

KIC 004737595

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})
004737595-01	OBS	No	369.929170	172.078422	6627.1	15.000	53.3	-1.0	0.66	4497	5.15	0.21
004737595-02	OBS	No	368.090150	175.409092	9419.9	15.000	81.0	-1.0	0.66	4497	6.14	0.21
004737595-03	OBS	No	370.242485	173.066044	6902.3	12.500	46.8	-1.0	0.66	4497	5.26	0.21
004737595-04	OBS	No	364.997431	191.472844	3234.7	29.354	27.2	7.4	0.66	4497	3.89	0.21
004737595-05	OBS	No	359.985104	197.448211	52879.5	32.654	46.0	66.4	0.66	4497	26.76	0.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004737595-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
004737595-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
004737595-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
004737595-04	OBS	FP	0.00	1	0	0	0	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004737595-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

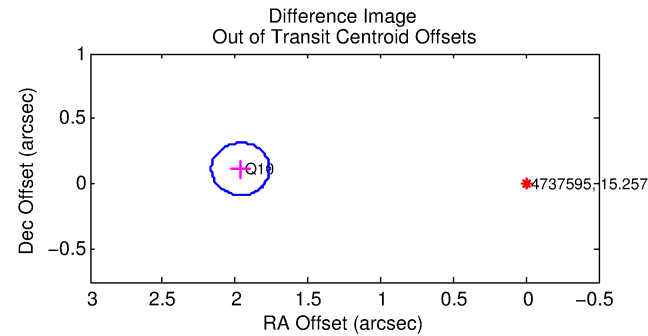
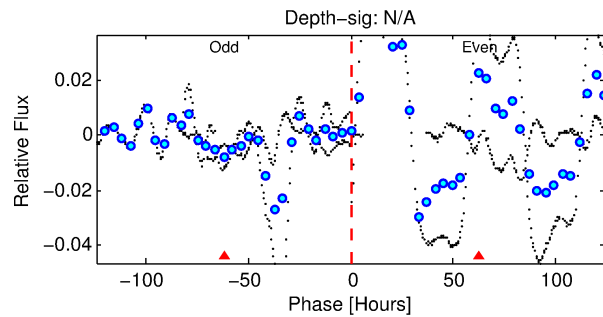
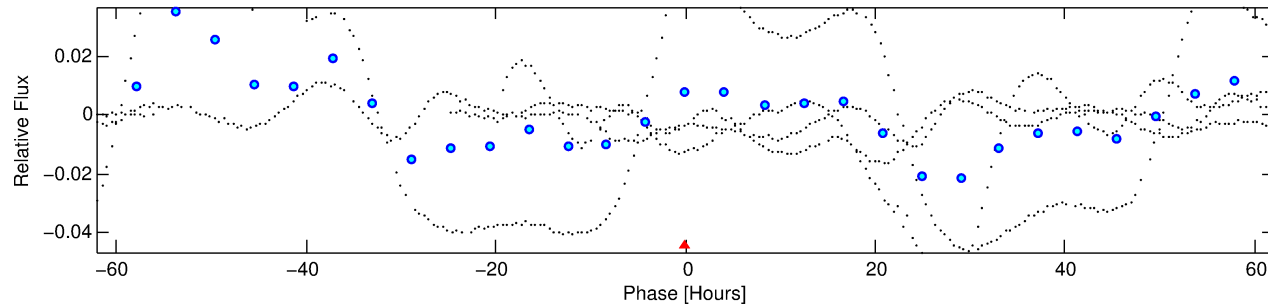
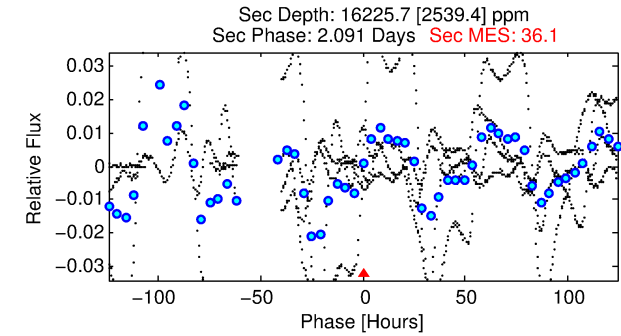
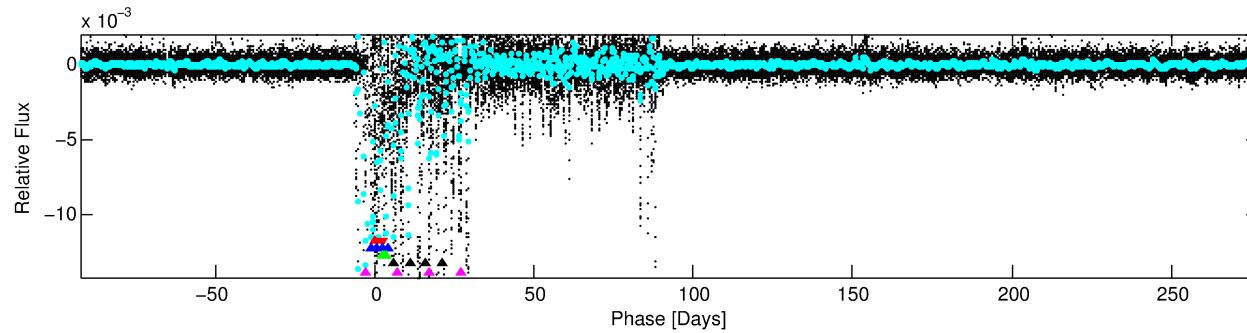
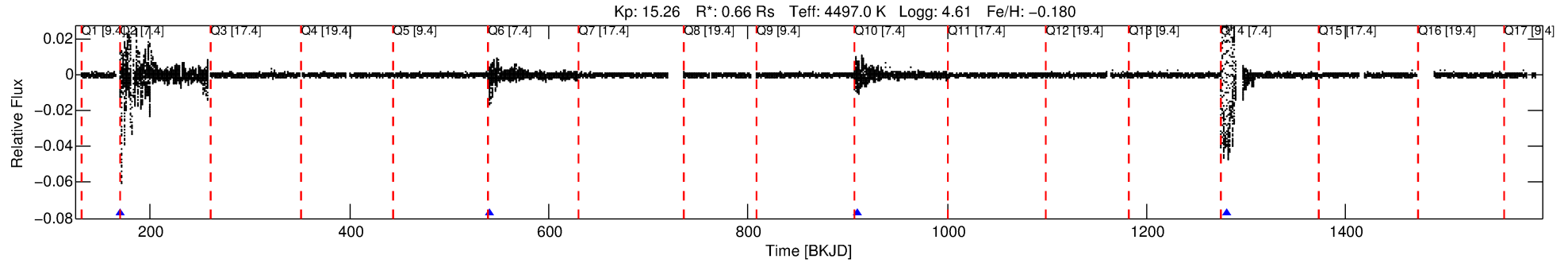
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004737595-01

No Significant Match Found

DV One-Page Summary

KIC: 4737595 Candidate: 1 of 5 Period: 369.929 d



TPS TCE Results:

Period = 369.92917 d
Epoch = 172.0784 BKJD

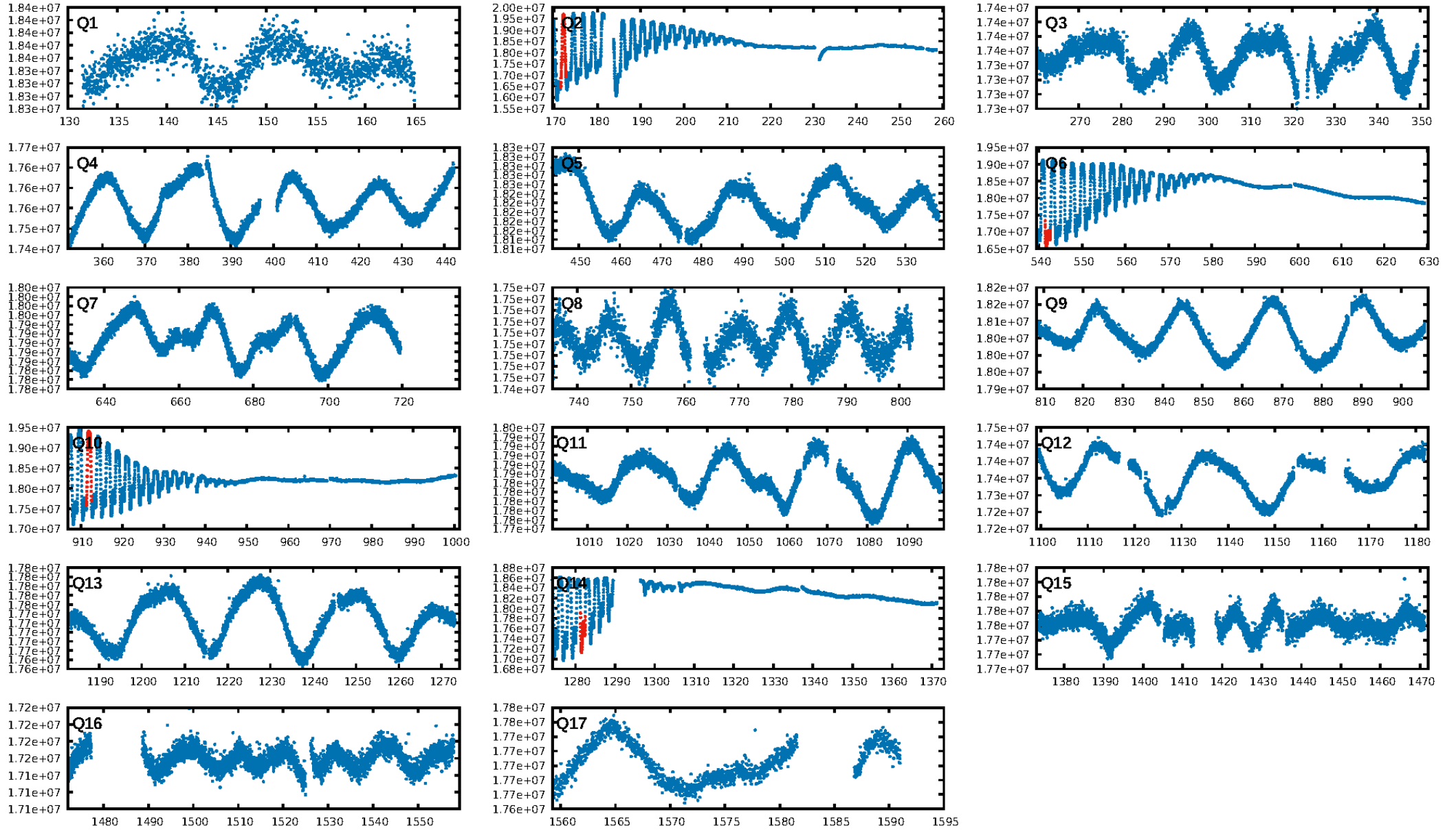
DV fit results are unavailable

DV Diagnostic Results:

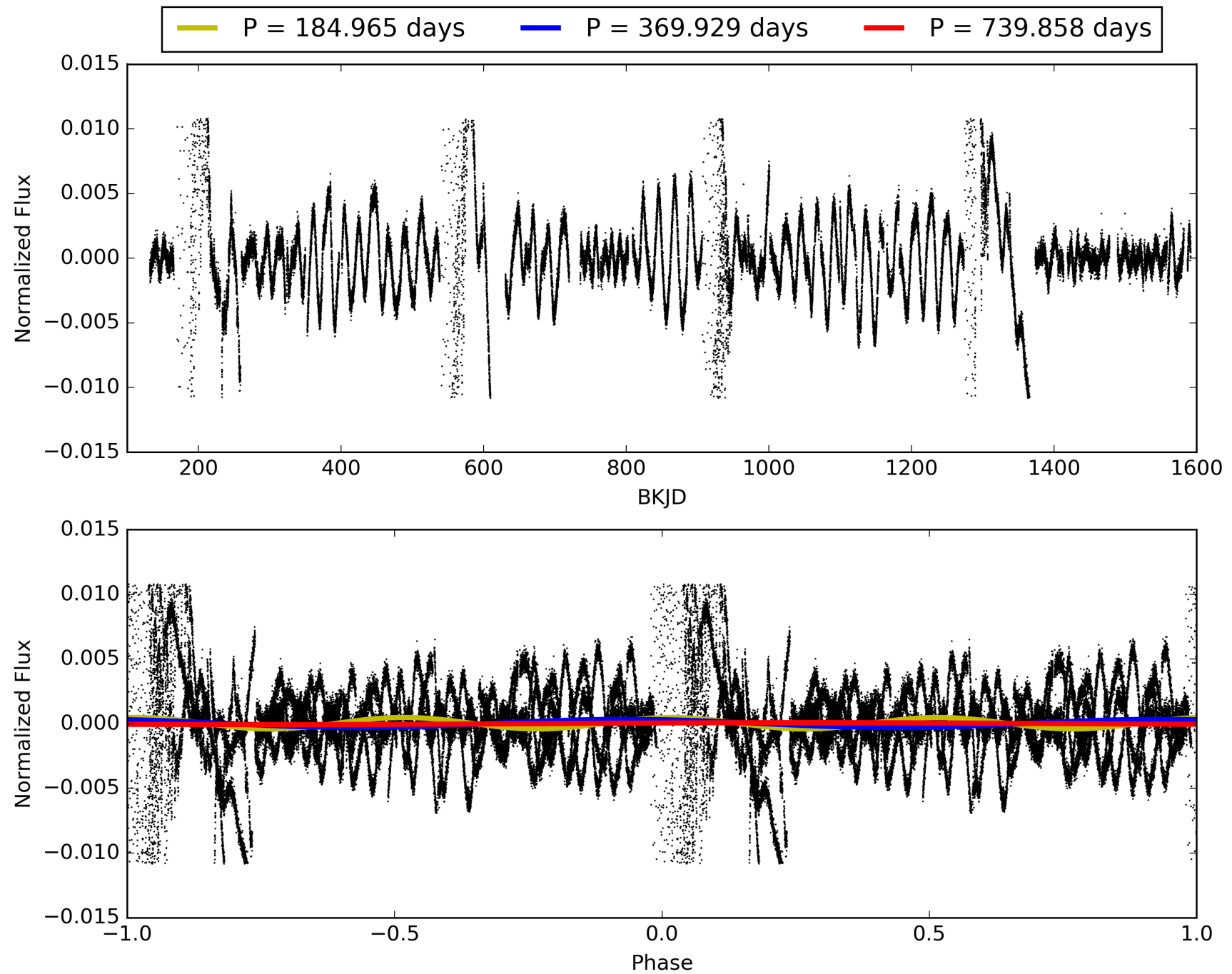
ShortPeriod-sig: 96.3% [2.08 σ]
LongPeriod-sig: 30.0% [0.39 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.38e-78
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.029

Centroid-sig: N/A
Centroid-so: 2.959 arcsec [7.89 σ]
OotOffset-rm: 1.968 arcsec [29.48 σ]
KicOffset-rm: 1.956 arcsec [29.30 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.00 [0/1]

TCE 004737595-01, PDC Light Curves

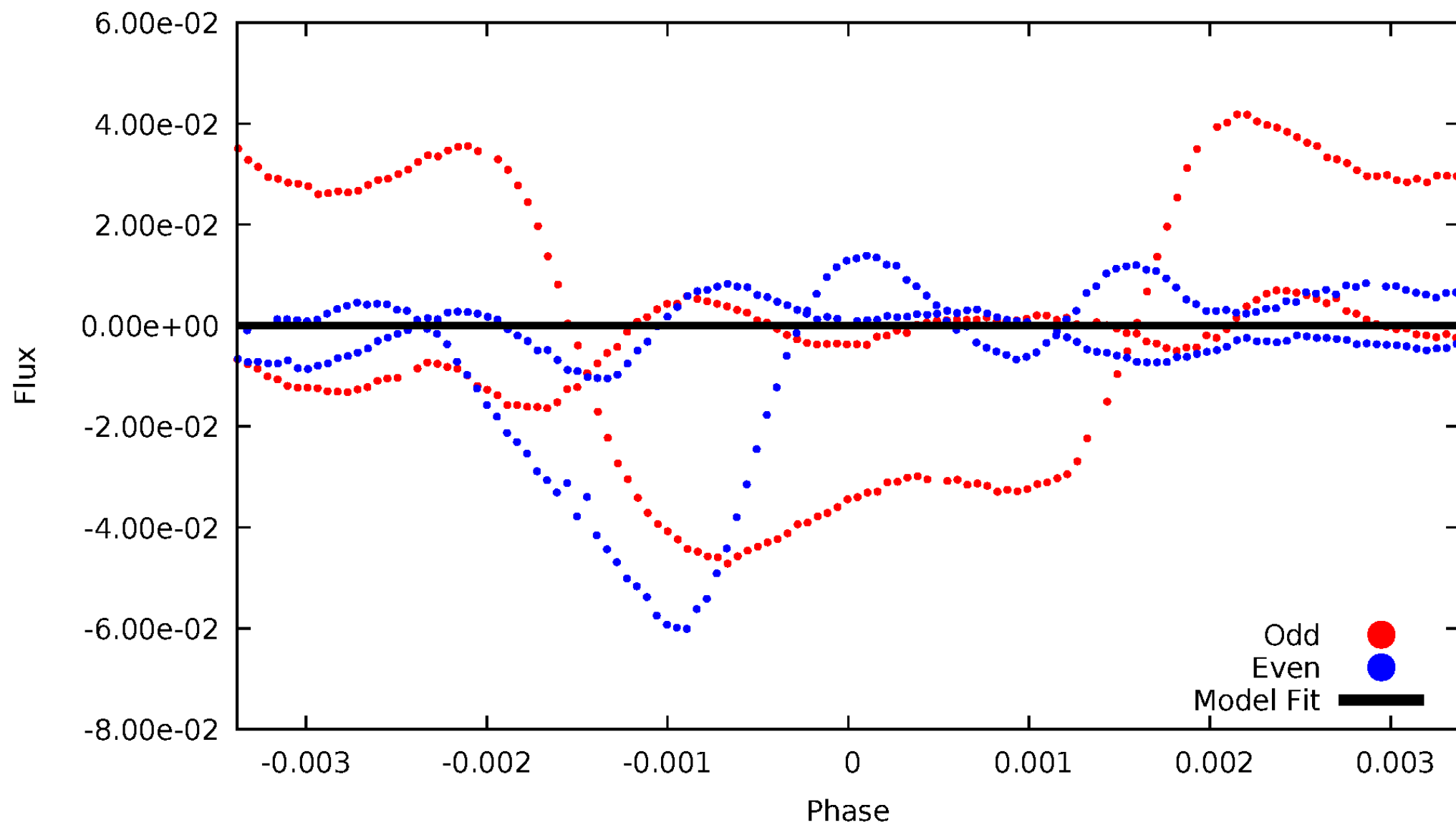


TCE 004737595-01



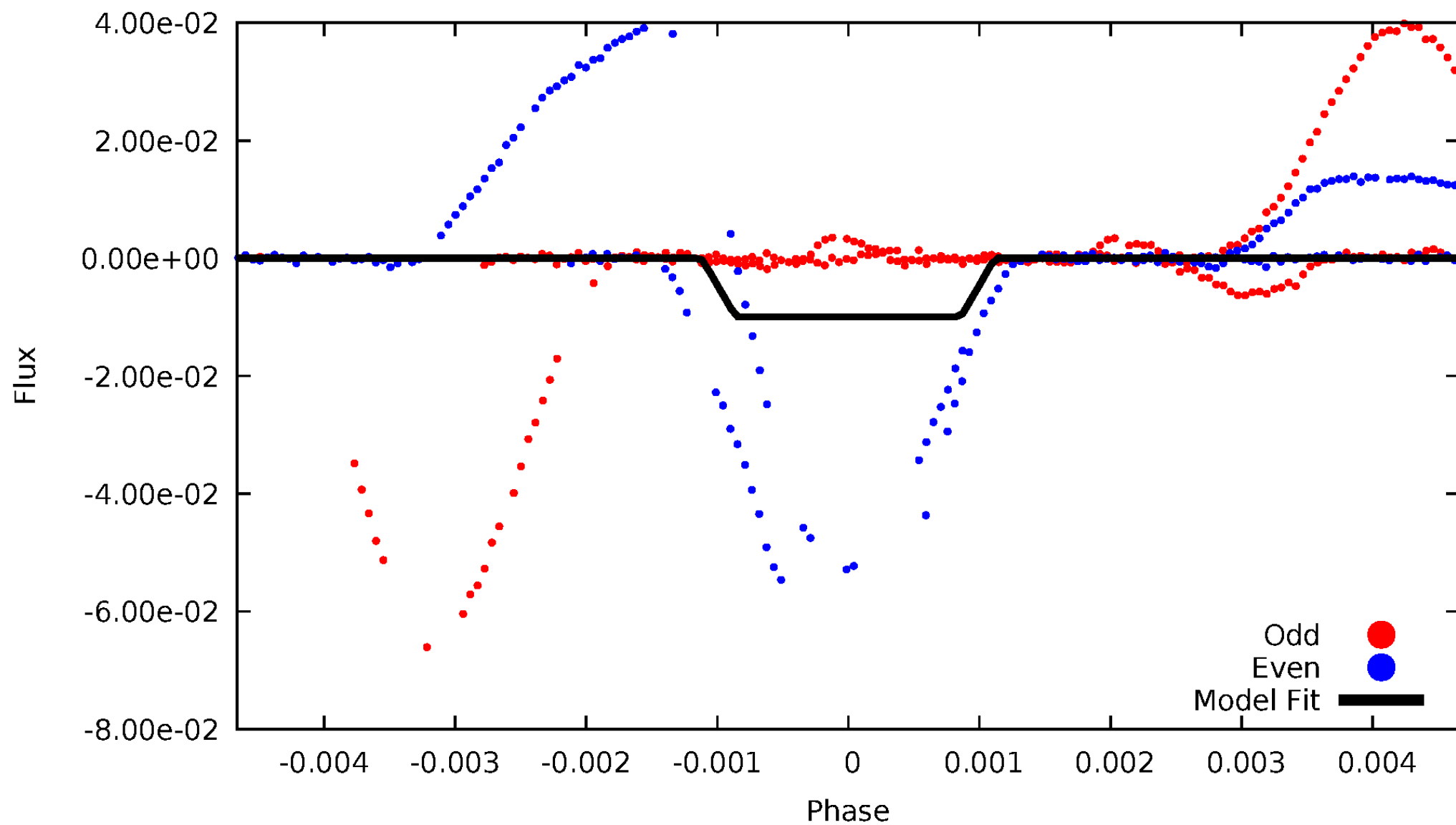
DV Odd/Even

TCE 004737595-01



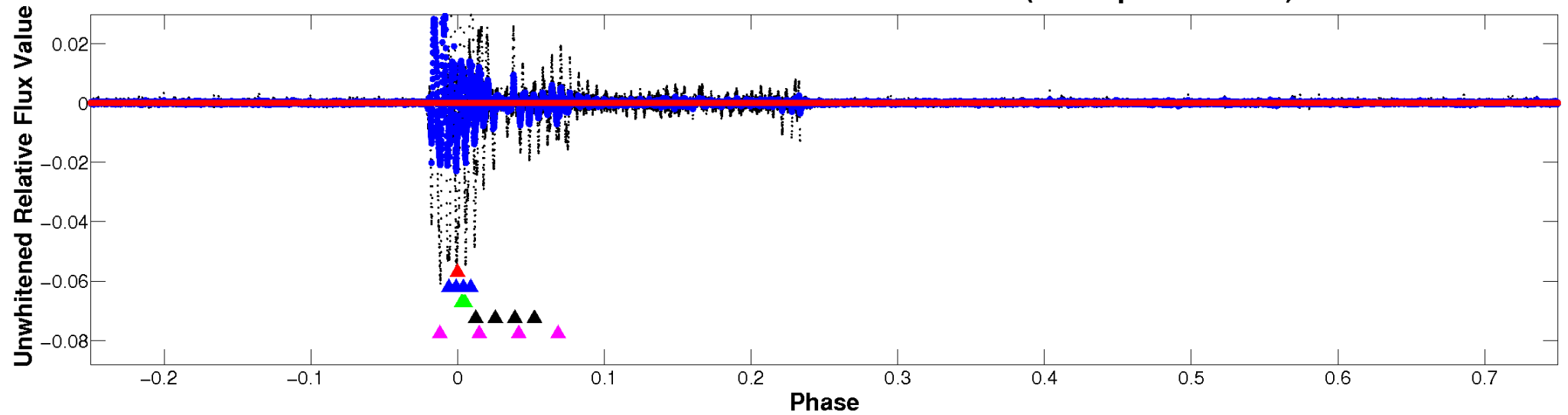
ALT Odd/Even

TCE 004737595-01

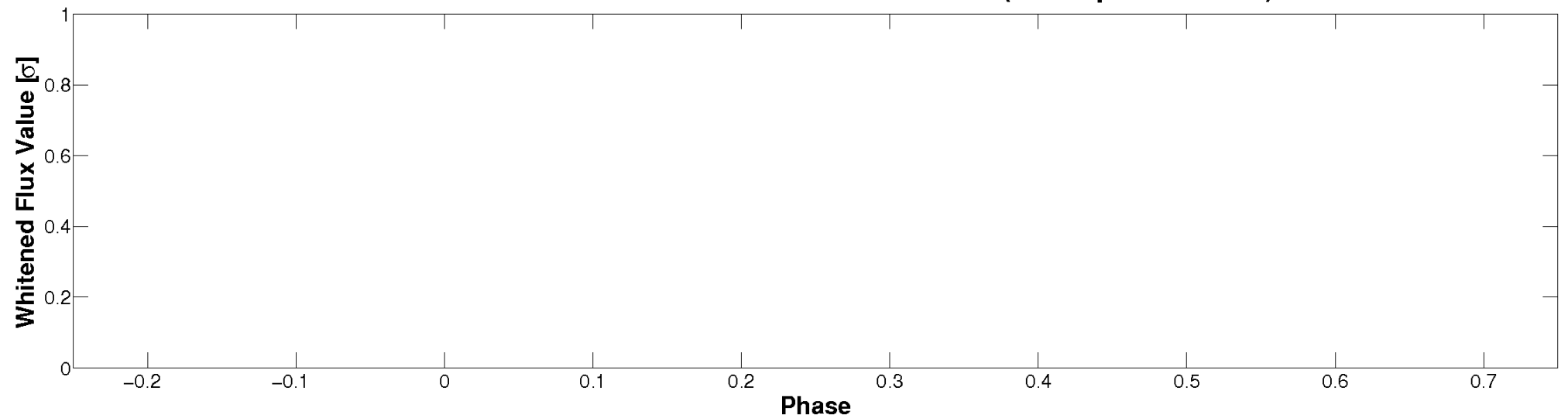


Non-Whitened Vs. Whitened Light Curve

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

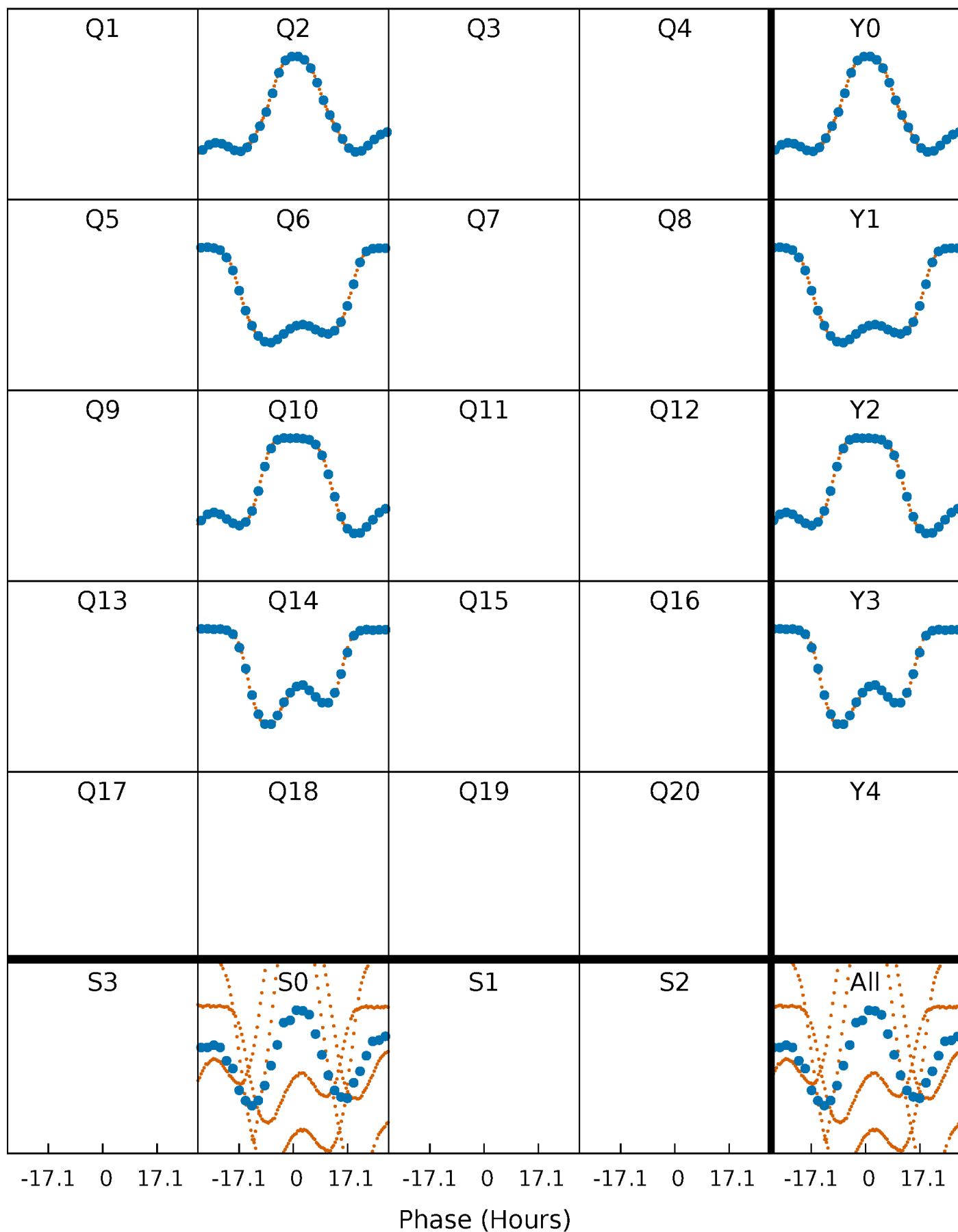


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



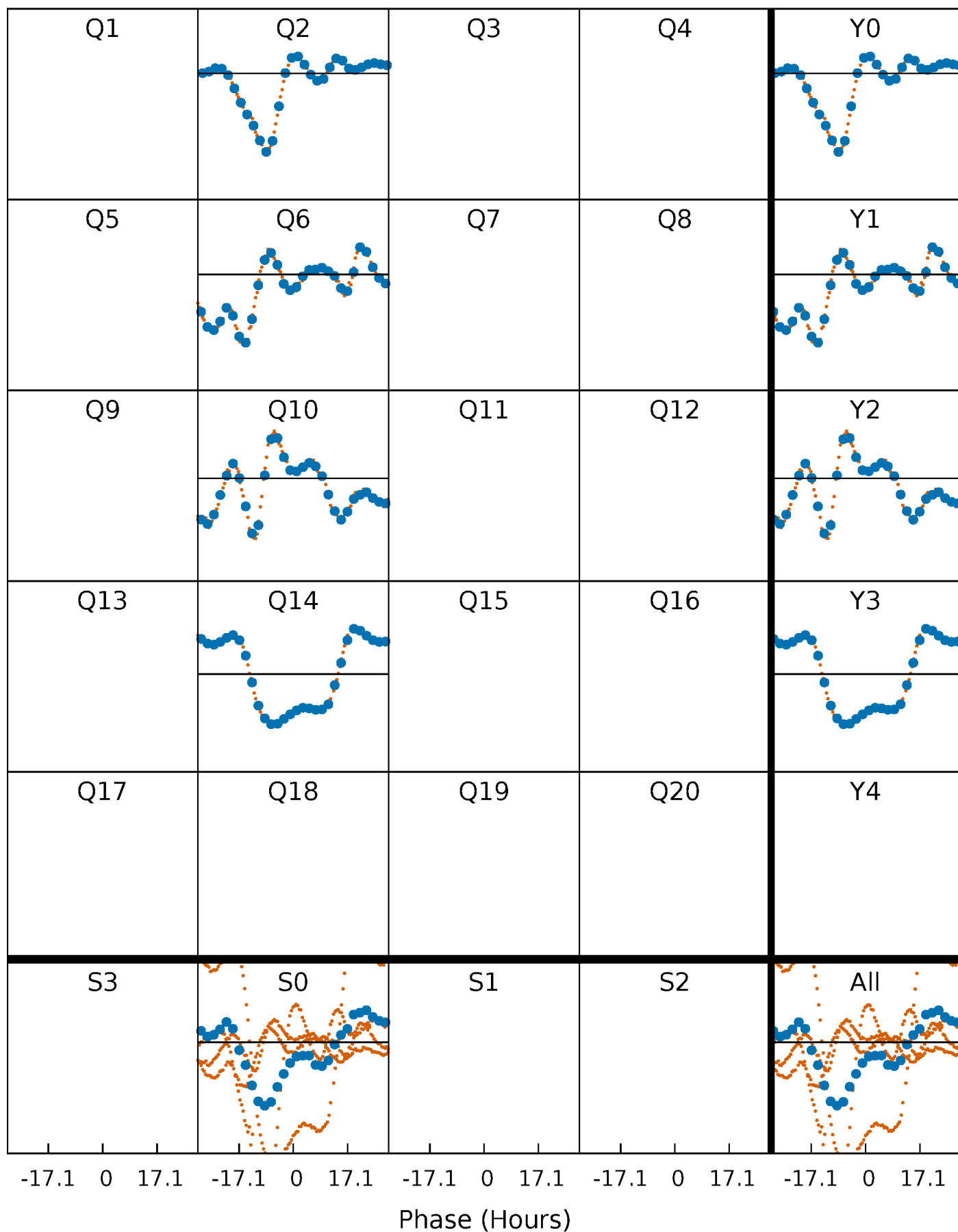
PDC Quarter-Phased Transit Curves

TCE 004737595-01 P=369.929170 Days $T_0=172.078422$ (BKJD)



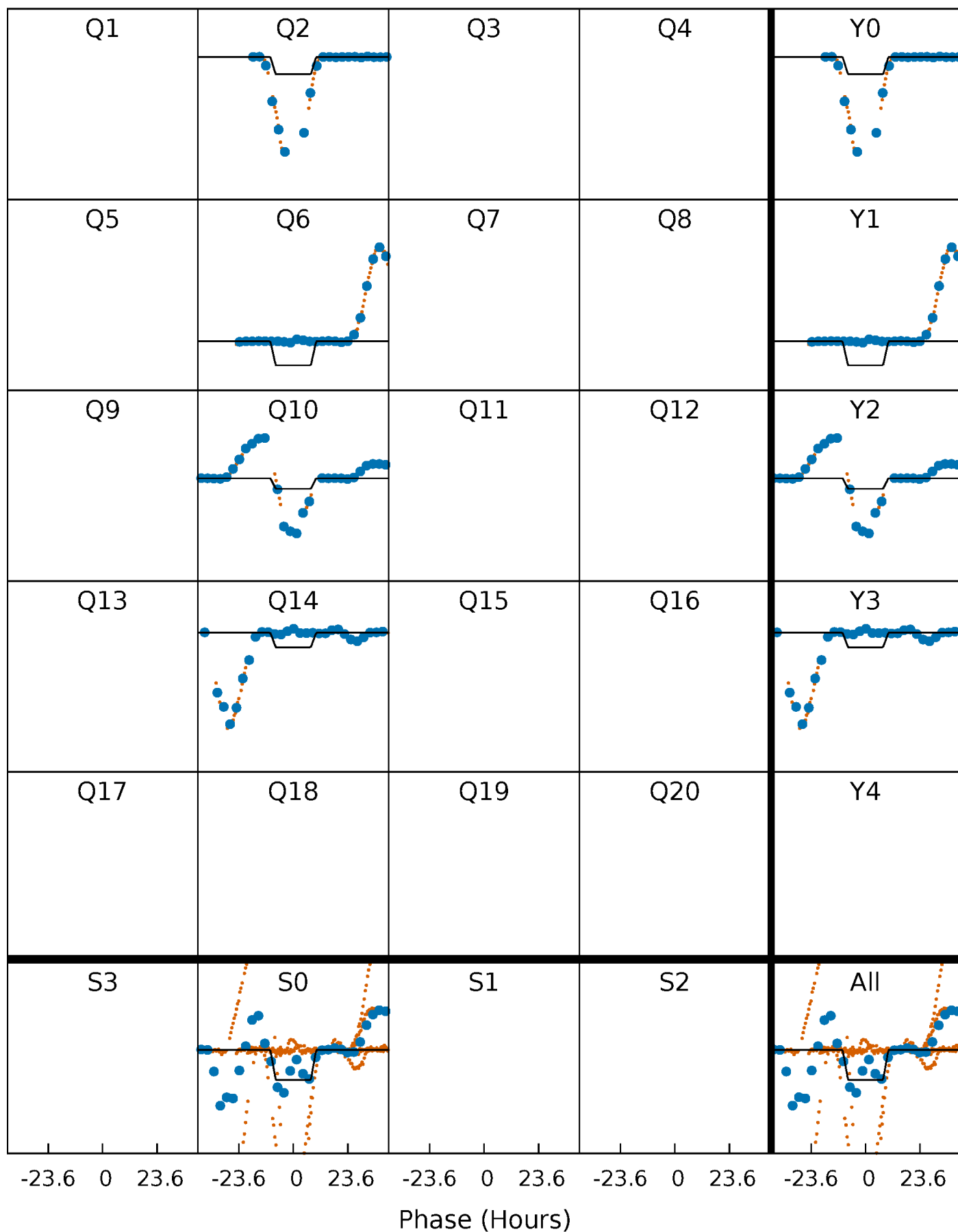
DV Quarter-Phased Transit Curves

TCE 004737595-01 P=369.929170 Days $T_0=172.078422$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

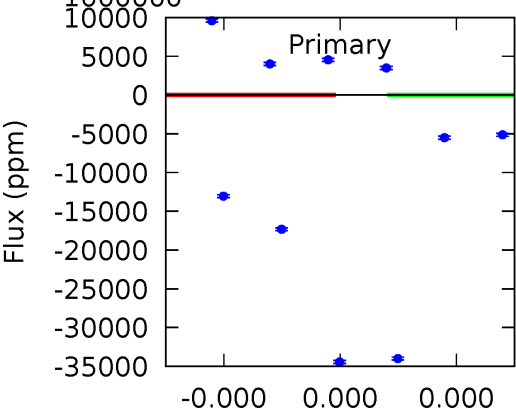
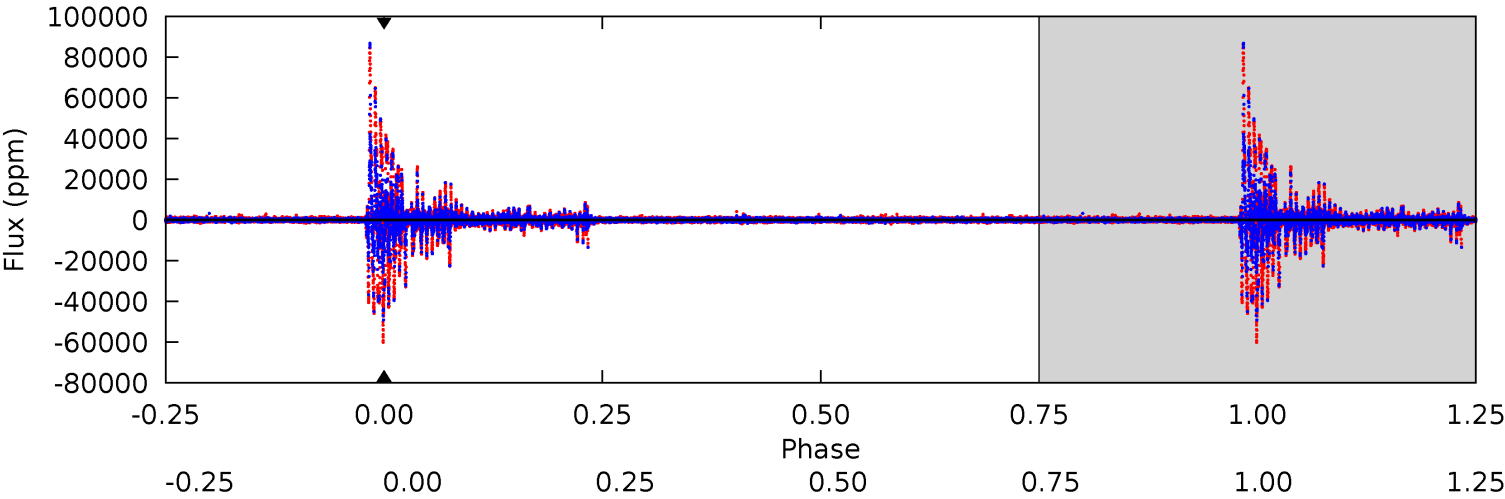
TCE 004737595-01 P=369.929170 Days $T_0=170.568860$ (BKJD)



DV Model-Shift Uniqueness Test

004737595-01, P = 369.929170 Days, E = 172.078422 Days

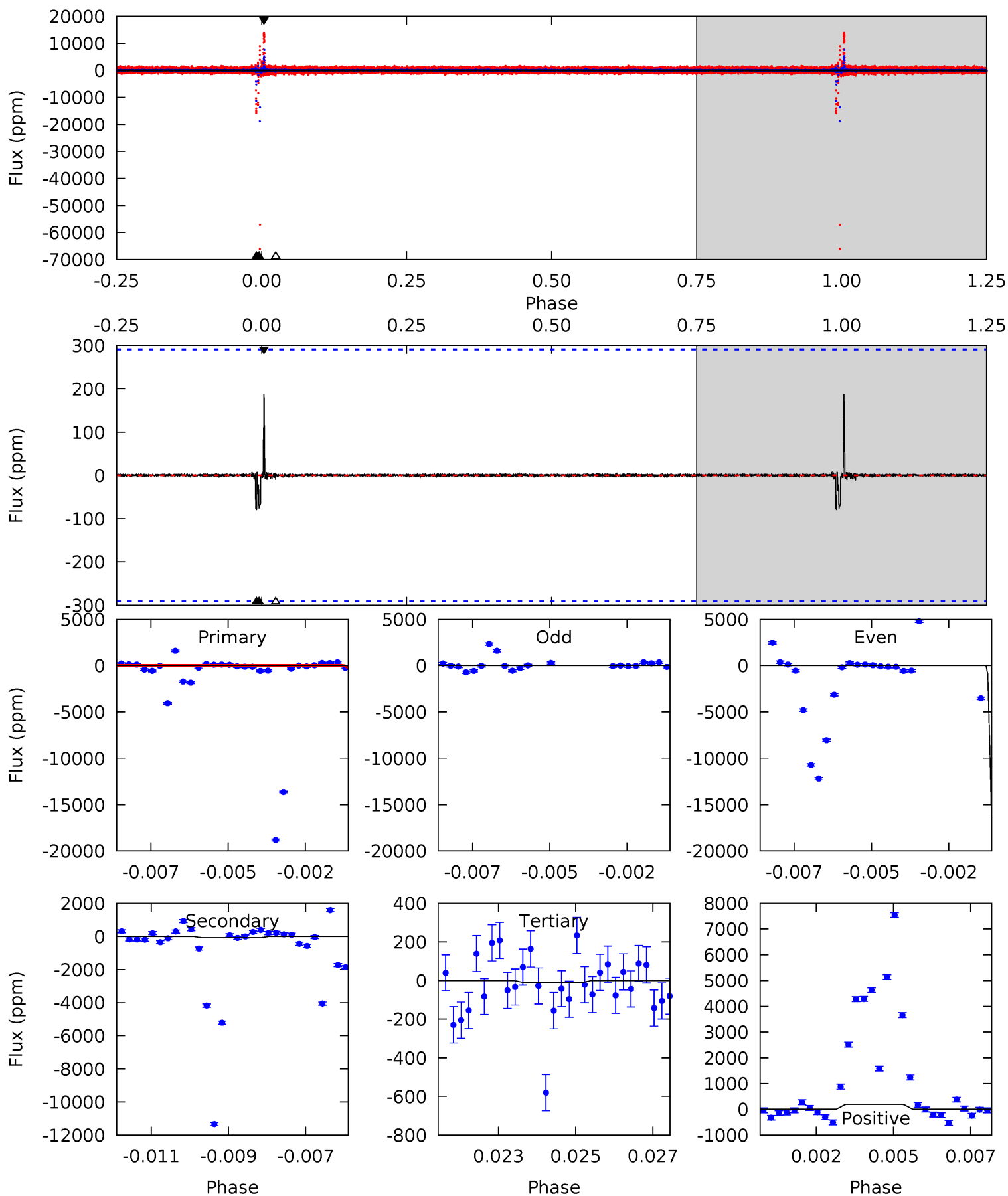
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

004737595-01, P = 369.929170 Days, E = 170.568860 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.33	1.43	0.19	3.42	5.30	3.05	0.10	1.14	-2.10	1.24	-1.99	195.1	1.22	0.71	0



Stellar Parameters For KIC 004737595

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4497^{+135}_{-135}	$4.609^{+0.053}_{-0.025}$	$-0.180^{+0.300}_{-0.300}$	$0.661^{+0.048}_{-0.058}$	$0.648^{+0.073}_{-0.053}$	$3.156^{+0.733}_{-0.362}$
	+3%/-3%	+1%/-1%	+167%/-167%	+7%/-9%	+11%/-8%	+23%/-11%
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 004737595-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$7.05^{+6.80}_{-4.72}$	240^{+8}_{-9}	-2811^{+12097}_{-7350}	$-6235.094^{+1400187.808}_{-1750519.826}$
Alt.	-79 ± 55	$8.36^{+6.76}_{-5.08}$	240^{+8}_{-8}	2127^{+551}_{-355}	431^{+2581}_{-363}

