

KIC 008547338

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})
008547338-02	OBS	No	372.397224	227.531458	1262.5	19.058	7.4	8.5	0.70	5477	2.50	0.46
008547338-03	OBS	No	357.590022	235.209454	1214.7	16.660	7.3	8.0	0.70	5477	2.76	0.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008547338-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS
008547338-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—INCONSISTENT_TRANS—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.

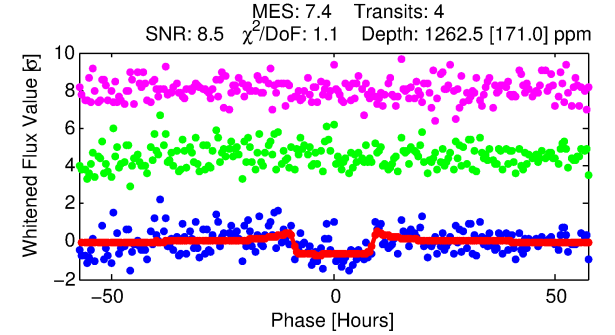
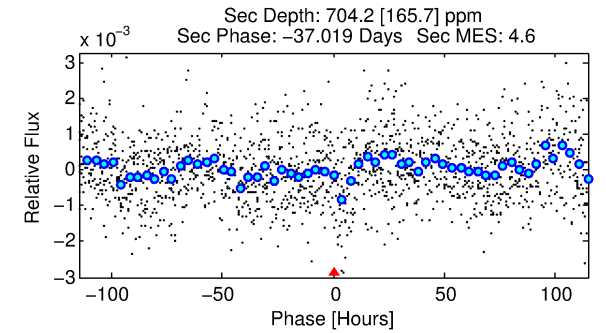
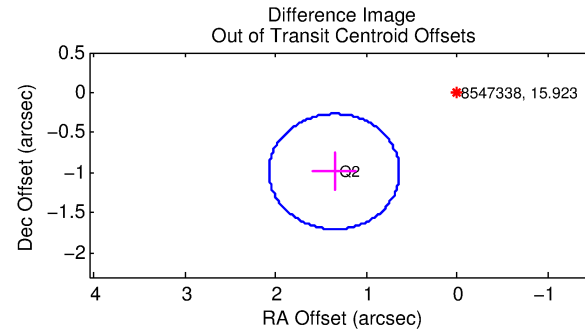
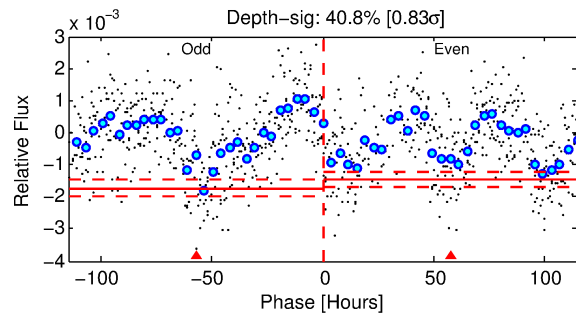
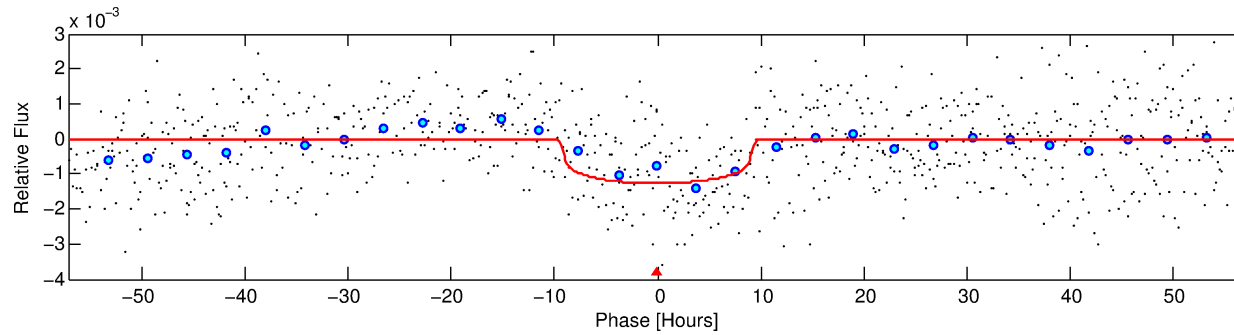
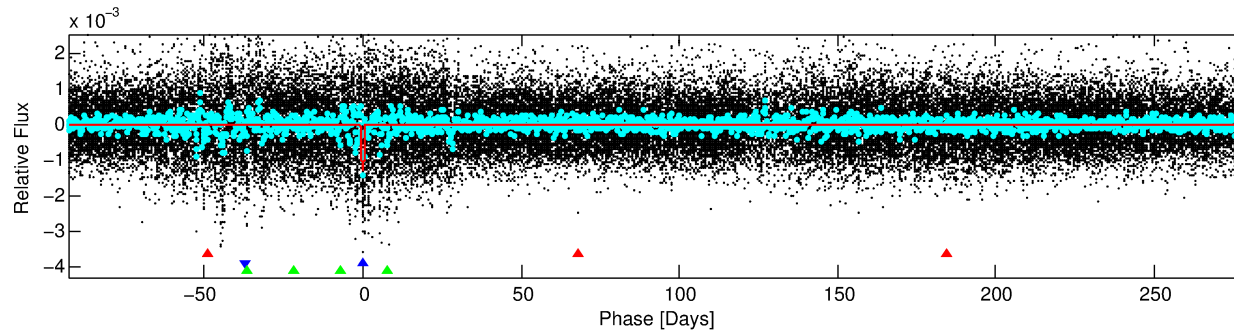
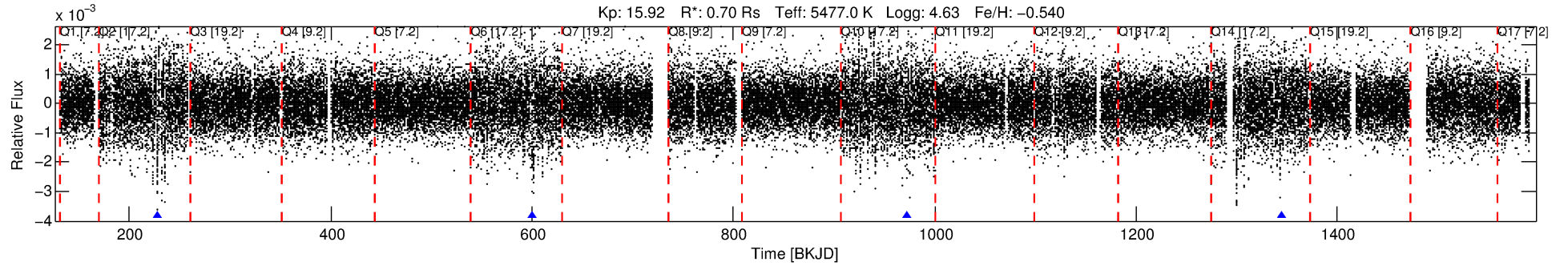
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008547338-02

No Significant Match Found

DV One-Page Summary

KIC: 8547338 Candidate: 2 of 3 Period: 372.397 d



DV Fit Results:

Period = 372.39722 [0.00988] d
Epoch = 227.5315 [0.0188] BKJD
Rp/R* = 0.0325 [0.0121]
a/R* = 148.44 [234.82]
b = 0.28 [5.28]
Seff = 0.46 [0.11]
Teff = 210 [12] K
Rp = 2.50 [1.02] Re
a = 0.9291 [0.1287] AU
Ag = 53691.33 [43342.93] [1.24 σ]
Teffp = 4950 [980] K [4.84 σ]

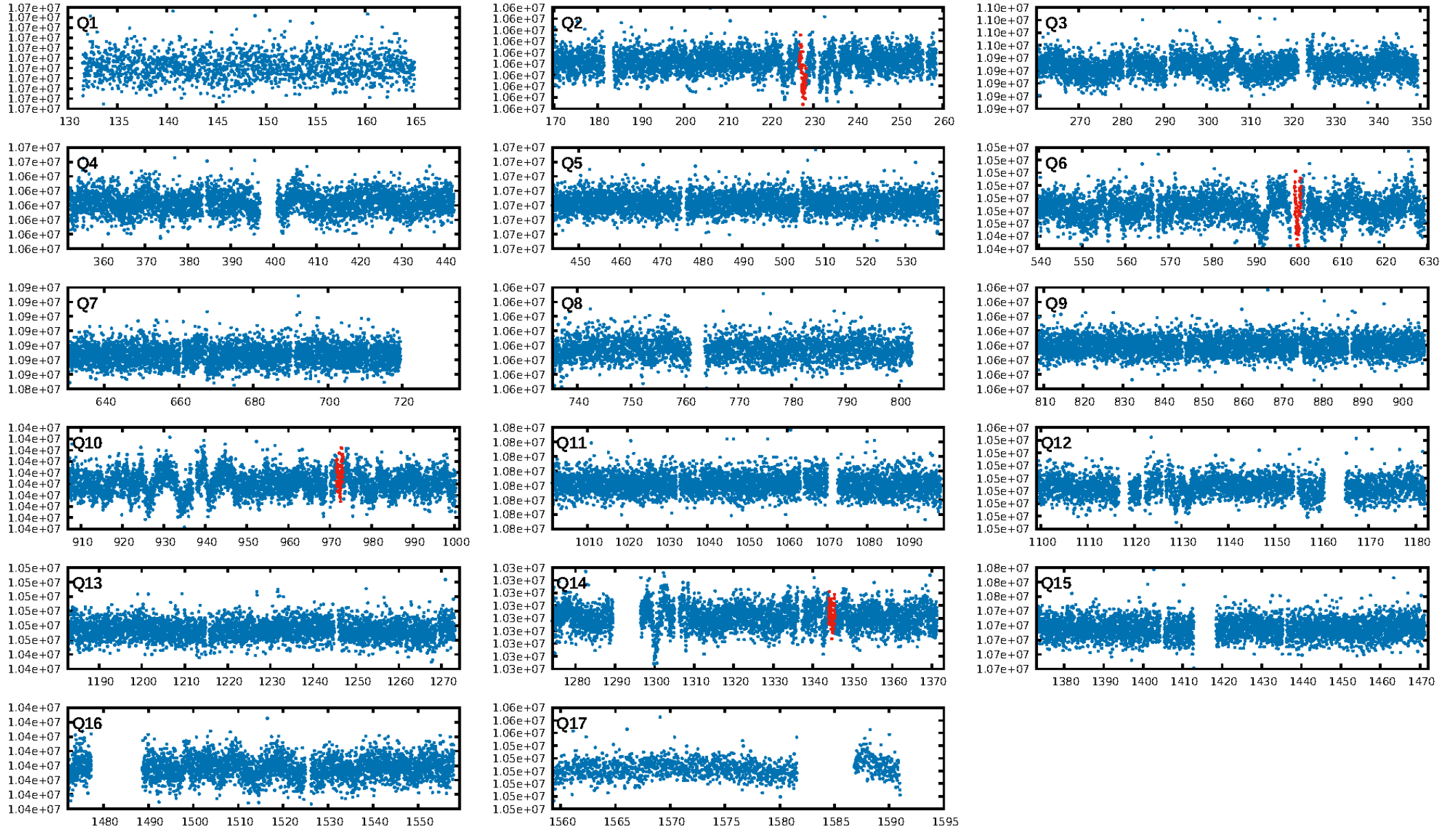
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.04 σ]
LongPeriod-sig: 100.0% [142.41 σ]
ModelChiSquare2-sig: 0.8%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 1.00e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.746
Centroid-sig: 16.9%
Centroid-so: 2.753 arcsec [1.56 σ]
OotOffset-rm: 1.673 arcsec [6.99 σ]
KicOffset-rm: 1.581 arcsec [6.58 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

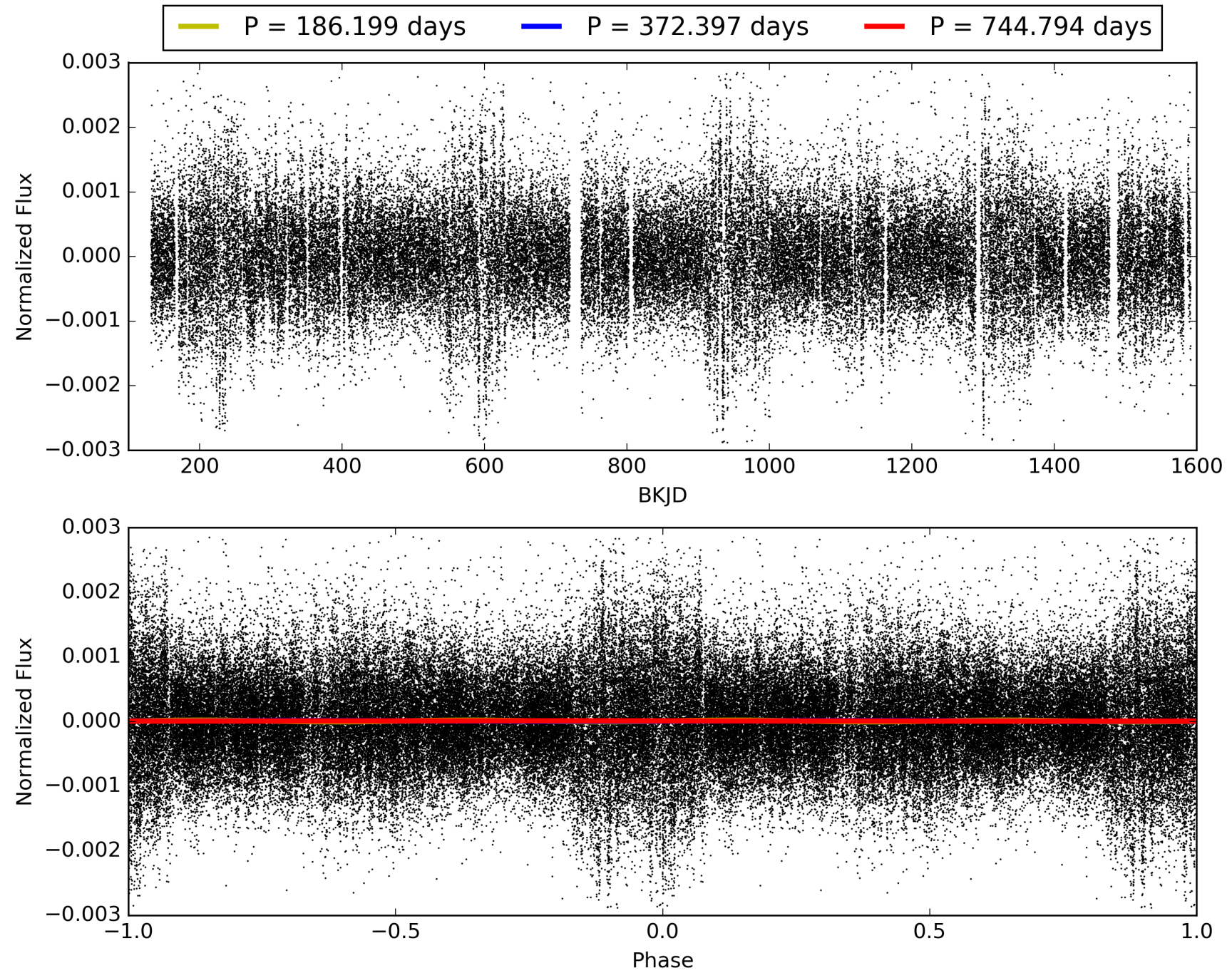
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:13:47 Z

