

KIC 002442448

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})
002442448-01	OBS	2812.01	76.613594	153.798979	466.4	9.692	22.4	23.5	1.03	6173	2.41	11.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002442448-01	OBS	PC	1.00	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.

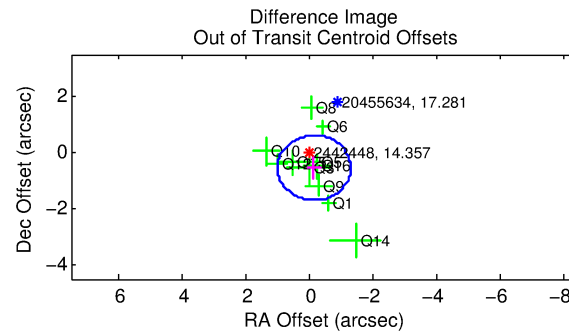
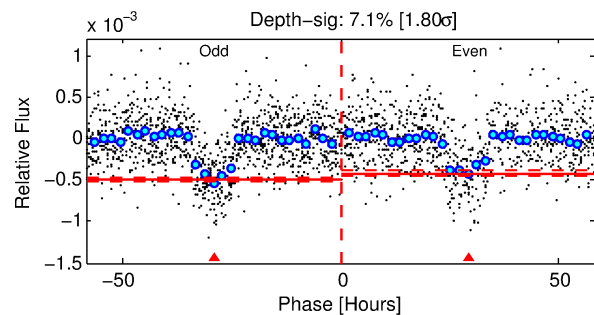
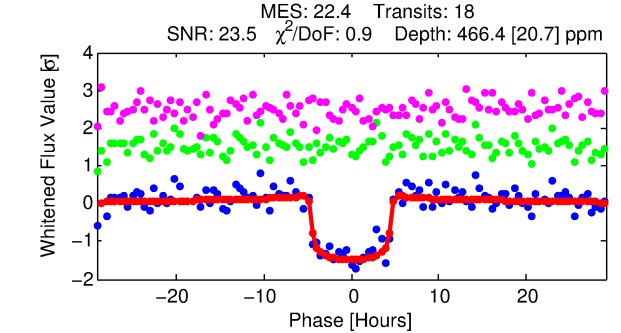
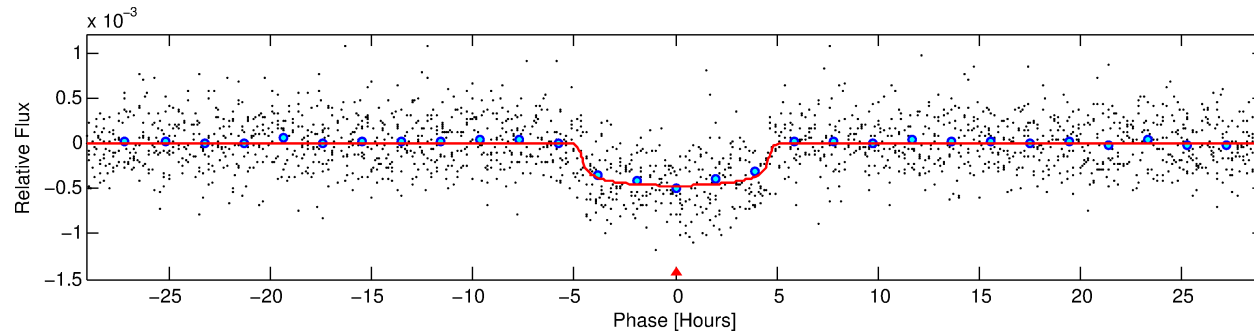
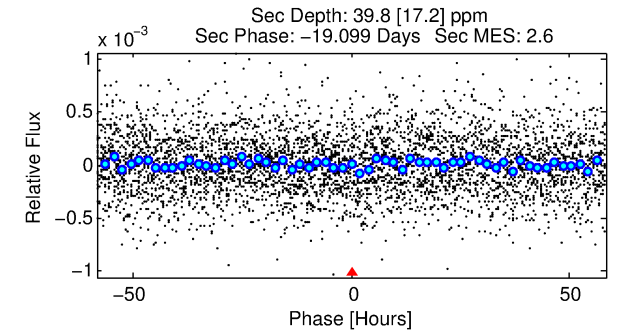
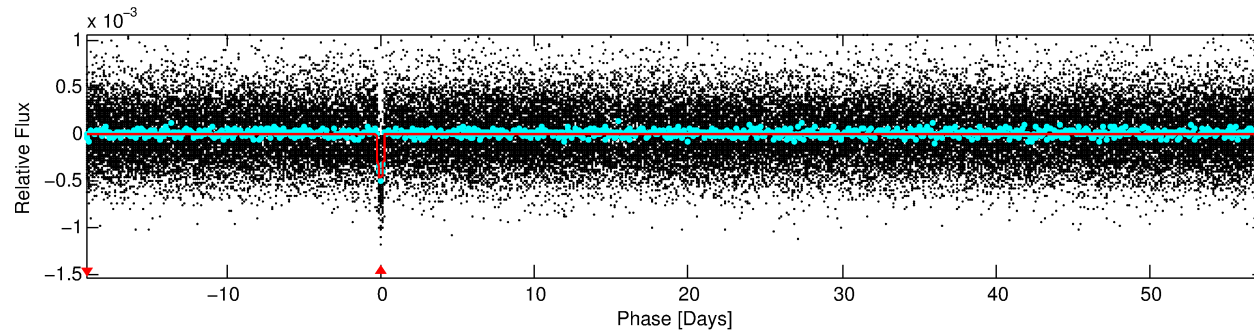
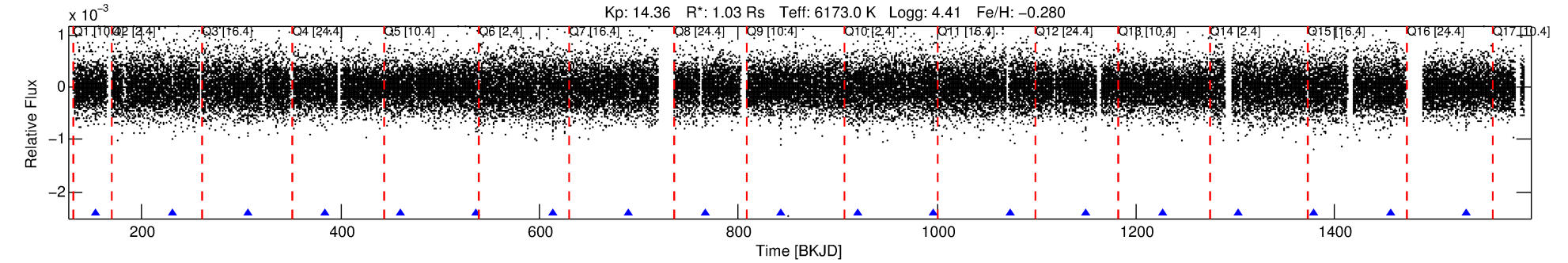
Ephemeris Match Information For 002442448-01

No Significant Match Found

DV One-Page Summary

KIC: 2442448 Candidate: 1 of 1 Period: 76.614 d

KOI: K02812.01 Corr: 0.996



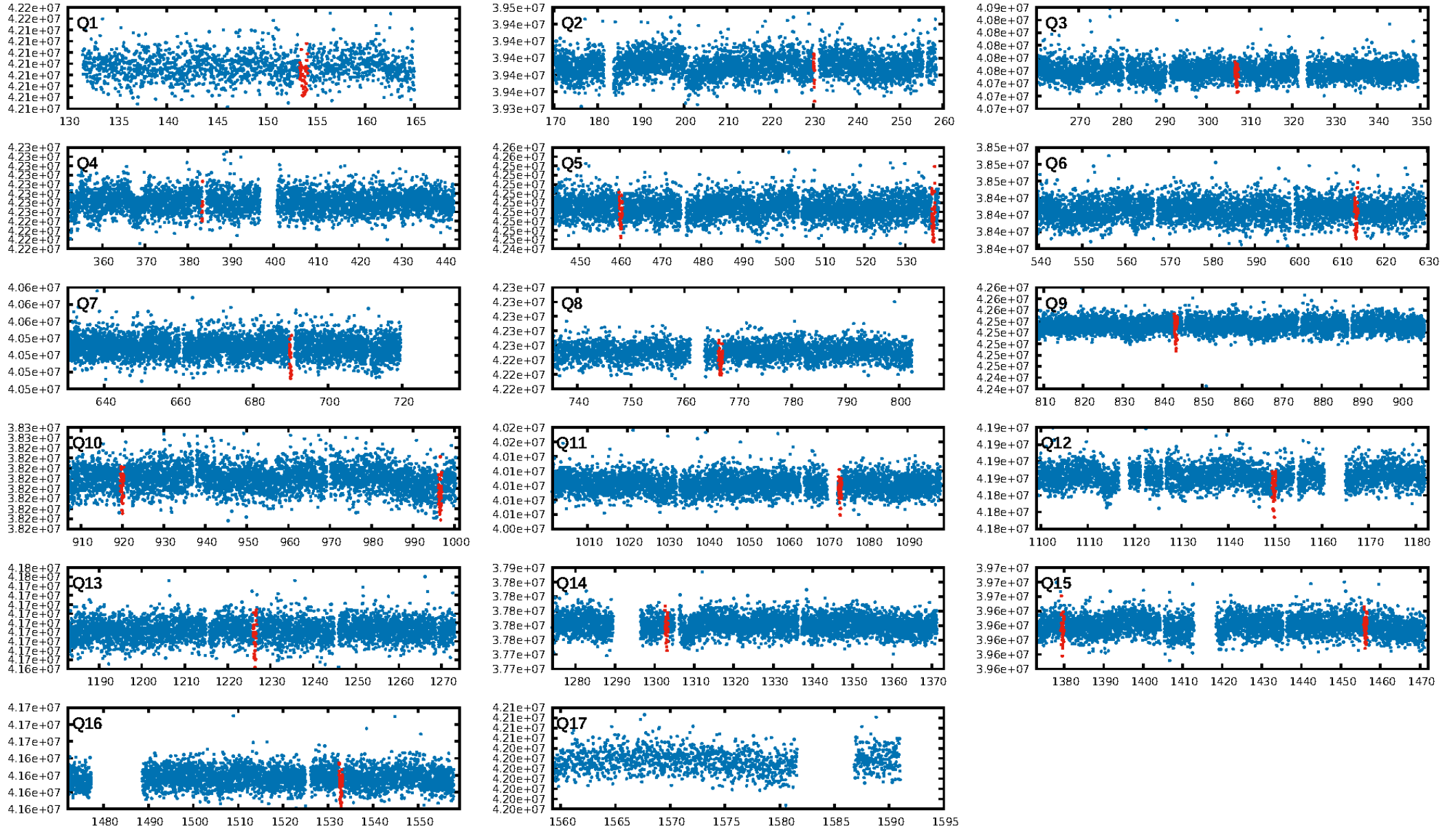
DV Fit Results:

