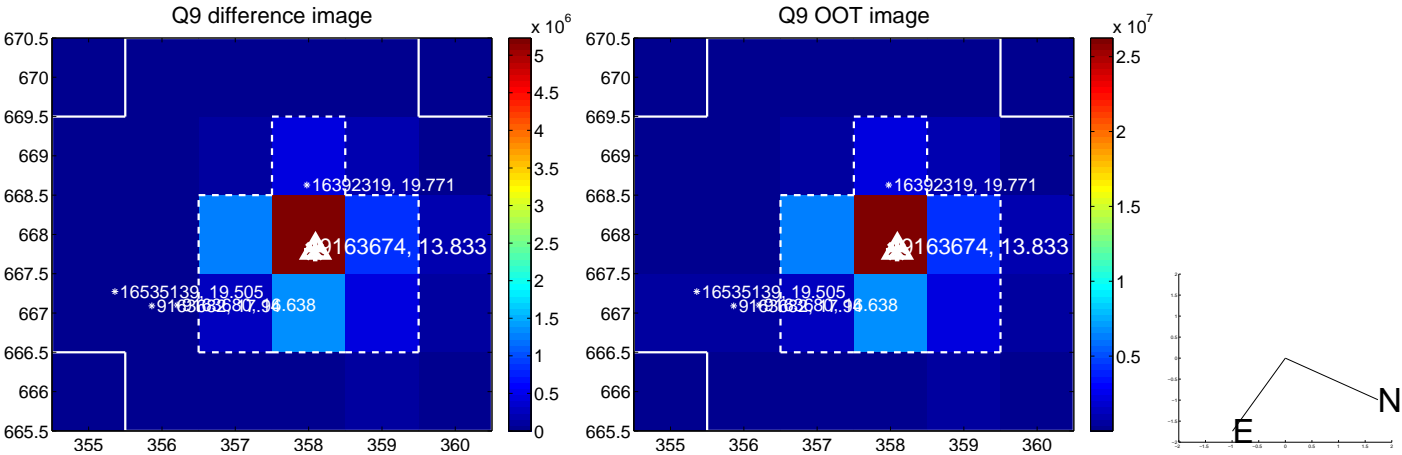
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



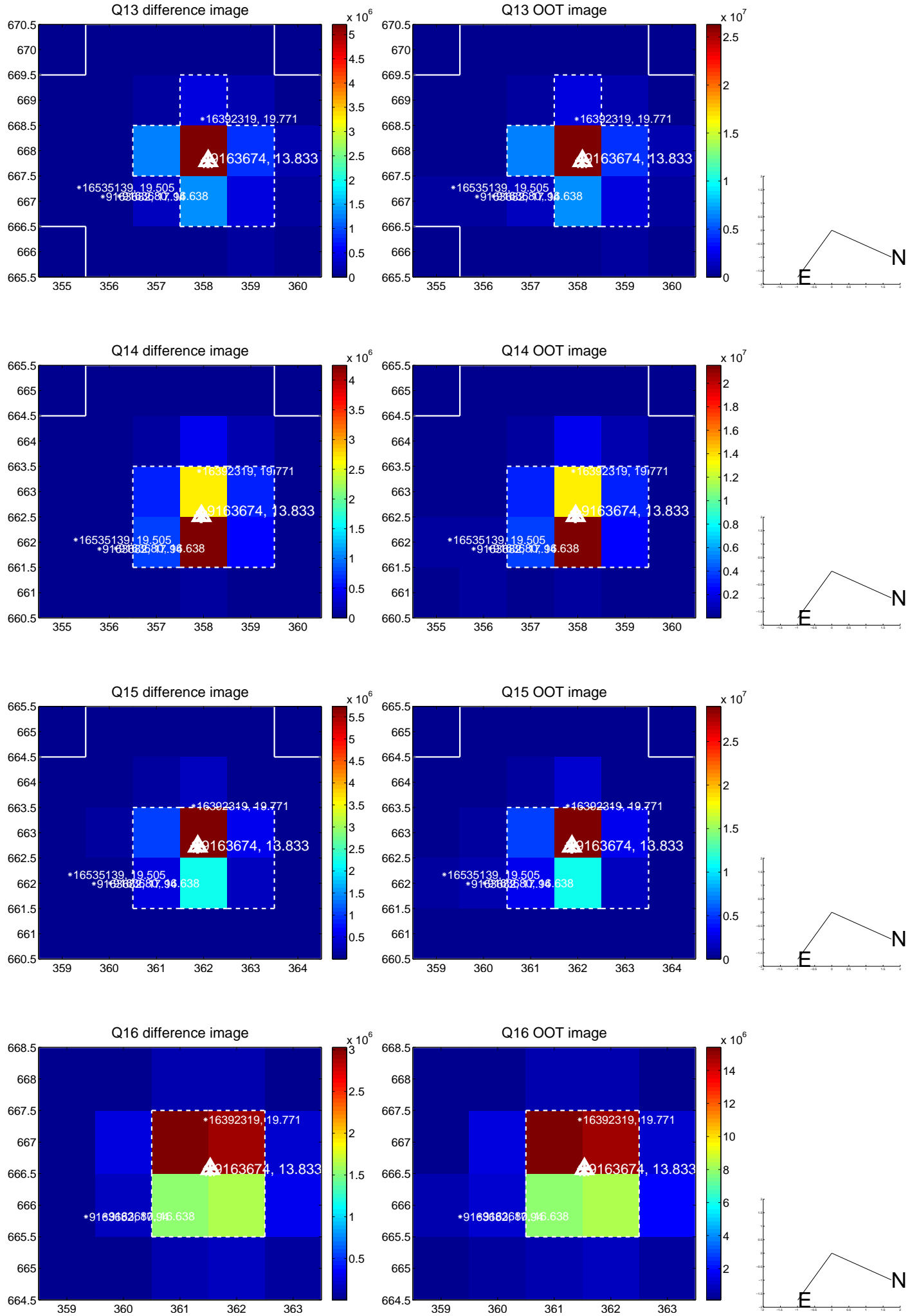
