

KIC 008540081

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})
008540081-01	OBS	No	493.968258	253.574105	874.5	13.639	17.8	9.8	1.01	5676	4.05	0.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008540081-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

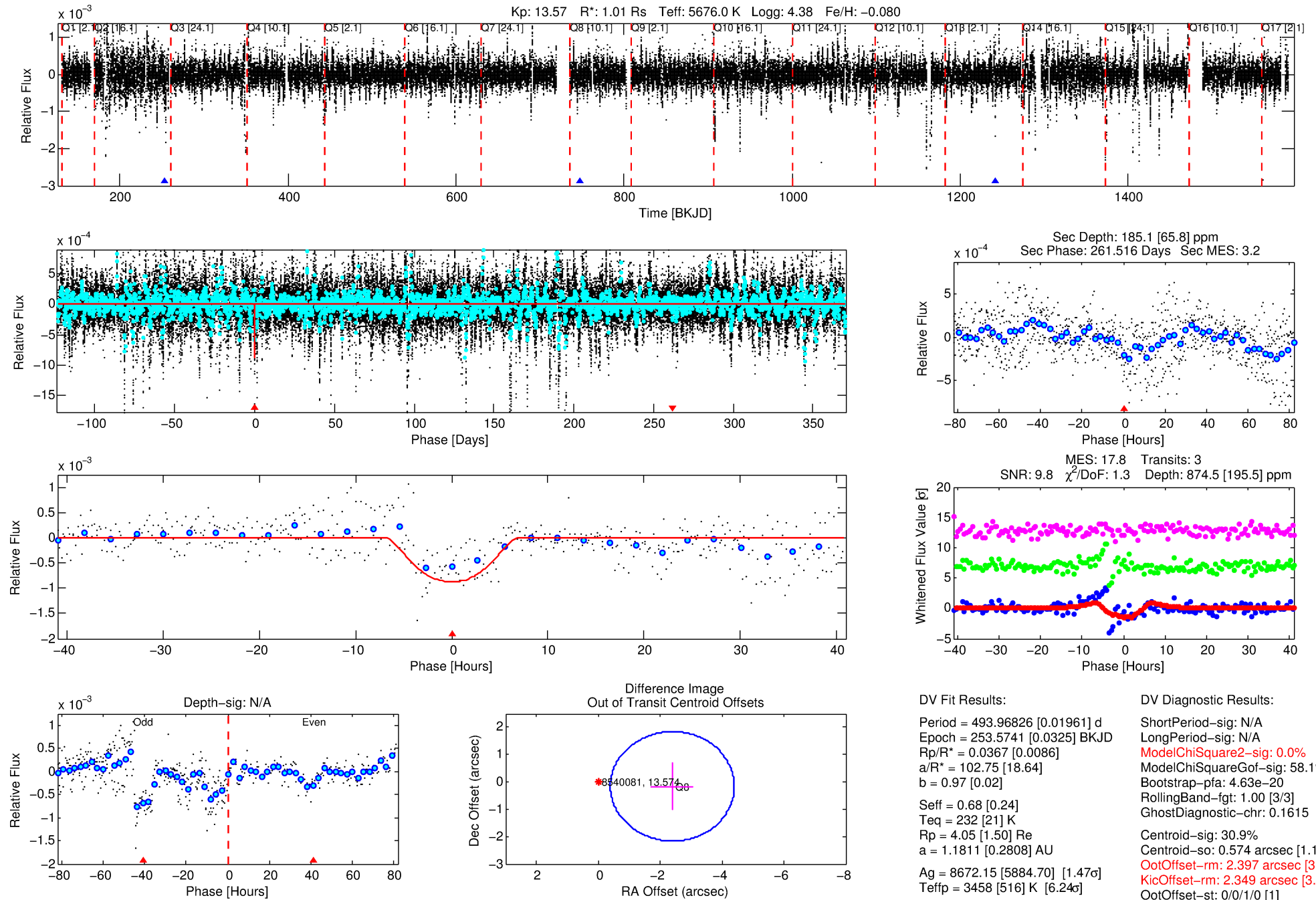
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008540081-01

No Significant Match Found

DV One-Page Summary

KIC: 8540081 Candidate: 1 of 1 Period: 493.968 d



DV Fit Results:

Period = 493.96826 [0.01961] d
Epoch = 253.5741 [0.0325] BKJD
Rp/R* = 0.0367 [0.0086]
a/R* = 102.75 [18.64]
b = 0.97 [0.02]
Seff = 0.68 [0.24]
Teq = 232 [21] K
Rp = 4.05 [1.50] Re
a = 1.1811 [0.2808] AU
Ag = 8672.15 [5884.70] [1.47] σ
Teffp = 3458 [516] K [6.24] σ

