

KIC 009957415

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})
009957415-01	OBS	No	284.445032	239.318230	440.9	14.415	7.7	6.7	0.93	5841	2.07	1.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009957415-01	OBS	FP	0.02	1	0	0	0	INDIV_TRANS_MARSHALL—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.

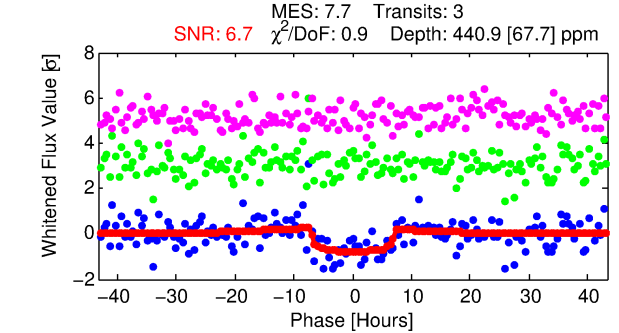
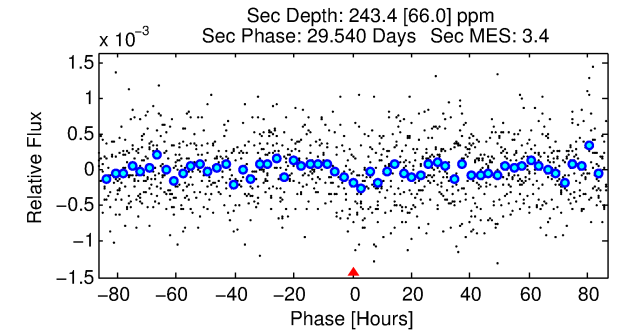
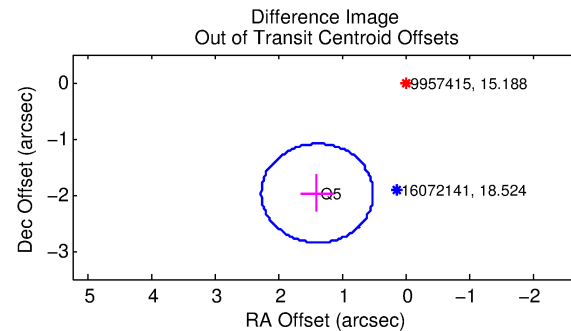
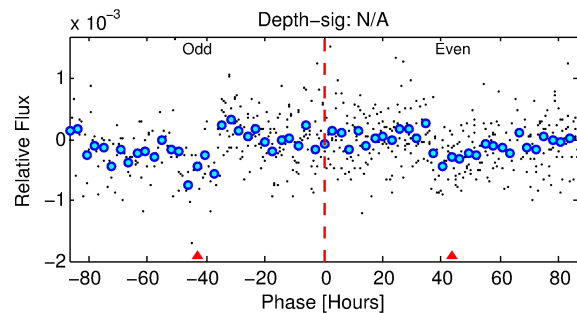
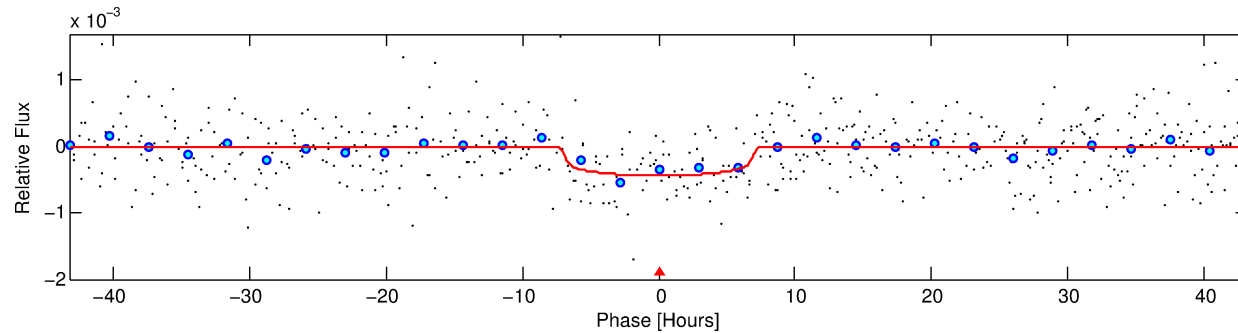
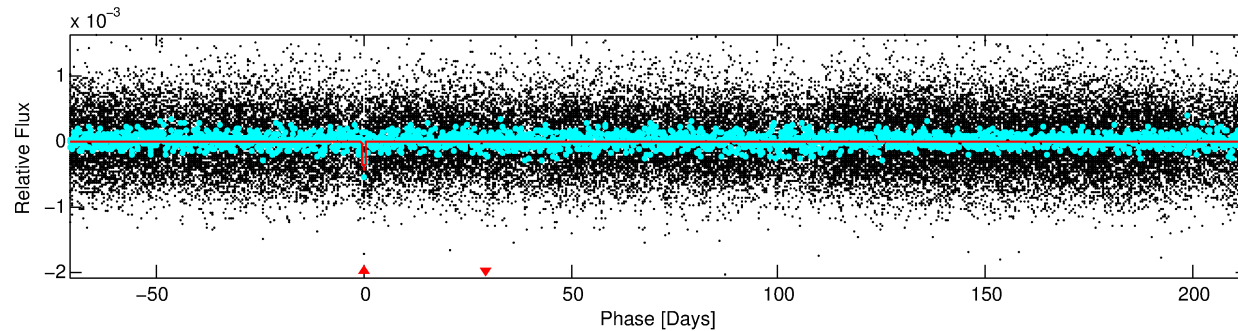
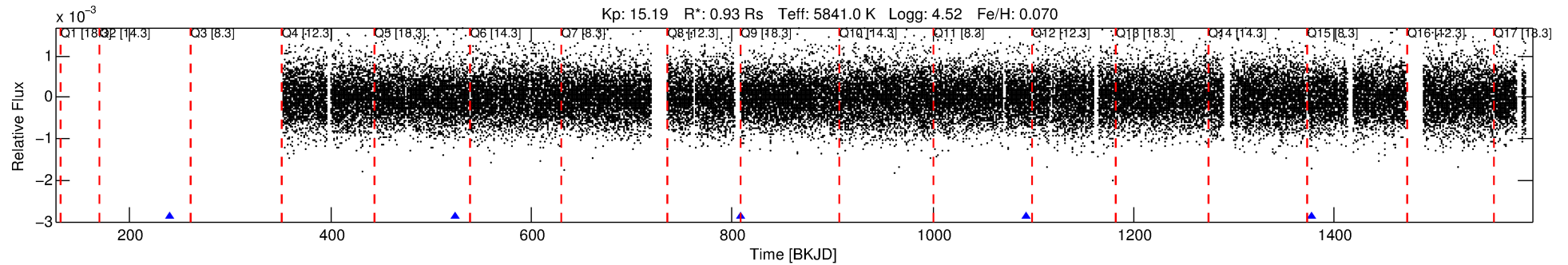
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009957415-01

No Significant Match Found

DV One-Page Summary

KIC: 9957415 Candidate: 1 of 1 Period: 284.445 d



DV Fit Results:

Period = 284.44503 [0.01261] d
Epoch = 239.3182 [0.0377] BKJD
Rp/R* = 0.0204 [0.0105]
a/R* = 115.62 [258.31]
b = 0.67 [1.84]
Seff = 1.22 [0.48]
Teq = 268 [26] K
Rp = 2.07 [1.23] Re
a = 0.8597 [0.2153] AU
Ag = 23090.76 [26062.57] [0.89σ]
Teff = 5111 [1374] K [3.52σ]

