

KIC 008240396

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})
008240396-01	OBS	No	382.268106	208.075666	1048.5	13.625	10.0	8.1	1.09	6323	4.24	1.47
008240396-02	OBS	No	363.699994	243.933675	903.9	8.940	7.3	7.4	1.09	6323	3.43	1.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008240396-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008240396-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

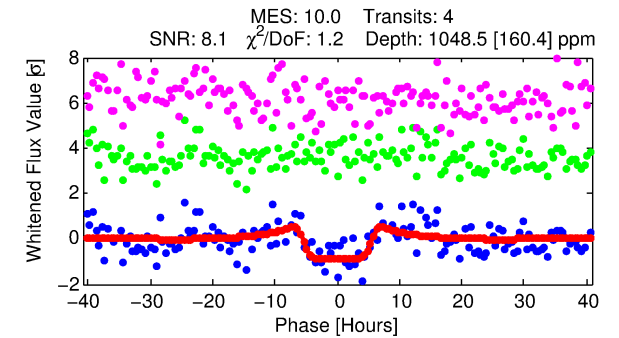
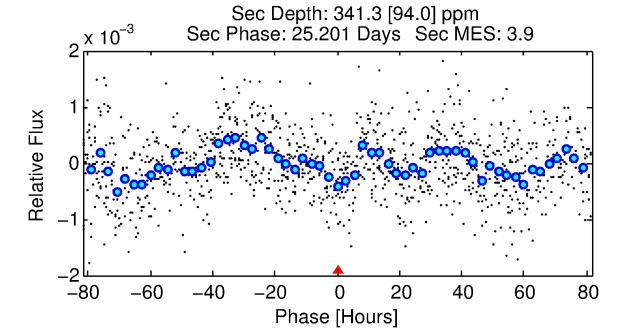
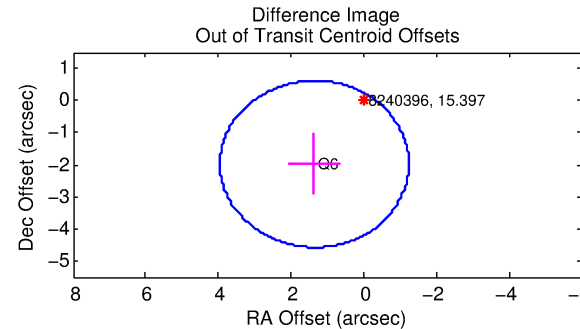
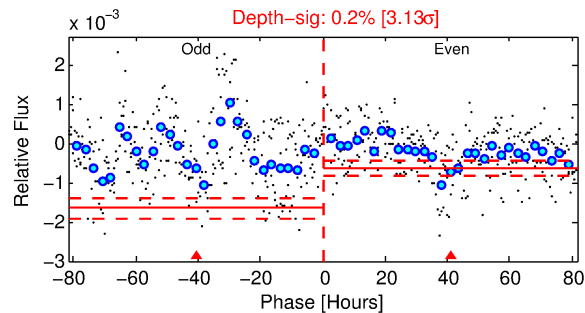
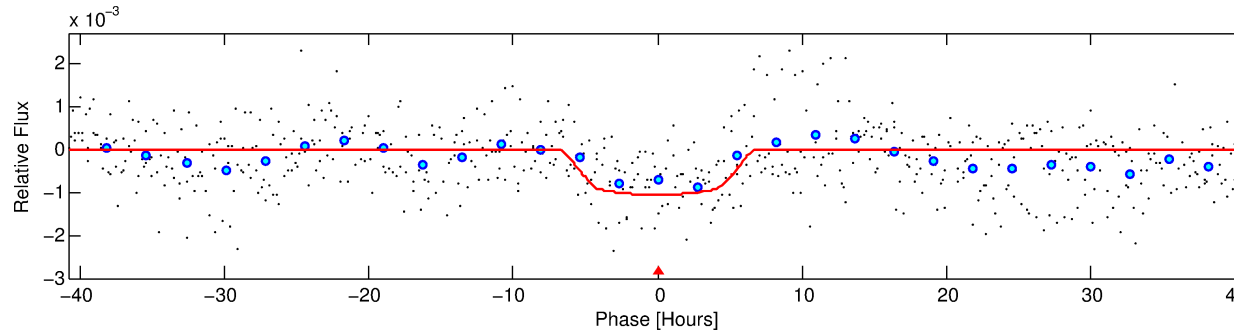
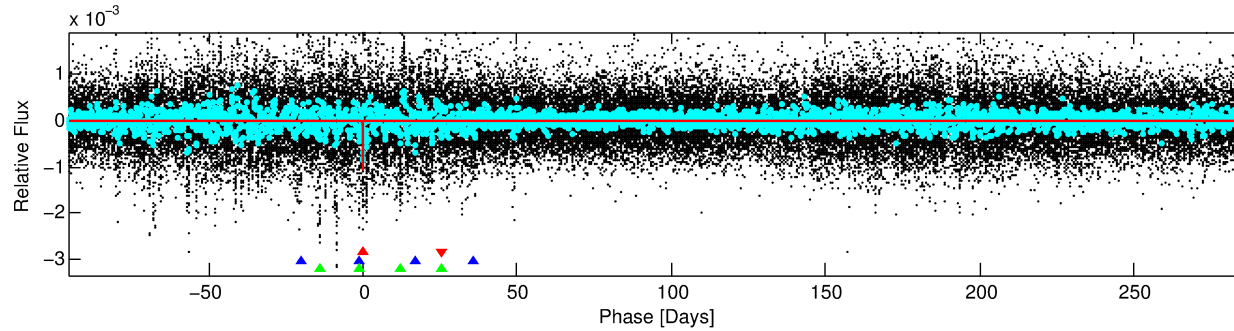
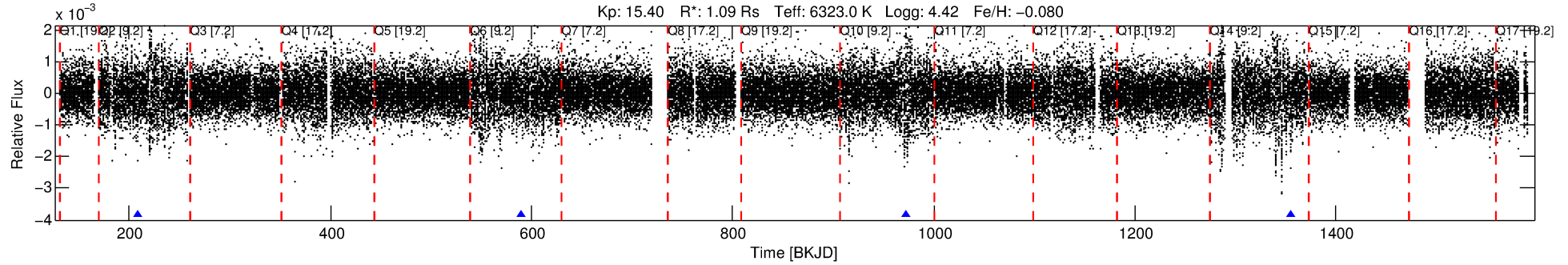
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008240396-01

No Significant Match Found

DV One-Page Summary

KIC: 8240396 Candidate: 1 of 3 Period: 382.268 d



DV Fit Results:

Period = 382.26811 [0.01224] d
Epoch = 208.0757 [0.0225] BKJD
Rp/R* = 0.0355 [0.0035]
a/R* = 101.72 [26.38]
b = 0.92 [0.04]
Seff = 1.47 [0.56]
Teq = 281 [27] K
Rp = 4.23 [1.34] Re
a = 1.0773 [0.2663] AU
Ag = 12150.93 [5931.71] [2.05 σ]
Teffp = 4561 [417] K [10.25 σ]

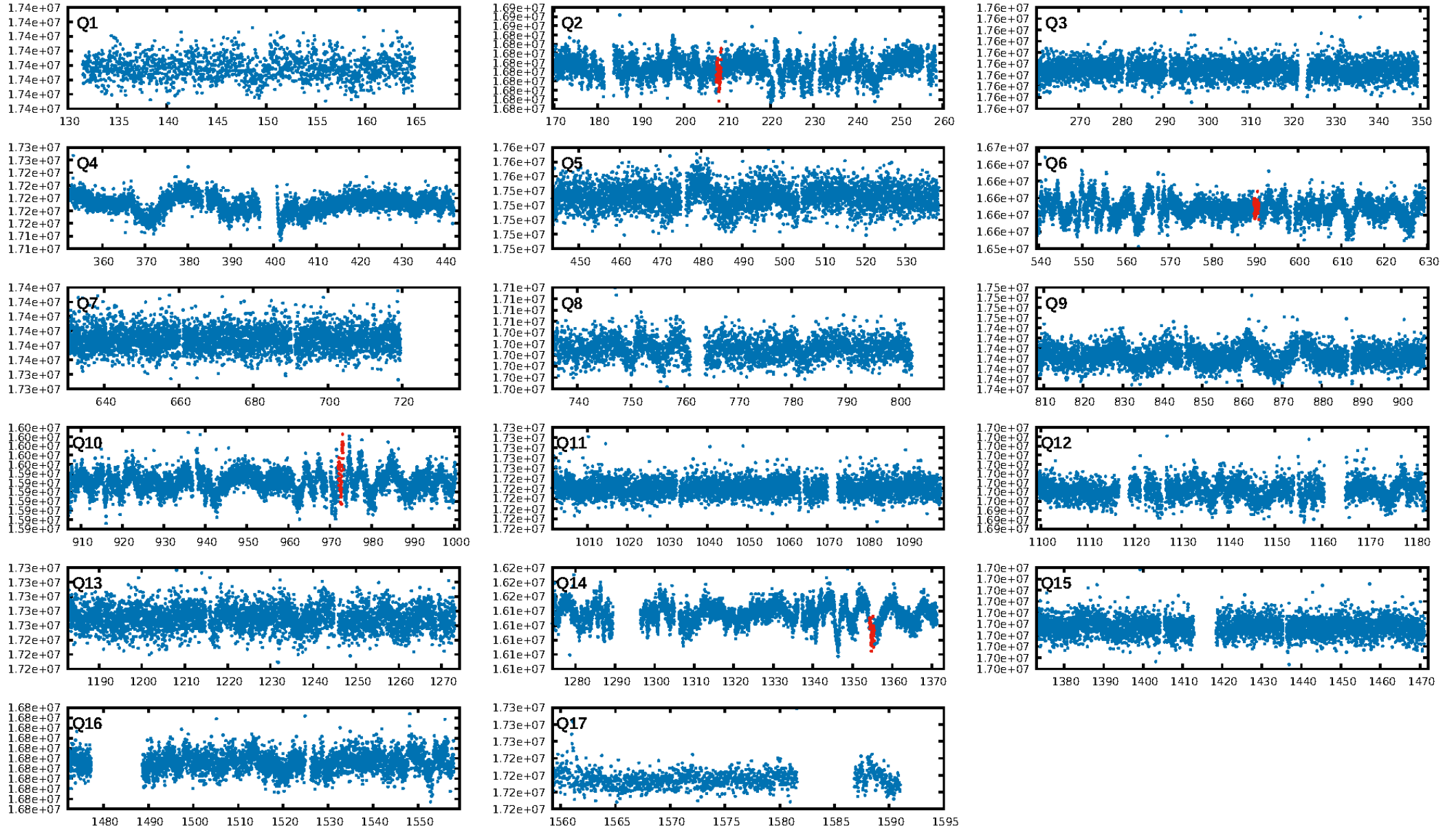
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.49 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.7%
ModelChiSquareGof-sig: 94.1%
Bootstrap-pfa: 2.68e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.517
Centroid-sig: 36.4%
Centroid-so: 2.682 arcsec [0.85 σ]
OotOffset-rm: 2.404 arcsec [2.78 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-rm: 2.616 arcsec [3.05 σ]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.75 [3/4]

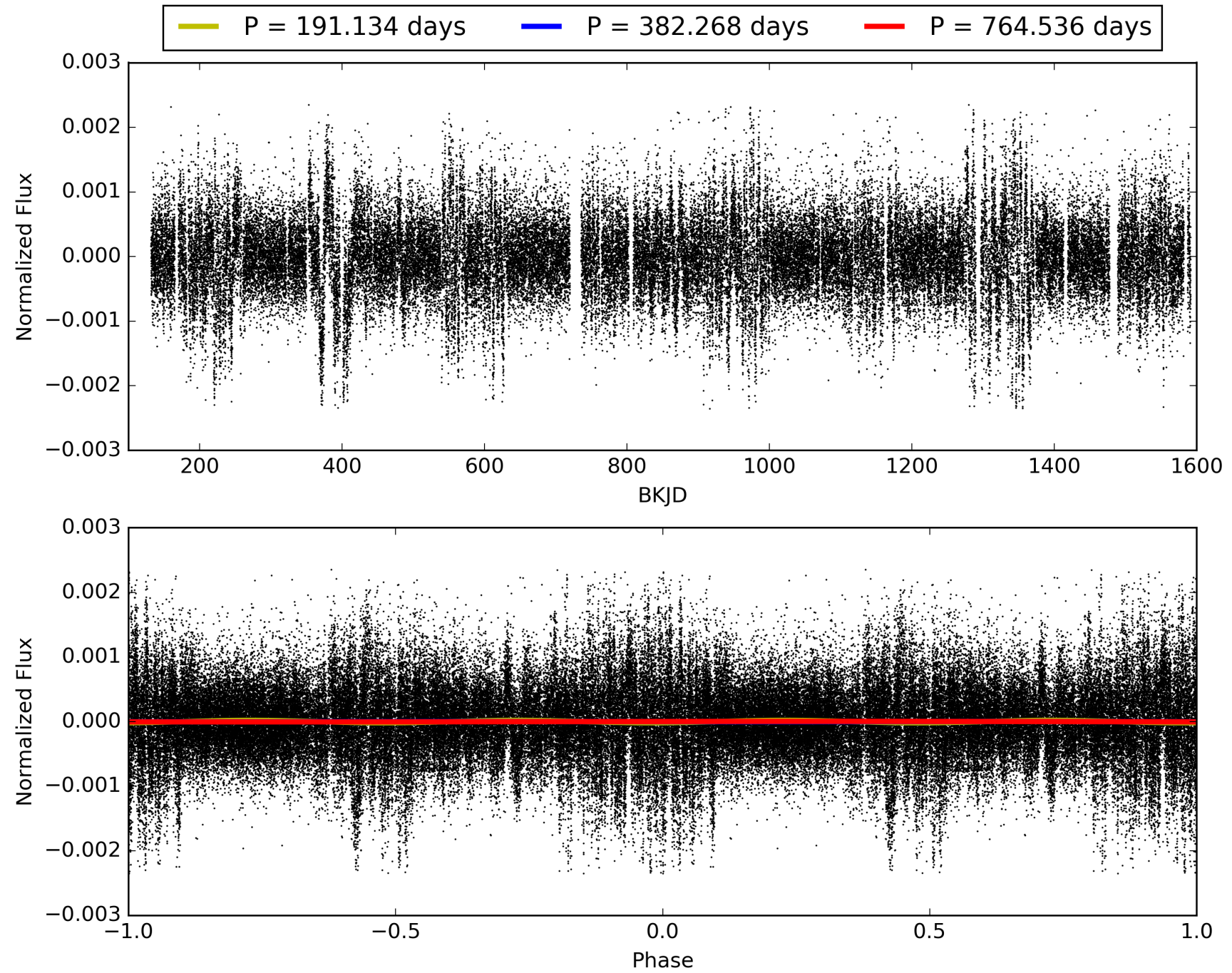
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:38:18 Z