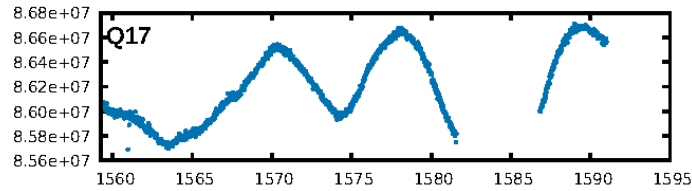
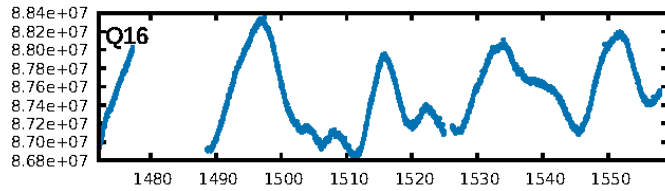
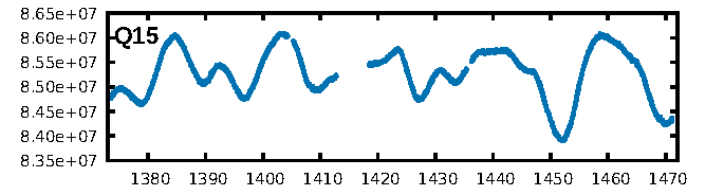
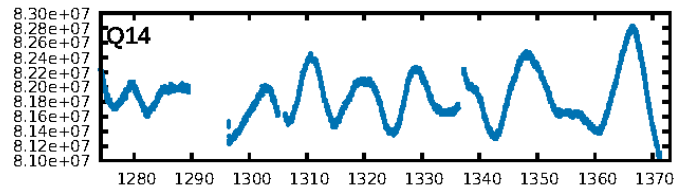
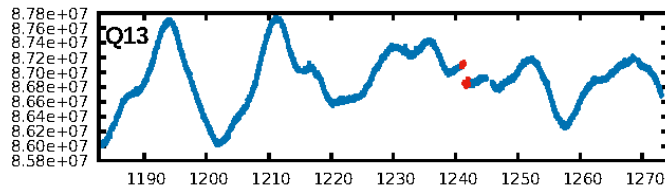
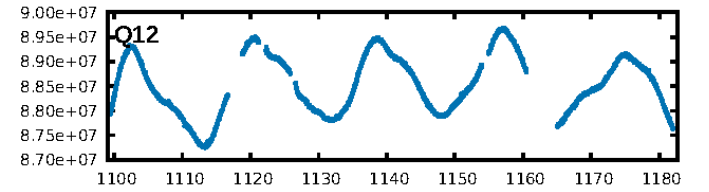
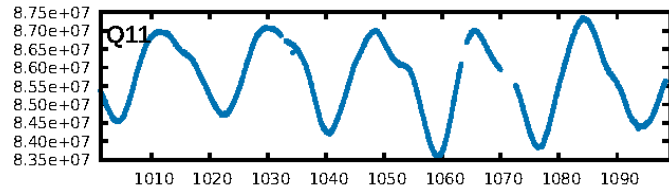
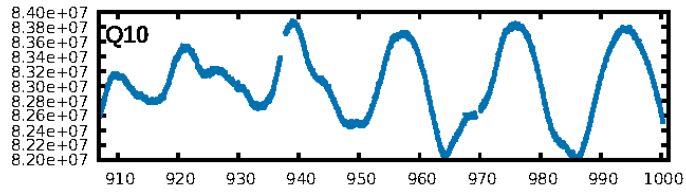
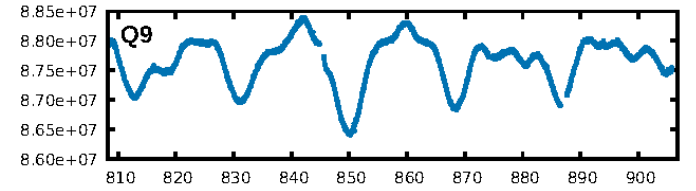
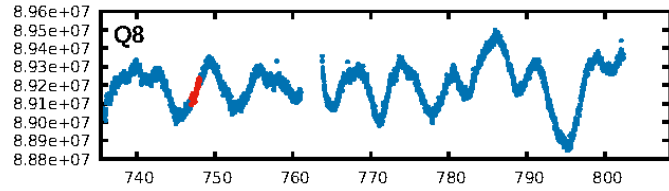
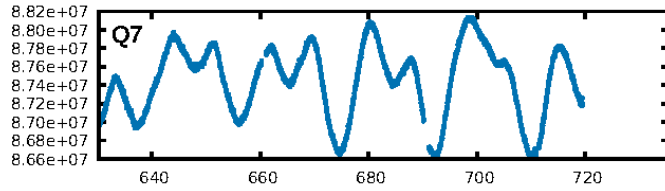
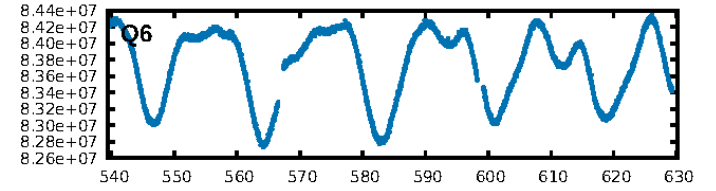
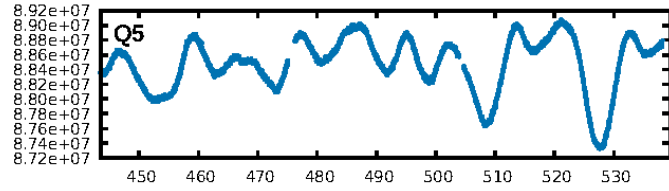
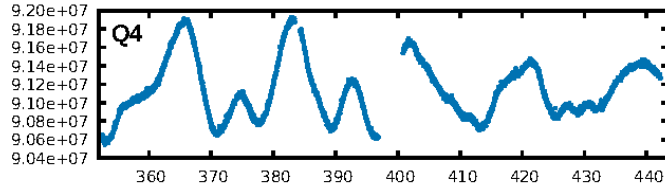
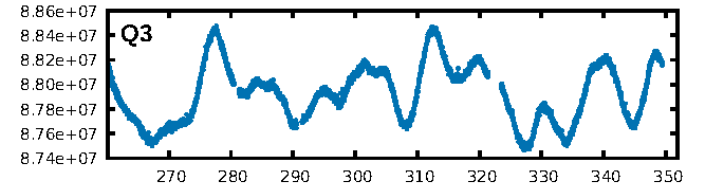
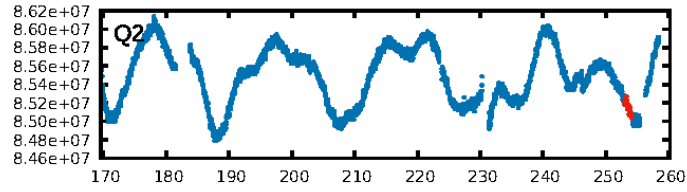
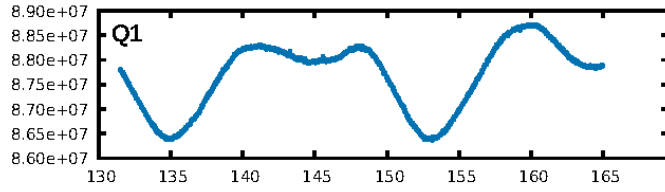
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 58.1%
Bootstrap-pfa: 4.63e-20
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1615
Centroid-sig: 30.9%
Centroid-so: 0.574 arcsec [1.16] σ
OotOffset-rm: 2.397 arcsec [3.59] σ
KicOffset-rm: 2.349 arcsec [3.52] σ
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

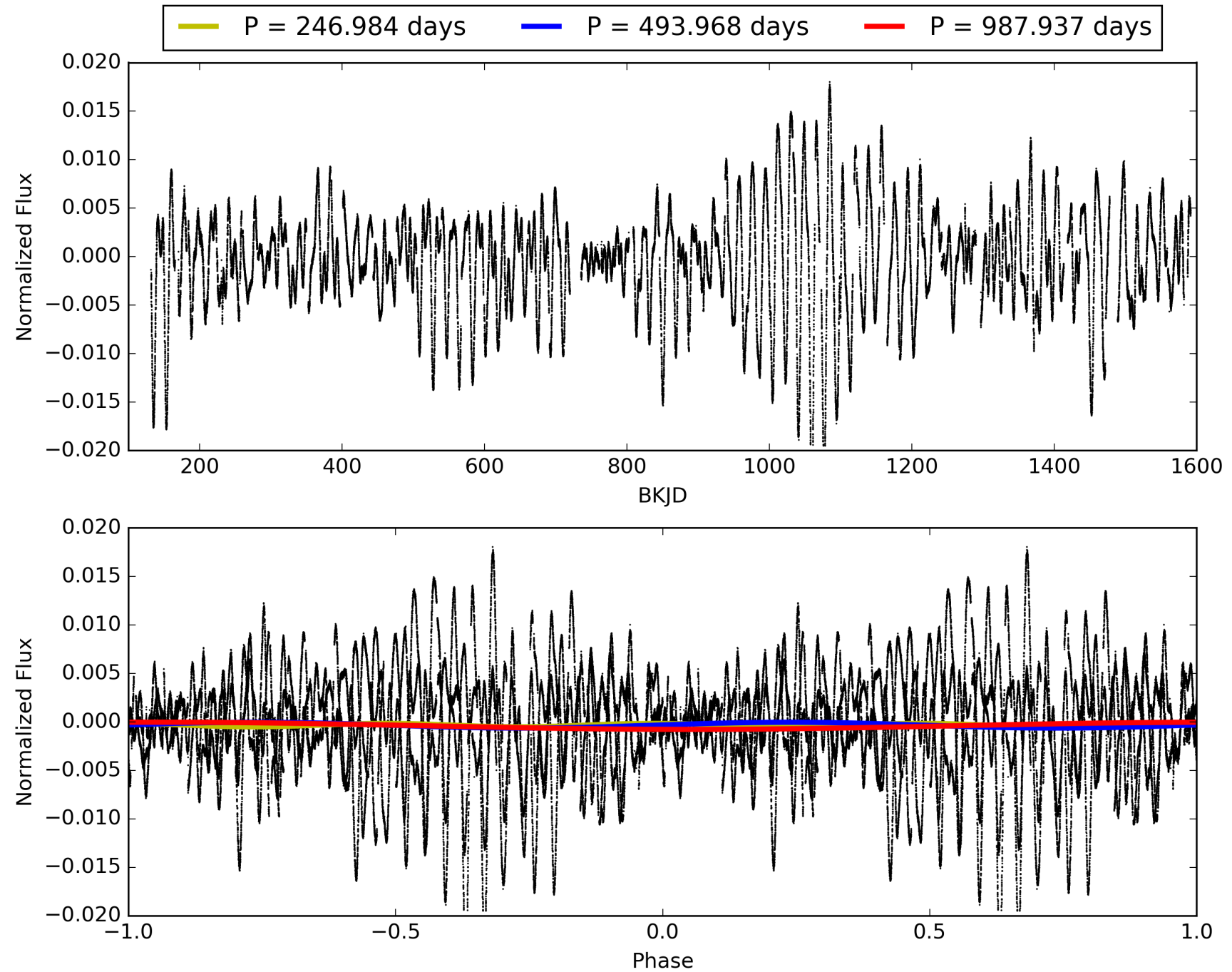
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:01:53 Z