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 $A_{obs} \gg 1.0$

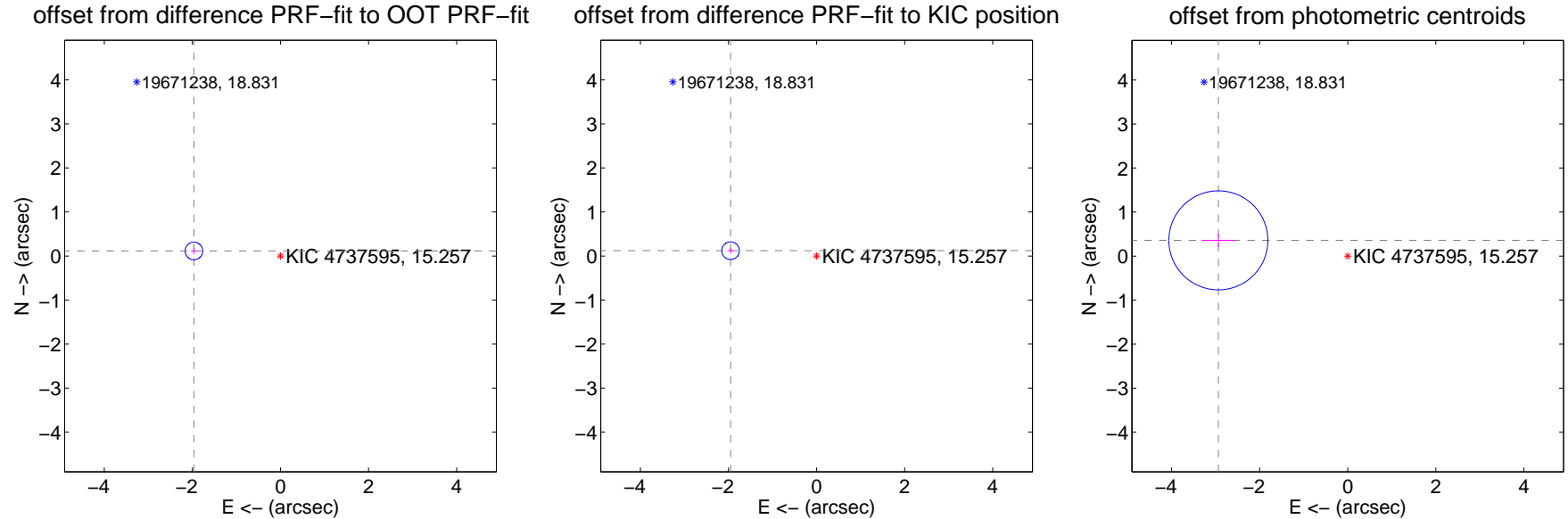
DV Centroid Data

Supplemental centroid analysis for 004737595-01. Kepler magnitude: 15.26. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.968 ± 0.067	29.48	1.964 ± 0.067	0.115 ± 0.067
PRF-fit source offset from KIC position	1.956 ± 0.067	29.30	1.952 ± 0.067	0.121 ± 0.067
photometric centroid source offset	2.96 ± 0.37	7.89	2.94 ± 0.38	0.36 ± 0.15



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

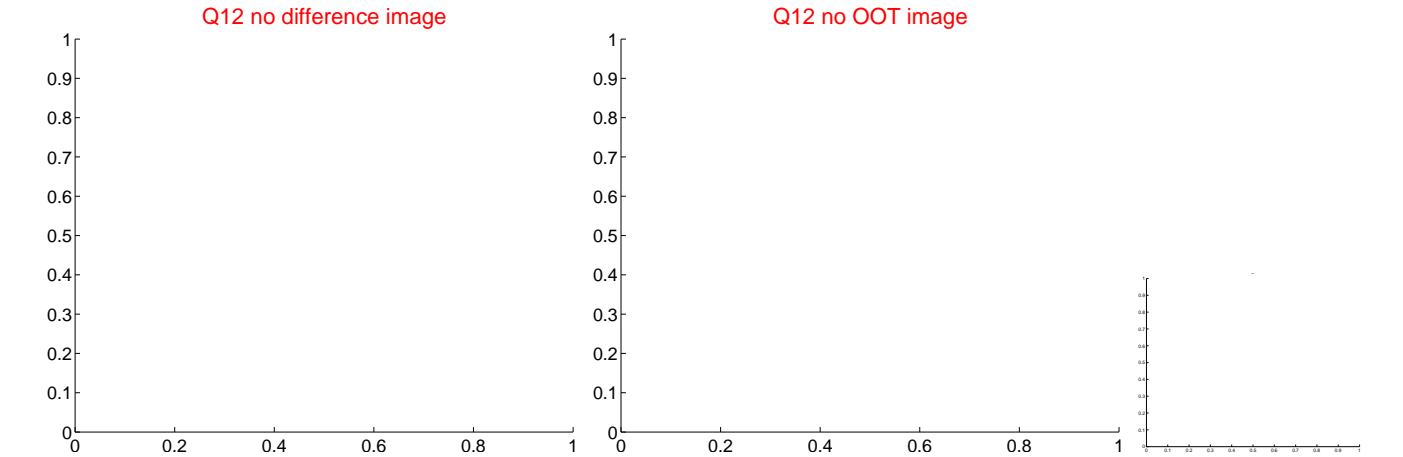
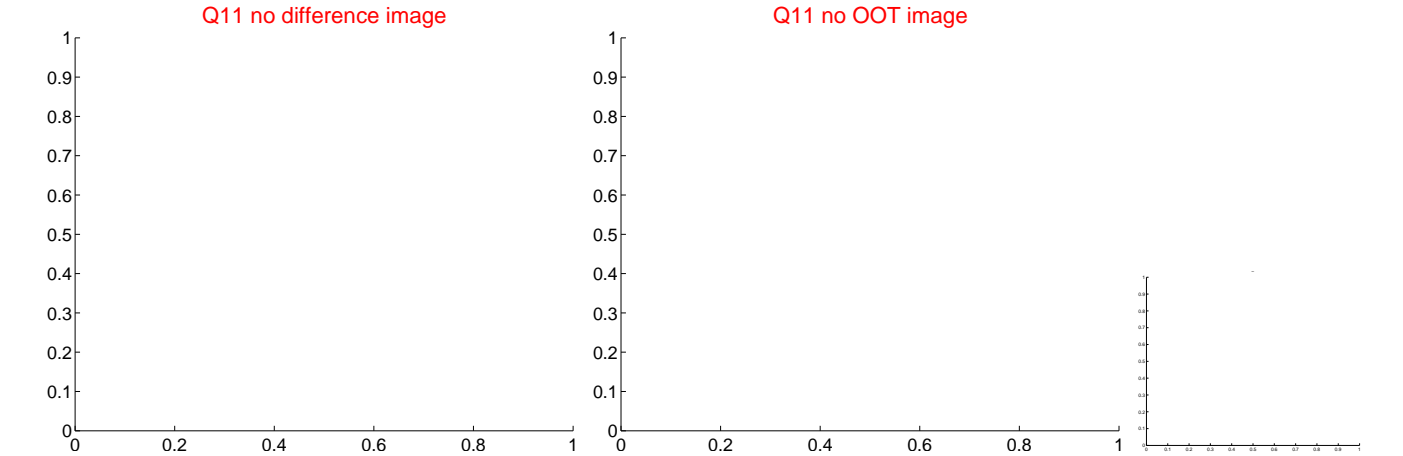
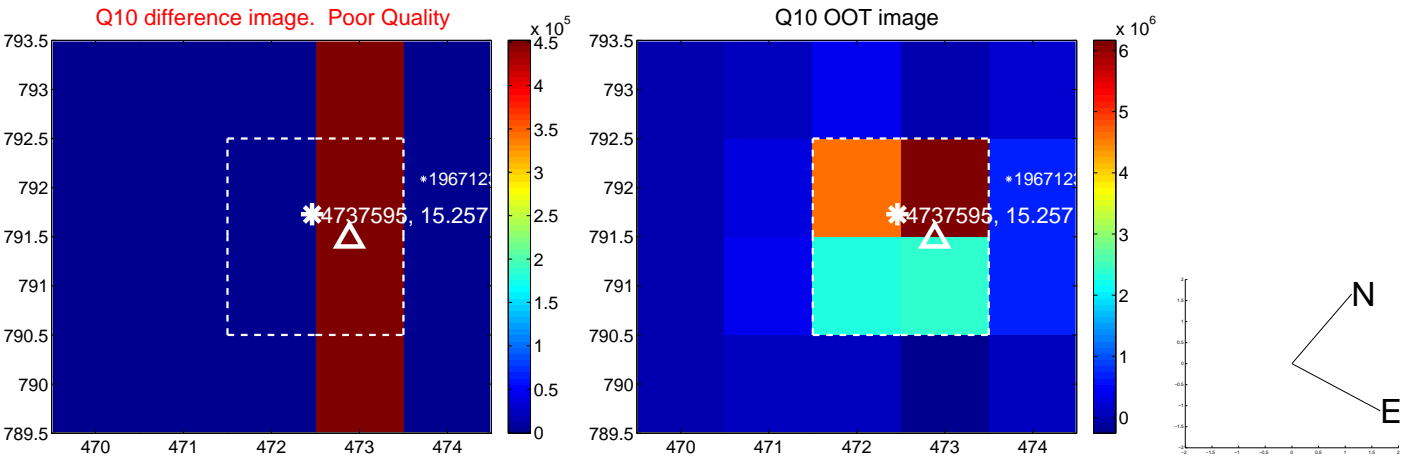
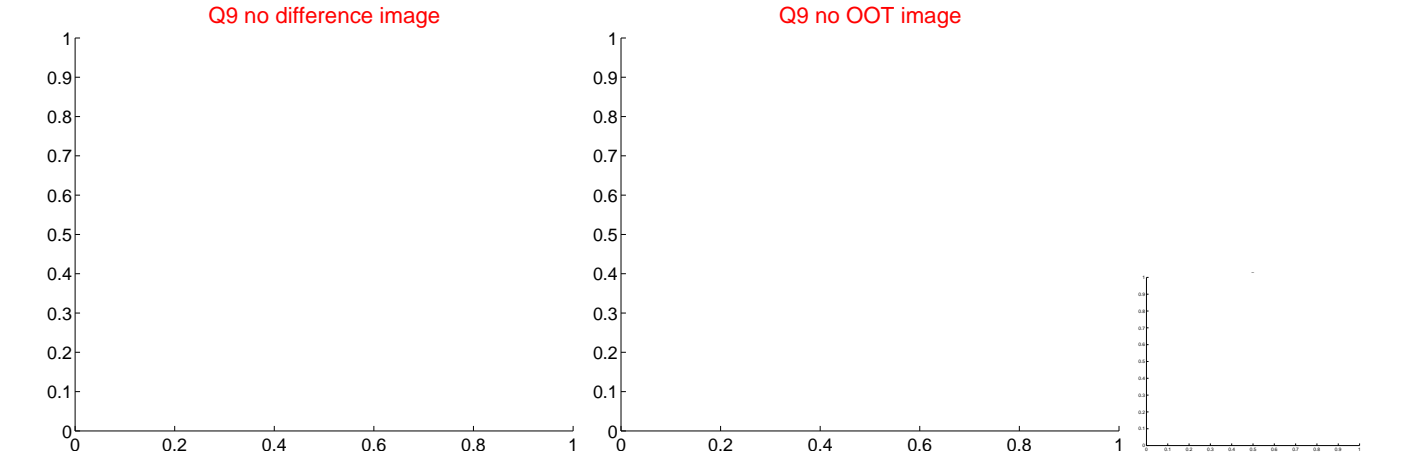
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



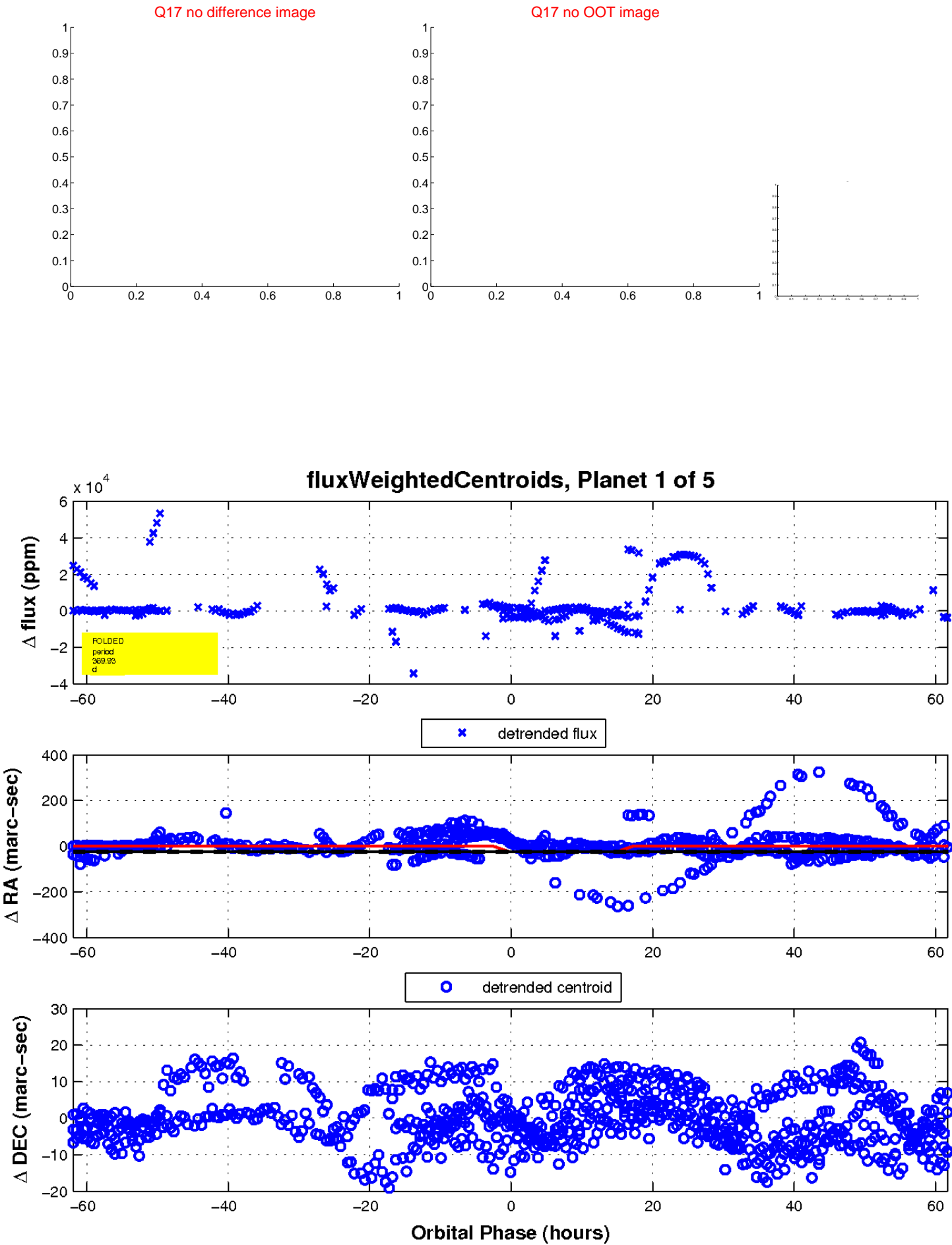
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

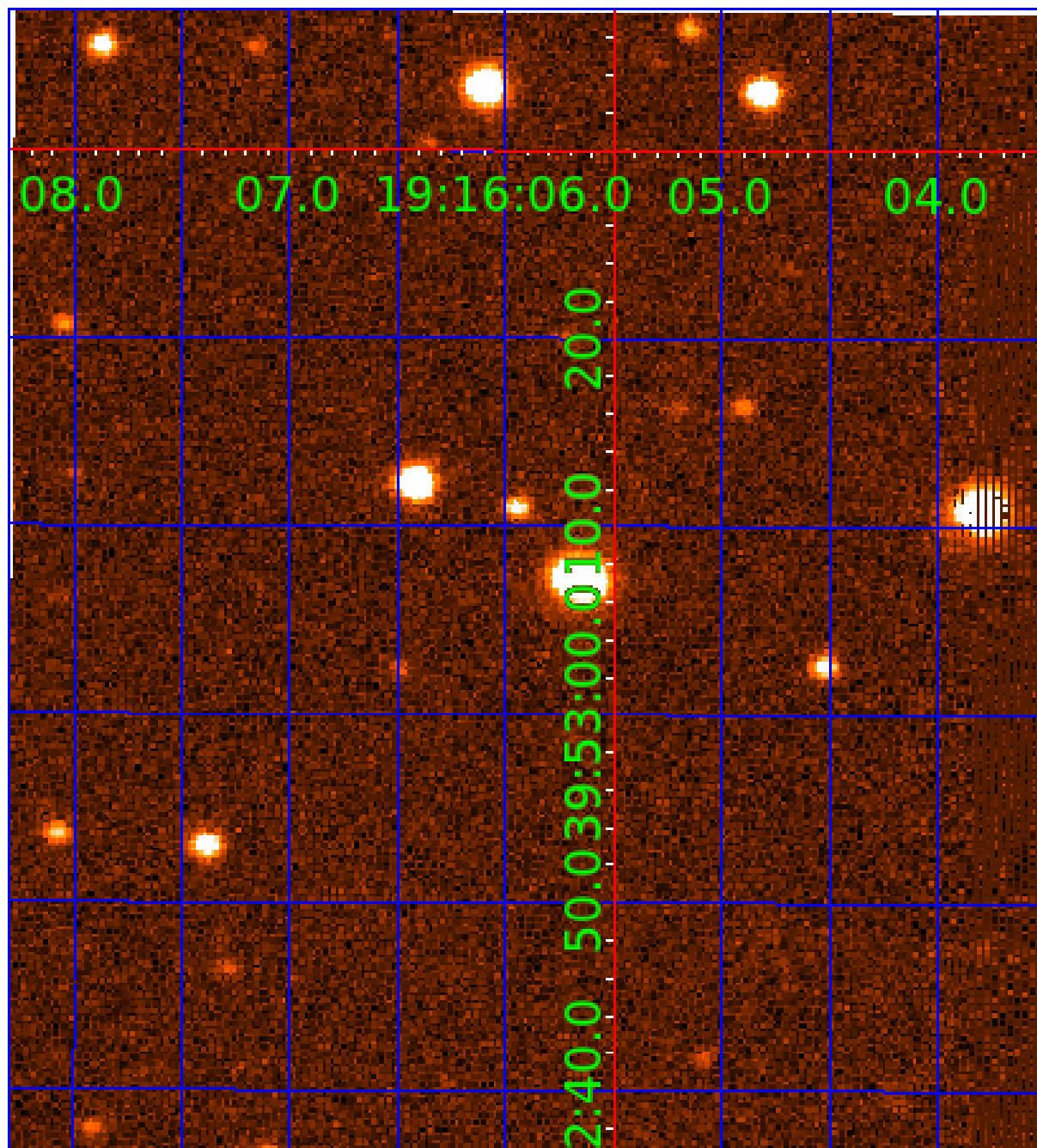


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004737595

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})
004737595-01	OBS	No	369.929170	172.078422	6627.1	15.000	53.3	-1.0	0.66	4497	5.15	0.21
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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004737595-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
004737595-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
004737595-04	OBS	FP	0.00	1	0	0	0	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004737595-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

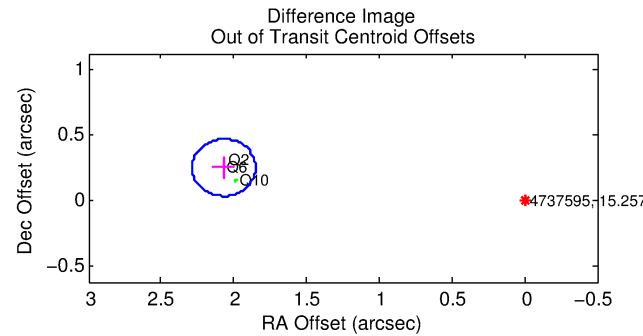
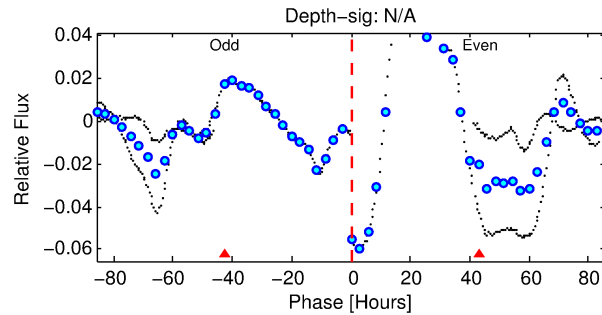
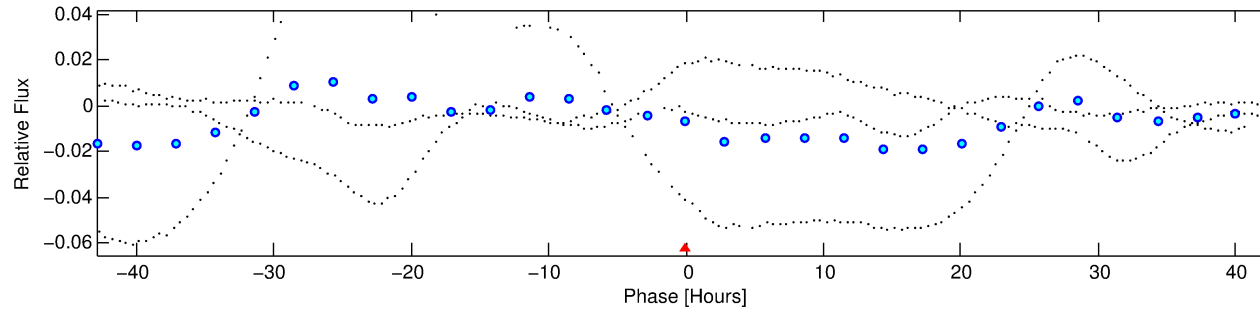
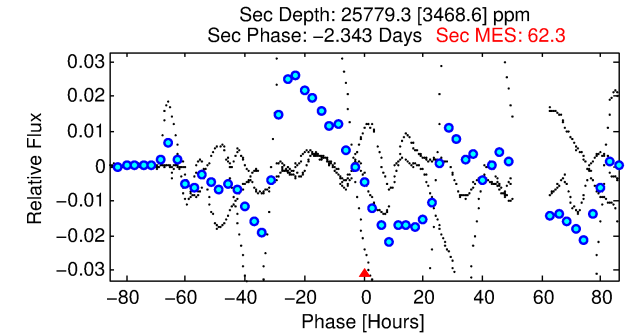
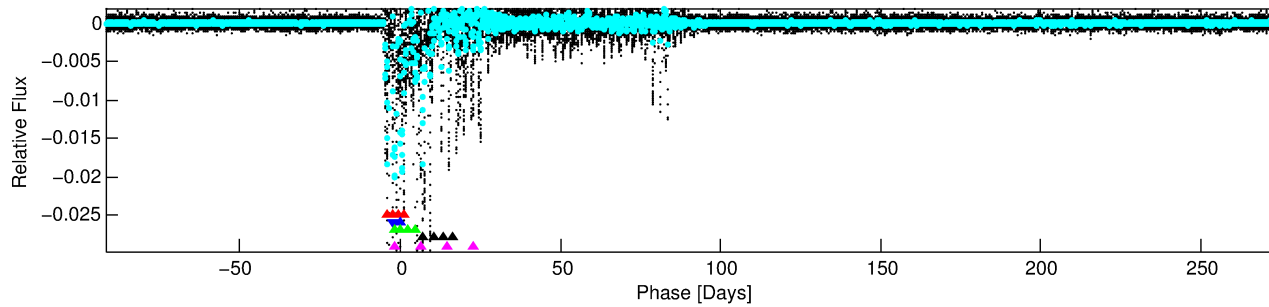
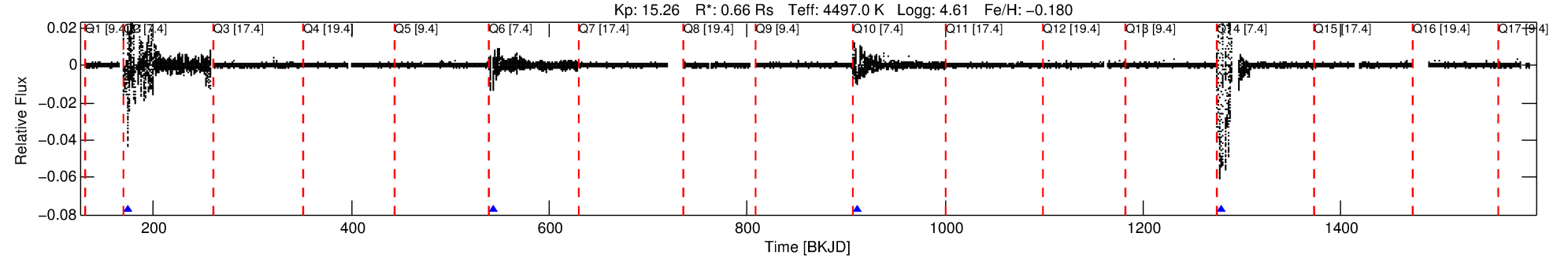
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004737595-02

No Significant Match Found

DV One-Page Summary

KIC: 4737595 Candidate: 2 of 5 Period: 368.090 d



TPS TCE Results:

Period = 368.09015 d
Epoch = 175.4091 BKJD

DV fit results are unavailable

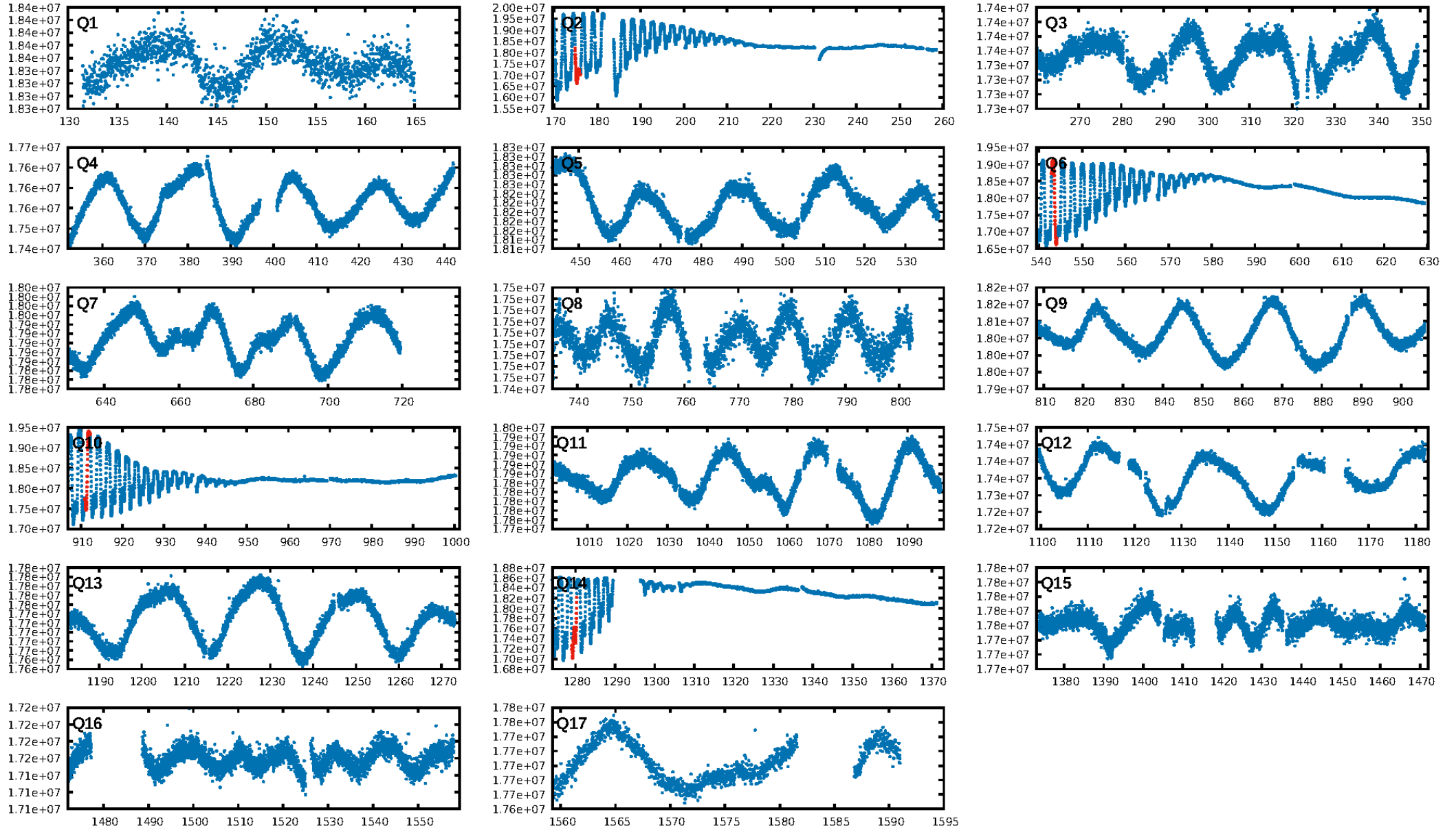
DV Diagnostic Results:

ShortPeriod-sig: 97.6% [2.25 σ]
LongPeriod-sig: 96.3% [2.08 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.99e-156
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.1957
Centroid-sig: N/A
Centroid-so: 2.222 arcsec [14.61 σ]
OotOffset-rm: 2.086 arcsec [28.66 σ]
KicOffset-rm: 1.956 arcsec [29.06 σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
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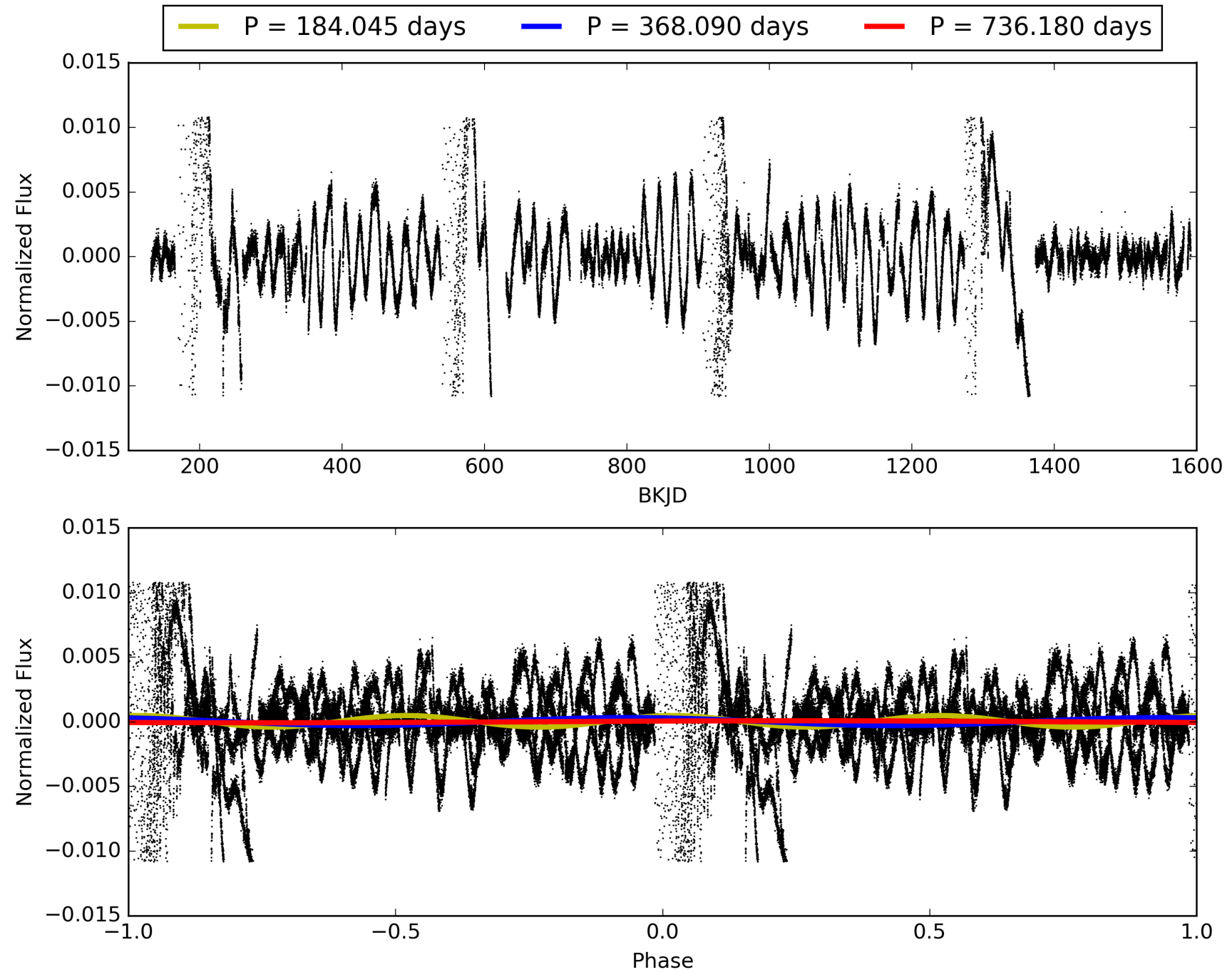
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004737595-02, PDC Light Curves

