

KIC 004651220

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})
004651220-01	OBS	No	314.498829	255.954732	598.3	11.837	17.4	2.6	15.21	4888	45.89	72.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004651220-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

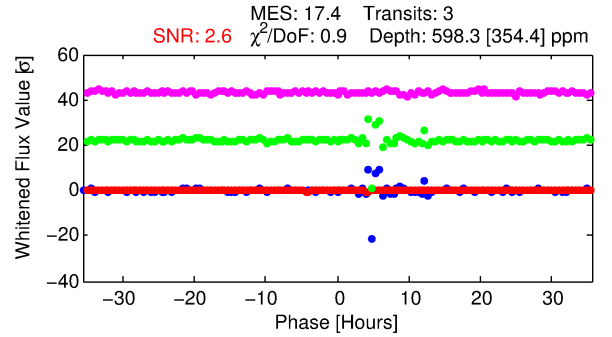
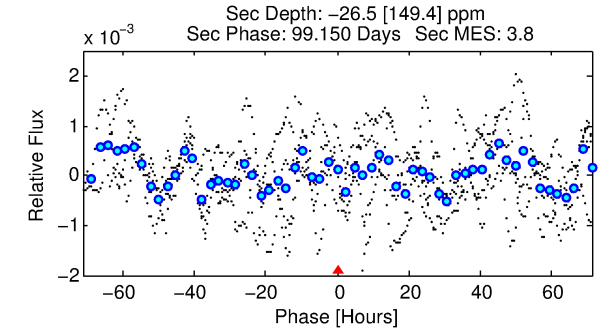
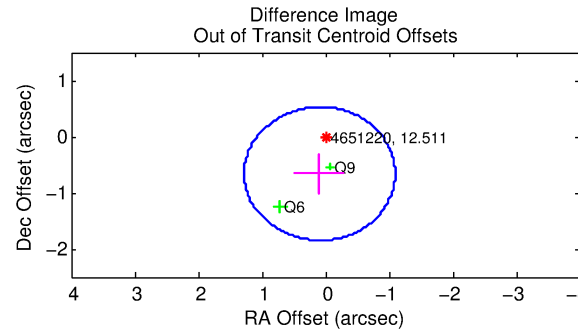
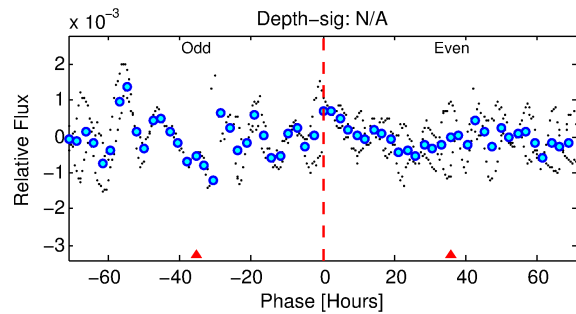
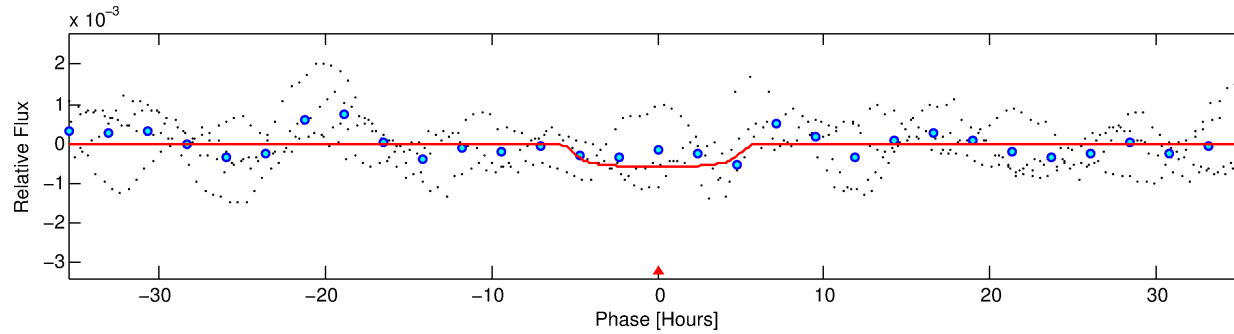
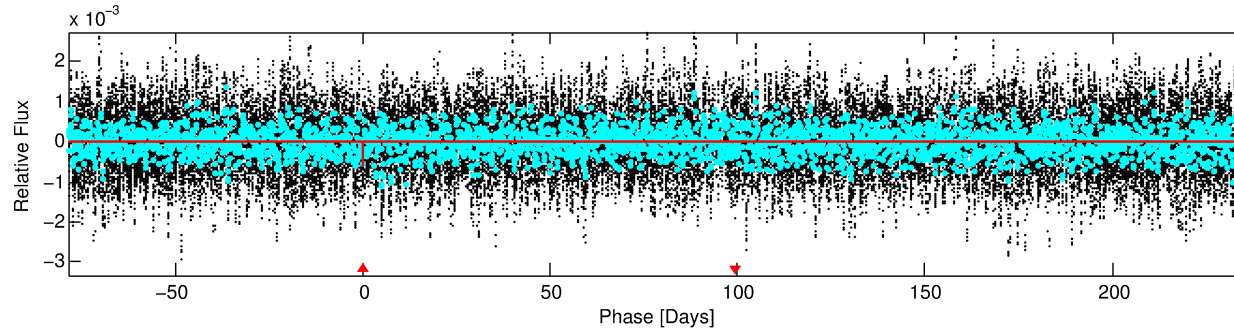
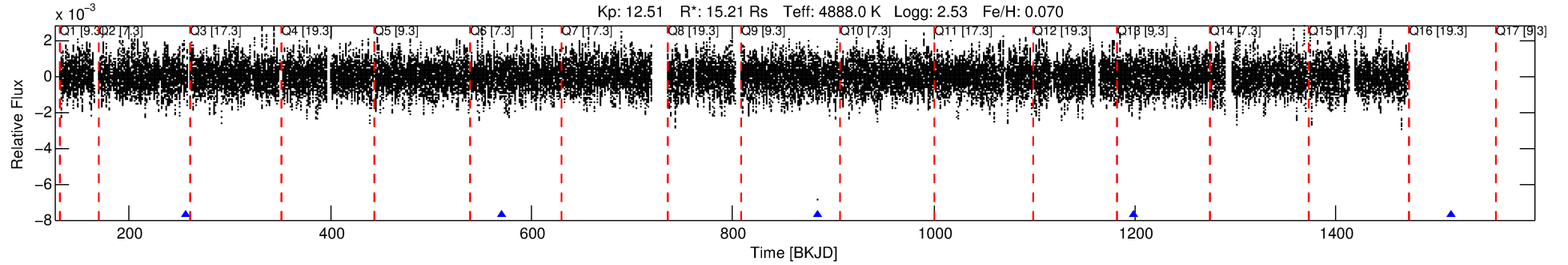
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004651220-01

No Significant Match Found

DV One-Page Summary

KIC: 4651220 Candidate: 1 of 1 Period: 314.499 d



DV Fit Results:

Period = 314.49883 [0.01805] d
Epoch = 255.9547 [0.0384] BKJD
Rp/R* = 0.0276 [0.0084]
a/R* = 97.44 [24.44]
b = 0.91 [0.05]
Seff = 72.01 [37.60]
Teq = 743 [97] K
Rp = 45.89 [25.36] Re
a = 1.2820 [0.4661] AU
Ag = N/A
Teffp = N/A