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

TCE 008240396-01, PDC Light Curves

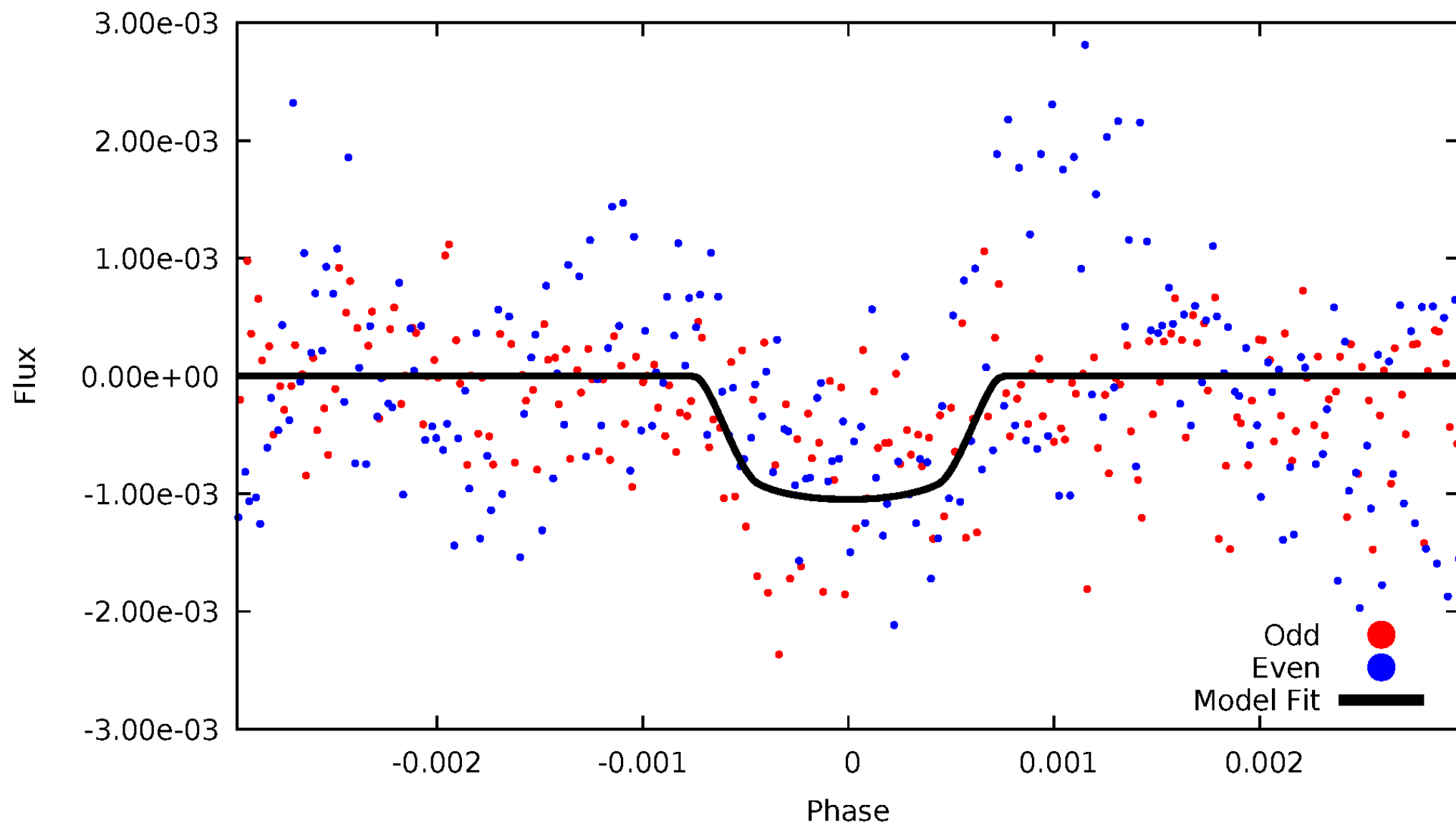


TCE 008240396-01



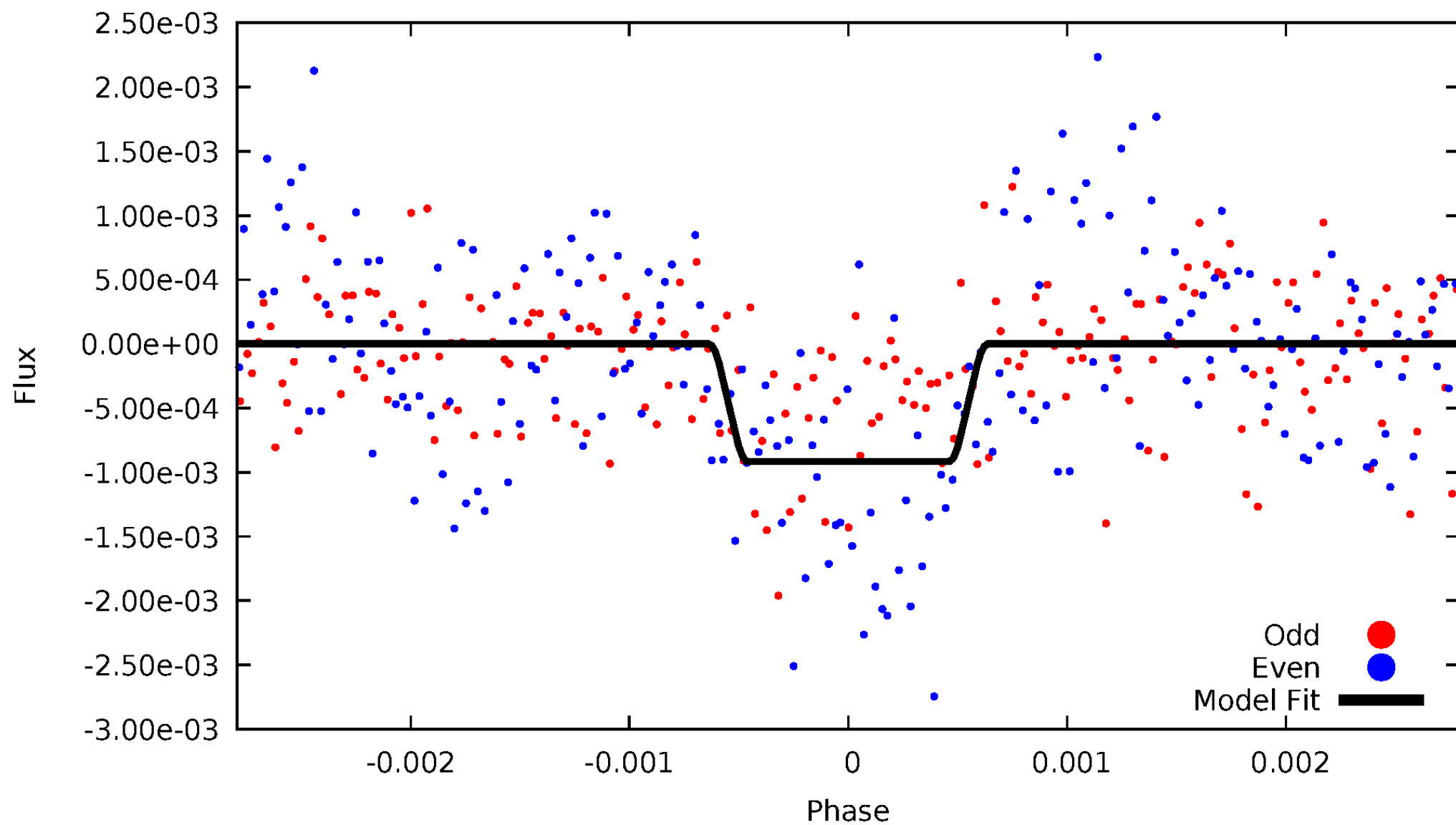
DV Odd/Even

TCE 008240396-01



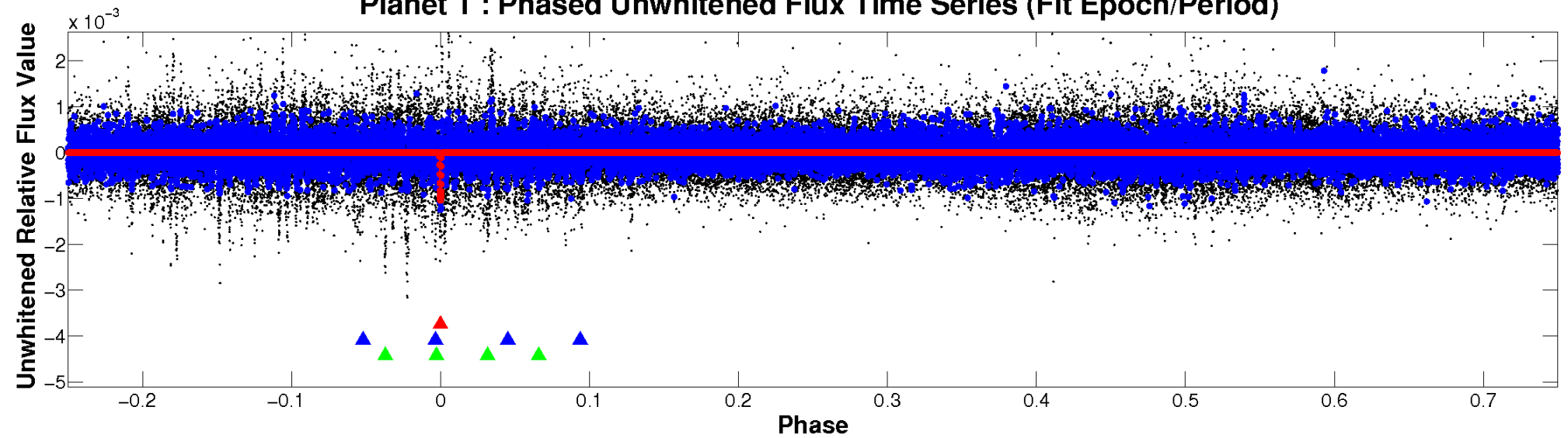
ALT Odd/Even

TCE 008240396-01

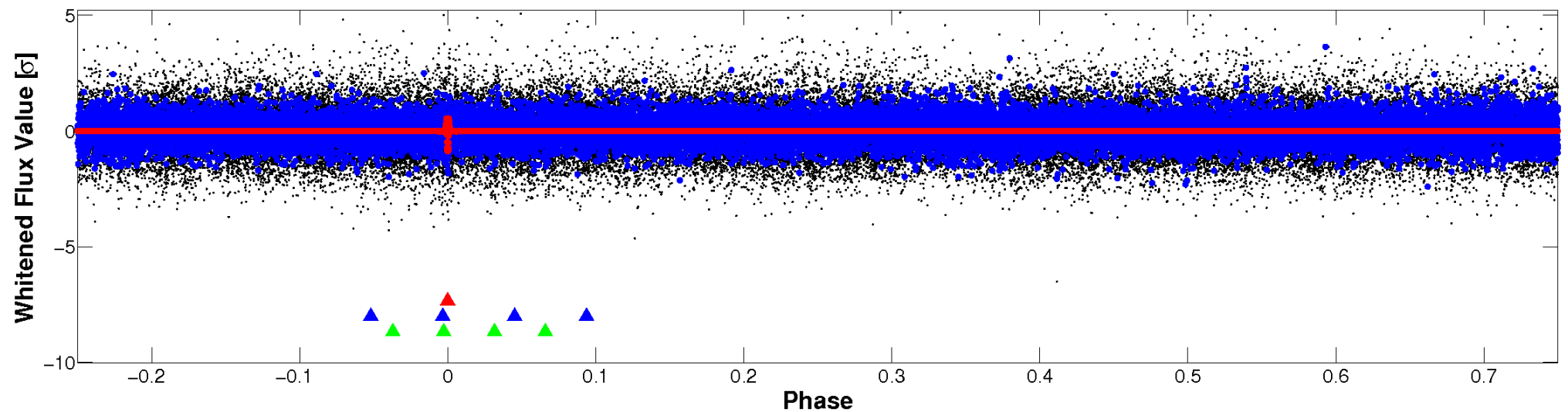


Non-Whitened Vs. Whitened Light Curve

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

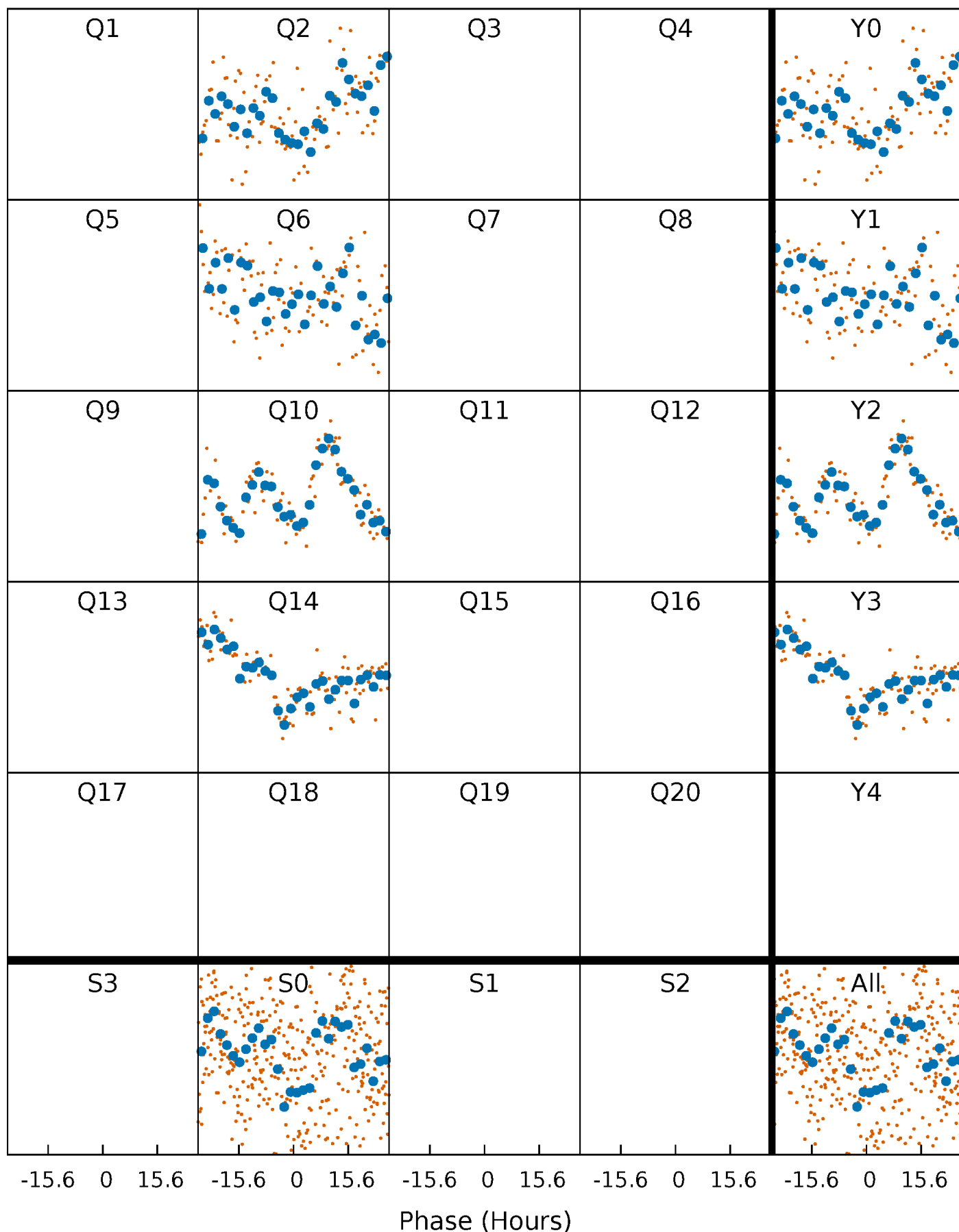


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



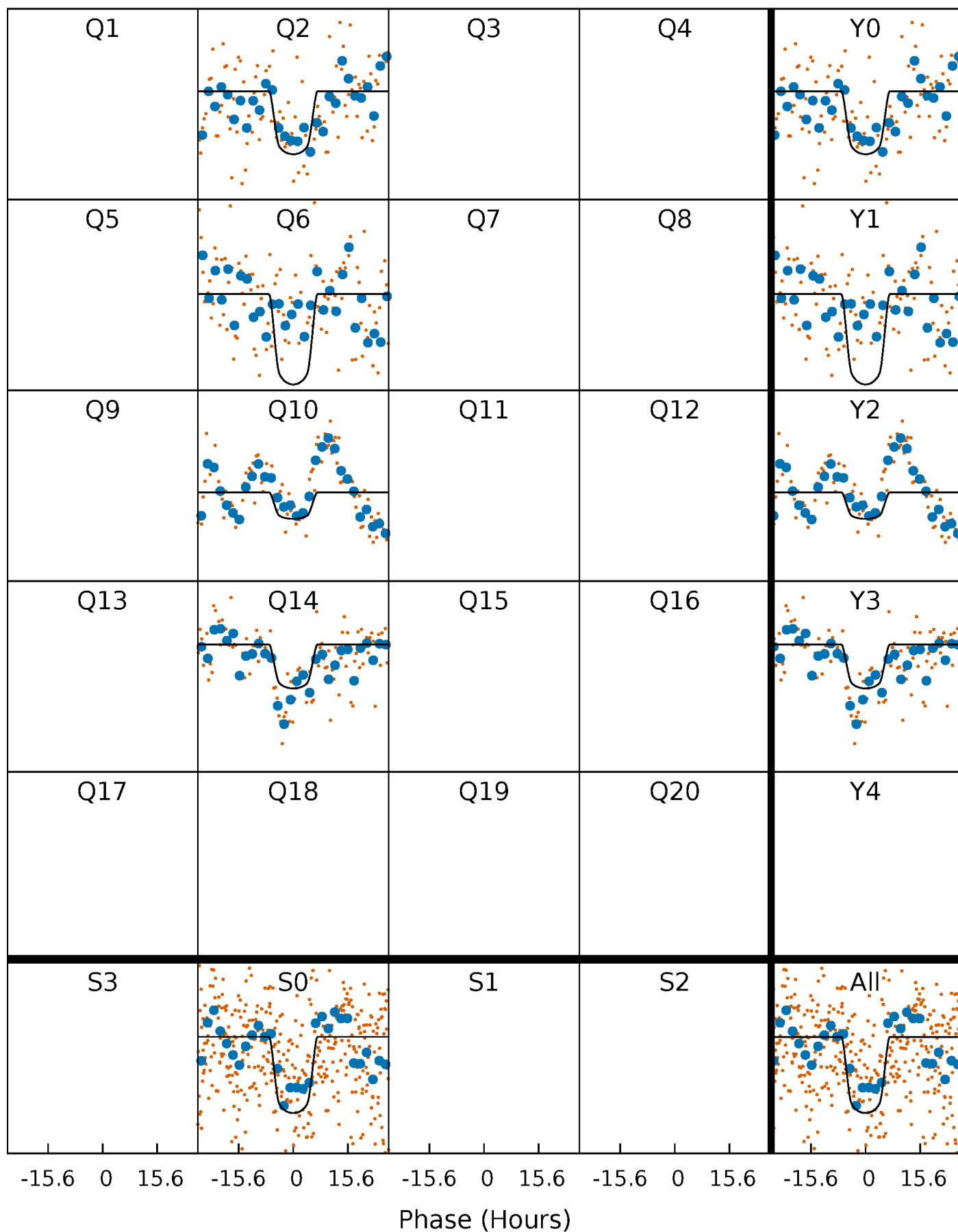
PDC Quarter-Phased Transit Curves

TCE 008240396-01 P=382.268106 Days $T_0=208.075666$ (BKJD)



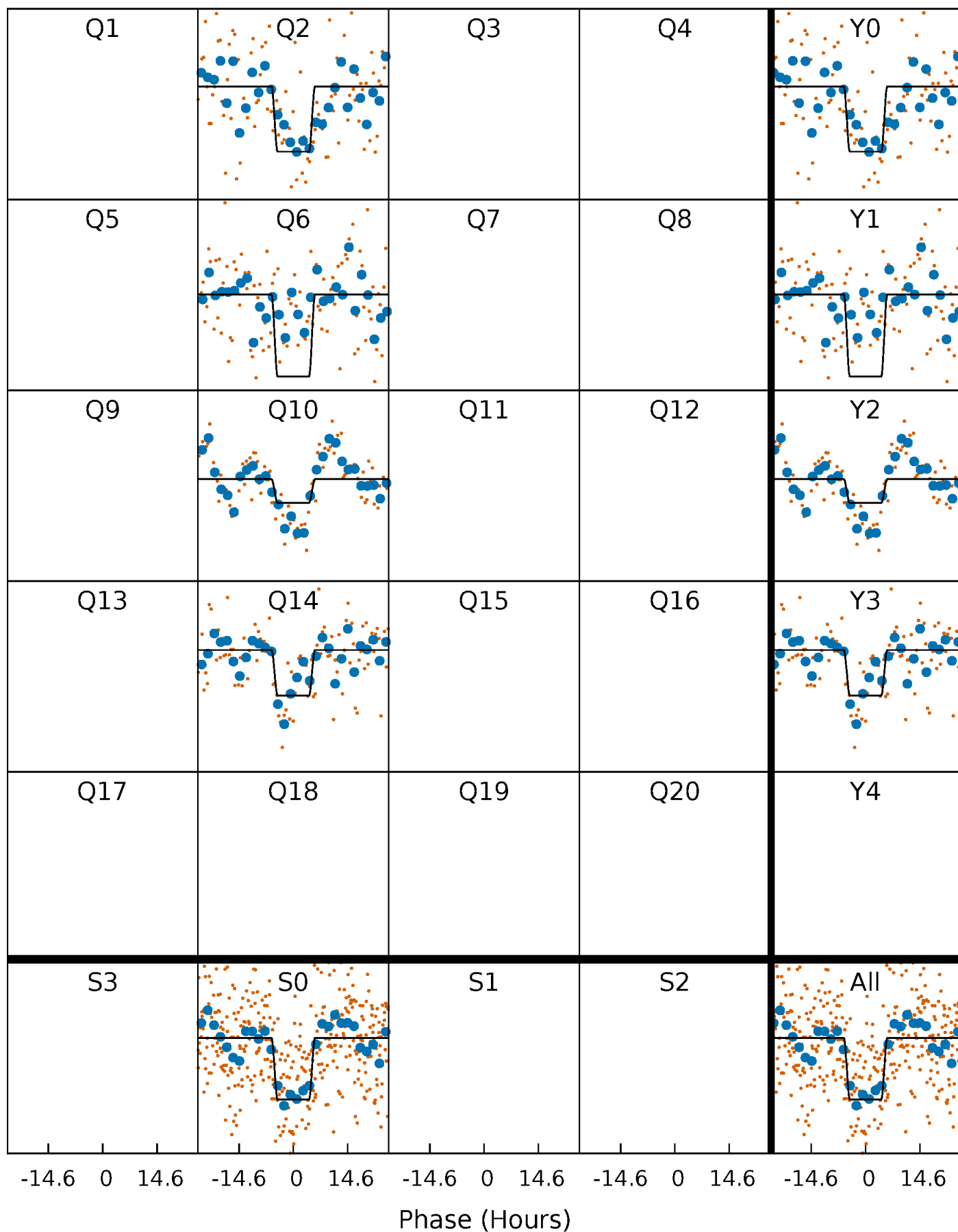
DV Quarter-Phased Transit Curves

TCE 008240396-01 P=382.268106 Days $T_0=208.075666$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

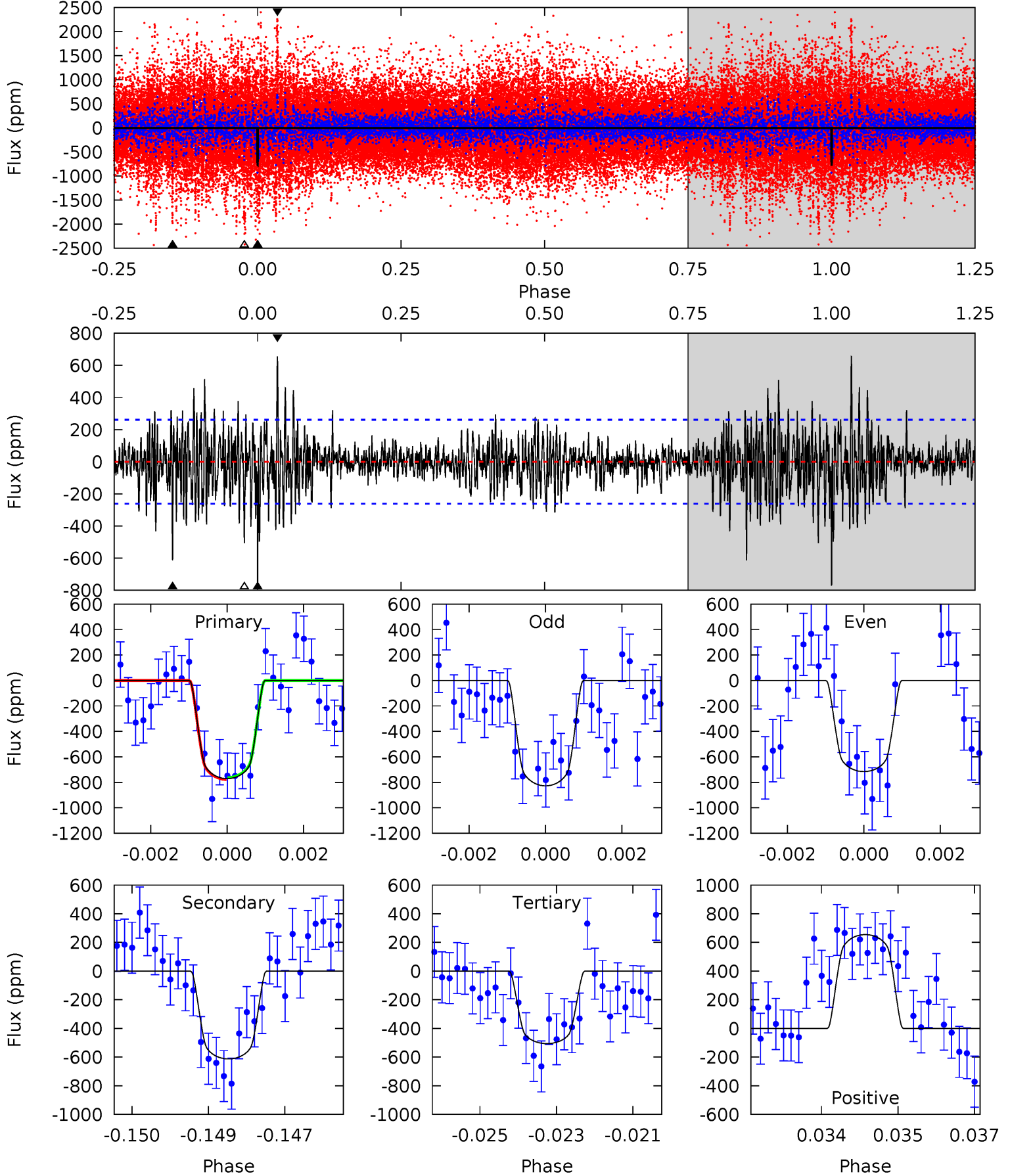
TCE 008240396-01 $P=382.257418$ Days $T_0=208.101080$ (BKJD)



