

KIC 006715434

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})
006715434-01	OBS	No	1.644953	132.603637	19.1	4.970	8.8	5.1	2.14	6253	1.05	7055.33
006715434-02	OBS	No	372.685213	196.068737	468.6	18.419	8.8	8.5	2.14	6253	5.71	5.11
006715434-03	OBS	No	360.530640	228.031823	466.5	21.067	7.7	9.3	2.14	6253	4.68	5.34
006715434-04	OBS	No	360.528369	203.508085	418.0	24.785	7.3	7.3	2.14	6253	8.55	5.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006715434-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006715434-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006715434-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
006715434-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—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.

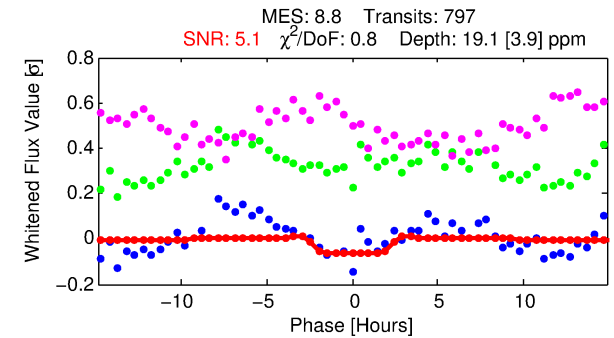
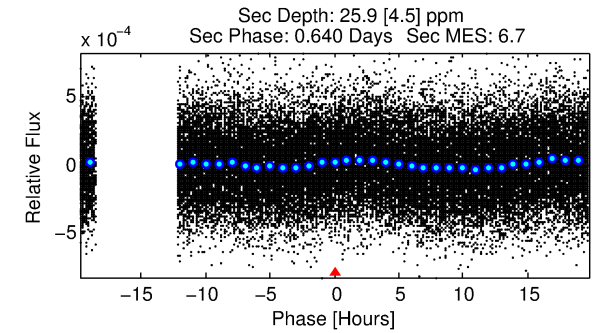
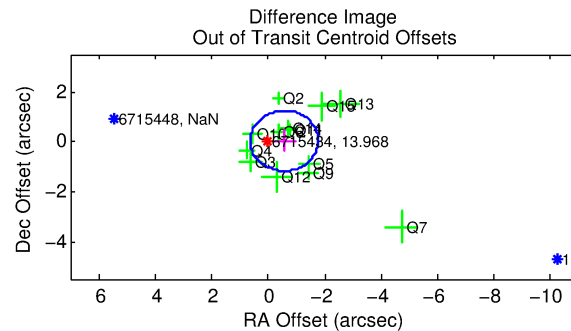
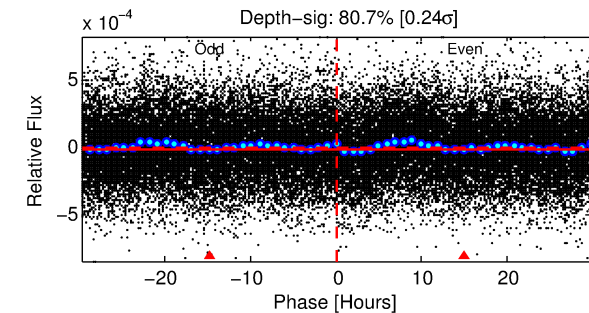
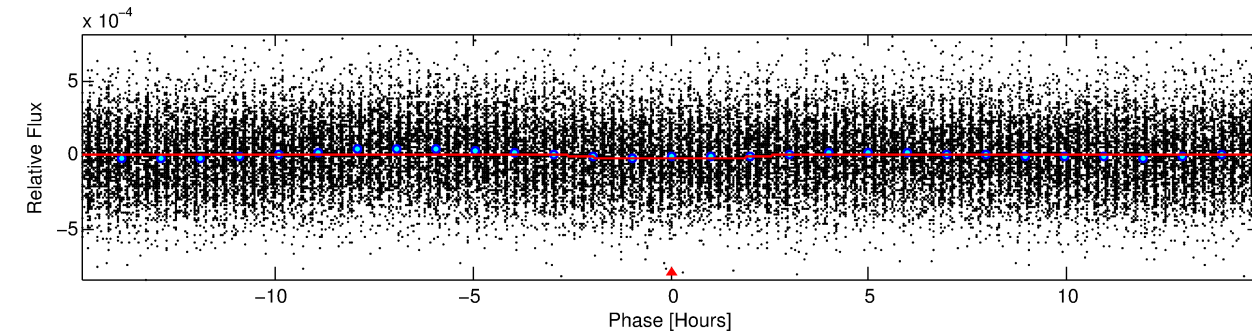
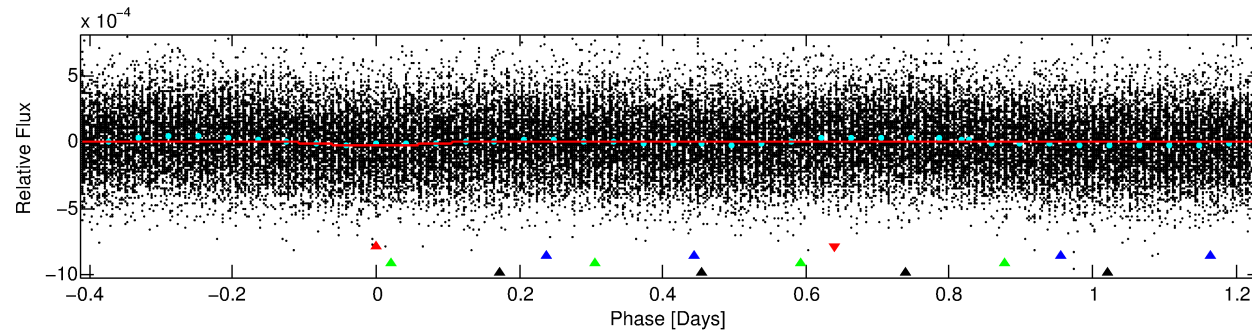
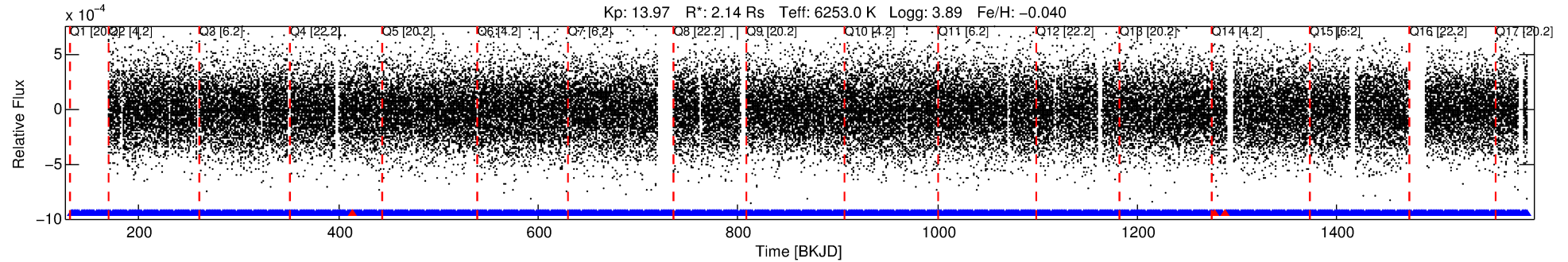
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006715434-01

No Significant Match Found

DV One-Page Summary

KIC: 6715434 Candidate: 1 of 4 Period: 1.645 d



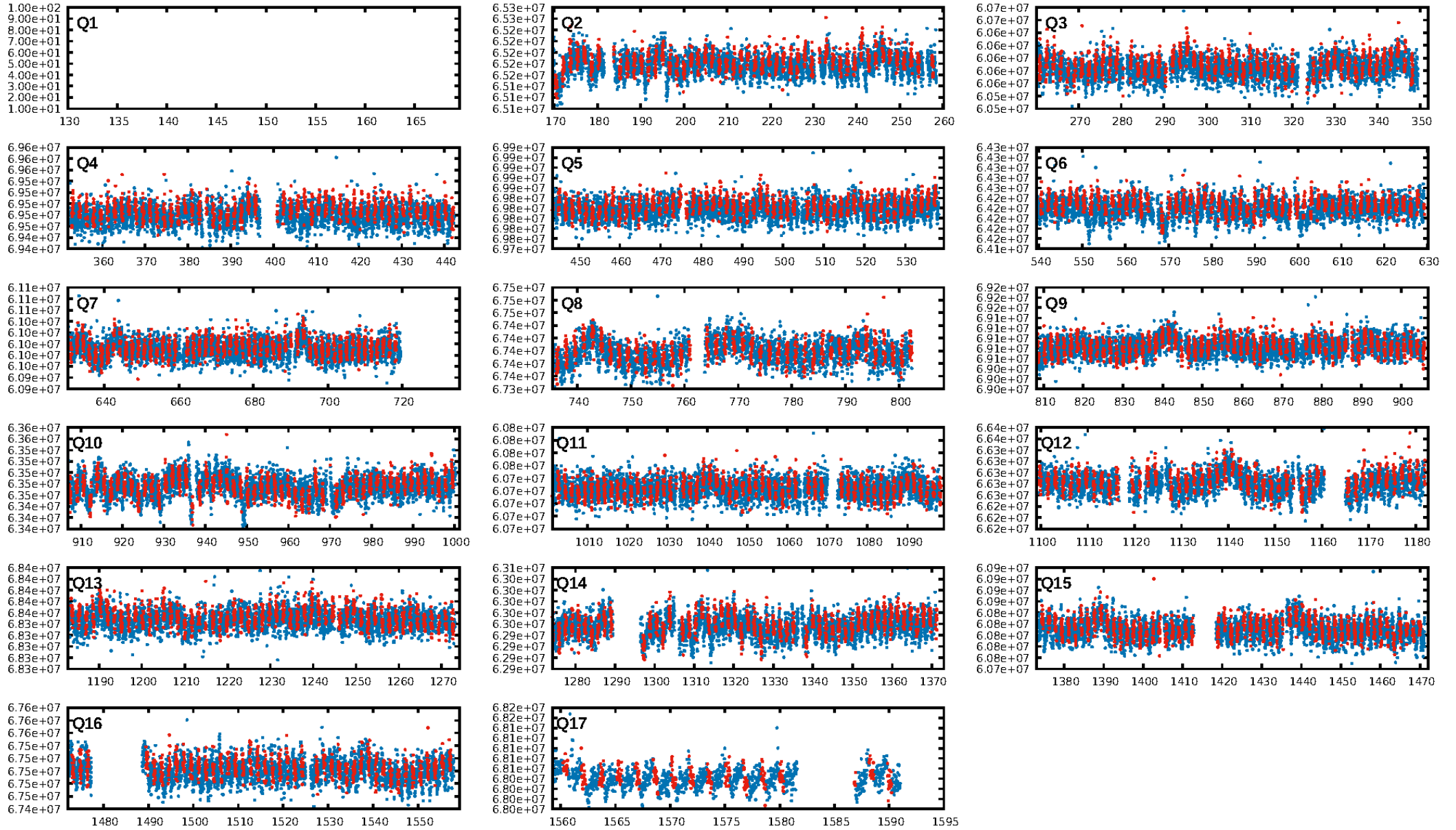
DV Fit Results:

Period = 1.64495 [0.00003] d
Epoch = 132.6036 [0.0087] BKJD
Rp/R* = 0.0045 [0.0019]
a/R* = 1.69 [2.43]
b = 0.83 [0.84]
Seff = 7055.33 [5125.96]
Teq = 2337 [424] K
Rp = 1.05 [0.65] Re
a = 0.0298 [0.0131] AU
Ag = 11.51 [12.95] [0.81 σ]
Teffp = 6655 [1475] K [2.81 σ]

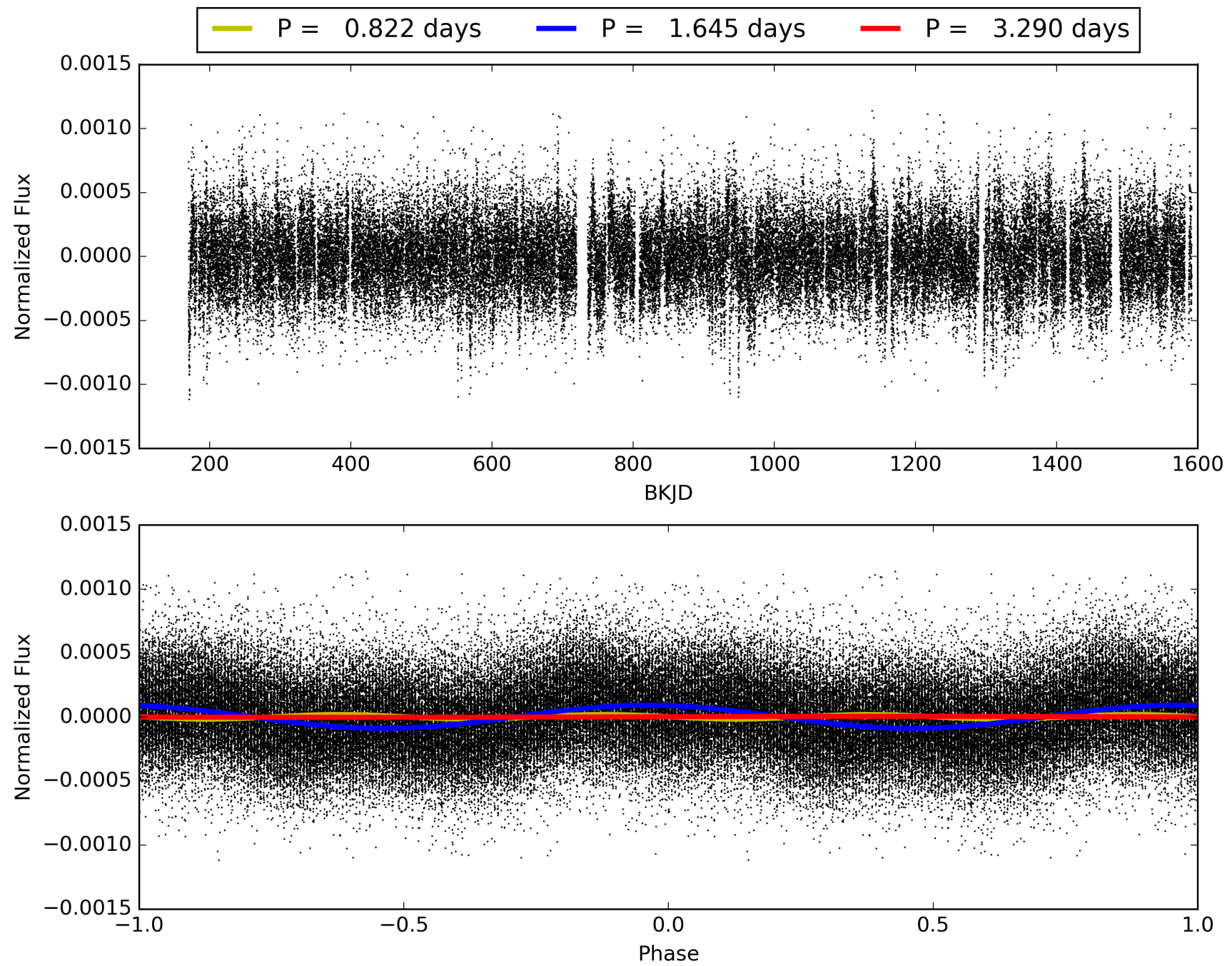
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [340.74 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.19e-14
RollingBand-fgt: 1.00 [778/781]
GhostDiagnostic-chr: -1.609
Centroid-sig: 26.2%
Centroid-so: 1.715 arcsec [0.91 σ]
OotOffset-rm: 0.564 arcsec [1.40 σ]
KicOffset-rm: 0.538 arcsec [1.42 σ]
OotOffset-st: 4/4/2/3 [13]
KicOffset-st: 4/4/2/3 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 006715434-01, PDC Light Curves