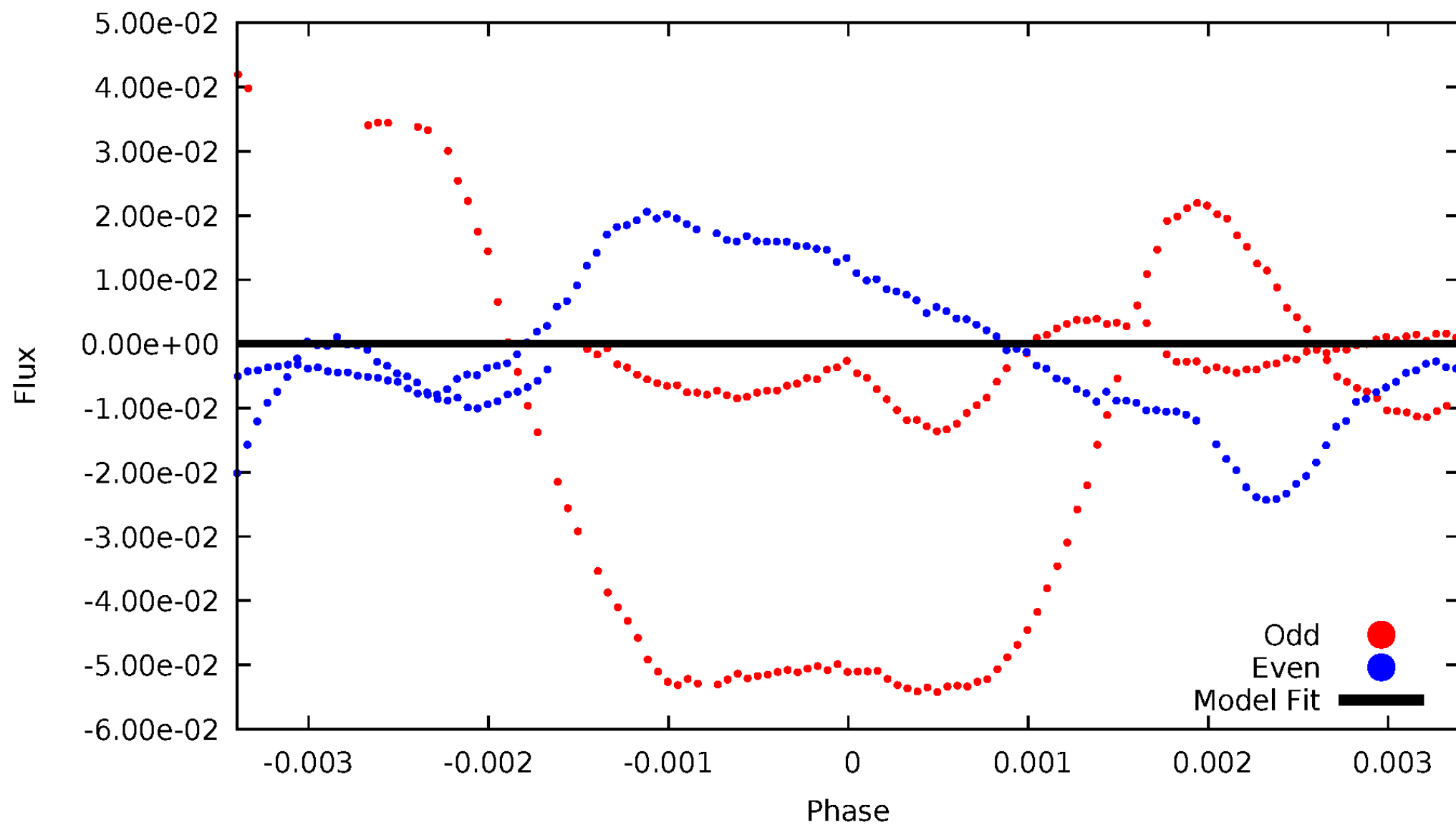


TCE 004737595-02



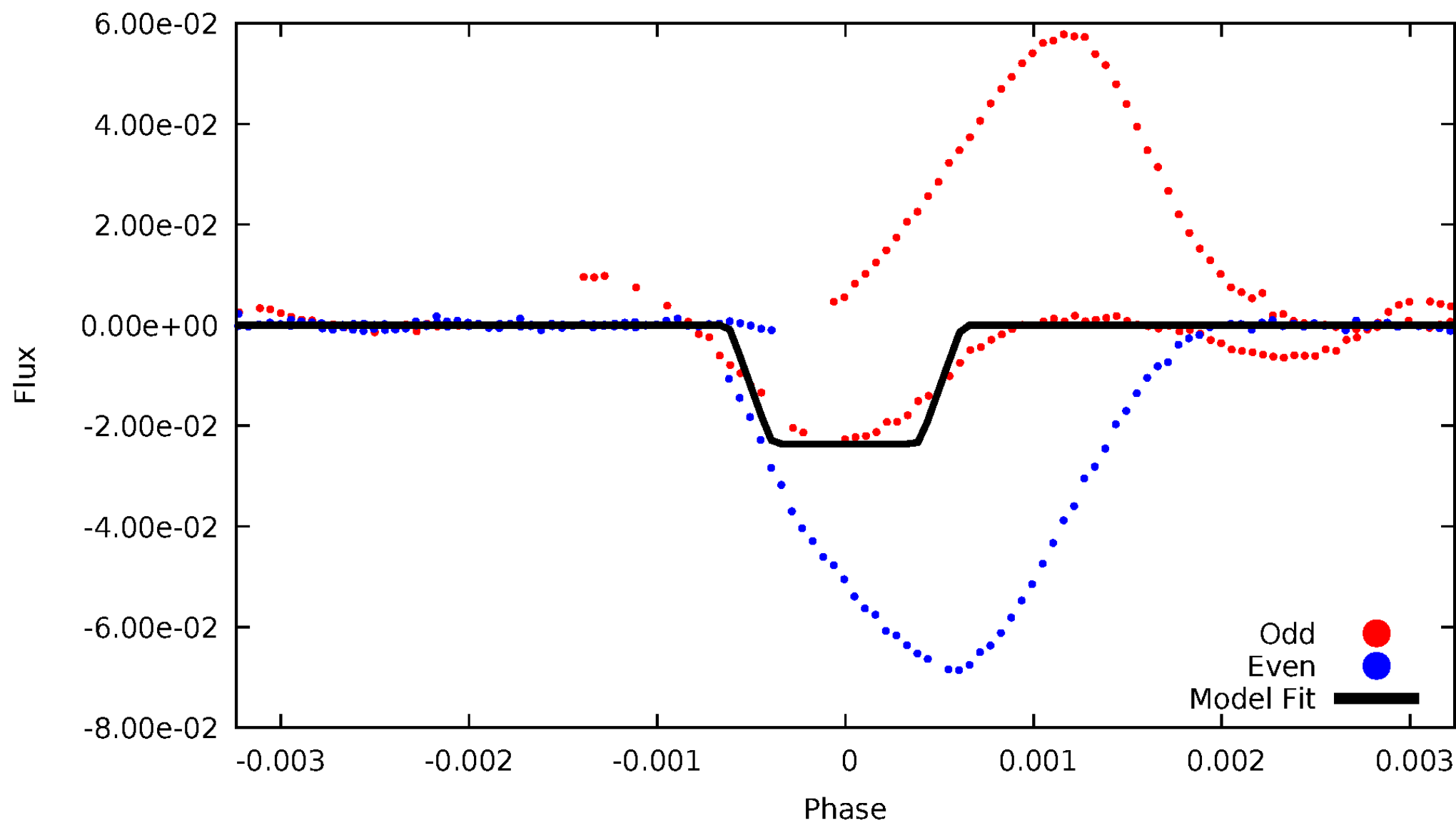
DV Odd/Even

TCE 004737595-02



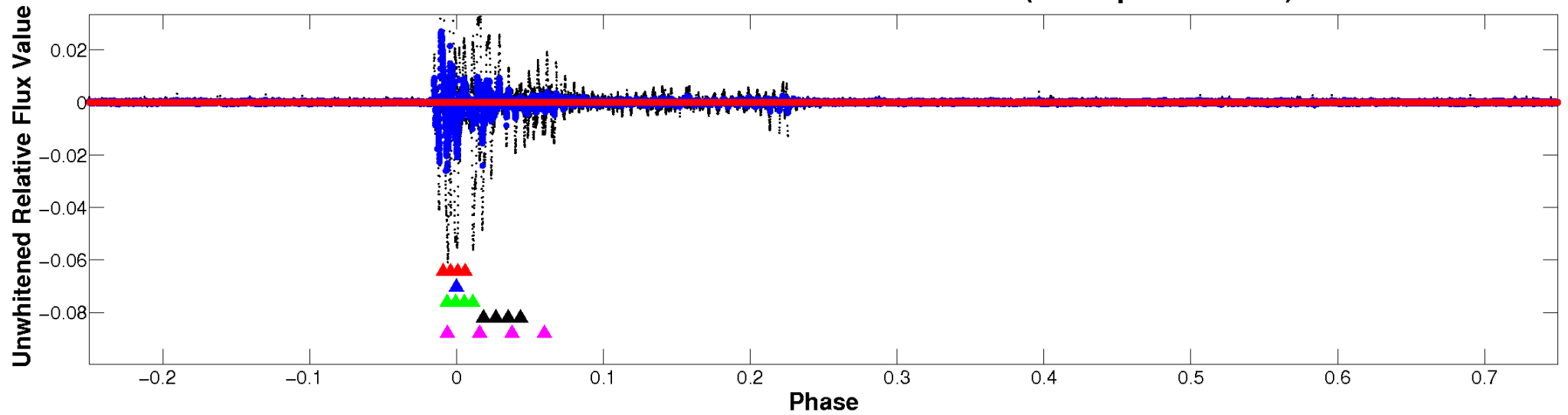
ALT Odd/Even

TCE 004737595-02

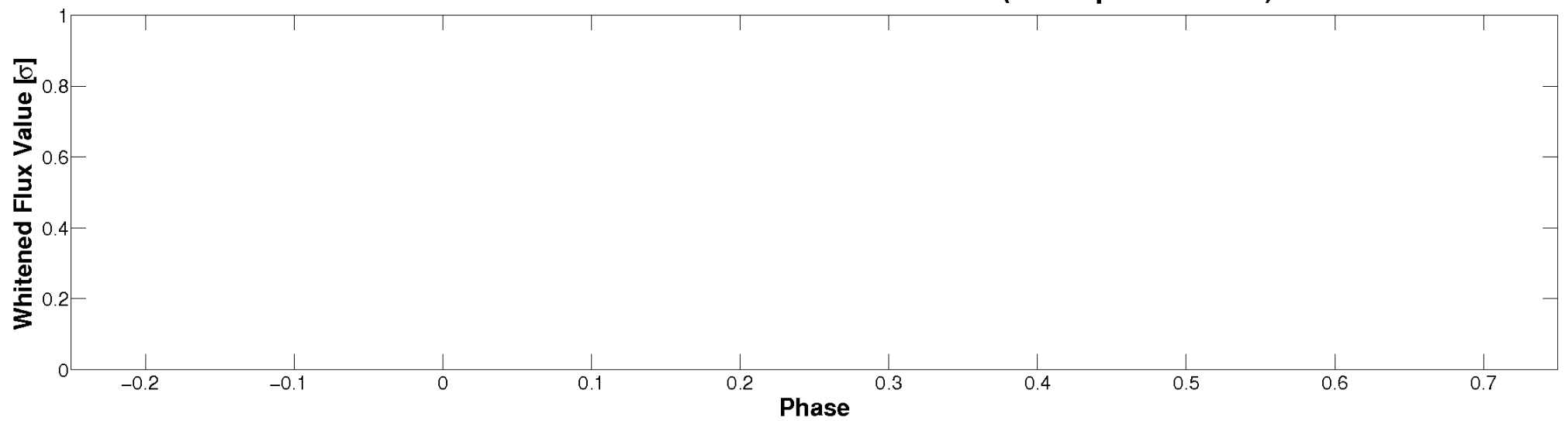


Non-Whitened Vs. Whitened Light Curve

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

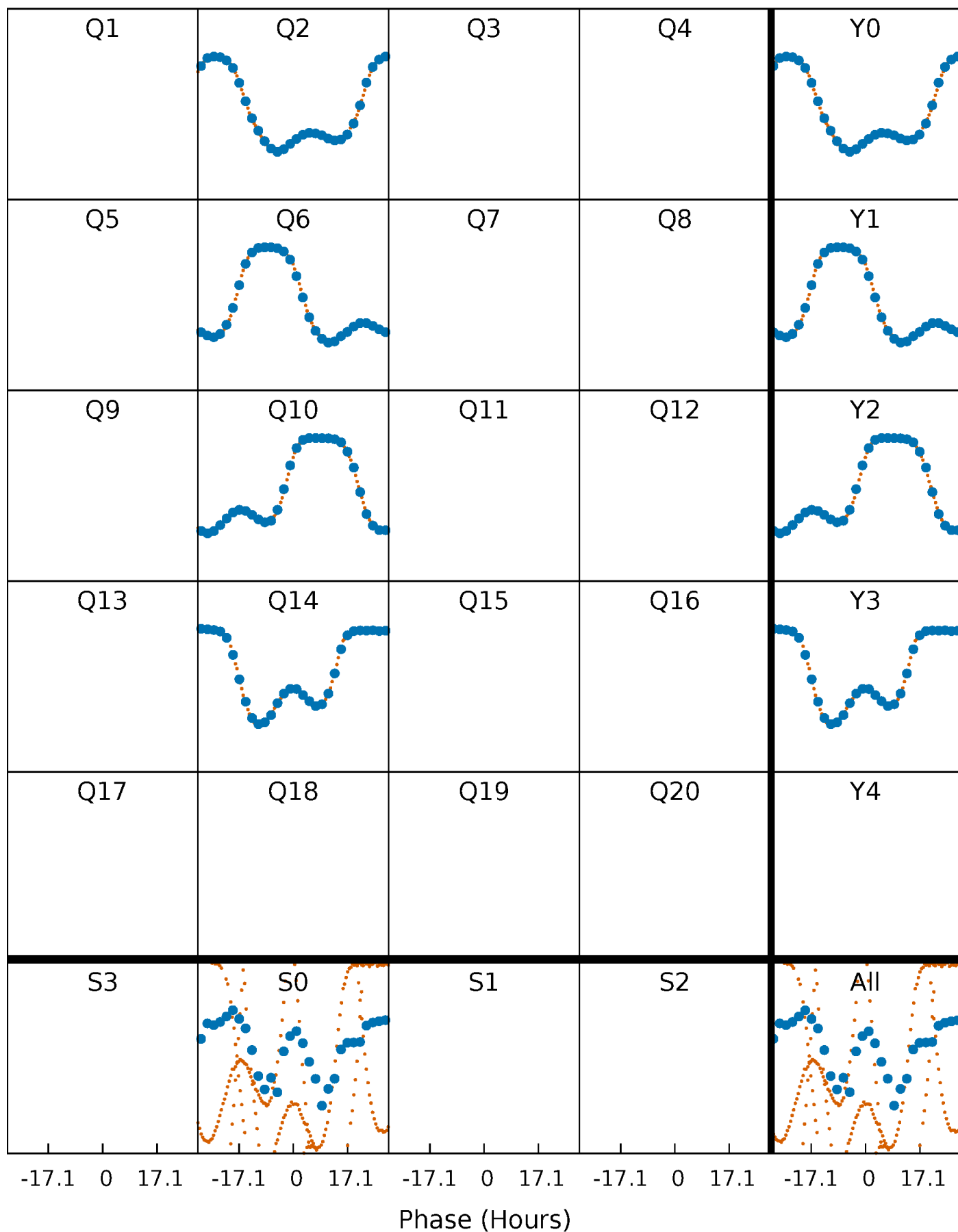


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



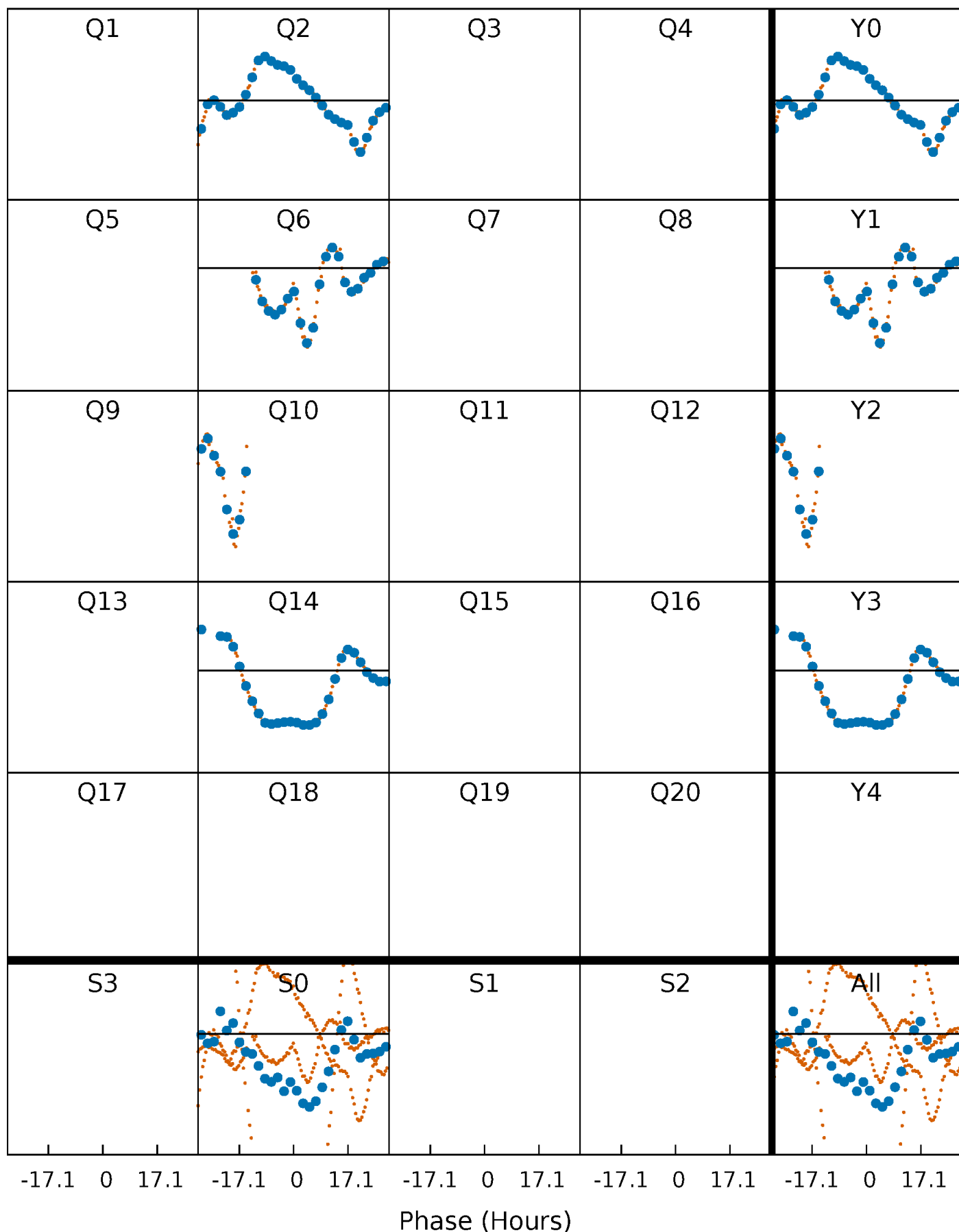
PDC Quarter-Phased Transit Curves

TCE 004737595-02 P=368.090150 Days $T_0=175.409092$ (BKJD)



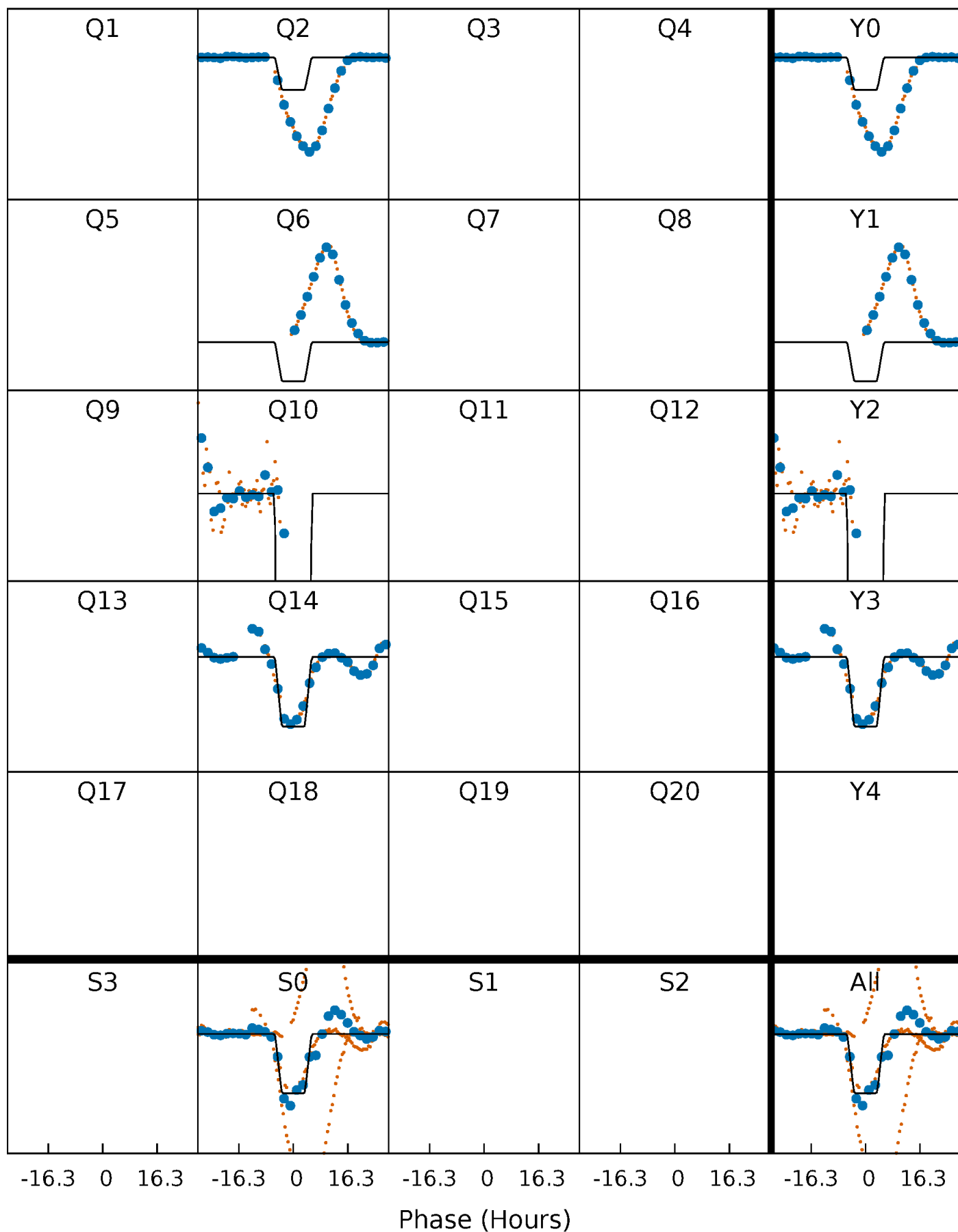
DV Quarter-Phased Transit Curves

TCE 004737595-02 P=368.090150 Days $T_0=175.409092$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

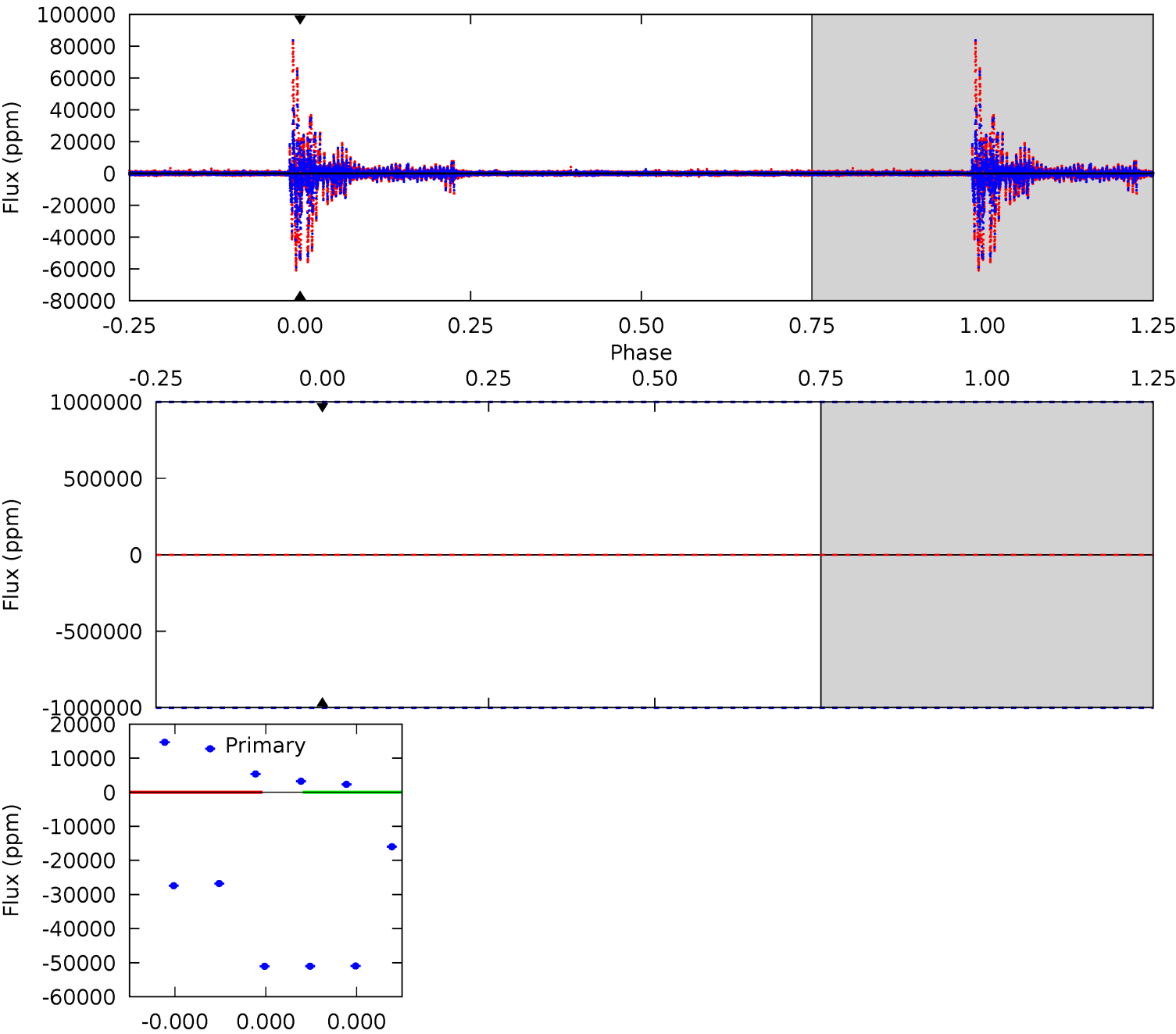
TCE 004737595-02 P=368.090150 Days $T_0=174.938247$ (BKJD)



DV Model-Shift Uniqueness Test

004737595-02, P = 368.090150 Days, E = 175.409092 Days

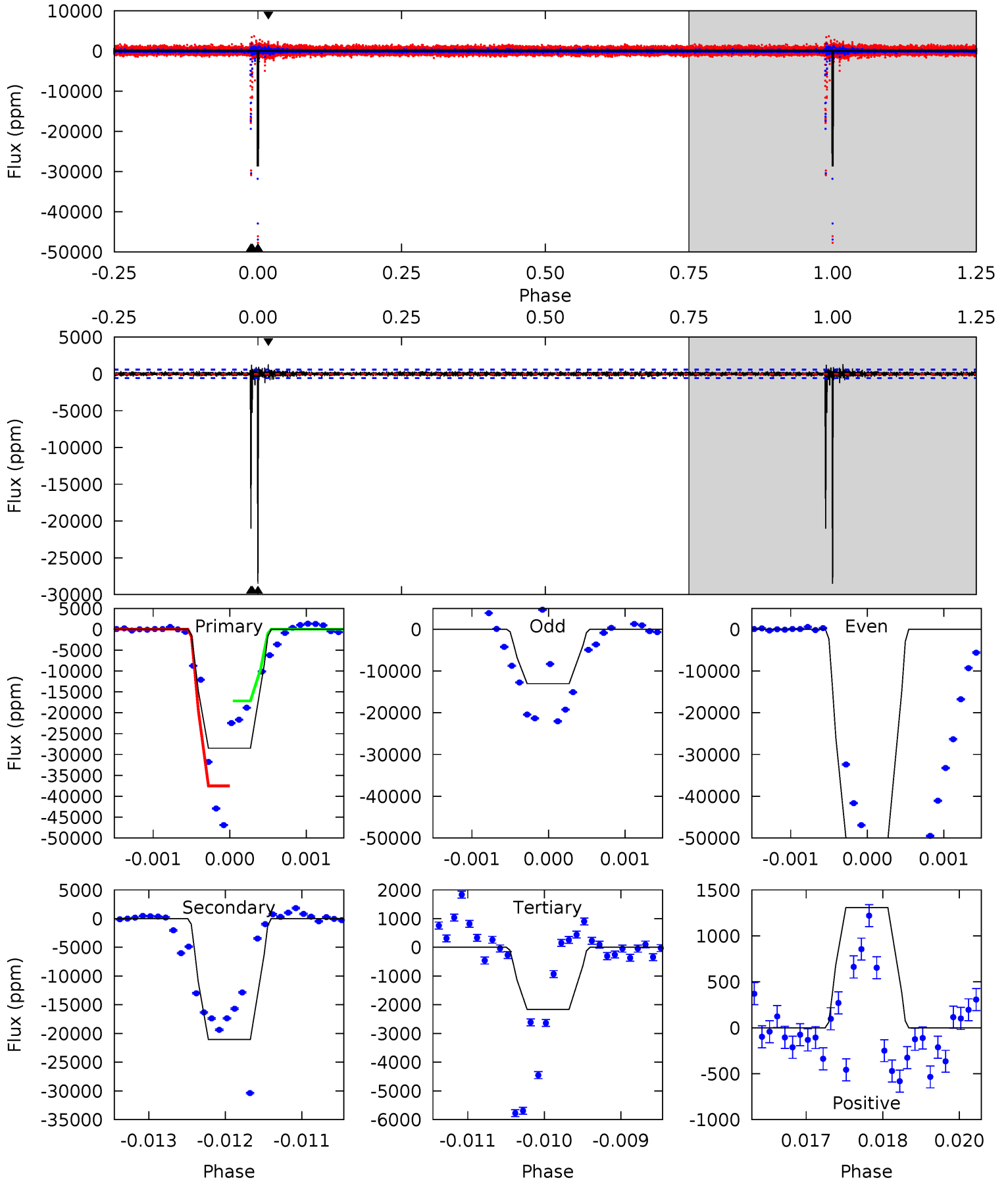
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

004737595-02, P = 368.090150 Days, E = 174.938247 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
269.9	199.3	20.4	12.4	5.42	3.23	1.33	249.5	257.6	178.8	186.9	172.2	1.34	0.04	78.2



Stellar Parameters For KIC 004737595

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4497^{+135}_{-135}	$4.609^{+0.053}_{-0.025}$	$-0.180^{+0.300}_{-0.300}$	$0.661^{+0.048}_{-0.058}$	$0.648^{+0.073}_{-0.053}$	$3.156^{+0.733}_{-0.362}$
	+3%/-3%	+1%/-1%	+167%/-167%	+7%/-9%	+11%/-8%	+23%/-11%
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 004737595-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$8.35^{+5.91}_{-5.28}$	240^{+8}_{-8}	2746^{+5721}_{-10405}	$3757^{+966996}_{-772175}$
Alt.	-21033 ± 106	$11.32^{+7.25}_{-6.03}$	240^{+9}_{-8}	4379^{+1732}_{-719}	$71028^{+255987}_{-45249}$

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 $A_{obs} \gg 1.0$

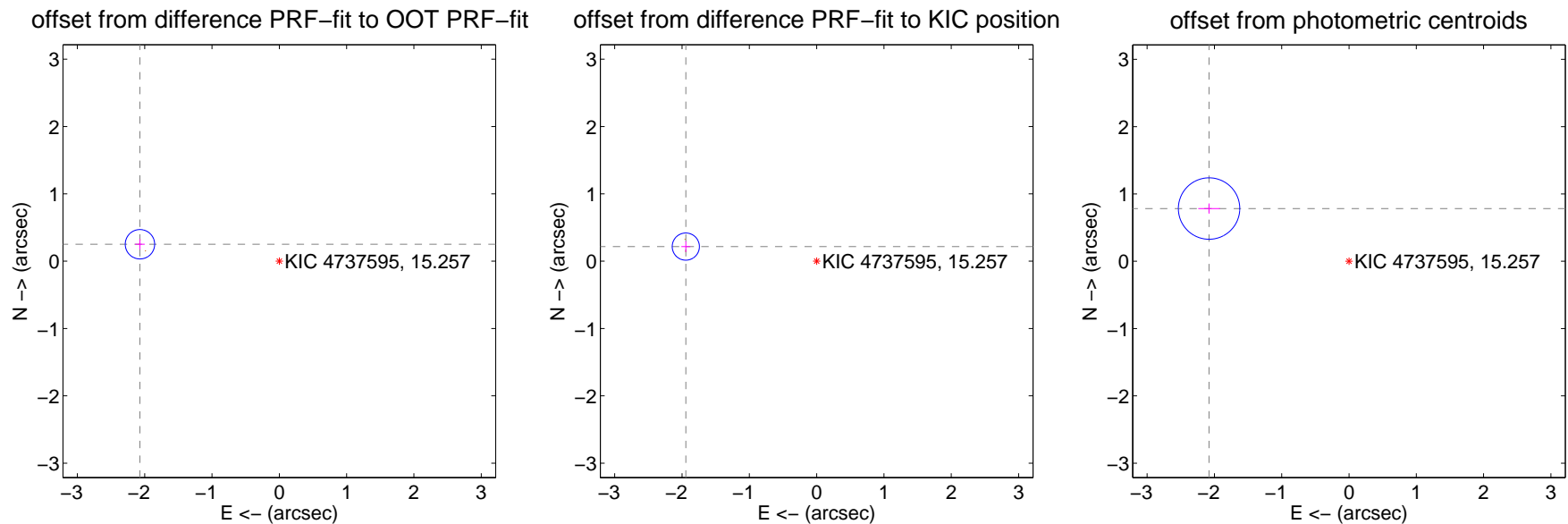
DV Centroid Data

Supplemental centroid analysis for 004737595-02. Kepler magnitude: 15.26. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

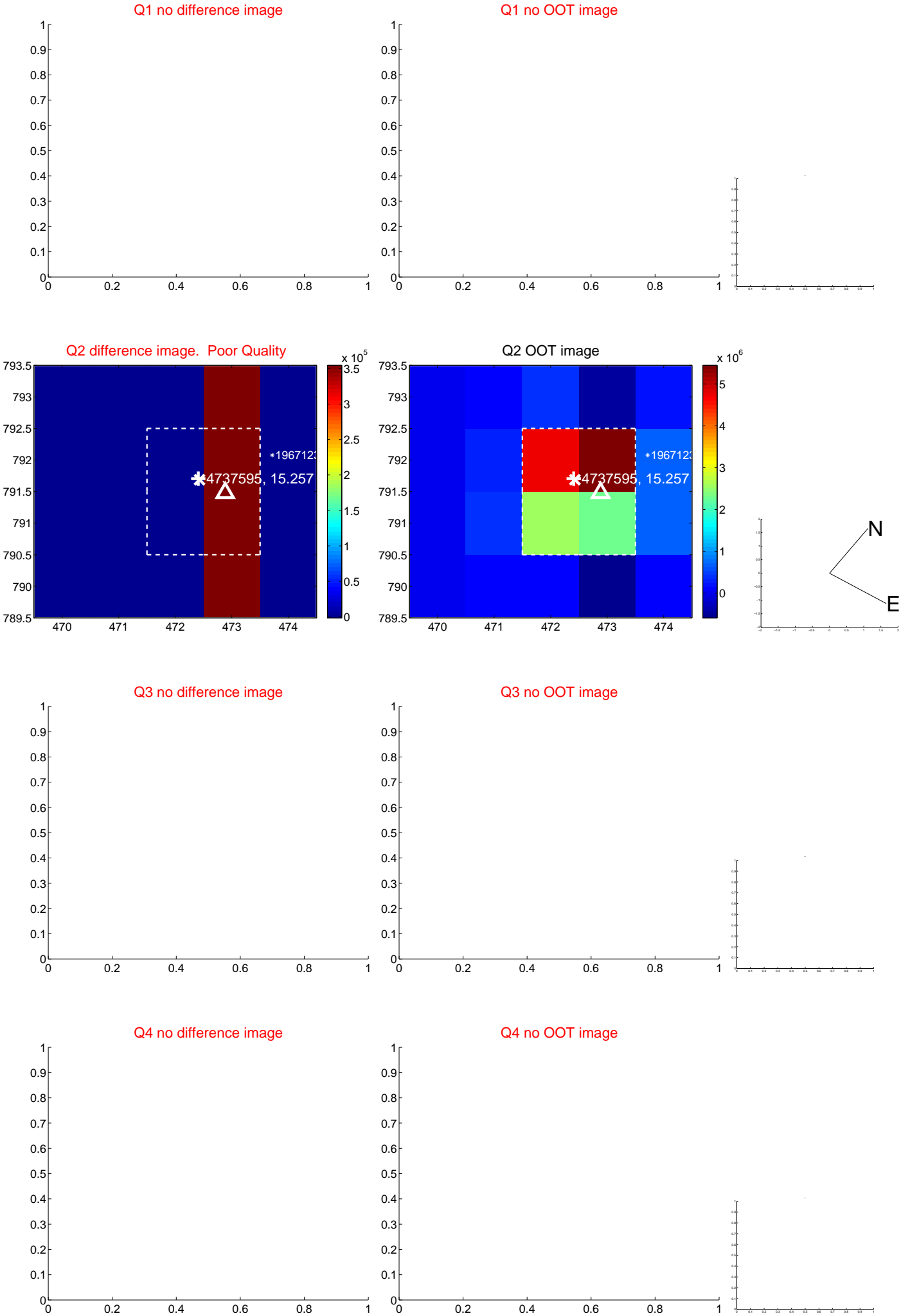
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.086 ± 0.073	28.66	2.070 ± 0.071	0.252 ± 0.078
PRF-fit source offset from KIC position	1.956 ± 0.067	29.06	1.944 ± 0.067	0.217 ± 0.080
photometric centroid source offset	2.22 ± 0.15	14.61	2.08 ± 0.16	0.78 ± 0.08

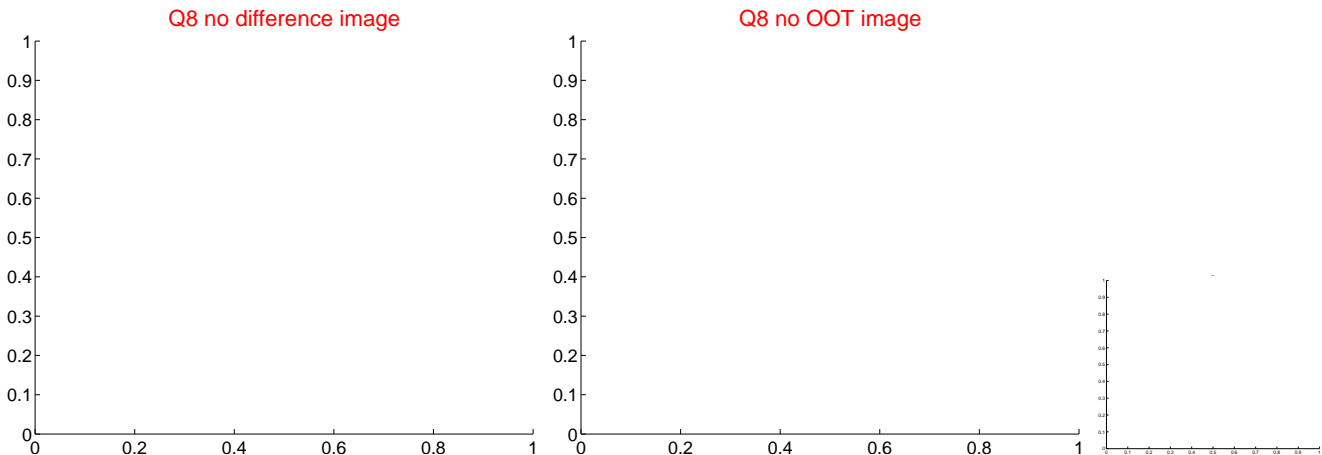
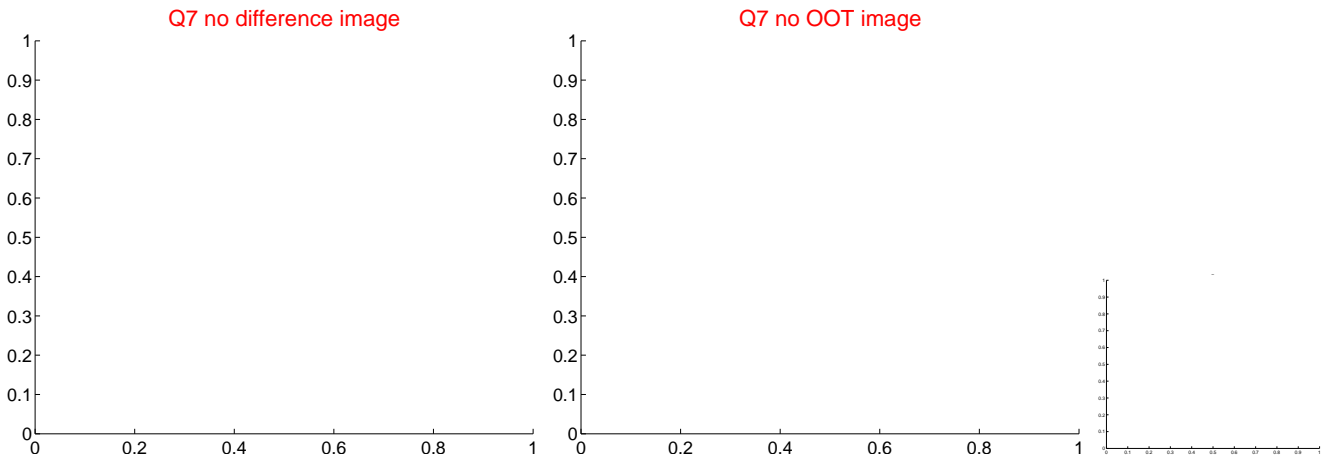
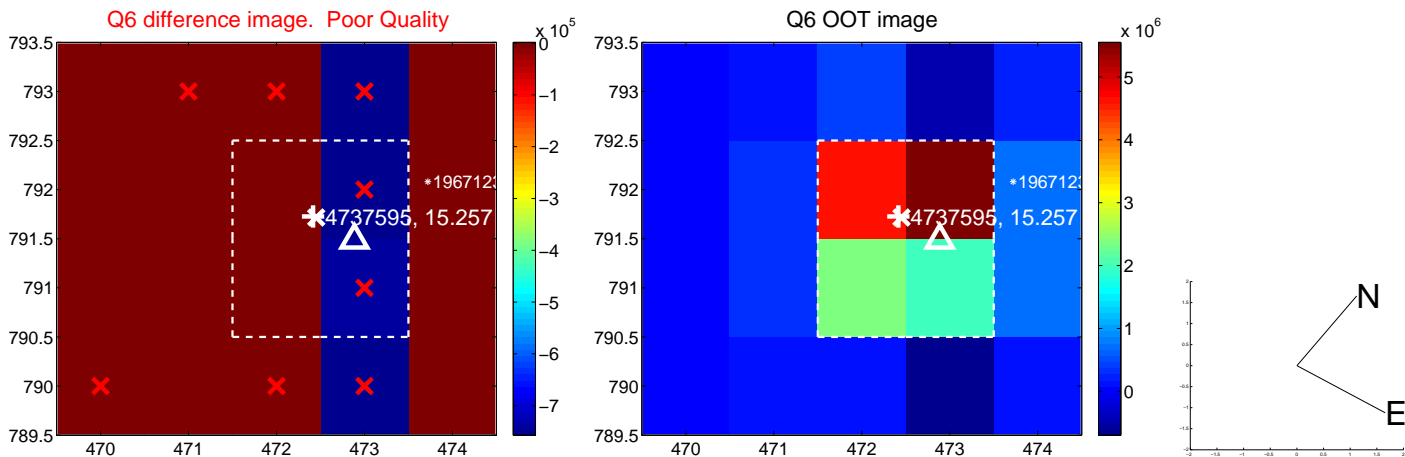
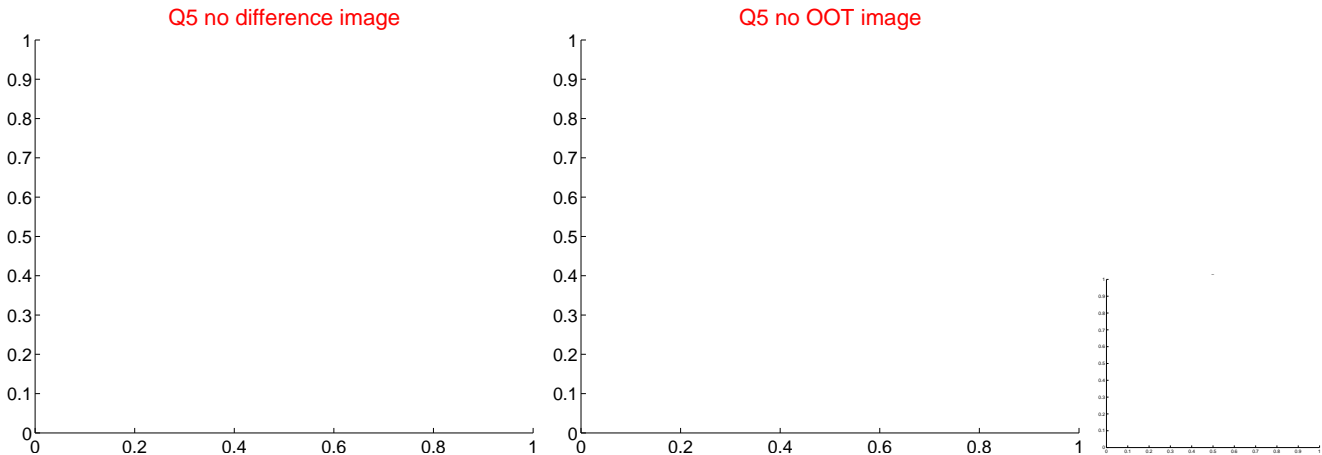


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

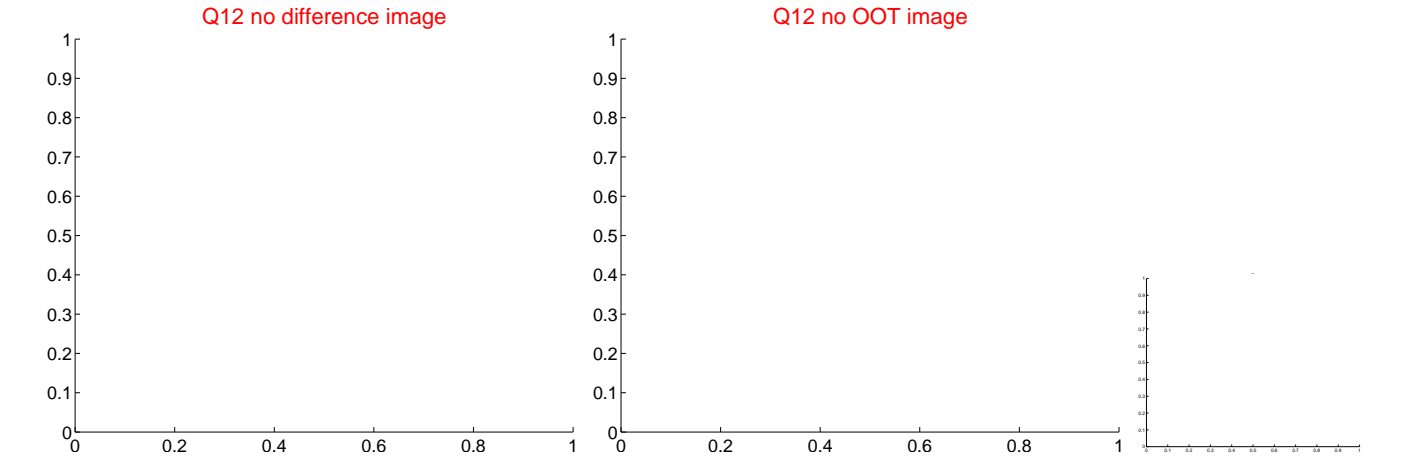
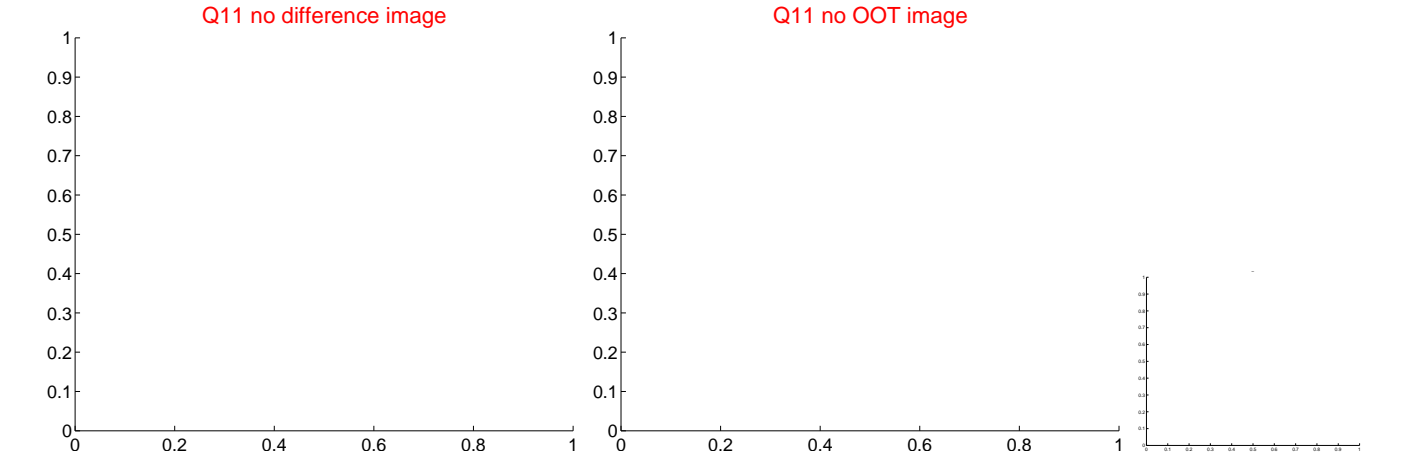
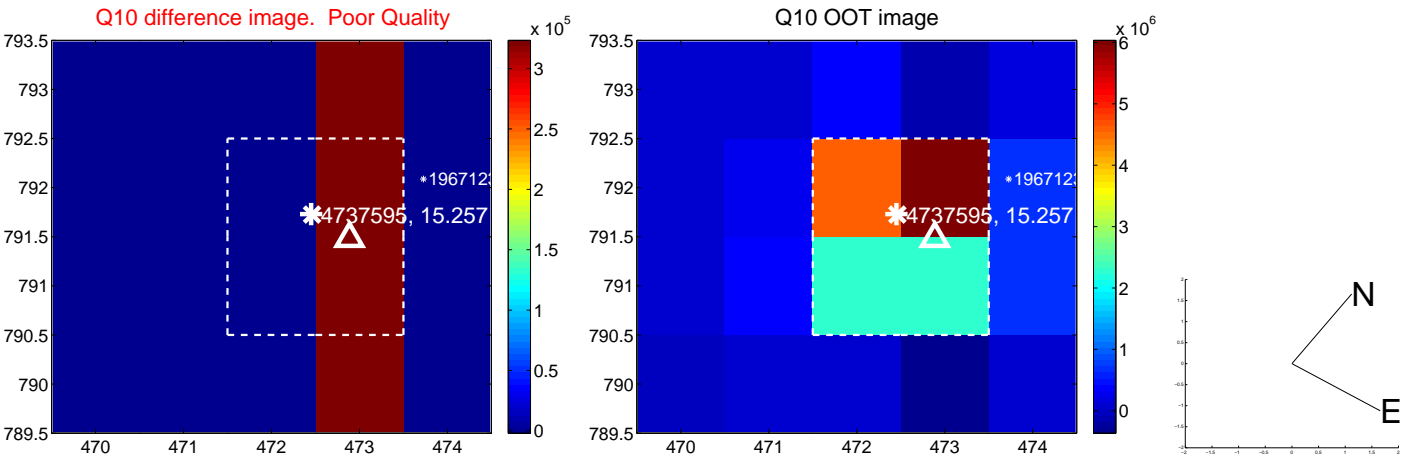
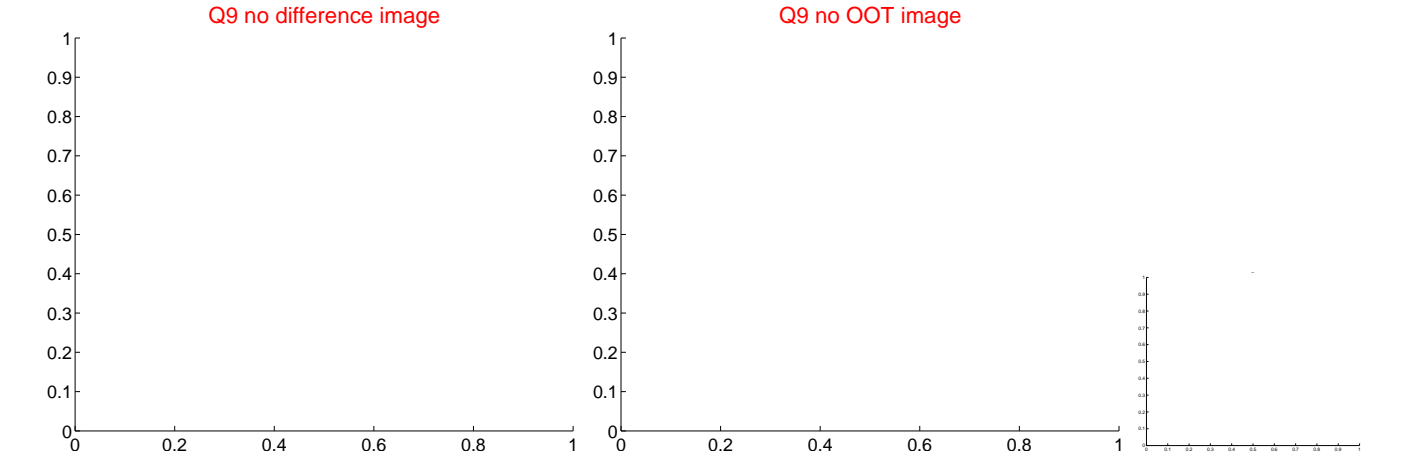
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



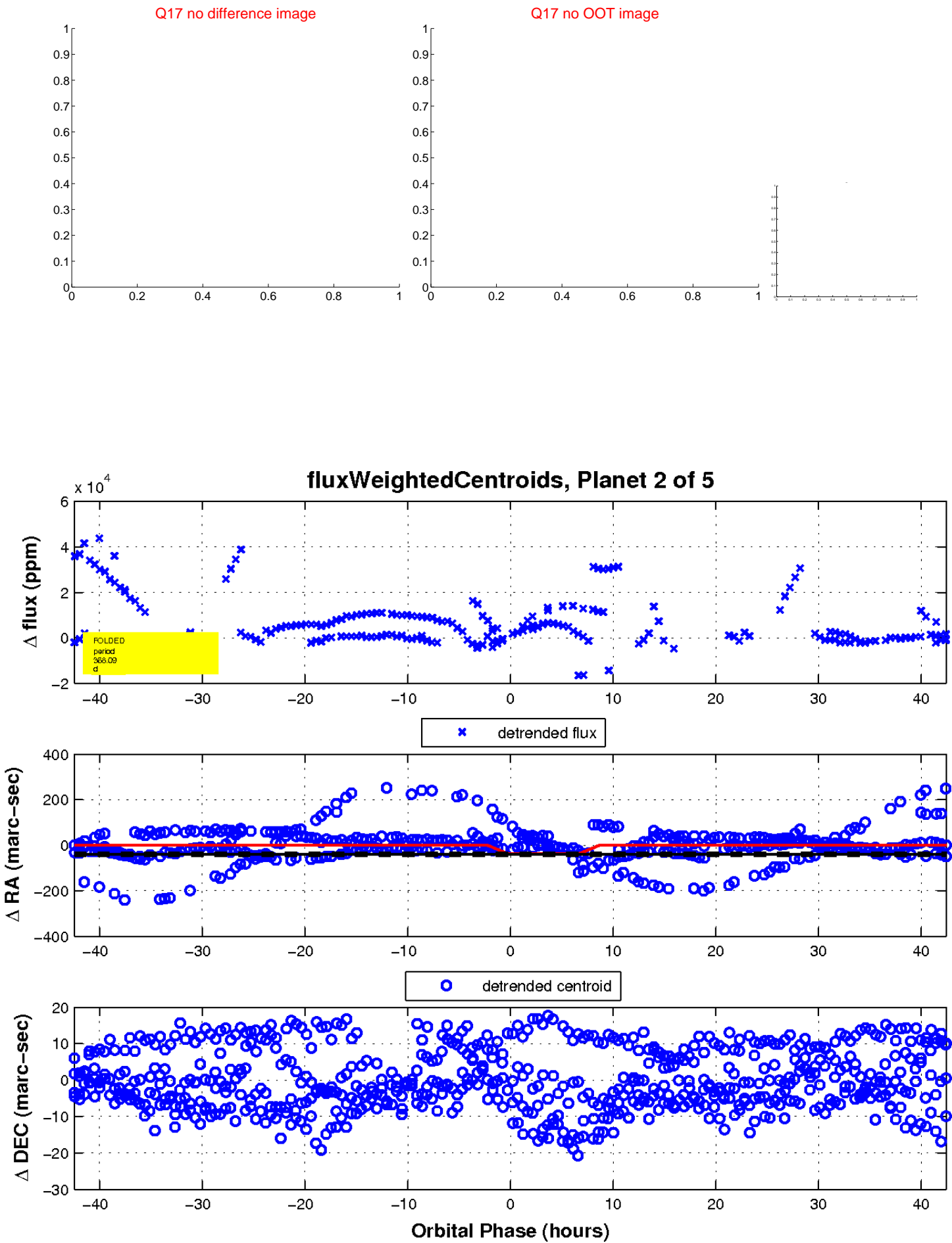
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

