

KIC 012643582

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})
012643582-01	OBS	3626.01	44.145781	167.392378	221274.0	4.103	999.0	600.7	0.90	5876	51.33	15.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012643582-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_KIC_POS

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.

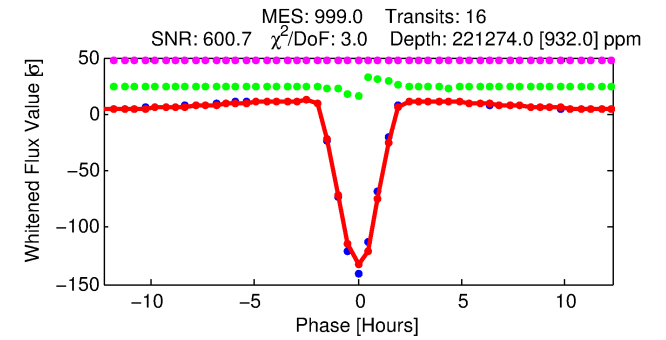
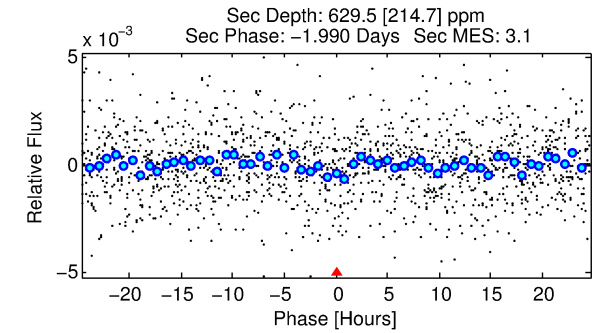
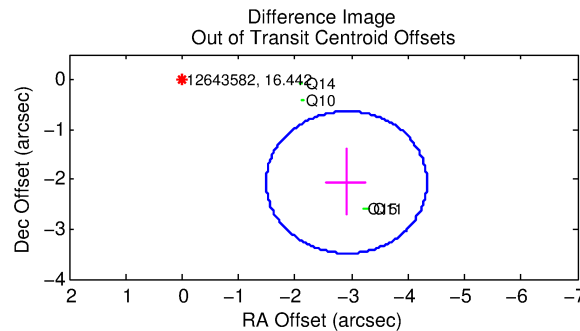
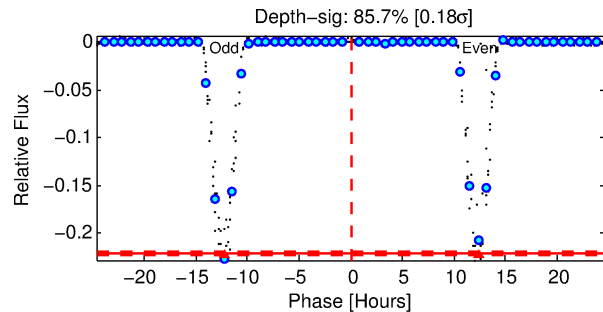
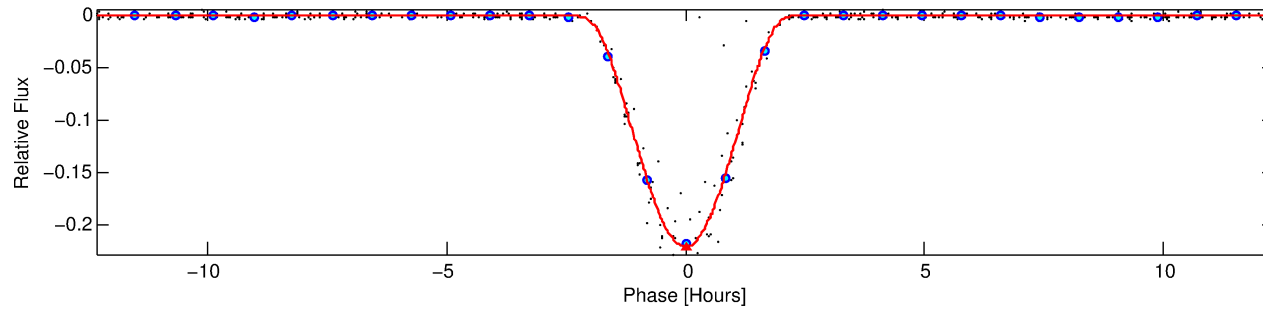
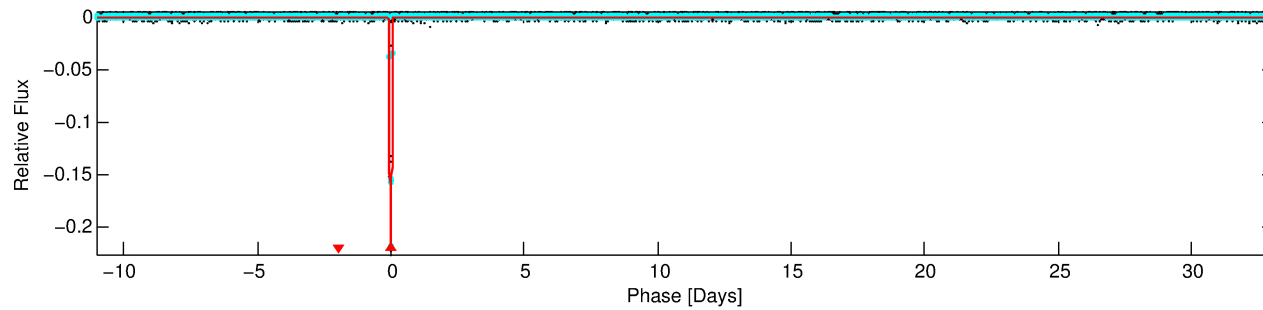
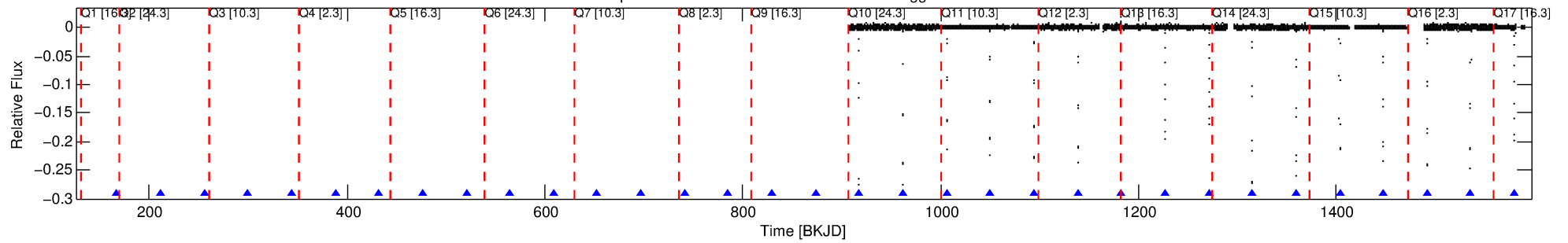
Ephemeris Match Information For 012643582-01

