

KIC 010937609

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 _⊕)
010937609-01	OBS	7391.01	2.570431	133.189665	69243.1	4.957	5829.0	4213.6	0.97	6244	32.71	938.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010937609-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—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.

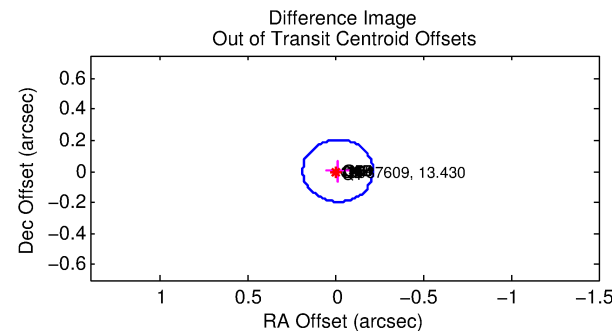
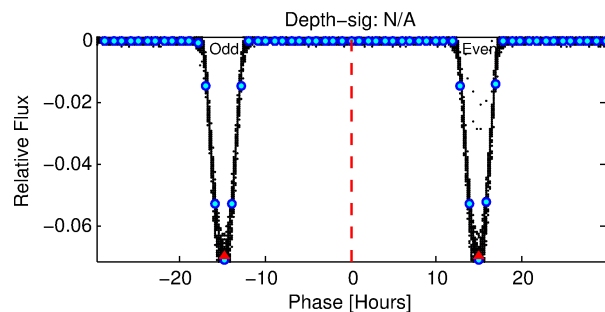
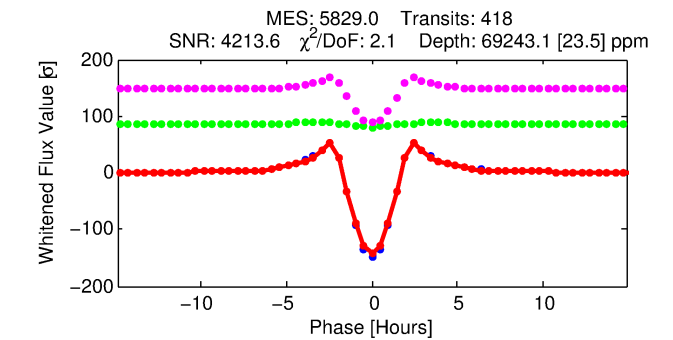
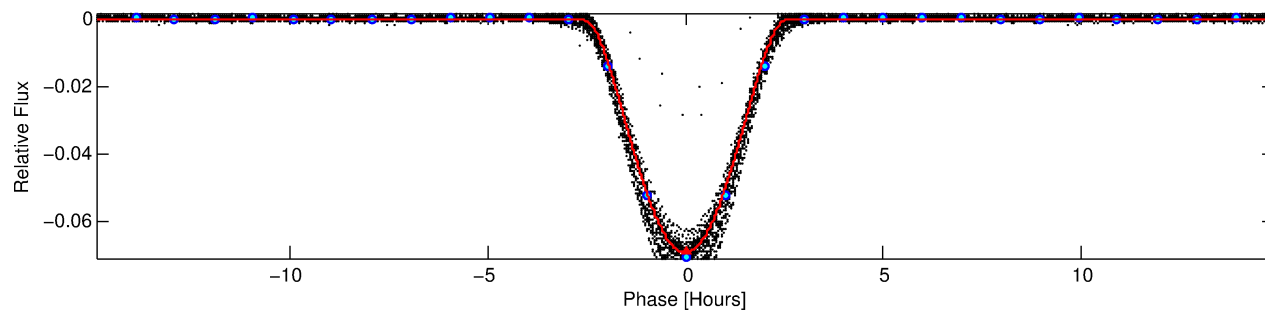
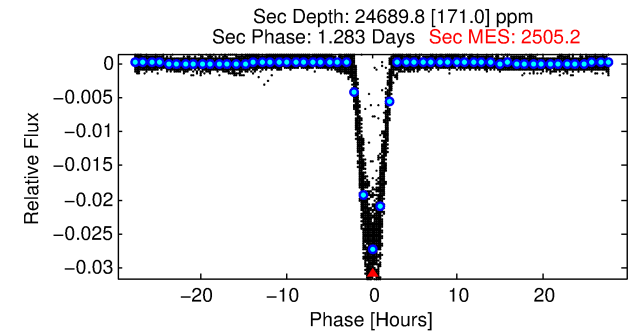
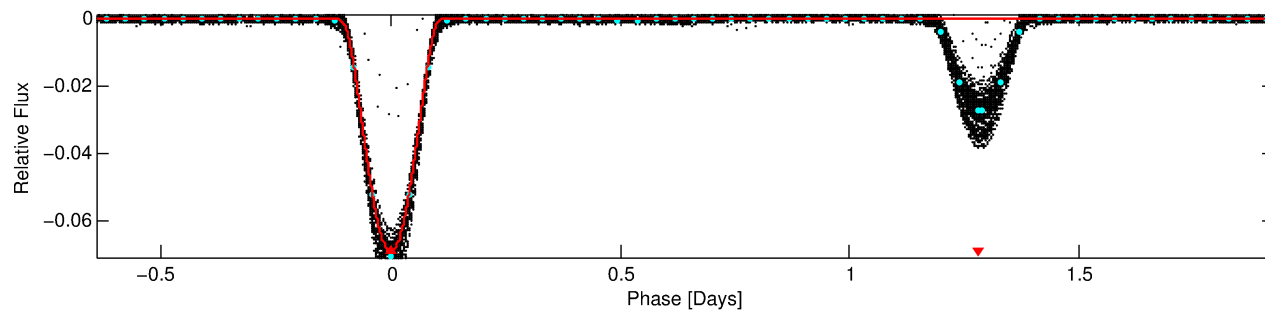
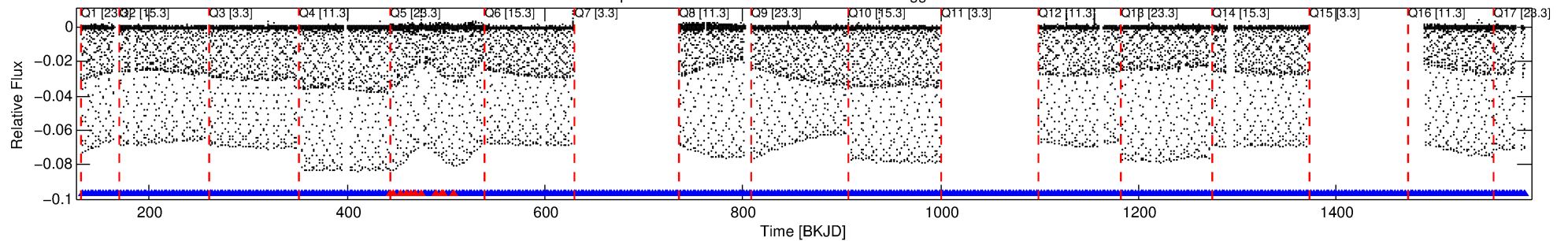
Ephemeris Match Information For 010937609-01

No Significant Match Found

DV One-Page Summary

KIC: 10937609 Candidate: 1 of 1 Period: 2.570 d
KOI: K07391.01 Corr: 0.950

Kp: 13.43 R*: 0.97 Rs Teff: 6244.0 K Logg: 4.47 Fe/H: -0.320



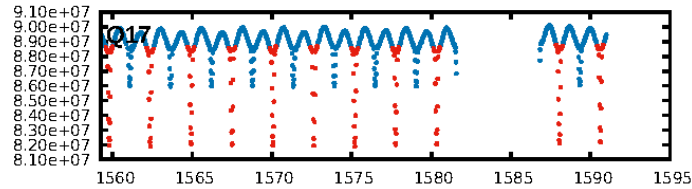
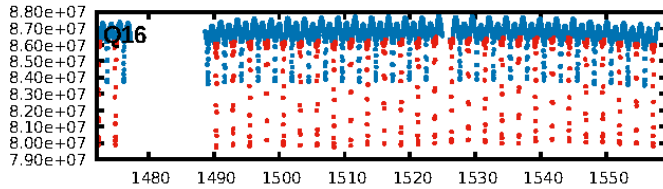
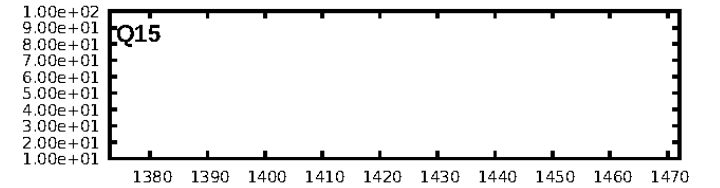
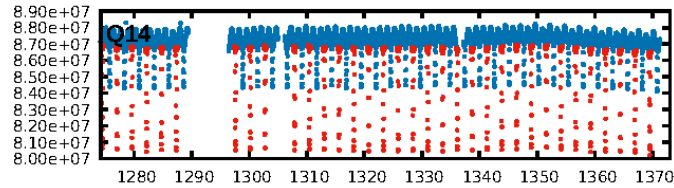
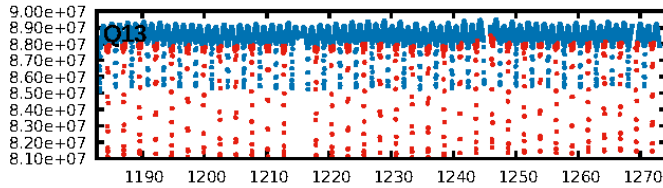
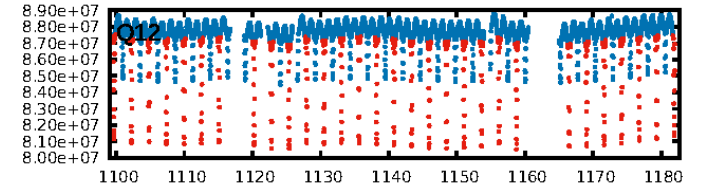
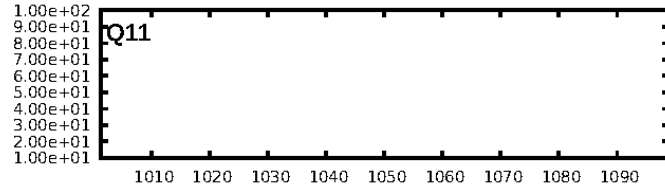
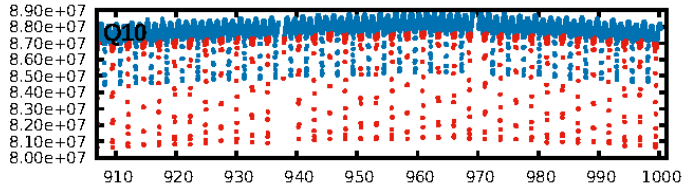
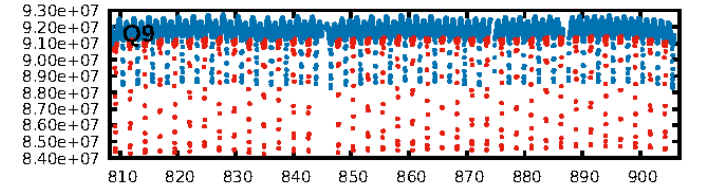
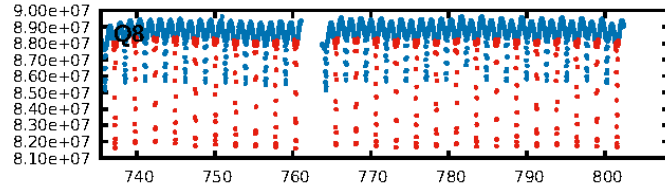
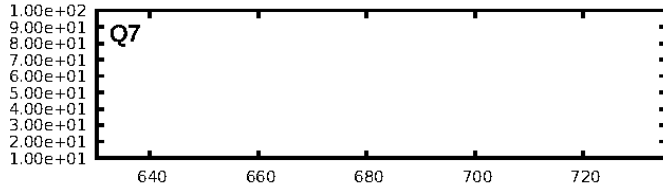
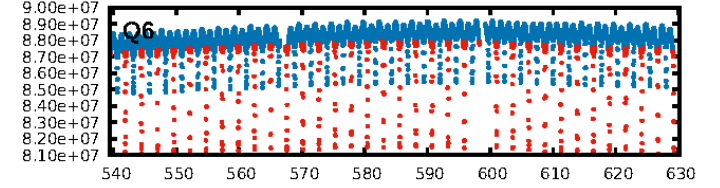
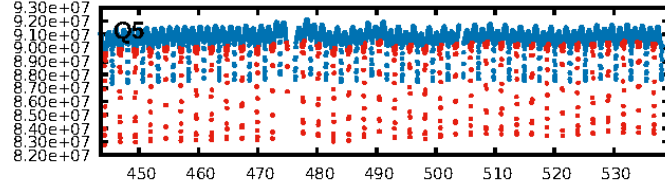
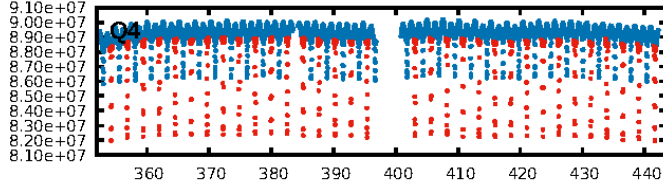
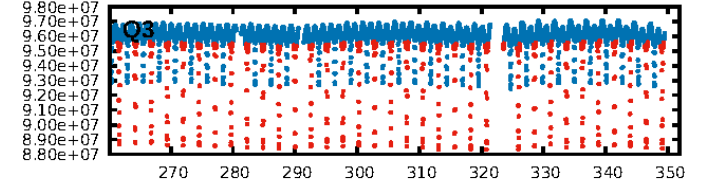
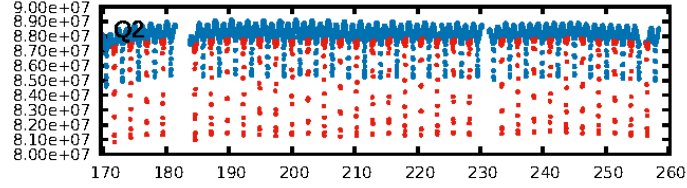
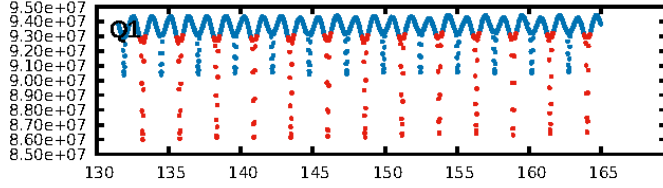
DV Fit Results:

Period = 2.57043 [0.00000] d
Epoch = 133.1897 [0.0000] BKJD
Rp/R* = 0.3087 [0.0010]
a/R* = 4.09 [0.00]
b = 0.85 [0.00]
Seff = 938.03 [384.82]
Teff = 1411 [145] K
Rp = 32.71 [10.27] Re
a = 0.0370 [0.0099] AU
Ag = 17.38 [6.82] [2.40σ]
Teffp = 4455 [135] K [15.40σ]

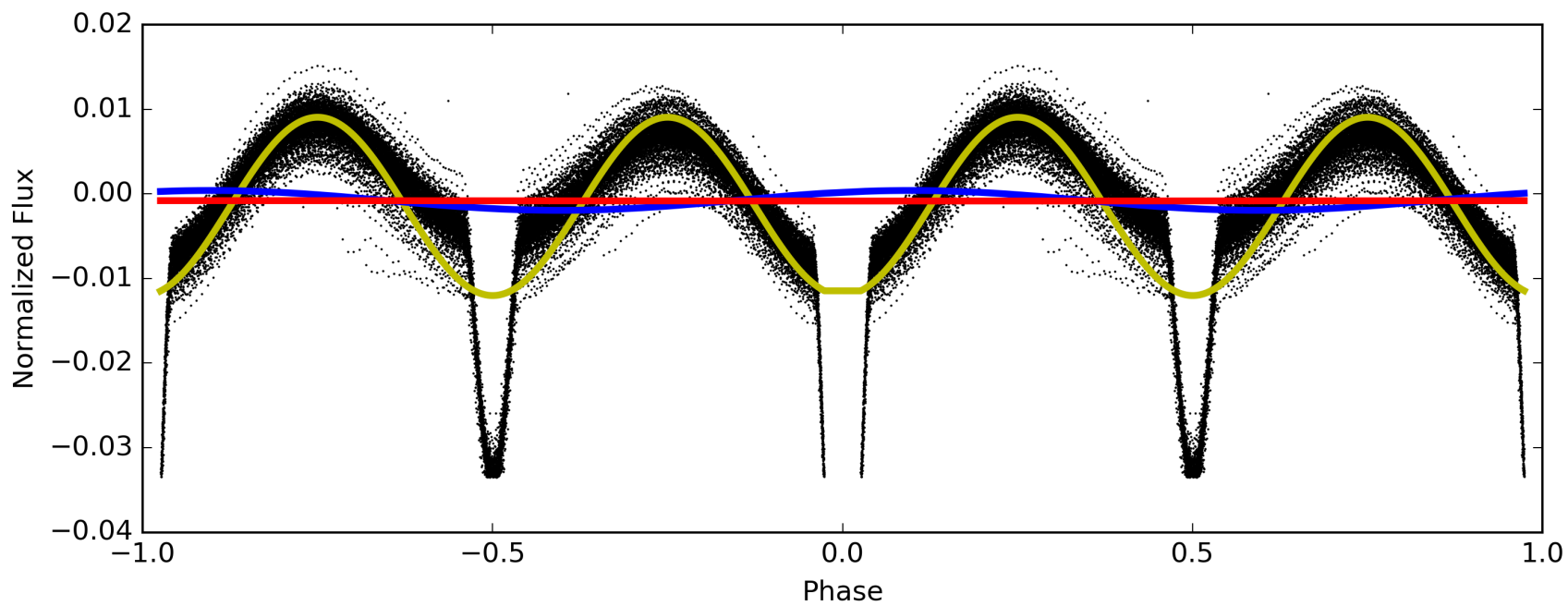
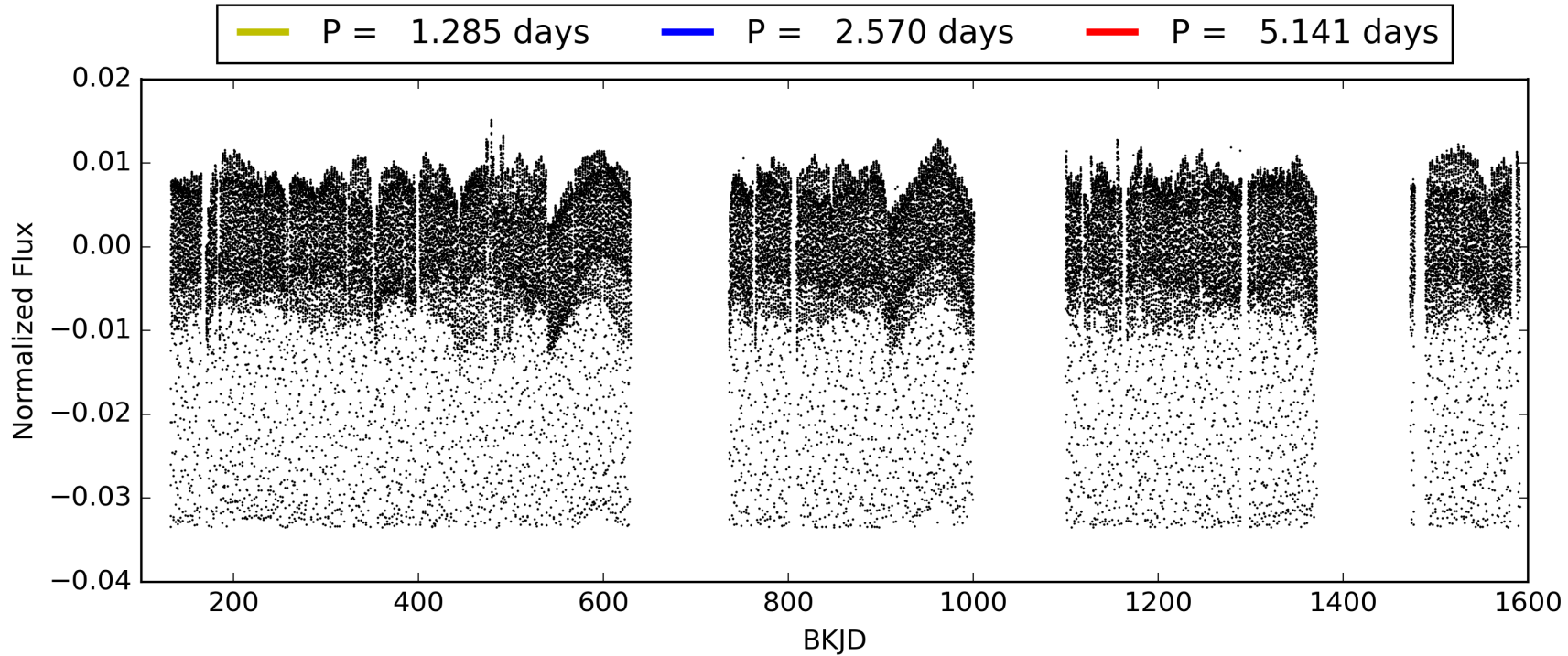
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.97 [383/394]
GhostDiagnostic-chr: 2.05
Centroid-sig: 0.0%
Centroid-so: 0.264 arcsec [244.18σ]
OotOffset-rm: 0.015 arcsec [0.22σ]
KicOffset-rm: 0.222 arcsec [3.28σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 010937609-01, PDC Light Curves

