

KIC 004349442

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})
004349442-01	OBS	1803.01	4.539285	133.961838	815.3	2.068	86.0	89.5	0.72	4914	2.53	112.33
004349442-02	OBS	1803.02	12.720530	140.357907	272.6	2.727	18.2	19.6	0.72	4914	1.47	28.43
004349442-03	OBS	1803.03	6.238461	134.283234	108.5	3.147	10.0	11.5	0.72	4914	0.94	73.51
004349442-04	OBS	No	276.630005	406.838612	275.7	9.246	9.3	4.3	0.72	4914	1.31	0.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004349442-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
004349442-02	OBS	FP	0.00	0	0	0	1	CENT_KIC_POS—EPHEM_MATCH
004349442-03	OBS	FP	0.00	0	0	0	1	CENT_KIC_POS—EPHEM_MATCH
004349442-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— 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.

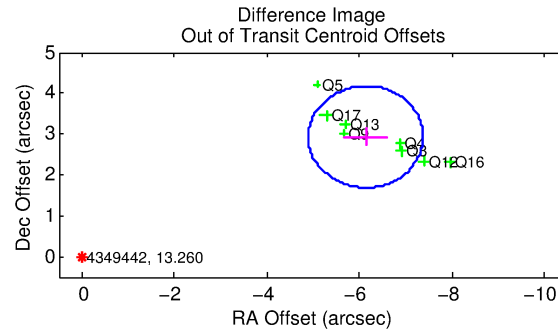
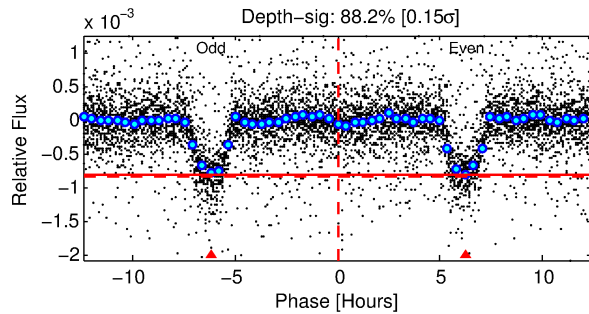
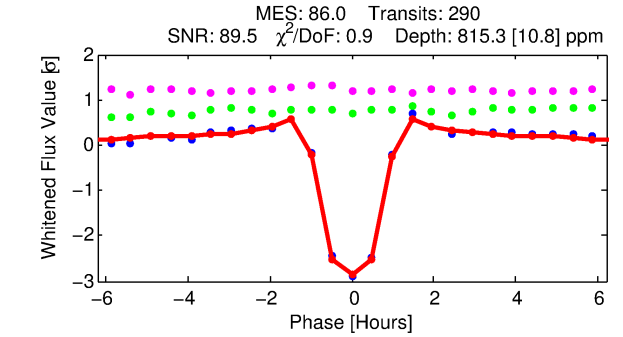
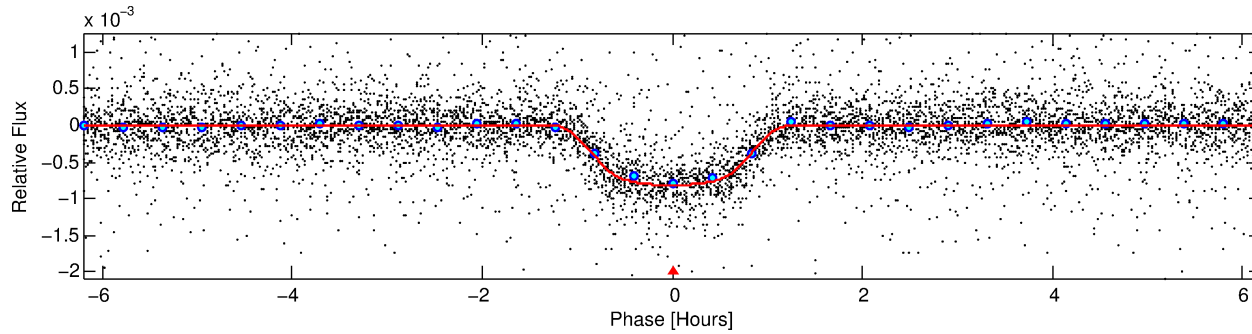
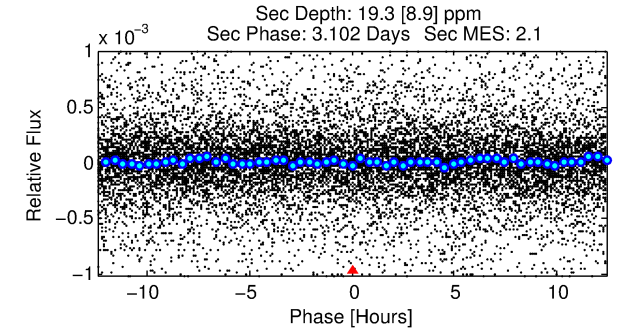
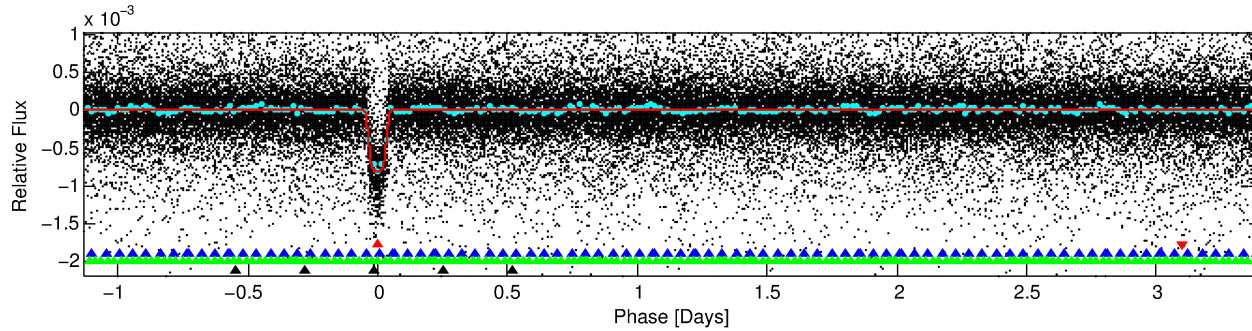
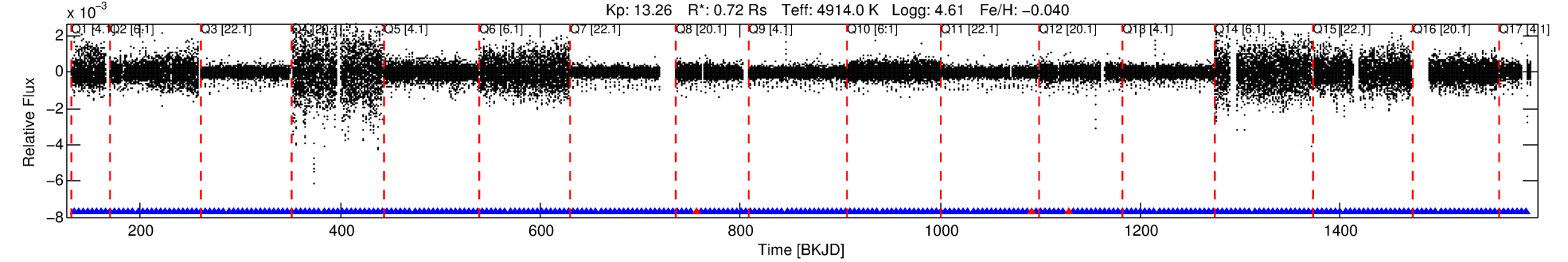
Ephemeris Match Information For 004349442-01

No Significant Match Found

DV One-Page Summary

KIC: 4349442 Candidate: 1 of 4 Period: 4.539 d
KOI: K01803.01 Corr: 0.956

Kp: 13.26 R*: 0.72 Rs Teff: 4914.0 K Logg: 4.61 Fe/H: -0.040



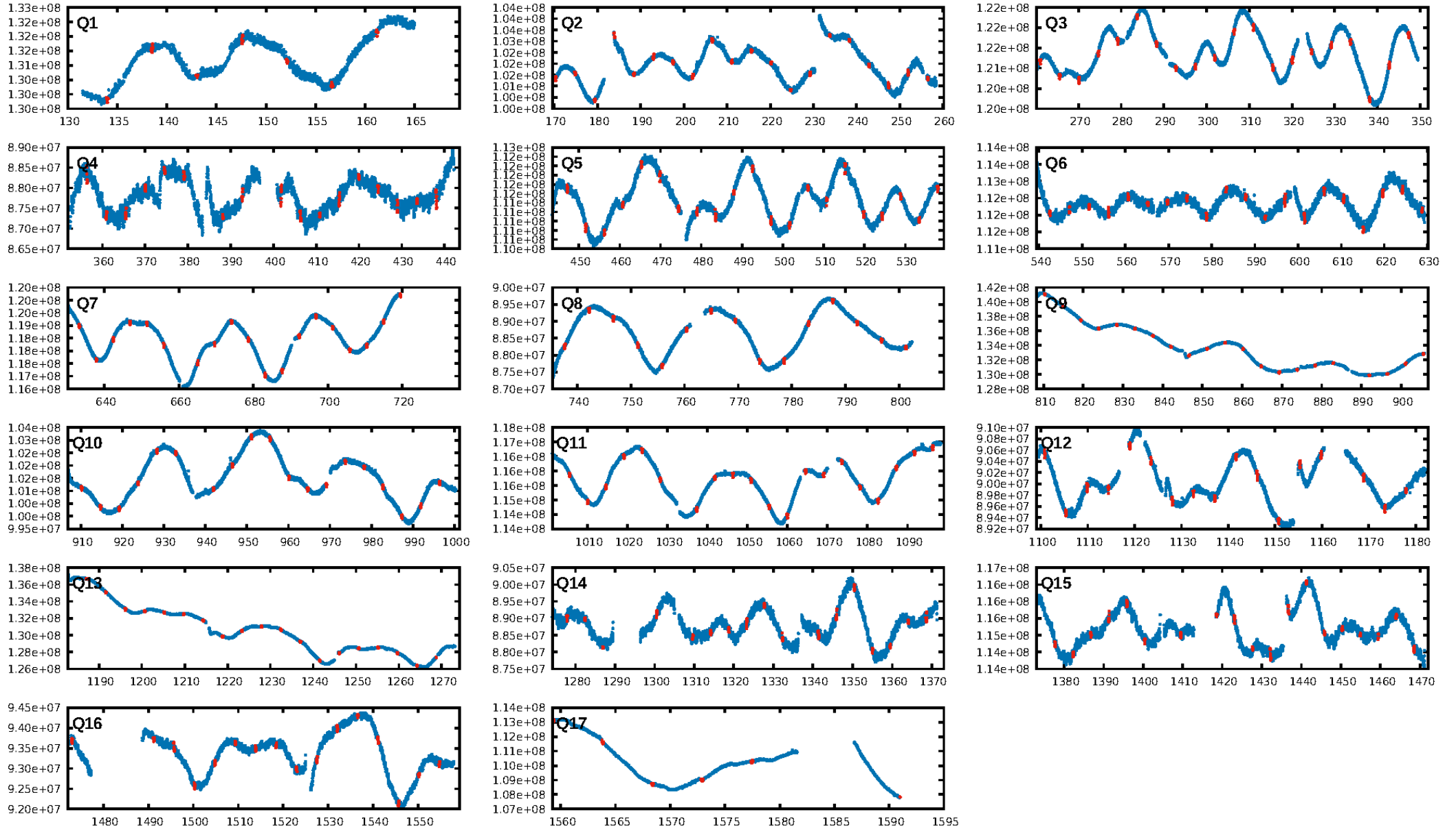
DV Fit Results:

Period = 4.53928 [0.00000] d
Epoch = 133.9618 [0.0004] BKJD
Rp/R* = 0.0320 [0.0014]
a/R* = 8.52 [1.39]
b = 0.90 [0.04]
Seff = 112.33 [12.84]
Teq = 830 [24] K
Rp = 2.53 [0.19] Re
a = 0.0494 [0.0027] AU
Ag = 4.04 [1.93] [1.58σ]
Teffp = 1820 [217] K [4.54σ]

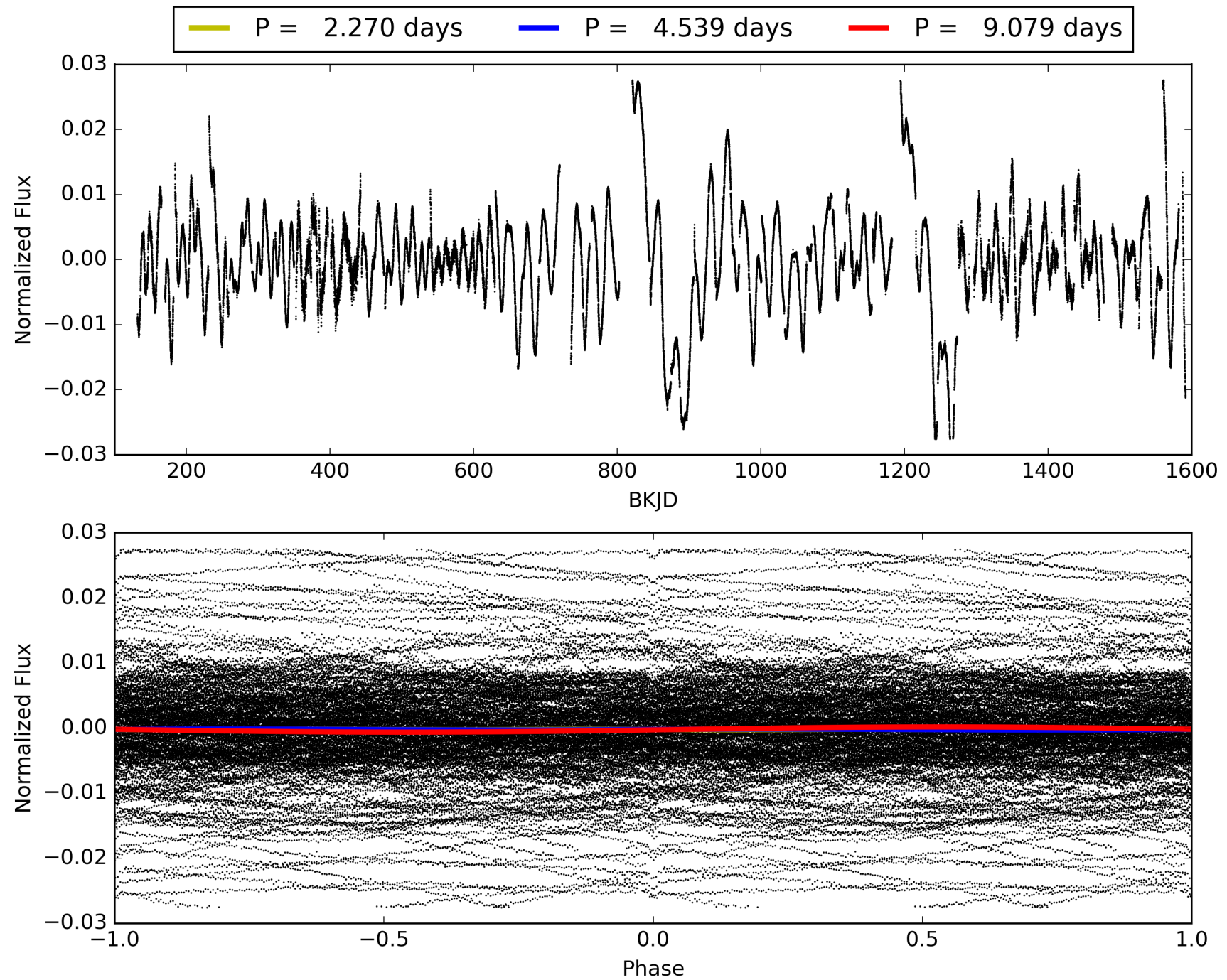
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [10.83σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.99 [275/278]
GhostDiagnostic-chr: 2.736
Centroid-sig: 0.0%
Centroid-so: 3.988 arcsec [80.84σ]
OotOffset-rm: 6.798 arcsec [16.42σ]
KicOffset-rm: 0.089 arcsec [0.93σ]
OotOffset-st: 0/0/4/4 [8]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.93 [14/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 004349442-01, PDC Light Curves

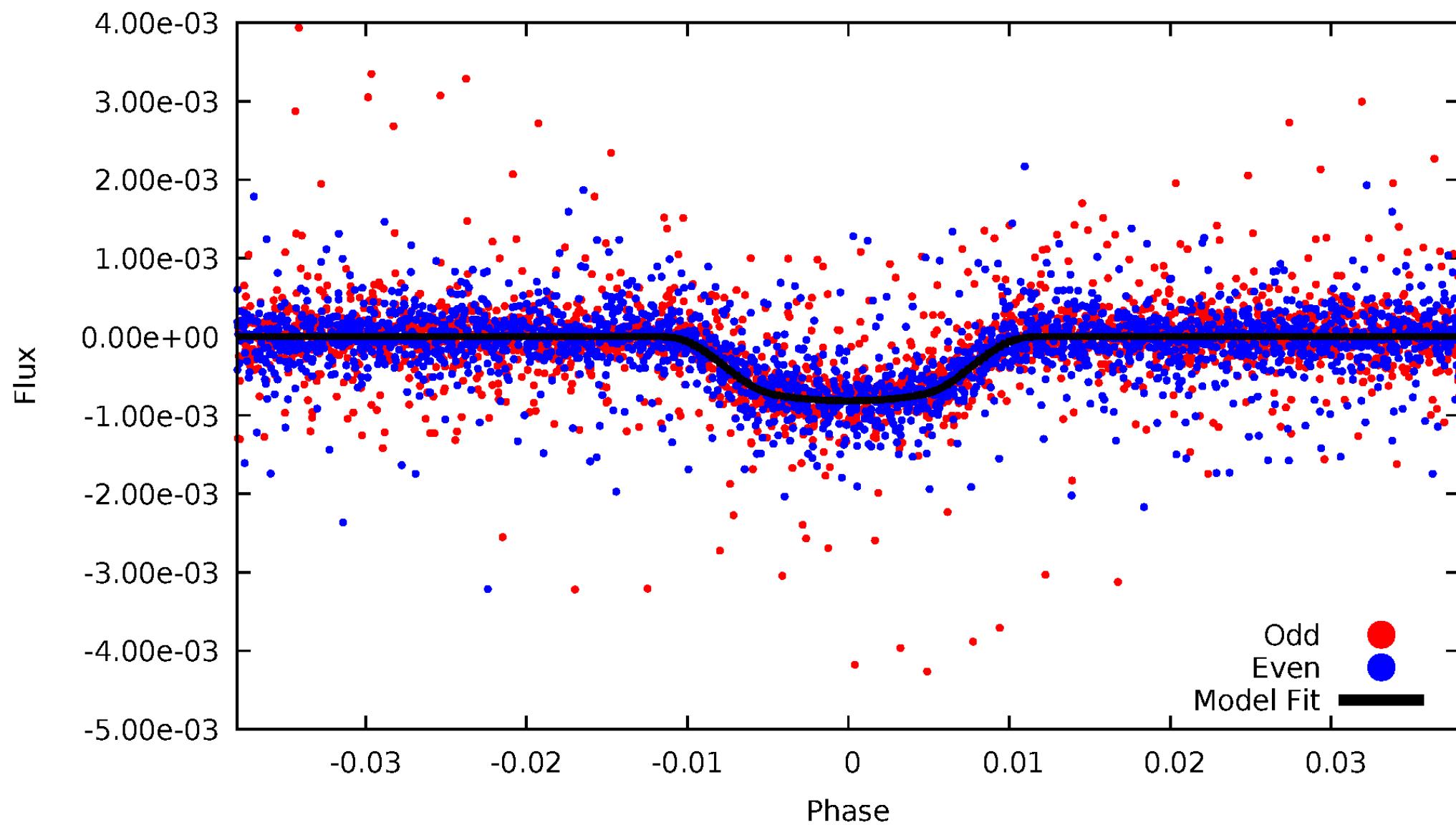


TCE 004349442-01



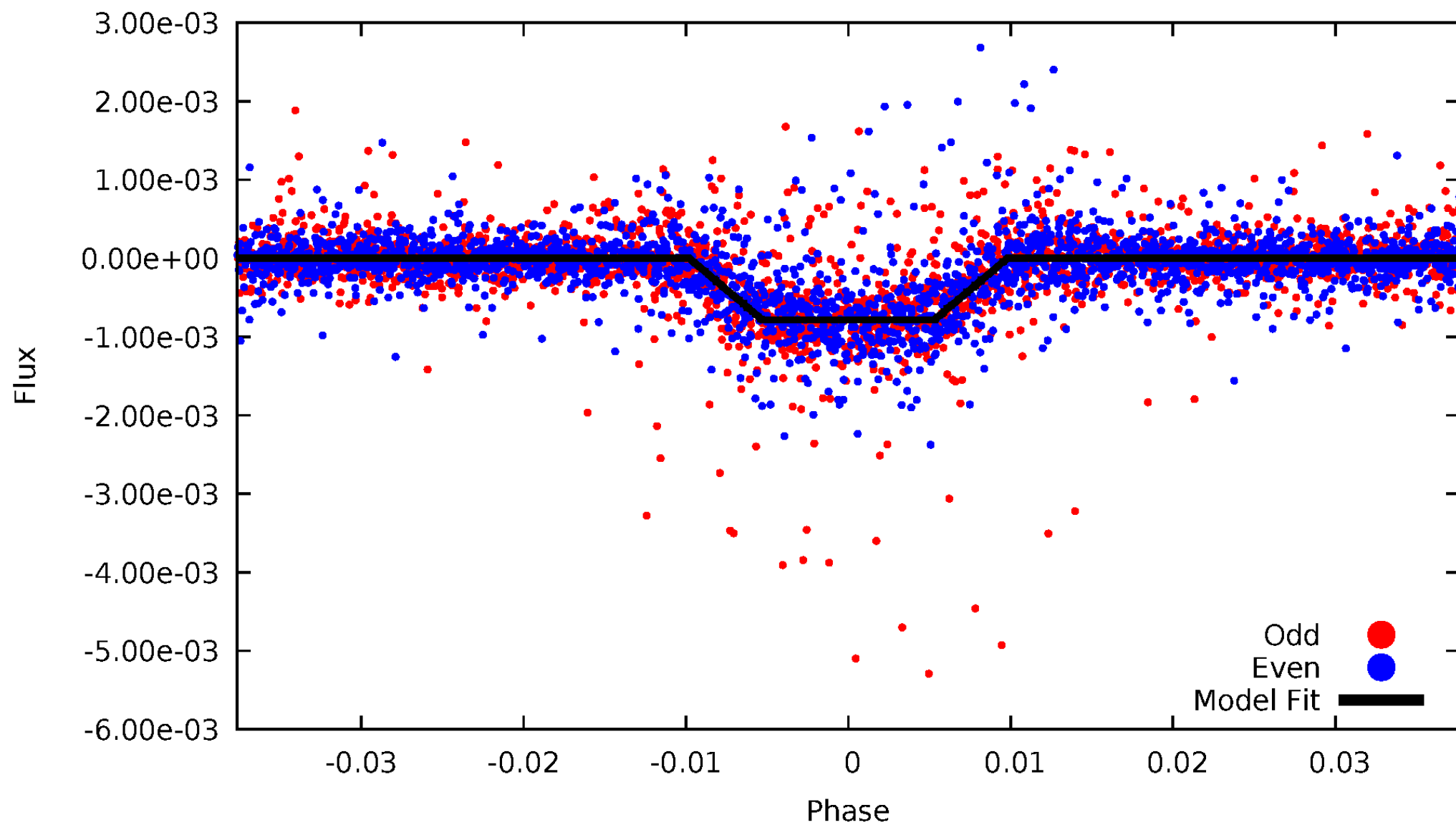
DV Odd/Even

TCE 004349442-01



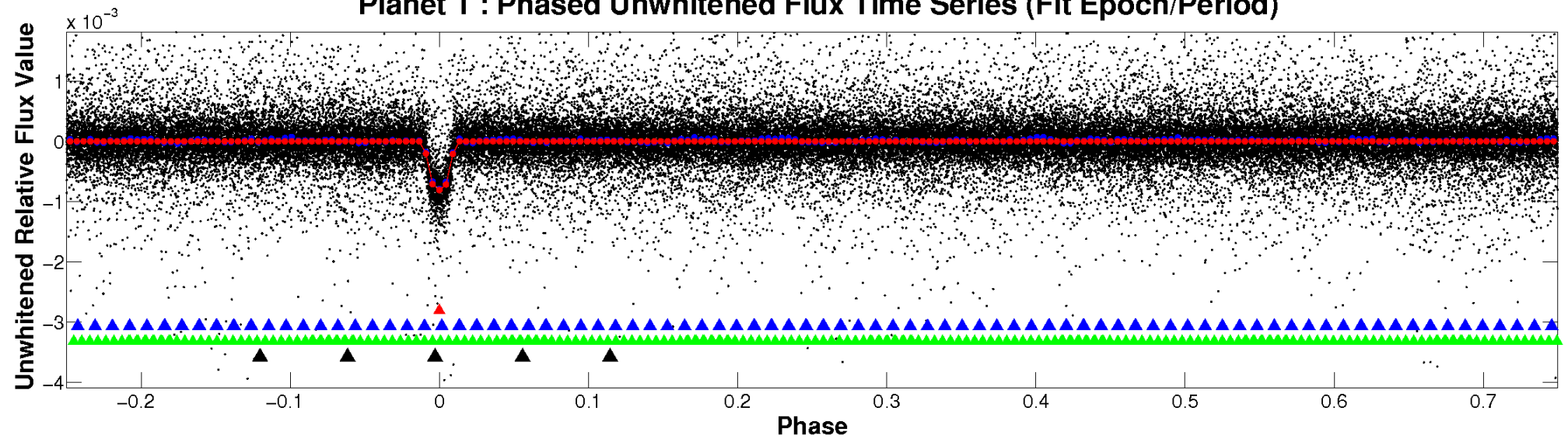
ALT Odd/Even

TCE 004349442-01

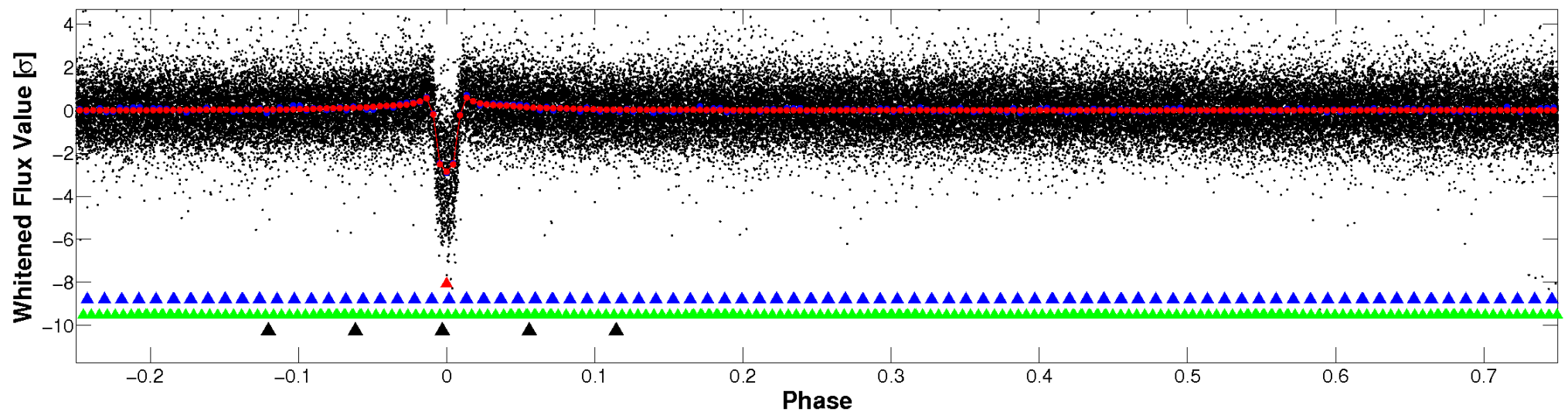


Non-Whitened Vs. Whitened Light Curve

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

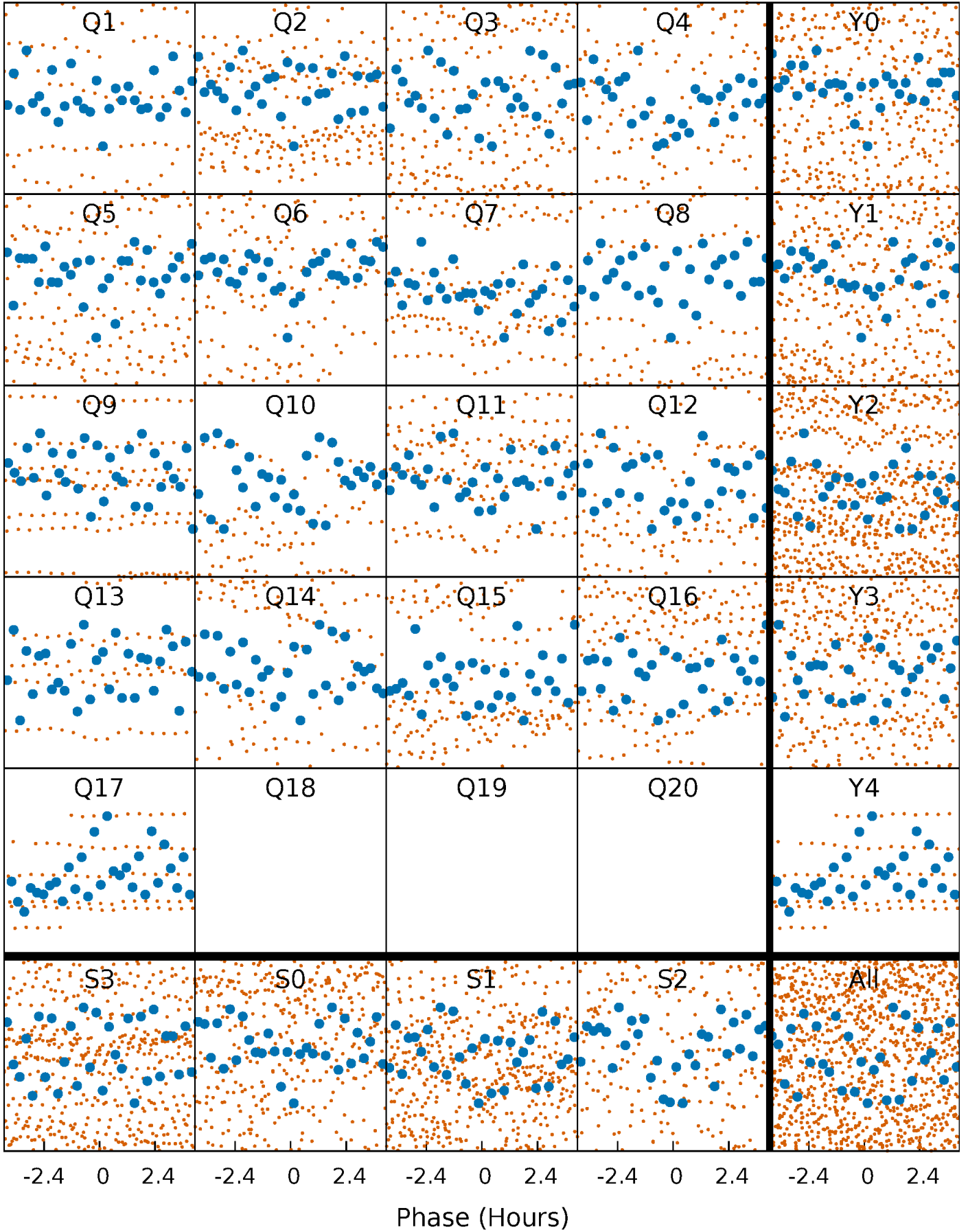


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



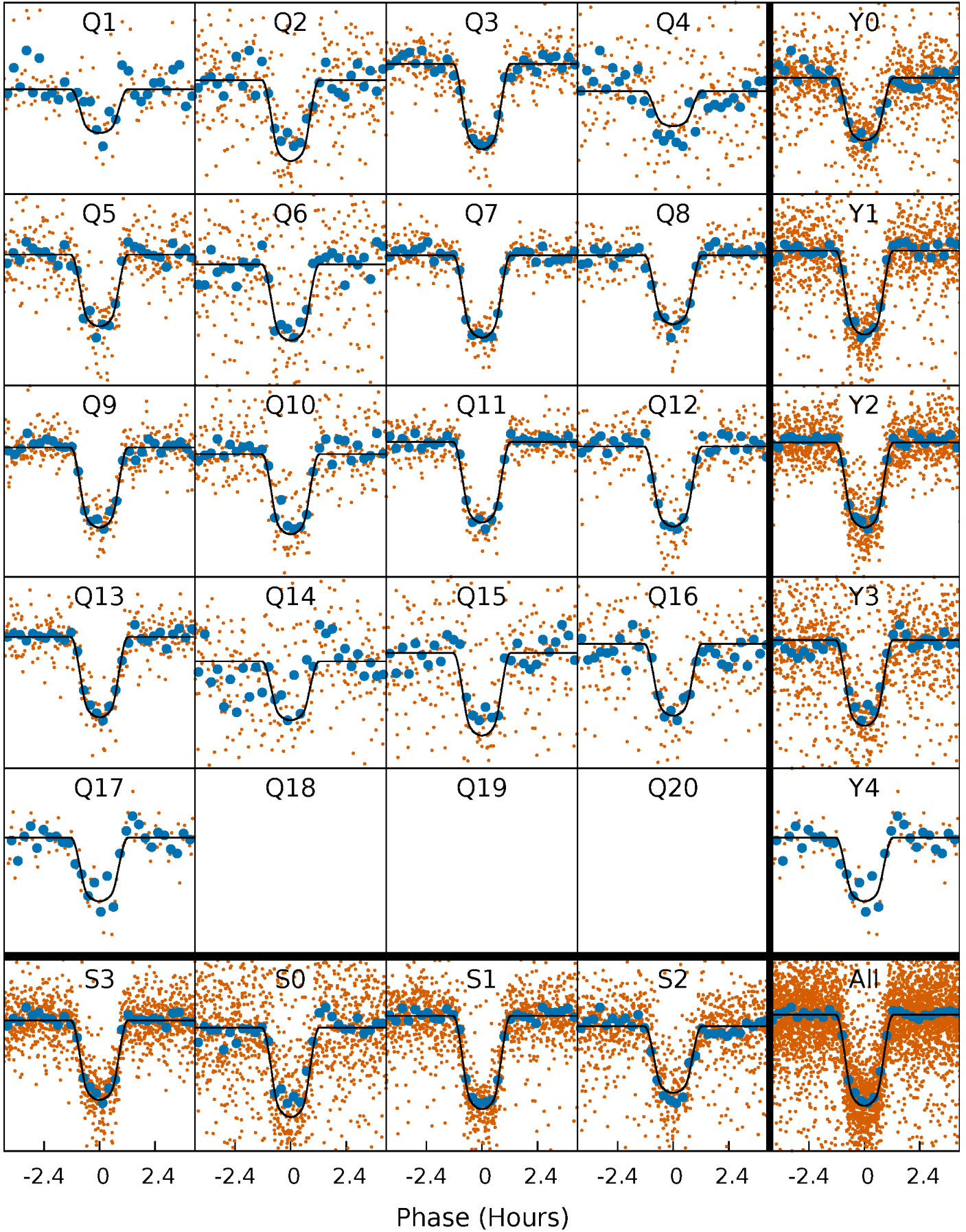
PDC Quarter-Phased Transit Curves

TCE 004349442-01 P= 4.539285 Days $T_0=133.961838$ (BKJD)



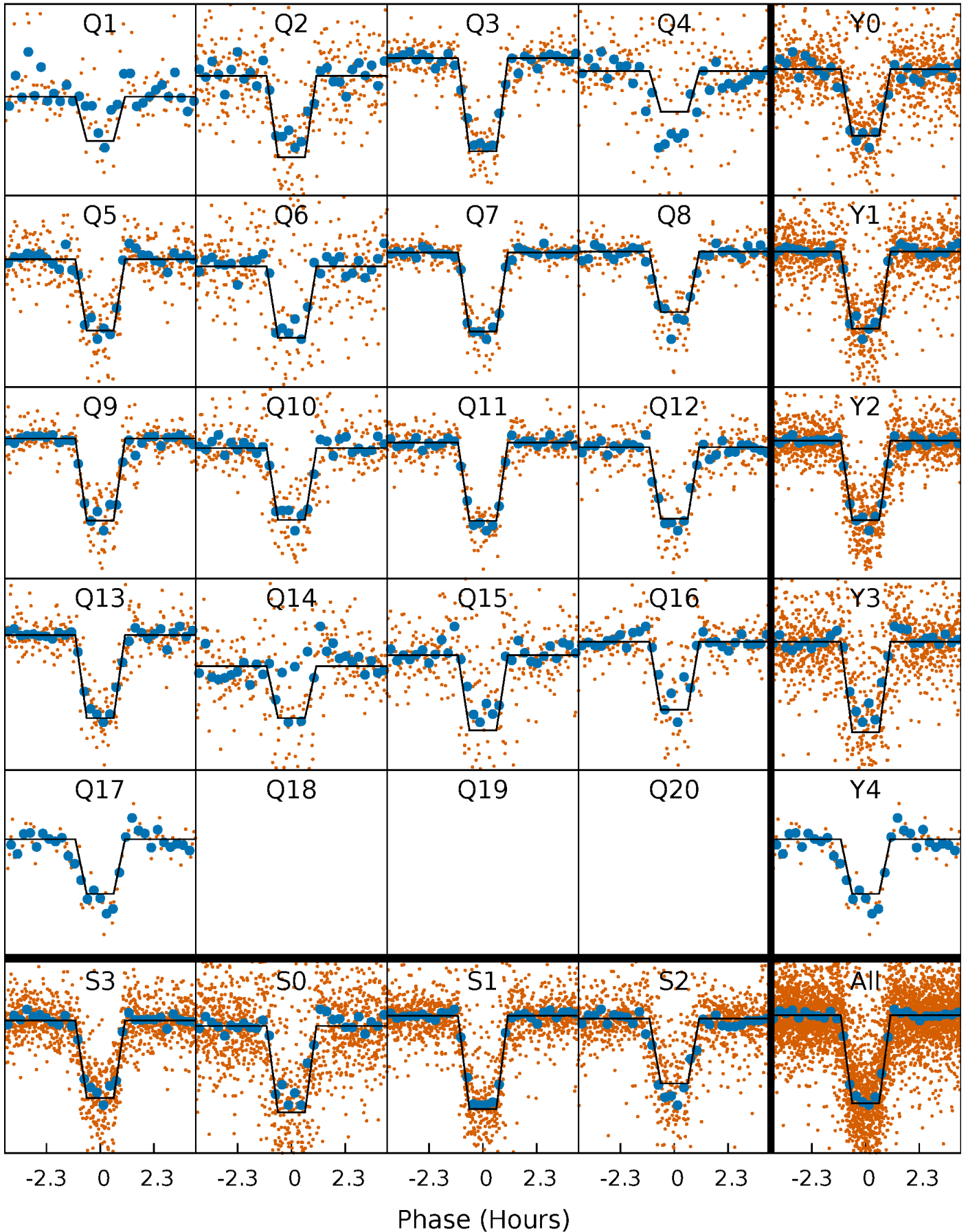
DV Quarter-Phased Transit Curves

TCE 004349442-01 P= 4.539285 Days $T_0=133.961838$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

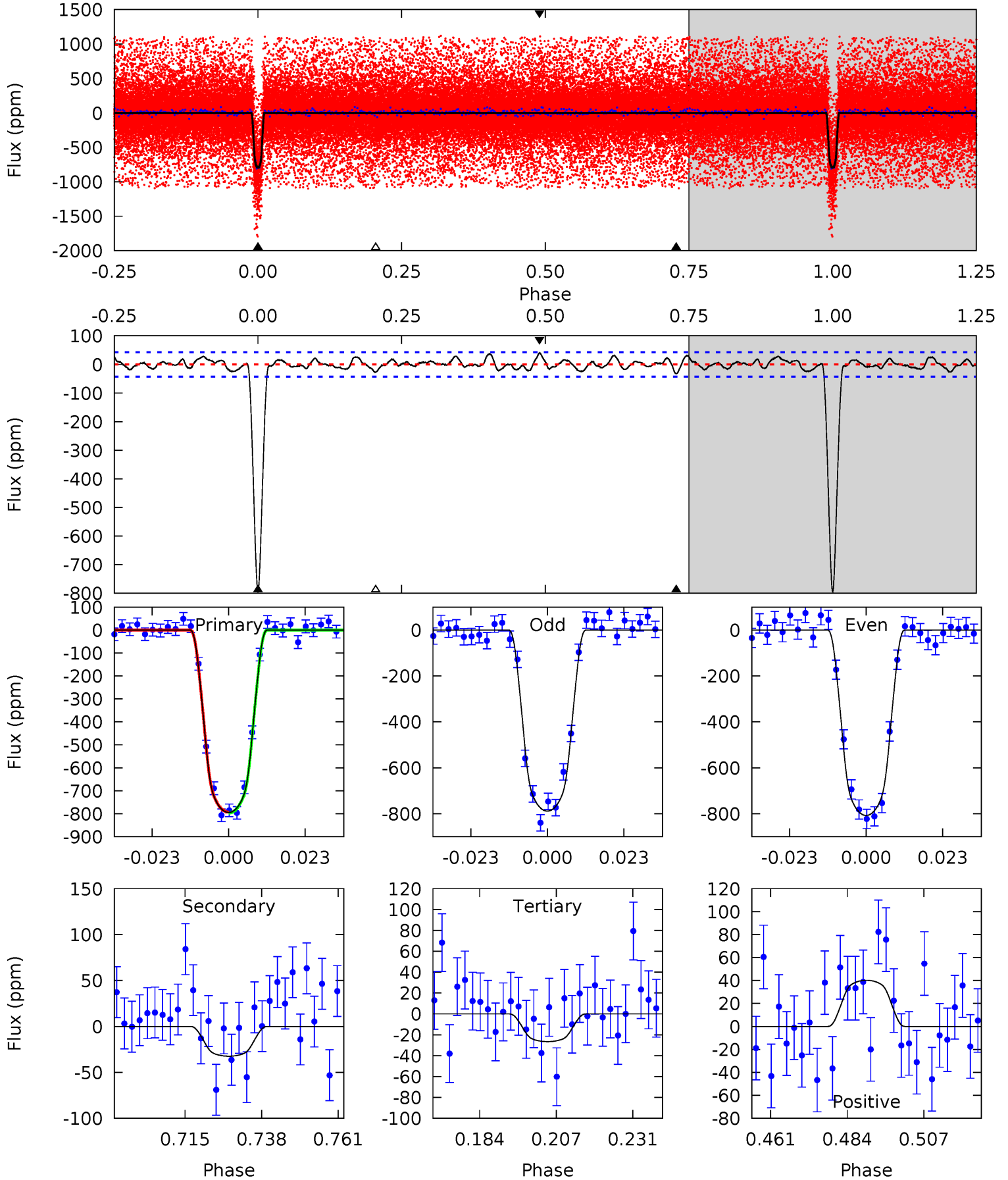
TCE 004349442-01 P= 4.539289 Days $T_0=133.961301$ (BKJD)



