

KIC 010449542

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})
010449542-01	OBS	No	288.437268	314.126127	1593.6	3.870	9.1	6.5	0.74	4582	3.26	0.36
010449542-02	OBS	No	587.200913	201.511124	2179.1	7.075	9.9	6.9	0.74	4582	3.42	0.14
010449542-03	OBS	No	508.503806	243.299520	1665.3	10.807	8.4	5.4	0.74	4582	3.00	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010449542-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS
010449542-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010449542-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_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.

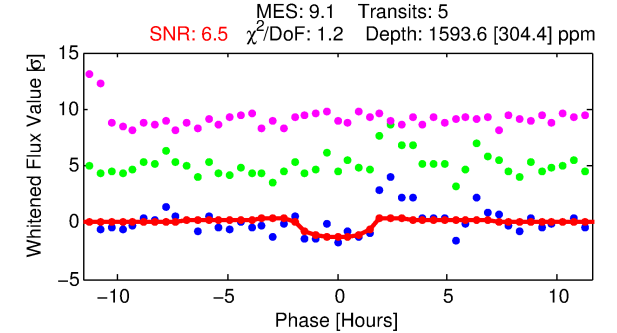
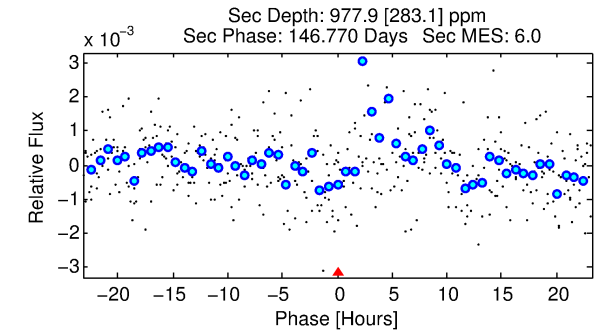
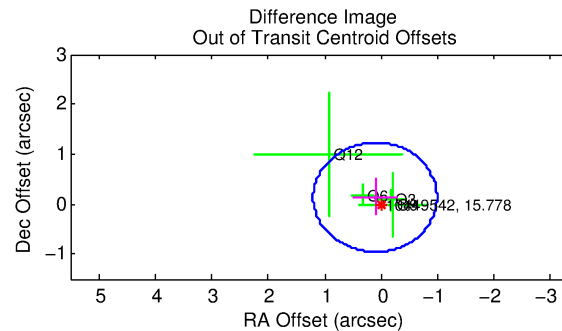
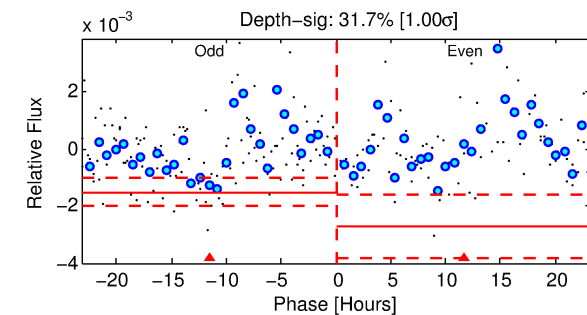
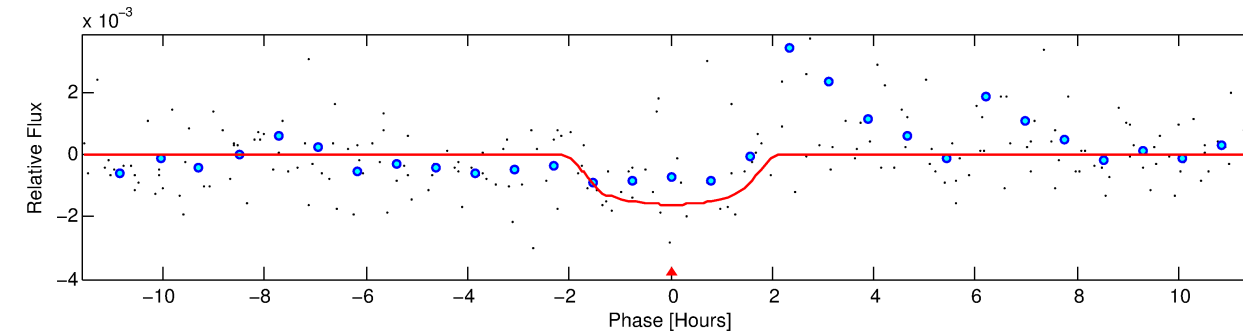
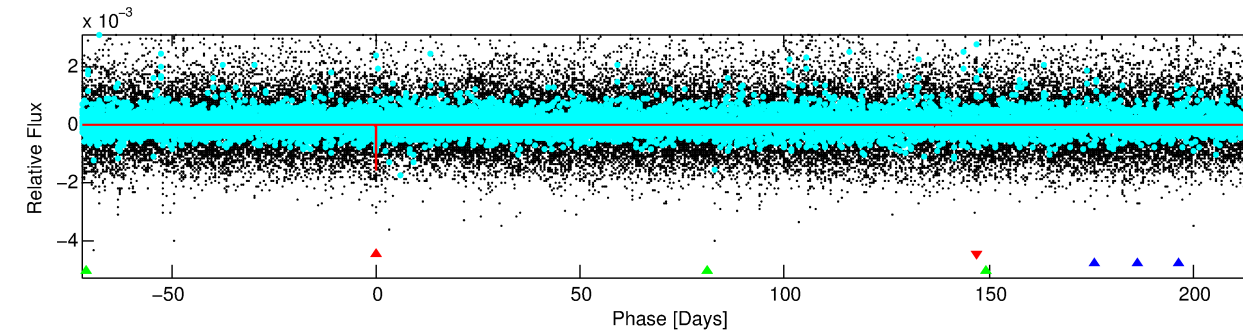
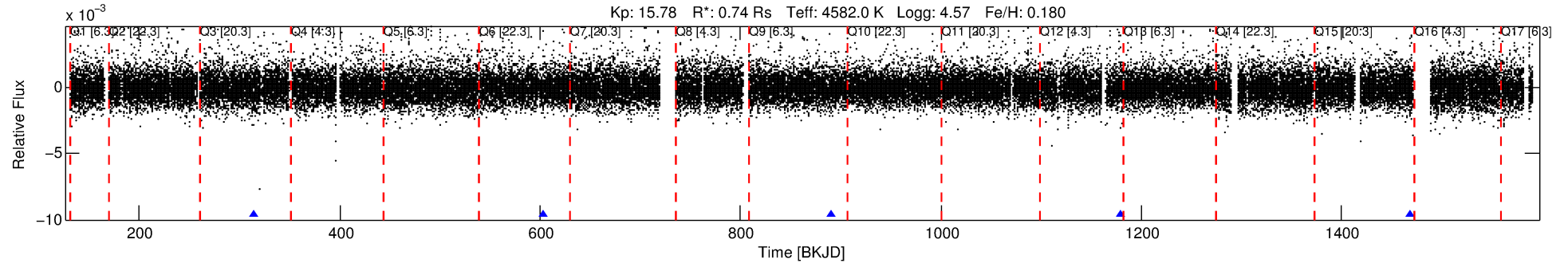
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010449542-01

No Significant Match Found

DV One-Page Summary

KIC: 10449542 Candidate: 1 of 3 Period: 288.437 d



DV Fit Results:

Period = 288.43727 [0.00493] d
Epoch = 314.1261 [0.0130] BKJD
Rp/R* = 0.0405 [0.0416]
a/R* = 396.98 [1278.83]
b = 0.77 [1.74]
Seff = 0.36 [0.06]
Teq = 198 [8] K
Rp = 3.26 [3.36] Re
a = 0.7692 [0.0544] AU
Ag = 29932.65 [62138.91] [0.48 σ]
Teffp = 4024 [2089] K [1.83 σ]

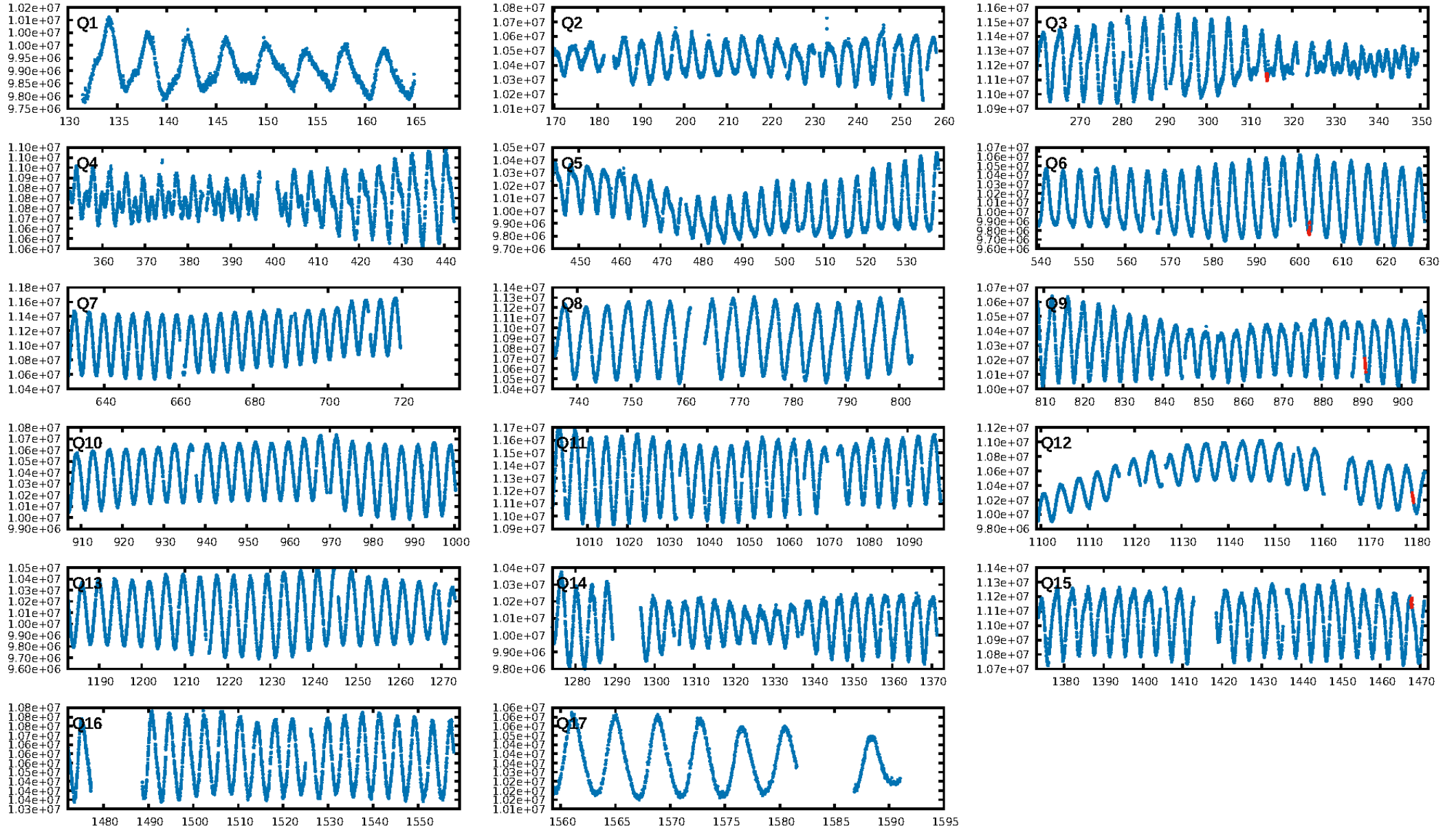
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [460.09 σ]
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 84.7%
Bootstrap-pfa: 1.52e-10
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.2753
Centroid-sig: 44.2%
Centroid-so: 0.609 arcsec [0.44 σ]
OotOffset-rm: 0.172 arcsec [0.47 σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-rm: 0.108 arcsec [0.30 σ]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [5/5]

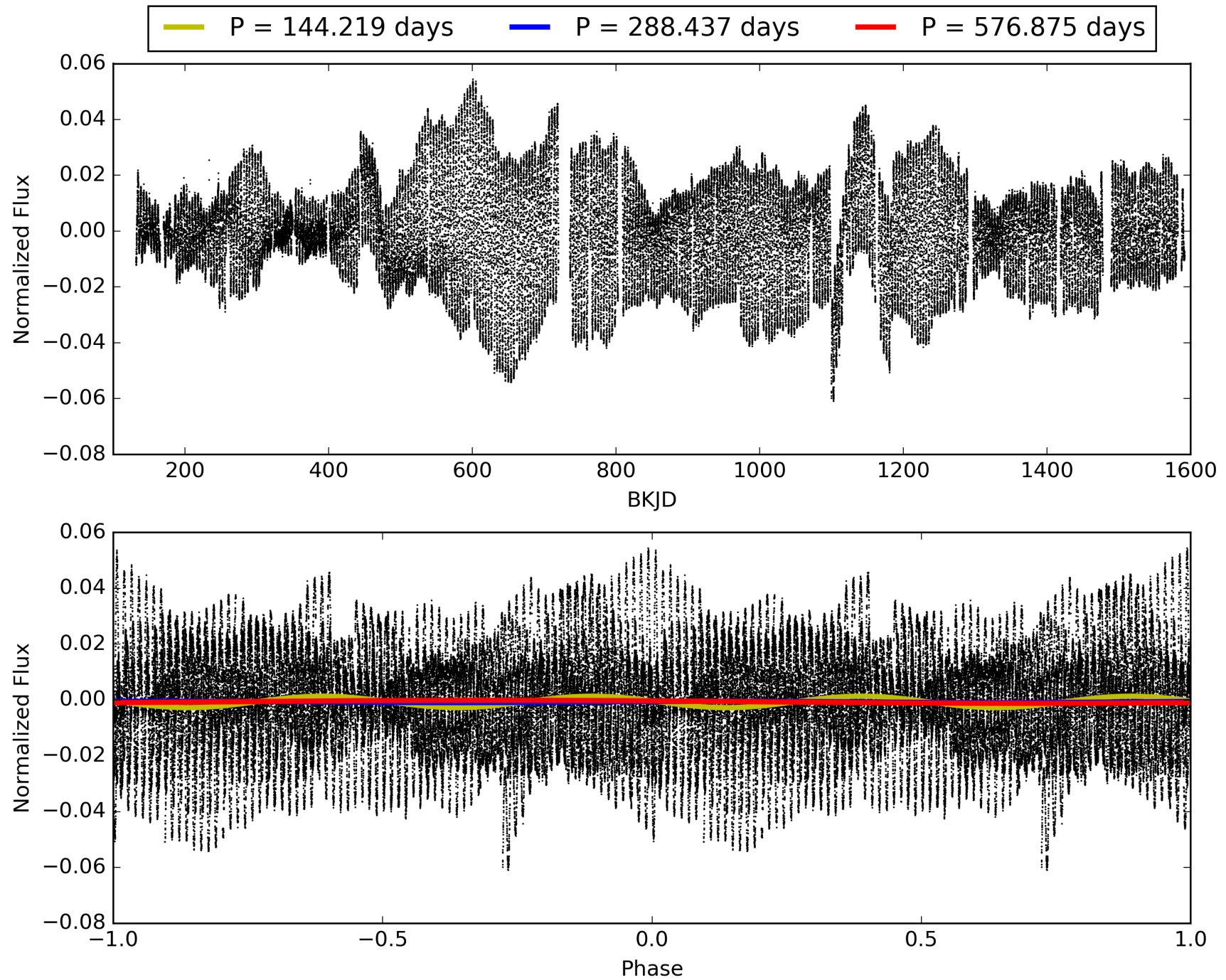
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:30:47 Z