No Significant Match Found

DV One-Page Summary

KIC: 12643582 Candidate: 1 of 1 Period: 44.146 d
KOI: K03626.01 Corr: 0.999

Kp: 16.44 R*: 0.90 Rs Teff: 5876.0 K Logg: 4.49 Fe/H: -0.300



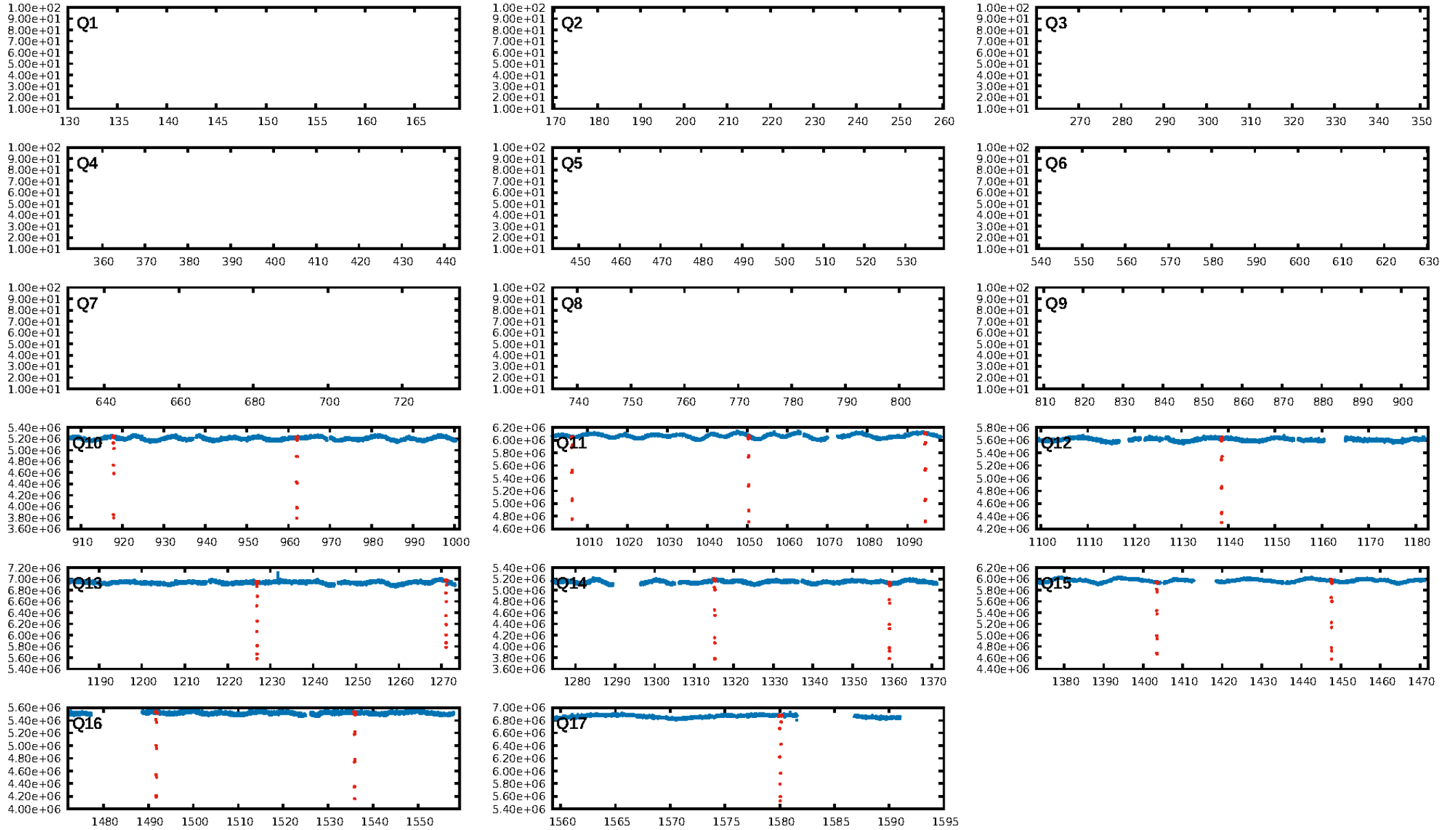
DV Fit Results:

Period = 44.14578 [0.00003] d
Epoch = 167.3924 [0.0007] BKJD
Rp/R* = 0.5250 [0.0979]
a/R* = 111.35 [1.61]
b = 0.70 [0.17]
Seff = 15.28 [5.78]
Teff = 504 [48] K
Rp = 51.33 [17.47] Re
a = 0.2369 [0.0572] AU
Ag = 7.37 [4.55] [1.40σ]
Teffp = 1285 [168] K [4.48σ]

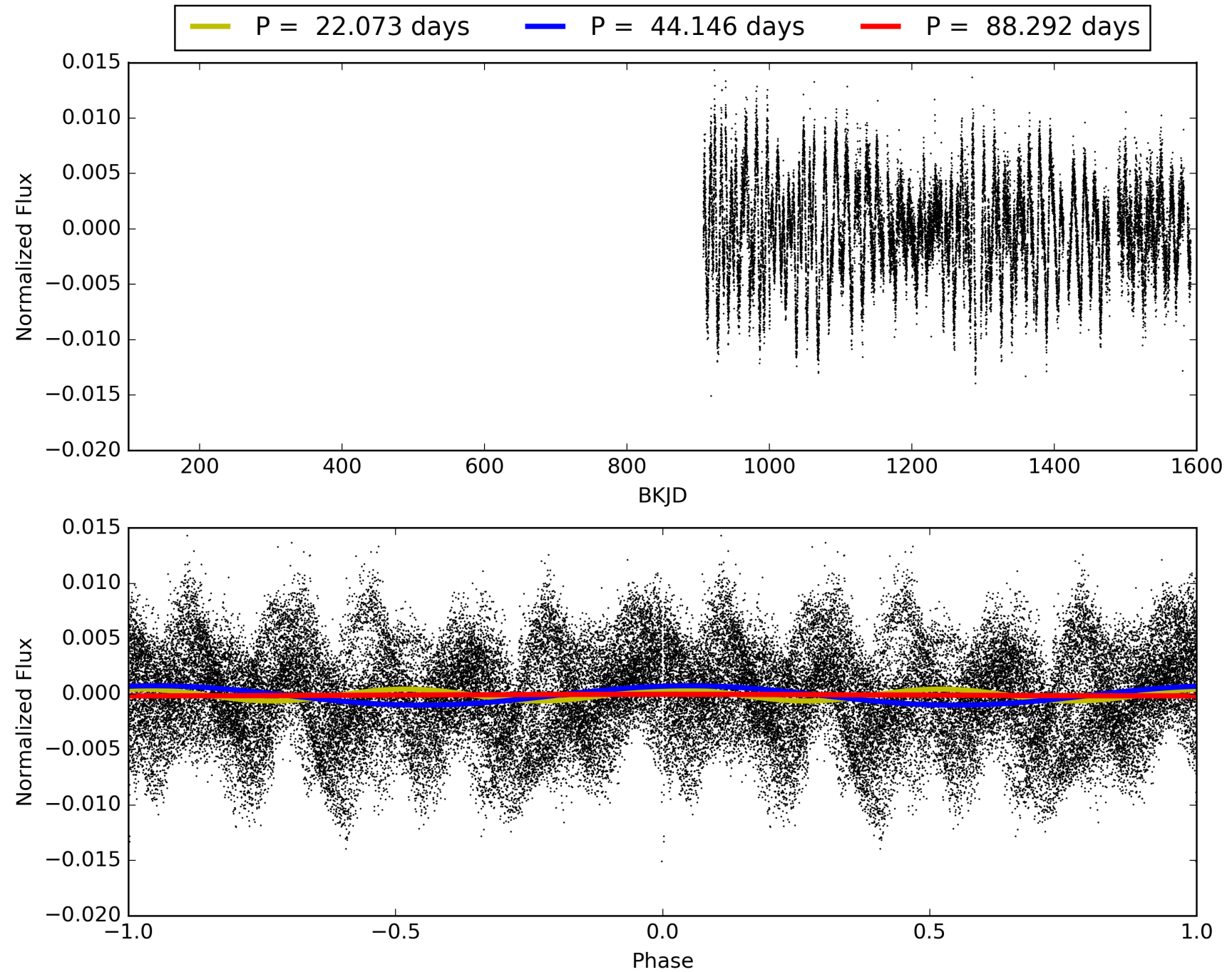
DV Diagnostic Results:

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 [15/15]
GhostDiagnostic-chr: 0.3563
Centroid-sig: 0.0%
Centroid-so: 3.113 arcsec [889.09σ]
OotOffset-rm: 3.569 arcsec [7.52σ]
OotOffset-st: 2/2/0/0 [4]
KicOffset-rm: 0.135 arcsec [1.65σ]
KicOffset-st: 2/2/2/2 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

