

KIC 002707097

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})
002707097-01	OBS	6095.01	0.692787	131.910522	16082.7	0.806	102.2	107.3	1.00	5780	18.10	4257.35
002707097-02	OBS	No	0.692774	131.582869	14211.4	1.500	84.2	-1.0	1.00	5780	11.87	4257.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002707097-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_ODDEVEN_DV—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_FEW_DIFFS
002707097-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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 002707097-01

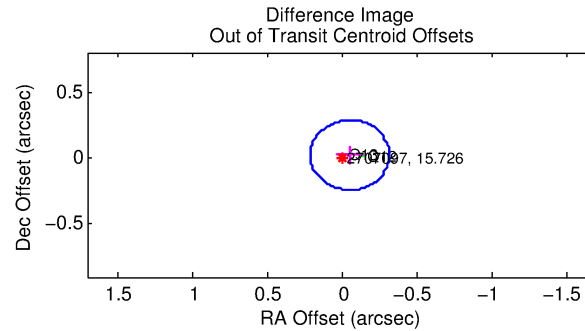
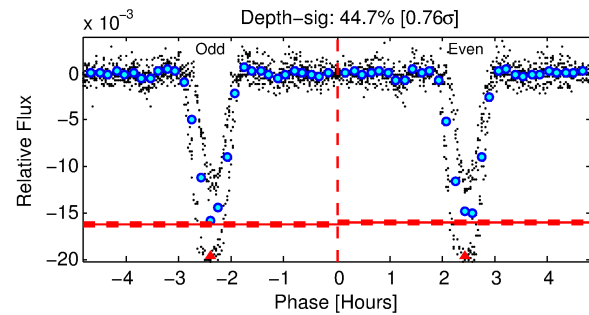
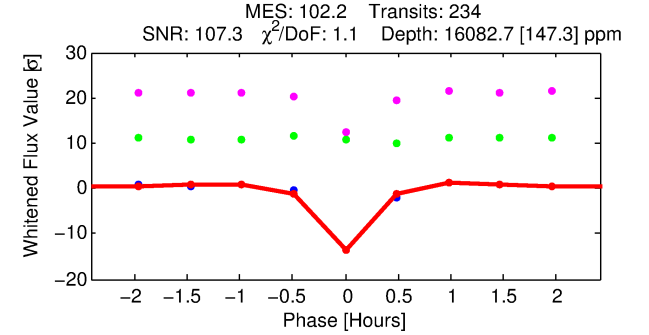
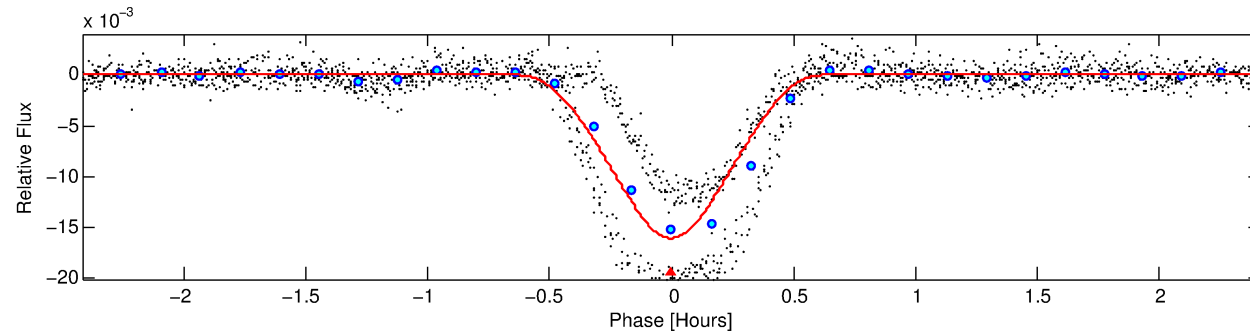
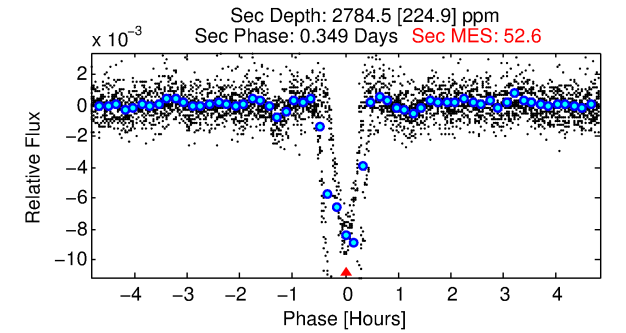
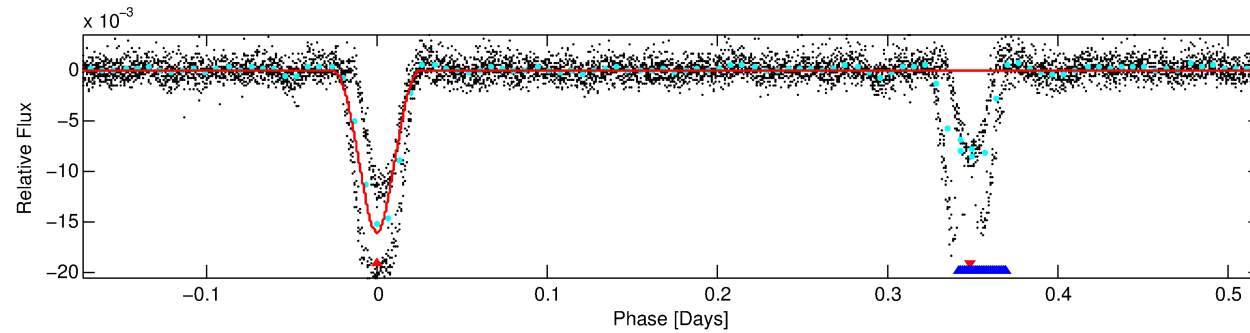
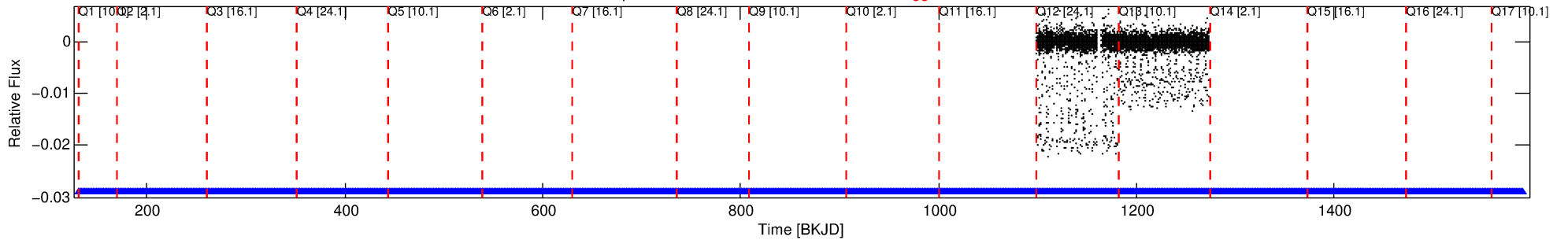
No Significant Match Found

DV One-Page Summary

KIC: 2707097 Candidate: 1 of 2 Period: 0.693 d

KOI: K06095 Corr: No Ephemeris Match

Kp: 15.73 R*: 1.00 Rs Teff: 5780.0 K Logg: 4.44 Fe/H: 0.000



DV Fit Results:

Period = 0.69279 [0.00000] d
Epoch = 131.9105 [0.0001] BKJD
Rp/R* = 0.1658 [0.0480]
a/R* = 4.96 [0.40]
b = 0.90 [0.10]
Seff = 4257.35 [0.00]
Teq = 2060 [0] K
Rp = 18.10 [5.24] Re
a = 0.0153 [0.0000] AU
Ag = 1.10 [0.64] [0.15σ]
Teffp = 3260 [477] K [2.52σ]

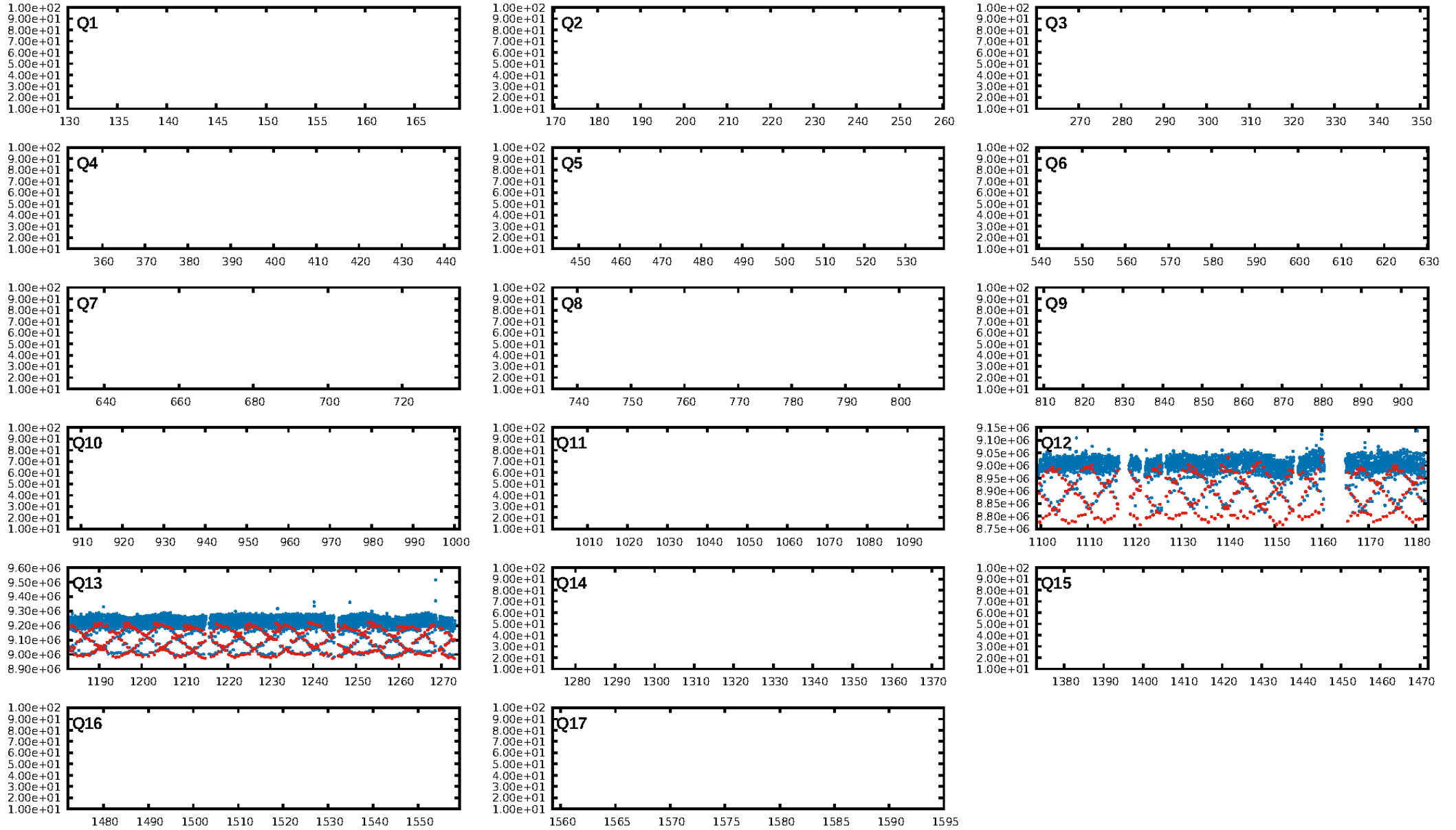
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [234/234]
GhostDiagnostic-chr: 16.21
Centroid-sig: 0.0%
Centroid-so: 0.863 arcsec [17.05σ]
OotOffset-rm: 0.058 arcsec [0.66σ]
KicOffset-rm: 0.141 arcsec [0.71σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

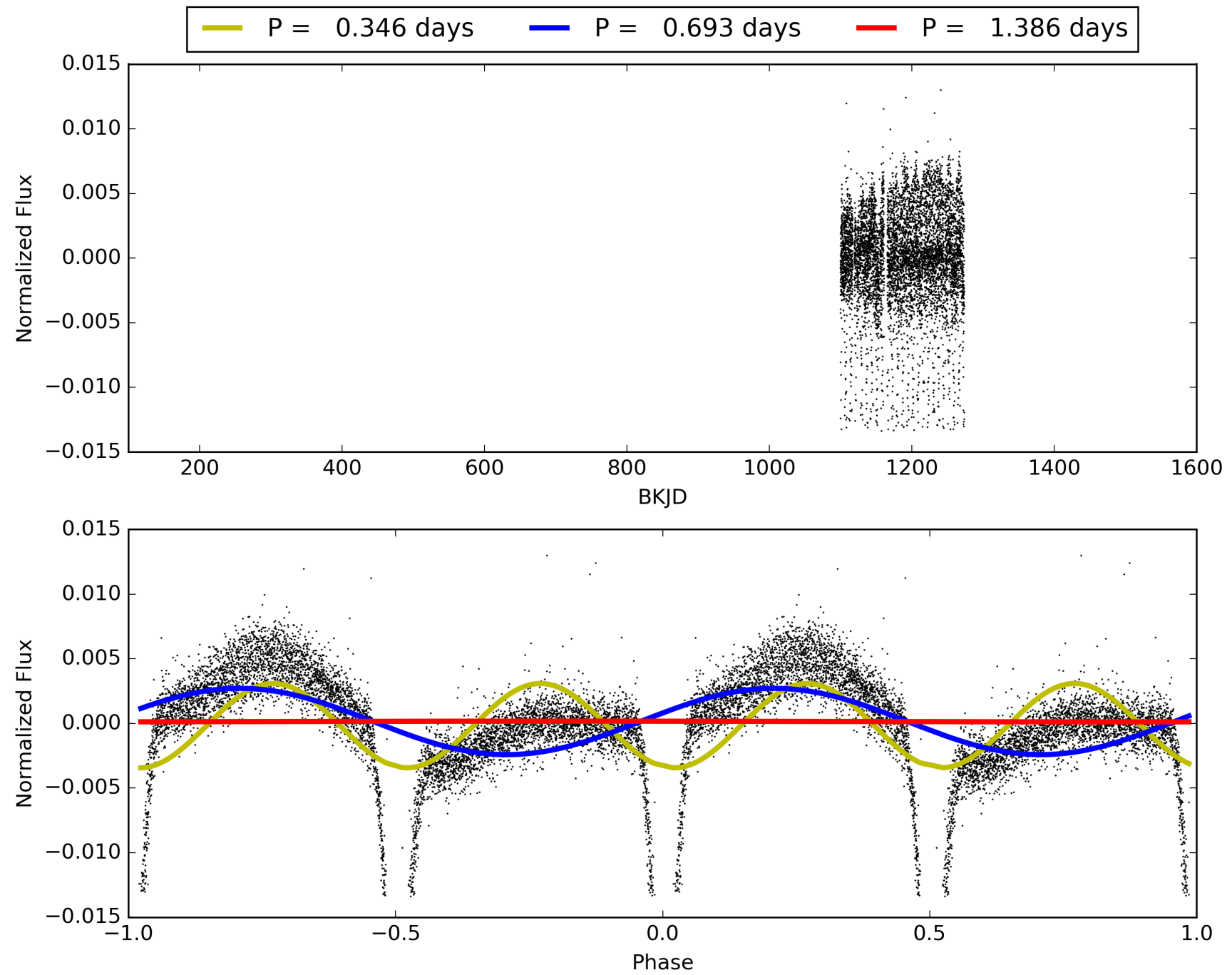
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:27:39 Z

