

KIC 009592831

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})
009592831-01	OBS	7947.01	0.609643	131.946706	102.1	4.445	10.1	7.1	0.81	5296	0.81	2512.03
009592831-02	OBS	No	11.266104	132.997448	11230.8	0.785	9.9	4.2	0.81	5296	11.62	51.41
009592831-03	OBS	No	5.270752	133.834031	596.0	2.033	9.4	6.2	0.81	5296	2.13	141.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009592831-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
009592831-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009592831-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

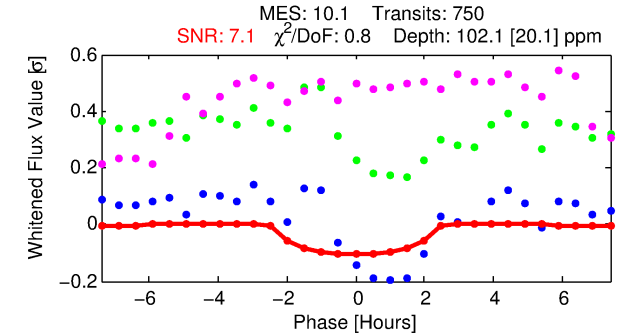
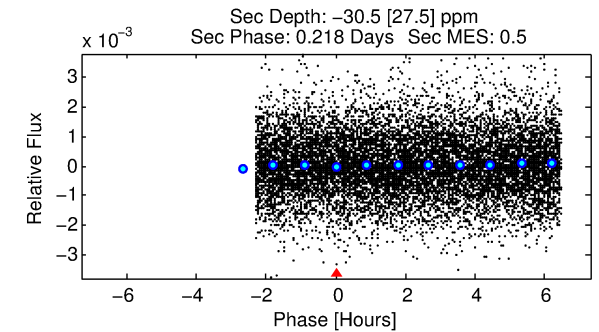
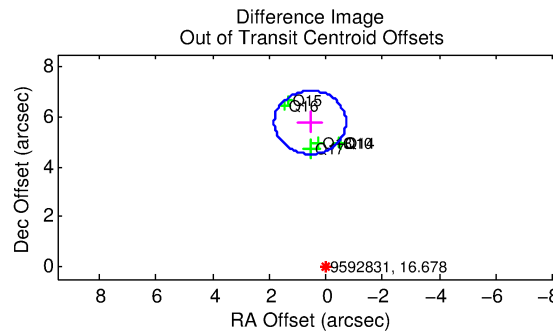
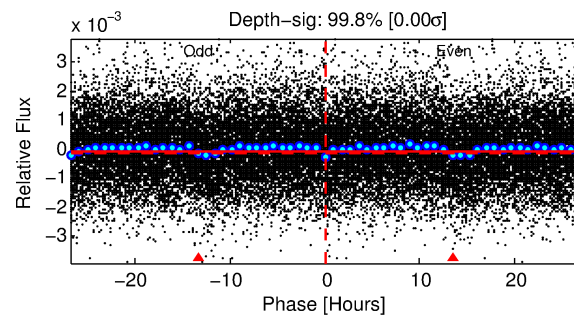
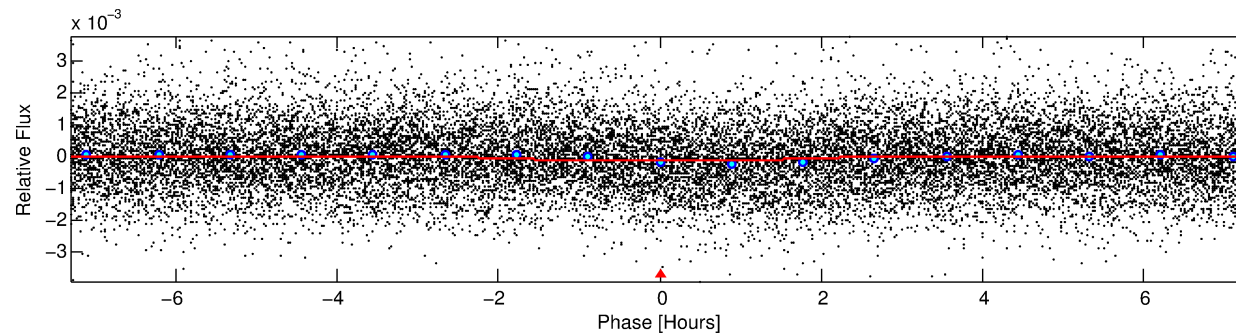
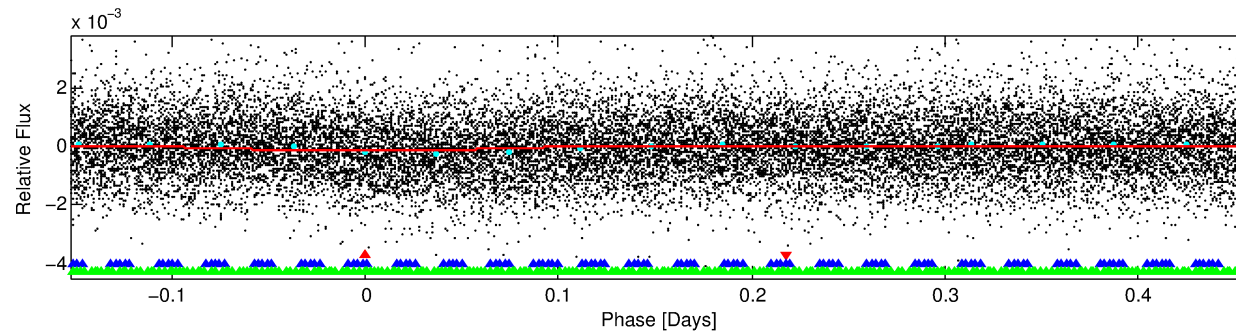
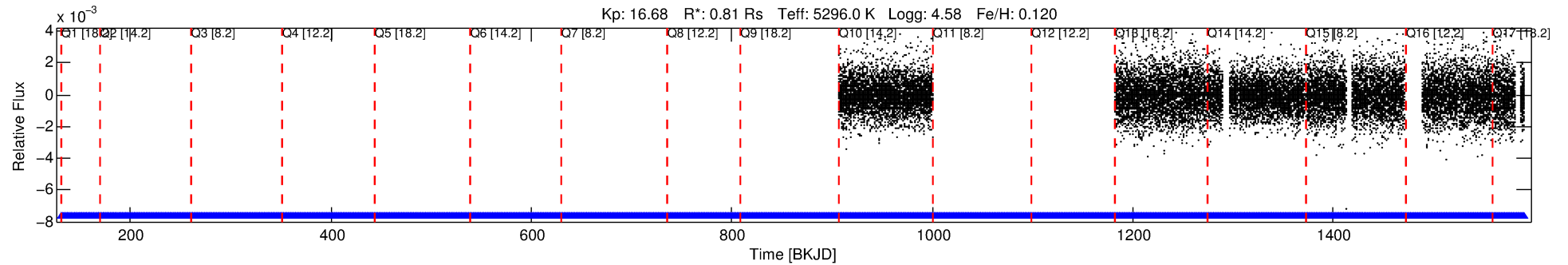
Ephemeris Match Information For 009592831-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
009592831-01	9592831	009592850-01	9592850	1:1	28.8	-7	2	16.40	16.68	1647.60	Direct-PRF	0	4.96	1.10

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 9592831 Candidate: 1 of 3 Period: 0.610 d



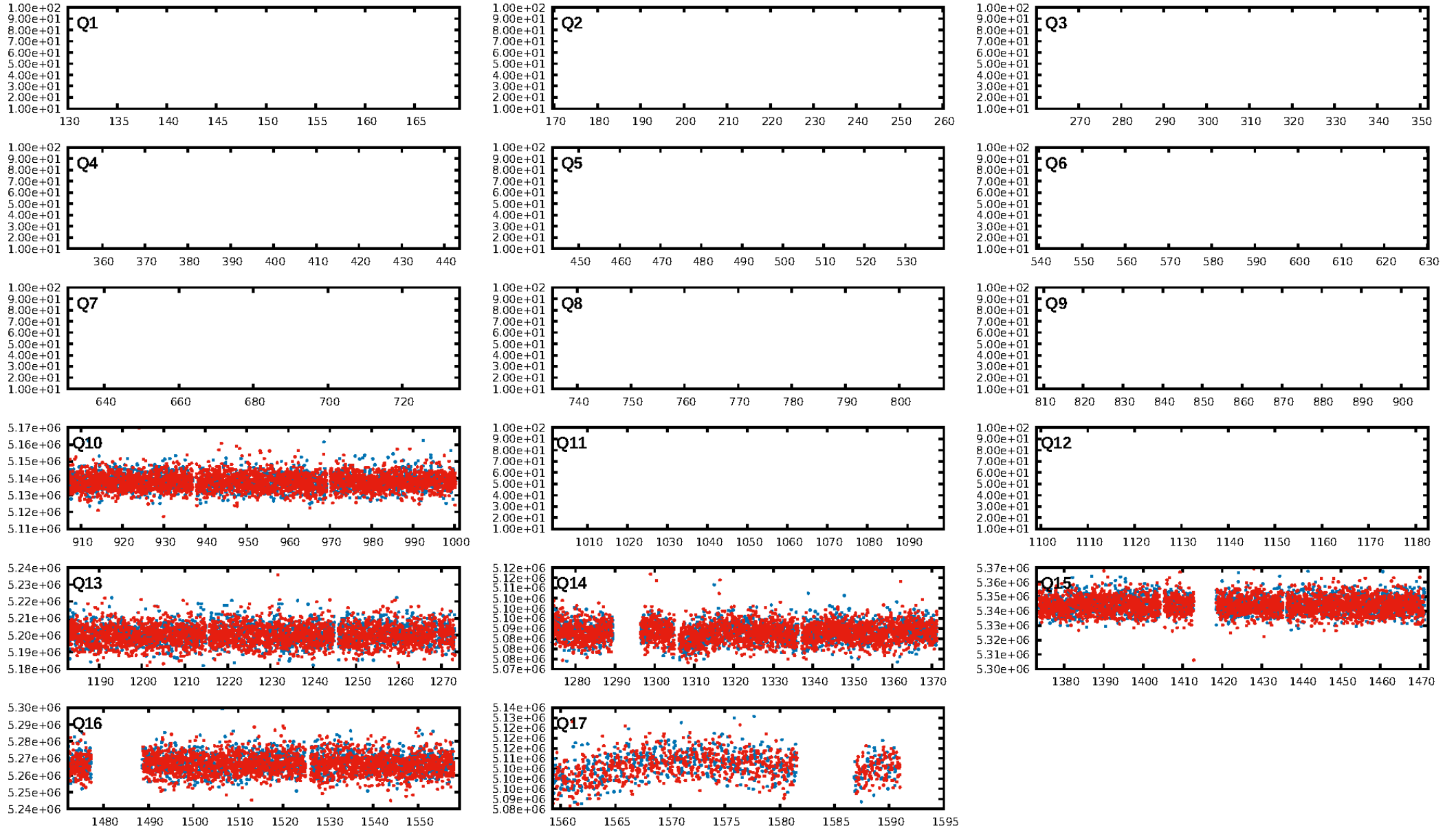
DV Fit Results:

Period = 0.60964 [0.00001] d
Epoch = 131.9467 [0.0077] BKJD
Rp/R* = 0.0091 [0.0230]
a/R* = 1.22 [3.59]
b = 0.31 [27.56]
Seff = 2512.03 [651.52]
Teq = 1805 [117] K
Rp = 0.81 [2.05] Re
a = 0.0137 [0.0020] AU
Ag = N/A
Teffp = N/A

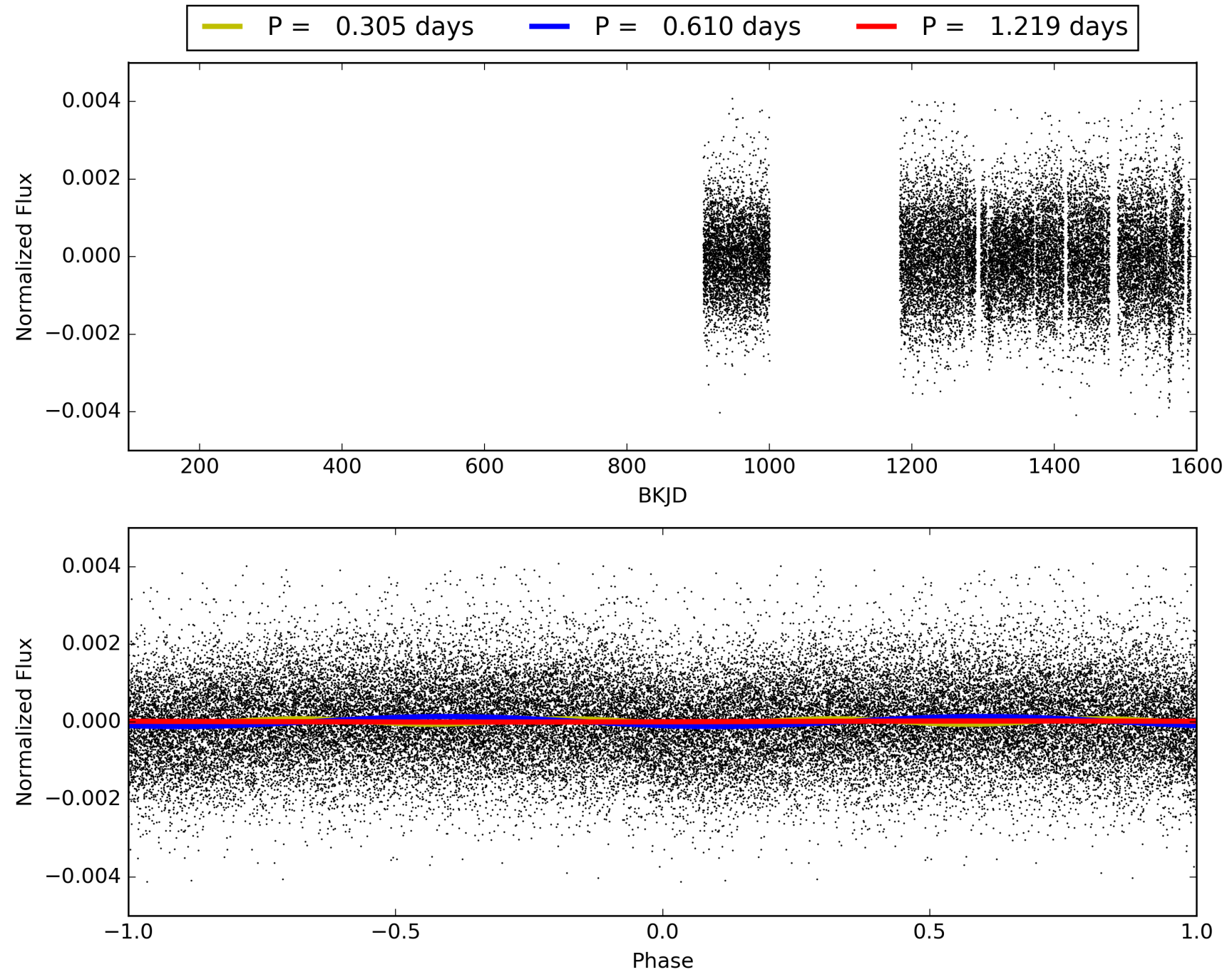
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [22.89 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 1.29e-30
RollingBand-fgt: 1.00 [706/706]
GhostDiagnostic-chr: -0.1617
Centroid-sig: 0.0%
Centroid-so: 14.820 arcsec [5.62 σ]
OotOffset-rm: 5.801 arcsec [13.73 σ]
KicOffset-rm: 5.657 arcsec [13.07 σ]
OotOffset-st: 2/1/1/2 [6]
KicOffset-st: 2/1/1/2 [6]
DiffImageQuality-fgm: 1.00 [6/6]
DiffImageOverlap-fno: 1.00 [6/6]