TCE 012643582-01, PDC Light Curves

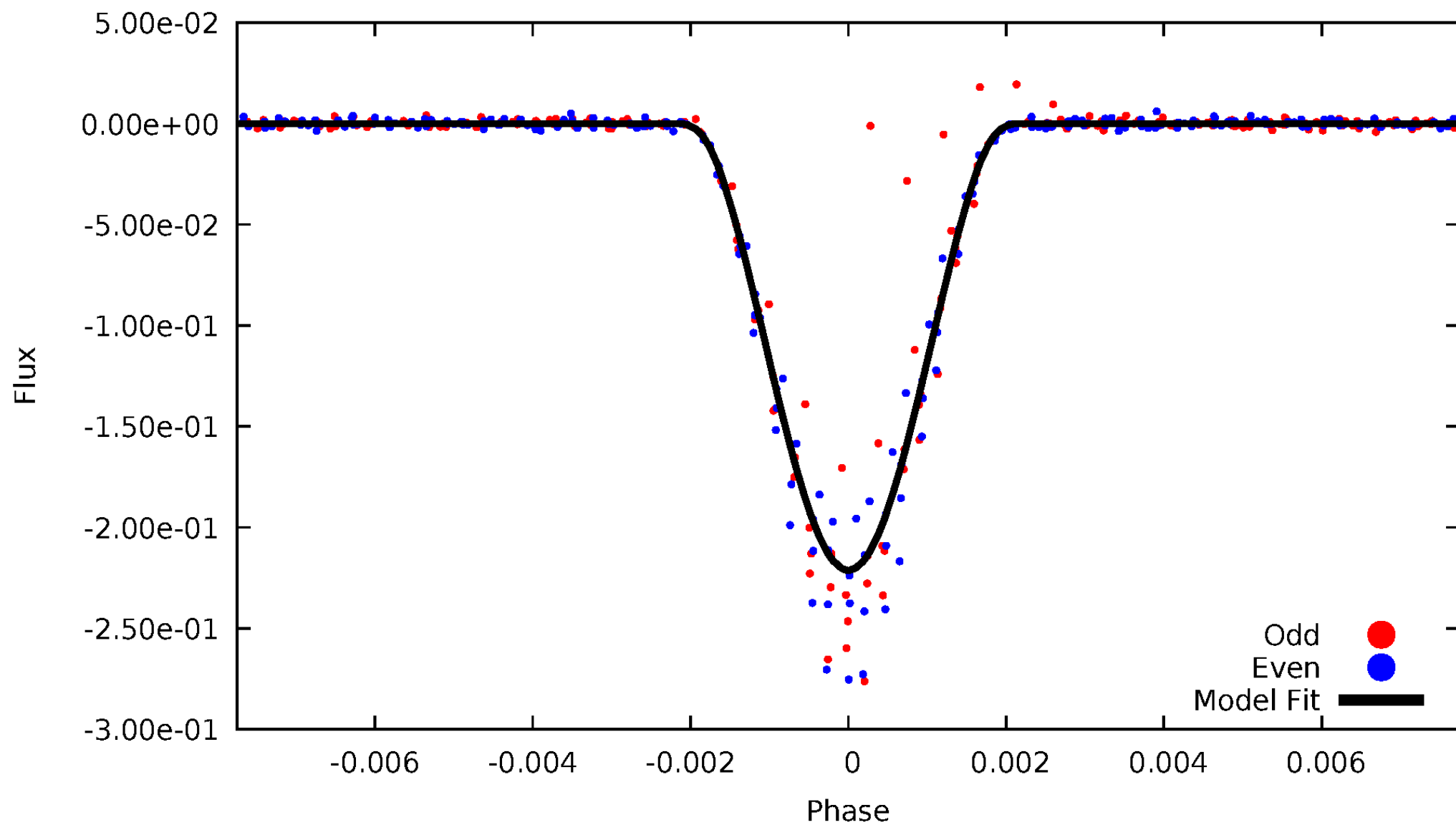


TCE 012643582-01



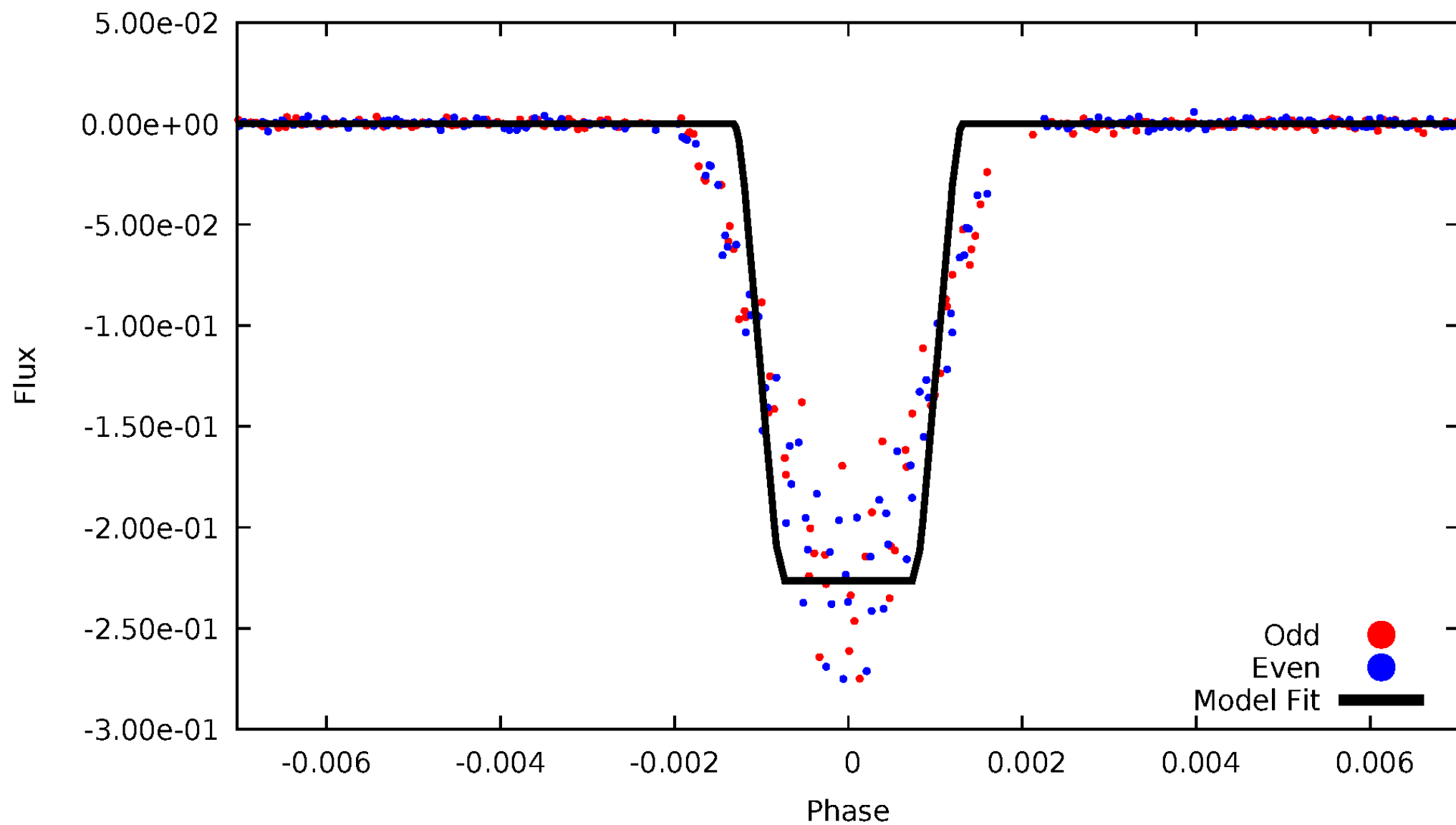
DV Odd/Even

TCE 012643582-01



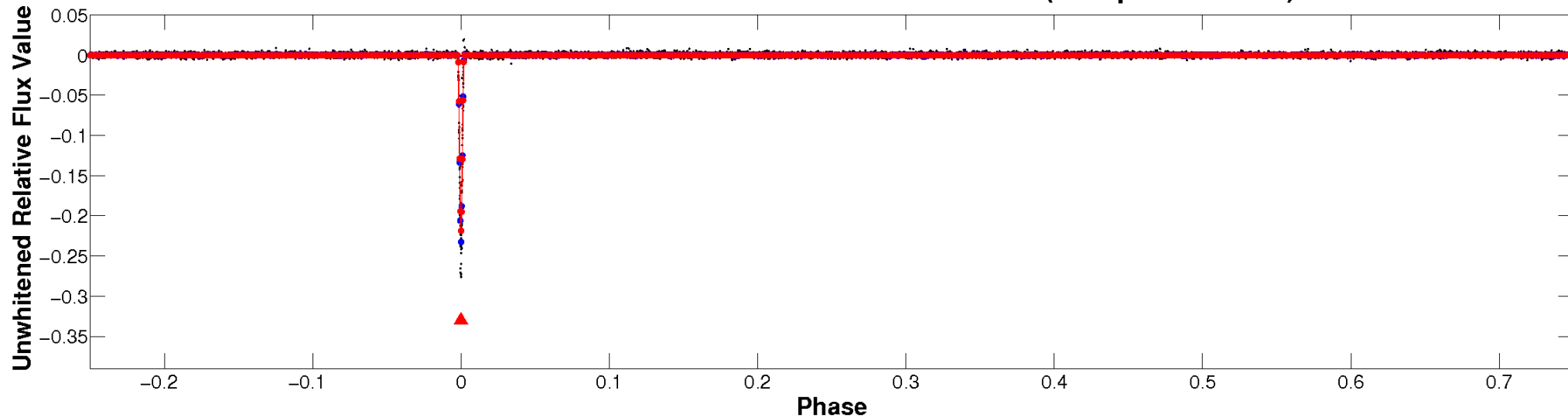
ALT Odd/Even

TCE 012643582-01

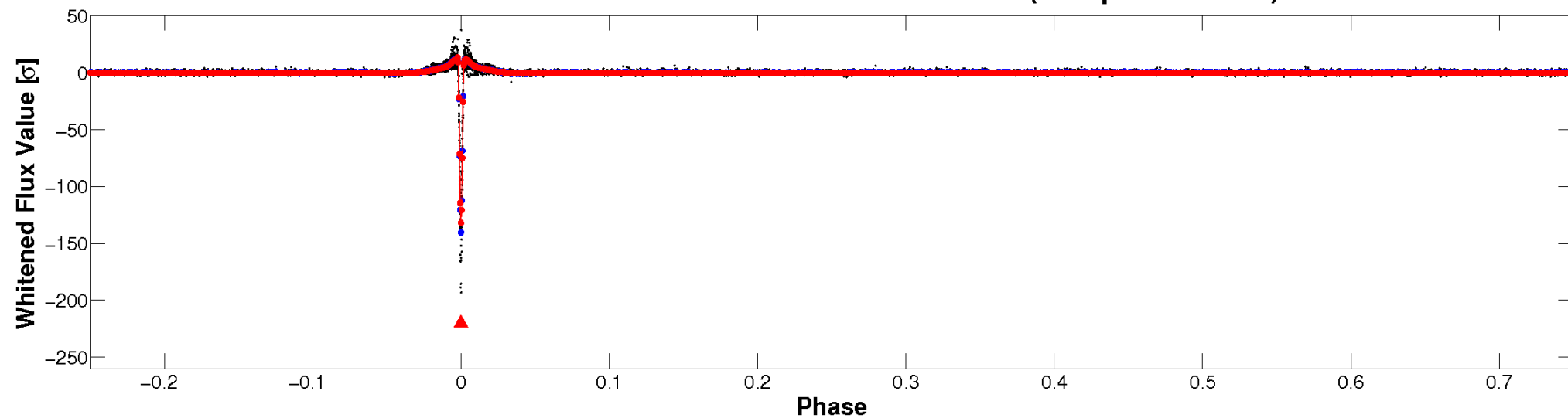


Non-Whitened Vs. Whitened Light Curve