Period = 76.61359 [0.00063] d
Epoch = 153.7990 [0.0069] BKJD
Rp/R* = 0.0214 [0.0033]
a/R* = 42.40 [33.14]
b = 0.74 [0.48]
Seff = 11.14 [4.40]
Teq = 466 [46] K
Rp = 2.41 [0.82] Re
a = 0.3519 [0.0898] AU
Ag = 467.33 [302.44] [1.54σ]
Teffp = 3349 [458] K [6.27σ]

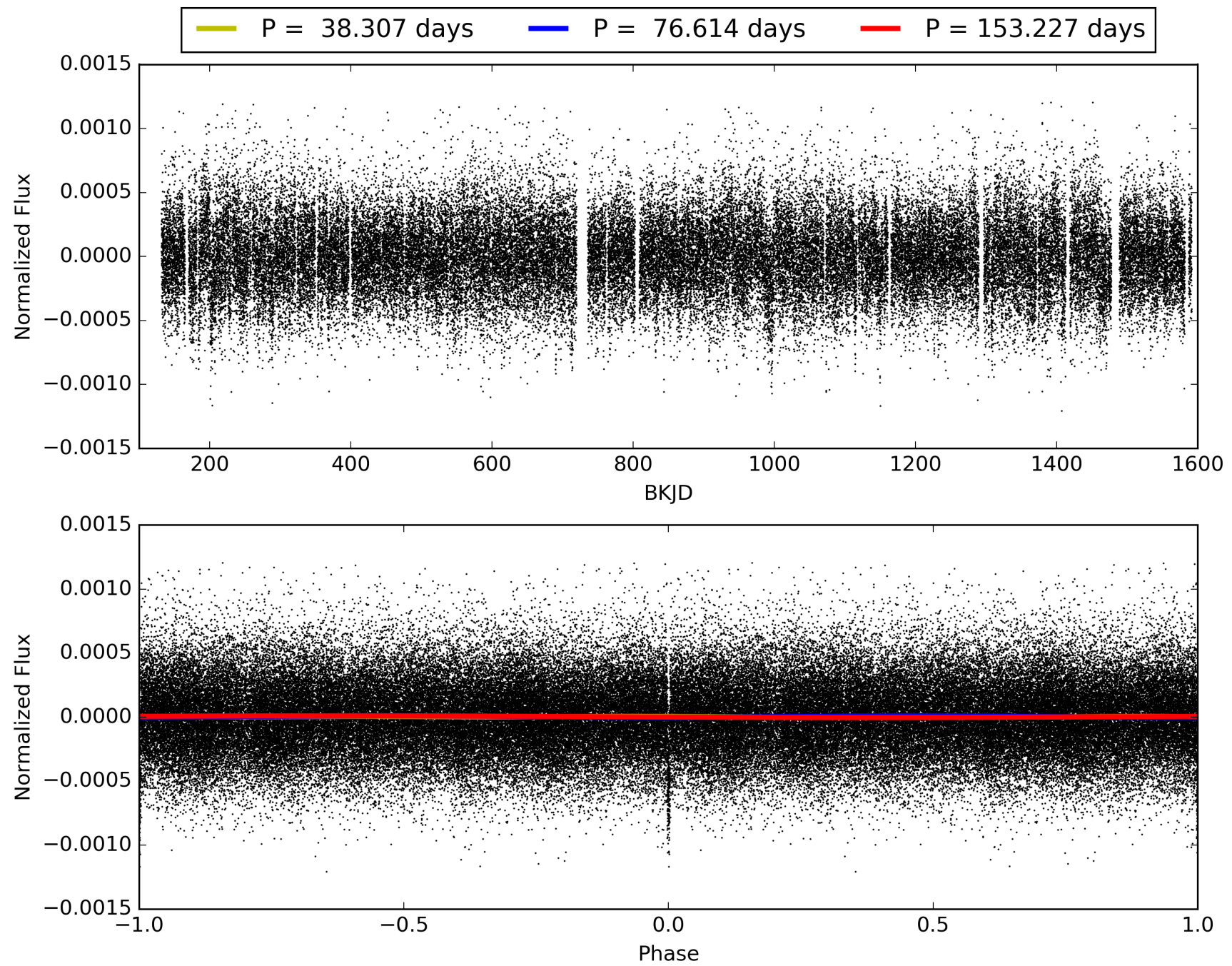
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 24.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.32e-105
RollingBand-fgt: 1.00 [17/17]
GhostDiagnostic-chr: 2.41
Centroid-sig: 2.5%
Centroid-so: 1.387 arcsec [2.43σ]
OotOffset-rm: 0.561 arcsec [1.46σ]
KicOffset-rm: 0.486 arcsec [1.30σ]
OotOffset-st: 3/2/3/3 [11]
KicOffset-st: 3/2/3/3 [11]
DiffImageQuality-fgm: 0.91 [10/11]
DiffImageOverlap-fno: 1.00 [11/11]

