

KIC 006422170

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})
006422170-01	OBS	No	312.157014	417.947020	269270.0	19.690	2369.2	1687.4	0.74	5366	45.12	0.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006422170-01	OBS	FP	0.00	1	0	0	0	INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

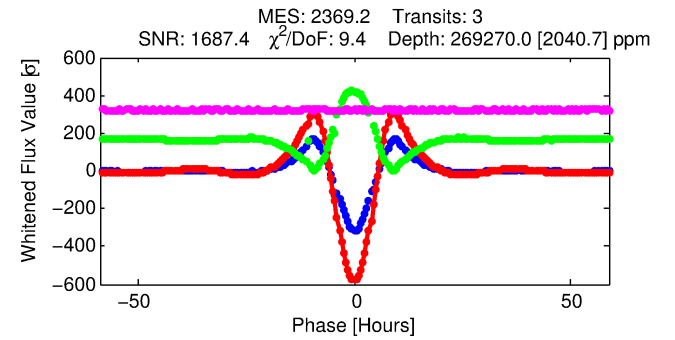
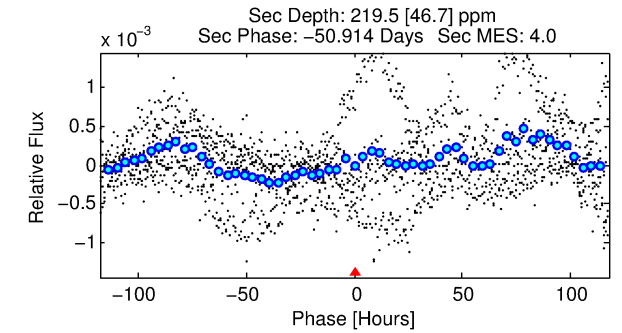
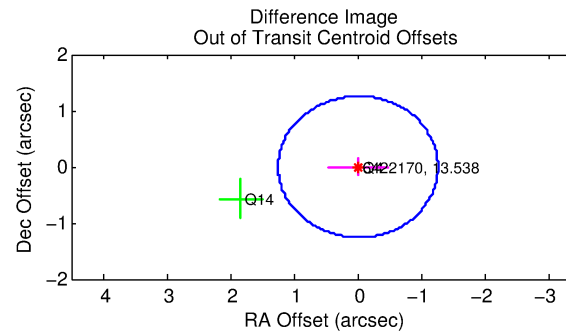
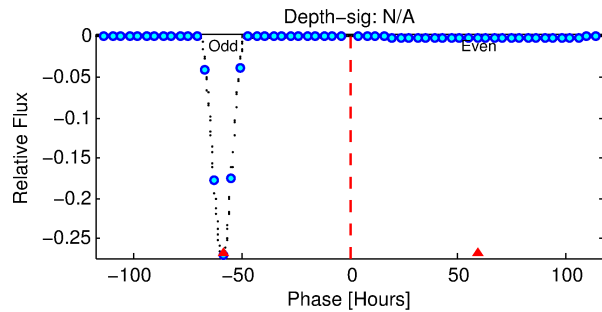
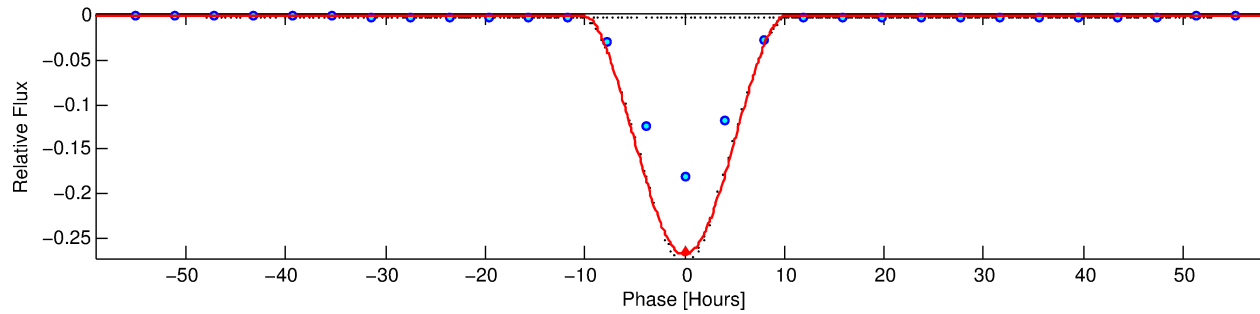
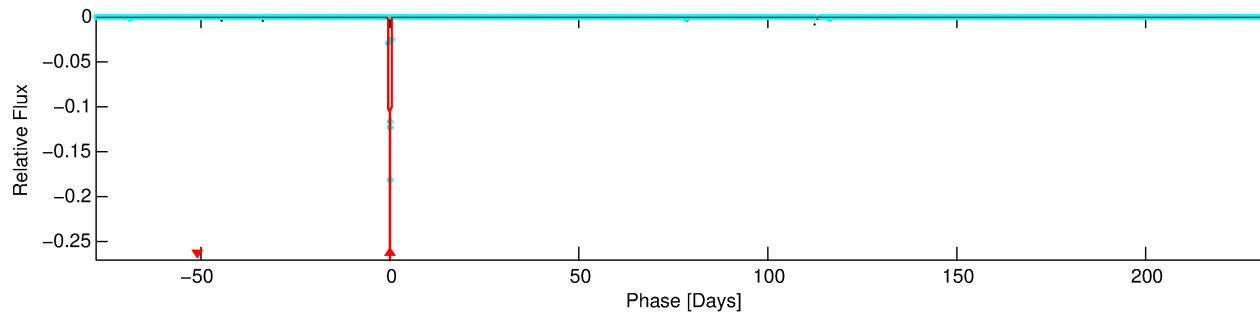
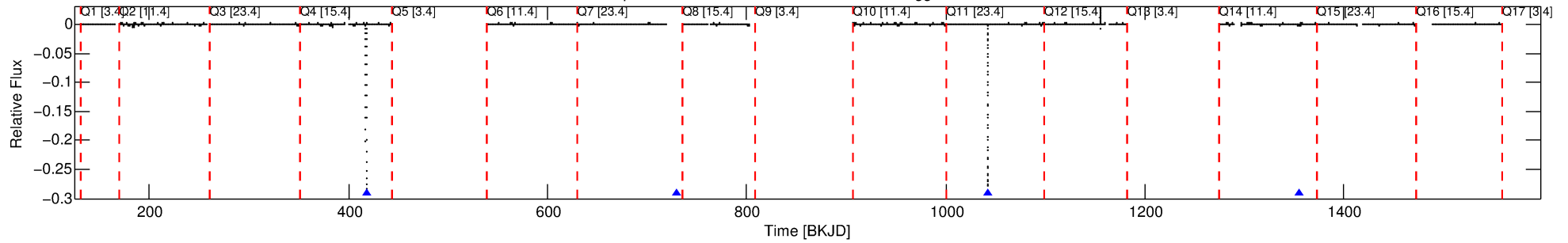
Ephemeris Match Information For 006422170-01

No Significant Match Found

DV One-Page Summary

KIC: 6422170 Candidate: 1 of 1 Period: 312.157 d

Kp: 13.54 R*: 0.74 Rs Teff: 5366.0 K Logg: 4.54 Fe/H: -0.600



DV Fit Results:

Period = 312.15701 [0.00079] d
Epoch = 417.9470 [0.0018] BKJD
Rp/R* = 0.5596 [0.1101]
a/R* = 171.96 [3.75]
b = 0.65 [0.20]
Seff = 0.64 [0.13]
Teq = 228 [12] K
Rp = 45.12 [10.38] Re
a = 0.7968 [0.0863] AU
Ag = 37.65 [17.98] [2.04σ]
Teffp = 873 [101] K [6.34σ]

