

KIC 007768952

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})
007768952-01	OBS	1709.01	22.468670	148.492966	214.9	2.392	16.4	18.0	3.30	5461	5.80	277.32
007768952-02	OBS	No	22.468501	141.523885	138.6	2.958	12.6	13.5	3.30	5461	4.63	277.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007768952-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
007768952-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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 007768952-01

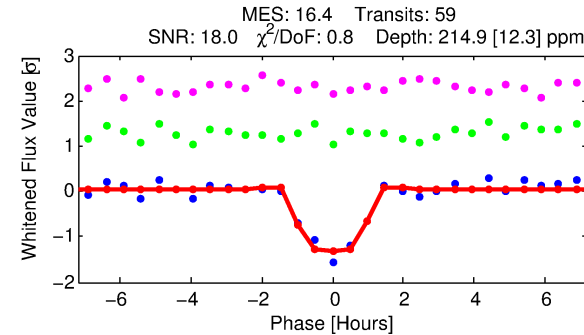
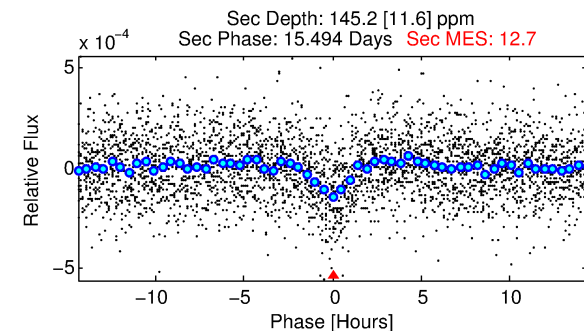
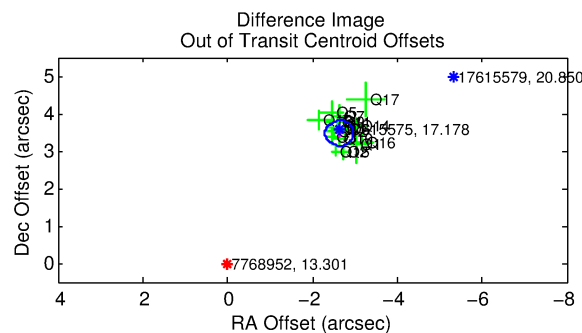
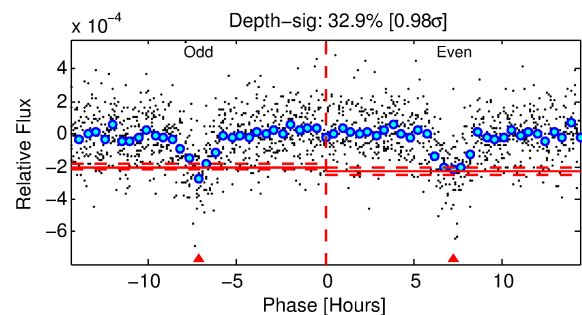
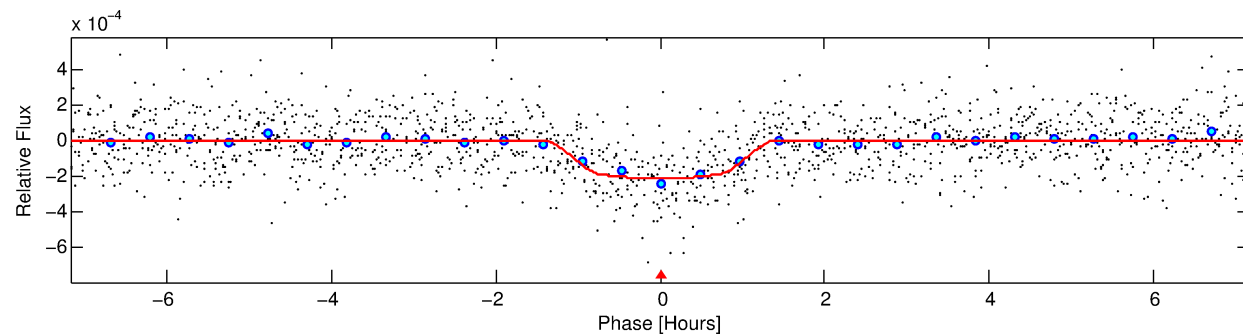
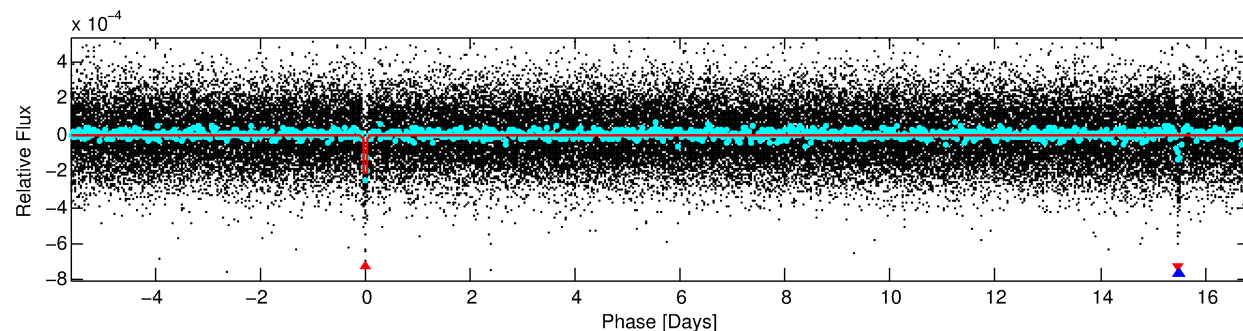
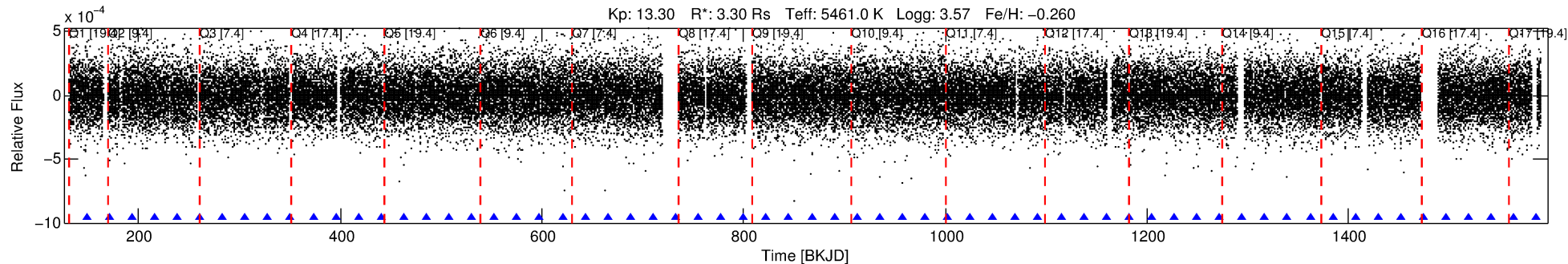
No Significant Match Found

DV One-Page Summary

KIC: 7768952 Candidate: 1 of 2 Period: 22.469 d

KOI: K01709.01 Corr: 0.965

Kp: 13.30 R*: 3.30 Rs Teff: 5461.0 K Logg: 3.57 Fe/H: -0.260



DV Fit Results:

Period = 22.46867 [0.00008] d
Epoch = 148.4930 [0.0030] BKJD
Rp/R* = 0.0161 [0.0053]
a/R* = 33.53 [50.75]
b = 0.90 [0.32]
Seff = 277.32 [385.58]
Teq = 1041 [362] K
Rp = 5.80 [4.50] Re
a = 0.1769 [0.1419] AU
Ag = 74.45 [114.32] [0.64σ]
Teffp = 4726 [804] K [4.18σ]

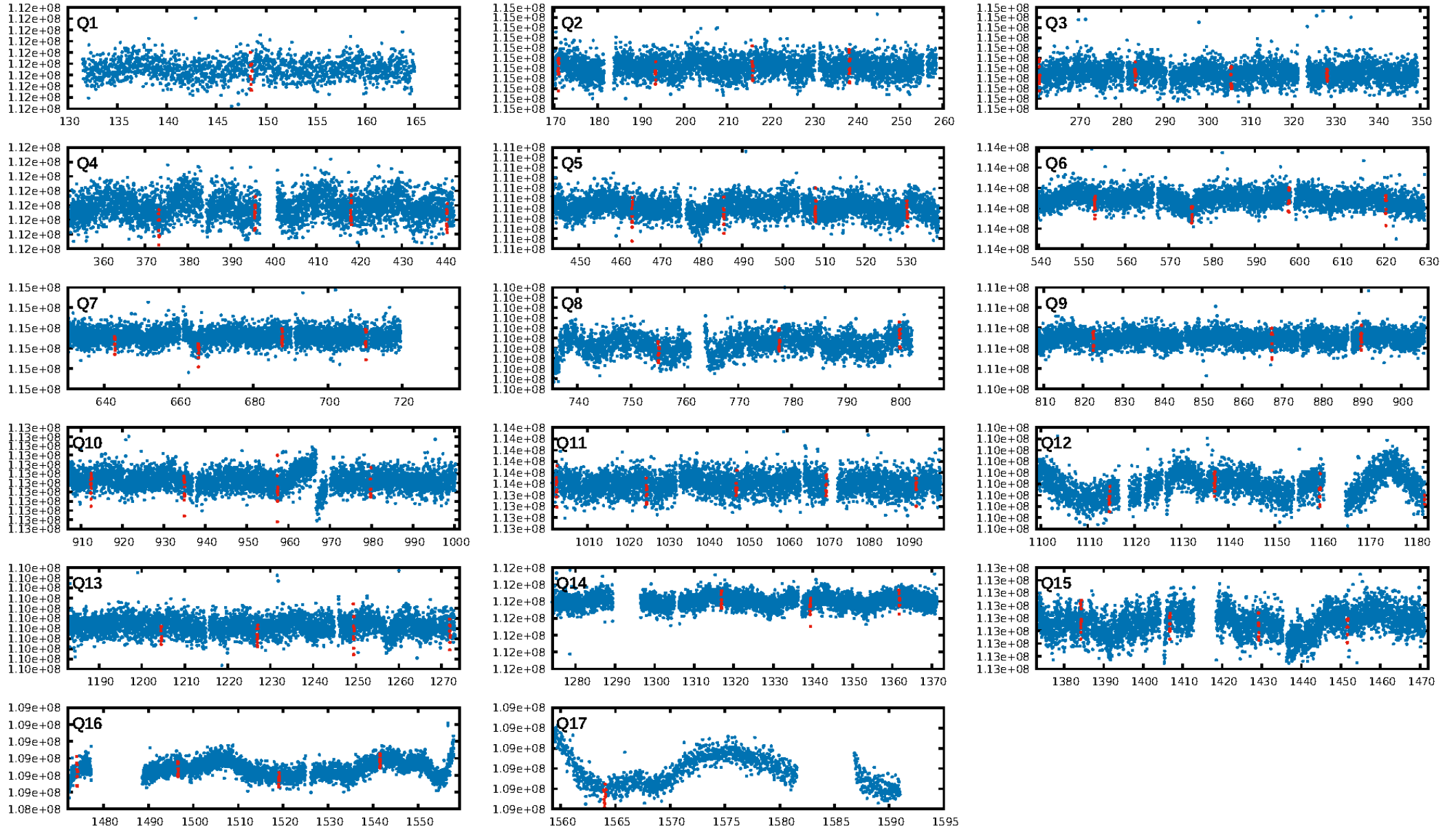
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 60.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.08e-58
RollingBand-fgt: 1.00 [57/57]
GhostDiagnostic-chr: 0.8998
Centroid-sig: 0.0%
Centroid-so: 5.504 arcsec [10.84σ]
OotOffset-rm: 4.361 arcsec [39.08σ]
KicOffset-rm: 4.312 arcsec [40.75σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [17/17]

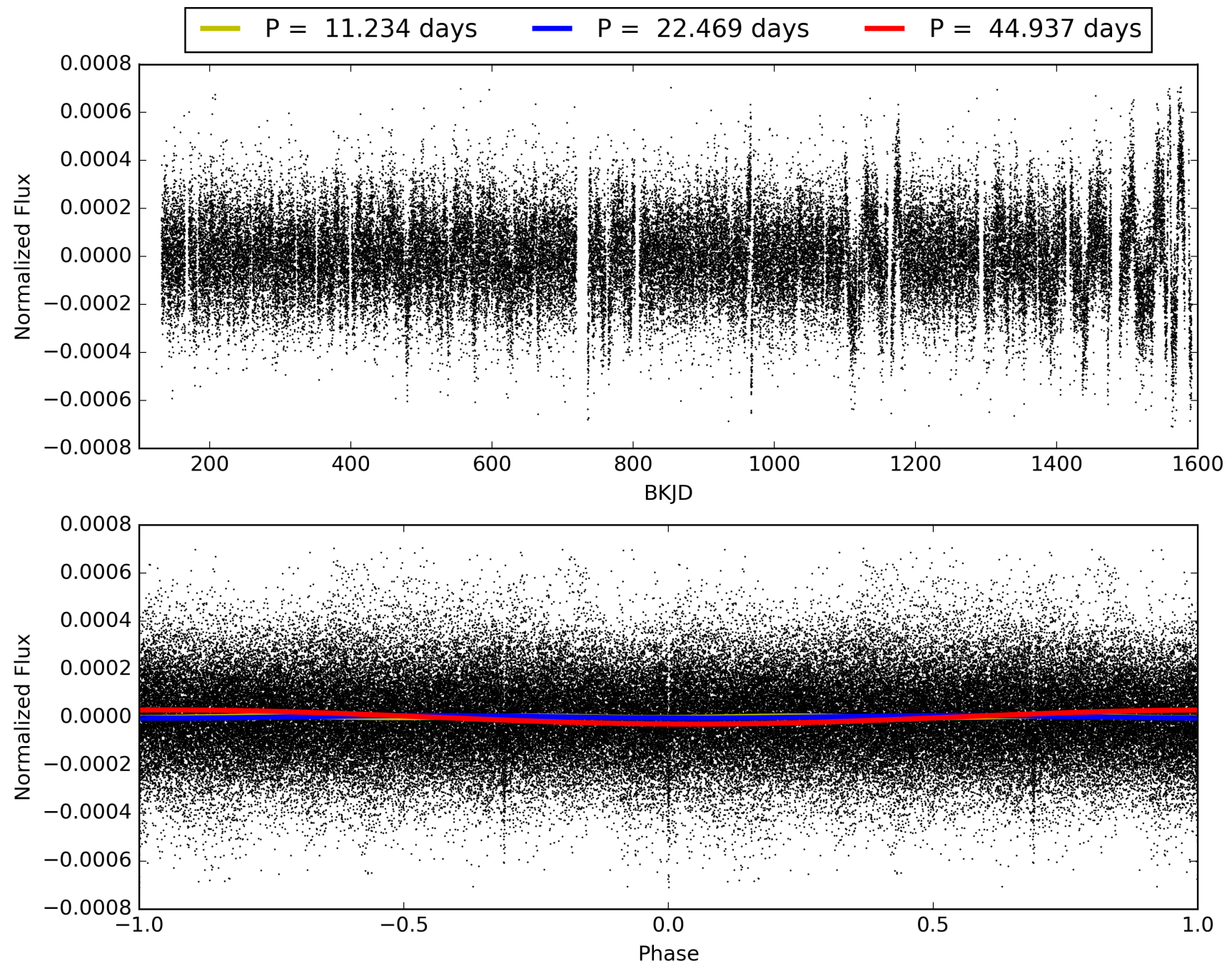
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:56:12 Z