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

TCE 008547338-02, PDC Light Curves

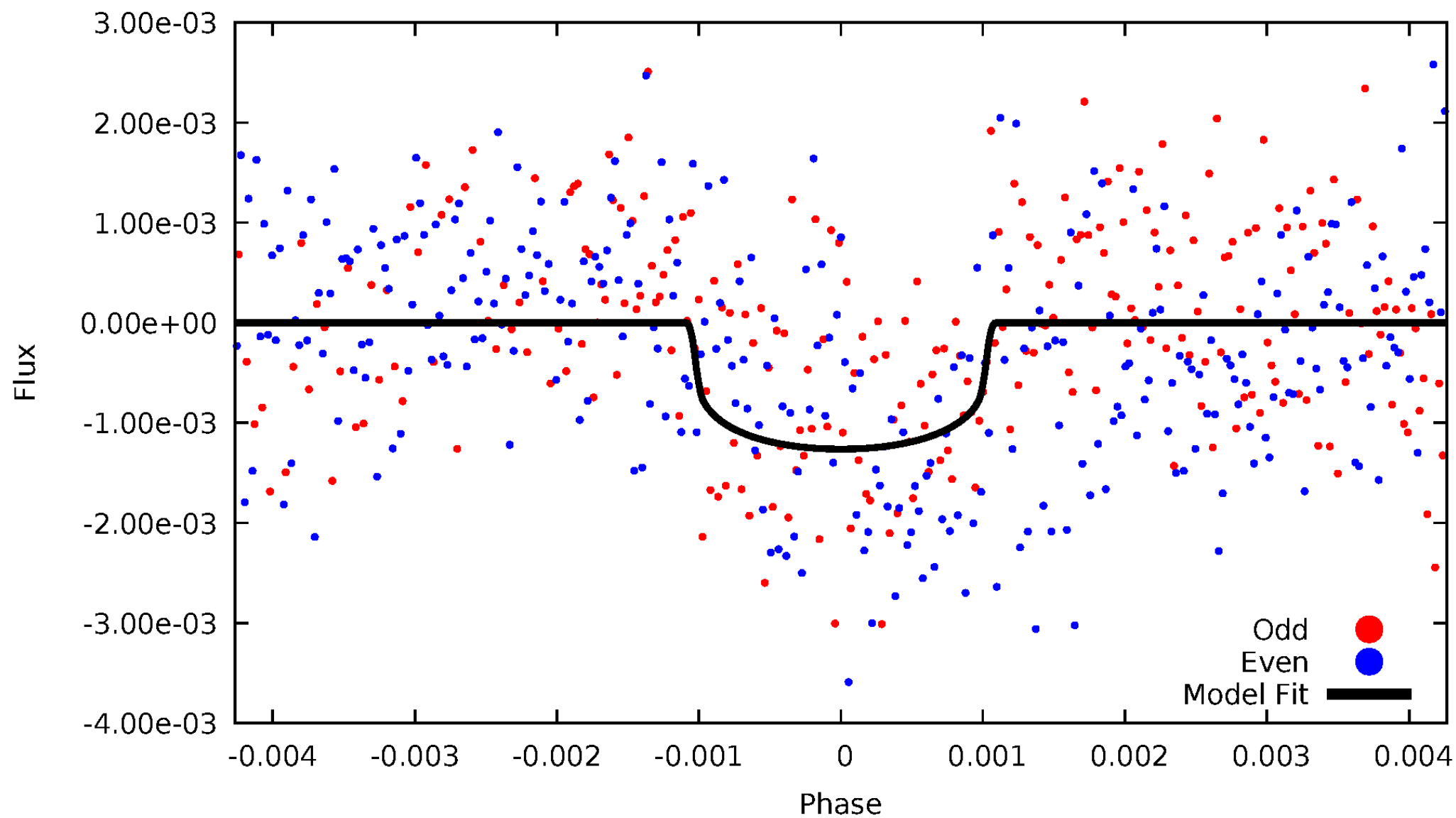


TCE 008547338-02



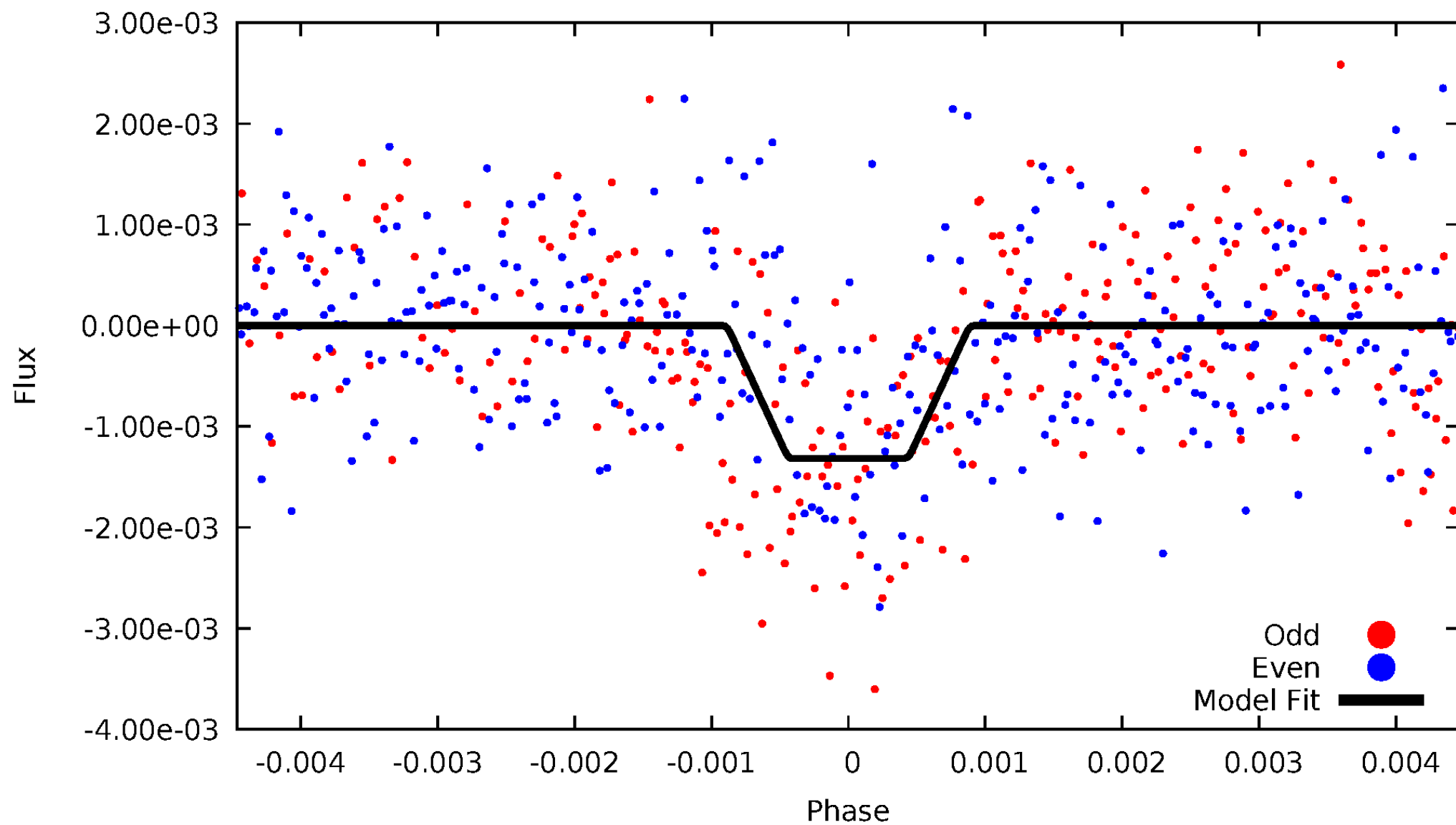
DV Odd/Even

TCE 008547338-02



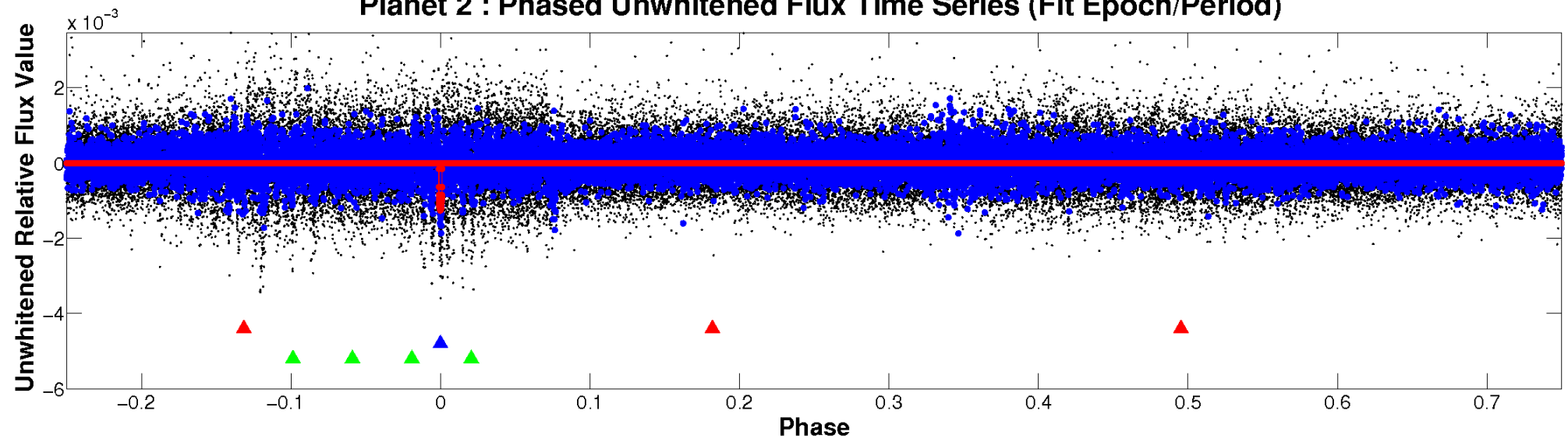
ALT Odd/Even

TCE 008547338-02

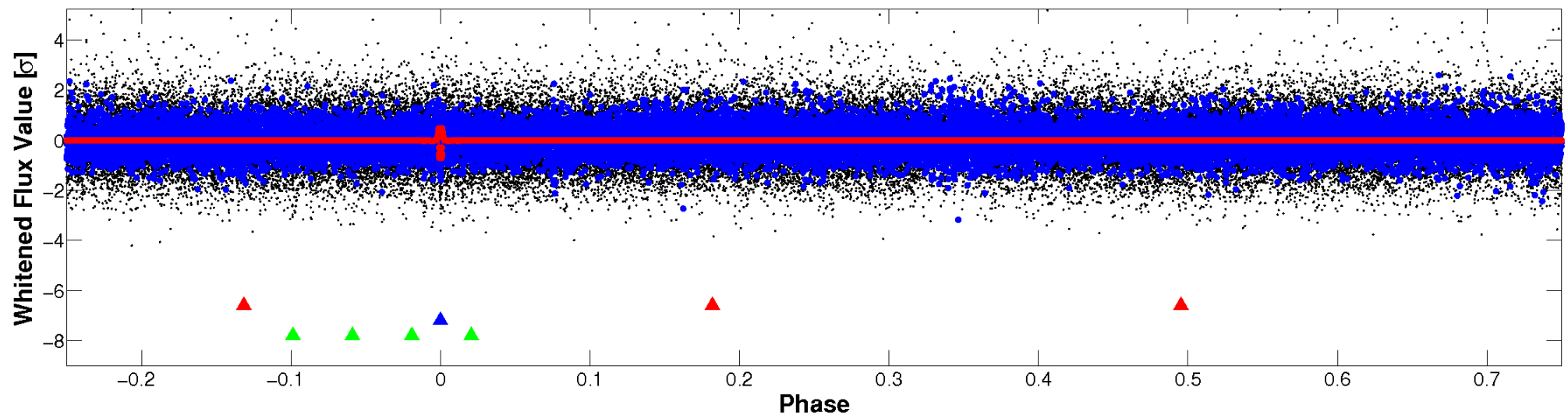


Non-Whitened Vs. Whitened Light Curve

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

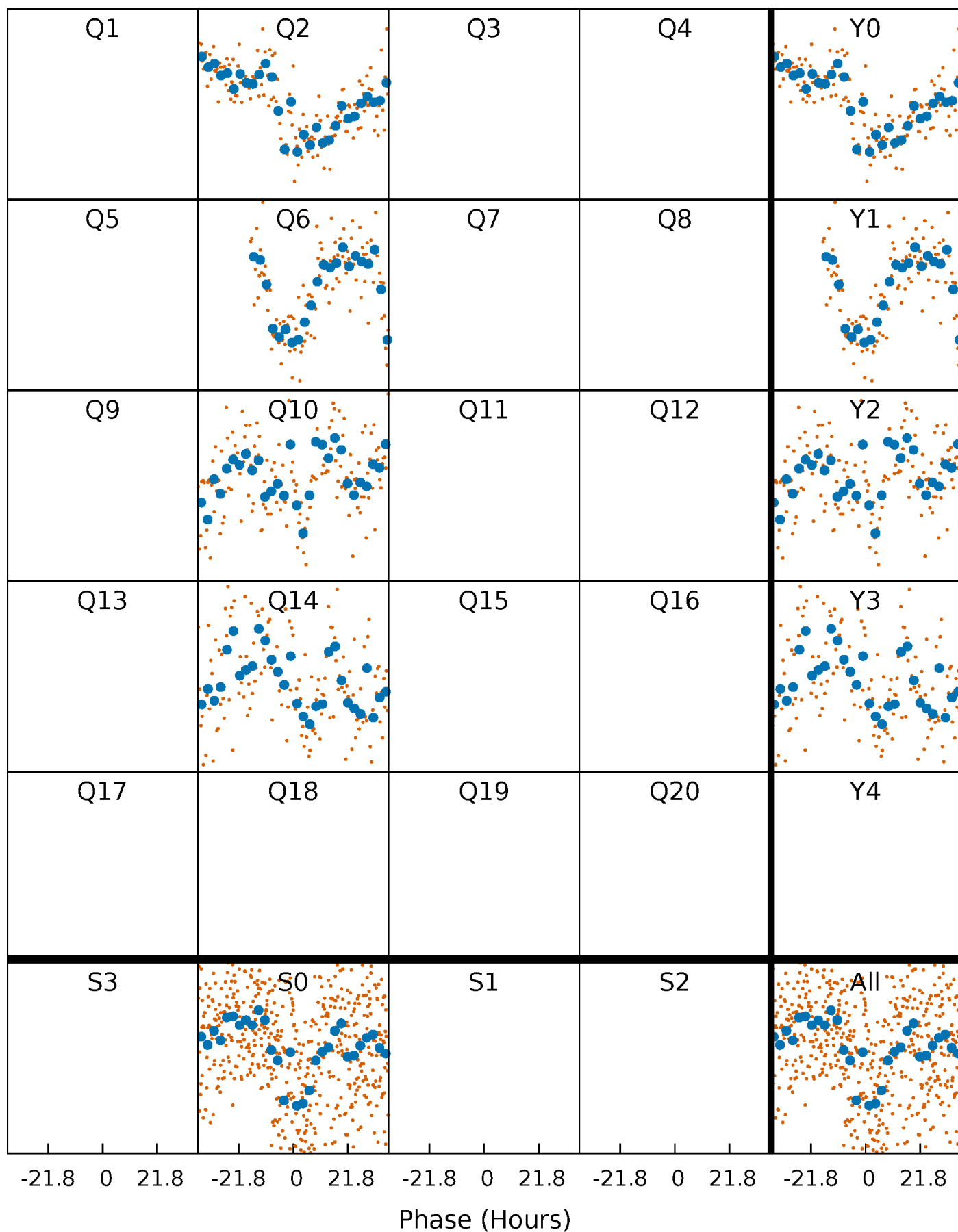


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



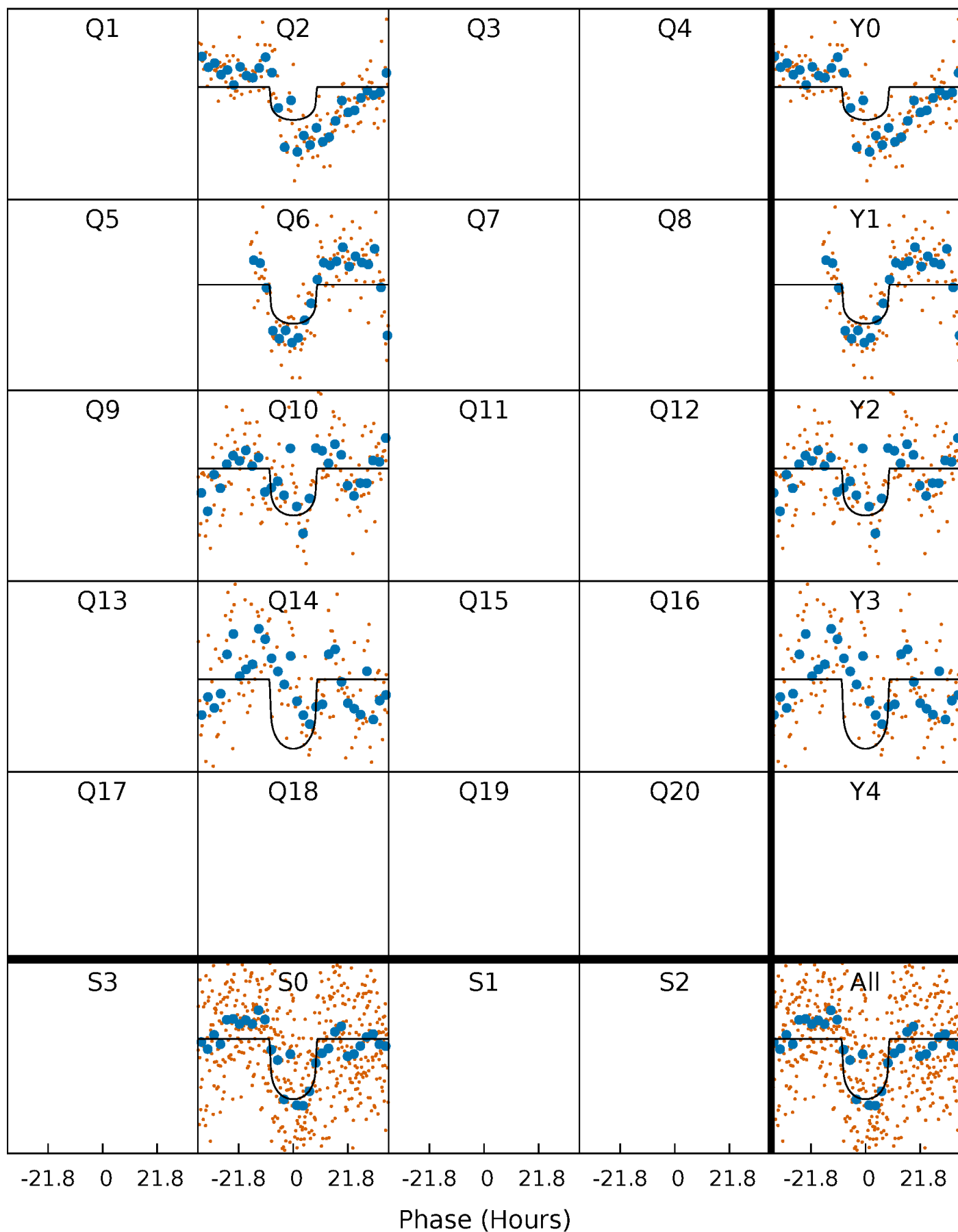
PDC Quarter-Phased Transit Curves

TCE 008547338-02 $P=372.397224$ Days $T_0=227.531458$ (BKJD)



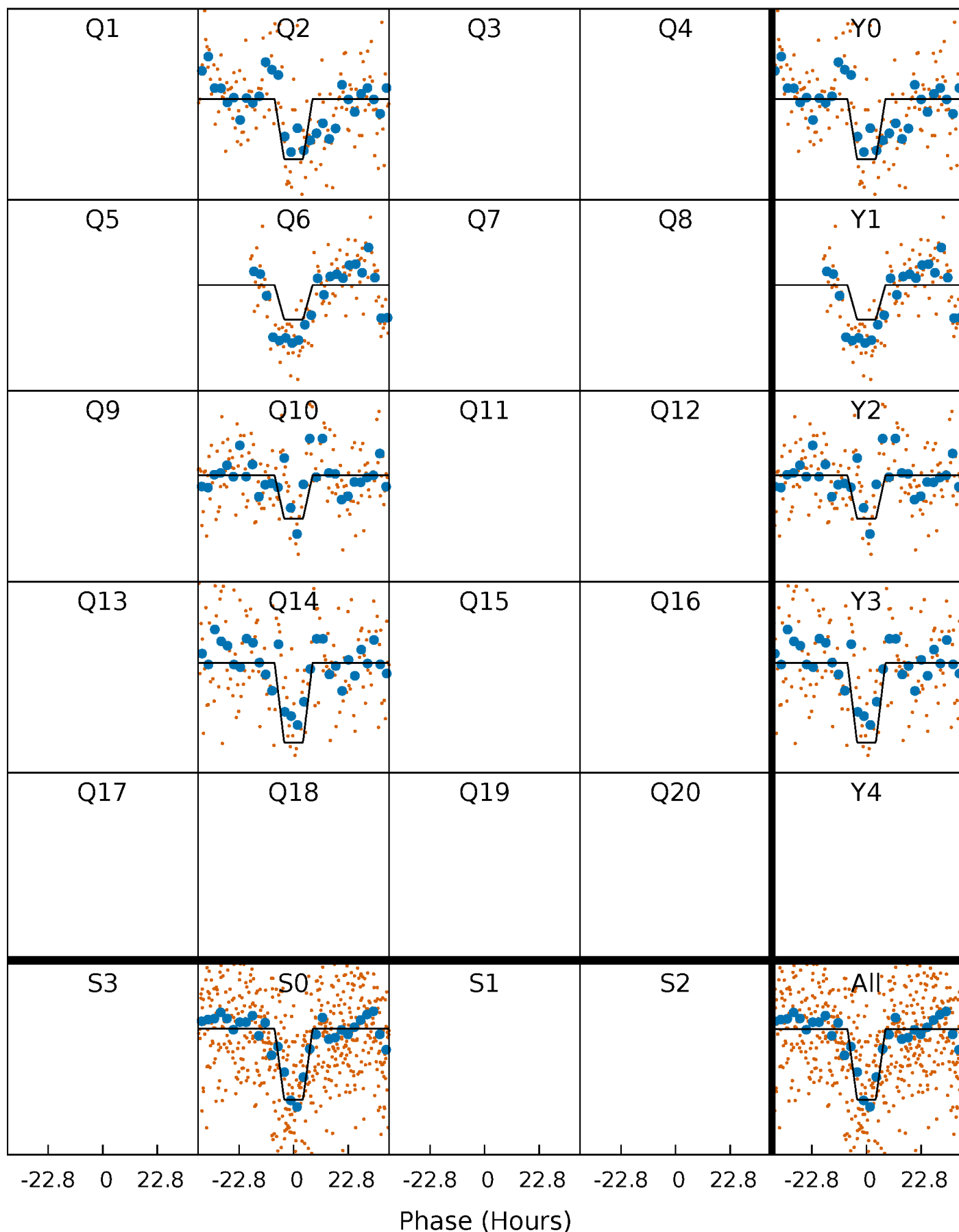
DV Quarter-Phased Transit Curves

TCE 008547338-02 $P=372.397224$ Days $T_0=227.531458$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

