

KIC 010332732

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})
010332732-01	OBS	No	476.085381	282.642951	640.5	16.137	13.5	2.0	0.25	3310	0.63	0.01
010332732-02	OBS	No	4.646442	134.174500	0.0	26.201	10.4	0.0	0.25	3310	0.00	5.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010332732-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_TER_DV—CENT_FEW_DIFFS
010332732-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_KIC_POS

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

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

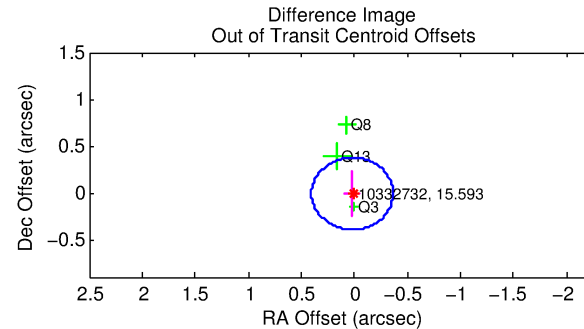
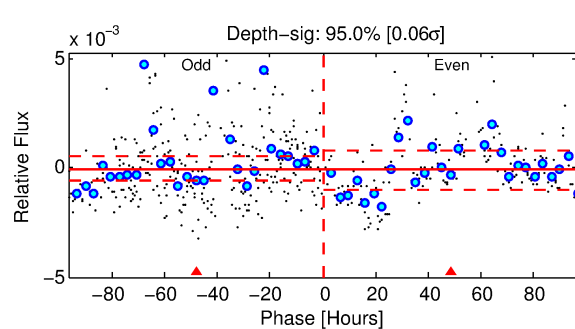
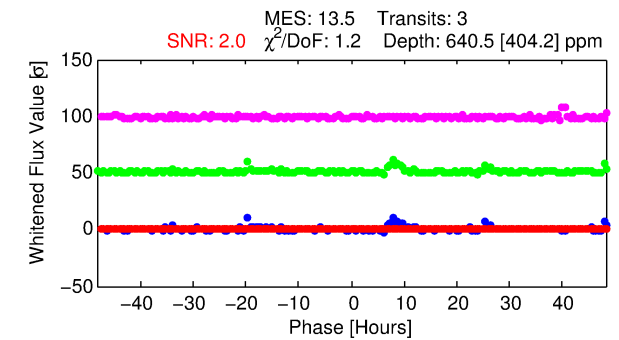
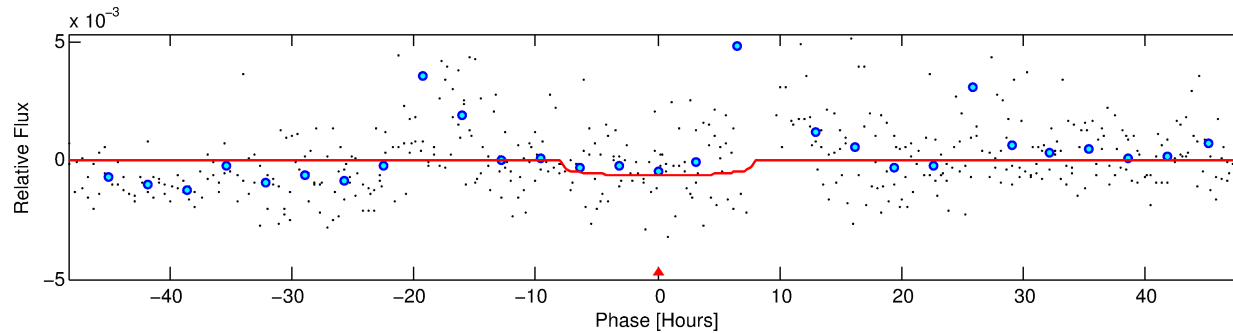
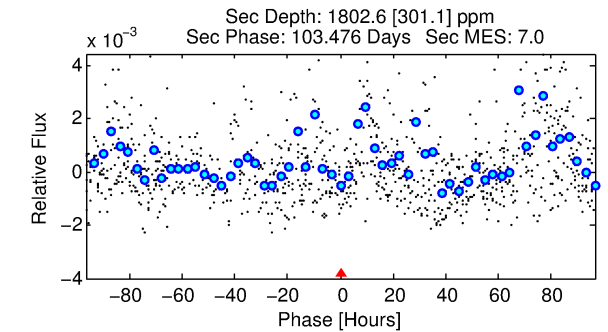
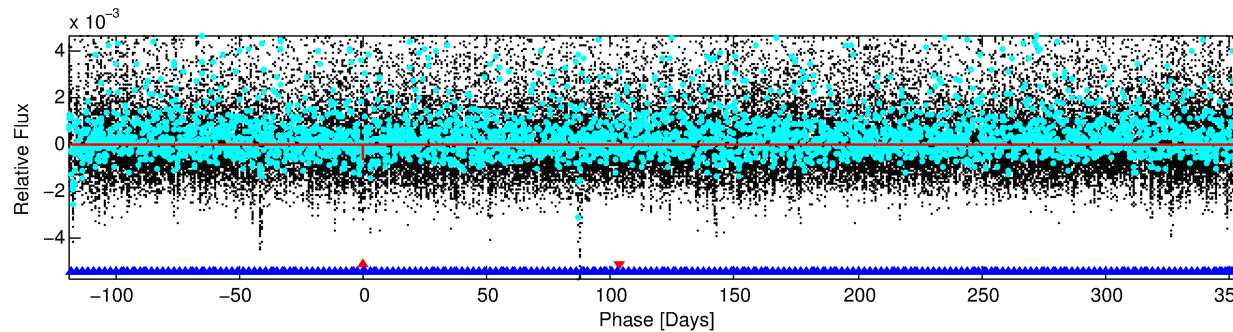
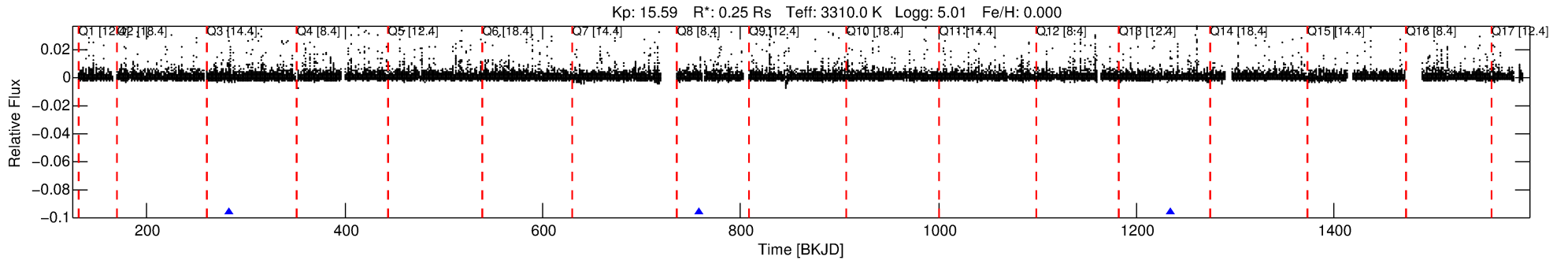
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010332732-01

No Significant Match Found

DV One-Page Summary

KIC: 10332732 Candidate: 1 of 2 Period: 476.085 d



DV Fit Results:

Period = 476.08538 [0.04806] d
Epoch = 282.6430 [0.0647] BKJD
Rp/R* = 0.0233 [0.0315]
a/R* = 214.77 [1193.89]
b = 0.37 [12.81]
Seff = 0.01 [0.00]
Teq = 85 [3] K
Rp = 0.63 [0.86] Re
a = 0.7297 [0.0898] AU
Ag = 1332702.25 [3626904.32] [0.37σ]
Teffp = 4472 [3039] K [1.44σ]

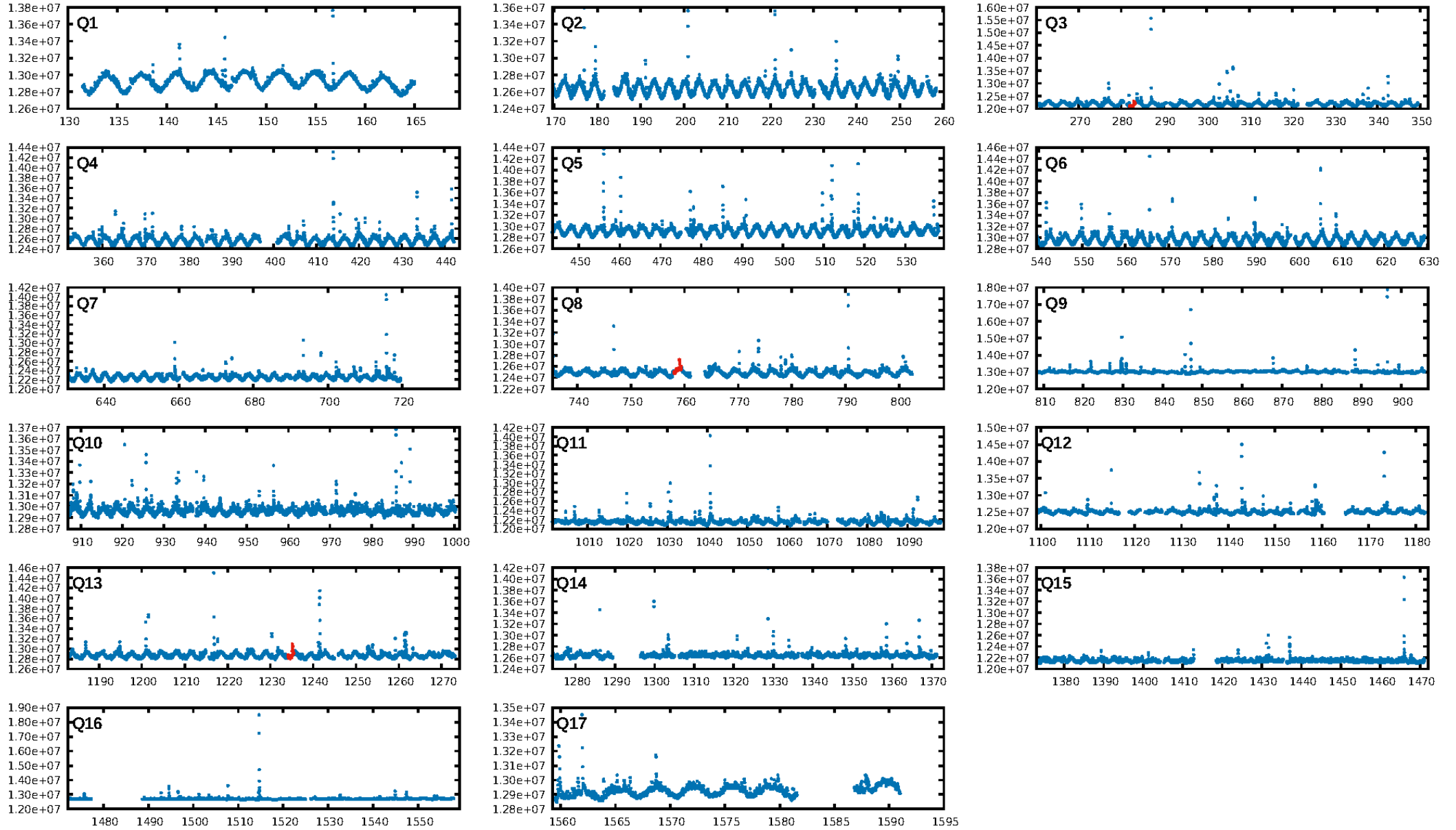
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [367.69σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 17.5%
ModelChiSquareGof-sig: 99.1%
Bootstrap-pfa: 3.96e-15
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.464
Centroid-sig: 58.9%
Centroid-so: 1.219 arcsec [0.65σ]
OotOffset-rm: 0.022 arcsec [0.17σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: 0.558 arcsec [2.74σ]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.33 [1/3]

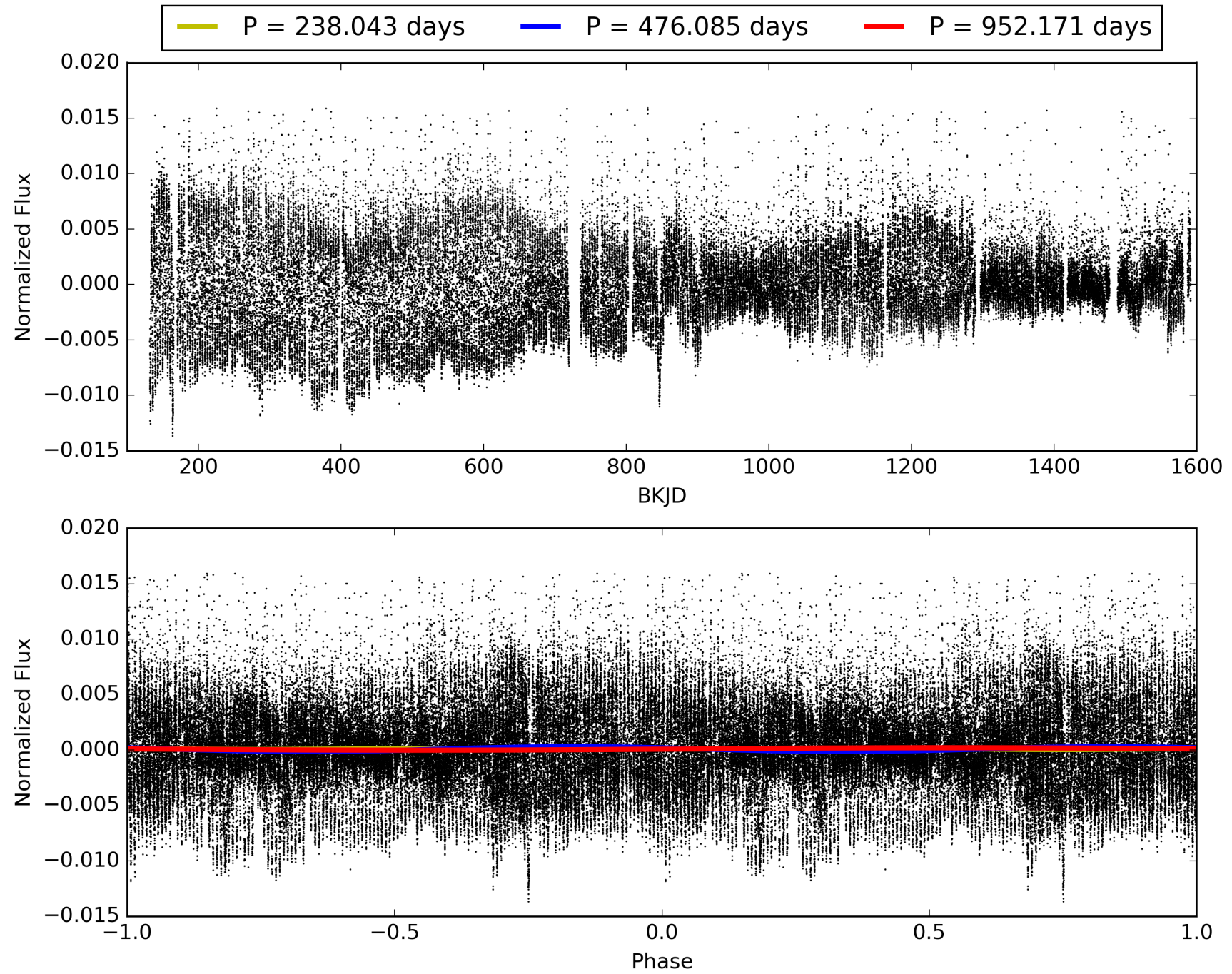
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:34:27 Z