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

TCE 007768952-01, PDC Light Curves

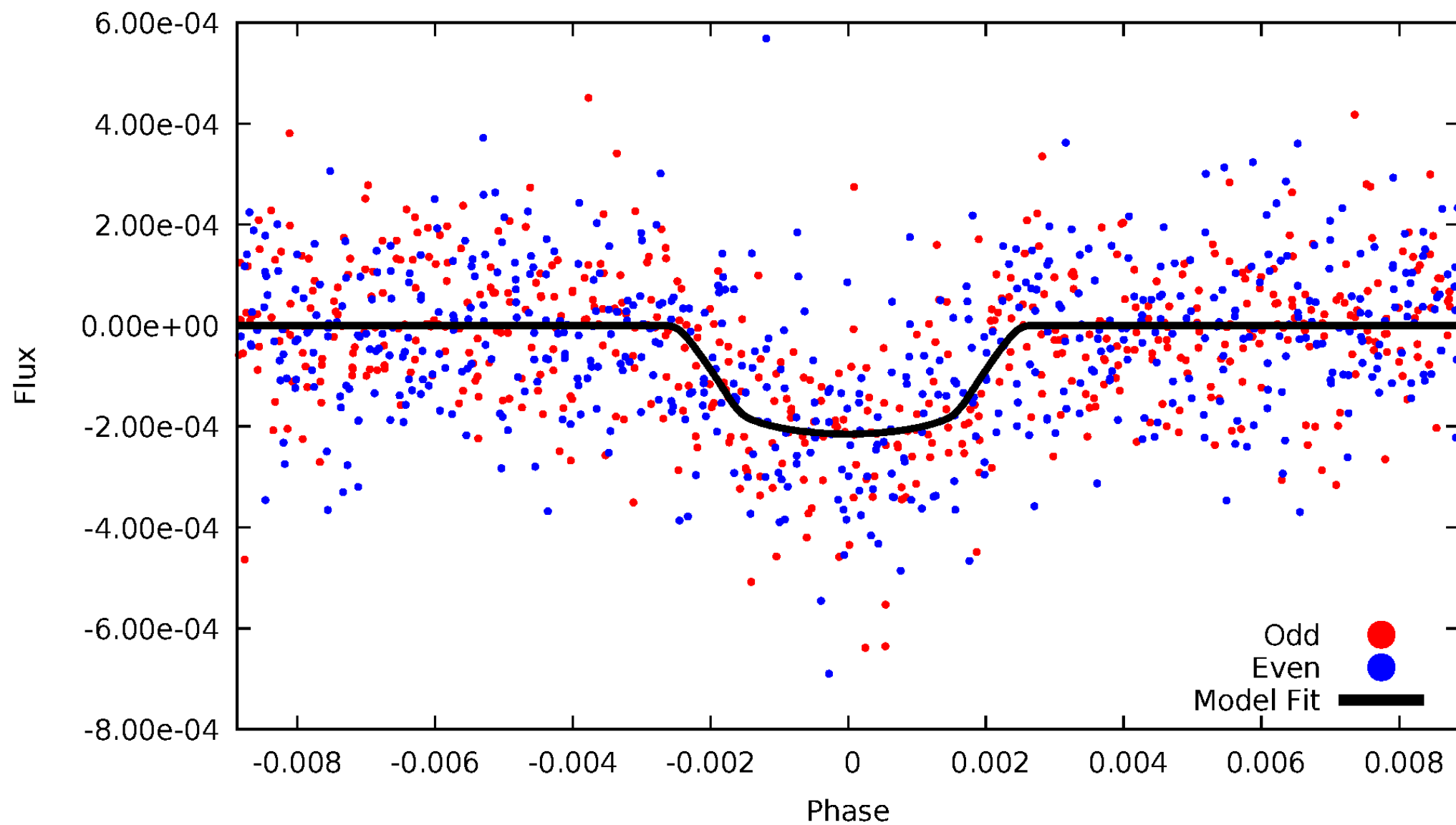


TCE 007768952-01



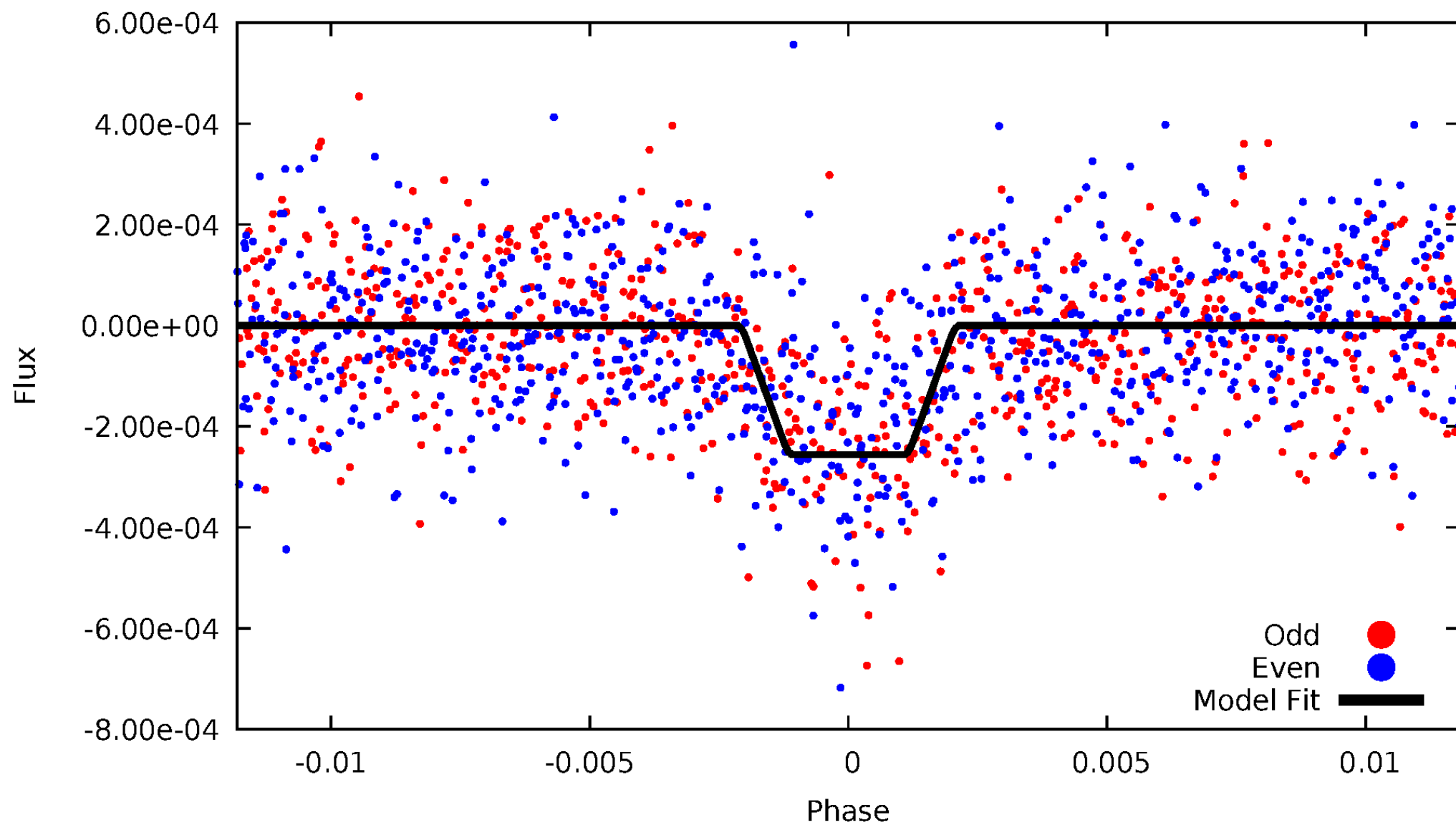
DV Odd/Even

TCE 007768952-01

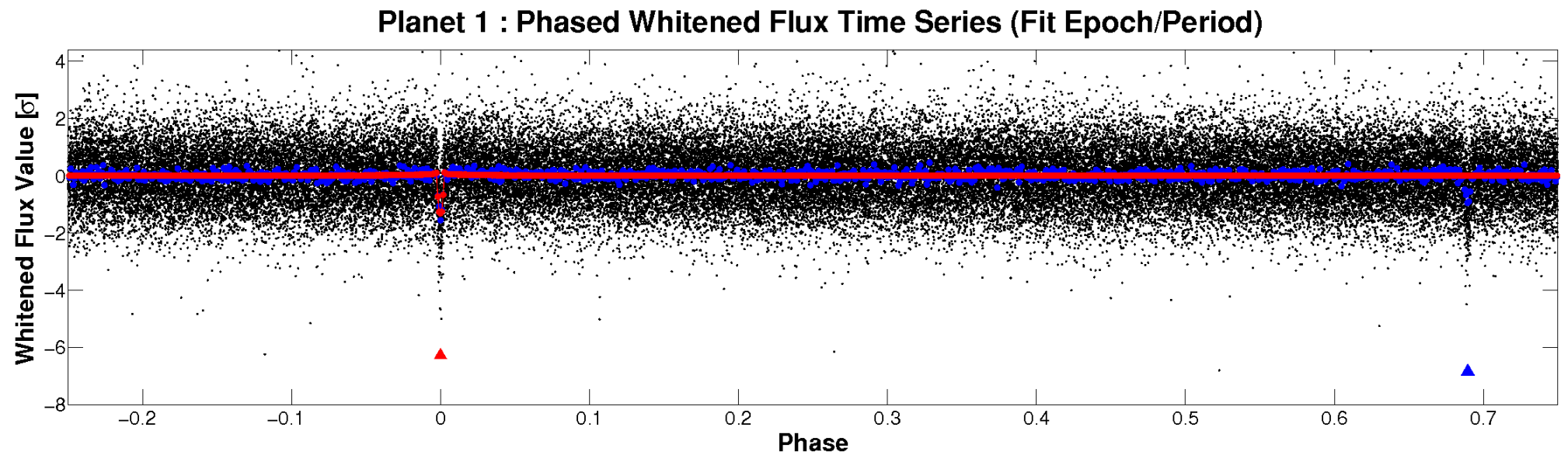
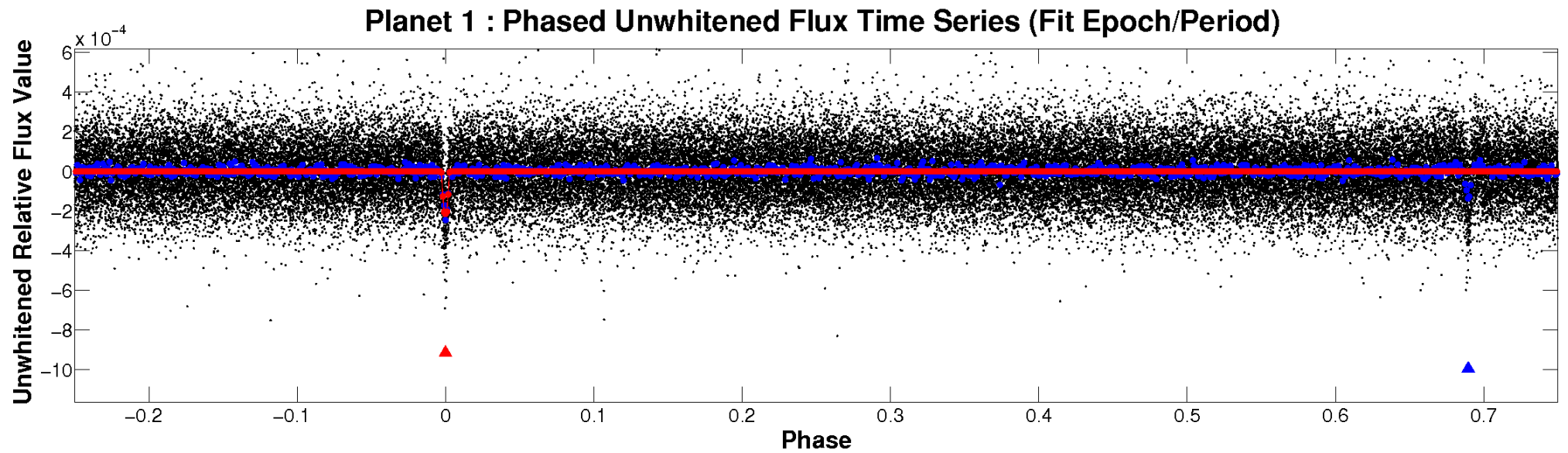


ALT Odd/Even

TCE 007768952-01

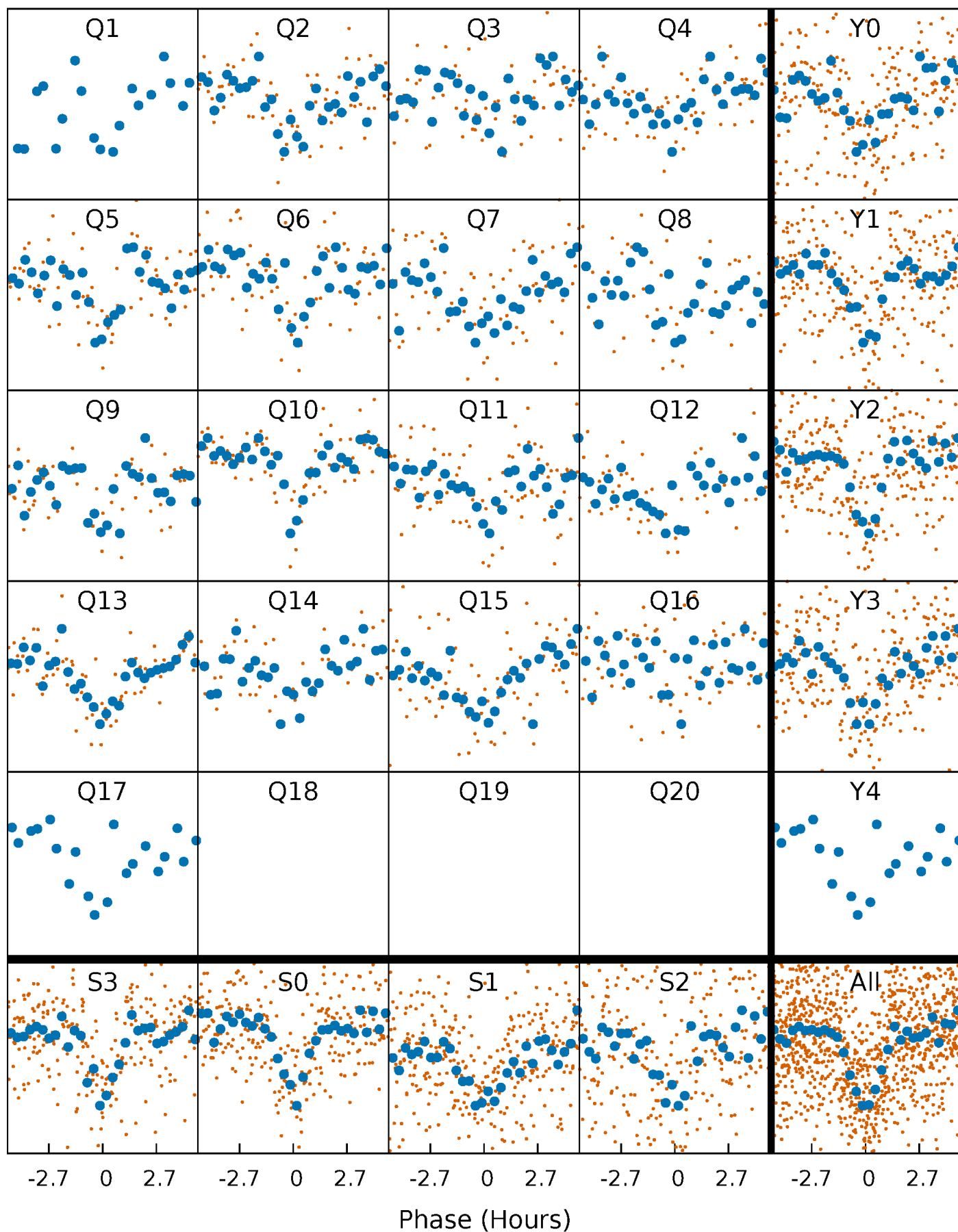


Non-Whitened Vs. Whitened Light Curve



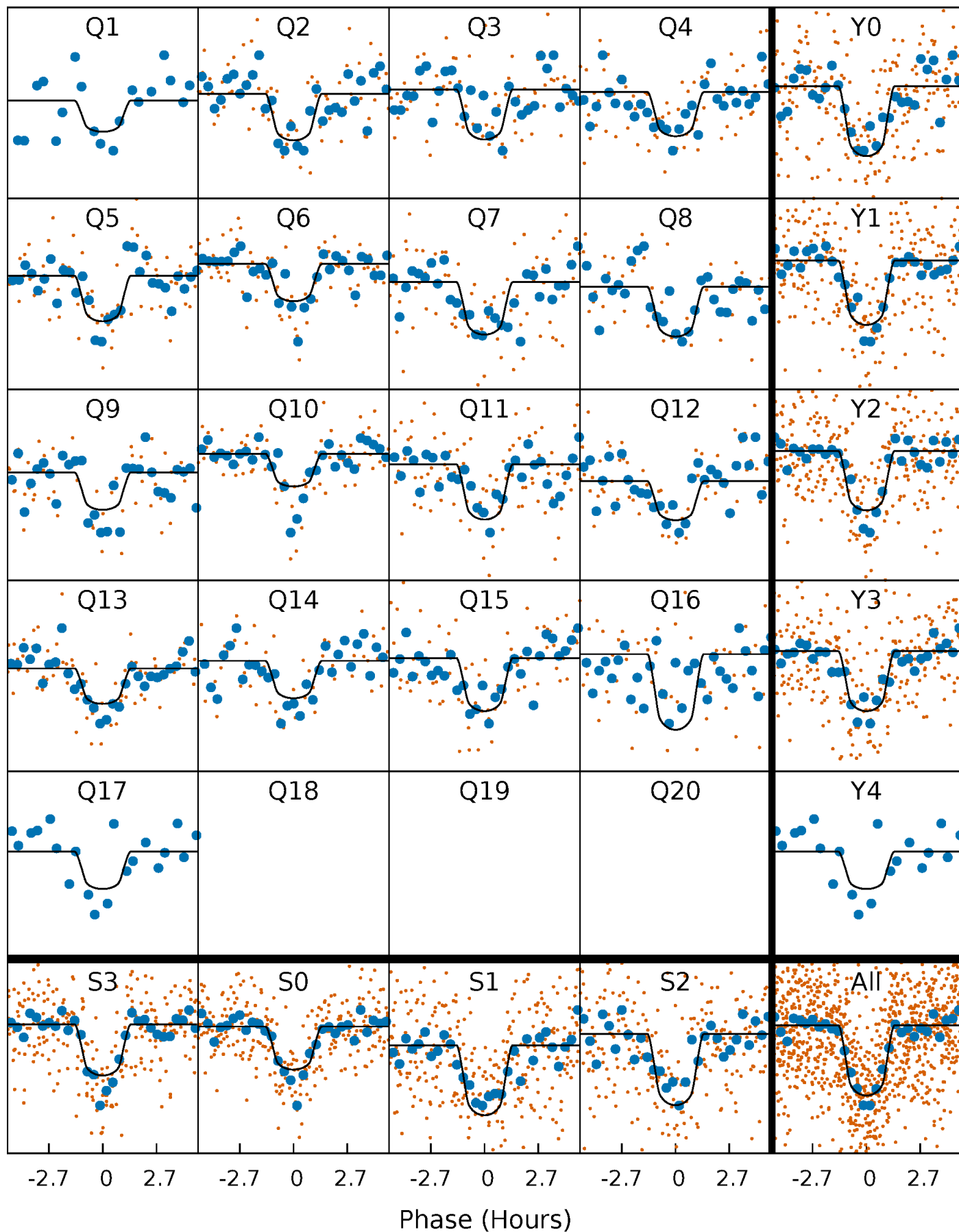
PDC Quarter-Phased Transit Curves

TCE 007768952-01 P= 22.468670 Days $T_0=148.492966$ (BKJD)



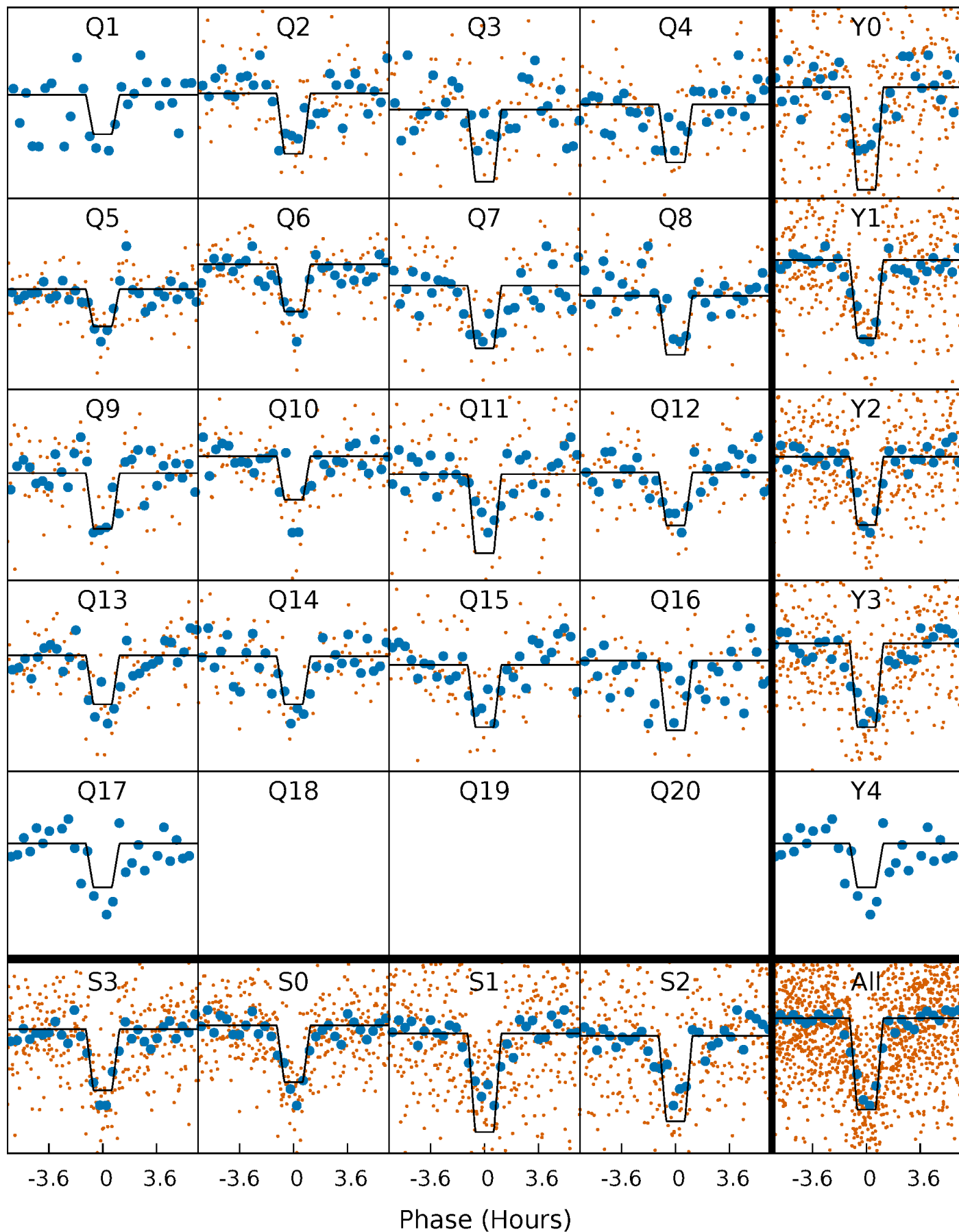
DV Quarter-Phased Transit Curves

TCE 007768952-01 P= 22.468670 Days $T_0=148.492966$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

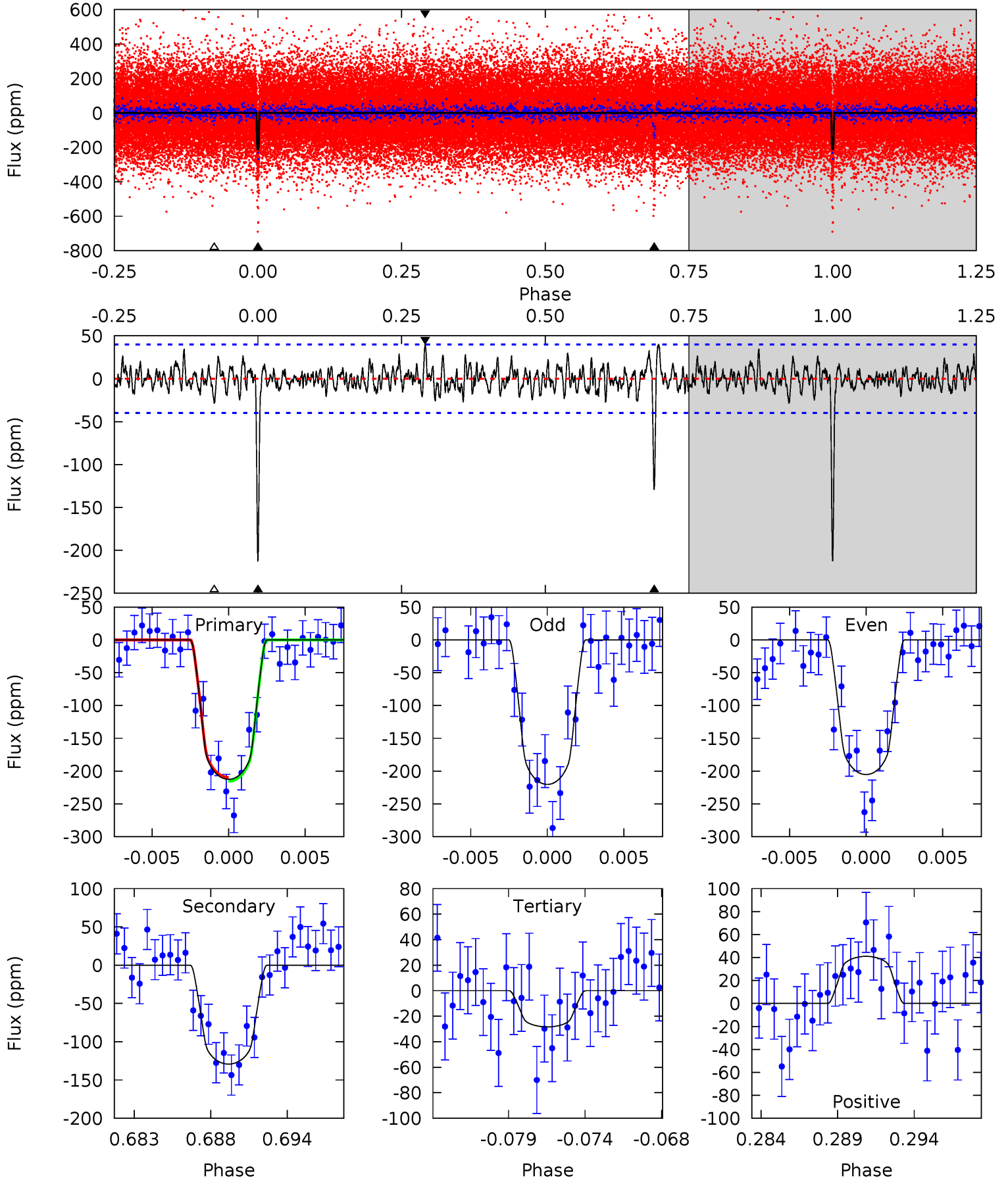
TCE 007768952-01 P= 22.468252 Days $T_0=148.505091$ (BKJD)



