

KIC 008247608

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})
008247608-01	OBS	No	275.748438	395.577435	2015.9	2.198	27.2	10.9	1.38	6514	6.28	4.22
008247608-02	OBS	No	420.164123	264.075928	905.3	11.704	20.7	2.5	1.38	6514	4.93	2.40
008247608-03	OBS	No	224.920619	155.680638	0.4	7.192	23.2	0.0	1.38	6514	0.10	5.53
008247608-04	OBS	No	232.027950	322.166296	67.2	0.561	23.8	0.9	1.38	6514	1.31	5.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008247608-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008247608-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008247608-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008247608-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

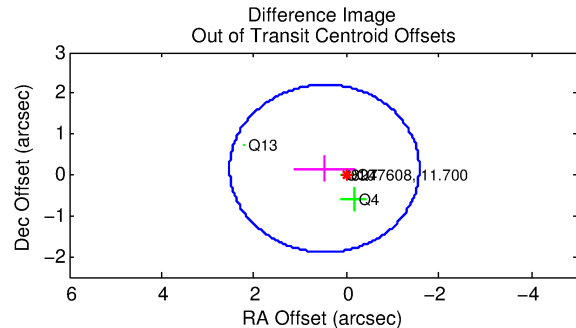
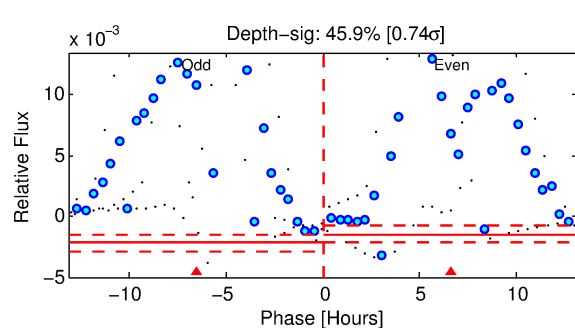
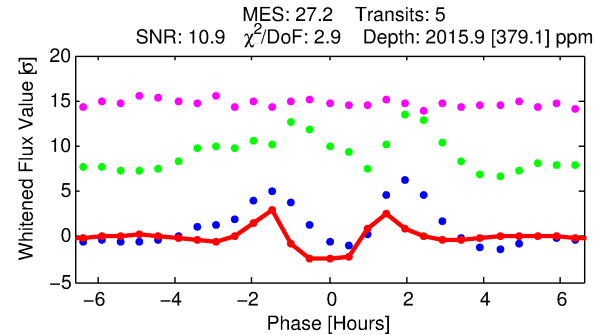
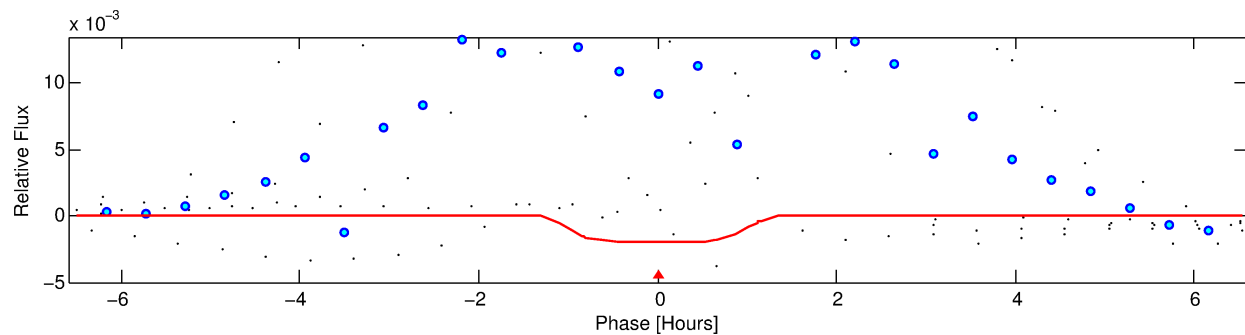
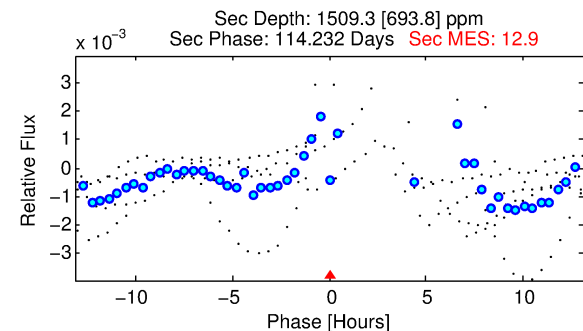
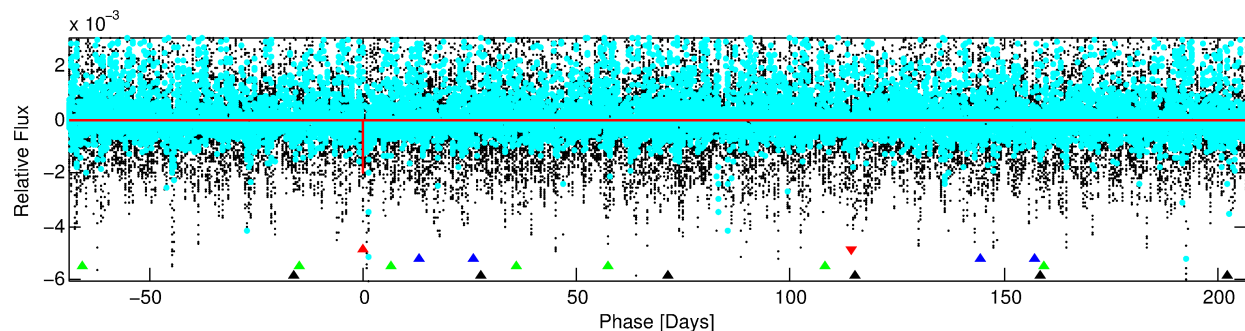
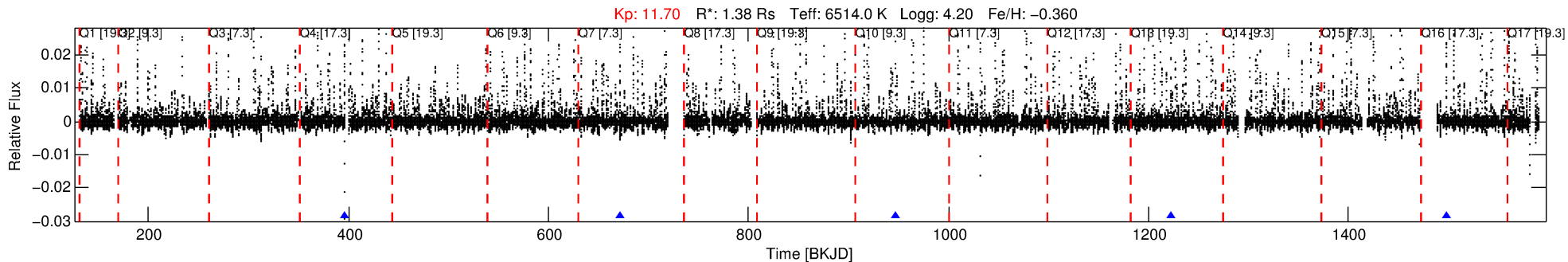
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008247608-01

No Significant Match Found

DV One-Page Summary

KIC: 8247608 Candidate: 1 of 4 Period: 275.748 d



DV Fit Results:

Period = 275.74844 [0.00257] d
Epoch = 395.5774 [0.0050] BKJD
Rp/R* = 0.0417 [0.0519]
a/R* = 972.86 [6362.36]
b = 0.23 [26.59]
Seff = 4.22 [1.57]
Teff = 365 [34] K
Rp = 6.28 [8.01] Re
a = 0.8537 [0.2041] AU
Ag = 15362.75 [39292.88] [0.39σ]
Teffp = 6289 [3986] K [1.49σ]

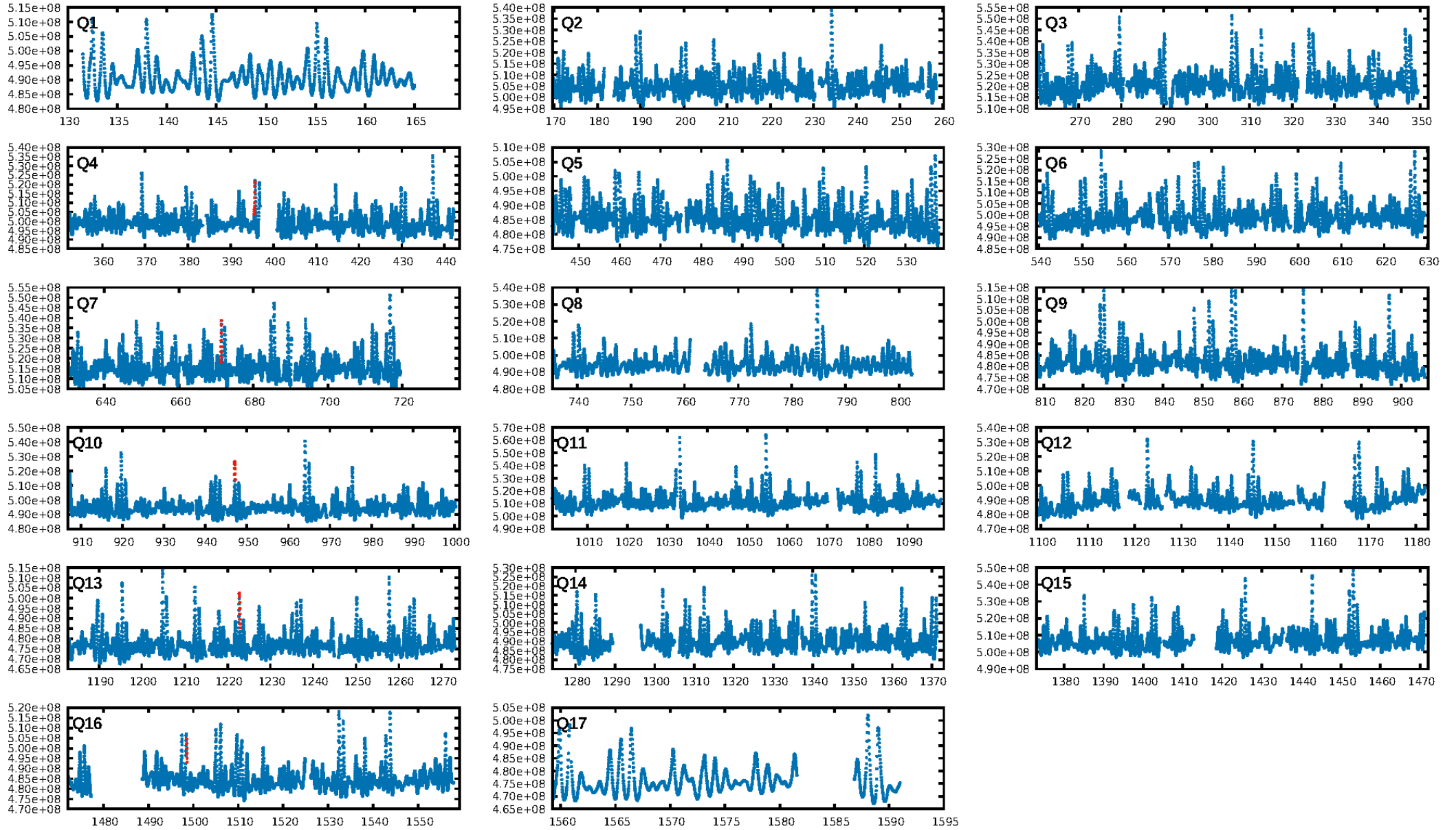
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [462.63σ]
LongPeriod-sig: 100.0% [291.04σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.4127
Centroid-sig: 45.4%
Centroid-so: 0.224 arcsec [2.23σ]
OotOffset-rm: 0.503 arcsec [0.74σ]
KicOffset-rm: 0.748 arcsec [1.36σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 1.00 [4/4]

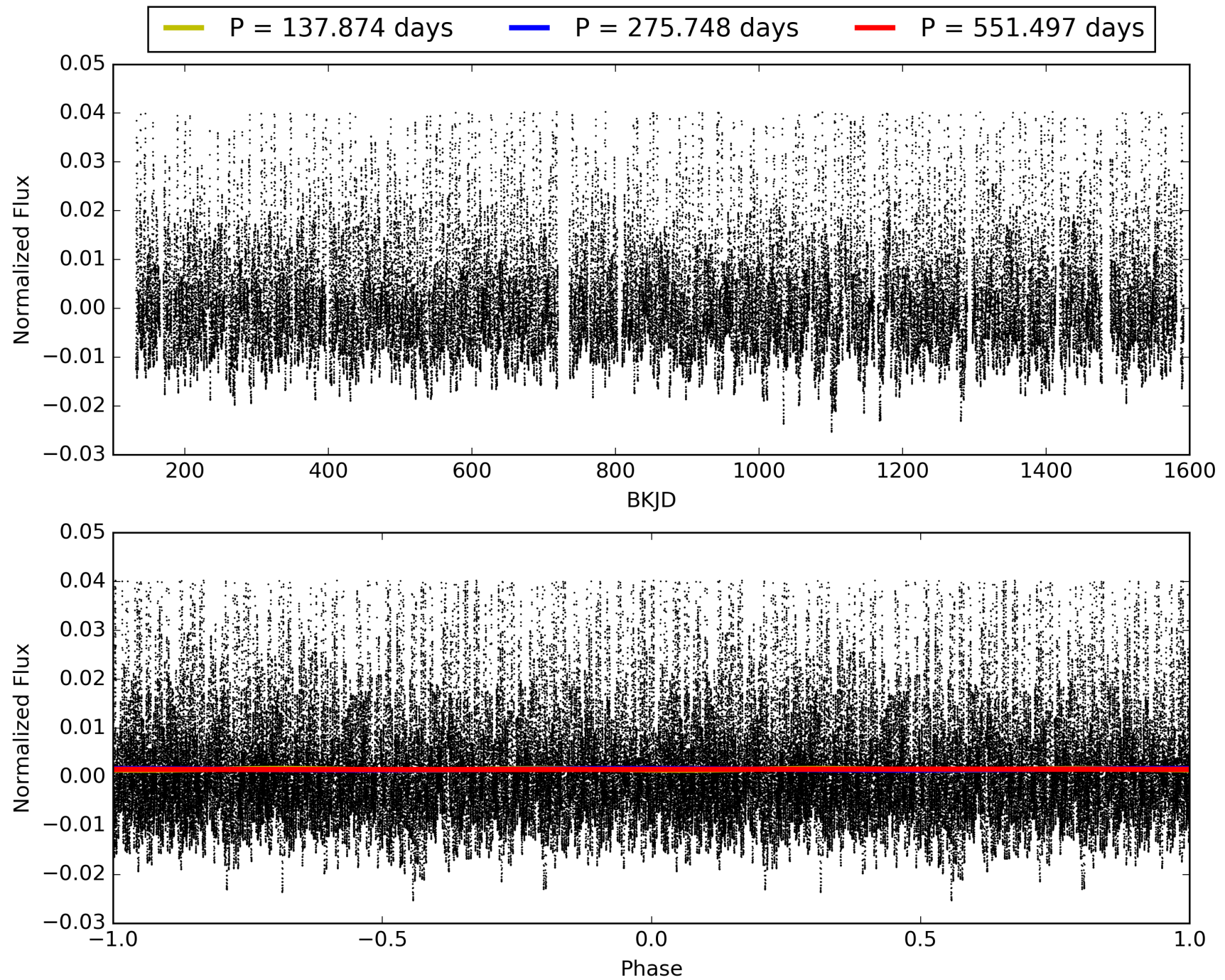
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:38:44 Z

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

TCE 008247608-01, PDC Light Curves

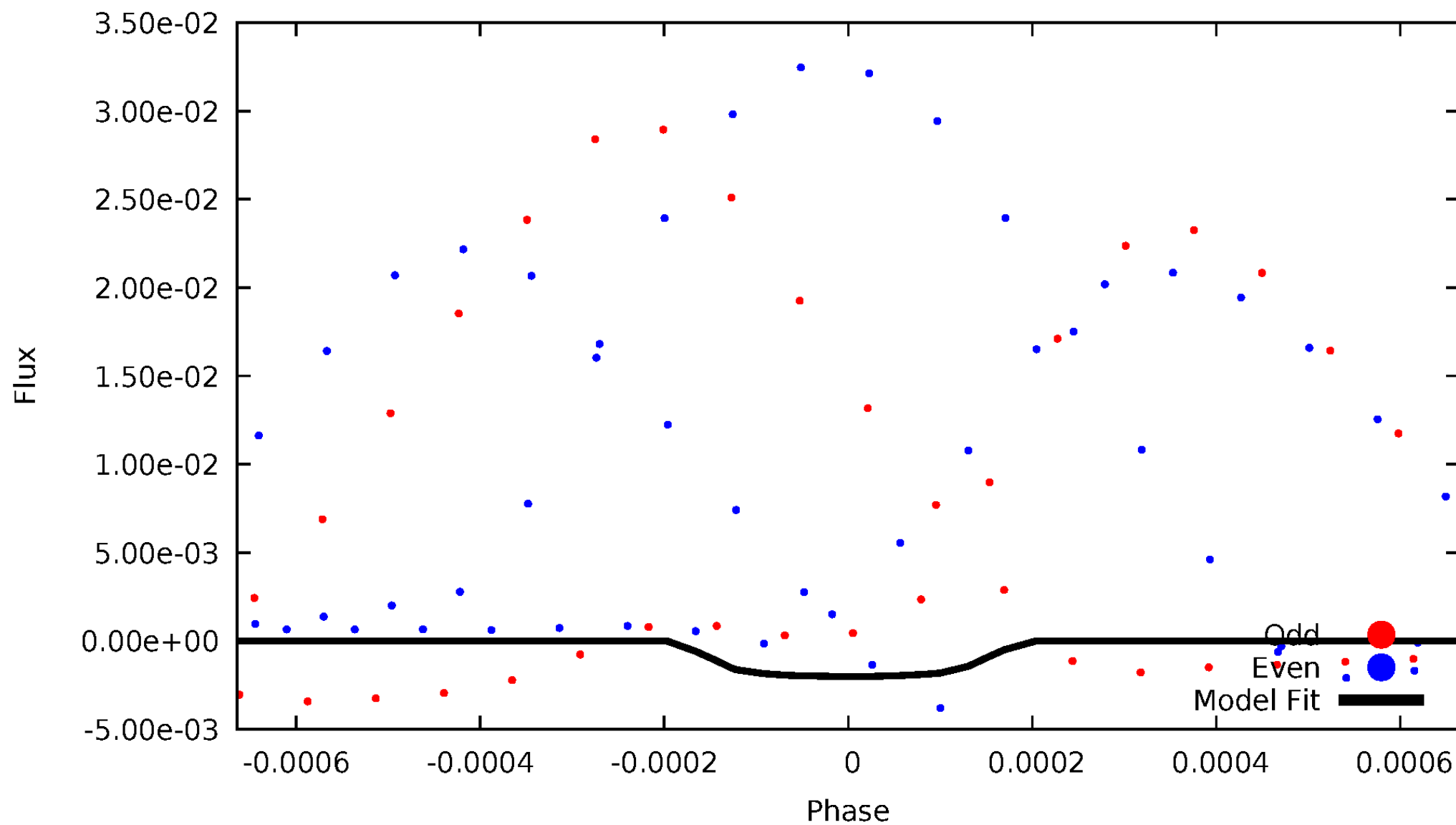


TCE 008247608-01



DV Odd/Even

TCE 008247608-01

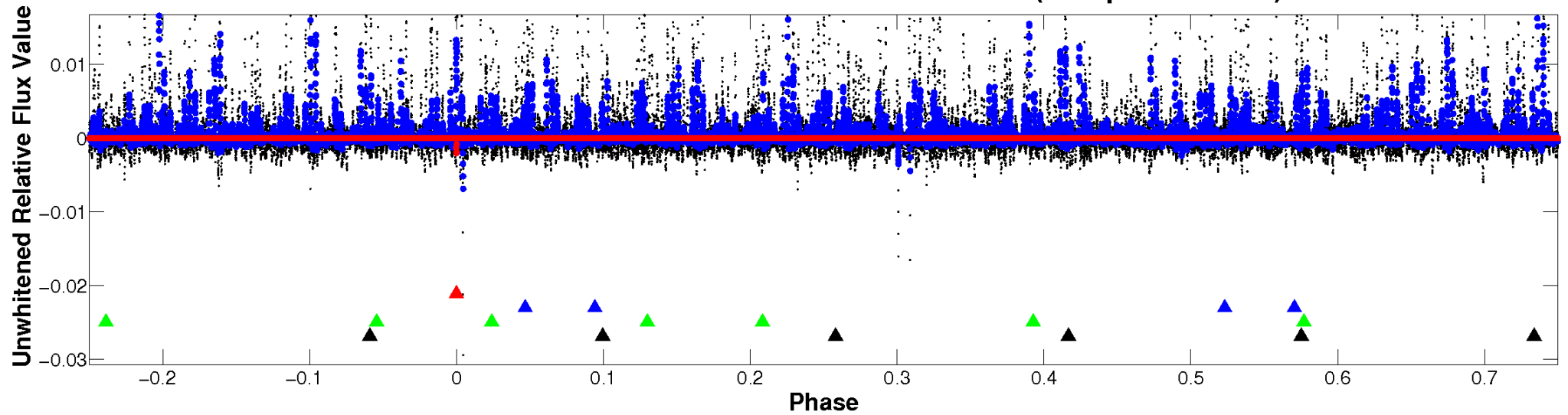


ALT Odd/Even

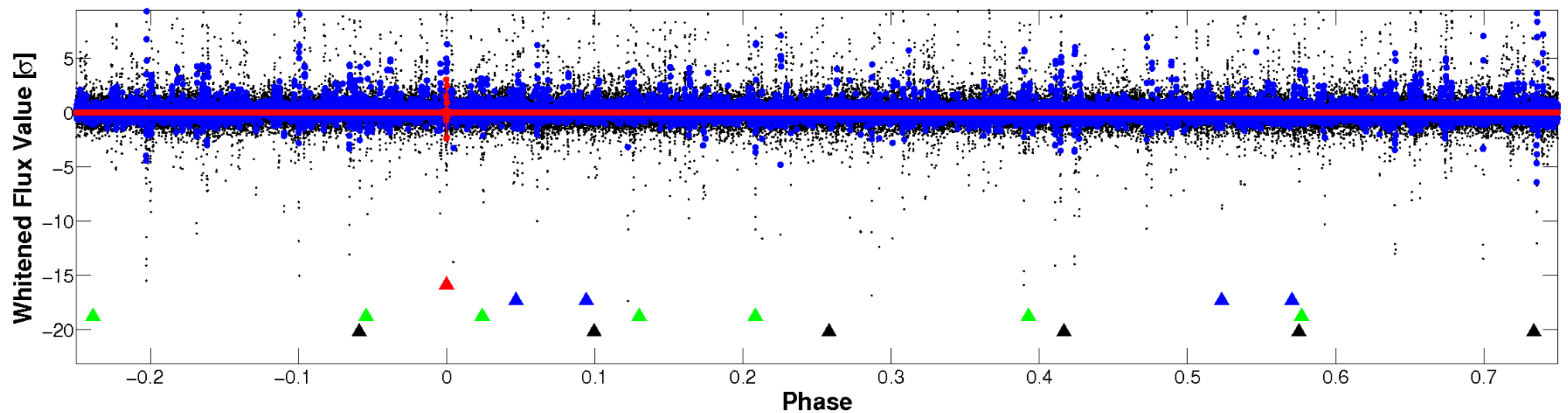
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

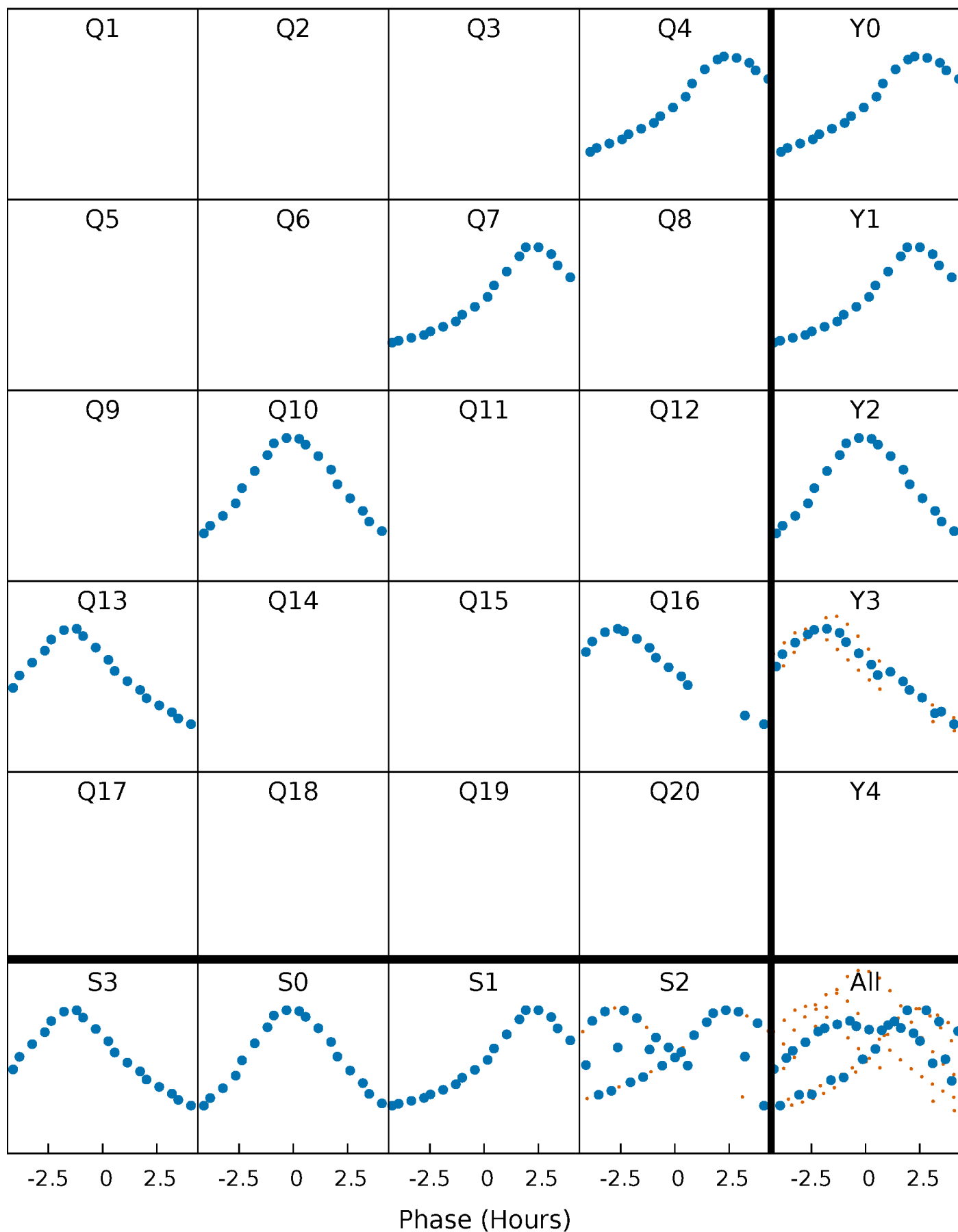


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



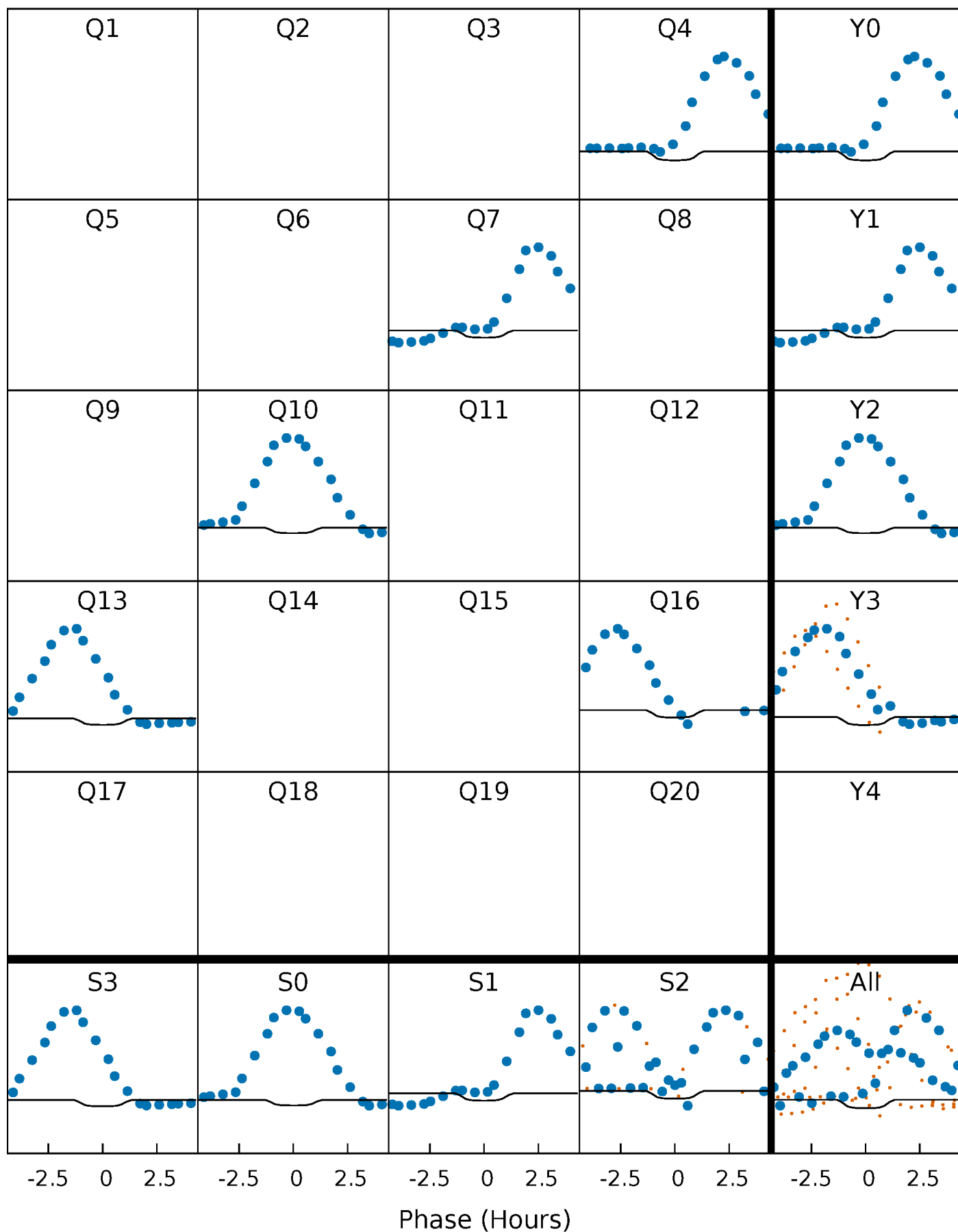
PDC Quarter-Phased Transit Curves

TCE 008247608-01 P=275.748438 Days $T_0=395.577435$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008247608-01 P=275.748438 Days $T_0=395.577435$ (BKJD)

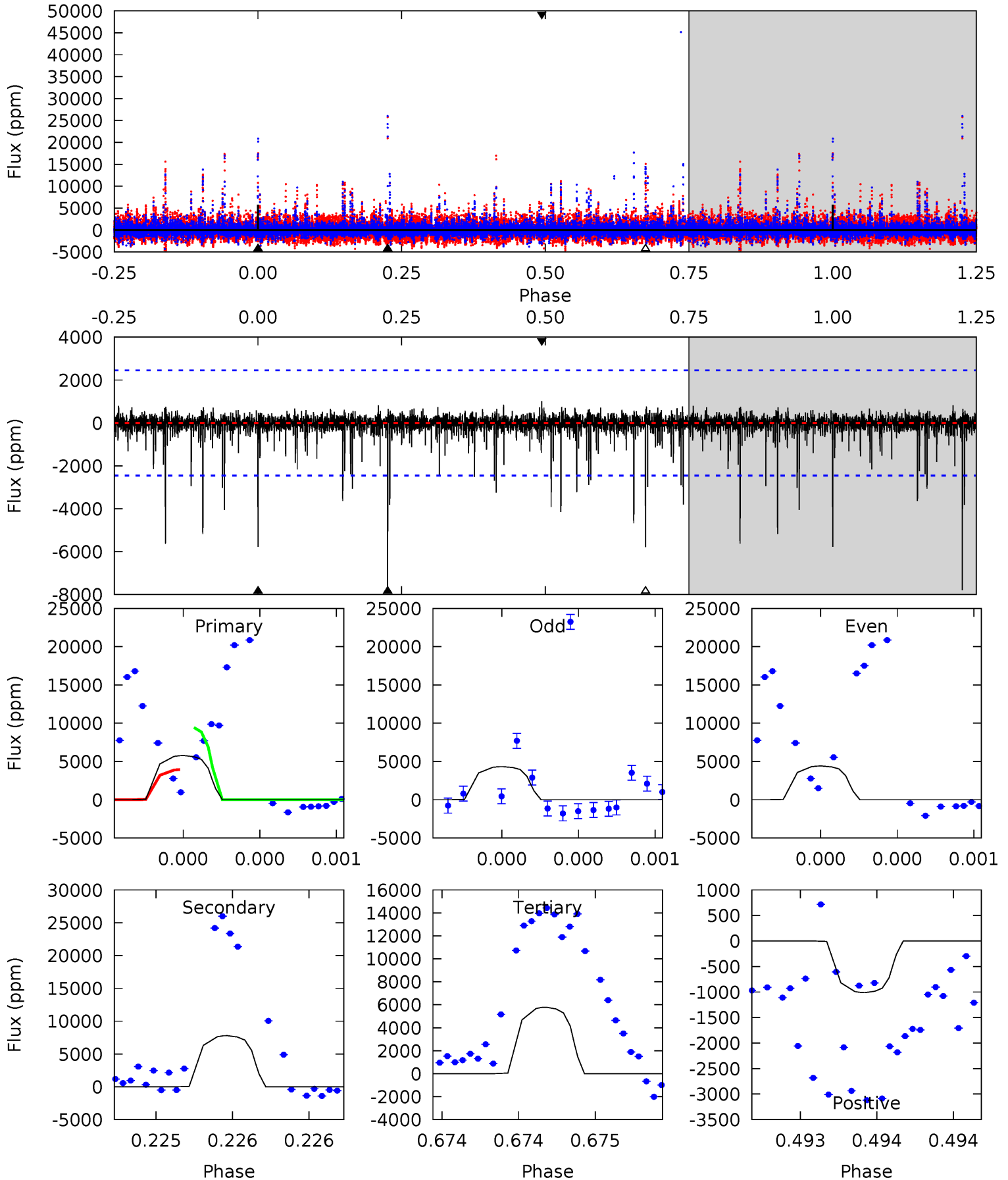


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

008247608-01, P = 275.748438 Days, E = 119.828997 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	17.8	13.3	2.32	5.61	3.54	0.80	-0.04	10.9	4.59	15.5	0.06	2.77	0.11	5.57



