

KIC 008451573

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})
008451573-01	OBS	No	594.869689	355.792050	505.5	2.296	7.2	6.3	3.74	5069	10.33	3.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008451573-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_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.

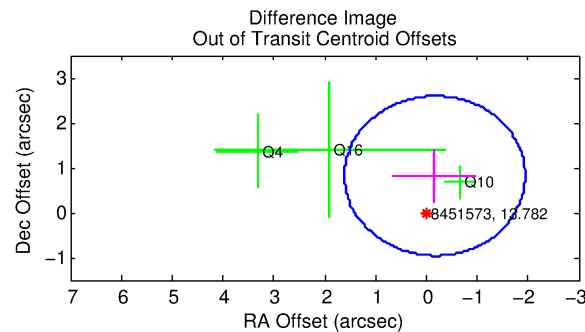
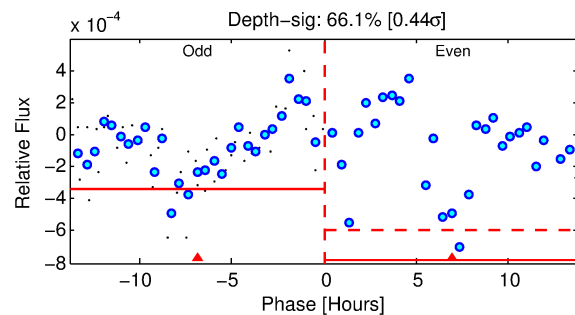
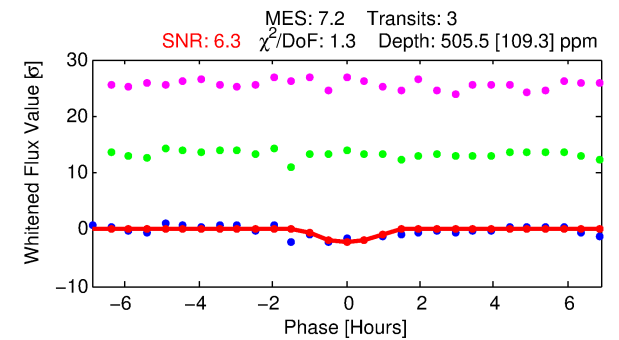
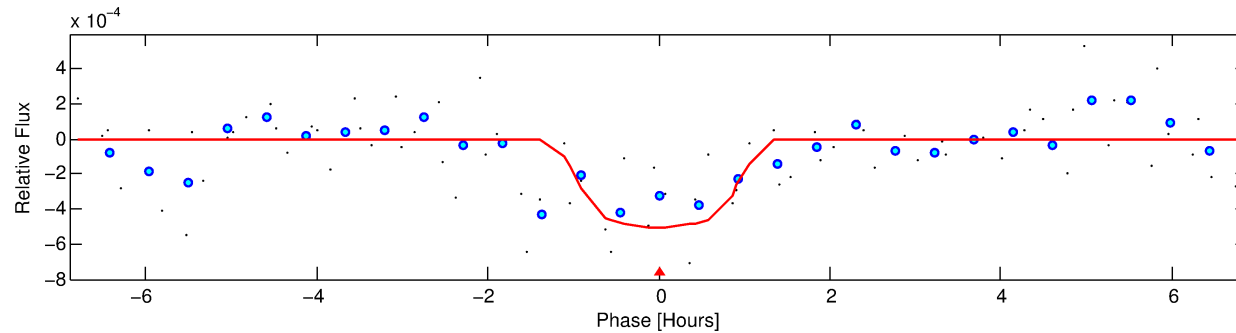
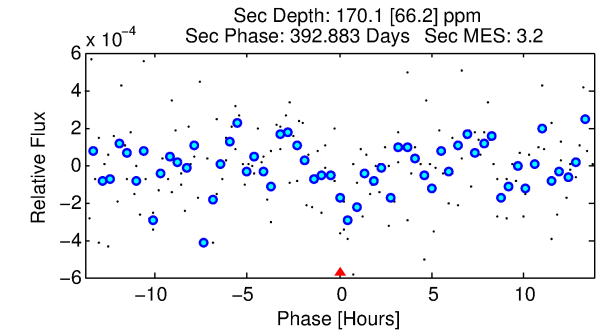
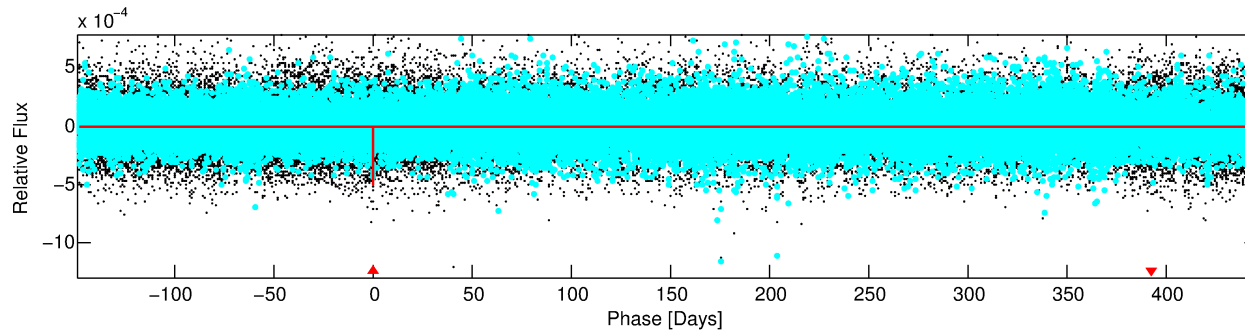
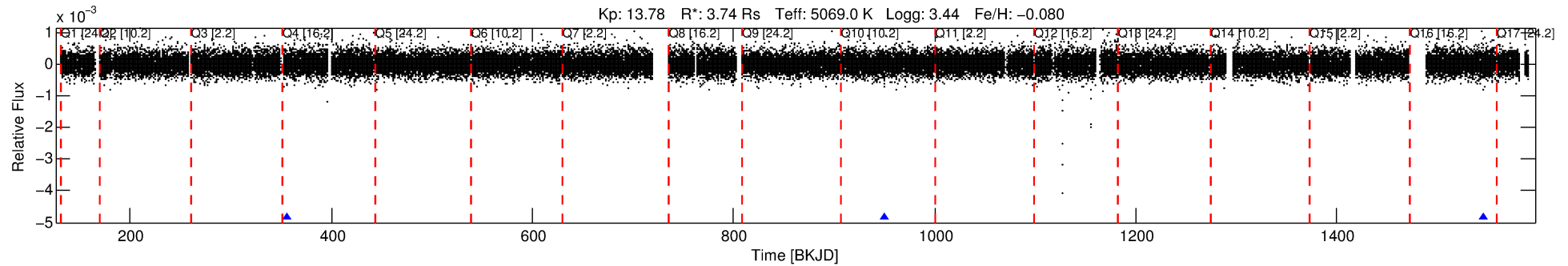
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008451573-01

No Significant Match Found

DV One-Page Summary

KIC: 8451573 Candidate: 1 of 1 Period: 594.870 d



DV Fit Results:

Period = 594.86969 [0.00667] d
Epoch = 355.7921 [0.0077] BKJD
Rp/R* = 0.0253 [0.0510]
a/R* = 937.67 [7810.64]
b = 0.91 [1.63]
Seff = 3.45 [2.25]
Teq = 347 [57] K
Rp = 10.33 [21.26] Re
a = 1.5476 [0.6241] AU
Ag = 2101.35 [8616.94] [0.24 σ]
Teffp = 3638 [3684] K [0.89 σ]