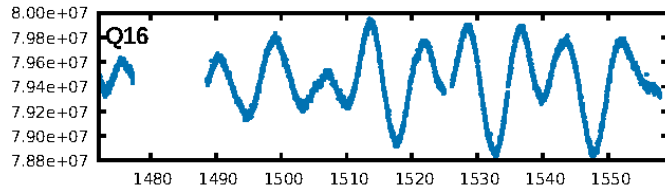
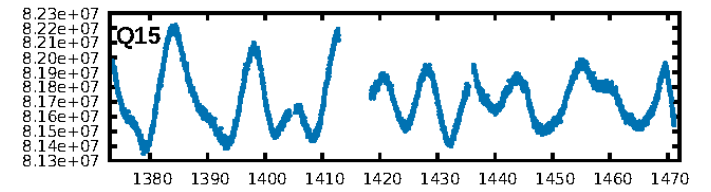
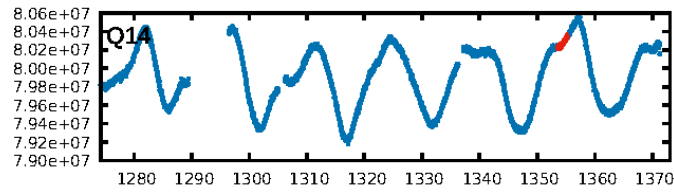
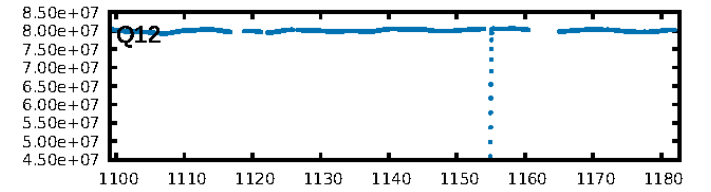
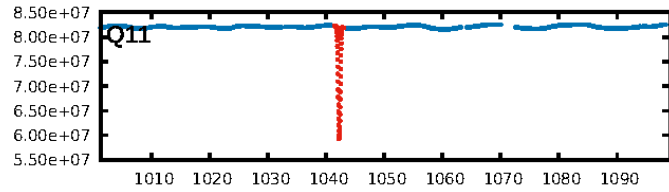
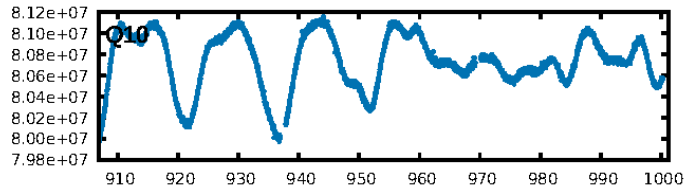
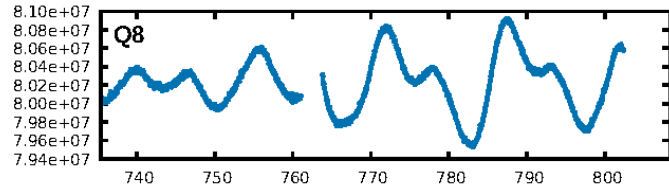
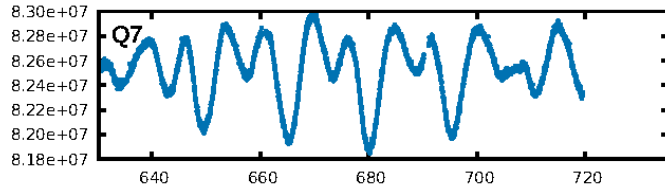
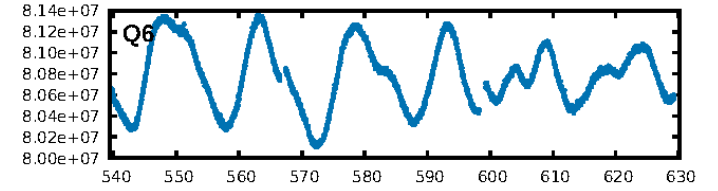
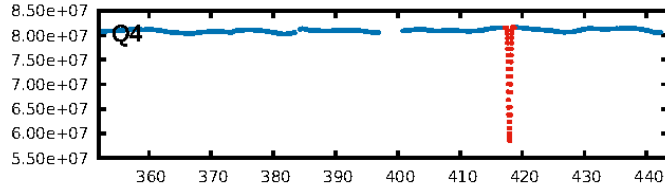
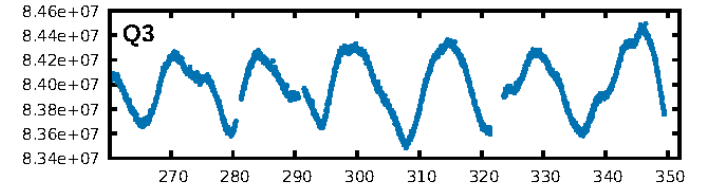
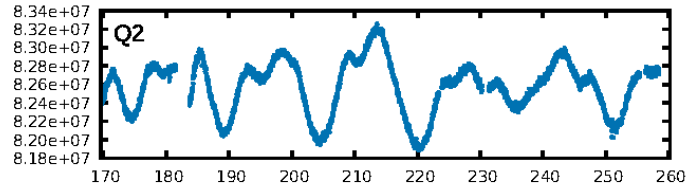
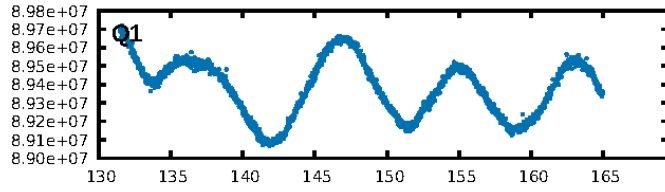
DV Diagnostic Results:

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 [3/3]
GhostDiagnostic-chr: 0.5688
Centroid-sig: 0.0%
Centroid-so: 0.132 arcsec [67.81σ]
OotOffset-rm: 0.013 arcsec [0.03σ]
KicOffset-rm: 0.113 arcsec [0.26σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

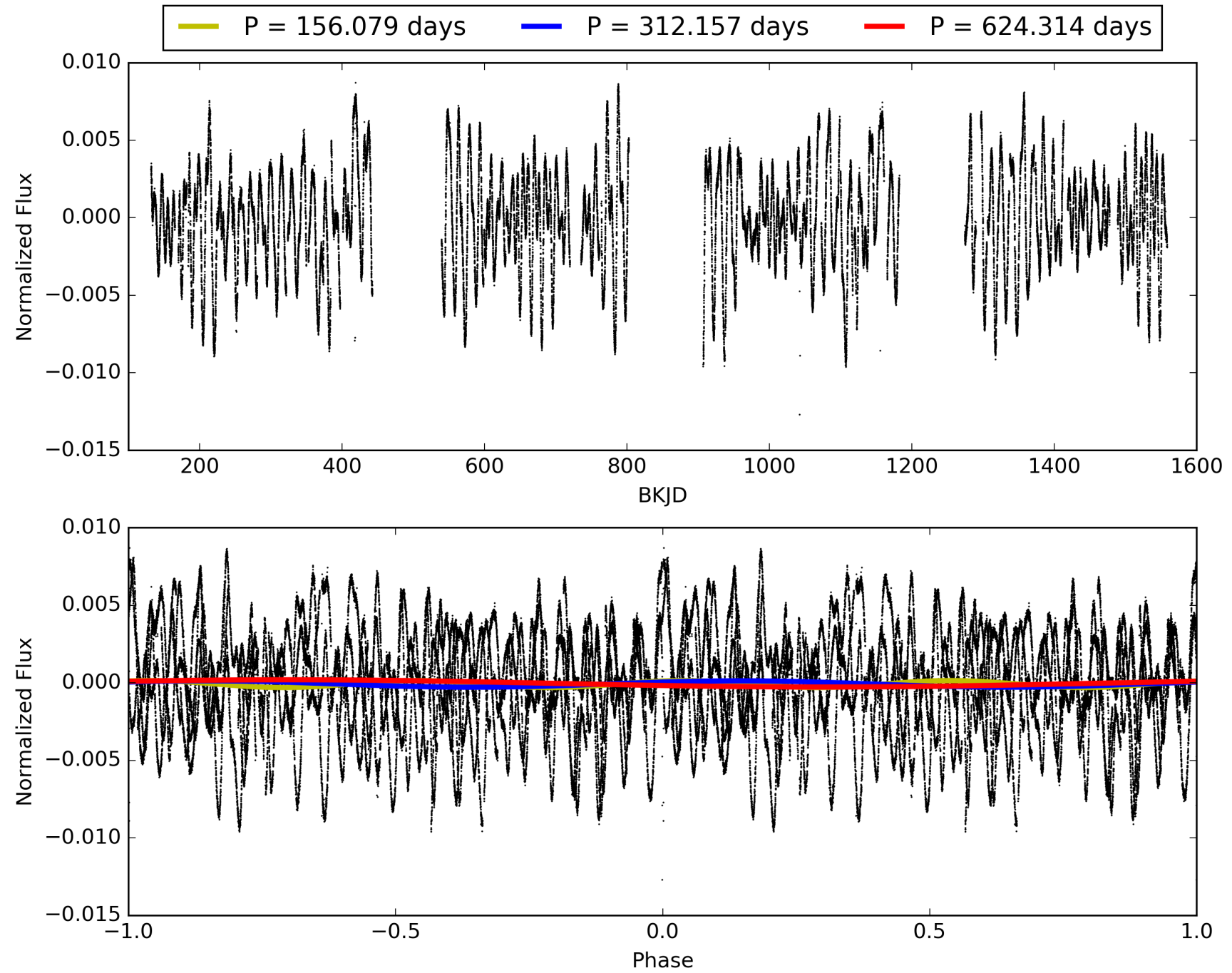
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:00:21 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006422170-01, PDC Light Curves