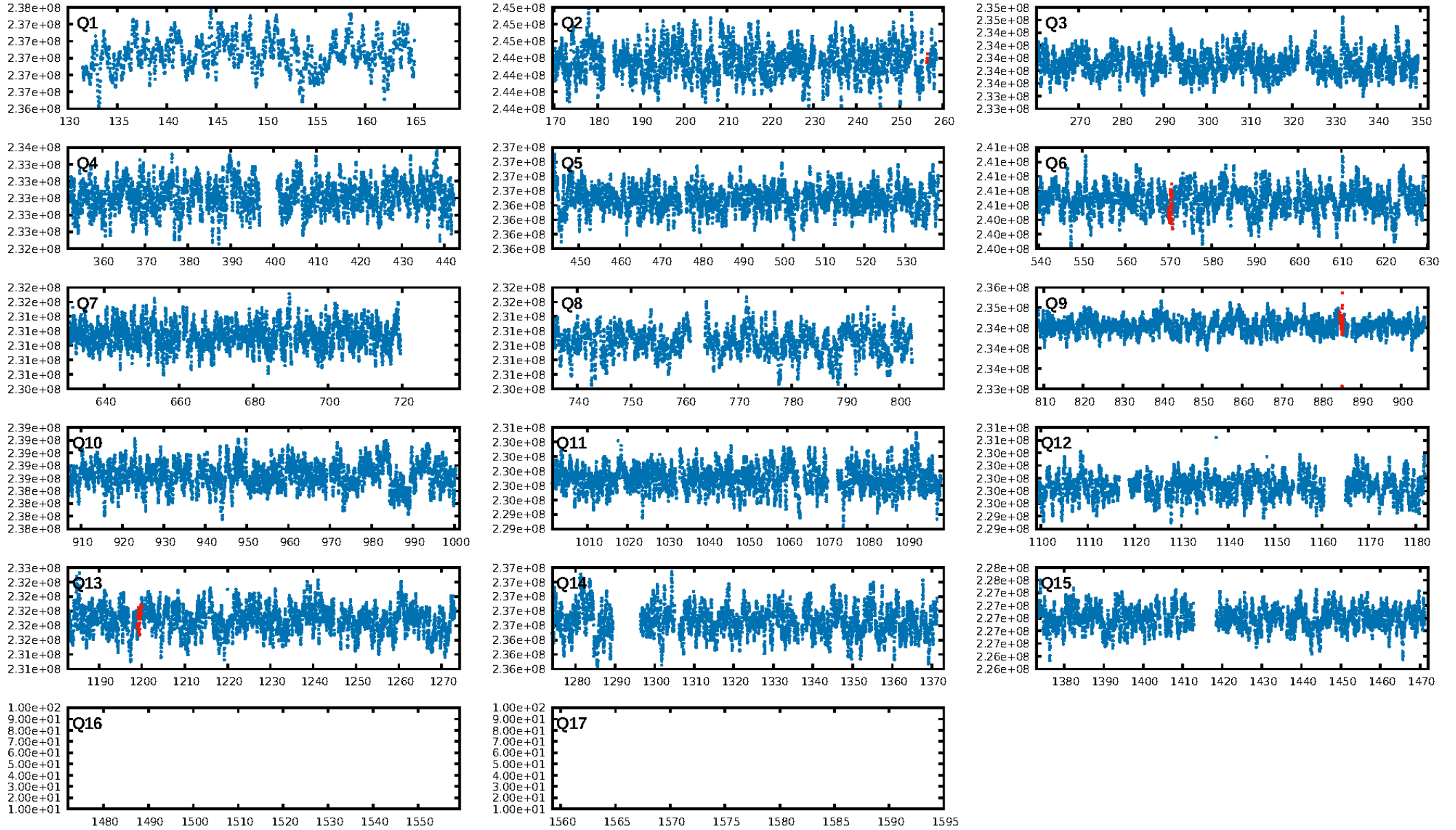
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 81.4%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 7.42e-28
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.796
Centroid-sig: 2.1%
Centroid-so: 0.445 arcsec [1.54σ]
OotOffset-rm: 0.668 arcsec [1.69σ]
KicOffset-rm: 0.543 arcsec [1.89σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

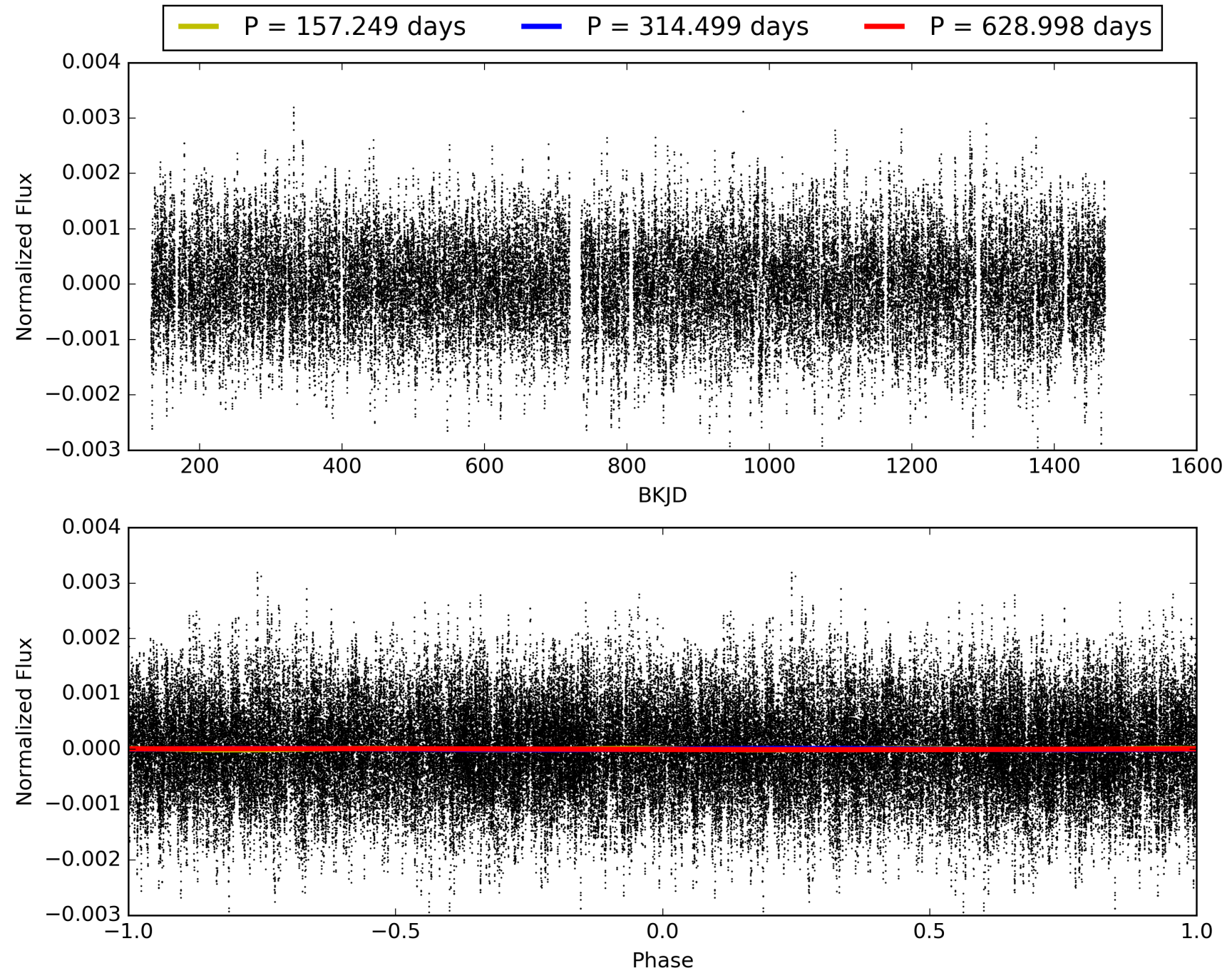
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:34:00 Z

