

KIC 007458904

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})
007458904-01	OBS	No	439.846322	311.289079	475.0	42.344	13.2	13.9	1.09	5437	4.85	0.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007458904-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—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.

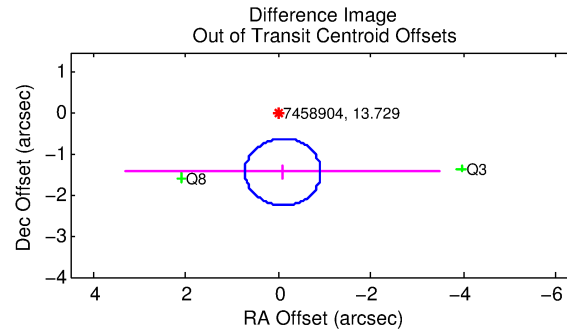
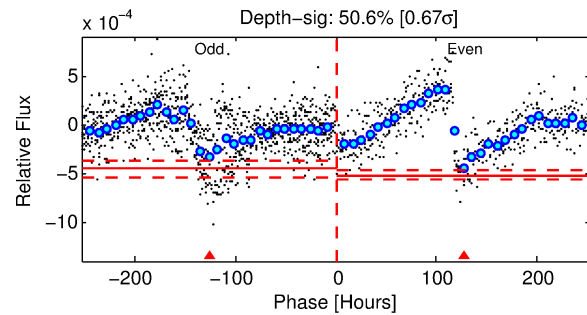
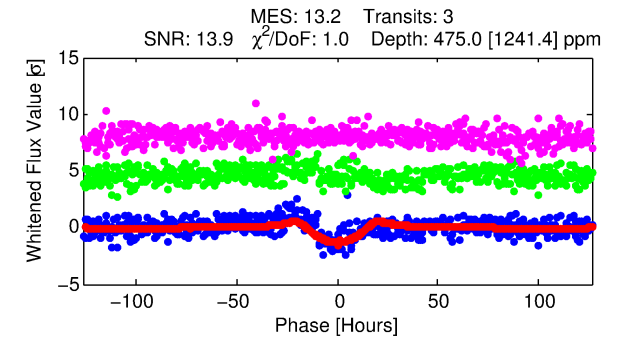
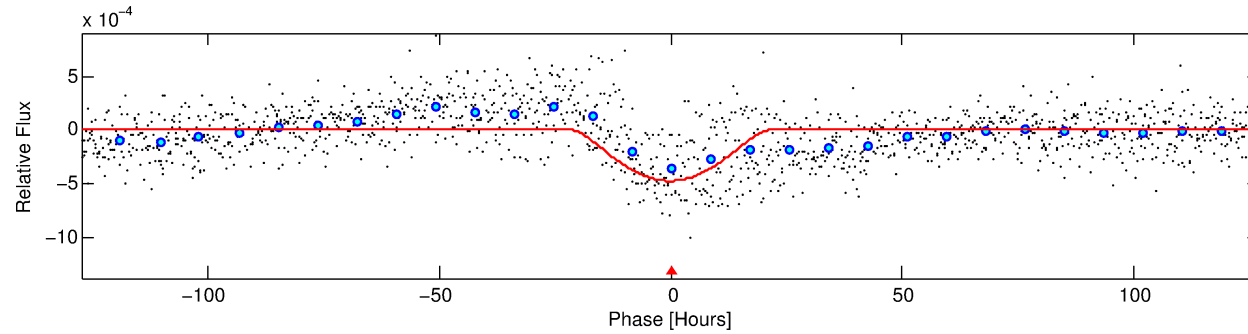
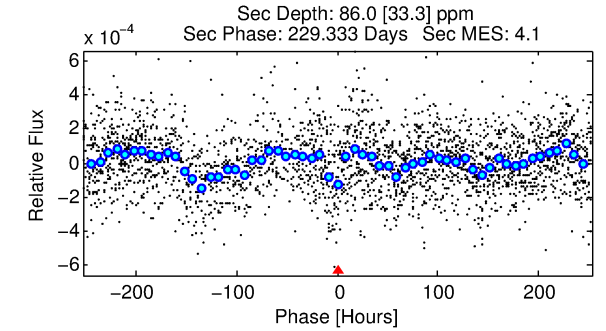
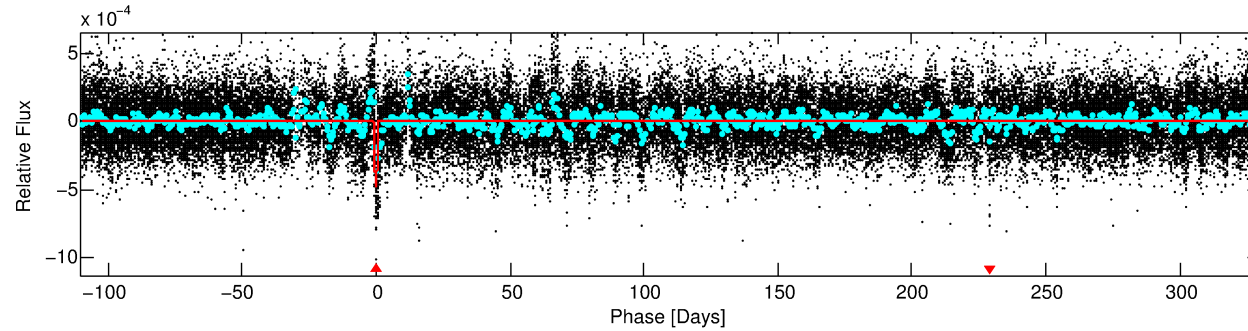
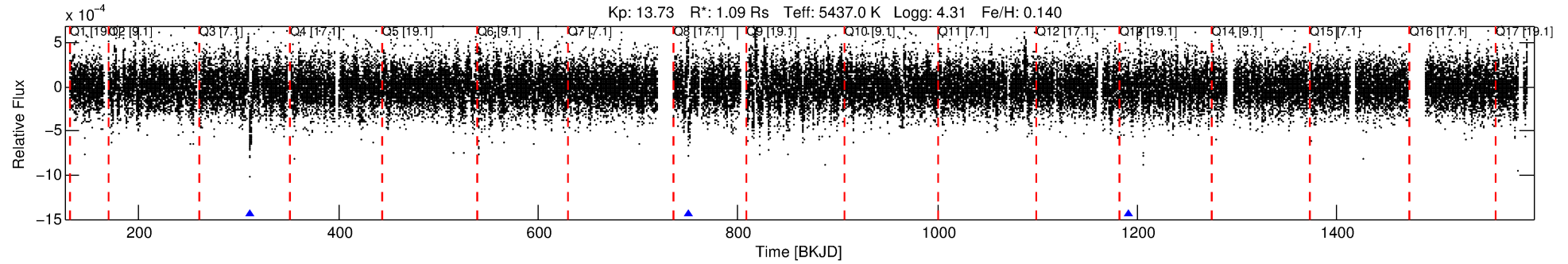
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007458904-01

No Significant Match Found

DV One-Page Summary

KIC: 7458904 Candidate: 1 of 1 Period: 439.846 d



DV Fit Results:

Period = 439.84632 [0.03714] d
Epoch = 311.2891 [0.0378] BKJD
Rp/R* = 0.0408 [0.0627]
a/R* = 22.93 [8.70]
b = 1.00 [0.02]
Seff = 0.78 [0.30]
Teff = 240 [23] K
Rp = 4.85 [7.59] Re
a = 1.0887 [0.2773] AU
Ag = 2381.96 [7423.61] [0.32σ]
Teffp = 2591 [2006] K [1.17σ]