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

TCE 008540081-01, PDC Light Curves

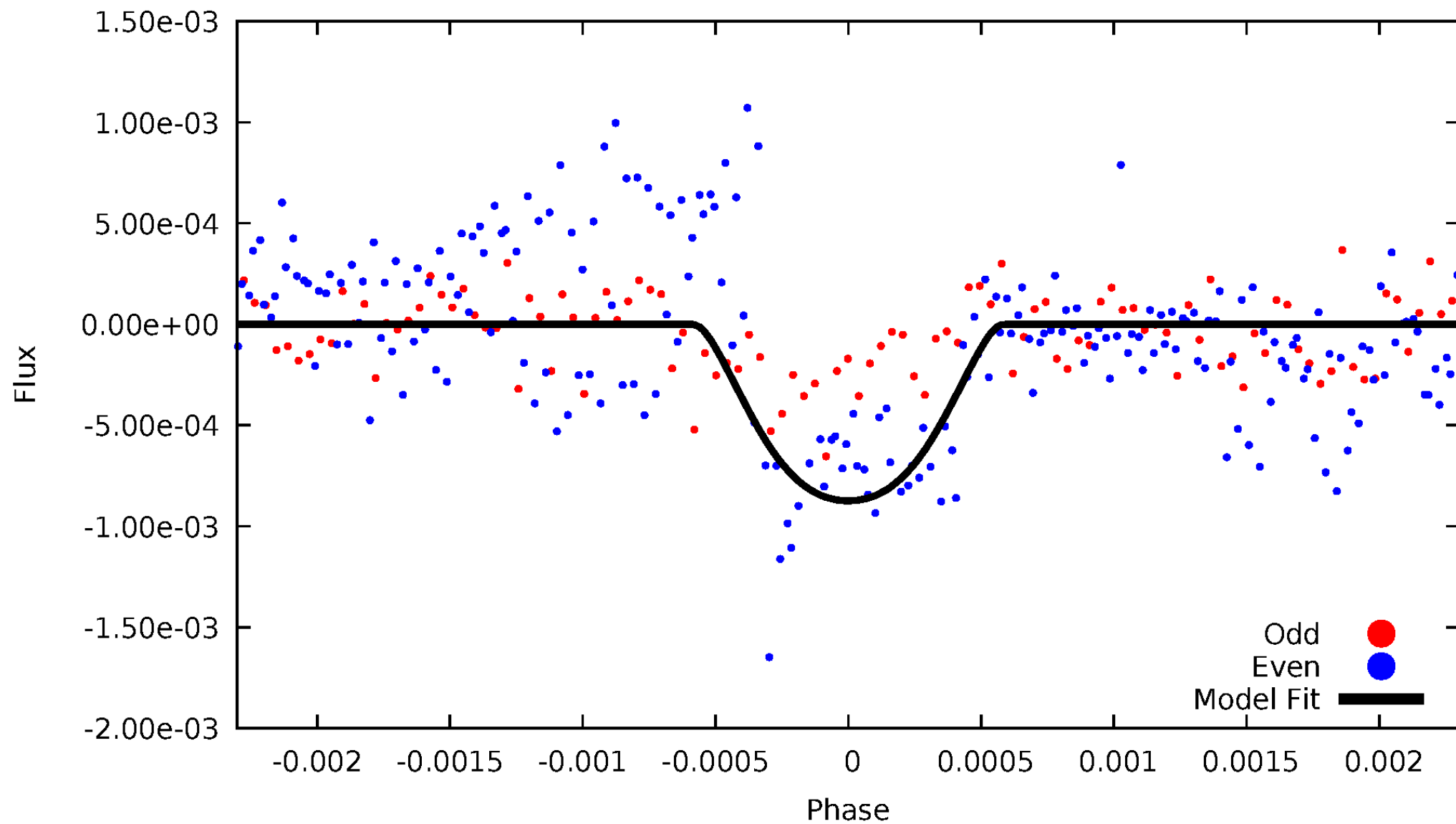


TCE 008540081-01



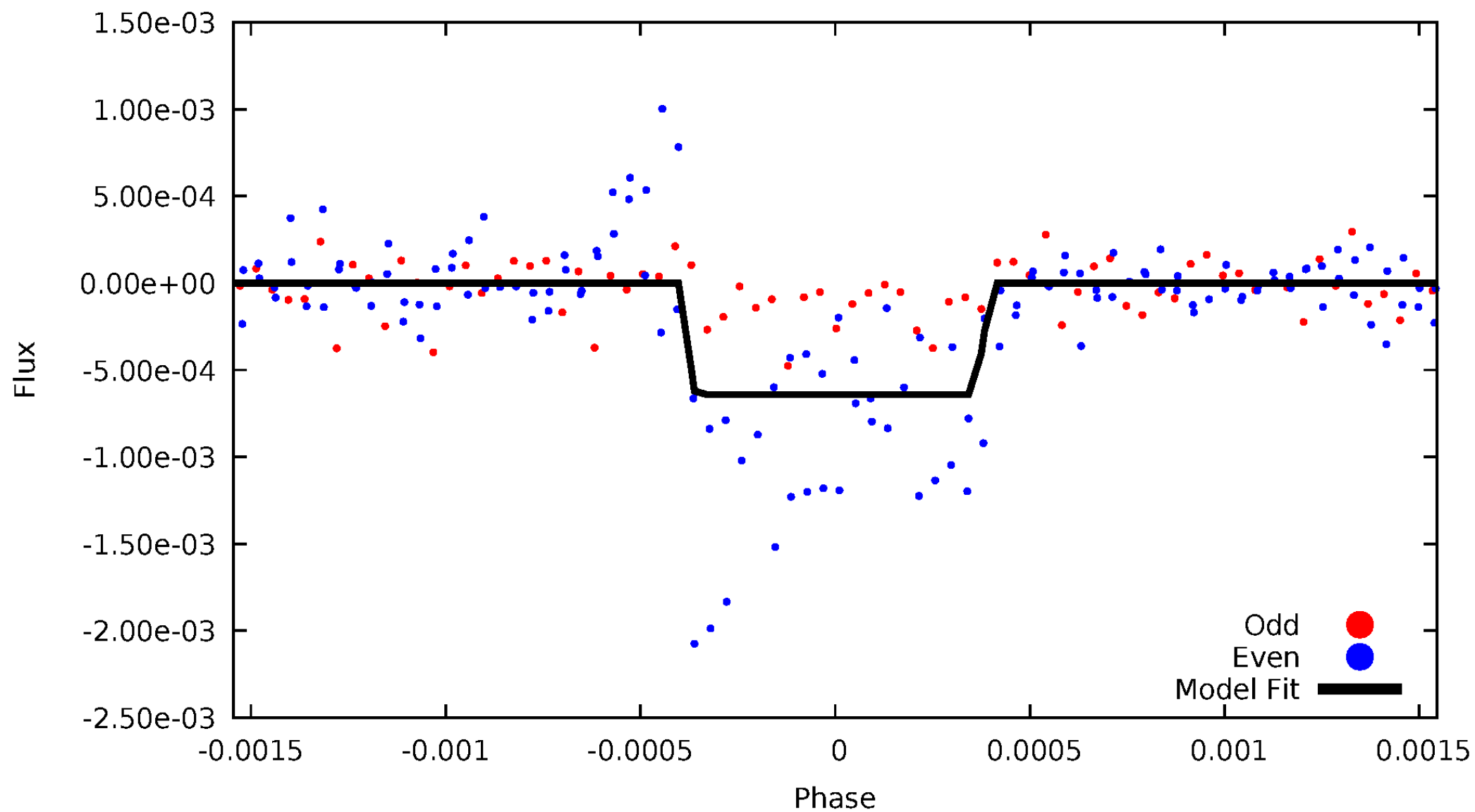
DV Odd/Even

TCE 008540081-01



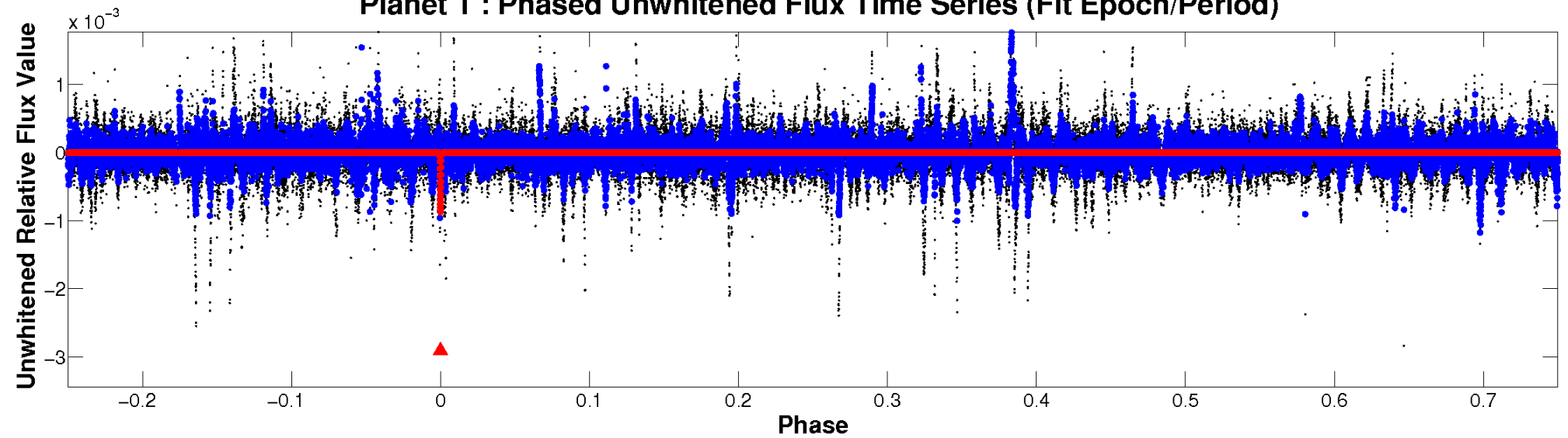
ALT Odd/Even