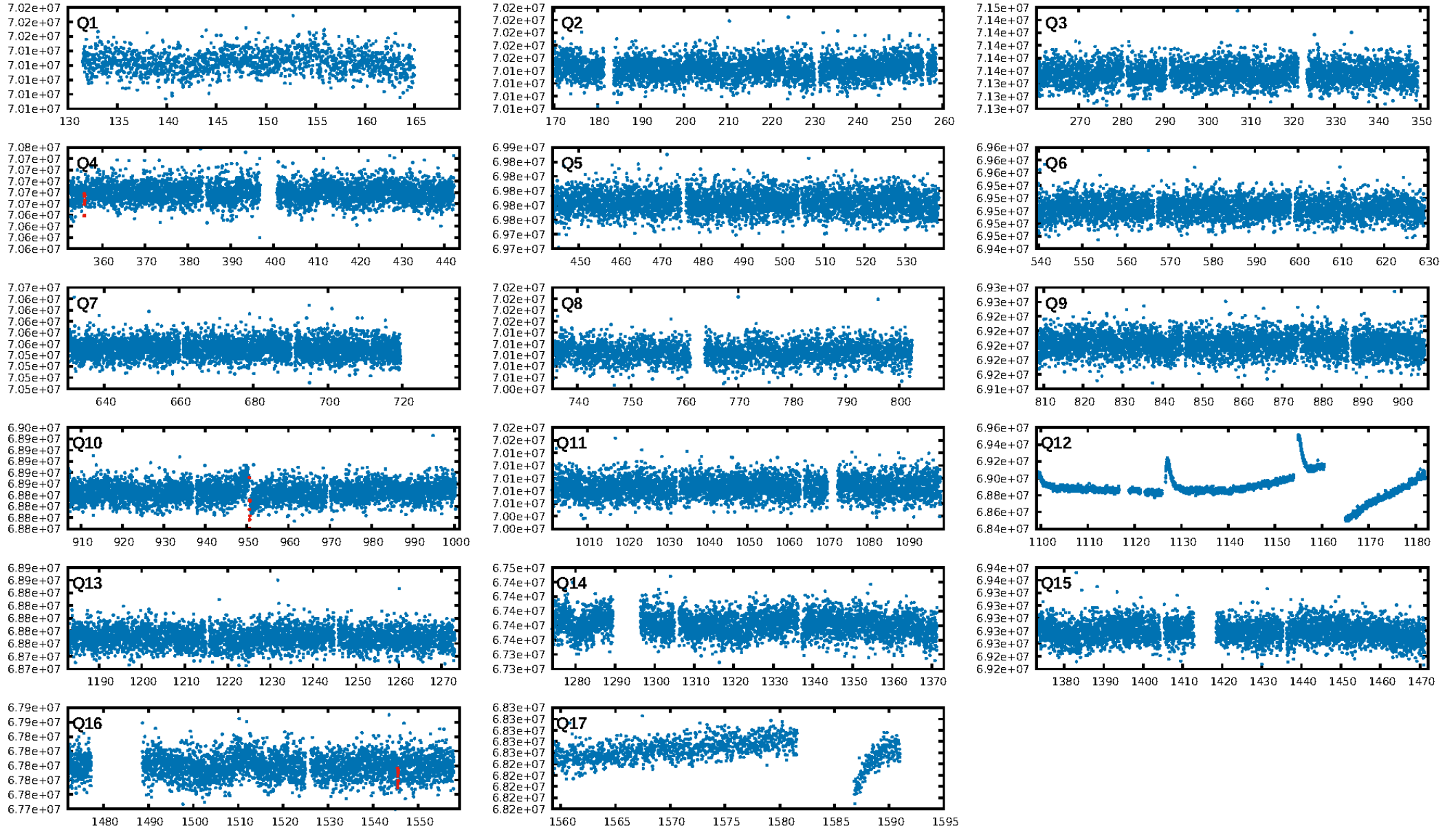
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.3%
ModelChiSquareGof-sig: 69.2%
Bootstrap-pfa: 3.35e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.269
Centroid-sig: 4.9%
Centroid-so: 3.099 arcsec [1.34 σ]
OotOffset-rm: 0.833 arcsec [1.41 σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-rm: 0.493 arcsec [0.85 σ]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

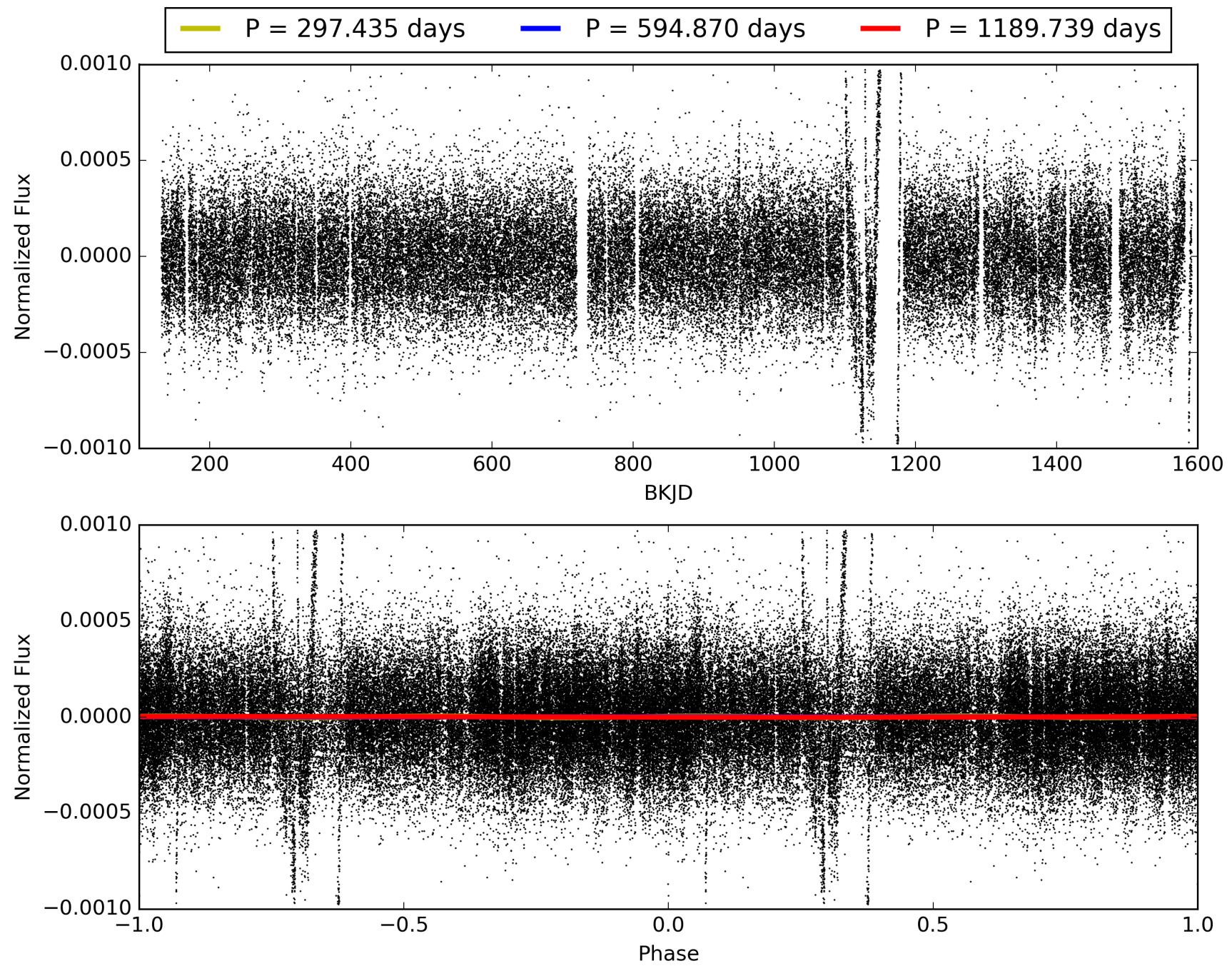
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:59:50 Z