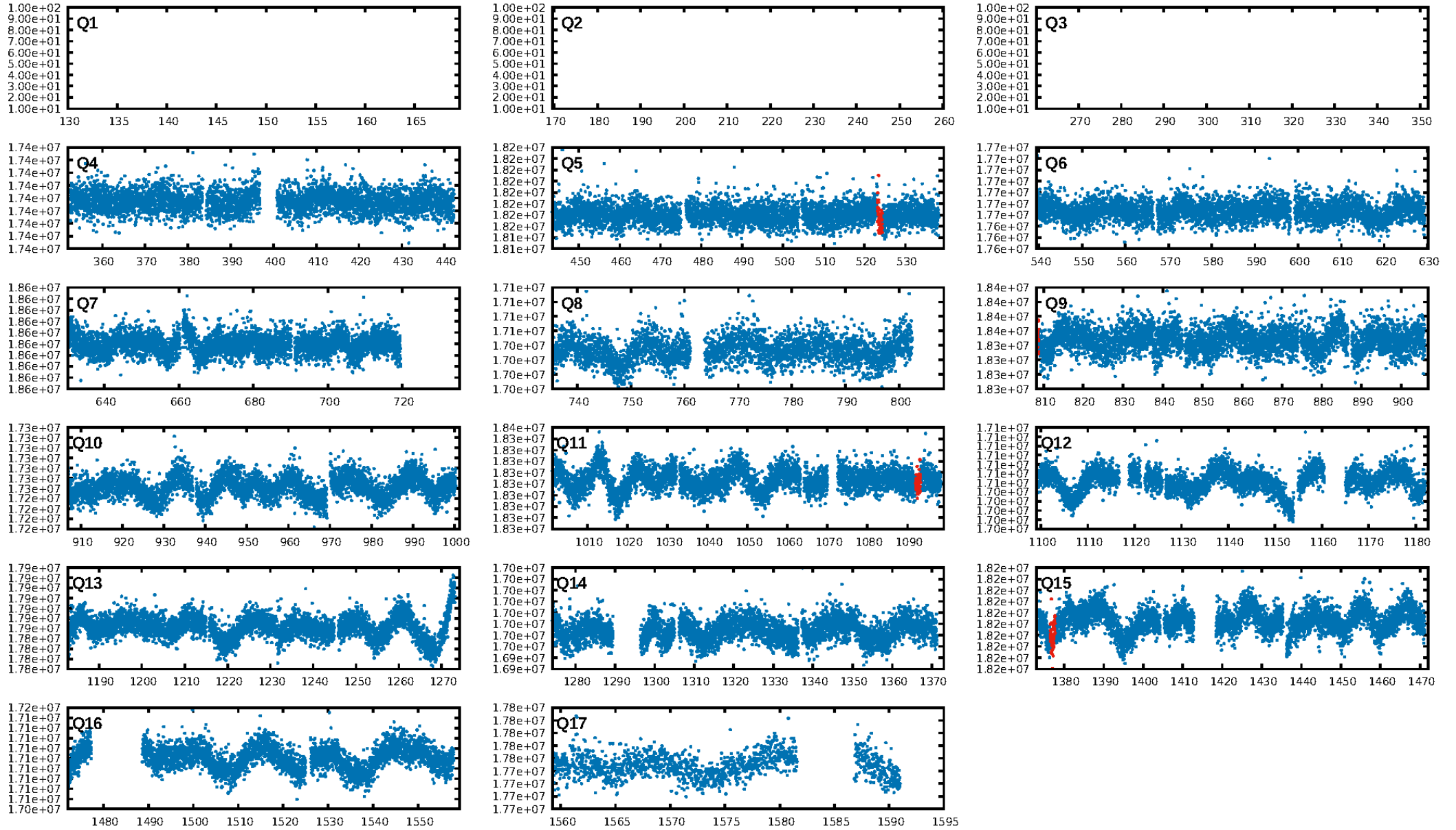
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 13.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.72e-15
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.108
Centroid-sig: 87.5%
Centroid-so: 2.314 arcsec [2.56σ]
OotOffset-rm: 2.420 arcsec [8.25σ]
KicOffset-rm: 3.986 arcsec [15.37σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

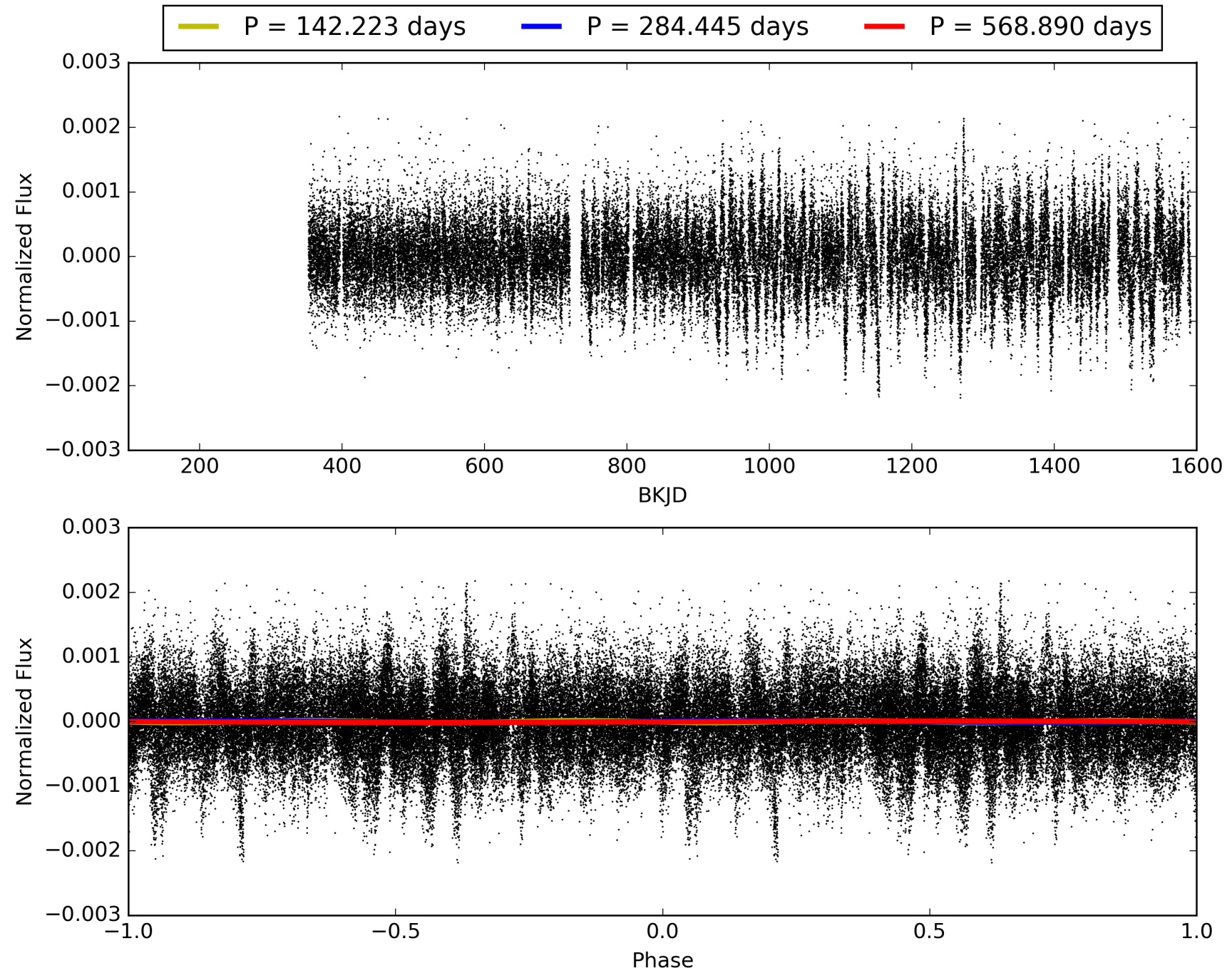
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:22:36 Z