TCE 009592831-01, PDC Light Curves

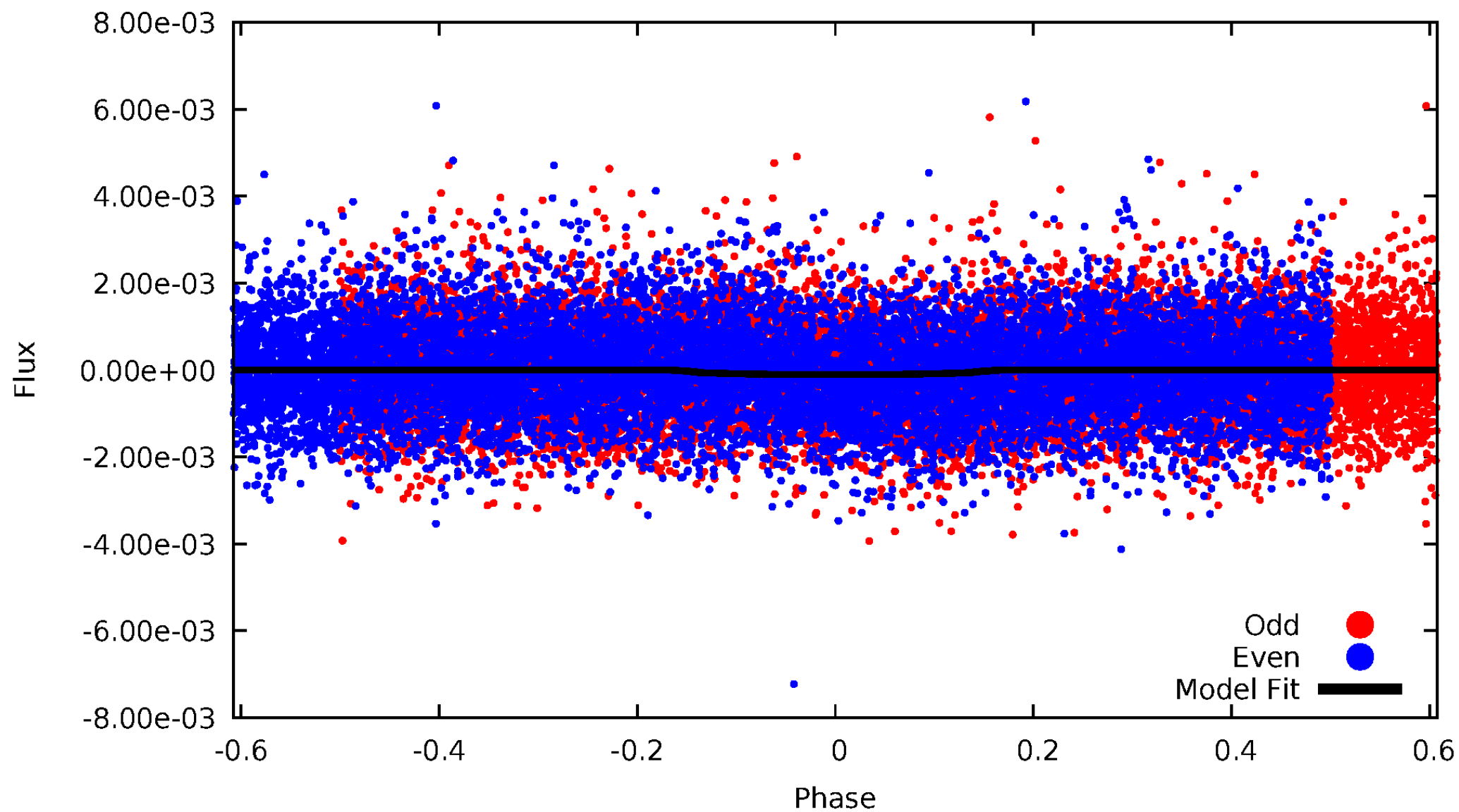


TCE 009592831-01



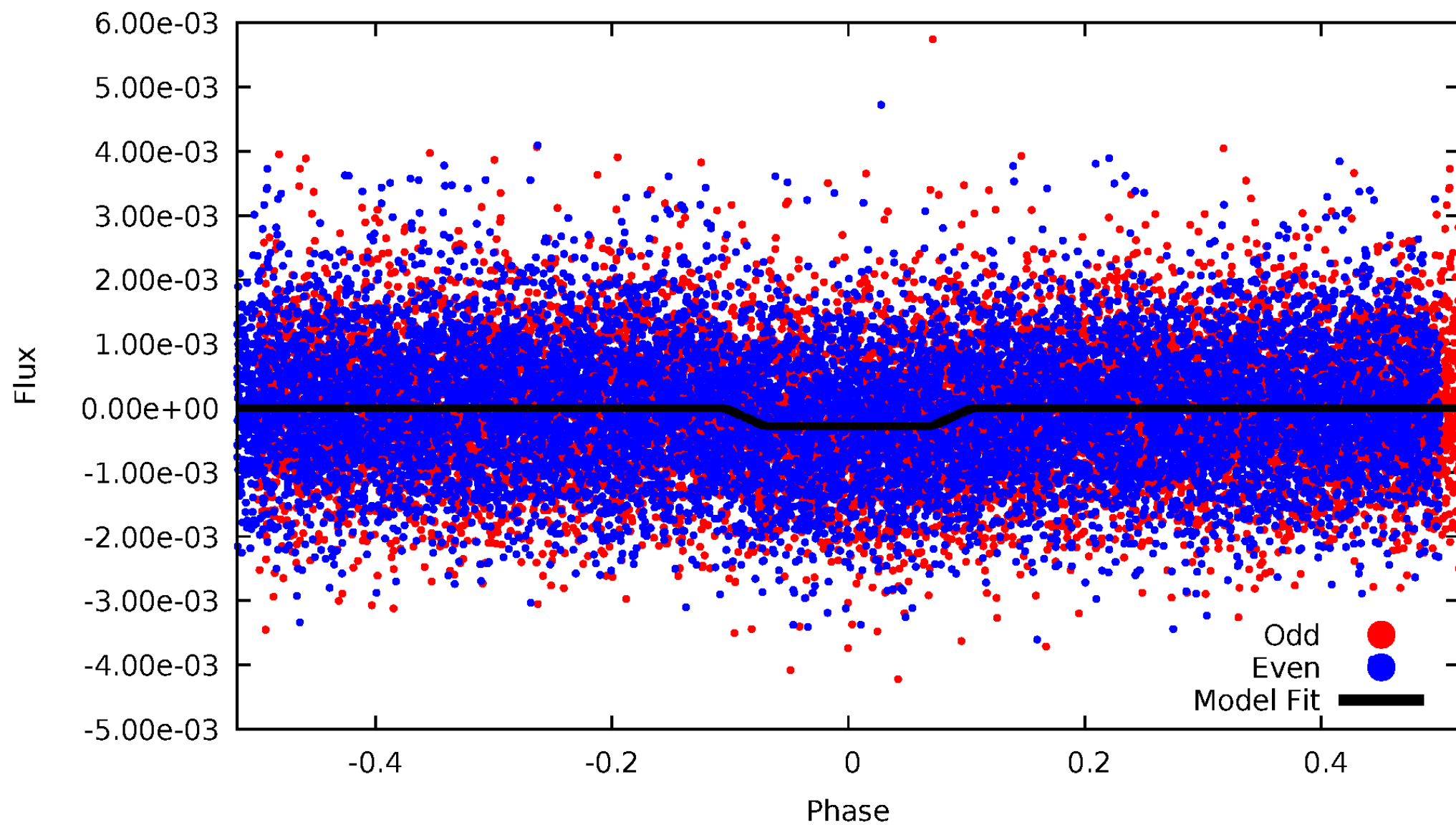
DV Odd/Even

TCE 009592831-01



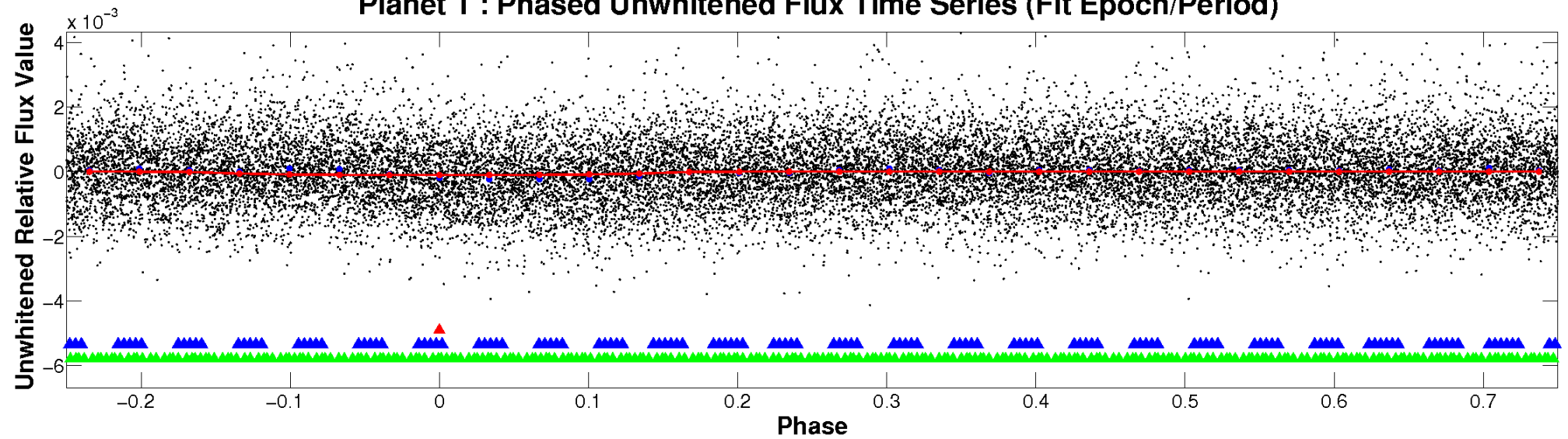
ALT Odd/Even

TCE 009592831-01

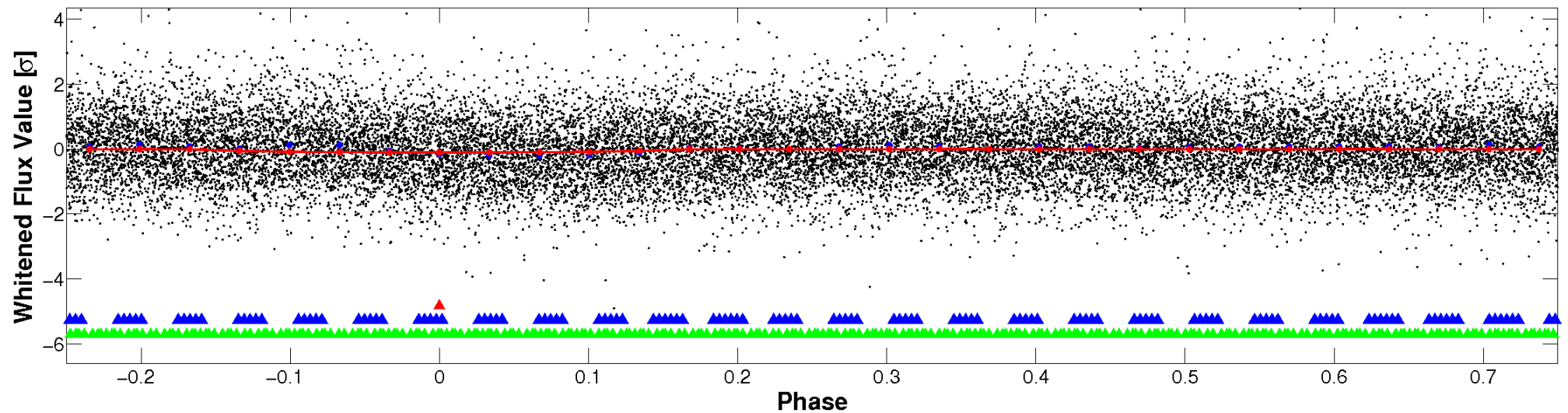


Non-Whitened Vs. Whitened Light Curve

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

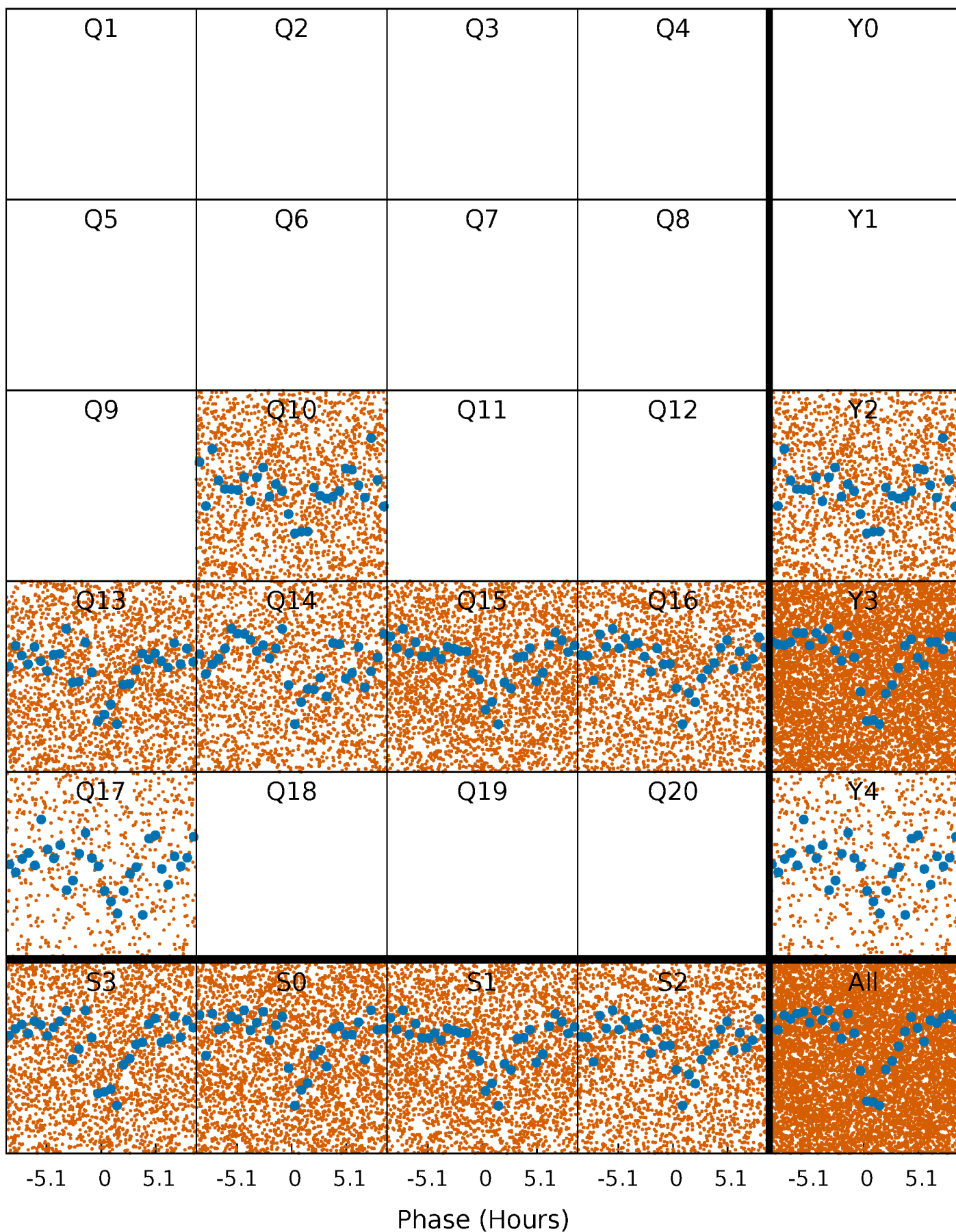


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



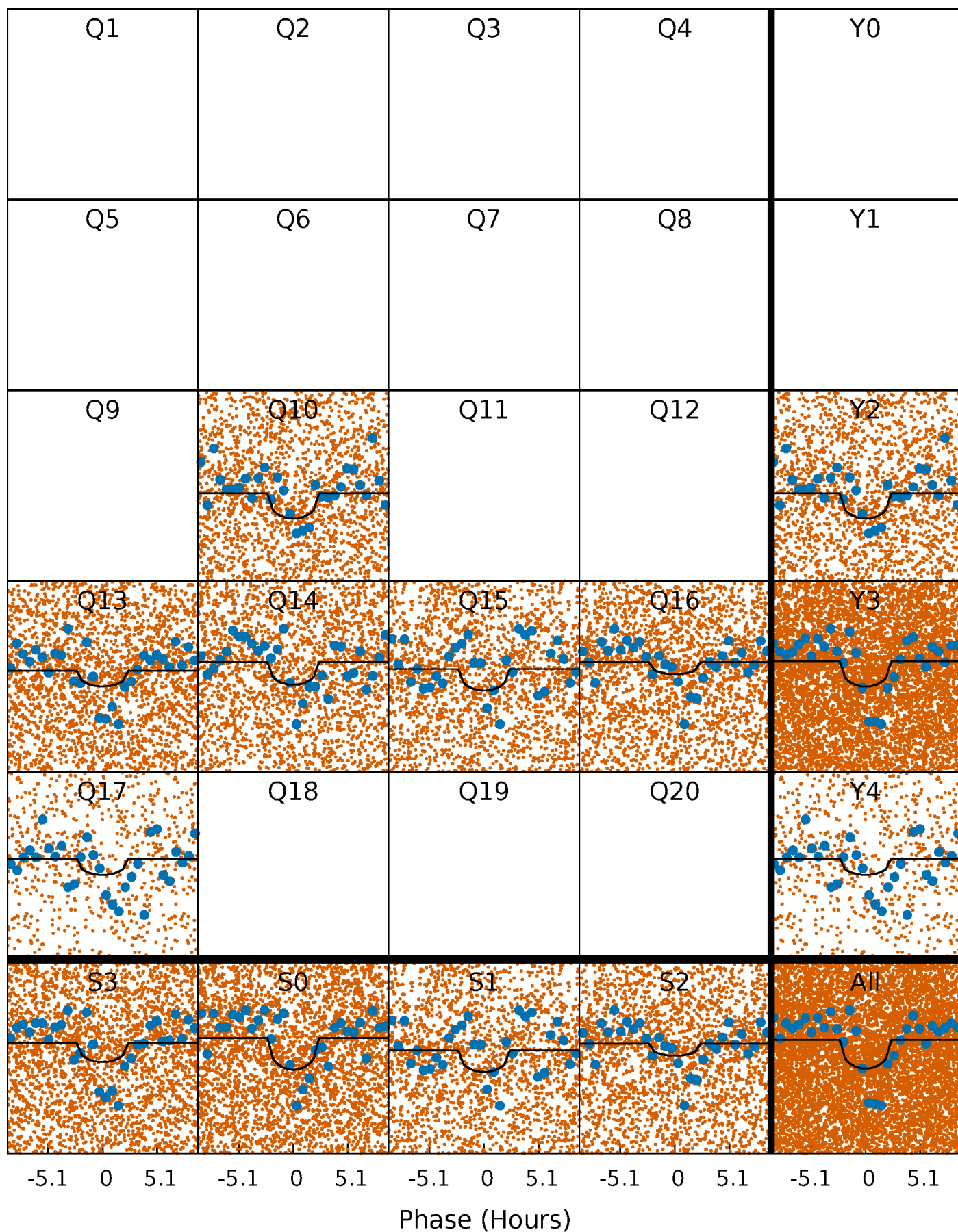
PDC Quarter-Phased Transit Curves

TCE 009592831-01 P= 0.609643 Days $T_0=131.946706$ (BKJD)



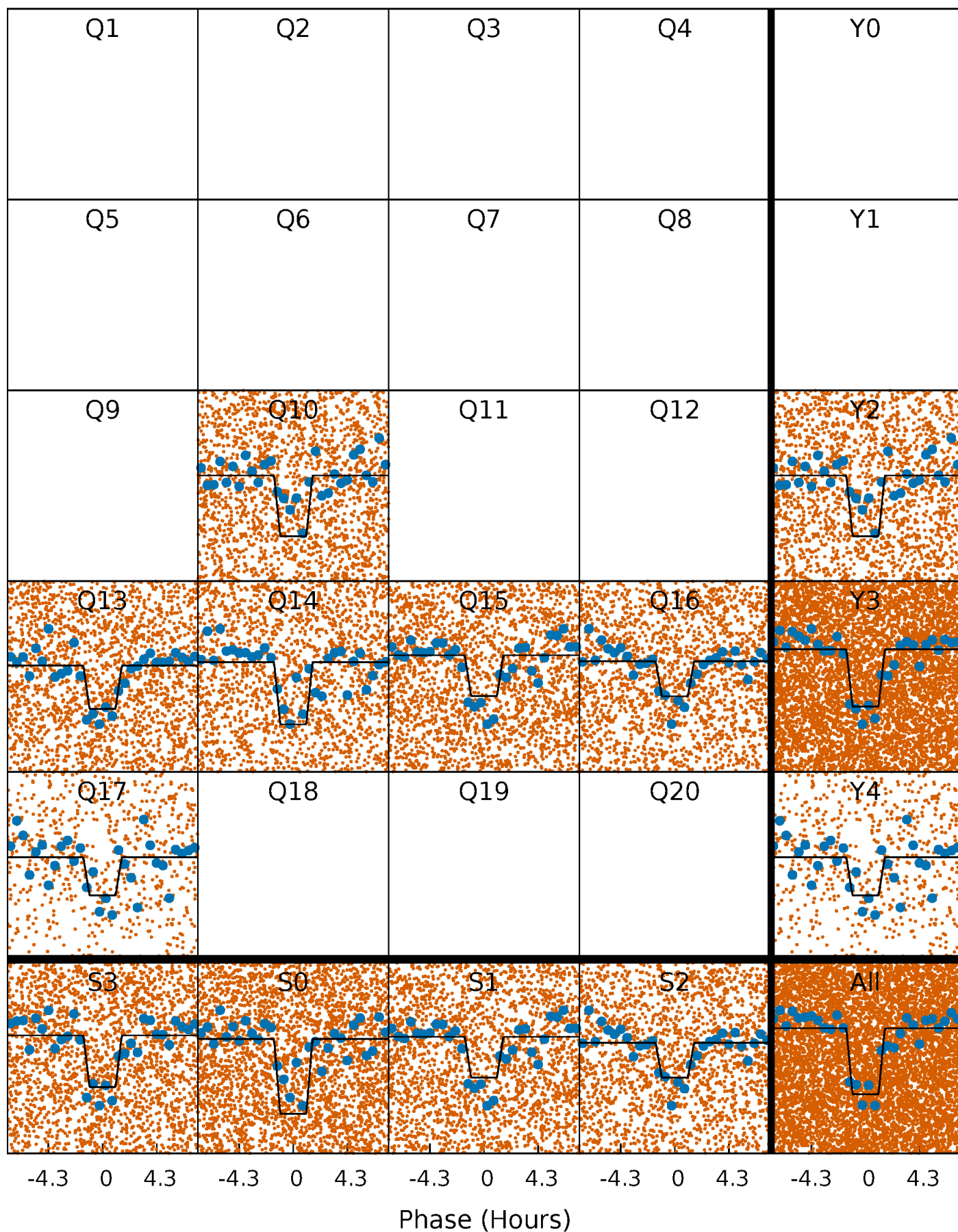
DV Quarter-Phased Transit Curves

TCE 009592831-01 P= 0.609643 Days $T_0=131.946706$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

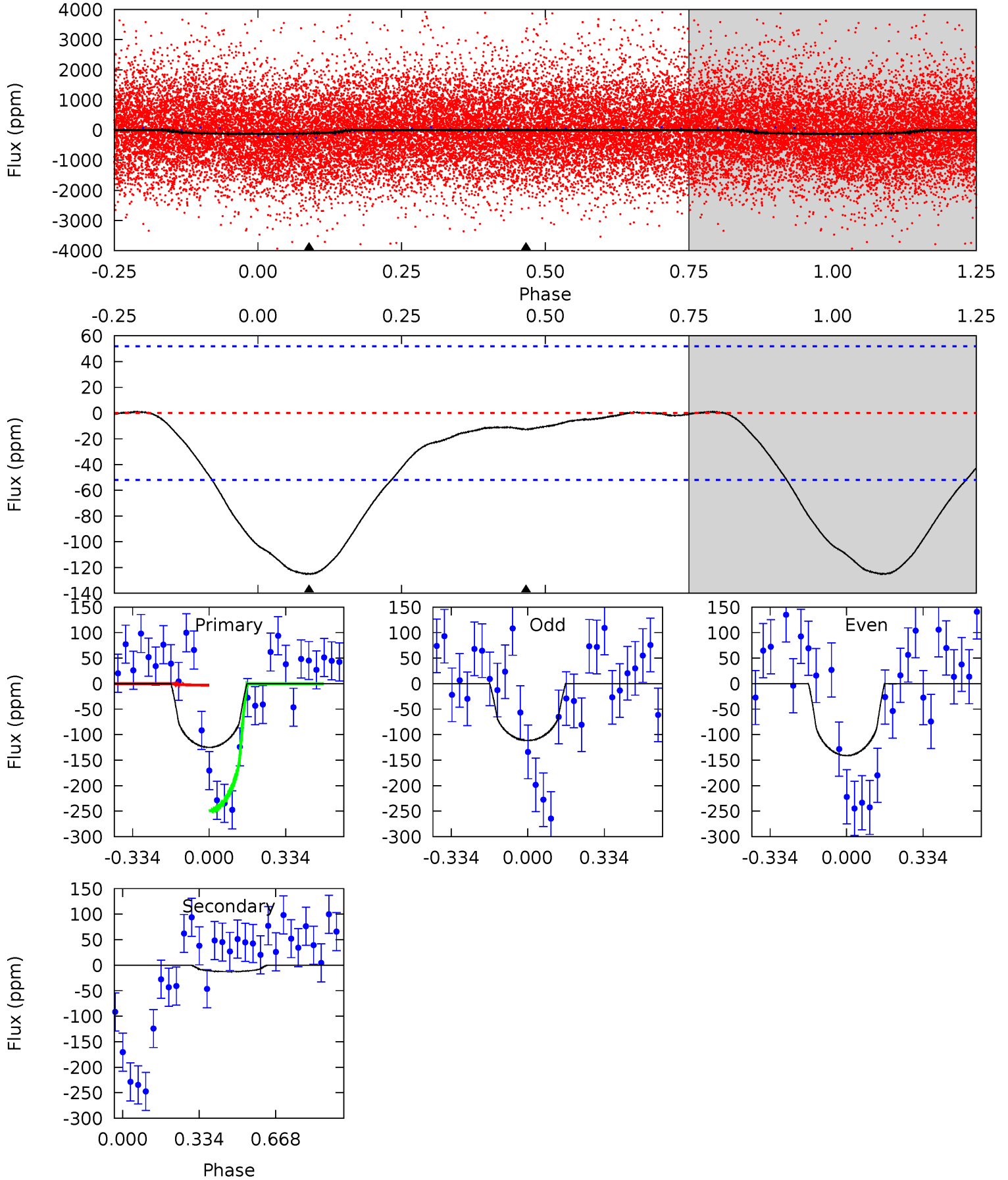
TCE 009592831-01 P= 0.609670 Days $T_0=131.934693$ (BKJD)



DV Model-Shift Uniqueness Test

009592831-01, $P = 0.609643$ Days, $E = 131.946706$ Days

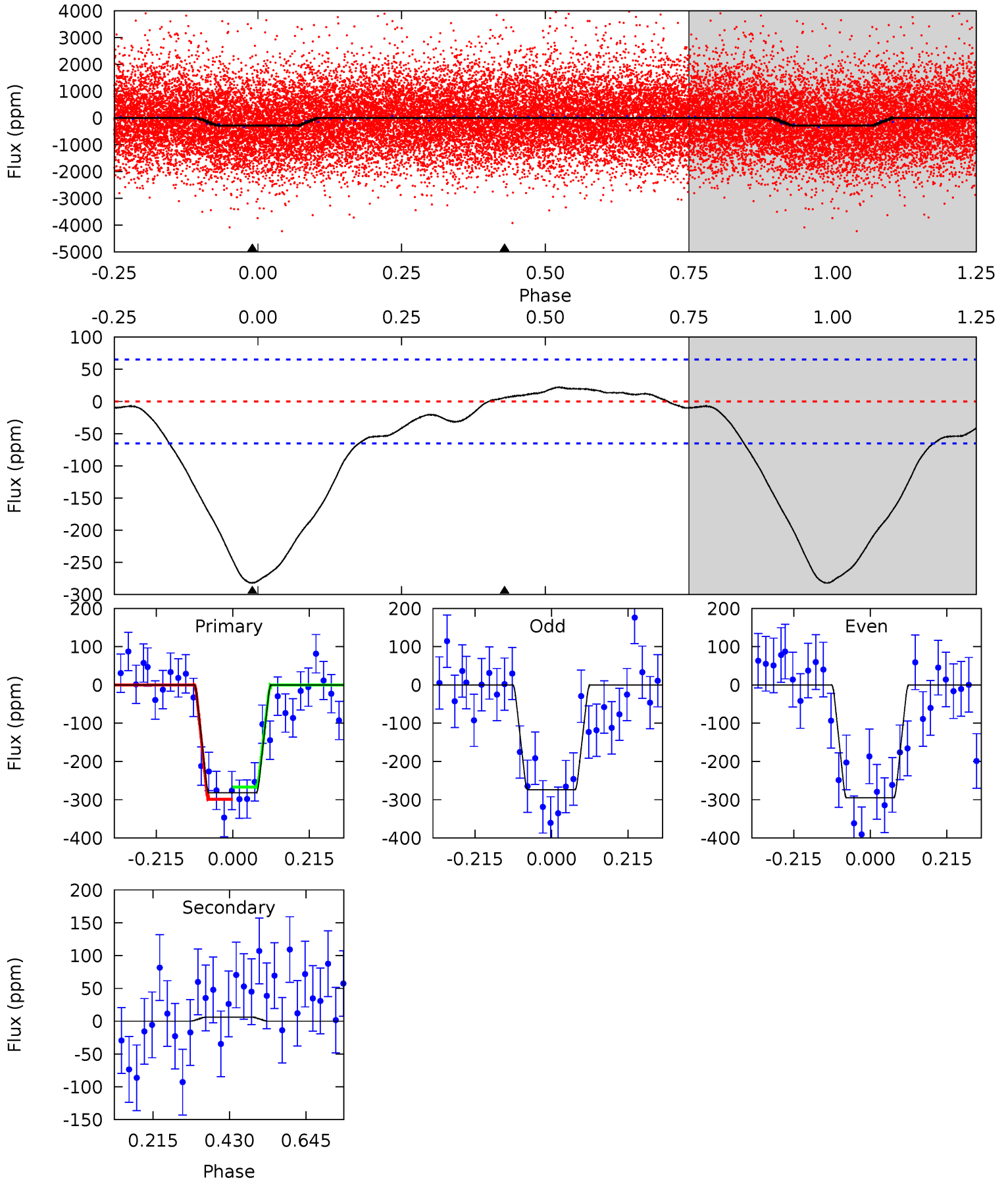
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	1.06	0	0	4.30	0.97	0.08	10.4	10.4	1.06	1.06	1.23	1.09	0.01	10.4



Alt Model-Shift Uniqueness Test

009592831-01, P = 0.609670 Days, E = 131.934693 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.1	-0.40	0	0	4.40	1.24	1.08	19.1	19.1	-0.40	-0.40	0.72	1.05	0.07	1.11



Stellar Parameters For KIC 009592831

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5296^{+190}_{-174}	$4.576^{+0.030}_{-0.120}$	$0.120^{+0.250}_{-0.300}$	$0.815^{+0.138}_{-0.064}$	$0.911^{+0.066}_{-0.090}$	$2.373^{+0.371}_{-0.839}$
	+4%/-3%	+1%/-3%	+208%/-250%	+17%/-8%	+7%/-10%	+16%/-35%
Source	KIC0	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 009592831-01 / KOI 7947.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-13 ± 12	$1.72^{+1.68}_{-1.24}$	2576^{+120}_{-114}	1881^{+2453}_{-4712}	$0.309^{+4.607}_{-0.302}$
Alt.	6 ± 15	$2.27^{+1.85}_{-1.52}$	2565^{+135}_{-108}	-2922^{+384}_{-584}	$-0.076^{+0.244}_{-0.853}$

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

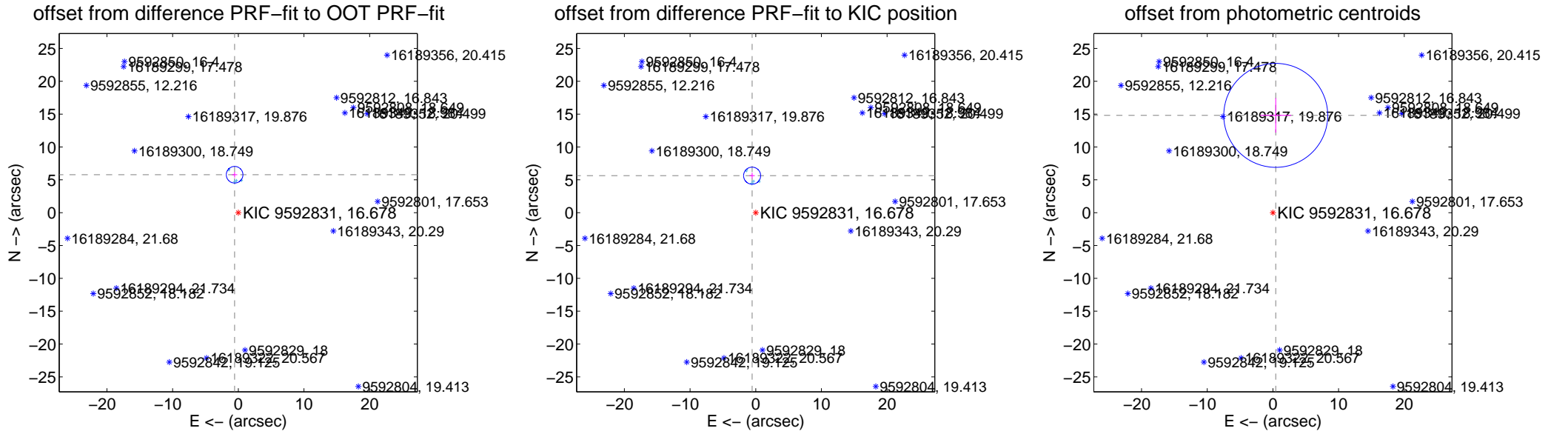
DV Centroid Data

Supplemental centroid analysis for 009592831-01. Kepler magnitude: 16.68. Transit SNR 7.06

There are 6 quarters with good PRF difference image offsets

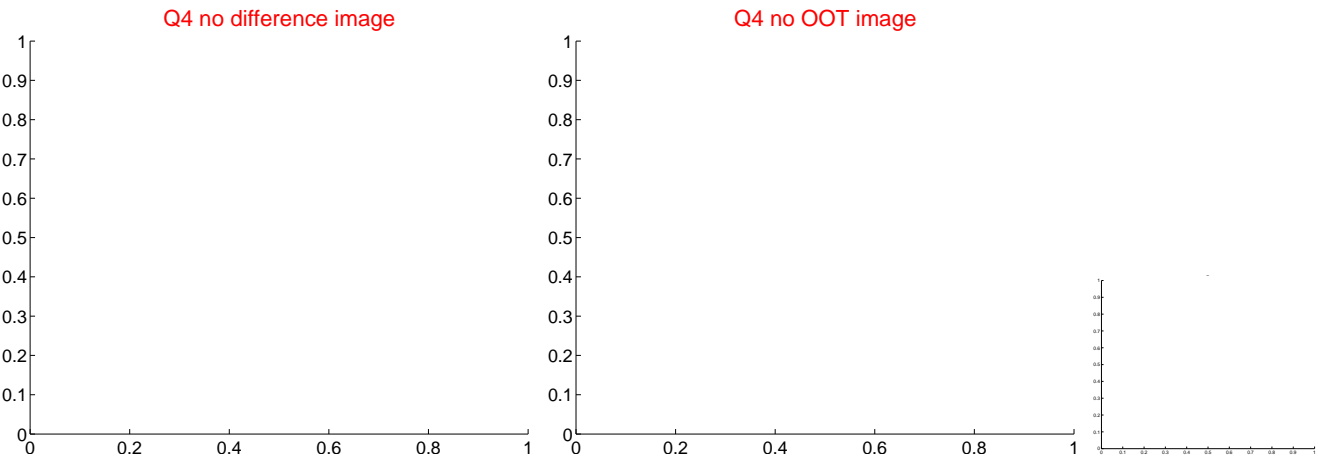
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.801 ± 0.422	13.73	0.560 ± 0.407	5.774 ± 0.423
PRF-fit source offset from KIC position	5.657 ± 0.433	13.07	0.552 ± 0.408	5.630 ± 0.433
photometric centroid source offset	14.82 ± 2.64	5.62	-0.43 ± 2.35	14.81 ± 2.64



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.

