

KIC 002449407

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})
002449407-01	OBS	No	430.661272	518.608385	259.9	7.304	11.9	9.4	2.24	6010	4.11	4.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002449407-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—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.

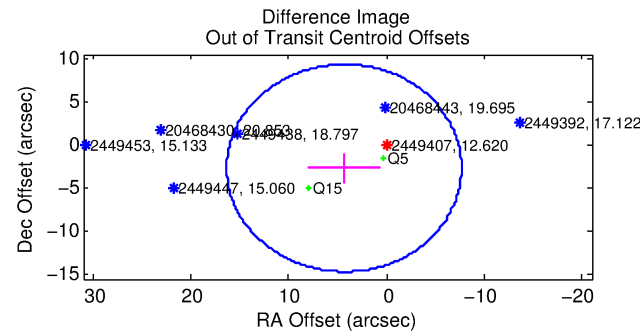
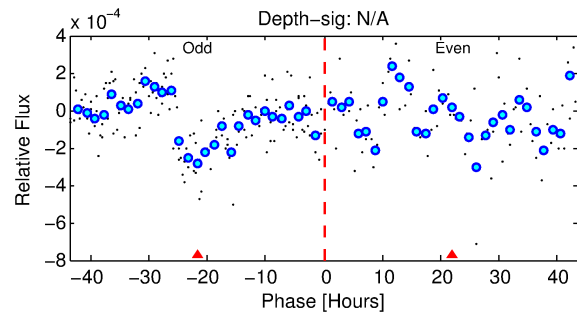
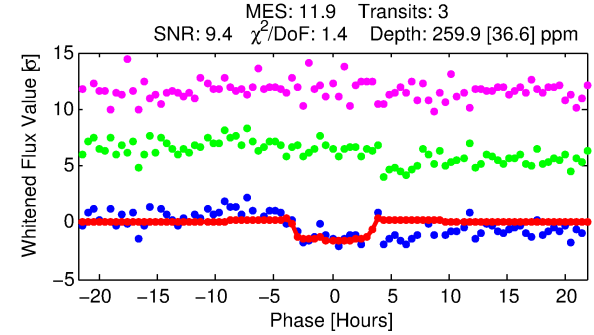
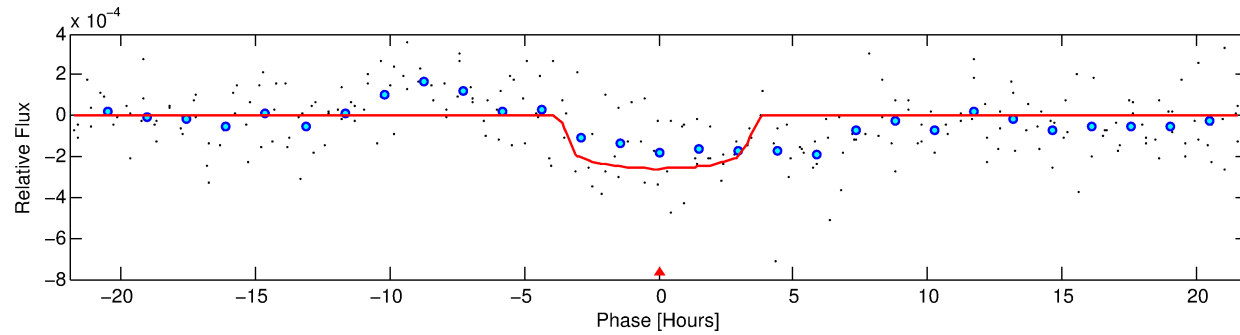
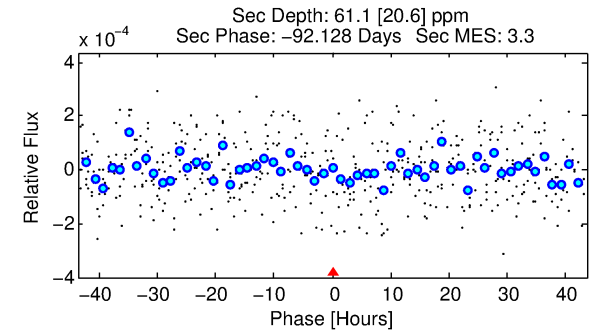
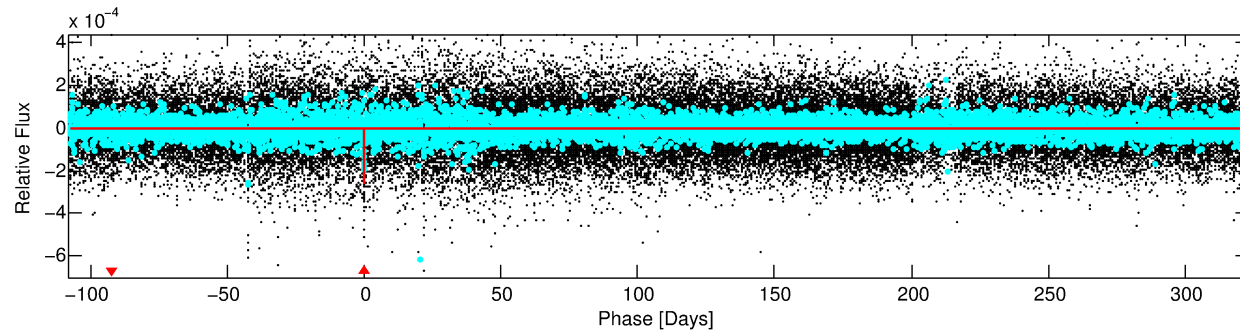
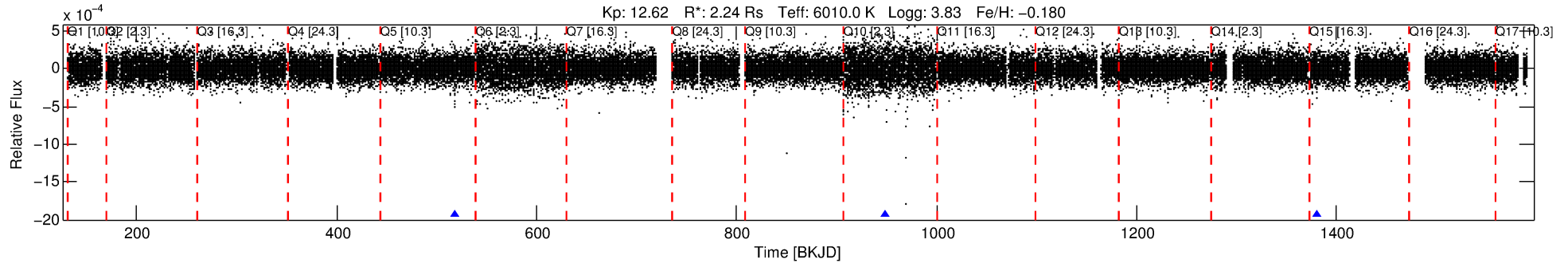
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002449407-01

No Significant Match Found

DV One-Page Summary

KIC: 2449407 Candidate: 1 of 1 Period: 430.661 d



DV Fit Results:

Period = 430.66127 [0.00898] d
Epoch = 518.6084 [0.0110] BKJD
Rp/R* = 0.0168 [0.0088]
a/R* = 246.70 [649.83]
b = 0.86 [0.83]
Seff = 4.09 [2.23]
Teq = 363 [49] K
Rp = 4.11 [2.64] Re
a = 1.1952 [0.4108] AU
Ag = 2842.26 [3468.87] [0.82σ]
Teffp = 4094 [1128] K [3.30σ]