DV Model-Shift Uniqueness Test

007768952-01, P = 22.468670 Days, E = 126.024296 Days

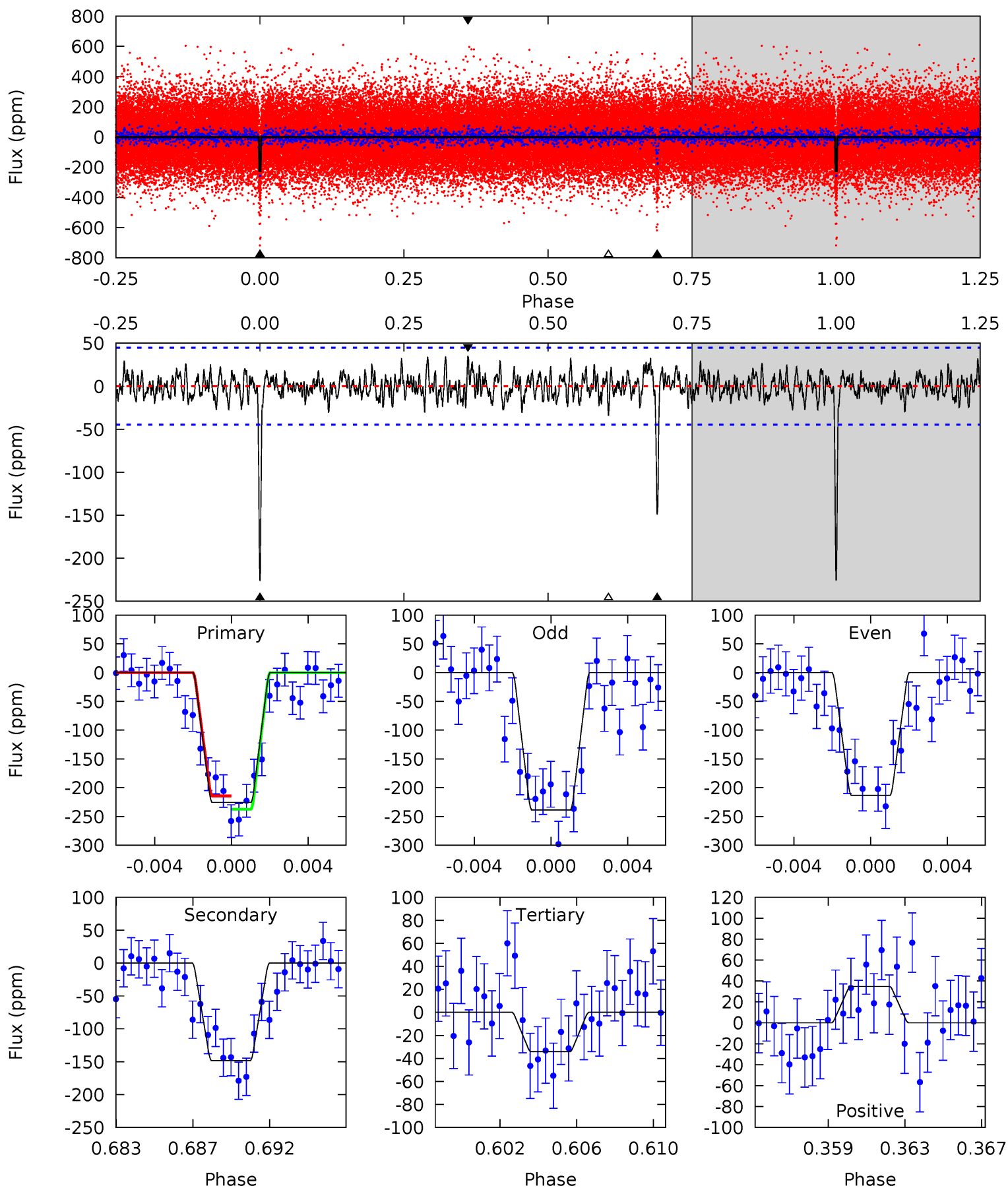
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.4	16.7	3.66	5.29	5.15	2.79	1.41	23.8	22.1	13.0	11.4	0.97	0.99	0.16	0.38



Alt Model-Shift Uniqueness Test

007768952-01, P = 22.468252 Days, E = 126.036839 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.2	17.3	3.97	4.04	5.19	2.86	1.35	22.2	22.2	13.3	13.2	1.47	1.11	0.13	1.34



Stellar Parameters For KIC 007768952

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5461^{+189}_{-189}	$3.566^{+0.848}_{-0.212}$	$-0.260^{+0.350}_{-0.300}$	$3.301^{+0.994}_{-2.320}$	$1.463^{+0.201}_{-0.602}$	$0.057^{+1.415}_{-0.029}$
	+3%/-3%	+24%/-6%	+135%/-115%	+30%/-70%	+14%/-41%	+2472%/-50%
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 007768952-01 / KOI 1709.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-129 ± 8	$5.05^{+2.72}_{-2.36}$	1410^{+166}_{-248}	4703^{+972}_{-524}	85^{+193}_{-47}
Alt.	-149 ± 9	$4.94^{+2.73}_{-2.25}$	1414^{+162}_{-265}	4857^{+988}_{-553}	100^{+226}_{-57}

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 $A_{obs} \gg 1.0$

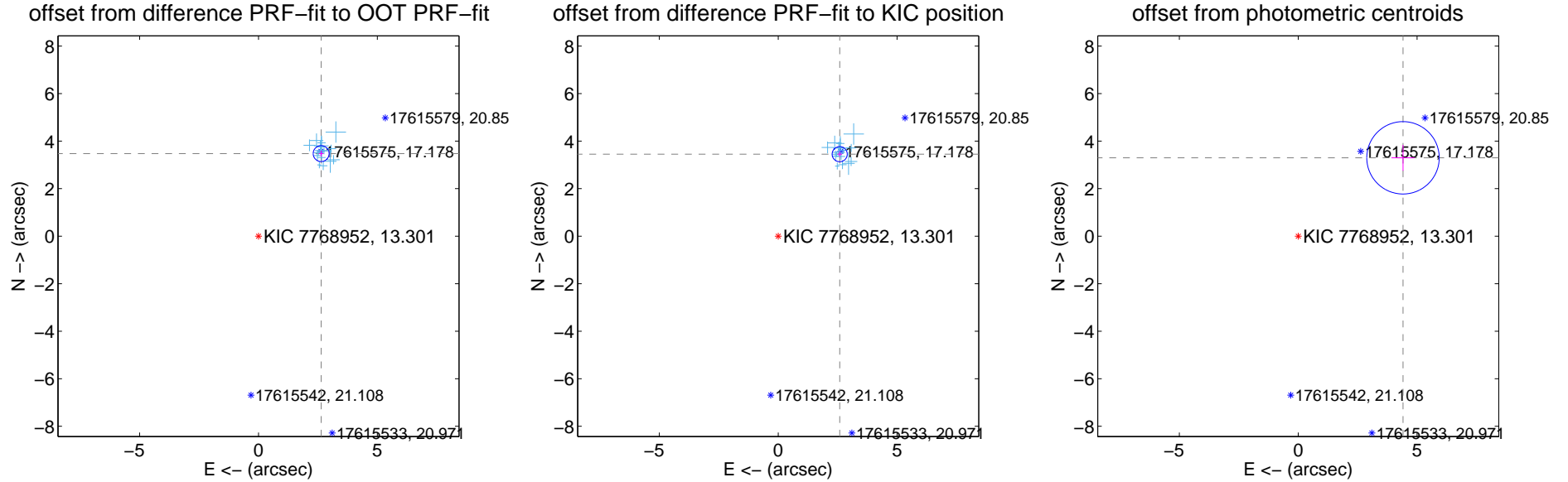
DV Centroid Data

Supplemental centroid analysis for 007768952-01. Kepler magnitude: 13.30. Transit SNR 17.97

There are 16 quarters with good PRF difference image offsets

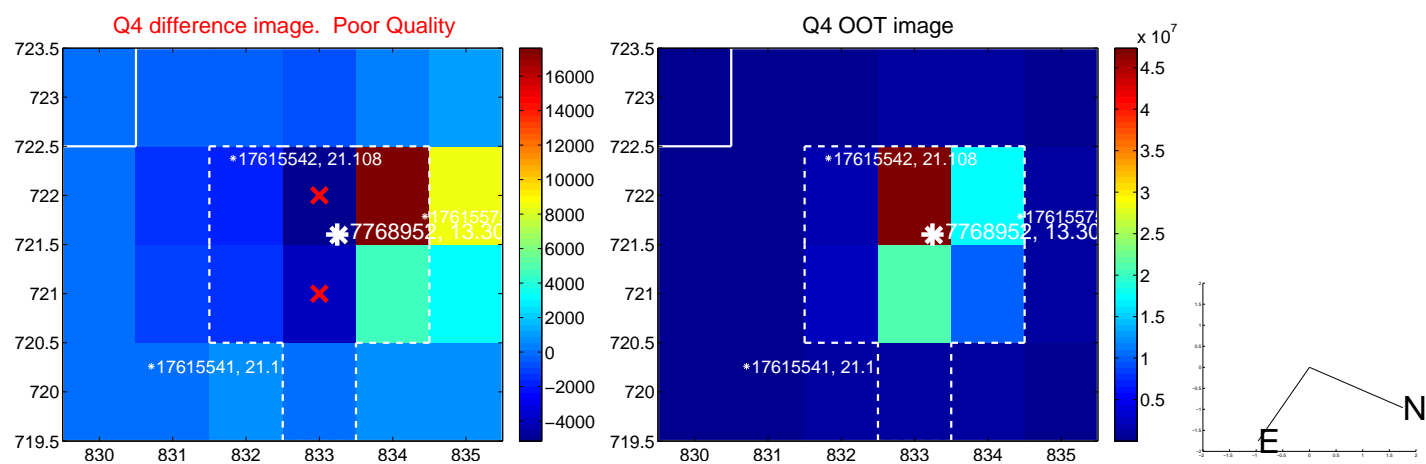
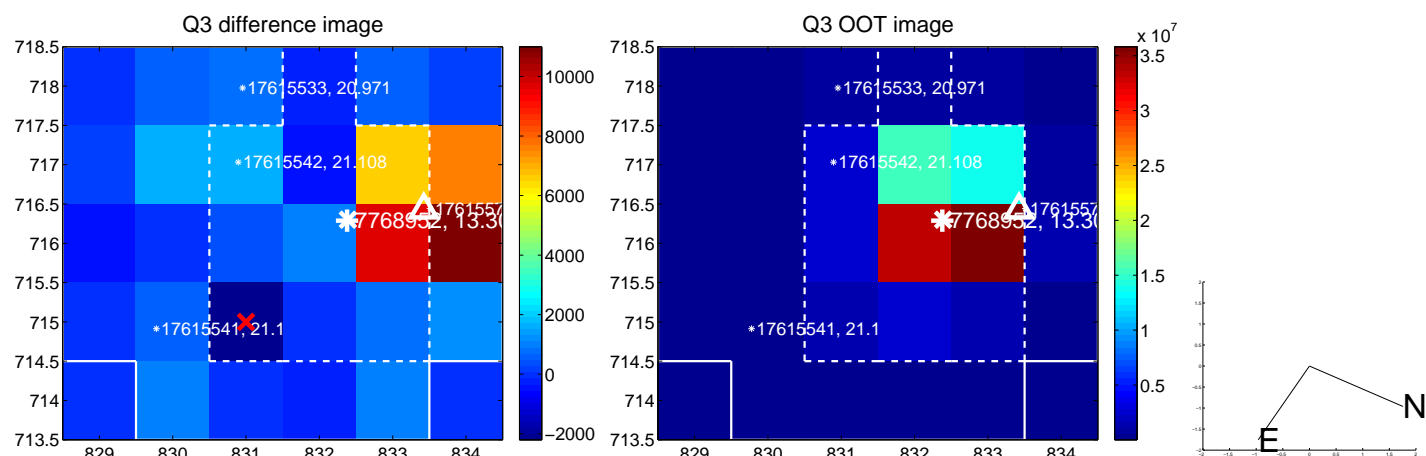
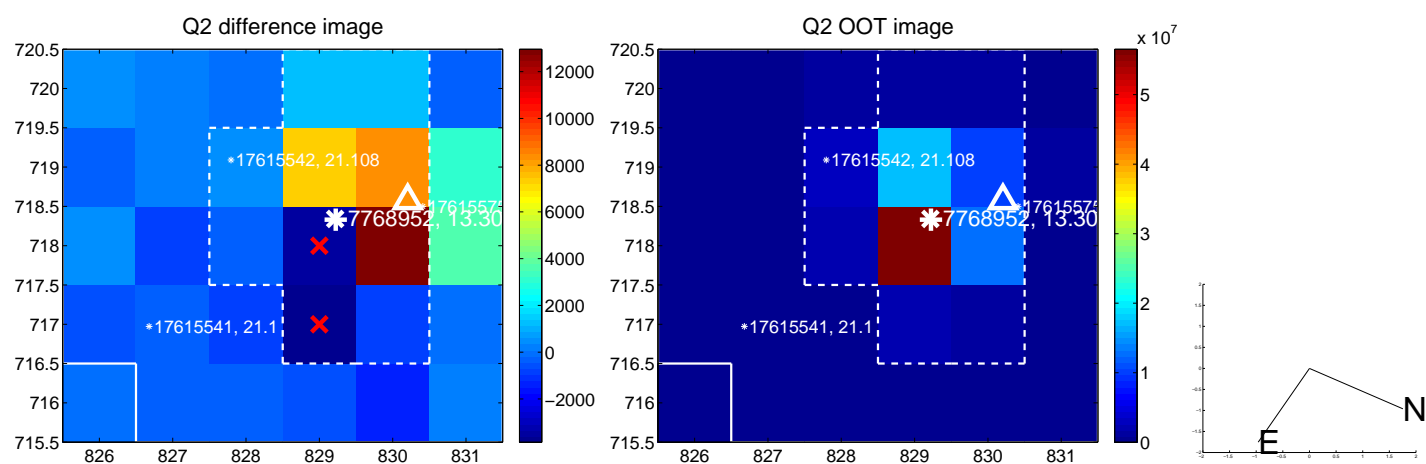
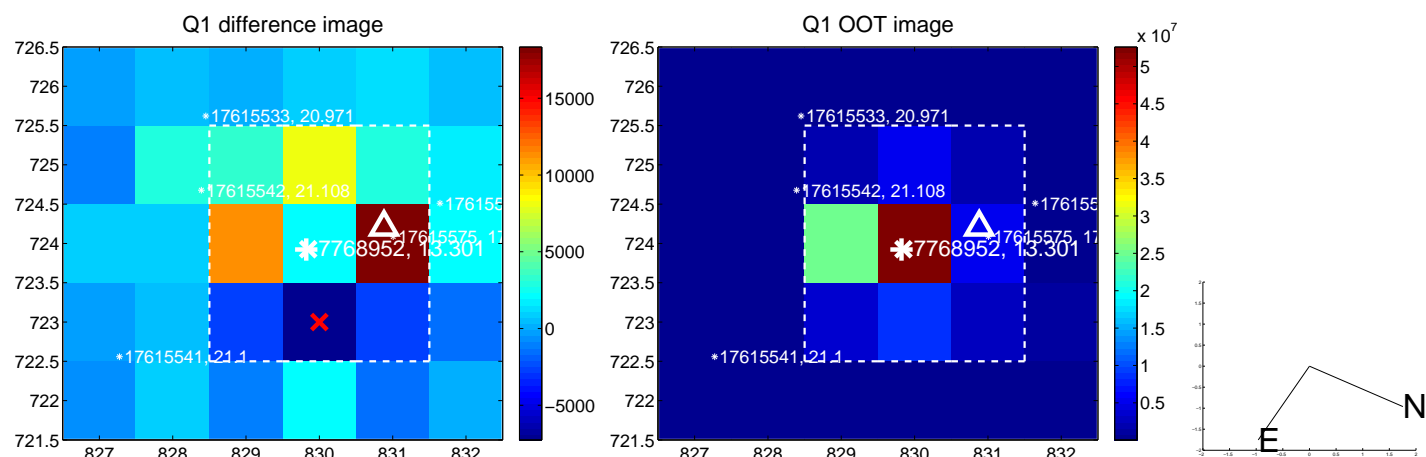
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.361 ± 0.112	39.08	-2.635 ± 0.098	3.475 ± 0.120
PRF-fit source offset from KIC position	4.312 ± 0.106	40.75	-2.586 ± 0.096	3.451 ± 0.113
photometric centroid source offset	5.50 ± 0.51	10.84	-4.41 ± 0.49	3.30 ± 0.54

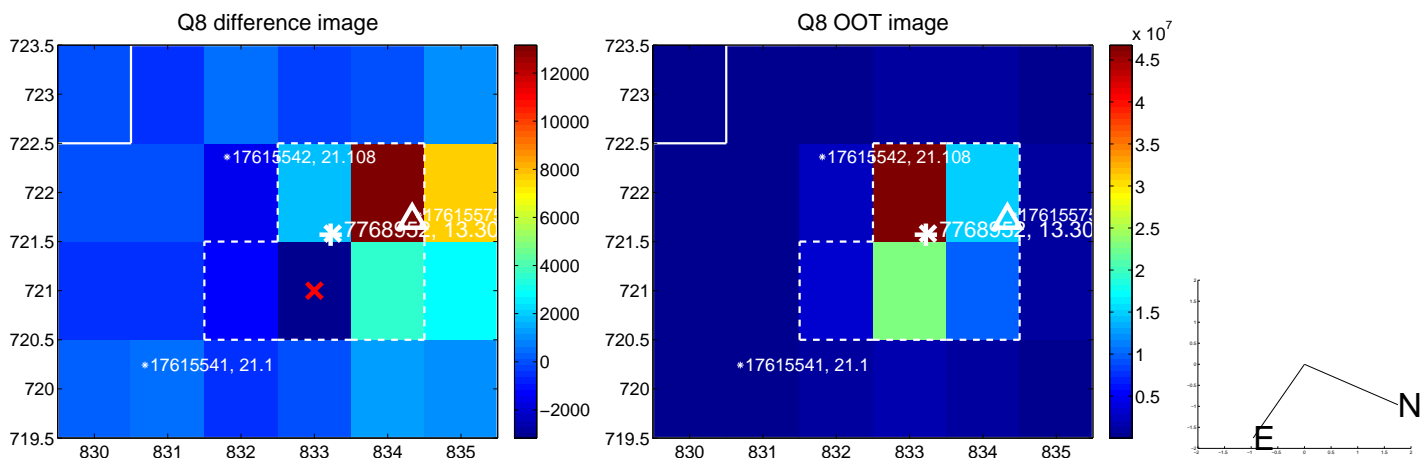
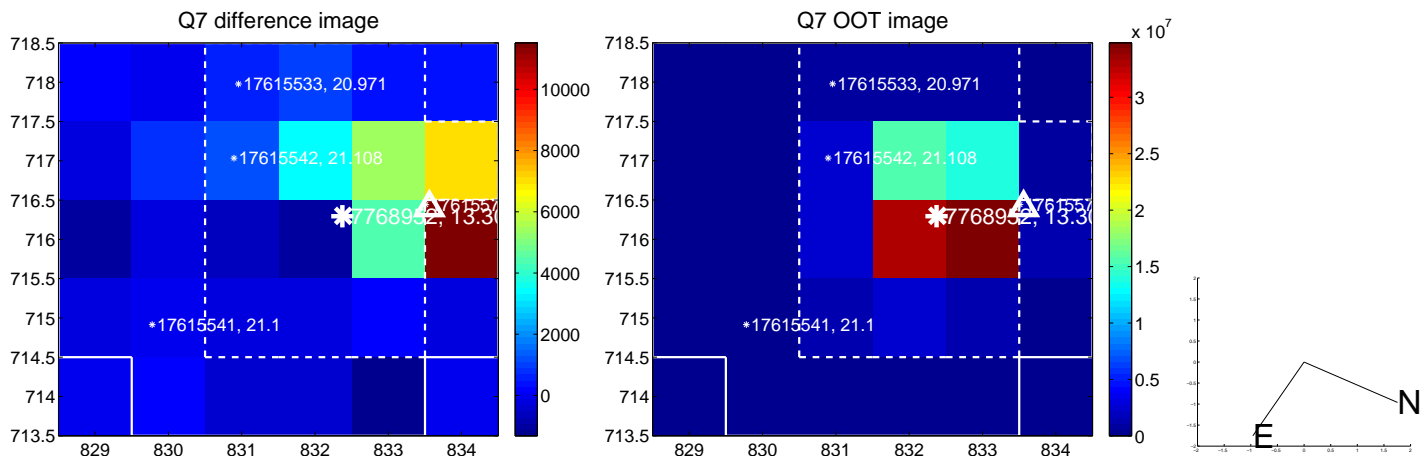
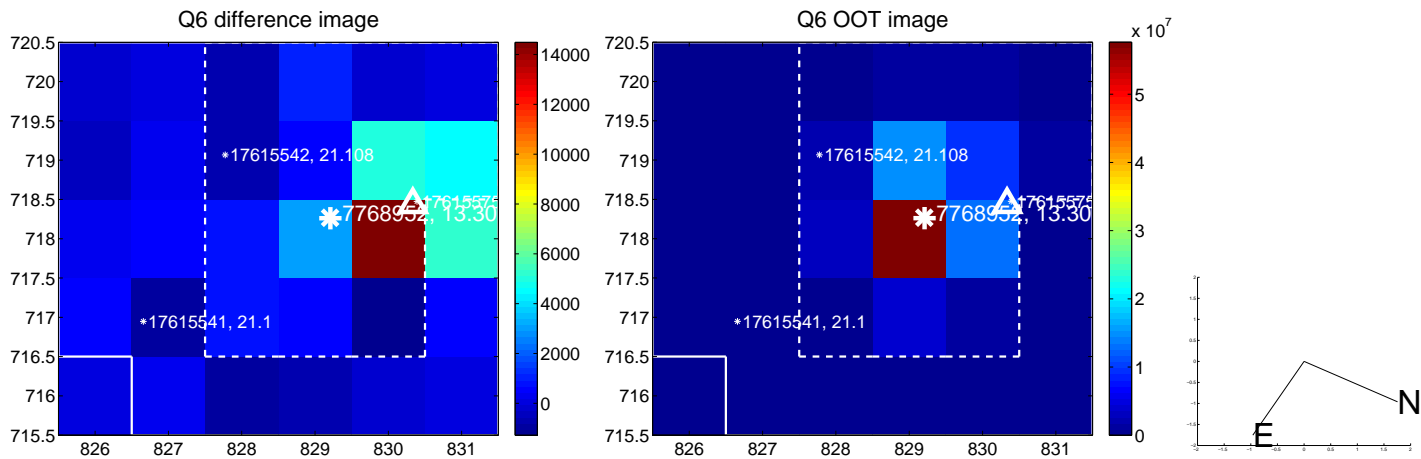
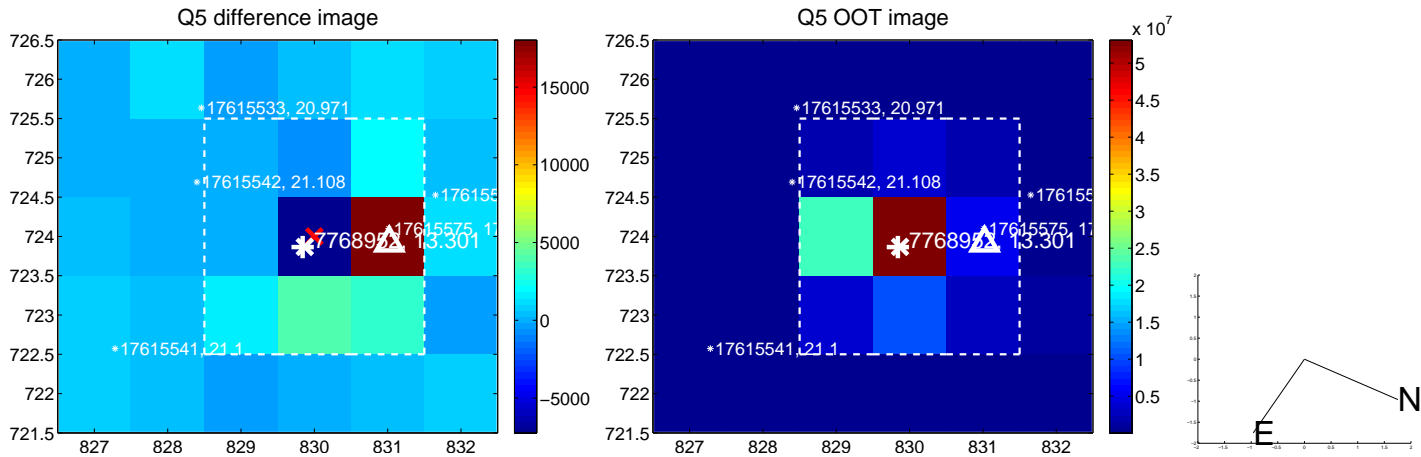