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

TCE 002707097-01, PDC Light Curves

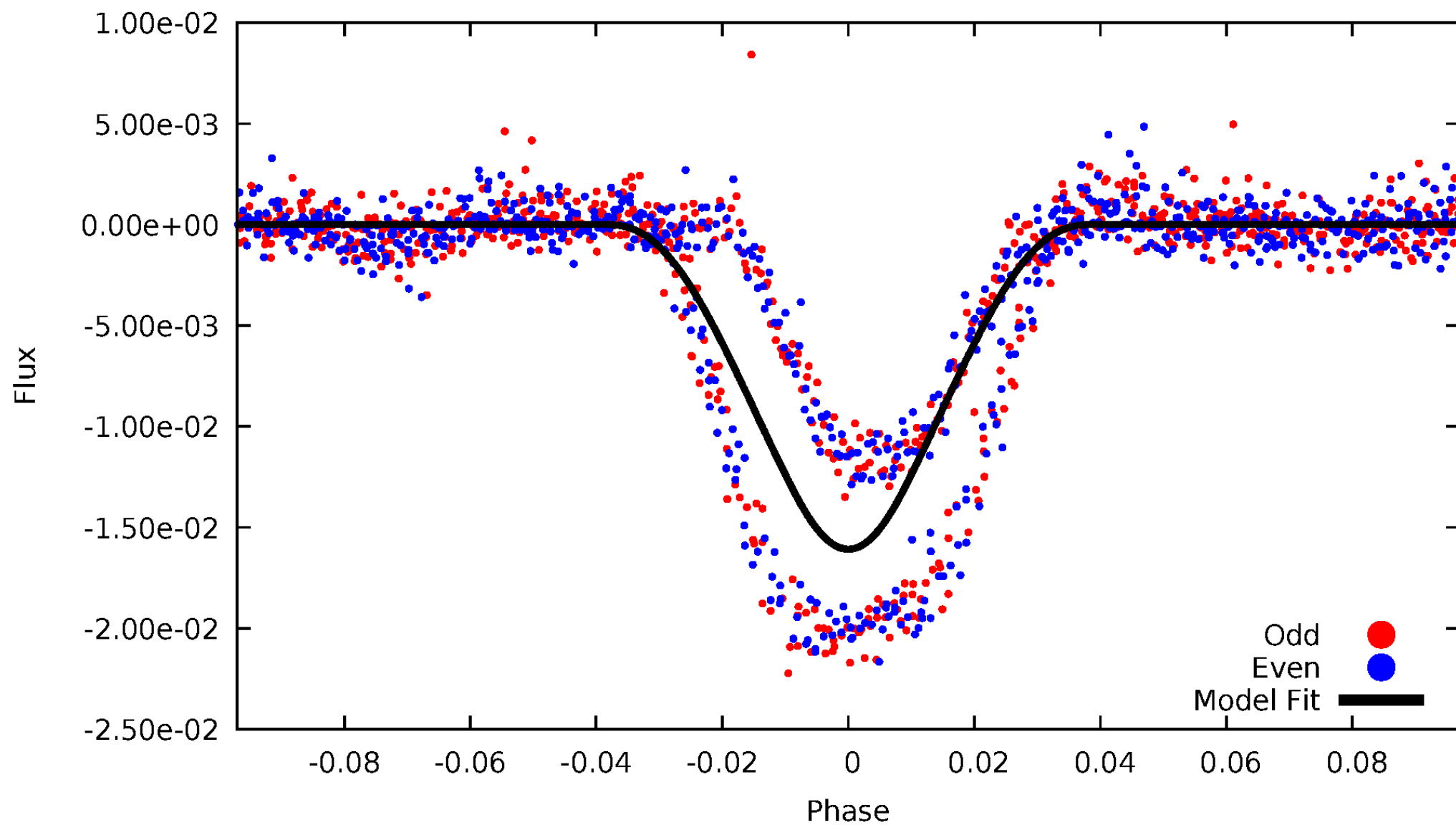


TCE 002707097-01



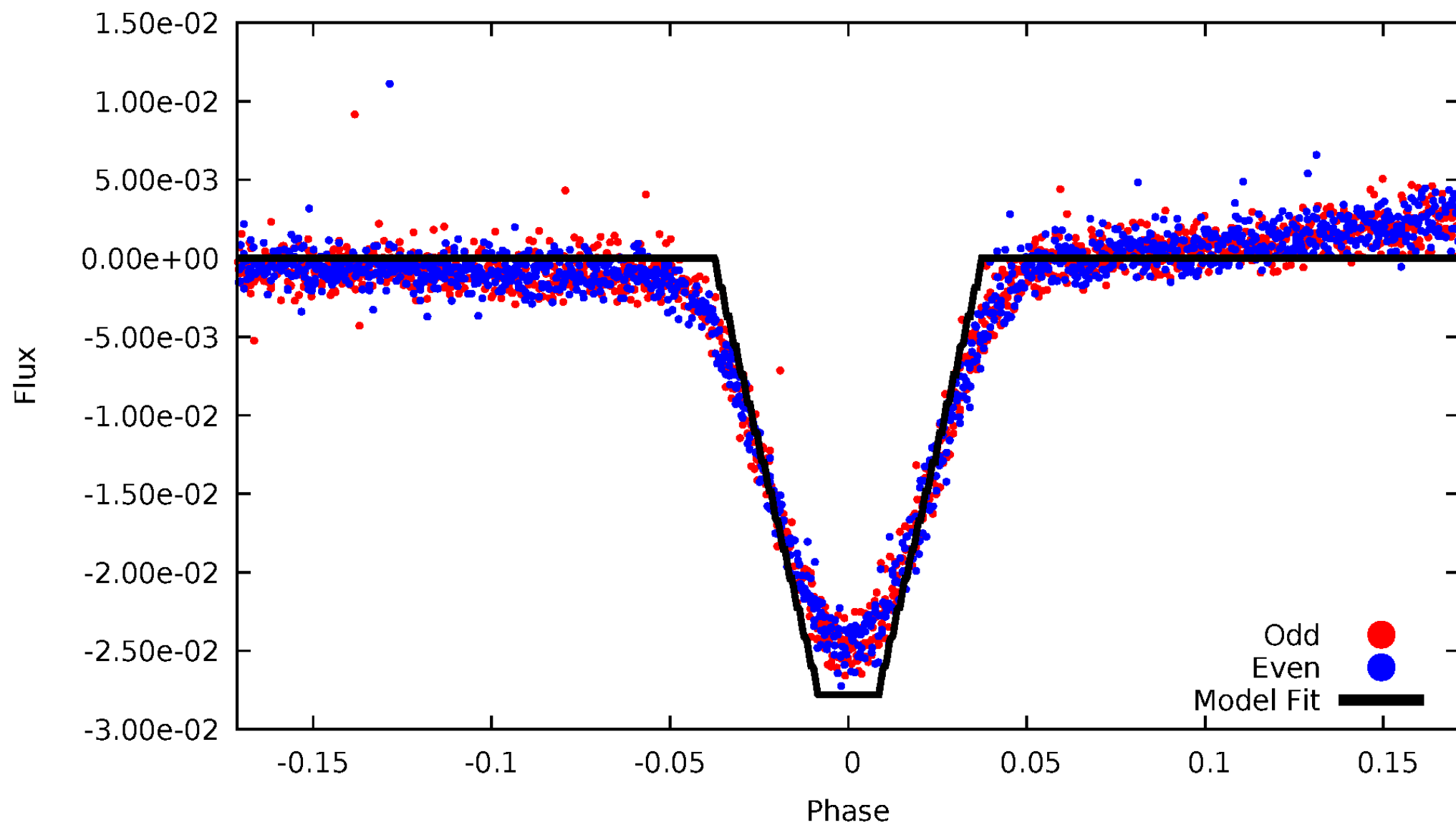
DV Odd/Even

TCE 002707097-01



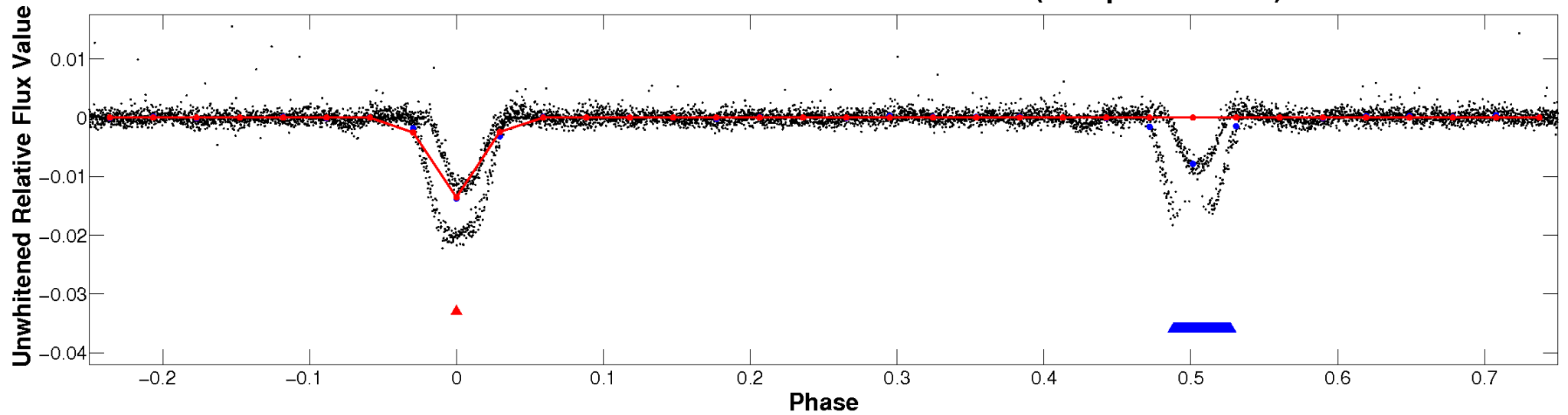
ALT Odd/Even

TCE 002707097-01

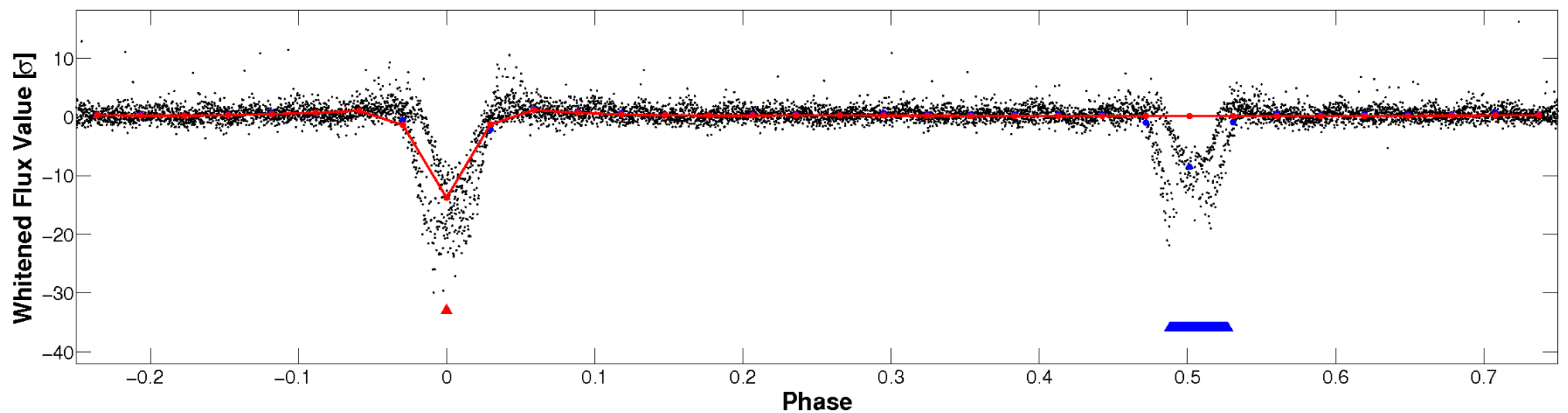


Non-Whitened Vs. Whitened Light Curve

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

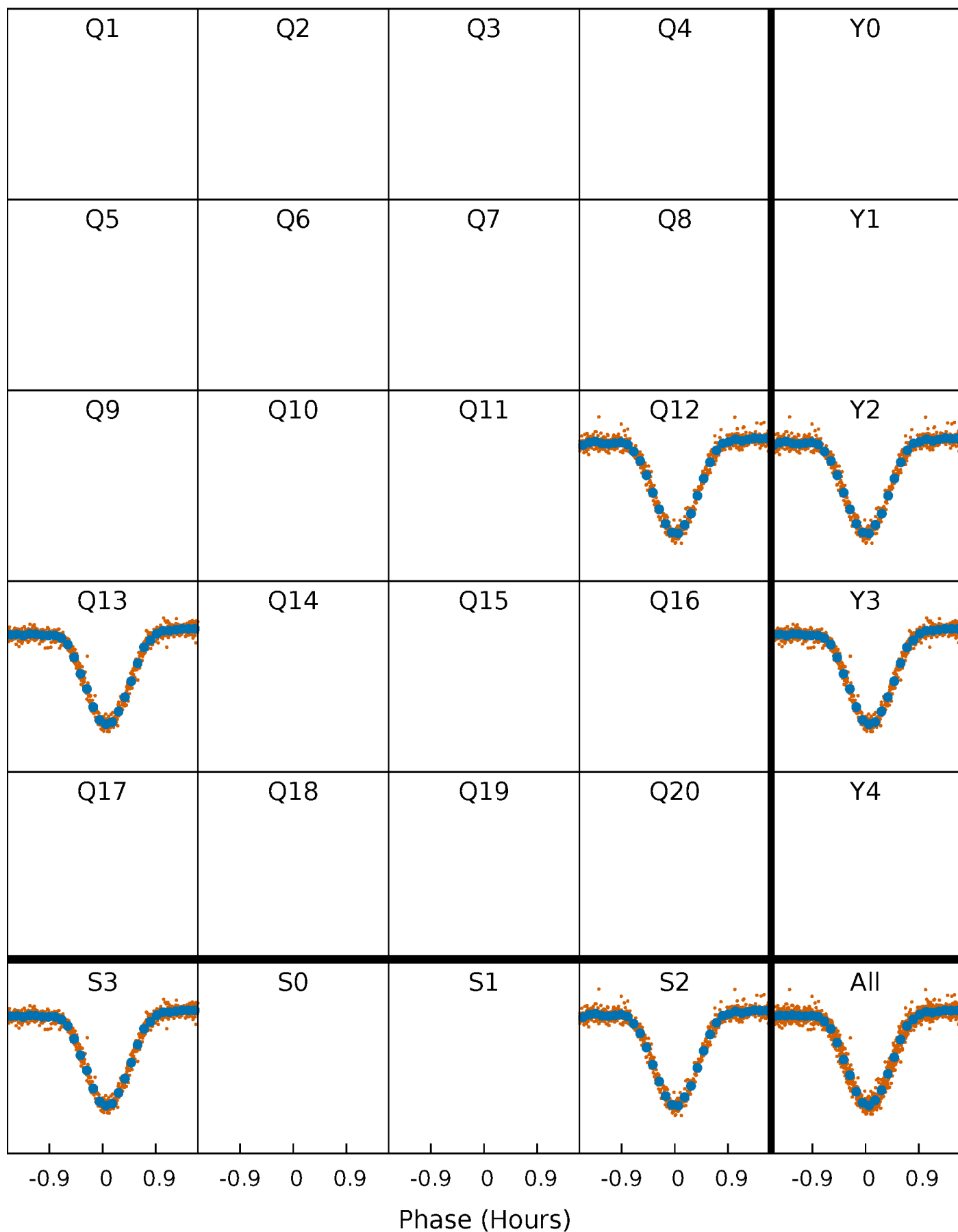


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



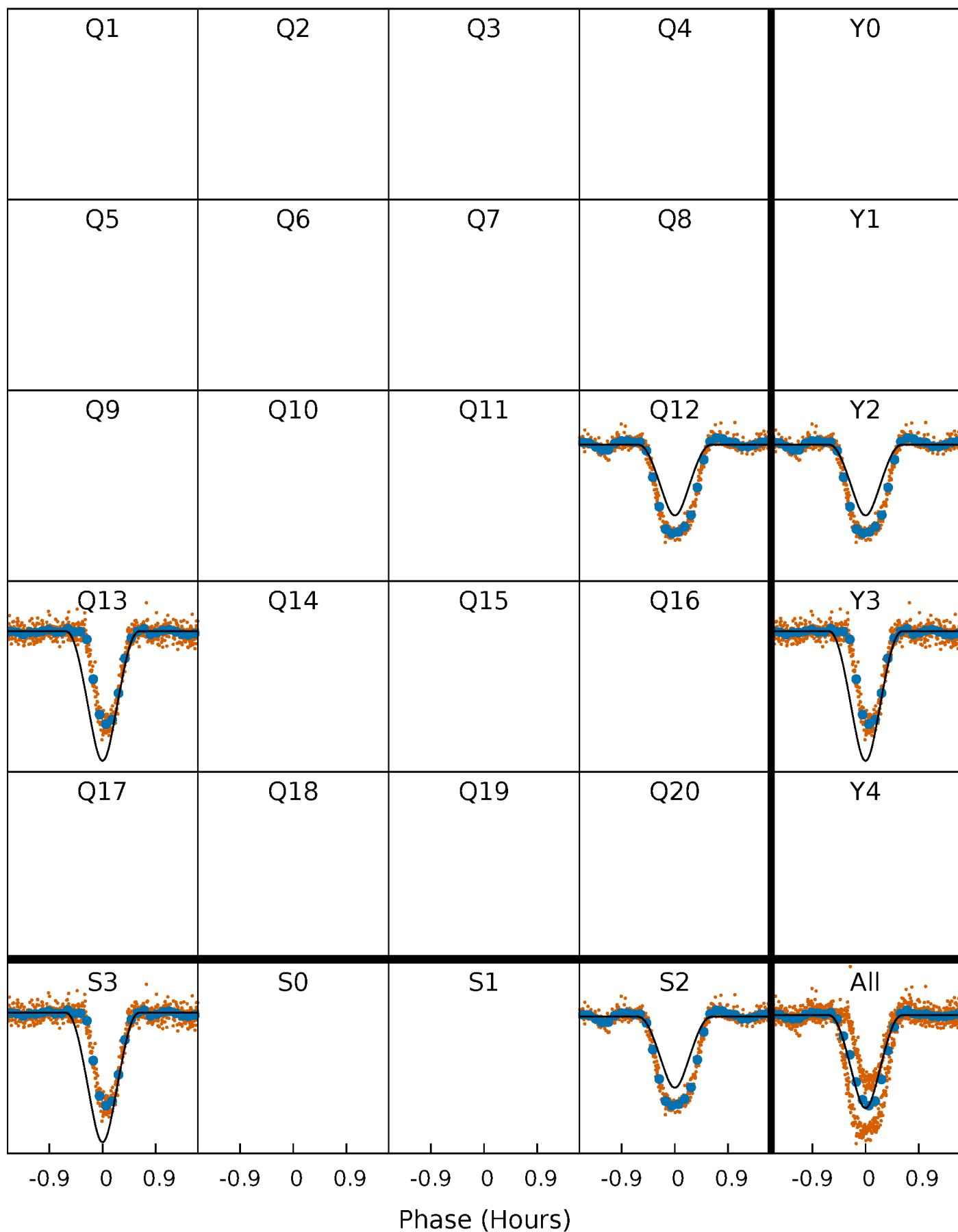
PDC Quarter-Phased Transit Curves

TCE 002707097-01 P= 0.692787 Days $T_0=131.910522$ (BKJD)