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

TCE 010332732-01, PDC Light Curves

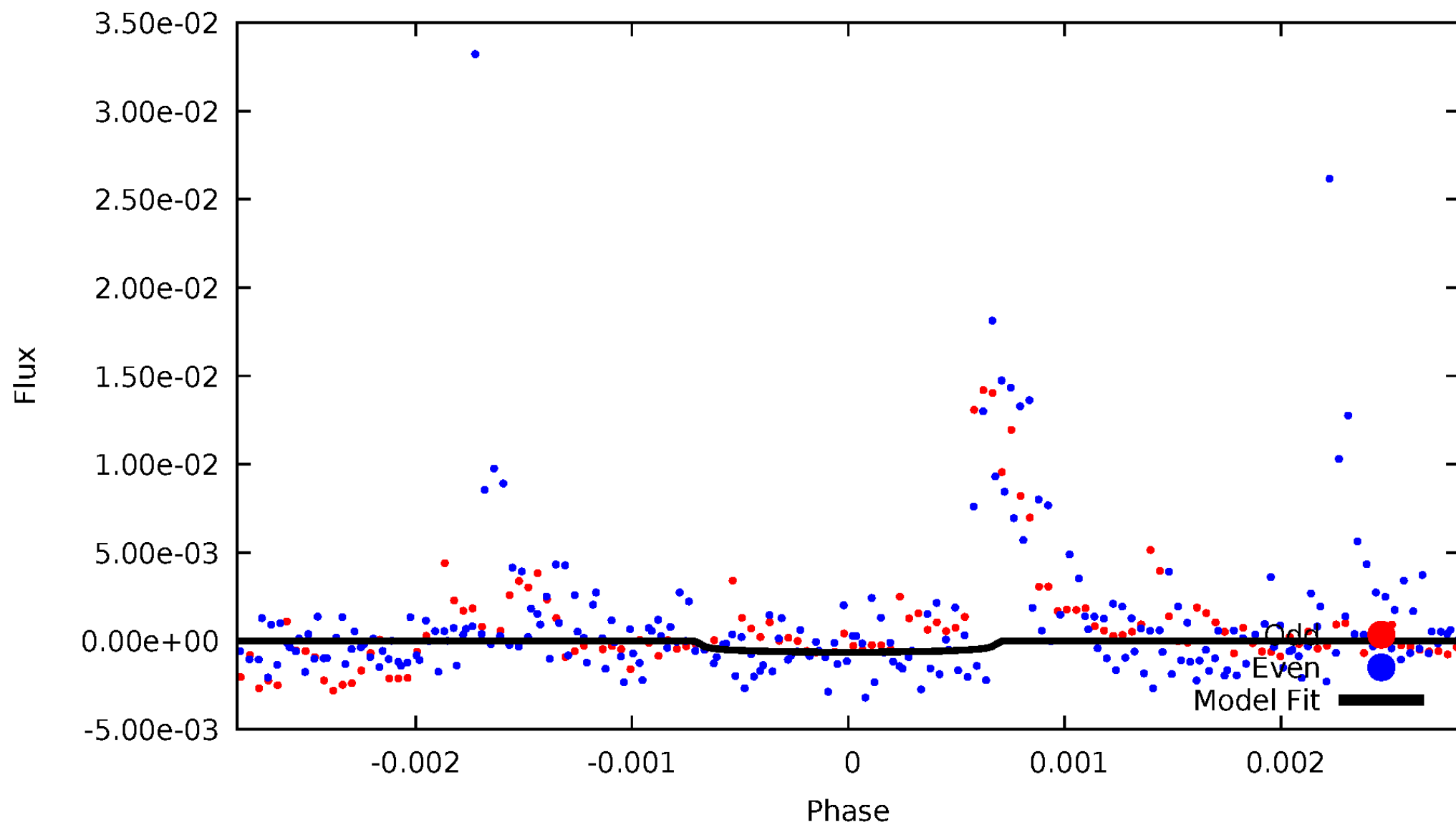


TCE 010332732-01



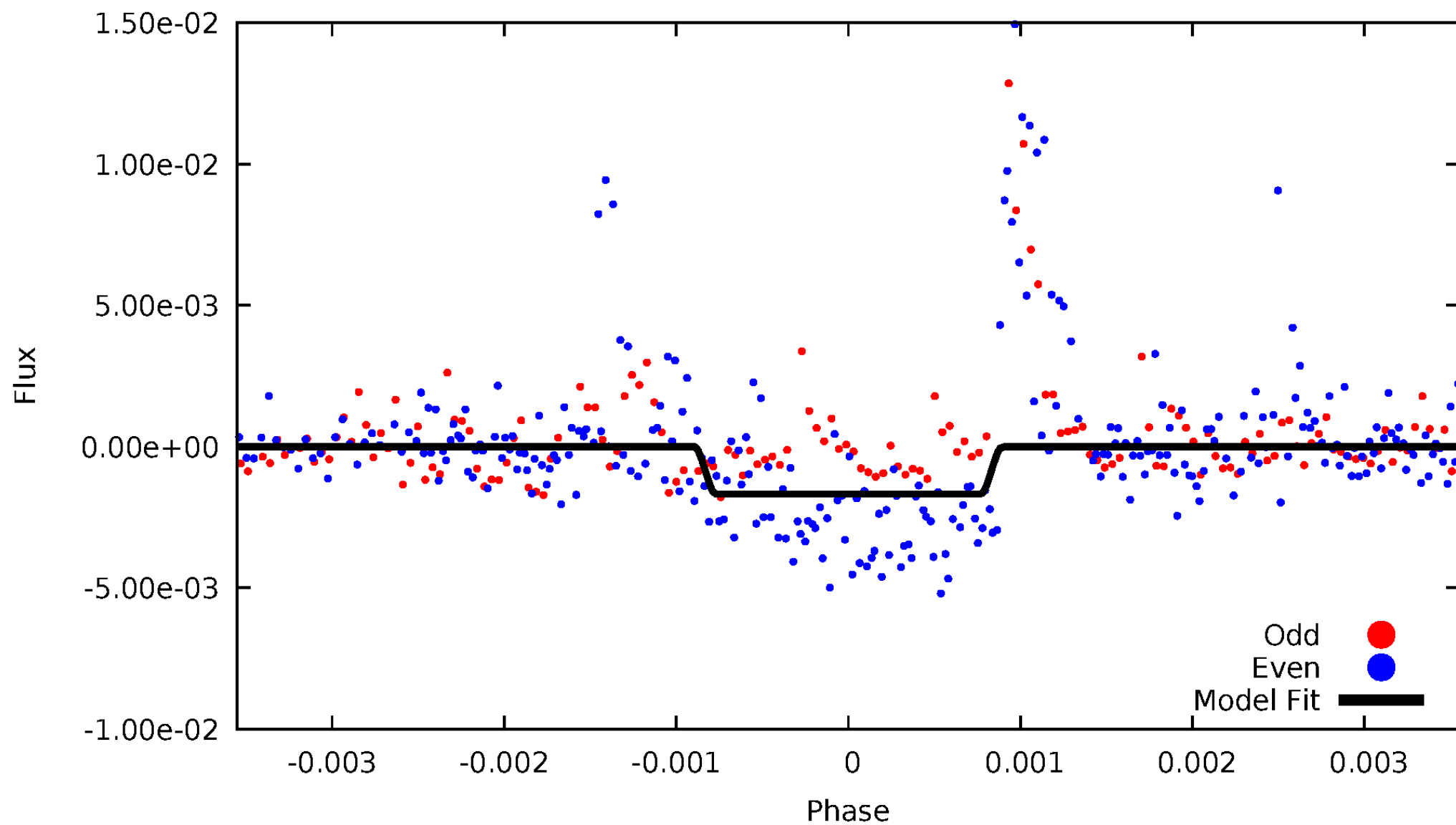
DV Odd/Even

TCE 010332732-01



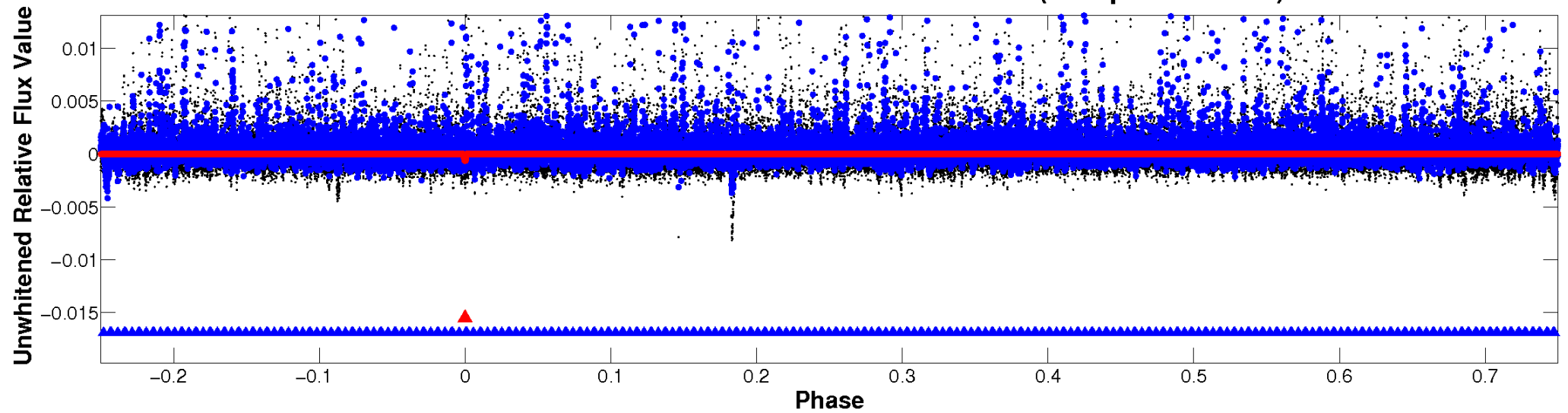
ALT Odd/Even

TCE 010332732-01

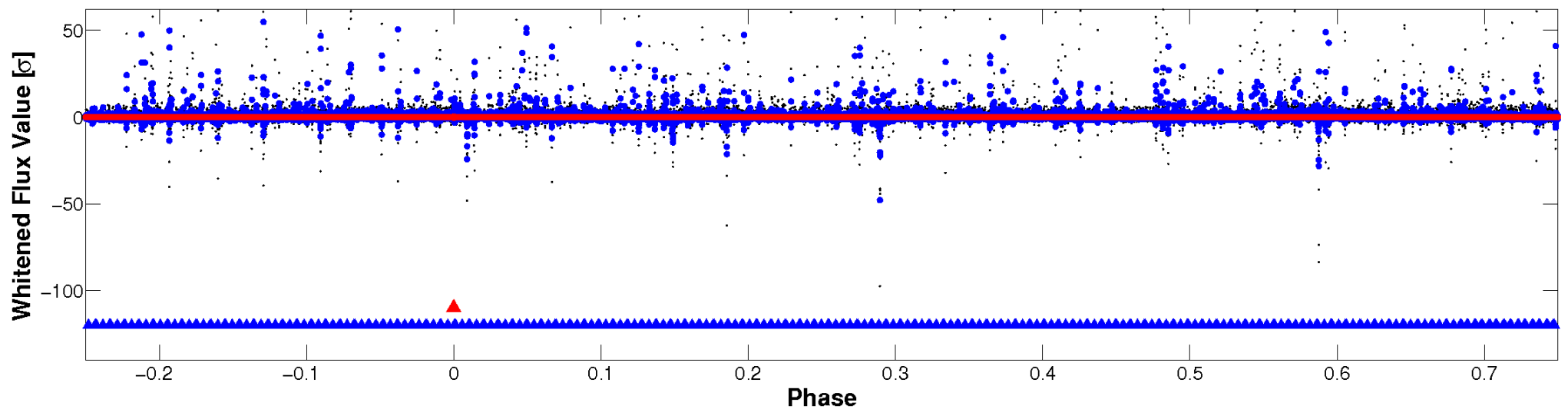


Non-Whitened Vs. Whitened Light Curve

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

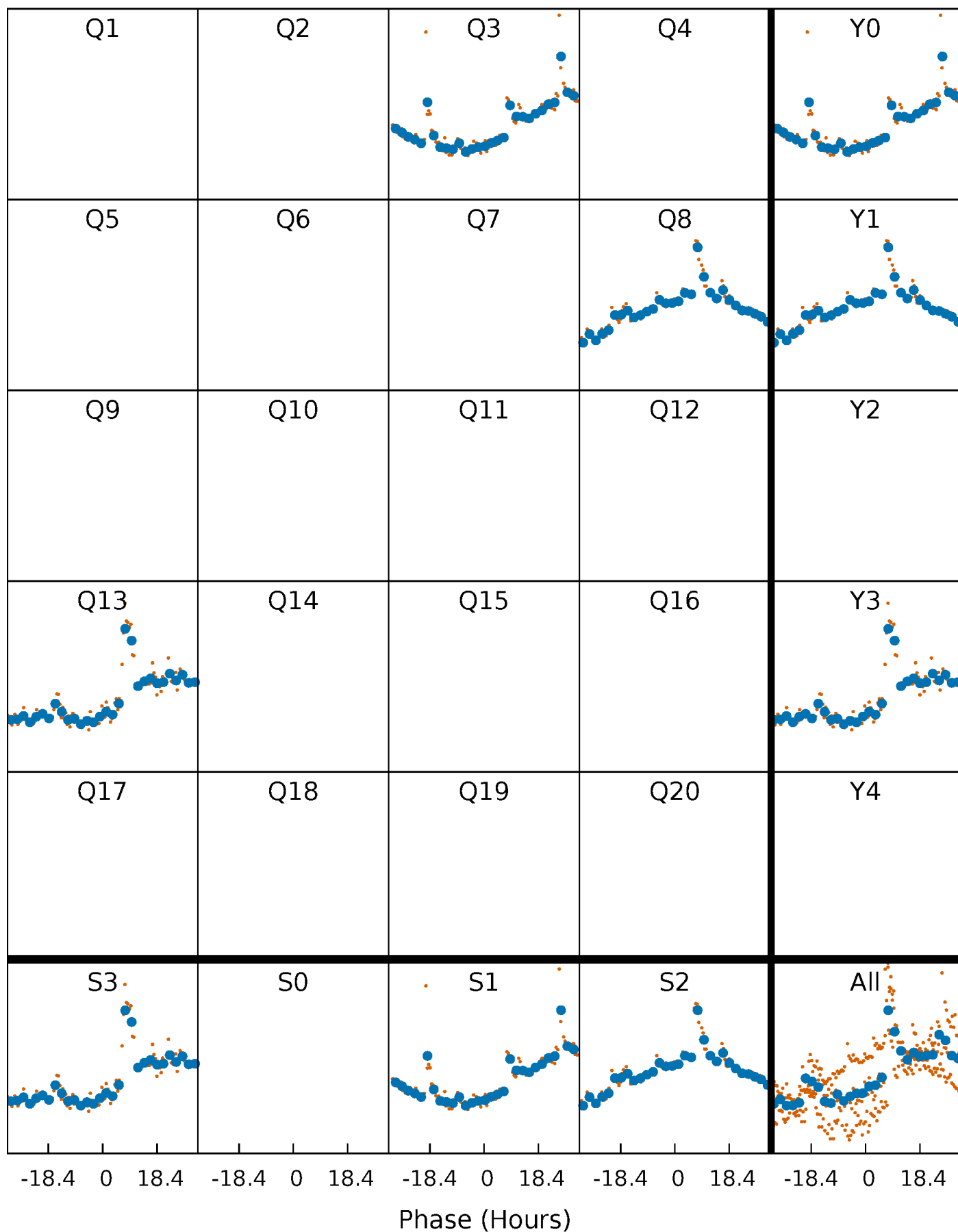


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



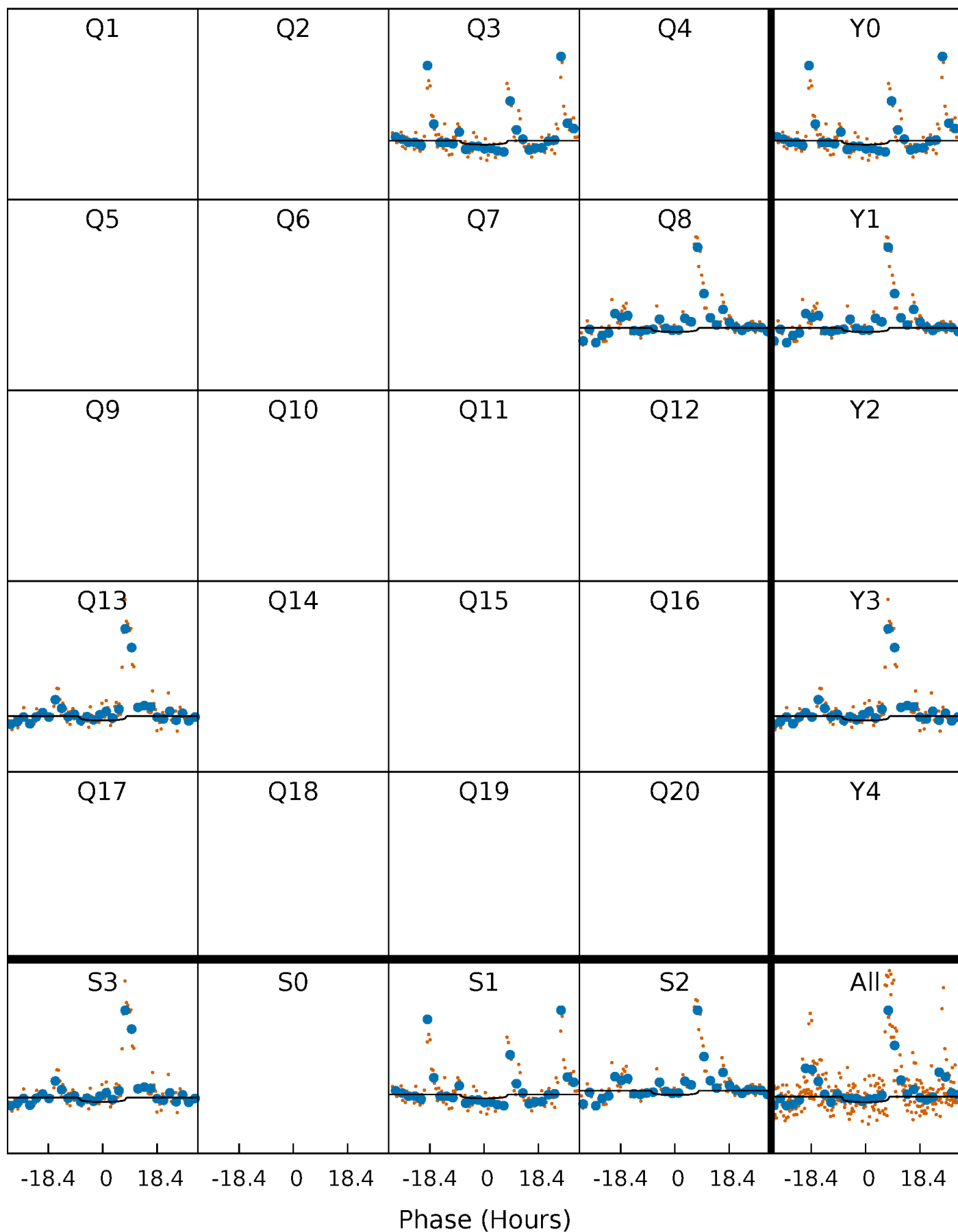
PDC Quarter-Phased Transit Curves

TCE 010332732-01 P=476.085380 Days $T_0=282.642951$ (BKJD)



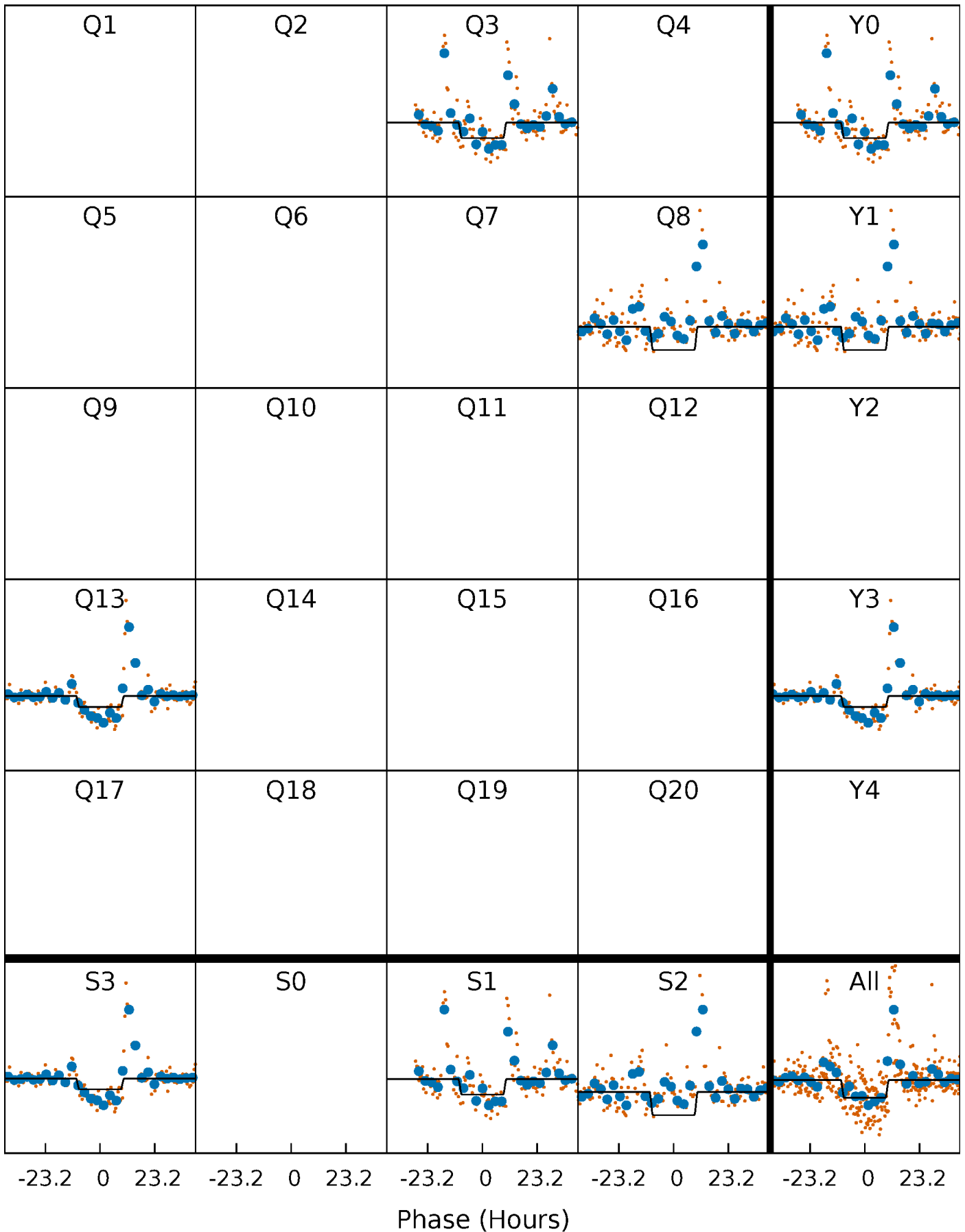
DV Quarter-Phased Transit Curves

TCE 010332732-01 $P=476.085380$ Days $T_0=282.642951$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