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

TCE 010449542-01, PDC Light Curves

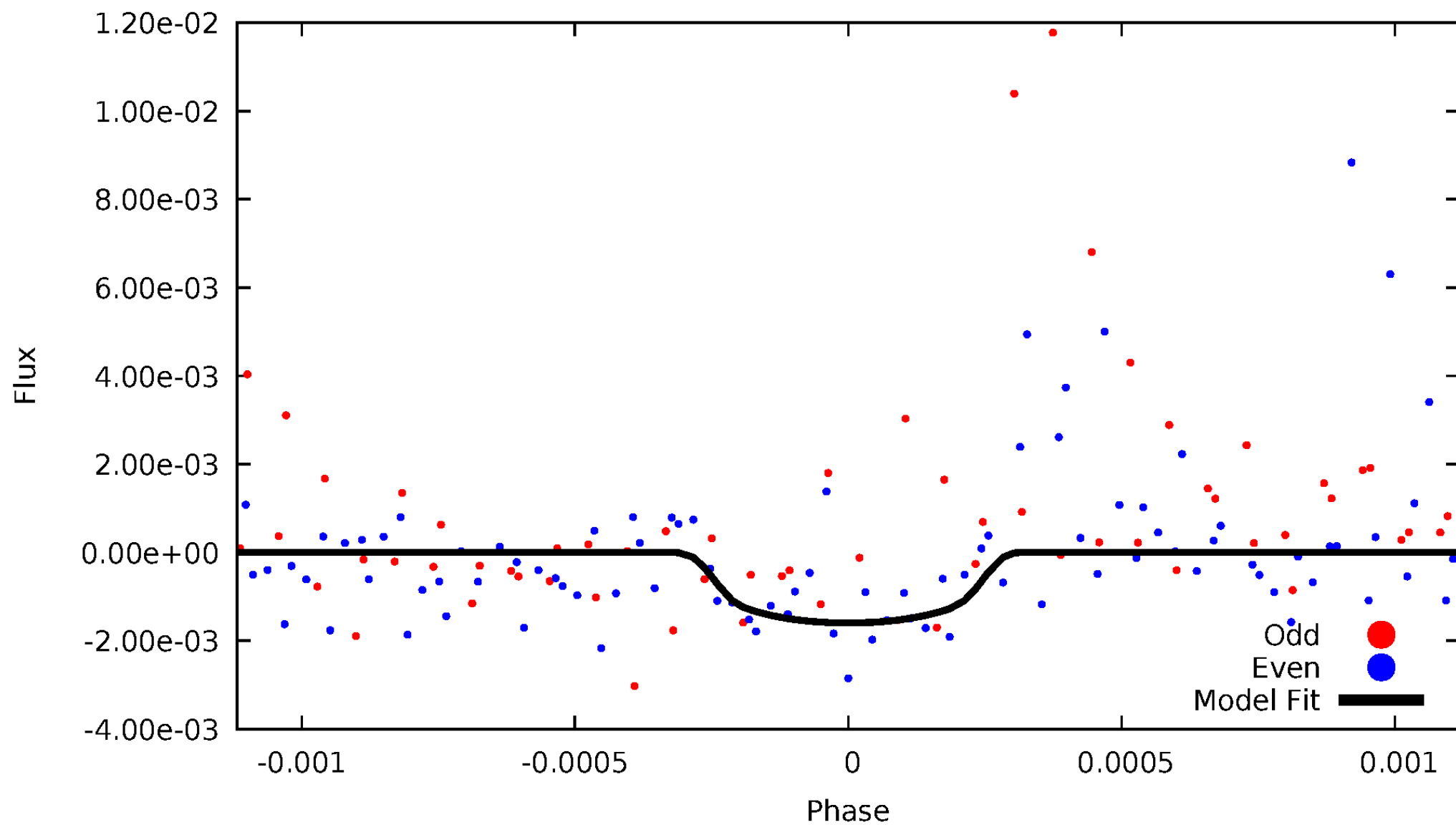


TCE 010449542-01



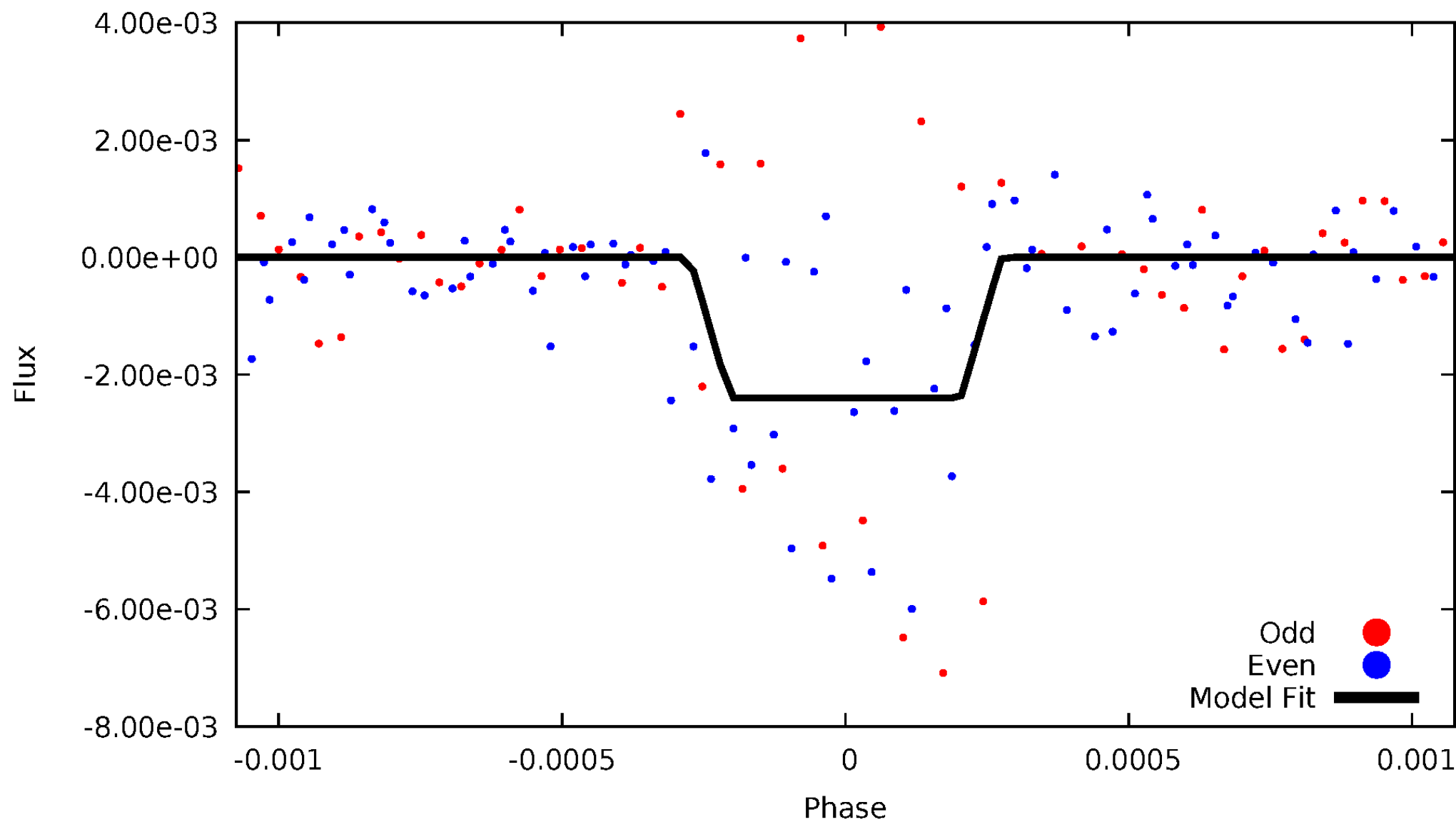
DV Odd/Even

TCE 010449542-01



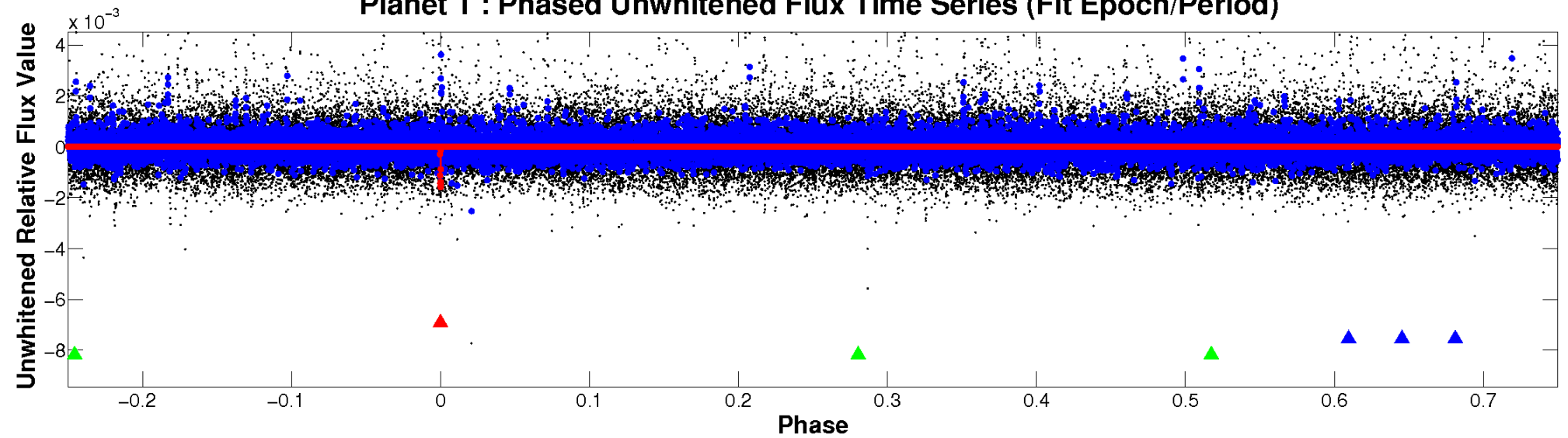
ALT Odd/Even

TCE 010449542-01

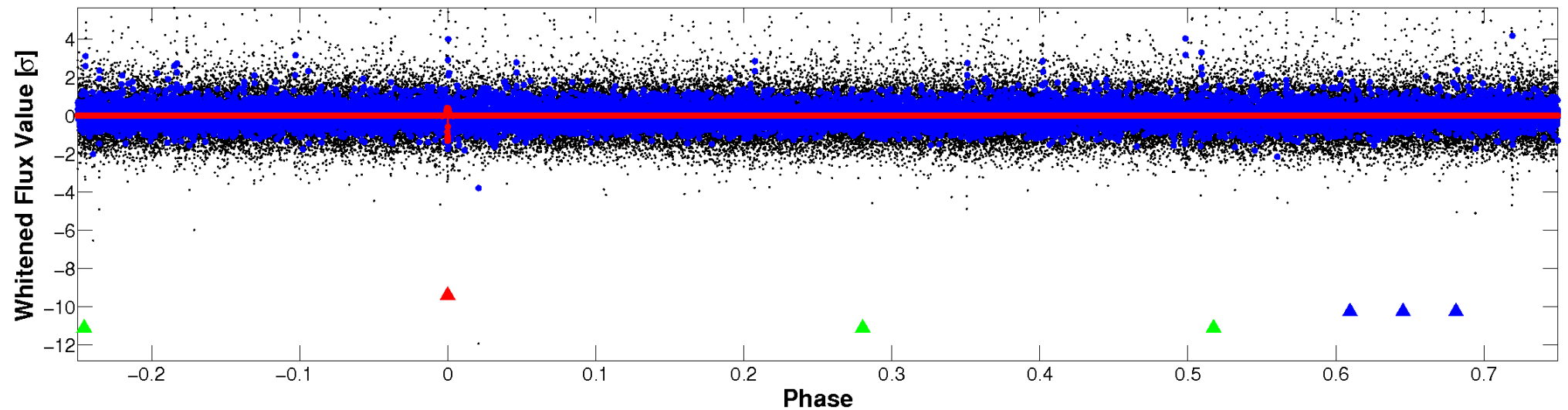


Non-Whitened Vs. Whitened Light Curve

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

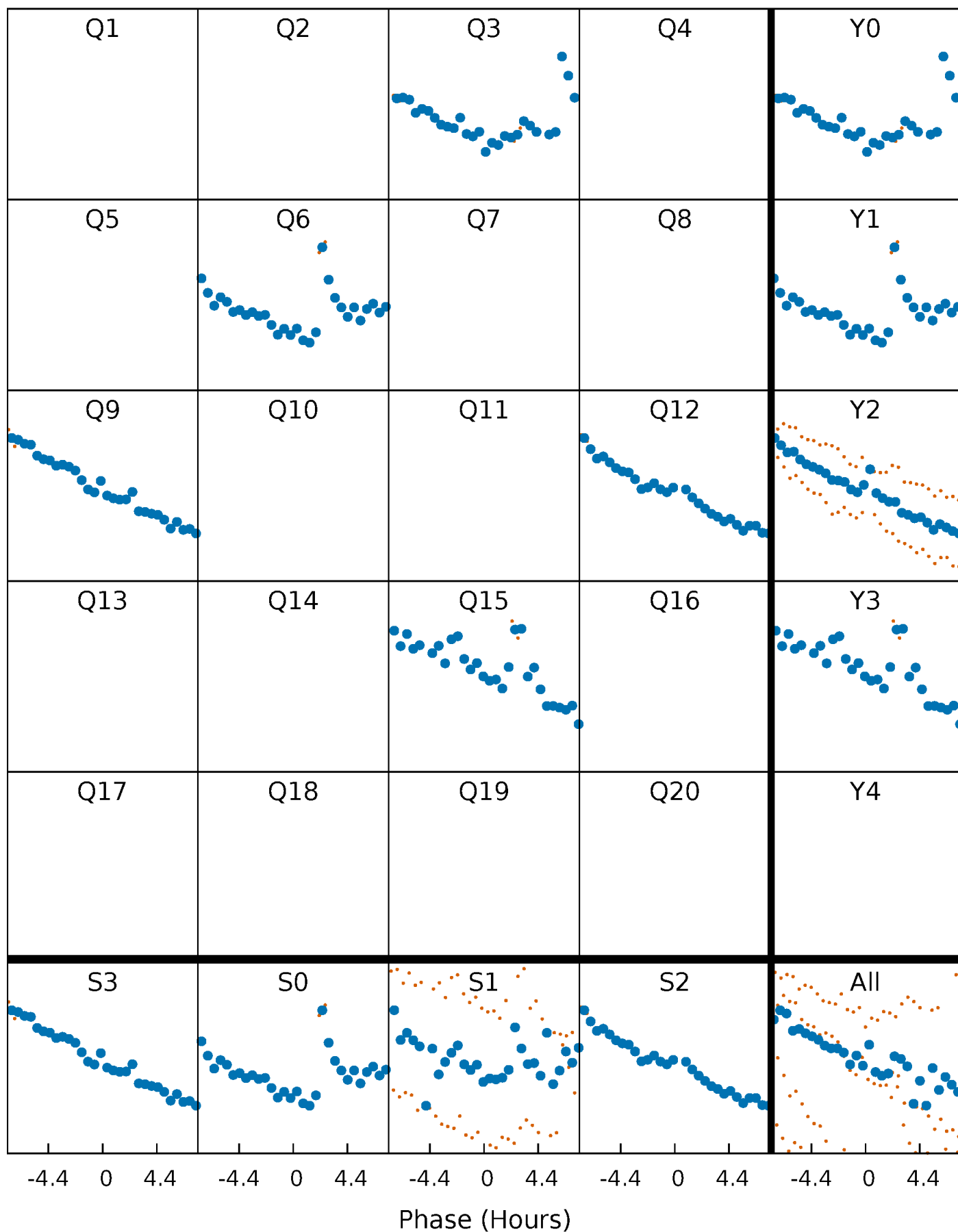


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



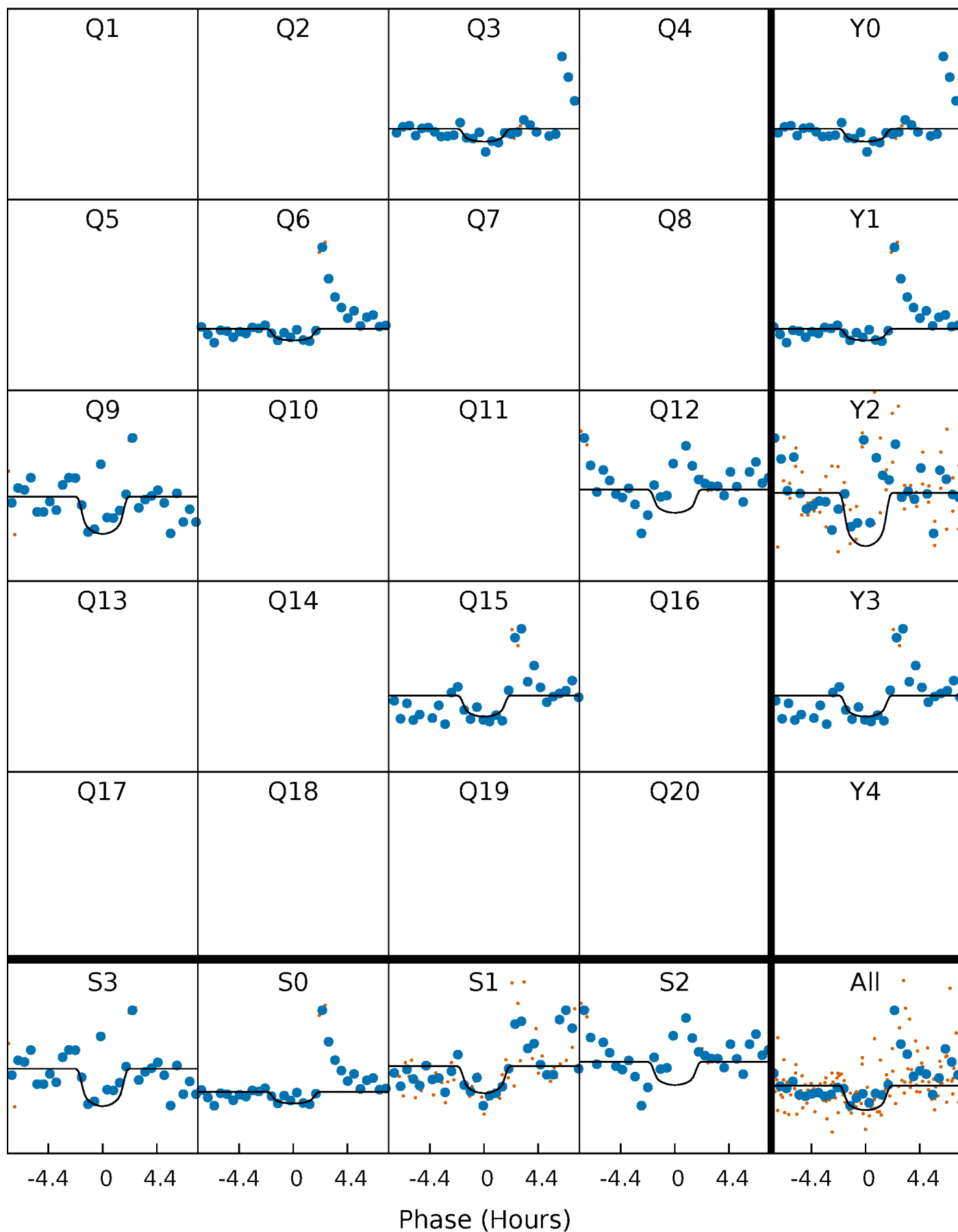
PDC Quarter-Phased Transit Curves

TCE 010449542-01 P=288.437268 Days $T_0=314.126127$ (BKJD)



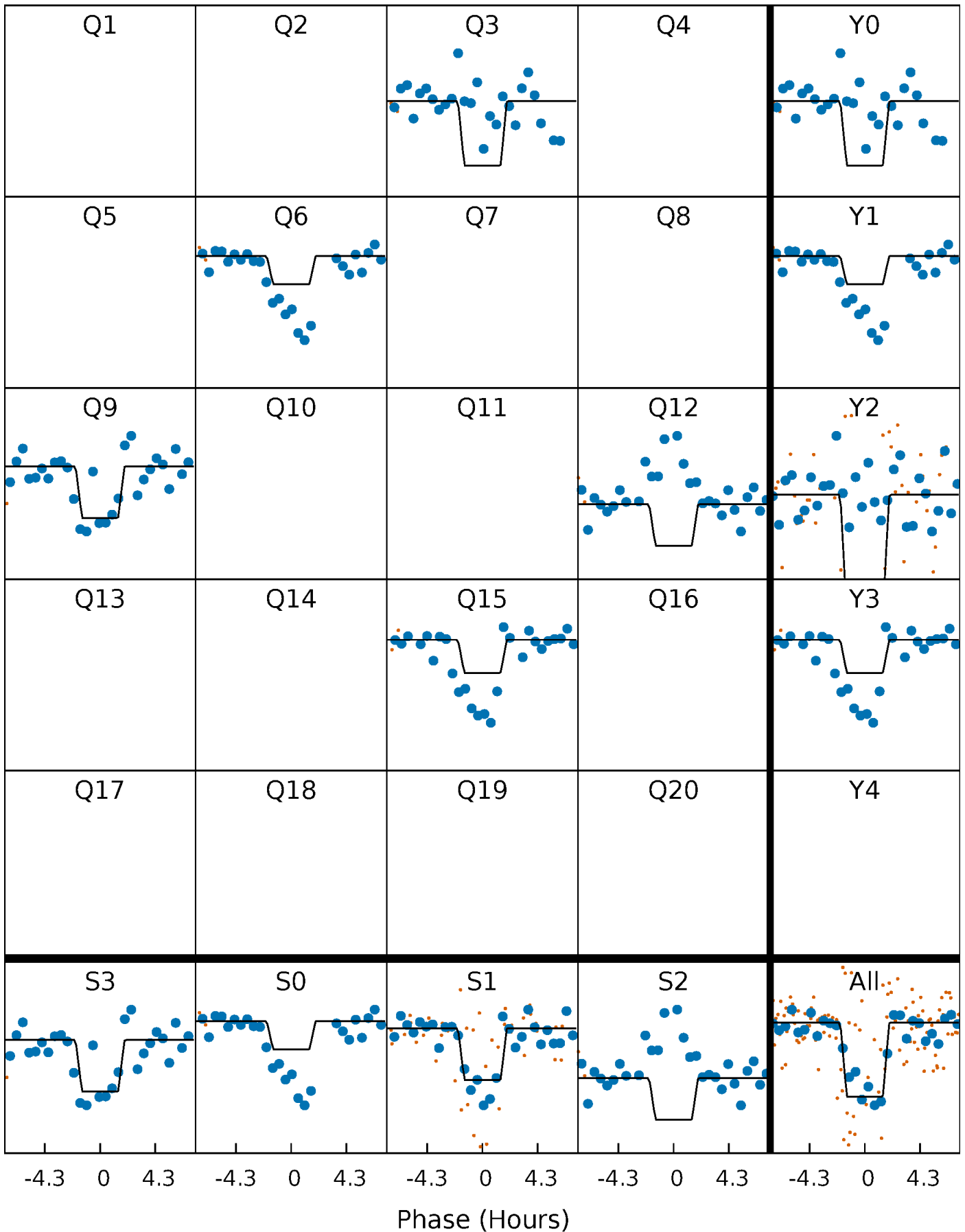
DV Quarter-Phased Transit Curves

TCE 010449542-01 P=288.437268 Days $T_0=314.126127$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

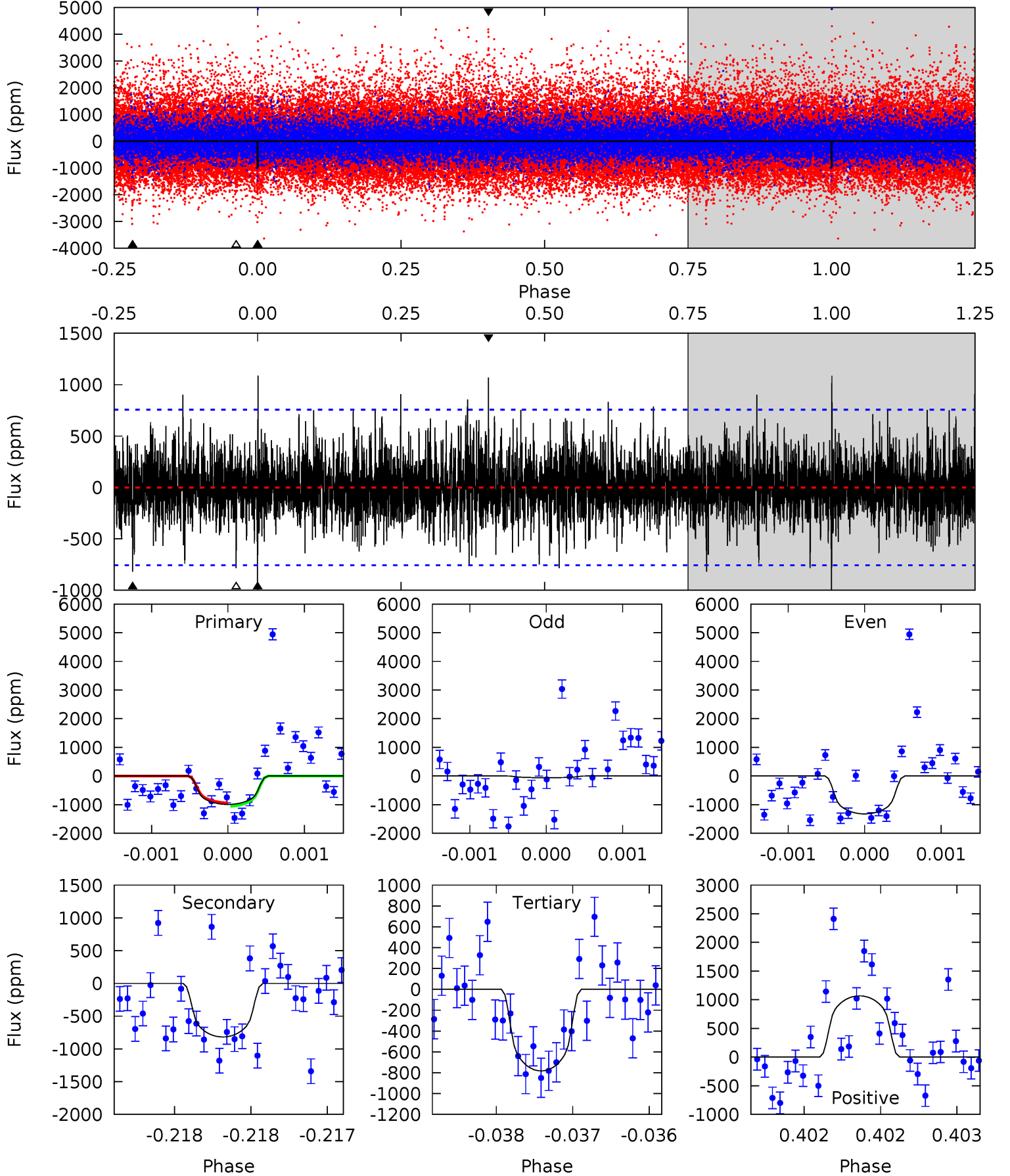
TCE 010449542-01 P=288.444835 Days $T_0=314.115550$ (BKJD)



DV Model-Shift Uniqueness Test

010449542-01, P = 288.437268 Days, E = 25.688859 Days

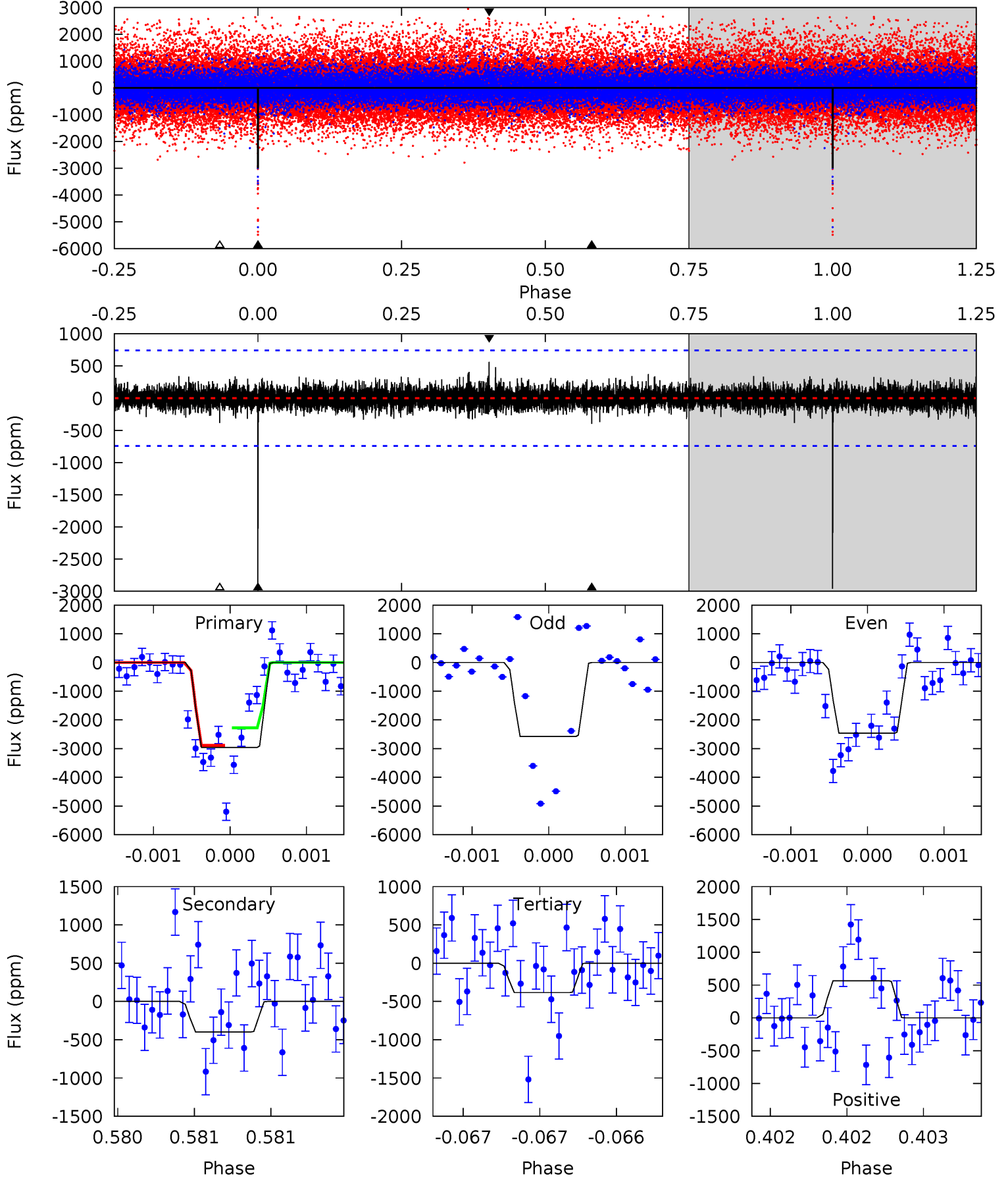
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.27	5.99	5.73	7.82	5.54	3.43	1.64	1.54	-0.55	0.26	-1.83	4.45	0.67	0.52	0.44



Alt Model-Shift Uniqueness Test

010449542-01, P = 288.444835 Days, E = 25.670715 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.2	2.98	2.87	4.23	5.56	3.47	0.70	19.3	17.9	0.10	-1.26	0.44	0.90	0.16	0



Stellar Parameters For KIC 010449542

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4582^{+138}_{-138}	$4.566^{+0.056}_{-0.021}$	$0.180^{+0.200}_{-0.300}$	$0.737^{+0.031}_{-0.062}$	$0.729^{+0.053}_{-0.053}$	$2.563^{+0.647}_{-0.236}$
	+3%/-3%	+1%/-0%	+111%/-167%	+4%/-8%	+7%/-7%	+25%/-9%
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 010449542-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-818 ± 137	$4.15^{+2.92}_{-2.64}$	275^{+9}_{-10}	3700^{+1691}_{-586}	$15881^{+102332}_{-10535}$
Alt.	-397 ± 133	$4.24^{+3.16}_{-2.66}$	274^{+10}_{-10}	3255^{+1303}_{-520}	6949^{+44869}_{-4735}

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

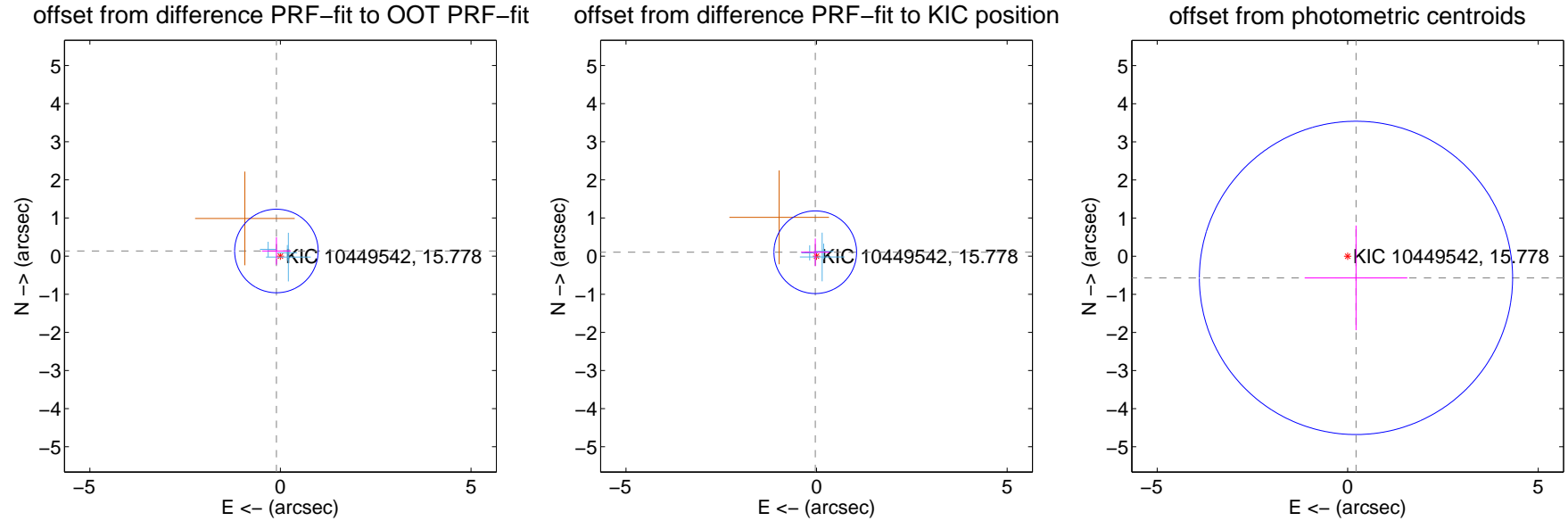
DV Centroid Data

Supplemental centroid analysis for 010449542-01. Kepler magnitude: 15.78. Transit SNR 6.47

There are 3 quarters with good PRF difference image offsets

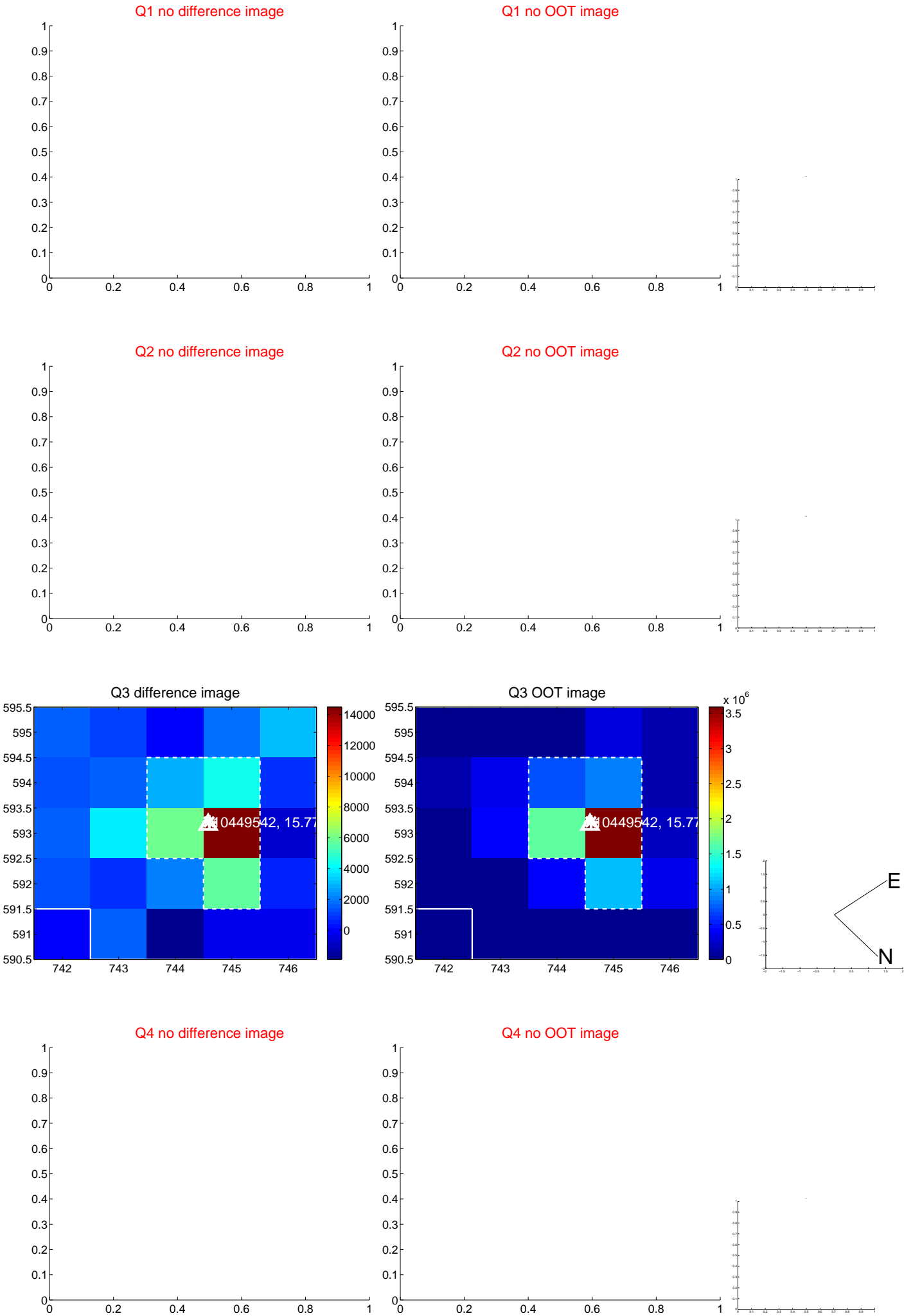
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.172 ± 0.365	0.47	0.106 ± 0.374	0.135 ± 0.360
PRF-fit source offset from KIC position	0.108 ± 0.361	0.30	0.034 ± 0.374	0.102 ± 0.360
photometric centroid source offset	0.61 ± 1.37	0.44	-0.22 ± 1.35	-0.57 ± 1.37