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

TCE 008451573-01, PDC Light Curves

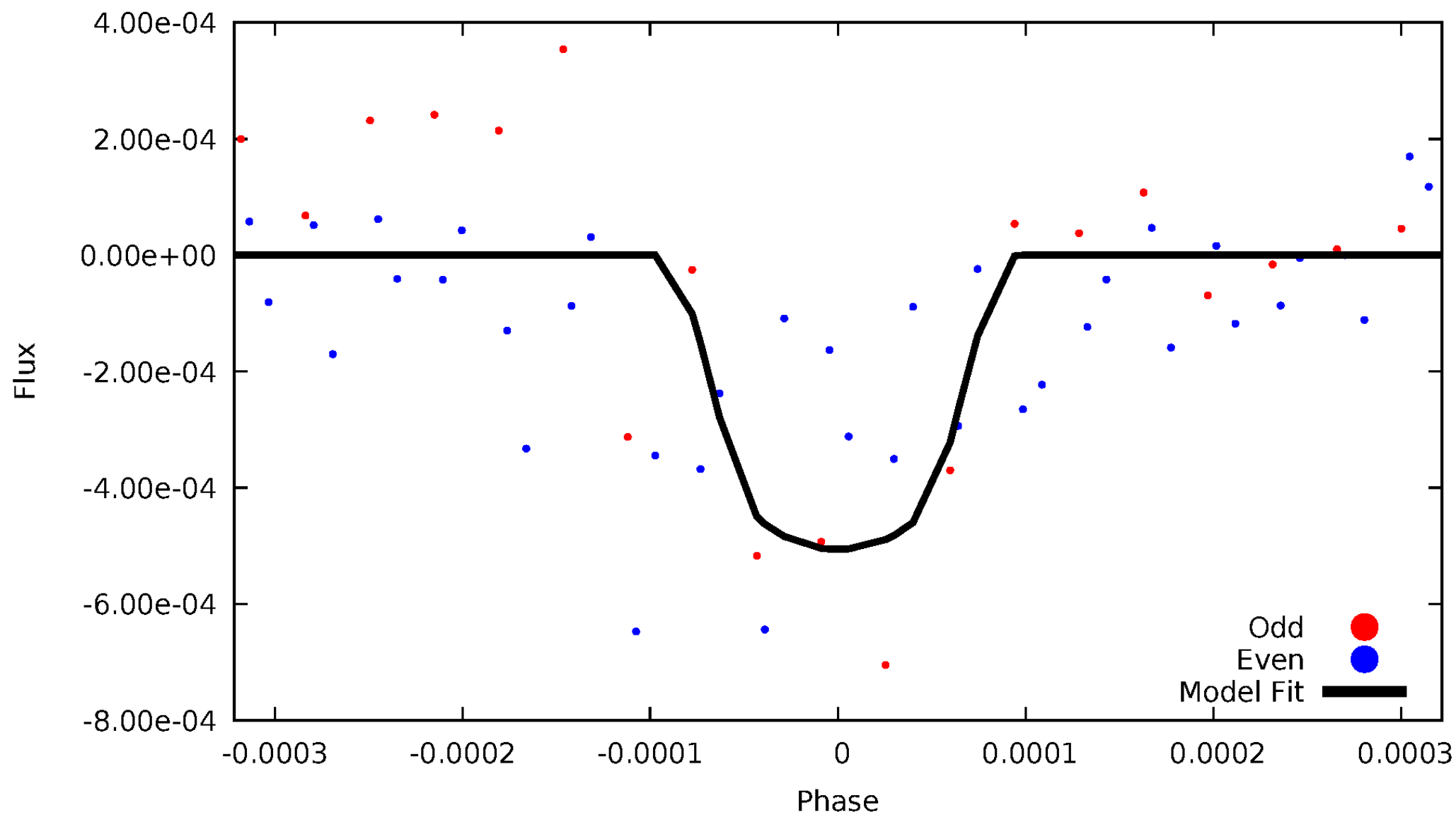


TCE 008451573-01



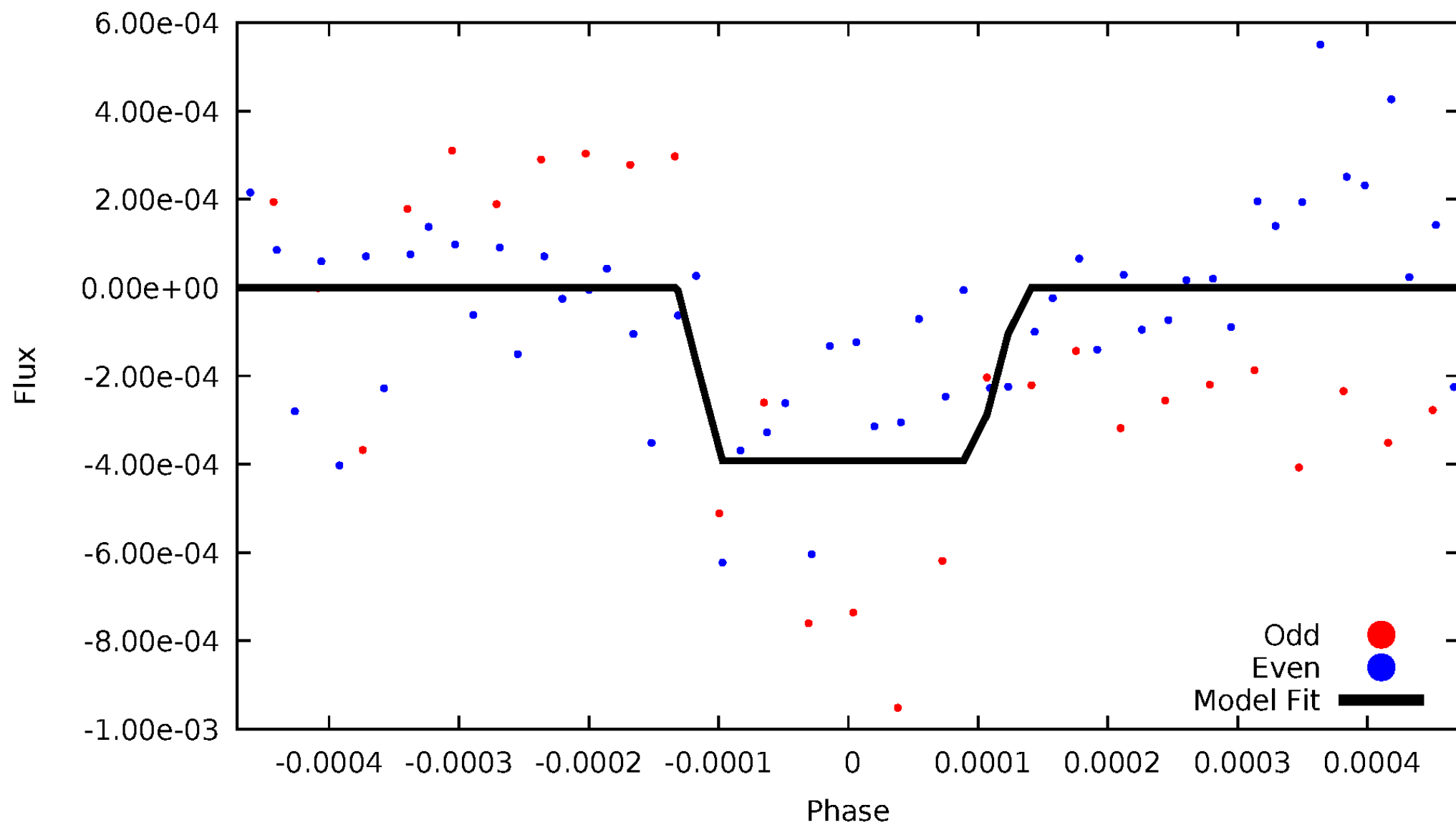
DV Odd/Even

TCE 008451573-01



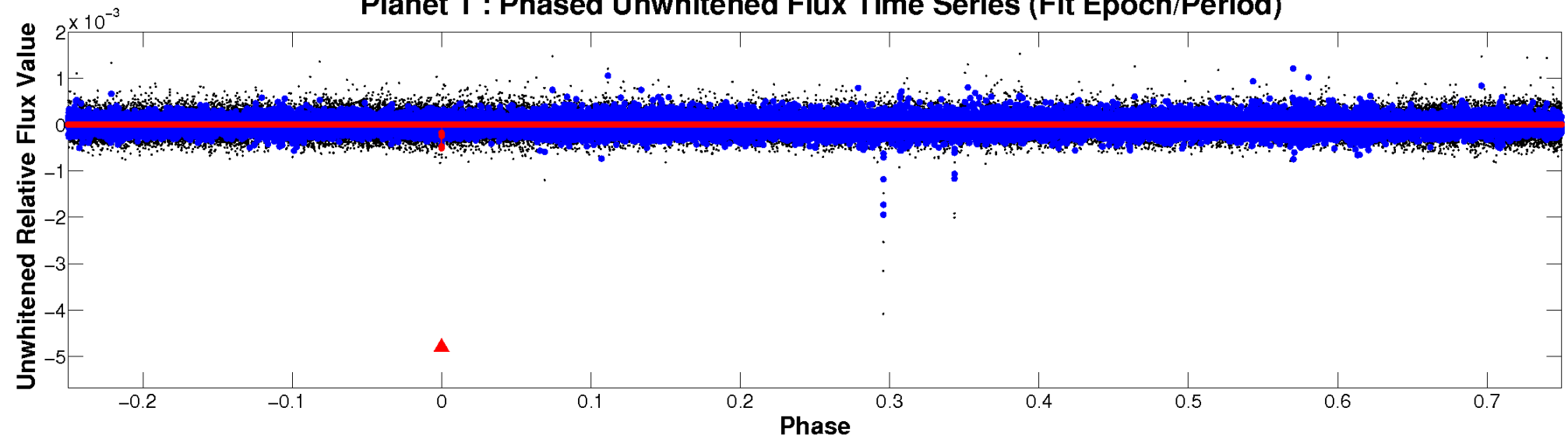
ALT Odd/Even

TCE 008451573-01

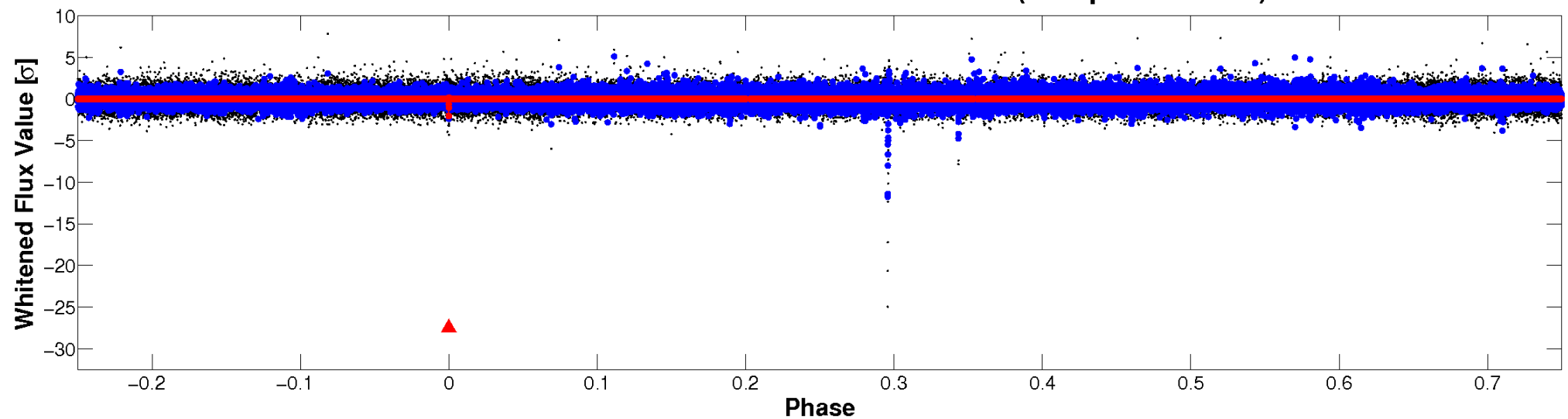