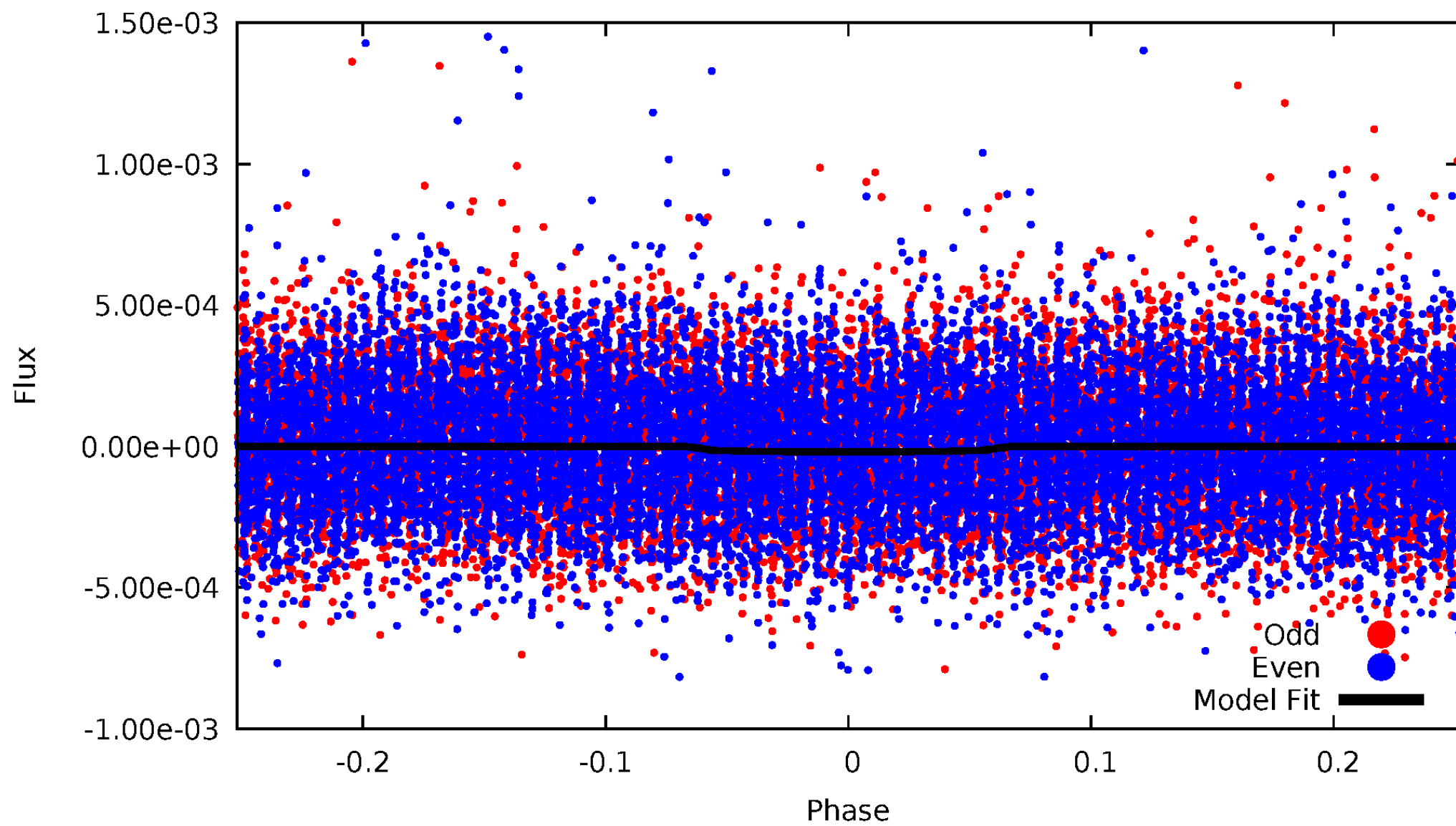


TCE 006715434-01



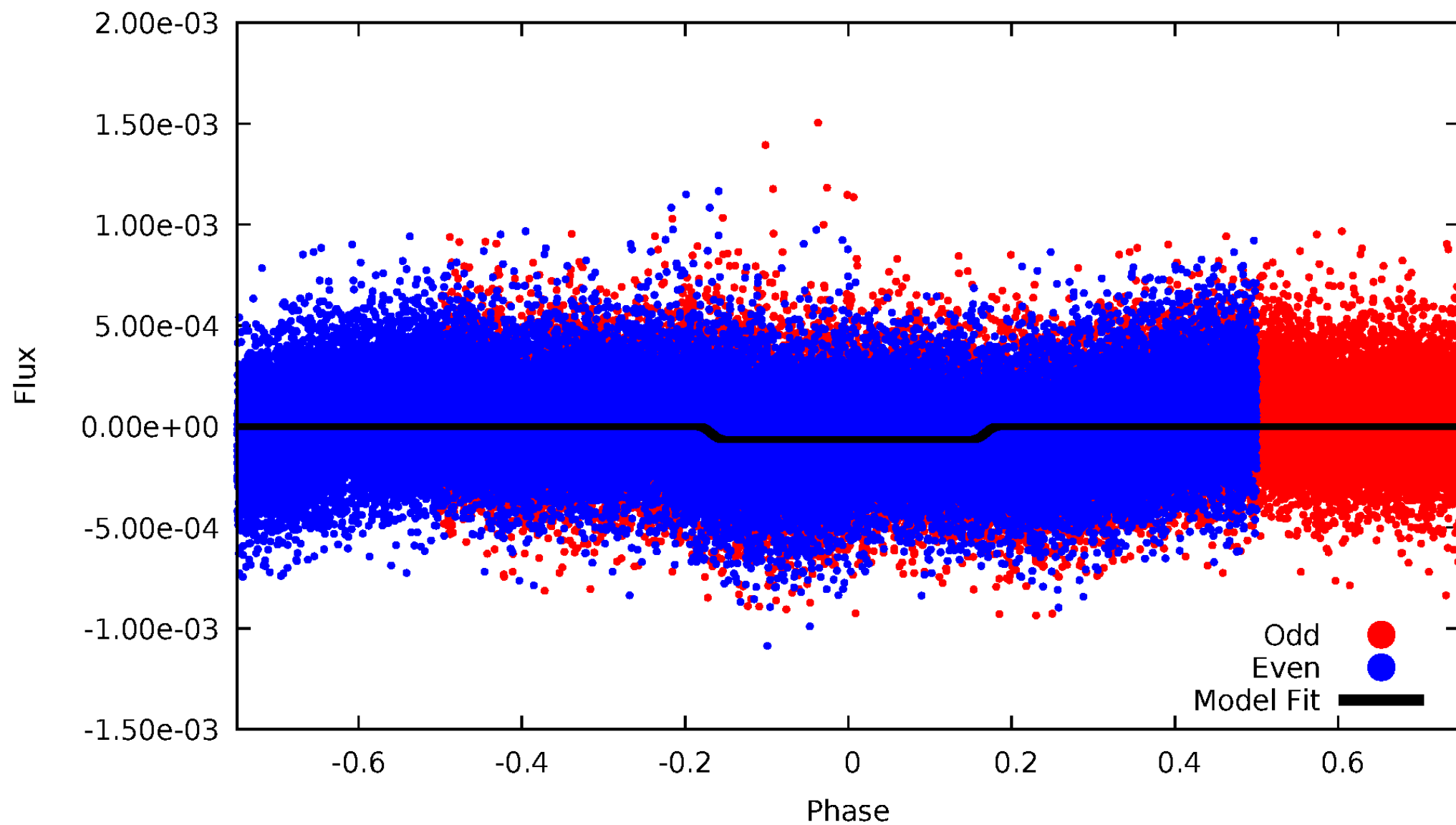
DV Odd/Even

TCE 006715434-01



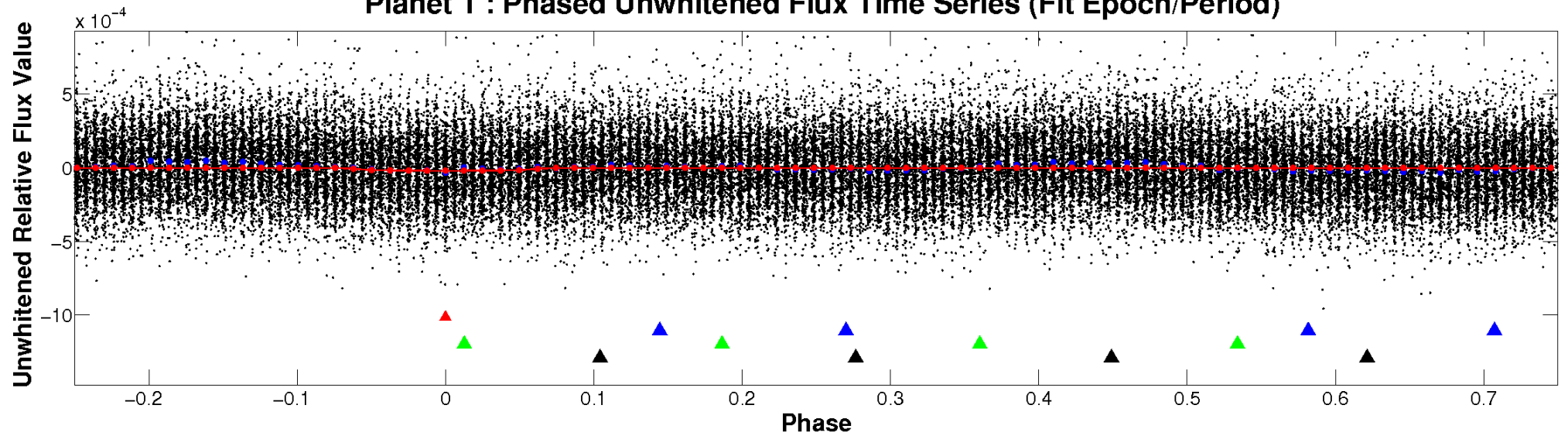
ALT Odd/Even

TCE 006715434-01

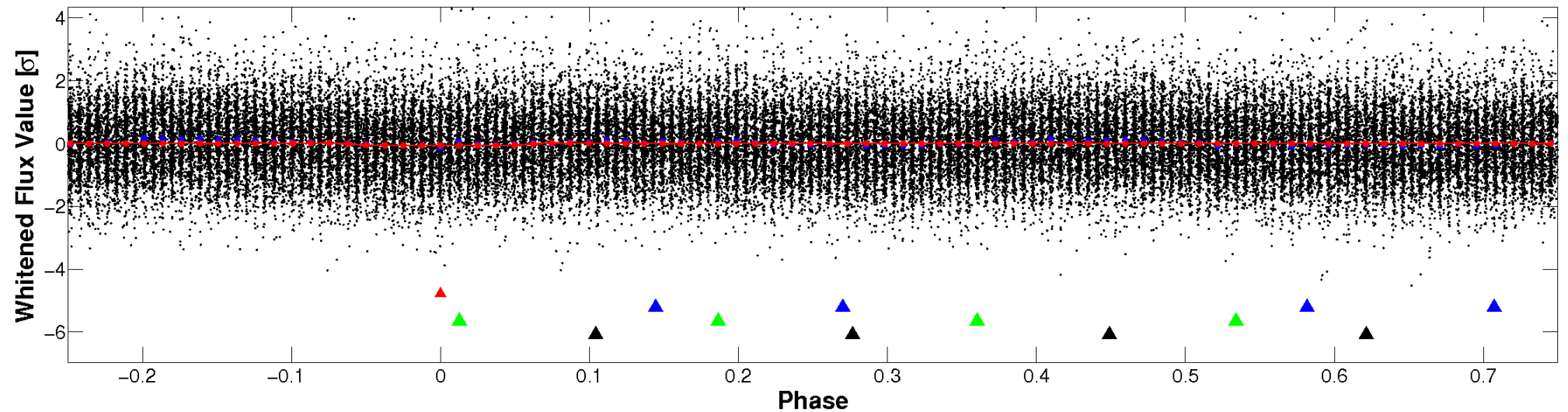


Non-Whitened Vs. Whitened Light Curve

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

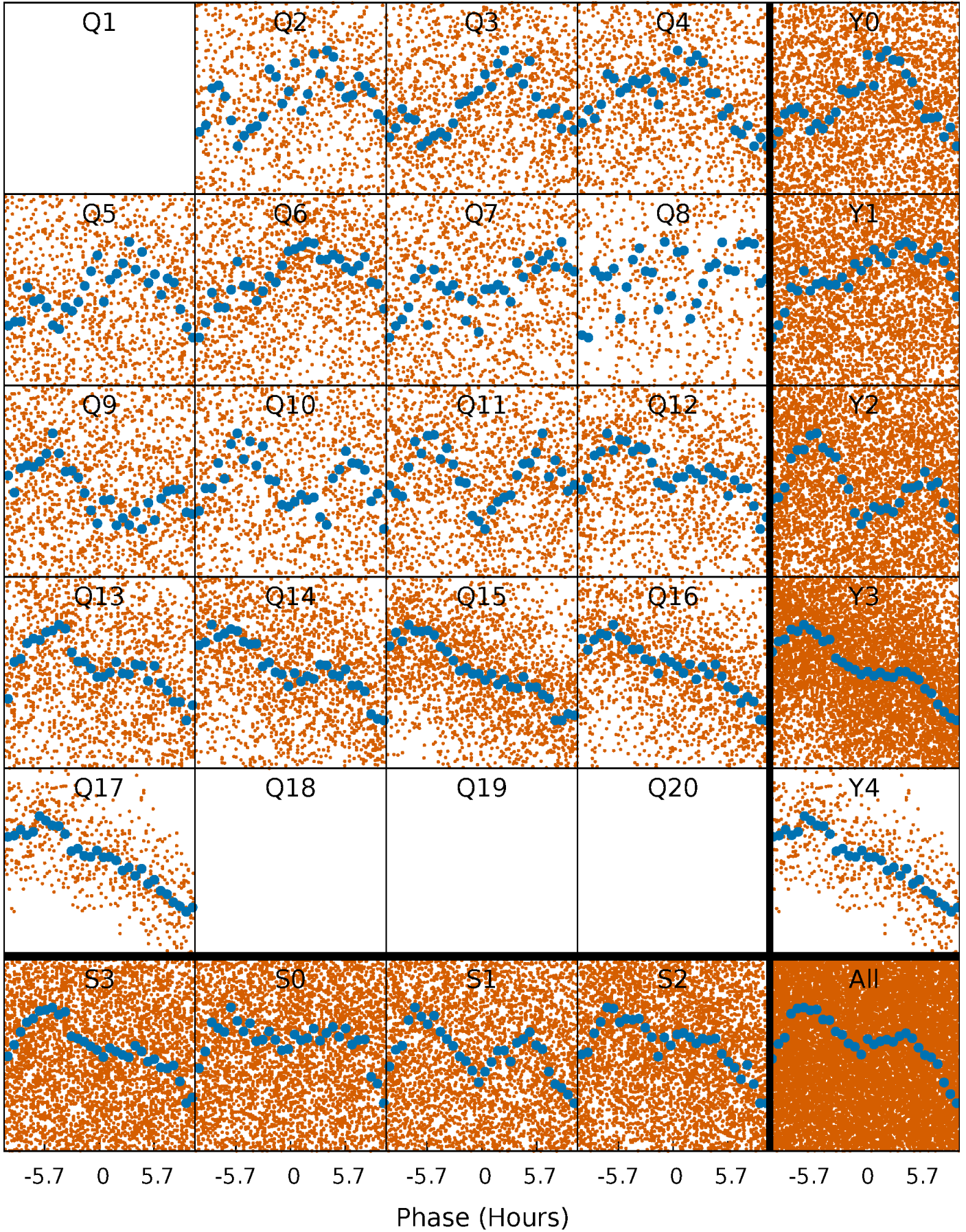


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



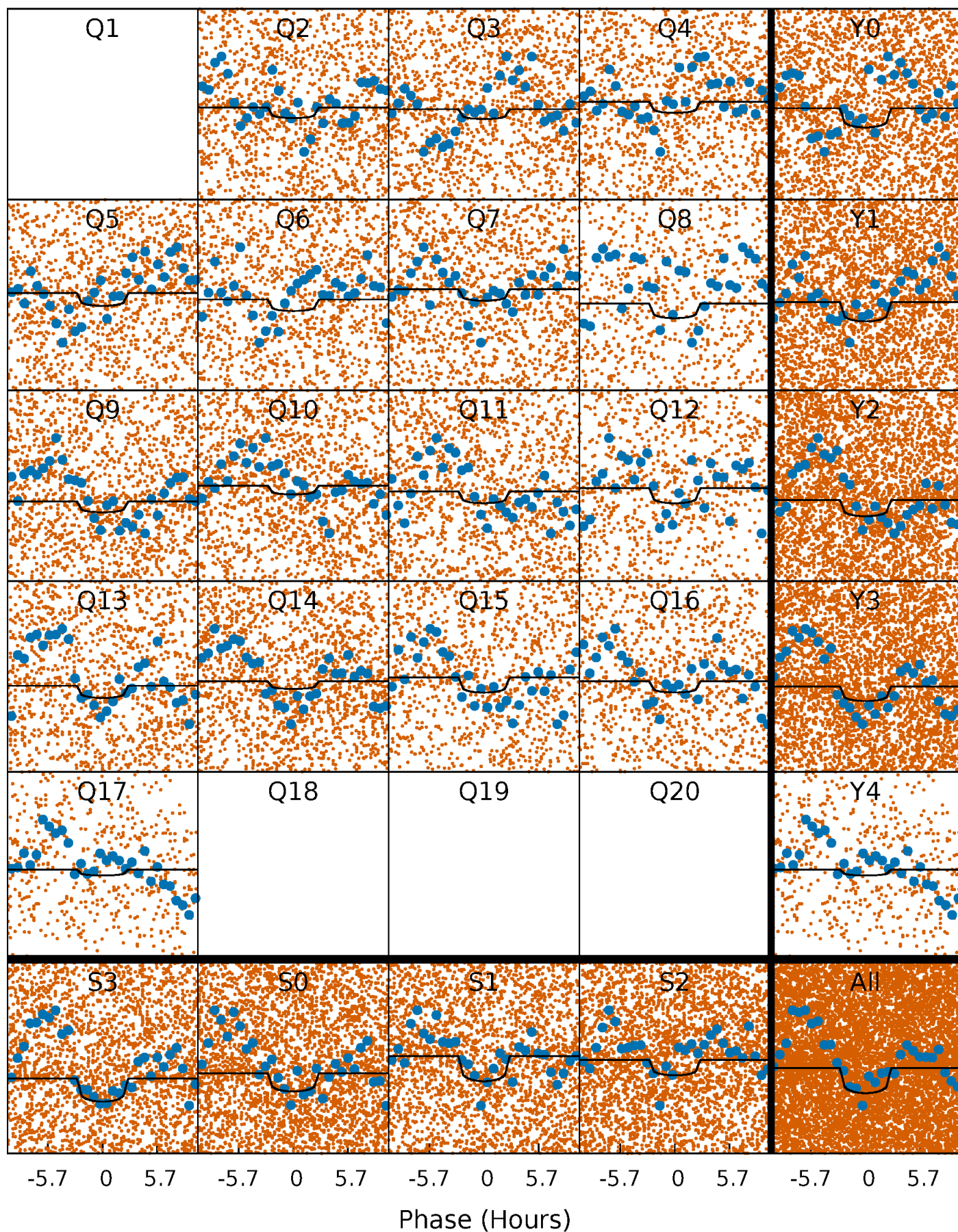
PDC Quarter-Phased Transit Curves

TCE 006715434-01 P= 1.644953 Days $T_0=132.603637$ (BKJD)



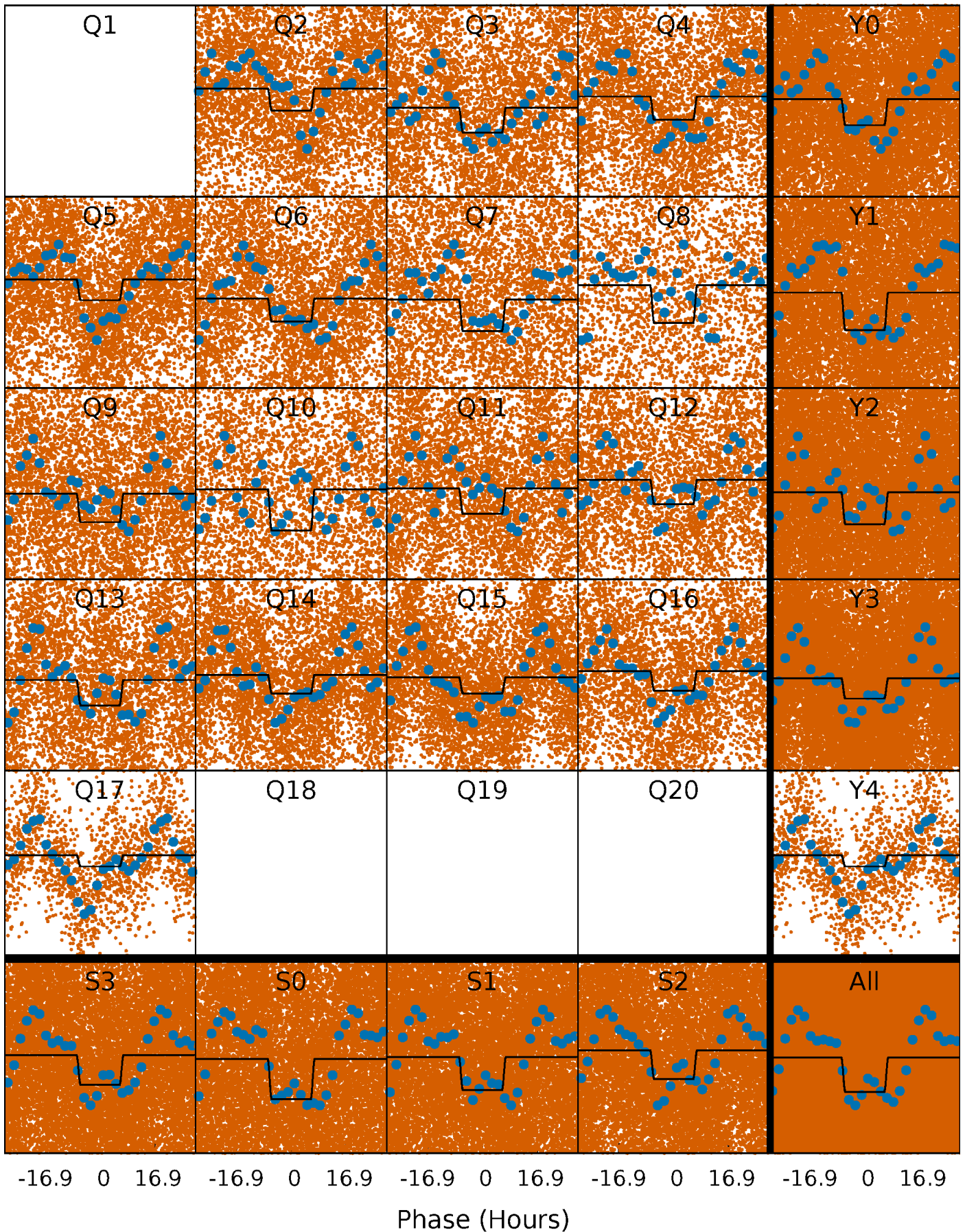
DV Quarter-Phased Transit Curves

TCE 006715434-01 P= 1.644953 Days $T_0=132.603637$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

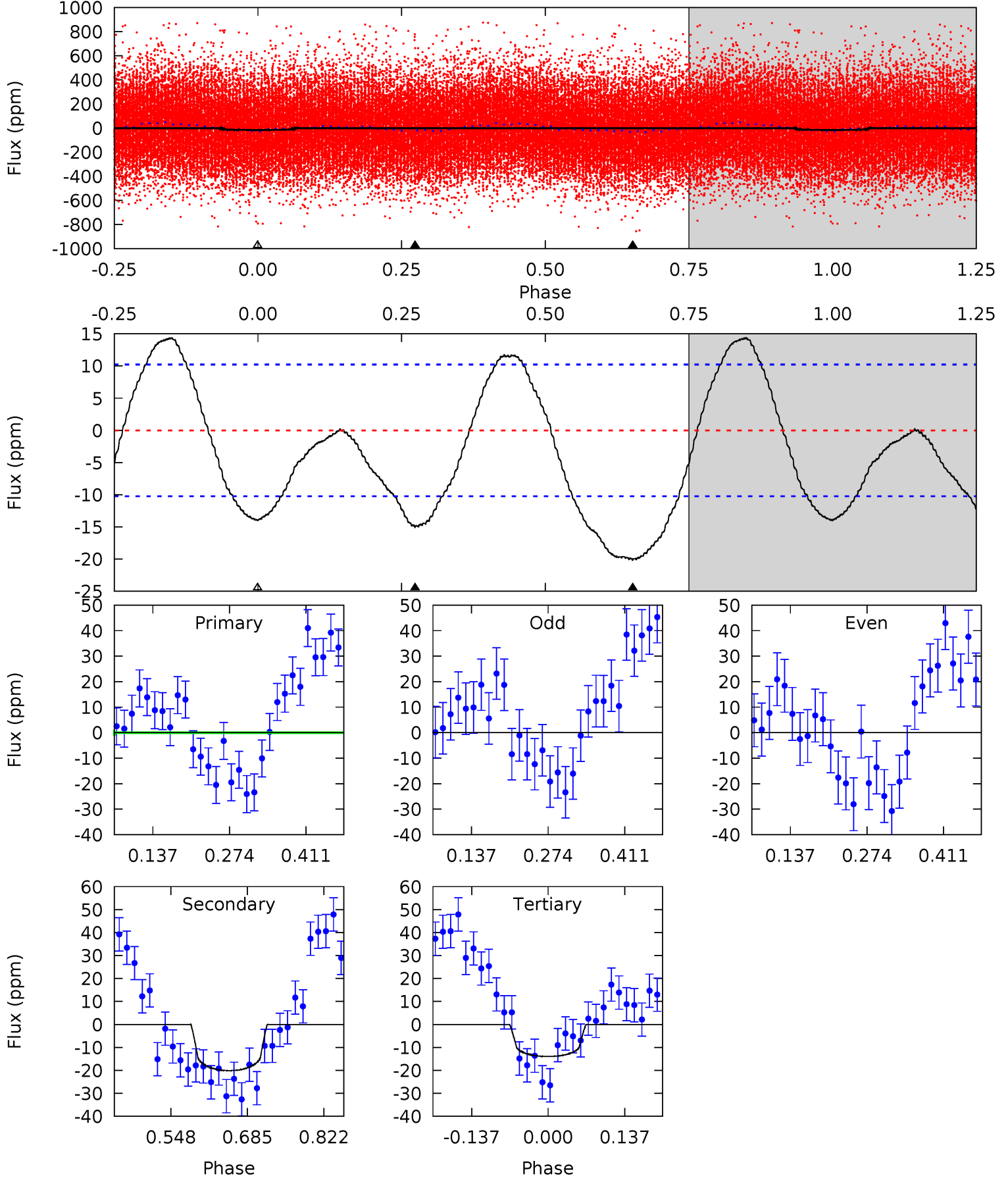
TCE 006715434-01 P= 1.644787 Days $T_0=131.686190$ (BKJD)



DV Model-Shift Uniqueness Test

006715434-01, P = 1.644953 Days, E = 132.603637 Days

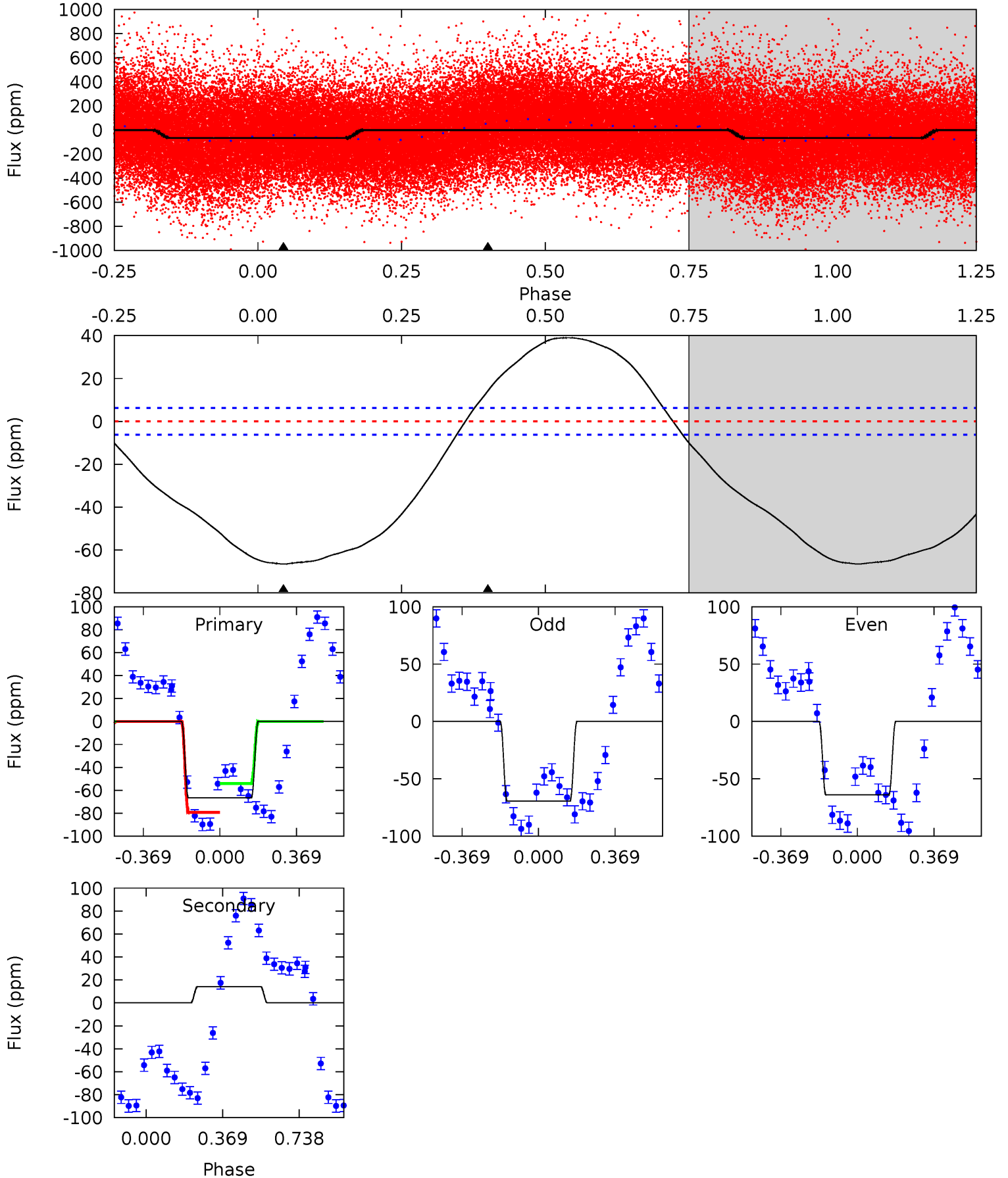
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.61	8.85	6.13	0	4.50	1.49	4.14	0.48	6.61	2.72	8.85	0.07	0.82	0.42	2.37



Alt Model-Shift Uniqueness Test

006715434-01, P = 1.644787 Days, E = 131.686190 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.7	-9.73	0	0	4.28	0.90	7.30	45.7	45.7	-9.73	-9.73	1.86	1.00	0.37	8.45



Stellar Parameters For KIC 006715434

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6253^{+198}_{-242}	$3.893^{+0.420}_{-0.140}$	$-0.040^{+0.250}_{-0.300}$	$2.139^{+0.513}_{-0.953}$	$1.303^{+0.215}_{-0.263}$	$0.188^{+0.698}_{-0.076}$
	+3%/-4%	+11%/-4%	+625%/-750%	+24%/-45%	+17%/-20%	+372%/-40%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006715434-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-20 ± 2	$1.00^{+0.46}_{-0.47}$	3196^{+270}_{-353}	6195^{+2545}_{-1041}	10^{+26}_{-5}
Alt.	14 ± 1	$1.76^{+0.56}_{-0.58}$	3192^{+253}_{-415}	-4587^{+363}_{-474}	$-2.283^{+0.973}_{-2.532}$

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

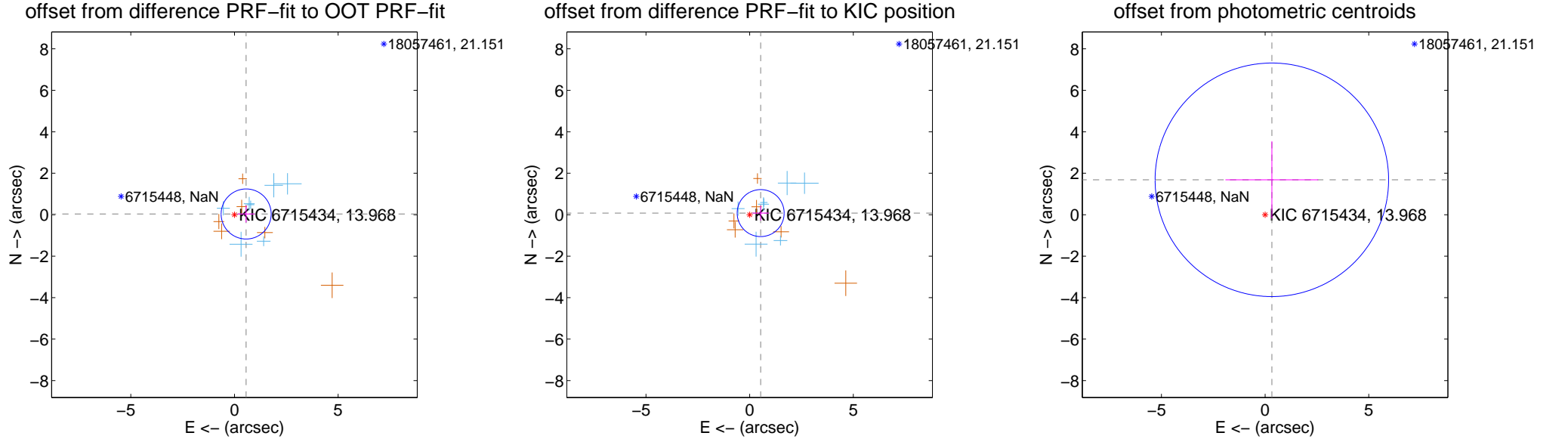
DV Centroid Data

Supplemental centroid analysis for 006715434-01. Kepler magnitude: 13.97. Transit SNR 5.14

There are 7 quarters with good PRF difference image offsets

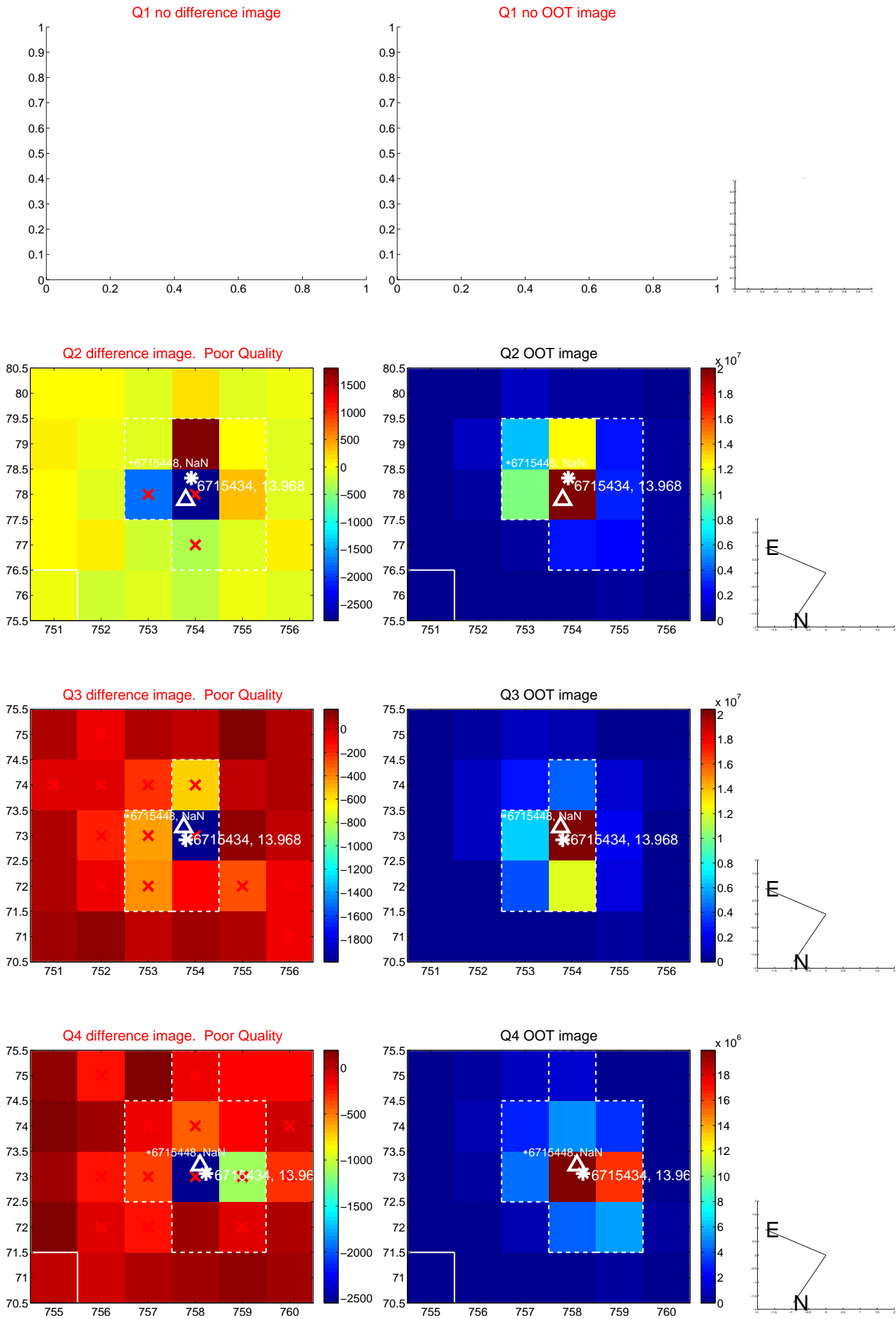
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.564 ± 0.402	1.40	-0.563 ± 0.411	0.035 ± 0.410
PRF-fit source offset from KIC position	0.538 ± 0.378	1.42	-0.532 ± 0.391	0.078 ± 0.355
photometric centroid source offset	1.72 ± 1.88	0.91	-0.33 ± 2.24	1.68 ± 1.86