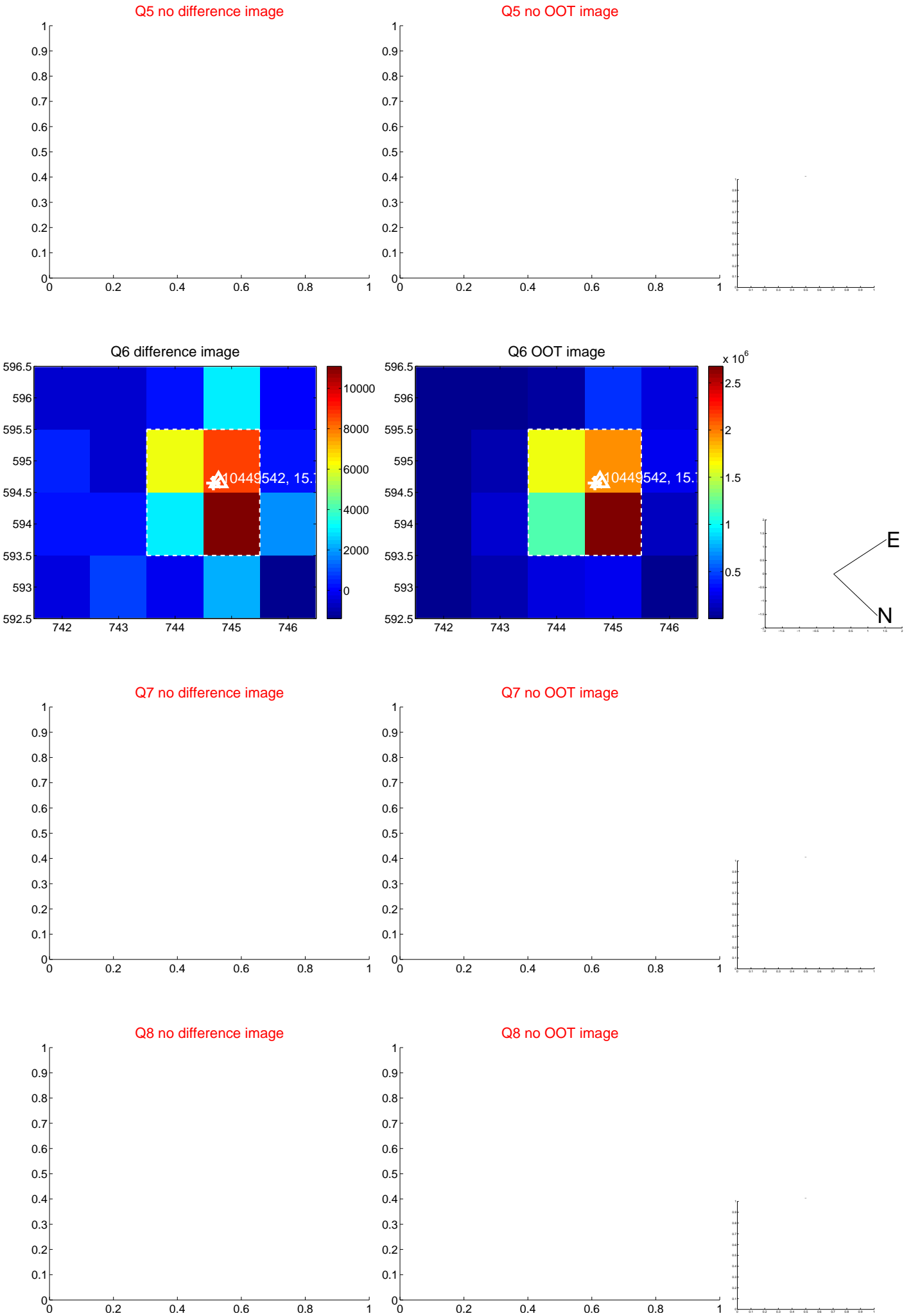


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

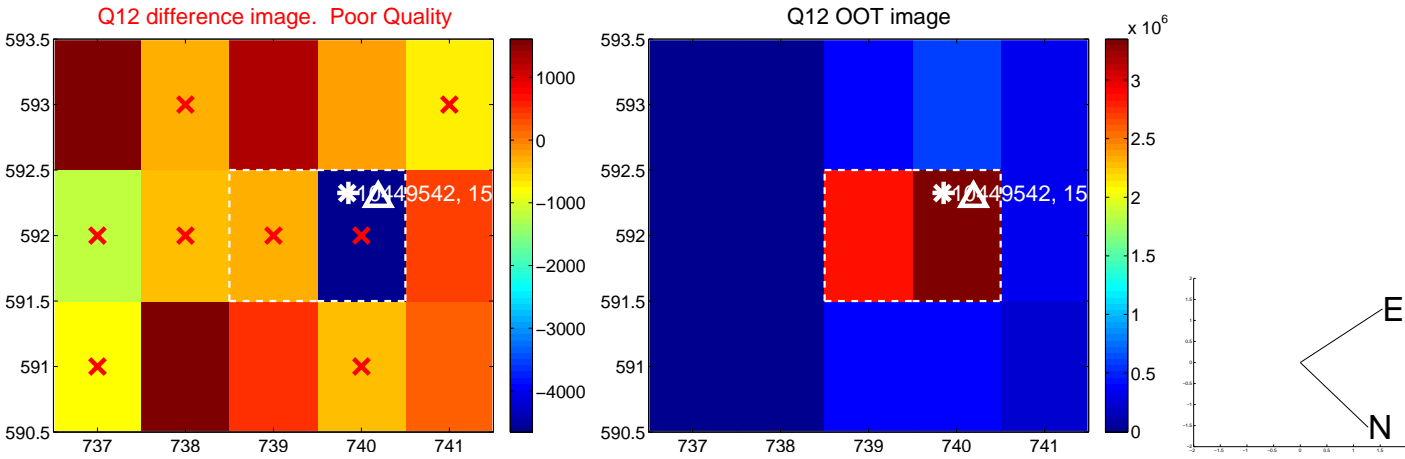
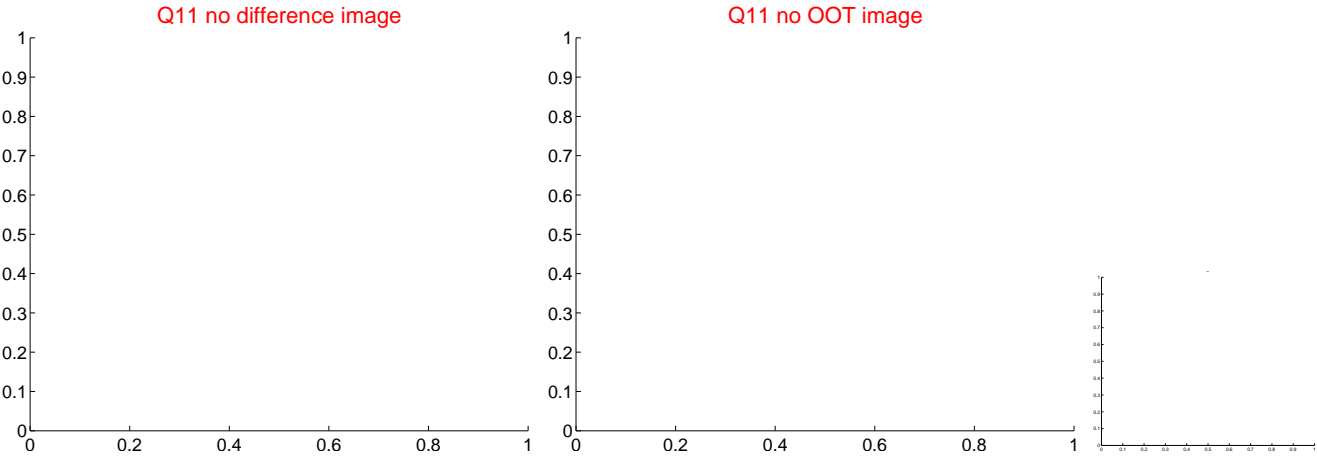
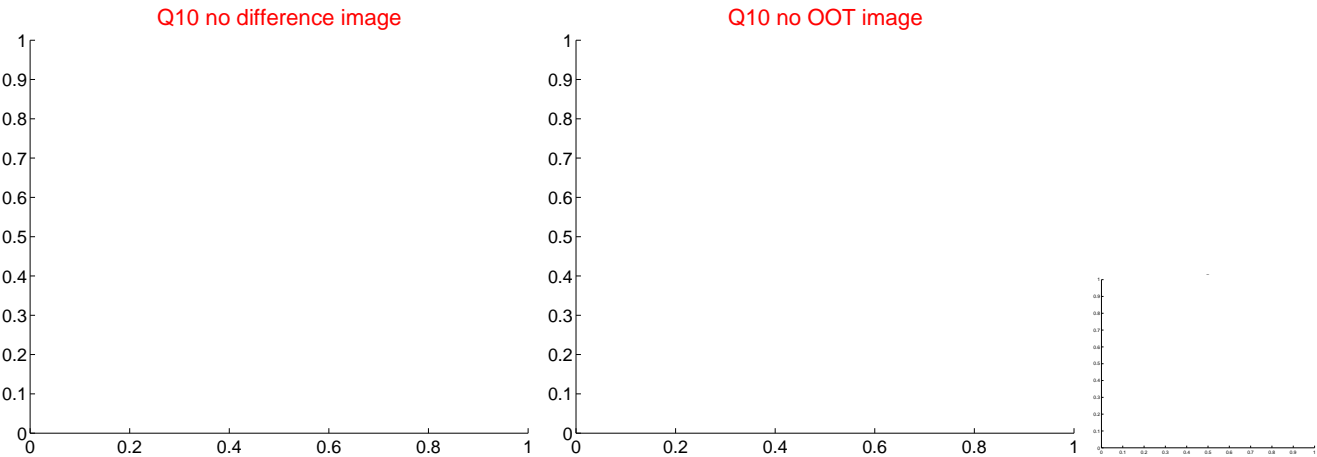
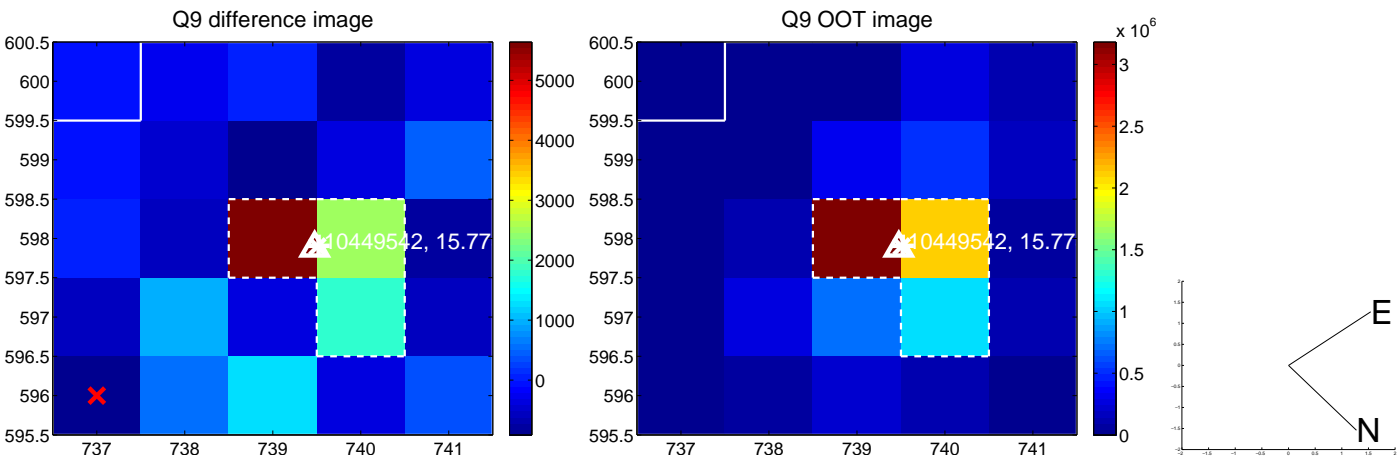
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



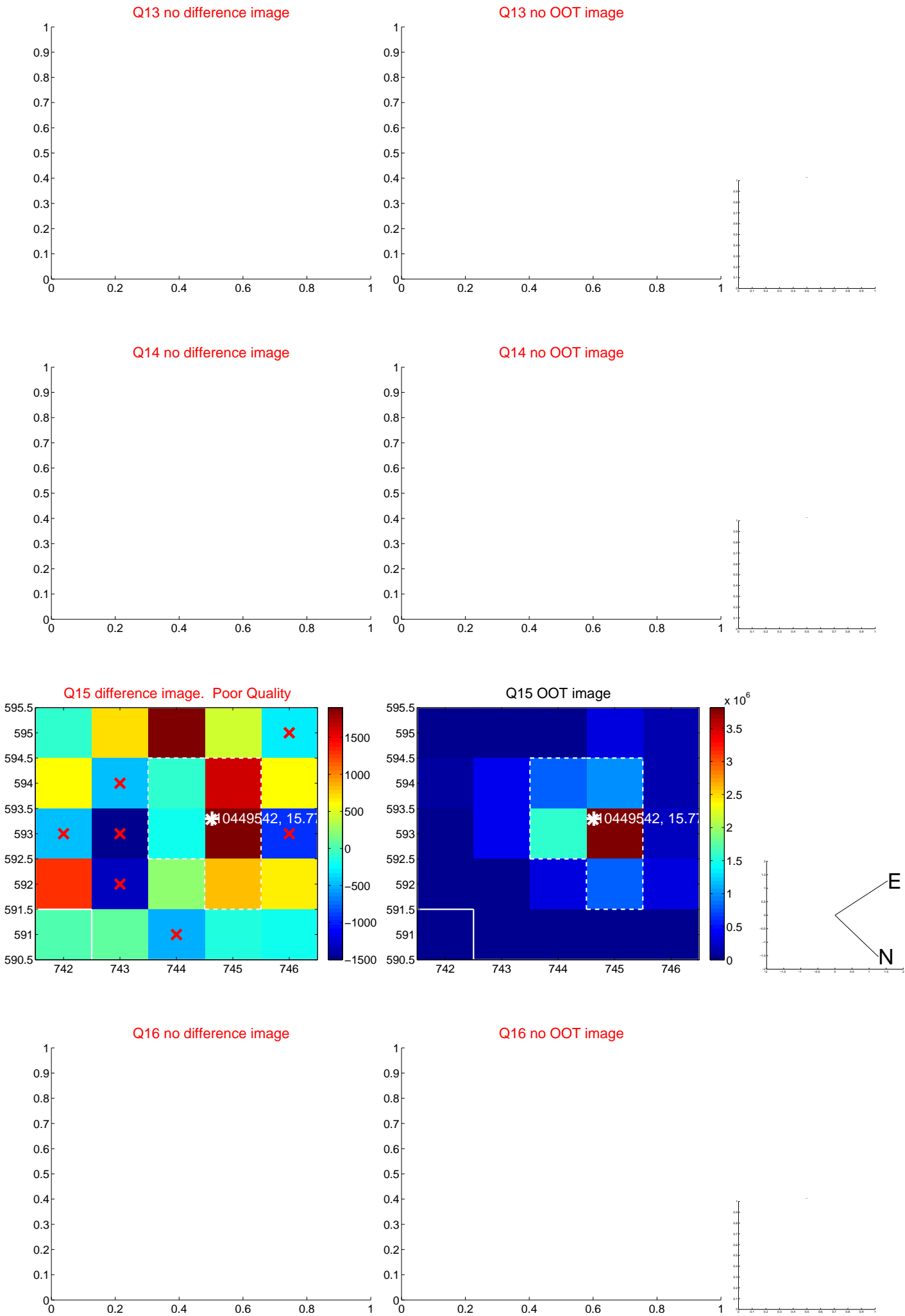
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



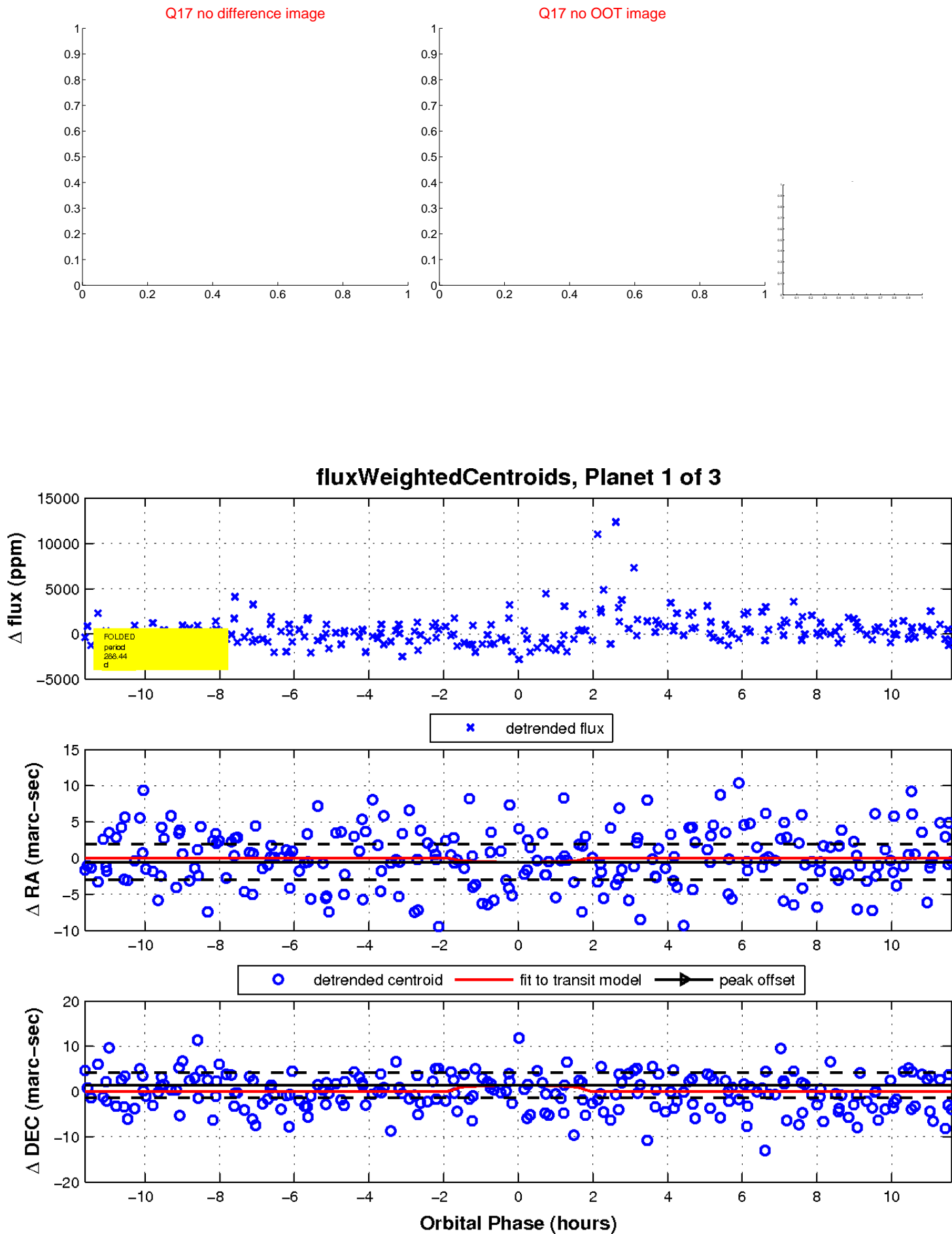
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

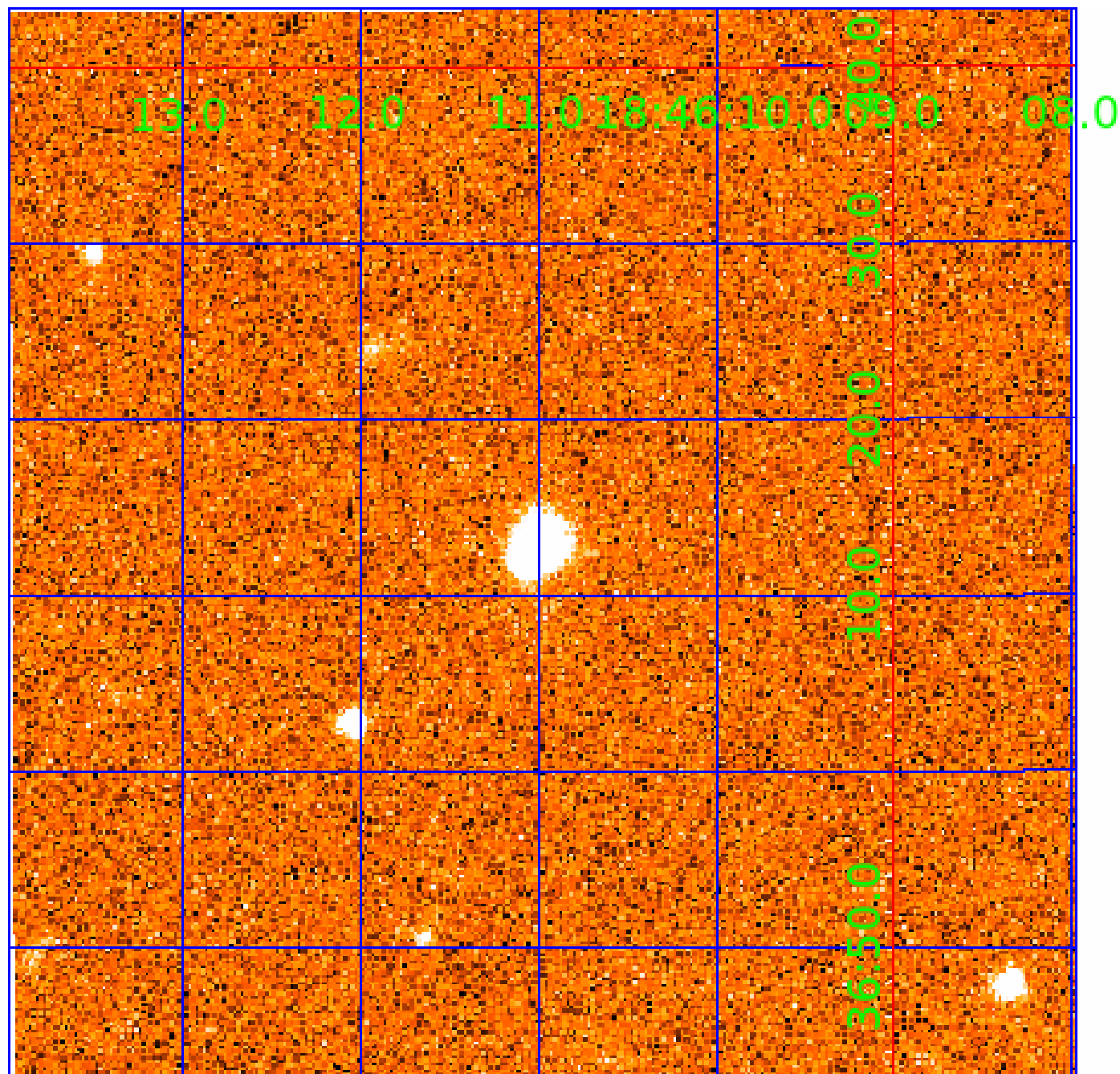


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010449542

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})
010449542-01	OBS	No	288.437268	314.126127	1593.6	3.870	9.1	6.5	0.74	4582	3.26	0.36
010449542-02	OBS	No	587.200913	201.511124	2179.1	7.075	9.9	6.9	0.74	4582	3.42	0.14
010449542-03	OBS	No	508.503806	243.299520	1665.3	10.807	8.4	5.4	0.74	4582	3.00	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010449542-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS
010449542-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010449542-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_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.

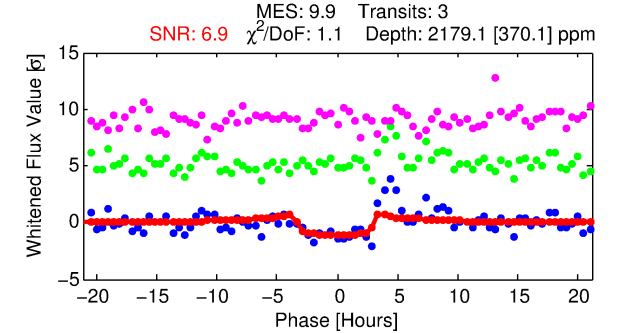
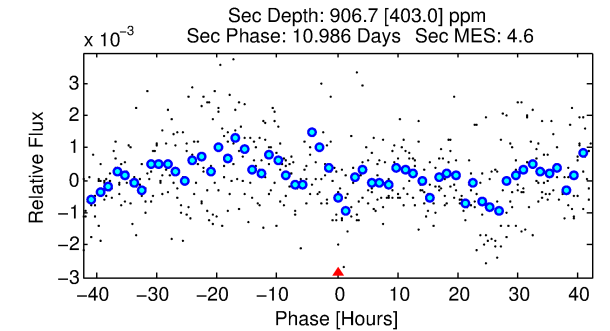
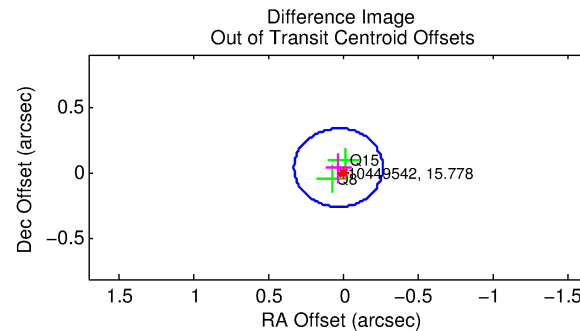
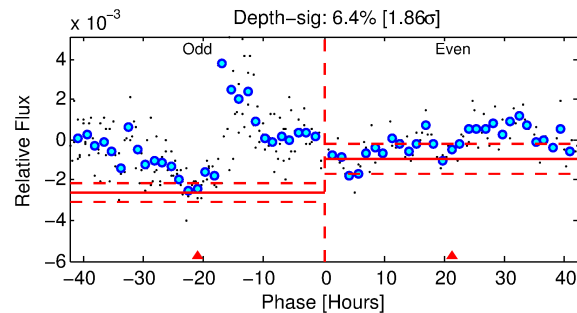
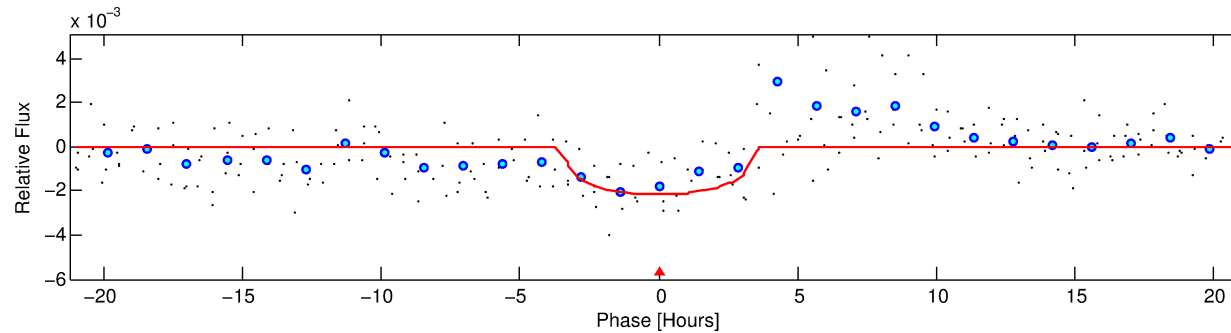
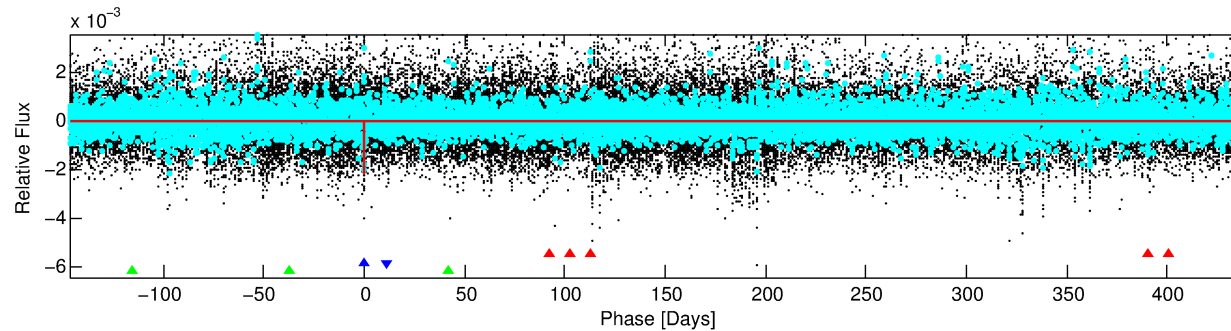
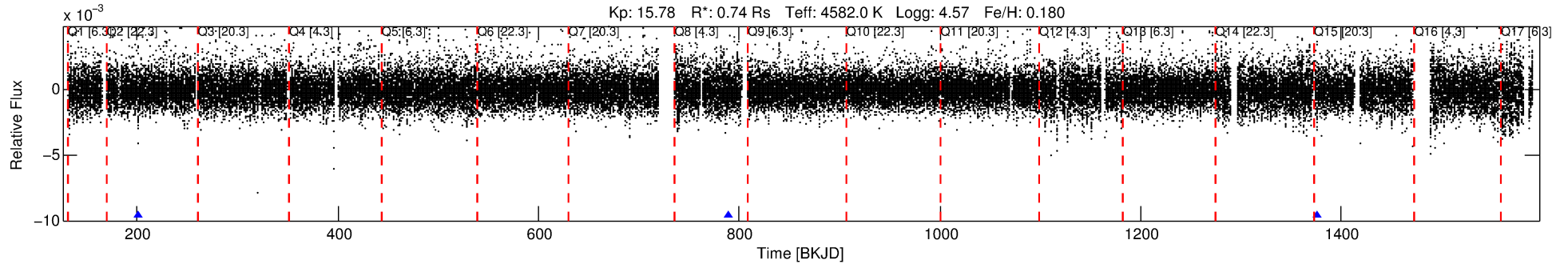
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010449542-02