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 008247608

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6514^{+146}_{-178}	$4.196^{+0.198}_{-0.180}$	$-0.360^{+0.250}_{-0.300}$	$1.380^{+0.382}_{-0.313}$	$1.089^{+0.177}_{-0.133}$	$0.583^{+0.569}_{-0.292}$
	+2%/-3%	+5%/-4%	+69%/-83%	+28%/-23%	+16%/-12%	+98%/-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 008247608-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7788 ± 437	$8.36^{+6.86}_{-5.18}$	508^{+39}_{-36}	8521^{+10647}_{-2389}	$46265^{+273147}_{-32609}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

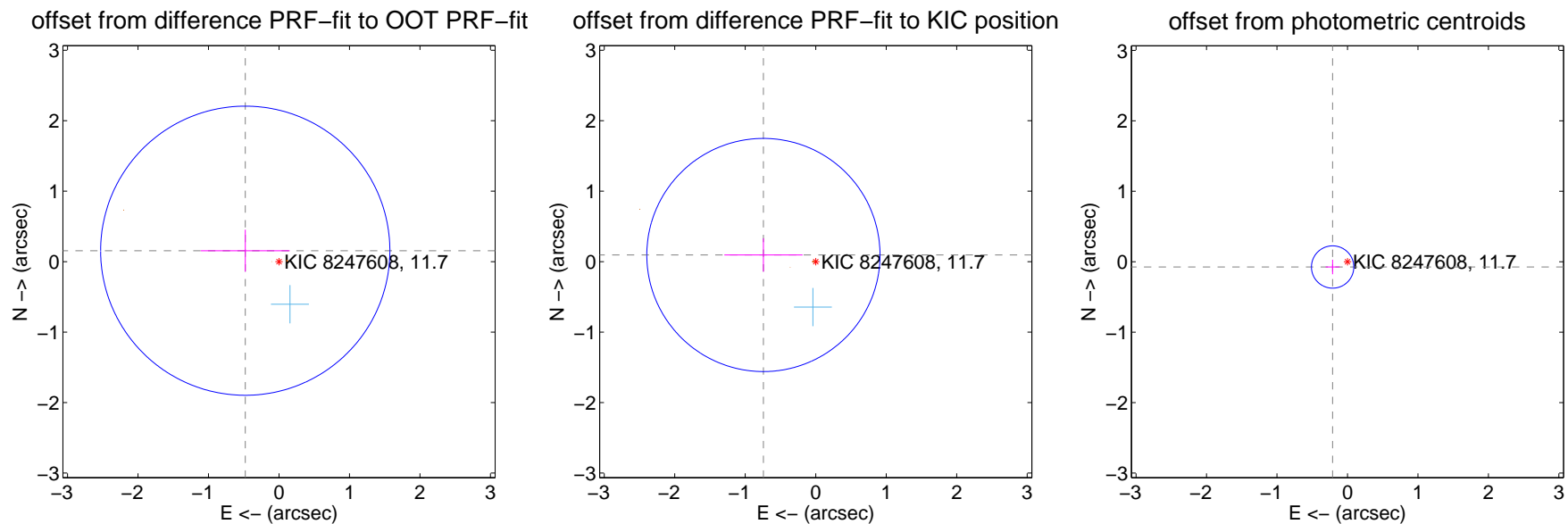
DV Centroid Data

Supplemental centroid analysis for 008247608-01. **Kepler magnitude: 11.70.** Transit SNR 10.89

There are 1 quarters with good PRF difference image offsets

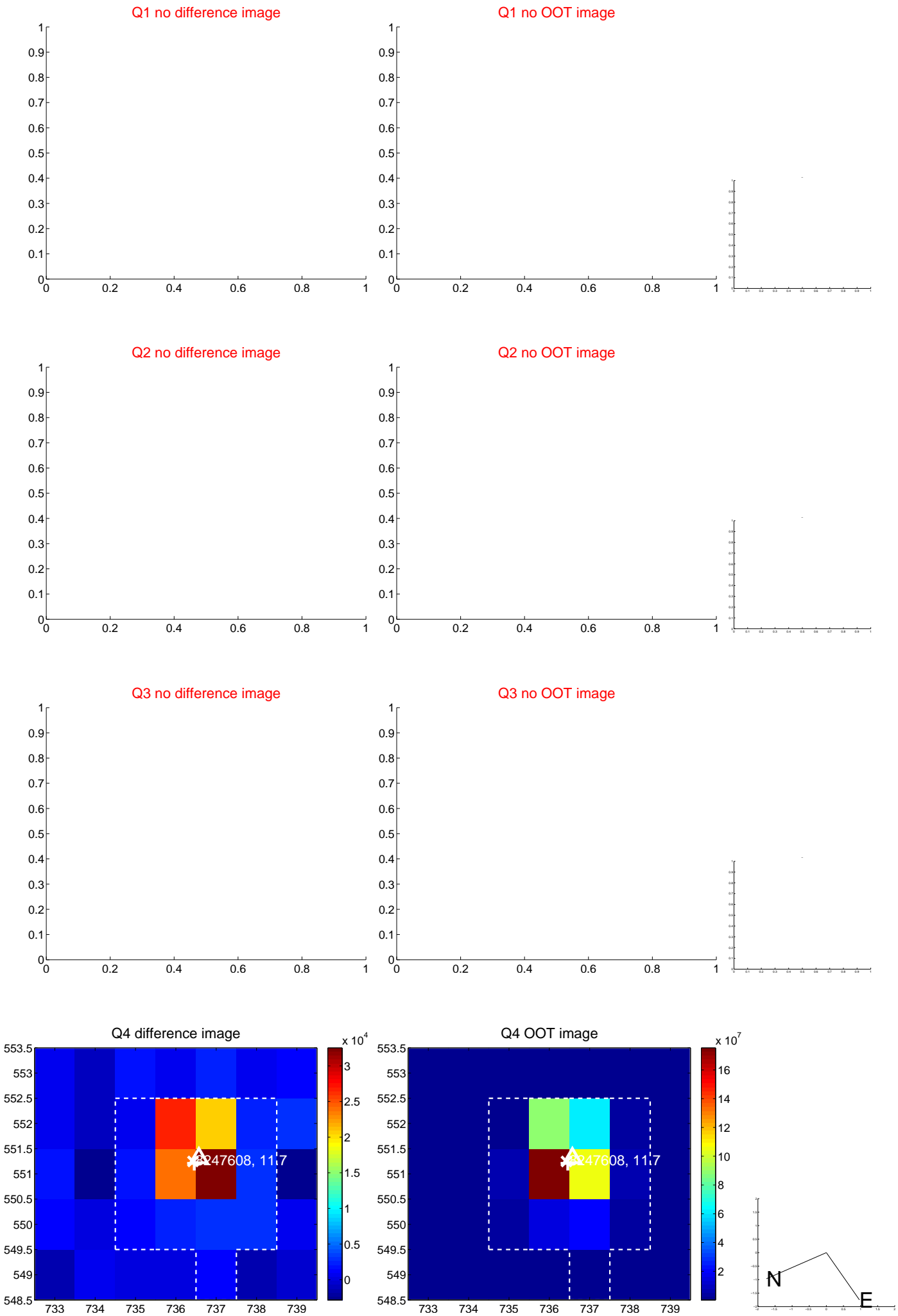
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.503 ± 0.684	0.74	0.479 ± 0.630	0.155 ± 0.298
PRF-fit source offset from KIC position	0.748 ± 0.551	1.36	0.742 ± 0.555	0.094 ± 0.237
photometric centroid source offset	0.22 ± 0.10	2.23	0.21 ± 0.10	-0.08 ± 0.10

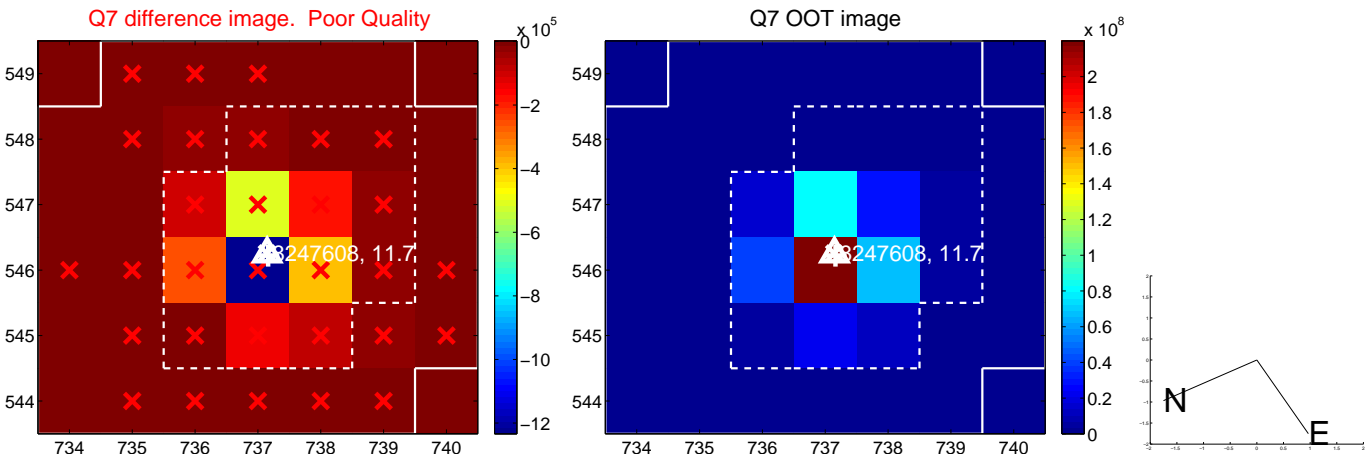


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

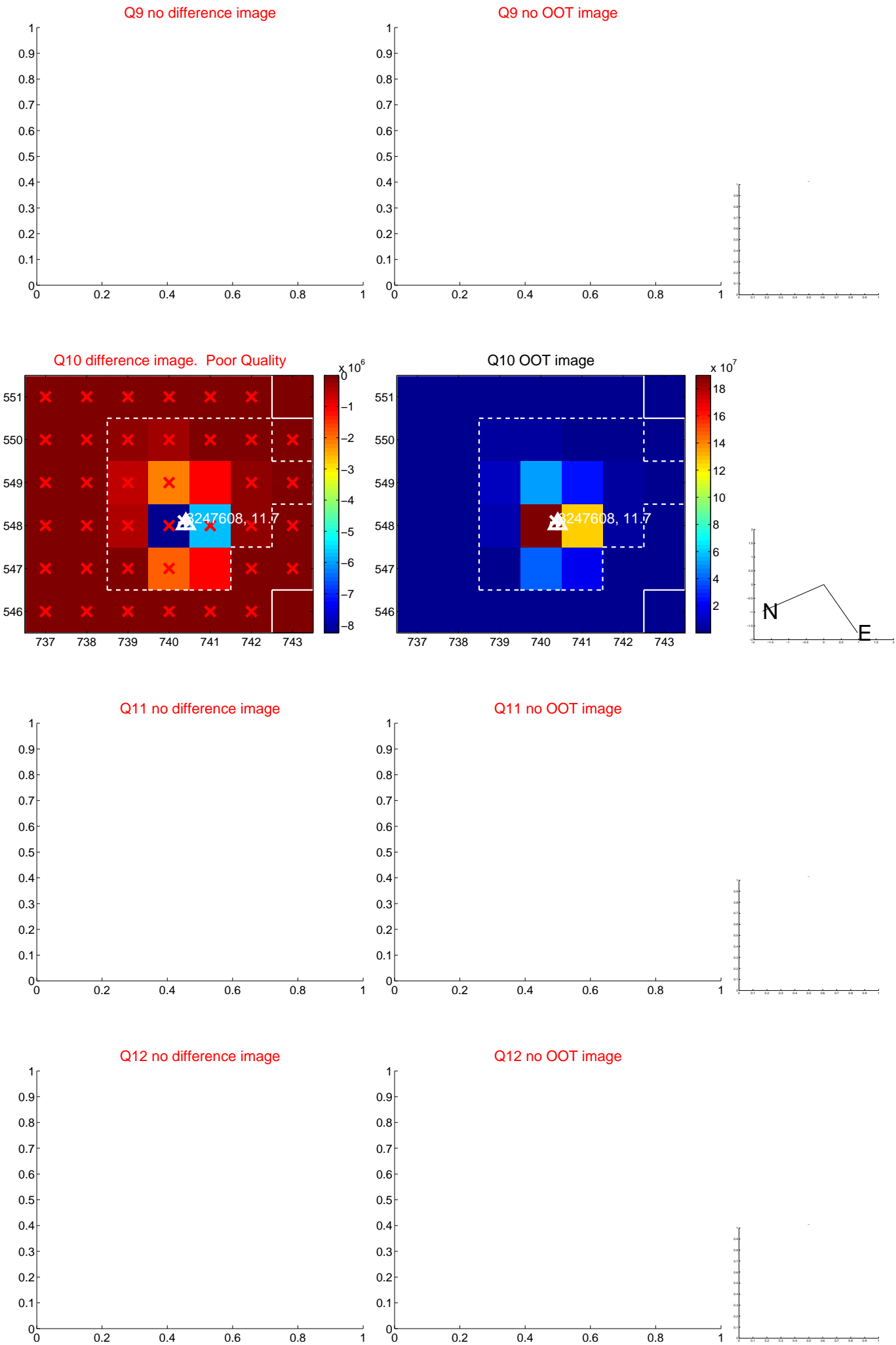
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



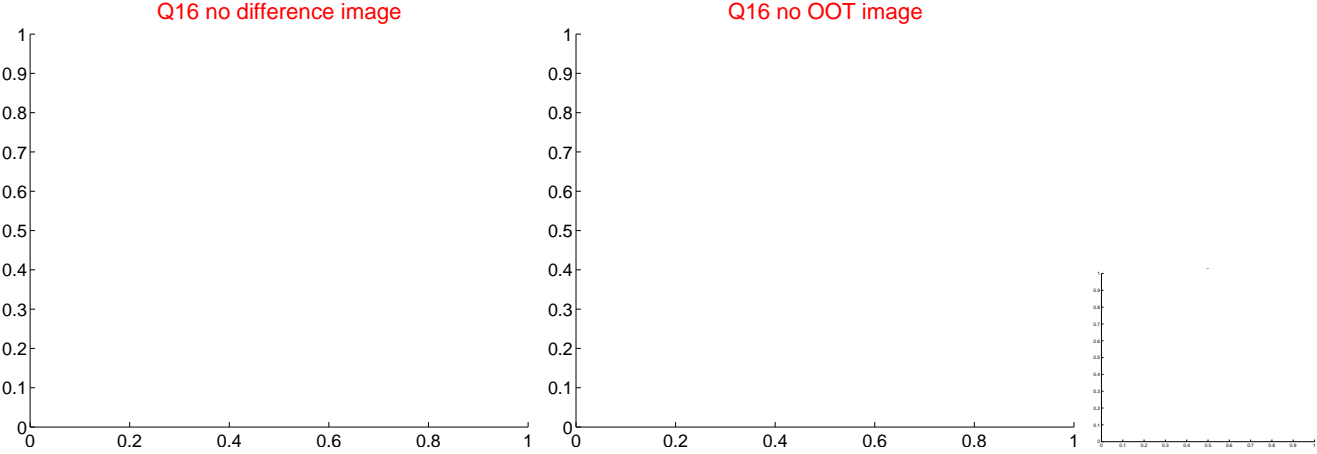
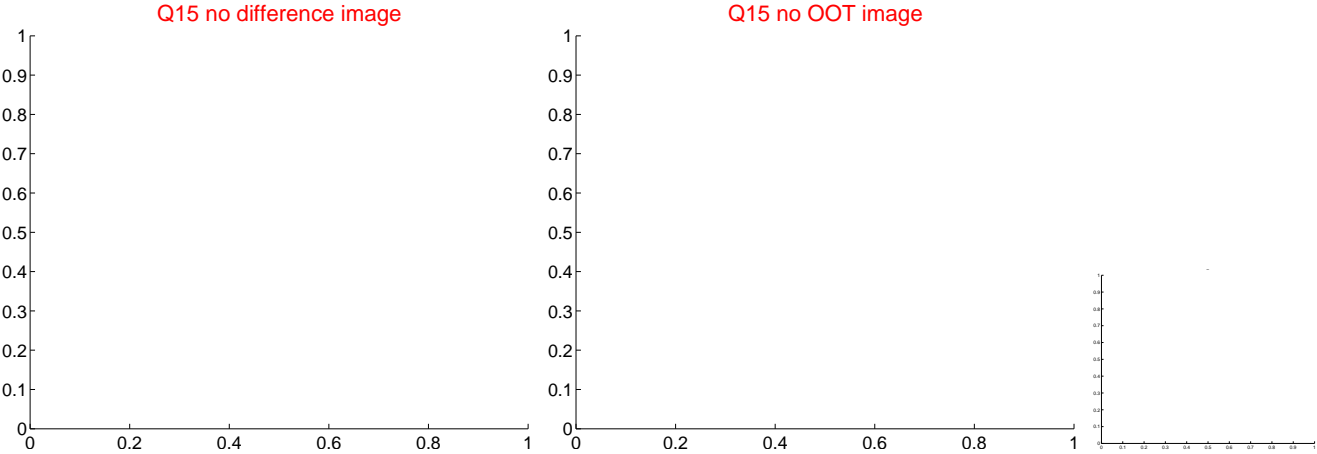
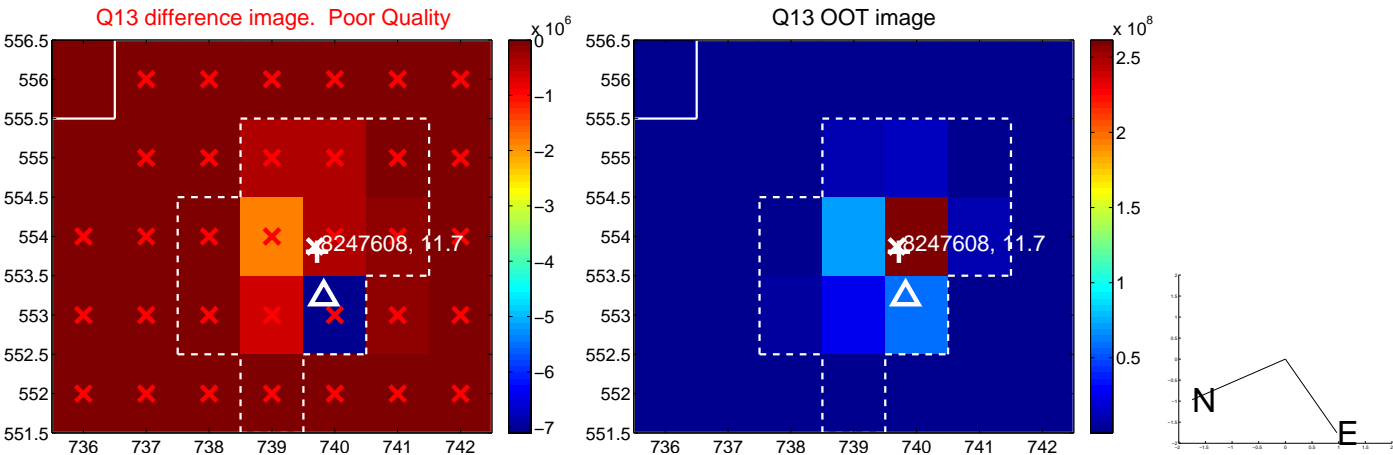
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



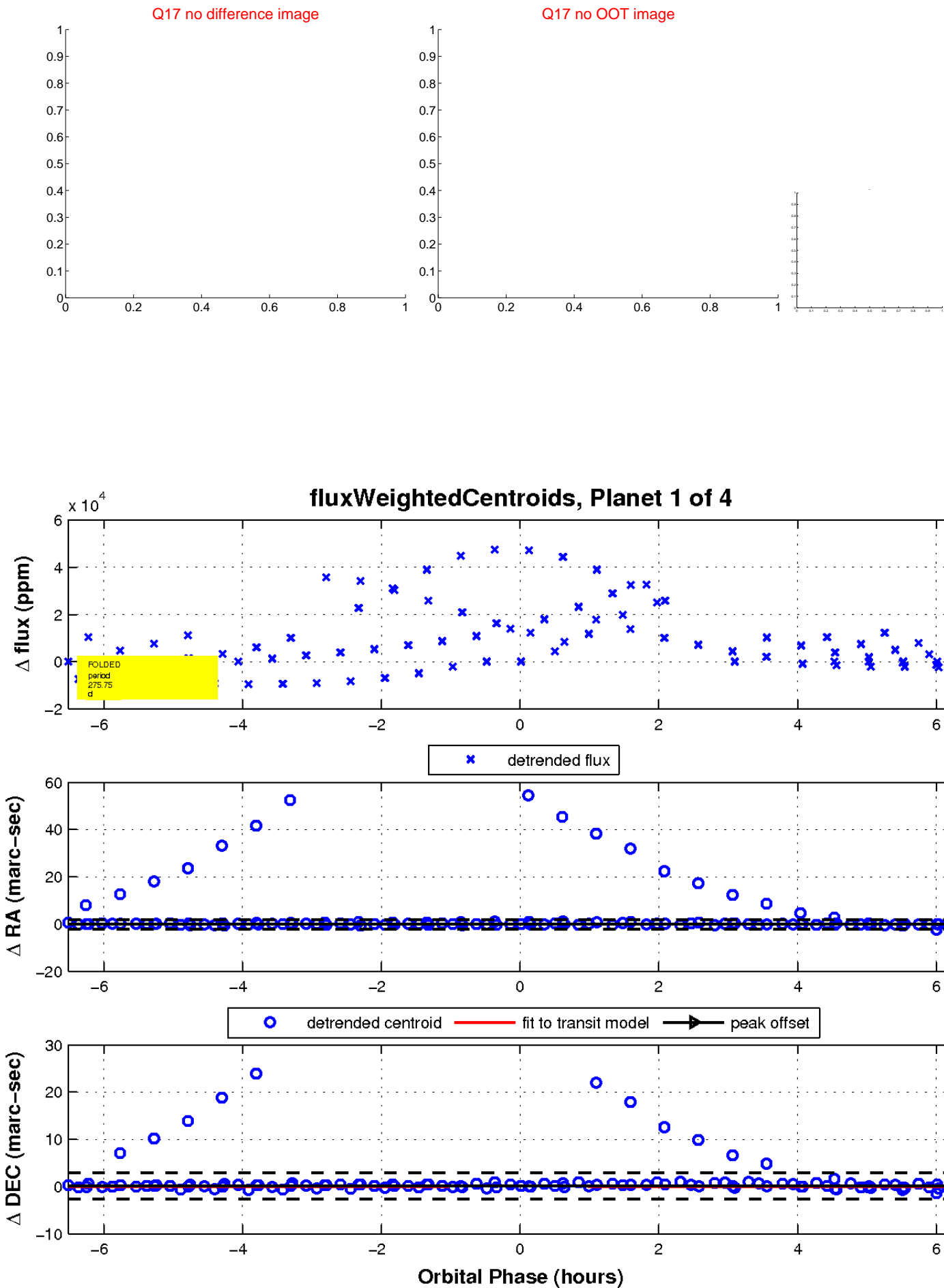
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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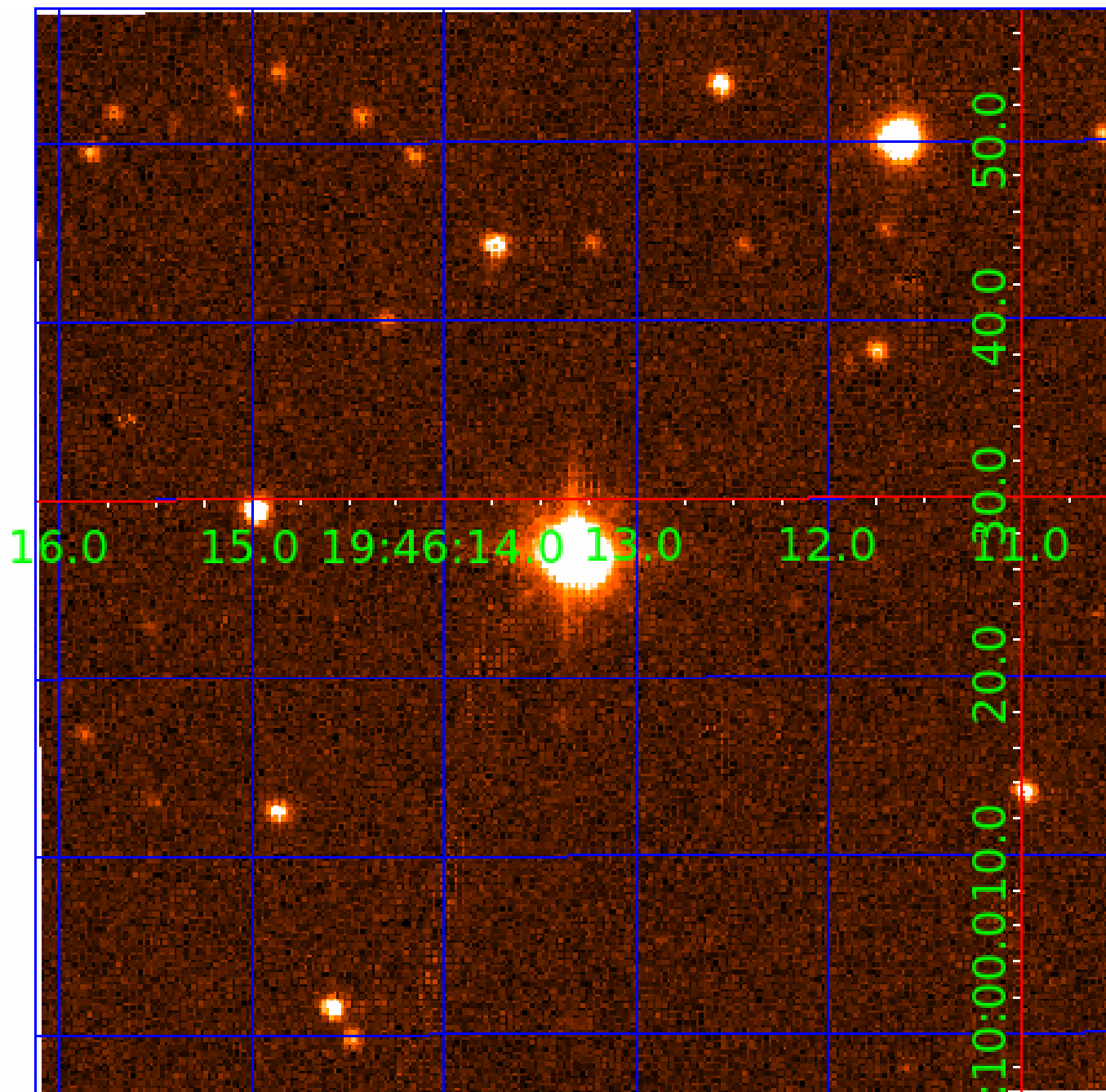


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008247608

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})
008247608-01	OBS	No	275.748438	395.577435	2015.9	2.198	27.2	10.9	1.38	6514	6.28	4.22
008247608-02	OBS	No	420.164123	264.075928	905.3	11.704	20.7	2.5	1.38	6514	4.93	2.40
008247608-03	OBS	No	224.920619	155.680638	0.4	7.192	23.2	0.0	1.38	6514	0.10	5.53
008247608-04	OBS	No	232.027950	322.166296	67.2	0.561	23.8	0.9	1.38	6514	1.31	5.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008247608-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008247608-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008247608-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008247608-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

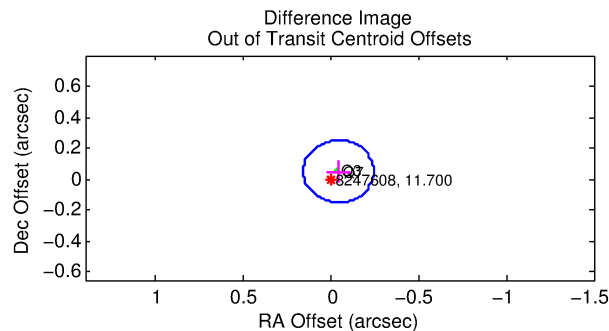
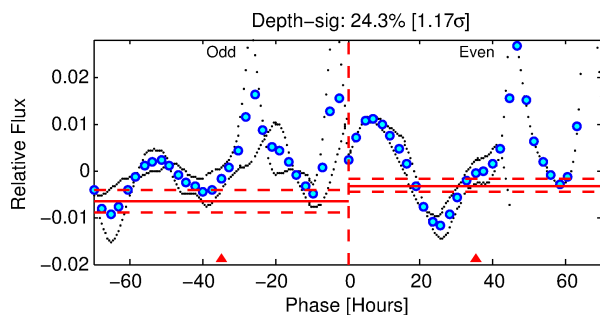
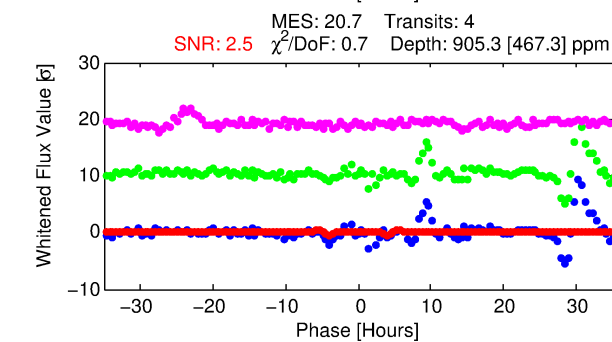
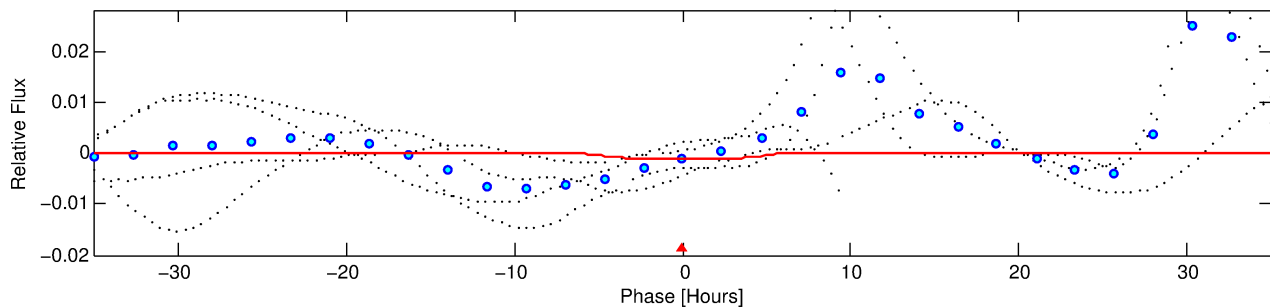
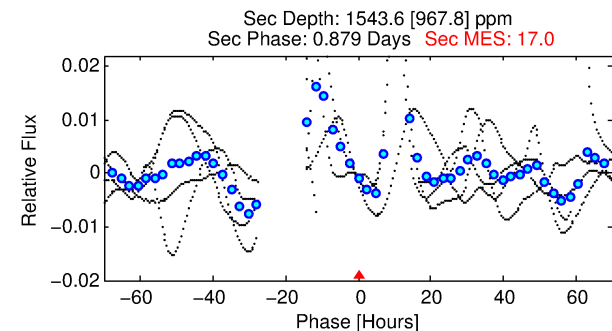
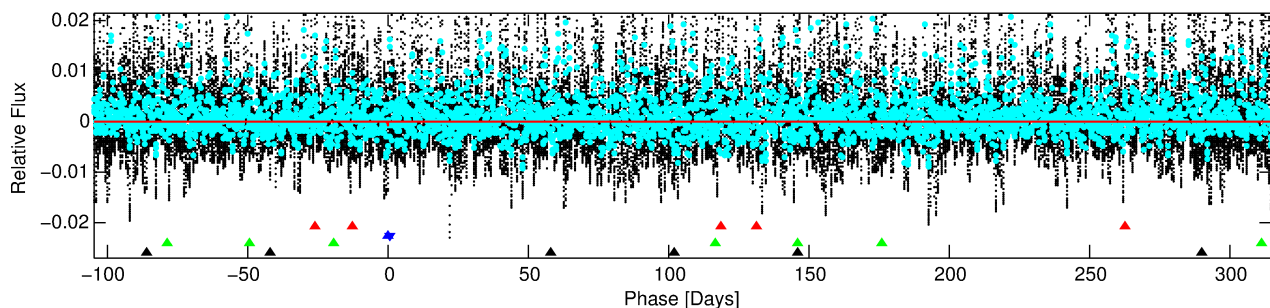
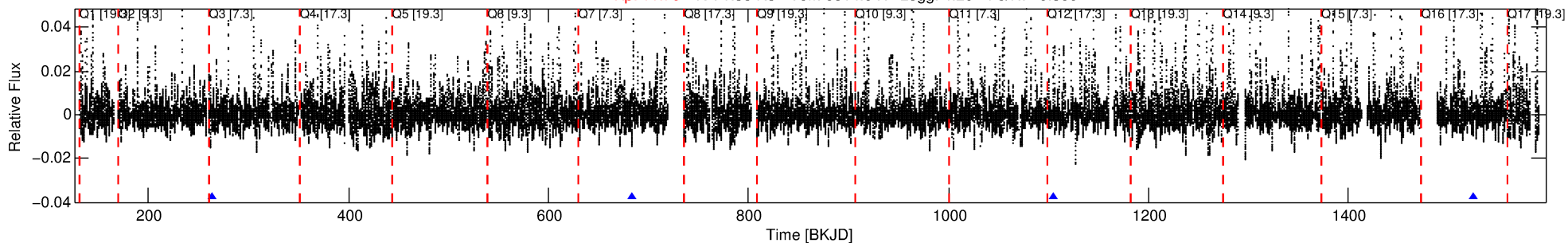
Ephemeris Match Information For 008247608-02

No Significant Match Found

DV One-Page Summary

KIC: 8247608 Candidate: 2 of 4 Period: 420.164 d

Kp: 11.70 R*: 1.38 Rs Teff: 6514.0 K Logg: 4.20 Fe/H: -0.360



DV Fit Results:

Period = 420.16412 [0.00787] d
Epoch = 264.0759 [0.0123] BKJD
Rp/R* = 0.0327 [0.0083]
a/R* = 129.58 [14.03]
b = 0.92 [0.02]
Seff = 2.40 [0.89]
Teff = 318 [30] K
Rp = 4.93 [1.85] Re
a = 1.1304 [0.2702] AU
Ag = 44679.55 [39417.61] [1.13σ]
Teffp = 7137 [1454] K [4.69σ]

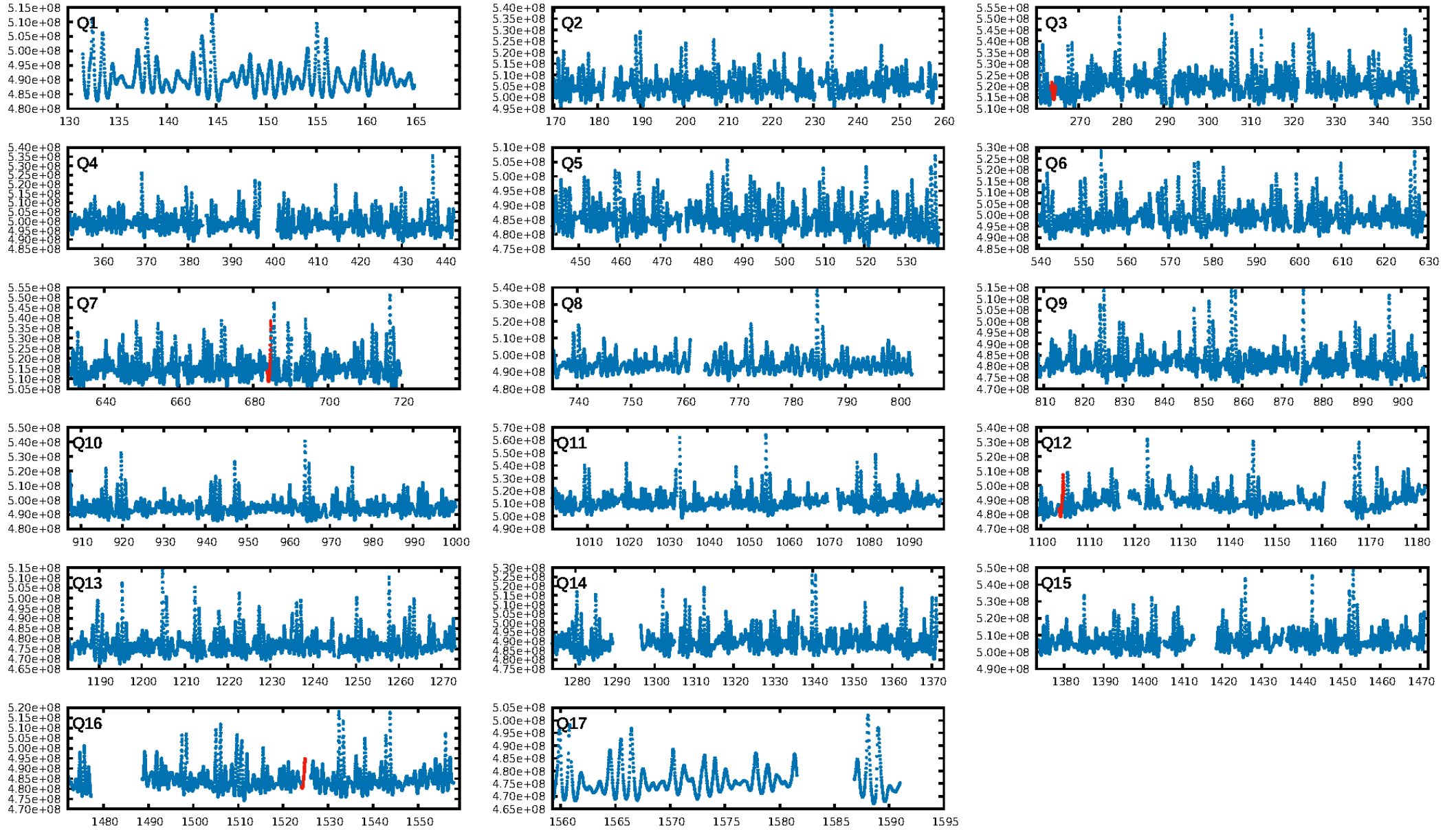
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [291.04σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 78.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.046
Centroid-sig: 7.6%
Centroid-so: 0.215 arcsec [1.03σ]
OotOffset-rm: 0.067 arcsec [1.00σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-rm: 0.119 arcsec [1.77σ]
KicOffset-st: 0/2/0/0 [2]
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DiffImageOverlap-fno: 1.00 [2/2]

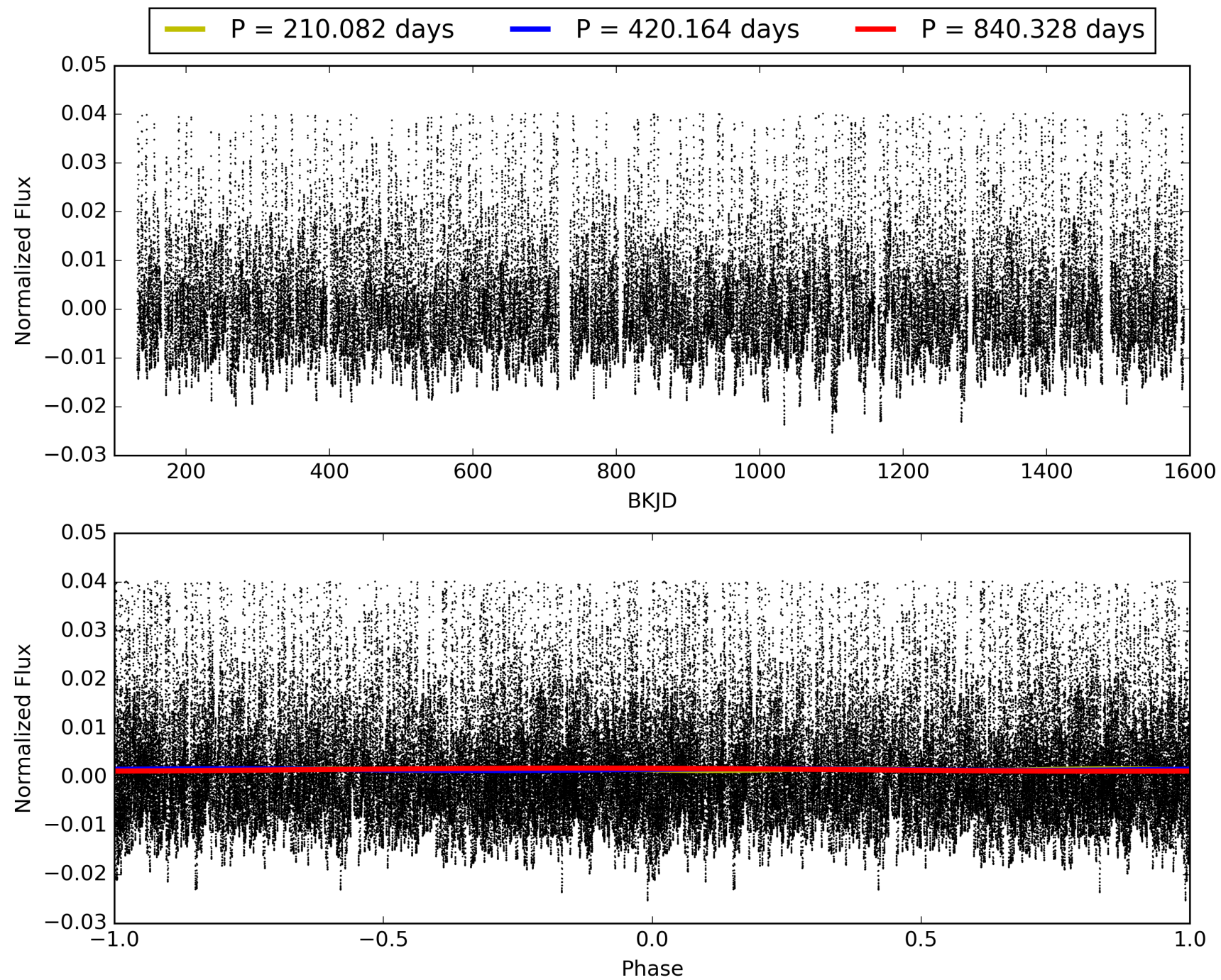
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:38:53 Z

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

TCE 008247608-02, PDC Light Curves

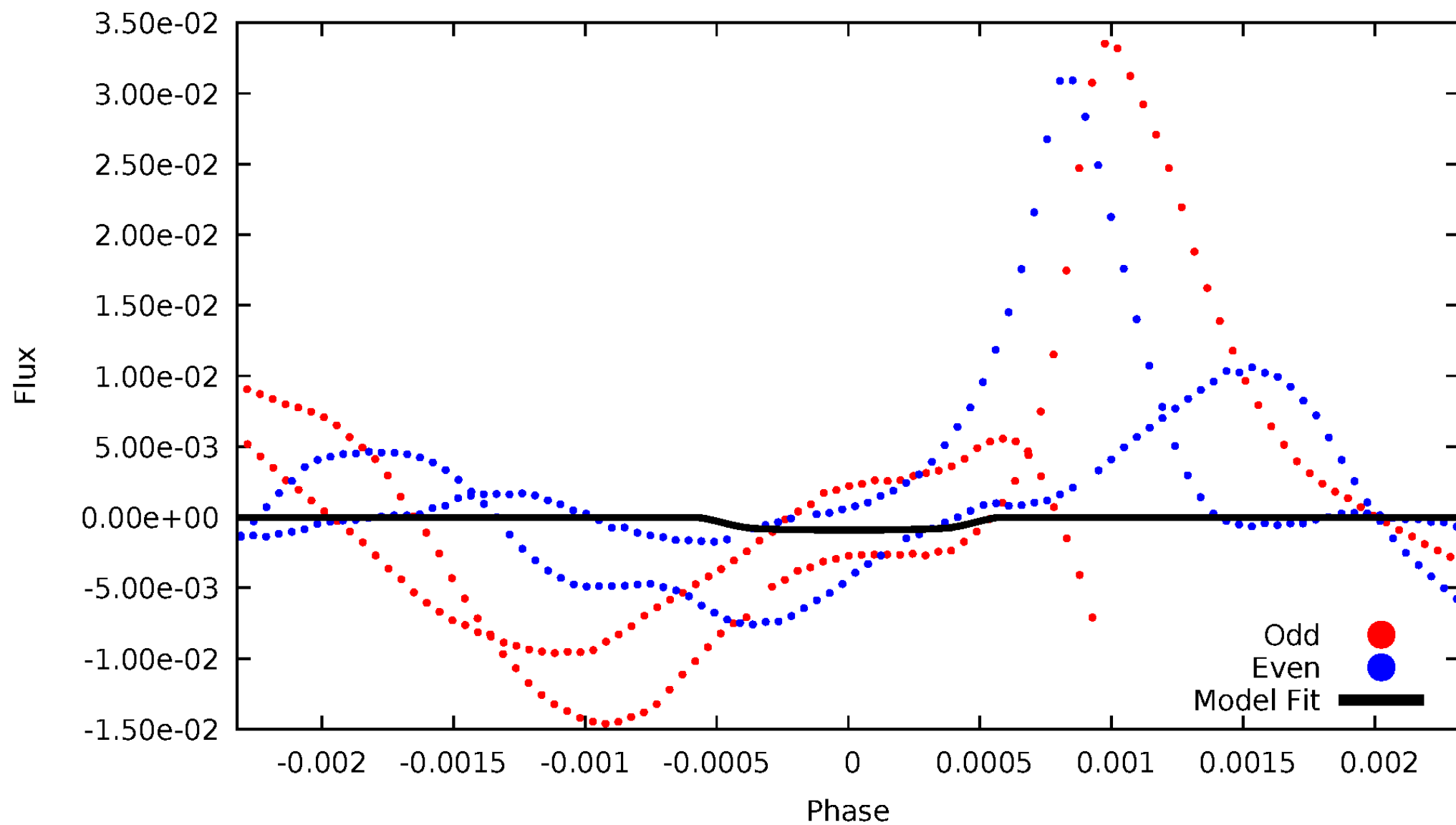


TCE 008247608-02



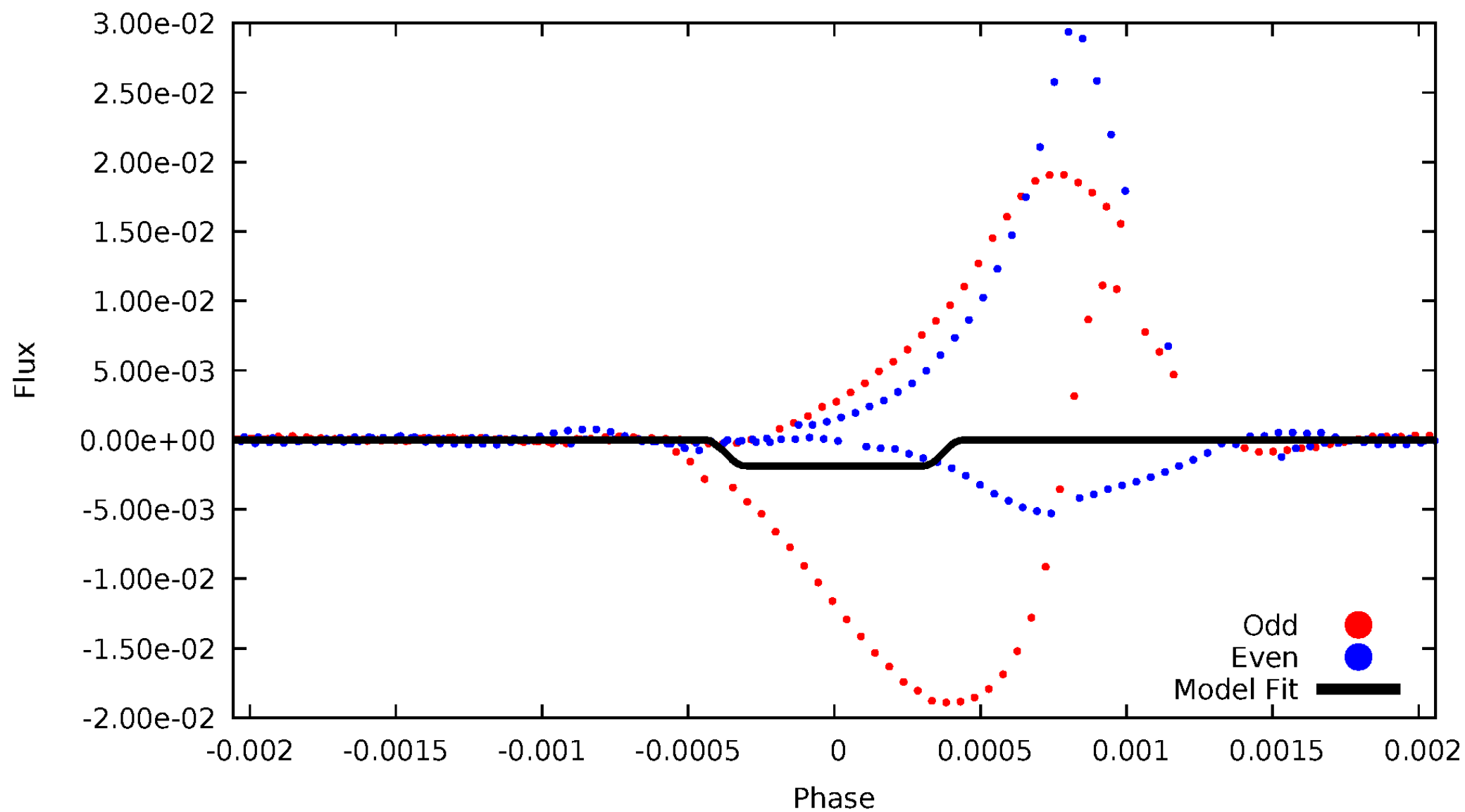
DV Odd/Even

TCE 008247608-02



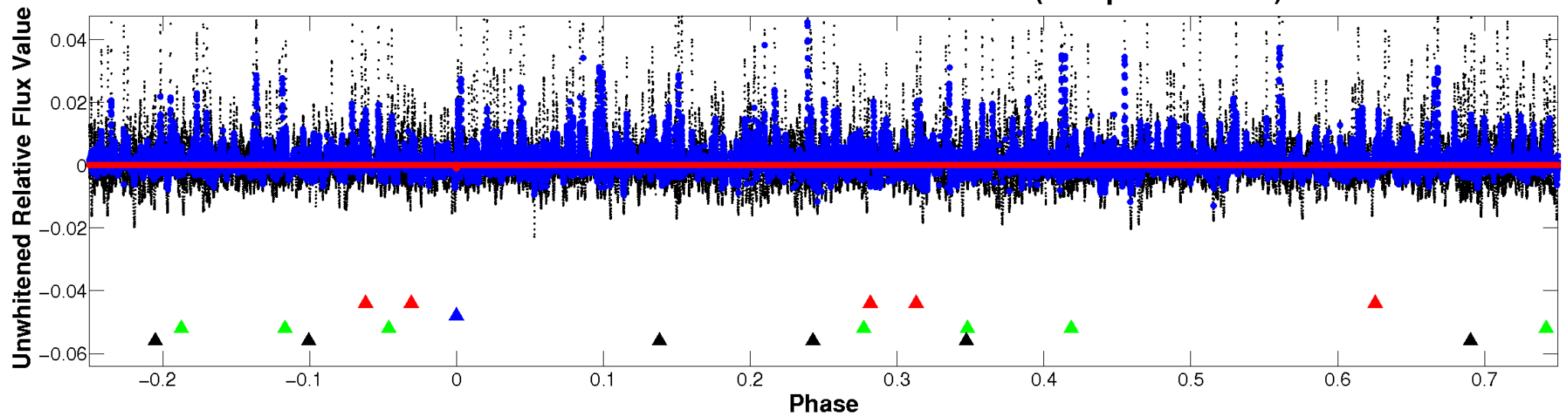
ALT Odd/Even

TCE 008247608-02

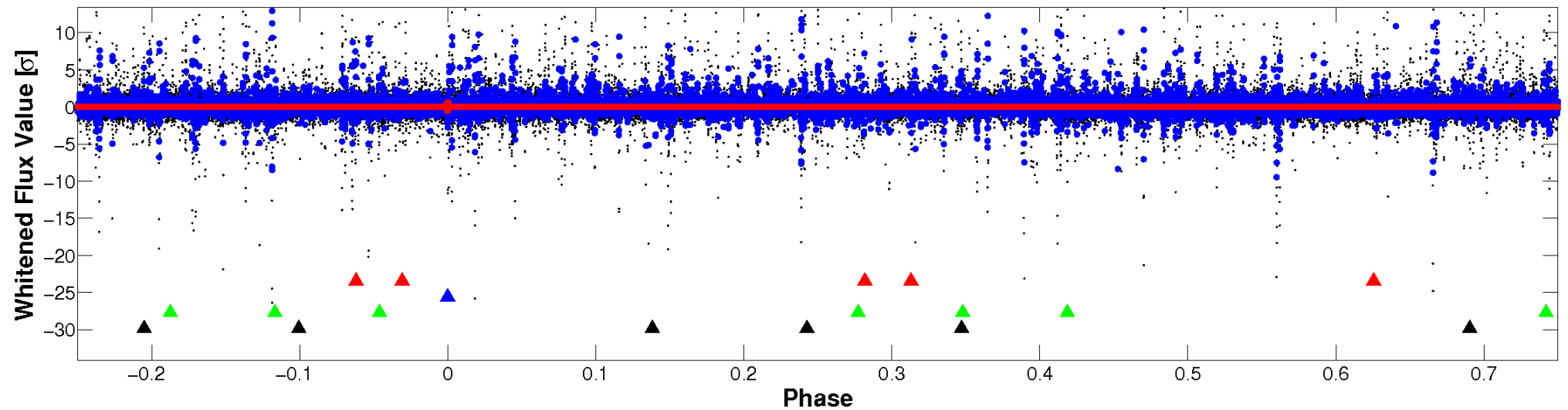


Non-Whitened Vs. Whitened Light Curve

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

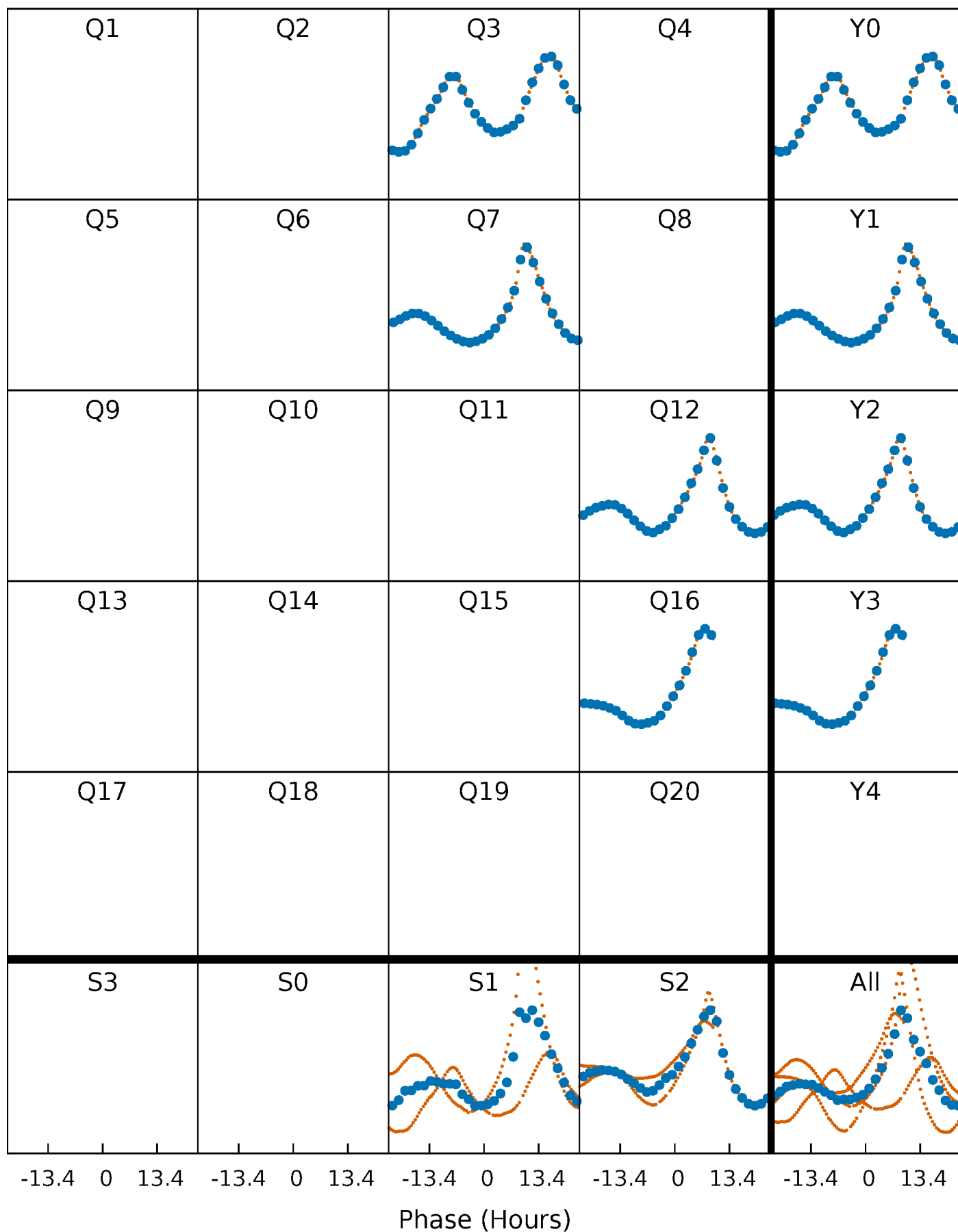


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



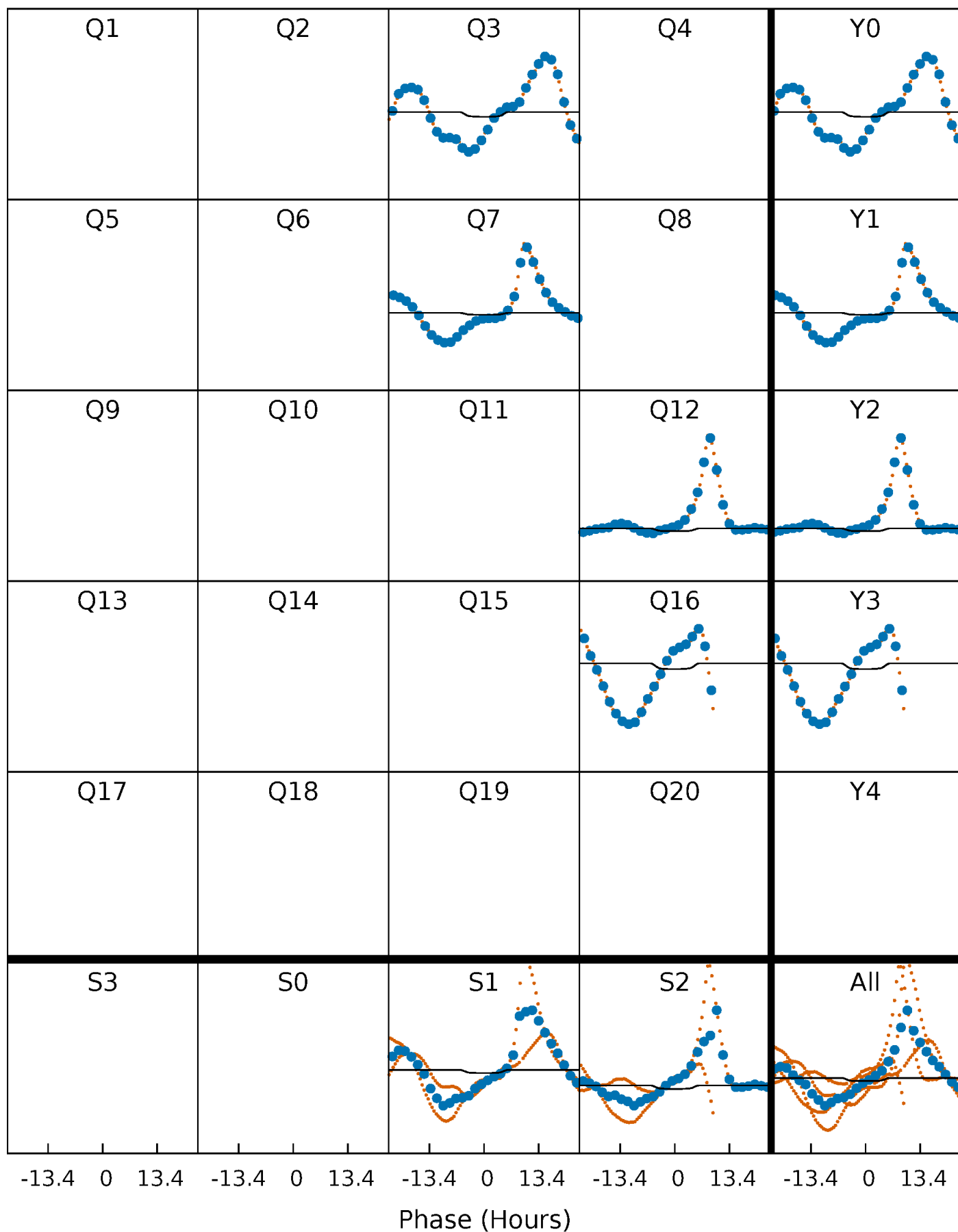
PDC Quarter-Phased Transit Curves

TCE 008247608-02 $P=420.164123$ Days $T_0=264.075928$ (BKJD)



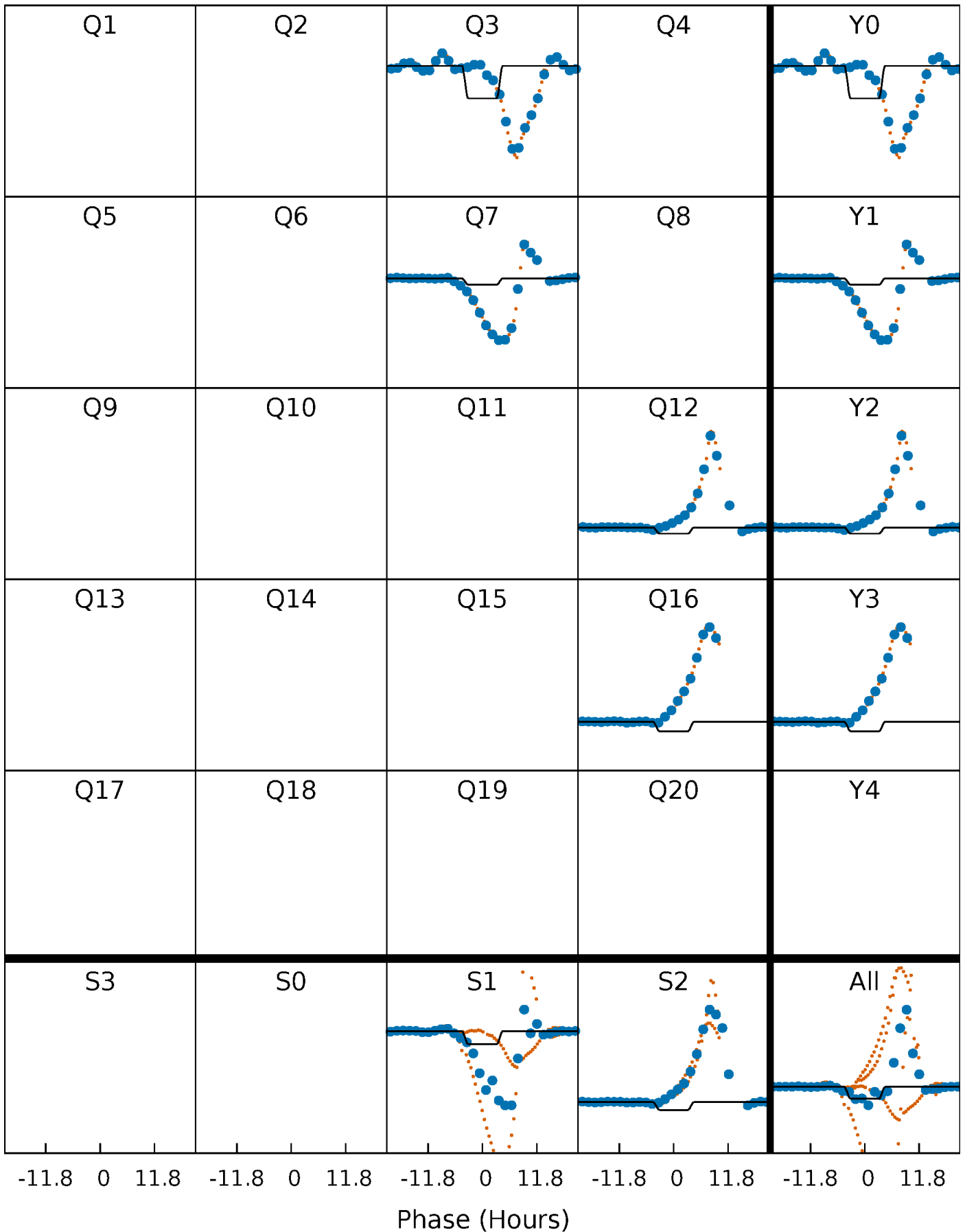
DV Quarter-Phased Transit Curves

TCE 008247608-02 P=420.164123 Days $T_0=264.075928$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

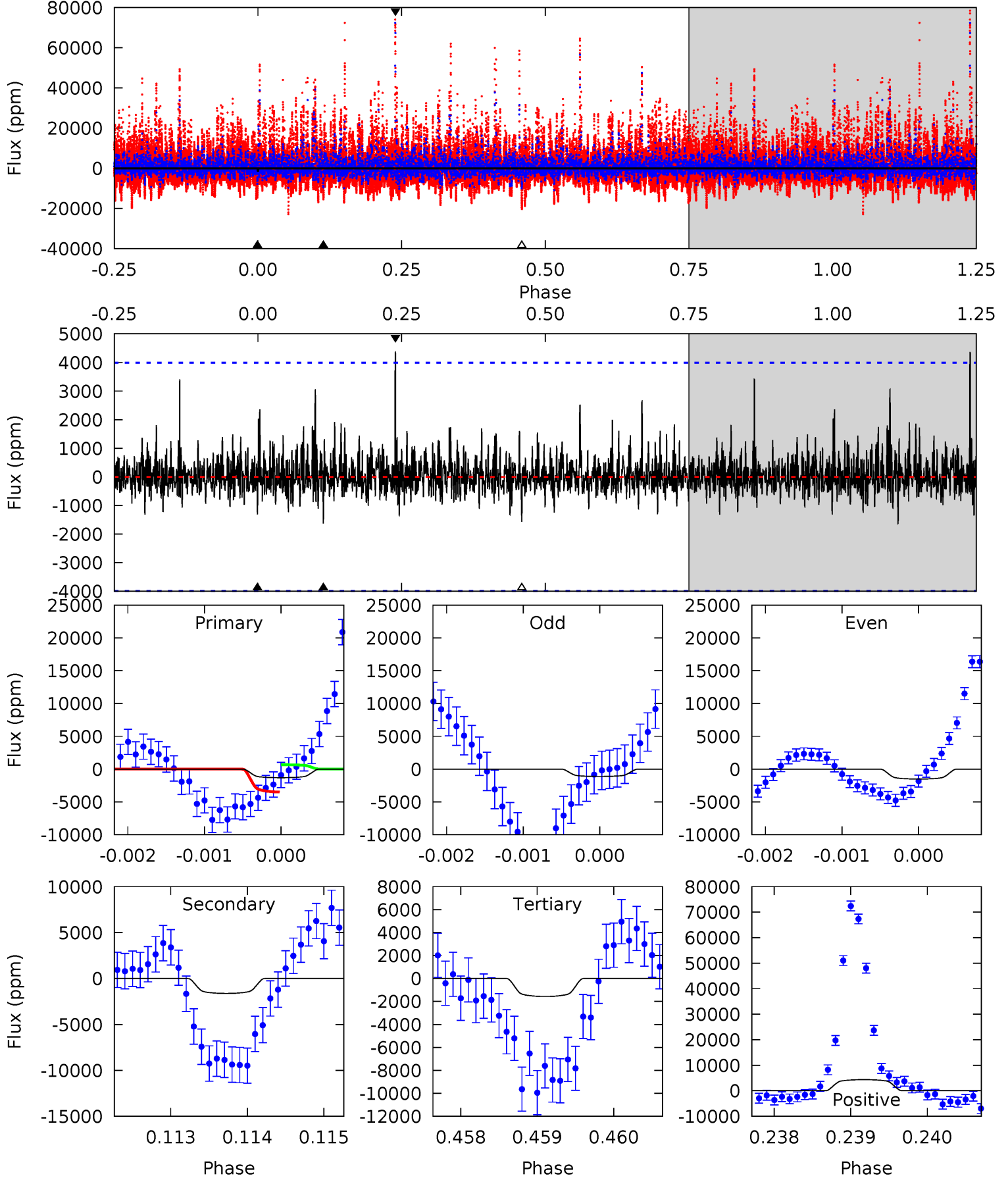
TCE 008247608-02 $P=420.141238$ Days $T_0=264.122550$ (BKJD)