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

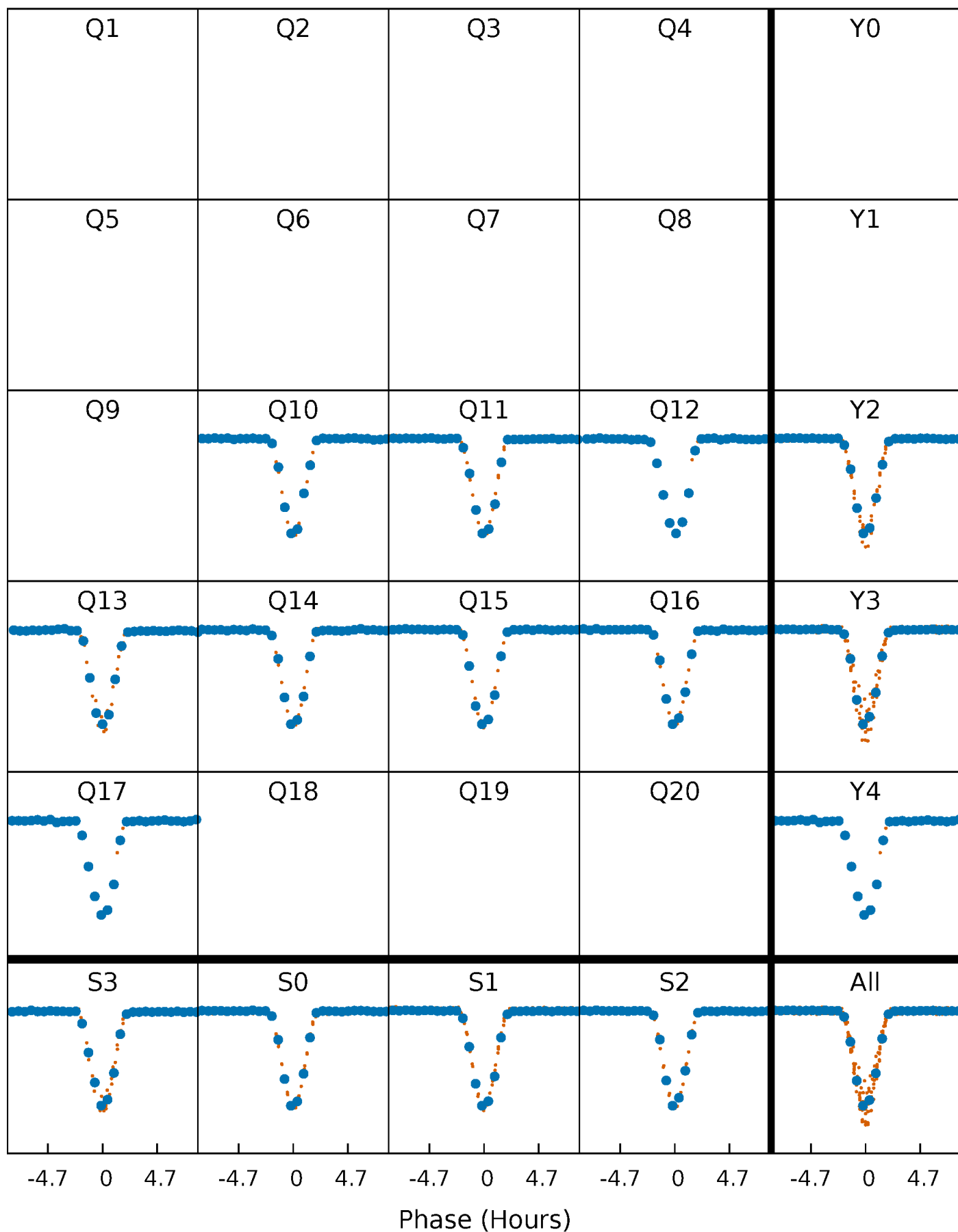


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



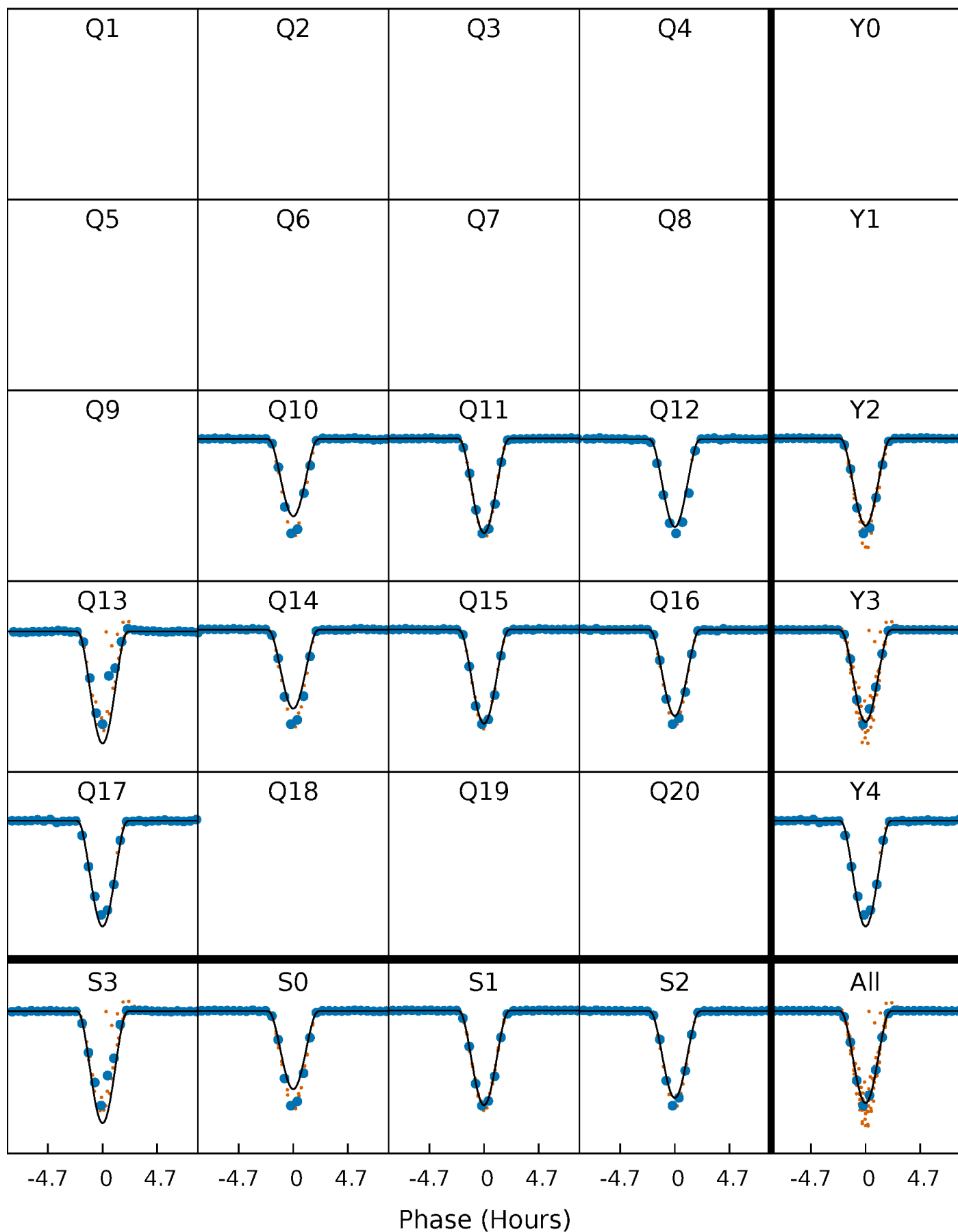
PDC Quarter-Phased Transit Curves

TCE 012643582-01 P= 44.145781 Days $T_0=167.392378$ (BKJD)