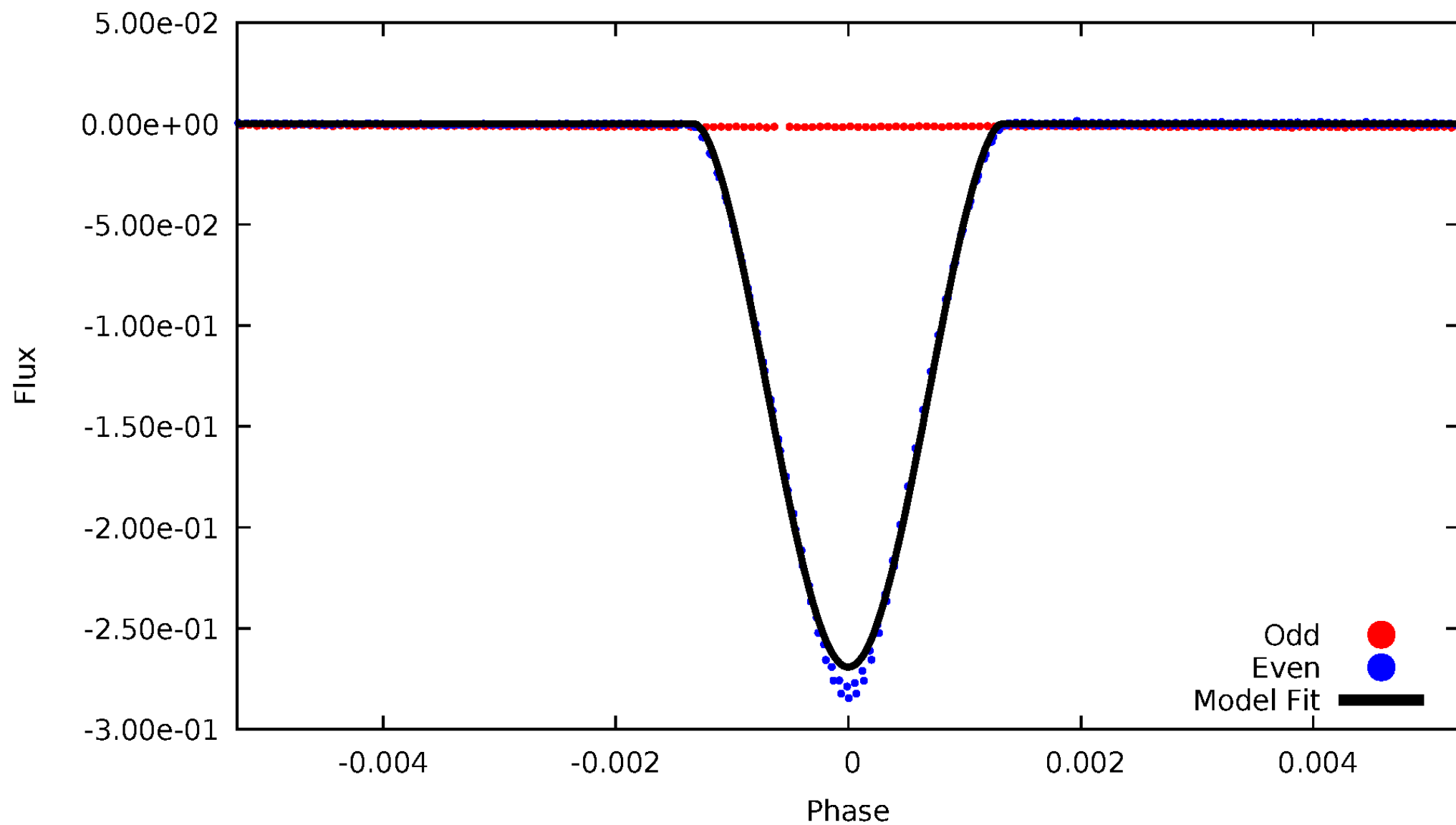


TCE 006422170-01



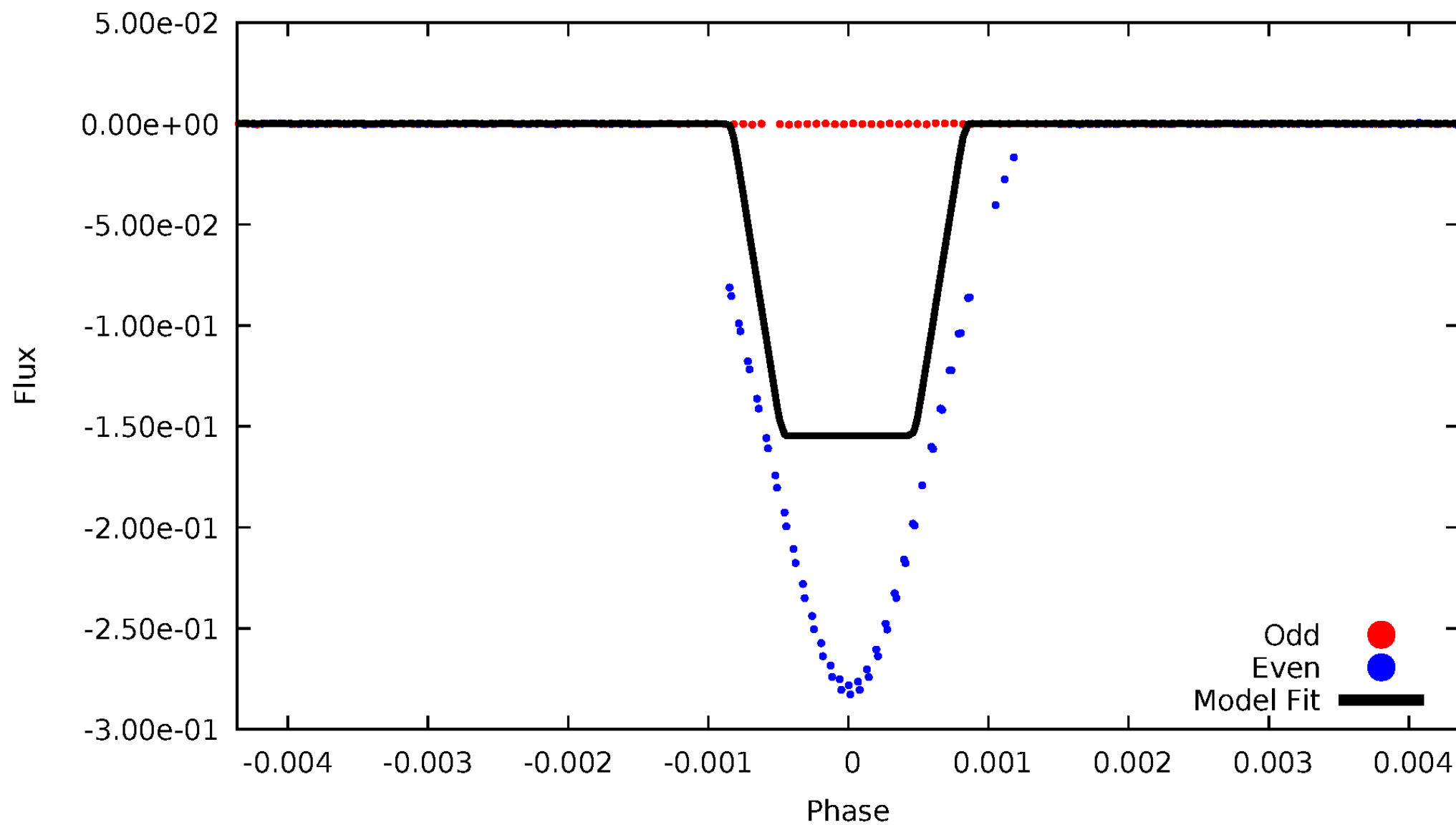
DV Odd/Even

TCE 006422170-01



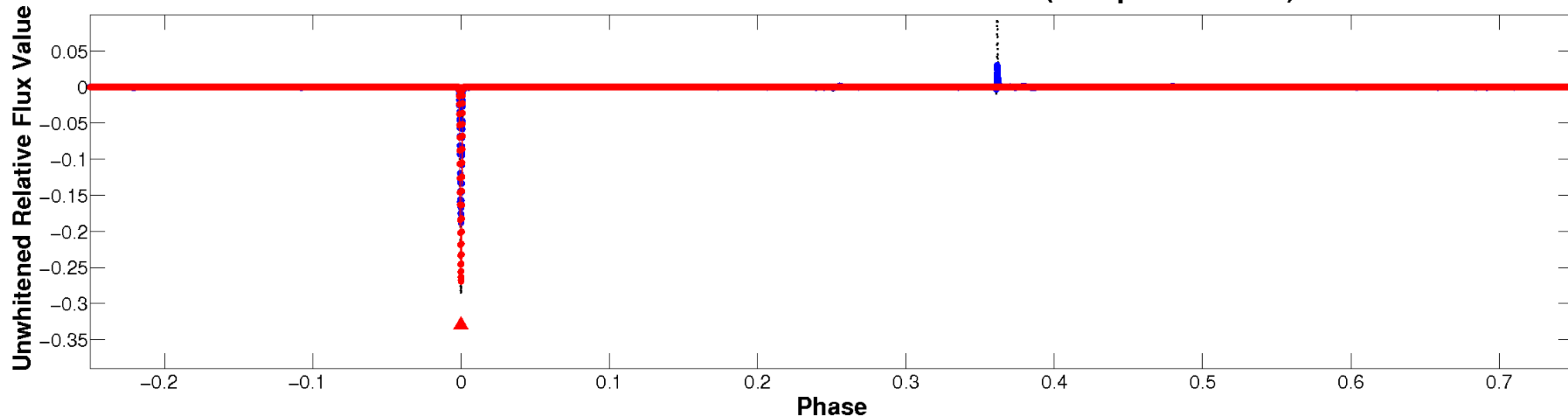
ALT Odd/Even

TCE 006422170-01

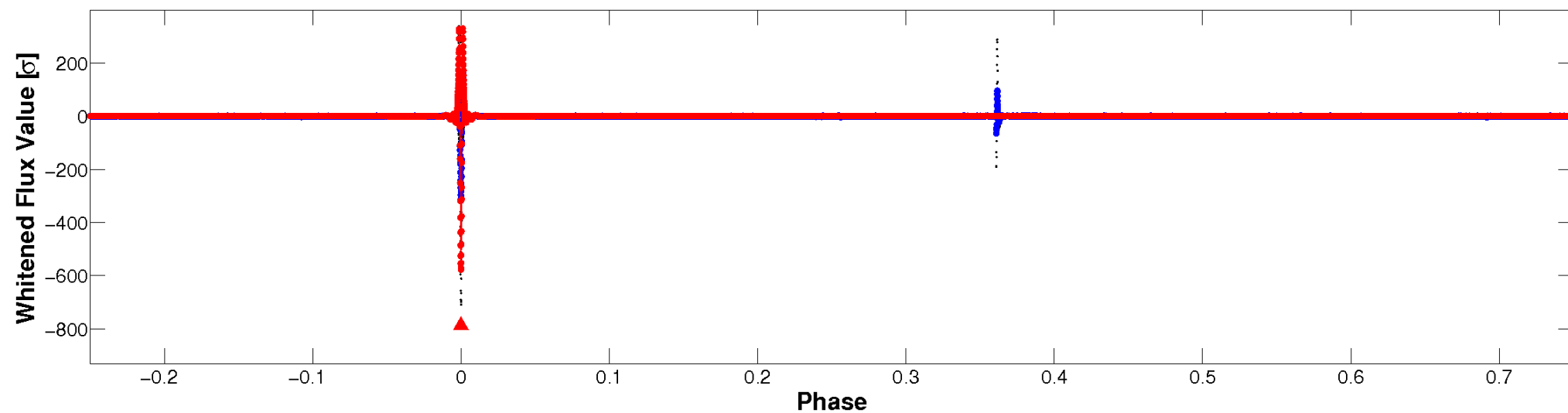


Non-Whitened Vs. Whitened Light Curve