DV Model-Shift Uniqueness Test

008240396-01, P = 382.268106 Days, E = 208.075666 Days

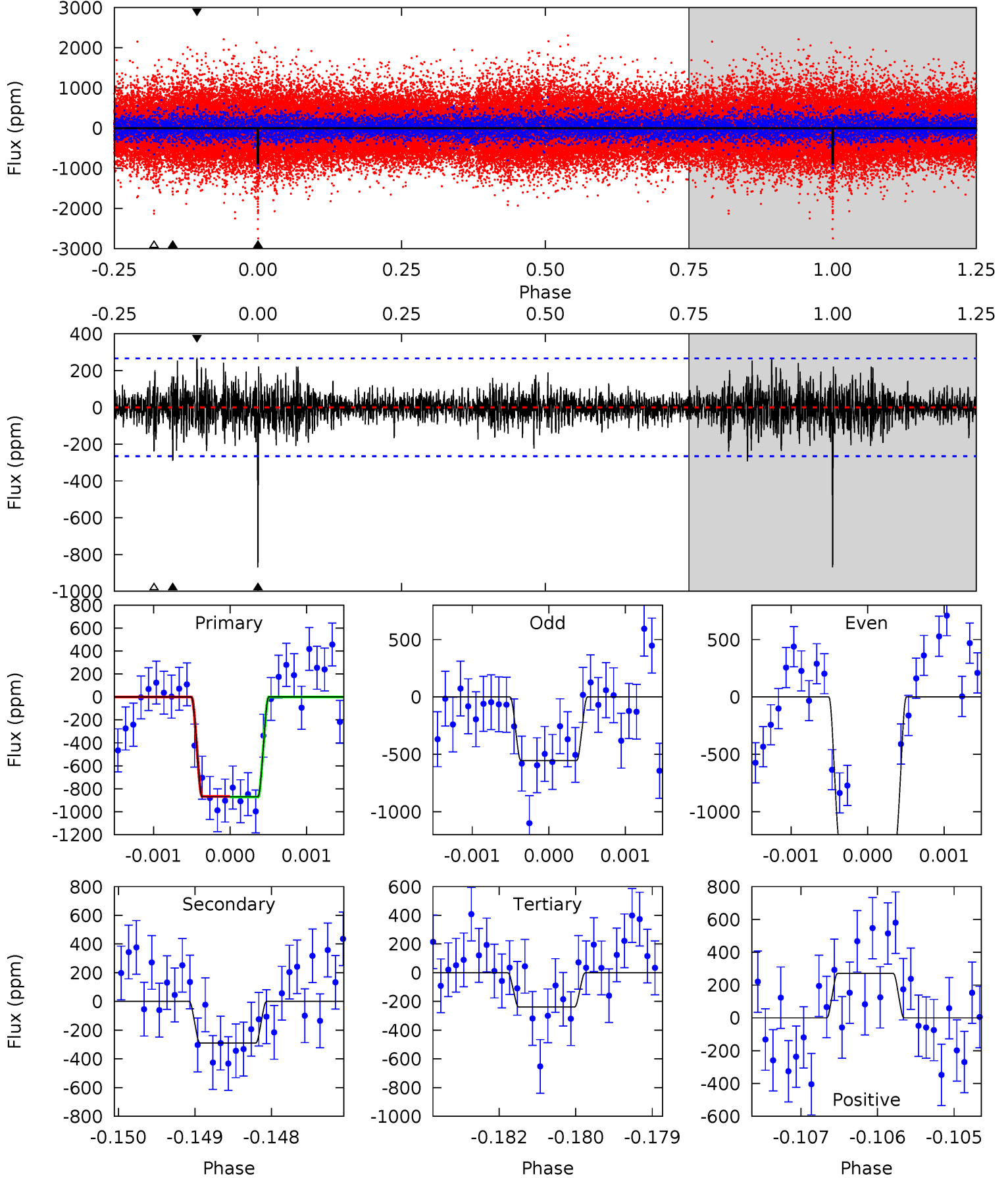
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	12.6	10.4	13.5	5.38	3.17	2.50	5.45	2.39	2.20	-0.86	1.15	1.07	0.46	0.15



Alt Model-Shift Uniqueness Test

008240396-01, P = 382.257418 Days, E = 208.101080 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	5.91	4.87	5.51	5.41	3.22	1.22	12.8	12.2	1.03	0.40	7.13	1.08	0.24	0.06



Stellar Parameters For KIC 008240396

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6323^{+174}_{-217}	$4.418^{+0.062}_{-0.188}$	$-0.080^{+0.250}_{-0.300}$	$1.093^{+0.329}_{-0.141}$	$1.140^{+0.157}_{-0.157}$	$1.230^{+0.334}_{-0.637}$
	+3%/-3%	+1%/-4%	+312%/-375%	+30%/-13%	+14%/-14%	+27%/-52%
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 008240396-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-613 ± 49	$4.38^{+0.70}_{-0.60}$	398^{+28}_{-18}	5313^{+327}_{-253}	20164^{+6430}_{-5377}
Alt.	-290 ± 49	$3.69^{+0.71}_{-0.51}$	399^{+26}_{-19}	4845^{+362}_{-286}	13142^{+5120}_{-3738}

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

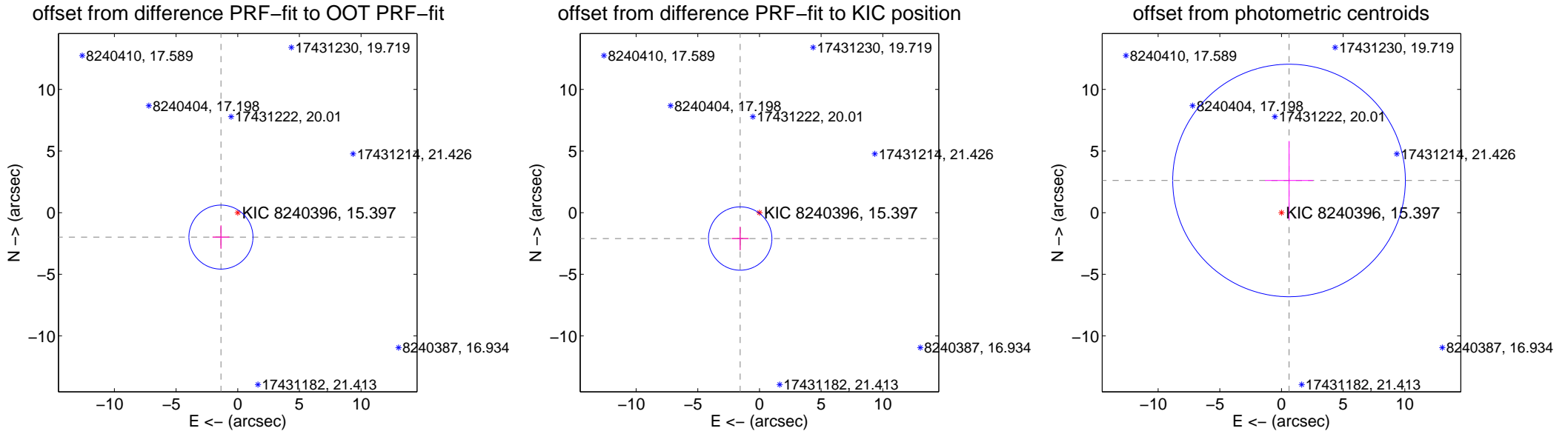
DV Centroid Data

Supplemental centroid analysis for 008240396-01. Kepler magnitude: 15.40. Transit SNR 8.07

There are 0 quarters with good PRF difference image offsets

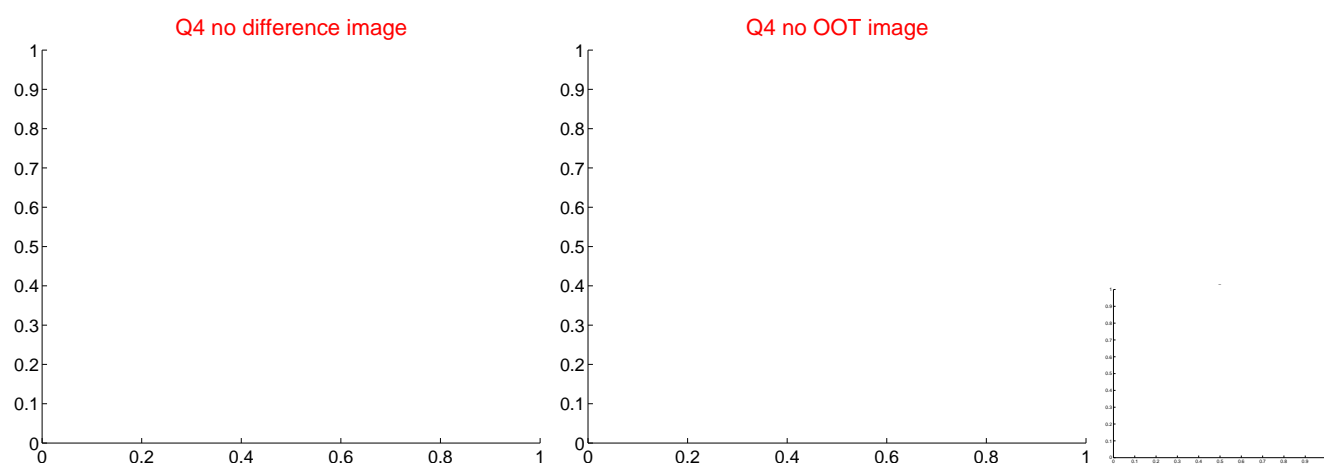
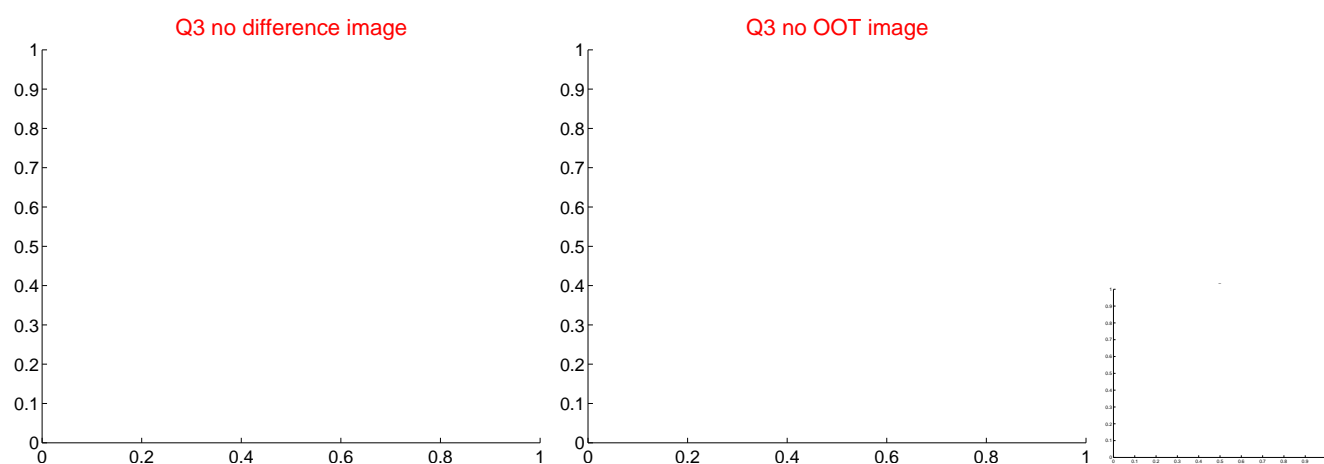
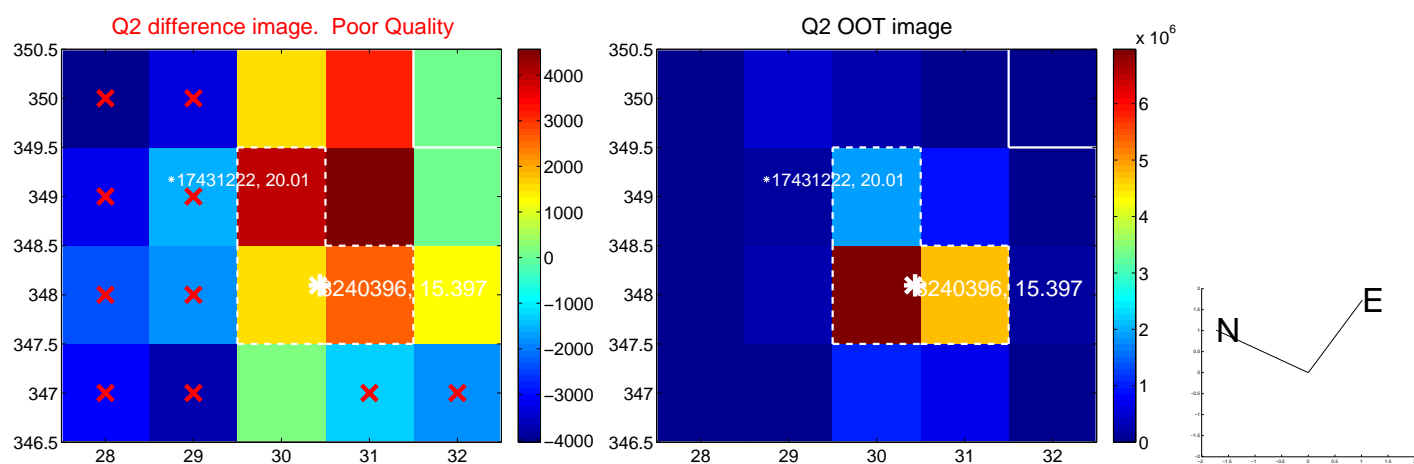
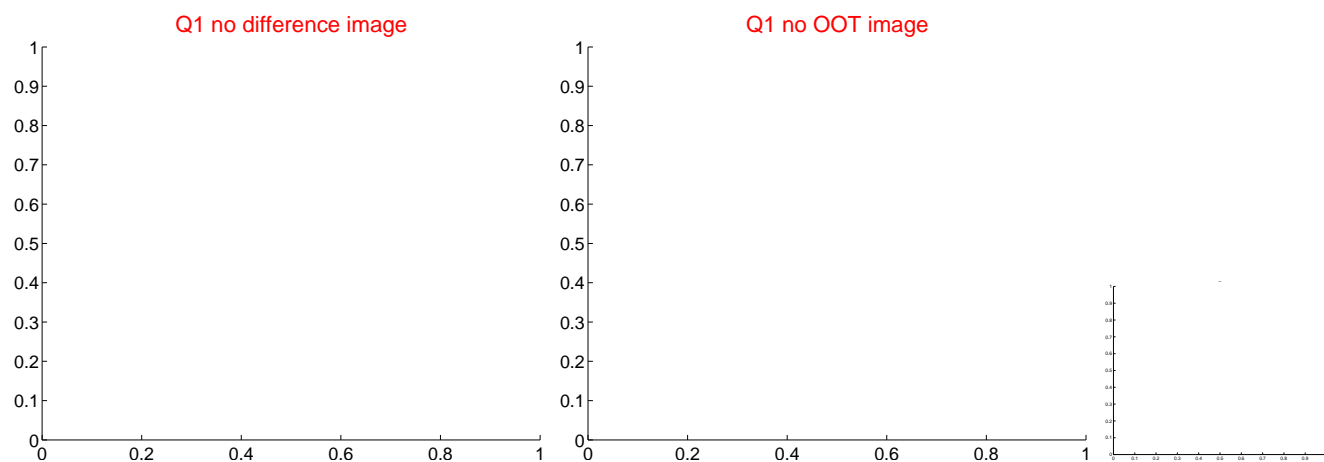
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.404 ± 0.866	2.78	1.361 ± 0.681	-1.981 ± 0.940
PRF-fit source offset from KIC position	2.616 ± 0.857	3.05	1.562 ± 0.681	-2.098 ± 0.940
photometric centroid source offset	2.68 ± 3.14	0.85	-0.61 ± 1.95	2.61 ± 3.20