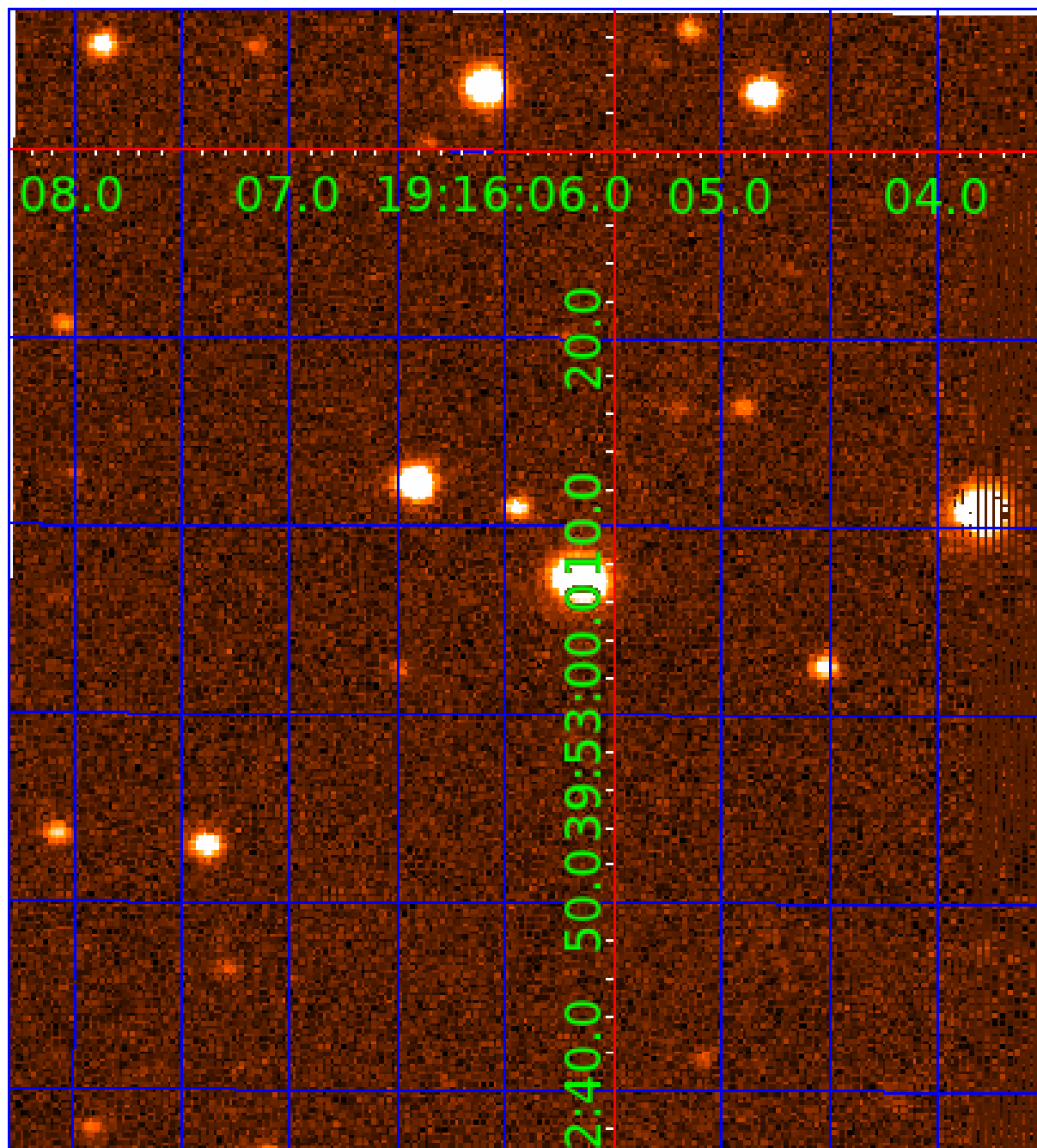


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004737595

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})
004737595-01	OBS	No	369.929170	172.078422	6627.1	15.000	53.3	-1.0	0.66	4497	5.15	0.21
004737595-02	OBS	No	368.090150	175.409092	9419.9	15.000	81.0	-1.0	0.66	4497	6.14	0.21
004737595-03	OBS	No	370.242485	173.066044	6902.3	12.500	46.8	-1.0	0.66	4497	5.26	0.21
004737595-04	OBS	No	364.997431	191.472844	3234.7	29.354	27.2	7.4	0.66	4497	3.89	0.21
004737595-05	OBS	No	359.985104	197.448211	52879.5	32.654	46.0	66.4	0.66	4497	26.76	0.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004737595-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
004737595-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
004737595-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
004737595-04	OBS	FP	0.00	1	0	0	0	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004737595-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

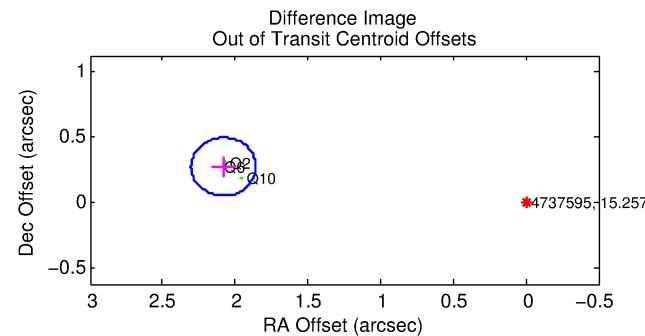
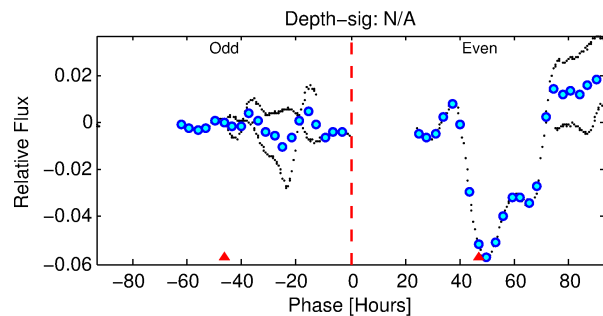
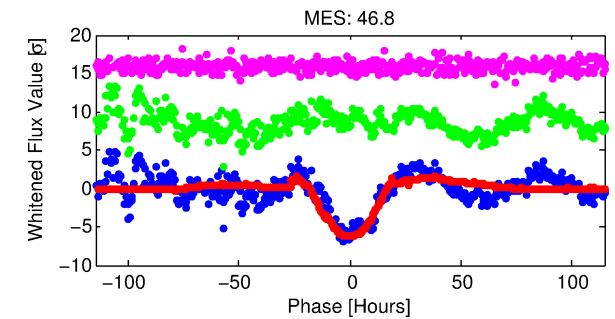
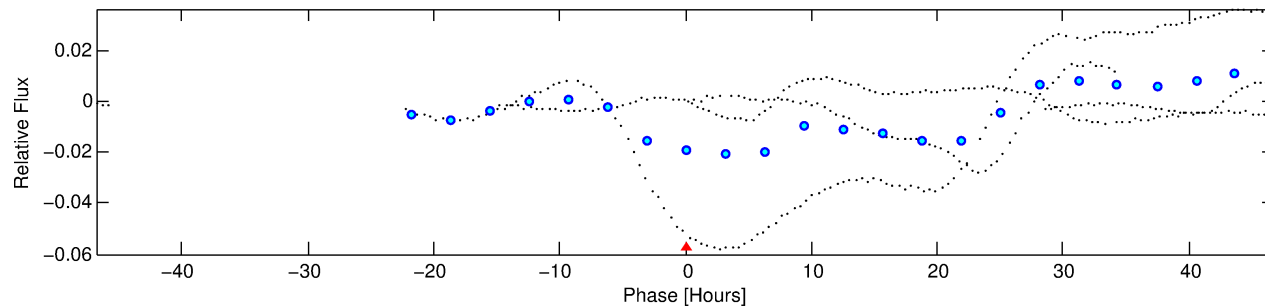
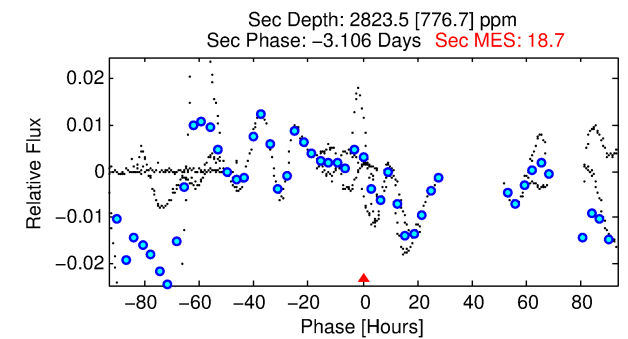
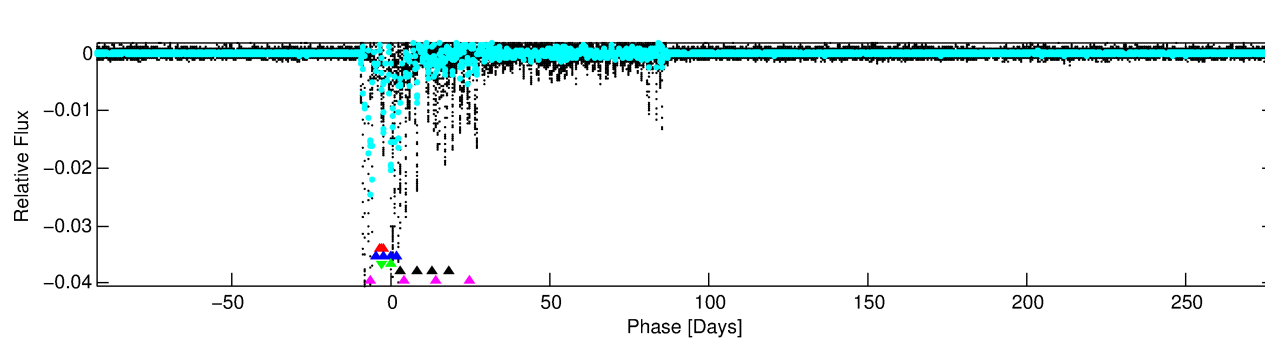
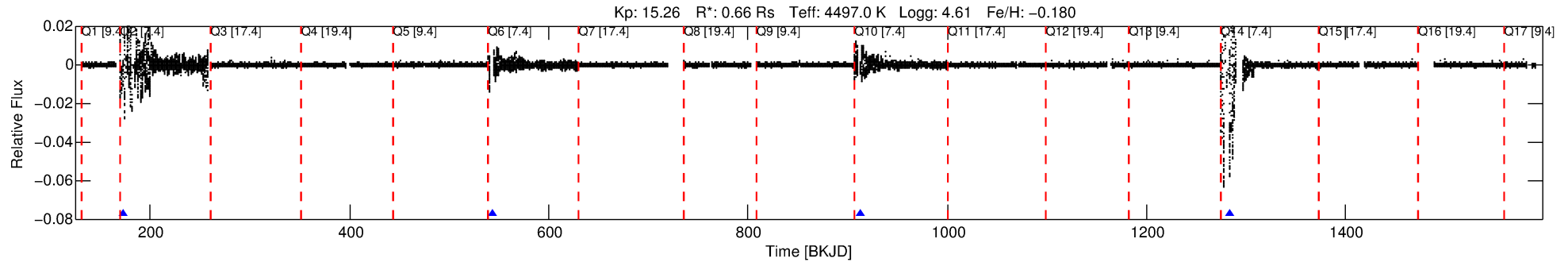
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004737595-03

No Significant Match Found

DV One-Page Summary

KIC: 4737595 Candidate: 3 of 5 Period: 370.242 d



TPS TCE Results:

Period = 370.24248 d
Epoch = 173.0660 BKJD

DV fit results are unavailable

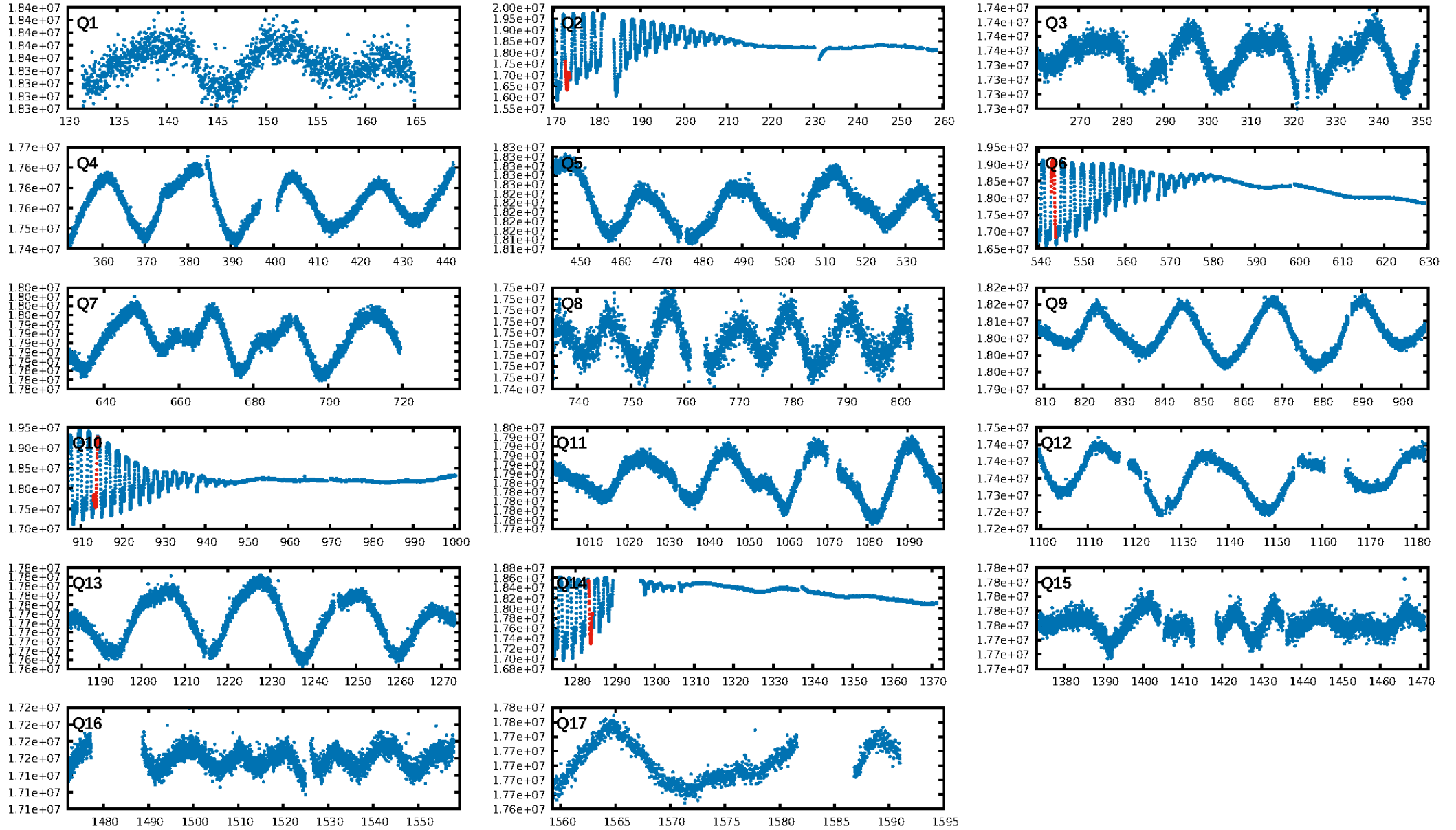
DV Diagnostic Results:

ShortPeriod-sig: 30.0% [0.39σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.96e-44
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.5256
Centroid-sig: N/A
Centroid-so: 2.260 arcsec [19.83σ]
OotOffset-rm: 2.100 arcsec [28.25σ]
KicOffset-rm: 1.953 arcsec [29.17σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.67 [2/3]

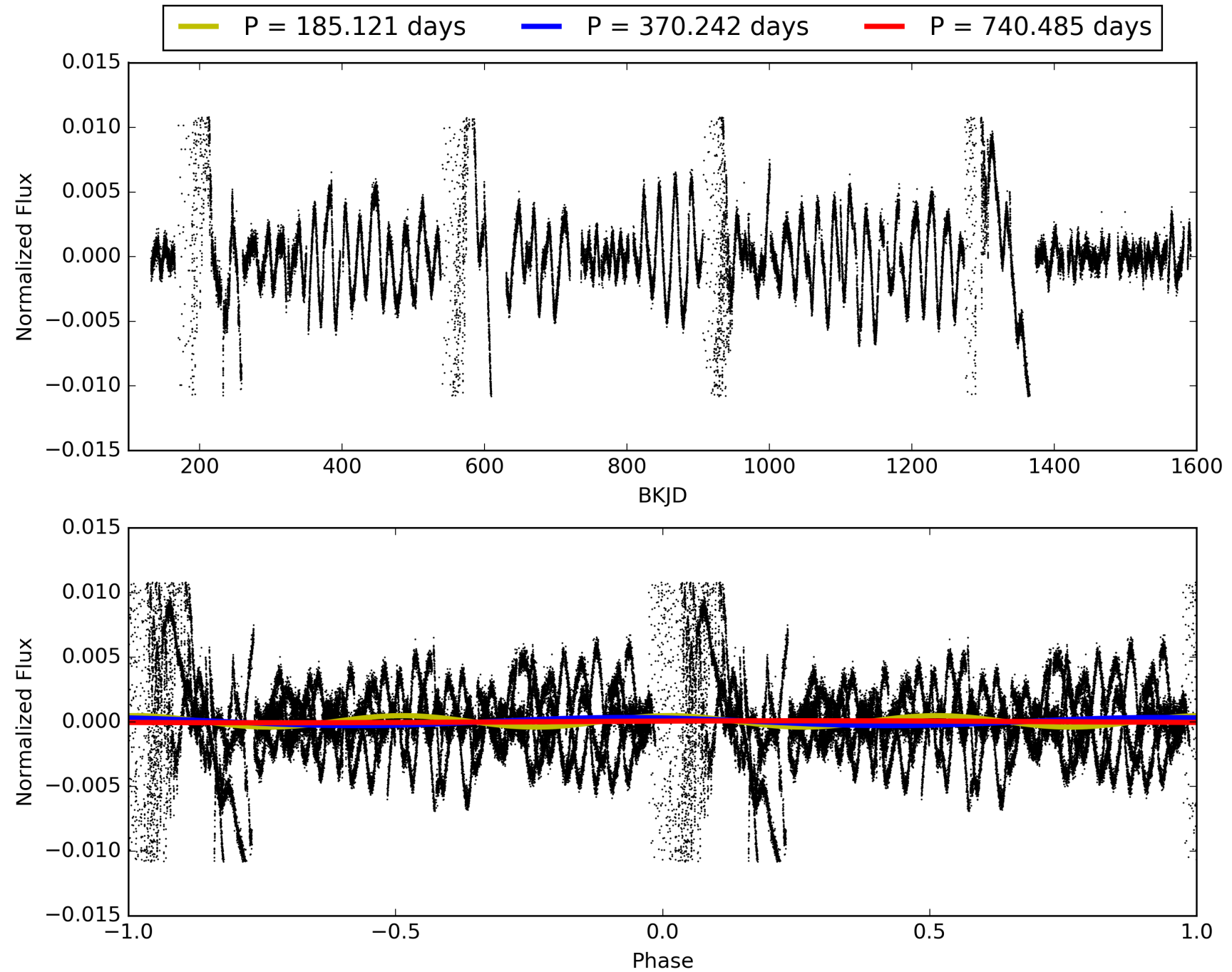
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:56:20 Z

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

TCE 004737595-03, PDC Light Curves

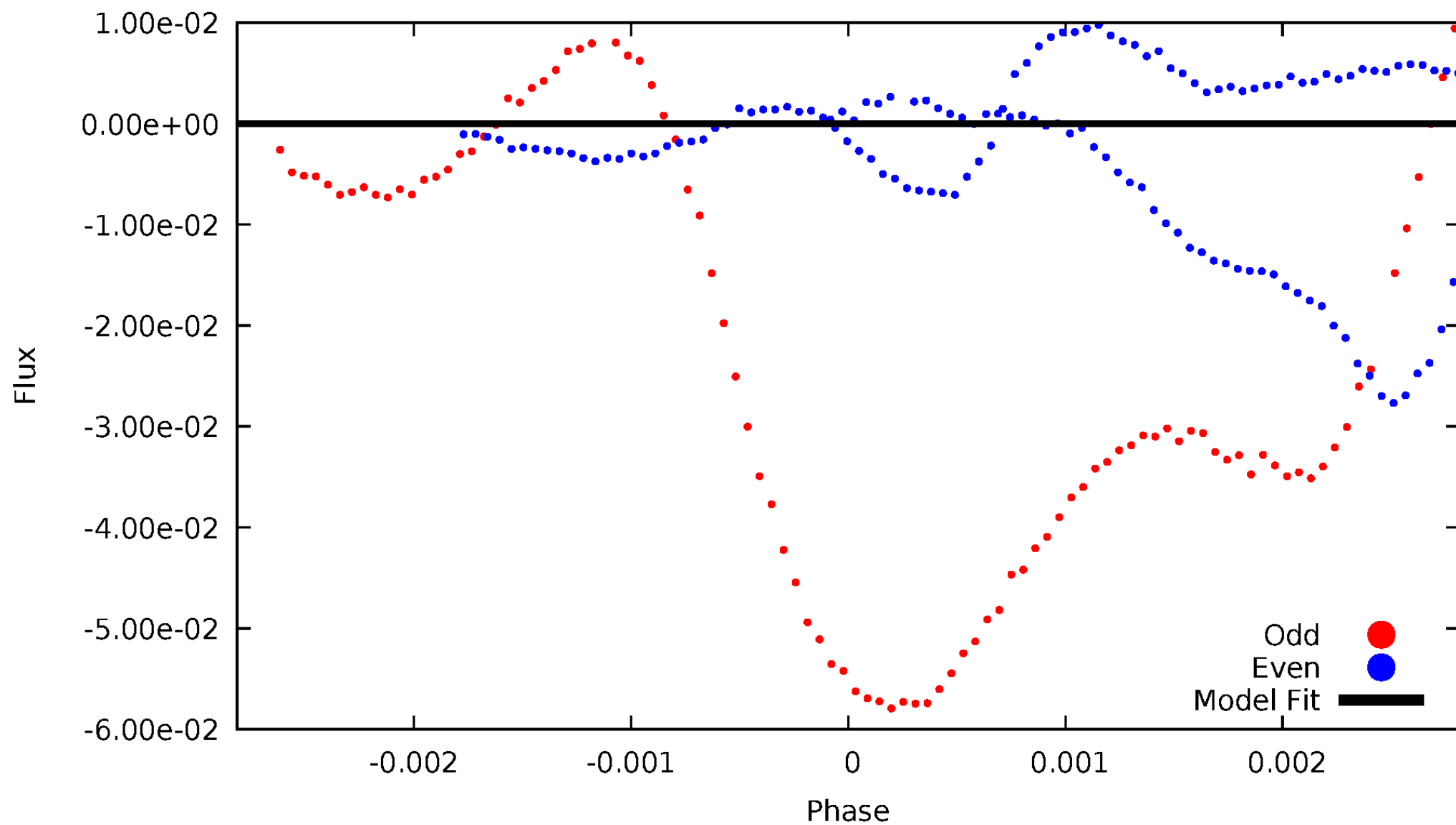


TCE 004737595-03



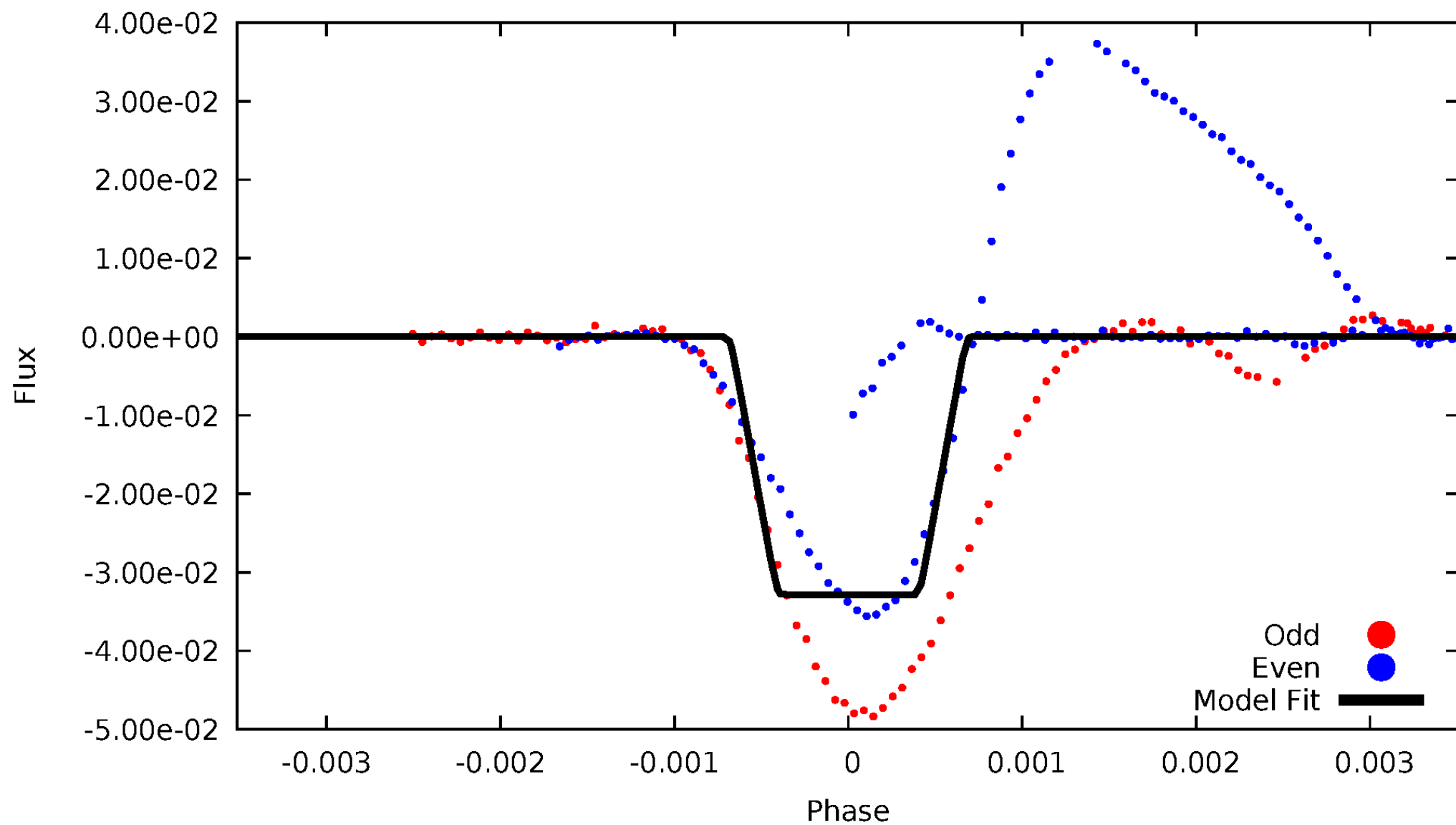
DV Odd/Even

TCE 004737595-03



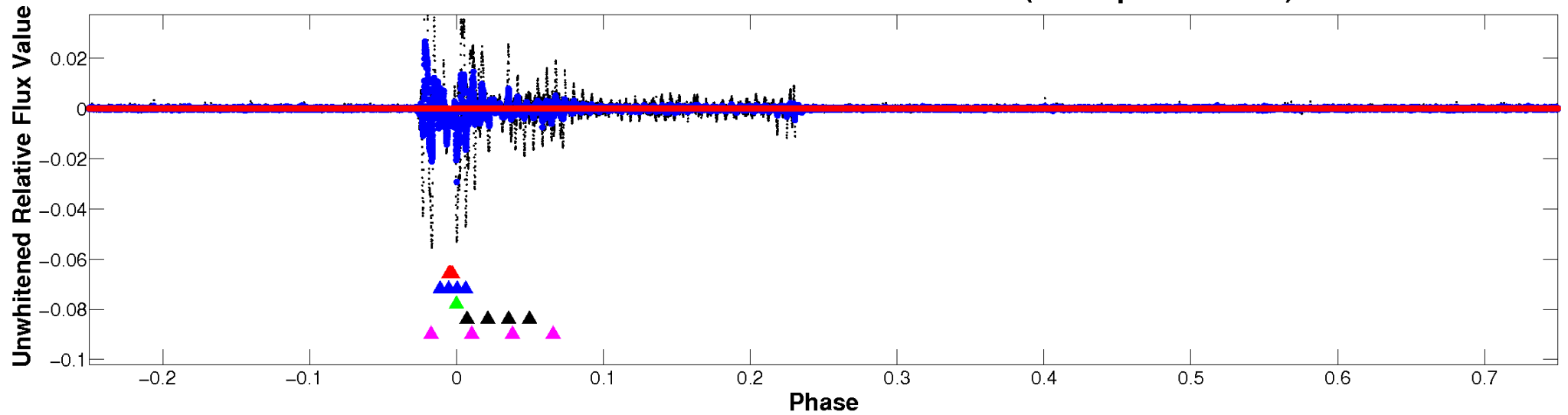
ALT Odd/Even

TCE 004737595-03



Non-Whitened Vs. Whitened Light Curve

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

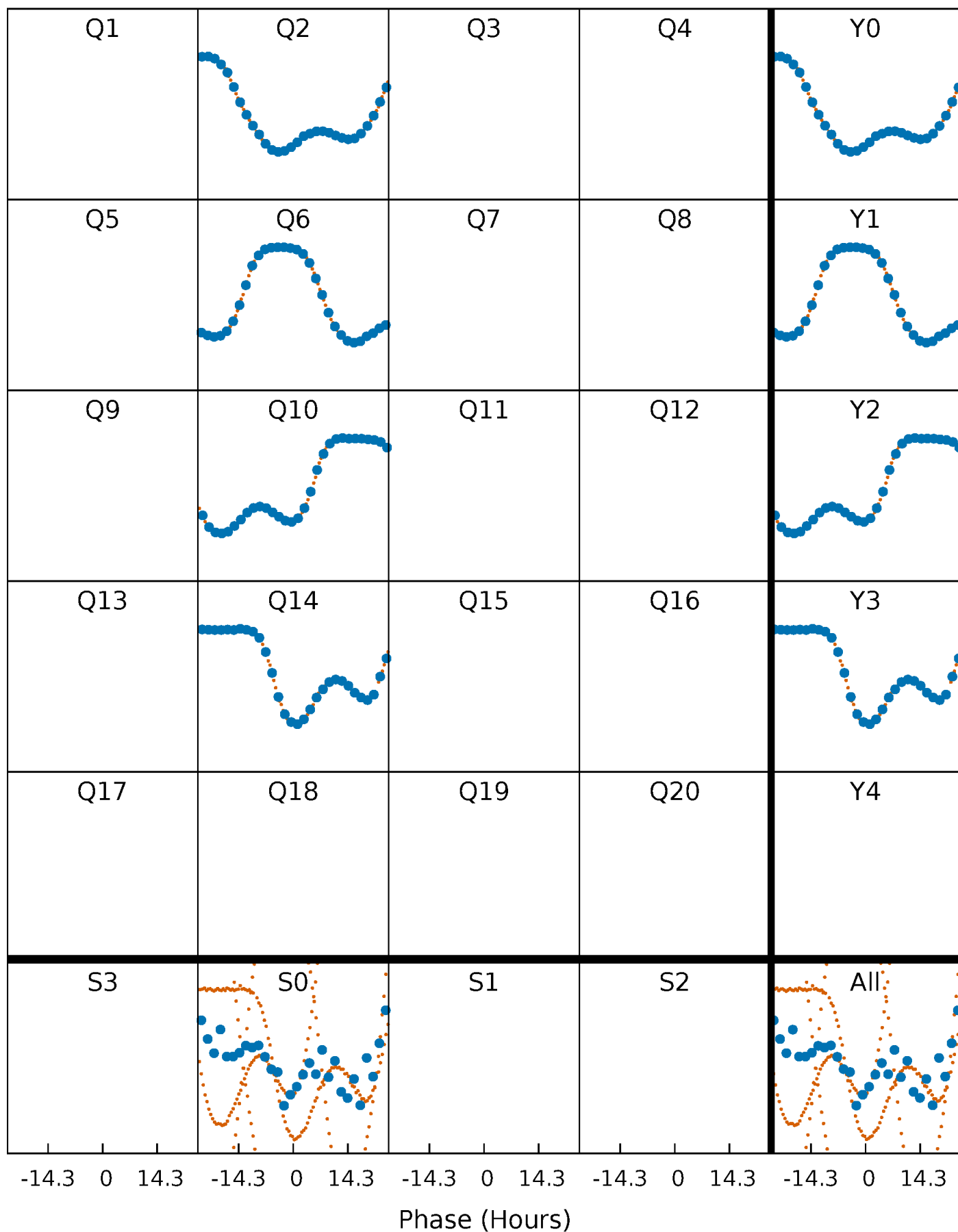


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



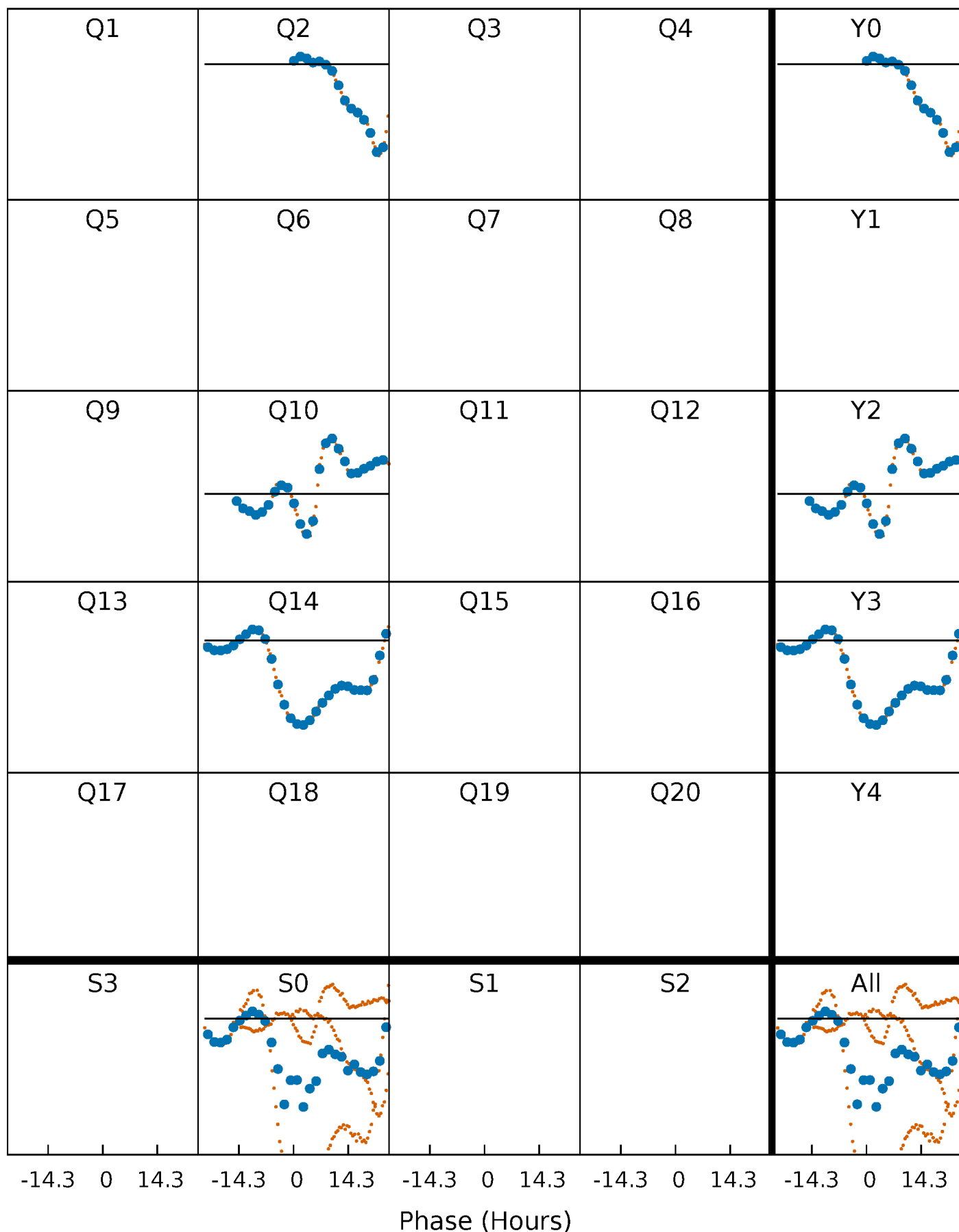
PDC Quarter-Phased Transit Curves

TCE 004737595-03 $P=370.242485$ Days $T_0=173.066044$ (BKJD)



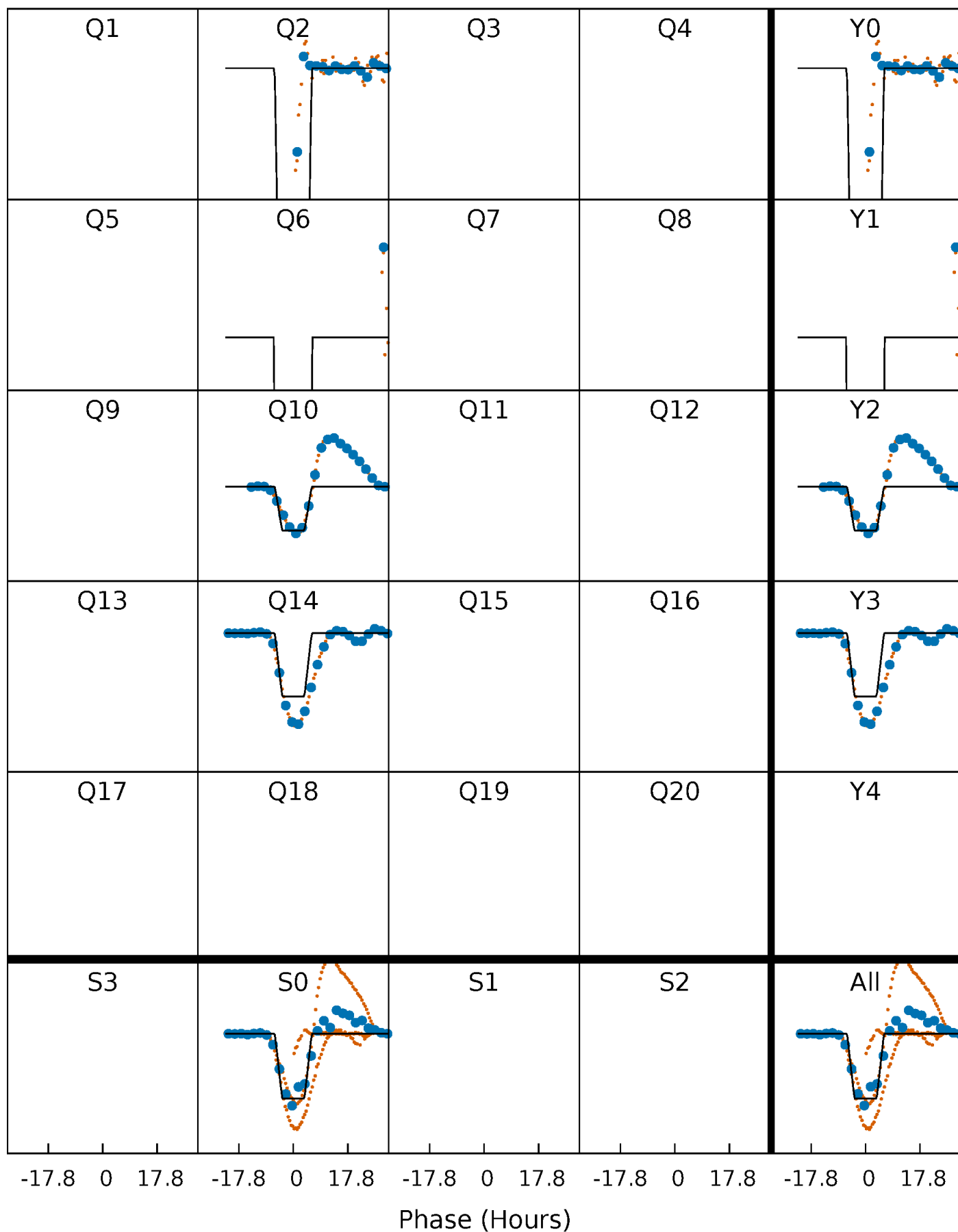
DV Quarter-Phased Transit Curves

TCE 004737595-03 P=370.242485 Days $T_0=173.066044$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

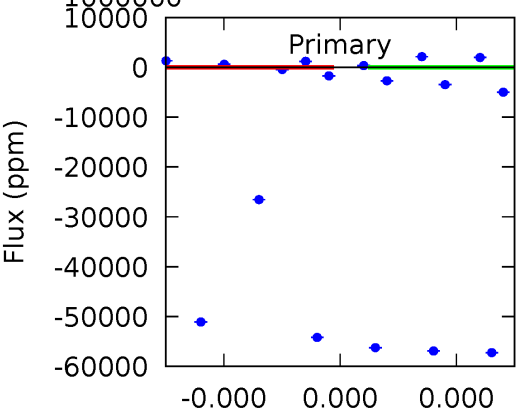
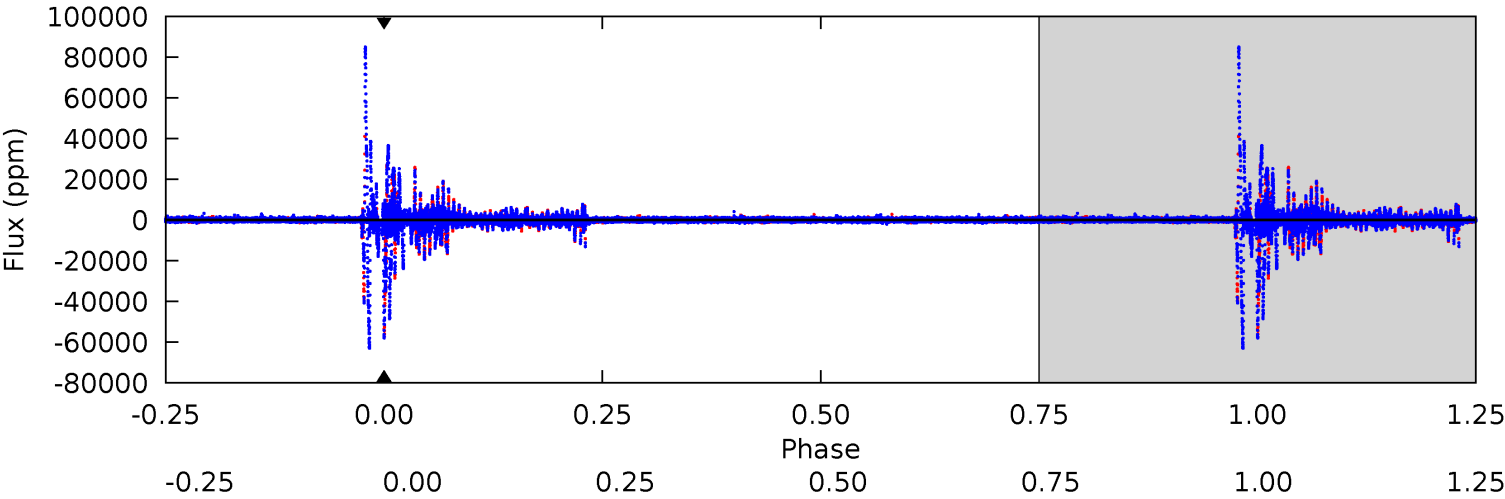
TCE 004737595-03 P=370.242485 Days $T_0=173.024748$ (BKJD)