DV Model-Shift Uniqueness Test

004349442-01, P = 4.539285 Days, E = 129.422553 Days

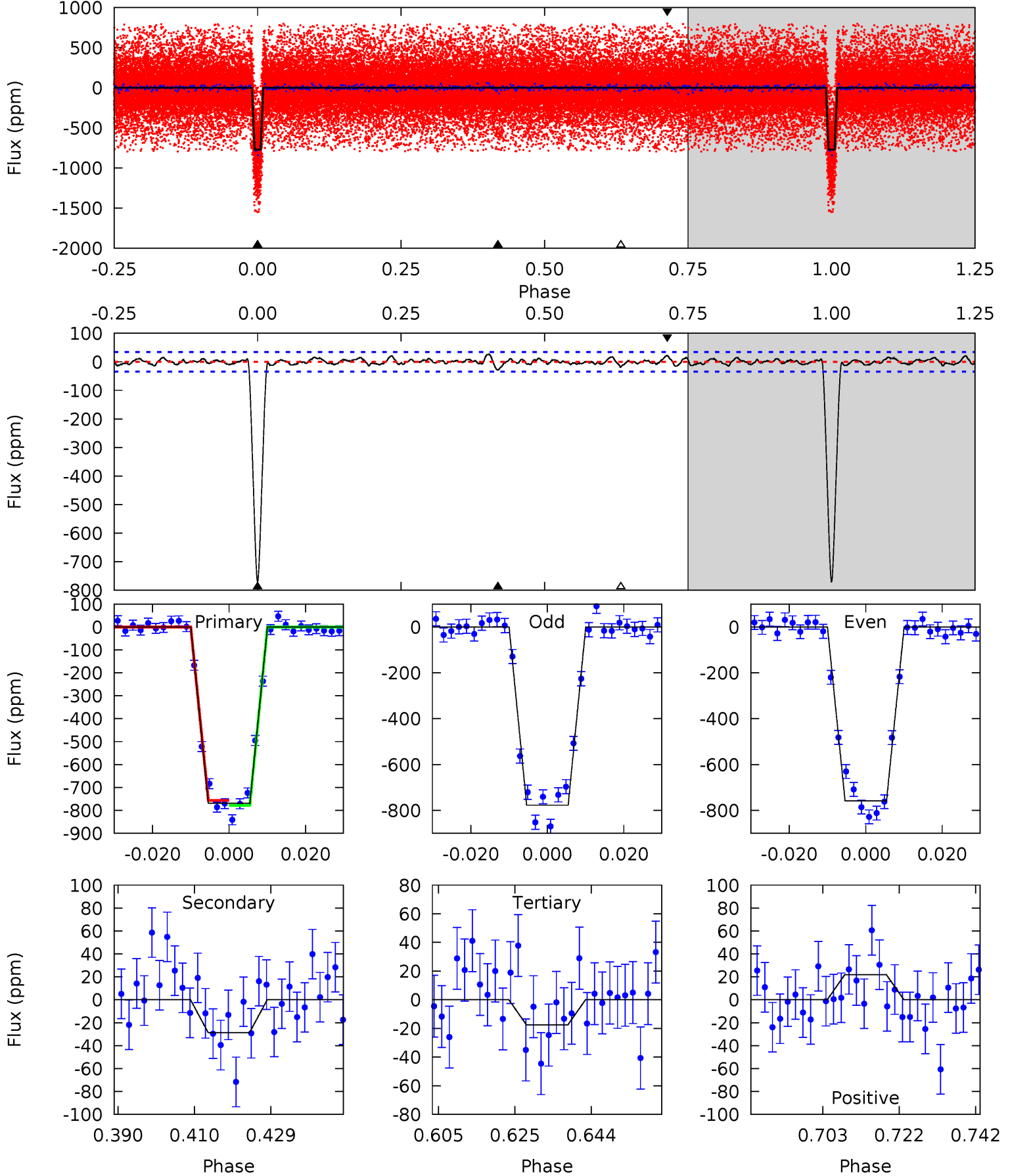
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
90.8	3.70	3.04	4.59	4.86	2.27	1.46	87.8	86.2	0.67	-0.89	1.10	0.97	0.05	0.24



Alt Model-Shift Uniqueness Test

004349442-01, P = 4.539289 Days, E = 129.422012 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
109.2	4.06	2.49	3.12	4.90	2.34	1.02	106.7	106.1	1.57	0.94	1.35	0.97	0.03	1.53



Stellar Parameters For KIC 004349442

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4914^{+98}_{-98}	$4.610^{+0.018}_{-0.046}$	$-0.040^{+0.150}_{-0.150}$	$0.724^{+0.045}_{-0.030}$	$0.783^{+0.035}_{-0.046}$	$2.902^{+0.269}_{-0.441}$
	+2%/-2%	+0%/-1%	+375%/-375%	+6%/-4%	+4%/-6%	+9%/-15%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 004349442-01 / KOI 1803.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-32 ± 9	$2.56^{+0.13}_{-0.14}$	1166^{+26}_{-27}	2760^{+108}_{-121}	$6.557^{+2.009}_{-1.706}$
Alt.	-29 ± 7	$2.24^{+0.14}_{-0.12}$	1166^{+28}_{-27}	2816^{+101}_{-114}	$7.644^{+2.040}_{-2.019}$

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

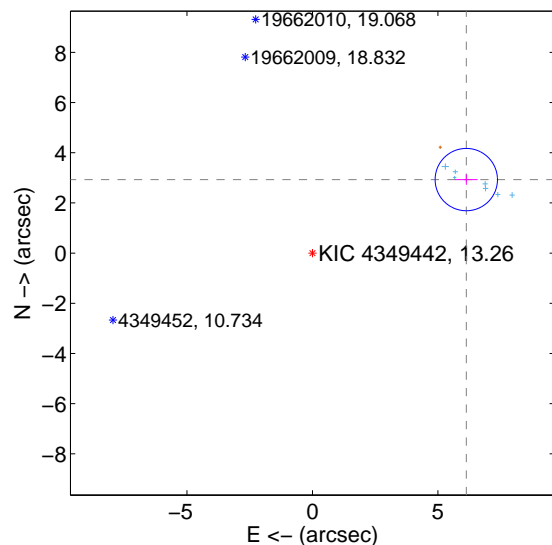
Supplemental centroid analysis for 004349442-01. Kepler magnitude: 13.26. Transit SNR 89.53

There are 14 quarters with good PRF difference image offsets

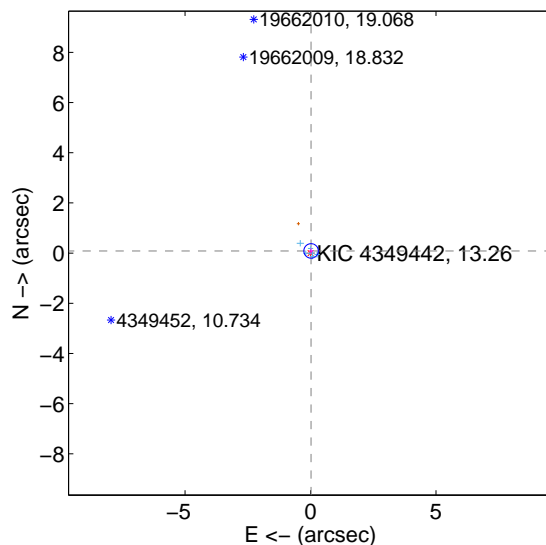
The OOT PRF centroid is offset from the target star catalog position by about 6.47 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.798 ± 0.414	16.42	-6.134 ± 0.448	2.931 ± 0.207
PRF-fit source offset from KIC position	0.089 ± 0.096	0.93	-0.022 ± 0.085	0.086 ± 0.106
photometric centroid source offset	3.99 ± 0.05	80.84	3.63 ± 0.05	-1.65 ± 0.04

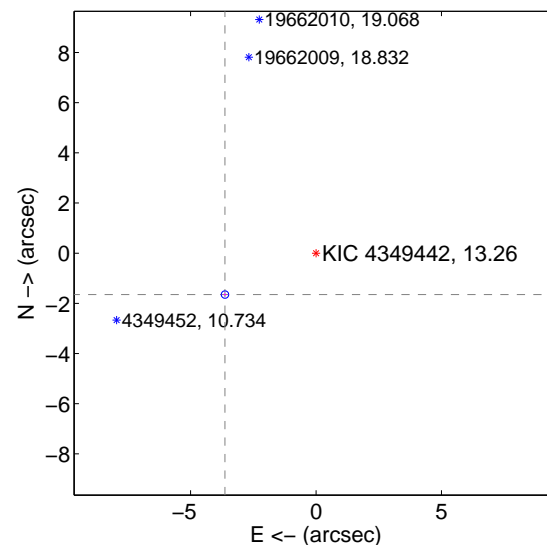
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

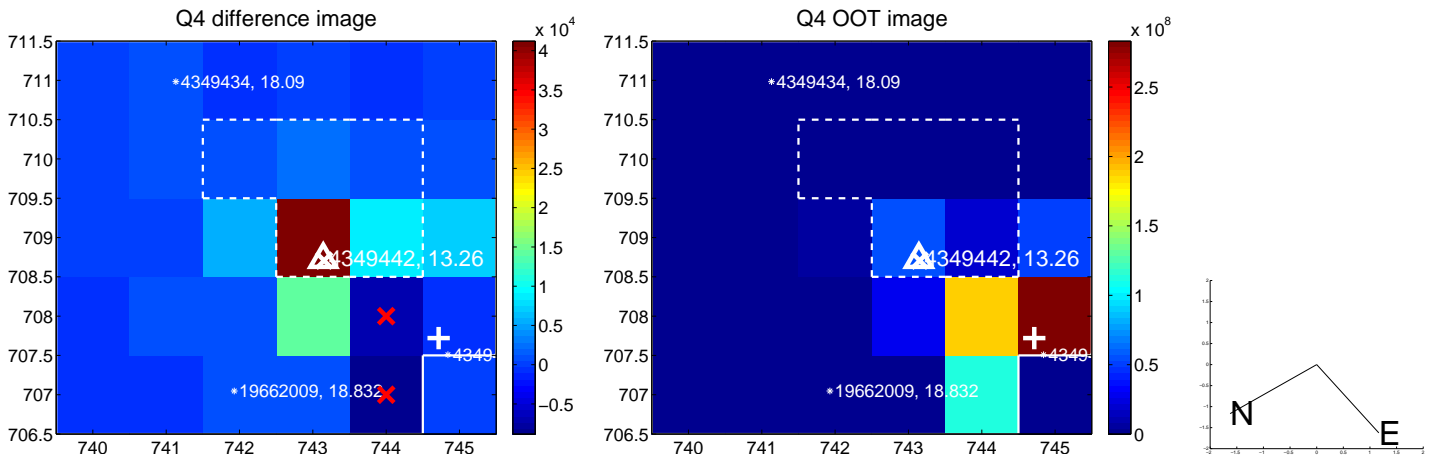
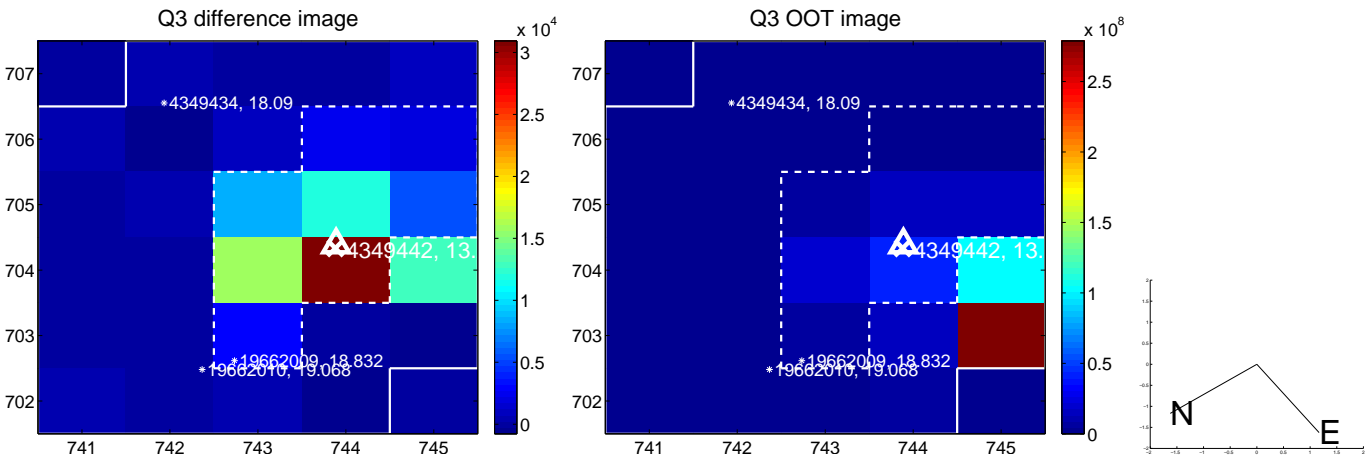
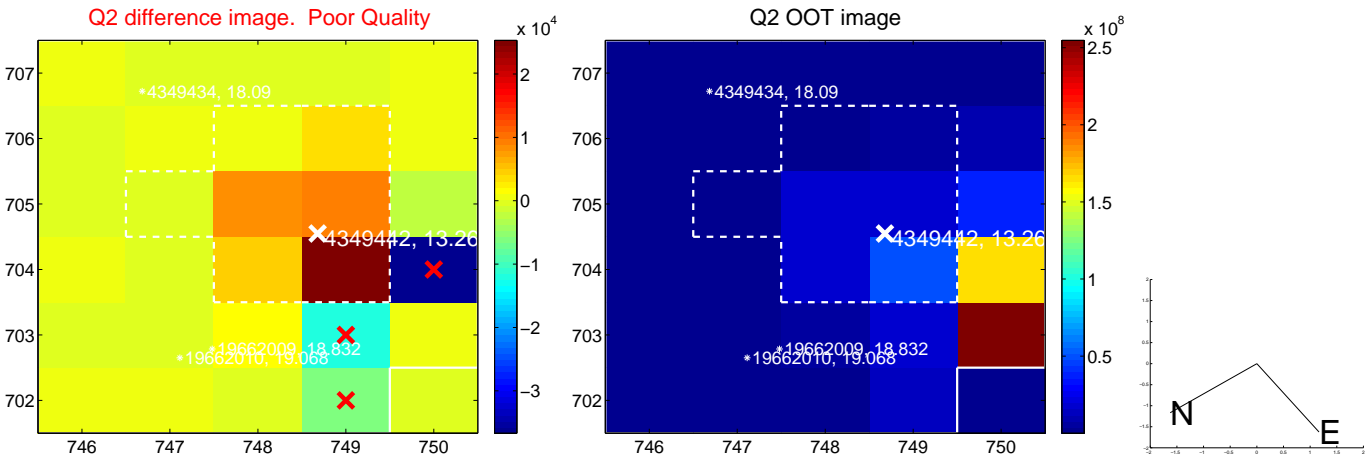
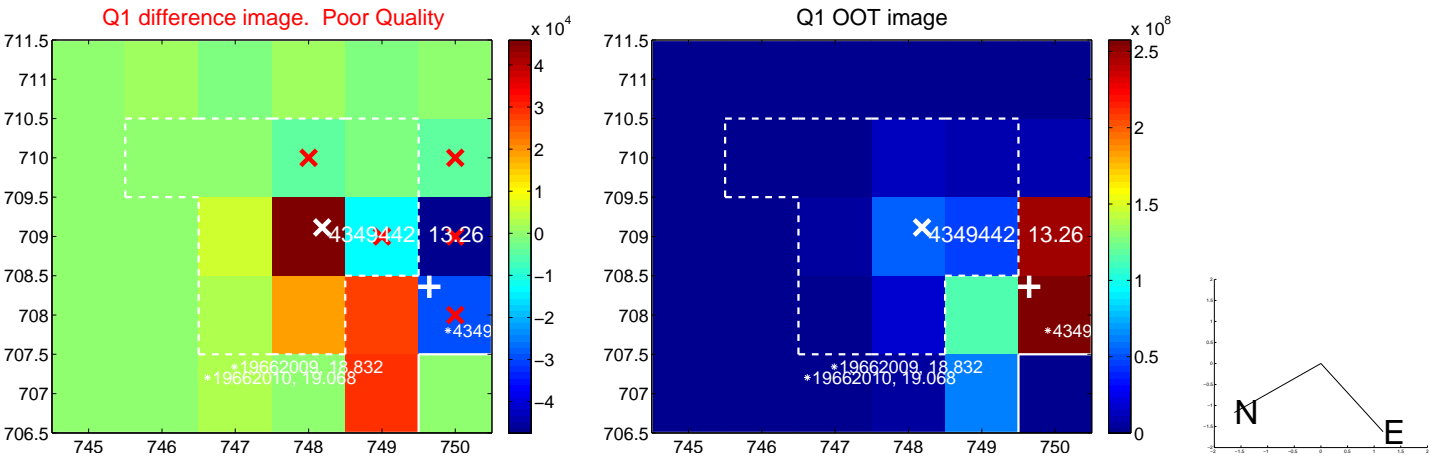


offset from photometric centroids

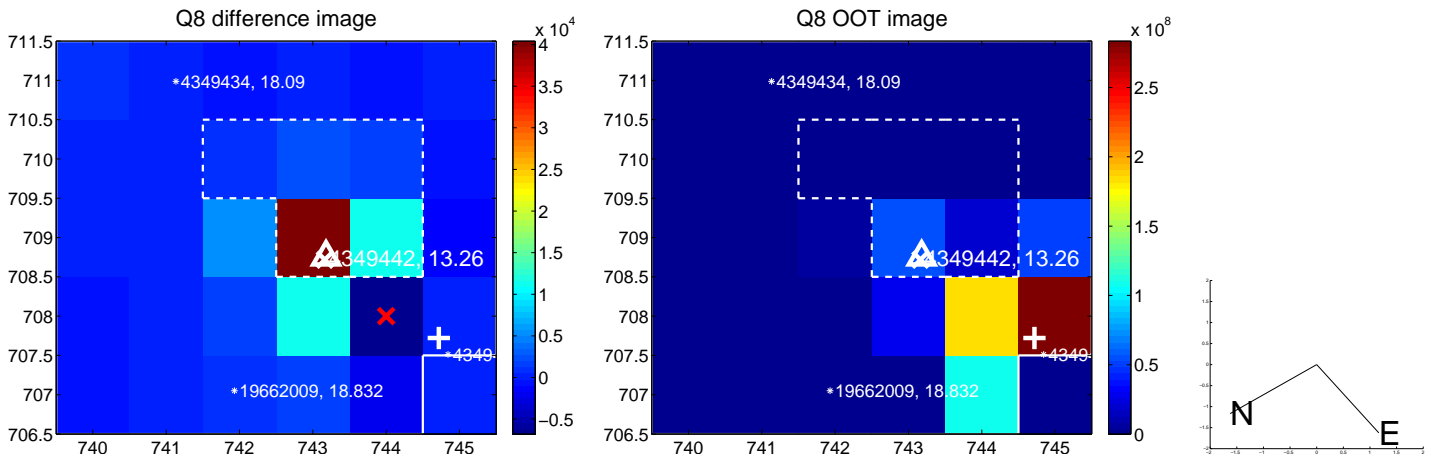
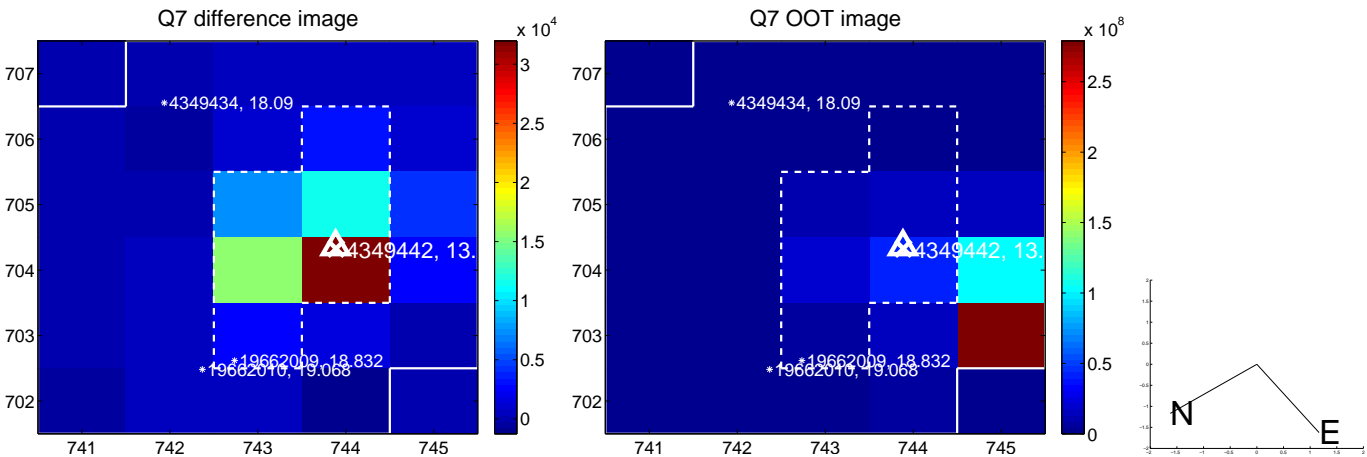
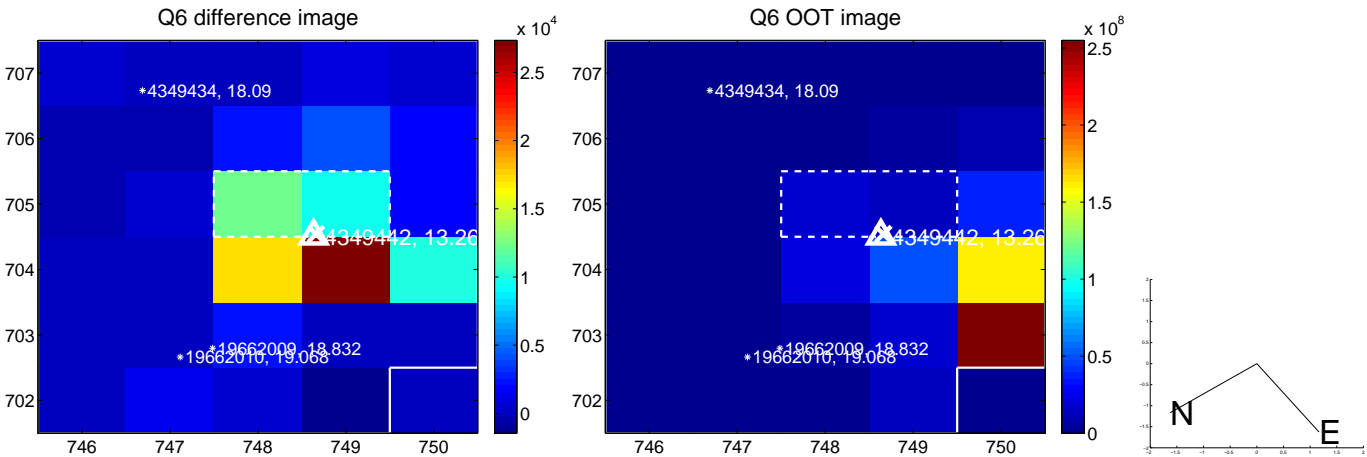
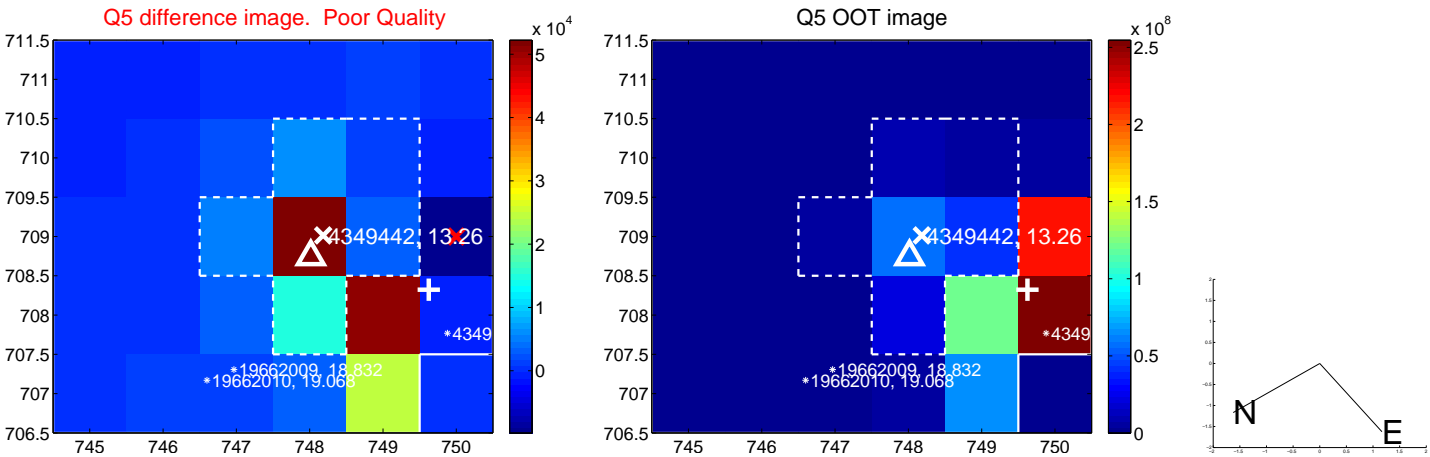


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

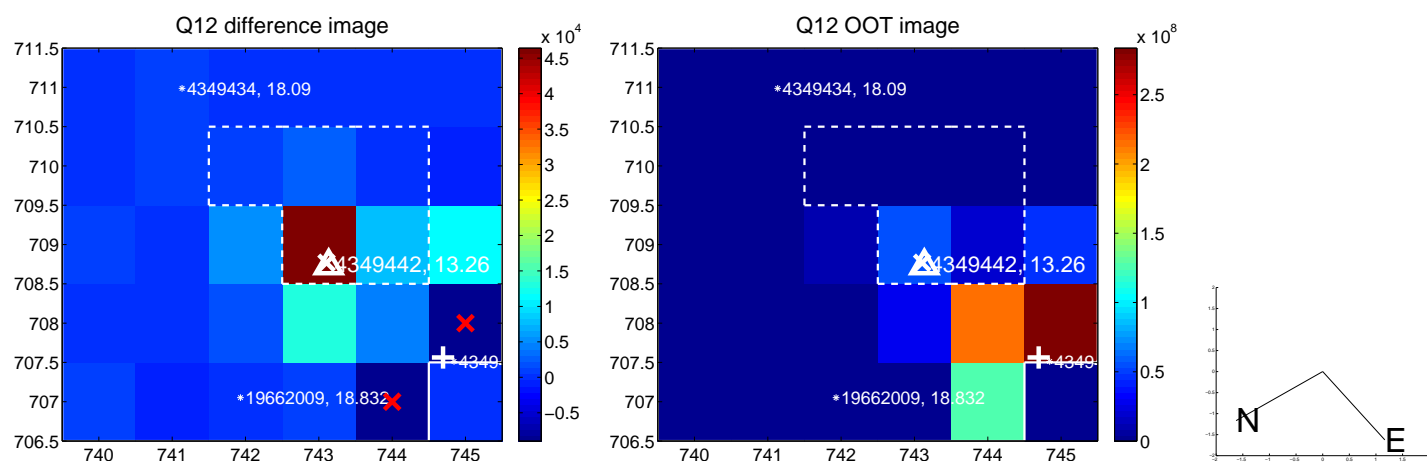
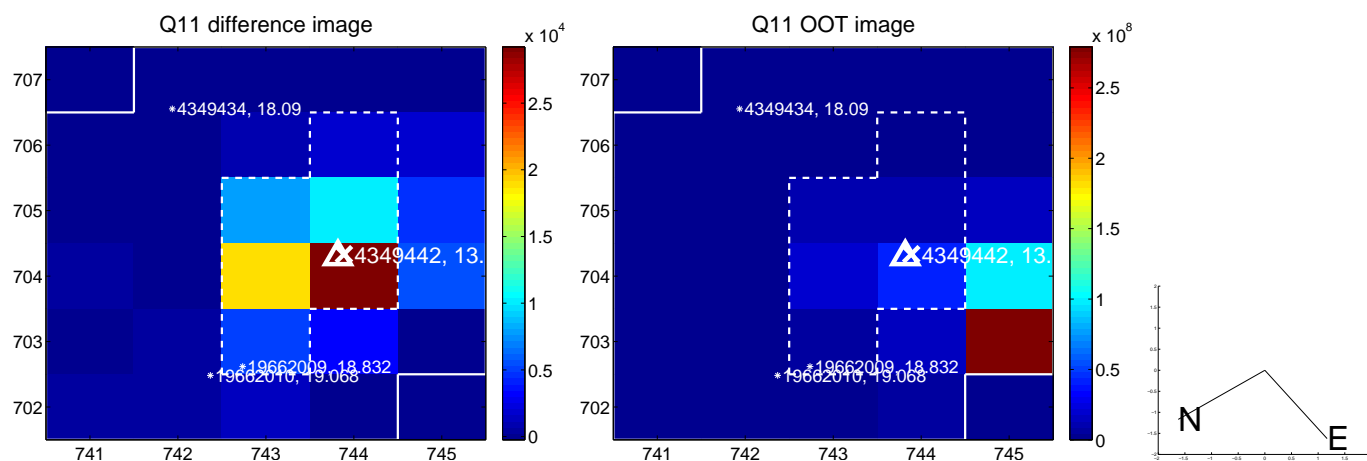
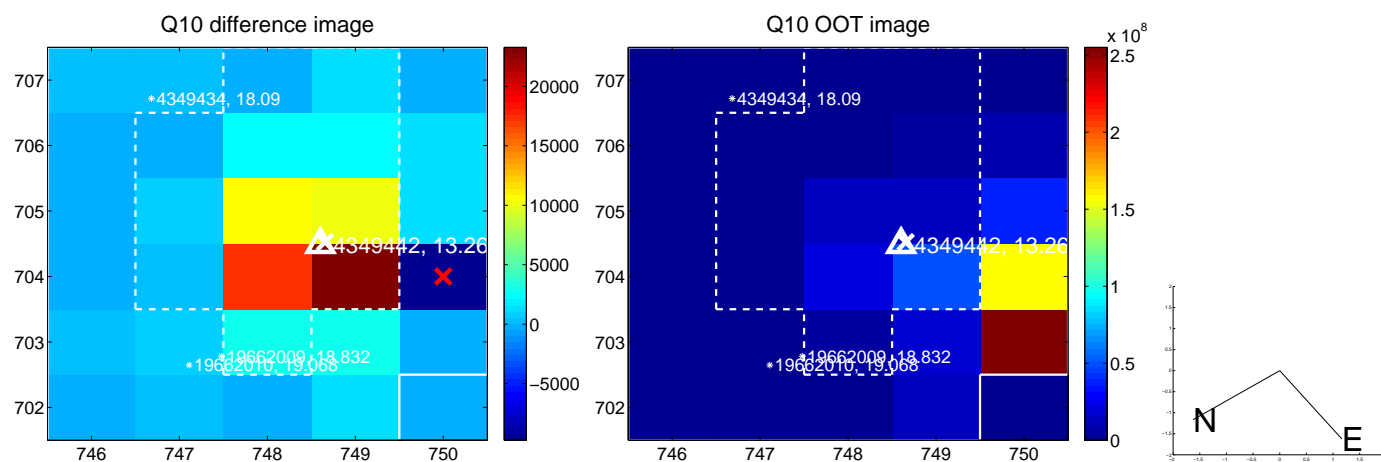
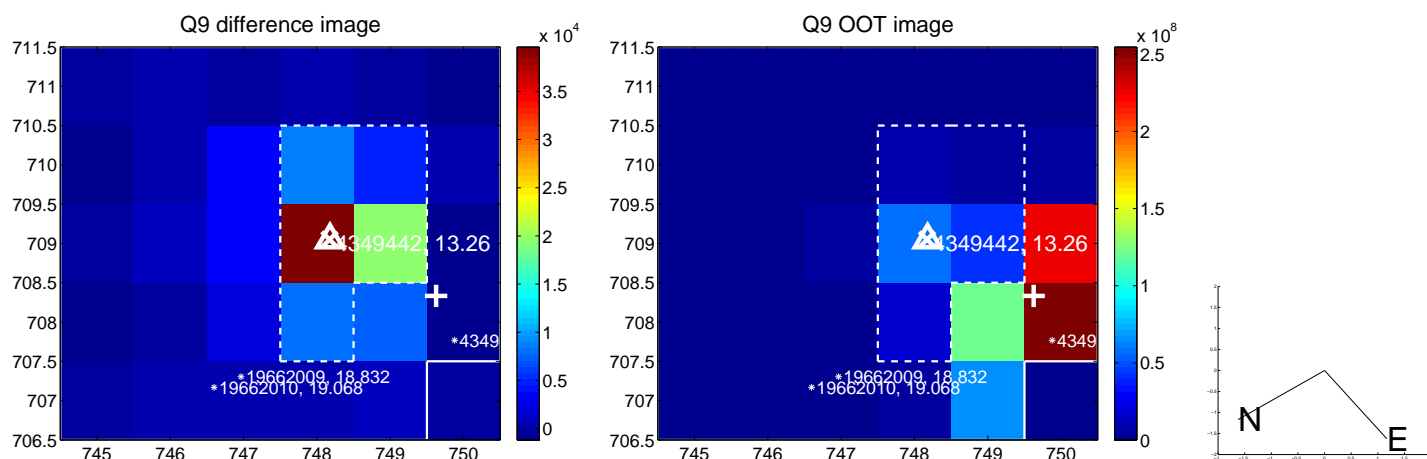
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



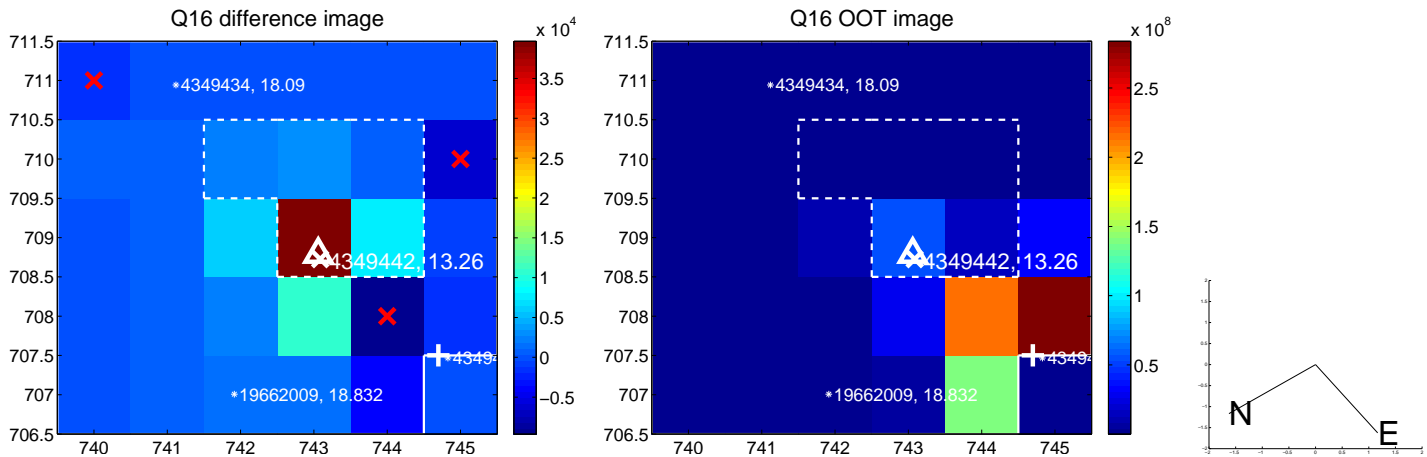
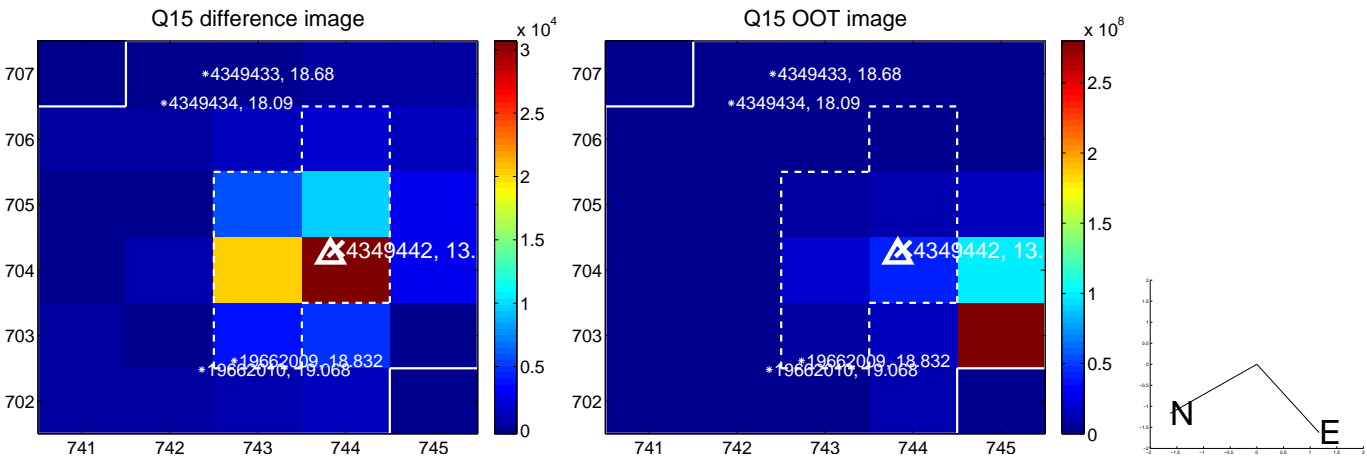
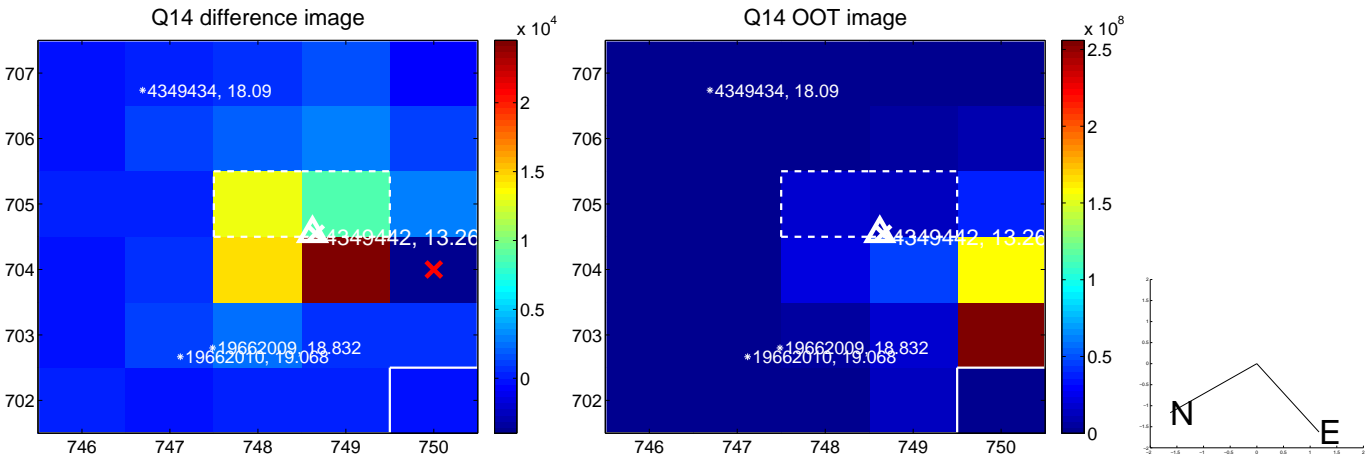
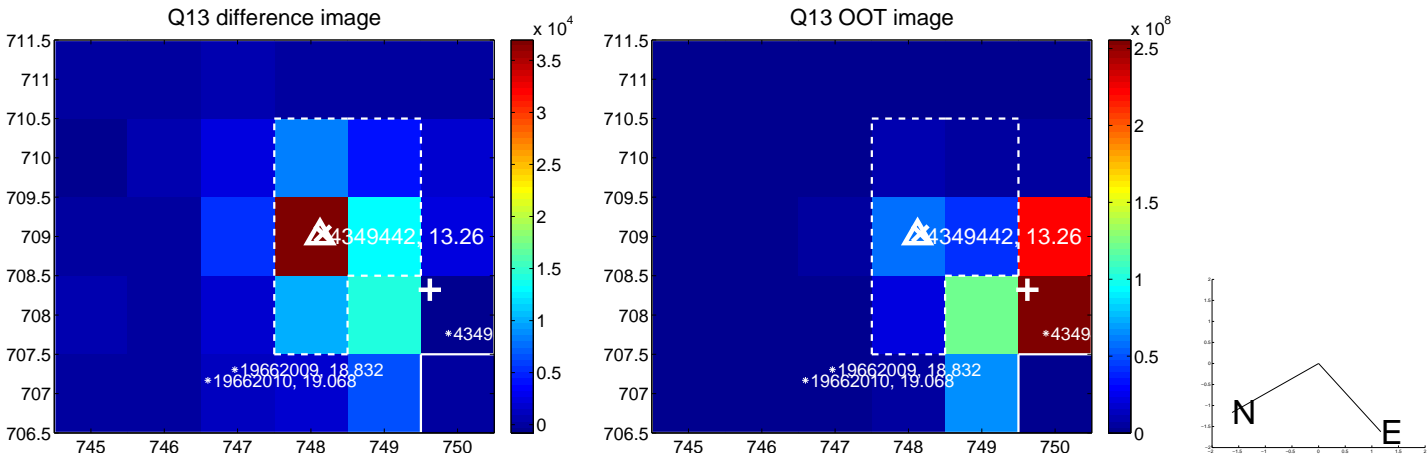
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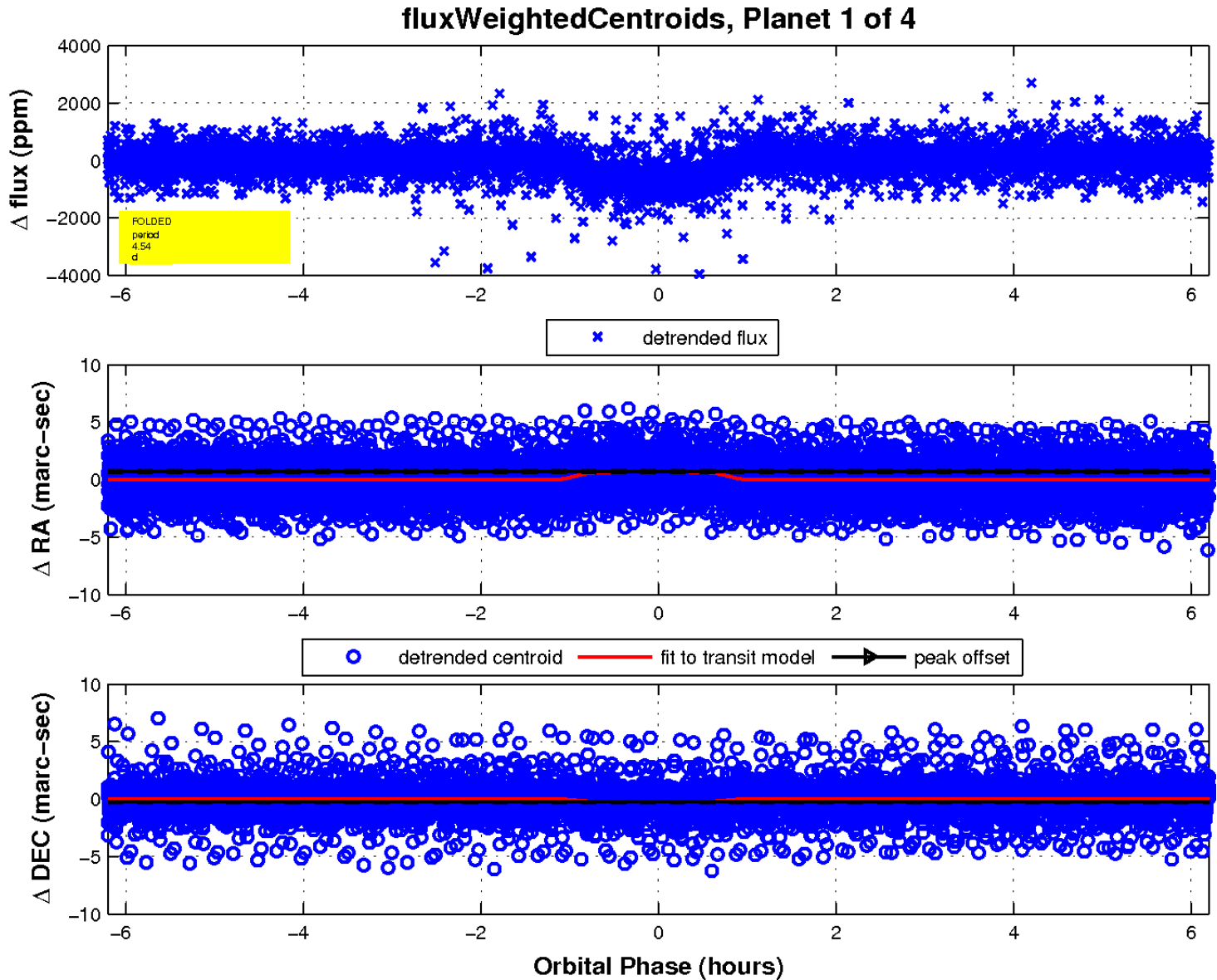
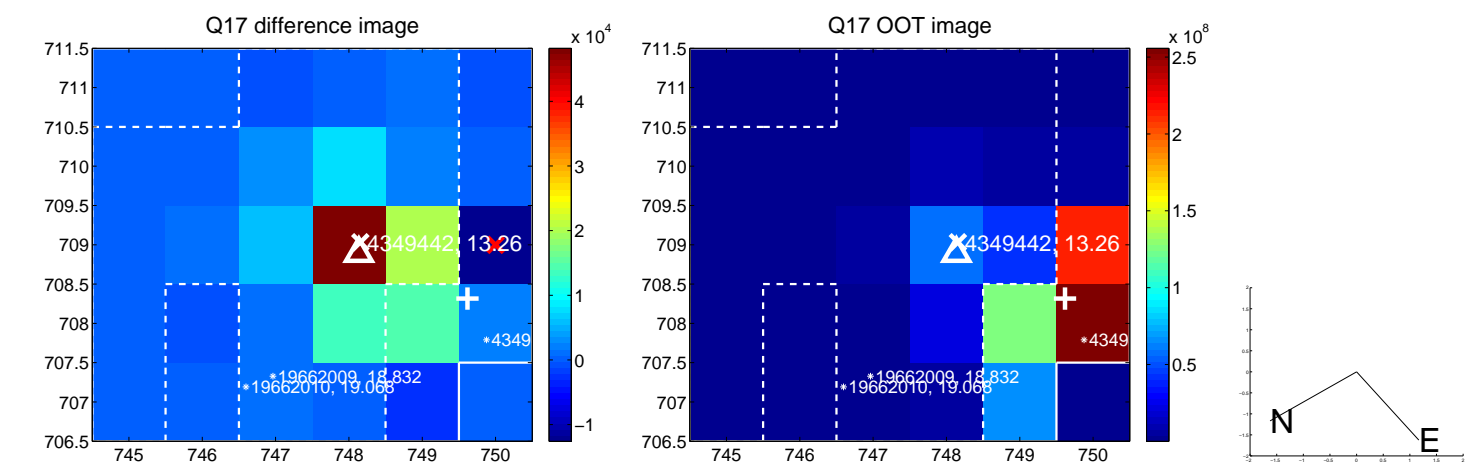
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