TCE 008540081-01

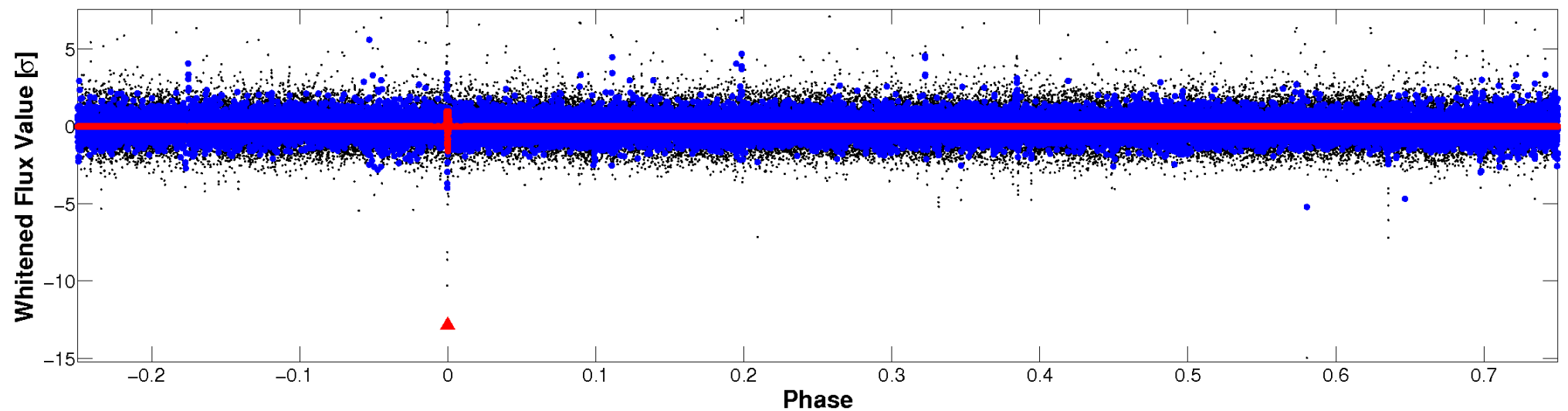


Non-Whitened Vs. Whitened Light Curve

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

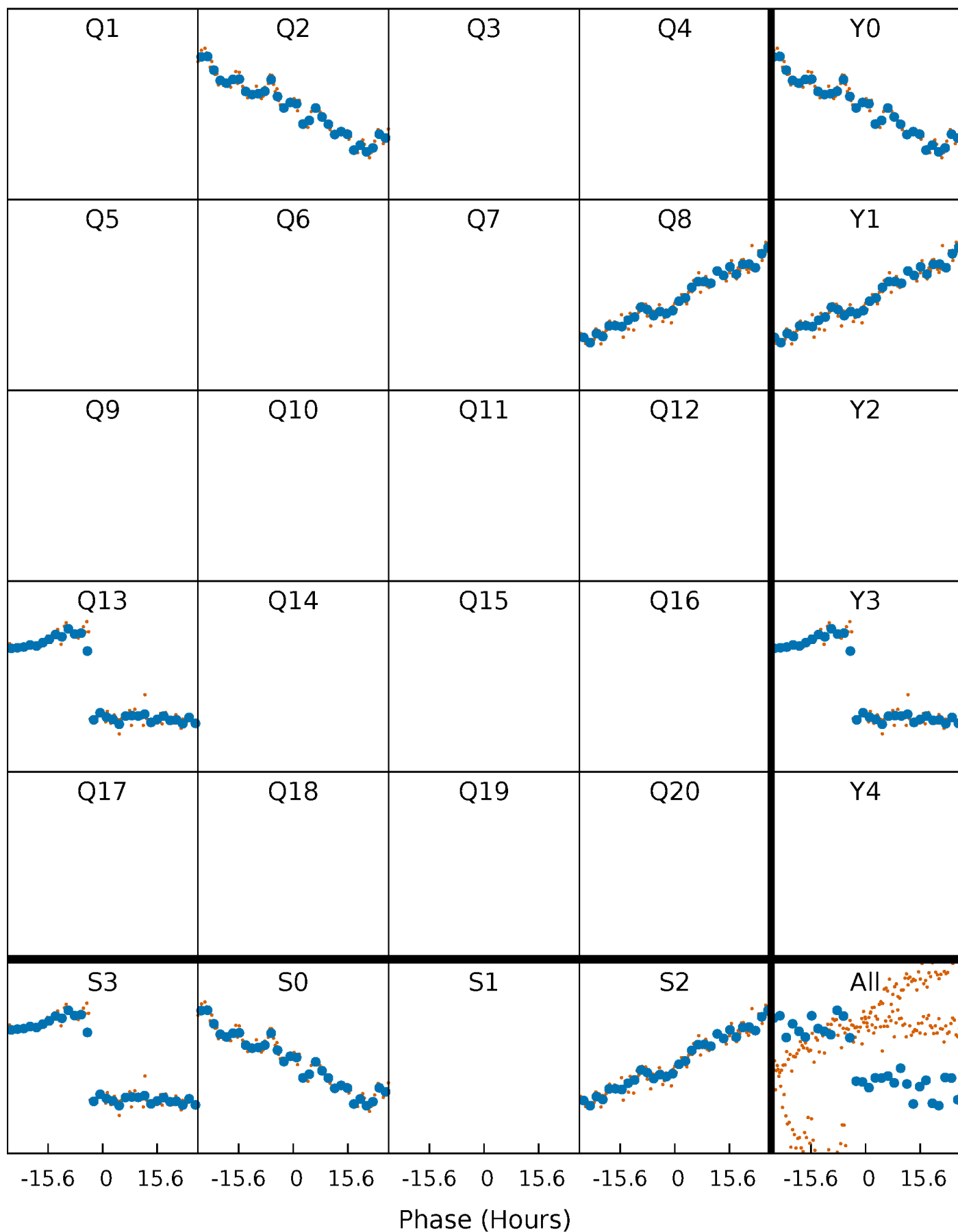


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



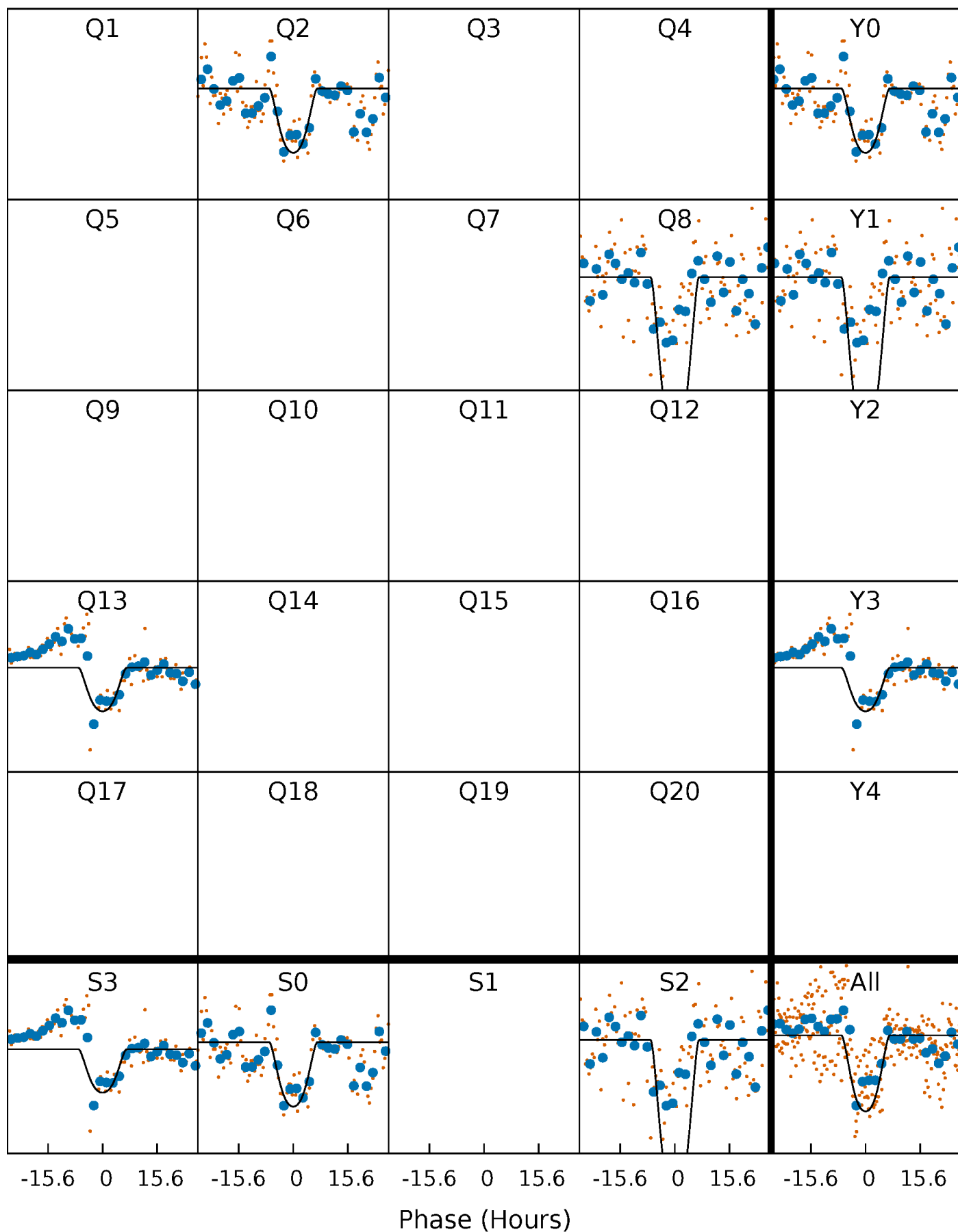
