

KIC 010352938

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})
010352938-01	OBS	3756.01	6.471695	136.361019	6248.4	7.437	246.2	256.7	1.69	6318	13.99	759.02
010352938-02	OBS	No	6.471746	132.870661	245.1	7.588	9.4	10.3	1.69	6318	3.05	759.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010352938-01	OBS	FP	0.00	0	1	0	0	HAS_SEC_TCE—CENT_KIC_POS
010352938-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

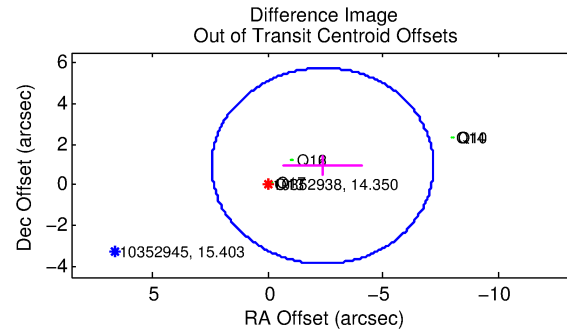
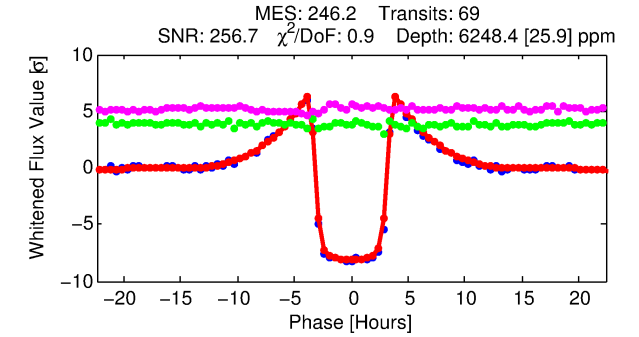
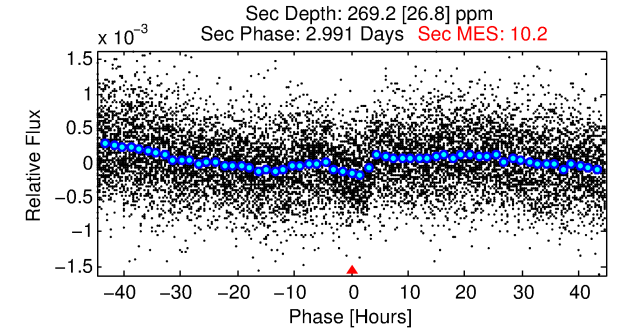
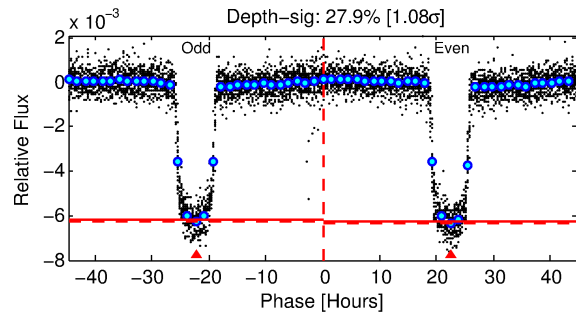
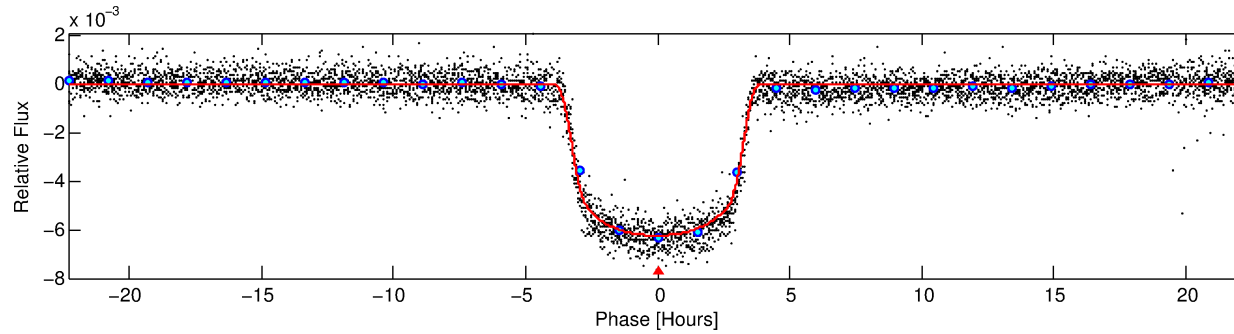
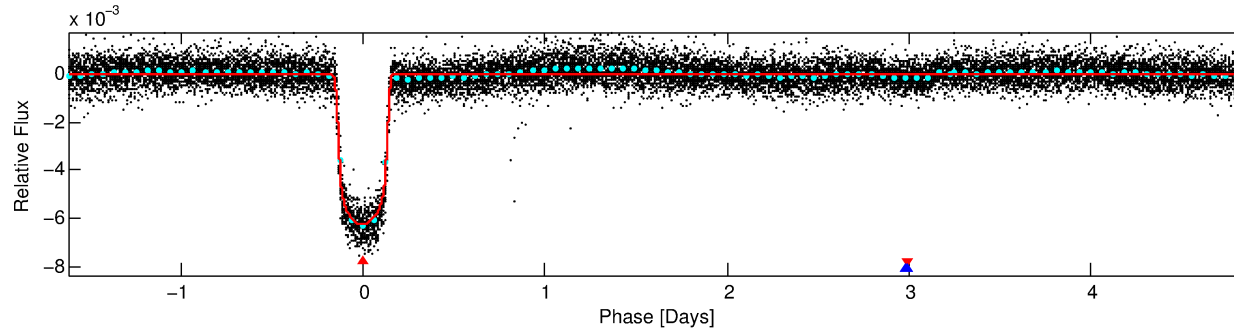
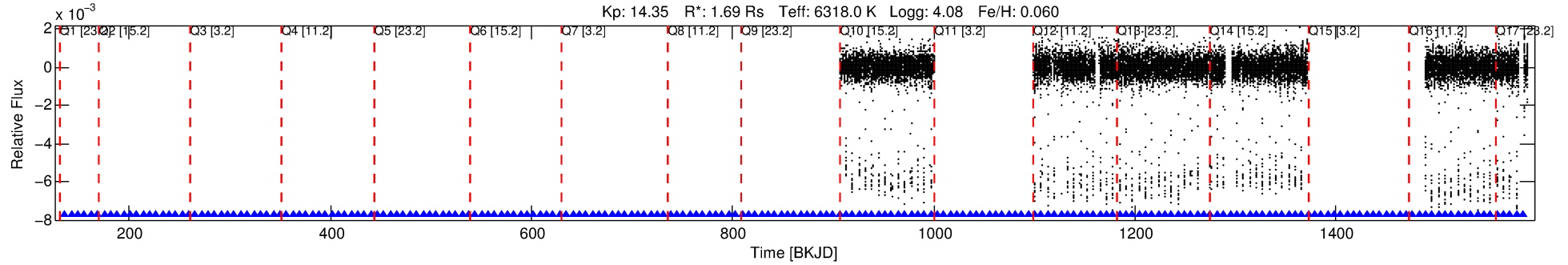
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010352938-01

No Significant Match Found

DV One-Page Summary

KIC: 10352938 Candidate: 1 of 2 Period: 6.472 d
KOI: K03756.01 Corr: 0.978



DV Fit Results:

Period = 6.47169 [0.00000] d
Epoch = 136.3610 [0.0006] BKJD
Rp/R* = 0.0761 [0.0004]
a/R* = 5.90 [0.13]
b = 0.62 [0.02]
Seff = 759.02 [356.24]
Teq = 1338 [157] K
Rp = 13.99 [4.19] Re
a = 0.0731 [0.0205] AU
Ag = 4.04 [1.84] [1.66σ]
Teffp = 2934 [135] K [7.71σ]

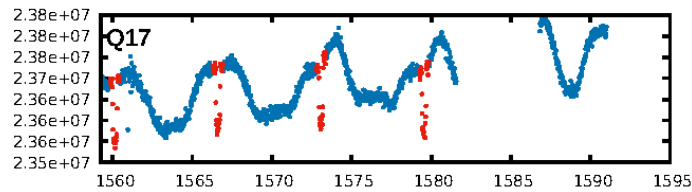
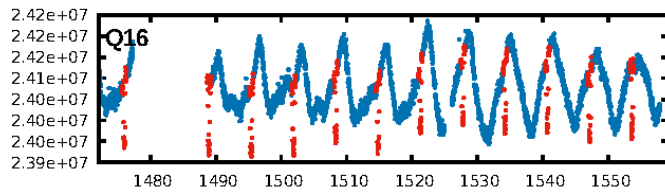
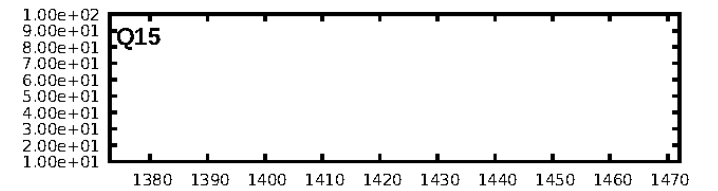
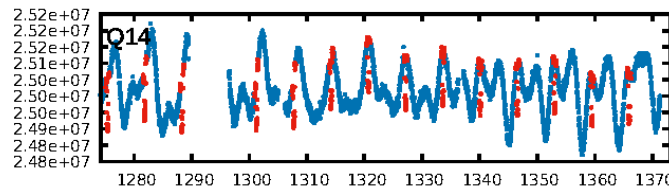
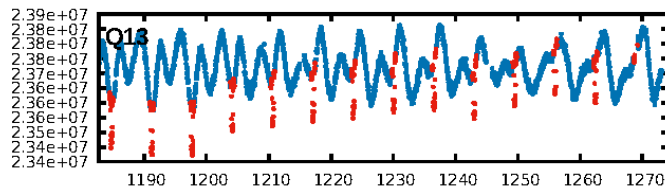
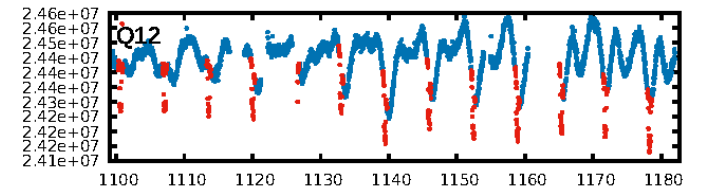
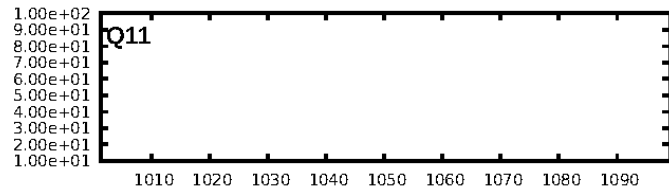
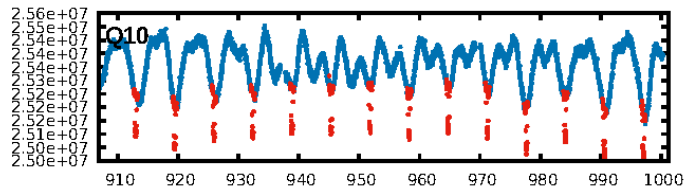
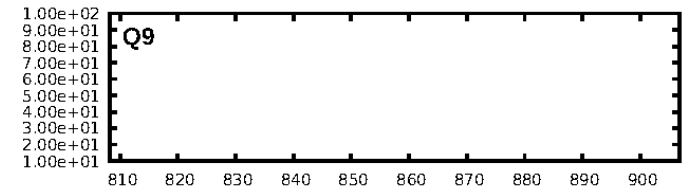
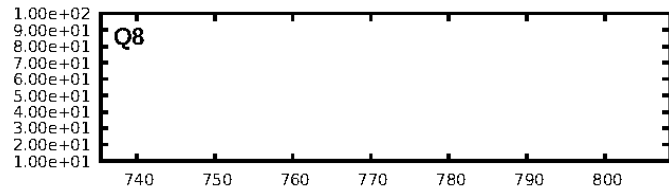
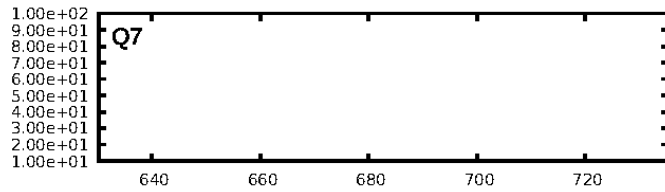
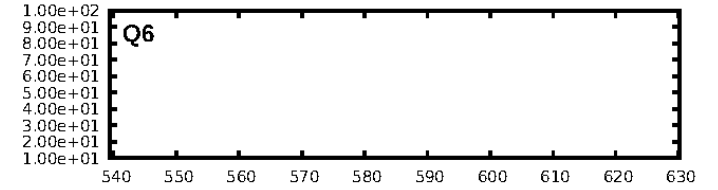
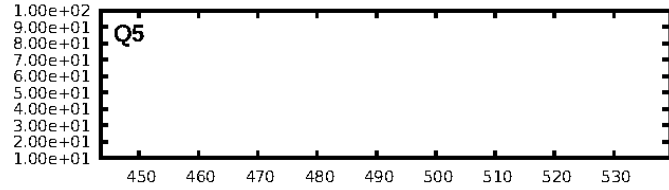
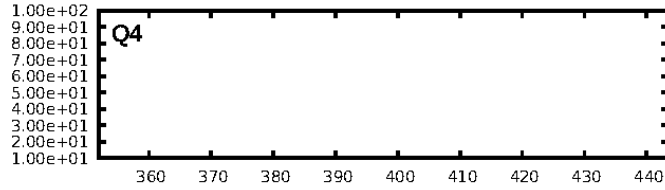
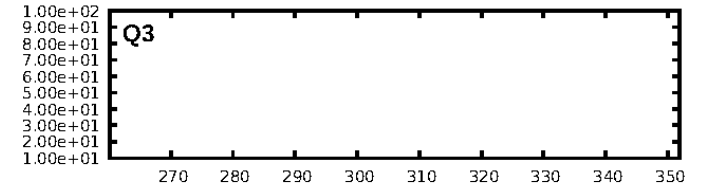
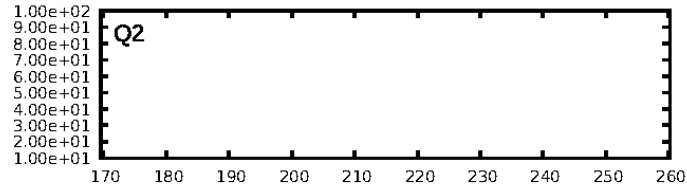
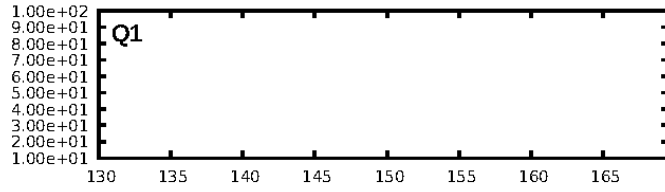
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 81.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [65/65]
GhostDiagnostic-chr: 3.755
Centroid-sig: 0.0%
Centroid-so: 1.087 arcsec [24.89σ]
OotOffset-rm: 2.556 arcsec [1.60σ]
KicOffset-rm: 0.077 arcsec [1.13σ]
OotOffset-st: 2/0/2/2 [6]
KicOffset-st: 2/0/2/2 [6]
DiffImageQuality-fgm: 1.00 [6/6]
DiffImageOverlap-fno: 1.00 [6/6]

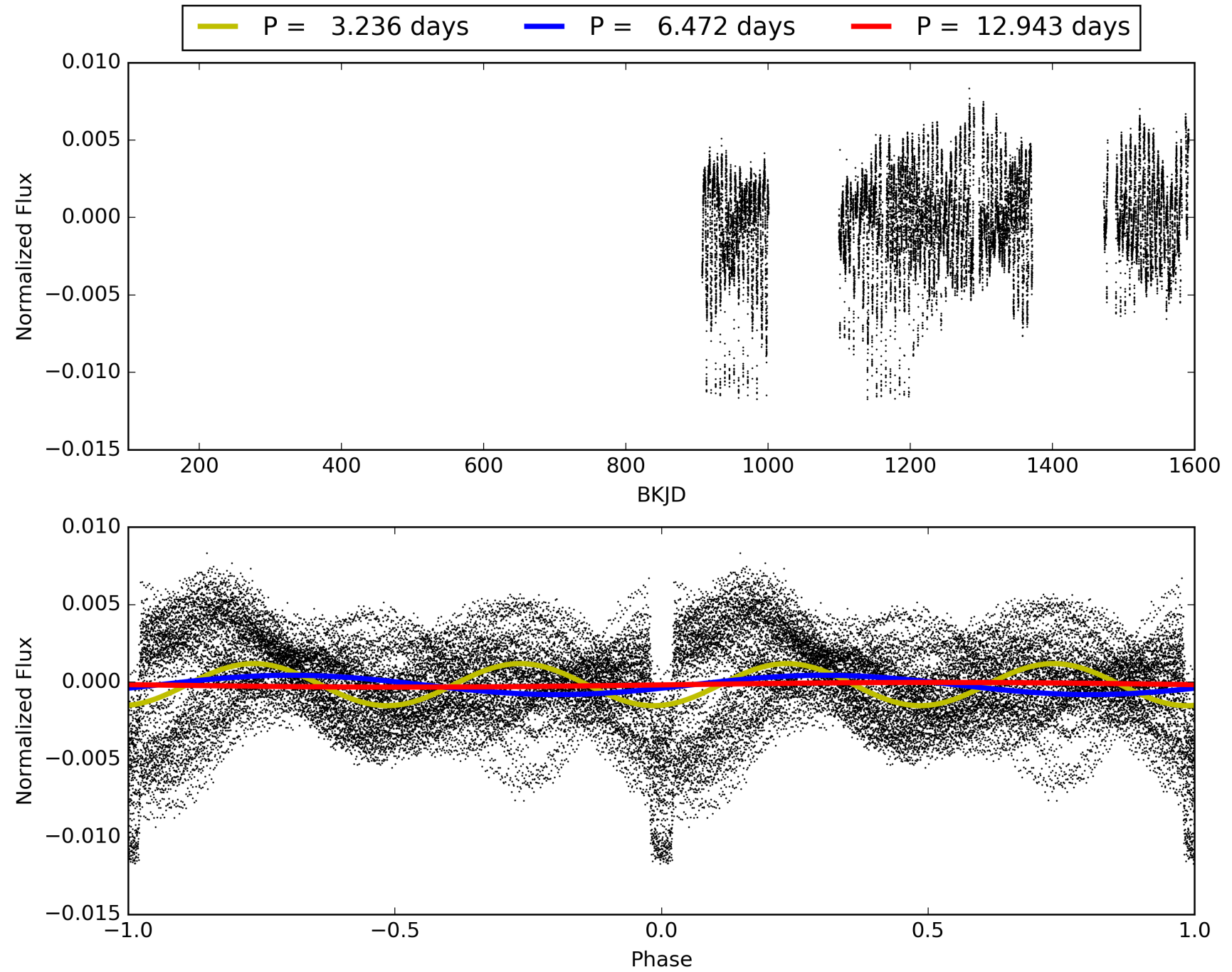
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010352938-01, PDC Light Curves