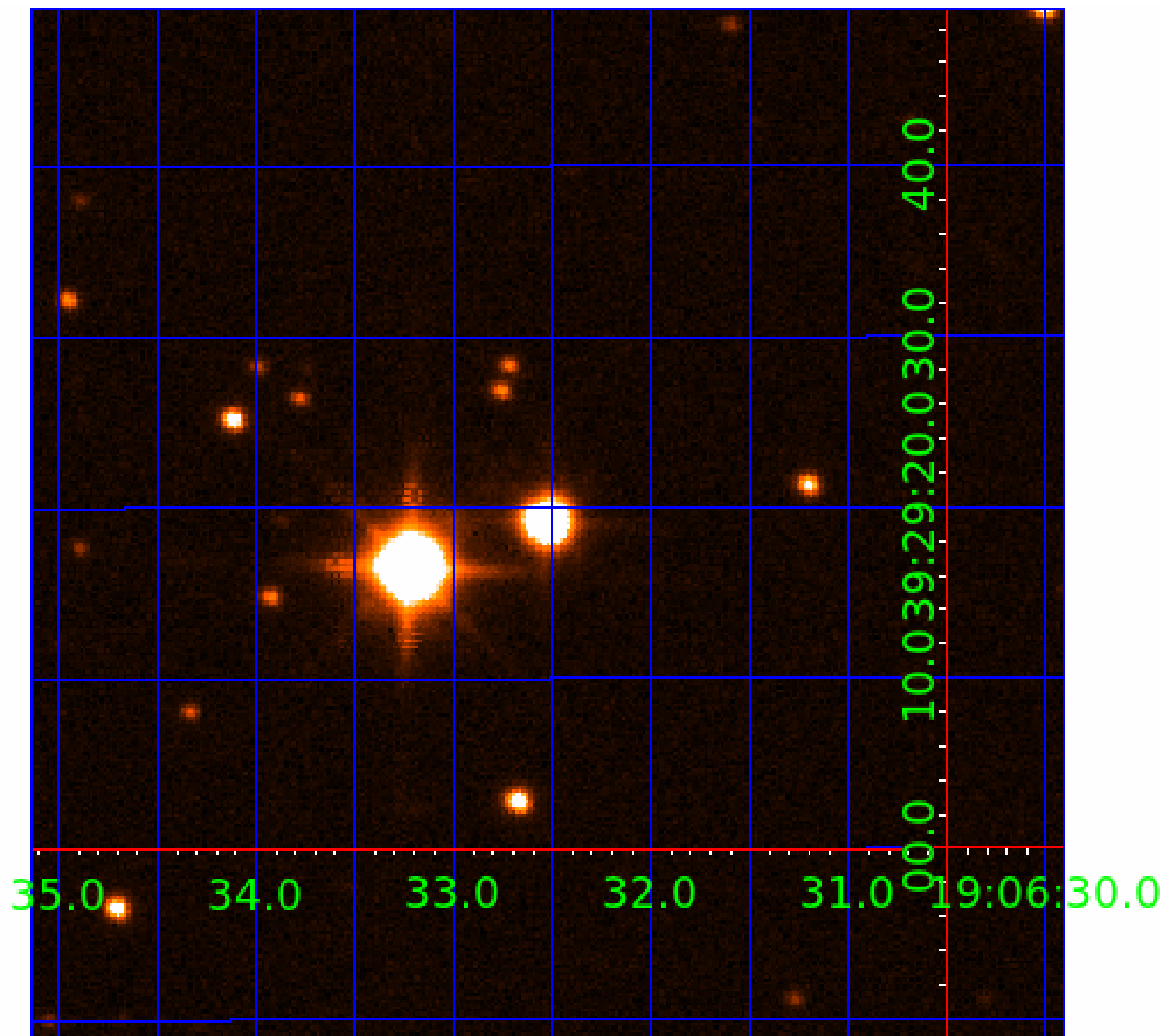


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004349442

Q1-17 DR25 TCE Parameters

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004349442-03	OBS	FP	0.00	0	0	0	1	CENT_KIC_POS—EPHEM_MATCH
004349442-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—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.

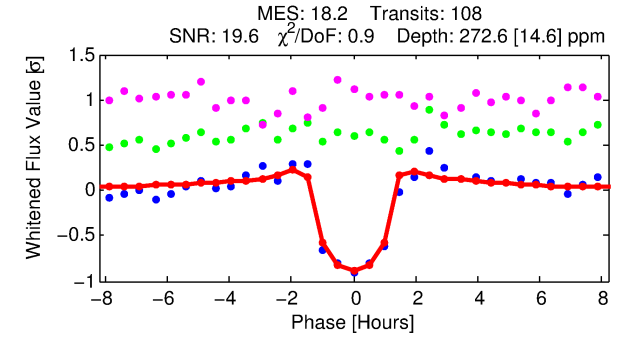
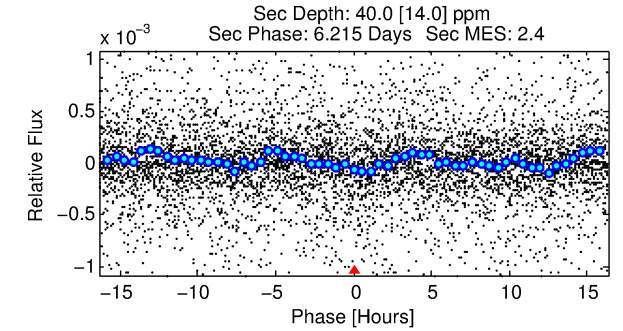
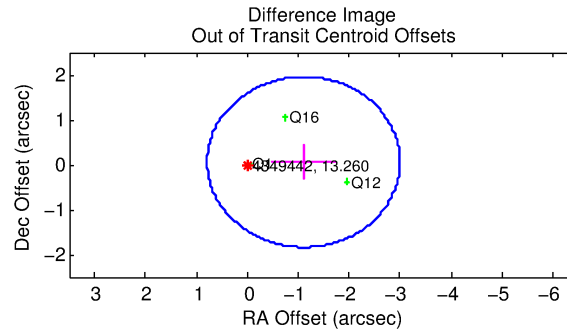
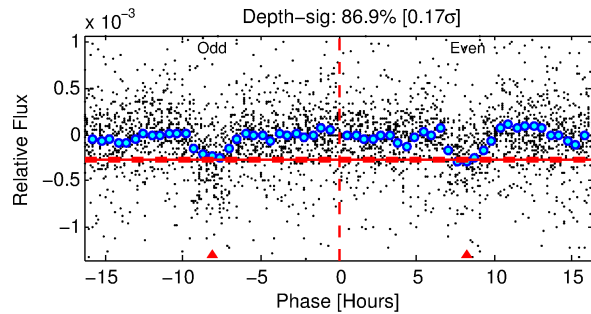
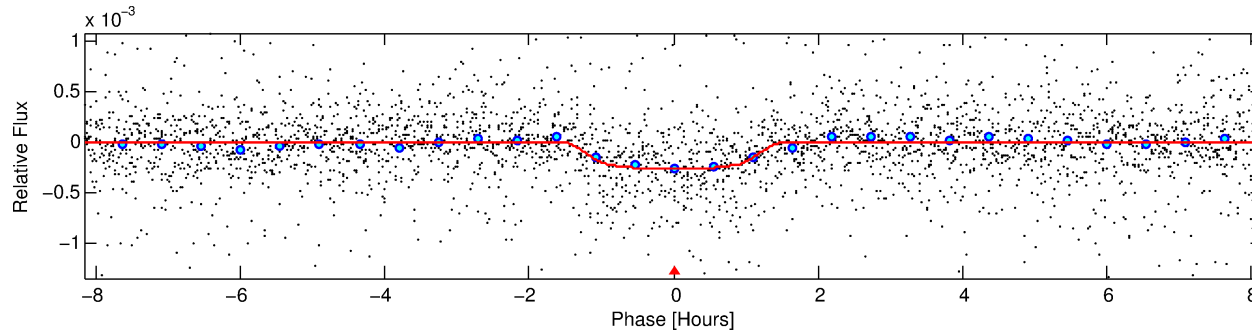
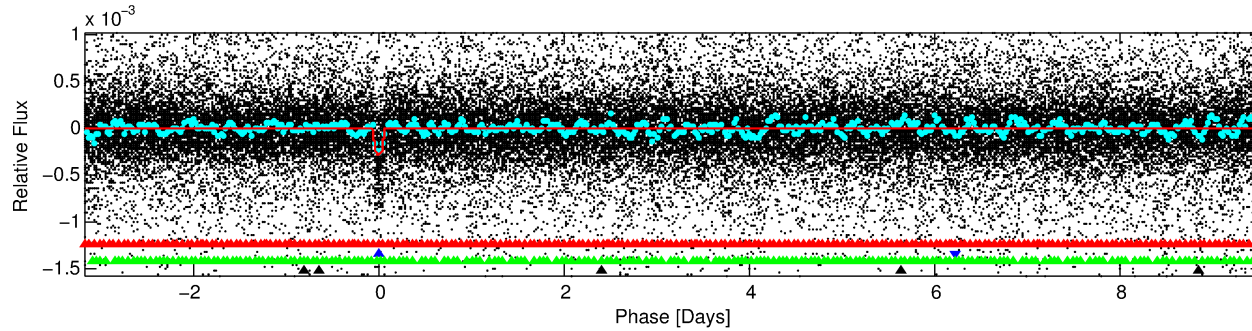
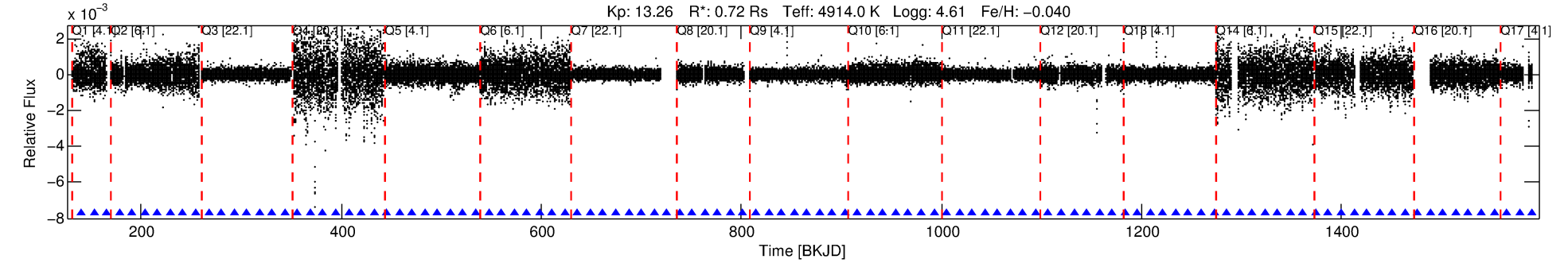
Ephemeris Match Information For 004349442-02

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004349442-02	4349442	244.01	4349452	1:1	8.4	1	-1	10.73	13.26	4.31	Direct-PRF	0	0.43	0.26

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 4349442 Candidate: 2 of 4 Period: 12.721 d
KOI: K01803.02 Corr: 0.964



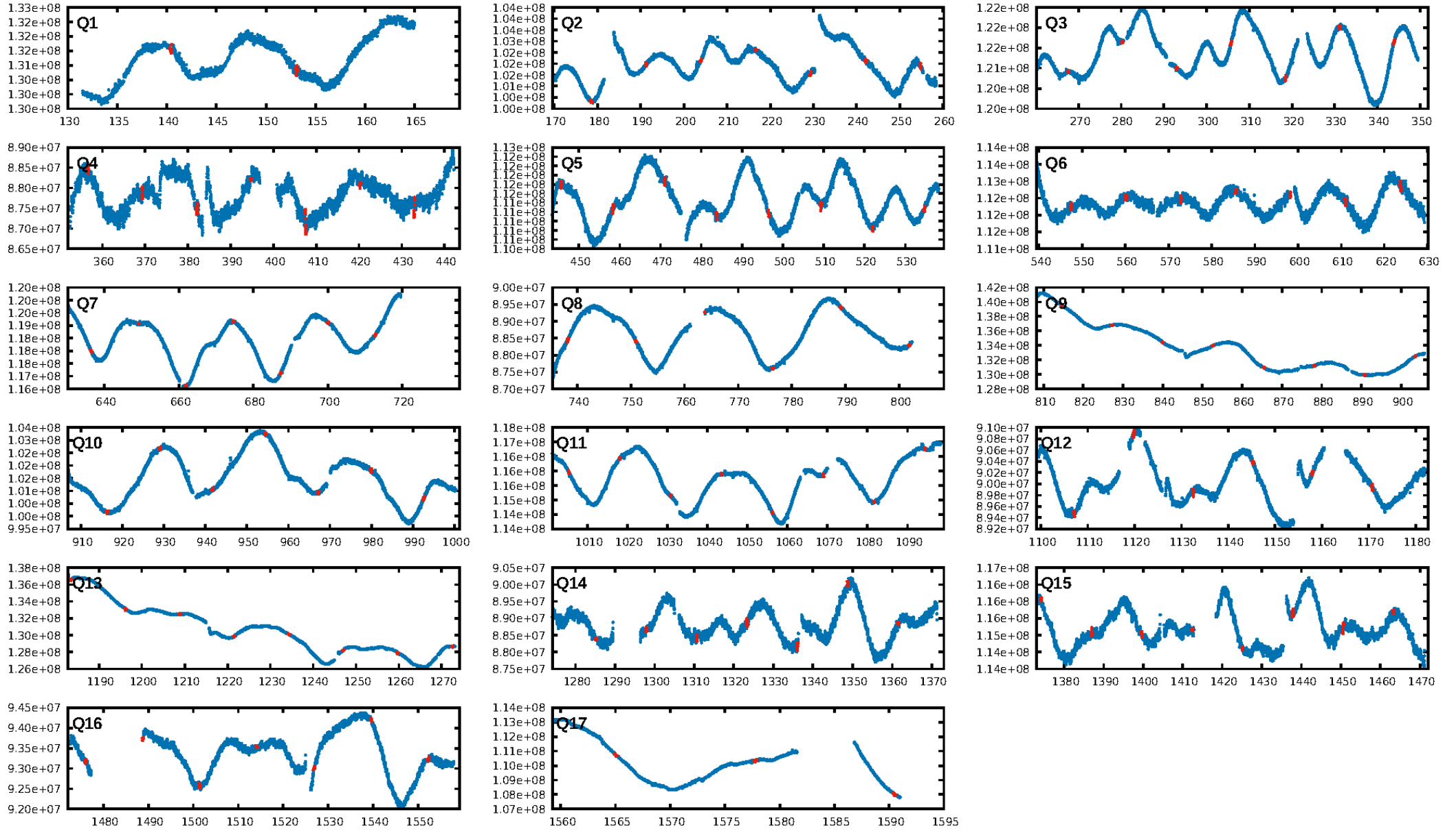
DV Fit Results:

Period = 12.72053 [0.00005] d
Epoch = 140.3579 [0.0032] BKJD
Rp/R* = 0.0185 [0.0052]
a/R* = 16.86 [18.52]
b = 0.90 [0.23]
Seff = 28.43 [3.25]
Teq = 589 [17] K
Rp = 1.46 [0.42] Re
a = 0.0981 [0.0053] AU
Ag = 98.81 [66.26] [1.48σ]
Teffp = 2870 [481] K [4.74σ]

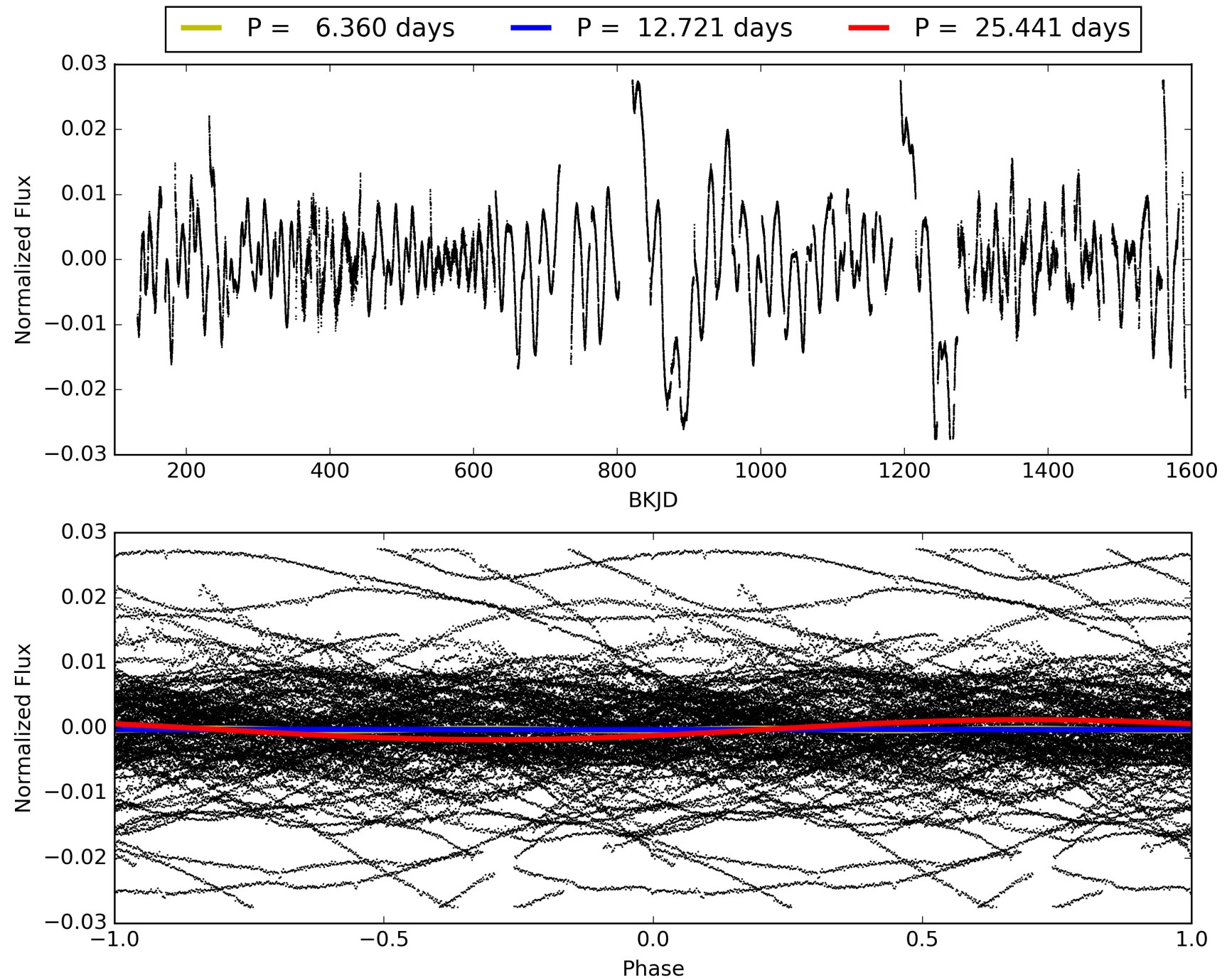
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [37.36σ]
LongPeriod-sig: 100.0% [657.04σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.26e-62
RollingBand-fgt: 1.00 [103/103]
GhostDiagnostic-chr: -0.5709
Centroid-sig: 0.0%
Centroid-so: 6.522 arcsec [32.84σ]
OotOffset-rm: 1.108 arcsec [1.75σ]
OotOffset-st: 0/0/2/1 [3]
KicOffset-rm: 6.748 arcsec [12.78σ]
KicOffset-st: 0/0/2/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.94 [16/17]

TCE 004349442-02, PDC Light Curves

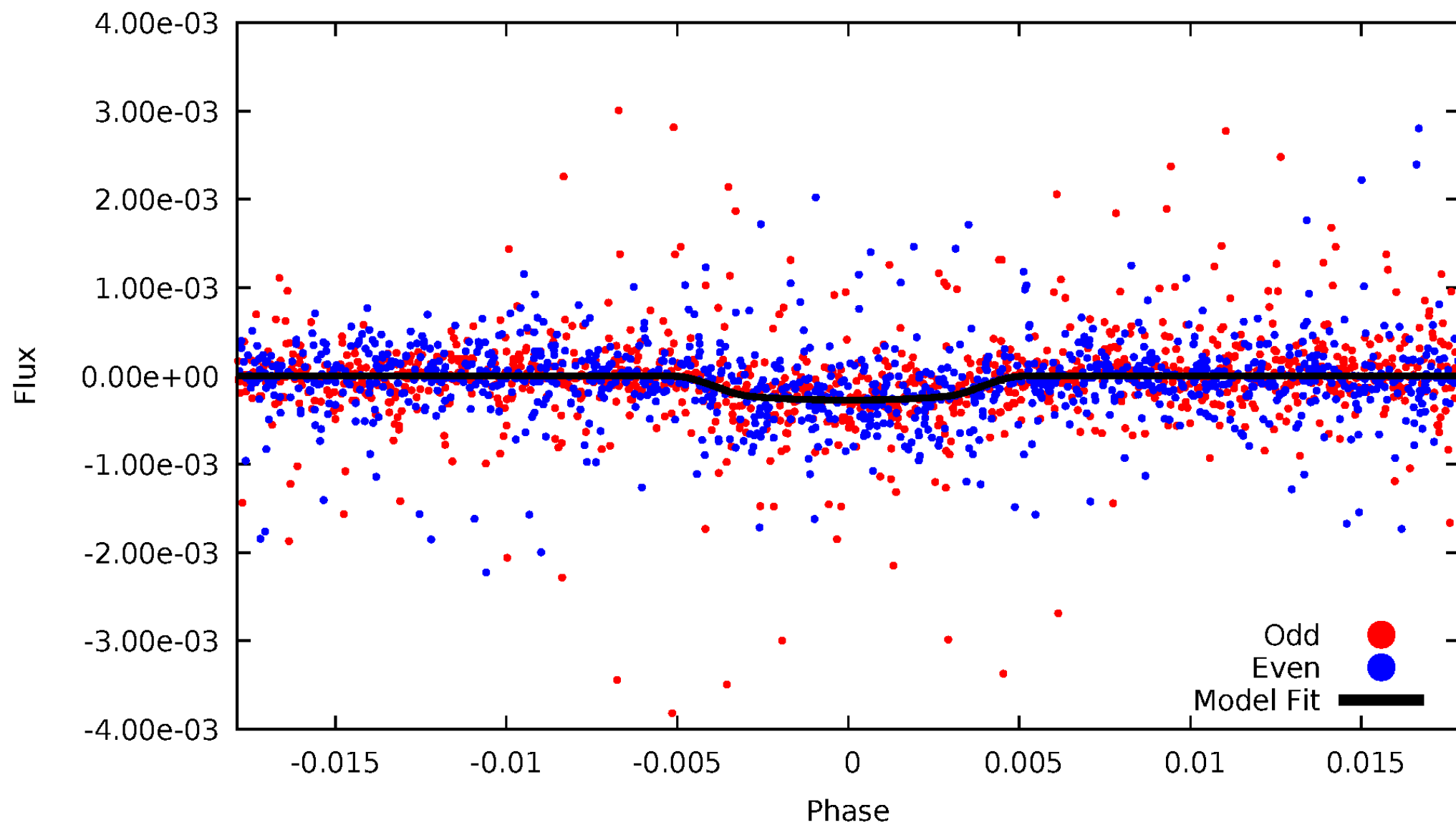


TCE 004349442-02



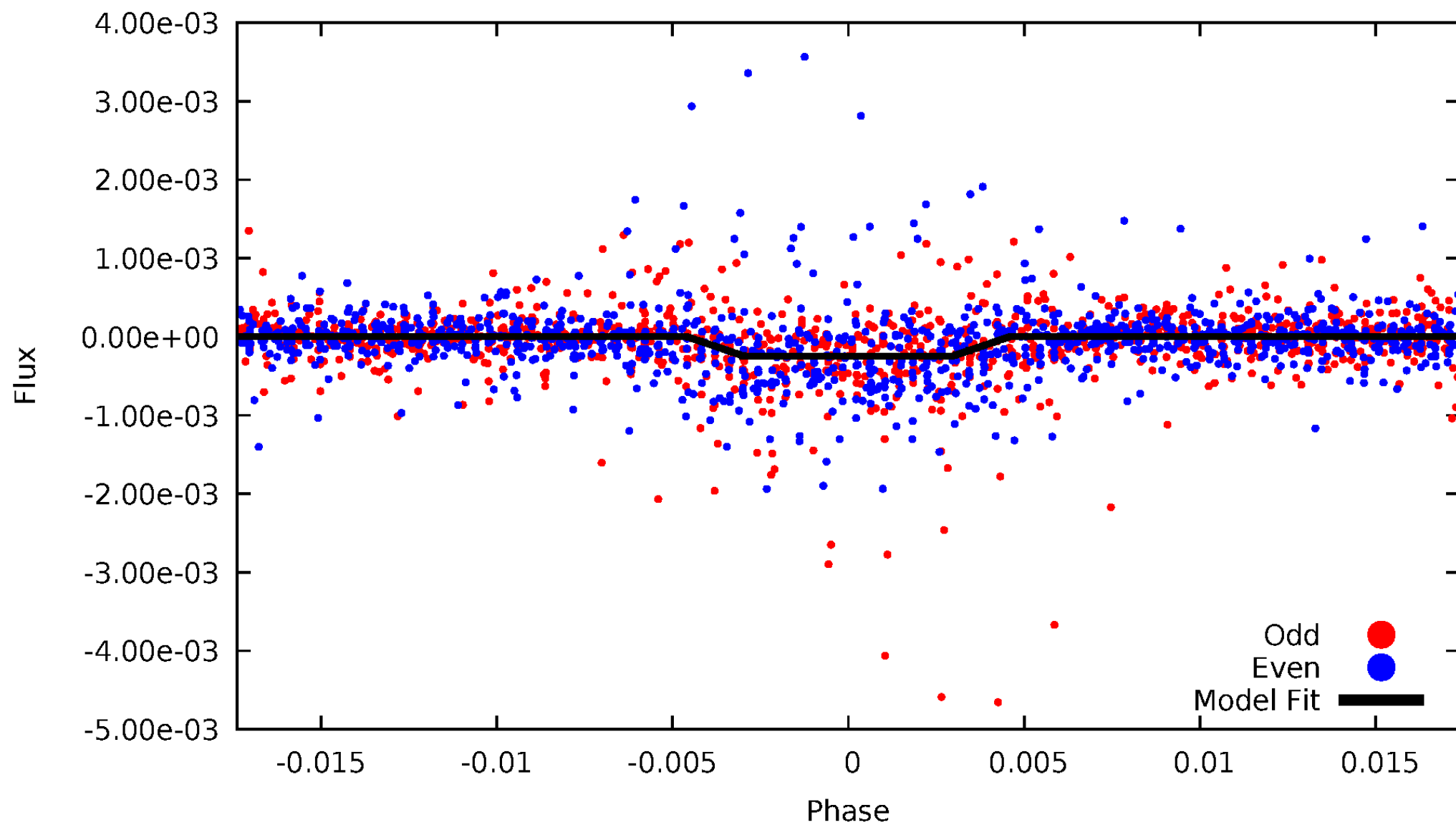
DV Odd/Even

TCE 004349442-02



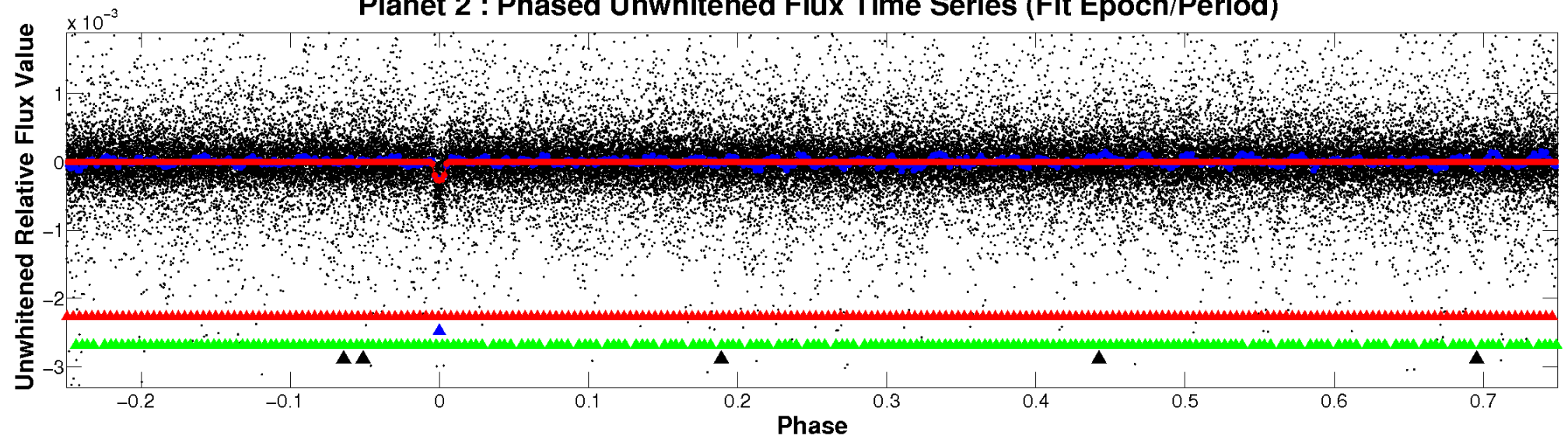
ALT Odd/Even

TCE 004349442-02

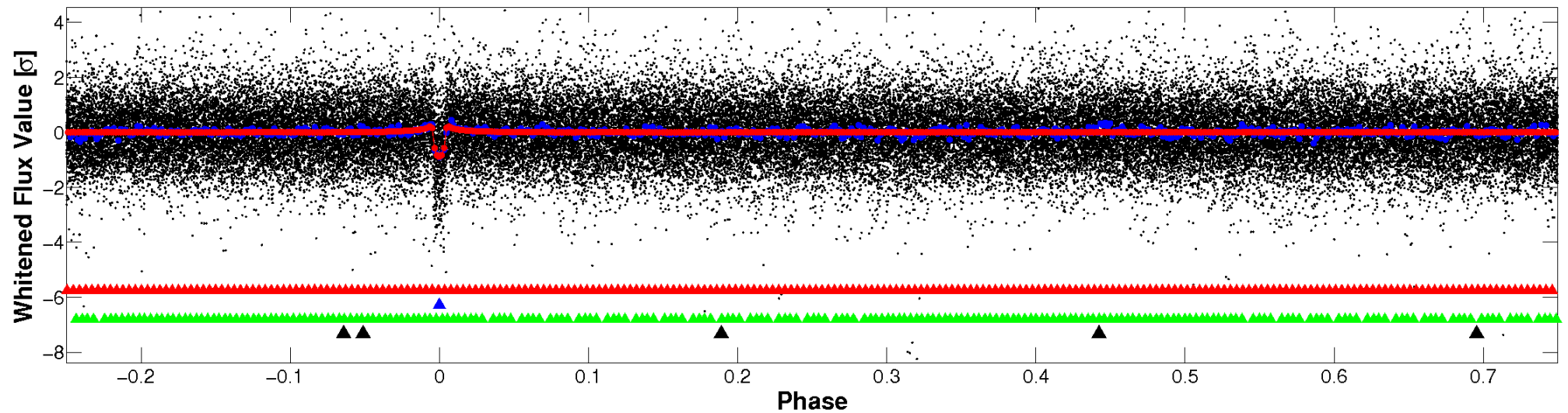


Non-Whitened Vs. Whitened Light Curve

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

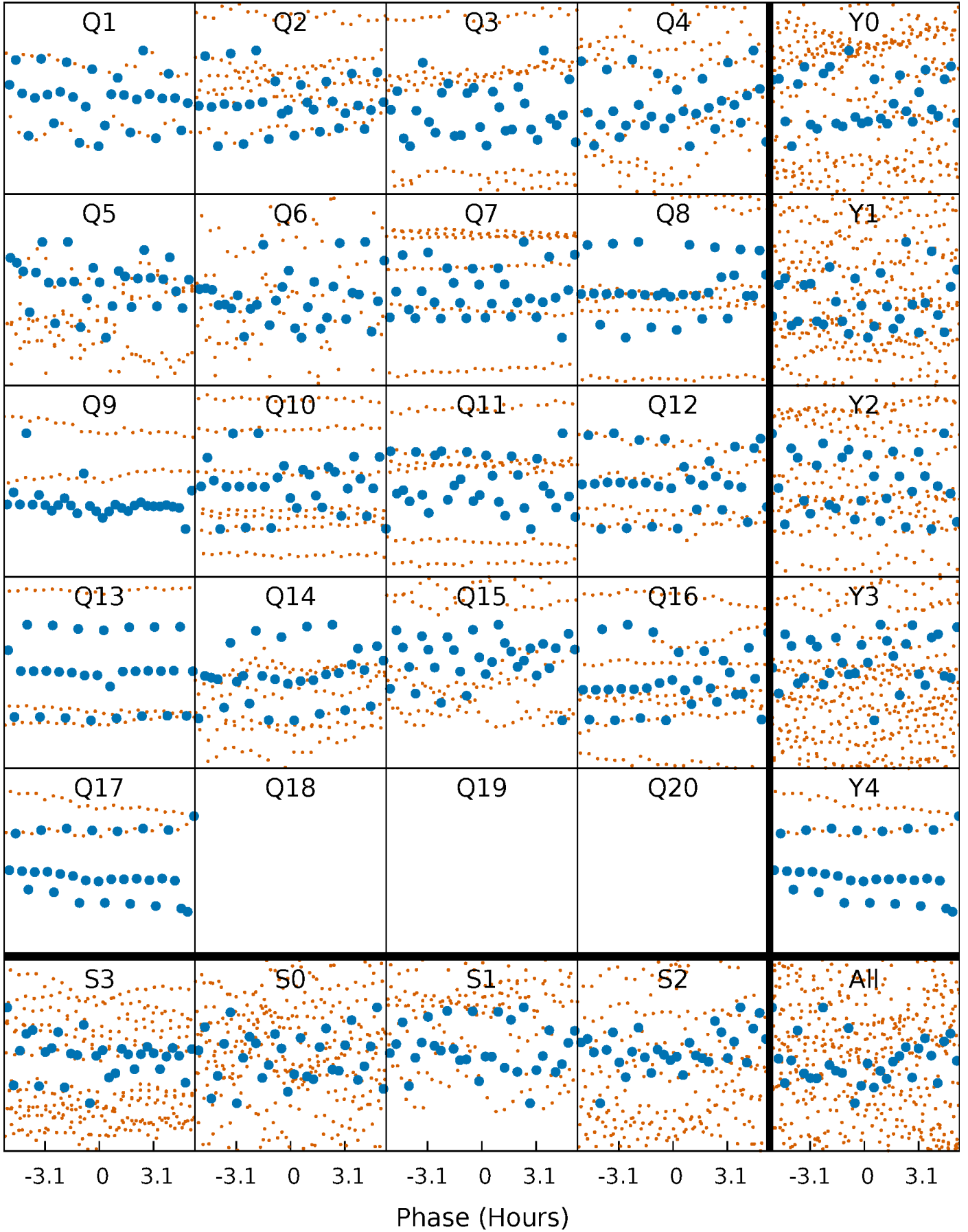


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



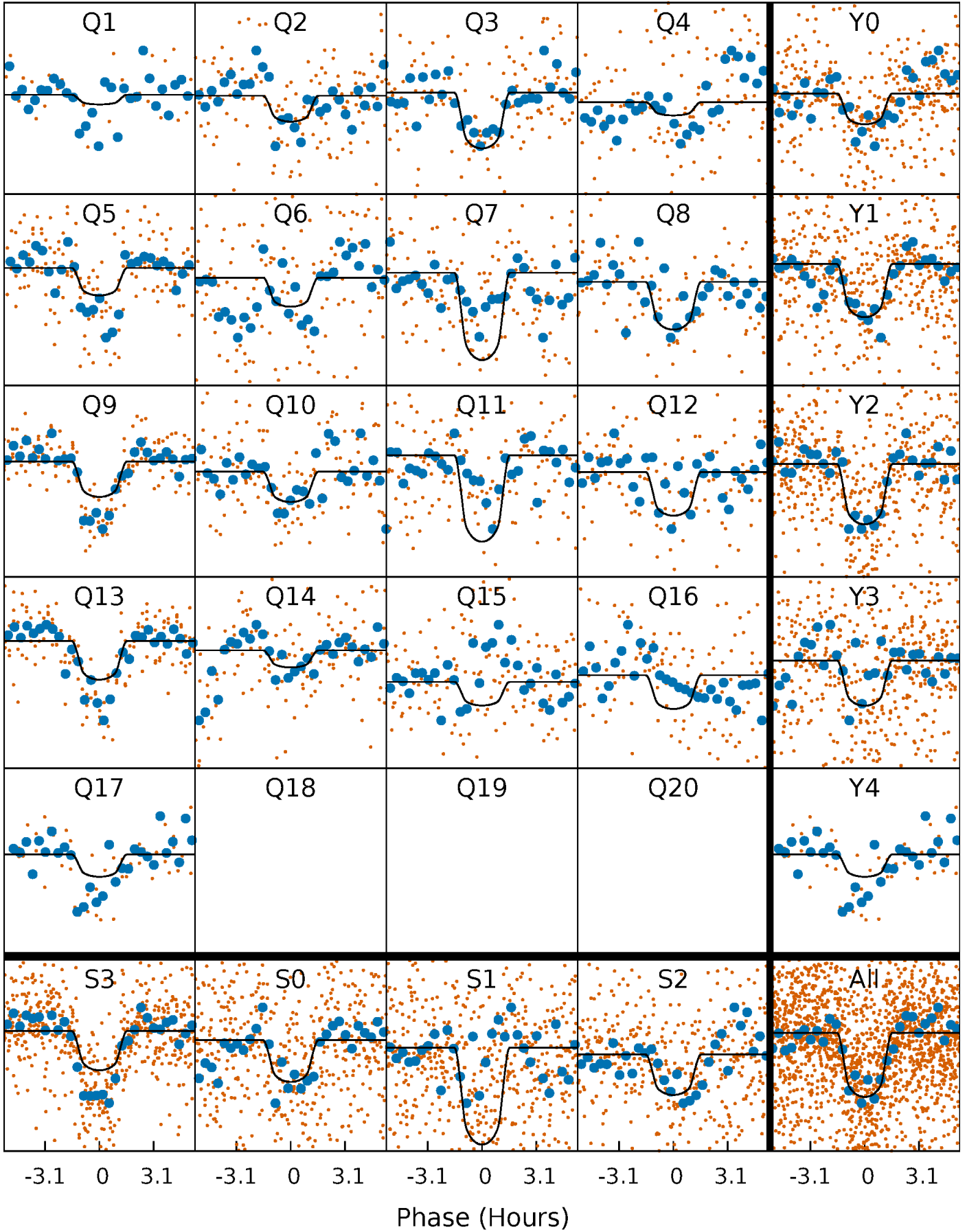
PDC Quarter-Phased Transit Curves

TCE 004349442-02 $P = 12.720530$ Days $T_0 = 140.357907$ (BKJD)