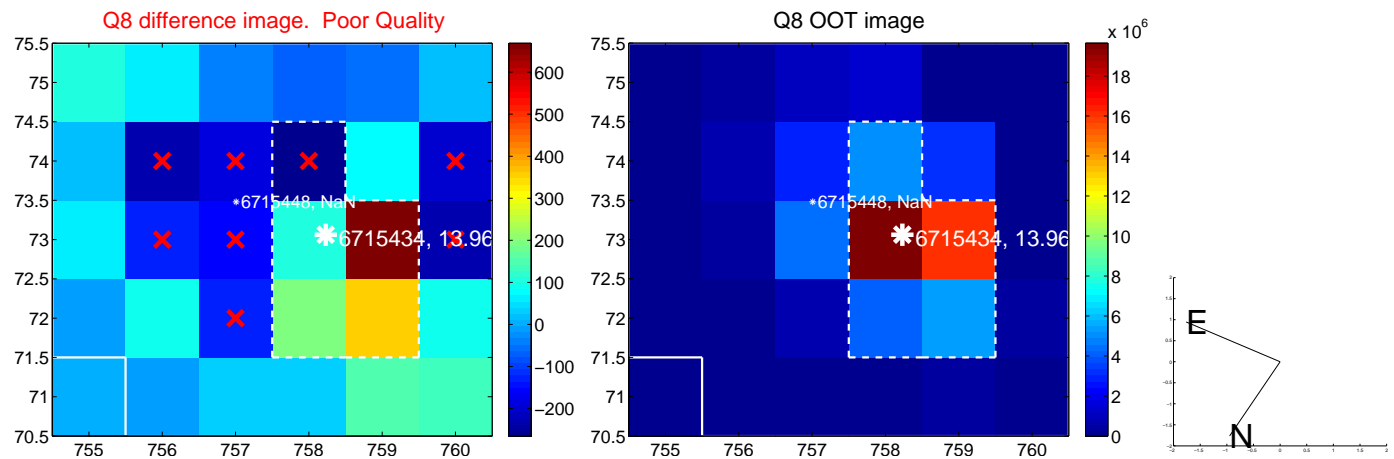
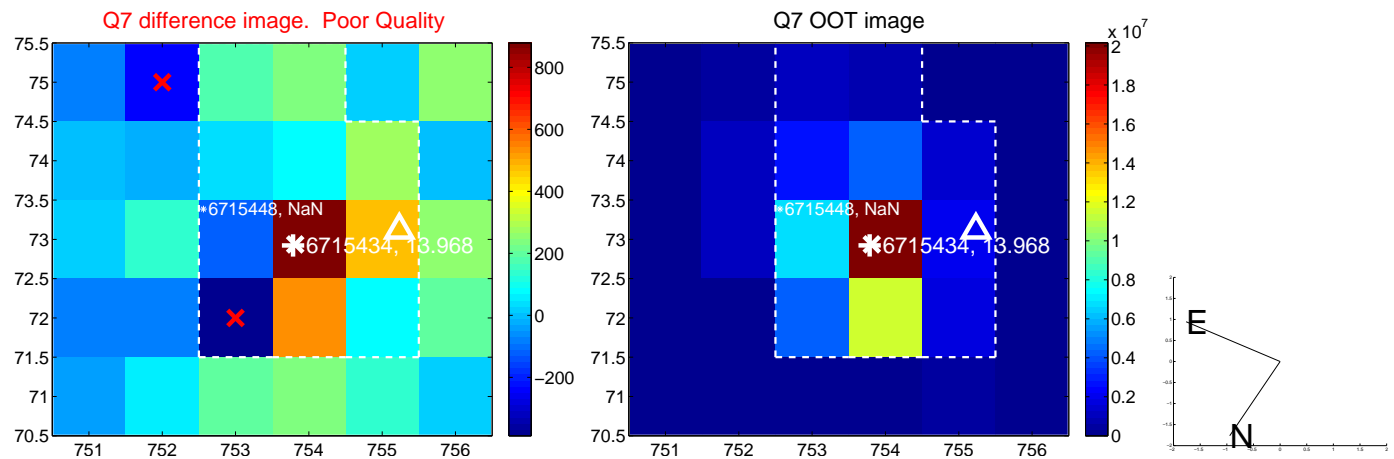
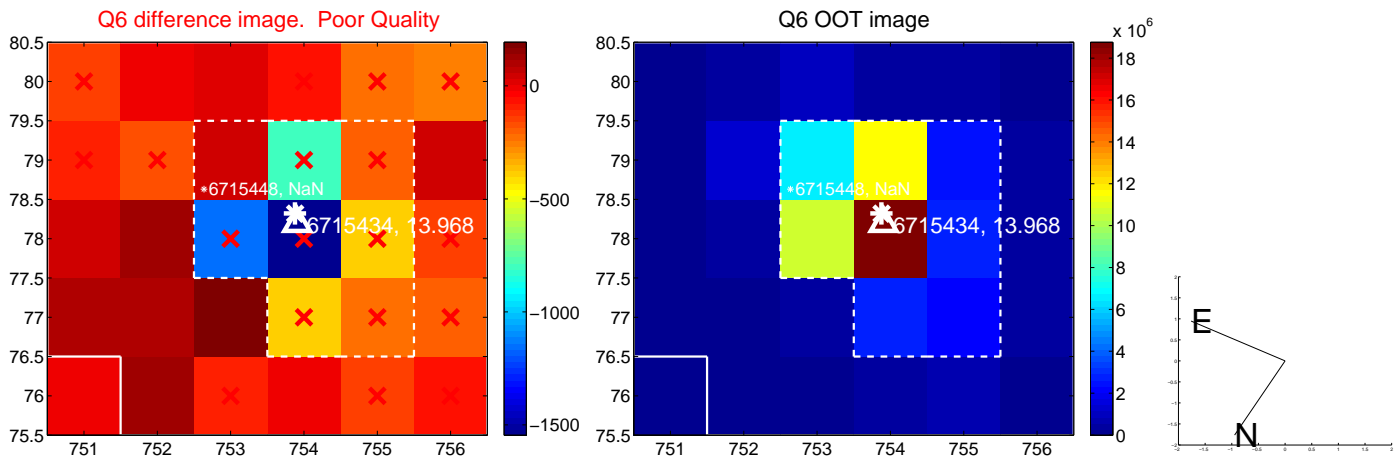
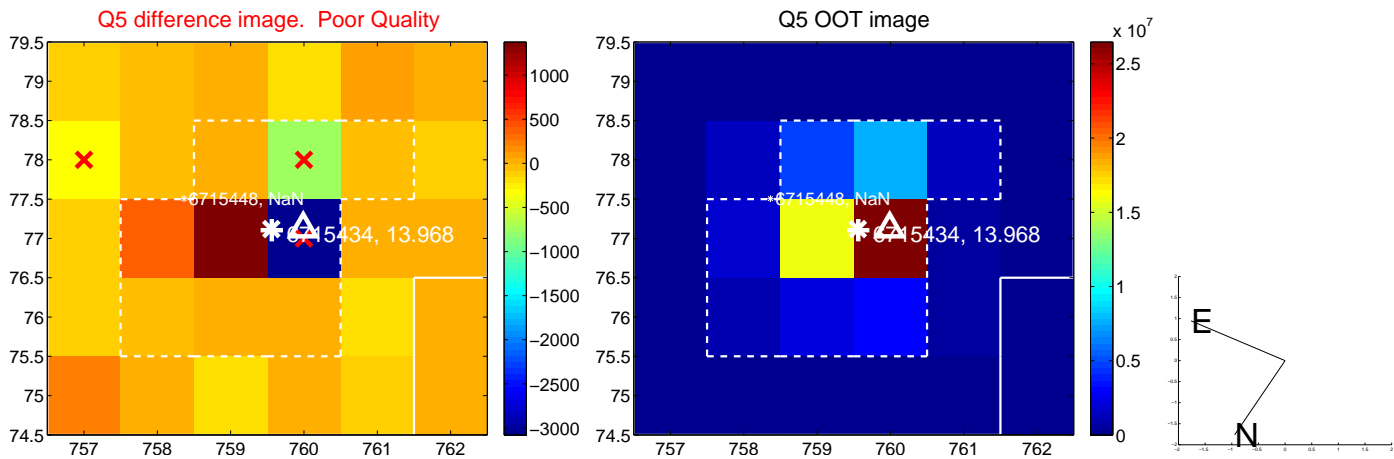


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

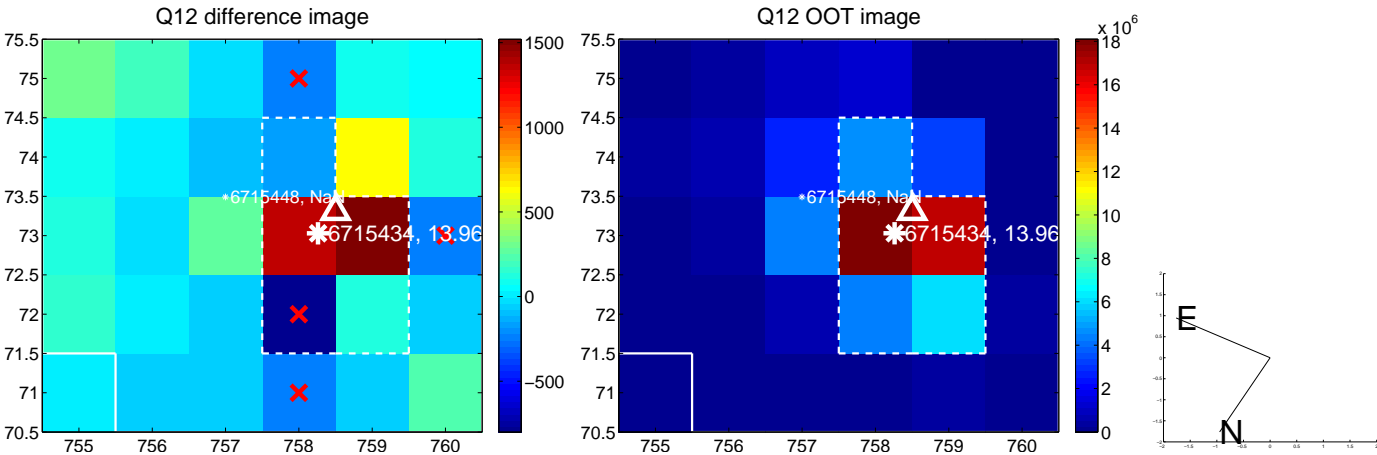
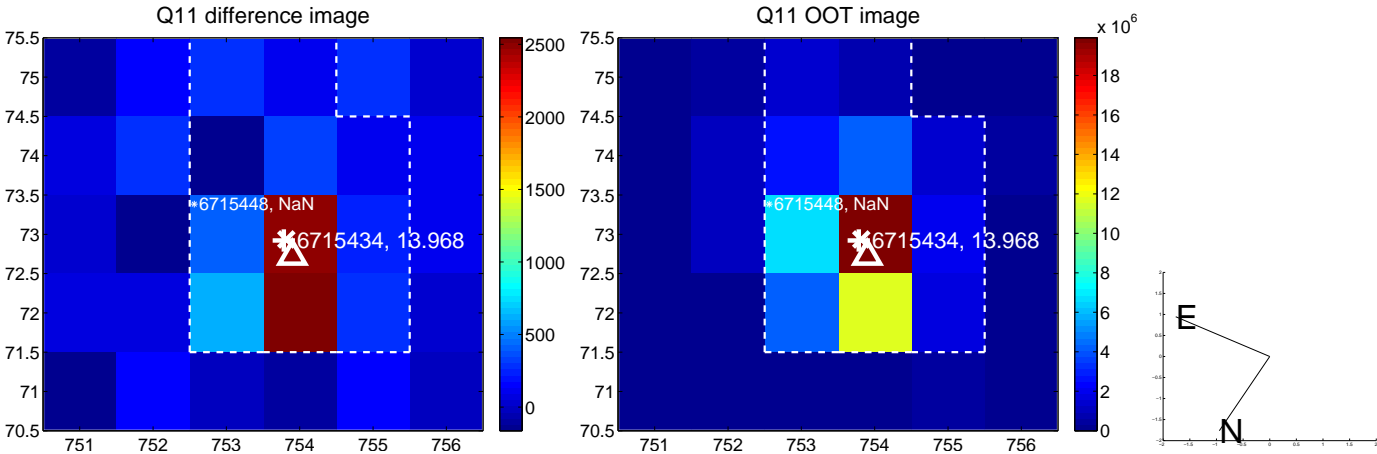
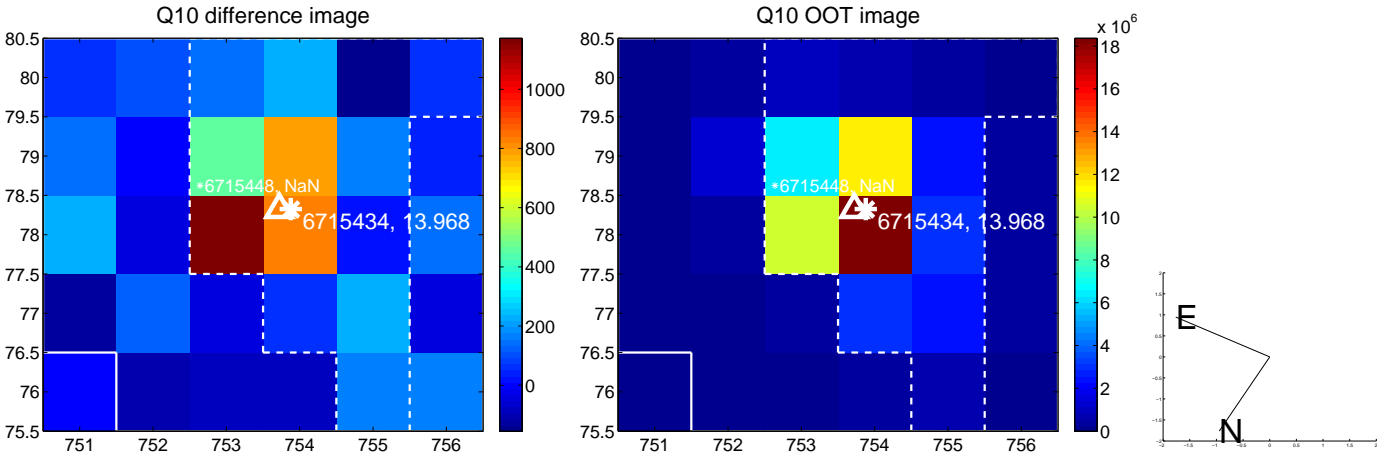
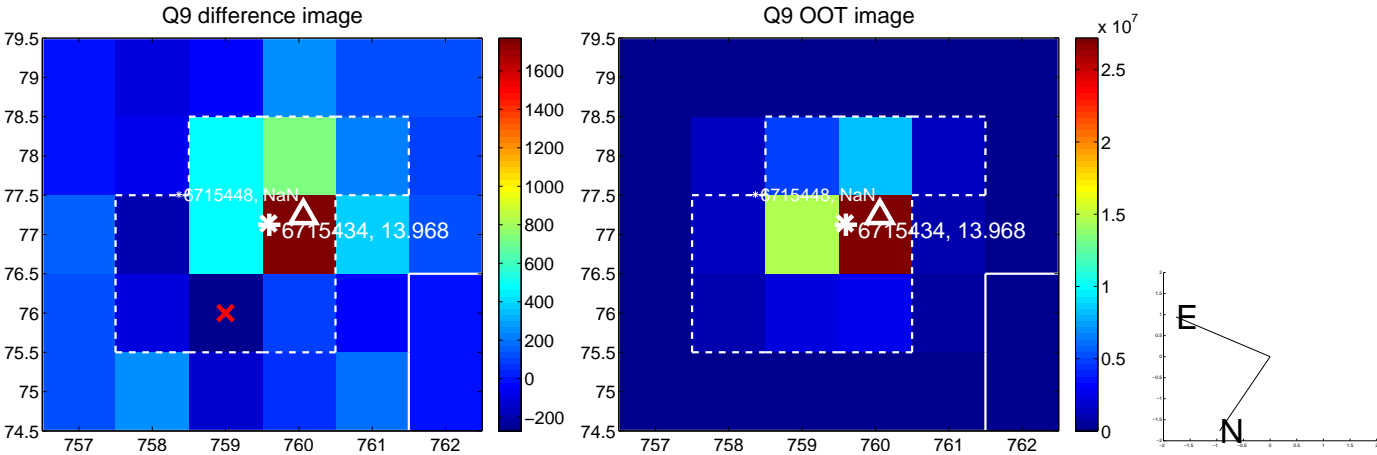
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



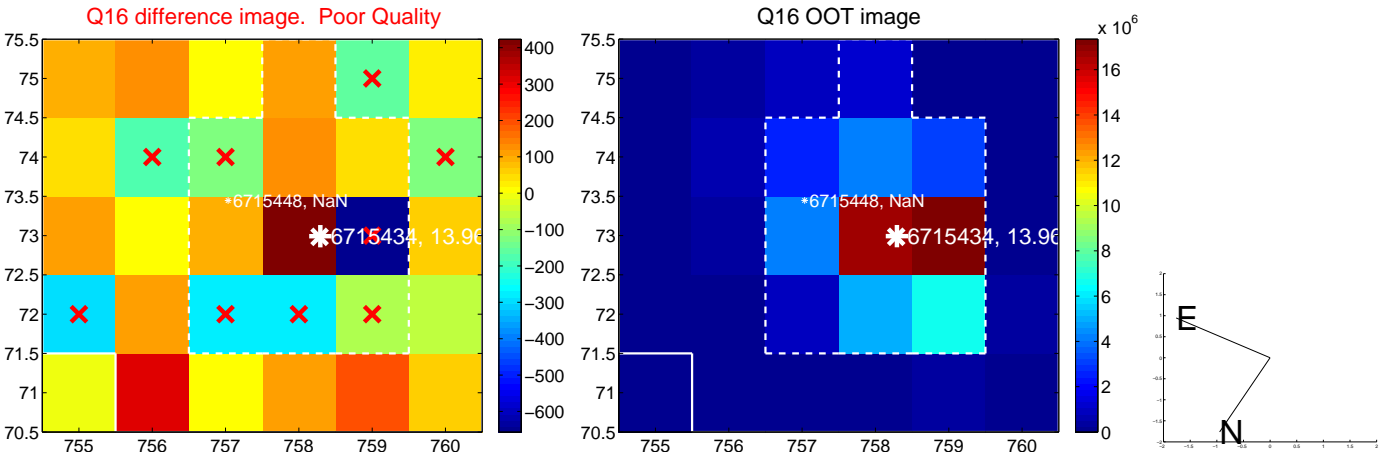
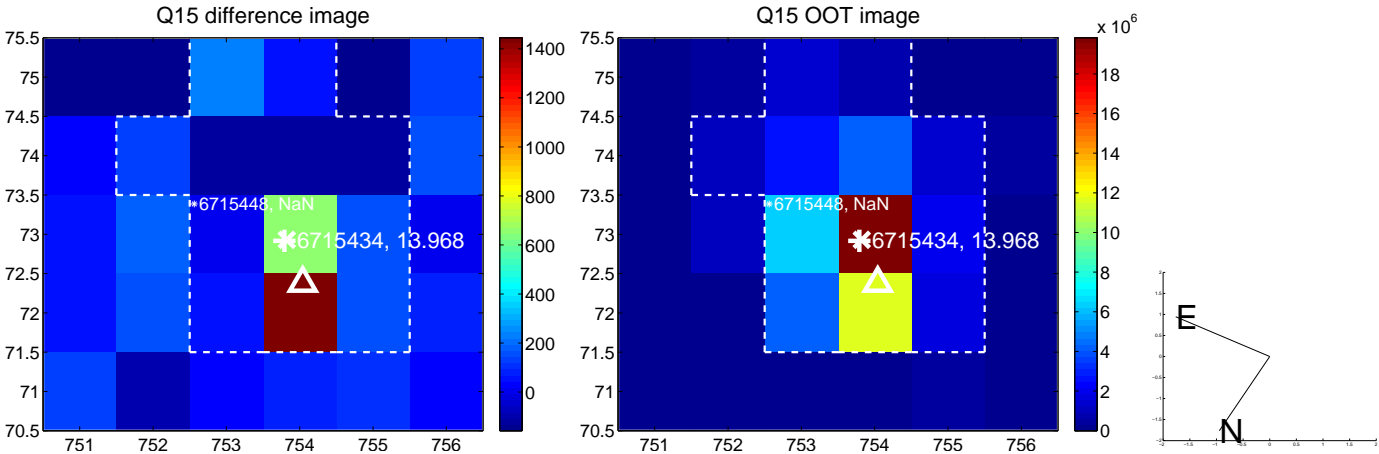
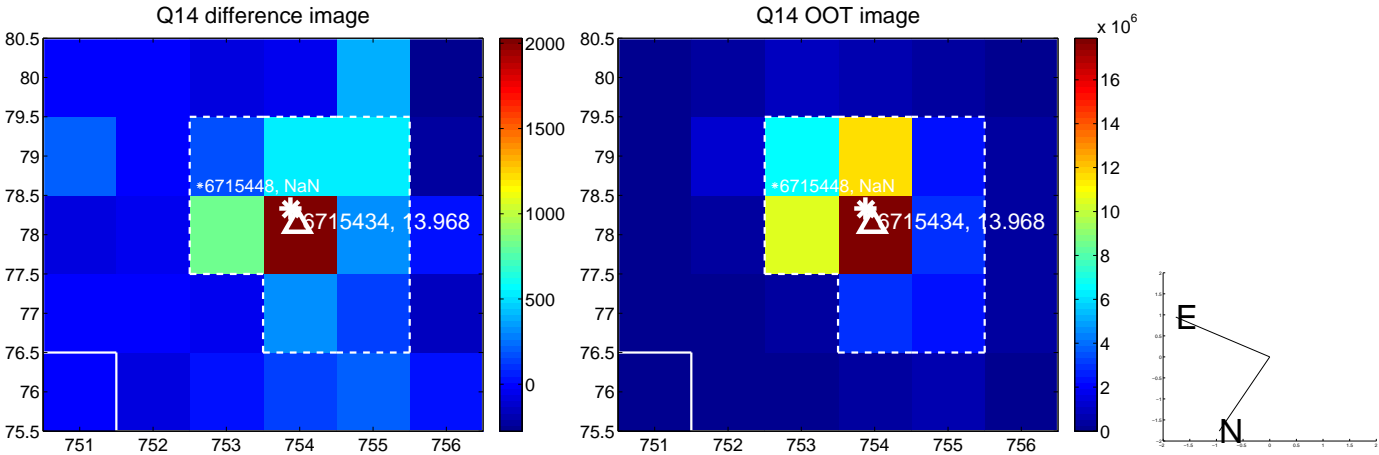
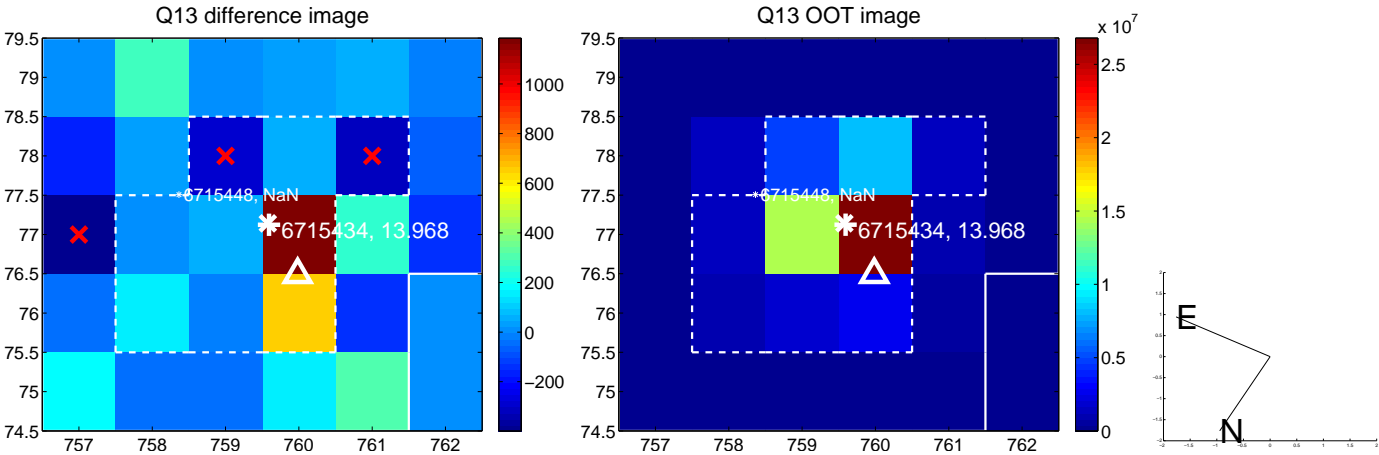
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

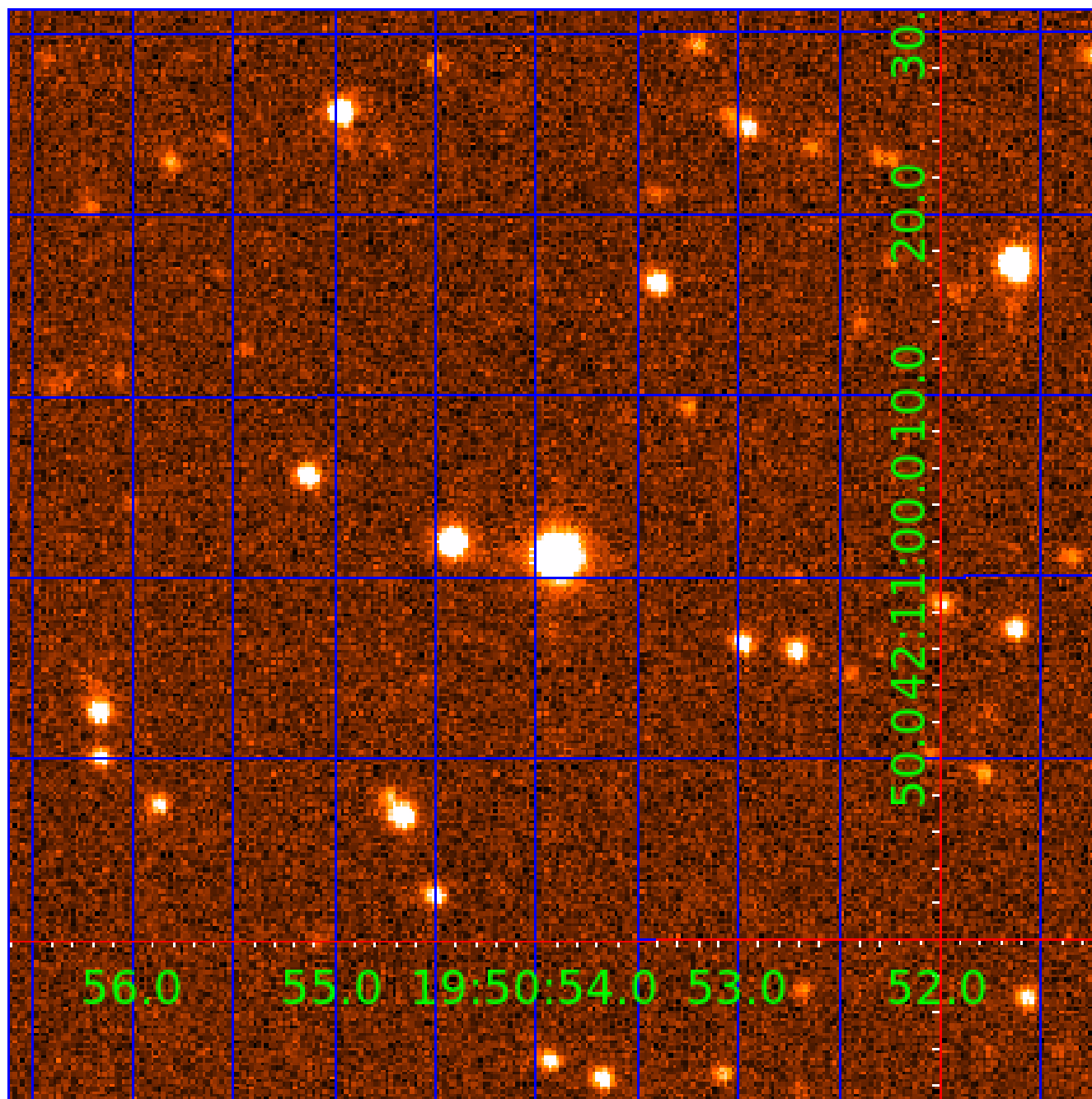


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006715434

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})
006715434-01	OBS	No	1.644953	132.603637	19.1	4.970	8.8	5.1	2.14	6253	1.05	7055.33
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006715434-03	OBS	No	360.530640	228.031823	466.5	21.067	7.7	9.3	2.14	6253	4.68	5.34
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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006715434-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006715434-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
006715434-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—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.