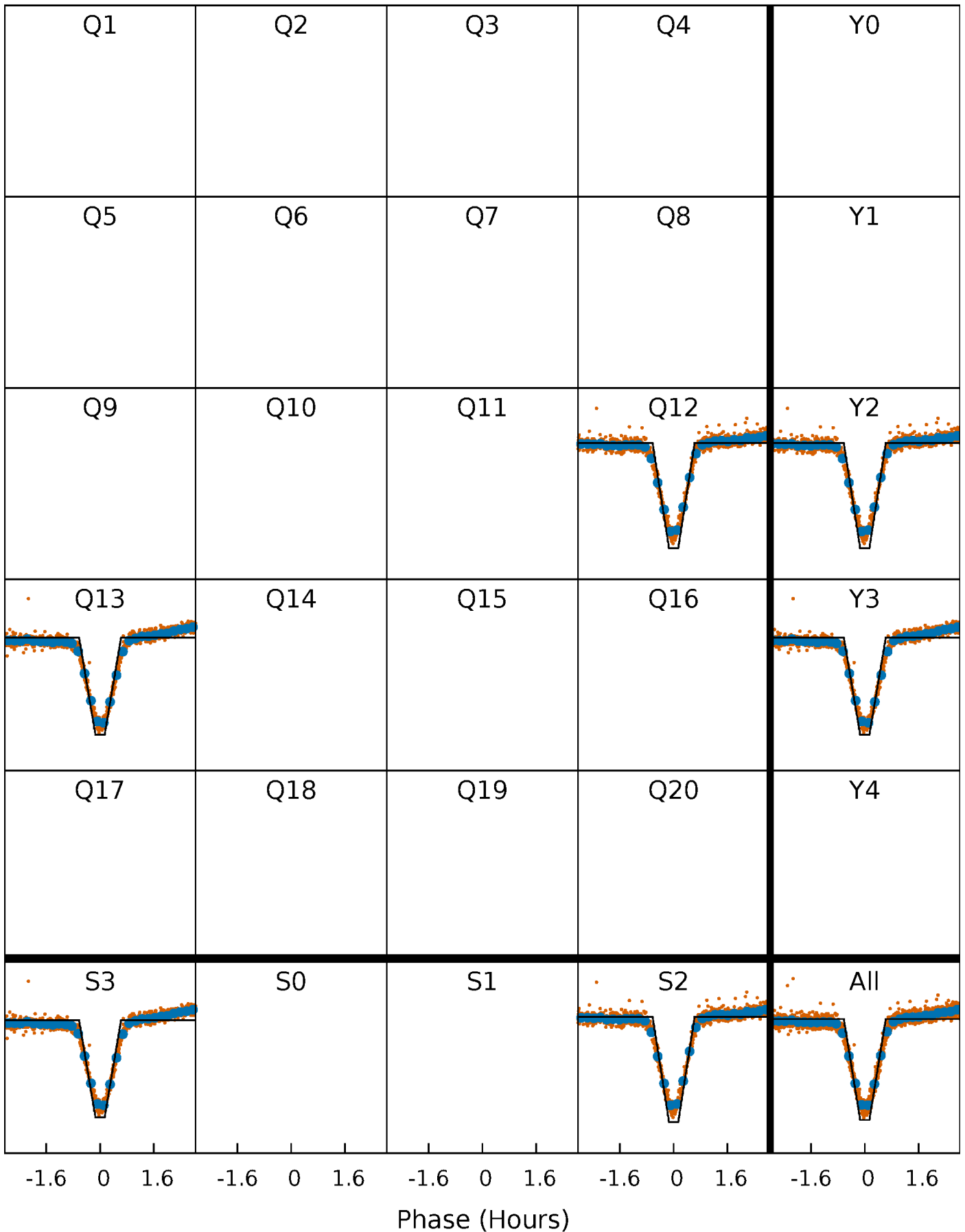
DV Quarter-Phased Transit Curves

TCE 002707097-01 P= 0.692787 Days $T_0=131.910522$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

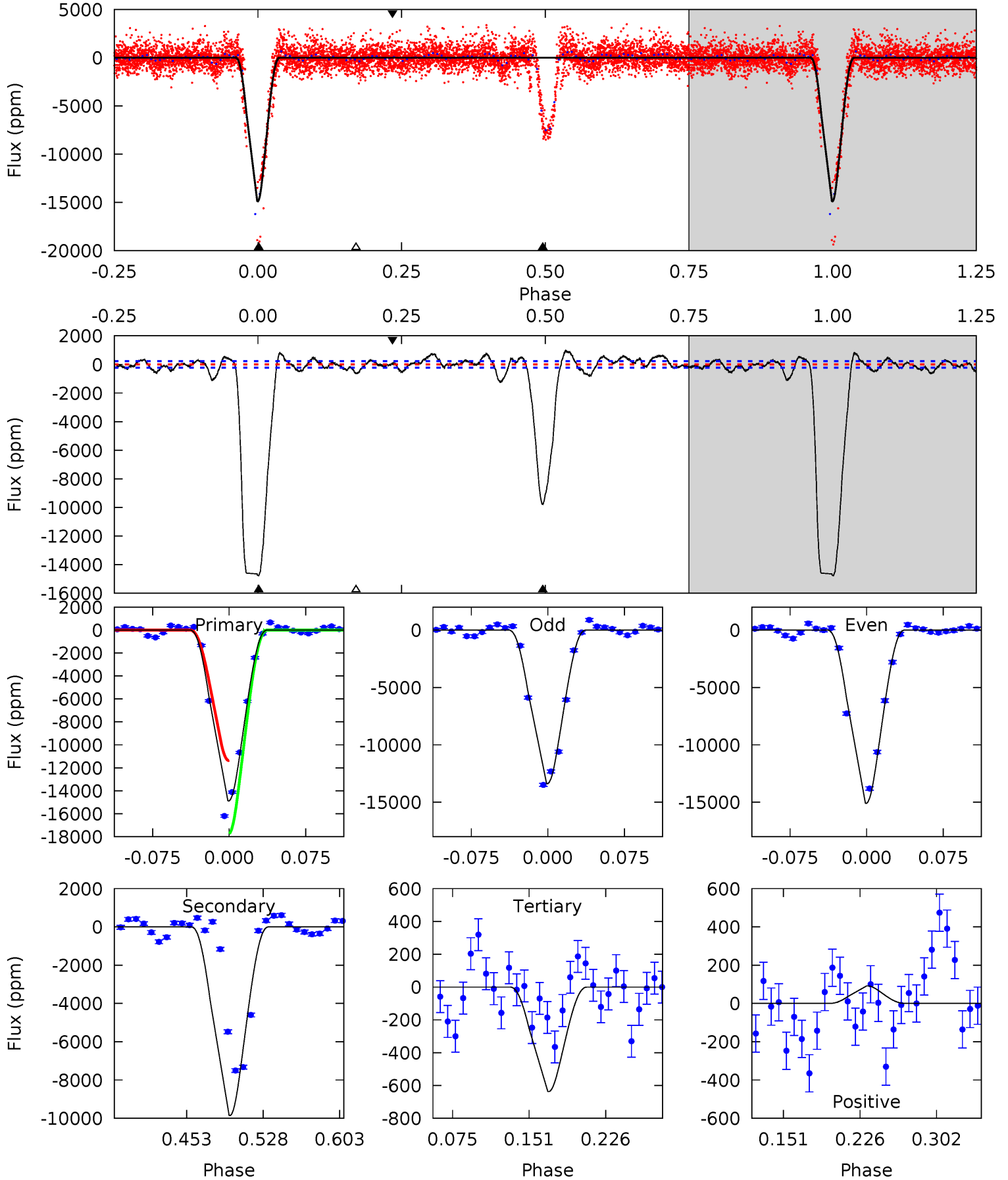
TCE 002707097-01 P= 0.692798 Days $T_0=131.895711$ (BKJD)



DV Model-Shift Uniqueness Test

002707097-01, P = 0.692787 Days, E = 131.910522 Days

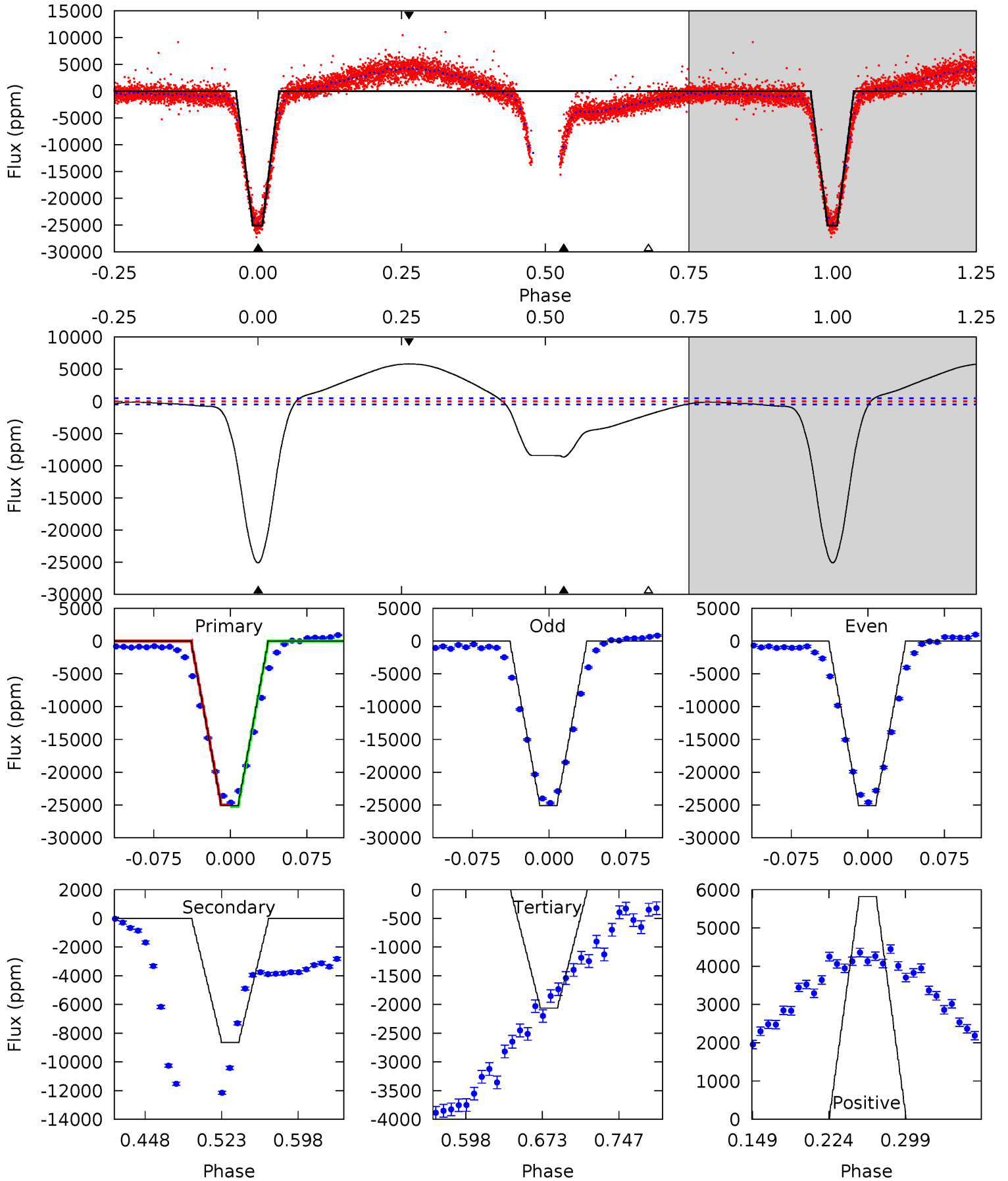
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
304.1	201.4	13.0	1.88	4.62	1.78	6.84	291.1	302.3	188.4	199.5	17.4	1.30	0.06	67.5



Alt Model-Shift Uniqueness Test

002707097-01, P = 0.692798 Days, E = 131.895711 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
242.2	83.5	19.9	56.2	4.63	1.78	27.7	222.3	186.0	63.6	27.3	0.02	1.00	0.19	1.30



Stellar Parameters For KIC 002707097

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 002707097-01 / KOI 6095.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-9783 ± 49	$18.30^{+5.91}_{-5.05}$	2890^{+139}_{-135}	4544^{+717}_{-489}	$3.841^{+3.530}_{-1.667}$
Alt.	-8646 ± 104	$18.24^{+5.41}_{-5.10}$	2883^{+142}_{-135}	4413^{+711}_{-449}	$3.380^{+3.237}_{-1.353}$

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 $A_{obs} \gg 1.0$

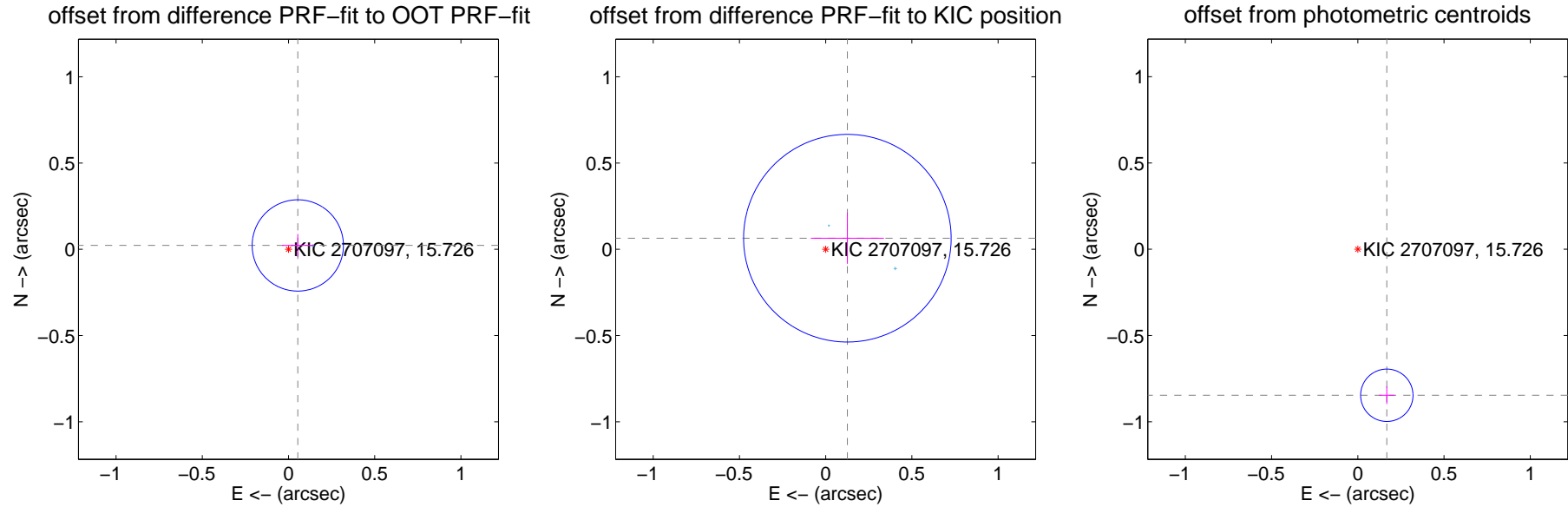
DV Centroid Data

Supplemental centroid analysis for 002707097-01. Kepler magnitude: 15.73. Transit SNR 107.31

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.058 ± 0.088	0.66	-0.054 ± 0.091	0.022 ± 0.067
PRF-fit source offset from KIC position	0.141 ± 0.201	0.71	-0.126 ± 0.212	0.064 ± 0.148
photometric centroid source offset	0.86 ± 0.05	17.05	-0.17 ± 0.04	-0.85 ± 0.05



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.