DV Model-Shift Uniqueness Test

004737595-03, P = 370.242485 Days, E = 173.066044 Days

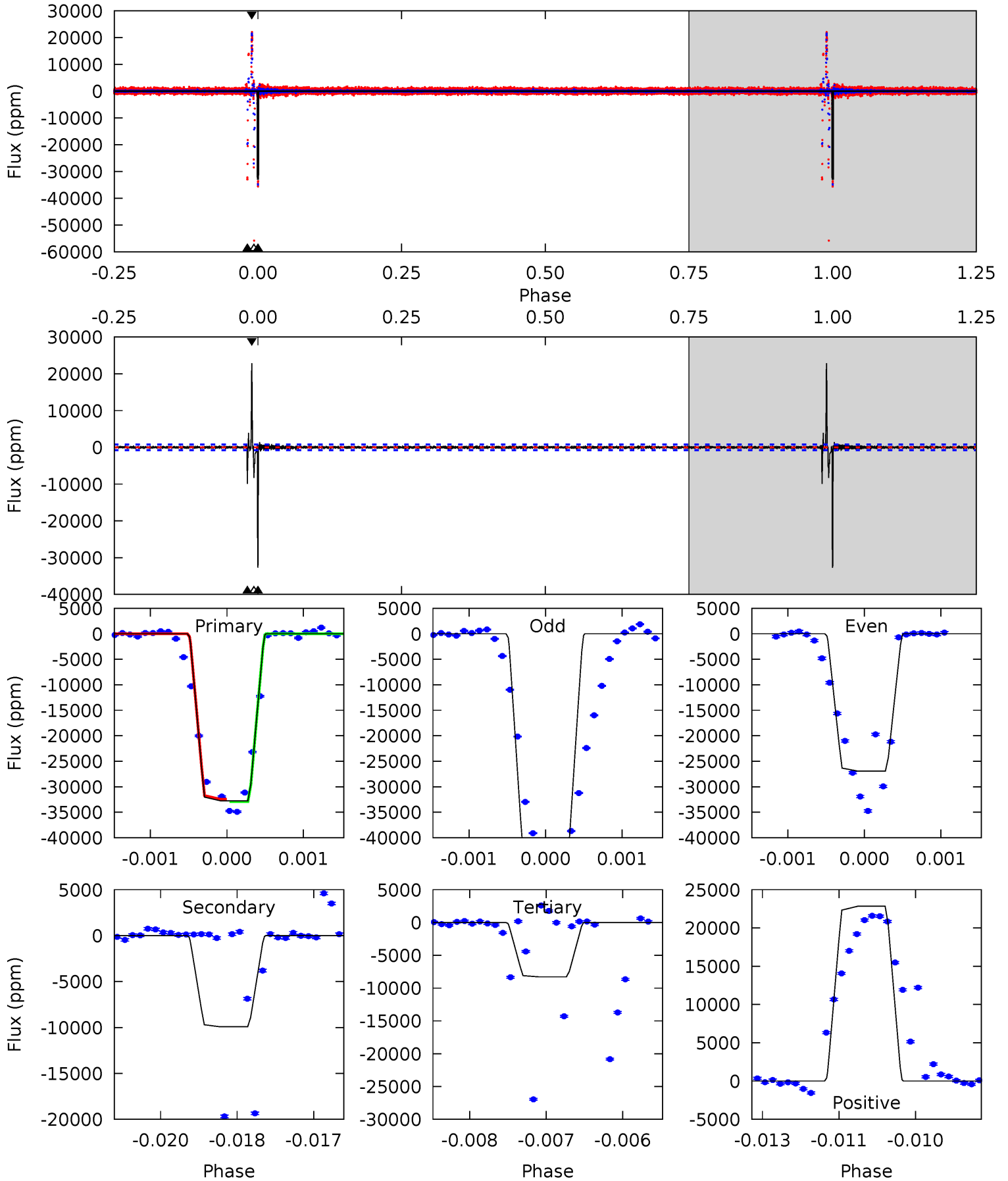
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

004737595-03, P = 370.242485 Days, E = 173.024748 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
234.5	71.1	59.4	163.6	5.39	3.20	3.17	175.1	70.9	11.7	-92.5	73.6	0.85	0.41	1.35



Stellar Parameters For KIC 004737595

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4497^{+135}_{-135}	$4.609^{+0.053}_{-0.025}$	$-0.180^{+0.300}_{-0.300}$	$0.661^{+0.048}_{-0.058}$	$0.648^{+0.073}_{-0.053}$	$3.156^{+0.733}_{-0.362}$
	+3%/-3%	+1%/-1%	+167%/-167%	+7%/-9%	+11%/-8%	+23%/-11%
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 004737595-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$7.42^{+5.92}_{-4.98}$	239^{+8}_{-7}	3052^{+6435}_{-11778}	$7932^{+1555008}_{-1143463}$
Alt.	-9929 ± 140	$13.56^{+6.92}_{-6.83}$	239^{+9}_{-8}	3587^{+1036}_{-428}	23275^{+70640}_{-13082}

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 $A_{obs} \gg 1.0$

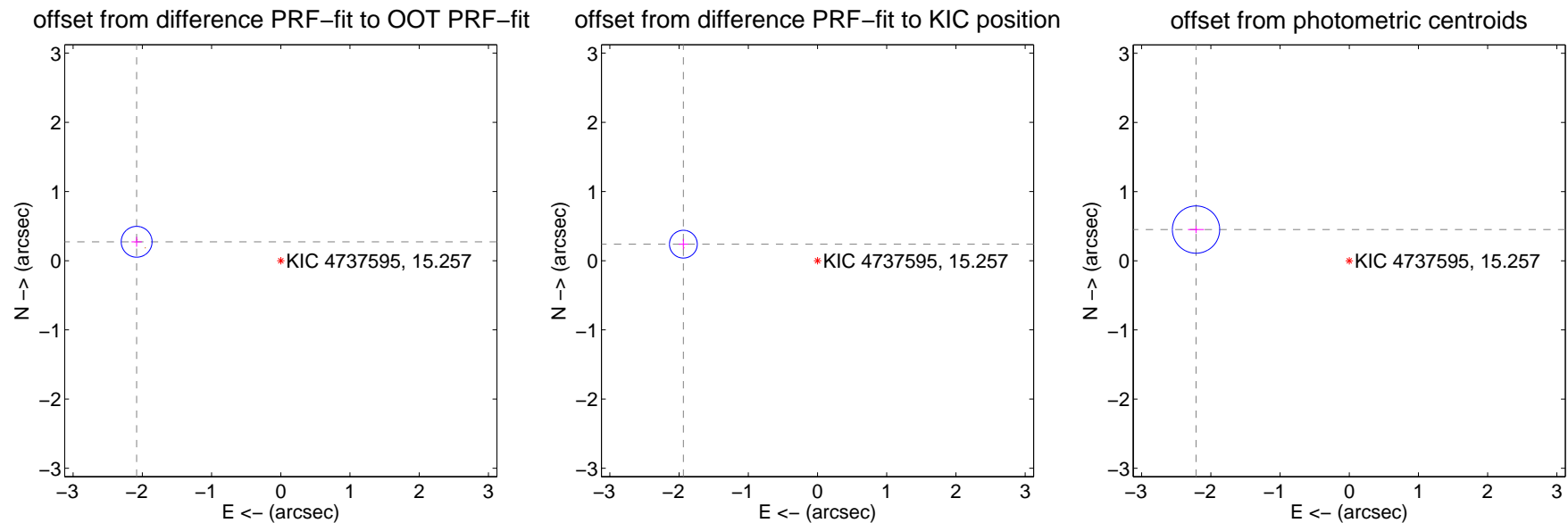
DV Centroid Data

Supplemental centroid analysis for 004737595-03. Kepler magnitude: 15.26. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

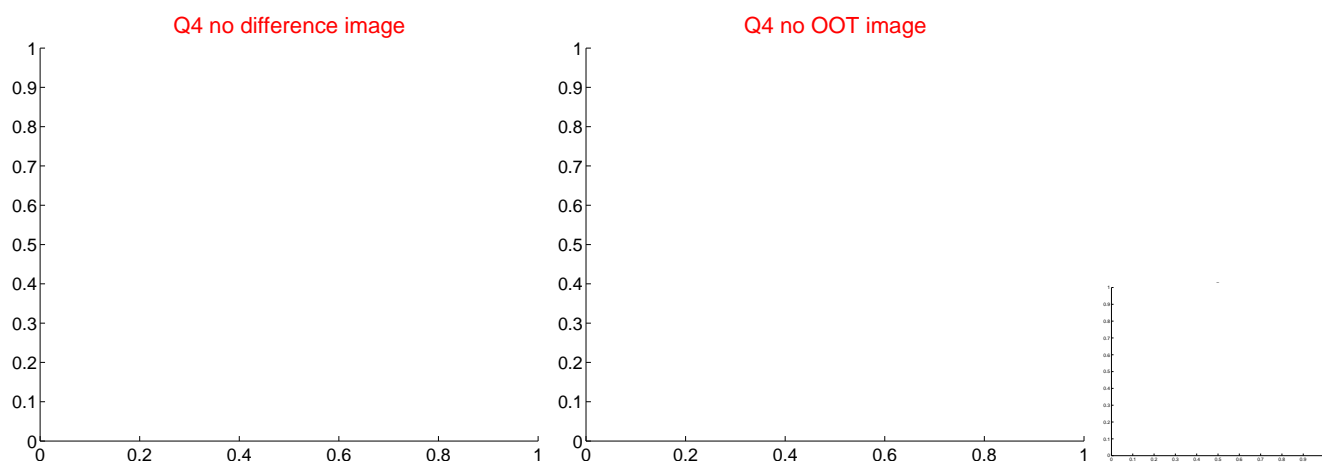
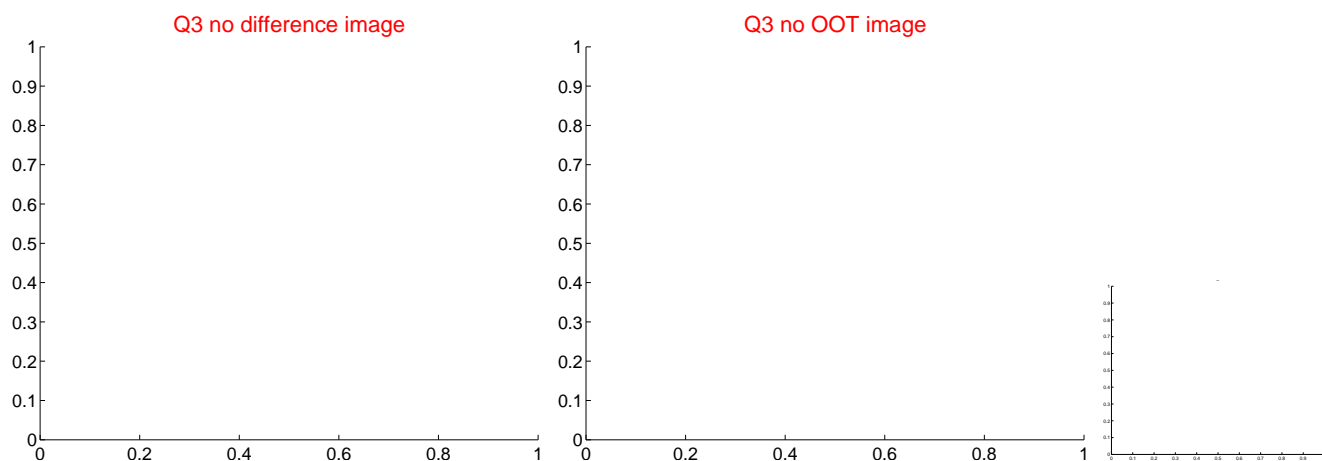
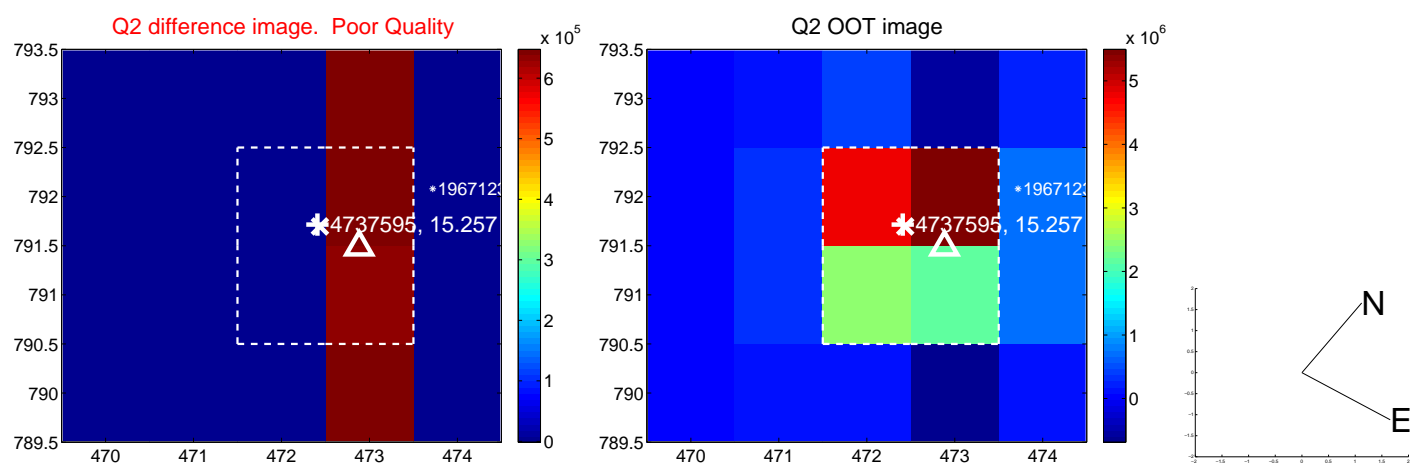
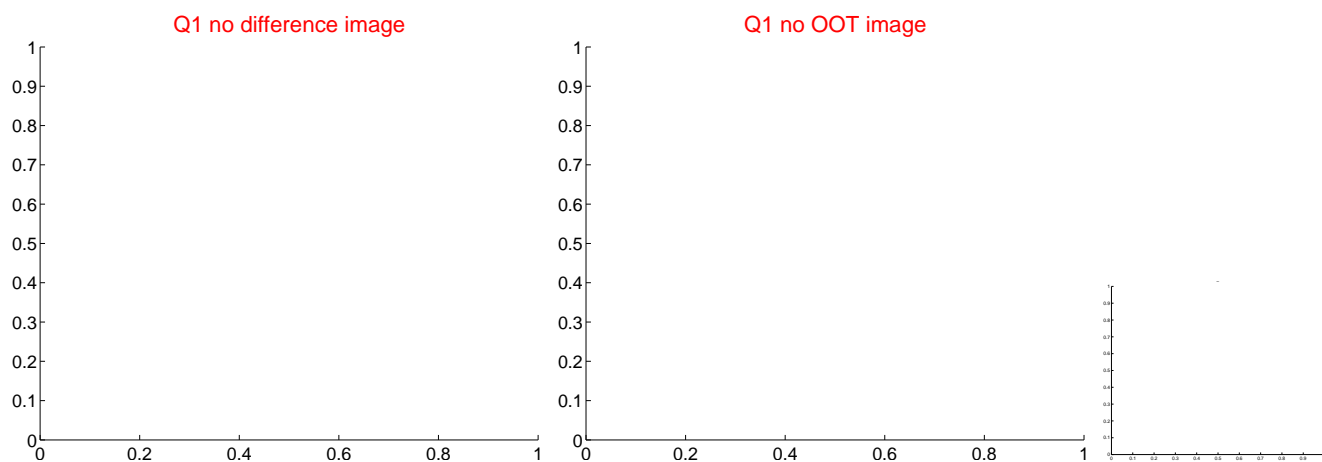
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.100 ± 0.074	28.25	2.082 ± 0.074	0.273 ± 0.071
PRF-fit source offset from KIC position	1.953 ± 0.067	29.17	1.938 ± 0.067	0.239 ± 0.076
photometric centroid source offset	2.26 ± 0.11	19.83	2.21 ± 0.12	0.45 ± 0.05

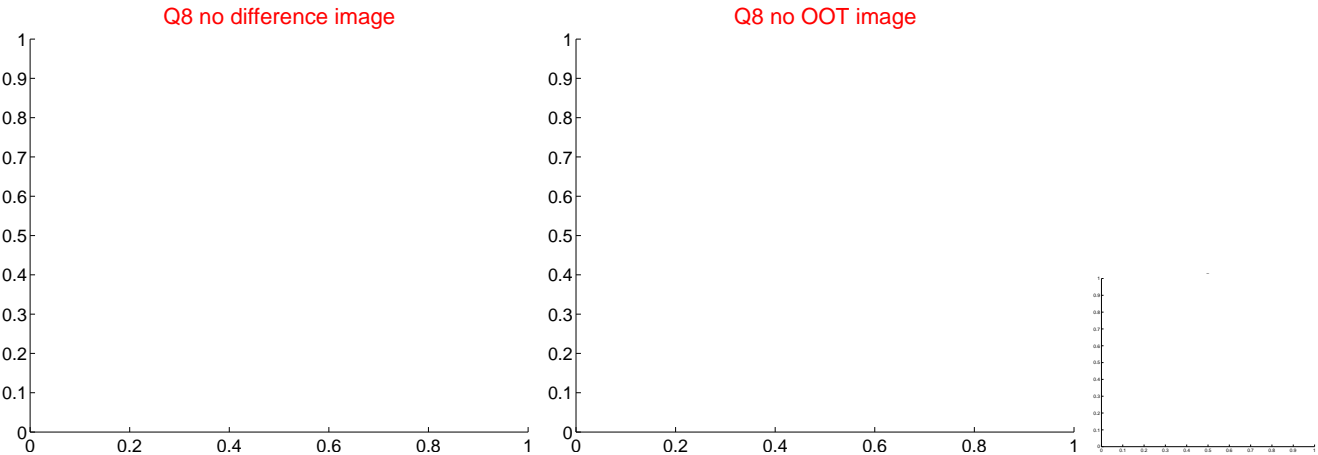
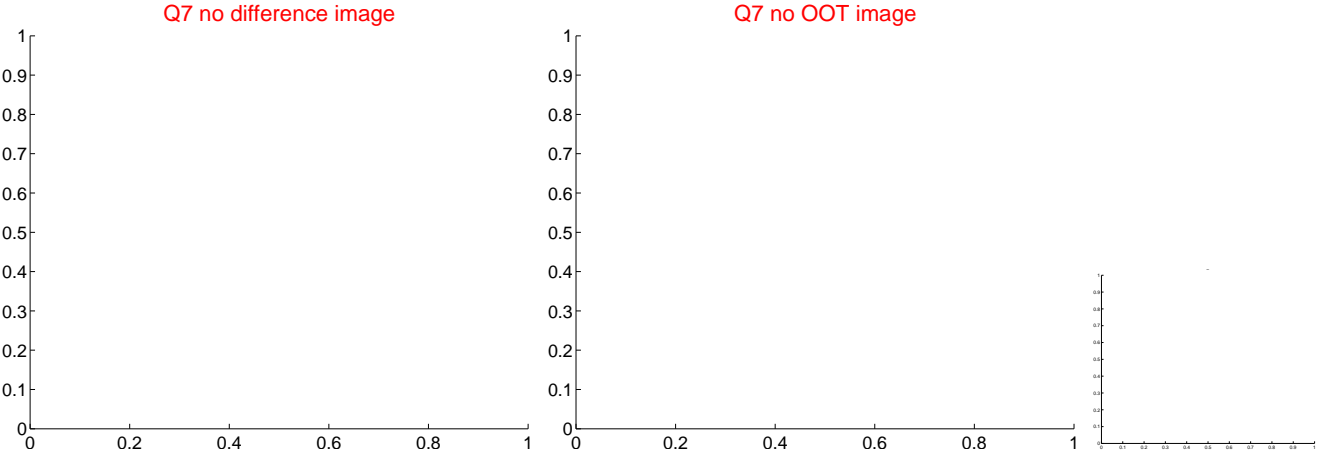
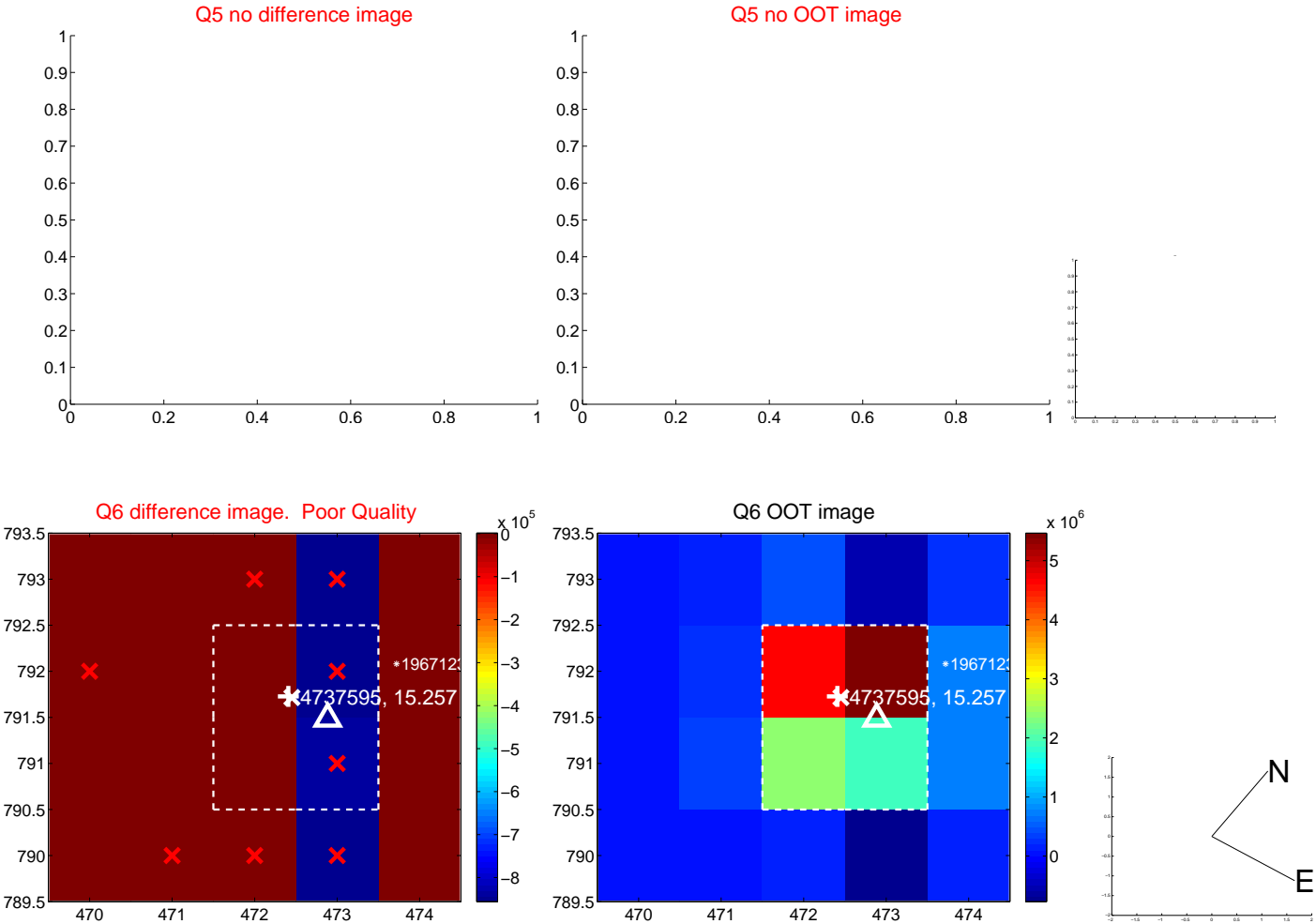


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

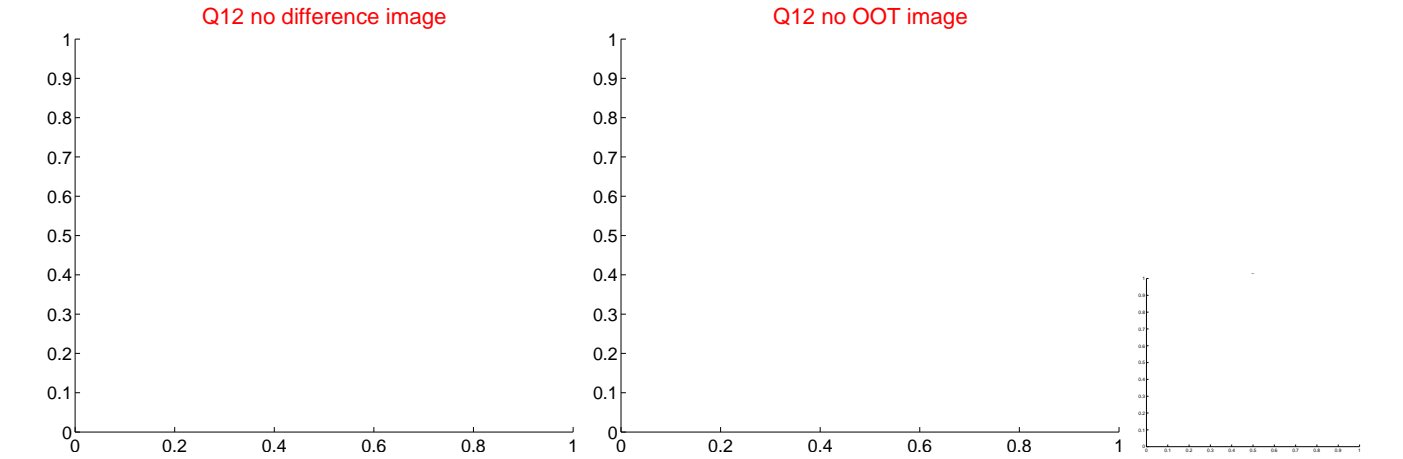
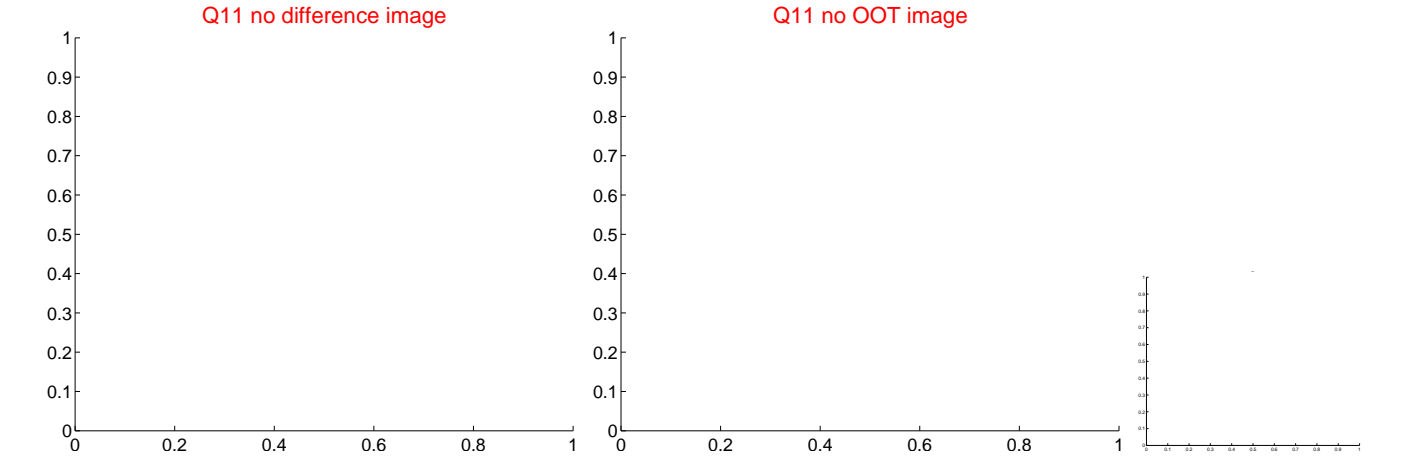
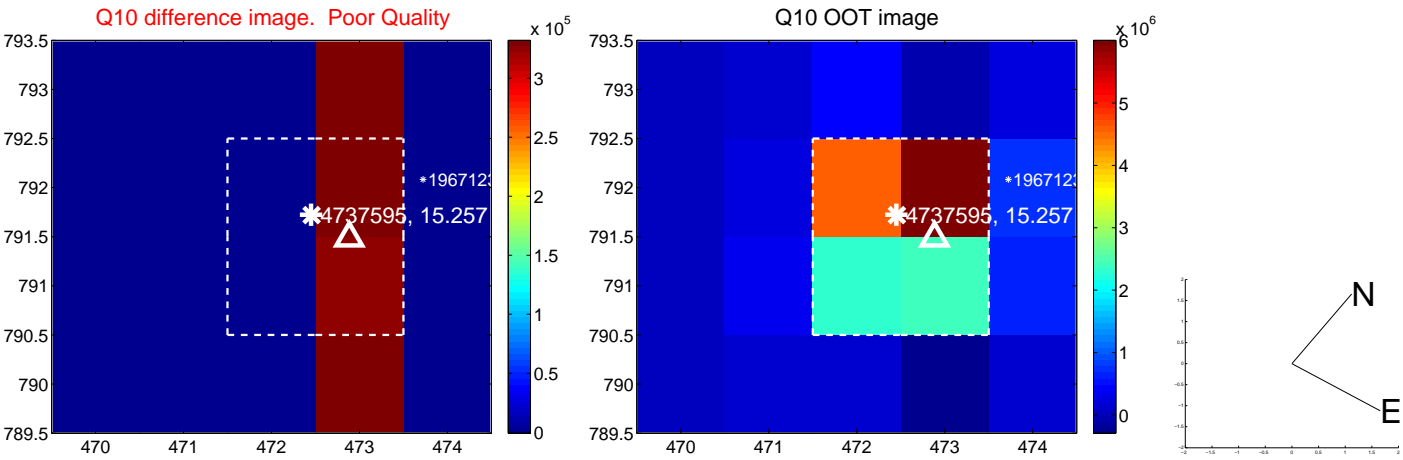
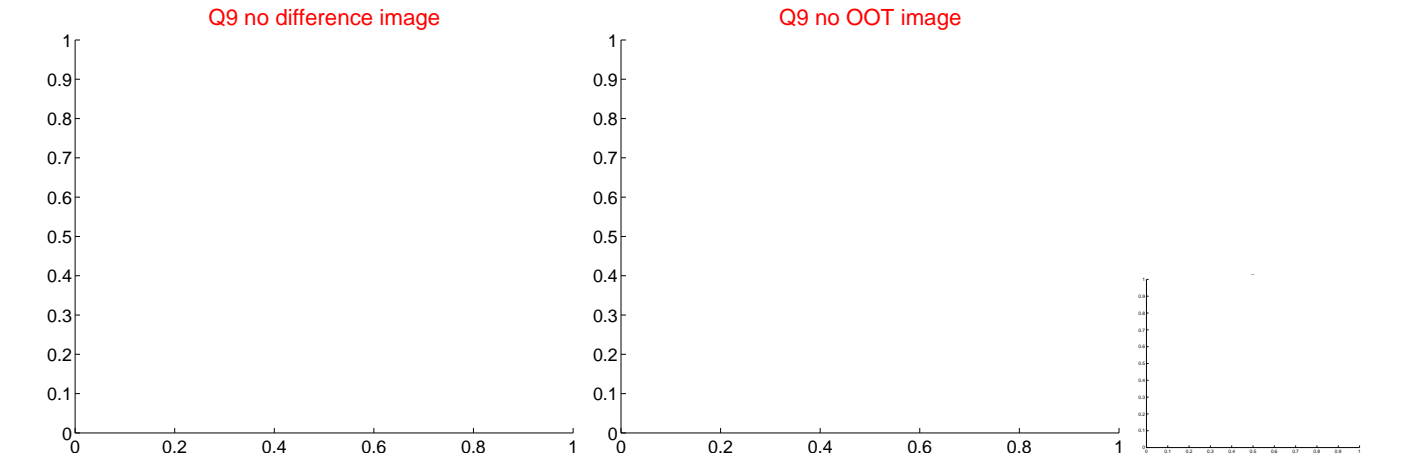
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



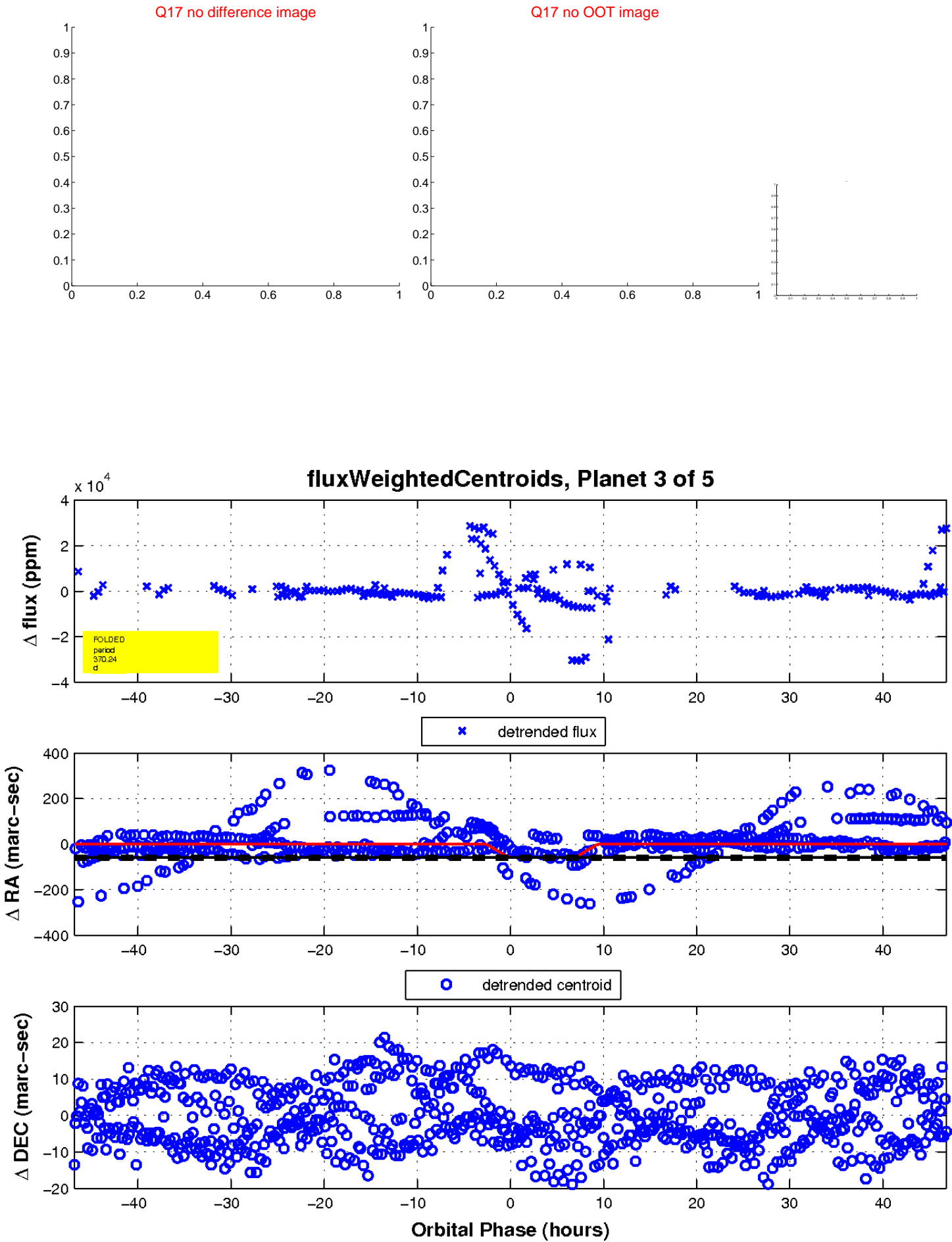
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

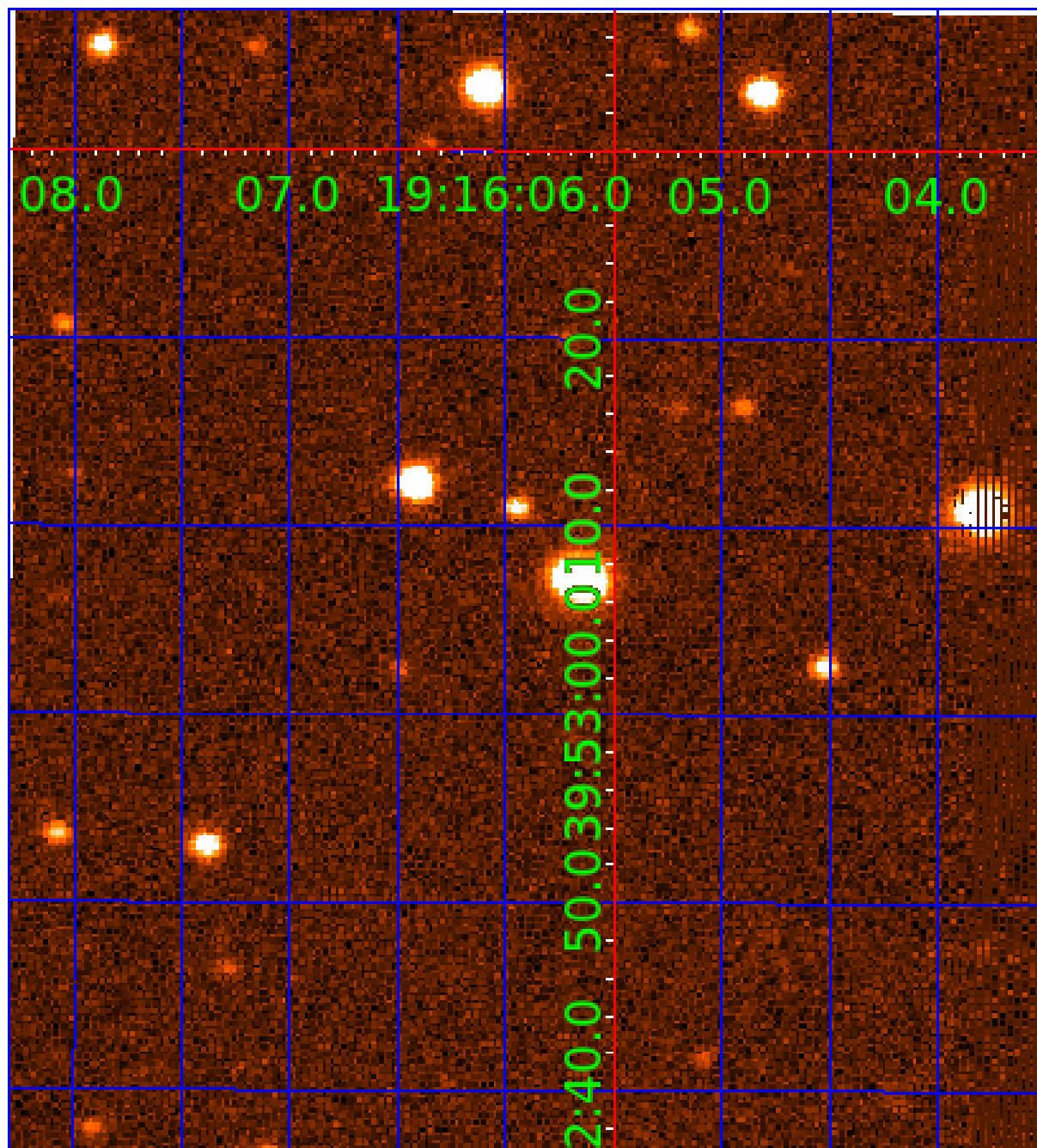


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004737595

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})
004737595-01	OBS	No	369.929170	172.078422	6627.1	15.000	53.3	-1.0	0.66	4497	5.15	0.21
004737595-02	OBS	No	368.090150	175.409092	9419.9	15.000	81.0	-1.0	0.66	4497	6.14	0.21
004737595-03	OBS	No	370.242485	173.066044	6902.3	12.500	46.8	-1.0	0.66	4497	5.26	0.21
004737595-04	OBS	No	364.997431	191.472844	3234.7	29.354	27.2	7.4	0.66	4497	3.89	0.21
004737595-05	OBS	No	359.985104	197.448211	52879.5	32.654	46.0	66.4	0.66	4497	26.76	0.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004737595-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
004737595-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
004737595-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
004737595-04	OBS	FP	0.00	1	0	0	0	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004737595-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

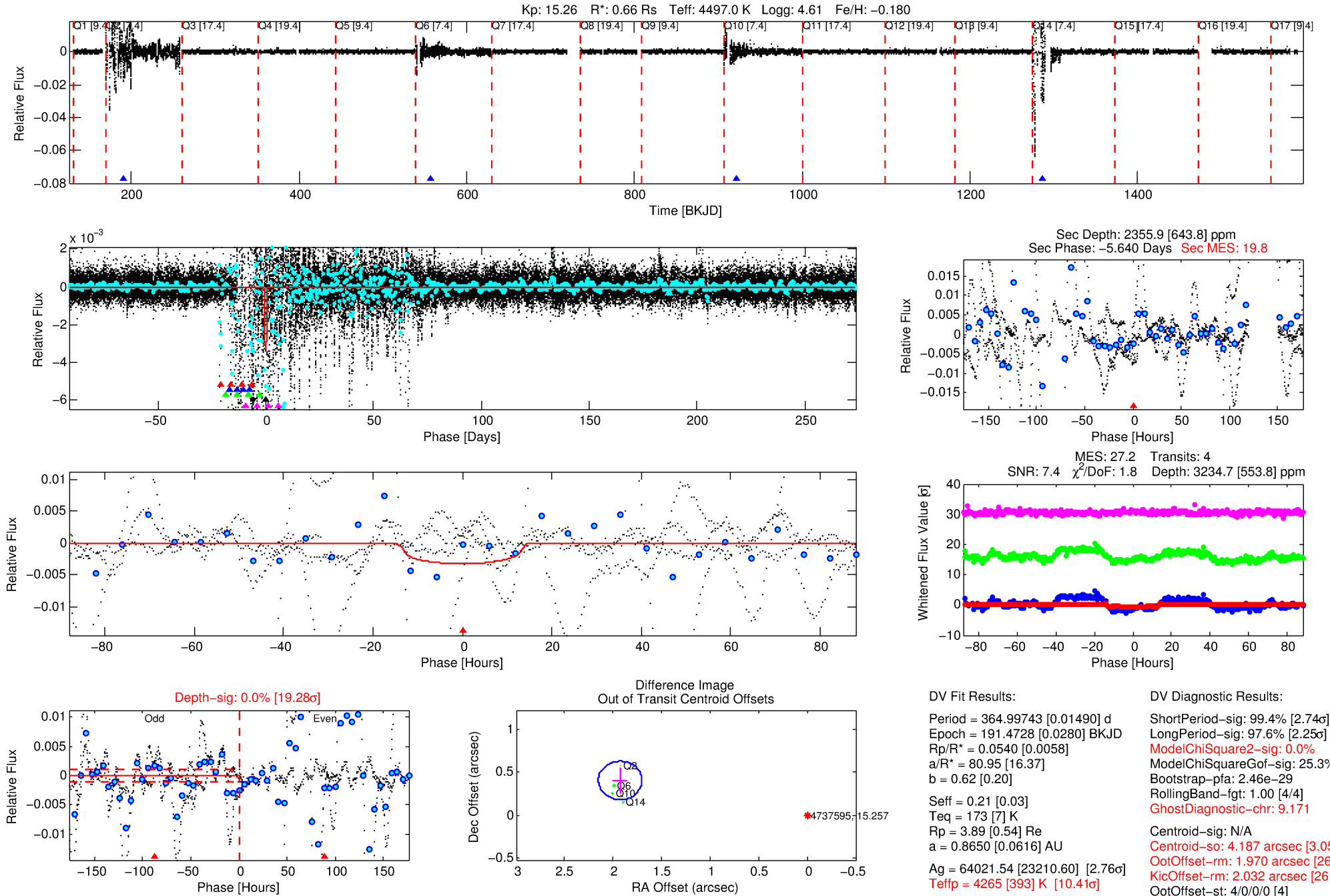
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004737595-04

No Significant Match Found

DV One-Page Summary

KIC: 4737595 Candidate: 4 of 5 Period: 364.997 d



DV Fit Results:

Period = 364.99743 [0.01490] d
Epoch = 191.4728 [0.0280] BKJD
Rp/R* = 0.0540 [0.0058]
a/R* = 80.95 [16.37]
b = 0.62 [0.20]
Seff = 0.21 [0.03]
Teq = 173 [7] K
Rp = 3.89 [0.54] Re
a = 0.8650 [0.0616] AU
Ag = 64021.54 [23210.60] [2.76σ]
Teffp = 4265 [393] K [10.41σ]