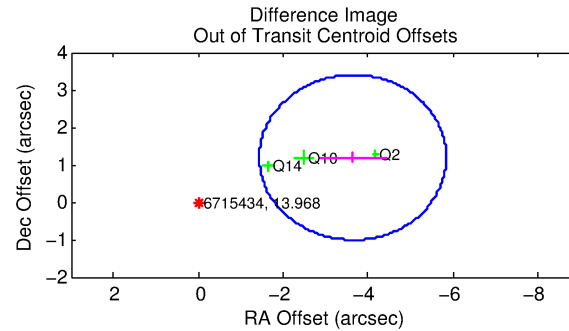
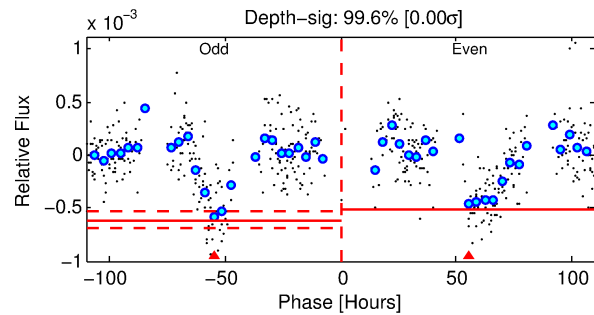
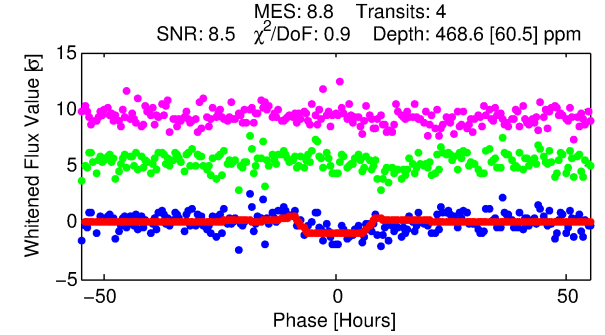
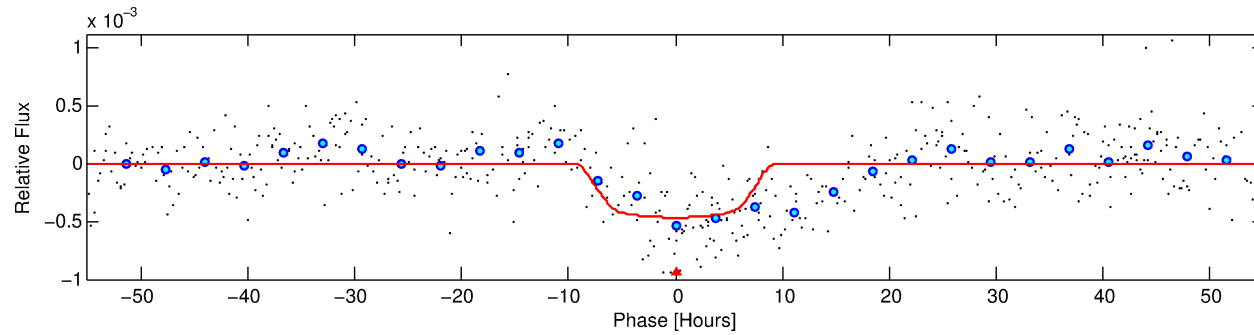
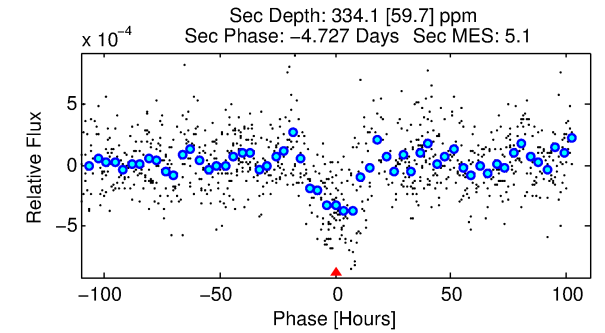
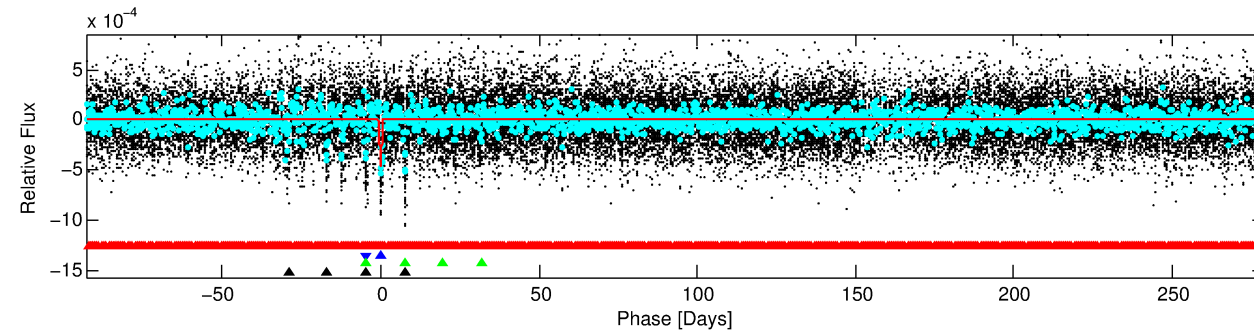
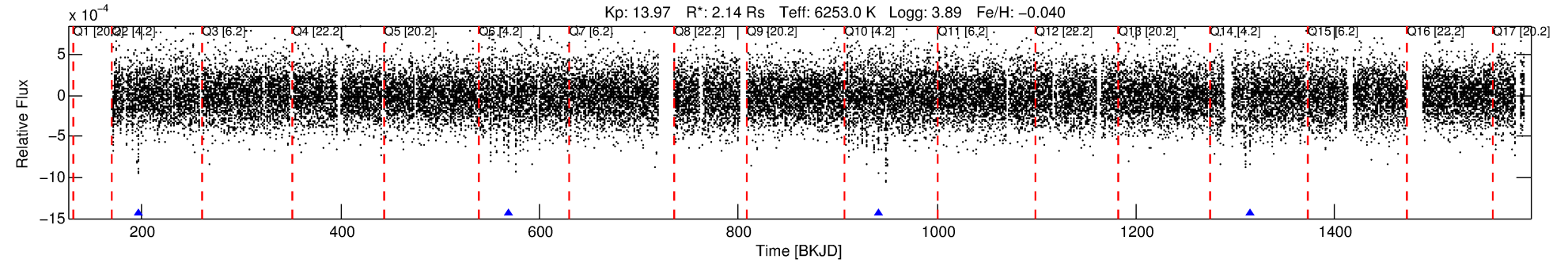
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006715434-02

No Significant Match Found

DV One-Page Summary

KIC: 6715434 Candidate: 2 of 4 Period: 372.685 d



DV Fit Results:

Period = 372.68521 [0.01471] d
Epoch = 196.0687 [0.0231] BKJD
Rp/R* = 0.0245 [0.0020]
a/R* = 61.57 [13.82]
b = 0.94 [0.03]
Seff = 5.11 [3.71]
Teq = 383 [70] K
Rp = 5.71 [2.59] Re
a = 1.1076 [0.4855] AU
Ag = 6919.31 [5189.97] [1.33 σ]
Teff = 5406 [389] K [12.72 σ]

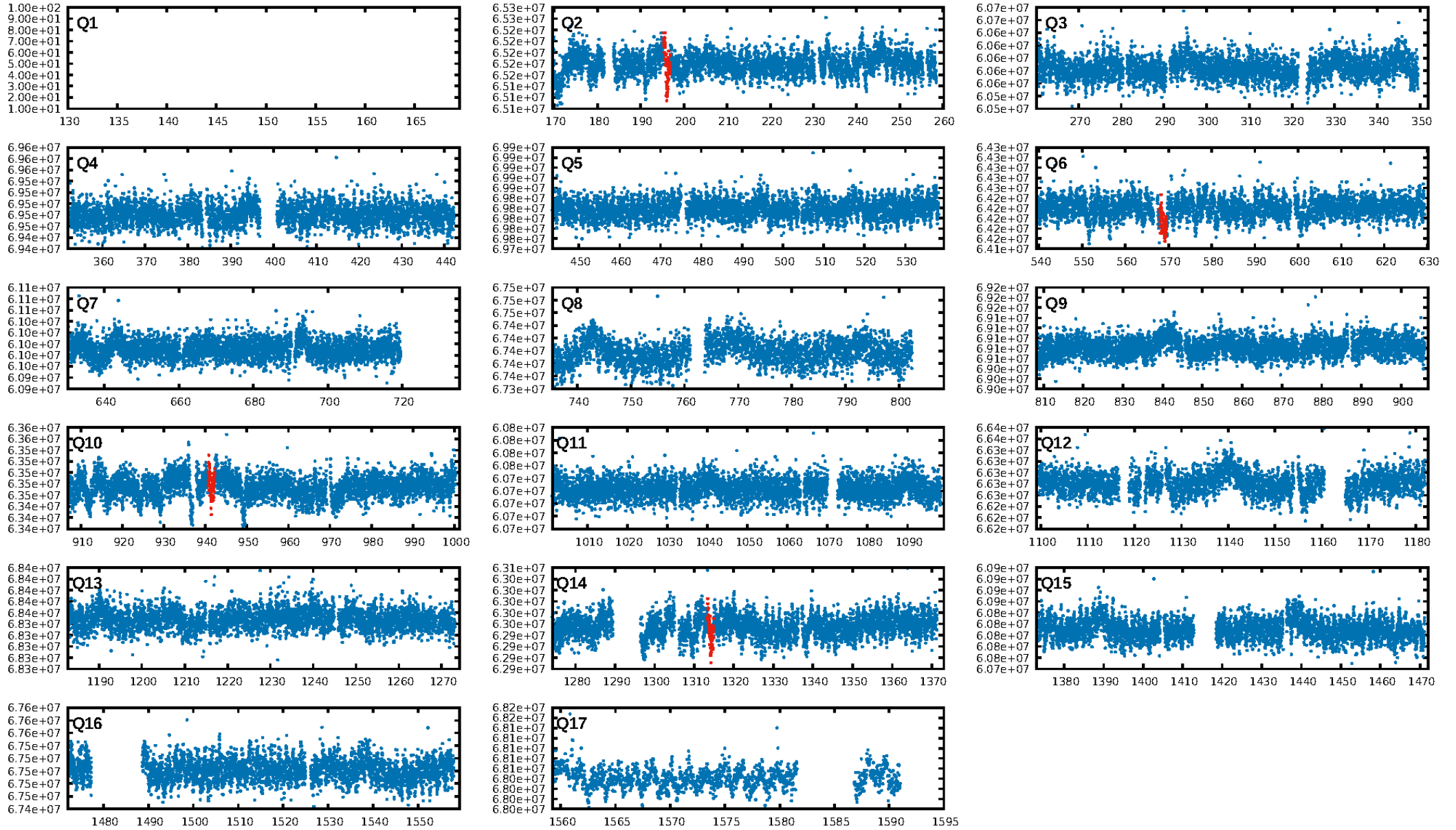
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.42 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 43.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.00e-10
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -9.412
Centroid-sig: 0.0%
Centroid-so: 3.229 arcsec [2.94 σ]
OotOffset-rm: 3.835 arcsec [5.22 σ]
KicOffset-rm: 3.797 arcsec [5.11 σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/3]

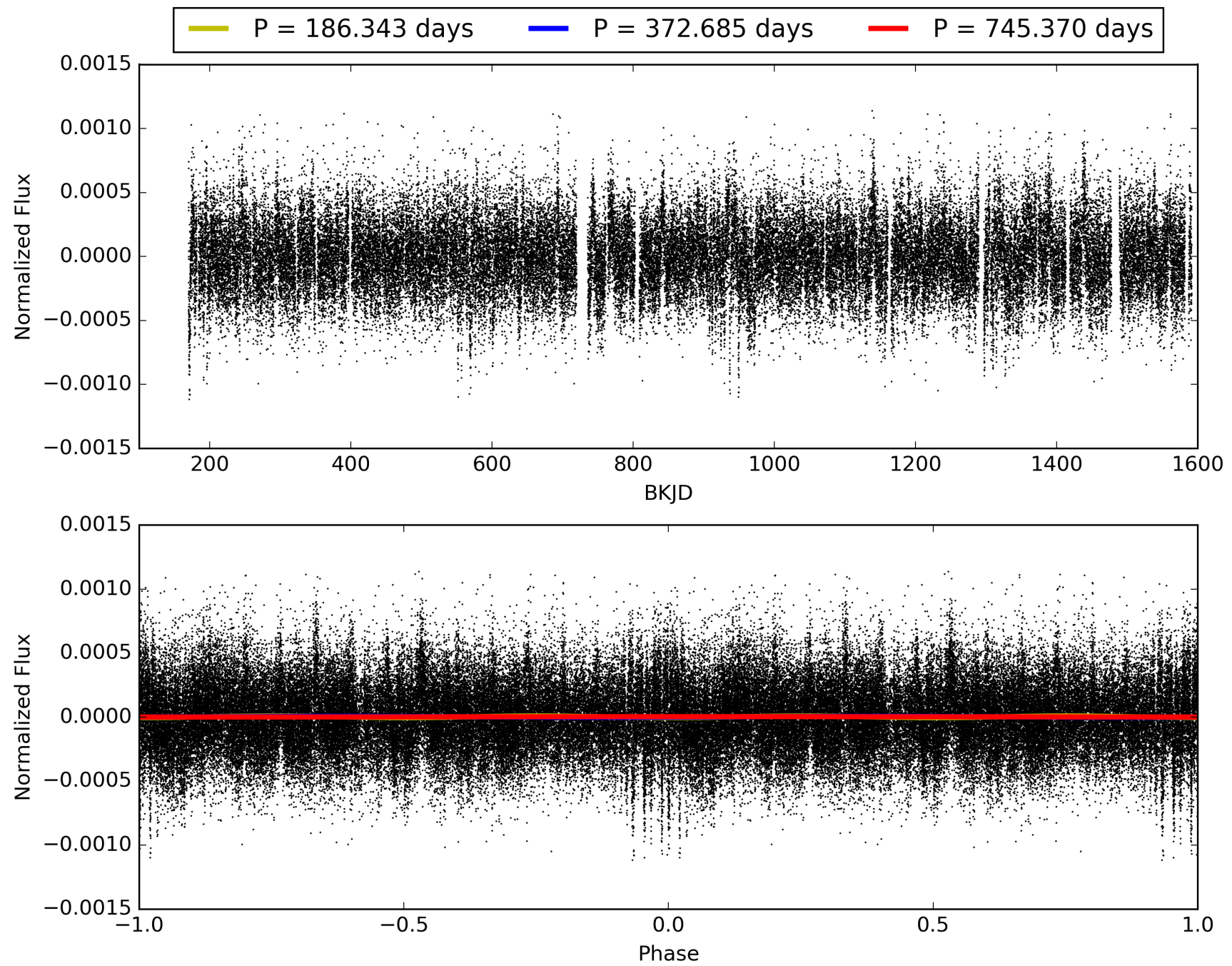
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:46:40 Z

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

TCE 006715434-02, PDC Light Curves

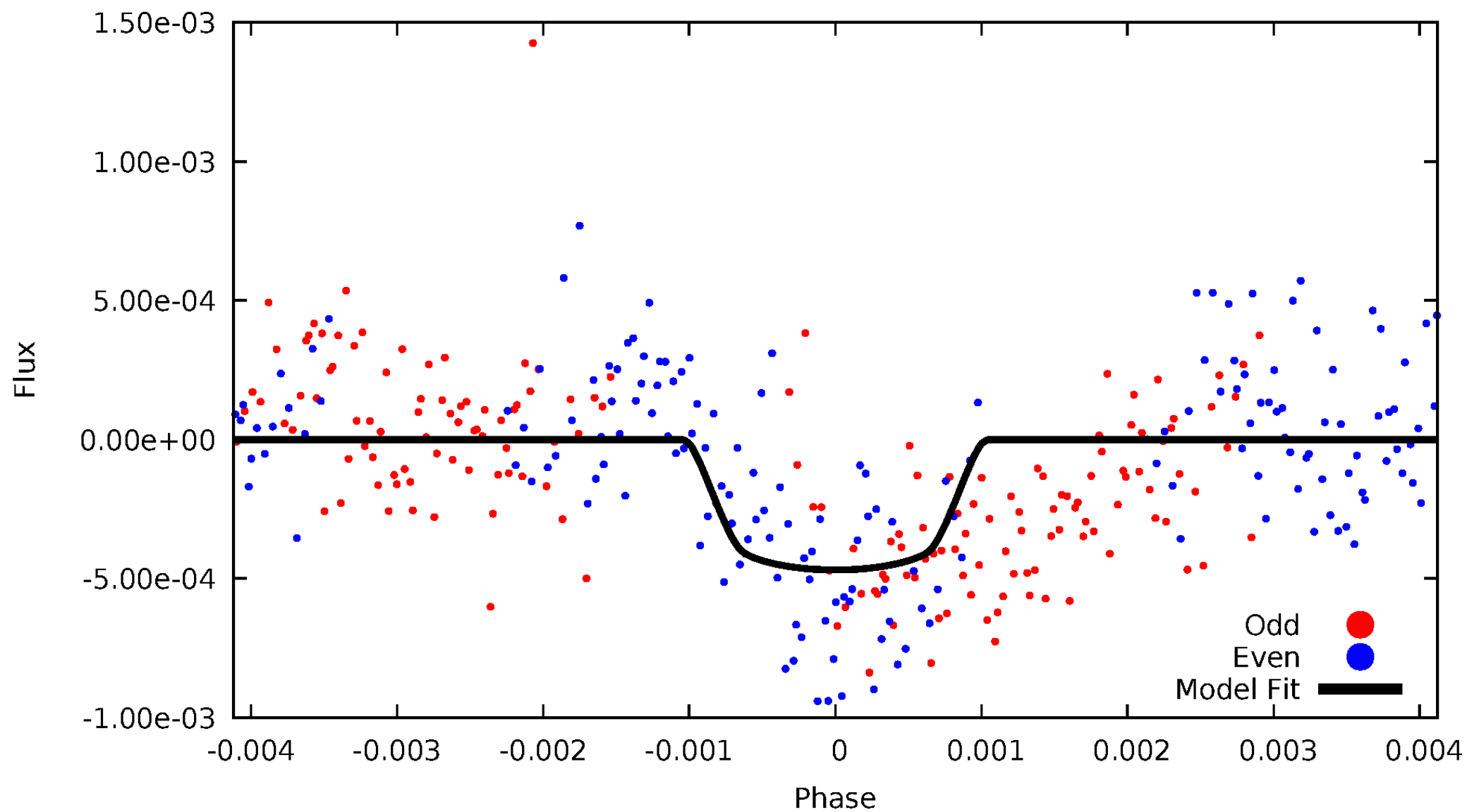


TCE 006715434-02



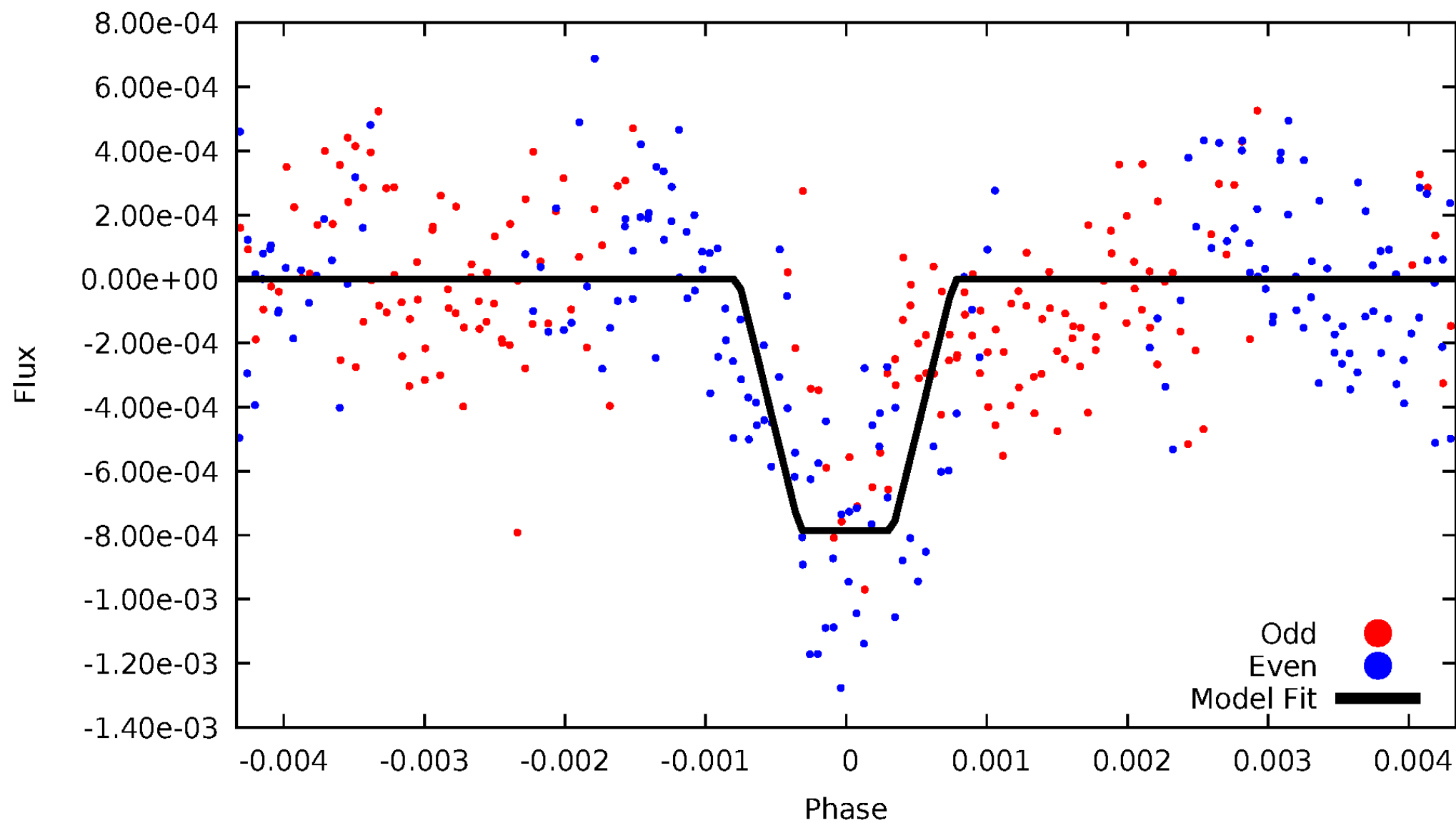
DV Odd/Even

TCE 006715434-02



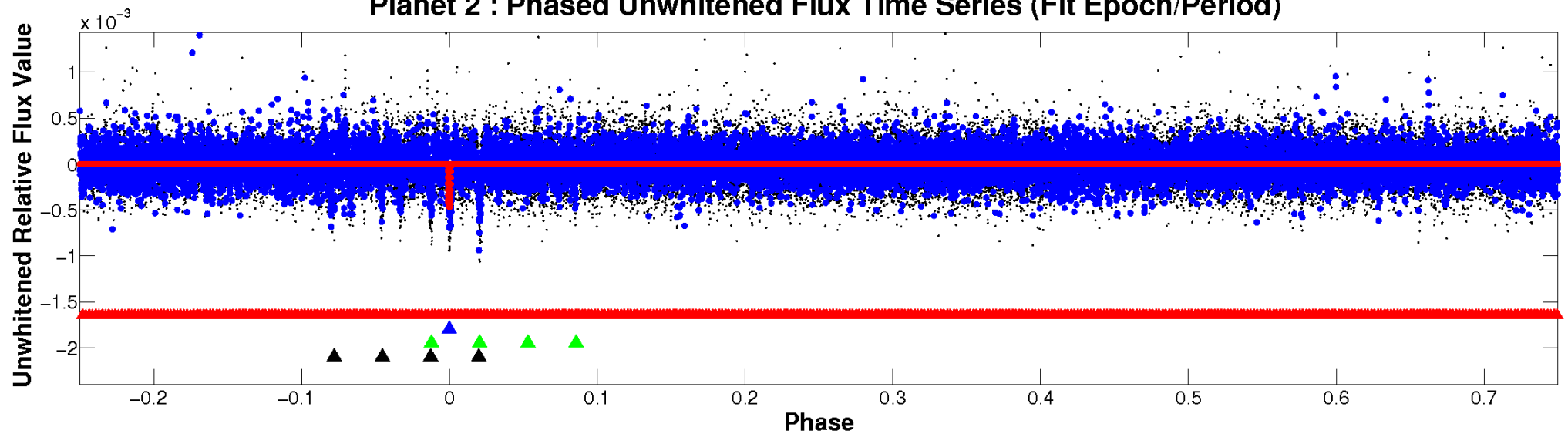
ALT Odd/Even

TCE 006715434-02

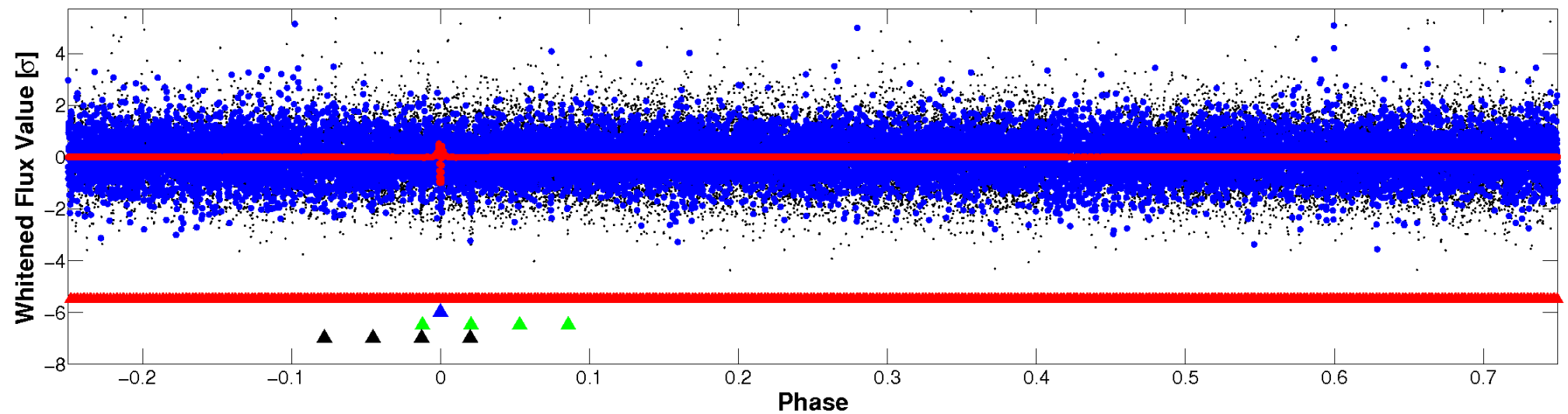


Non-Whitened Vs. Whitened Light Curve

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



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



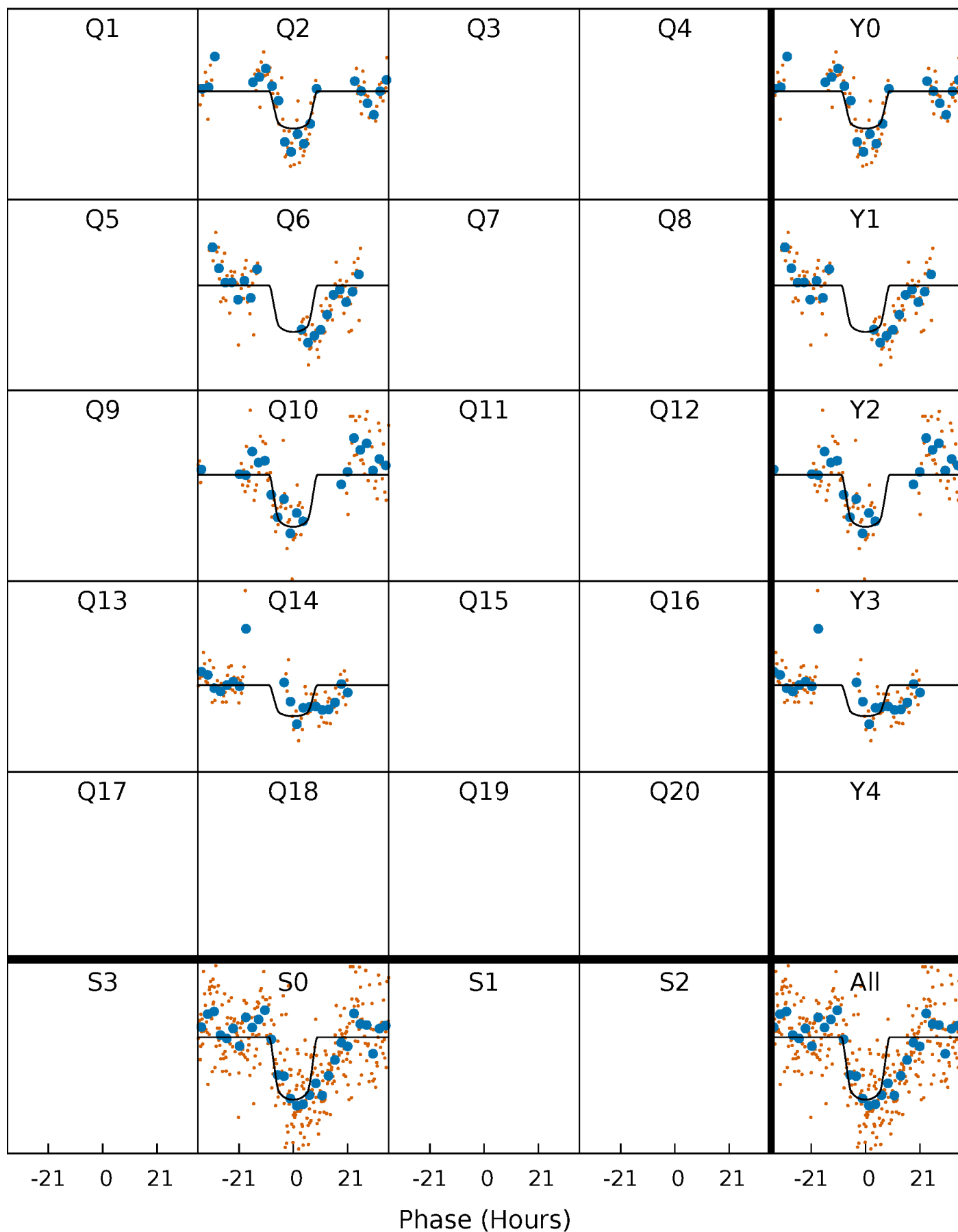
PDC Quarter-Phased Transit Curves

TCE 006715434-02 $P=372.685213$ Days $T_0=196.068737$ (BKJD)