TCE 002442448-01, PDC Light Curves

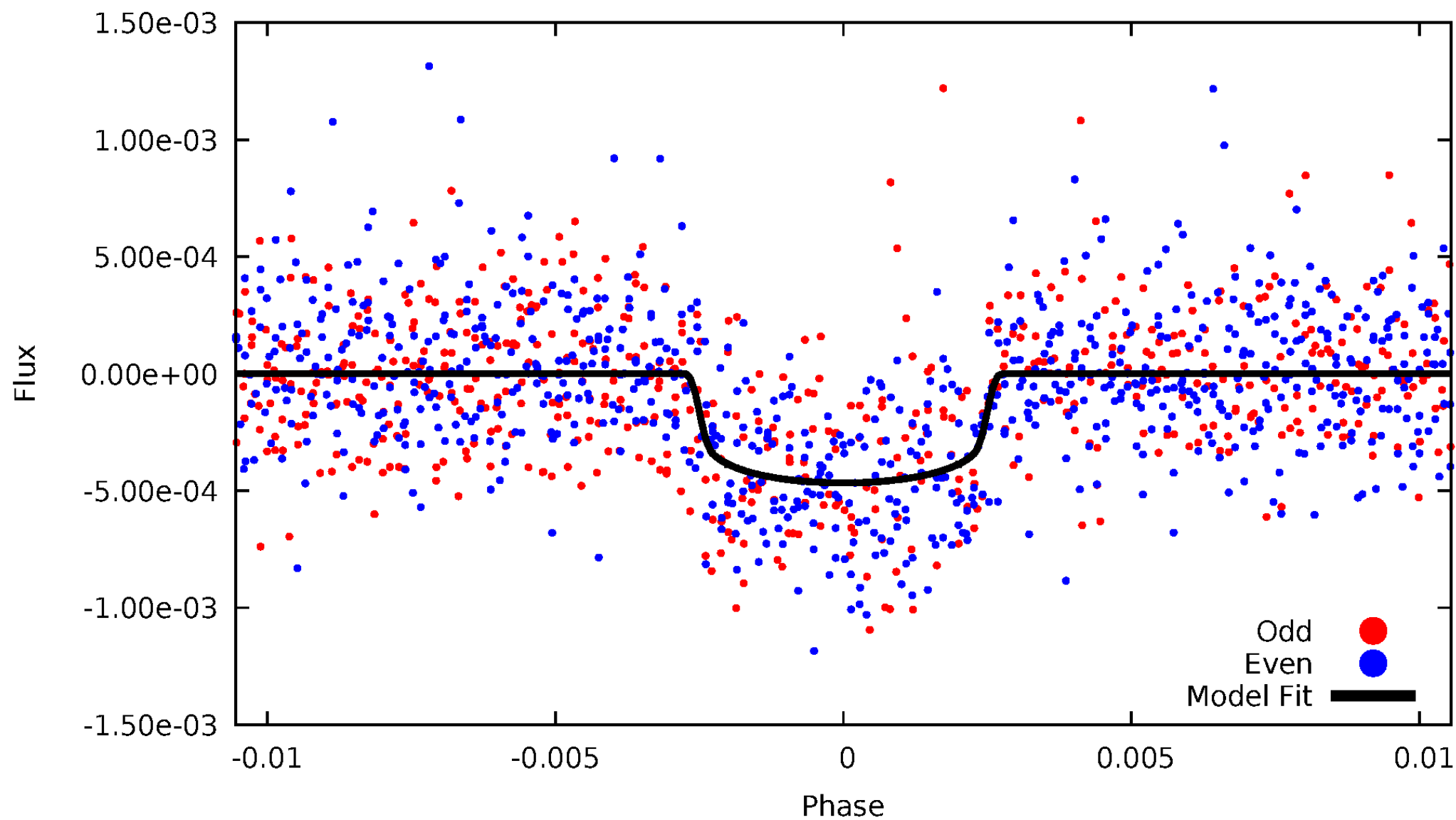


TCE 002442448-01



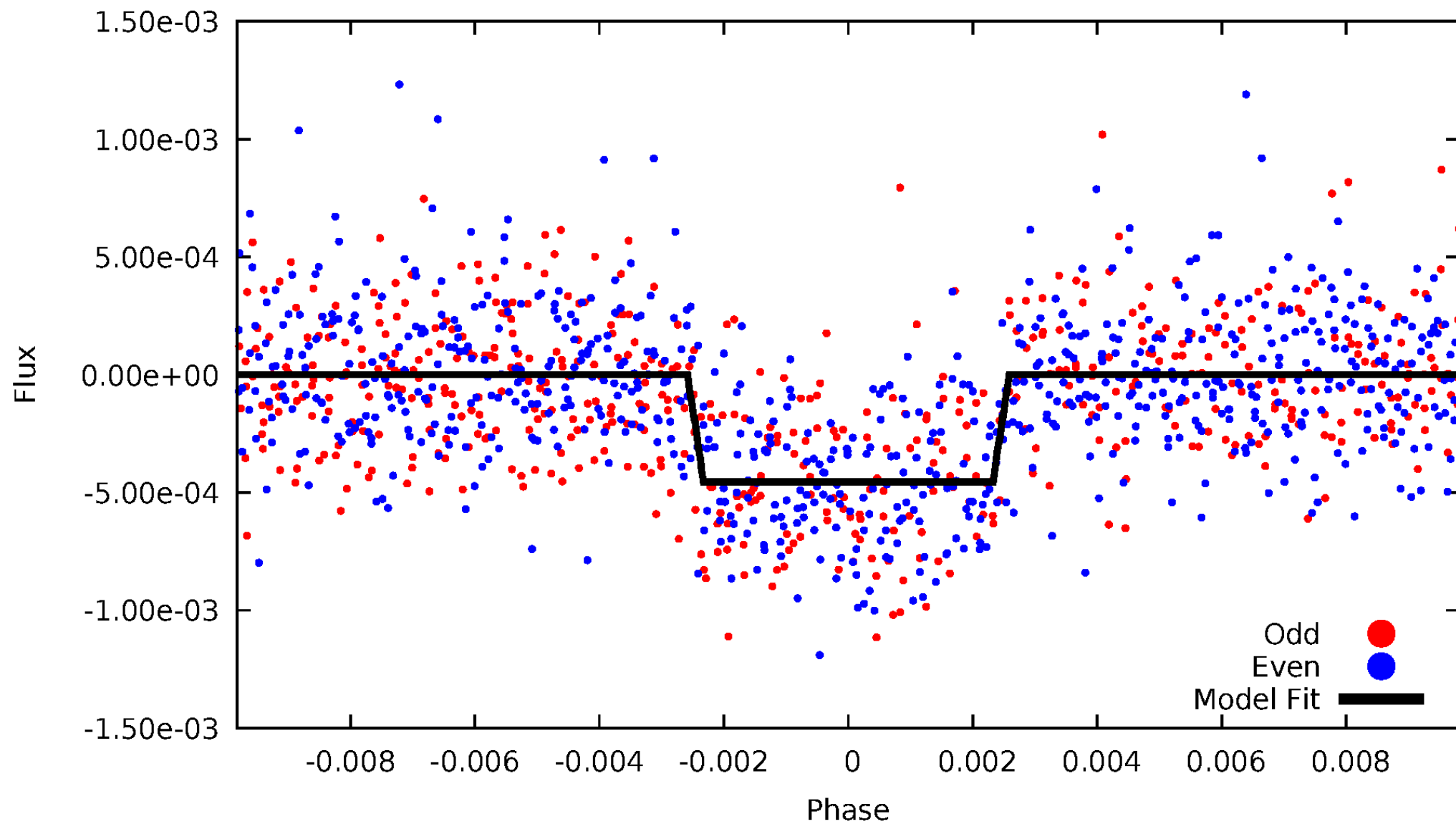
DV Odd/Even

TCE 002442448-01



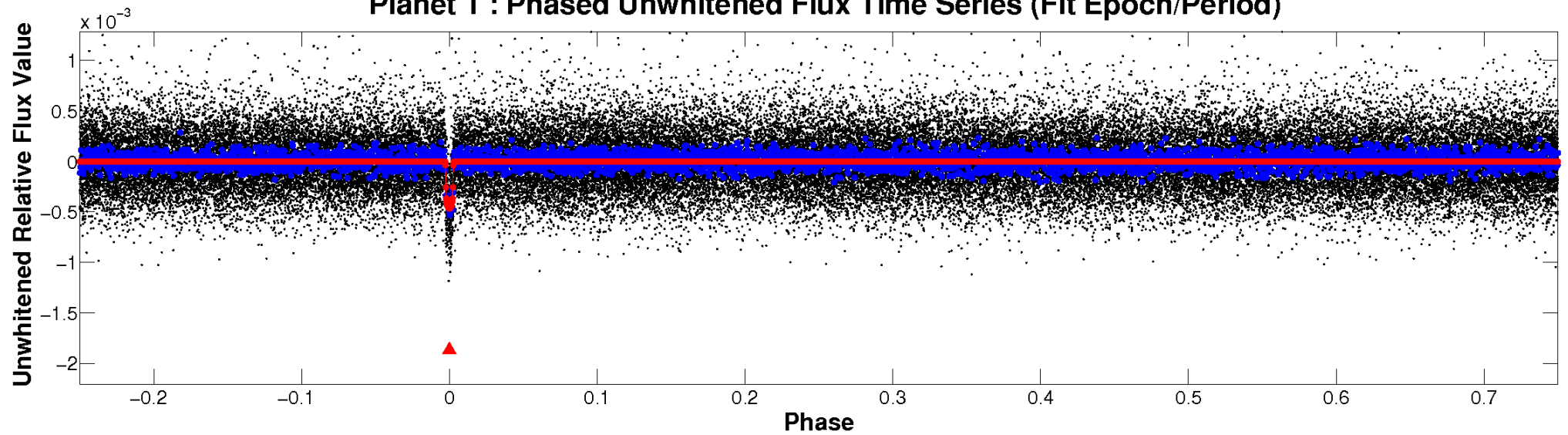
ALT Odd/Even

TCE 002442448-01

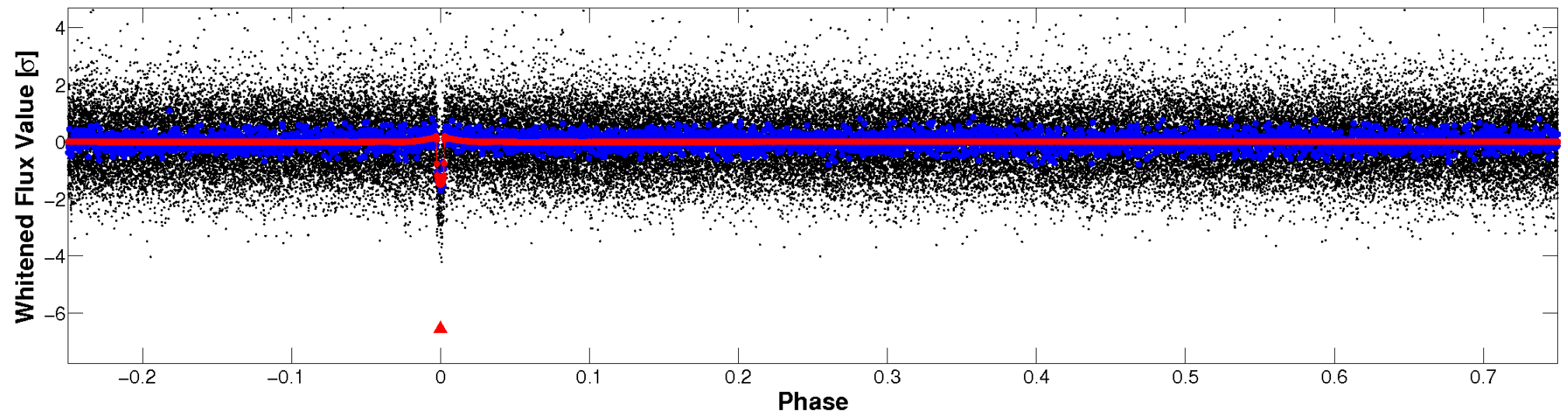


Non-Whitened Vs. Whitened Light Curve

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