PDC Quarter-Phased Transit Curves

TCE 008540081-01 $P=493.968258$ Days $T_0=253.574105$ (BKJD)



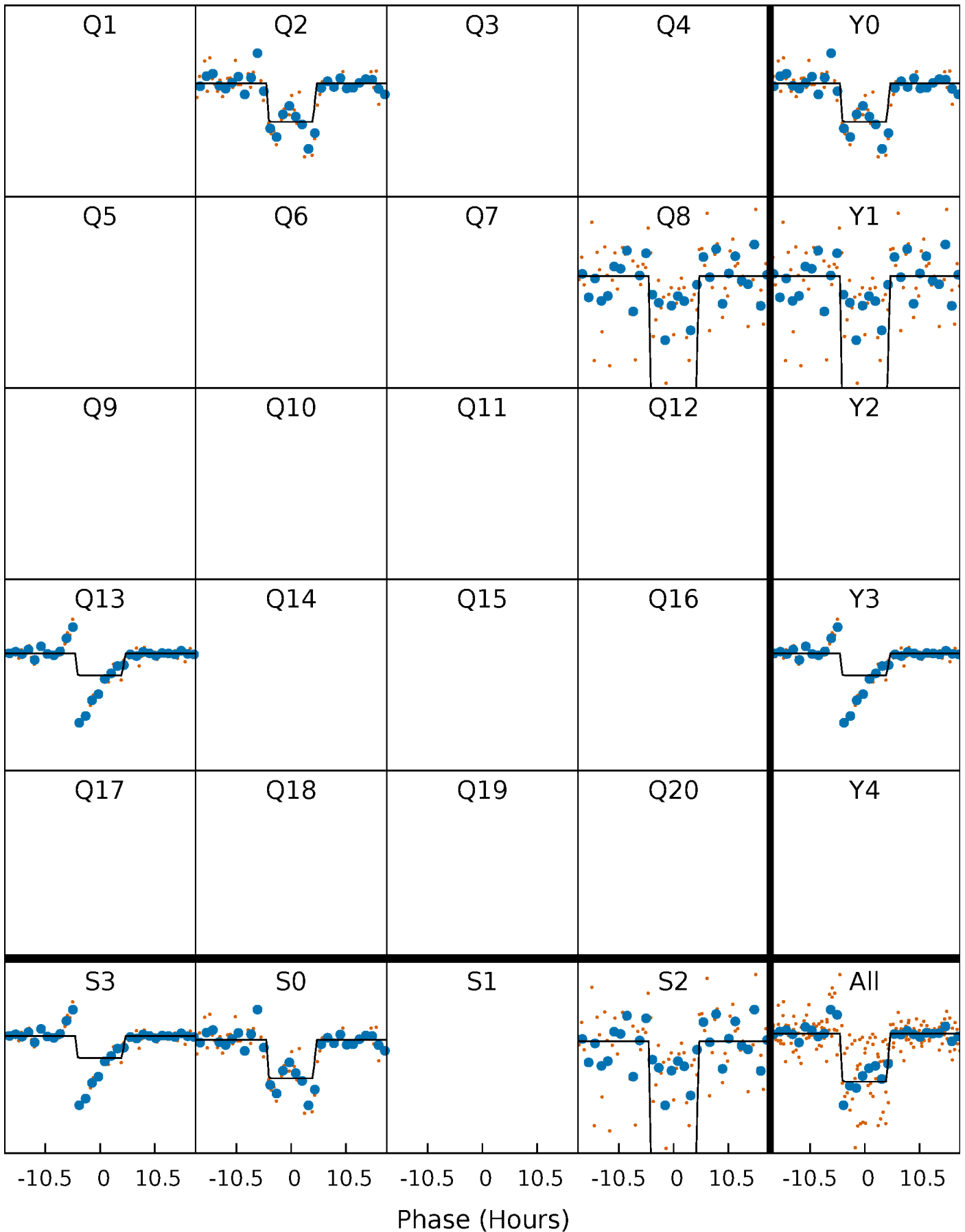
DV Quarter-Phased Transit Curves

TCE 008540081-01 $P=493.968258$ Days $T_0=253.574105$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