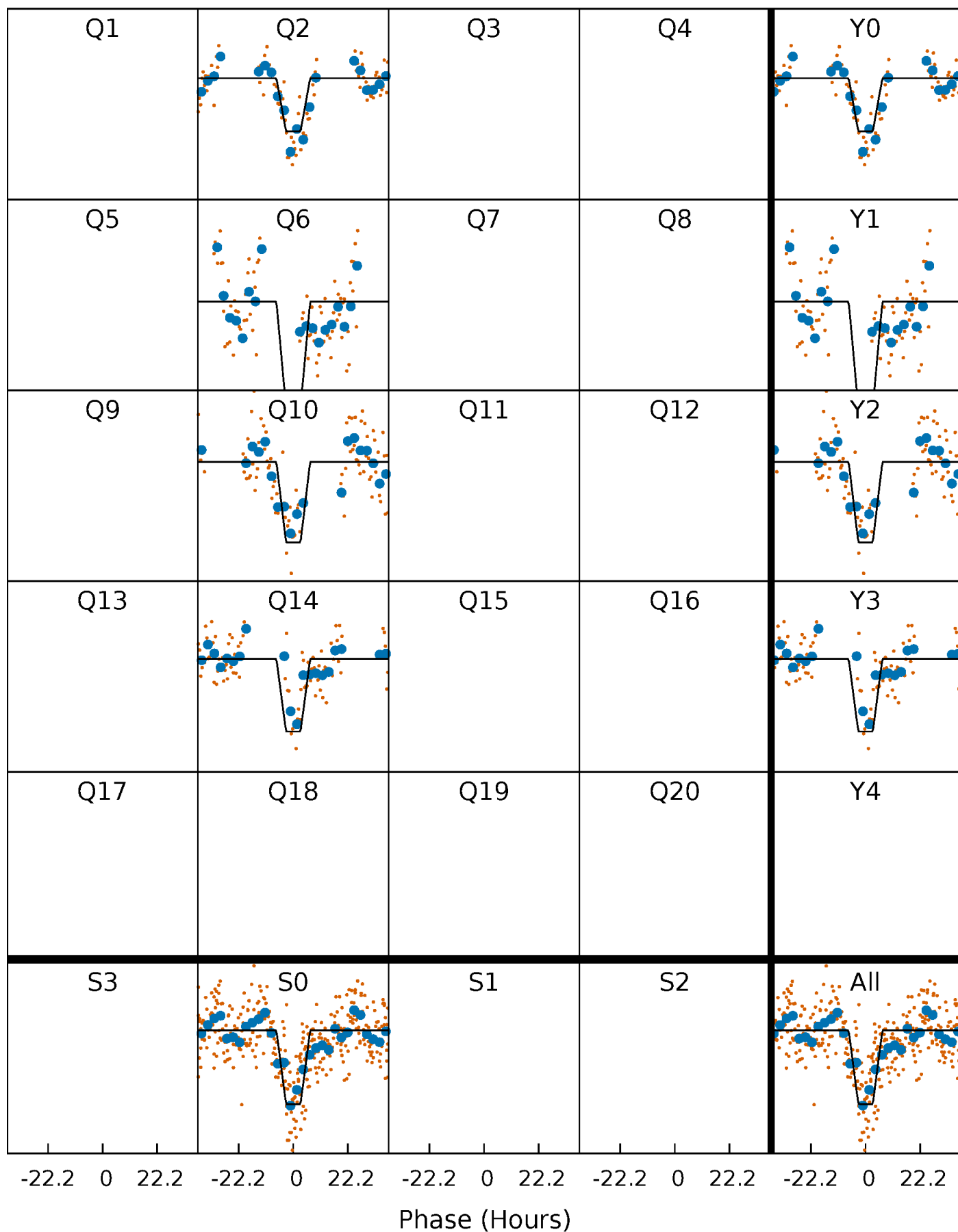
DV Quarter-Phased Transit Curves

TCE 006715434-02 P=372.685213 Days $T_0=196.068737$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

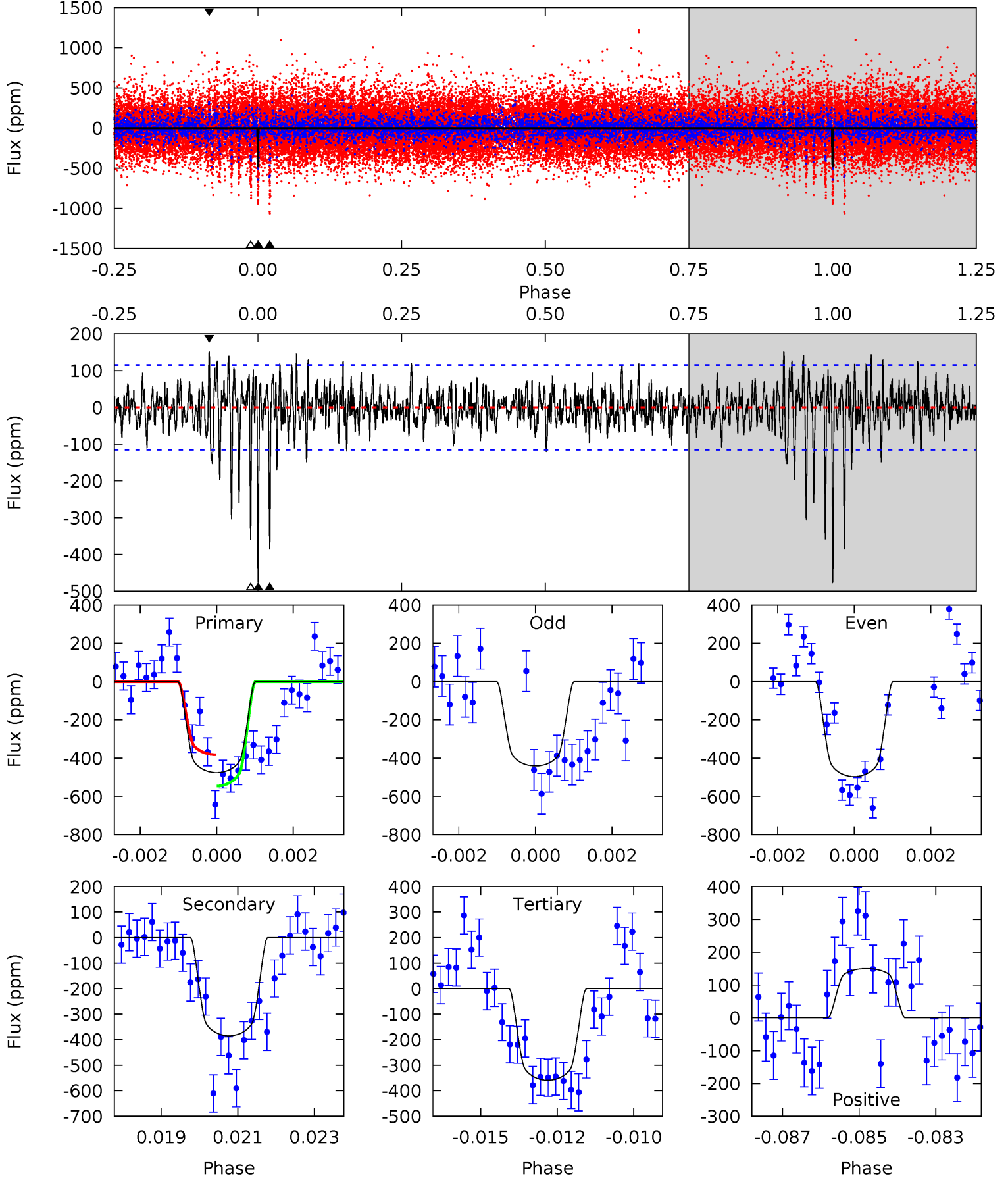
TCE 006715434-02 P=372.708134 Days $T_0=196.037534$ (BKJD)



DV Model-Shift Uniqueness Test

006715434-02, P = 372.685213 Days, E = 196.068737 Days

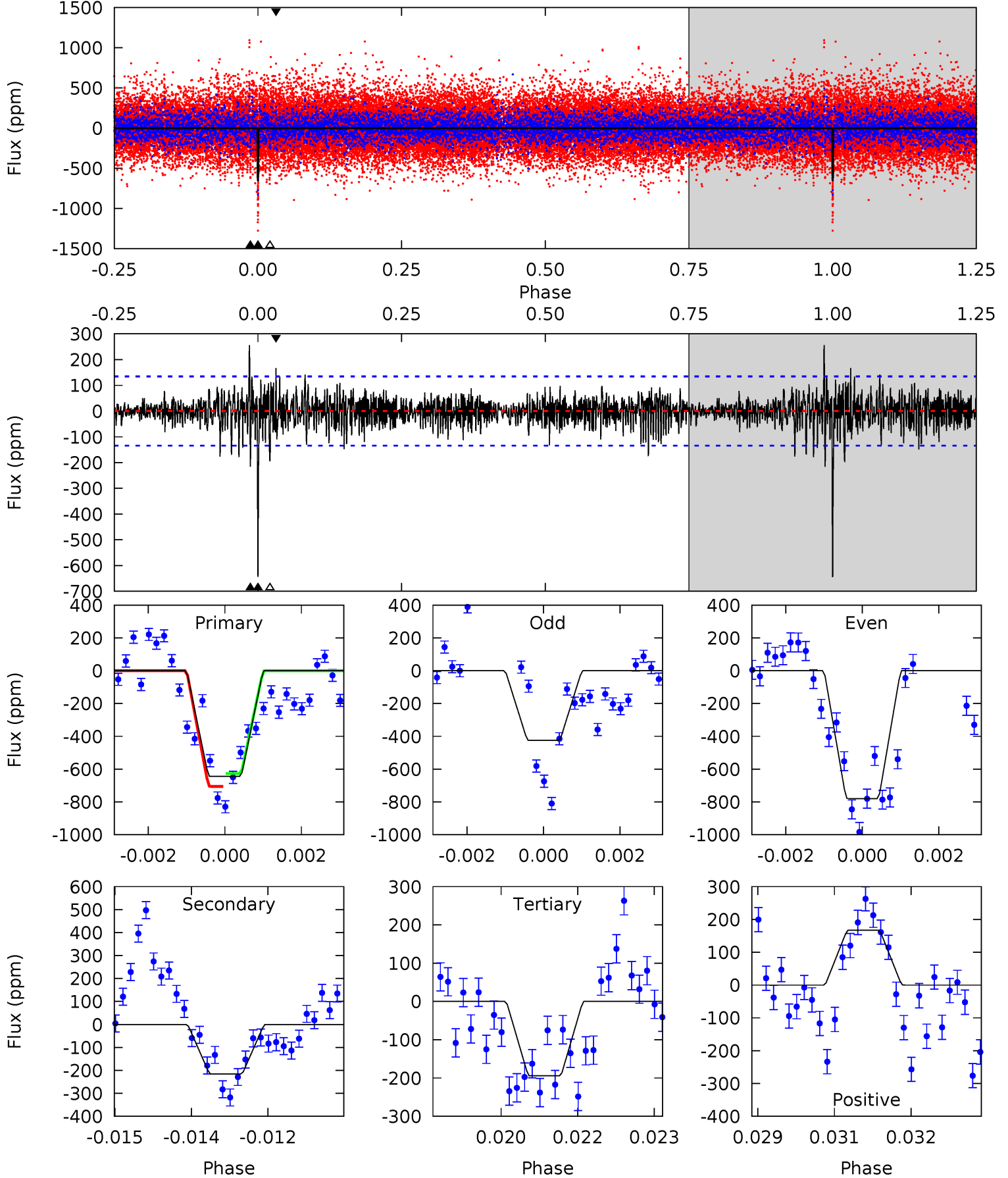
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.0	17.8	16.6	6.95	5.32	3.08	2.19	5.39	15.0	1.19	10.8	1.24	1.00	0.24	3.73



Alt Model-Shift Uniqueness Test

006715434-02, P = 372.708134 Days, E = 196.037534 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.8	8.64	7.78	6.69	5.37	3.17	1.70	18.0	19.1	0.86	1.95	6.96	1.05	0.28	1.56



Stellar Parameters For KIC 006715434

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6253^{+198}_{-242}	$3.893^{+0.420}_{-0.140}$	$-0.040^{+0.250}_{-0.300}$	$2.139^{+0.513}_{-0.953}$	$1.303^{+0.215}_{-0.263}$	$0.188^{+0.698}_{-0.076}$
	+3%/-4%	+11%/-4%	+625%/-750%	+24%/-45%	+17%/-20%	+372%/-40%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006715434-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-385 ± 22	$5.56^{+1.02}_{-1.44}$	525^{+42}_{-61}	5599^{+340}_{-271}	8546^{+6127}_{-2414}
Alt.	-216 ± 25	$6.39^{+1.07}_{-1.56}$	524^{+41}_{-60}	4651^{+223}_{-200}	3638^{+2445}_{-999}

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 $A_{obs} \gg 1.0$

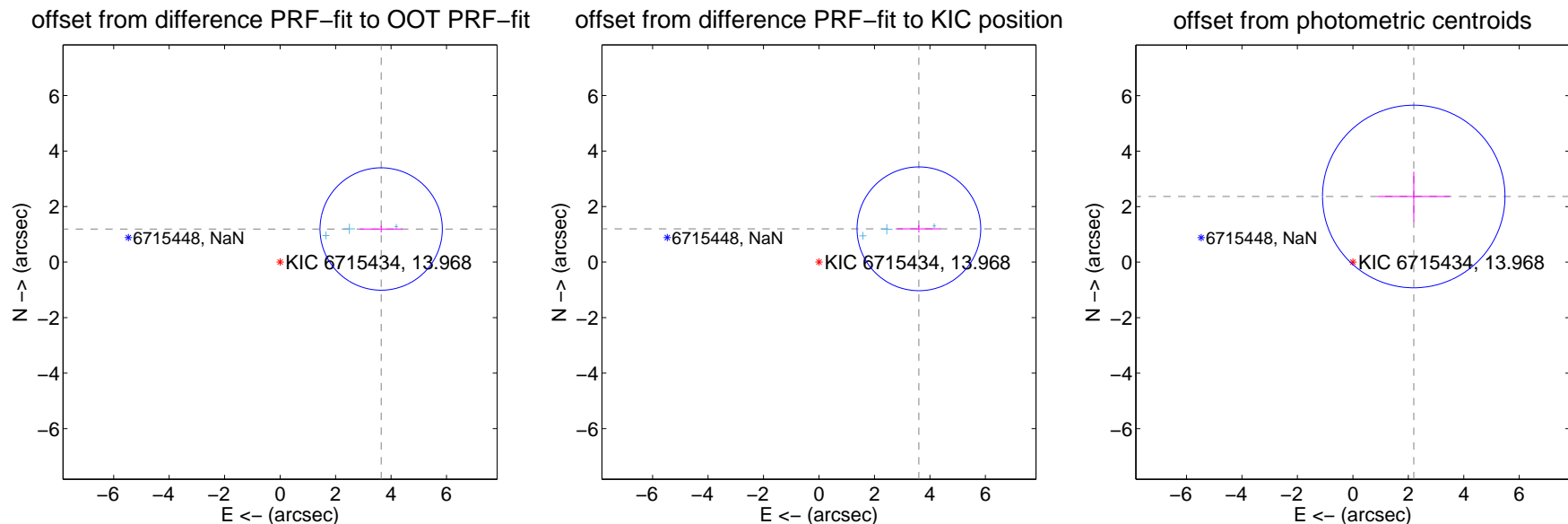
DV Centroid Data

Supplemental centroid analysis for 006715434-02. Kepler magnitude: 13.97. Transit SNR 8.50

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.835 ± 0.735	5.22	-3.645 ± 0.772	1.192 ± 0.124
PRF-fit source offset from KIC position	3.797 ± 0.743	5.11	-3.603 ± 0.782	1.200 ± 0.133
photometric centroid source offset	3.23 ± 1.10	2.94	-2.20 ± 1.30	2.37 ± 0.89



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.

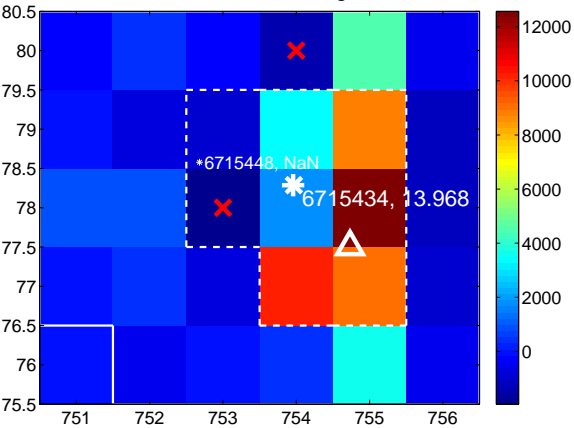
Q1 no difference image



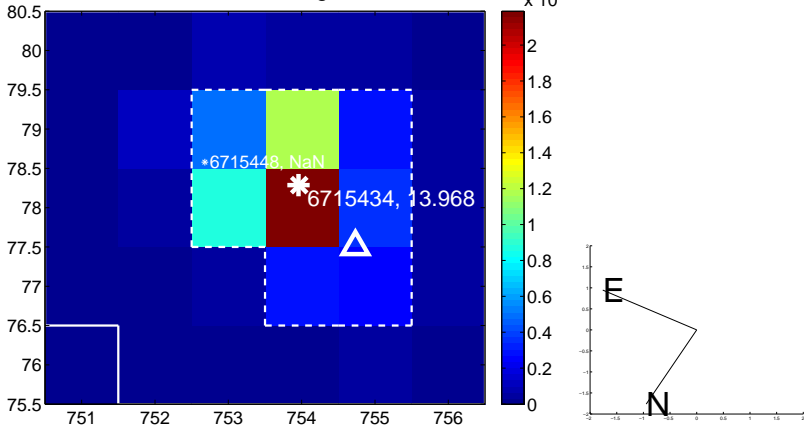
Q1 no OOT image



Q2 difference image



Q2 OOT image



Q3 no difference image



Q3 no OOT image



Q4 no difference image



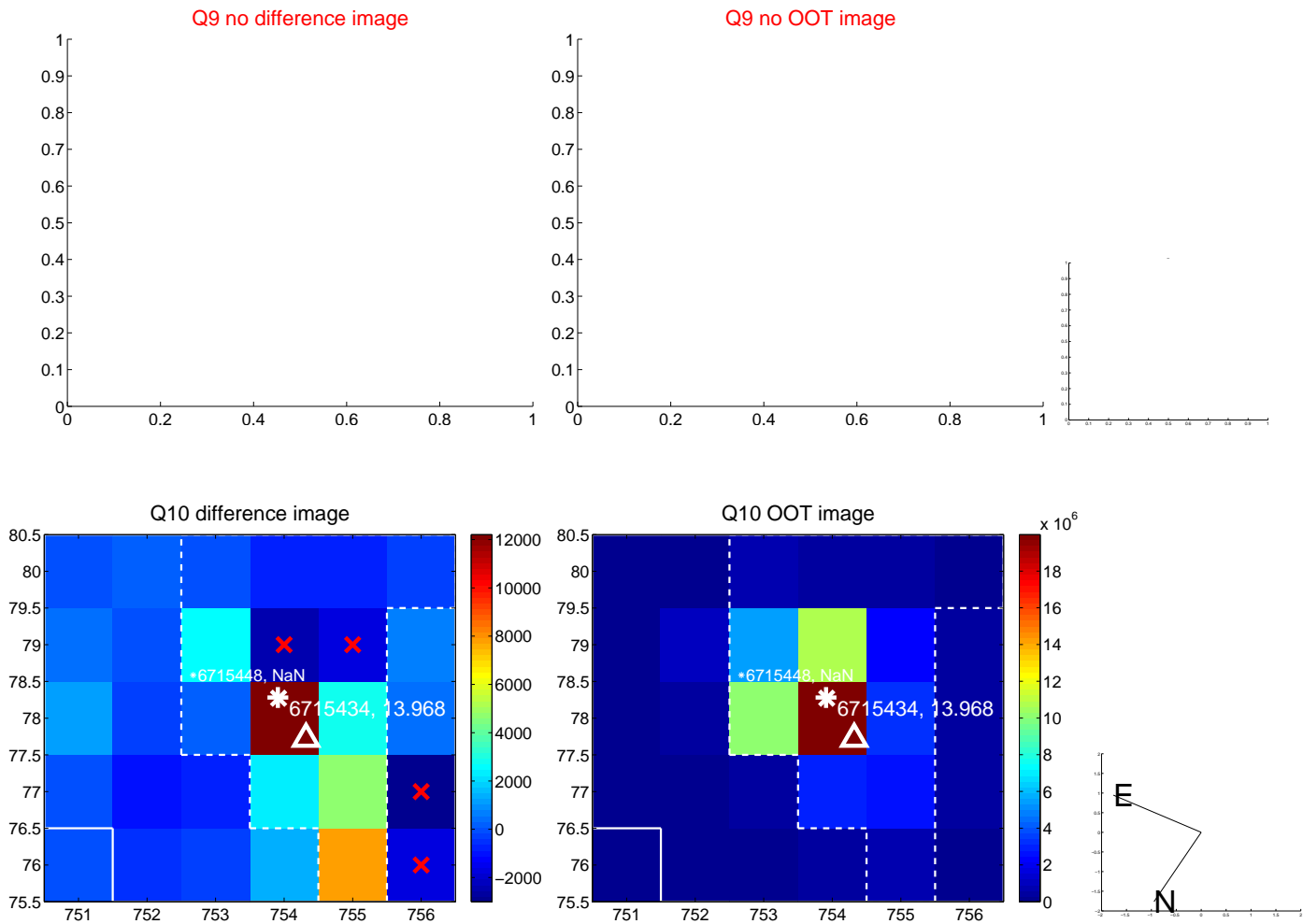
Q4 no OOT image



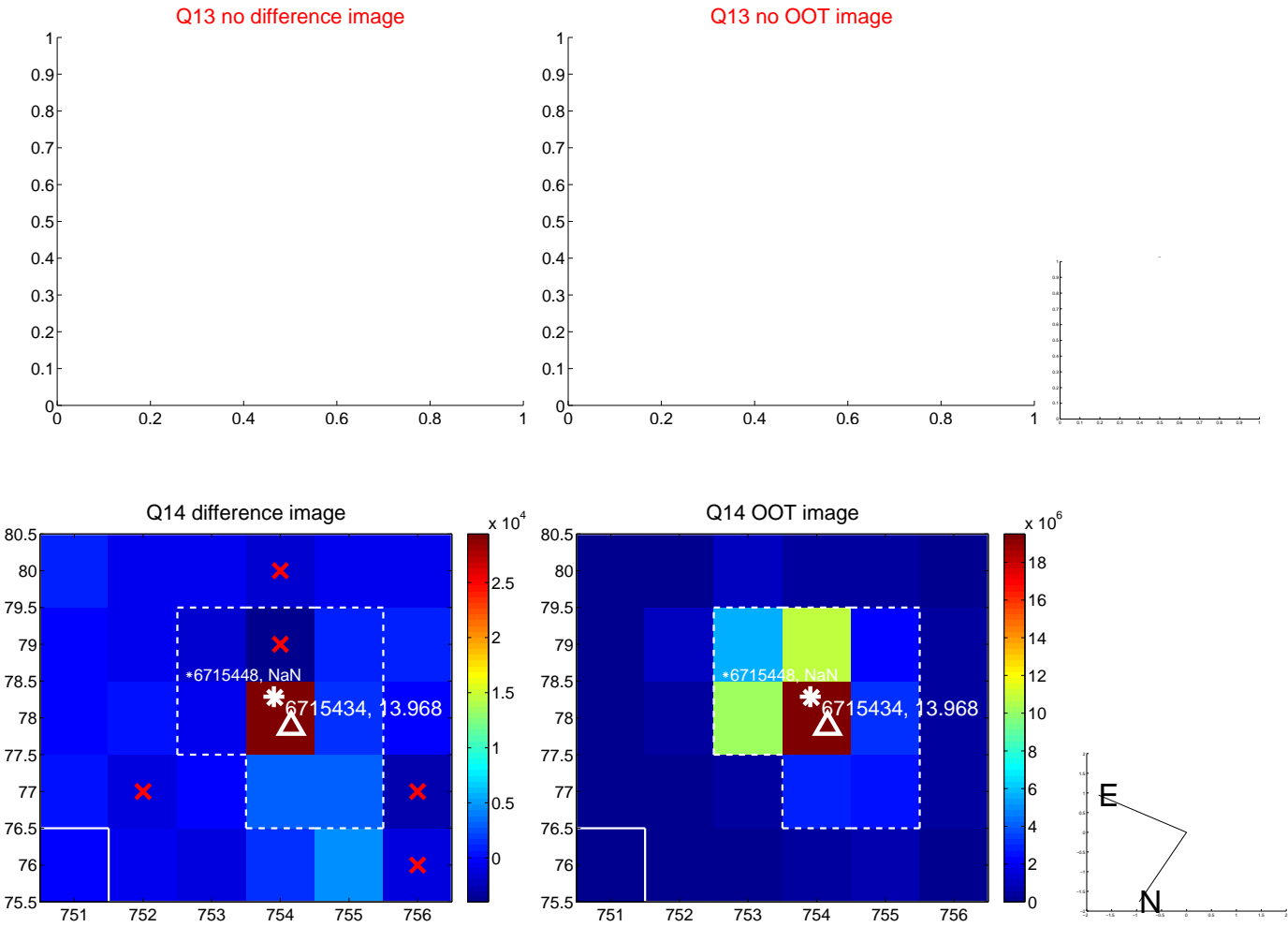
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



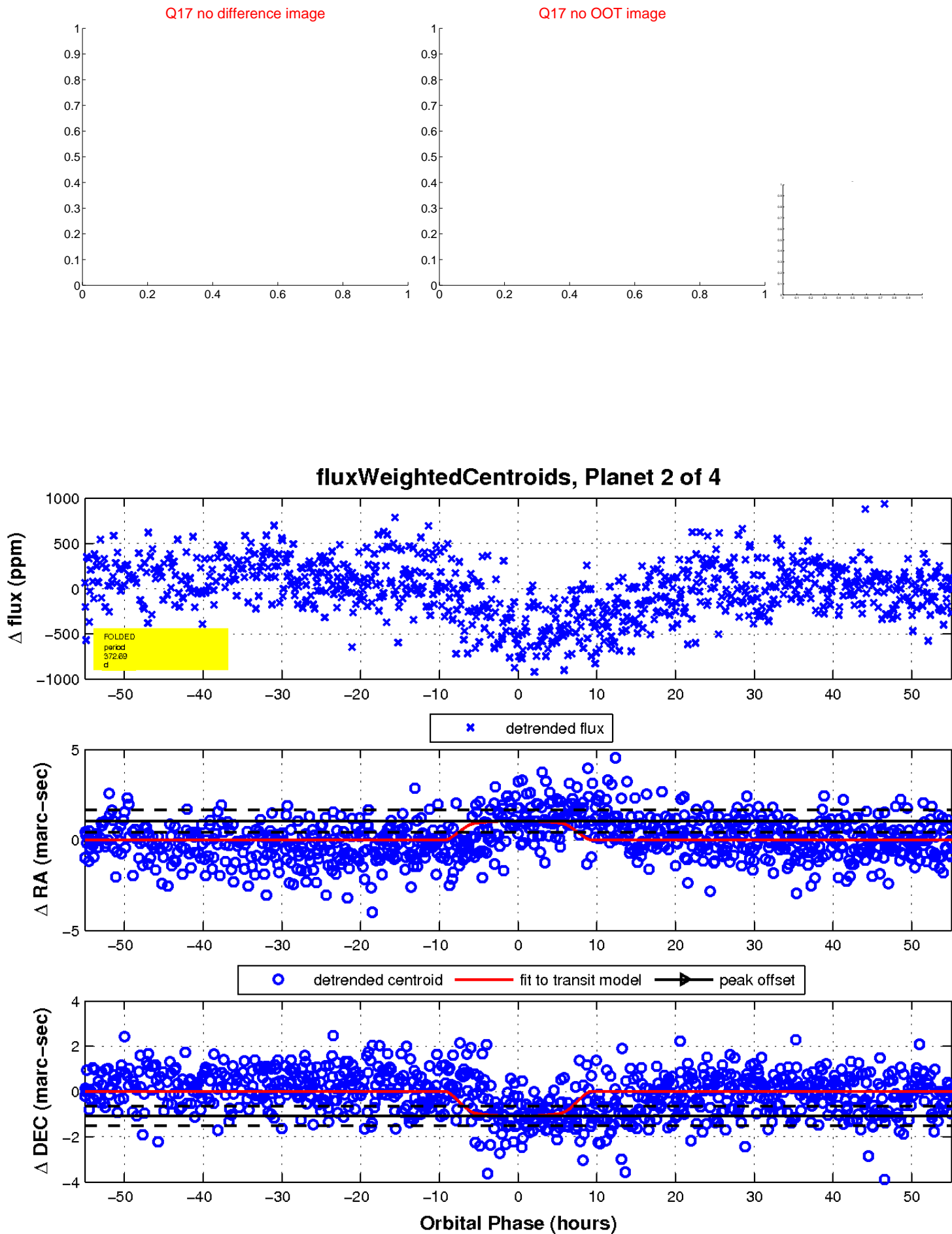
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

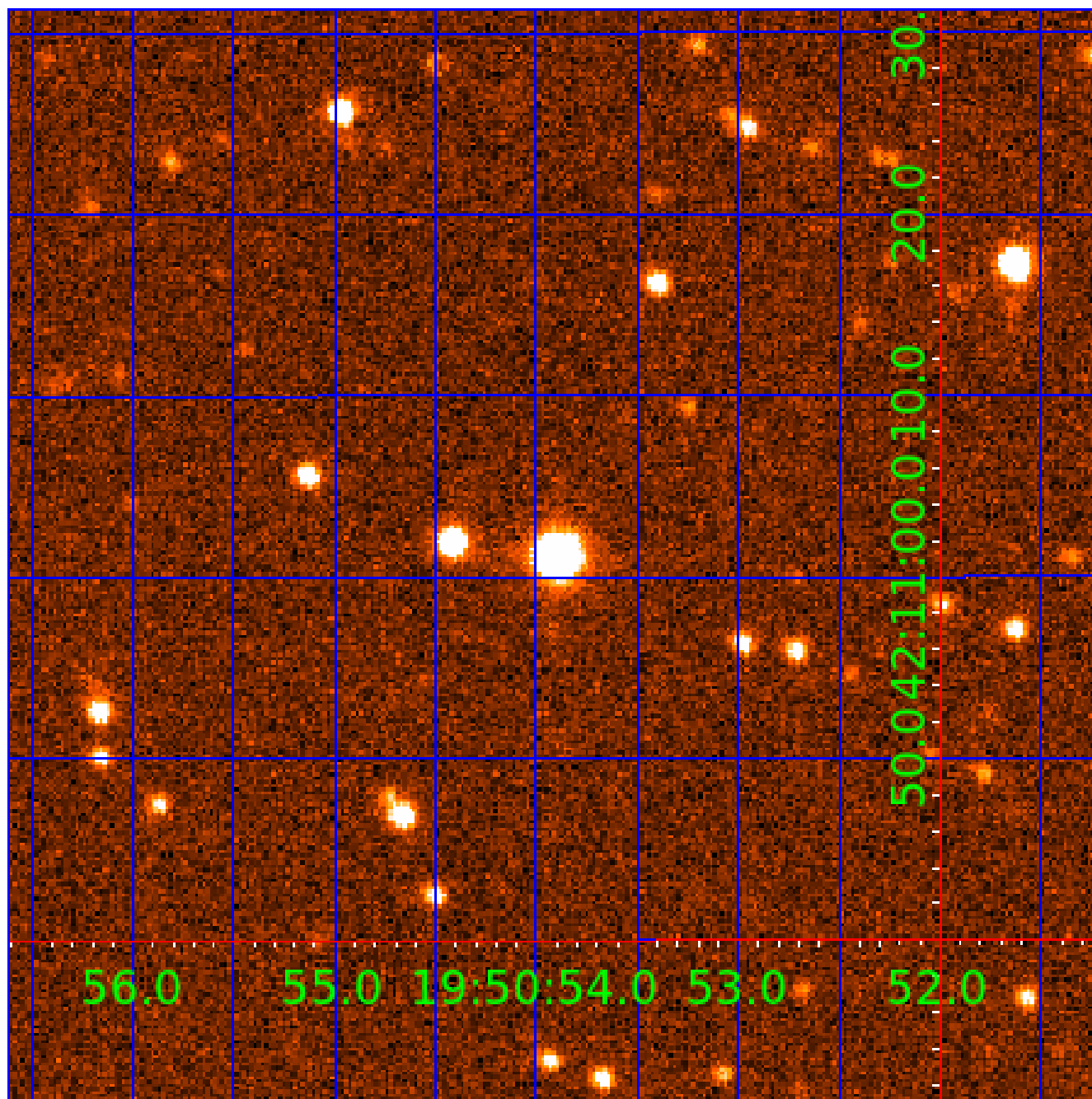


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006715434

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})
006715434-01	OBS	No	1.644953	132.603637	19.1	4.970	8.8	5.1	2.14	6253	1.05	7055.33
006715434-02	OBS	No	372.685213	196.068737	468.6	18.419	8.8	8.5	2.14	6253	5.71	5.11
006715434-03	OBS	No	360.530640	228.031823	466.5	21.067	7.7	9.3	2.14	6253	4.68	5.34
006715434-04	OBS	No	360.528369	203.508085	418.0	24.785	7.3	7.3	2.14	6253	8.55	5.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006715434-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006715434-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006715434-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
006715434-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—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.