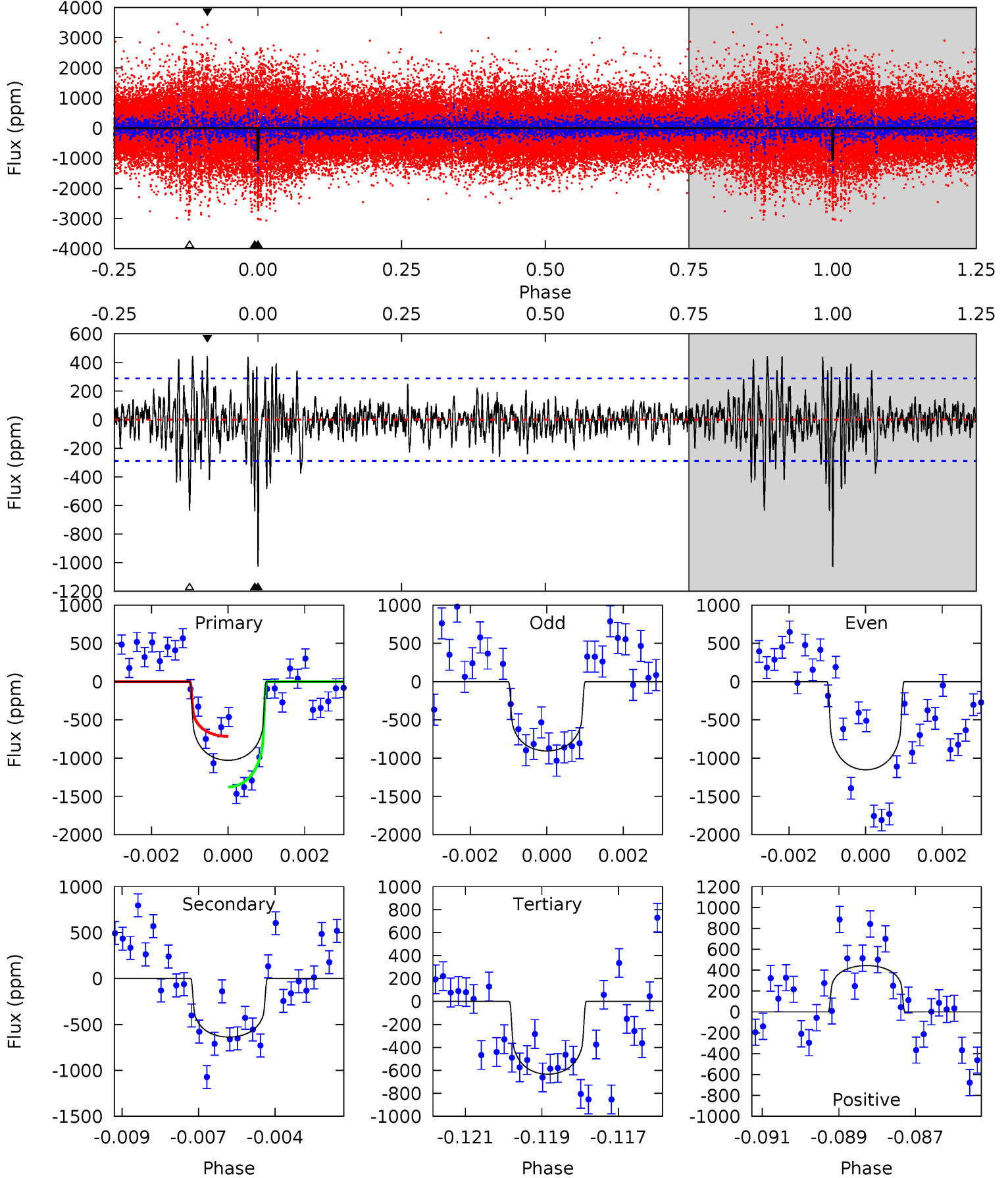
TCE 008547338-02 P=372.496988 Days $T_0=227.466712$ (BKJD)



DV Model-Shift Uniqueness Test

008547338-02, P = 372.397224 Days, E = 227.531458 Days

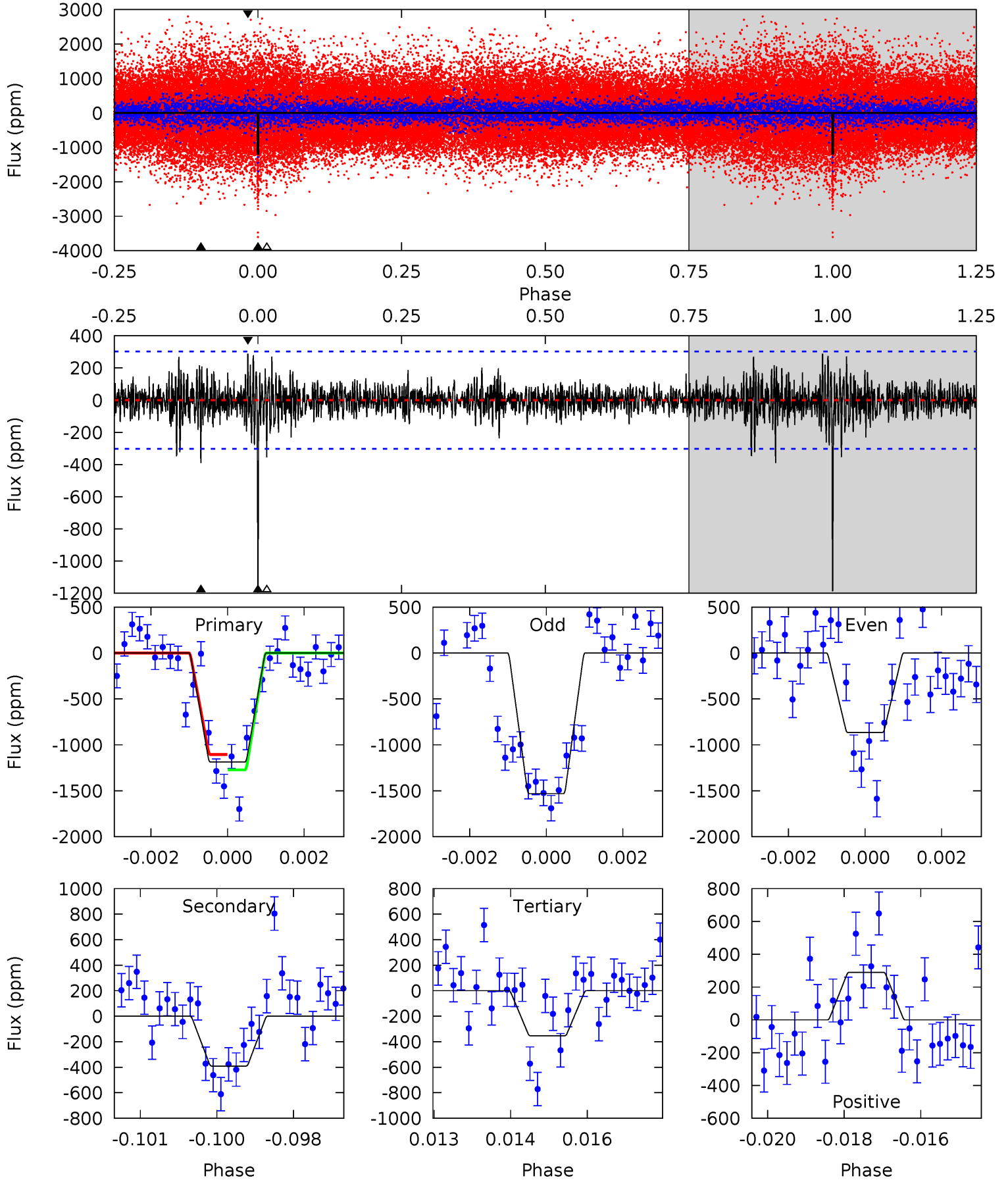
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	11.7	11.7	8.18	5.31	3.07	1.99	7.27	10.8	0.08	3.57	2.27	0.91	0.30	6.07



Alt Model-Shift Uniqueness Test

008547338-02, $P = 372.496988$ Days, $E = 227.466712$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.0	6.90	6.23	5.11	5.34	3.12	1.19	14.7	15.9	0.67	1.79	5.90	1.33	0.20	1.47



Stellar Parameters For KIC 008547338

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5477^{+163}_{-163}	$4.630^{+0.035}_{-0.105}$	$-0.540^{+0.300}_{-0.300}$	$0.704^{+0.119}_{-0.055}$	$0.782^{+0.074}_{-0.081}$	$3.153^{+0.469}_{-1.074}$
	+3%/-3%	+1%/-2%	+56%/-56%	+17%/-8%	+9%/-10%	+15%/-34%
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 008547338-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-638 ± 54	$2.47^{+1.07}_{-0.88}$	297^{+12}_{-11}	4919^{+1202}_{-591}	47914^{+71108}_{-23470}
Alt.	-391 ± 57	$2.81^{+0.98}_{-0.91}$	298^{+13}_{-12}	4283^{+752}_{-459}	23358^{+28930}_{-11033}

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 $A_{obs} \gg 1.0$

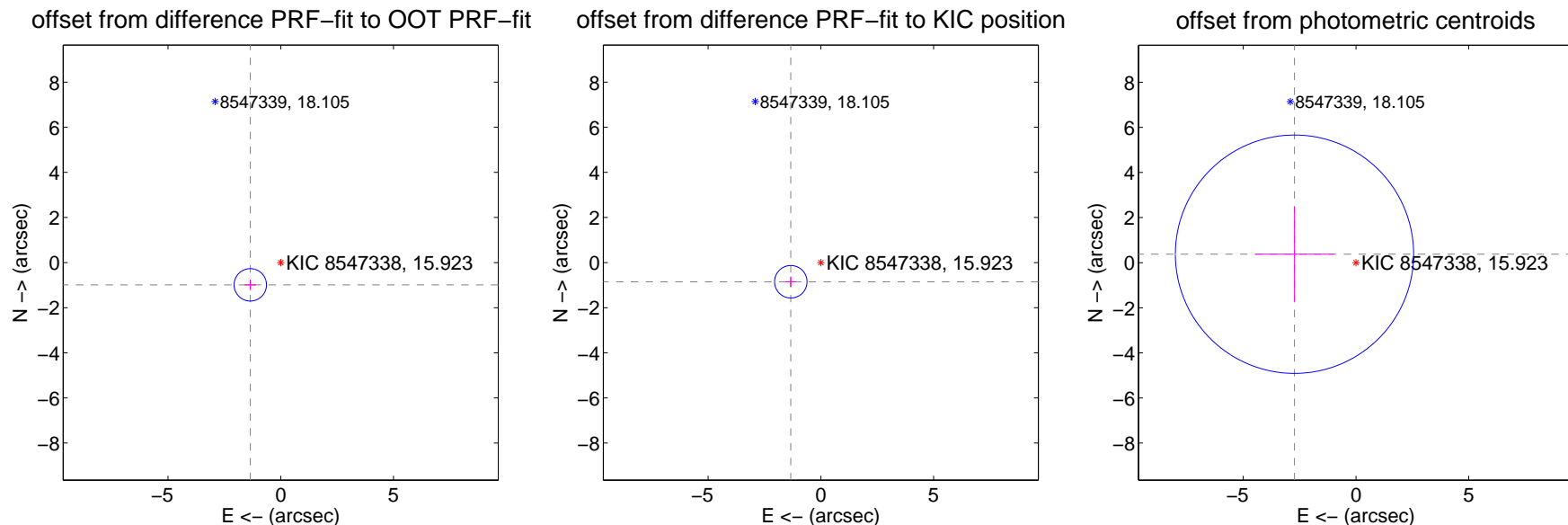
DV Centroid Data

Supplemental centroid analysis for 008547338-02. Kepler magnitude: 15.92. Transit SNR 8.51

There are 0 quarters with good PRF difference image offsets

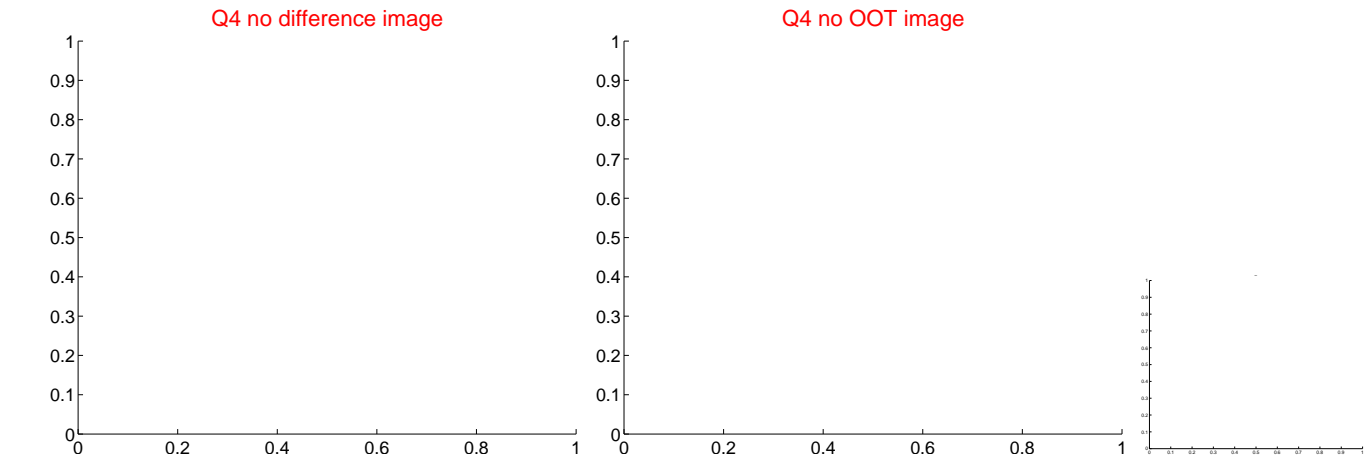
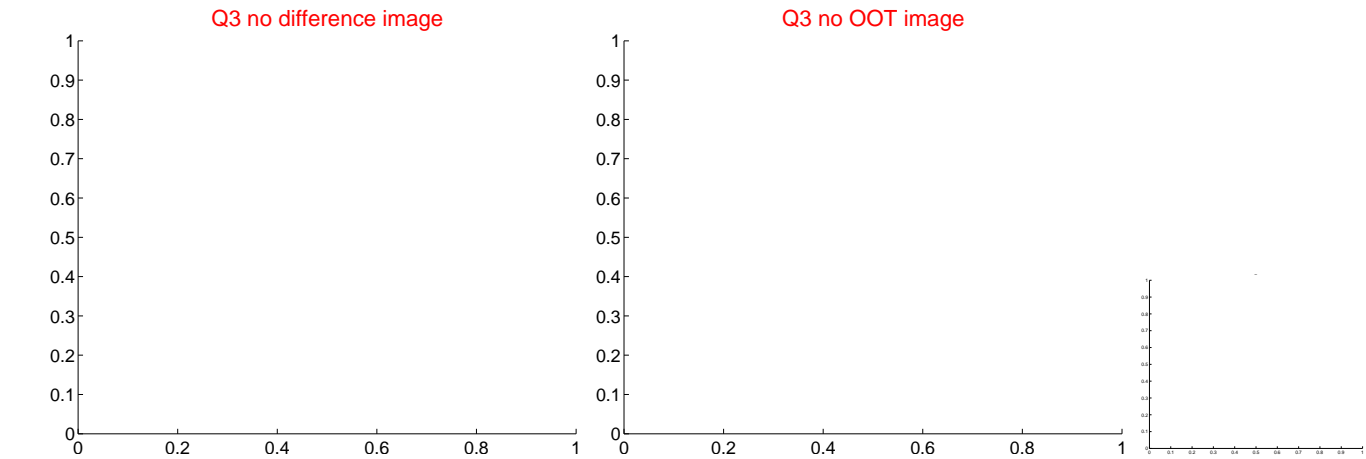
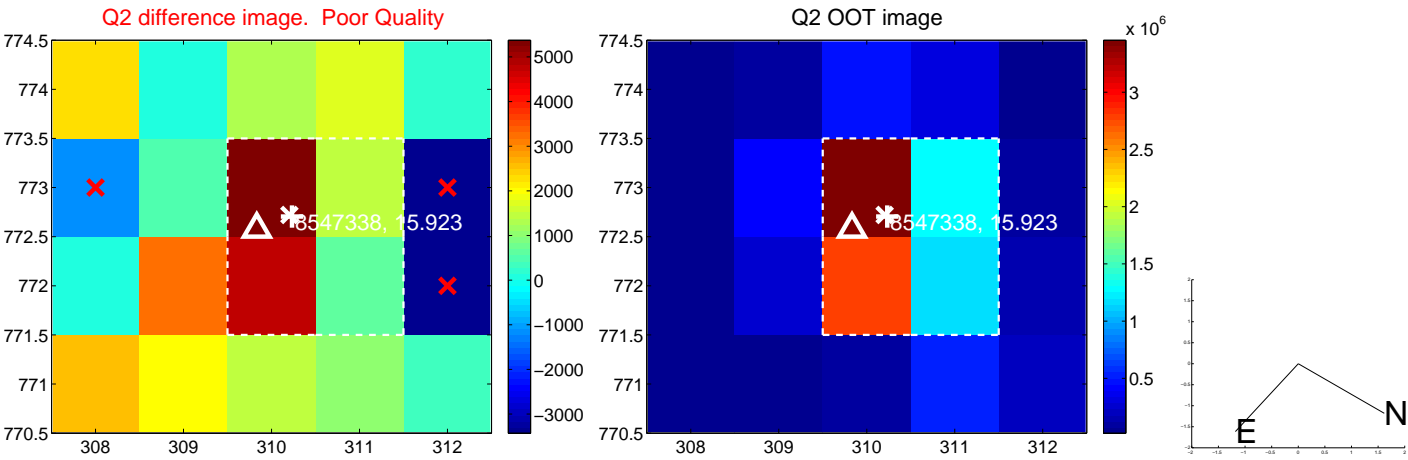
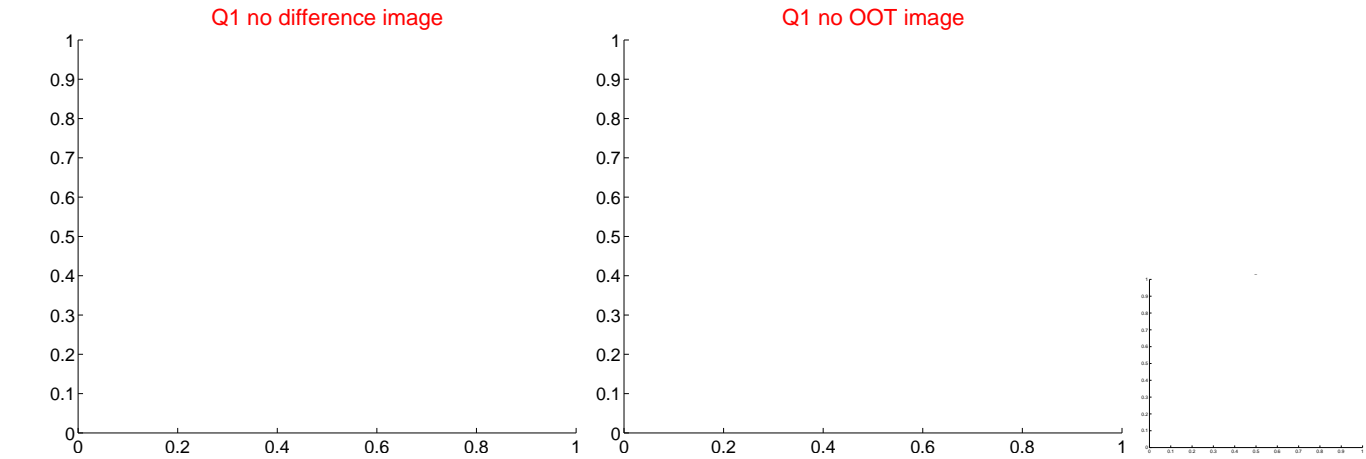
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.673 ± 0.239	6.99	1.351 ± 0.244	-0.987 ± 0.231
PRF-fit source offset from KIC position	1.581 ± 0.240	6.58	1.334 ± 0.244	-0.849 ± 0.231
photometric centroid source offset	2.75 ± 1.76	1.56	2.73 ± 1.76	0.37 ± 2.10



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 are from the UKIRT catalog.

