

KIC 009392016

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})
009392016-01	OBS	7935.01	350.651148	208.782156	239.1	9.527	7.2	7.3	0.83	5882	1.62	0.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009392016-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE

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

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

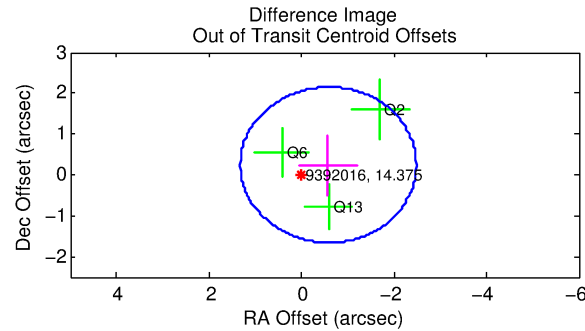
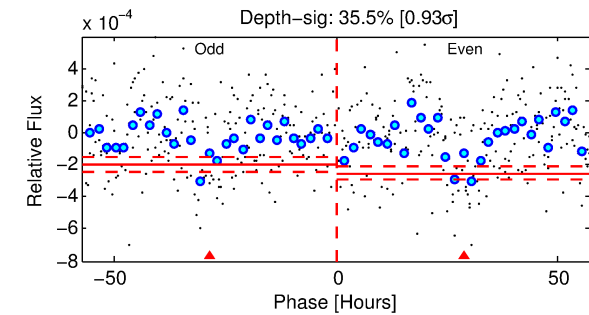
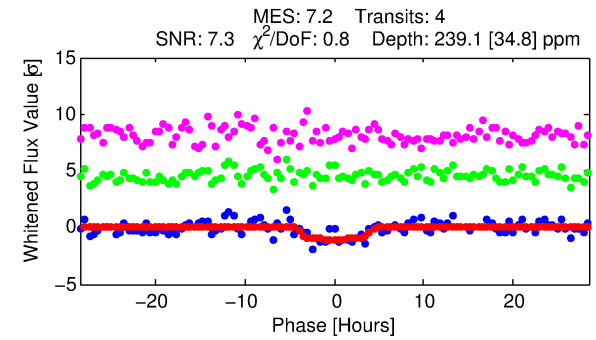
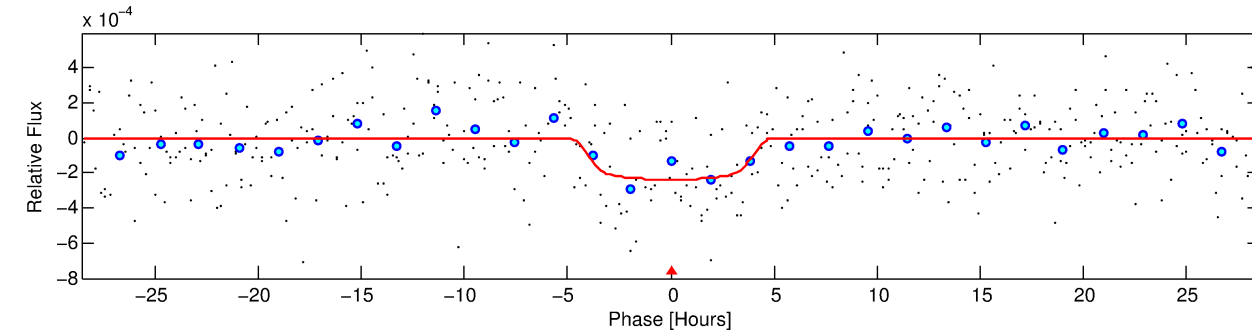
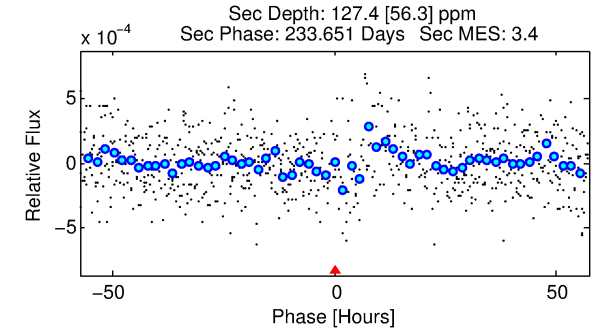
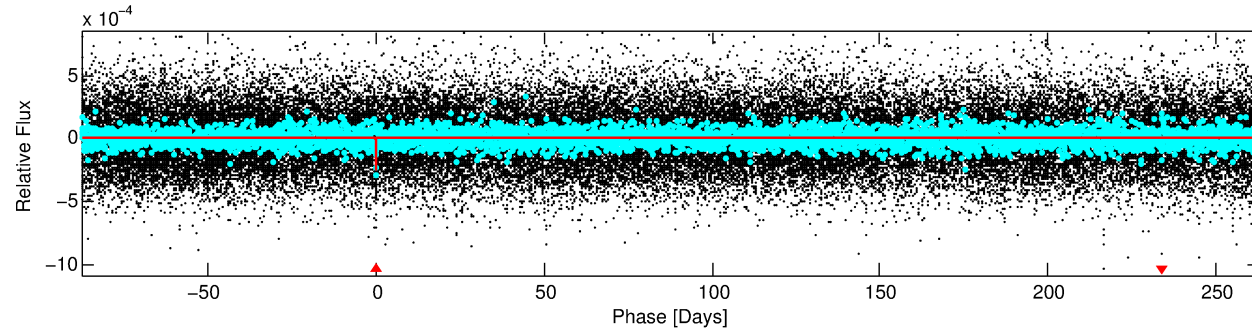
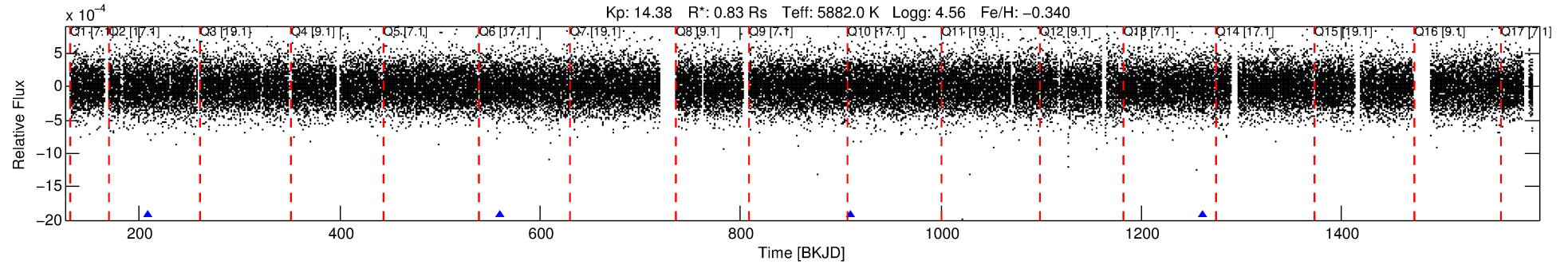
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009392016-01

No Significant Match Found

DV One-Page Summary

KIC: 9392016 Candidate: 1 of 1 Period: 350.651 d



DV Fit Results:

Period = 350.65115 [0.01261] d
Epoch = 208.7822 [0.0254] BKJD
Rp/R* = 0.0178 [0.0026]
a/R* = 102.93 [63.38]
b = 0.95 [0.07]
Seff = 0.83 [0.29]
Teq = 243 [22] K
Rp = 1.62 [0.49] Re
a = 0.9463 [0.2167] AU
Ag = 24048.75 [15113.26] [1.59σ]
Teffp = 4687 [633] K [7.01σ]