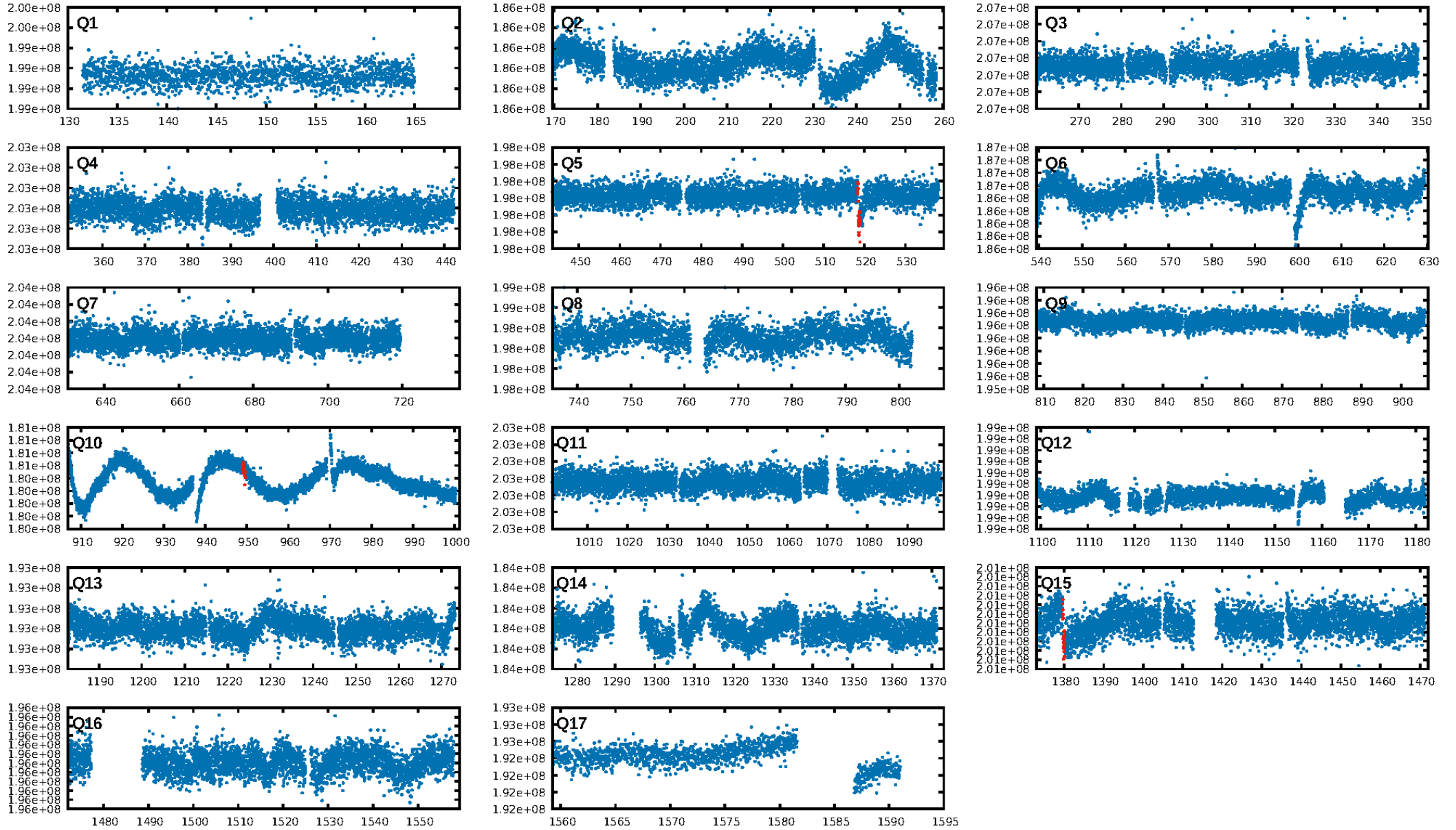
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 78.8%
Bootstrap-pfa: 6.97e-18
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -12.32
Centroid-sig: 0.2%
Centroid-so: 3.335 arcsec [2.51σ]
OotOffset-rm: 5.090 arcsec [1.27σ]
KicOffset-rm: 5.056 arcsec [1.05σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

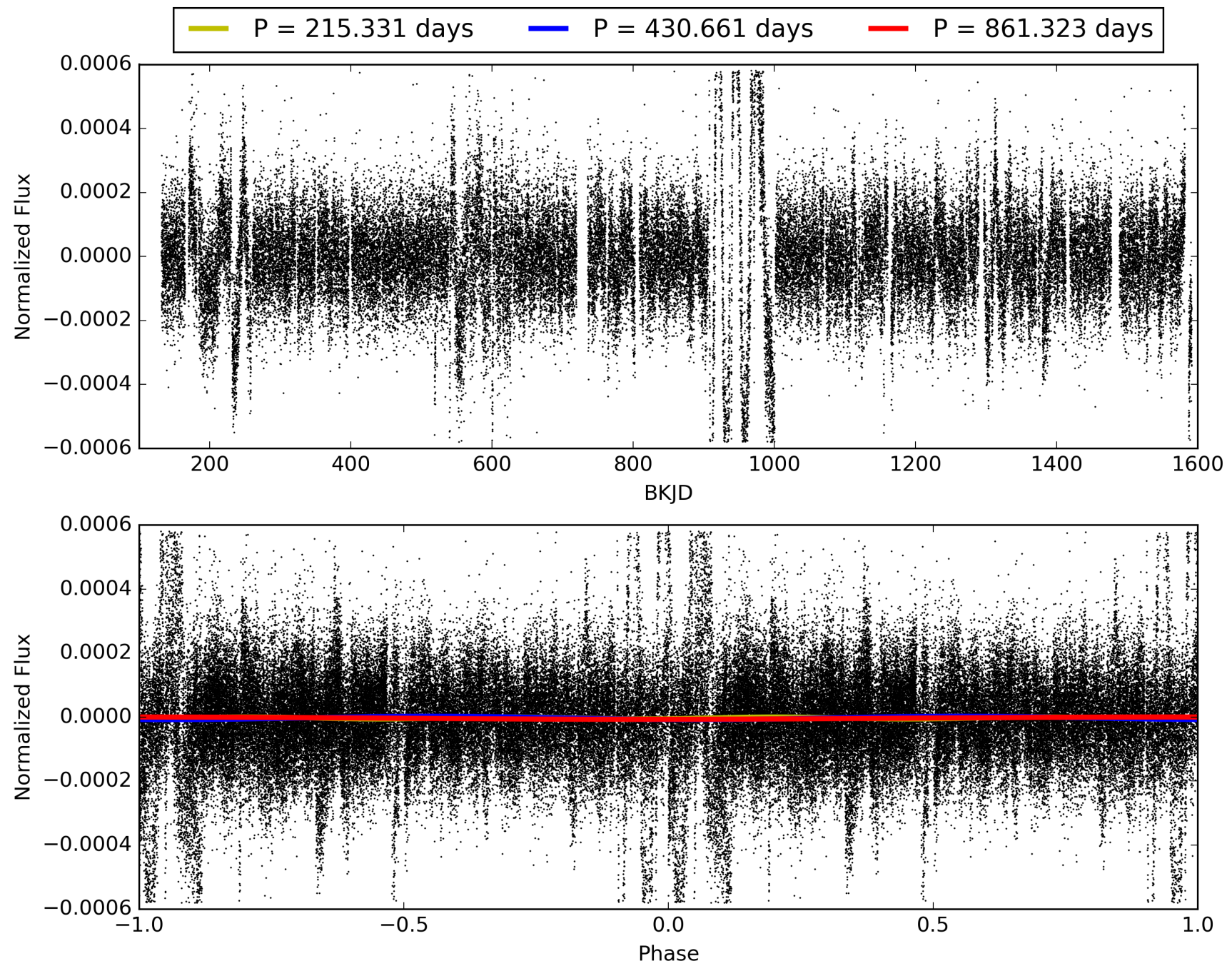
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:56:00 Z