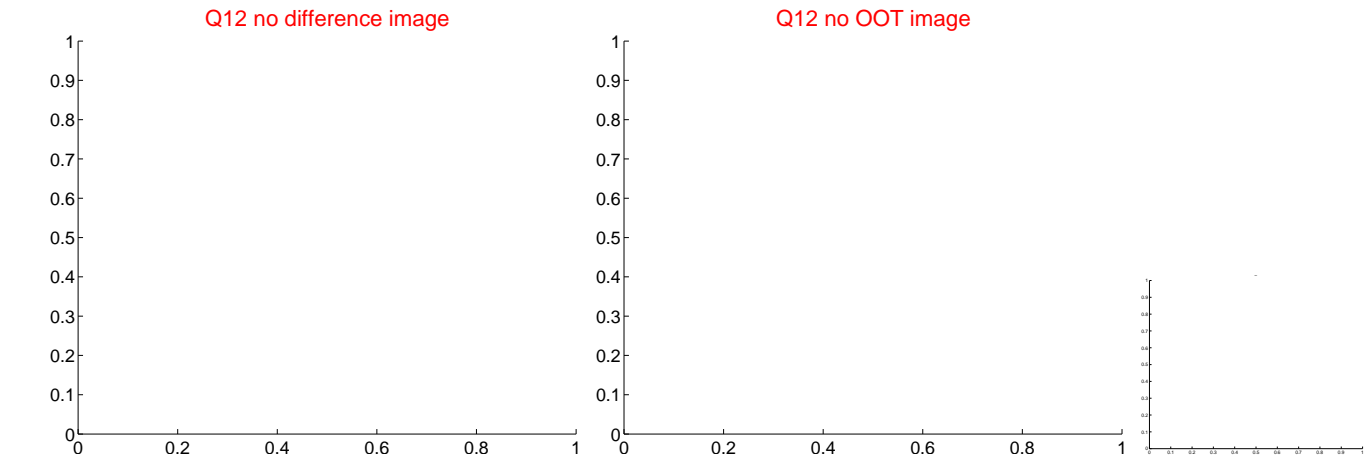
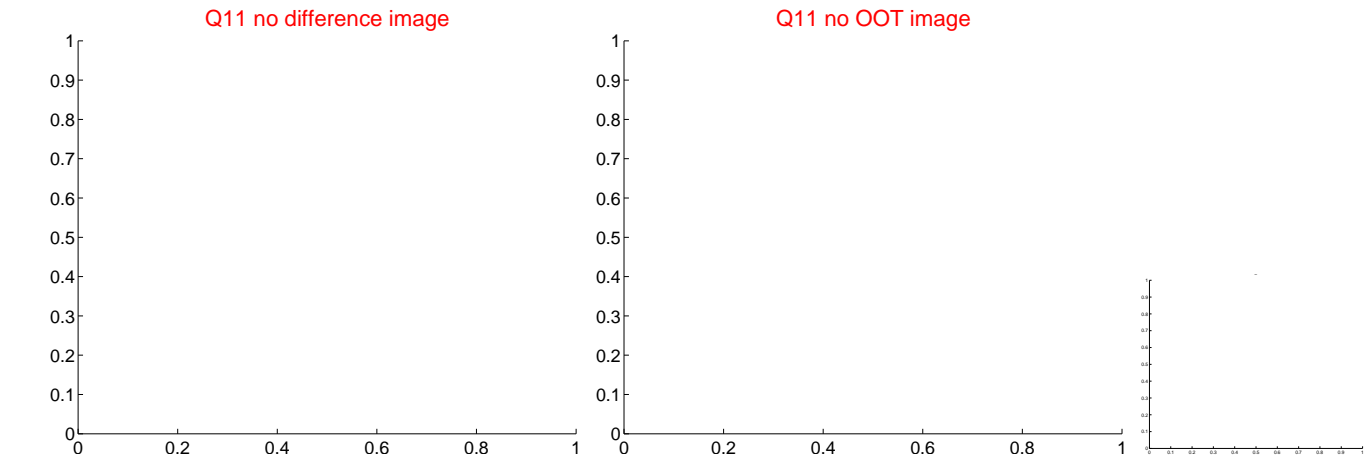
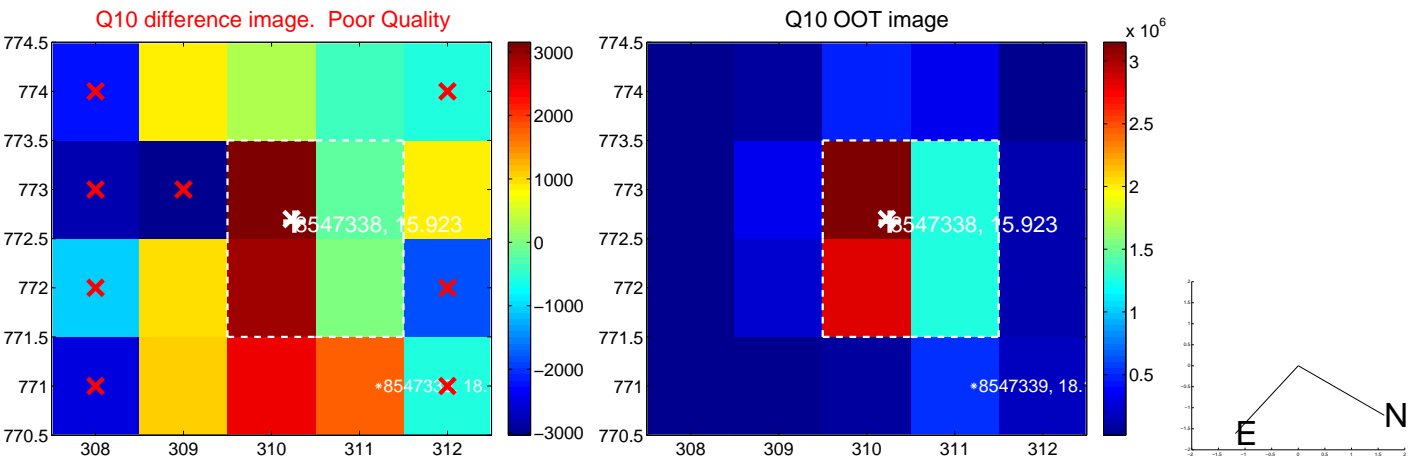
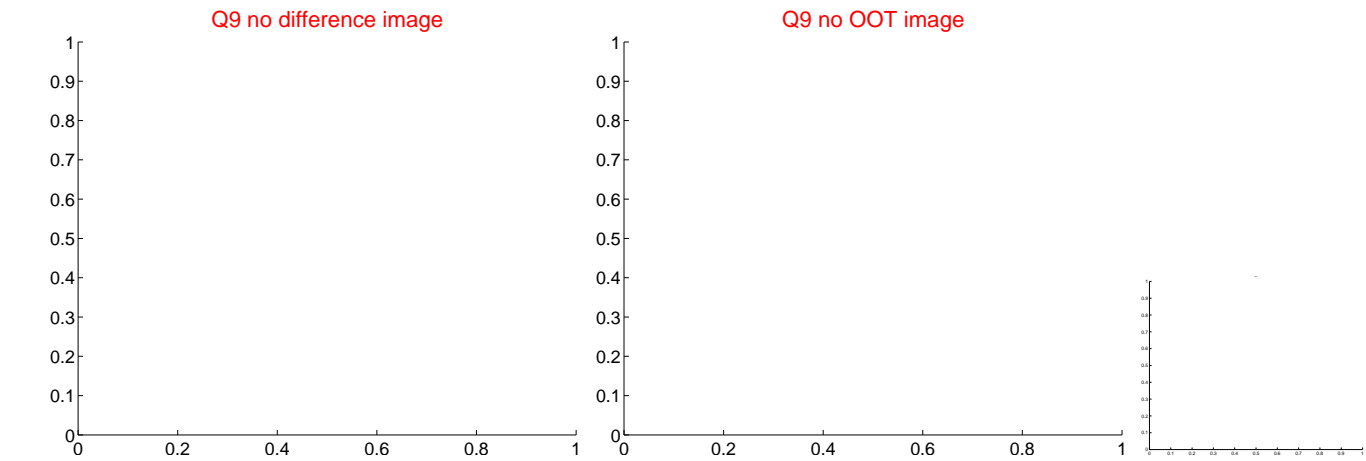
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



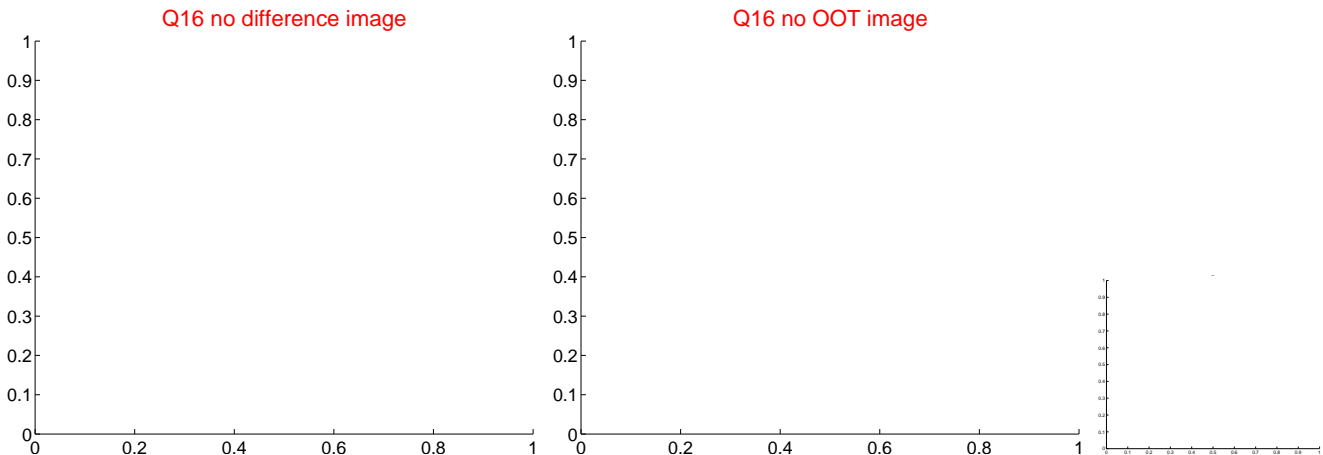
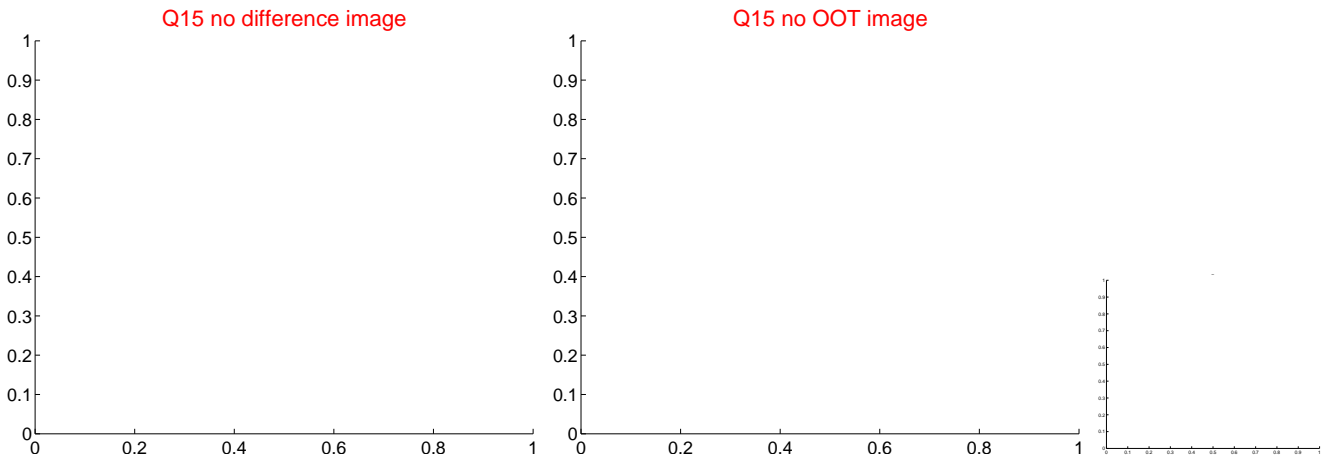
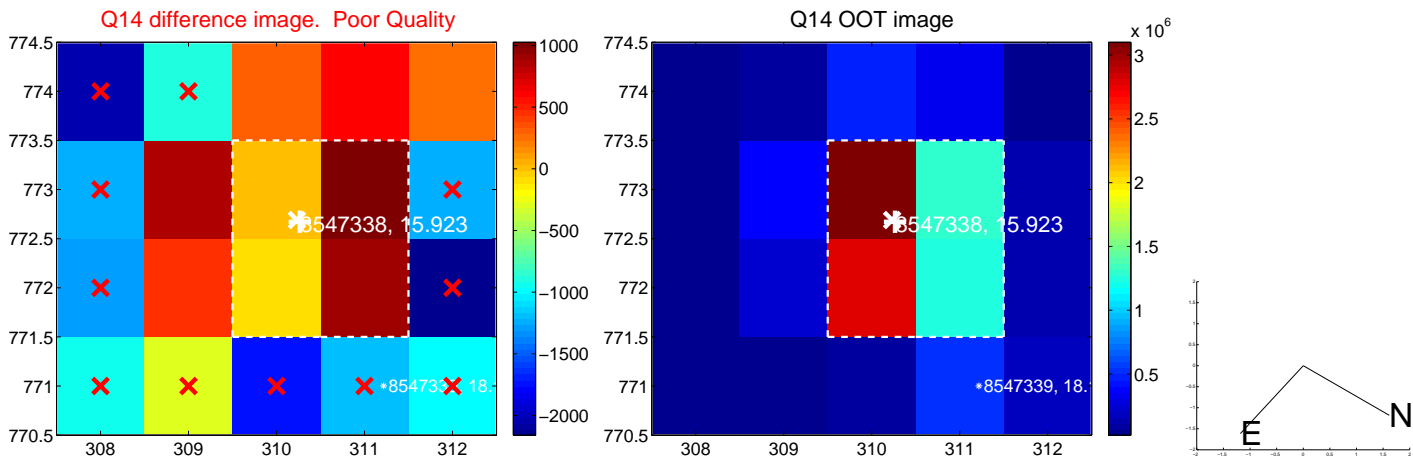
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



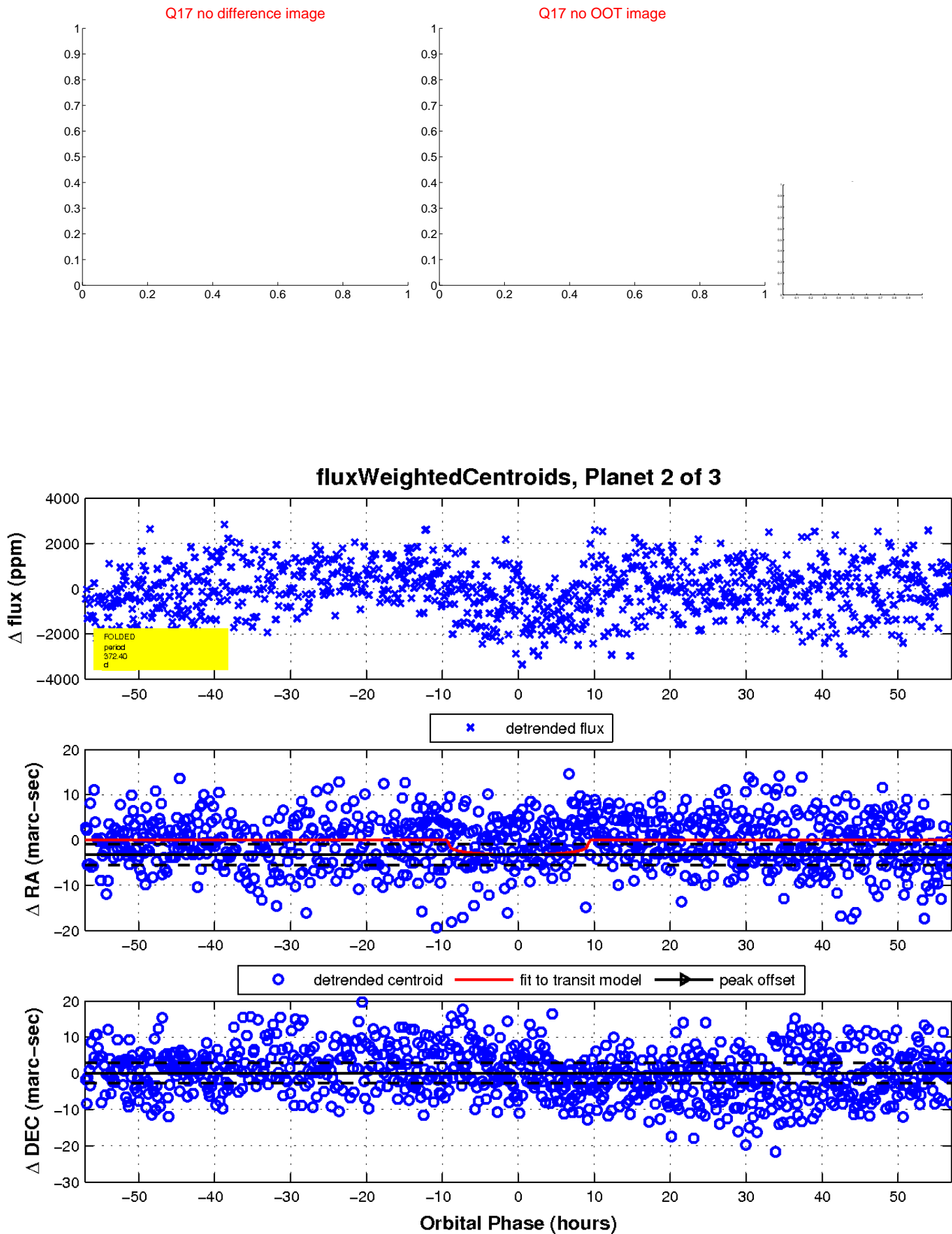
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