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

TCE 004651220-01, PDC Light Curves

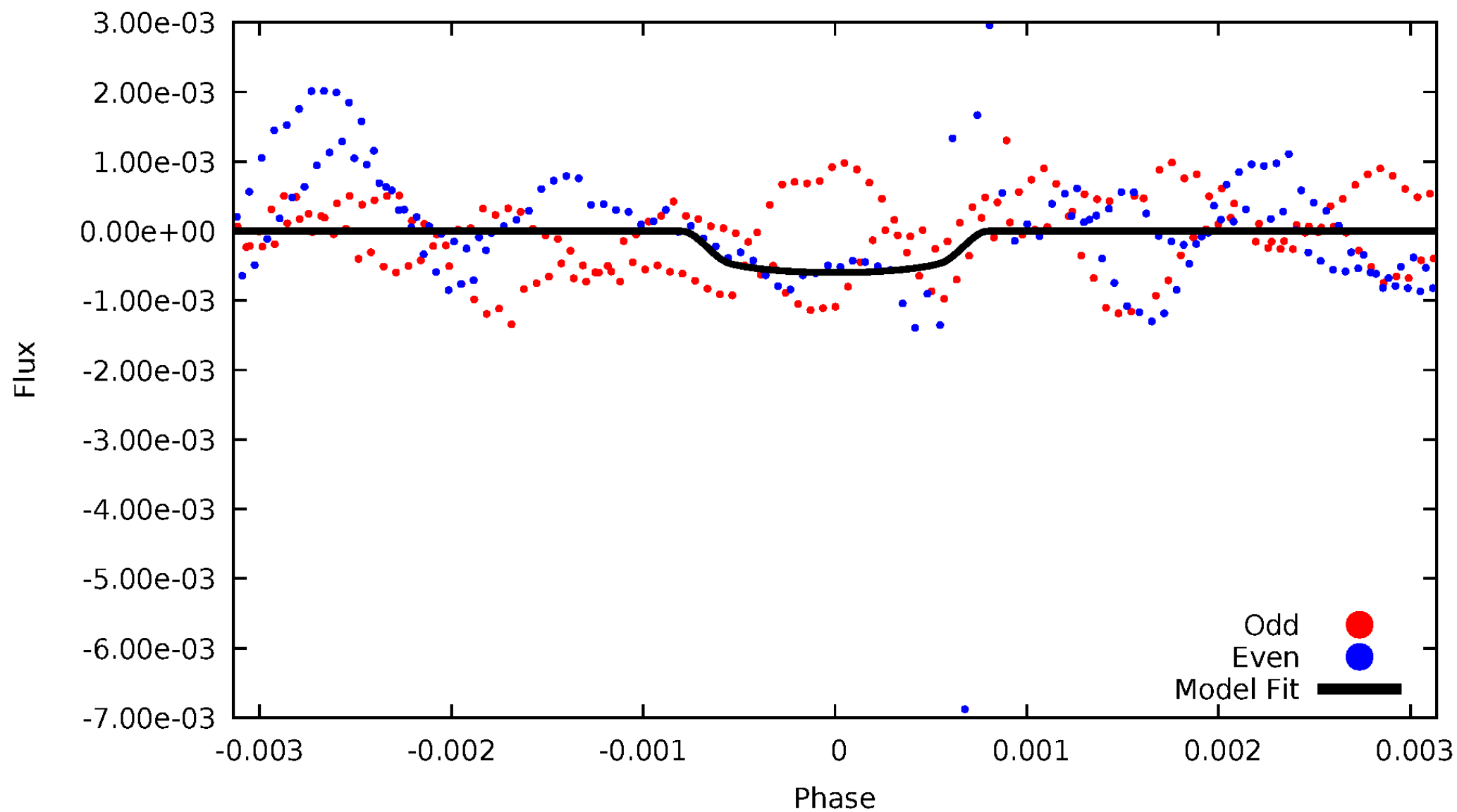


TCE 004651220-01



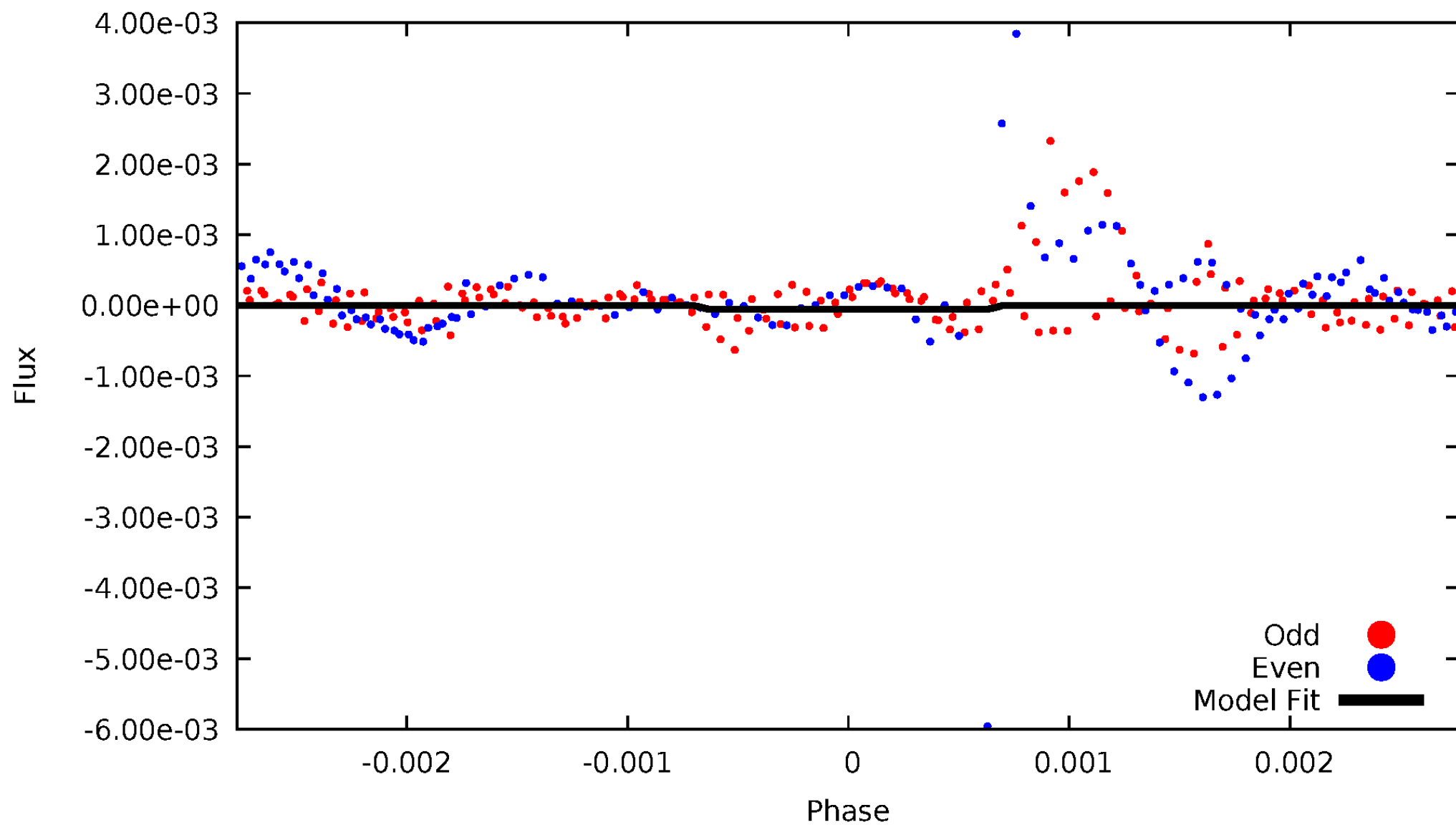
DV Odd/Even

TCE 004651220-01



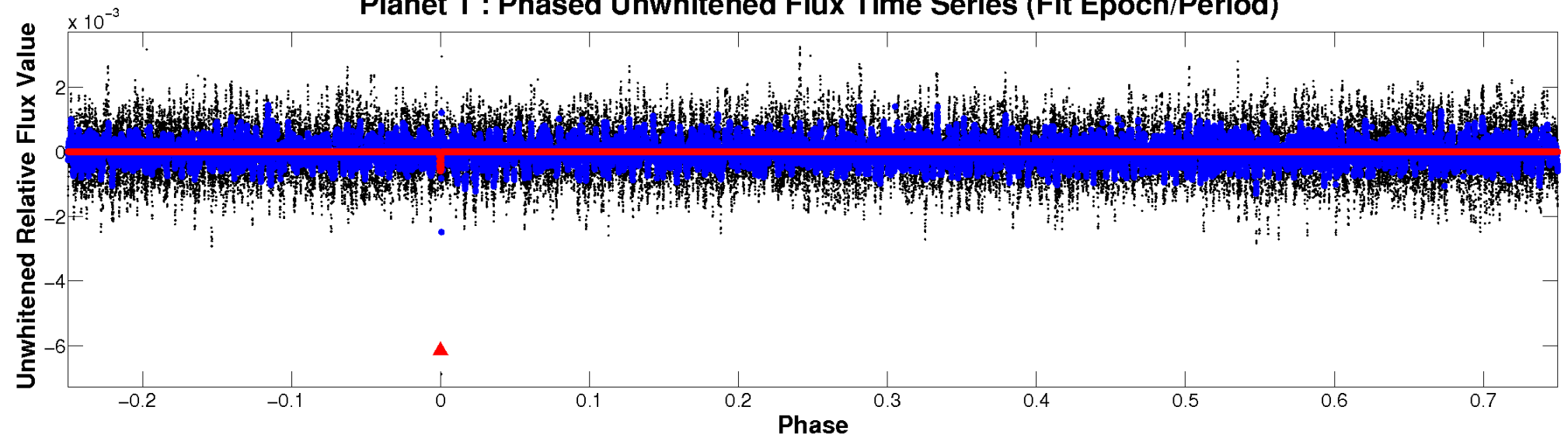
ALT Odd/Even