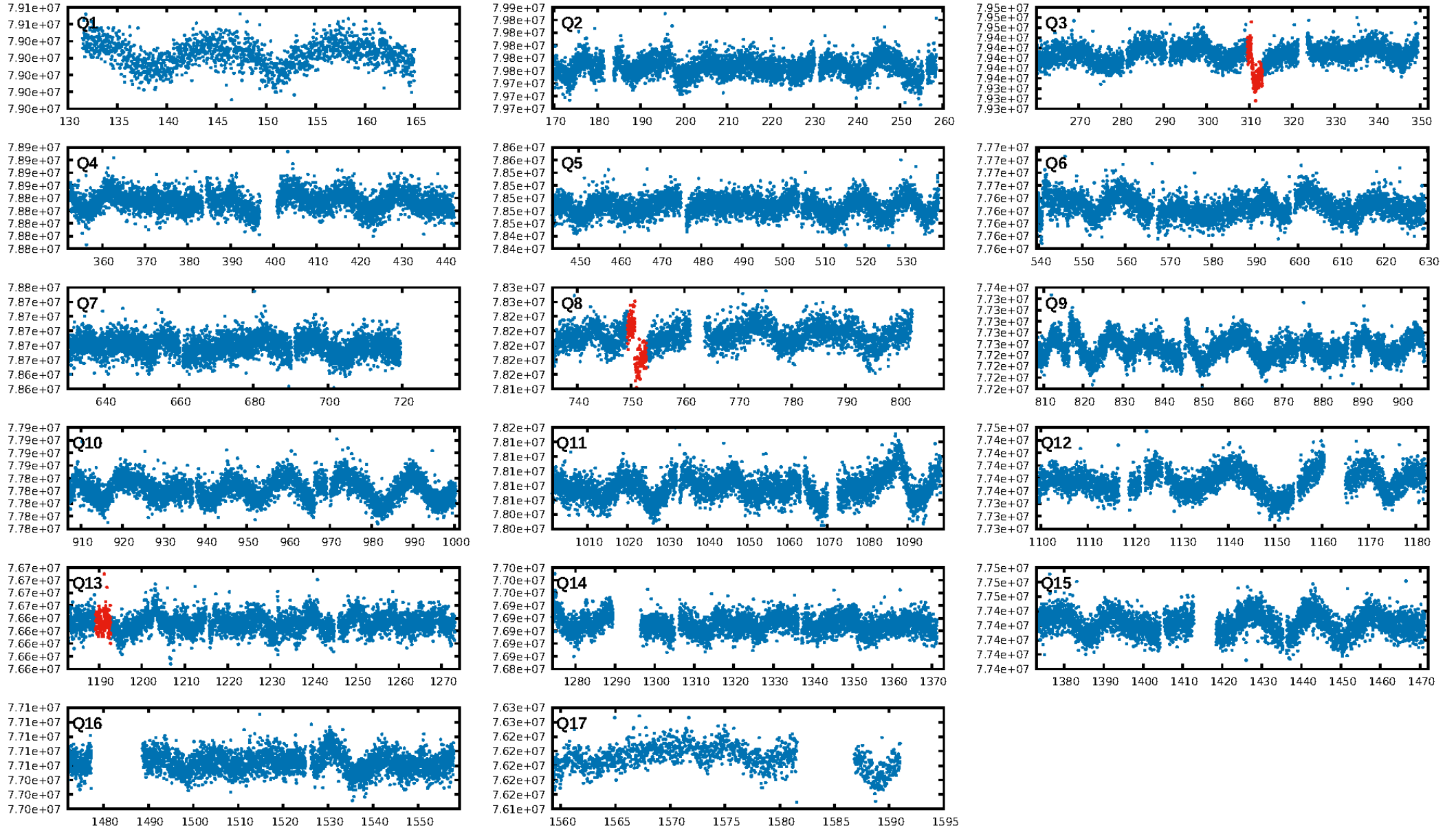
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.94e-22
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 4.304
Centroid-sig: 0.2%
Centroid-so: 1.541 arcsec [3.14σ]
OotOffset-rm: 1.434 arcsec [5.26σ]
KicOffset-rm: 1.374 arcsec [8.37σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

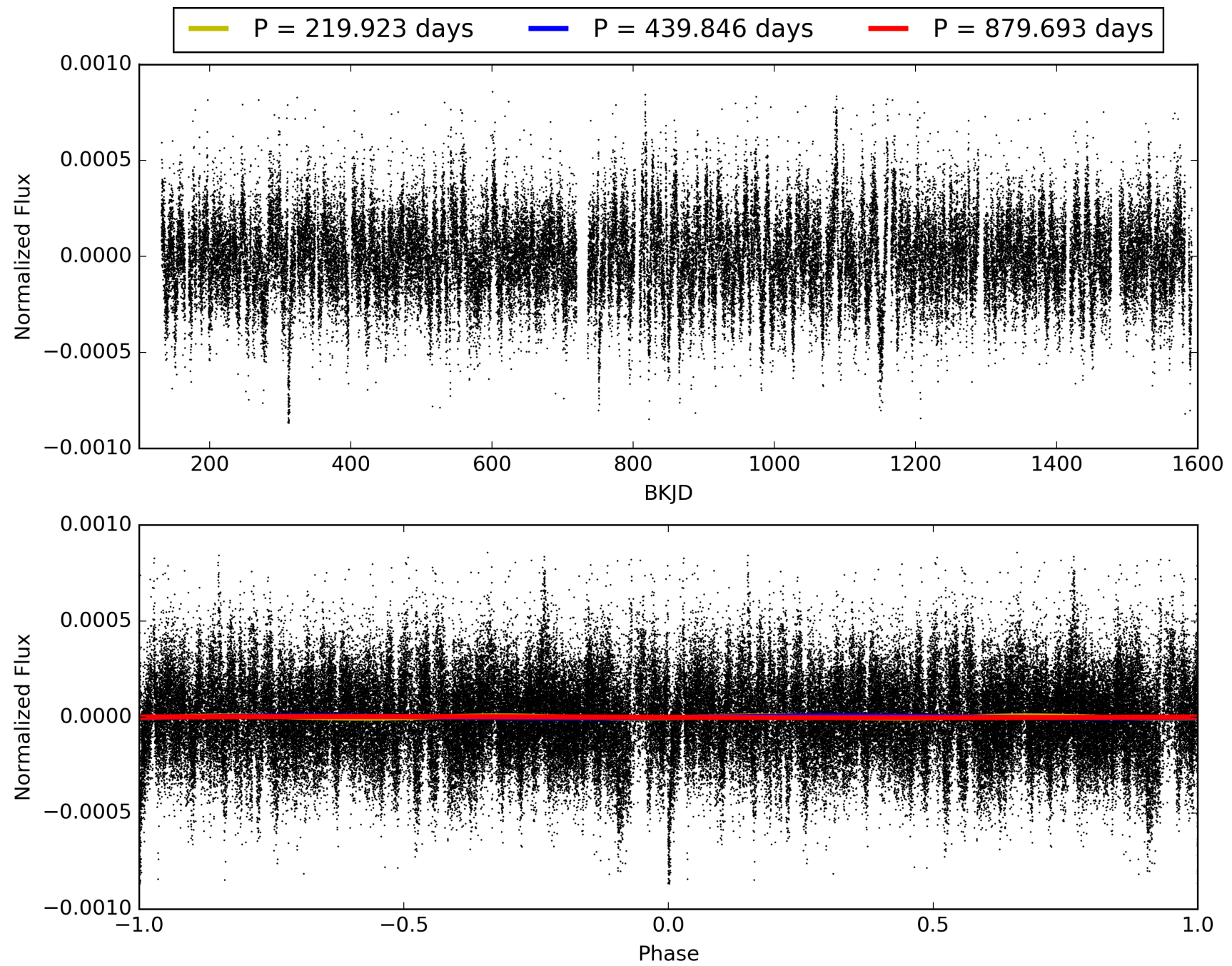
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:22:04 Z