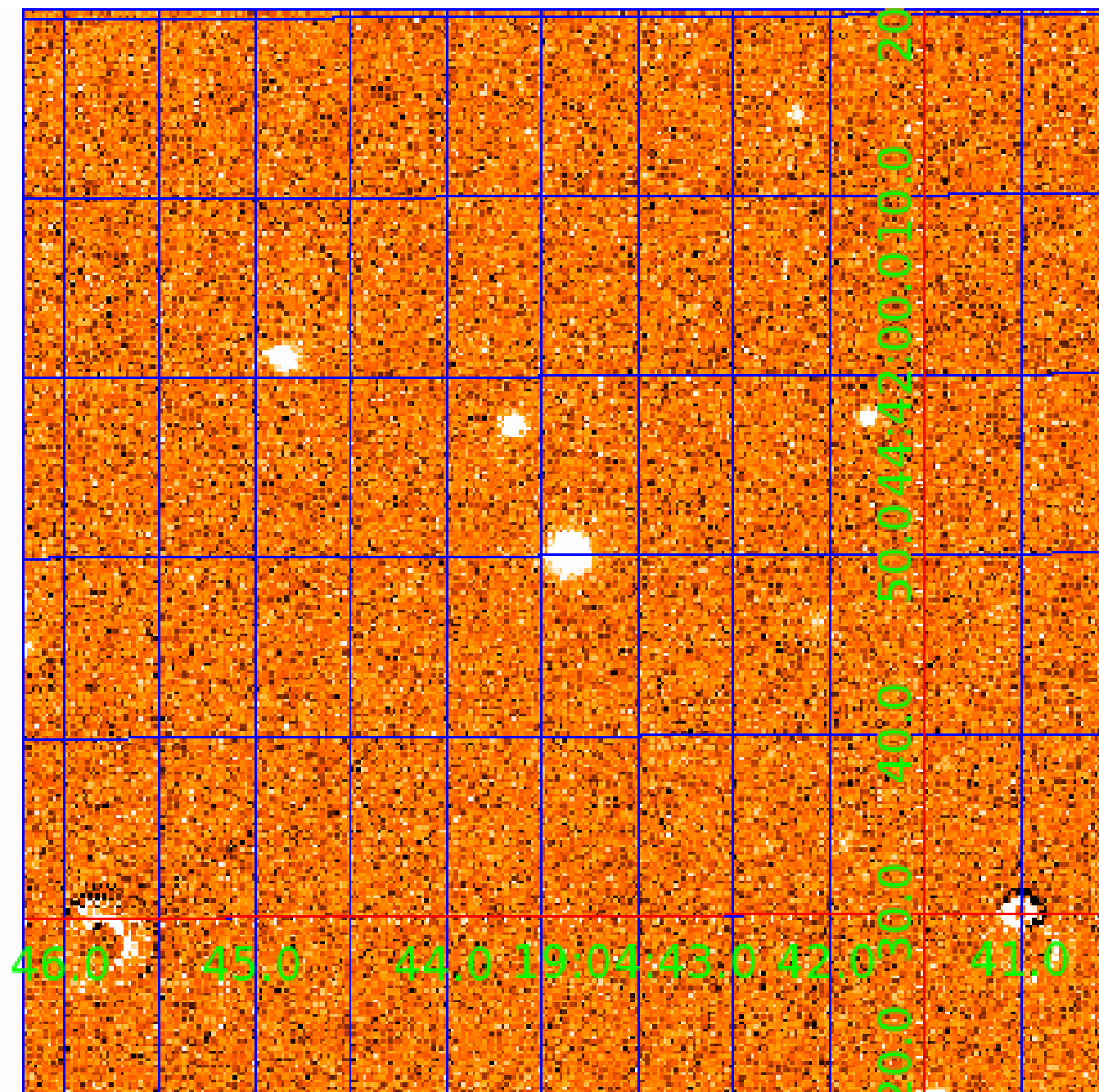


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008547338

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})
008547338-02	OBS	No	372.397224	227.531458	1262.5	19.058	7.4	8.5	0.70	5477	2.50	0.46
008547338-03	OBS	No	357.590022	235.209454	1214.7	16.660	7.3	8.0	0.70	5477	2.76	0.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008547338-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS
008547338-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—INCONSISTENT_TRANS—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.

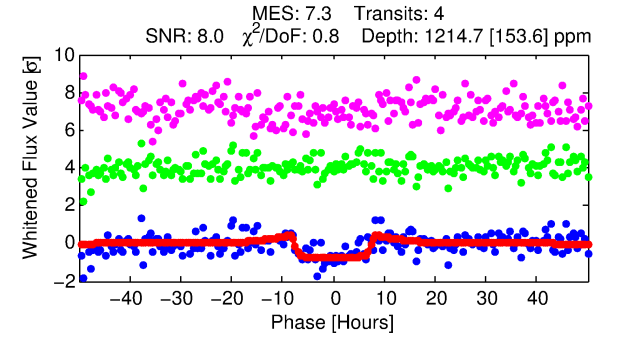
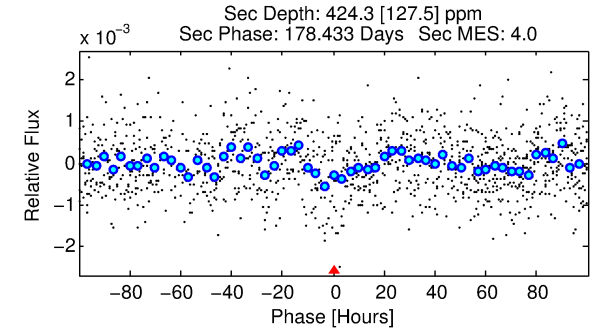
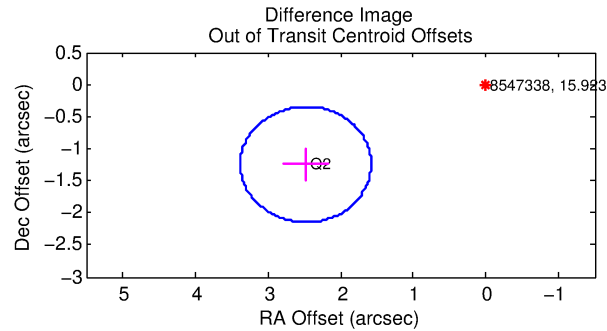
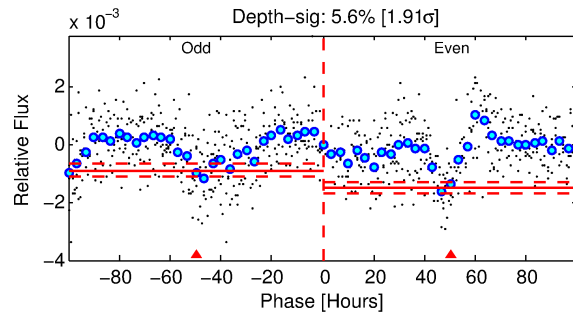
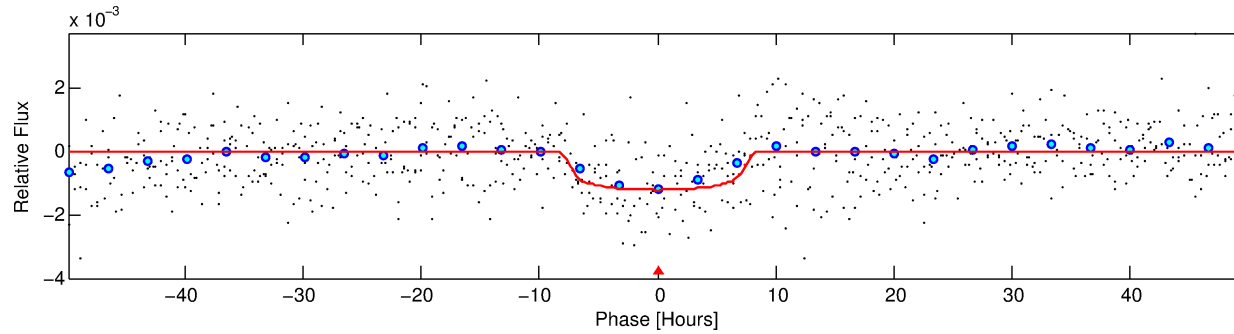
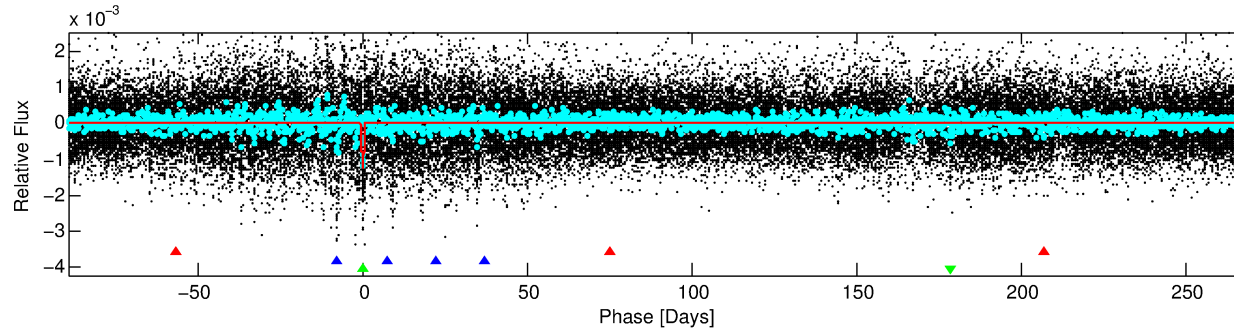
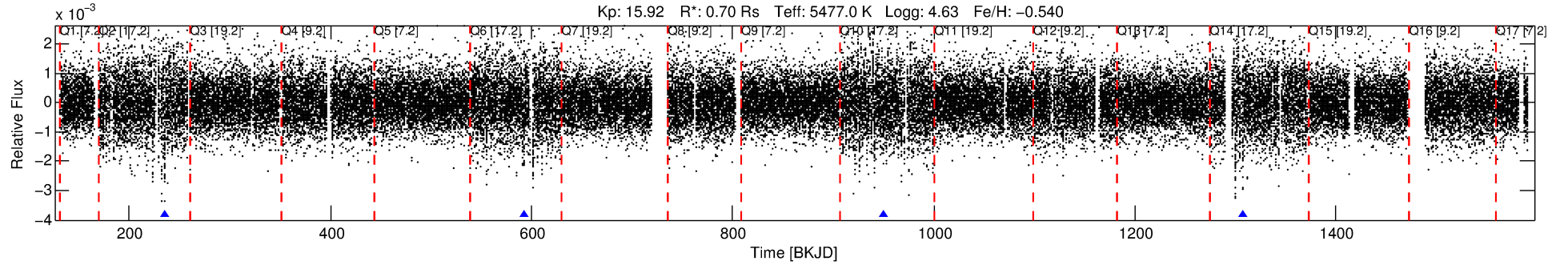
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008547338-03

No Significant Match Found

DV One-Page Summary

KIC: 8547338 Candidate: 3 of 3 Period: 357.590 d



DV Fit Results:

Period = 357.59002 [0.01172] d
Epoch = 235.2095 [0.0218] BKJD
Rp/R* = 0.0359 [0.0045]
a/R* = 102.49 [45.09]
b = 0.83 [0.17]
Seff = 0.49 [0.11]
Teff = 213 [12] K
Rp = 2.76 [0.58] Re
a = 0.9043 [0.1253] AU
Ag = 25037.75 [10926.73] [2.29 σ]
Teffp = 4146 [422] K [9.31 σ]

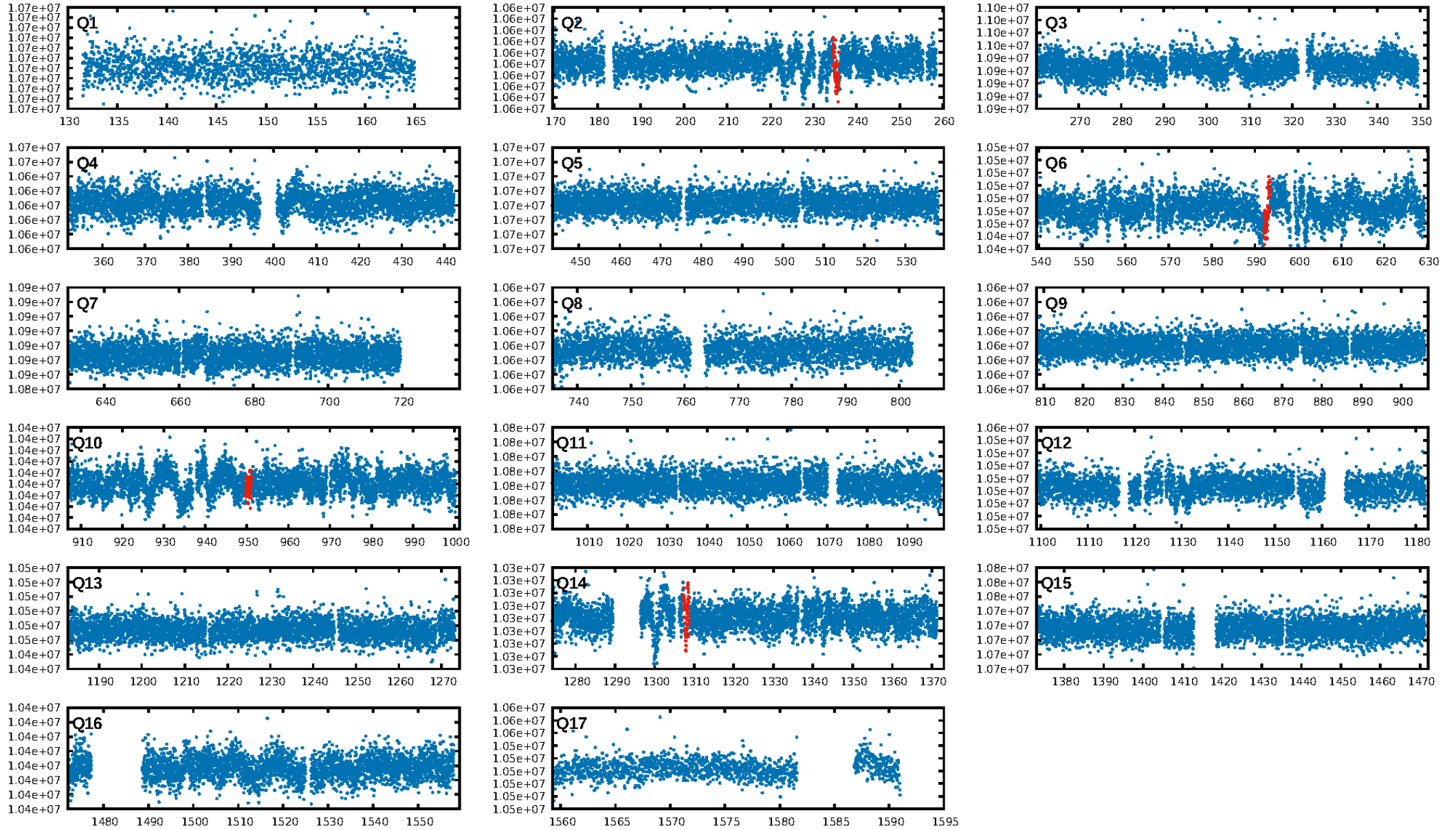
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [14.04 σ]
ModelChiSquare2-sig: 26.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.71e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.494
Centroid-sig: 58.1%
Centroid-so: 1.533 arcsec [0.82 σ]
OotOffset-rm: 2.775 arcsec [9.25 σ]
KicOffset-rm: 2.702 arcsec [8.95 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

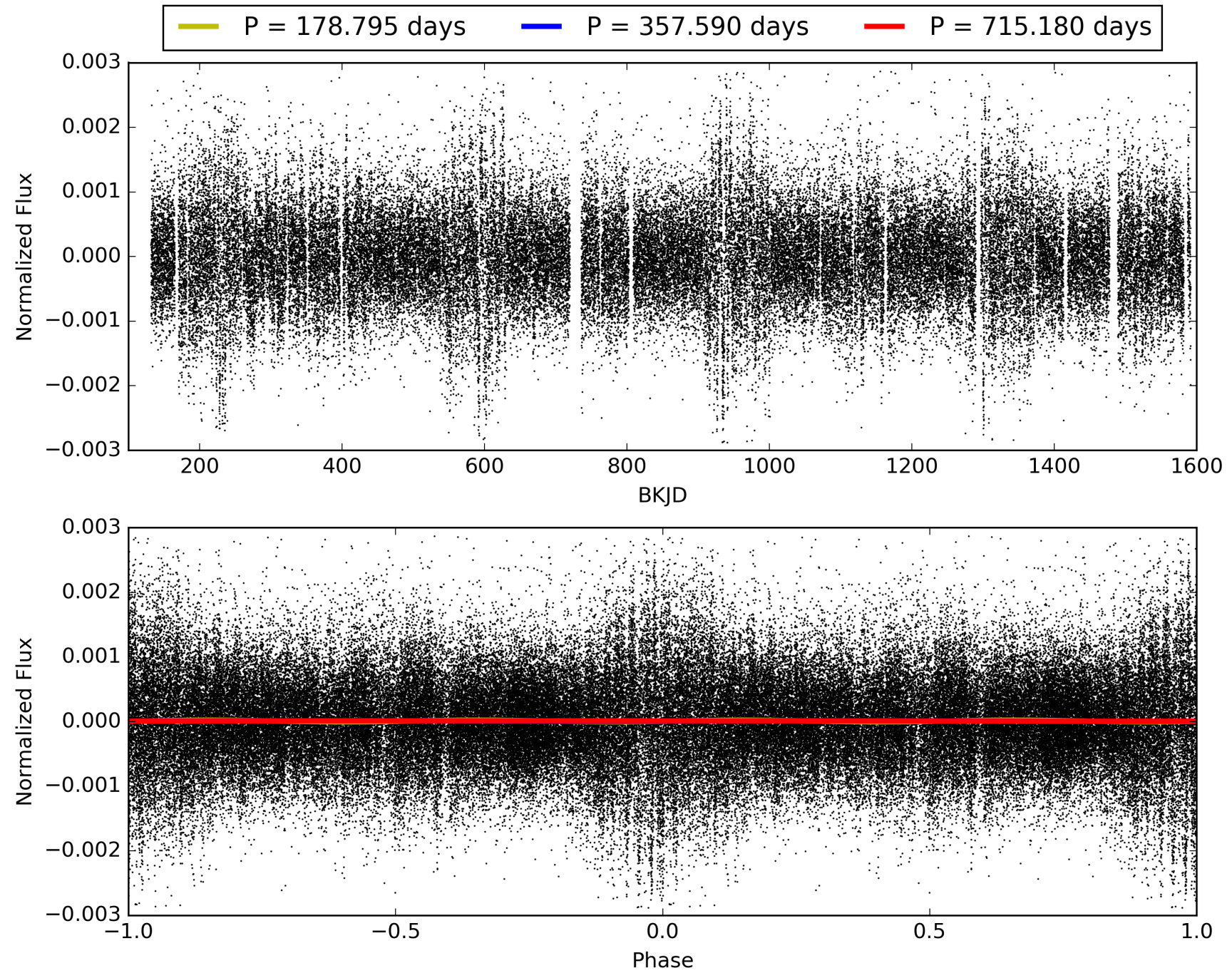
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:13:56 Z