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

TCE 009957415-01, PDC Light Curves

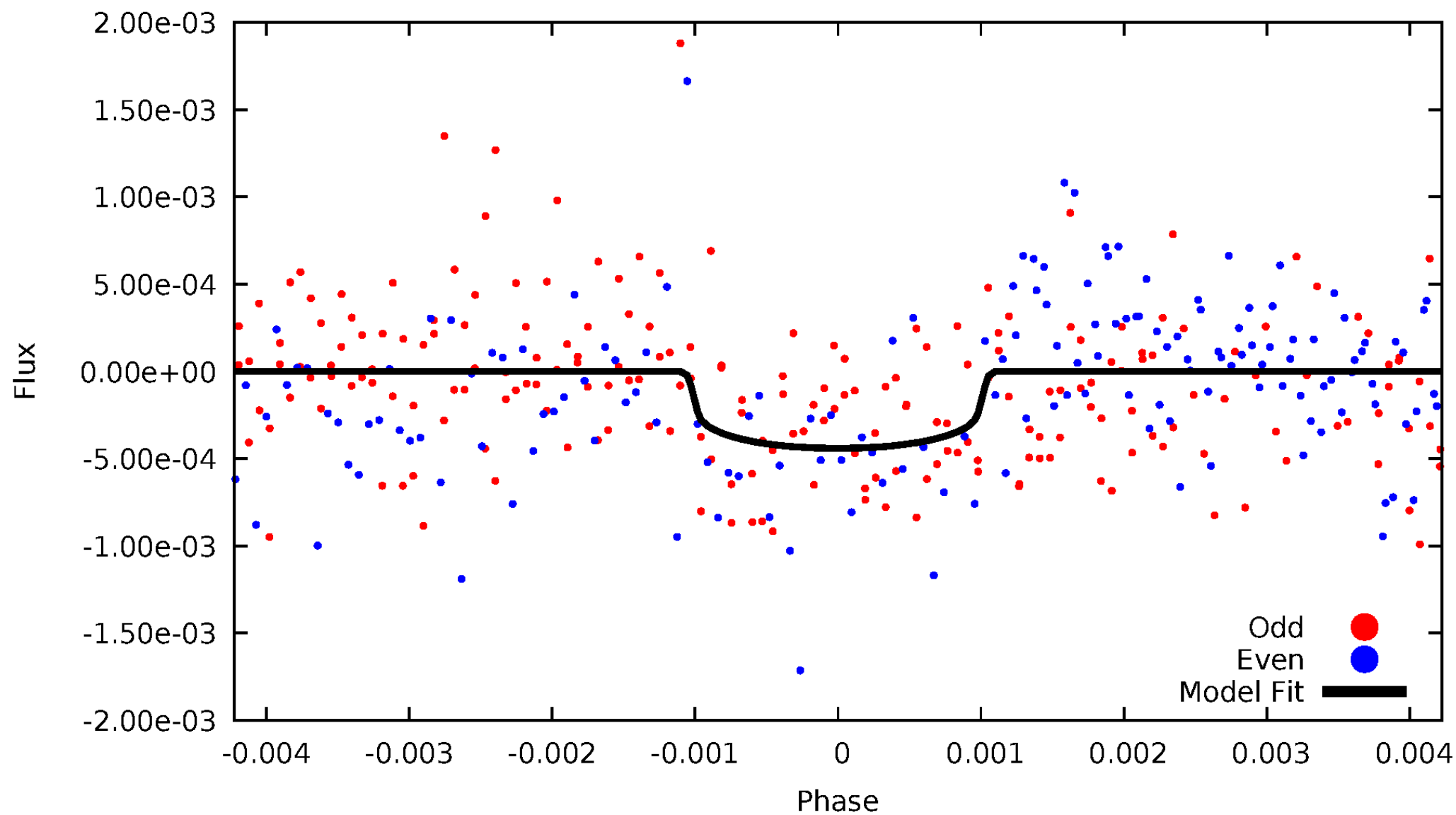


TCE 009957415-01



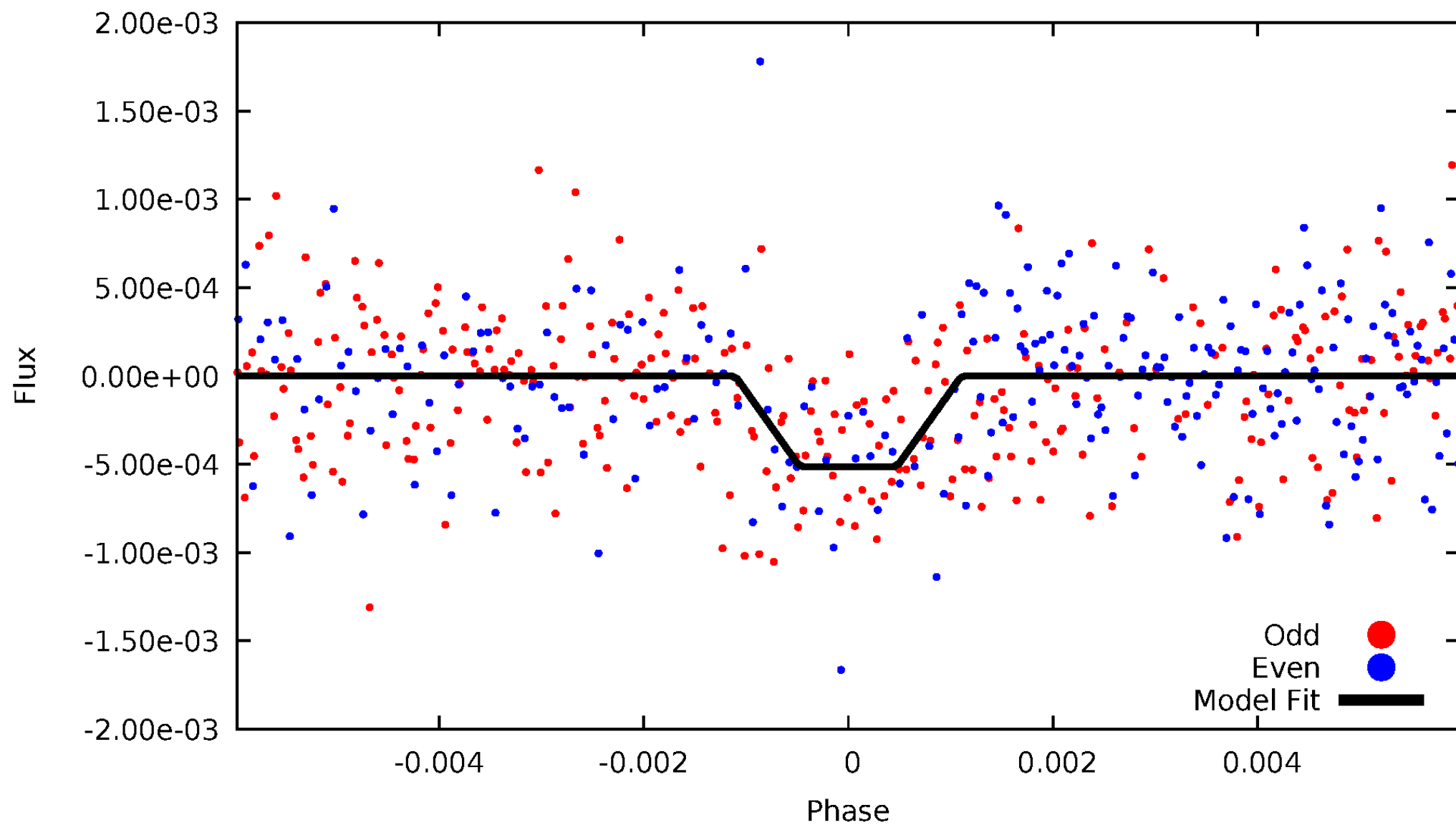
DV Odd/Even

TCE 009957415-01



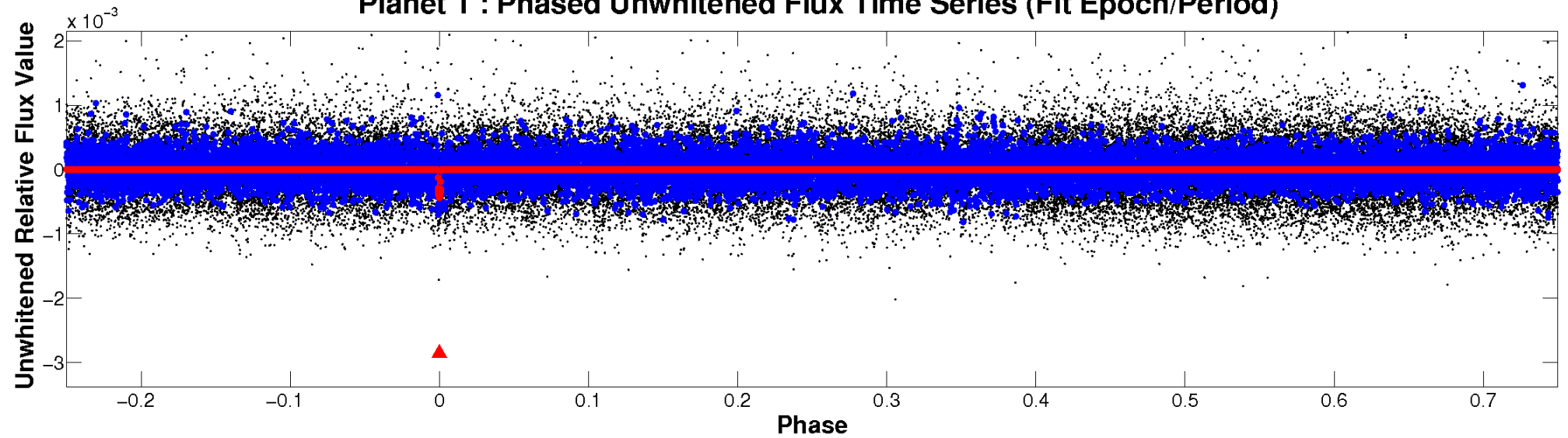
ALT Odd/Even