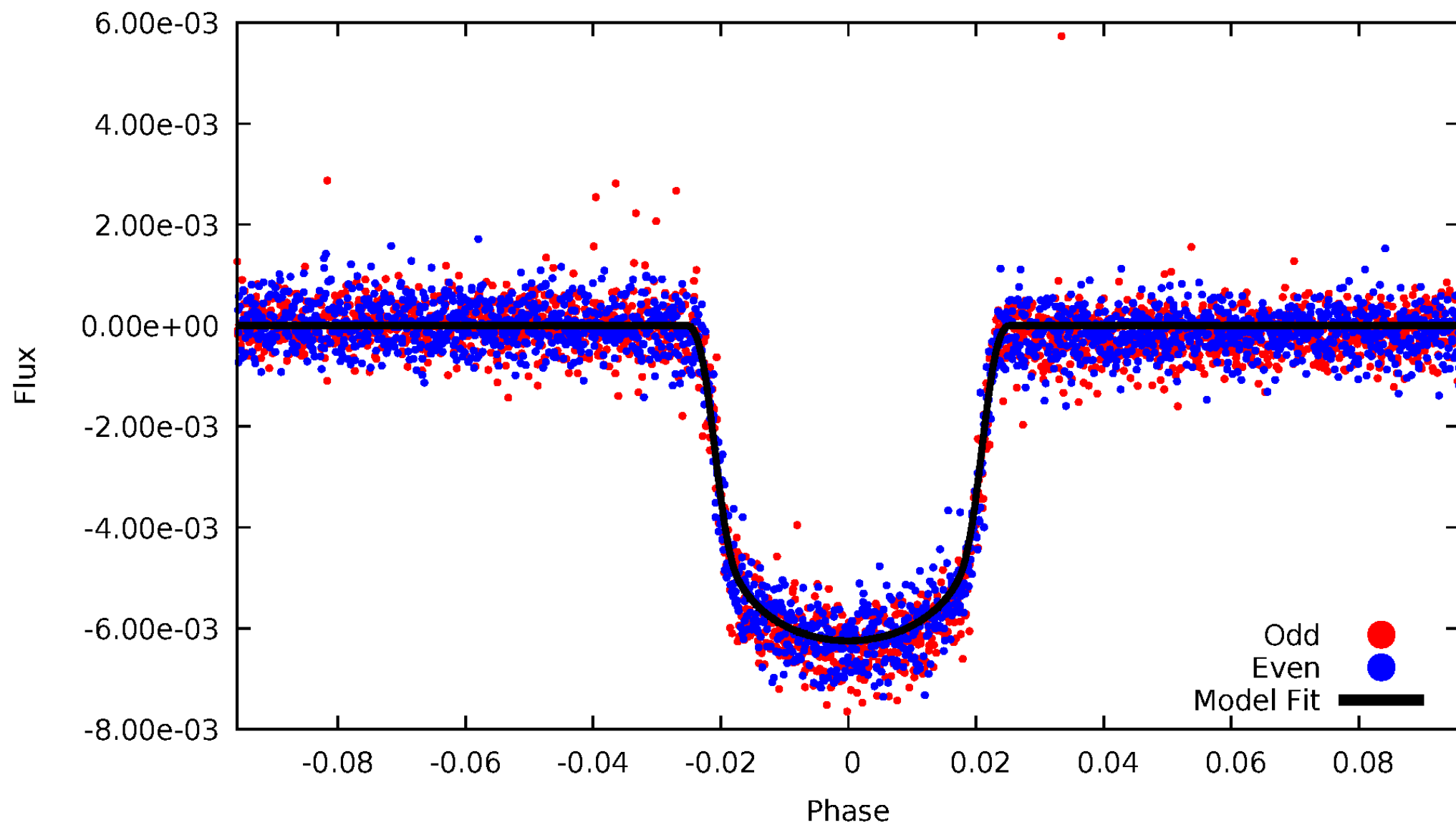


TCE 010352938-01



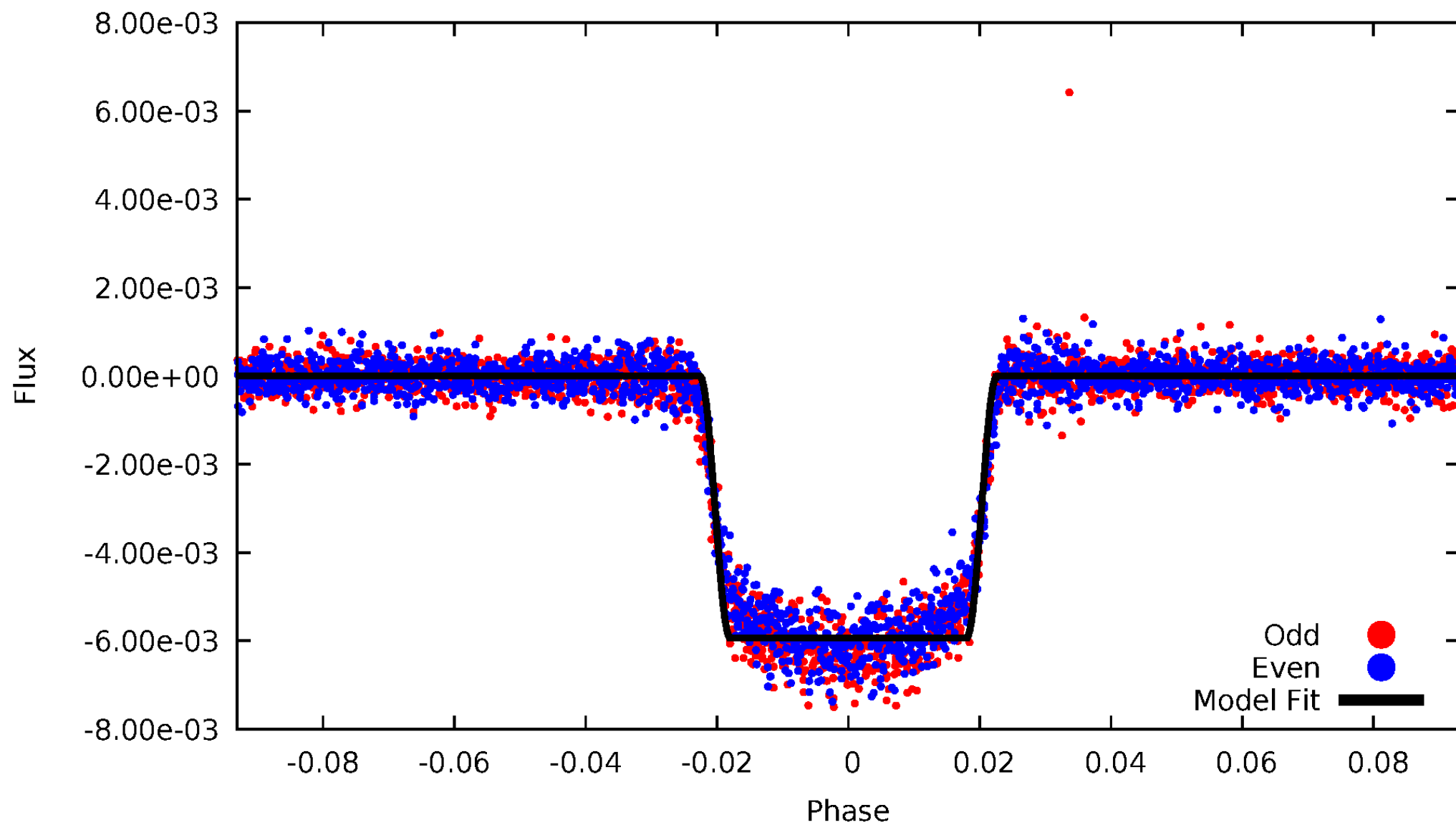
DV Odd/Even

TCE 010352938-01



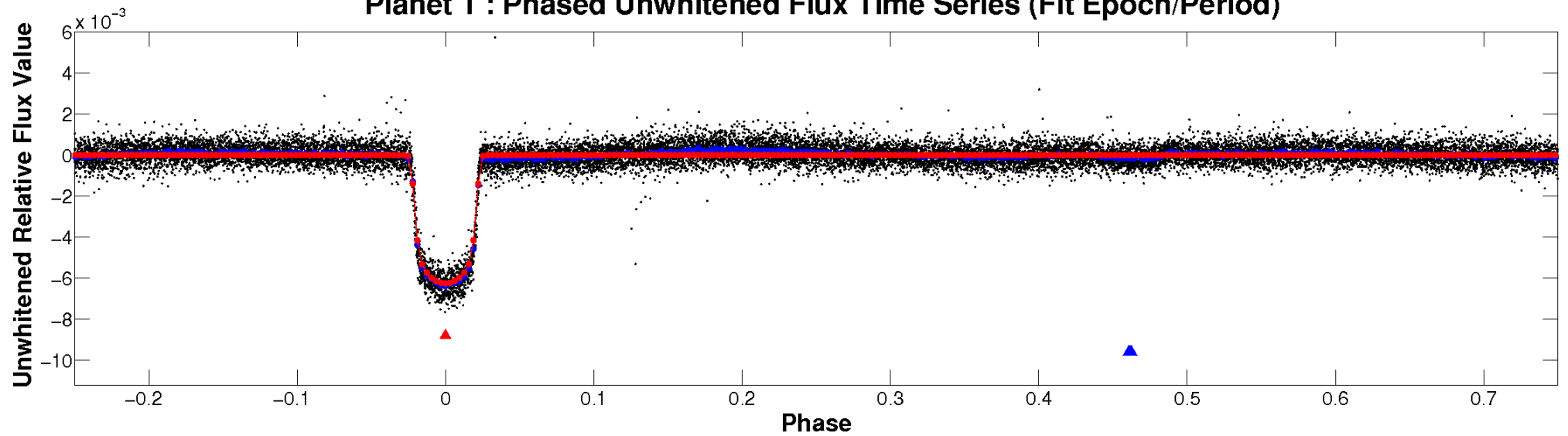
ALT Odd/Even

TCE 010352938-01

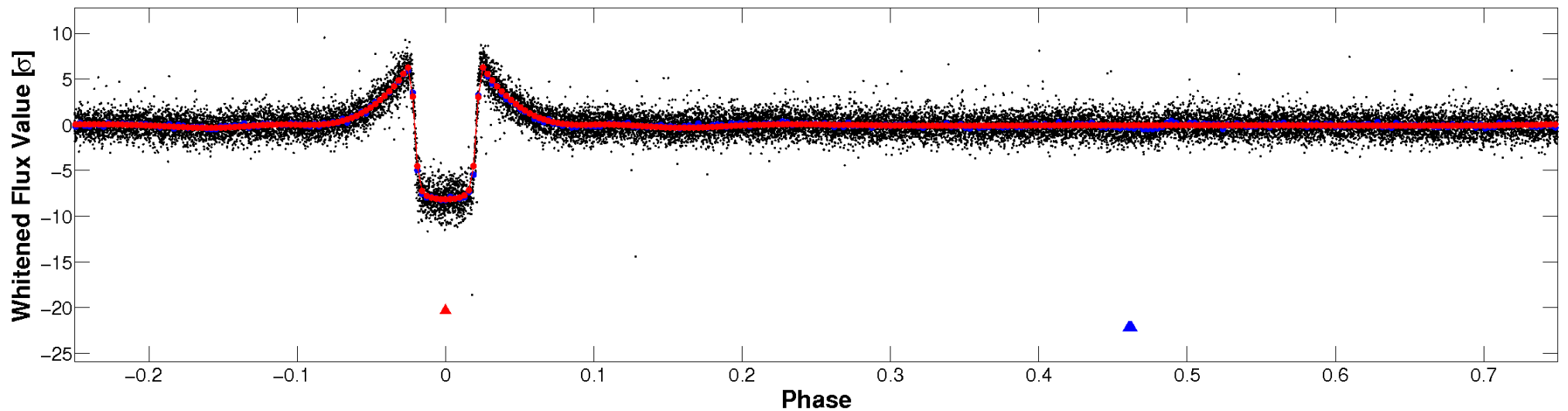


Non-Whitened Vs. Whitened Light Curve

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

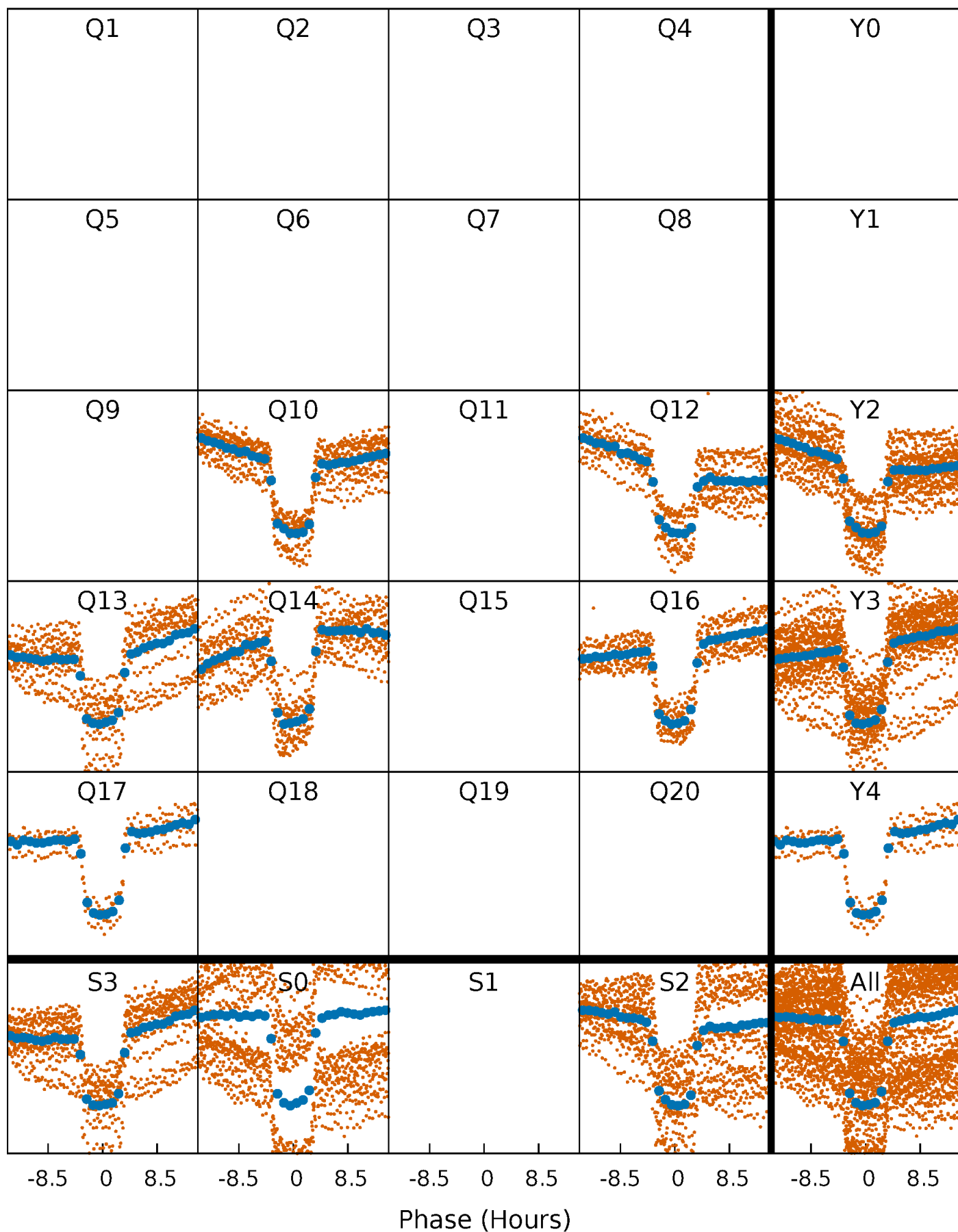


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



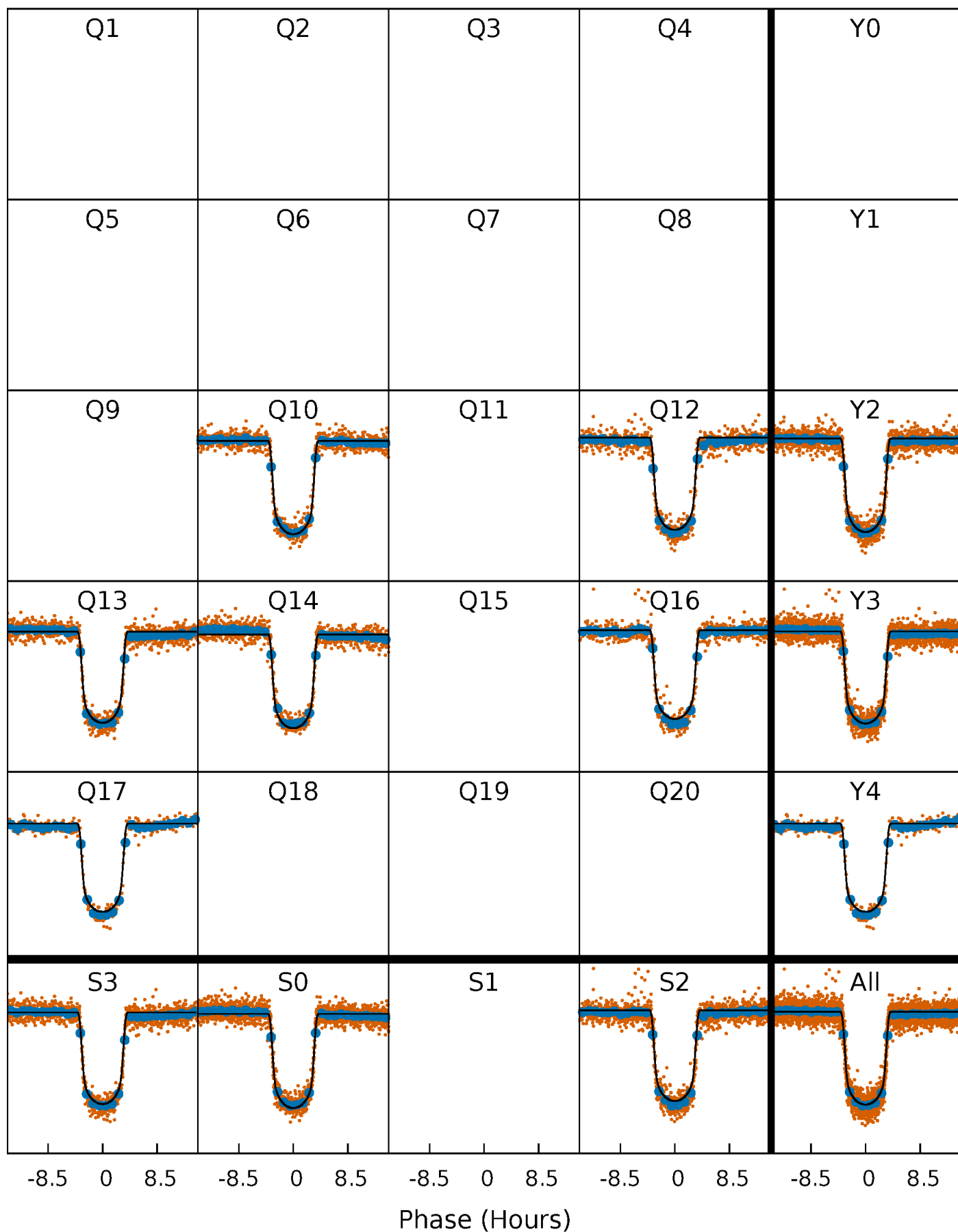
PDC Quarter-Phased Transit Curves

TCE 010352938-01 P= 6.471695 Days $T_0=136.361019$ (BKJD)