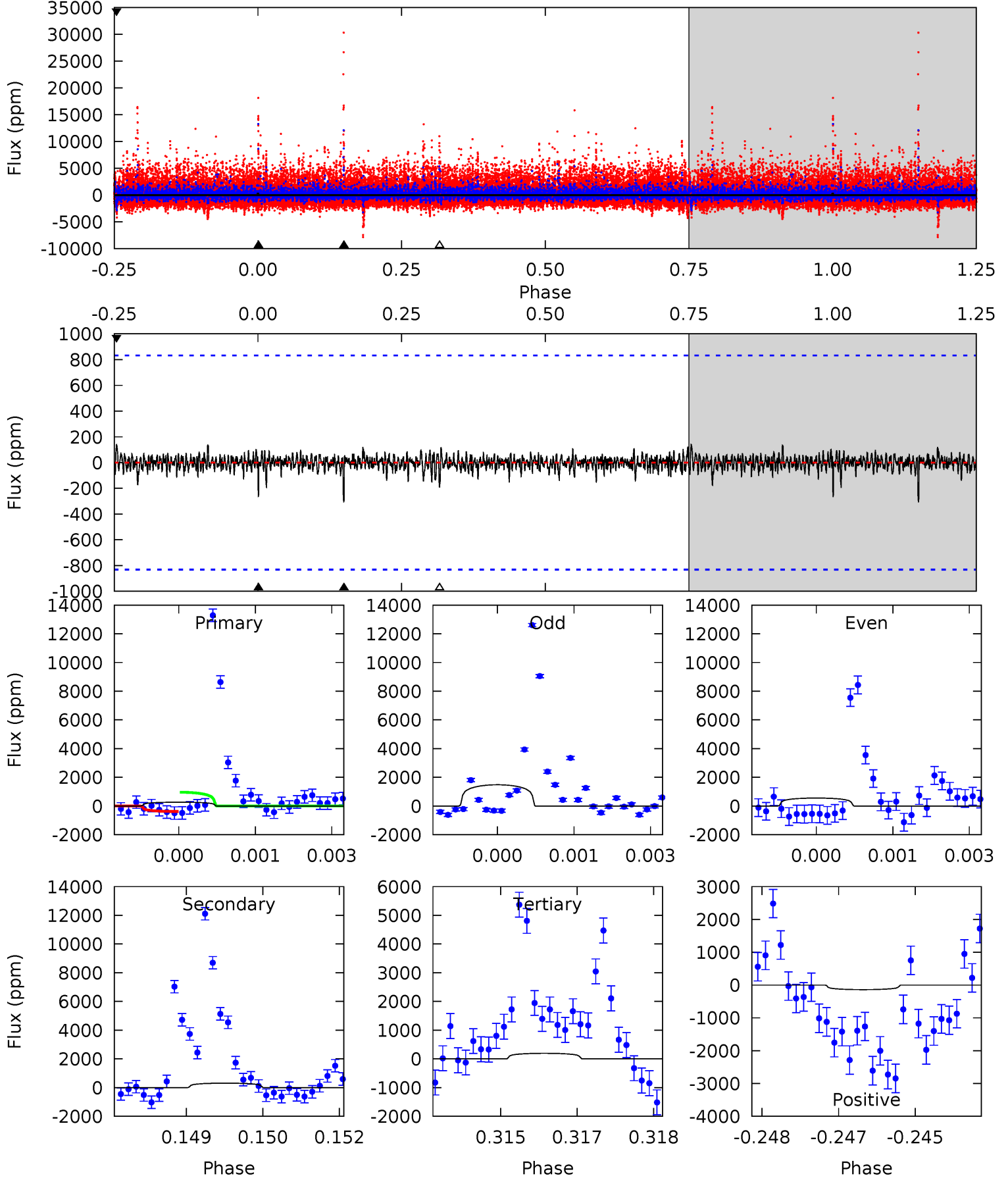
TCE 010332732-01 P=476.067892 Days $T_0=282.534289$ (BKJD)



DV Model-Shift Uniqueness Test

010332732-01, P = 476.085380 Days, E = 282.642951 Days

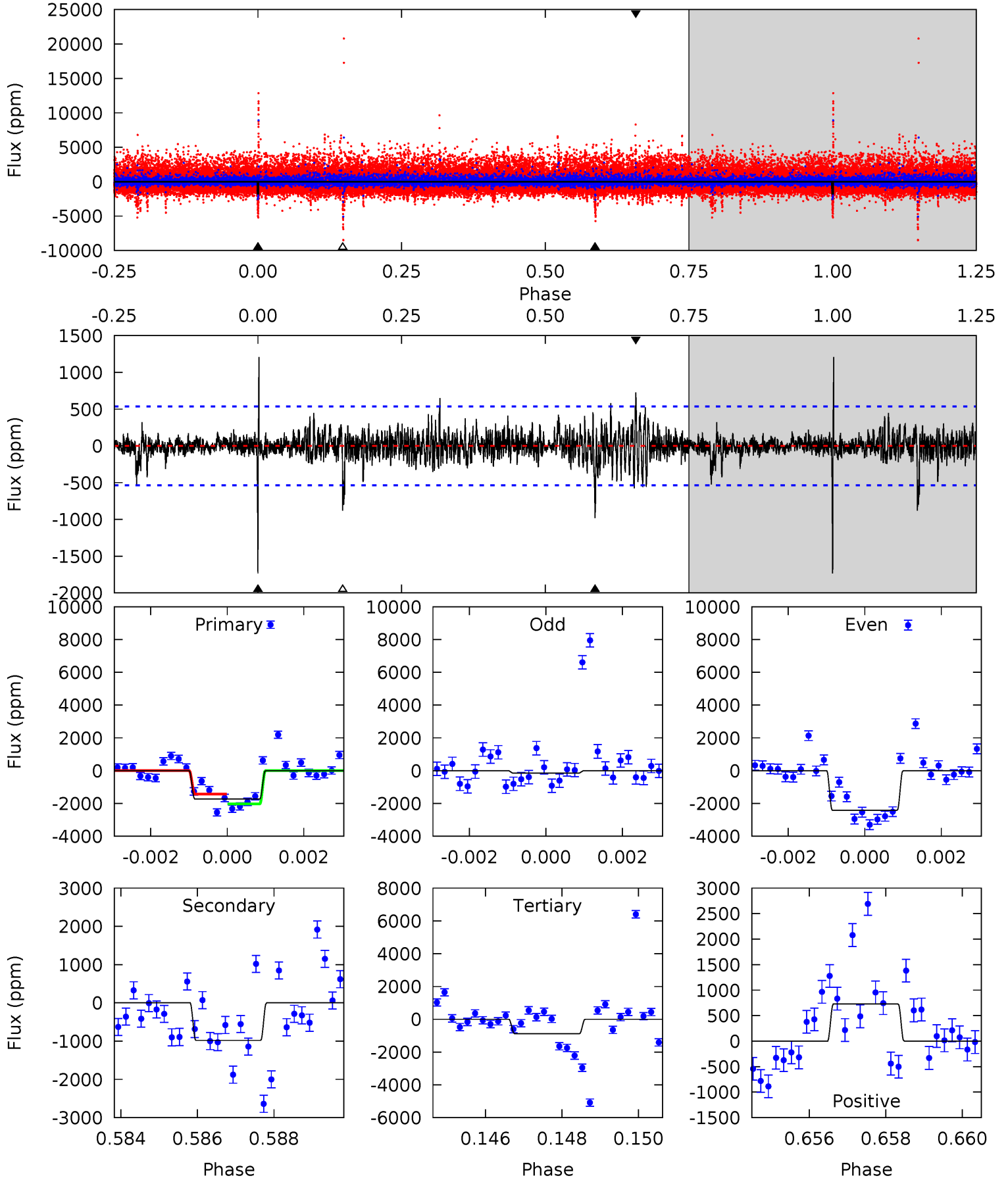
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.71	1.99	1.25	0.90	5.38	3.18	0.28	0.45	0.81	0.74	1.09	1.35	0.39	0.31	1.89



Alt Model-Shift Uniqueness Test

010332732-01, P = 476.067892 Days, E = 282.534289 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.3	9.77	8.78	7.24	5.35	3.12	1.39	8.52	10.1	0.99	2.52	9.64	0.93	0.41	3.03



Stellar Parameters For KIC 010332732

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3310^{+49}_{-44}	$5.008^{+0.055}_{-0.049}$	$0.000^{+0.100}_{-0.100}$	$0.248^{+0.043}_{-0.036}$	$0.229^{+0.057}_{-0.038}$	$21.080^{+7.034}_{-5.275}$
	+1%/-1%	+1%/-1%	+inf%/-inf%	+17%/-15%	+25%/-17%	+33%/-25%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010332732-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-307 ± 155	$0.86^{+0.77}_{-0.57}$	119^{+4}_{-3}	2742^{+1125}_{-447}	$106463^{+950057}_{-80957}$
Alt.	-980 ± 100	$1.24^{+0.81}_{-0.67}$	119^{+3}_{-3}	2966^{+831}_{-352}	$192260^{+737790}_{-120901}$

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

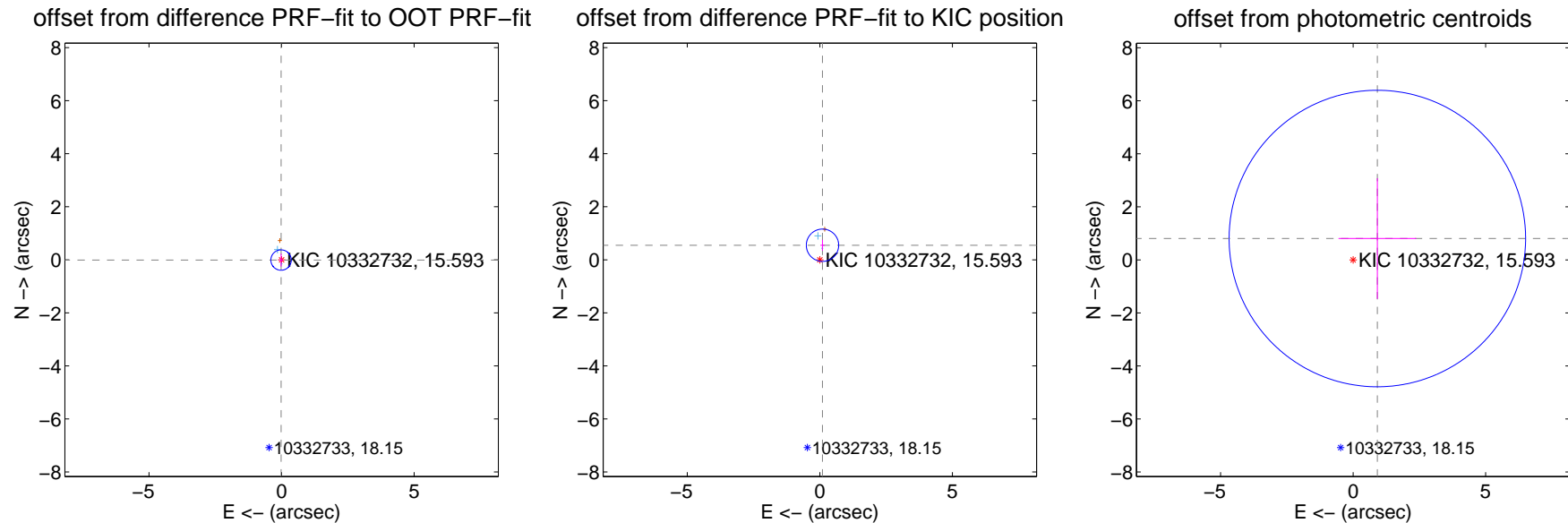
DV Centroid Data

Supplemental centroid analysis for 010332732-01. Kepler magnitude: 15.59. Transit SNR 1.98

There are 2 quarters with good PRF difference image offsets

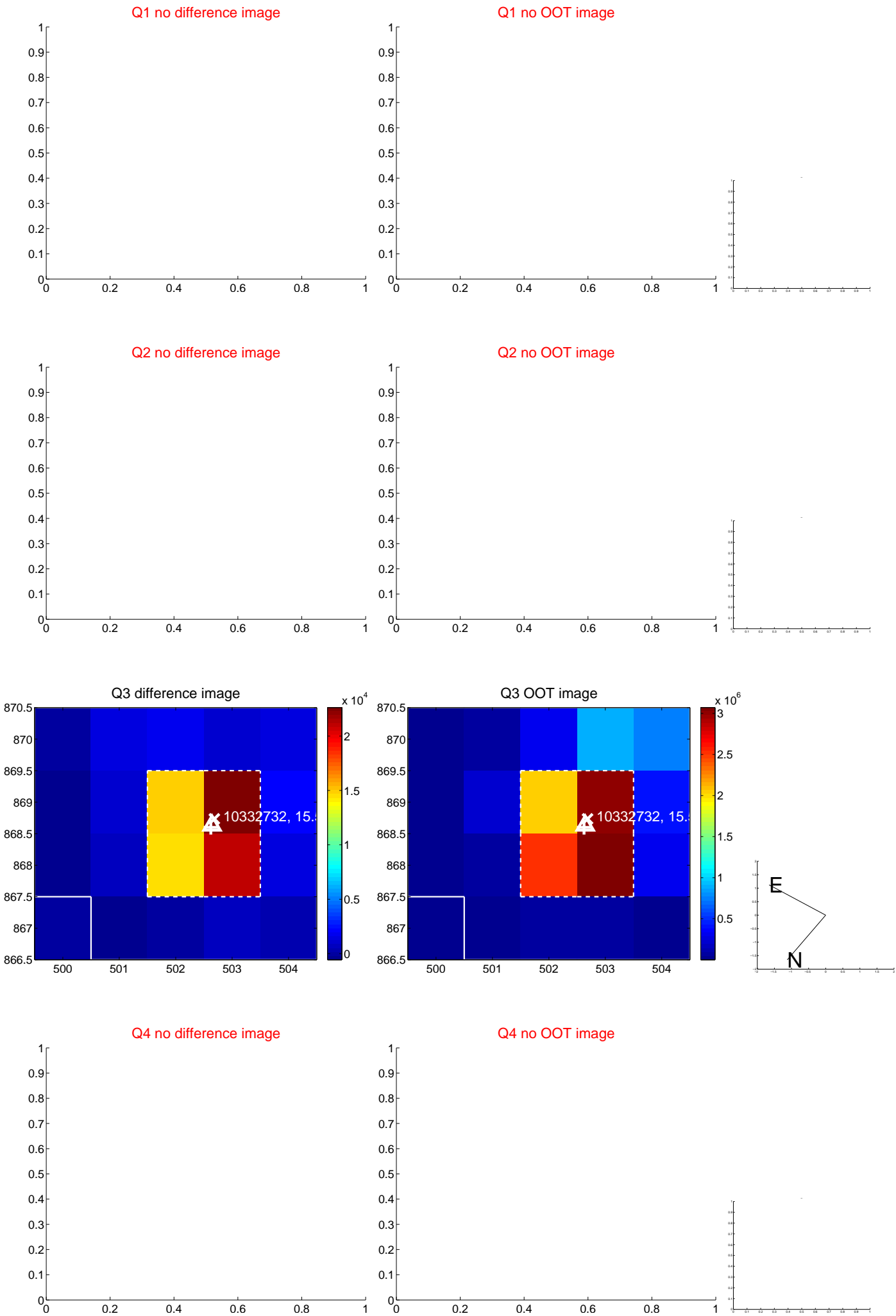
The direct PRF centroid is offset from the target star catalog position by about 0.52 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.022 ± 0.128	0.17	0.019 ± 0.074	-0.010 ± 0.243
PRF-fit source offset from KIC position	0.558 ± 0.203	2.74	-0.100 ± 0.078	0.549 ± 0.206
photometric centroid source offset	1.22 ± 1.86	0.65	-0.91 ± 1.47	0.80 ± 2.28