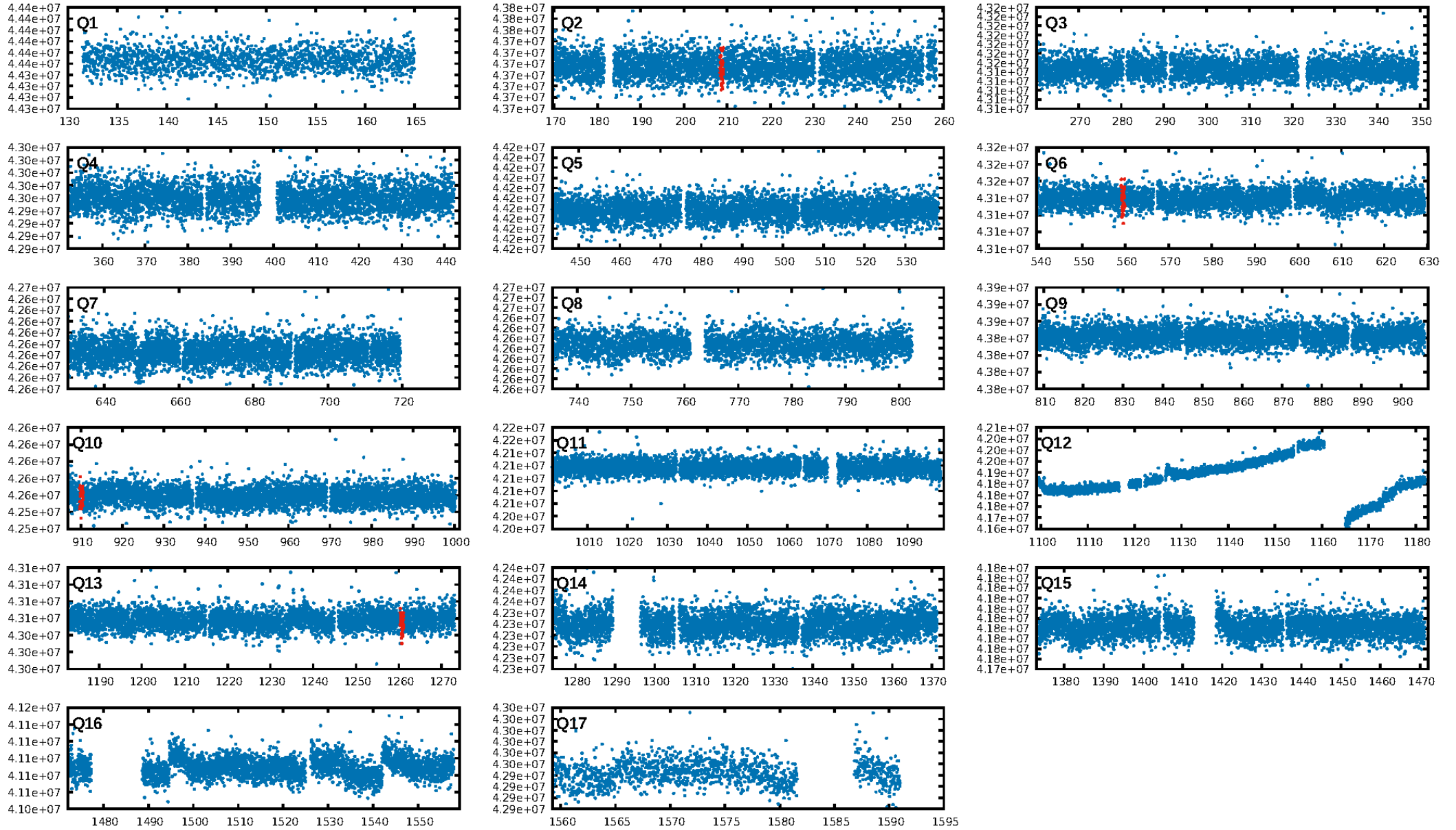
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 79.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.42e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 6.359
Centroid-sig: 77.8%
Centroid-so: 0.739 arcsec [0.47σ]
OotOffset-rm: 0.630 arcsec [0.99σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-rm: 0.719 arcsec [1.10σ]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [4/4]

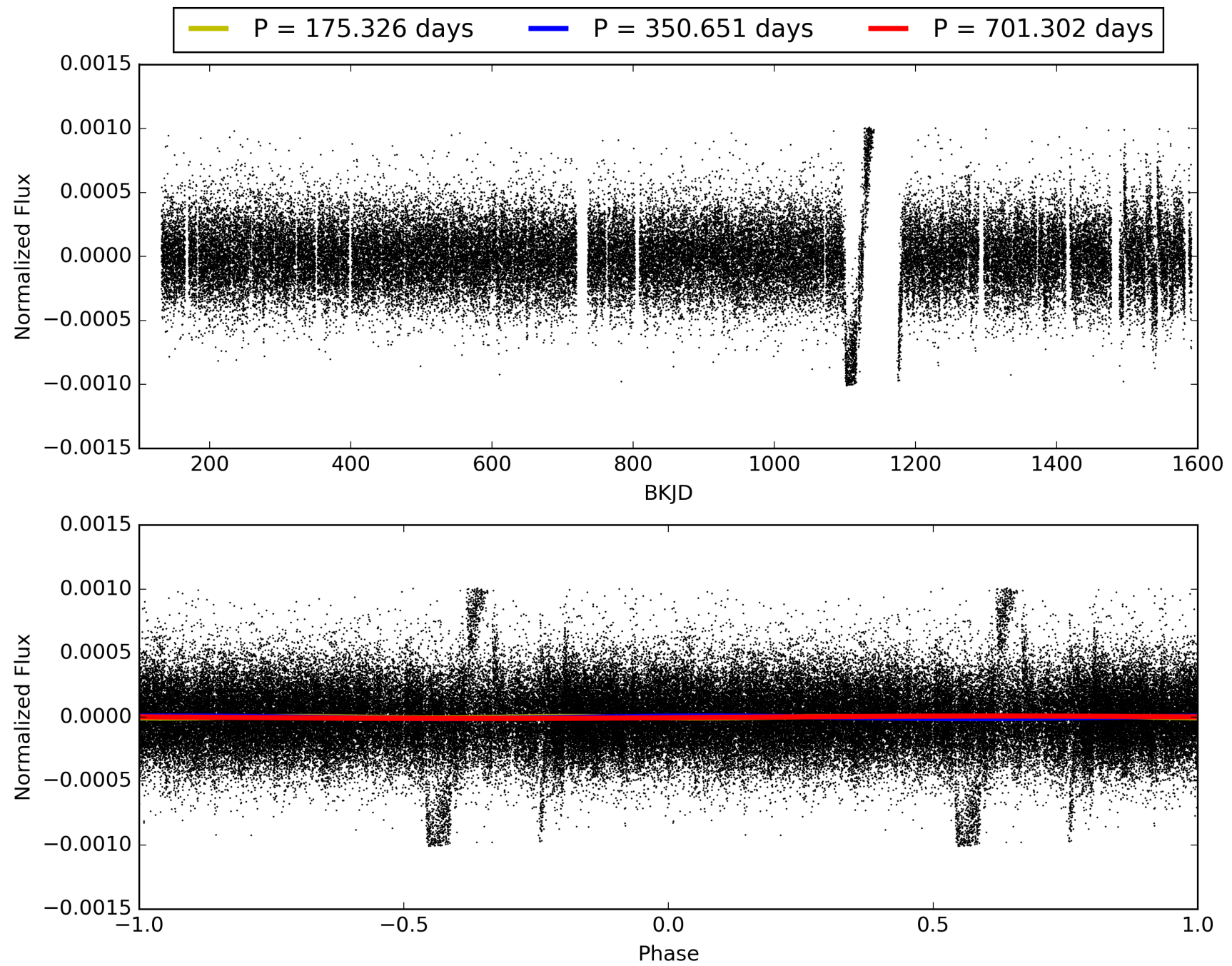
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:21:31 Z