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

TCE 002449407-01, PDC Light Curves

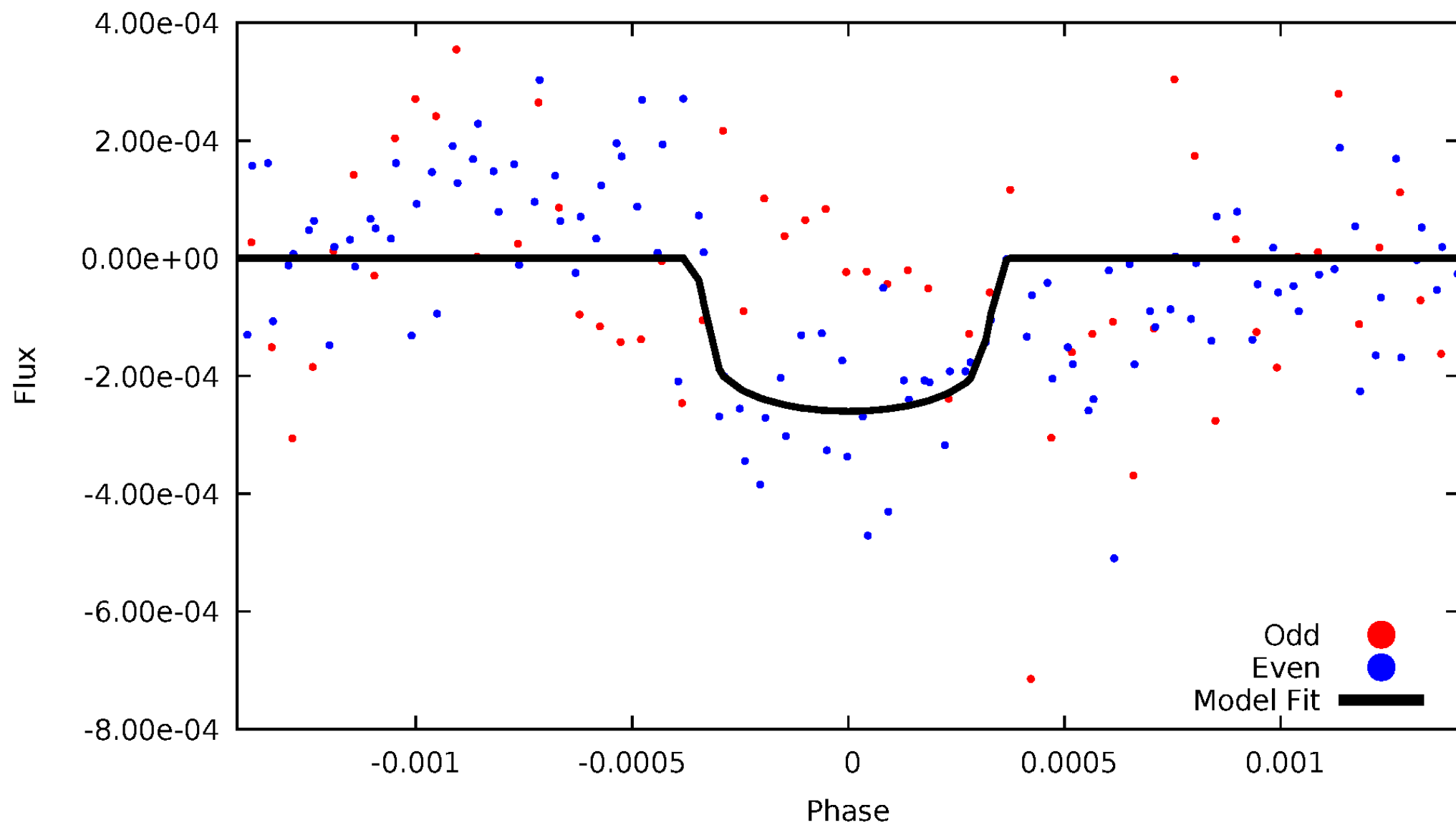


TCE 002449407-01



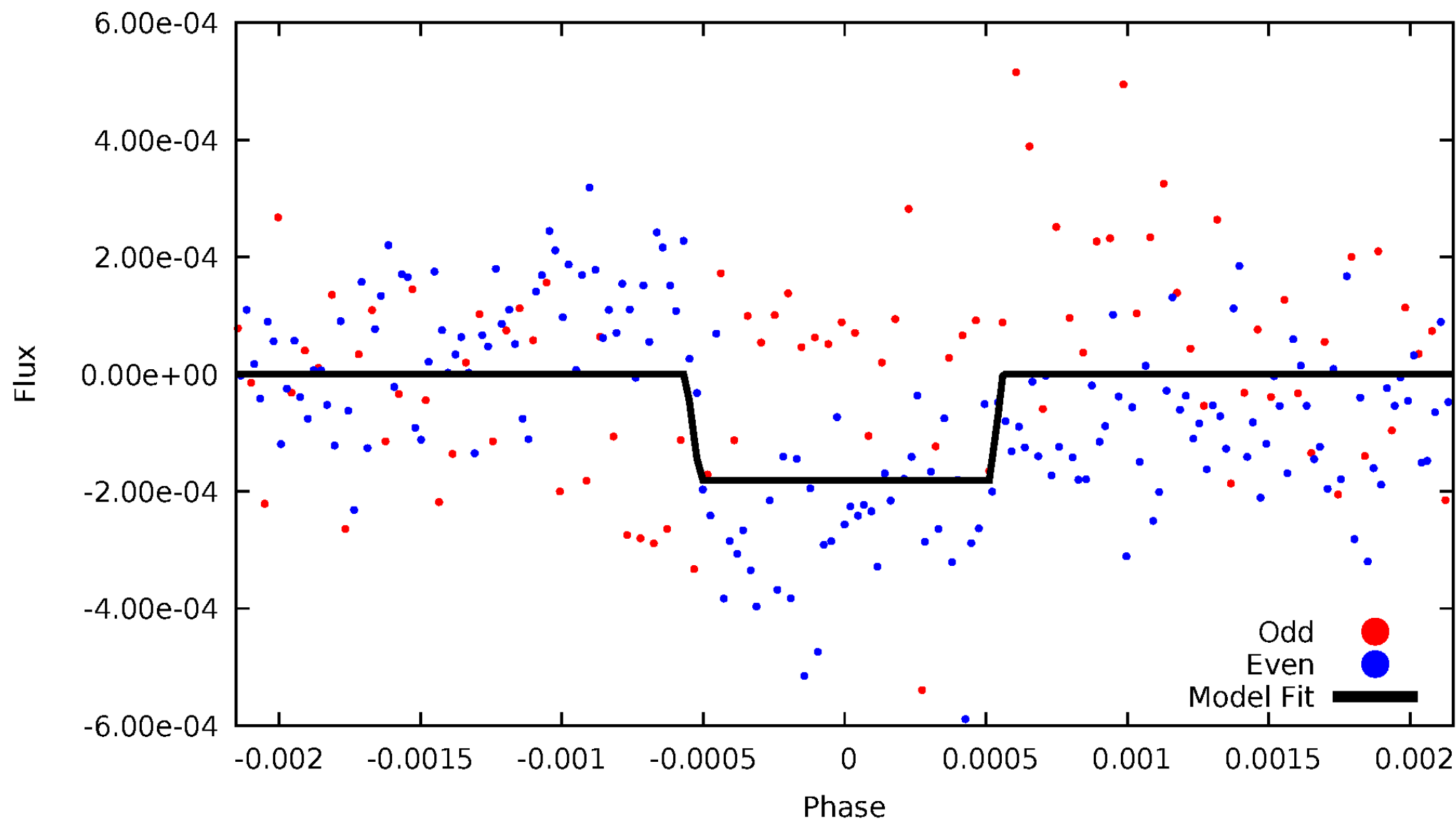
DV Odd/Even

TCE 002449407-01



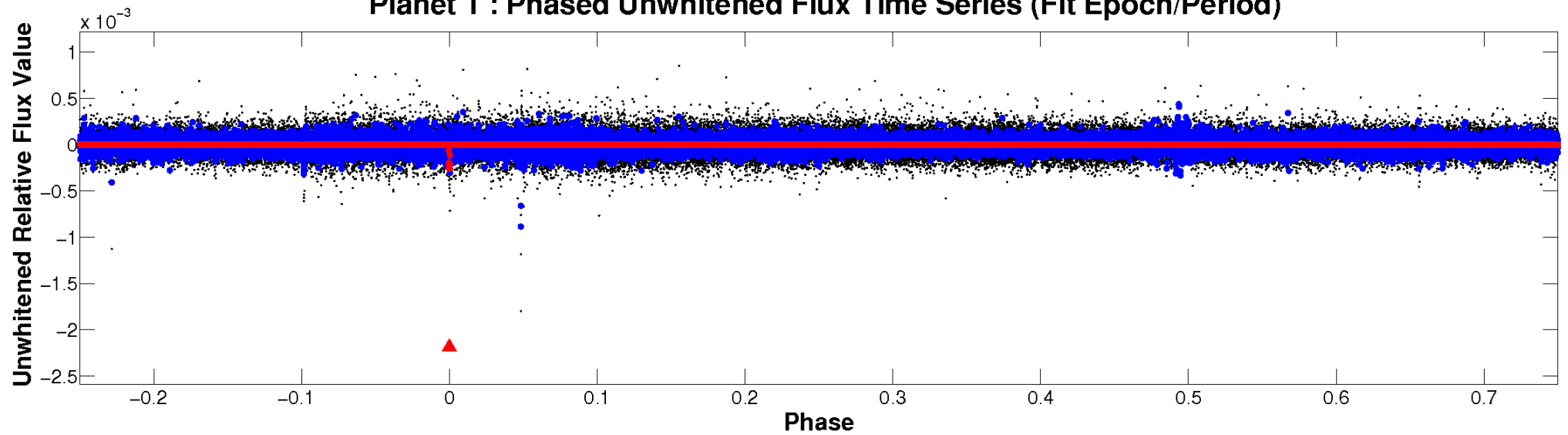
ALT Odd/Even

TCE 002449407-01

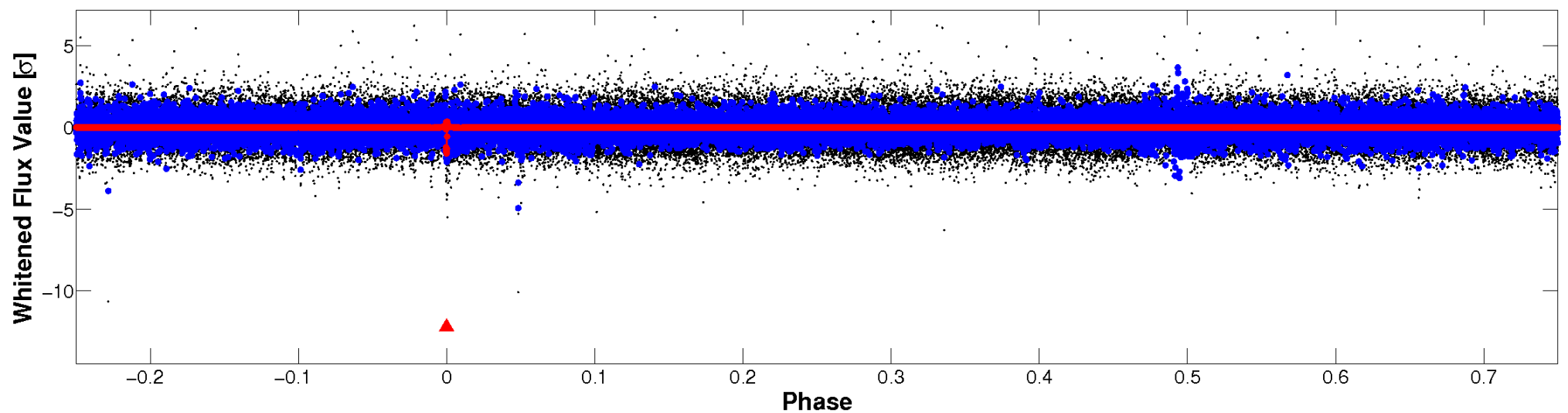