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

TCE 008547338-03, PDC Light Curves

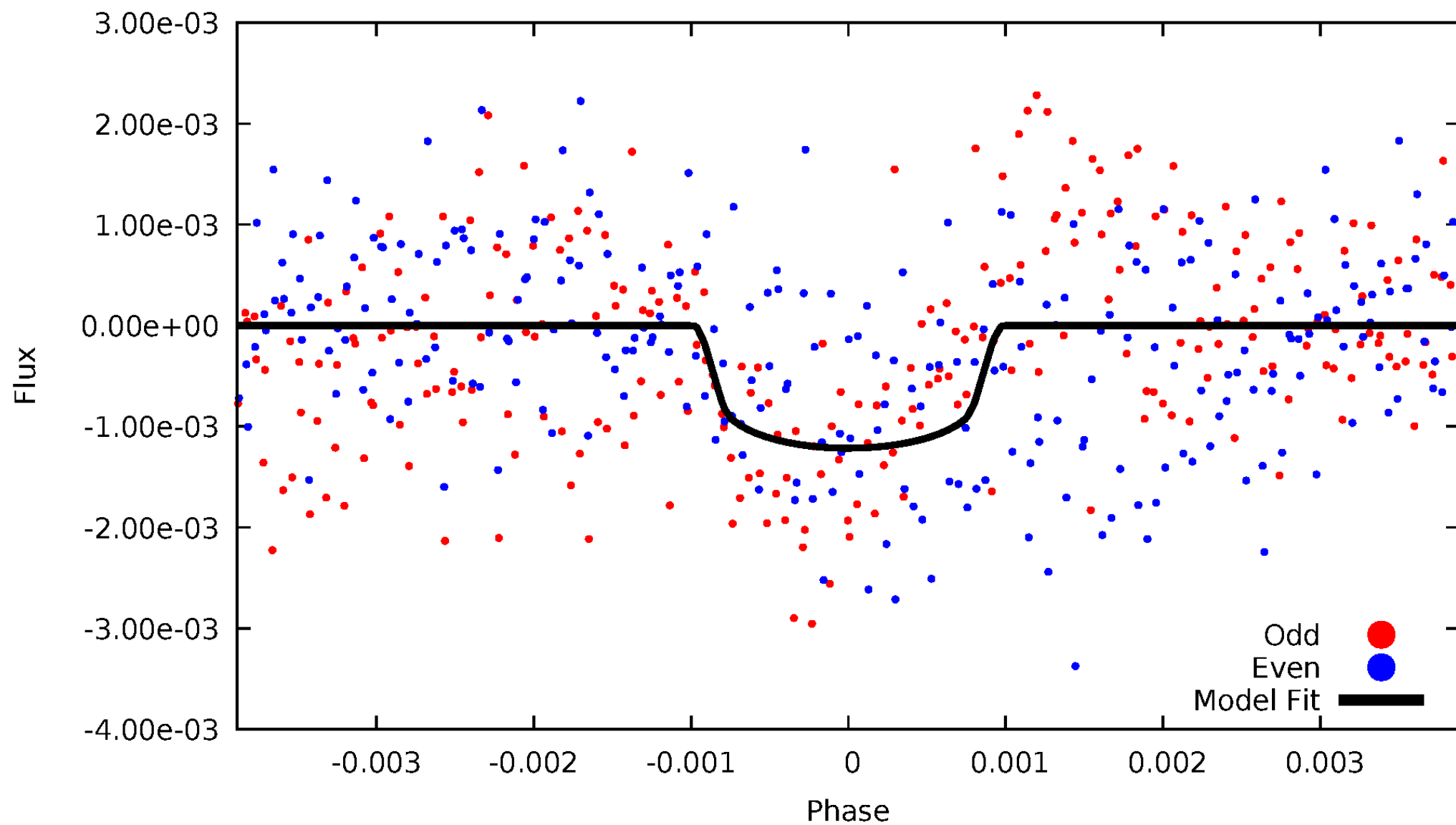


TCE 008547338-03



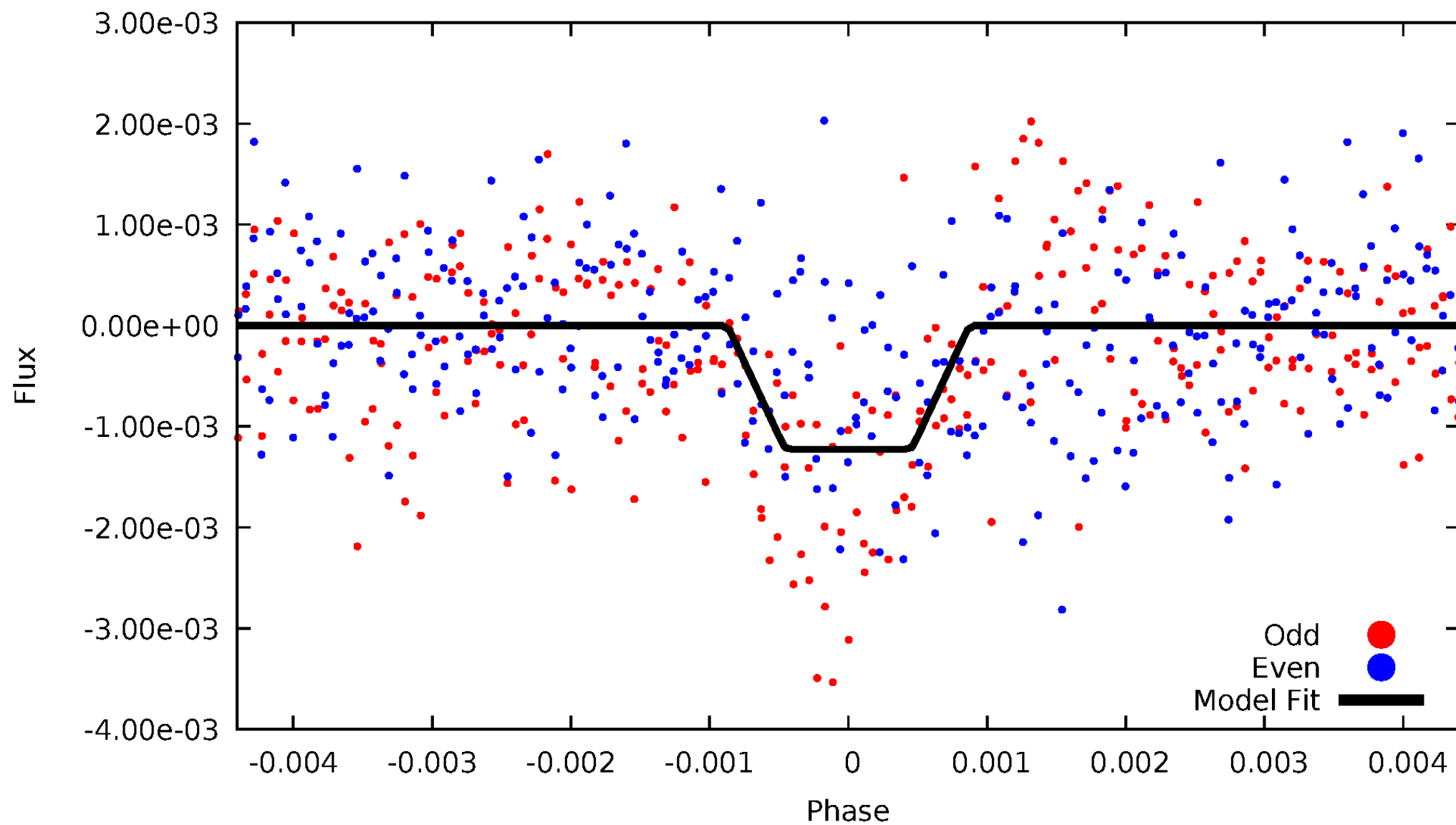
DV Odd/Even

TCE 008547338-03



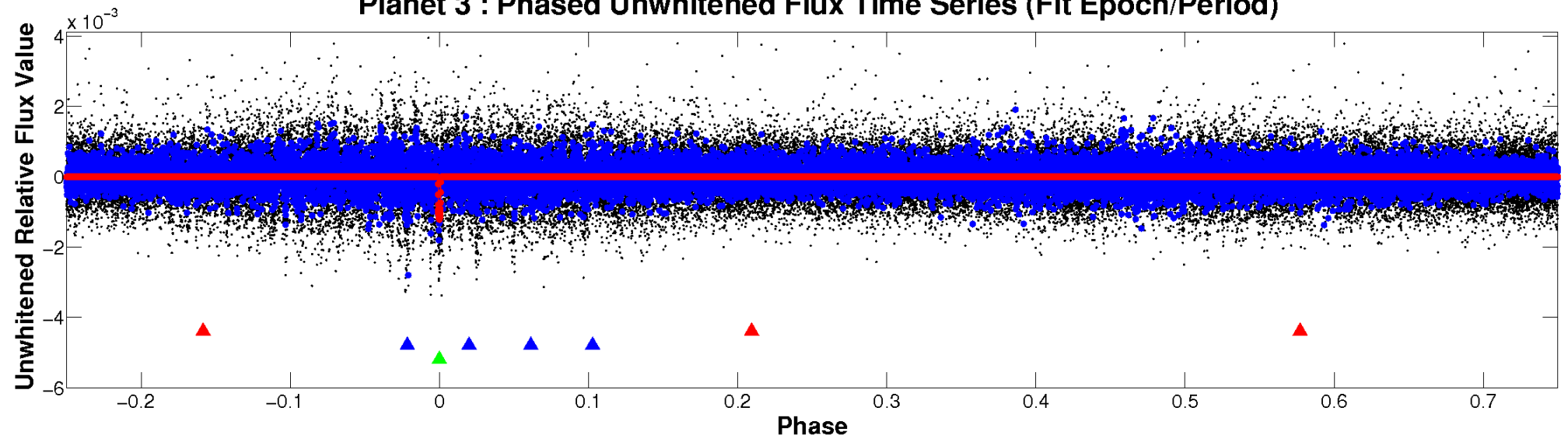
ALT Odd/Even

TCE 008547338-03

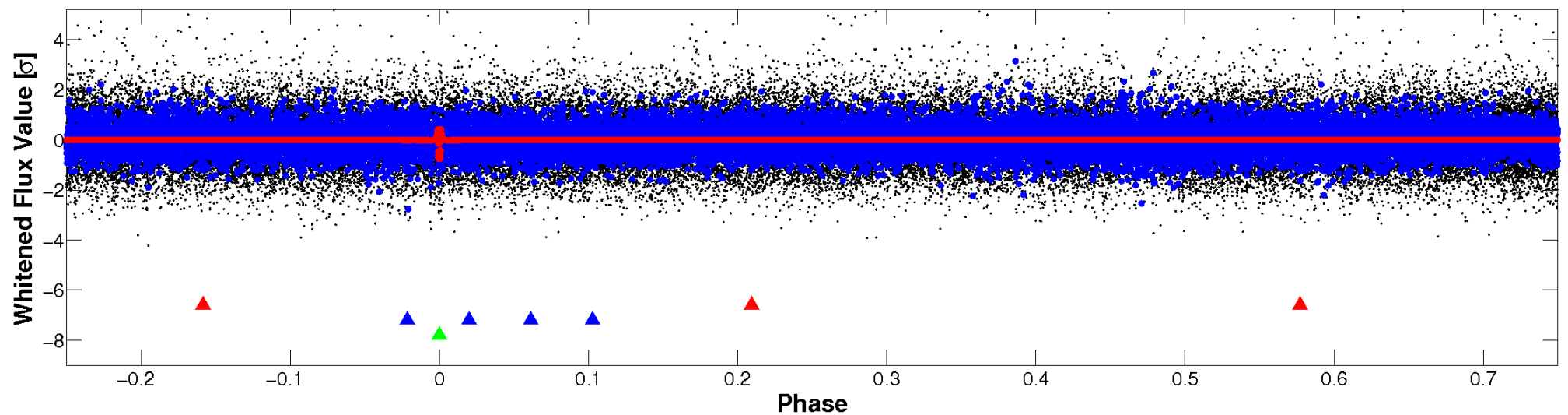


Non-Whitened Vs. Whitened Light Curve

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

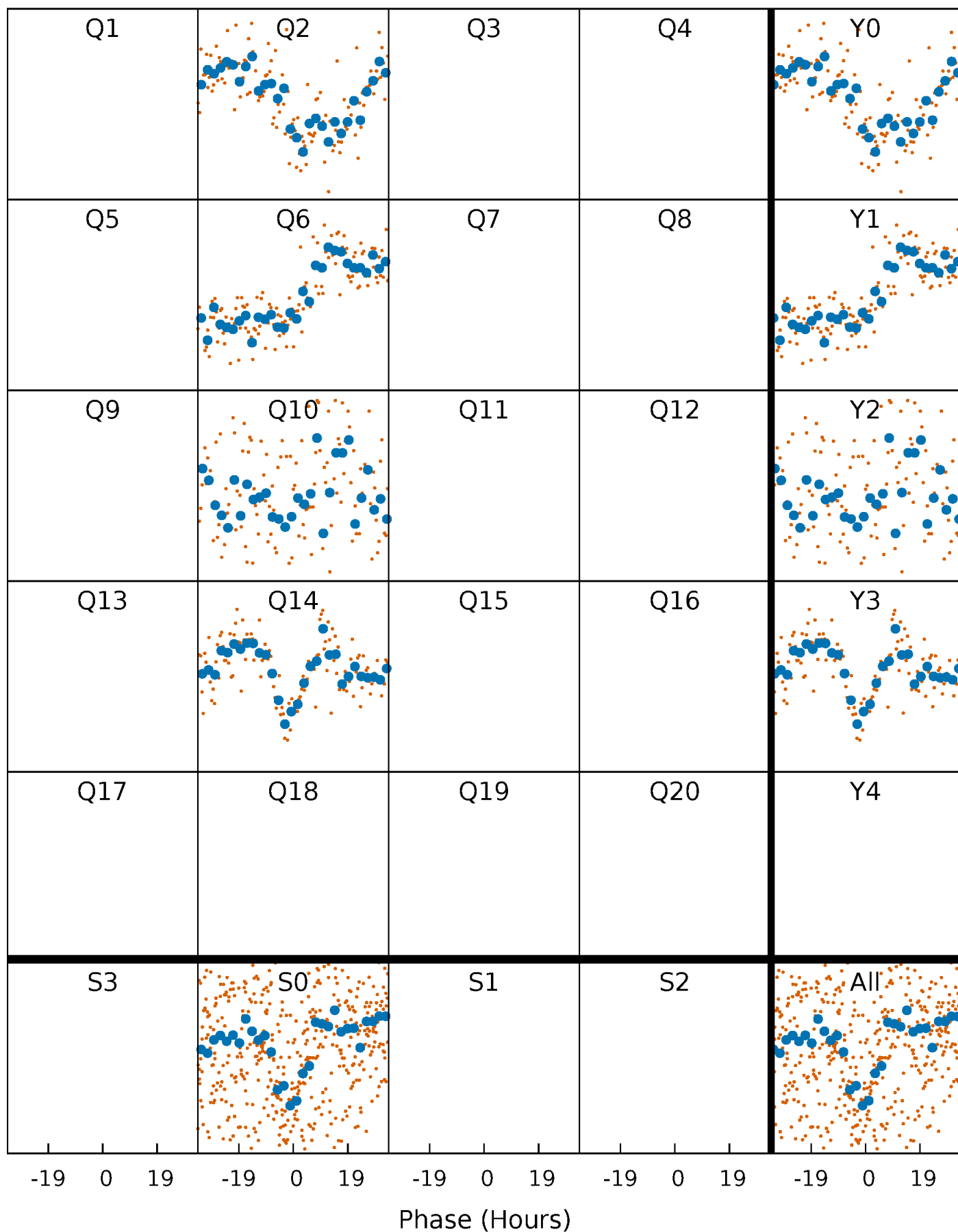


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



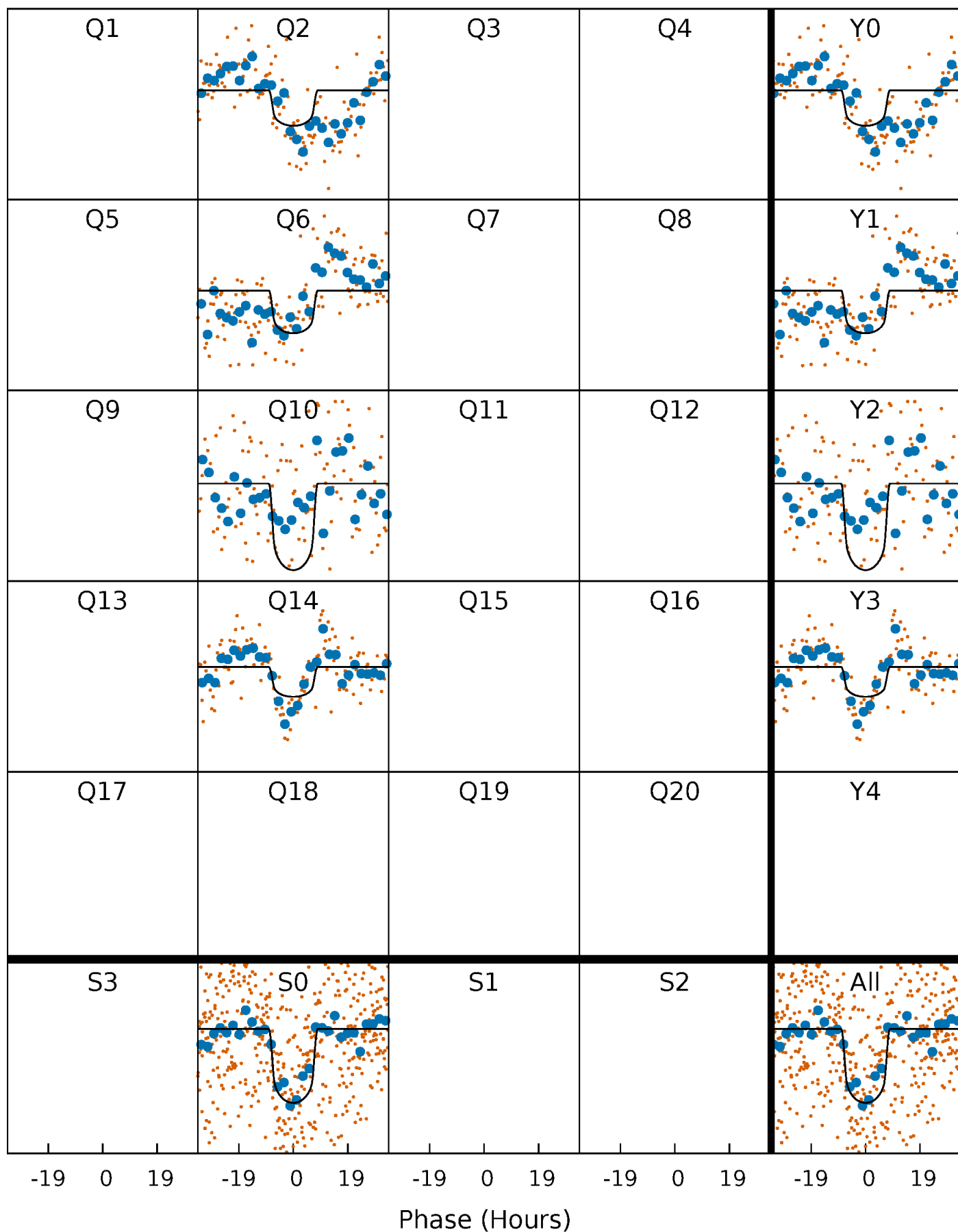
PDC Quarter-Phased Transit Curves

TCE 008547338-03 $P=357.590022$ Days $T_0=235.209454$ (BKJD)