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

TCE 007458904-01, PDC Light Curves

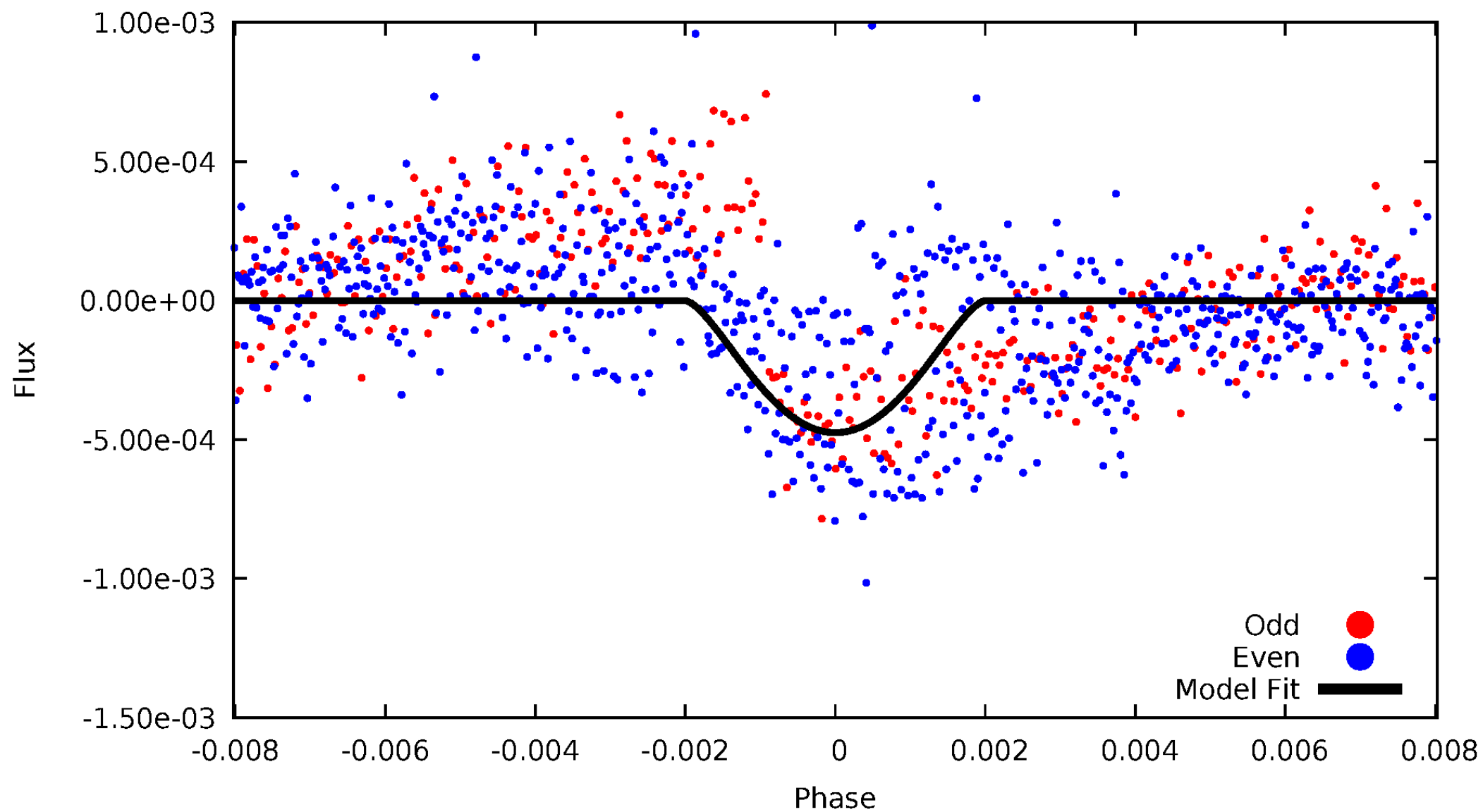


TCE 007458904-01



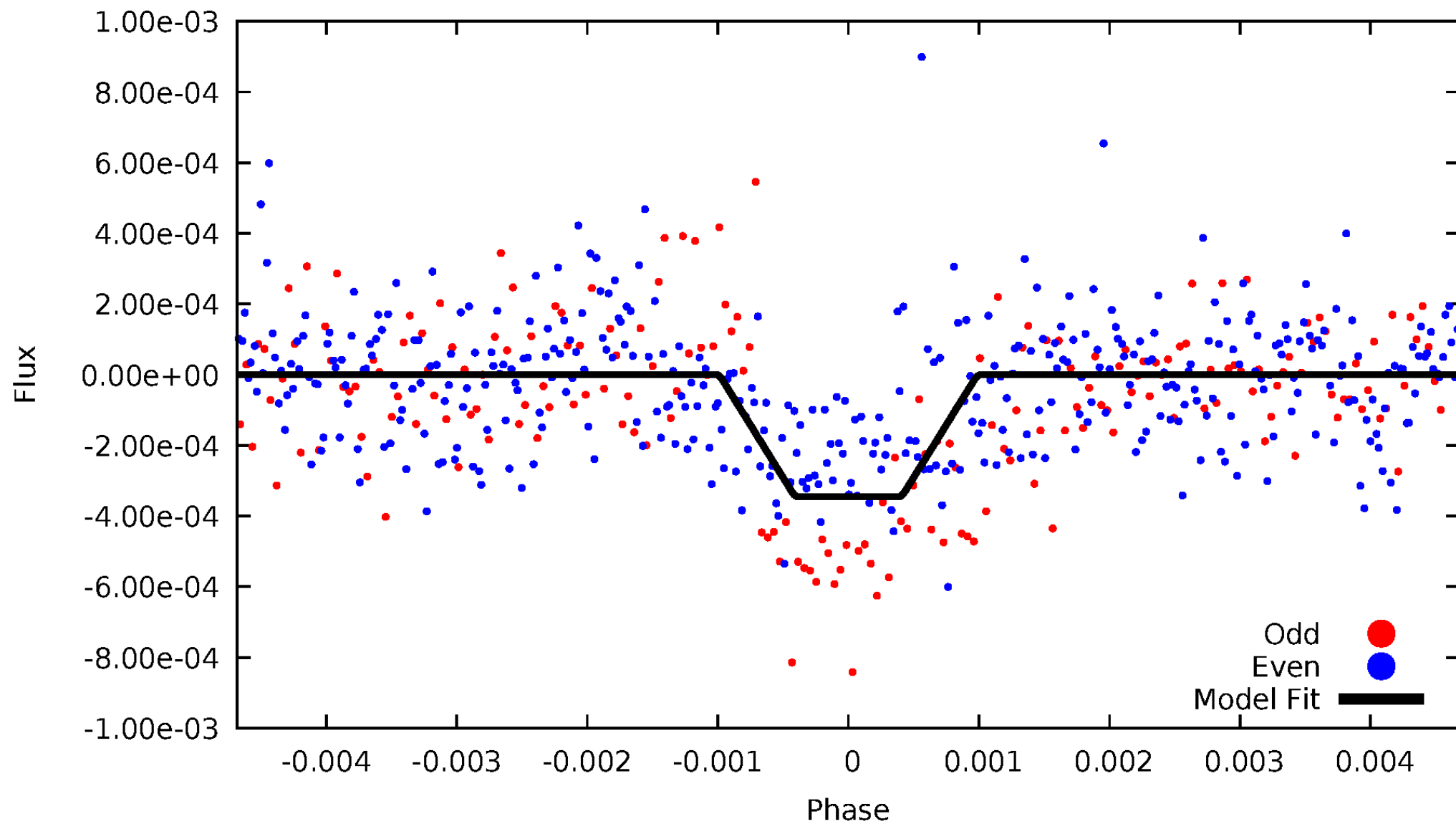
DV Odd/Even

TCE 007458904-01



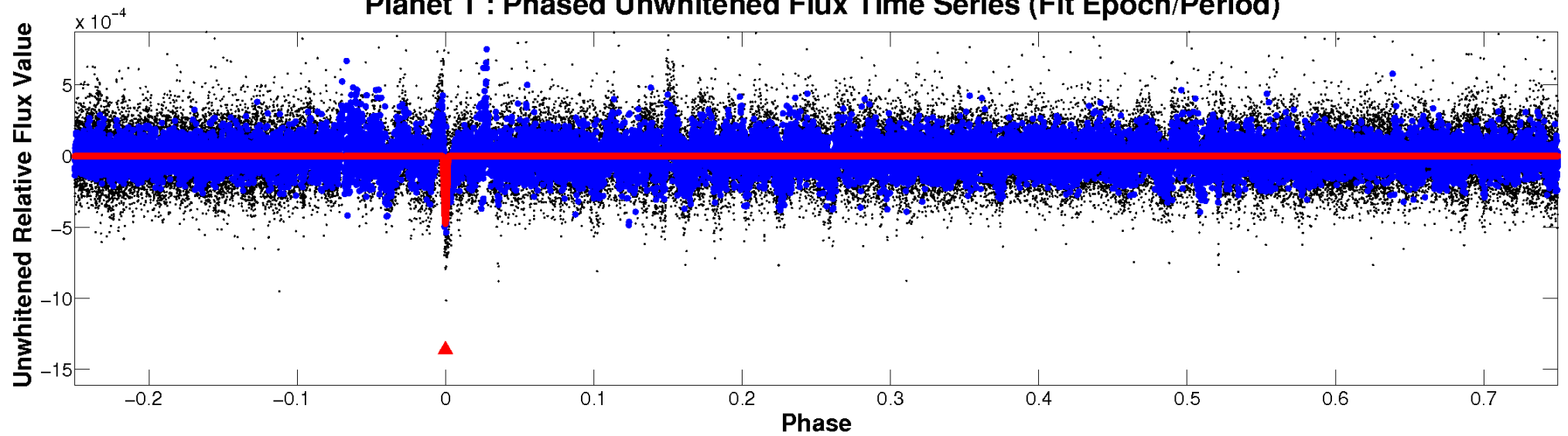
ALT Odd/Even