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

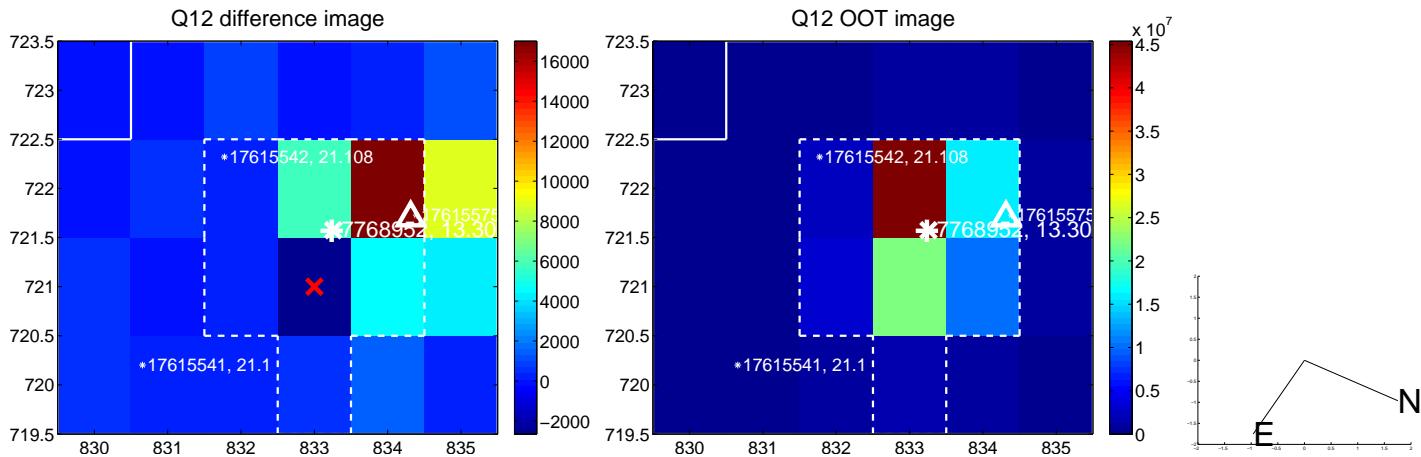
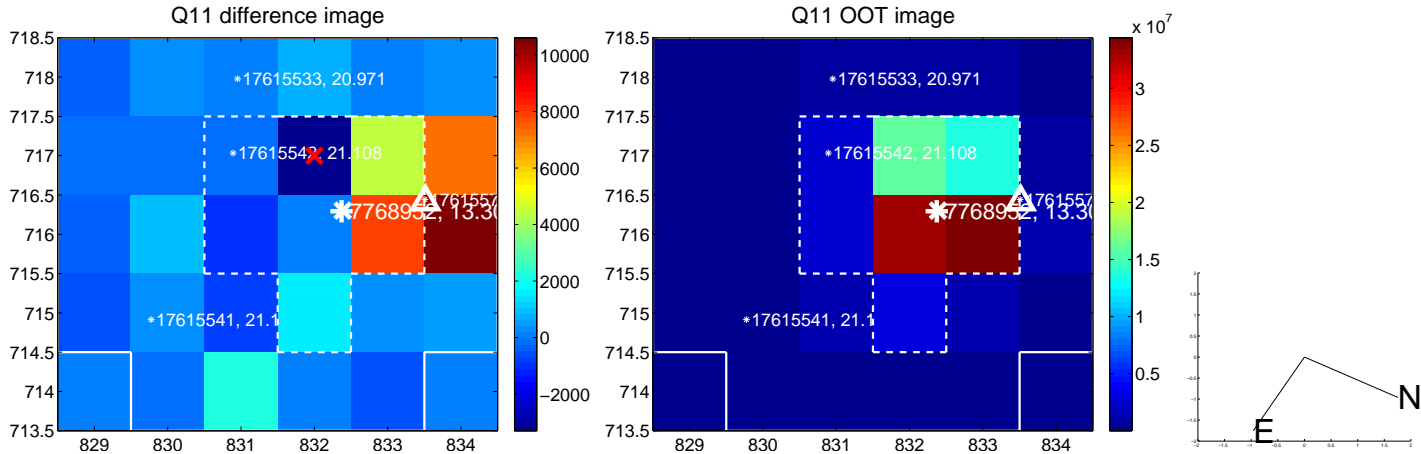
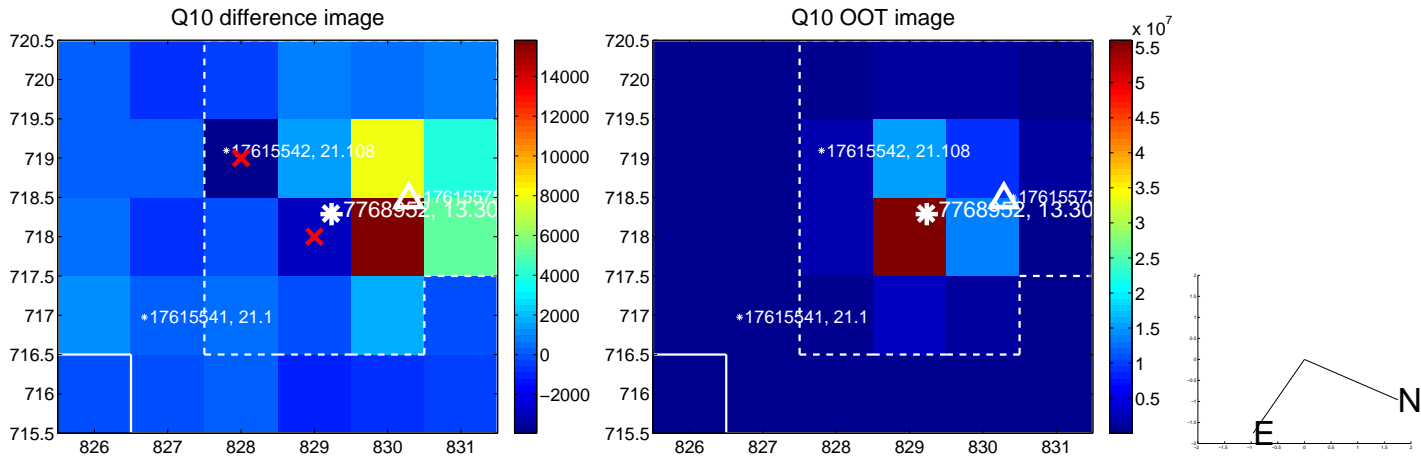
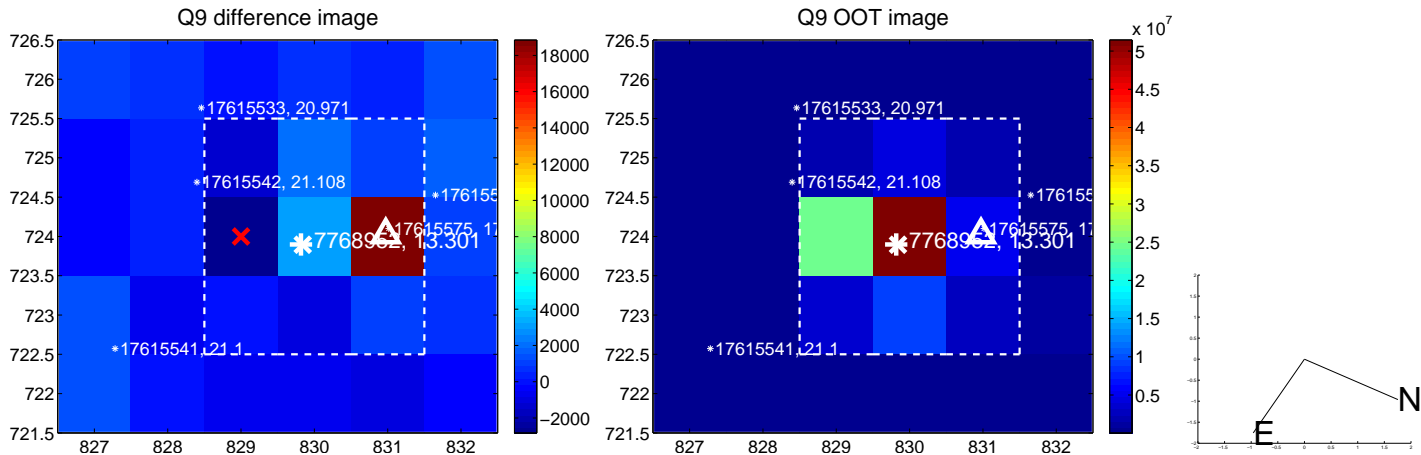
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



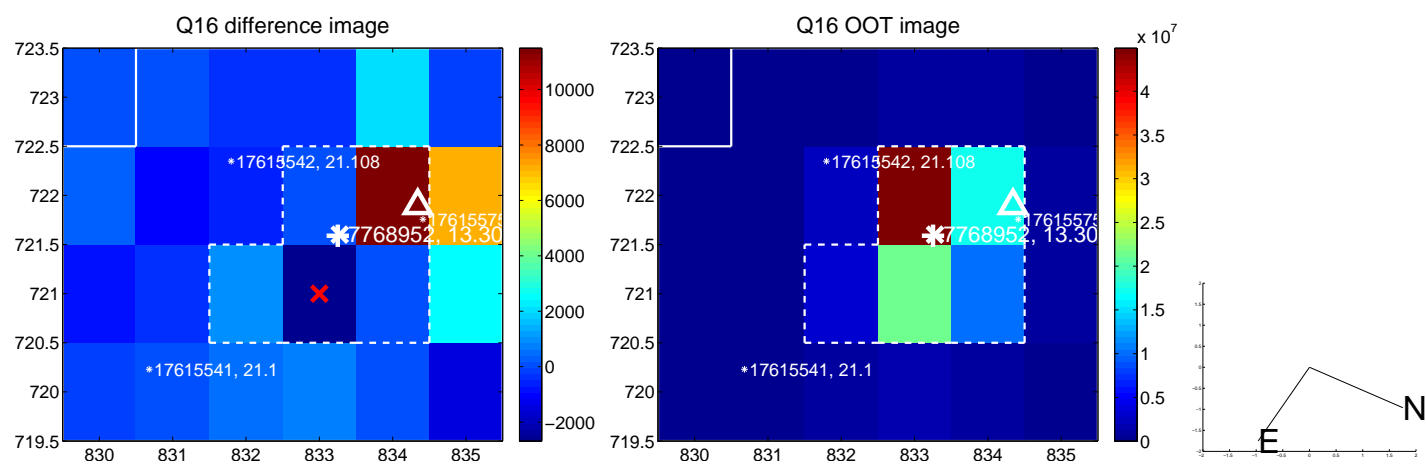
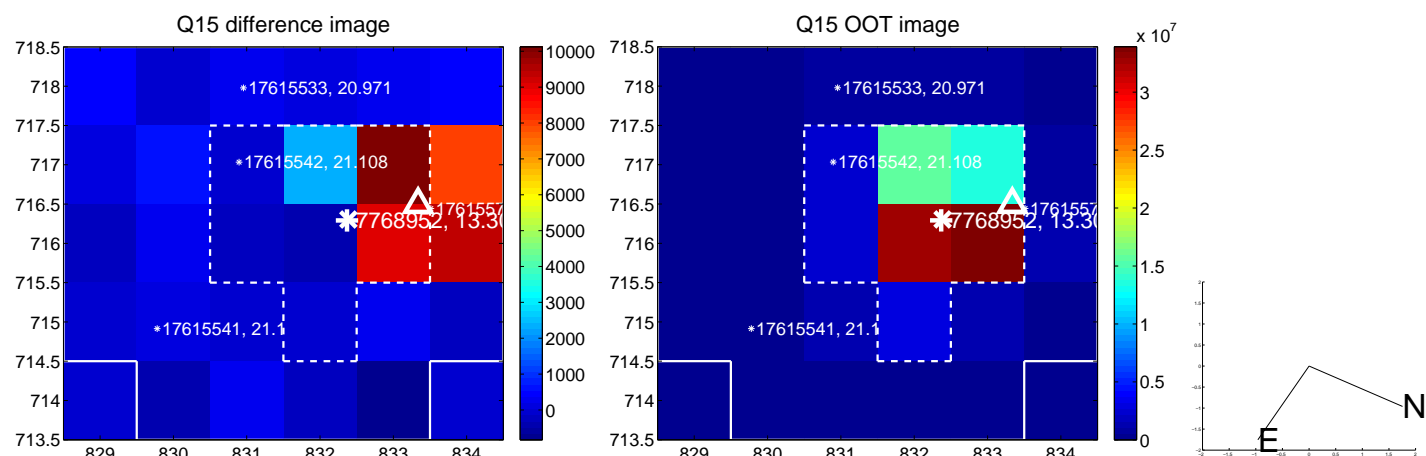
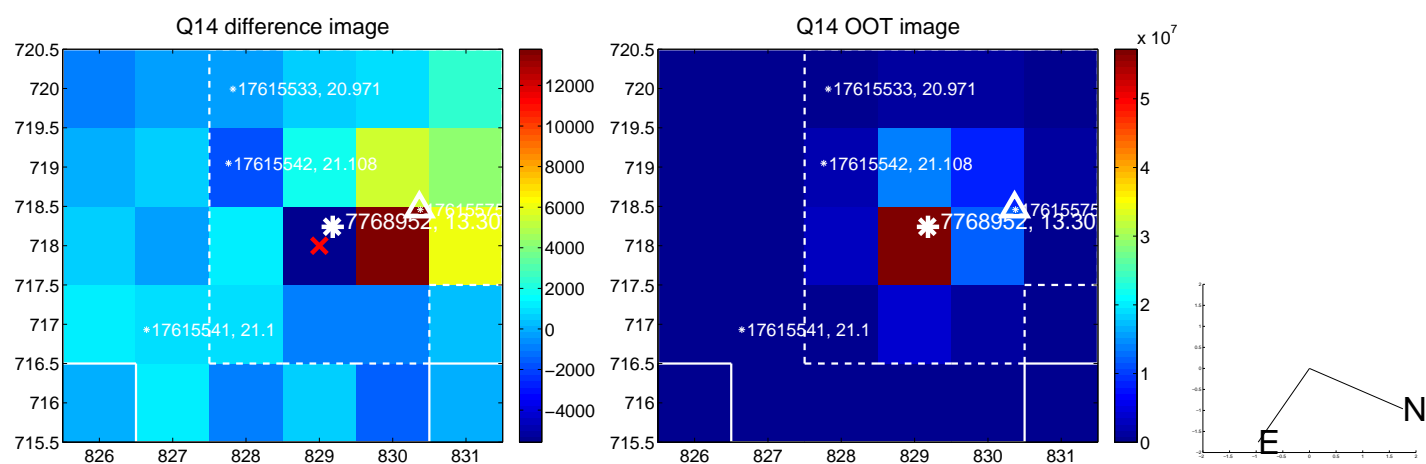
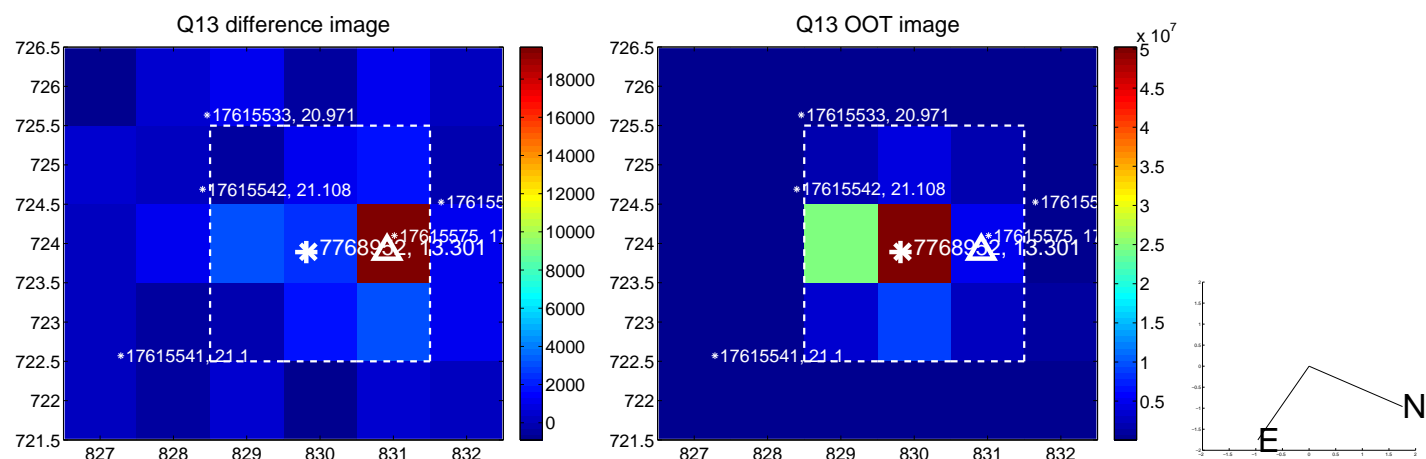
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



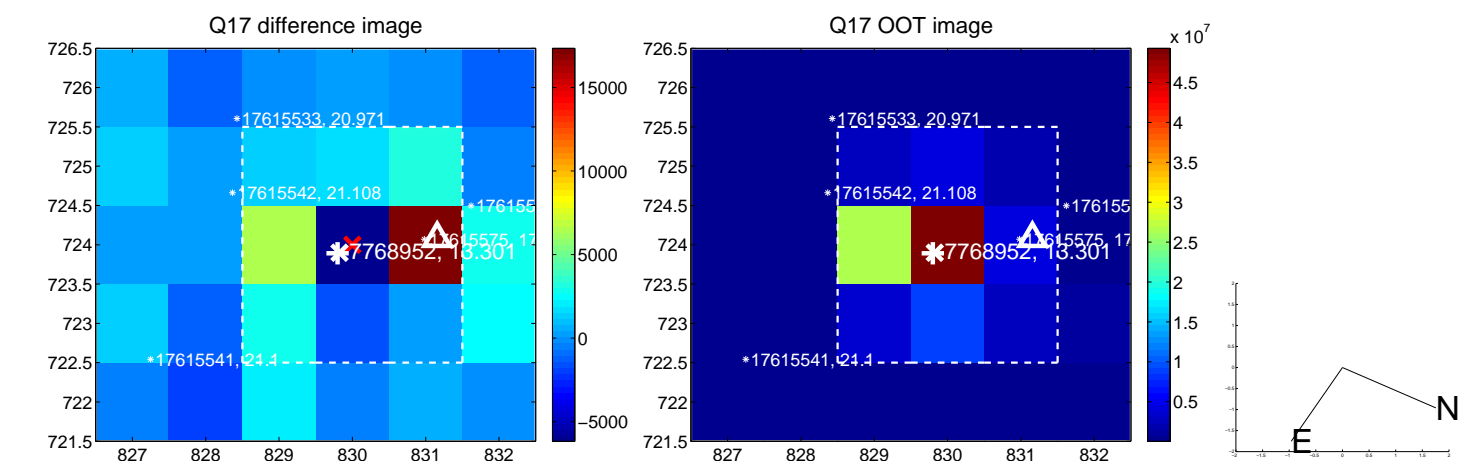
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



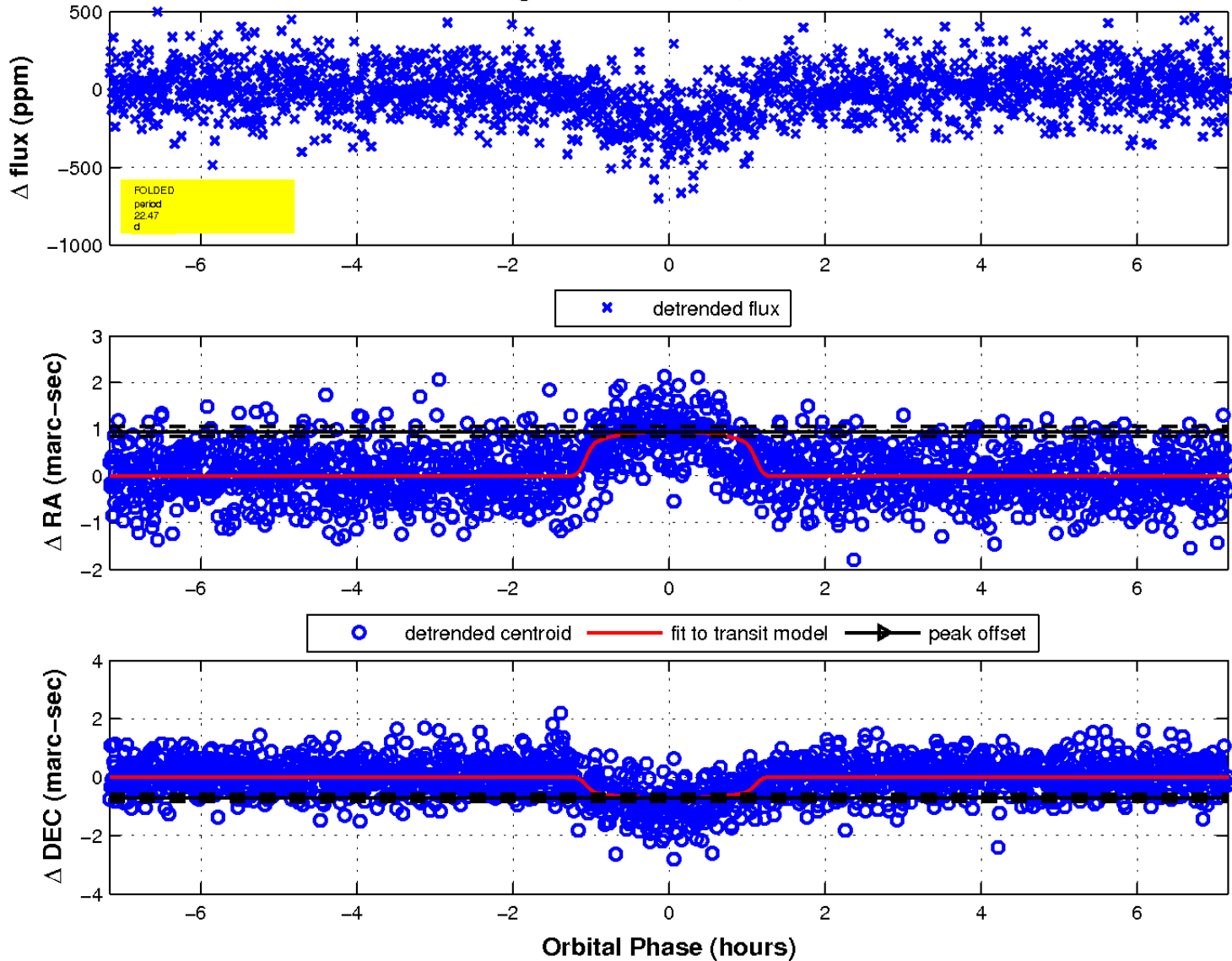
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