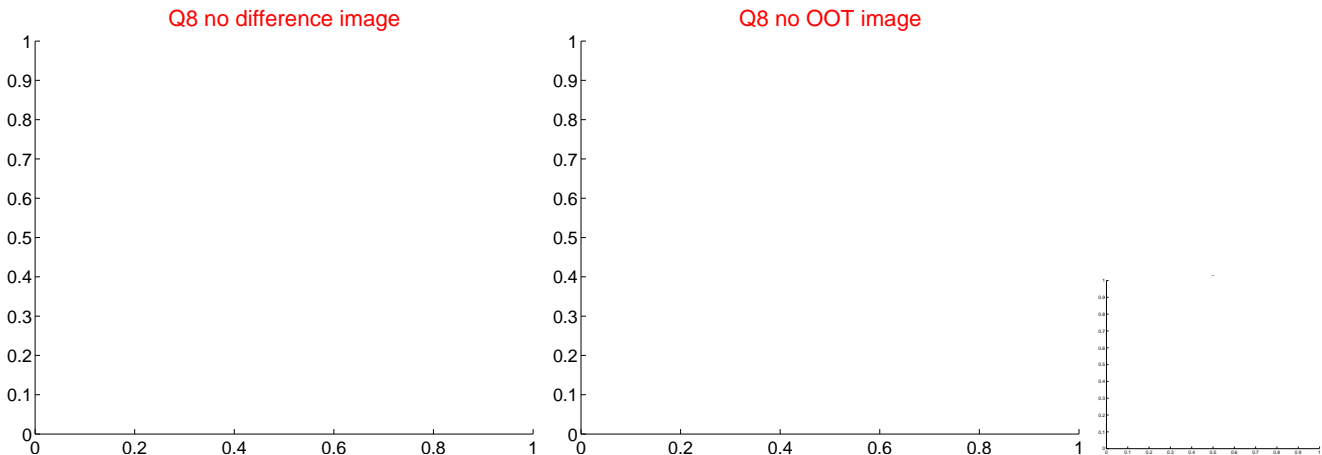
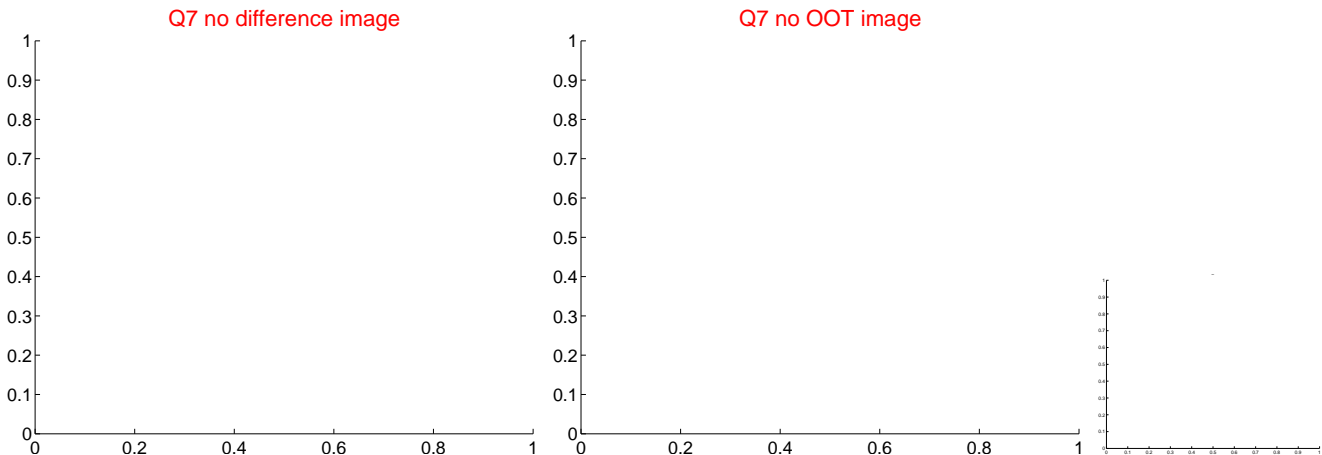
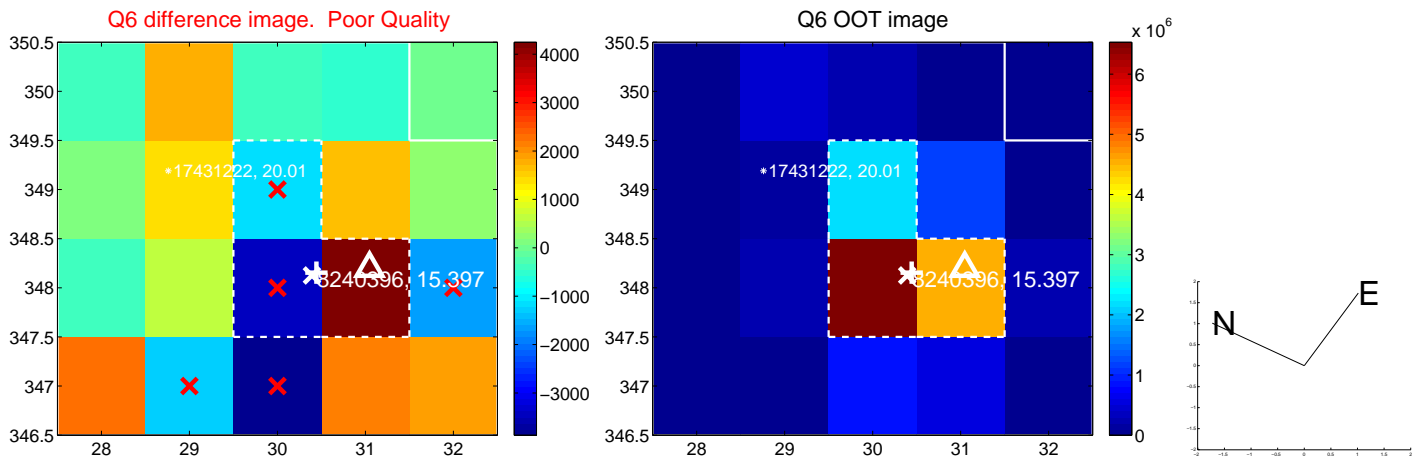
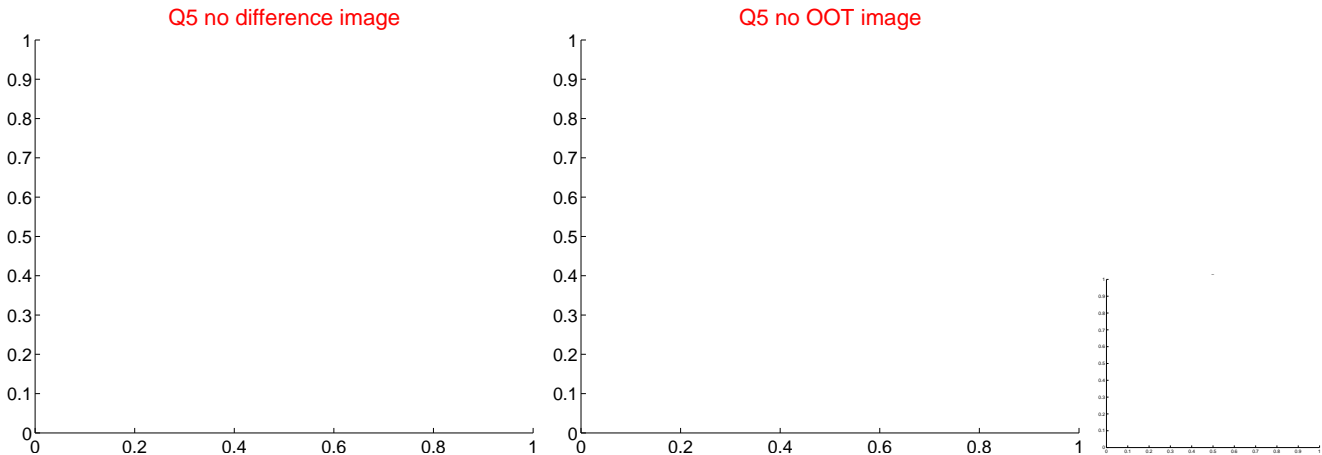


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

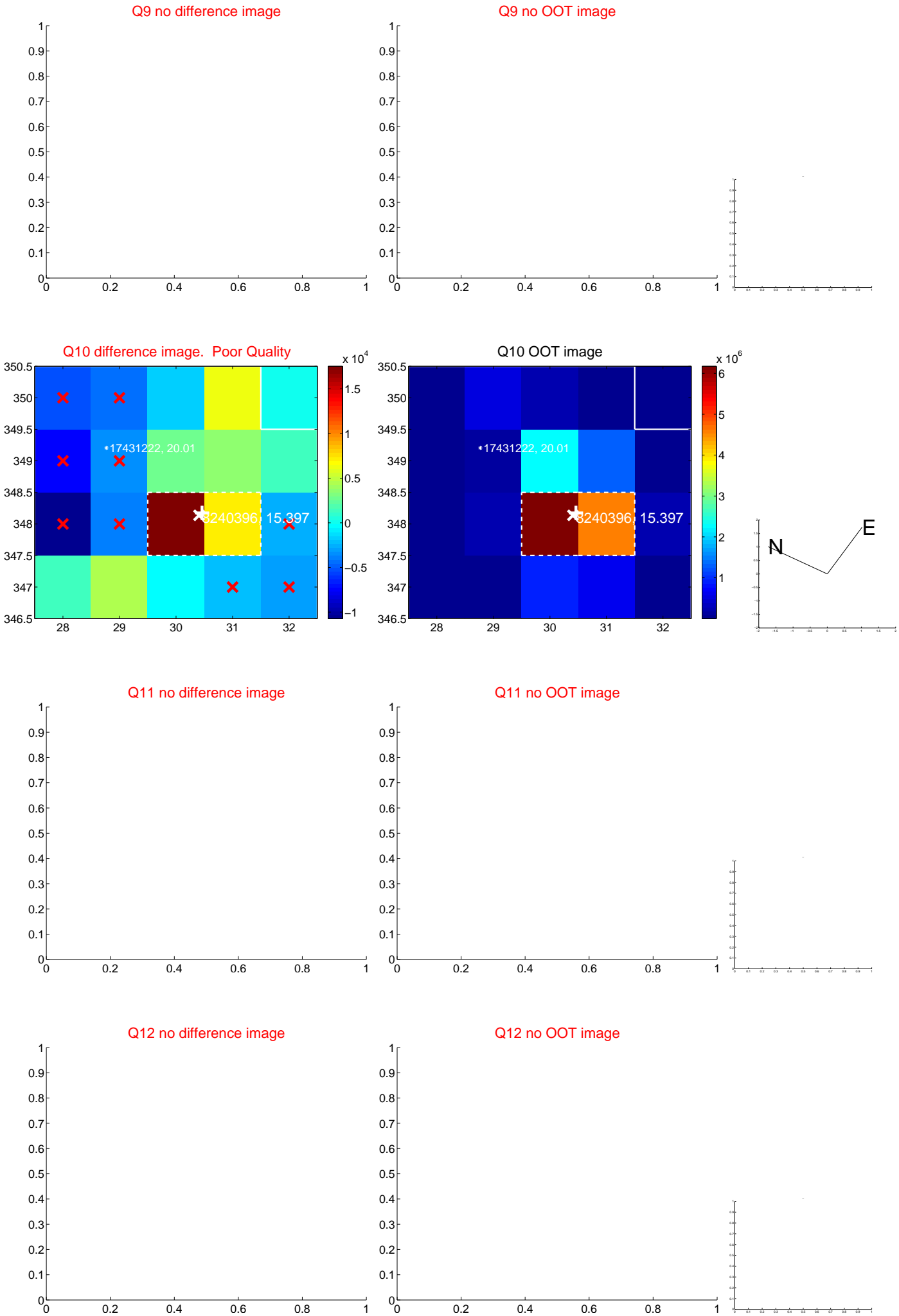
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



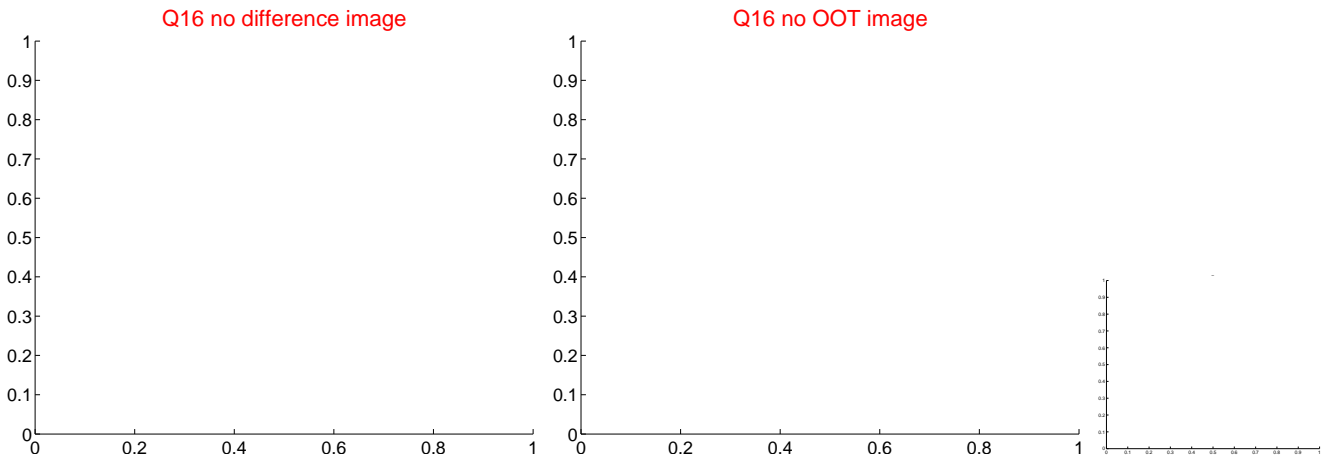
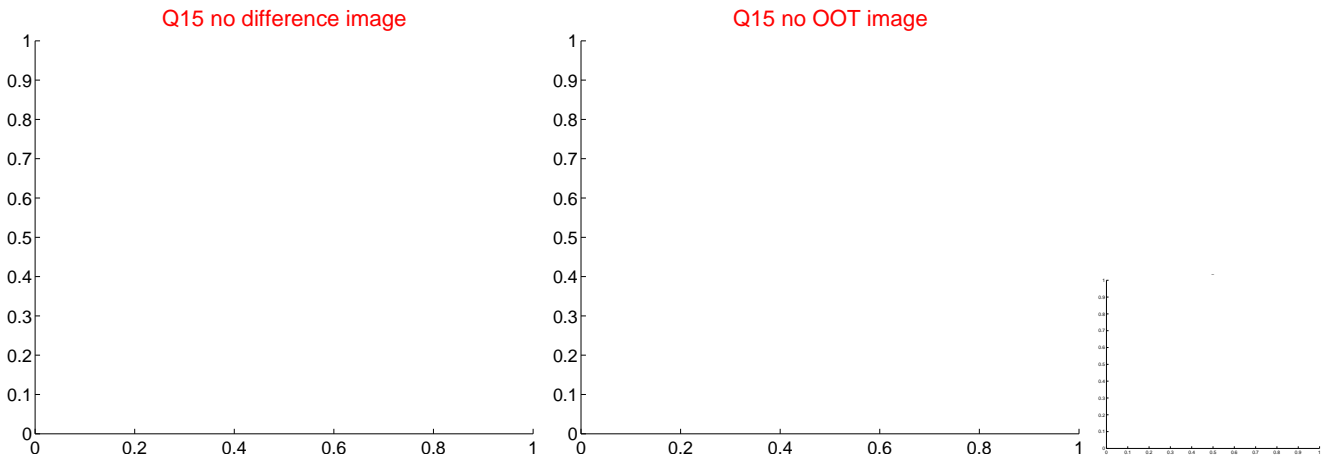
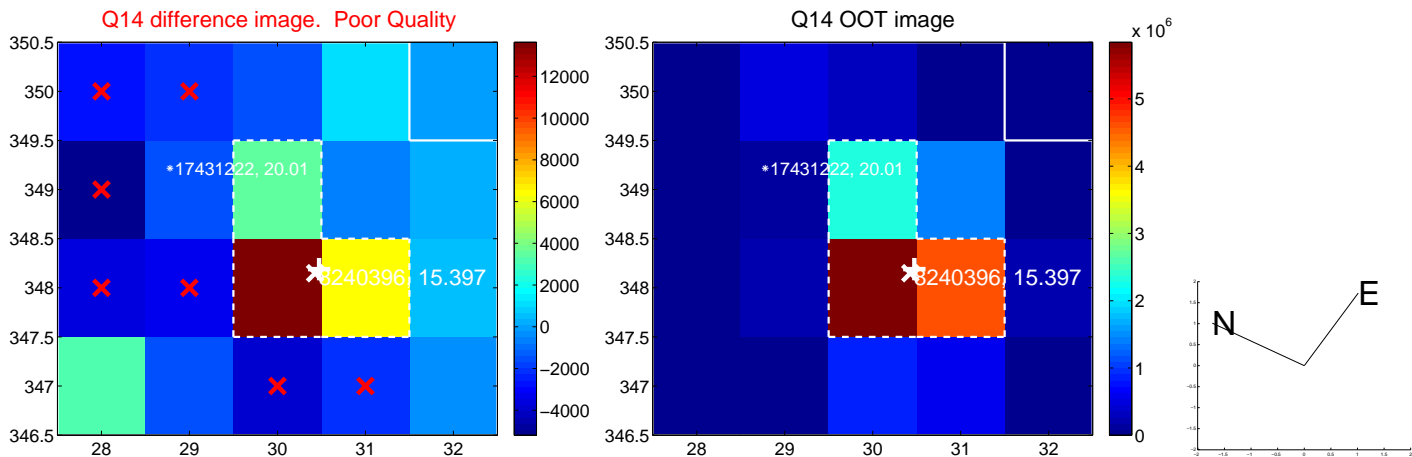
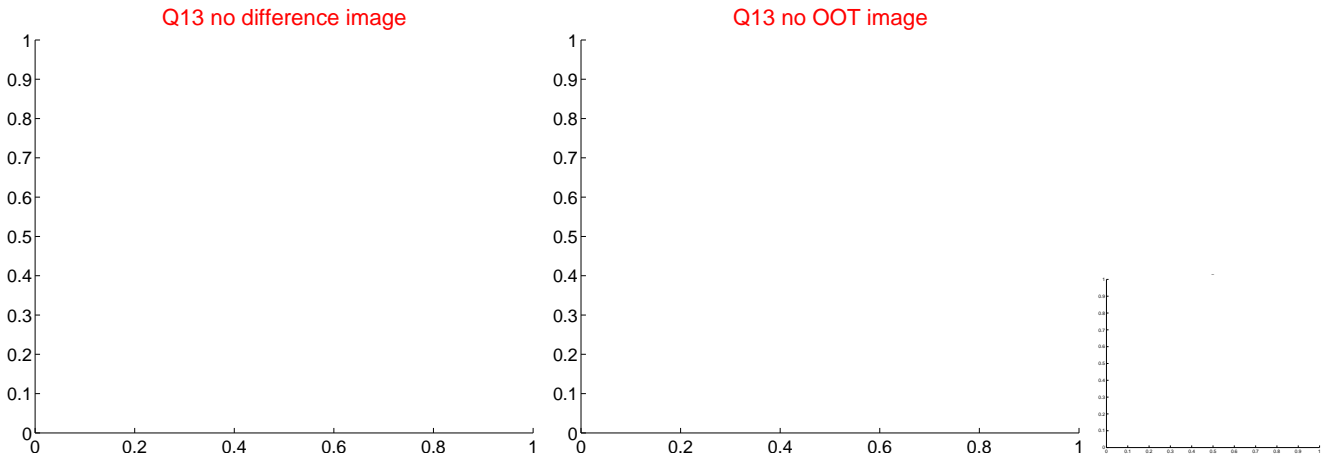
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



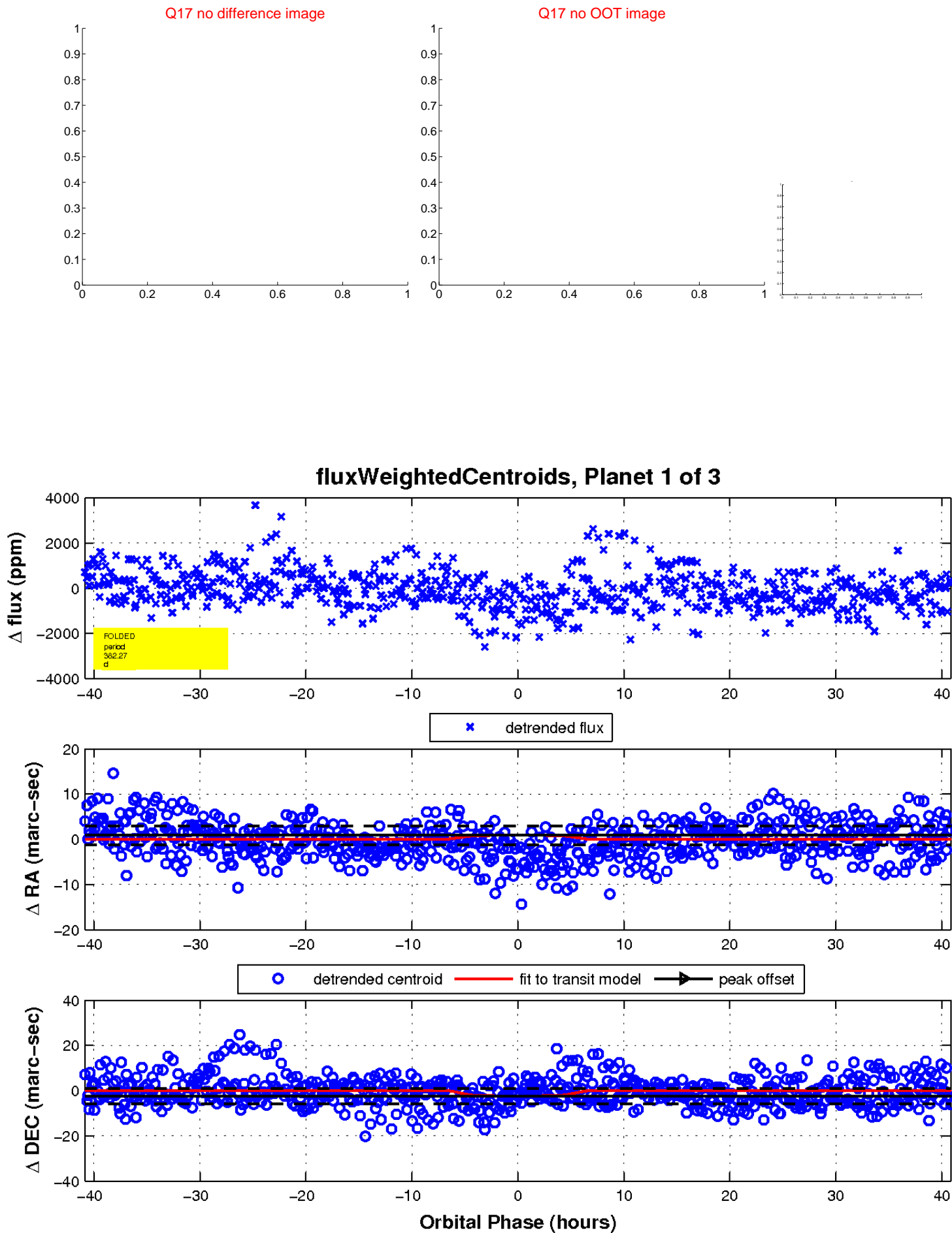
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