No Significant Match Found

DV One-Page Summary

KIC: 10449542 Candidate: 2 of 3 Period: 587.201 d



DV Fit Results:

Period = 587.20091 [0.00949] d
Epoch = 201.5111 [0.0117] BKJD
Rp/R* = 0.0425 [0.0381]
a/R* = 591.11 [1539.75]
b = 0.47 [4.46]
Seff = 0.14 [0.02]
Teq = 156 [6] K
Rp = 3.42 [3.08] Re
a = 1.2356 [0.0873] AU
Ag = 65111.19 [120370.83] [0.54 σ]
Teffp = 3856 [1783] K [2.07 σ]

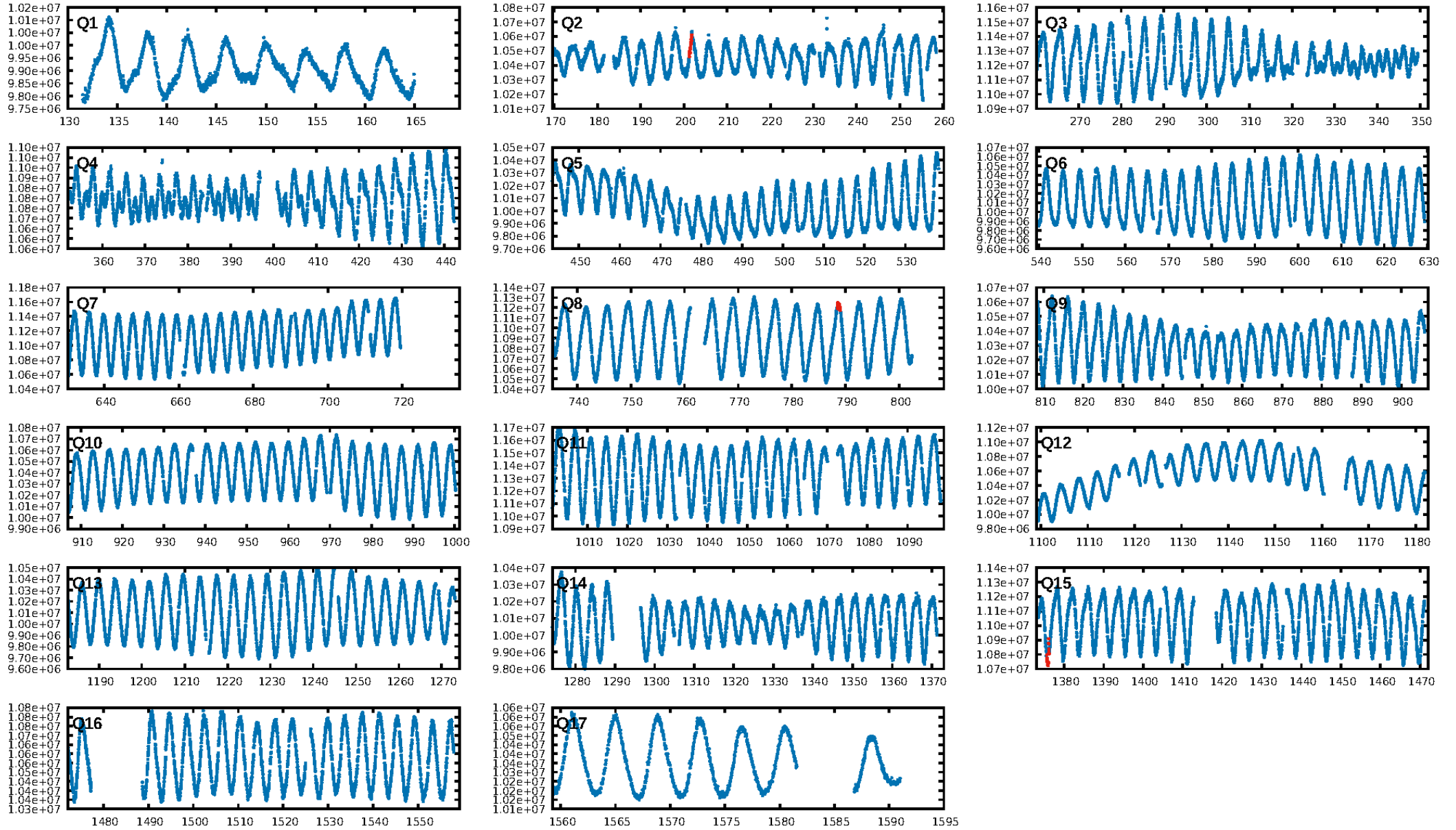
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [146.22 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.8%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: 1.68e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.9561
Centroid-sig: 13.9%
Centroid-so: 1.301 arcsec [1.38 σ]
OotOffset-rm: 0.051 arcsec [0.52 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 0.064 arcsec [0.66 σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

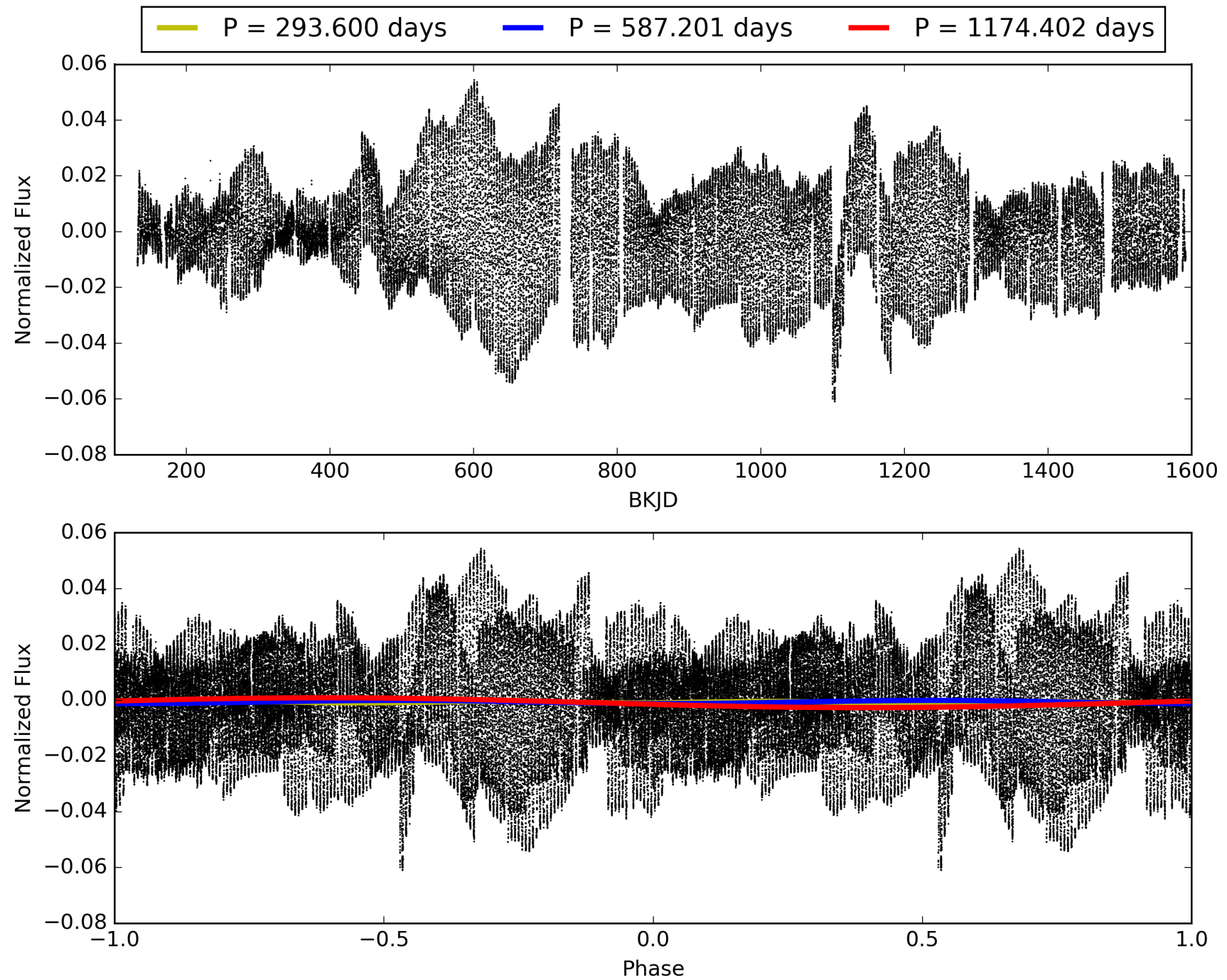
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:31:02 Z

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

TCE 010449542-02, PDC Light Curves

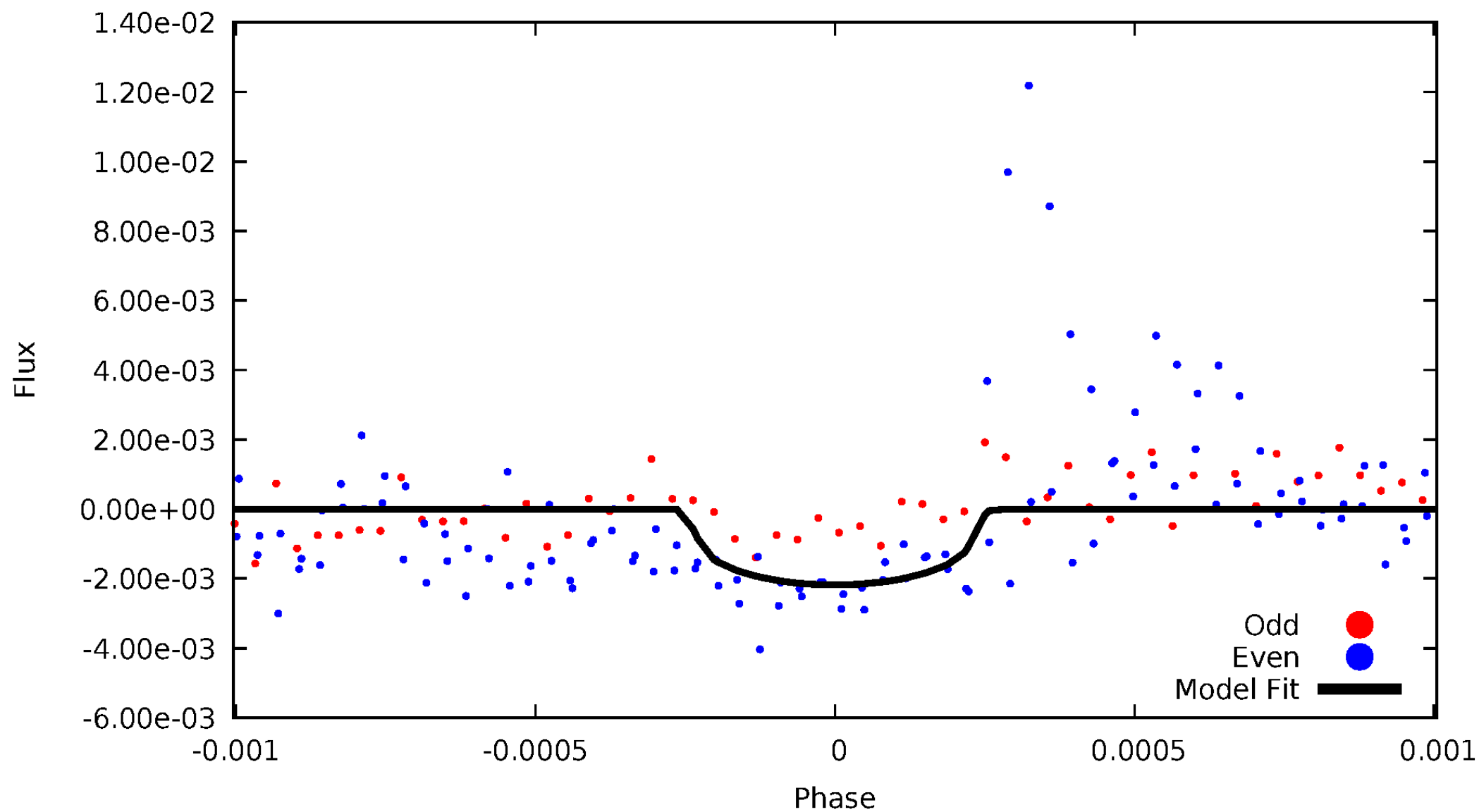


TCE 010449542-02



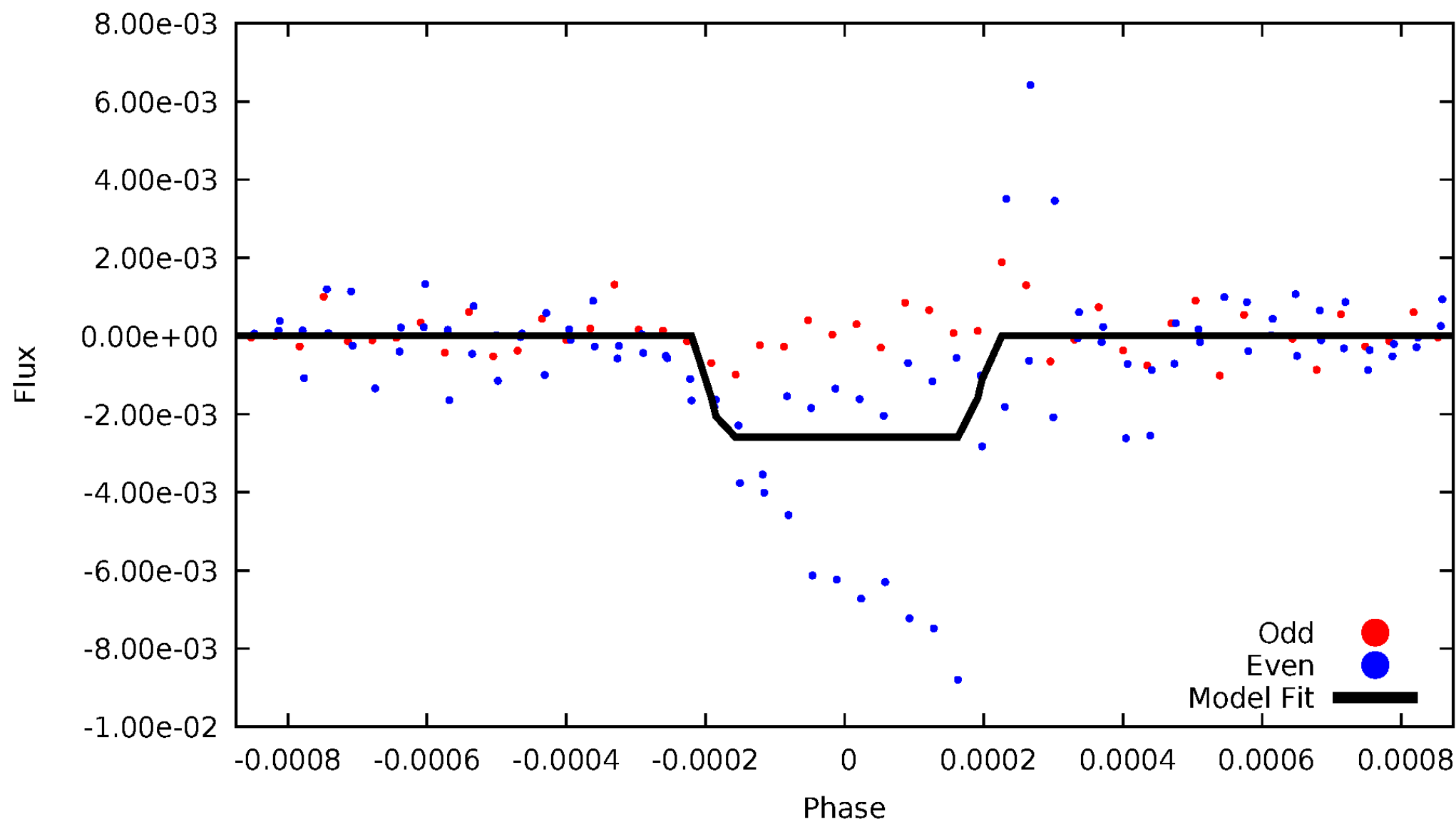
DV Odd/Even

TCE 010449542-02



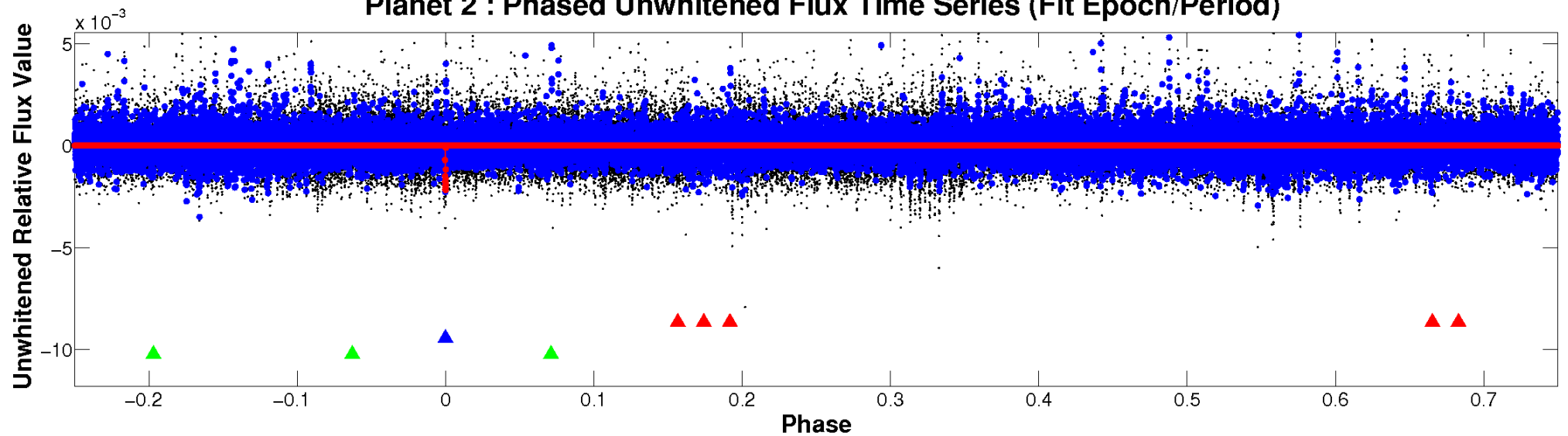
ALT Odd/Even

TCE 010449542-02

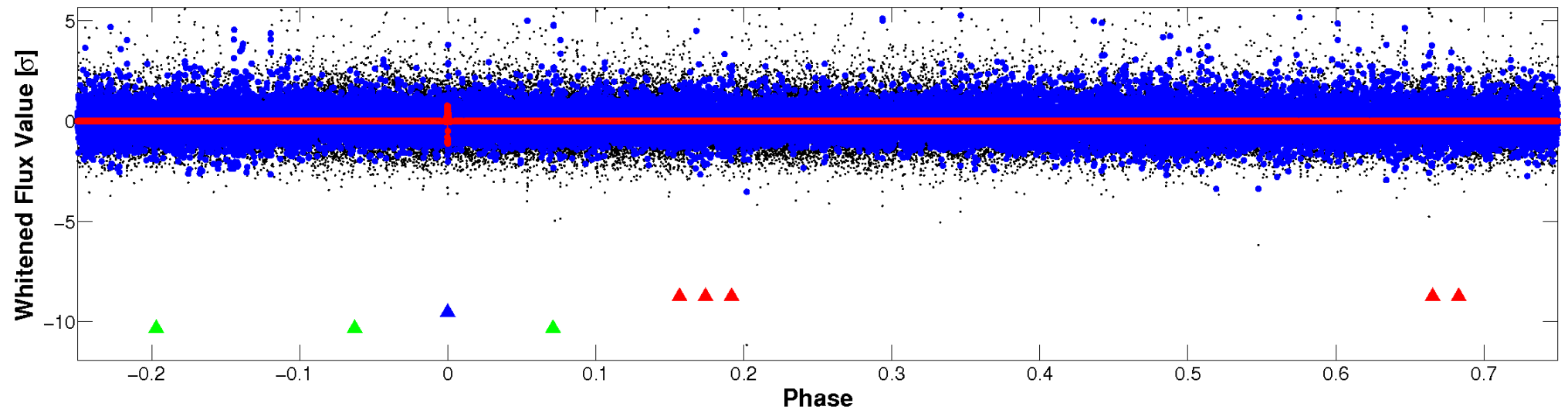


Non-Whitened Vs. Whitened Light Curve

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

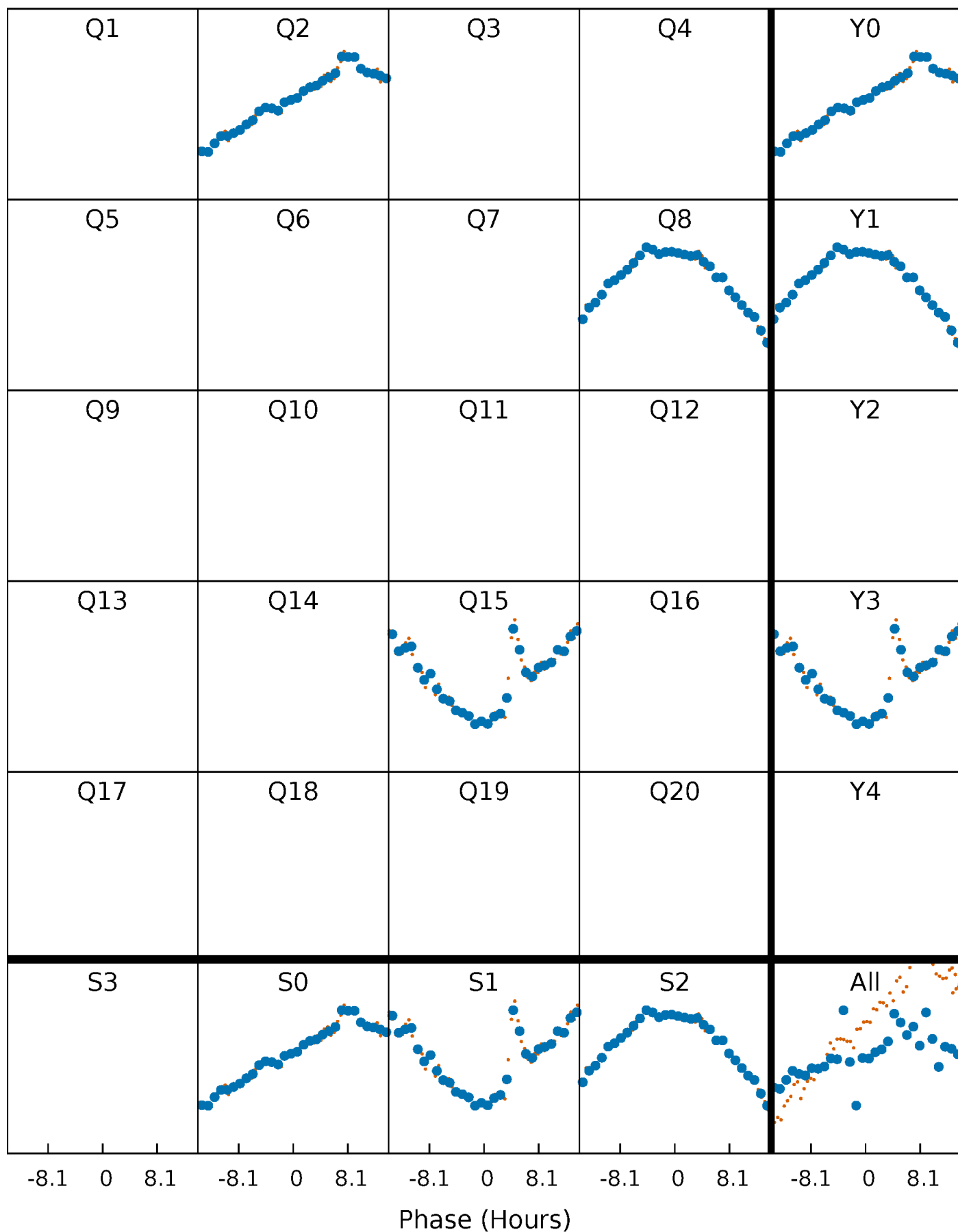


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



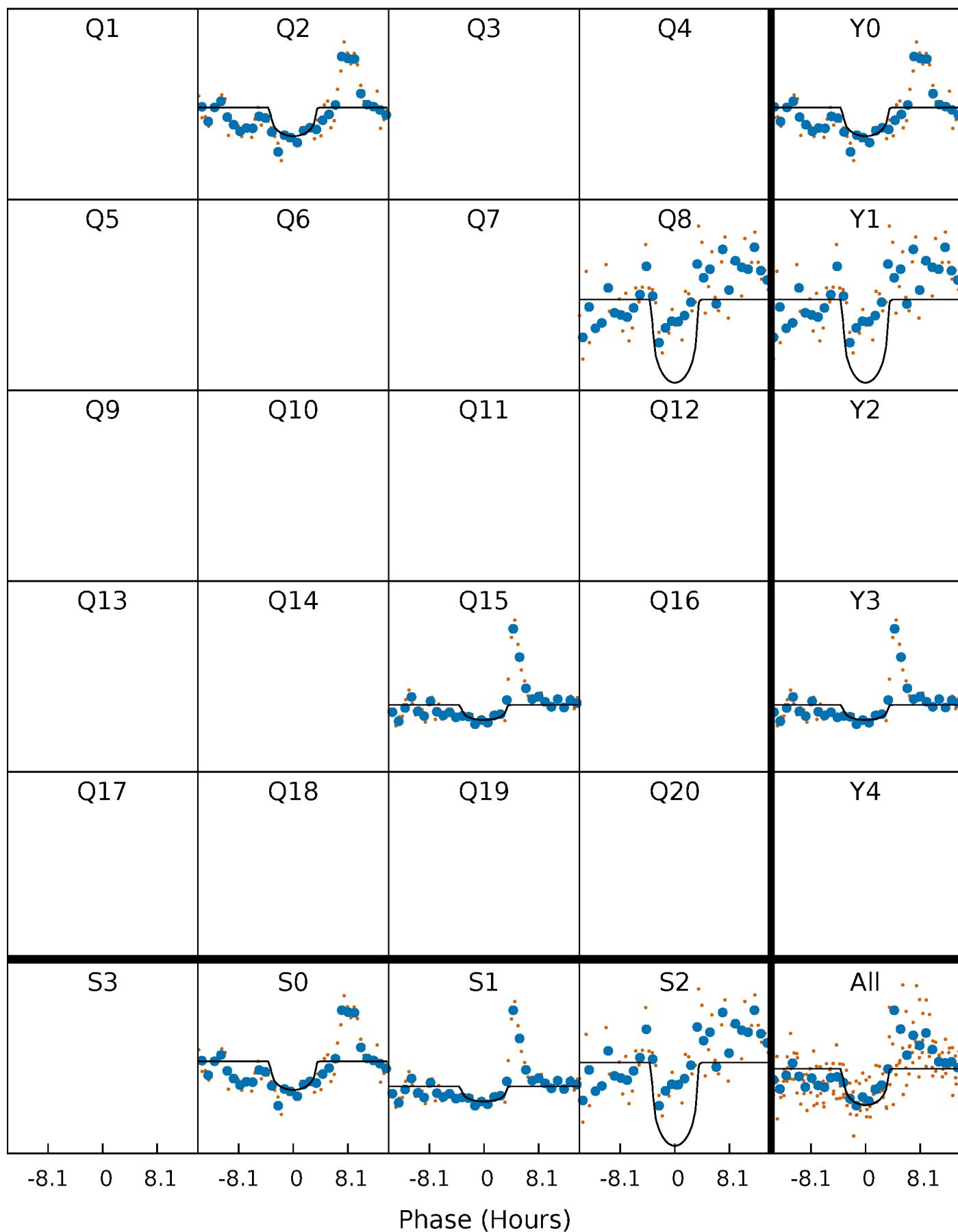
PDC Quarter-Phased Transit Curves

TCE 010449542-02 P=587.200913 Days $T_0=201.511124$ (BKJD)