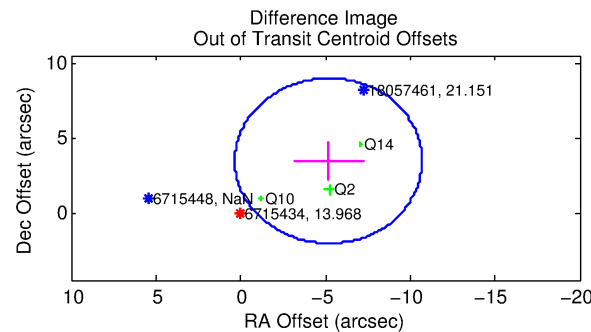
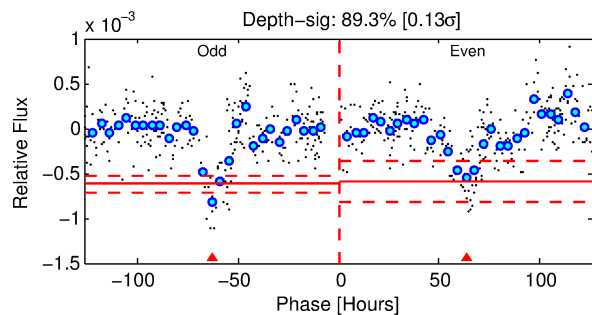
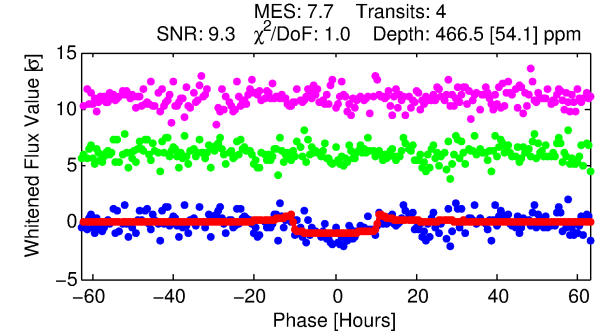
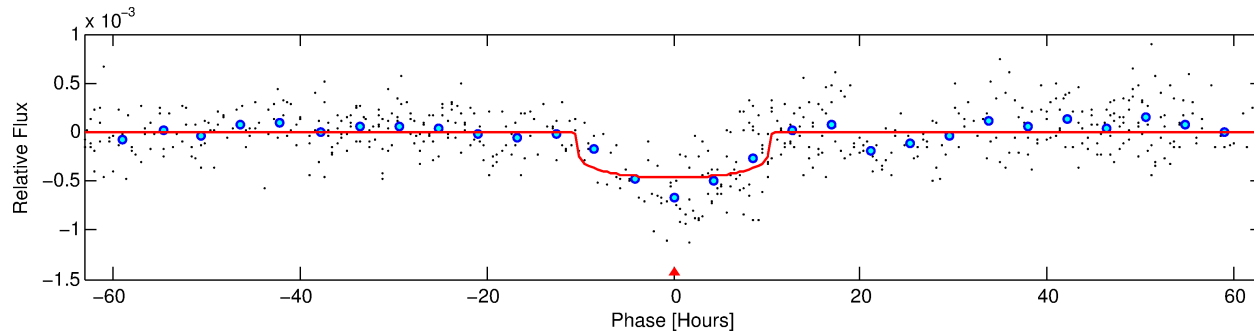
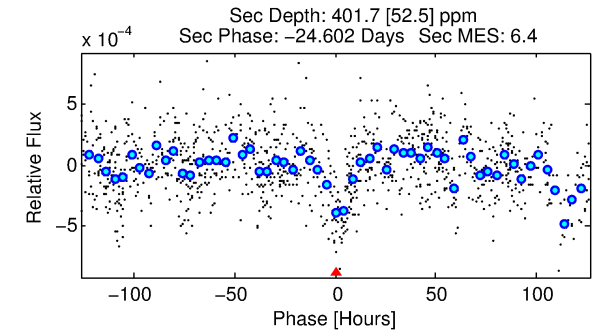
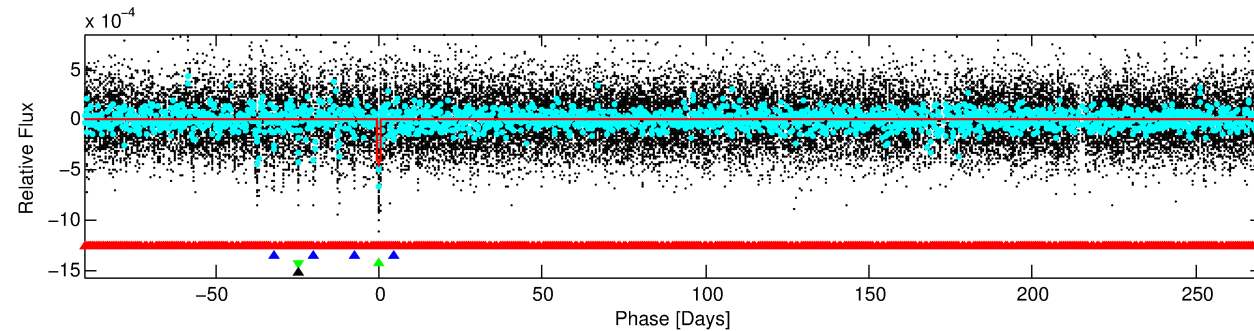
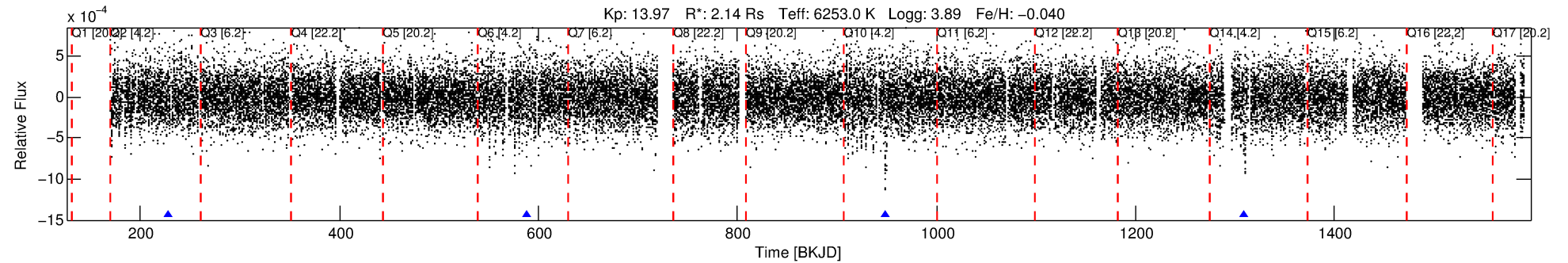
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006715434-03

No Significant Match Found

DV One-Page Summary

KIC: 6715434 Candidate: 3 of 4 Period: 360.531 d



DV Fit Results:

Period = 360.53064 [0.00691] d
Epoch = 228.0318 [0.0142] BKJD
Rp/R* = 0.0200 [0.0048]
a/R* = 125.74 [145.19]
b = 0.34 [3.00]
Seff = 5.34 [3.88]
Teff = 388 [70] K
Rp = 4.68 [2.37] Re
a = 1.0834 [0.4749] AU
Ag = 11849.86 [10289.14] [1.15 σ]
Teffp = 6253 [818] K [7.14 σ]

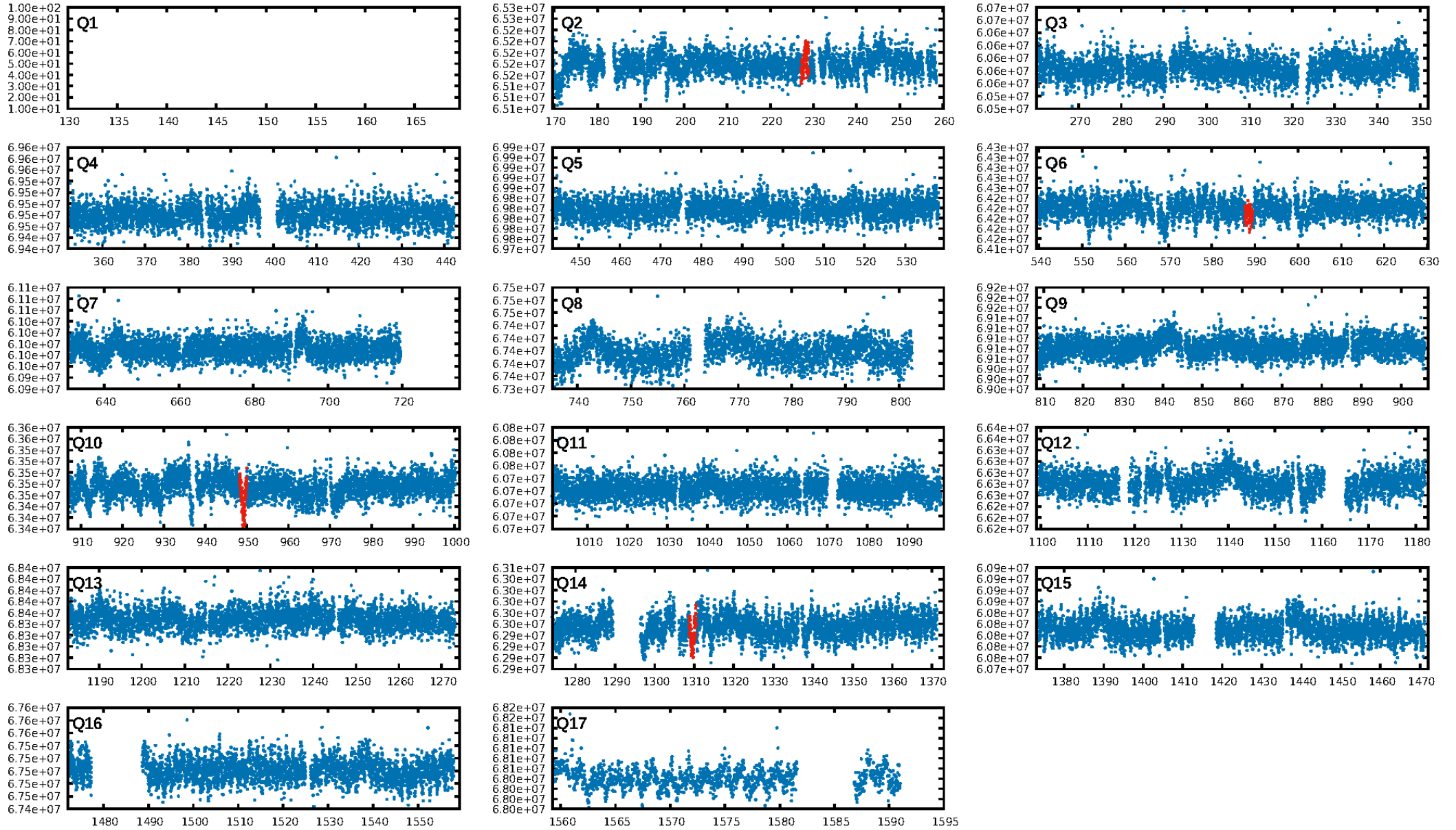
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00 σ]
LongPeriod-sig: 100.0% [10.42 σ]
ModelChiSquare2-sig: 2.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.18e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.132
Centroid-sig: 0.7%
Centroid-so: 2.600 arcsec [2.16 σ]
OotOffset-rm: 6.227 arcsec [3.39 σ]
KicOffset-rm: 6.169 arcsec [3.38 σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/4]

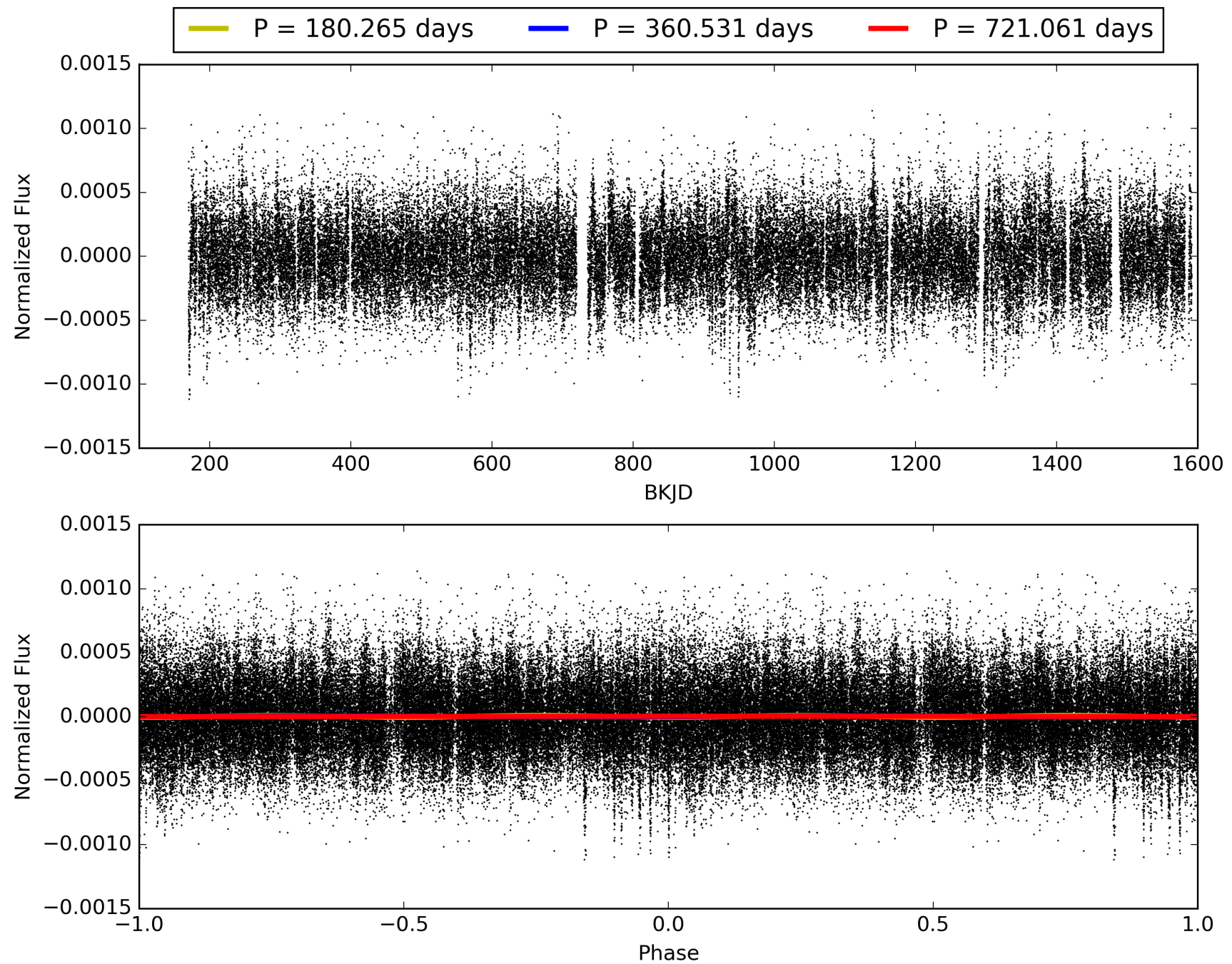
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:46:47 Z

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

TCE 006715434-03, PDC Light Curves

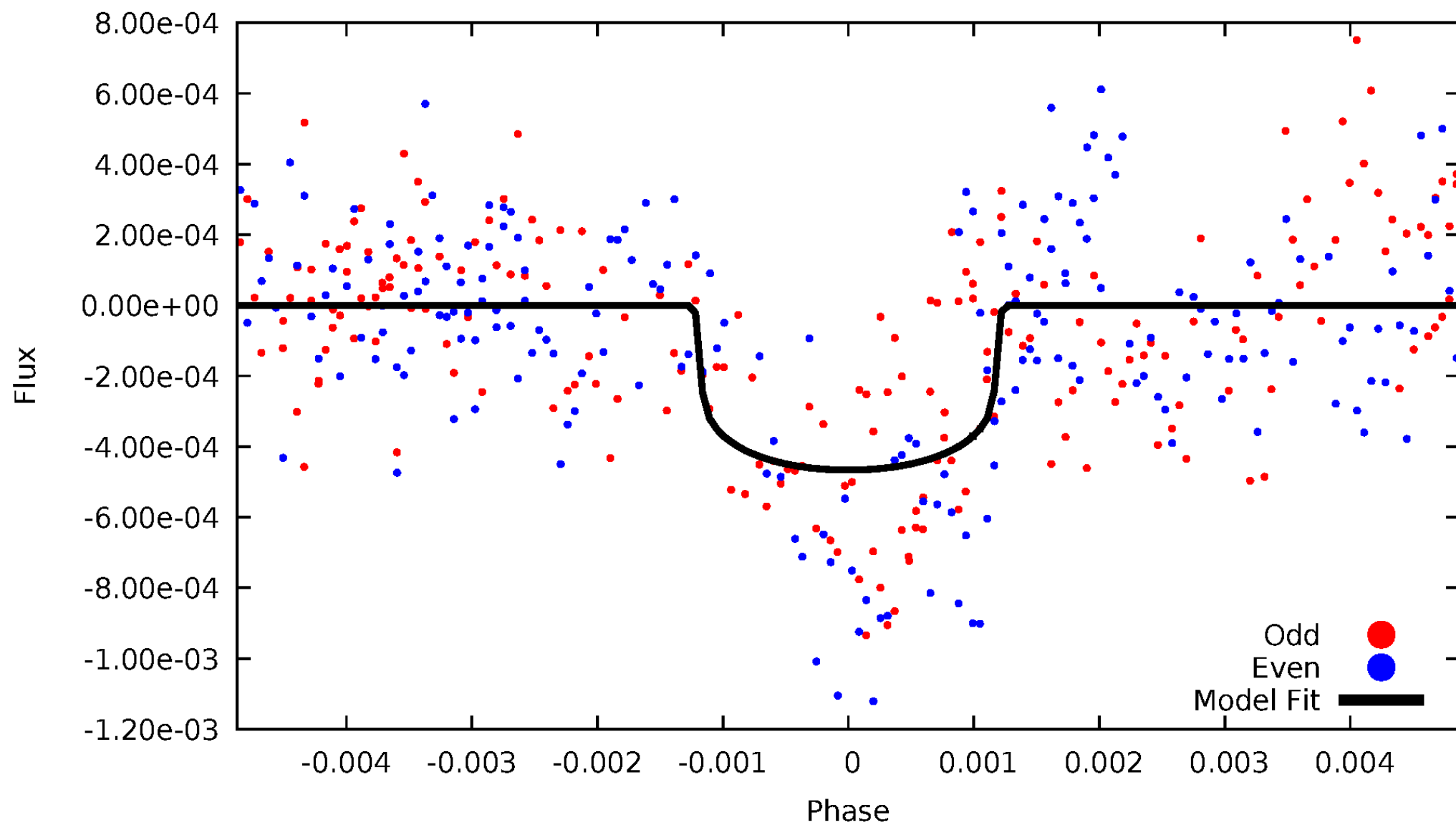


TCE 006715434-03



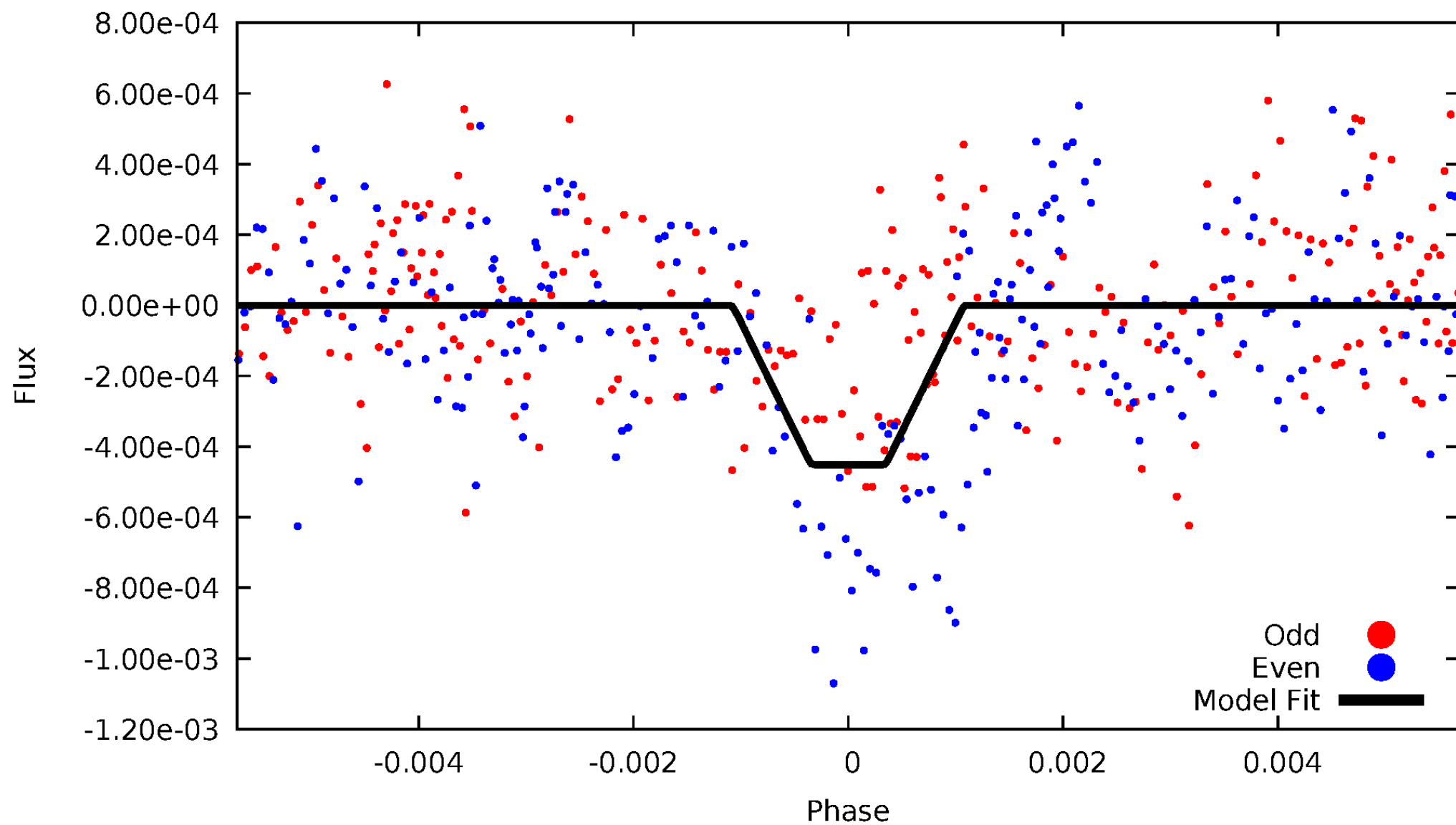
DV Odd/Even

TCE 006715434-03

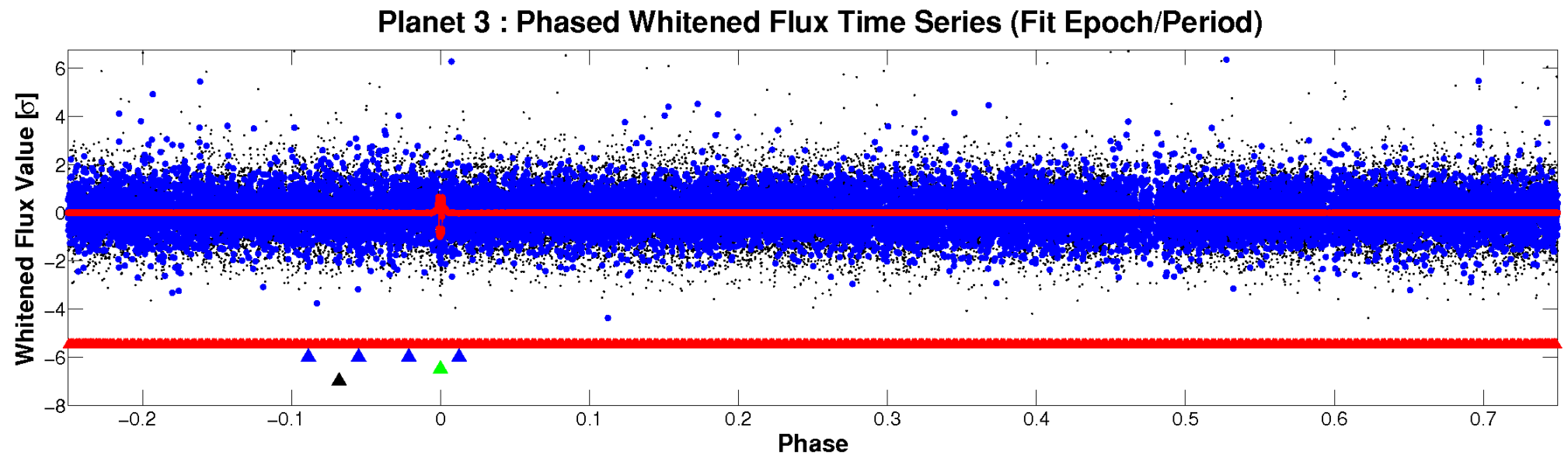
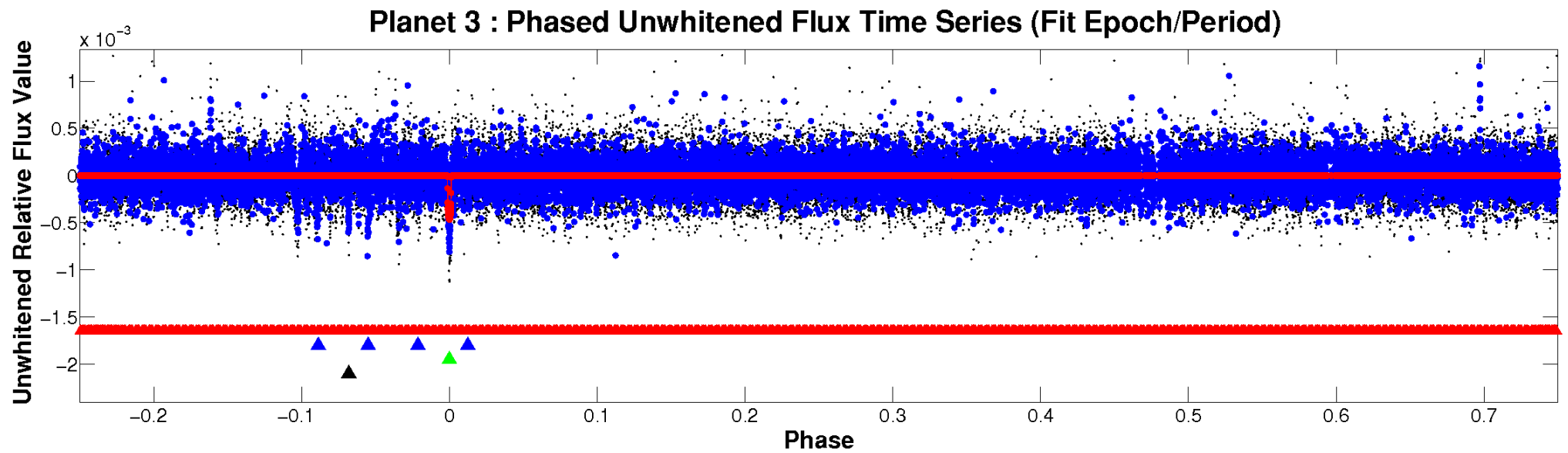