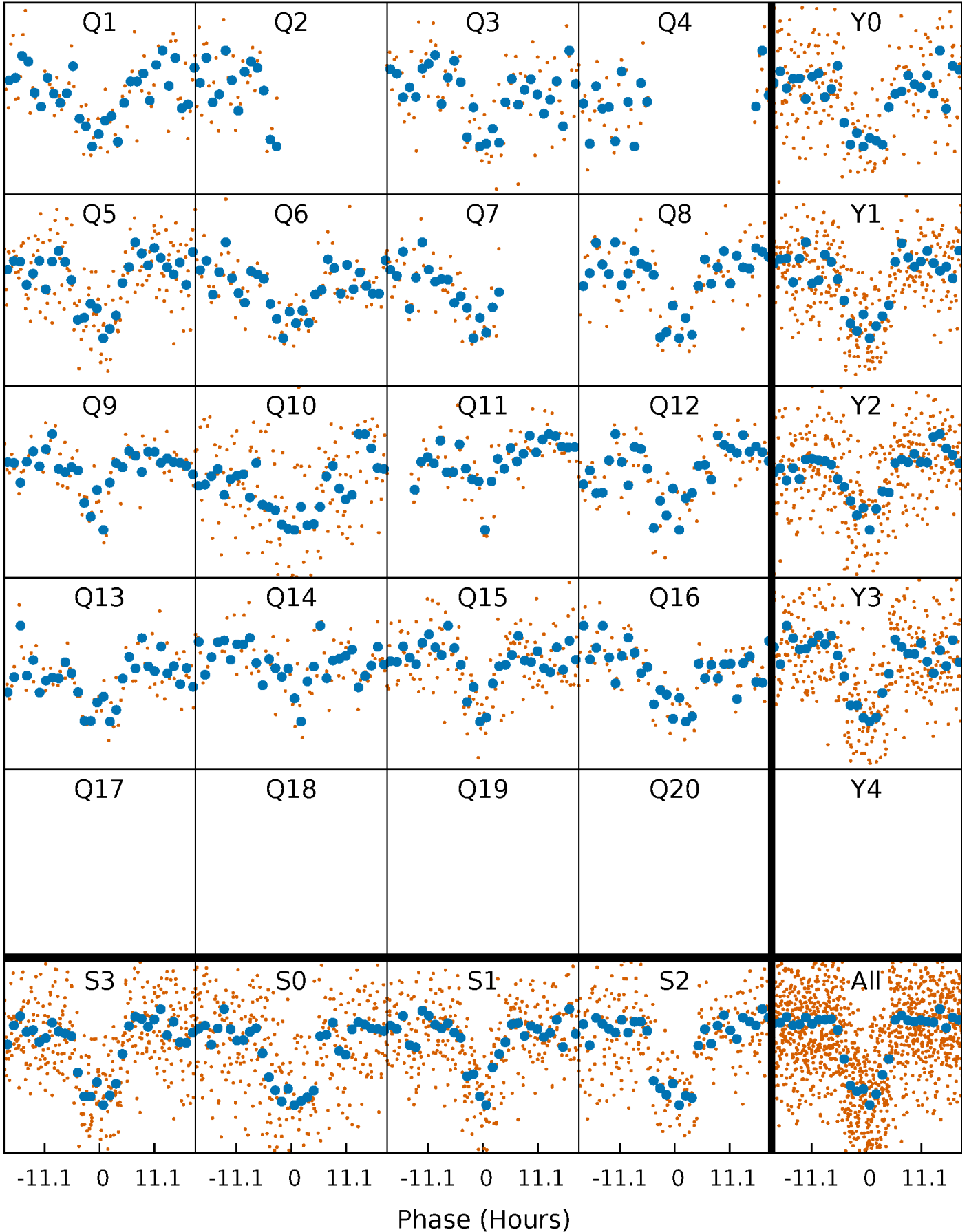


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



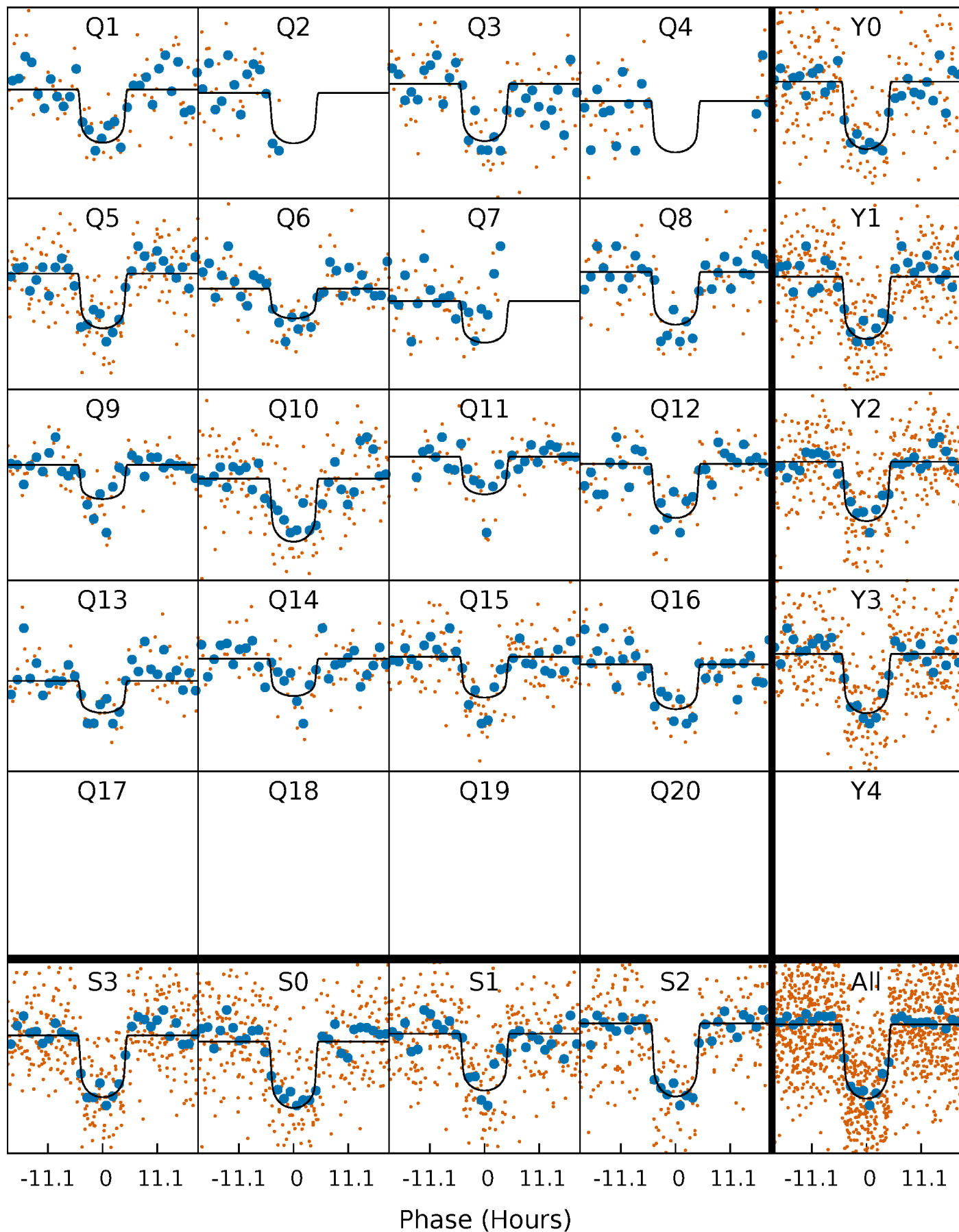
PDC Quarter-Phased Transit Curves

TCE 002442448-01 P= 76.613594 Days $T_0=153.798979$ (BKJD)



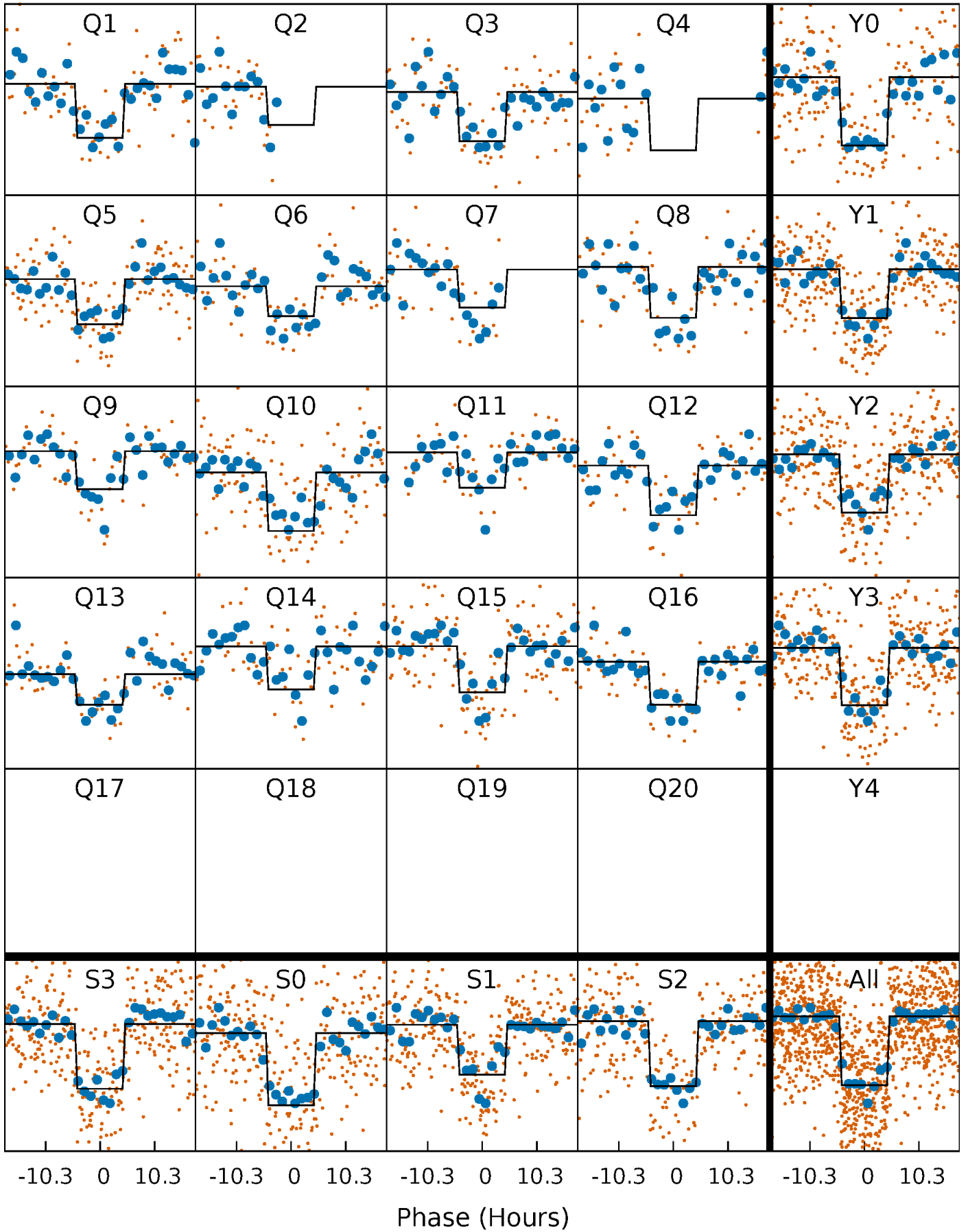
DV Quarter-Phased Transit Curves

TCE 002442448-01 P= 76.613594 Days $T_0=153.798979$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