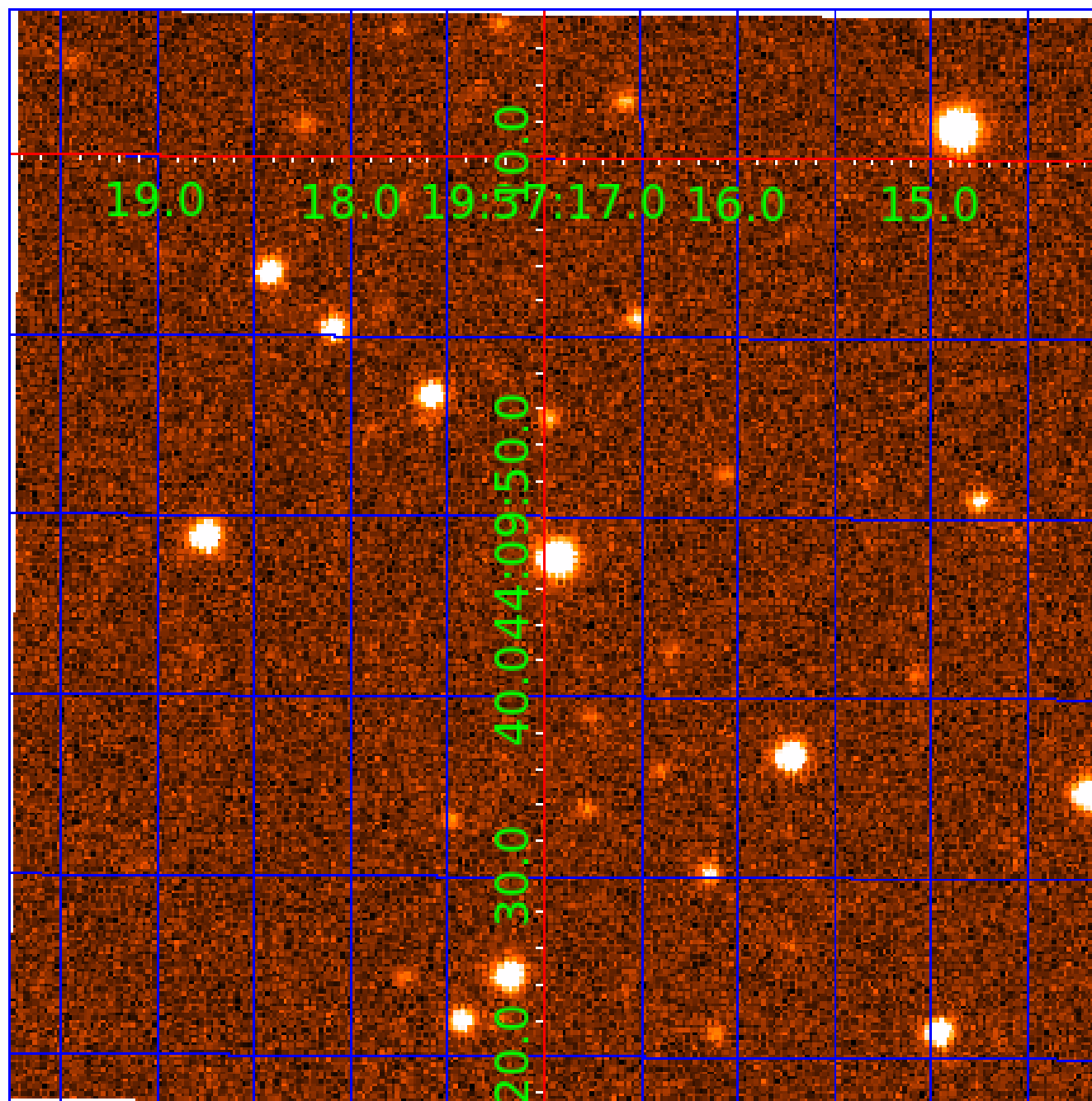


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008240396

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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008240396-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

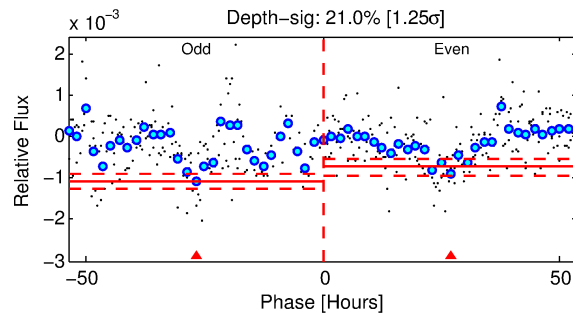
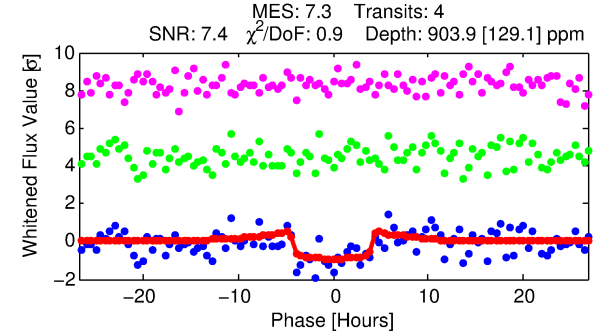
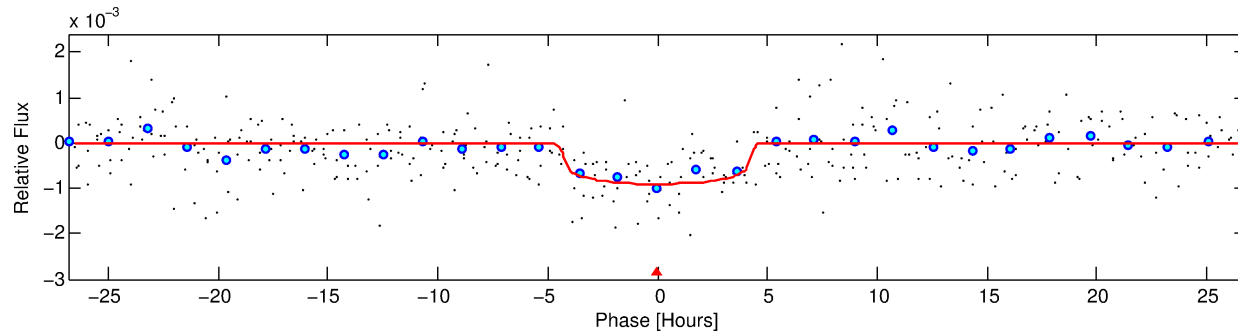
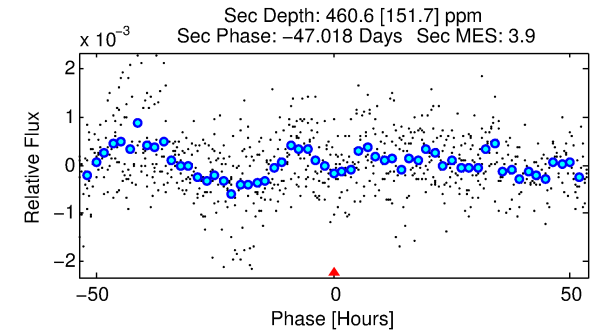
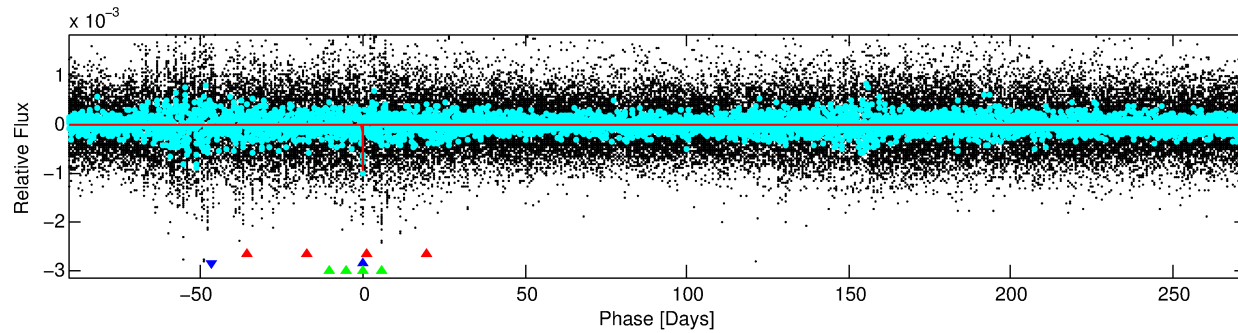
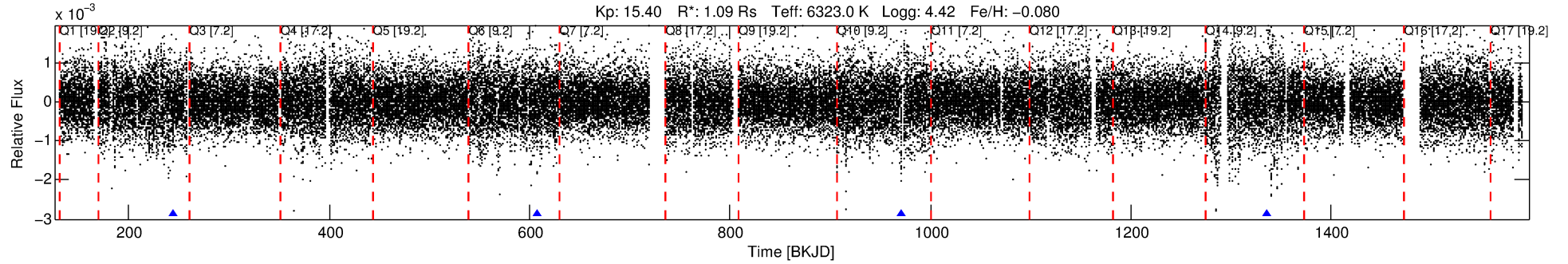
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008240396-02

No Significant Match Found

DV One-Page Summary

KIC: 8240396 Candidate: 2 of 3 Period: 363.700 d



DV Fit Results:

Period = 363.69999 [0.00698] d
Epoch = 243.9337 [0.0124] BKJD
Rp/R* = 0.0288 [0.0125]
a/R* = 262.21 [561.64]
b = 0.59 [2.40]
Seff = 1.58 [0.59]
Teq = 286 [27] K
Rp = 3.43 [1.81] Re
a = 1.0422 [0.2576] AU
Ag = 23378.24 [23170.18] [1.01σ]
Teffp = 5461 [1279] K [4.05σ]

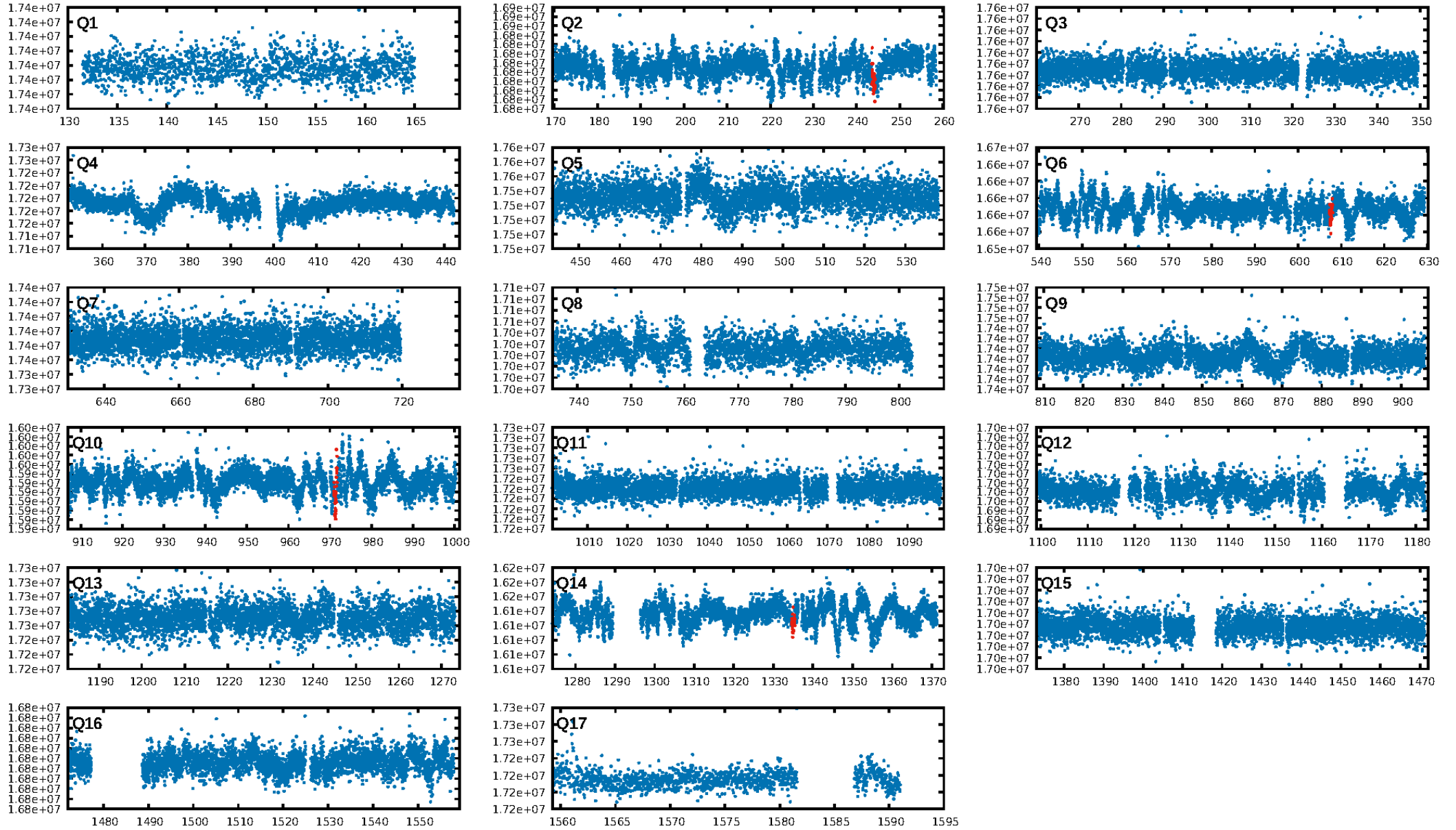
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [6.82σ]
ModelChiSquare2-sig: 61.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.09e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -3.942
Centroid-sig: 5.7%
Centroid-so: 4.452 arcsec [1.90σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [3/3]

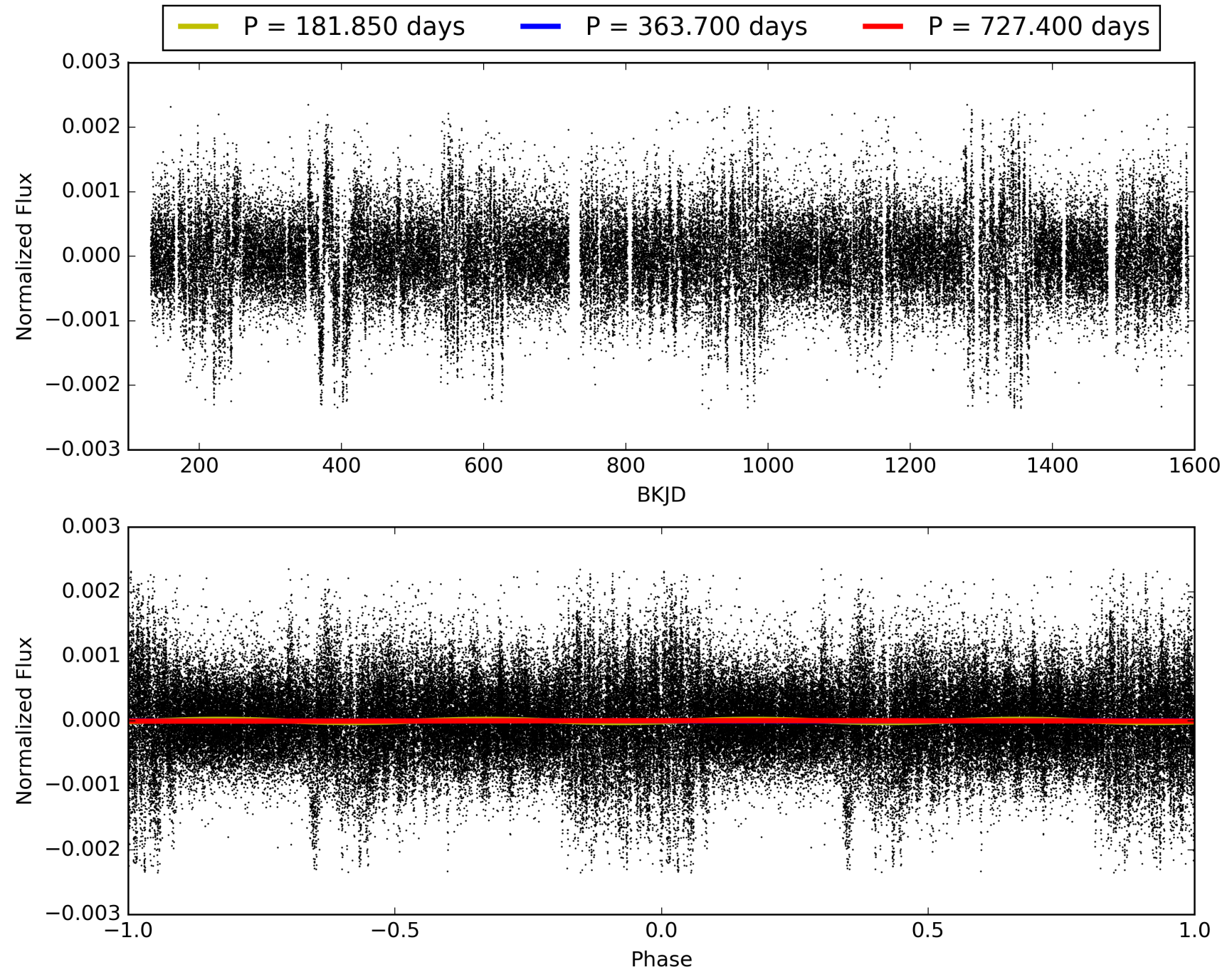
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:38:28 Z

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TCE 008240396-02, PDC Light Curves

