

KIC 007748234

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})
007748234-01	OBS	No	267.028539	199.991576	243.2	1.921	15.4	6.1	1.16	5948	1.82	2.36
007748234-02	OBS	No	304.178768	242.099497	172.4	3.192	9.3	5.7	1.16	5948	1.71	1.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007748234-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—HALO_GHOST
007748234-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES

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

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

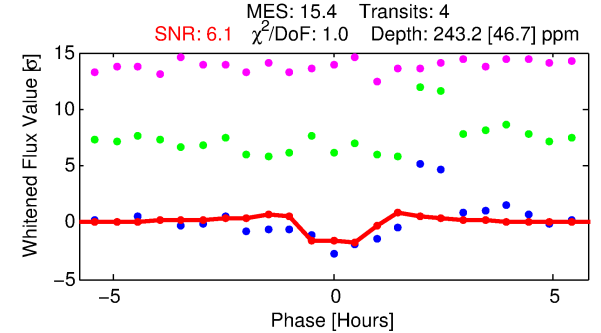
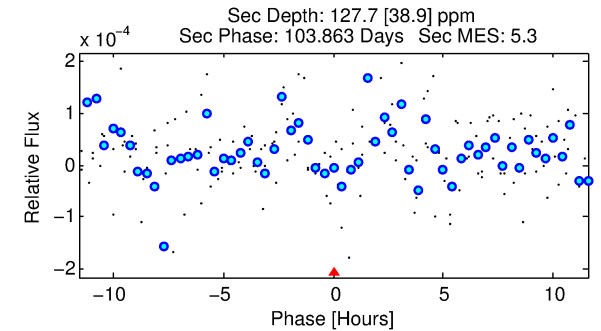
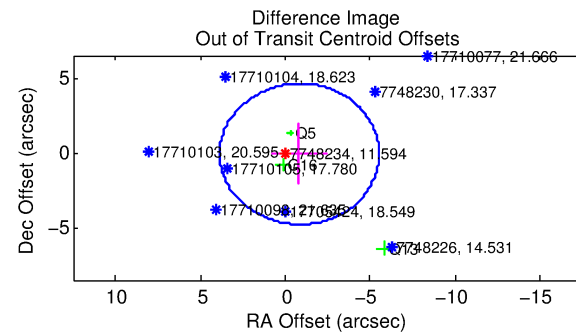
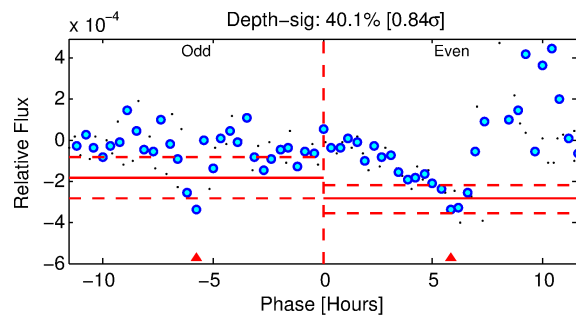
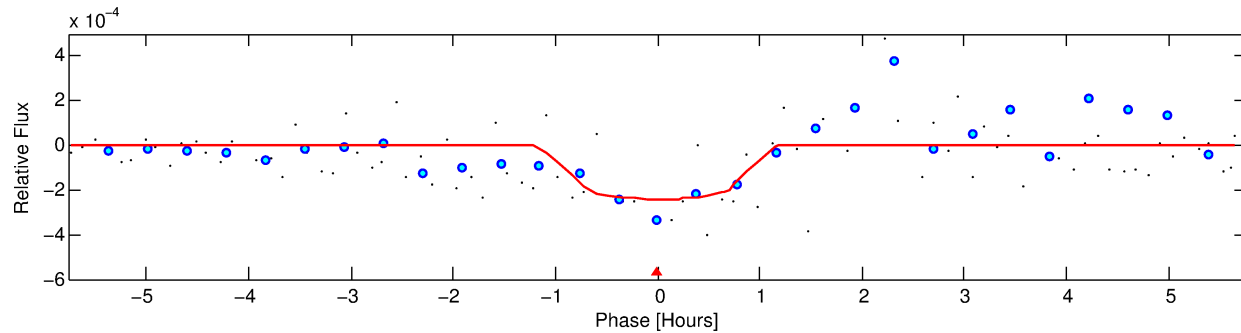
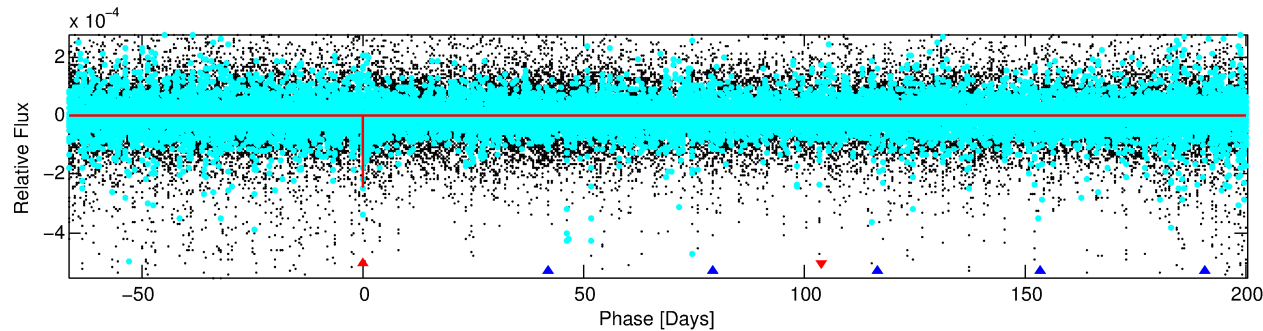
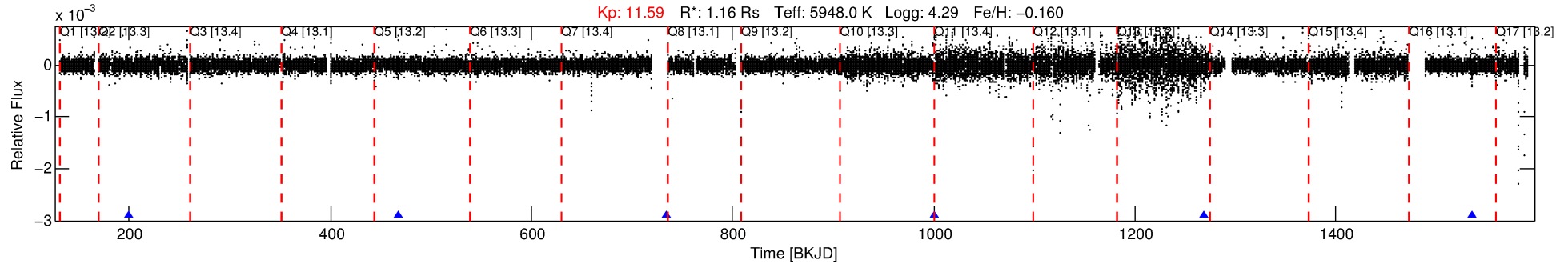
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007748234-01

No Significant Match Found

DV One-Page Summary

KIC: 7748234 Candidate: 1 of 2 Period: 267.029 d



DV Fit Results:

Period = 267.02854 [0.00144] d
Epoch = 199.9916 [0.0053] BKJD
Rp/R* = 0.0143 [0.0250]
a/R* = 1055.55 [8719.80]
b = 0.20 [39.42]
Seff = 2.36 [0.83]
Teq = 316 [28] K
Rp = 1.82 [3.22] Re
a = 0.8030 [0.1902] AU
Ag = 13693.98 [48247.84] [0.28 σ]
Teffp = 5284 [4635] K [1.07 σ]

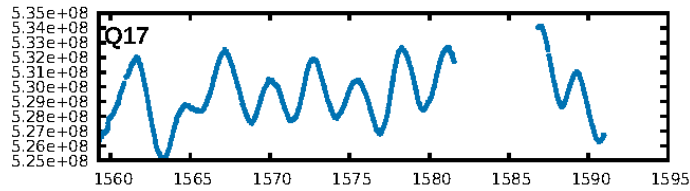
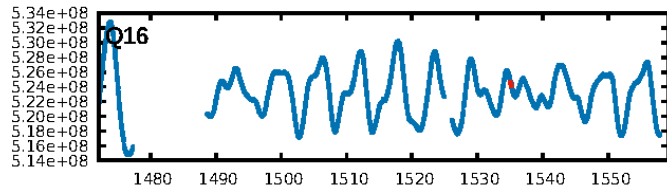
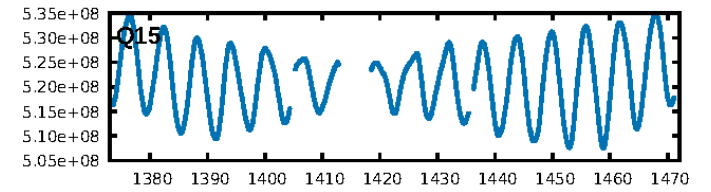
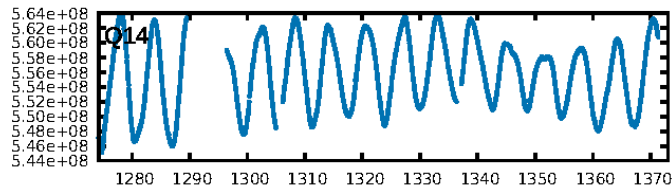
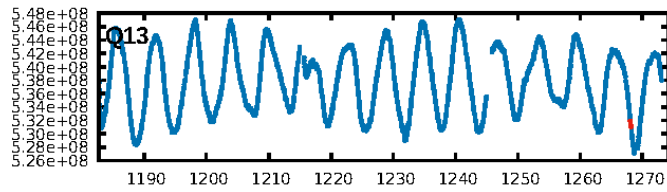
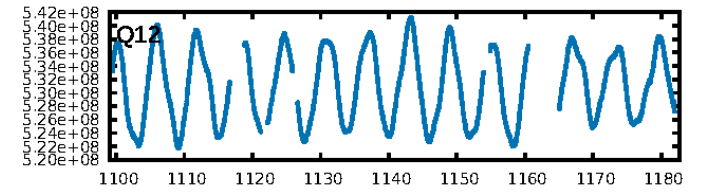
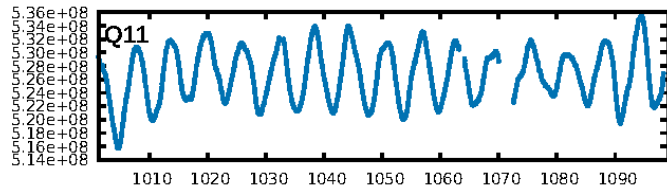
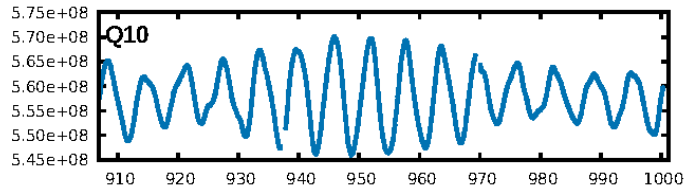
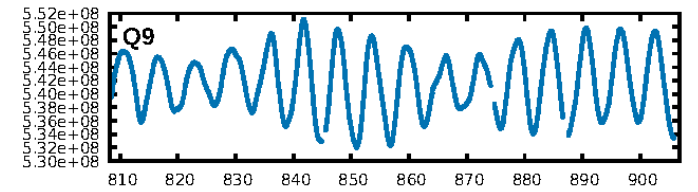
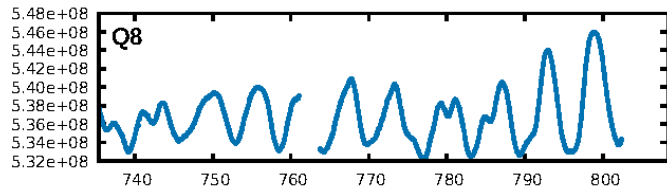
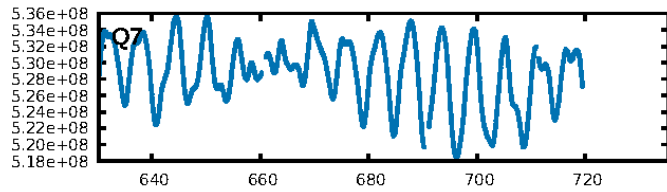
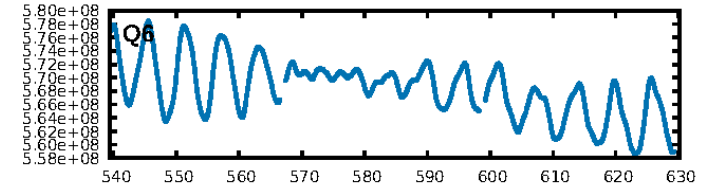
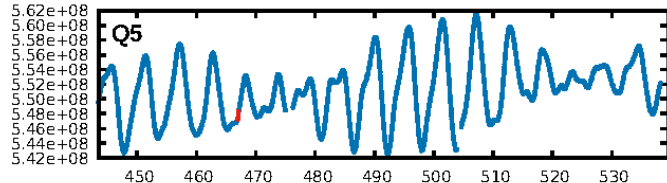
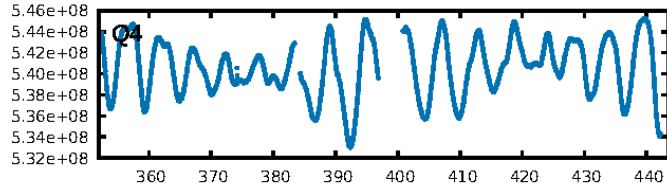
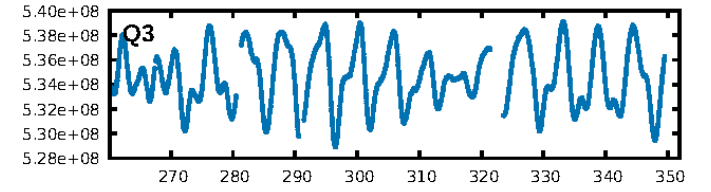
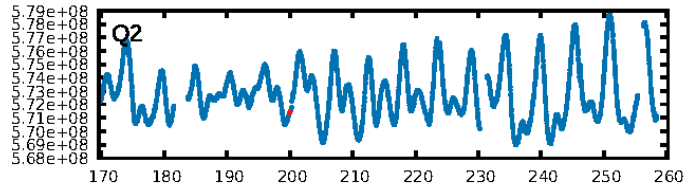
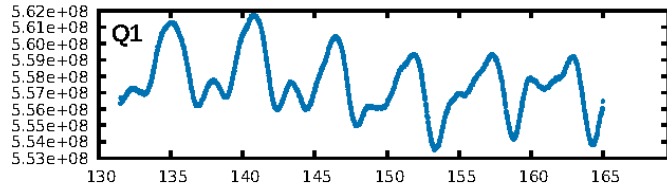
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [239.30 σ]
ModelChiSquare2-sig: 3.7%
ModelChiSquareGof-sig: 85.0%
Bootstrap-pfa: 1.76e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.02651
Centroid-sig: 73.4%
Centroid-so: 0.684 arcsec [0.46 σ]
OotOffset-rm: 0.848 arcsec [0.54 σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-rm: 0.907 arcsec [0.58 σ]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [4/4]

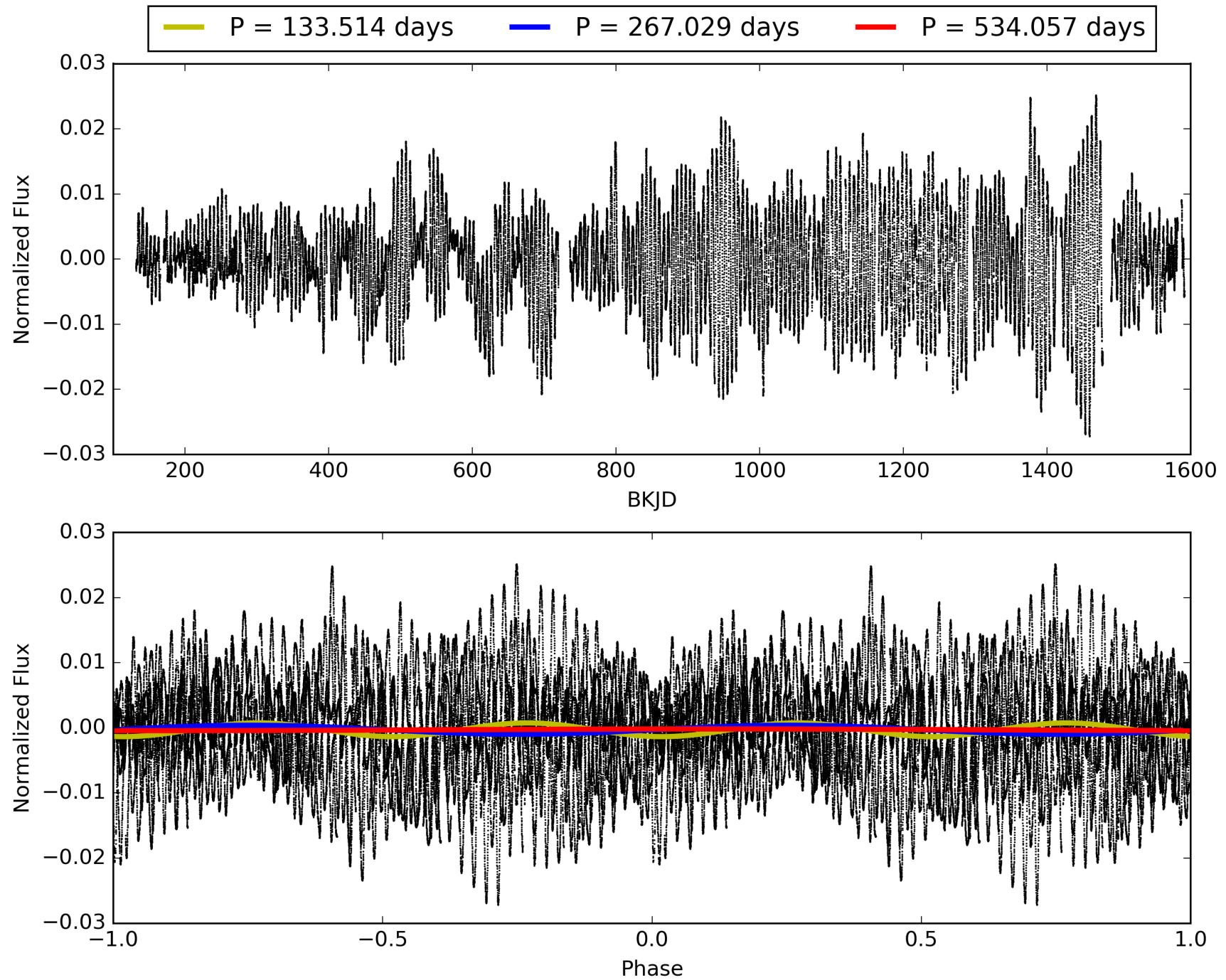
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007748234-01, PDC Light Curves