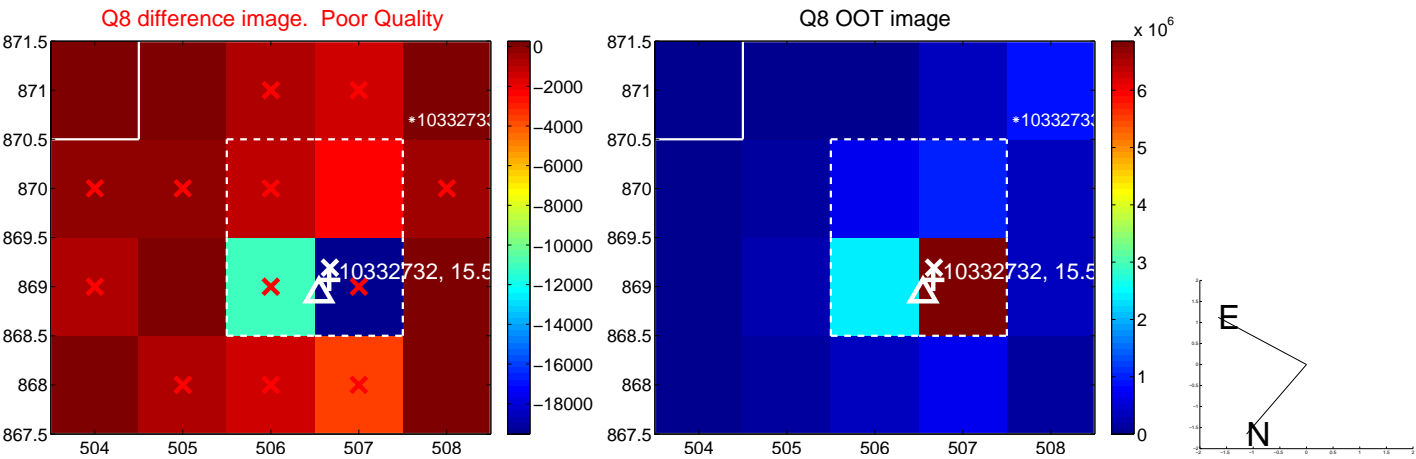


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



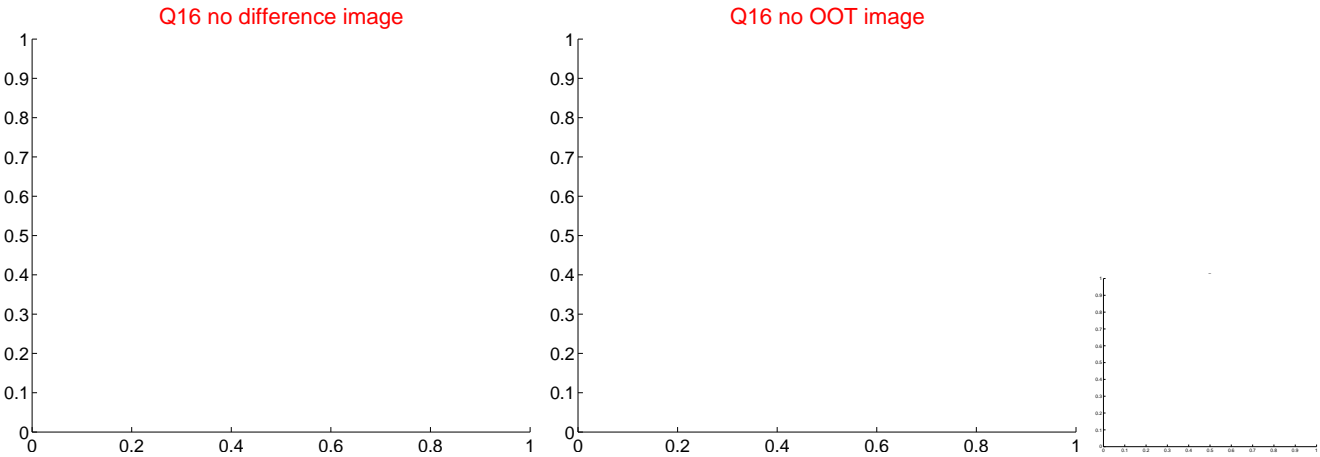
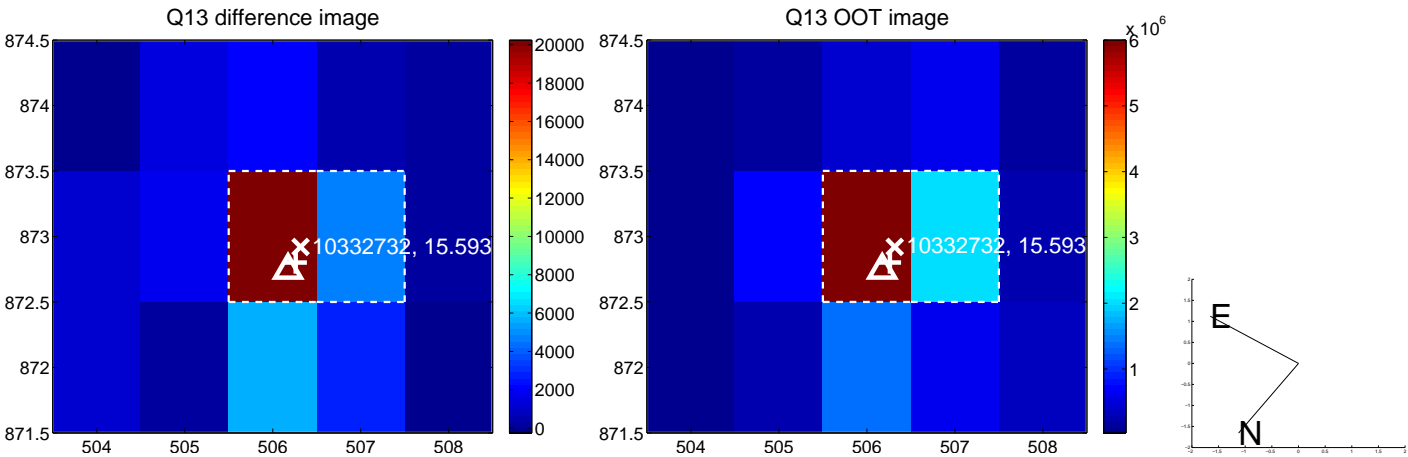
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



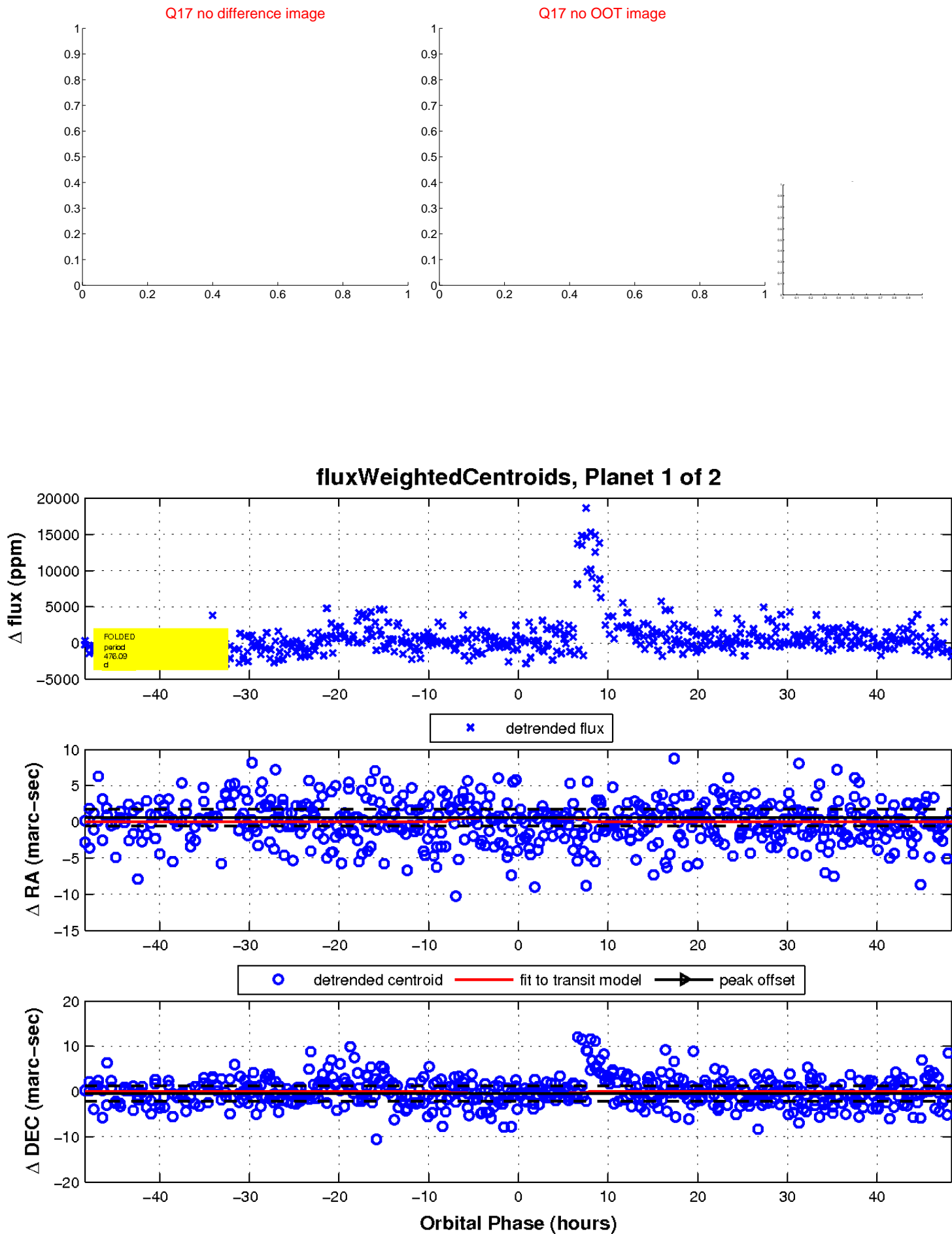
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

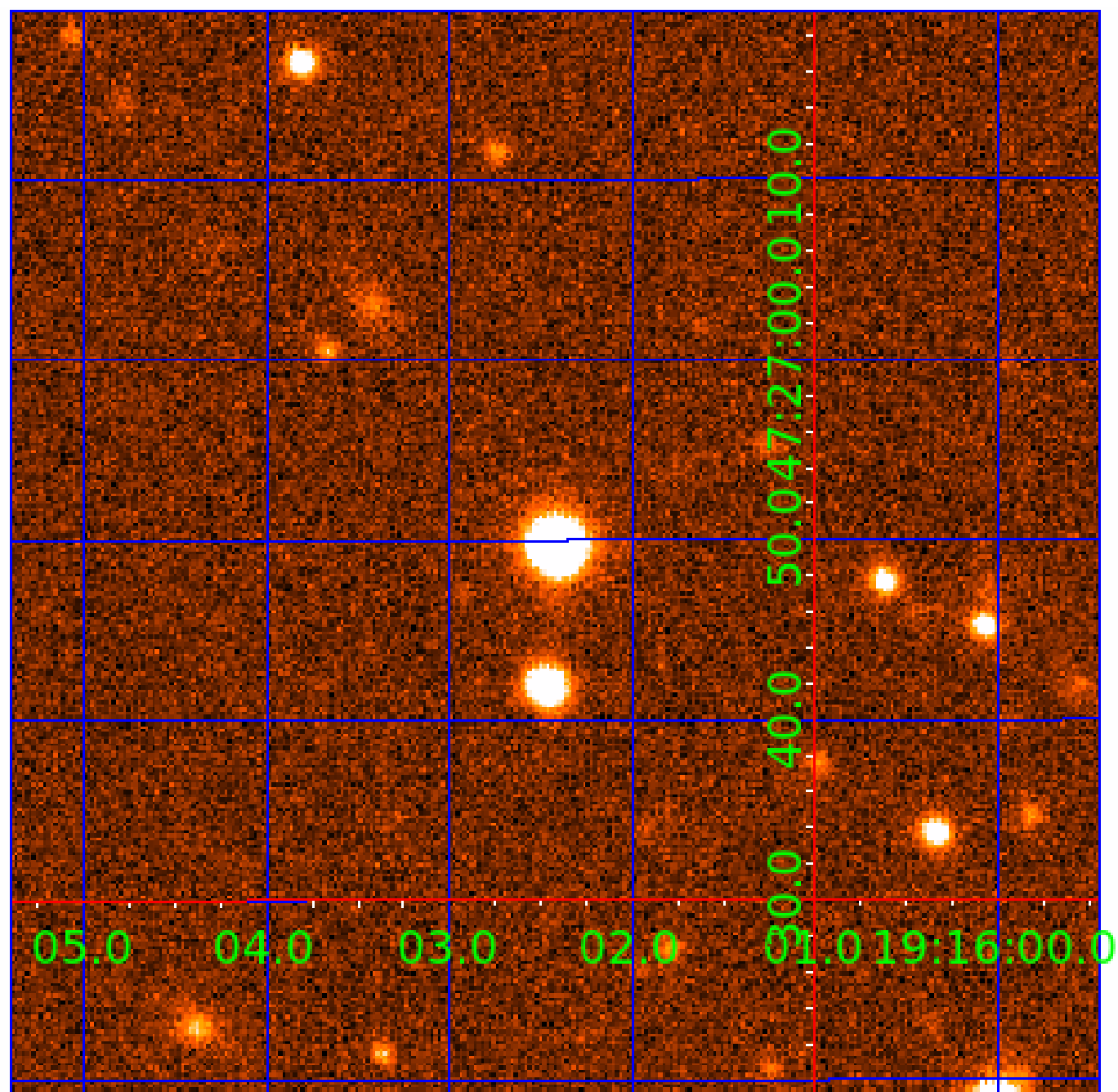


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010332732

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})
010332732-01	OBS	No	476.085381	282.642951	640.5	16.137	13.5	2.0	0.25	3310	0.63	0.01
010332732-02	OBS	No	4.646442	134.174500	0.0	26.201	10.4	0.0	0.25	3310	0.00	5.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010332732-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_TER_DV—CENT_FEW_DIFFS
010332732-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_KIC_POS

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

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

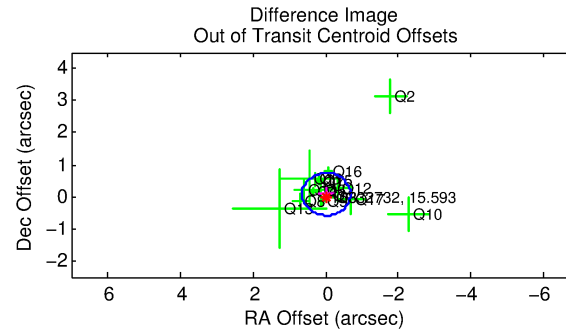
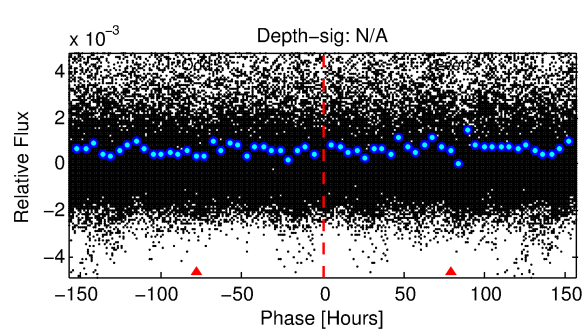
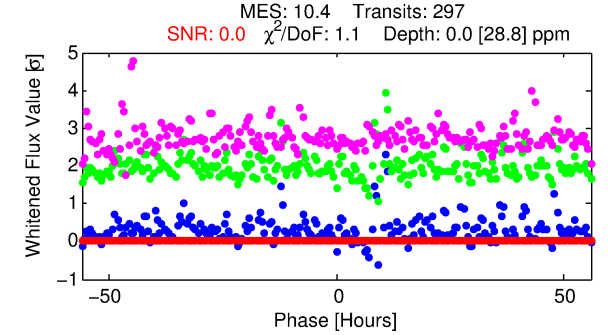
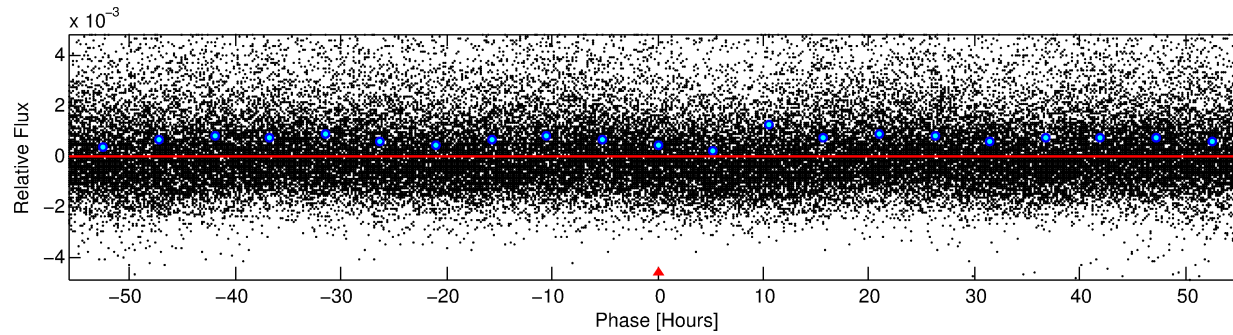
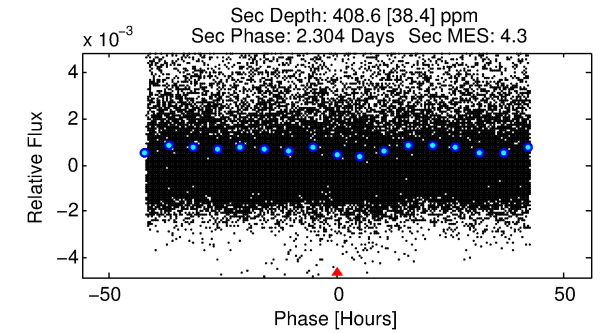
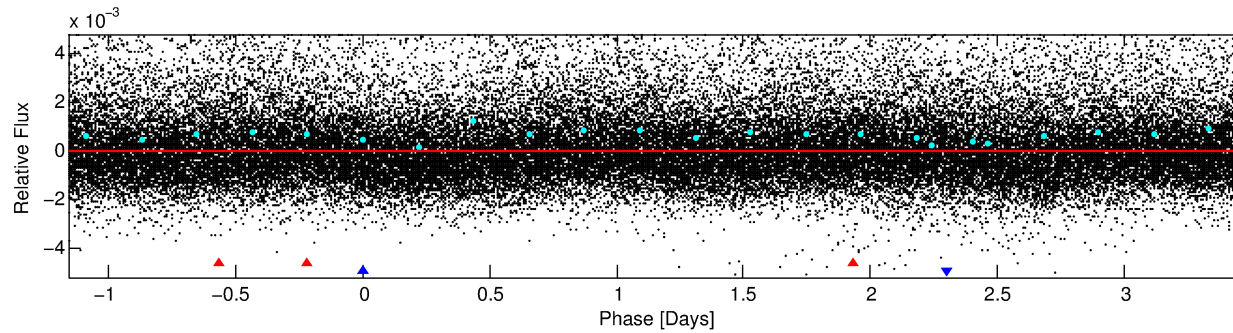
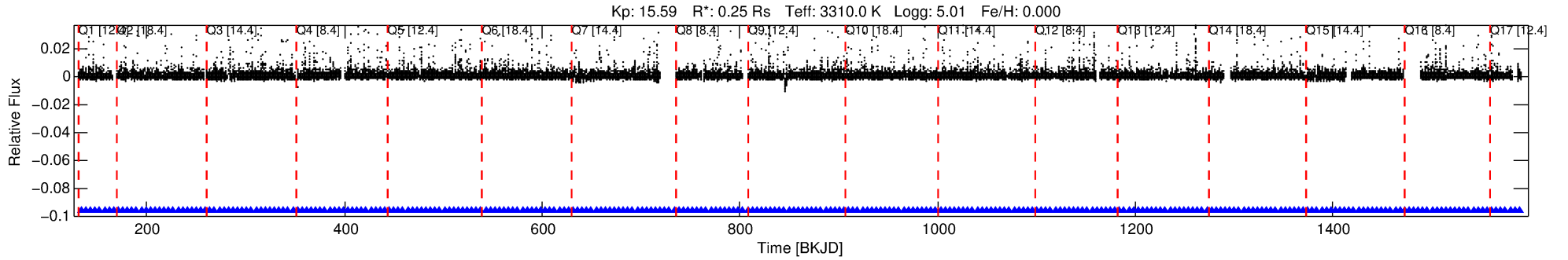
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010332732-02

No Significant Match Found

DV One-Page Summary

KIC: 10332732 Candidate: 2 of 2 Period: 4.646 d



DV Fit Results:

Period = 4.64644 [3.12599] d
Epoch = 134.1745 [451.4639] BKJD
Rp/R* = 0.0001 [0.1974]
a/R* = 1.23 [230.94]
b = 0.76 [404.86]
Seff = 5.96 [5.42]
Teq = 398 [91] K
Rp = 0.00 [5.34] Re
a = 0.0333 [0.0155] AU
Ag = 63949371.03 [345789489138.53] K [0.005]
Teffp = 55078 [74456638] K [0.005]