TCE 007458904-01

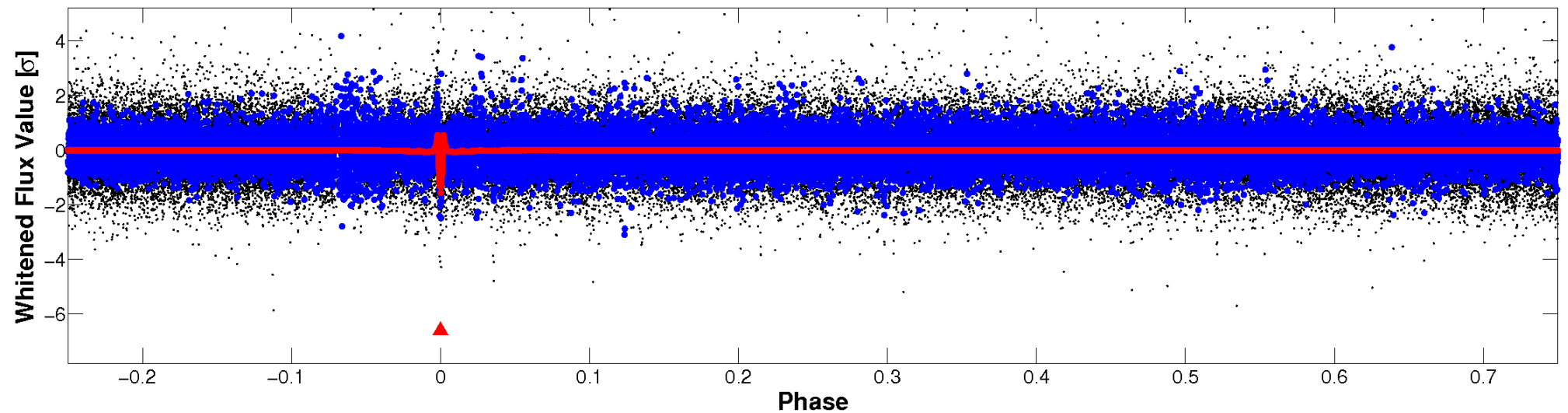


Non-Whitened Vs. Whitened Light Curve

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

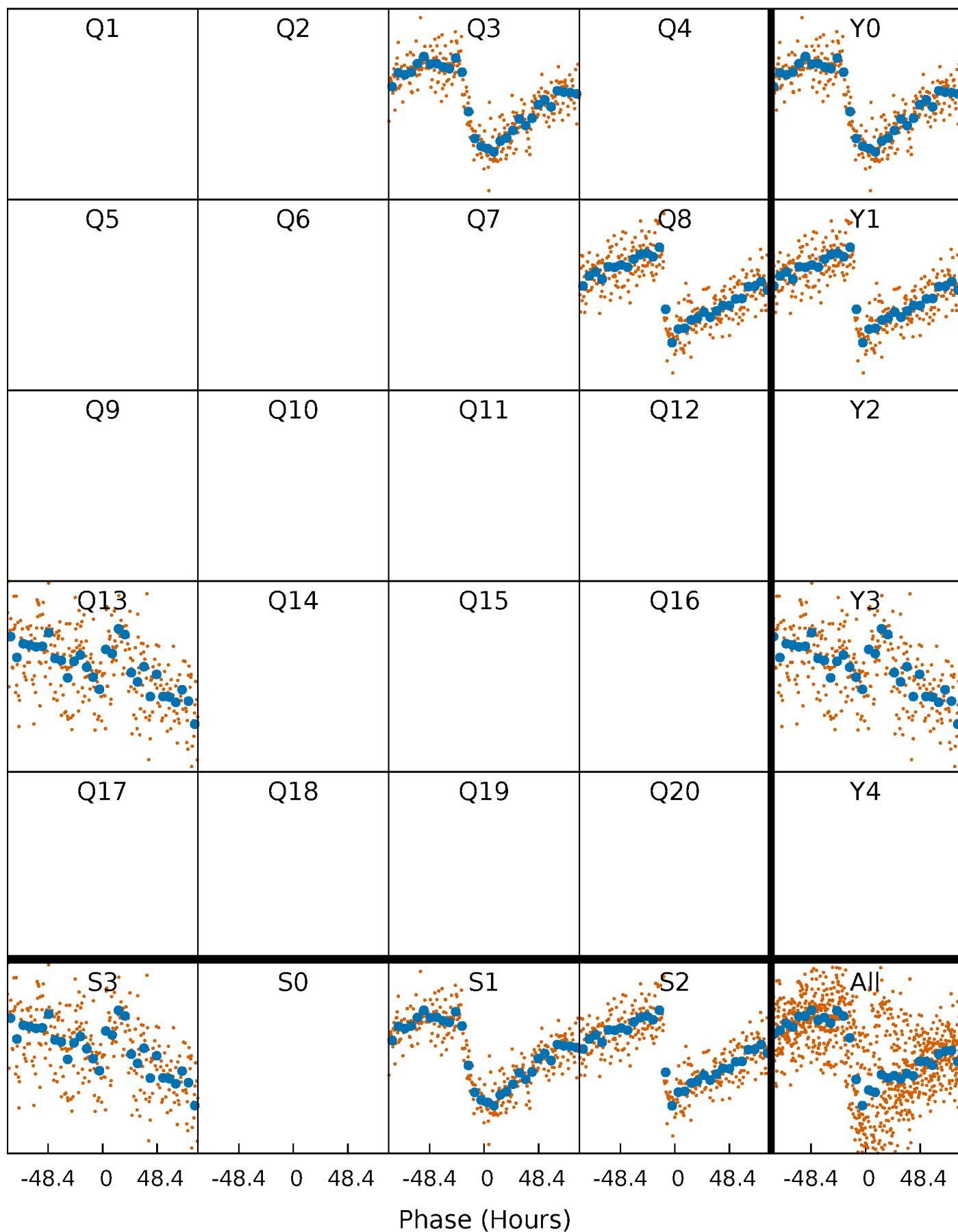


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



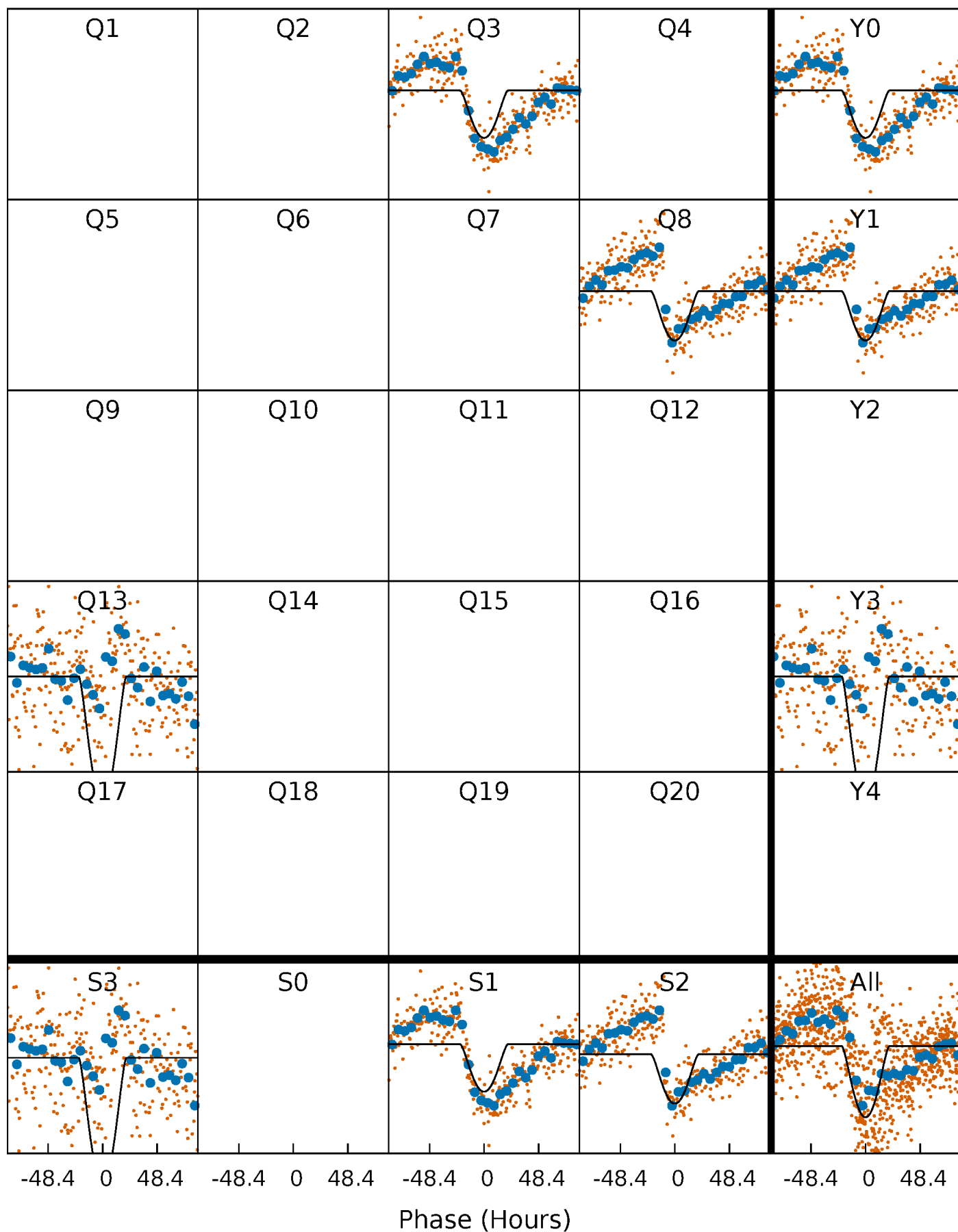