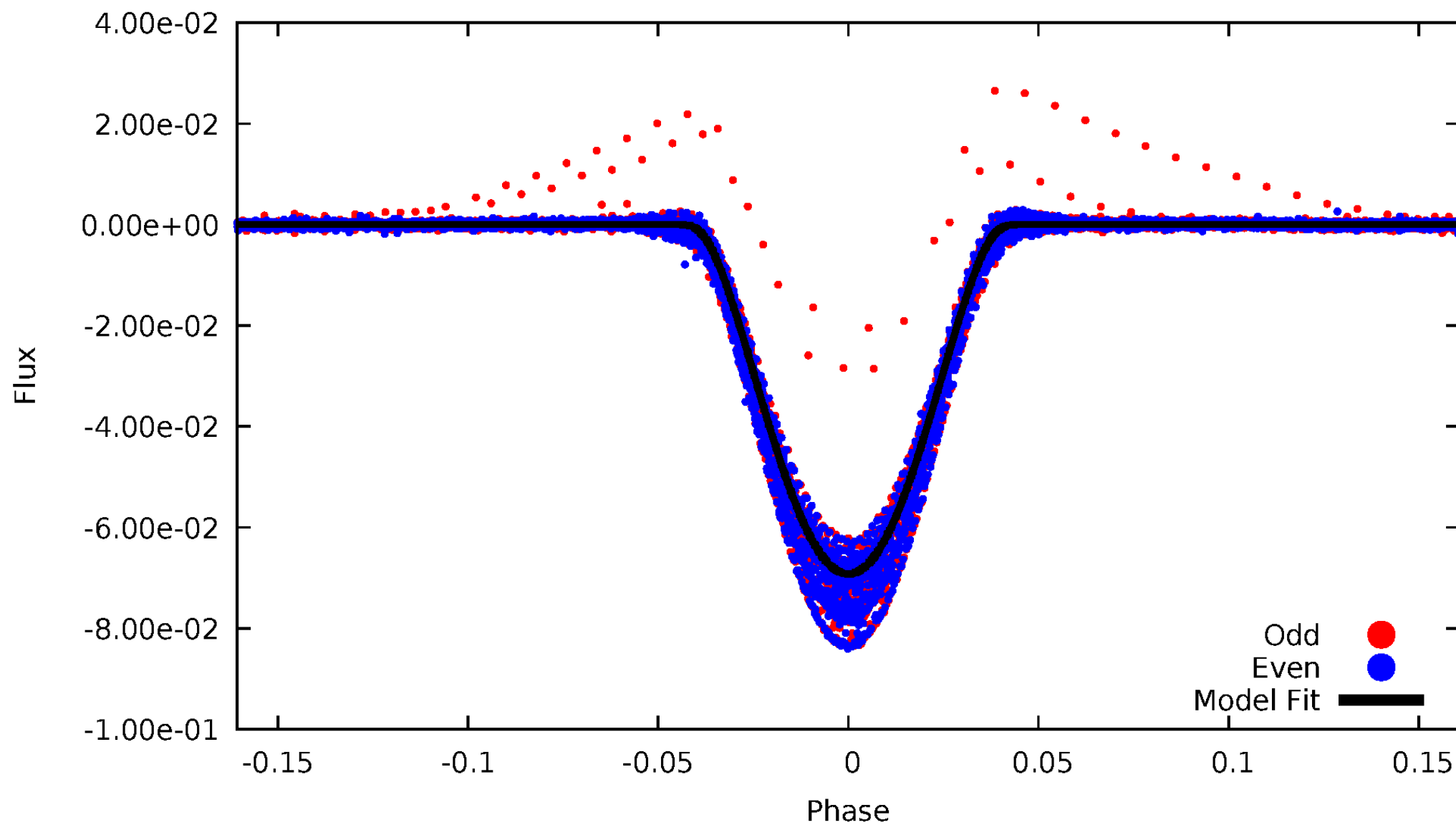


TCE 010937609-01



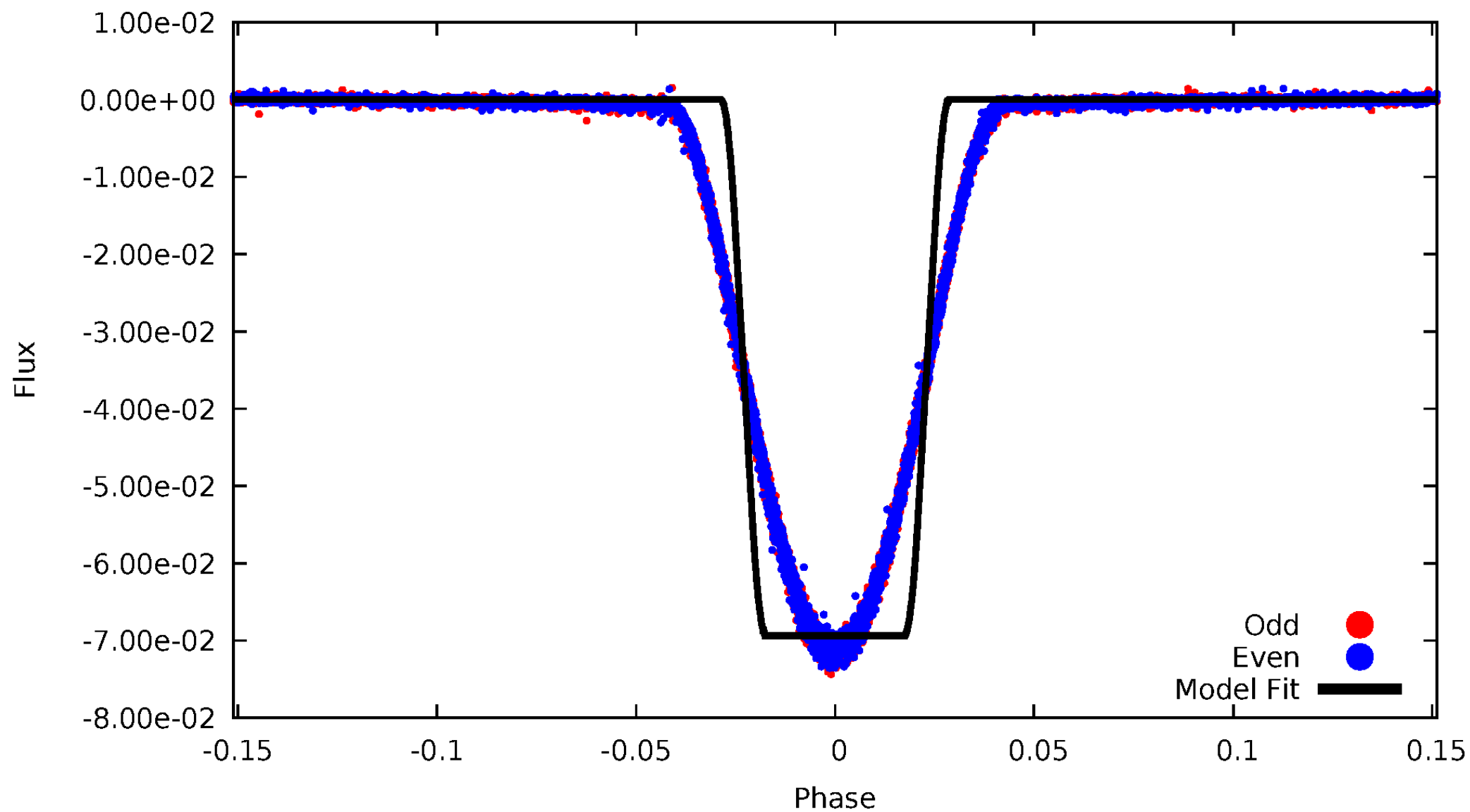
DV Odd/Even

TCE 010937609-01



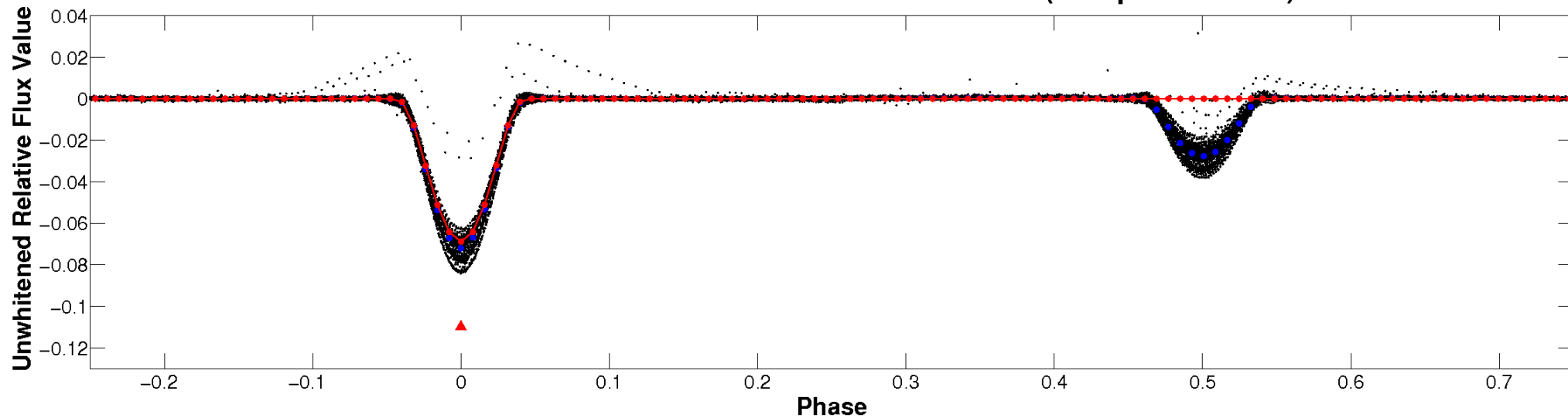
ALT Odd/Even

TCE 010937609-01

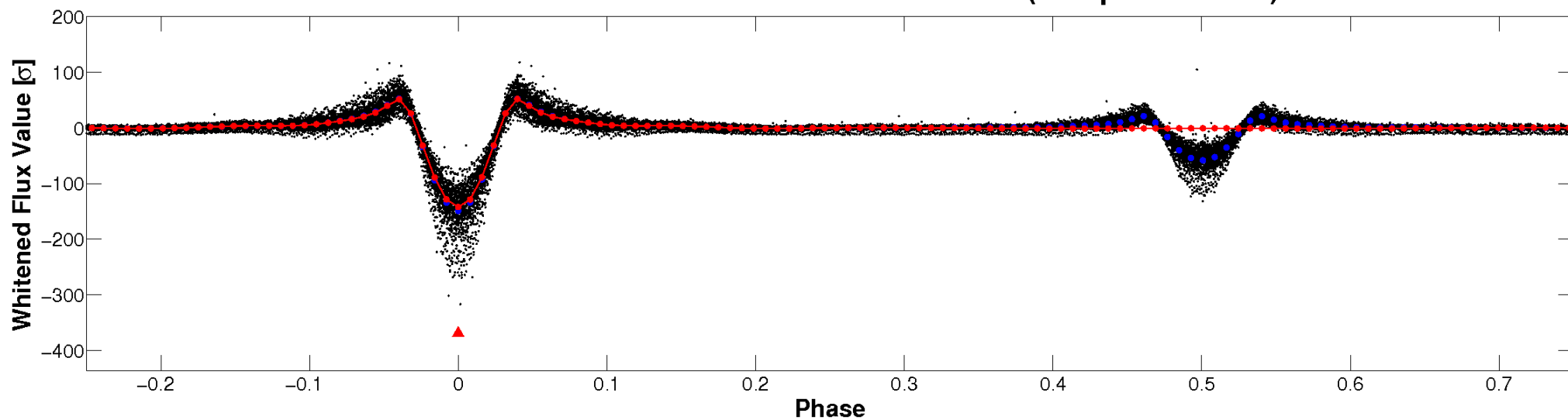


Non-Whitened Vs. Whitened Light Curve

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

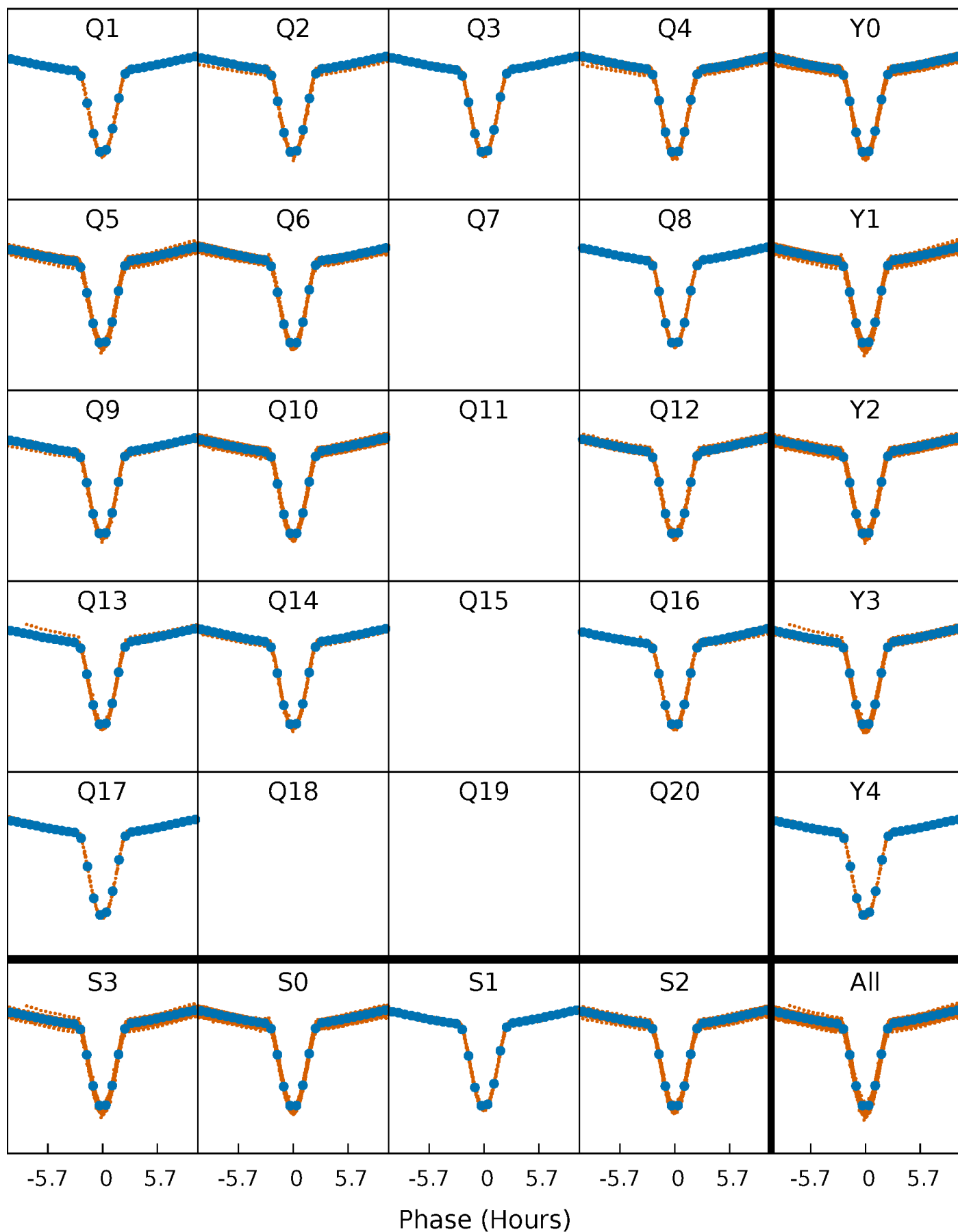