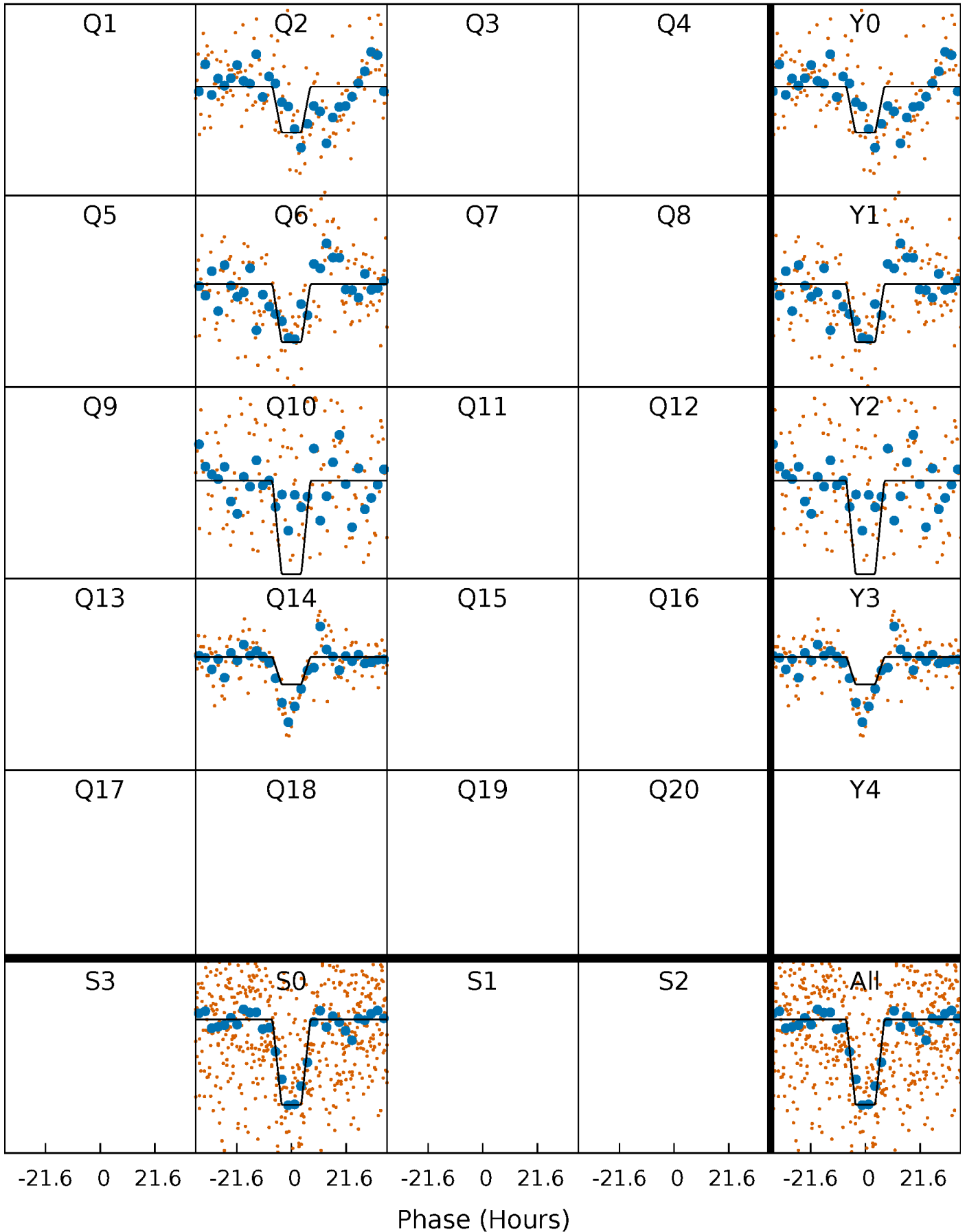
DV Quarter-Phased Transit Curves

TCE 008547338-03 P=357.590022 Days $T_0=235.209454$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

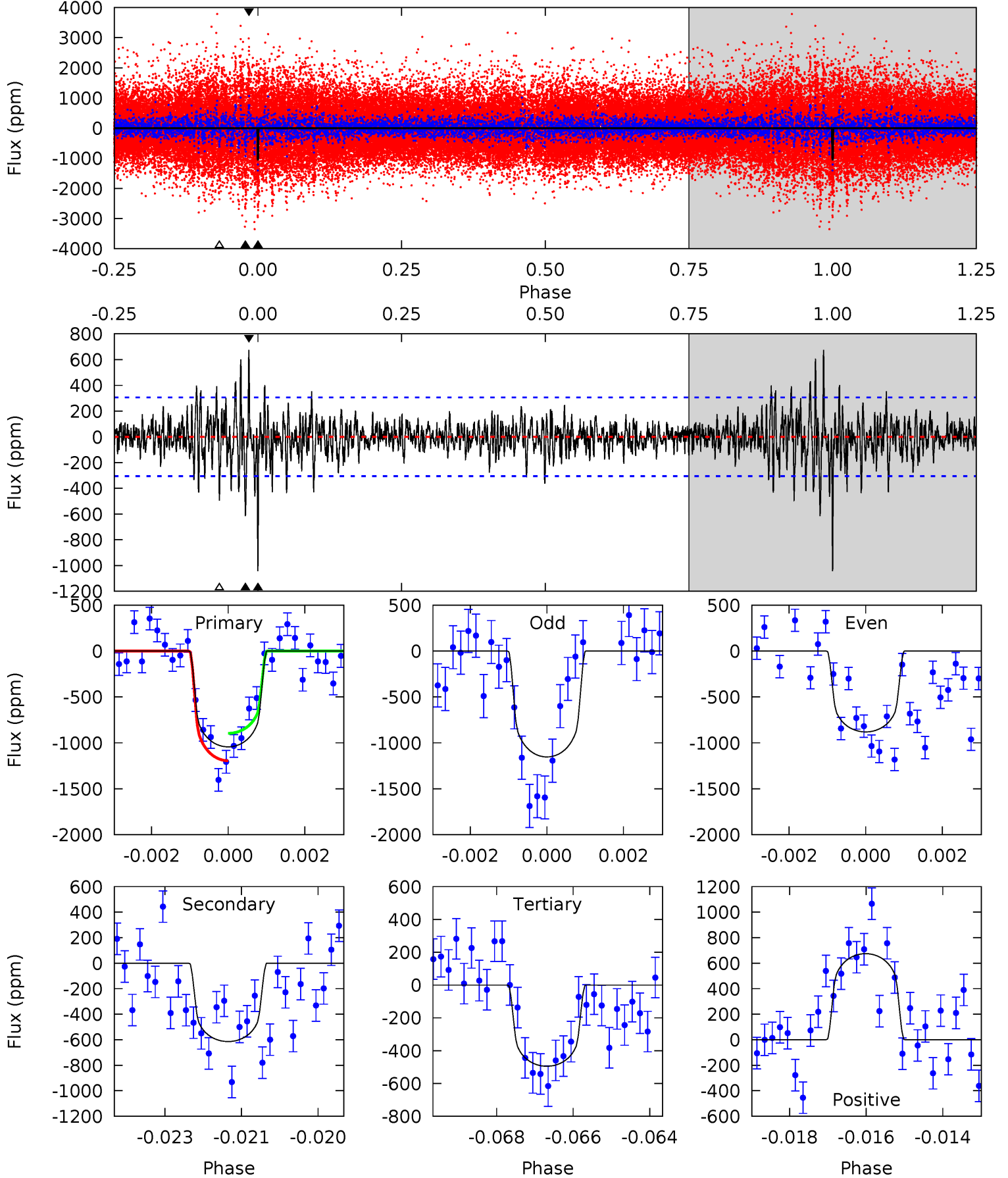
TCE 008547338-03 P=357.587300 Days $T_0=235.174432$ (BKJD)



DV Model-Shift Uniqueness Test

008547338-03, P = 357.590022 Days, E = 235.209454 Days

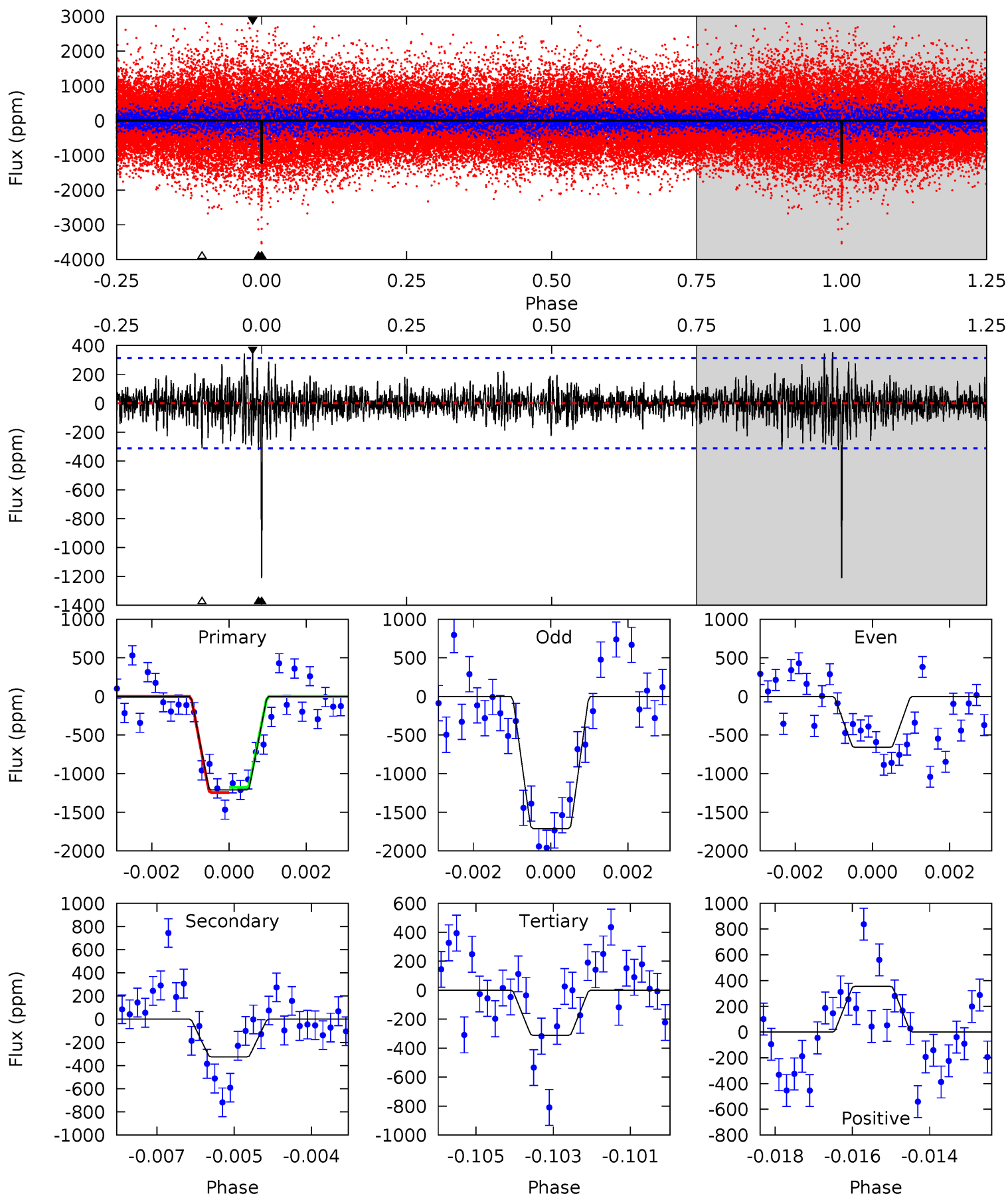
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	10.7	8.62	11.7	5.33	3.10	1.94	9.55	6.43	2.08	-1.05	2.39	0.95	0.39	2.60



Alt Model-Shift Uniqueness Test

008547338-03, P = 357.587300 Days, E = 235.174432 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	5.58	5.33	6.07	5.35	3.13	1.25	15.4	14.7	0.25	-0.50	9.07	1.19	0.23	0.58



Stellar Parameters For KIC 008547338

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5477^{+163}_{-163}	$4.630^{+0.035}_{-0.105}$	$-0.540^{+0.300}_{-0.300}$	$0.704^{+0.119}_{-0.055}$	$0.782^{+0.074}_{-0.081}$	$3.153^{+0.469}_{-1.074}$
	+3%/-3%	+1%/-2%	+56%/-56%	+17%/-8%	+9%/-10%	+15%/-34%
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 008547338-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-614 ± 57	$2.81^{+0.43}_{-0.37}$	301^{+15}_{-11}	4681^{+307}_{-238}	34966^{+10819}_{-8892}
Alt.	-325 ± 58	$2.75^{+0.39}_{-0.41}$	301^{+15}_{-11}	4198^{+279}_{-265}	19487^{+7405}_{-5844}

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

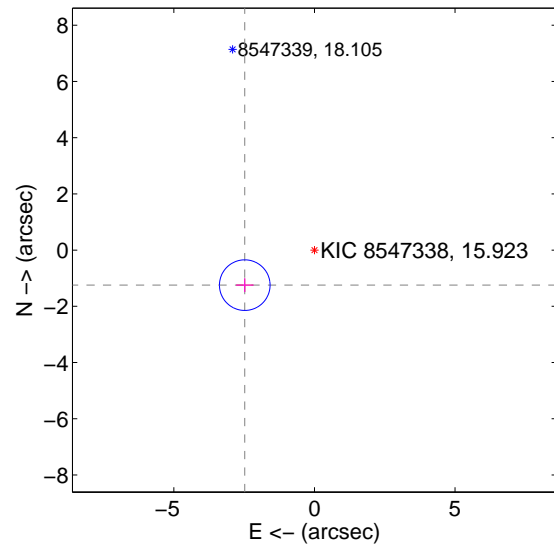
Supplemental centroid analysis for 008547338-03. Kepler magnitude: 15.92. Transit SNR 7.96

There are 0 quarters with good PRF difference image offsets

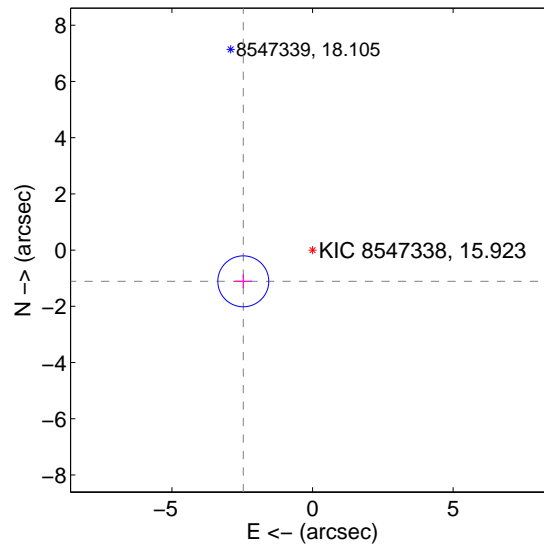
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.775 \pm 0.300	9.25	2.479 \pm 0.312	-1.247 \pm 0.248
PRF-fit source offset from KIC position	2.702 \pm 0.302	8.95	2.463 \pm 0.312	-1.111 \pm 0.248
photometric centroid source offset	1.53 \pm 1.88	0.82	-1.52 \pm 1.87	0.21 \pm 2.26

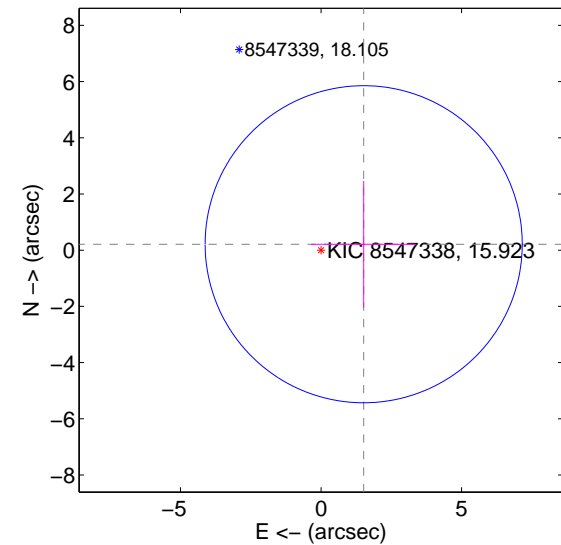
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