Non-Whitened Vs. Whitened Light Curve

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

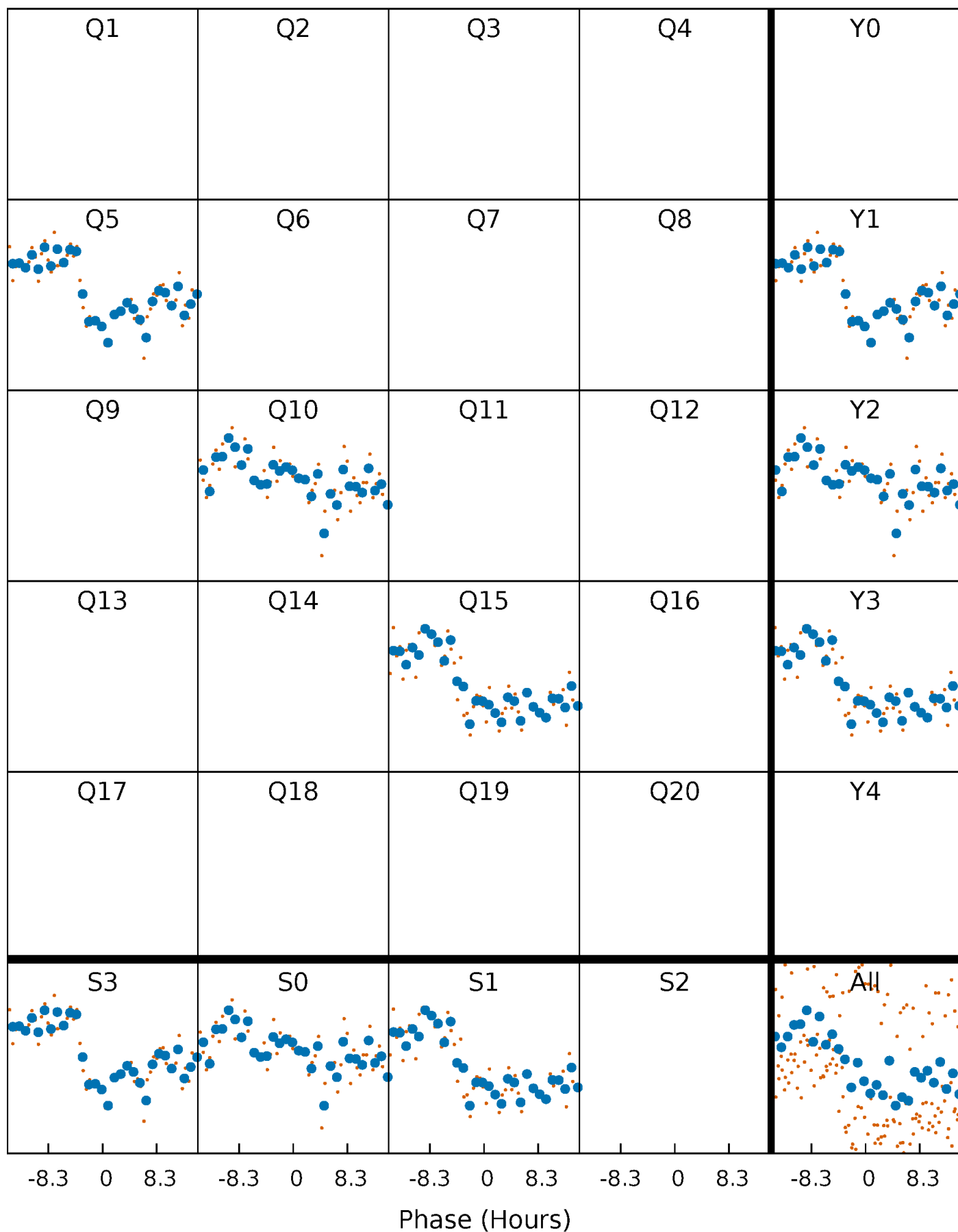


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



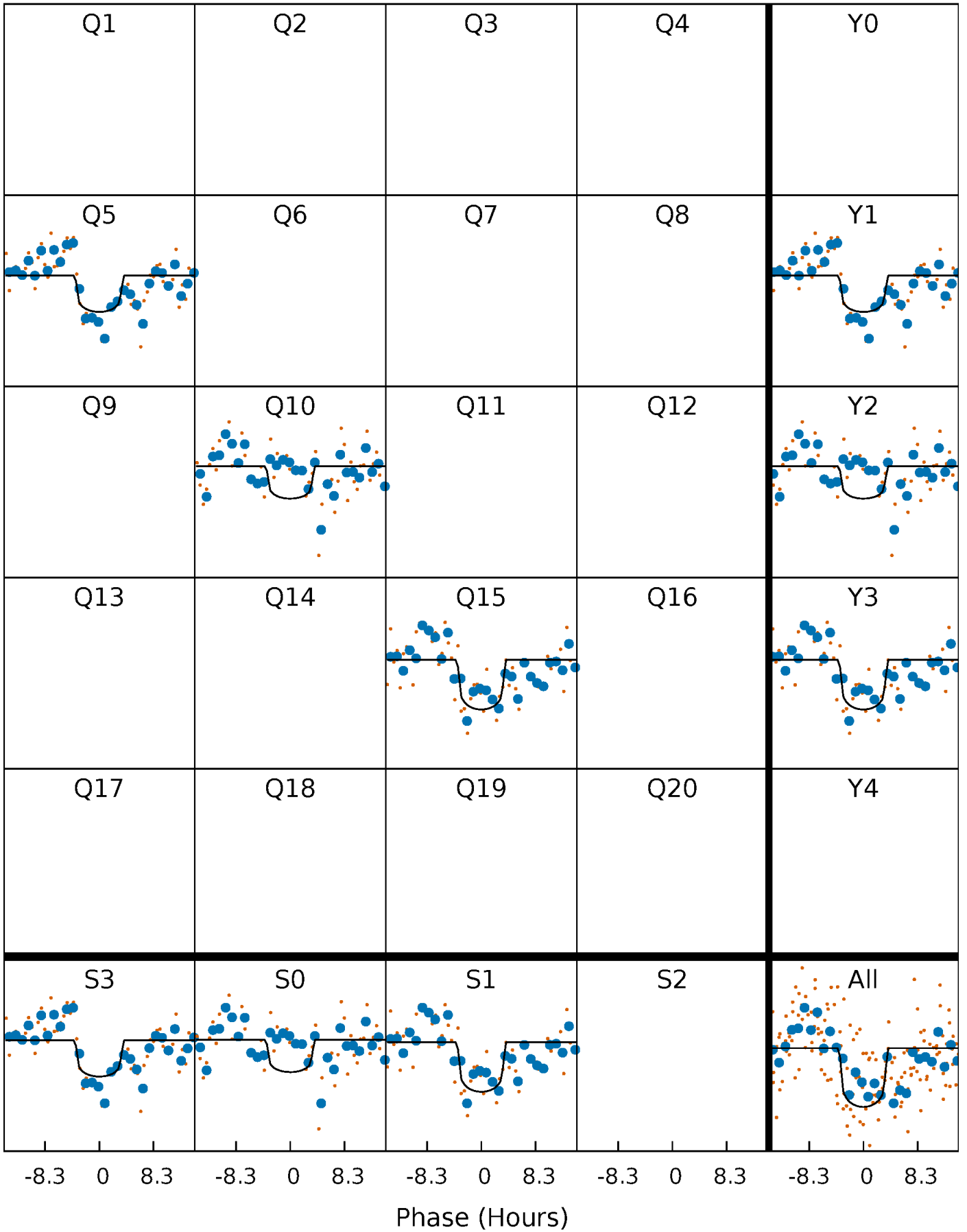
PDC Quarter-Phased Transit Curves

TCE 002449407-01 P=430.661272 Days $T_0=518.608385$ (BKJD)