TCE 004651220-01

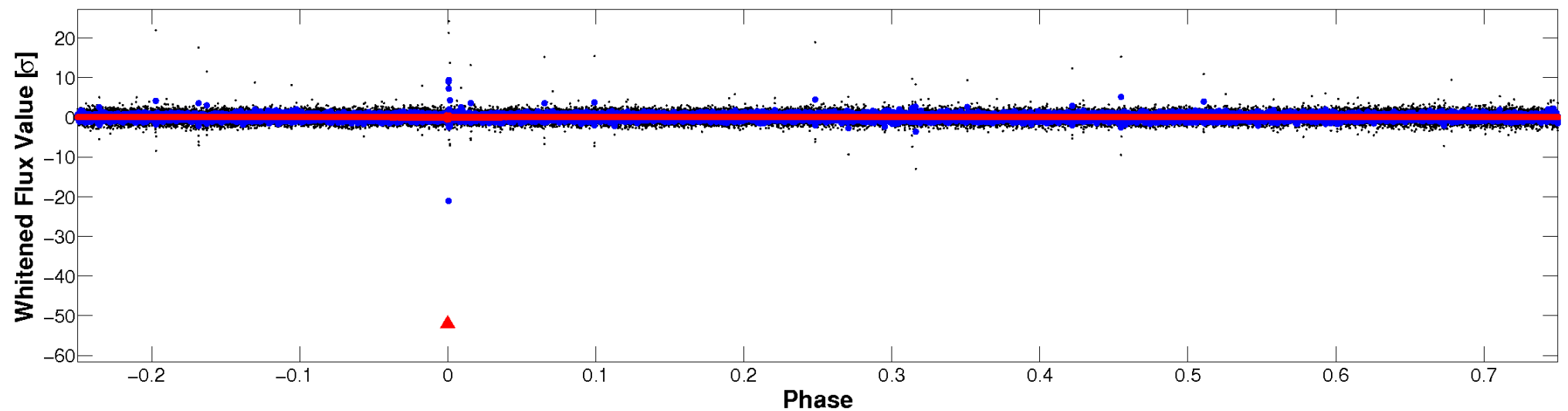


Non-Whitened Vs. Whitened Light Curve

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

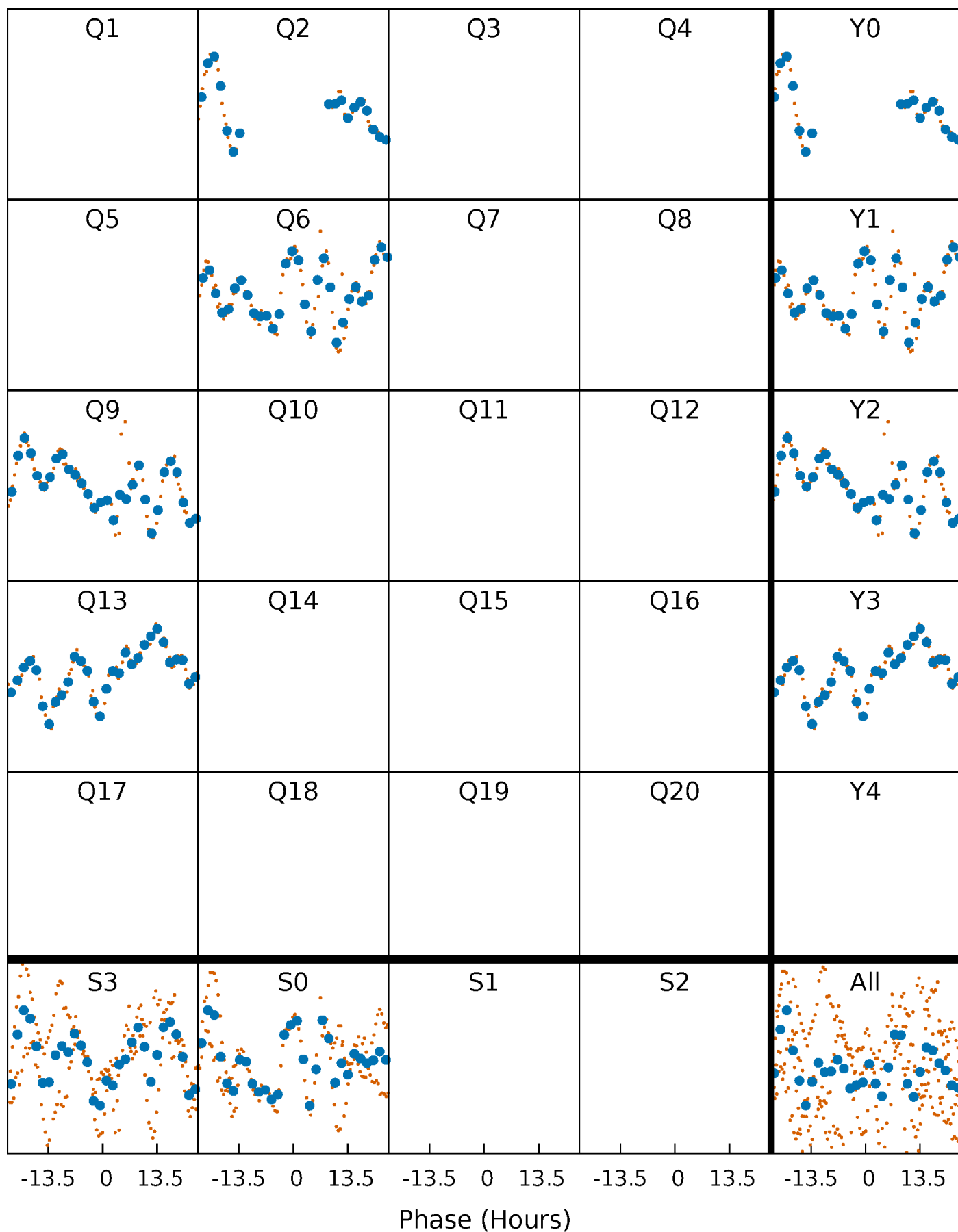


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



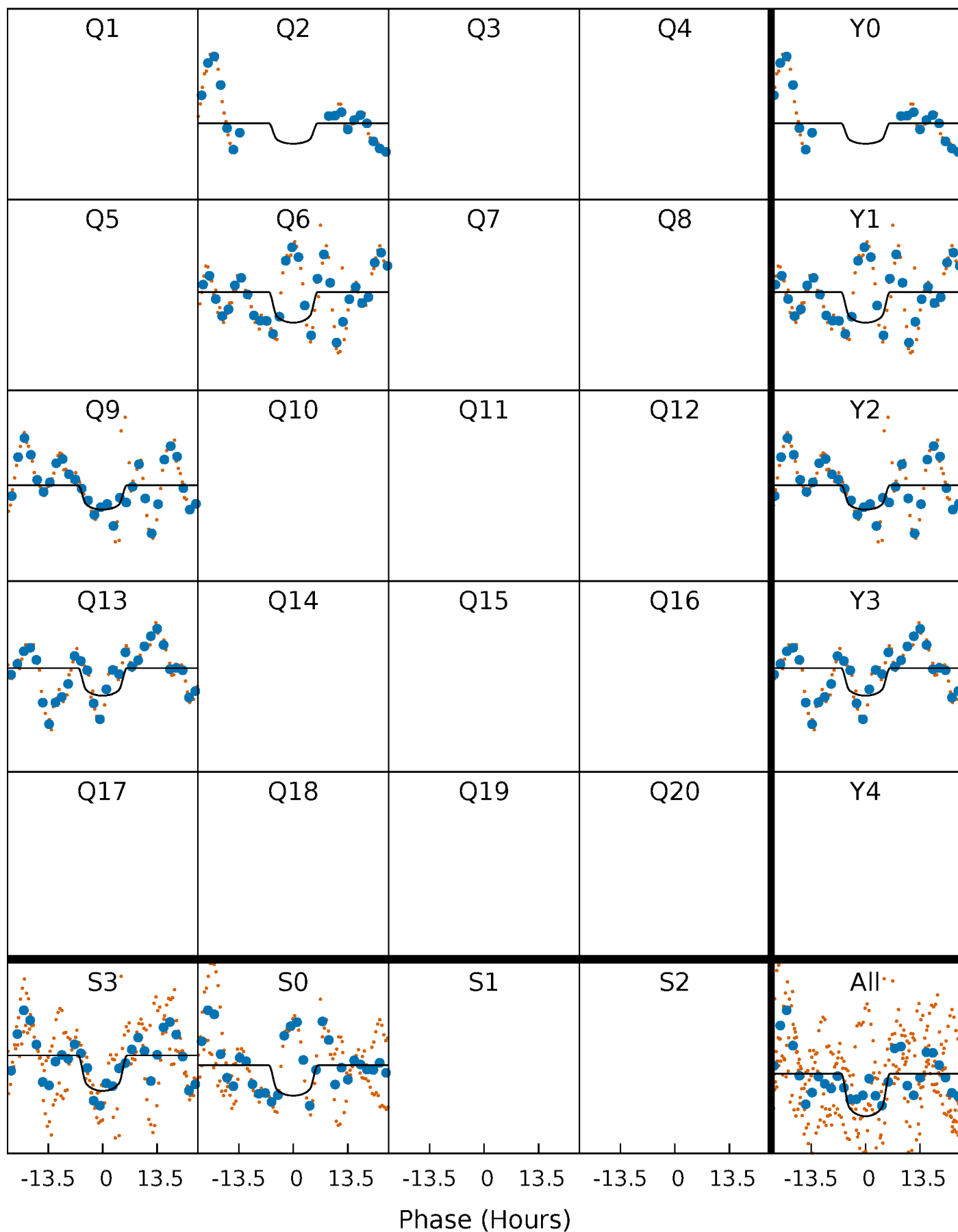