TCE 009957415-01

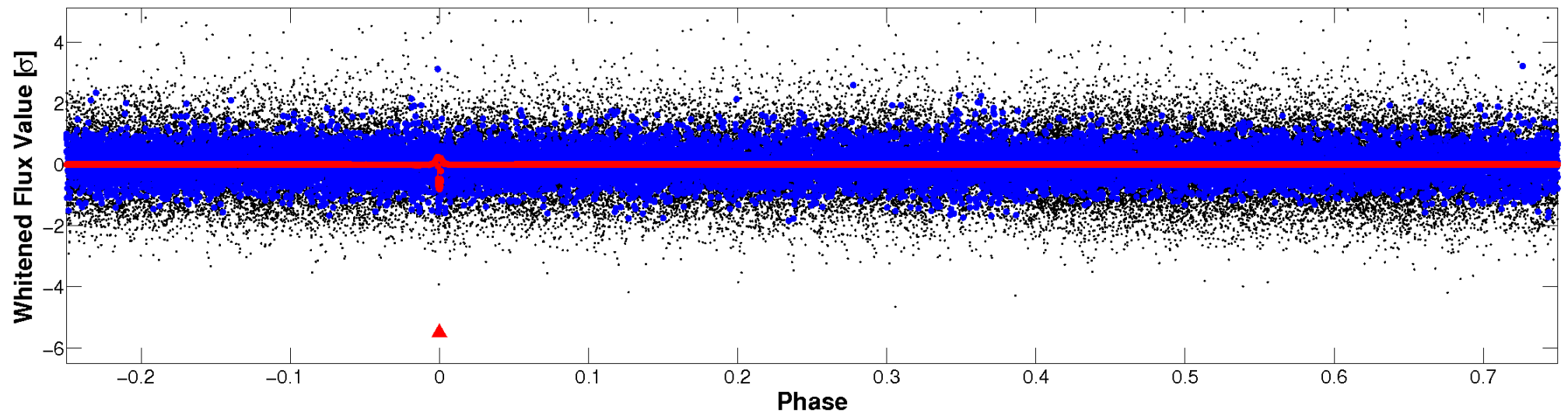


Non-Whitened Vs. Whitened Light Curve

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

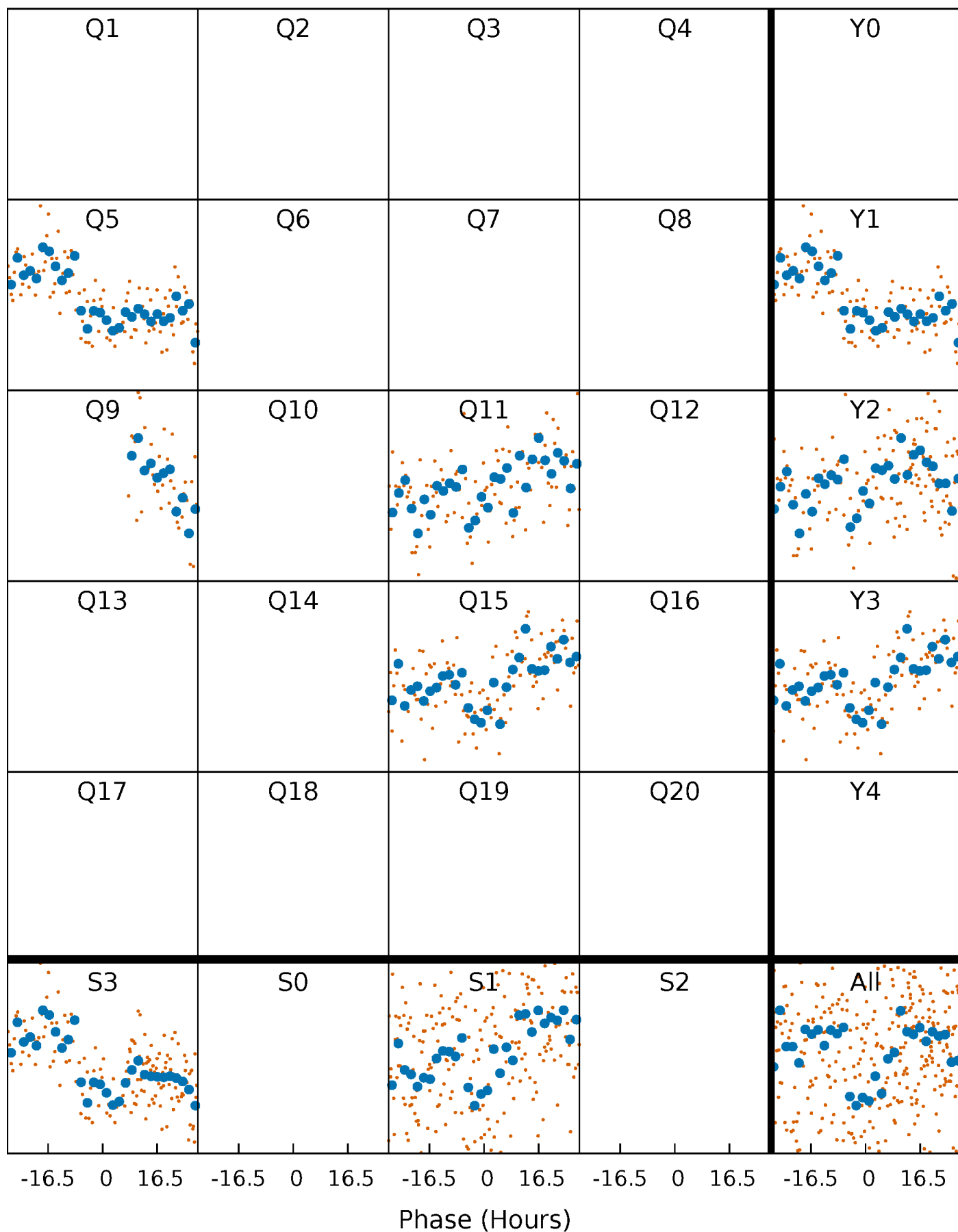


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



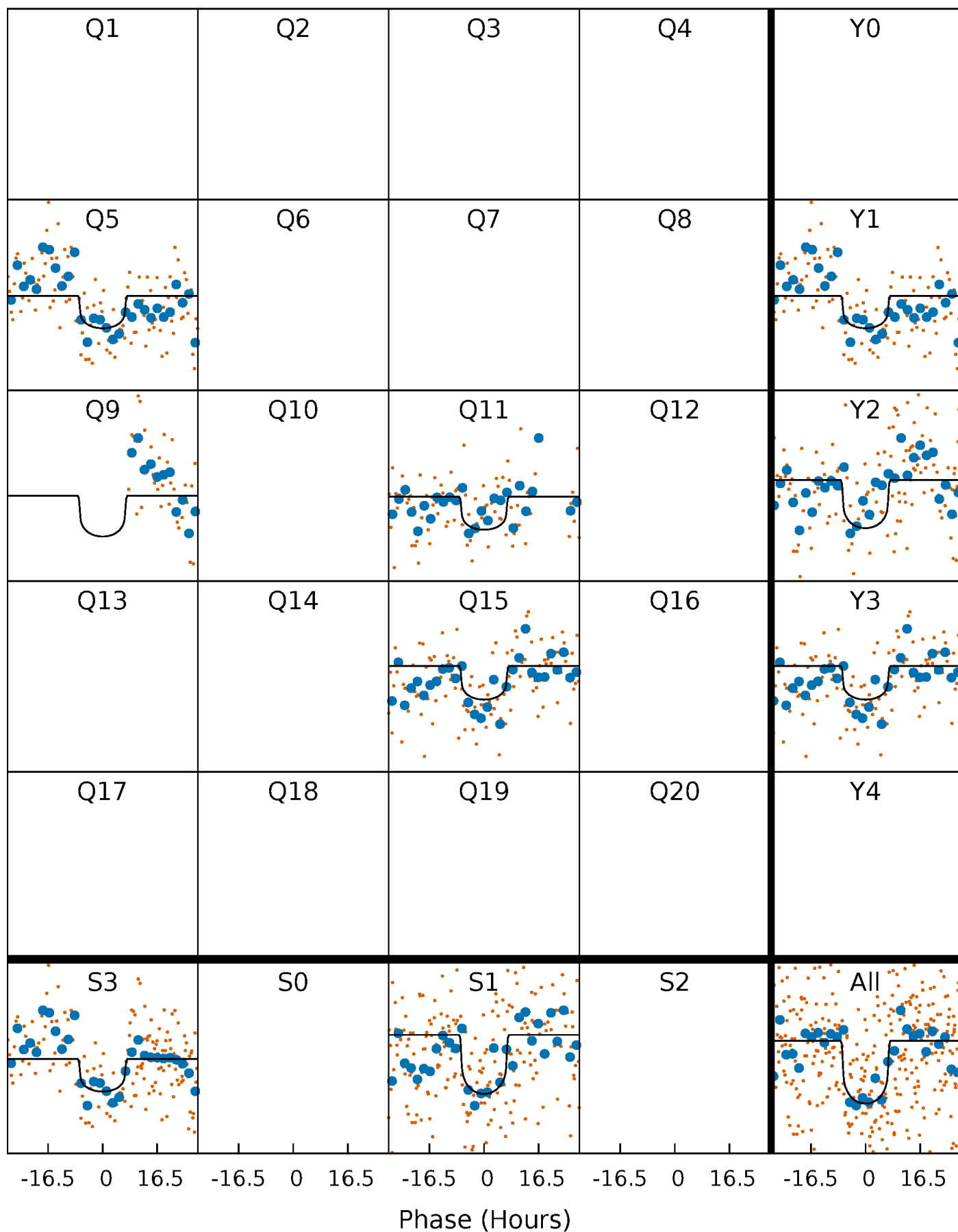