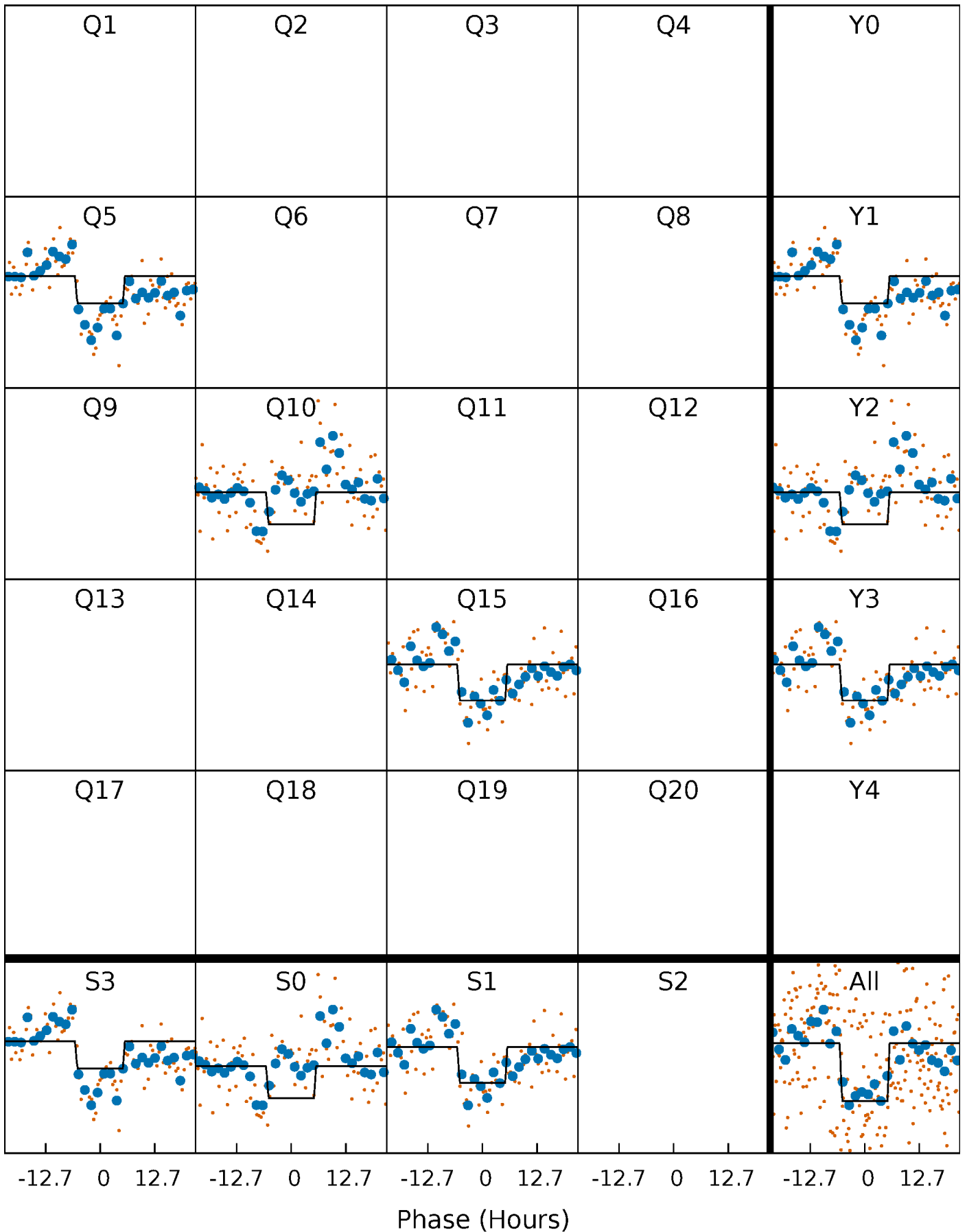
DV Quarter-Phased Transit Curves

TCE 002449407-01 $P=430.661272$ Days $T_0=518.608385$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

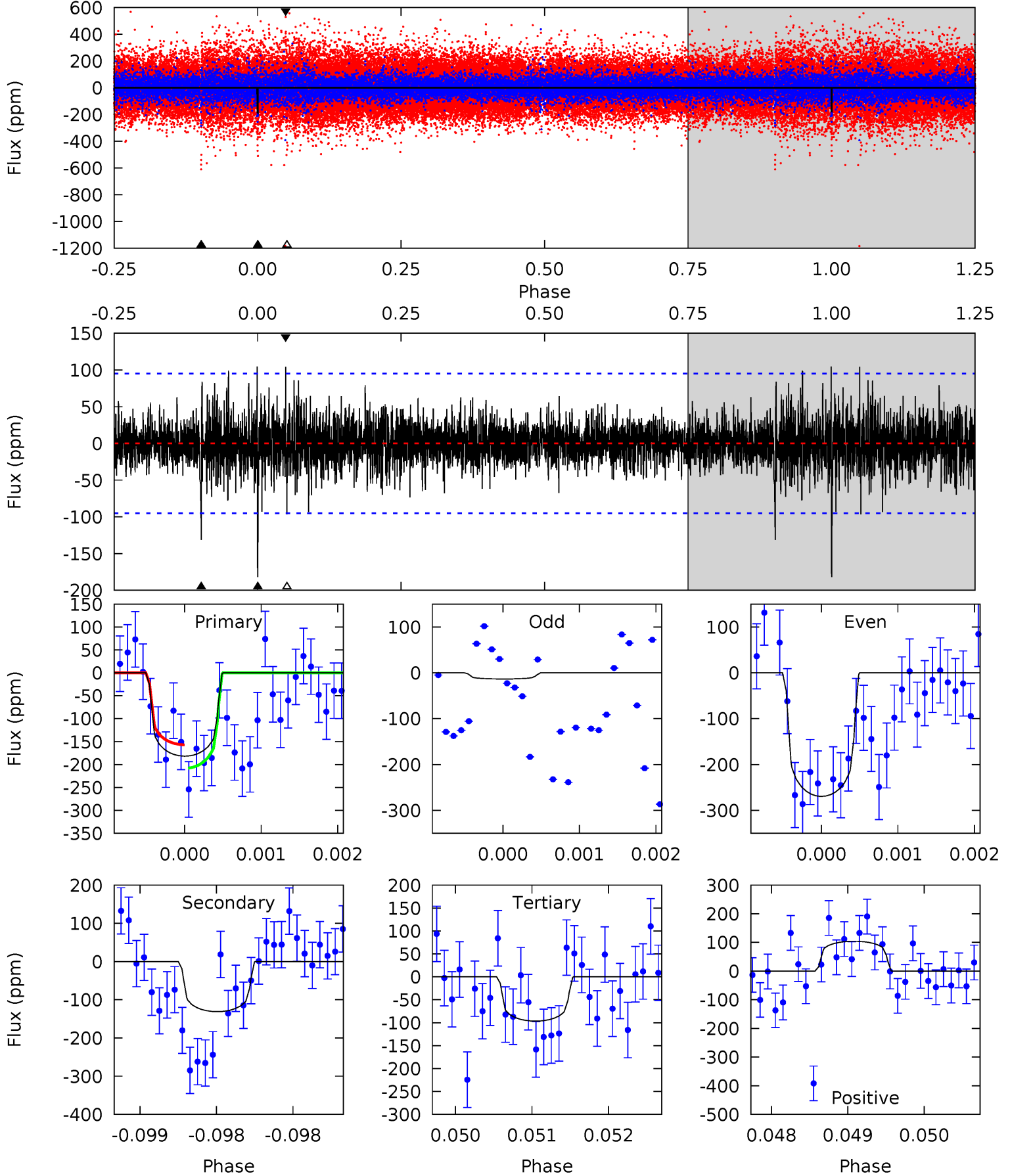
TCE 002449407-01 P=430.644088 Days $T_0=518.689191$ (BKJD)