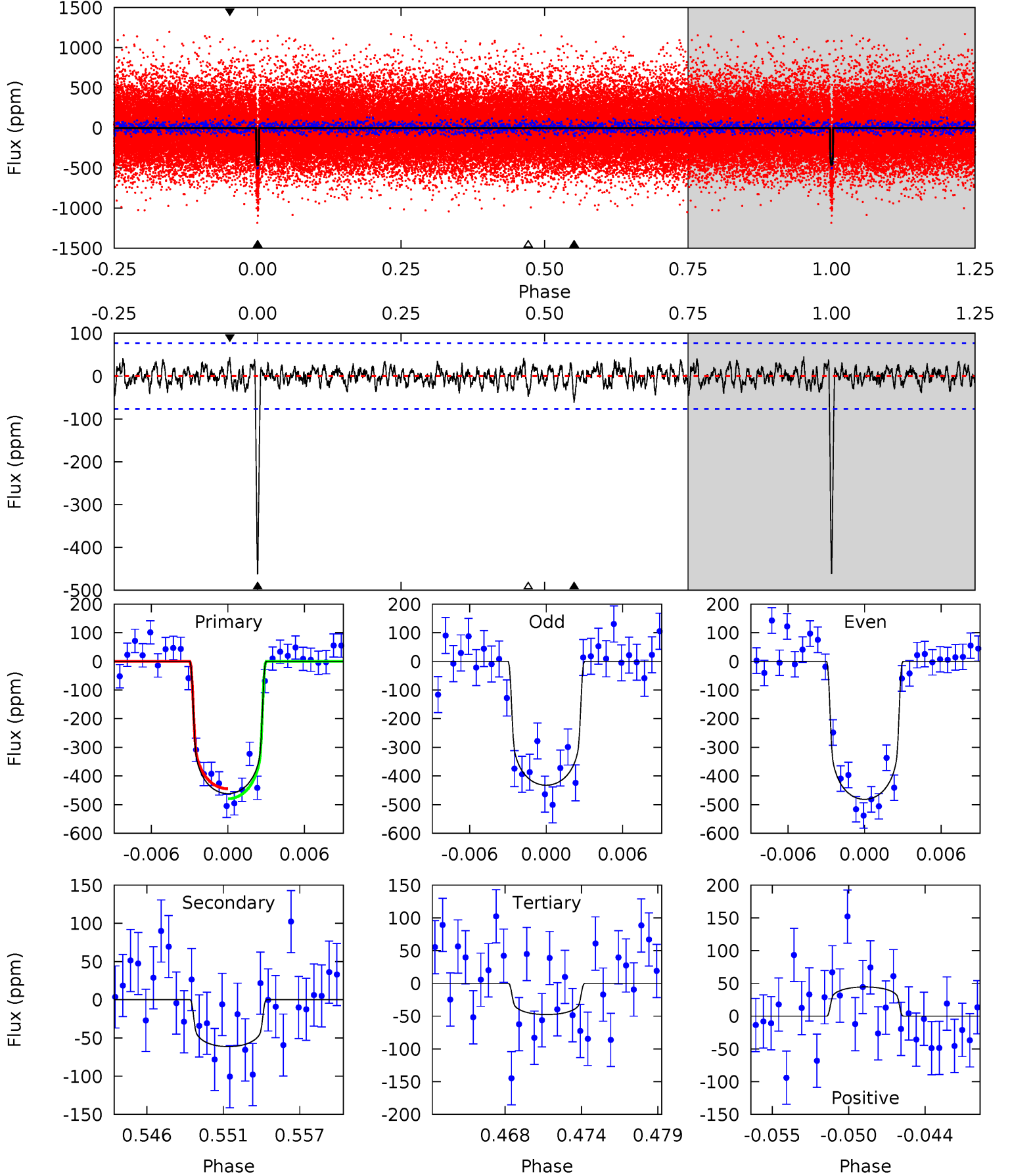
TCE 002442448-01 P= 76.613001 Days $T_0=153.804660$ (BKJD)



DV Model-Shift Uniqueness Test

002442448-01, P = 76.613594 Days, E = 77.185385 Days

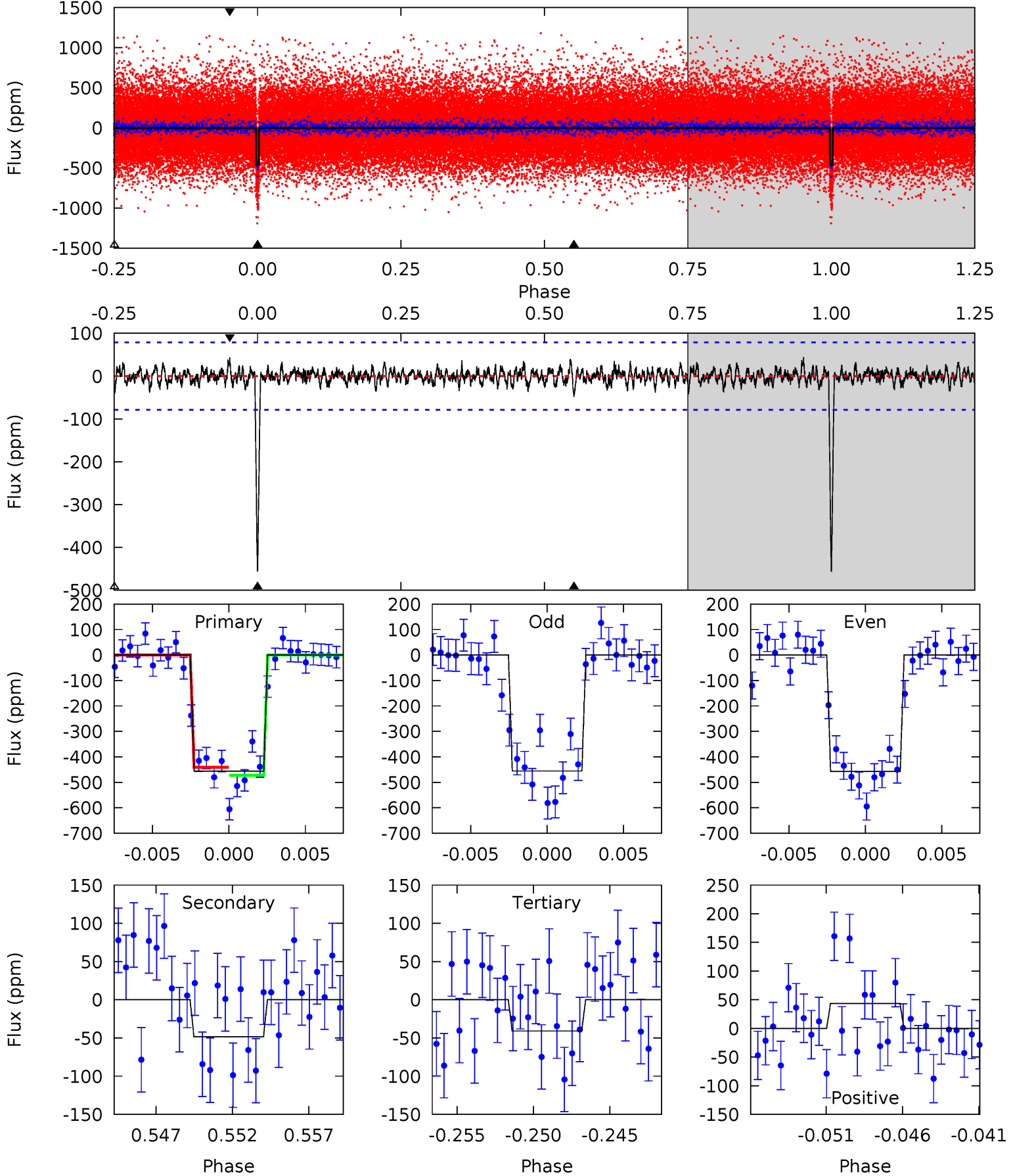
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.0	4.12	3.20	2.99	5.14	2.78	1.05	27.8	28.0	0.92	1.13	1.62	0.93	0.09	1.18



Alt Model-Shift Uniqueness Test

002442448-01, P = 76.613001 Days, E = 77.191659 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.9	3.19	2.68	2.84	5.15	2.80	0.82	27.3	27.1	0.51	0.35	0.05	1.01	0.09	1.04



Stellar Parameters For KIC 002442448

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6173^{+169}_{-206}	$4.408^{+0.087}_{-0.203}$	$-0.280^{+0.300}_{-0.300}$	$1.030^{+0.312}_{-0.134}$	$0.988^{+0.147}_{-0.120}$	$1.273^{+0.590}_{-0.647}$
	+3%/-3%	+2%/-5%	+107%/-107%	+30%/-13%	+15%/-12%	+46%/-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 002442448-01 / KOI 2812.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-61 ± 15	$2.47^{+0.58}_{-0.45}$	659^{+49}_{-38}	4033^{+297}_{-292}	668^{+380}_{-261}
Alt.	-49 ± 15	$2.44^{+0.52}_{-0.42}$	660^{+50}_{-35}	3896^{+306}_{-306}	546^{+315}_{-239}