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



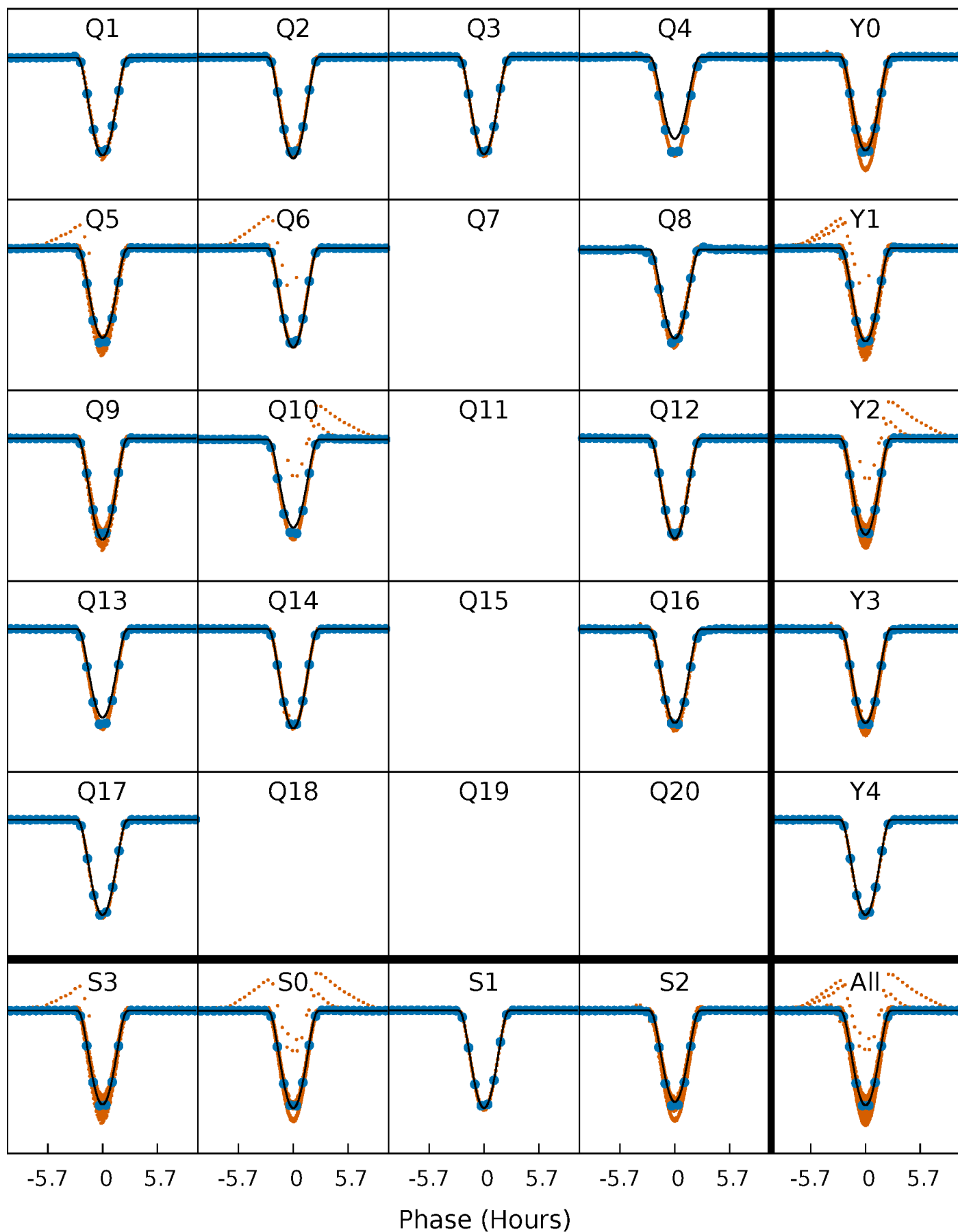
PDC Quarter-Phased Transit Curves

TCE 010937609-01 P= 2.570431 Days $T_0=133.189665$ (BKJD)



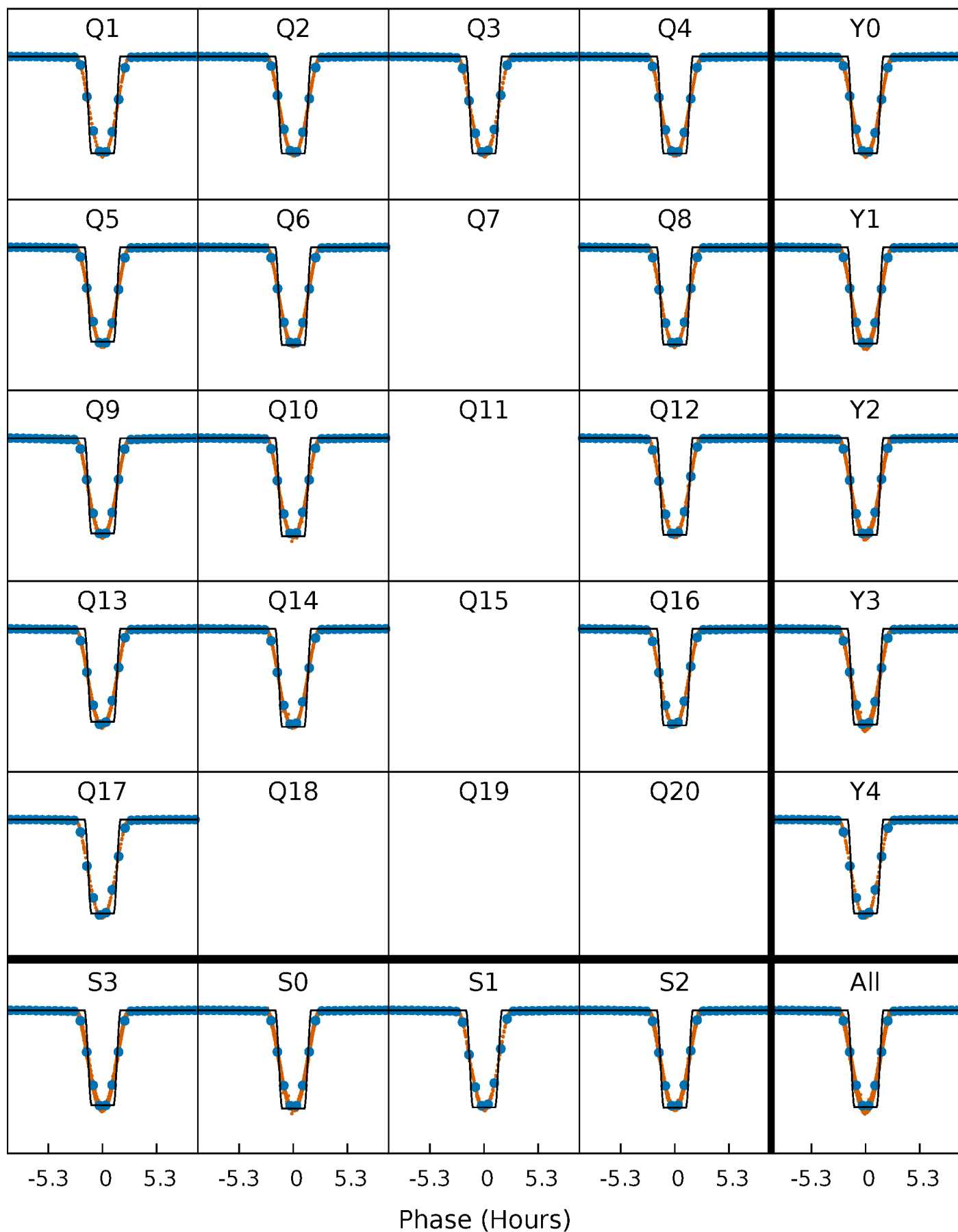
DV Quarter-Phased Transit Curves

TCE 010937609-01 P= 2.570431 Days $T_0=133.189665$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