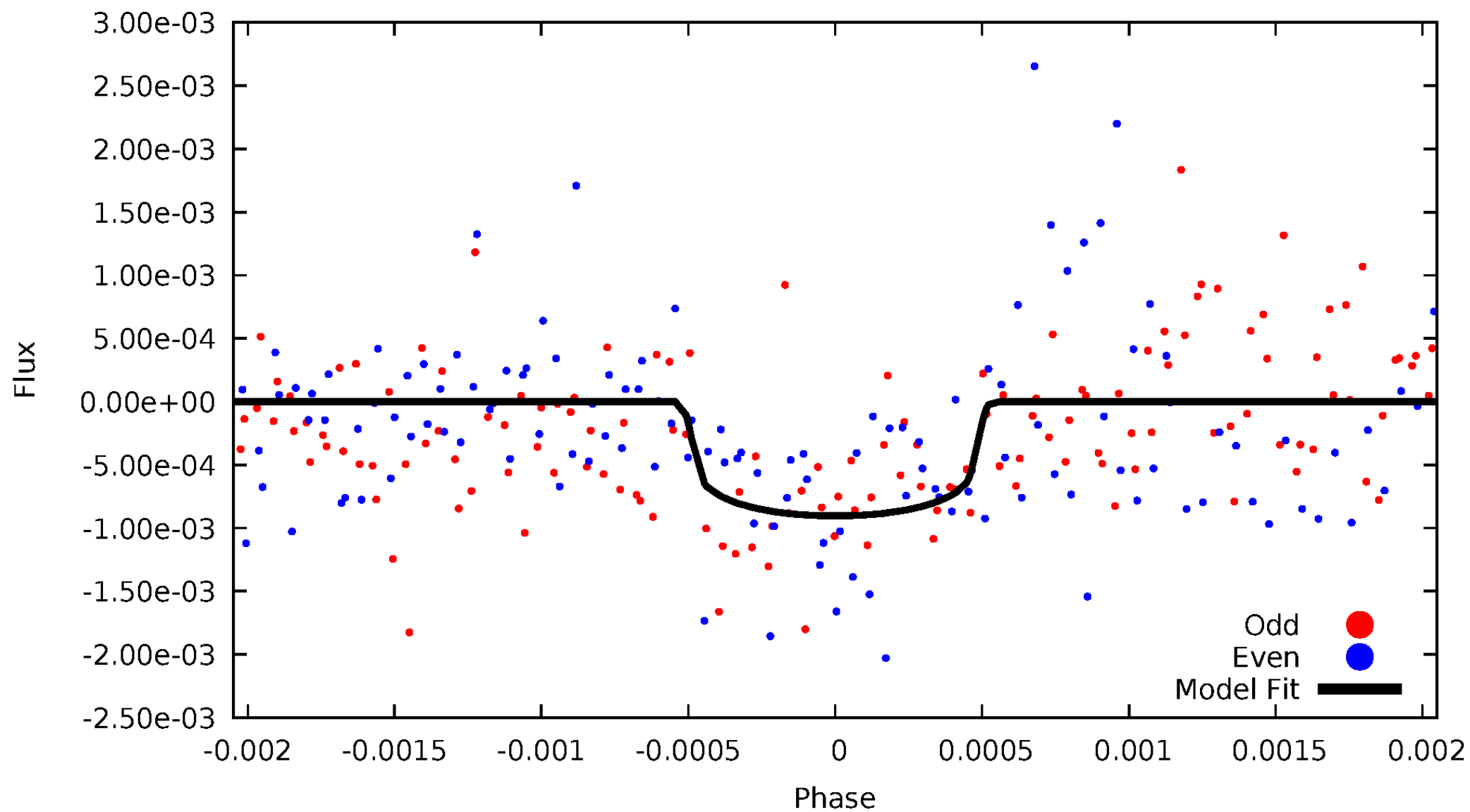


TCE 008240396-02



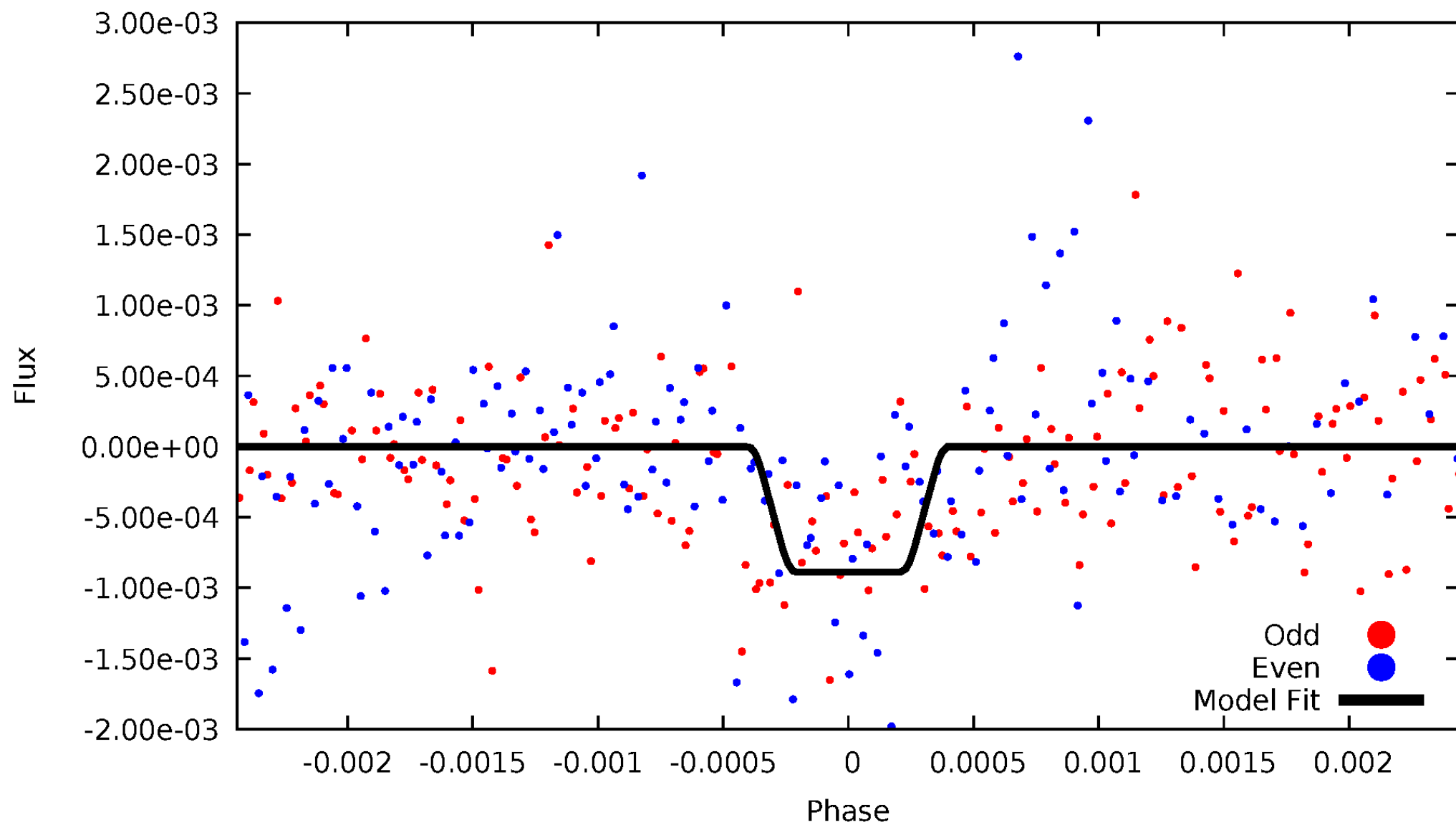
DV Odd/Even

TCE 008240396-02



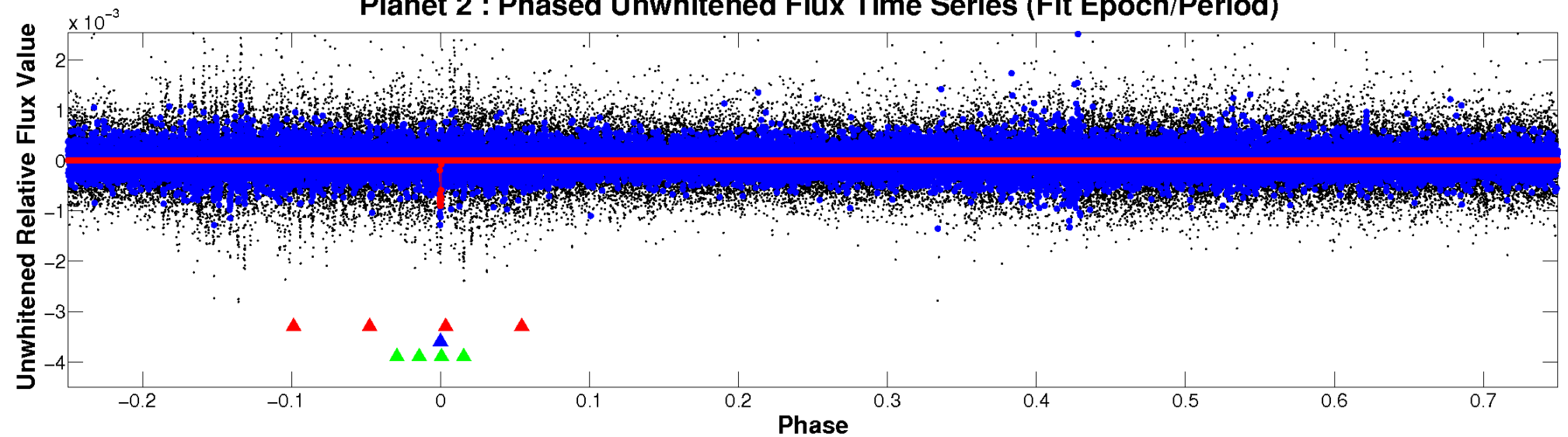
ALT Odd/Even

TCE 008240396-02

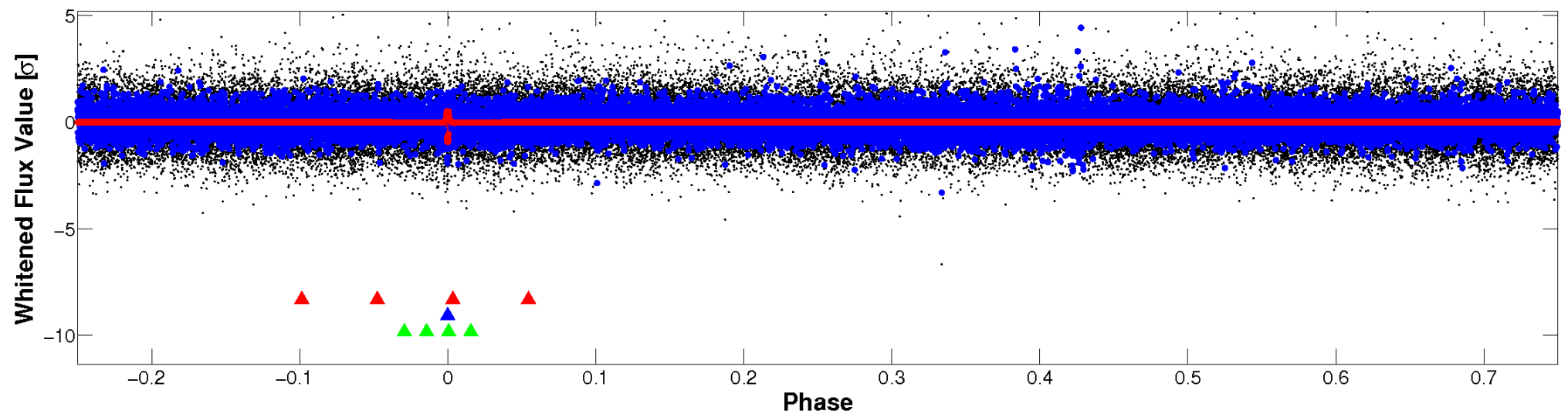


Non-Whitened Vs. Whitened Light Curve

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

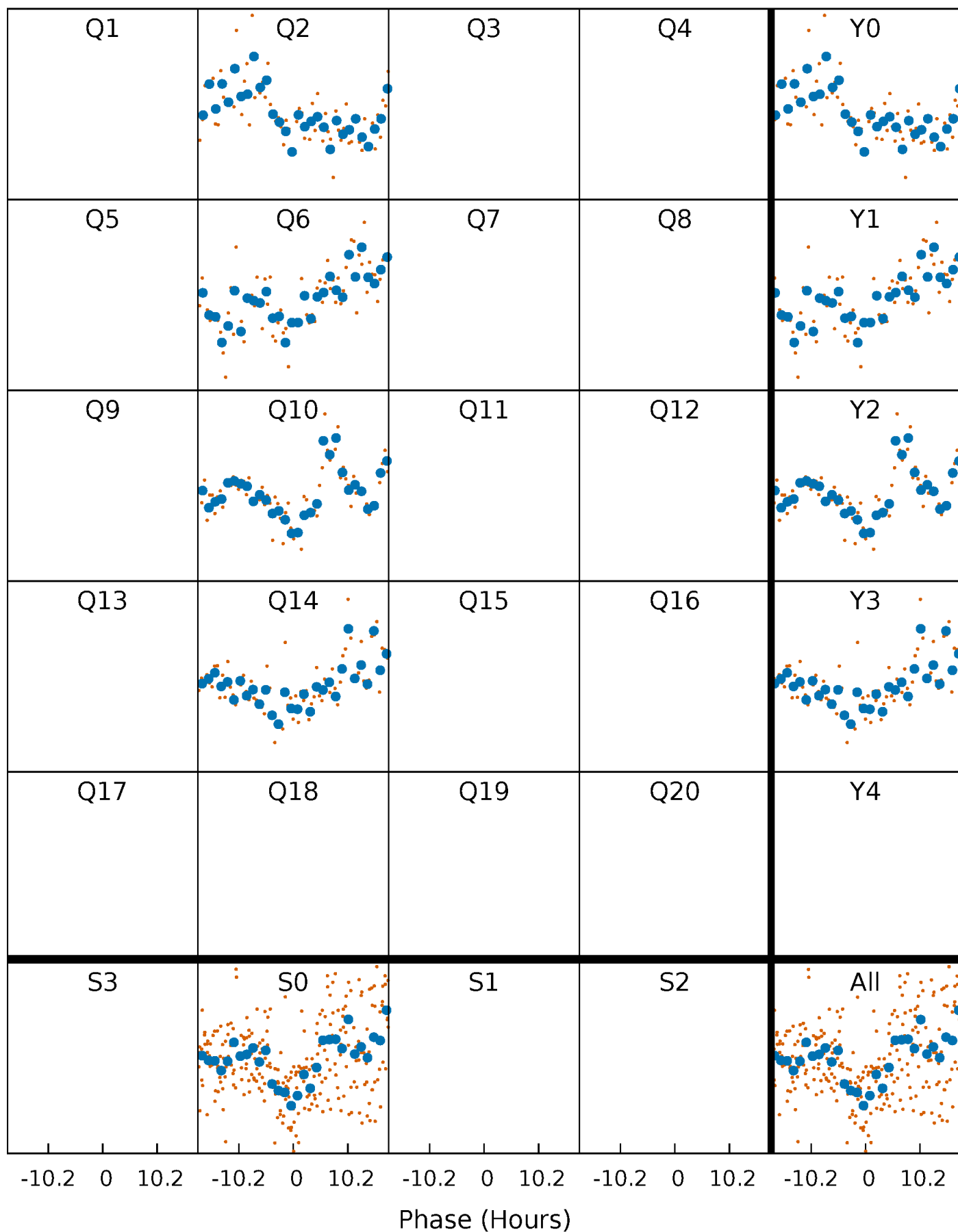


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



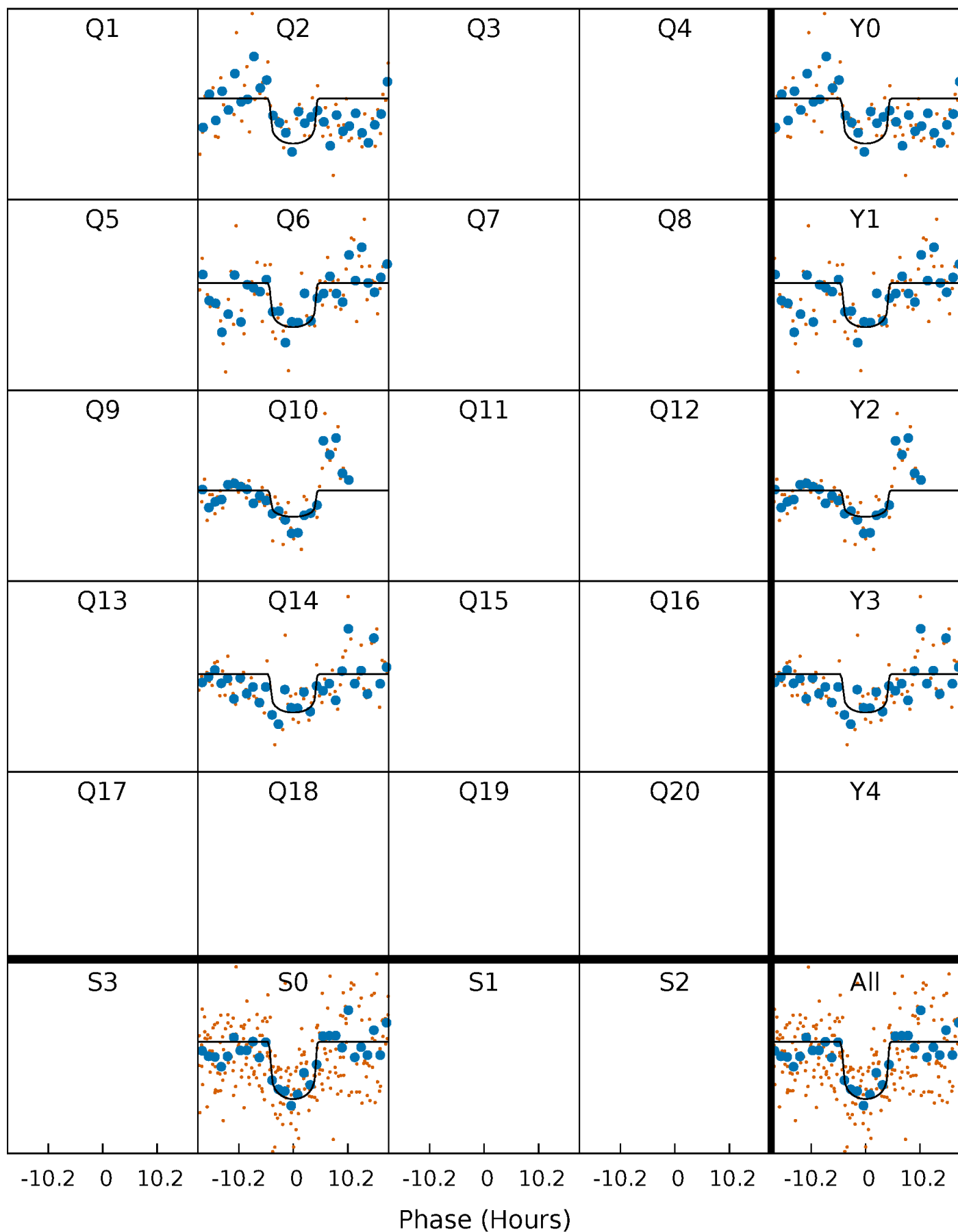
PDC Quarter-Phased Transit Curves

TCE 008240396-02 $P=363.699994$ Days $T_0=243.933675$ (BKJD)



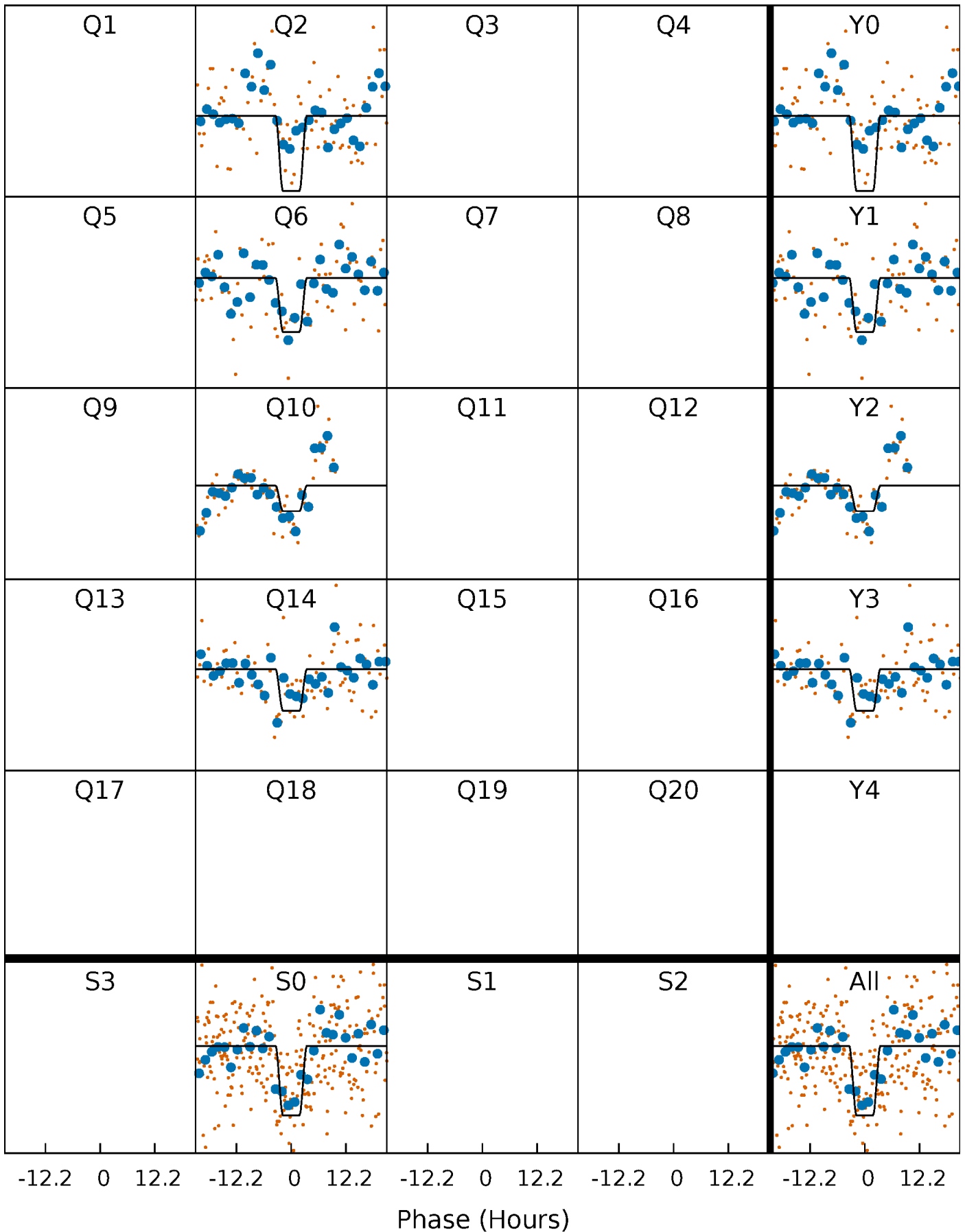
DV Quarter-Phased Transit Curves

TCE 008240396-02 $P=363.699994$ Days $T_0=243.933675$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