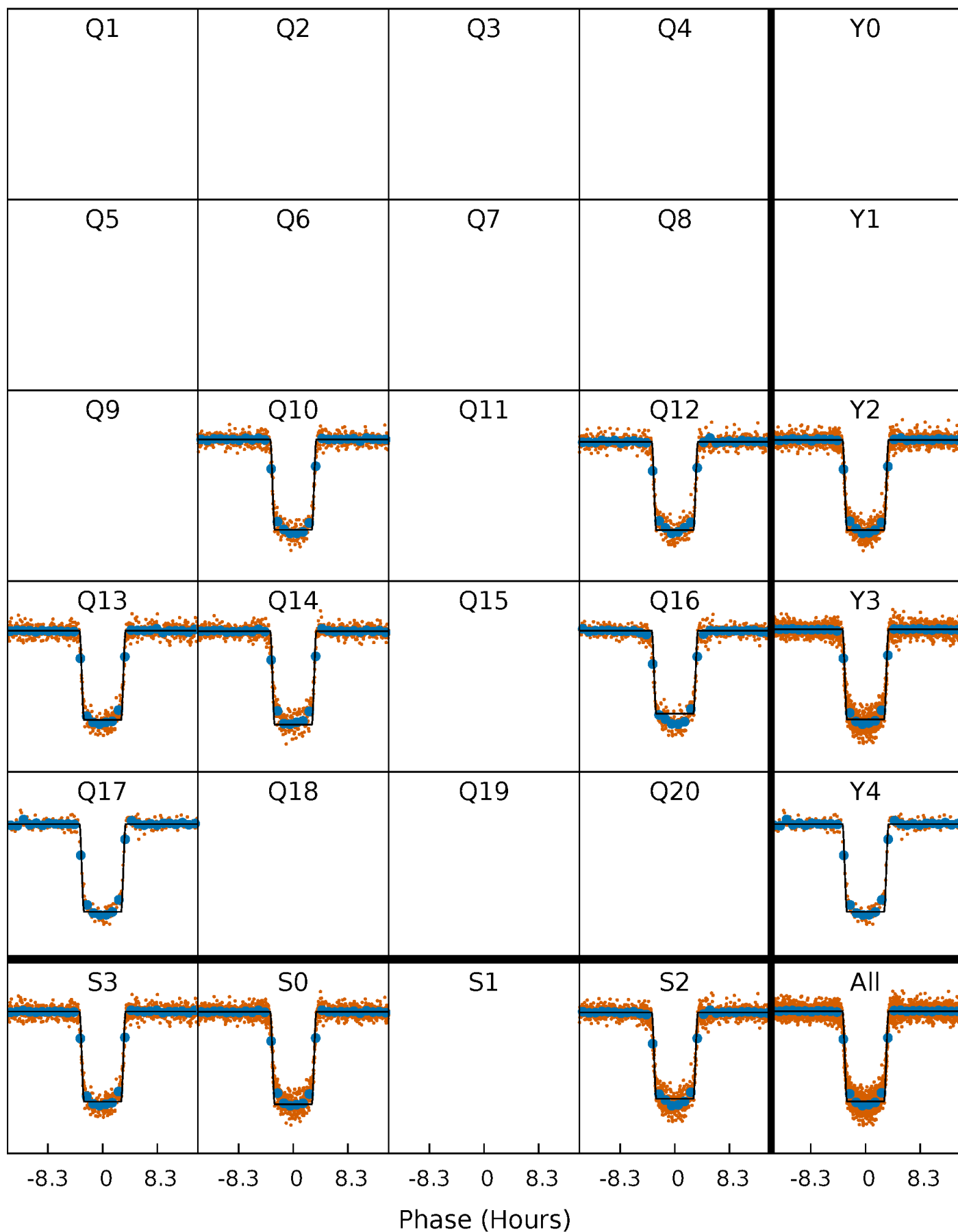
DV Quarter-Phased Transit Curves

TCE 010352938-01 P= 6.471695 Days $T_0=136.361019$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

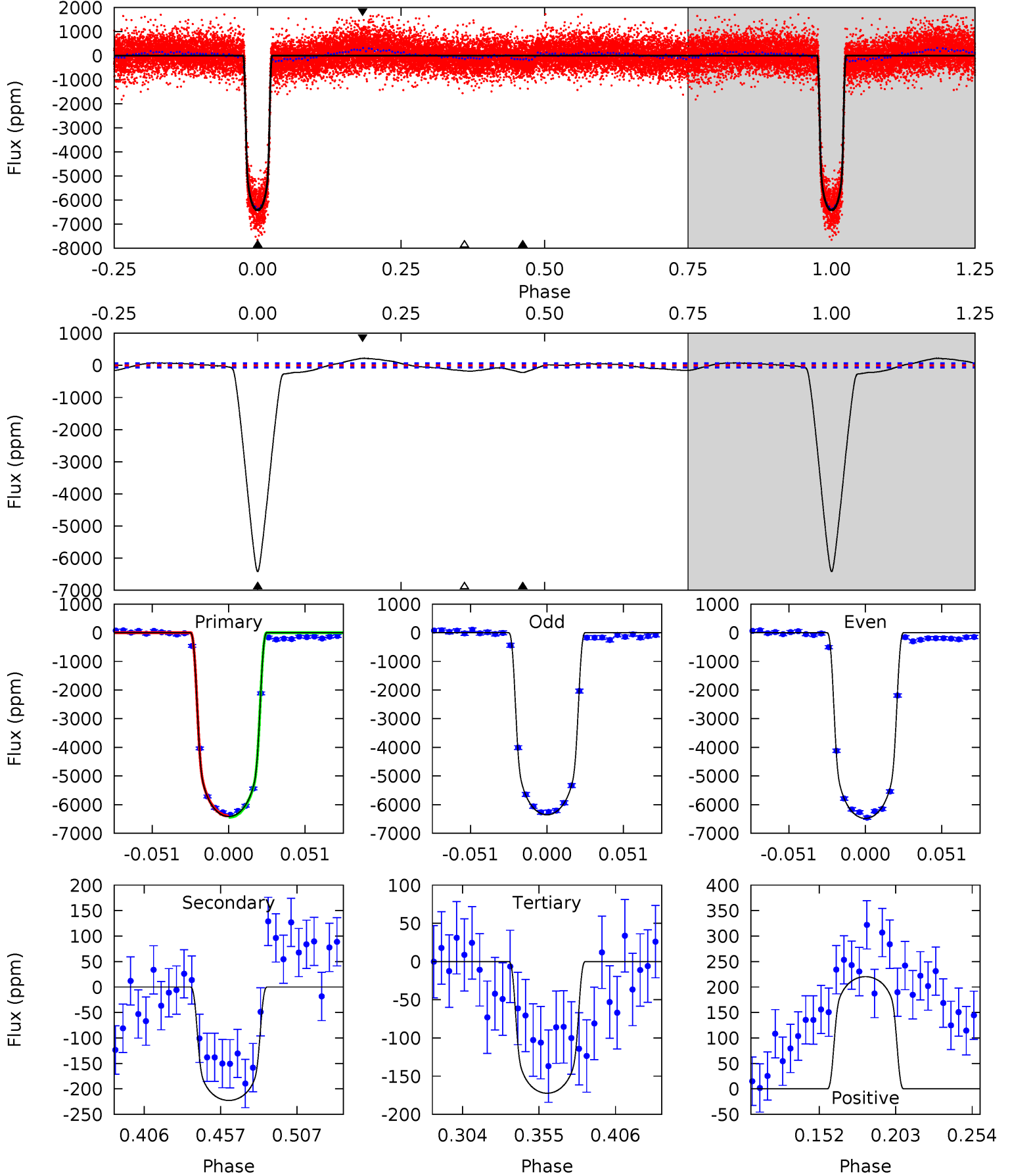
TCE 010352938-01 P= 6.471774 Days $T_0=136.347751$ (BKJD)



DV Model-Shift Uniqueness Test

010352938-01, P = 6.471695 Days, E = 136.361019 Days

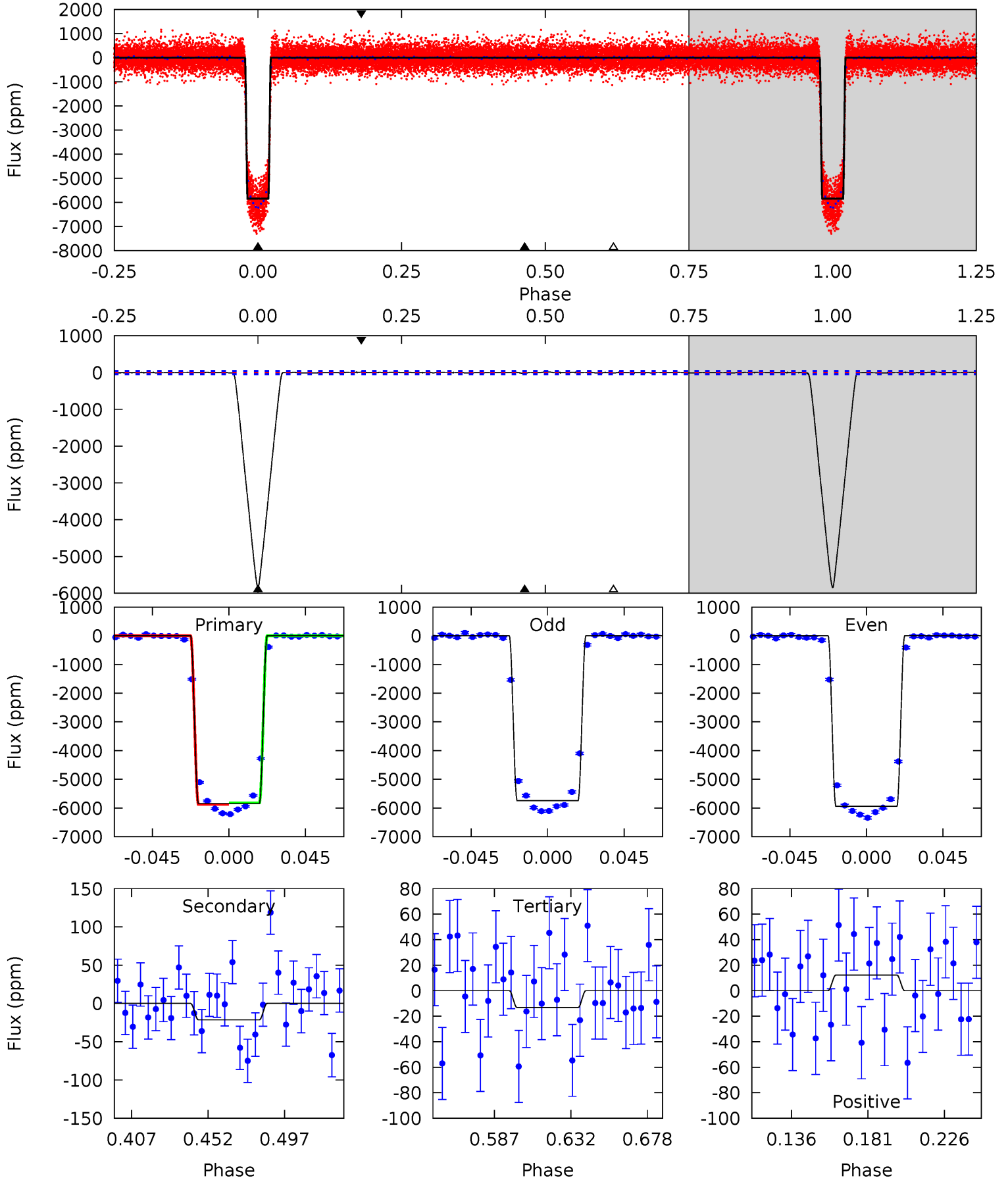
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
482.1	16.7	12.9	16.6	4.71	1.95	8.13	469.2	465.6	3.78	0.17	4.74	1.01	0.03	1.81



Alt Model-Shift Uniqueness Test

010352938-01, P = 6.471774 Days, E = 136.347751 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
607.4	2.22	1.37	1.27	4.73	2.00	0.51	606.1	606.2	0.85	0.95	10.4	1.01	0.00	2.68



Stellar Parameters For KIC 010352938

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6318^{+177}_{-243}	$4.079^{+0.258}_{-0.172}$	$0.060^{+0.250}_{-0.300}$	$1.685^{+0.504}_{-0.504}$	$1.242^{+0.202}_{-0.202}$	$0.365^{+0.600}_{-0.177}$
	+3%/-4%	+6%/-4%	+417%/-500%	+30%/-30%	+16%/-16%	+164%/-48%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 010352938-01 / KOI 3756.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-223 ± 13	$13.80^{+2.21}_{-2.28}$	1843^{+159}_{-163}	3287^{+69}_{-84}	$3.420^{+1.474}_{-0.909}$
Alt.	-21 ± 10	$14.03^{+2.07}_{-2.21}$	1854^{+134}_{-166}	1773^{+496}_{-4019}	$0.316^{+0.204}_{-0.159}$

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

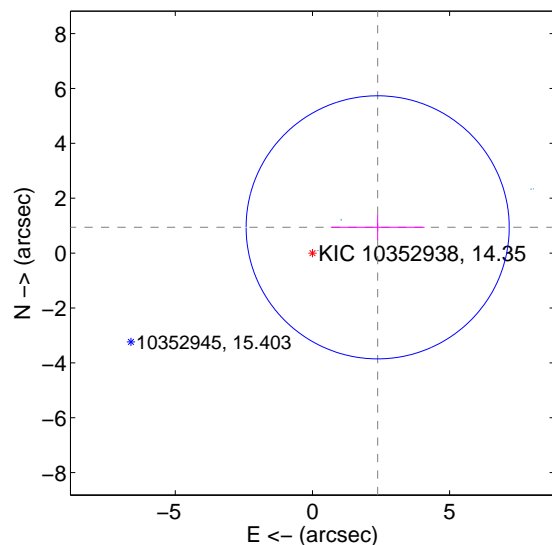
Supplemental centroid analysis for 010352938-01. Kepler magnitude: 14.35. Transit SNR 256.74

There are 6 quarters with good PRF difference image offsets

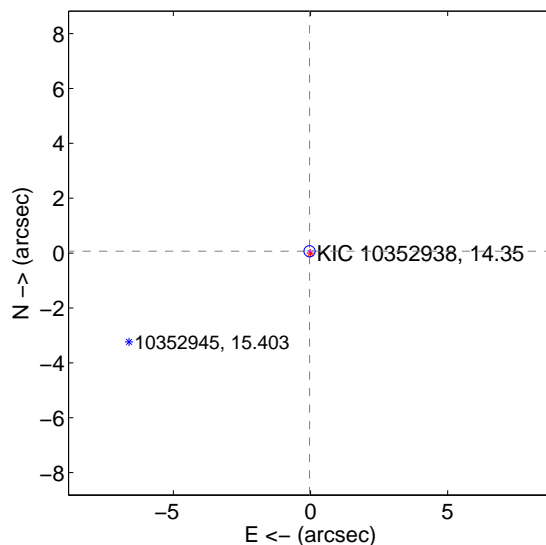
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.556 ± 1.598	1.60	-2.378 ± 1.709	0.939 ± 0.462
PRF-fit source offset from KIC position	0.077 ± 0.068	1.13	0.037 ± 0.070	0.067 ± 0.067
photometric centroid source offset	1.09 ± 0.04	24.89	1.01 ± 0.05	-0.39 ± 0.03

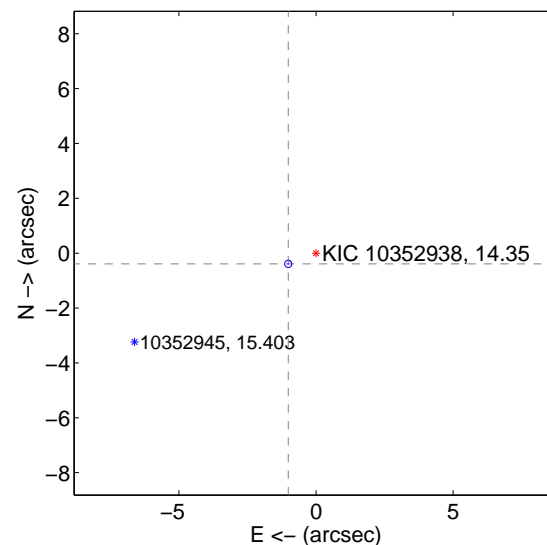
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

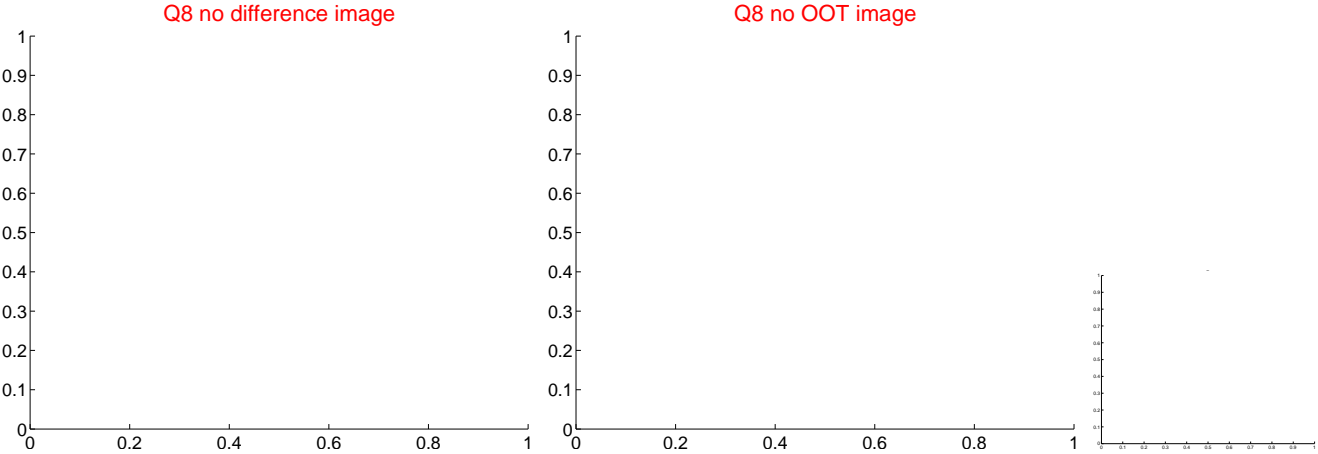
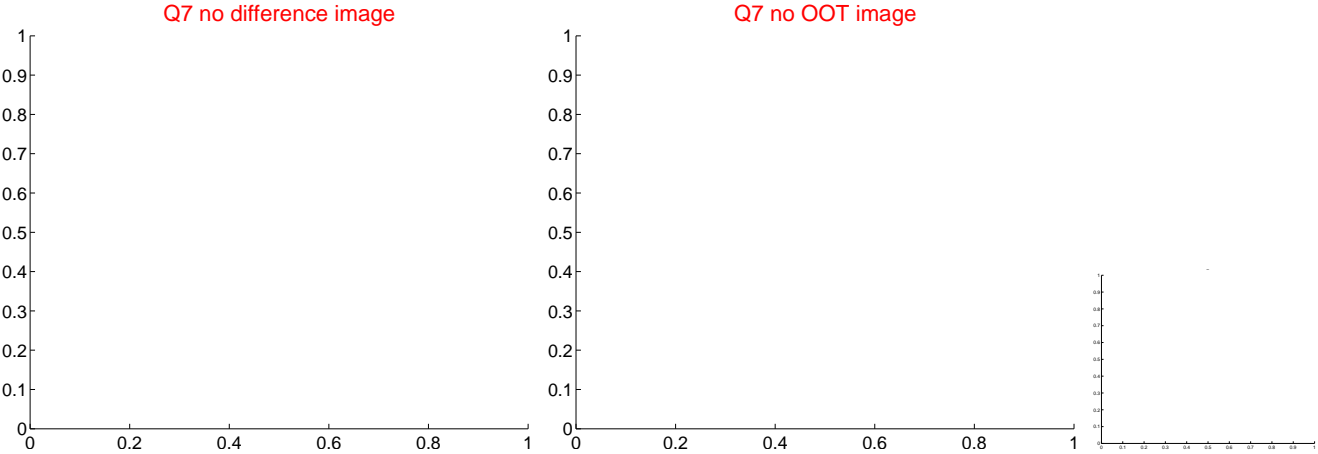
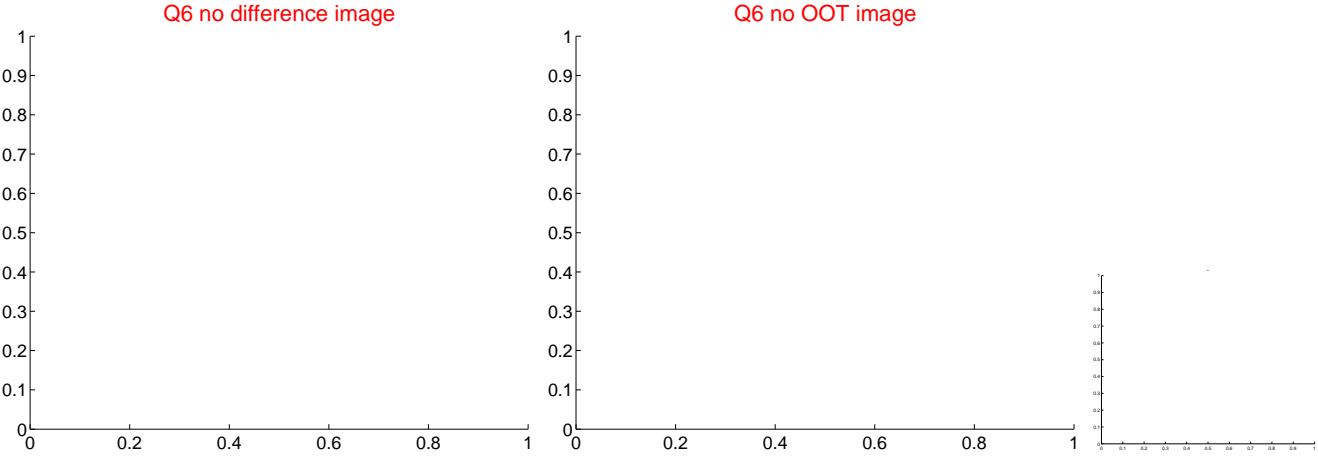
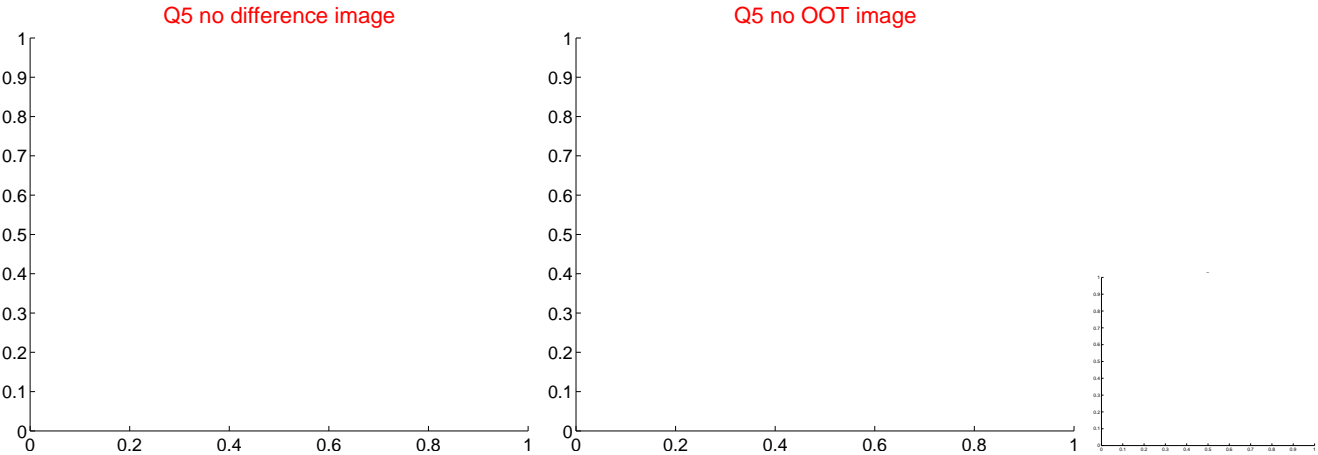