PDC Quarter-Phased Transit Curves

TCE 009957415-01 P=284.445032 Days $T_0=239.318230$ (BKJD)



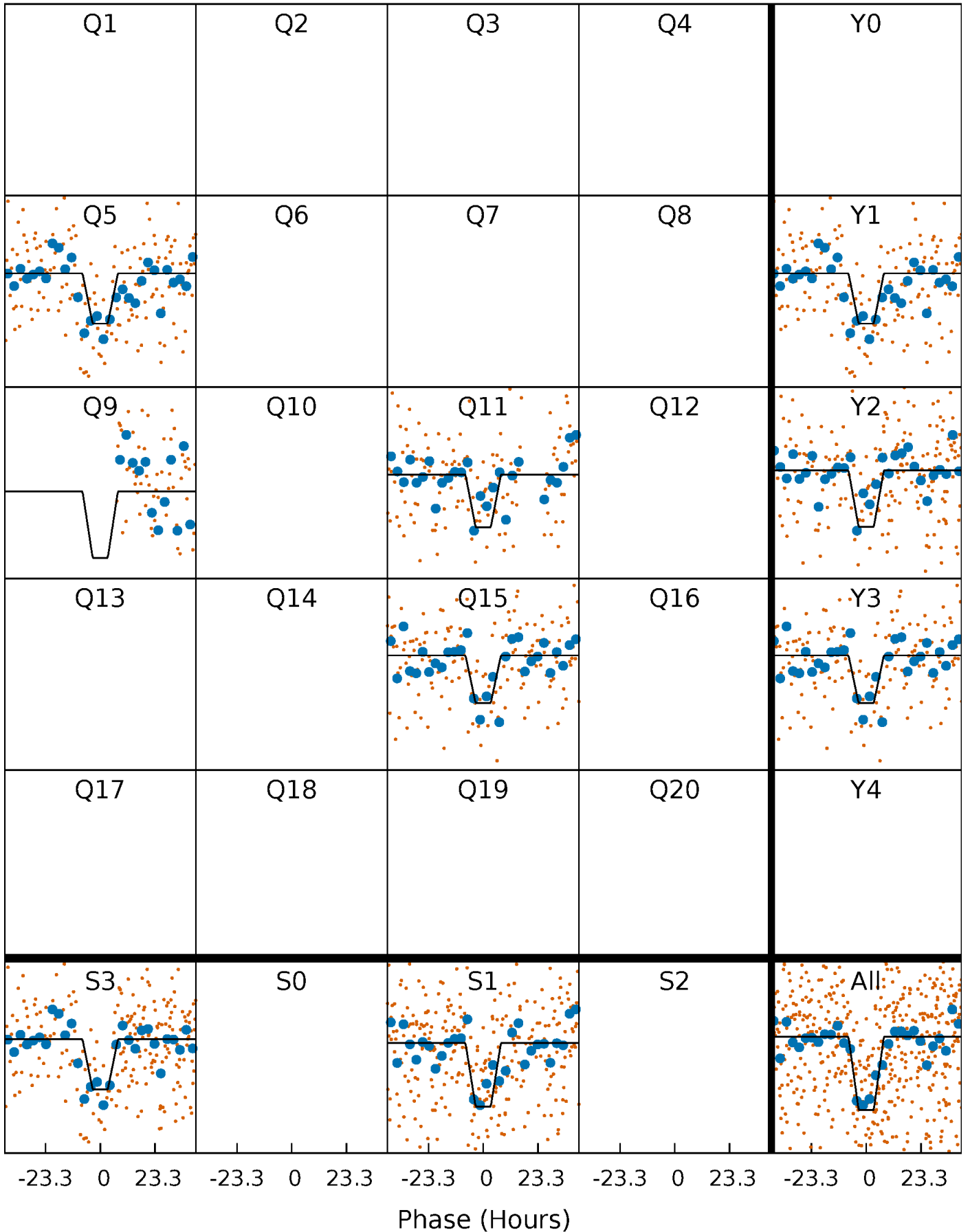
DV Quarter-Phased Transit Curves

TCE 009957415-01 P=284.445032 Days $T_0=239.318230$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