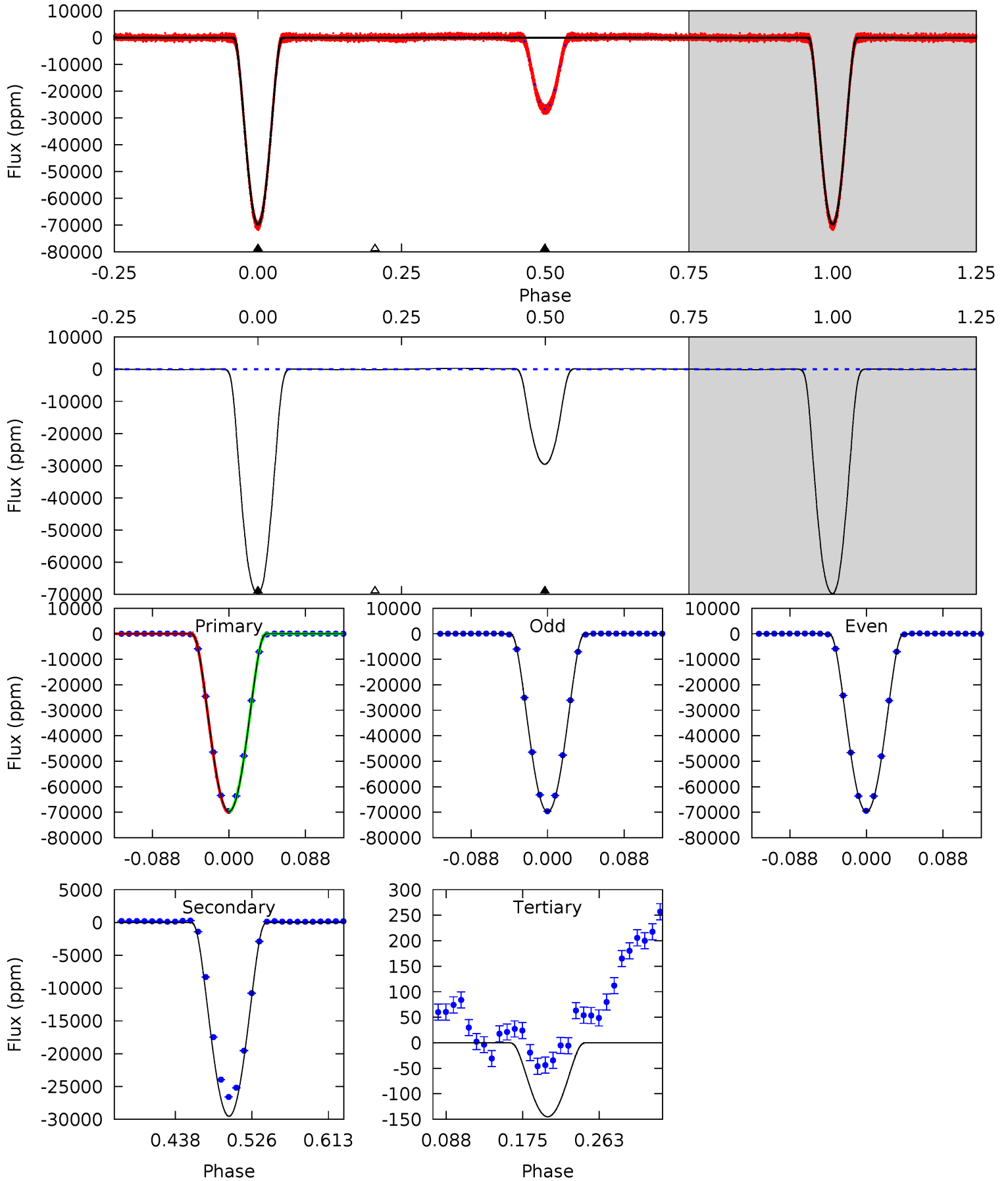
TCE 010937609-01 P= 2.570438 Days $T_0=133.187717$ (BKJD)



DV Model-Shift Uniqueness Test

010937609-01, P = 2.570431 Days, E = 130.619234 Days

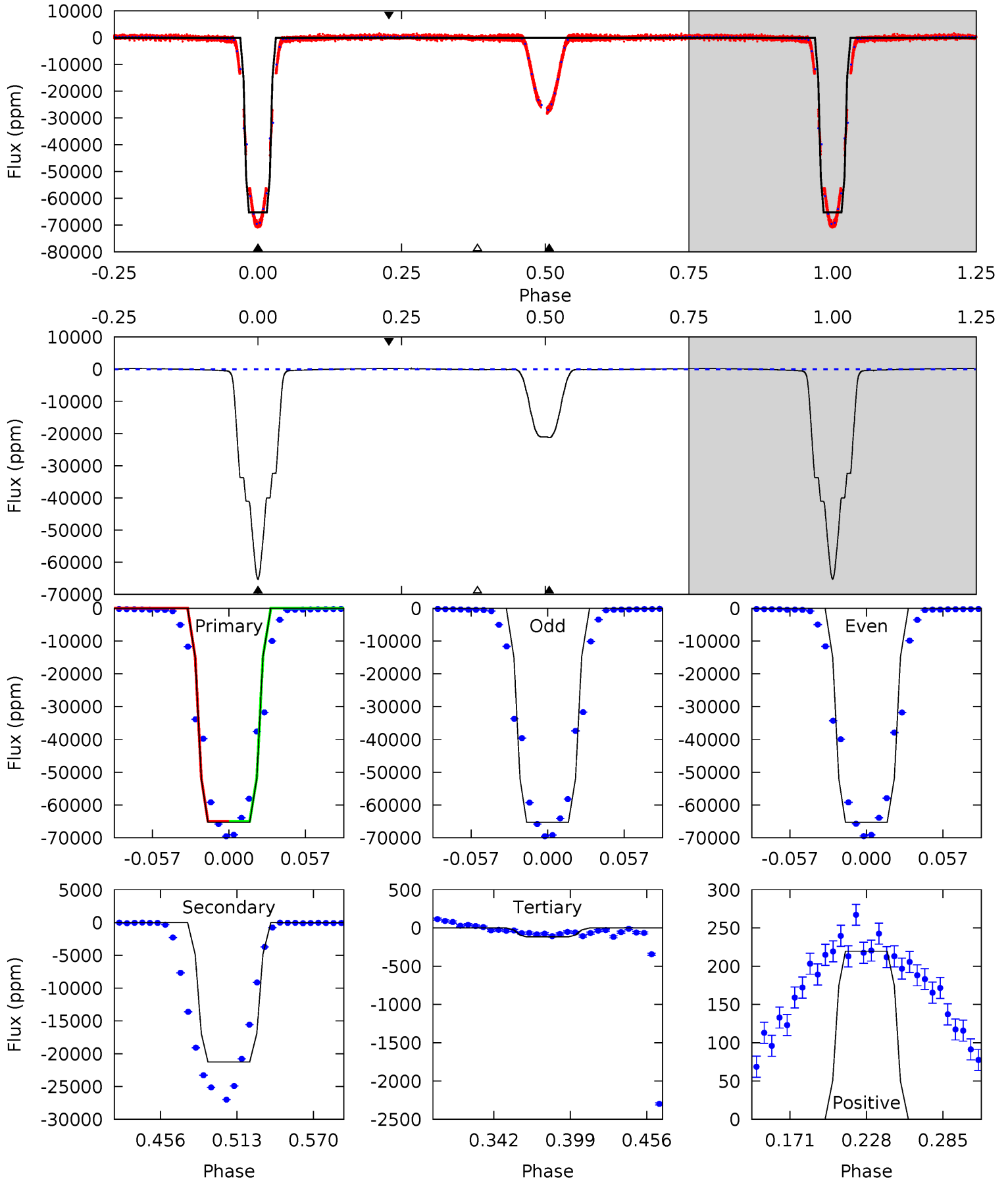
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8620	3649	17.9	0	4.59	1.71	15.4	8602	8620	3631	3649	5.19	1.02	0.00	0



Alt Model-Shift Uniqueness Test

010937609-01, P = 2.570438 Days, E = 130.617279 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7881	2567	14.1	26.5	4.68	1.90	19.0	7866	7854	2553	2541	2.12	1.00	0.00	3.42



Stellar Parameters For KIC 010937609

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6244^{+169}_{-188}	$4.473^{+0.054}_{-0.216}$	$-0.320^{+0.300}_{-0.350}$	$0.971^{+0.305}_{-0.102}$	$1.021^{+0.147}_{-0.120}$	$1.570^{+0.433}_{-0.807}$
	+3%/-3%	+1%/-5%	+94%/-109%	+31%/-11%	+14%/-12%	+28%/-51%
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 010937609-01 / KOI 7391.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-29537 ± 8	$33.77^{+5.33}_{-2.73}$	2007^{+141}_{-93}	4795^{+101}_{-124}	20^{+3}_{-5}
Alt.	-21262 ± 8	$28.87^{+4.78}_{-2.29}$	2016^{+139}_{-98}	4779^{+103}_{-116}	20^{+3}_{-5}