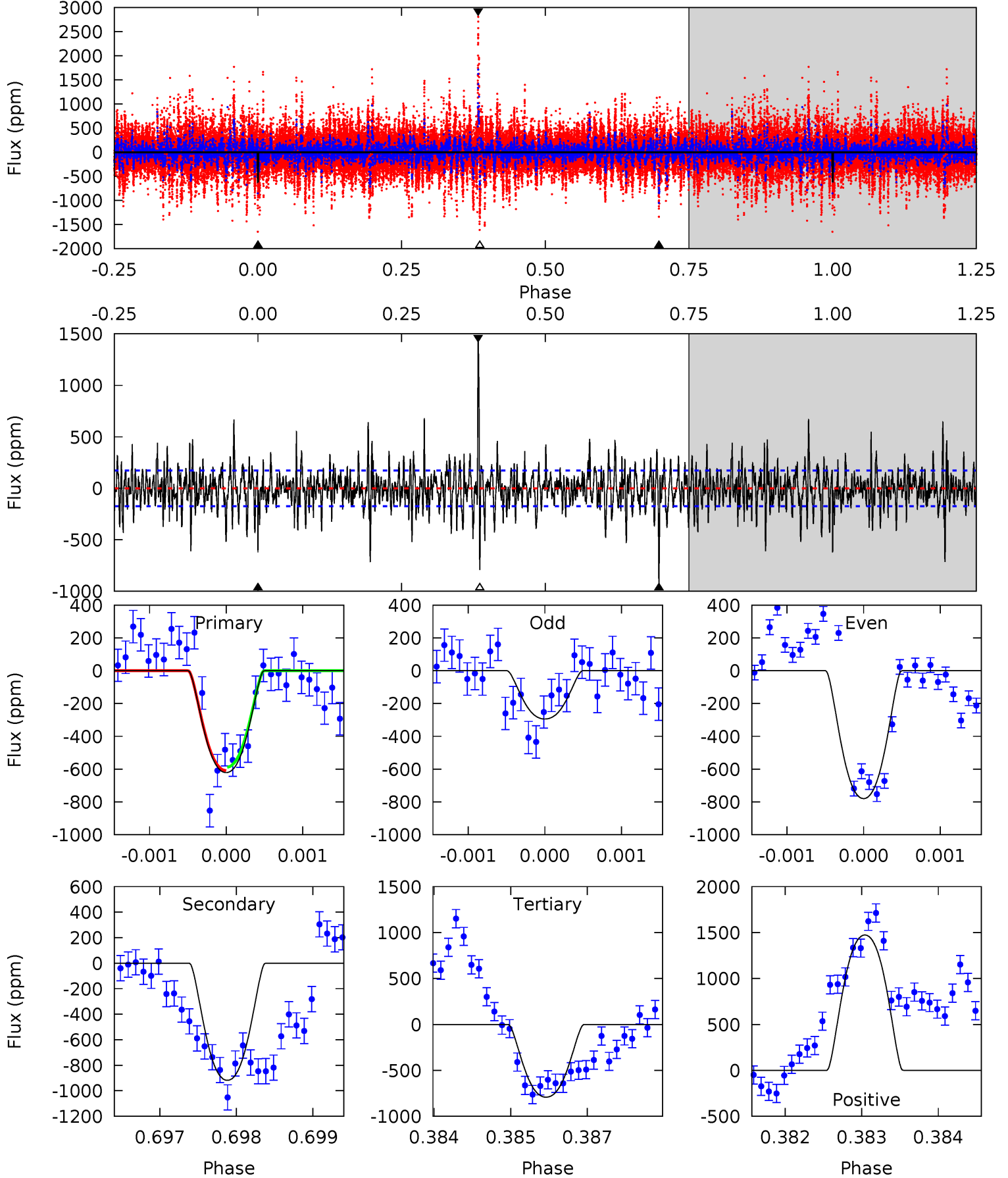
TCE 008540081-01 P=493.981313 Days $T_0=253.579405$ (BKJD)



DV Model-Shift Uniqueness Test

008540081-01, P = 493.968258 Days, E = 253.574105 Days

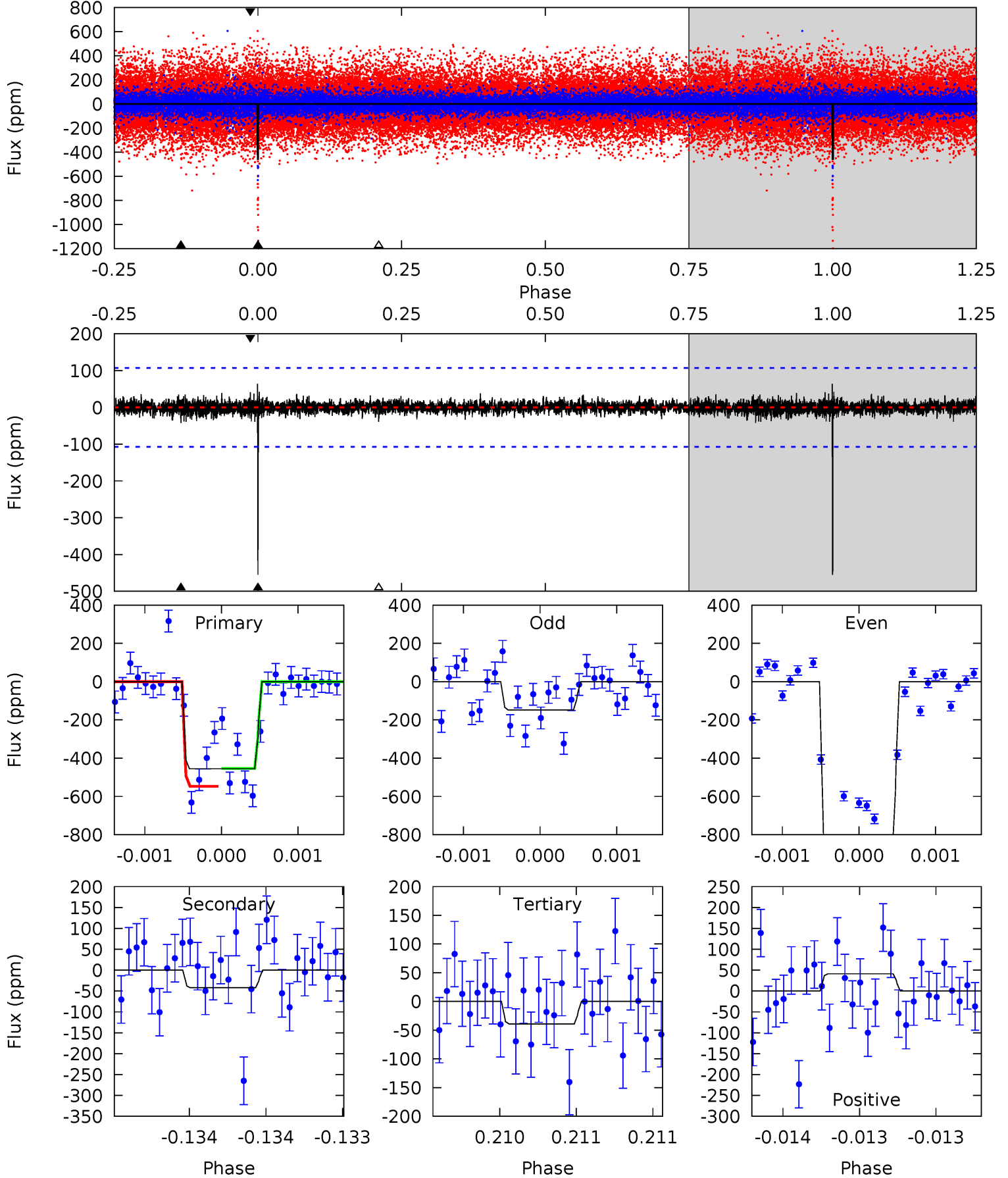
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.4	28.6	24.7	45.9	5.42	3.24	5.11	-5.32	-26.6	3.94	-17.3	7.10	0.84	0.62	0.31