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

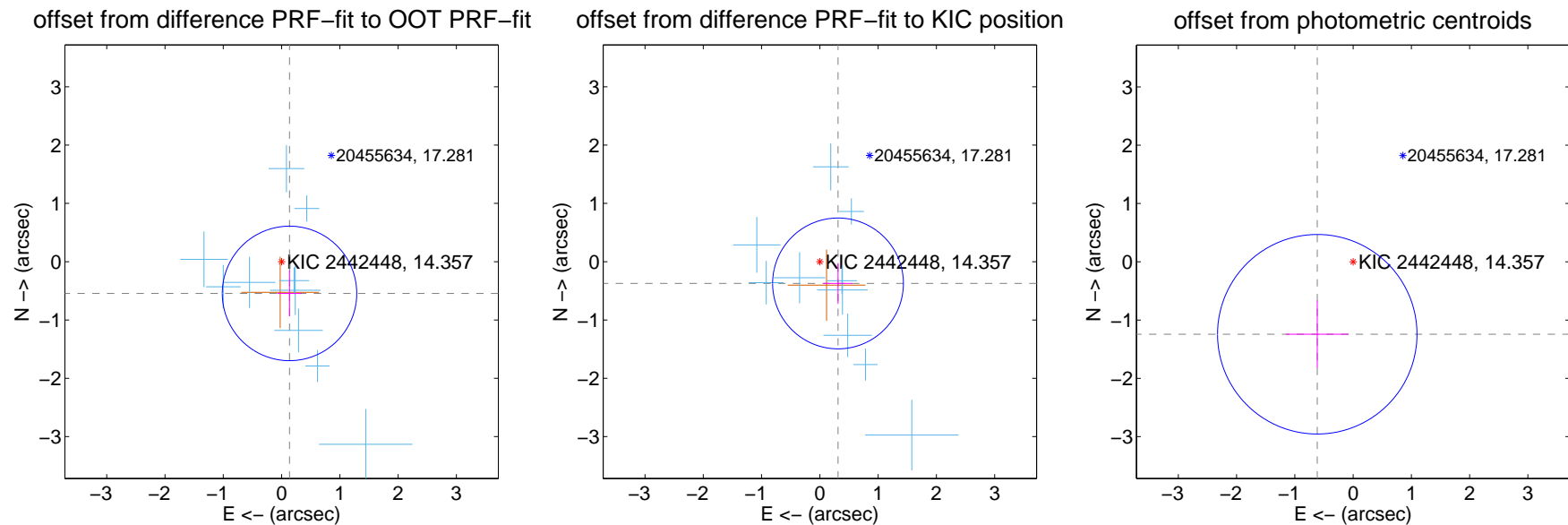
DV Centroid Data

Supplemental centroid analysis for 002442448-01. Kepler magnitude: 14.36. Transit SNR 23.45

There are 10 quarters with good PRF difference image offsets

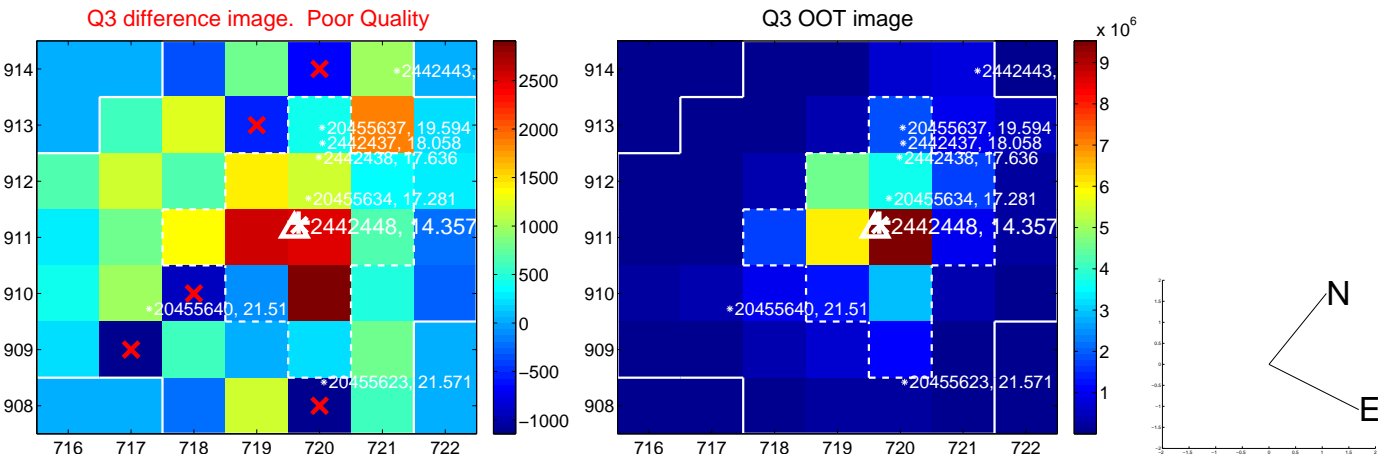
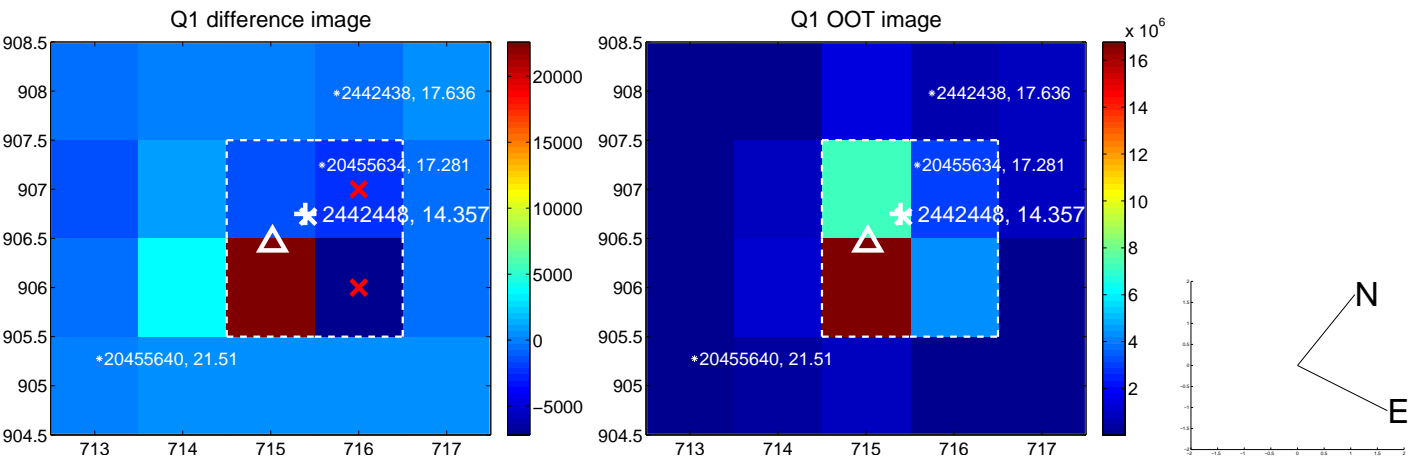
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.561 ± 0.384	1.46	-0.136 ± 0.210	-0.544 ± 0.393
PRF-fit source offset from KIC position	0.486 ± 0.374	1.30	-0.312 ± 0.249	-0.373 ± 0.351
photometric centroid source offset	1.39 ± 0.57	2.43	0.62 ± 0.54	-1.24 ± 0.58