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

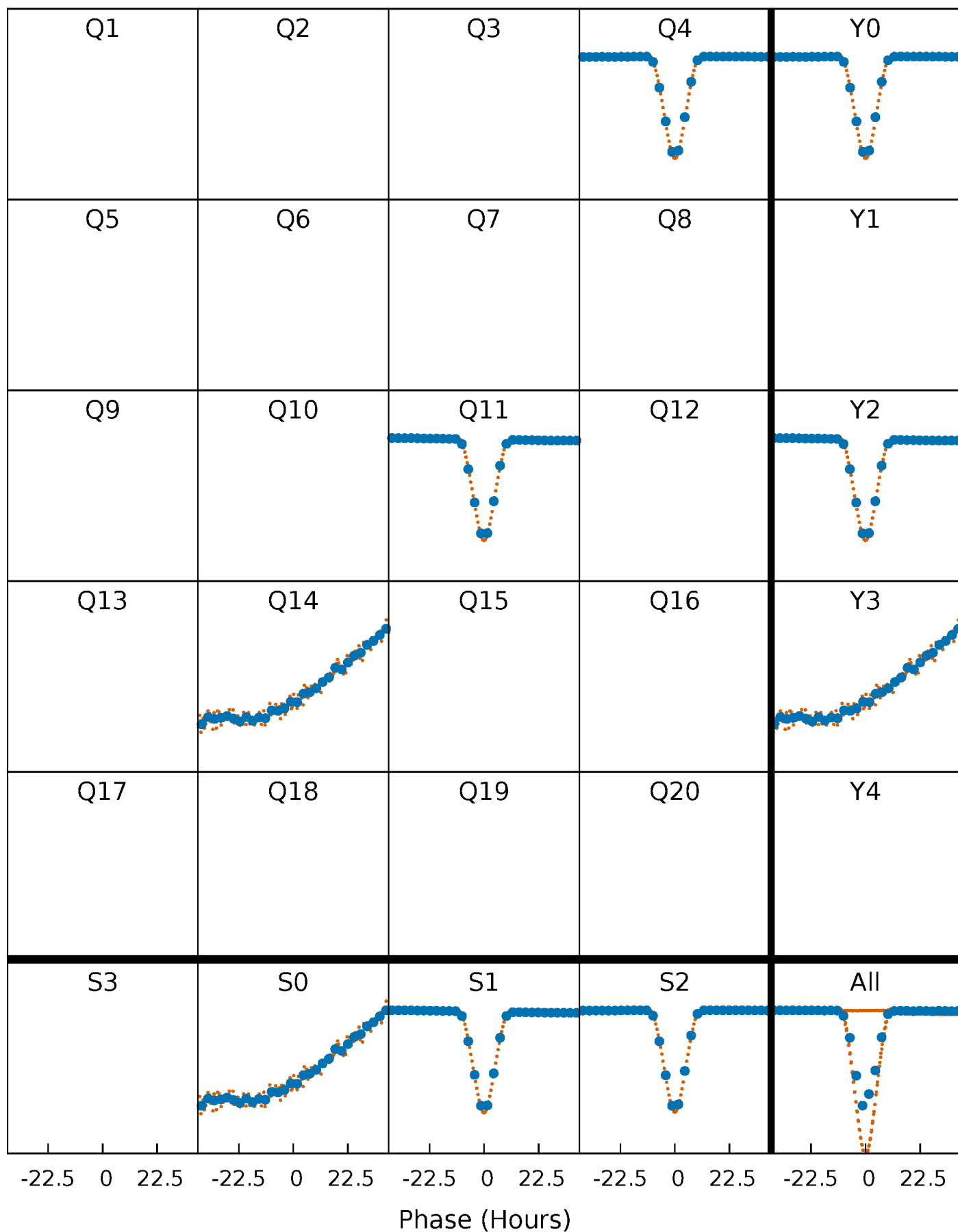


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



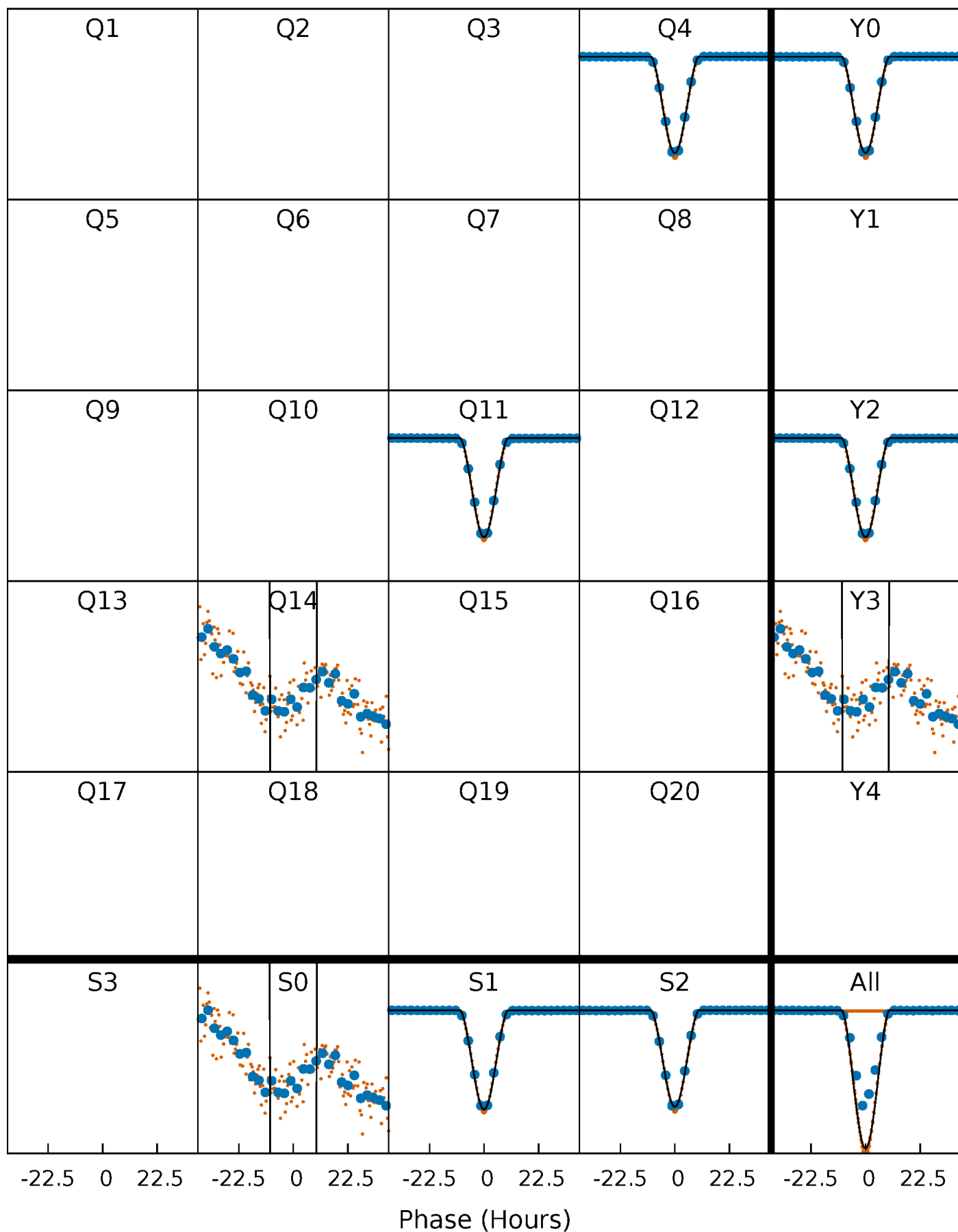
PDC Quarter-Phased Transit Curves

TCE 006422170-01 P=312.157014 Days $T_0=417.947020$ (BKJD)