PDC Quarter-Phased Transit Curves

TCE 004651220-01 P=314.498829 Days $T_0=255.954732$ (BKJD)



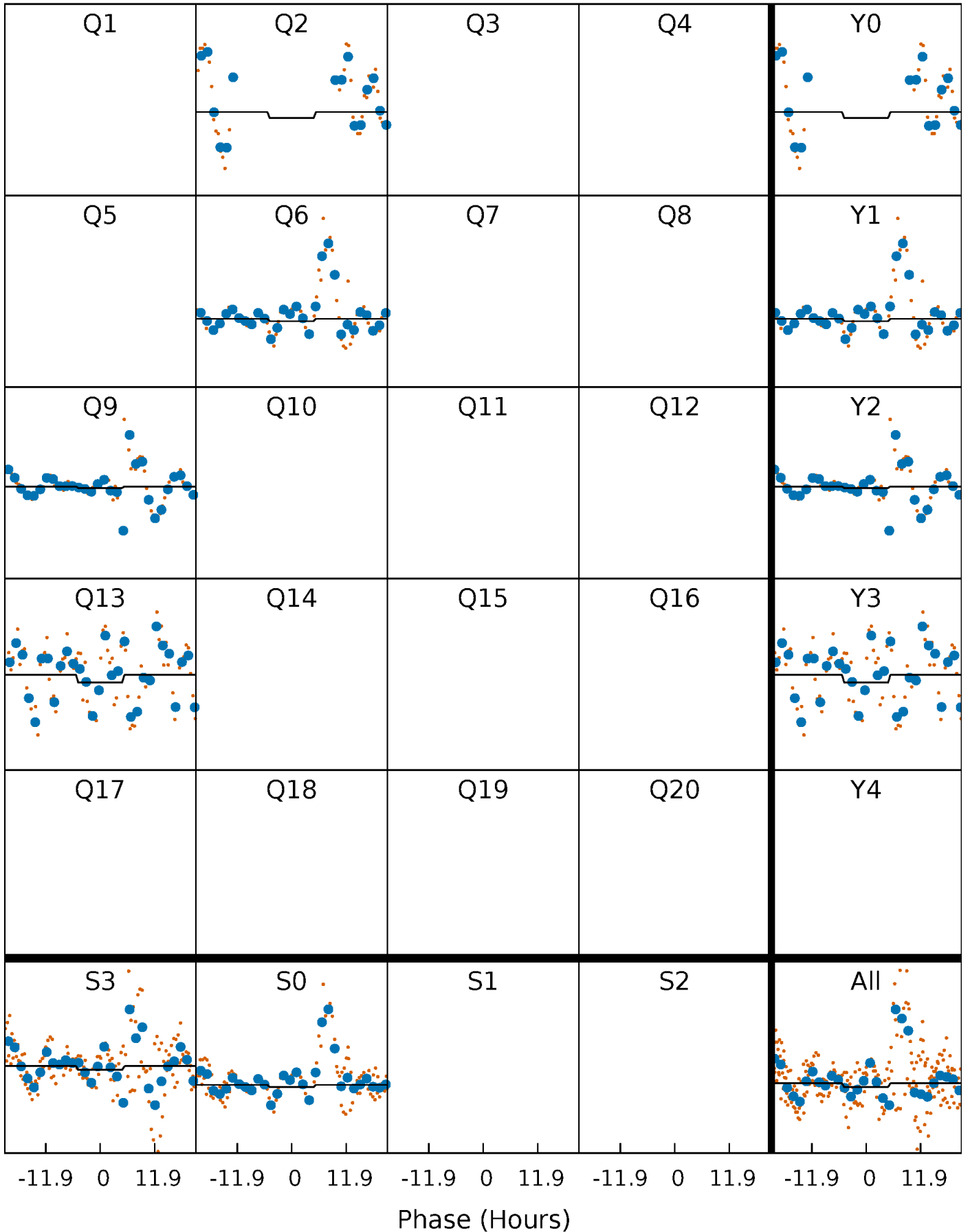
DV Quarter-Phased Transit Curves

TCE 004651220-01 P=314.498829 Days $T_0=255.954732$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