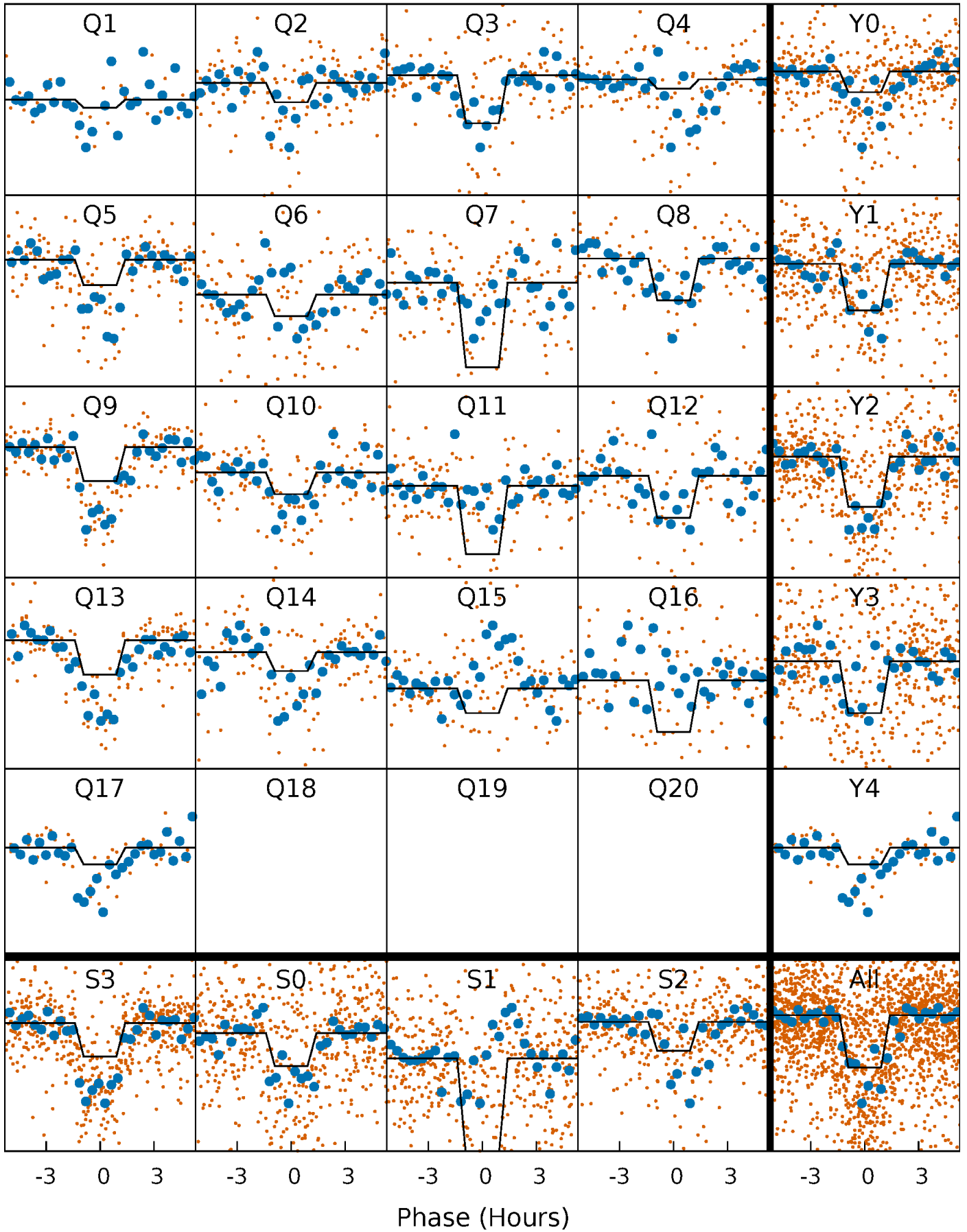
DV Quarter-Phased Transit Curves

TCE 004349442-02 P= 12.720530 Days $T_0=140.357907$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

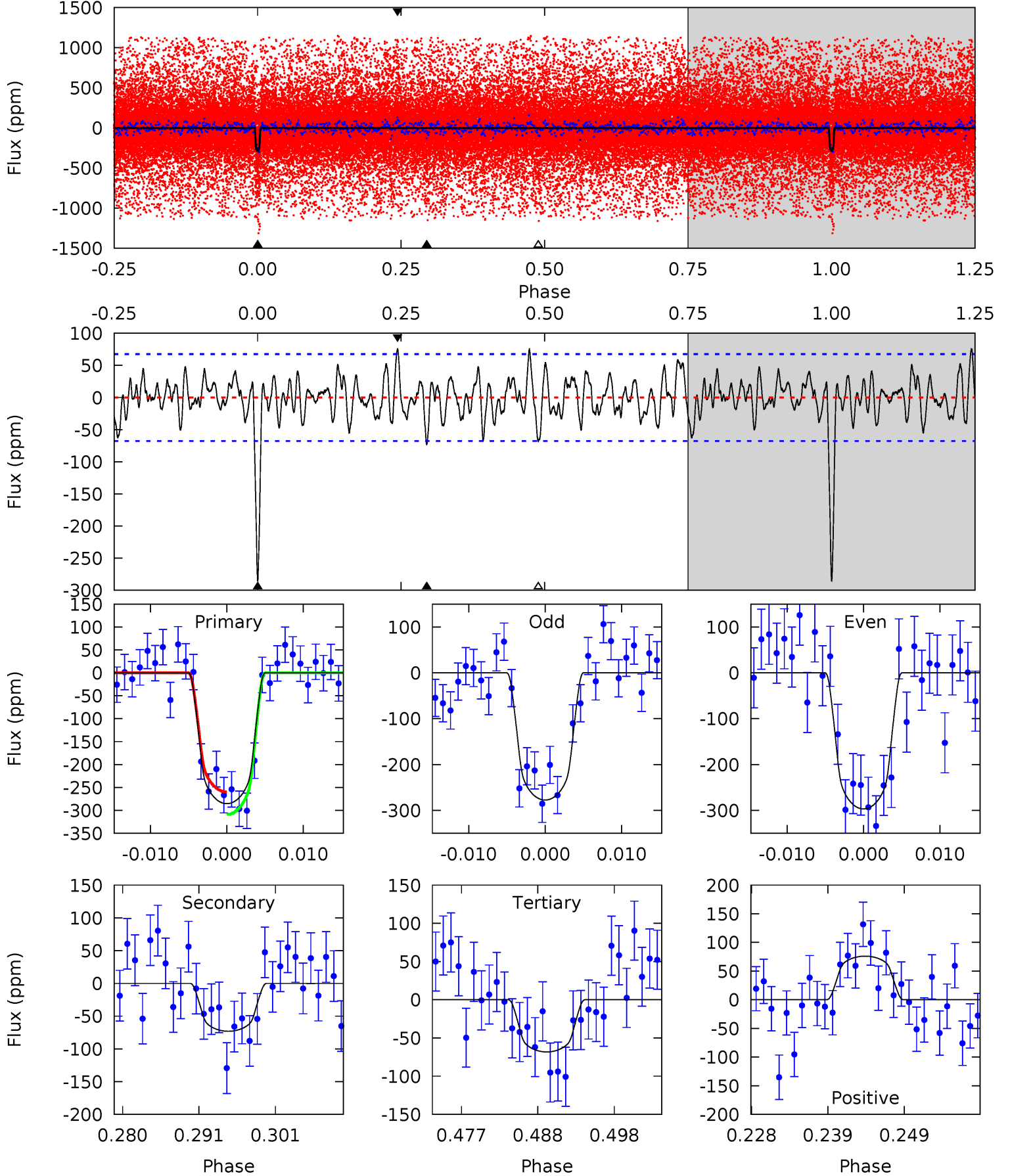
TCE 004349442-02 P= 12.720435 Days $T_0=140.363345$ (BKJD)



DV Model-Shift Uniqueness Test

004349442-02, P = 12.720530 Days, E = 127.637377 Days

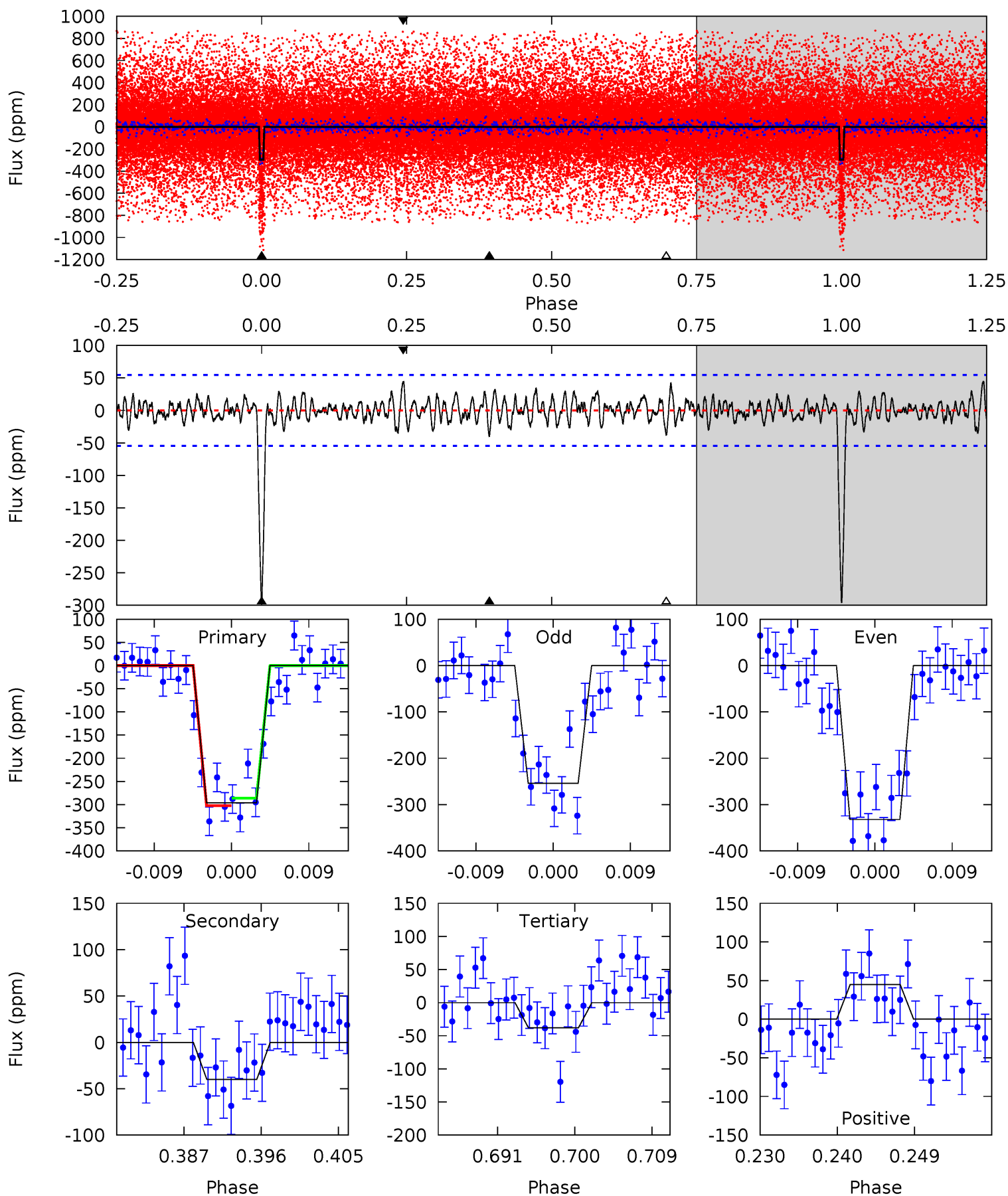
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	5.42	5.06	5.64	5.02	2.56	1.86	16.1	15.5	0.36	-0.22	0.73	1.04	0.21	1.86



Alt Model-Shift Uniqueness Test

004349442-02, P = 12.720435 Days, E = 127.642910 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.4	3.69	3.52	4.15	5.04	2.60	1.26	23.8	23.2	0.17	-0.46	3.65	1.07	0.13	0.75



Stellar Parameters For KIC 004349442

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4914^{+98}_{-98}	$4.610^{+0.018}_{-0.046}$	$-0.040^{+0.150}_{-0.150}$	$0.724^{+0.045}_{-0.030}$	$0.783^{+0.035}_{-0.046}$	$2.902^{+0.269}_{-0.441}$
	+2%/-2%	+0%/-1%	+375%/-375%	+6%/-4%	+4%/-6%	+9%/-15%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 004349442-02 / KOI 1803.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-73 ± 13	$1.48^{+0.44}_{-0.42}$	827^{+18}_{-19}	3696^{+457}_{-322}	180^{+173}_{-78}
Alt.	-40 ± 11	$1.26^{+0.43}_{-0.44}$	827^{+20}_{-19}	3508^{+561}_{-336}	131^{+177}_{-62}

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 $A_{obs} \gg 1.0$

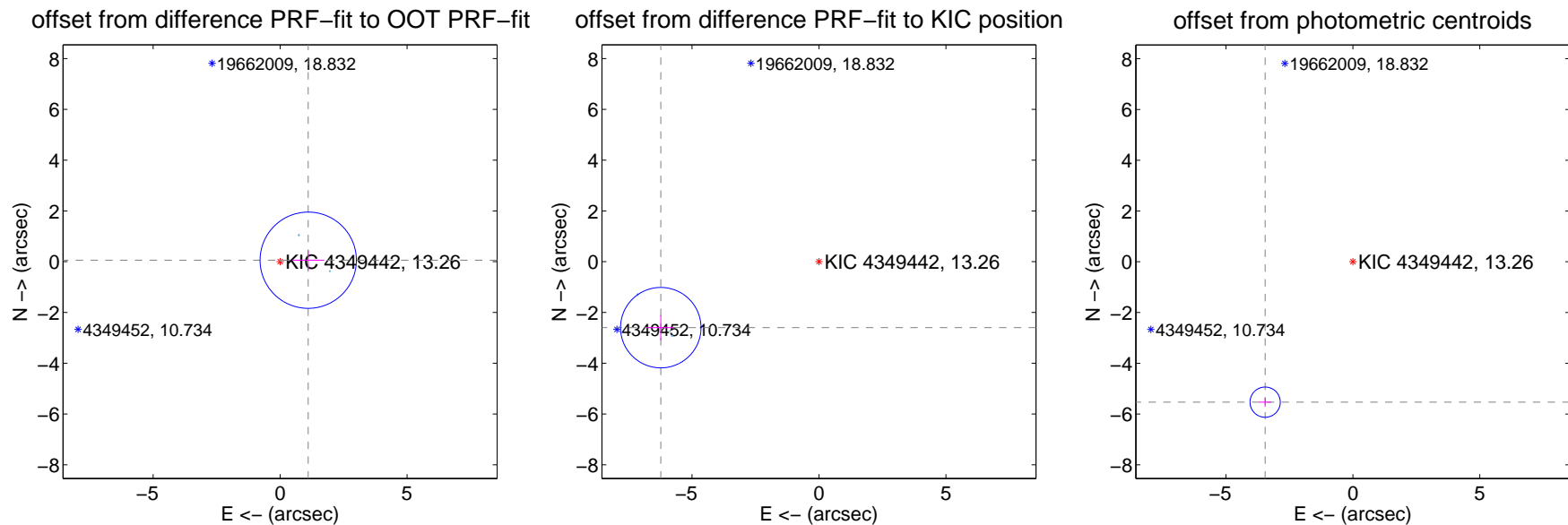
DV Centroid Data

Supplemental centroid analysis for 004349442-02. Kepler magnitude: 13.26. Transit SNR 19.56

There are 3 quarters with good PRF difference image offsets

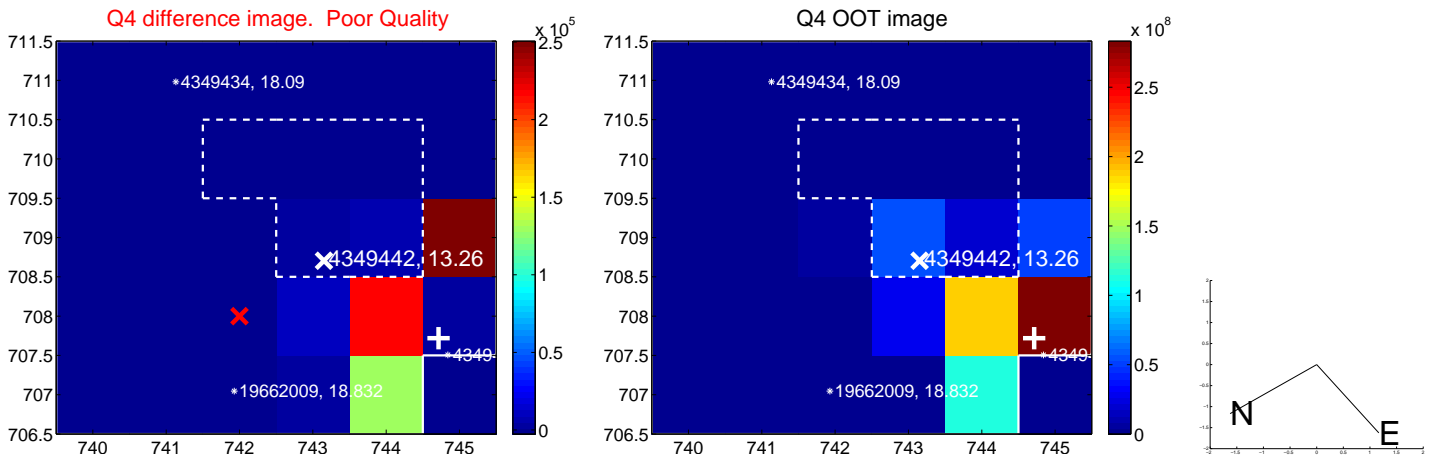
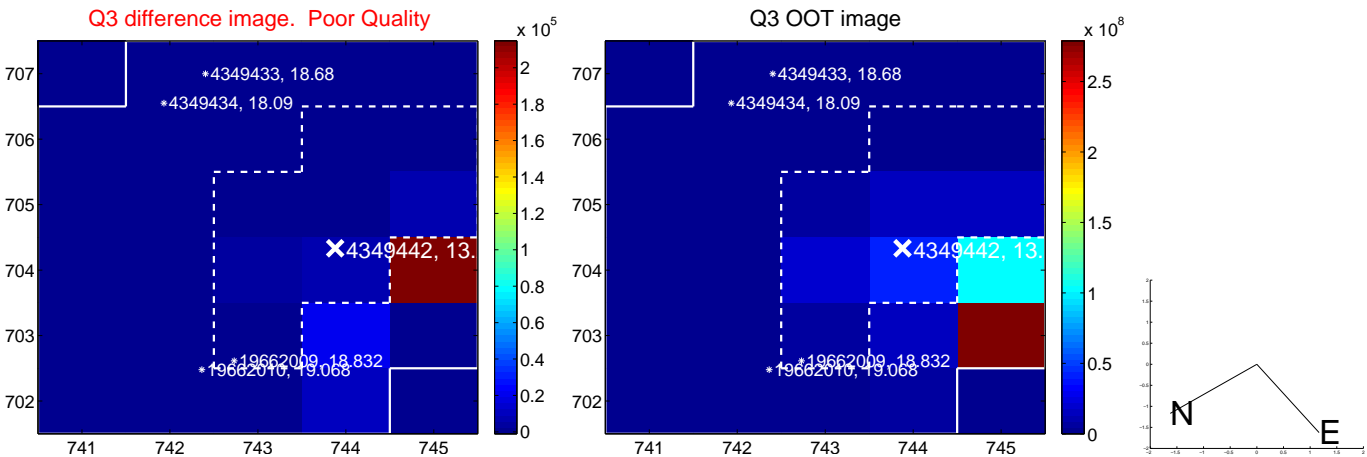
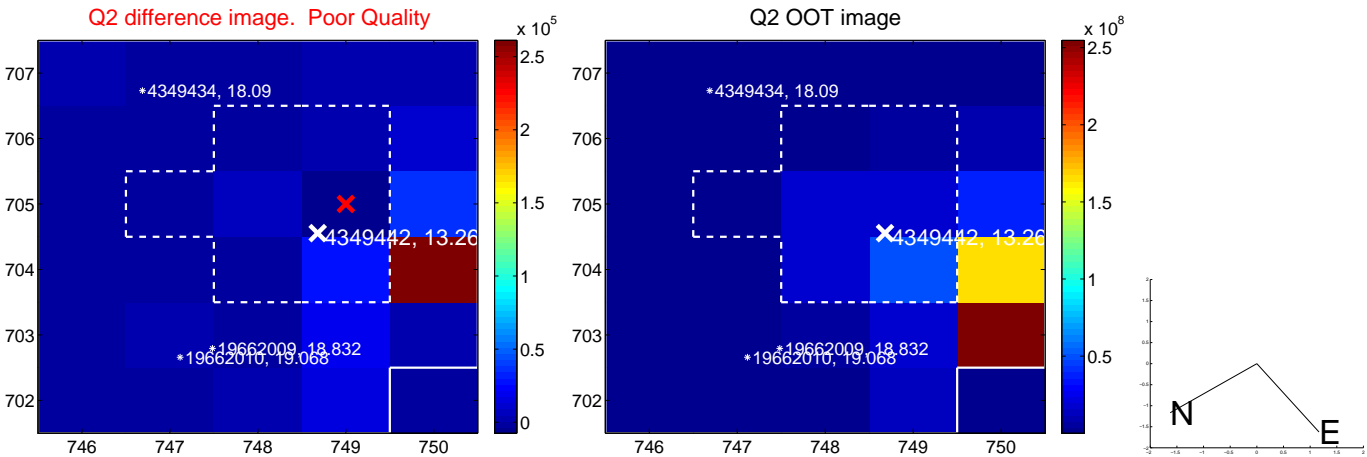
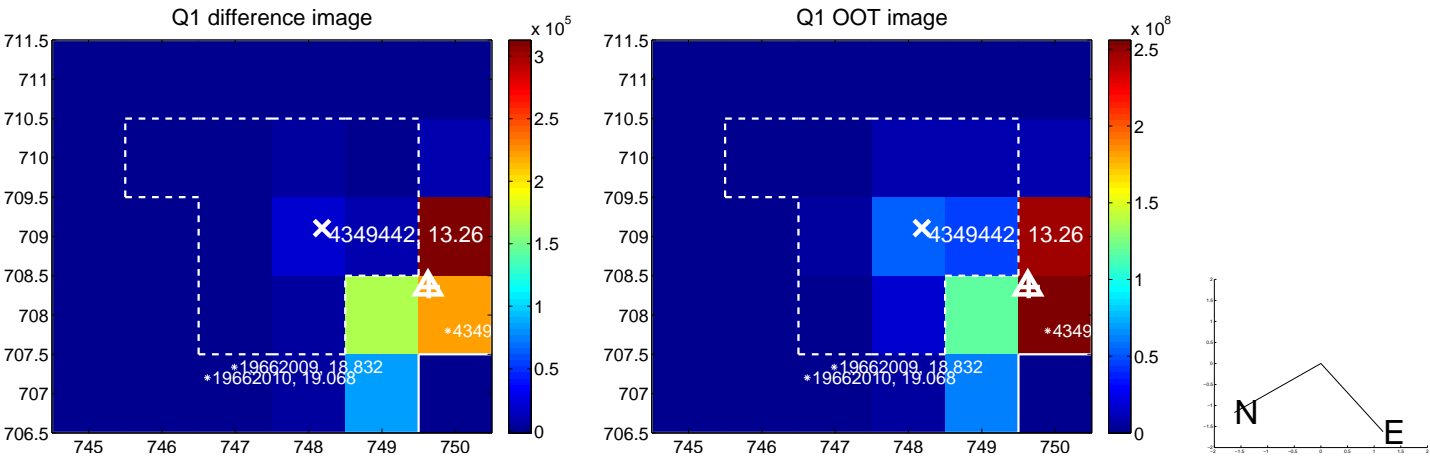
The OOT PRF centroid is offset from the target star catalog position by about 8.22 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.108 ± 0.632	1.75	-1.107 ± 0.632	0.058 ± 0.388
PRF-fit source offset from KIC position	6.748 ± 0.528	12.78	6.228 ± 0.533	-2.598 ± 0.496
photometric centroid source offset	6.52 ± 0.20	32.84	3.45 ± 0.24	-5.53 ± 0.18

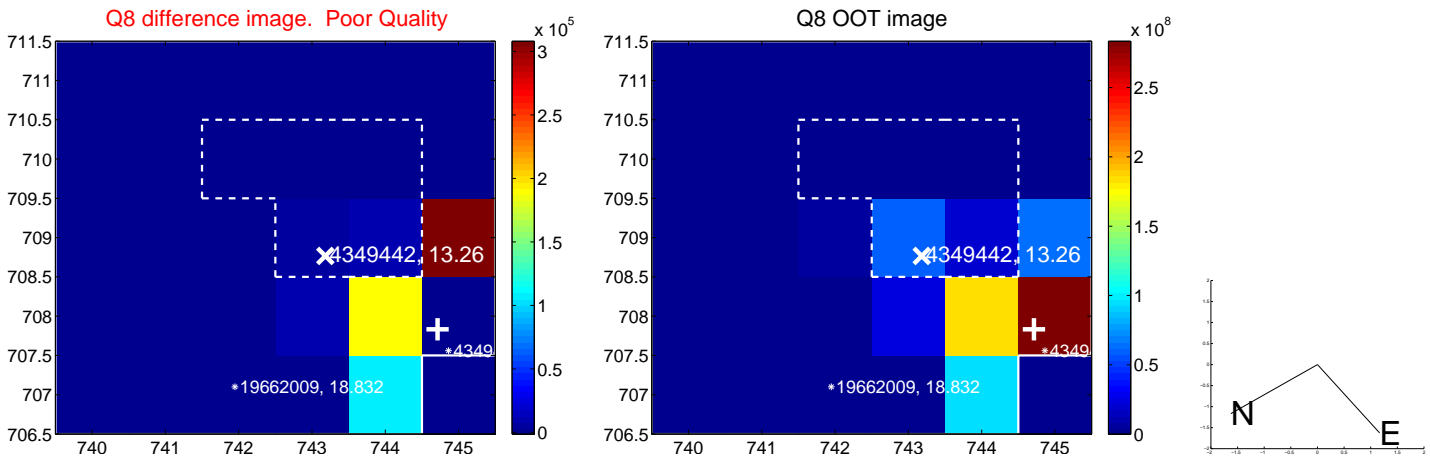
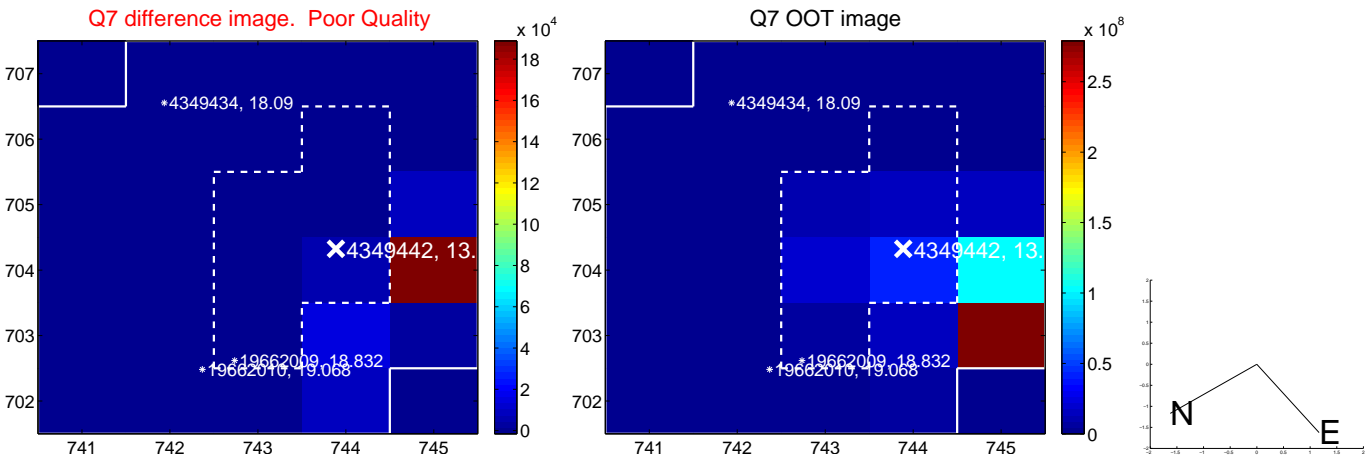
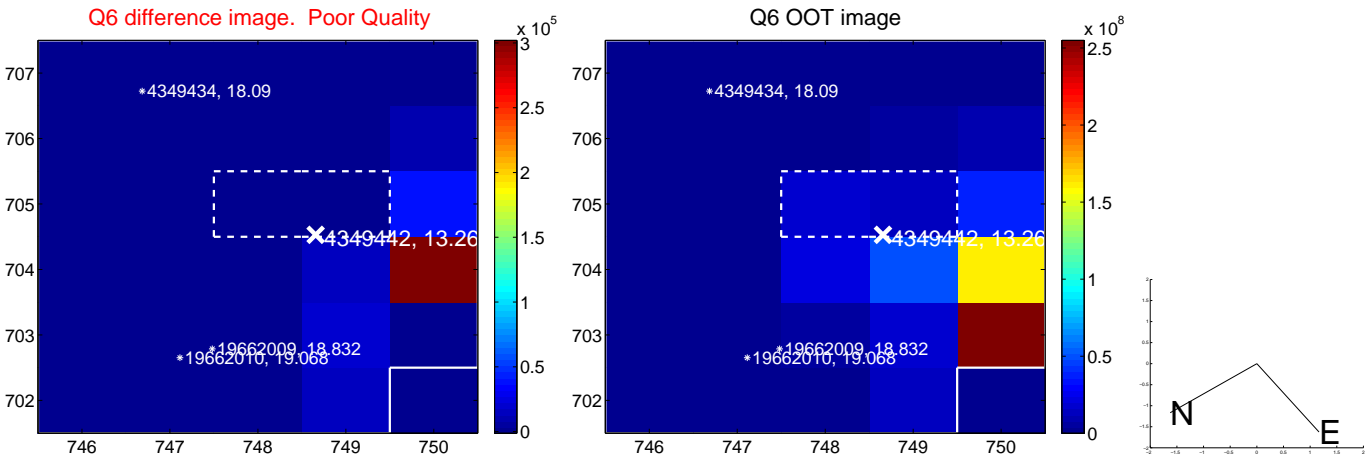
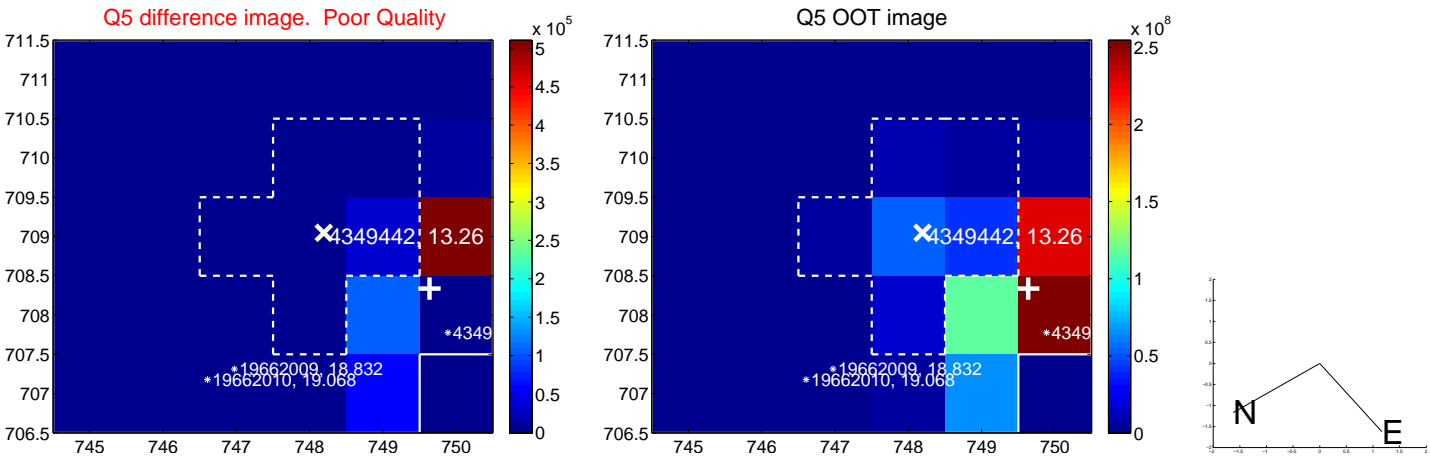


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

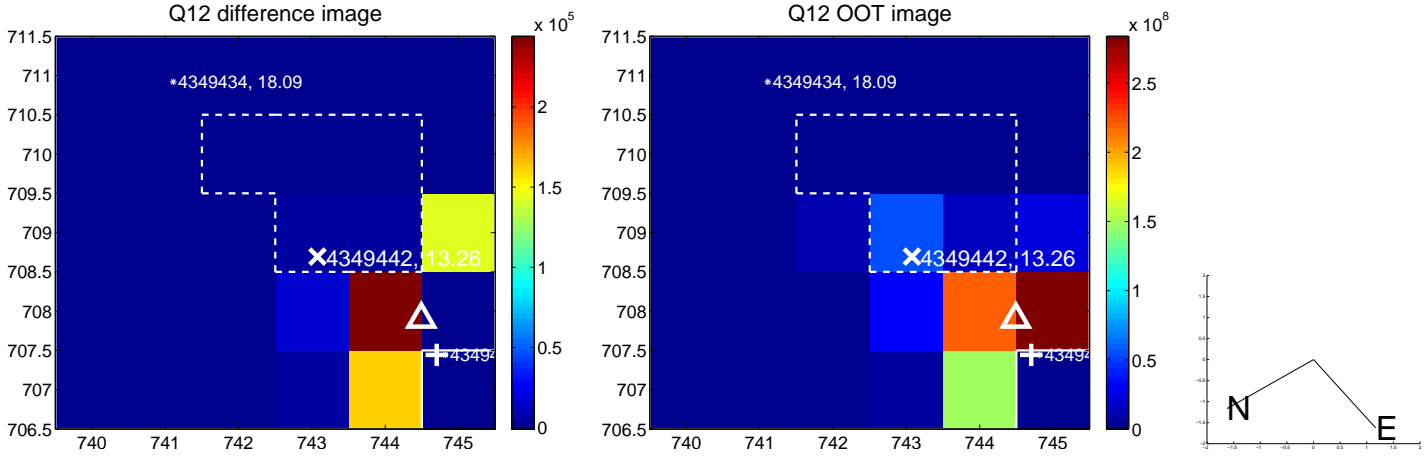
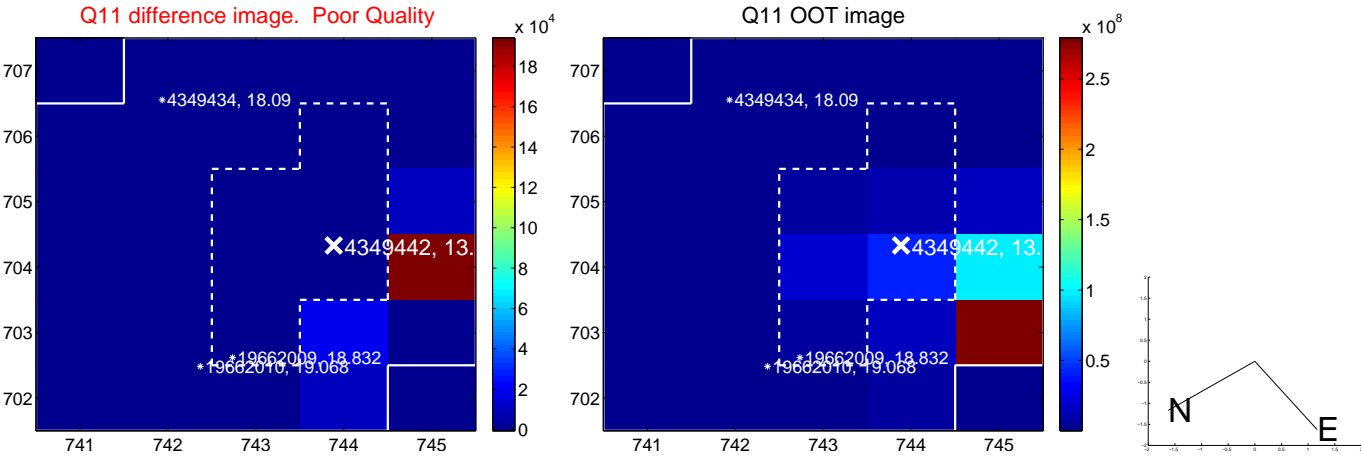
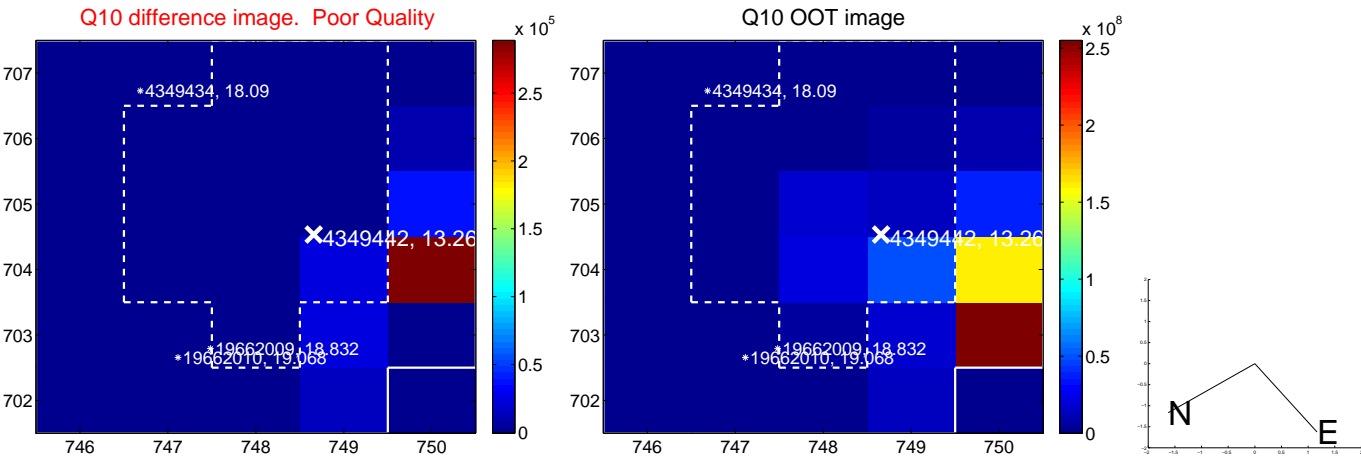
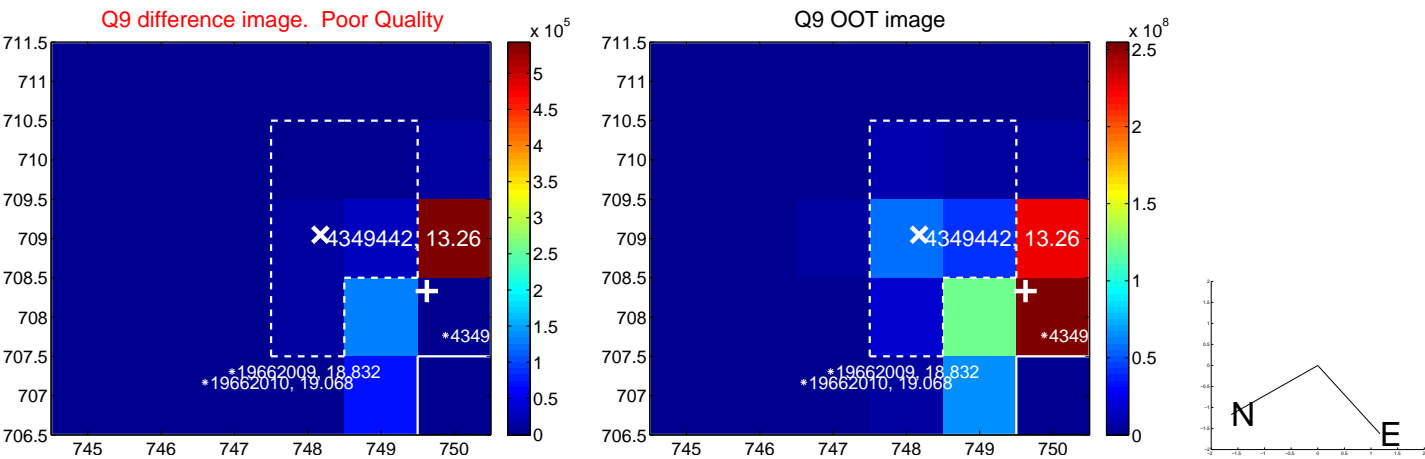
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

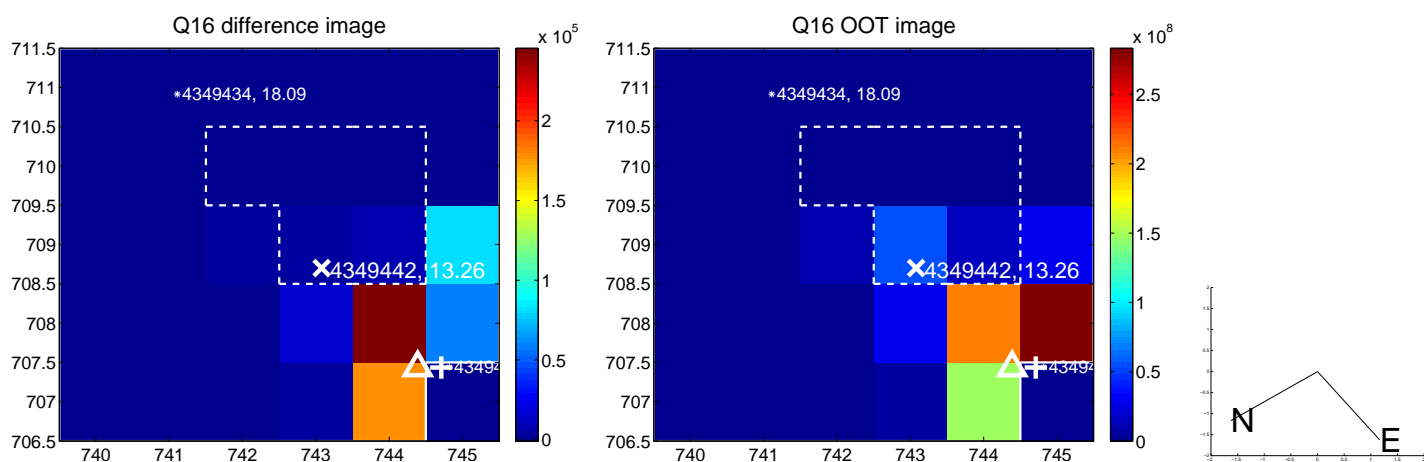
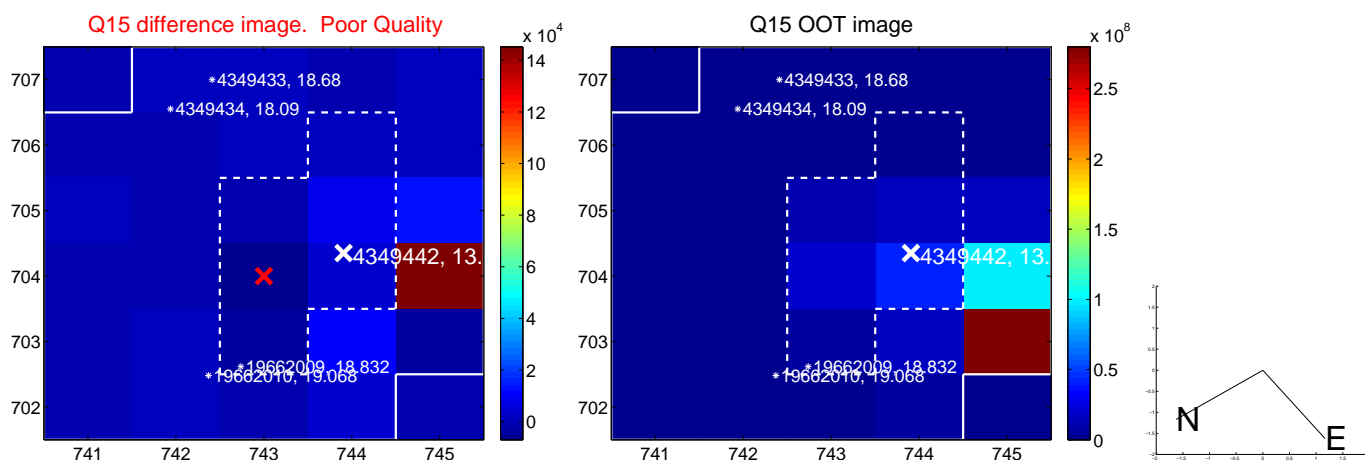
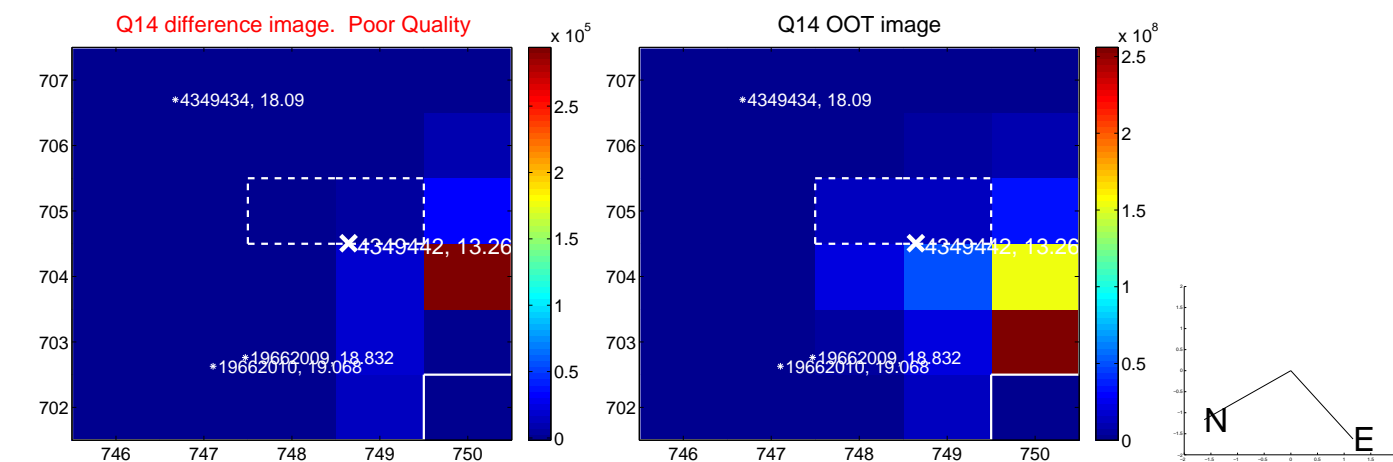