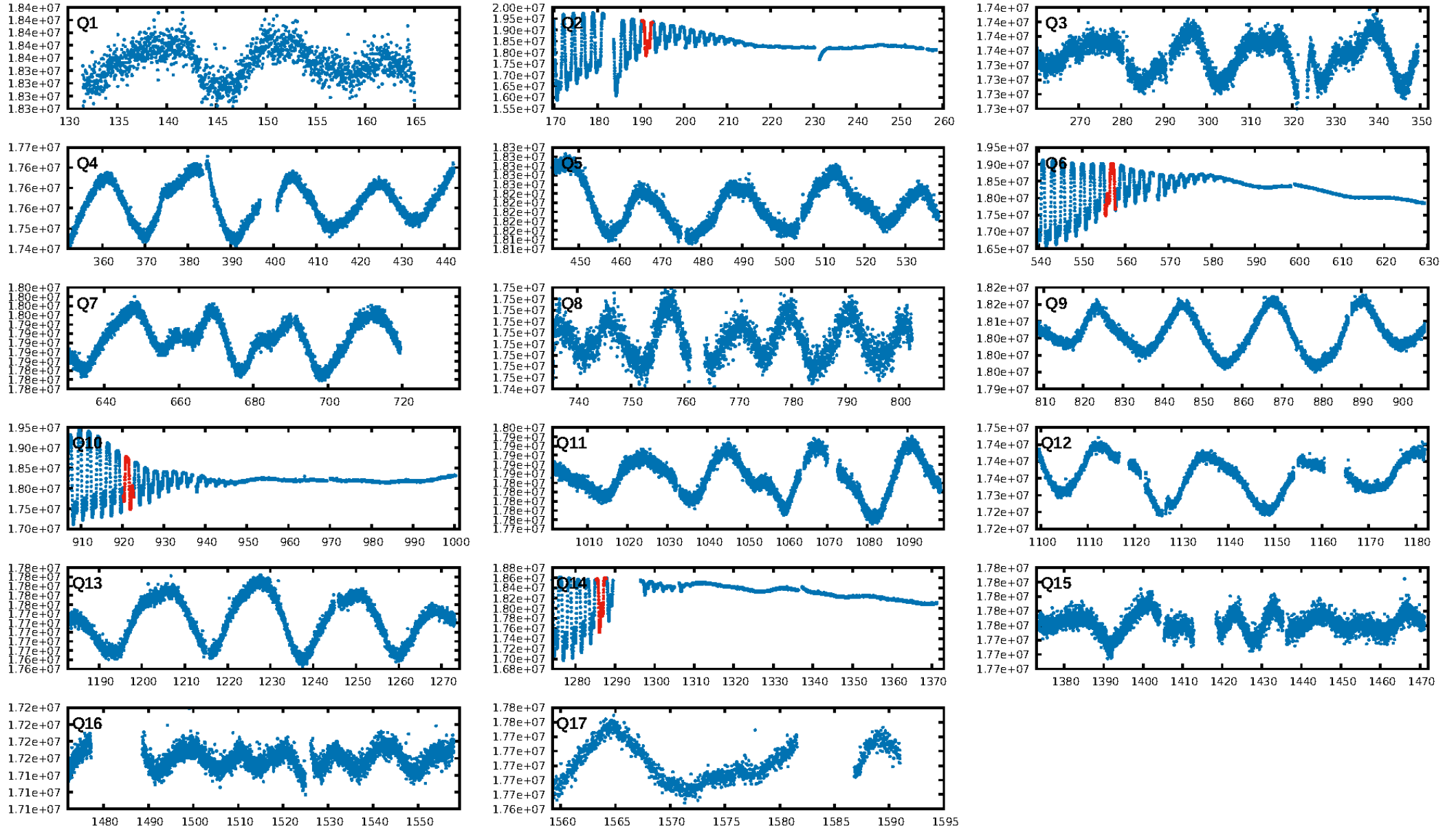
DV Diagnostic Results:

ShortPeriod-sig: 99.4% [2.74σ]
LongPeriod-sig: 97.6% [2.25σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 25.3%
Bootstrap-pfa: 2.46e-29
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 9.171
Centroid-sig: N/A
Centroid-so: 4.187 arcsec [3.05σ]
OotOffset-rm: 1.970 arcsec [26.32σ]
KicOffset-rm: 2.032 arcsec [26.11σ]
OotOffset-st: 4/0/0/0 [4]
KicOffset-st: 4/0/0/0 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 0.75 [3/4]

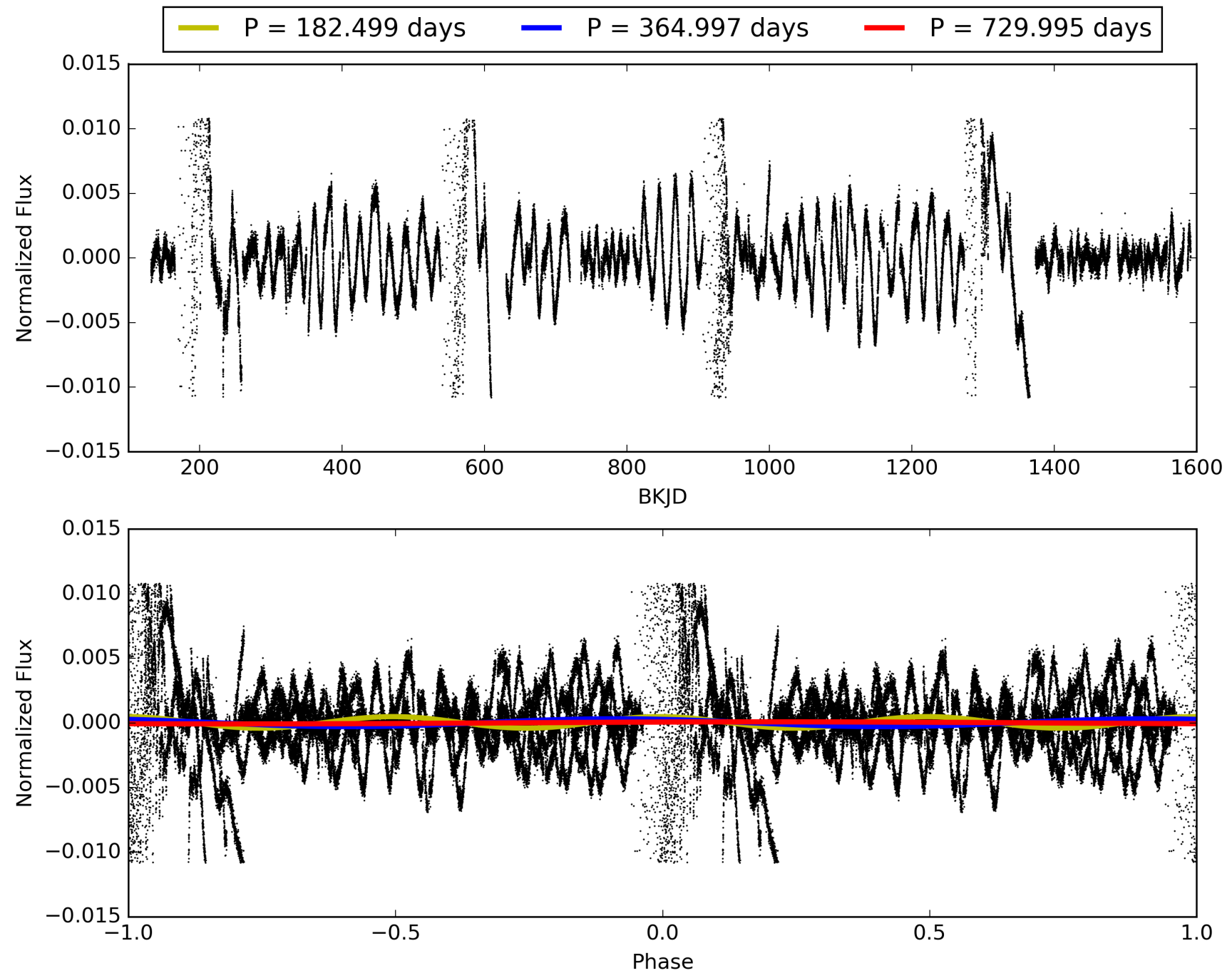
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:56:26 Z

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

TCE 004737595-04, PDC Light Curves

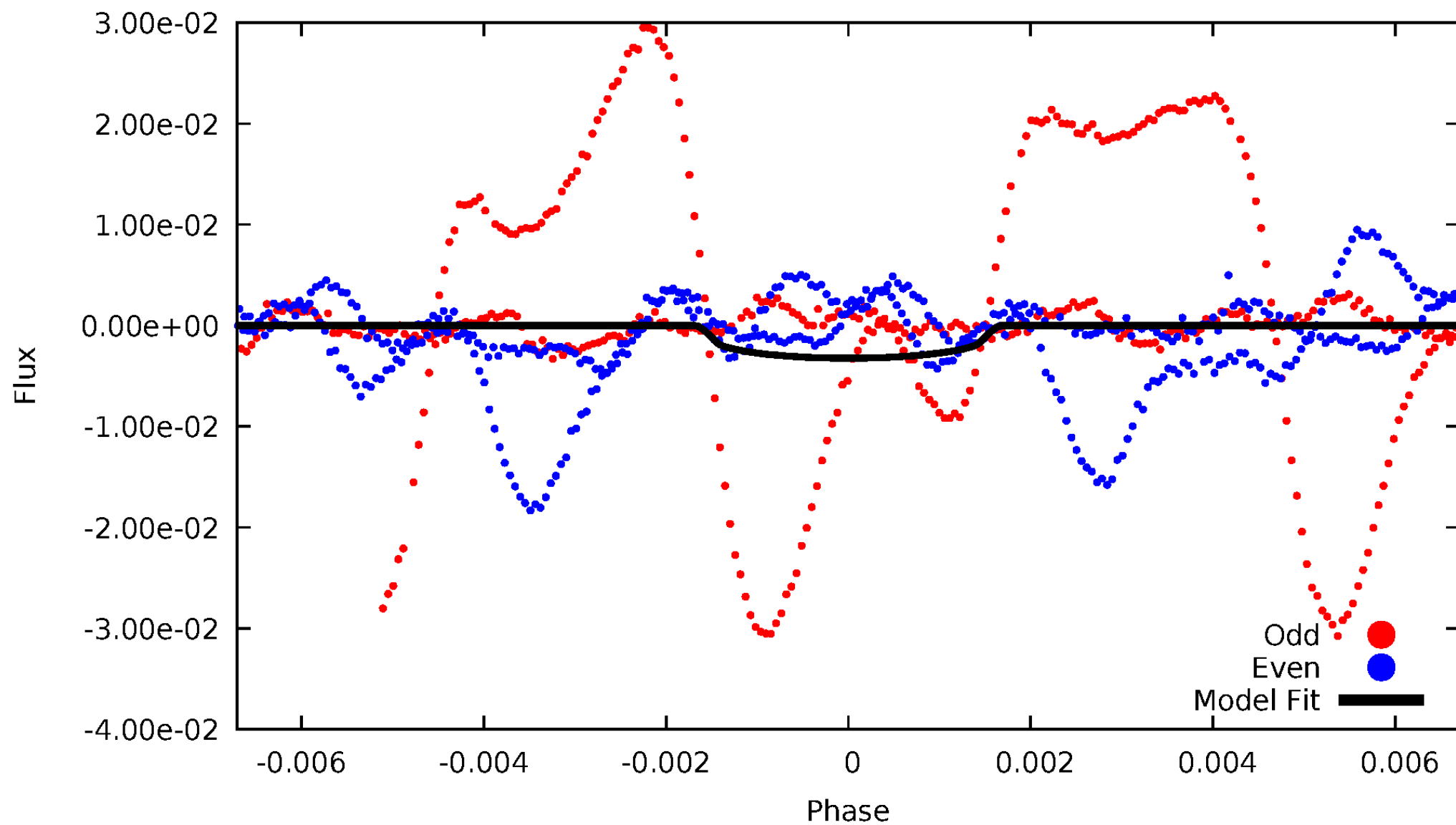


TCE 004737595-04



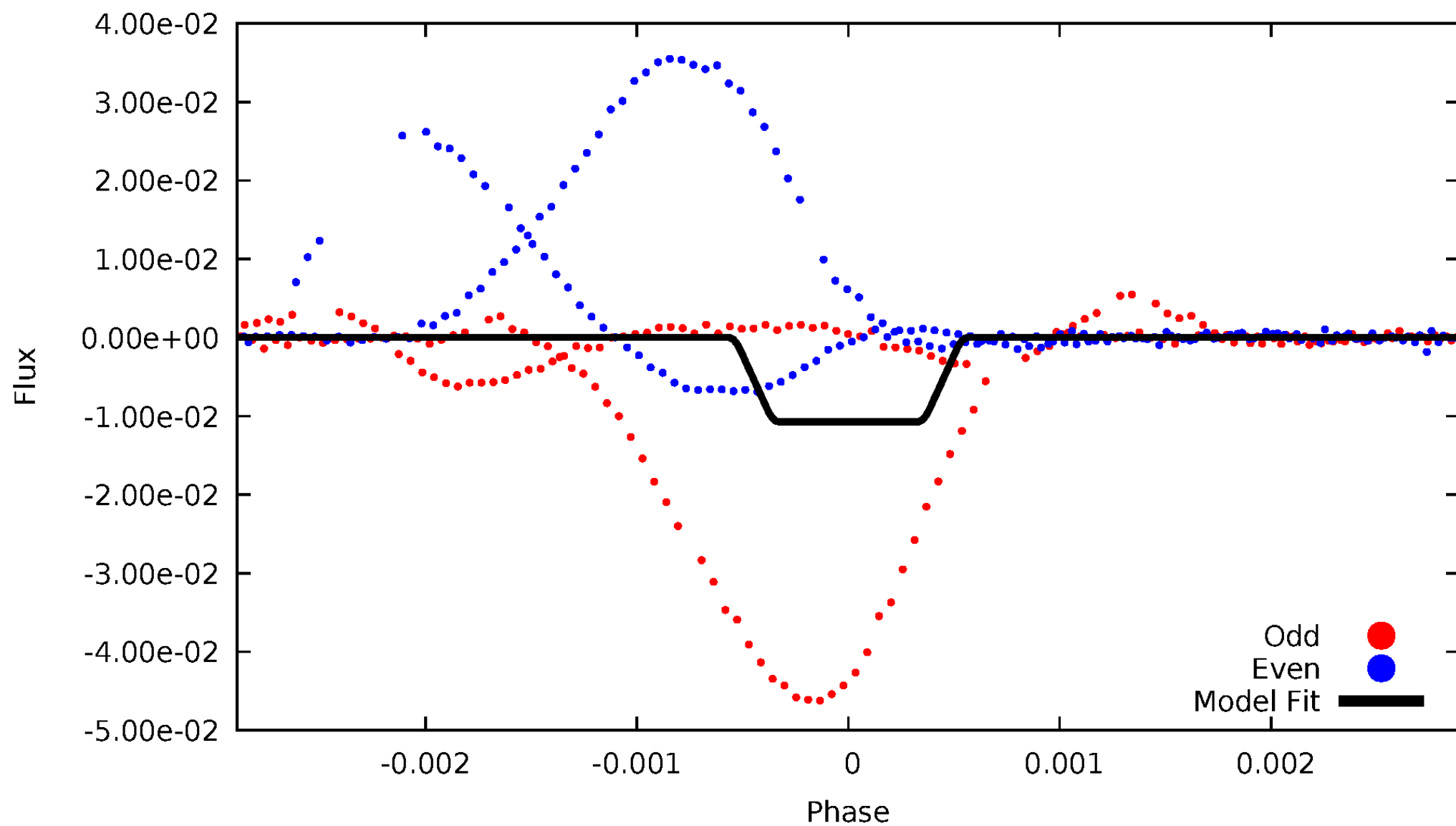
DV Odd/Even

TCE 004737595-04



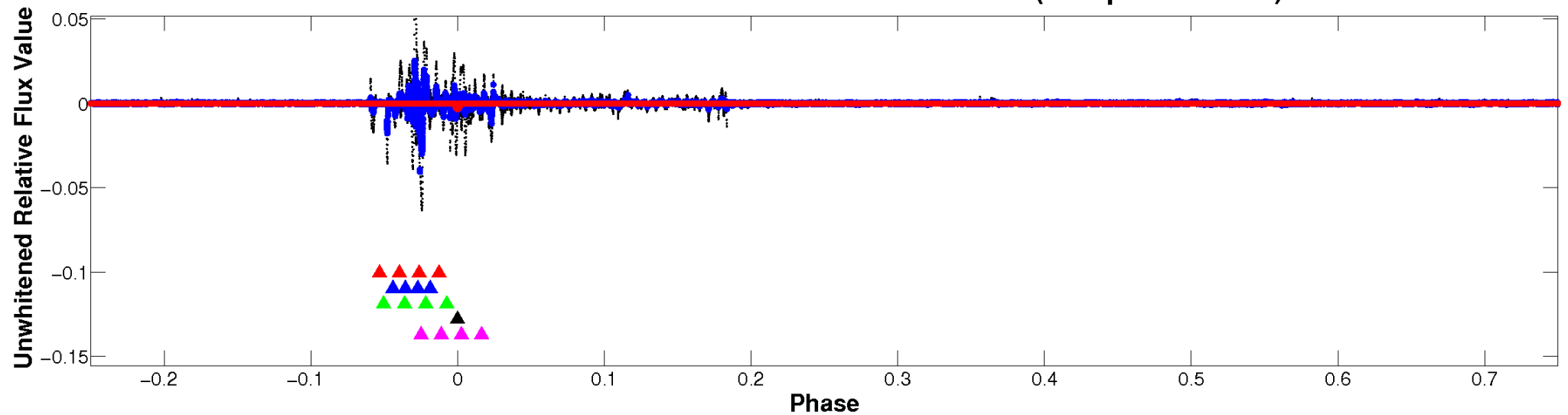
ALT Odd/Even

TCE 004737595-04

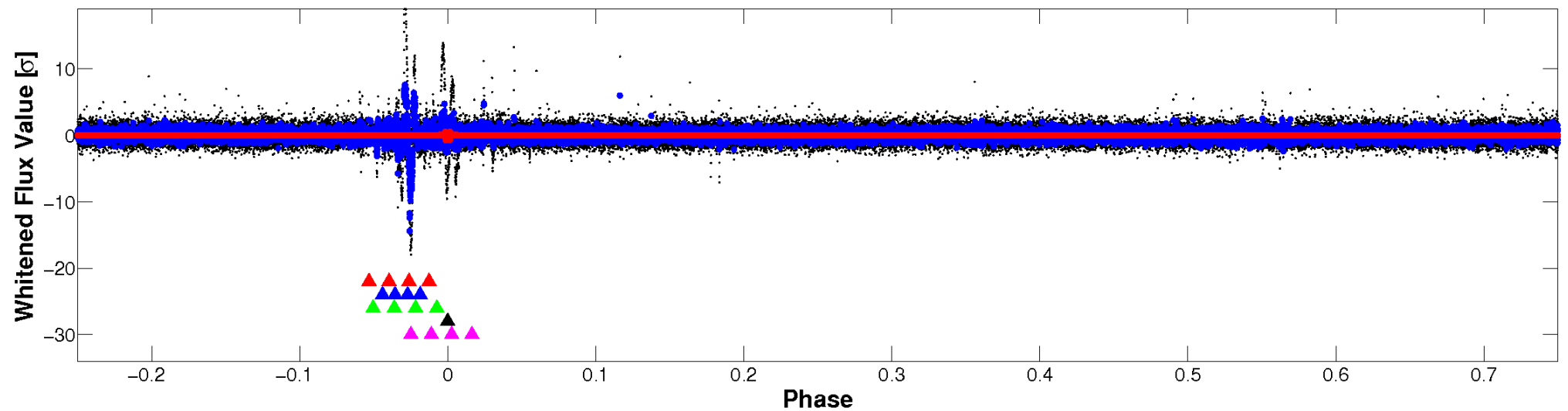


Non-Whitened Vs. Whitened Light Curve

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

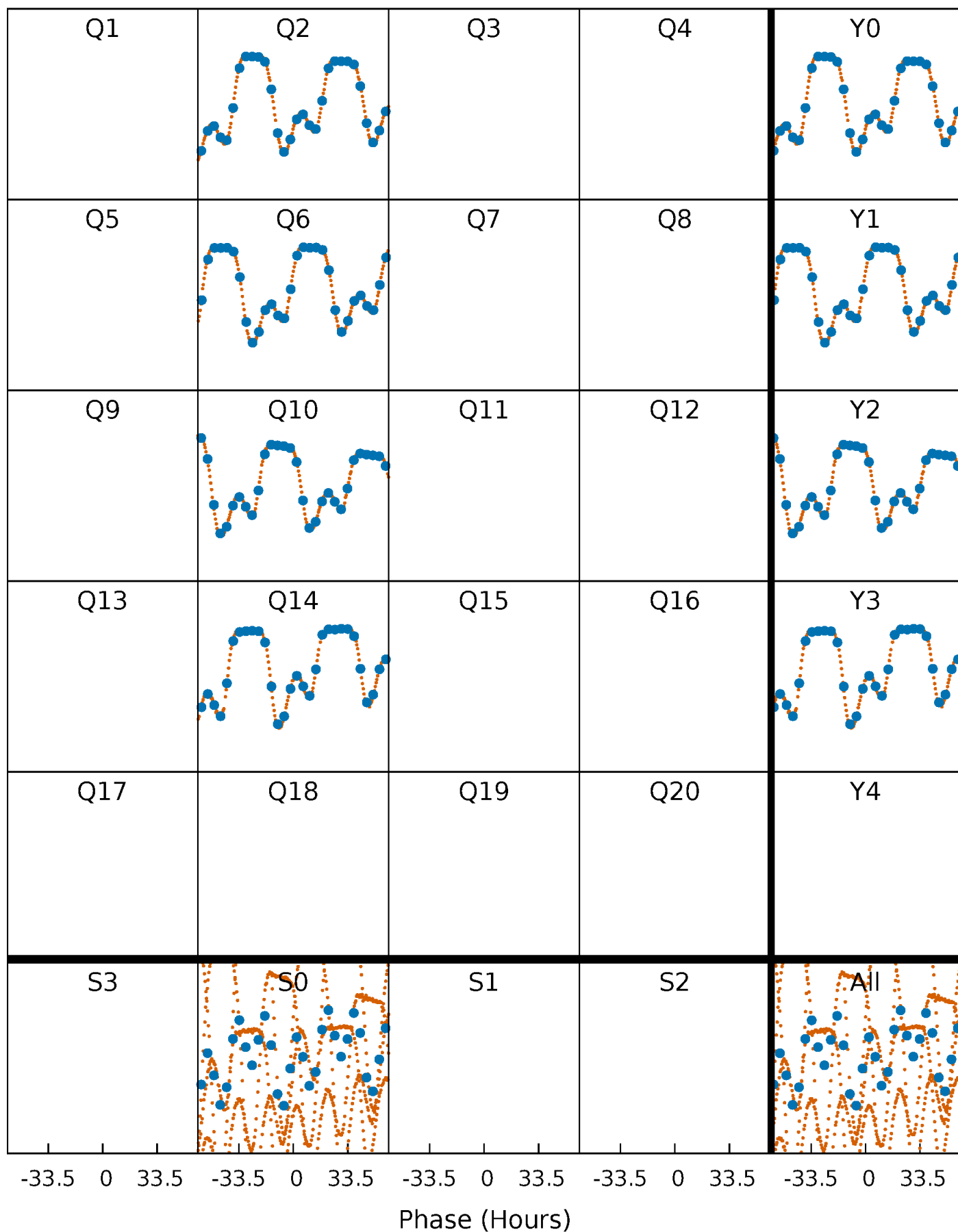


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



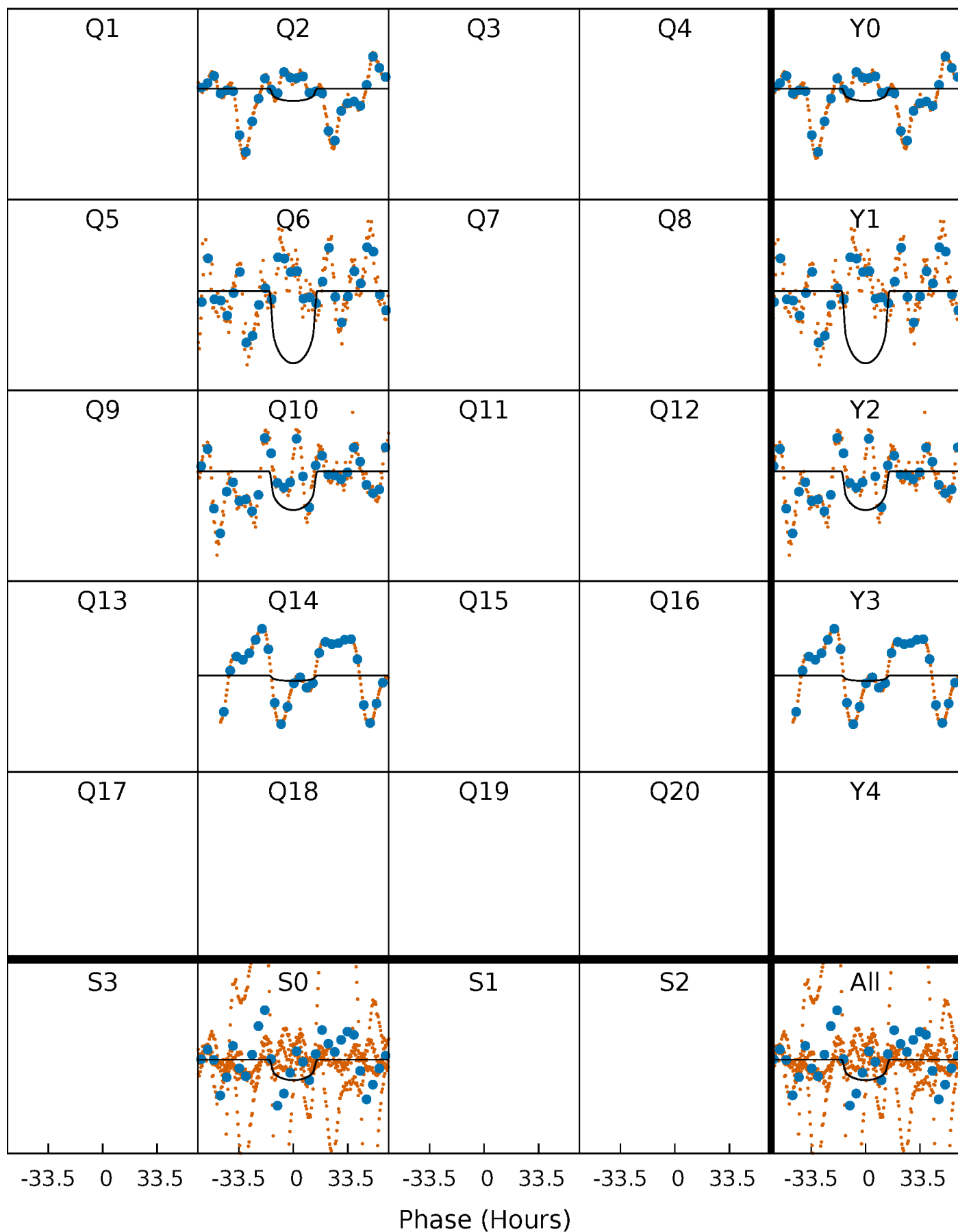
PDC Quarter-Phased Transit Curves

TCE 004737595-04 P=364.997431 Days $T_0=191.472844$ (BKJD)



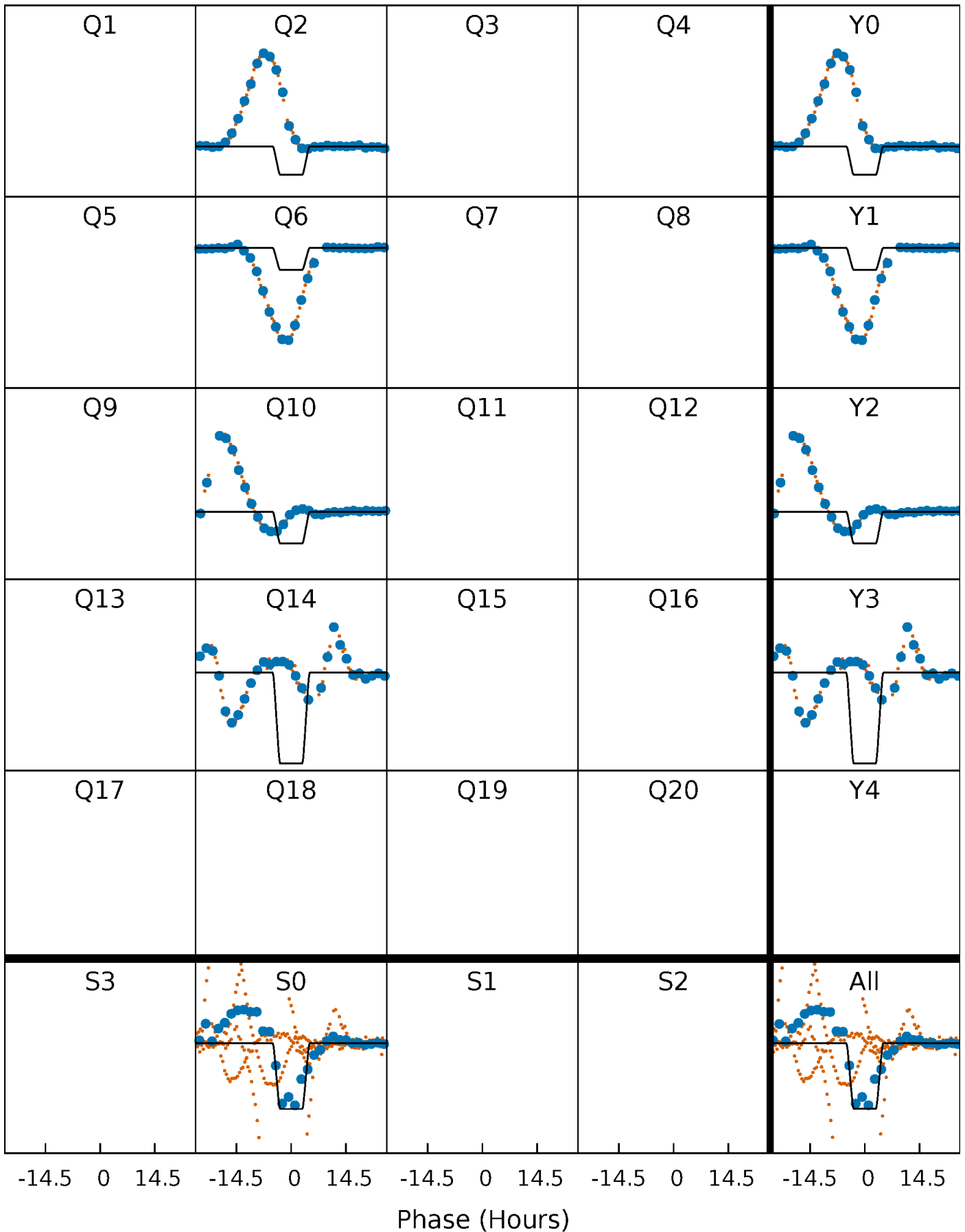
DV Quarter-Phased Transit Curves

TCE 004737595-04 P=364.997431 Days $T_0=191.472844$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

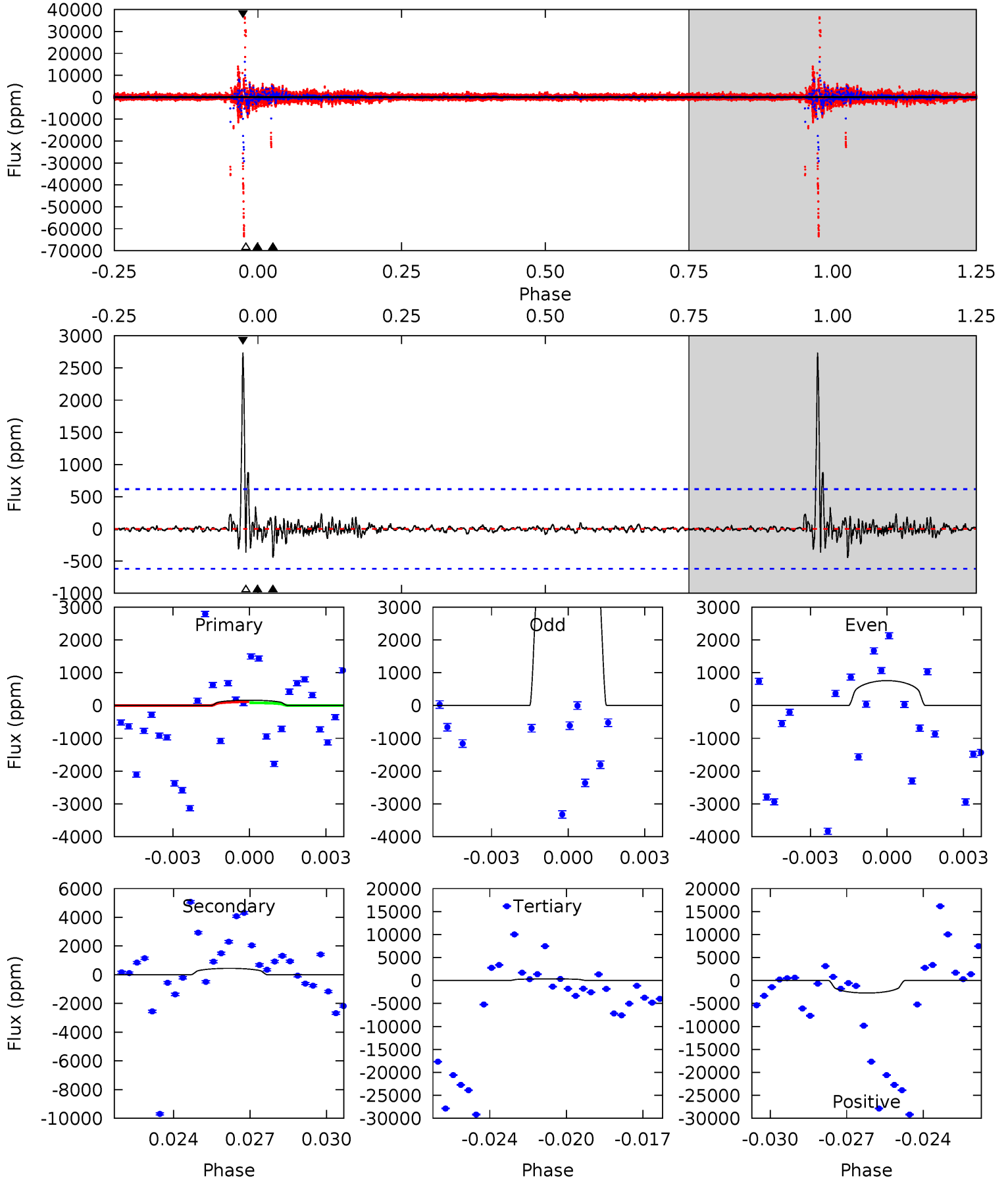
TCE 004737595-04 P=365.195396 Days $T_0=191.100884$ (BKJD)



DV Model-Shift Uniqueness Test

004737595-04, P = 364.997431 Days, E = 191.472844 Days

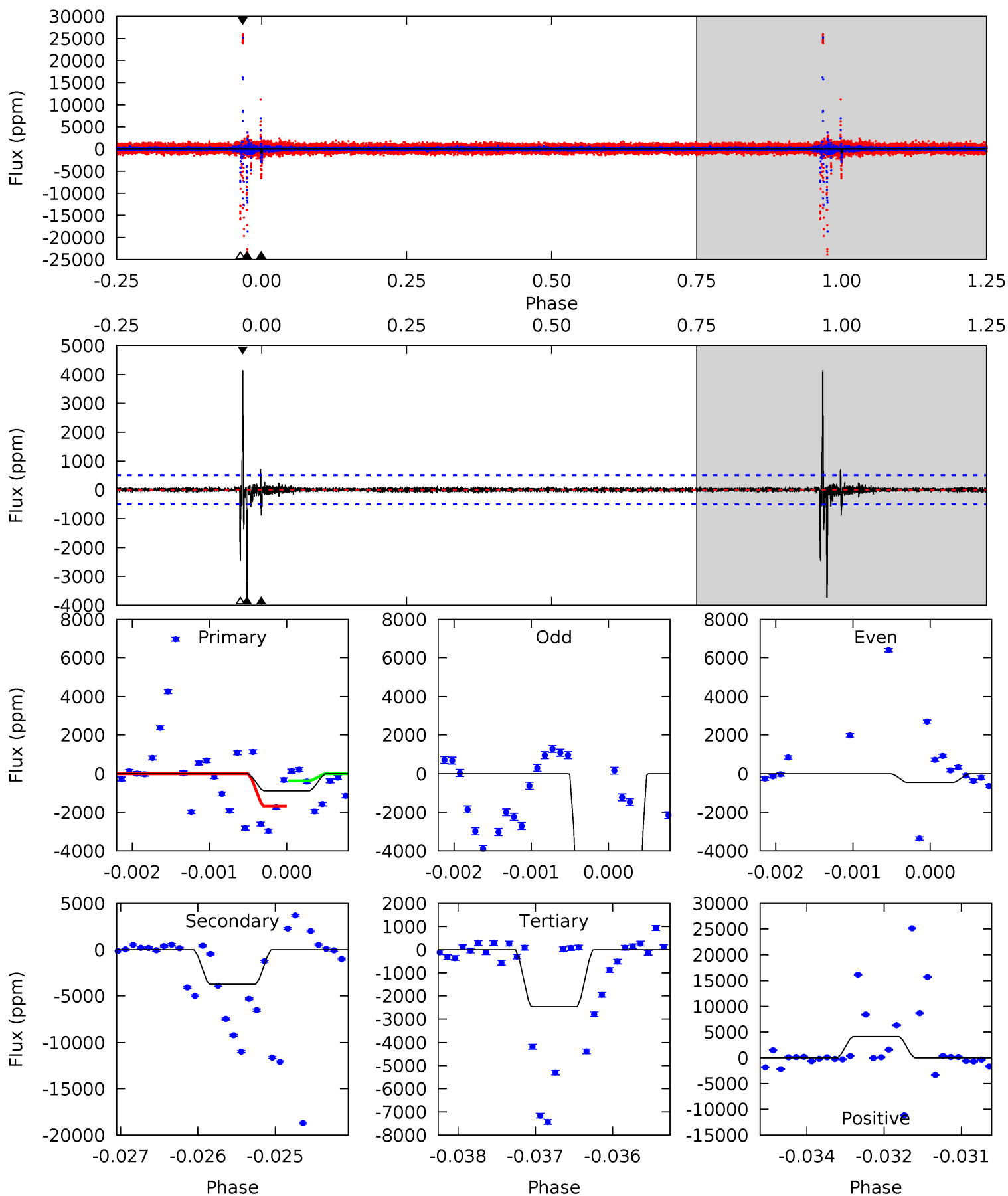
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.36	3.76	3.10	23.2	5.23	2.93	1.01	-1.74	-21.8	0.66	-19.4	19.6	-47.0	0.86	0



Alt Model-Shift Uniqueness Test

004737595-04, P = 365.195396 Days, E = 191.100884 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.55	40.4	26.6	44.9	5.43	3.26	1.11	-17.1	-35.3	13.8	-4.48	57.4	9.68	0.53	6.34



Stellar Parameters For KIC 004737595

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4497^{+135}_{-135}	$4.609^{+0.053}_{-0.025}$	$-0.180^{+0.300}_{-0.300}$	$0.661^{+0.048}_{-0.058}$	$0.648^{+0.073}_{-0.053}$	$3.156^{+0.733}_{-0.362}$
	+3%/-3%	+1%/-1%	+167%/-167%	+7%/-9%	+11%/-8%	+23%/-11%
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 004737595-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-444 ± 118	$3.86^{+0.49}_{-0.42}$	241^{+8}_{-9}	3257^{+198}_{-184}	12157^{+5114}_{-3517}
Alt.	-3734 ± 92	$7.40^{+0.57}_{-0.52}$	241^{+9}_{-8}	3728^{+117}_{-118}	28451^{+4000}_{-3547}

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 $A_{obs} \gg 1.0$

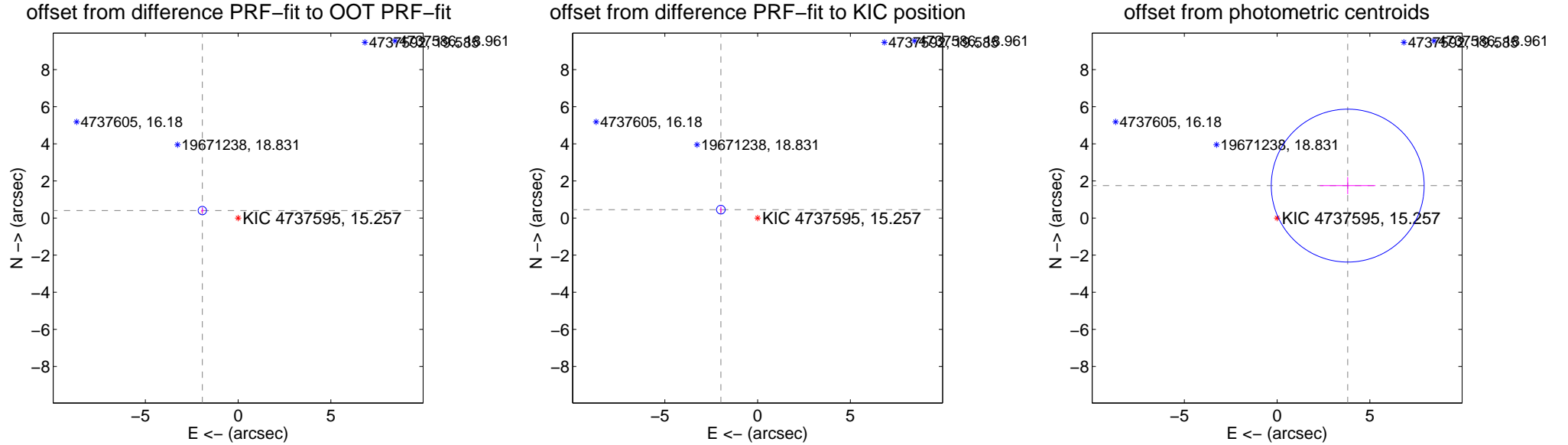
DV Centroid Data

Supplemental centroid analysis for 004737595-04. Kepler magnitude: 15.26. Transit SNR 7.40

There are 0 quarters with good PRF difference image offsets

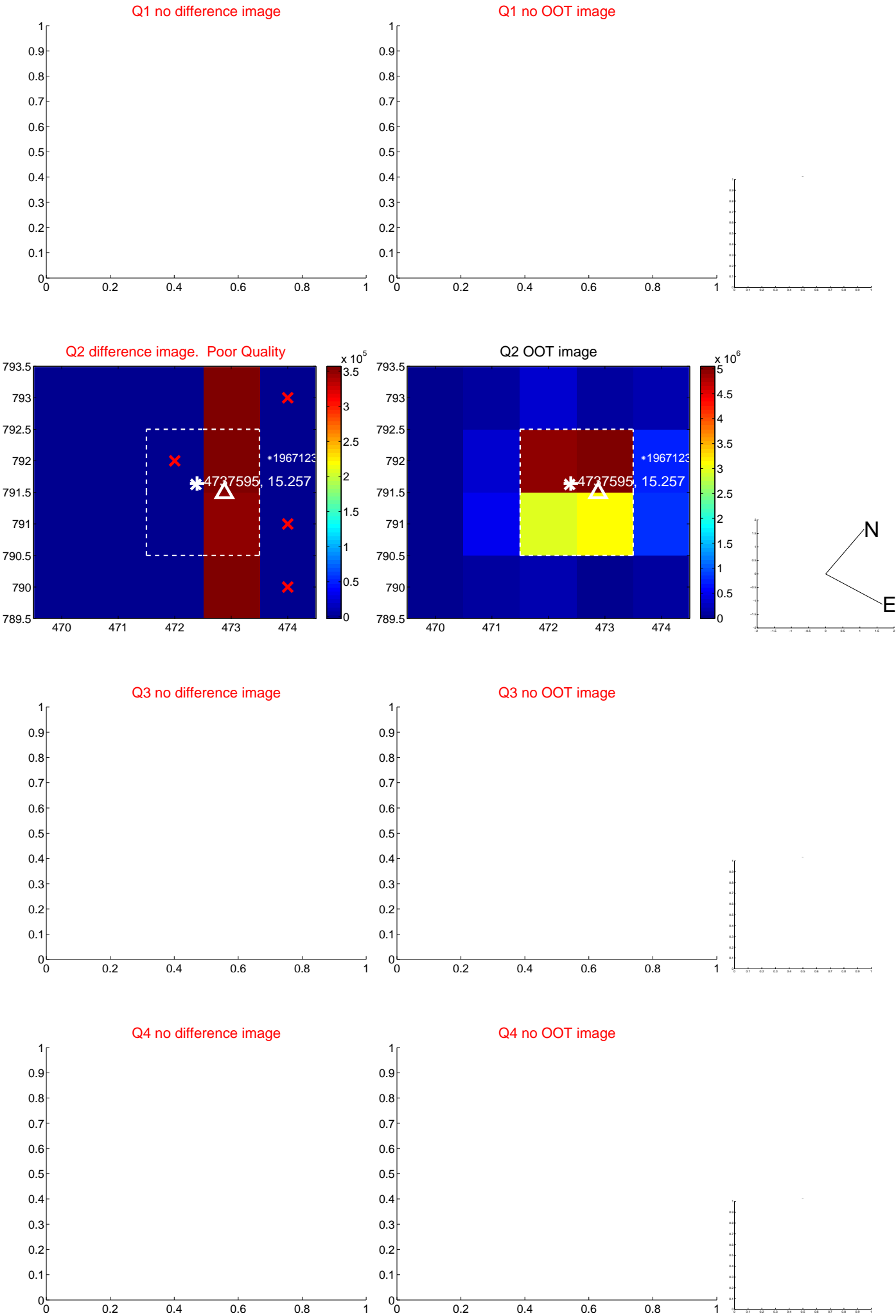
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.970 ± 0.075	26.32	1.929 ± 0.070	0.403 ± 0.146
PRF-fit source offset from KIC position	2.032 ± 0.078	26.11	1.981 ± 0.069	0.452 ± 0.179
photometric centroid source offset	4.19 ± 1.37	3.05	-3.81 ± 1.50	1.75 ± 0.46