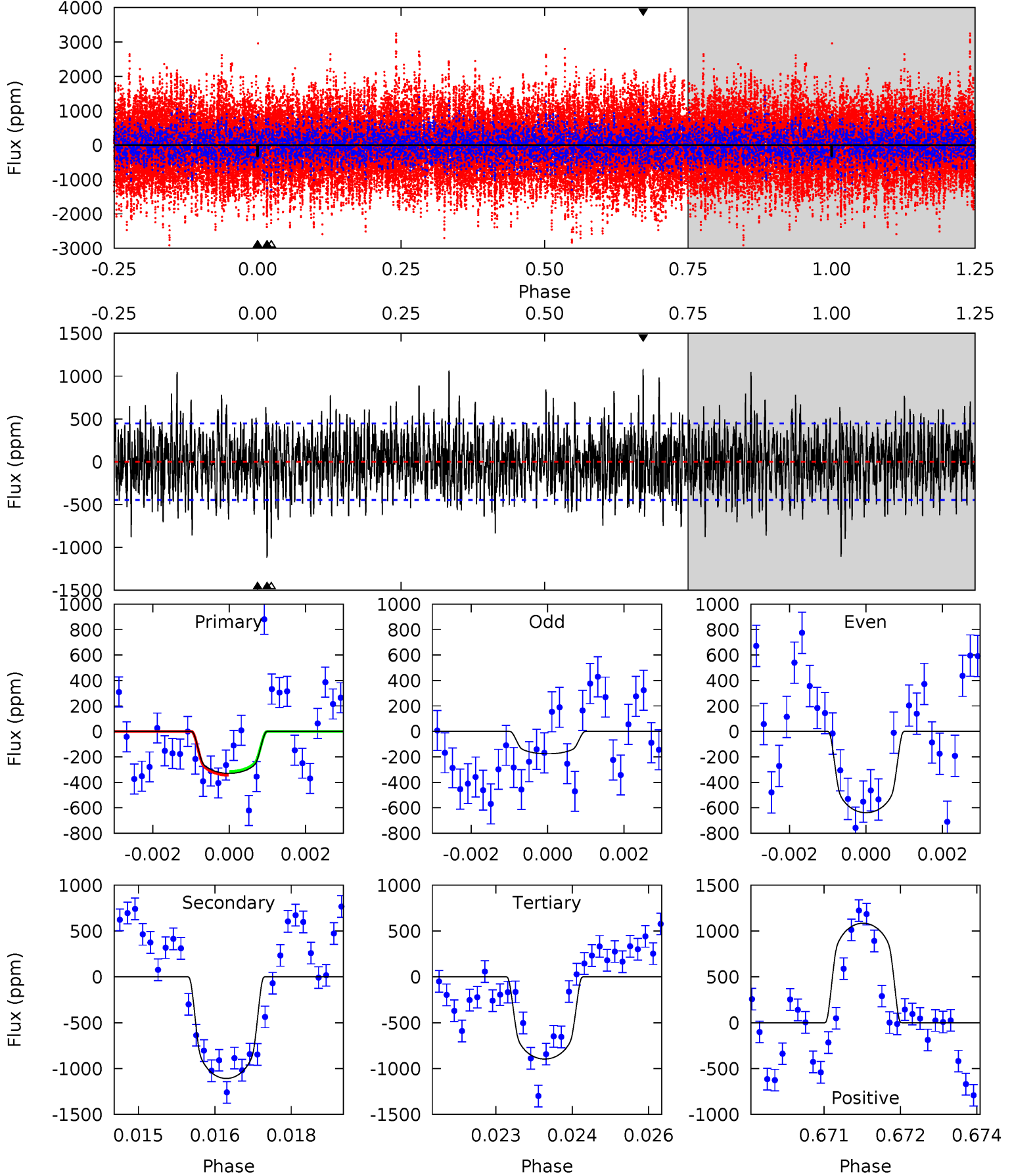
TCE 004651220-01 P=314.520167 Days $T_0=255.926841$ (BKJD)



DV Model-Shift Uniqueness Test

004651220-01, P = 314.498829 Days, E = 255.954732 Days

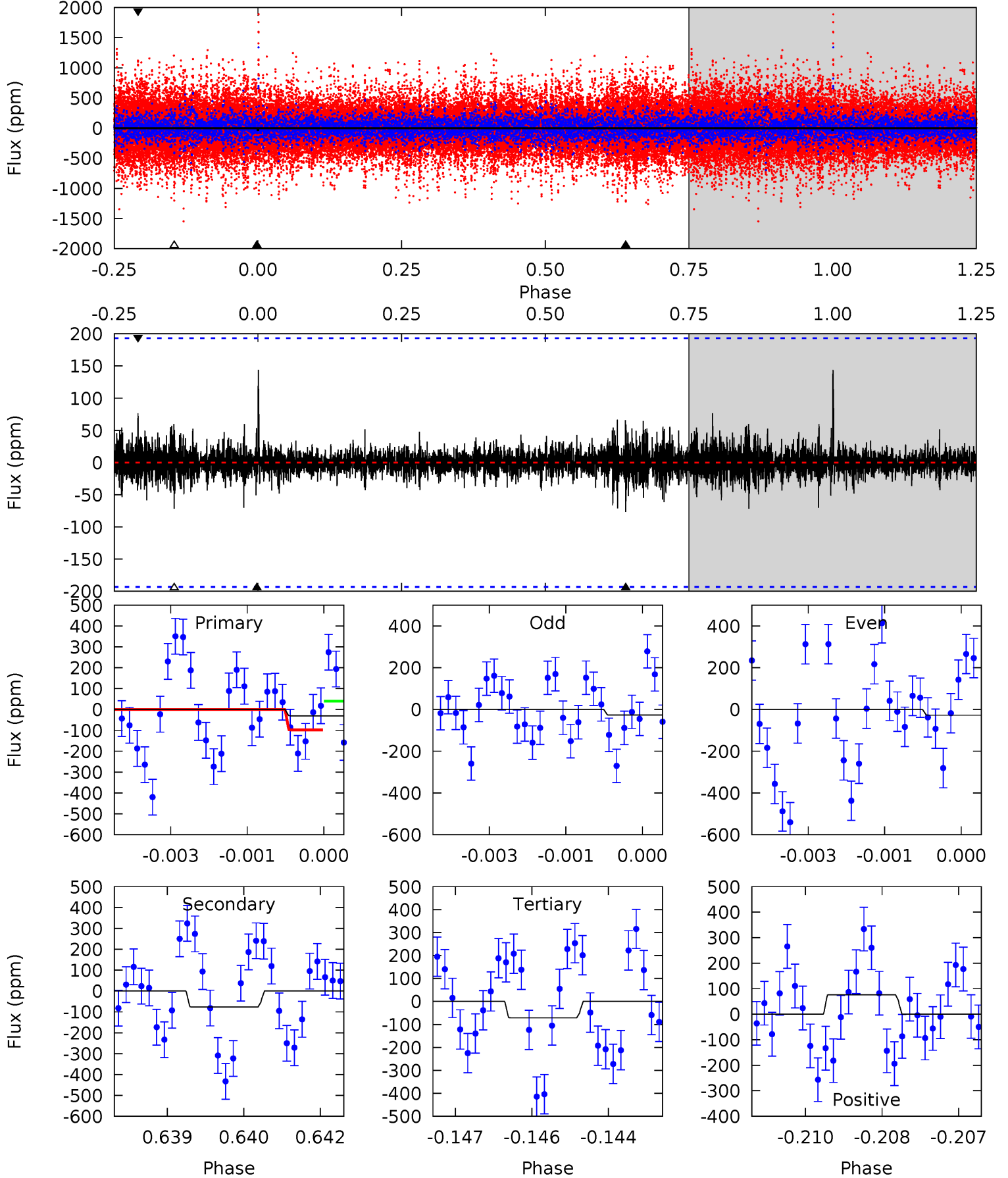
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.96	13.3	10.8	13.0	5.36	3.15	3.37	-6.82	-9.07	2.54	0.28	2.61	0.78	0.49	0.18



Alt Model-Shift Uniqueness Test

004651220-01, P = 314.520167 Days, E = 255.926841 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.85	2.13	1.99	2.13	5.39	3.20	0.45	-1.14	-1.28	0.14	-0.00	0.01	2.73	0.65	0.82