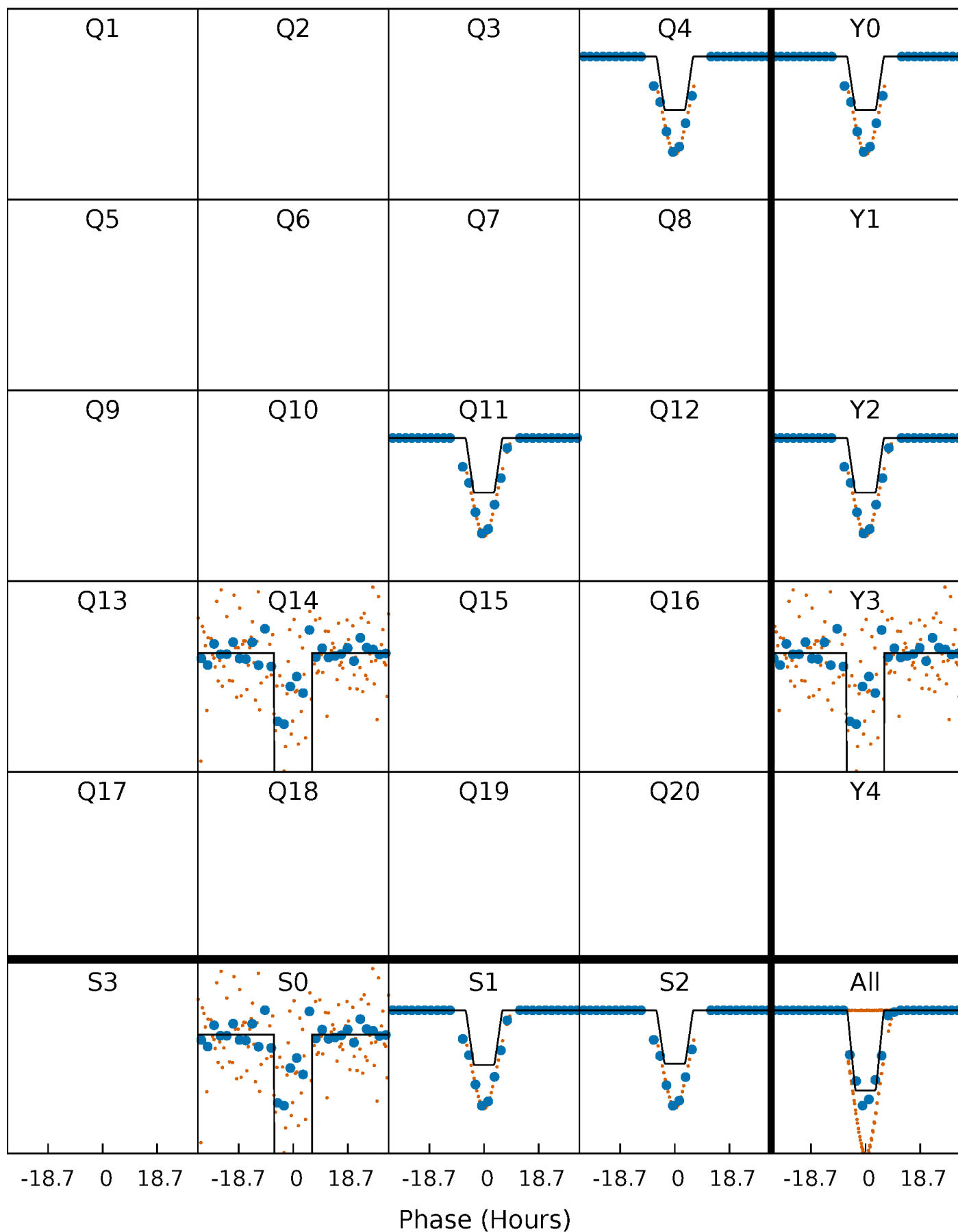
DV Quarter-Phased Transit Curves

TCE 006422170-01 P=312.157014 Days $T_0=417.947020$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

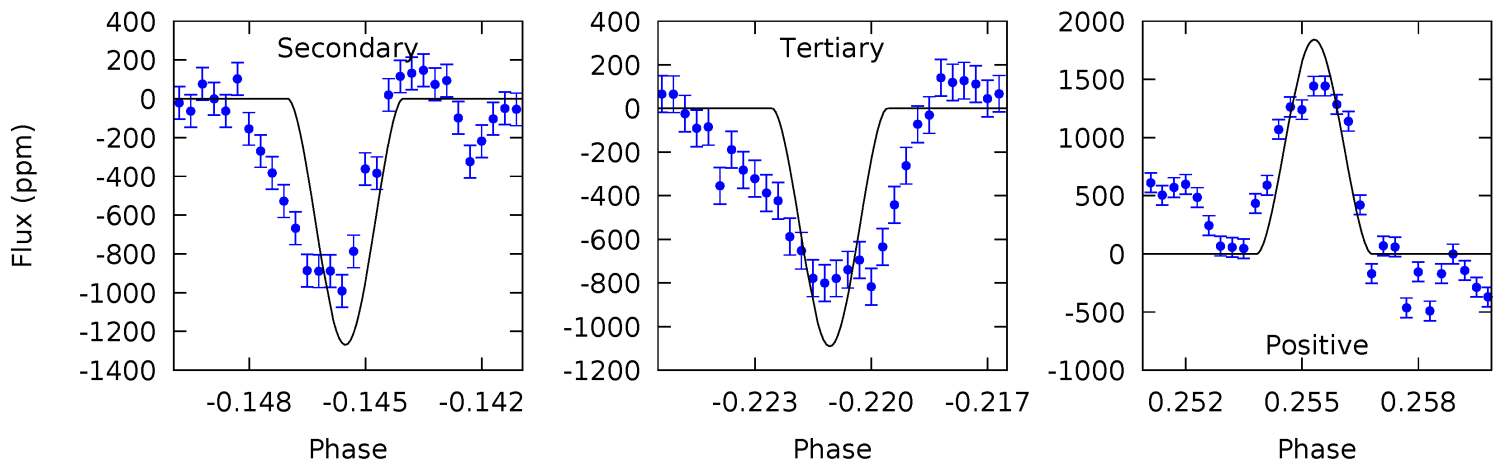
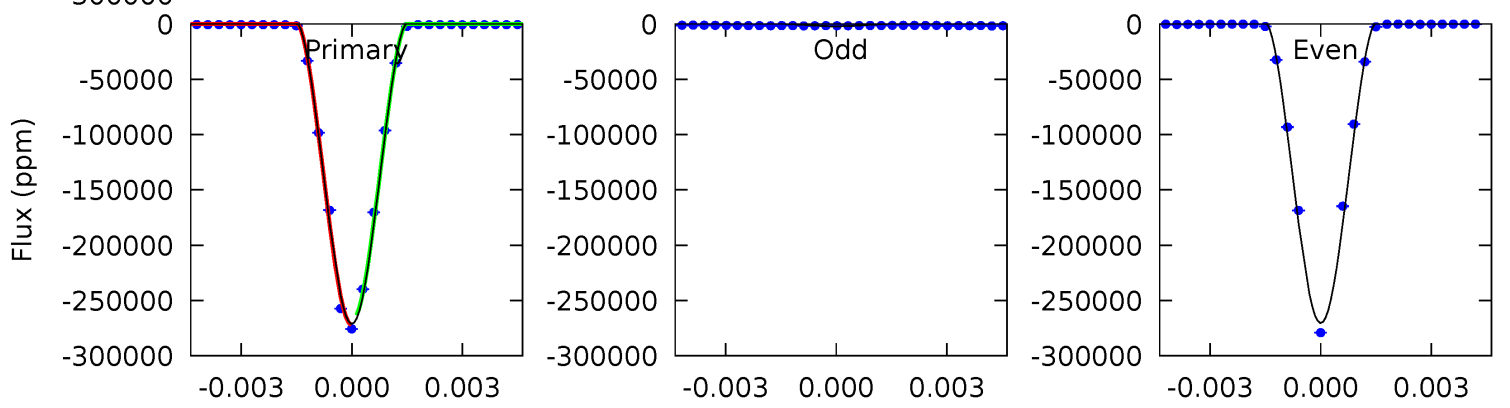
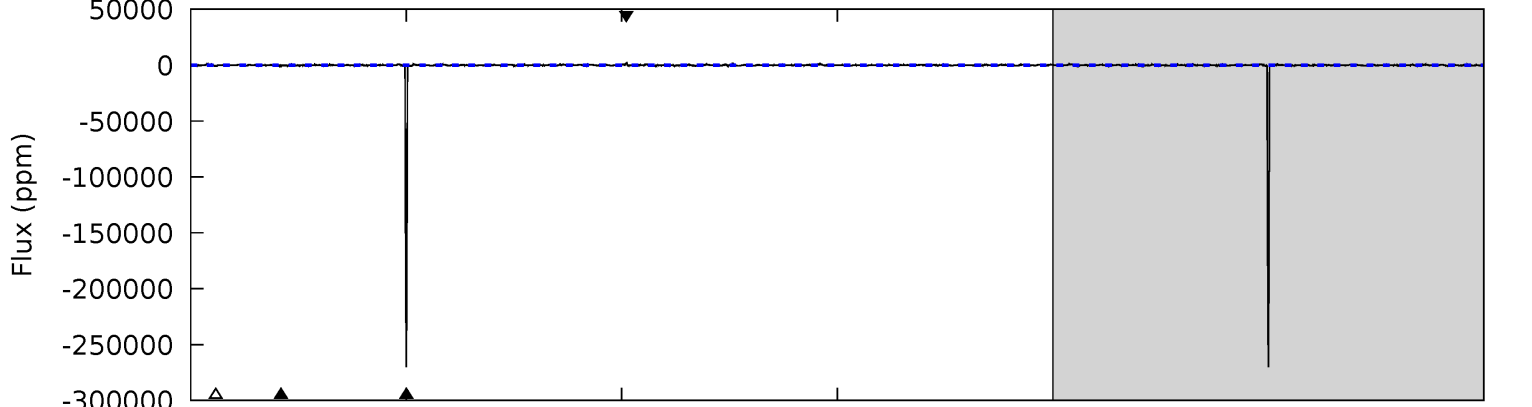
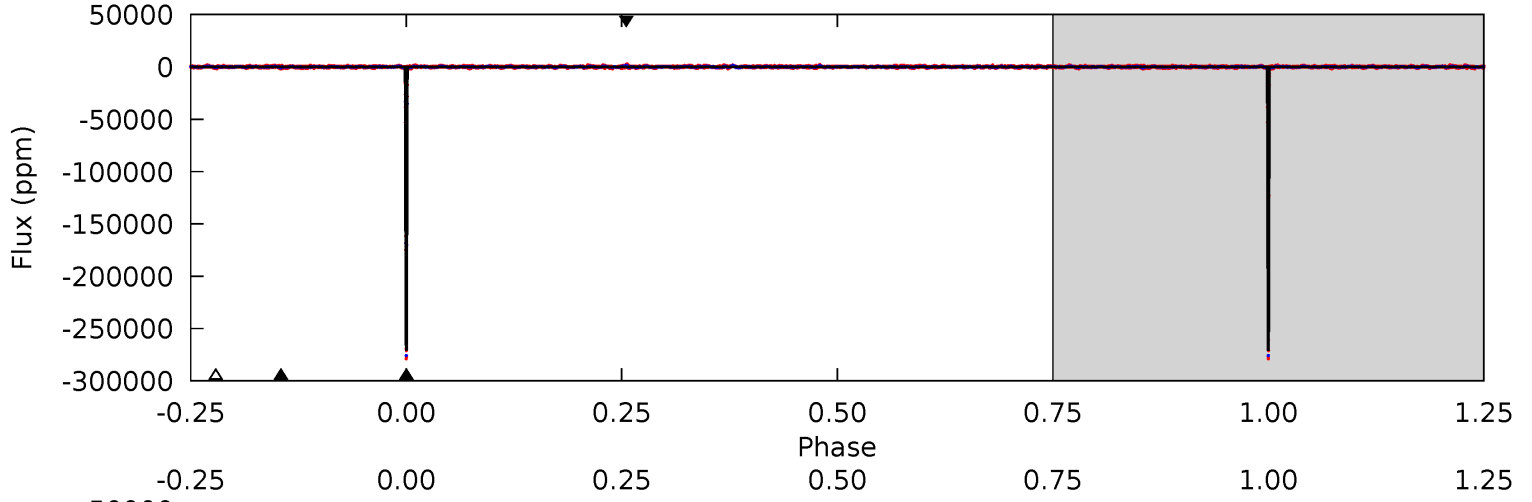
TCE 006422170-01 P=312.156685 Days $T_0=417.943115$ (BKJD)