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

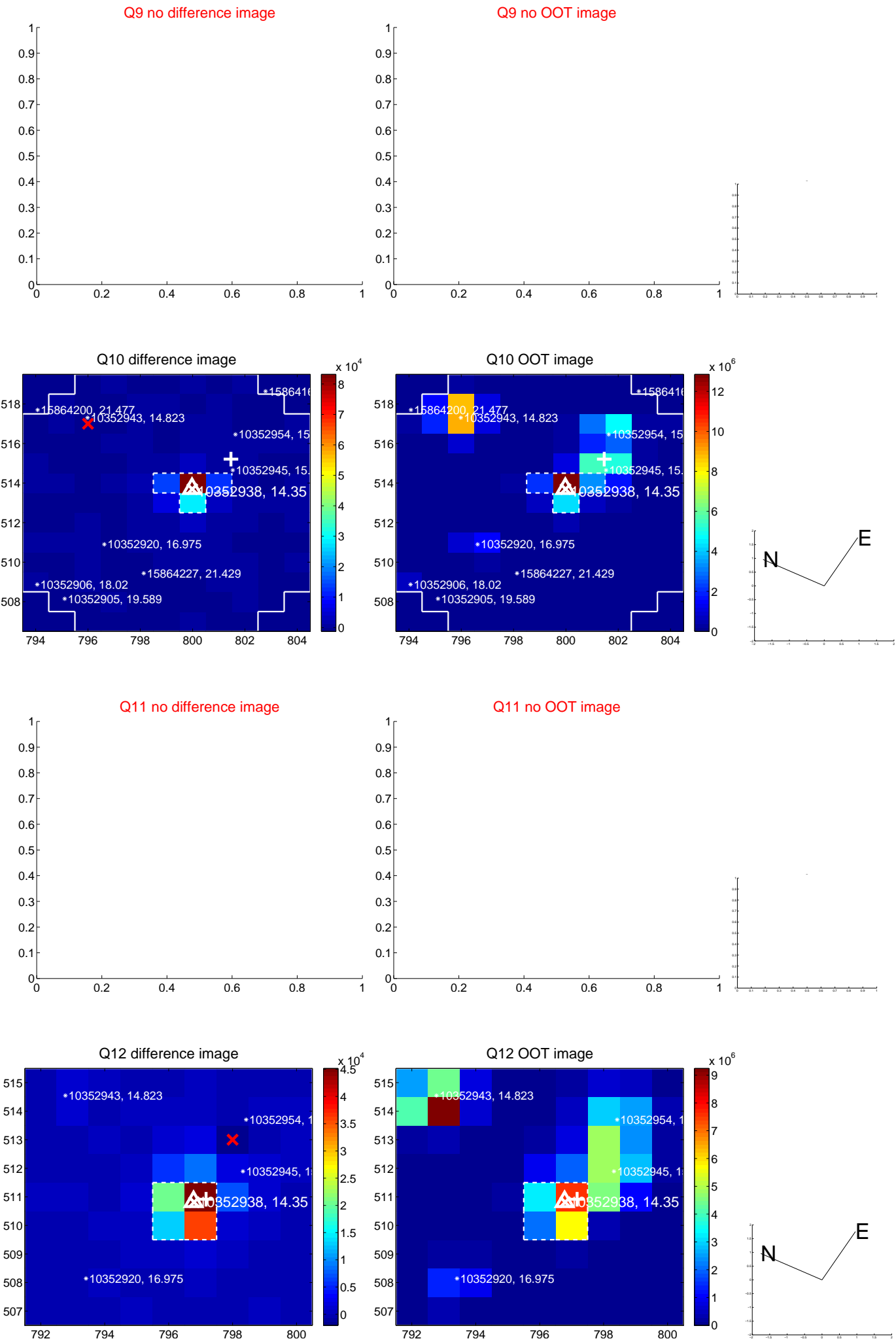
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



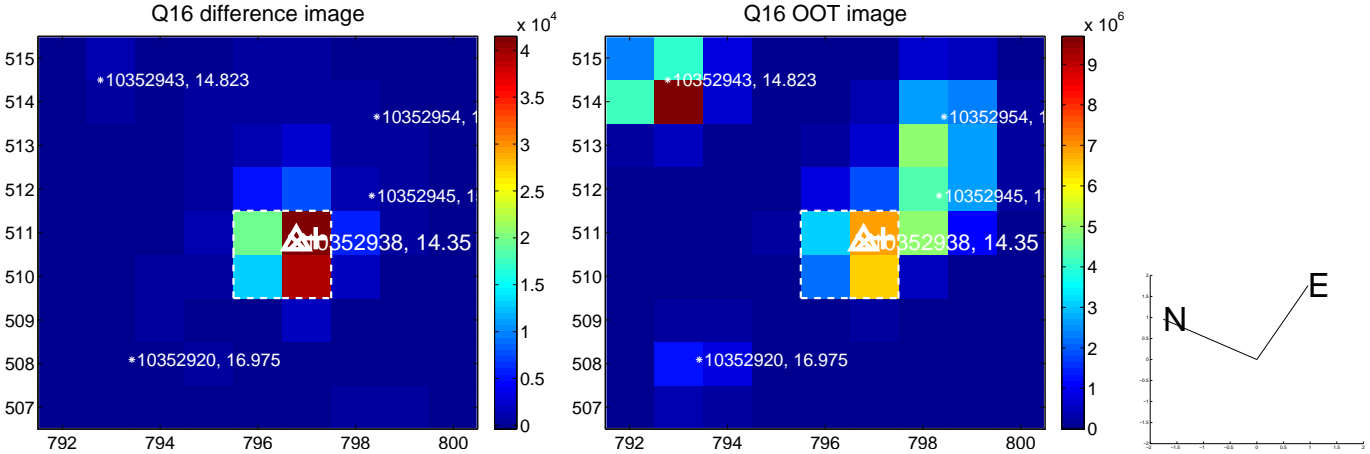
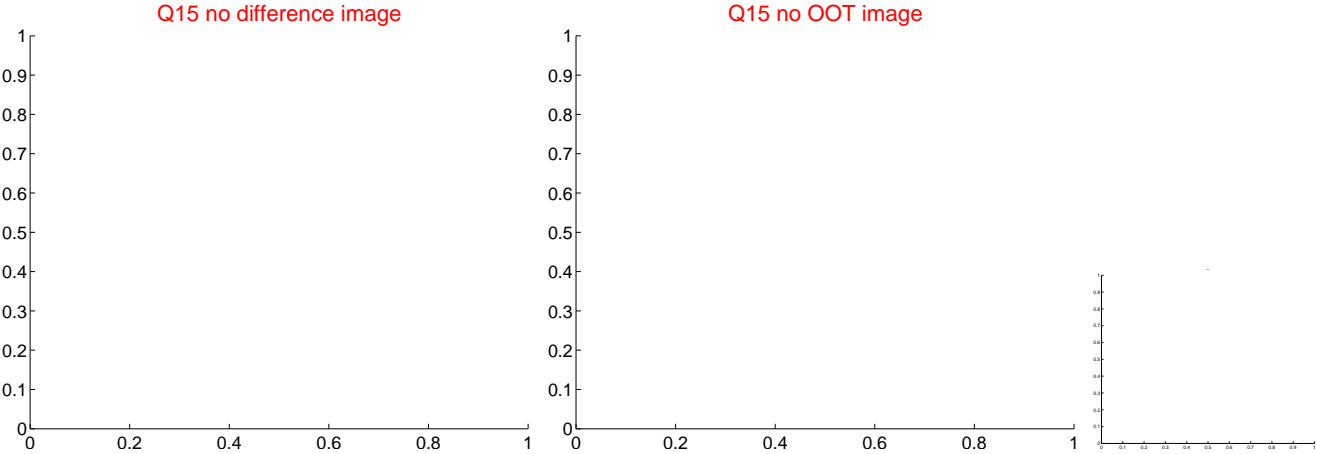
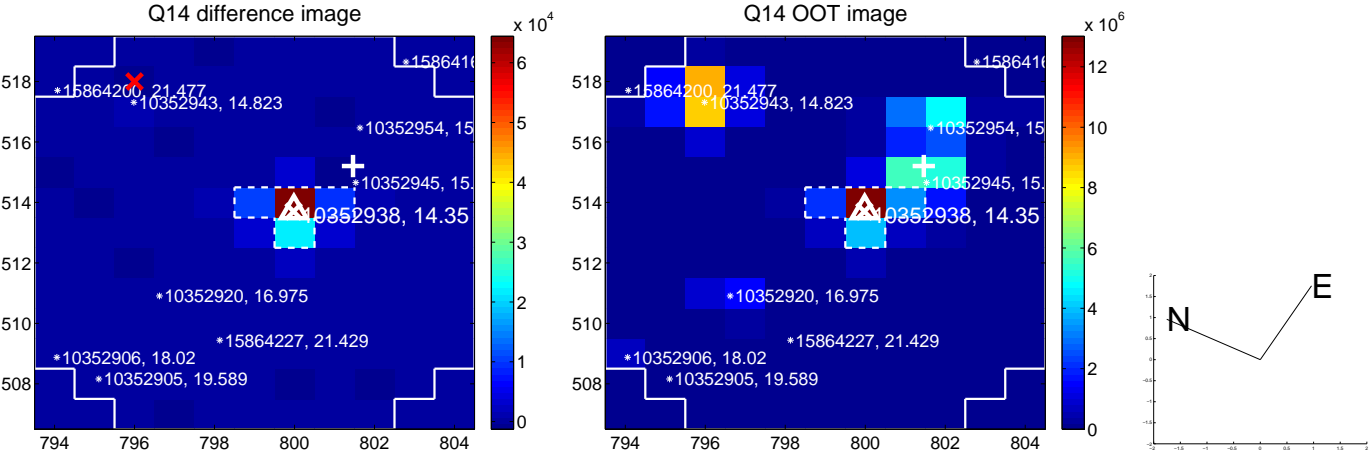
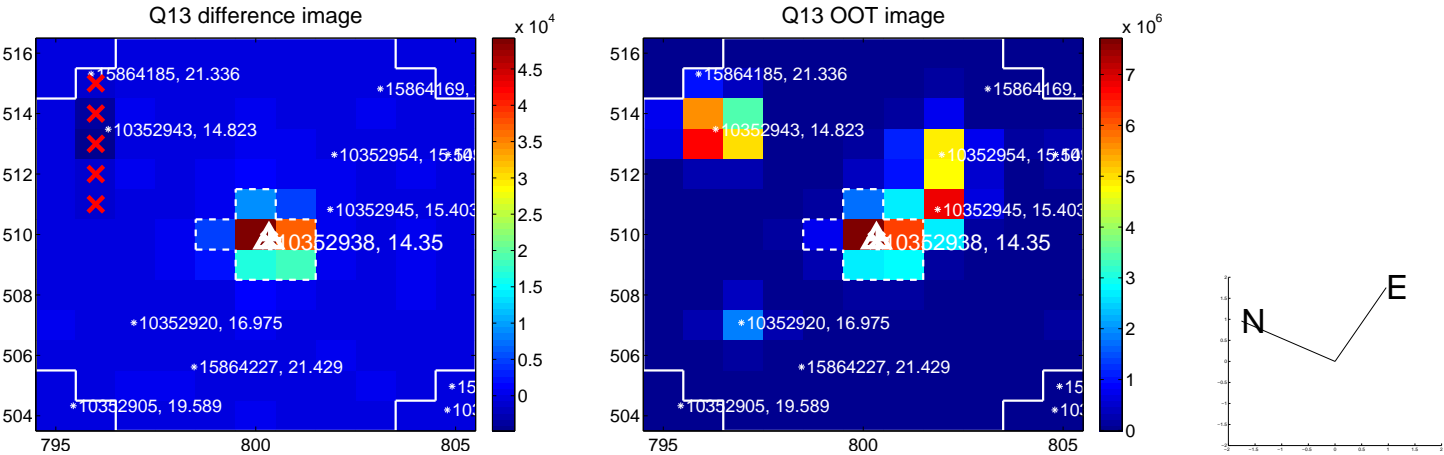
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

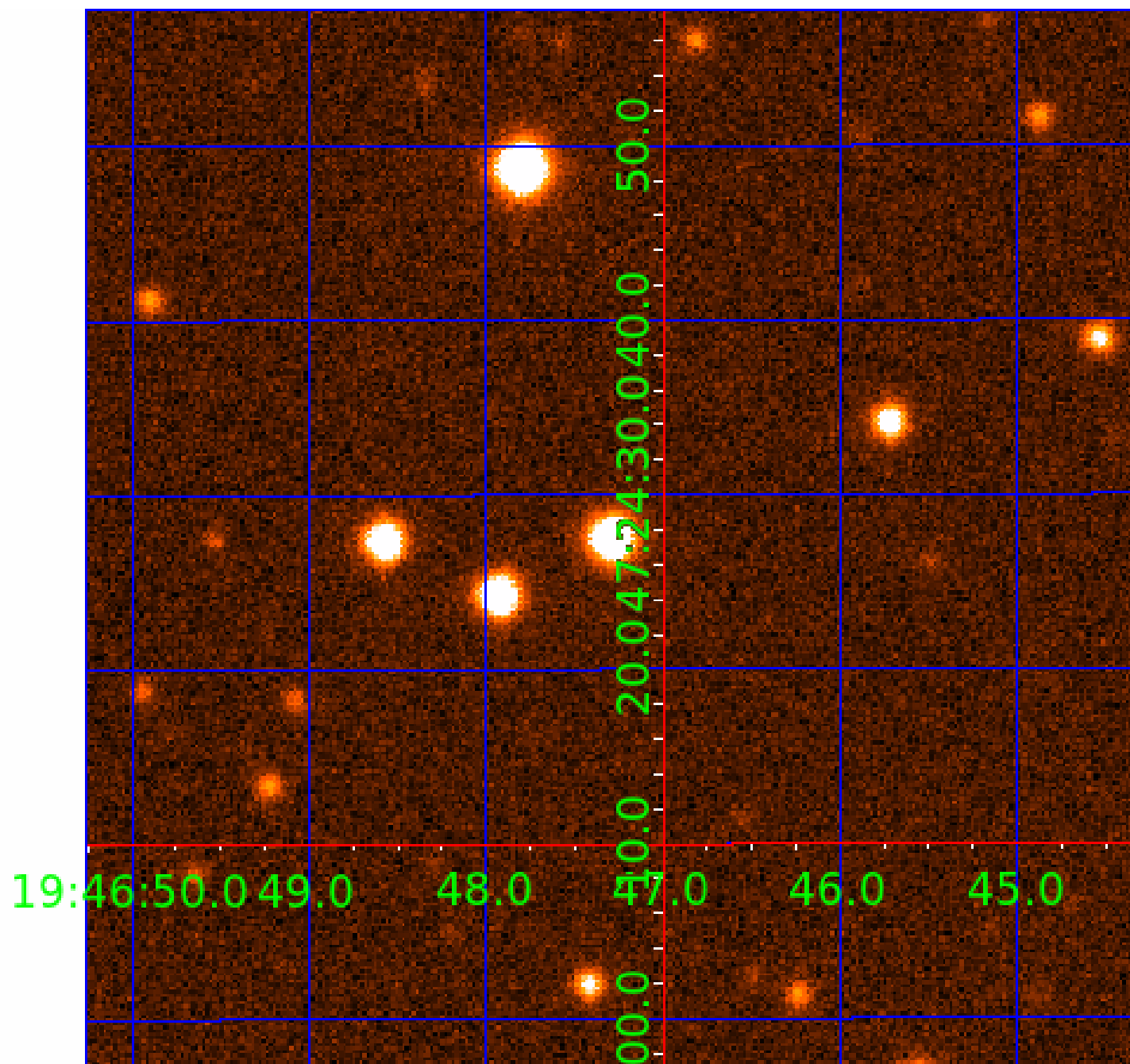


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010352938

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})
010352938-01	OBS	3756.01	6.471695	136.361019	6248.4	7.437	246.2	256.7	1.69	6318	13.99	759.02
010352938-02	OBS	No	6.471746	132.870661	245.1	7.588	9.4	10.3	1.69	6318	3.05	759.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010352938-01	OBS	FP	0.00	0	1	0	0	HAS_SEC_TCE—CENT_KIC_POS
010352938-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 010352938-02