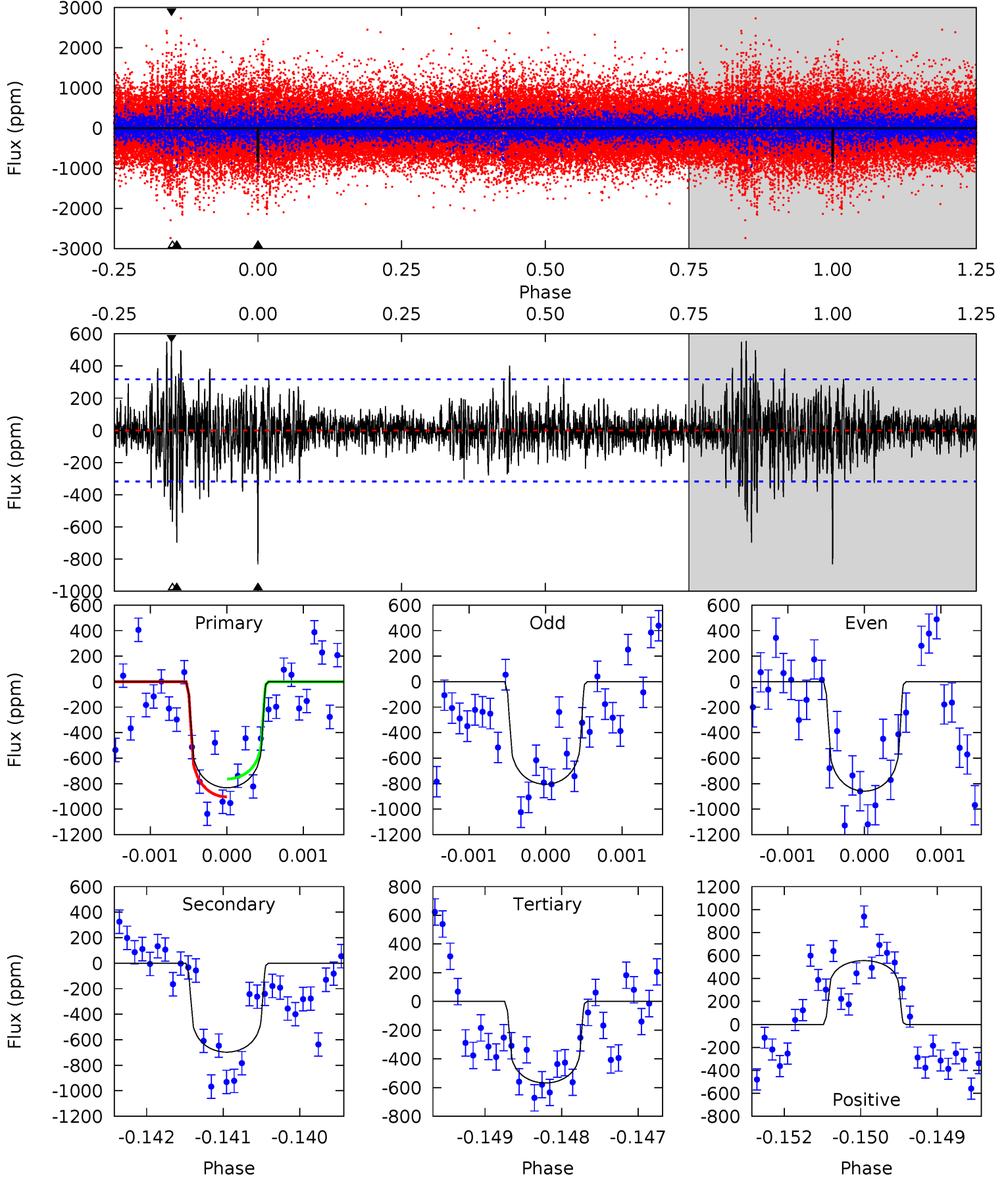
TCE 008240396-02 P=363.710557 Days $T_0=243.912834$ (BKJD)



DV Model-Shift Uniqueness Test

008240396-02, P = 363.699994 Days, E = 243.933675 Days

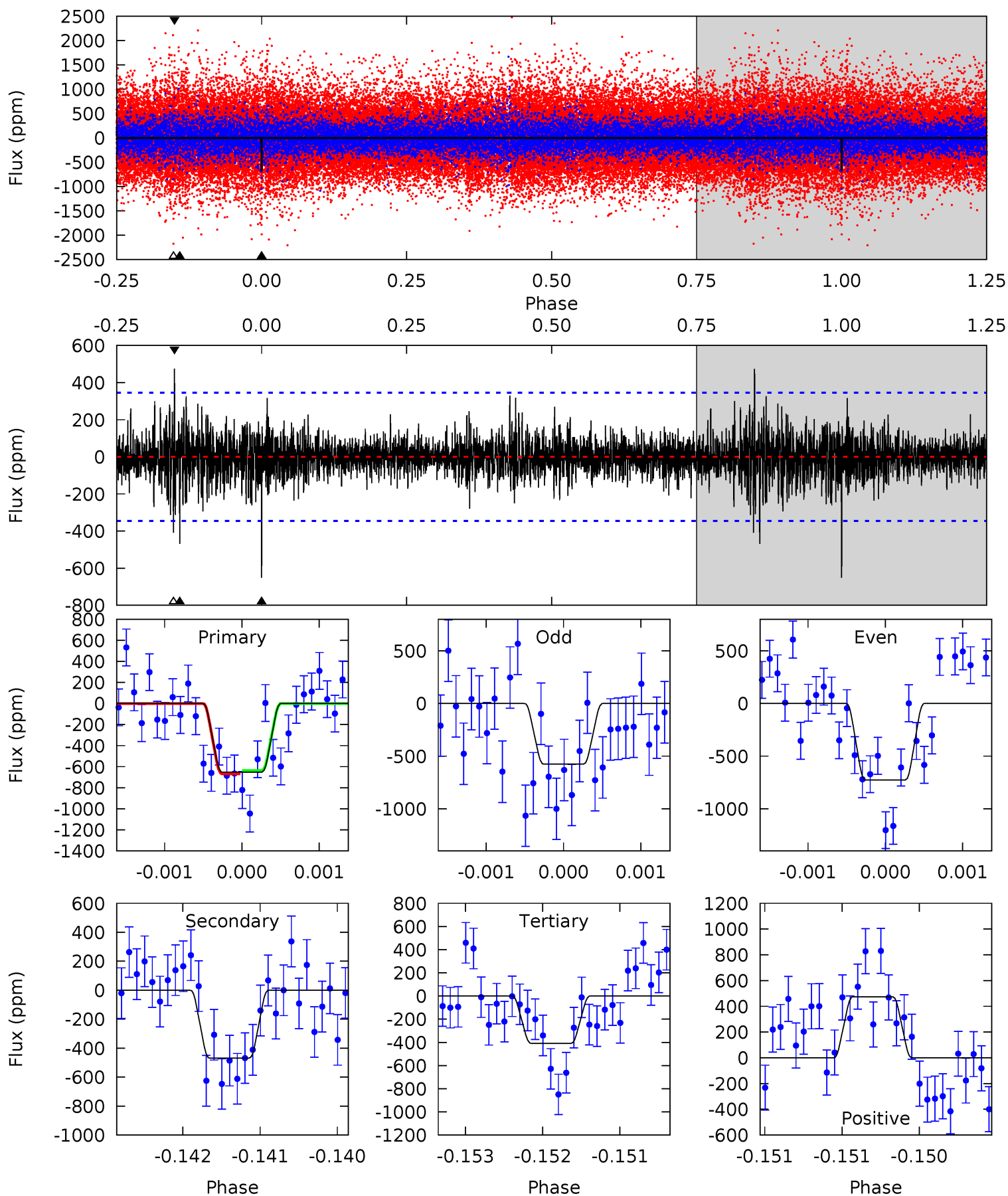
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	11.9	9.72	9.52	5.45	3.28	1.81	4.52	4.73	2.22	2.42	0.46	1.03	0.40	1.20



Alt Model-Shift Uniqueness Test

008240396-02, P = 363.710557 Days, E = 243.912834 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	7.45	6.50	7.54	5.49	3.35	1.26	3.86	2.83	0.94	-0.09	1.20	1.13	0.42	0.24



Stellar Parameters For KIC 008240396

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6323^{+174}_{-217}	$4.418^{+0.062}_{-0.188}$	$-0.080^{+0.250}_{-0.300}$	$1.093^{+0.329}_{-0.141}$	$1.140^{+0.157}_{-0.157}$	$1.230^{+0.334}_{-0.637}$
	+3%/-3%	+1%/-4%	+312%/-375%	+30%/-13%	+14%/-14%	+27%/-52%
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 008240396-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-697 ± 58	$3.66^{+1.65}_{-1.49}$	408^{+26}_{-21}	6007^{+1883}_{-958}	31153^{+58172}_{-16459}
Alt.	-468 ± 63	$3.57^{+1.75}_{-1.58}$	405^{+28}_{-20}	5491^{+1930}_{-837}	21153^{+47797}_{-11659}

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 008240396-02. Kepler magnitude: 15.40. Transit SNR 7.36

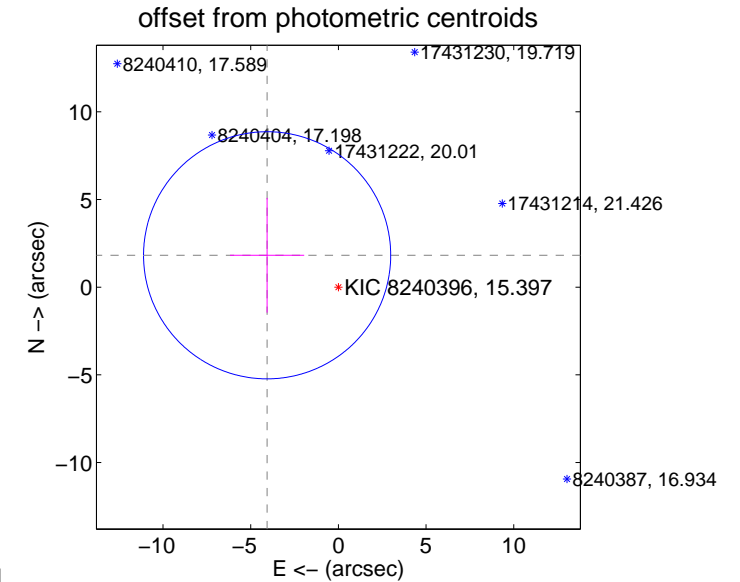
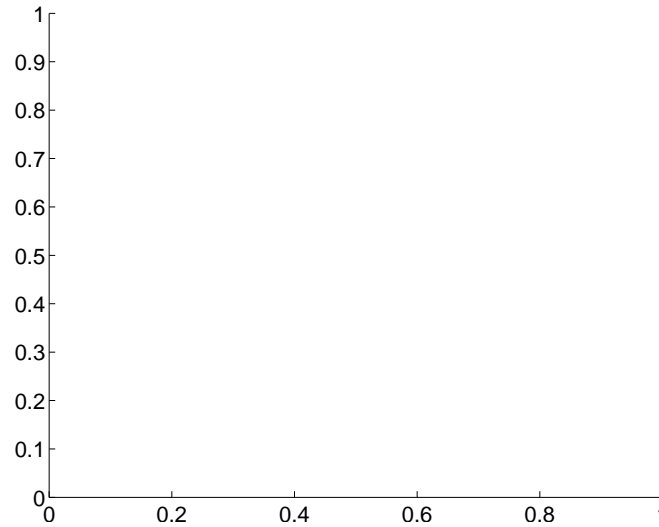
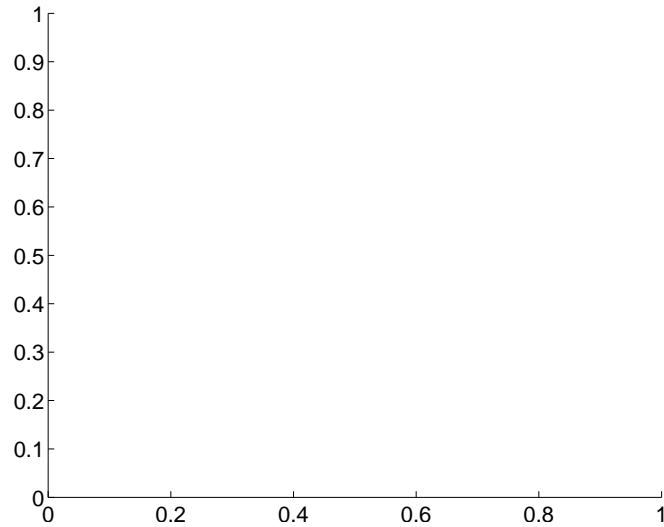
There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	4.45 ± 2.35	1.90	4.06 ± 2.12	1.82 ± 3.27

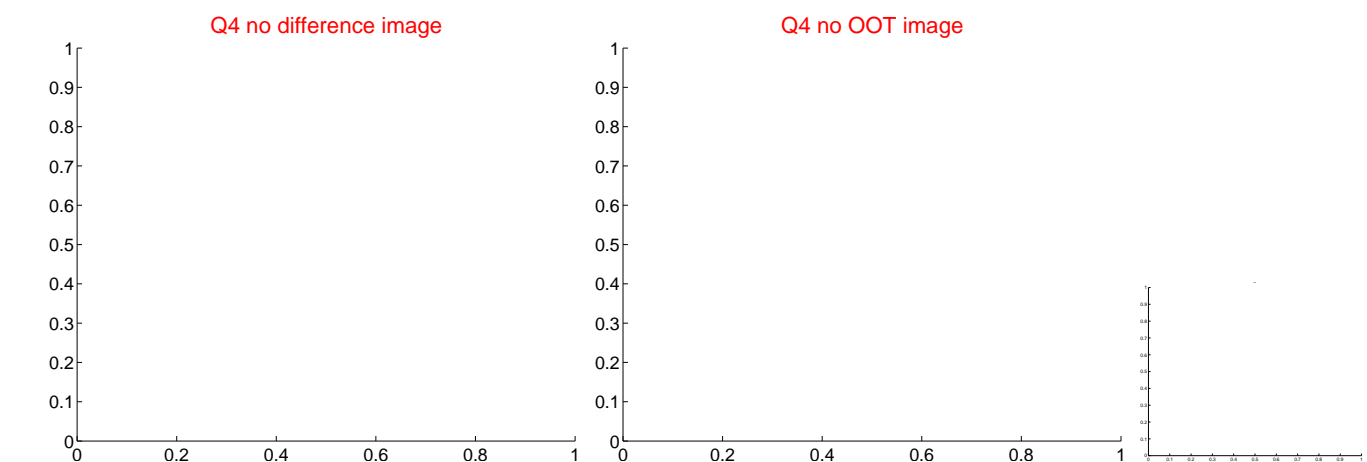
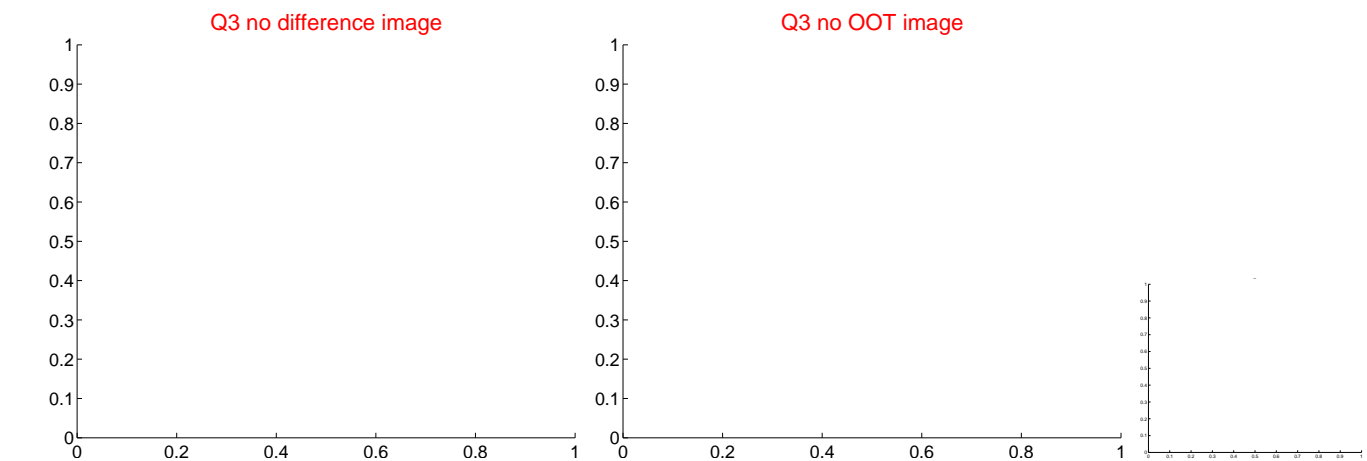
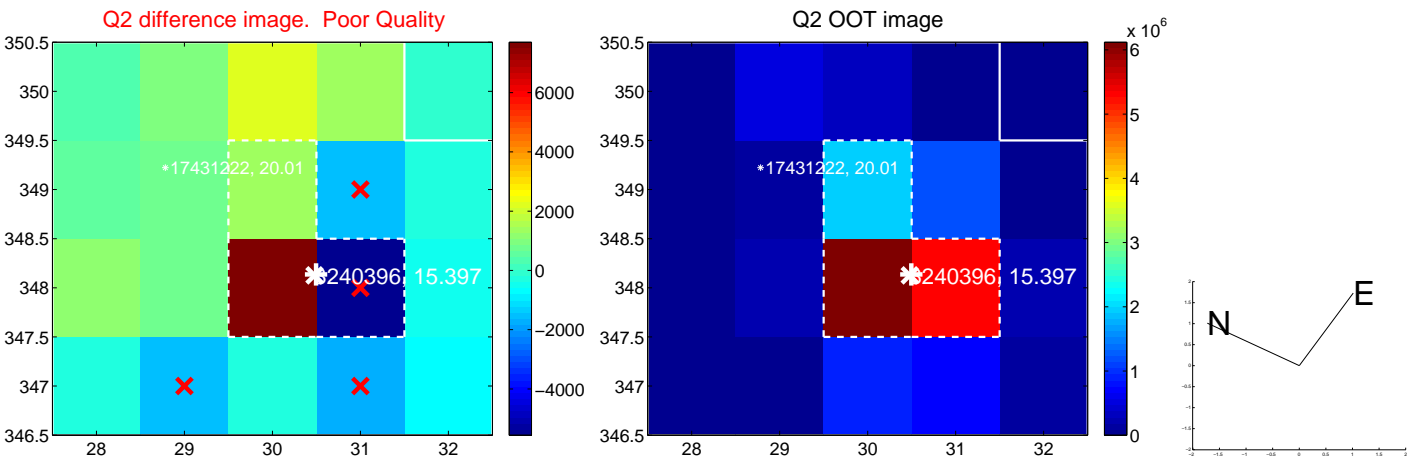
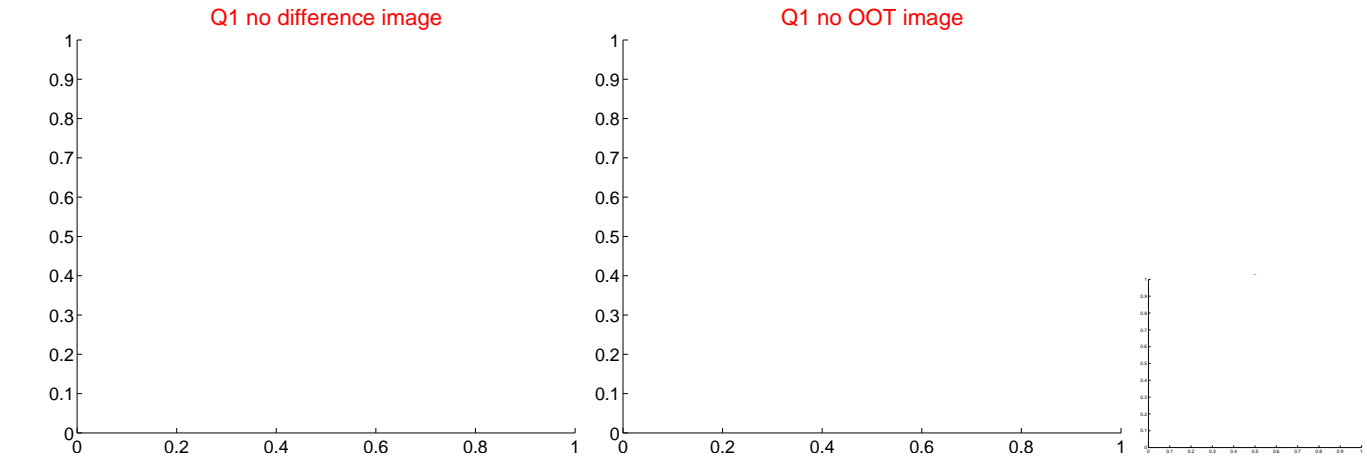
There is no PRF-fit offset from OOT-fit