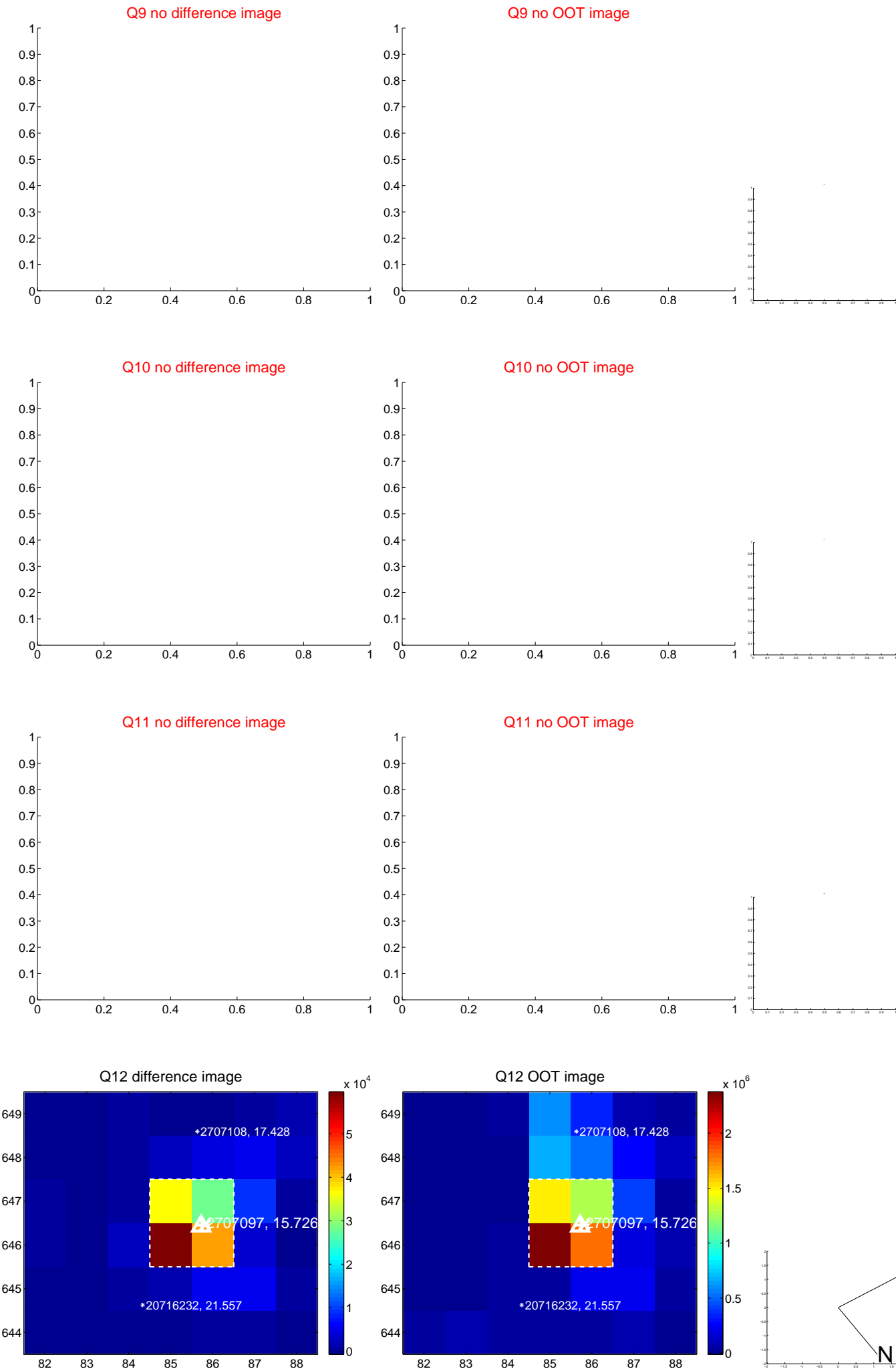
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



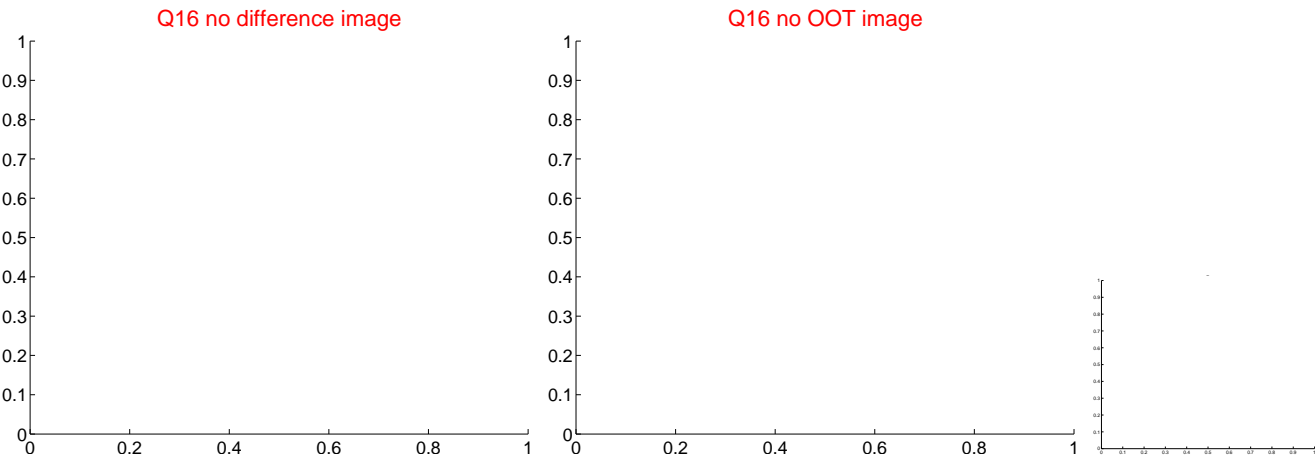
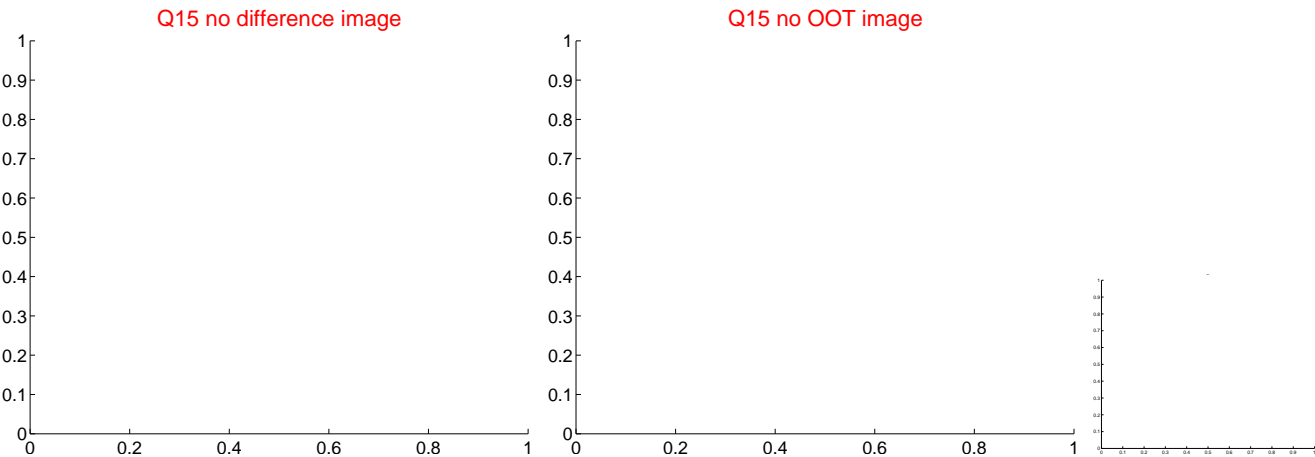
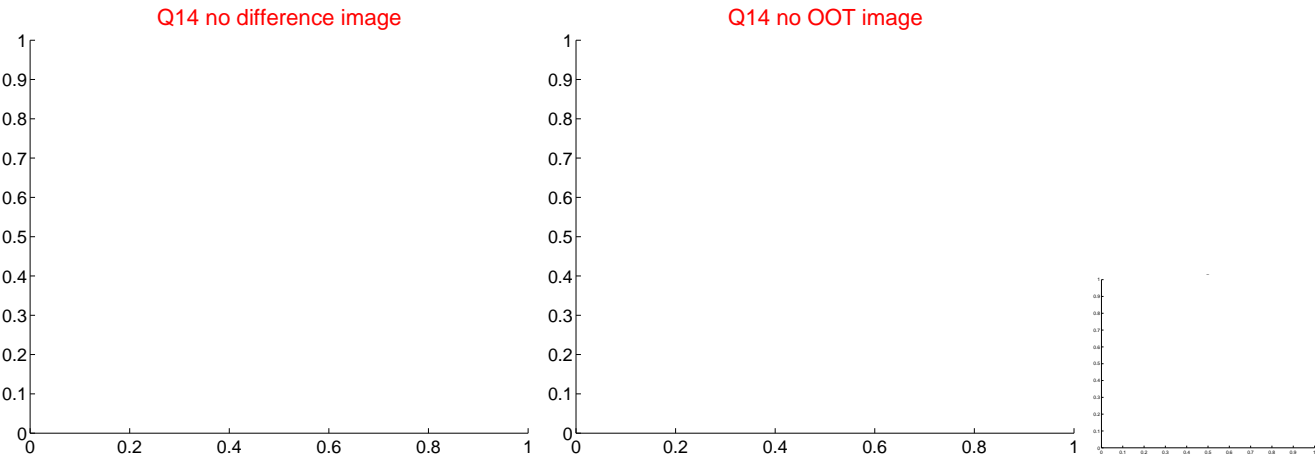
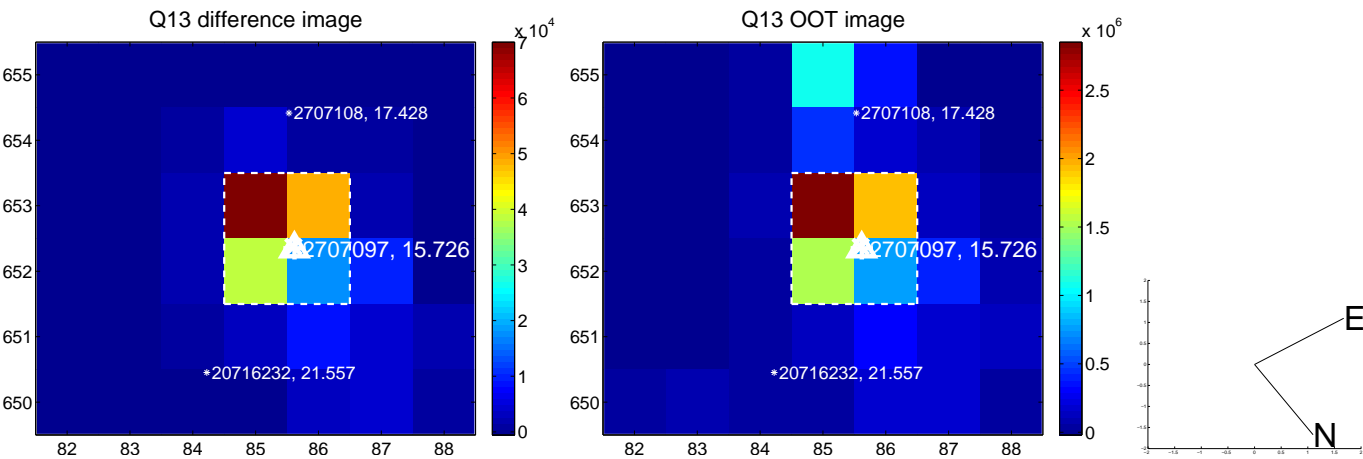
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



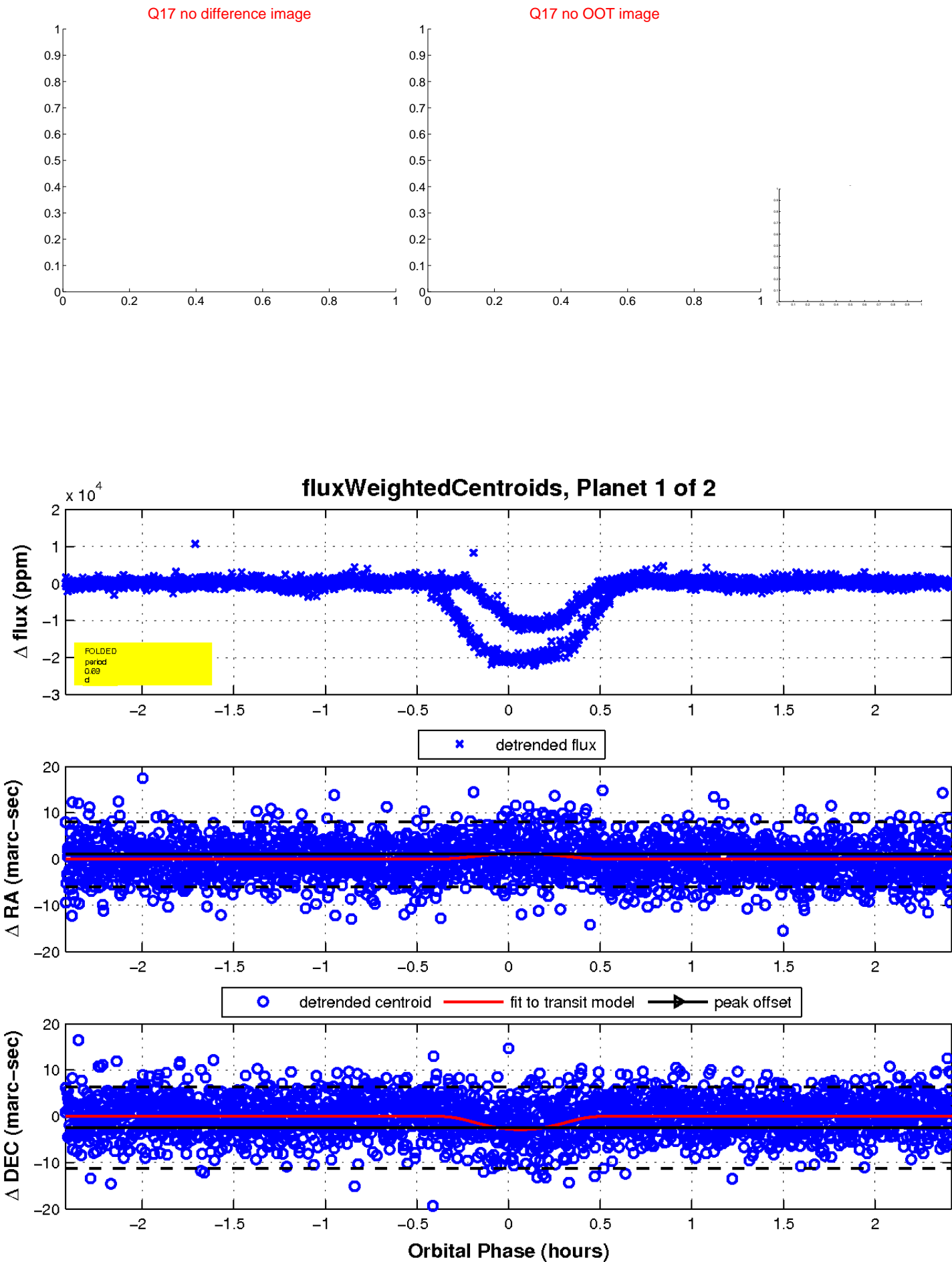
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