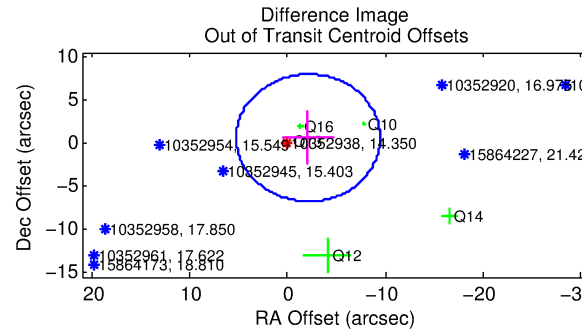
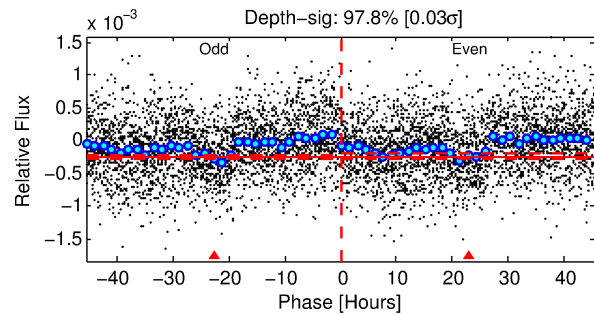
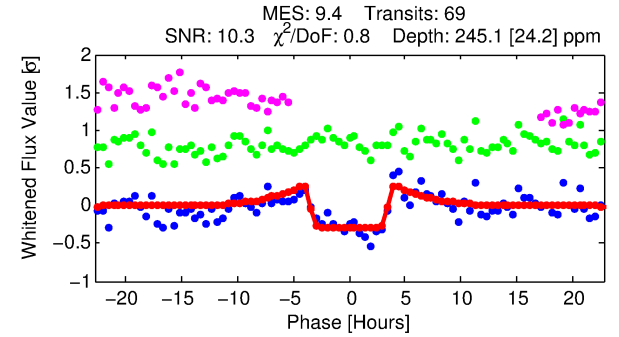
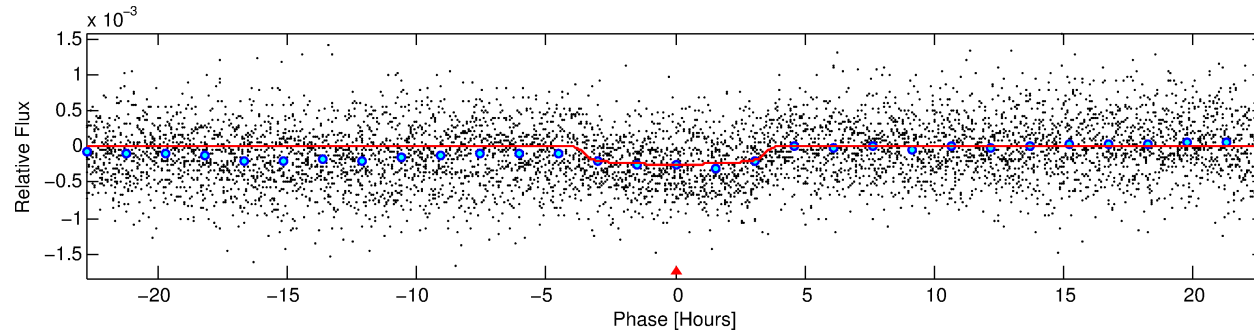
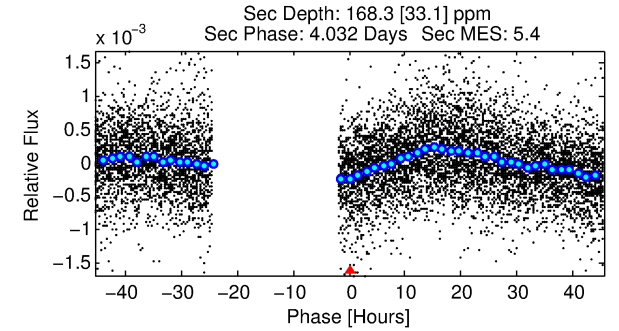
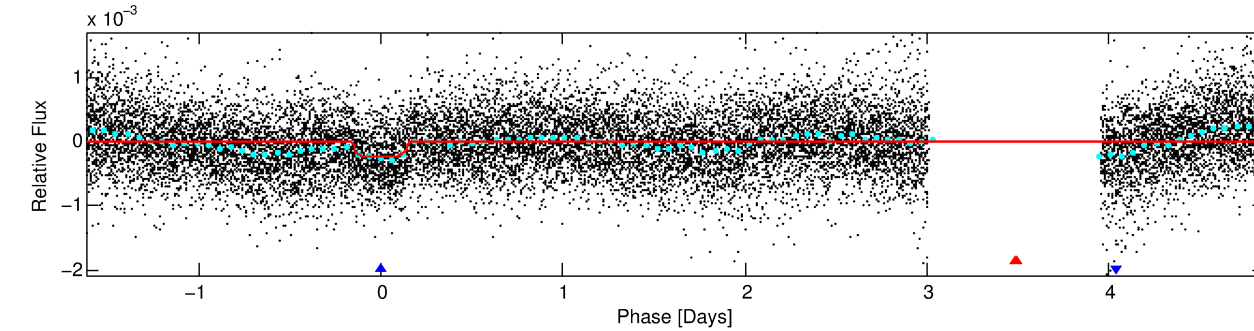
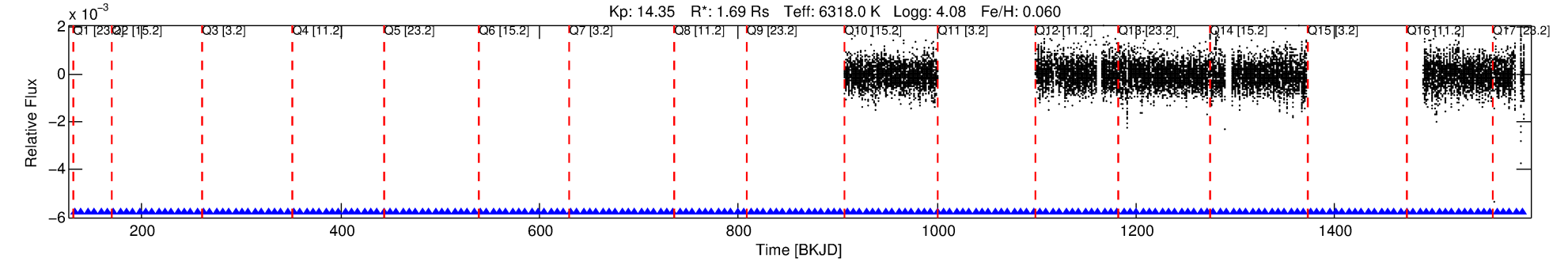
No Significant Match Found

DV One-Page Summary

KIC: 10352938 Candidate: 2 of 2 Period: 6.472 d

KOI: K03756 Corr: No Ephemeris Match

Kp: 14.35 R*: 1.69 Rs Teff: 6318.0 K Logg: 4.08 Fe/H: 0.060



DV Fit Results:

Period = 6.47175 [0.00007] d
Epoch = 132.8707 [0.0093] BKJD
Rp/R* = 0.0166 [0.0024]
a/R* = 3.43 [2.33]
b = 0.88 [0.19]
Seff = 759.02 [356.24]
Teq = 1338 [157] K
Rp = 3.05 [1.02] Re
a = 0.0731 [0.0205] AU
Ag = 53.14 [30.12] [1.73σ]
Teff = 5587 [538] K [7.58σ]

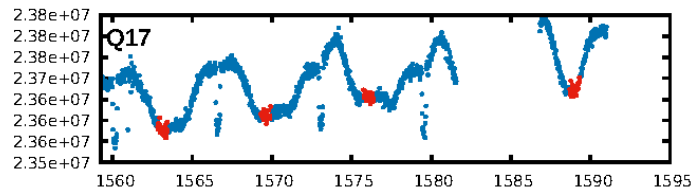
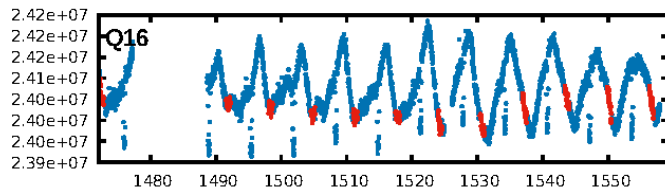
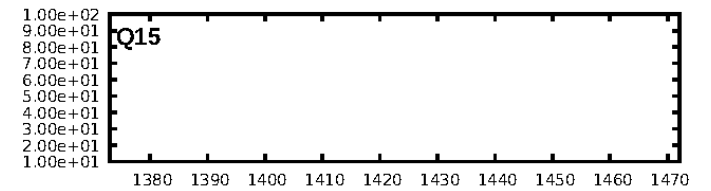
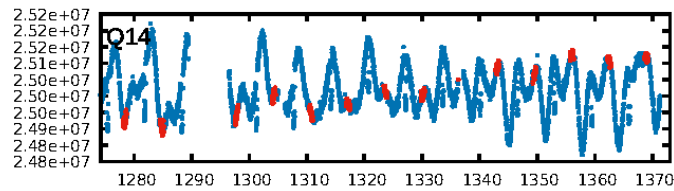
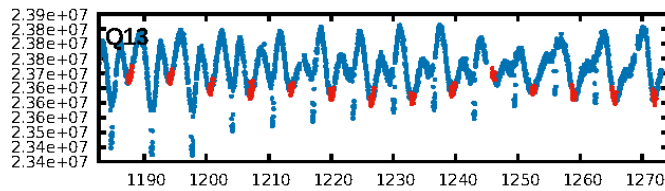
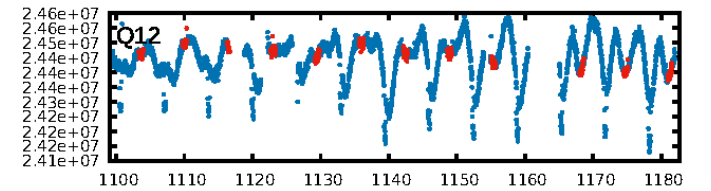
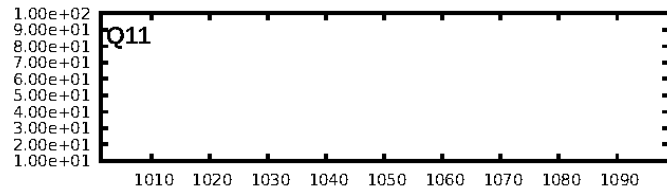
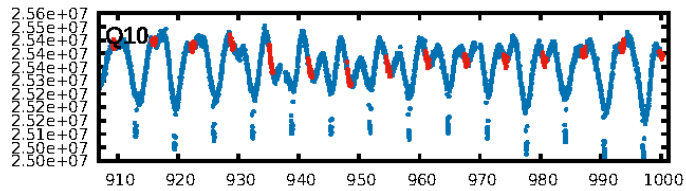
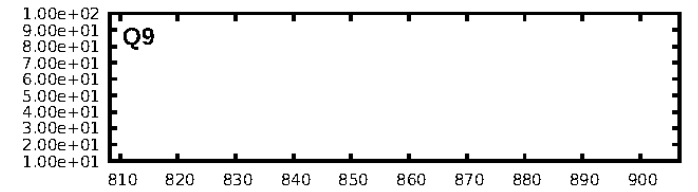
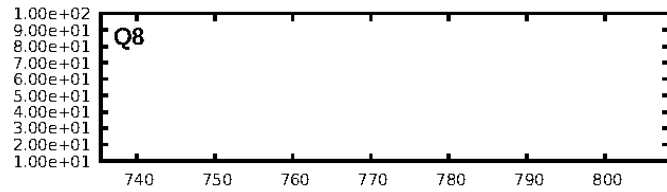
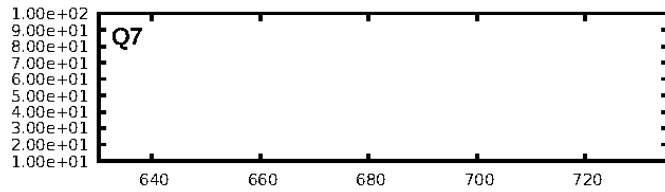
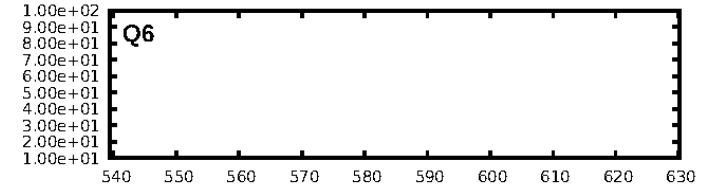
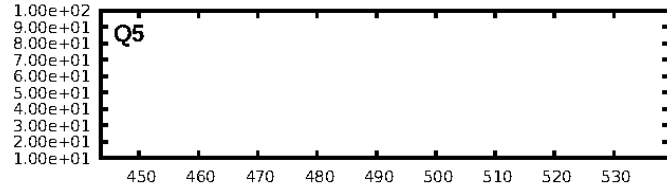
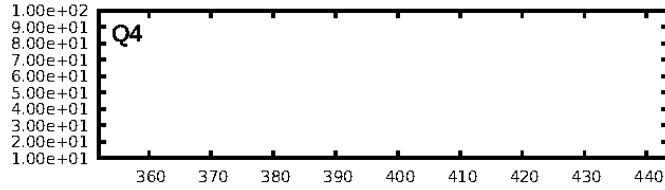
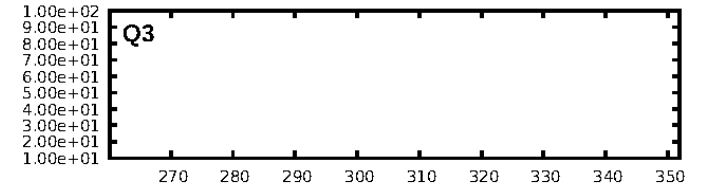
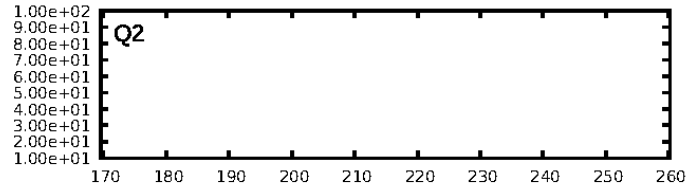
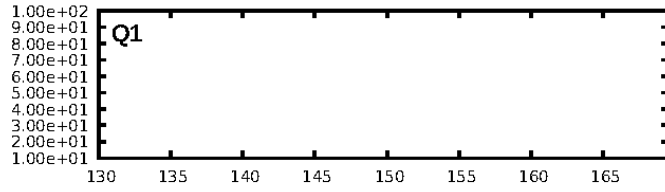
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.37e-20
RollingBand-fgt: 1.00 [65/65]
GhostDiagnostic-chr: 4.078
Centroid-sig: 0.1%
Centroid-so: 2.019 arcsec [2.54σ]
OotOffset-rm: 2.192 arcsec [0.89σ]
KicOffset-rm: 0.151 arcsec [0.06σ]
OotOffset-st: 2/0/2/1 [5]
KicOffset-st: 2/0/2/1 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 1.00 [6/6]

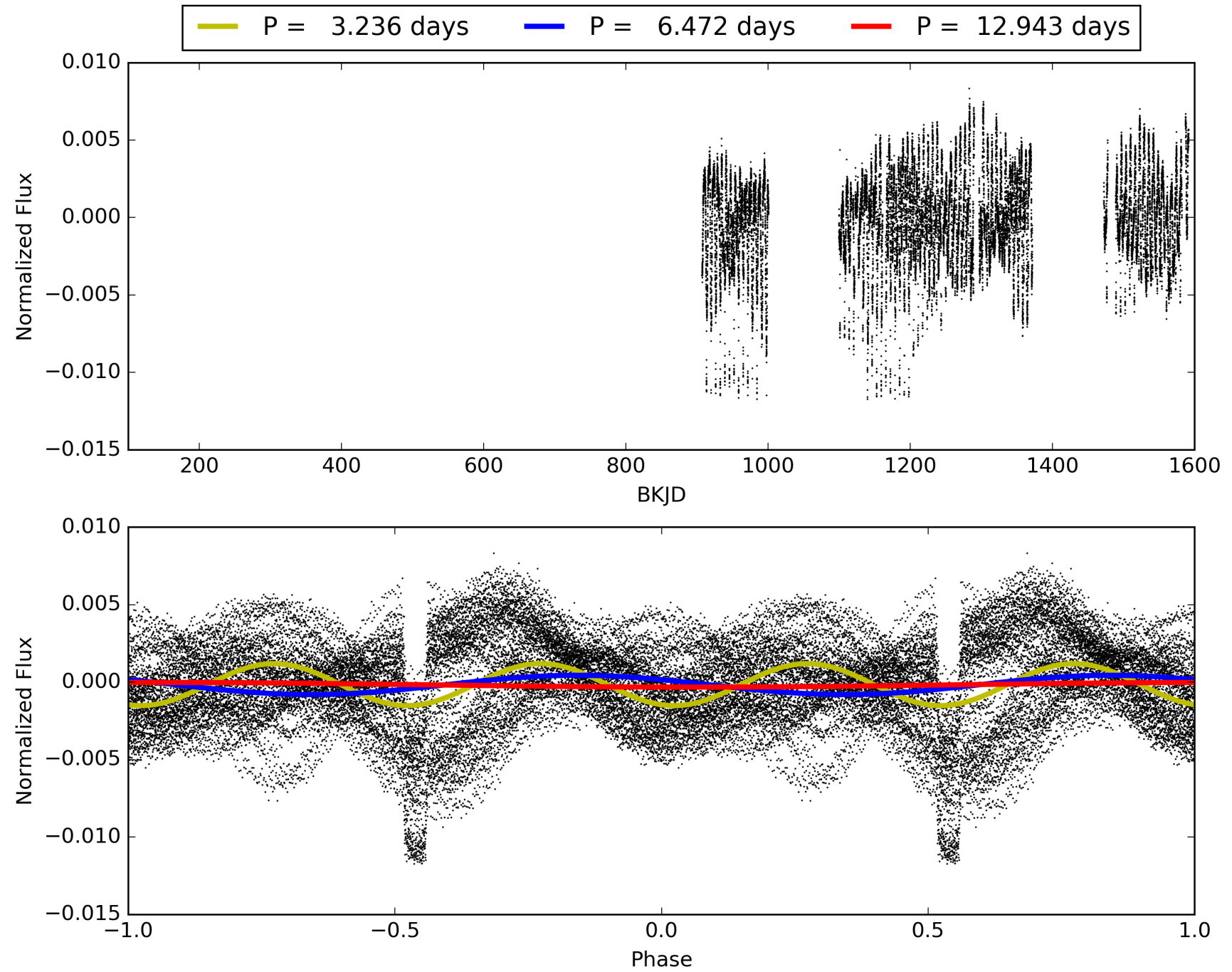
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:29:10 Z