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

TCE 009392016-01, PDC Light Curves

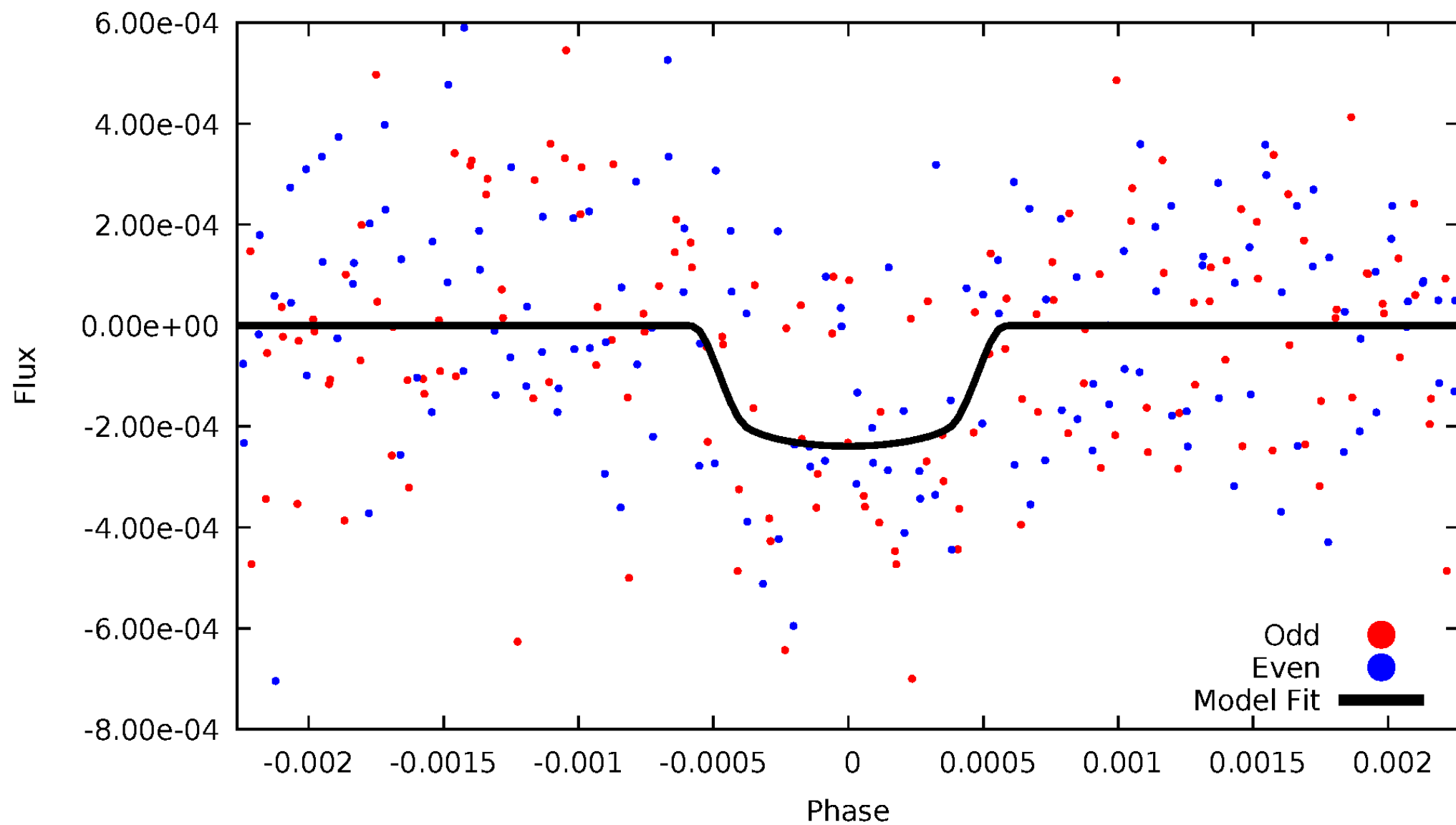


TCE 009392016-01



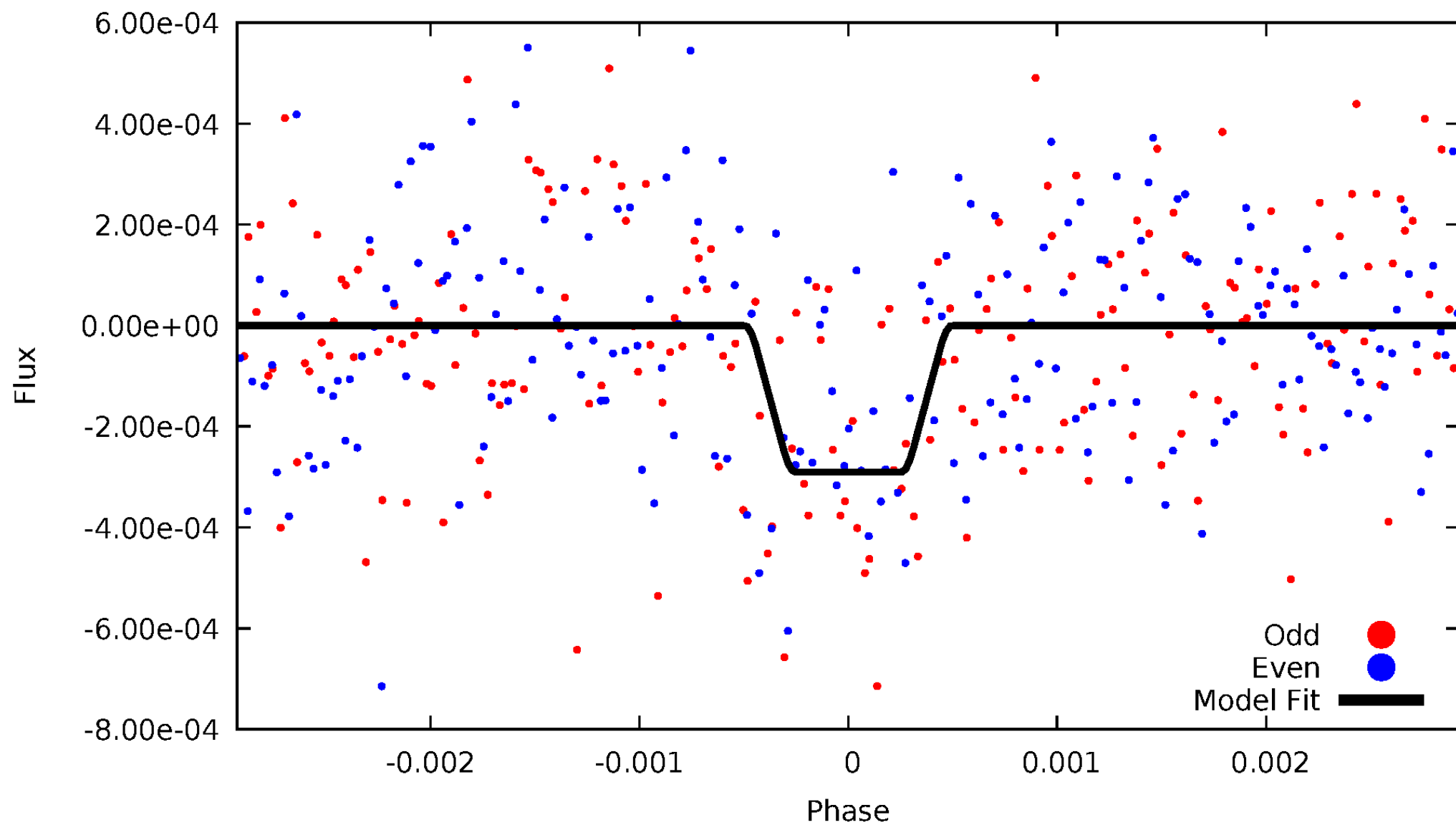
DV Odd/Even

TCE 009392016-01



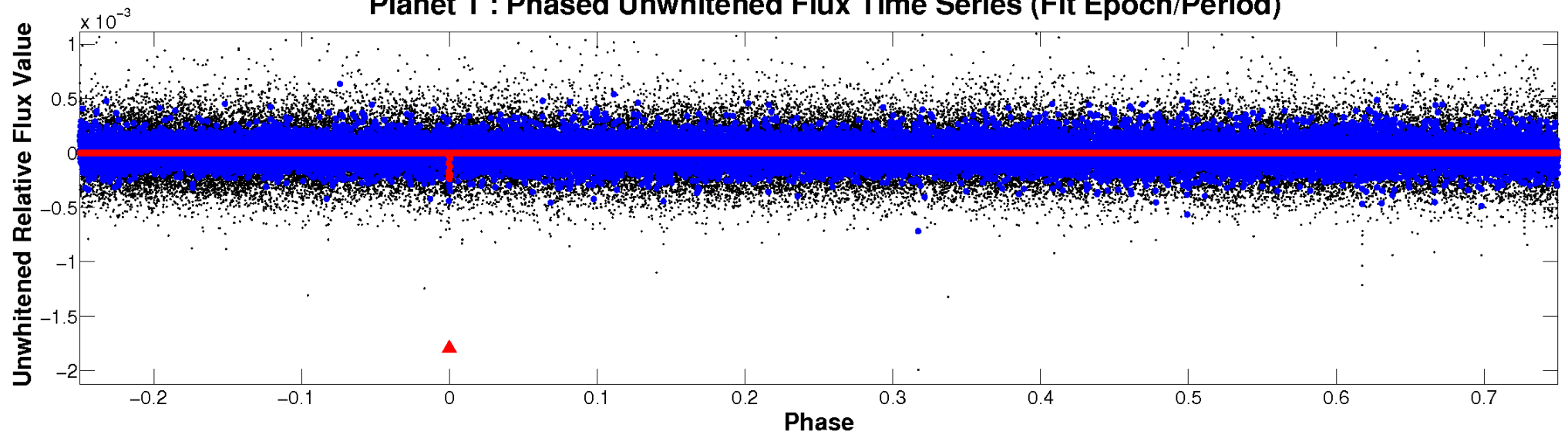
ALT Odd/Even

TCE 009392016-01

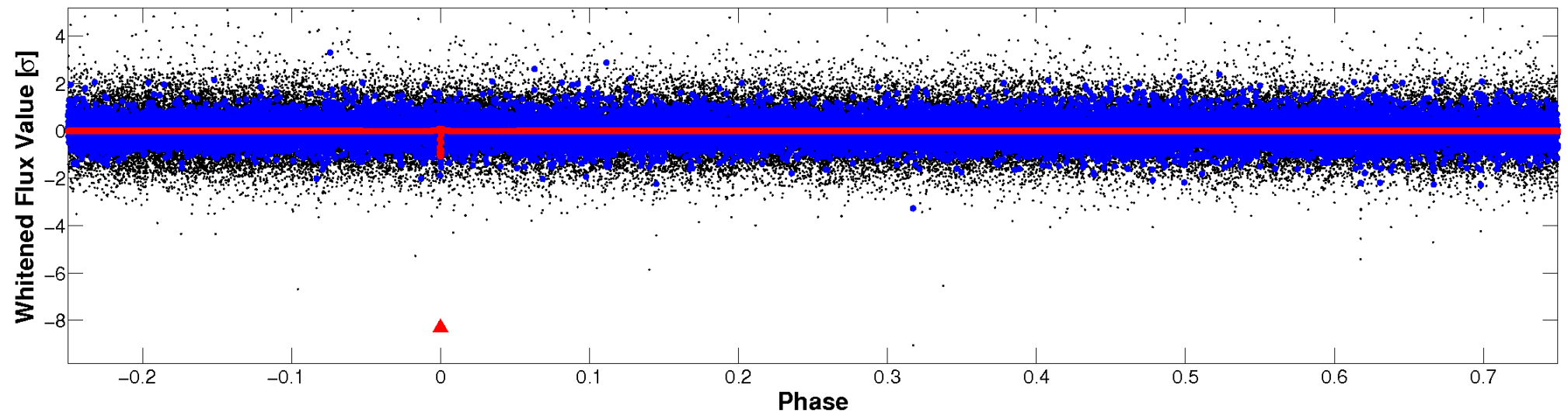