DV Model-Shift Uniqueness Test

008247608-02, P = 420.164123 Days, E = 264.075928 Days

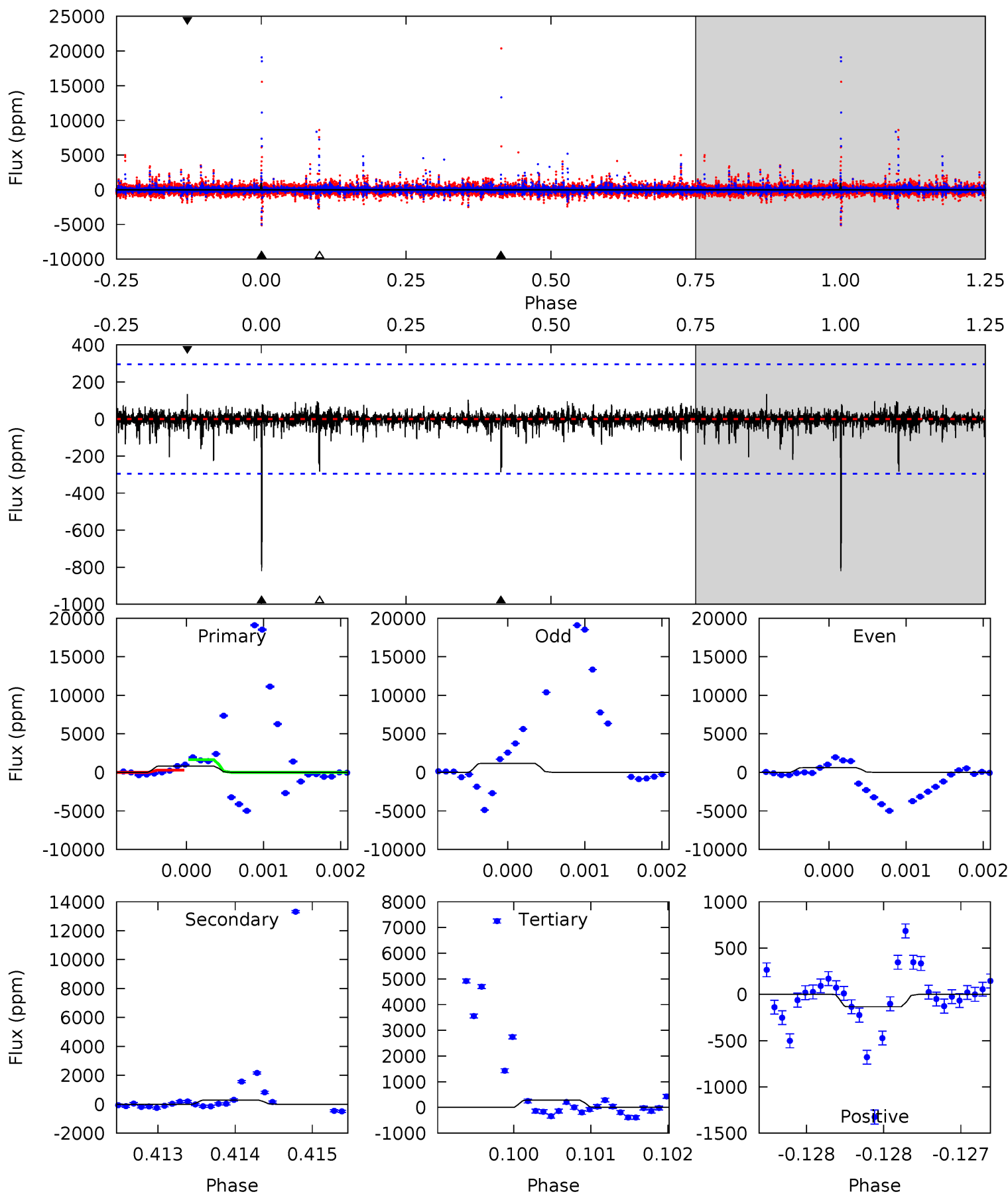
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.78	2.21	2.12	5.92	5.42	3.24	0.74	-0.34	-4.14	0.08	-3.72	0.23	1.11	0.73	1.96



Alt Model-Shift Uniqueness Test

008247608-02, P = 420.141238 Days, E = 264.122550 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	5.32	5.26	2.49	5.48	3.33	0.51	9.97	12.7	0.06	2.83	2.27	-1.97	0.14	0



Stellar Parameters For KIC 008247608

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6514^{+146}_{-178}	$4.196^{+0.198}_{-0.180}$	$-0.360^{+0.250}_{-0.300}$	$1.380^{+0.382}_{-0.313}$	$1.089^{+0.177}_{-0.133}$	$0.583^{+0.569}_{-0.292}$
	+2%/-3%	+5%/-4%	+69%/-83%	+28%/-23%	+16%/-12%	+98%/-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 008247608-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1625 ± 736	$4.92^{+1.64}_{-1.46}$	444^{+34}_{-29}	7141^{+1858}_{-1229}	43070^{+54552}_{-24627}
Alt.	-287 ± 54	$6.47^{+1.72}_{-1.49}$	443^{+32}_{-33}	4293^{+386}_{-293}	4722^{+3520}_{-1788}

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

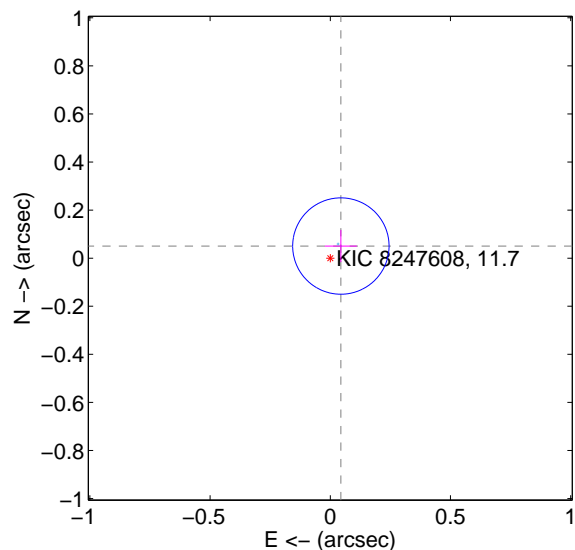
Supplemental centroid analysis for 008247608-02. **Kepler magnitude: 11.70.** Transit SNR 2.51

There are 2 quarters with good PRF difference image offsets

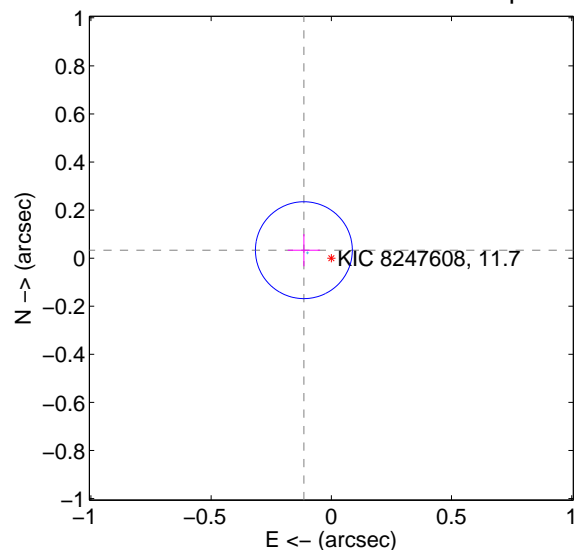
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.067 ± 0.067	1.00	-0.044 ± 0.067	0.050 ± 0.067
PRF-fit source offset from KIC position	0.119 ± 0.067	1.77	0.114 ± 0.067	0.033 ± 0.067
photometric centroid source offset	0.21 ± 0.21	1.03	-0.14 ± 0.18	-0.16 ± 0.23

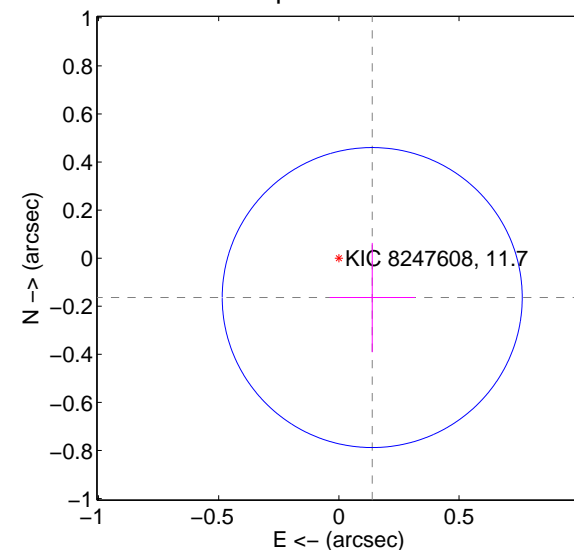
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

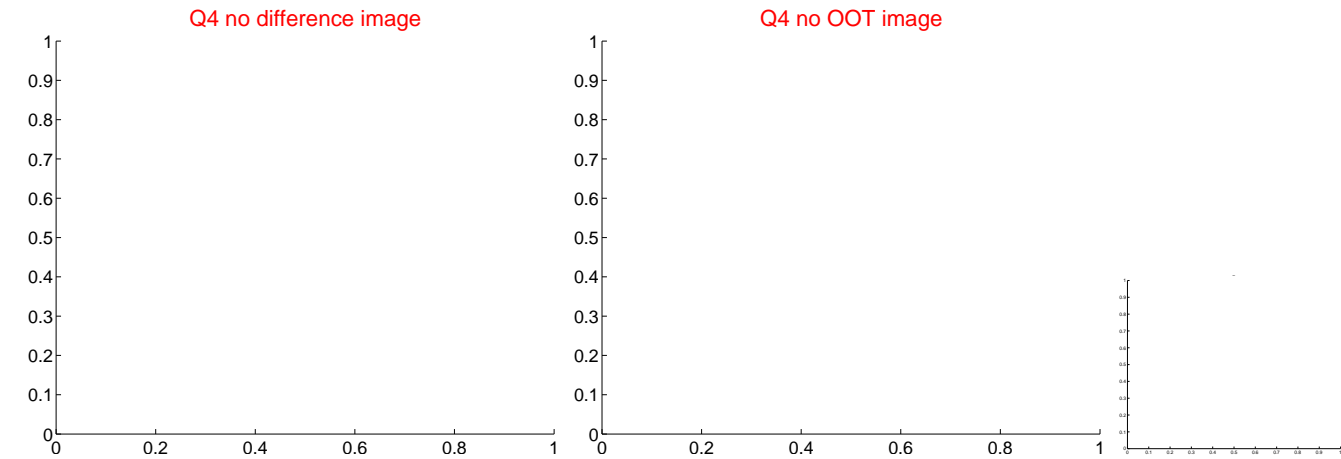
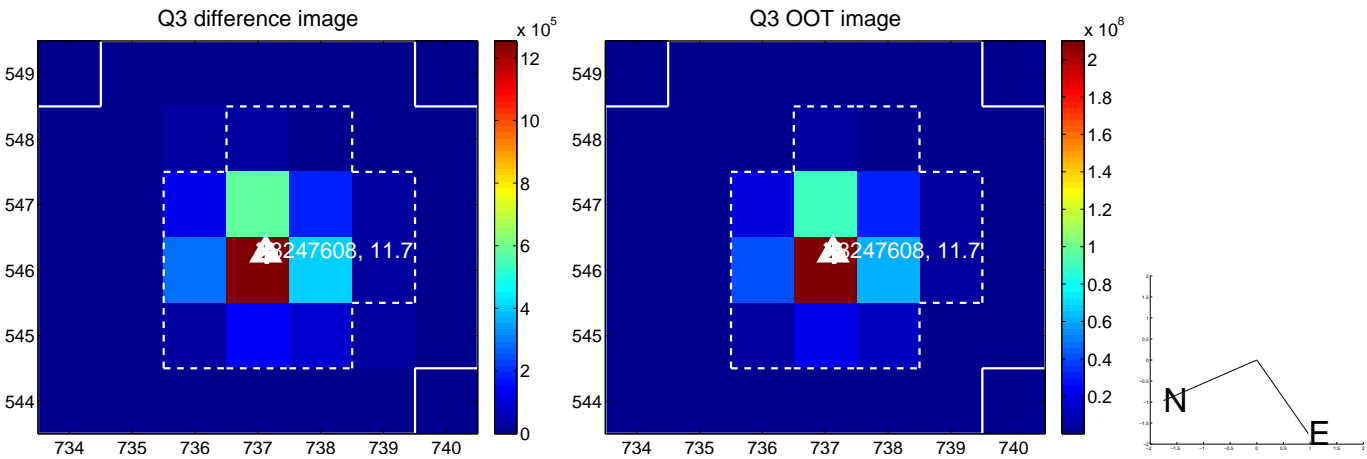
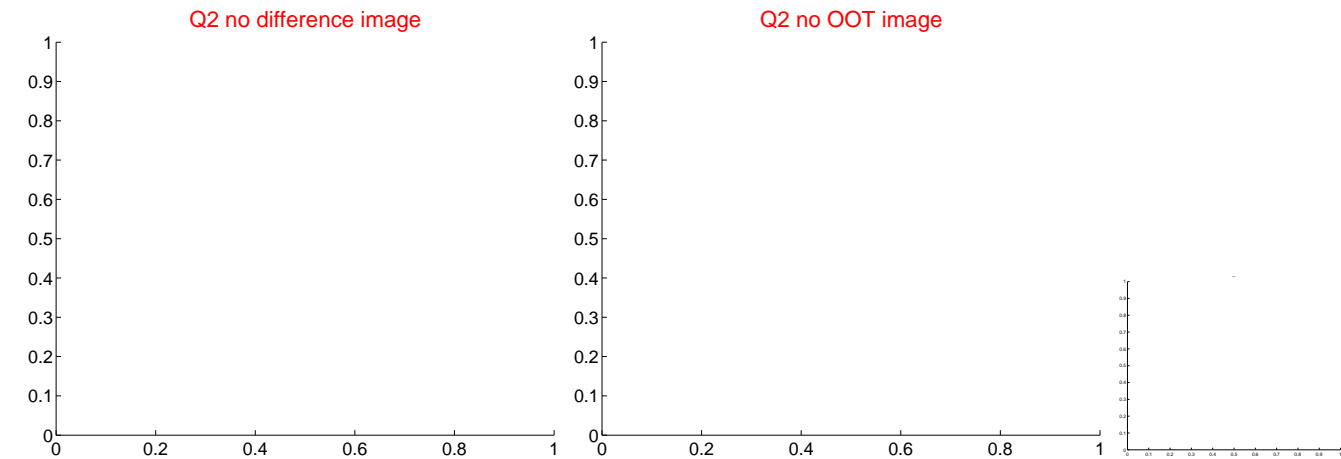
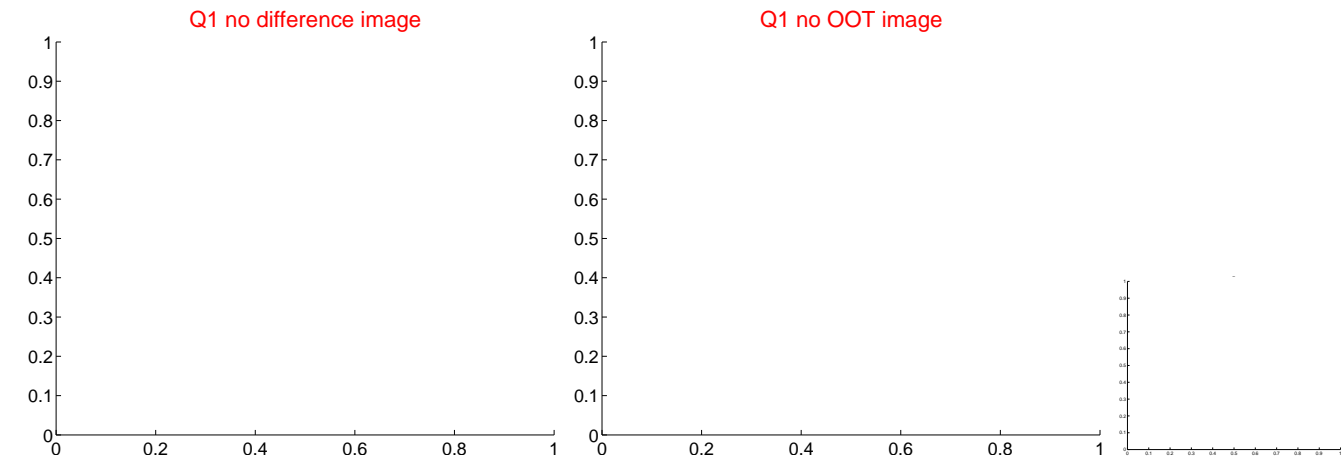


offset from photometric centroids

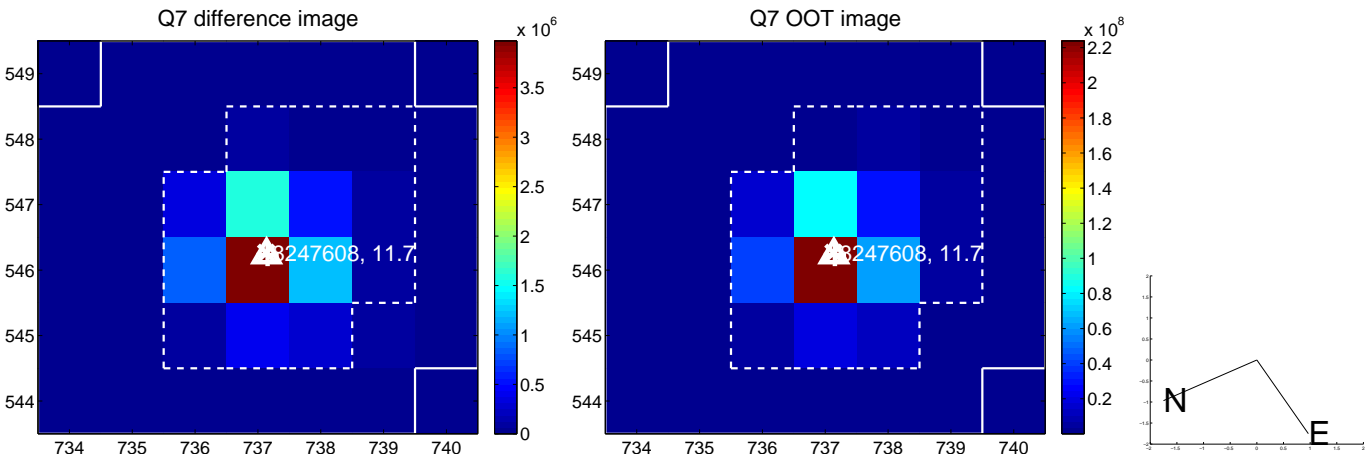


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

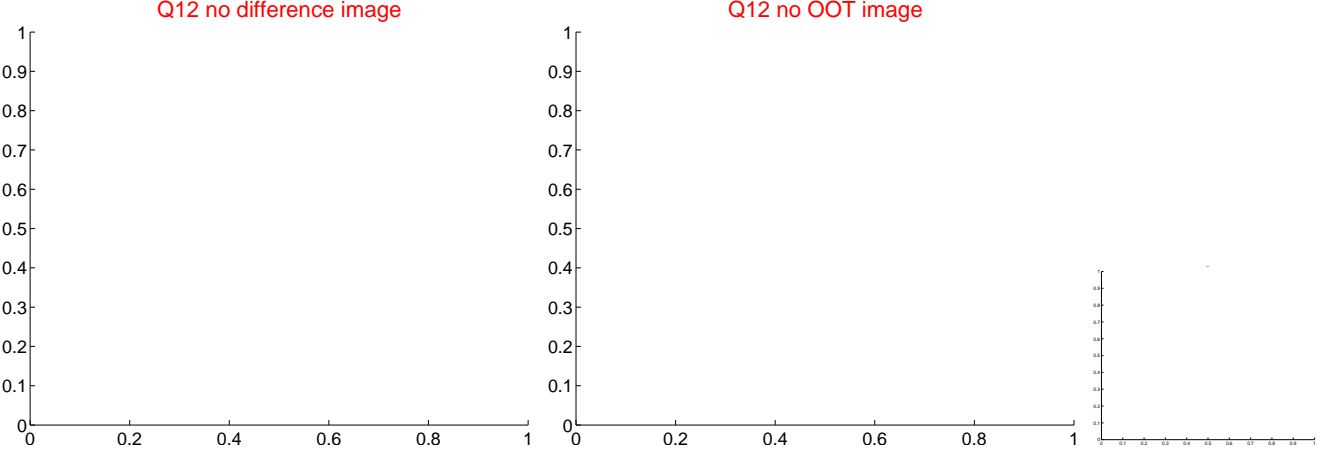
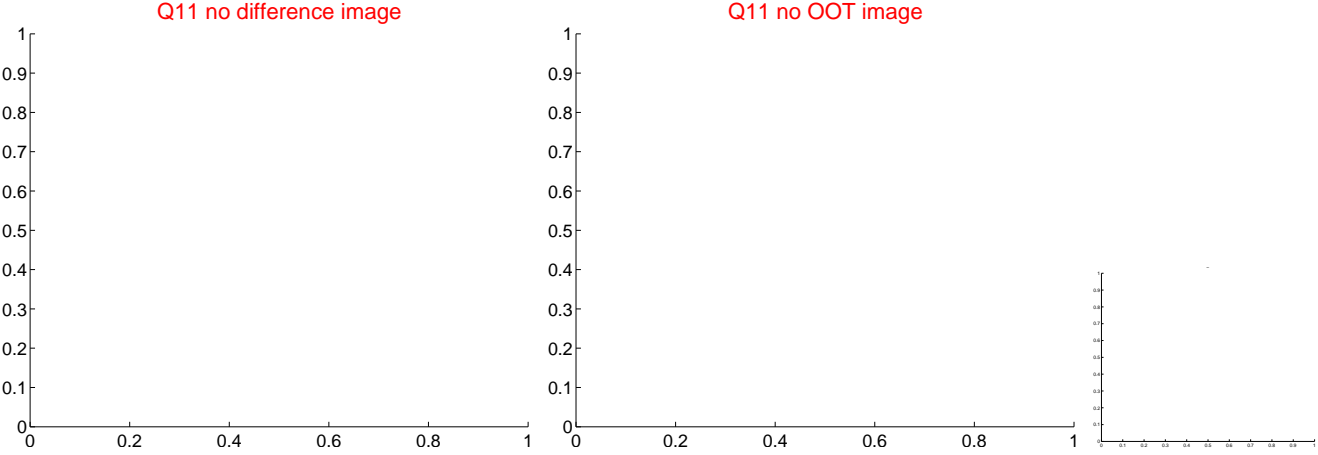
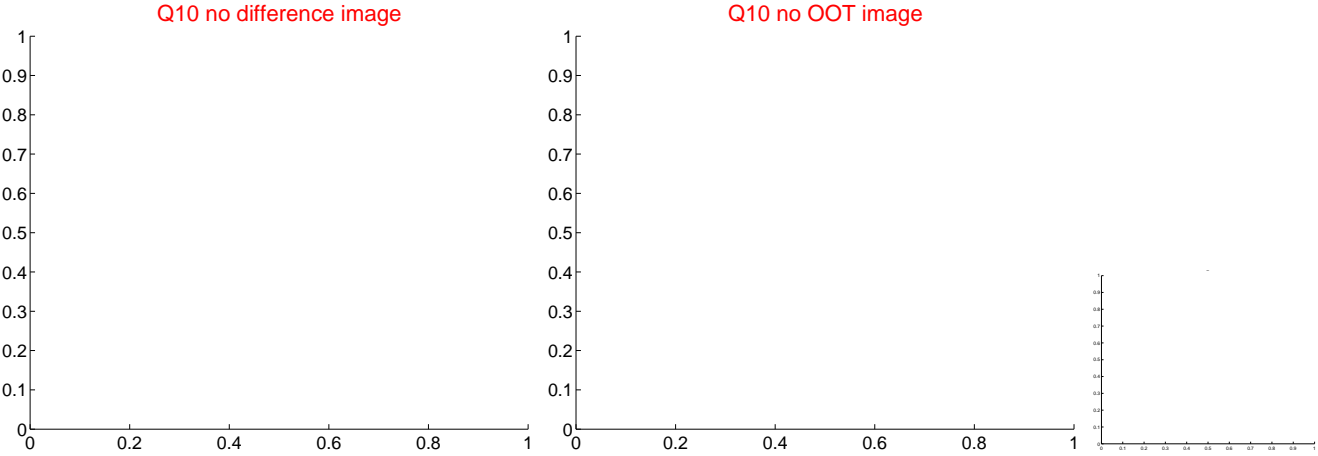
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



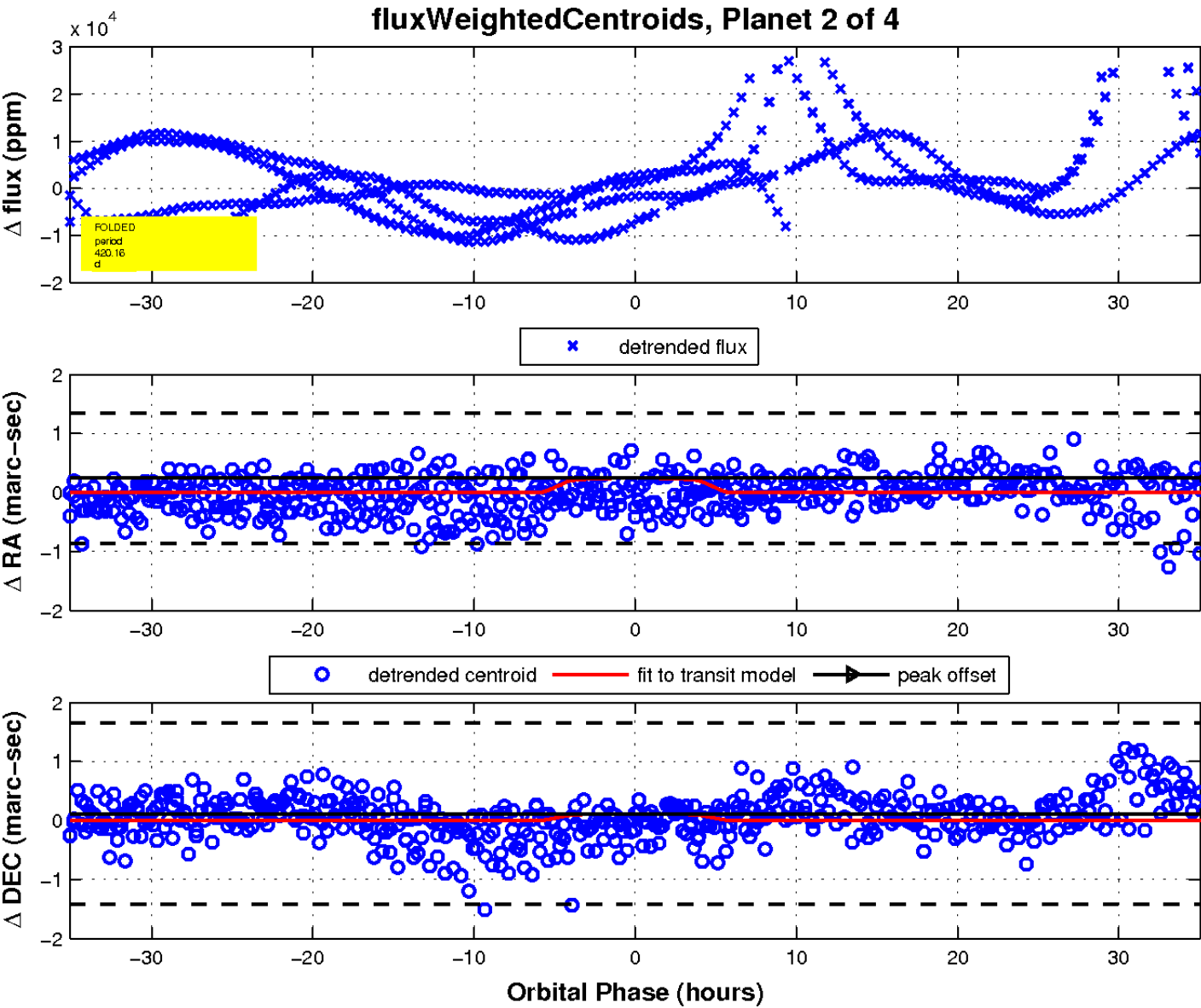
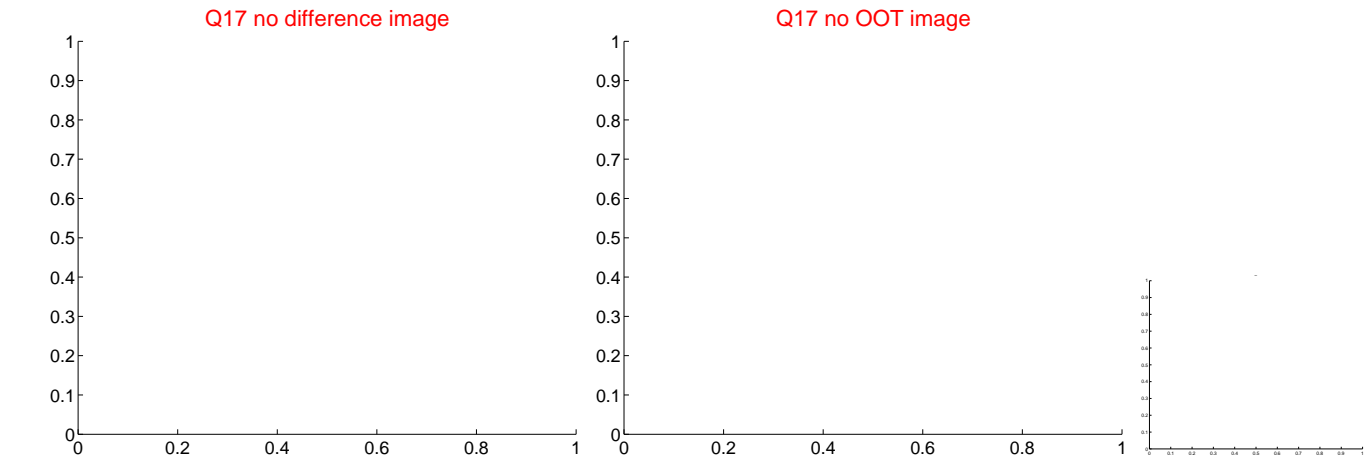
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

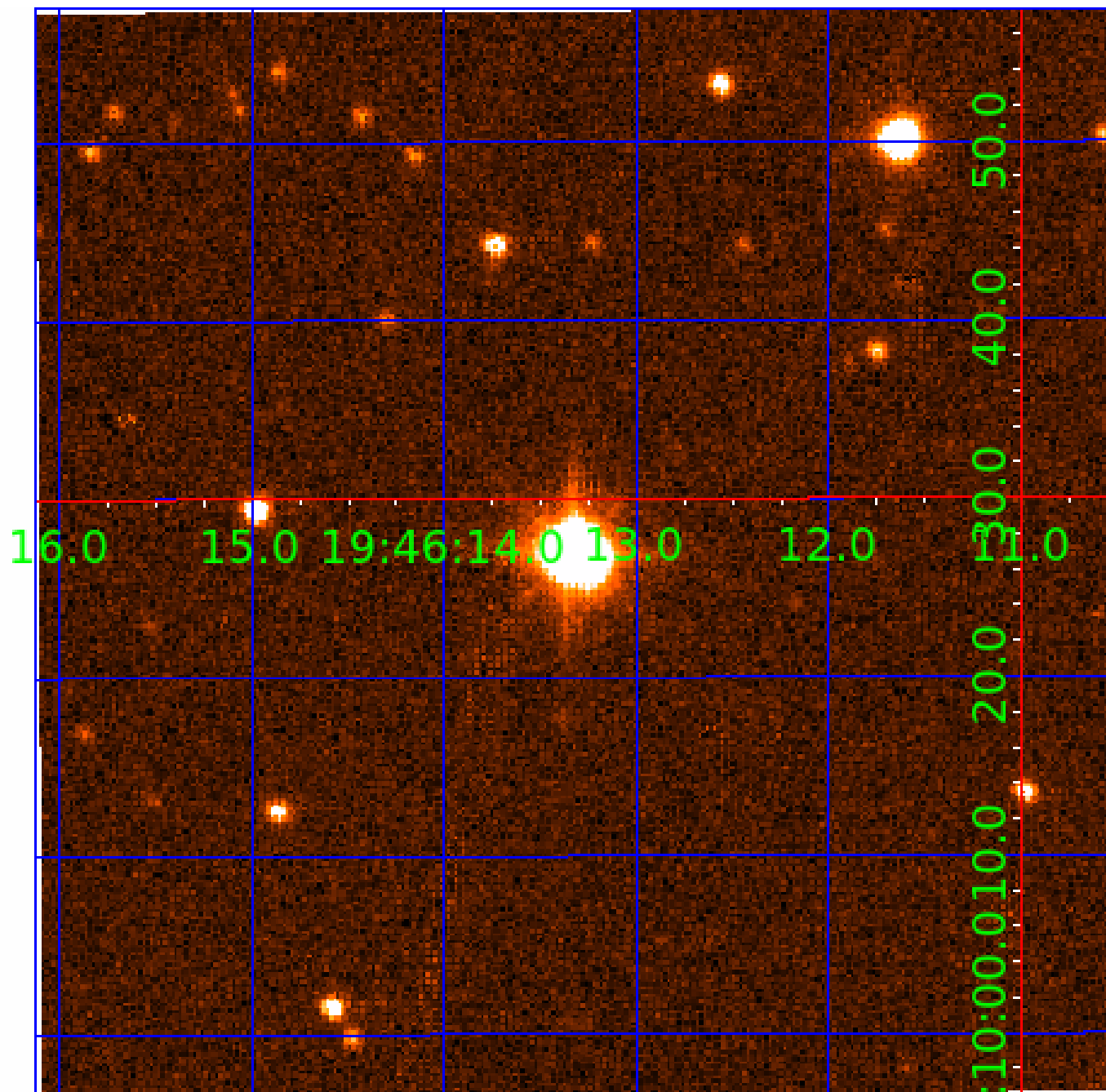


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008247608

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})
008247608-01	OBS	No	275.748438	395.577435	2015.9	2.198	27.2	10.9	1.38	6514	6.28	4.22
008247608-02	OBS	No	420.164123	264.075928	905.3	11.704	20.7	2.5	1.38	6514	4.93	2.40
008247608-03	OBS	No	224.920619	155.680638	0.4	7.192	23.2	0.0	1.38	6514	0.10	5.53
008247608-04	OBS	No	232.027950	322.166296	67.2	0.561	23.8	0.9	1.38	6514	1.31	5.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008247608-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008247608-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008247608-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008247608-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