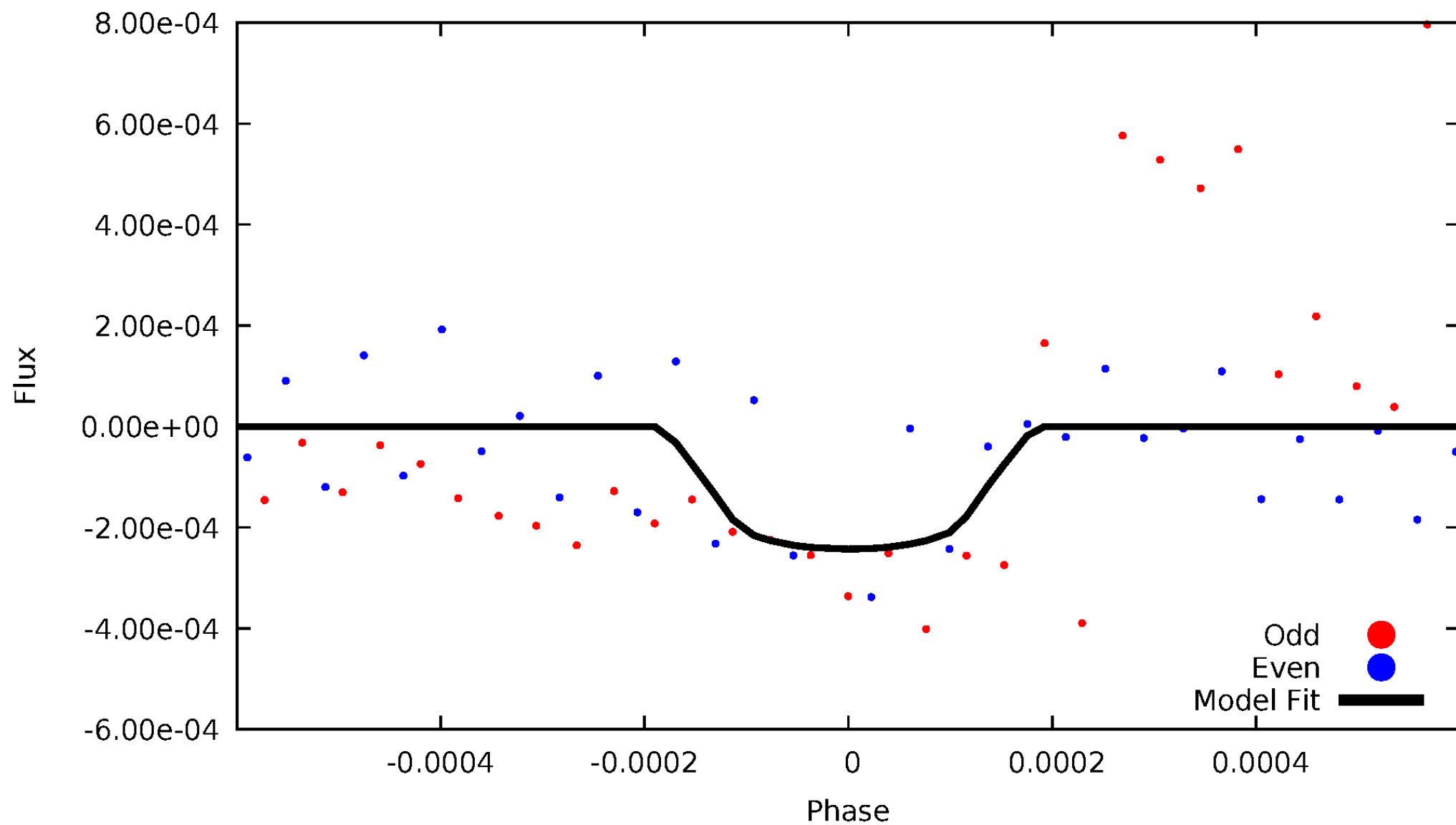


TCE 007748234-01



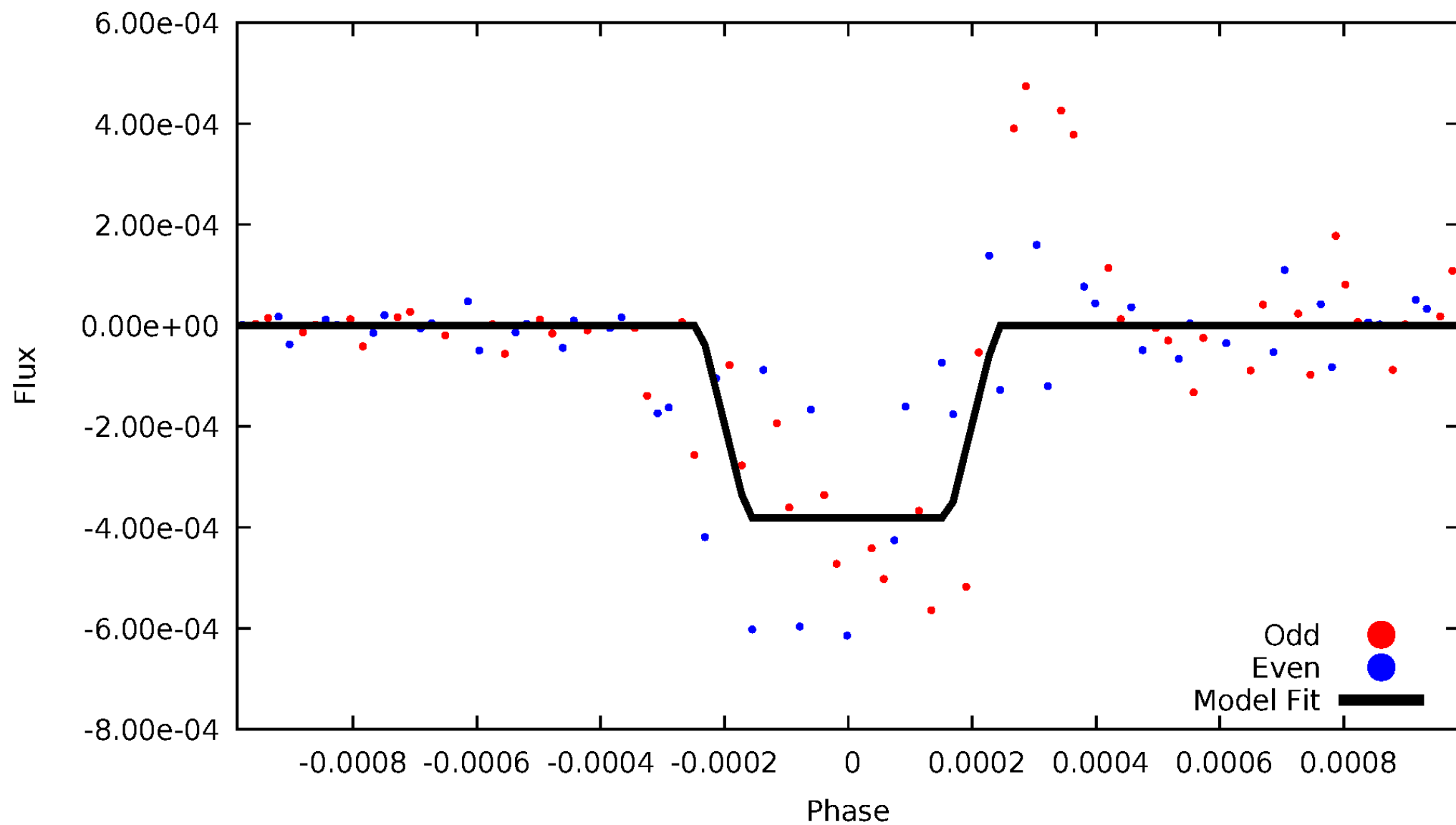
DV Odd/Even

TCE 007748234-01



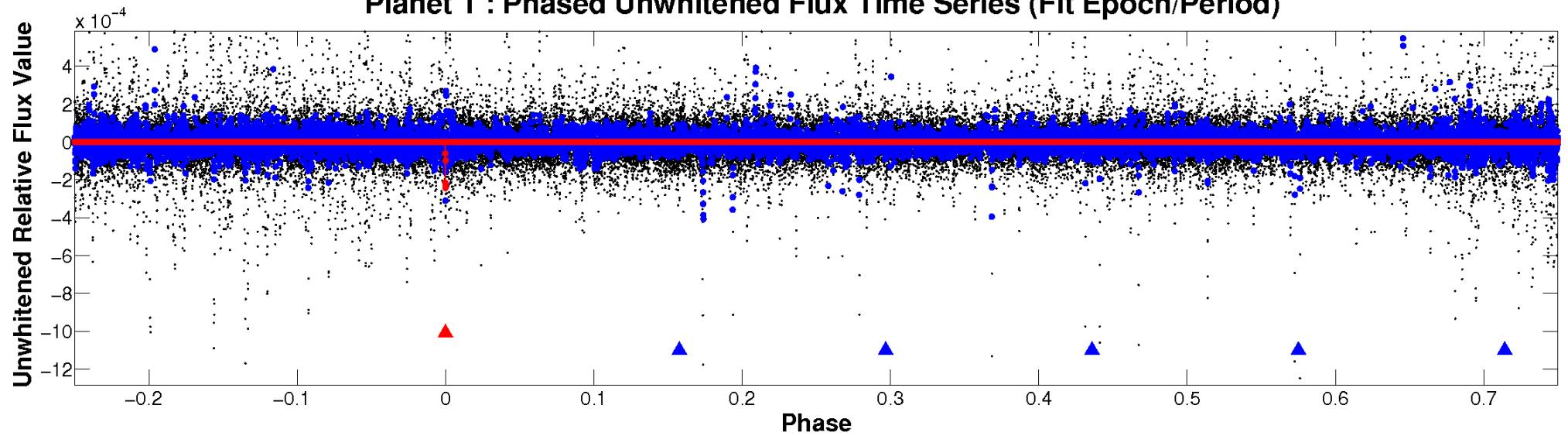
ALT Odd/Even

TCE 007748234-01

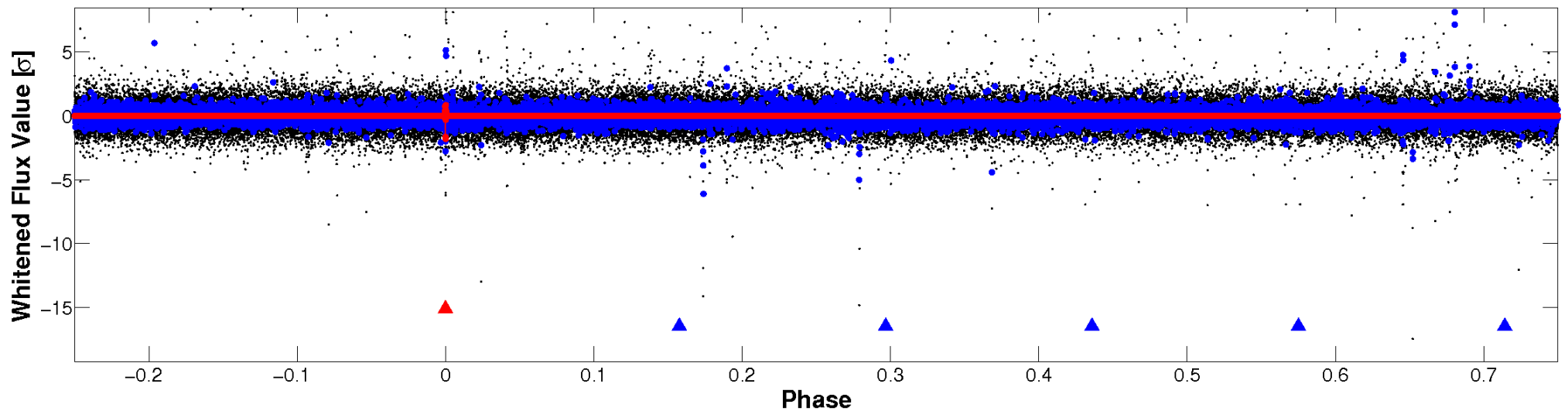


Non-Whitened Vs. Whitened Light Curve

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

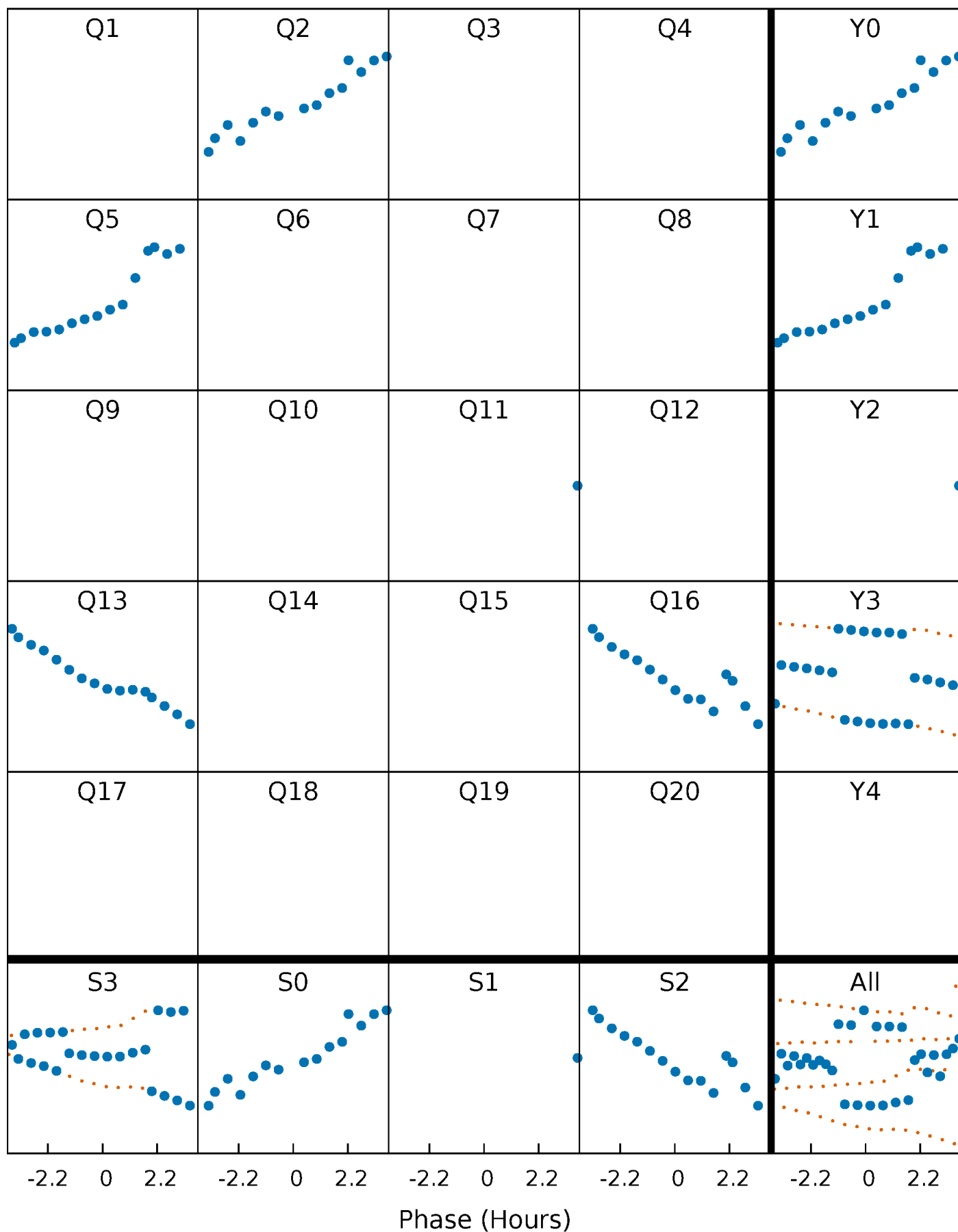


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



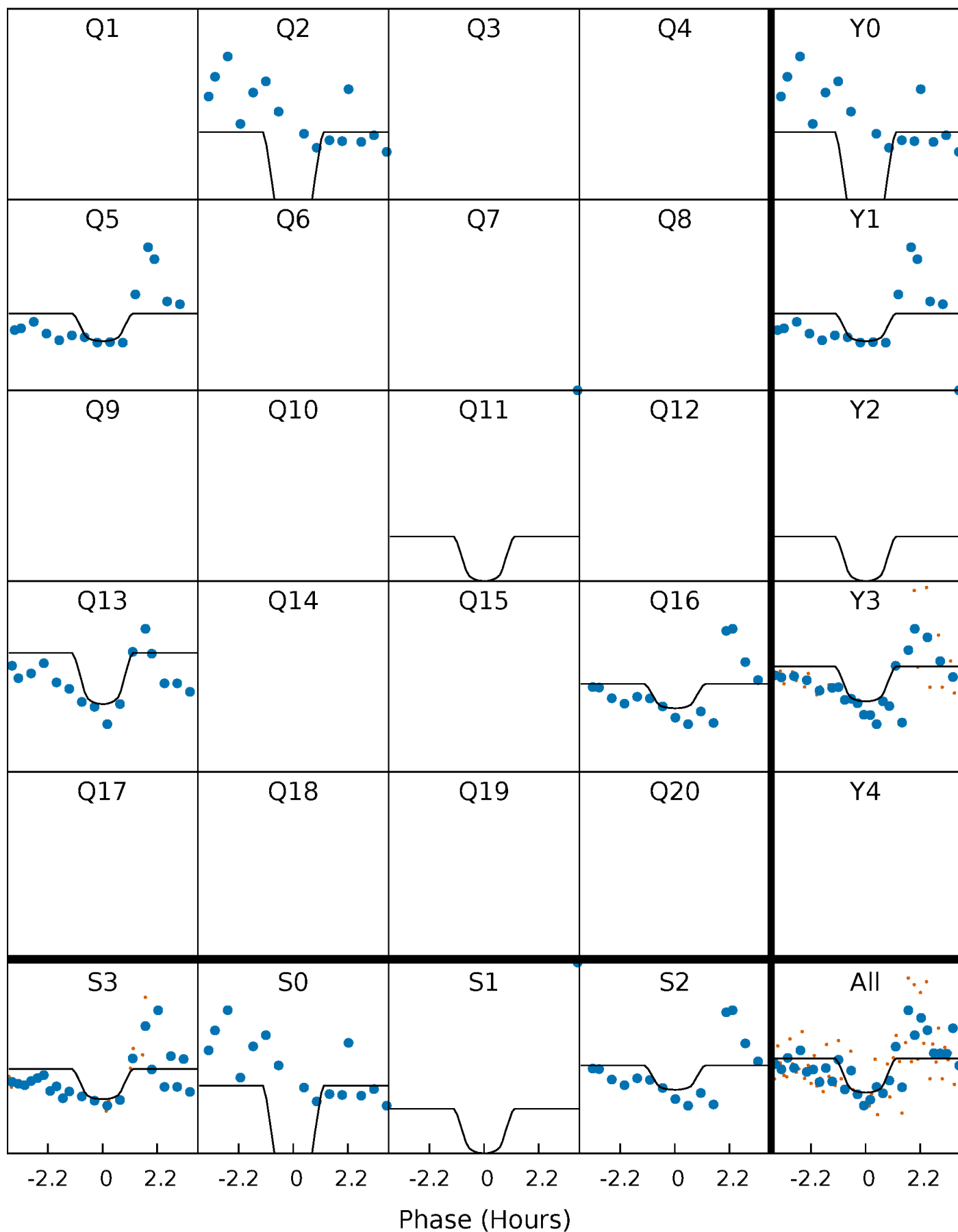
PDC Quarter-Phased Transit Curves

TCE 007748234-01 P=267.028539 Days $T_0=199.991576$ (BKJD)