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

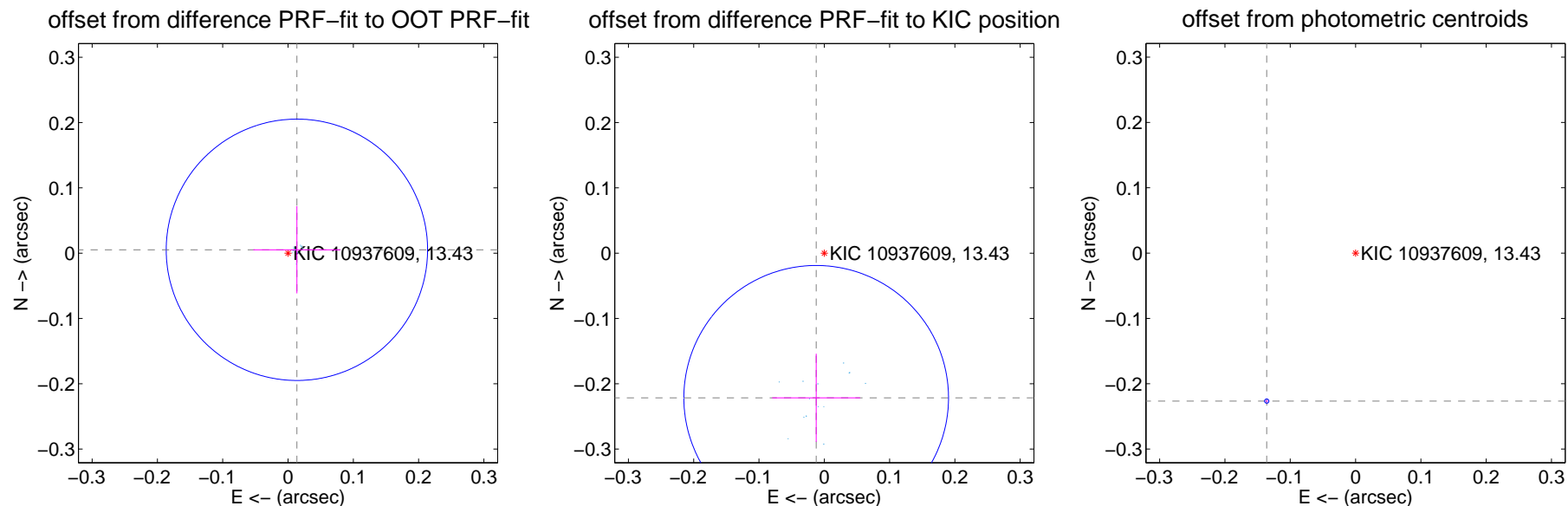
DV Centroid Data

Supplemental centroid analysis for 010937609-01. Kepler magnitude: 13.43. Transit SNR 4213.63

There are 14 quarters with good PRF difference image offsets

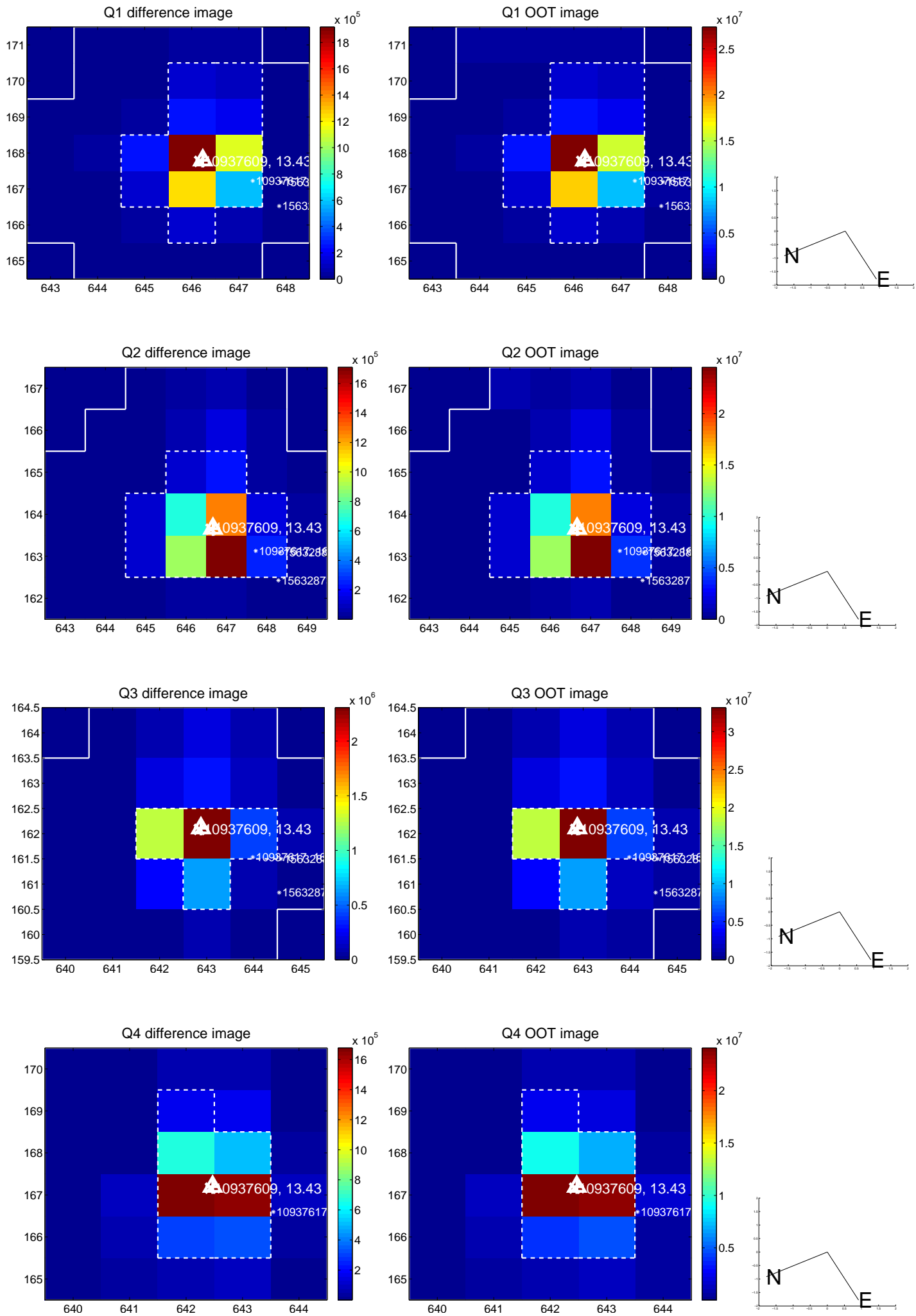
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.015 ± 0.067	0.22	-0.014 ± 0.067	0.005 ± 0.067
PRF-fit source offset from KIC position	0.222 ± 0.068	3.28	0.012 ± 0.067	-0.222 ± 0.068
photometric centroid source offset	0.26 ± 0.00	244.18	0.14 ± 0.00	-0.23 ± 0.00

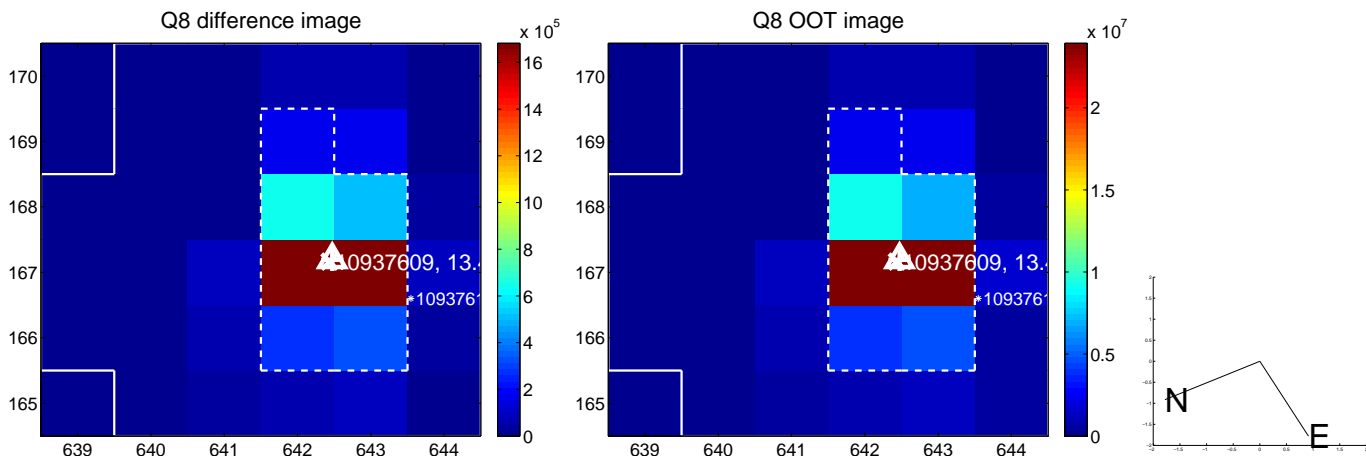
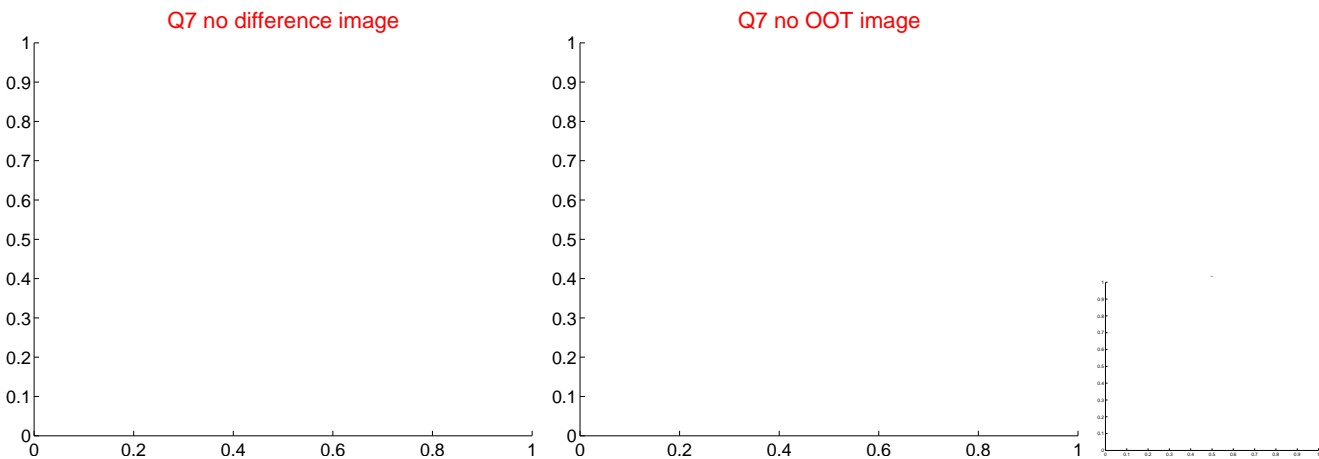
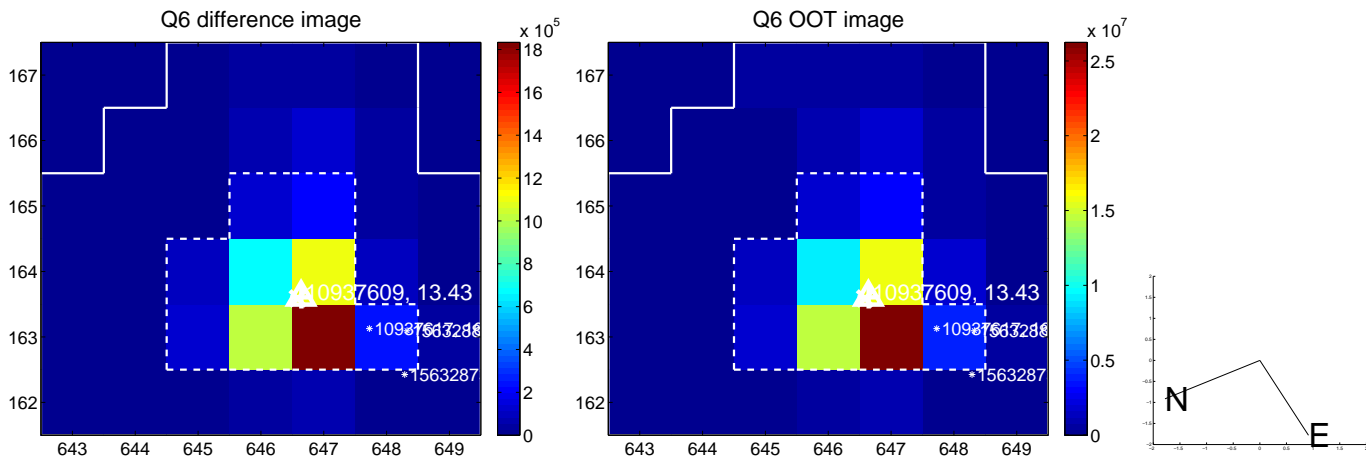
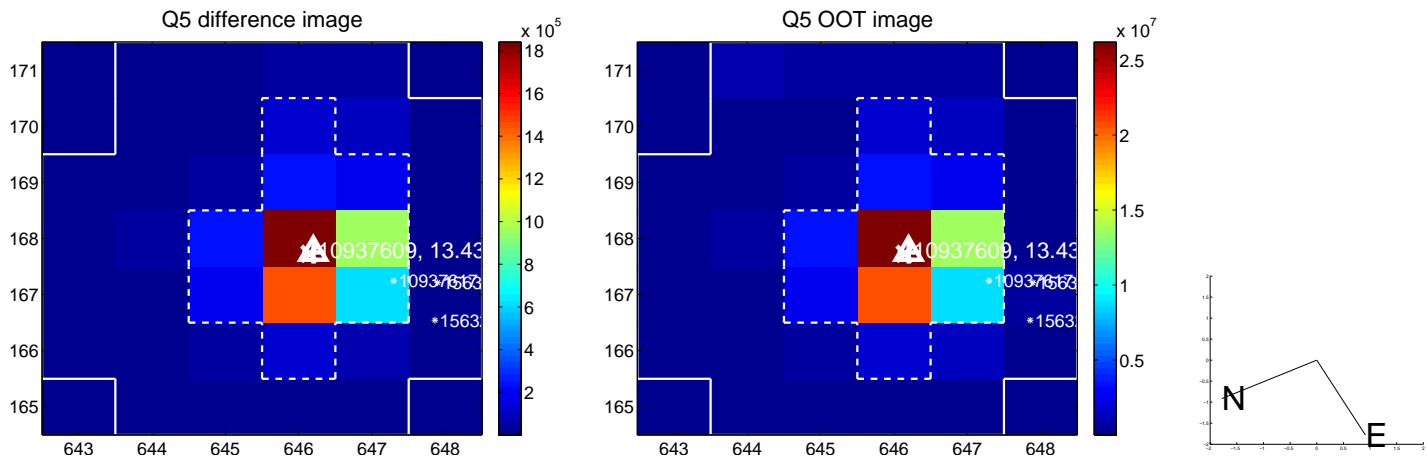