Non-Whitened Vs. Whitened Light Curve

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

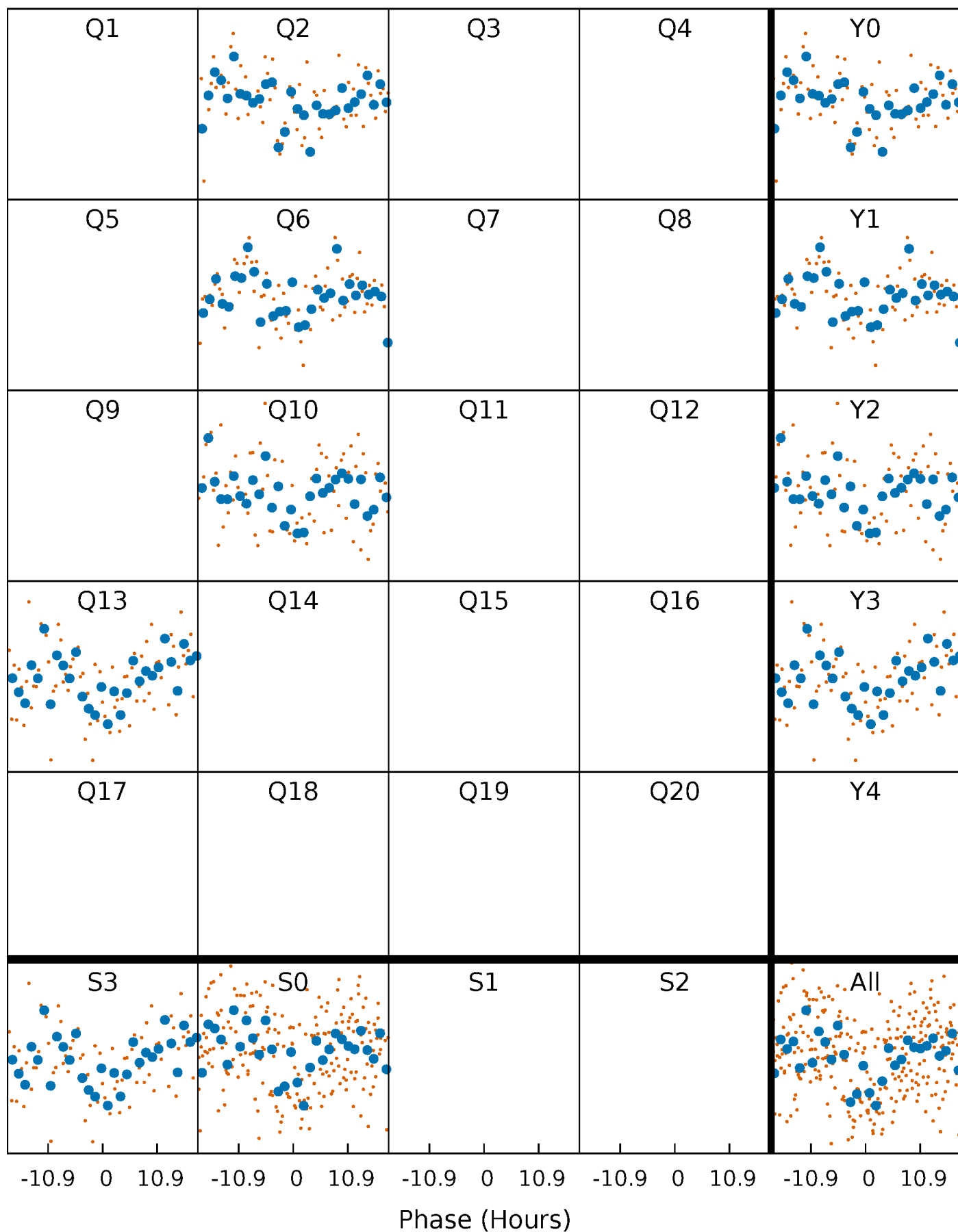


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



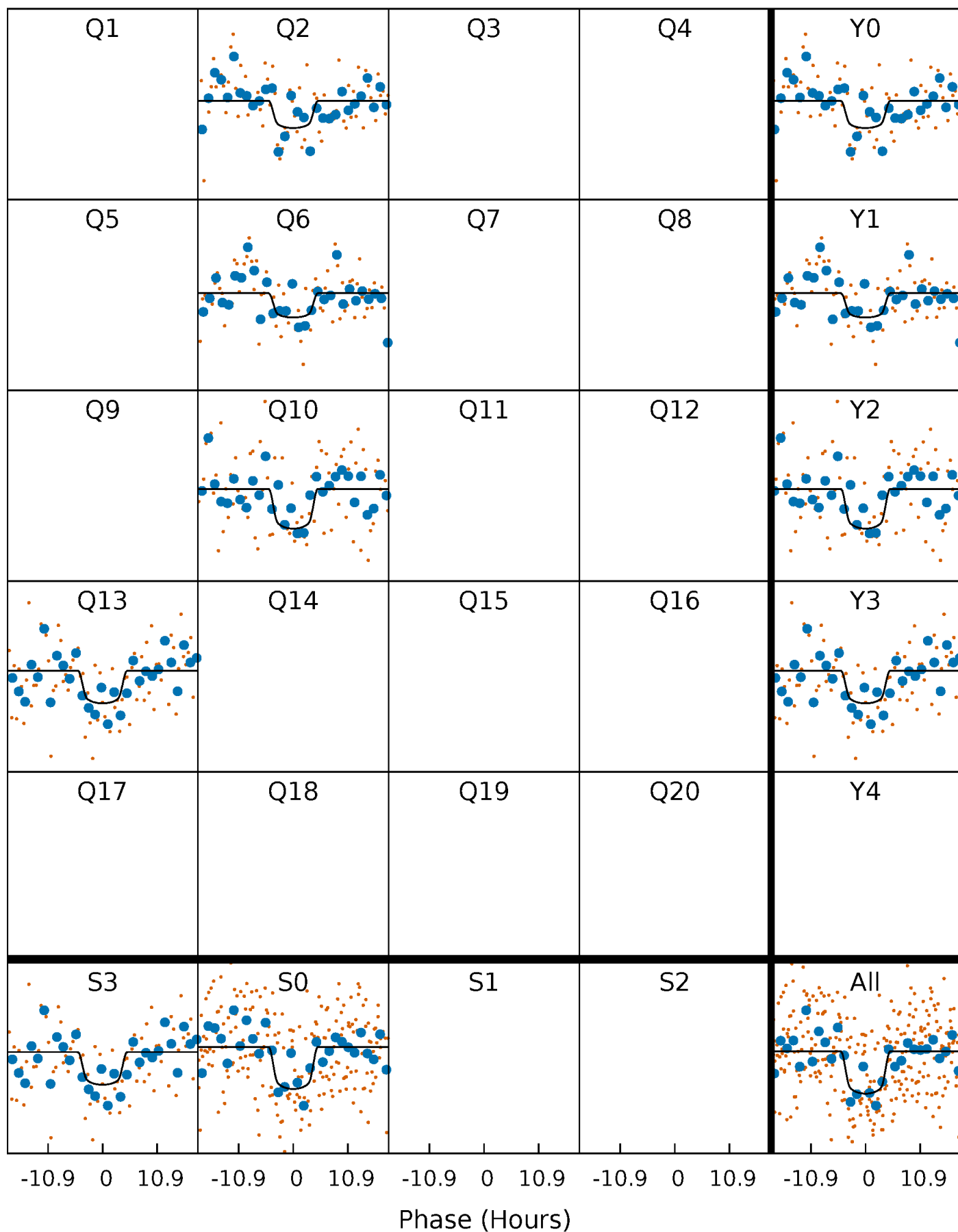
PDC Quarter-Phased Transit Curves

TCE 009392016-01 P=350.651148 Days $T_0=208.782156$ (BKJD)