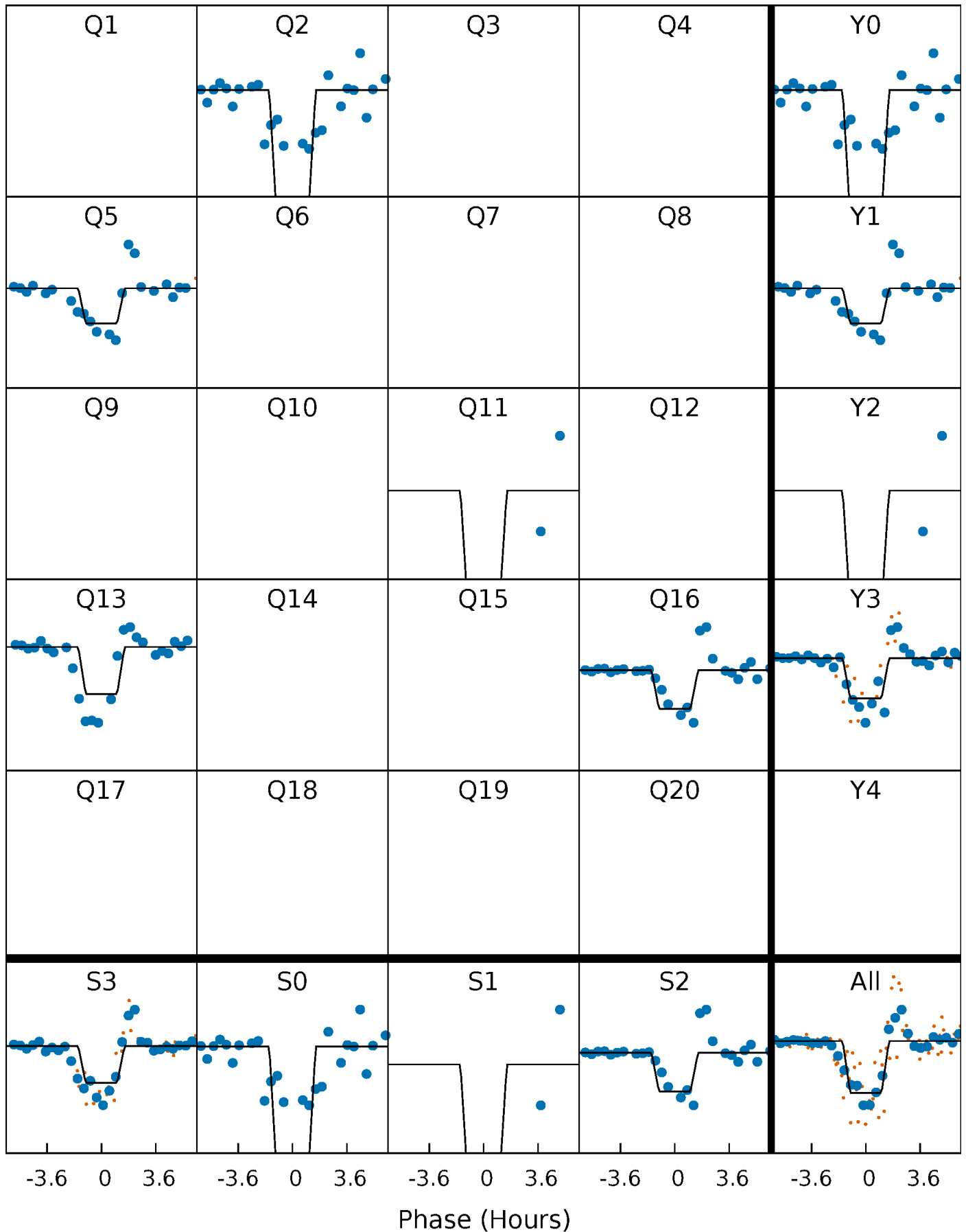
DV Quarter-Phased Transit Curves

TCE 007748234-01 P=267.028539 Days $T_0=199.991576$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

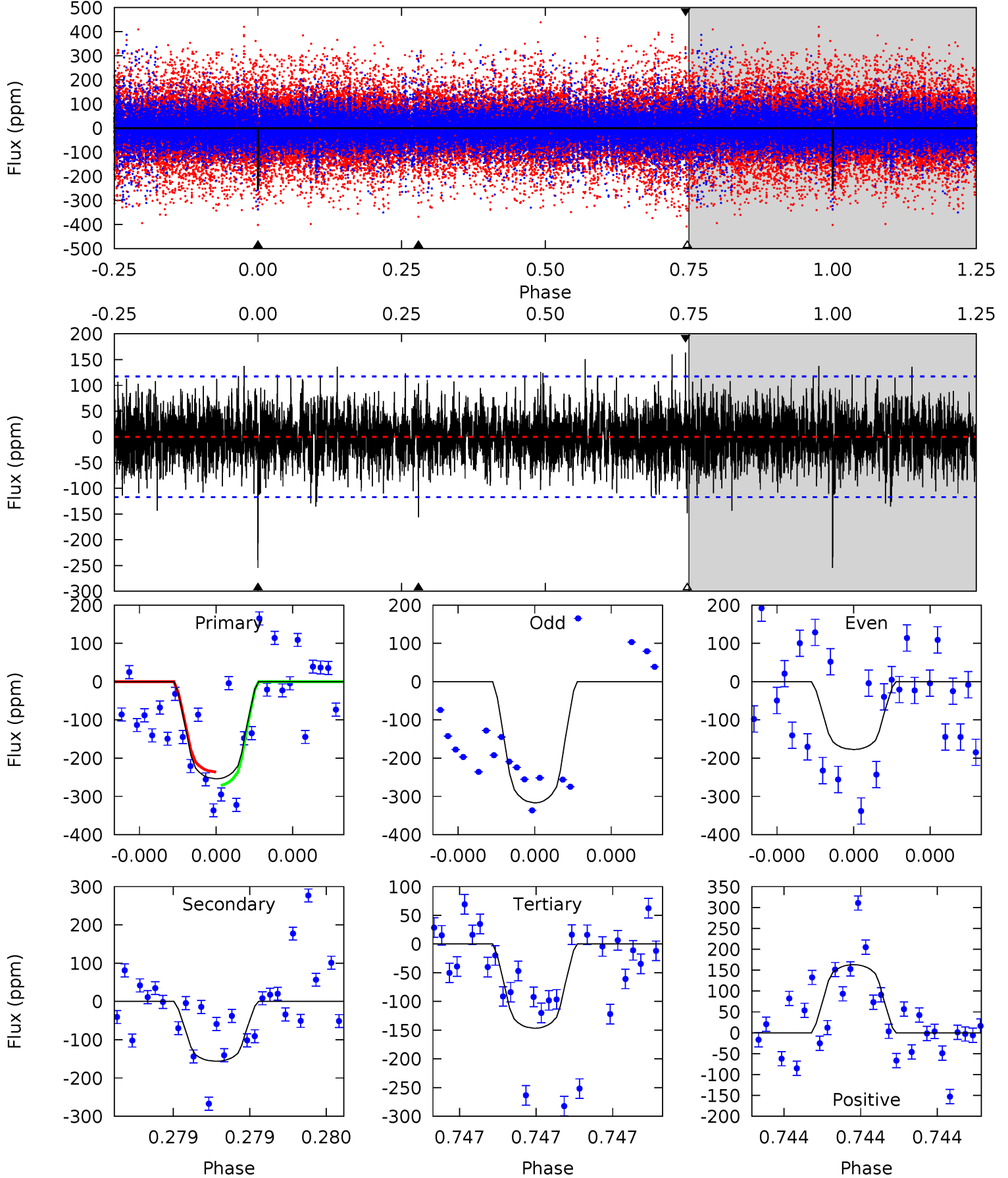
TCE 007748234-01 P=267.032330 Days $T_0=199.982986$ (BKJD)



DV Model-Shift Uniqueness Test

007748234-01, P = 267.028539 Days, E = 199.991576 Days

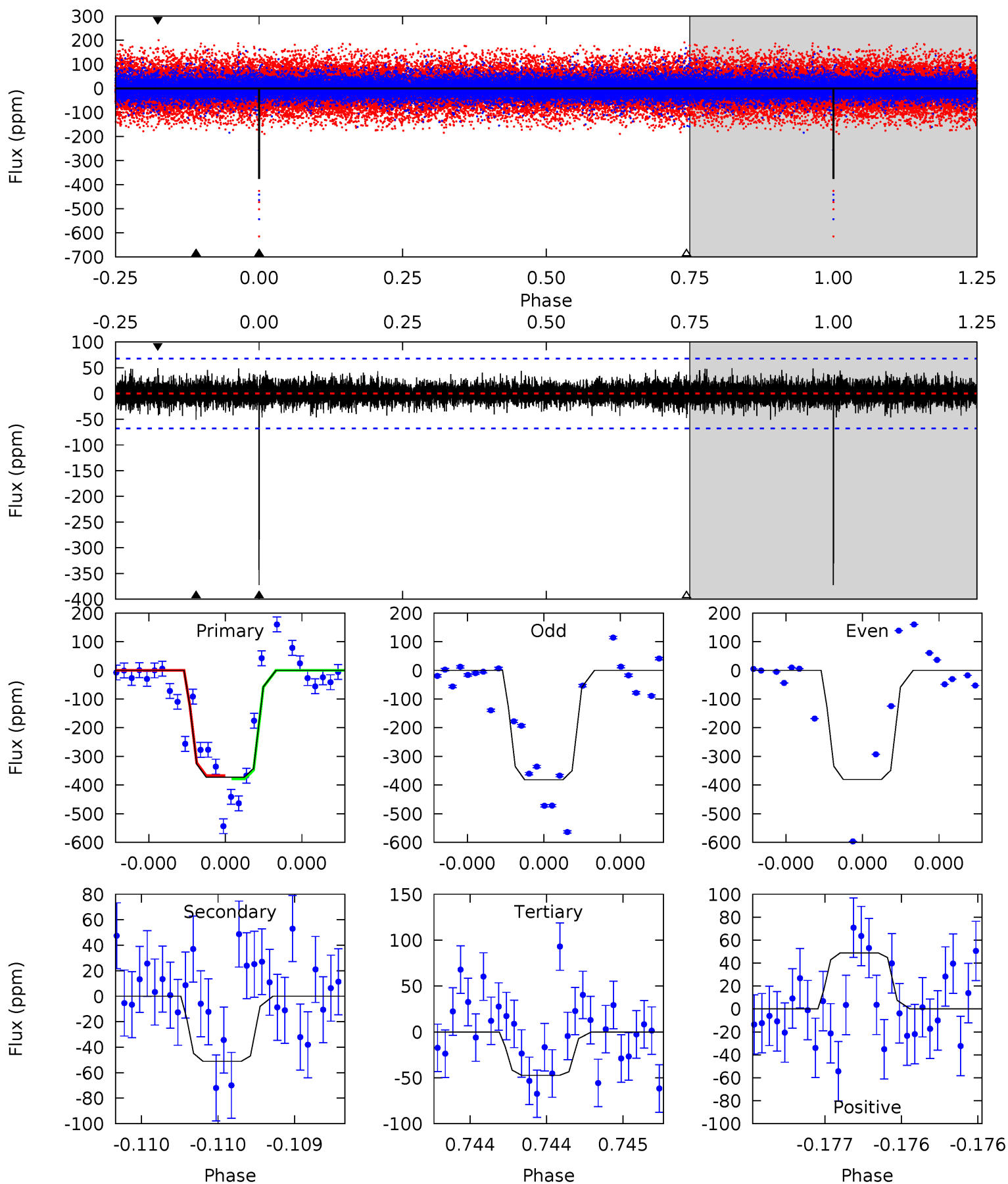
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	7.53	7.07	7.86	5.64	3.58	1.65	5.17	4.38	0.46	-0.33	3.10	0.79	0.39	0.84



Alt Model-Shift Uniqueness Test

007748234-01, P = 267.032330 Days, E = 199.982986 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.7	4.20	3.89	4.01	5.59	3.50	0.97	26.8	26.6	0.31	0.19	0.06	0.89	0.12	0.47



Stellar Parameters For KIC 007748234

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5948^{+149}_{-164}	$4.292^{+0.180}_{-0.180}$	$-0.160^{+0.300}_{-0.300}$	$1.164^{+0.336}_{-0.252}$	$0.967^{+0.146}_{-0.110}$	$0.865^{+0.795}_{-0.413}$
	+3%/-3%	+4%/-4%	+188%/-188%	+29%/-22%	+15%/-11%	+92%/-48%
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 007748234-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-156 ± 21	$2.85^{+3.12}_{-1.82}$	437^{+36}_{-27}	4559^{+2905}_{-1027}	6752^{+43854}_{-5218}
Alt.	-51 ± 12	$3.35^{+3.04}_{-2.13}$	443^{+31}_{-31}	3557^{+1496}_{-609}	1573^{+9841}_{-1134}

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 $A_{obs} \gg 1.0$

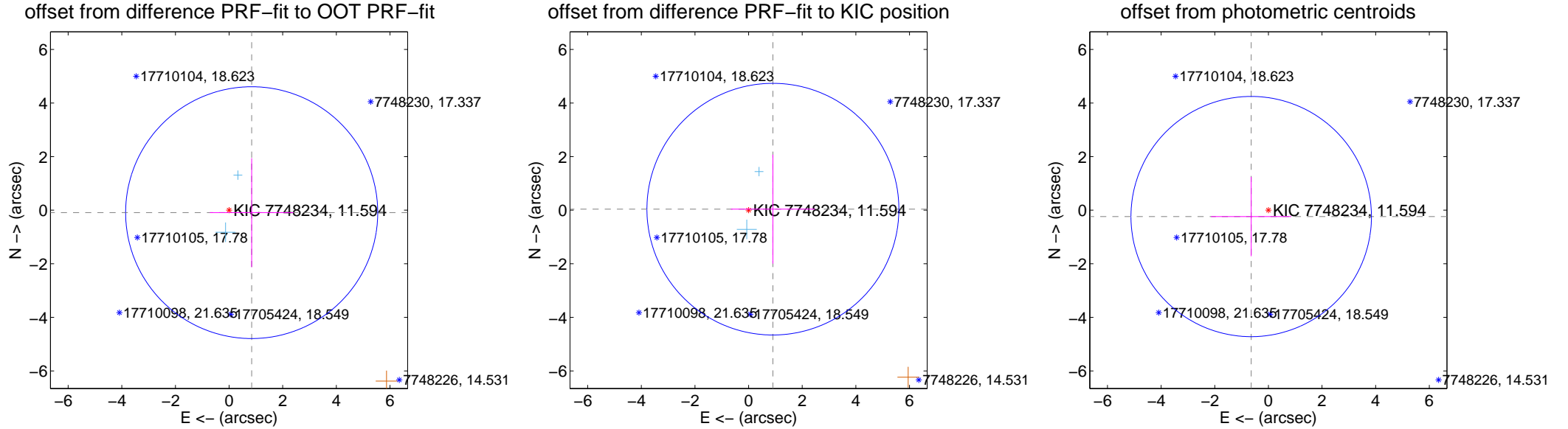
DV Centroid Data

Supplemental centroid analysis for 007748234-01. **Kepler magnitude: 11.59.** Transit SNR 6.08

There are 2 quarters with good PRF difference image offsets

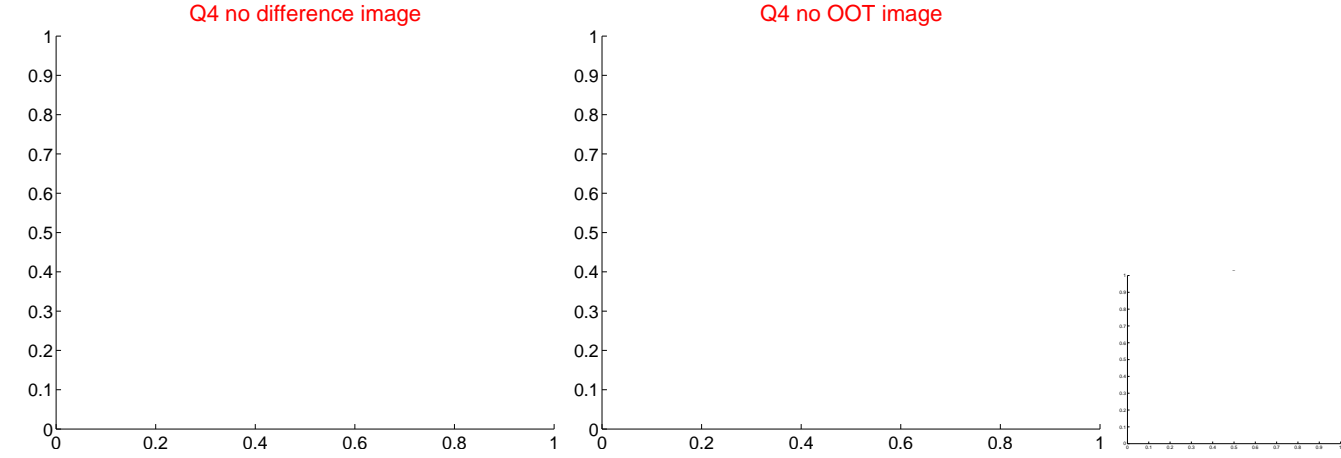
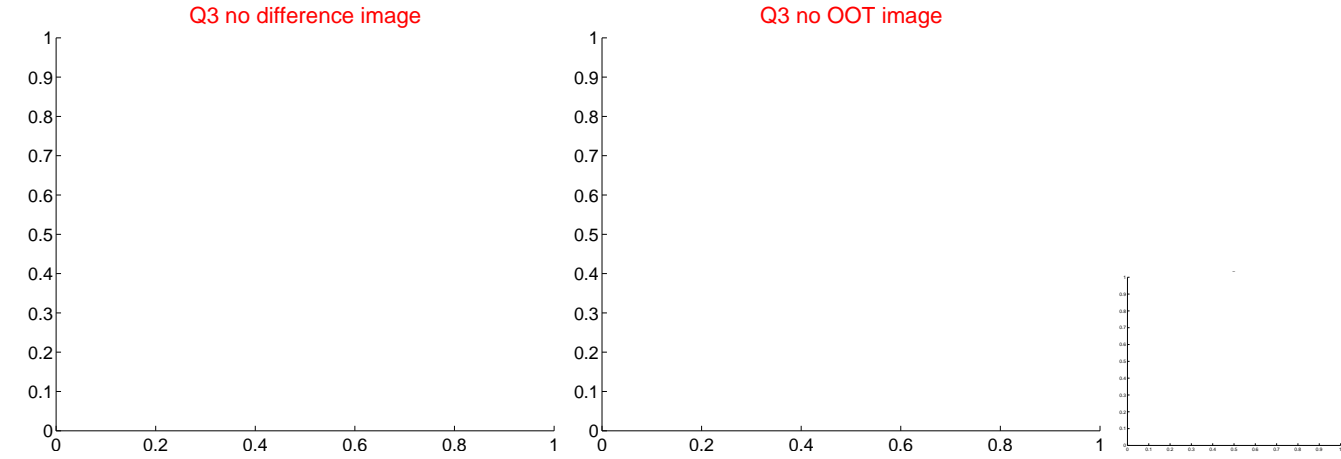
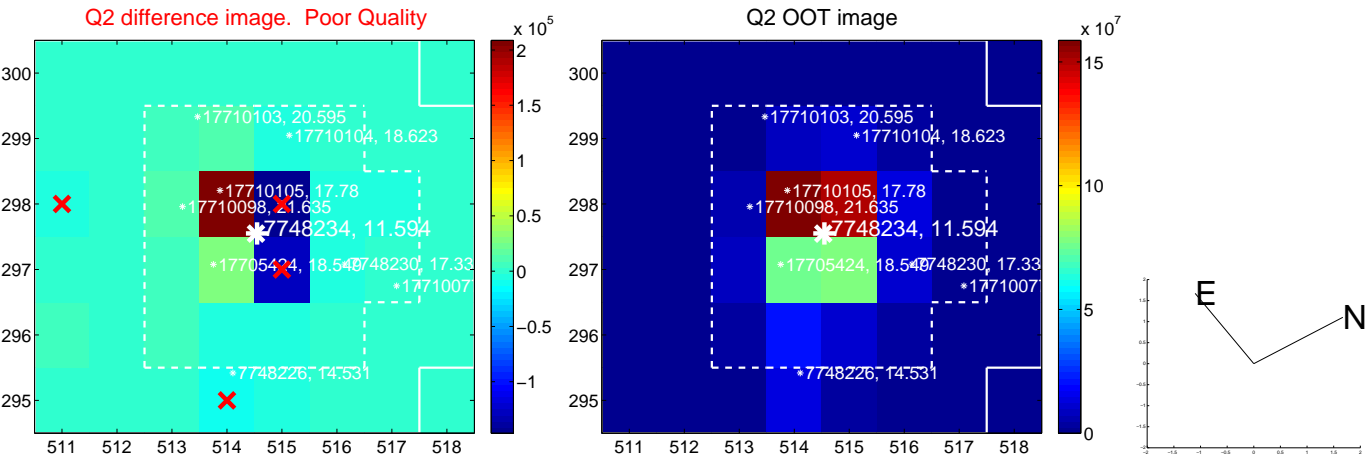
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.848 ± 1.567	0.54	-0.843 ± 1.560	-0.091 ± 2.034
PRF-fit source offset from KIC position	0.907 ± 1.566	0.58	-0.906 ± 1.565	0.039 ± 2.032
photometric centroid source offset	0.68 ± 1.49	0.46	0.64 ± 1.50	-0.24 ± 1.48