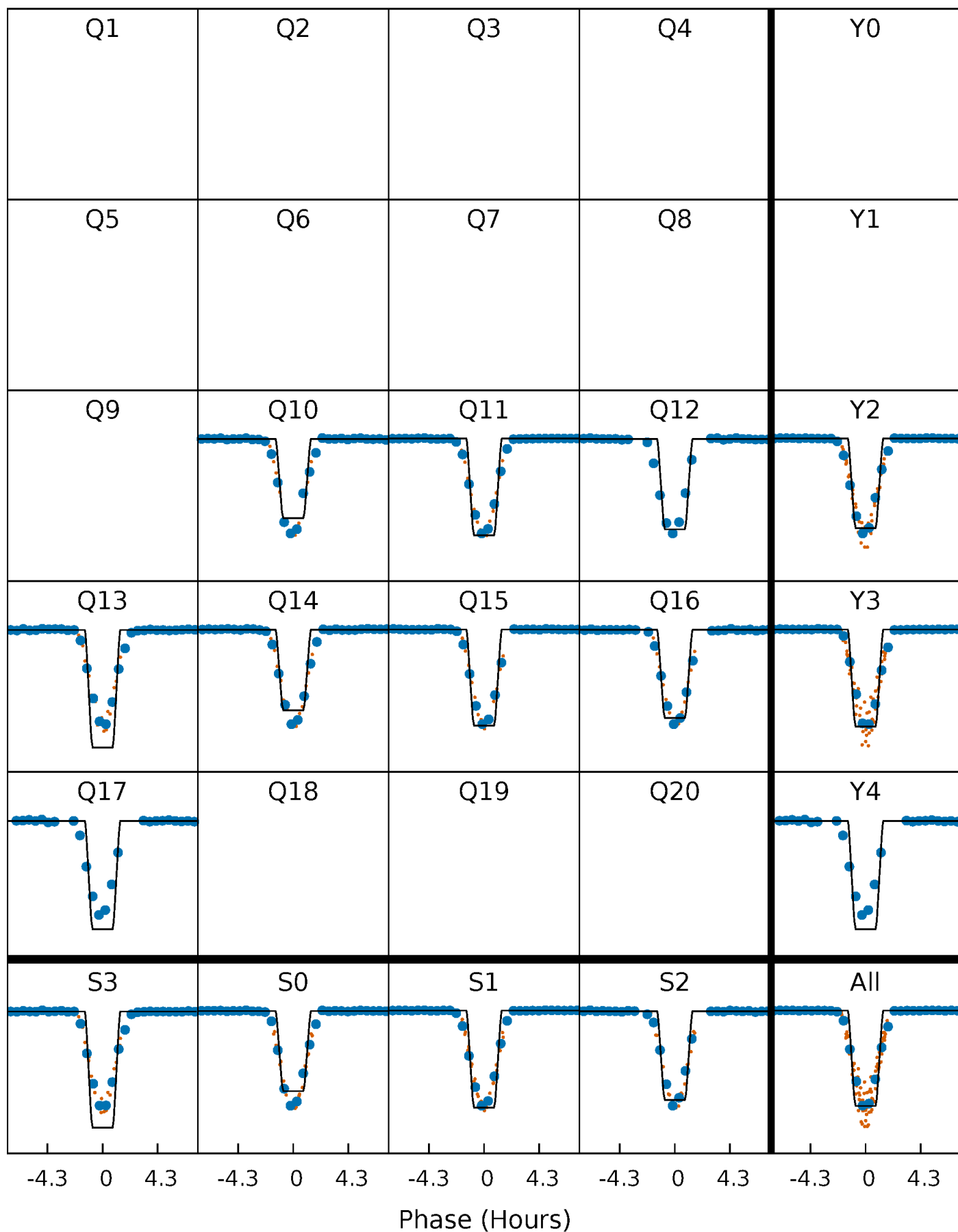
DV Quarter-Phased Transit Curves

TCE 012643582-01 P= 44.145781 Days $T_0=167.392378$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

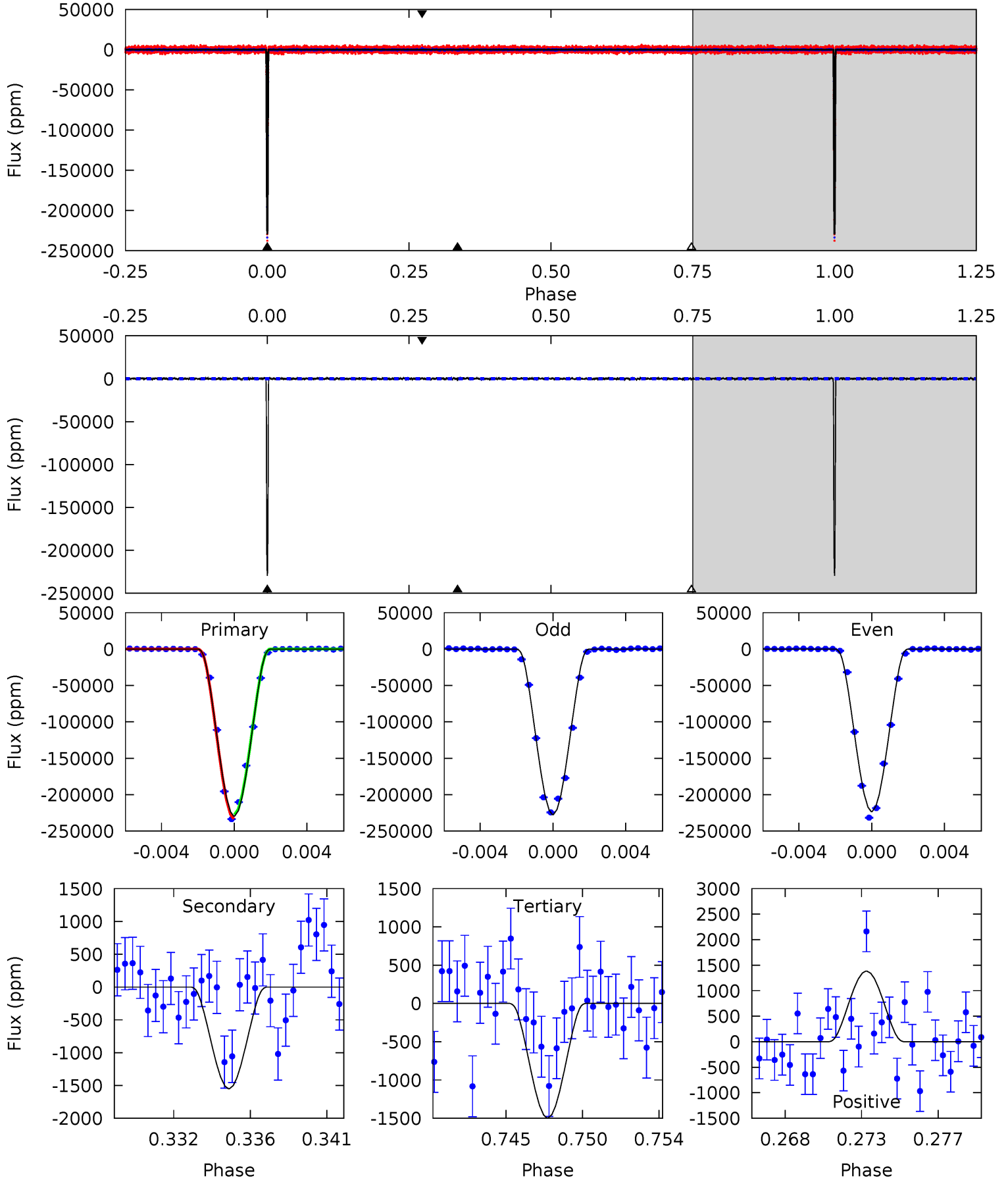
TCE 012643582-01 P= 44.145304 Days $T_0=167.403788$ (BKJD)