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

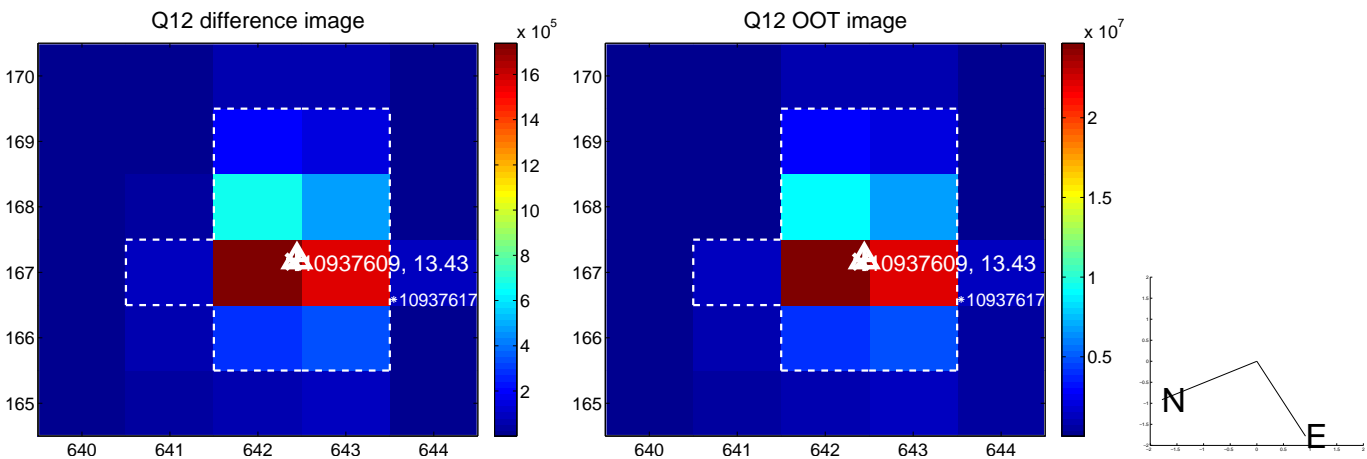
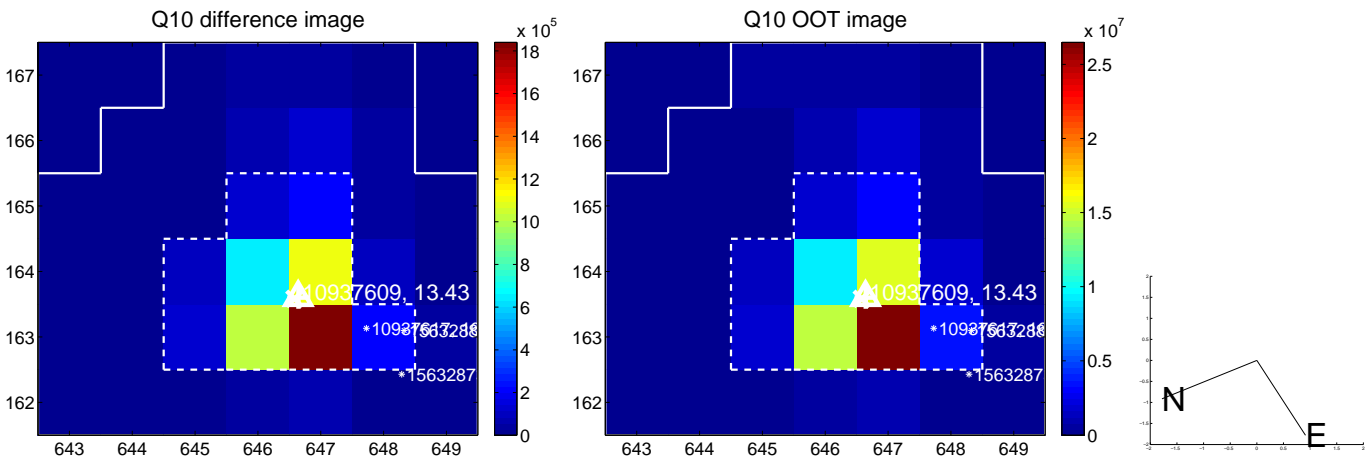
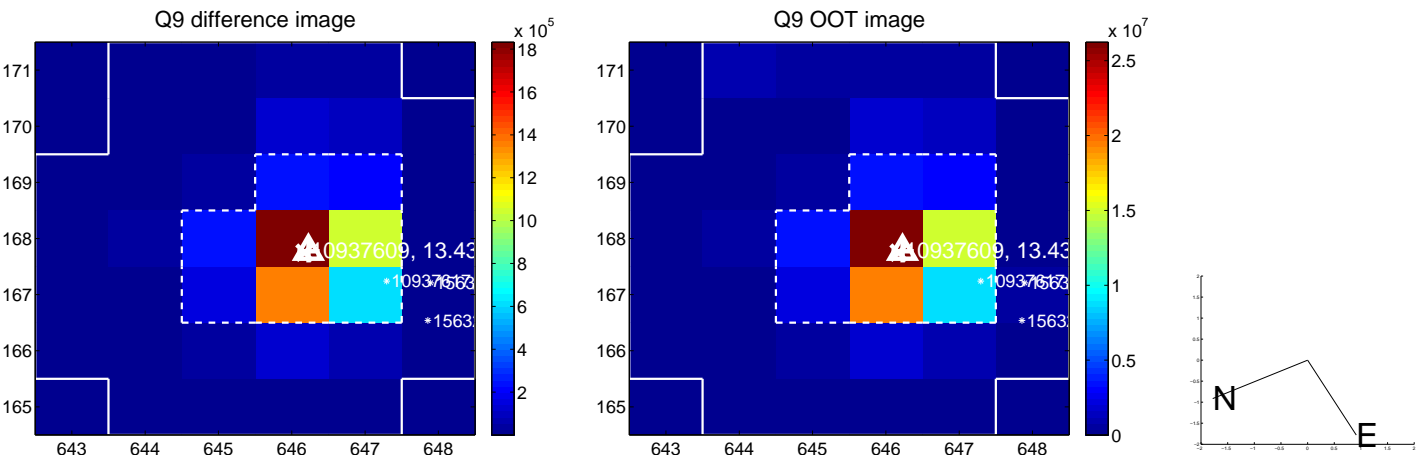
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