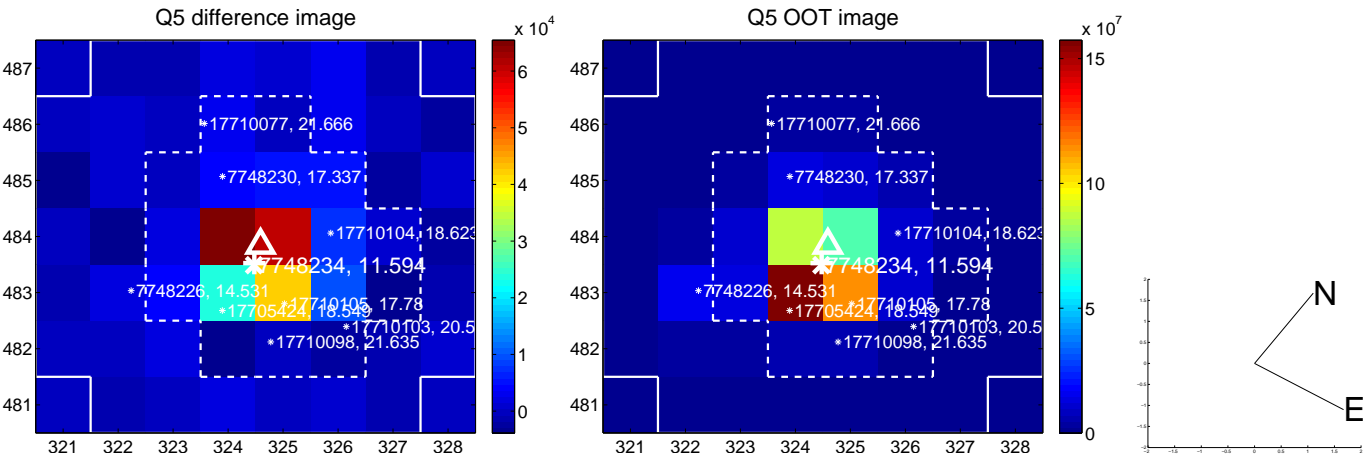


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



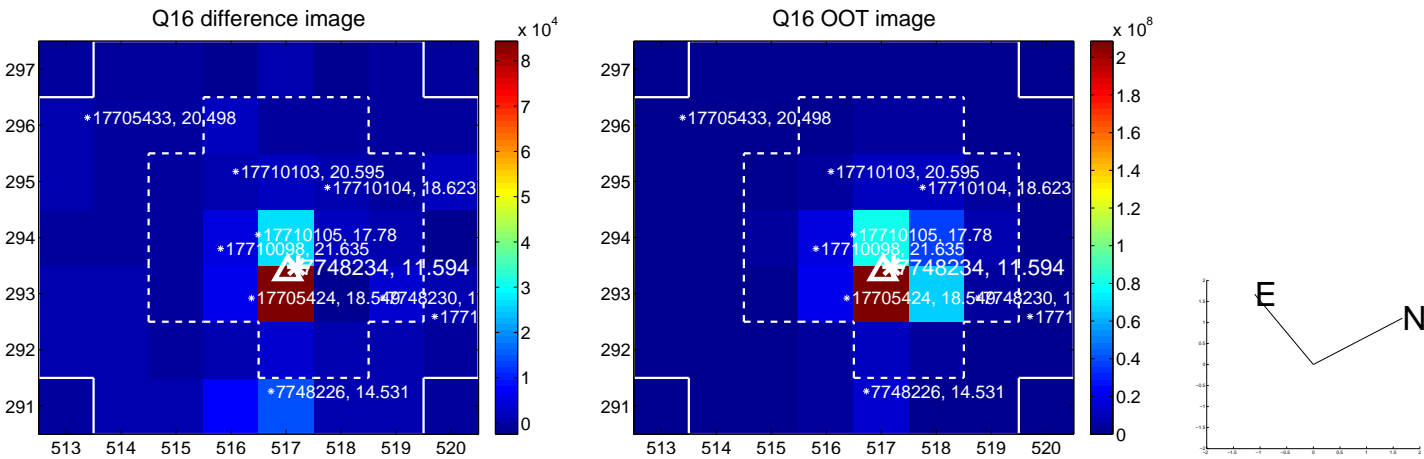
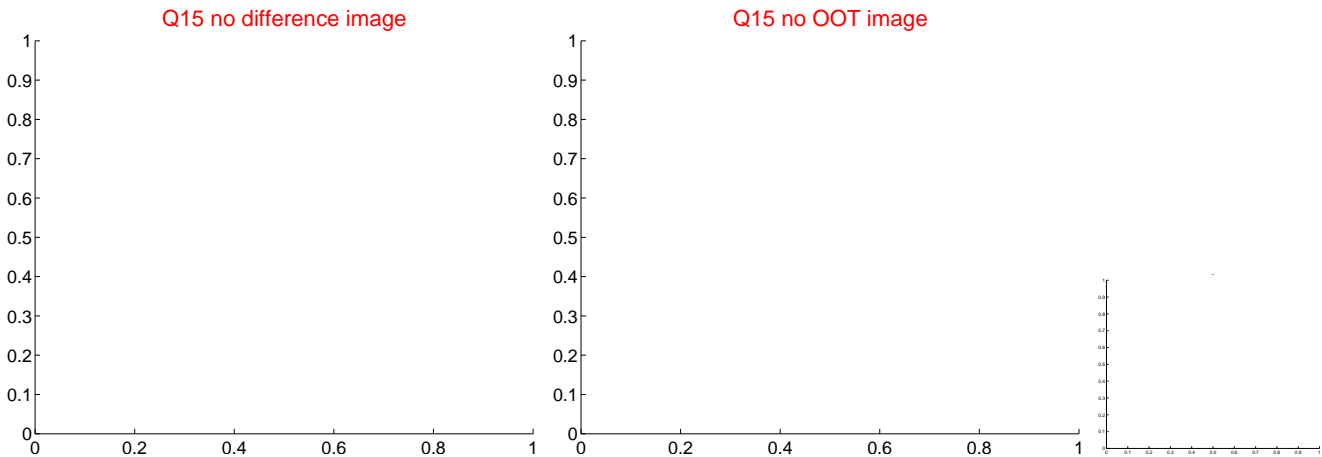
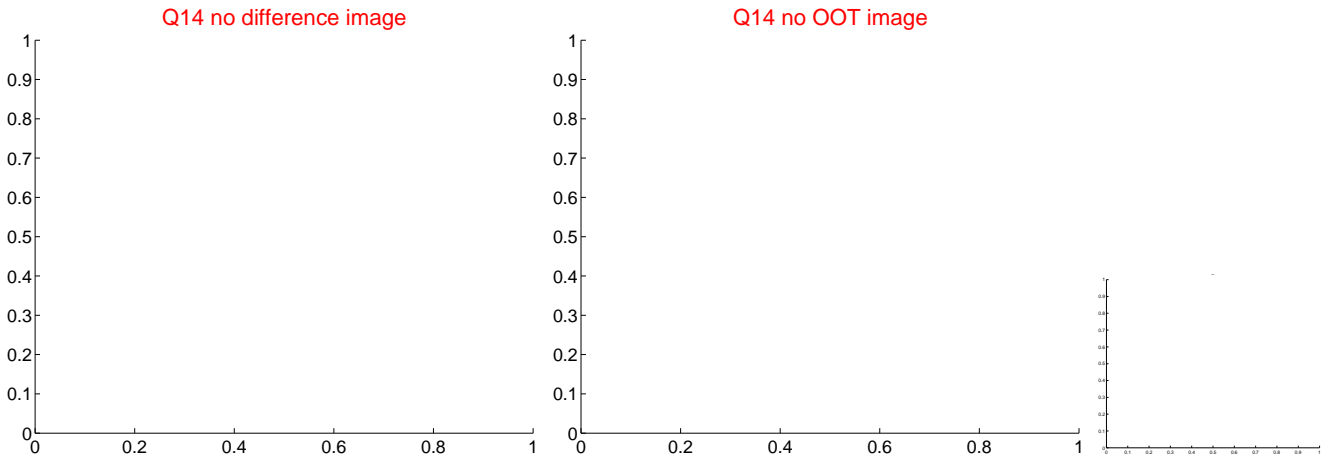
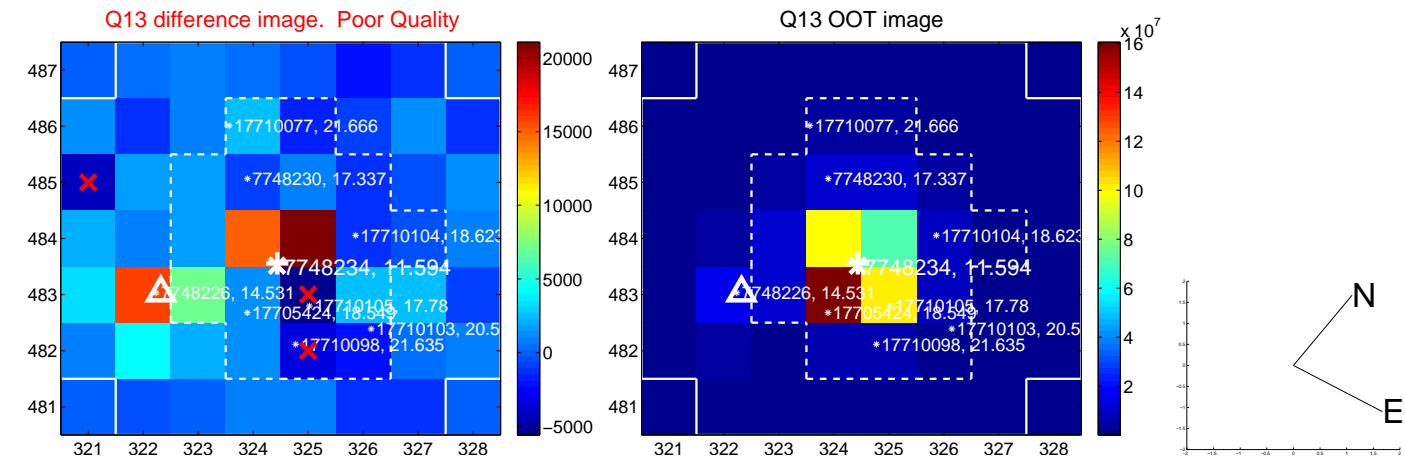
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



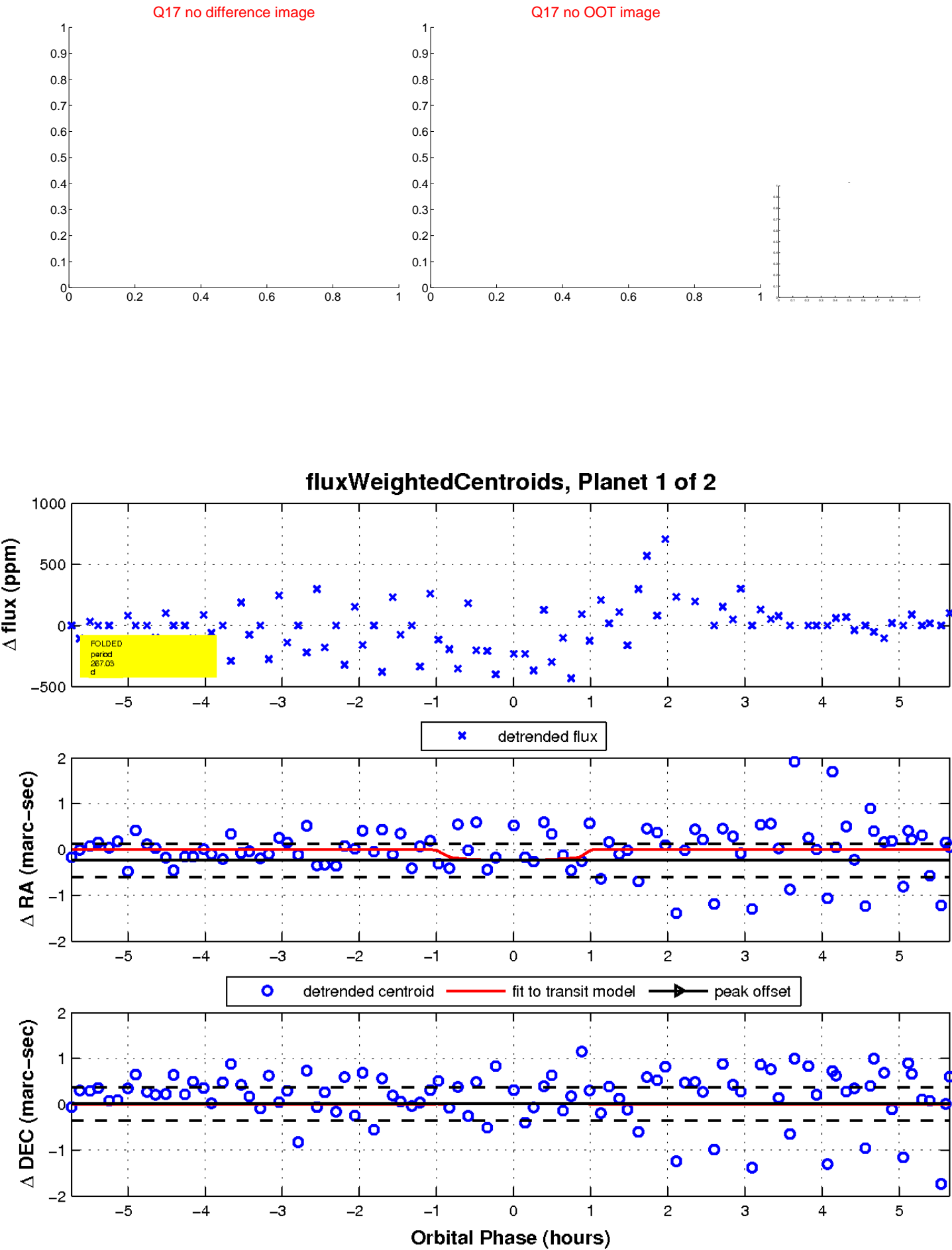
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

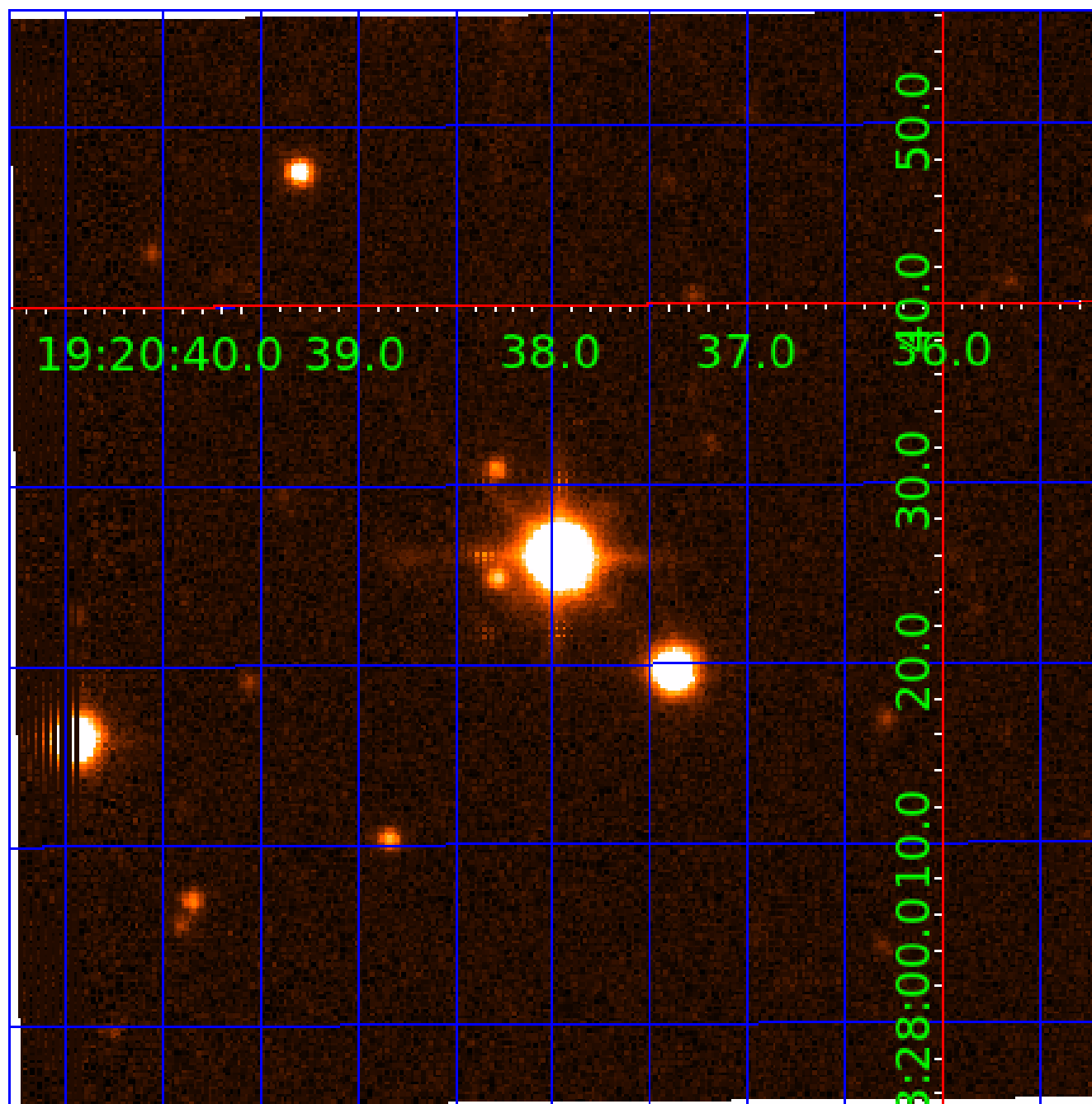


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007748234

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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007748234-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES