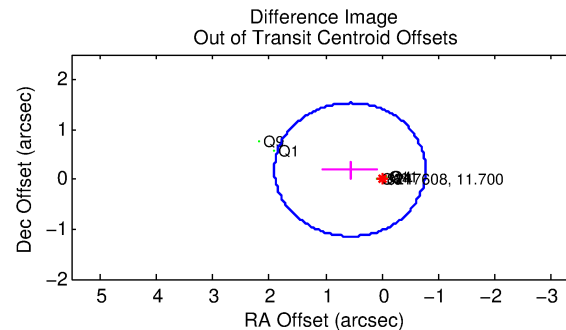
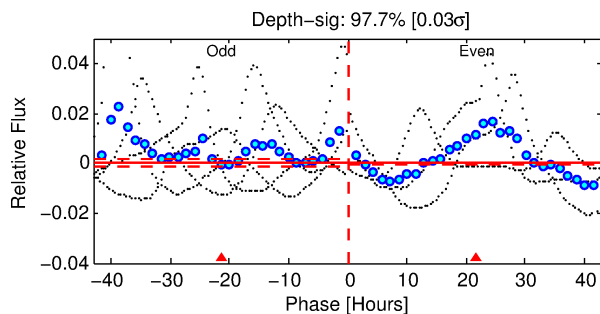
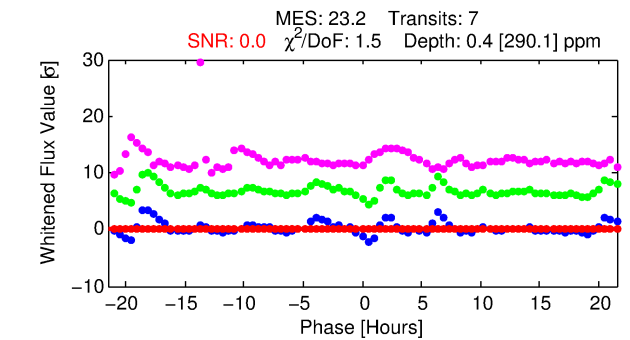
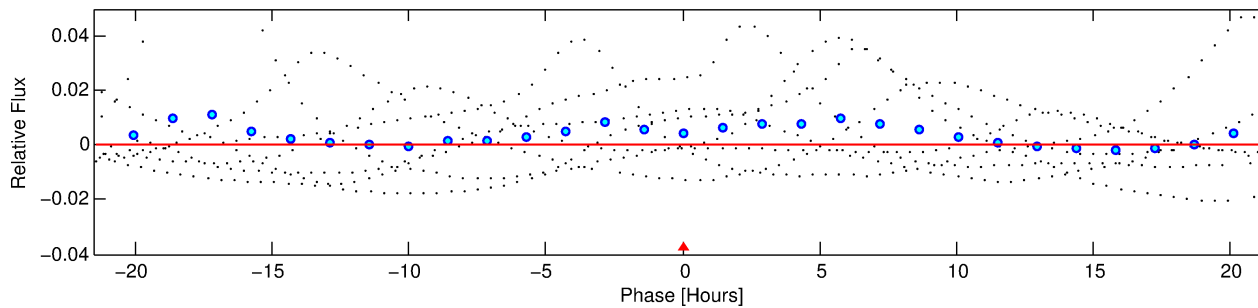
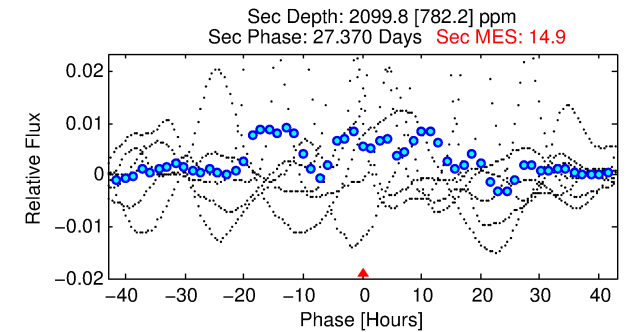
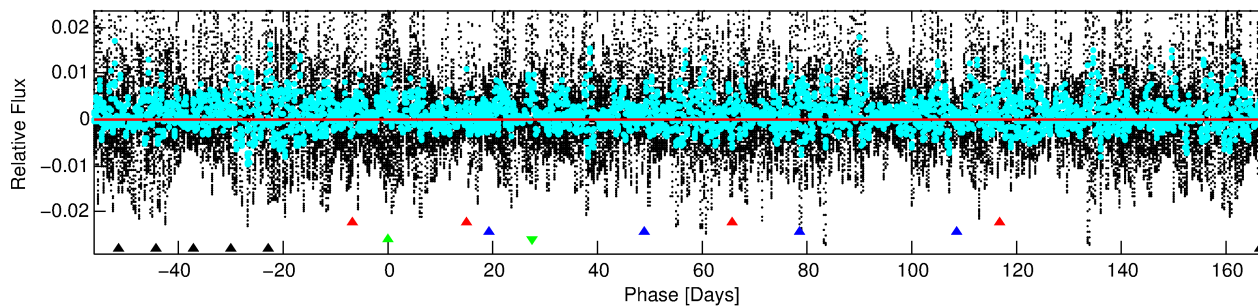
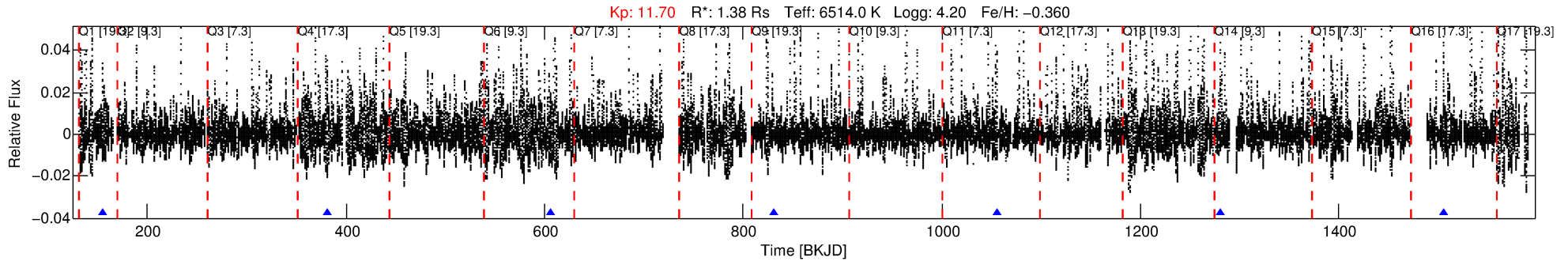
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008247608-03

No Significant Match Found

DV One-Page Summary

KIC: 8247608 Candidate: 3 of 4 Period: 224.921 d



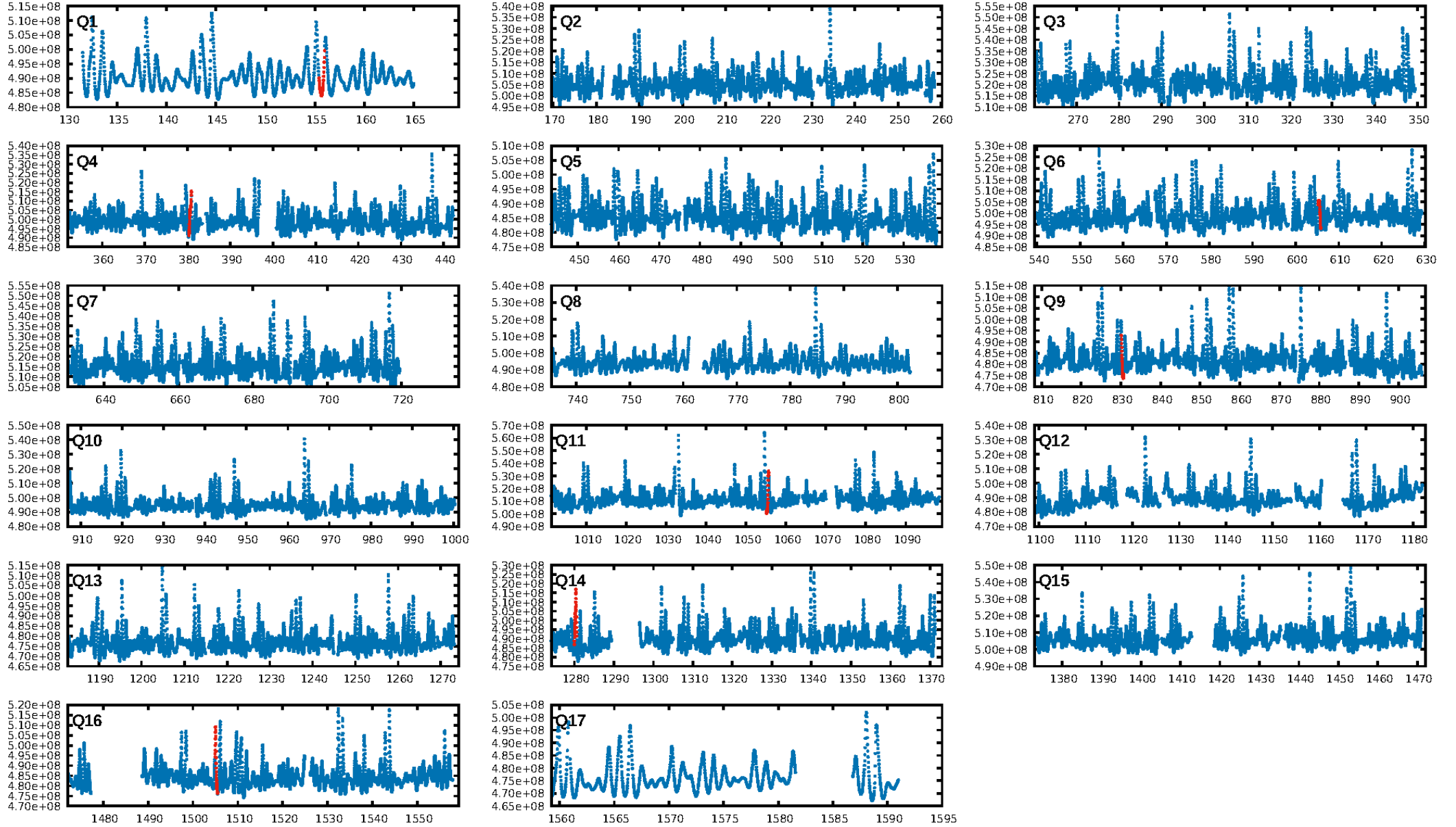
DV Fit Results:

Period = 224.92062 [3.19877] d
Epoch = 155.6806 [9.2432] BKJD
Rp/R* = 0.0006 [0.2238]
a/R* = 166.54 [7280.21]
b = 0.72 [31.32]
Seff = 5.53 [2.06]
Teq = 391 [36] K
Rp = 0.10 [33.71] Re
a = 0.7453 [0.1783] AU
Ag = 69652348.35 [48927654140.05]
Teffp = 55234 [9699920] K [0.01σ]

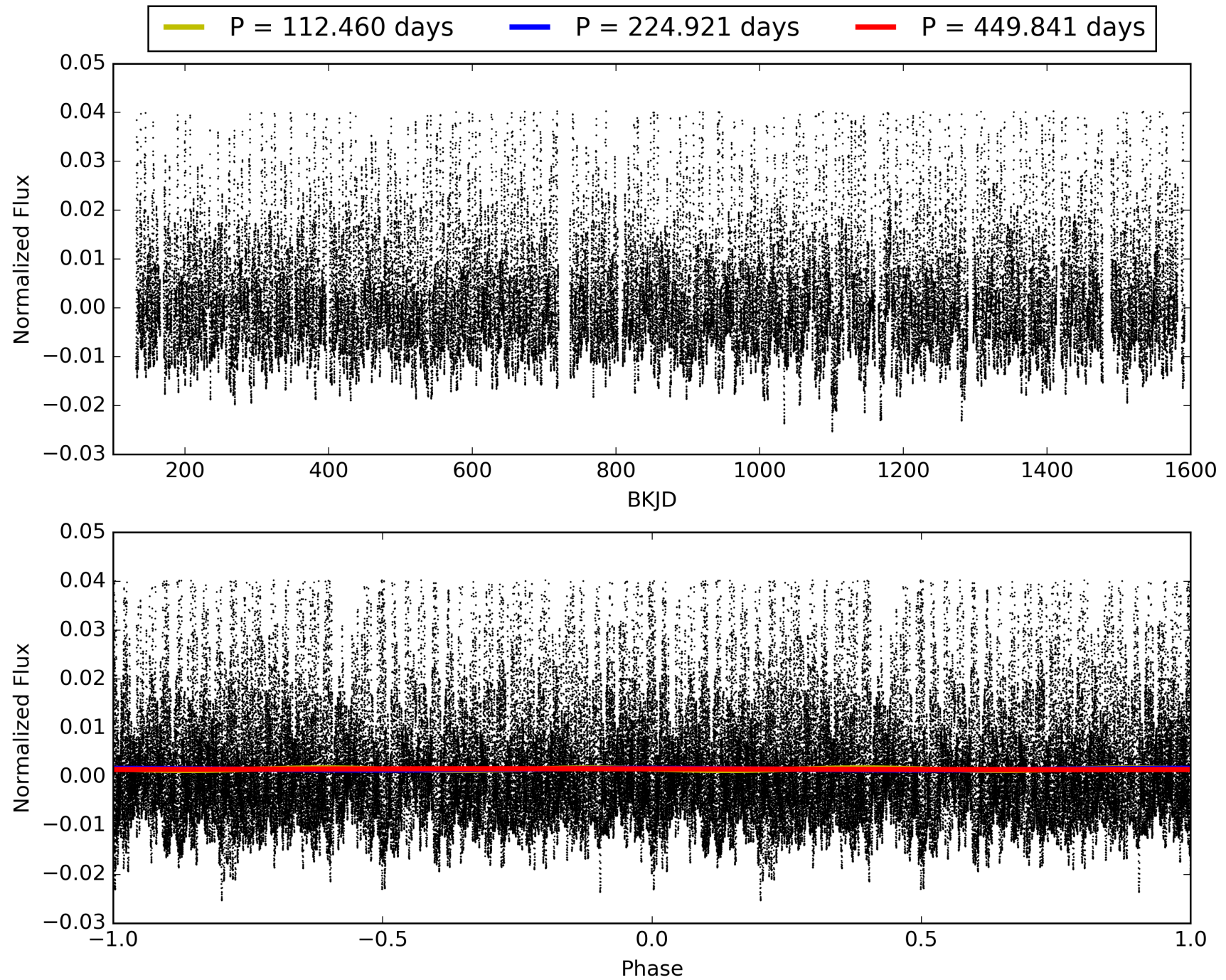
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [23.65σ]
ModelChiSquare2-sig: 19.5%
ModelChiSquareGof-sig: 95.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.598 arcsec [1.34σ]
OotOffset-st: 2/1/1/2 [6]
KicOffset-rm: 0.858 arcsec [1.70σ]
KicOffset-st: 2/1/1/2 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 1.00 [6/6]

TCE 008247608-03, PDC Light Curves

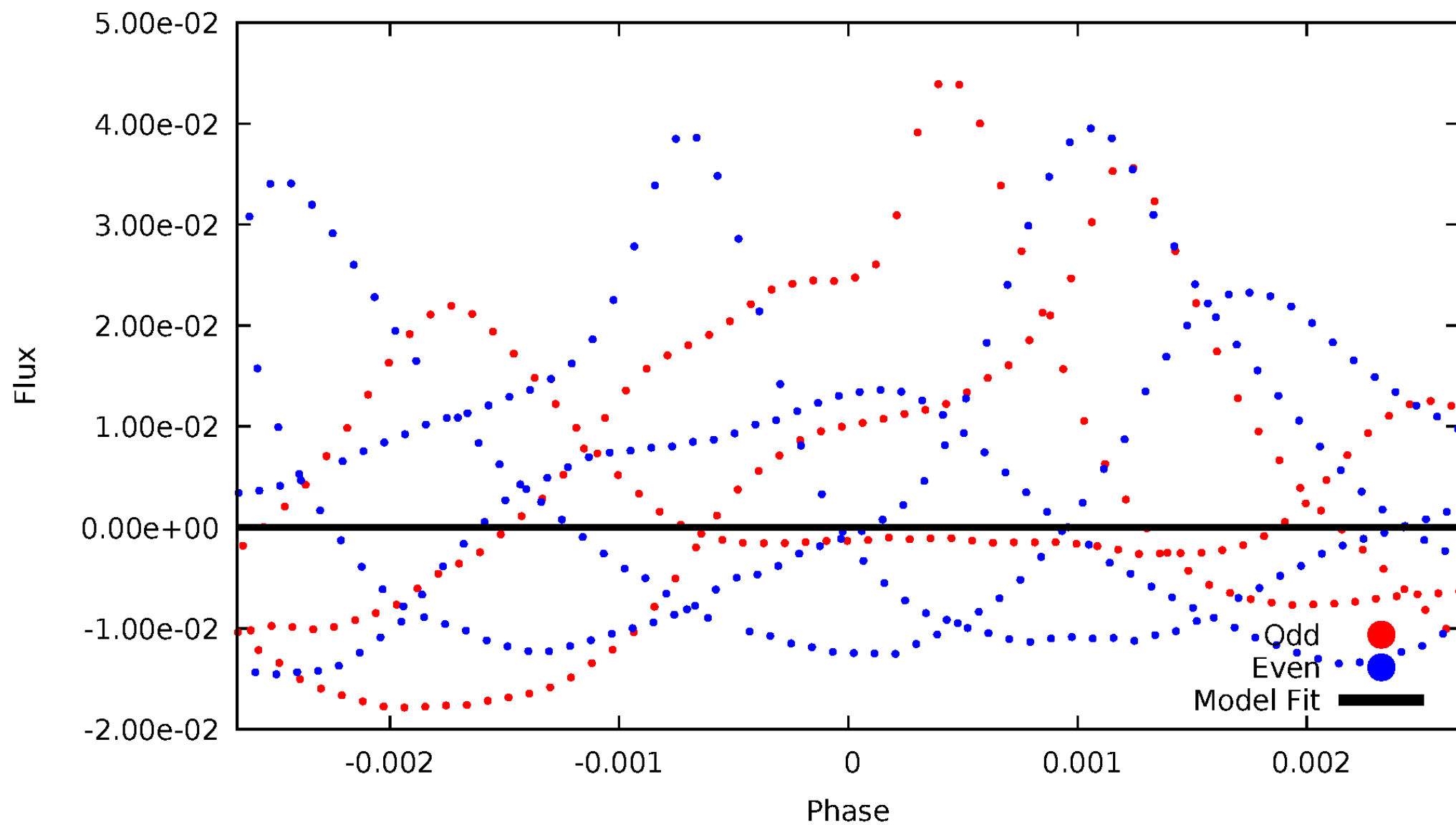


TCE 008247608-03



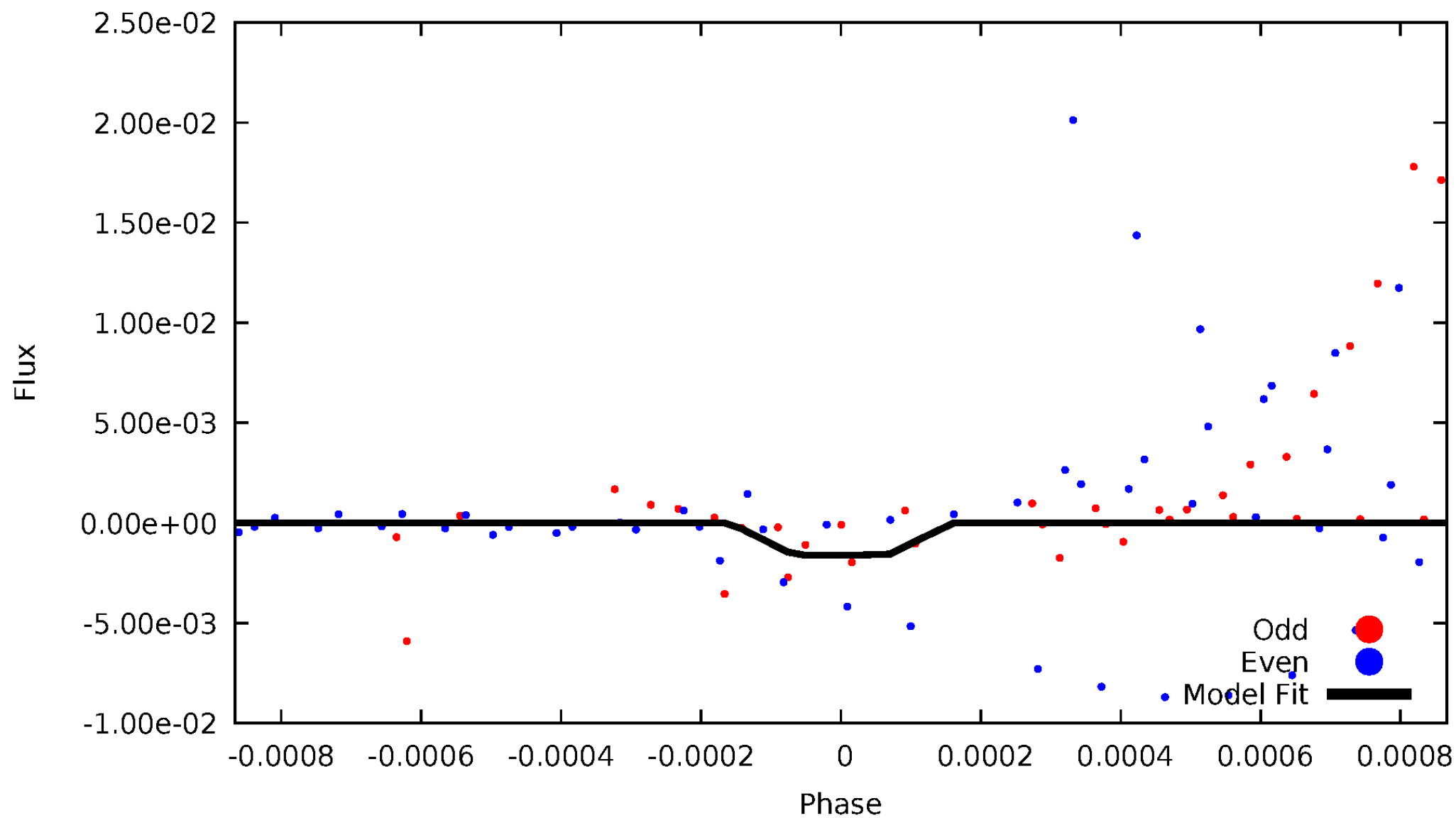
DV Odd/Even

TCE 008247608-03



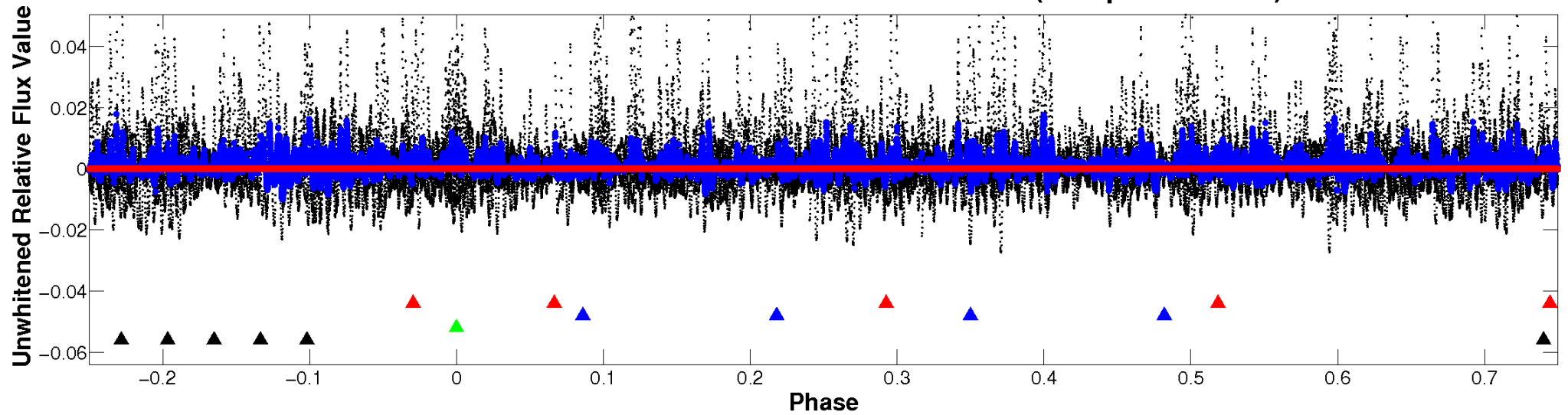
ALT Odd/Even

TCE 008247608-03

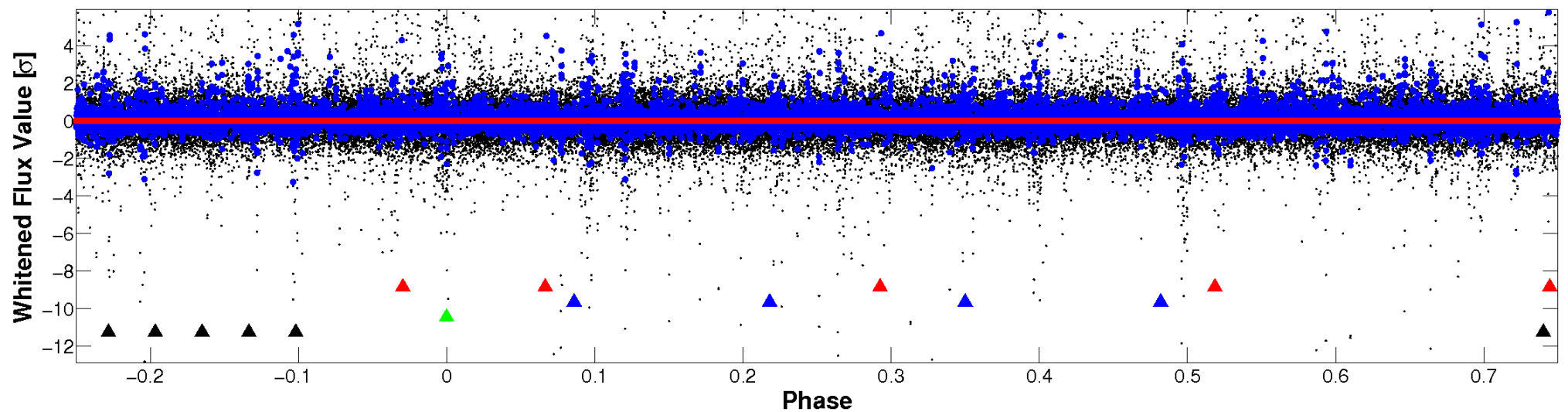


Non-Whitened Vs. Whitened Light Curve

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

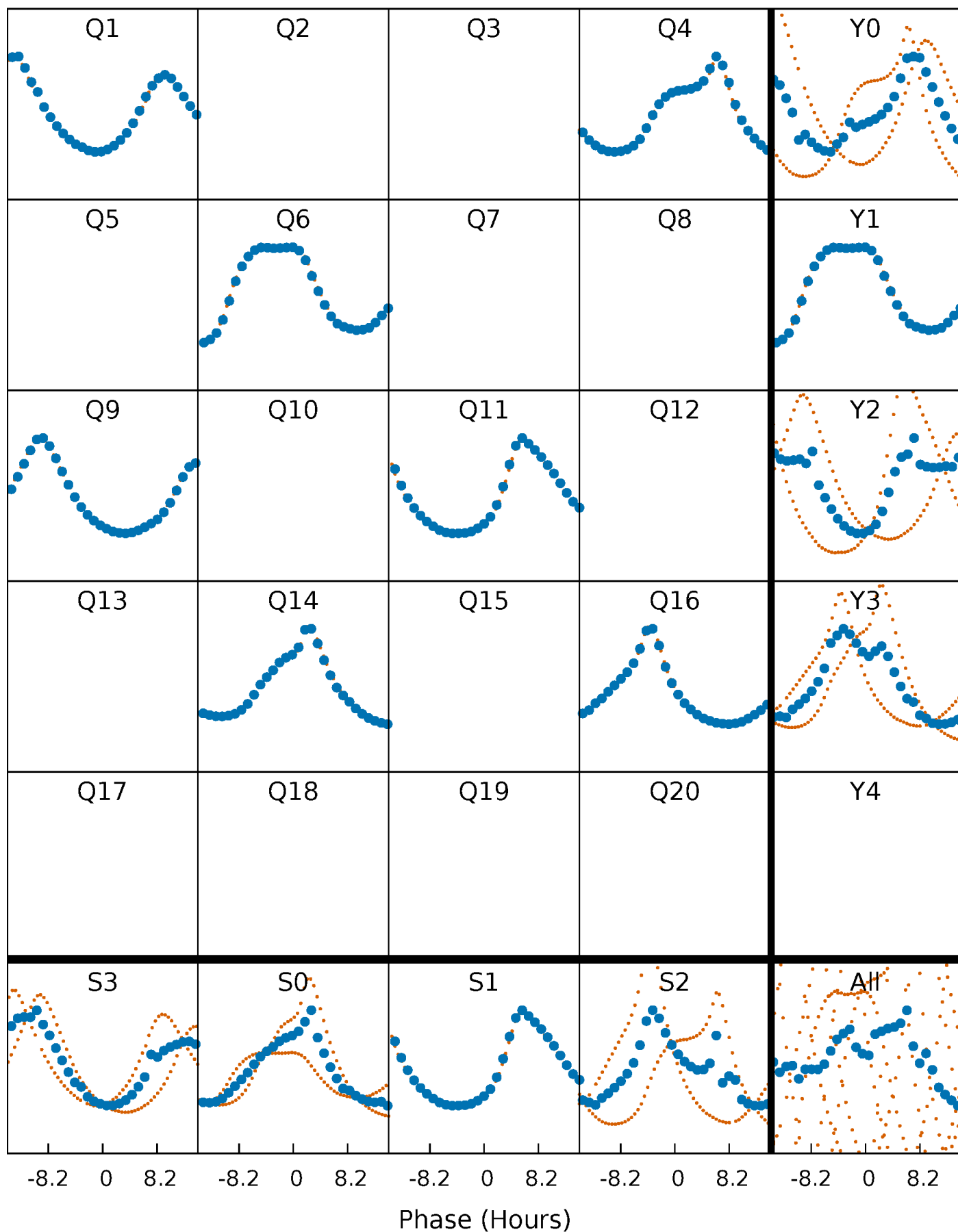


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



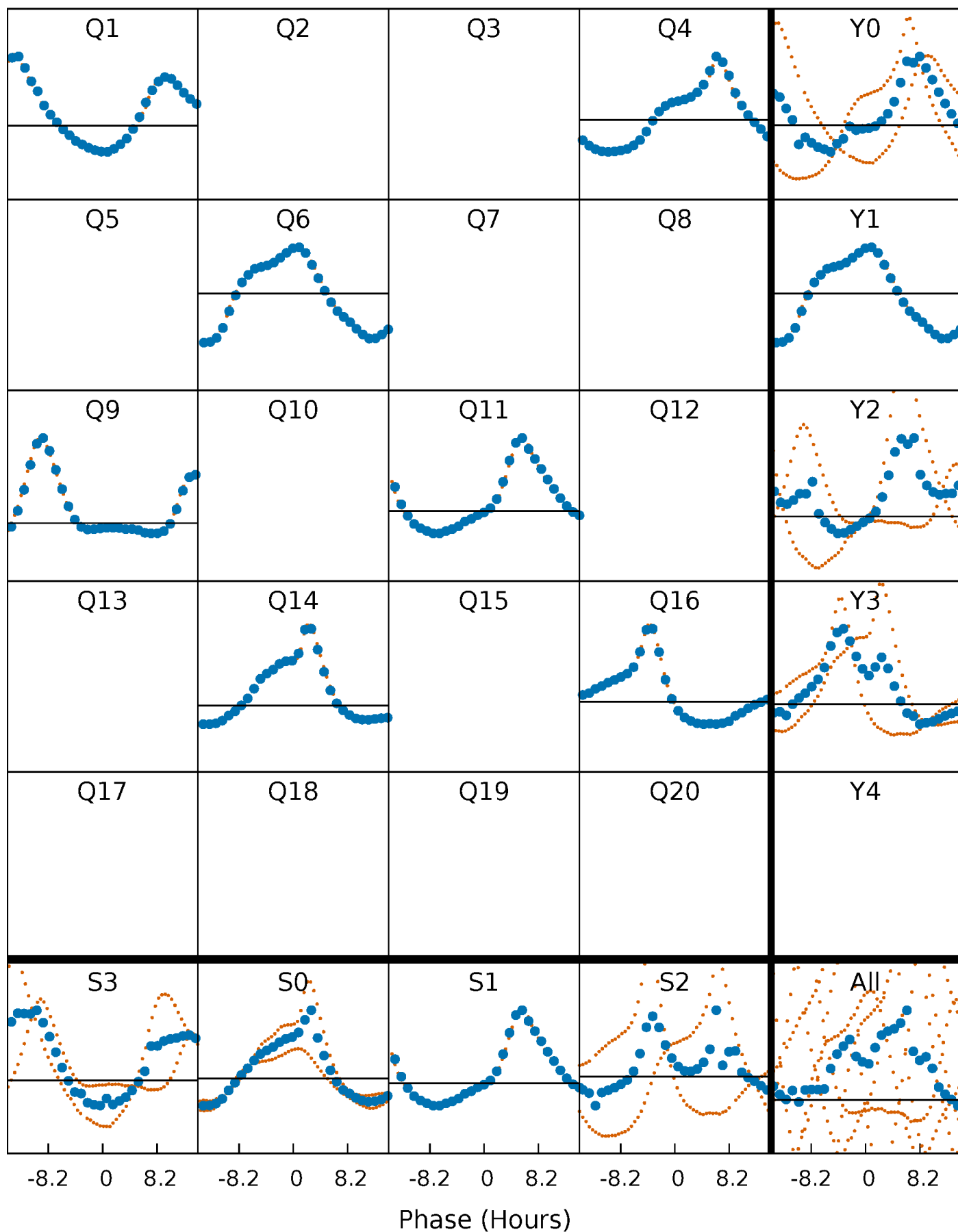
PDC Quarter-Phased Transit Curves

TCE 008247608-03 P=224.920619 Days $T_0=155.680638$ (BKJD)