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

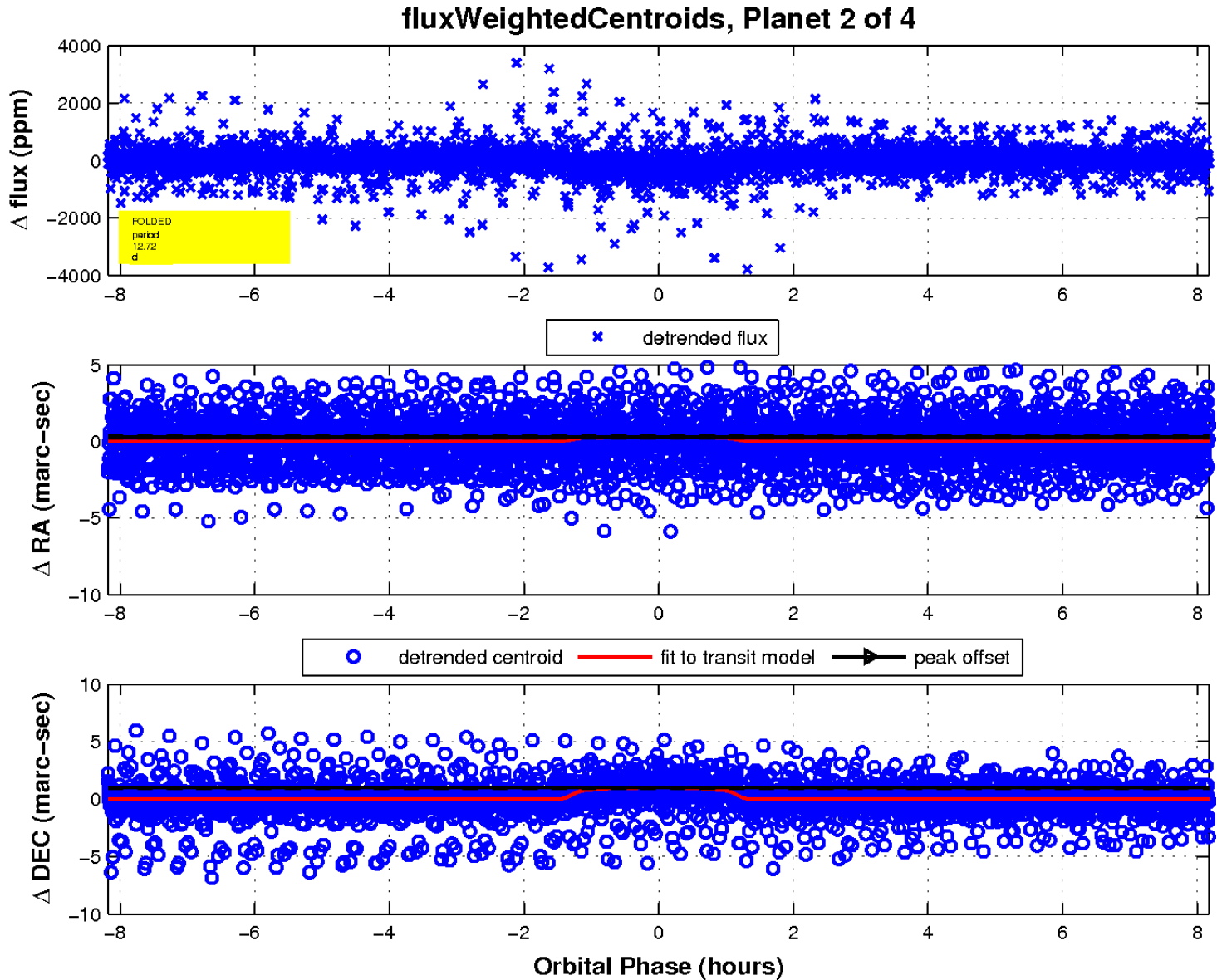
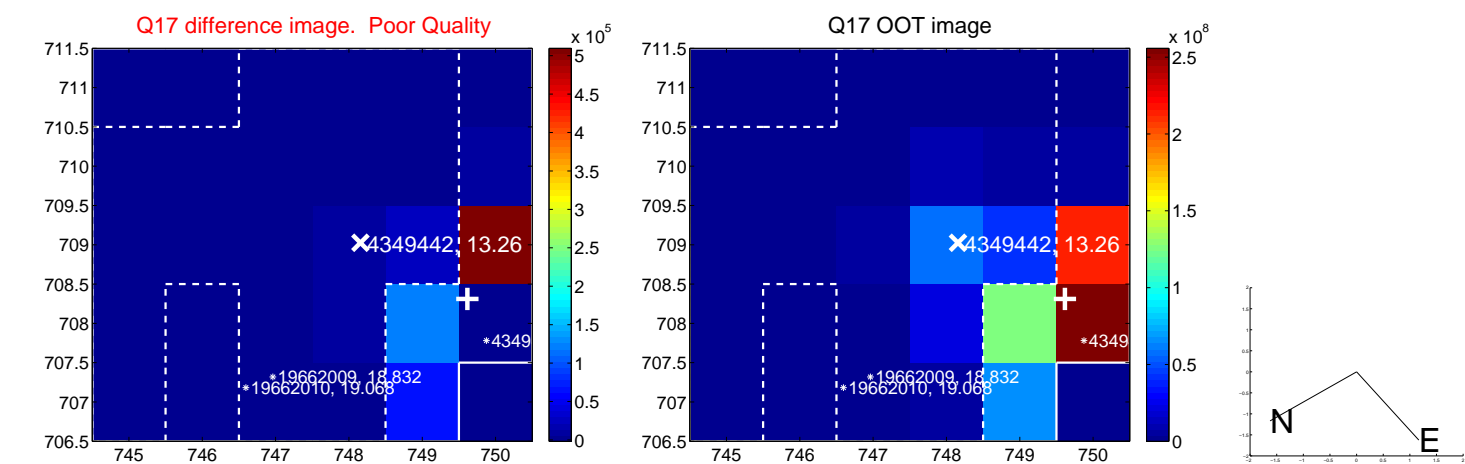


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



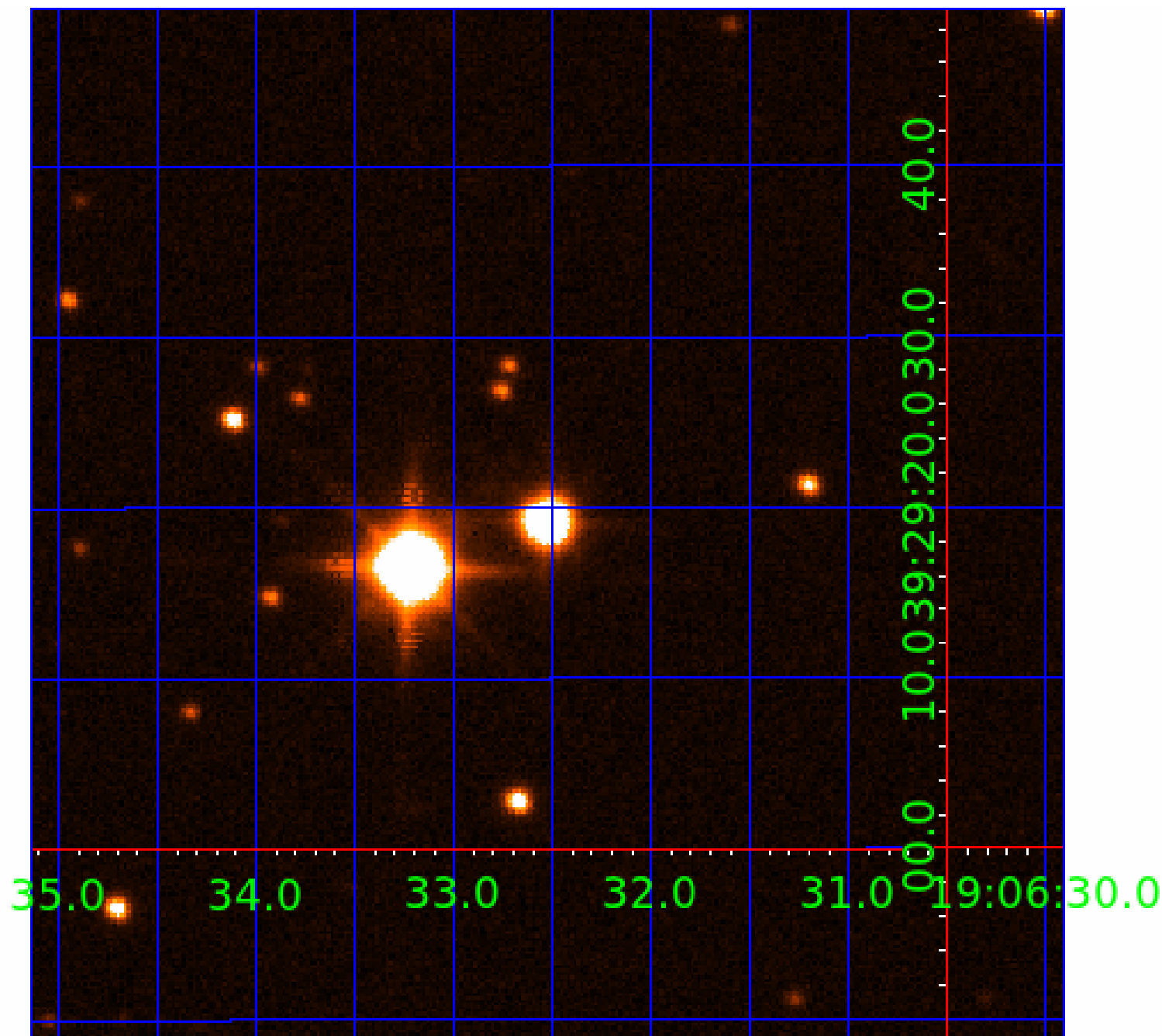


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004349442

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})
004349442-01	OBS	1803.01	4.539285	133.961838	815.3	2.068	86.0	89.5	0.72	4914	2.53	112.33
004349442-02	OBS	1803.02	12.720530	140.357907	272.6	2.727	18.2	19.6	0.72	4914	1.47	28.43
004349442-03	OBS	1803.03	6.238461	134.283234	108.5	3.147	10.0	11.5	0.72	4914	0.94	73.51
004349442-04	OBS	No	276.630005	406.838612	275.7	9.246	9.3	4.3	0.72	4914	1.31	0.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004349442-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
004349442-02	OBS	FP	0.00	0	0	0	1	CENT_KIC_POS—EPHEM_MATCH
004349442-03	OBS	FP	0.00	0	0	0	1	CENT_KIC_POS—EPHEM_MATCH
004349442-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—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.

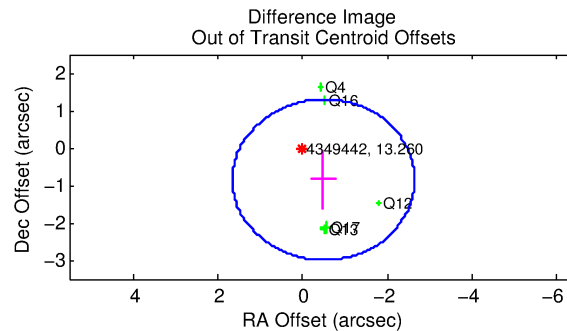
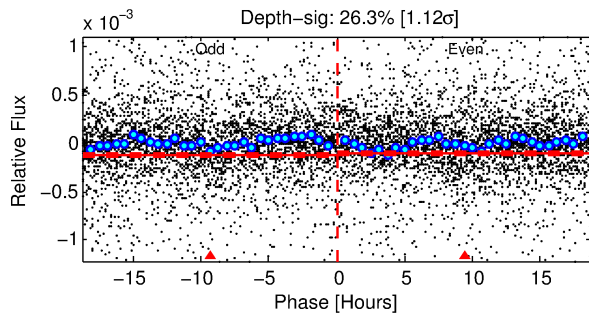
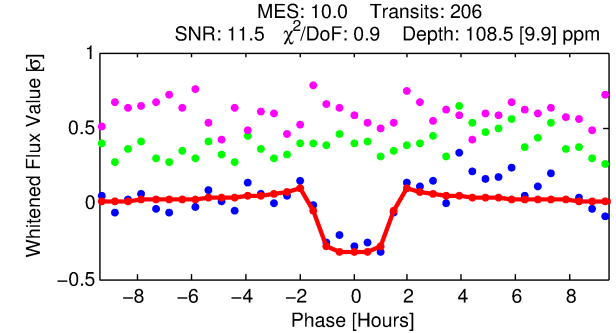
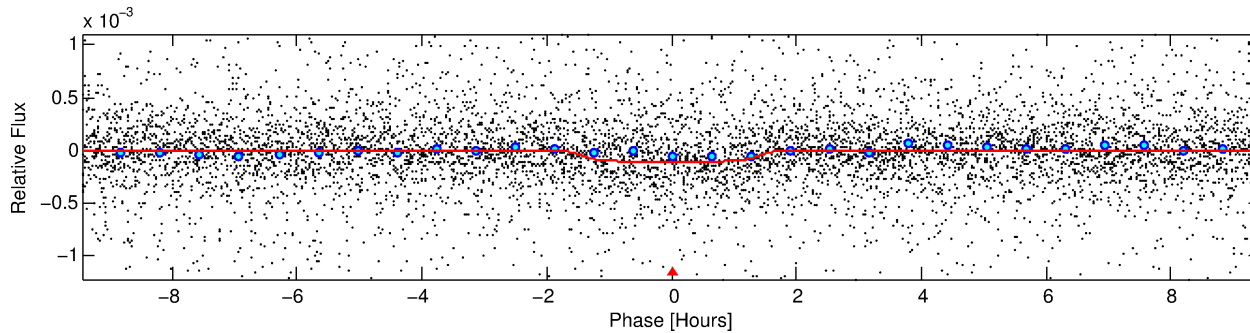
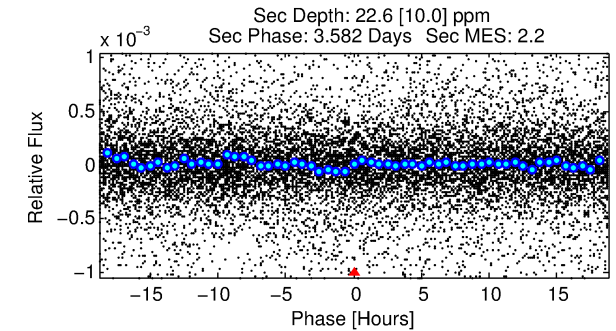
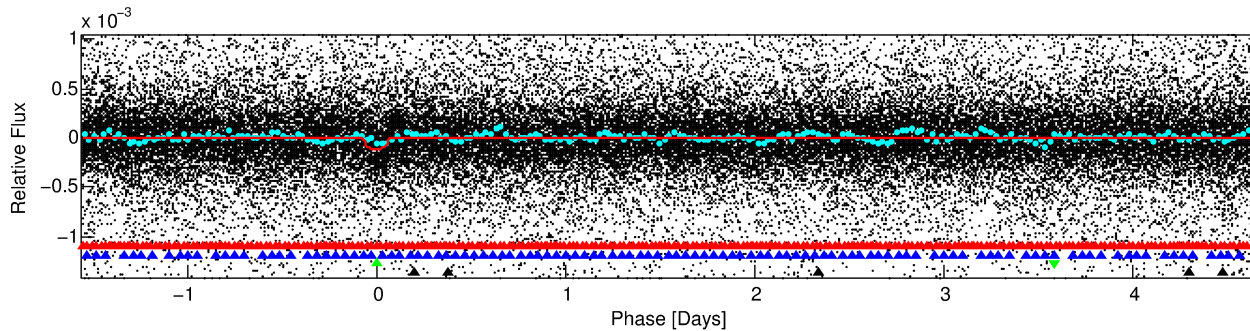
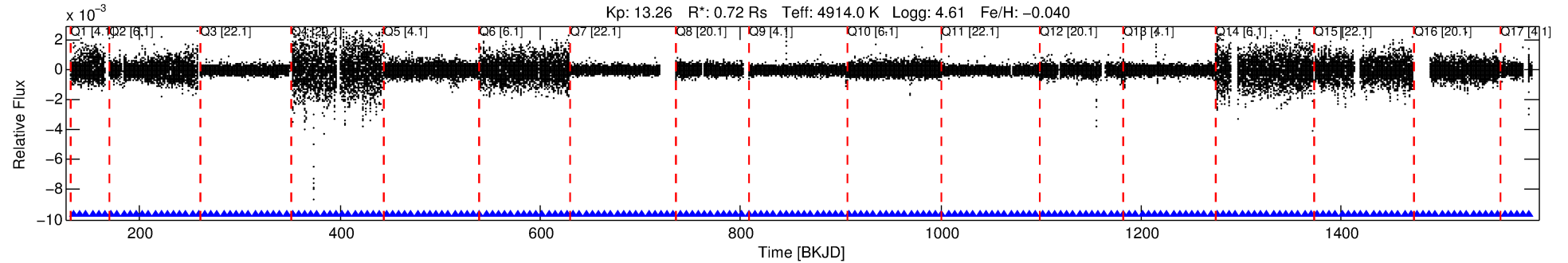
Ephemeris Match Information For 004349442-03

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004349442-03	4349442	244.02	4349452	1:1	8.4	1	-1	10.73	13.26	3.73	Direct-PRF	0	0.55	0.29

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 4349442 Candidate: 3 of 4 Period: 6.238 d
KOI: K01803.03 Corr: 0.963



DV Fit Results:

Period = 6.23846 [0.00004] d
Epoch = 134.2832 [0.0048] BKJD
Rp/R* = 0.0119 [0.0057]
a/R* = 6.61 [12.69]
b = 0.91 [0.36]
Seff = 73.51 [8.40]
Teq = 747 [21] K
Rp = 0.94 [0.45] Re
a = 0.0610 [0.0033] AU
Ag = 52.58 [55.77] [0.92σ]
Teffp = 3109 [824] K [2.86σ]

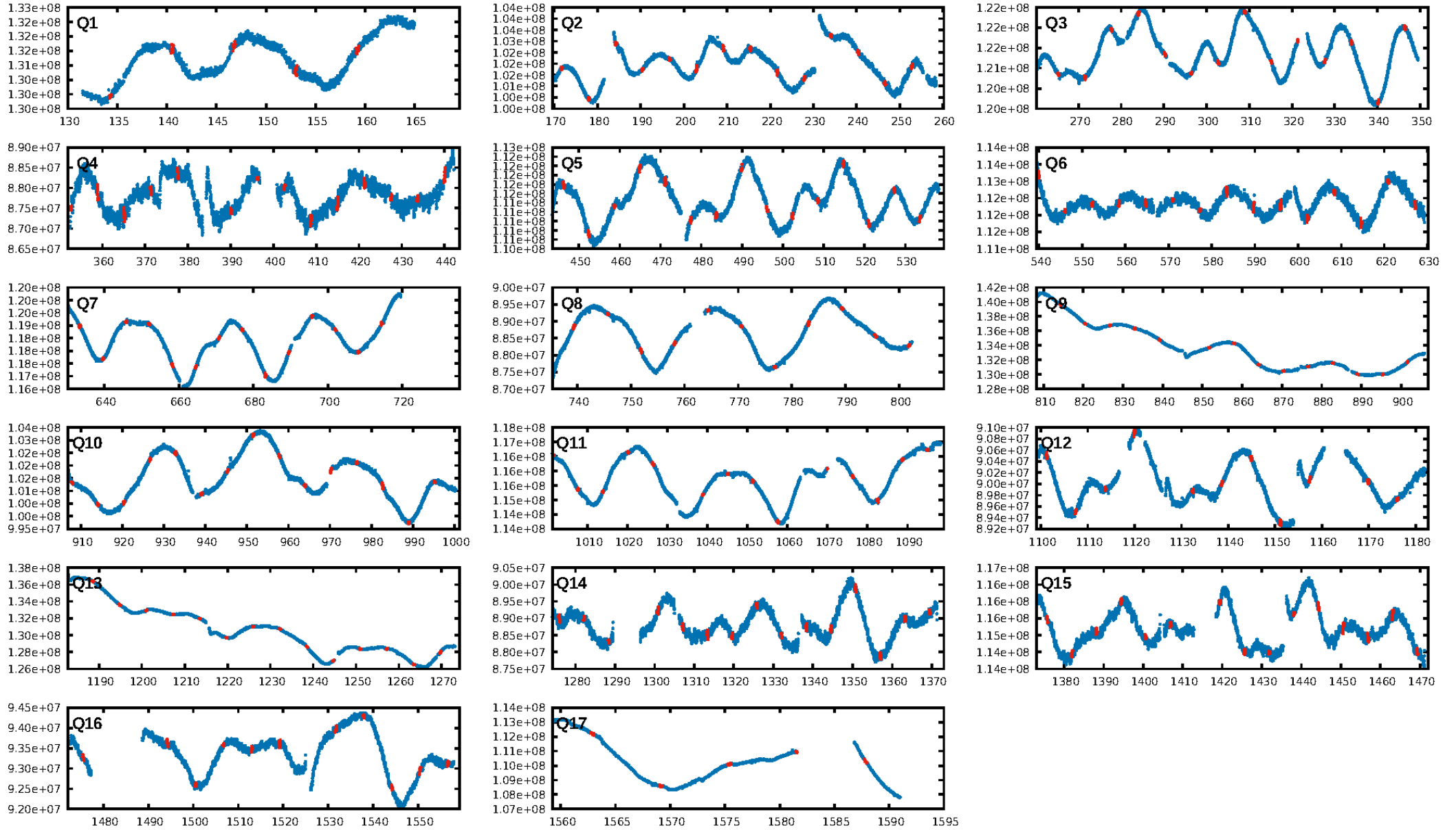
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.83σ]
LongPeriod-sig: 100.0% [37.36σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.73e-20
RollingBand-fgt: 1.00 [197/197]
GhostDiagnostic-chr: -0.4321
Centroid-sig: 0.0%
Centroid-so: 6.746 arcsec [18.45σ]
OotOffset-rm: 0.985 arcsec [1.38σ]
KicOffset-rm: 6.984 arcsec [12.50σ]
OotOffset-st: 0/0/3/2 [5]
KicOffset-st: 0/0/3/2 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [17/17]

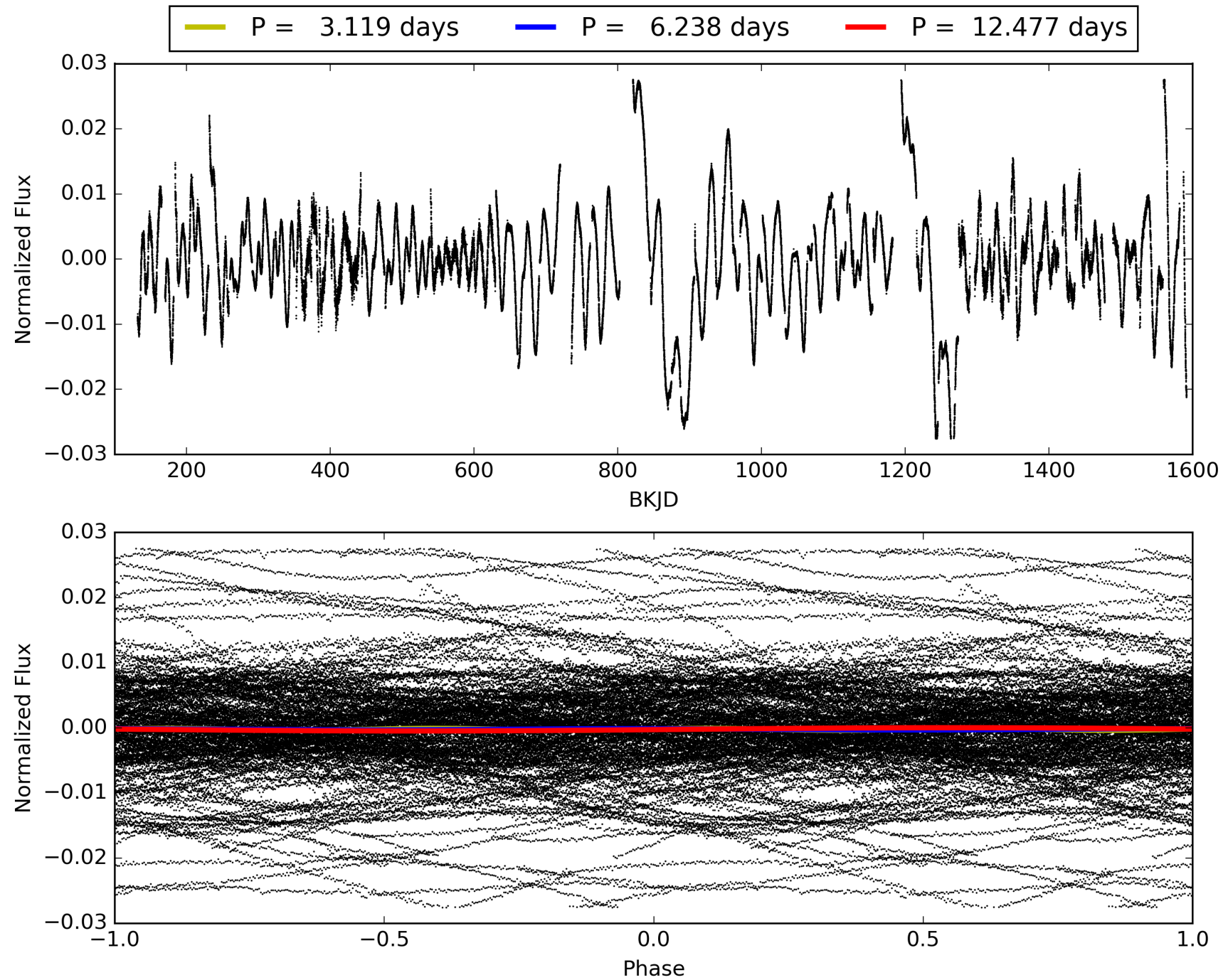
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 19:43:22 Z

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

TCE 004349442-03, PDC Light Curves

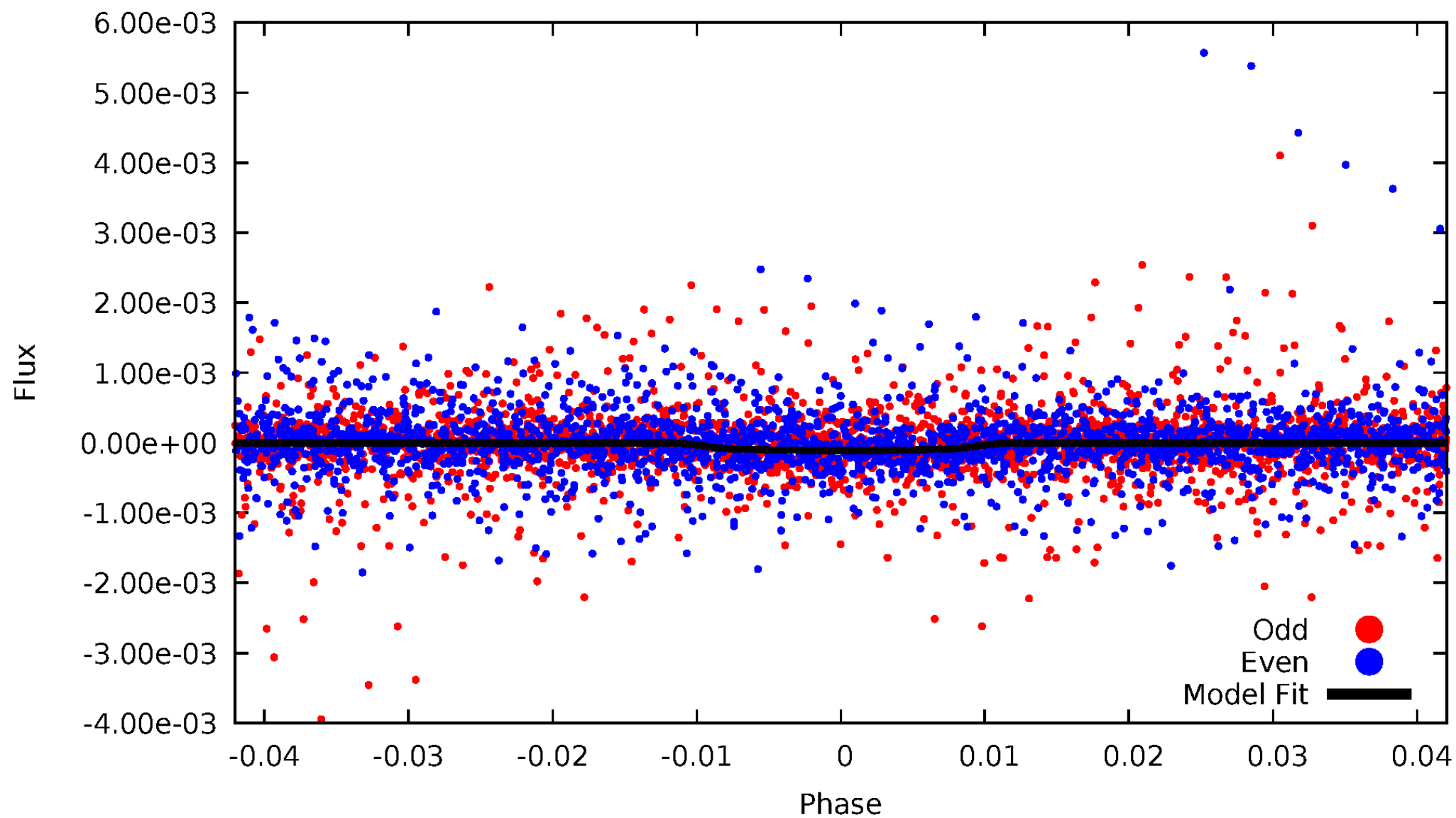


TCE 004349442-03



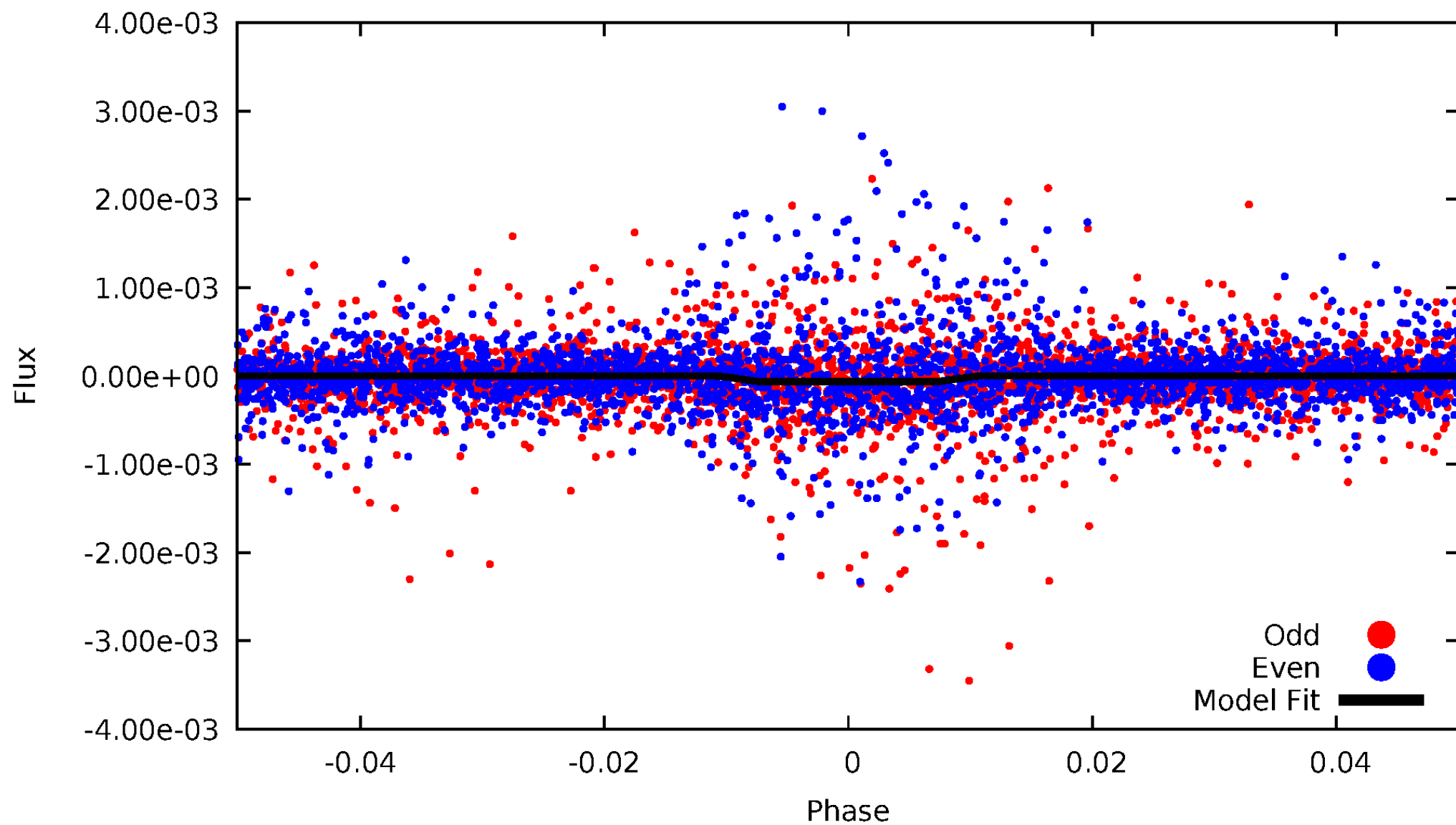
DV Odd/Even

TCE 004349442-03



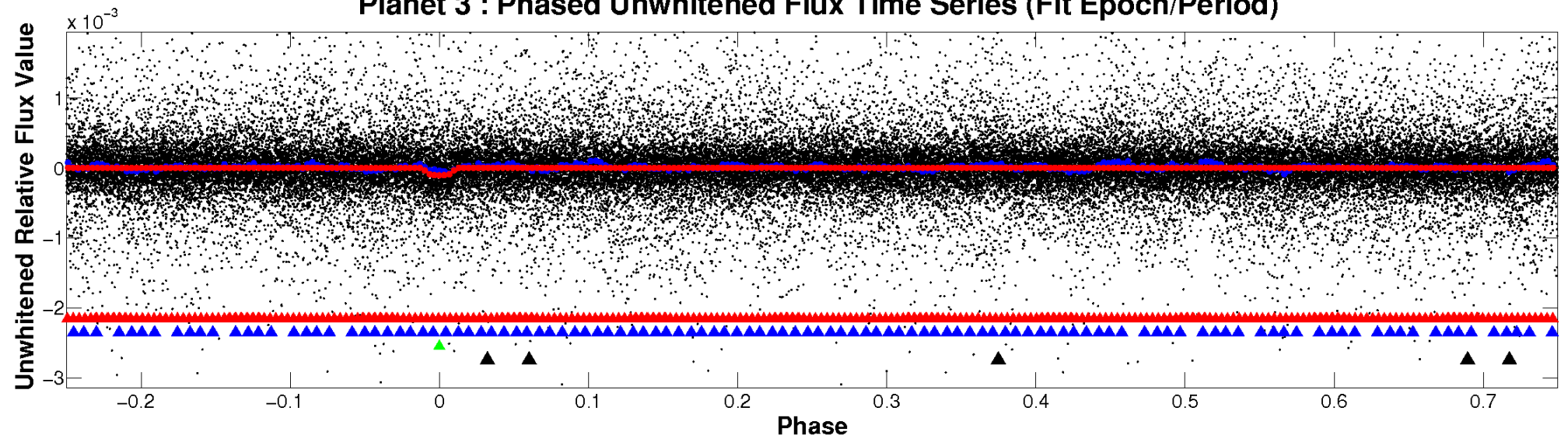
ALT Odd/Even

TCE 004349442-03

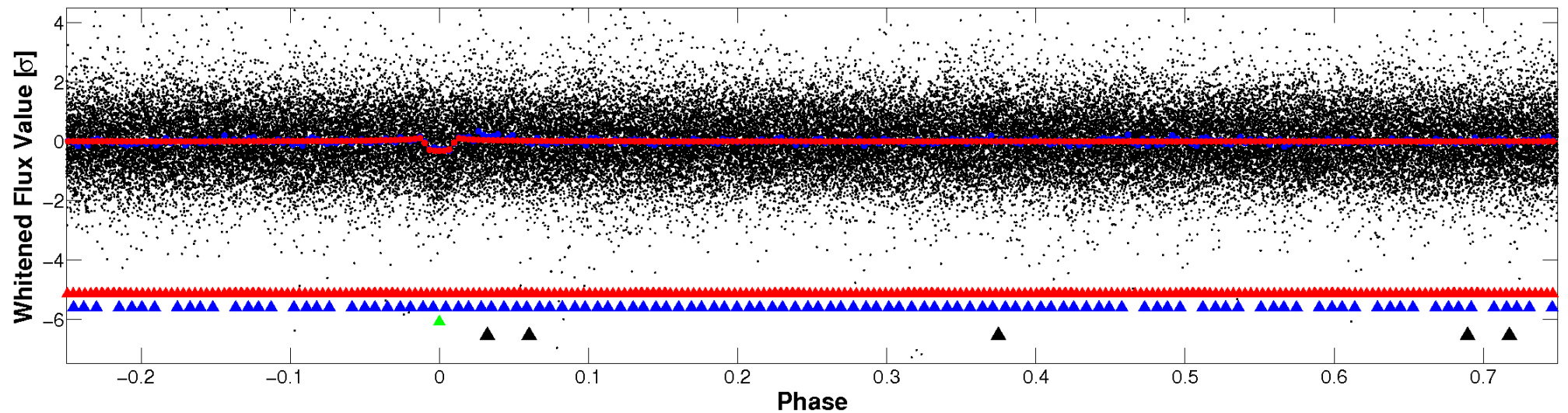


Non-Whitened Vs. Whitened Light Curve

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

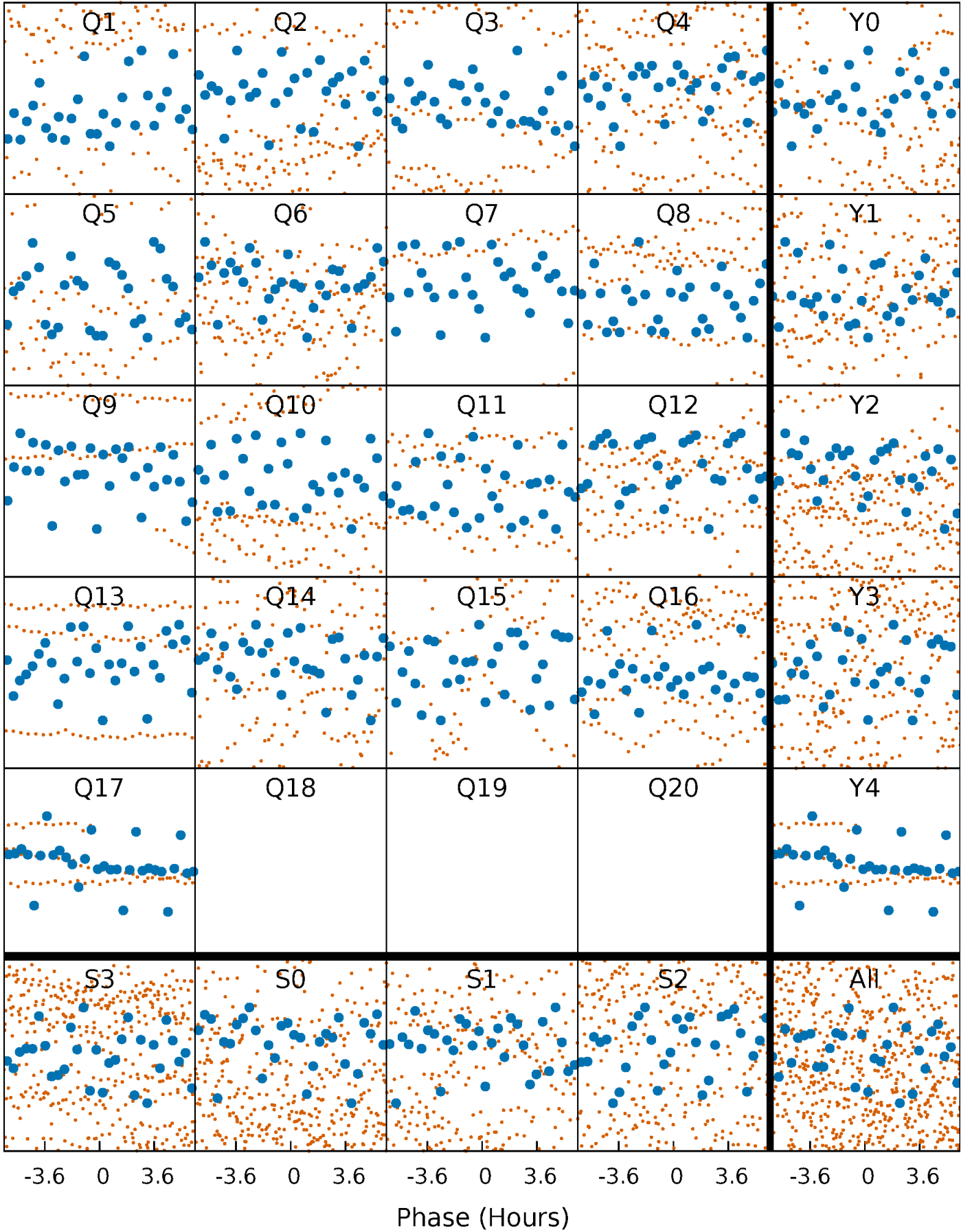


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



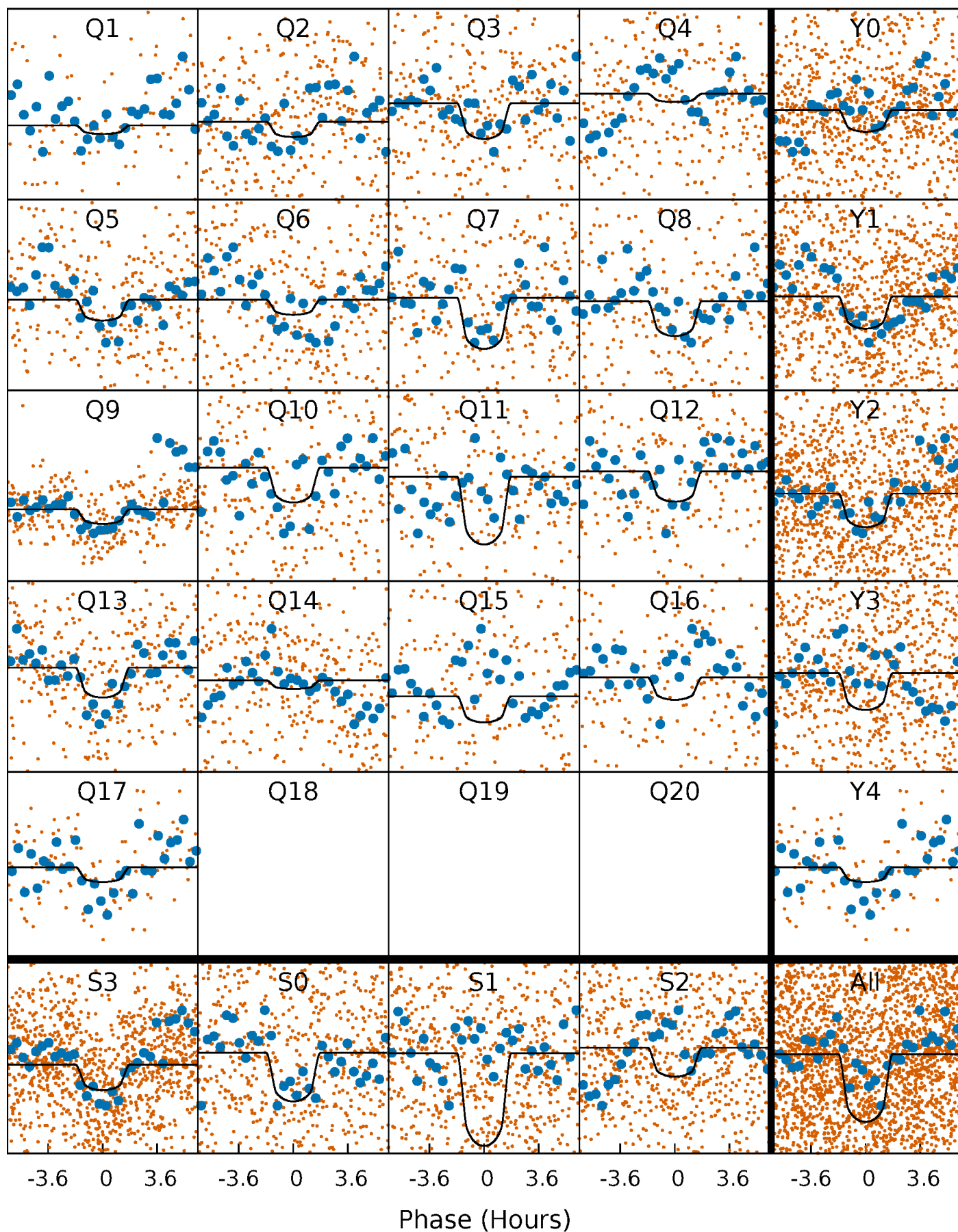
PDC Quarter-Phased Transit Curves

TCE 004349442-03 P= 6.238461 Days $T_0=134.283234$ (BKJD)