DV Model-Shift Uniqueness Test

006422170-01, P = 312.157014 Days, E = 105.790006 Days

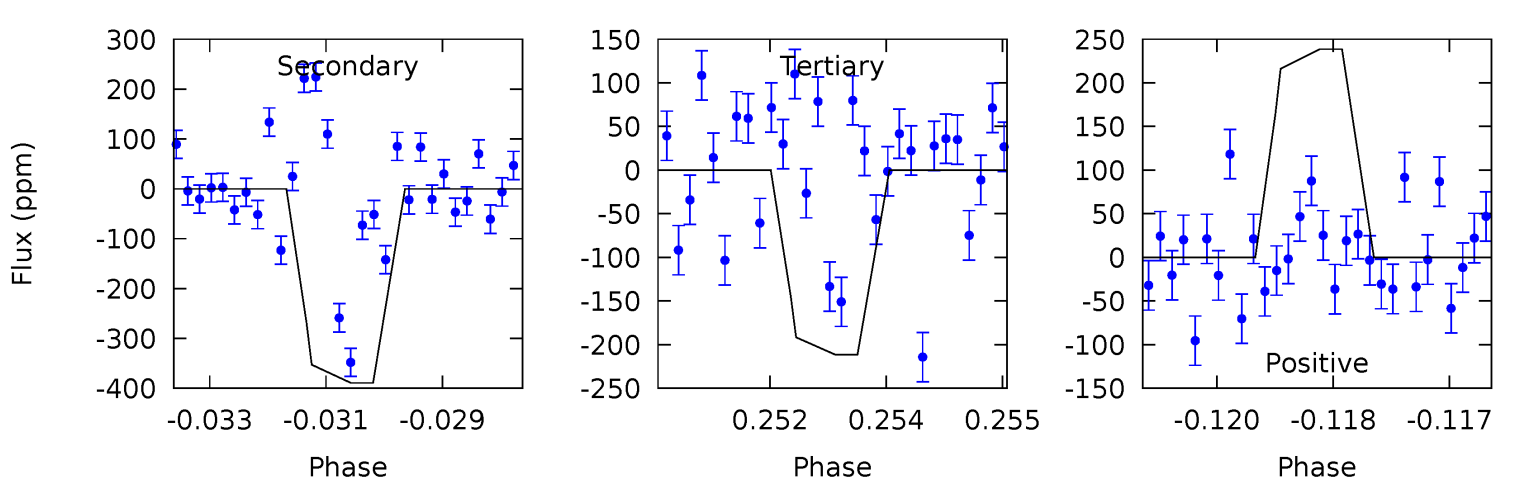
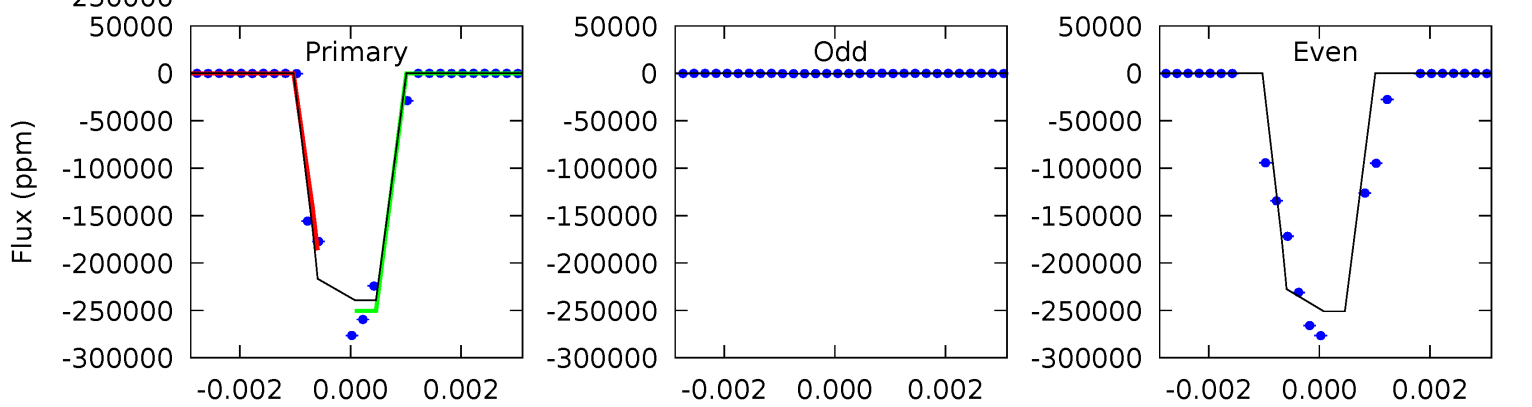
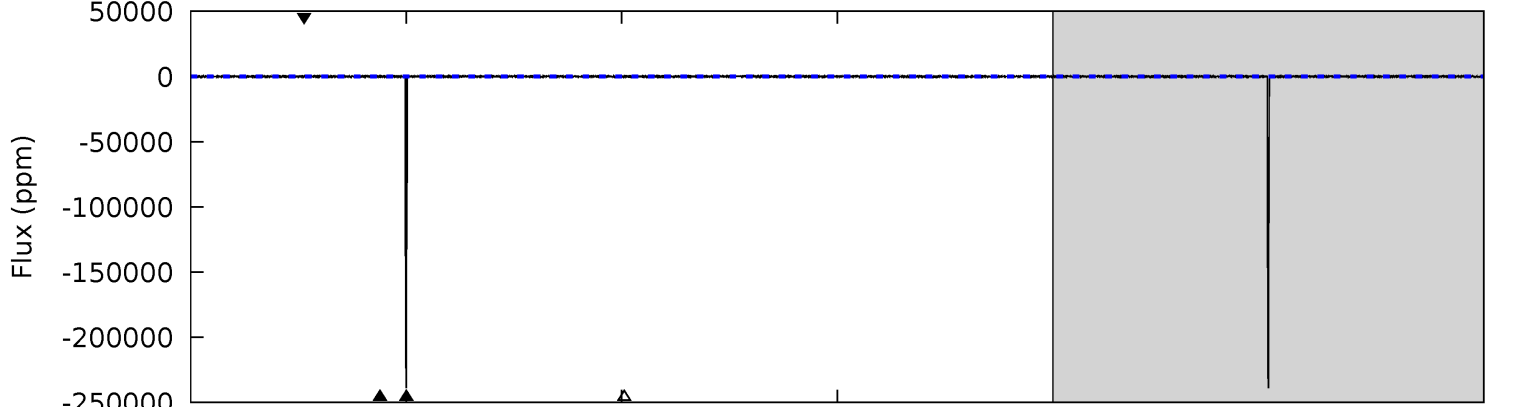
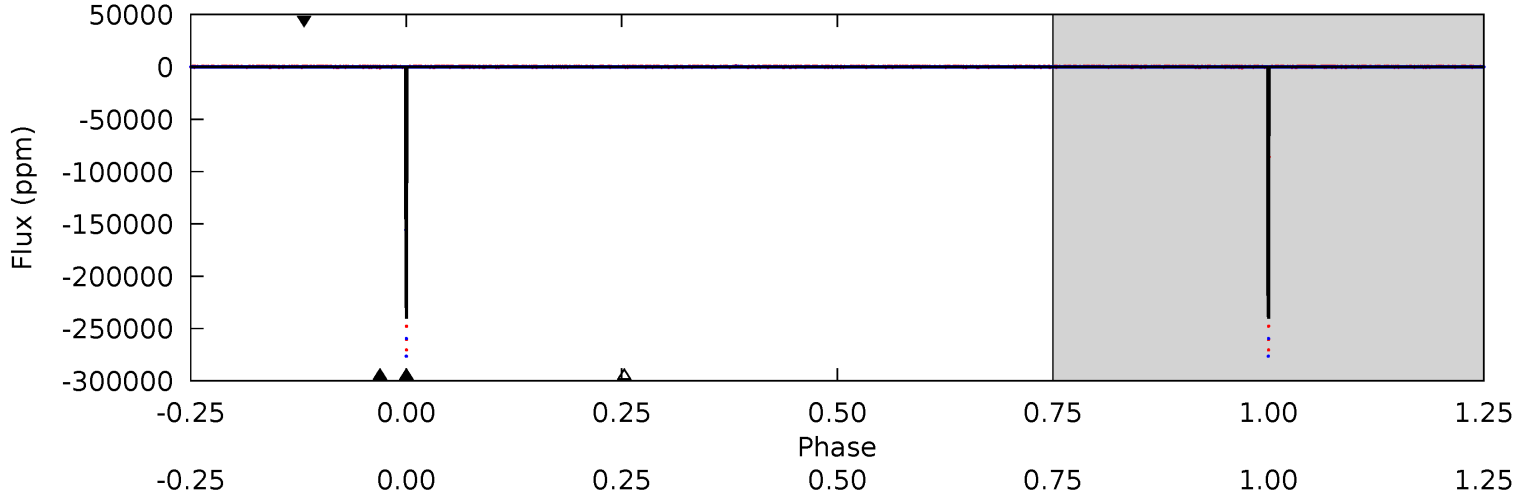
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3766	17.6	15.1	25.6	5.27	3.00	4.07	3751	3741	2.48	-7.97	1198	0.68	0.01	62.7