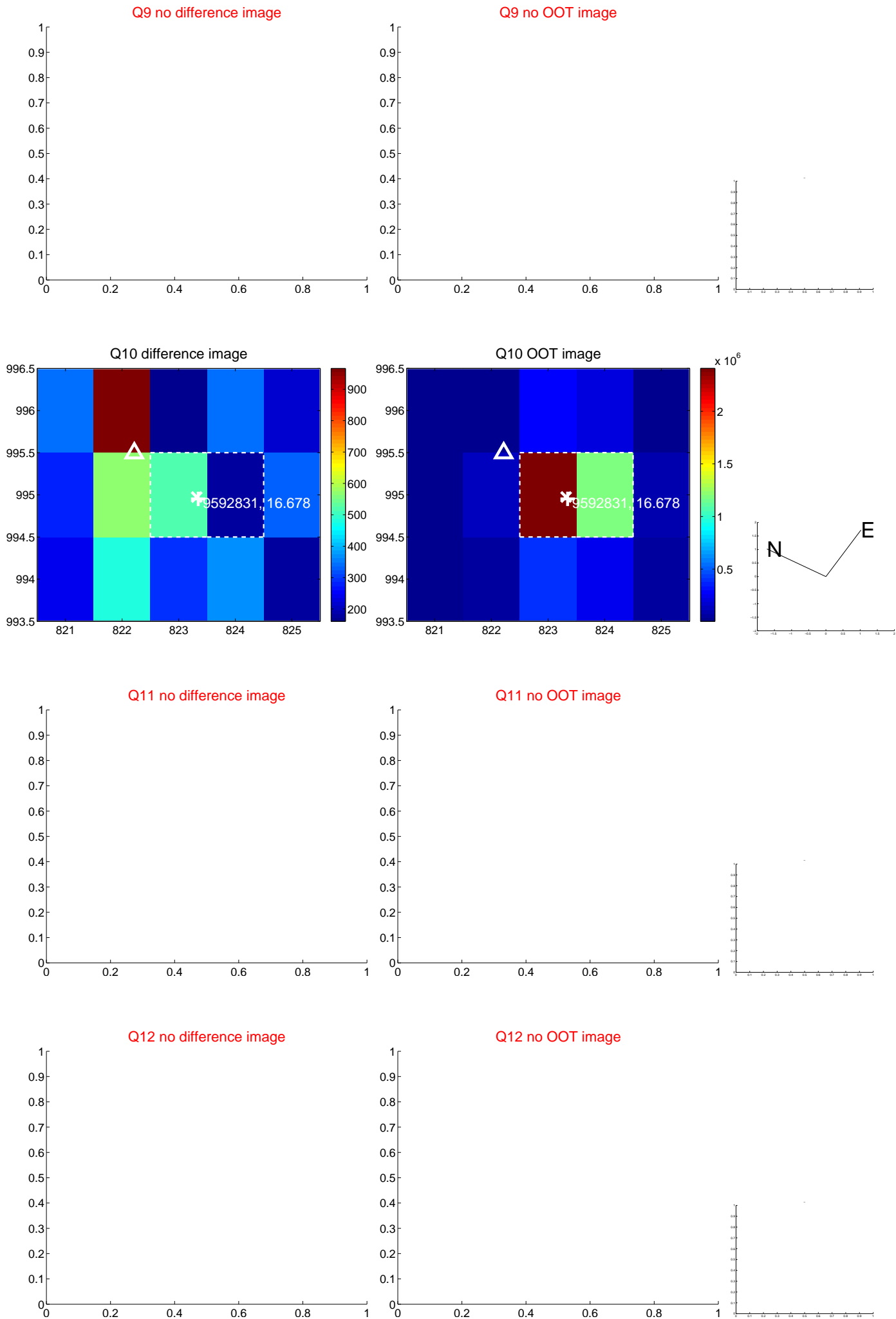
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



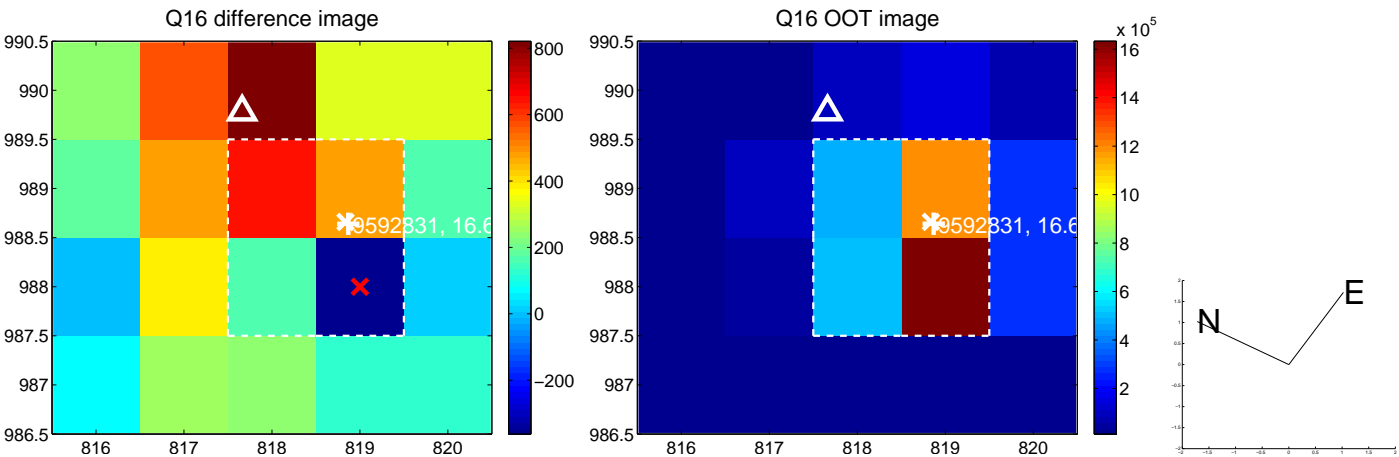
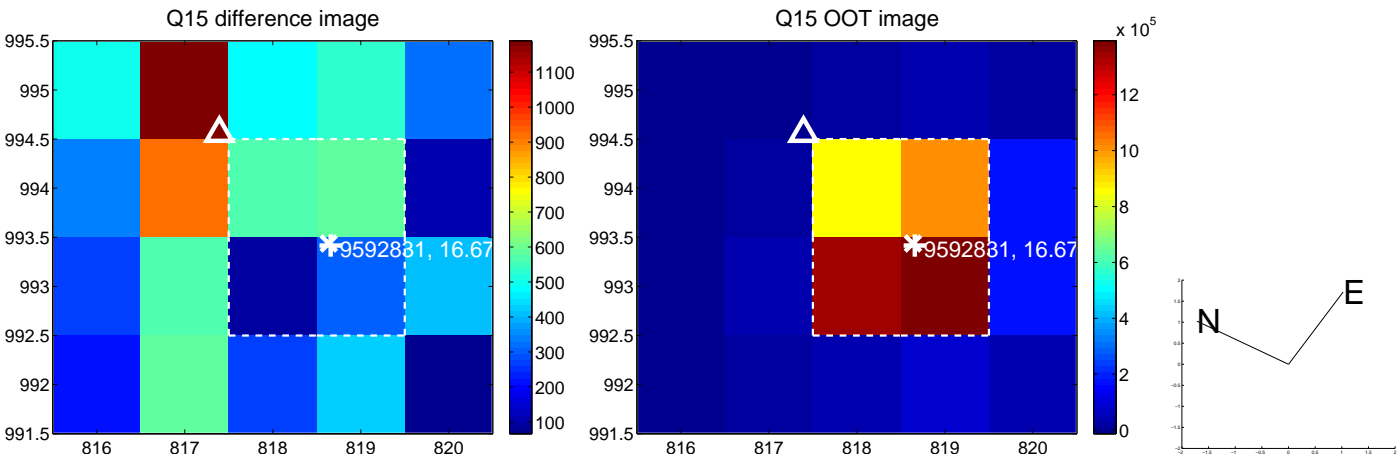
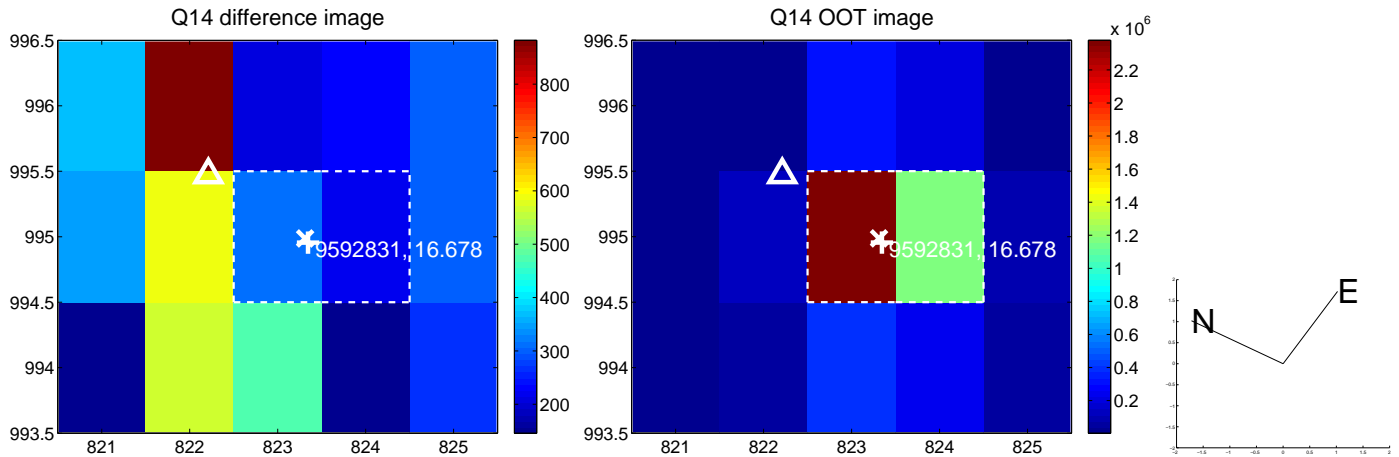
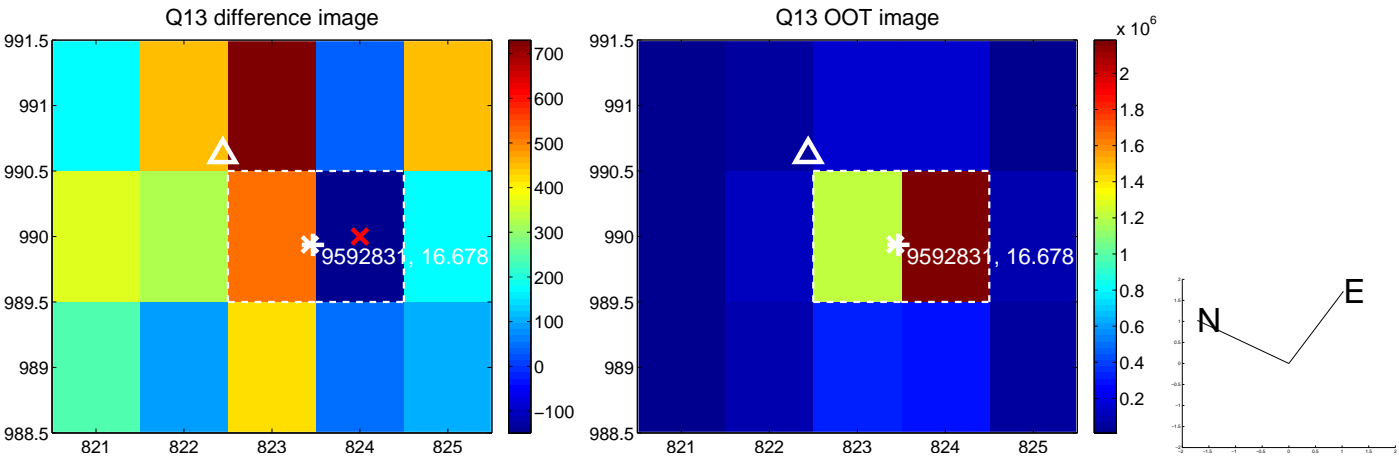
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



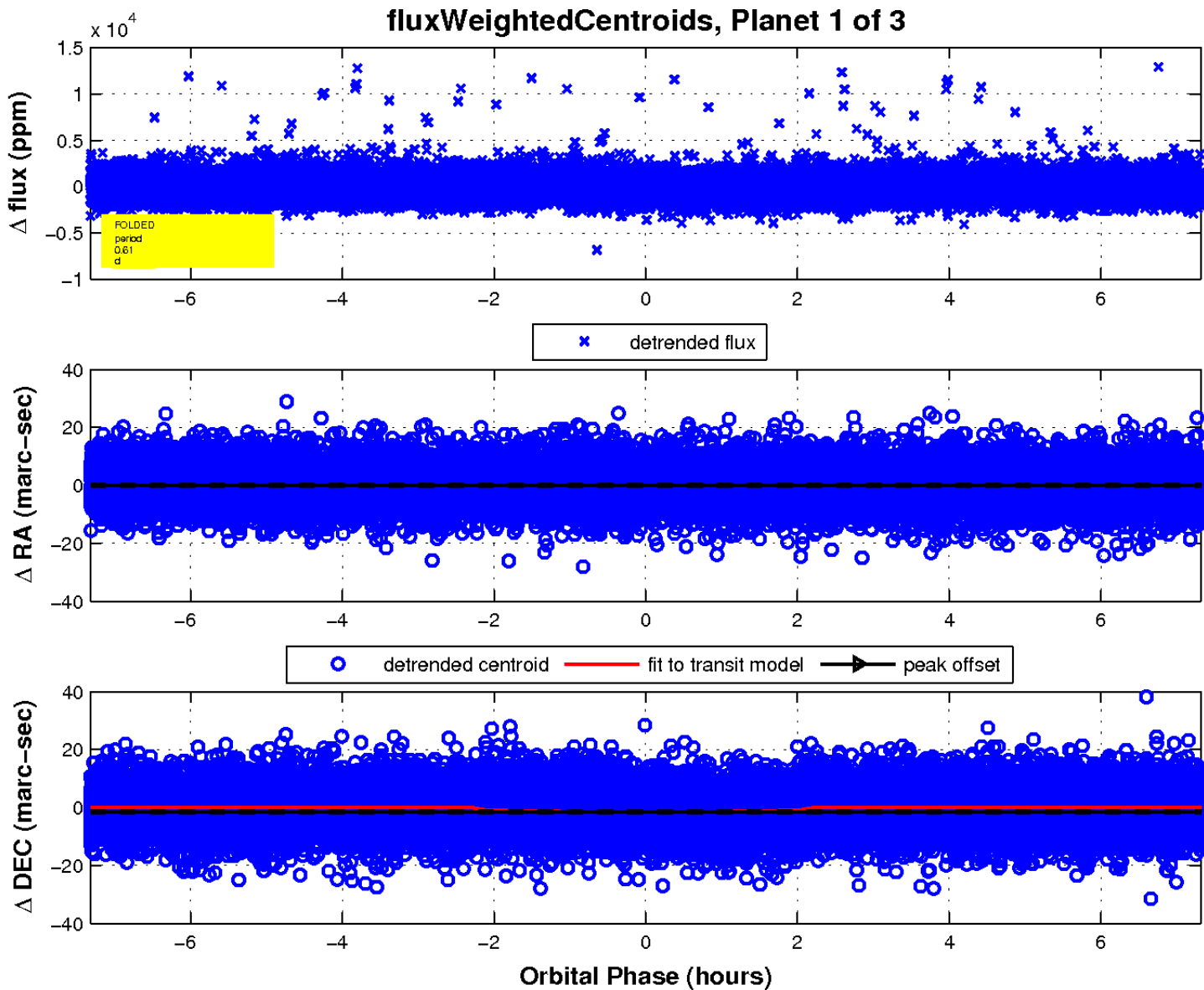
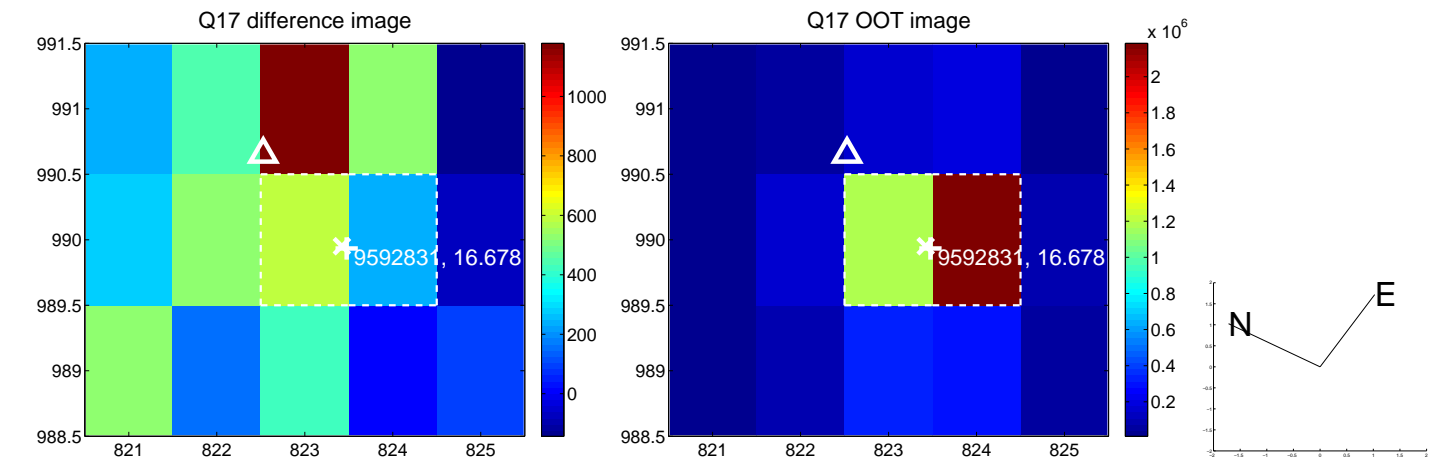
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

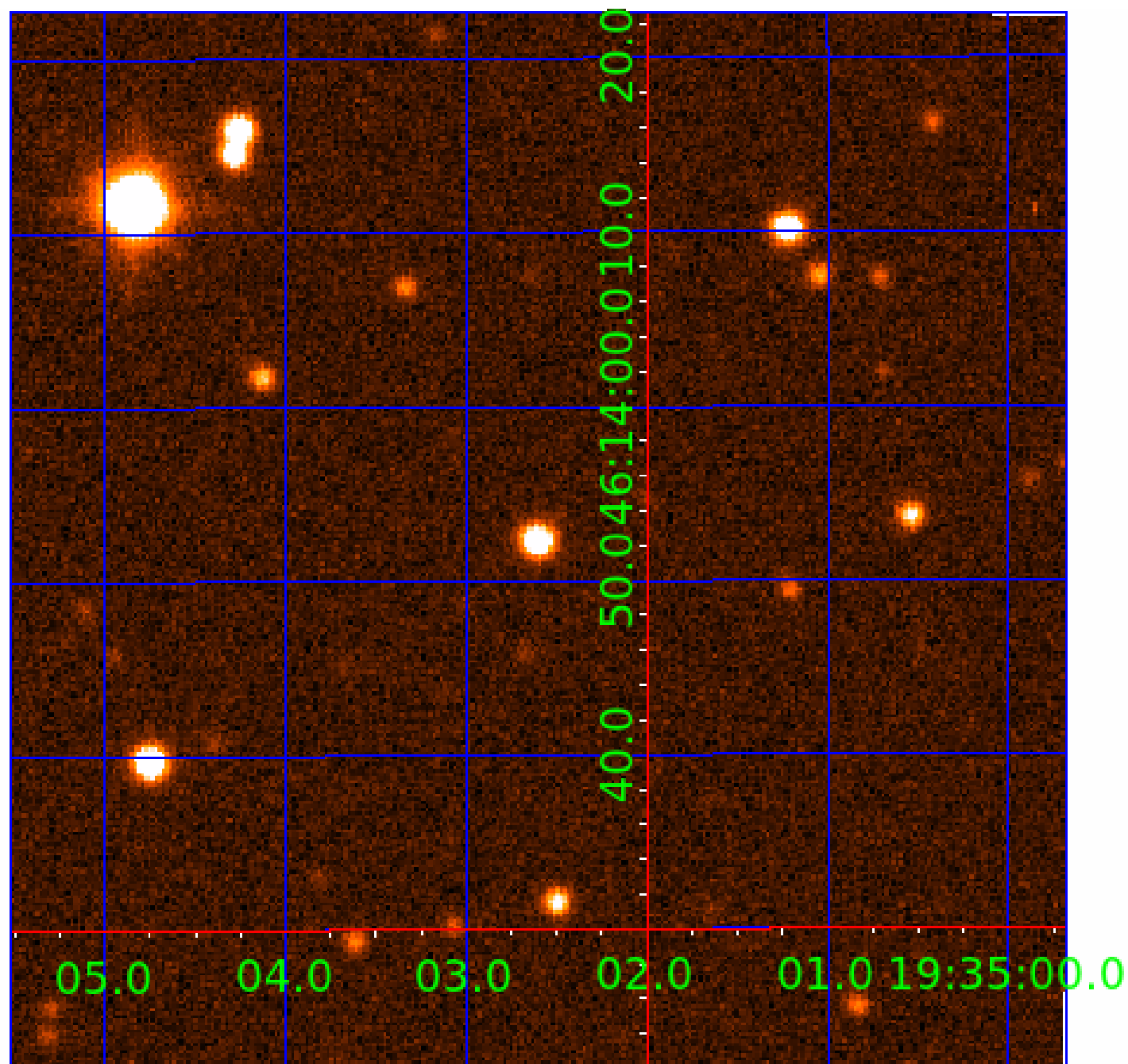


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009592831

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})
009592831-01	OBS	7947.01	0.609643	131.946706	102.1	4.445	10.1	7.1	0.81	5296	0.81	2512.03
009592831-02	OBS	No	11.266104	132.997448	11230.8	0.785	9.9	4.2	0.81	5296	11.62	51.41
009592831-03	OBS	No	5.270752	133.834031	596.0	2.033	9.4	6.2	0.81	5296	2.13	141.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009592831-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
009592831-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009592831-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

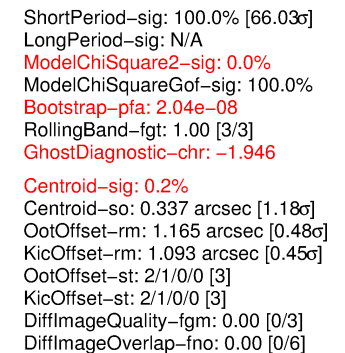
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 009592831-02

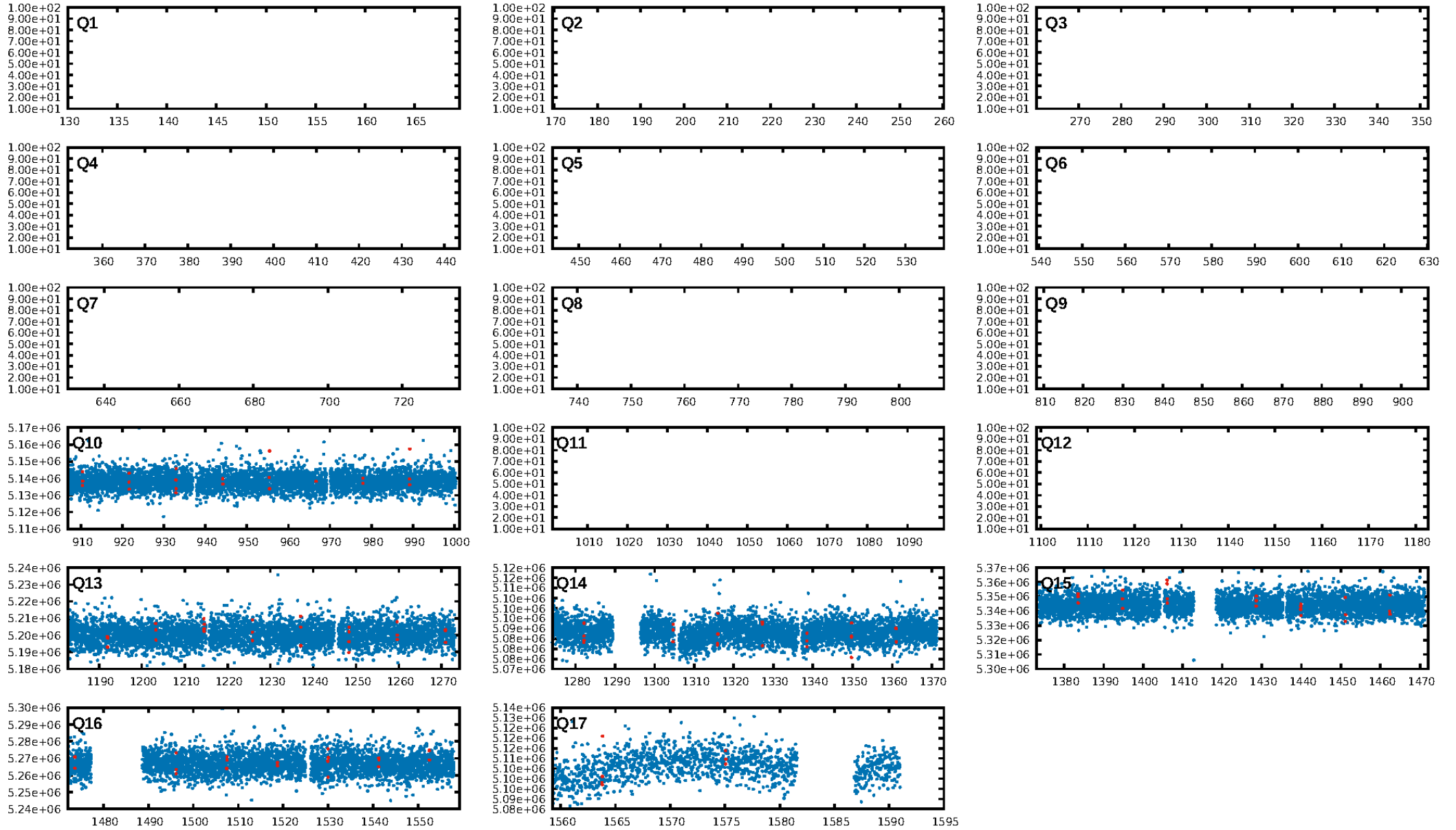
No Significant Match Found

KIC: 9592831 Candidate: 2 of 3 Period: 11.266 d

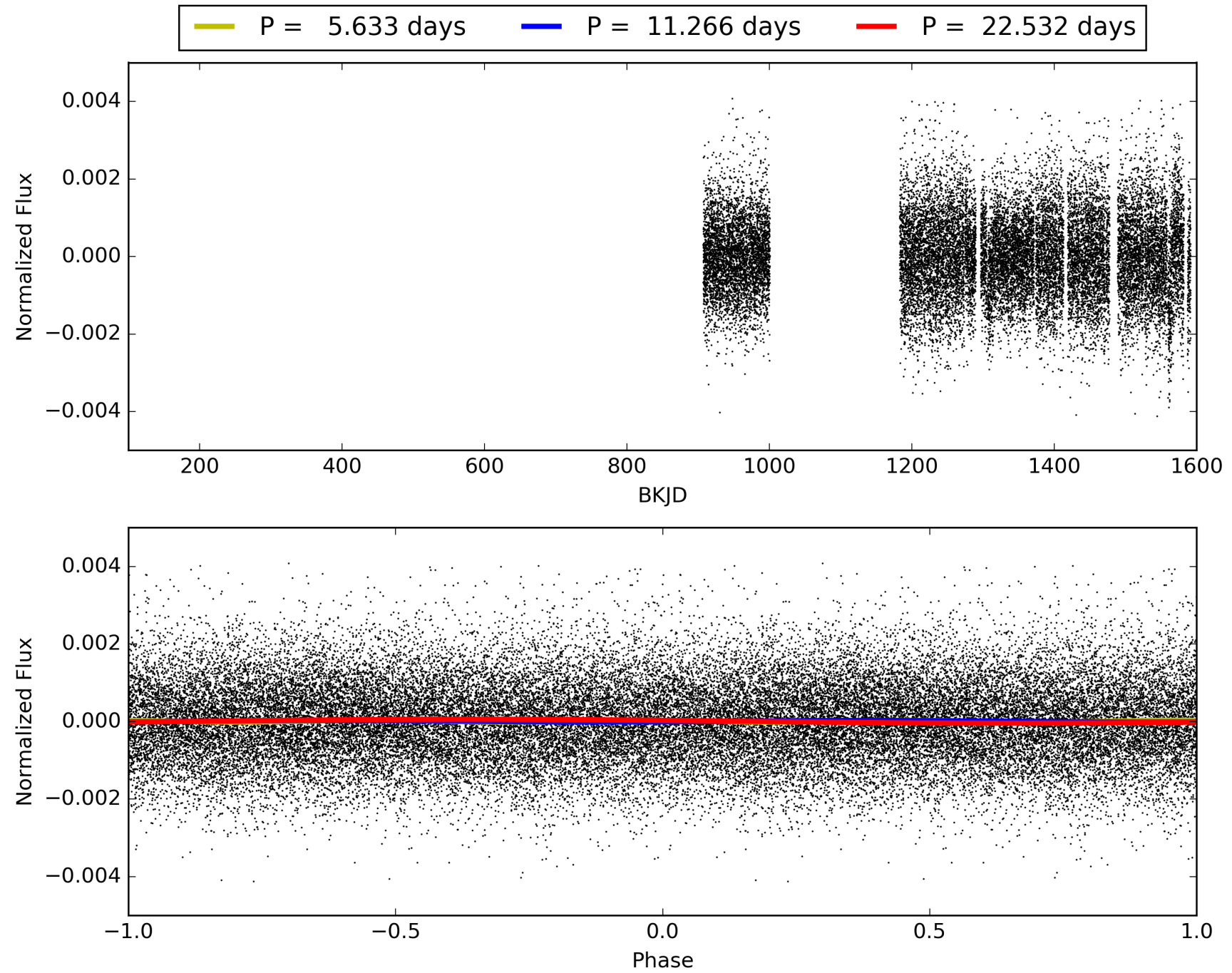


This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009592831-02, PDC Light Curves