DV Model-Shift Uniqueness Test

002449407-01, P = 430.661272 Days, E = 87.947113 Days

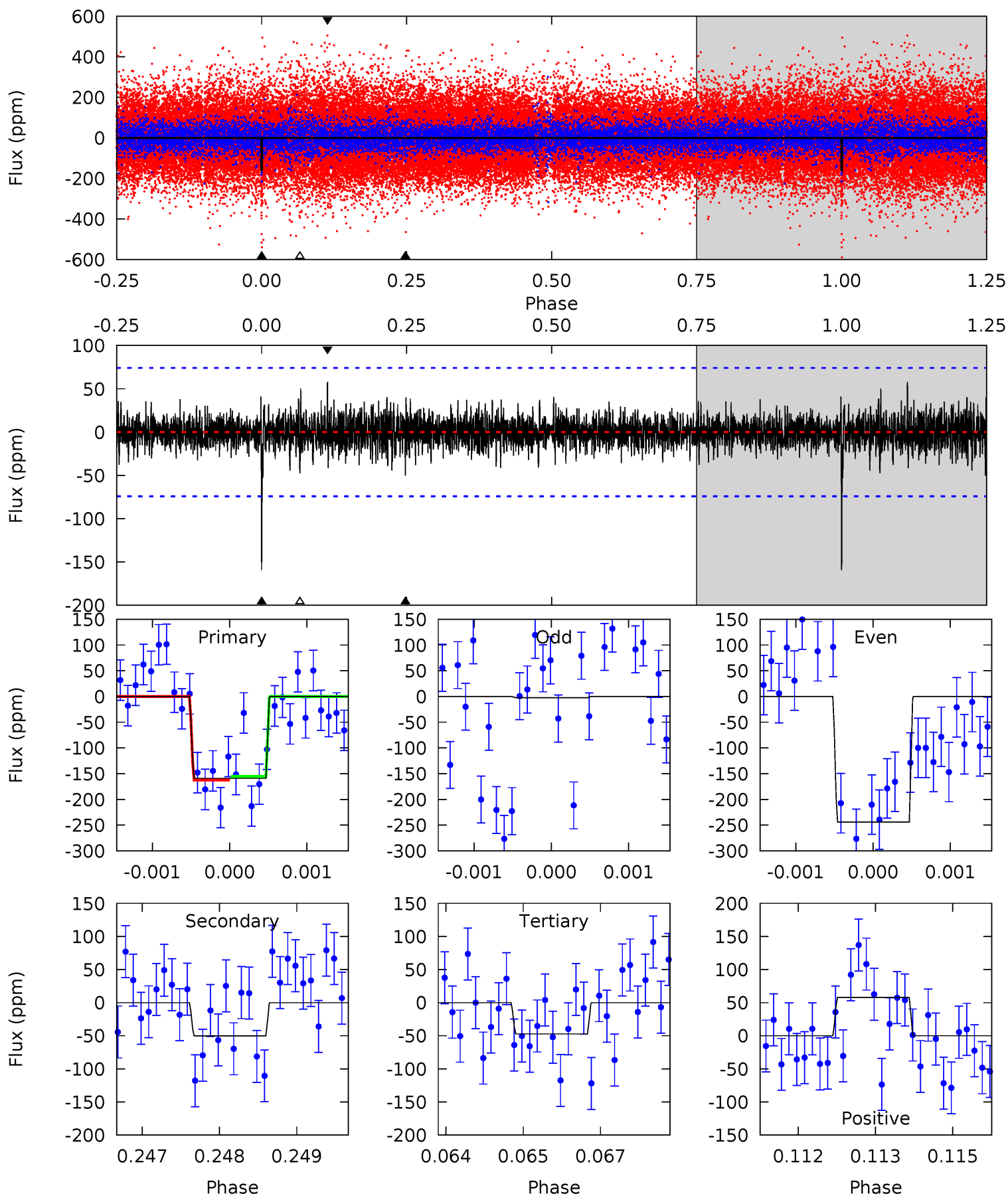
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	7.59	5.59	6.03	5.50	3.37	1.25	4.93	4.49	2.00	1.56	6.89	0.82	0.37	1.48



Alt Model-Shift Uniqueness Test

002449407-01, P = 430.644088 Days, E = 88.045103 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	3.69	3.47	4.26	5.44	3.27	0.89	8.19	7.41	0.22	-0.57	8.34	0.88	0.27	0.26



Stellar Parameters For KIC 002449407

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6010^{+161}_{-161}	$3.828^{+0.308}_{-0.103}$	$-0.180^{+0.350}_{-0.250}$	$2.236^{+0.419}_{-0.837}$	$1.227^{+0.201}_{-0.245}$	$0.154^{+0.309}_{-0.051}$
	+3%/-3%	+8%/-3%	+194%/-139%	+19%/-37%	+16%/-20%	+200%/-33%
Source	PHO1	FLK73	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 002449407-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-131 ± 17	$3.97^{+2.23}_{-1.96}$	499^{+29}_{-43}	4949^{+1786}_{-721}	6240^{+17518}_{-3568}
Alt.	-50 ± 14	$3.29^{+2.13}_{-1.95}$	498^{+33}_{-45}	4420^{+2140}_{-704}	3676^{+17264}_{-2345}

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 $A_{obs} \gg 1.0$

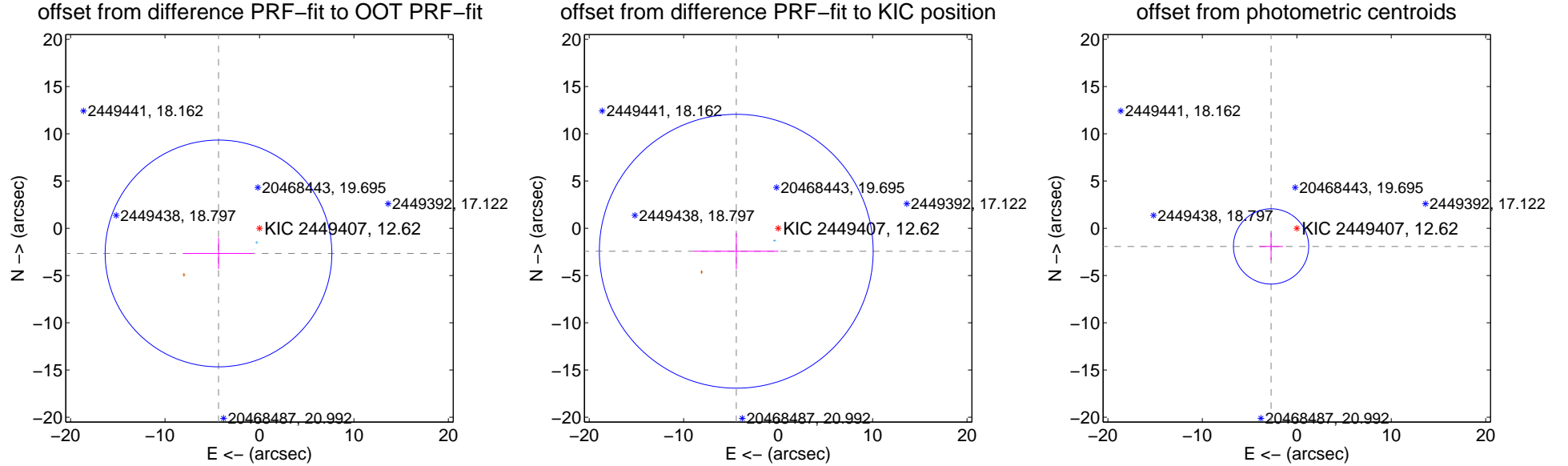
DV Centroid Data

Supplemental centroid analysis for 002449407-01. Kepler magnitude: 12.62. Transit SNR 9.38

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.090 ± 3.999	1.27	4.338 ± 3.688	-2.663 ± 1.639
PRF-fit source offset from KIC position	5.056 ± 4.831	1.05	4.432 ± 4.456	-2.432 ± 1.923
photometric centroid source offset	3.33 ± 1.33	2.51	2.72 ± 1.25	-1.92 ± 1.46