DV Model-Shift Uniqueness Test

012643582-01, P = 44.145781 Days, E = 167.392378 Days

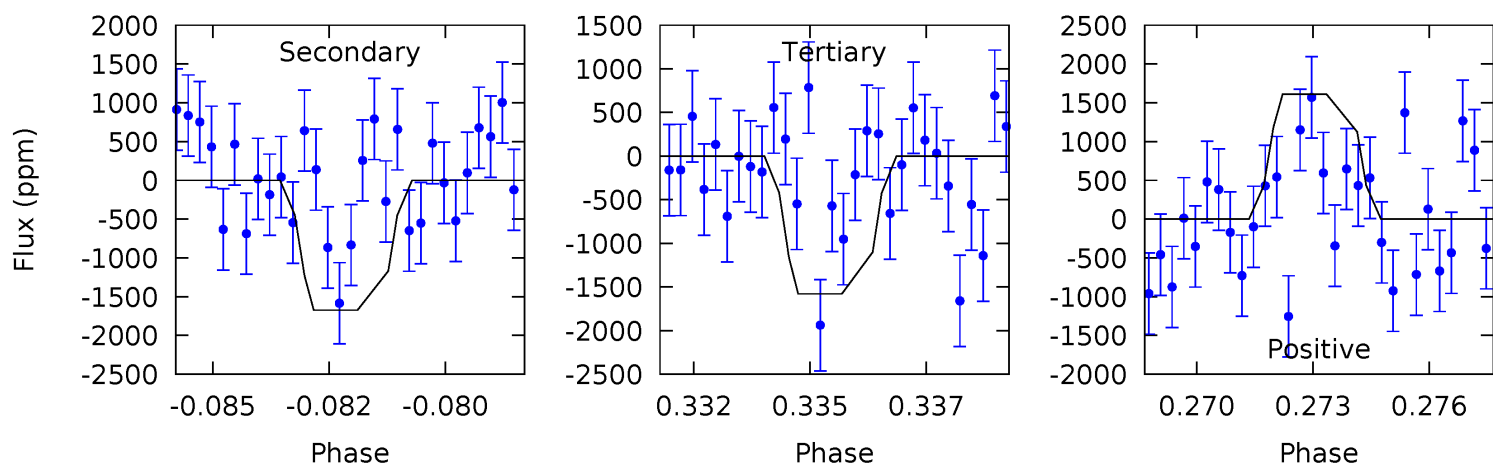
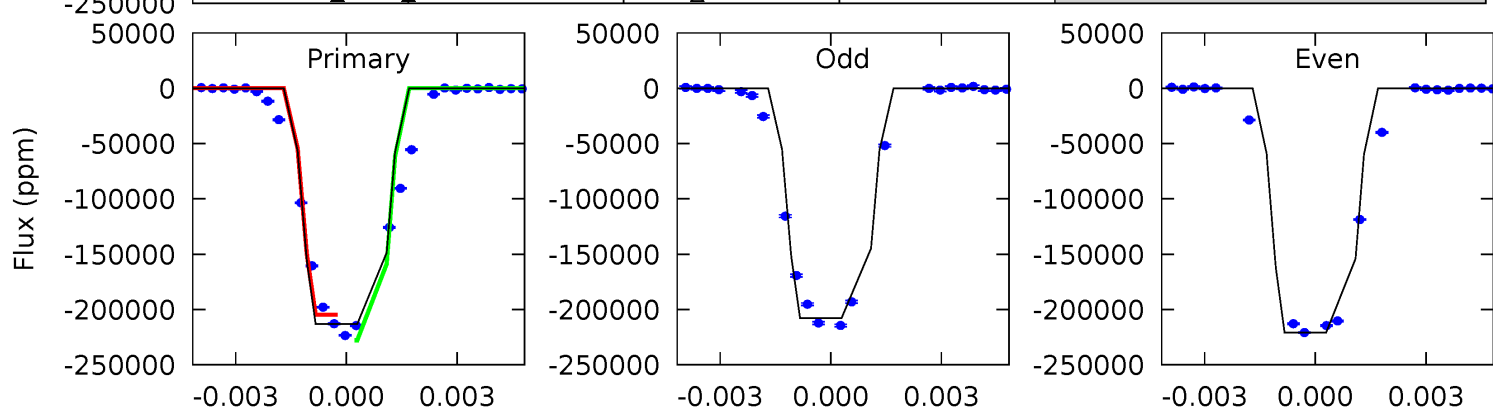
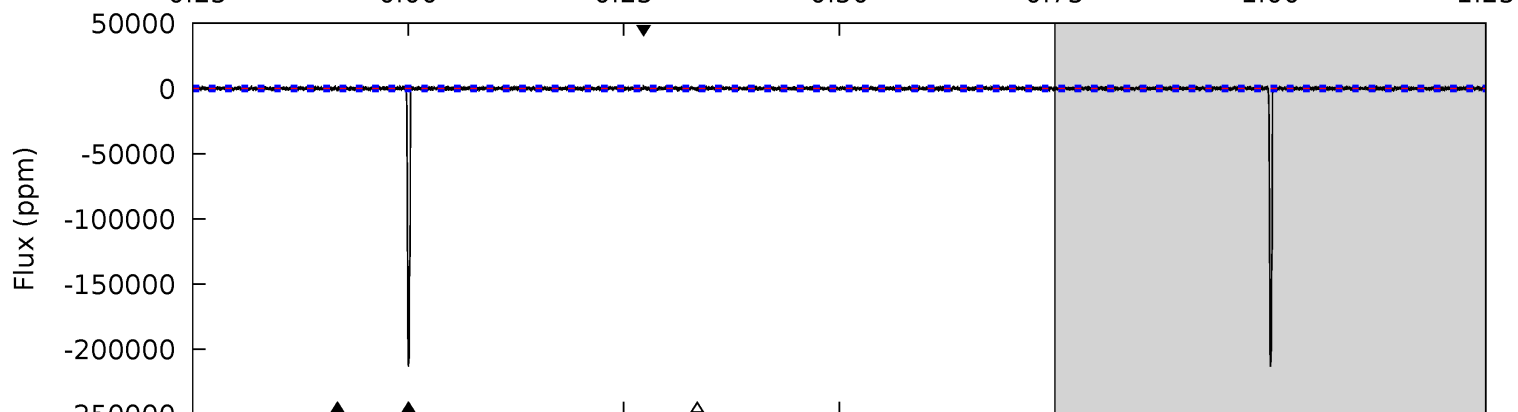
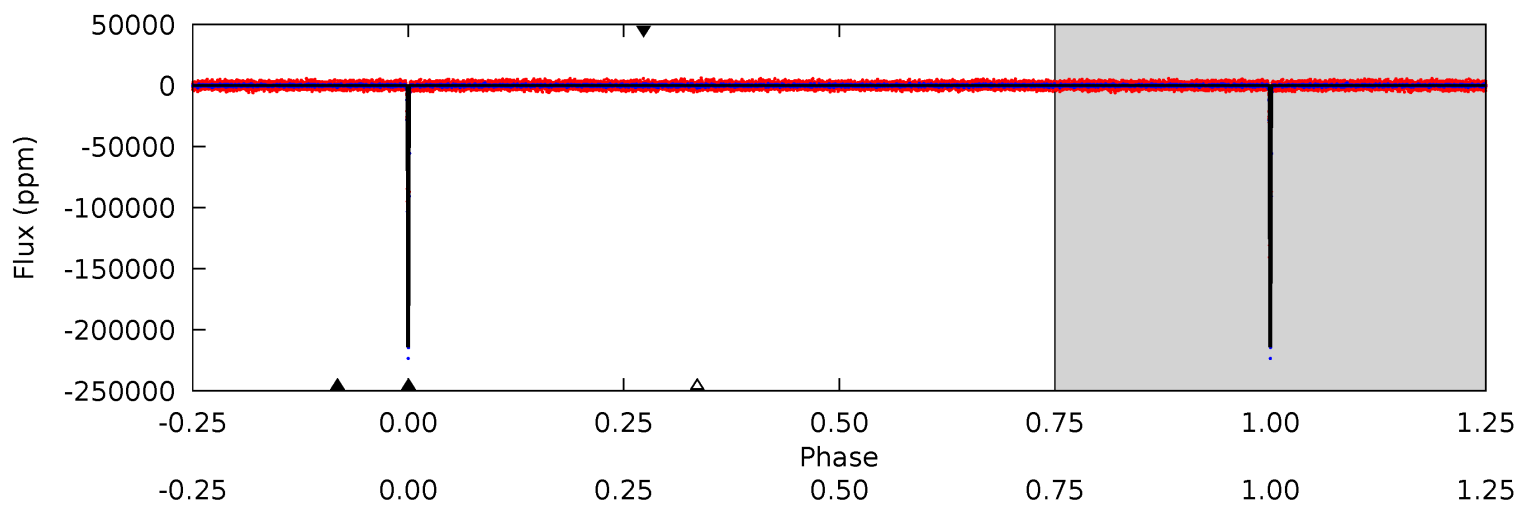
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1314	8.88	8.57	7.93	5.19	2.86	2.47	1306	1307	0.30	0.95	13.0	0.94	0.01	0



Alt Model-Shift Uniqueness Test

012643582-01, P = 44.145304 Days, E = 167.403788 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
633.9	4.98	4.69	4.79	5.28	3.01	1.31	629.2	629.1	0.29	0.18	20.7	1.00	0.01	0



Stellar Parameters For KIC 012643582

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5876^{+175}_{-193}	$4.492^{+0.065}_{-0.195}$	$-0.300^{+0.300}_{-0.300}$	$0.896^{+0.255}_{-0.109}$	$0.910^{+0.119}_{-0.097}$	$1.780^{+0.593}_{-0.867}$
	+3%/-3%	+1%/-4%	+100%/-100%	+28%/-12%	+13%/-11%	+33%/-49%
Source	KIC0	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 012643582-01 / KOI 3626.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1551 ± 175	$53.88^{+13.60}_{-11.60}$	718^{+50}_{-35}	2468^{+139}_{-112}	16^{+11}_{-6}
Alt.	-1675 ± 336	$48.45^{+12.03}_{-10.83}$	718^{+51}_{-35}	2565^{+158}_{-147}	22^{+14}_{-9}

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

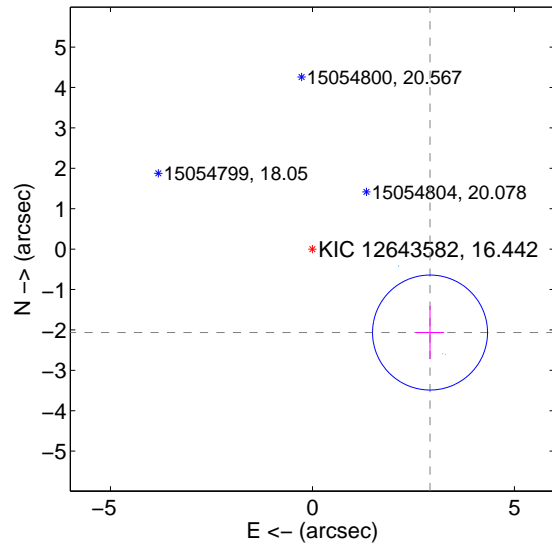
Supplemental centroid analysis for 012643582-01. Kepler magnitude: 16.44. Transit SNR 600.66