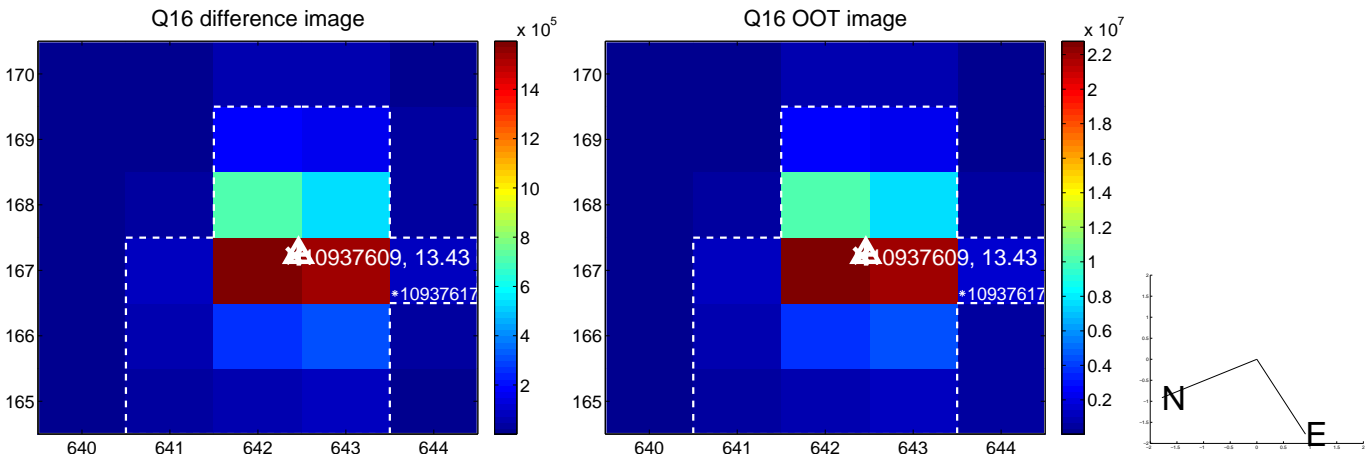
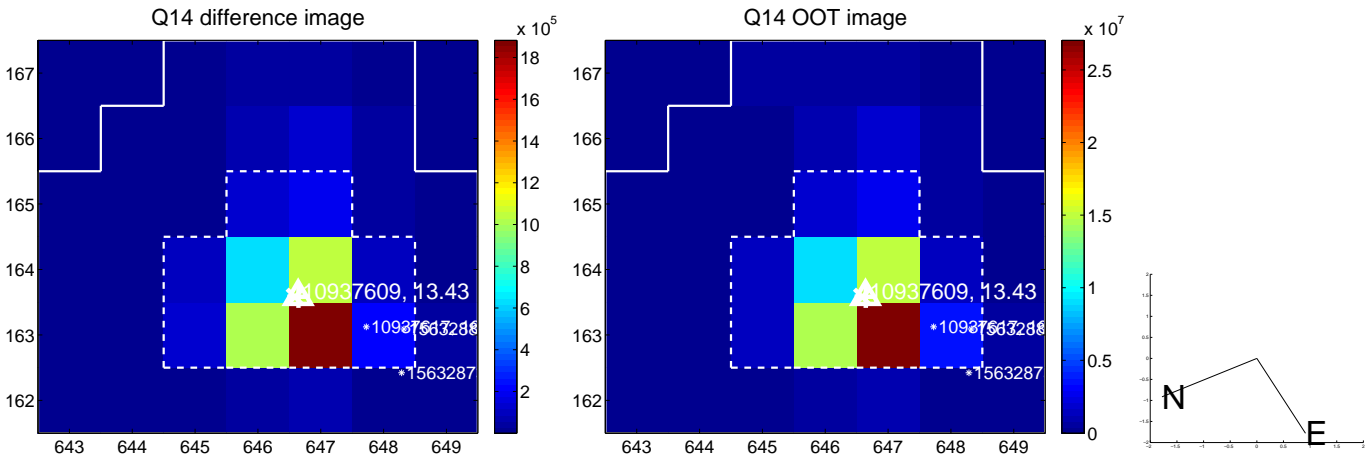
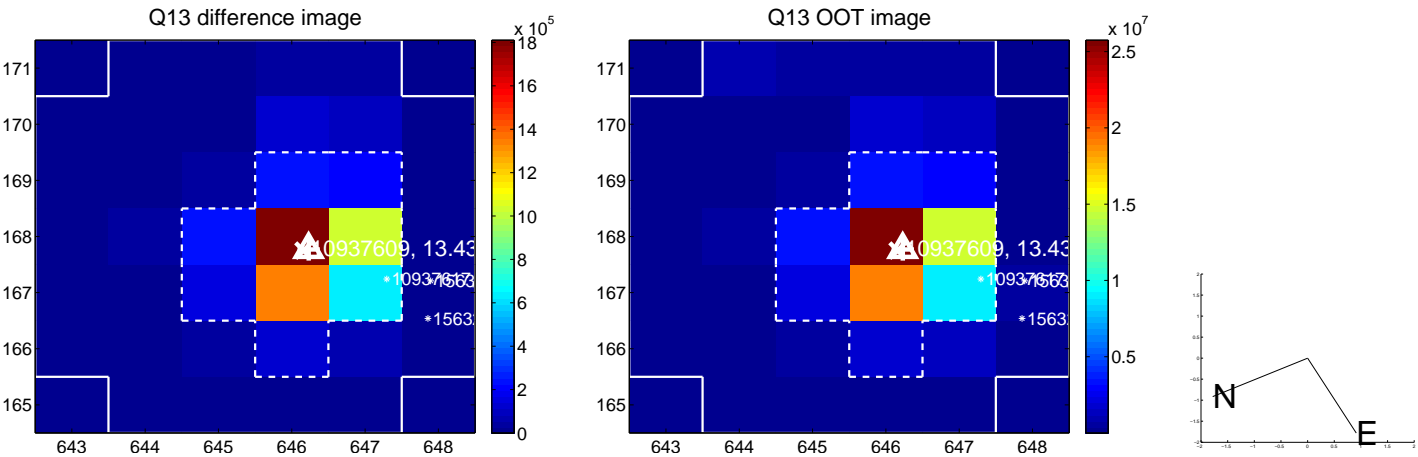
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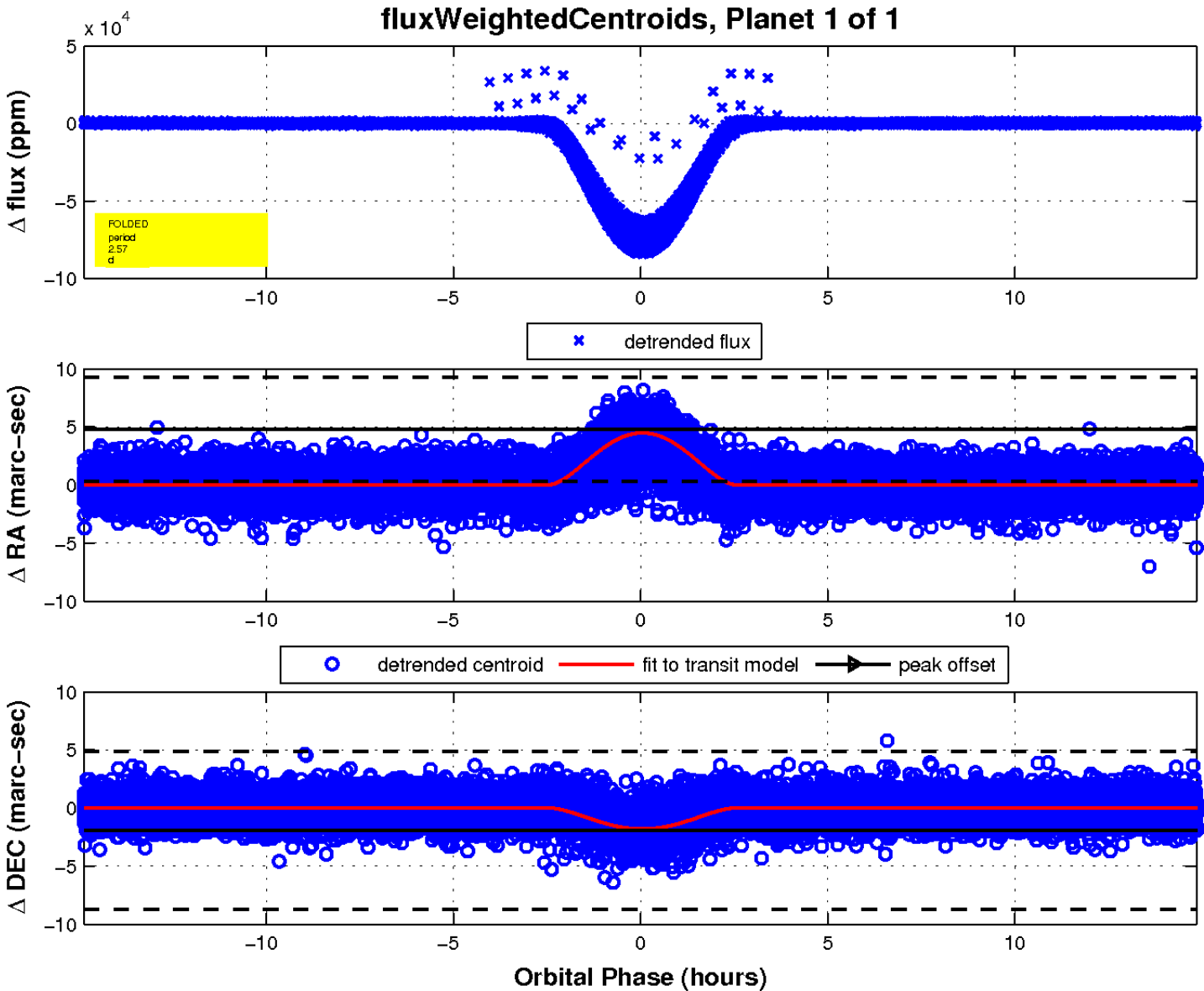
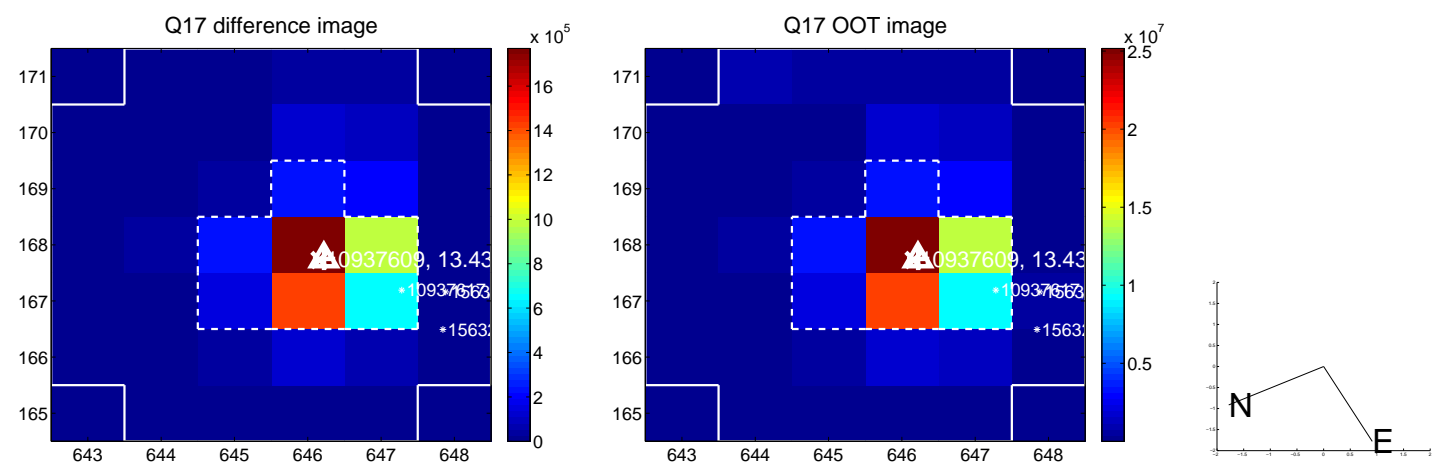
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UKIRT Image

Declination