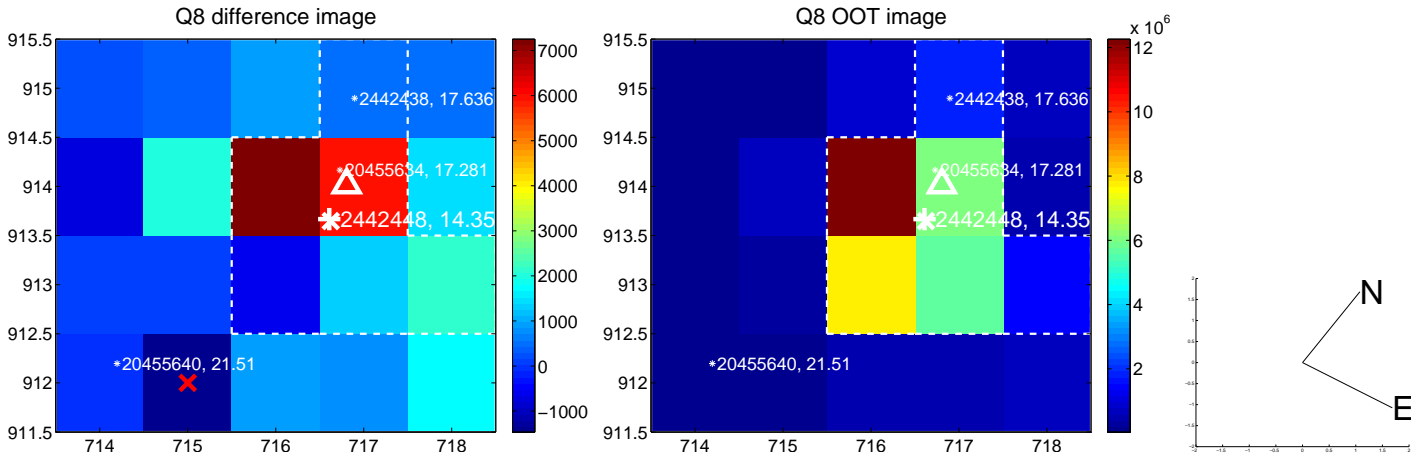
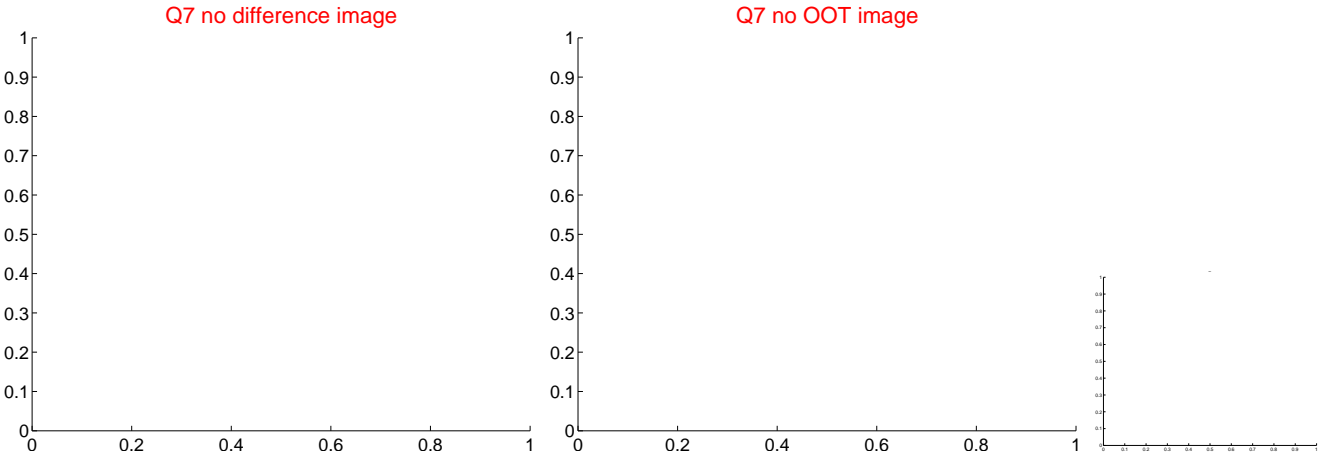
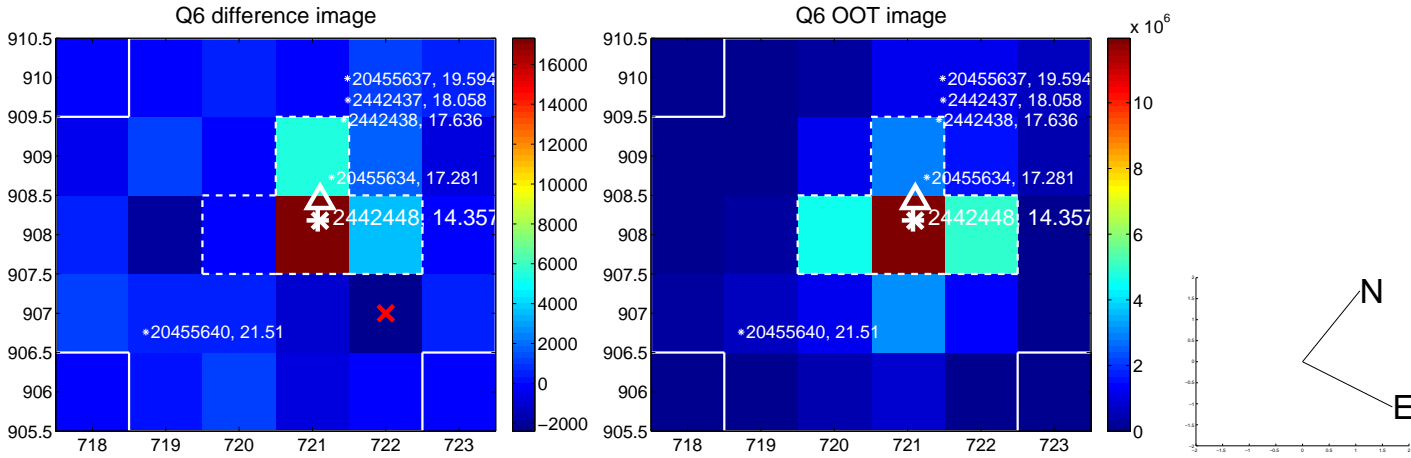
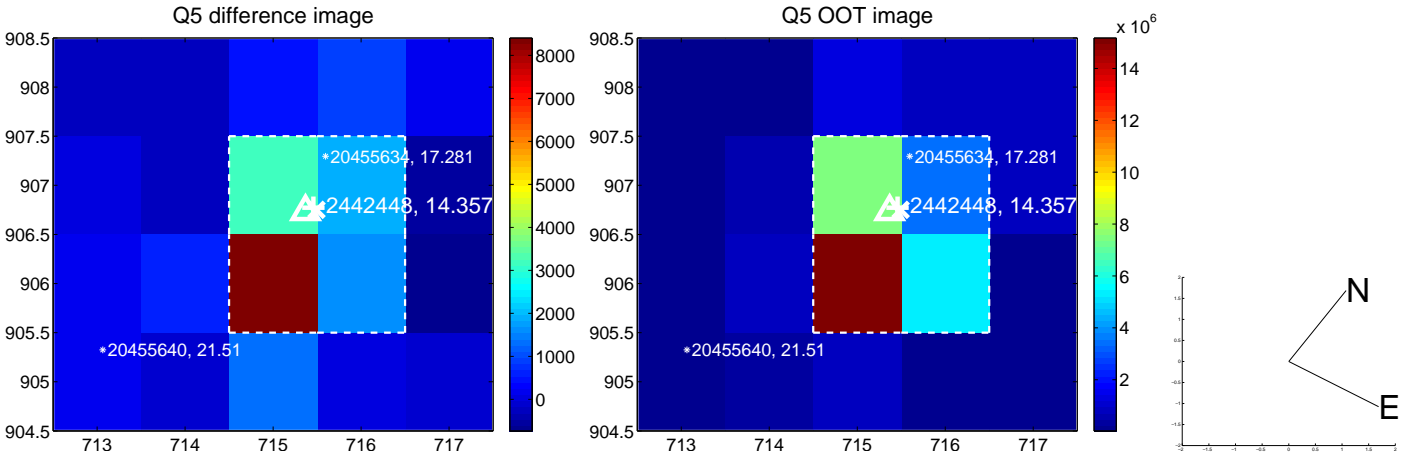


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

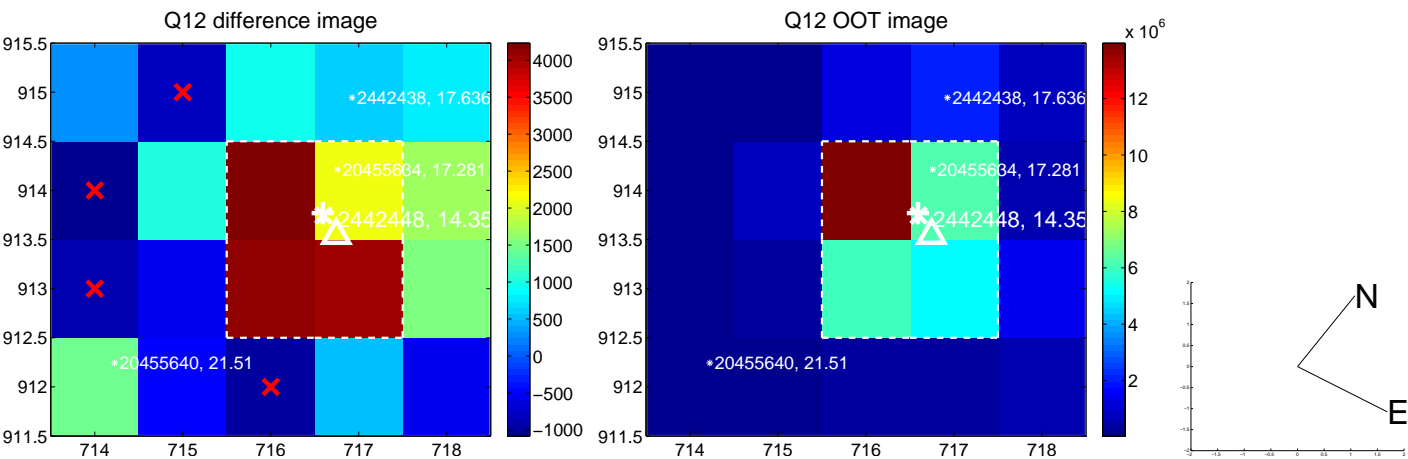
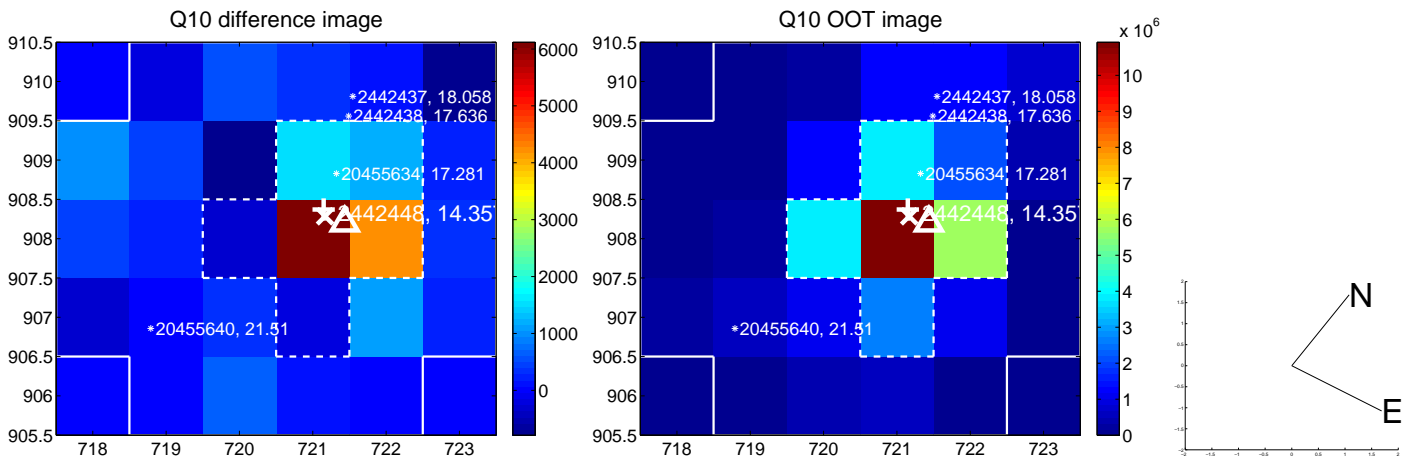
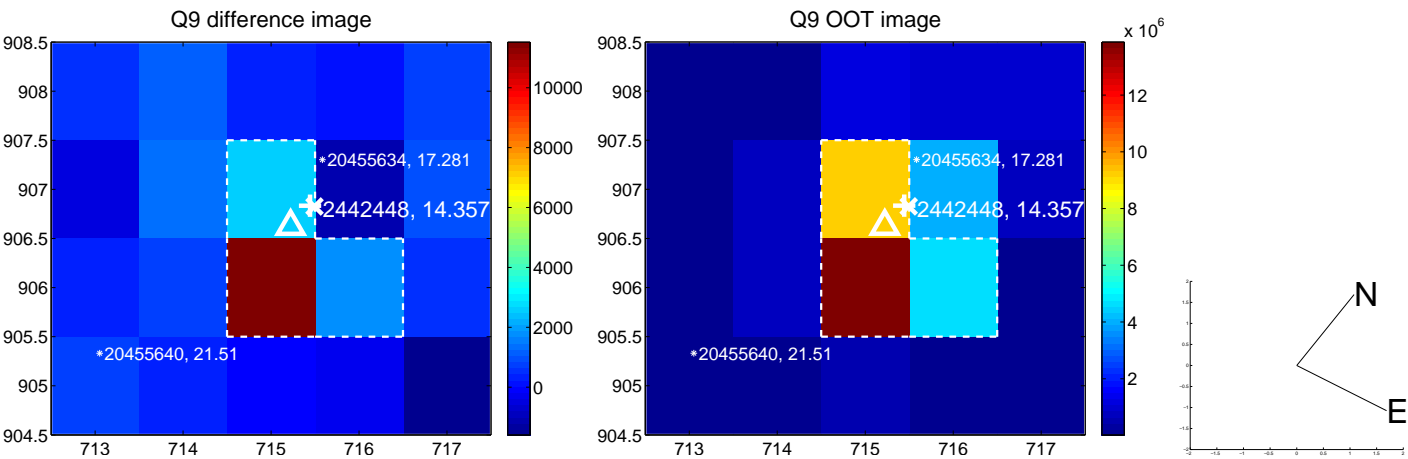
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