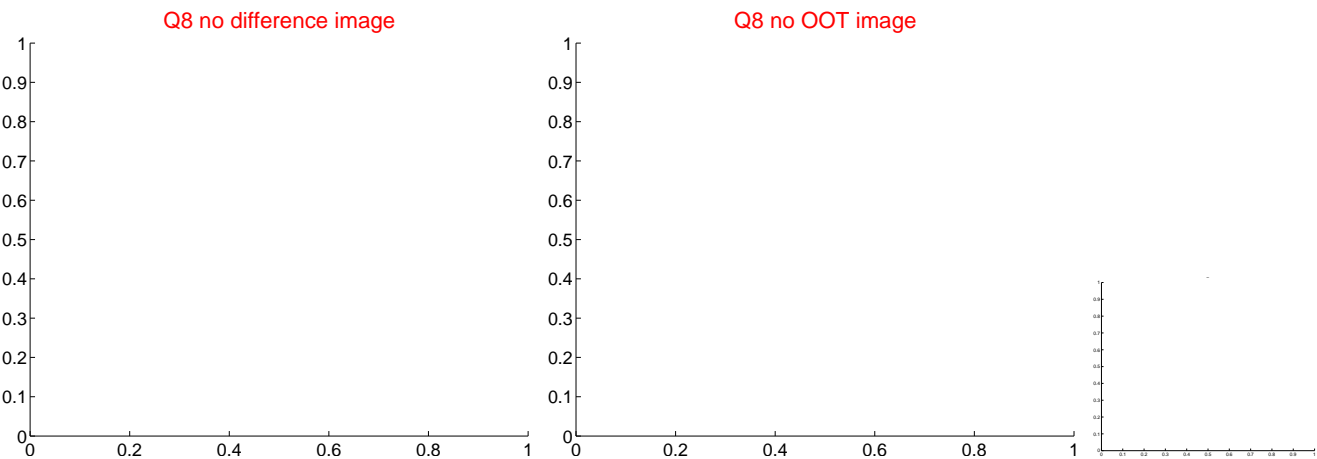
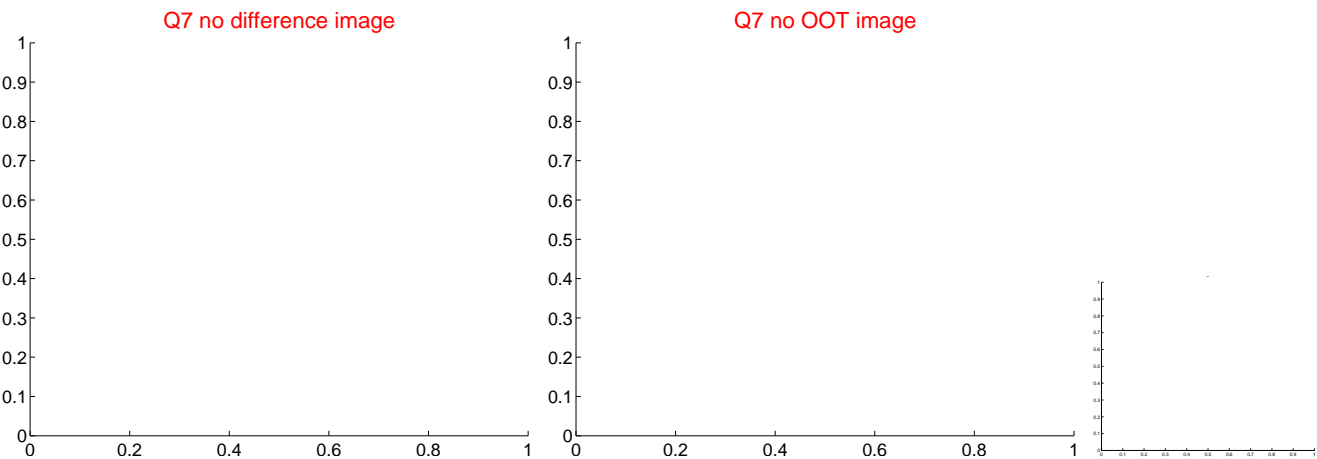
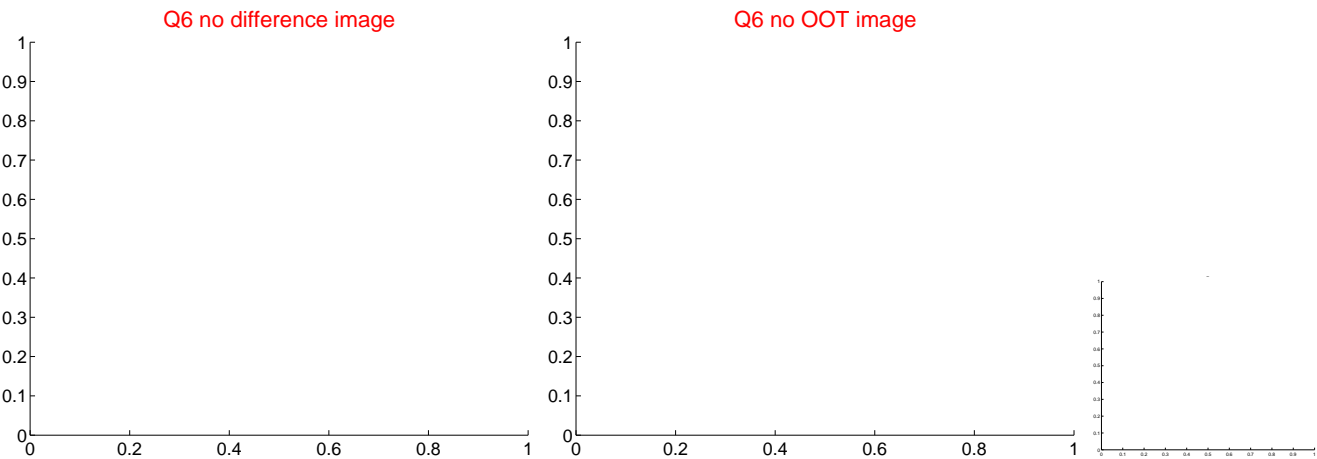
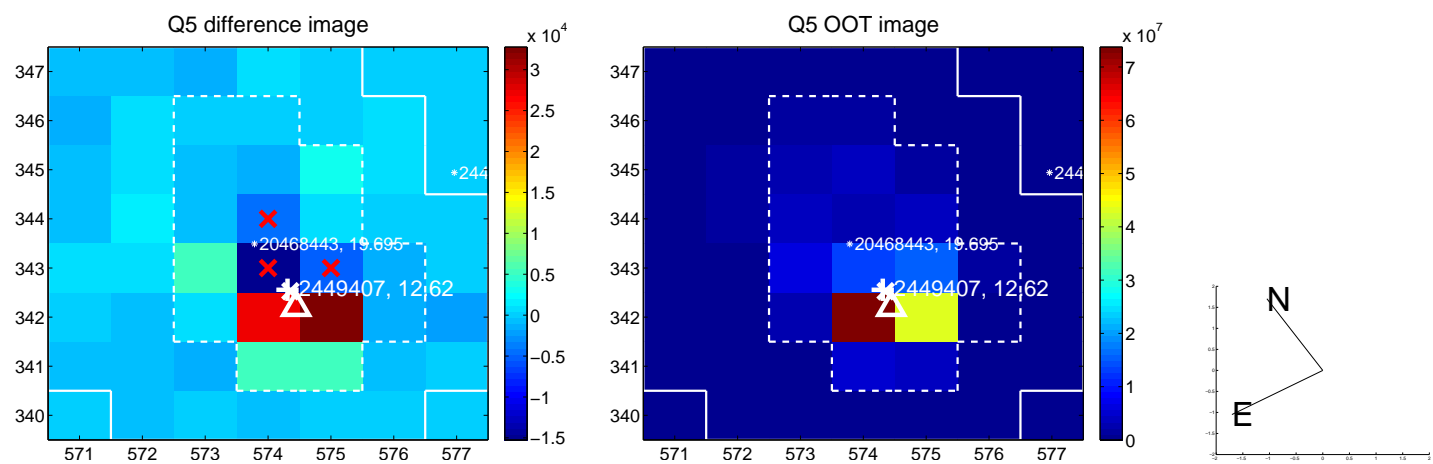