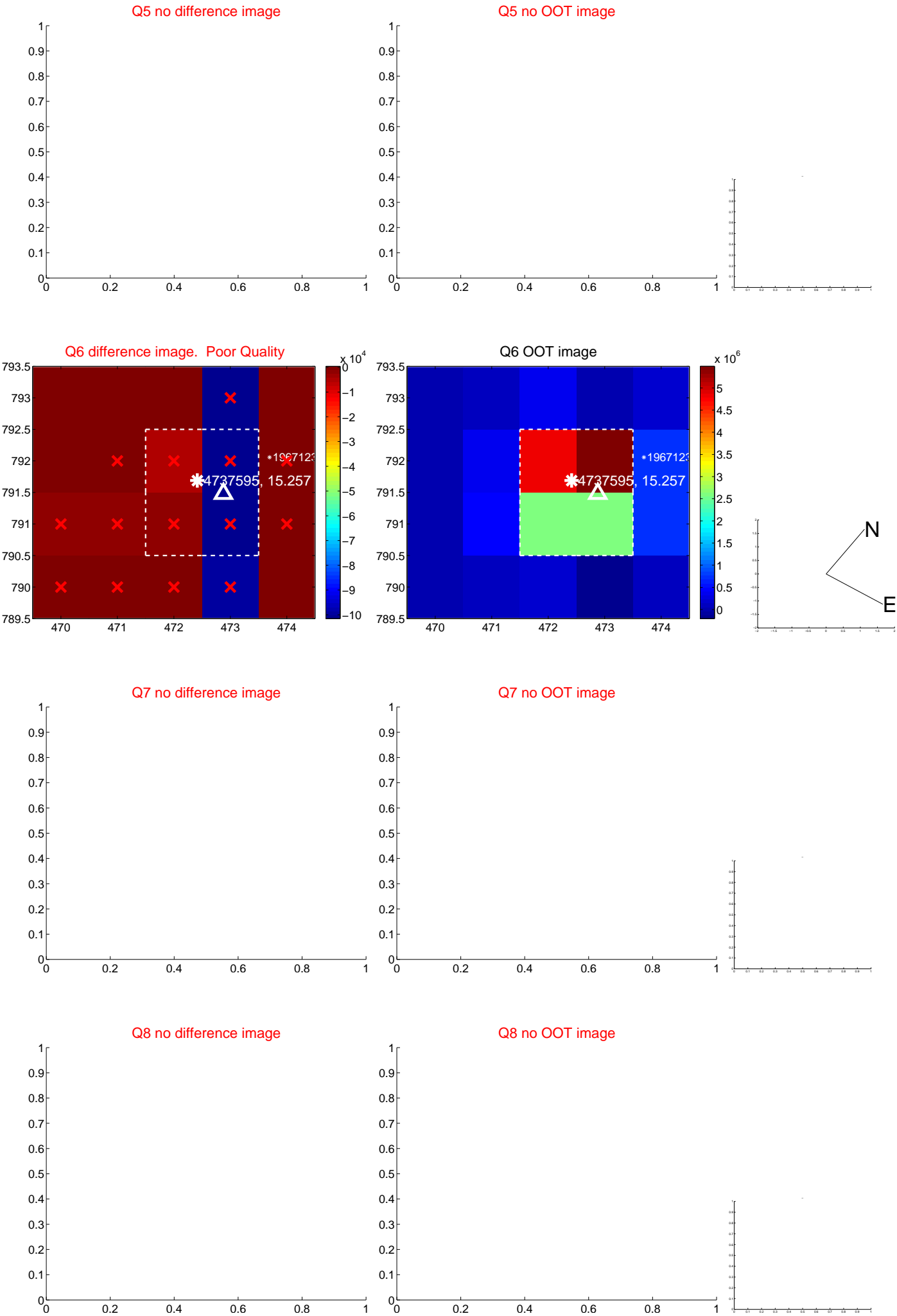


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

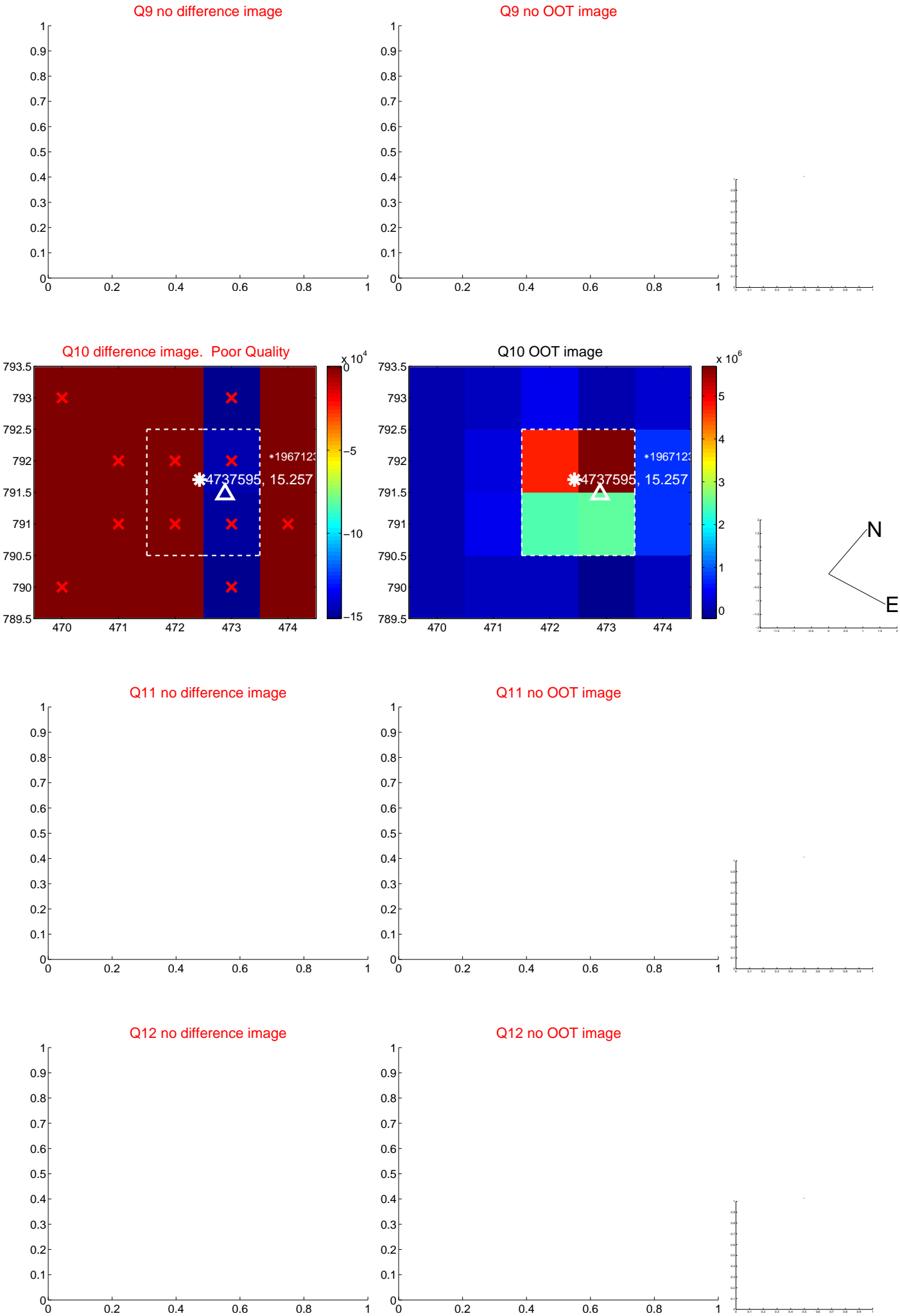
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



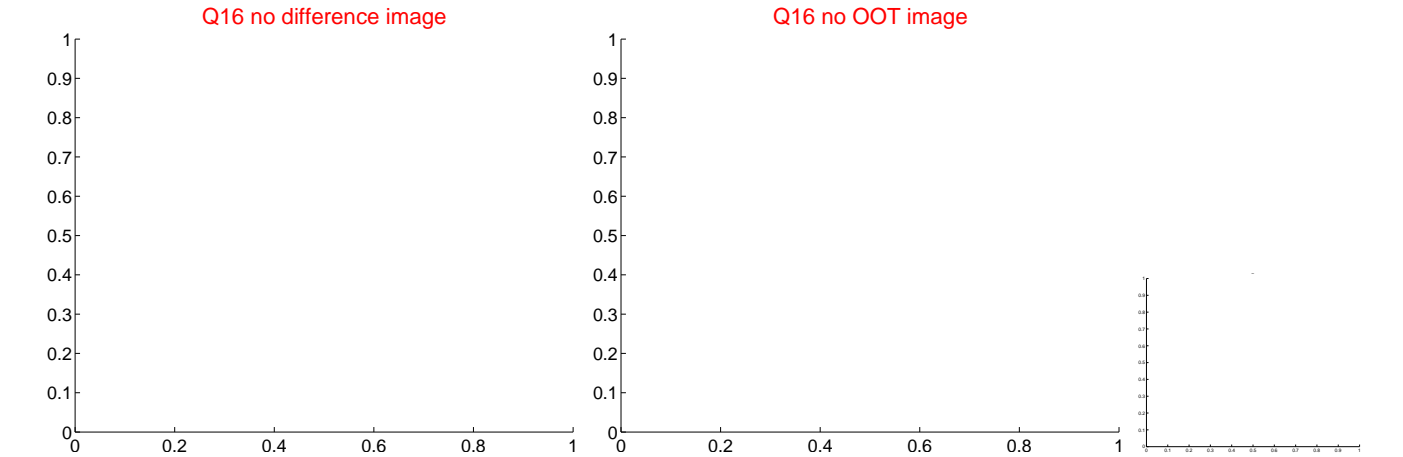
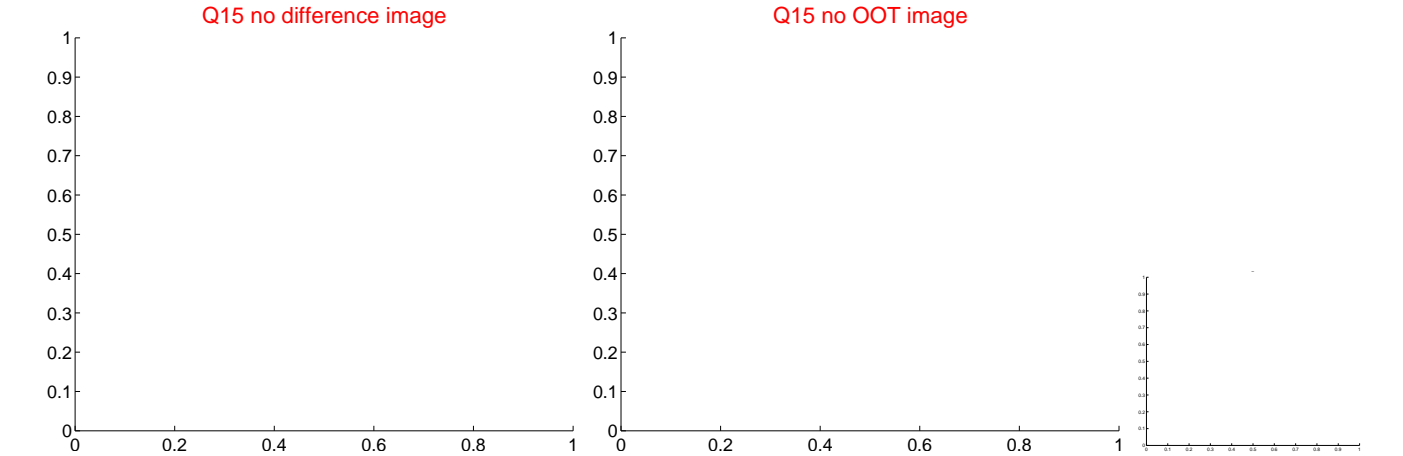
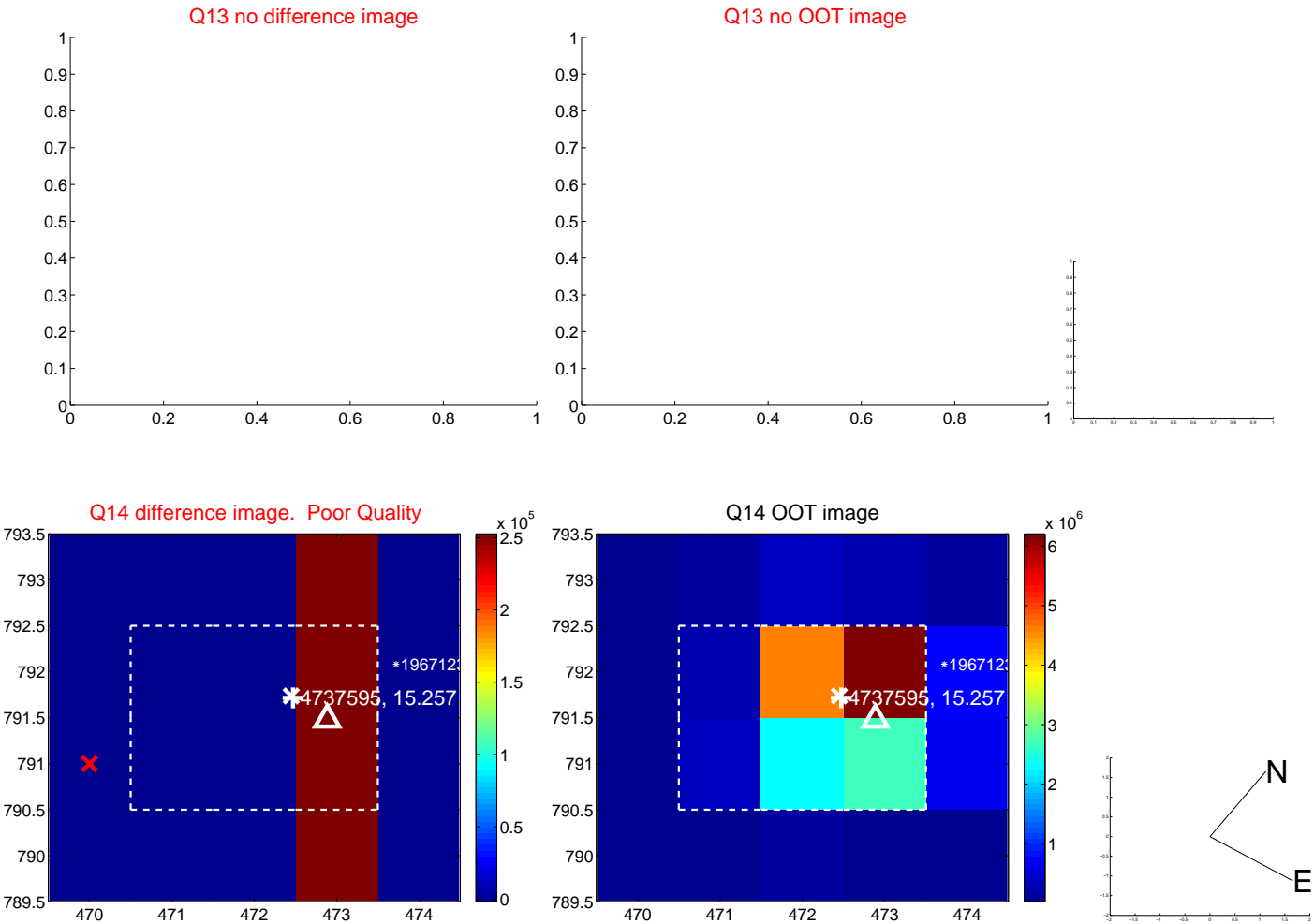
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



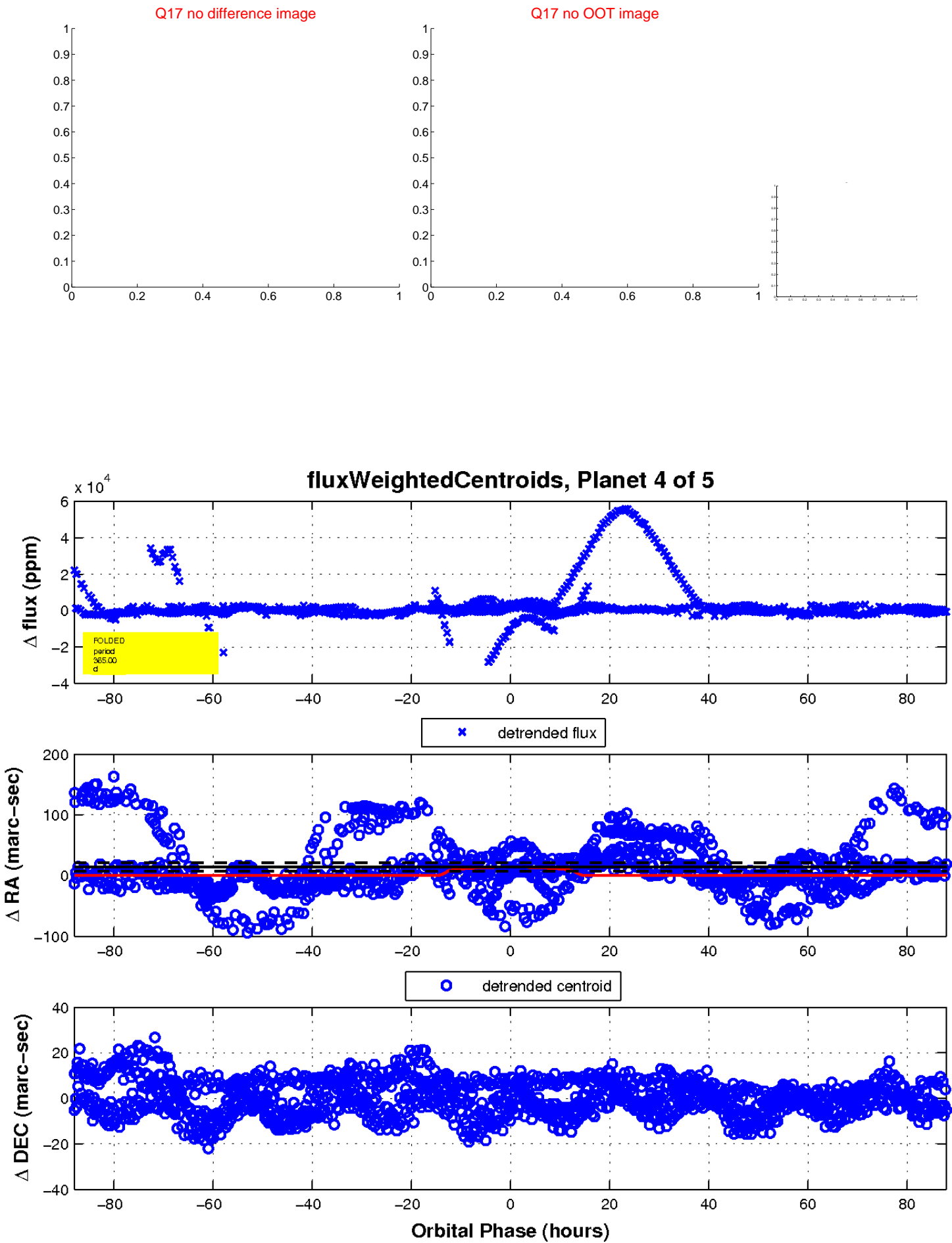
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

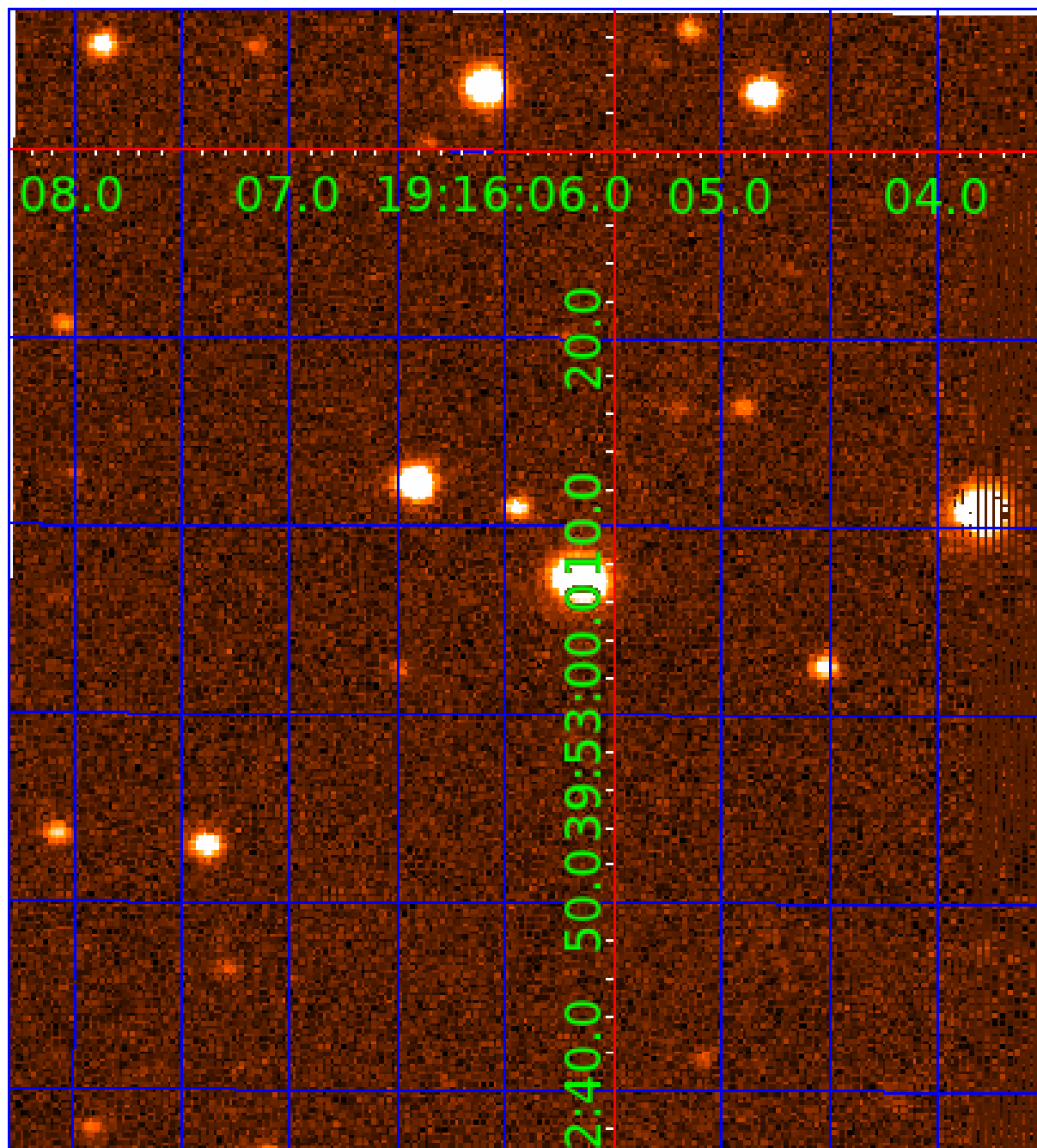


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004737595

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})
004737595-01	OBS	No	369.929170	172.078422	6627.1	15.000	53.3	-1.0	0.66	4497	5.15	0.21
004737595-02	OBS	No	368.090150	175.409092	9419.9	15.000	81.0	-1.0	0.66	4497	6.14	0.21
004737595-03	OBS	No	370.242485	173.066044	6902.3	12.500	46.8	-1.0	0.66	4497	5.26	0.21
004737595-04	OBS	No	364.997431	191.472844	3234.7	29.354	27.2	7.4	0.66	4497	3.89	0.21
004737595-05	OBS	No	359.985104	197.448211	52879.5	32.654	46.0	66.4	0.66	4497	26.76	0.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004737595-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
004737595-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
004737595-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS
004737595-04	OBS	FP	0.00	1	0	0	0	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004737595-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

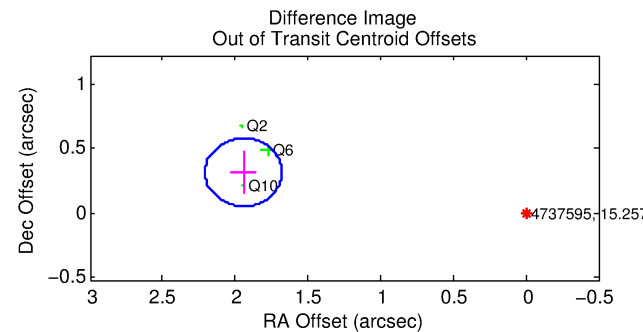
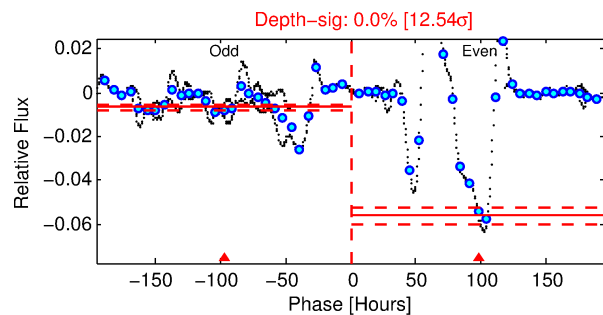
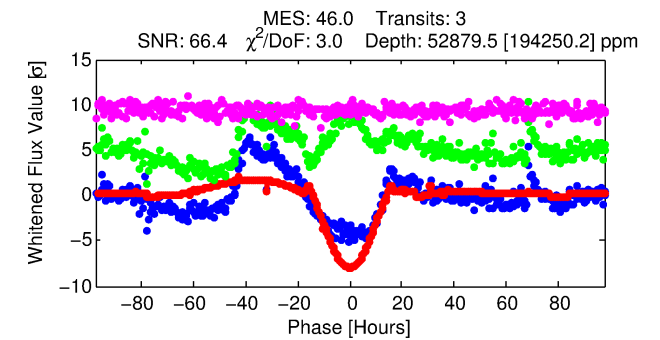
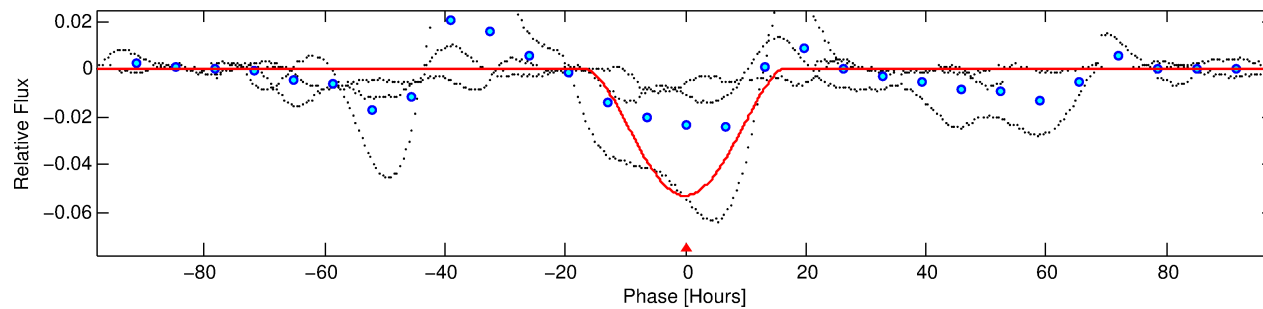
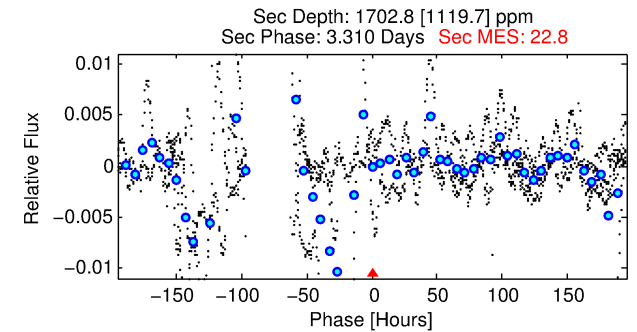
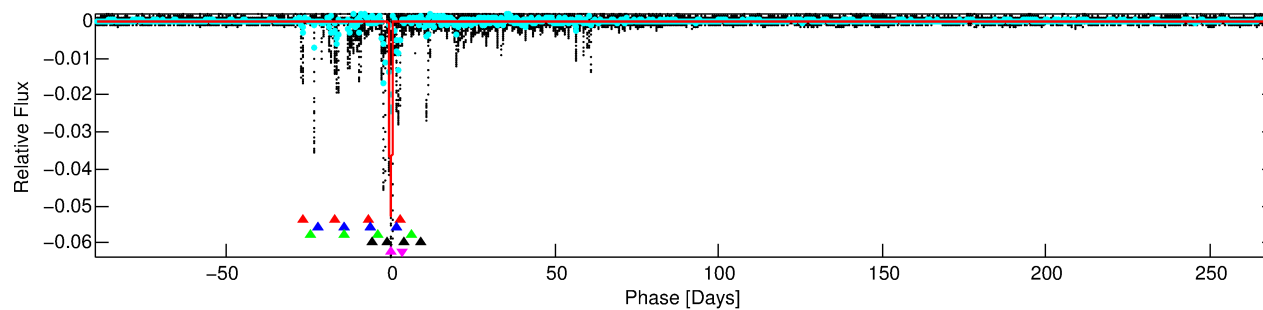
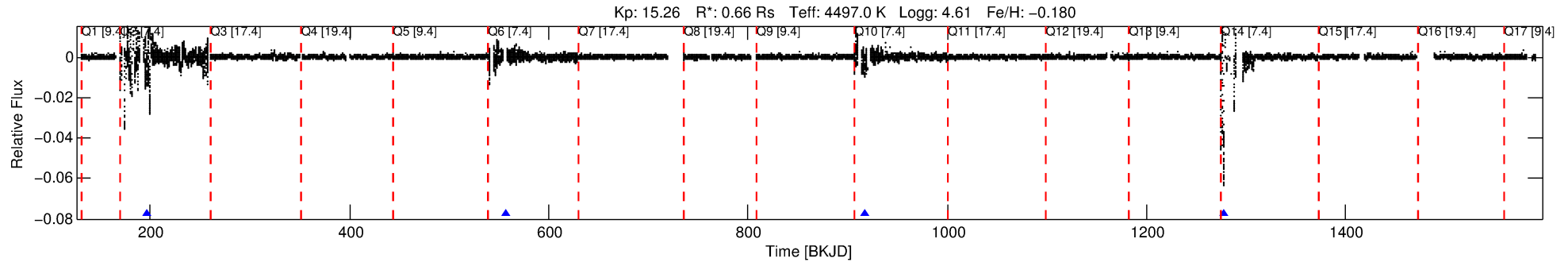
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004737595-05

No Significant Match Found

DV One-Page Summary

KIC: 4737595 Candidate: 5 of 5 Period: 359.985 d



DV Fit Results:

Period = 359.98510 [0.00898] d
Epoch = 197.4482 [0.0213] BKJD
Rp/R* = 0.3709 [0.9947]
a/R* = 78.99 [4.12]
b = 1.00 [2.14]
Seff = 0.22 [0.03]
Teq = 174 [7] K
Rp = 26.76 [71.79] Re
a = 0.8571 [0.0611] AU
Ag = 961.26 [5194.91] [0.18 σ]
Teffp = 1500 [2027] K [0.65 σ]

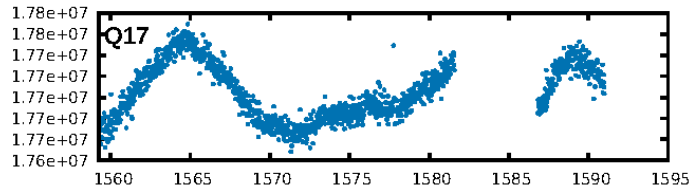
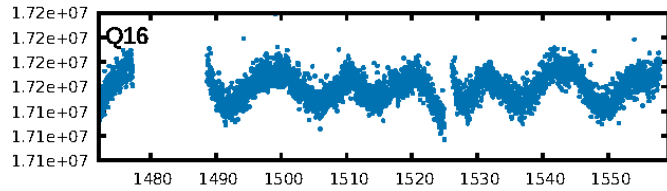
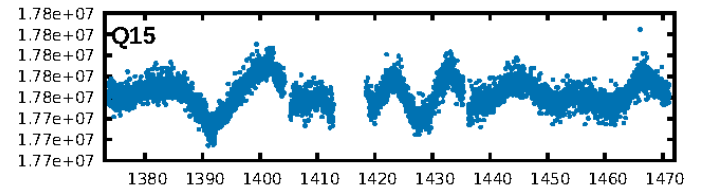
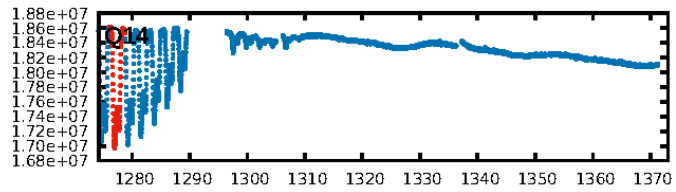
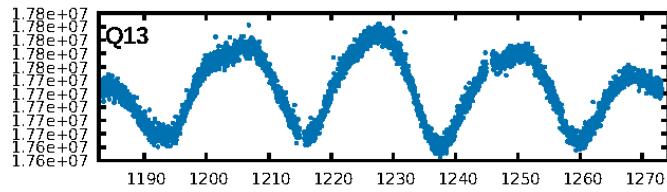
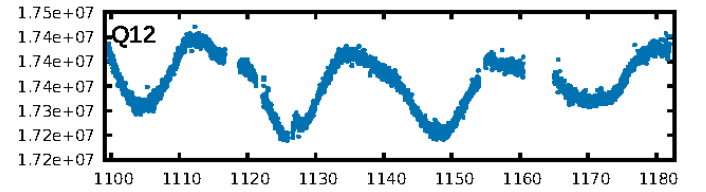
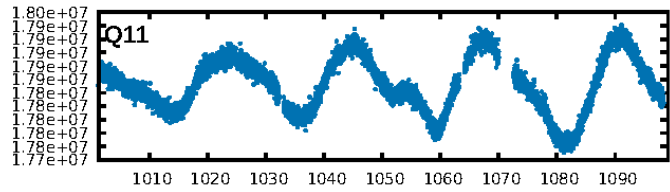
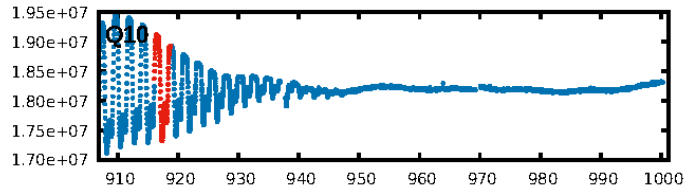
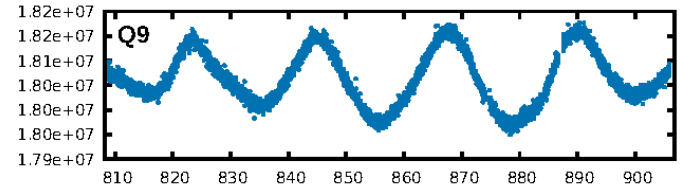
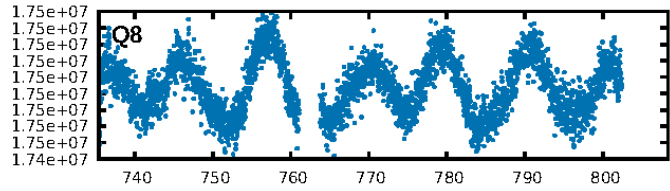
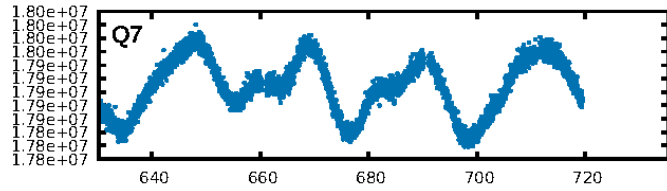
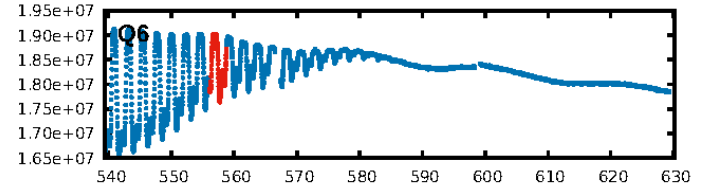
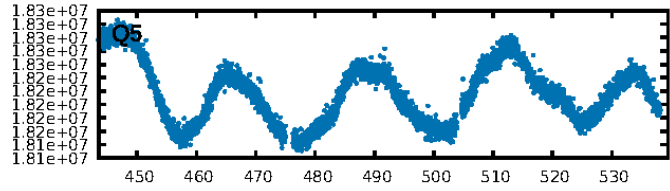
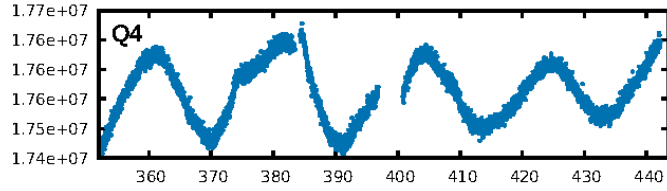
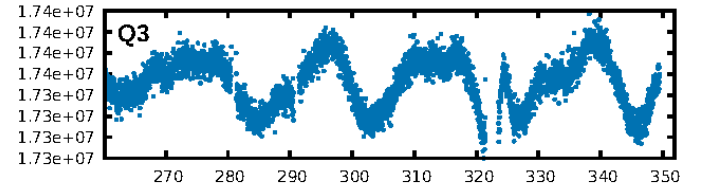
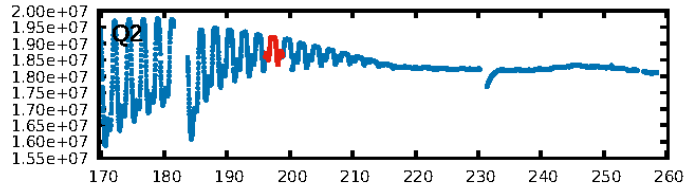
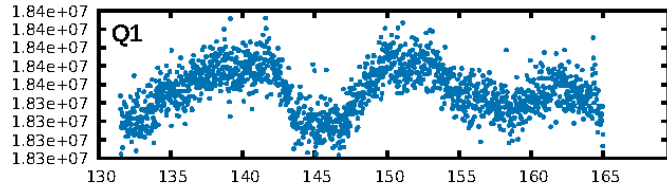
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 99.4% [2.74 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 2.23e-43
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2632
Centroid-sig: N/A
Centroid-so: 0.812 arcsec [8.05 σ]
OotOffset-rm: 1.969 arcsec [22.34 σ]
KicOffset-rm: 1.987 arcsec [21.84 σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.67 [2/3]

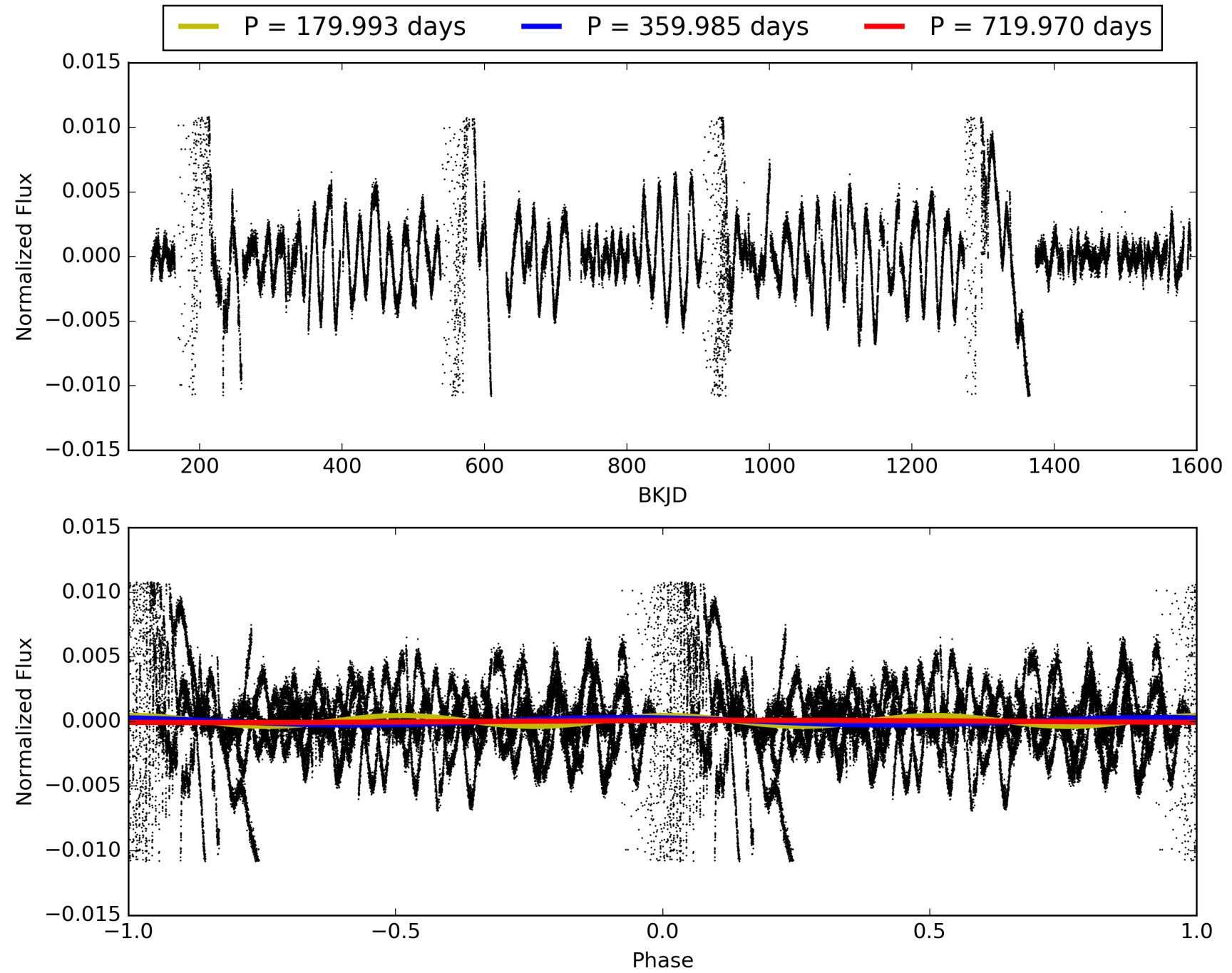
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:56:33 Z