Non-Whitened Vs. Whitened Light Curve

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

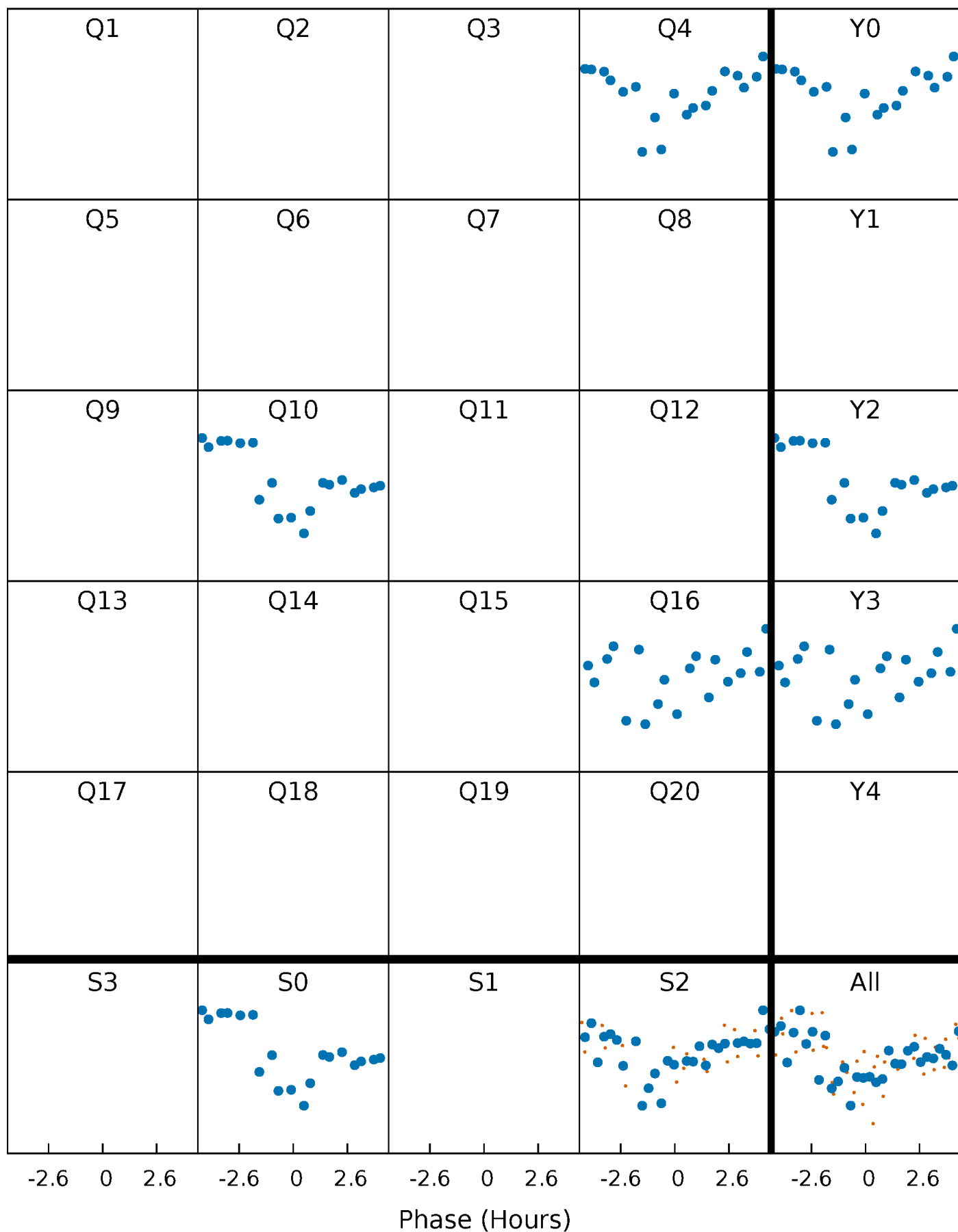


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



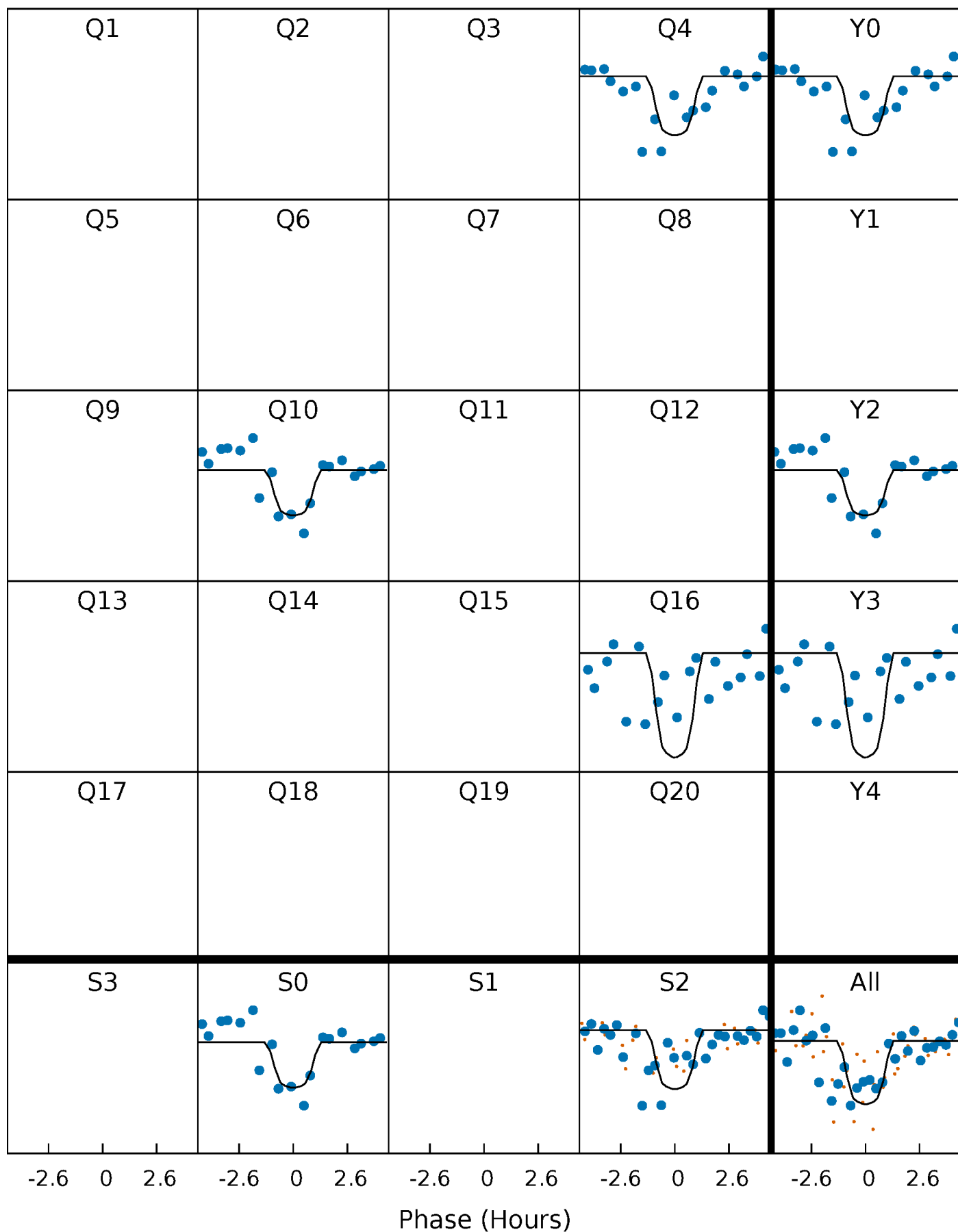
PDC Quarter-Phased Transit Curves

TCE 008451573-01 P=594.869690 Days $T_0=355.792050$ (BKJD)