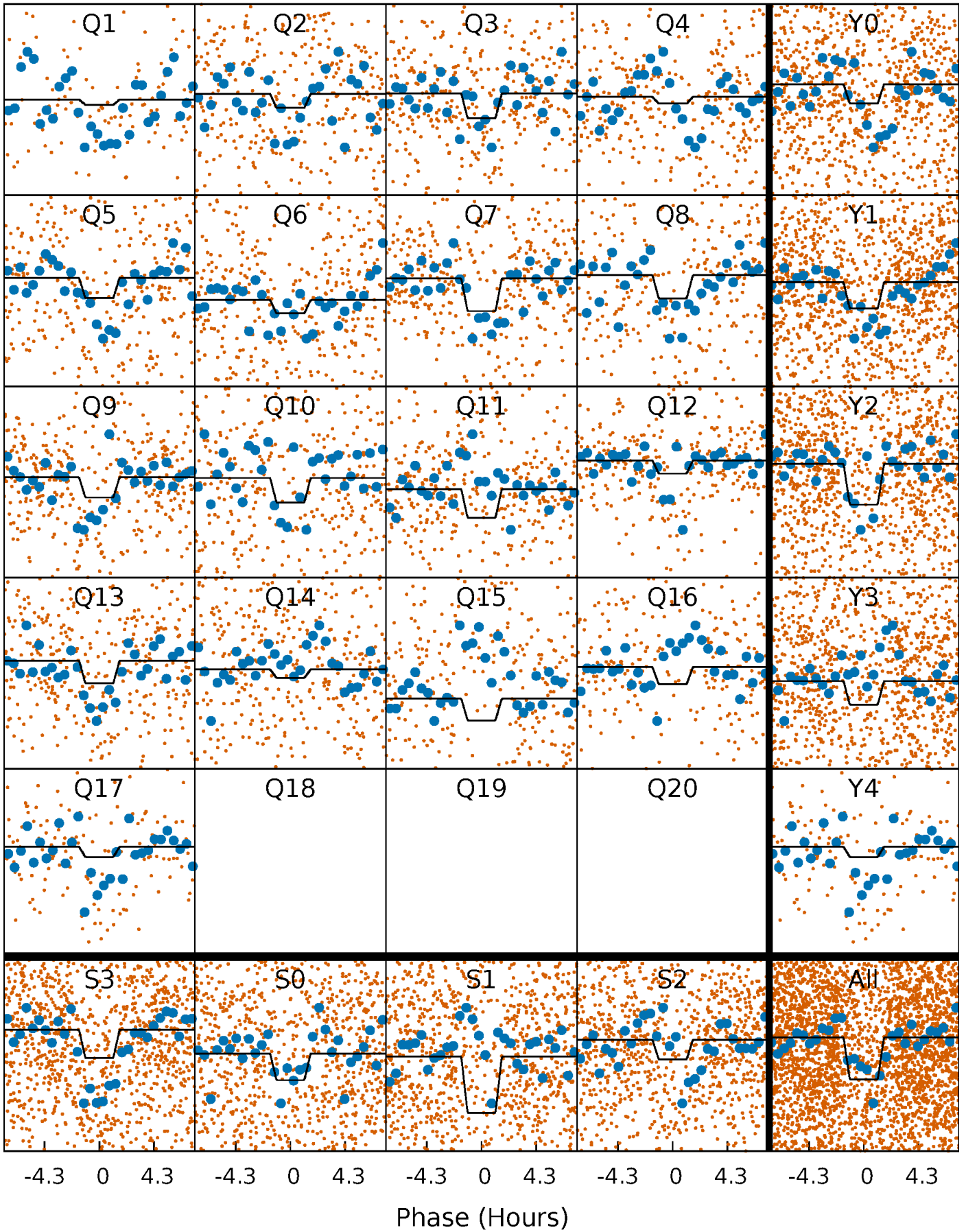
DV Quarter-Phased Transit Curves

TCE 004349442-03 P= 6.238461 Days $T_0=134.283234$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

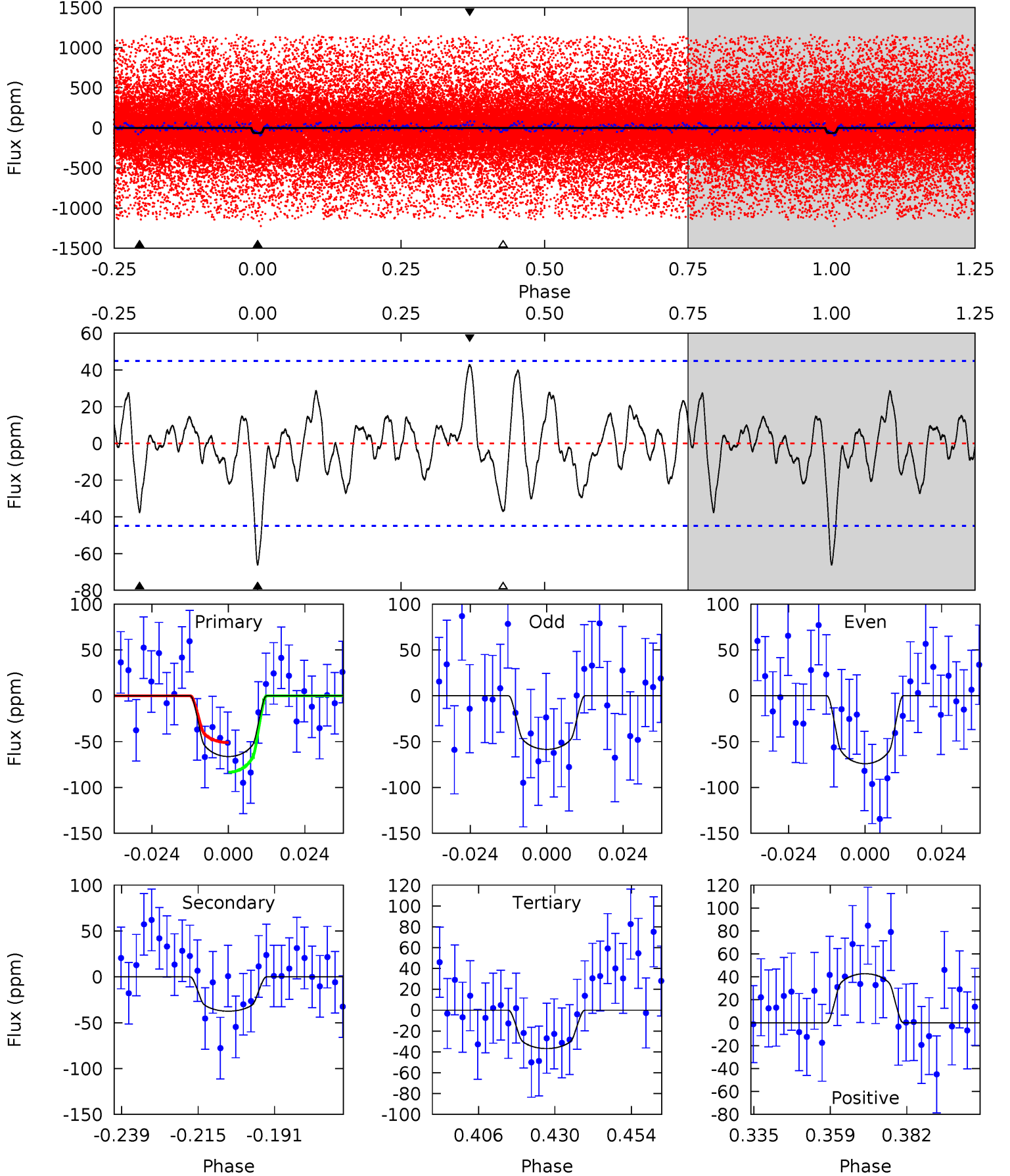
TCE 004349442-03 P= 6.238484 Days $T_0=134.281570$ (BKJD)



DV Model-Shift Uniqueness Test

004349442-03, P = 6.238461 Days, E = 128.044773 Days

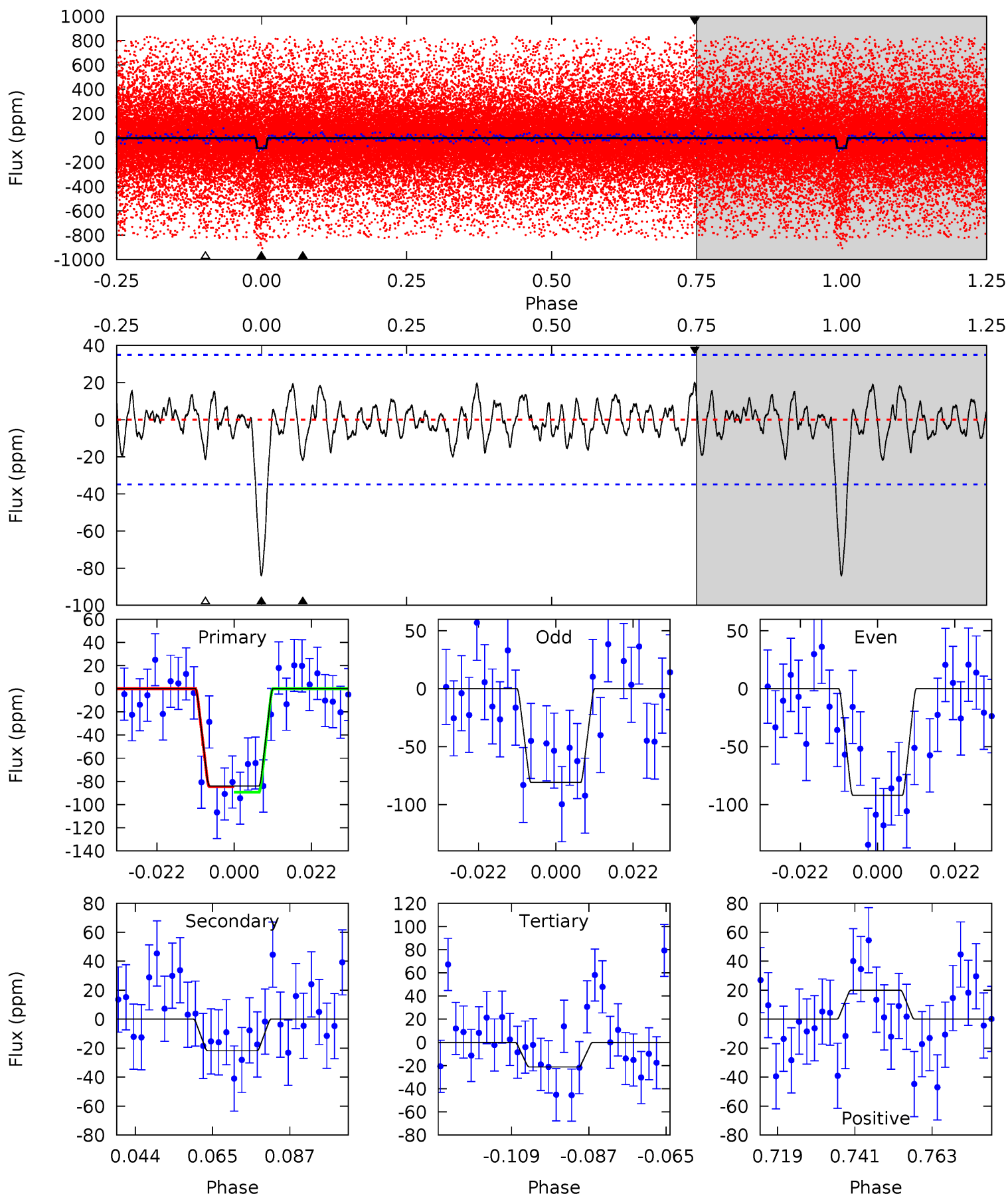
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.17	4.05	3.98	4.62	4.86	2.26	1.54	3.19	2.55	0.07	-0.57	0.86	0.64	0.39	1.79



Alt Model-Shift Uniqueness Test

004349442-03, P = 6.238484 Days, E = 128.043086 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	3.04	2.97	2.79	4.87	2.29	1.08	8.76	8.94	0.07	0.25	0.78	0.80	0.19	0.34



Stellar Parameters For KIC 004349442

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4914^{+98}_{-98}	$4.610^{+0.018}_{-0.046}$	$-0.040^{+0.150}_{-0.150}$	$0.724^{+0.045}_{-0.030}$	$0.783^{+0.035}_{-0.046}$	$2.902^{+0.269}_{-0.441}$
	+2%/-2%	+0%/-1%	+375%/-375%	+6%/-4%	+4%/-6%	+9%/-15%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 004349442-03 / KOI 1803.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-37 ± 9	$0.95^{+0.44}_{-0.41}$	1049^{+26}_{-23}	3806^{+848}_{-487}	83^{+173}_{-47}
Alt.	-22 ± 7	$0.69^{+0.42}_{-0.40}$	1050^{+25}_{-24}	3870^{+1499}_{-611}	91^{+395}_{-60}

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

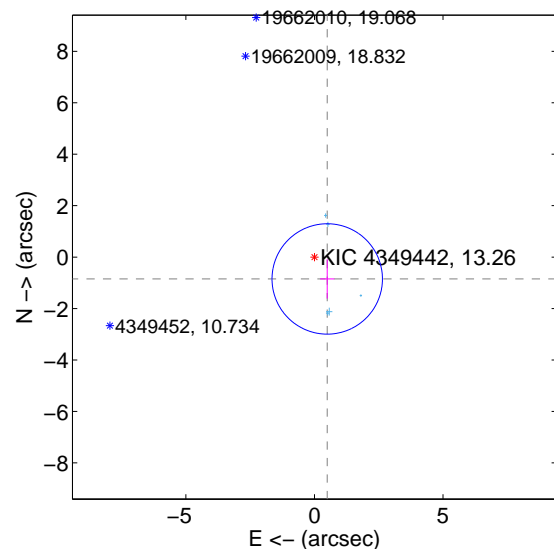
Supplemental centroid analysis for 004349442-03. Kepler magnitude: 13.26. Transit SNR 11.49

There are 5 quarters with good PRF difference image offsets

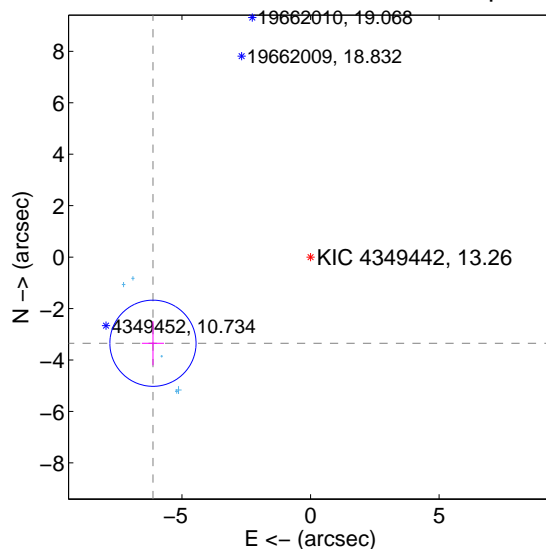
The OOT PRF centroid is offset from the target star catalog position by about 6.47 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.985 ± 0.716	1.38	-0.497 ± 0.276	-0.850 ± 0.766
PRF-fit source offset from KIC position	6.984 ± 0.559	12.50	6.128 ± 0.431	-3.350 ± 0.858
photometric centroid source offset	6.75 ± 0.37	18.45	4.47 ± 0.42	-5.05 ± 0.31

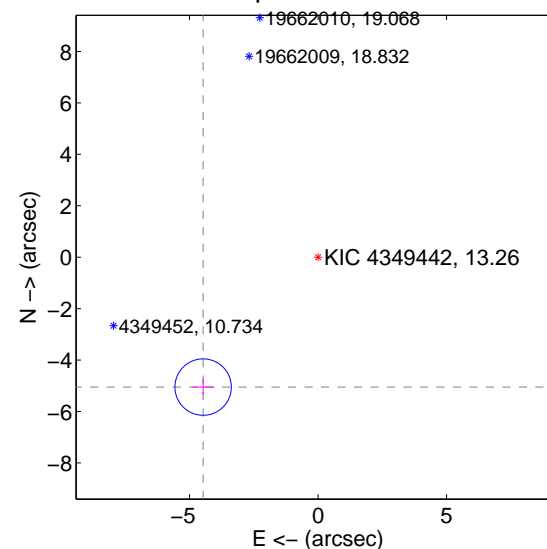
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

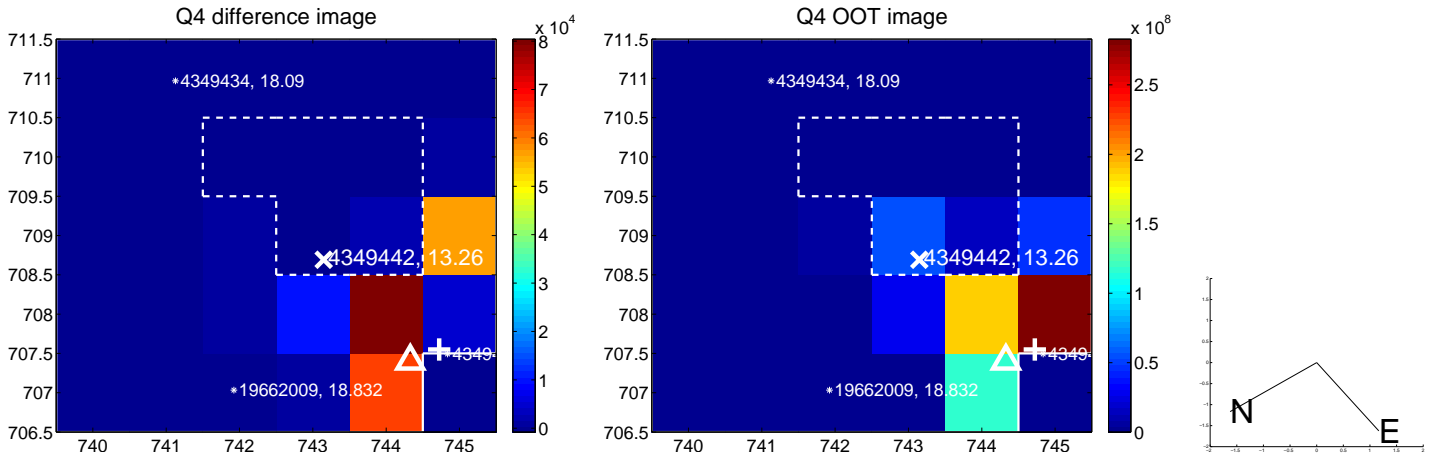
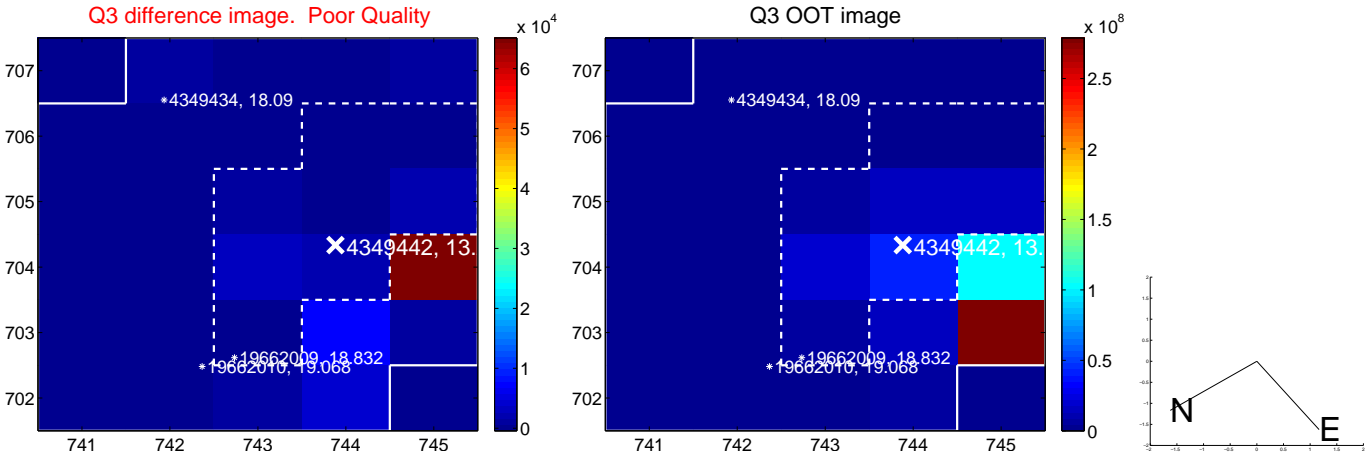
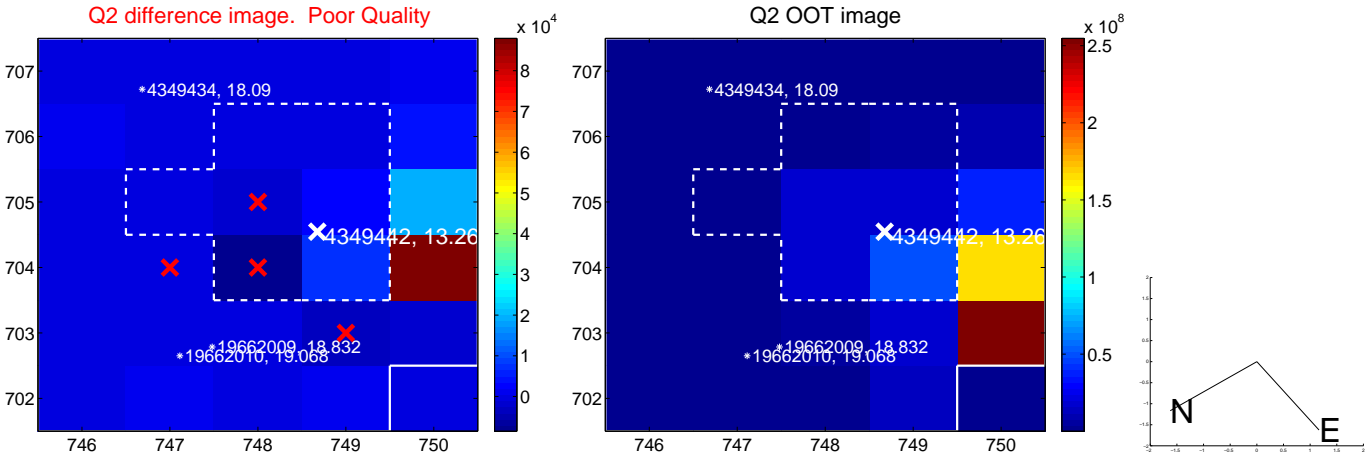
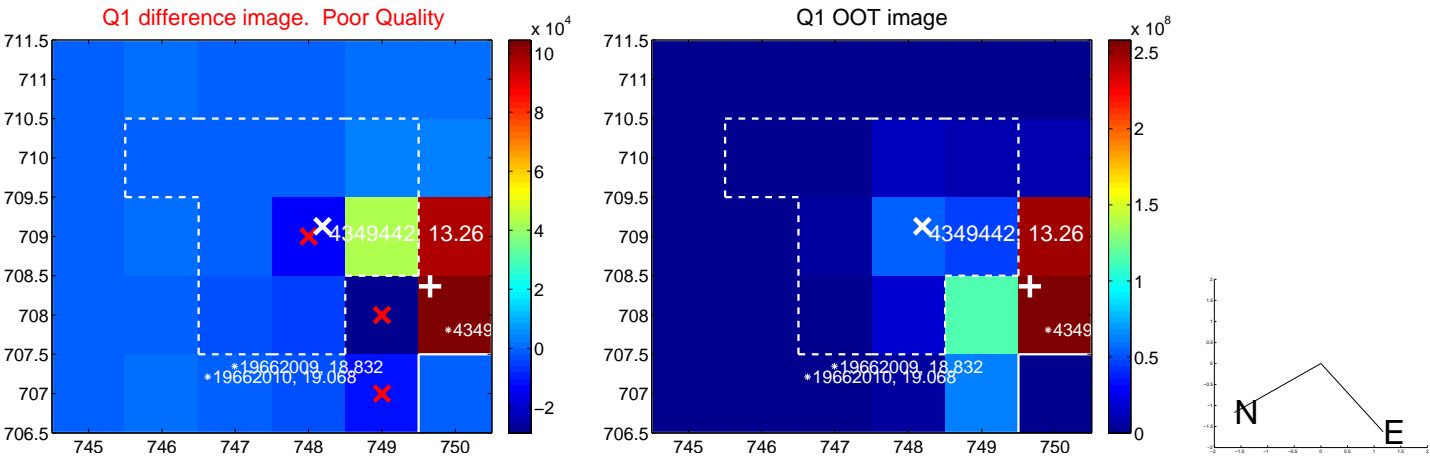


offset from photometric centroids

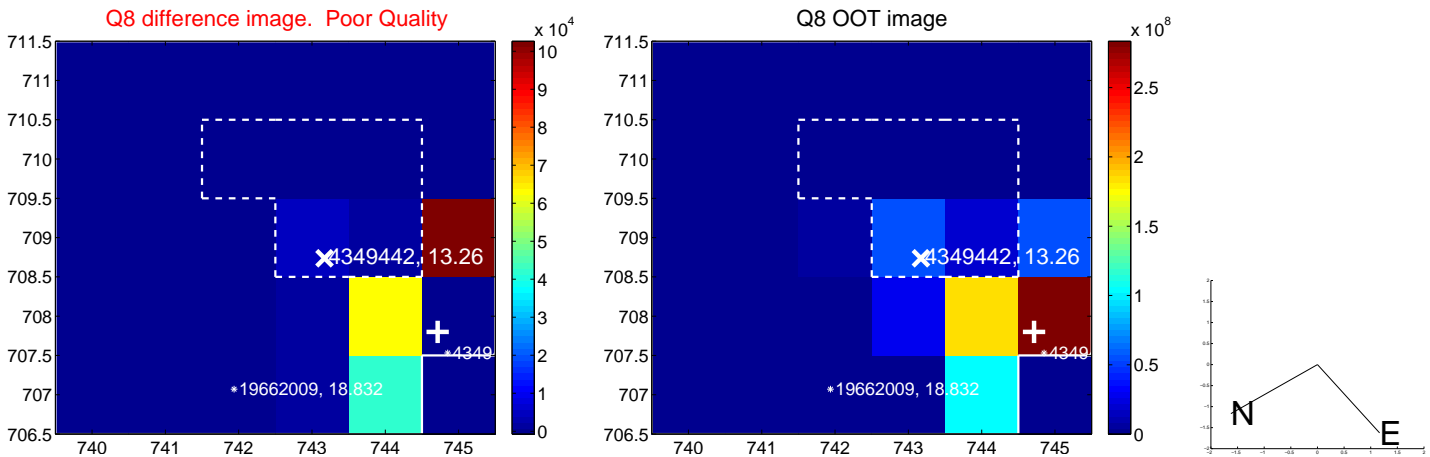
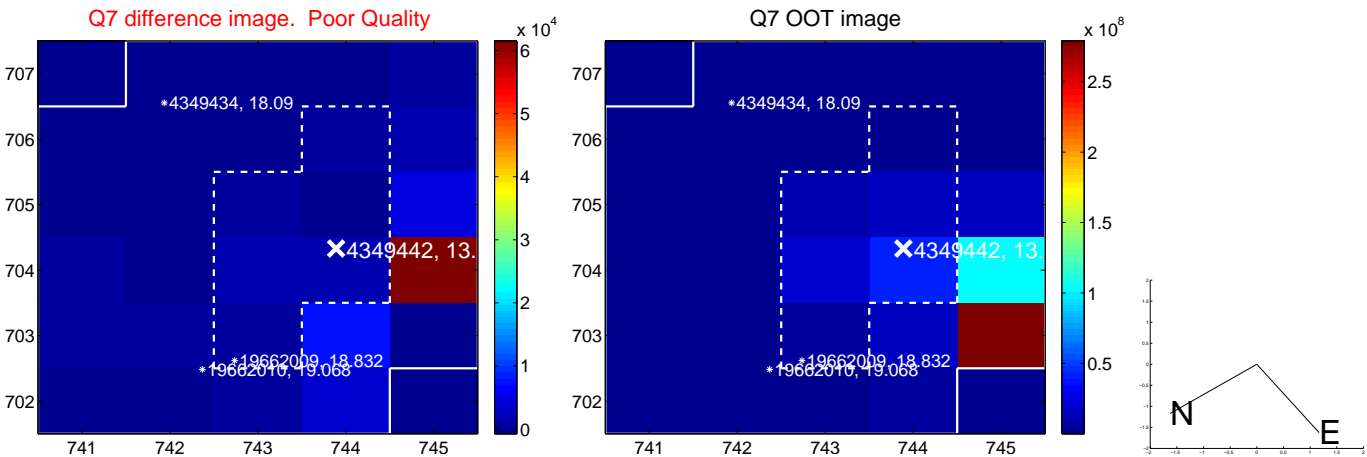
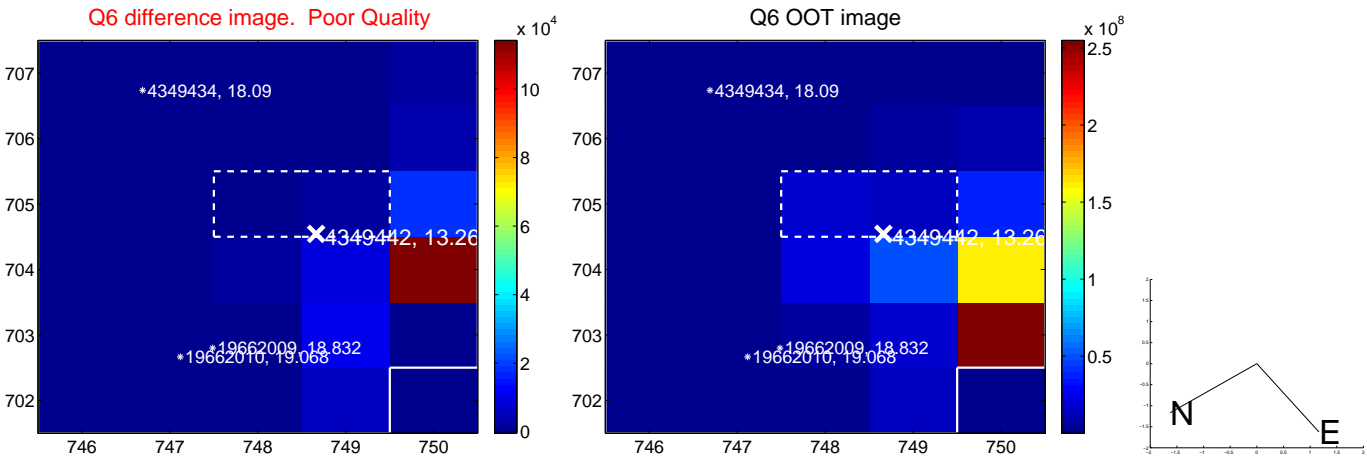
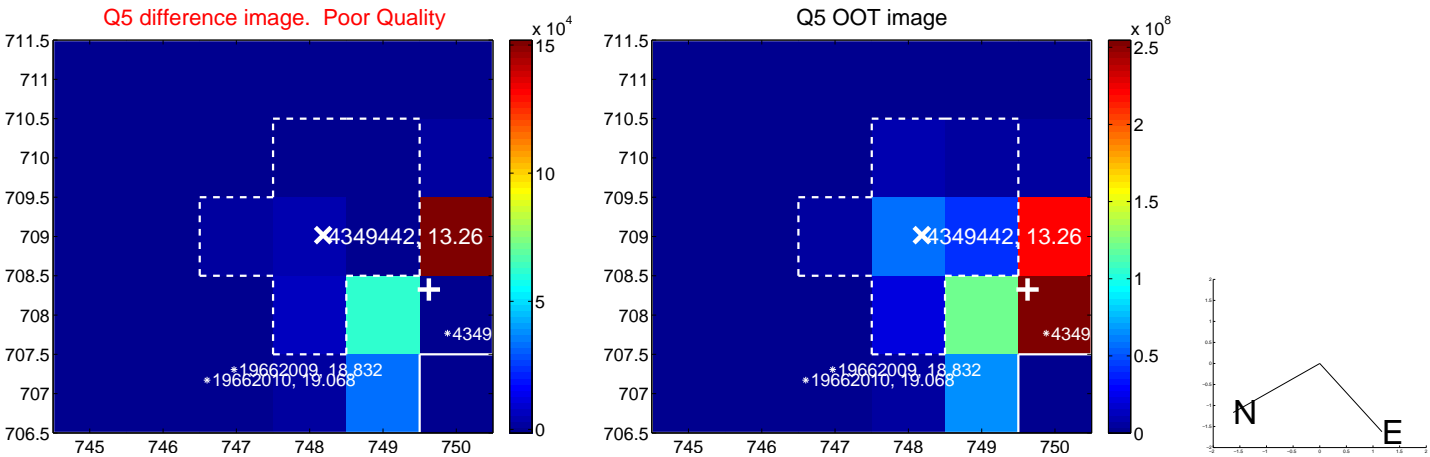


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

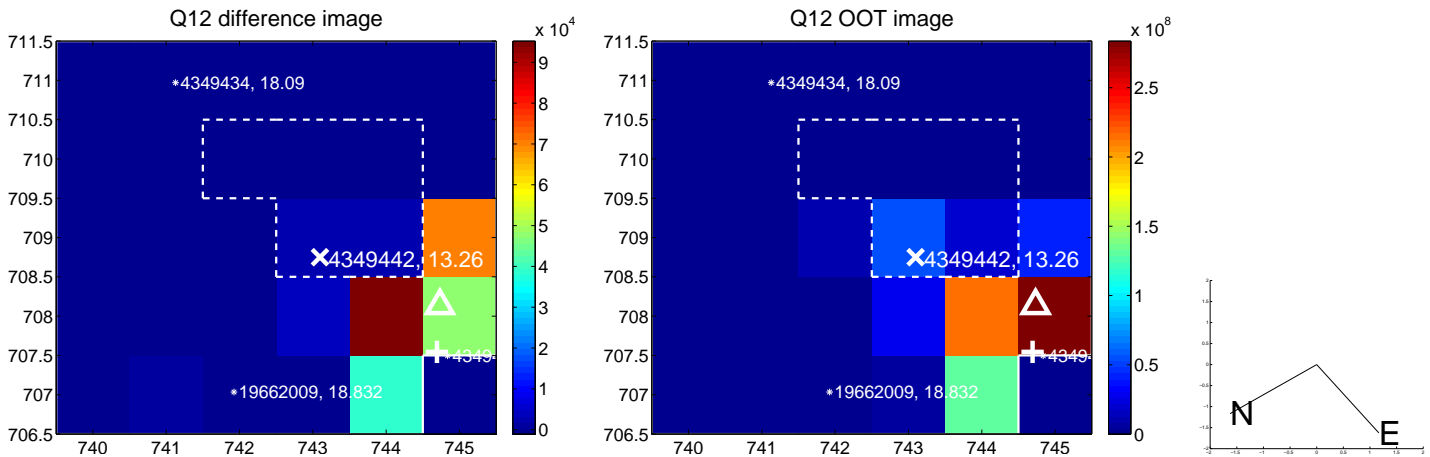
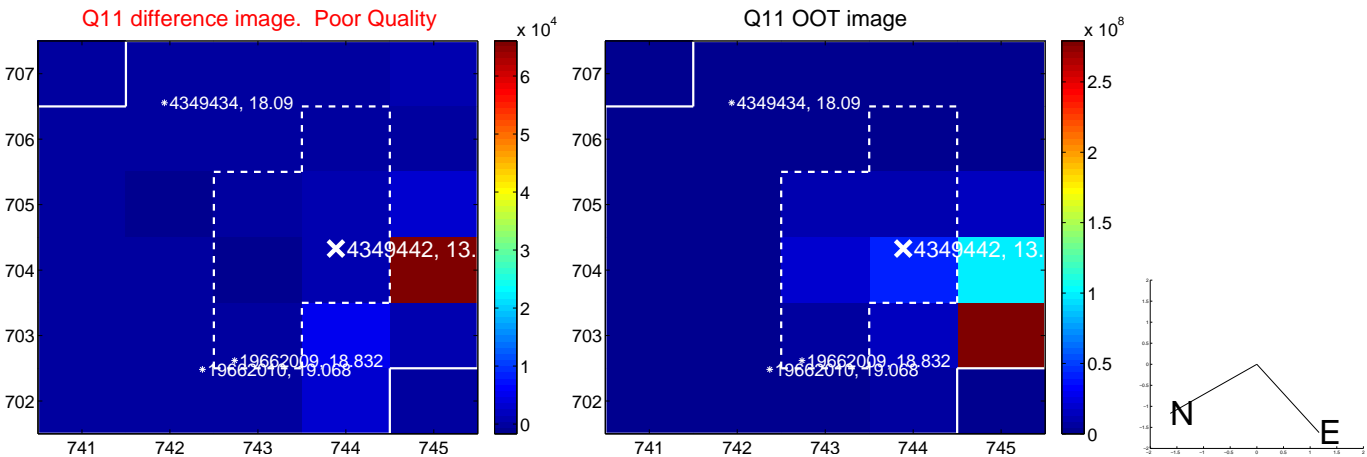
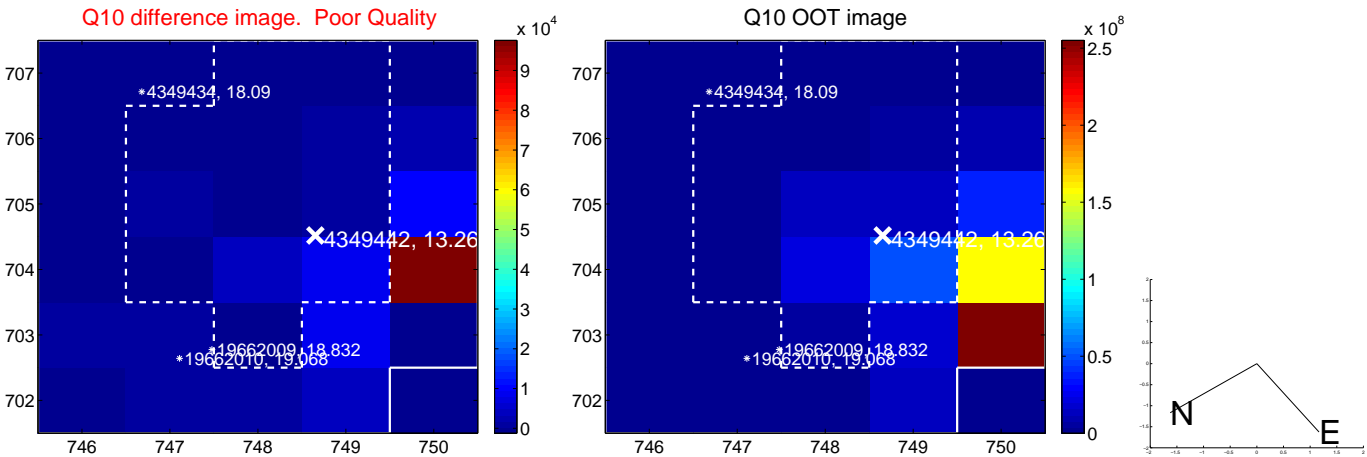
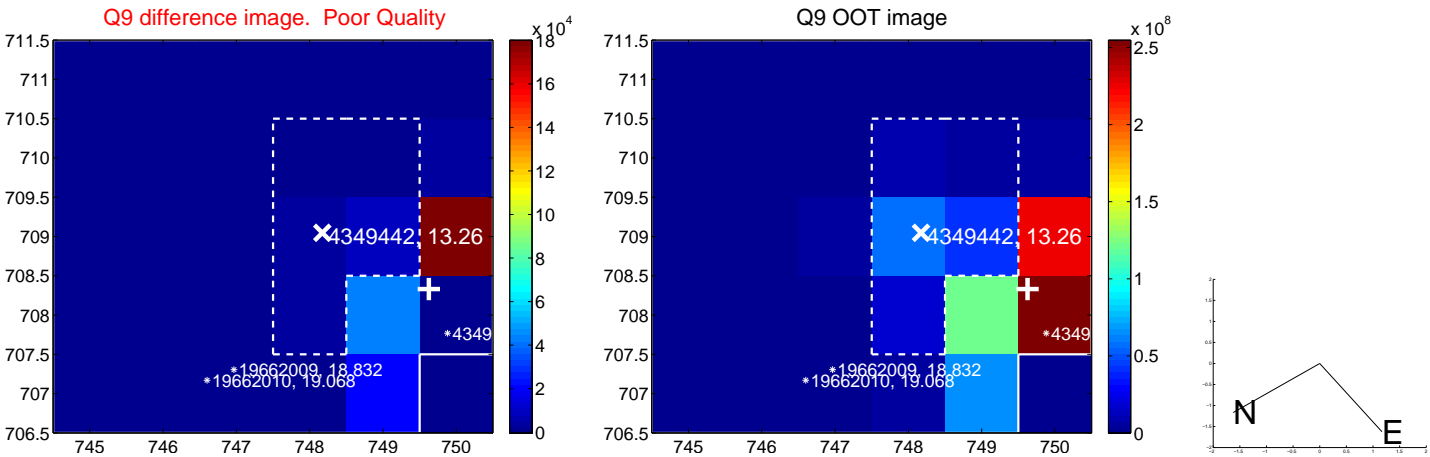
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