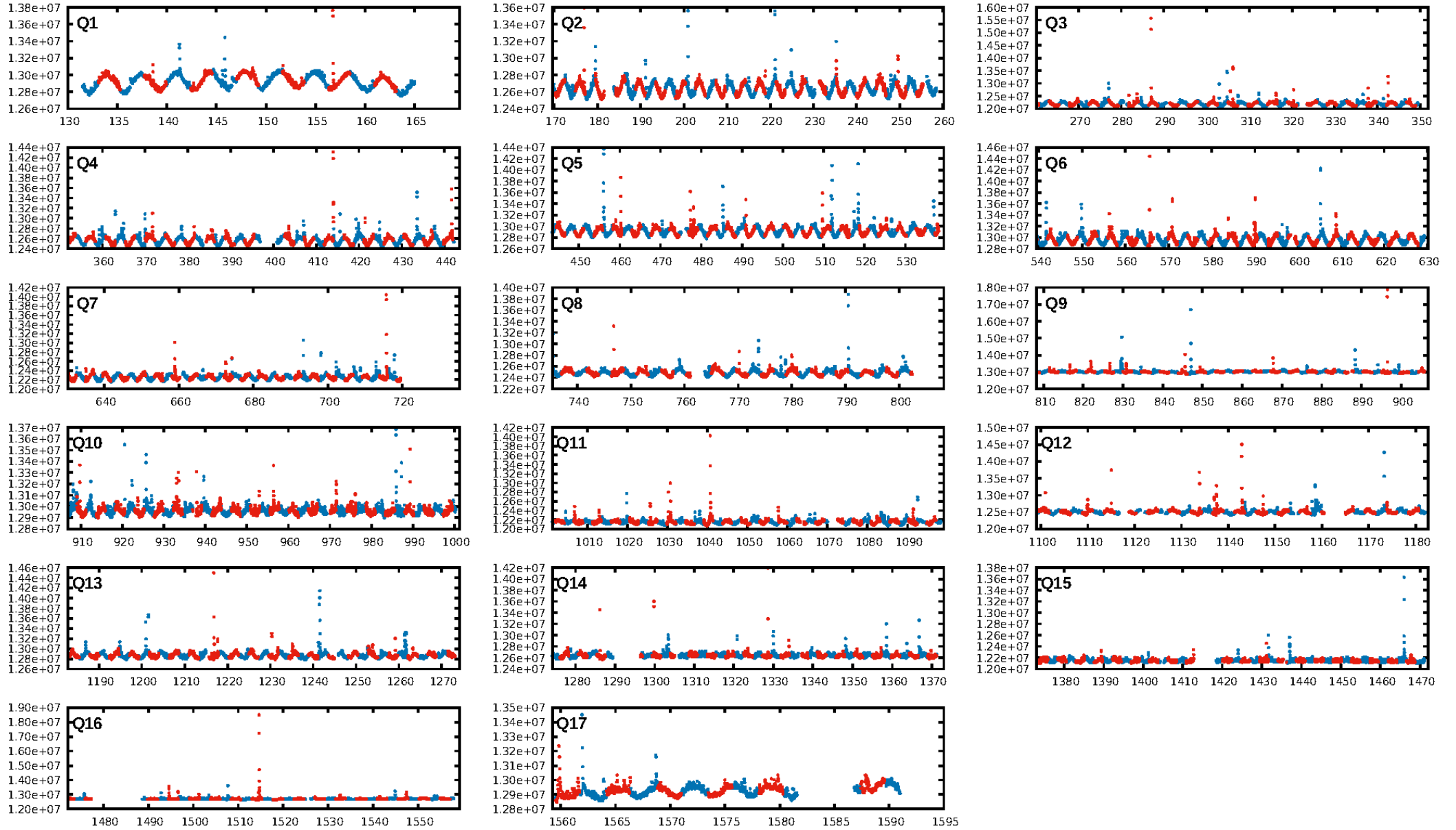
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [367.69]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.41e-18
RollingBand-fgt: 1.00 [284/284]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.080 arcsec [0.36σ]
KicOffset-rm: 0.589 arcsec [2.85σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.59 [10/17]
DiffImageOverlap-fno: 1.00 [17/17]

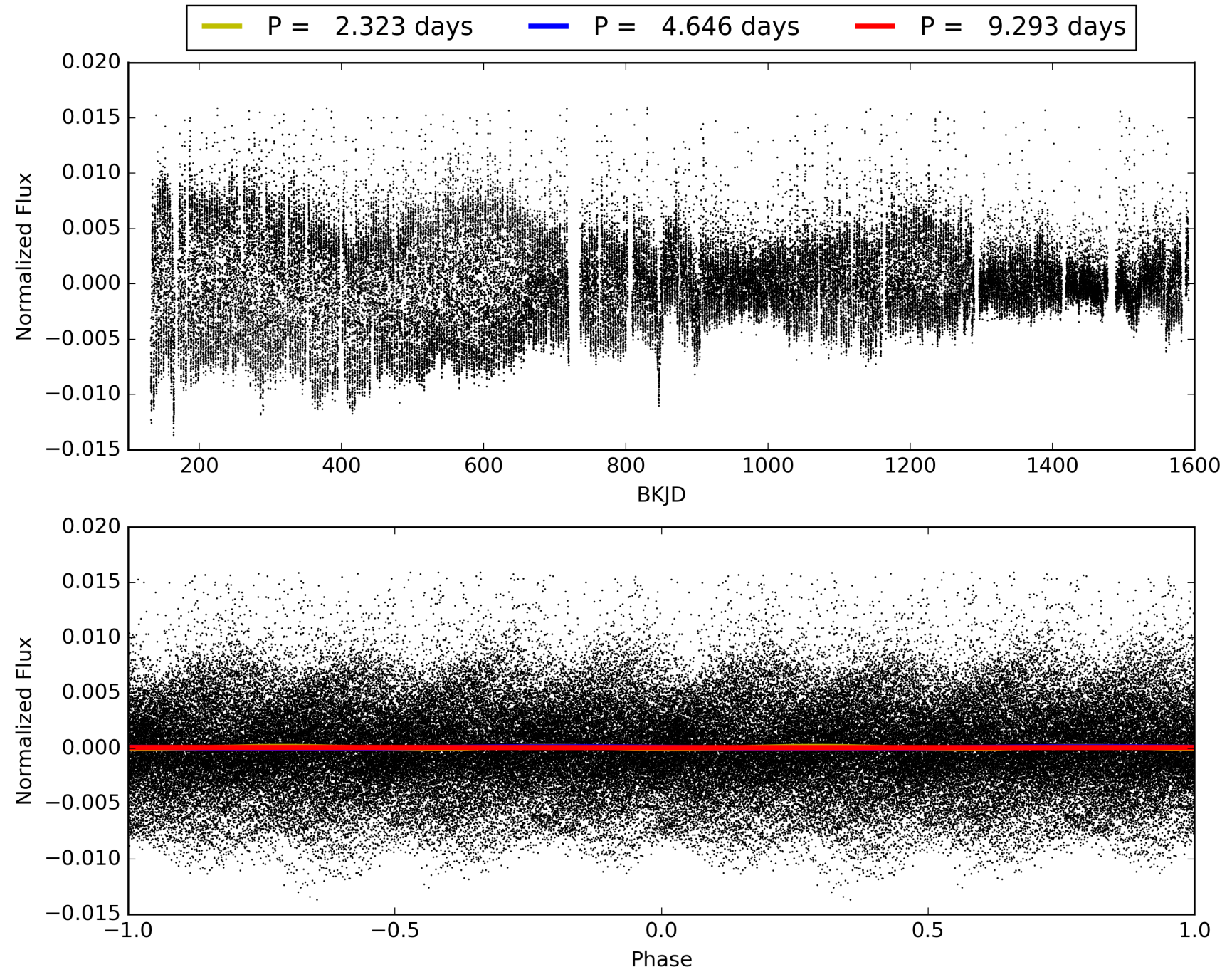
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:34:36 Z