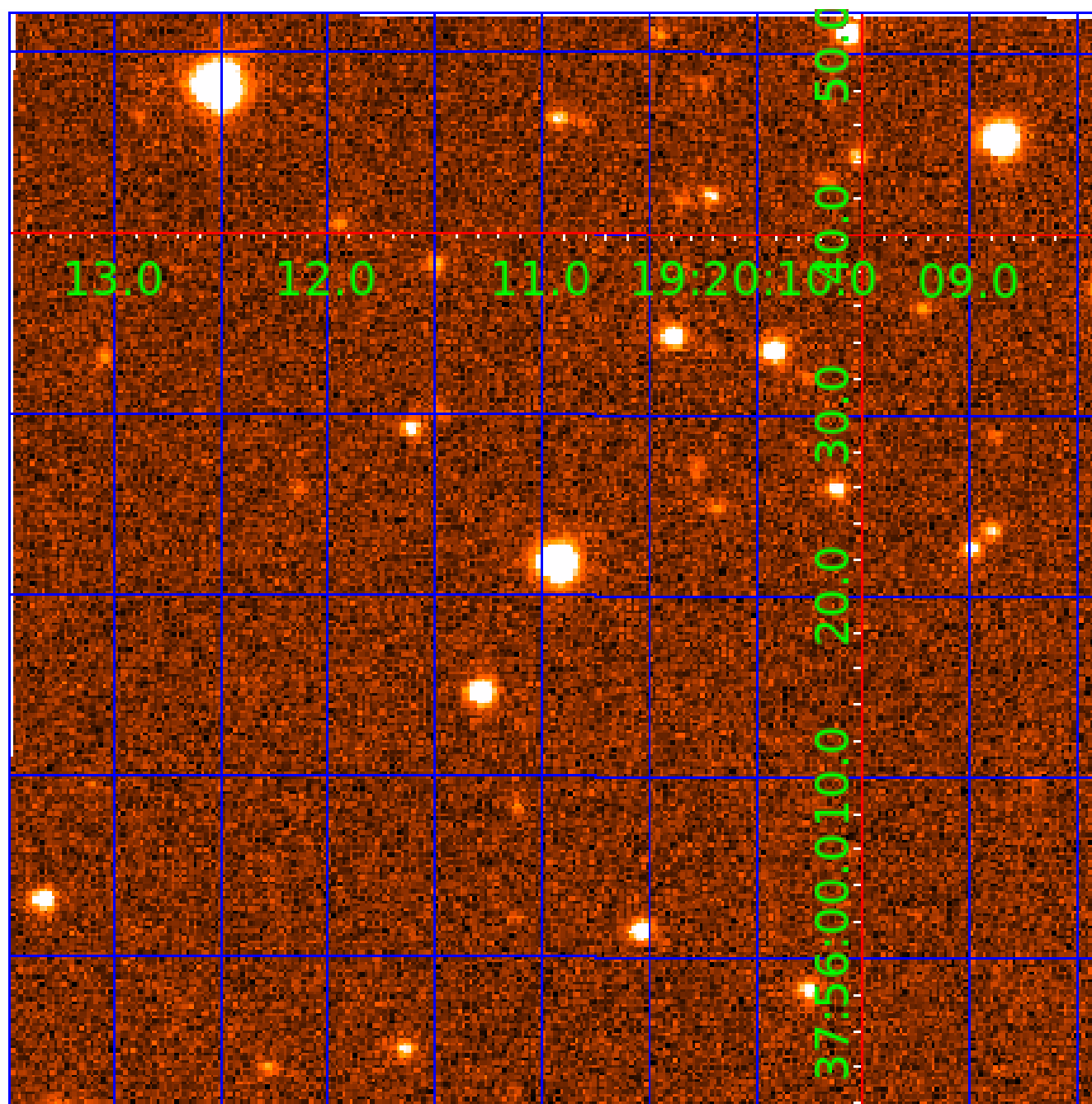


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002707097

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})
002707097-01	OBS	6095.01	0.692787	131.910522	16082.7	0.806	102.2	107.3	1.00	5780	18.10	4257.35
002707097-02	OBS	No	0.692774	131.582869	14211.4	1.500	84.2	-1.0	1.00	5780	11.87	4257.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002707097-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_ODDEVEN_DV—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_FEW_DIFFS
002707097-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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 002707097-02

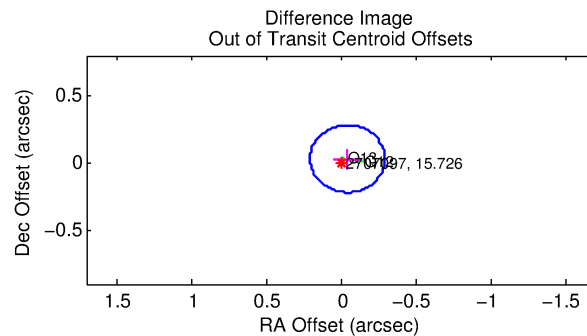
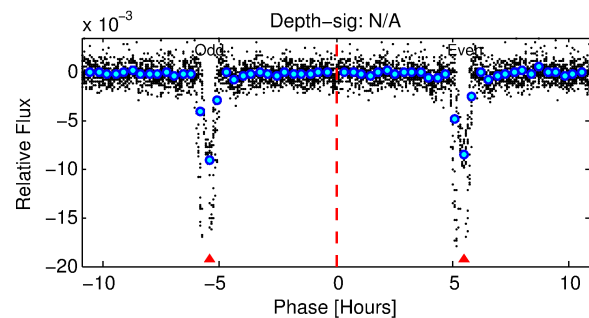
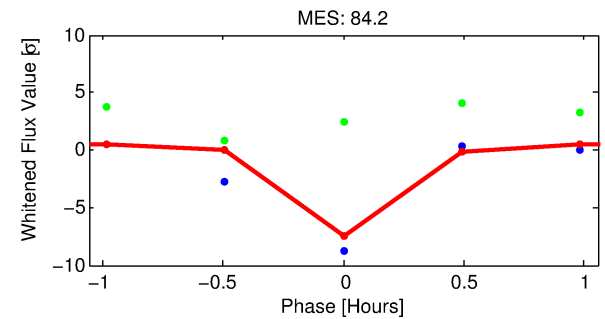
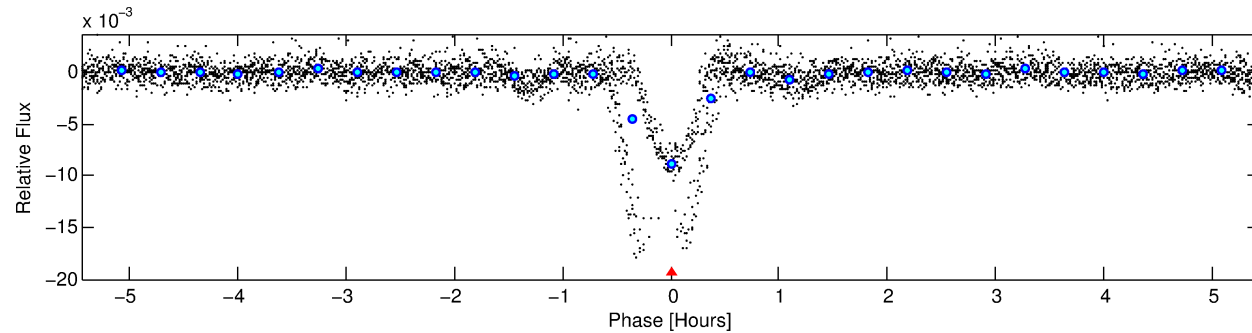
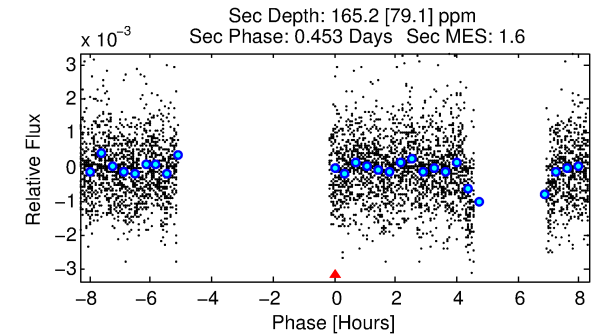
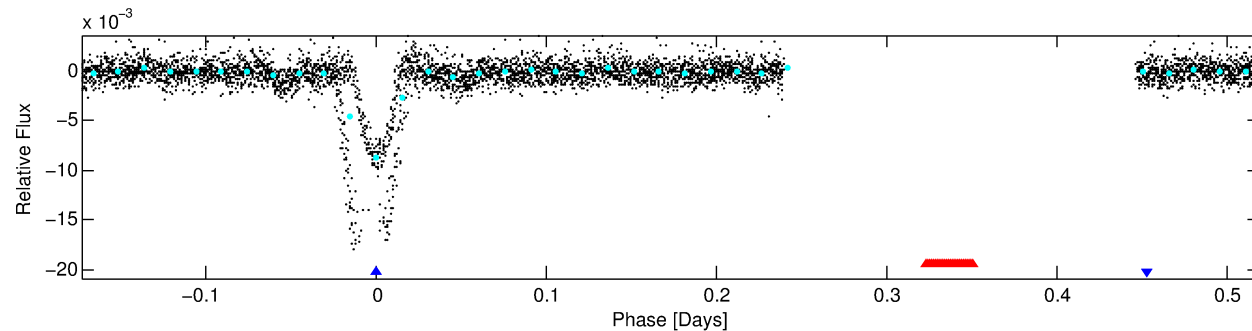
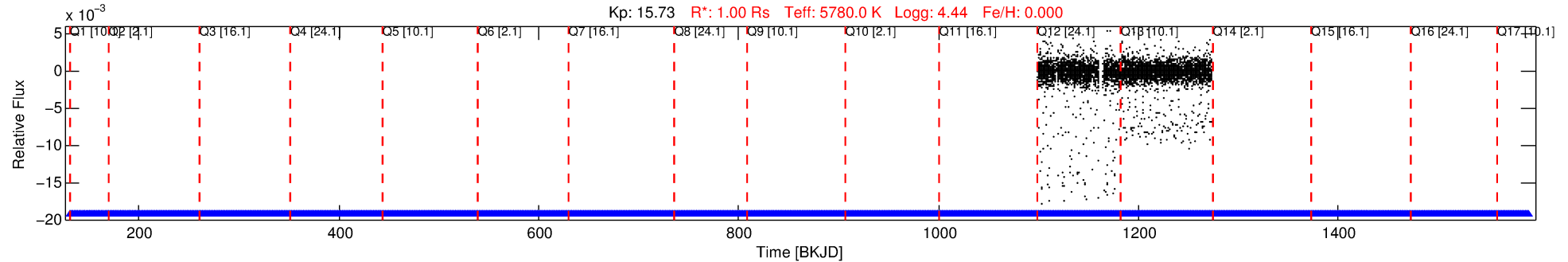
No Significant Match Found

DV One-Page Summary

KIC: 2707097 Candidate: 2 of 2 Period: 0.693 d

KOI: K06095 Corr: No Ephemeris Match

Kp: 15.73 R*: 1.00 Rs Teff: 5780.0 K Logg: 4.44 Fe/H: 0.000



TPS TCE Results:

Period = 0.69277 d
Epoch = 131.5829 BKJD

DV fit results are unavailable

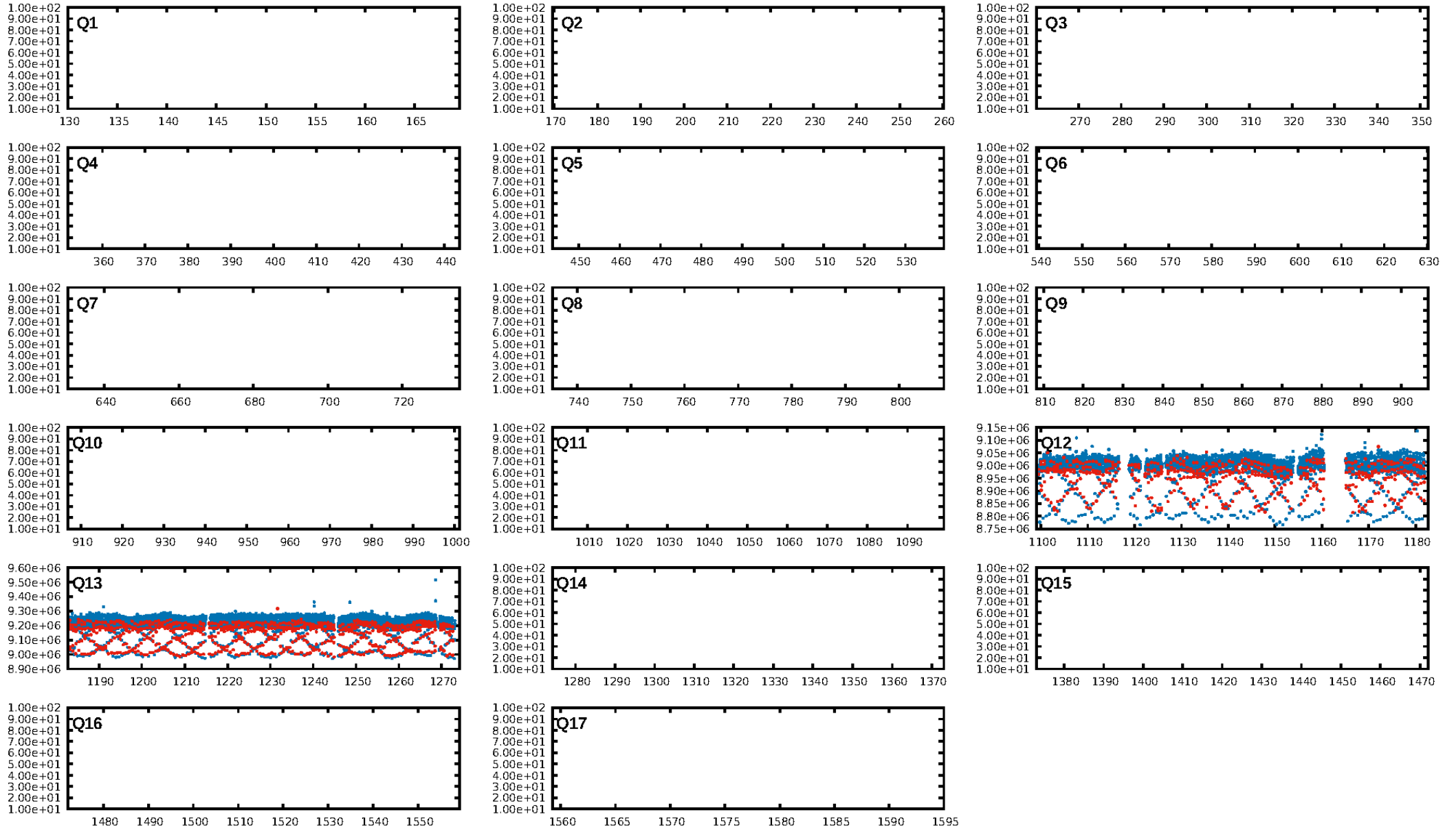
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [233/233]
GhostDiagnostic-chr: 12.98
Centroid-sig: 0.1%
Centroid-so: 0.997 arcsec [42.10σ]
OotOffset-rm: 0.056 arcsec [0.67σ]
KicOffset-rm: 0.134 arcsec [0.70σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

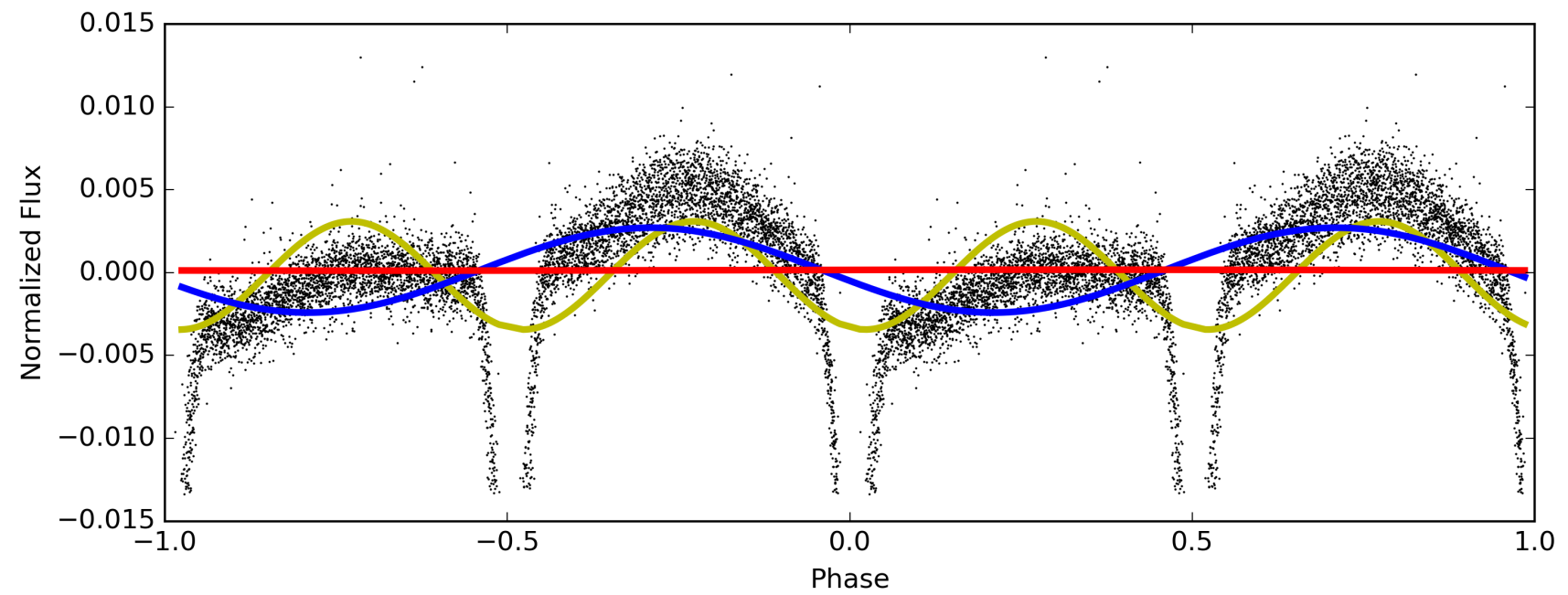
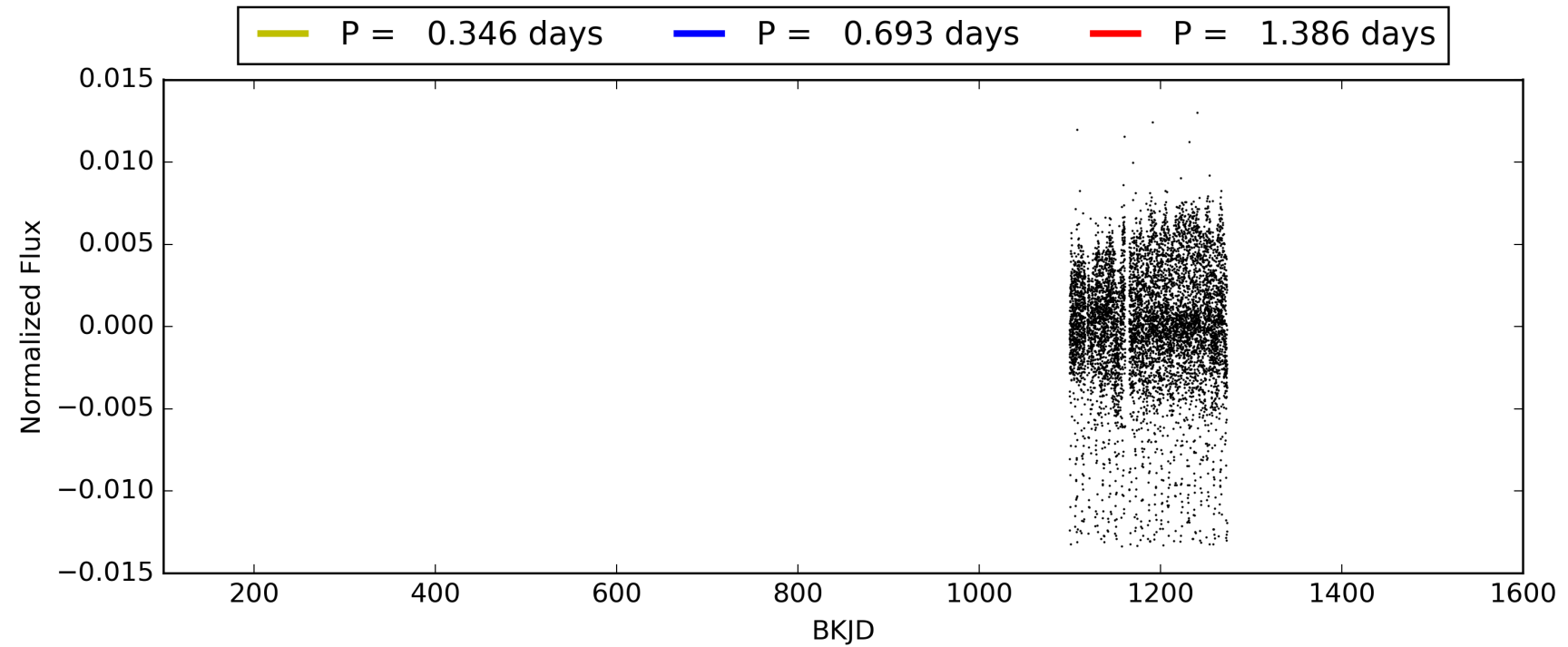
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:27:43 Z