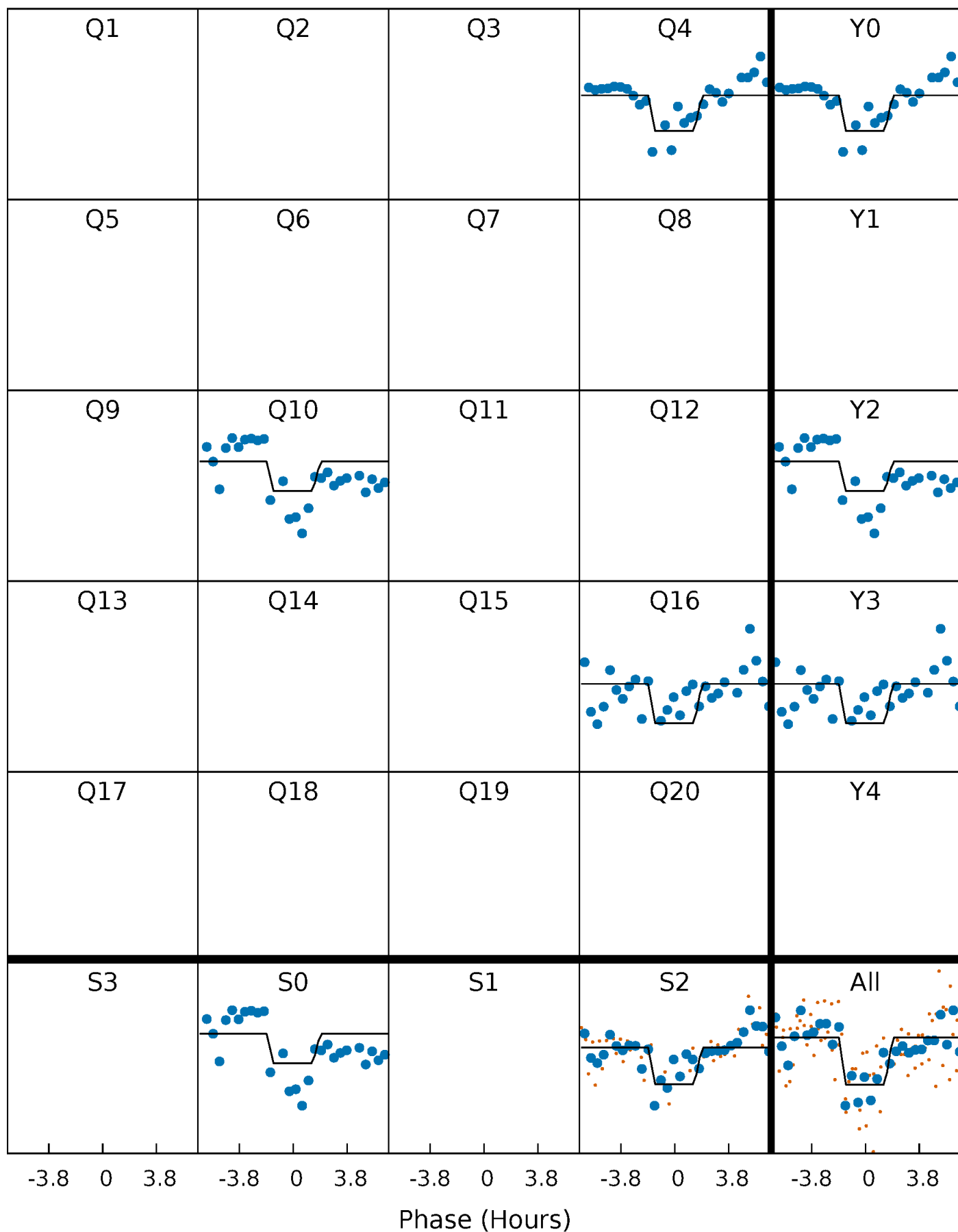
DV Quarter-Phased Transit Curves

TCE 008451573-01 P=594.869690 Days $T_0=355.792050$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

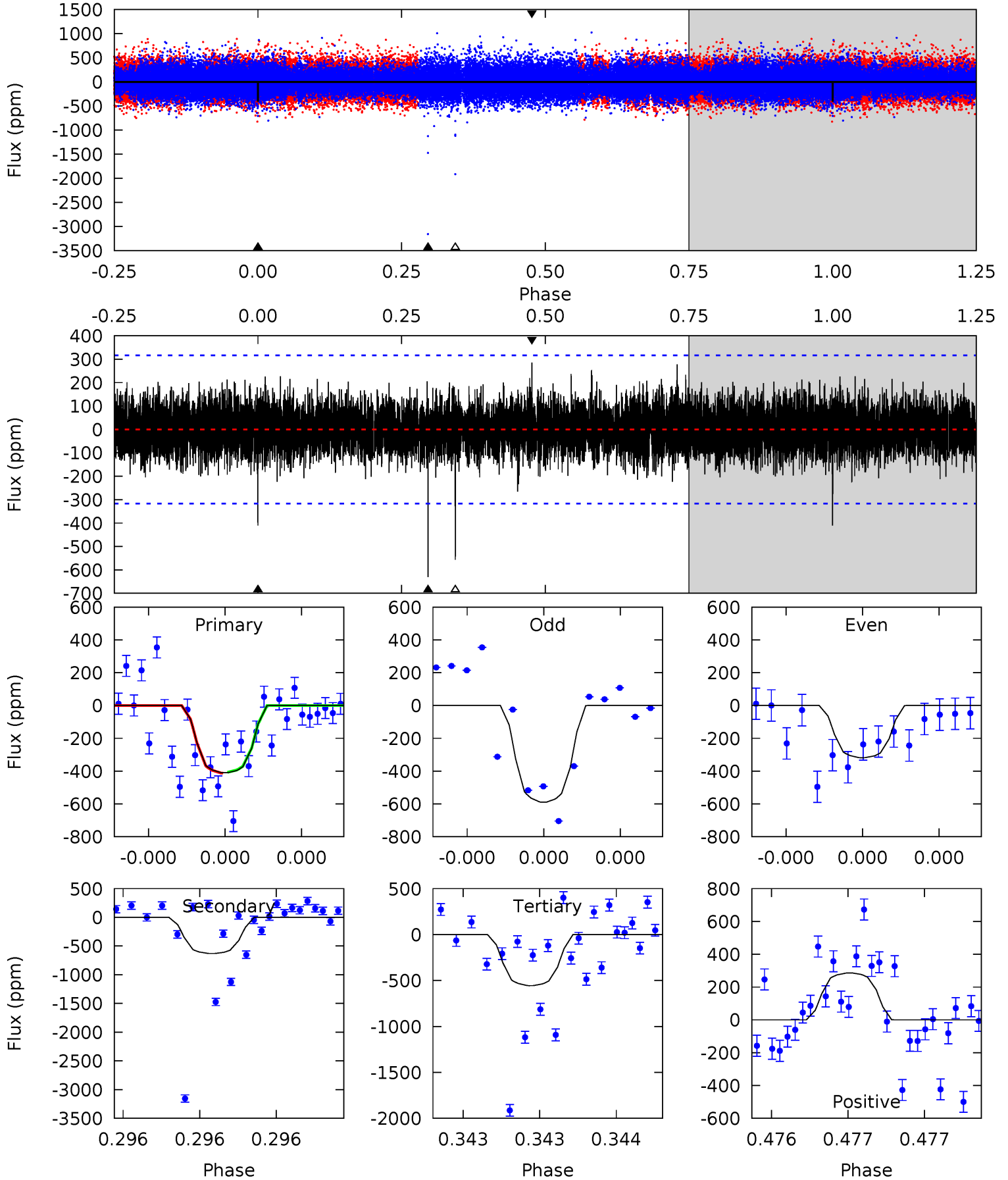
TCE 008451573-01 P=594.868610 Days $T_0=355.785622$ (BKJD)