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

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

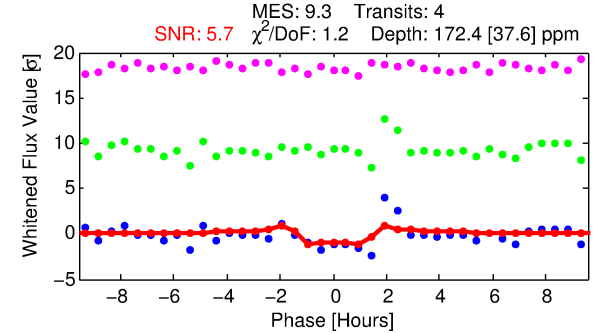
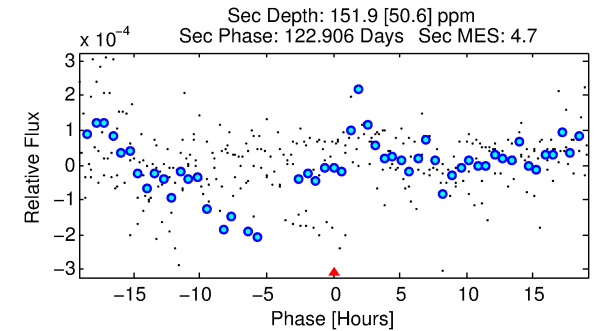
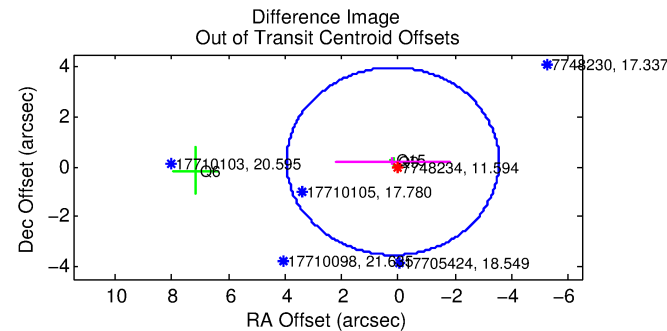
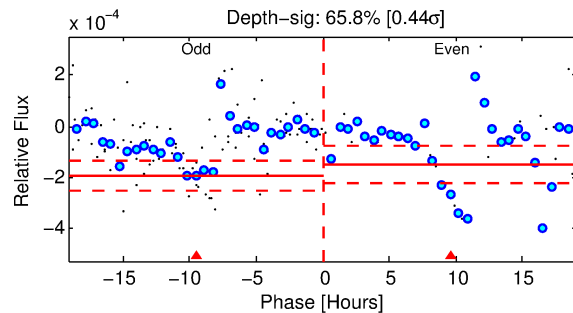
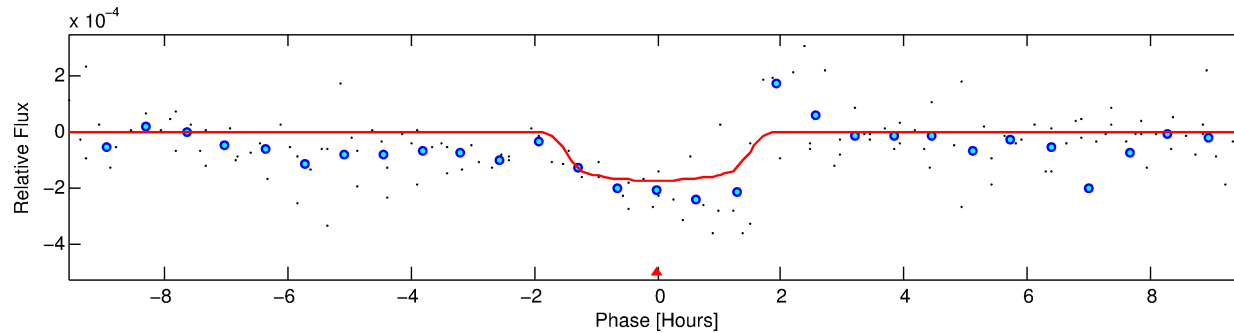
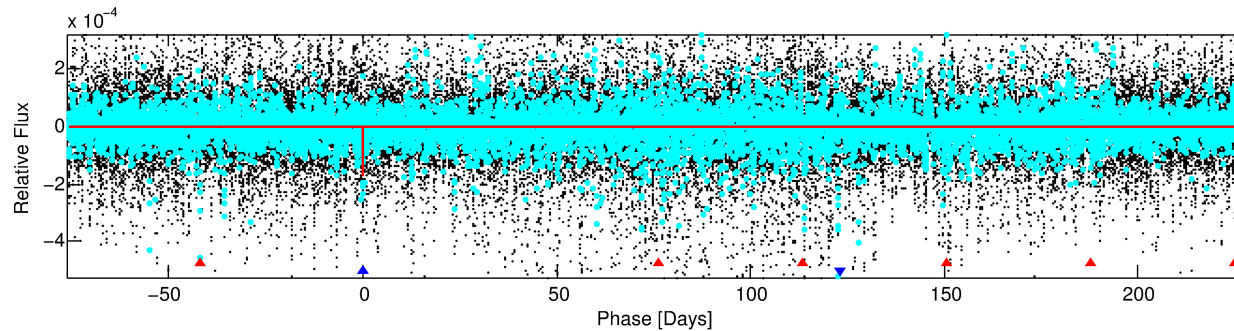
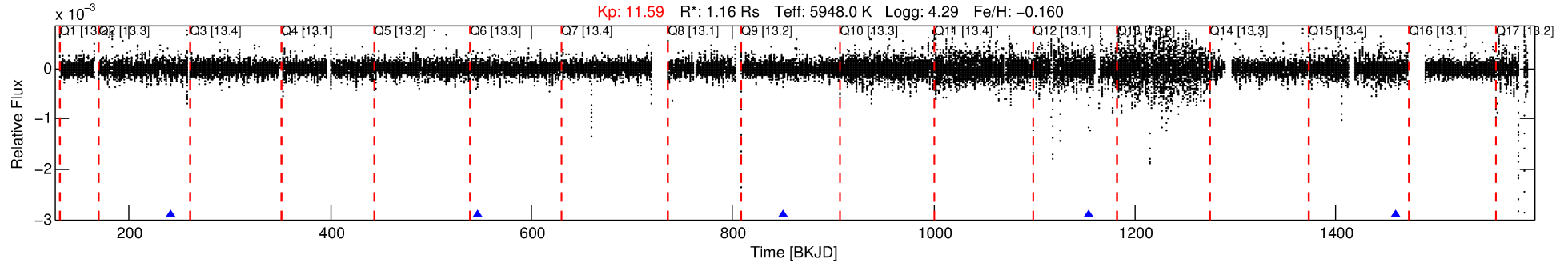
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007748234-02

No Significant Match Found

DV One-Page Summary

KIC: 7748234 Candidate: 2 of 2 Period: 304.179 d



DV Fit Results:

Period = 304.17877 [0.00322] d
Epoch = 242.0995 [0.0072] BKJD
Rp/R* = 0.0134 [0.0209]
a/R* = 439.02 [3369.03]
b = 0.81 [3.23]
Seff = 1.98 [0.70]
Teq = 303 [27] K
Rp = 1.71 [2.71] Re
a = 0.8758 [0.2075] AU
Ag = 22041.92 [69580.26] [0.32 σ]
Teffp = 5699 [4475] K [1.21 σ]

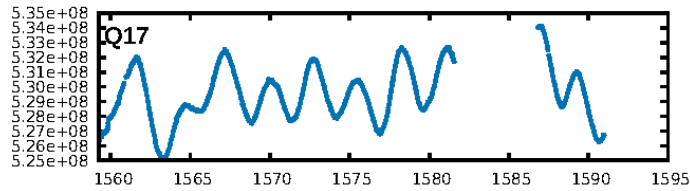
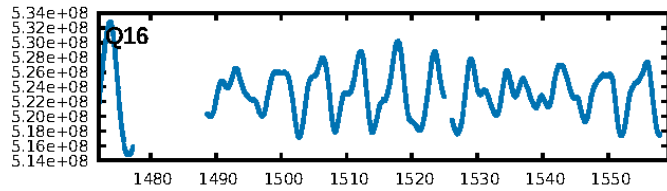
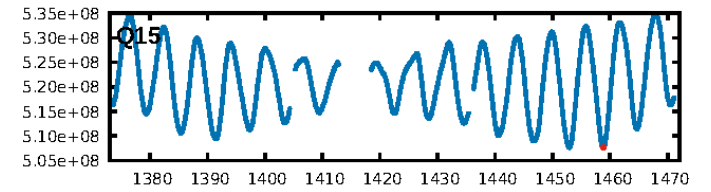
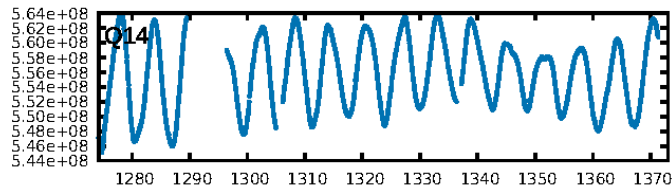
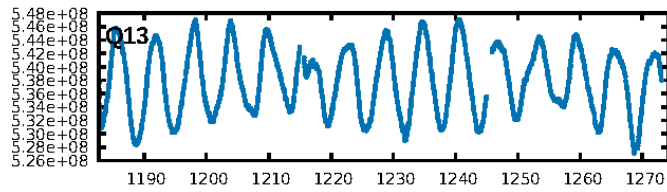
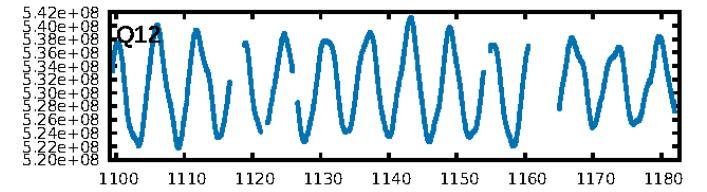
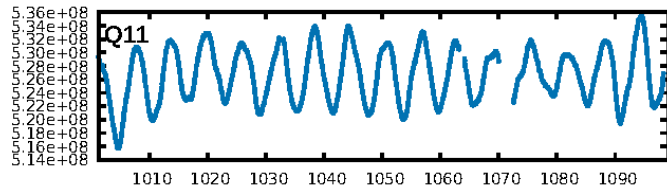
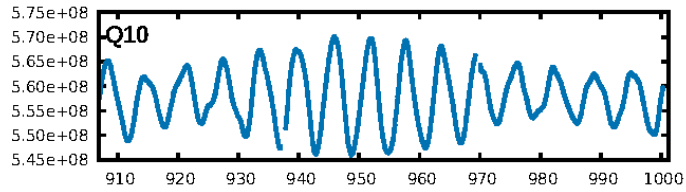
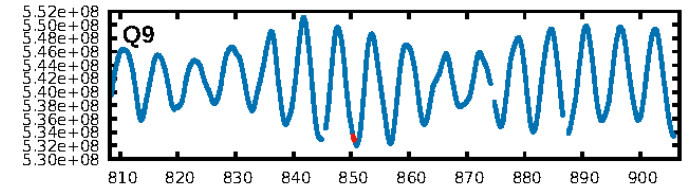
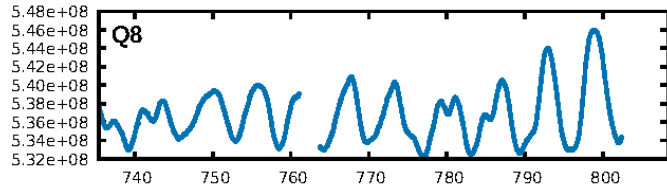
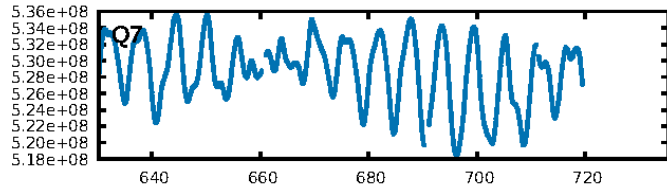
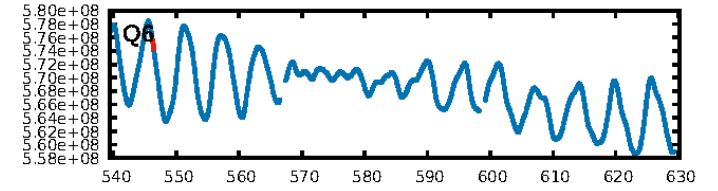
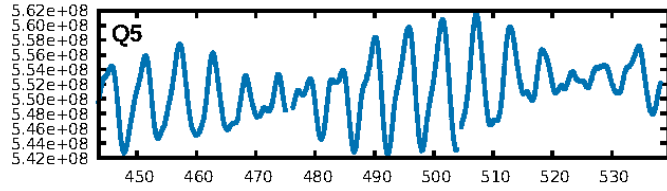
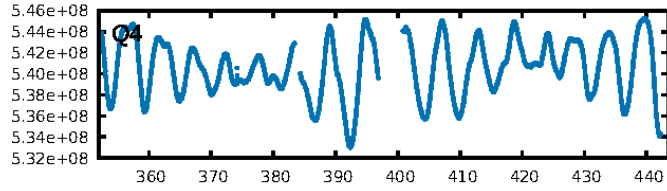
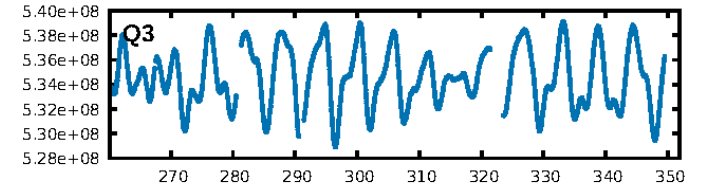
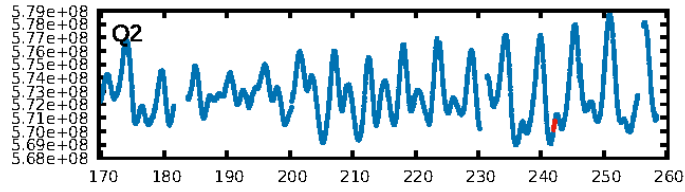
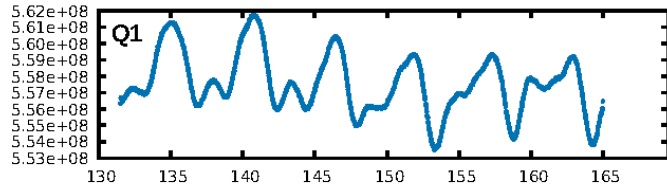
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [239.30 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 27.0%
ModelChiSquareGof-sig: 96.3%
Bootstrap-pfa: 2.00e-07
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 3.312
Centroid-sig: 36.4%
Centroid-so: 1.501 arcsec [0.82 σ]
OotOffset-rm: 0.287 arcsec [0.23 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.346 arcsec [0.72 σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [4/4]

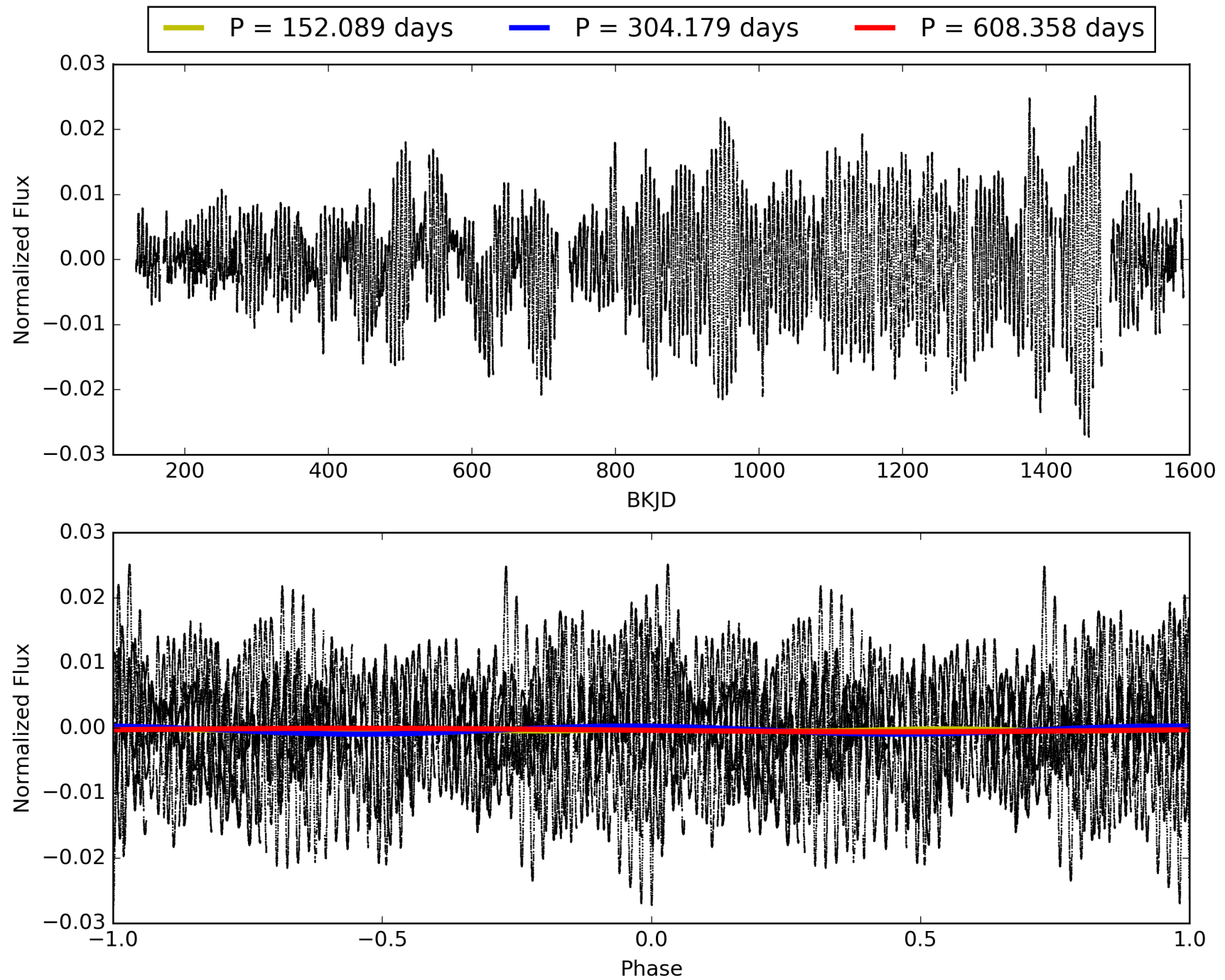
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:13:28 Z