Alt Model-Shift Uniqueness Test

008540081-01, P = 493.981313 Days, E = 253.579405 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.3	2.16	2.00	2.11	5.49	3.36	0.46	21.3	21.2	0.16	0.05	19.9	0.90	0.12	2.25



Stellar Parameters For KIC 008540081

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5676^{+152}_{-152}	$4.382^{+0.132}_{-0.182}$	$-0.080^{+0.300}_{-0.300}$	$1.012^{+0.292}_{-0.157}$	$0.900^{+0.123}_{-0.085}$	$1.224^{+0.808}_{-0.594}$
	+3%/-3%	+3%/-4%	+375%/-375%	+29%/-16%	+14%/-9%	+66%/-49%
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 008540081-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-918 ± 32	$4.04^{+1.21}_{-1.00}$	326^{+23}_{-19}	5242^{+738}_{-482}	43717^{+31961}_{-17939}
Alt.	-42 ± 20	$2.79^{+1.08}_{-1.04}$	325^{+22}_{-18}	3374^{+590}_{-399}	3847^{+6986}_{-2221}

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

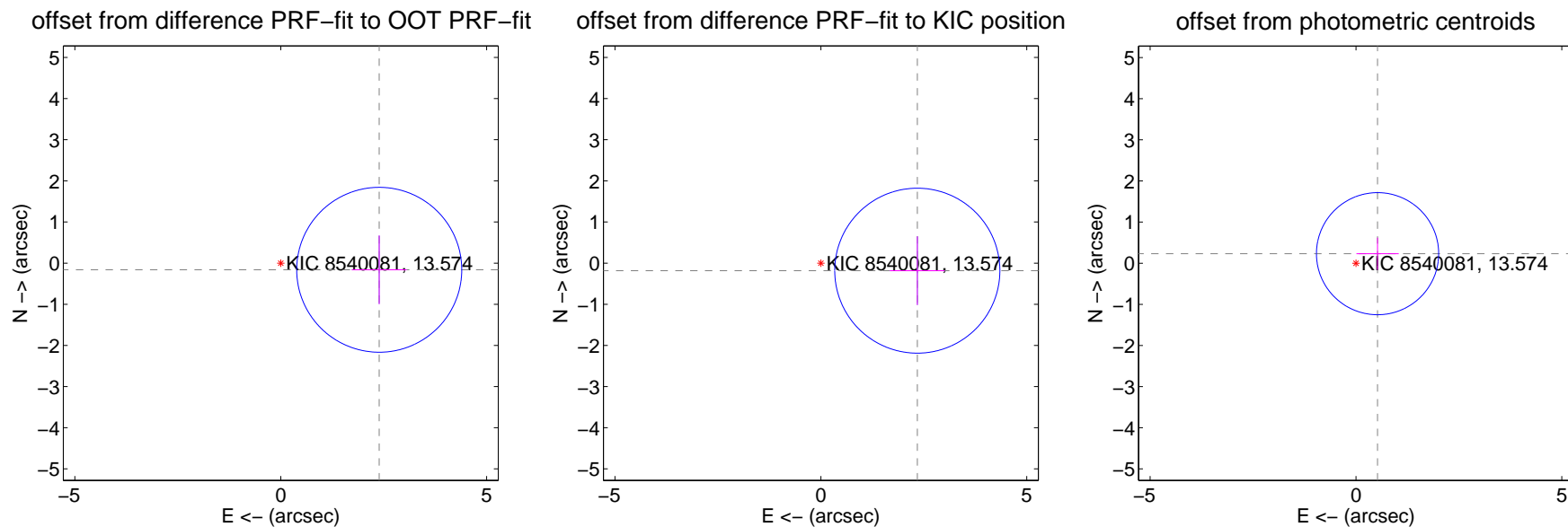
DV Centroid Data

Supplemental centroid analysis for 008540081-01. Kepler magnitude: 13.57. Transit SNR 9.76

There are 1 quarters with good PRF difference image offsets

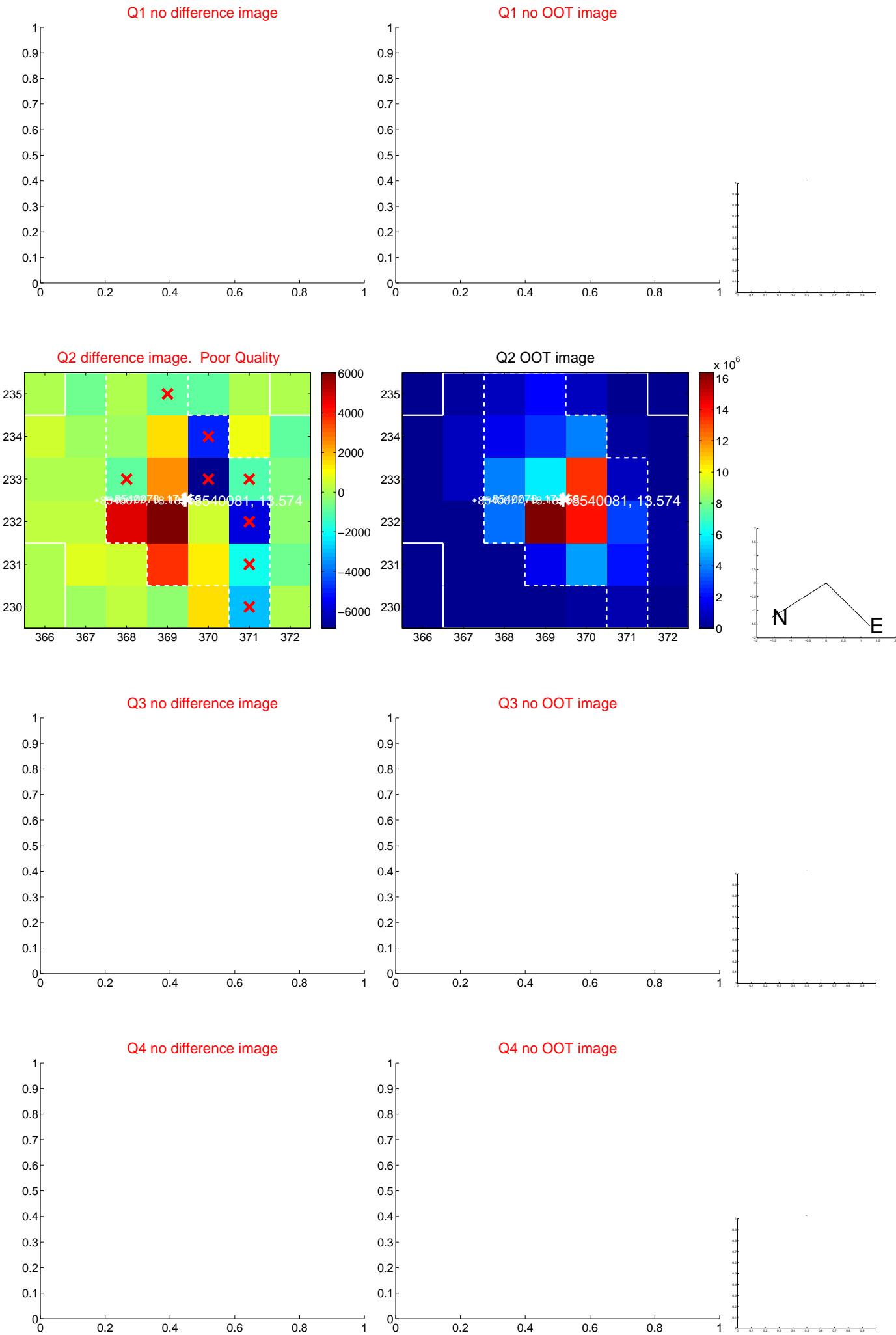
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.397 ± 0.668	3.59	-2.391 ± 0.667	-0.162 ± 0.834
PRF-fit source offset from KIC position	2.349 ± 0.668	3.52	-2.342 ± 0.667	-0.183 ± 0.834
photometric centroid source offset	0.57 ± 0.49	1.16	-0.52 ± 0.51	0.23 ± 0.39