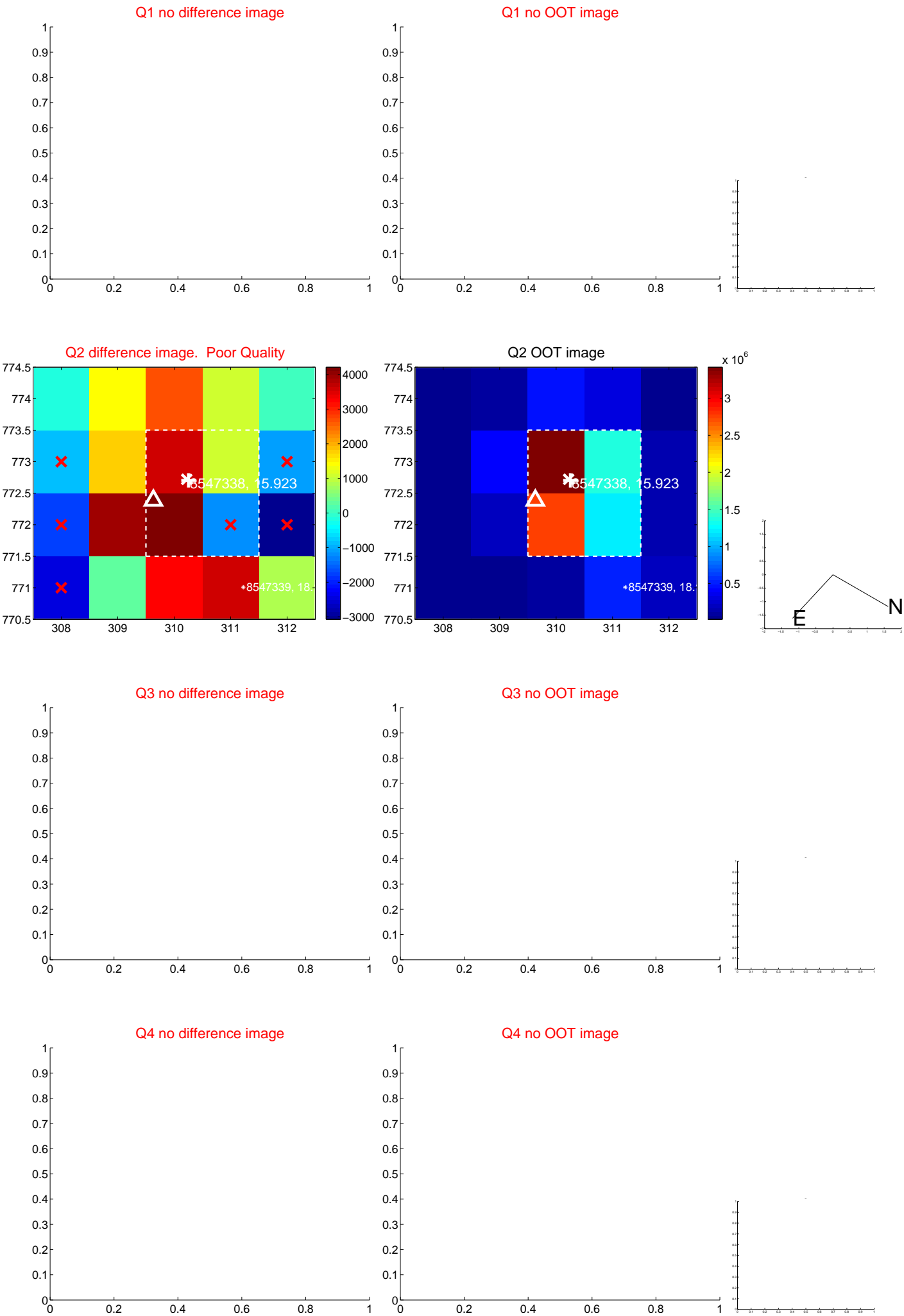


offset from photometric centroids

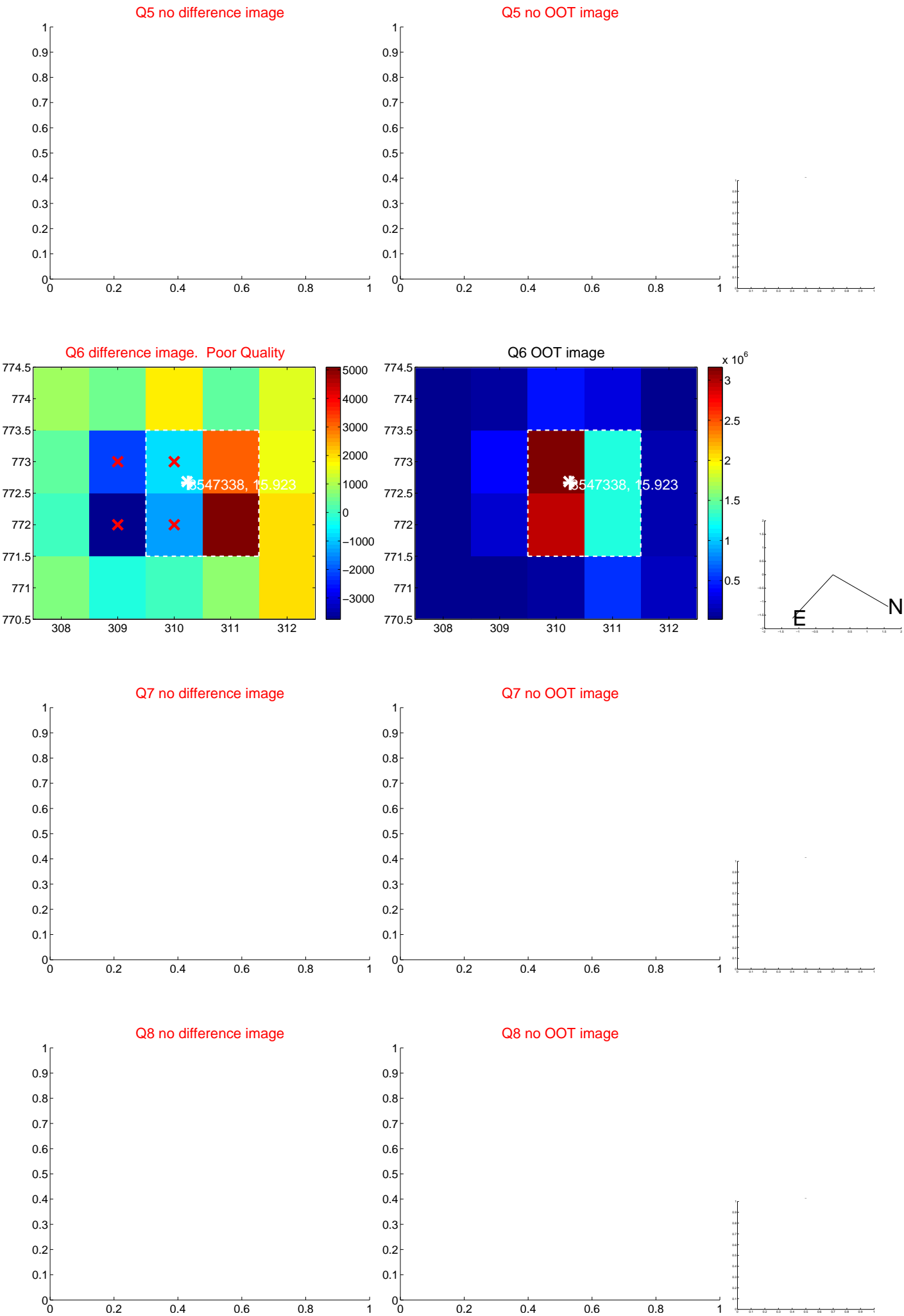


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

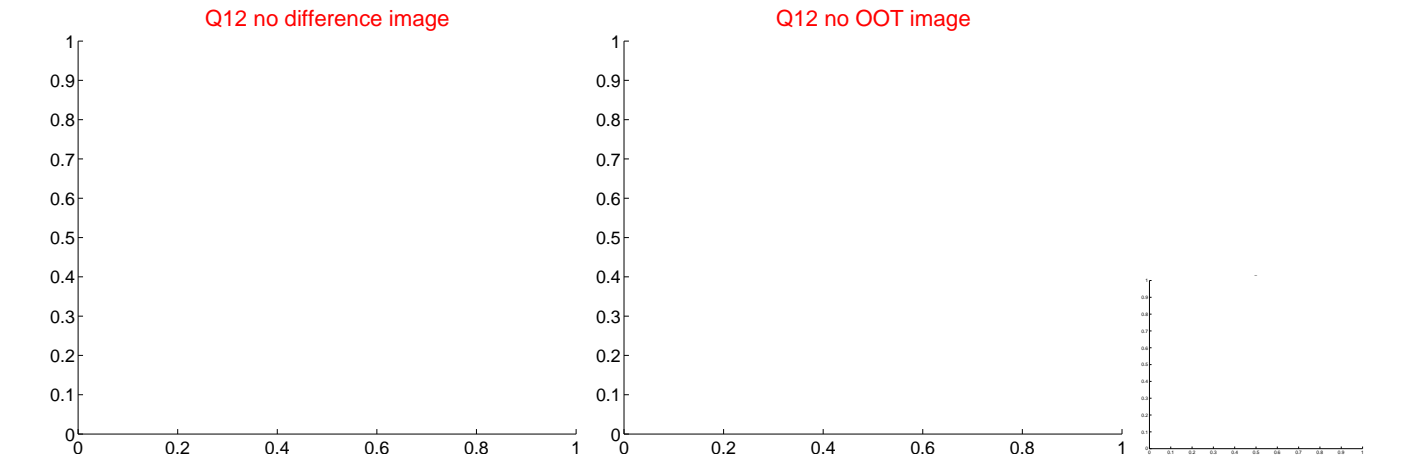
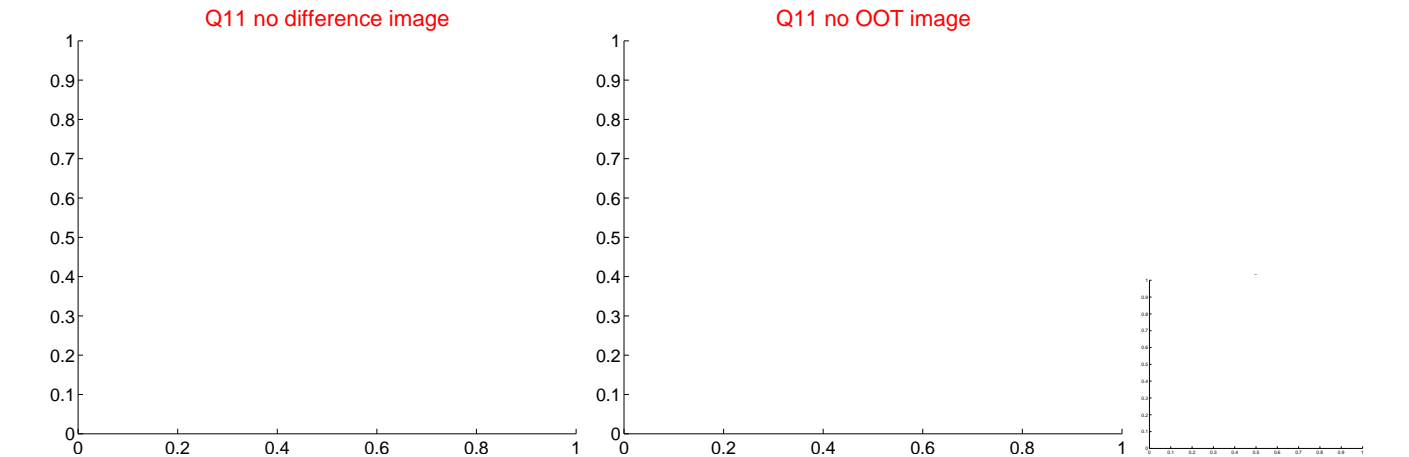
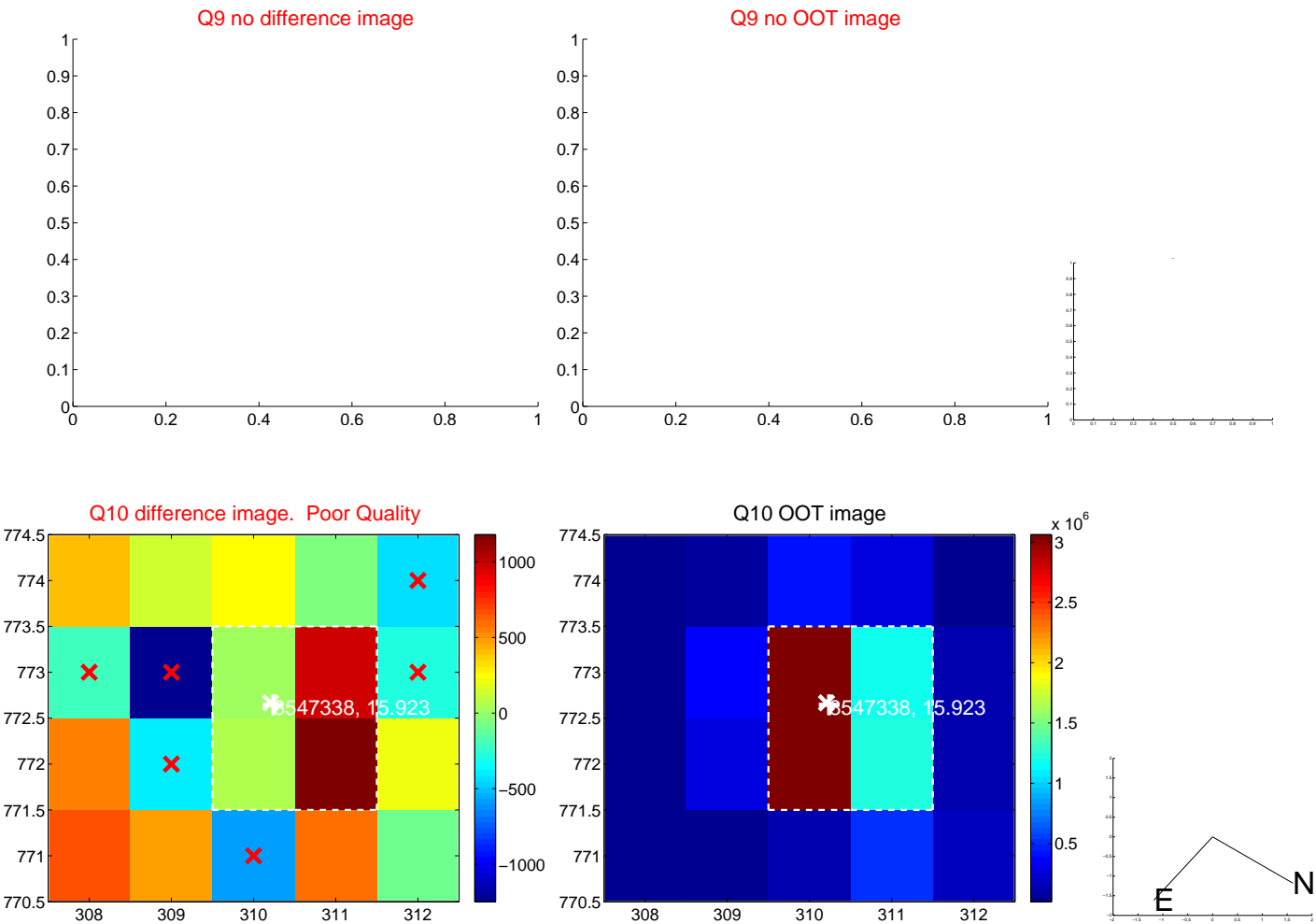
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



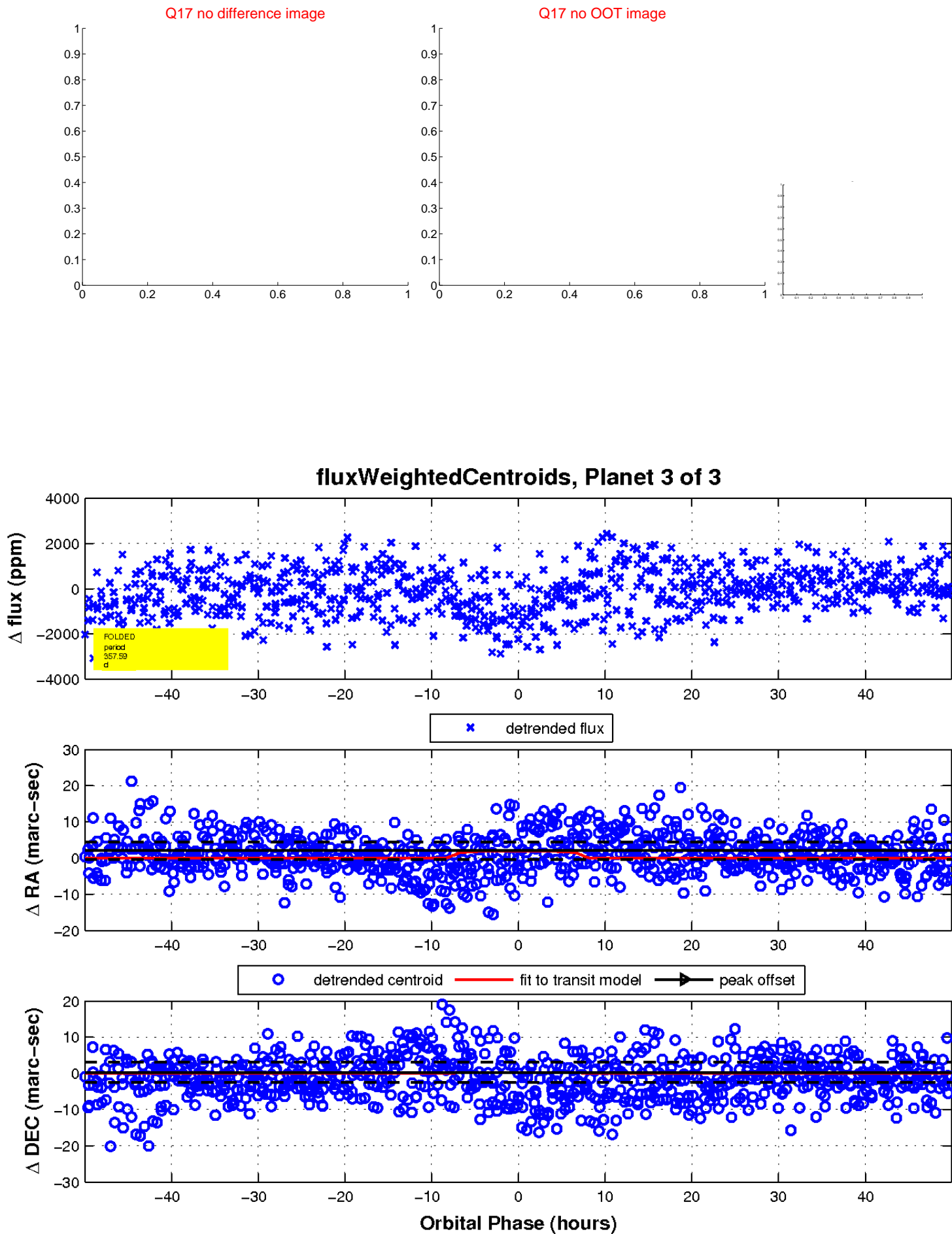
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