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

TCE 007748234-02, PDC Light Curves

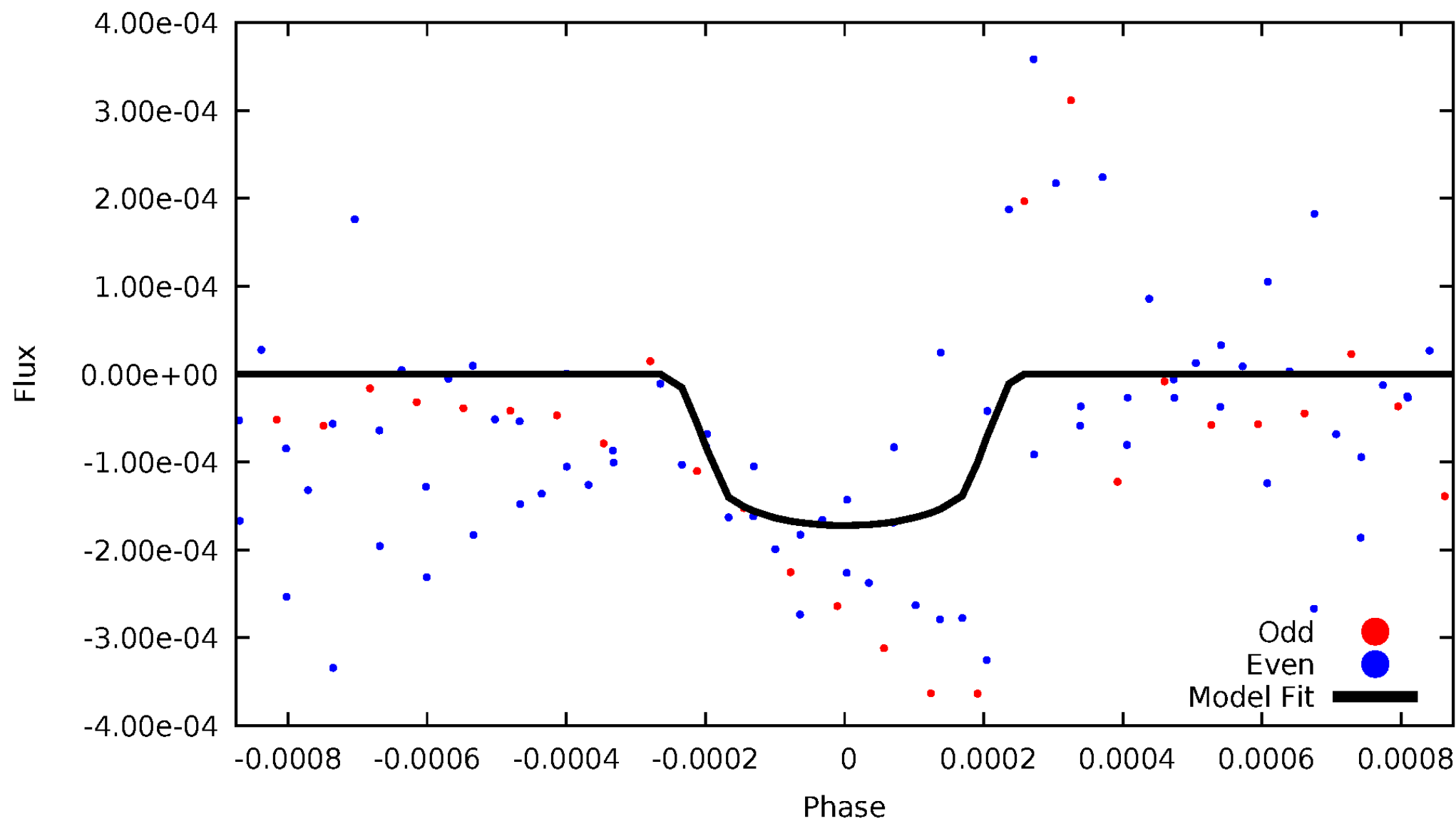


TCE 007748234-02



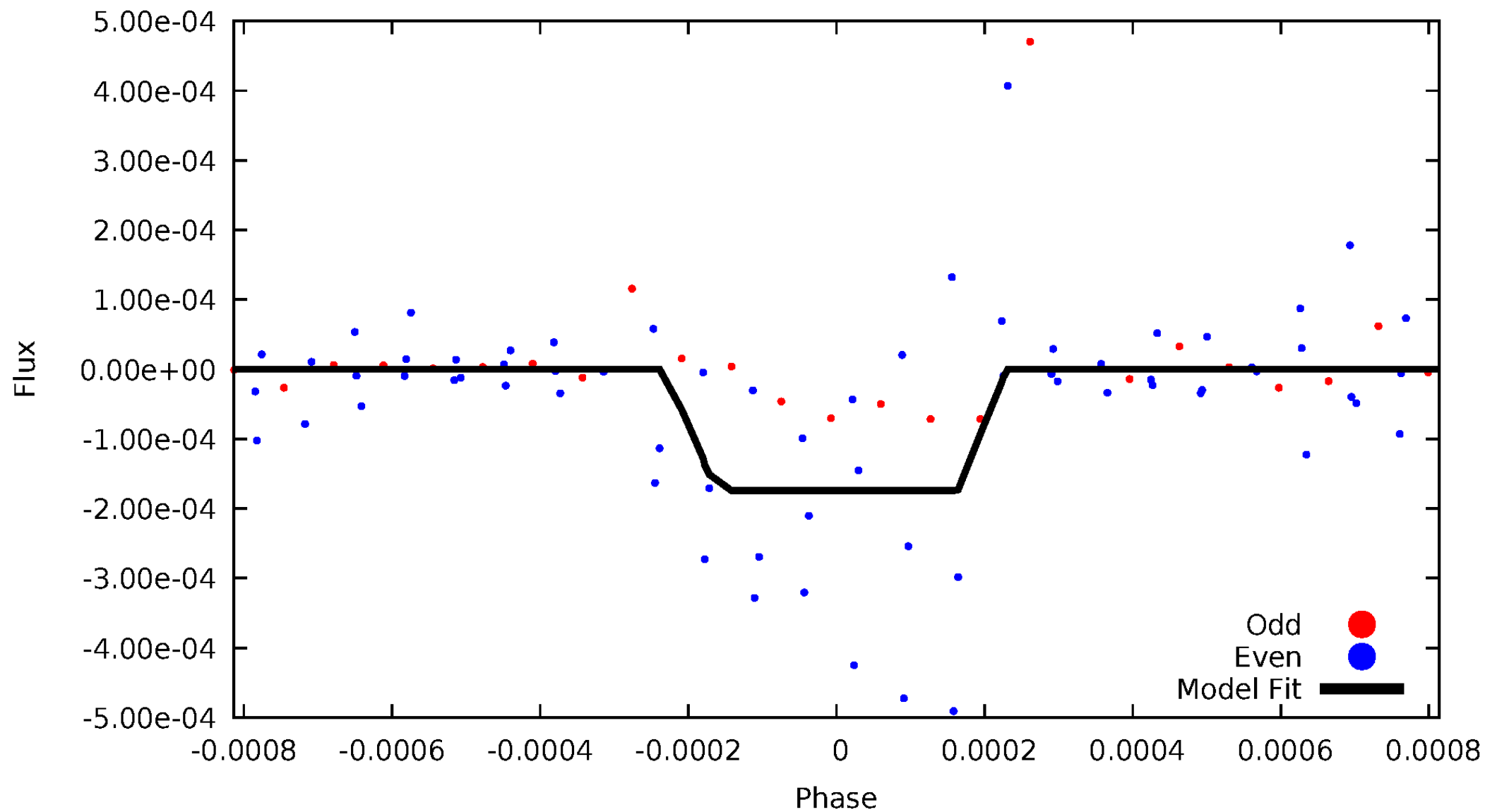
DV Odd/Even

TCE 007748234-02



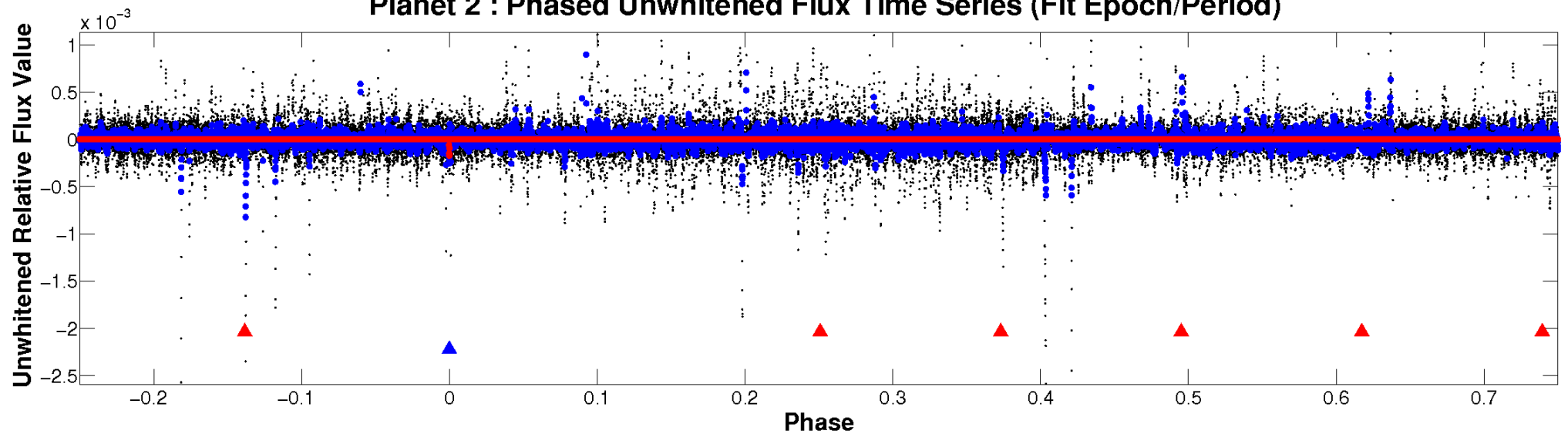
ALT Odd/Even

TCE 007748234-02

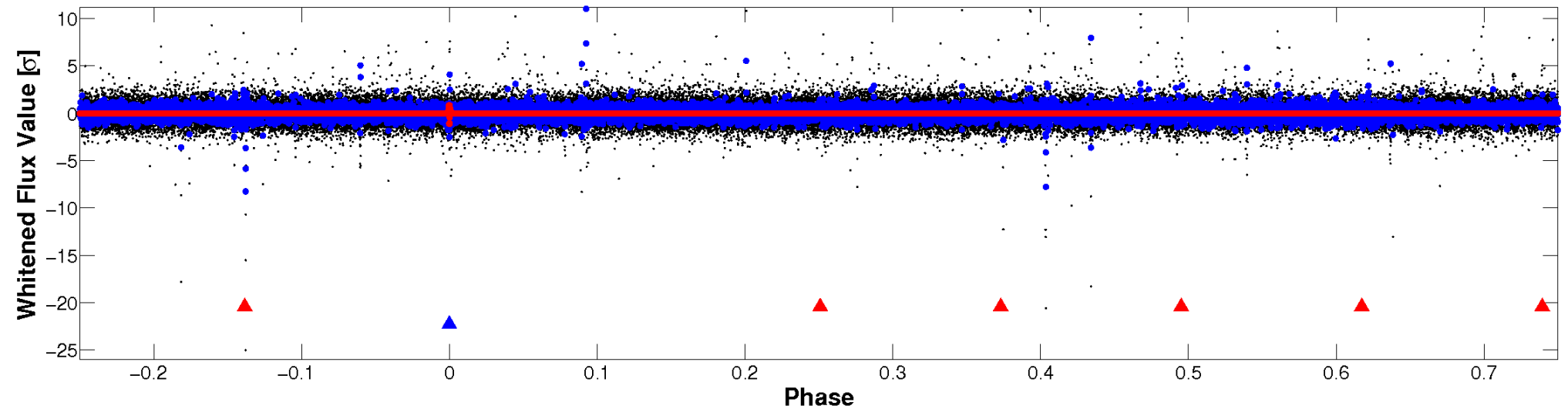


Non-Whitened Vs. Whitened Light Curve

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

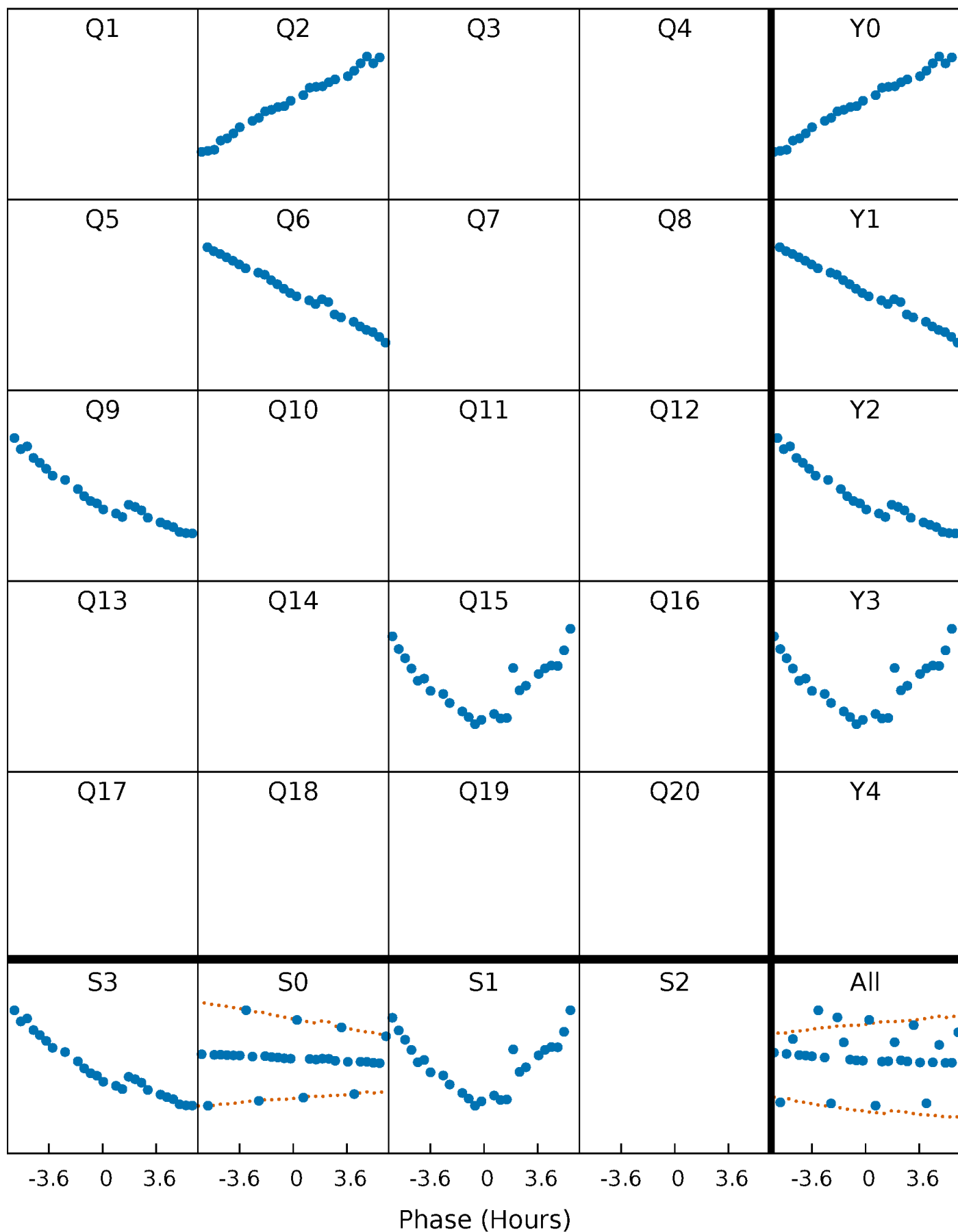


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



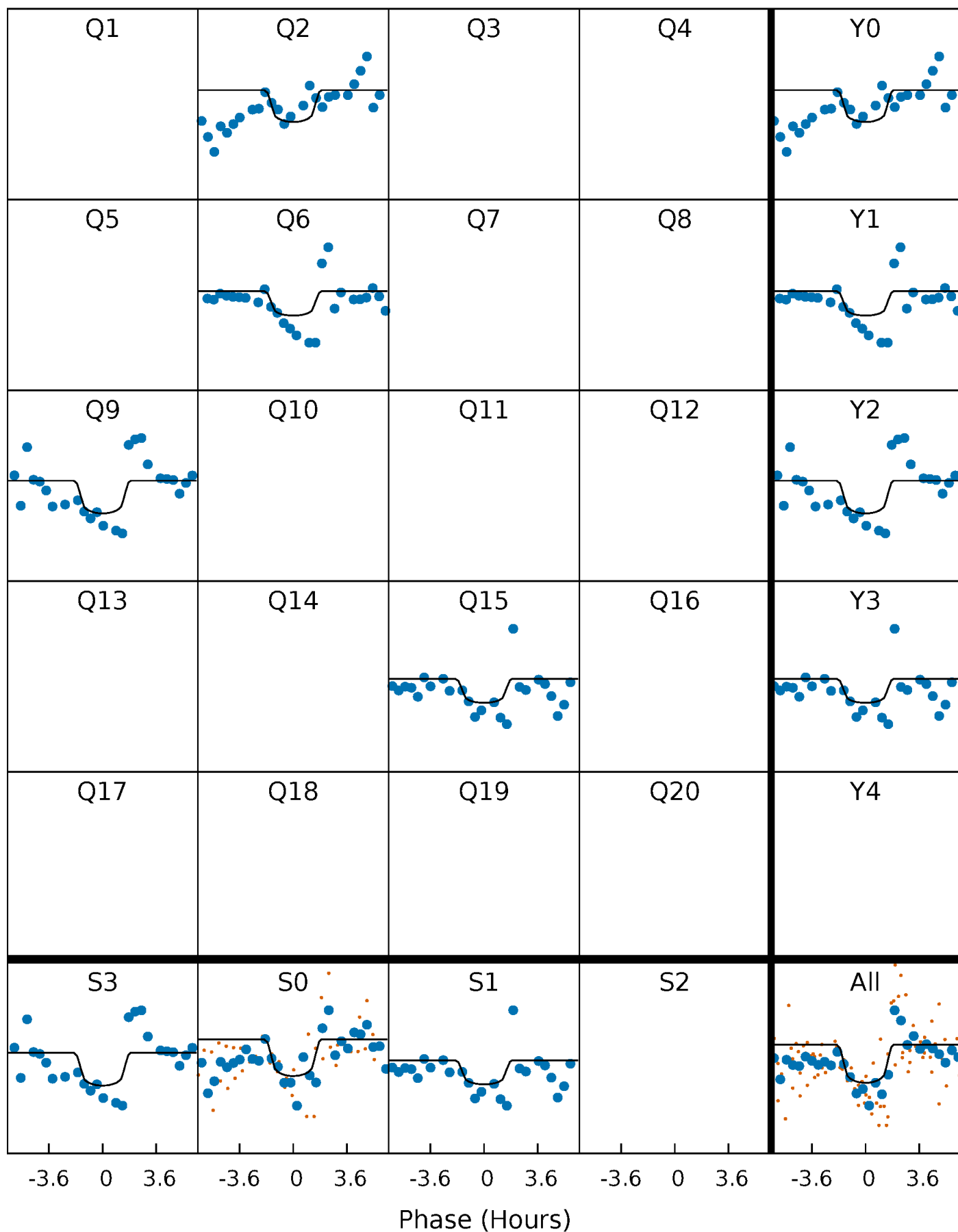
PDC Quarter-Phased Transit Curves

TCE 007748234-02 P=304.178768 Days $T_0=242.099496$ (BKJD)