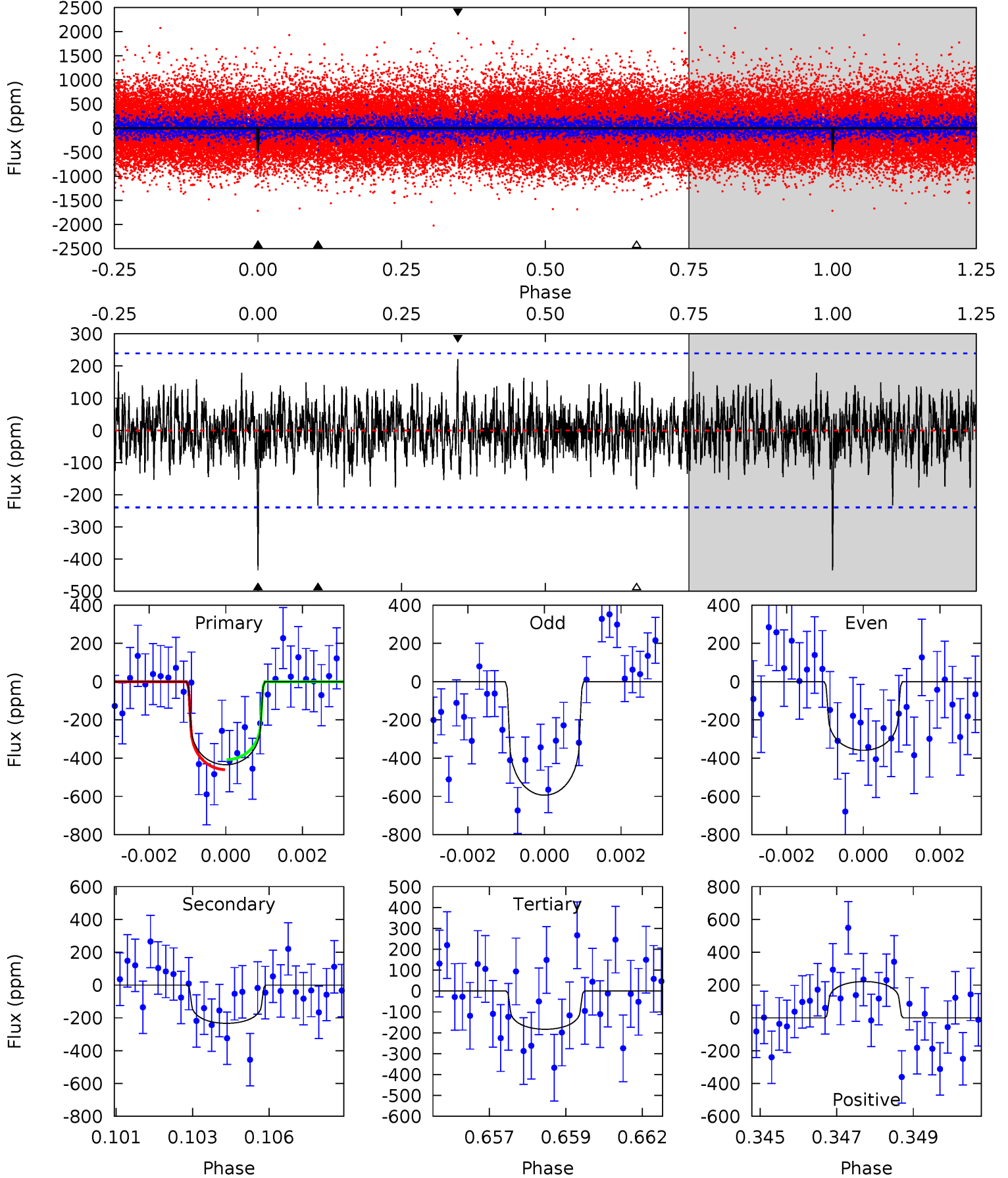
TCE 009957415-01 P=284.401099 Days $T_0=239.439180$ (BKJD)



DV Model-Shift Uniqueness Test

009957415-01, P = 284.445032 Days, E = 239.318230 Days

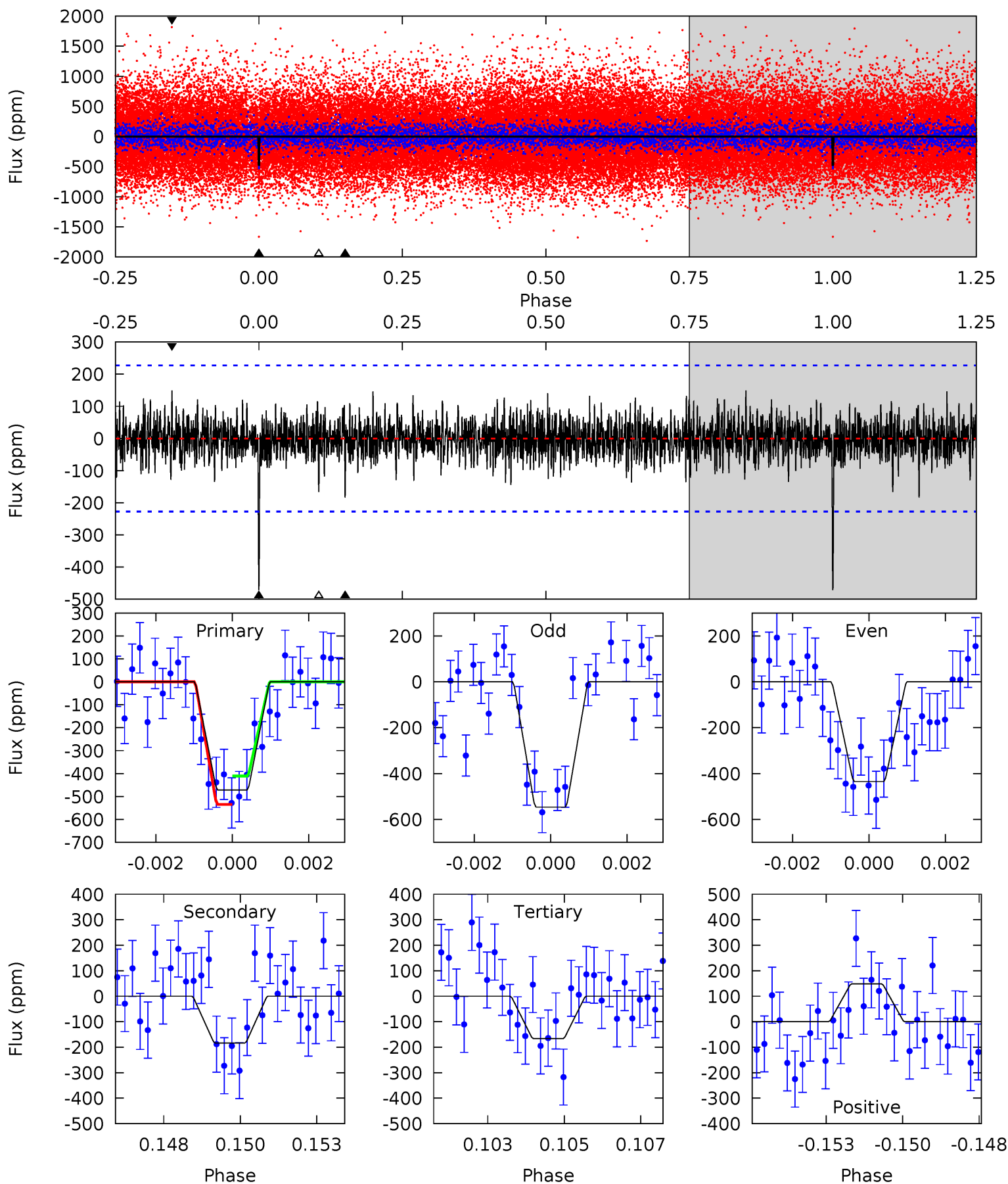
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.64	5.18	4.07	4.92	5.31	3.07	1.26	5.57	4.73	1.12	0.27	2.43	0.88	0.34	0.58



Alt Model-Shift Uniqueness Test

009957415-01, P = 284.401099 Days, E = 239.439180 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	4.29	3.88	3.47	5.30	3.05	1.05	7.11	7.52	0.40	0.81	1.23	1.01	0.24	1.44



Stellar Parameters For KIC 009957415

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5841^{+182}_{-203}	$4.520^{+0.036}_{-0.204}$	$0.070^{+0.250}_{-0.300}$	$0.931^{+0.273}_{-0.091}$	$1.047^{+0.112}_{-0.137}$	$1.828^{+0.363}_{-0.945}$
	+3%/-3%	+1%/-5%	+357%/-429%	+29%/-10%	+11%/-13%	+20%/-52%
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 009957415-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-233 ± 45	$2.11^{+1.26}_{-1.11}$	385^{+28}_{-19}	5156^{+2401}_{-848}	20751^{+71845}_{-12880}
Alt.	-184 ± 43	$2.41^{+1.25}_{-1.08}$	385^{+28}_{-18}	4626^{+1466}_{-652}	12044^{+27958}_{-6717}

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

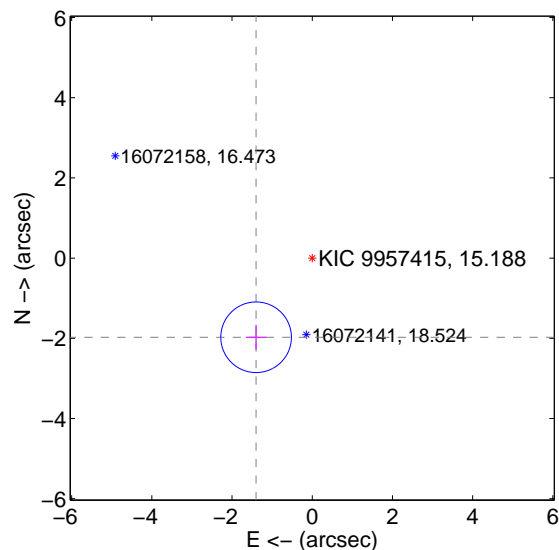
Supplemental centroid analysis for 009957415-01. Kepler magnitude: 15.19. Transit SNR 6.67