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

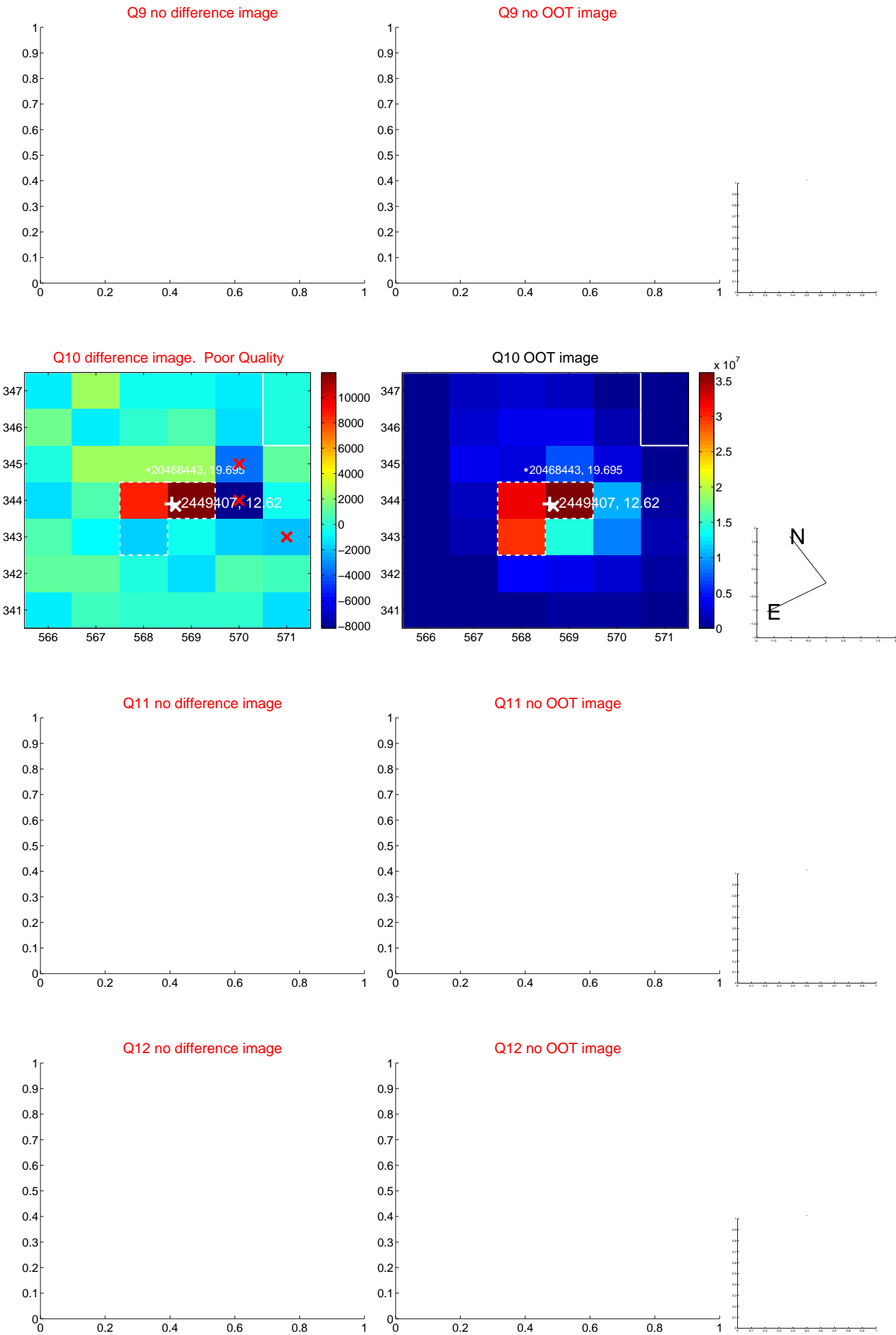
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



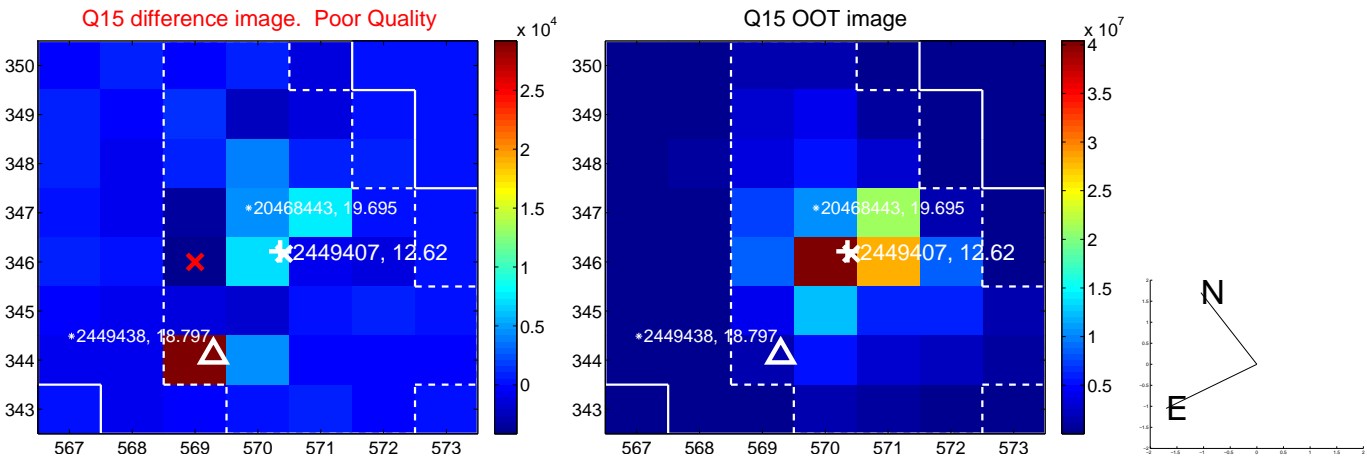
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



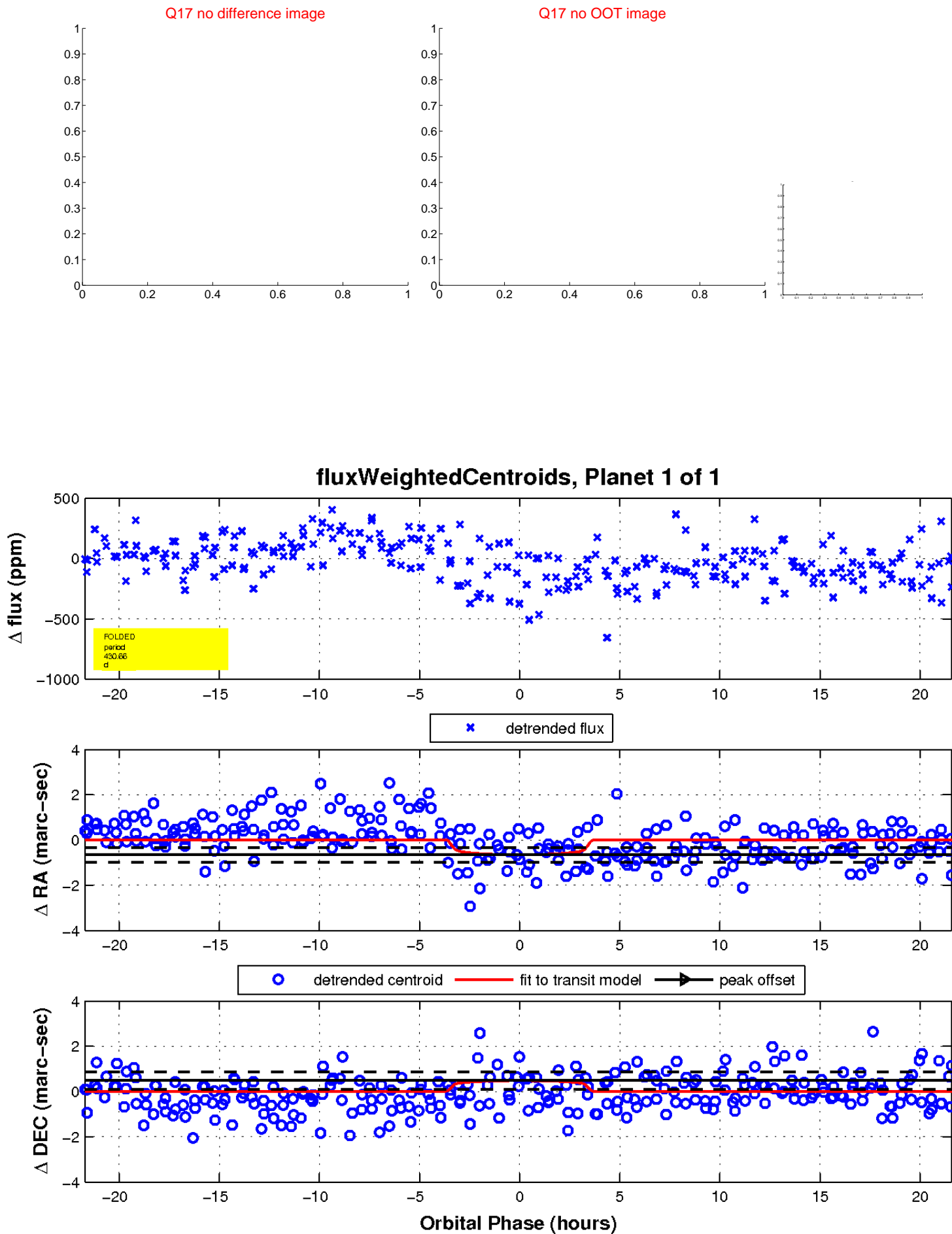
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