There are 8 quarters with good PRF difference image offsets

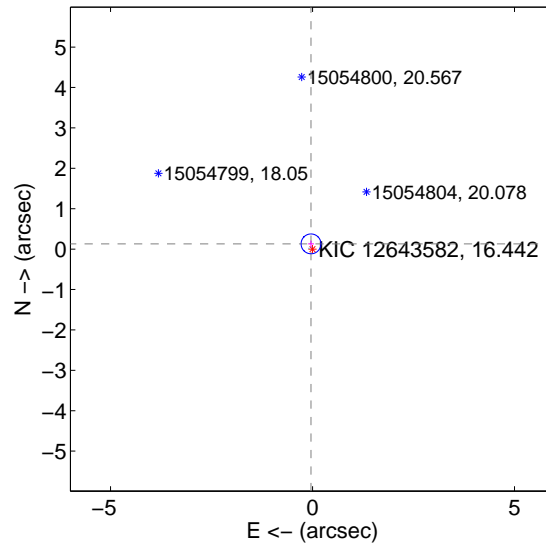
The OOT PRF centroid is offset from the target star catalog position by about 4.27 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.569 ± 0.474	7.52	-2.910 ± 0.349	-2.065 ± 0.656
PRF-fit source offset from KIC position	0.135 ± 0.082	1.65	0.037 ± 0.072	0.129 ± 0.082
photometric centroid source offset	3.11 ± 0.00	889.09	1.67 ± 0.00	2.63 ± 0.00

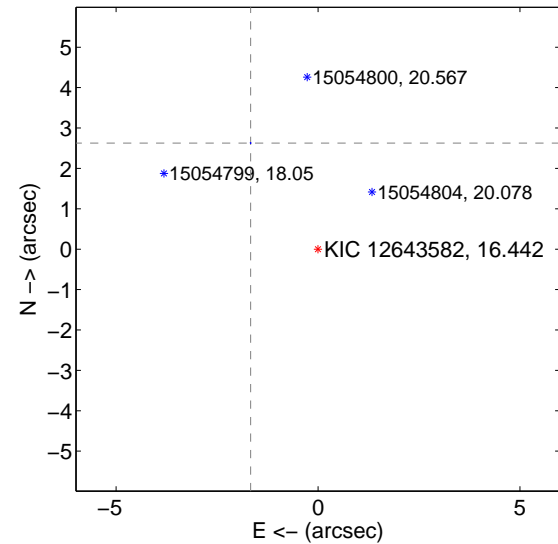
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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.

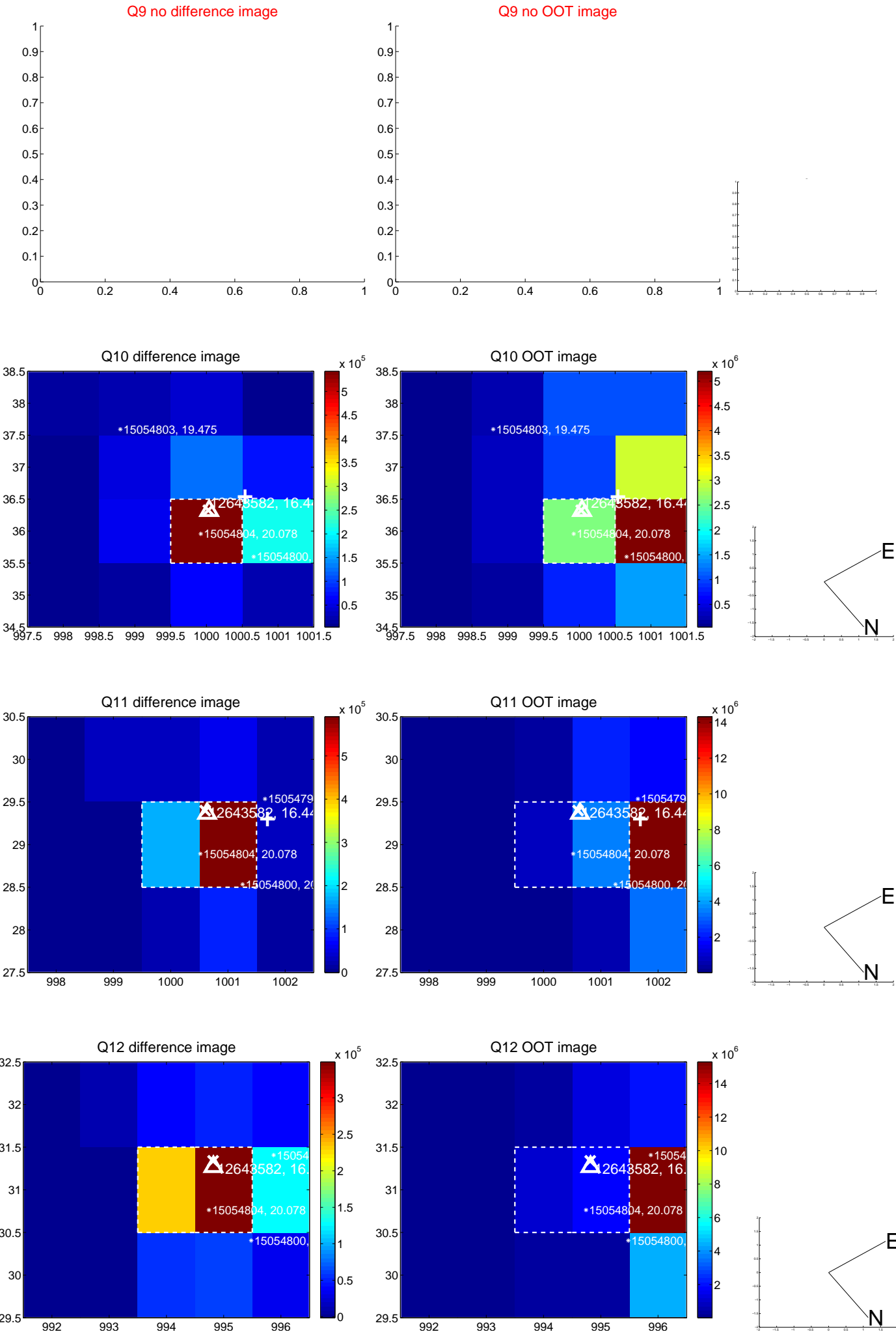
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