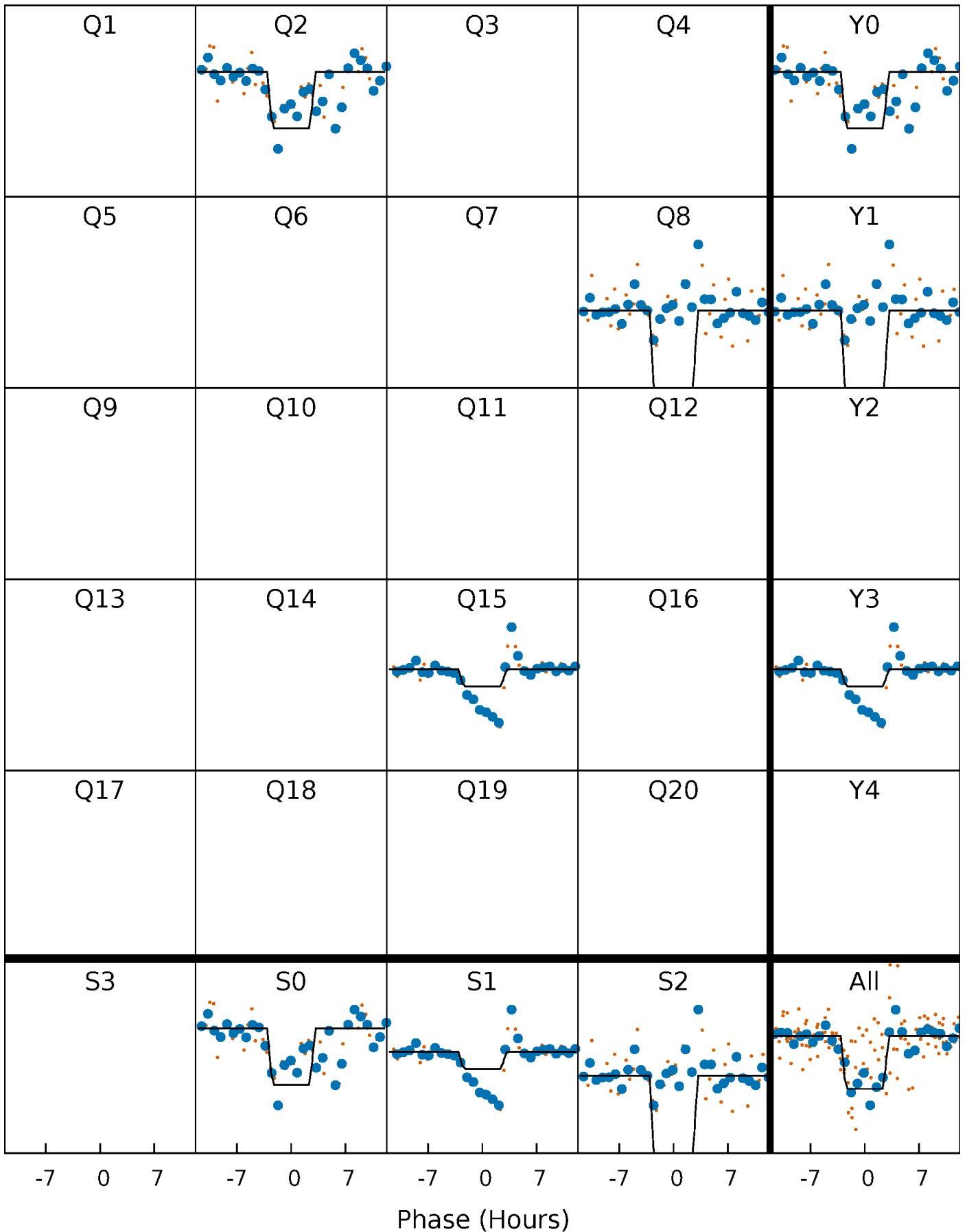
DV Quarter-Phased Transit Curves

TCE 010449542-02 $P=587.200913$ Days $T_0=201.511124$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

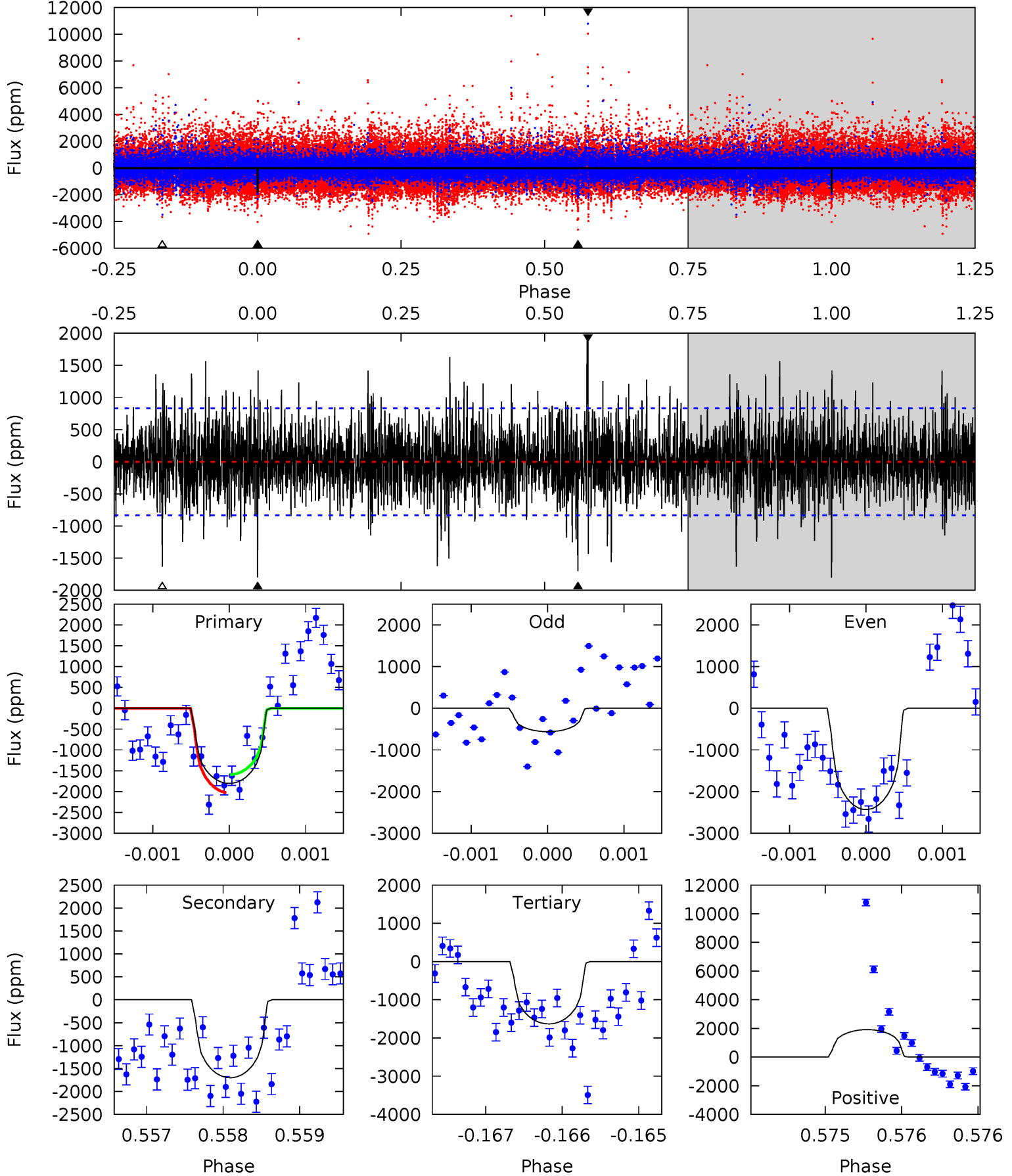
TCE 010449542-02 P=587.219647 Days $T_0=201.506630$ (BKJD)



DV Model-Shift Uniqueness Test

010449542-02, P = 587.200913 Days, E = 201.511124 Days

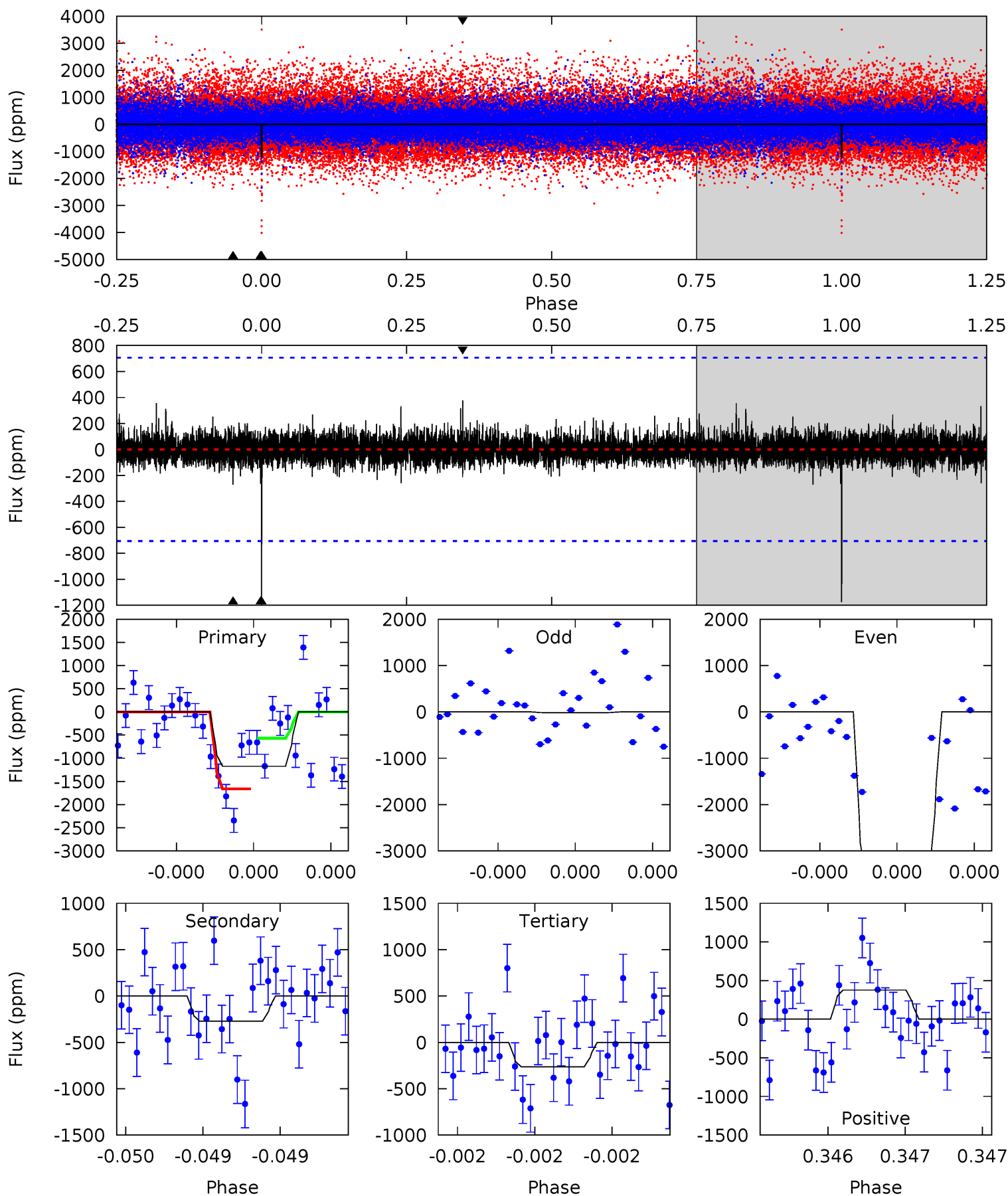
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	11.4	10.9	12.8	5.57	3.47	2.61	1.14	-0.76	0.46	-1.44	5.96	0.81	0.52	1.44



Alt Model-Shift Uniqueness Test

010449542-02, P = 587.219647 Days, E = 201.506630 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.36	2.15	2.09	3.00	5.62	3.55	0.47	7.27	6.36	0.06	-0.84	15.2	1.48	0.24	0



Stellar Parameters For KIC 010449542

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4582^{+138}_{-138}	$4.566^{+0.056}_{-0.021}$	$0.180^{+0.200}_{-0.300}$	$0.737^{+0.031}_{-0.062}$	$0.729^{+0.053}_{-0.053}$	$2.563^{+0.647}_{-0.236}$
	+3%/-3%	+1%/-0%	+111%/-167%	+4%/-8%	+7%/-7%	+25%/-9%
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 010449542-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1701 ± 150	$4.00^{+2.68}_{-2.43}$	216^{+8}_{-7}	4258^{+2199}_{-706}	$88803^{+490204}_{-56687}$
Alt.	-271 ± 126	$4.37^{+2.77}_{-2.49}$	217^{+7}_{-7}	3012^{+923}_{-437}	10734^{+46277}_{-7375}

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

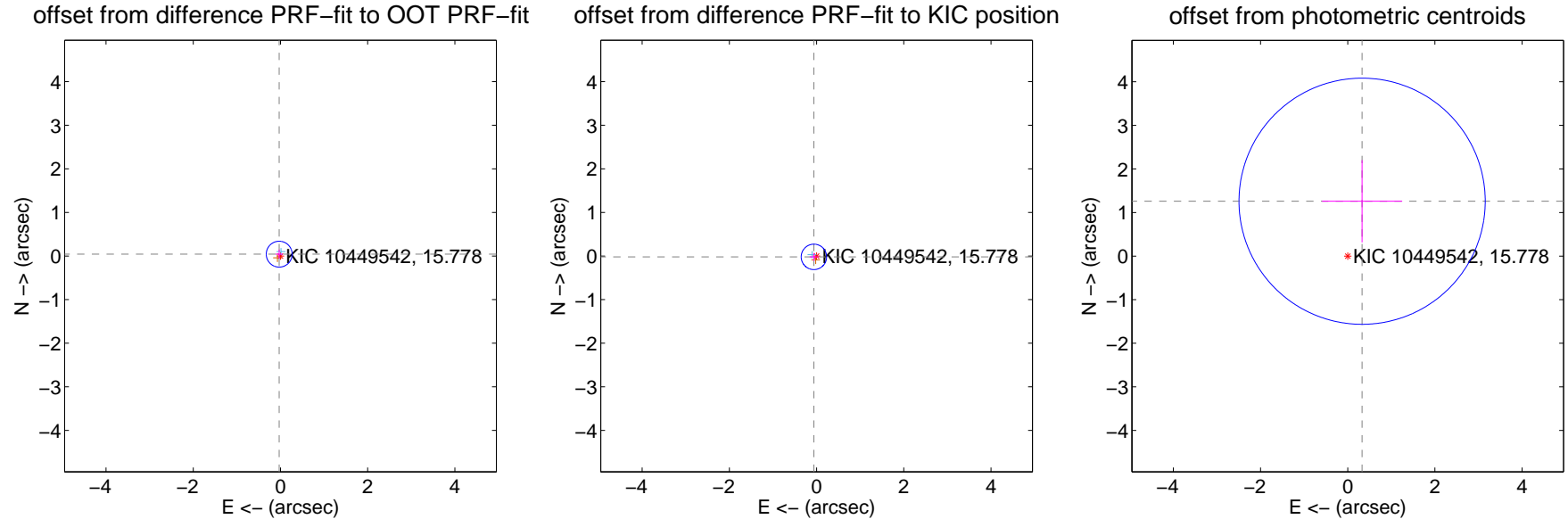
DV Centroid Data

Supplemental centroid analysis for 010449542-02. Kepler magnitude: 15.78. Transit SNR 6.95

There are 1 quarters with good PRF difference image offsets

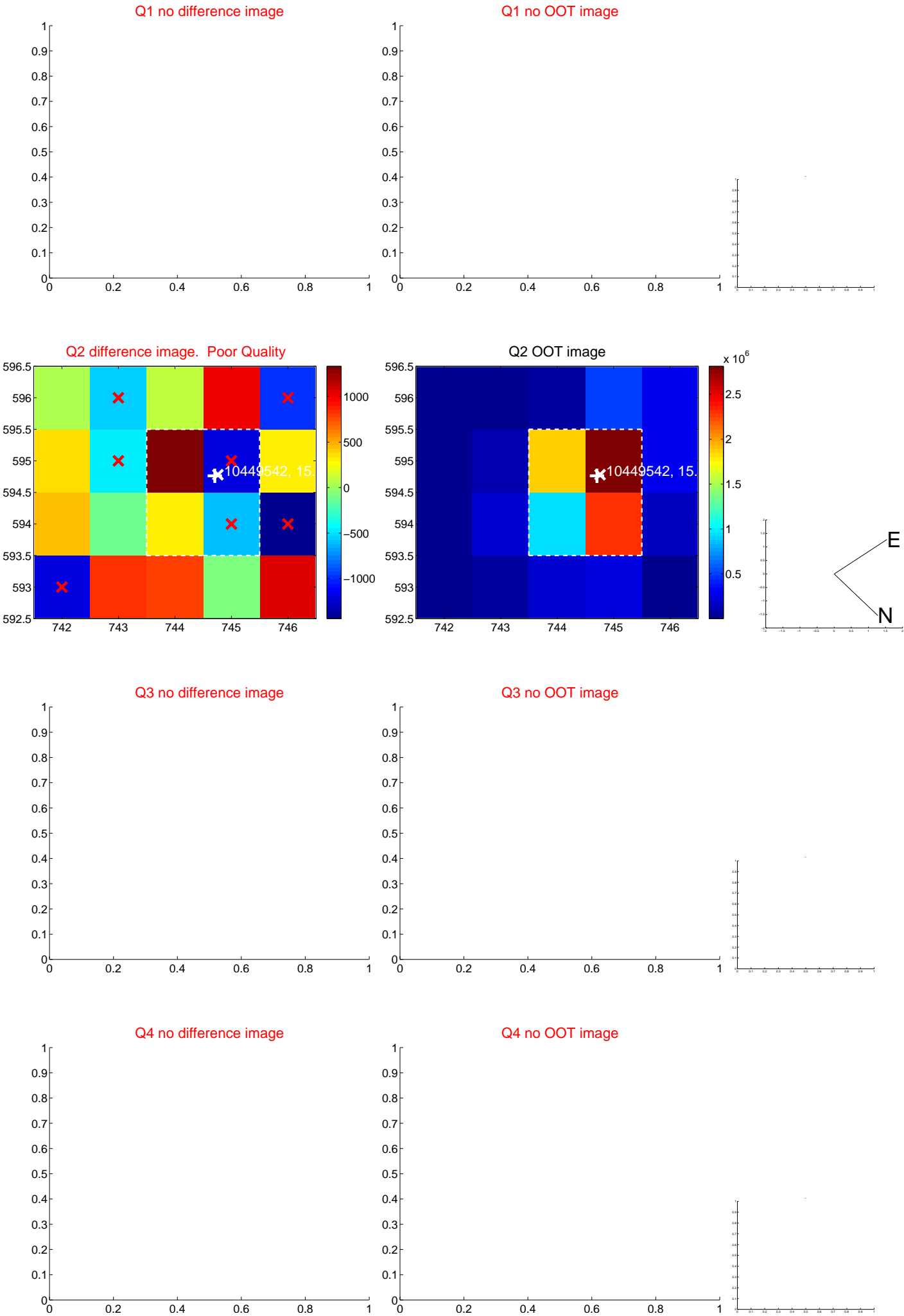
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.051 ± 0.099	0.52	0.029 ± 0.082	0.042 ± 0.106
PRF-fit source offset from KIC position	0.064 ± 0.097	0.66	0.061 ± 0.098	-0.020 ± 0.092
photometric centroid source offset	1.30 ± 0.94	1.38	-0.33 ± 0.92	1.26 ± 0.94

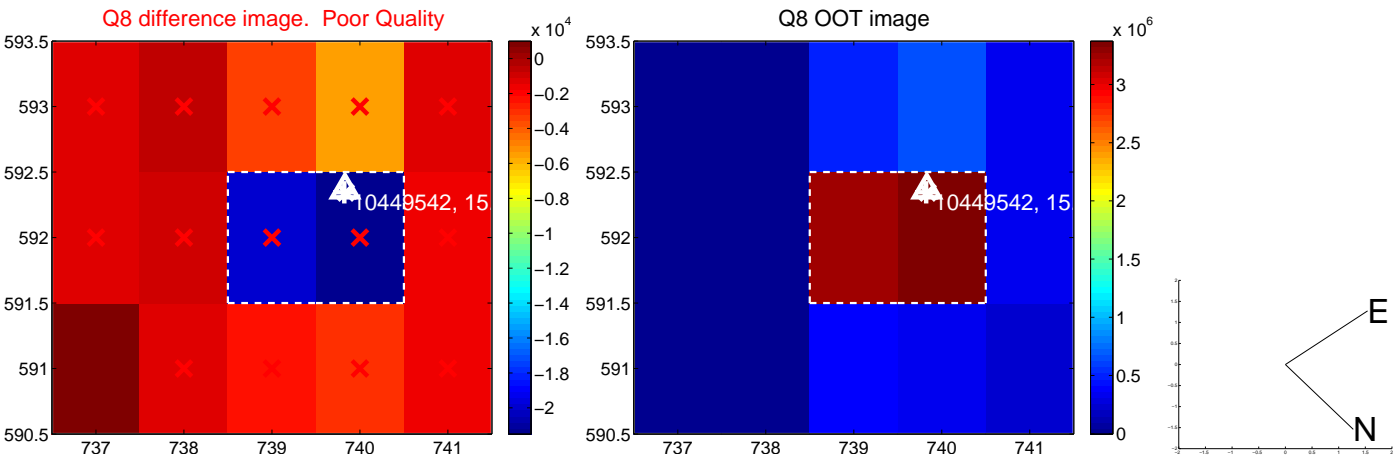
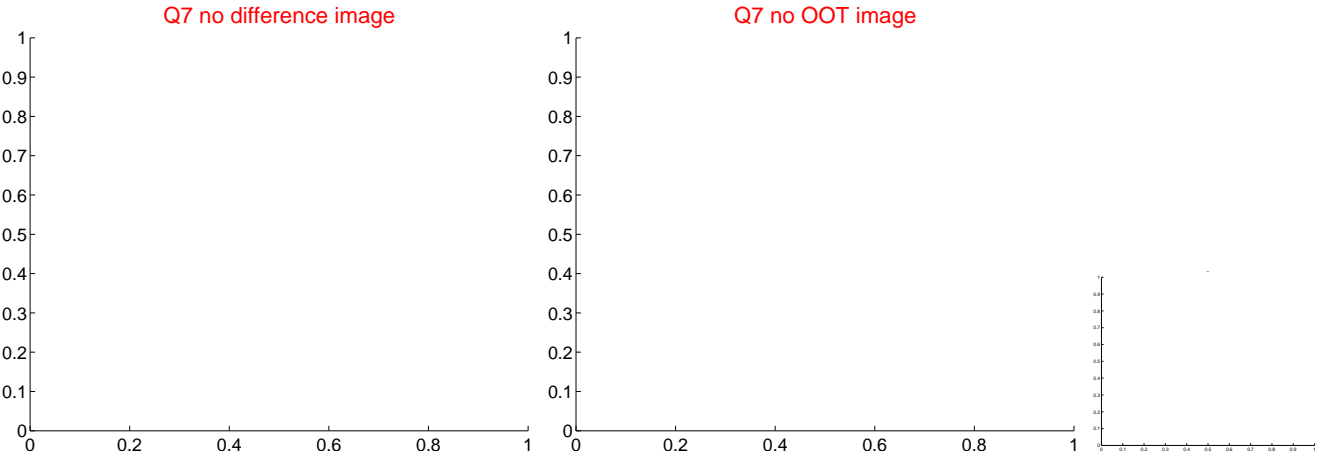
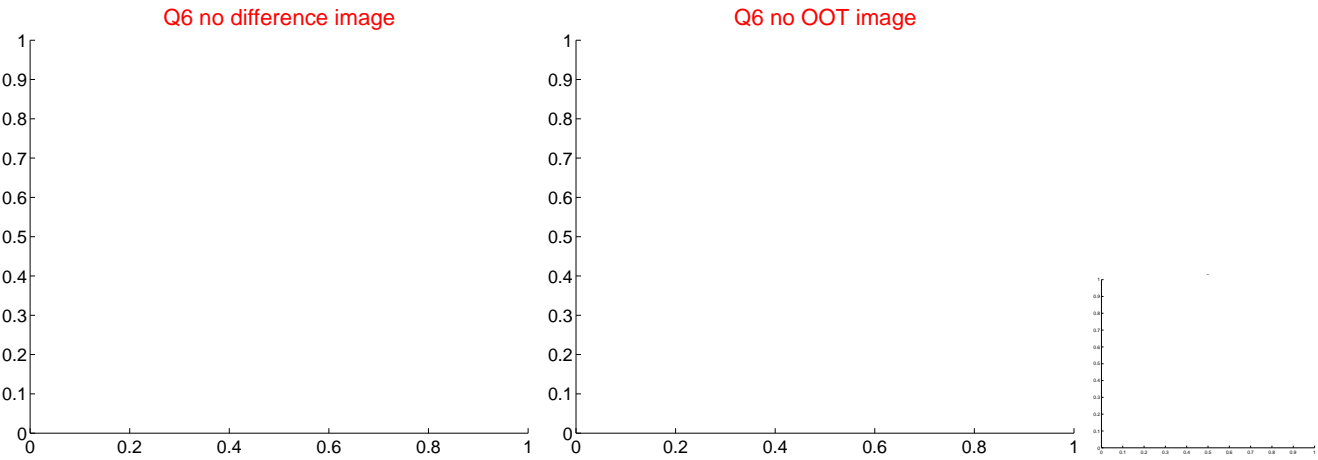
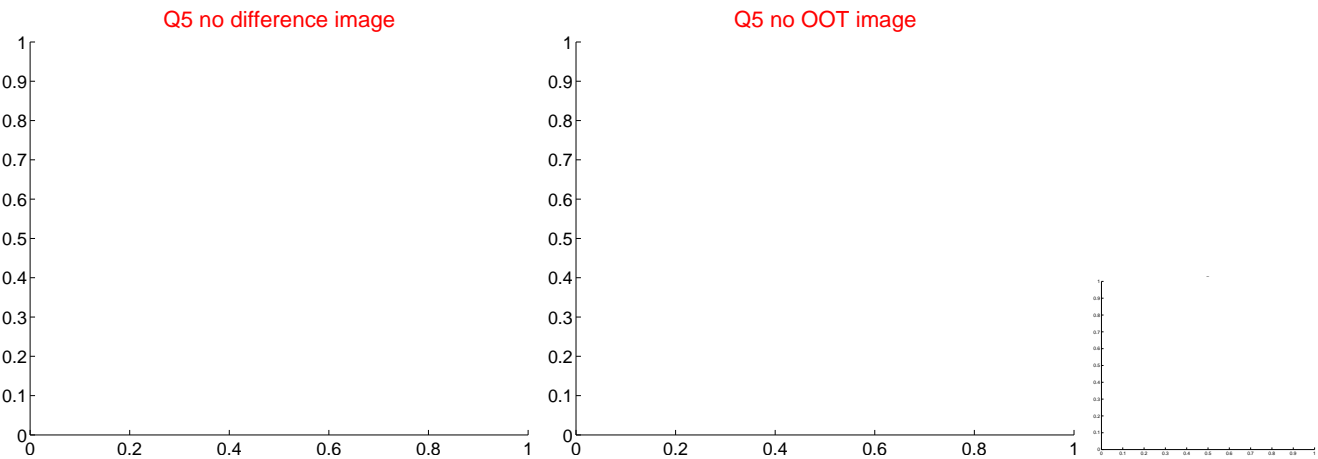