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

TCE 002707097-02, PDC Light Curves

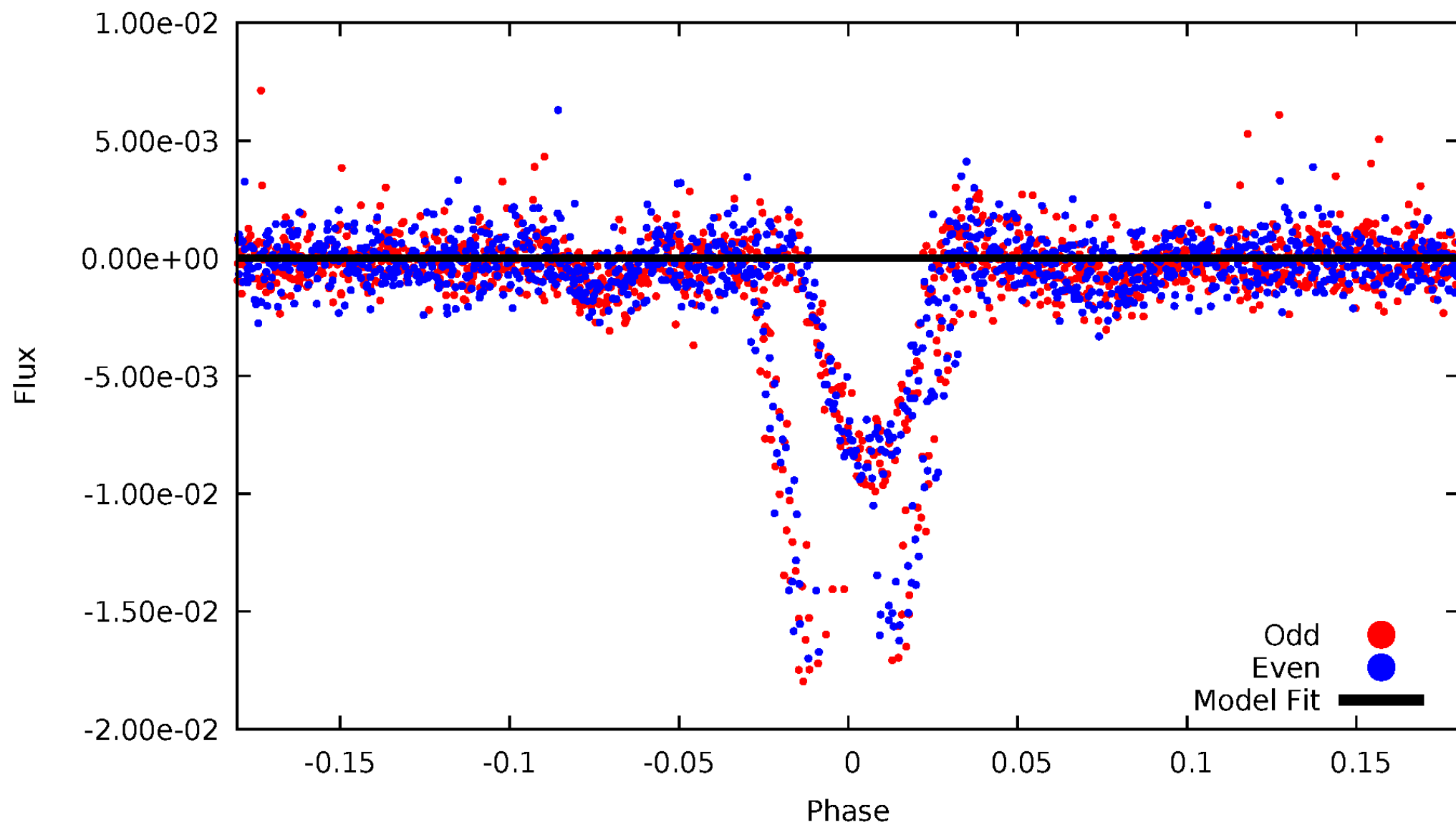


TCE 002707097-02



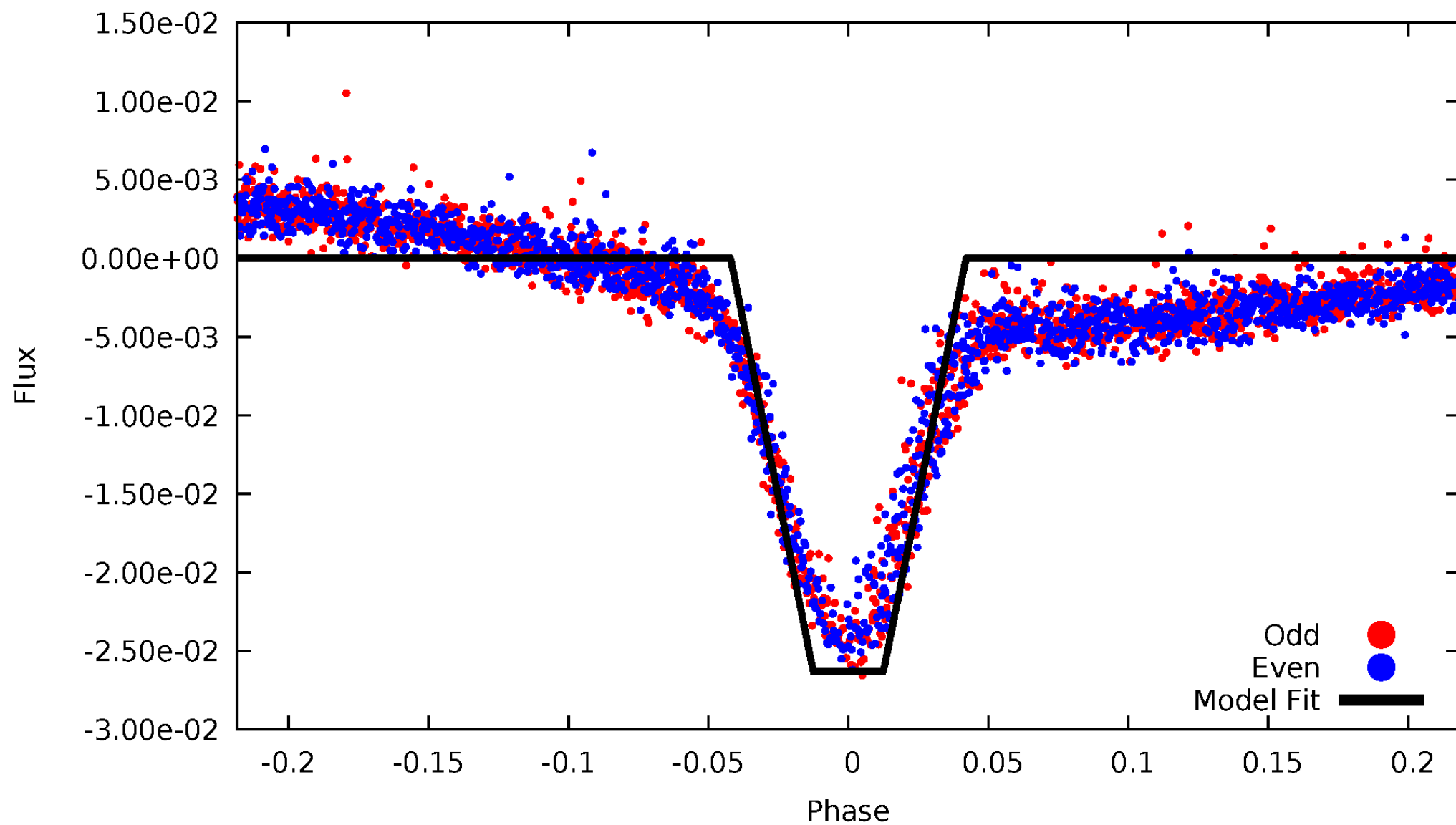
DV Odd/Even

TCE 002707097-02



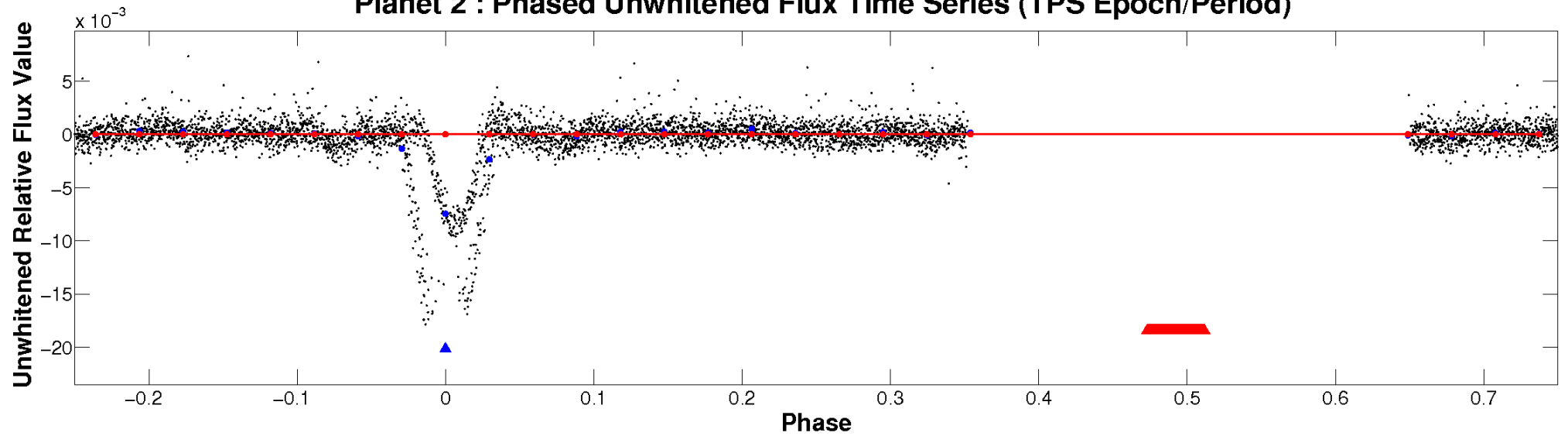
ALT Odd/Even

TCE 002707097-02



Non-Whitened Vs. Whitened Light Curve

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

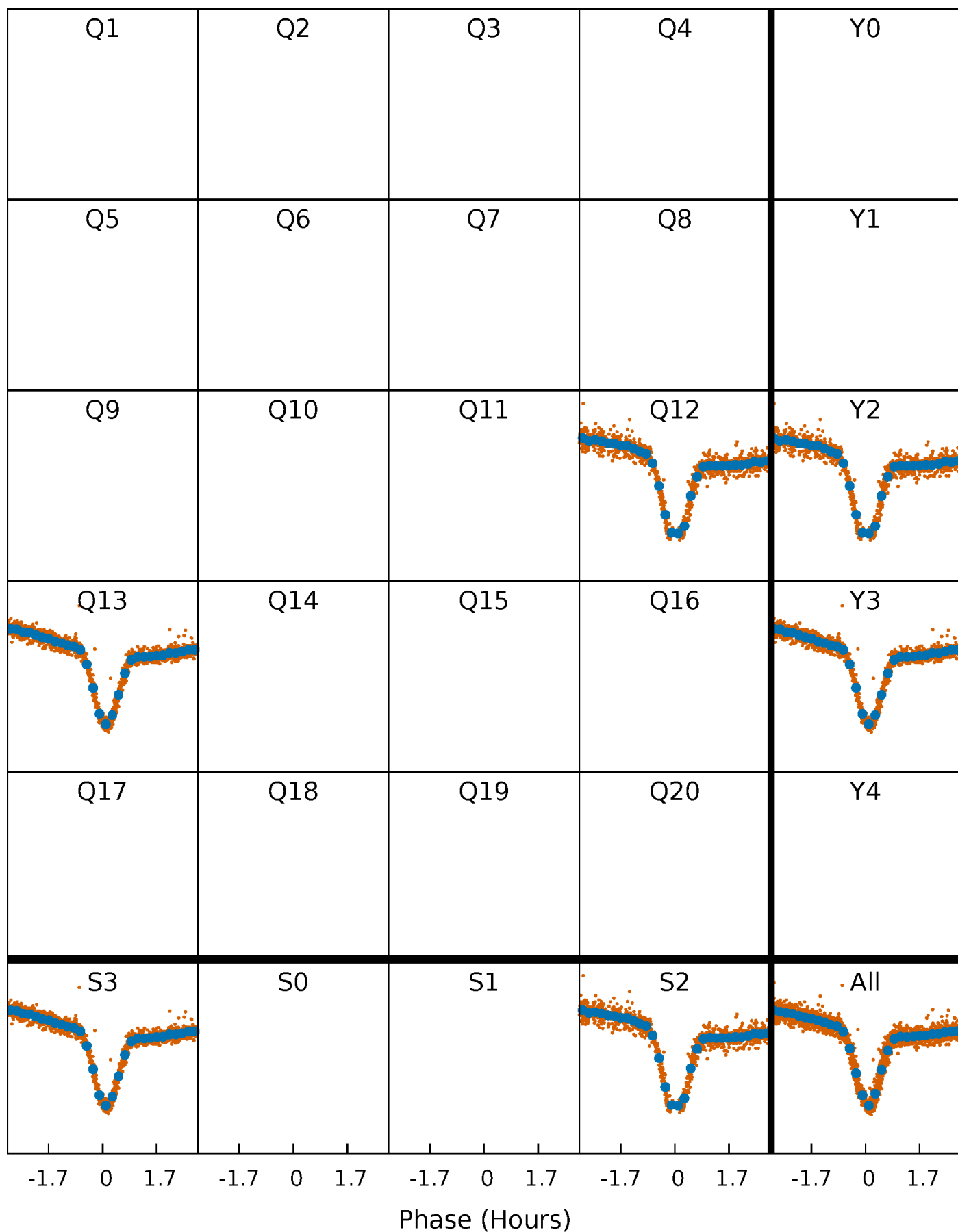


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



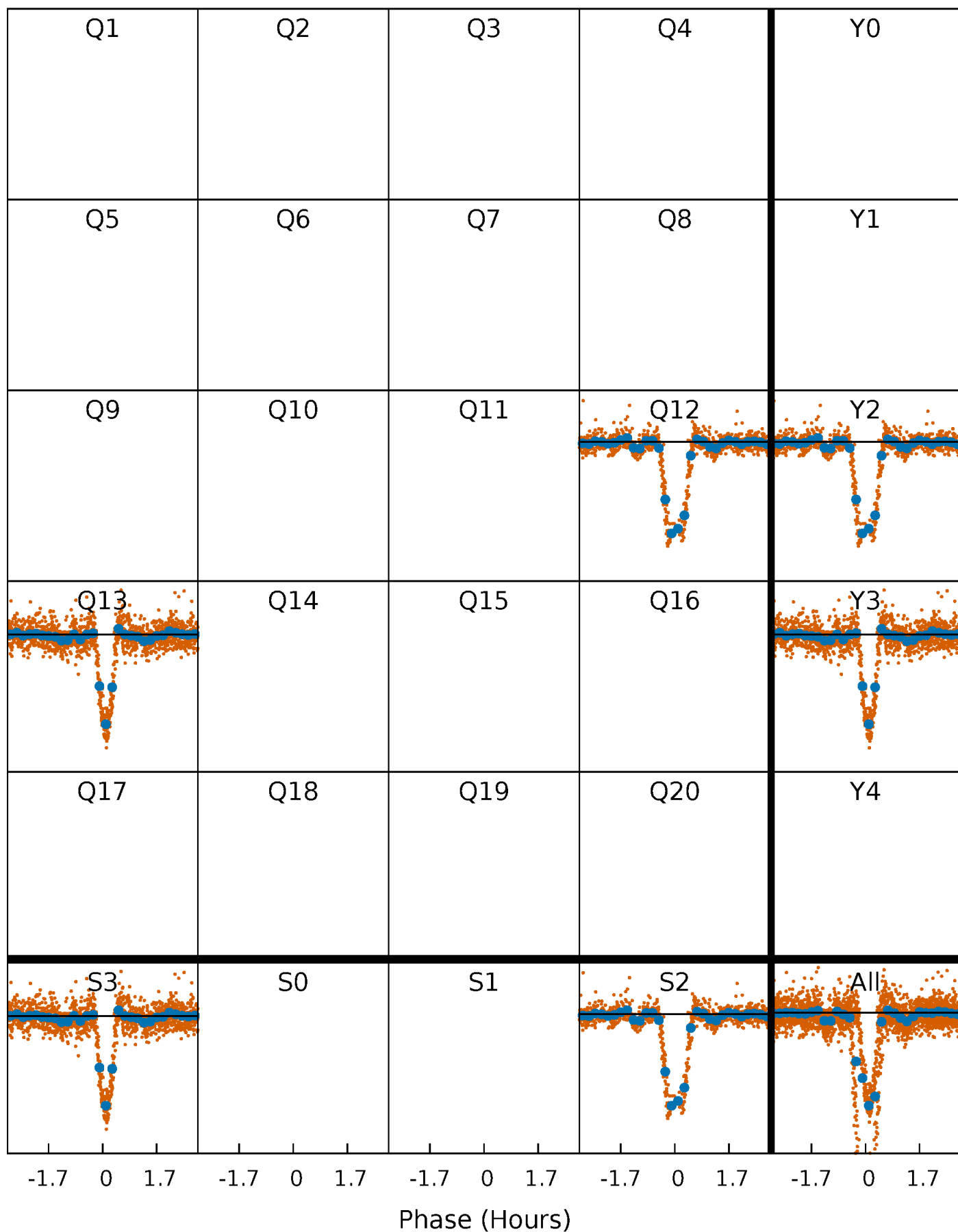
PDC Quarter-Phased Transit Curves

TCE 002707097-02 P= 0.692774 Days $T_0=131.582869$ (BKJD)



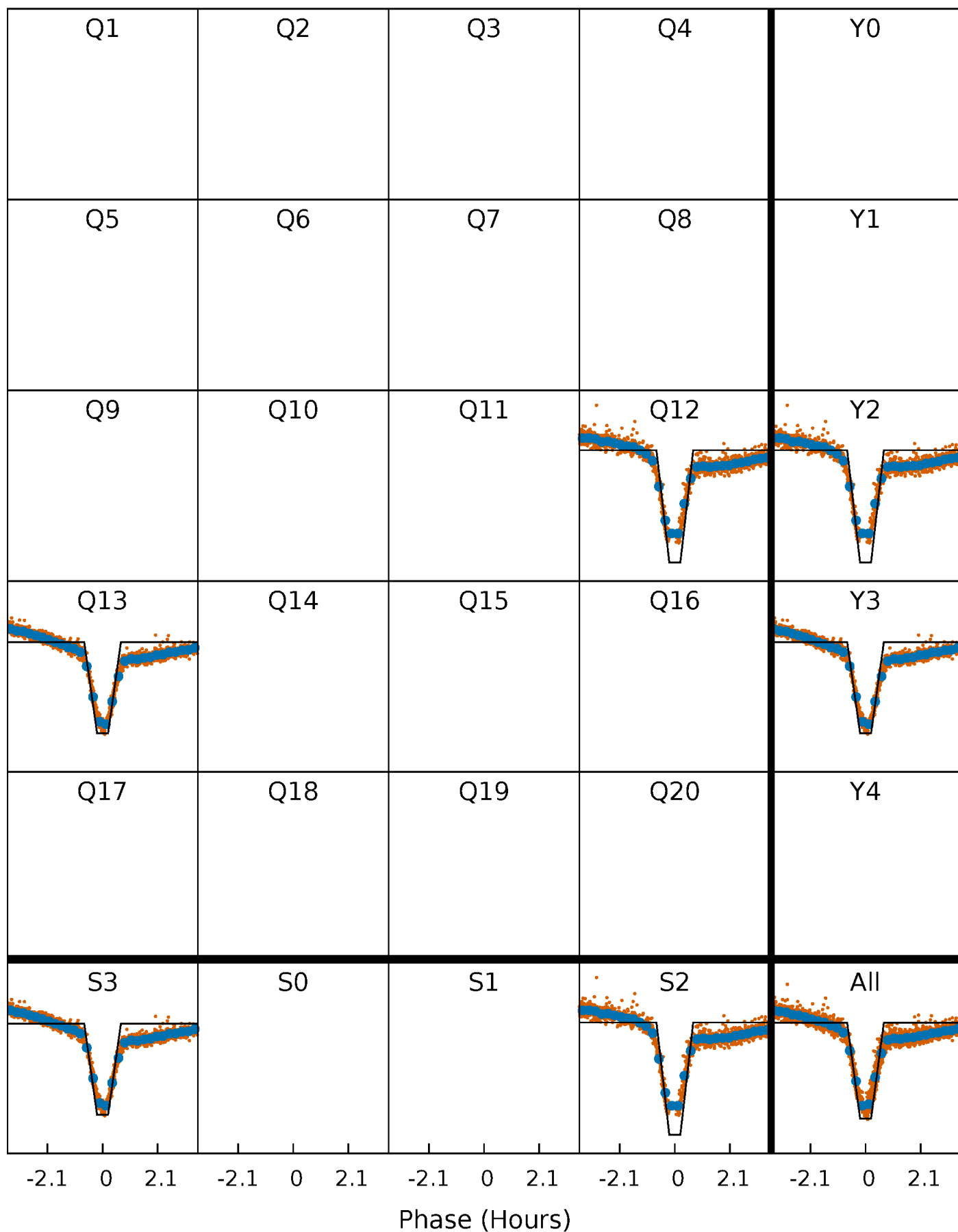
DV Quarter-Phased Transit Curves

TCE 002707097-02 $P = 0.692774$ Days $T_0 = 131.582869$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

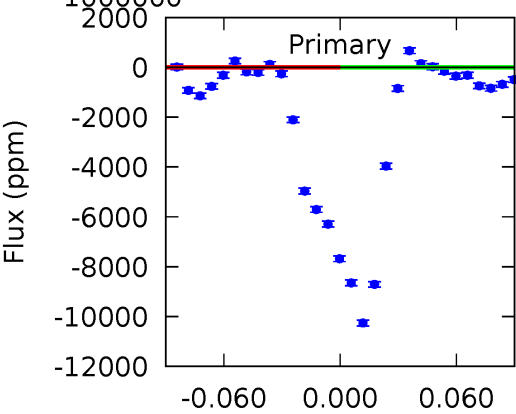
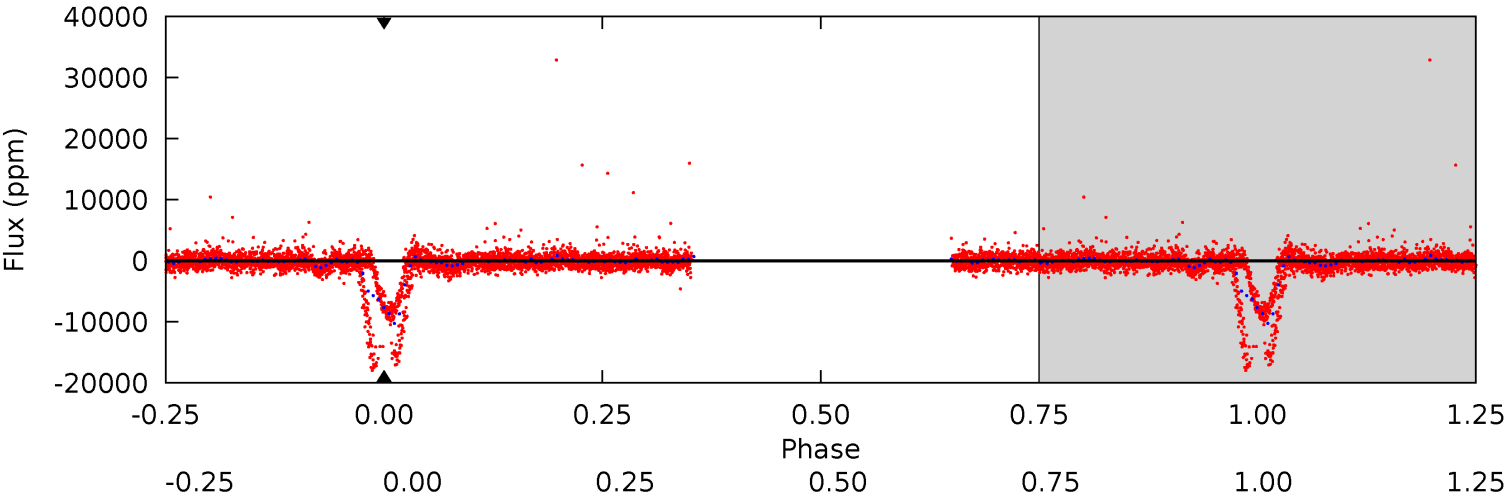
TCE 002707097-02 $P = 0.692774$ Days $T_0 = 131.586922$ (BKJD)



DV Model-Shift Uniqueness Test

002707097-02, P = 0.692774 Days, E = 131.582869 Days

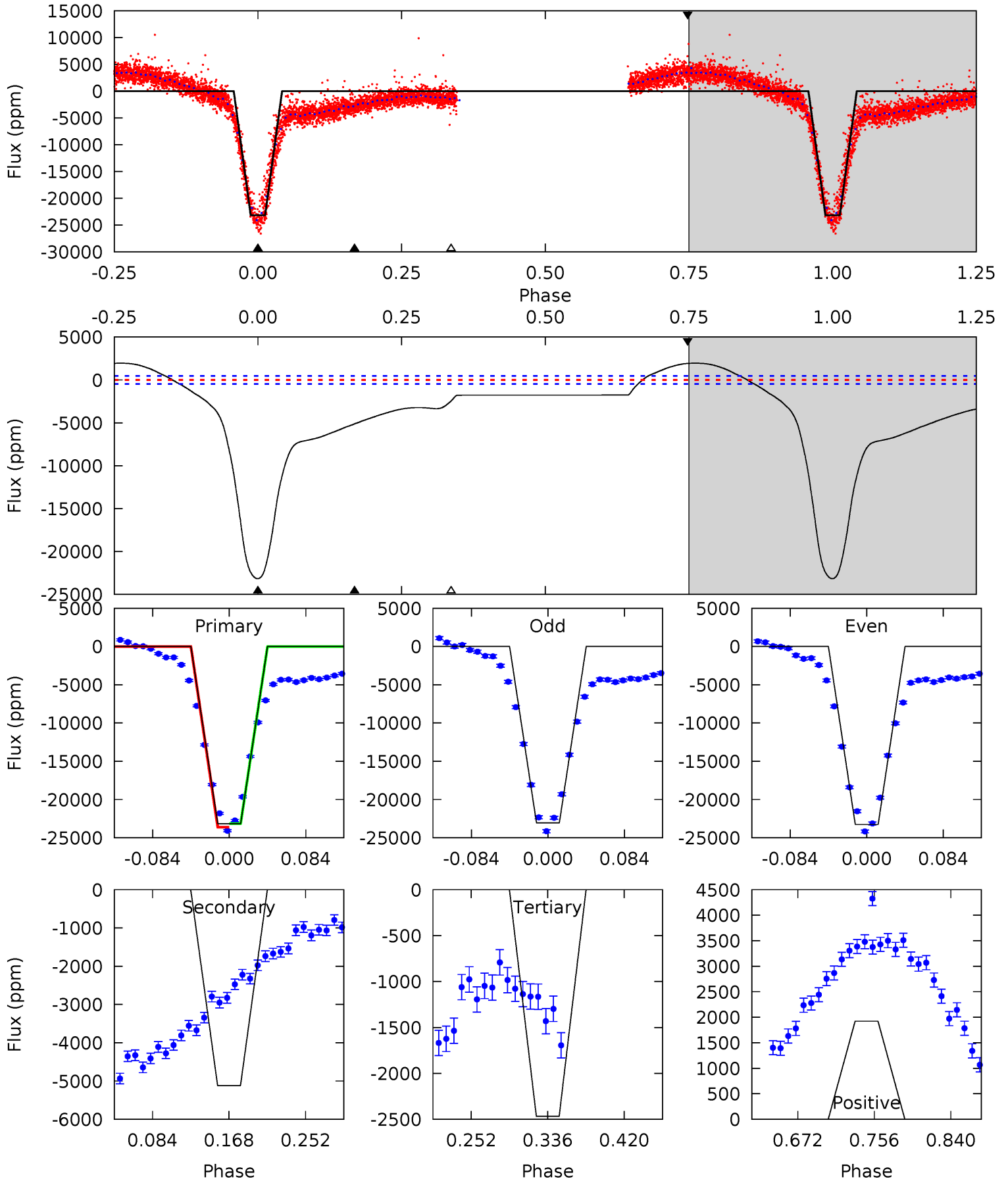