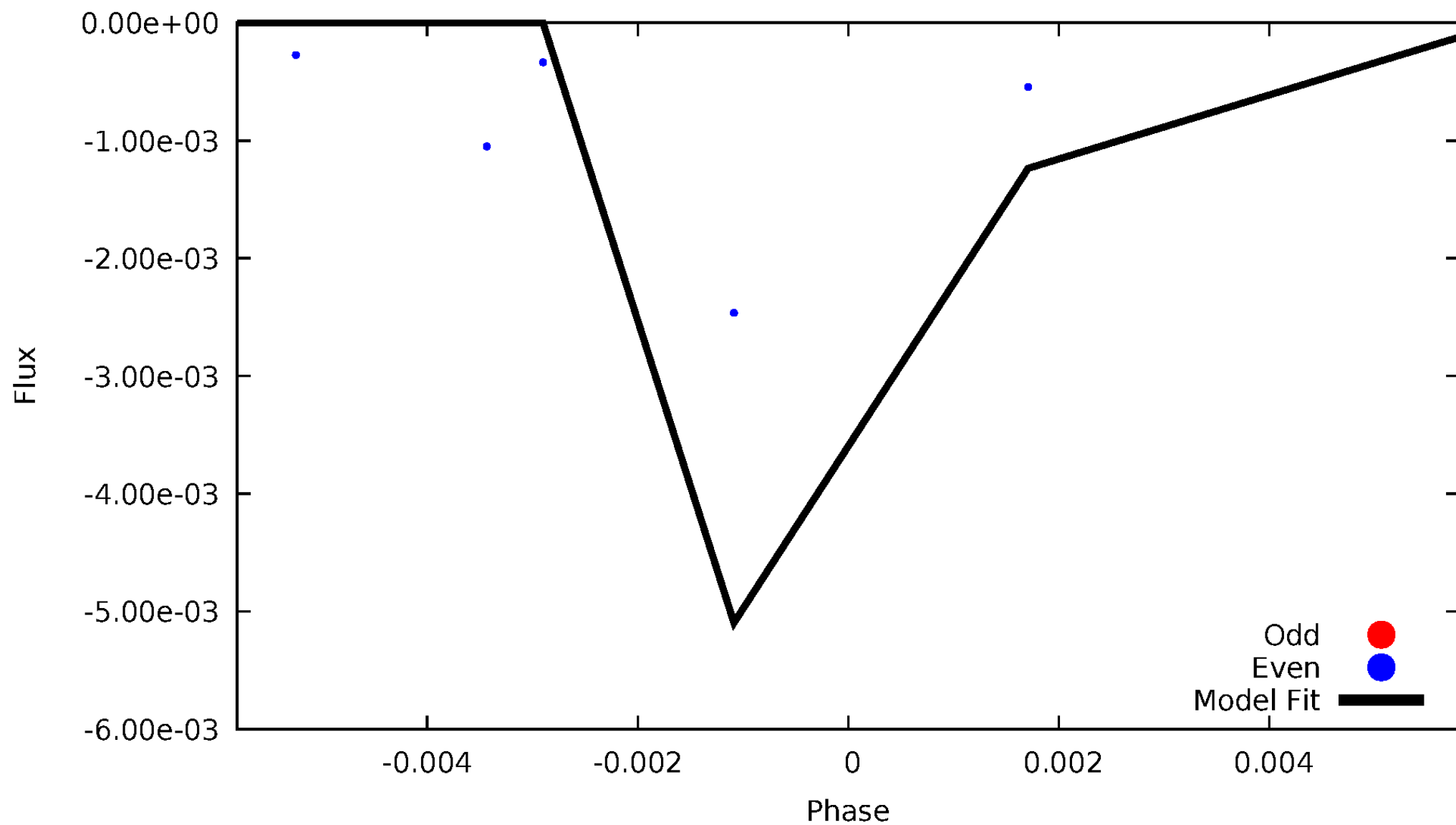


TCE 009592831-02



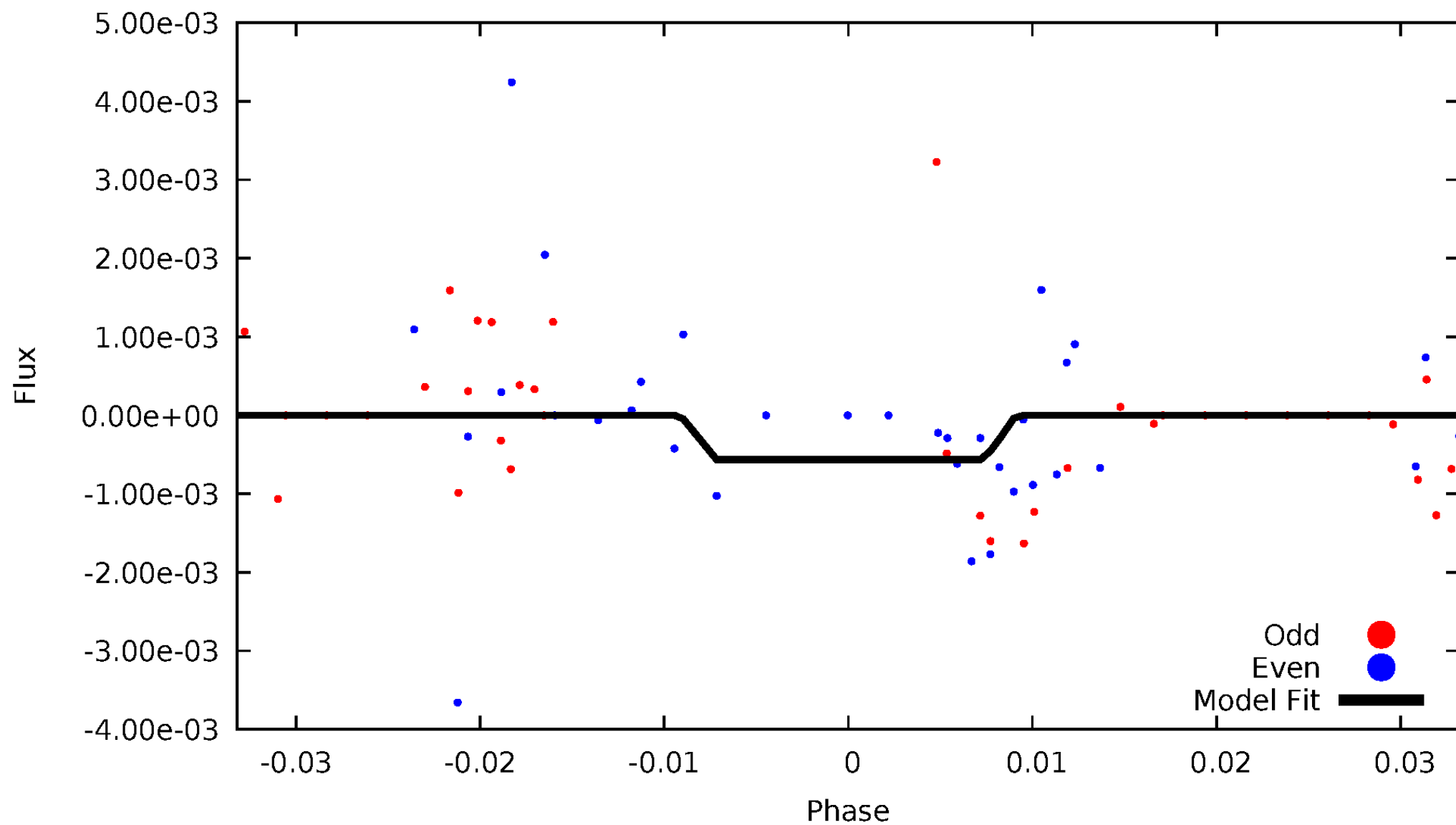
DV Odd/Even

TCE 009592831-02



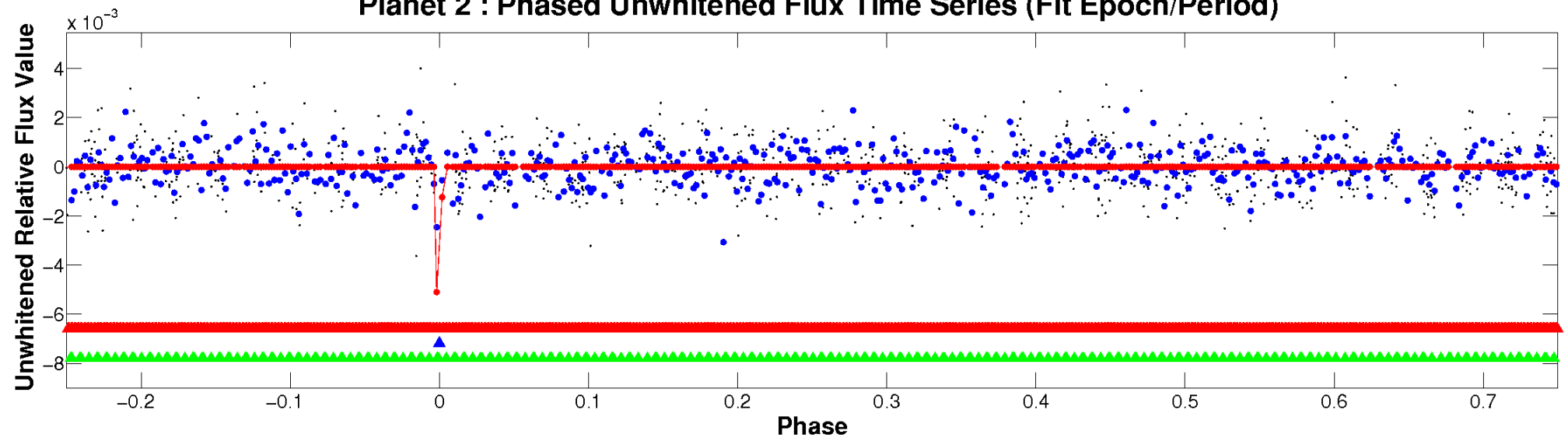
ALT Odd/Even

TCE 009592831-02

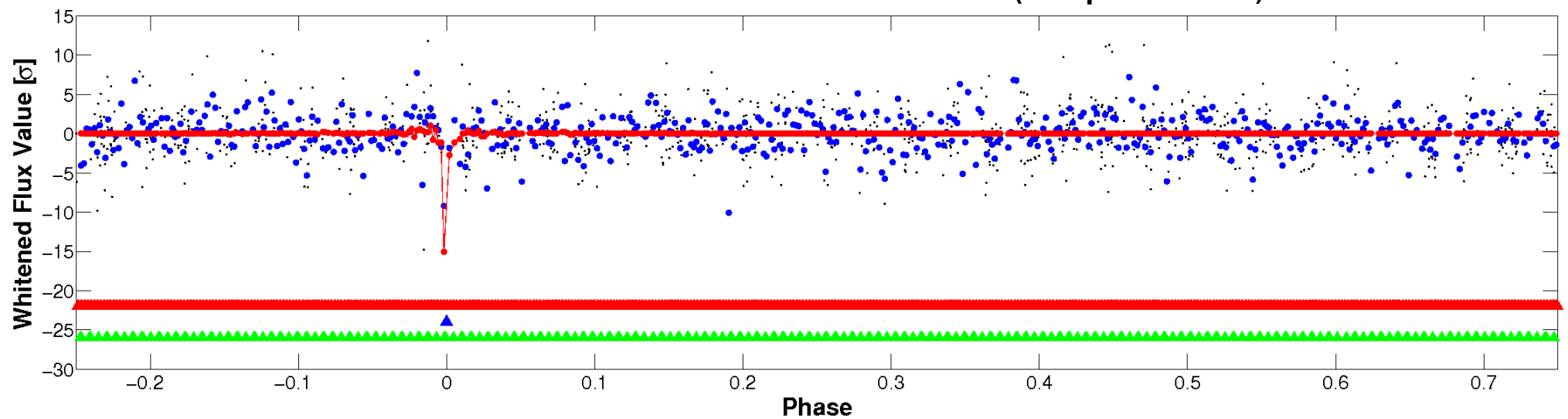


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

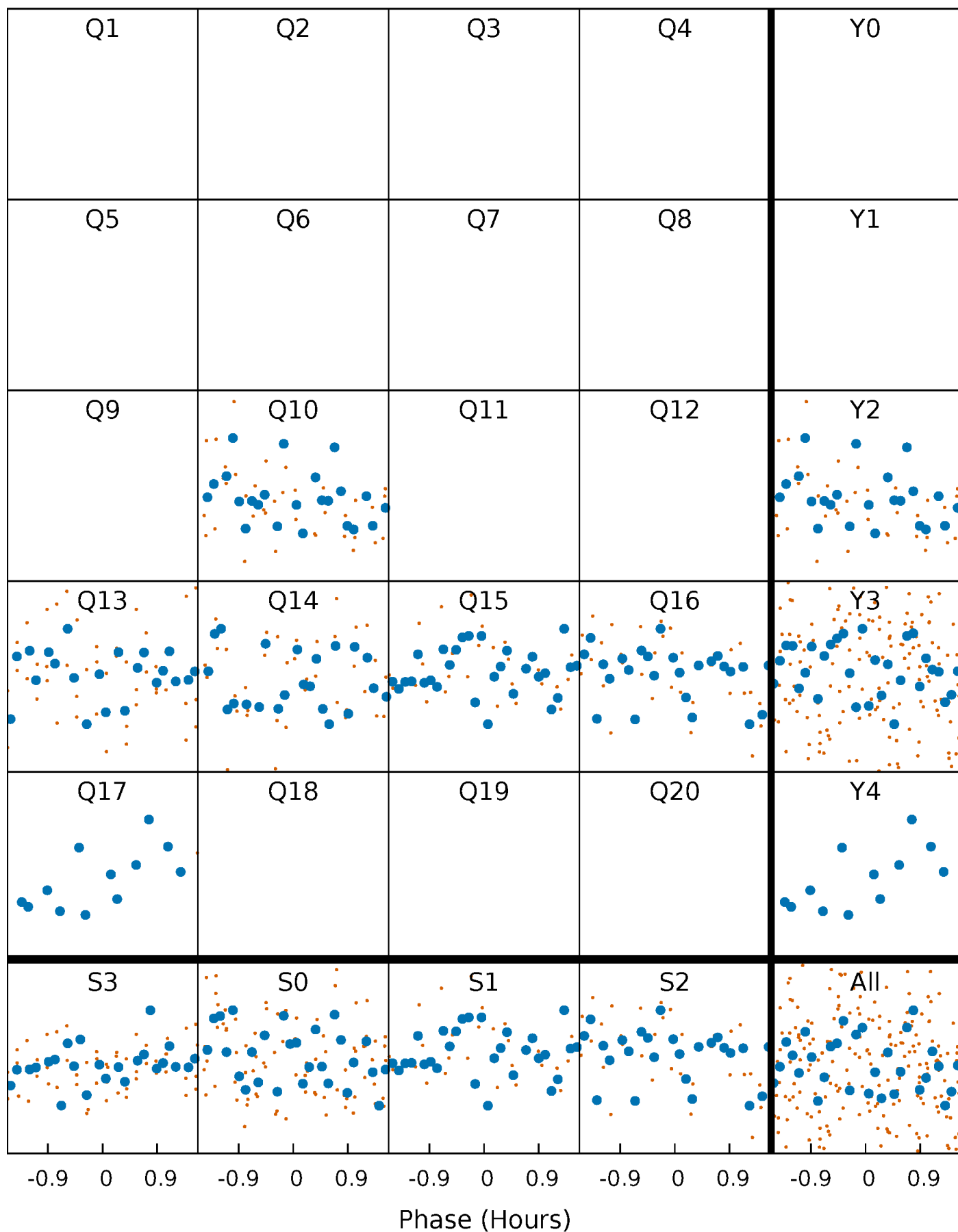


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



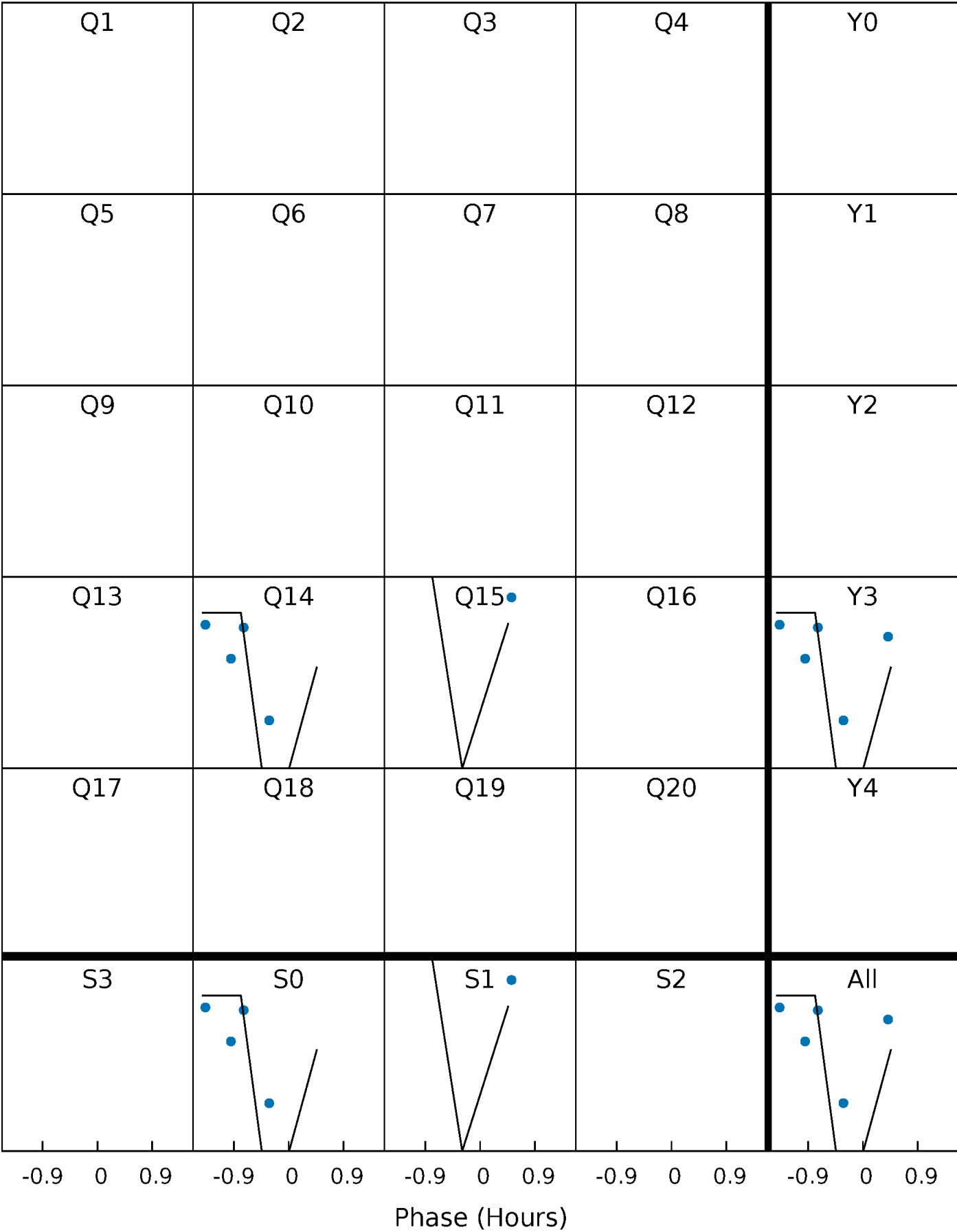
PDC Quarter-Phased Transit Curves

TCE 009592831-02 P= 11.266104 Days $T_0=132.997448$ (BKJD)



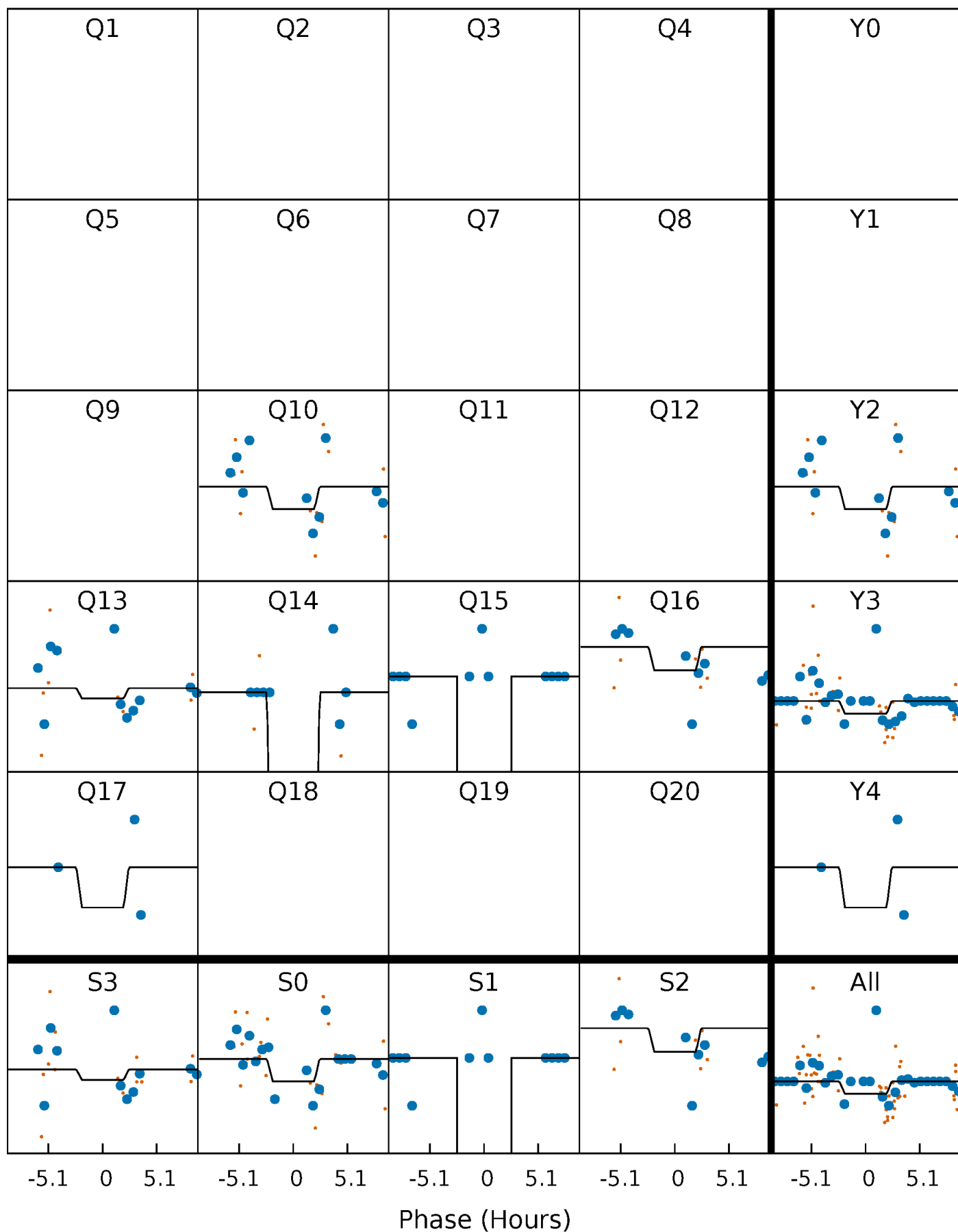
DV Quarter-Phased Transit Curves

TCE 009592831-02 P= 11.266104 Days T₀=132.997448 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

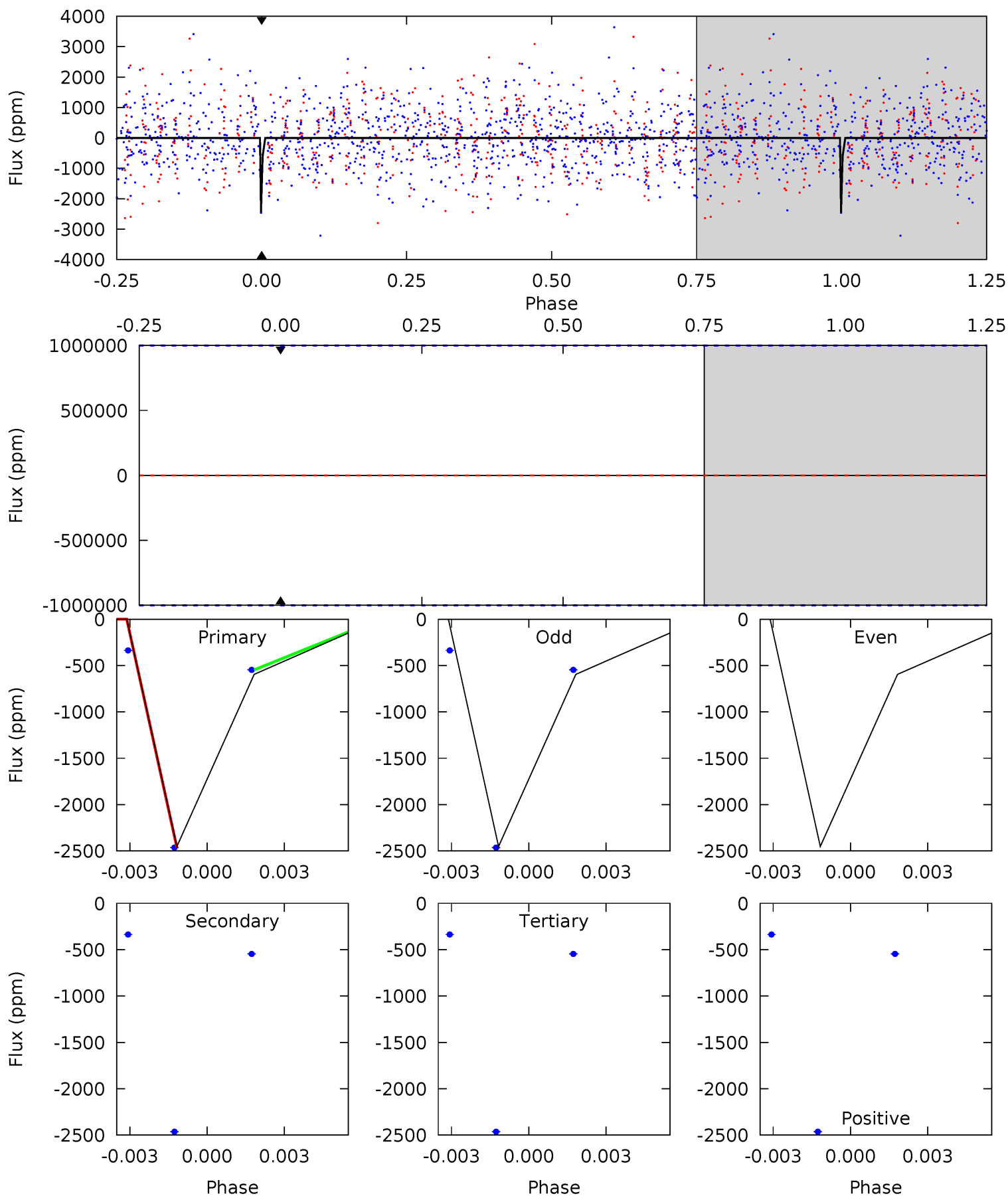
TCE 009592831-02 P= 11.266407 Days $T_0=133.033051$ (BKJD)