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

TCE 010332732-02, PDC Light Curves

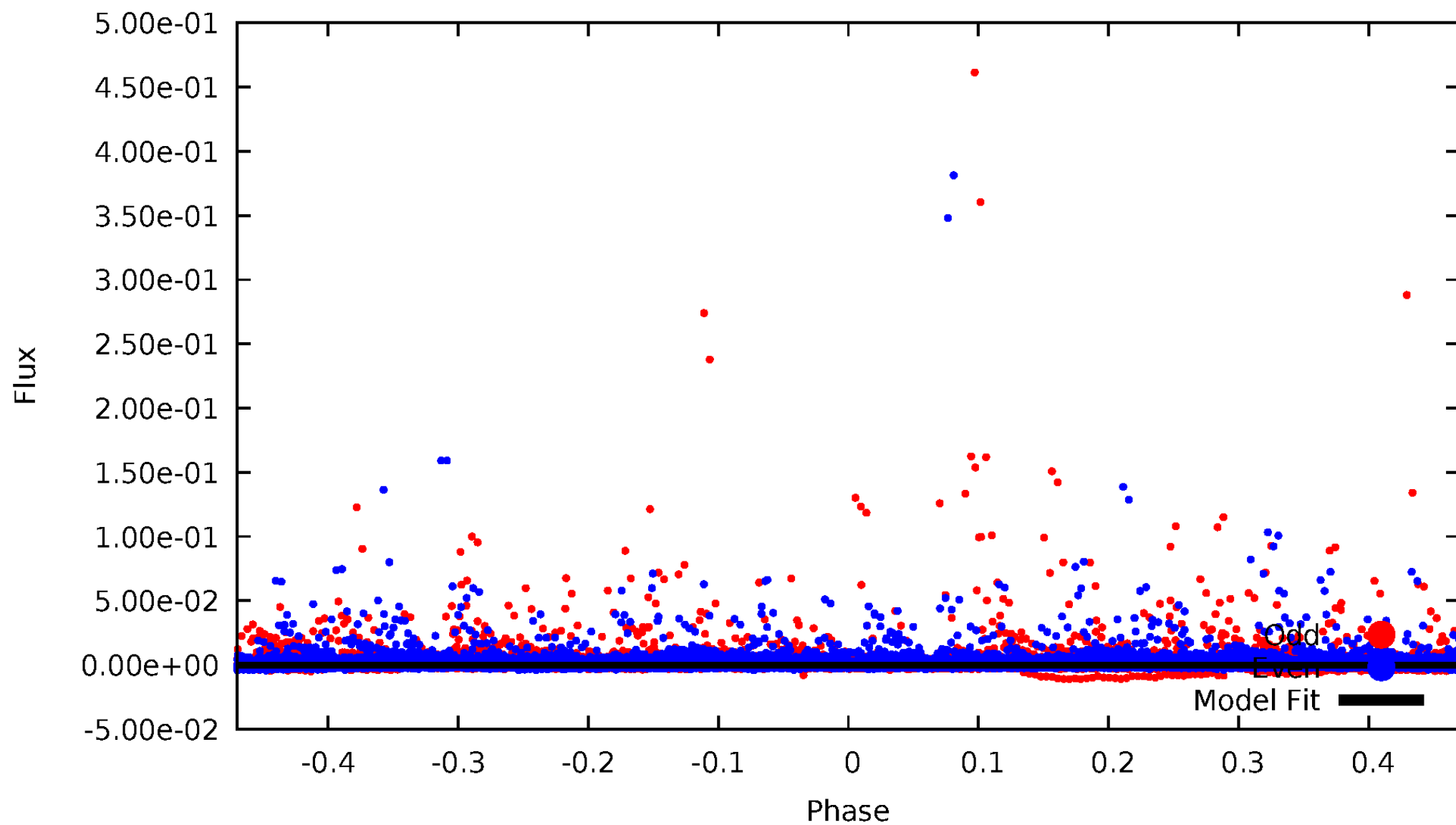


TCE 010332732-02



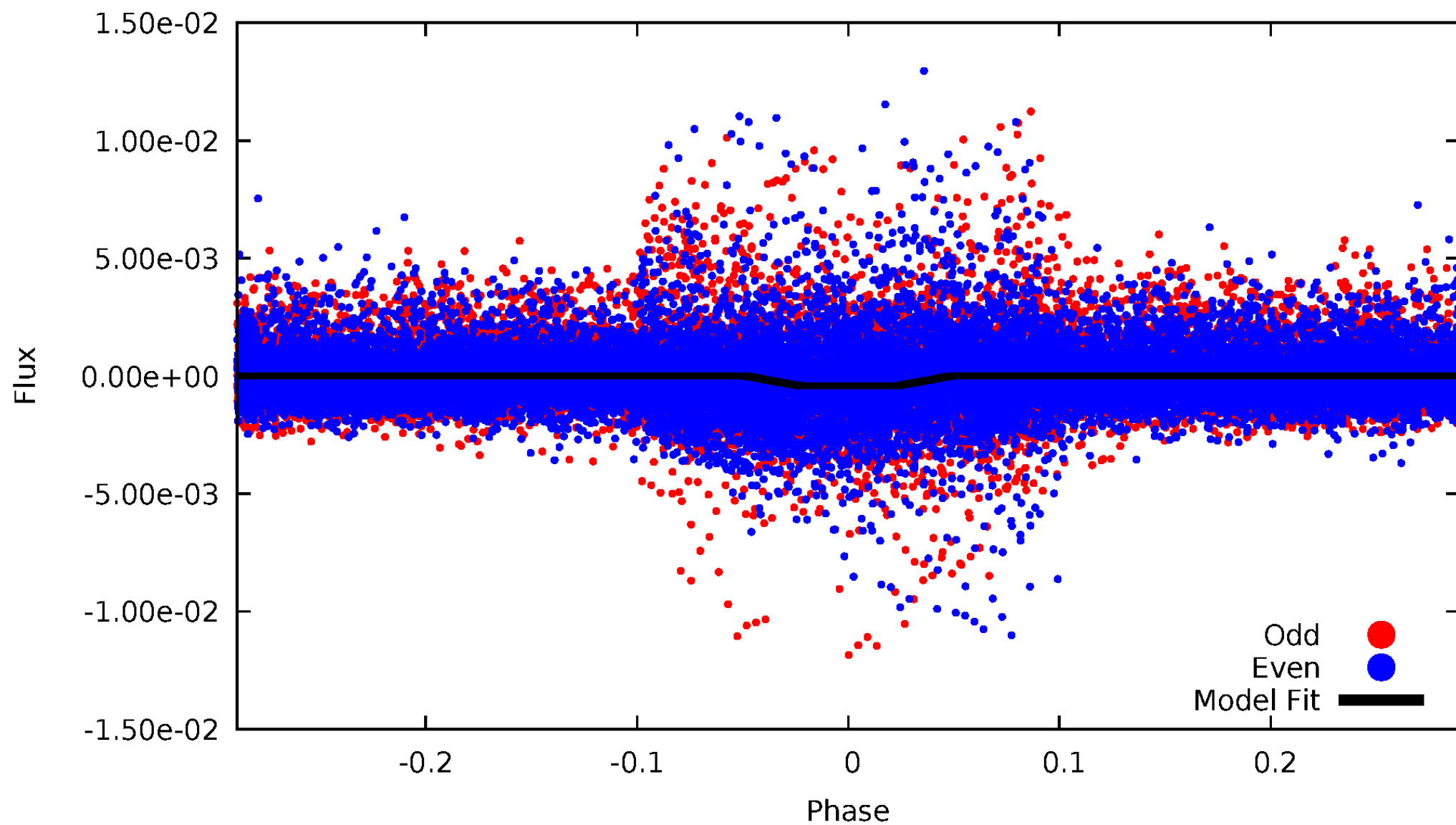
DV Odd/Even

TCE 010332732-02



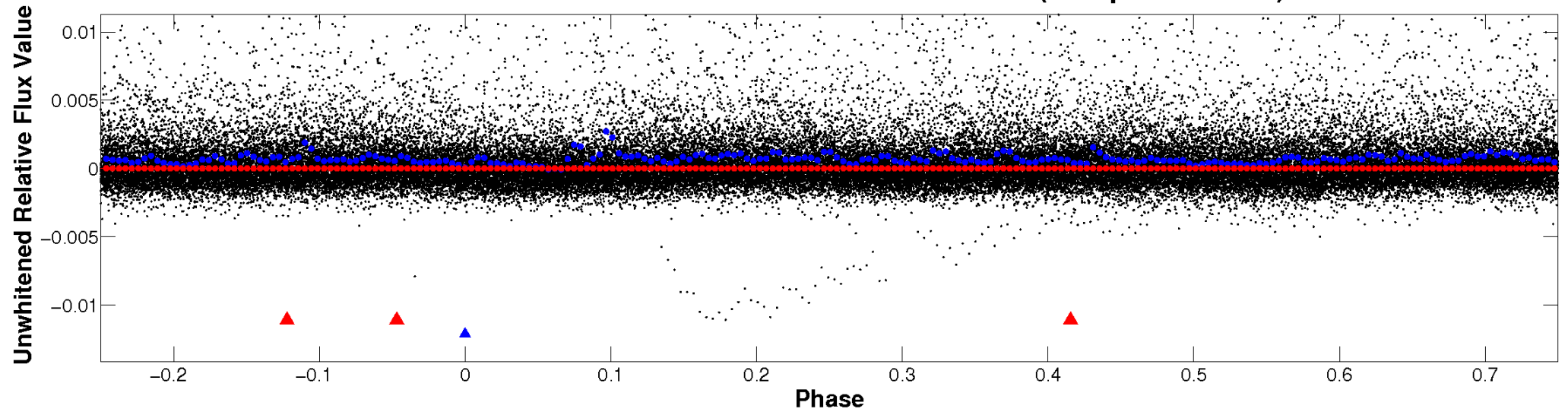
ALT Odd/Even

TCE 010332732-02

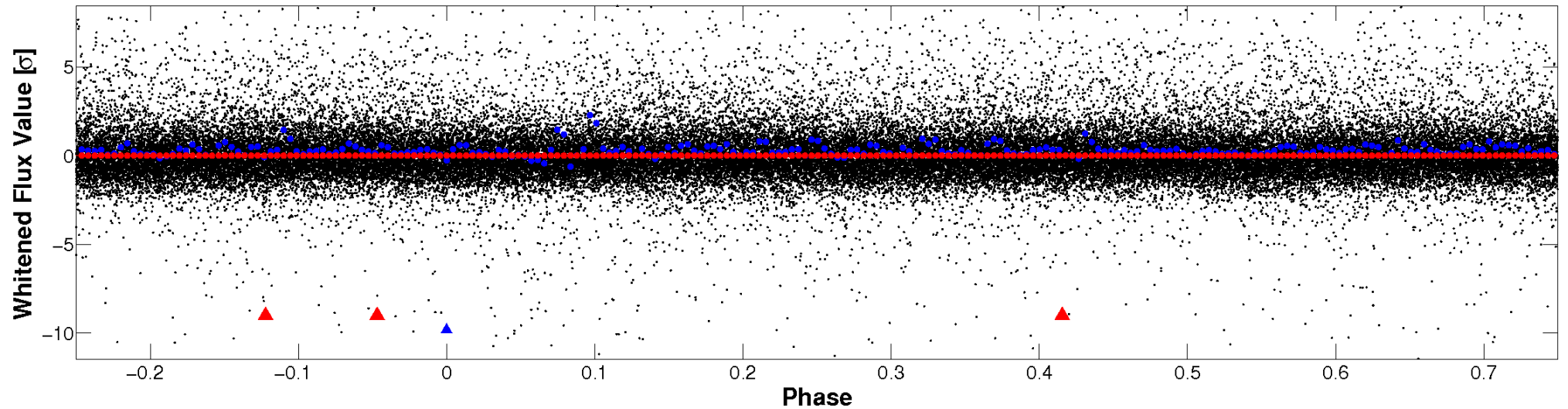


Non-Whitened Vs. Whitened Light Curve

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

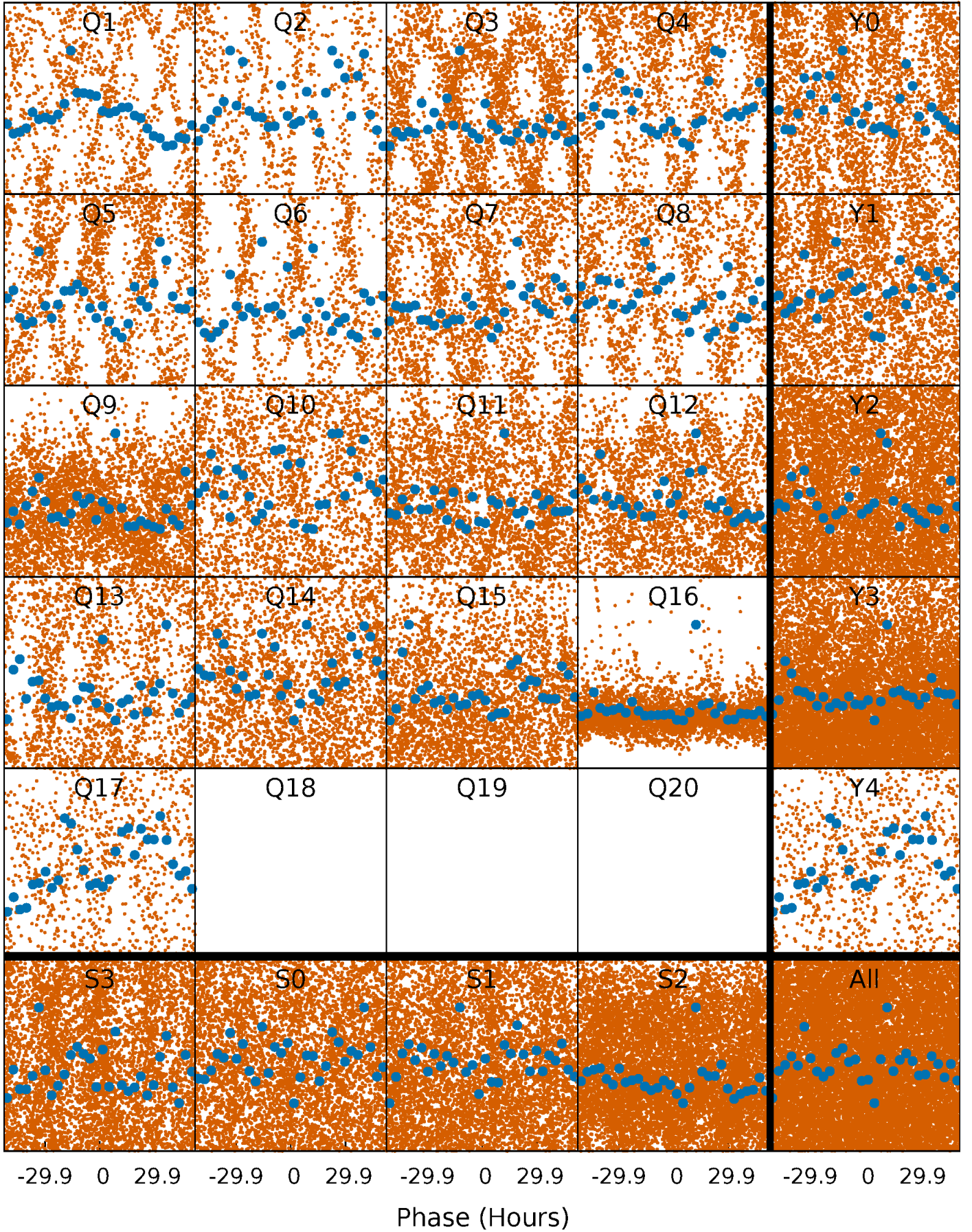


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



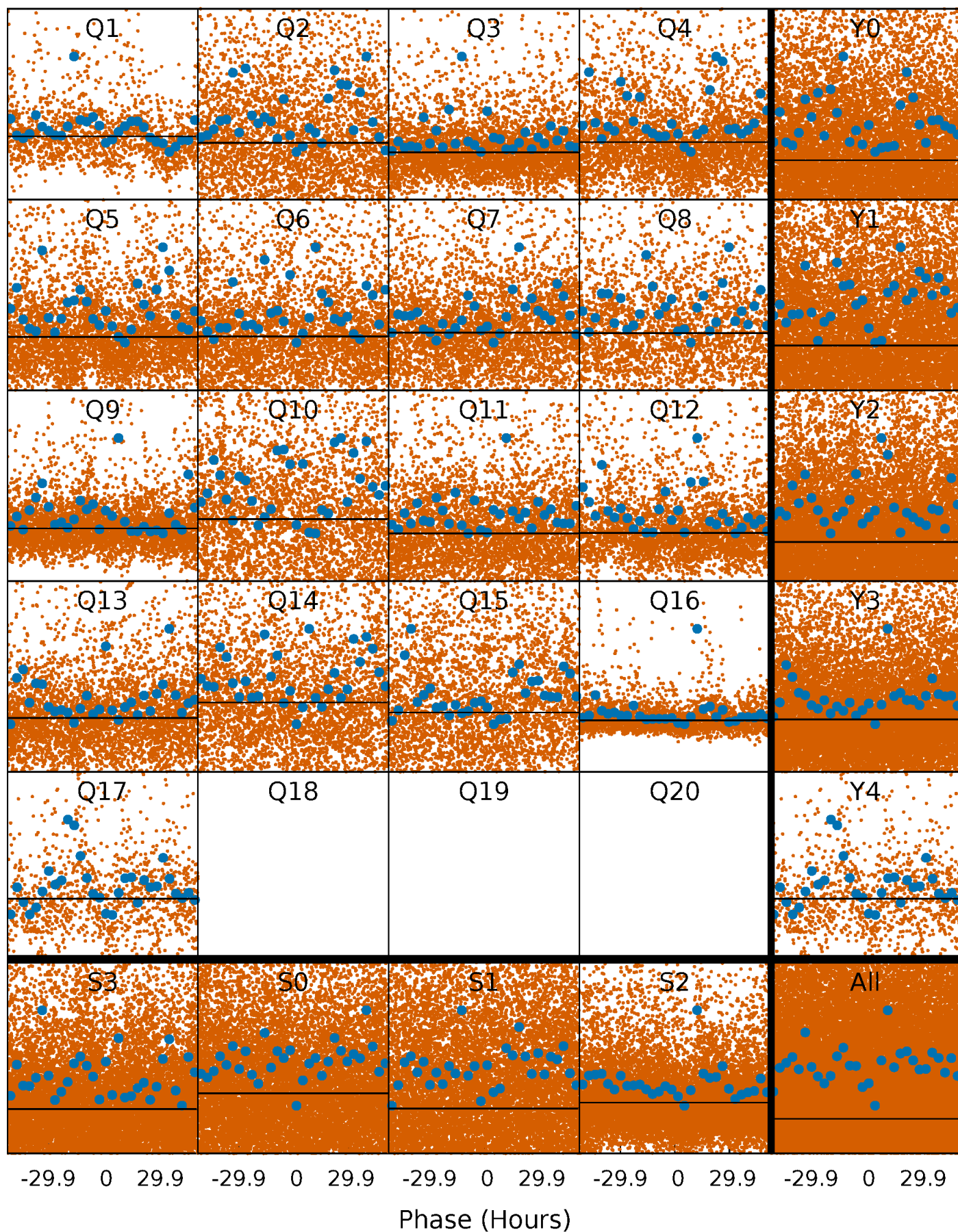
PDC Quarter-Phased Transit Curves

TCE 010332732-02 P= 4.646442 Days $T_0=134.174499$ (BKJD)



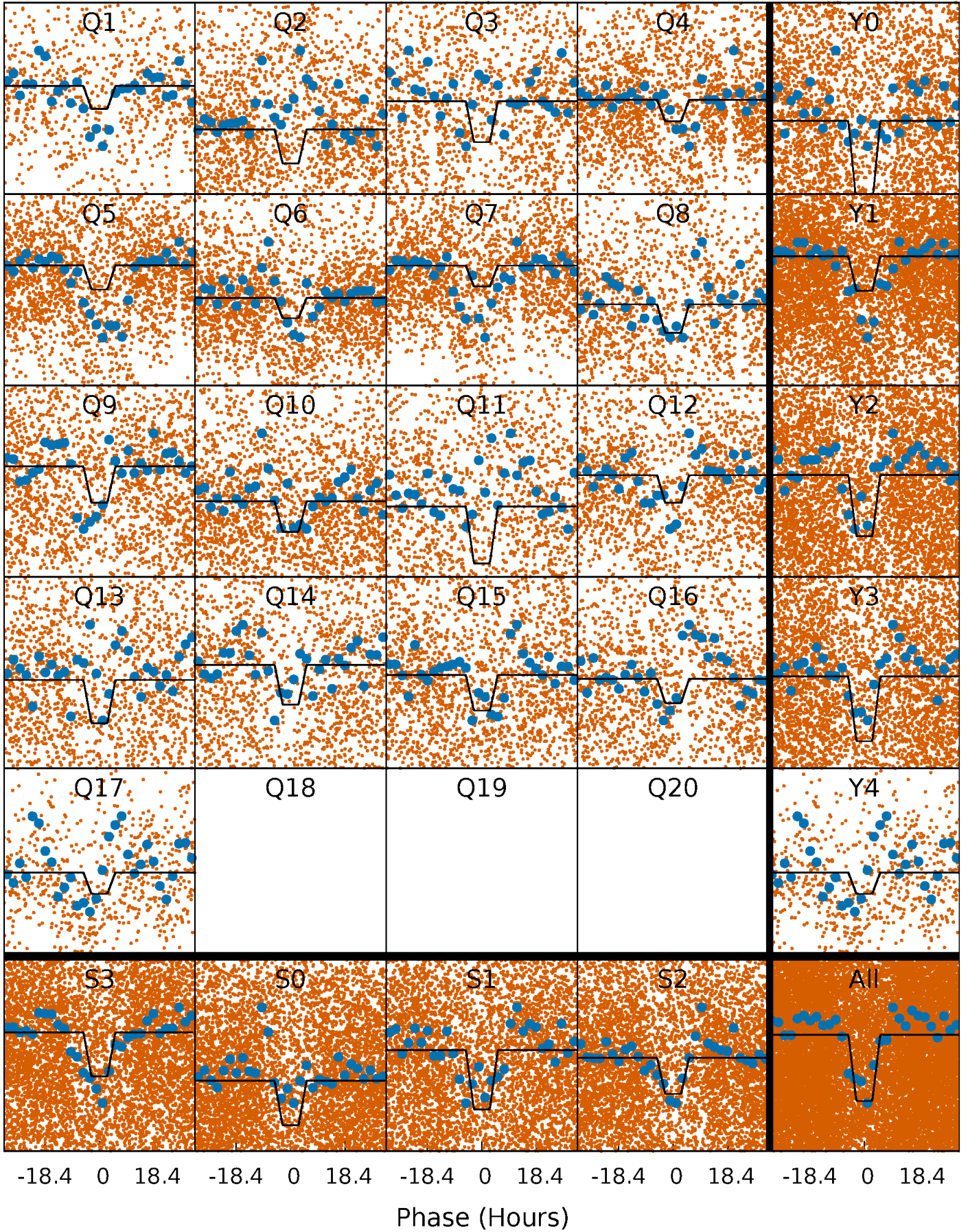
DV Quarter-Phased Transit Curves

TCE 010332732-02 P= 4.646442 Days $T_0=134.174499$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

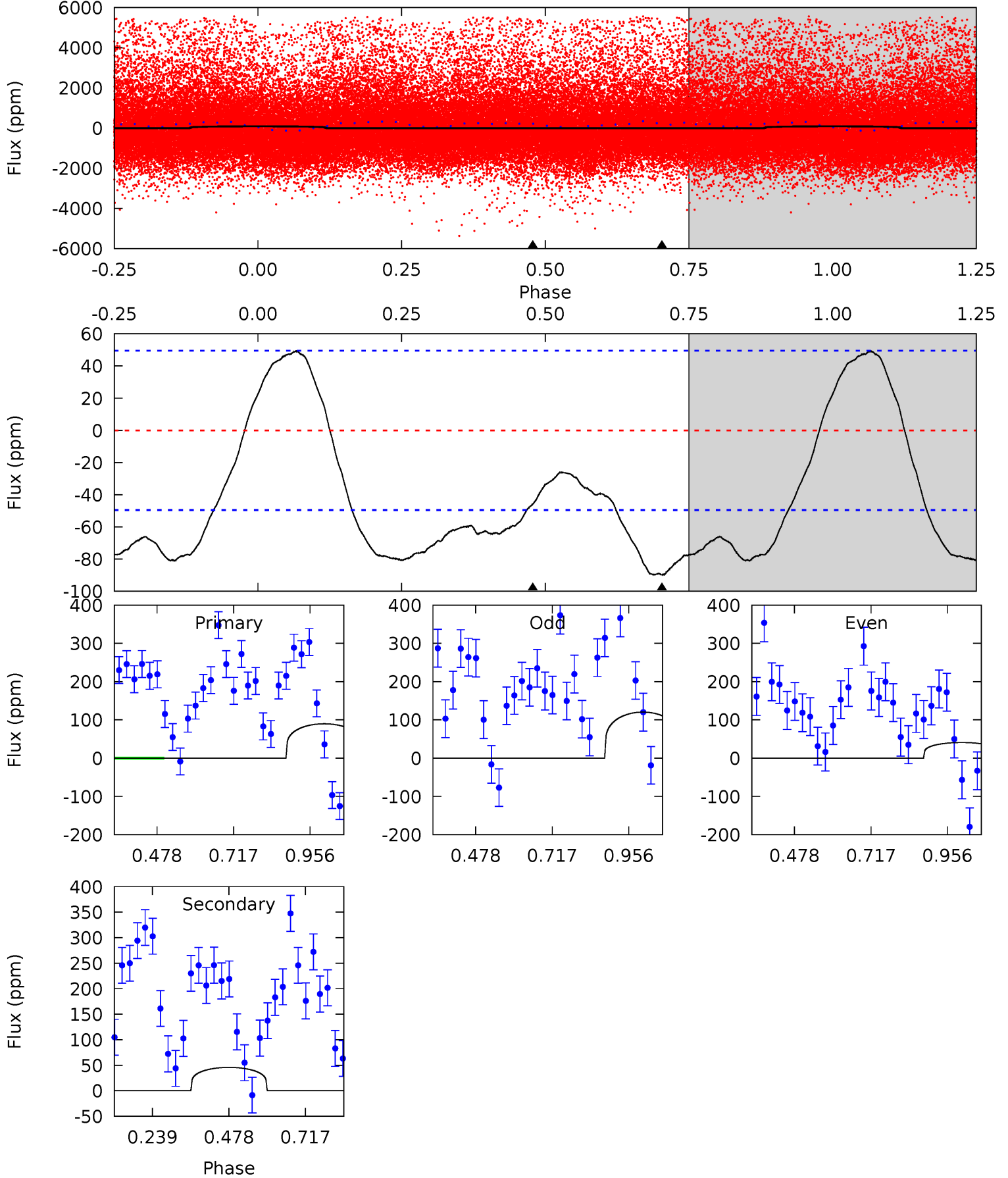
TCE 010332732-02 P= 4.646784 Days $T_0=134.367540$ (BKJD)



DV Model-Shift Uniqueness Test

010332732-02, P = 4.646442 Days, E = 129.528057 Days

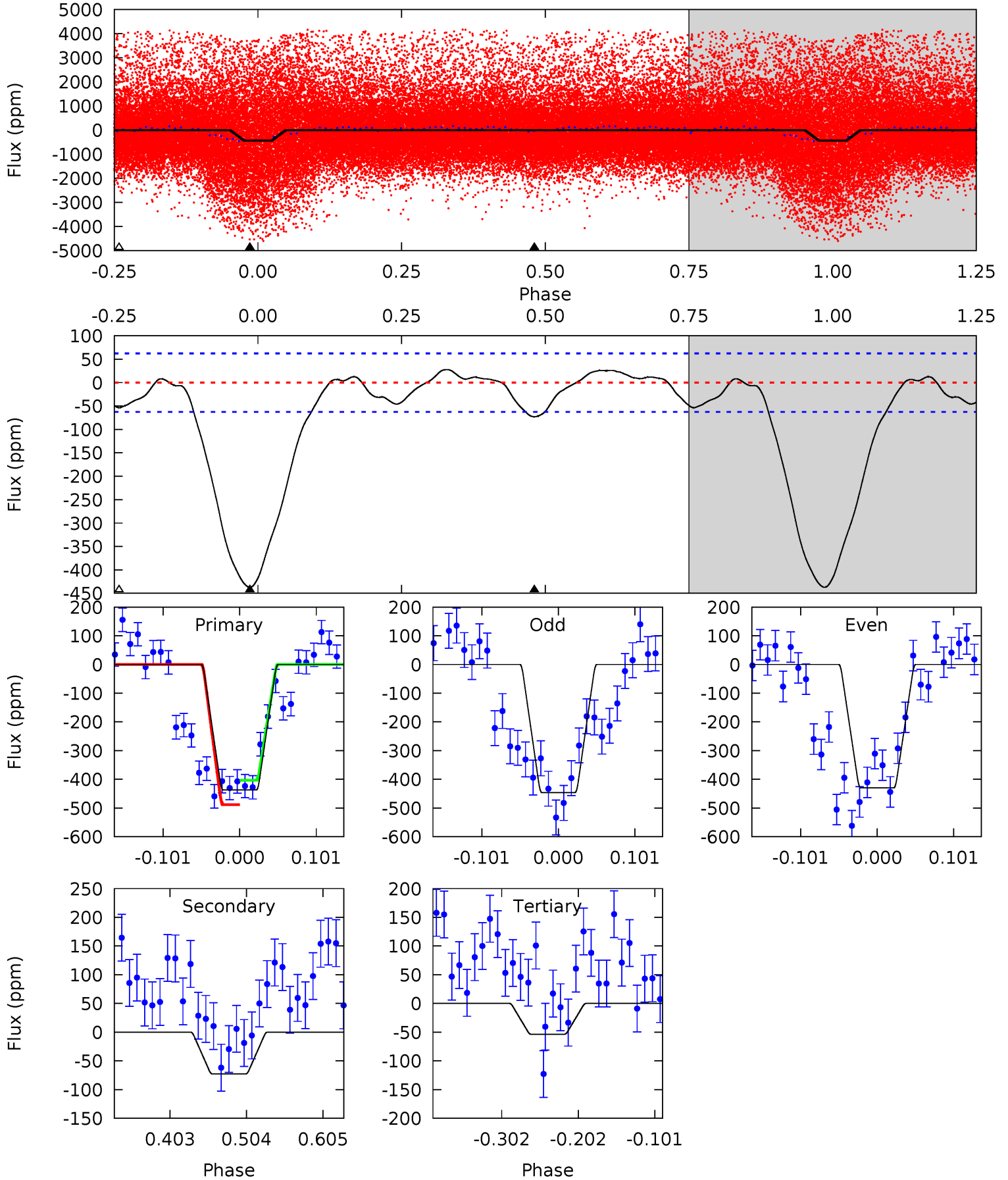
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.94	4.05	0	0	4.38	1.18	3.99	7.94	7.94	4.05	4.05	3.38	2.48	0.35	6.78



Alt Model-Shift Uniqueness Test

010332732-02, P = 4.646784 Days, E = 129.720756 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.0	5.33	3.92	0	4.56	1.64	1.80	28.0	32.0	1.40	5.33	0.60	1.02	0.06	3.17



Stellar Parameters For KIC 010332732

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3310^{+49}_{-44}	$5.008^{+0.055}_{-0.049}$	$0.000^{+0.100}_{-0.100}$	$0.248^{+0.043}_{-0.036}$	$0.229^{+0.057}_{-0.038}$	$21.080^{+7.034}_{-5.275}$
	+1%/-1%	+1%/-1%	+inf%/-inf%	+17%/-15%	+25%/-17%	+33%/-25%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010332732-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-46 ± 11	$3.74^{+3.94}_{-2.74}$	549^{+163}_{-86}	1624^{+497}_{-435}	$2.043^{+25.733}_{-1.727}$
Alt.	-73 ± 14	$4.05^{+4.07}_{-2.94}$	546^{+172}_{-79}	1679^{+538}_{-272}	$2.843^{+34.886}_{-2.325}$