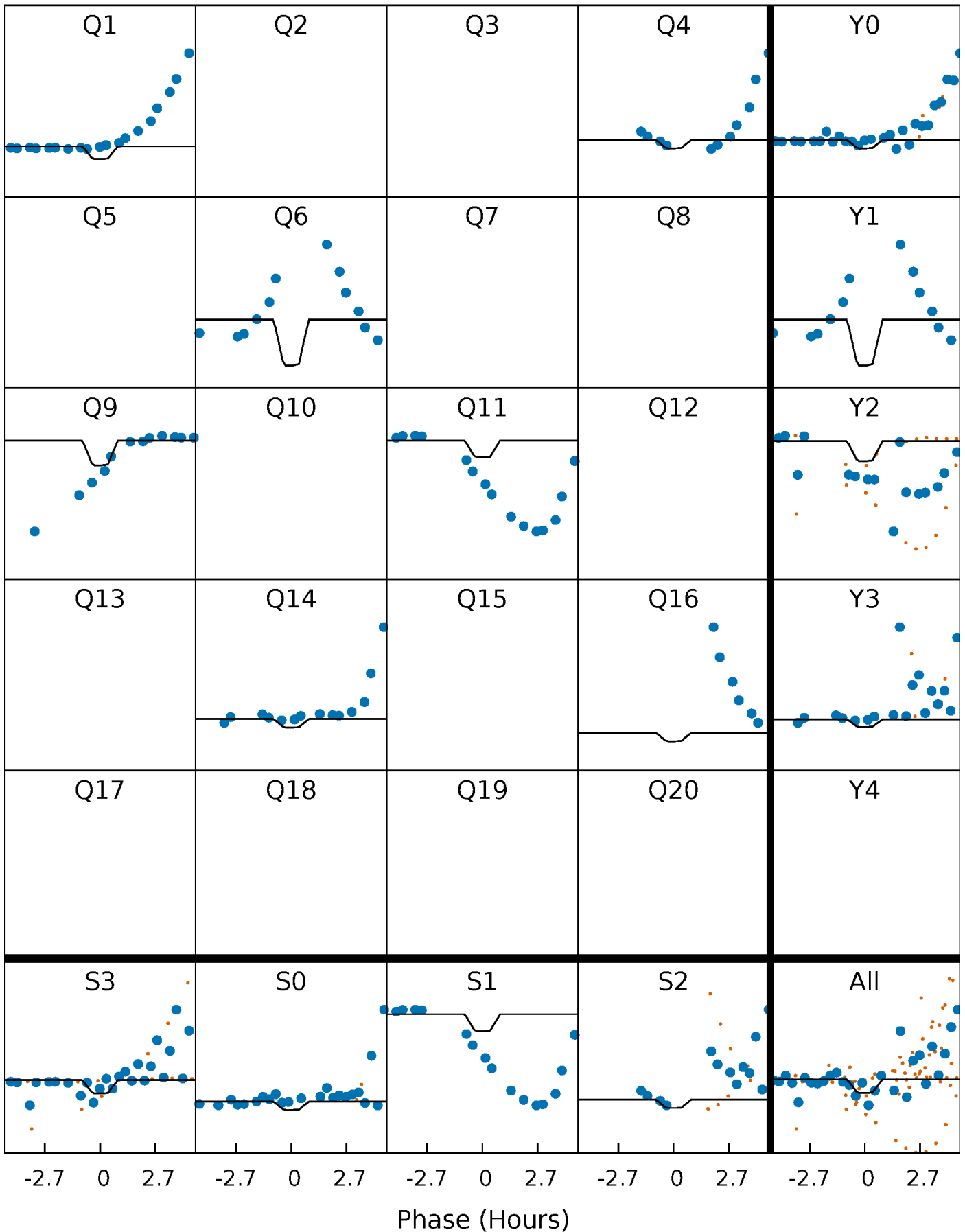
DV Quarter-Phased Transit Curves

TCE 008247608-03 P=224.920619 Days $T_0=155.680638$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

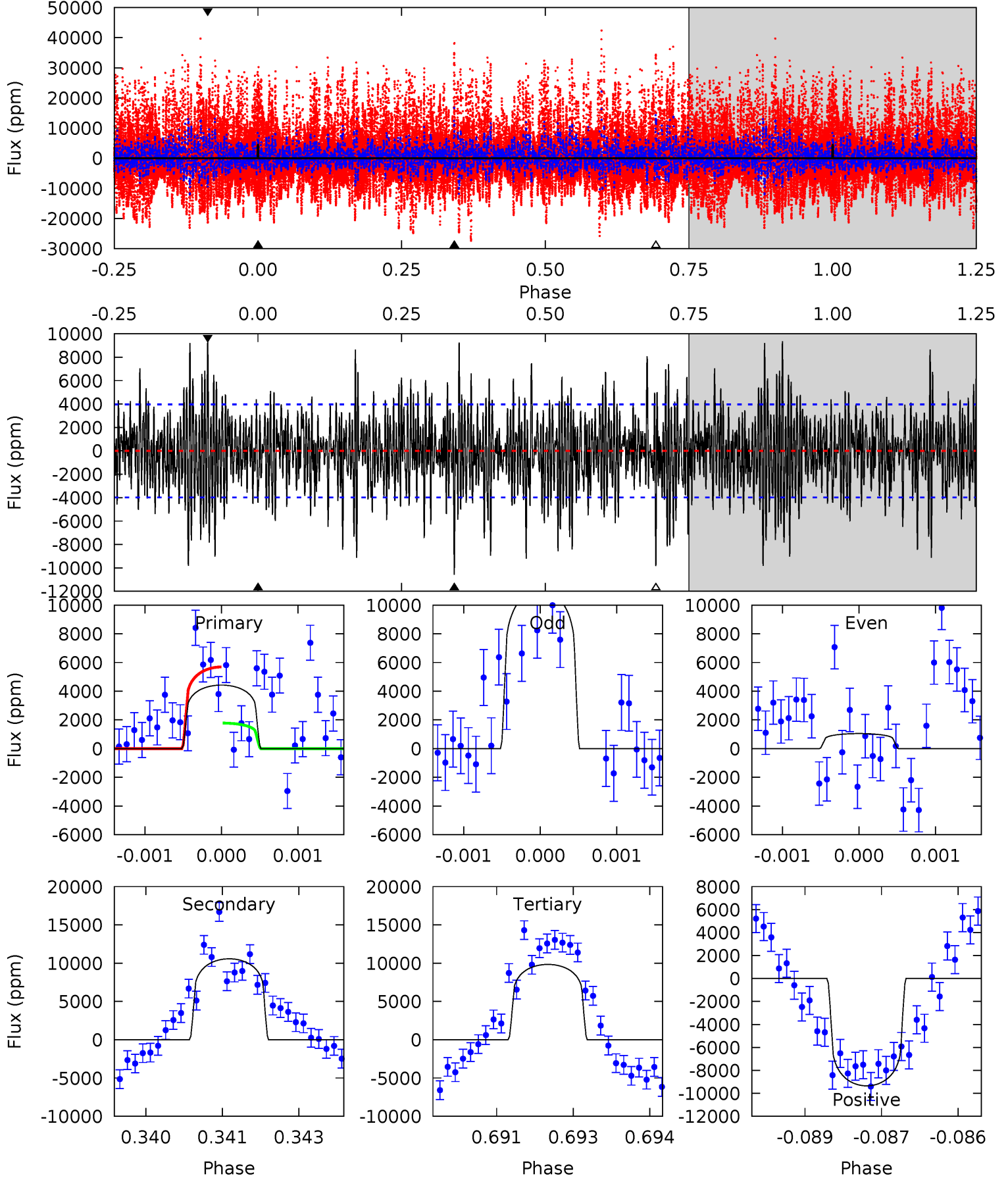
TCE 008247608-03 $P=224.874959$ Days $T_0=155.792664$ (BKJD)



DV Model-Shift Uniqueness Test

008247608-03, P = 224.920619 Days, E = 155.680638 Days

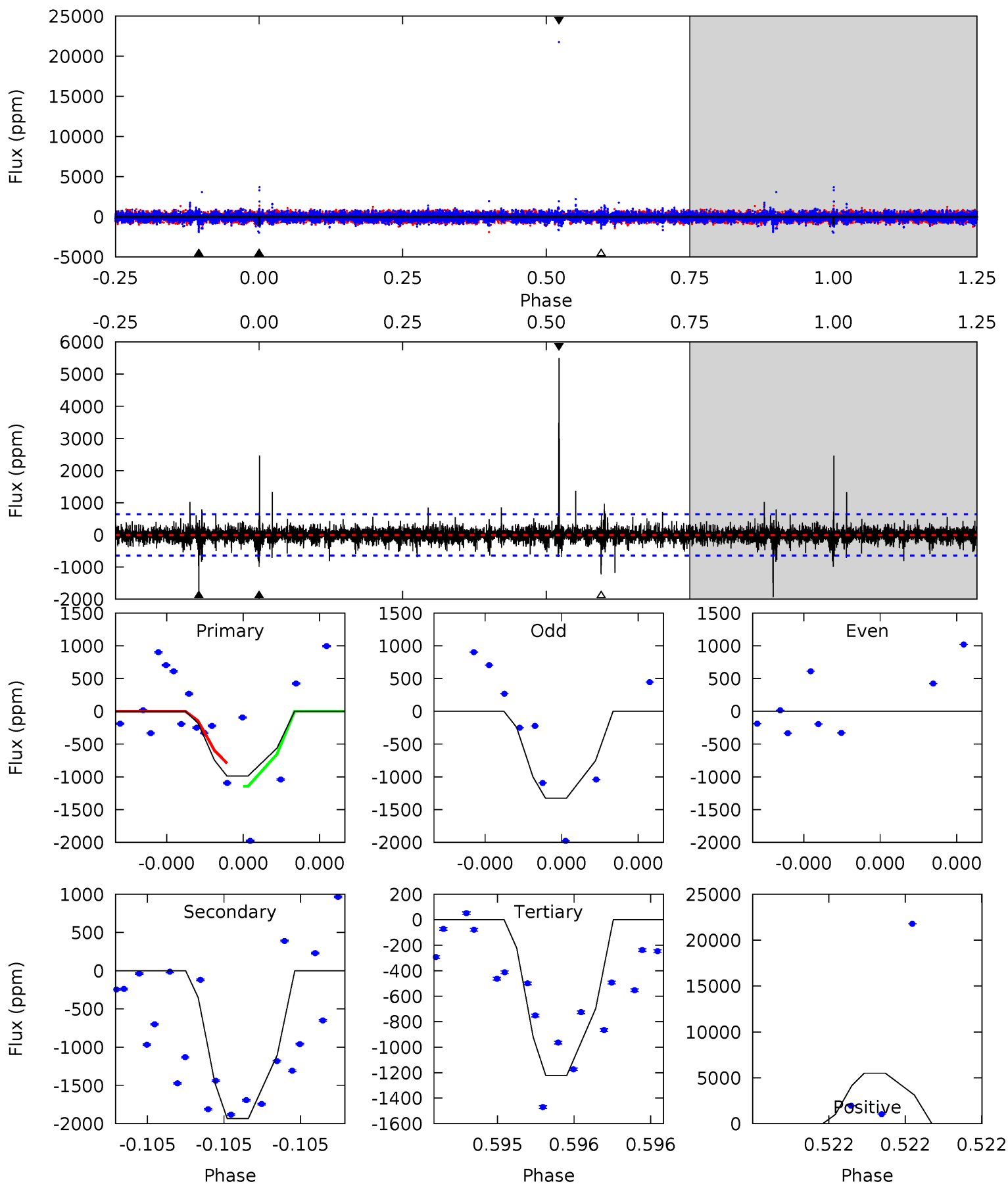
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.00	14.3	13.3	12.7	5.39	3.19	3.83	-7.34	-6.68	0.99	1.66	6.43	1.32	0.47	2.65



Alt Model-Shift Uniqueness Test

008247608-03, P = 224.874959 Days, E = 155.792664 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.75	17.1	10.8	48.6	5.70	3.67	1.25	-2.06	-39.9	6.30	-31.5	0	1.47	0.74	0



Stellar Parameters For KIC 008247608

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6514^{+146}_{-178}	$4.196^{+0.198}_{-0.180}$	$-0.360^{+0.250}_{-0.300}$	$1.380^{+0.382}_{-0.313}$	$1.089^{+0.177}_{-0.133}$	$0.583^{+0.569}_{-0.292}$
	+2%/-3%	+5%/-4%	+69%/-83%	+28%/-23%	+16%/-12%	+98%/-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 008247608-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10572 ± 737	$22.58^{+25.53}_{-15.87}$	547^{+41}_{-39}	5422^{+5279}_{-1368}	6605^{+61695}_{-5170}
Alt.	-1934 ± 113	$26.29^{+26.91}_{-18.28}$	544^{+43}_{-37}	3670^{+2172}_{-682}	854^{+7999}_{-648}

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 $A_{obs} \gg 1.0$

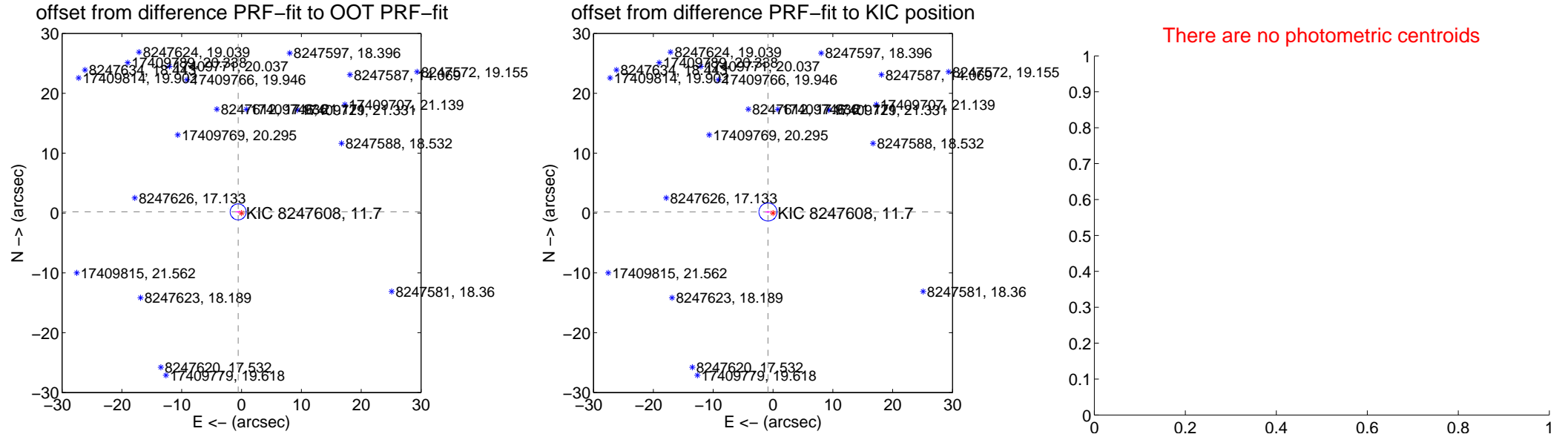
DV Centroid Data

Supplemental centroid analysis for 008247608-03. **Kepler magnitude: 11.70.** Transit SNR 0.00

There are 3 quarters with good PRF difference image offsets

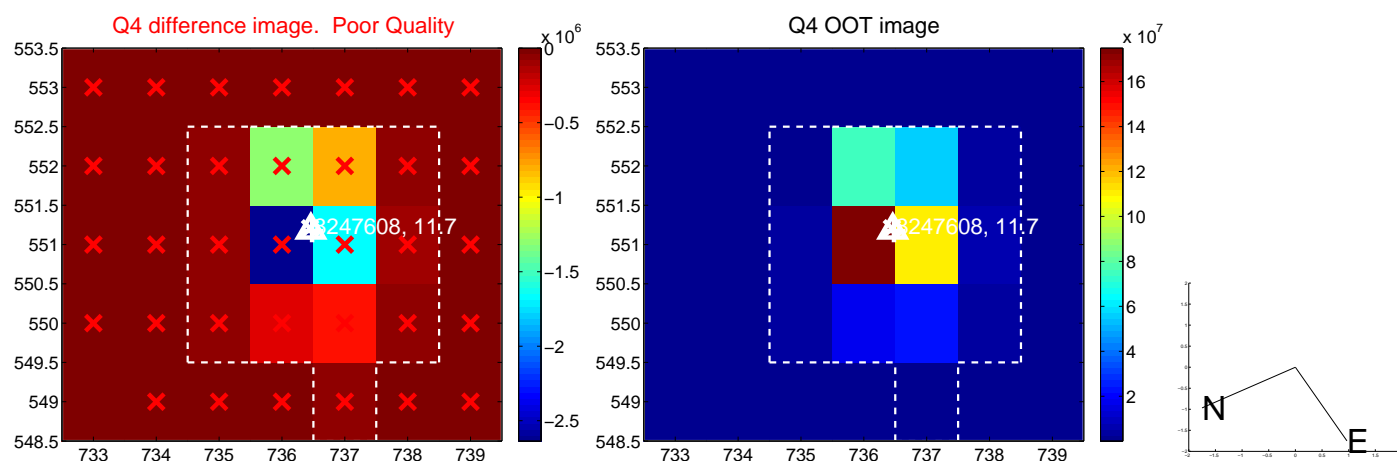
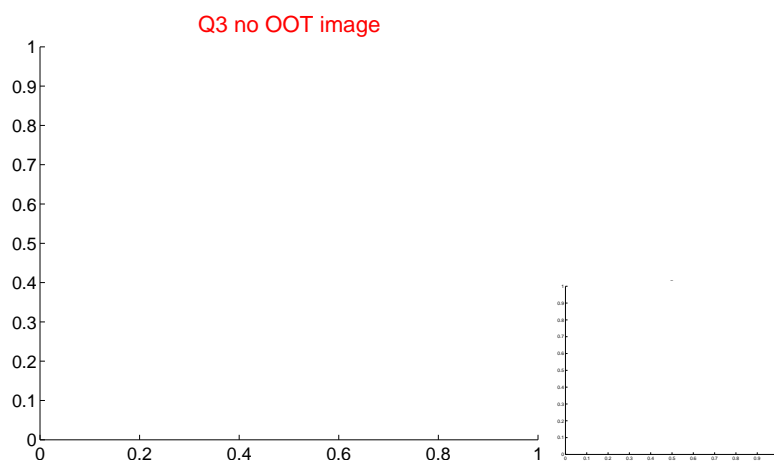
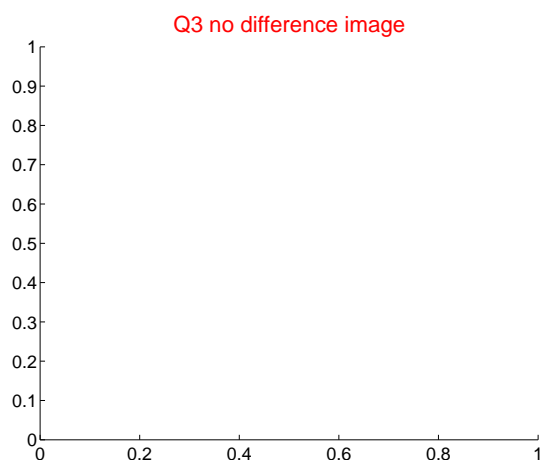
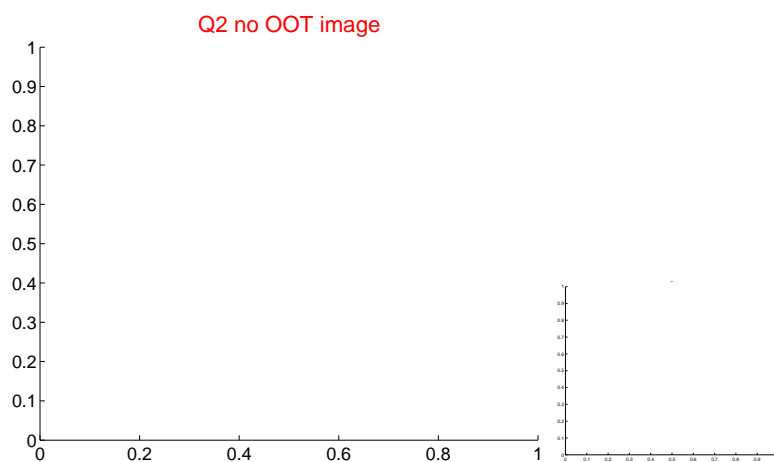
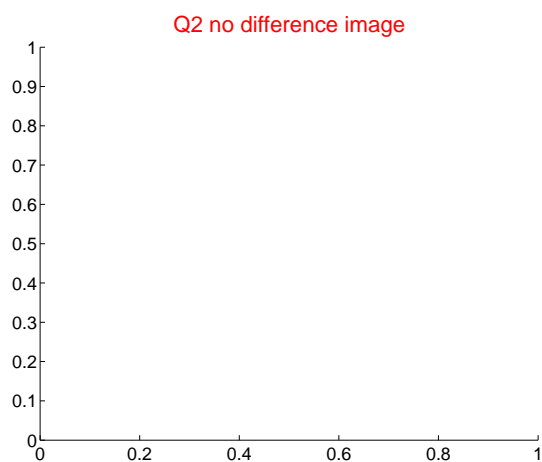
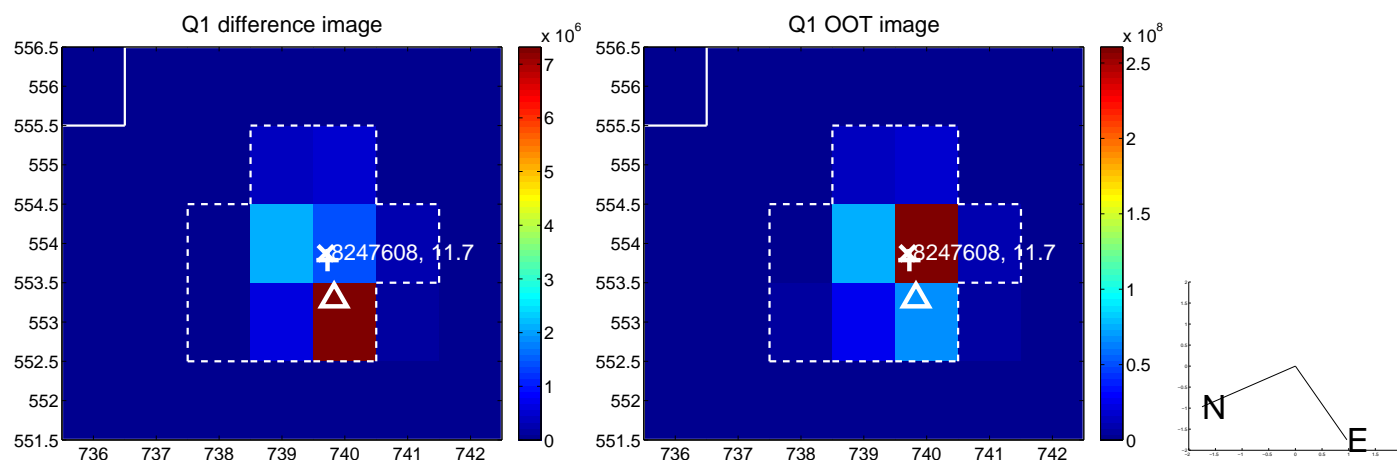
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.598 ± 0.445	1.34	0.567 ± 0.466	0.189 ± 0.165
PRF-fit source offset from KIC position	0.858 ± 0.503	1.70	0.840 ± 0.481	0.171 ± 0.177
photometric centroid source offset	—	—	—	—

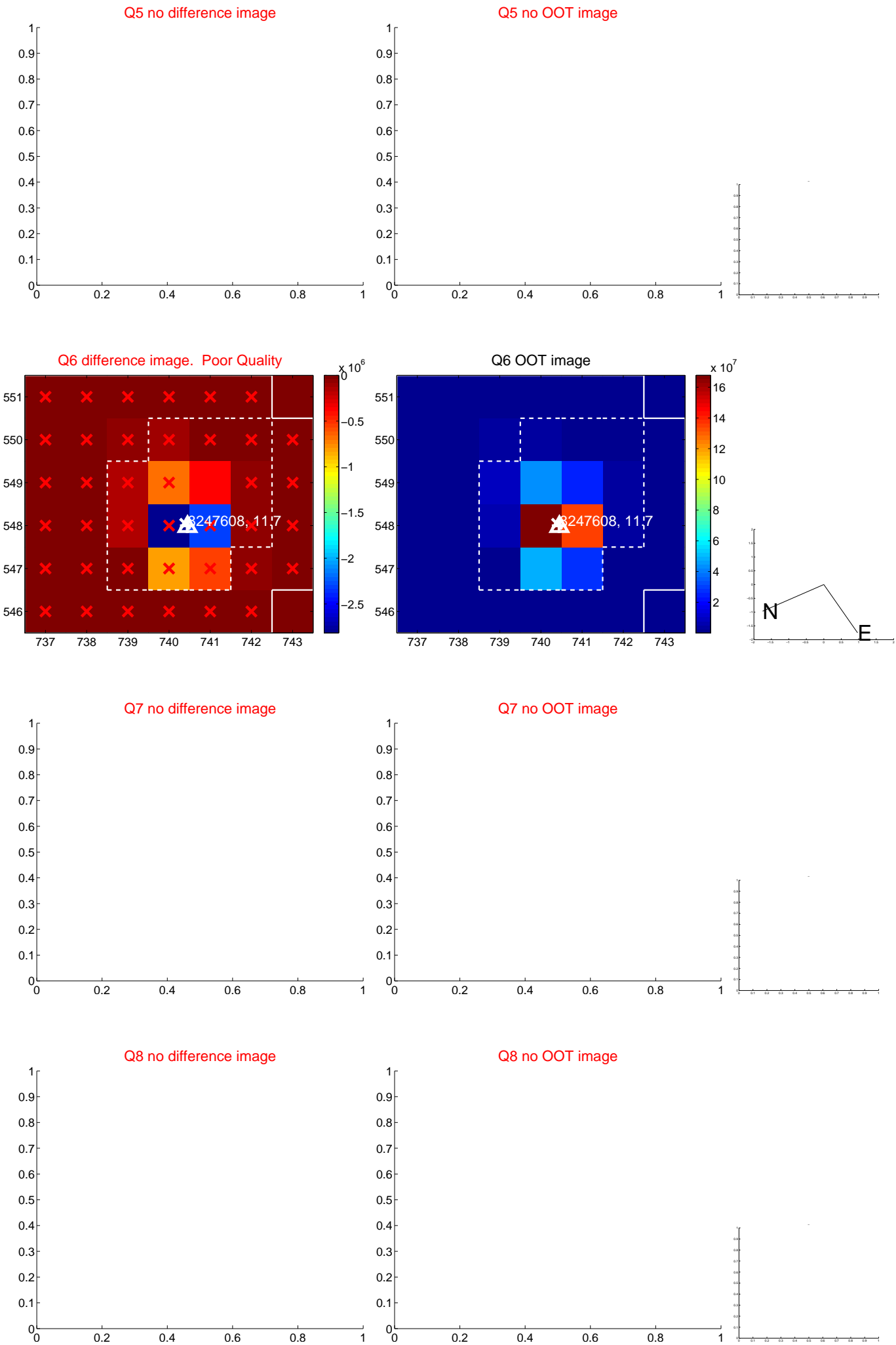


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

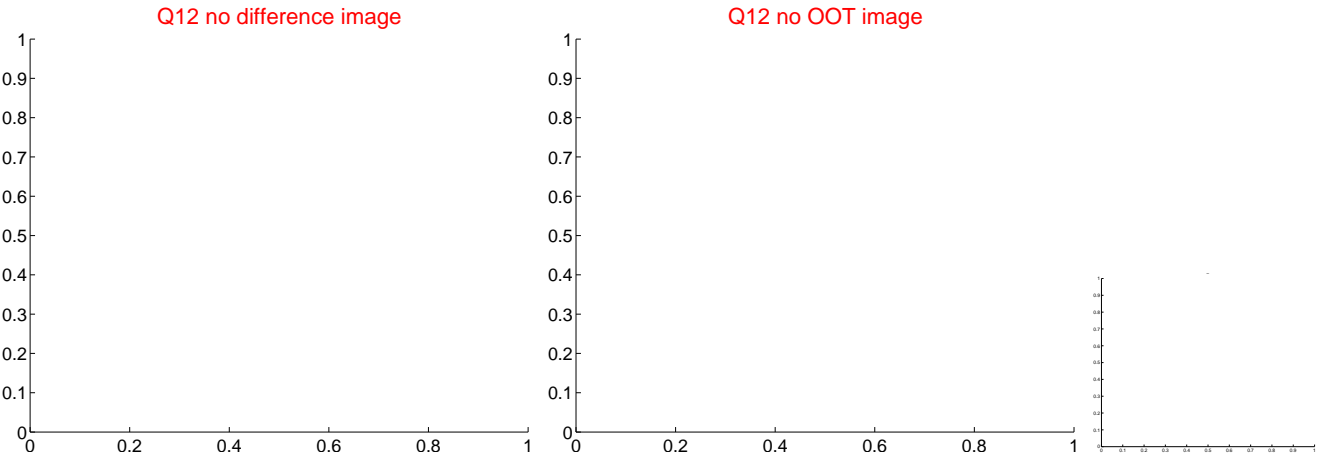
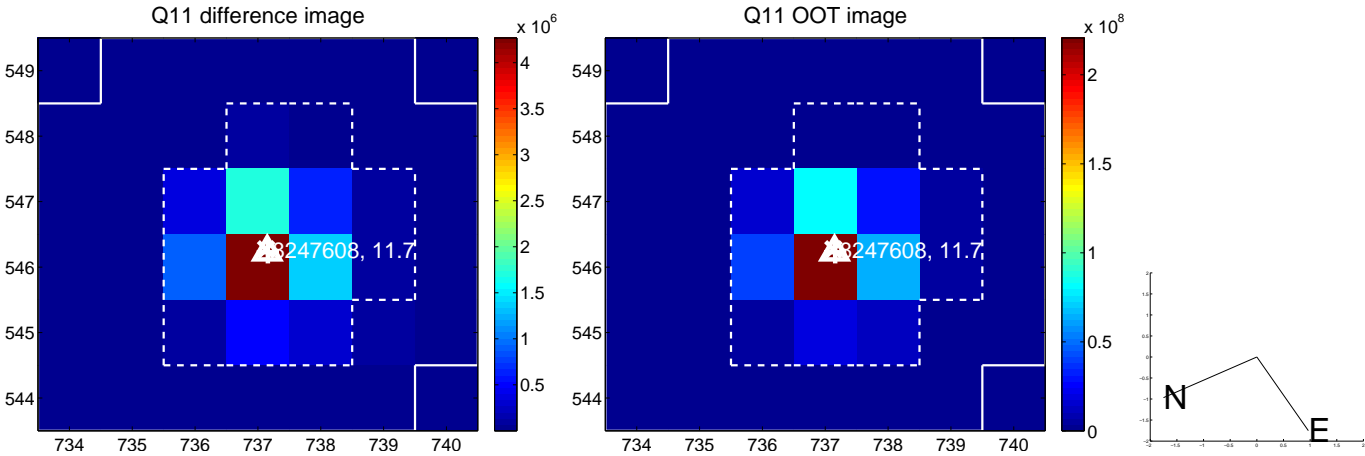
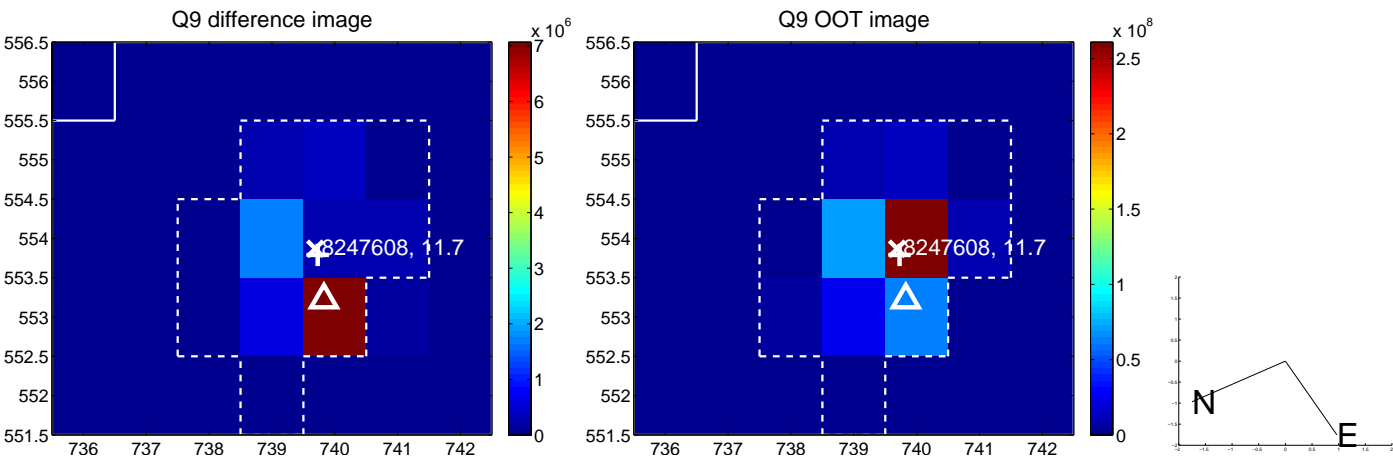
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