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

002707097-02, P = 0.692774 Days, E = 131.586922 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
224.2	49.6	23.9	18.6	4.60	1.73	19.0	200.4	205.6	25.7	31.0	1.08	1.00	0.08	1.99



Stellar Parameters For KIC 002707097

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 002707097-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$13.35^{+8.94}_{-8.48}$	2878^{+137}_{-132}	3253^{+9444}_{-14760}	$0.840^{+126.202}_{-101.013}$
Alt.	-5121 ± 103	$18.35^{+10.54}_{-9.36}$	2883^{+134}_{-138}	3972^{+1344}_{-724}	$1.996^{+5.933}_{-1.190}$

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

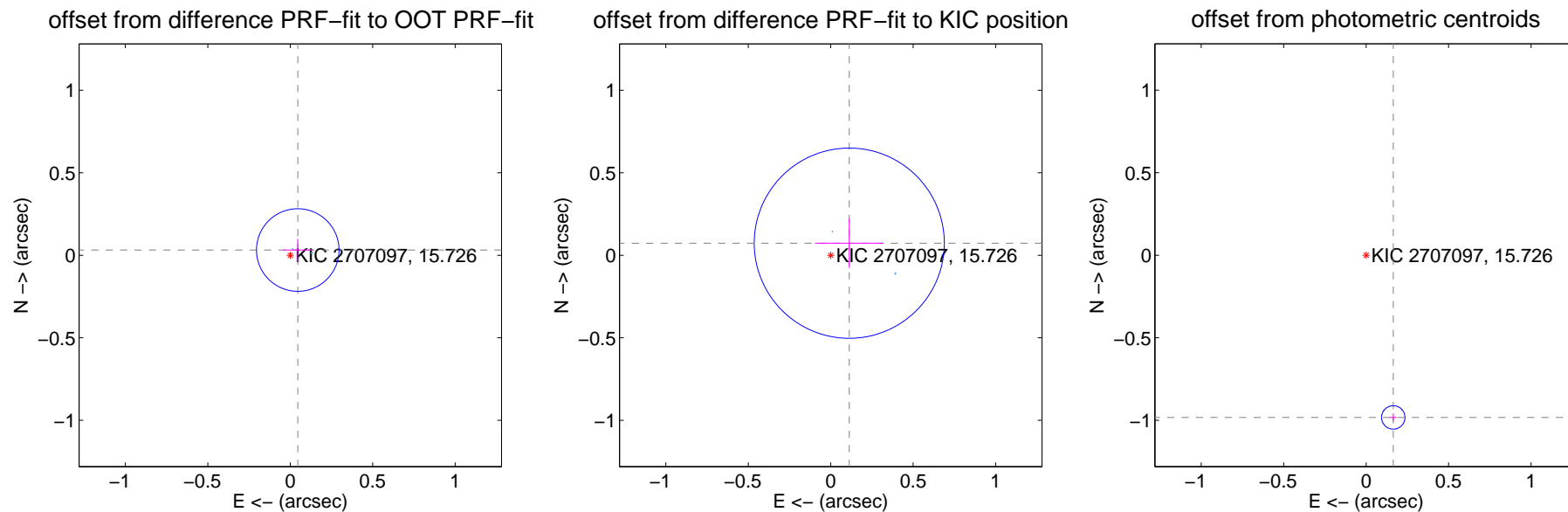
DV Centroid Data

Supplemental centroid analysis for 002707097-02. Kepler magnitude: 15.73. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.056 ± 0.083	0.67	-0.045 ± 0.090	0.032 ± 0.068
PRF-fit source offset from KIC position	0.134 ± 0.192	0.70	-0.113 ± 0.208	0.073 ± 0.149
photometric centroid source offset	1.00 ± 0.02	42.10	-0.16 ± 0.02	-0.98 ± 0.02



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.