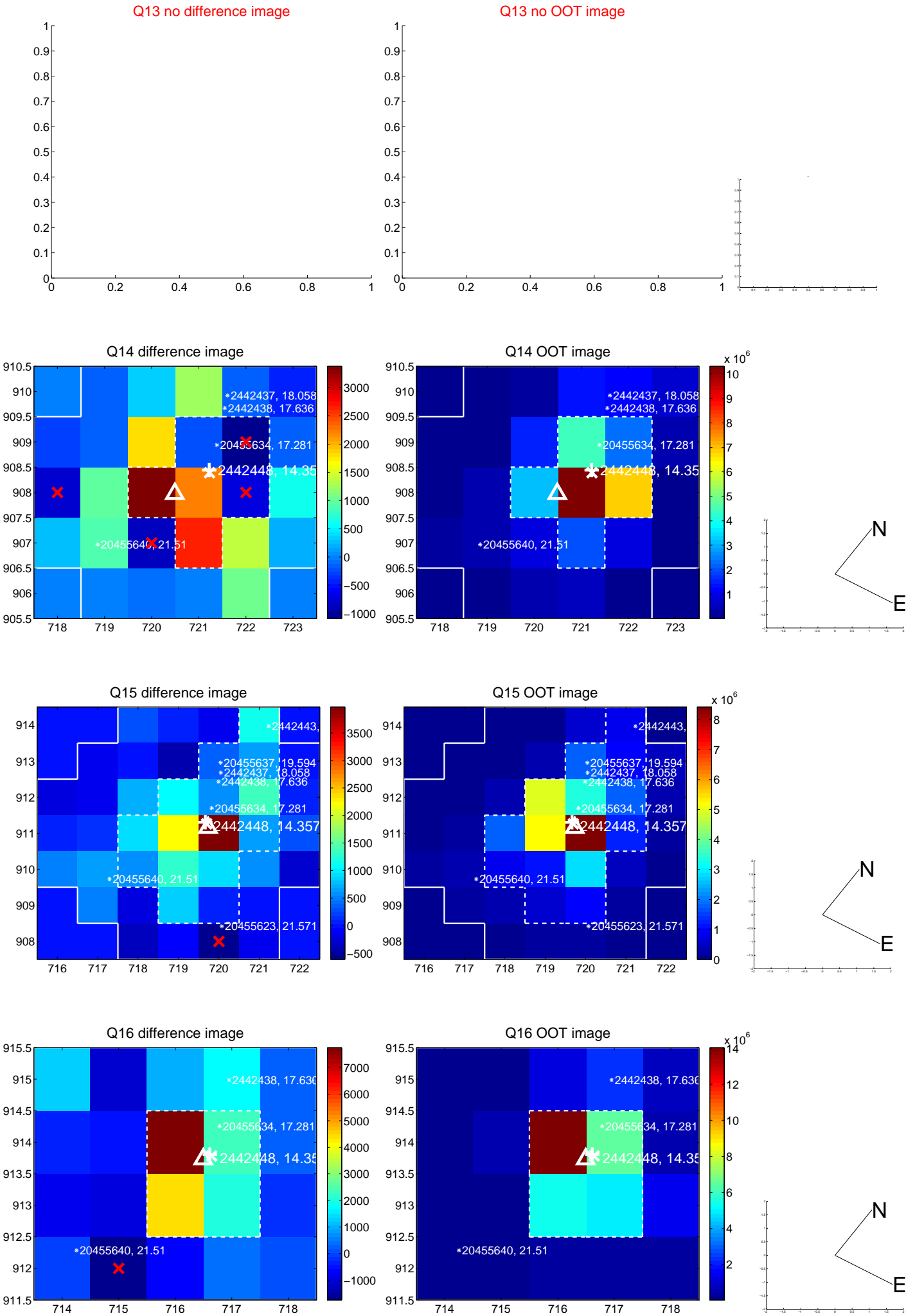
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



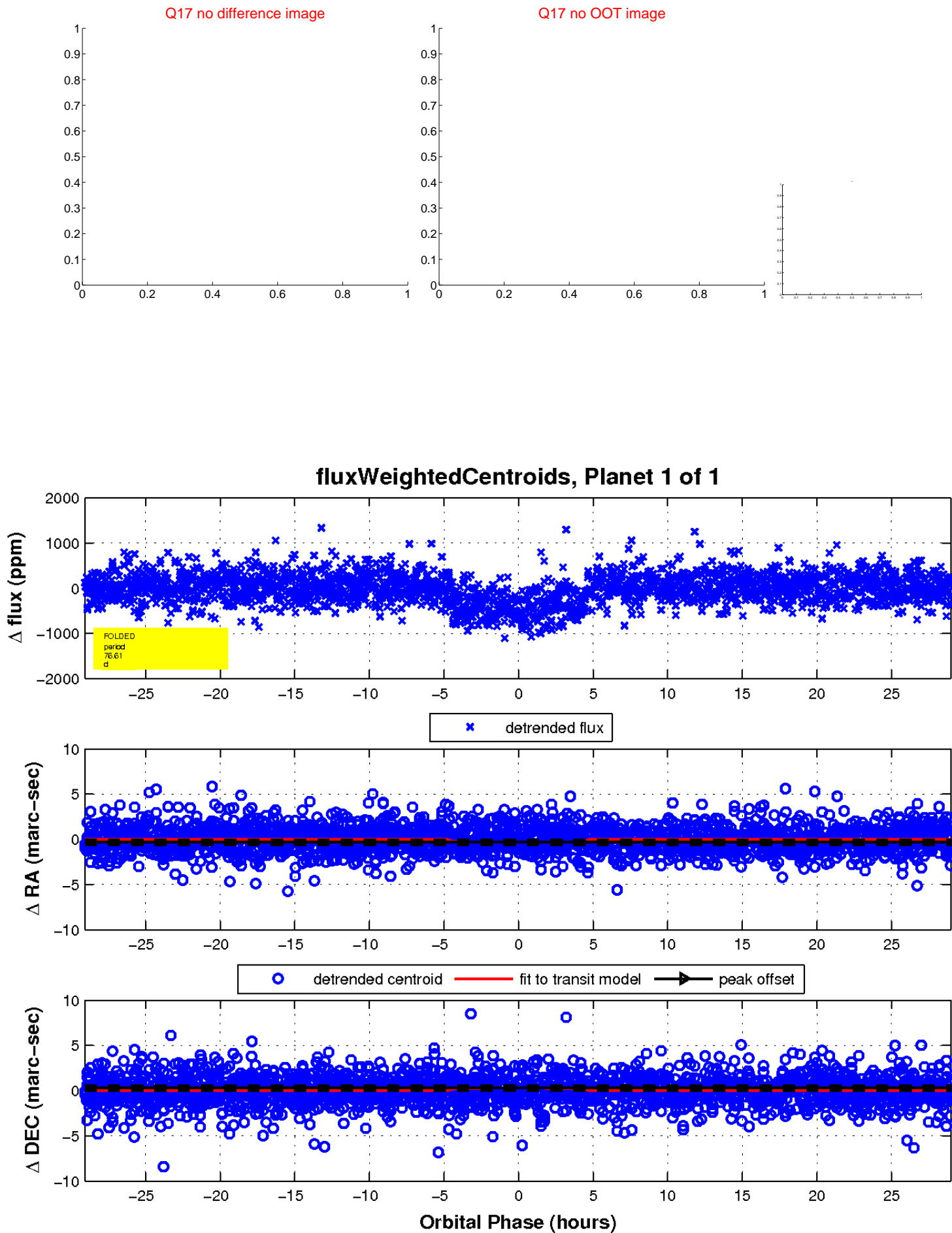
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