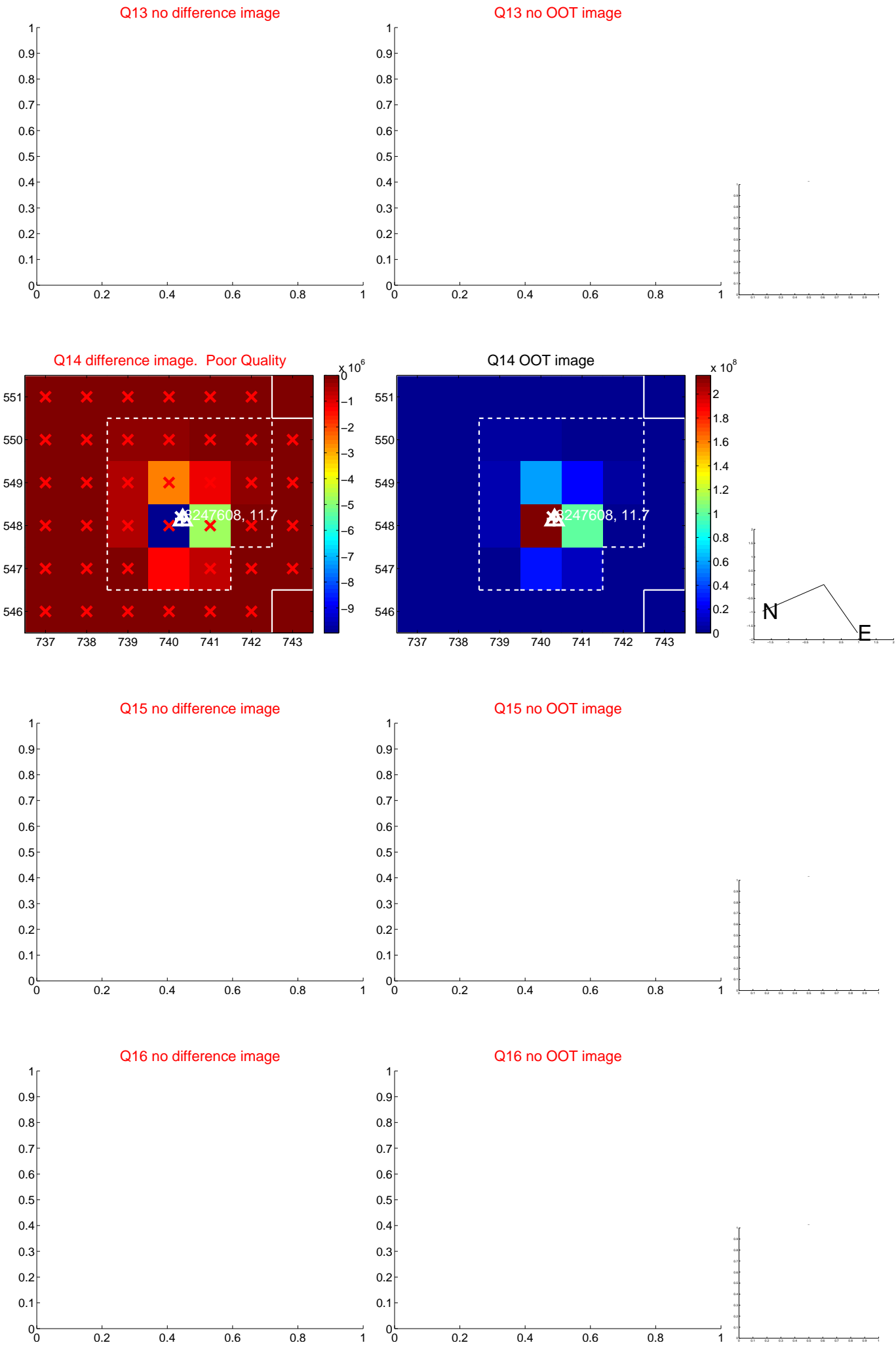
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



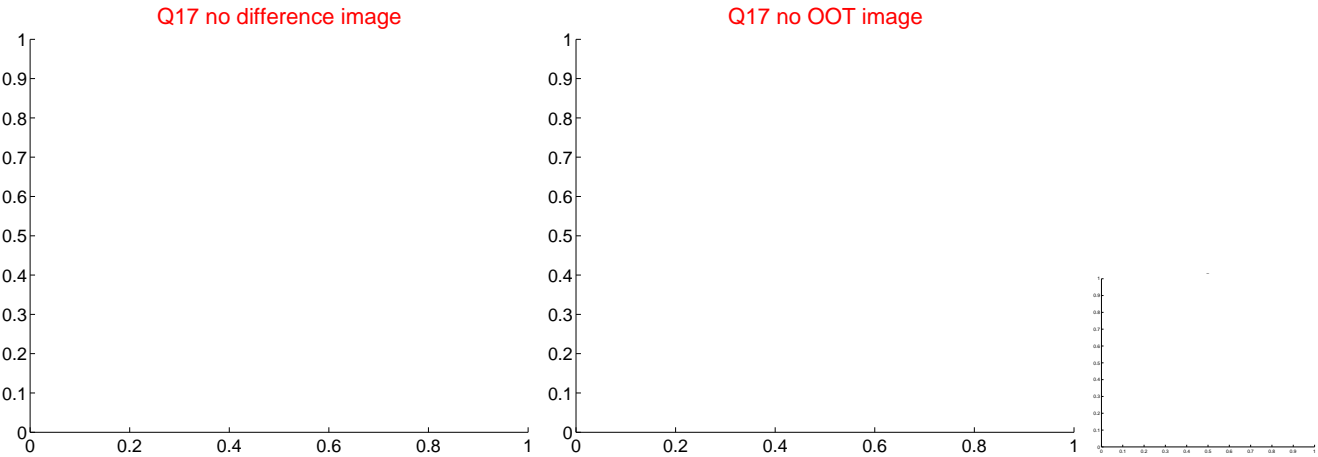
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

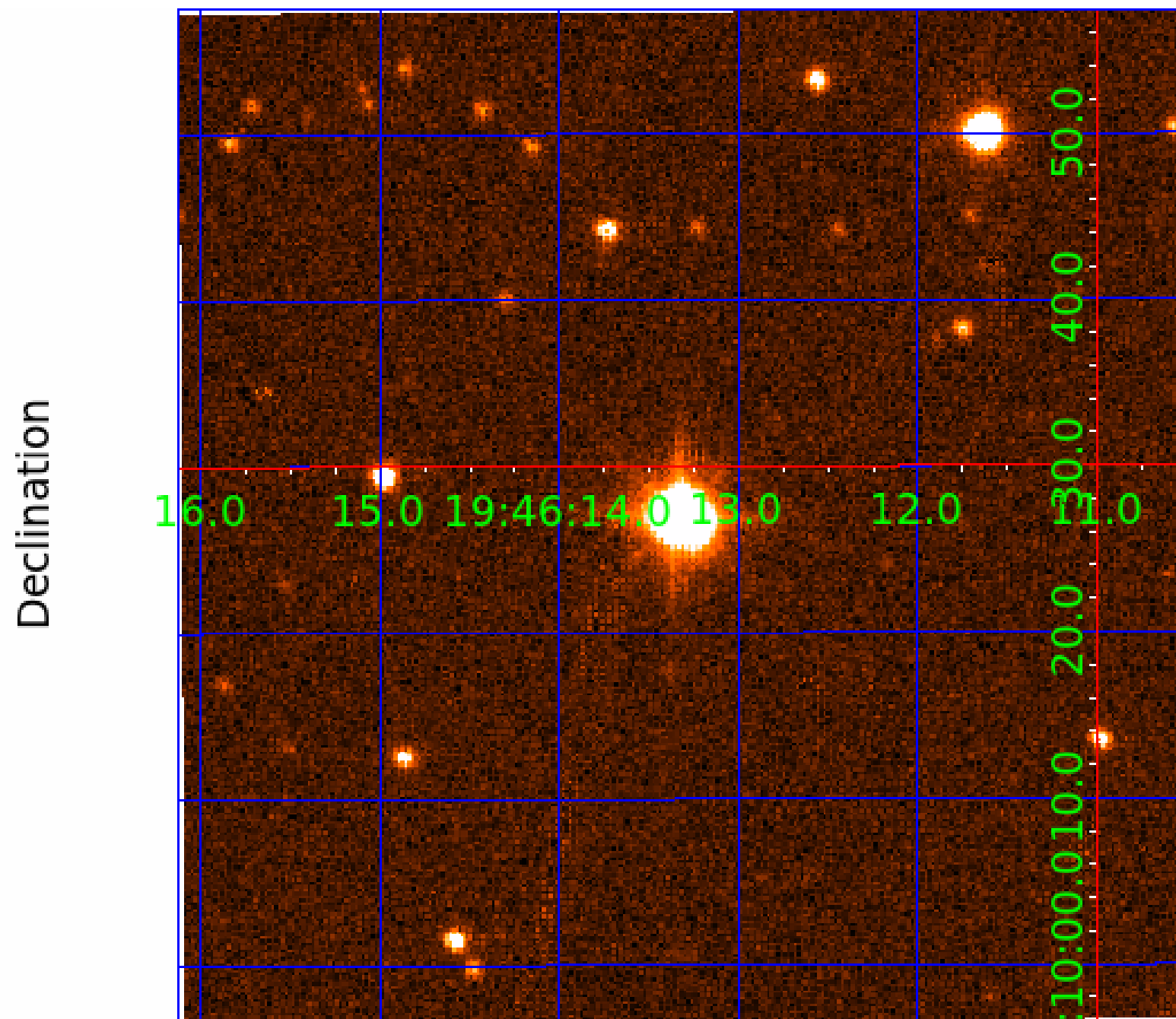


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image



KIC 008247608

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})
008247608-01	OBS	No	275.748438	395.577435	2015.9	2.198	27.2	10.9	1.38	6514	6.28	4.22
008247608-02	OBS	No	420.164123	264.075928	905.3	11.704	20.7	2.5	1.38	6514	4.93	2.40
008247608-03	OBS	No	224.920619	155.680638	0.4	7.192	23.2	0.0	1.38	6514	0.10	5.53
008247608-04	OBS	No	232.027950	322.166296	67.2	0.561	23.8	0.9	1.38	6514	1.31	5.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008247608-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008247608-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008247608-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008247608-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

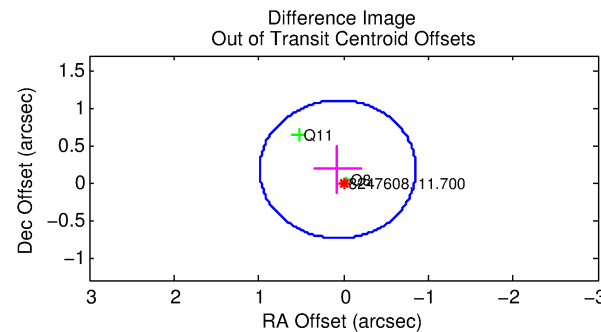
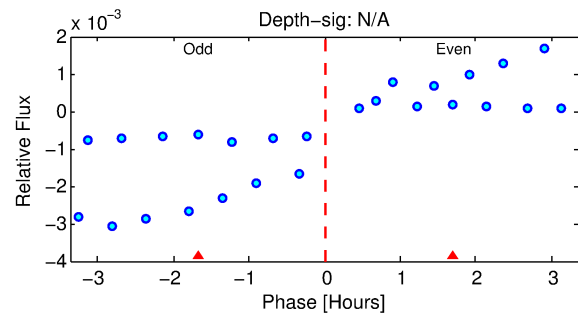
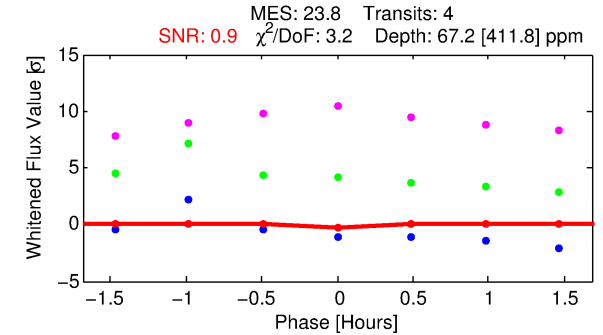
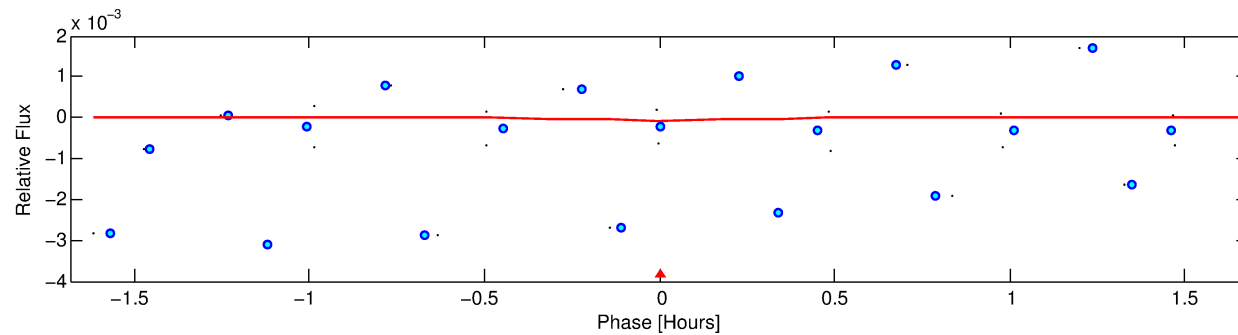
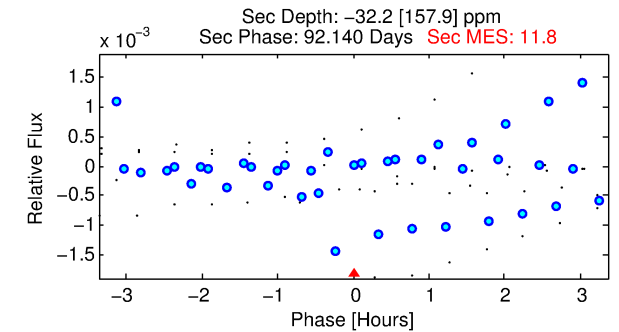
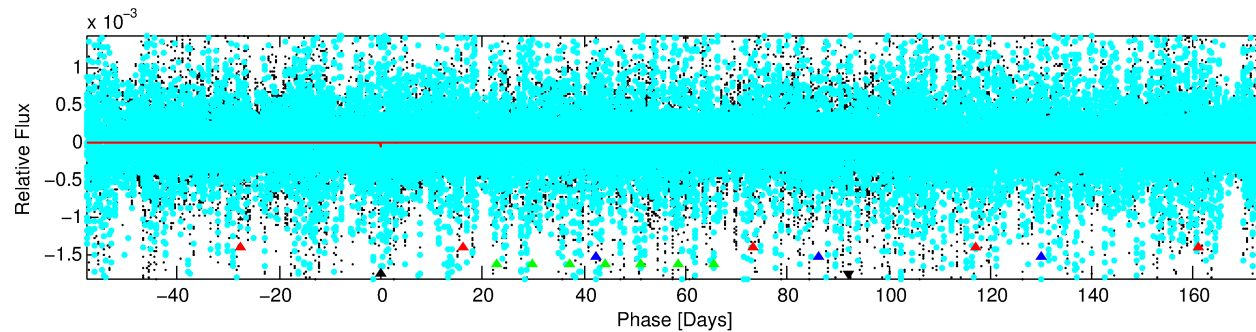
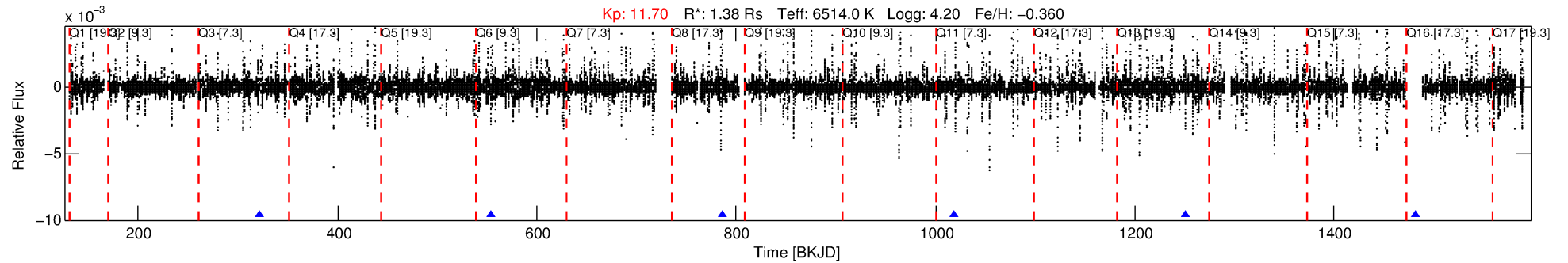
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008247608-04

No Significant Match Found

DV One-Page Summary

KIC: 8247608 Candidate: 4 of 4 Period: 232.028 d



DV Fit Results:

Period = 232.02795 [0.04020] d
Epoch = 322.1663 [0.0656] BKJD
Rp/R* = 0.0087 [0.2226]
a/R* = 1760.31 [259295.79]
b = 0.84 [51.90]
Seff = 5.31 [1.97]
Teq = 387 [36] K
Rp = 1.31 [33.52] Re
a = 0.7609 [0.1819] AU
Ag = N/A
Teffp = N/A

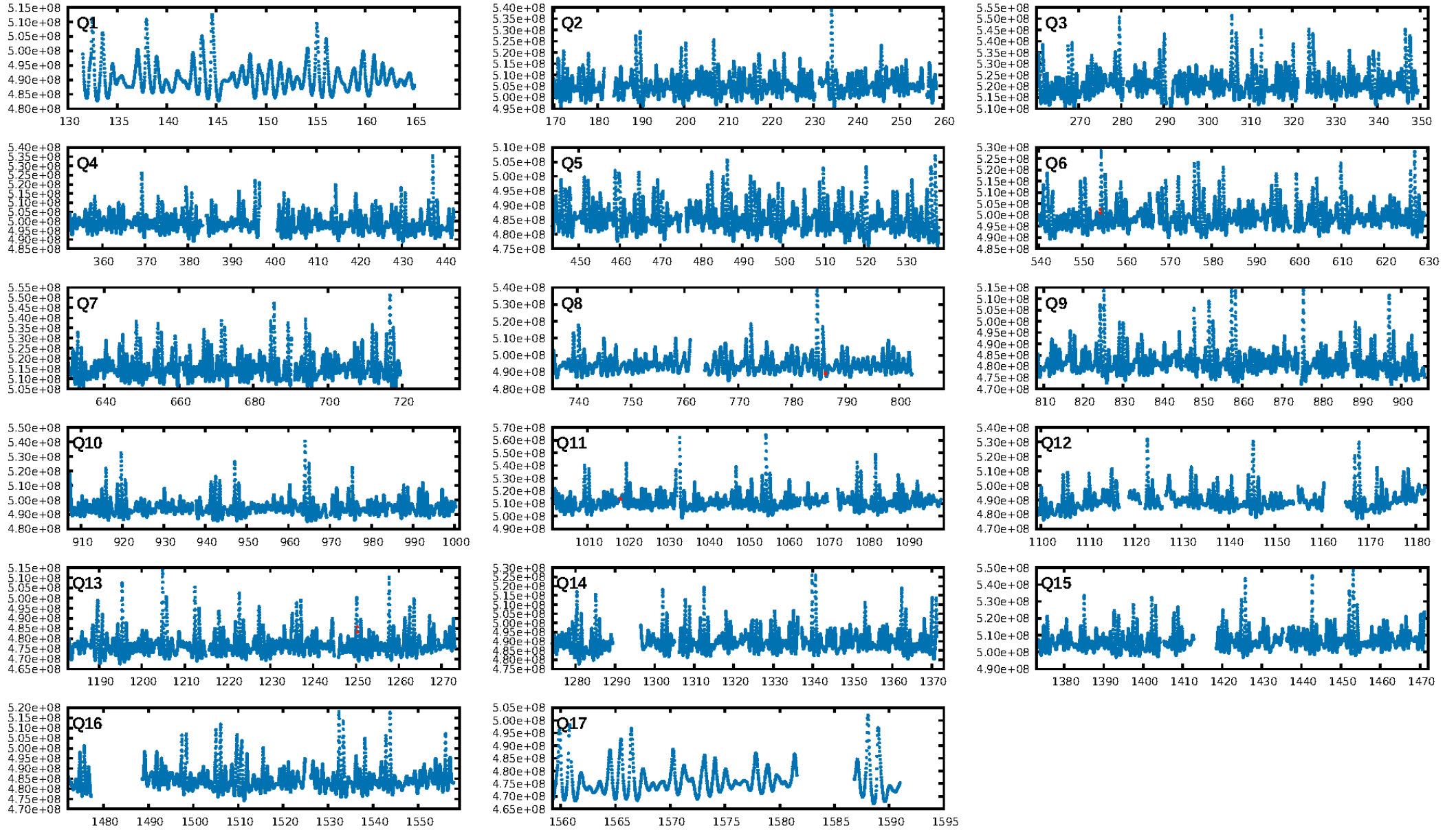
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [23.65 σ]
LongPeriod-sig: 100.0% [462.63 σ]
ModelChiSquare2-sig: 0.9%
ModelChiSquareGof-sig: 5.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.585
Centroid-sig: 53.6%
Centroid-so: 7.047 arcsec [1.31 σ]
OotOffset-rm: 0.188 arcsec [0.61 σ]
KicOffset-rm: 0.302 arcsec [0.66 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

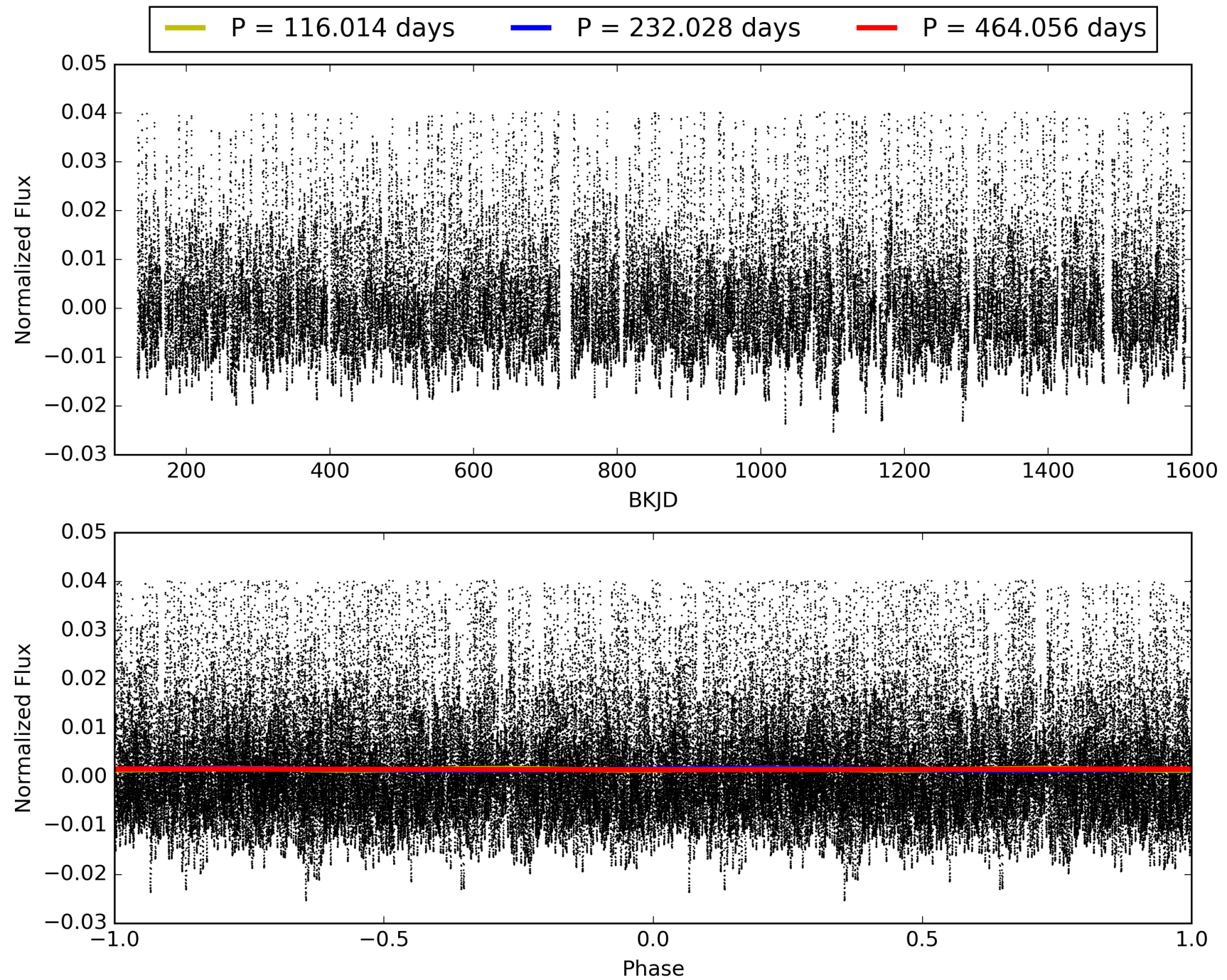
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:39:47 Z