There are 1 quarters with good PRF difference image offsets

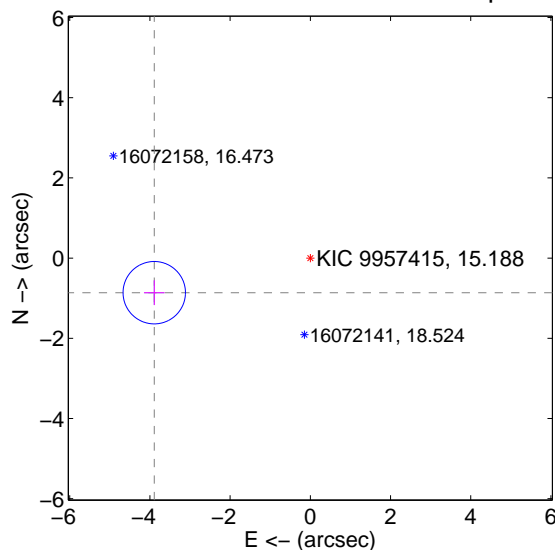
The OOT PRF centroid is offset from the target star catalog position by about 2.73 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.420 ± 0.293	8.25	1.400 ± 0.257	-1.974 ± 0.310
PRF-fit source offset from KIC position	3.986 ± 0.259	15.37	3.892 ± 0.257	-0.862 ± 0.310
photometric centroid source offset	2.31 ± 0.90	2.56	2.25 ± 0.91	0.53 ± 0.72

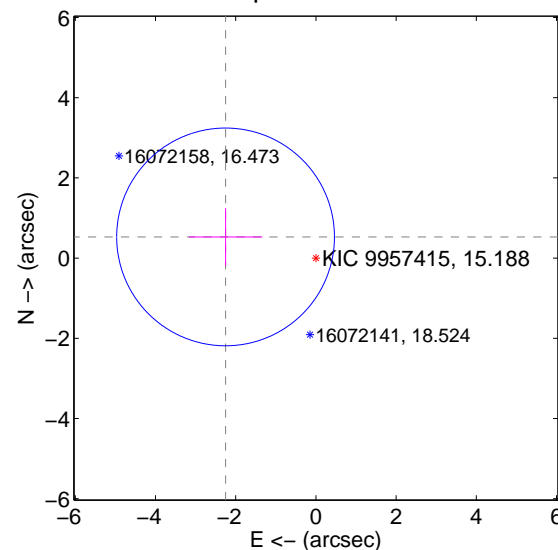
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