DV Model-Shift Uniqueness Test

009592831-02, P = 11.266104 Days, E = 132.997448 Days

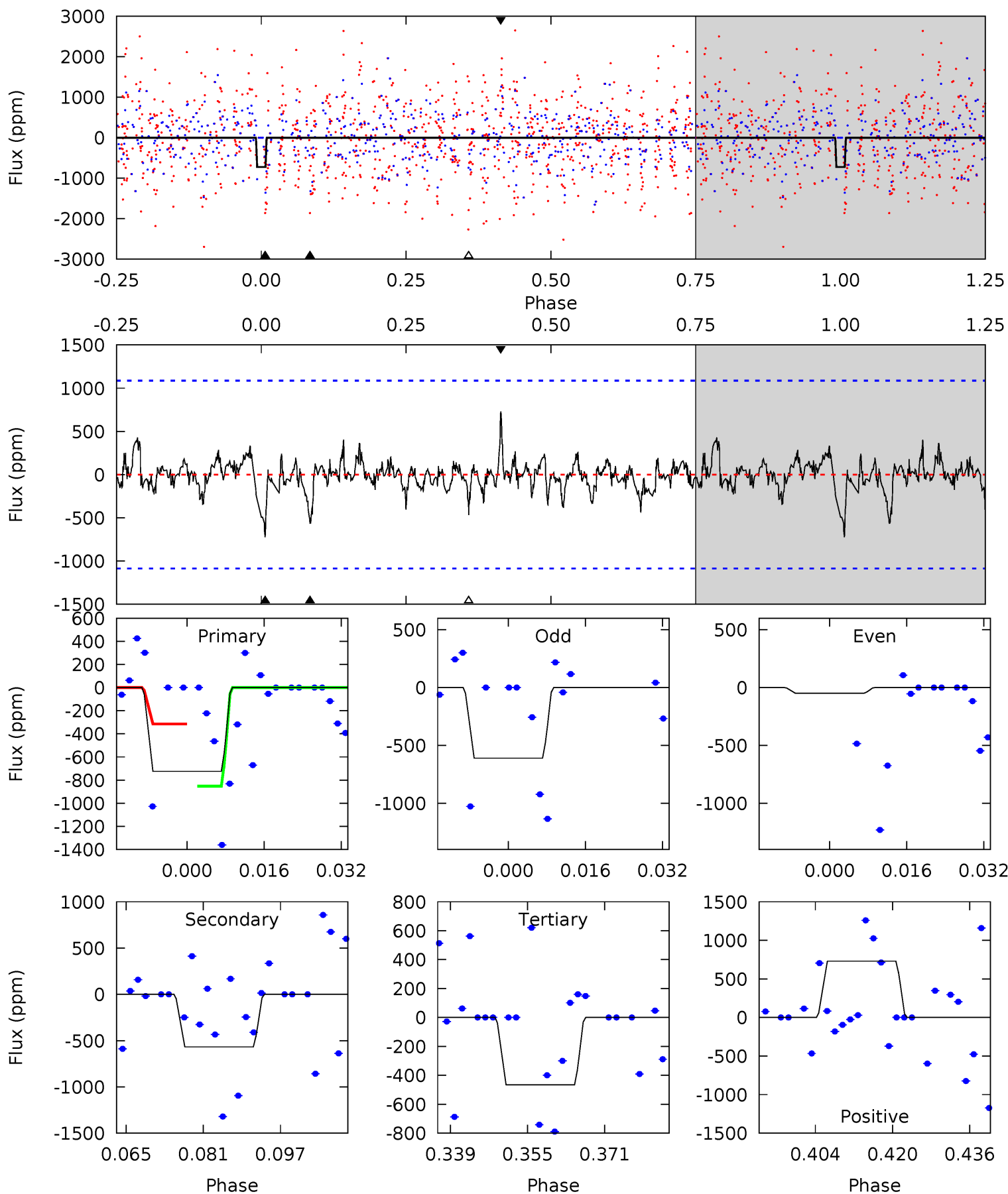
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0.00



Alt Model-Shift Uniqueness Test

009592831-02, P = 11.266407 Days, E = 133.033051 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.29	2.58	2.11	3.31	4.93	2.41	0.68	1.18	-0.02	0.46	-0.74	1.16	0.95	0.50	0.95



Stellar Parameters For KIC 009592831

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5296^{+190}_{-174}	$4.576^{+0.030}_{-0.120}$	$0.120^{+0.250}_{-0.300}$	$0.815^{+0.138}_{-0.064}$	$0.911^{+0.066}_{-0.090}$	$2.373^{+0.371}_{-0.839}$
	+4%/-3%	+1%/-3%	+208%/-250%	+17%/-8%	+7%/-10%	+16%/-35%
Source	KIC0	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 009592831-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-0 ± 1000000	$386.92^{+419.41}_{-275.84}$	970^{+49}_{-36}	-1730^{+4316}_{-778}	$0.132^{+7.120}_{-4.940}$
Alt.	-568 ± 220	$346.20^{+430.40}_{-247.11}$	974^{+46}_{-41}	-1800^{+271}_{-44}	$0.022^{+0.235}_{-0.017}$

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

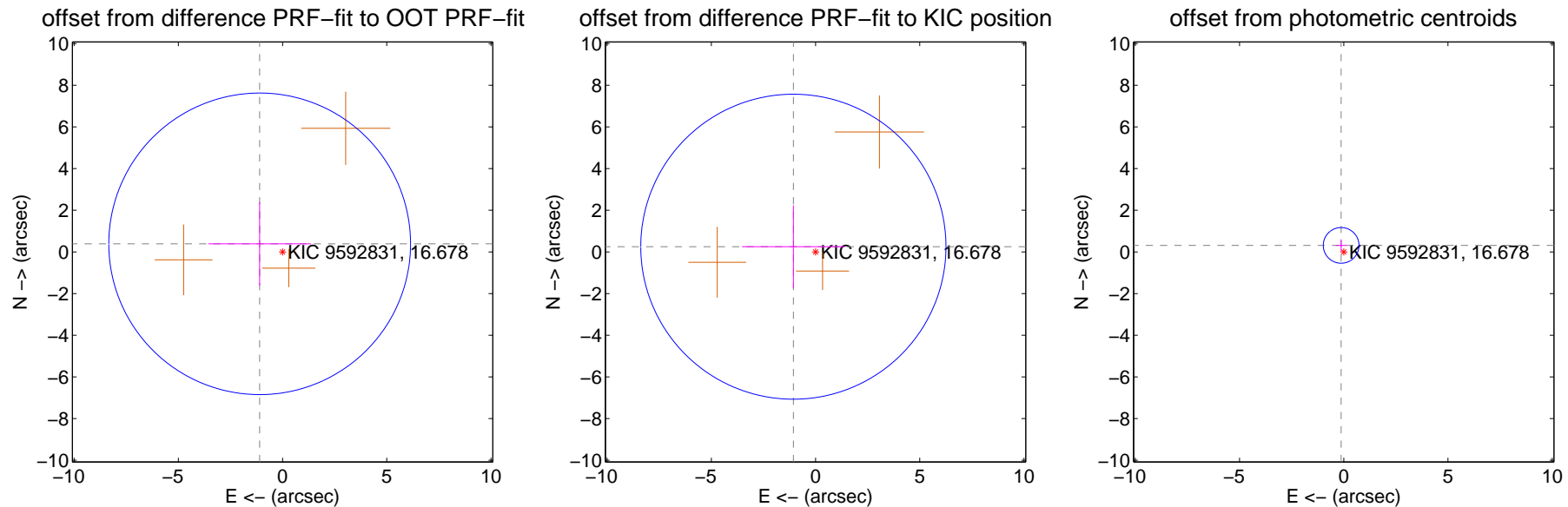
DV Centroid Data

Supplemental centroid analysis for 009592831-02. Kepler magnitude: 16.68. Transit SNR 4.18

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.165 ± 2.412	0.48	1.098 ± 2.459	0.388 ± 1.998
PRF-fit source offset from KIC position	1.093 ± 2.440	0.45	1.064 ± 2.463	0.250 ± 1.983
photometric centroid source offset	0.34 ± 0.29	1.18	0.13 ± 0.26	0.31 ± 0.29



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.

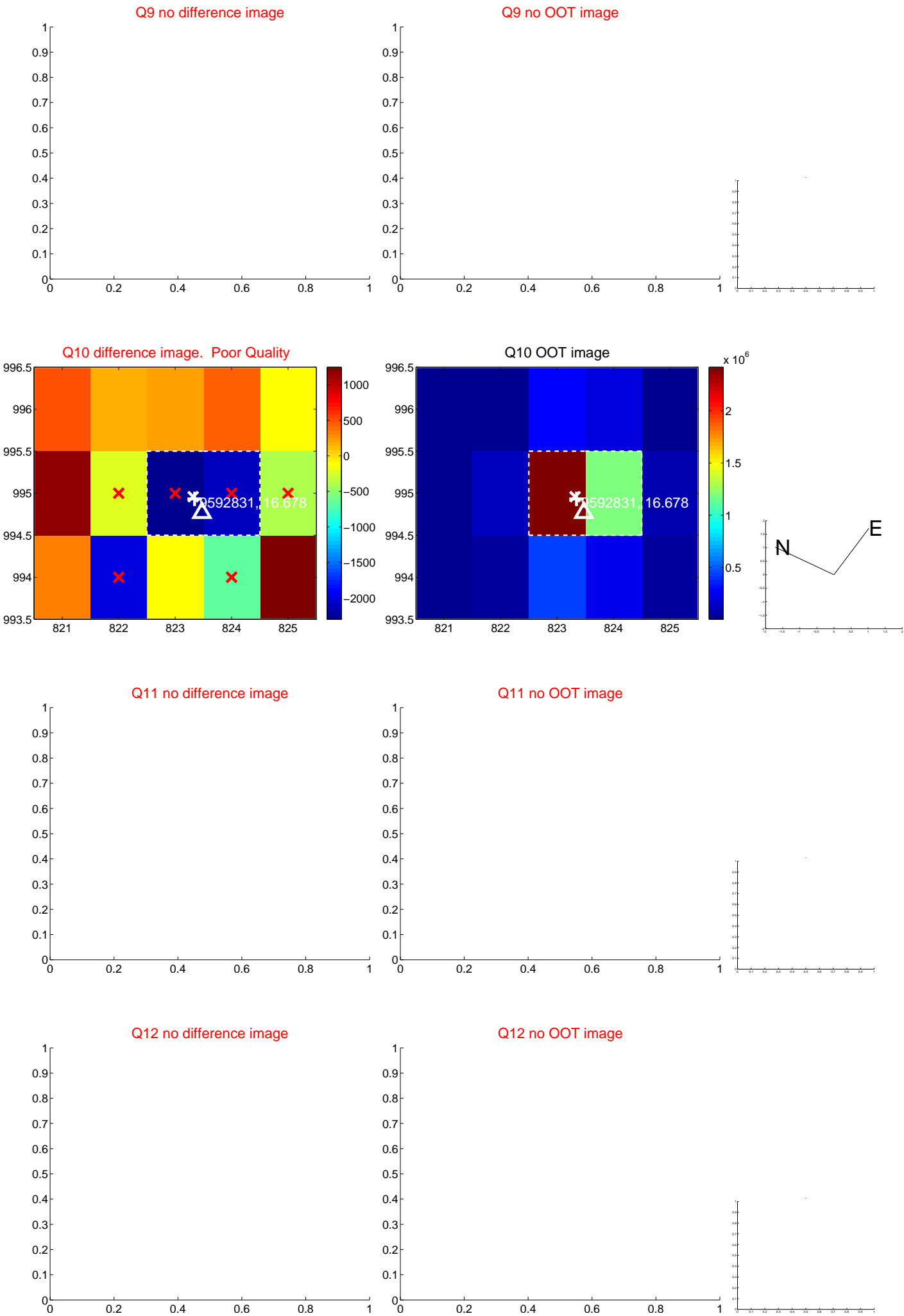
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



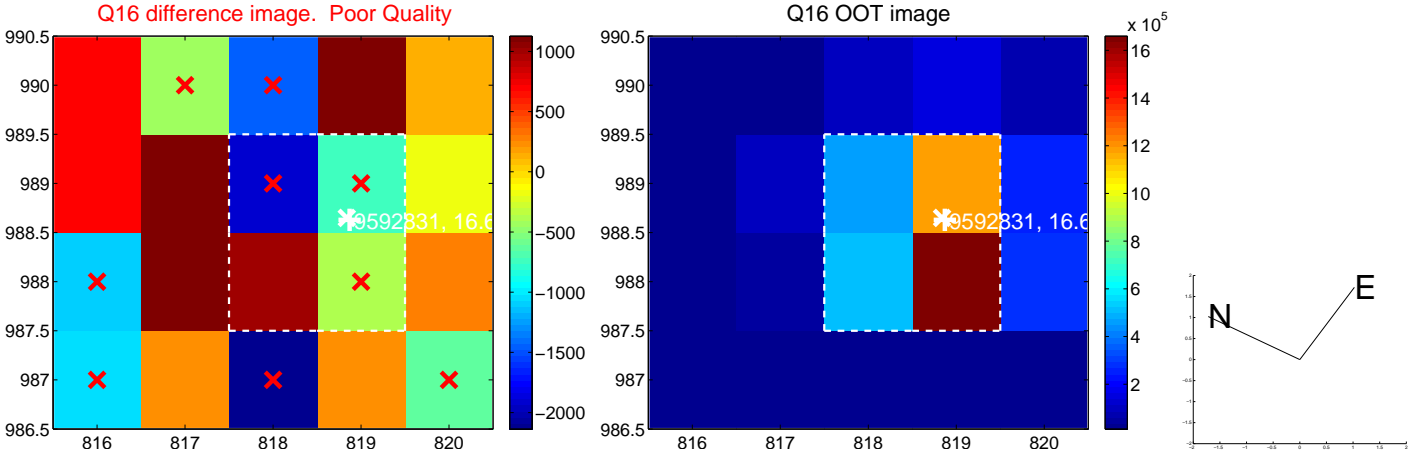
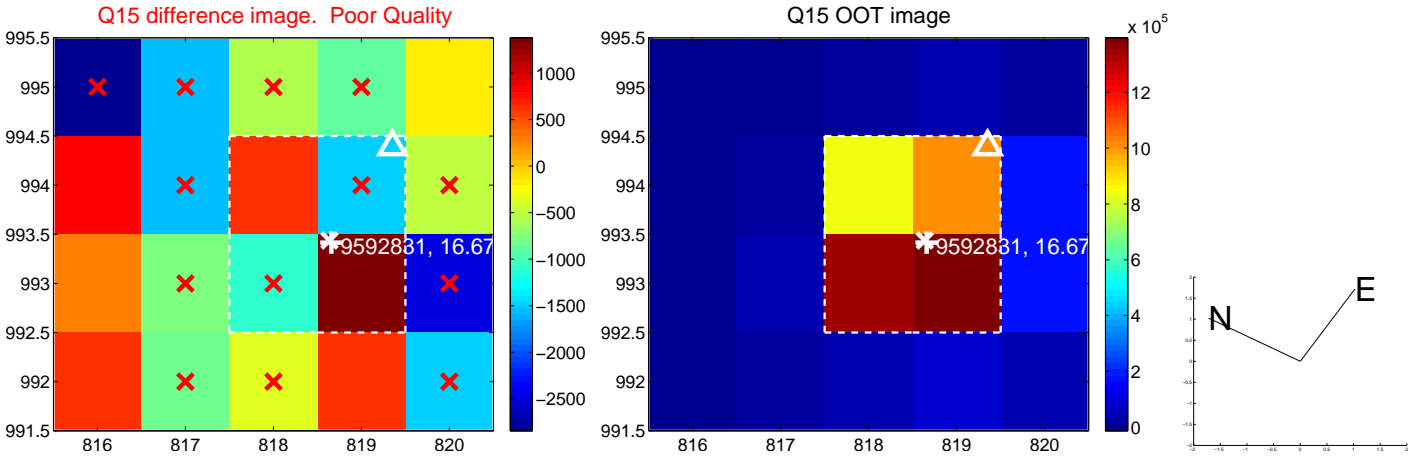
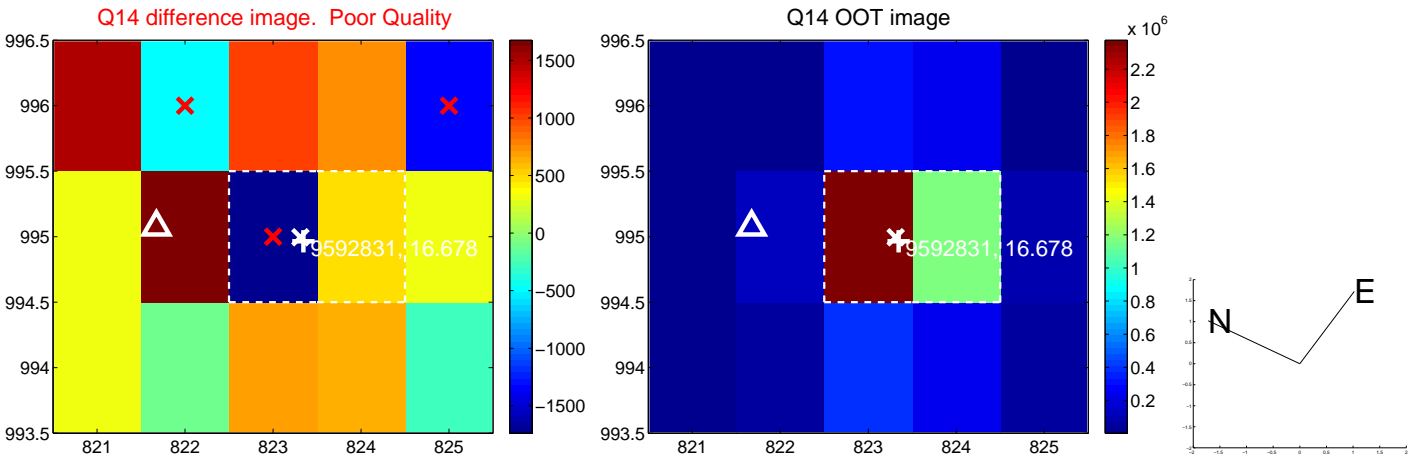
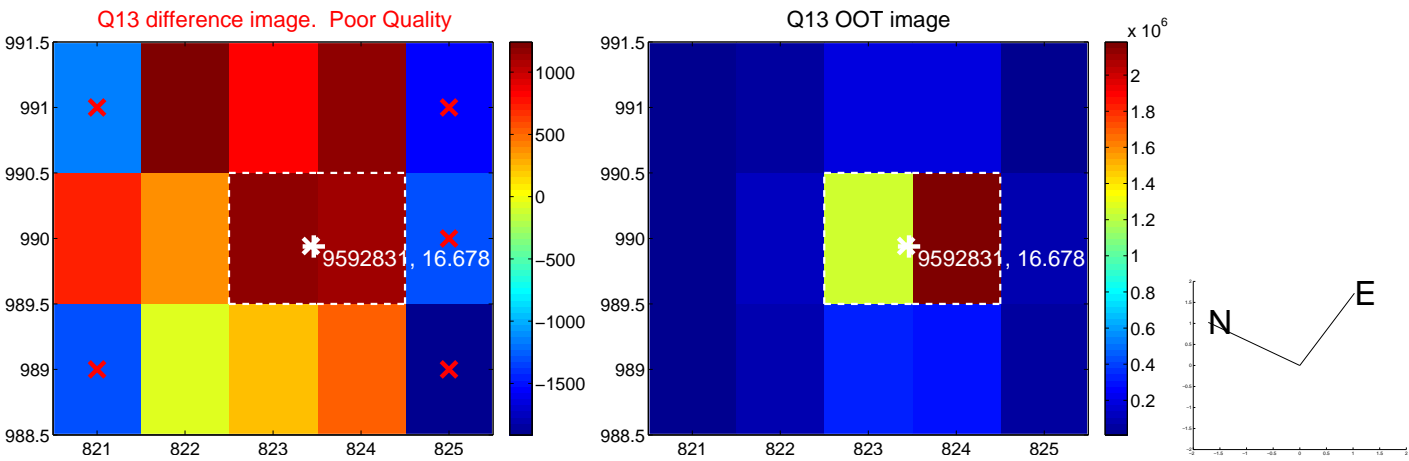
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



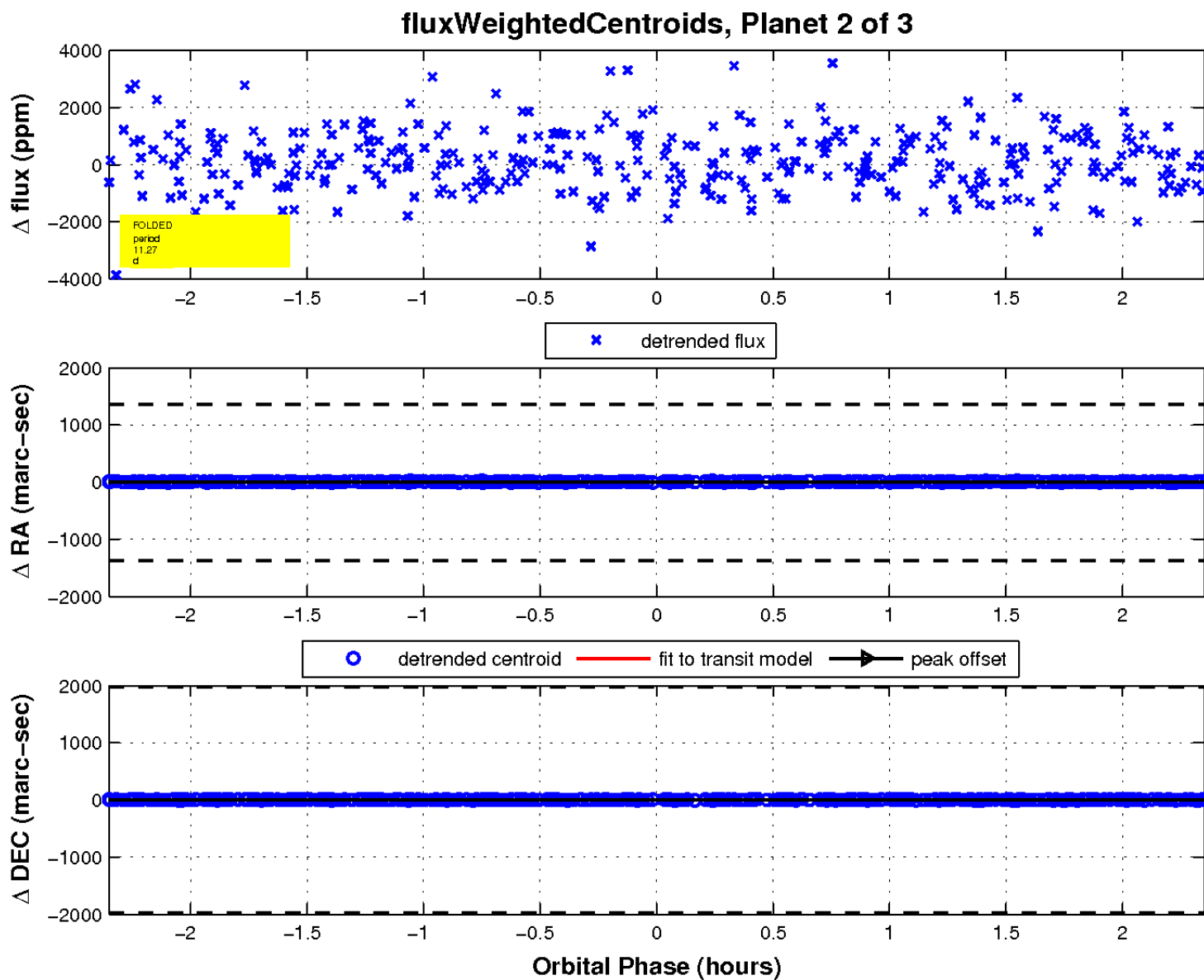
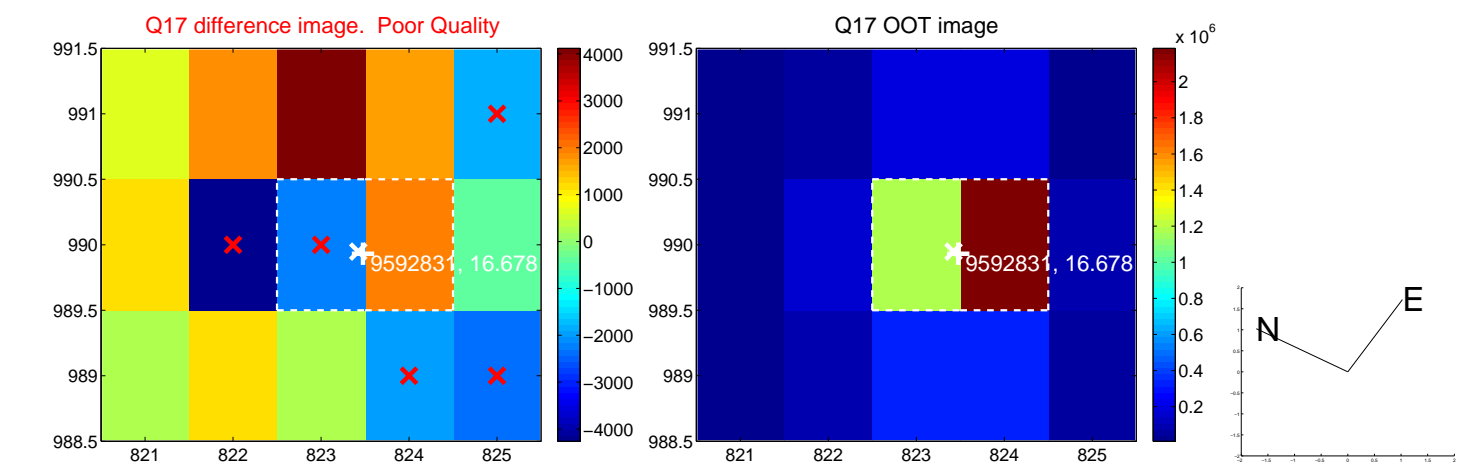
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