Stellar Parameters For KIC 004651220

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4888^{+72}_{-202}	$2.527^{+0.253}_{-0.136}$	$0.070^{+0.200}_{-0.350}$	$15.211^{+2.505}_{-7.014}$	$2.840^{+0.407}_{-1.627}$	$0.001^{+0.002}_{-0.000}$
	+1%/-4%	+10%/-5%	+286%/-500%	+16%/-46%	+14%/-57%	+215%/-31%
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 004651220-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1108 ± 83	$44.74^{+16.36}_{-14.73}$	1032^{+58}_{-97}	5231^{+899}_{-581}	499^{+587}_{-229}
Alt.	-76 ± 36	$14.82^{+13.38}_{-9.60}$	1022^{+64}_{-87}	4616^{+2995}_{-1030}	279^{+2033}_{-212}

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

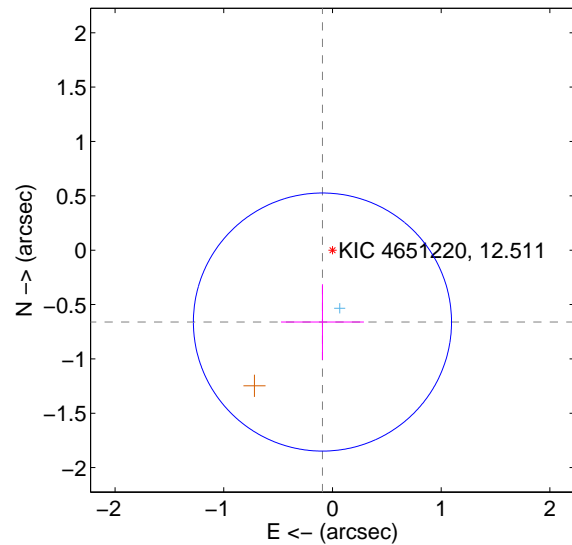
Supplemental centroid analysis for 004651220-01. Kepler magnitude: 12.51. Transit SNR 2.58

There are 1 quarters with good PRF difference image offsets

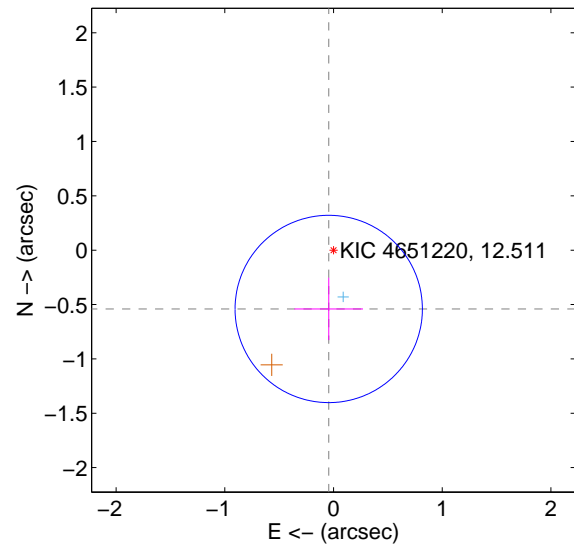
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.668 ± 0.396	1.69	0.092 ± 0.381	-0.661 ± 0.348
PRF-fit source offset from KIC position	0.543 ± 0.287	1.89	0.044 ± 0.316	-0.541 ± 0.287
photometric centroid source offset	0.45 ± 0.29	1.54	0.32 ± 0.29	-0.31 ± 0.29

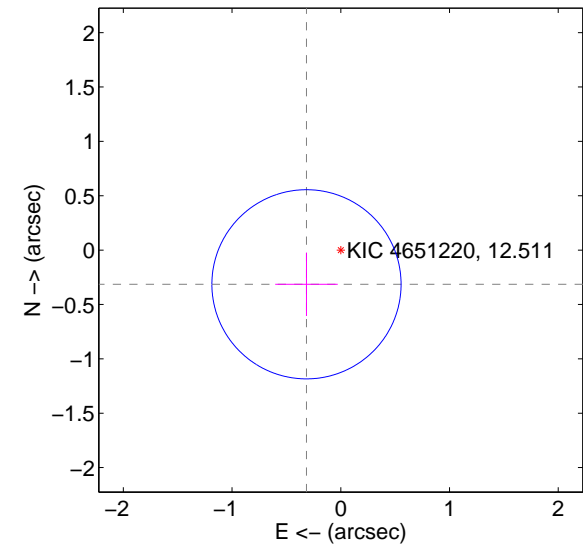
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