PDC Quarter-Phased Transit Curves

TCE 007458904-01 P=439.846322 Days $T_0=311.289079$ (BKJD)



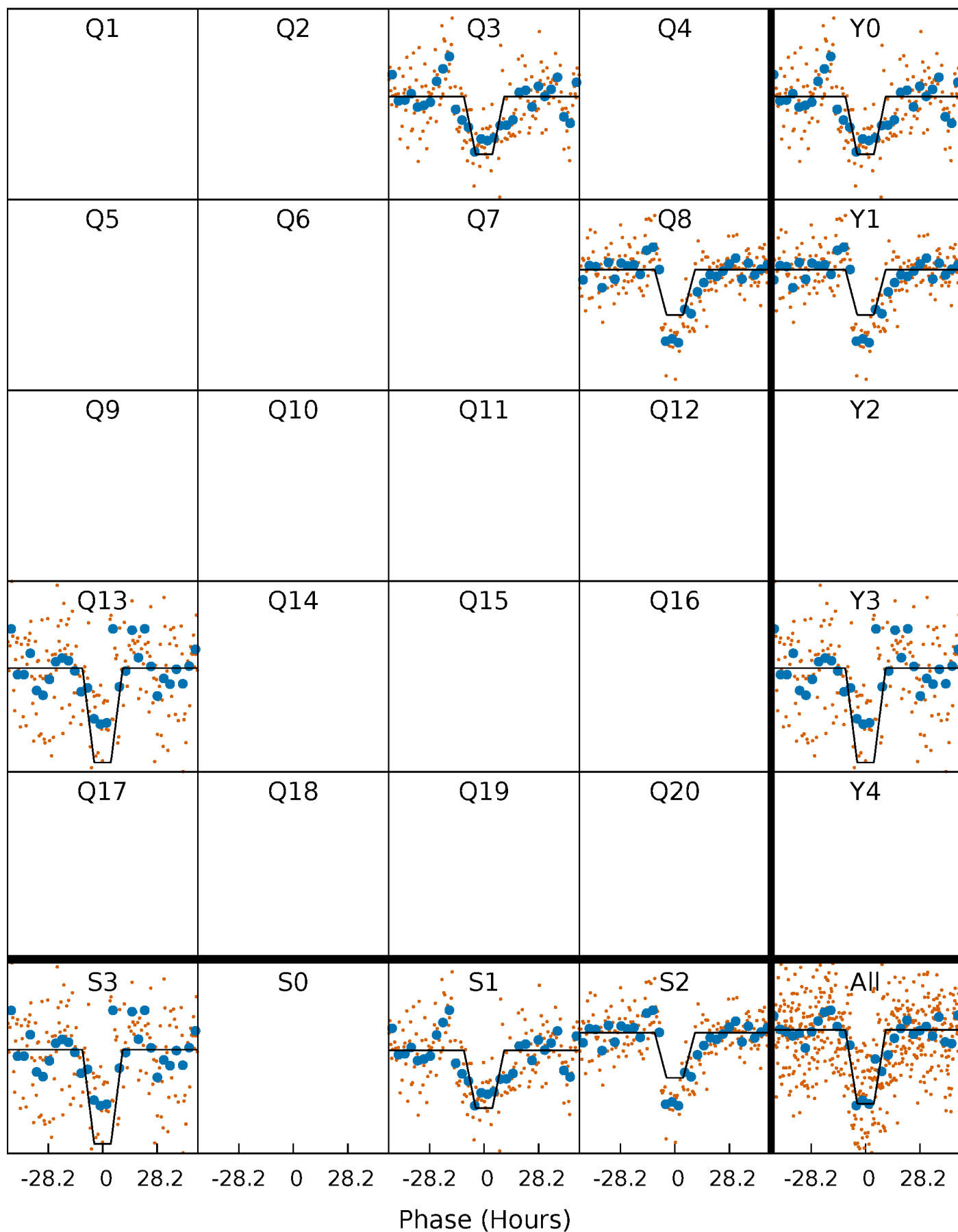
DV Quarter-Phased Transit Curves

TCE 007458904-01 P=439.846322 Days $T_0=311.289079$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