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

TCE 008247608-04, PDC Light Curves

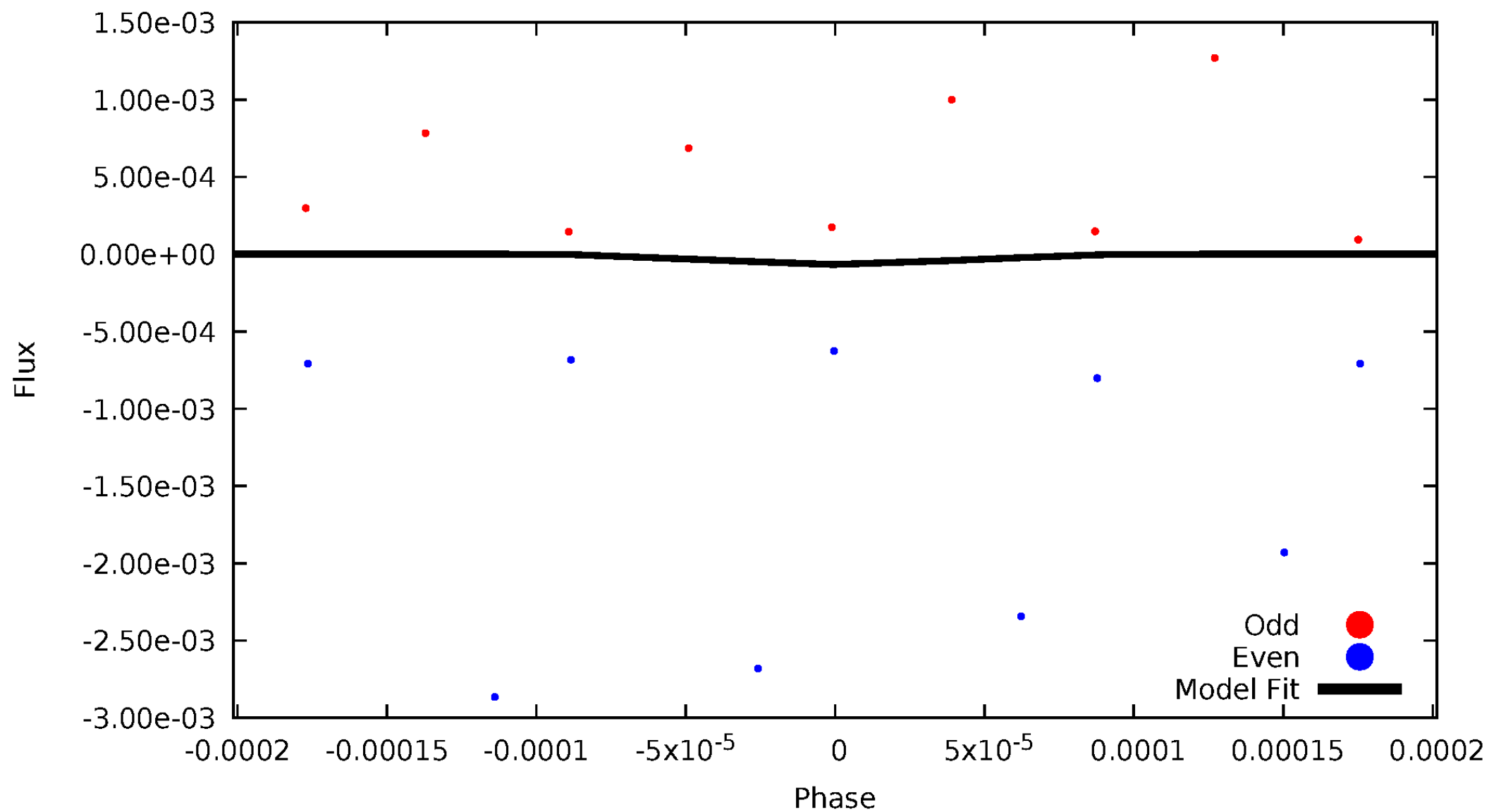


TCE 008247608-04



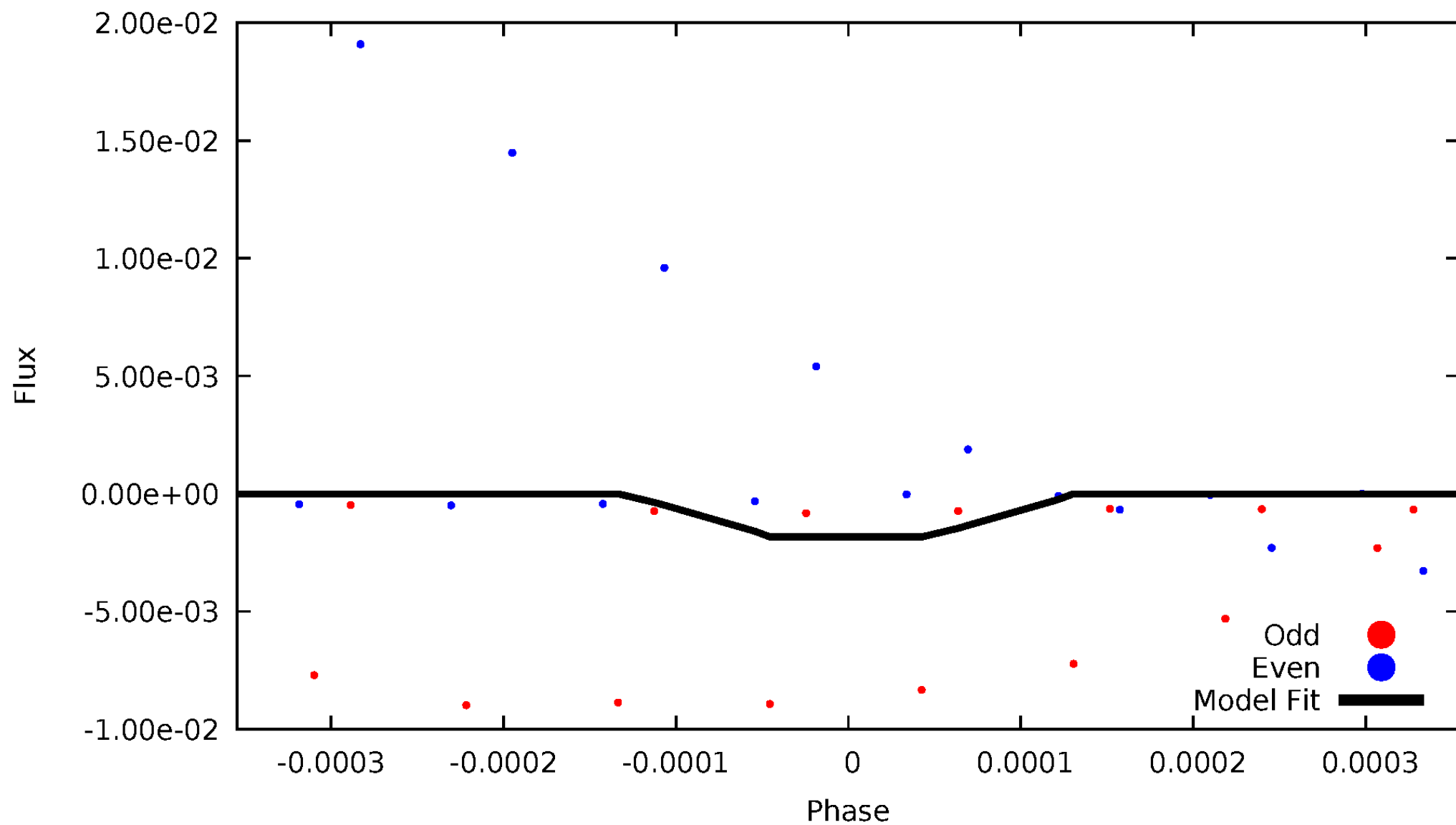
DV Odd/Even

TCE 008247608-04



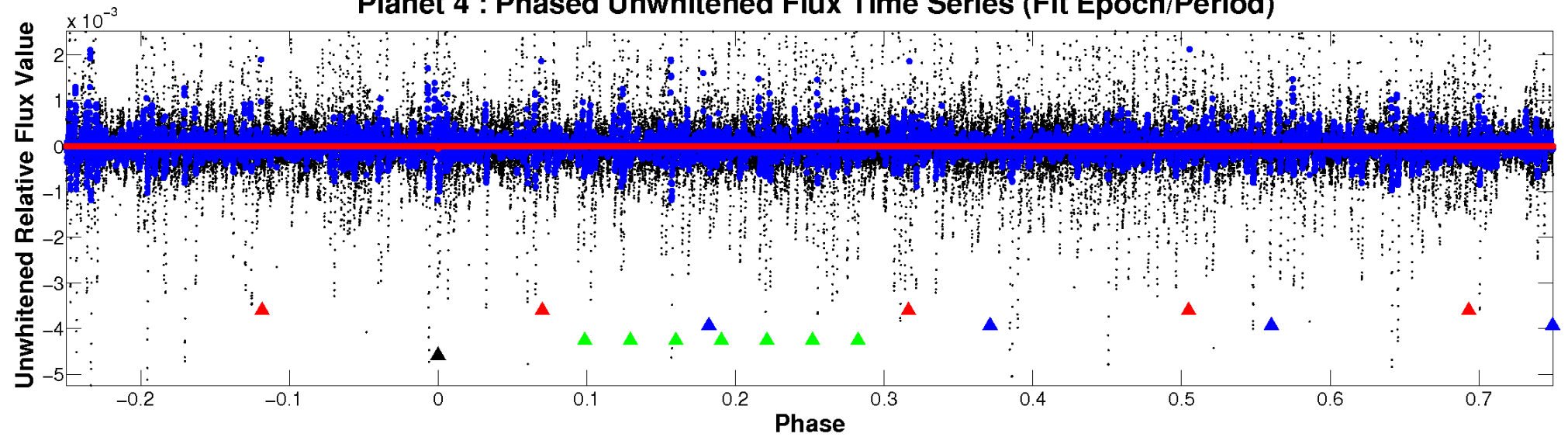
ALT Odd/Even

TCE 008247608-04

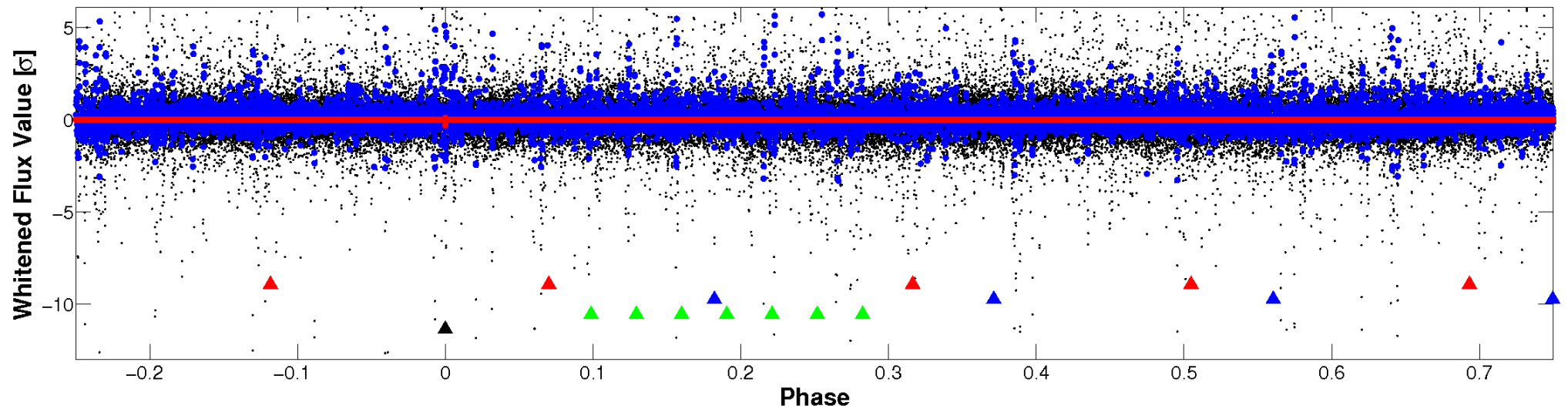


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

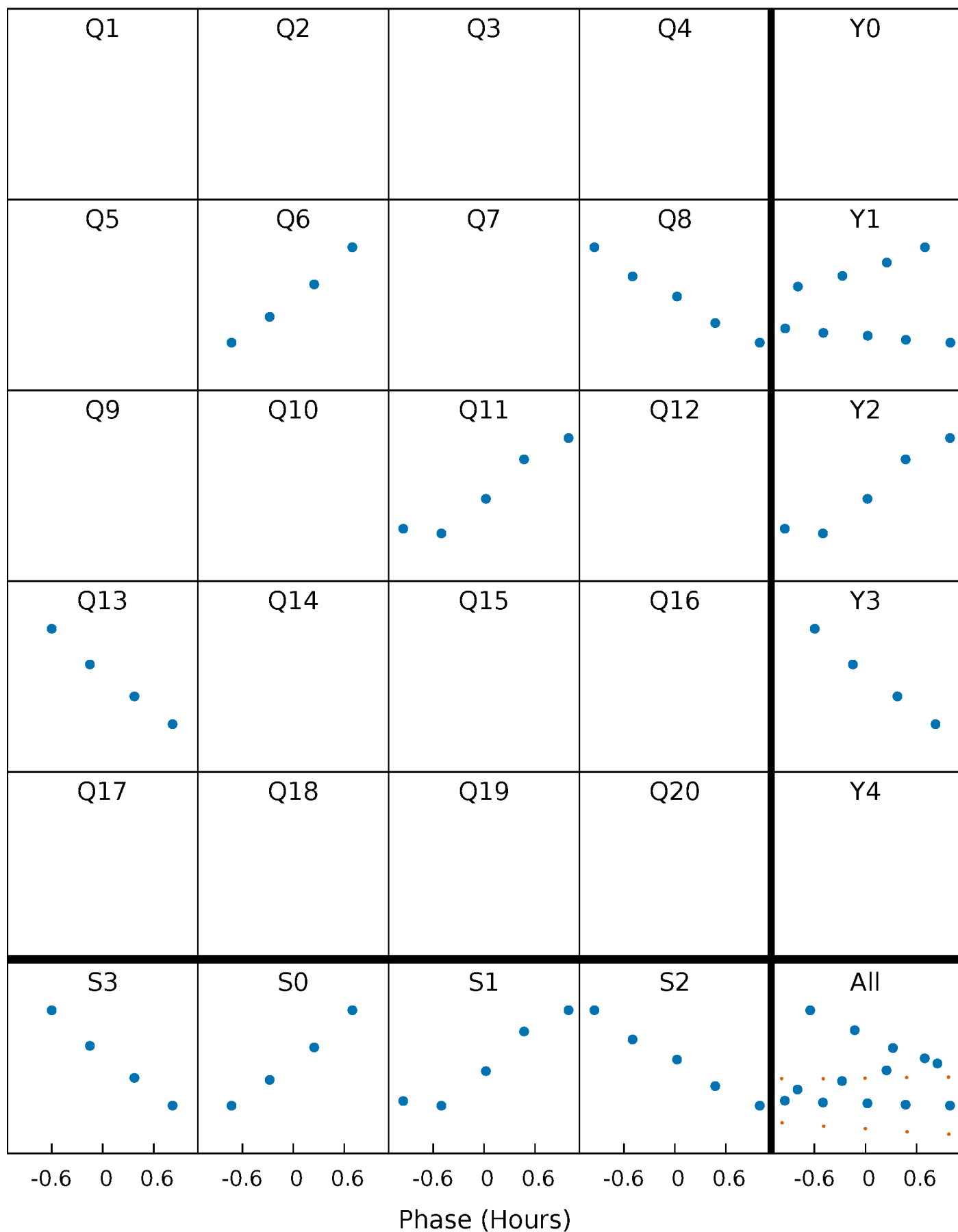


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



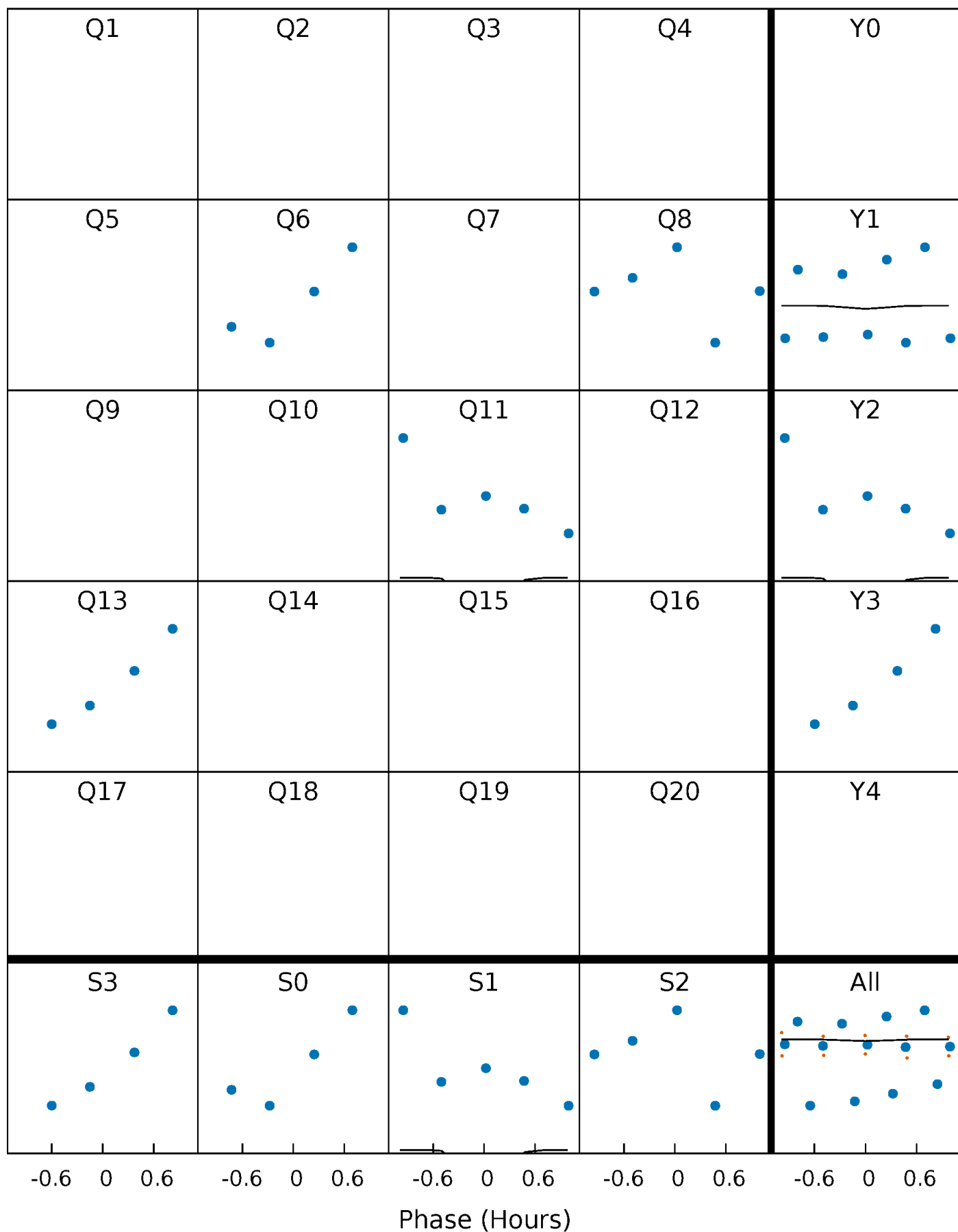
PDC Quarter-Phased Transit Curves

TCE 008247608-04 P=232.027951 Days $T_0=322.166296$ (BKJD)



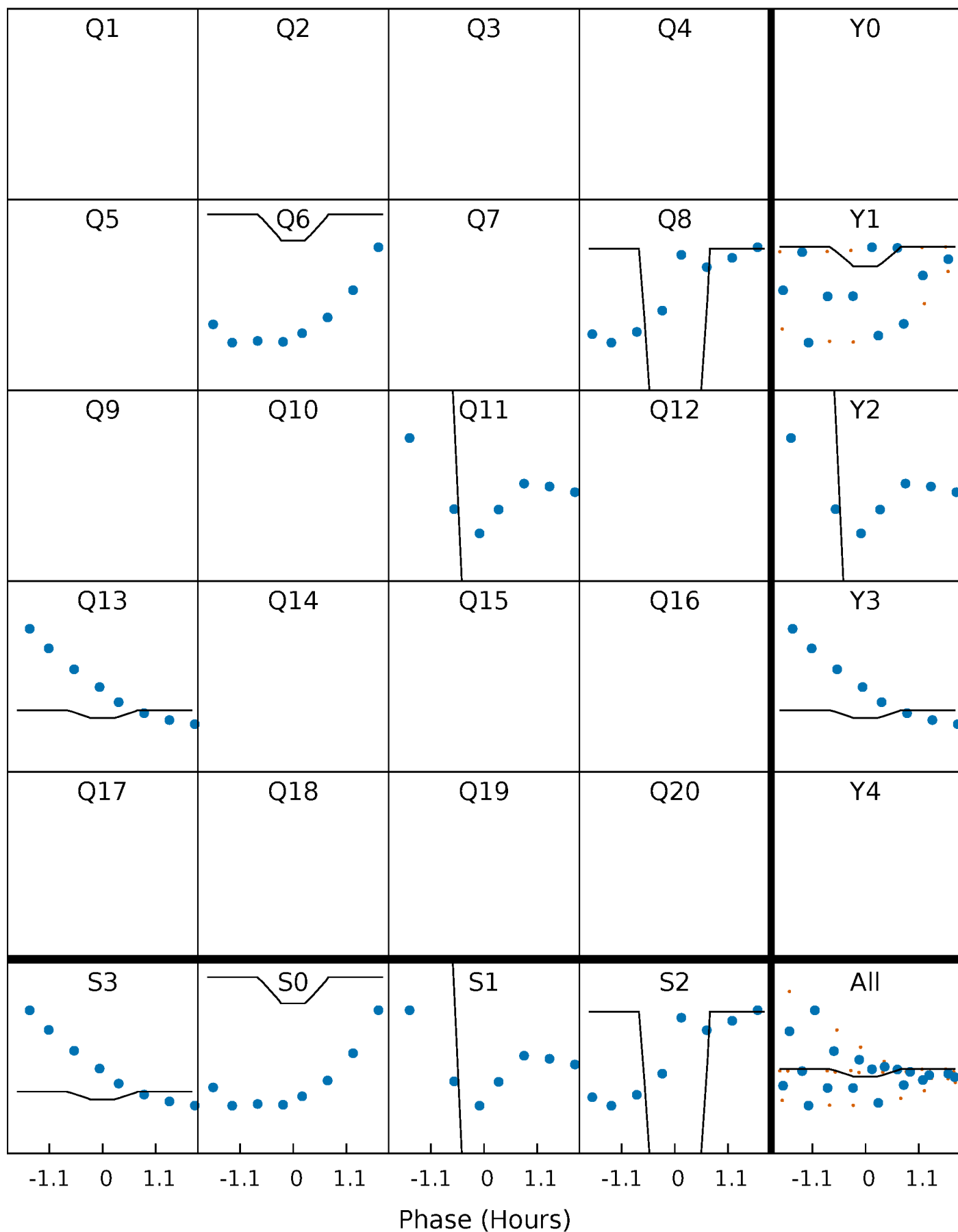
DV Quarter-Phased Transit Curves

TCE 008247608-04 P=232.027951 Days $T_0=322.166296$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

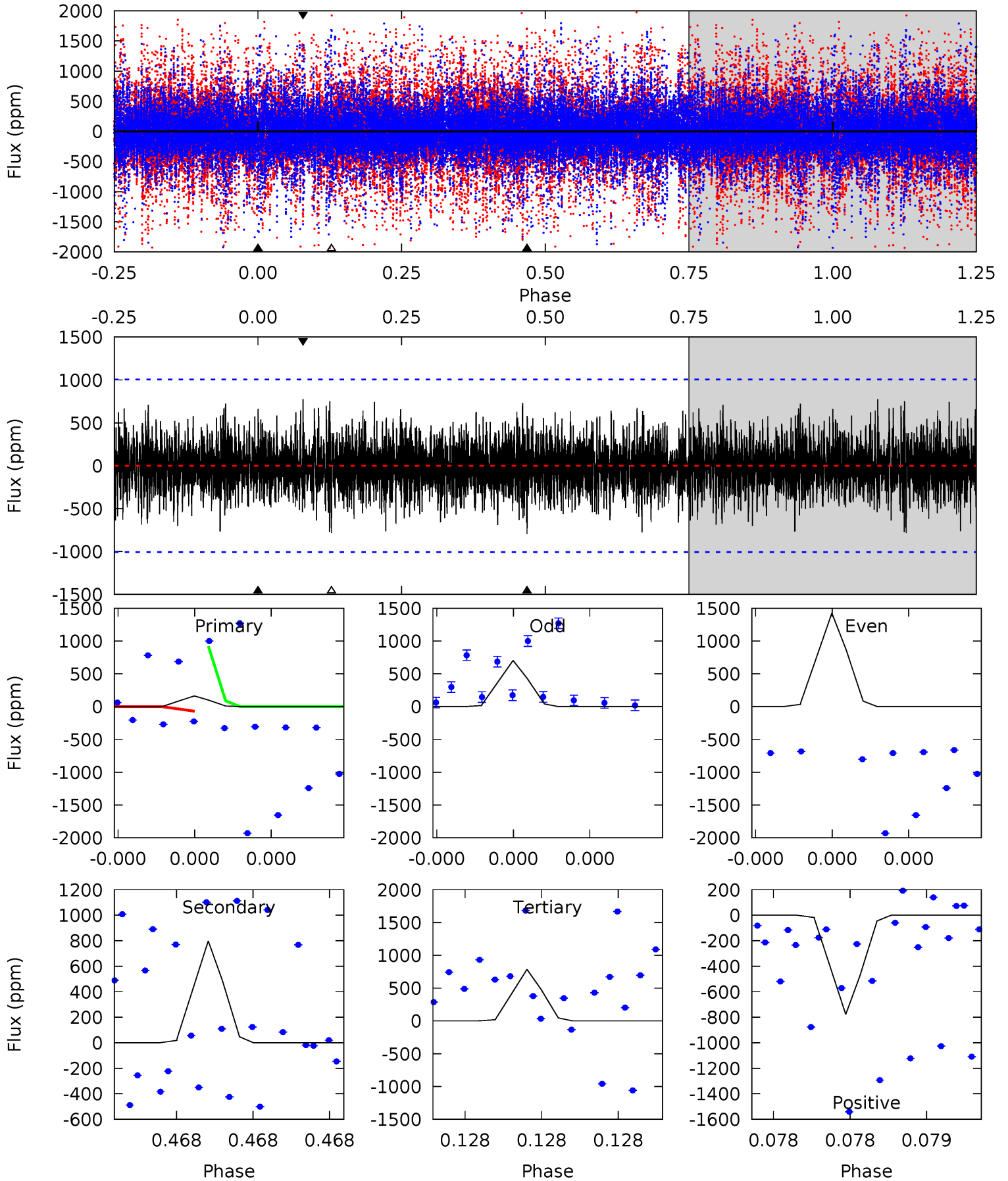
TCE 008247608-04 P=232.020862 Days $T_0=322.172558$ (BKJD)



DV Model-Shift Uniqueness Test

008247608-04, P = 232.027951 Days, E = 90.138345 Days

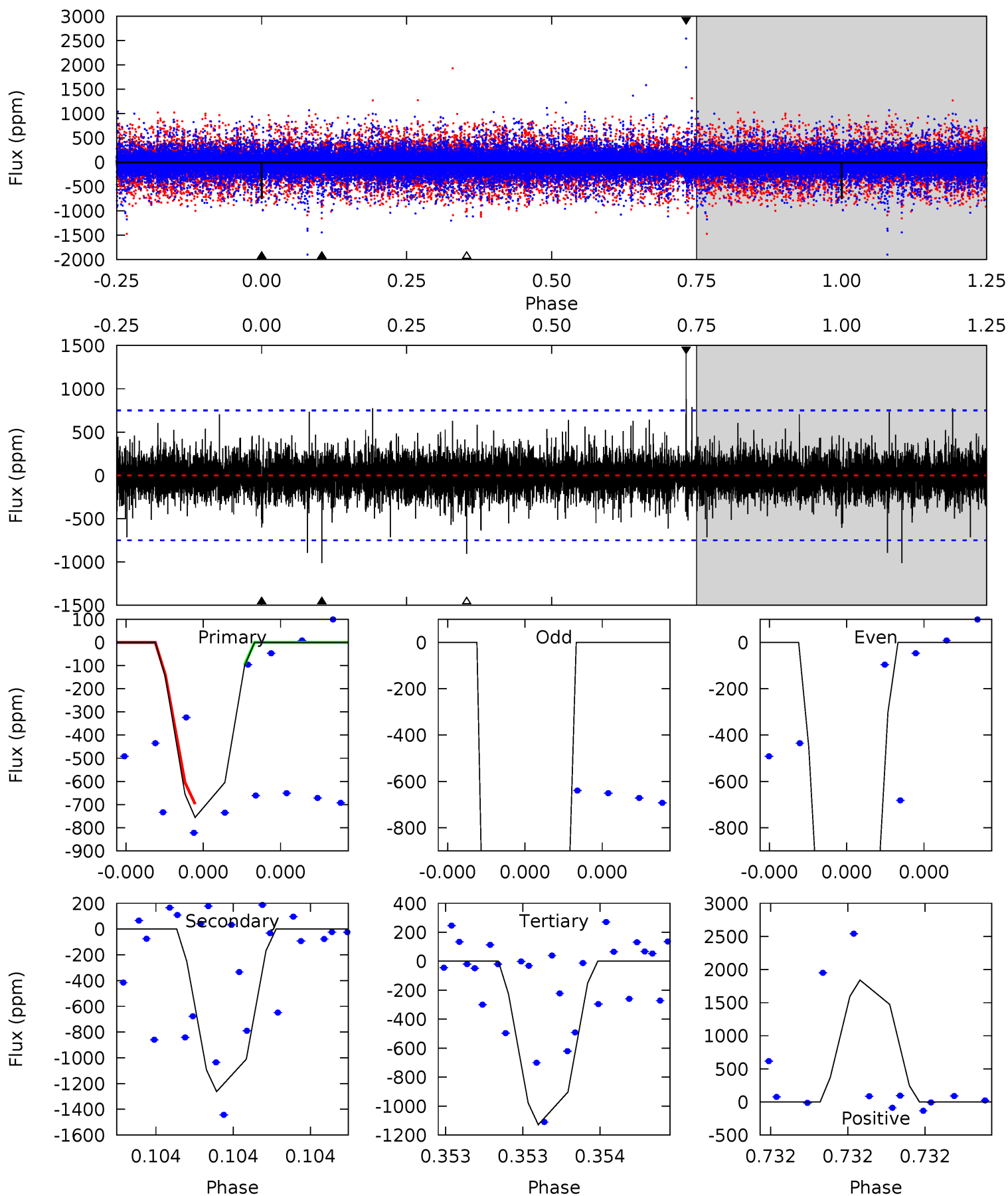
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.92	4.52	4.45	4.41	5.72	3.70	1.01	-3.53	-3.48	0.07	0.12	2.01	3.07	0.49	2.46



Alt Model-Shift Uniqueness Test

008247608-04, P = 232.020862 Days, E = 90.151696 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.60	7.70	6.88	11.2	5.71	3.69	0.93	-2.28	-6.61	0.82	-3.52	18.9	1.77	0.59	0



Stellar Parameters For KIC 008247608

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6514^{+146}_{-178}	$4.196^{+0.198}_{-0.180}$	$-0.360^{+0.250}_{-0.300}$	$1.380^{+0.382}_{-0.313}$	$1.089^{+0.177}_{-0.133}$	$0.583^{+0.569}_{-0.292}$
	+2%/-3%	+5%/-4%	+69%/-83%	+28%/-23%	+16%/-12%	+98%/-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 008247608-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-796 ± 176	$23.50^{+24.64}_{-16.49}$	538^{+41}_{-35}	3310^{+1705}_{-610}	455^{+4681}_{-348}
Alt.	-1010 ± 131	$24.81^{+28.50}_{-16.86}$	540^{+42}_{-36}	3377^{+1725}_{-644}	505^{+4571}_{-387}

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 $A_{obs} \gg 1.0$

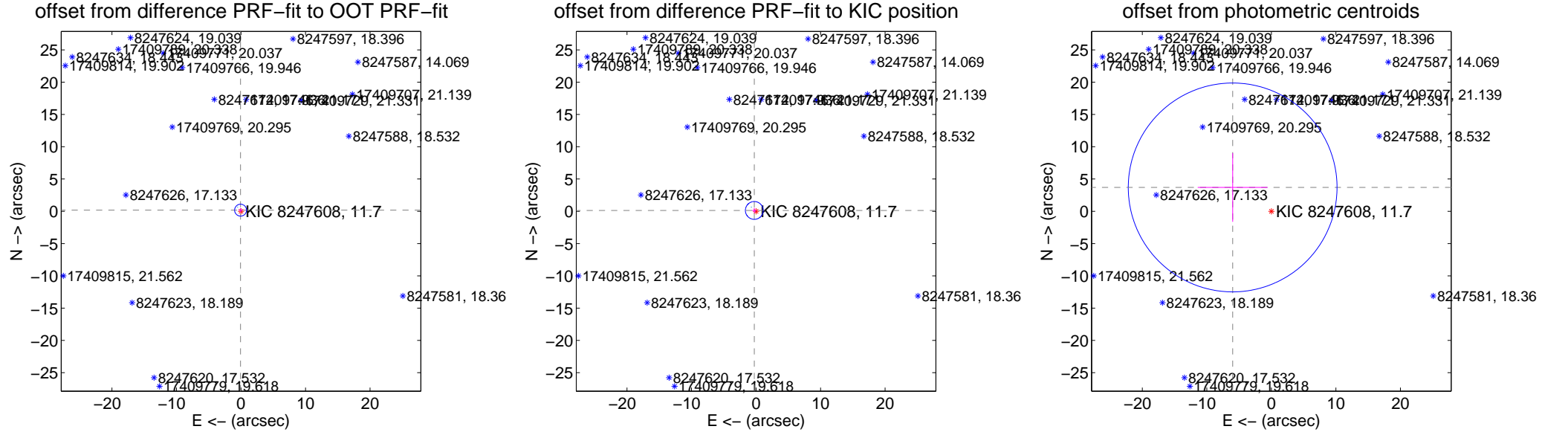
DV Centroid Data

Supplemental centroid analysis for 008247608-04. **Kepler magnitude: 11.70.** Transit SNR 0.85

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.188 ± 0.307	0.61	0.067 ± 0.267	0.176 ± 0.313
PRF-fit source offset from KIC position	0.302 ± 0.460	0.66	0.271 ± 0.325	0.132 ± 0.393
photometric centroid source offset	7.05 ± 5.39	1.31	6.00 ± 5.42	3.69 ± 5.33

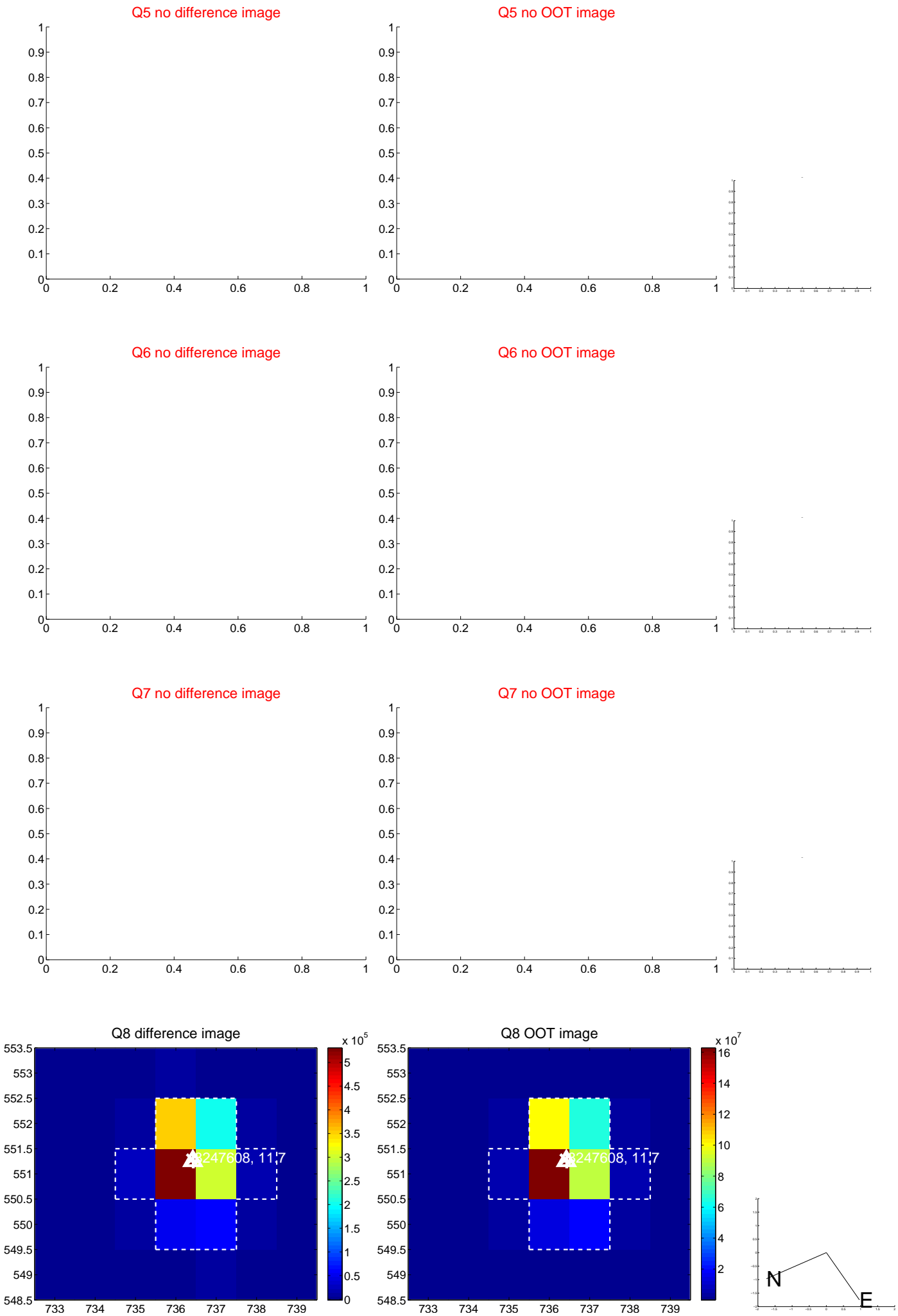


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

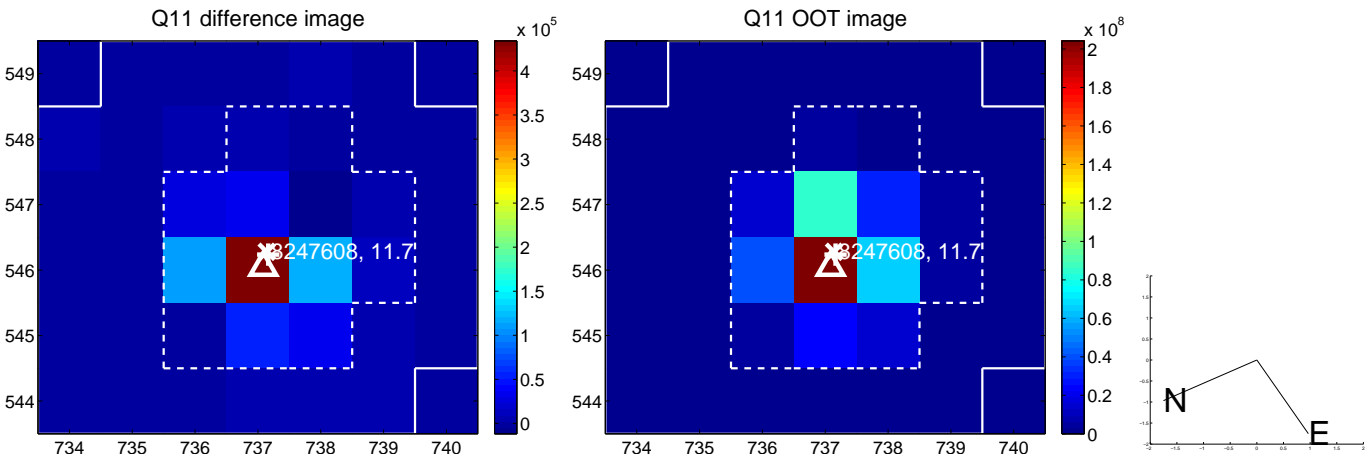
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



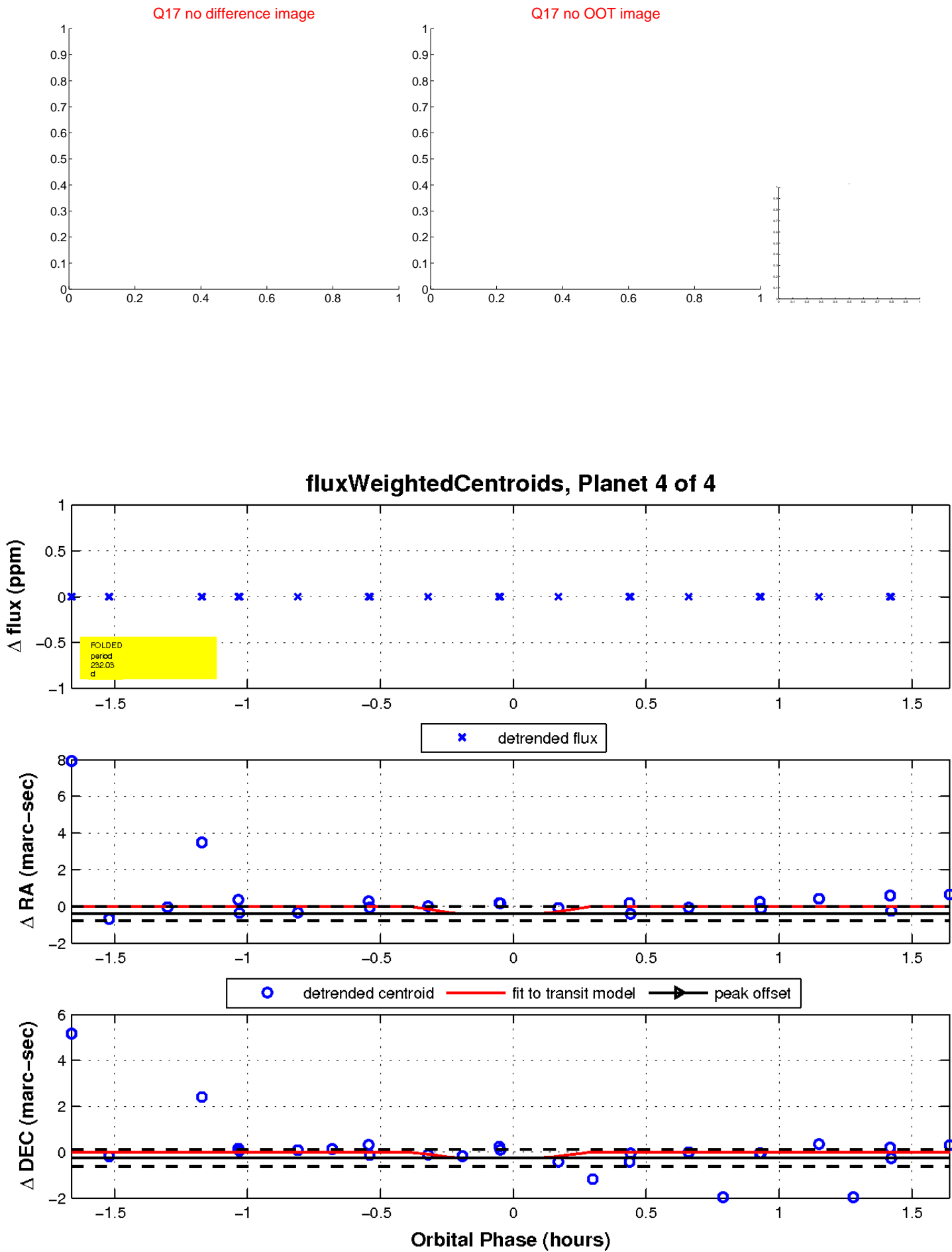
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