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



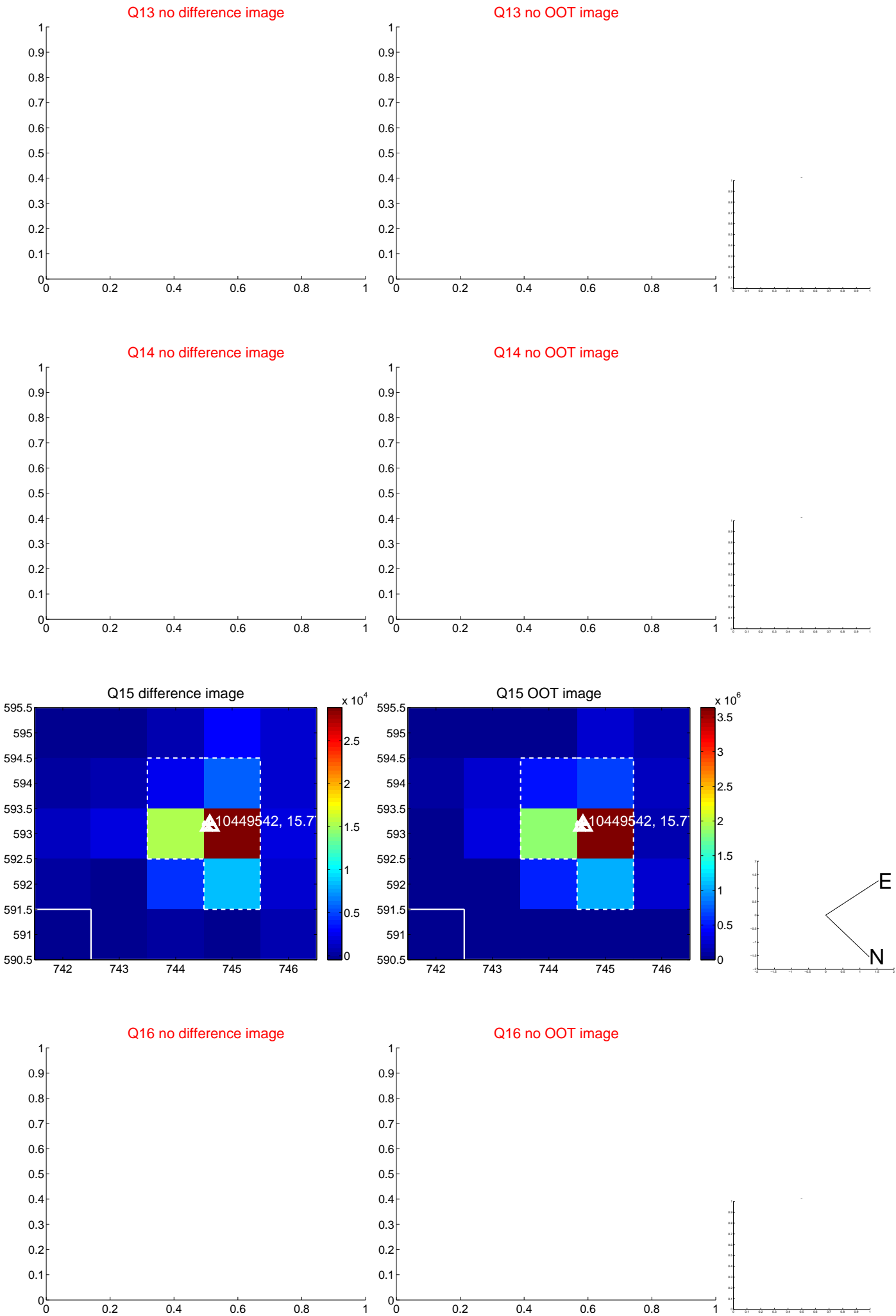
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



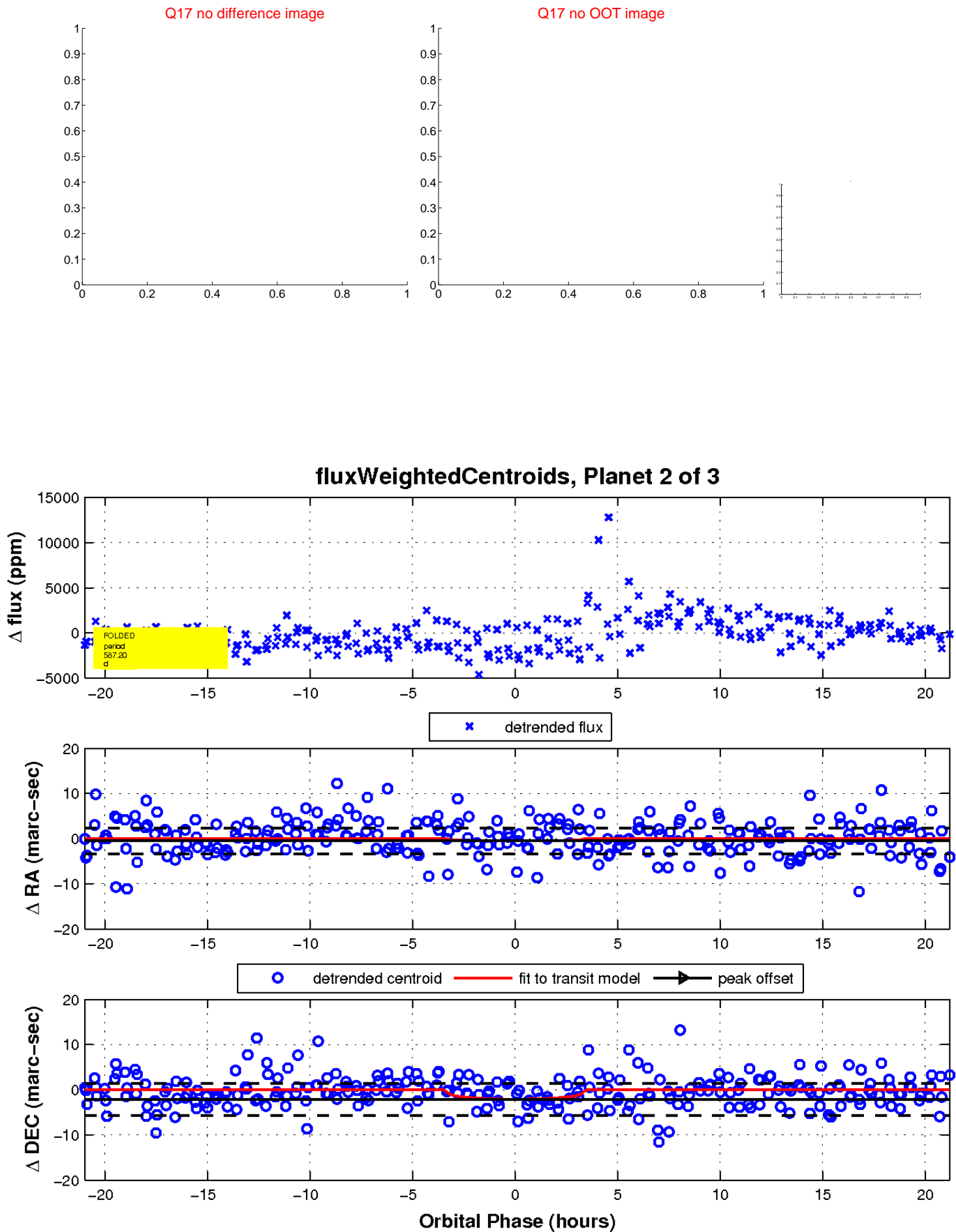
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

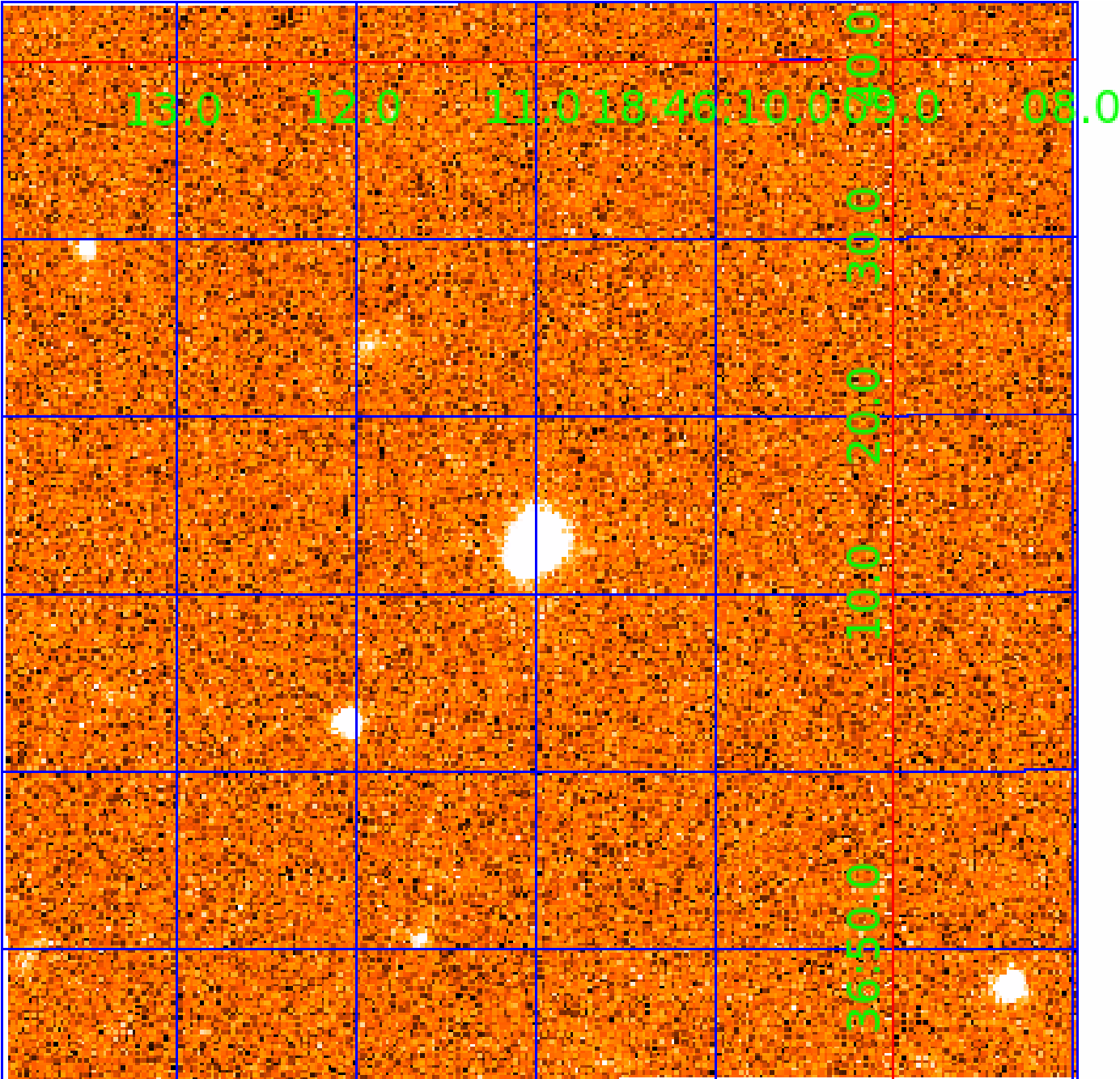


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010449542

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})
010449542-01	OBS	No	288.437268	314.126127	1593.6	3.870	9.1	6.5	0.74	4582	3.26	0.36
010449542-02	OBS	No	587.200913	201.511124	2179.1	7.075	9.9	6.9	0.74	4582	3.42	0.14
010449542-03	OBS	No	508.503806	243.299520	1665.3	10.807	8.4	5.4	0.74	4582	3.00	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010449542-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS
010449542-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010449542-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_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.

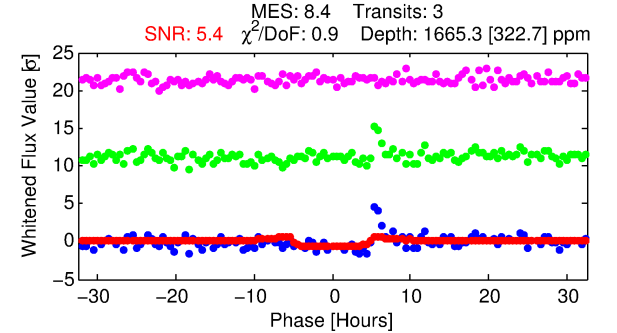
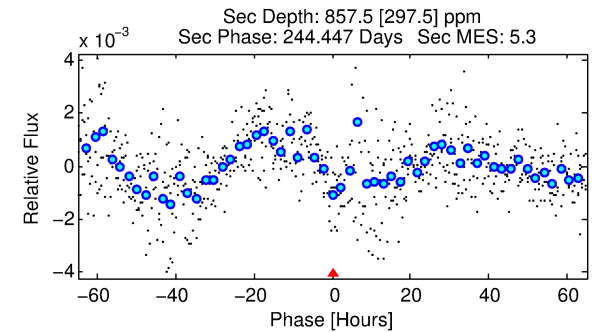
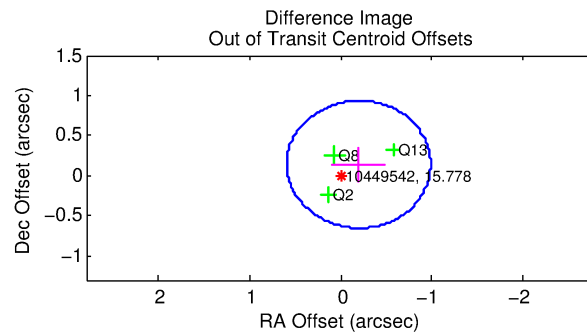
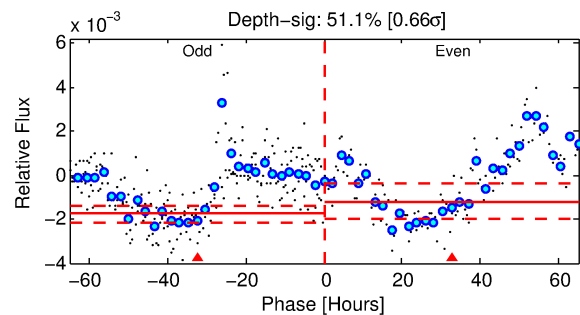
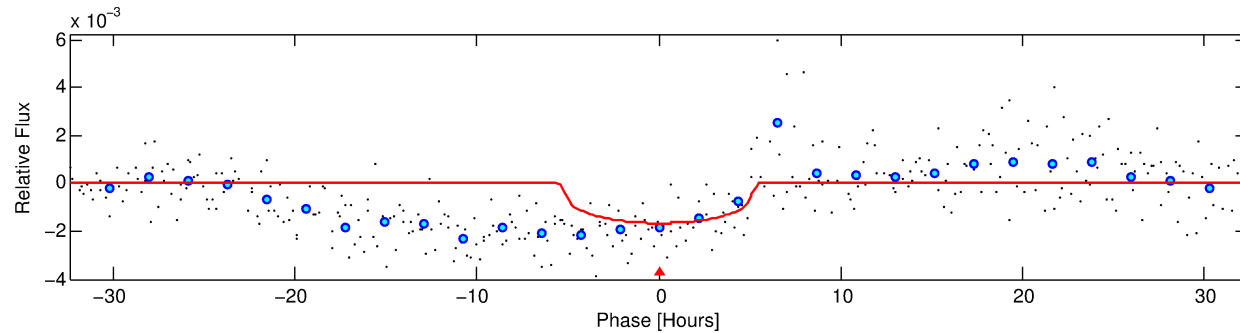
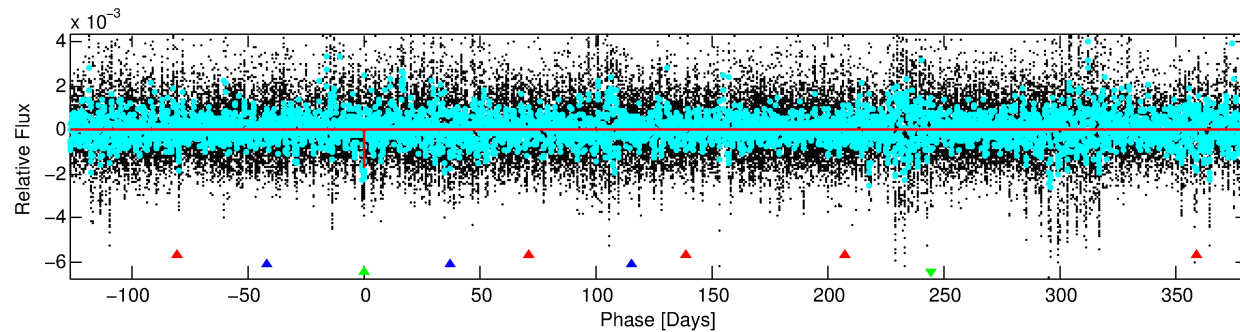
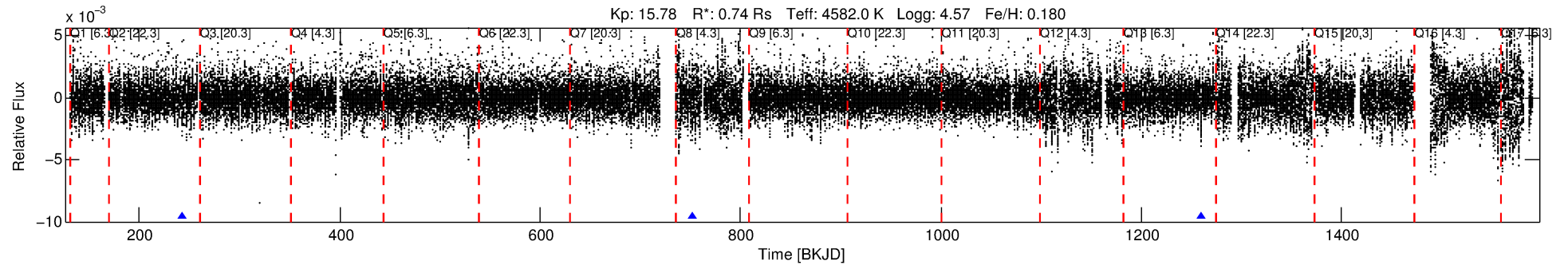
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010449542-03

No Significant Match Found

DV One-Page Summary

KIC: 10449542 Candidate: 3 of 3 Period: 508.504 d



DV Fit Results:

Period = 508.50381 [0.01276] d
Epoch = 243.2995 [0.0165] BKJD
Rp/R* = 0.0374 [0.0263]
a/R* = 328.47 [673.59]
b = 0.49 [3.23]
Seff = 0.17 [0.03]
Teq = 164 [6] K
Rp = 3.00 [2.13] Re
a = 1.1225 [0.0793] AU
Ag = 65873.67 [95719.06] [0.69 σ]
Teffp = 4057 [1475] K [2.64 σ]

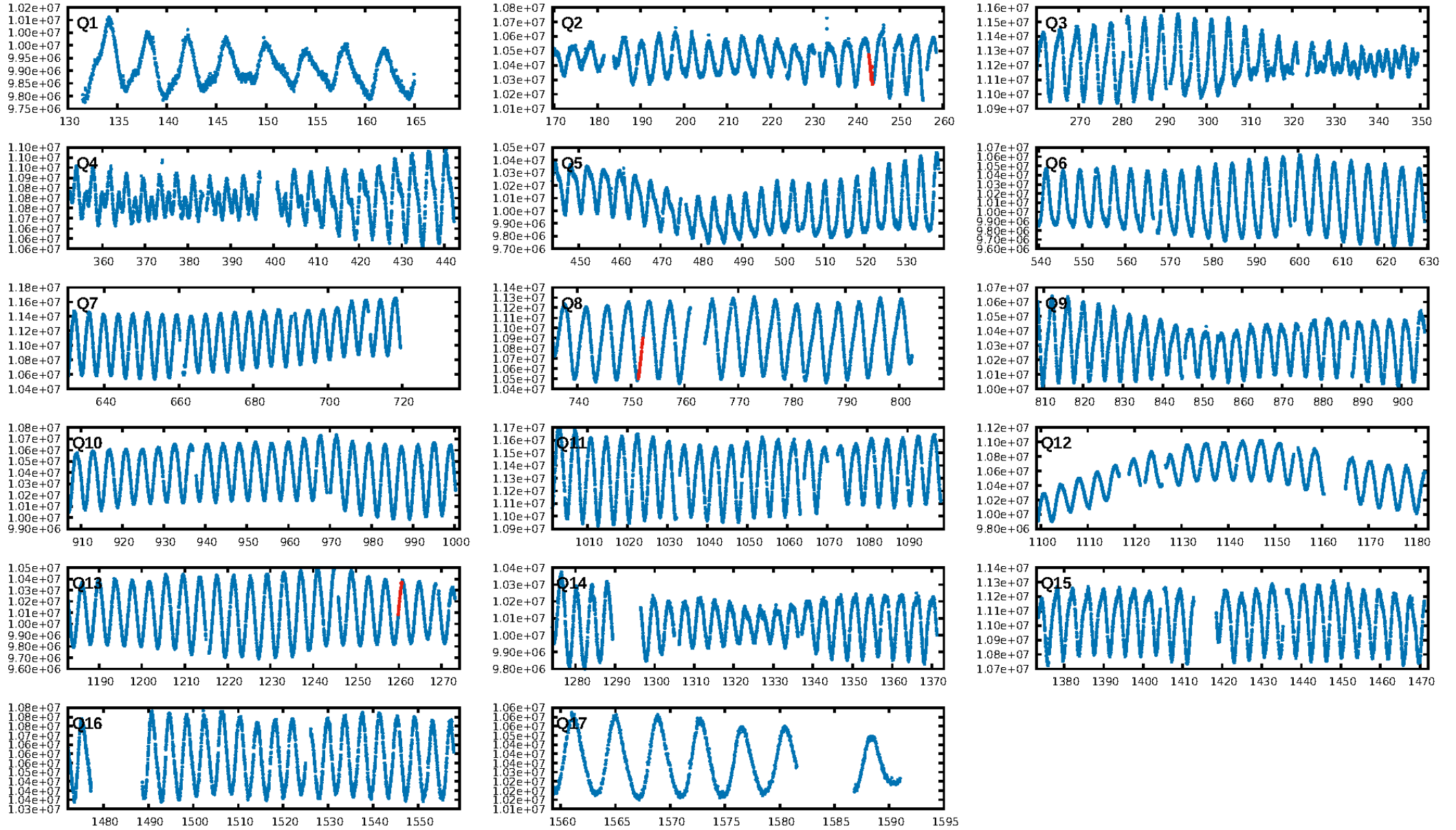
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [460.09 σ]
LongPeriod-sig: 100.0% [146.22 σ]
ModelChiSquare2-sig: 51.8%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 1.70e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.5741
Centroid-sig: 9.3%
Centroid-so: 1.445 arcsec [1.42 σ]
OotOffset-rm: 0.243 arcsec [0.92 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 0.269 arcsec [1.14 σ]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

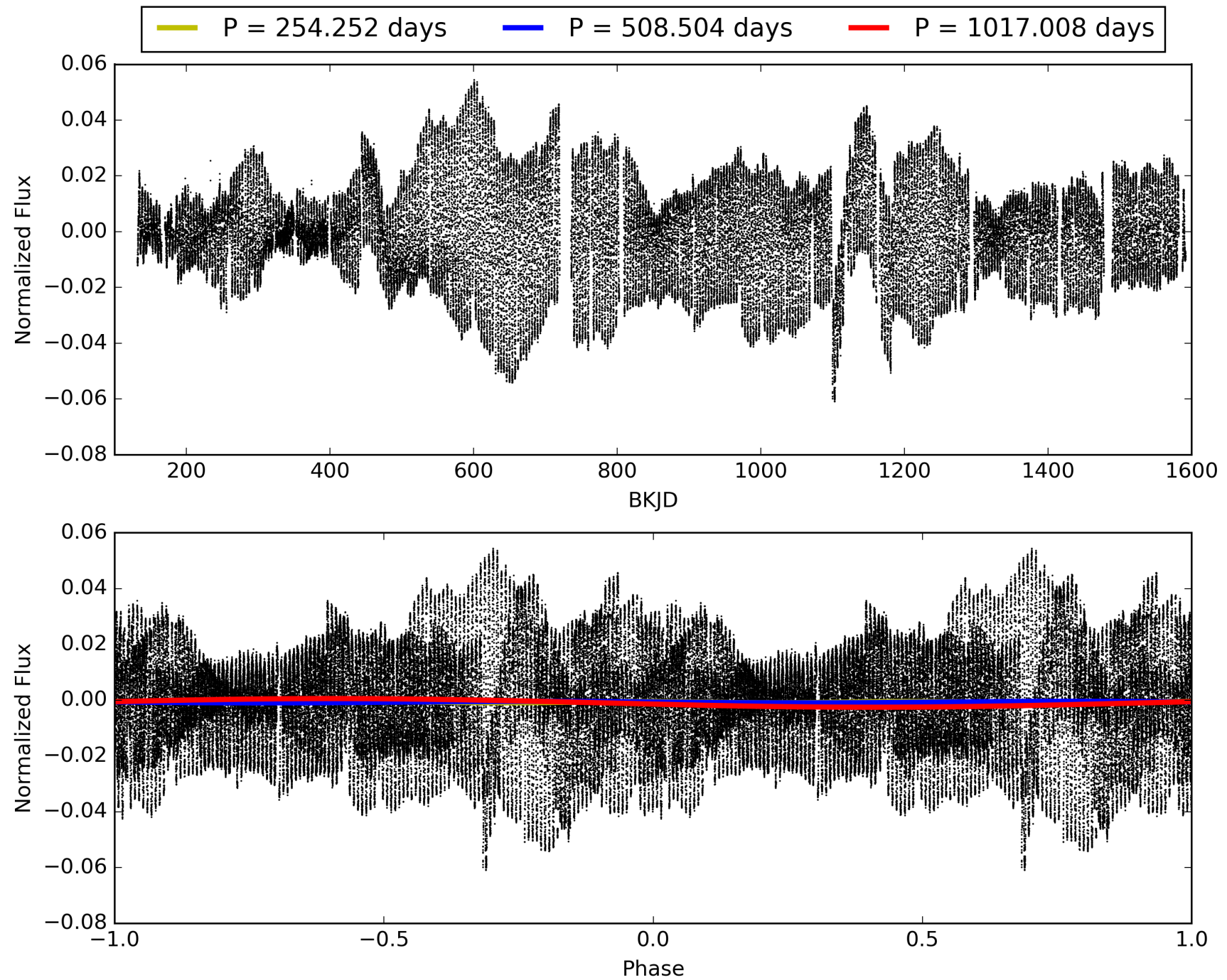
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:31:13 Z