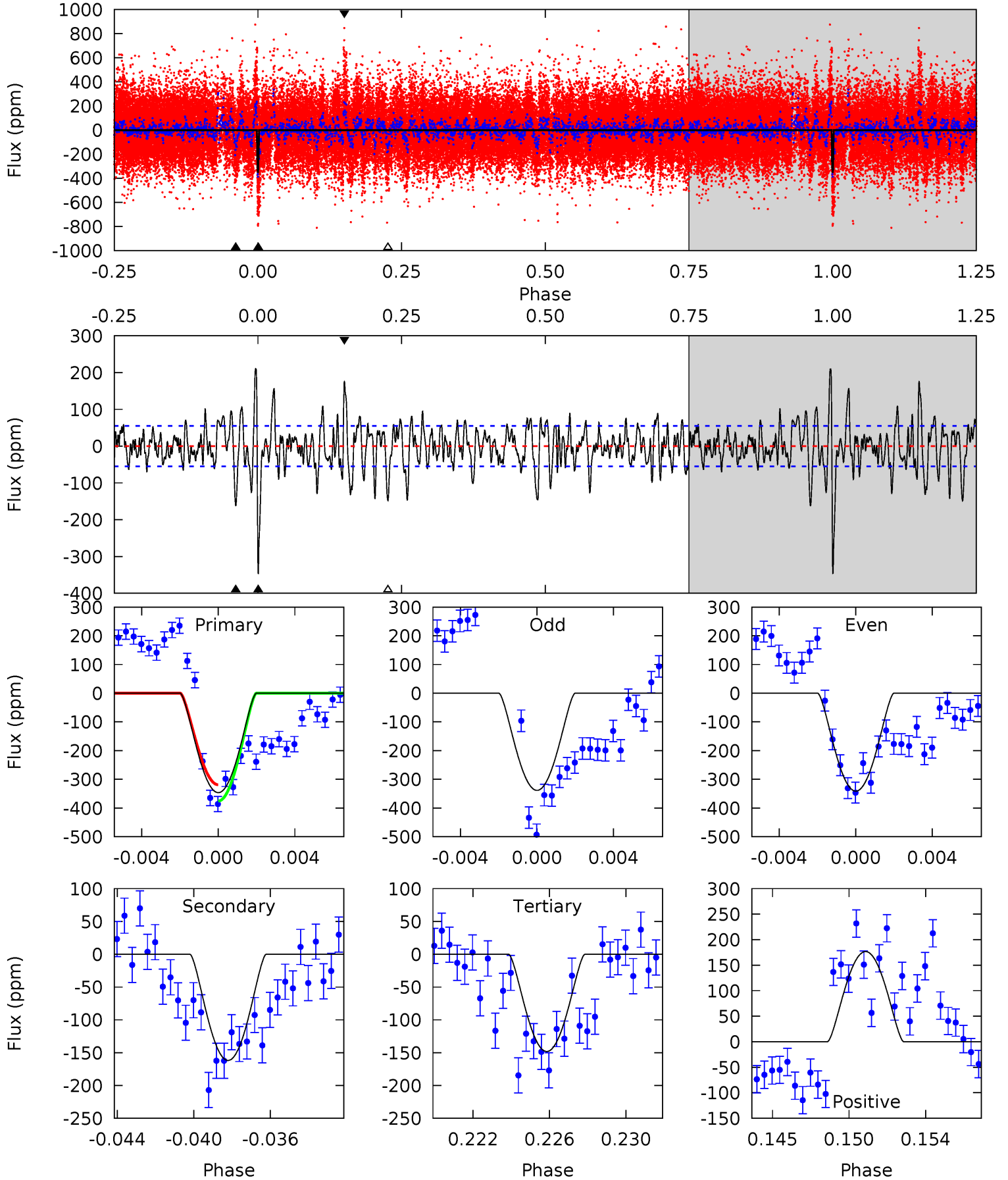
TCE 007458904-01 P=439.907302 Days $T_0=311.134345$ (BKJD)



DV Model-Shift Uniqueness Test

007458904-01, P = 439.846322 Days, E = 311.289079 Days

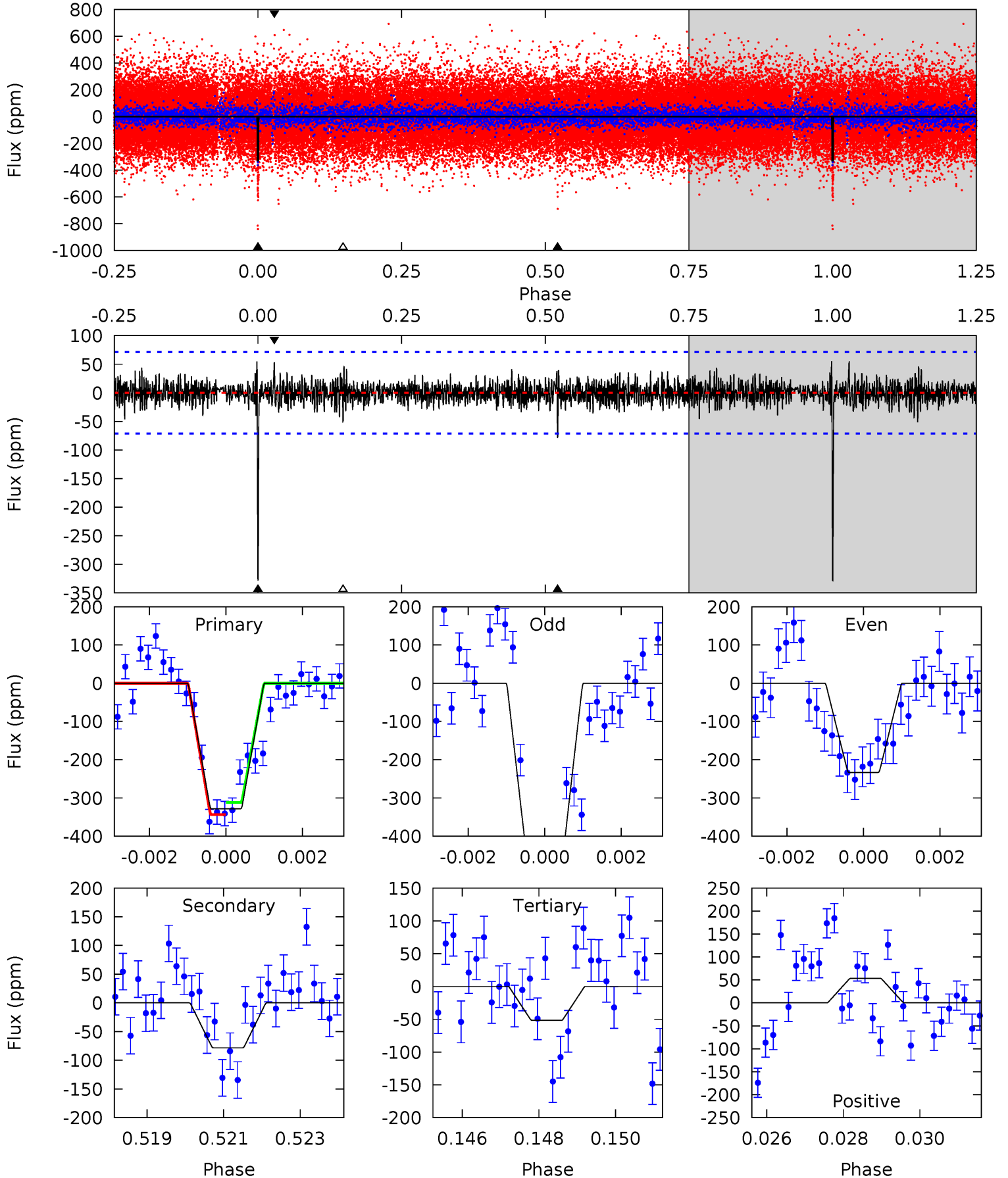
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.7	15.3	14.0	16.7	5.20	2.87	4.40	18.7	16.0	1.28	-1.40	0.12	0.99	0.38	2.67