DV Model-Shift Uniqueness Test

008451573-01, P = 594.869690 Days, E = 355.792050 Days

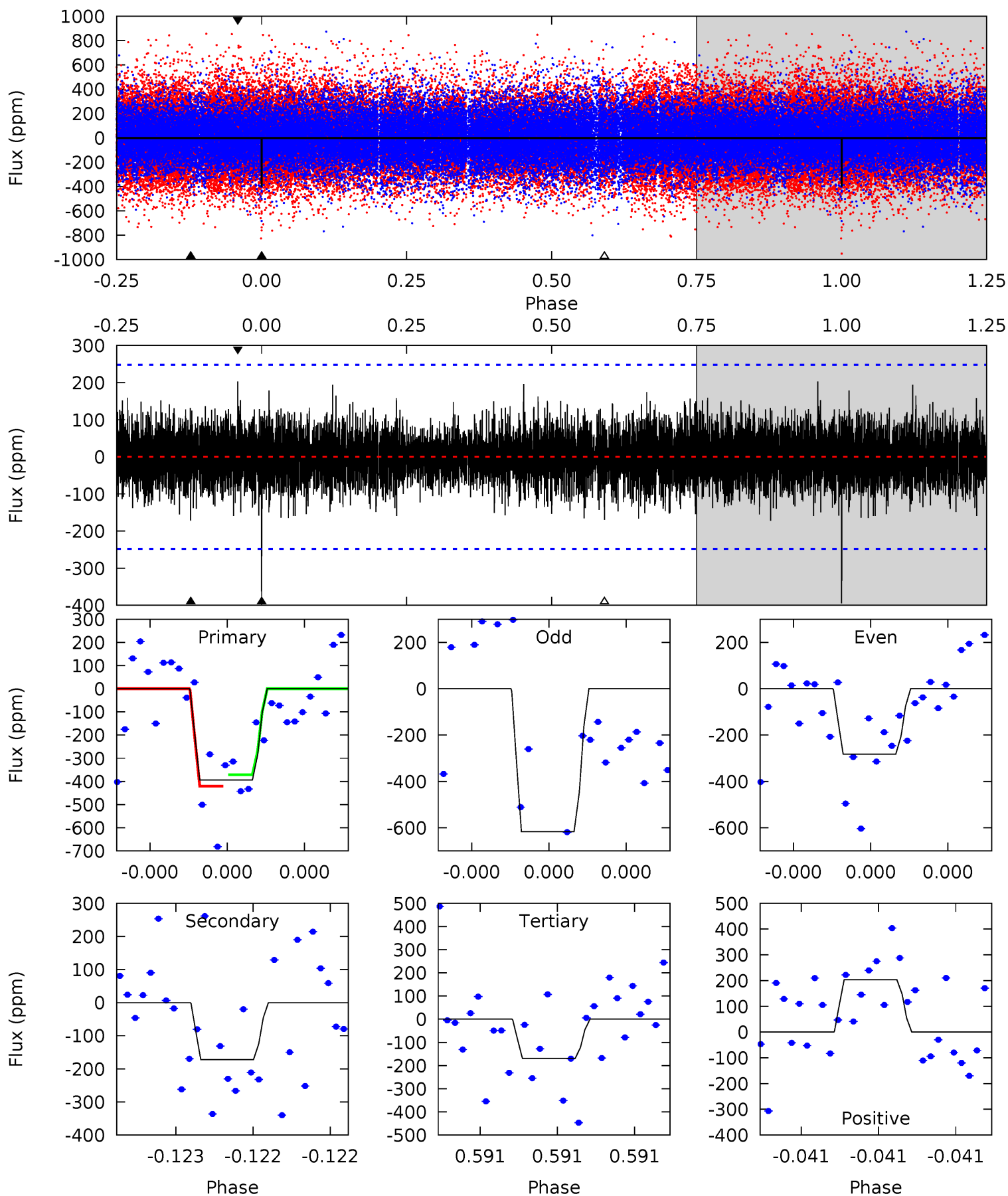
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.46	11.5	10.1	5.20	5.76	3.76	1.20	-2.65	2.26	1.36	6.27	2.39	0.94	0.31	0.05



Alt Model-Shift Uniqueness Test

008451573-01, P = 594.868610 Days, E = 355.785622 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.03	3.93	3.88	4.65	5.68	3.64	1.12	5.15	4.38	0.06	-0.71	3.57	1.06	0.34	0.56



Stellar Parameters For KIC 008451573

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5069^{+137}_{-137}	$3.438^{+0.378}_{-0.252}$	$-0.080^{+0.250}_{-0.250}$	$3.737^{+1.284}_{-1.570}$	$1.398^{+0.190}_{-0.444}$	$0.038^{+0.122}_{-0.022}$
	+3%/-3%	+11%/-7%	+312%/-312%	+34%/-42%	+14%/-32%	+324%/-58%
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 008451573-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-631 ± 55	$17.81^{+17.67}_{-12.60}$	485^{+47}_{-55}	4024^{+2611}_{-769}	2584^{+28841}_{-1944}
Alt.	-172 ± 44	$16.54^{+19.32}_{-11.79}$	485^{+48}_{-56}	3289^{+1847}_{-599}	791^{+9181}_{-627}

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 $A_{obs} \gg 1.0$

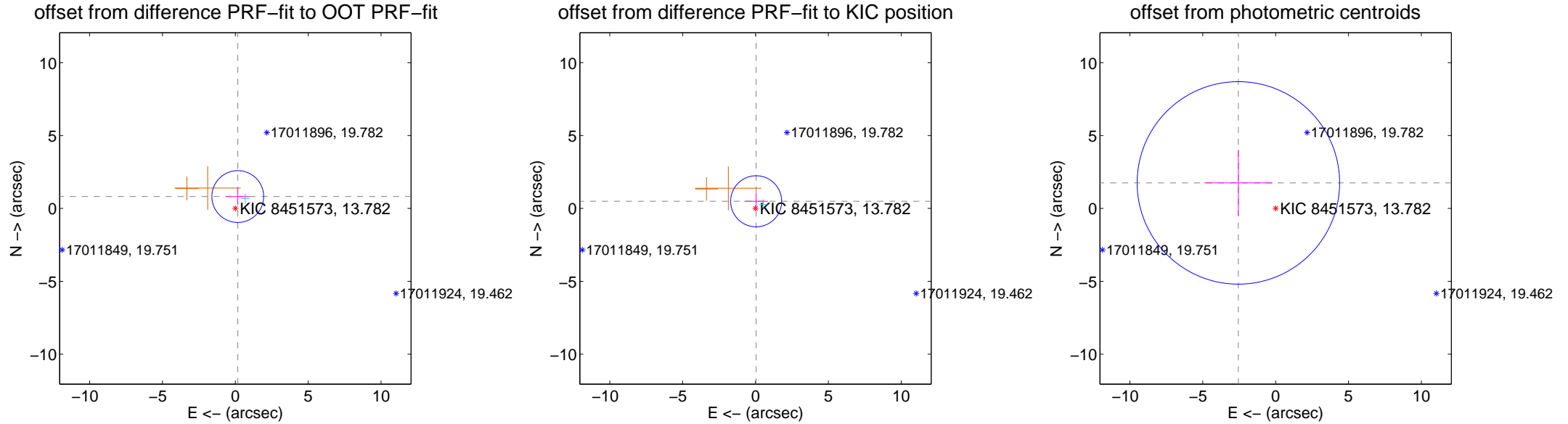
DV Centroid Data

Supplemental centroid analysis for 008451573-01. Kepler magnitude: 13.78. Transit SNR 6.26