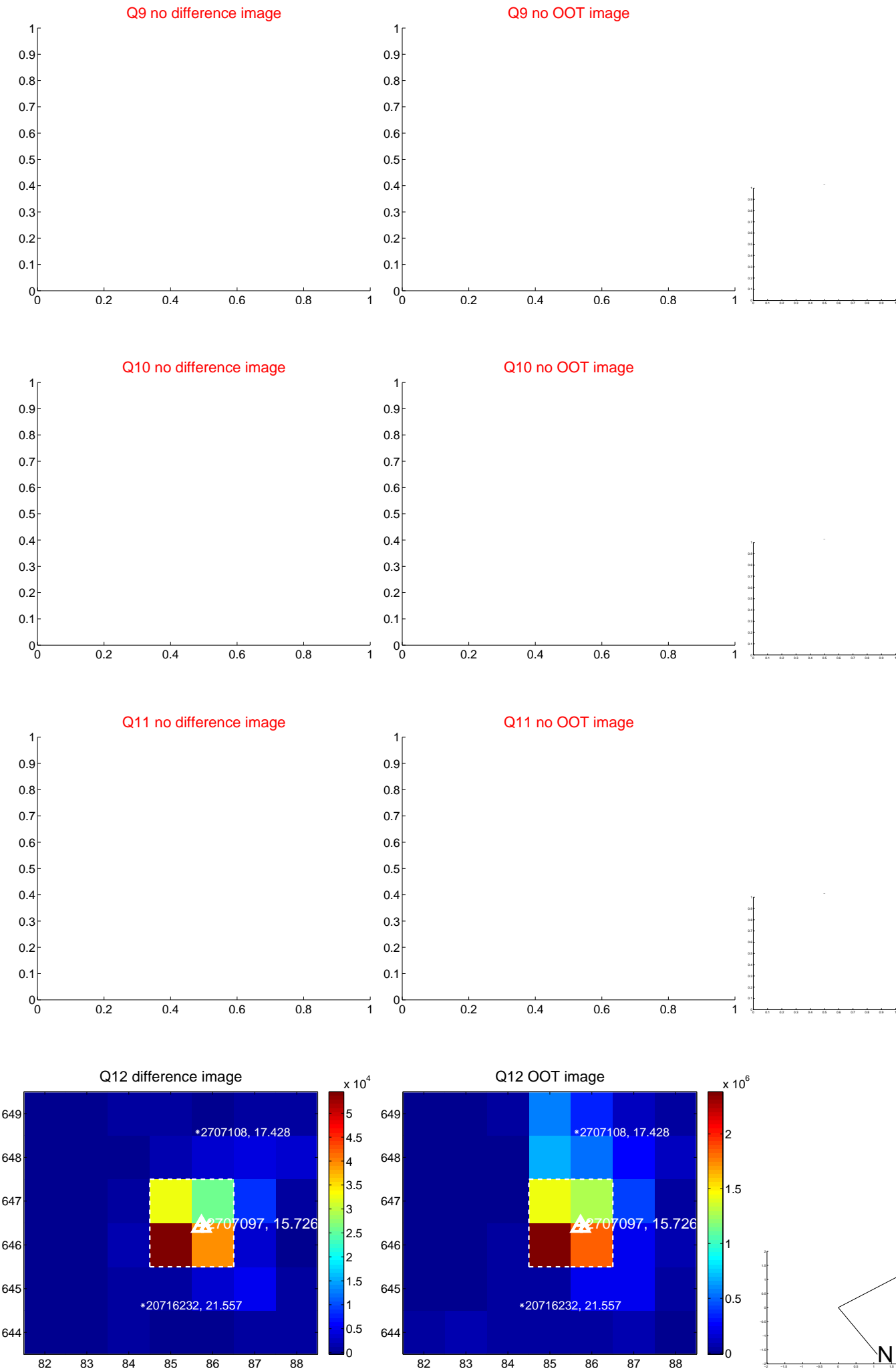
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



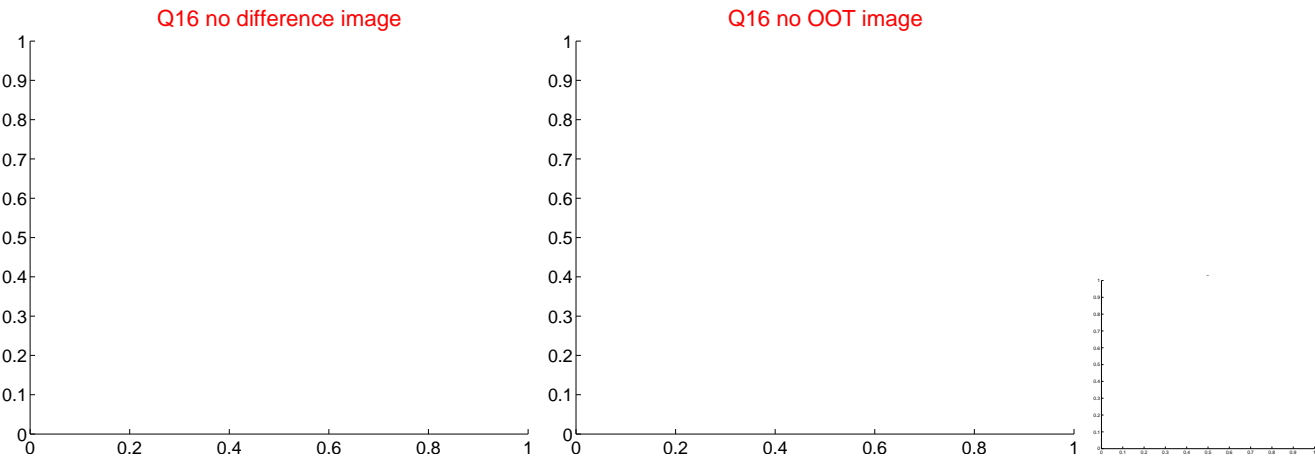
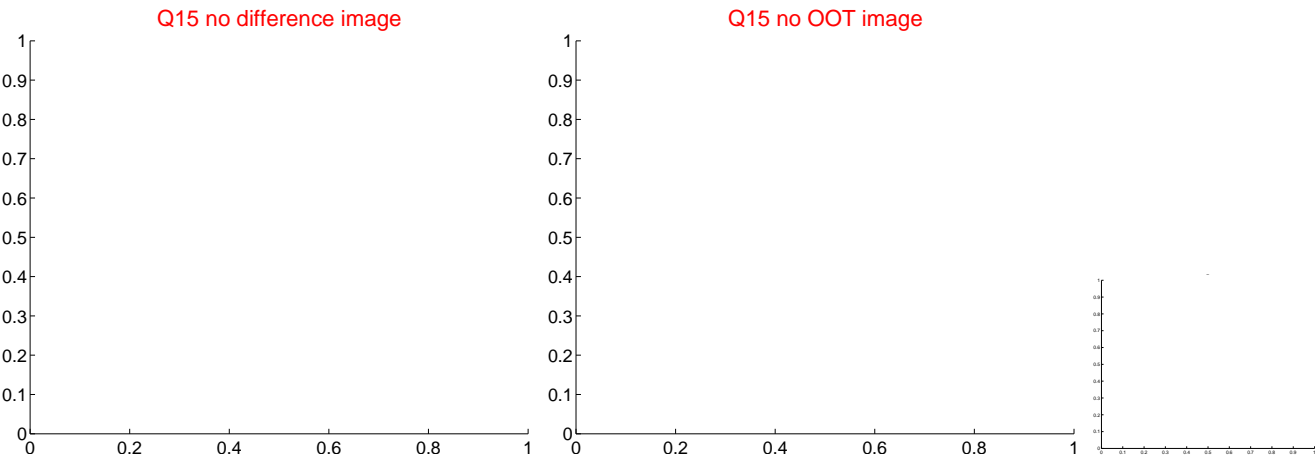
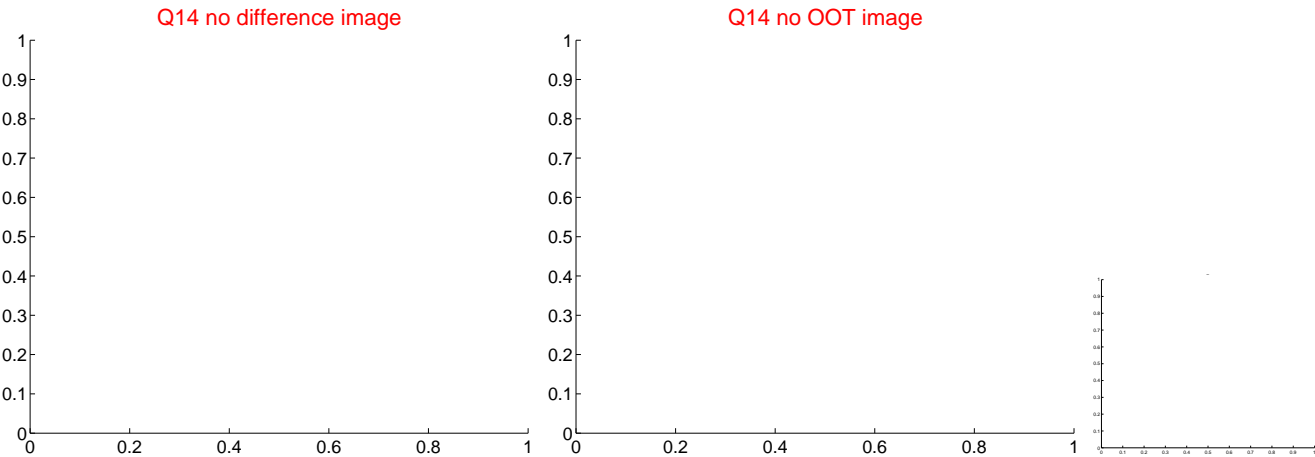
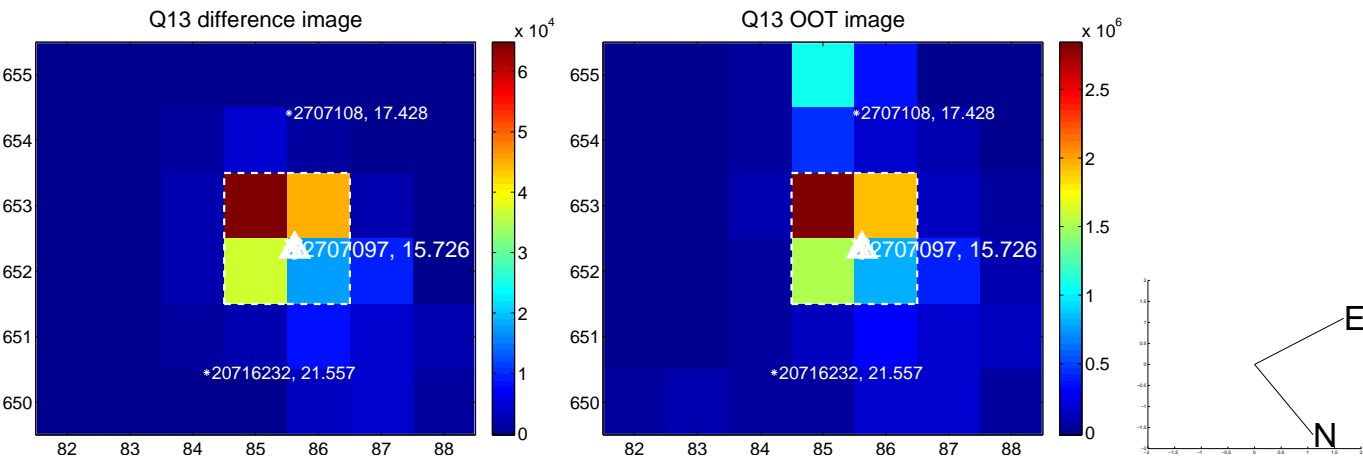
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



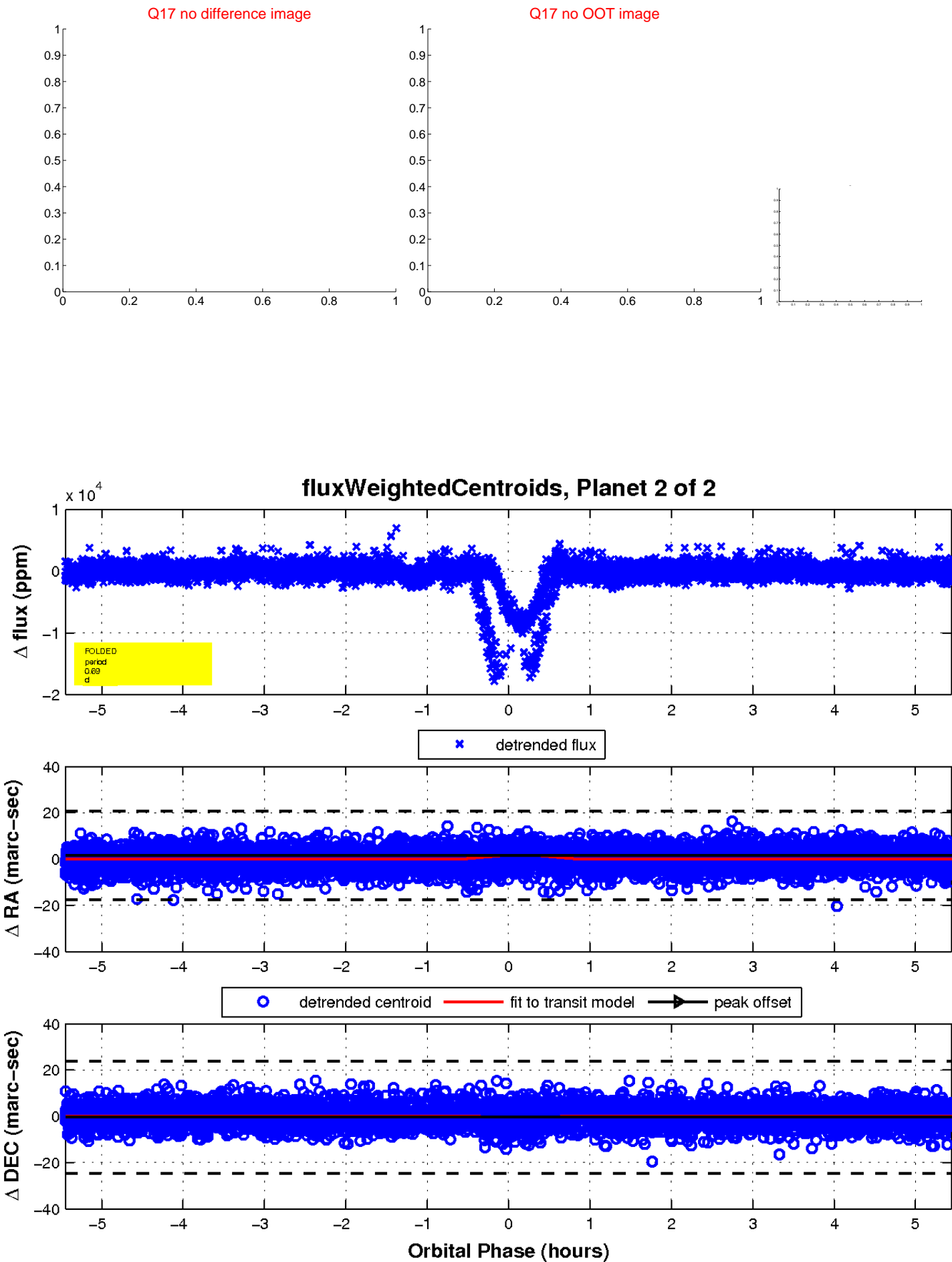
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