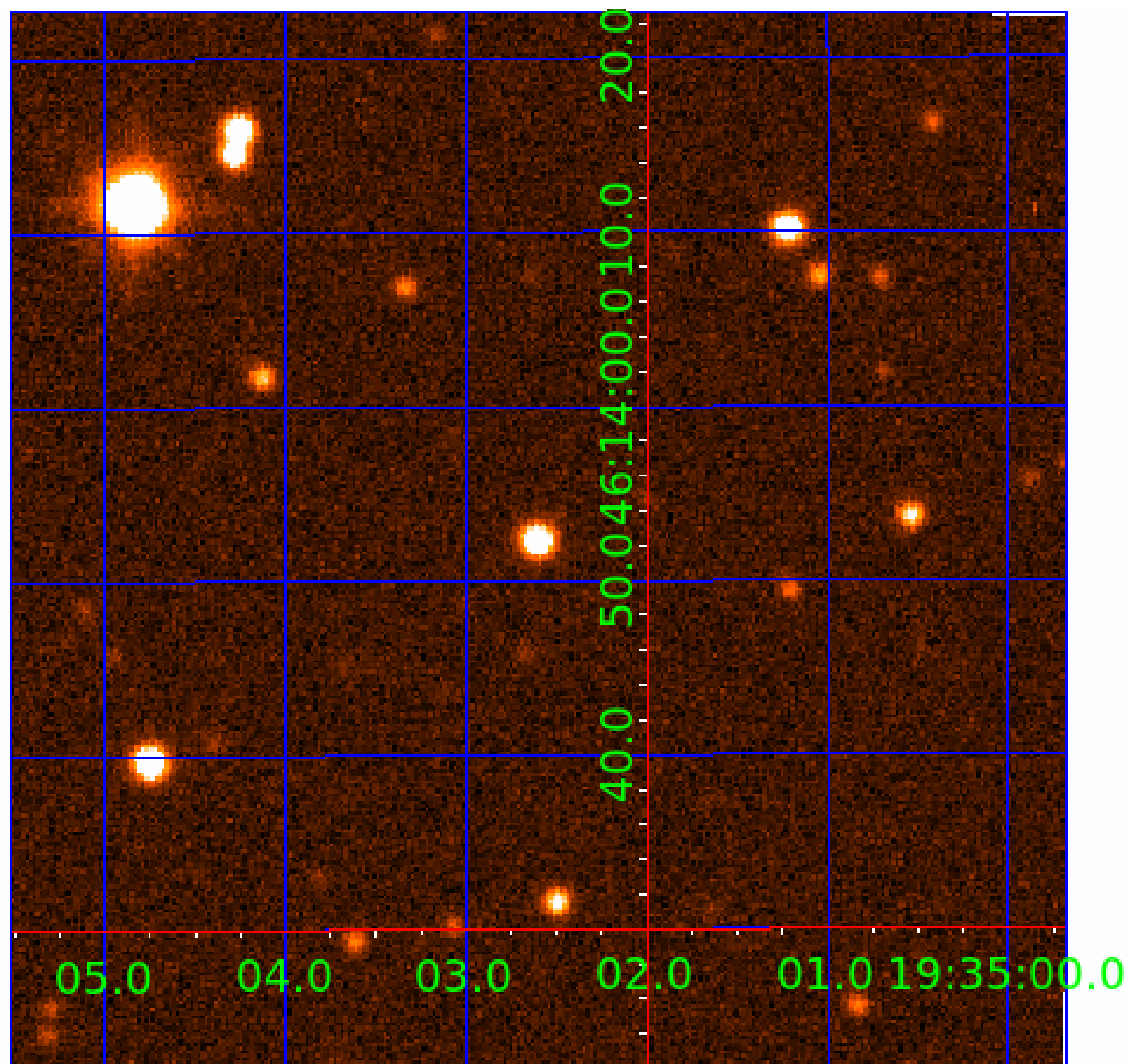


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009592831

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})
009592831-01	OBS	7947.01	0.609643	131.946706	102.1	4.445	10.1	7.1	0.81	5296	0.81	2512.03
009592831-02	OBS	No	11.266104	132.997448	11230.8	0.785	9.9	4.2	0.81	5296	11.62	51.41
009592831-03	OBS	No	5.270752	133.834031	596.0	2.033	9.4	6.2	0.81	5296	2.13	141.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009592831-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
009592831-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
009592831-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

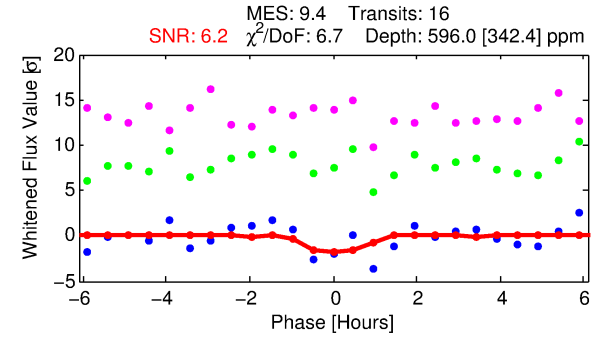
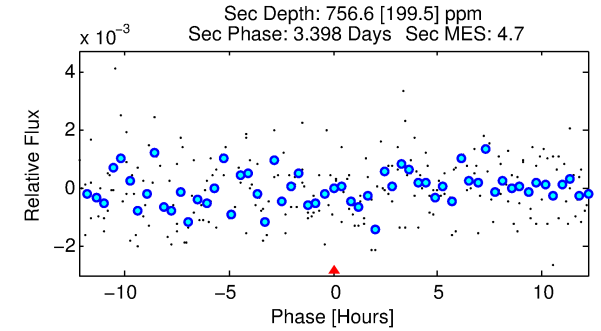
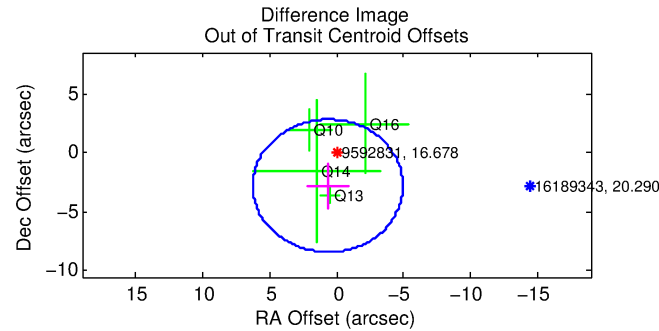
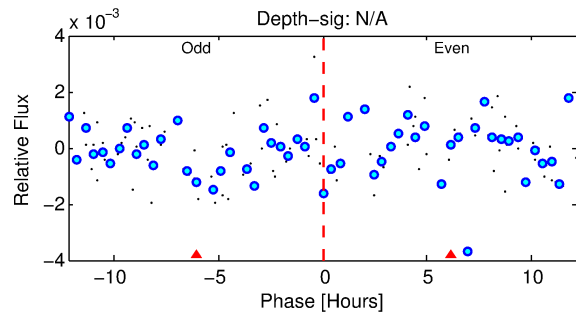
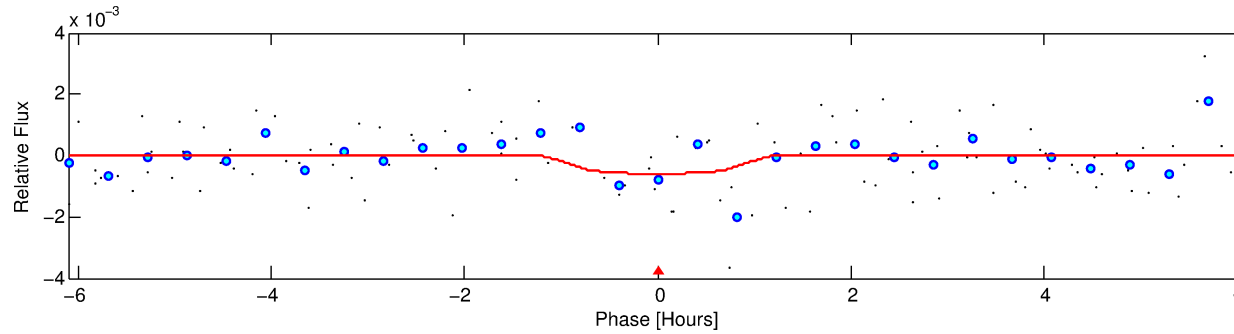
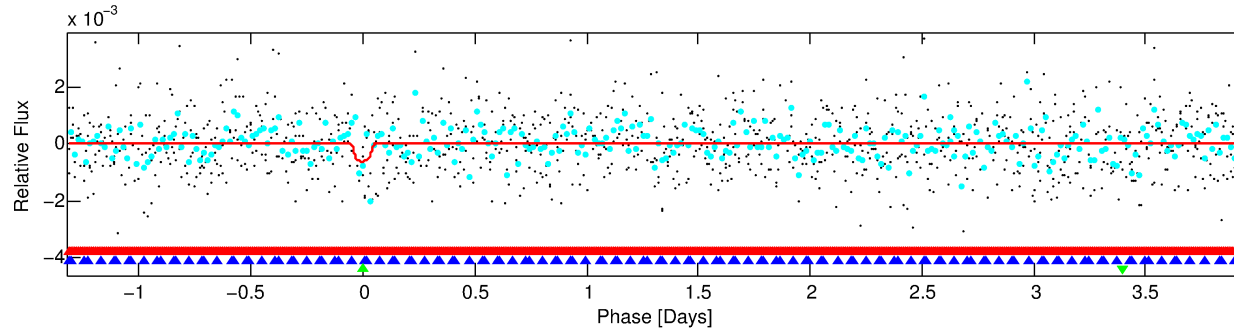
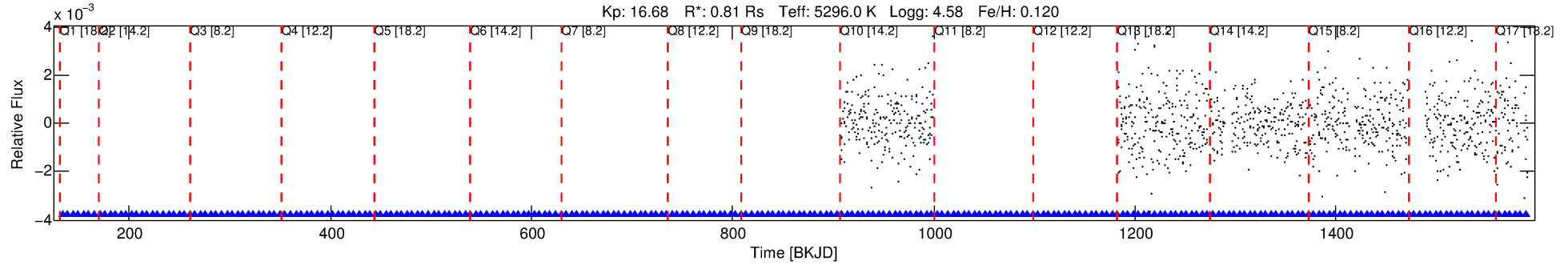
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009592831-03

No Significant Match Found

DV One-Page Summary

KIC: 9592831 Candidate: 3 of 3 Period: 5.271 d



DV Fit Results:

Period = 5.27075 [0.00015] d
Epoch = 133.8340 [0.0309] BKJD
Rp/R* = 0.0240 [0.003]
a/R* = 14.66 [453.53]
b = 0.71 [22.38]
Seff = 141.57 [36.72]
Teq = 880 [57] K
Rp = 2.13 [17.82] Re
a = 0.0575 [0.0084] AU
Ag = 302.13 [5043.51] [0.06σ]
Teffp = 5670 [23660] K [0.20σ]

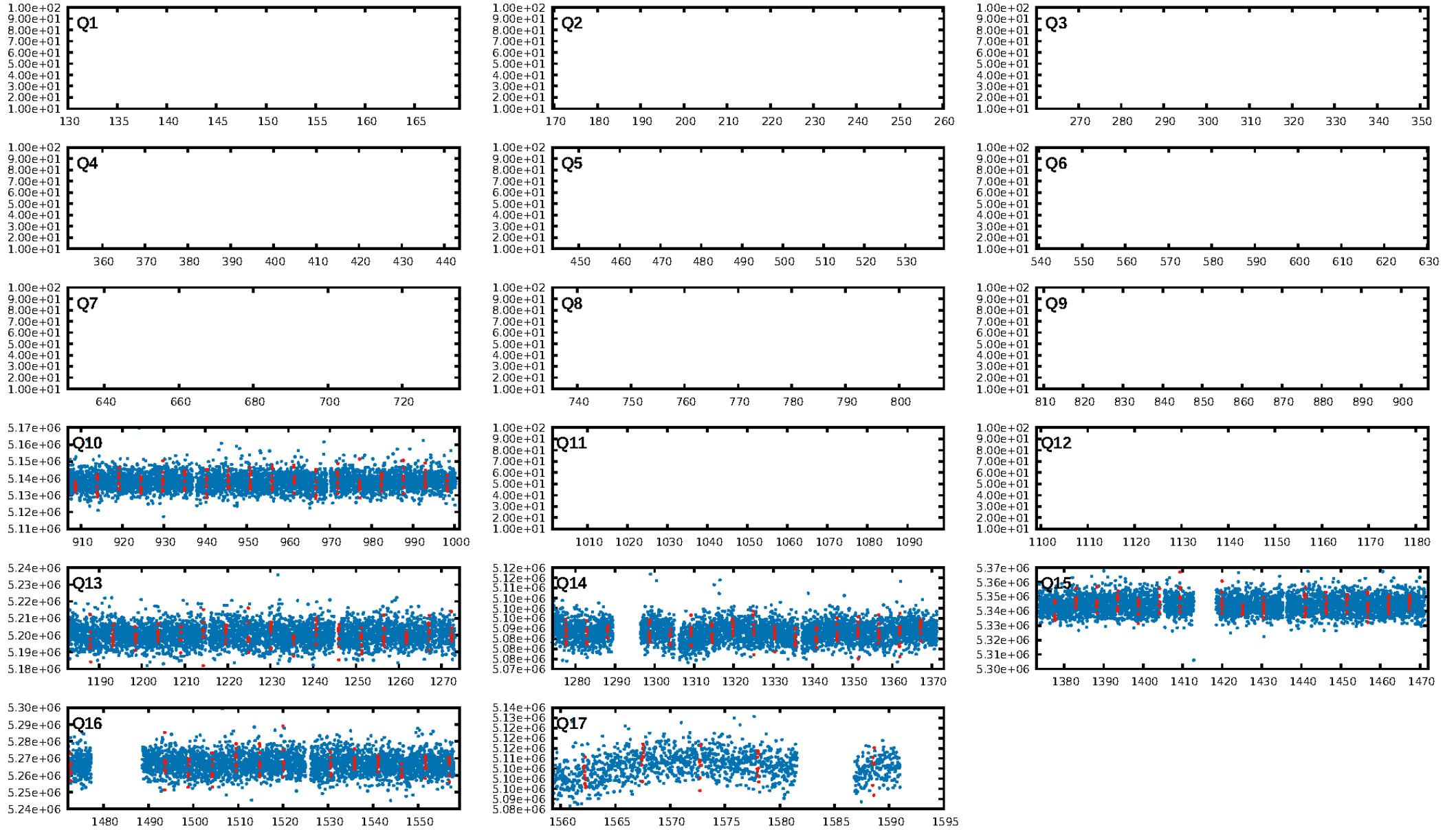
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [22.89σ]
LongPeriod-sig: 100.0% [66.03σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 3.1%
Bootstrap-pfa: 2.18e-08
RollingBand-fgt: 1.00 [16/16]
GhostDiagnostic-chr: 0.845
Centroid-sig: 5.0%
Centroid-so: 3.160 arcsec [1.89σ]
OotOffset-rm: 2.863 arcsec [1.53σ]
OotOffset-st: 2/0/1/1 [4]
KicOffset-rm: 2.992 arcsec [1.60σ]
KicOffset-st: 2/0/1/1 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 0.00 [0/6]

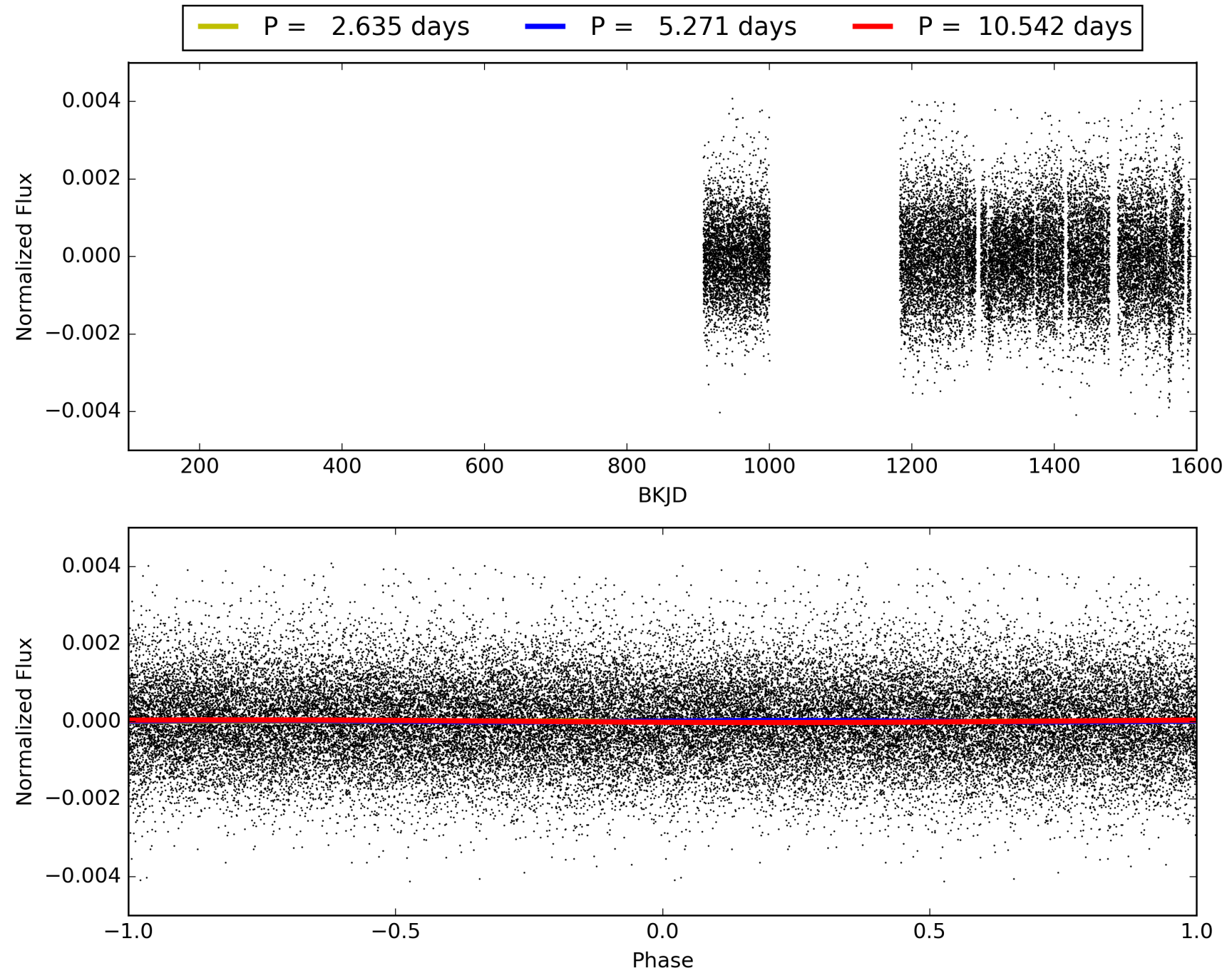
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:09:16 Z