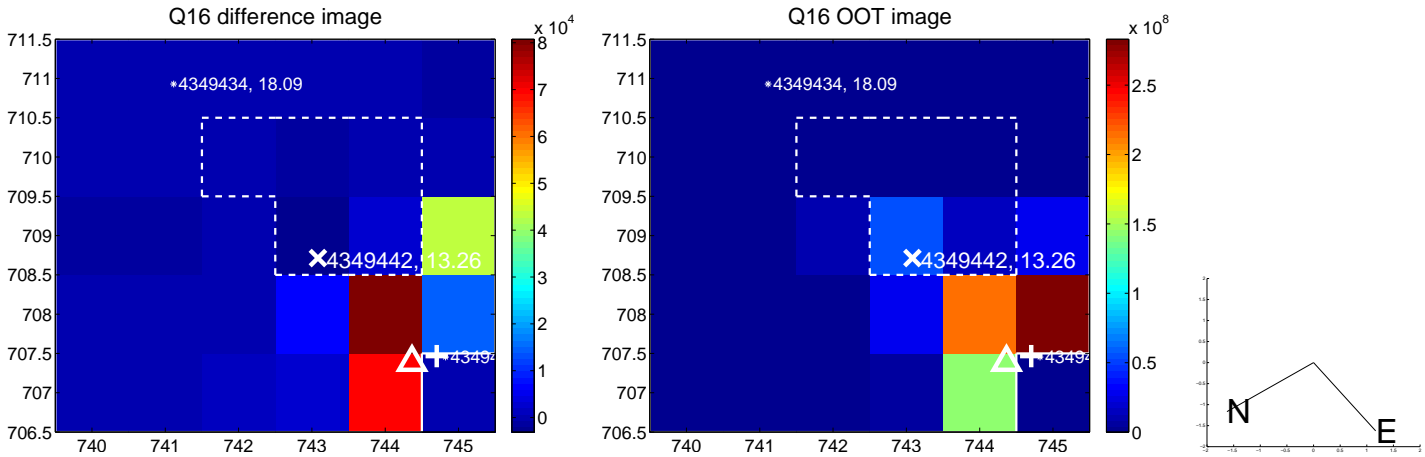
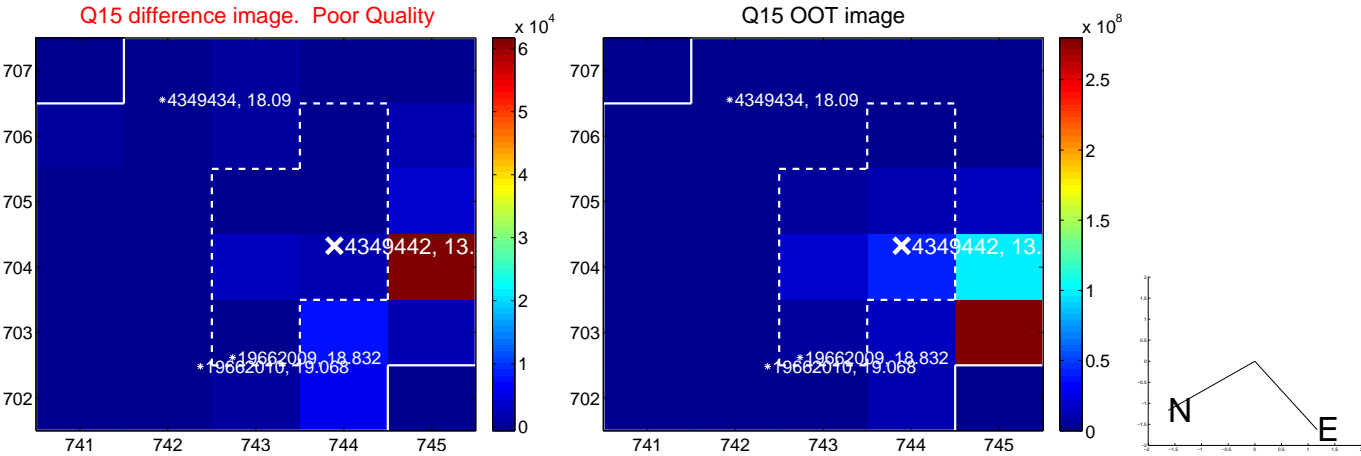
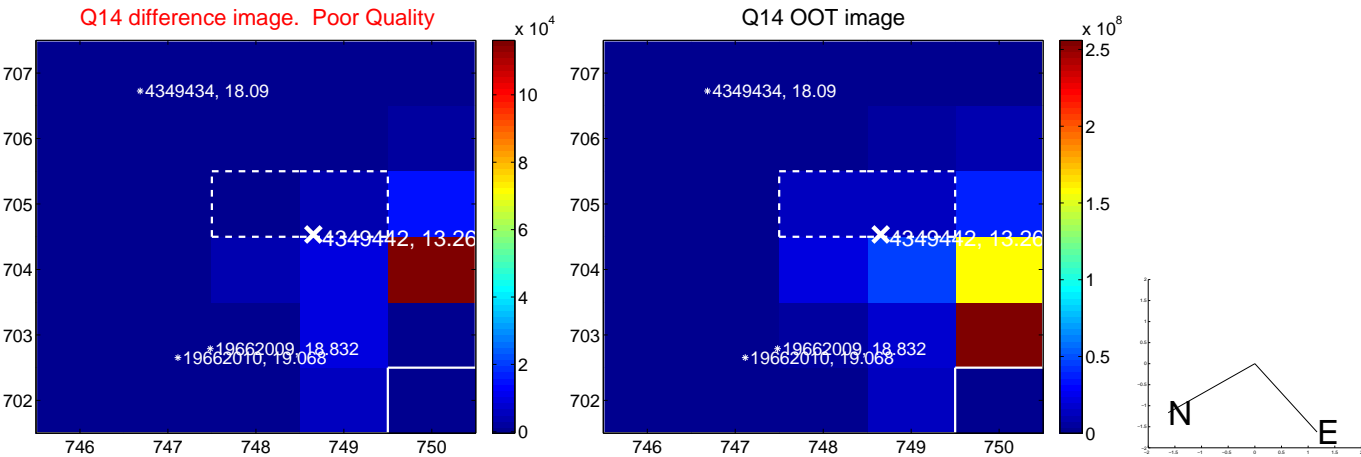
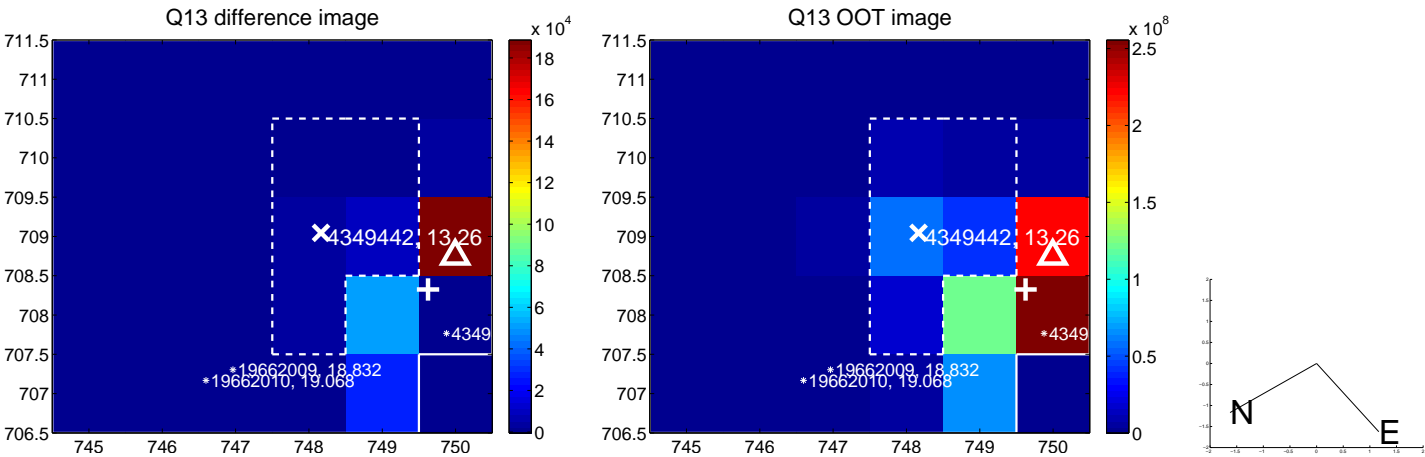
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



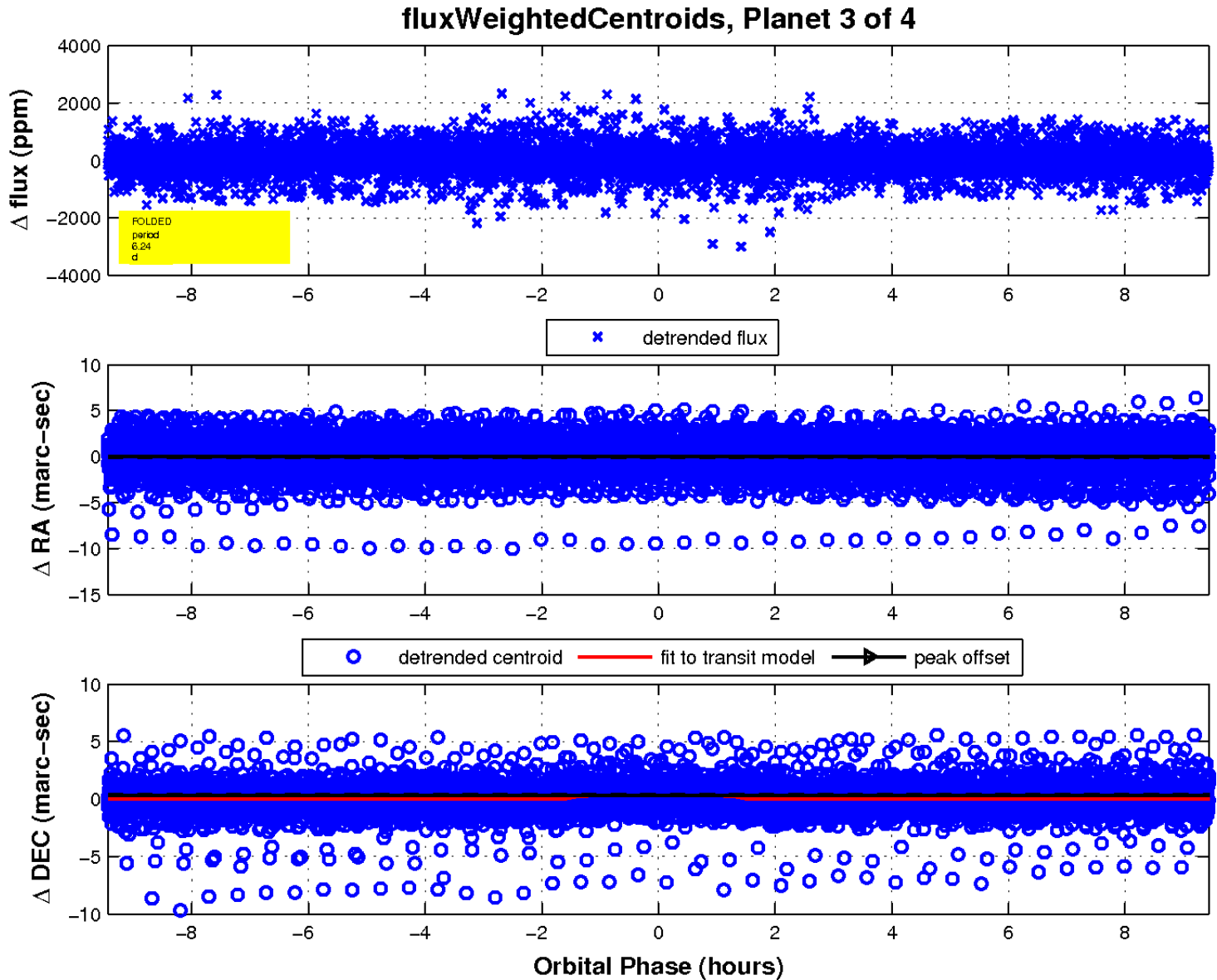
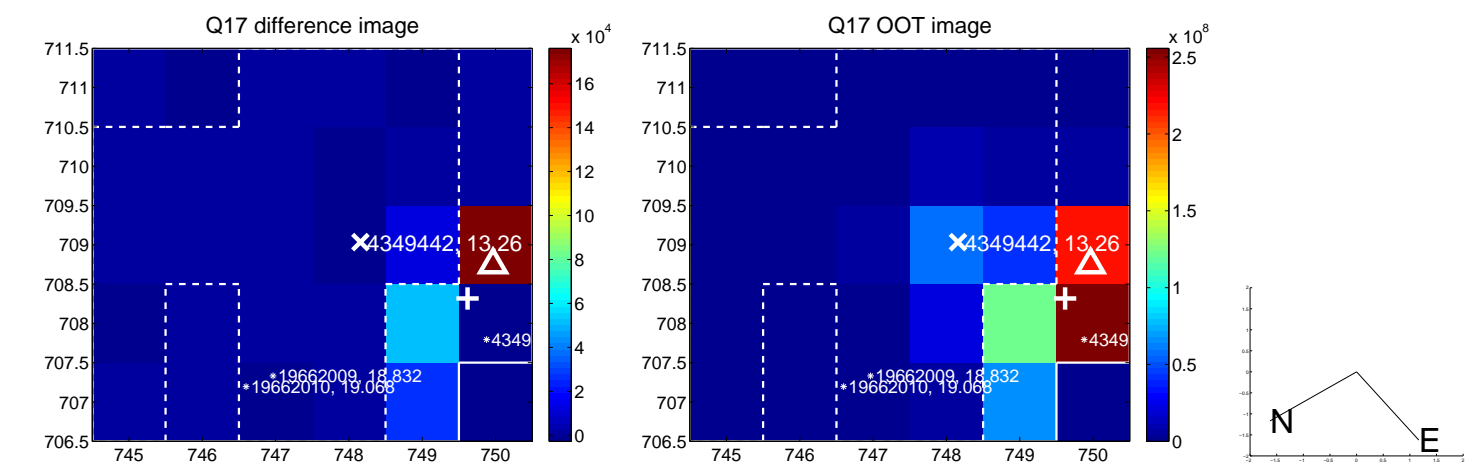
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

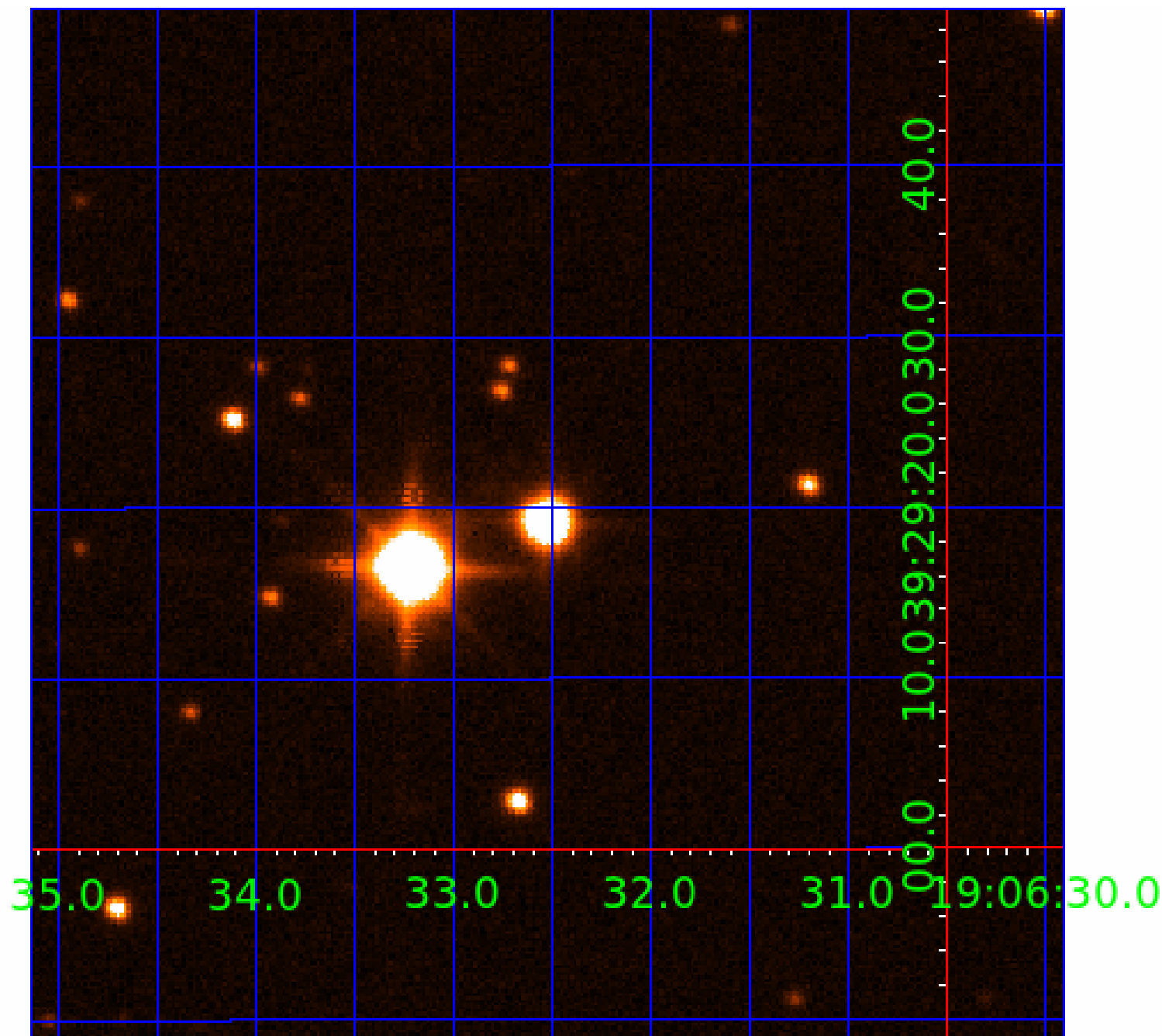


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004349442

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})
004349442-01	OBS	1803.01	4.539285	133.961838	815.3	2.068	86.0	89.5	0.72	4914	2.53	112.33
004349442-02	OBS	1803.02	12.720530	140.357907	272.6	2.727	18.2	19.6	0.72	4914	1.47	28.43
004349442-03	OBS	1803.03	6.238461	134.283234	108.5	3.147	10.0	11.5	0.72	4914	0.94	73.51
004349442-04	OBS	No	276.630005	406.838612	275.7	9.246	9.3	4.3	0.72	4914	1.31	0.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004349442-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
004349442-02	OBS	FP	0.00	0	0	0	1	CENT_KIC_POS—EPHEM_MATCH
004349442-03	OBS	FP	0.00	0	0	0	1	CENT_KIC_POS—EPHEM_MATCH
004349442-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— 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.

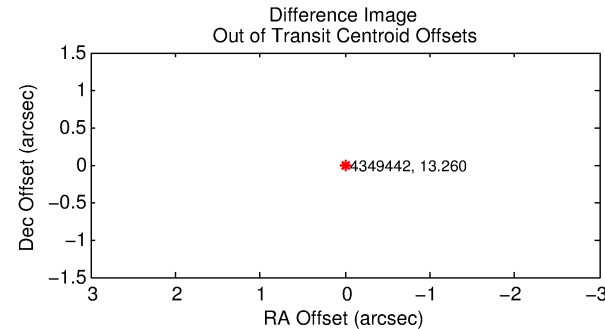
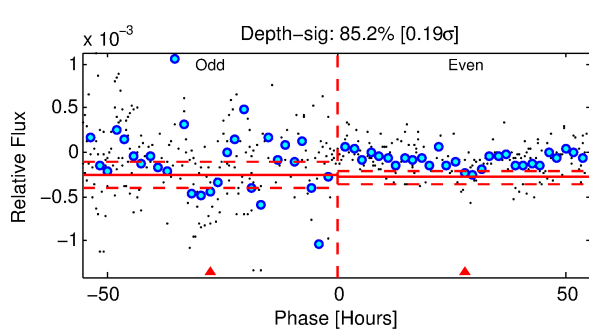
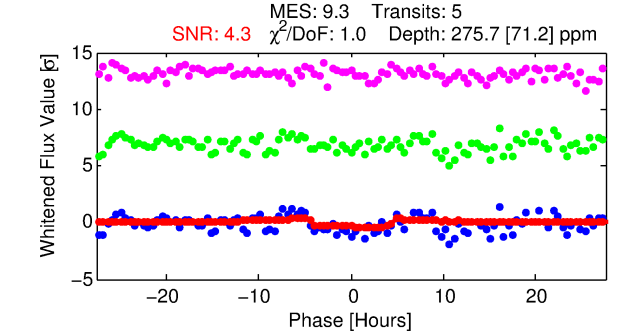
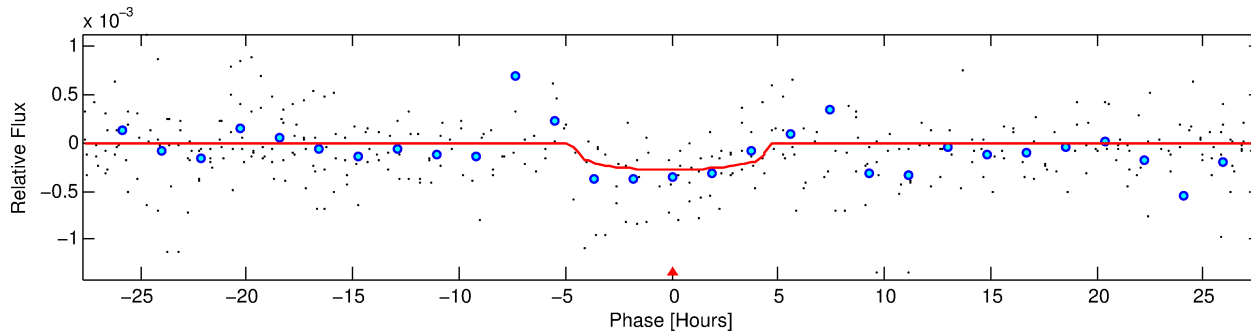
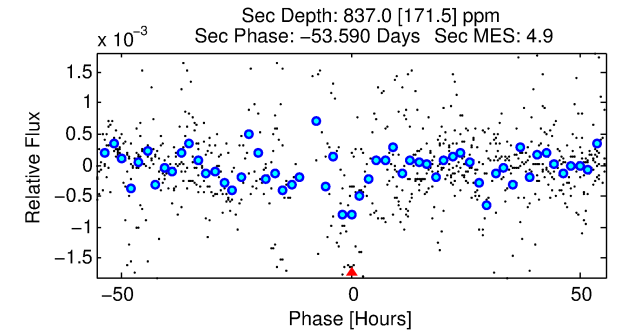
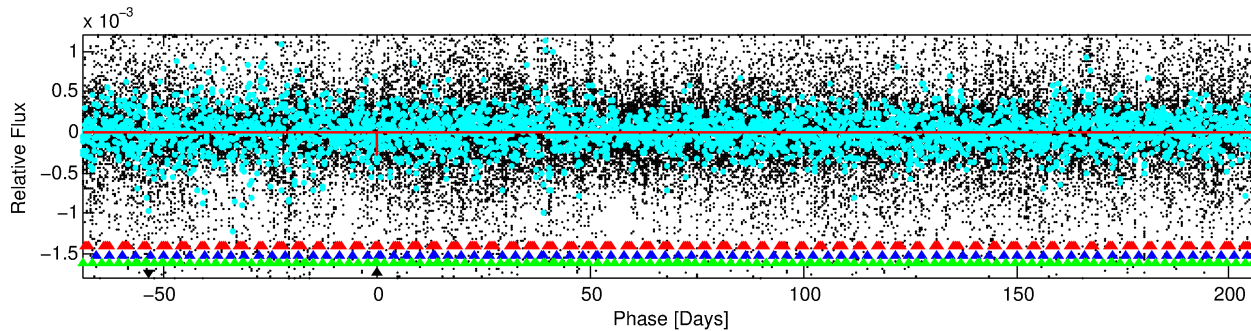
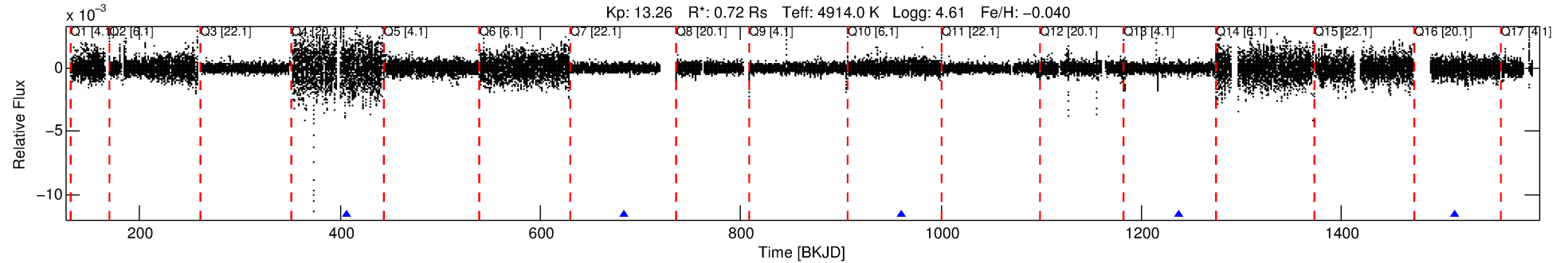
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004349442-04

No Significant Match Found

DV One-Page Summary

KIC: 4349442 Candidate: 4 of 4 Period: 276.630 d
KOI: K01803 Corr: No Ephemeris Match



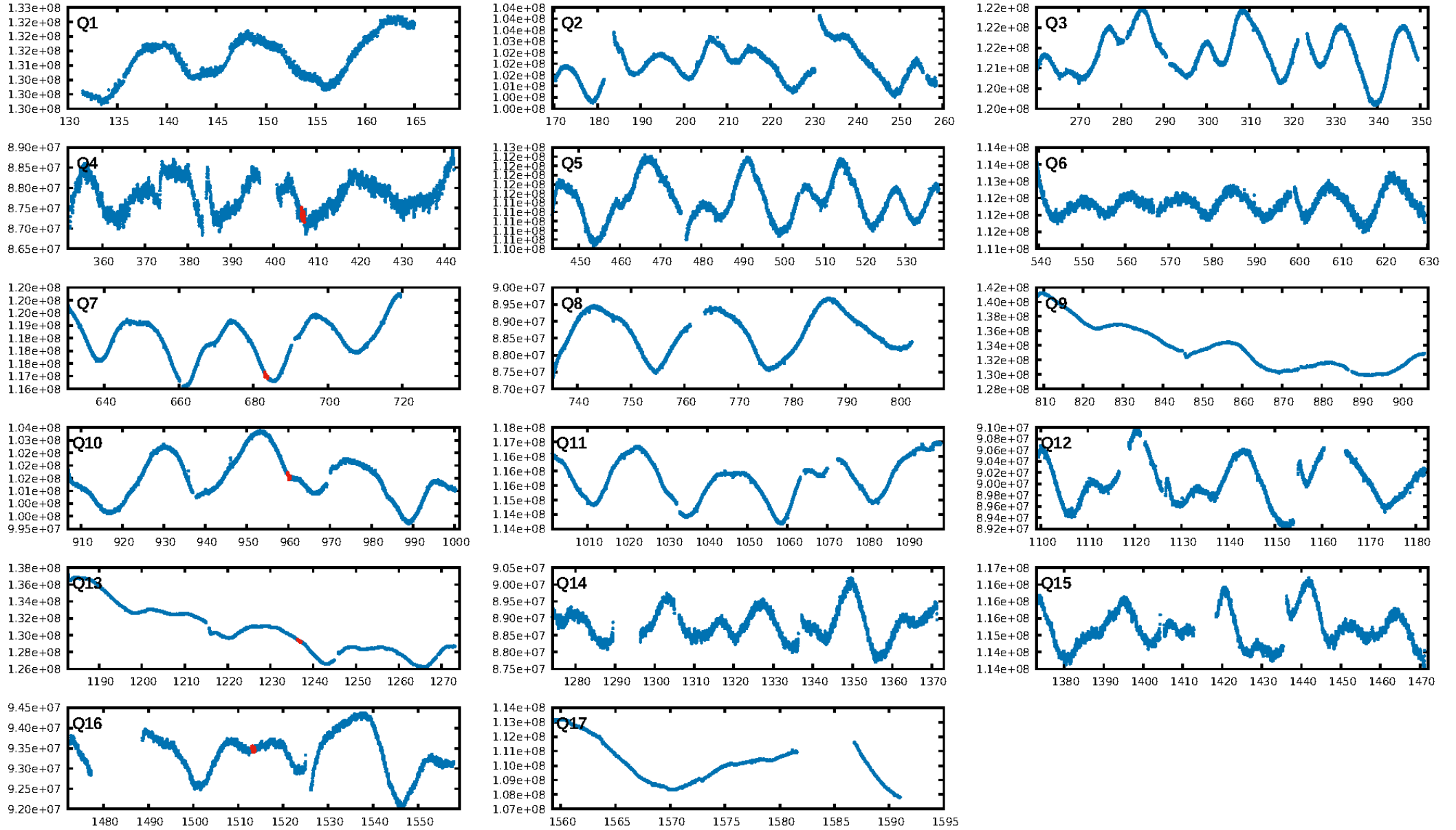
DV Fit Results:

Period = 276.63001 [0.01317] d
Epoch = 406.8386 [0.0294] BKJD
Rp/R* = 0.0166 [0.0140]
a/R* = 157.20 [466.29]
b = 0.75 [1.76]
Seff = 0.47 [0.05]
Teq = 211 [6] K
Rp = 1.31 [1.11] Re
a = 0.7646 [0.0416] AU
Ag = 157002.36 [267304.00] [0.59σ]
Teffp = 6492 [2763] K [2.27σ]

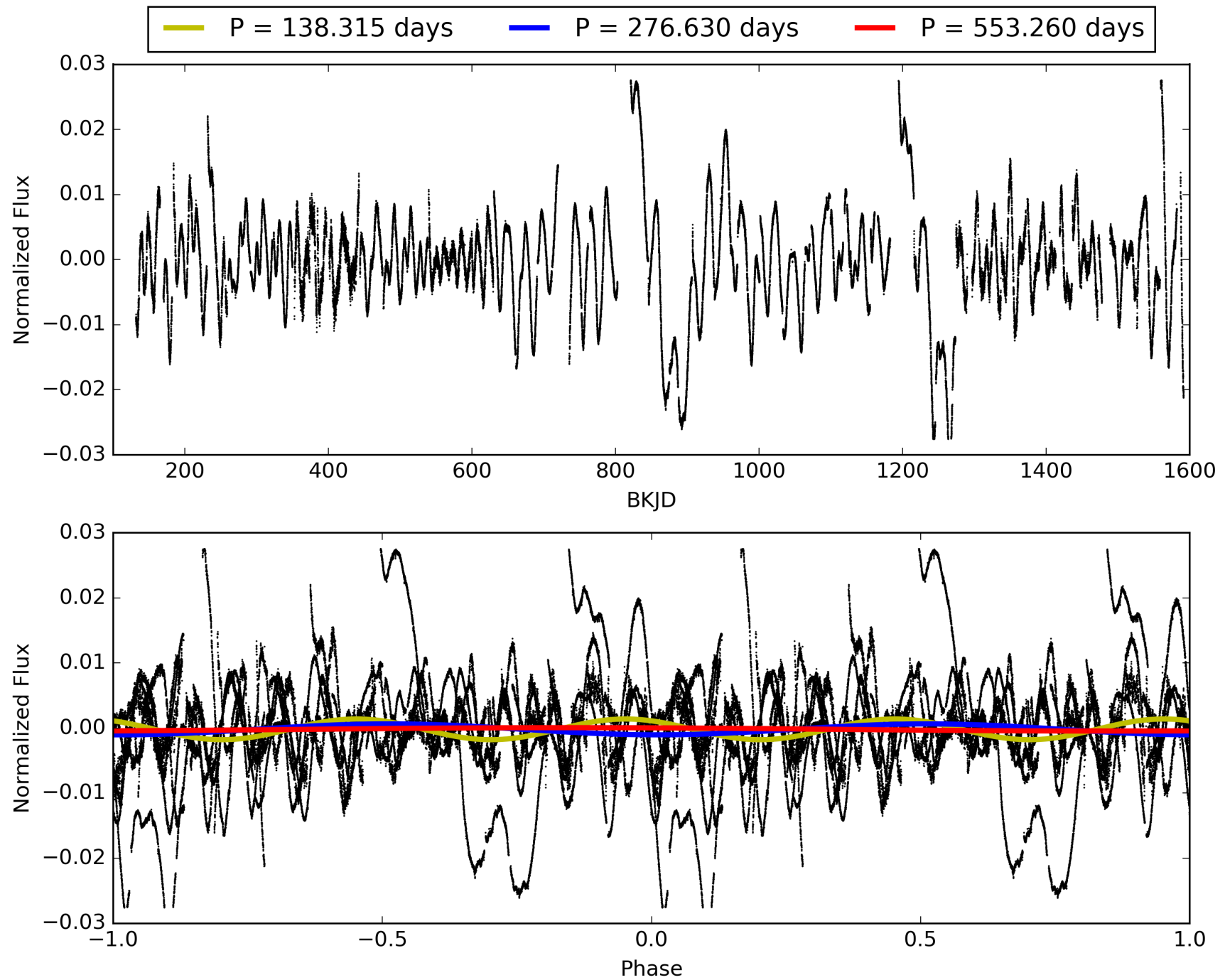
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [657.04σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.75e-05
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.402
Centroid-sig: 79.6%
Centroid-so: 5.235 arcsec [3.86σ]
OotOffset-rm: N/A
KicOffset-rm: 2.781 arcsec [9.72σ]
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/5]