There are 1 quarters with good PRF difference image offsets

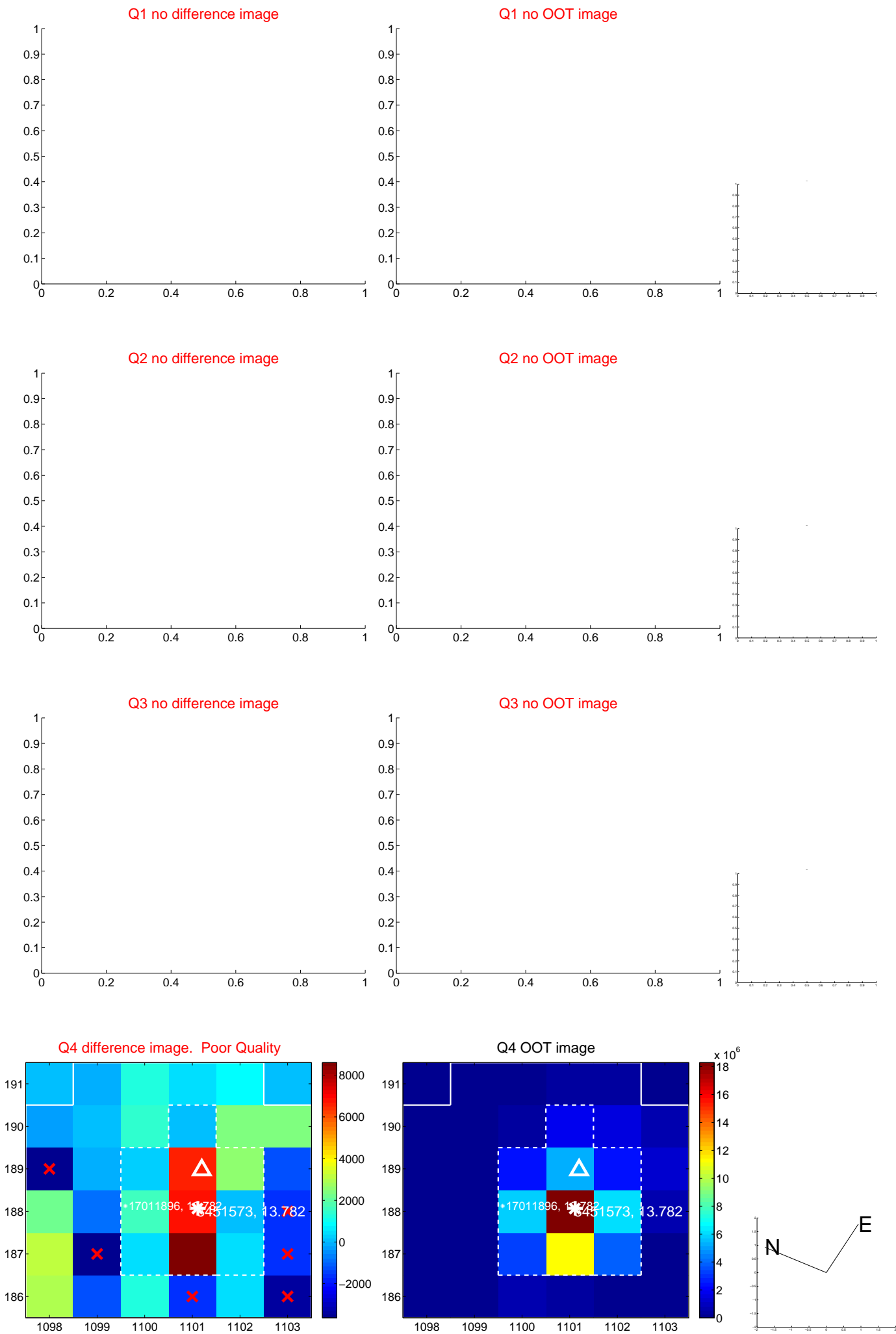
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.833 ± 0.592	1.41	-0.166 ± 0.810	0.816 ± 0.581
PRF-fit source offset from KIC position	0.493 ± 0.584	0.85	-0.045 ± 0.810	0.491 ± 0.581
photometric centroid source offset	3.10 ± 2.32	1.34	2.56 ± 2.34	1.75 ± 2.25



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.



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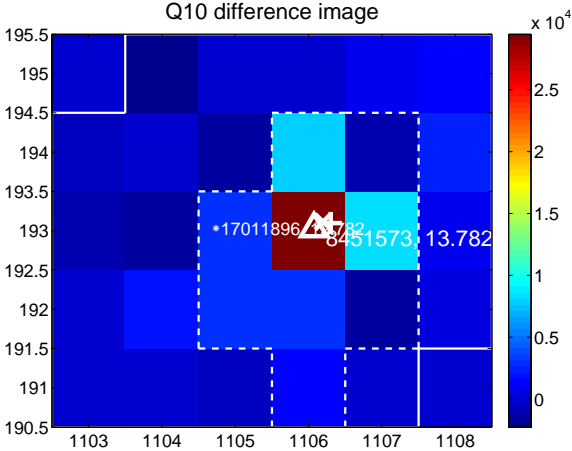
Q9 no difference image