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



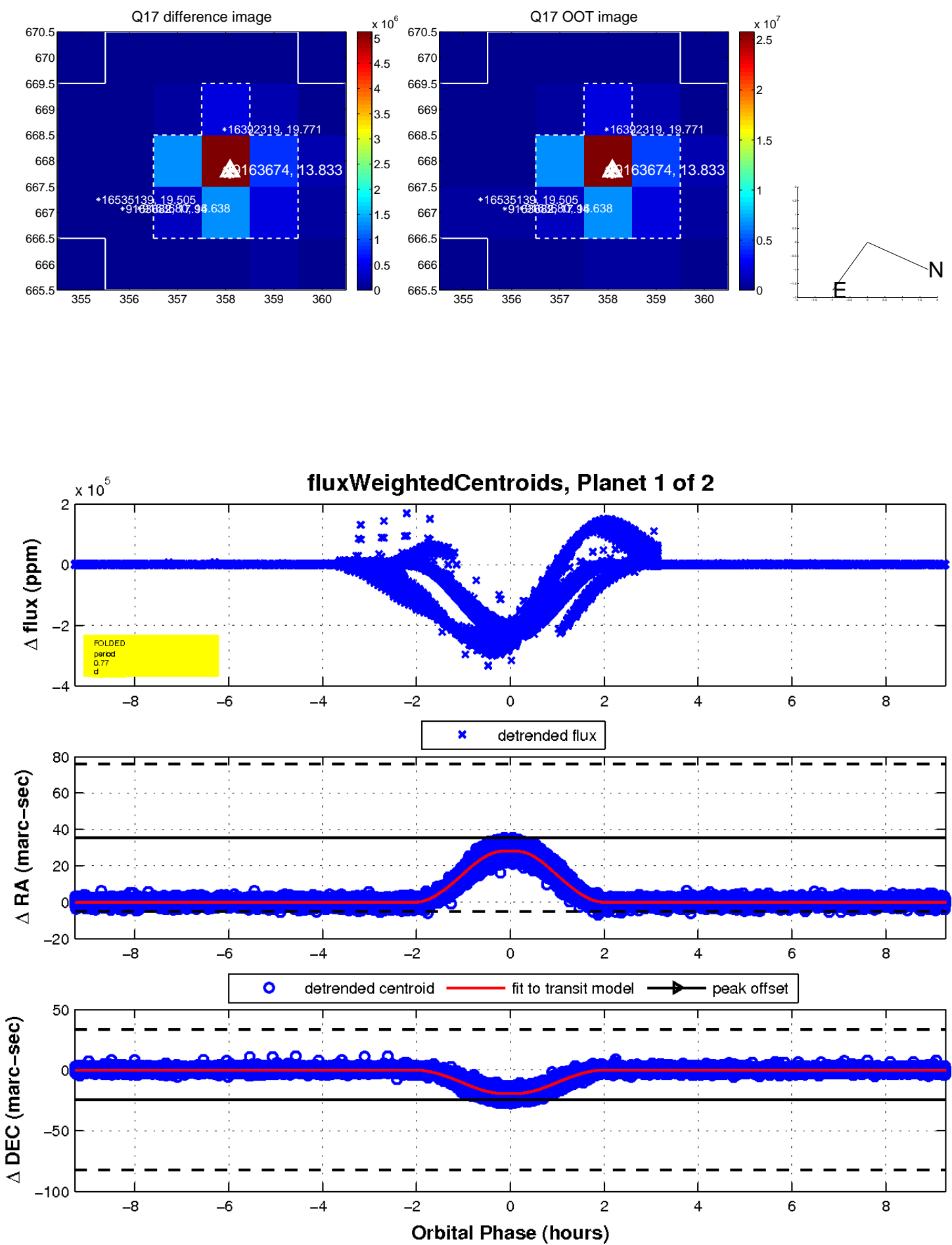
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