There is no PRF-fit offset from KIC

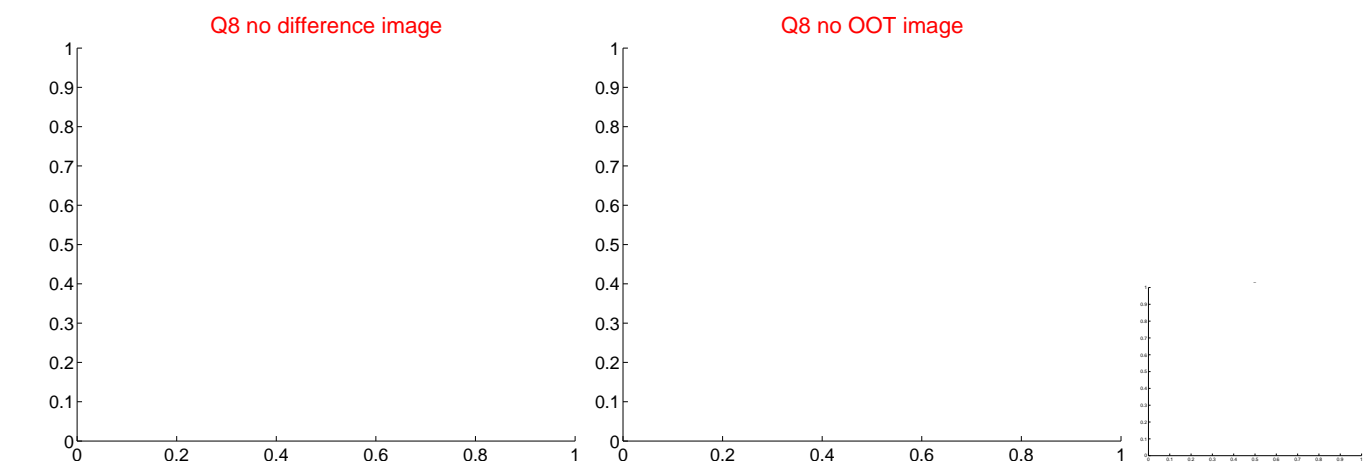
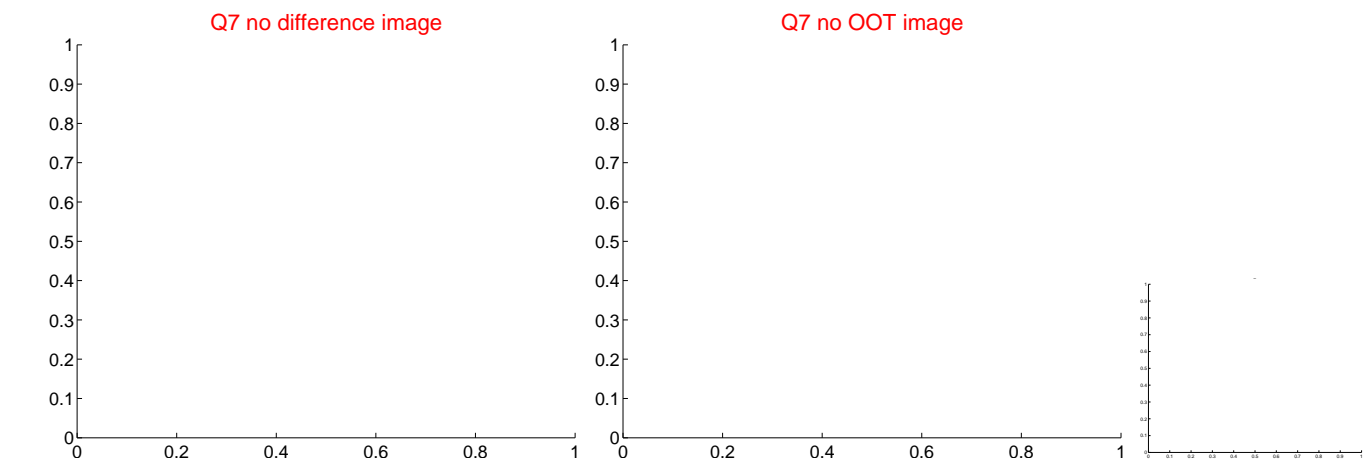
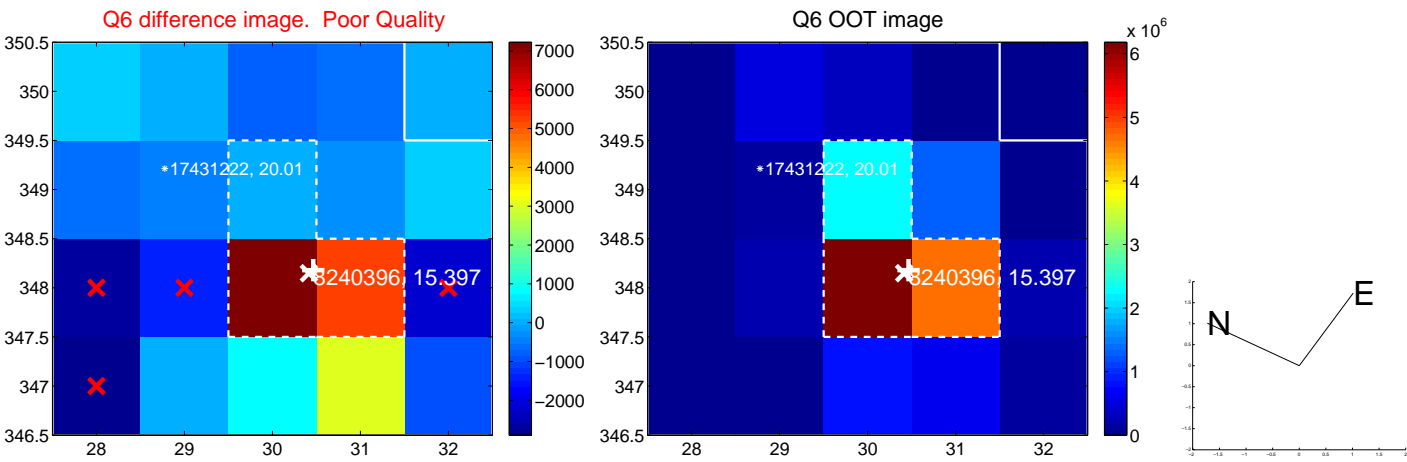
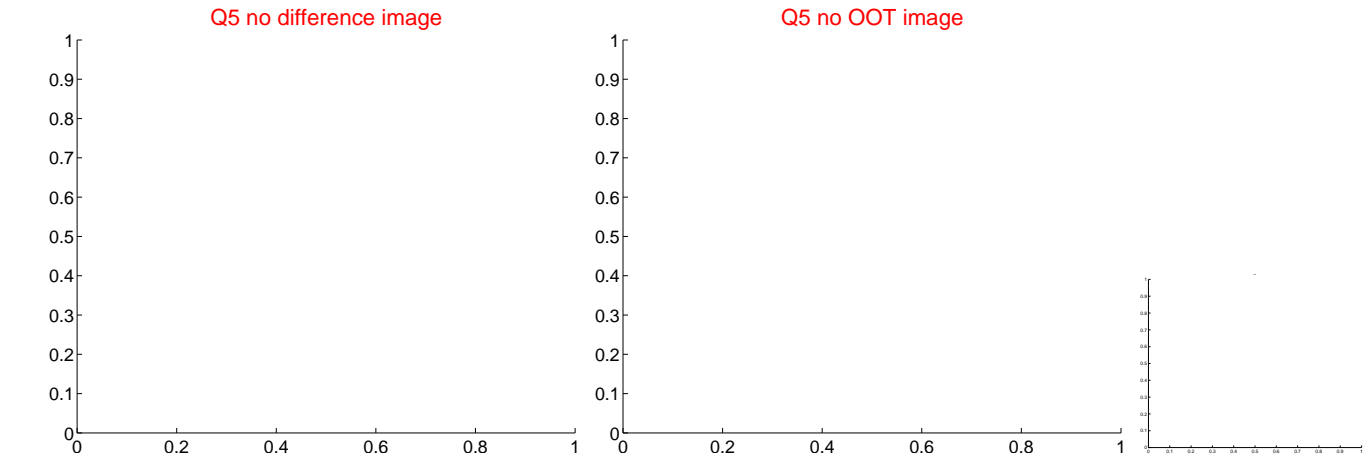


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



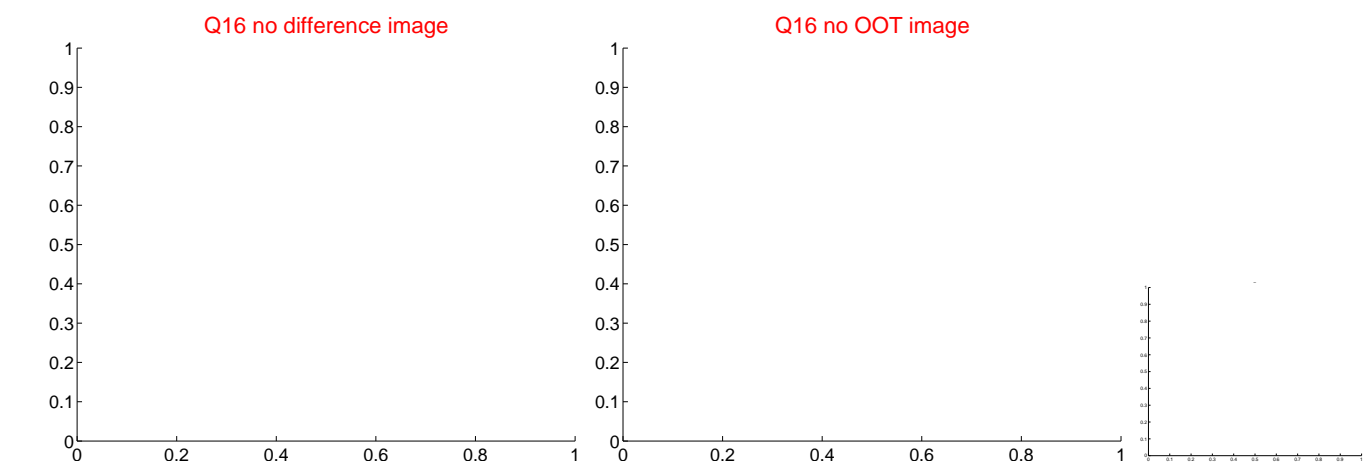
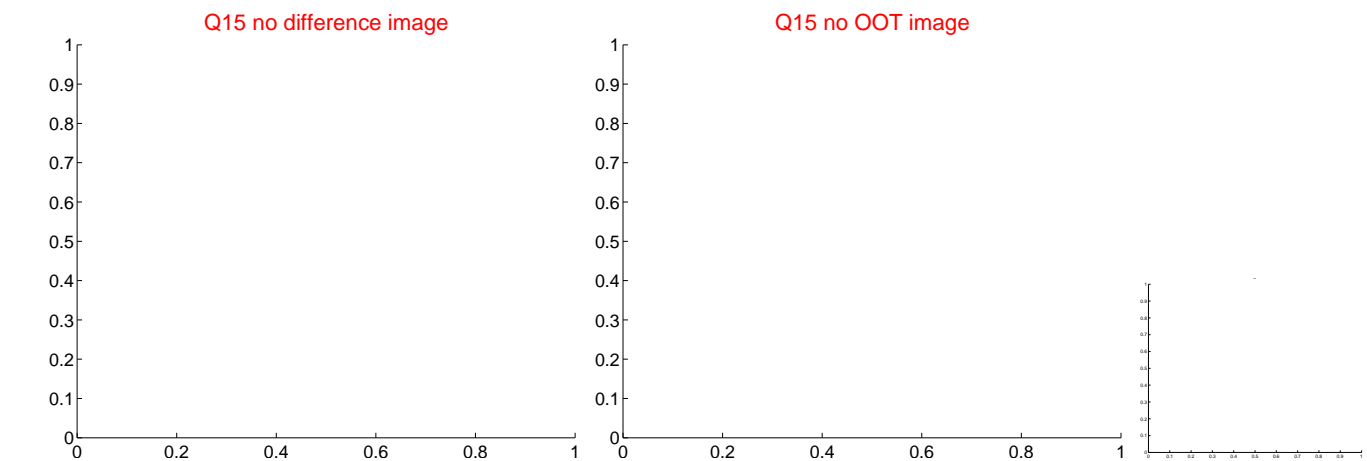
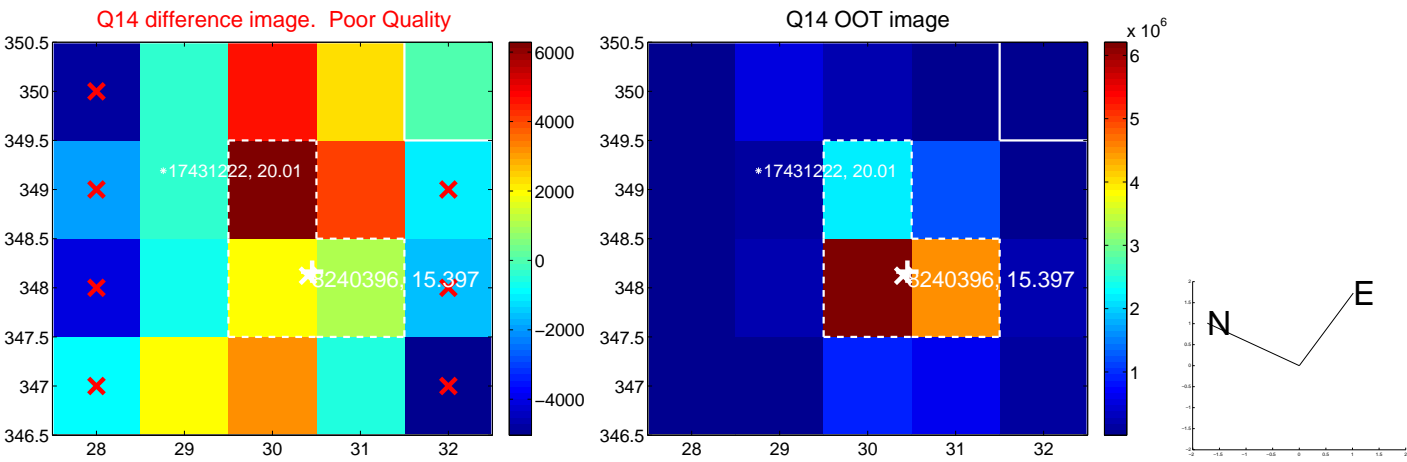
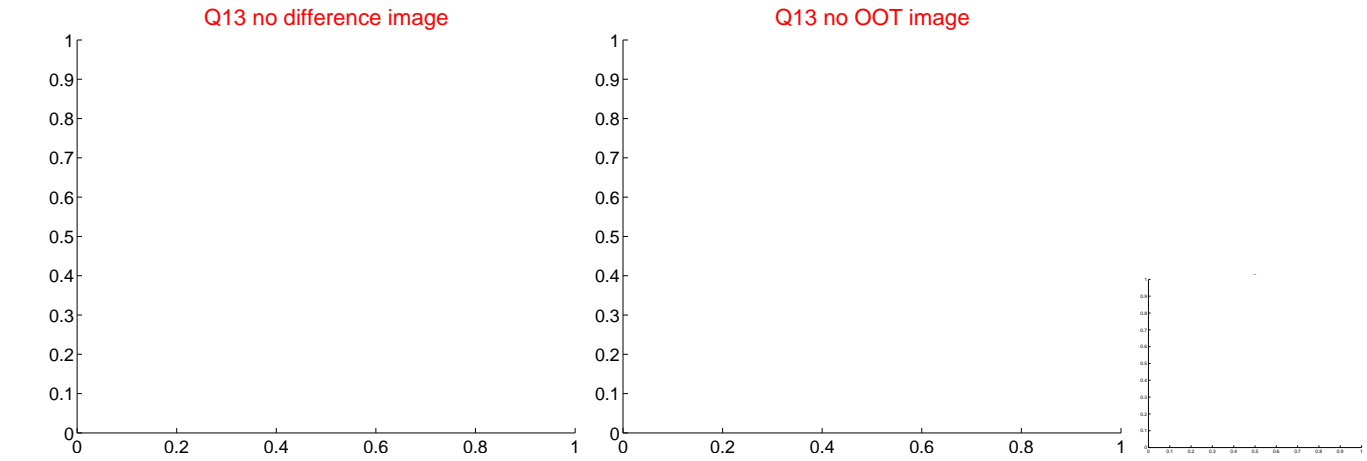
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



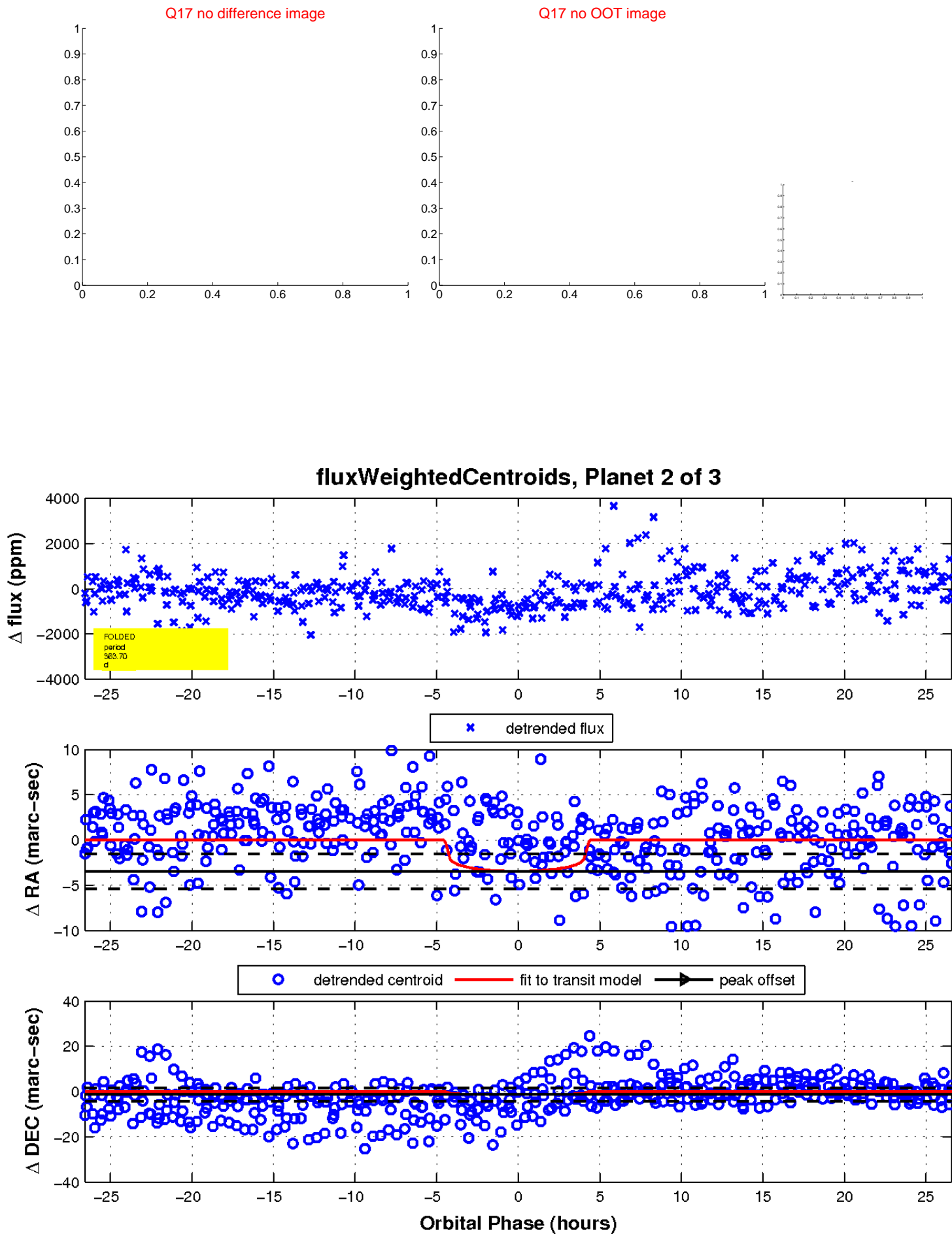
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: 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.



UKIRT Image

Declination