Alt Model-Shift Uniqueness Test

007458904-01, P = 439.907302 Days, E = 311.134345 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.5	5.85	3.86	3.98	5.33	3.09	1.00	20.7	20.6	1.99	1.87	9.77	1.04	0.14	1.19



Stellar Parameters For KIC 007458904

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5437^{+164}_{-147}	$4.313^{+0.200}_{-0.200}$	$0.140^{+0.250}_{-0.250}$	$1.089^{+0.332}_{-0.221}$	$0.890^{+0.098}_{-0.074}$	$0.970^{+1.025}_{-0.502}$
	+3%/-3%	+5%/-5%	+179%/-179%	+30%/-20%	+11%/-8%	+106%/-52%
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 007458904-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-162 ± 11	$7.87^{+6.03}_{-5.15}$	335^{+29}_{-22}	3028^{+1291}_{-418}	1728^{+12594}_{-1172}
Alt.	-78 ± 13	$6.02^{+5.90}_{-4.24}$	336^{+28}_{-22}	2956^{+1503}_{-482}	1457^{+15504}_{-1096}

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

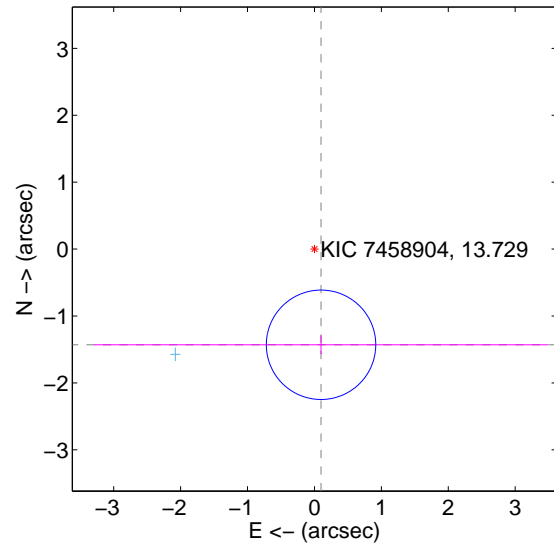
Supplemental centroid analysis for 007458904-01. Kepler magnitude: 13.73. Transit SNR 13.86

There are 2 quarters with good PRF difference image offsets

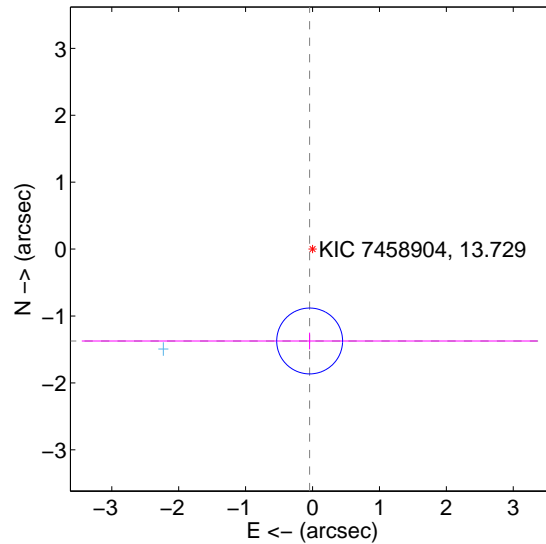
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.434 ± 0.273	5.26	-0.099 ± 3.393	-1.430 ± 0.141
PRF-fit source offset from KIC position	1.374 ± 0.164	8.37	0.043 ± 3.407	-1.373 ± 0.125
photometric centroid source offset	1.54 ± 0.49	3.14	1.18 ± 0.49	-1.00 ± 0.49

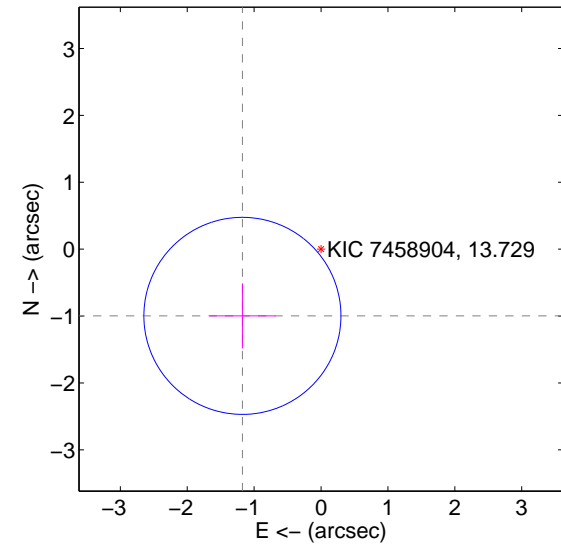
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