ALT Odd/Even

TCE 006715434-03

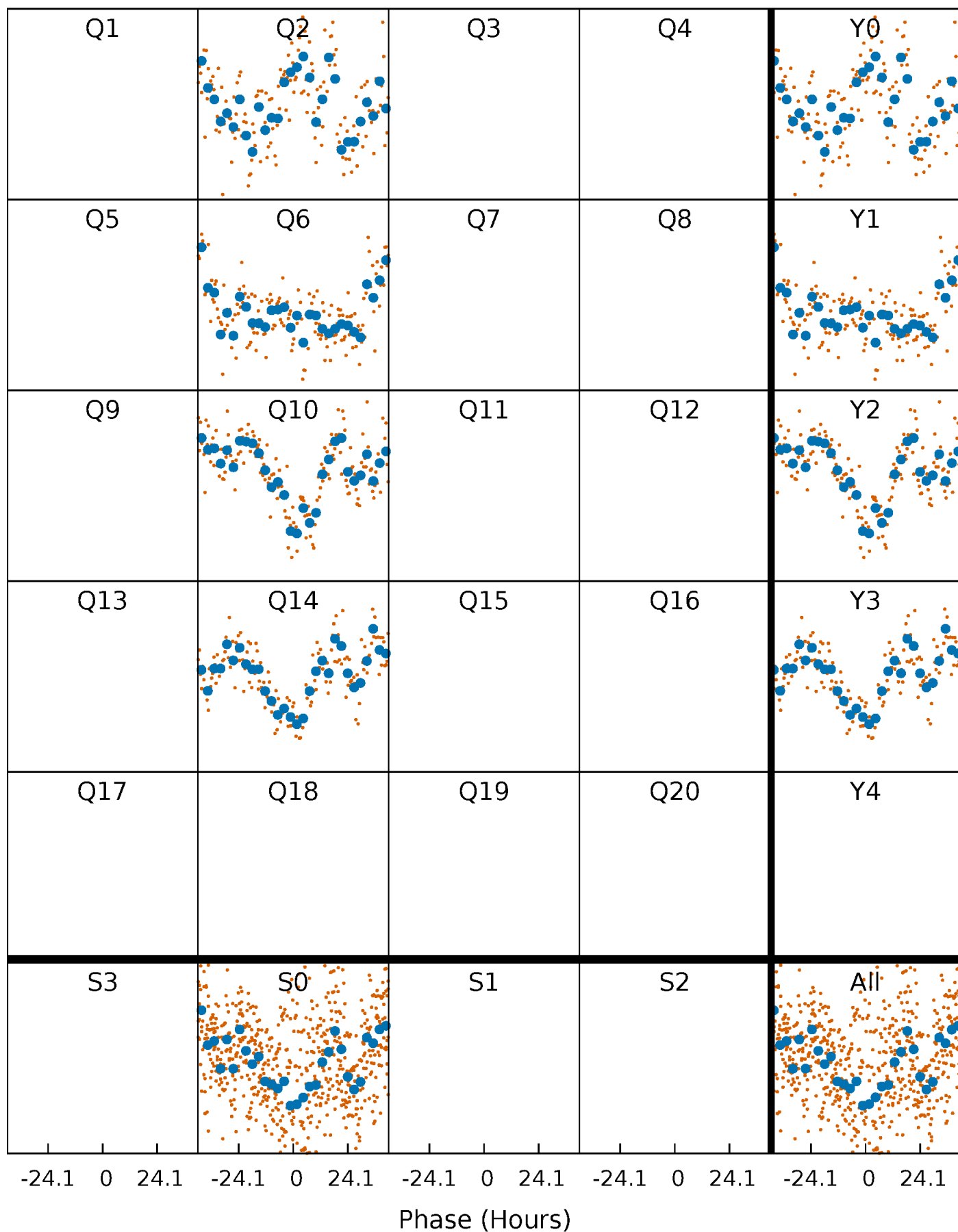


Non-Whitened Vs. Whitened Light Curve



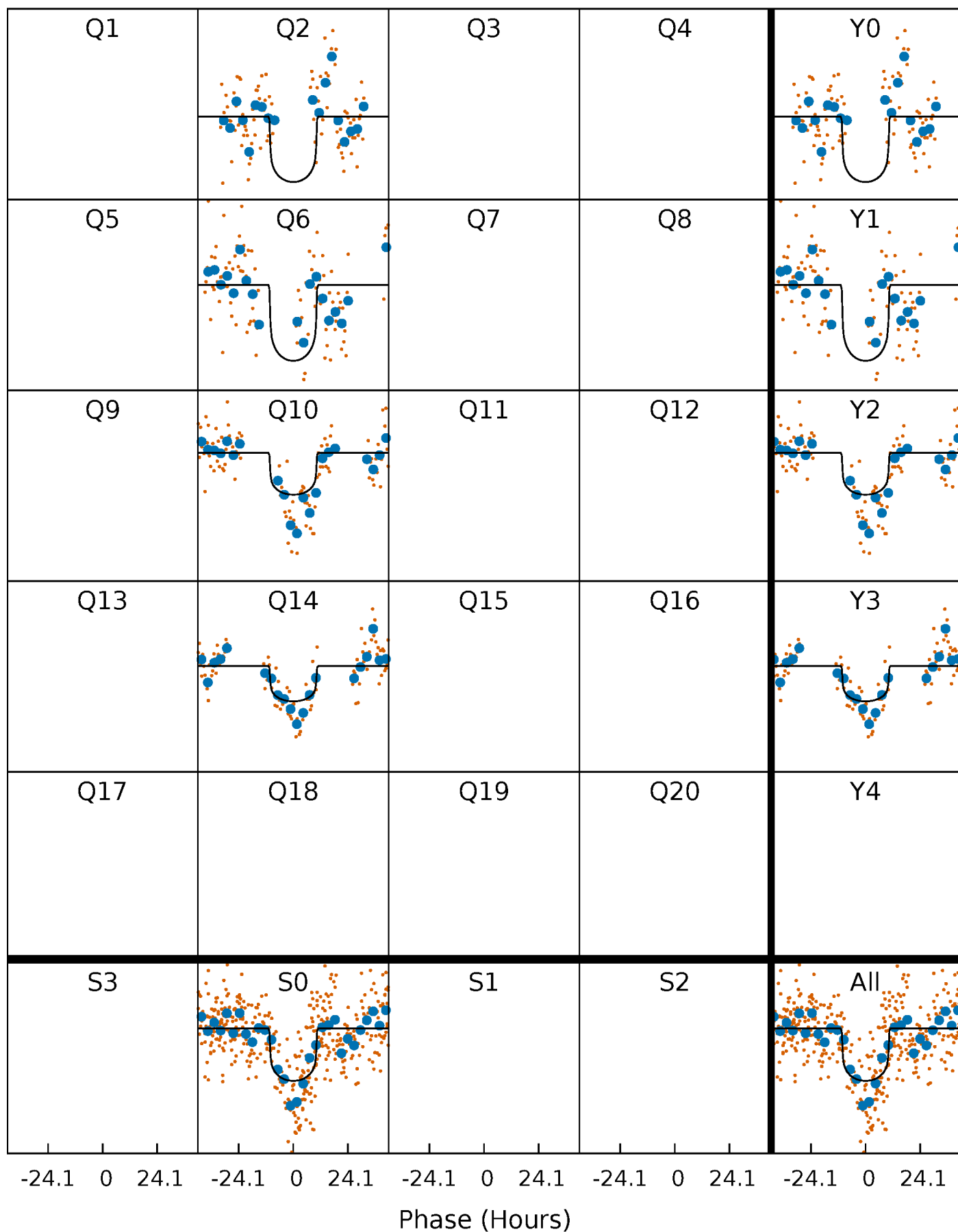
PDC Quarter-Phased Transit Curves

TCE 006715434-03 $P=360.530640$ Days $T_0=228.031823$ (BKJD)



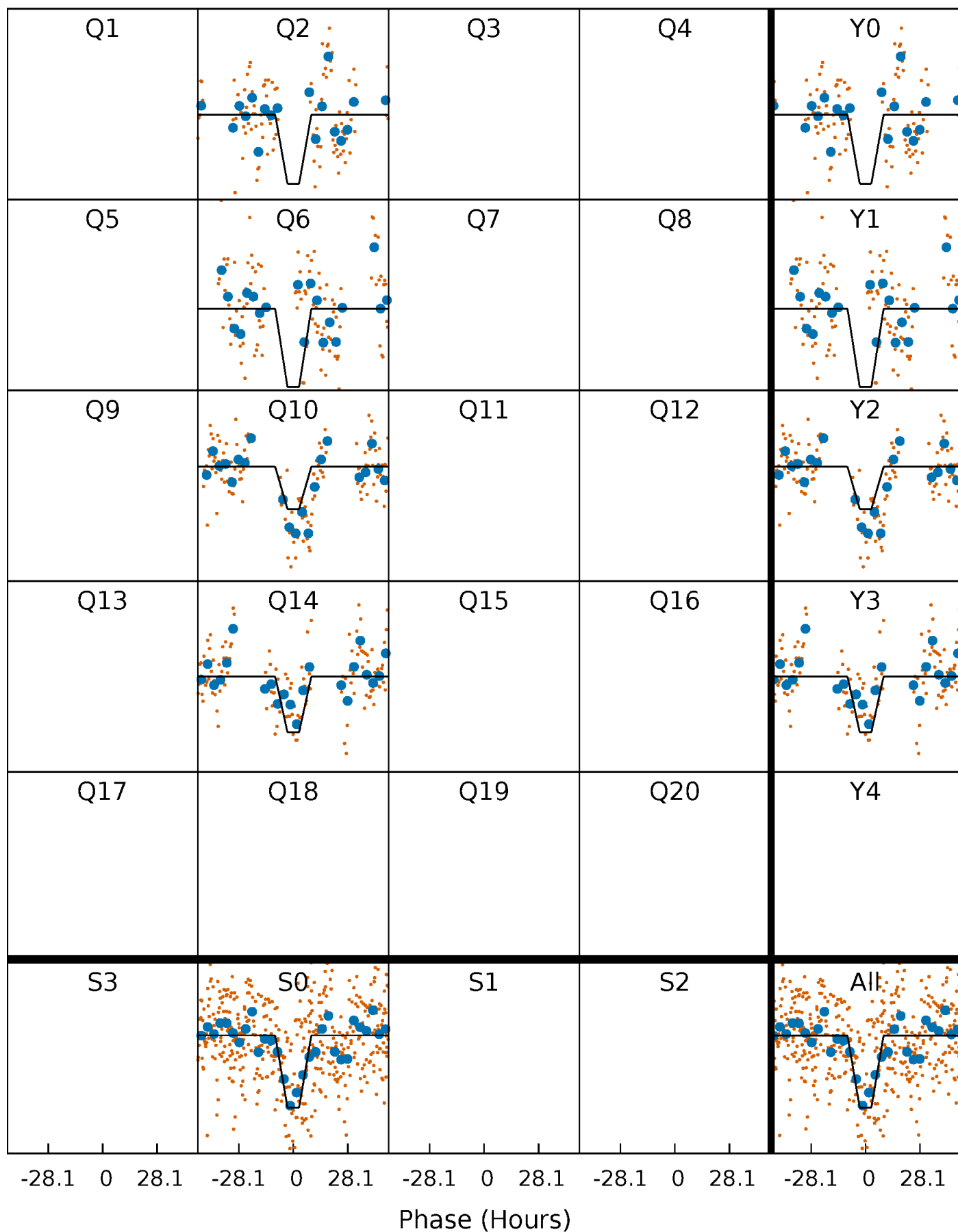
DV Quarter-Phased Transit Curves

TCE 006715434-03 P=360.530640 Days $T_0=228.031823$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

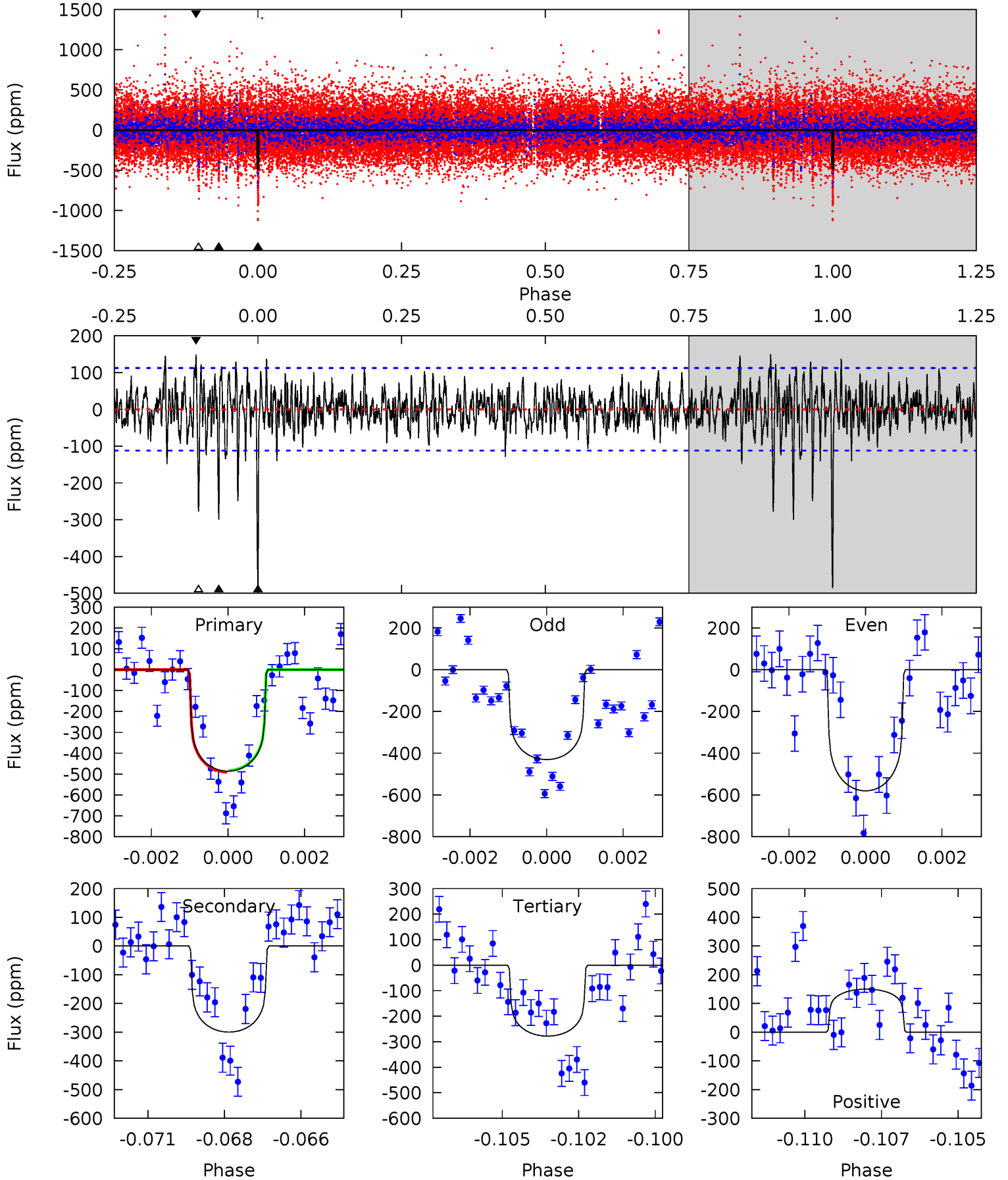
TCE 006715434-03 P=360.563789 Days $T_0=227.984887$ (BKJD)



DV Model-Shift Uniqueness Test

006715434-03, P = 360.530640 Days, E = 228.031823 Days

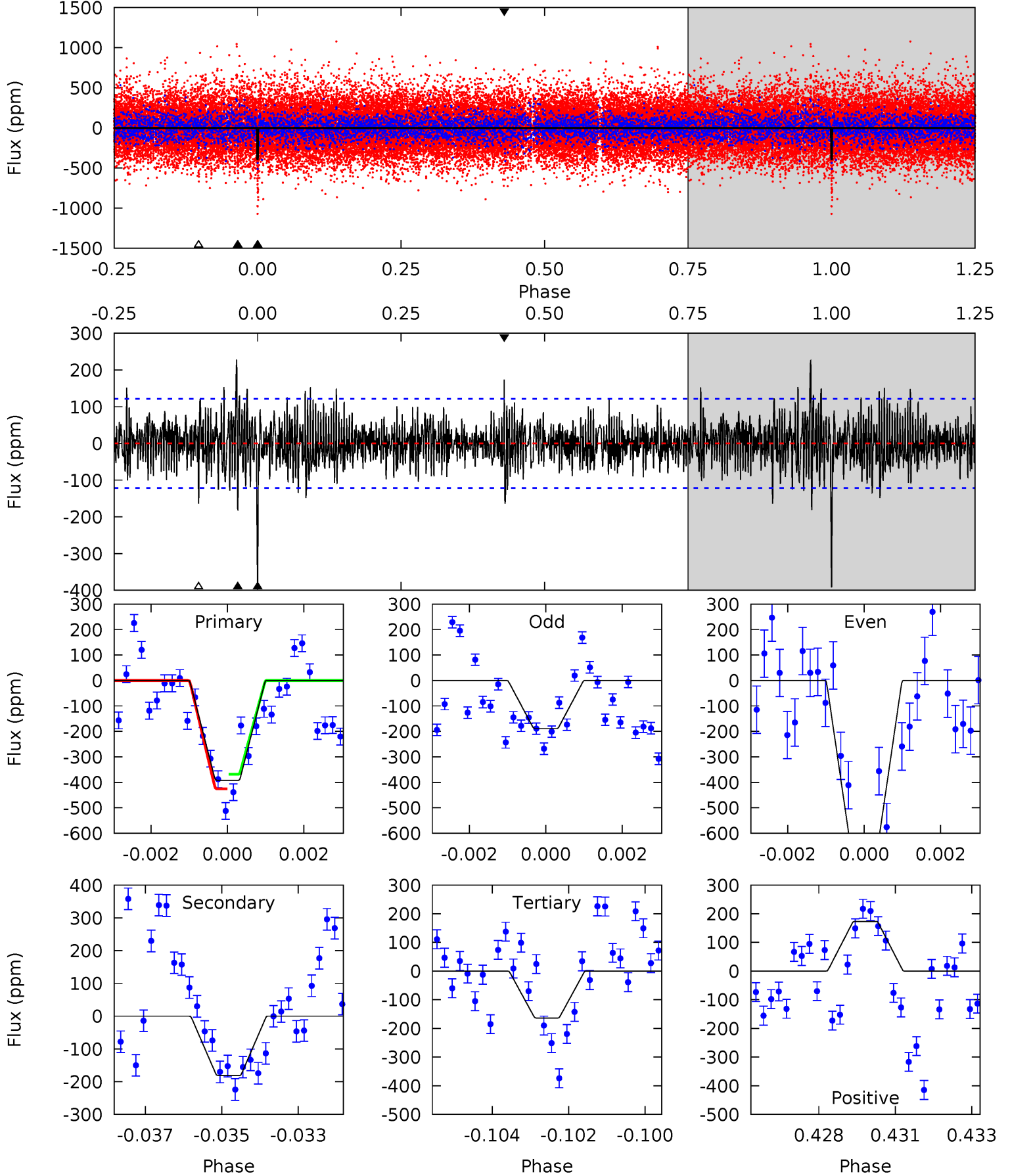
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.9	14.1	13.1	7.07	5.29	3.03	2.12	9.80	15.8	1.03	7.06	3.53	0.95	0.24	0.19



Alt Model-Shift Uniqueness Test

006715434-03, P = 360.563789 Days, E = 227.984887 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	7.90	7.15	7.57	5.31	3.07	1.96	9.97	9.55	0.75	0.33	10.7	1.48	0.37	1.23



Stellar Parameters For KIC 006715434

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6253^{+198}_{-242}	$3.893^{+0.420}_{-0.140}$	$-0.040^{+0.250}_{-0.300}$	$2.139^{+0.513}_{-0.953}$	$1.303^{+0.215}_{-0.263}$	$0.188^{+0.698}_{-0.076}$
	+3%/-4%	+11%/-4%	+625%/-750%	+24%/-45%	+17%/-20%	+372%/-40%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006715434-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-300 ± 21	$4.38^{+1.55}_{-1.35}$	528^{+47}_{-62}	5787^{+887}_{-573}	10173^{+10821}_{-4536}
Alt.	-181 ± 23	$4.53^{+1.55}_{-1.36}$	526^{+45}_{-58}	5070^{+631}_{-467}	5609^{+5573}_{-2522}

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

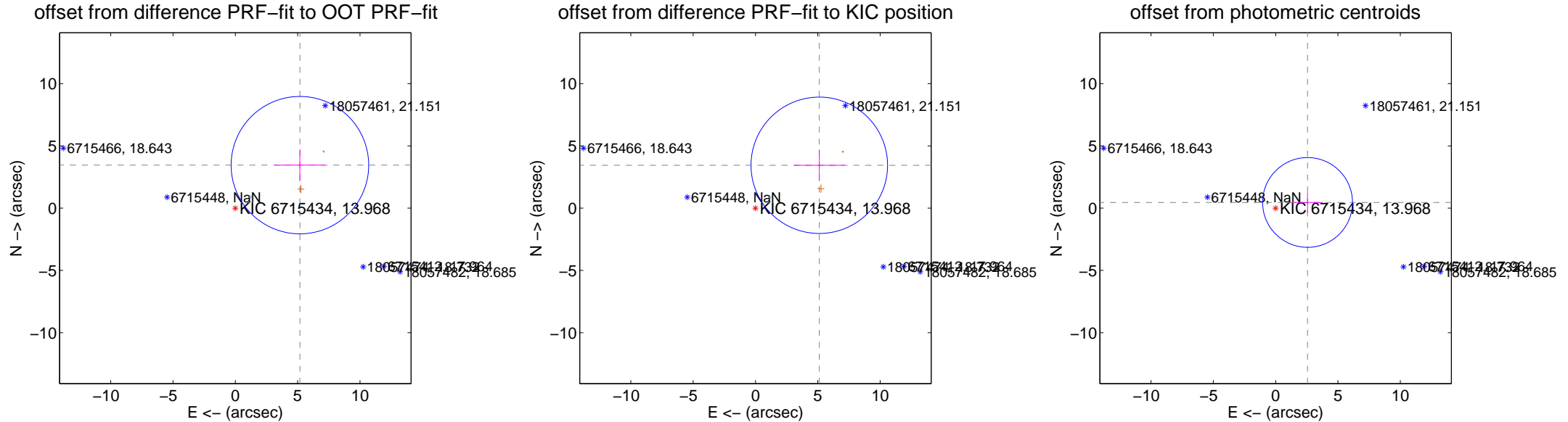
DV Centroid Data

Supplemental centroid analysis for 006715434-03. Kepler magnitude: 13.97. Transit SNR 9.27

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.227 ± 1.839	3.39	-5.180 ± 2.042	3.455 ± 1.270
PRF-fit source offset from KIC position	6.169 ± 1.825	3.38	-5.117 ± 2.029	3.444 ± 1.265
photometric centroid source offset	2.60 ± 1.20	2.16	-2.56 ± 1.21	0.46 ± 0.82



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.