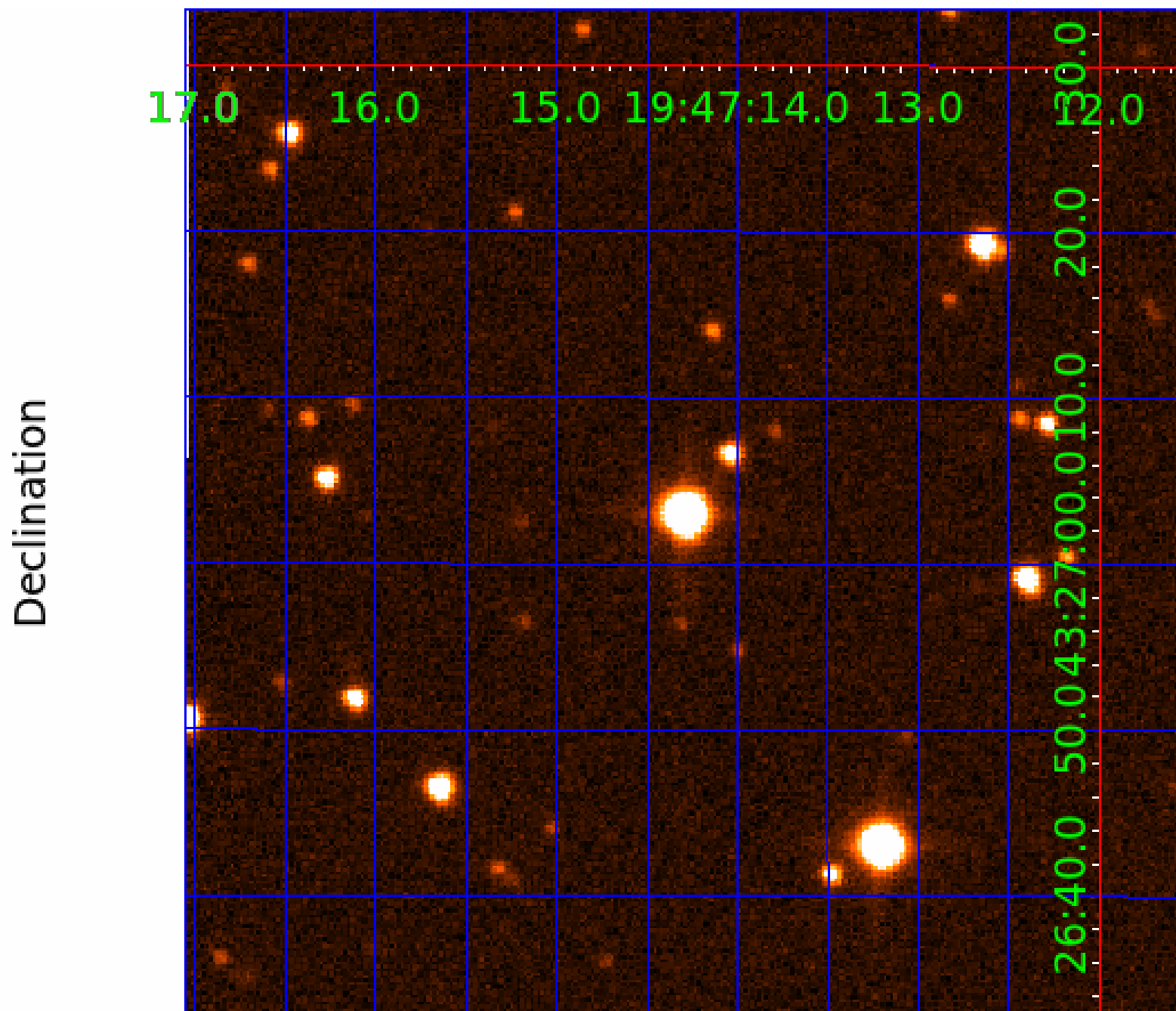
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 007768952

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})
007768952-01	OBS	1709.01	22.468670	148.492966	214.9	2.392	16.4	18.0	3.30	5461	5.80	277.32
007768952-02	OBS	No	22.468501	141.523885	138.6	2.958	12.6	13.5	3.30	5461	4.63	277.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007768952-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
007768952-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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.

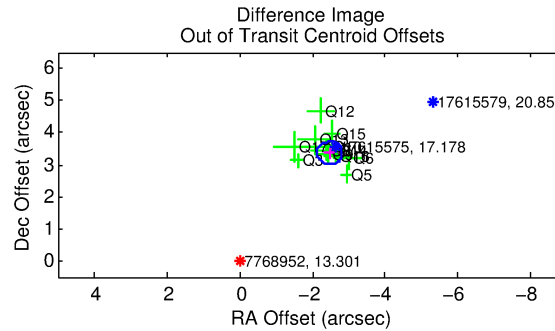
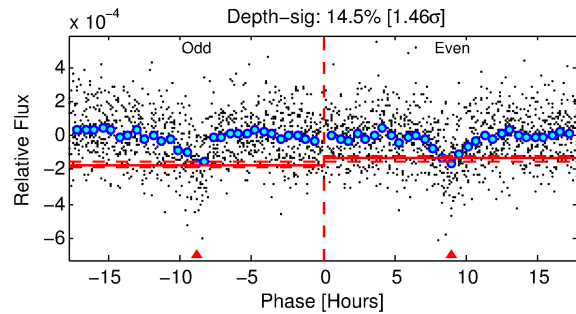
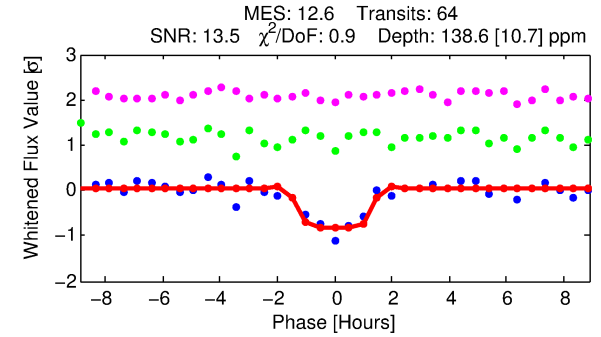
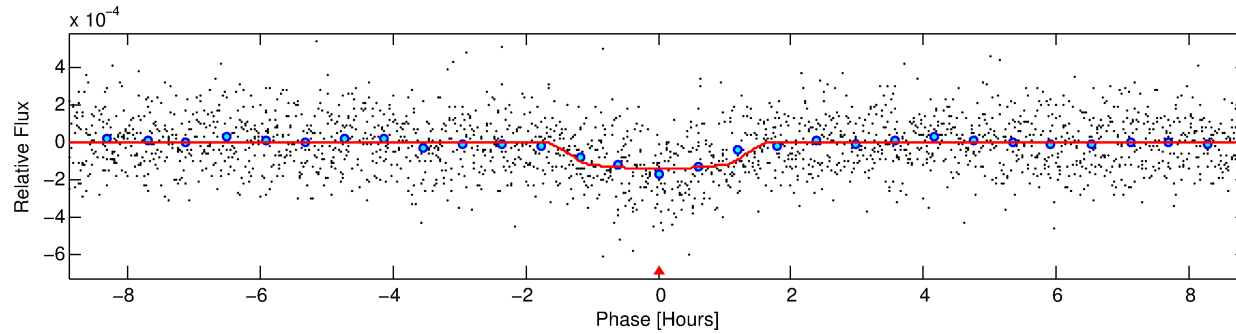
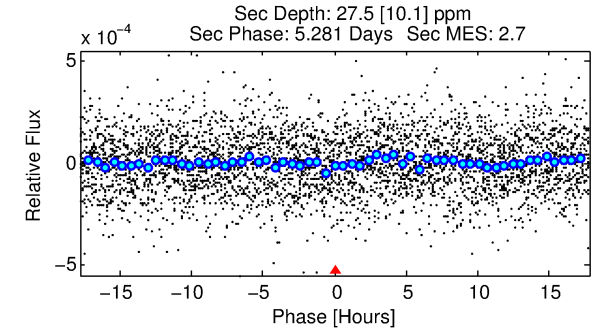
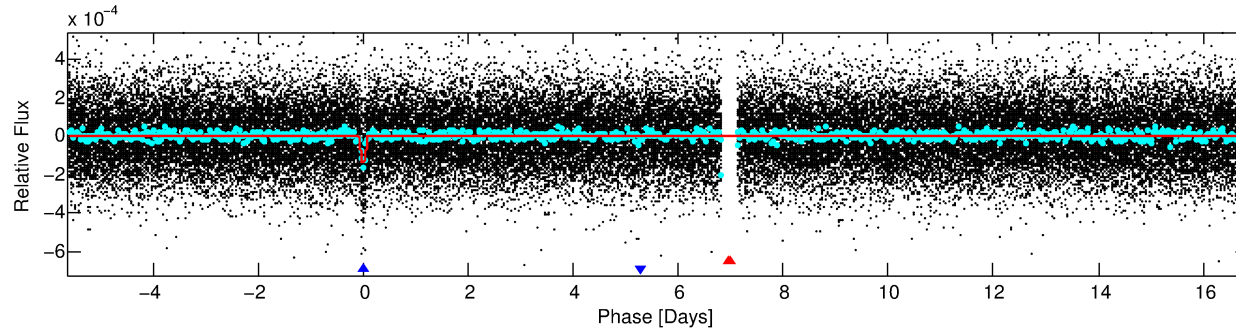
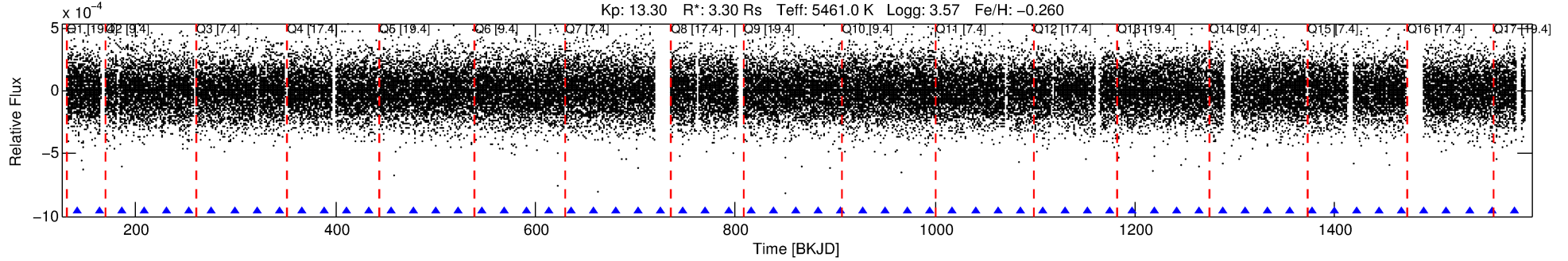
Ephemeris Match Information For 007768952-02

No Significant Match Found

DV One-Page Summary

KIC: 7768952 Candidate: 2 of 2 Period: 22.469 d
KOI: K01709 Corr: No Ephemeris Match

Kp: 13.30 R*: 3.30 Rs Teff: 5461.0 K Logg: 3.57 Fe/H: -0.260



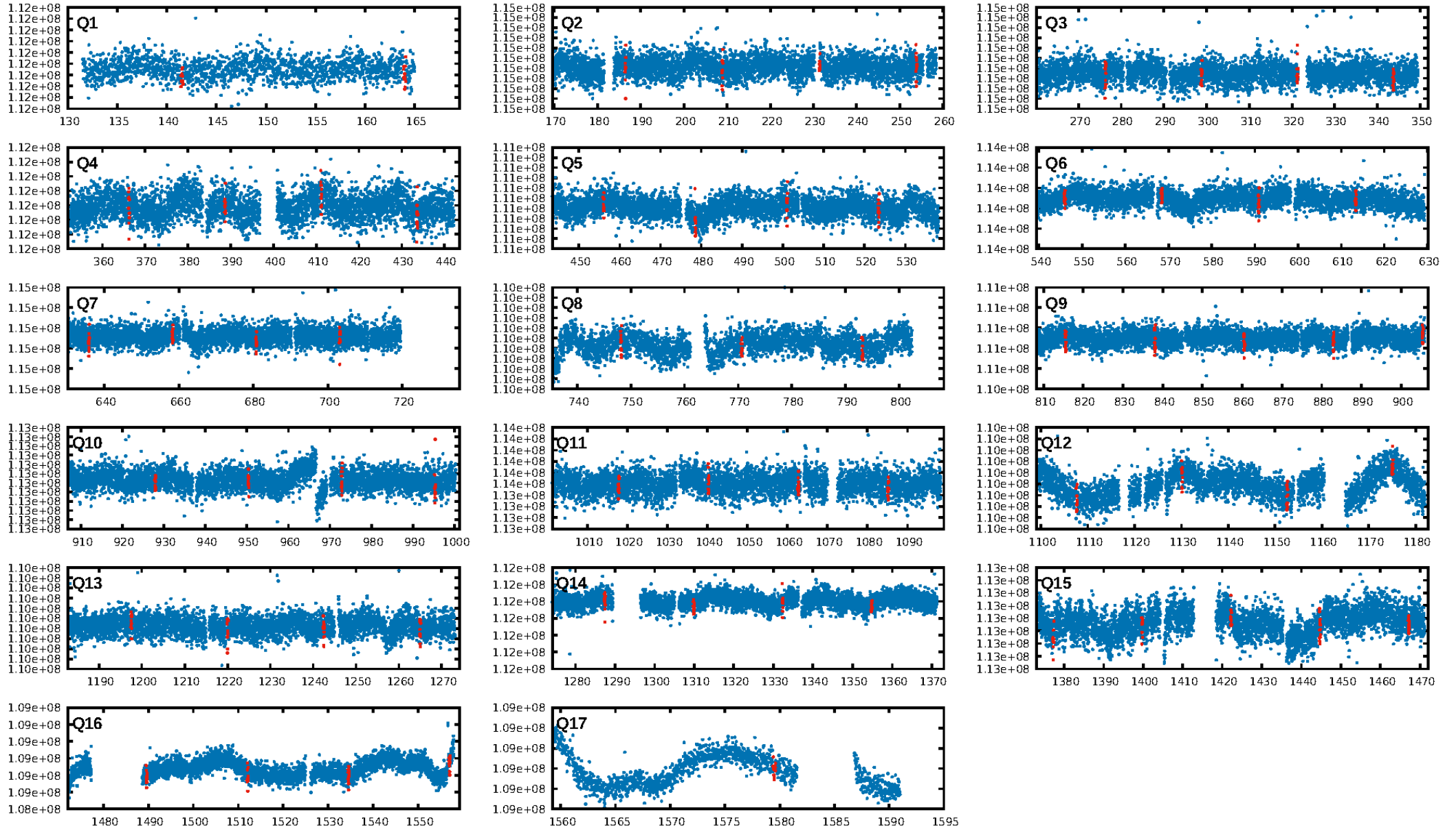
DV Fit Results:

Period = 22.46850 [0.00013] d
Epoch = 141.5239 [0.0048] BKJD
Rp/R* = 0.0129 [0.0057]
a/R* = 27.16 [55.75]
b = 0.90 [0.45]
Seff = 277.32 [385.58]
Teq = 1041 [362] K
Rp = 4.63 [3.85] Re
a = 0.1769 [0.1419] AU
Ag = 22.05 [37.15] [0.57σ]
Teffp = 3486 [847] K [2.66σ]

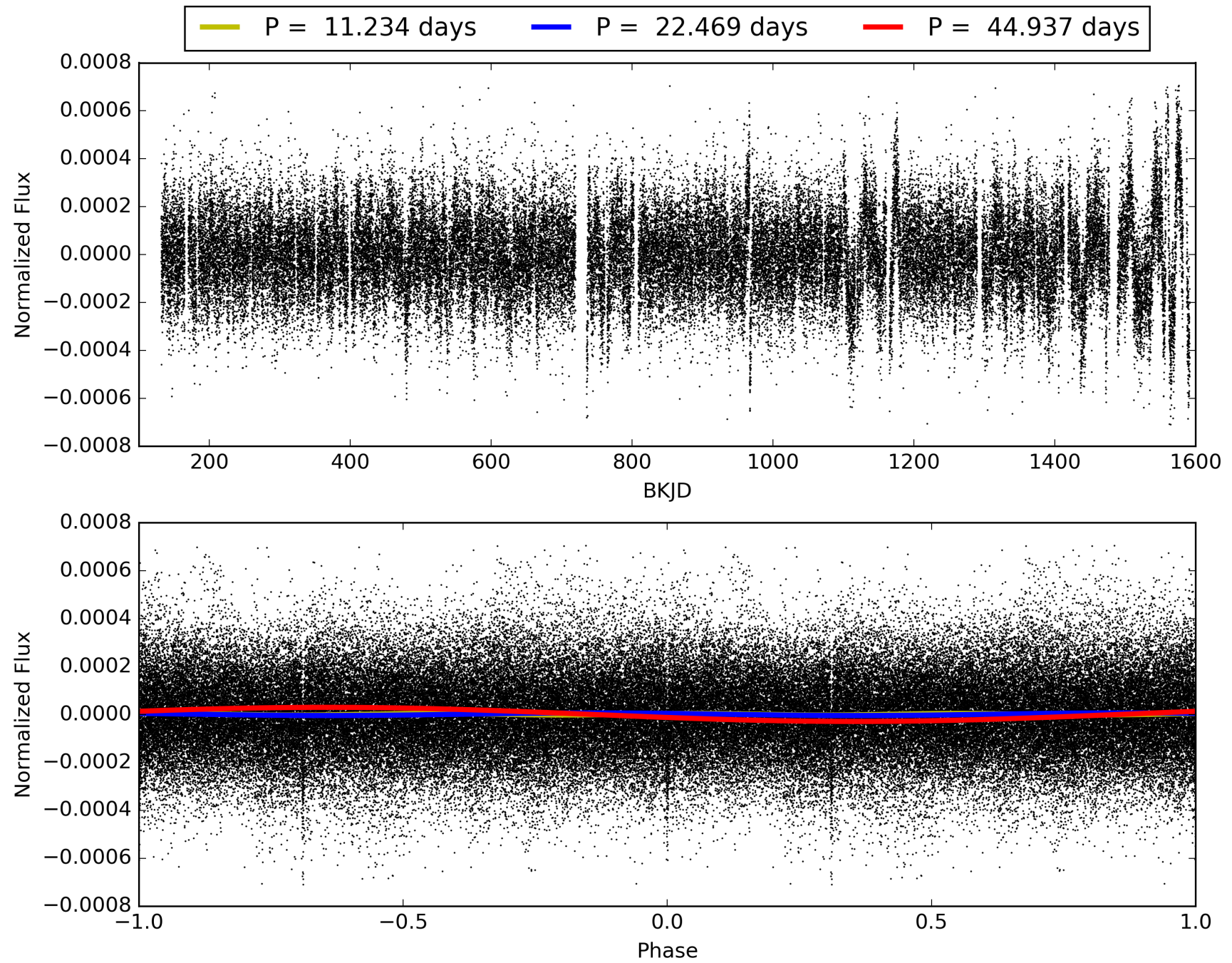
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 89.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.80e-35
RollingBand-fgt: 1.00 [61/61]
GhostDiagnostic-chr: 0.9077
Centroid-sig: 0.0%
Centroid-so: 5.318 arcsec [7.71σ]
OotOffset-rm: 4.169 arcsec [35.35σ]
KicOffset-rm: 4.116 arcsec [33.36σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007768952-02, PDC Light Curves