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 $A_{obs} \gg 1.0$

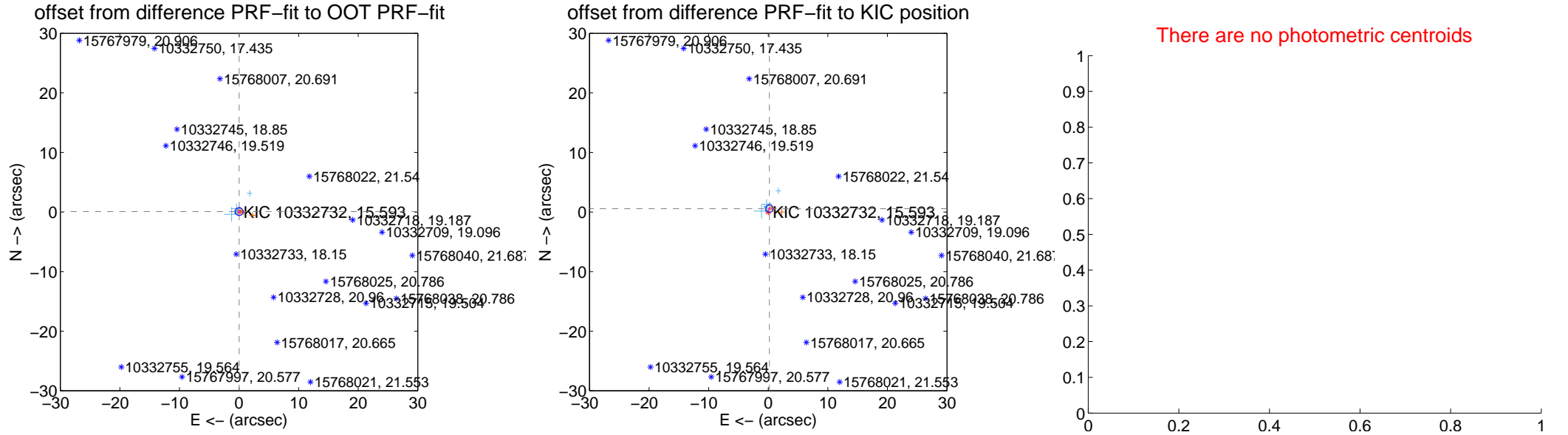
DV Centroid Data

Supplemental centroid analysis for 010332732-02. Kepler magnitude: 15.59. Transit SNR 0.00

There are 10 quarters with good PRF difference image offsets

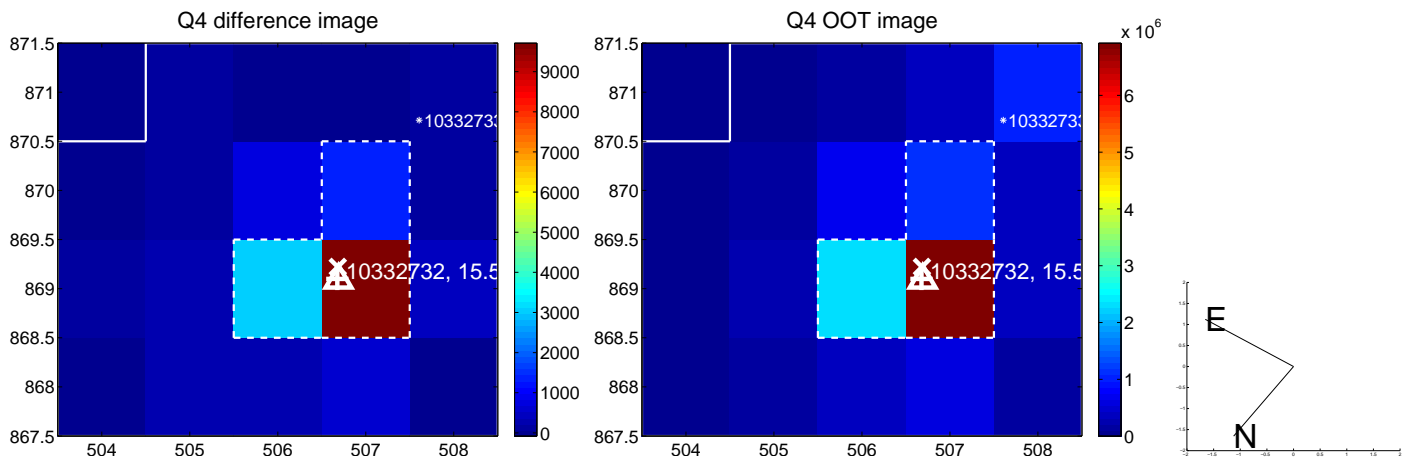
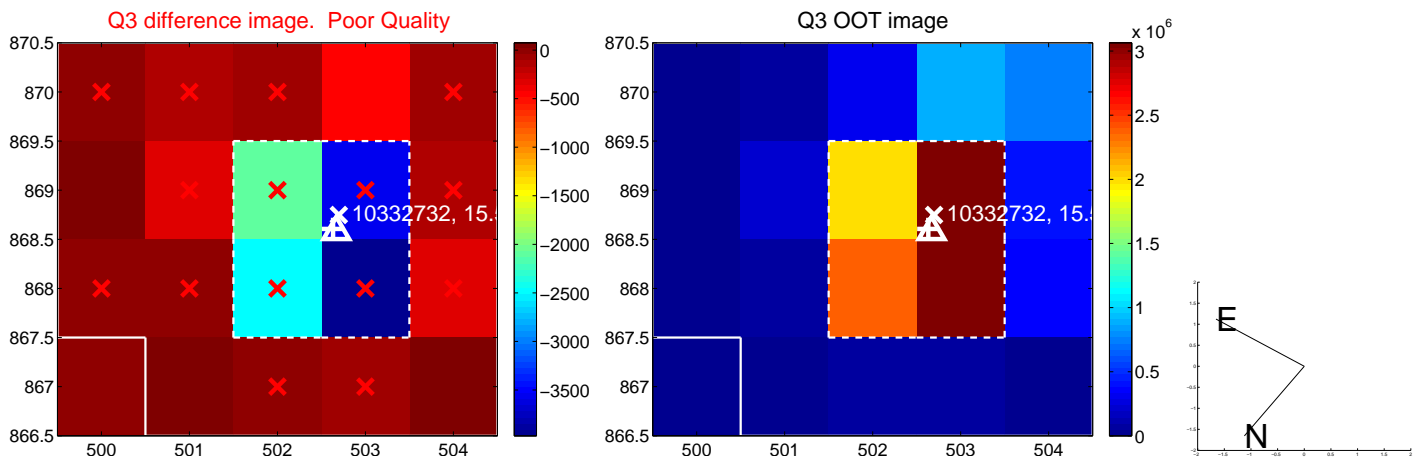
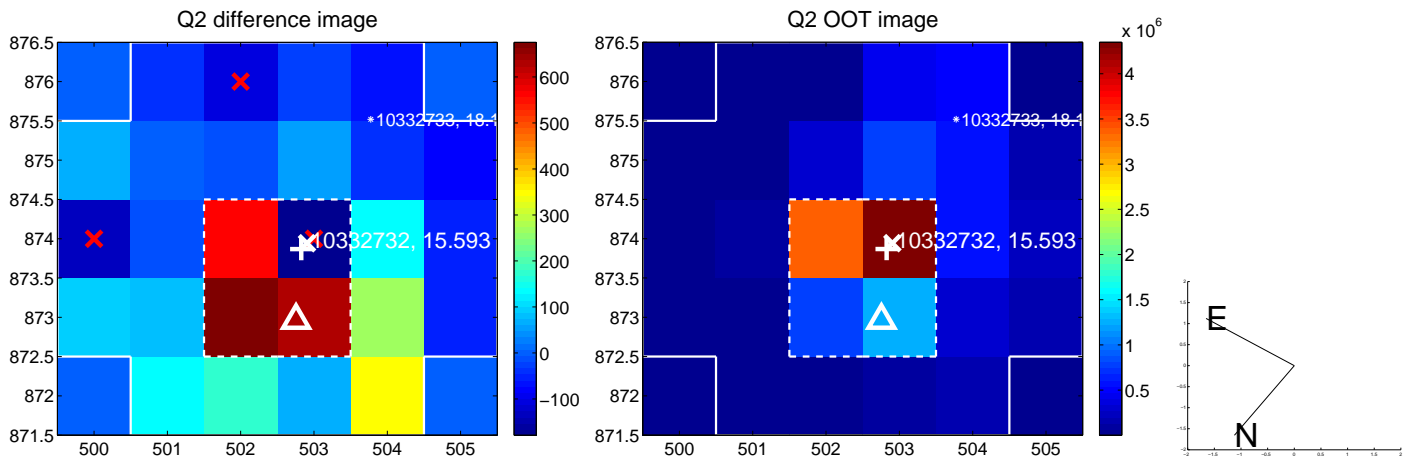
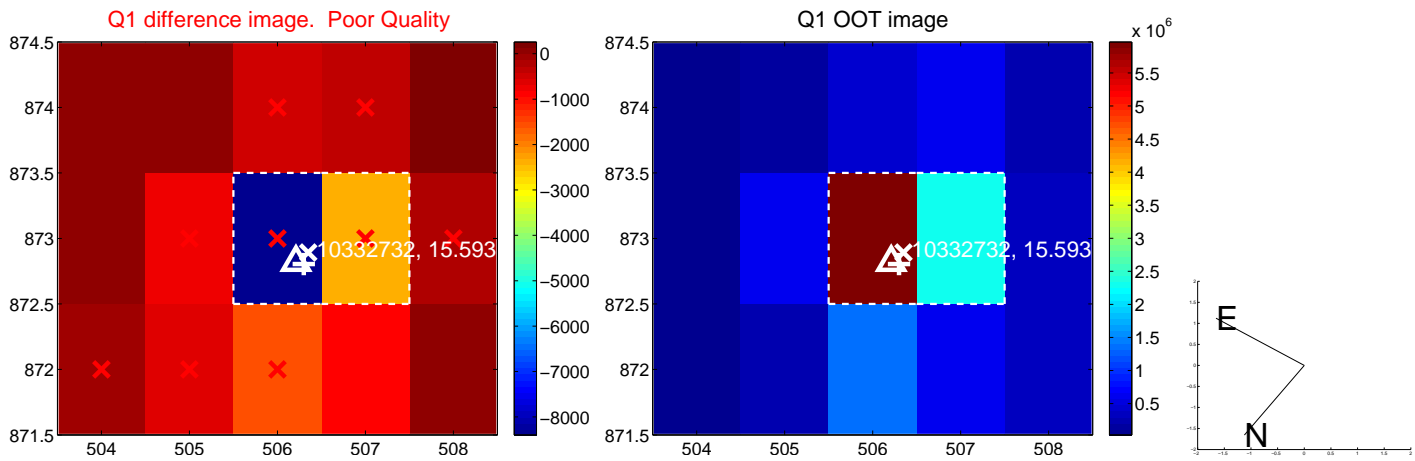
The direct PRF centroid is offset from the target star catalog position by about 0.56 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.080 ± 0.221	0.36	-0.017 ± 0.207	0.078 ± 0.205
PRF-fit source offset from KIC position	0.589 ± 0.207	2.85	-0.186 ± 0.210	0.559 ± 0.192
photometric centroid source offset	—	—	—	—

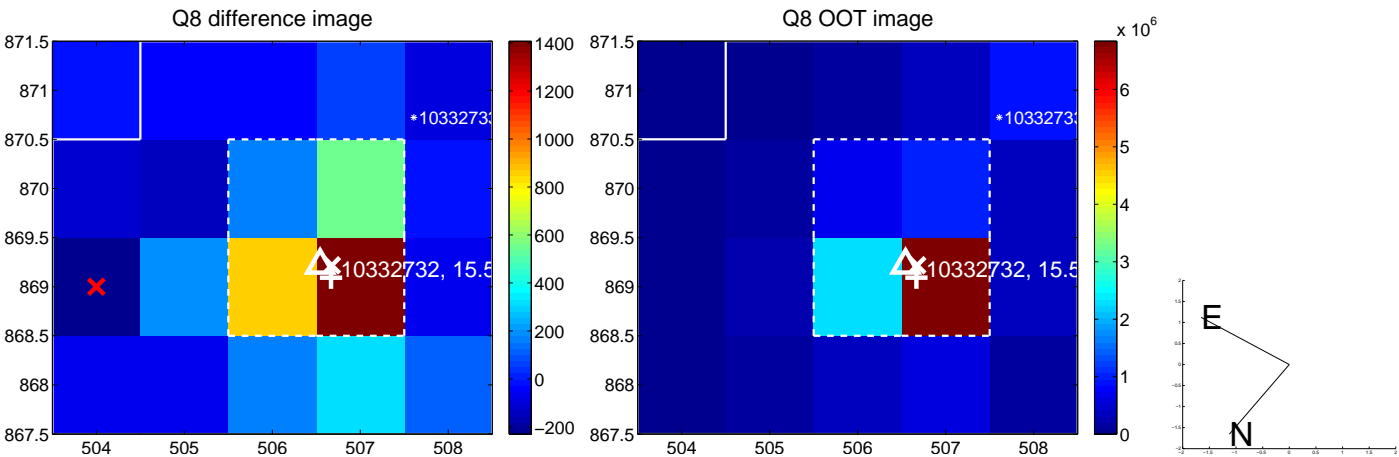
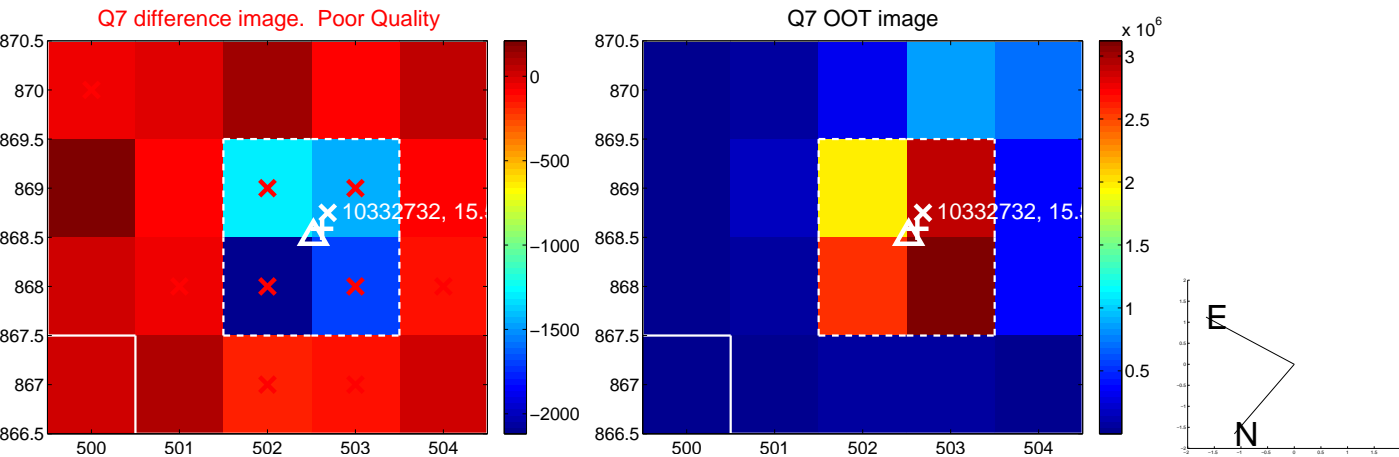
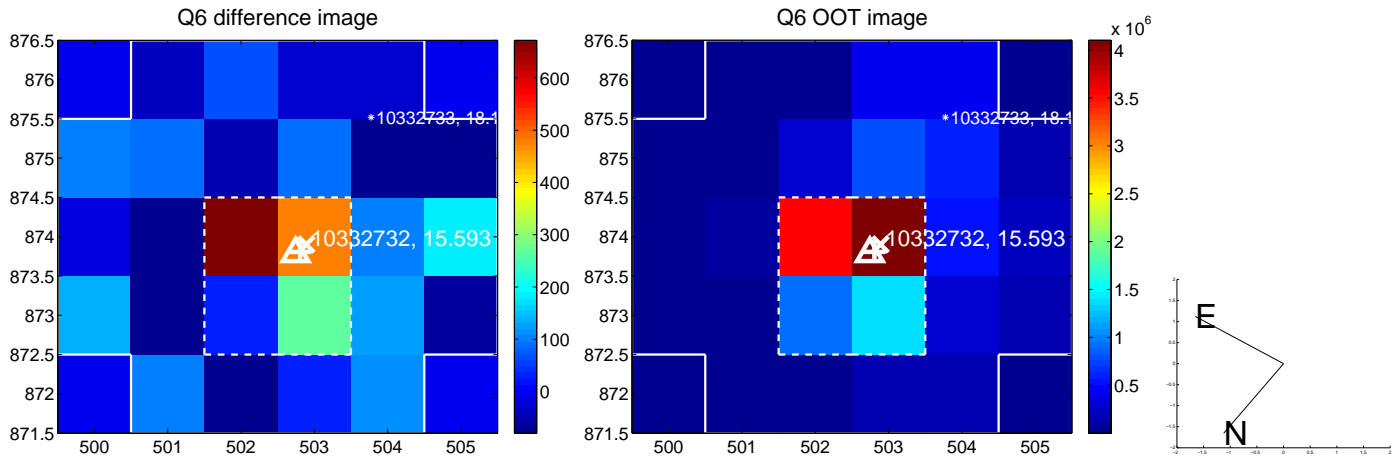
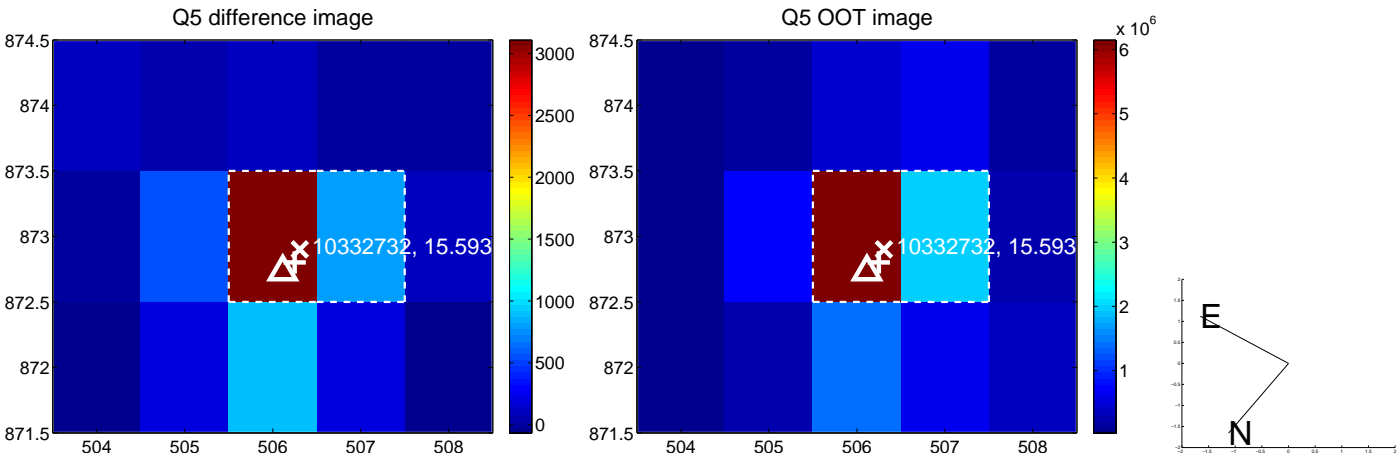