Alt Model-Shift Uniqueness Test

006422170-01, P = 312.156685 Days, E = 105.786430 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4976	8.10	4.40	4.97	5.35	3.14	0.92	4972	4971	3.70	3.14	6357	0.67	0.00	0



Stellar Parameters For KIC 006422170

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5366^{+160}_{-144}	$4.541^{+0.096}_{-0.072}$	$-0.600^{+0.350}_{-0.300}$	$0.739^{+0.088}_{-0.080}$	$0.692^{+0.100}_{-0.036}$	$2.417^{+0.981}_{-0.587}$
	+3%/-3%	+2%/-2%	+58%/-50%	+12%/-11%	+14%/-5%	+41%/-24%
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 006422170-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1264 ± 72	$45.12^{+9.59}_{-8.89}$	317^{+14}_{-12}	2272^{+123}_{-89}	222^{+122}_{-69}
Alt.	-389 ± 48	$31.51^{+9.85}_{-9.19}$	318^{+14}_{-13}	2159^{+180}_{-114}	140^{+139}_{-59}

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 $A_{obs} \gg 1.0$

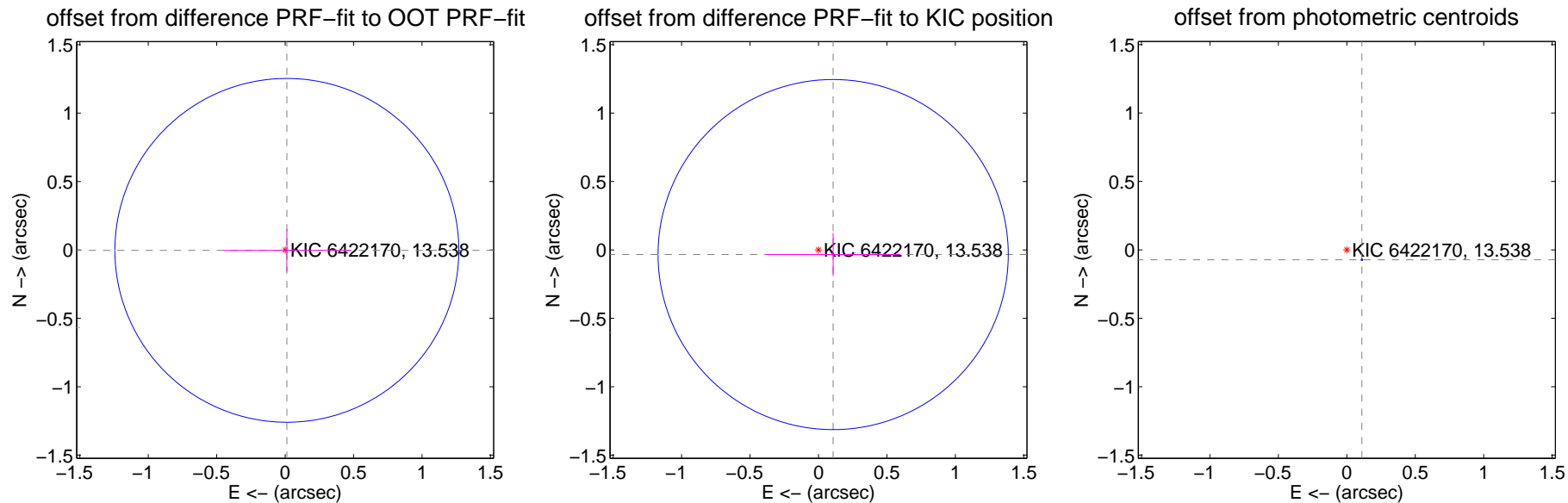
DV Centroid Data

Supplemental centroid analysis for 006422170-01. Kepler magnitude: 13.54. Transit SNR 1687.42

There are 2 quarters with good PRF difference image offsets

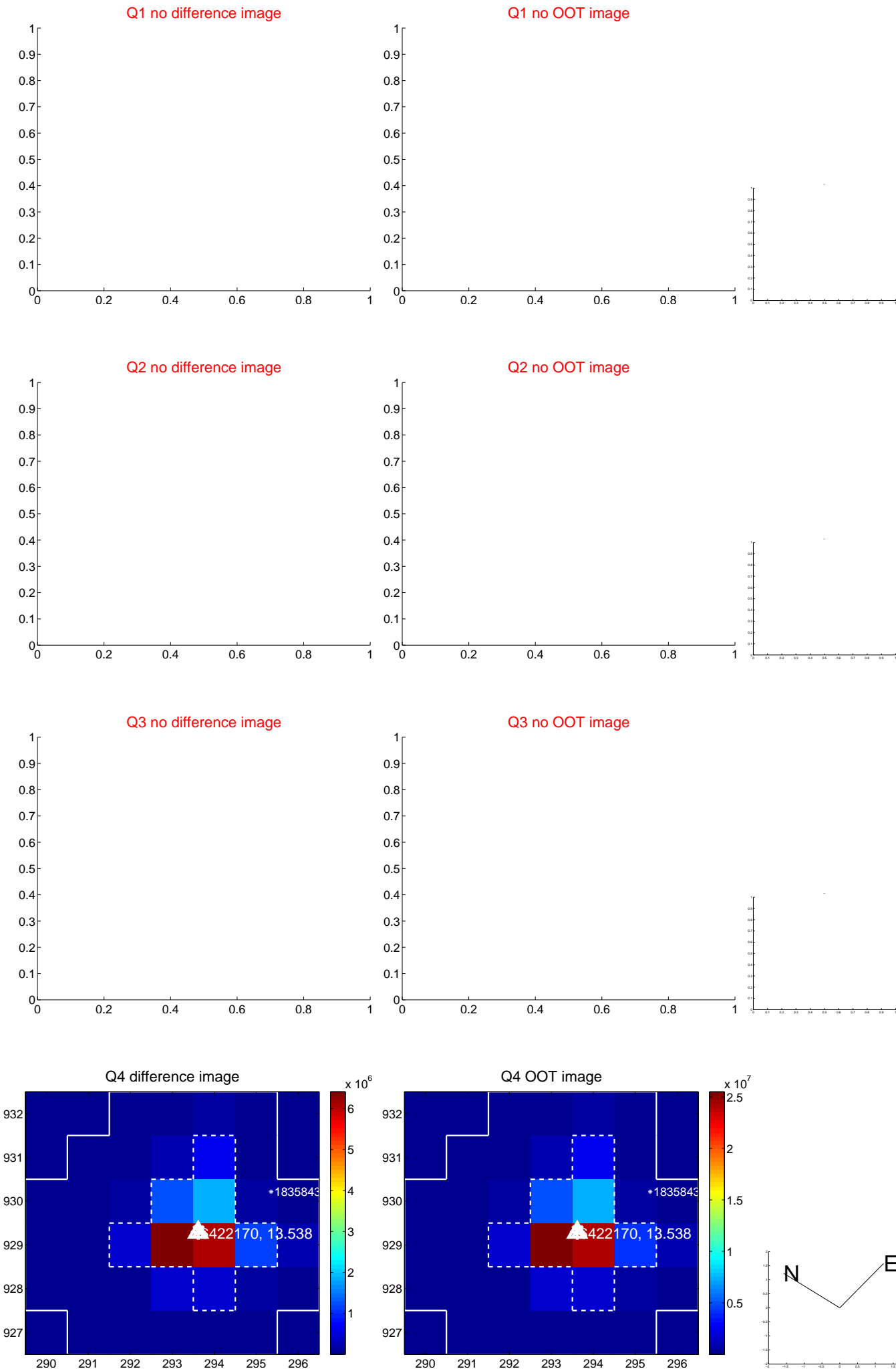
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.013 ± 0.419	0.03	-0.012 ± 0.465	-0.003 ± 0.156
PRF-fit source offset from KIC position	0.113 ± 0.426	0.26	-0.107 ± 0.491	-0.034 ± 0.157
photometric centroid source offset	0.13 ± 0.00	67.81	-0.11 ± 0.00	-0.07 ± 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.