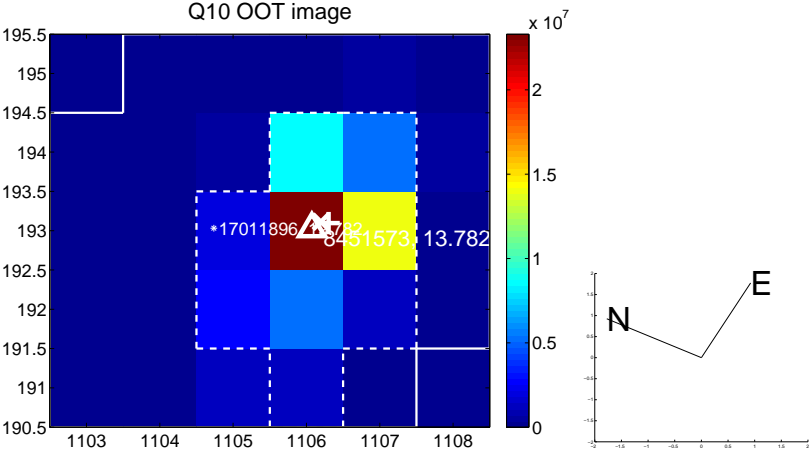
Q9 no OOT image



Q10 difference image



Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image

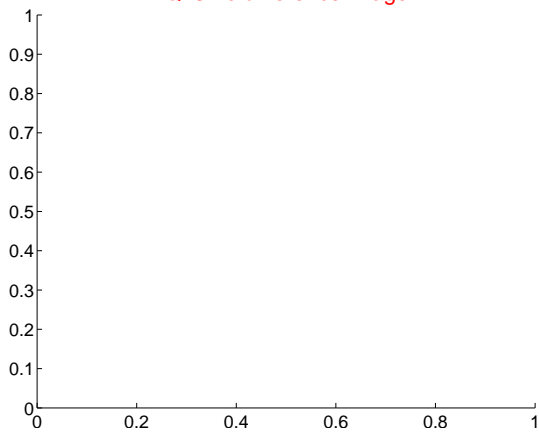


Q12 no OOT image

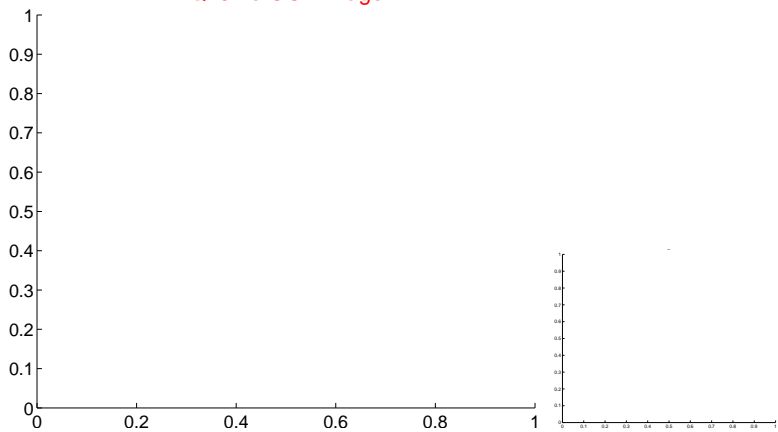


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

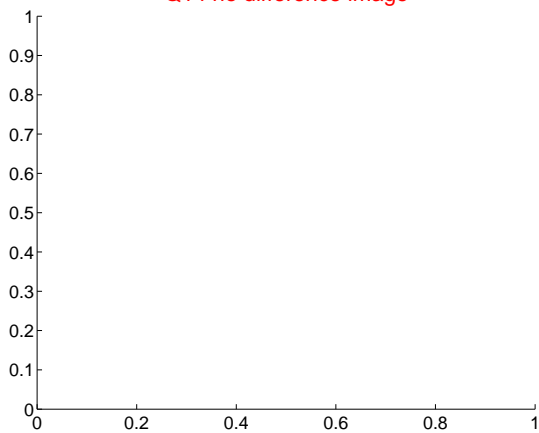
Q13 no difference image



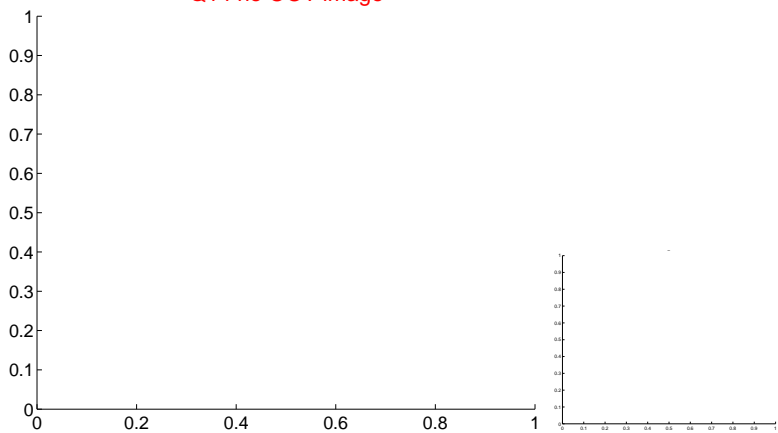
Q13 no OOT image



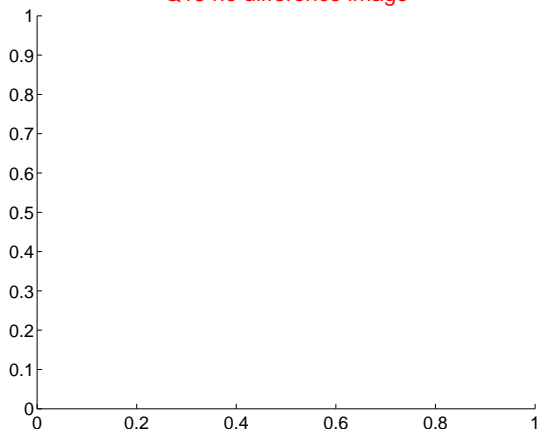
Q14 no difference image



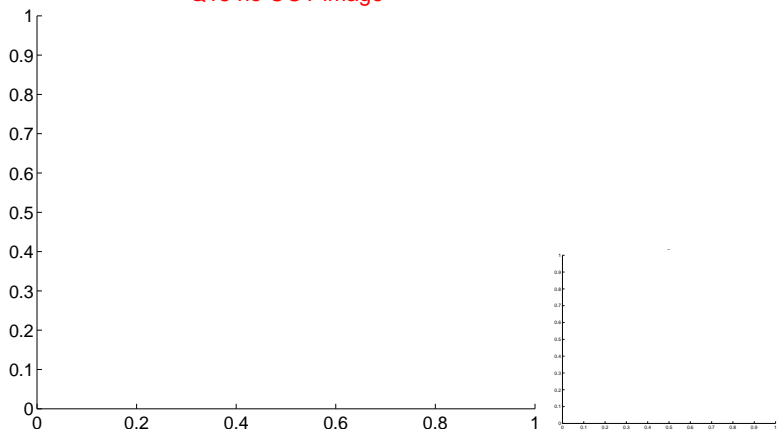
Q14 no OOT image



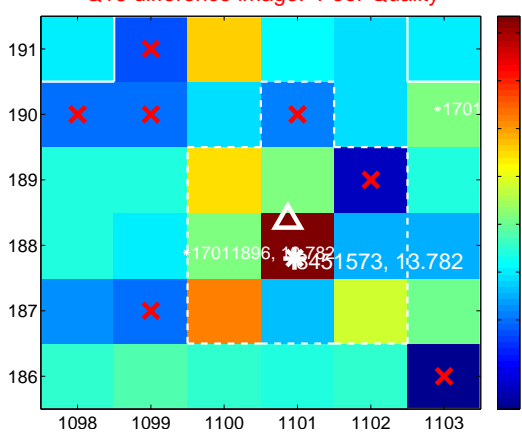
Q15 no difference image



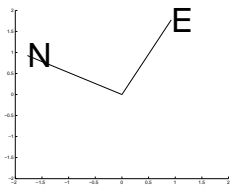
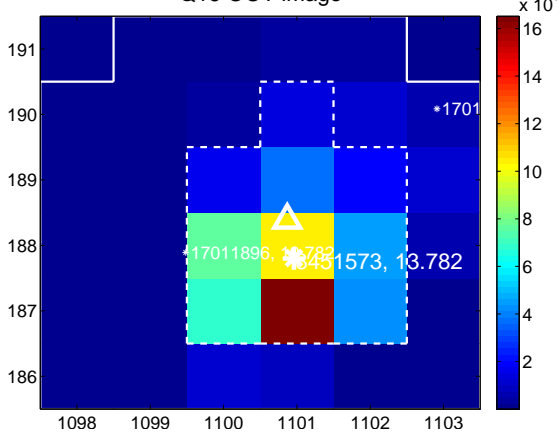
Q15 no OOT image



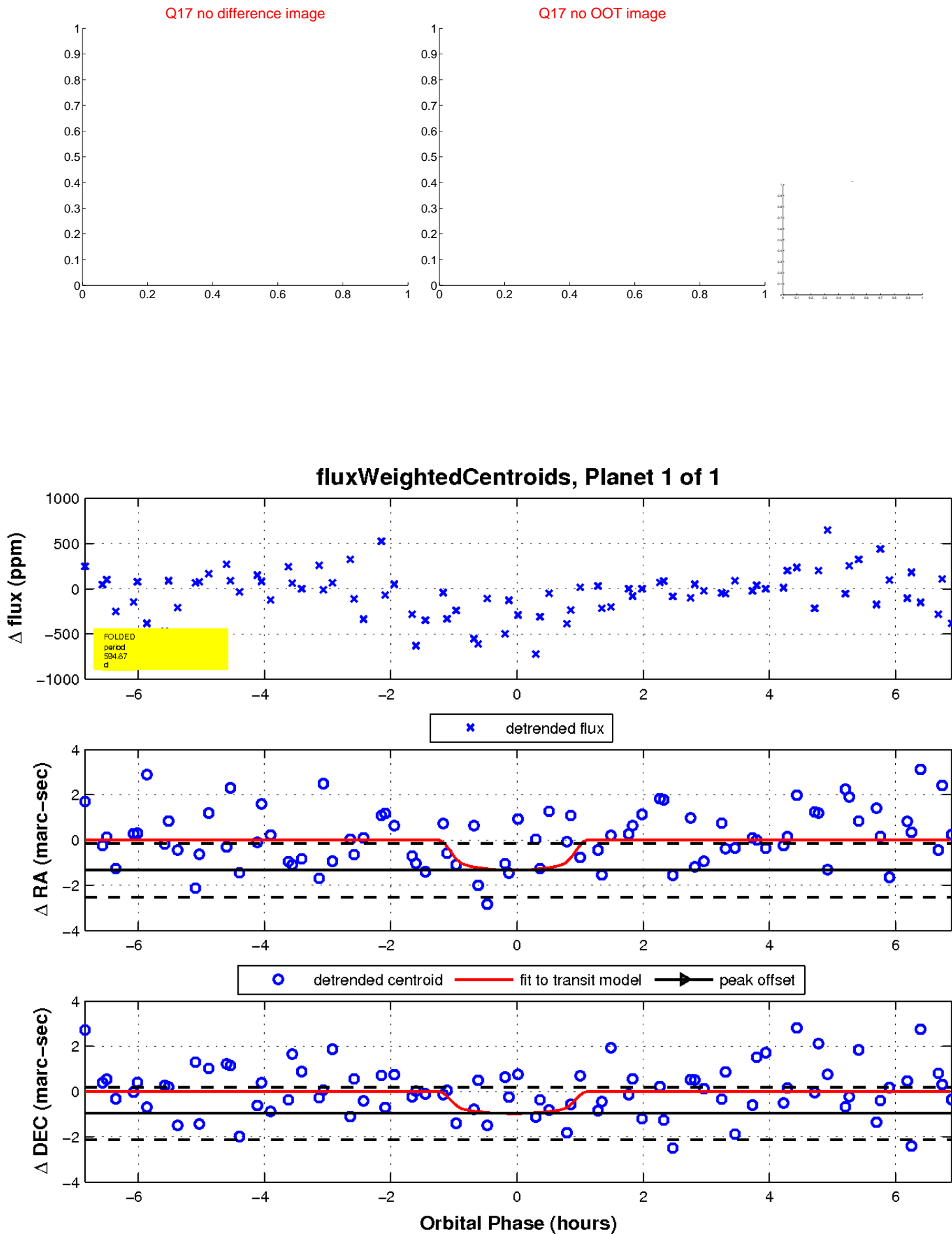
Q16 difference image. Poor Quality



Q16 OOT image



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



UKIRT Image

Declination