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

TCE 010352938-02, PDC Light Curves

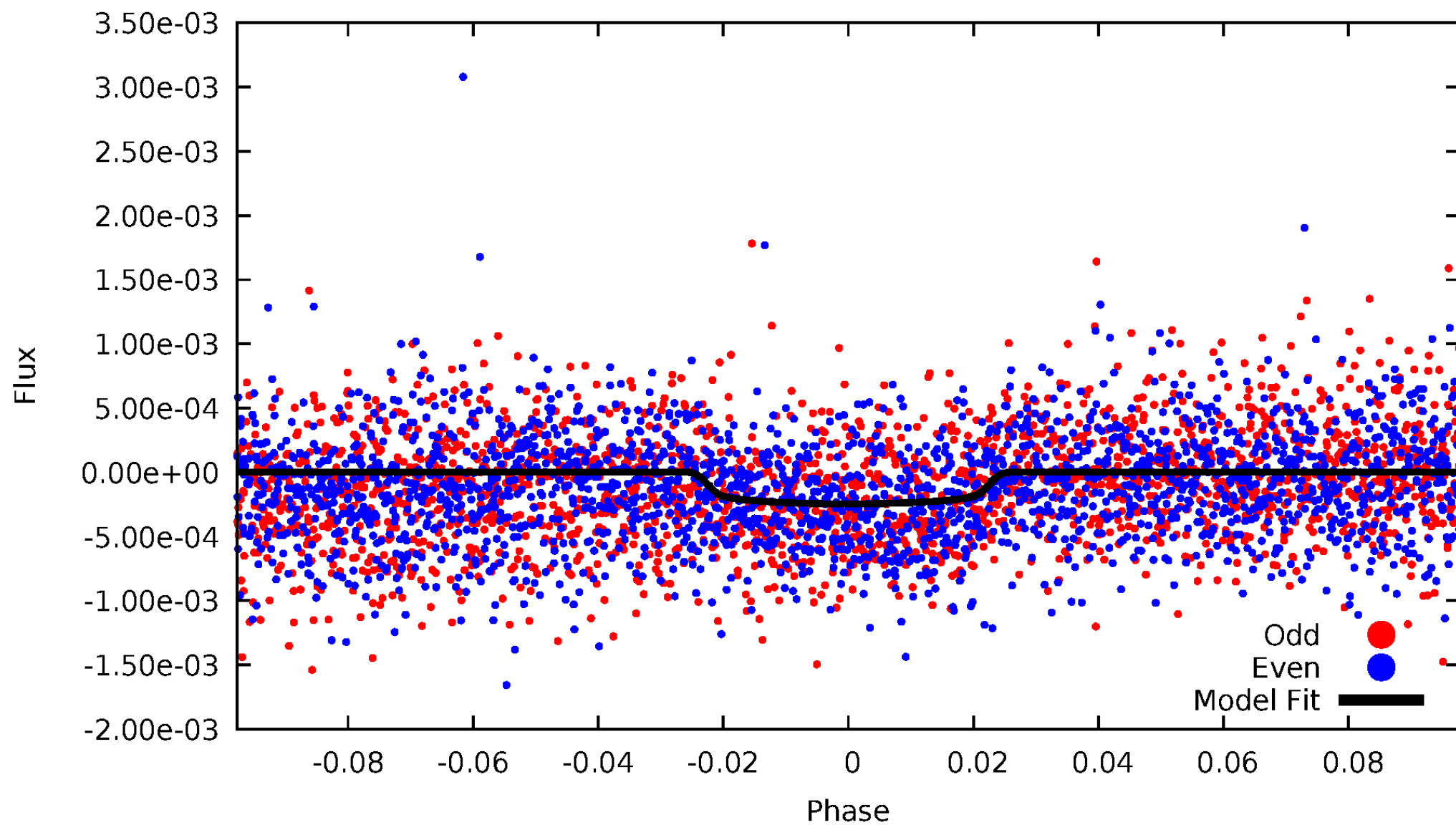


TCE 010352938-02



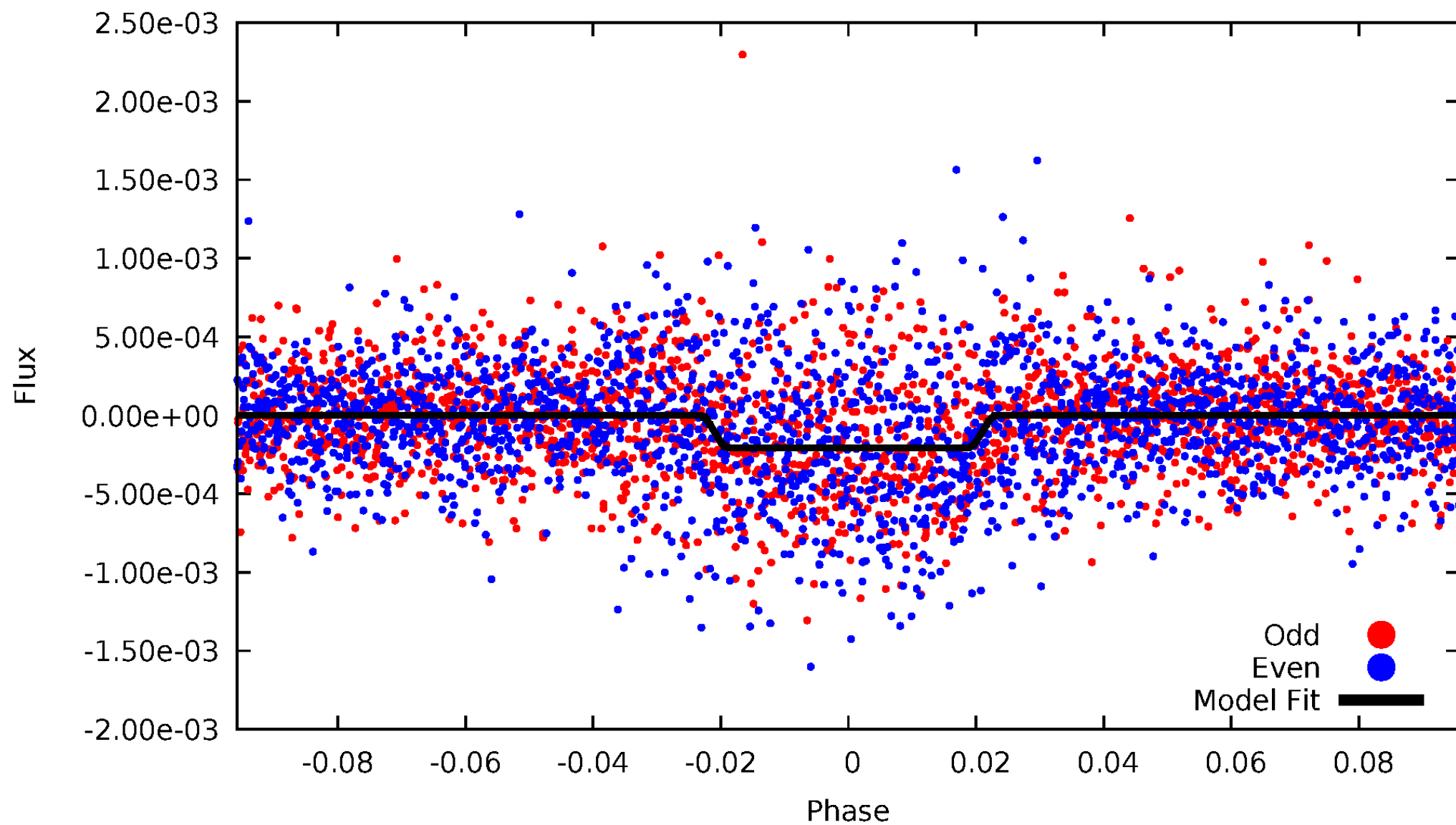
DV Odd/Even

TCE 010352938-02



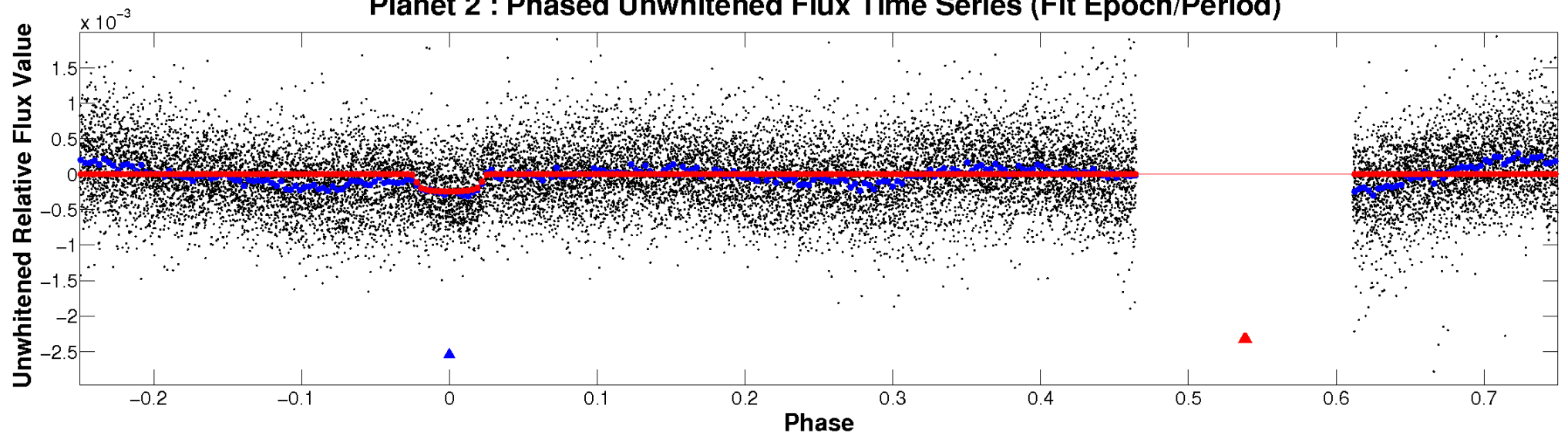
ALT Odd/Even

TCE 010352938-02

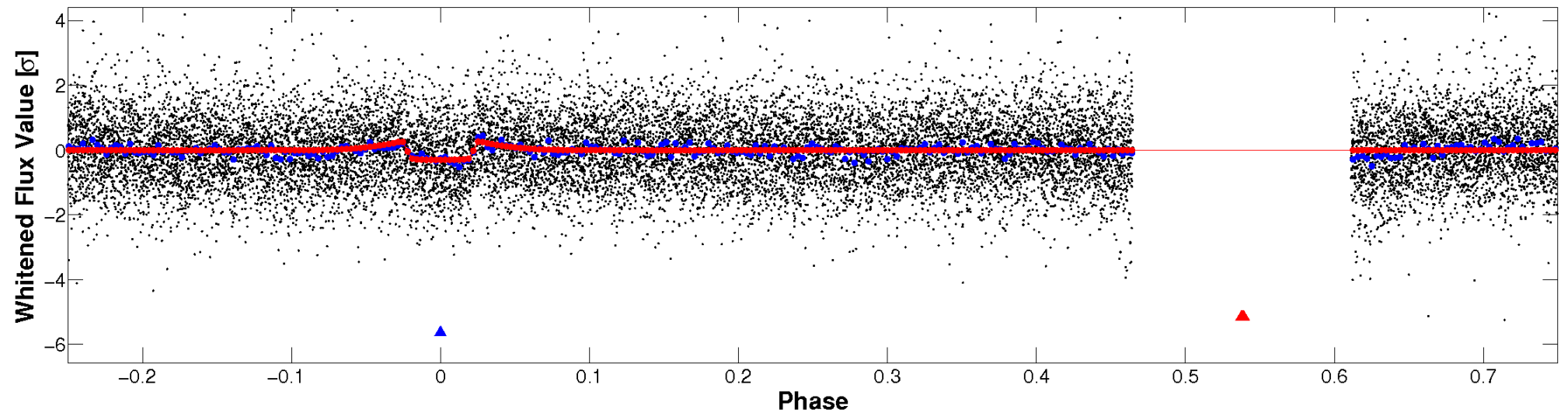


Non-Whitened Vs. Whitened Light Curve

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

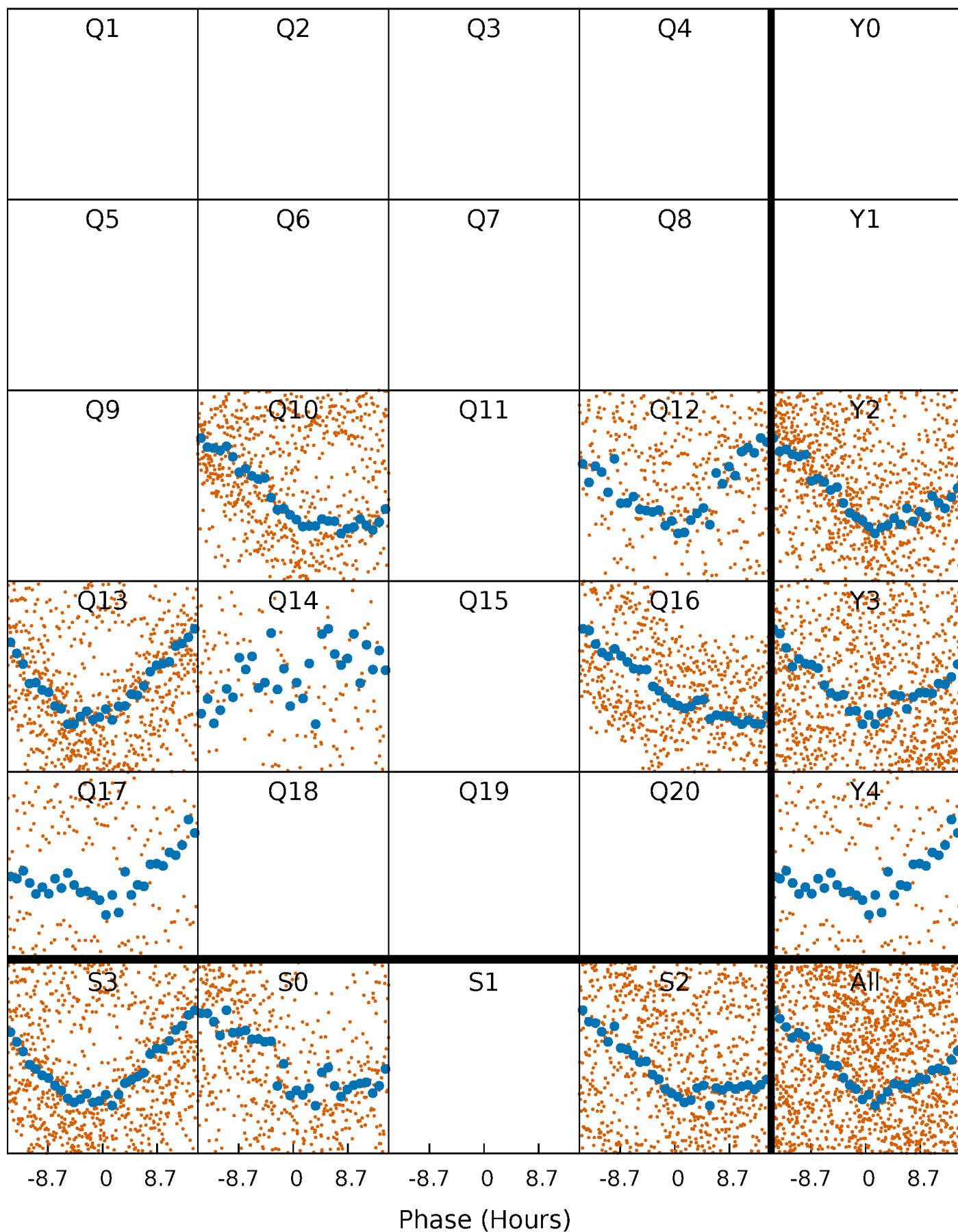


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



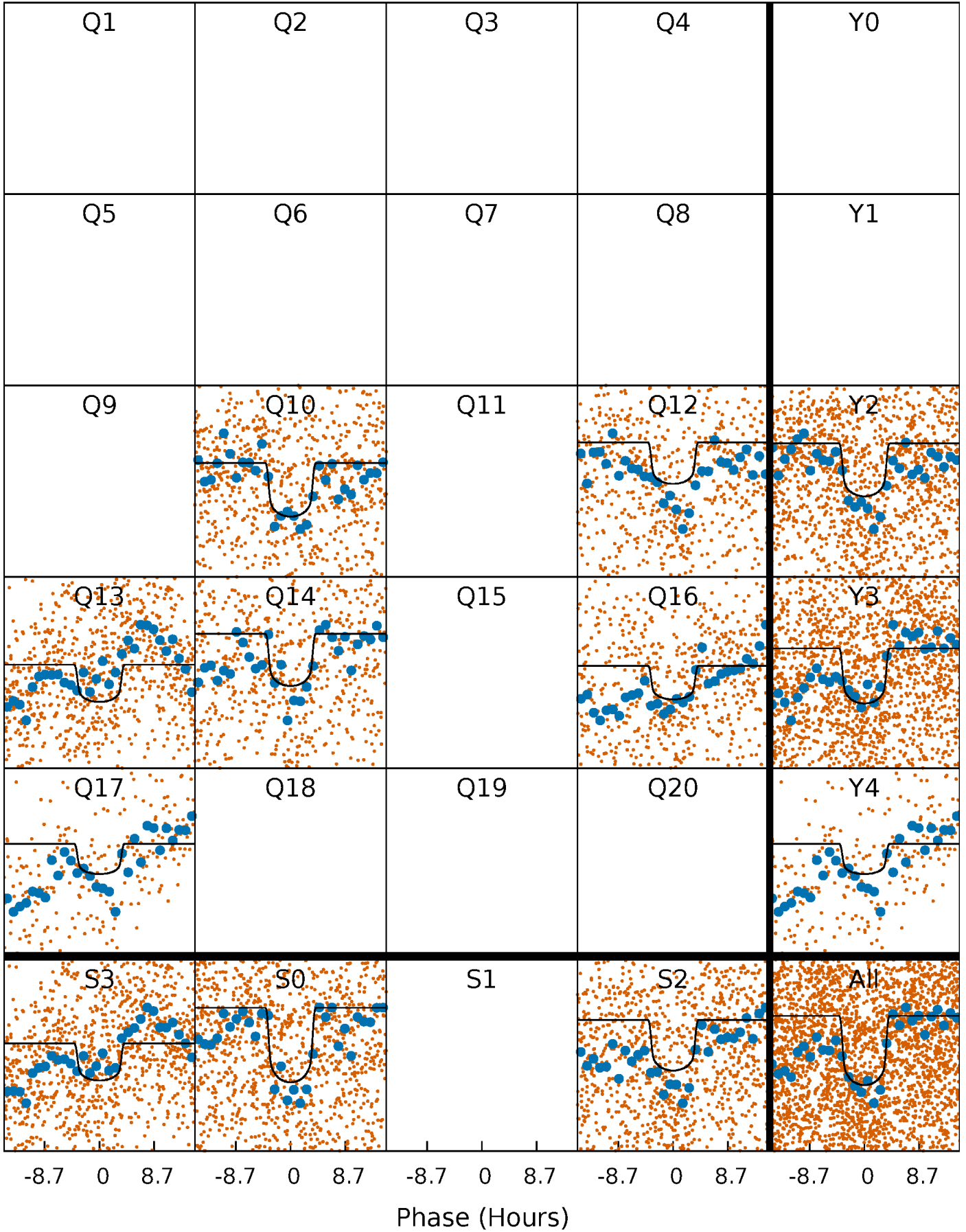
PDC Quarter-Phased Transit Curves

TCE 010352938-02 P= 6.471746 Days $T_0=132.870661$ (BKJD)



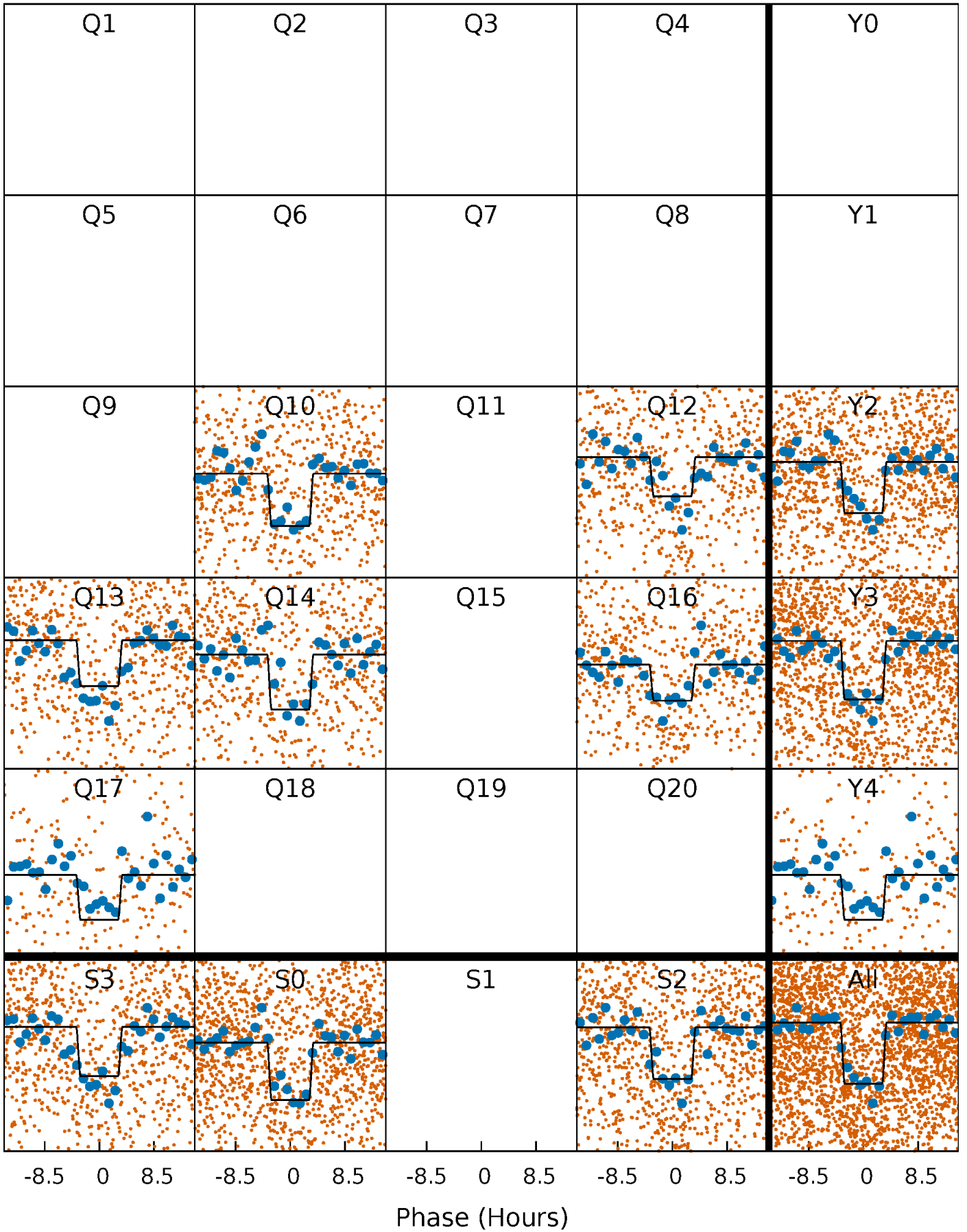
DV Quarter-Phased Transit Curves

TCE 010352938-02 P= 6.471746 Days $T_0=132.870661$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