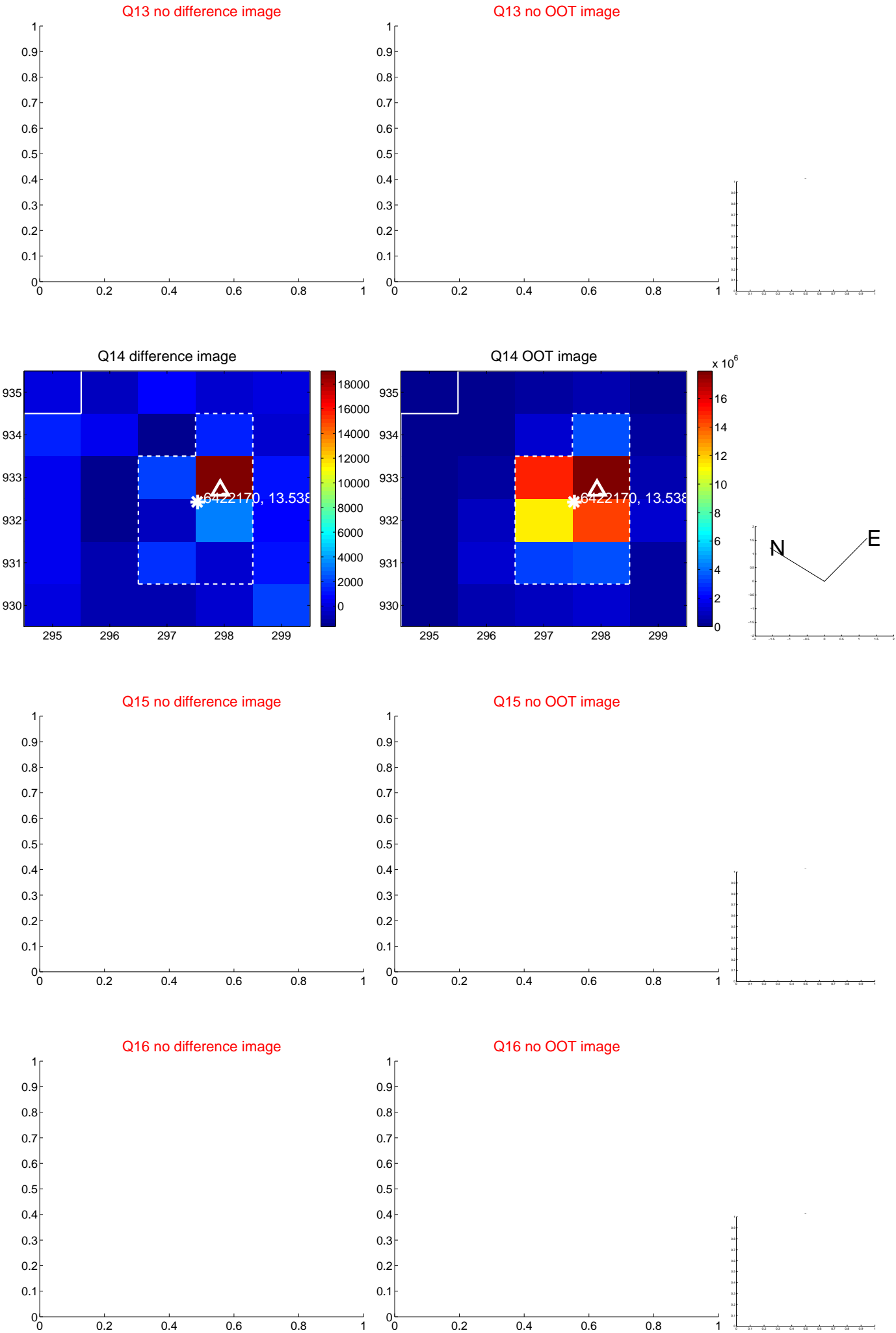
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



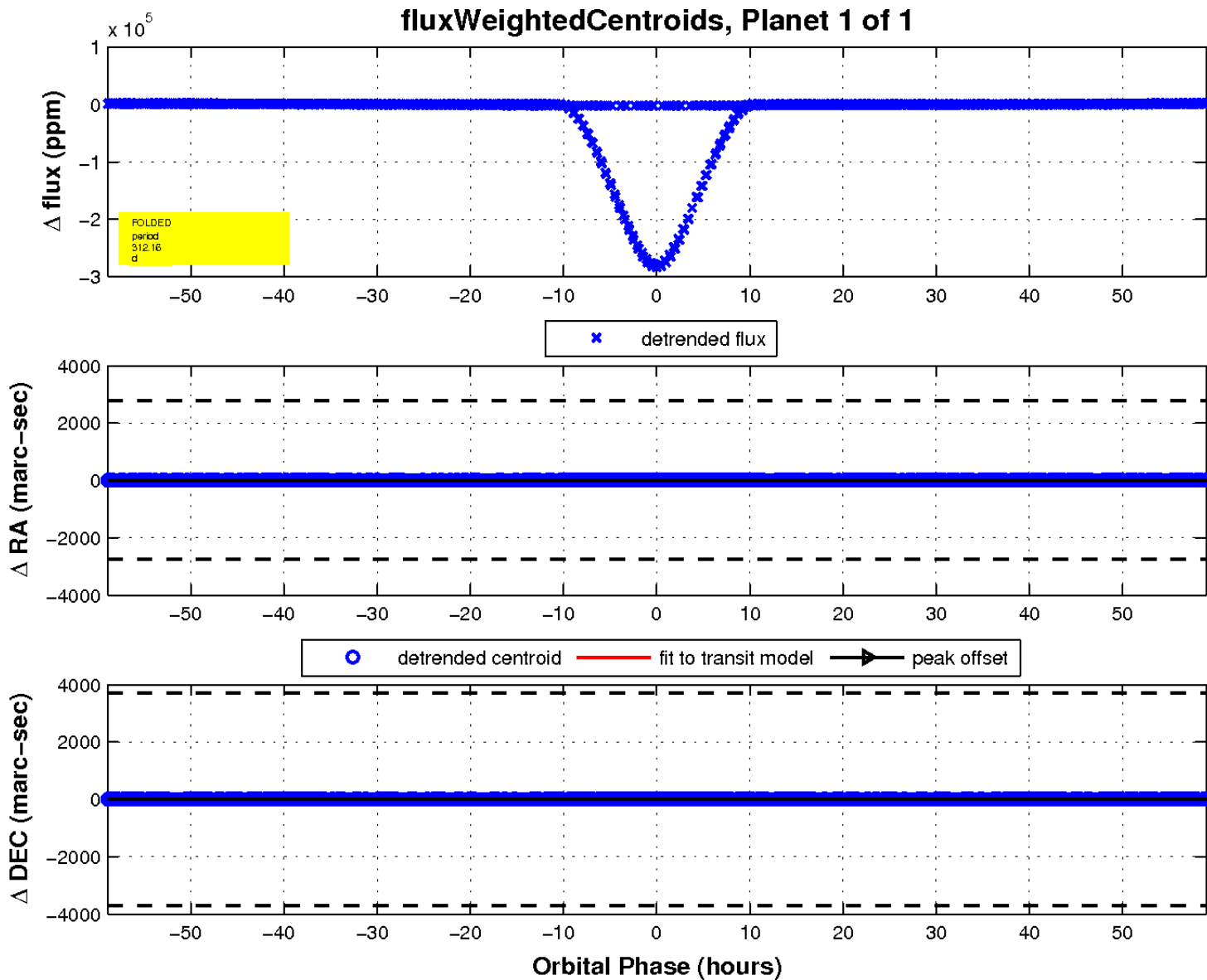
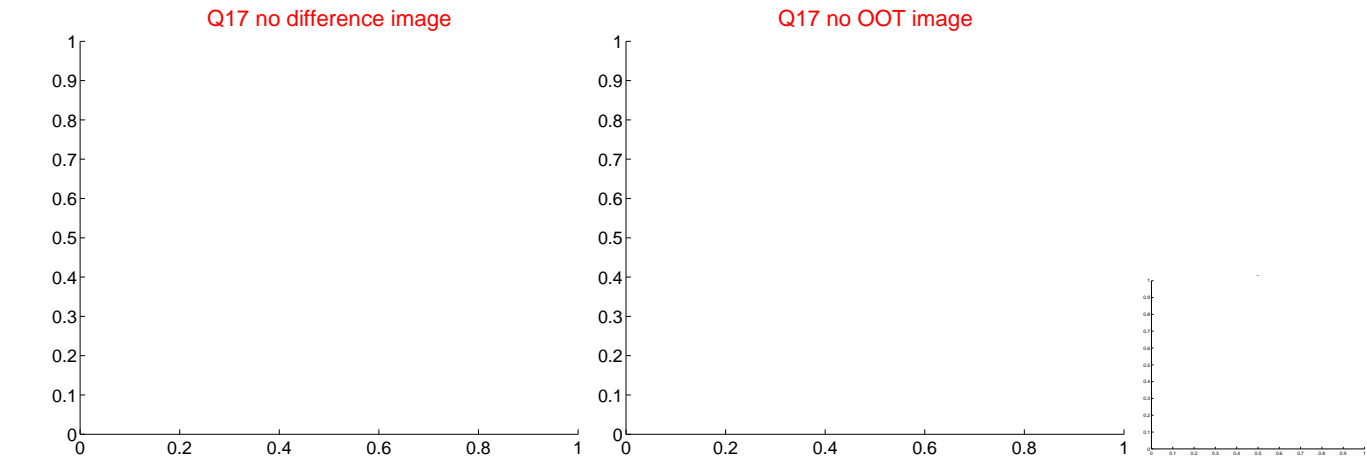
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