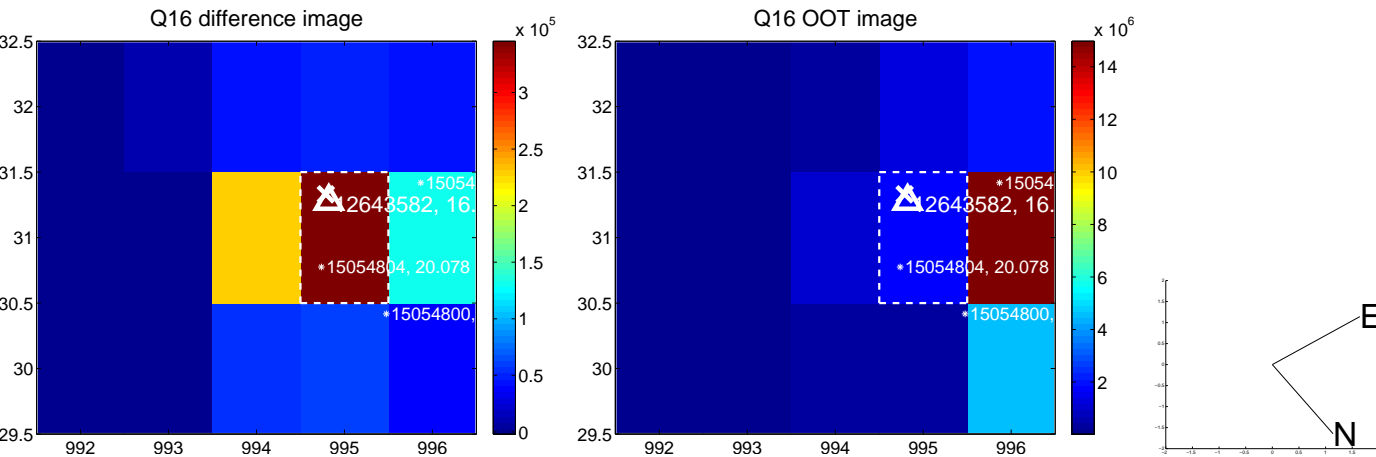
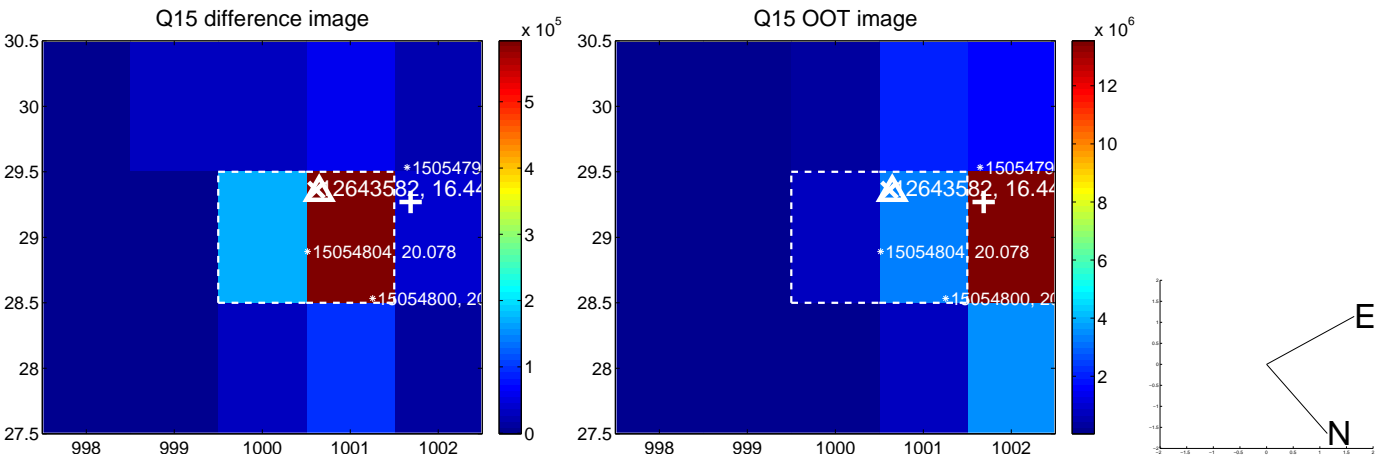
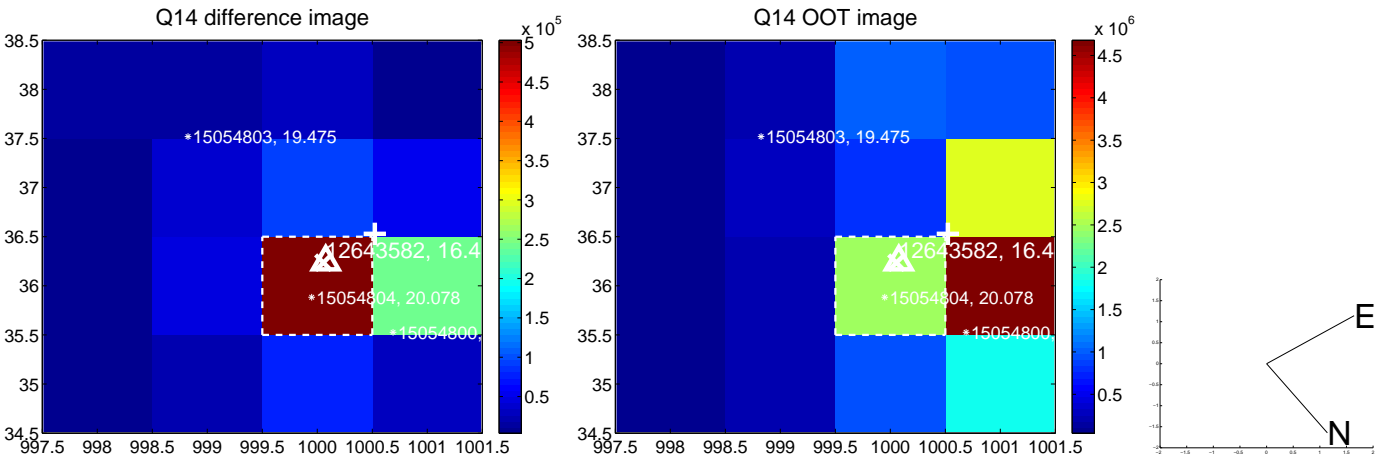
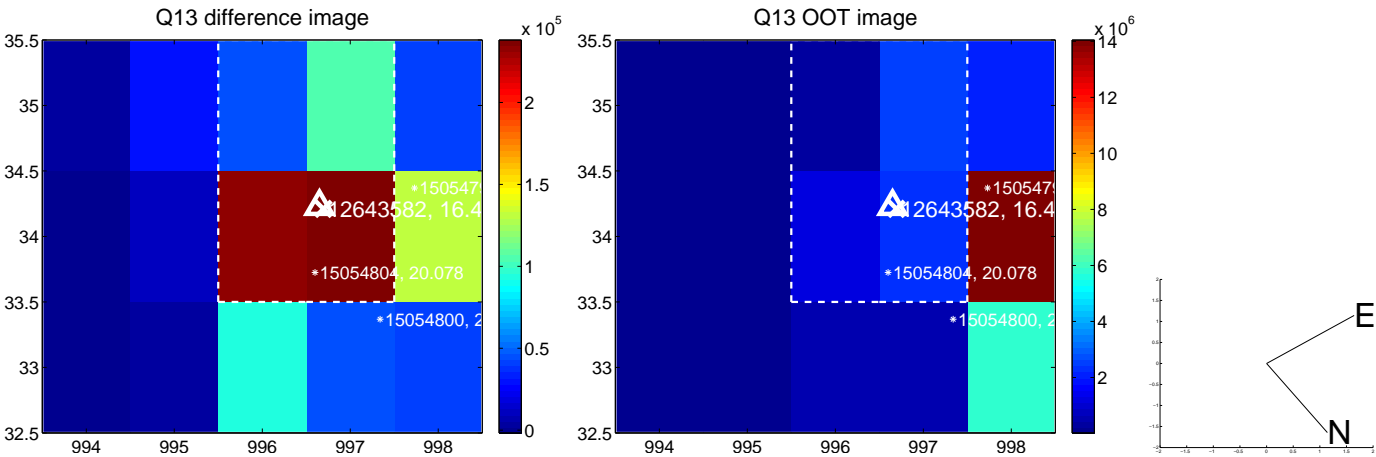
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



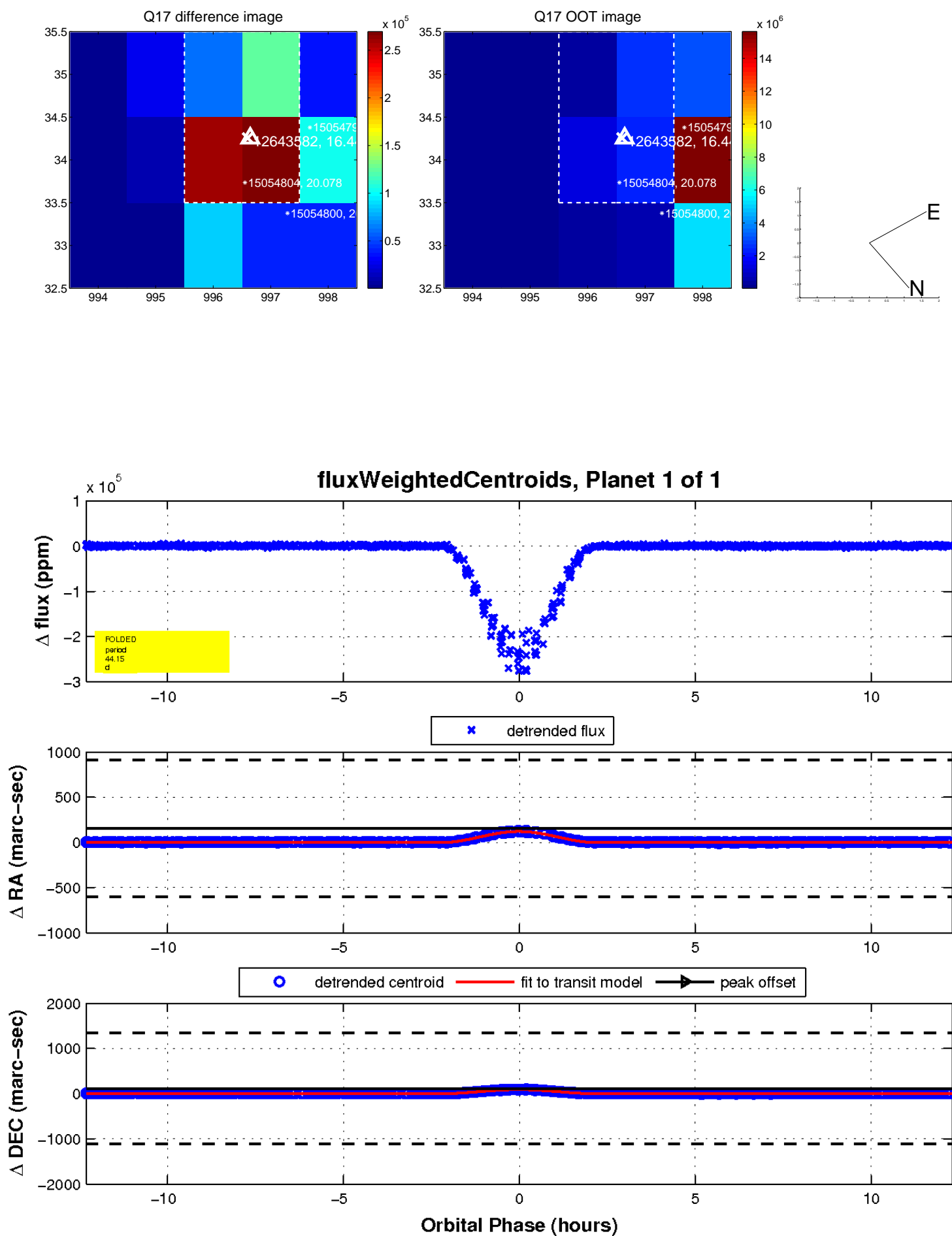
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UKIRT Image

Declination