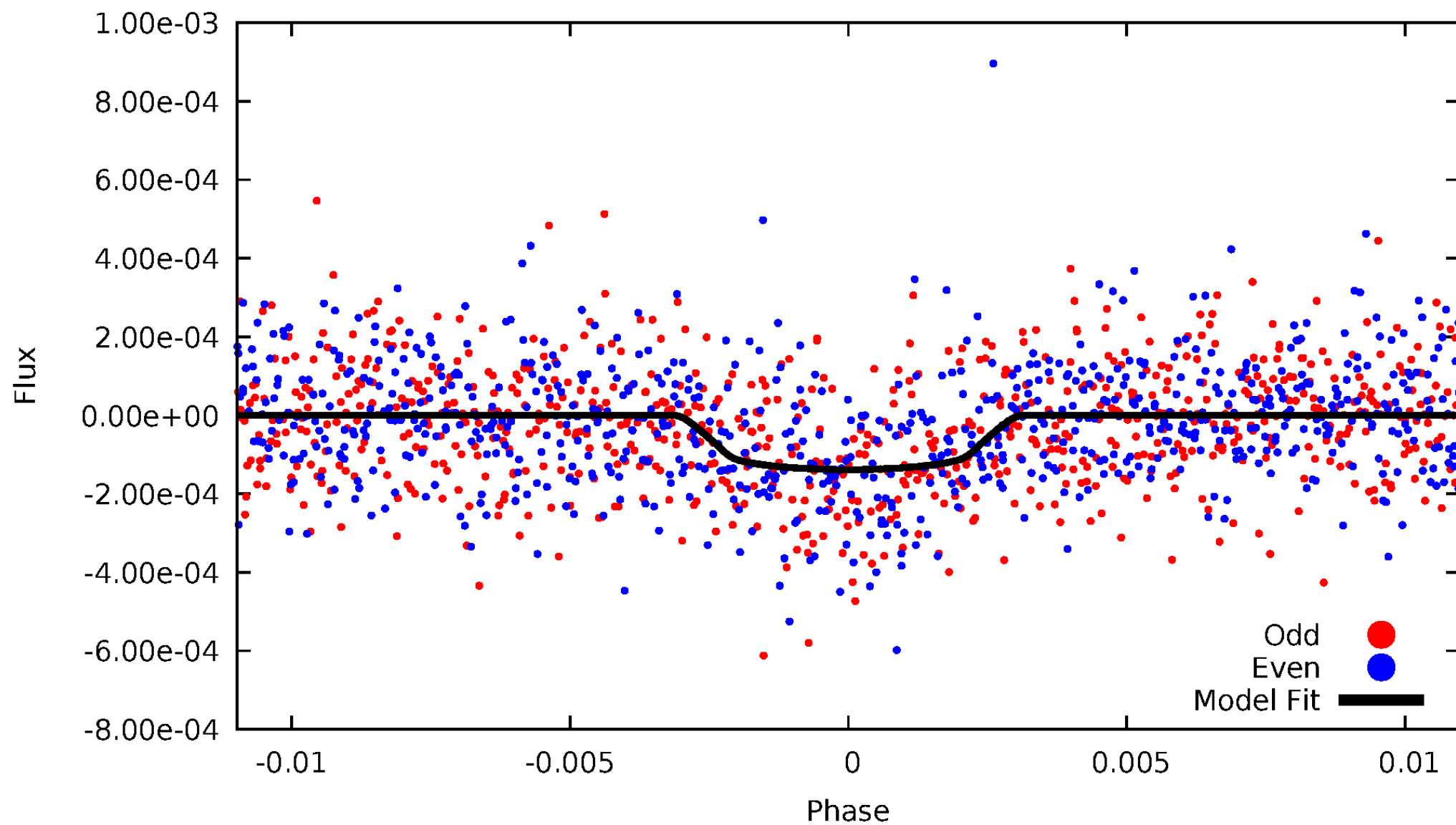


TCE 007768952-02



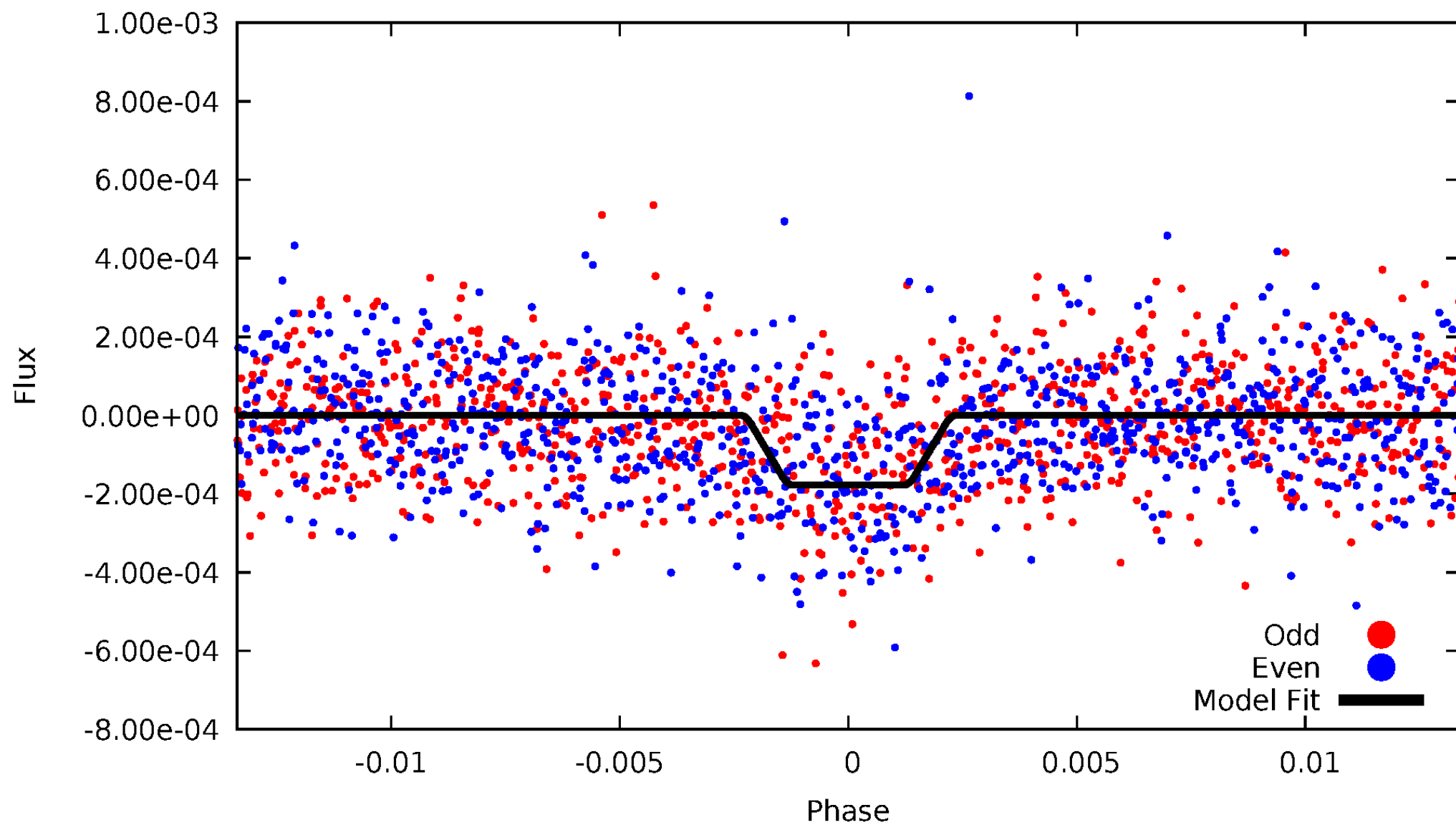
DV Odd/Even

TCE 007768952-02



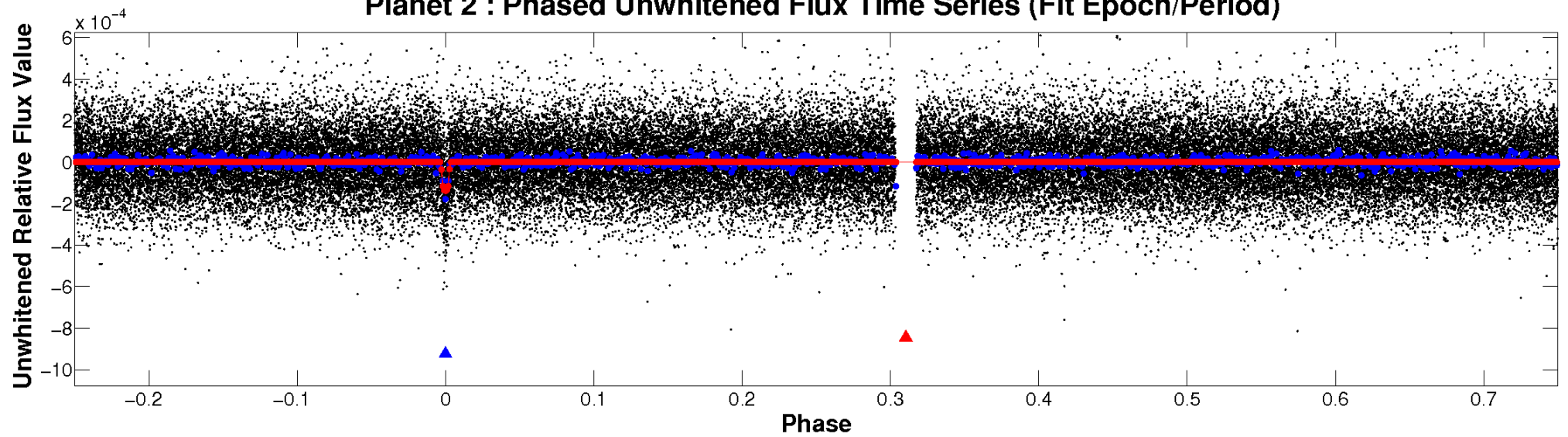
ALT Odd/Even

TCE 007768952-02

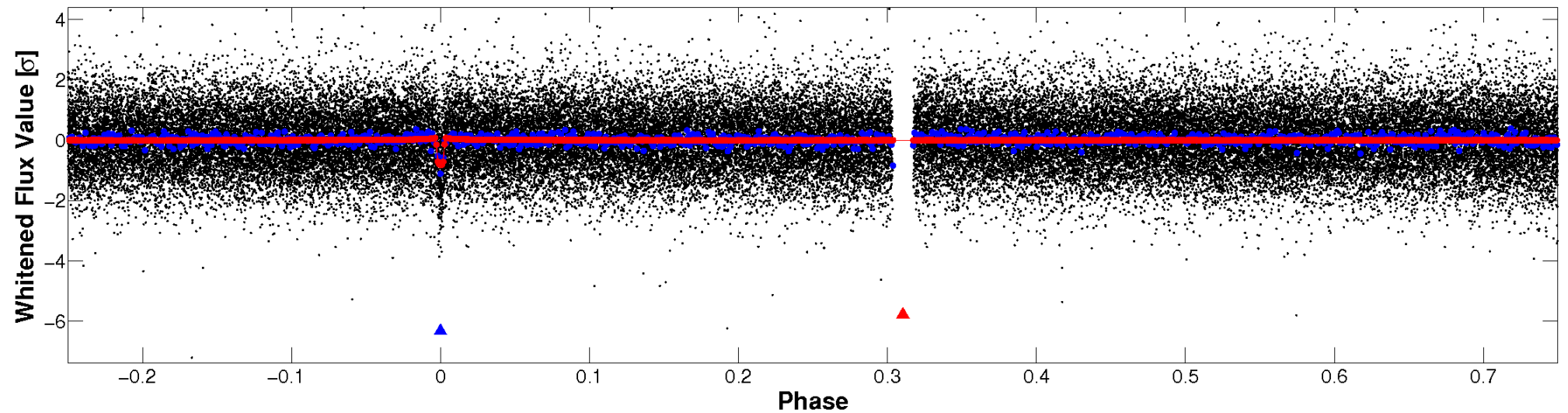


Non-Whitened Vs. Whitened Light Curve

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

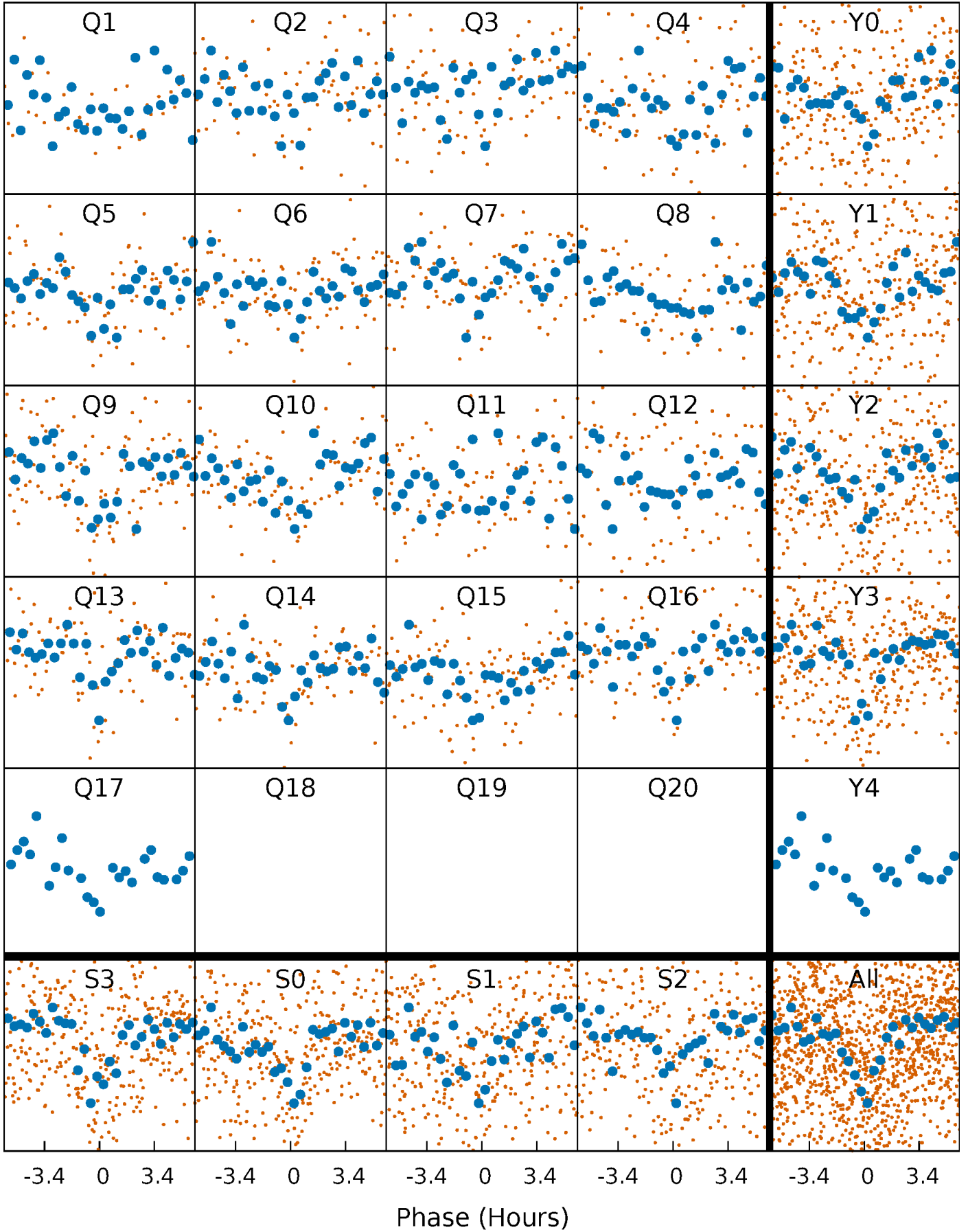


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



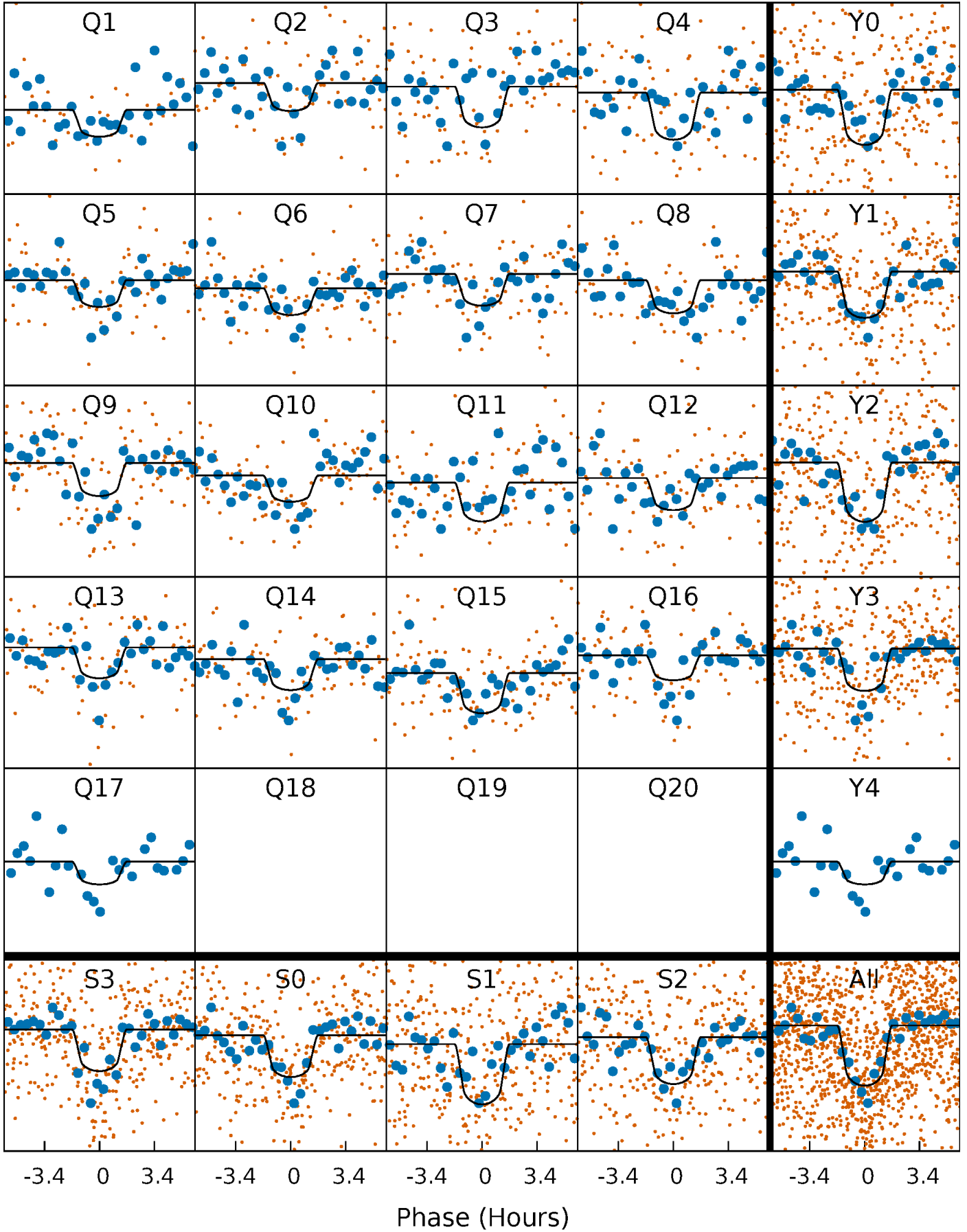
PDC Quarter-Phased Transit Curves

TCE 007768952-02 P= 22.468501 Days $T_0=141.523885$ (BKJD)



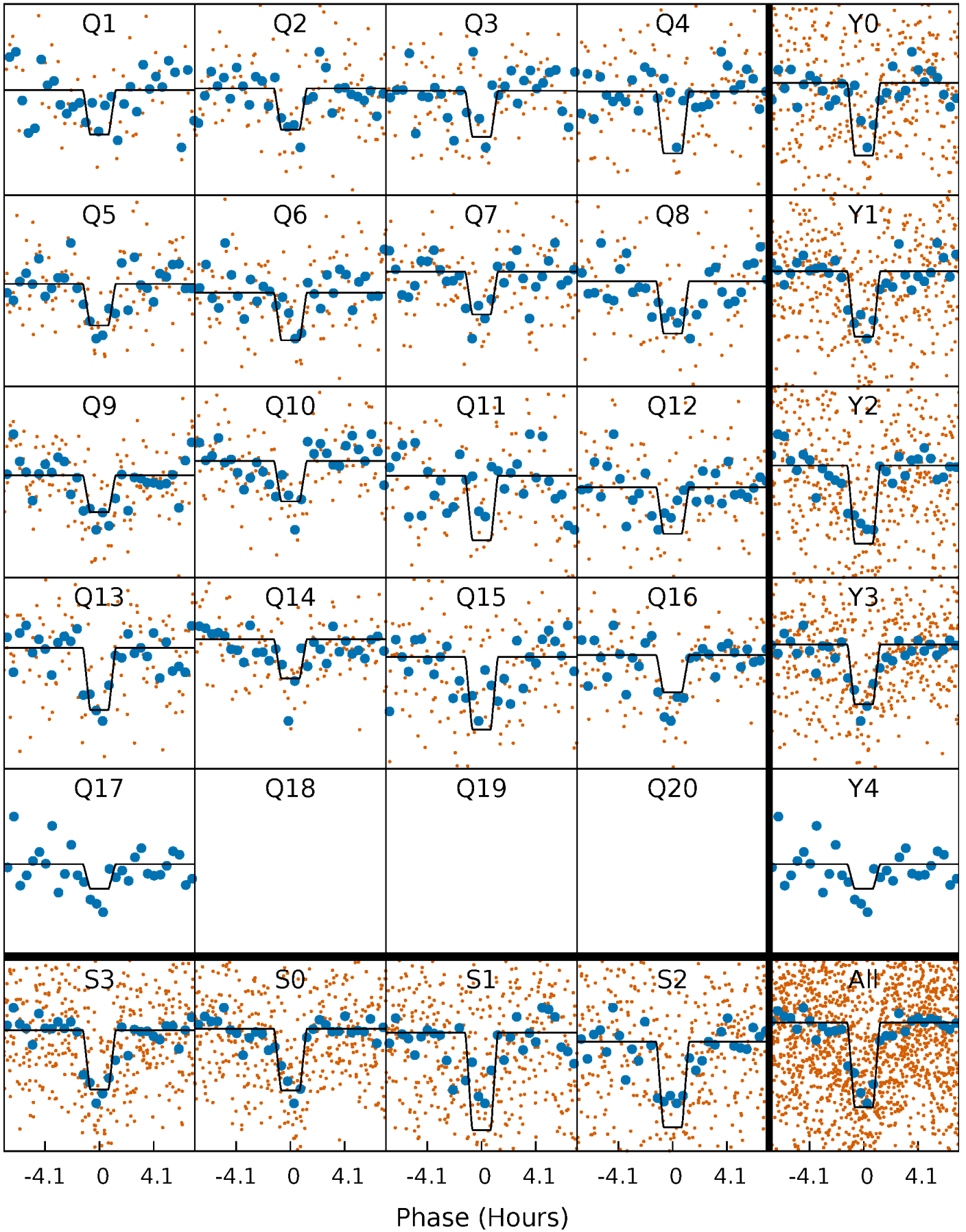
DV Quarter-Phased Transit Curves

TCE 007768952-02 P= 22.468501 Days $T_0=141.523885$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