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

TCE 009592831-03, PDC Light Curves

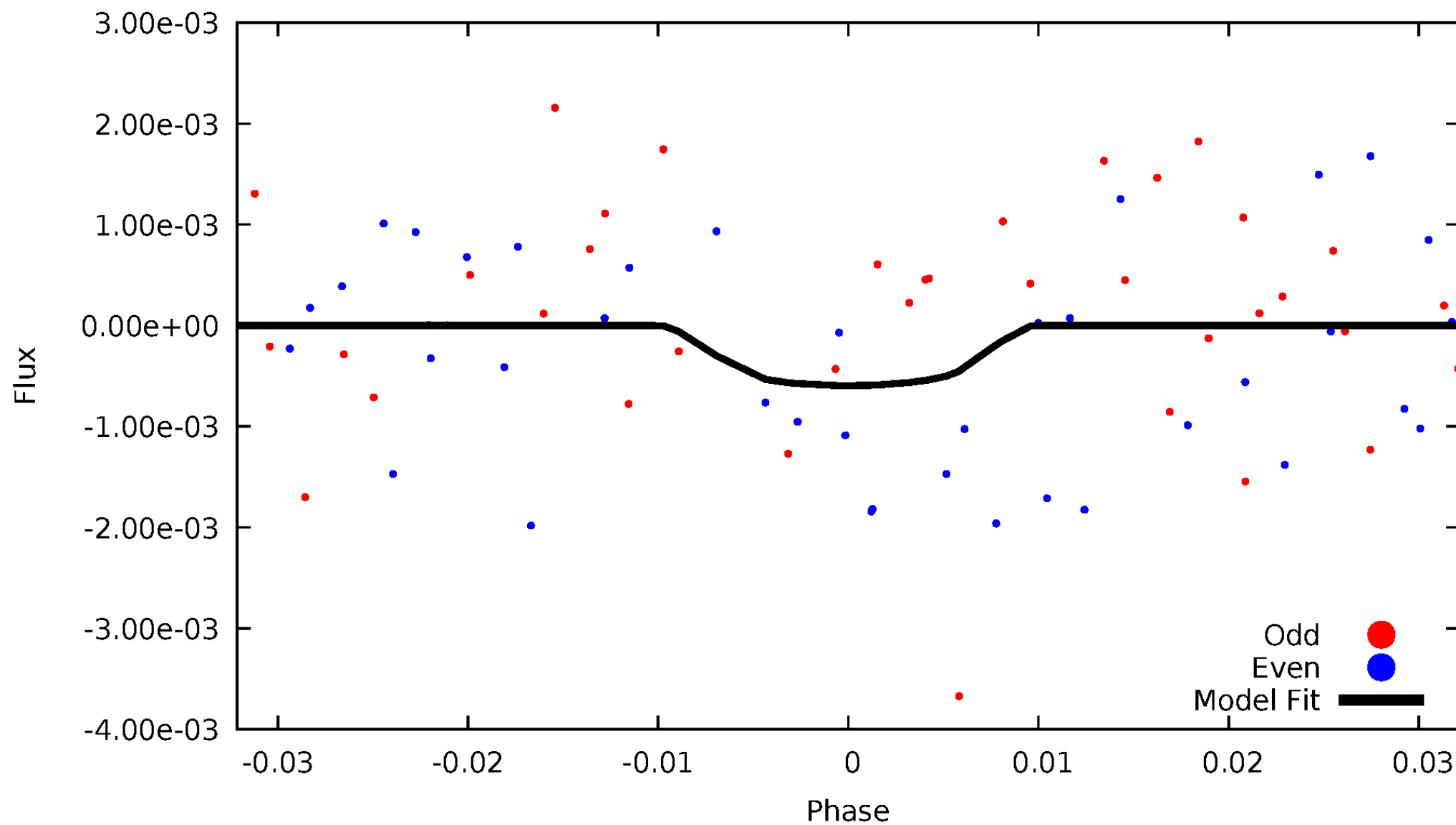


TCE 009592831-03



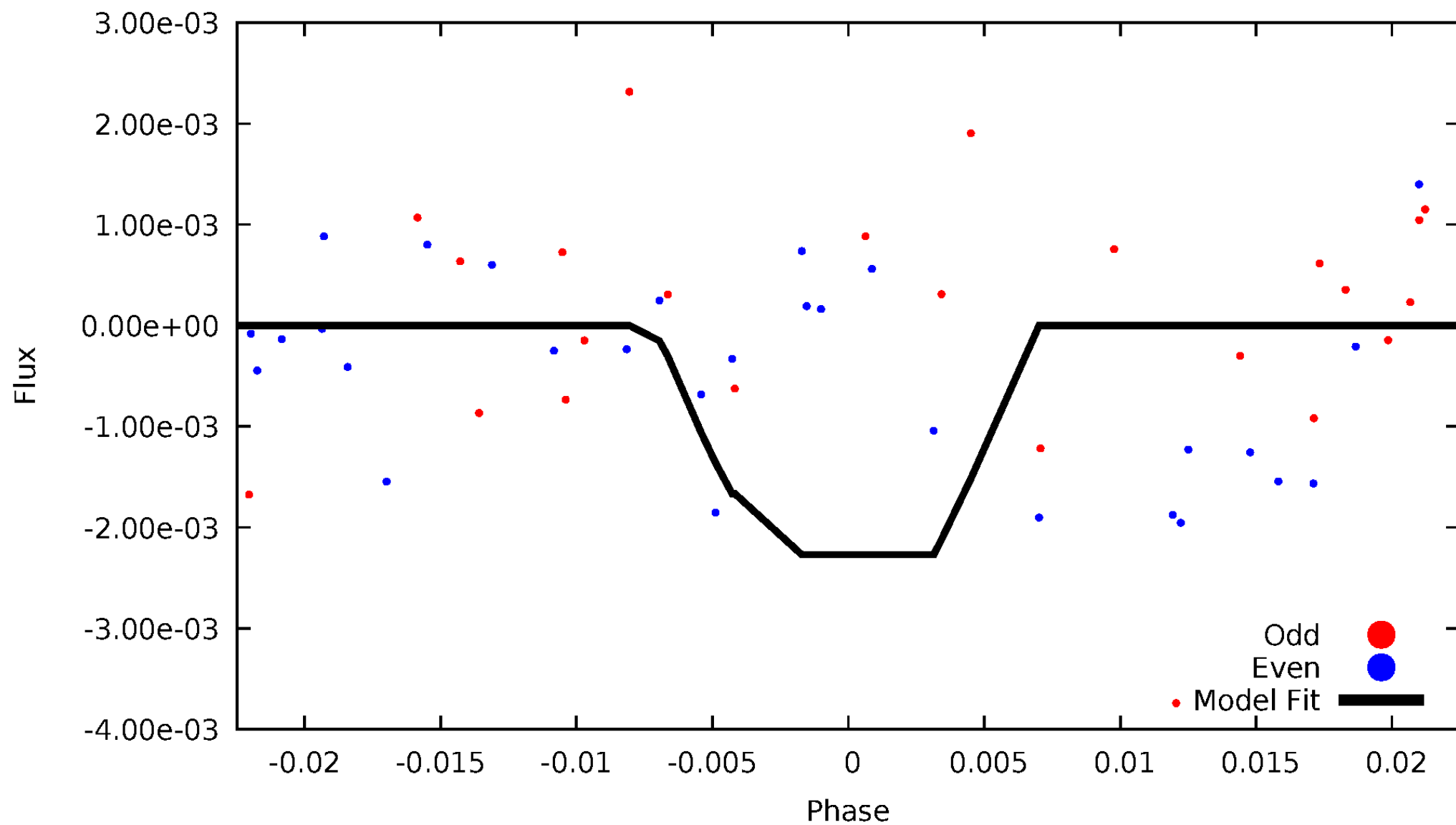
DV Odd/Even

TCE 009592831-03



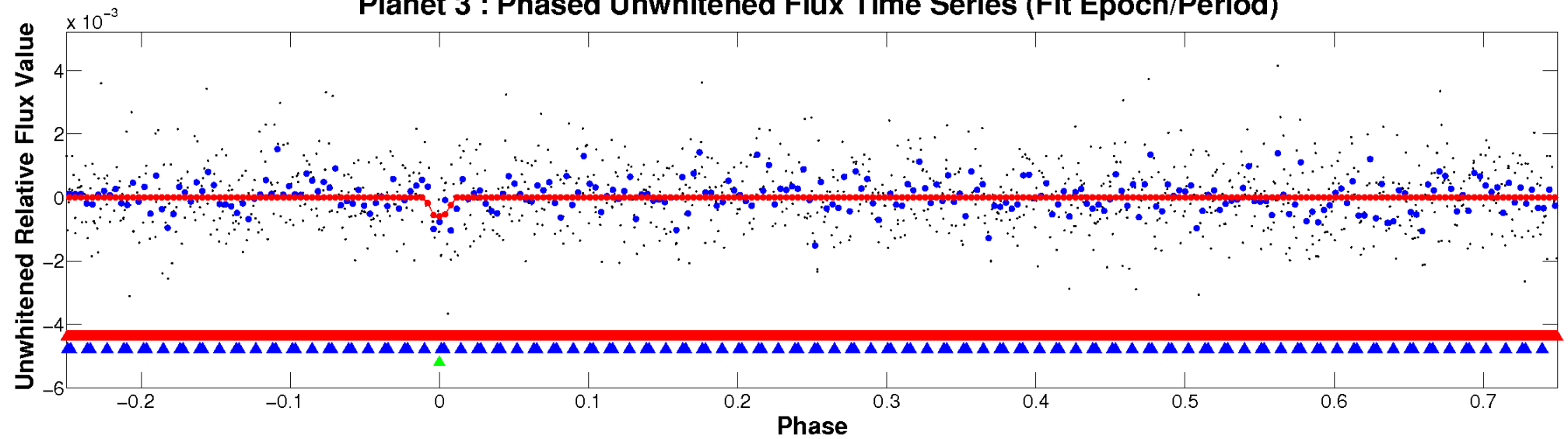
ALT Odd/Even

TCE 009592831-03

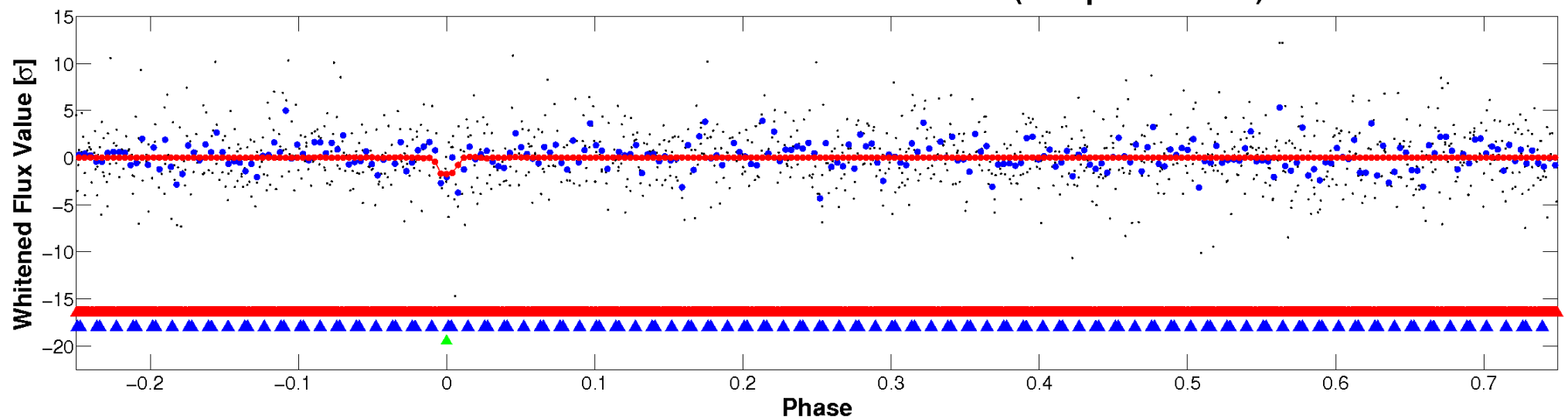


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

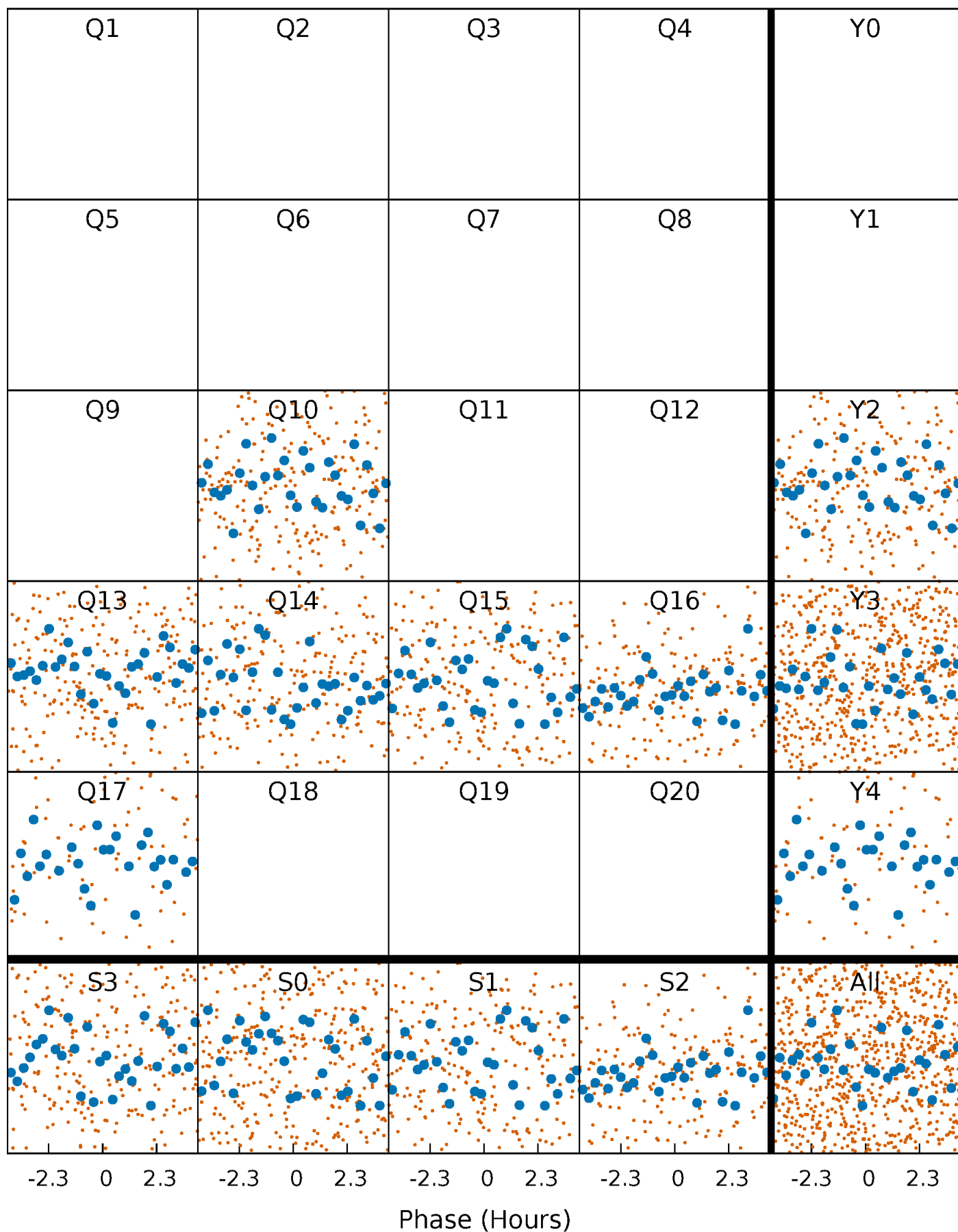


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



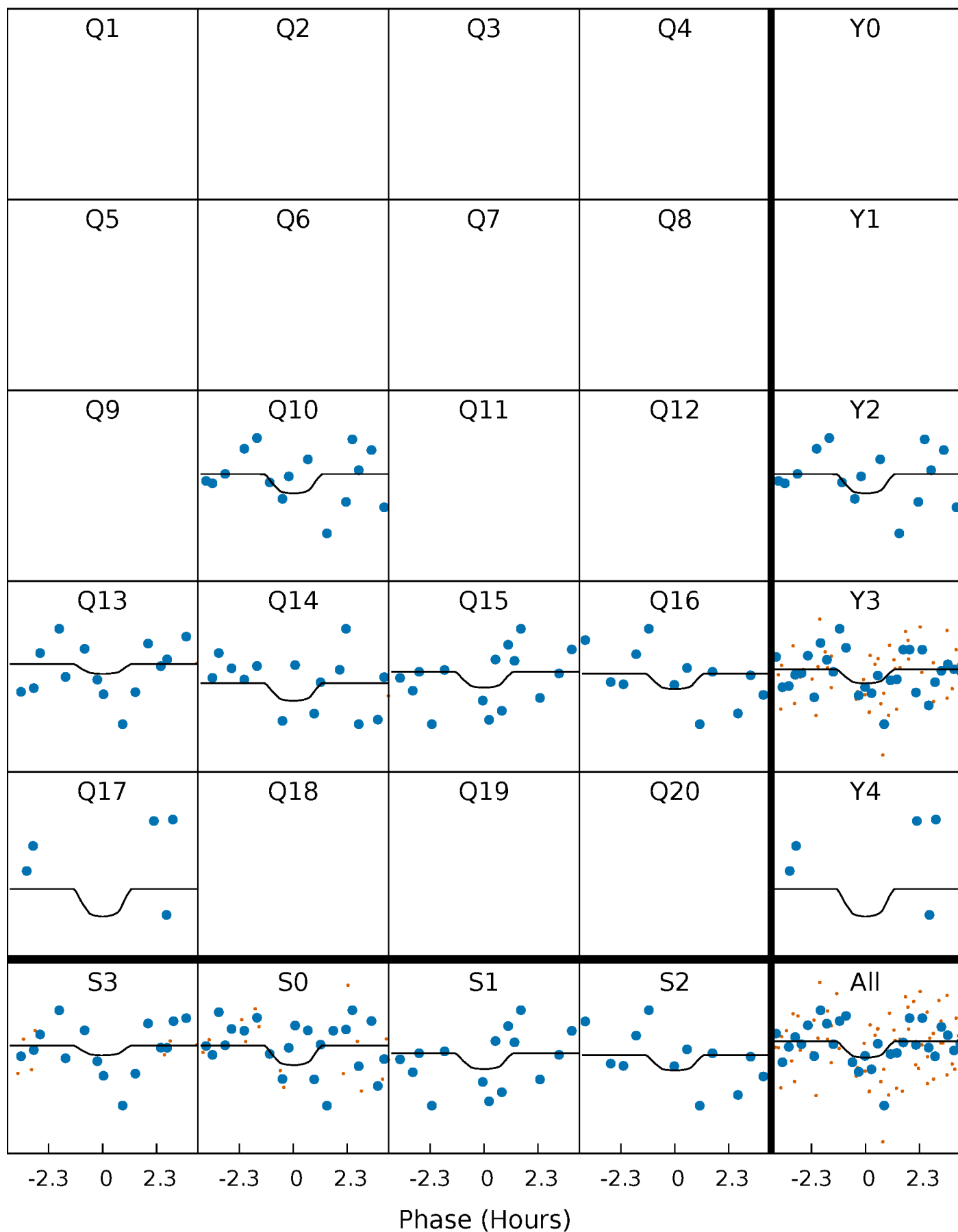
PDC Quarter-Phased Transit Curves

TCE 009592831-03 P= 5.270752 Days $T_0=133.834031$ (BKJD)



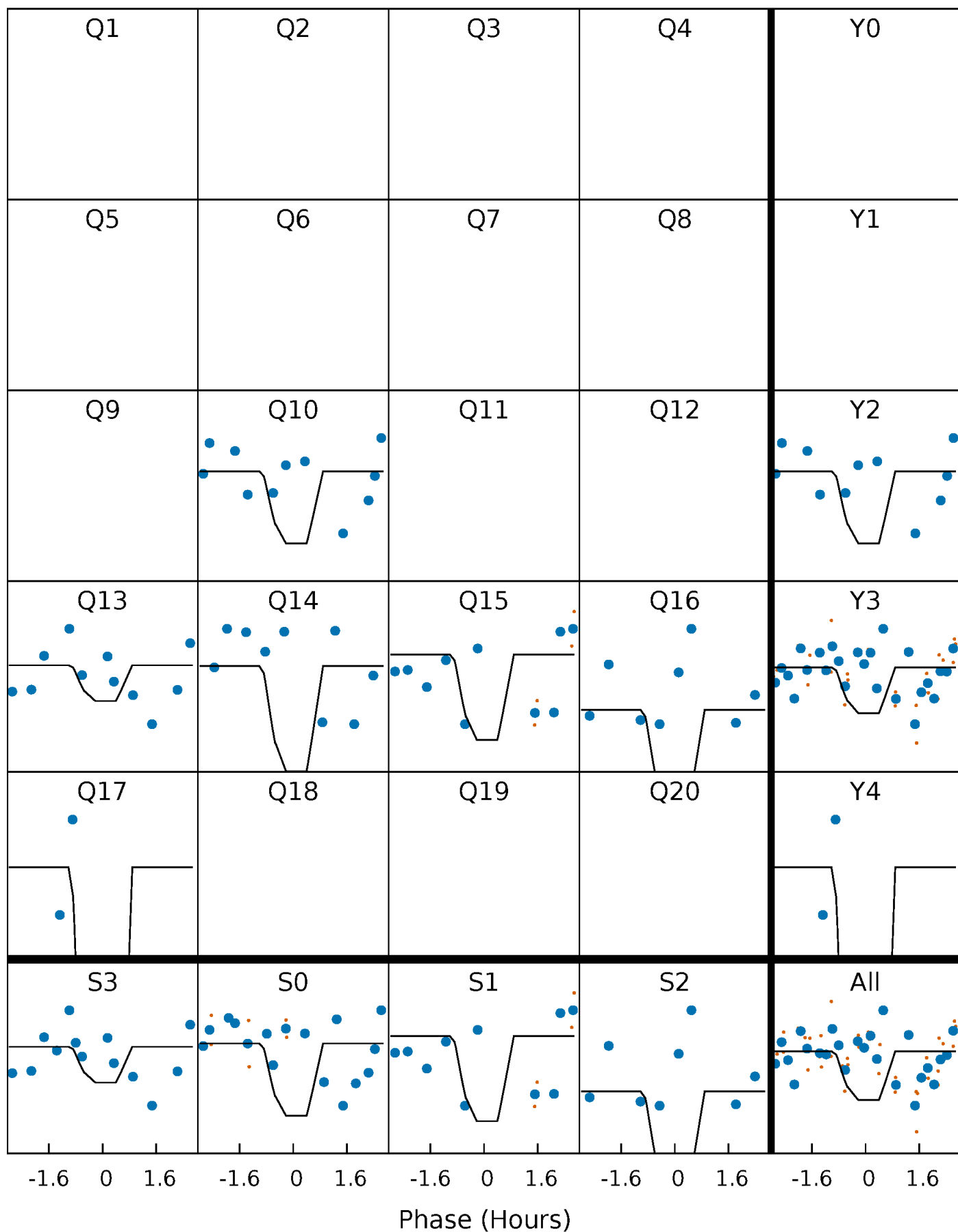
DV Quarter-Phased Transit Curves

TCE 009592831-03 P= 5.270752 Days $T_0=133.834031$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

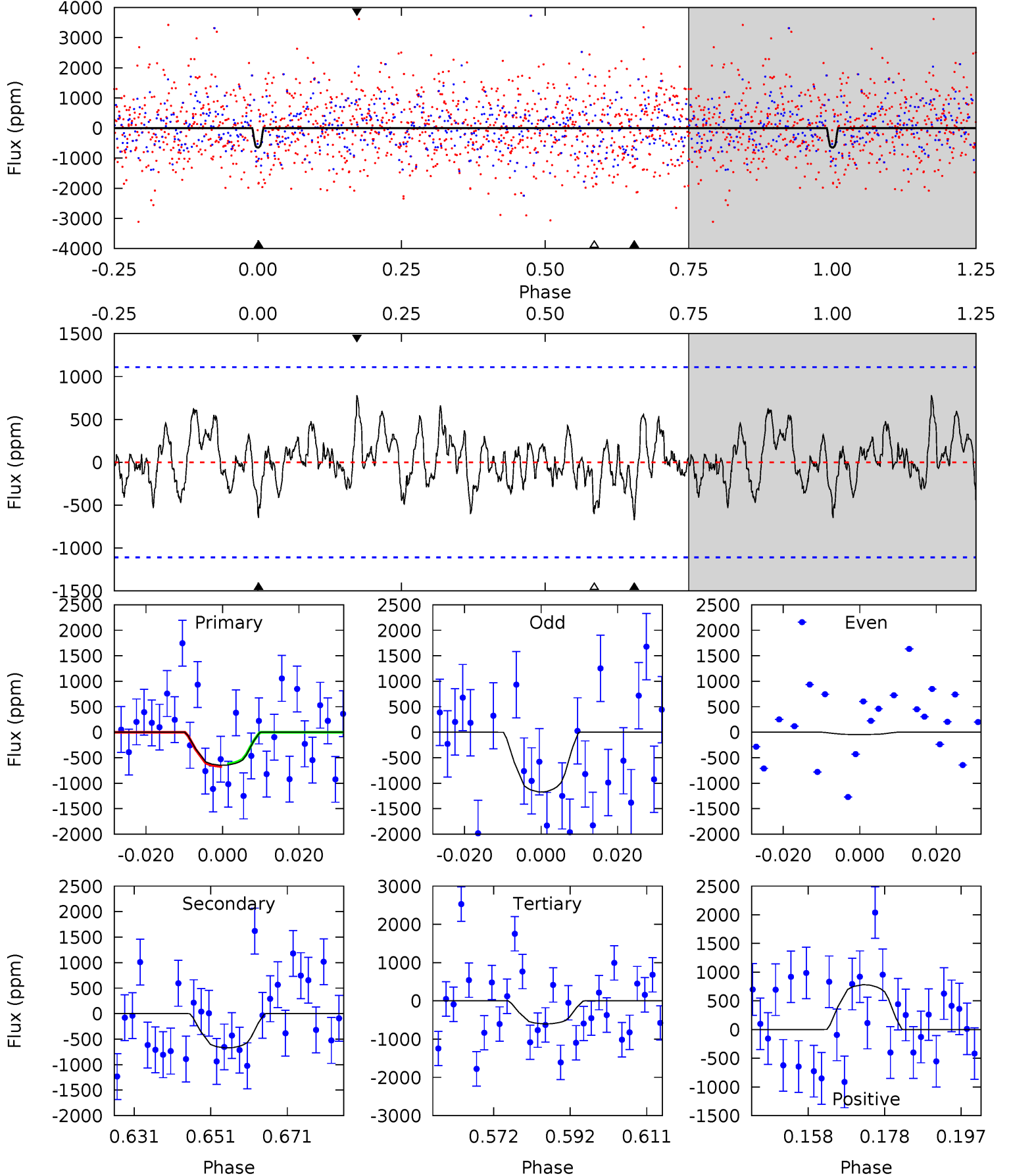
TCE 009592831-03 P= 5.269999 Days $T_0=133.955550$ (BKJD)



DV Model-Shift Uniqueness Test

009592831-03, P = 5.270752 Days, E = 133.834031 Days

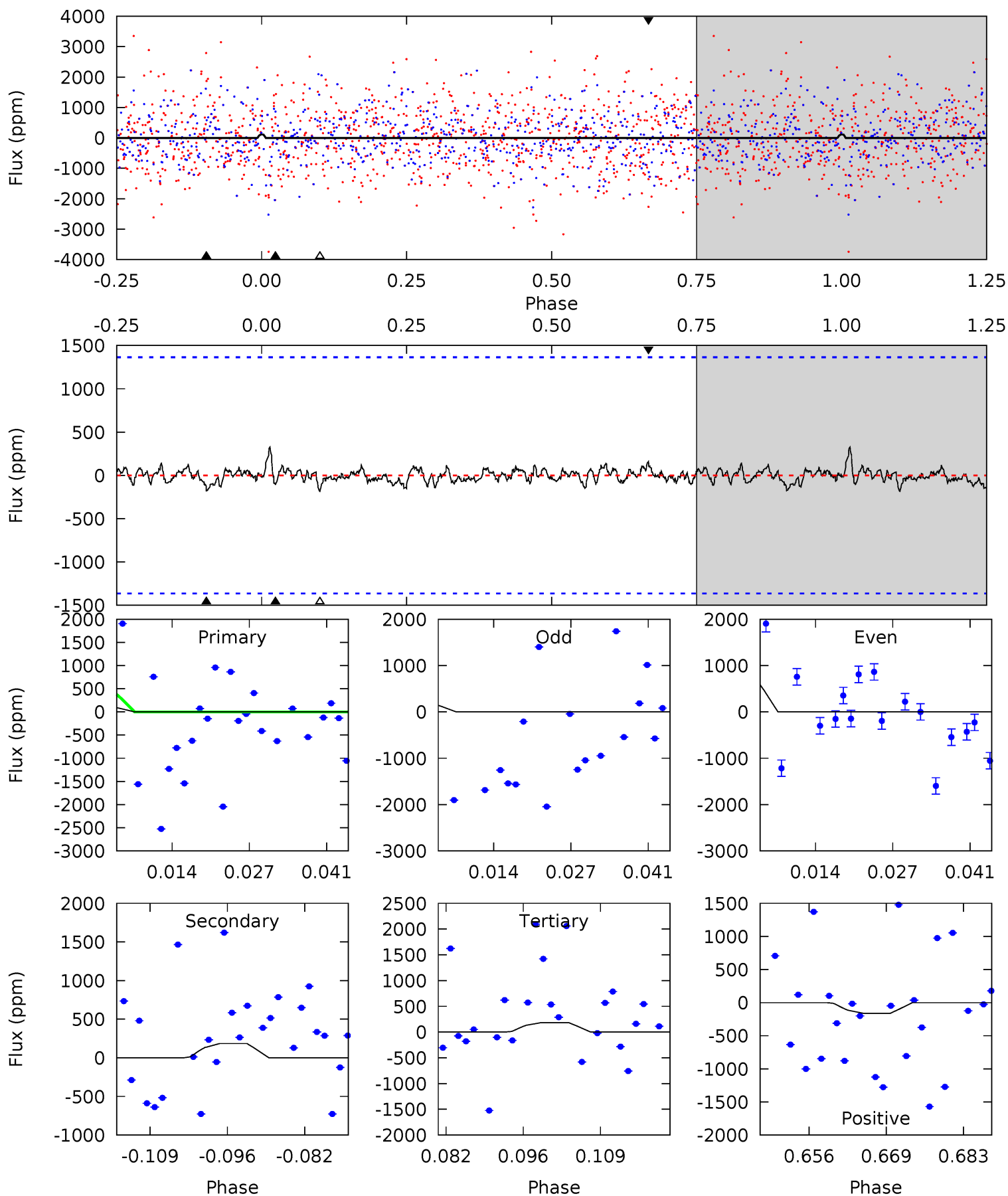
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.86	2.97	2.66	3.45	4.89	2.33	1.09	0.20	-0.59	0.31	-0.48	2.51	1.43	0.54	0.10



Alt Model-Shift Uniqueness Test

009592831-03, P = 5.269999 Days, E = 133.955550 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.40	0.67	0.67	0.58	4.97	2.47	0.22	-0.27	-0.19	0.00	0.09	0.92	-2.18	0.64	0.45



Stellar Parameters For KIC 009592831

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5296^{+190}_{-174}	$4.576^{+0.030}_{-0.120}$	$0.120^{+0.250}_{-0.300}$	$0.815^{+0.138}_{-0.064}$	$0.911^{+0.066}_{-0.090}$	$2.373^{+0.371}_{-0.839}$
	+4%/-3%	+1%/-3%	+208%/-250%	+17%/-8%	+7%/-10%	+16%/-35%
Source	KIC0	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 009592831-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-672 ± 226	$13.52^{+14.43}_{-9.66}$	1252^{+62}_{-50}	2880^{+1443}_{-544}	$6.066^{+72.736}_{-4.620}$
Alt.	-184 ± 275	$12.67^{+15.29}_{-8.51}$	1251^{+57}_{-51}	2264^{+1063}_{-4503}	$1.211^{+15.722}_{-1.670}$

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

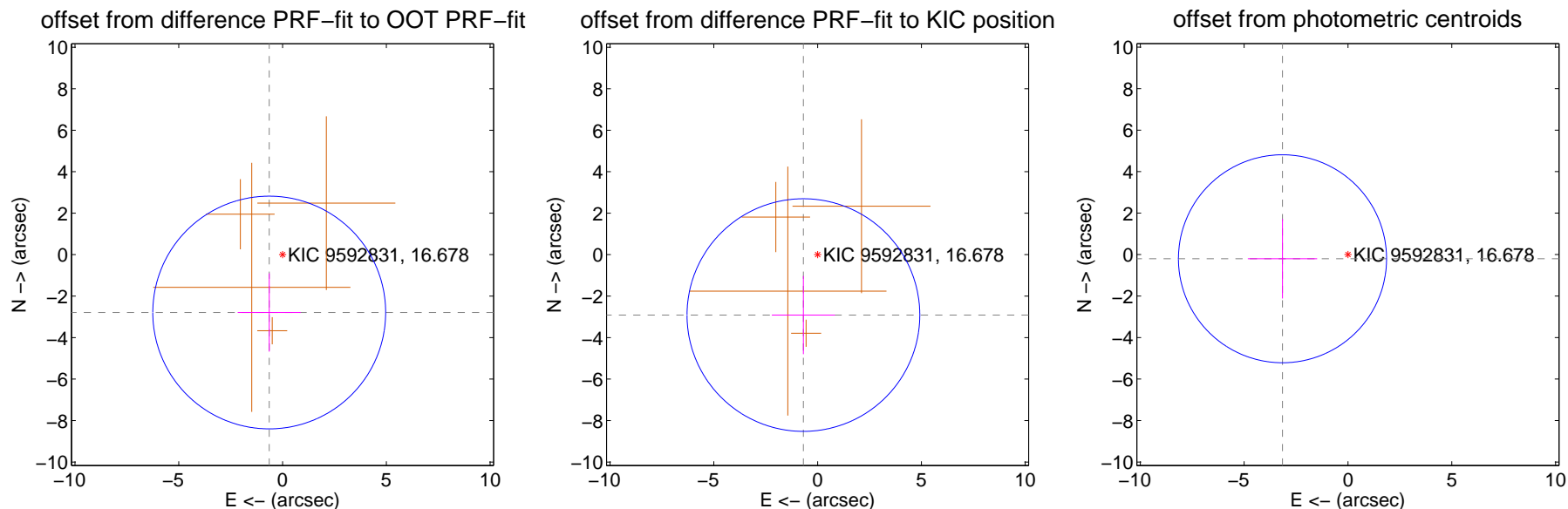
DV Centroid Data

Supplemental centroid analysis for 009592831-03. Kepler magnitude: 16.68. Transit SNR 6.15

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.863 ± 1.870	1.53	0.642 ± 1.520	-2.790 ± 1.887
PRF-fit source offset from KIC position	2.992 ± 1.869	1.60	0.685 ± 1.520	-2.913 ± 1.887
photometric centroid source offset	3.16 ± 1.67	1.89	3.15 ± 1.67	-0.20 ± 1.91