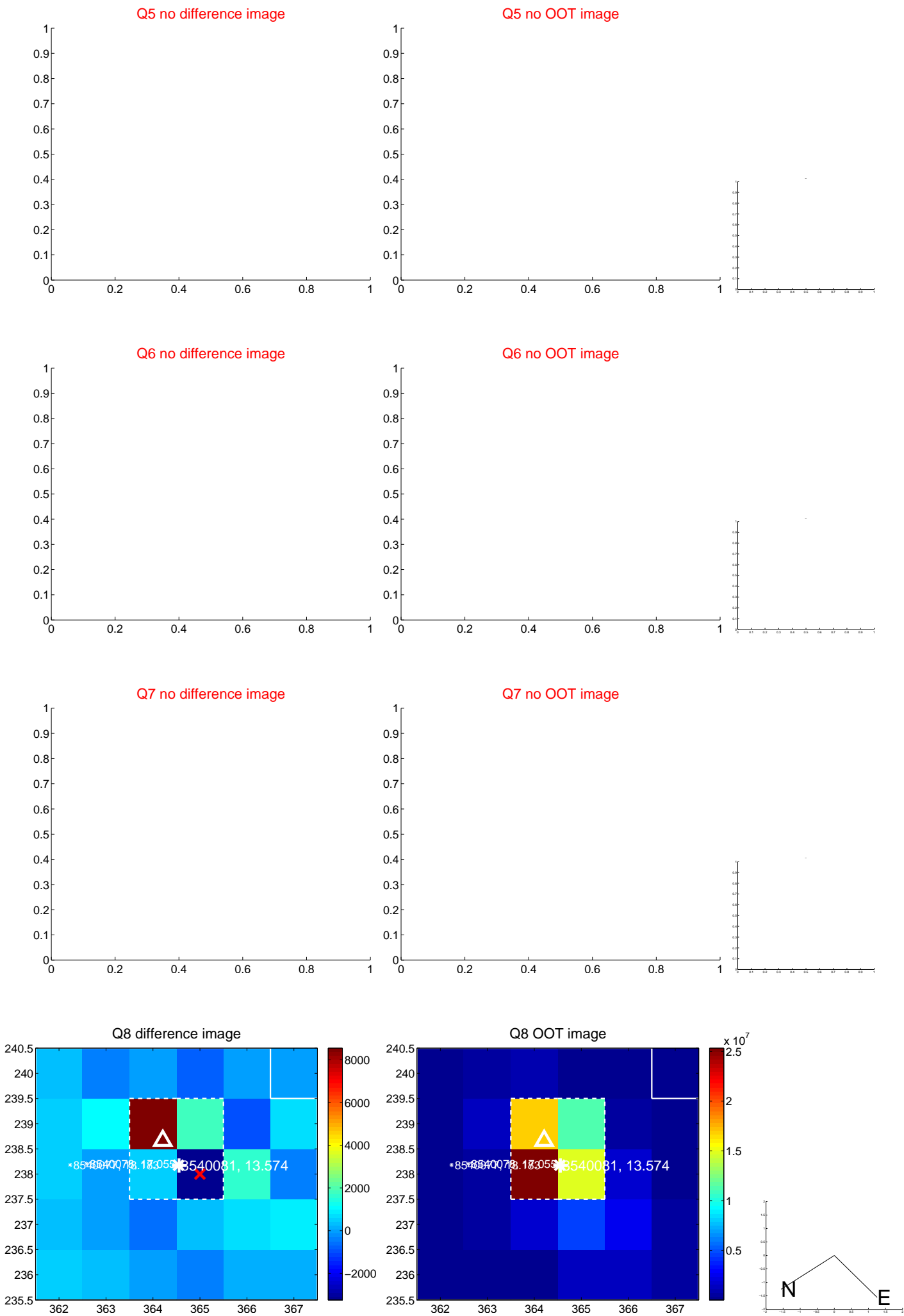


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



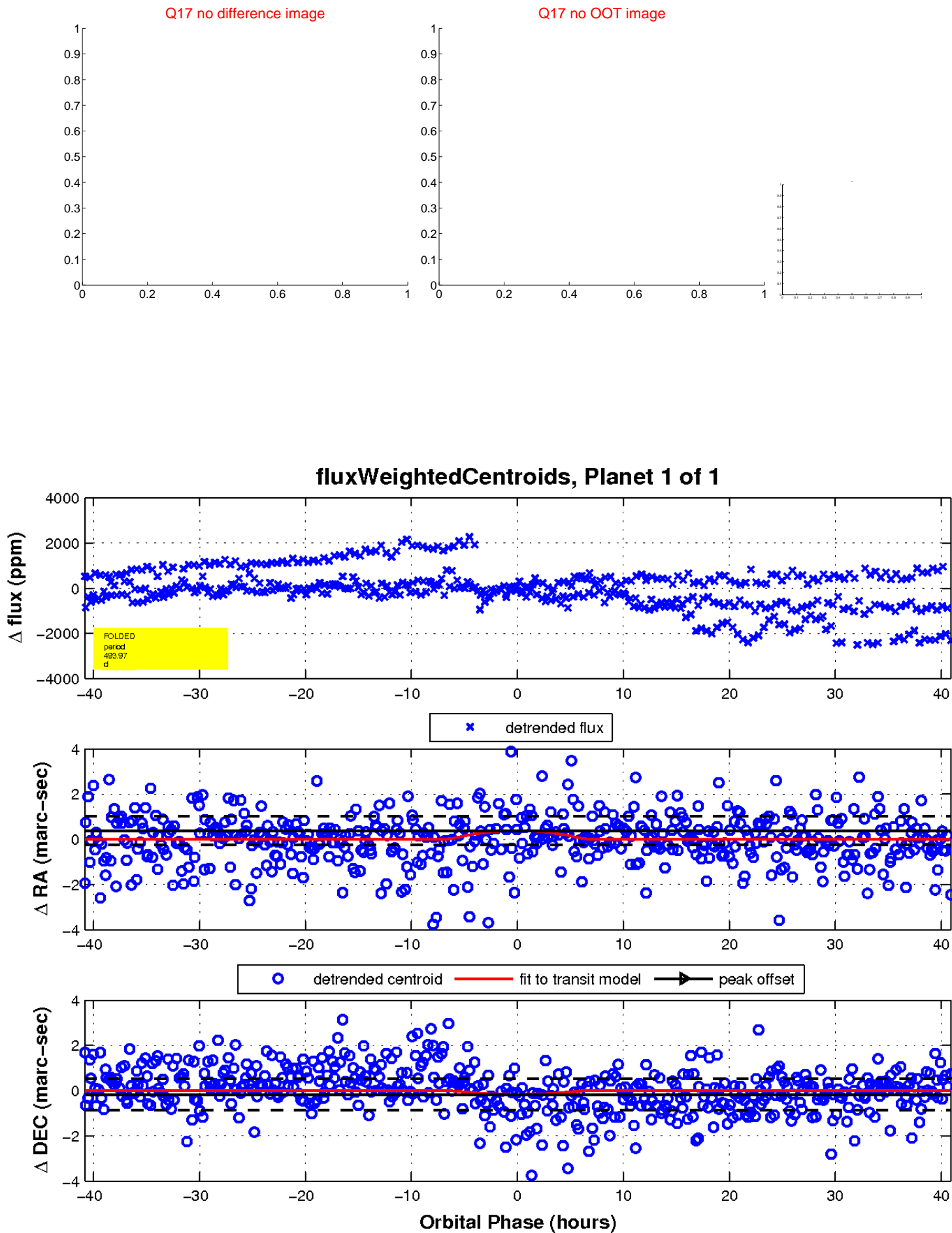
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