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

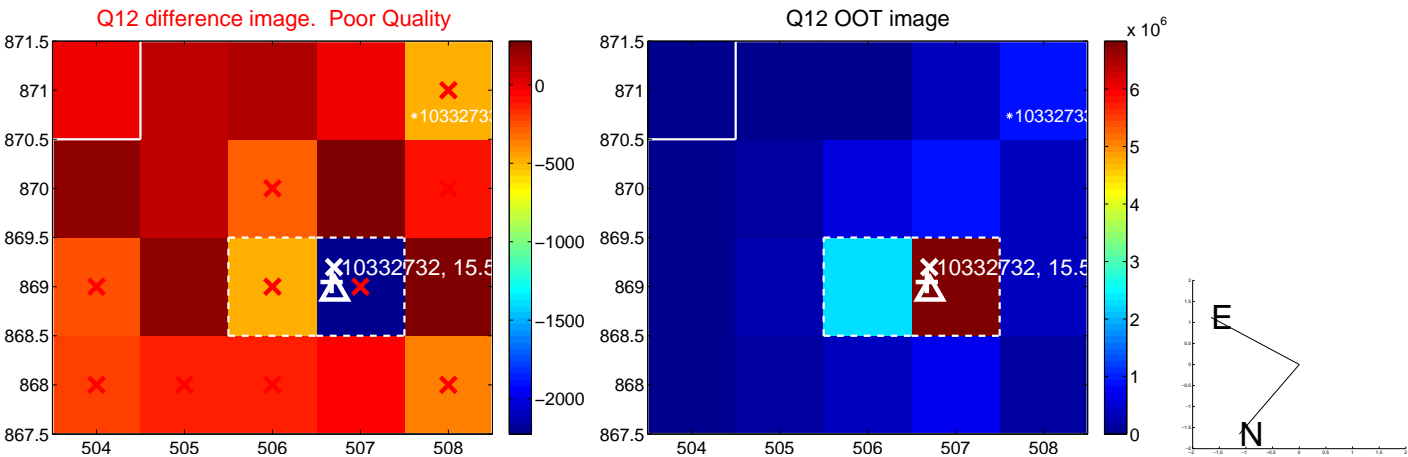
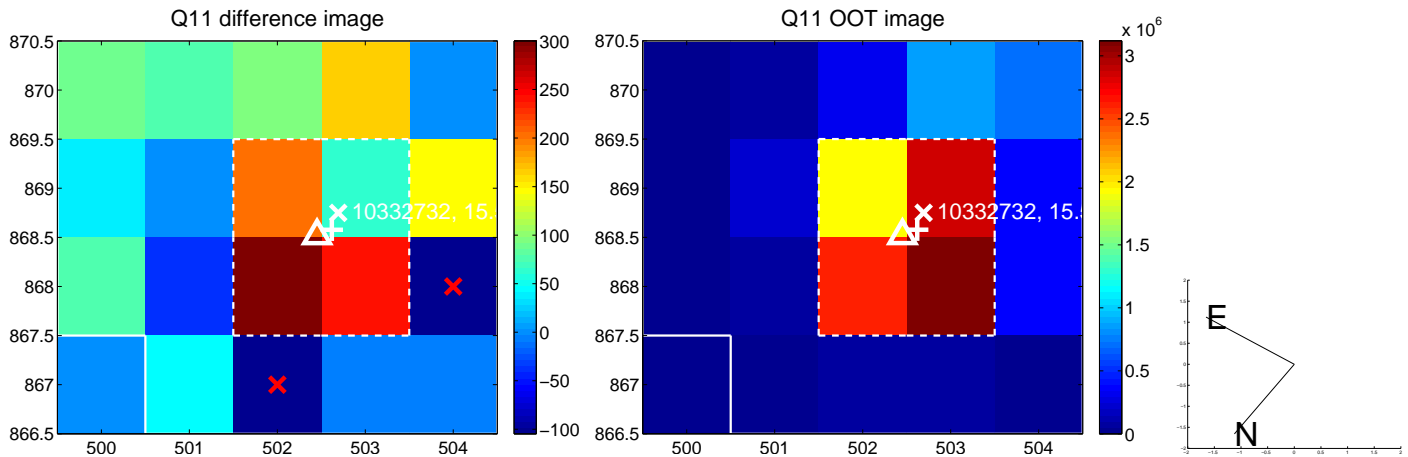
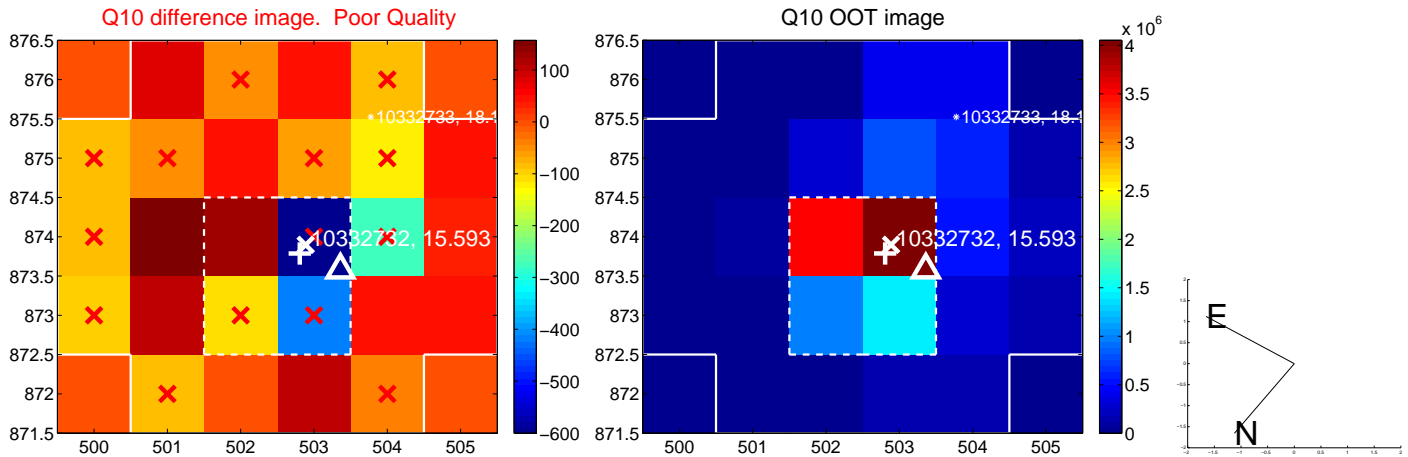
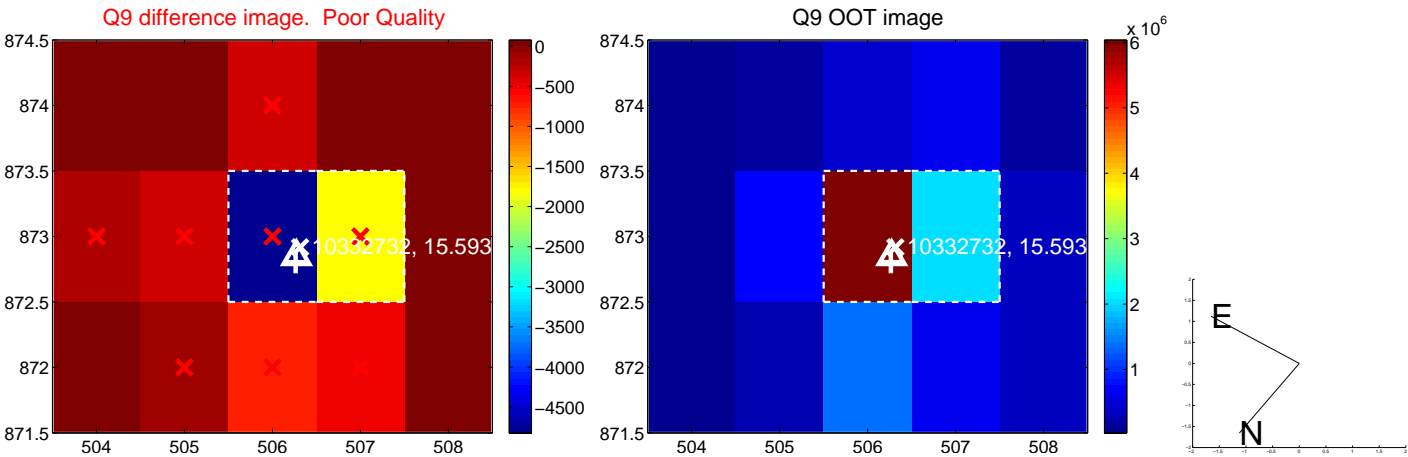
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



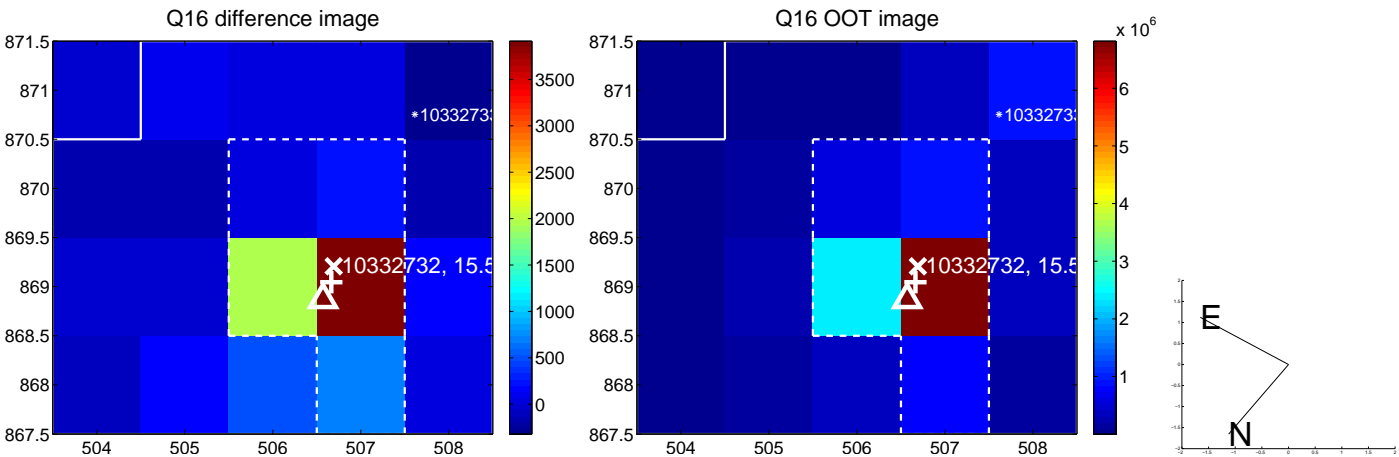
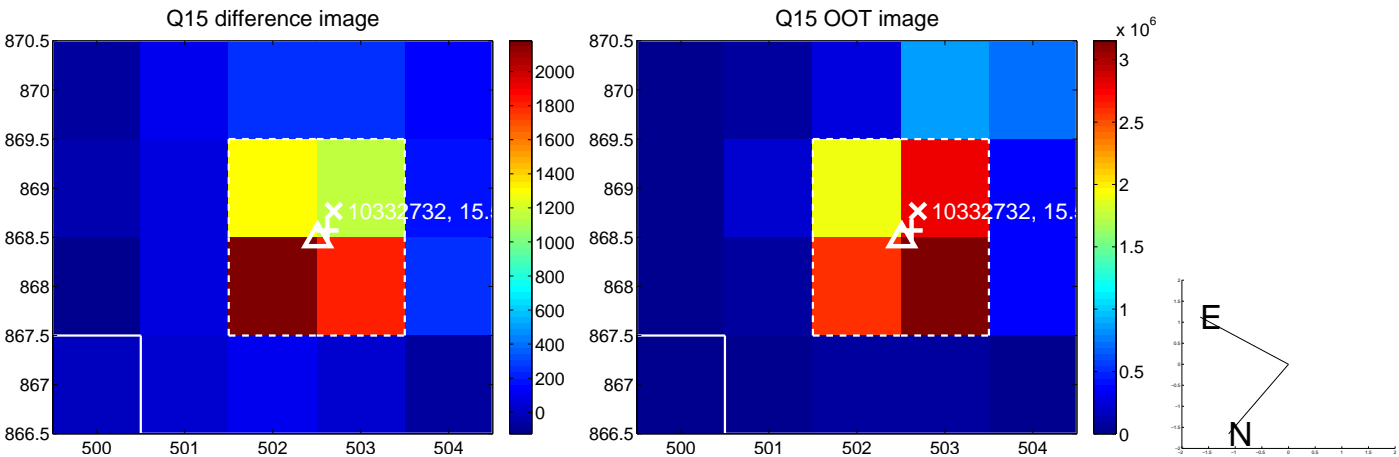
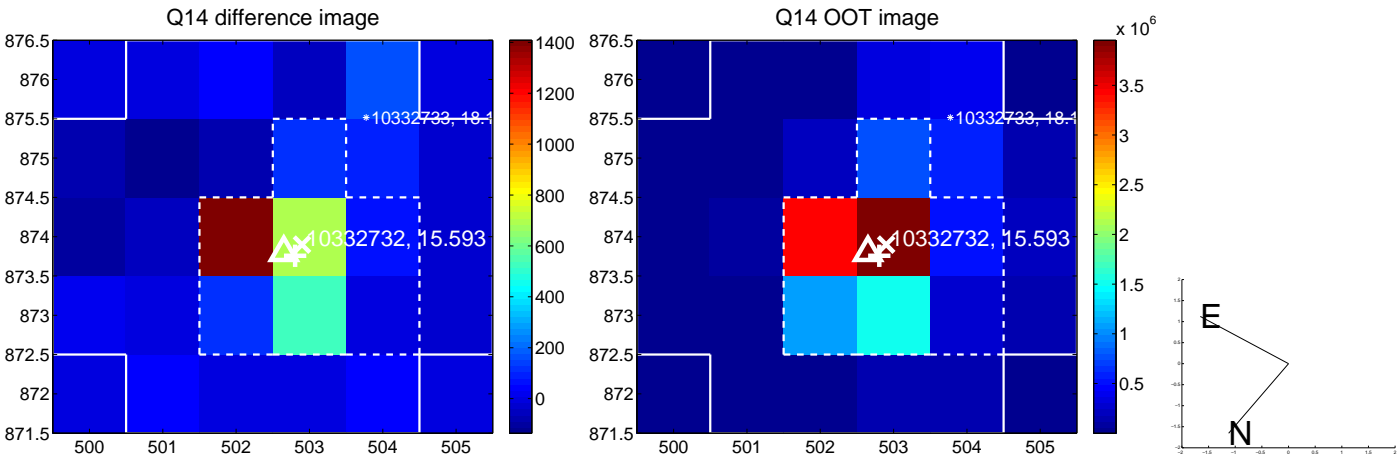
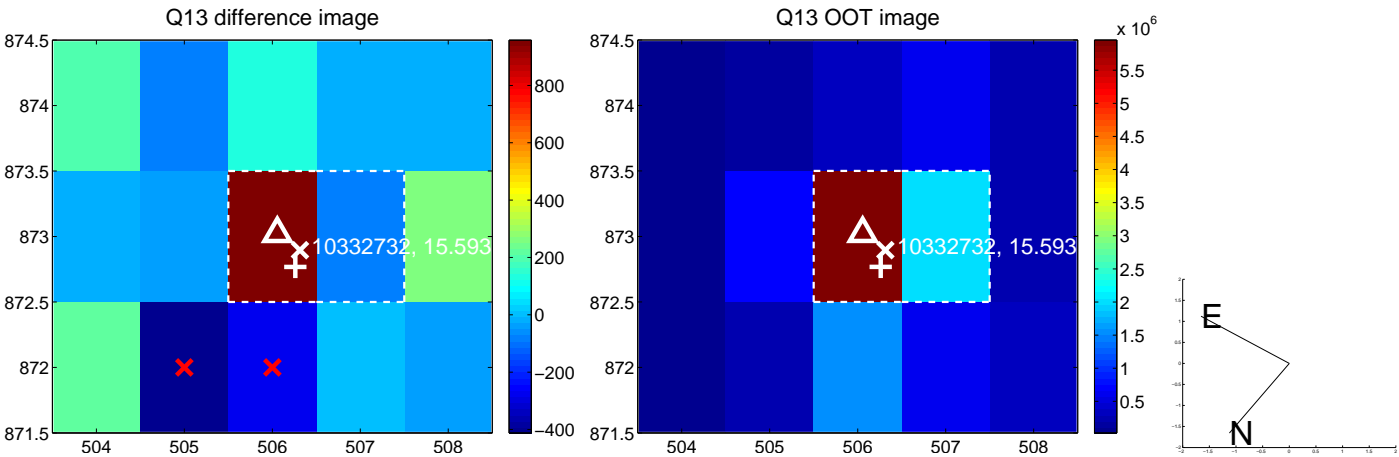
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



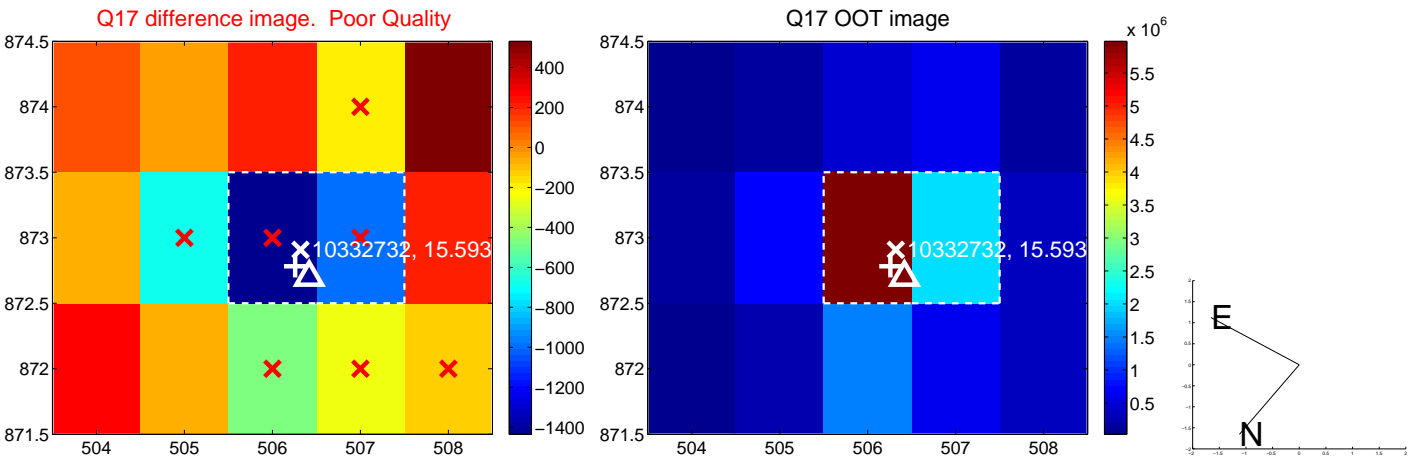
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