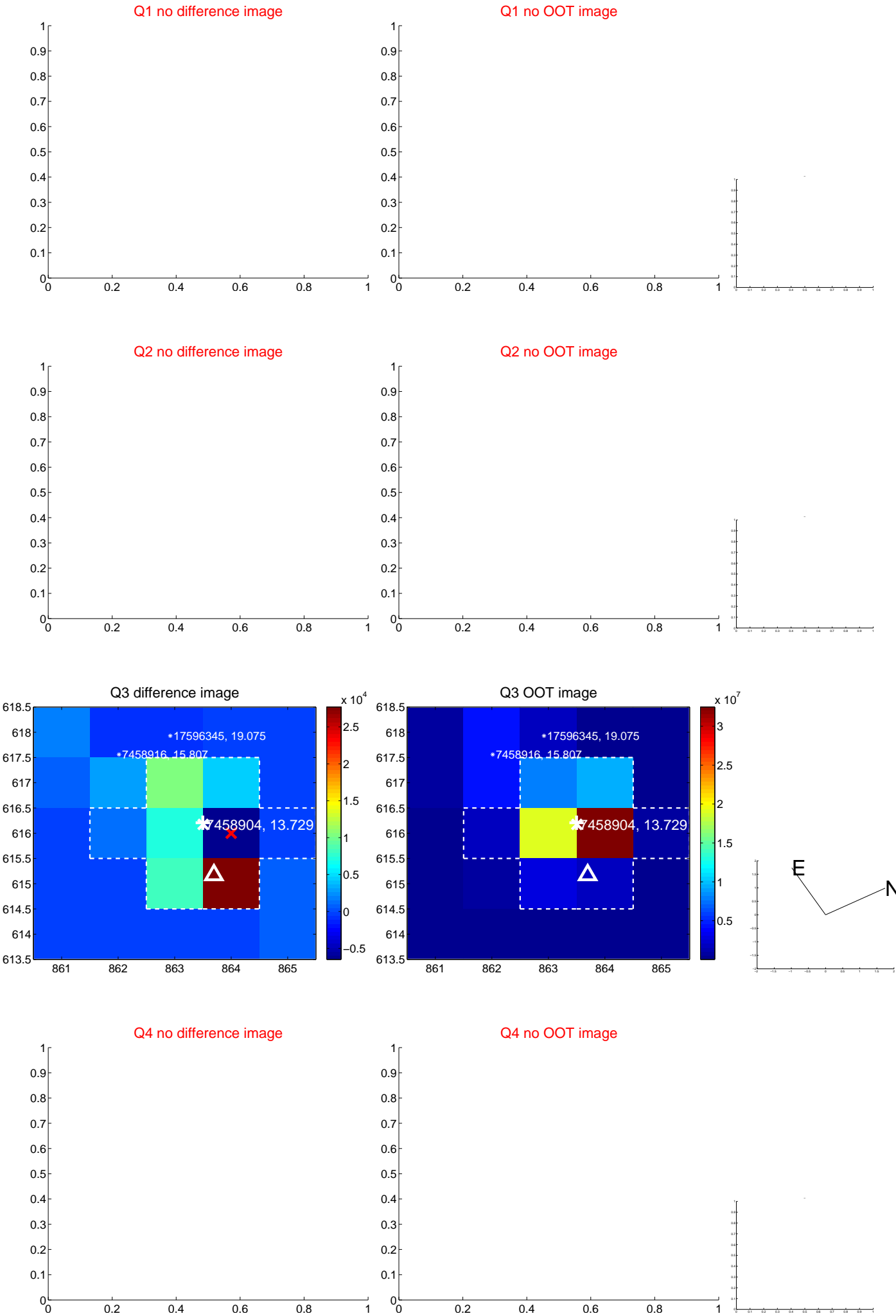


offset from photometric centroids



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

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



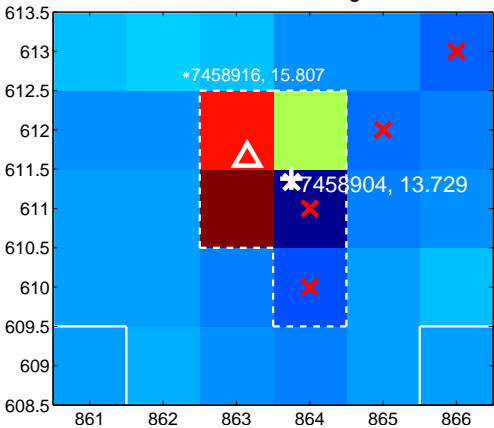
Q7 no difference image



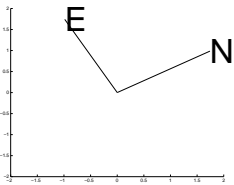
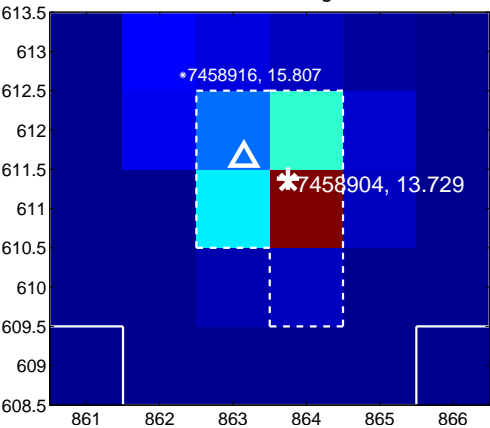
Q7 no OOT image



Q8 difference image



Q8 OOT image



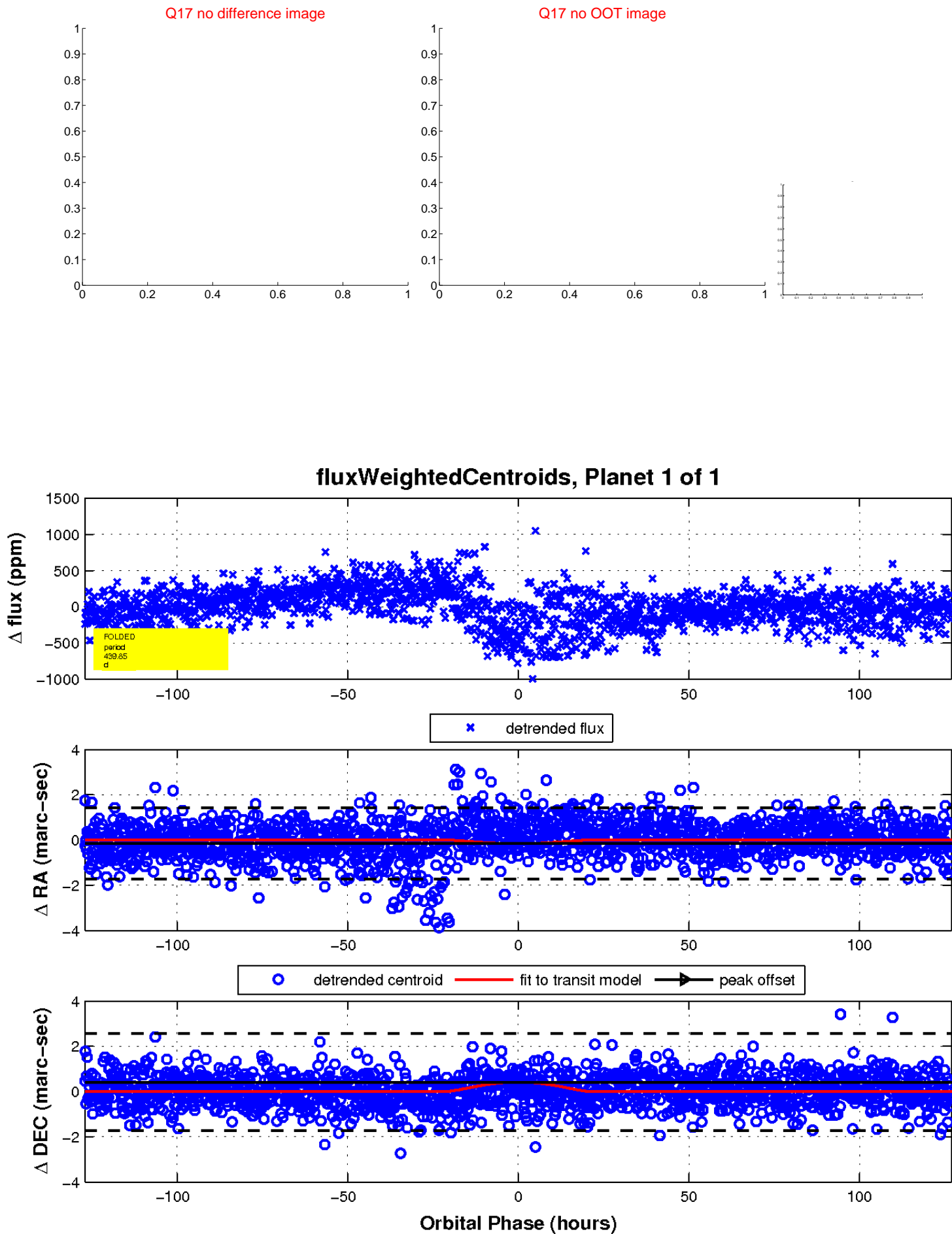
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