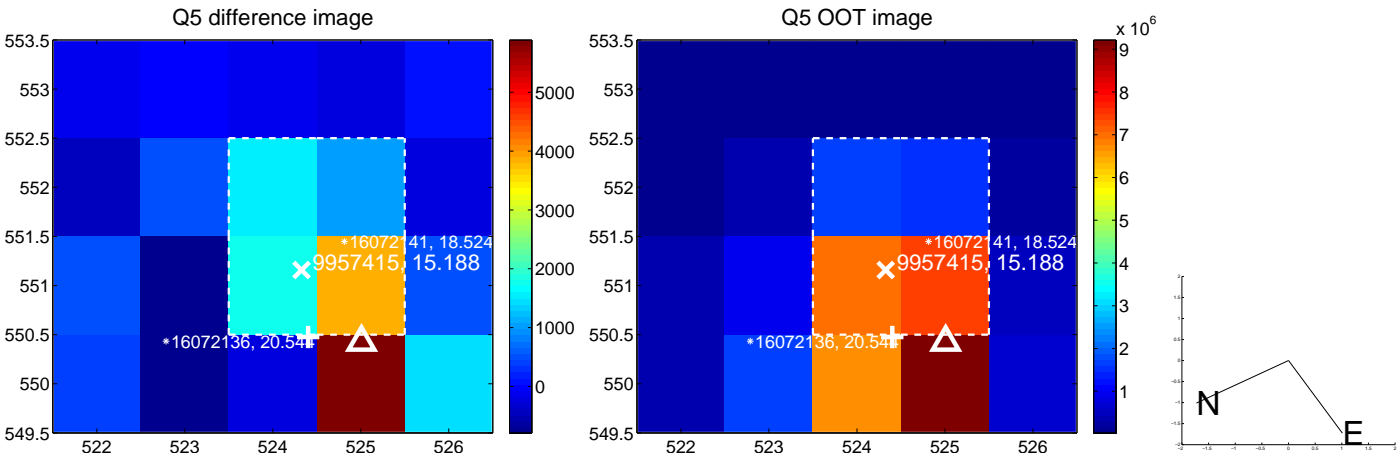


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



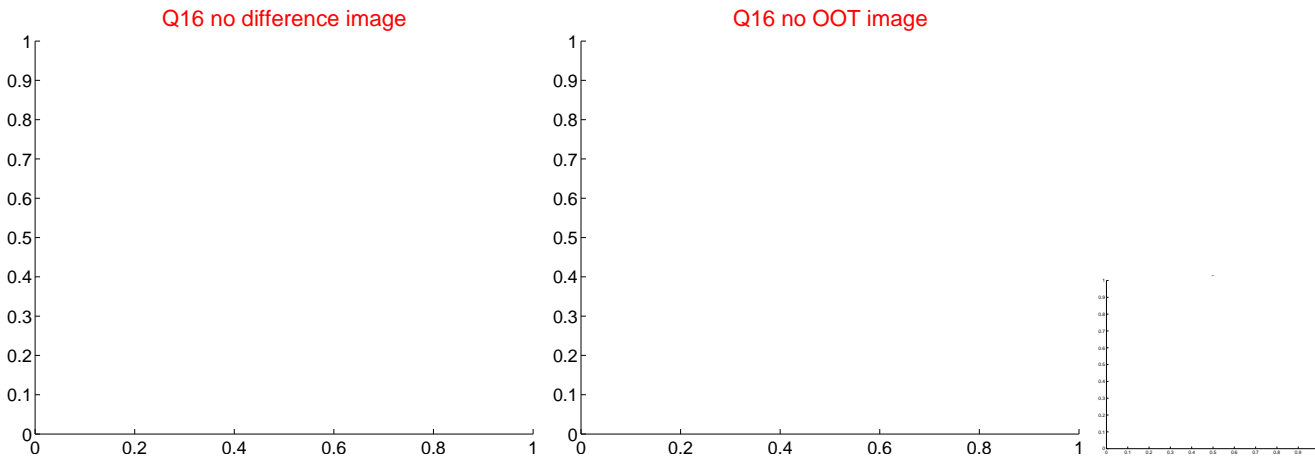
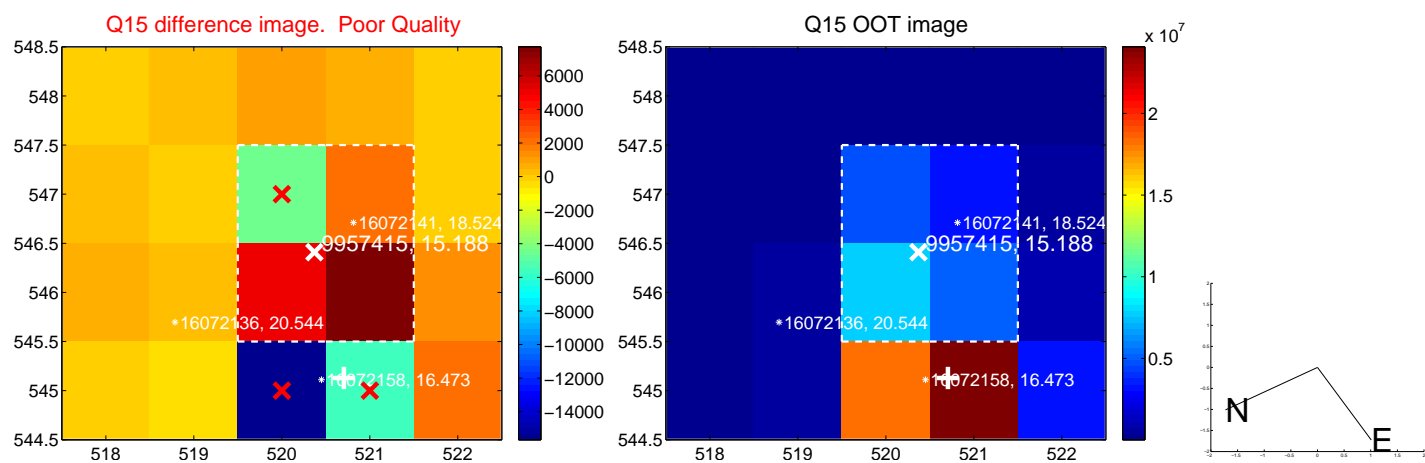
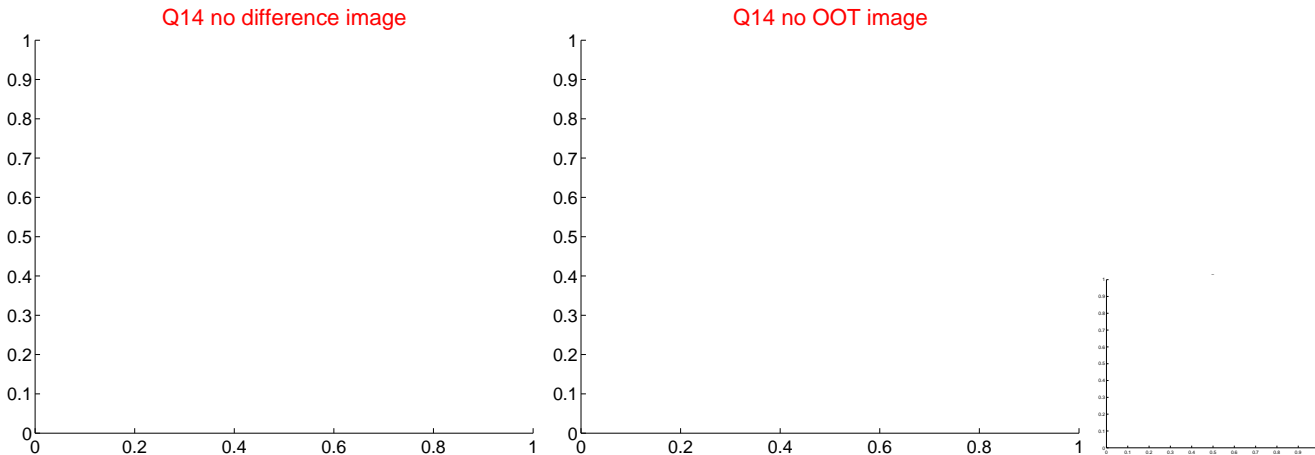
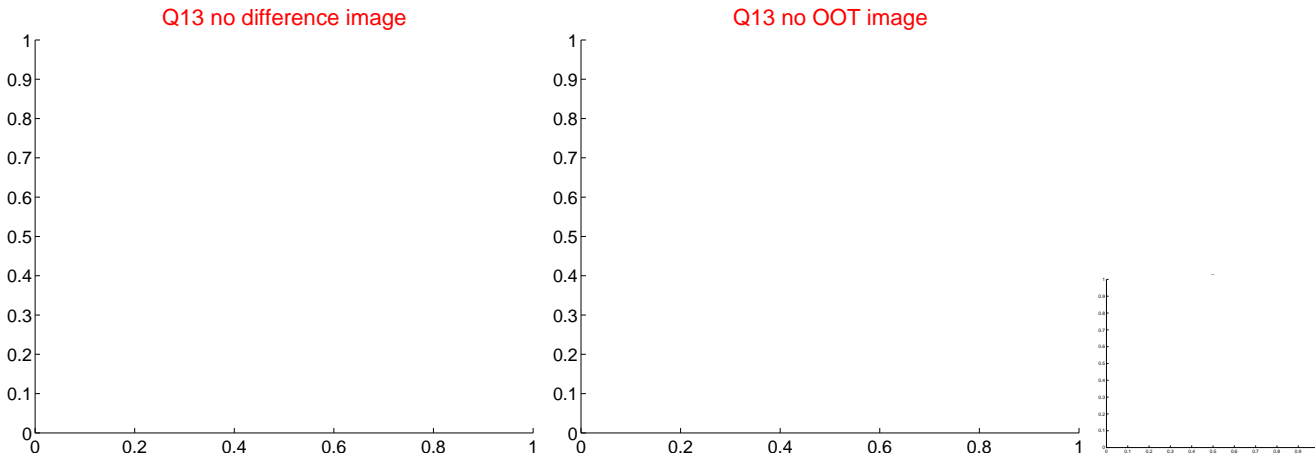
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



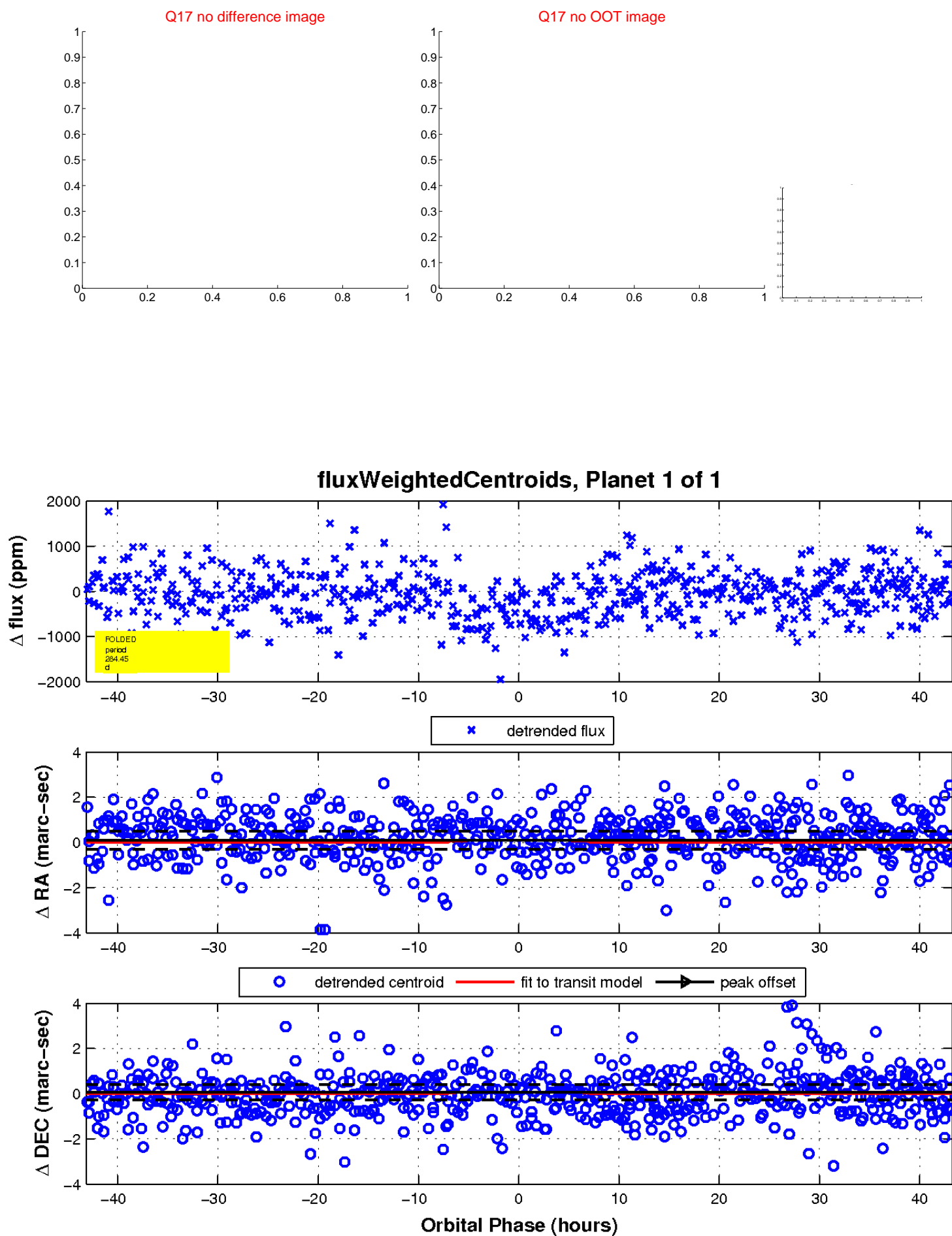
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UKIRT Image

Declination