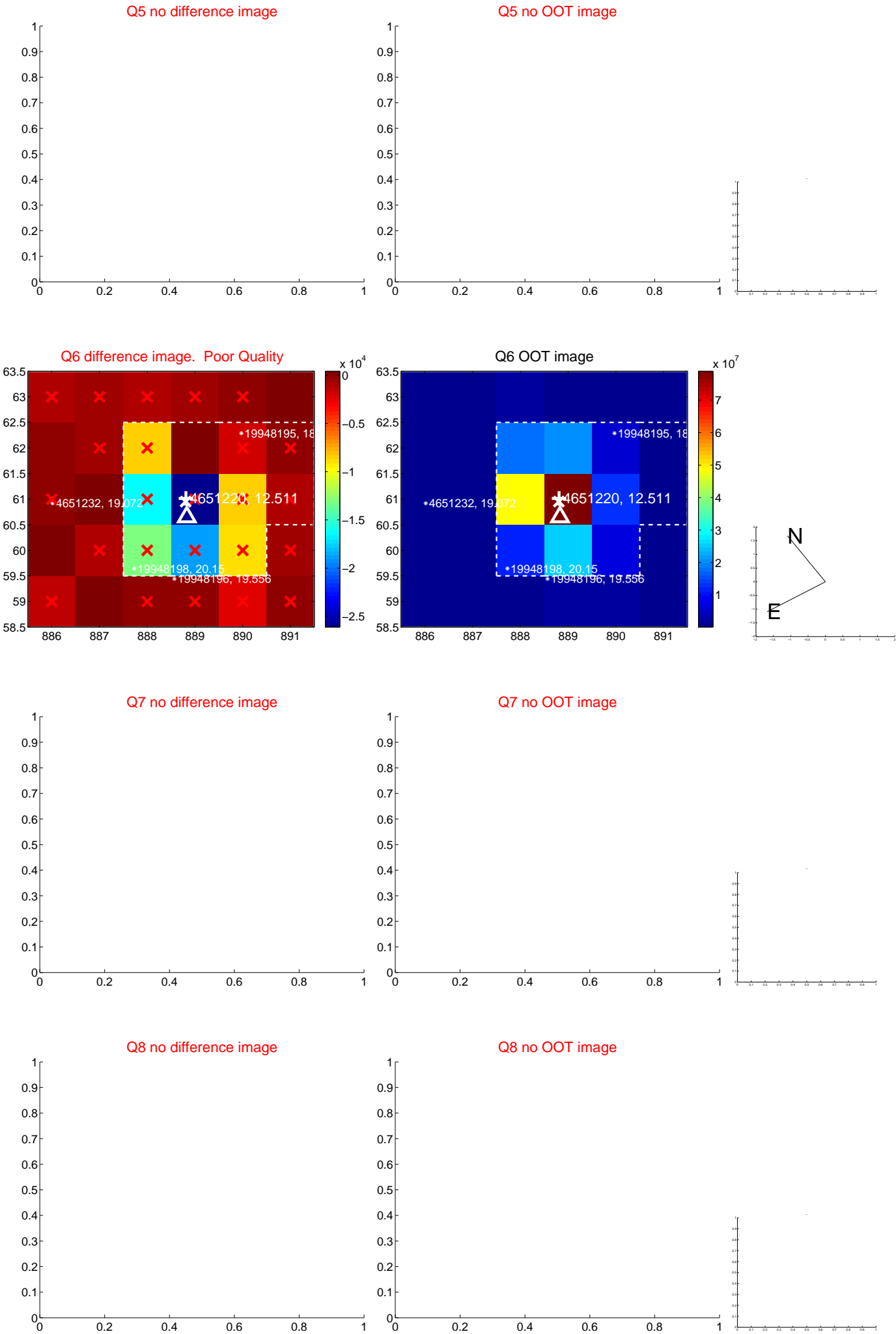


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

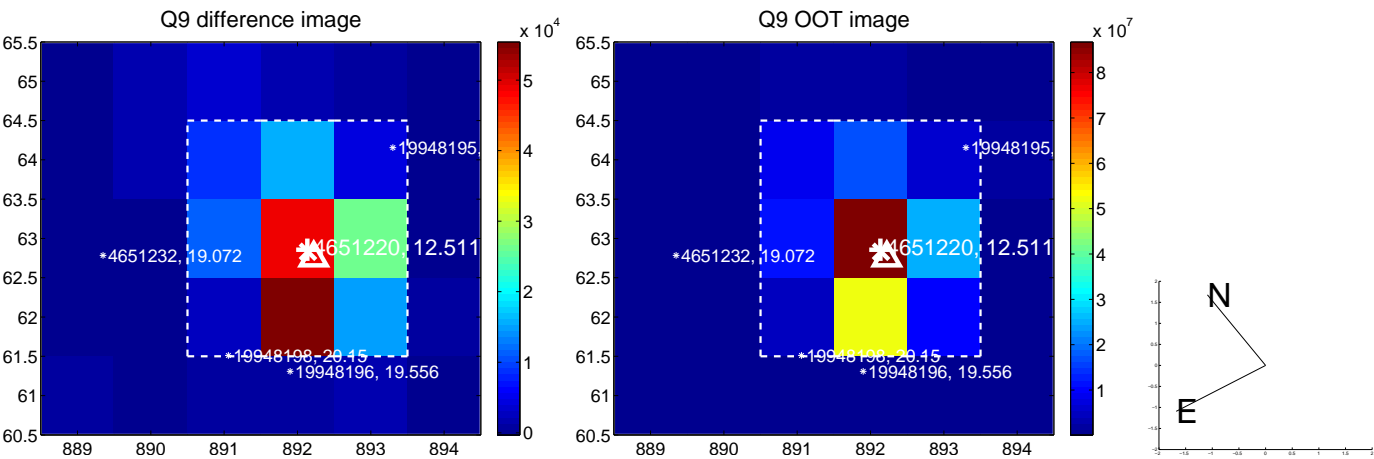
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



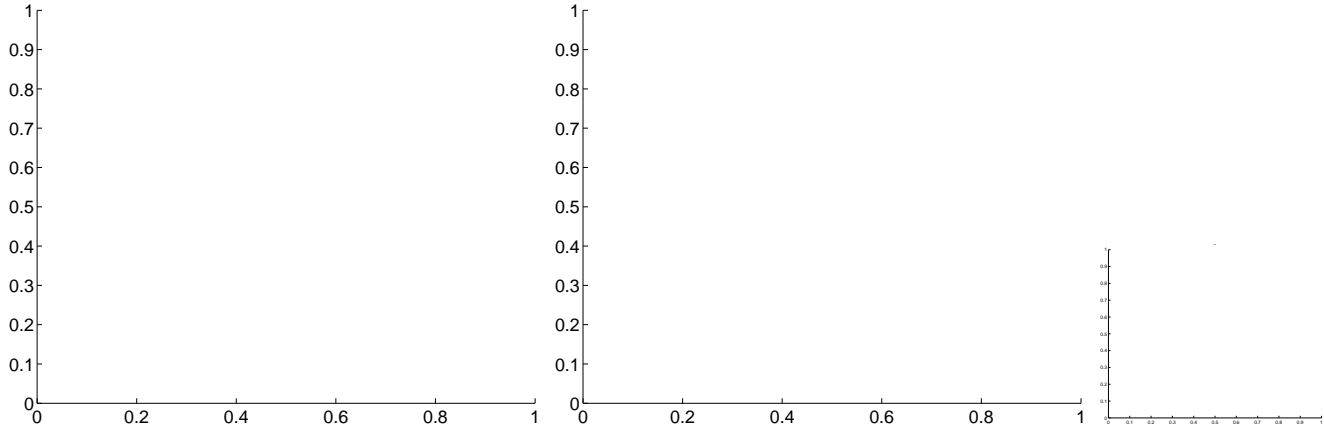
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



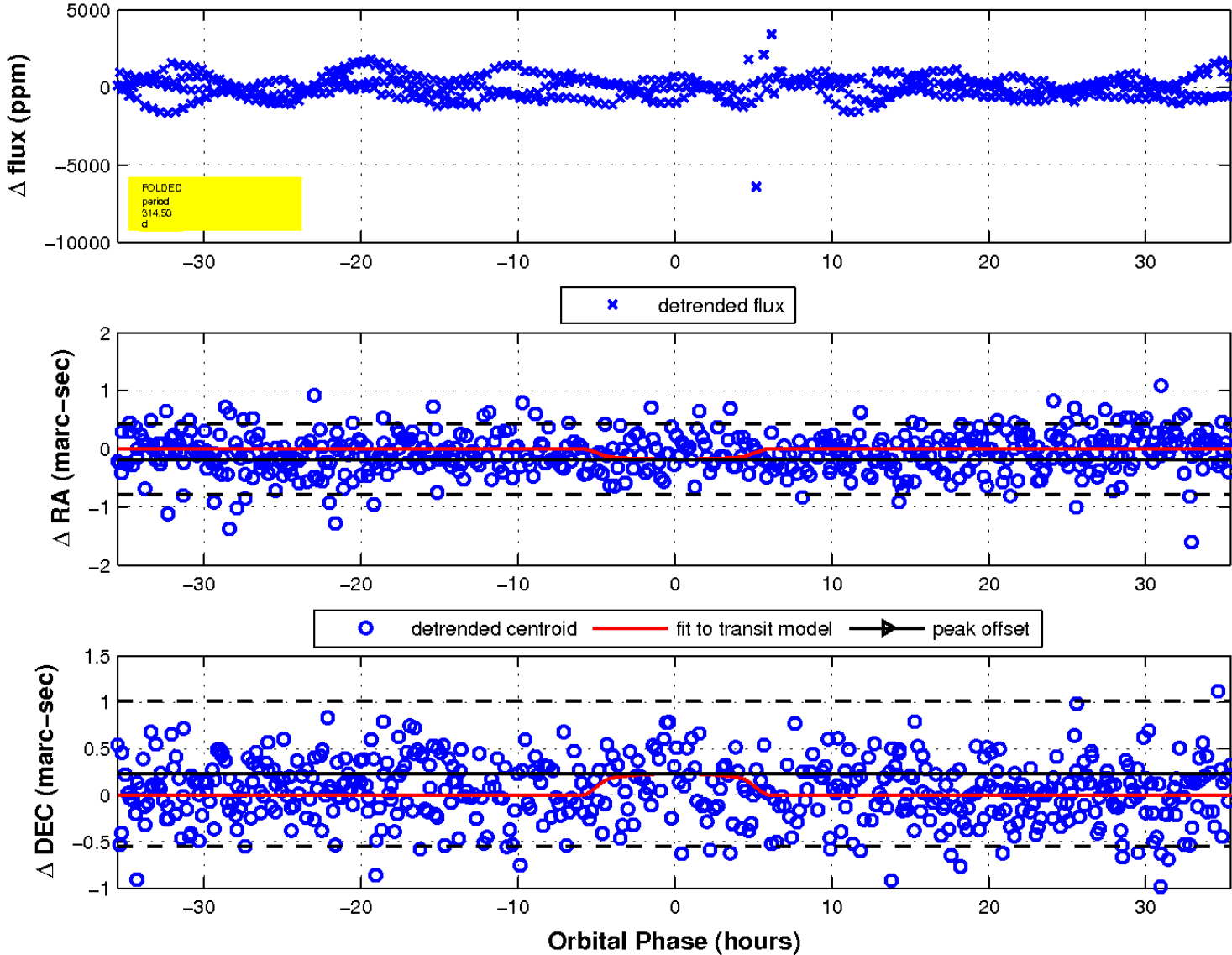
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