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

TCE 010449542-03, PDC Light Curves

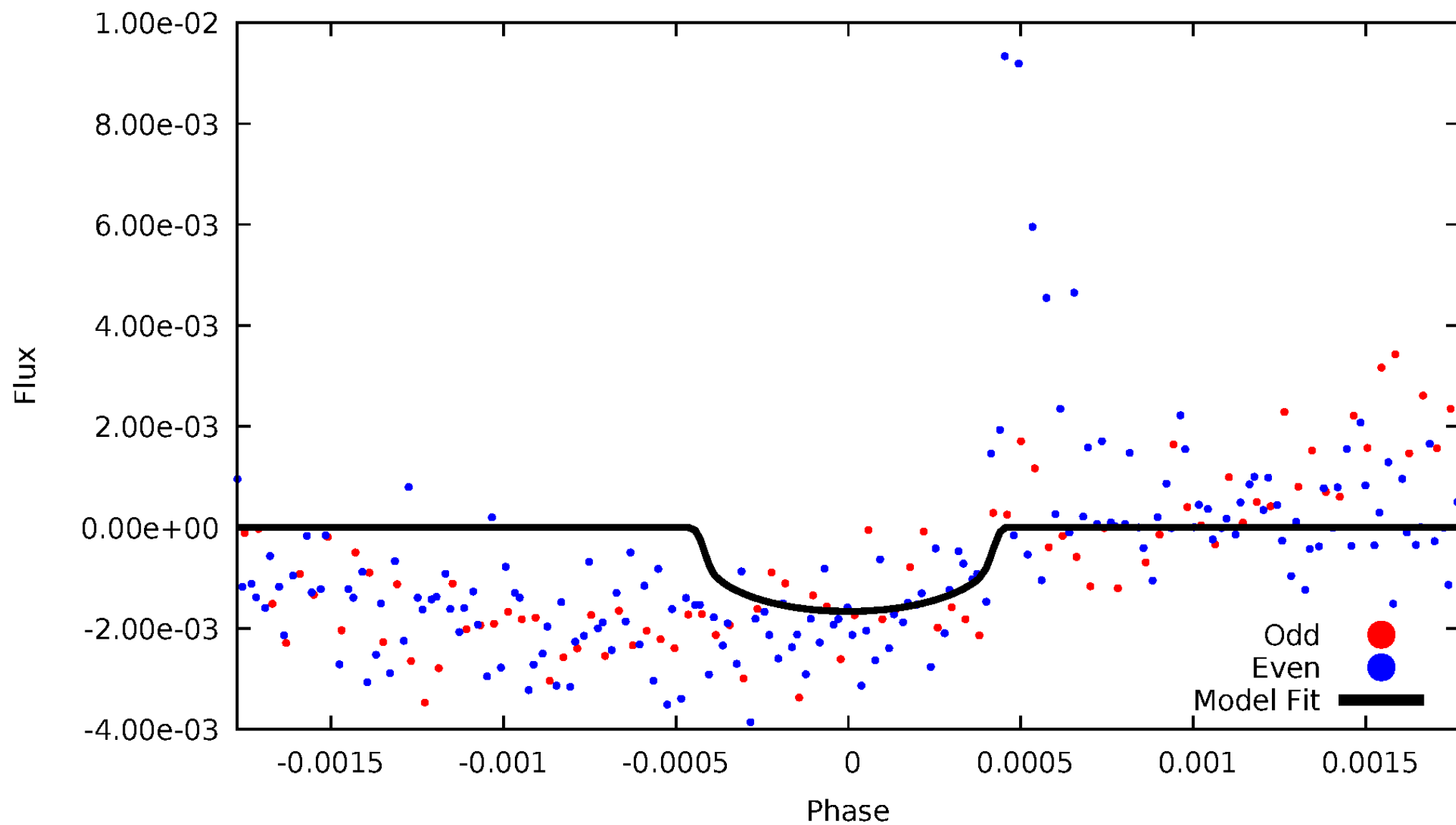


TCE 010449542-03



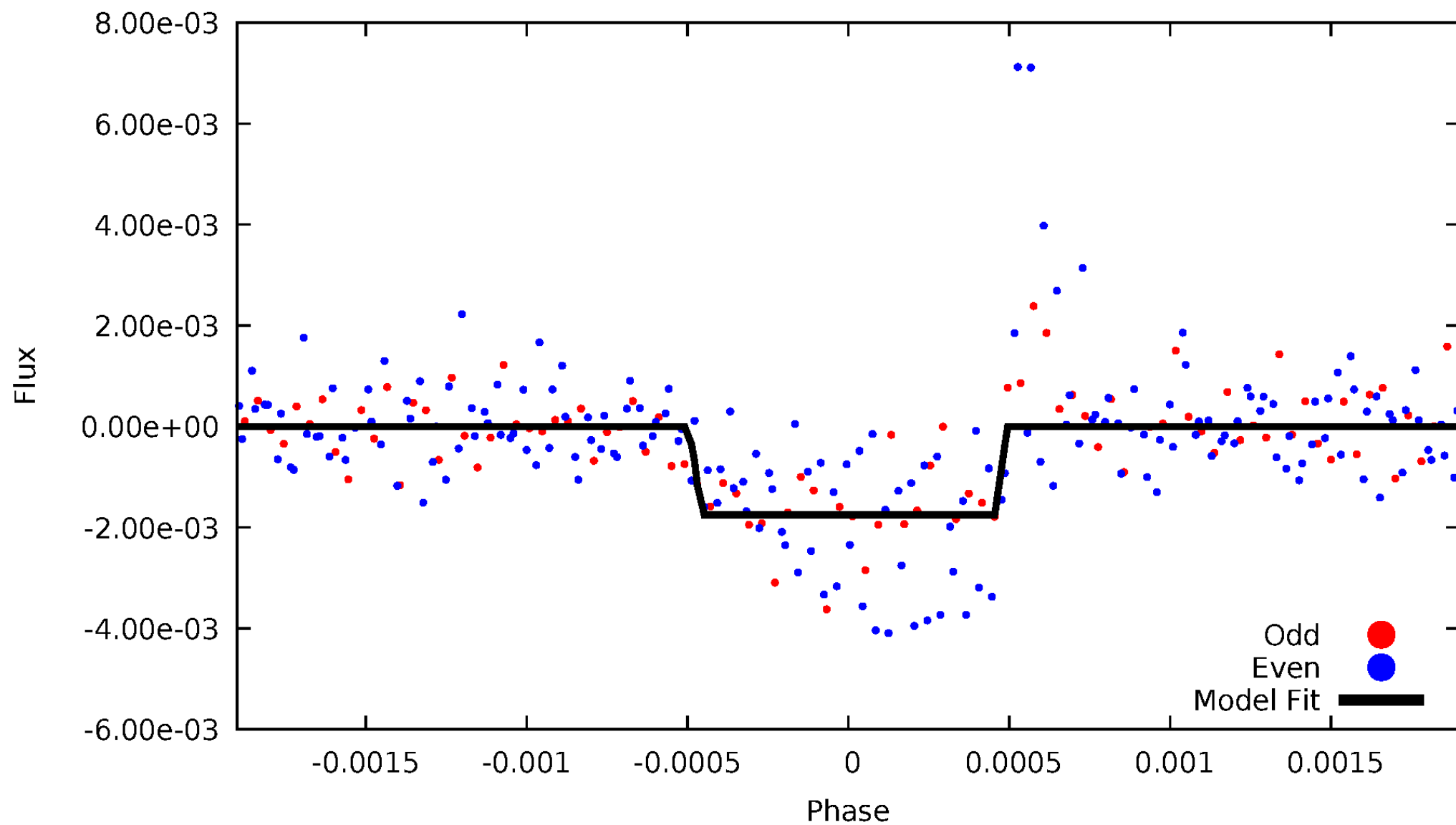
DV Odd/Even

TCE 010449542-03



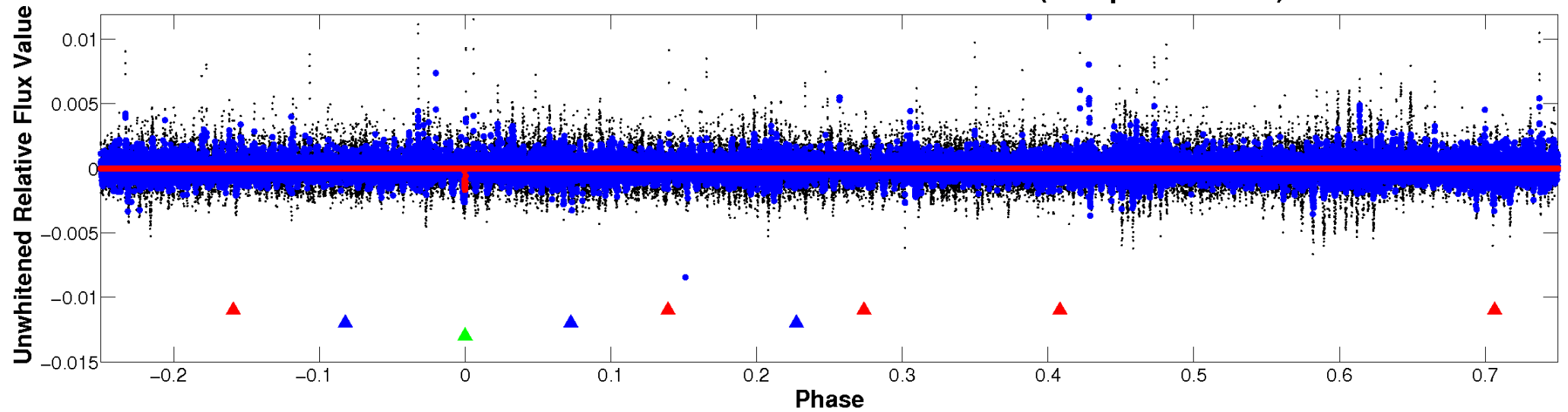
ALT Odd/Even

TCE 010449542-03

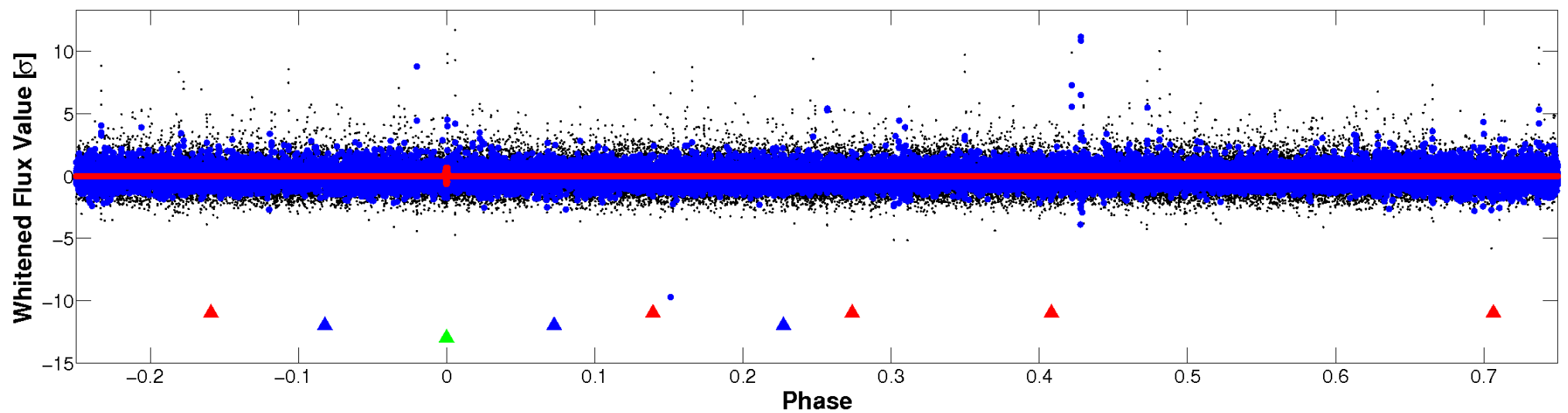


Non-Whitened Vs. Whitened Light Curve

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

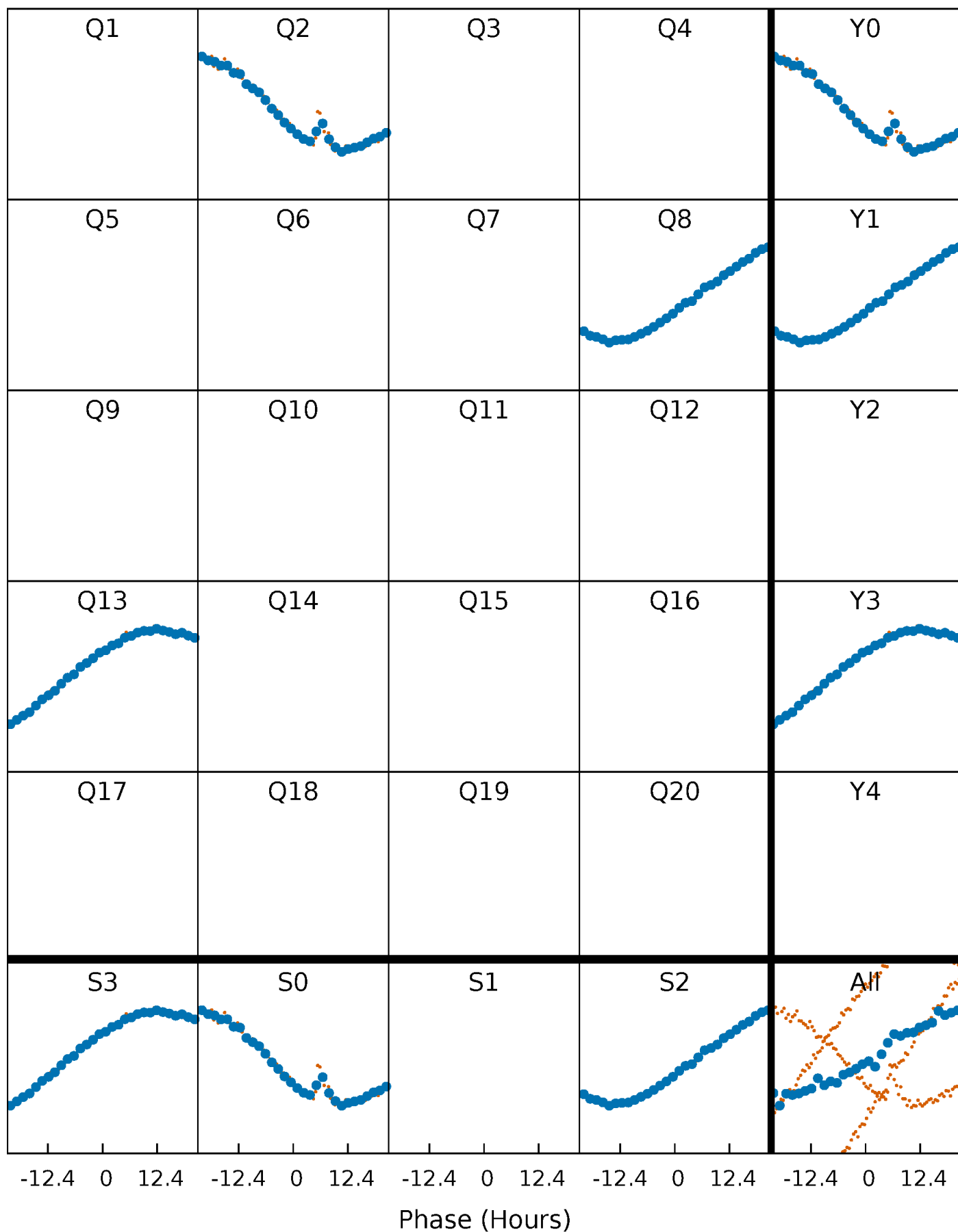


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



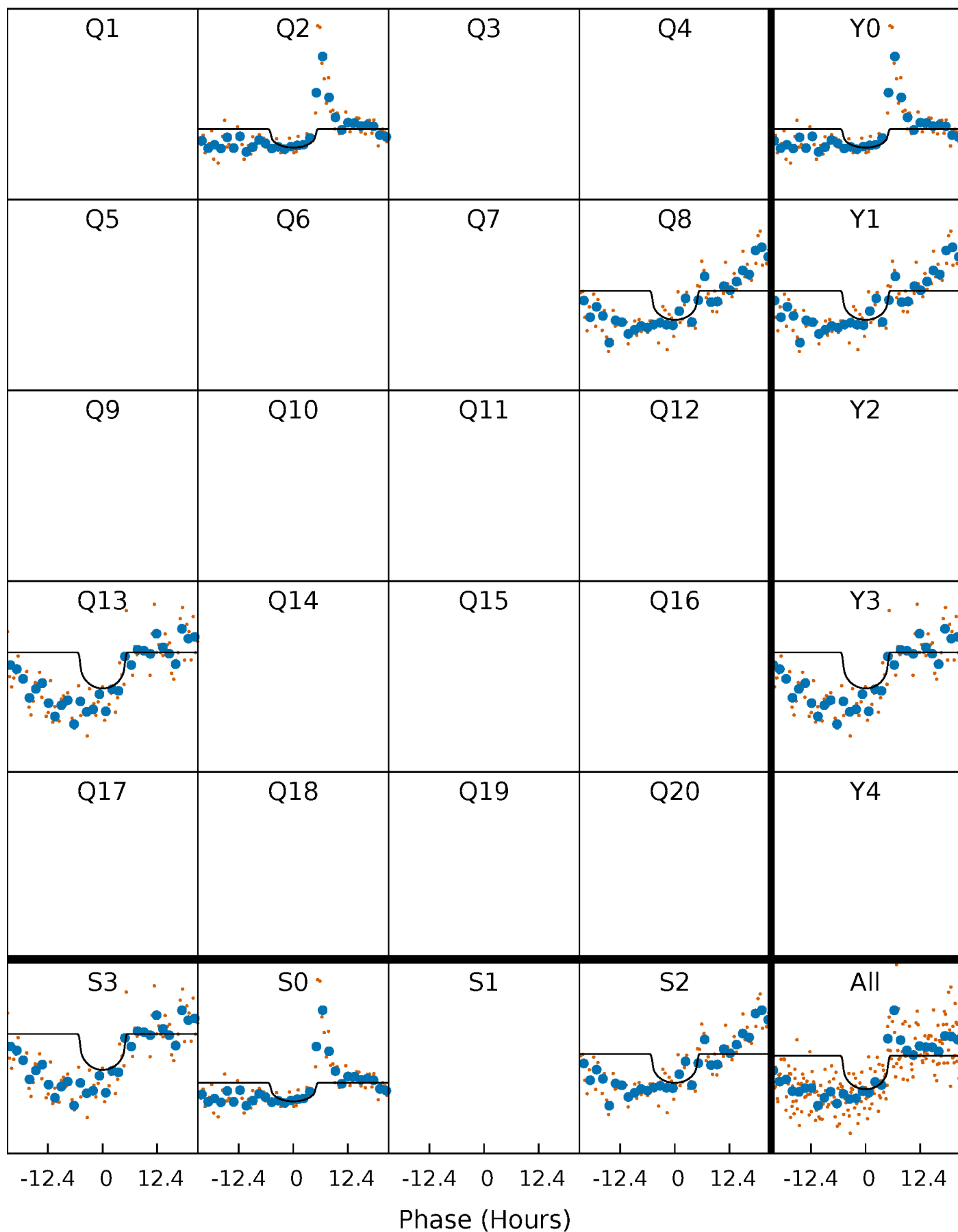
PDC Quarter-Phased Transit Curves

TCE 010449542-03 P=508.503806 Days $T_0=243.299520$ (BKJD)



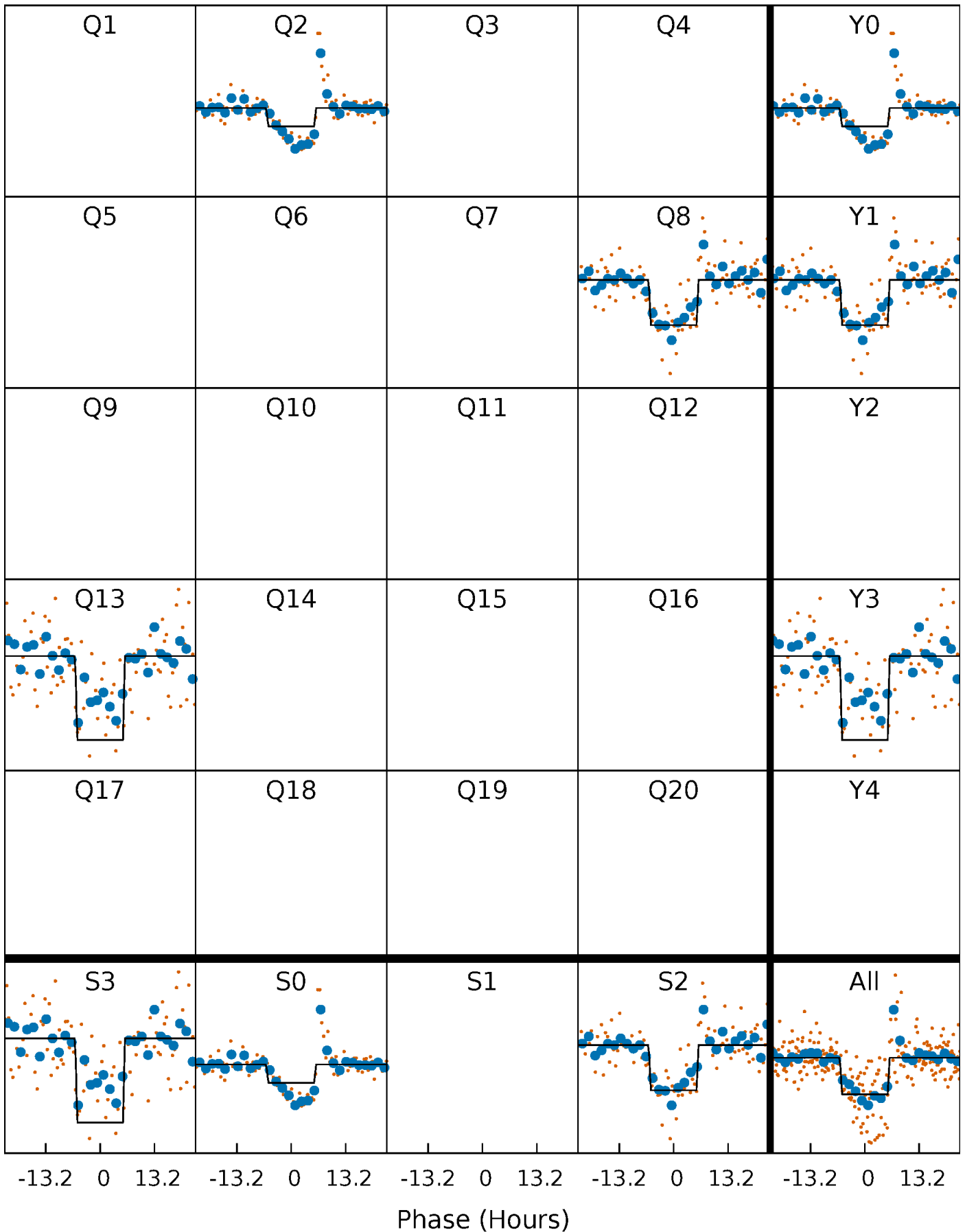
DV Quarter-Phased Transit Curves

TCE 010449542-03 $P=508.503806$ Days $T_0=243.299520$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

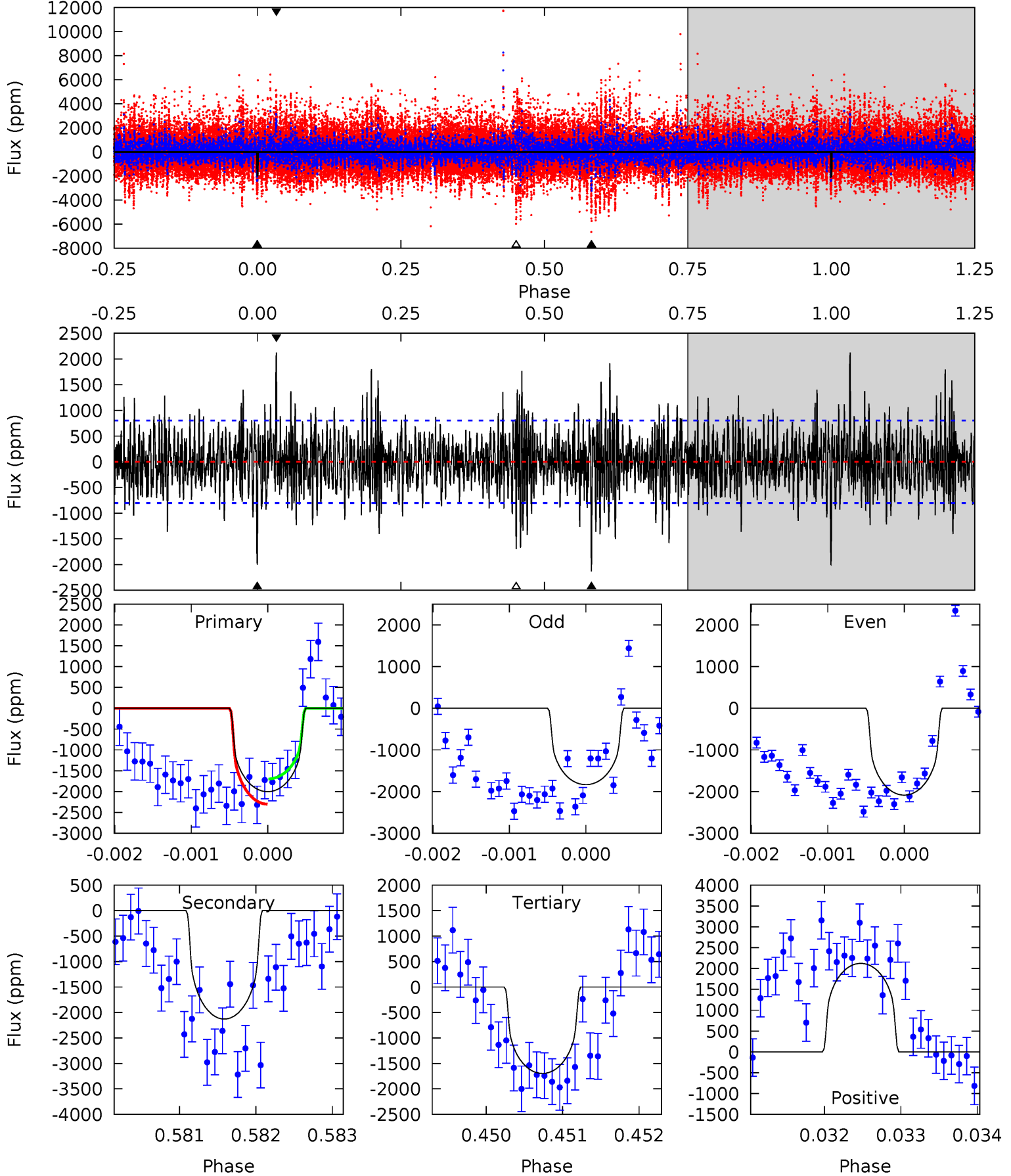
TCE 010449542-03 P=508.502763 Days $T_0=243.262309$ (BKJD)