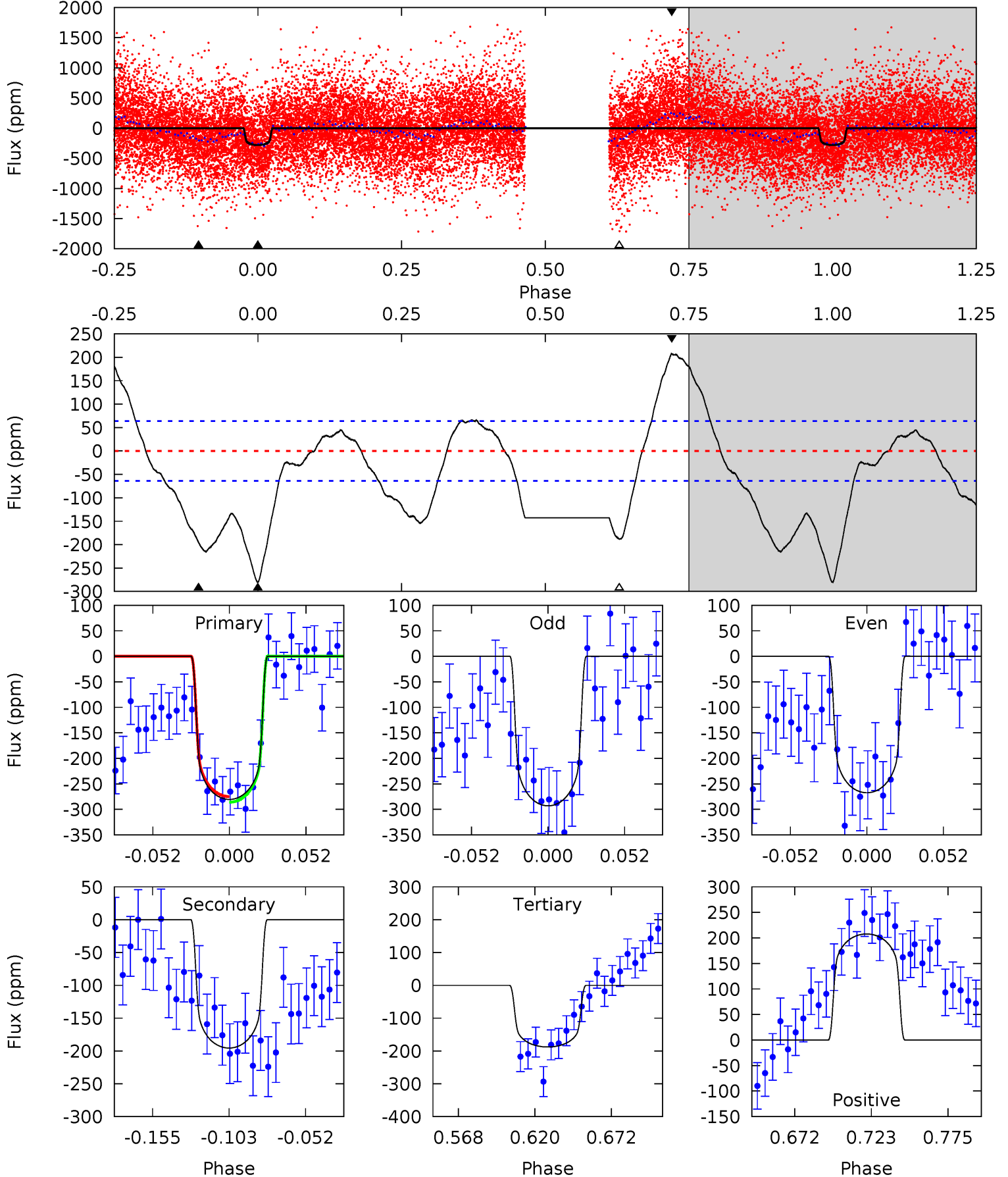
TCE 010352938-02 P= 6.471774 Days $T_0=132.873866$ (BKJD)



DV Model-Shift Uniqueness Test

010352938-02, P = 6.471746 Days, E = 132.870661 Days

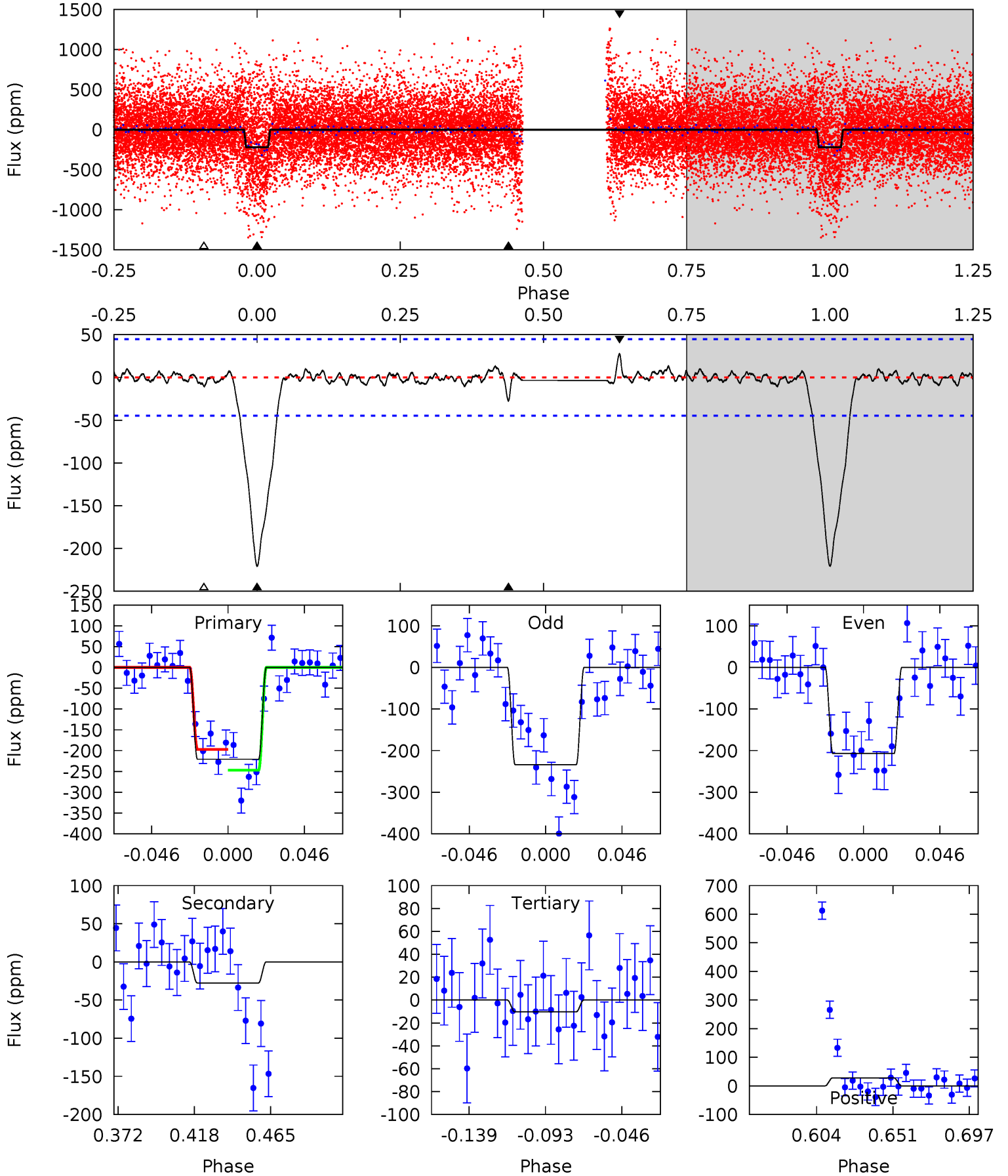
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.6	14.4	13.8	15.3	4.70	1.95	7.10	6.81	5.35	0.56	-0.90	0.95	1.01	0.43	0.41



Alt Model-Shift Uniqueness Test

010352938-02, P = 6.471774 Days, E = 132.873866 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.3	2.91	1.09	2.95	4.72	1.99	0.54	22.2	20.3	1.82	-0.04	1.42	0.94	0.11	2.70



Stellar Parameters For KIC 010352938

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6318^{+177}_{-243}	$4.079^{+0.258}_{-0.172}$	$0.060^{+0.250}_{-0.300}$	$1.685^{+0.504}_{-0.504}$	$1.242^{+0.202}_{-0.202}$	$0.365^{+0.600}_{-0.177}$
	+3%/-4%	+6%/-4%	+417%/-500%	+30%/-30%	+16%/-16%	+164%/-48%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 010352938-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-196 ± 14	$2.97^{+0.72}_{-0.61}$	1856^{+147}_{-160}	5809^{+477}_{-419}	65^{+39}_{-22}
Alt.	-28 ± 9	$2.56^{+0.69}_{-0.55}$	1848^{+153}_{-158}	4052^{+383}_{-359}	12^{+9}_{-5}

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

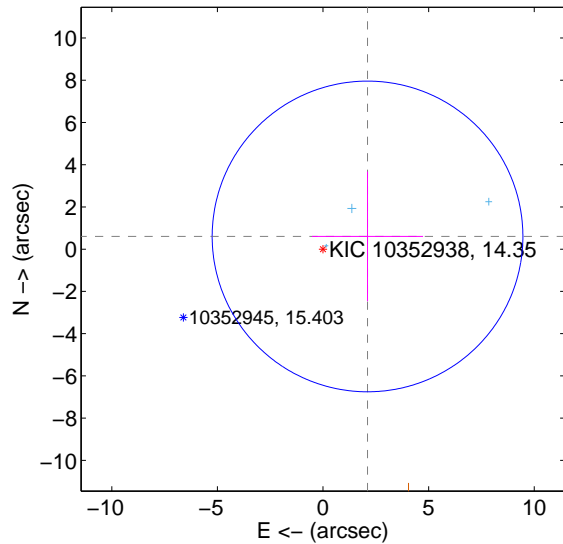
Supplemental centroid analysis for 010352938-02. Kepler magnitude: 14.35. Transit SNR 10.32

There are 3 quarters with good PRF difference image offsets

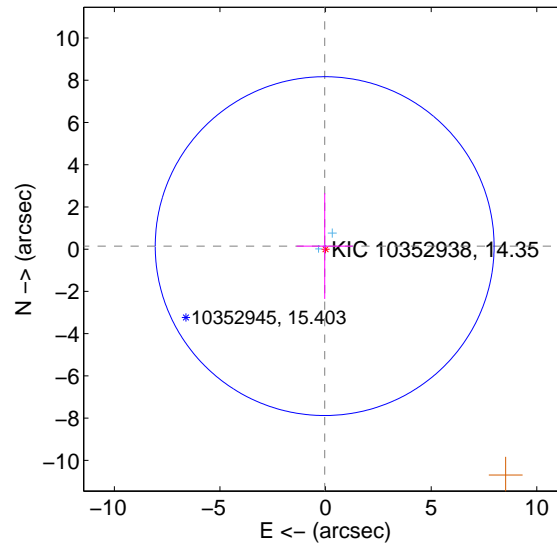
The direct PRF centroid is offset from the target star catalog position by about 1.57 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.192 ± 2.452	0.89	-2.107 ± 2.629	0.603 ± 3.070
PRF-fit source offset from KIC position	0.151 ± 2.674	0.06	0.043 ± 1.330	0.145 ± 2.502
photometric centroid source offset	2.02 ± 0.80	2.54	-0.66 ± 1.12	-1.91 ± 0.75

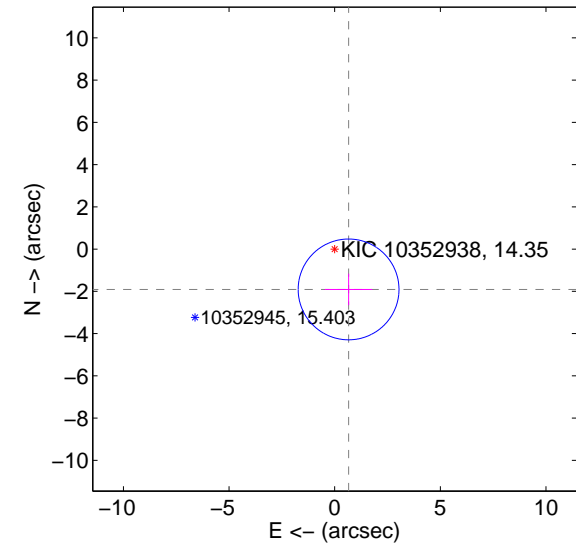
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

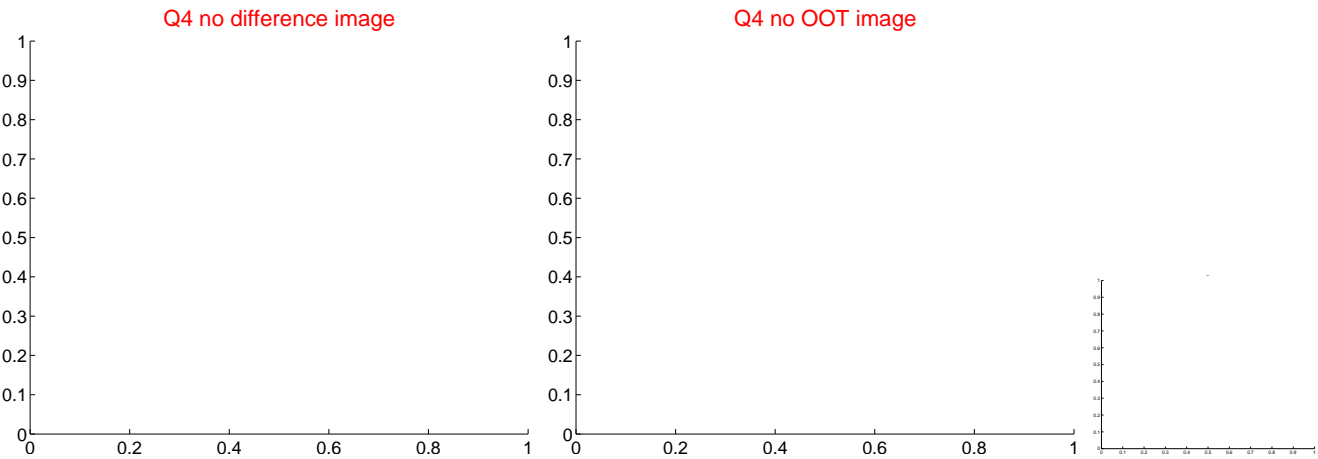
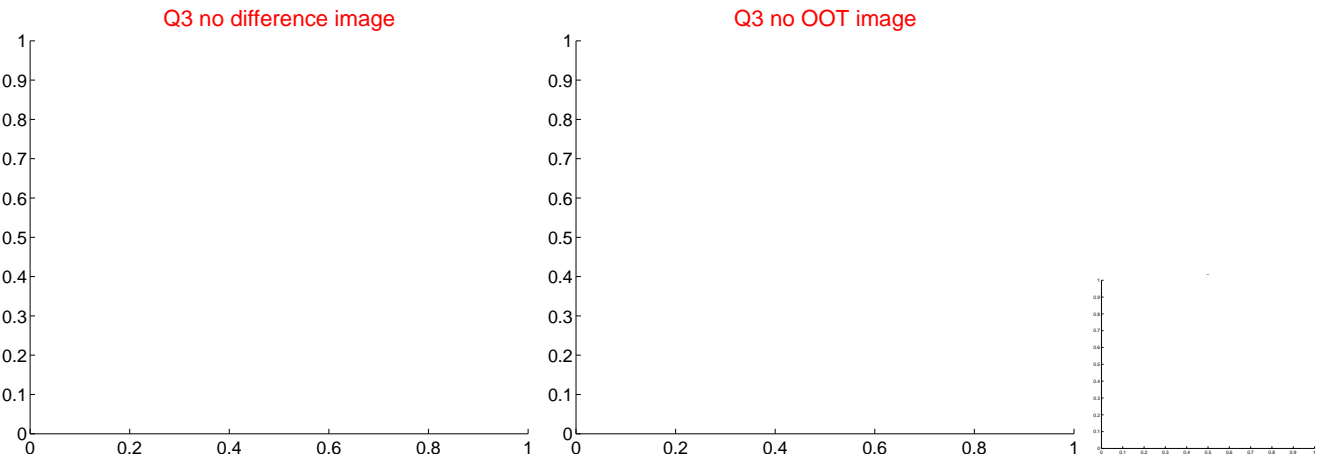
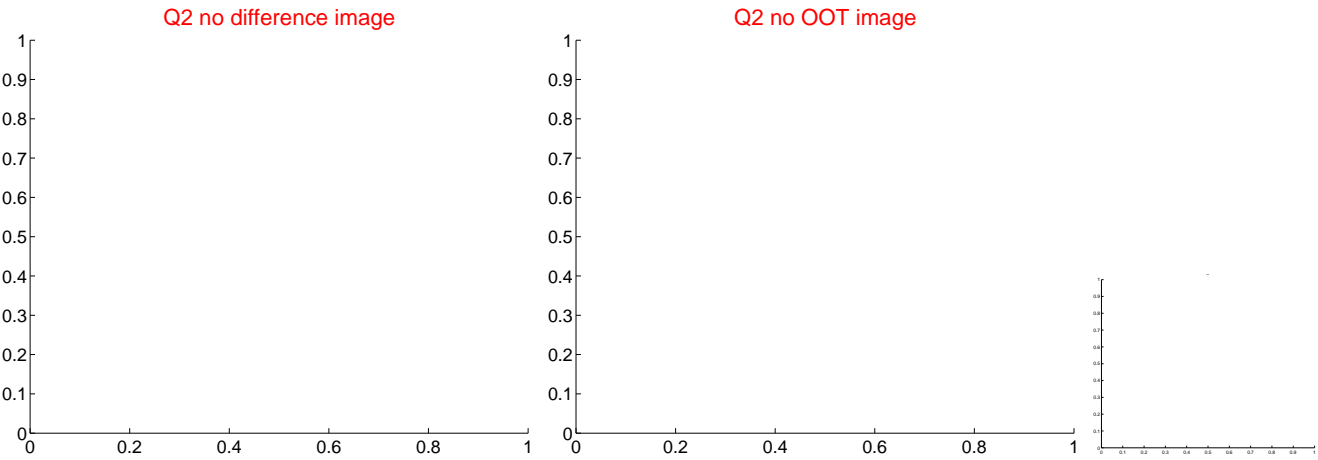
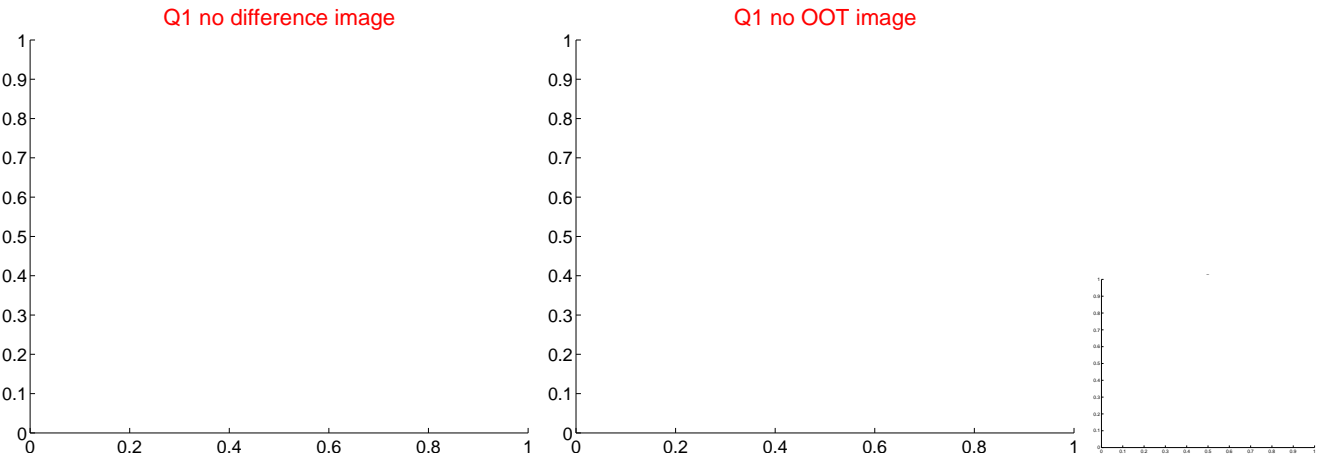


offset from photometric centroids



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.