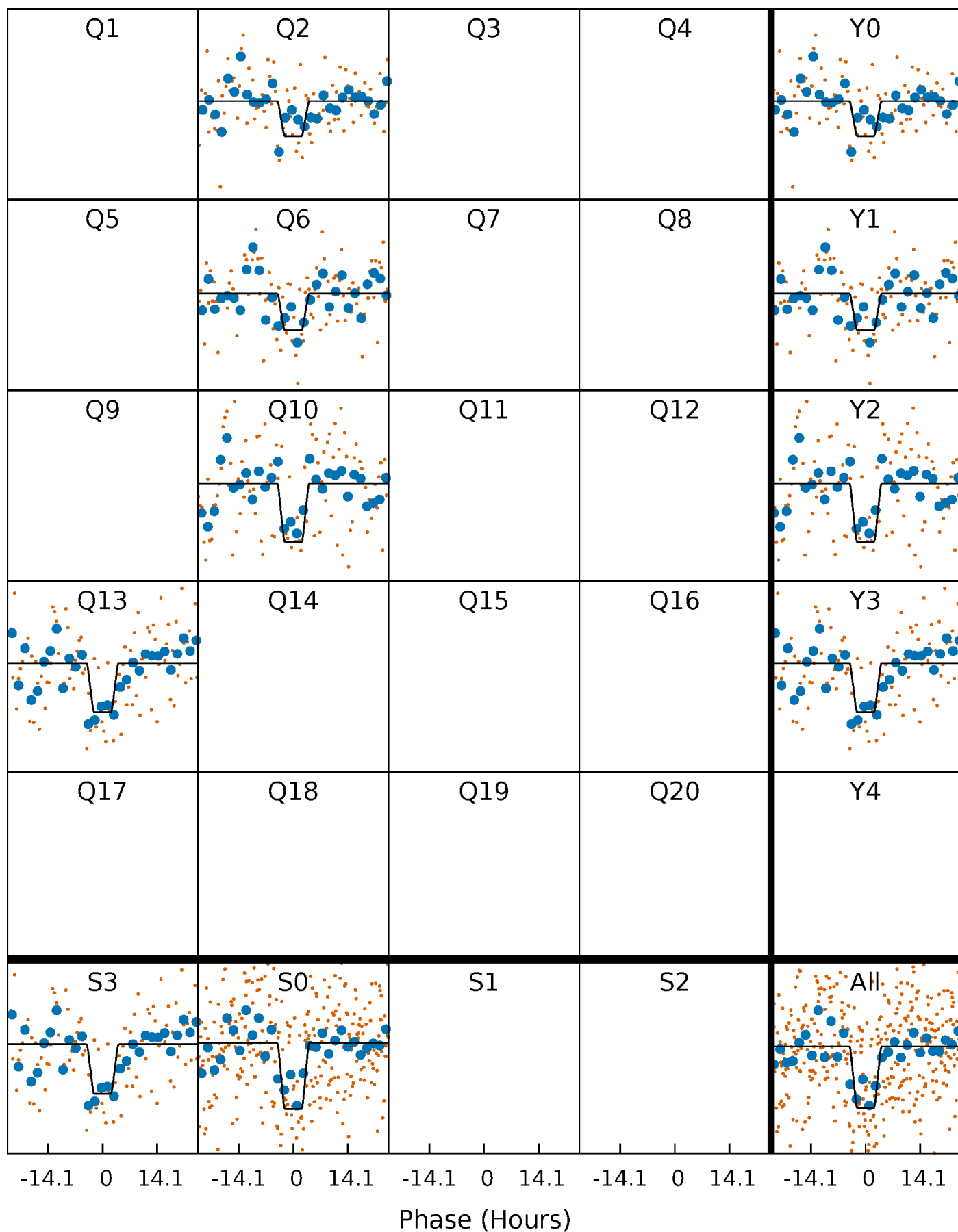
DV Quarter-Phased Transit Curves

TCE 009392016-01 P=350.651148 Days $T_0=208.782156$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

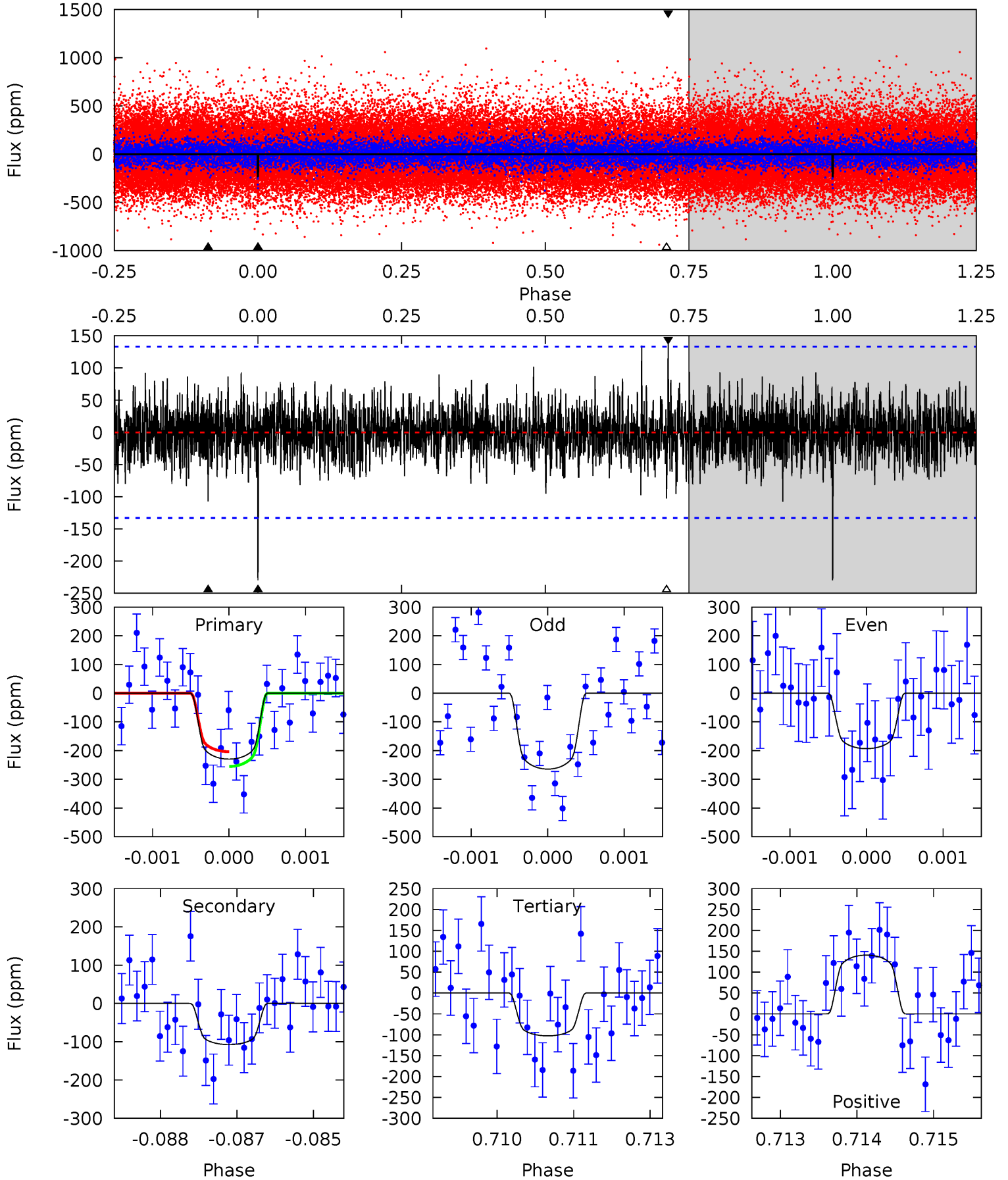
TCE 009392016-01 P=350.646701 Days $T_0=208.820990$ (BKJD)