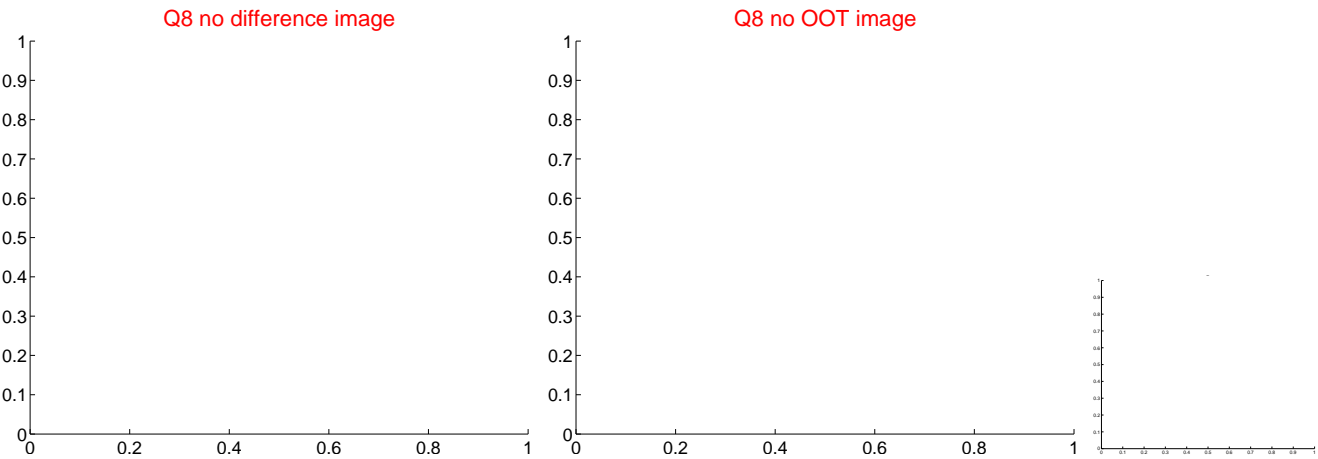
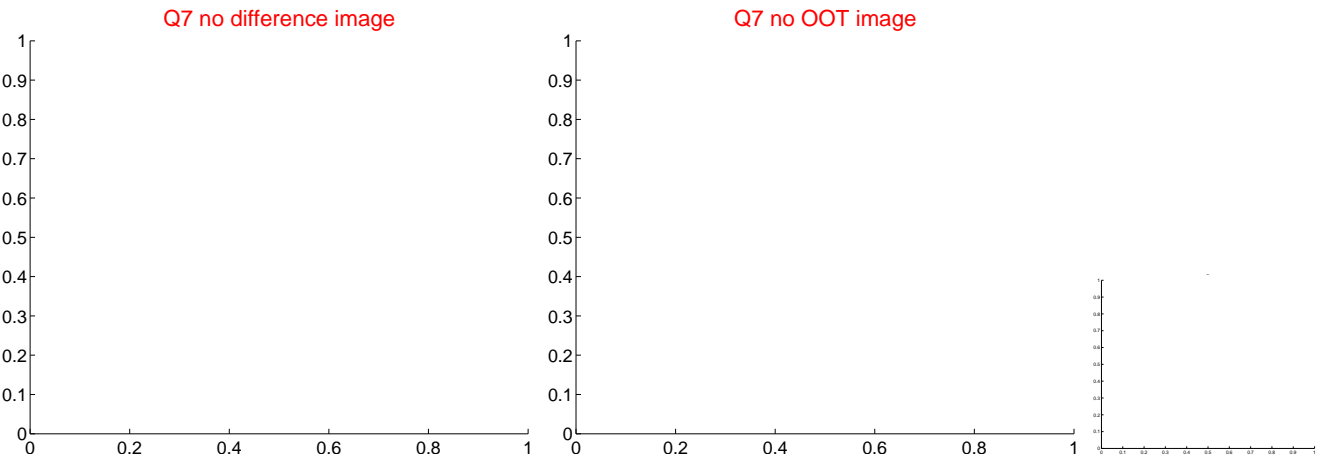
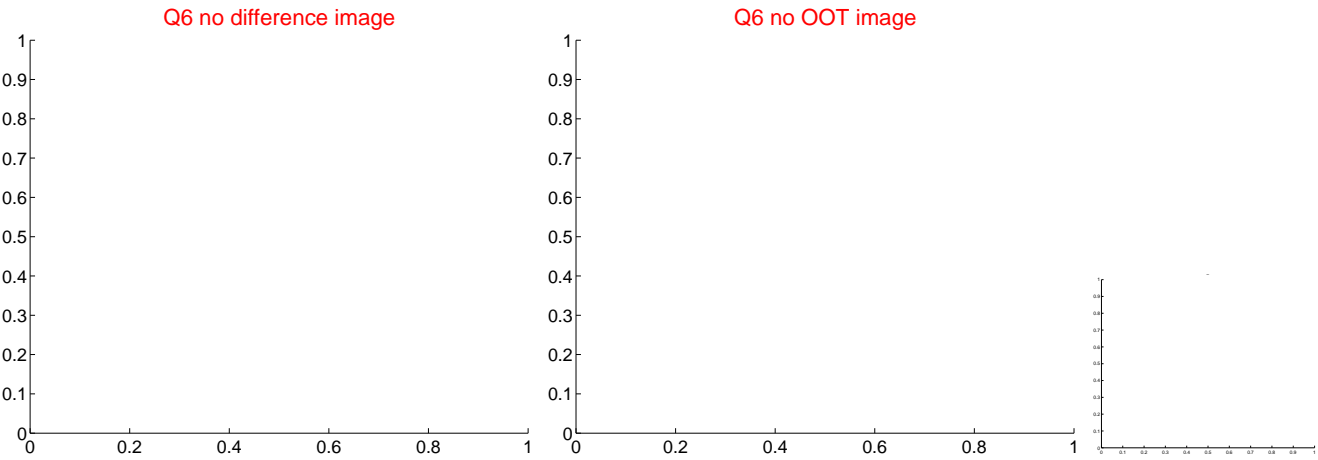
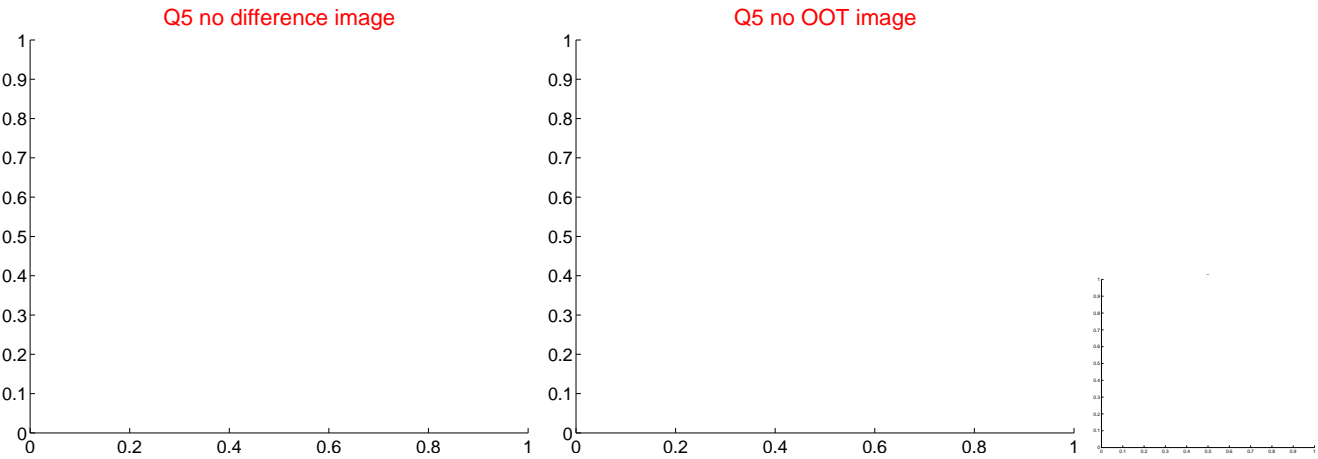


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

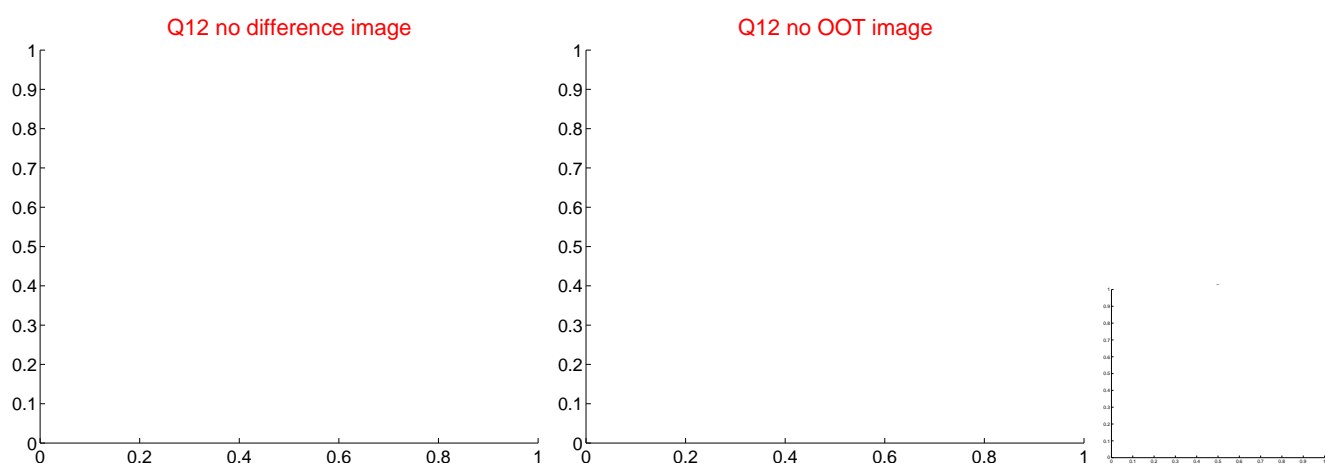
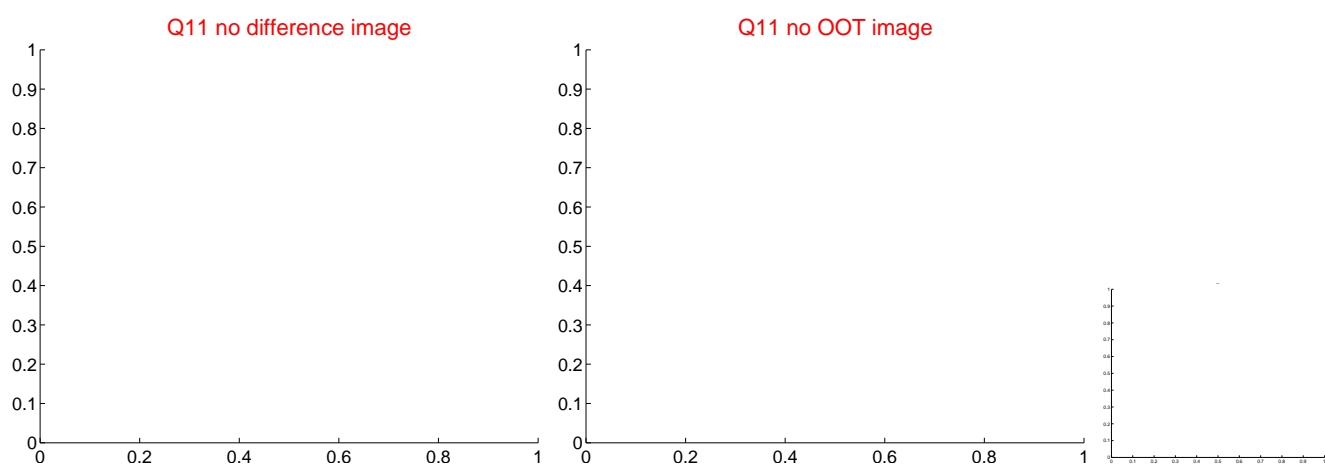
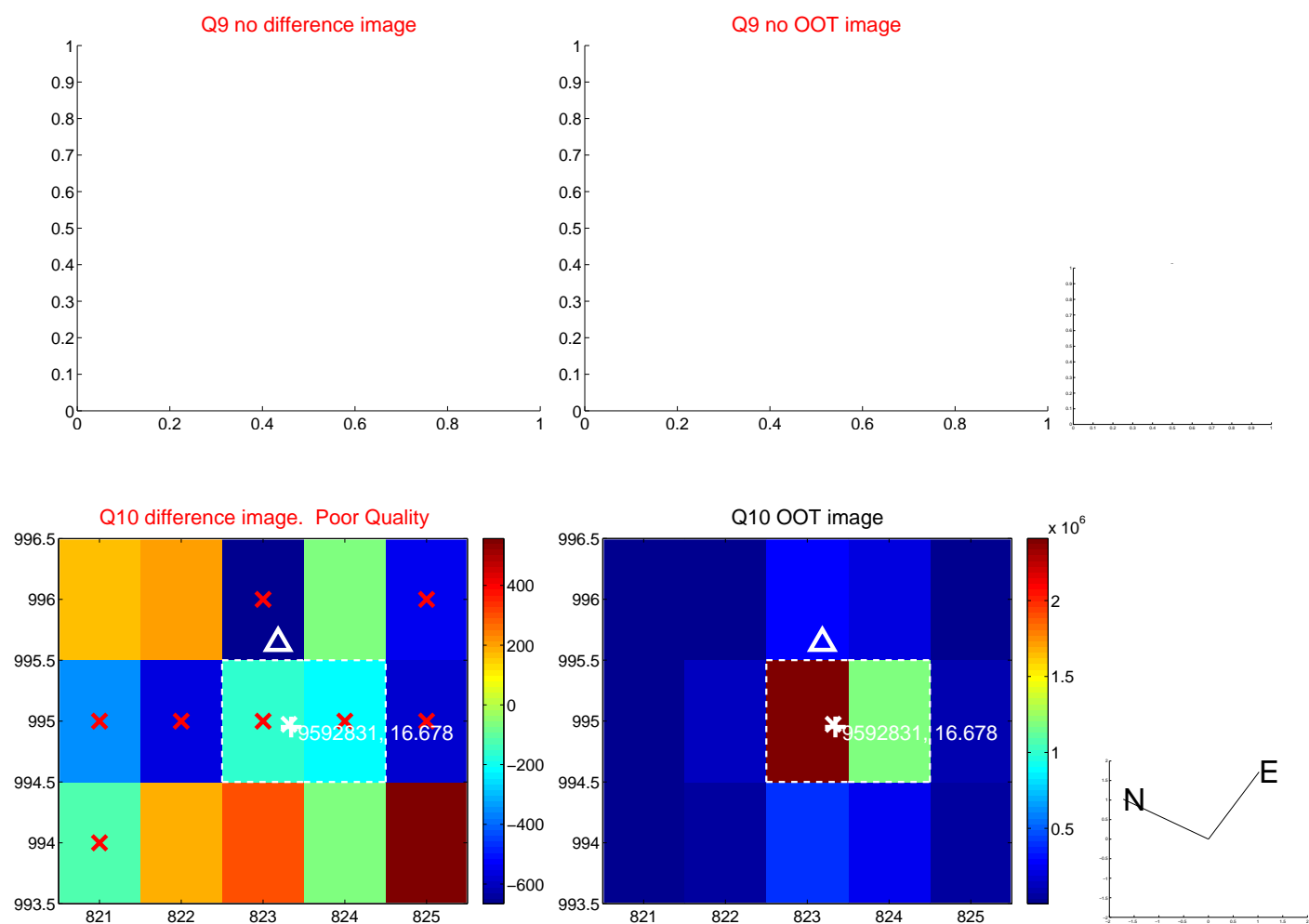
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



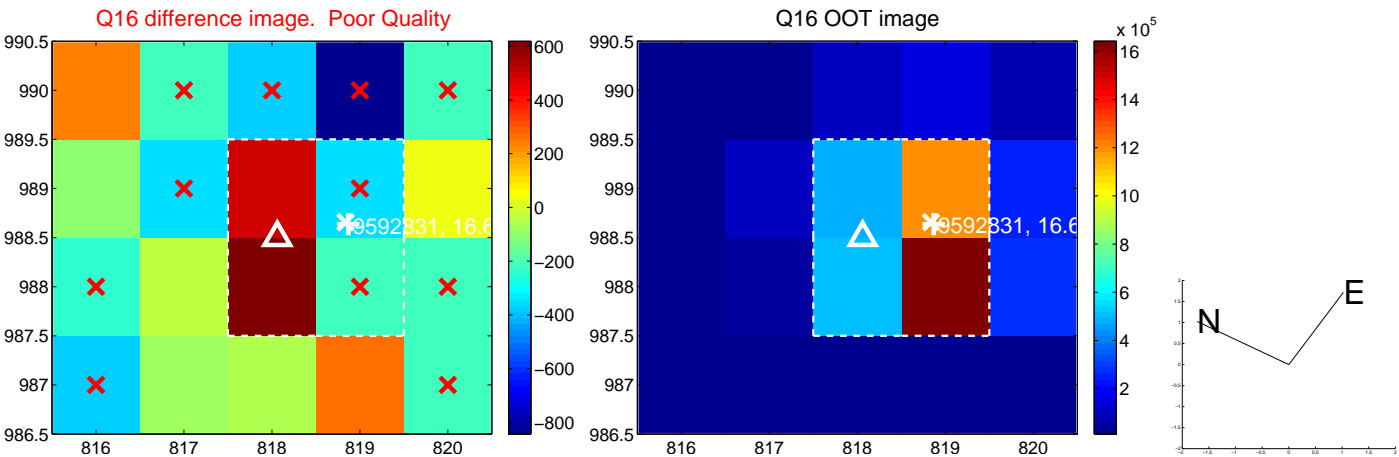
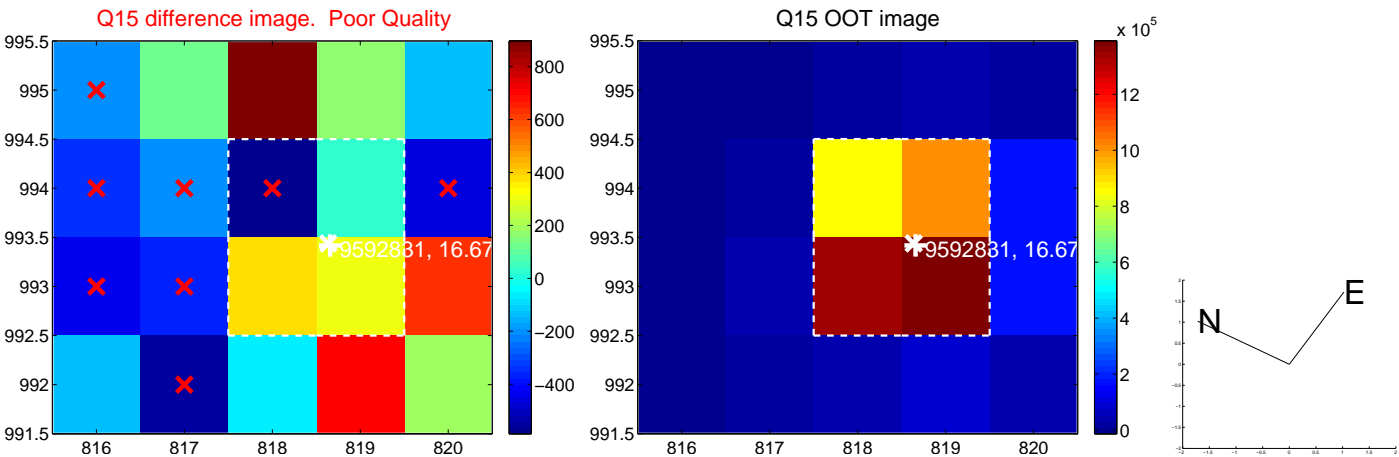
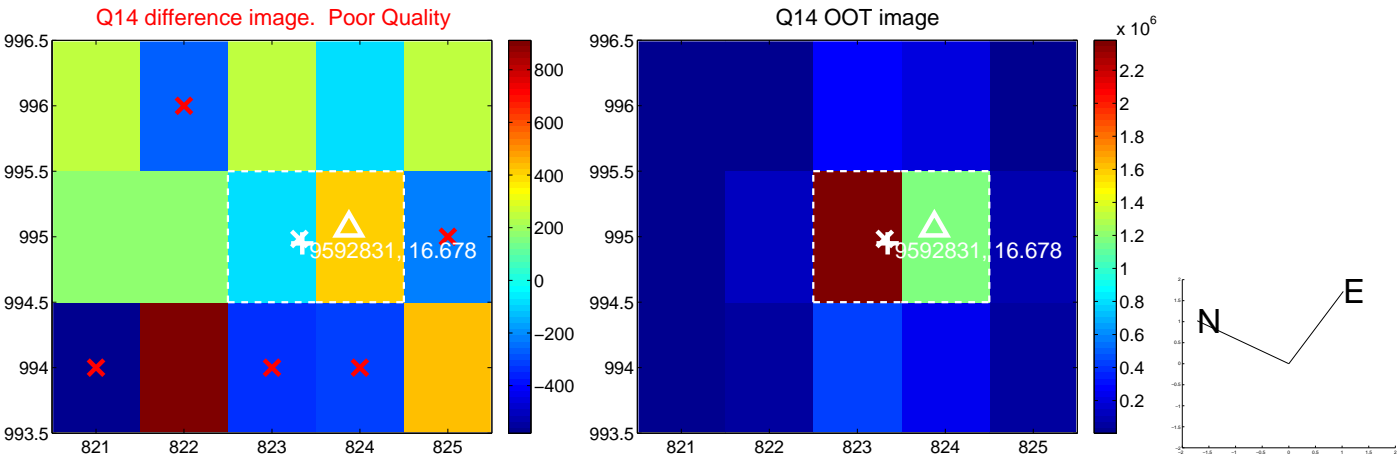
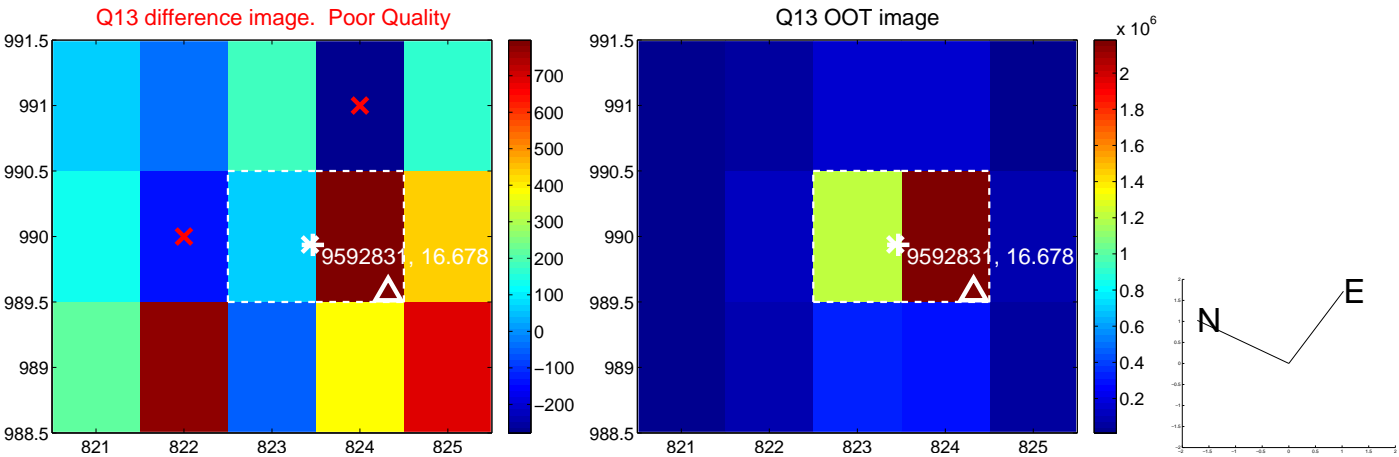
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



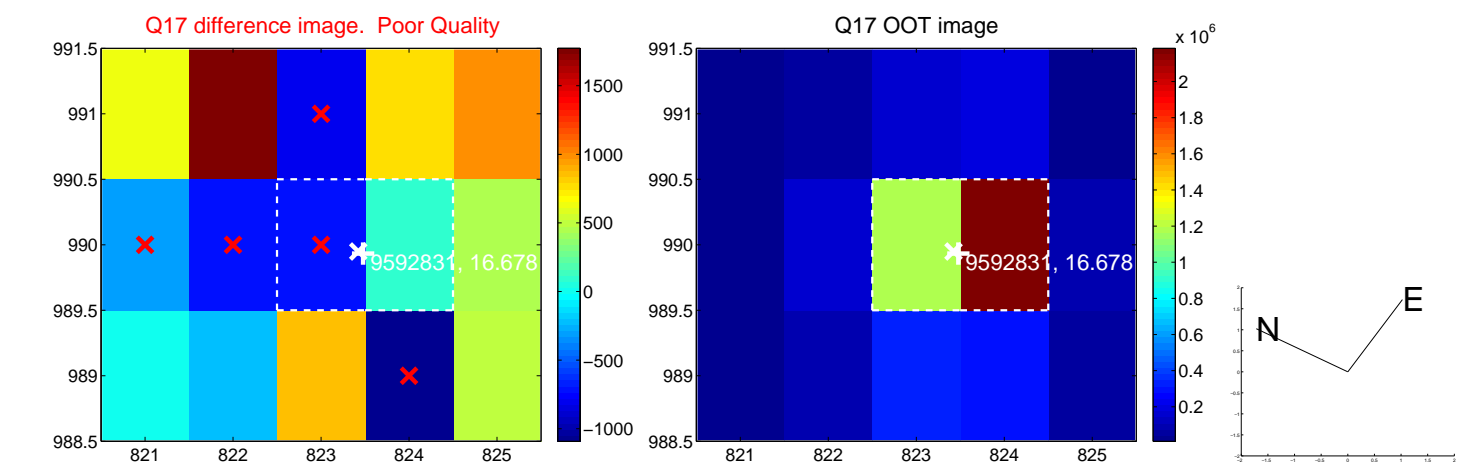
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



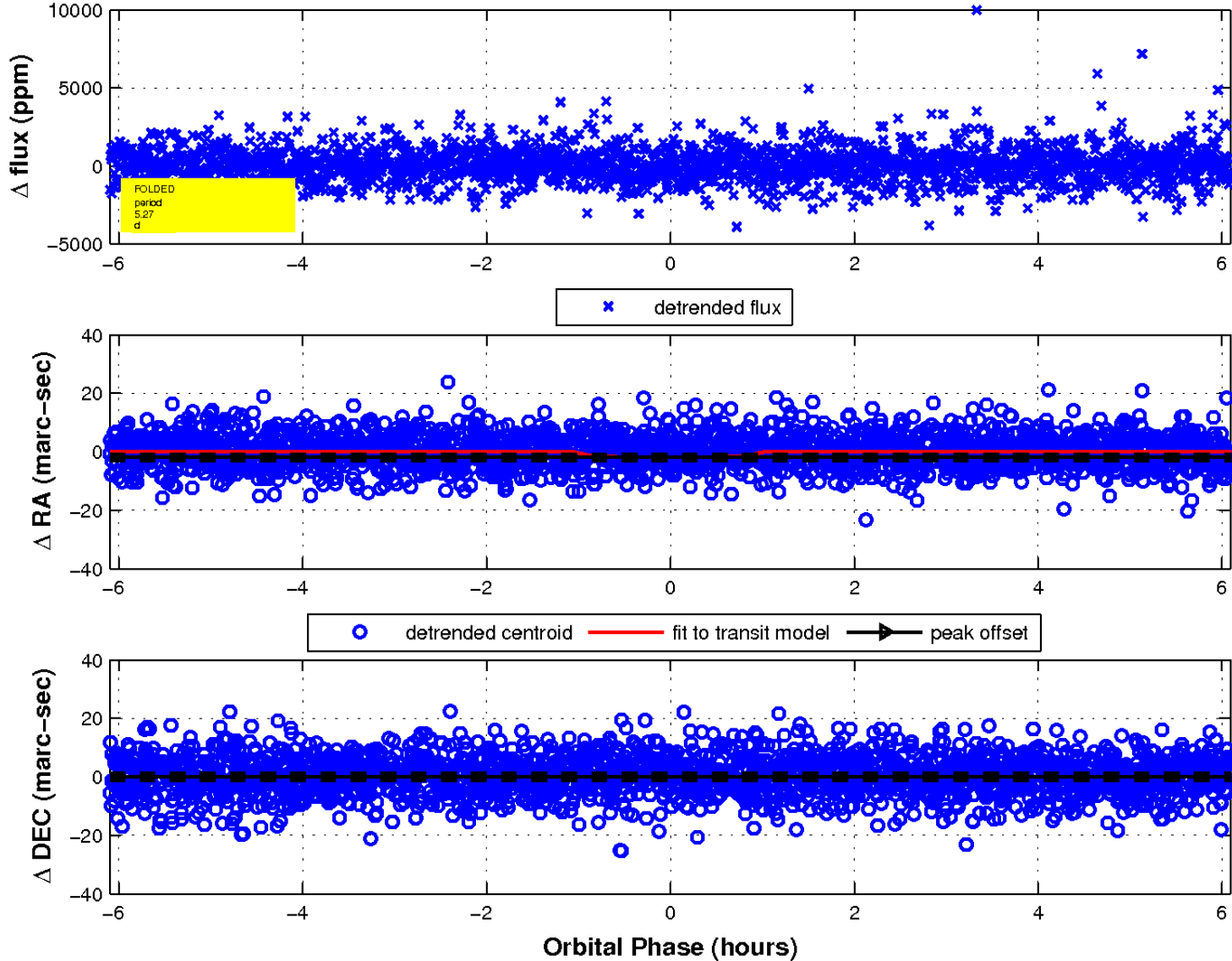
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