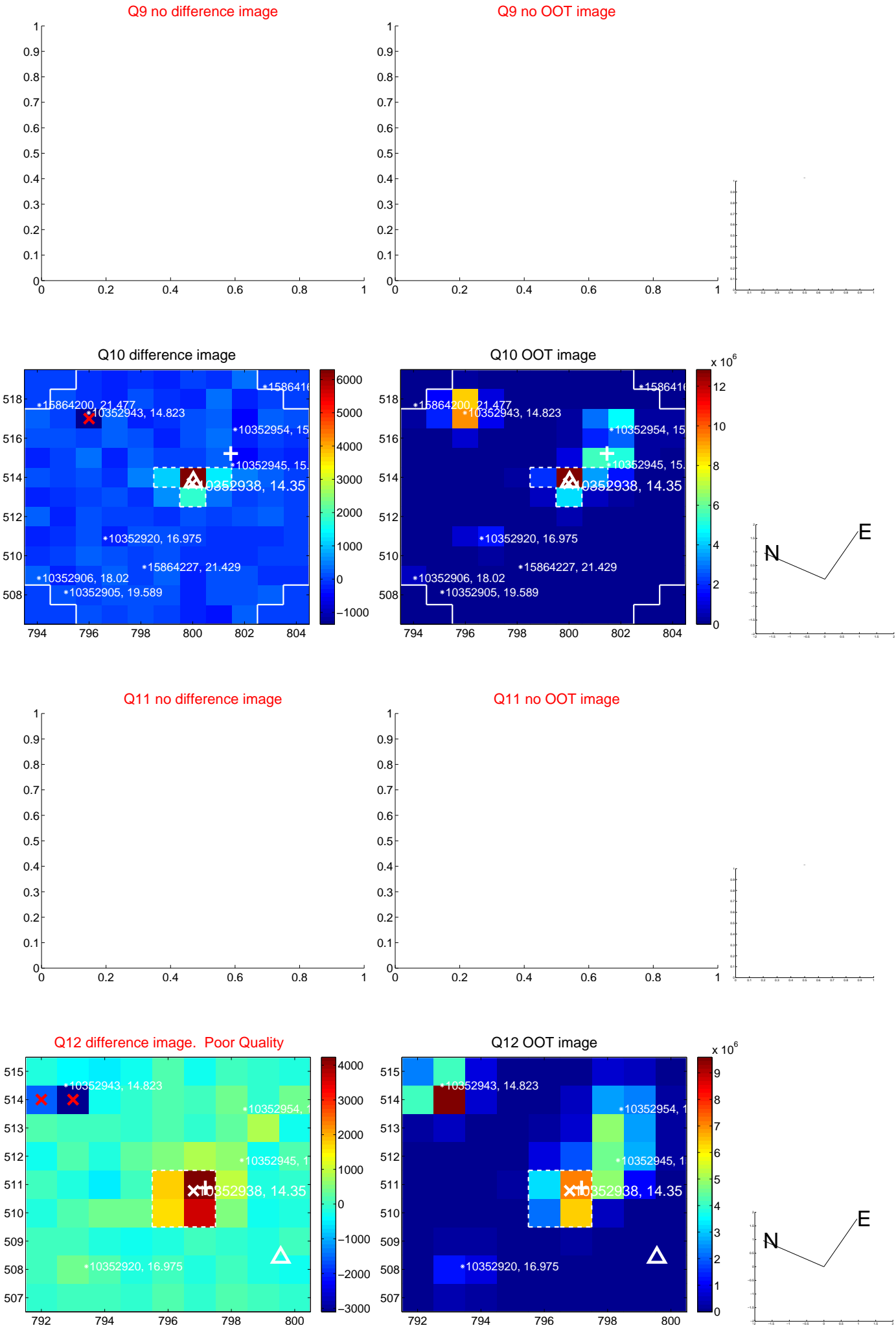
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



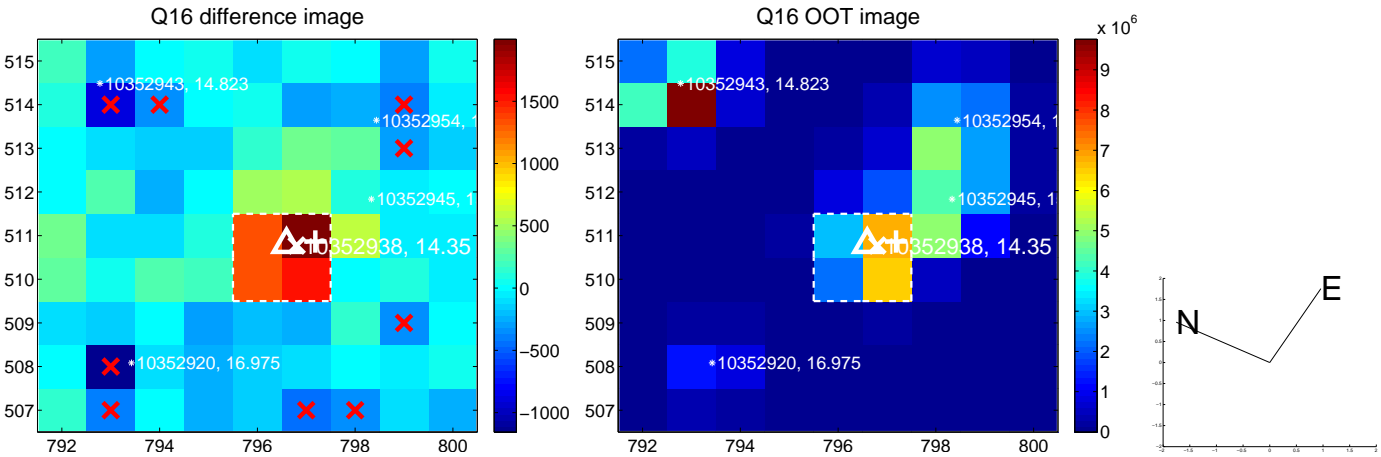
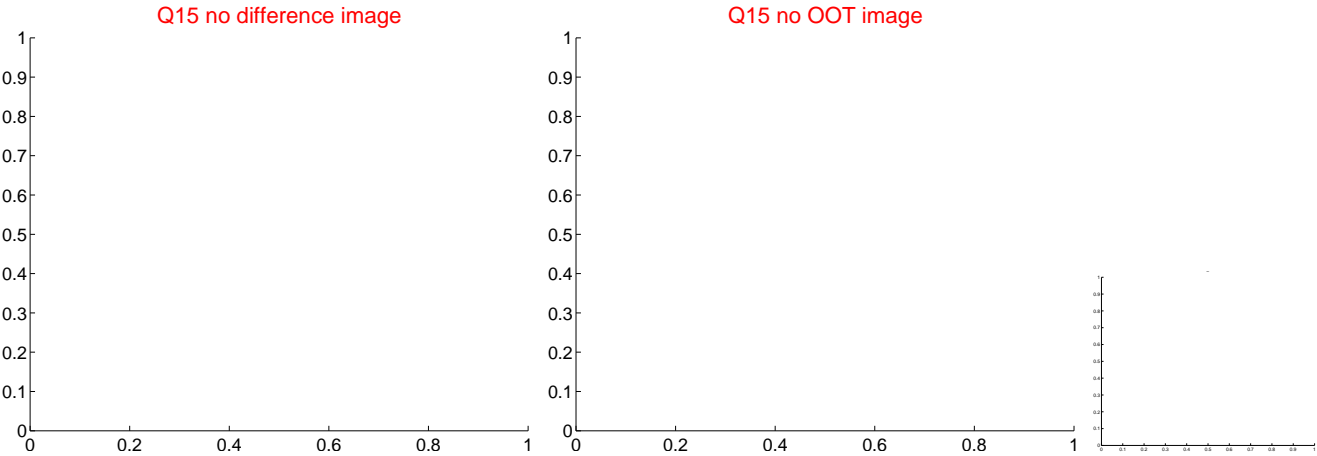
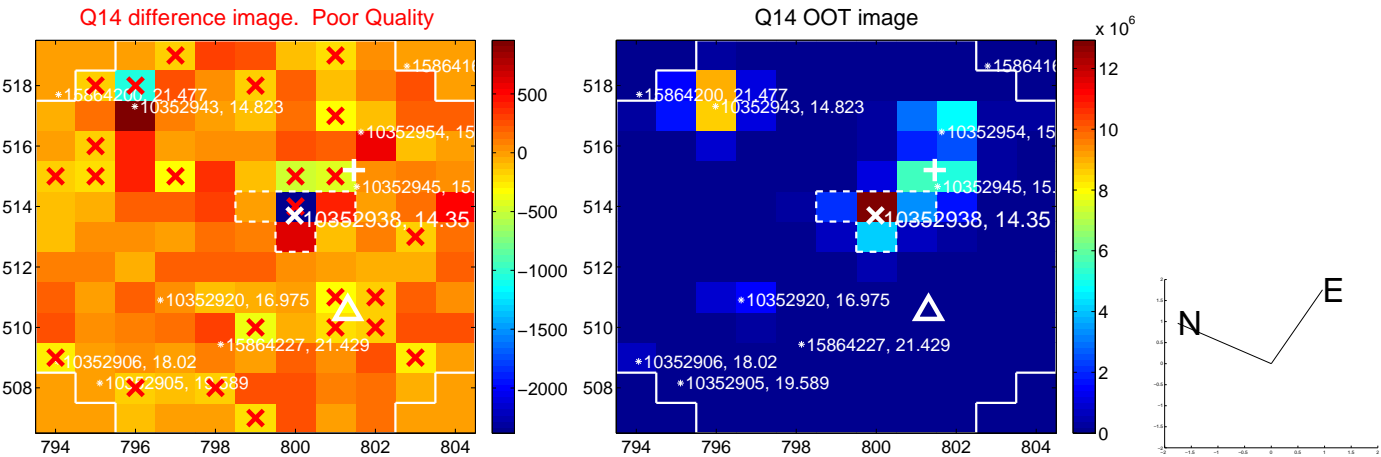
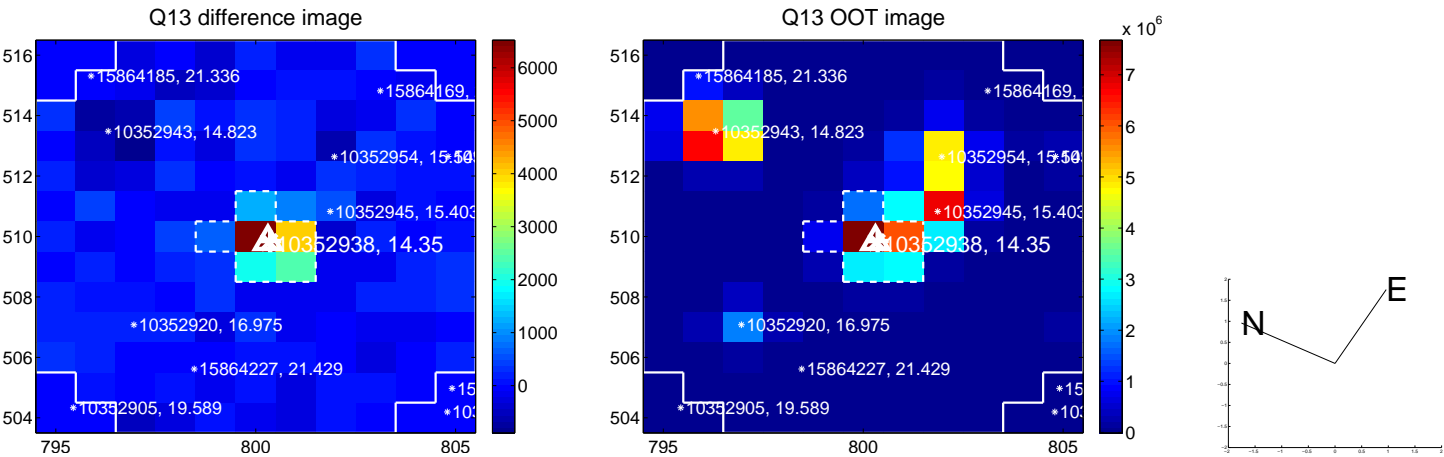
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



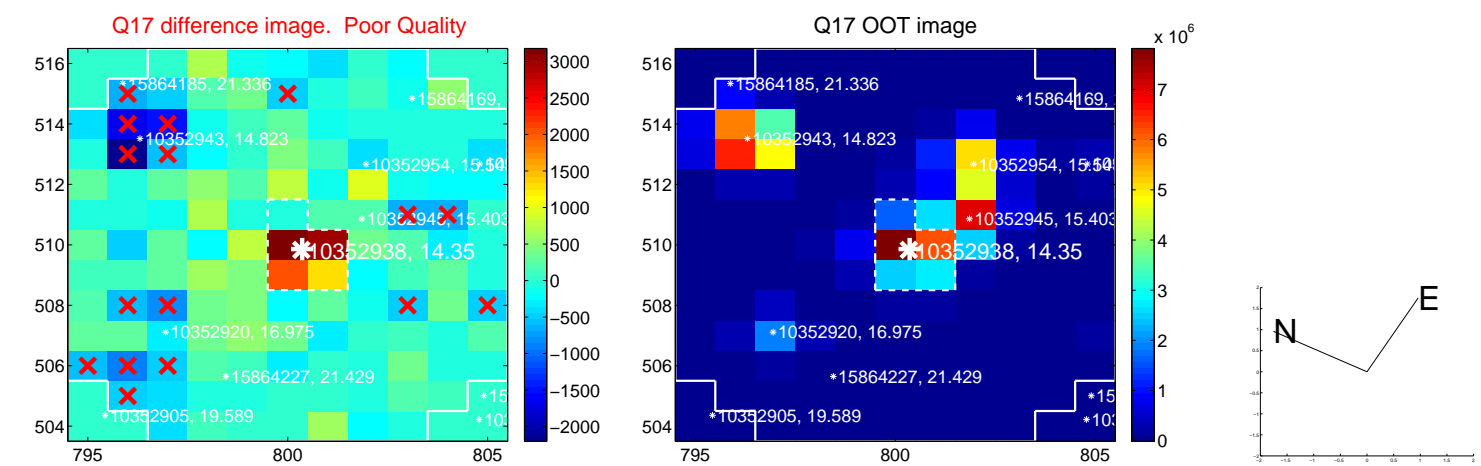
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



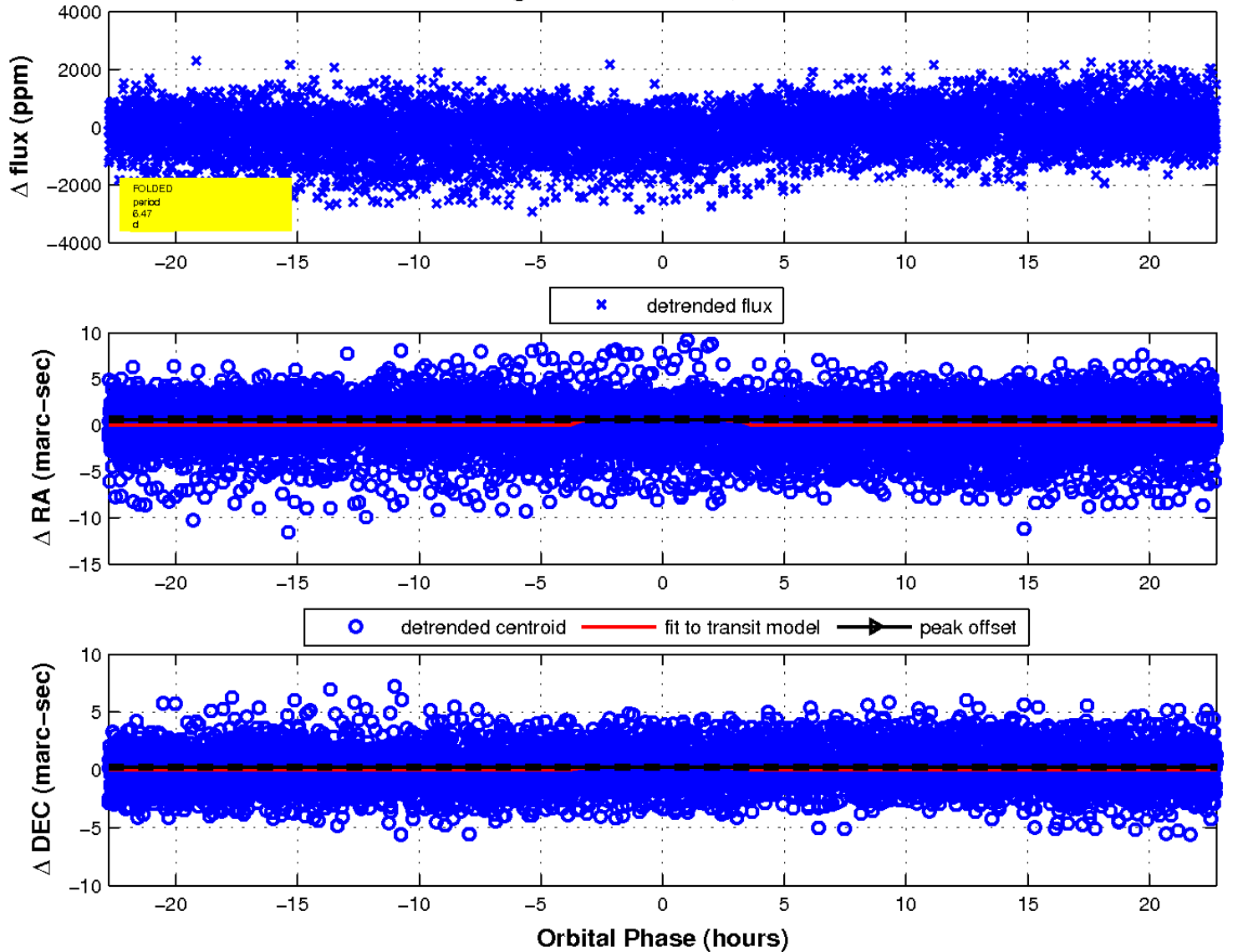
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