DV Model-Shift Uniqueness Test

009392016-01, P = 350.651148 Days, E = 208.782156 Days

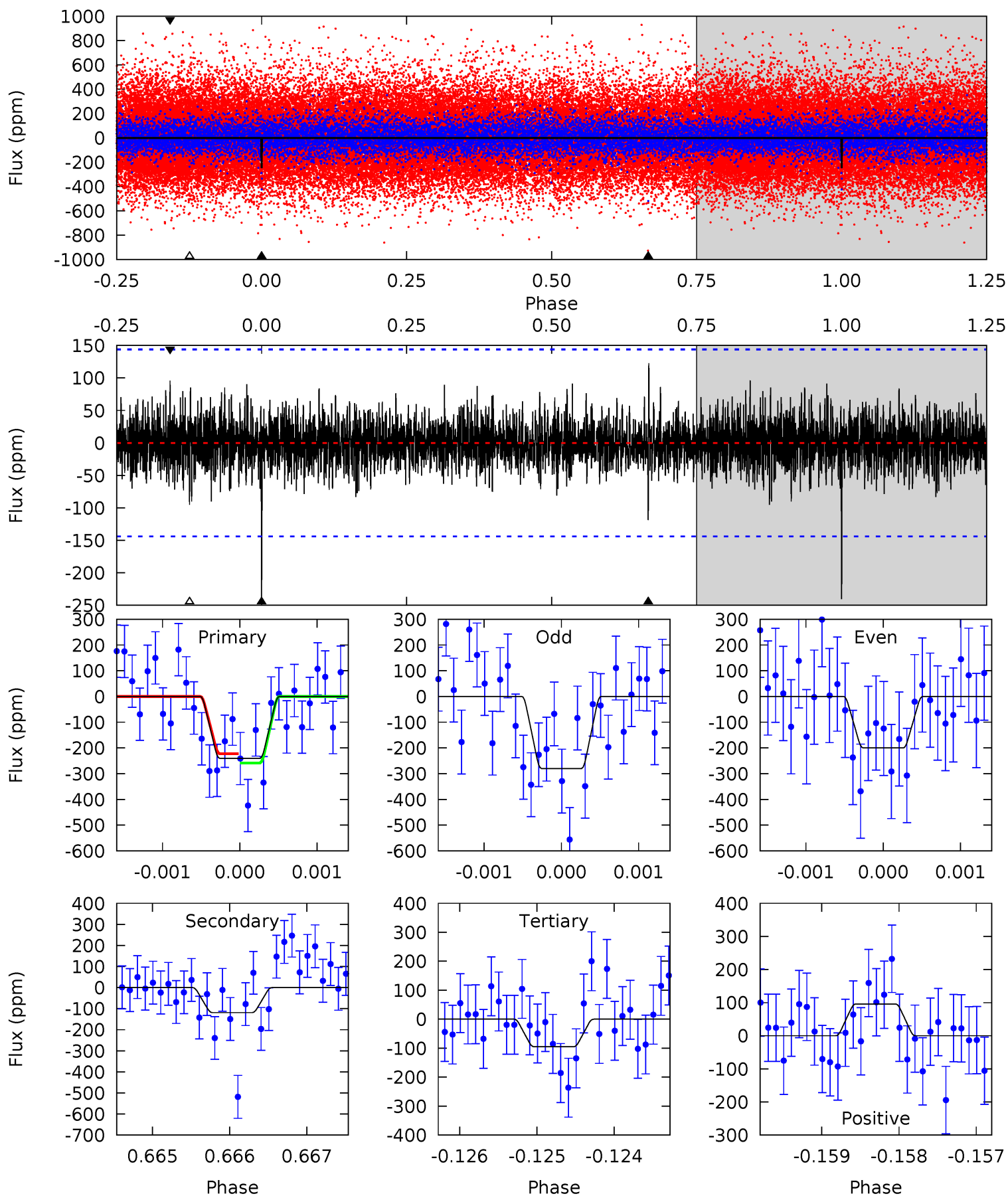
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.36	4.38	4.18	5.74	5.42	3.25	1.20	5.18	3.62	0.20	-1.36	1.45	1.08	0.38	1.05



Alt Model-Shift Uniqueness Test

009392016-01, $P = 350.646701$ Days, $E = 208.820990$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.12	4.50	3.60	3.63	5.46	3.30	1.02	5.52	5.48	0.90	0.87	1.52	1.00	0.34	0.68



Stellar Parameters For KIC 009392016

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5882^{+158}_{-158}	$4.560^{+0.044}_{-0.187}$	$-0.340^{+0.300}_{-0.300}$	$0.833^{+0.223}_{-0.074}$	$0.923^{+0.097}_{-0.108}$	$2.247^{+0.408}_{-1.096}$
	+3%/-3%	+1%/-4%	+88%/-88%	+27%/-9%	+11%/-12%	+18%/-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 009392016-01 / KOI 7935.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-107 ± 25	$1.67^{+0.33}_{-0.27}$	347^{+22}_{-14}	4633^{+364}_{-341}	17859^{+9439}_{-5895}
Alt.	-119 ± 26	$1.65^{+0.32}_{-0.28}$	348^{+21}_{-15}	4803^{+409}_{-355}	21207^{+10641}_{-7121}

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

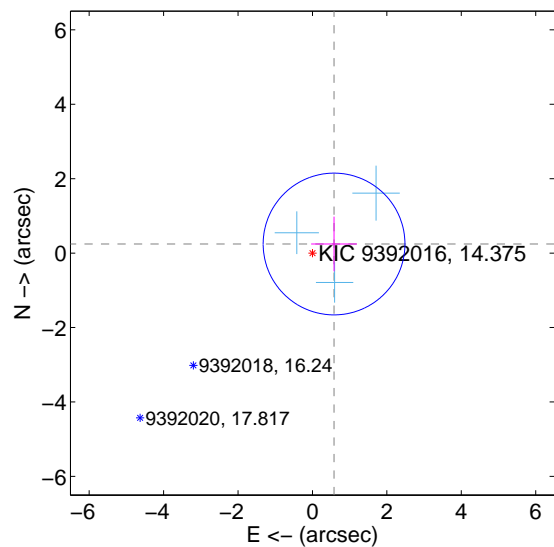
Supplemental centroid analysis for 009392016-01. Kepler magnitude: 14.38. Transit SNR 7.27

There are 3 quarters with good PRF difference image offsets

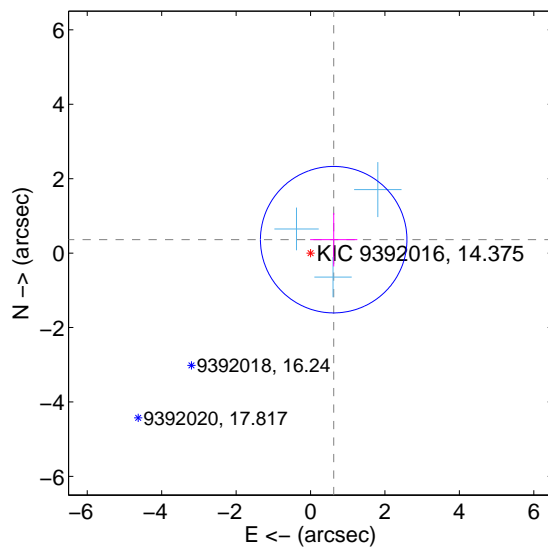
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.630 ± 0.635	0.99	-0.581 ± 0.615	0.244 ± 0.736
PRF-fit source offset from KIC position	0.719 ± 0.656	1.10	-0.622 ± 0.634	0.361 ± 0.719
photometric centroid source offset	0.74 ± 1.56	0.47	0.23 ± 1.63	0.70 ± 1.55

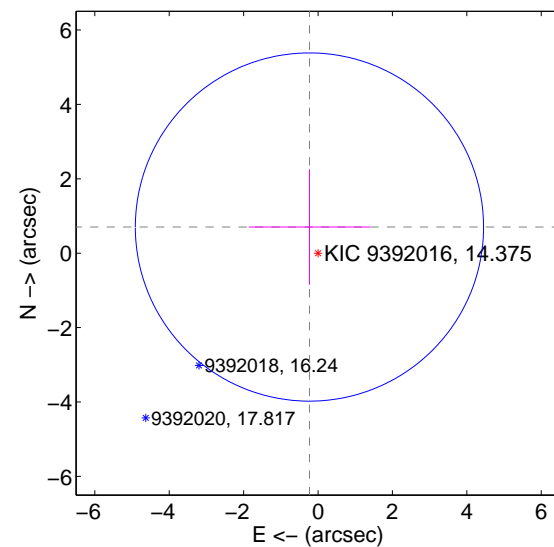
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