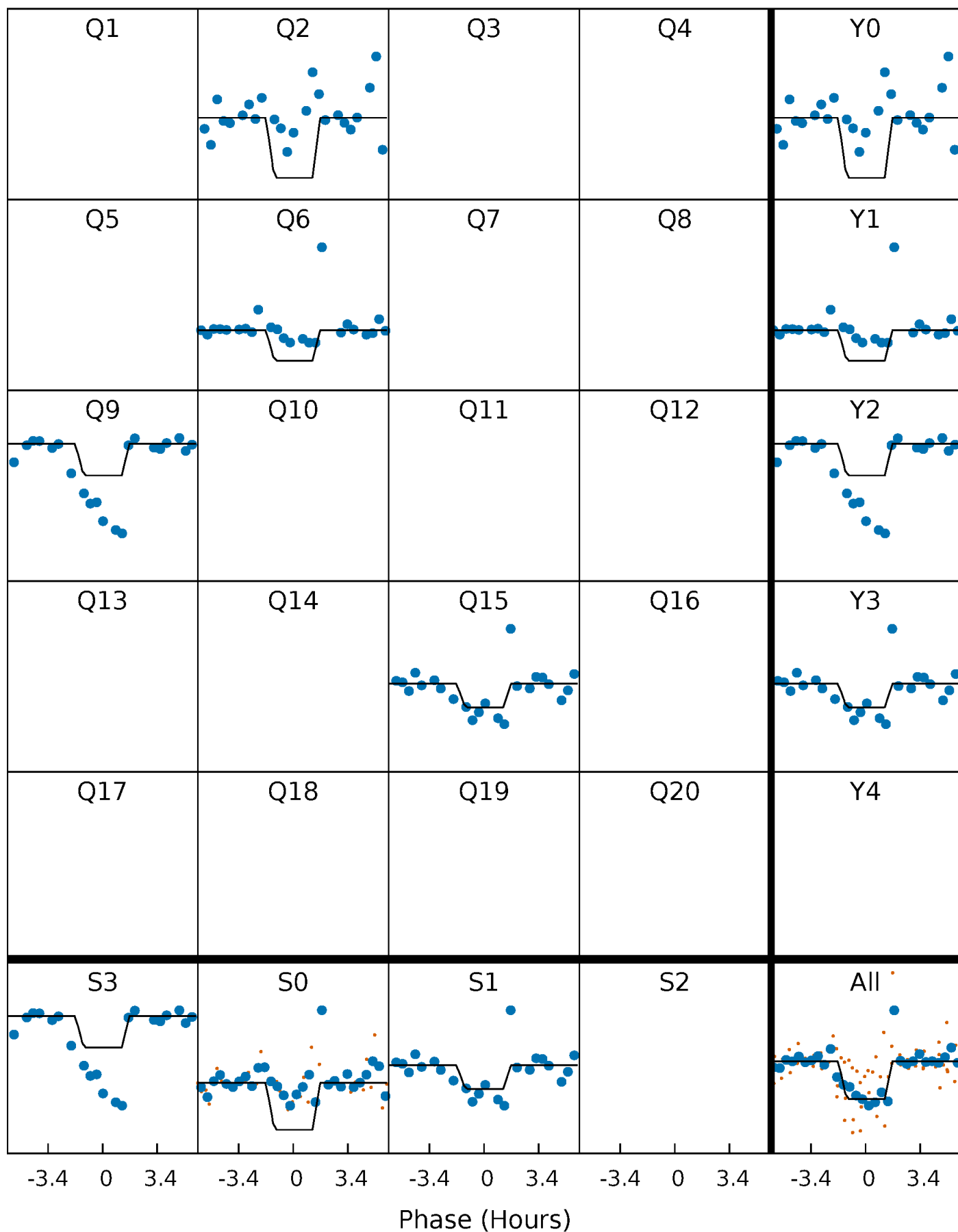
DV Quarter-Phased Transit Curves

TCE 007748234-02 P=304.178768 Days $T_0=242.099496$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

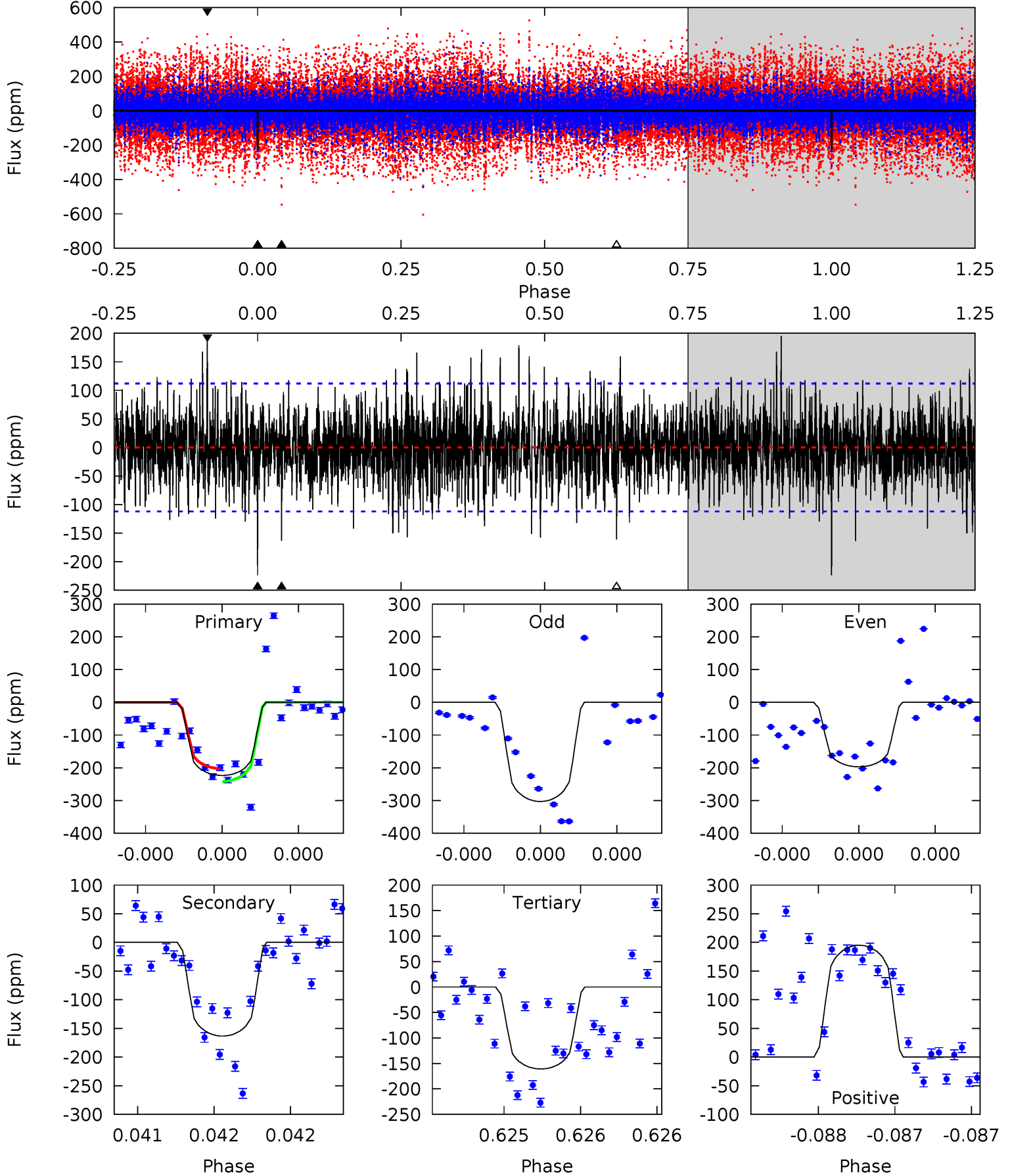
TCE 007748234-02 P=304.183172 Days $T_0=242.094080$ (BKJD)



DV Model-Shift Uniqueness Test

007748234-02, P = 304.178768 Days, E = 242.099496 Days

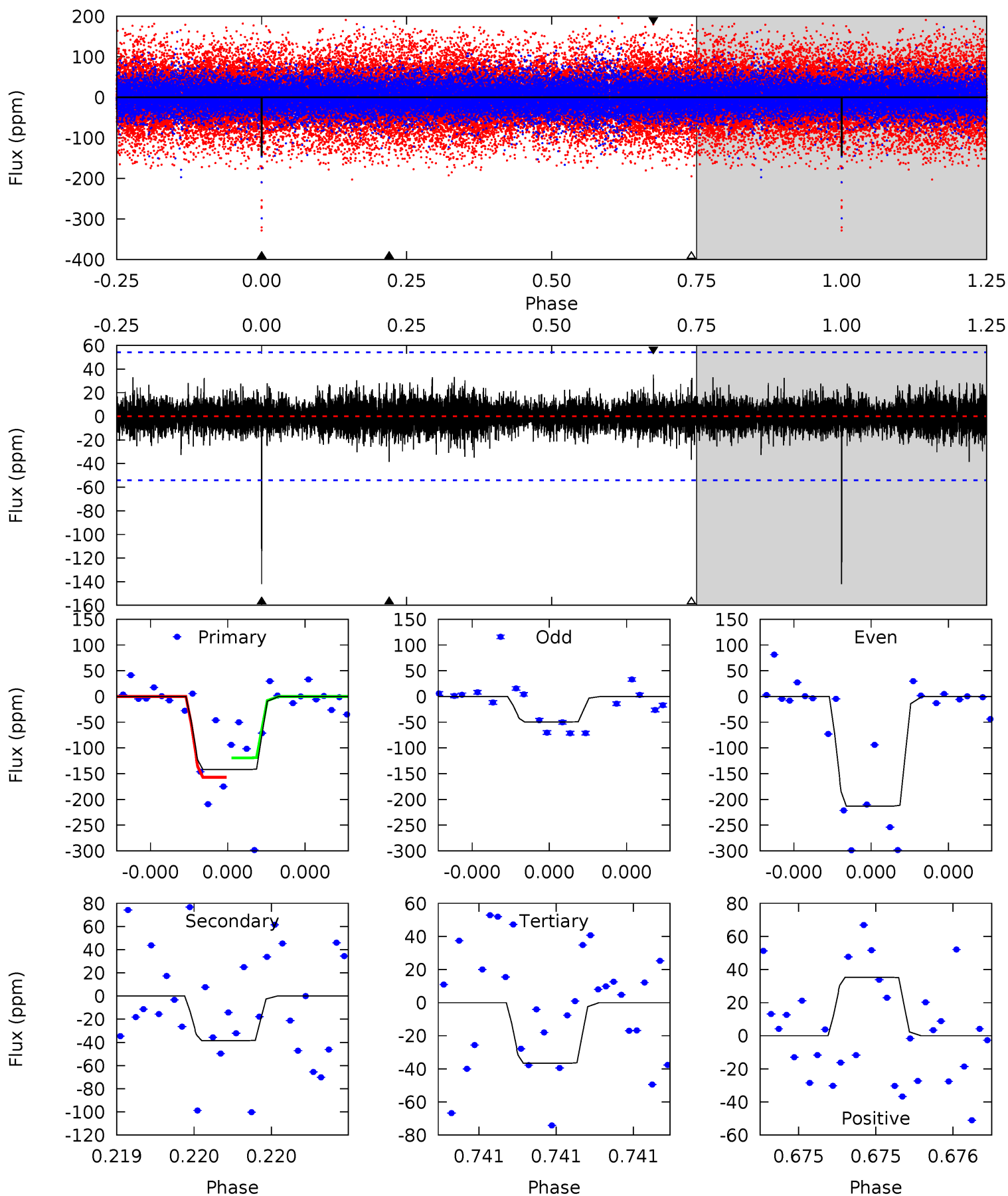
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	8.16	8.03	9.75	5.59	3.51	2.10	3.12	1.41	0.12	-1.59	1.66	0.92	0.47	0.98



Alt Model-Shift Uniqueness Test

007748234-02, P = 304.183172 Days, E = 242.094080 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	3.97	3.78	3.64	5.60	3.51	0.81	10.9	11.0	0.20	0.33	7.26	1.22	0.20	1.94



Stellar Parameters For KIC 007748234

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5948^{+149}_{-164}	$4.292^{+0.180}_{-0.180}$	$-0.160^{+0.300}_{-0.300}$	$1.164^{+0.336}_{-0.252}$	$0.967^{+0.146}_{-0.110}$	$0.865^{+0.795}_{-0.413}$
	+3%/-3%	+4%/-4%	+188%/-188%	+29%/-22%	+15%/-11%	+92%/-48%
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 007748234-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-163 ± 20	$2.59^{+2.50}_{-1.75}$	424^{+31}_{-28}	4814^{+3941}_{-1030}	10408^{+91293}_{-7680}
Alt.	-38 ± 10	$2.59^{+2.28}_{-1.68}$	423^{+32}_{-31}	3675^{+1900}_{-639}	2351^{+16458}_{-1705}

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

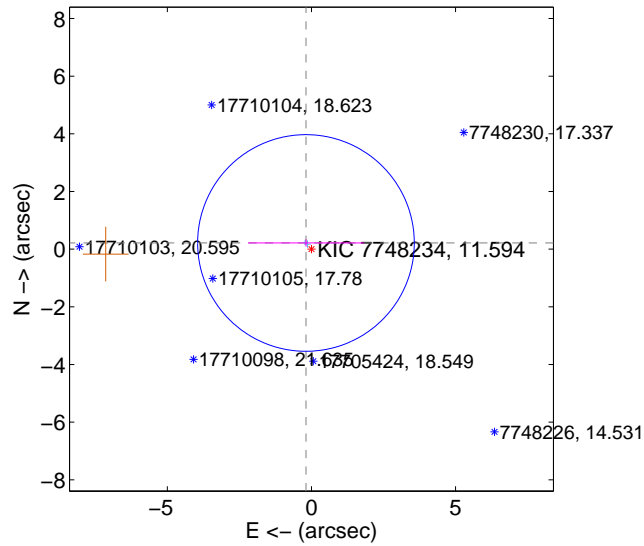
Supplemental centroid analysis for 007748234-02. **Kepler magnitude: 11.59.** Transit SNR 5.69

There are 2 quarters with good PRF difference image offsets

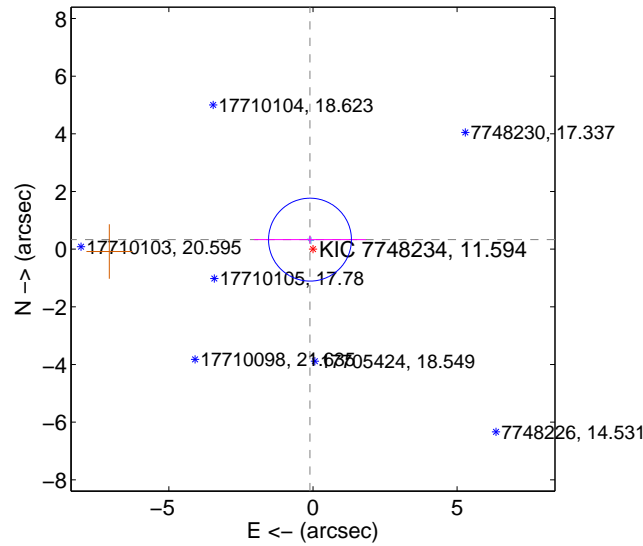
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.287 ± 1.252	0.23	0.190 ± 2.009	0.215 ± 0.128
PRF-fit source offset from KIC position	0.346 ± 0.479	0.72	0.103 ± 1.939	0.330 ± 0.130
photometric centroid source offset	1.50 ± 1.83	0.82	1.50 ± 1.83	0.08 ± 1.95

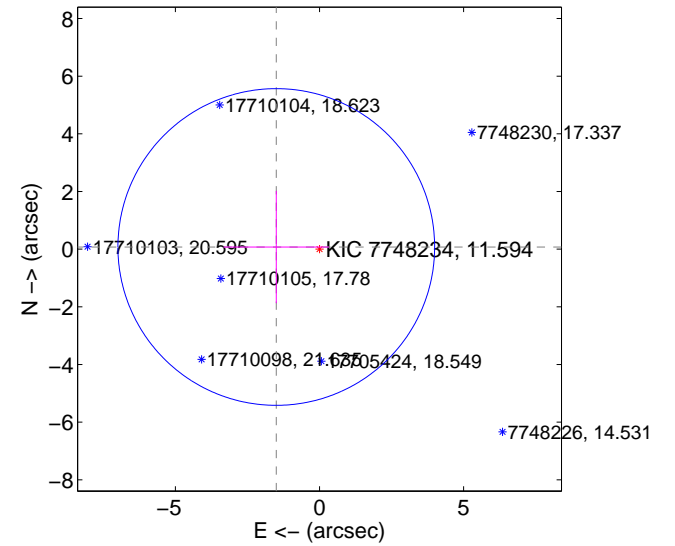
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