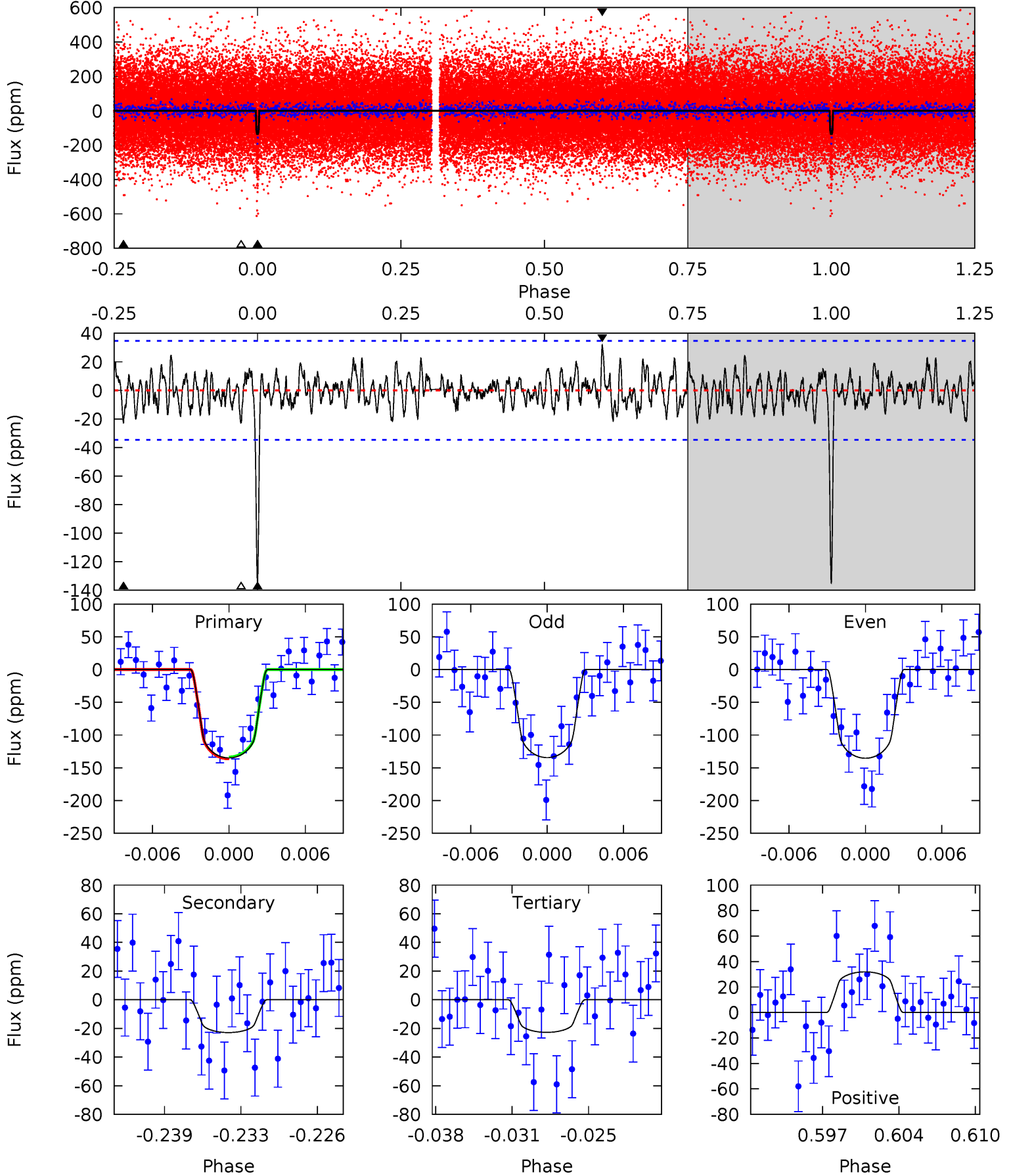
TCE 007768952-02 P= 22.468572 Days $T_0=141.520279$ (BKJD)



DV Model-Shift Uniqueness Test

007768952-02, P = 22.468501 Days, E = 119.055384 Days

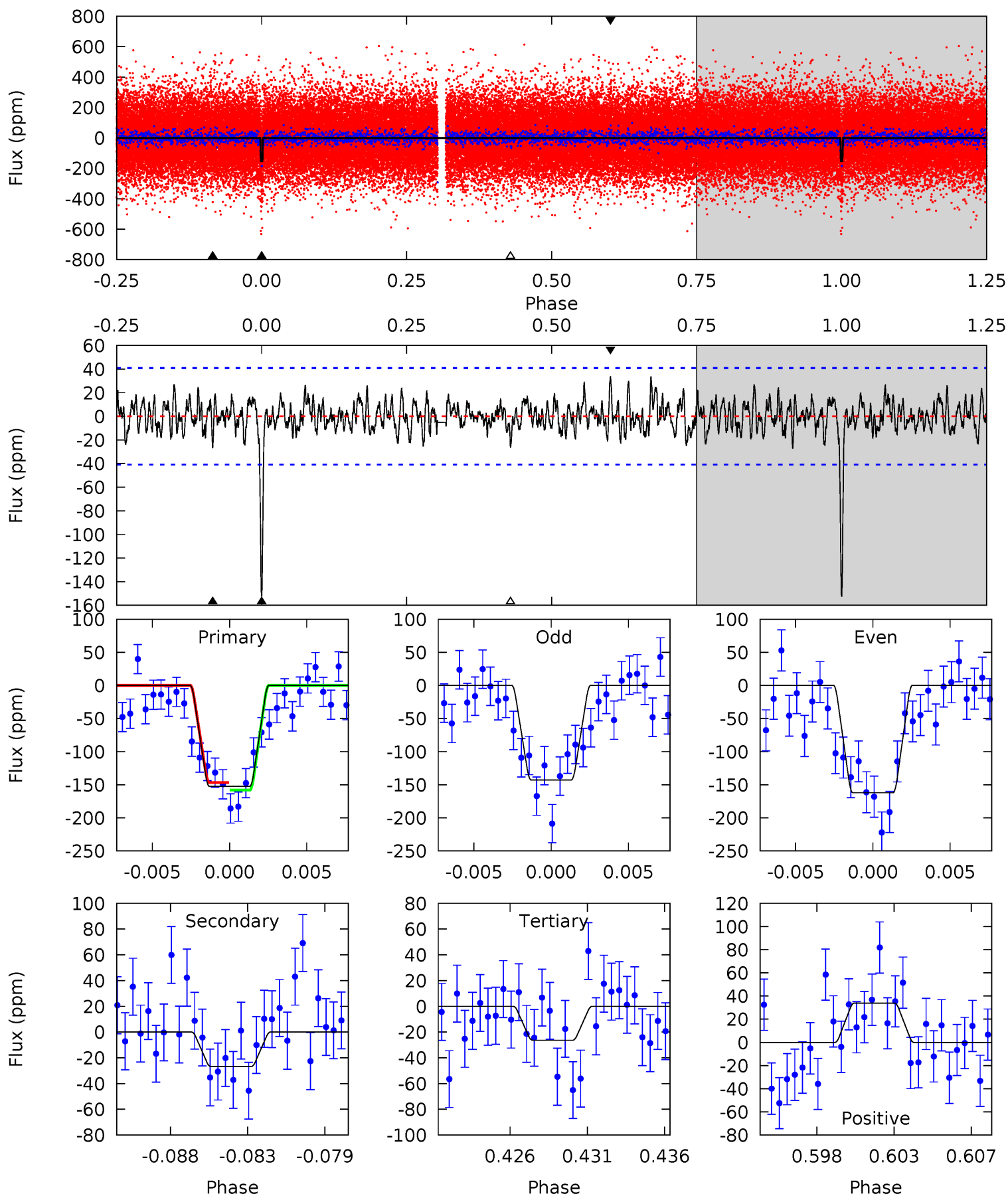
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.9	3.38	3.36	4.72	5.11	2.73	1.32	16.6	15.2	0.02	-1.33	0.07	0.91	0.19	0.21



Alt Model-Shift Uniqueness Test

007768952-02, $P = 22.468572$ Days, $E = 119.051707$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	3.39	3.33	4.28	5.17	2.83	1.28	16.0	15.0	0.07	-0.89	1.23	0.98	0.18	0.71



Stellar Parameters For KIC 007768952

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5461^{+189}_{-189}	$3.566^{+0.848}_{-0.212}$	$-0.260^{+0.350}_{-0.300}$	$3.301^{+0.994}_{-2.320}$	$1.463^{+0.201}_{-0.602}$	$0.057^{+1.415}_{-0.029}$
	+3%/-3%	+24%/-6%	+135%/-115%	+30%/-70%	+14%/-41%	+2472%/-50%
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 007768952-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-23 ± 7	$4.14^{+2.45}_{-2.10}$	1429^{+149}_{-261}	3695^{+856}_{-475}	22^{+68}_{-14}
Alt.	-27 ± 8	$4.15^{+2.57}_{-2.19}$	1423^{+165}_{-272}	3747^{+843}_{-439}	25^{+81}_{-16}

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 $A_{obs} \gg 1.0$

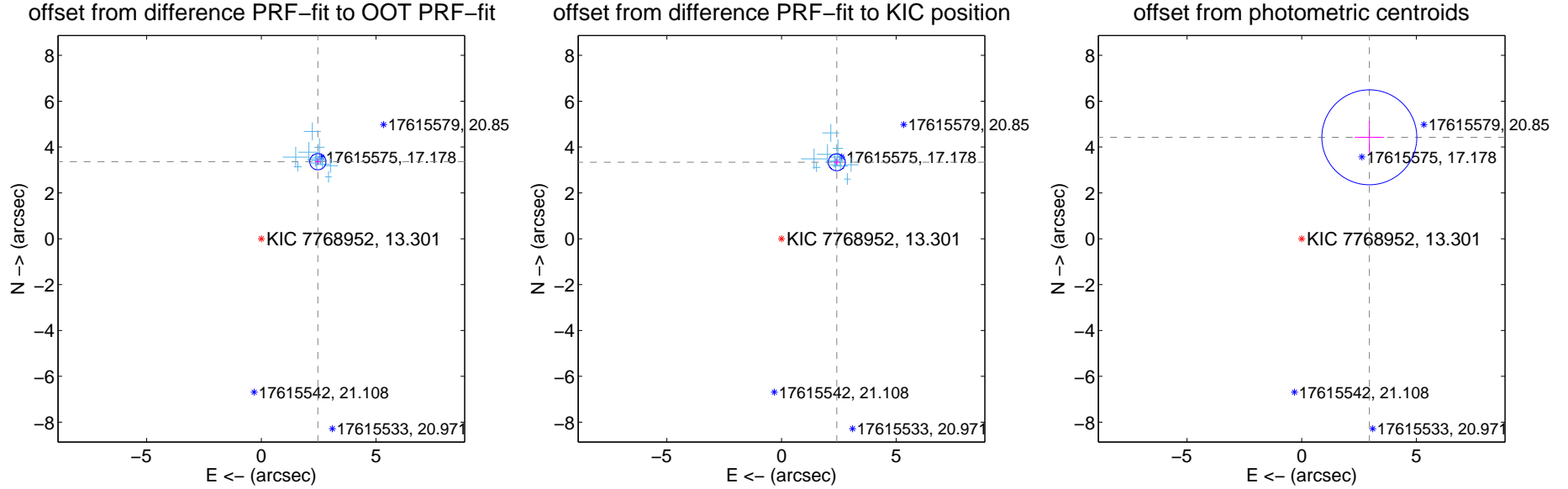
DV Centroid Data

Supplemental centroid analysis for 007768952-02. Kepler magnitude: 13.30. Transit SNR 13.54

There are 13 quarters with good PRF difference image offsets

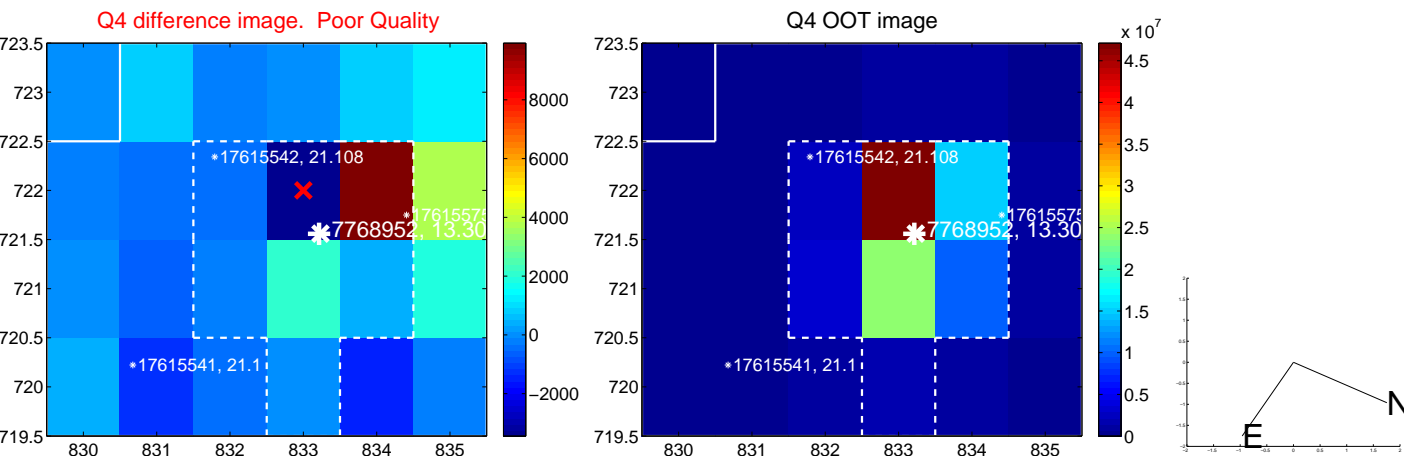
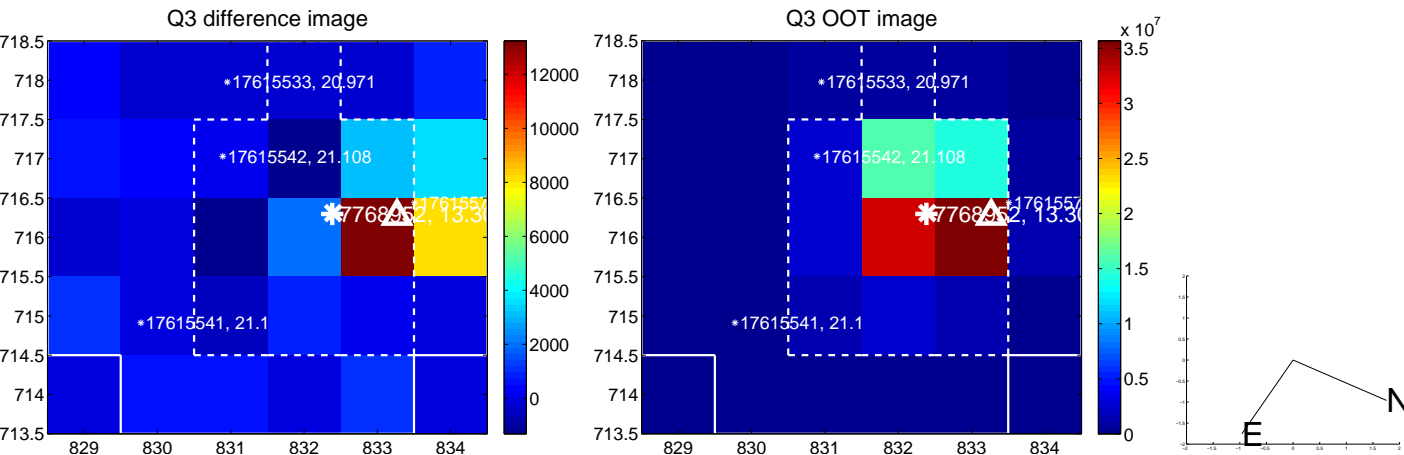
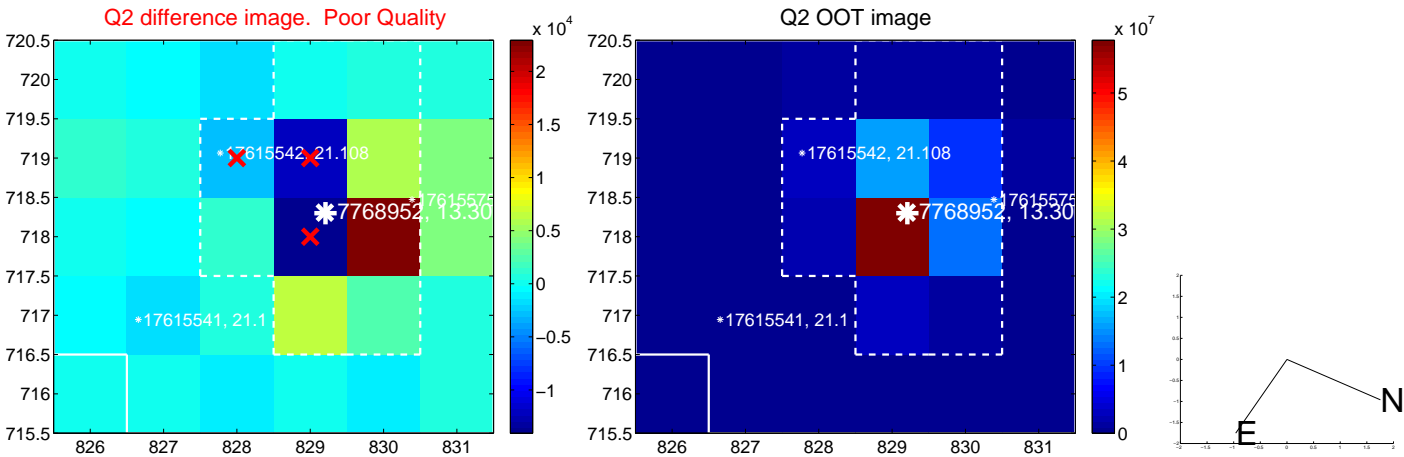
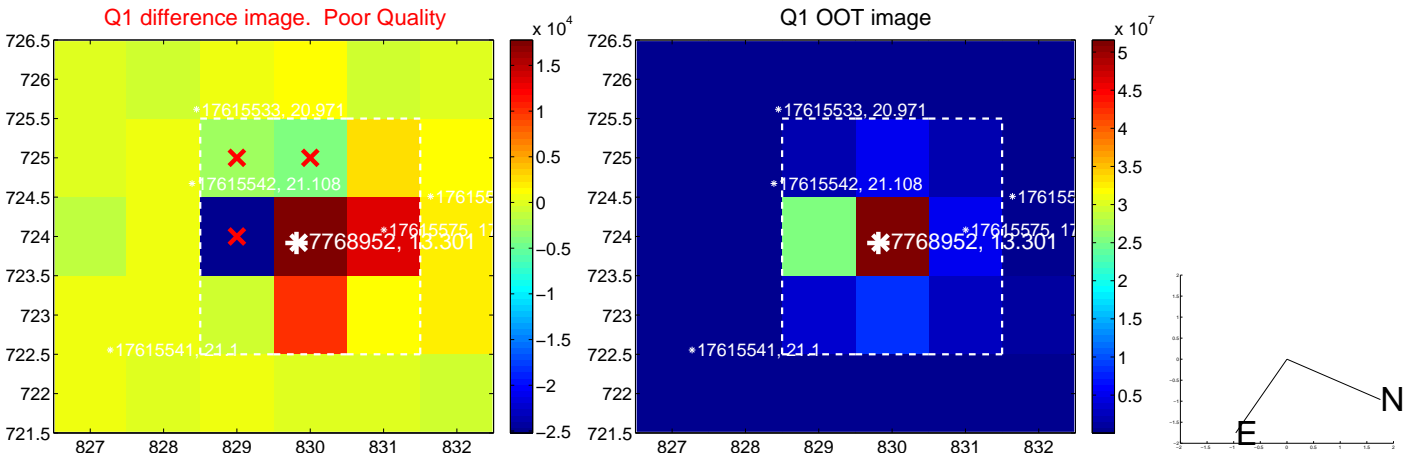
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.169 ± 0.118	35.35	-2.466 ± 0.129	3.361 ± 0.137
PRF-fit source offset from KIC position	4.116 ± 0.123	33.36	-2.411 ± 0.146	3.336 ± 0.136
photometric centroid source offset	5.32 ± 0.69	7.71	-2.95 ± 0.64	4.43 ± 0.71