DV Model-Shift Uniqueness Test

010449542-03, P = 508.503806 Days, E = 243.299520 Days

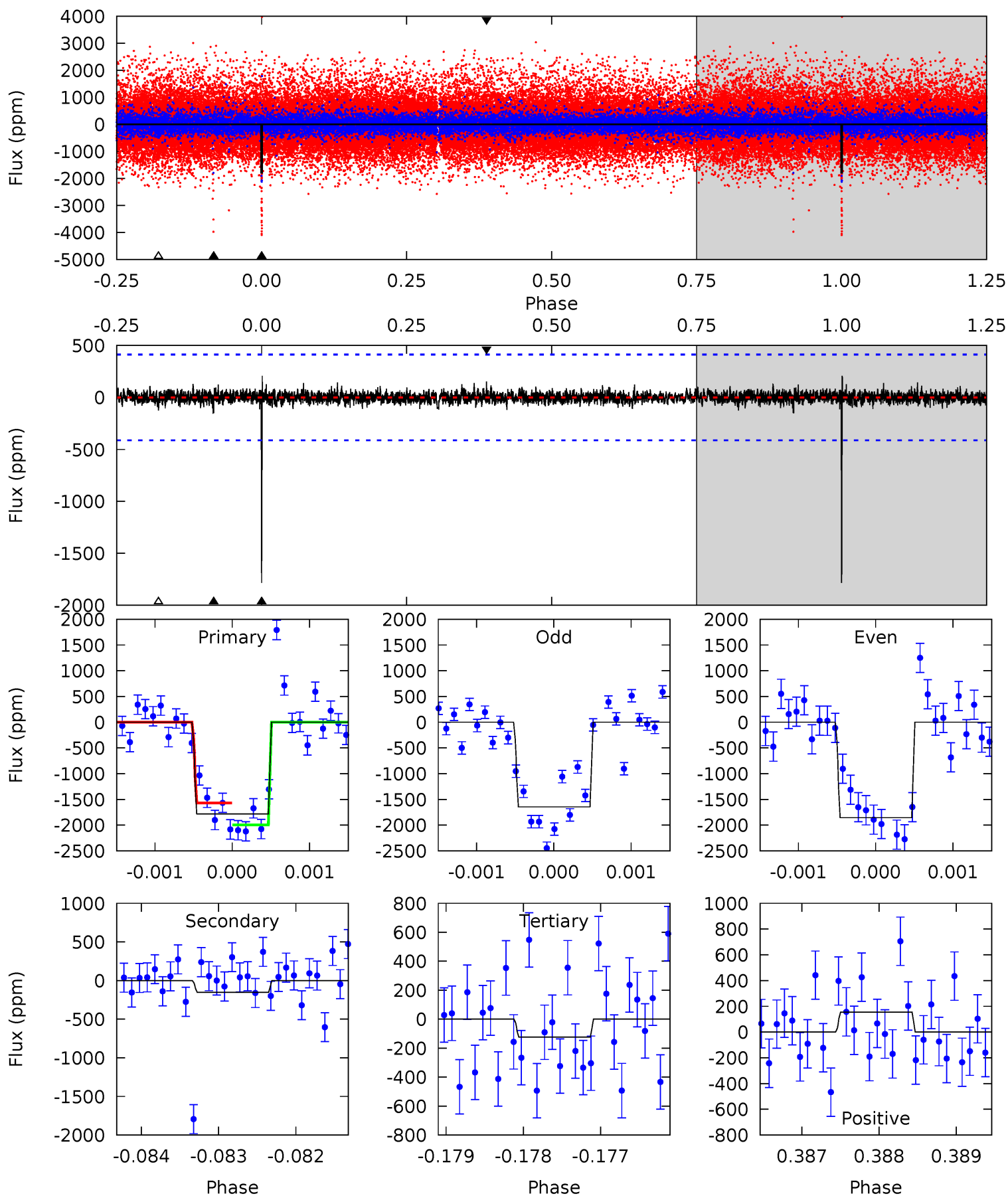
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	14.5	11.5	14.4	5.47	3.31	3.17	2.08	-0.82	2.94	0.04	0.80	1.09	0.50	2.07



Alt Model-Shift Uniqueness Test

010449542-03, P = 508.502763 Days, E = 243.262309 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.6	2.00	1.64	2.03	5.46	3.30	0.42	22.0	21.6	0.36	-0.03	1.32	1.09	0.10	2.85



Stellar Parameters For KIC 010449542

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4582^{+138}_{-138}	$4.566^{+0.056}_{-0.021}$	$0.180^{+0.200}_{-0.300}$	$0.737^{+0.031}_{-0.062}$	$0.729^{+0.053}_{-0.053}$	$2.563^{+0.647}_{-0.236}$
	+3%/-3%	+1%/-0%	+111%/-167%	+4%/-8%	+7%/-7%	+25%/-9%
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 010449542-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2129±147	$3.16^{+2.07}_{-1.84}$	227^{+8}_{-8}	4863^{+2637}_{-880}	$150575^{+700539}_{-96439}$
Alt.	-151±76	$3.61^{+2.05}_{-1.94}$	228^{+7}_{-8}	2968^{+785}_{-455}	7609^{+29197}_{-5408}

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

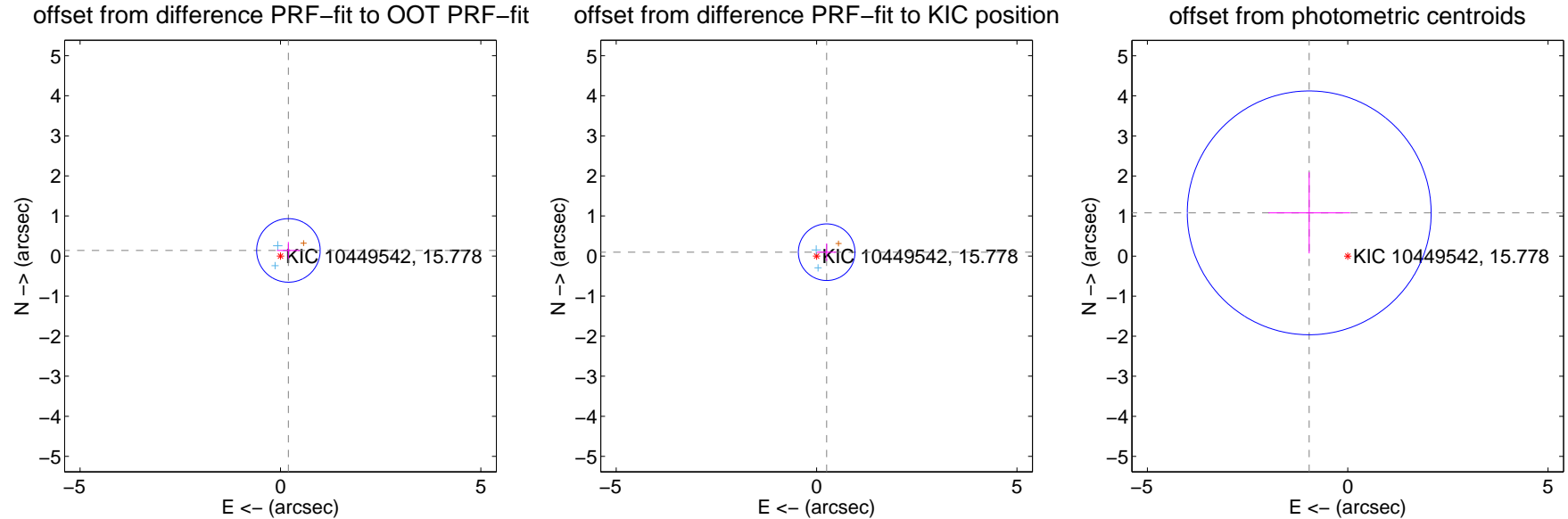
DV Centroid Data

Supplemental centroid analysis for 010449542-03. Kepler magnitude: 15.78. Transit SNR 5.43

There are 2 quarters with good PRF difference image offsets

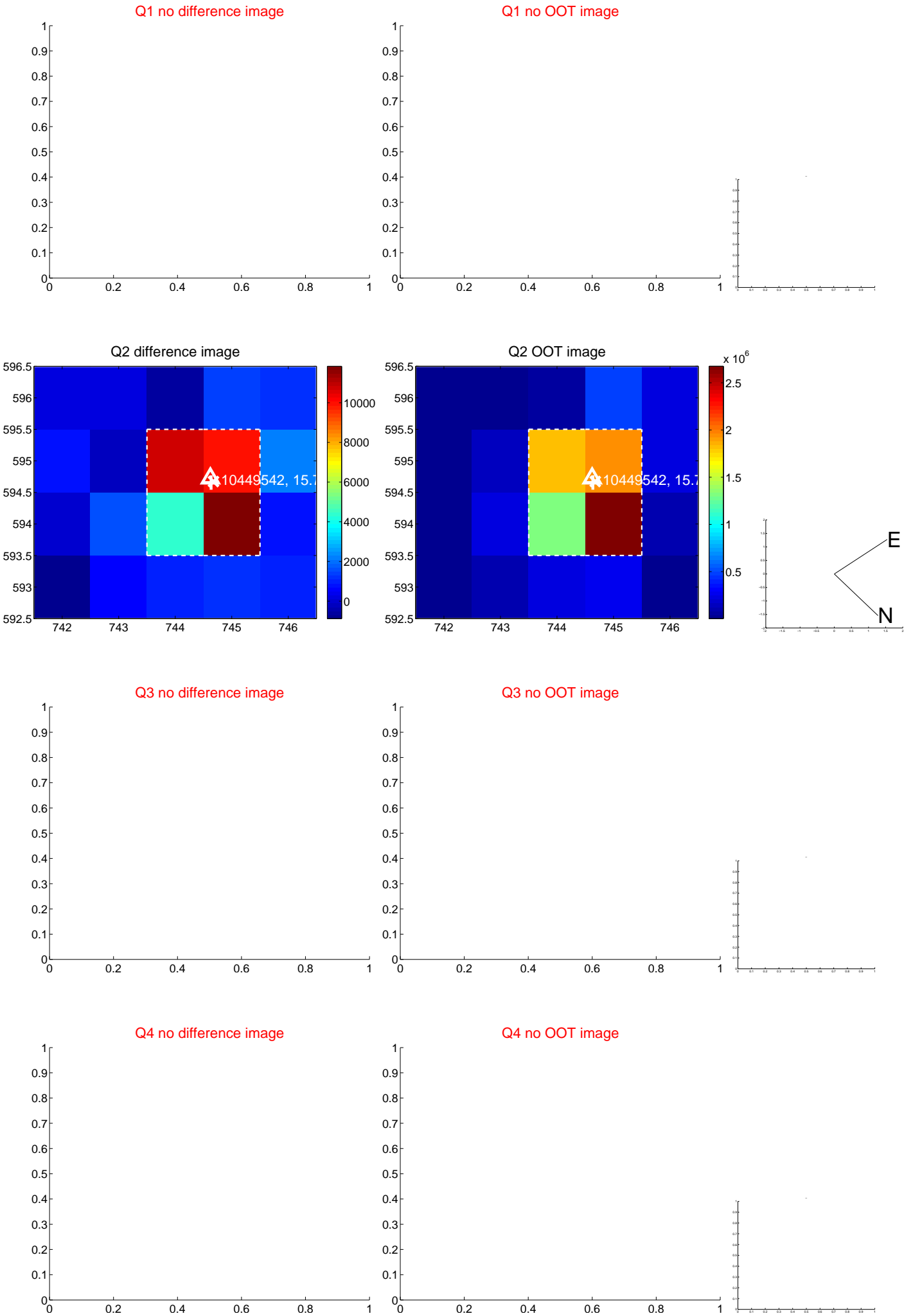
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.243 ± 0.264	0.92	-0.199 ± 0.287	0.140 ± 0.210
PRF-fit source offset from KIC position	0.269 ± 0.235	1.14	-0.252 ± 0.238	0.095 ± 0.217
photometric centroid source offset	1.45 ± 1.01	1.42	0.96 ± 1.02	1.08 ± 1.01

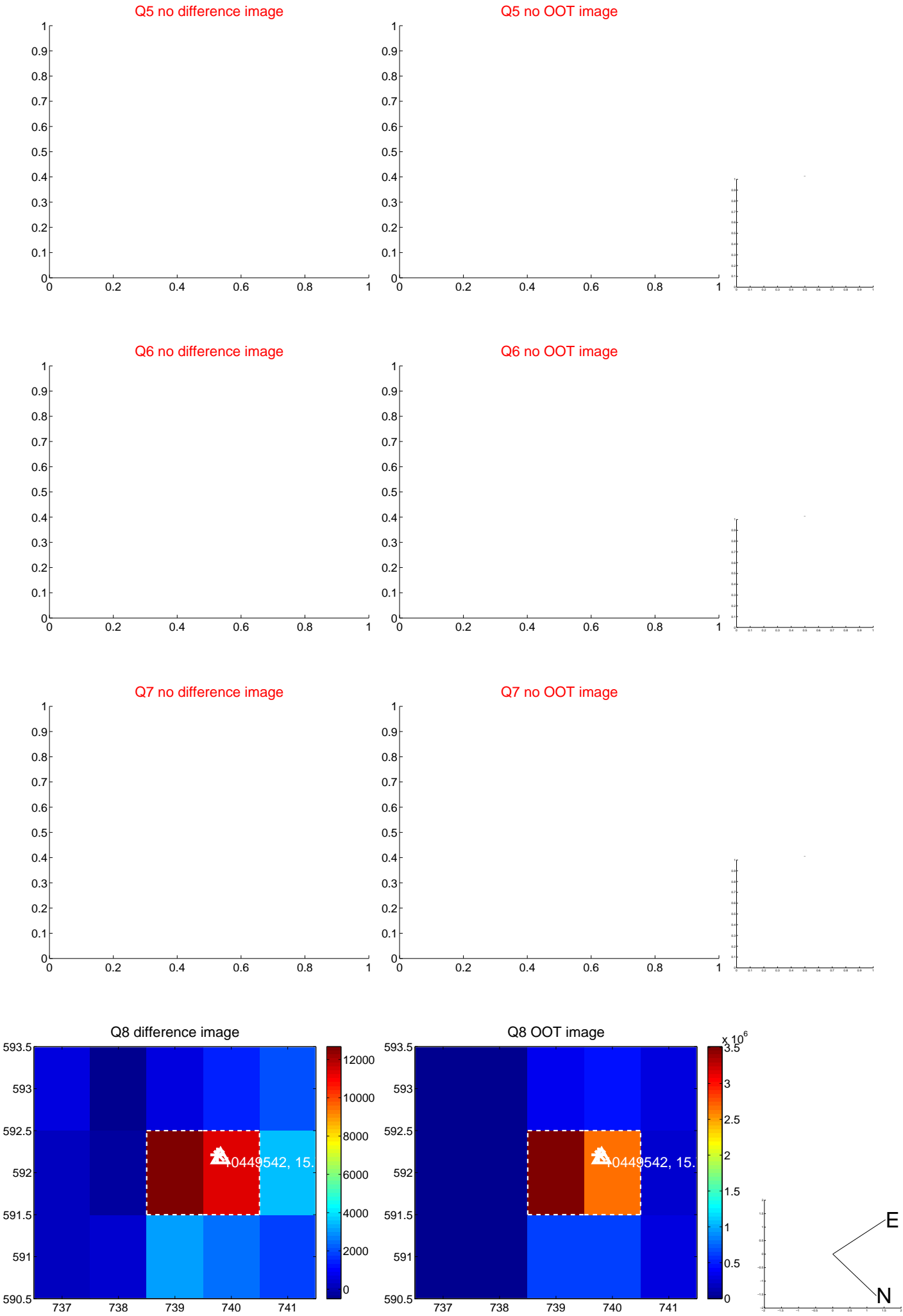


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

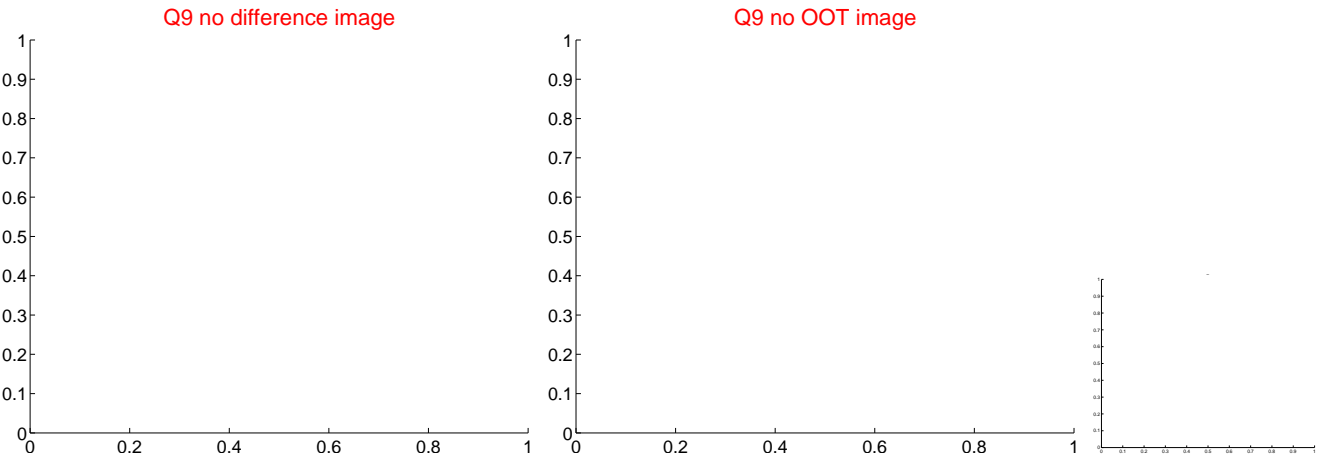
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



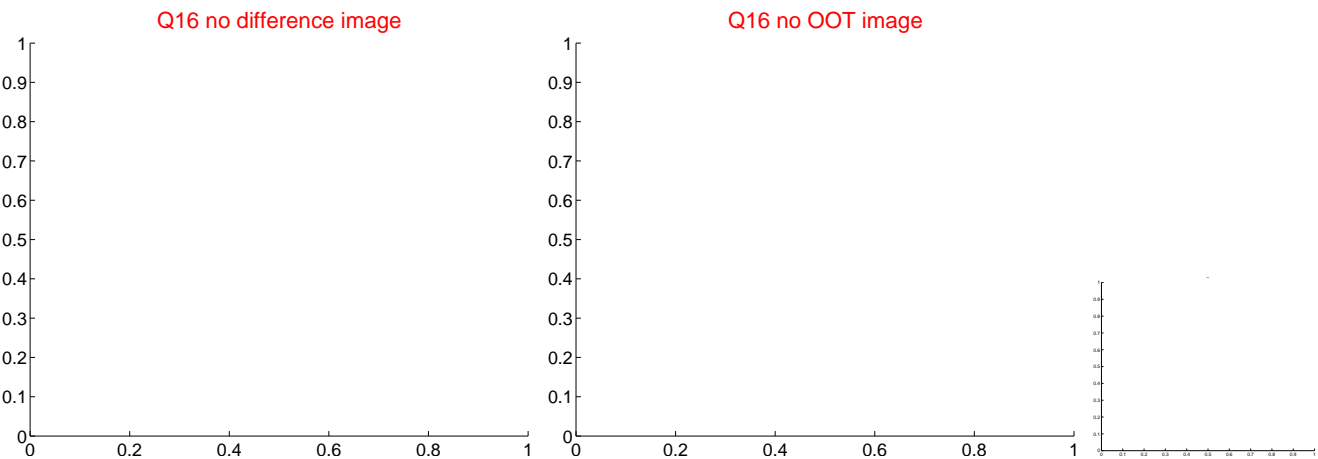
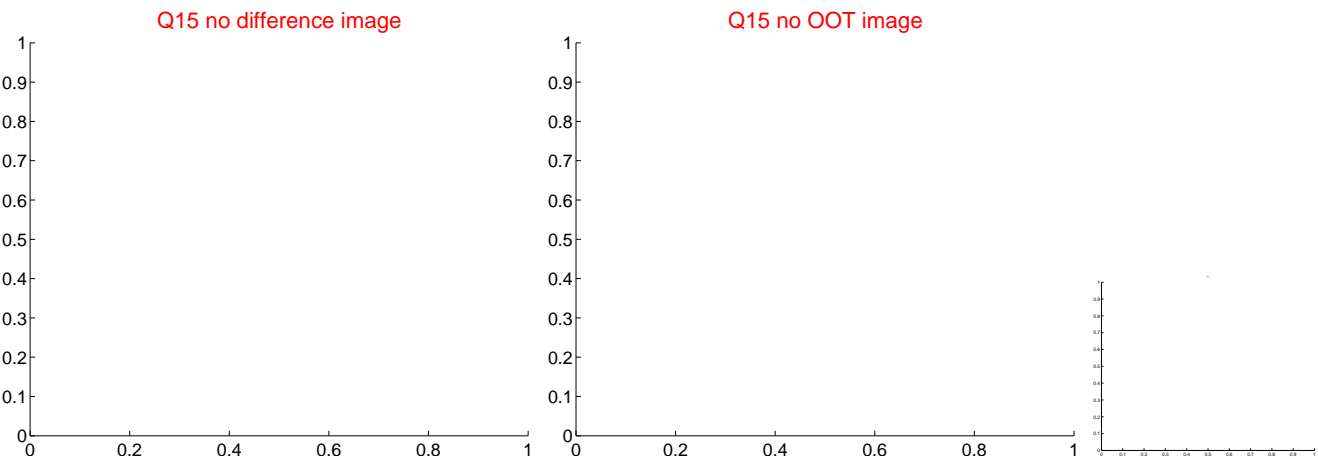
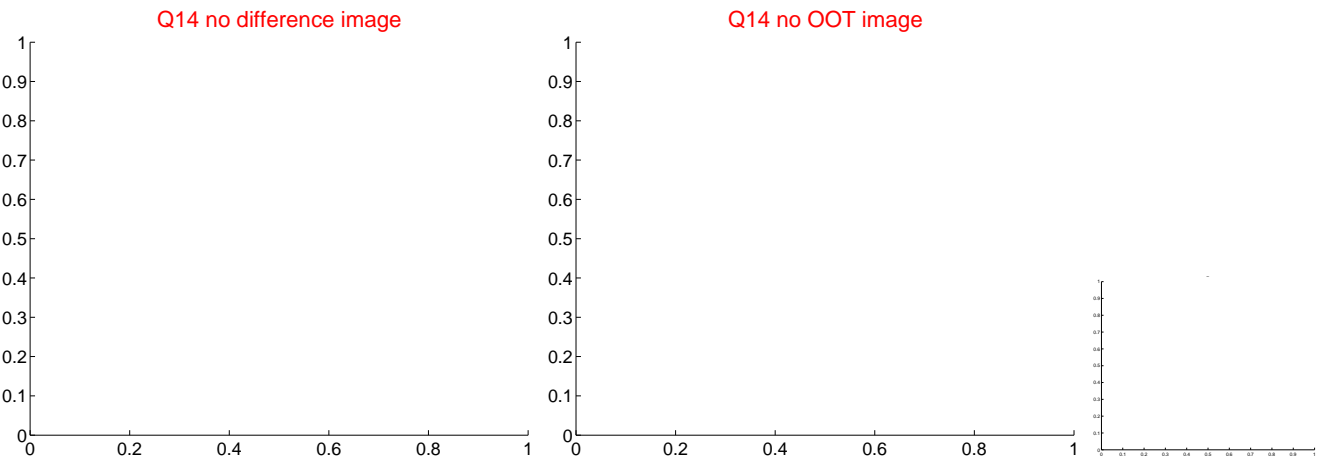
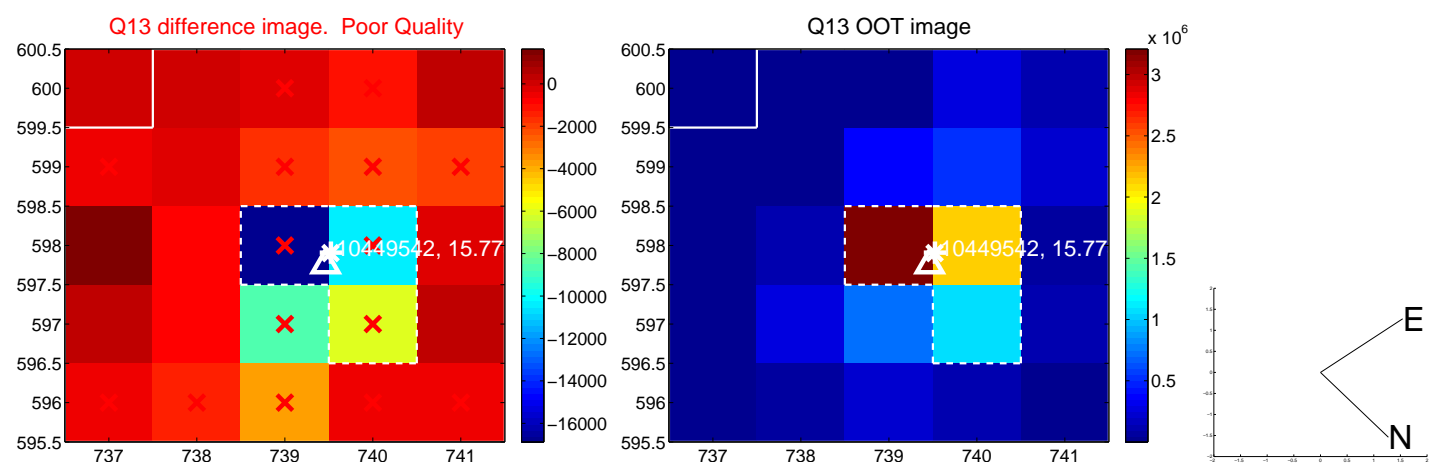
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



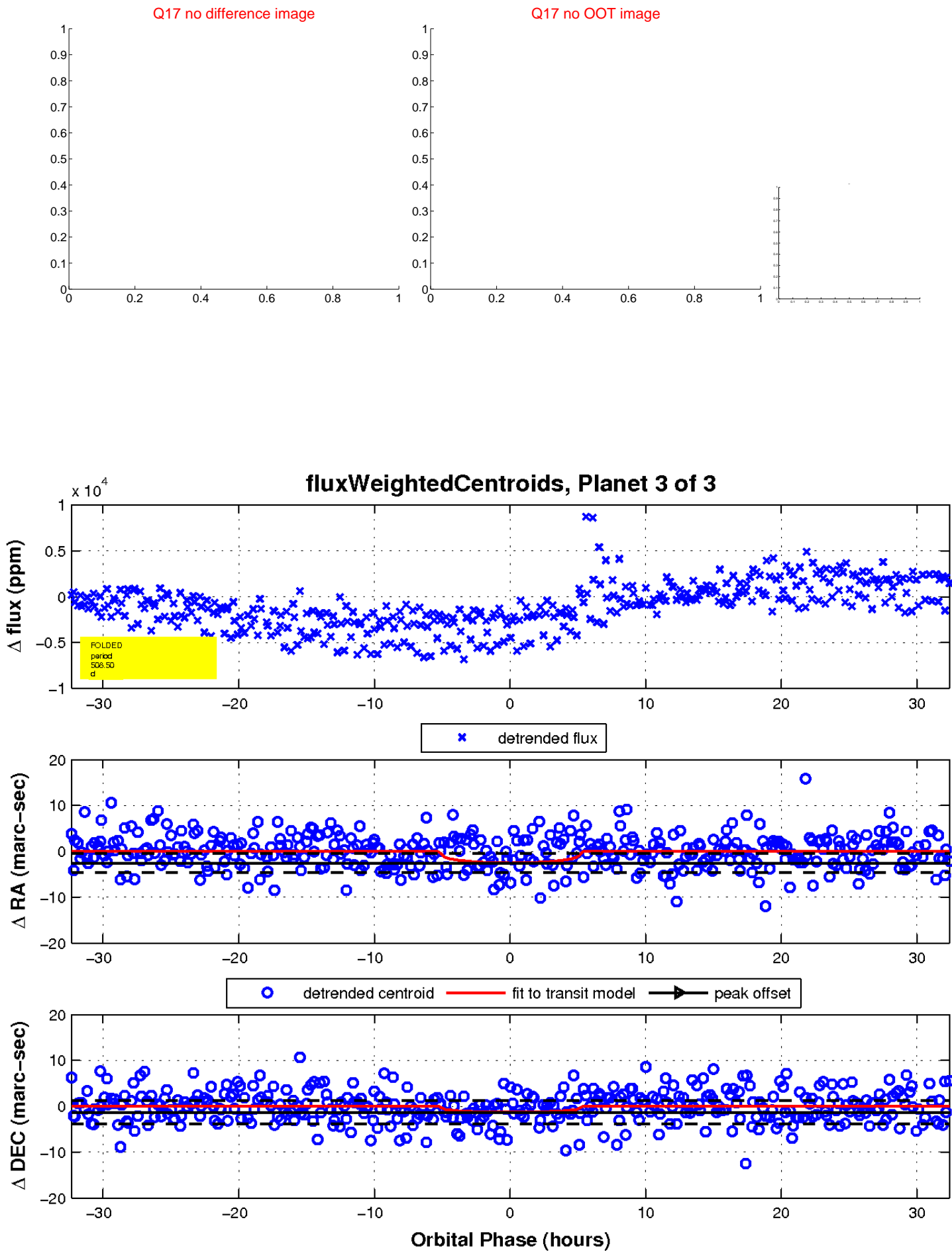
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