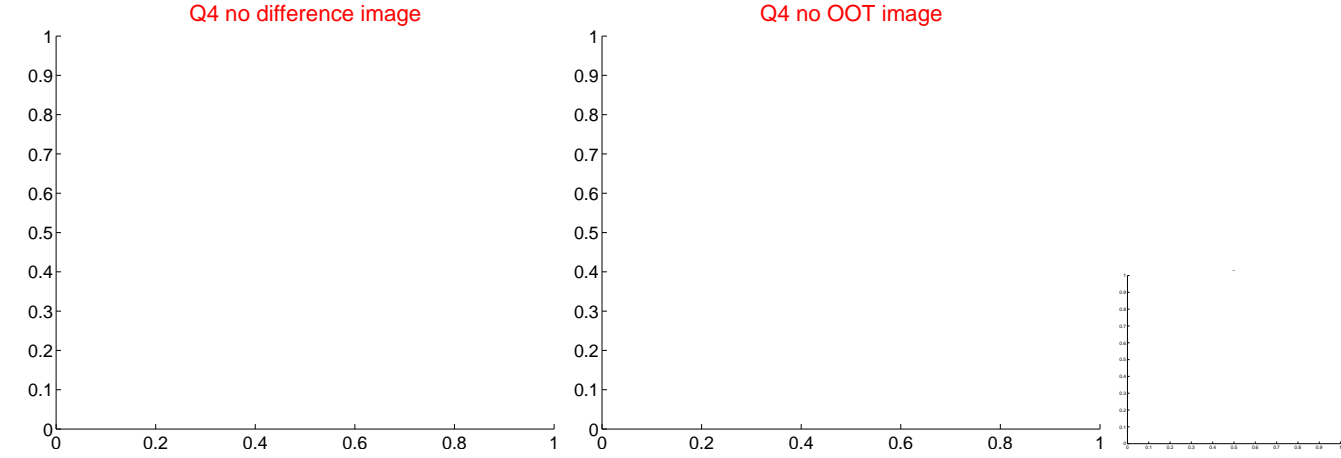
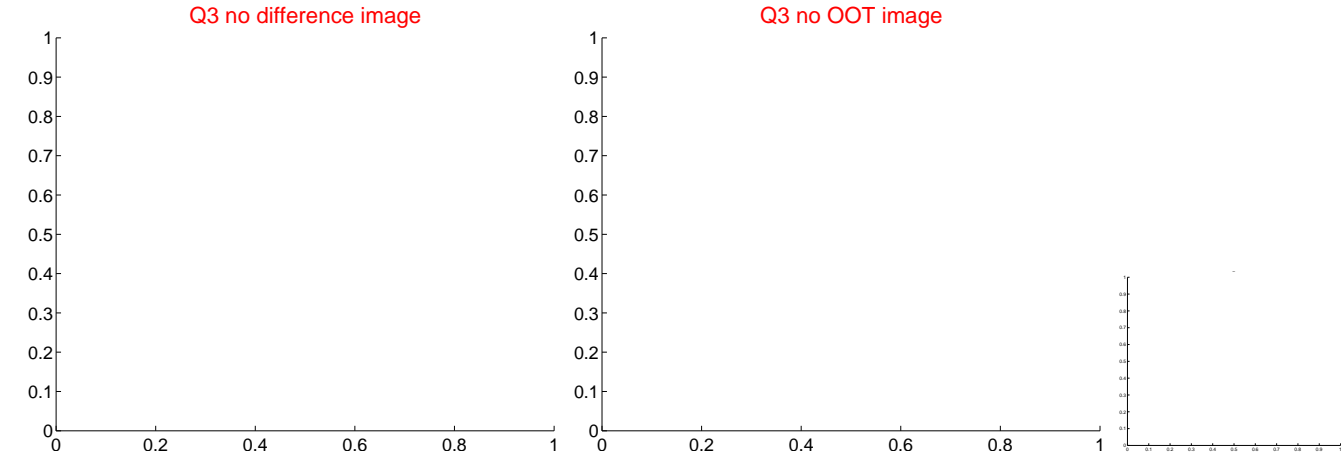
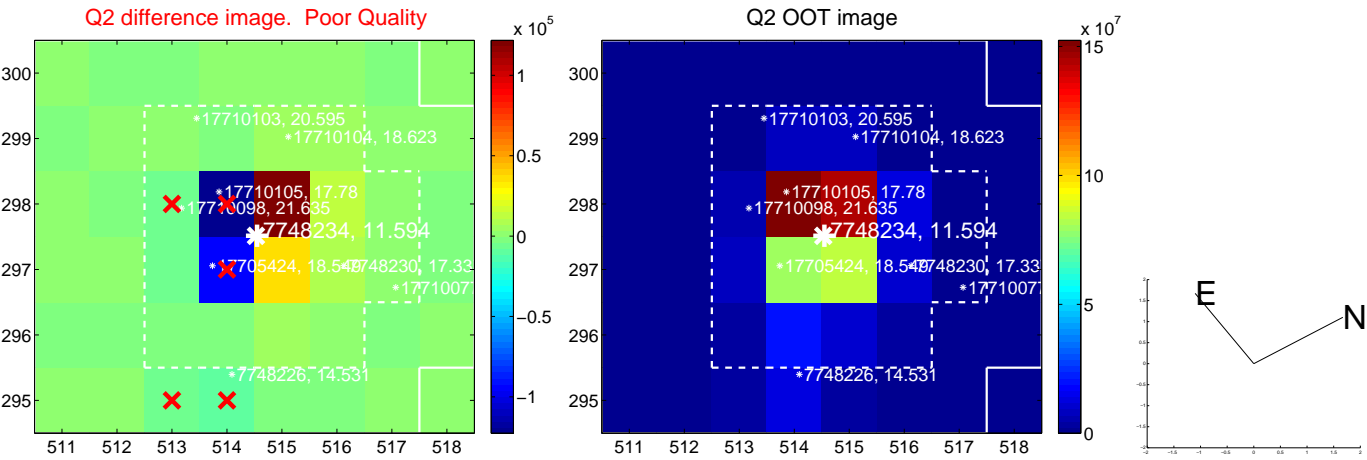


offset from photometric centroids



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.

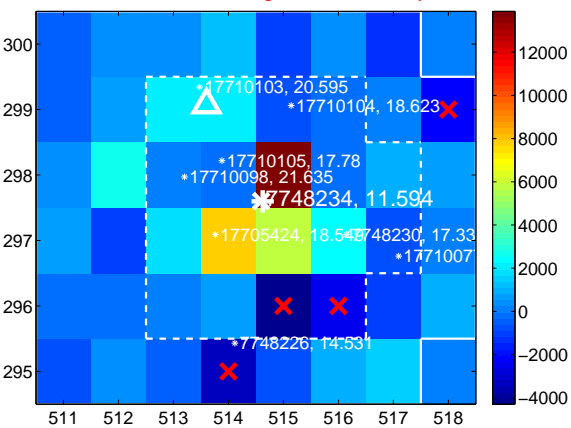
Q5 no difference image



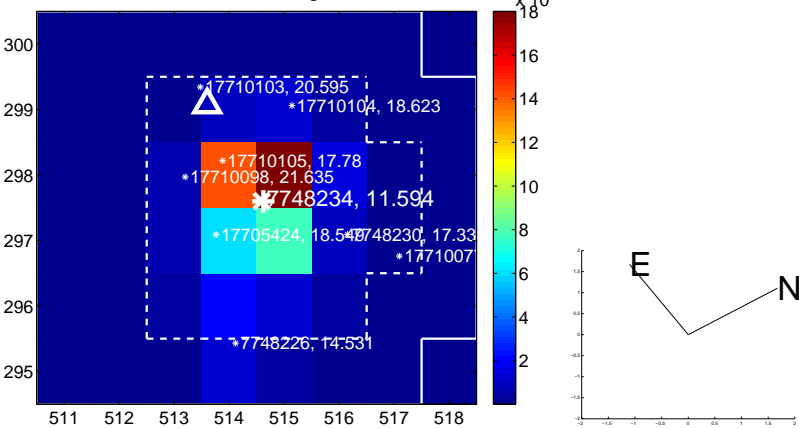
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



Q7 no difference image



Q7 no OOT image



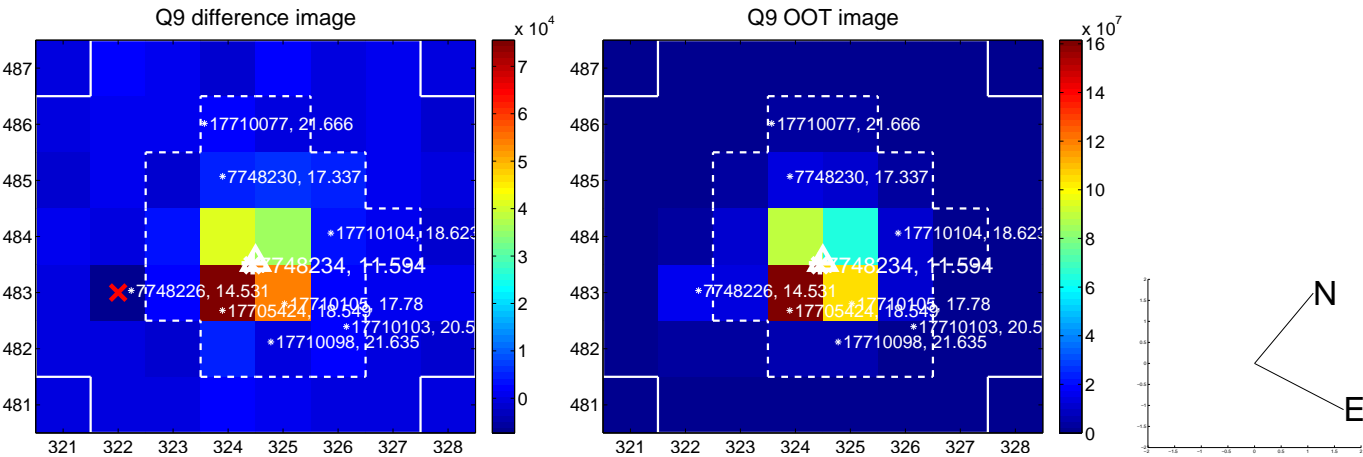
Q8 no difference image



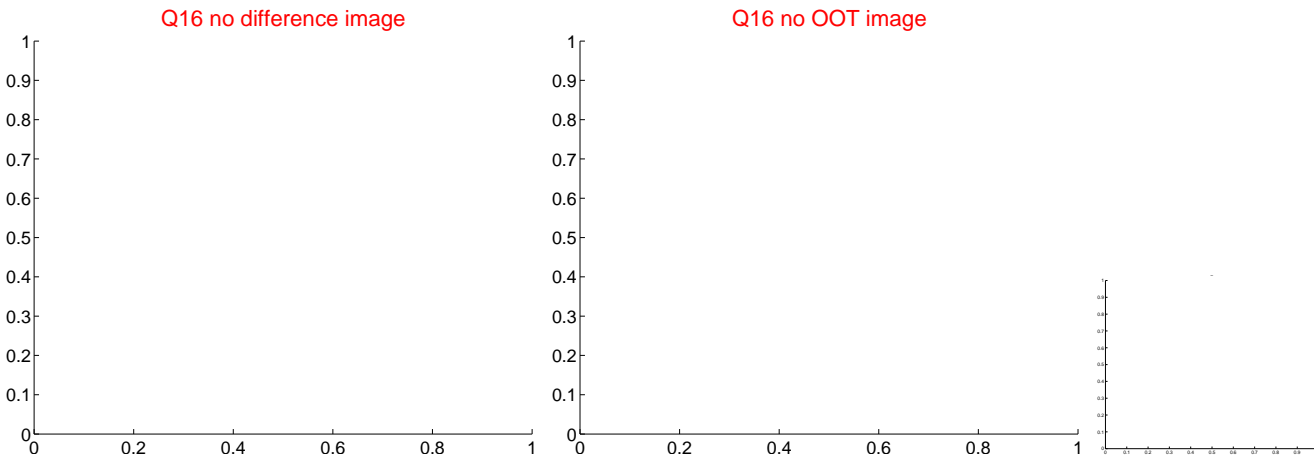
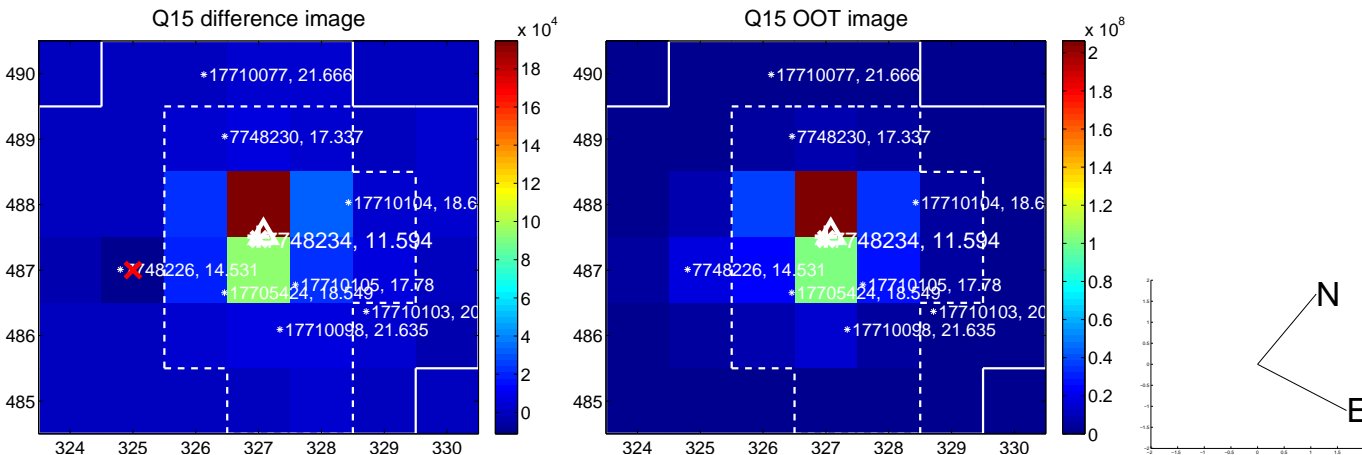
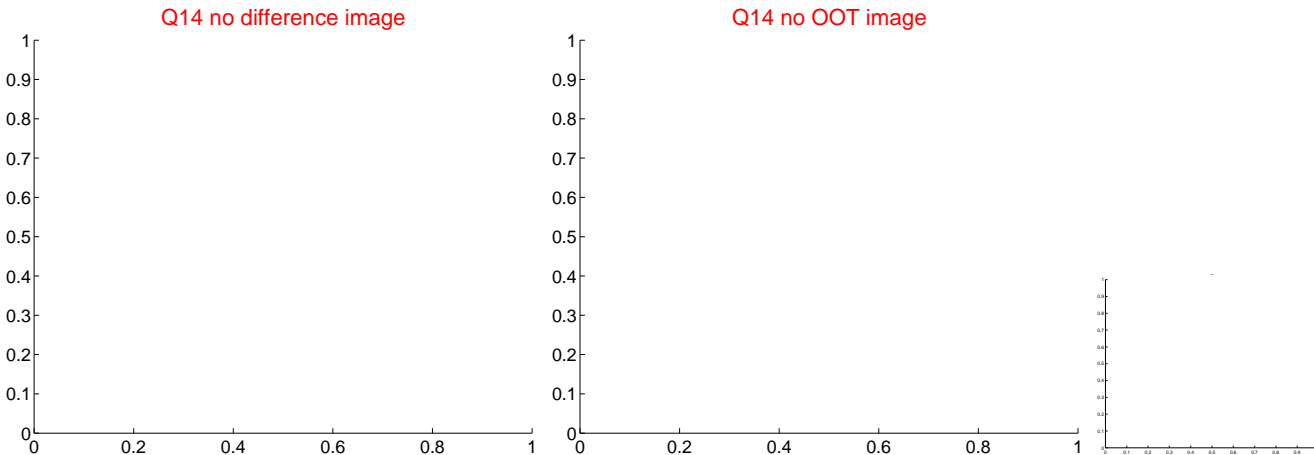
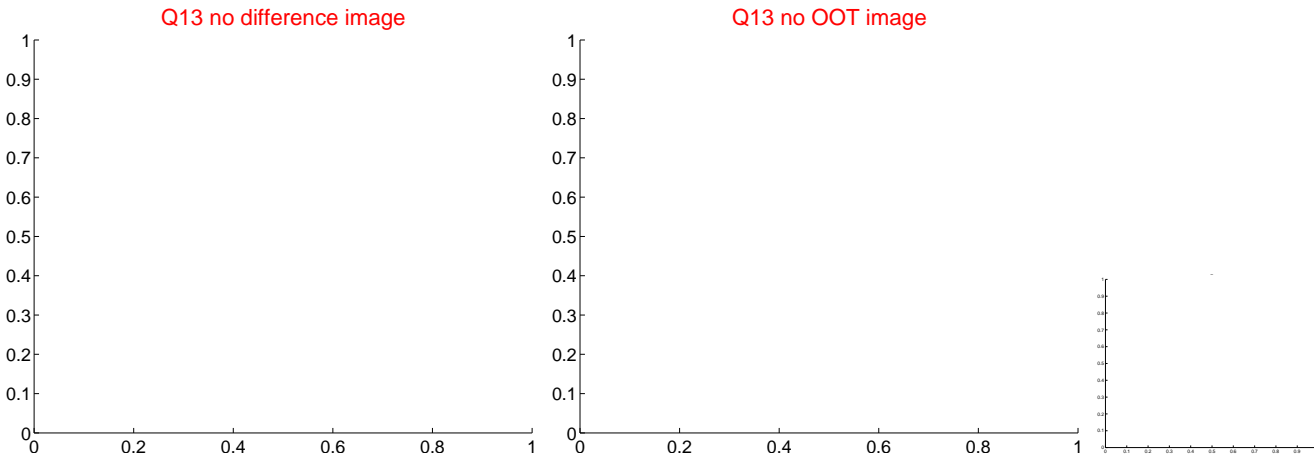
Q8 no OOT image



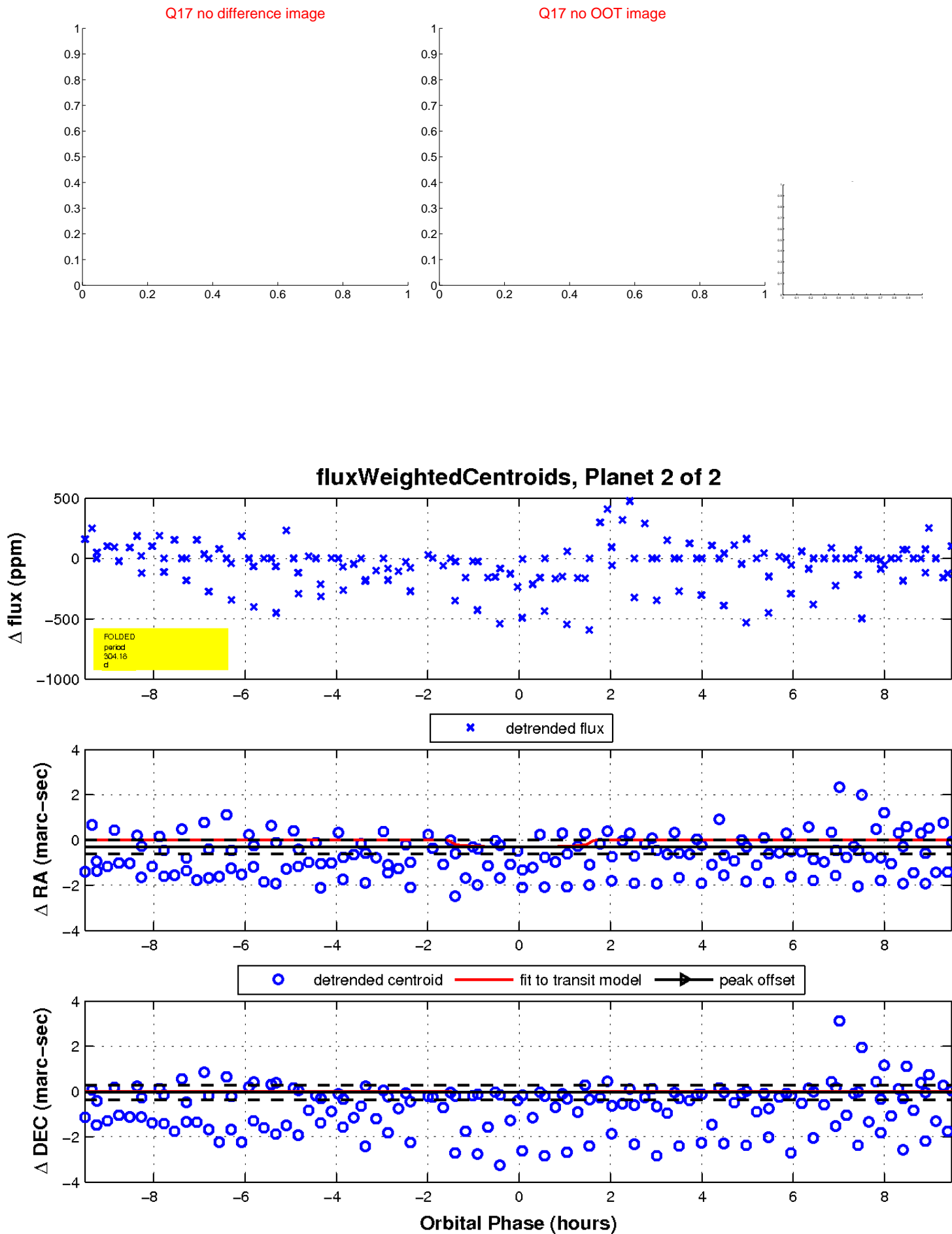
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