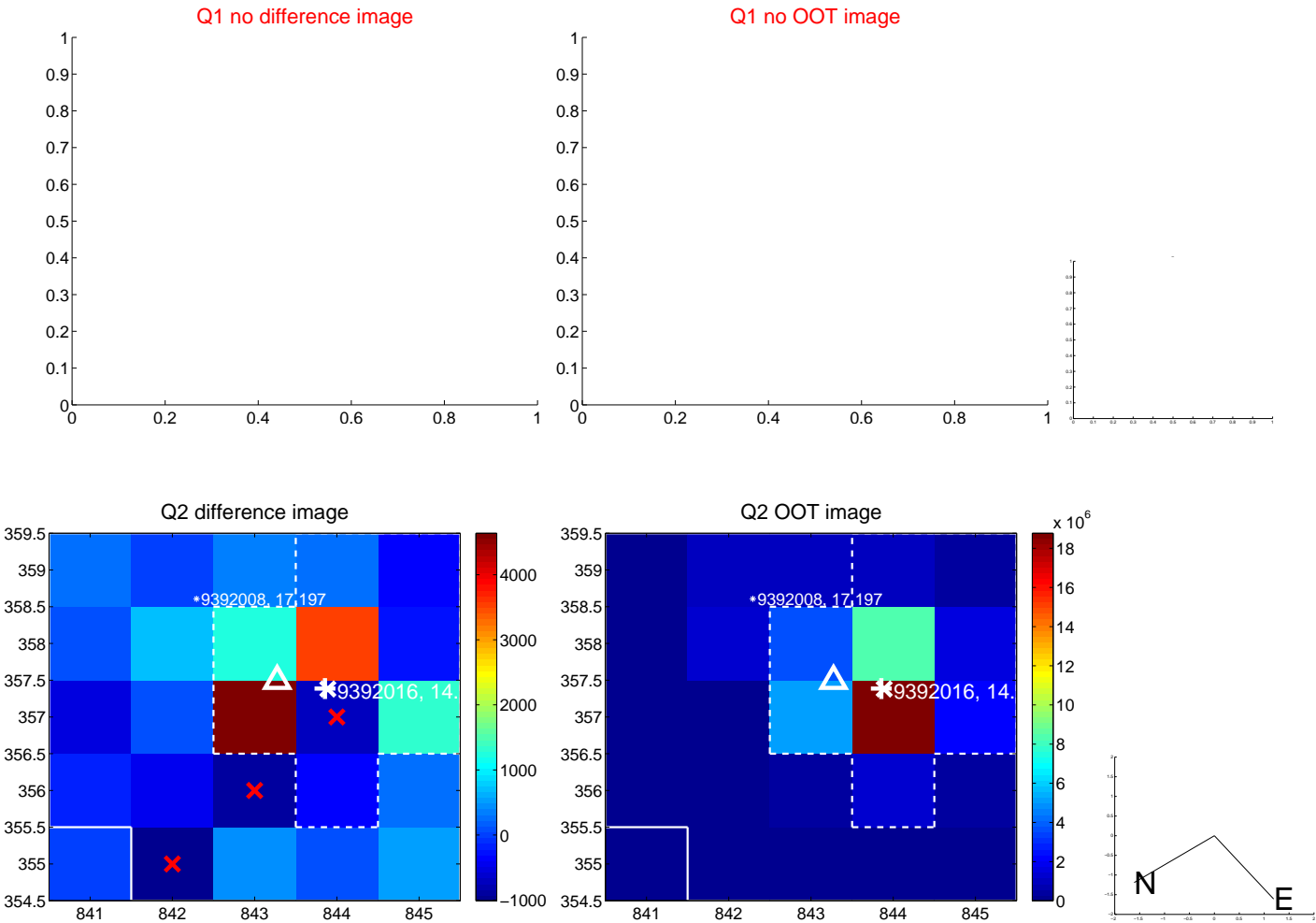


offset from photometric centroids



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.

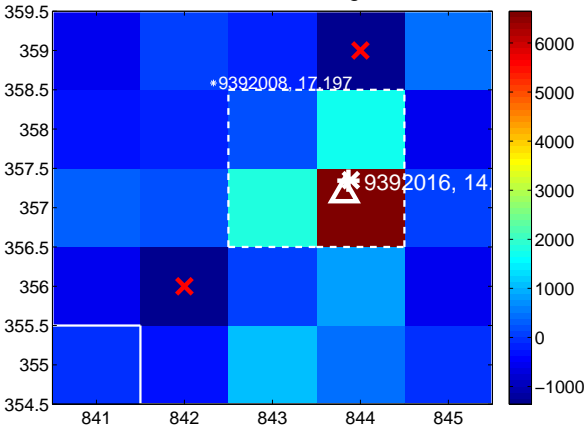
Q5 no difference image



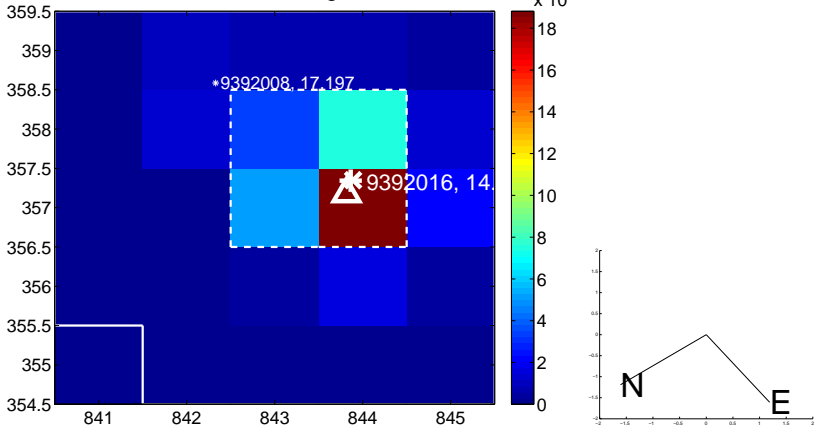
Q5 no OOT image



Q6 difference image



Q6 OOT image



Q7 no difference image



Q7 no OOT image



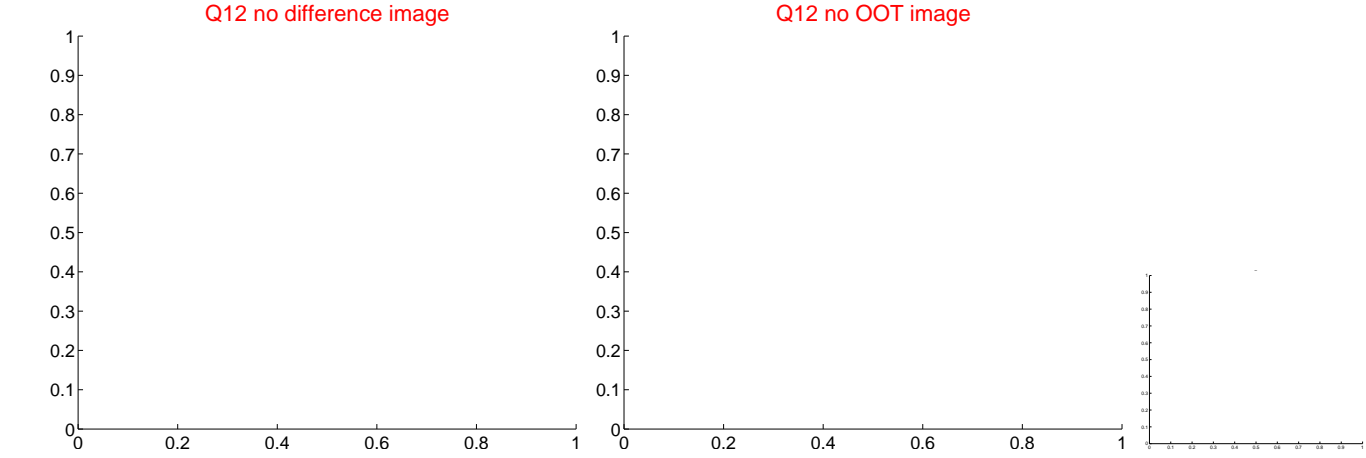
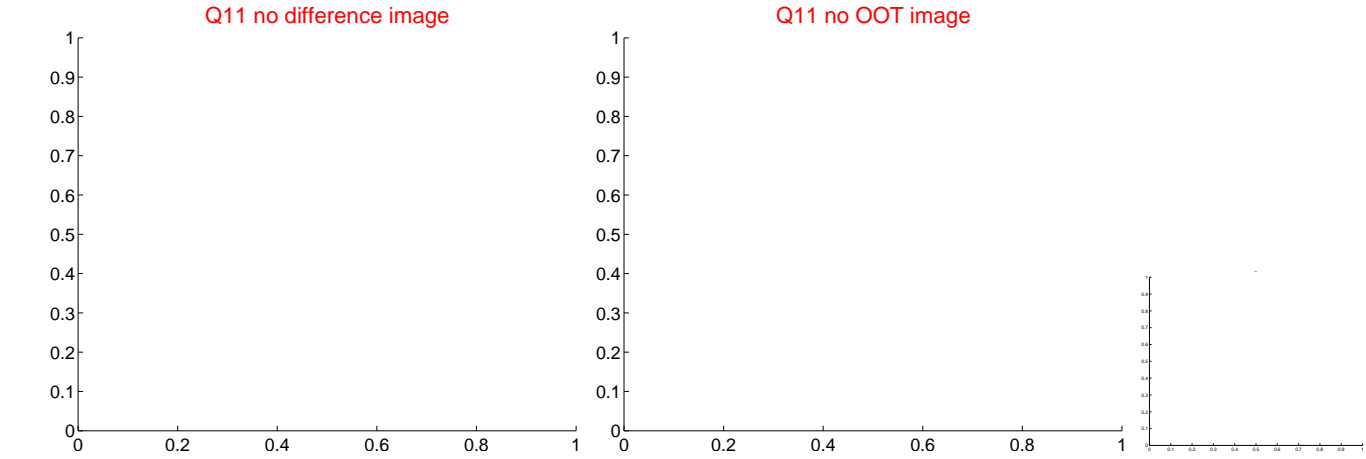
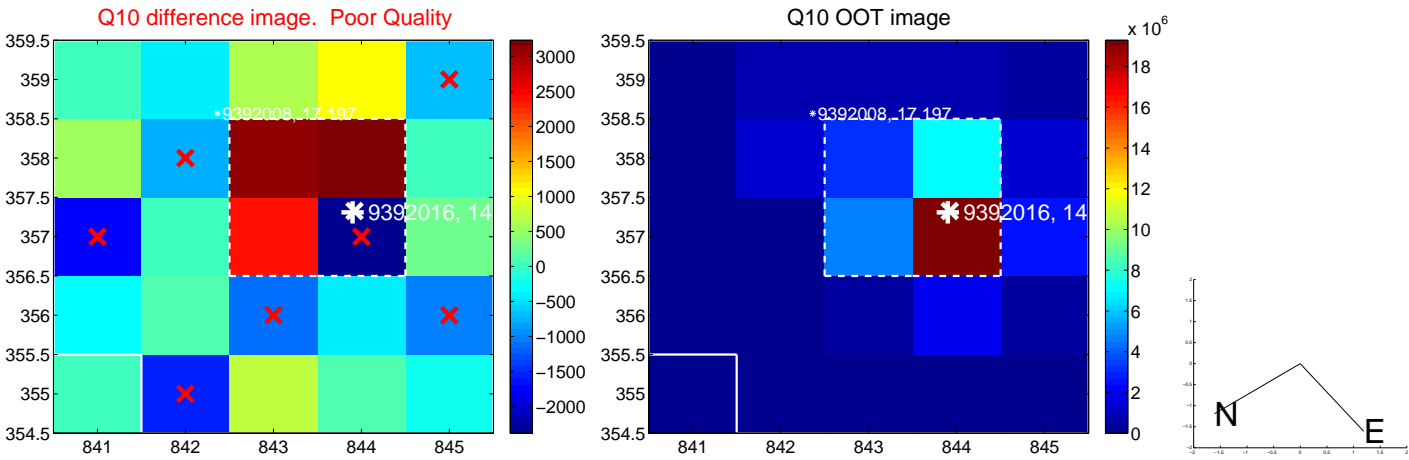
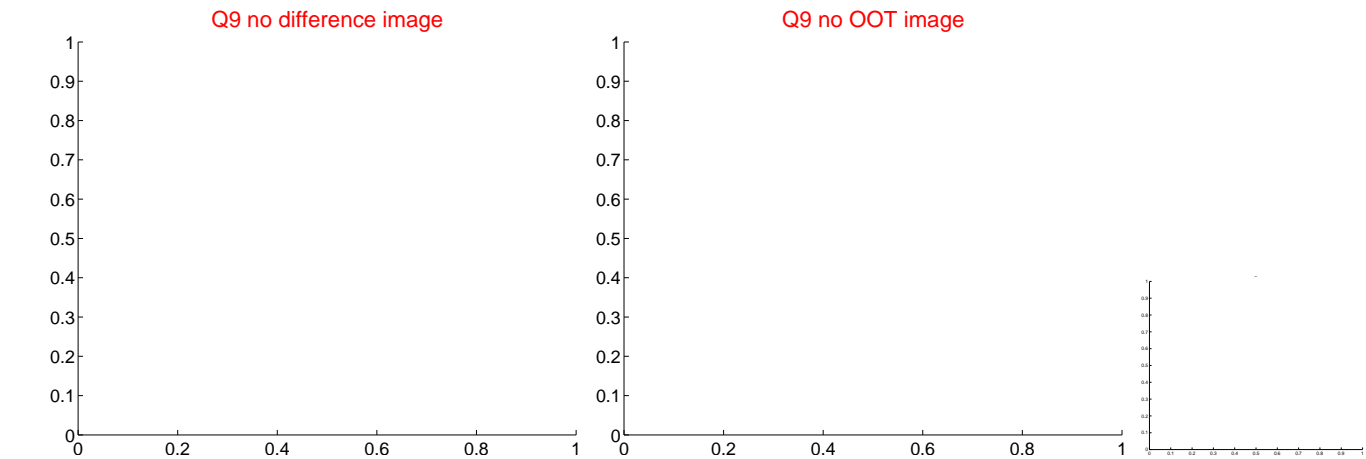
Q8 no difference image