TCE 004349442-04, PDC Light Curves

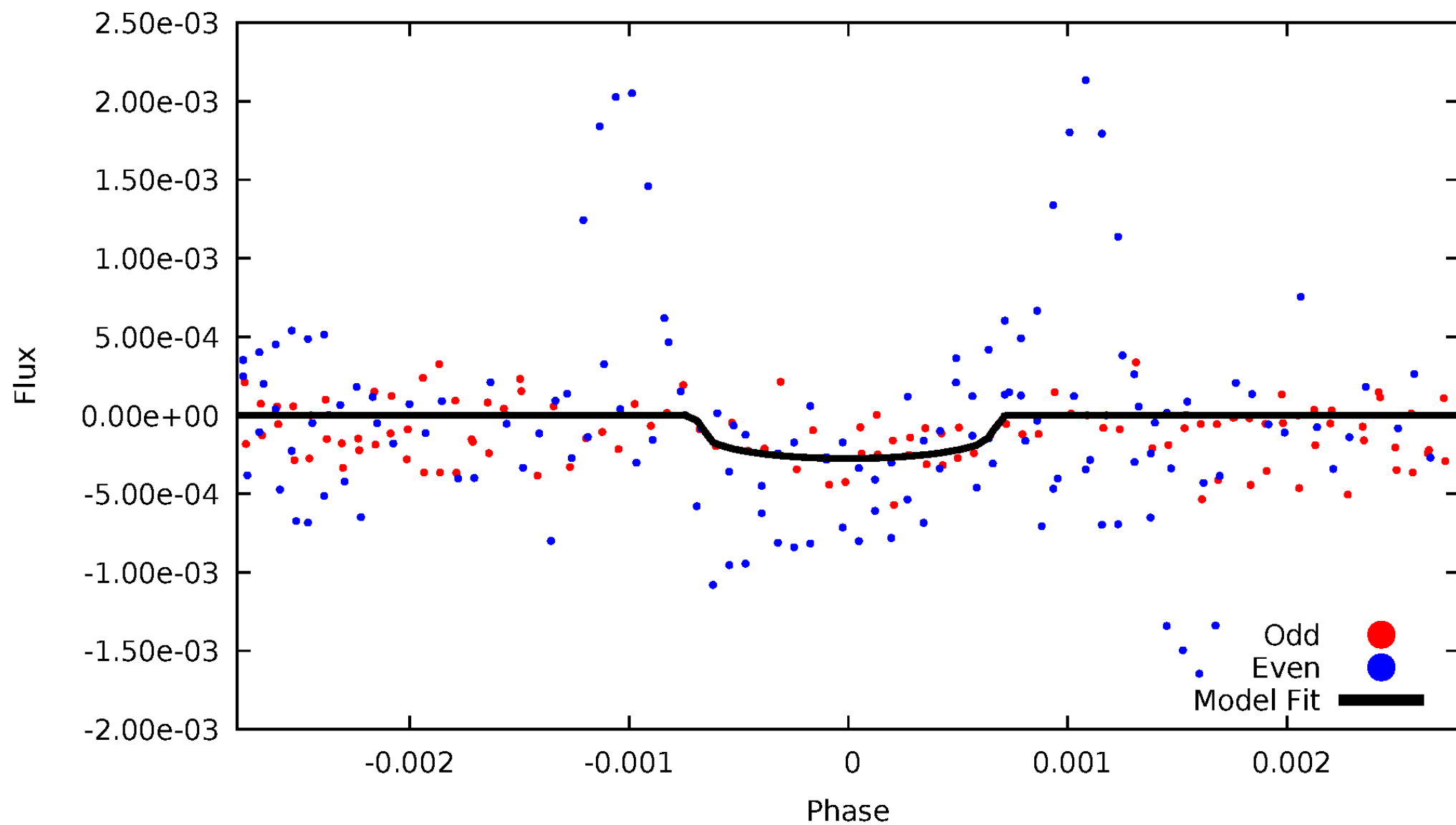


TCE 004349442-04



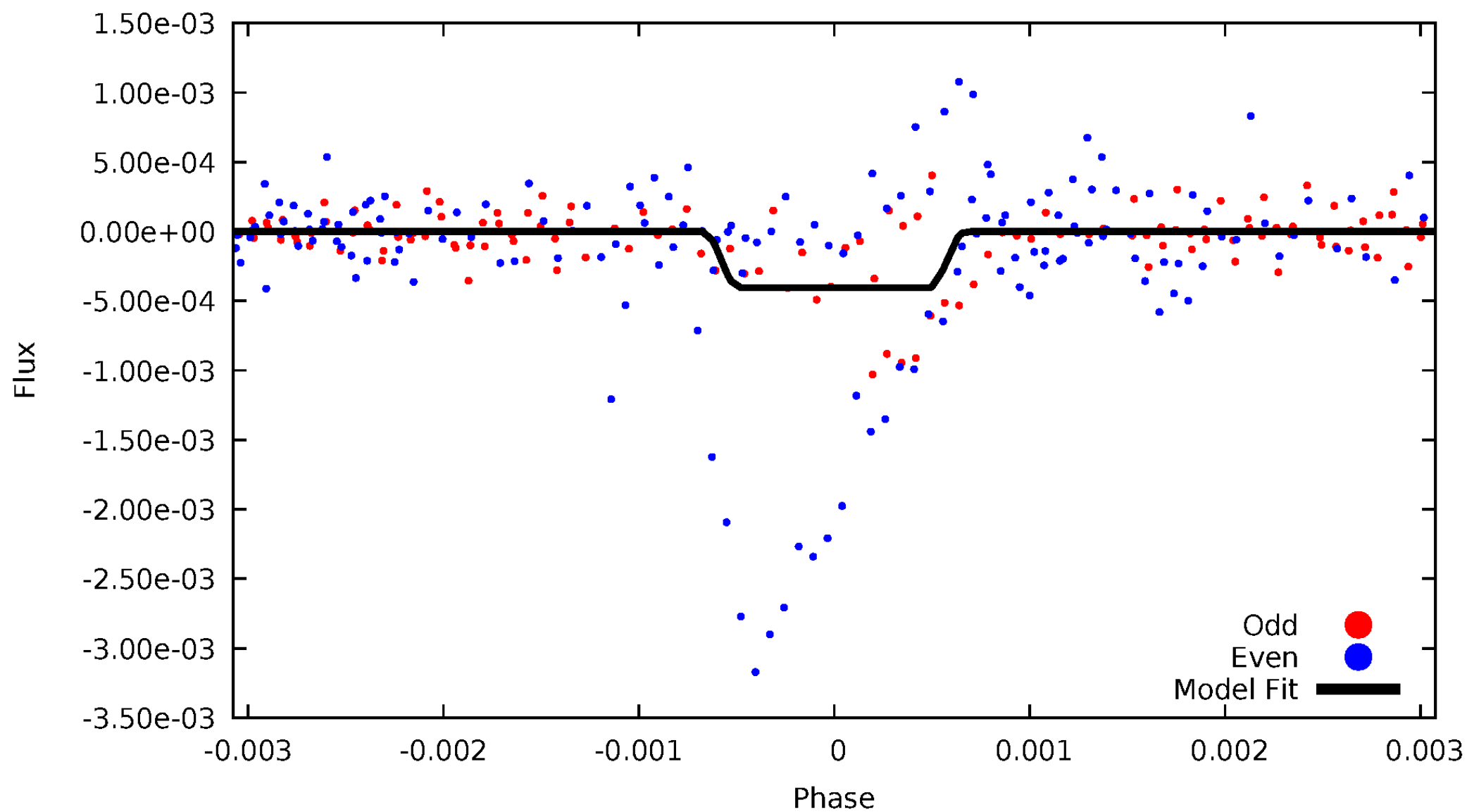
DV Odd/Even

TCE 004349442-04



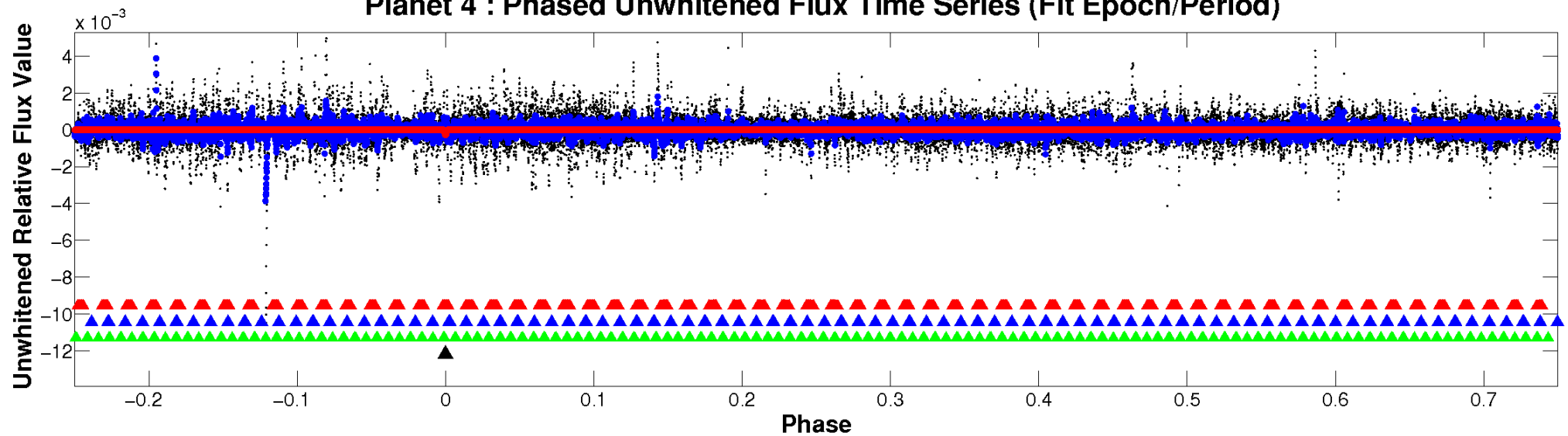
ALT Odd/Even

TCE 004349442-04

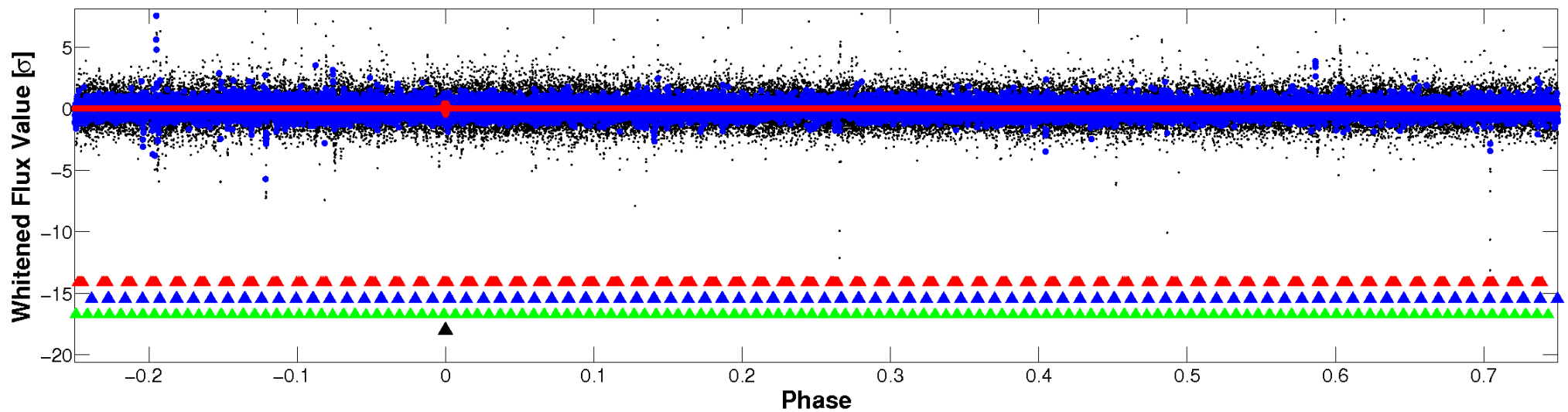


Non-Whitened Vs. Whitened Light Curve

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

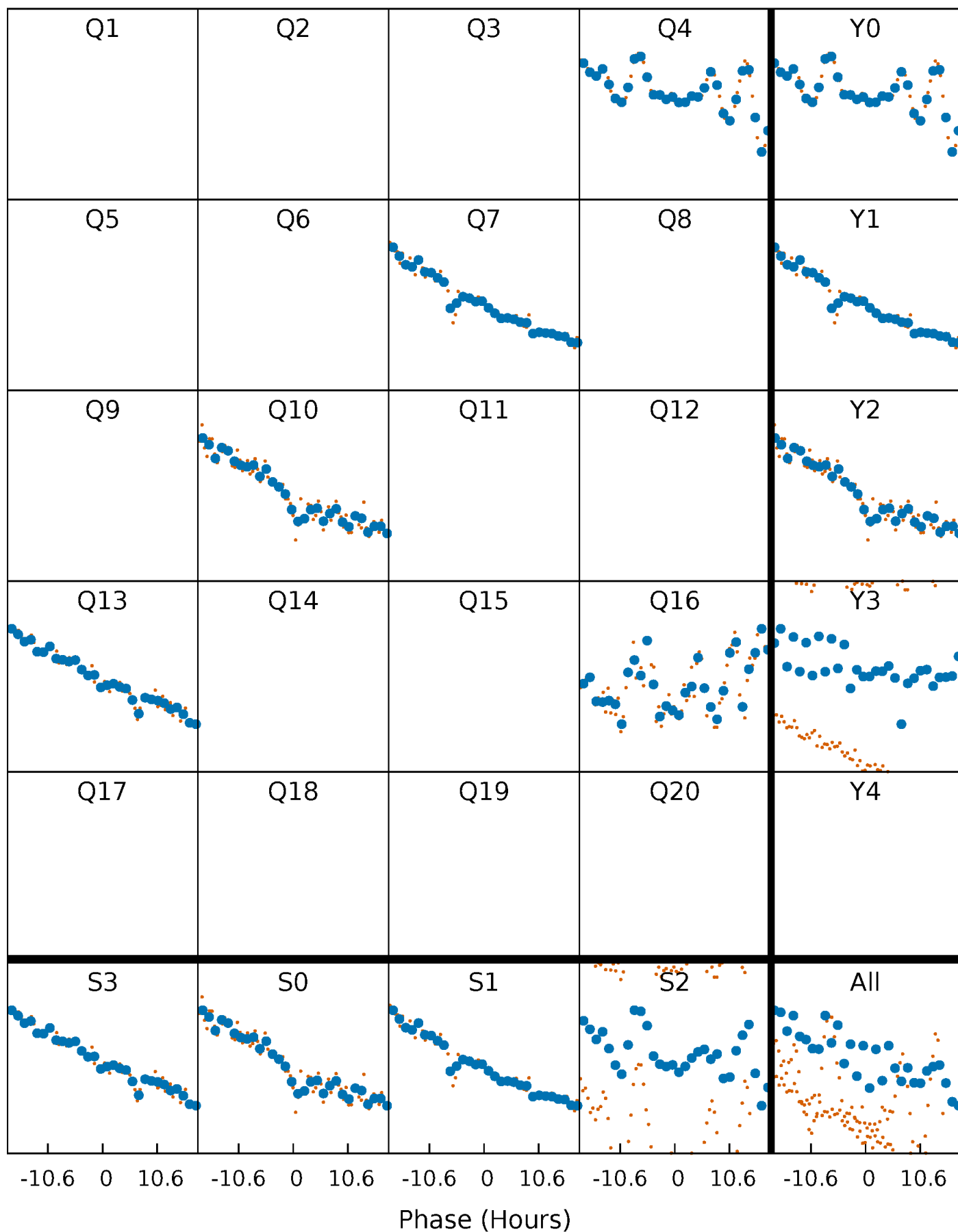


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



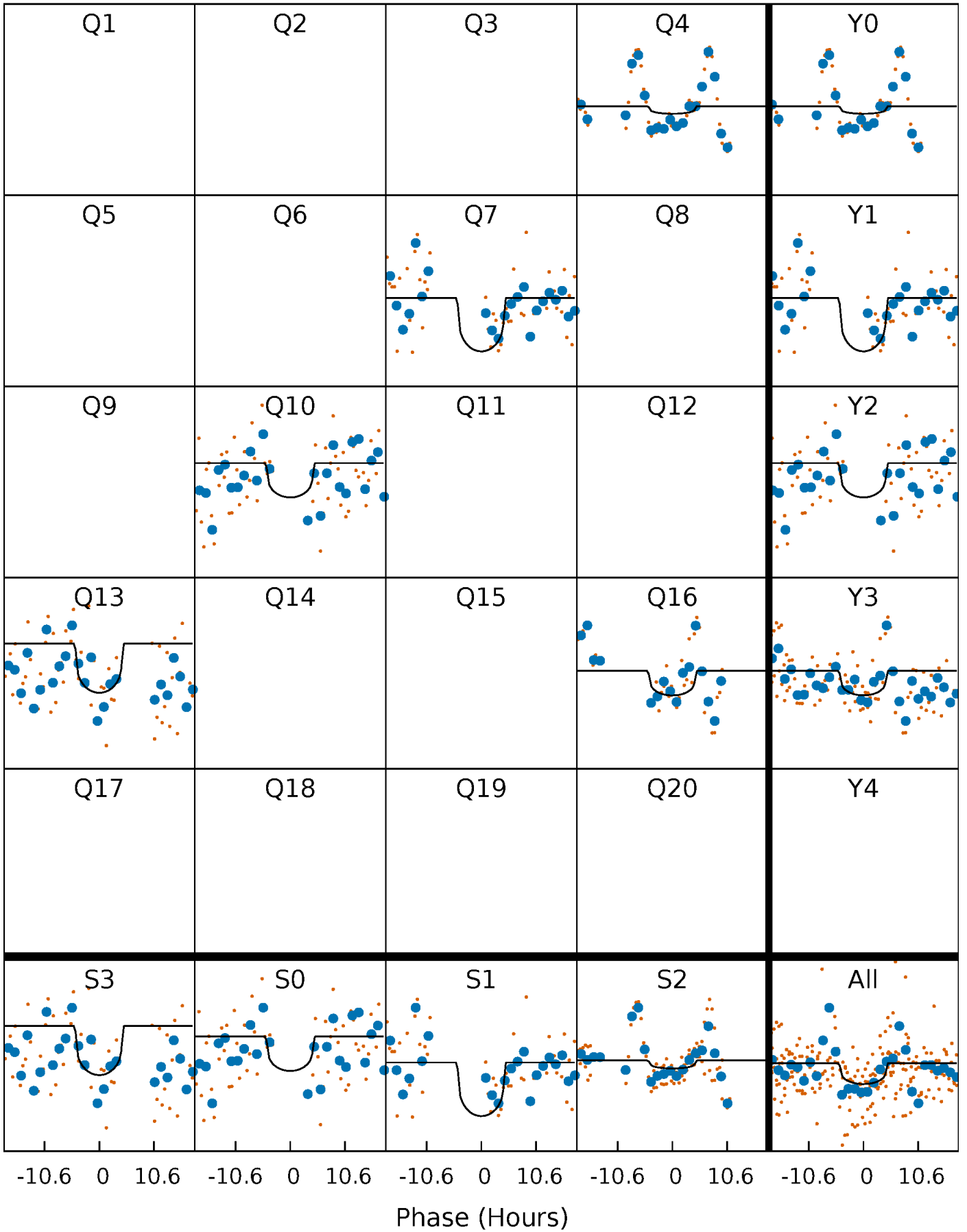
PDC Quarter-Phased Transit Curves

TCE 004349442-04 $P=276.630005$ Days $T_0=406.838612$ (BKJD)



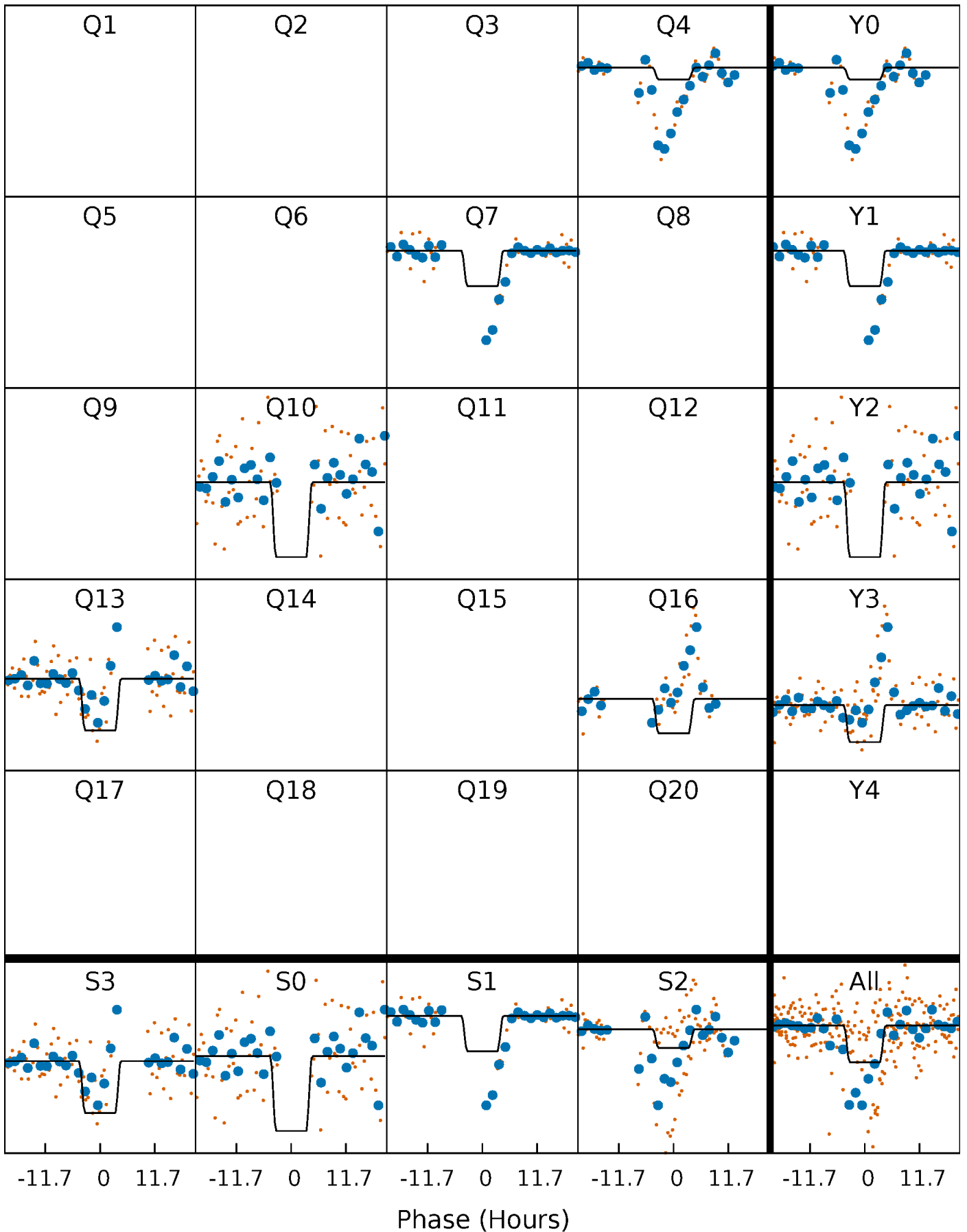
DV Quarter-Phased Transit Curves

TCE 004349442-04 $P=276.630005$ Days $T_0=406.838612$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

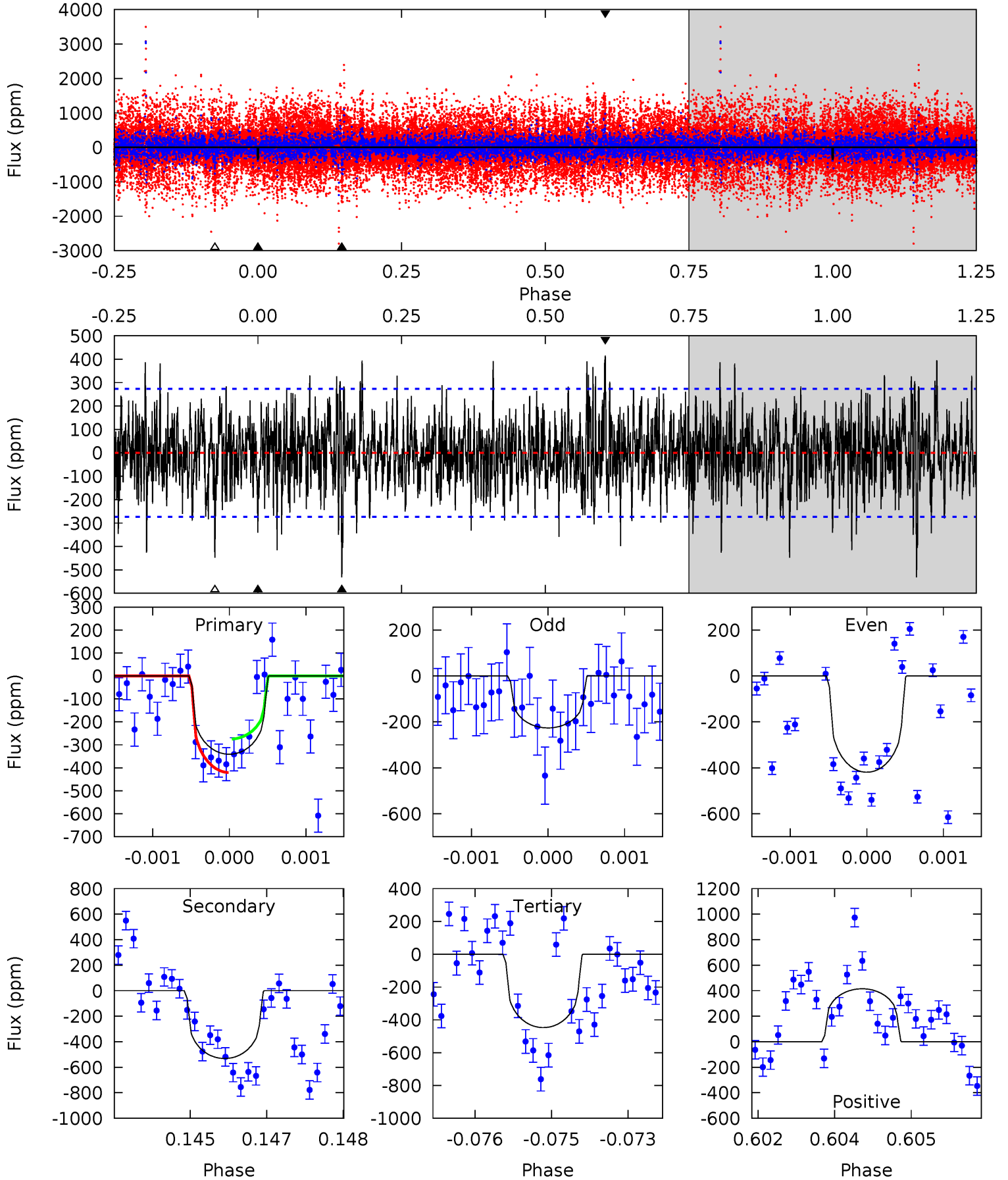
TCE 004349442-04 $P=276.649969$ Days $T_0=406.779602$ (BKJD)



DV Model-Shift Uniqueness Test

004349442-04, P = 276.630005 Days, E = 130.208607 Days

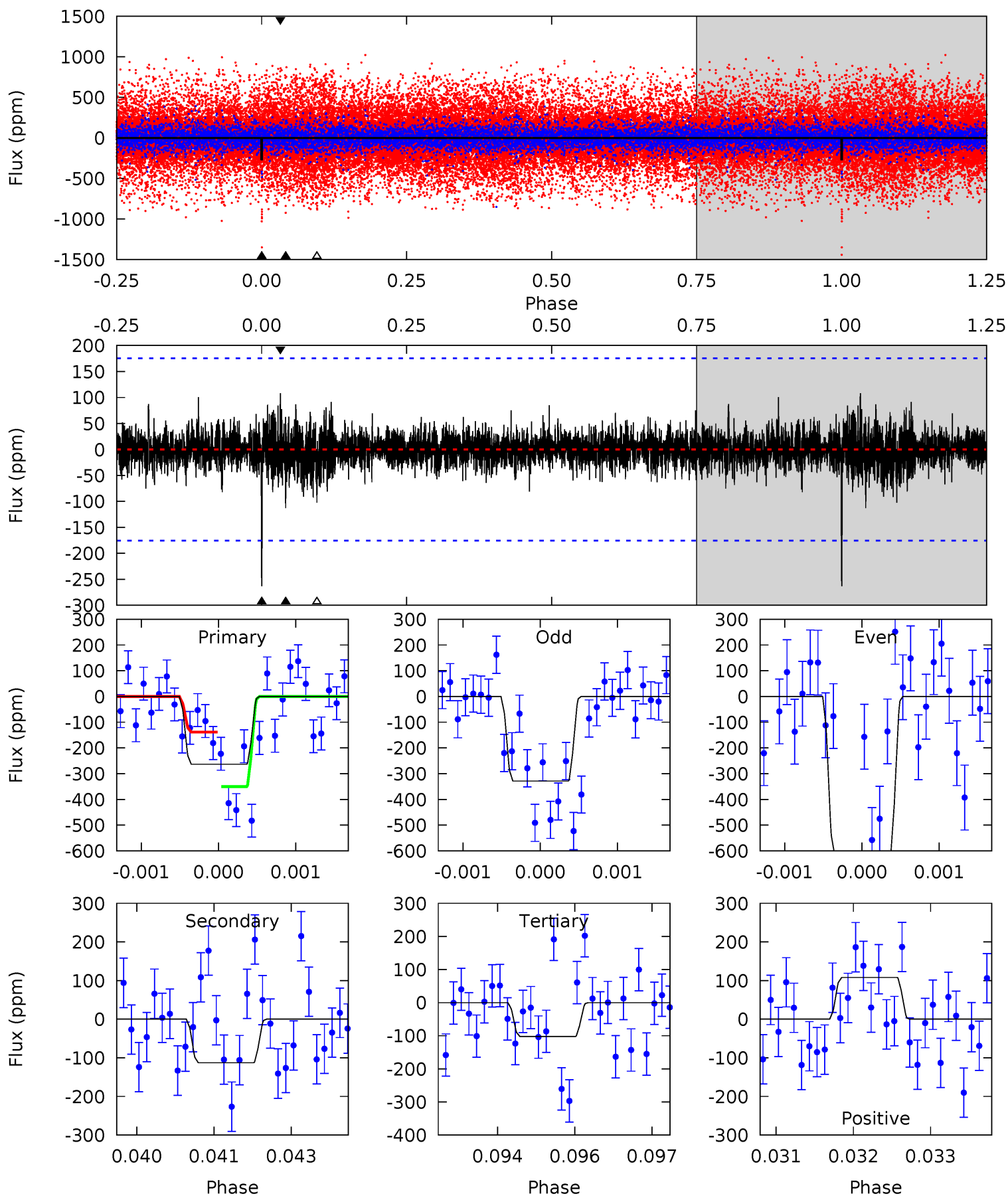
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.73	10.5	8.82	8.19	5.39	3.19	2.27	-2.09	-1.46	1.67	2.30	1.66	1.20	0.44	1.45



Alt Model-Shift Uniqueness Test

004349442-04, P = 276.649969 Days, E = 130.129633 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.10	3.47	3.15	3.33	5.40	3.21	0.68	4.95	4.77	0.32	0.14	4.29	4.42	0.29	3.30



Stellar Parameters For KIC 004349442

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4914^{+98}_{-98}	$4.610^{+0.018}_{-0.046}$	$-0.040^{+0.150}_{-0.150}$	$0.724^{+0.045}_{-0.030}$	$0.783^{+0.035}_{-0.046}$	$2.902^{+0.269}_{-0.441}$
	+2%/-2%	+0%/-1%	+375%/-375%	+6%/-4%	+4%/-6%	+9%/-15%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 004349442-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-532 ± 51	$1.57^{+1.03}_{-0.89}$	297^{+7}_{-7}	5311^{+2751}_{-1037}	$68601^{+281442}_{-44061}$
Alt.	-113 ± 32	$1.72^{+1.03}_{-0.98}$	296^{+7}_{-7}	3740^{+1557}_{-549}	11652^{+61612}_{-7365}

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 $A_{obs} \gg 1.0$

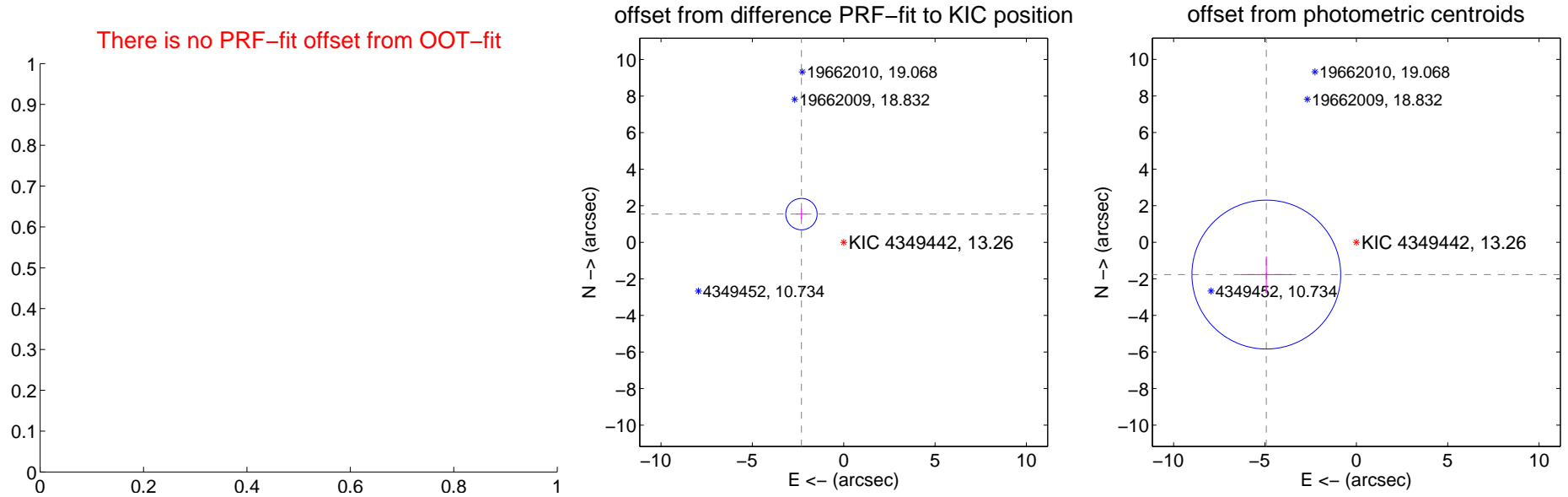
DV Centroid Data

Supplemental centroid analysis for 004349442-04. Kepler magnitude: 13.26. Transit SNR 4.26

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	2.781 ± 0.286	9.72	2.313 ± 0.286	1.543 ± 0.287
photometric centroid source offset	5.23 ± 1.36	3.86	4.93 ± 1.40	-1.77 ± 0.99



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



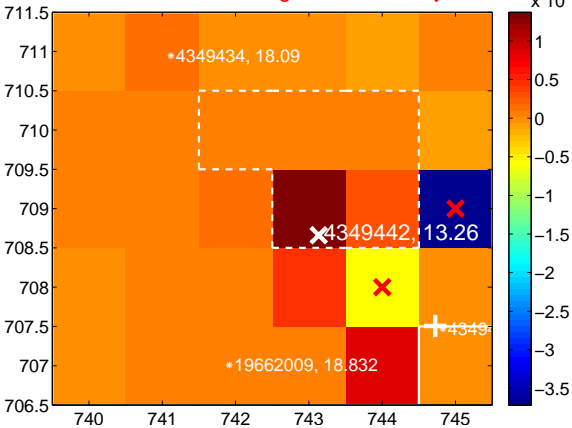
Q3 no difference image



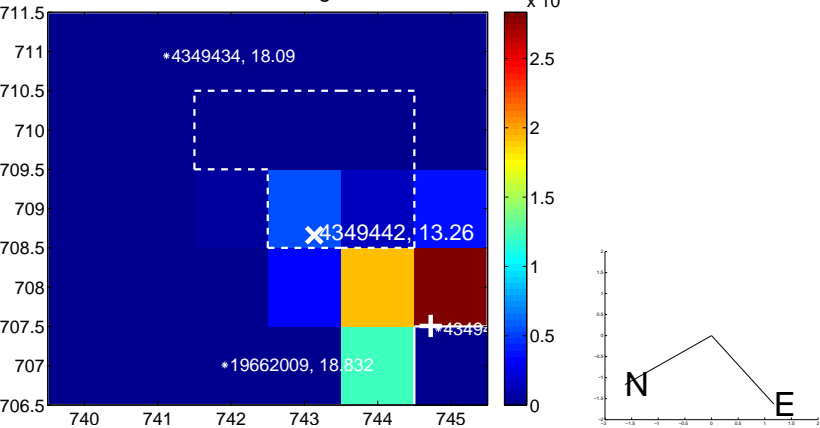
Q3 no OOT image



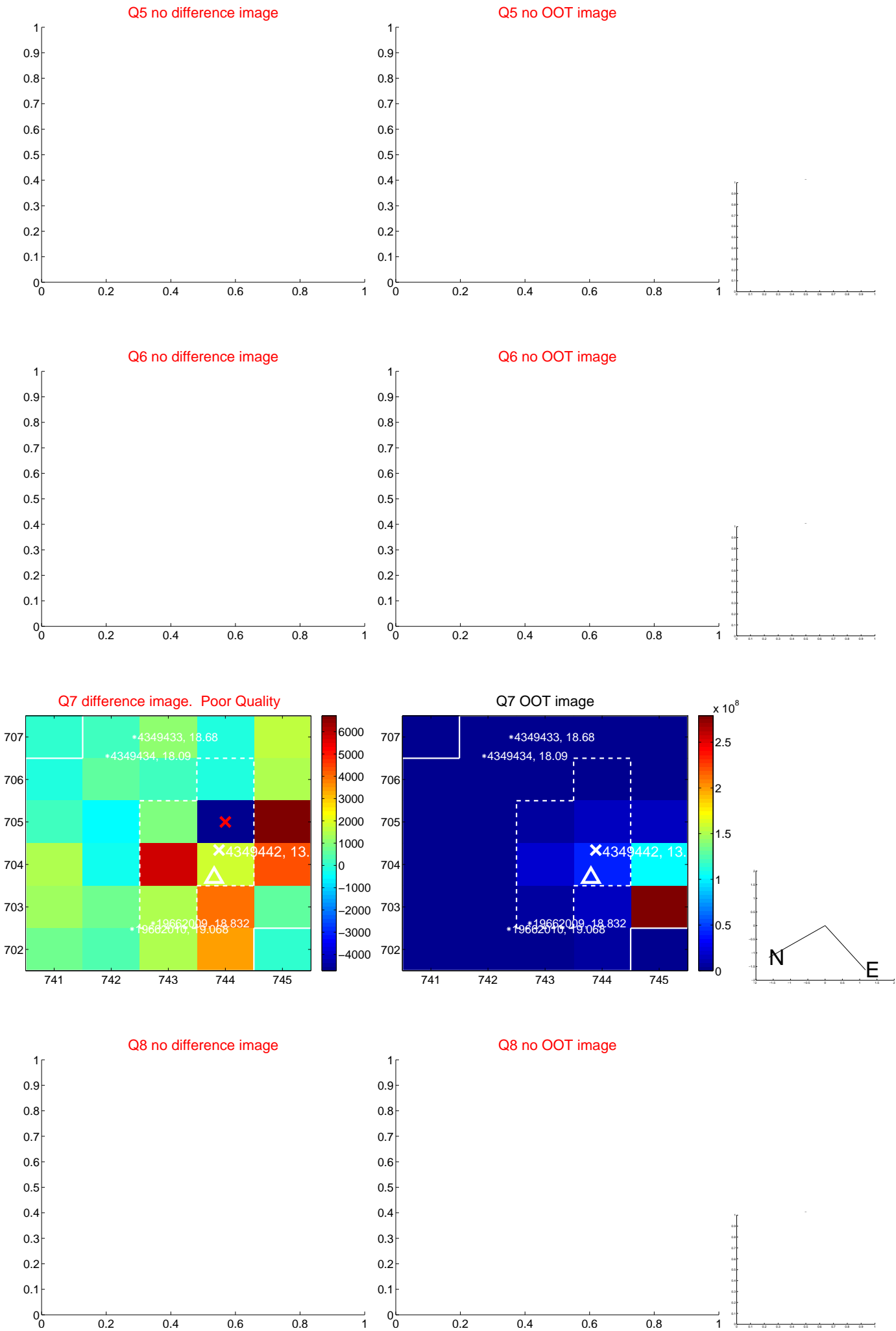
Q4 difference image. Poor Quality



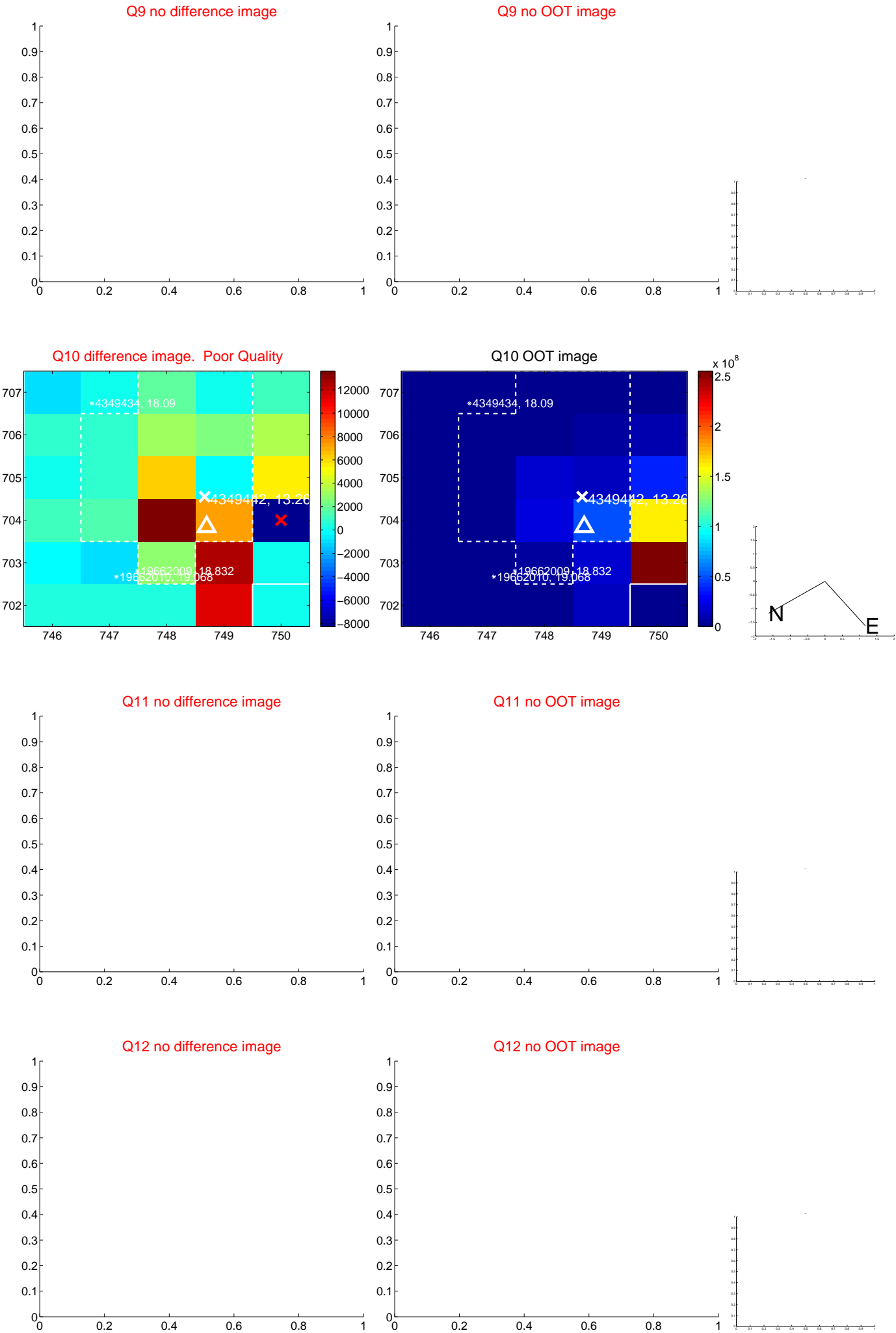
Q4 OOT image



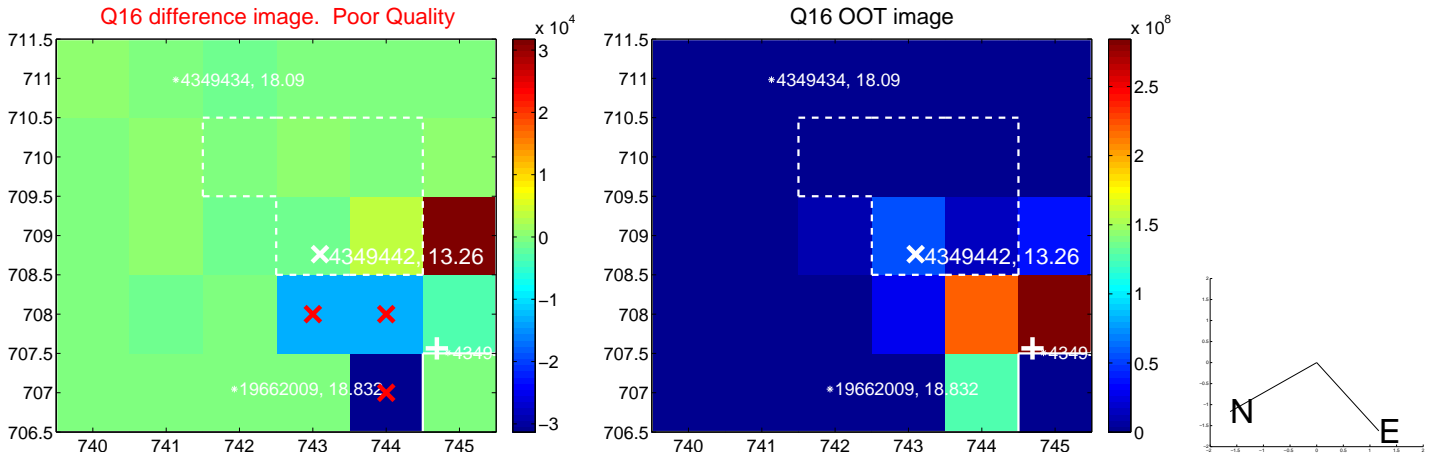
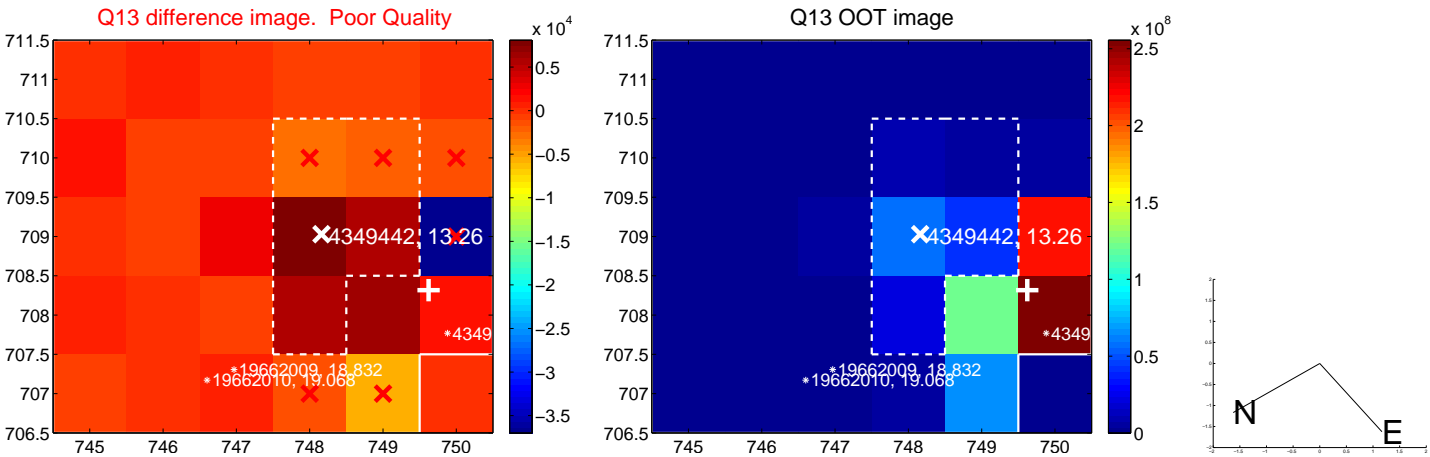
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



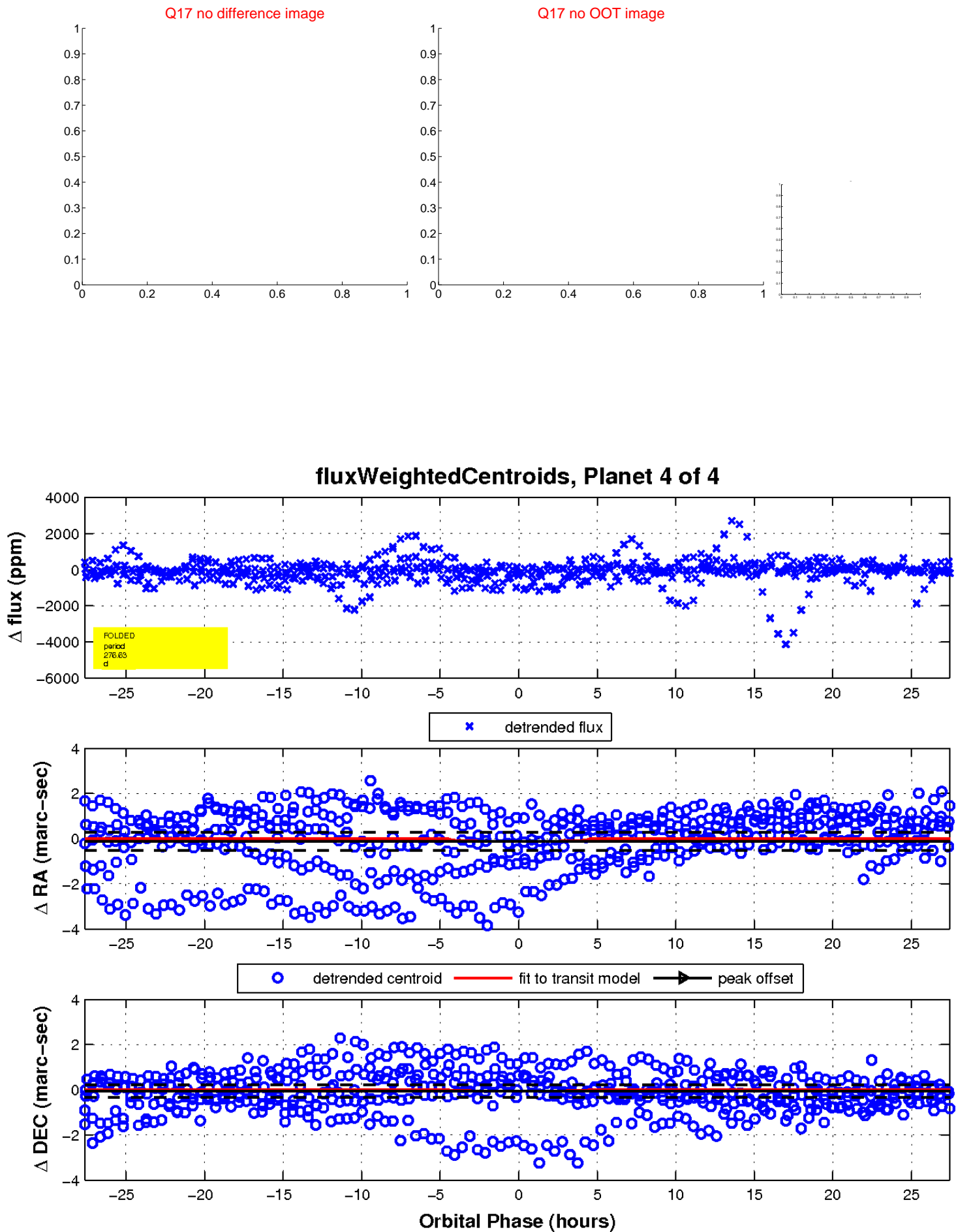
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