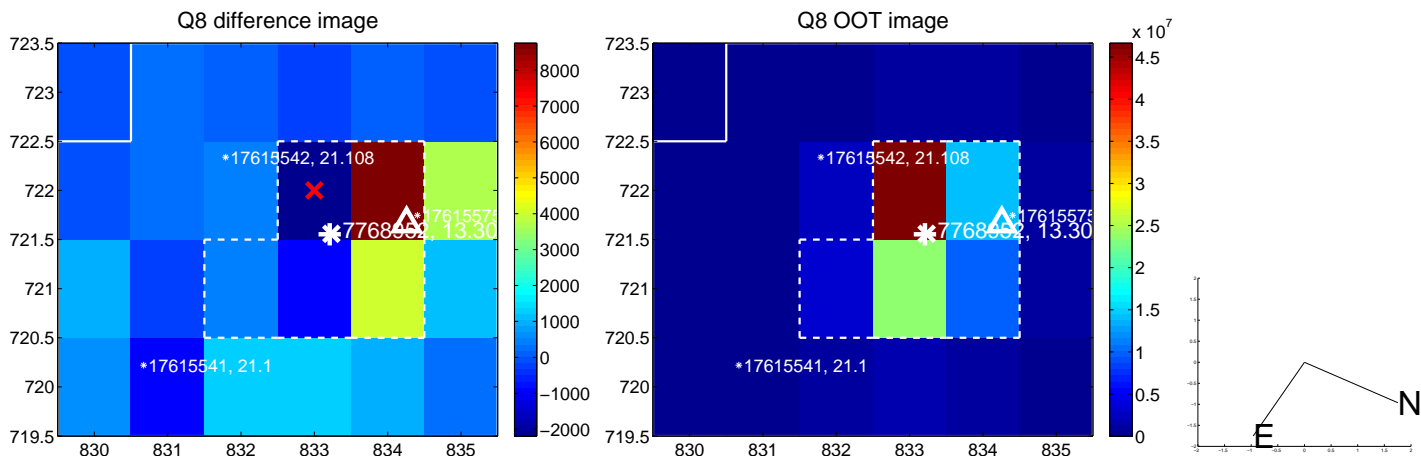
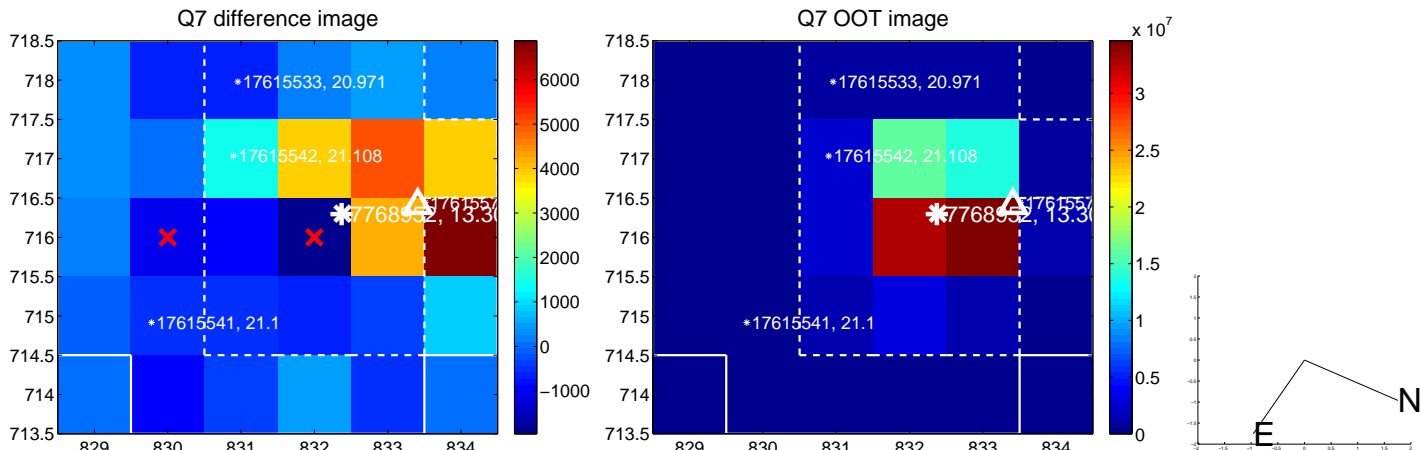
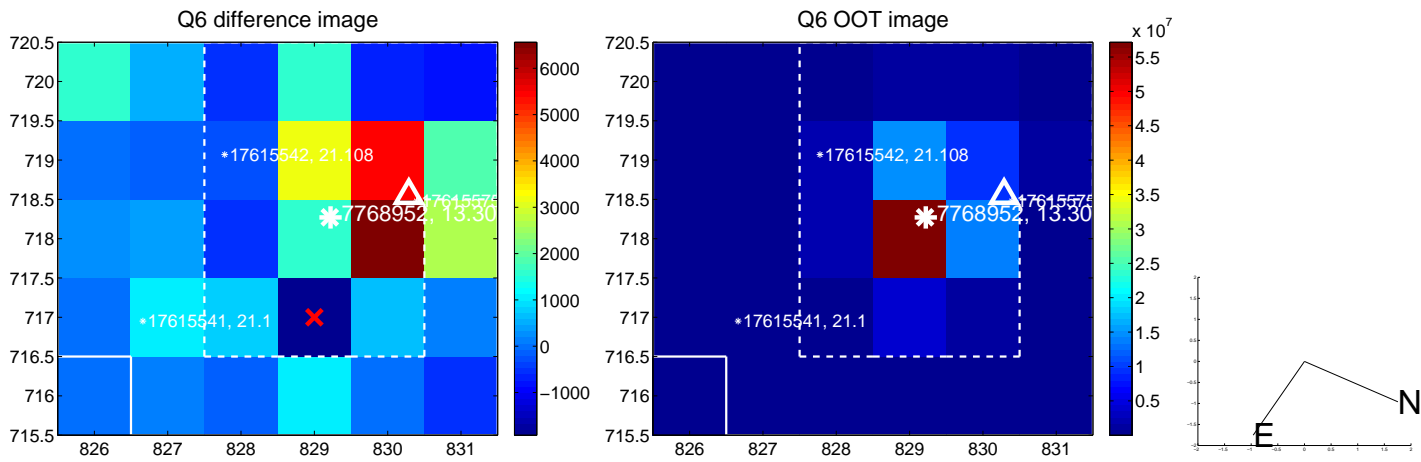
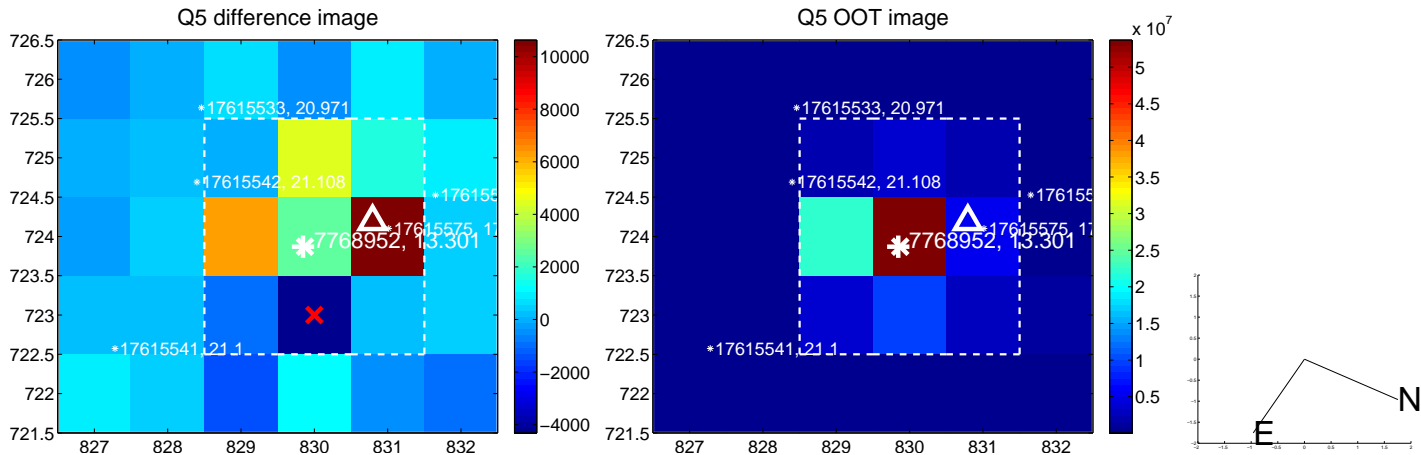


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

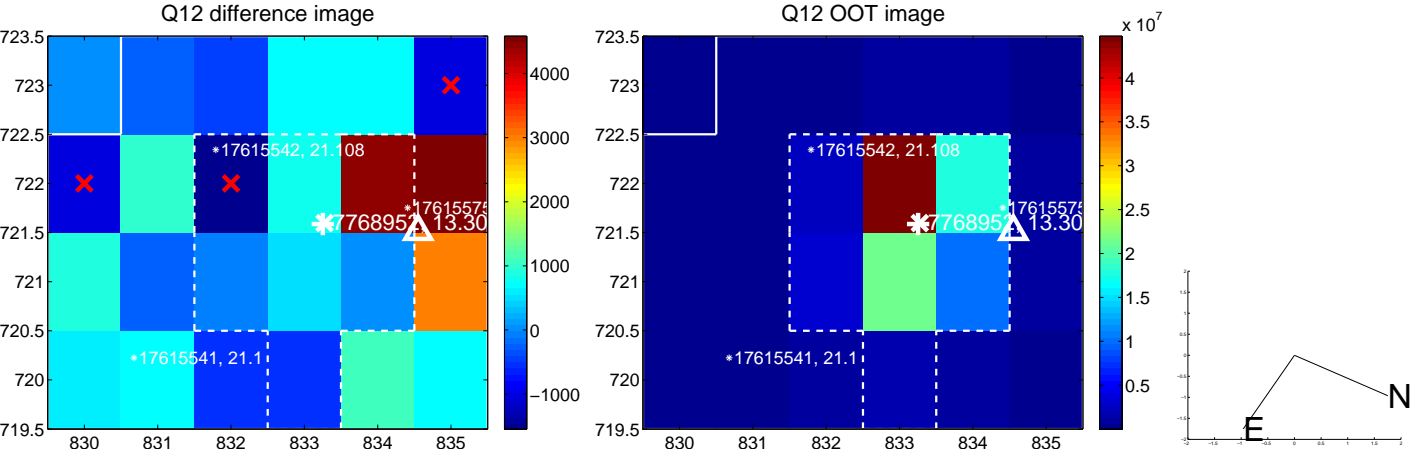
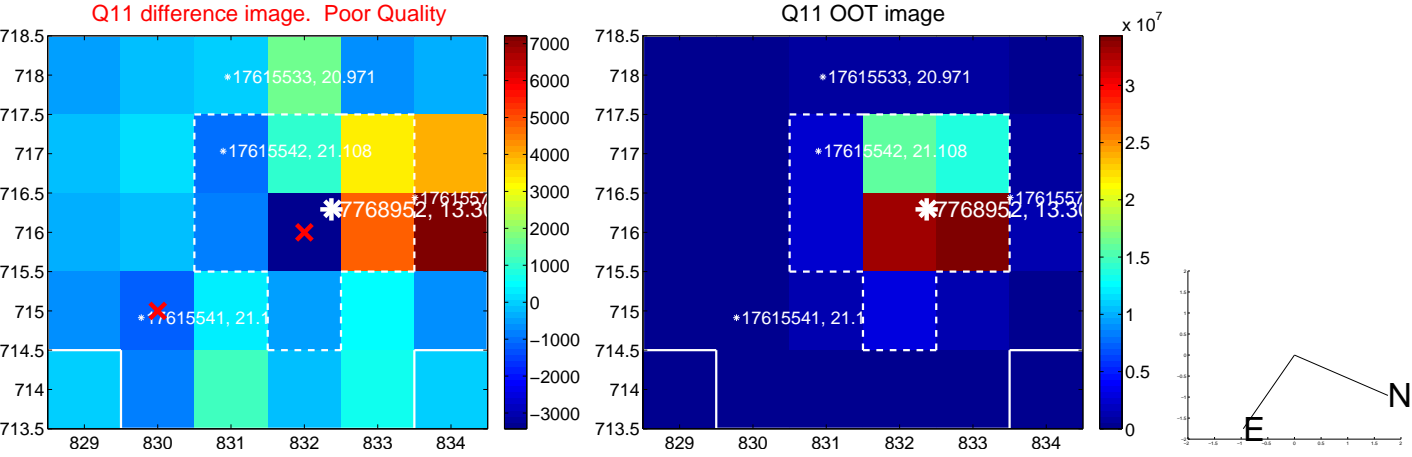
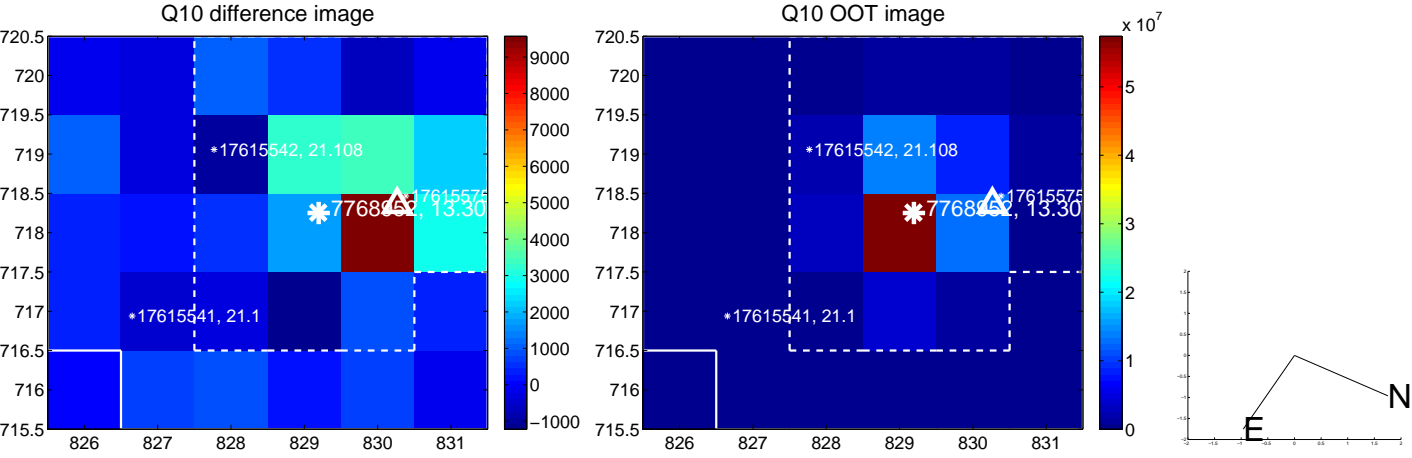
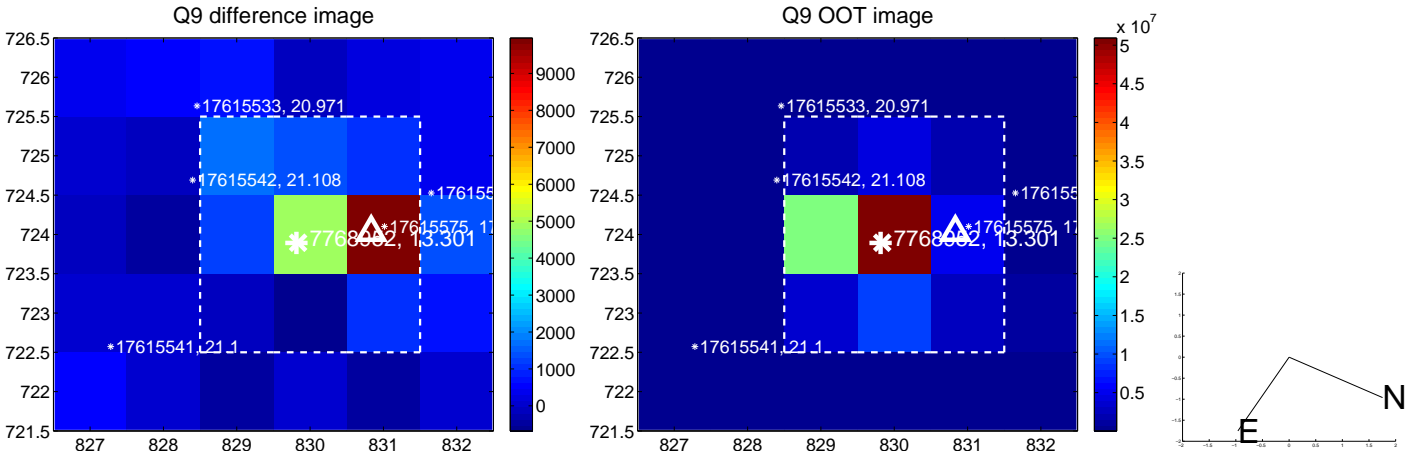
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



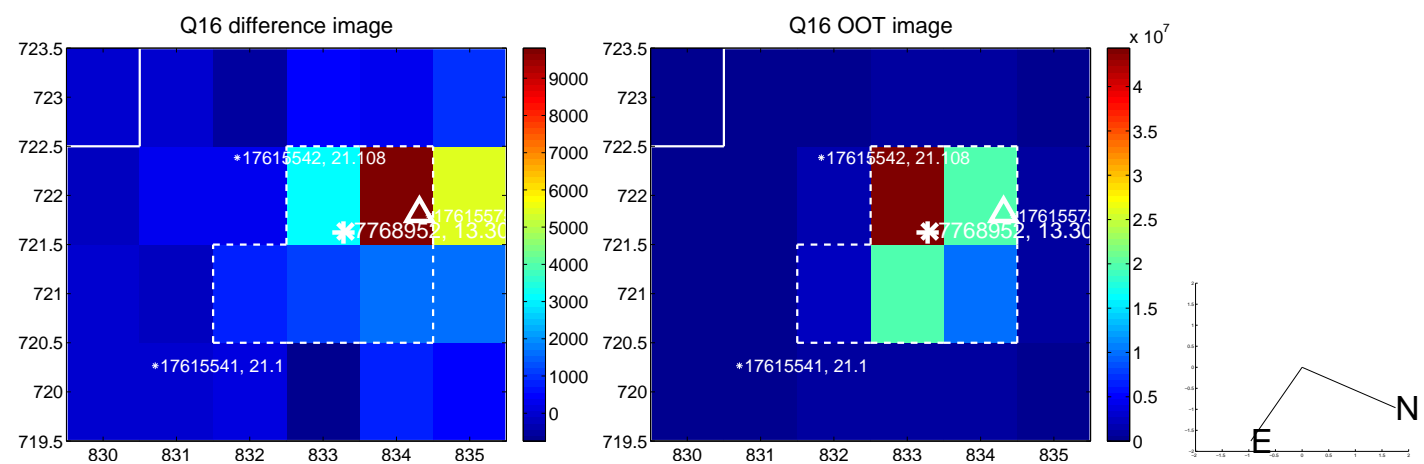
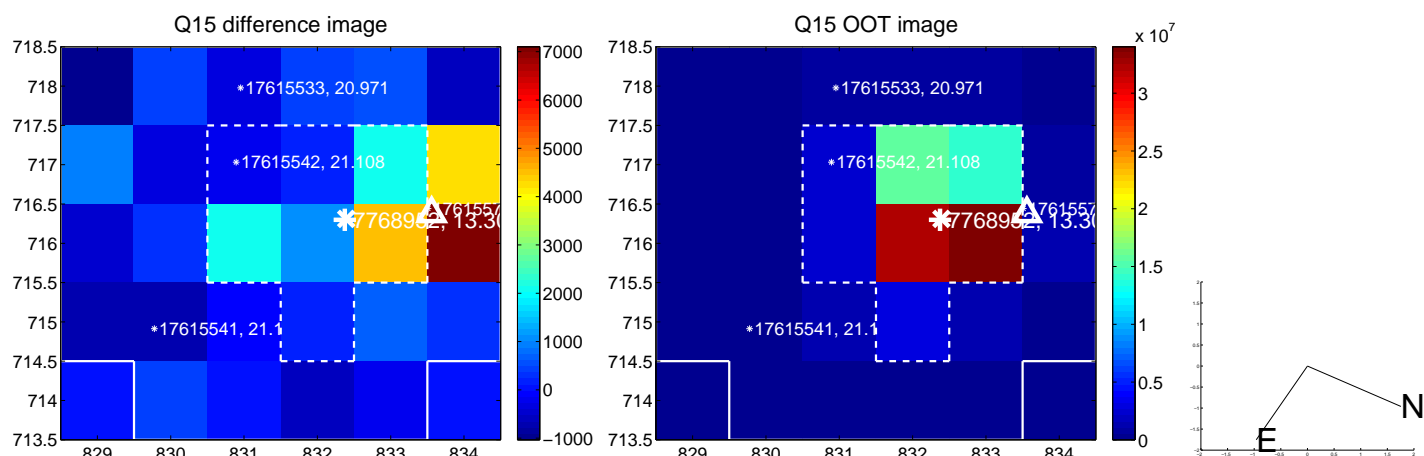
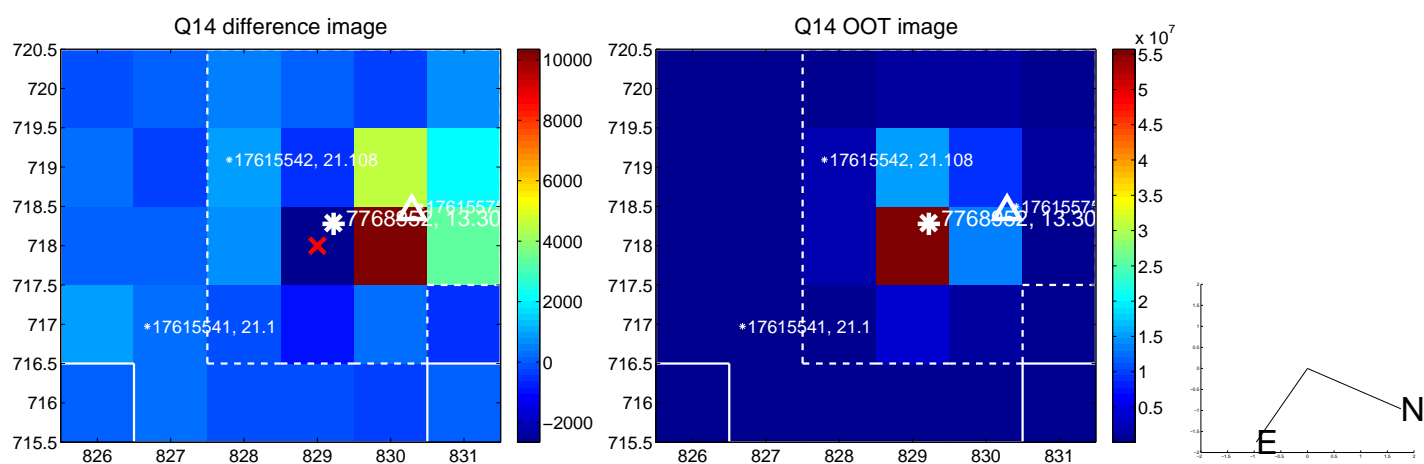
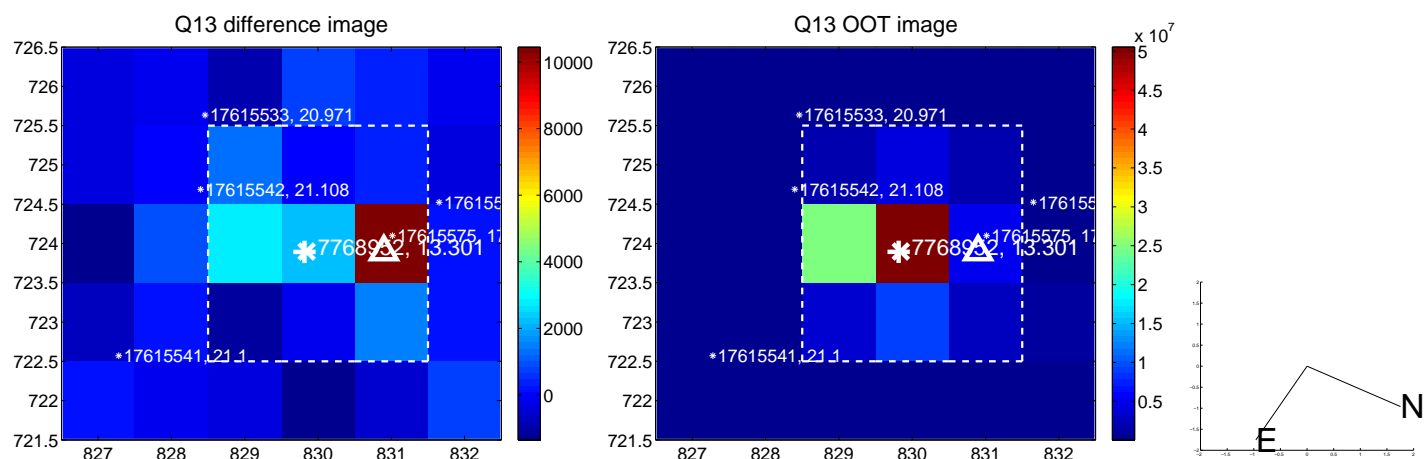
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