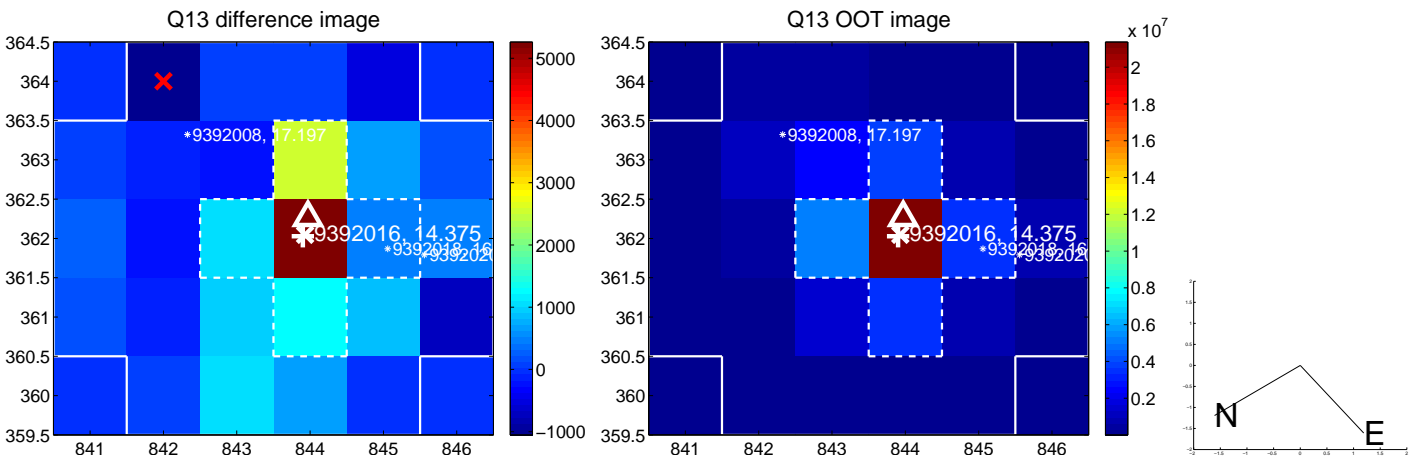
Q8 no OOT image



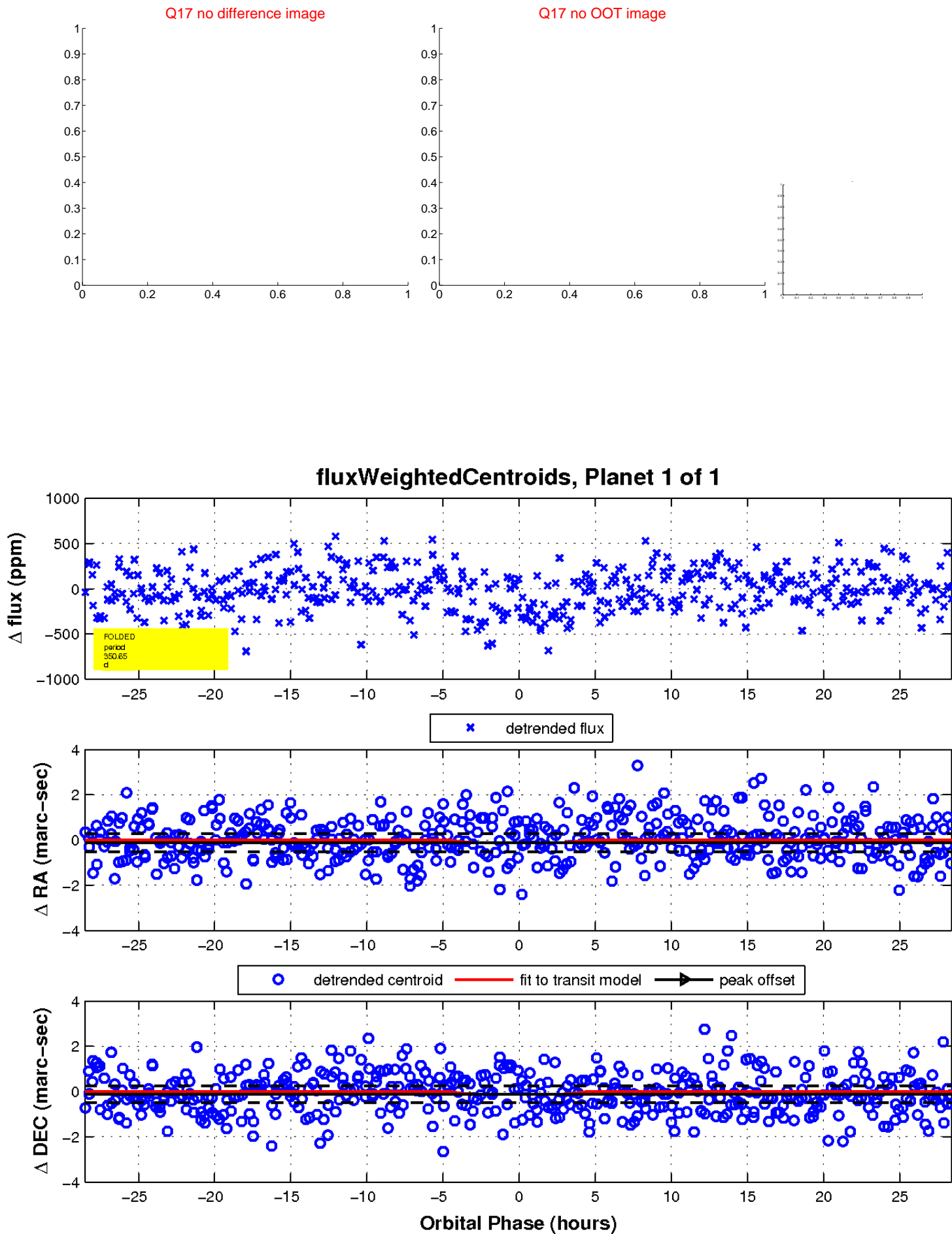
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