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

TCE 004737595-05, PDC Light Curves

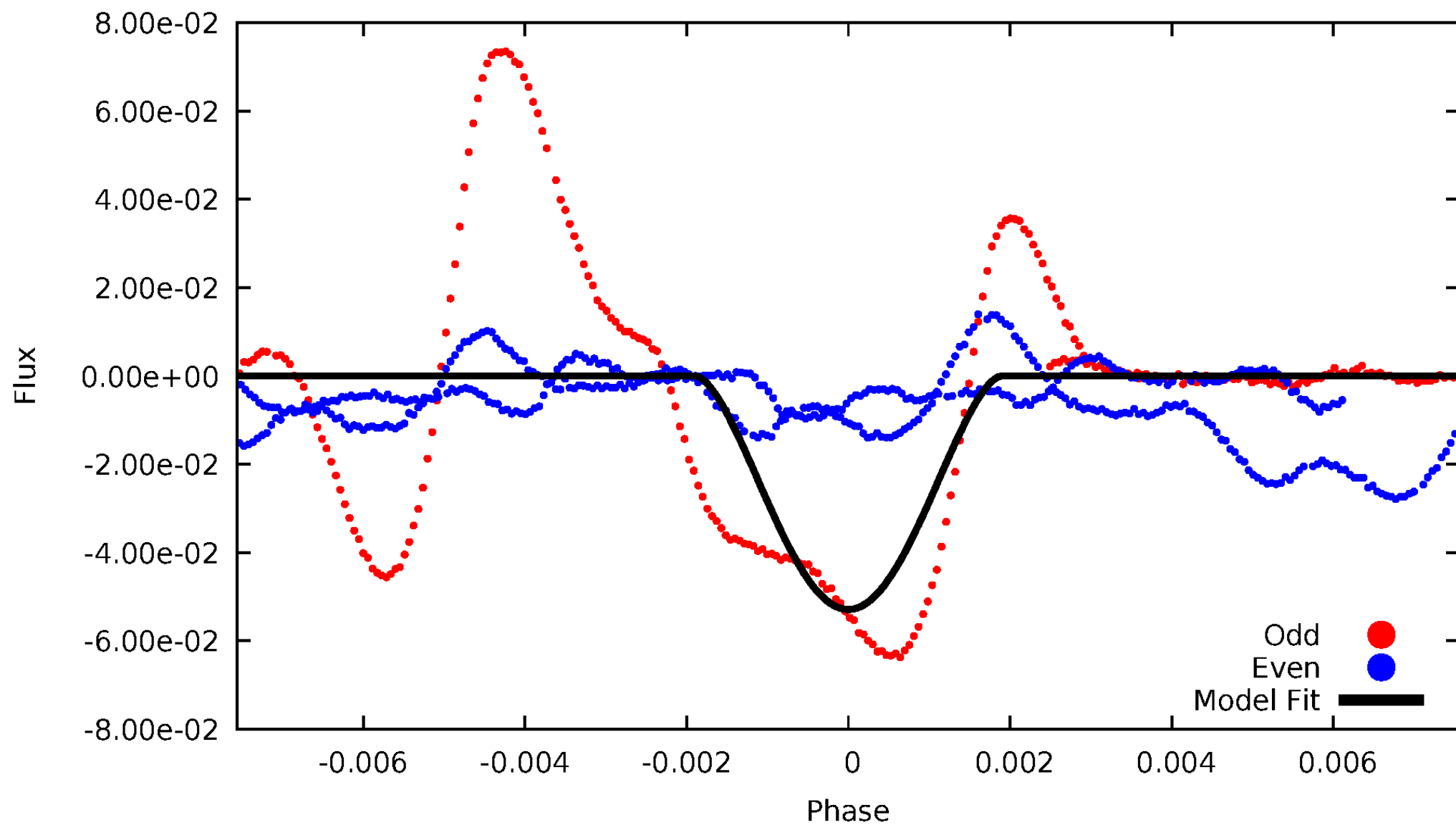


TCE 004737595-05



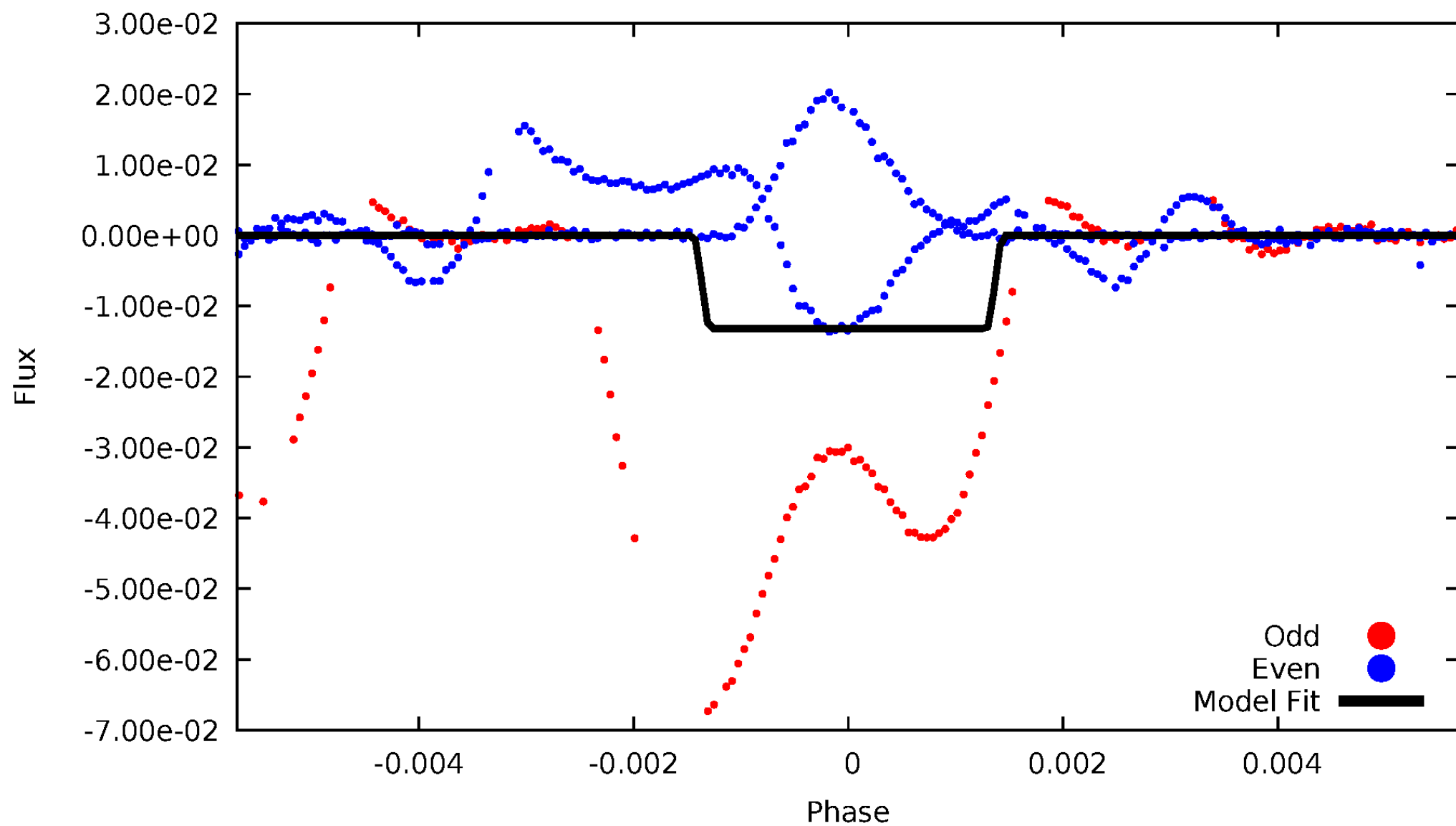
DV Odd/Even

TCE 004737595-05



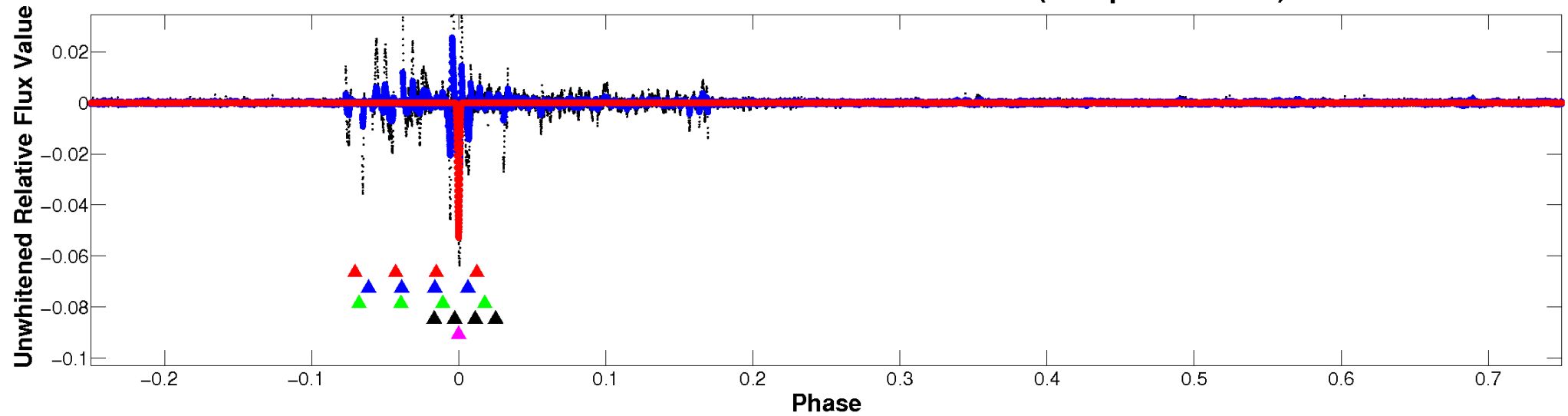
ALT Odd/Even

TCE 004737595-05

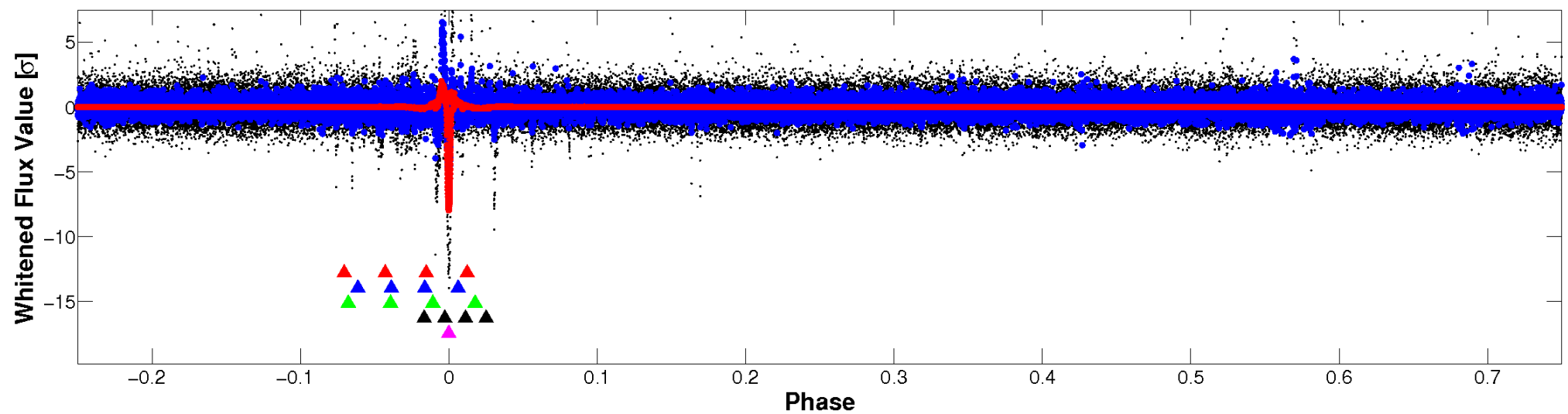


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

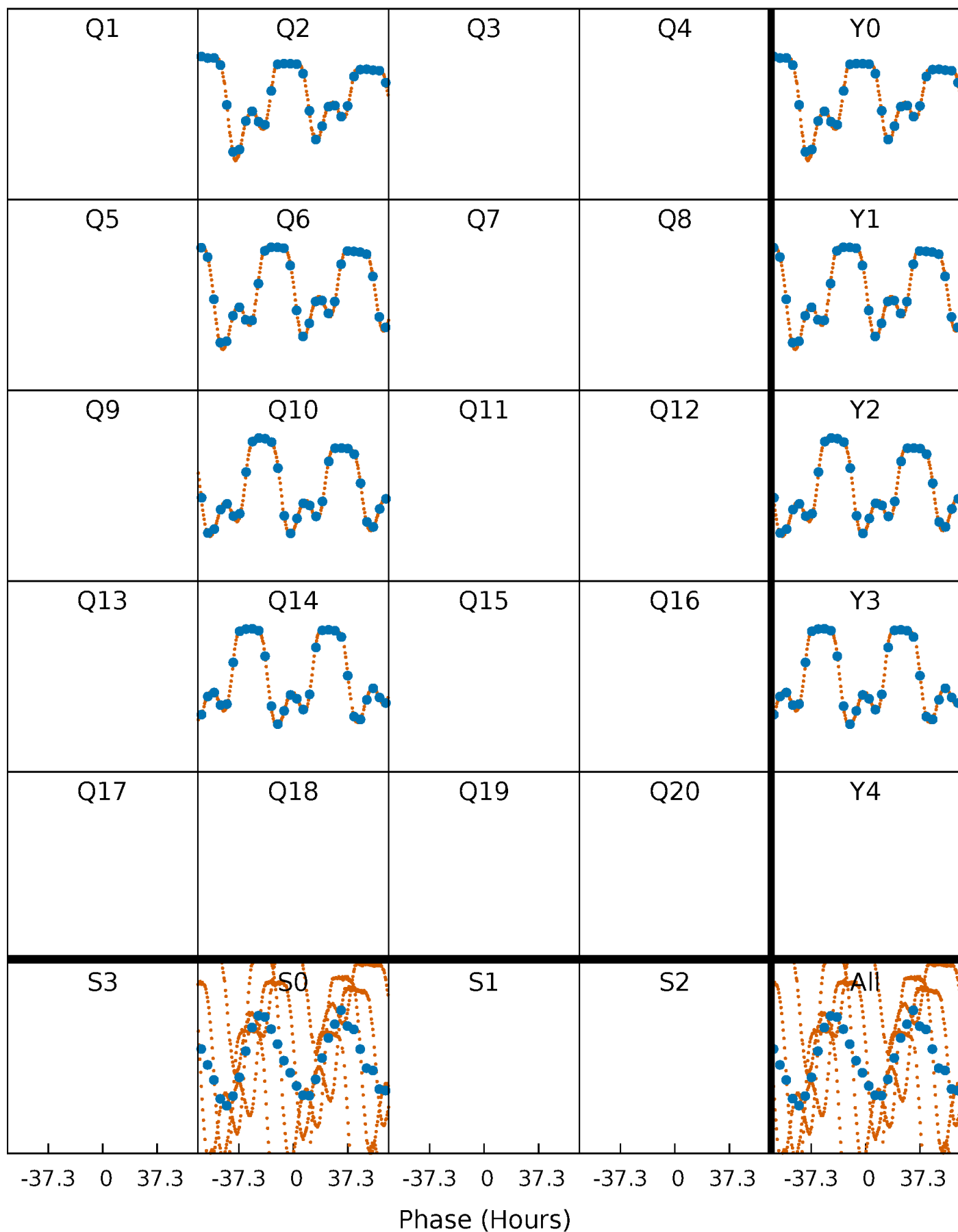


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



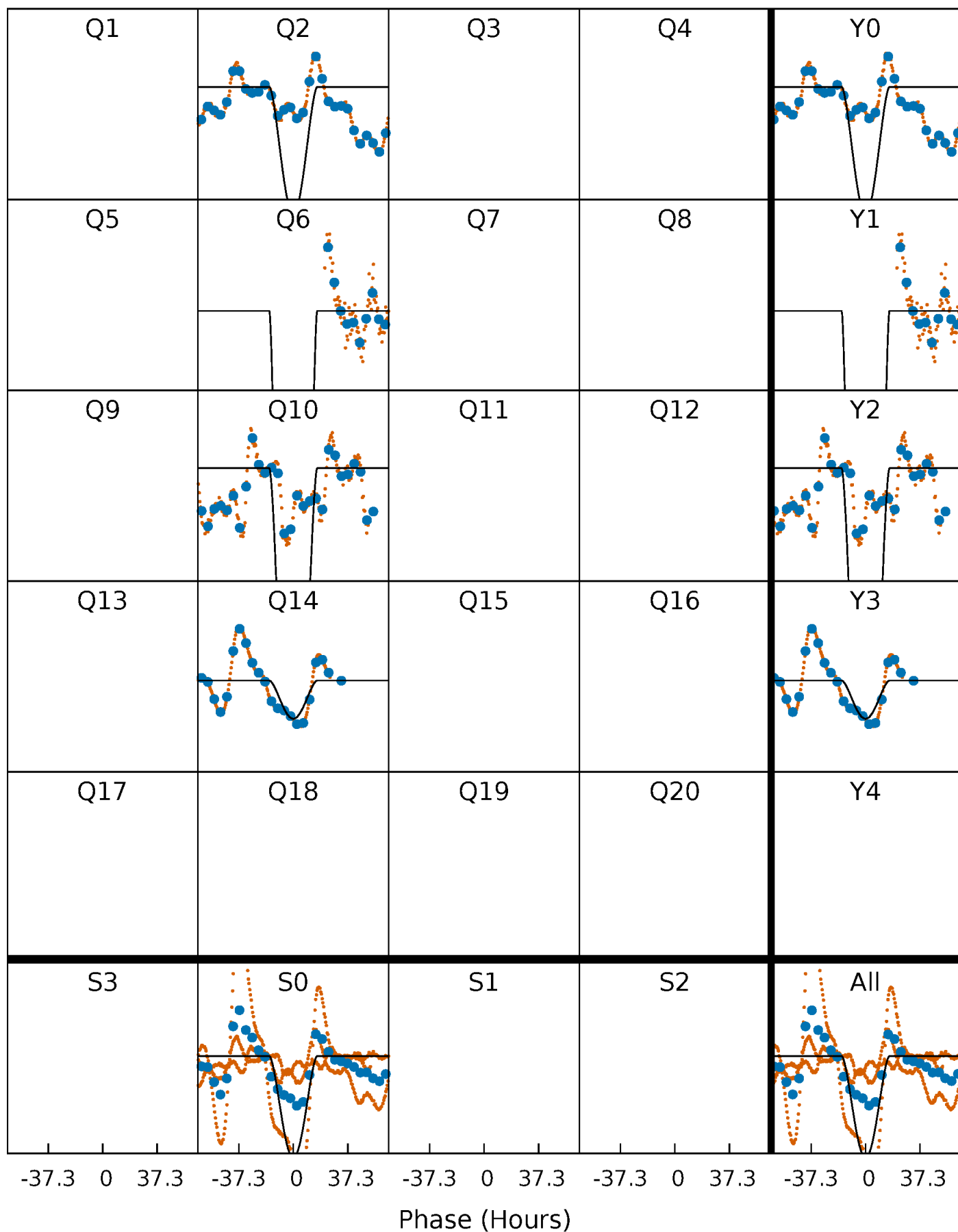
PDC Quarter-Phased Transit Curves

TCE 004737595-05 $P=359.985104$ Days $T_0=197.448211$ (BKJD)



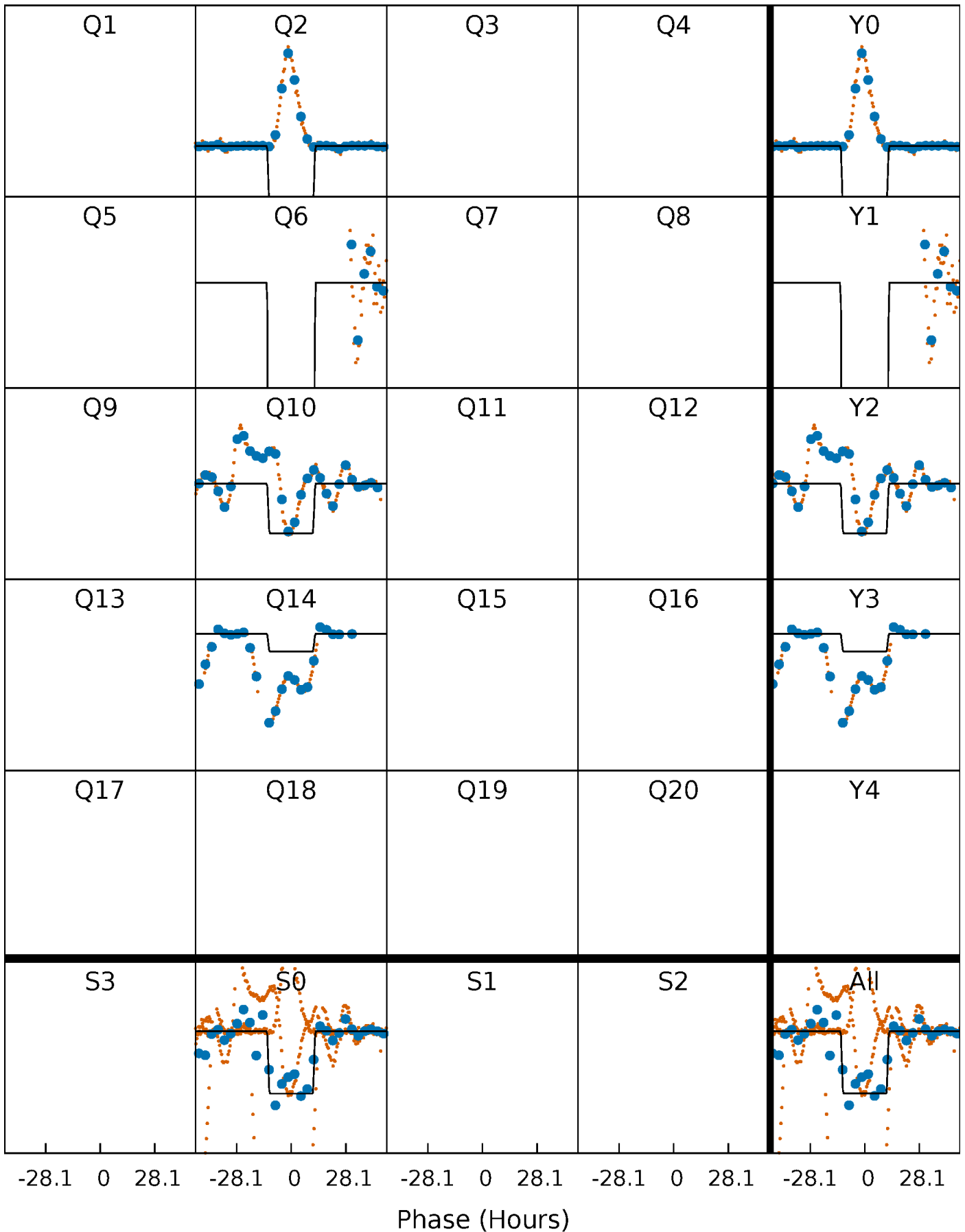
DV Quarter-Phased Transit Curves

TCE 004737595-05 P=359.985104 Days $T_0=197.448211$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

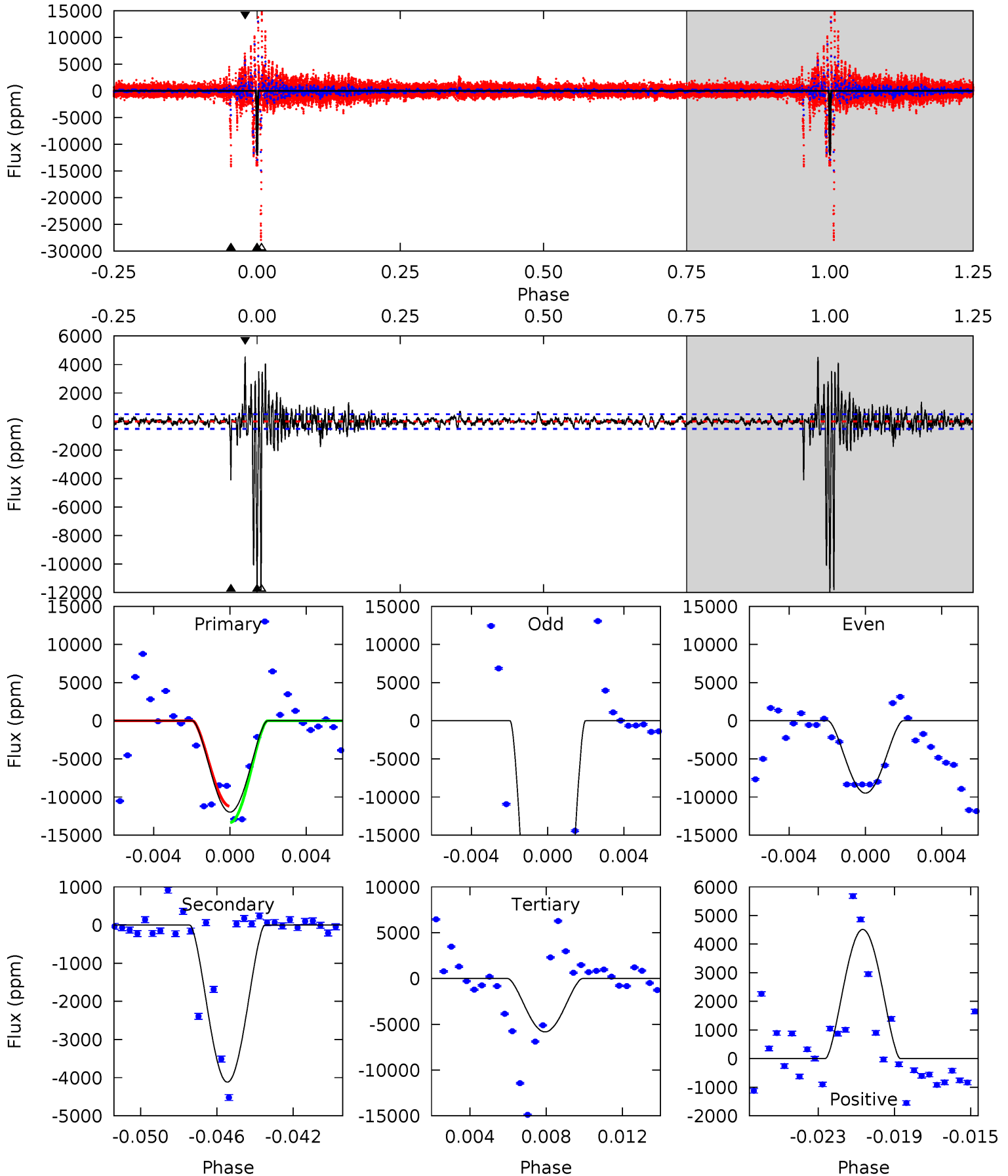
TCE 004737595-05 P=360.141495 Days $T_0=197.007268$ (BKJD)



DV Model-Shift Uniqueness Test

004737595-05, P = 359.985104 Days, E = 197.448211 Days

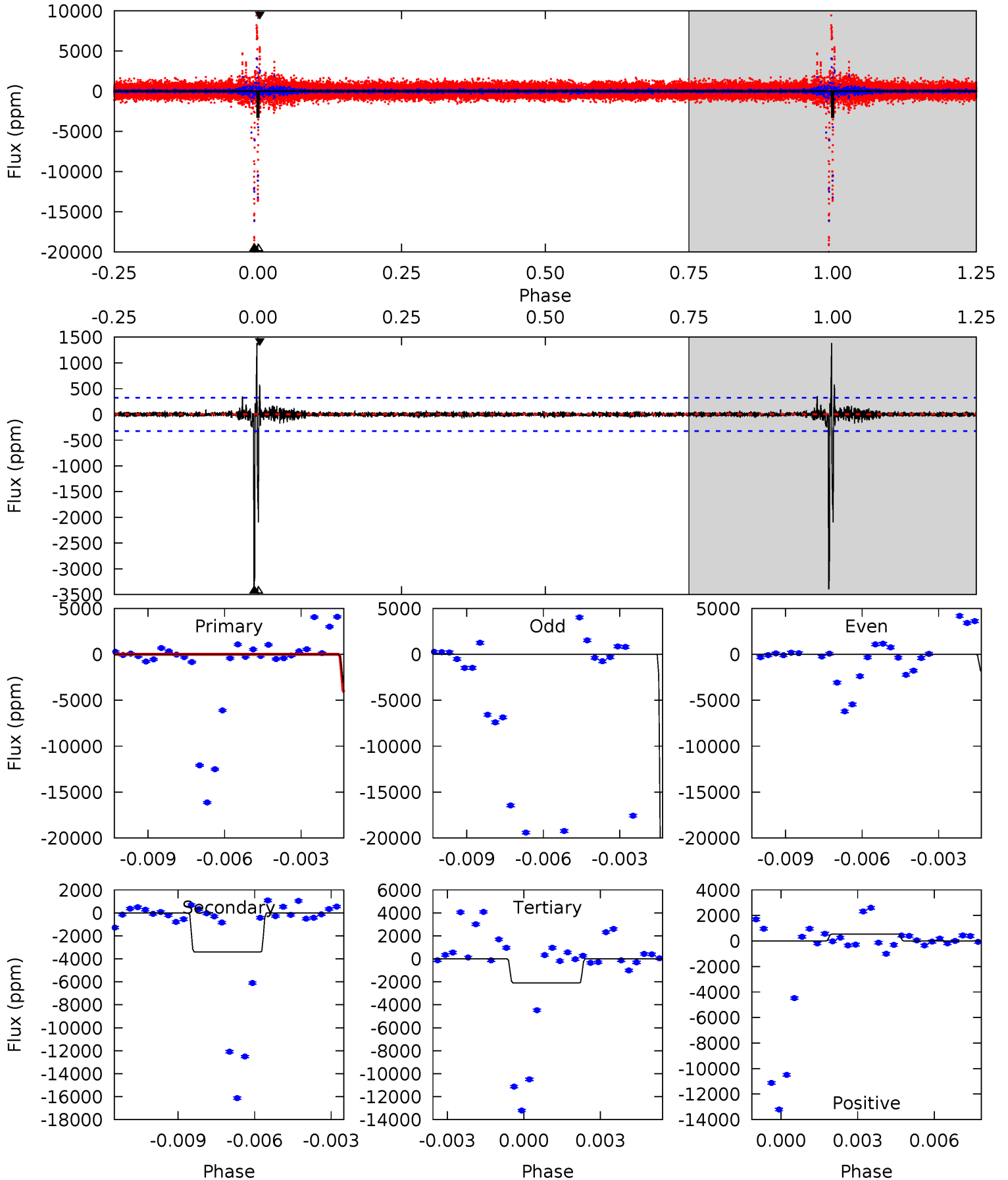
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
121.5	41.8	59.2	45.8	5.21	2.89	5.51	62.3	75.7	-17.4	-4.03	182.7	2.25	0.27	0



Alt Model-Shift Uniqueness Test

004737595-05, P = 360.141495 Days, E = 197.007268 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.1	55.3	34.1	8.70	5.26	2.98	0.98	18.0	43.4	21.2	46.6	287.6	5.69	0.29	11.3



Stellar Parameters For KIC 004737595

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4497^{+135}_{-135}	$4.609^{+0.053}_{-0.025}$	$-0.180^{+0.300}_{-0.300}$	$0.661^{+0.048}_{-0.058}$	$0.648^{+0.073}_{-0.053}$	$3.156^{+0.733}_{-0.362}$
	+3%/-3%	+1%/-1%	+167%/-167%	+7%/-9%	+11%/-8%	+23%/-11%
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 004737595-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4117 ± 99	$55.98^{+58.89}_{-40.11}$	242^{+8}_{-9}	2186^{+794}_{-299}	538^{+5999}_{-409}
Alt.	-3398 ± 61	$53.78^{+53.07}_{-38.94}$	242^{+8}_{-8}	2165^{+802}_{-285}	486^{+5752}_{-362}

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

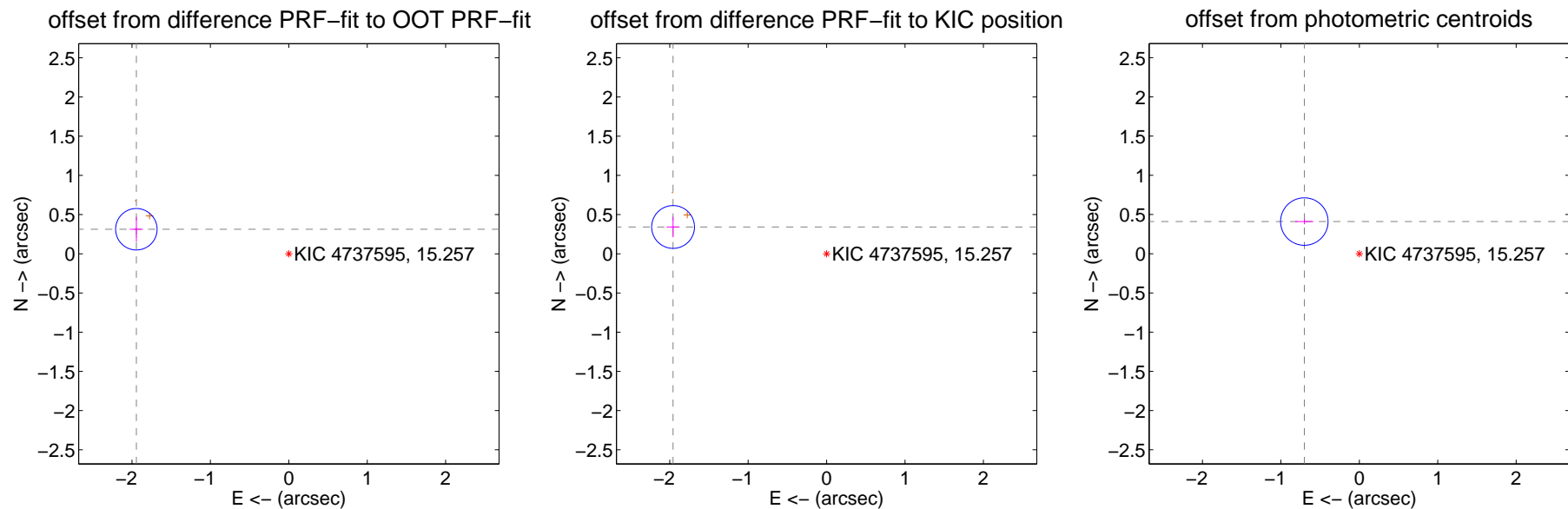
DV Centroid Data

Supplemental centroid analysis for 004737595-05. Kepler magnitude: 15.26. Transit SNR 66.41

There are 0 quarters with good PRF difference image offsets

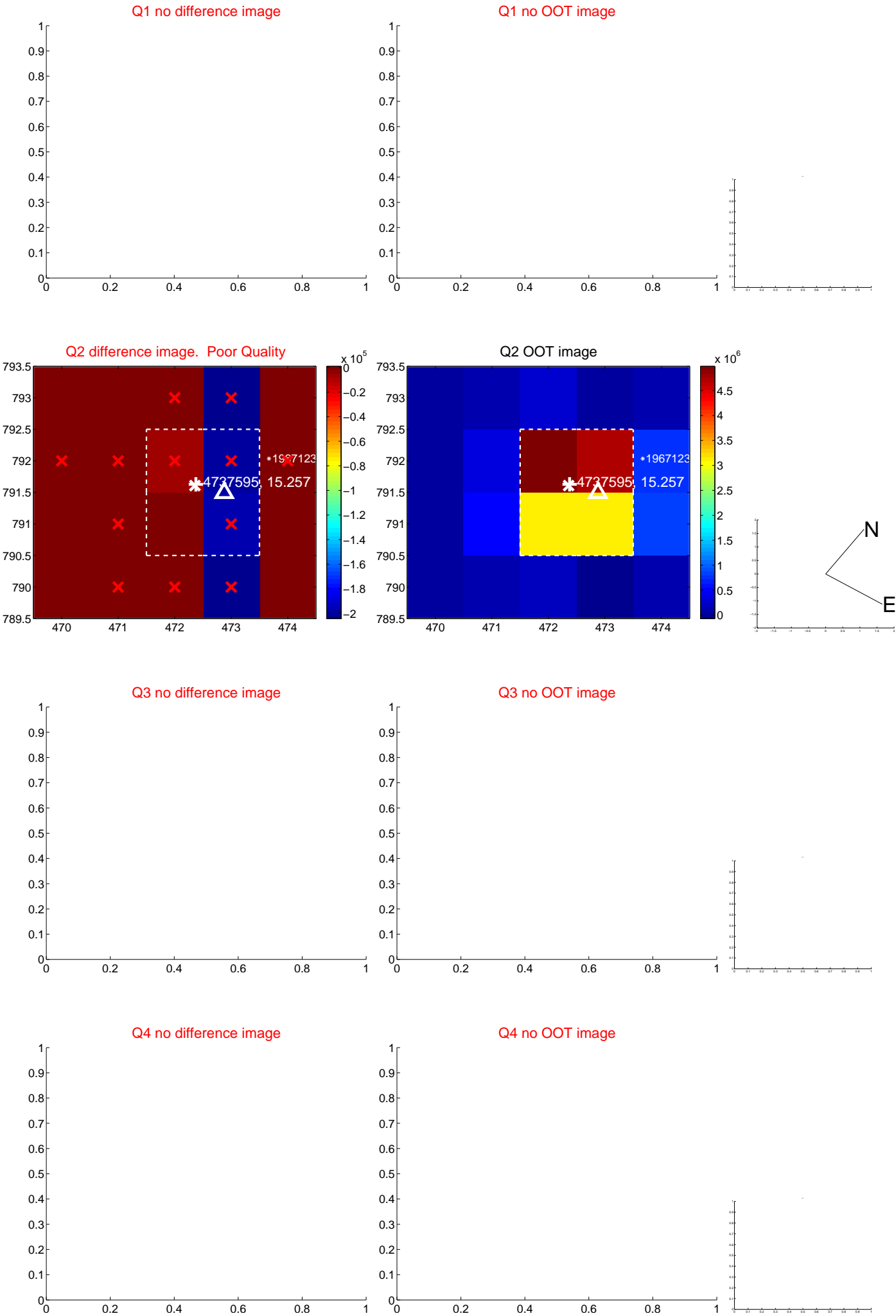
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.969 ± 0.088	22.34	1.944 ± 0.084	0.313 ± 0.157
PRF-fit source offset from KIC position	1.987 ± 0.091	21.84	1.957 ± 0.083	0.342 ± 0.130
photometric centroid source offset	0.81 ± 0.10	8.05	0.70 ± 0.12	0.41 ± 0.03

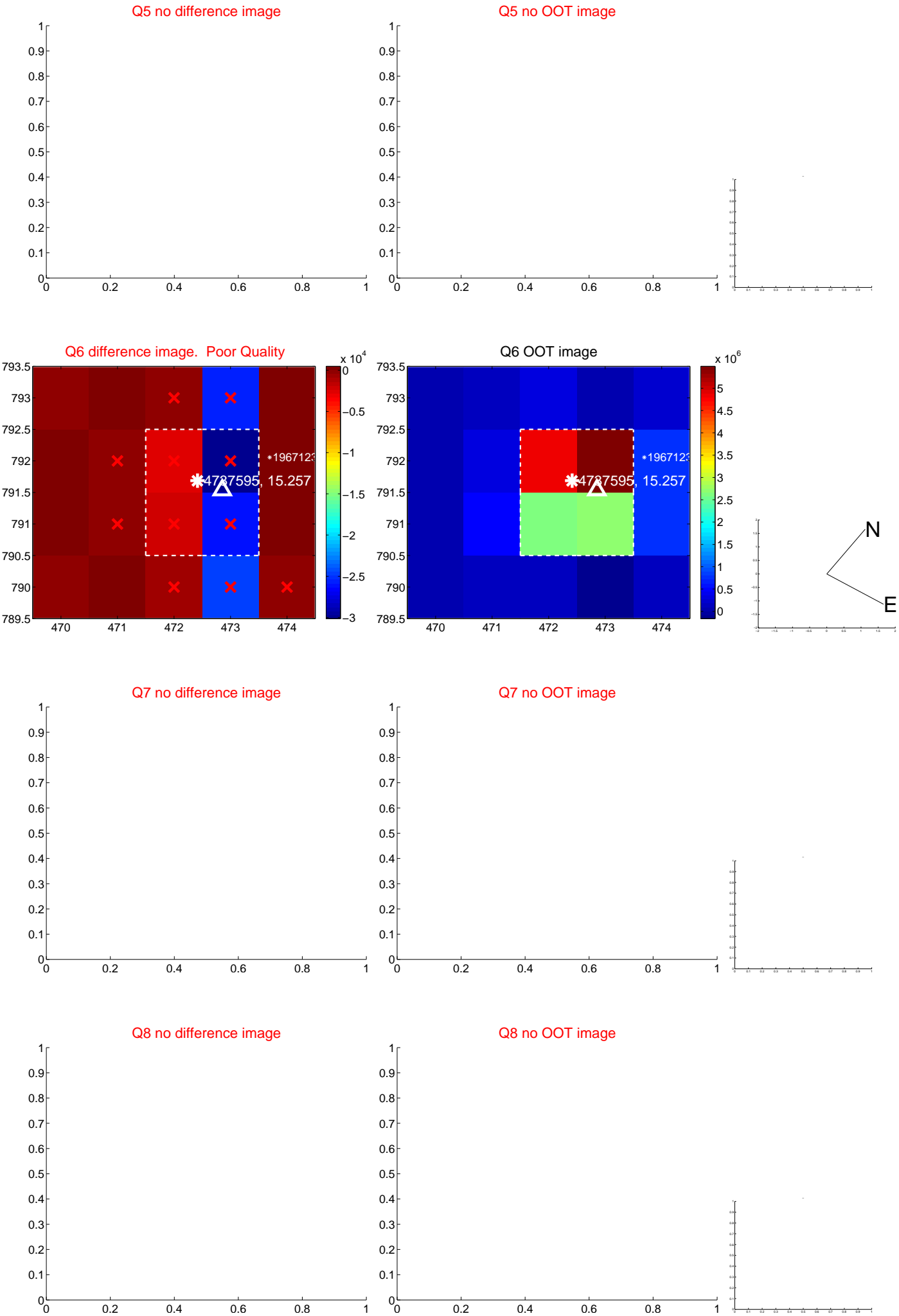


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

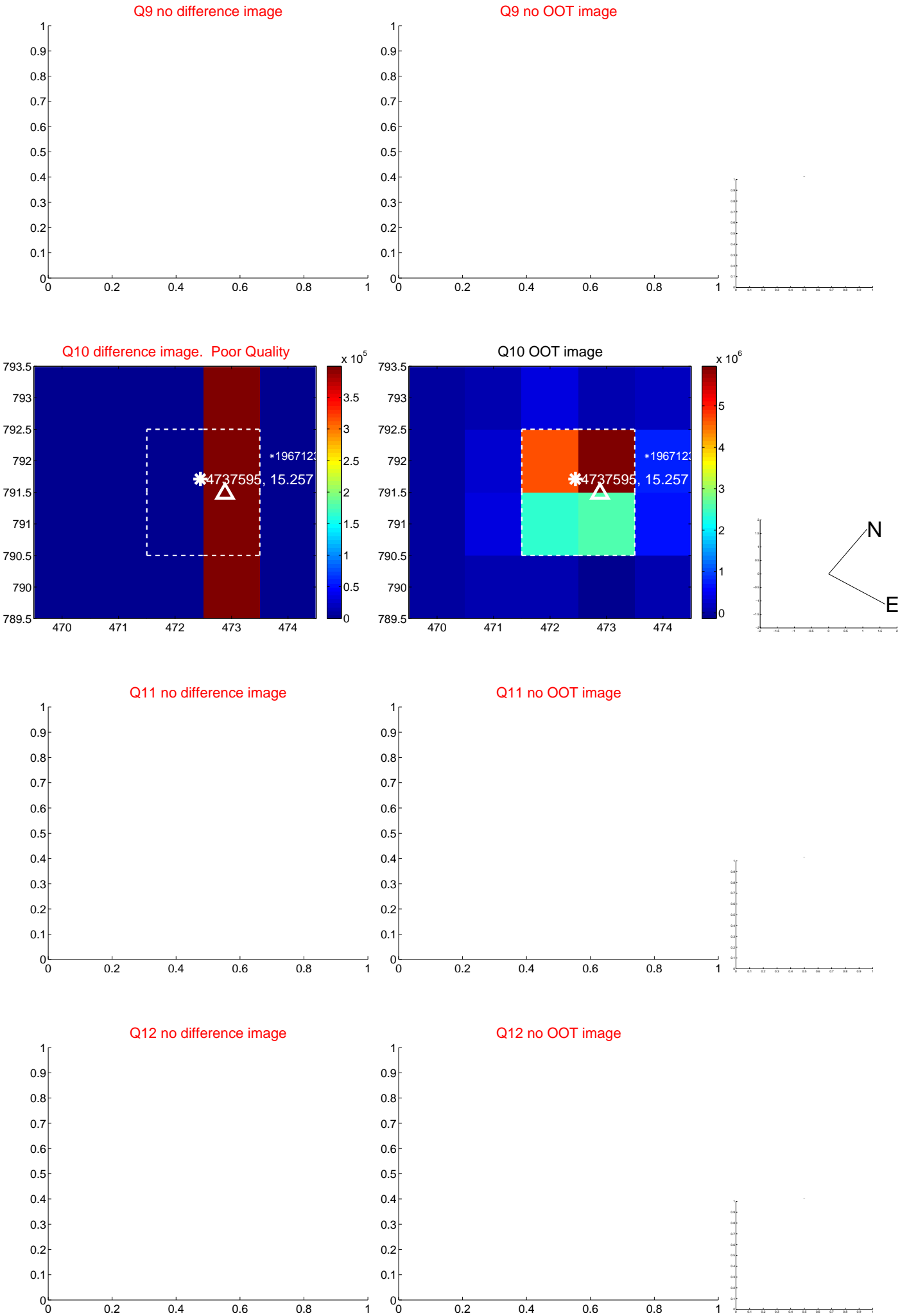
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



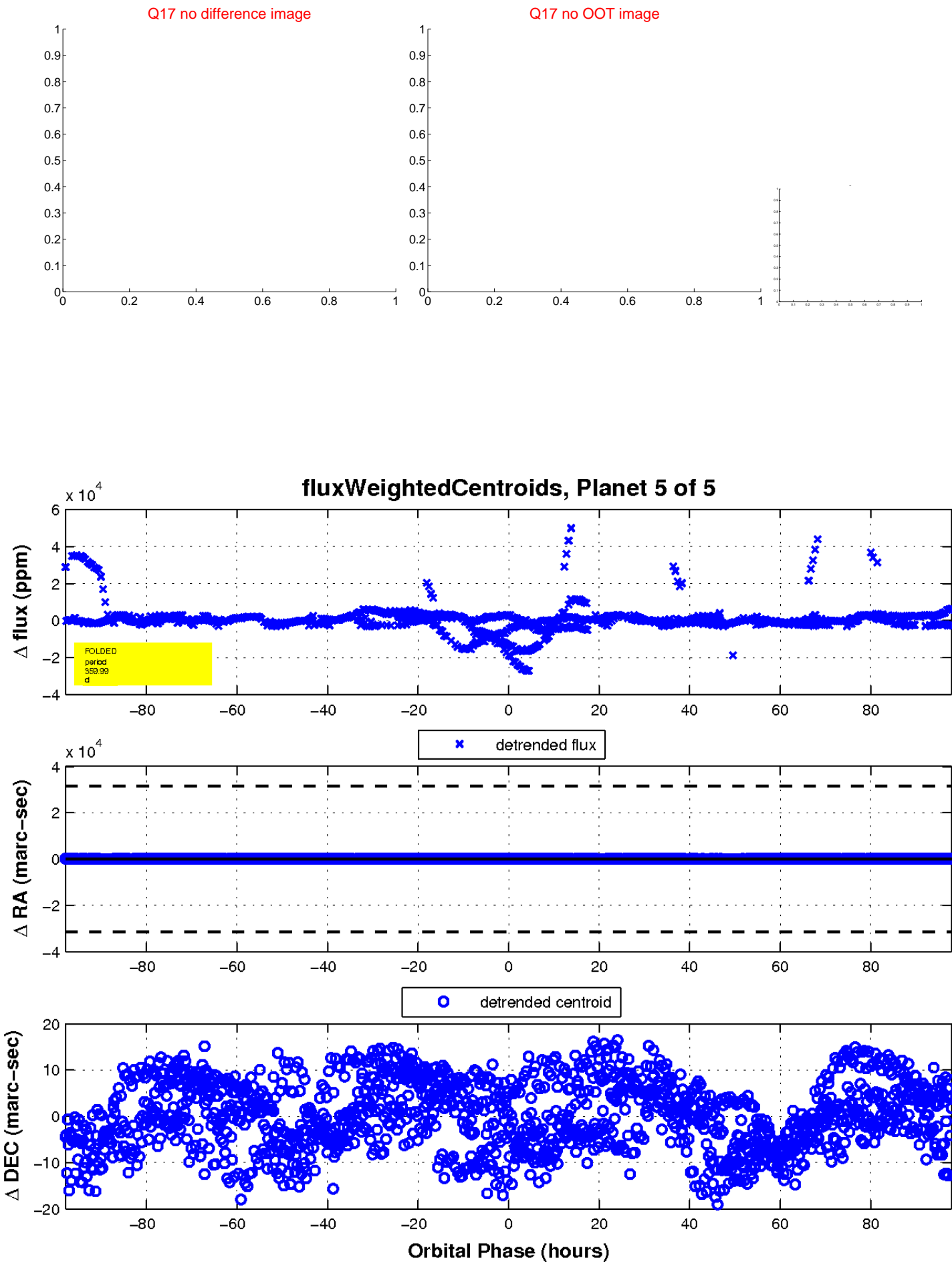
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