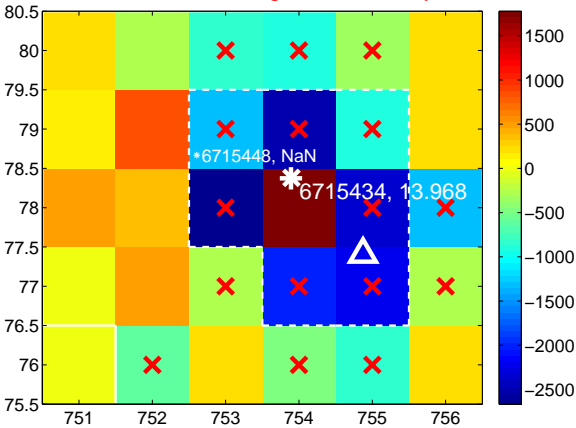
Q1 no difference image



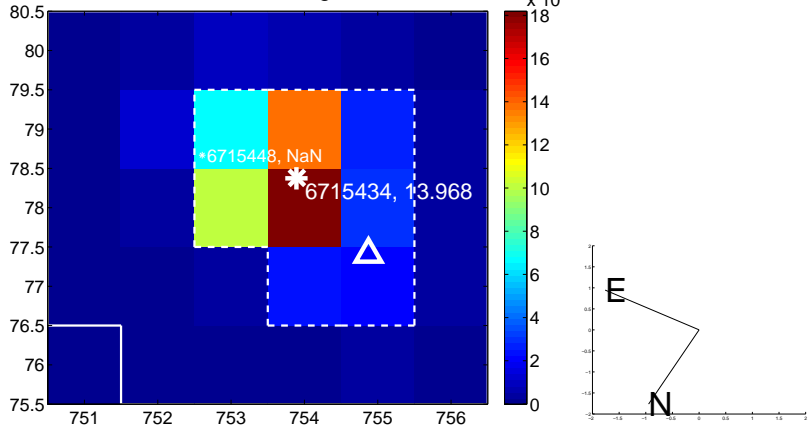
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



Q3 no difference image



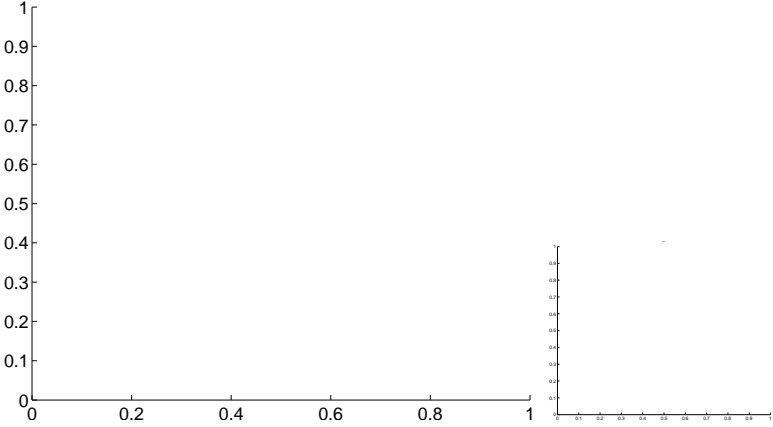
Q3 no OOT image



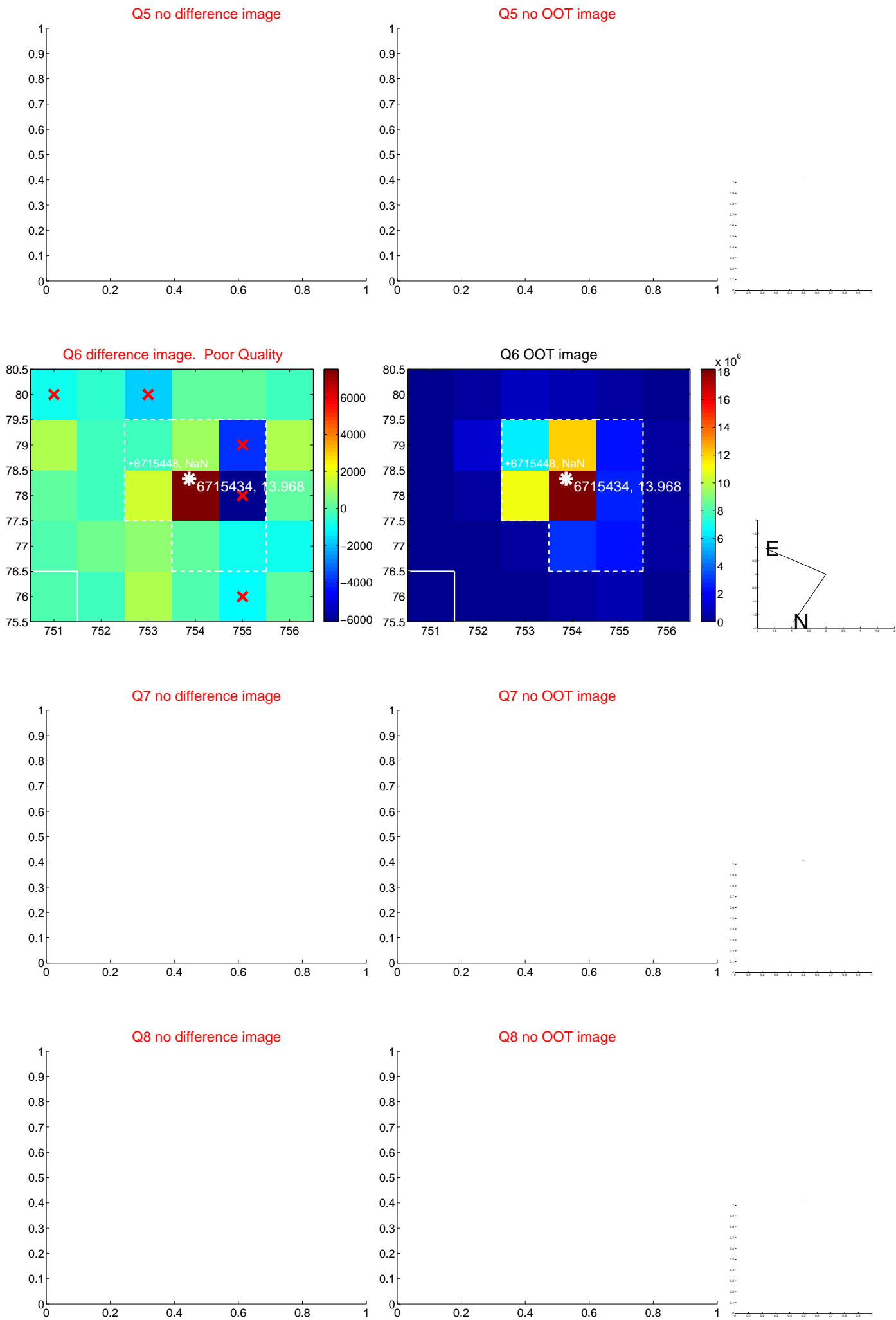
Q4 no difference image



Q4 no OOT image



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.

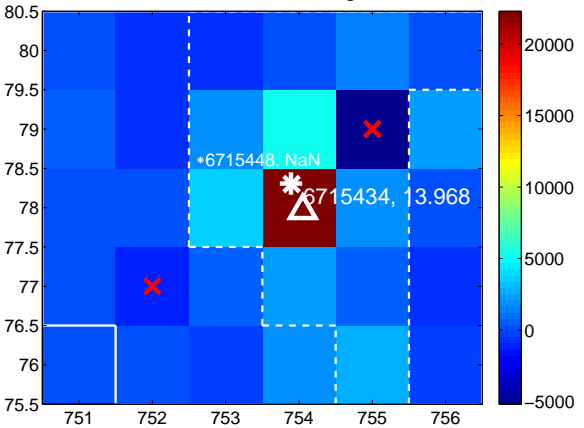
Q9 no difference image



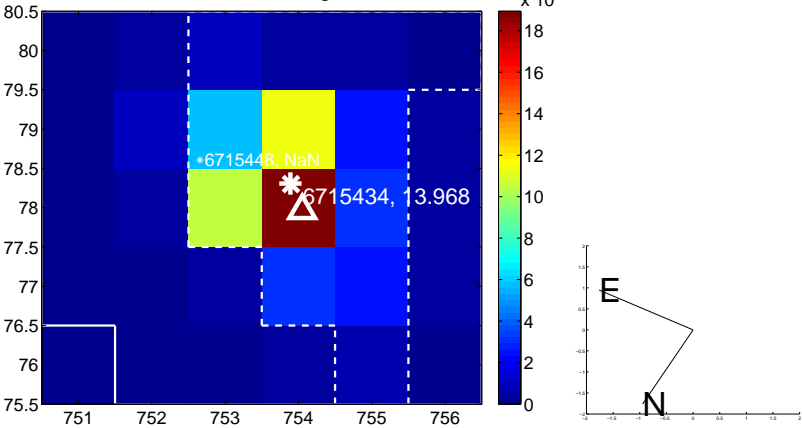
Q9 no OOT image



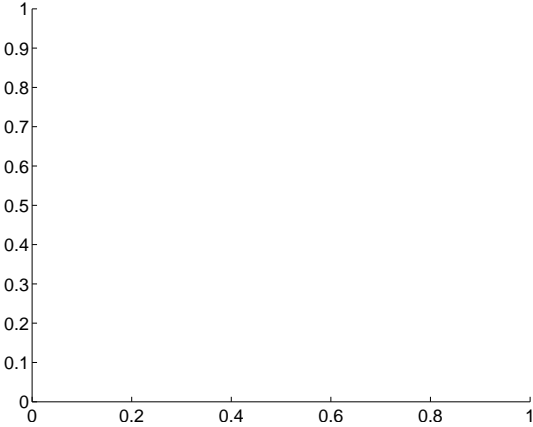
Q10 difference image



Q10 OOT image



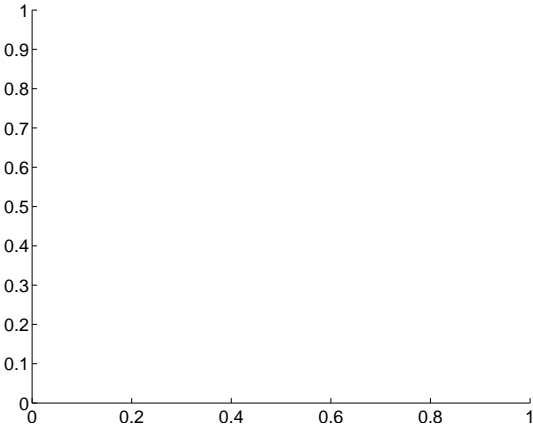
Q11 no difference image



Q11 no OOT image



Q12 no difference image



Q12 no OOT image



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

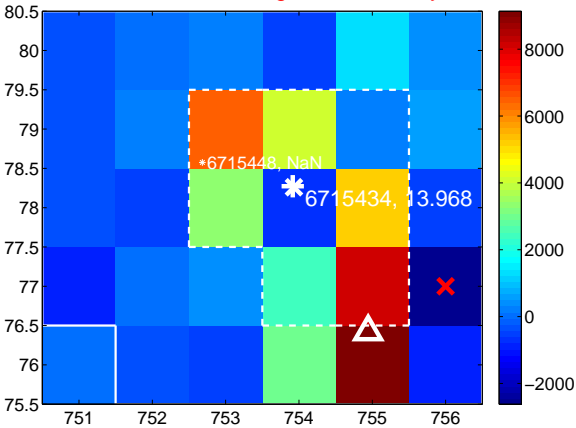
Q13 no difference image



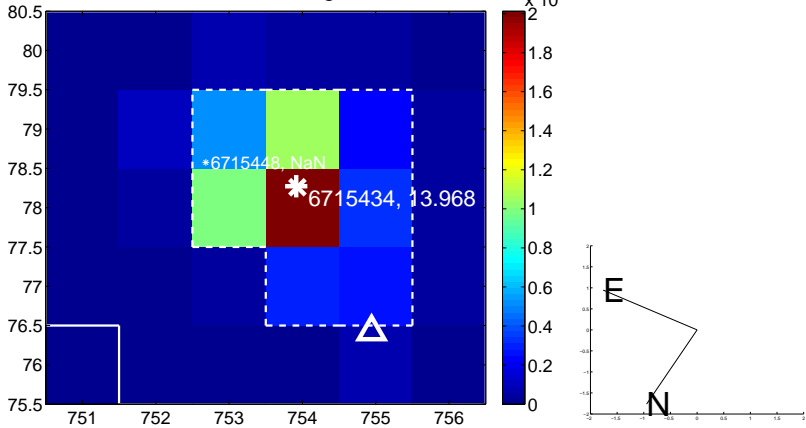
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



Q15 no difference image



Q15 no OOT image



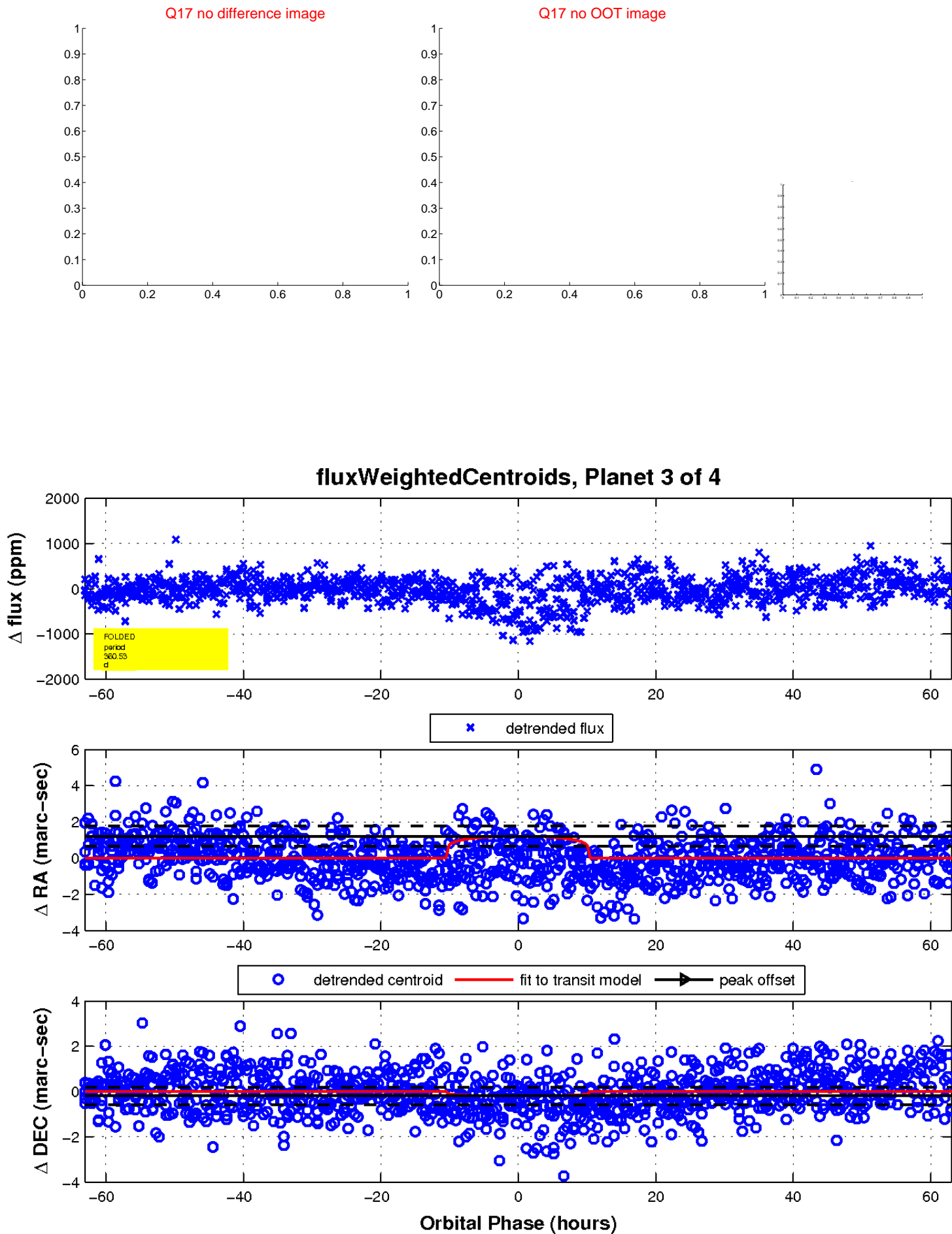
Q16 no difference image



Q16 no OOT image

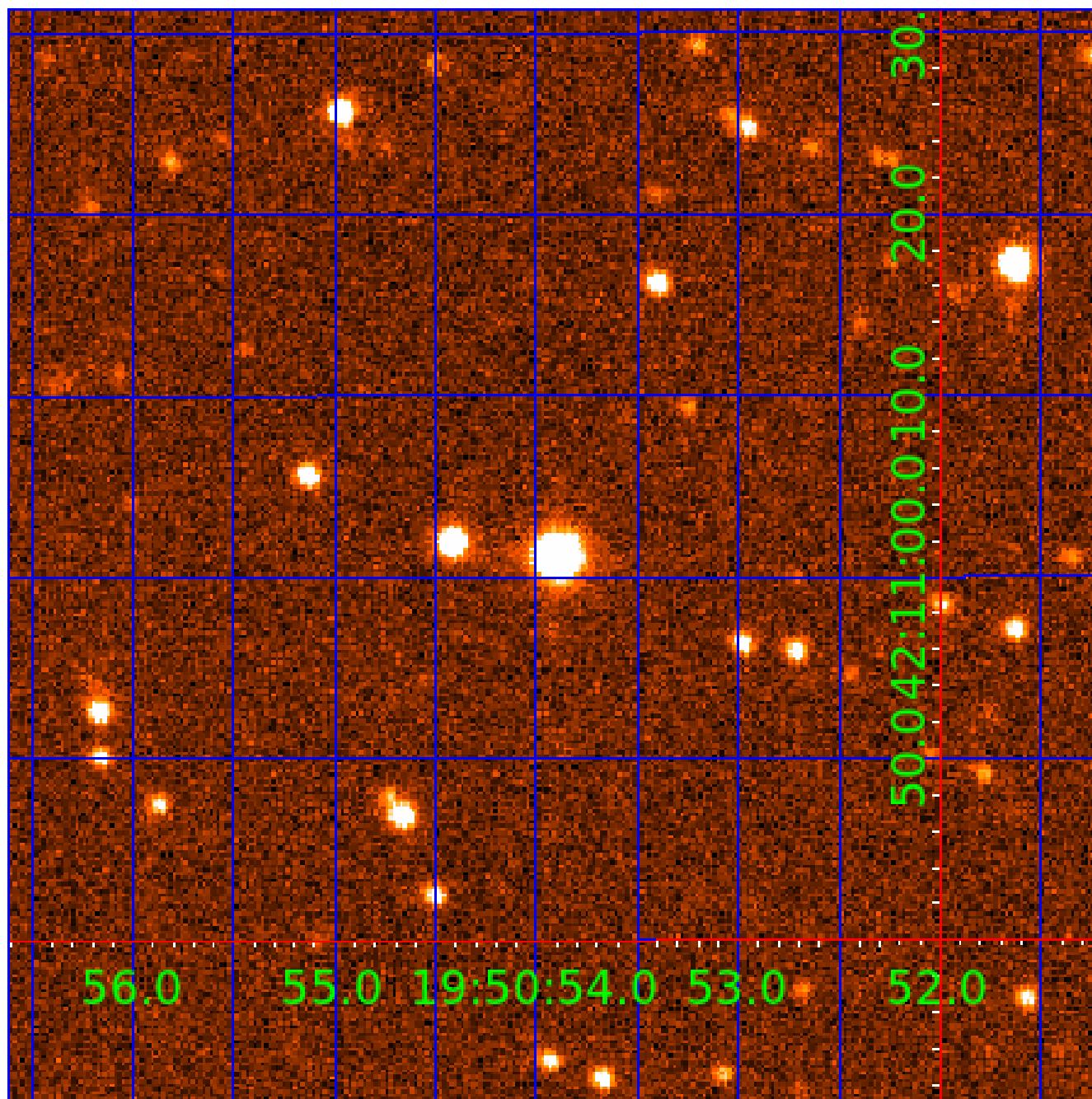


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006715434

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})
006715434-01	OBS	No	1.644953	132.603637	19.1	4.970	8.8	5.1	2.14	6253	1.05	7055.33
006715434-02	OBS	No	372.685213	196.068737	468.6	18.419	8.8	8.5	2.14	6253	5.71	5.11
006715434-03	OBS	No	360.530640	228.031823	466.5	21.067	7.7	9.3	2.14	6253	4.68	5.34
006715434-04	OBS	No	360.528369	203.508085	418.0	24.785	7.3	7.3	2.14	6253	8.55	5.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006715434-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006715434-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006715434-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
006715434-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—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.

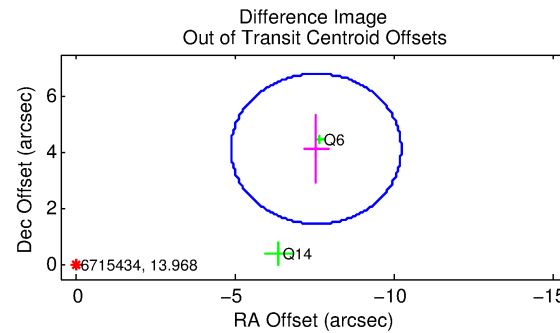
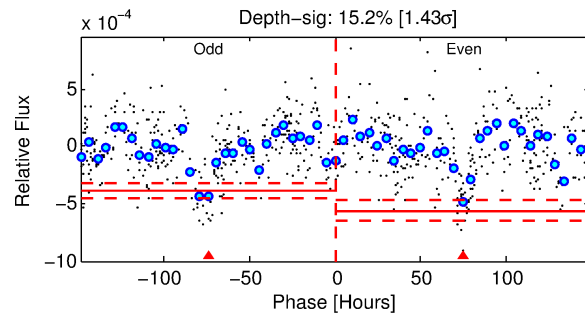
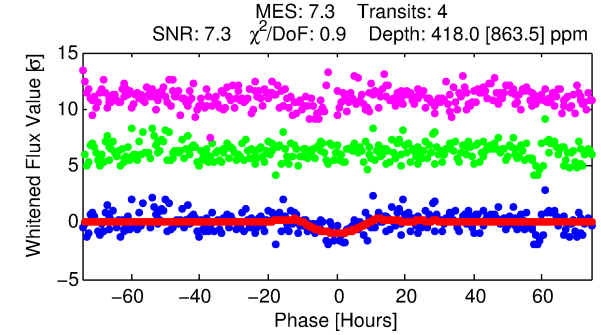
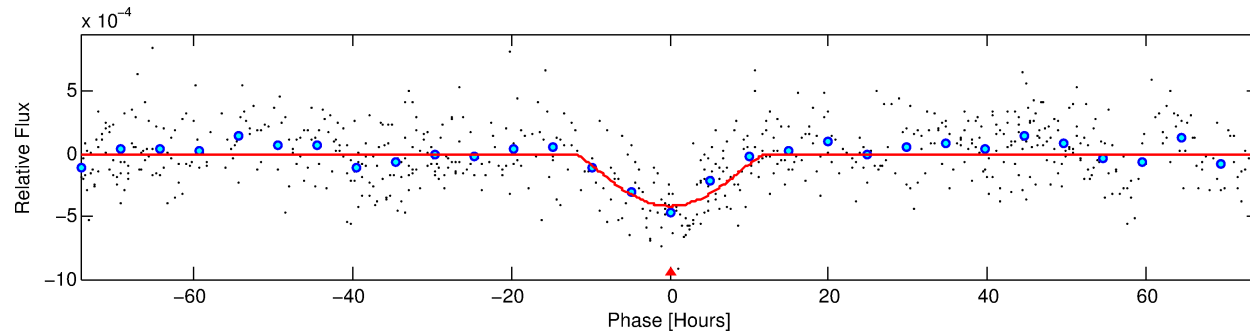
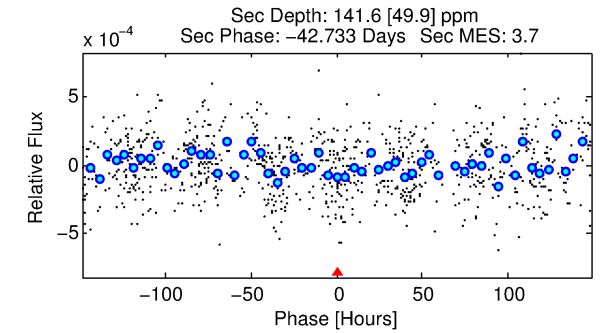
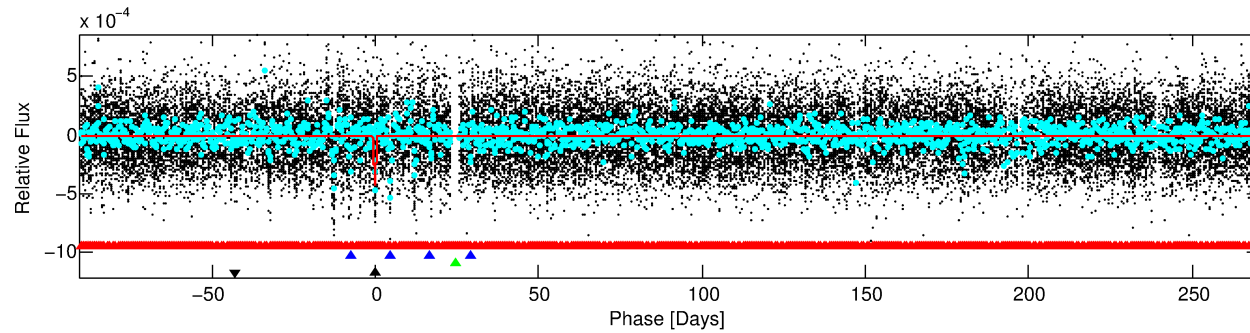
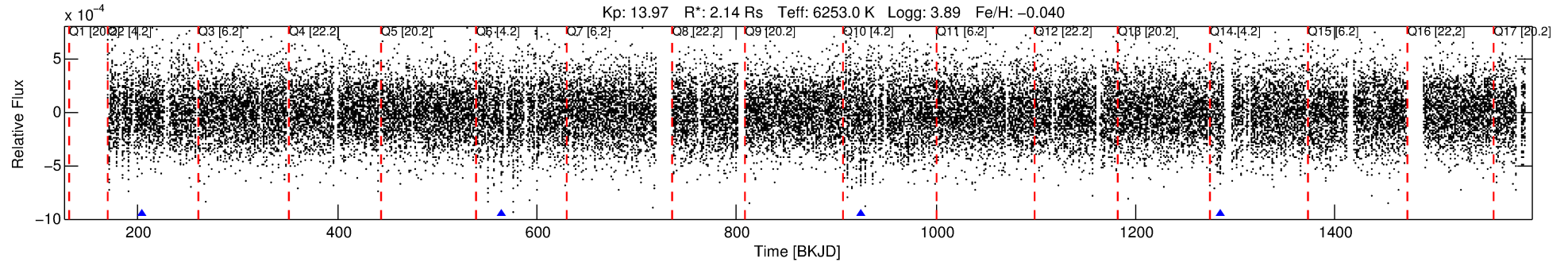
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006715434-04

No Significant Match Found

DV One-Page Summary

KIC: 6715434 Candidate: 4 of 4 Period: 360.528 d



DV Fit Results:

Period = 360.52837 [0.03816] d
Epoch = 203.5081 [0.0777] BKJD
Rp/R* = 0.0366 [0.1227]
a/R* = 30.37 [26.06]
b = 1.00 [0.13]
Seff = 5.34 [3.88]
Teq = 388 [70] K
Rp = 8.55 [28.89] Re
a = 1.0834 [0.4749] AU
Ag = 1249.68 [8428.49] [0.15 σ]
Teffp = 3563 [5976] K [0.53 σ]

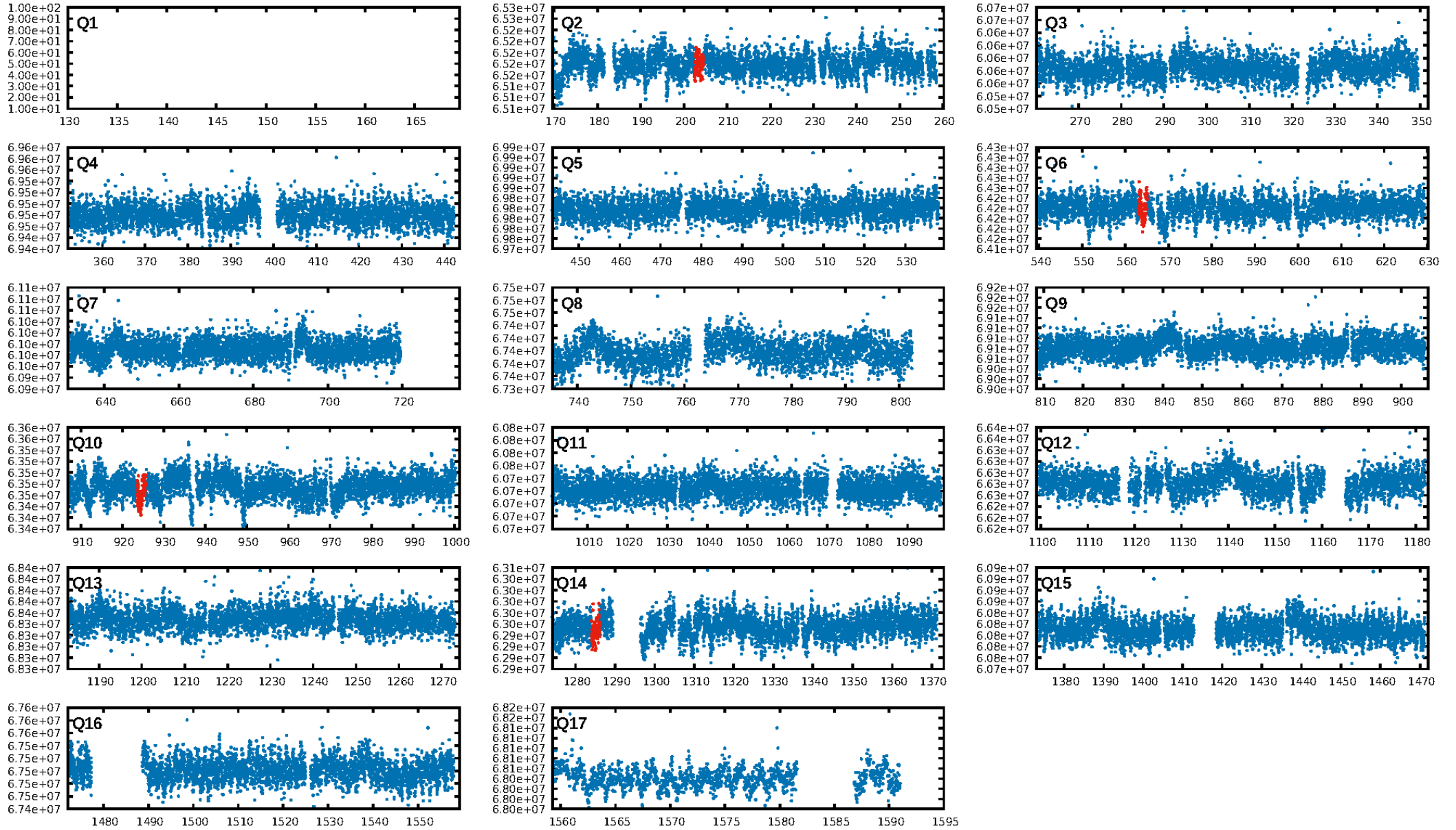
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [340.74 σ]
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: 58.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.43e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.772
Centroid-sig: 2.0%
Centroid-so: 2.783 arcsec [1.73 σ]
OotOffset-rm: 8.601 arcsec [9.64 σ]
KicOffset-rm: 8.546 arcsec [11.54 σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/4]

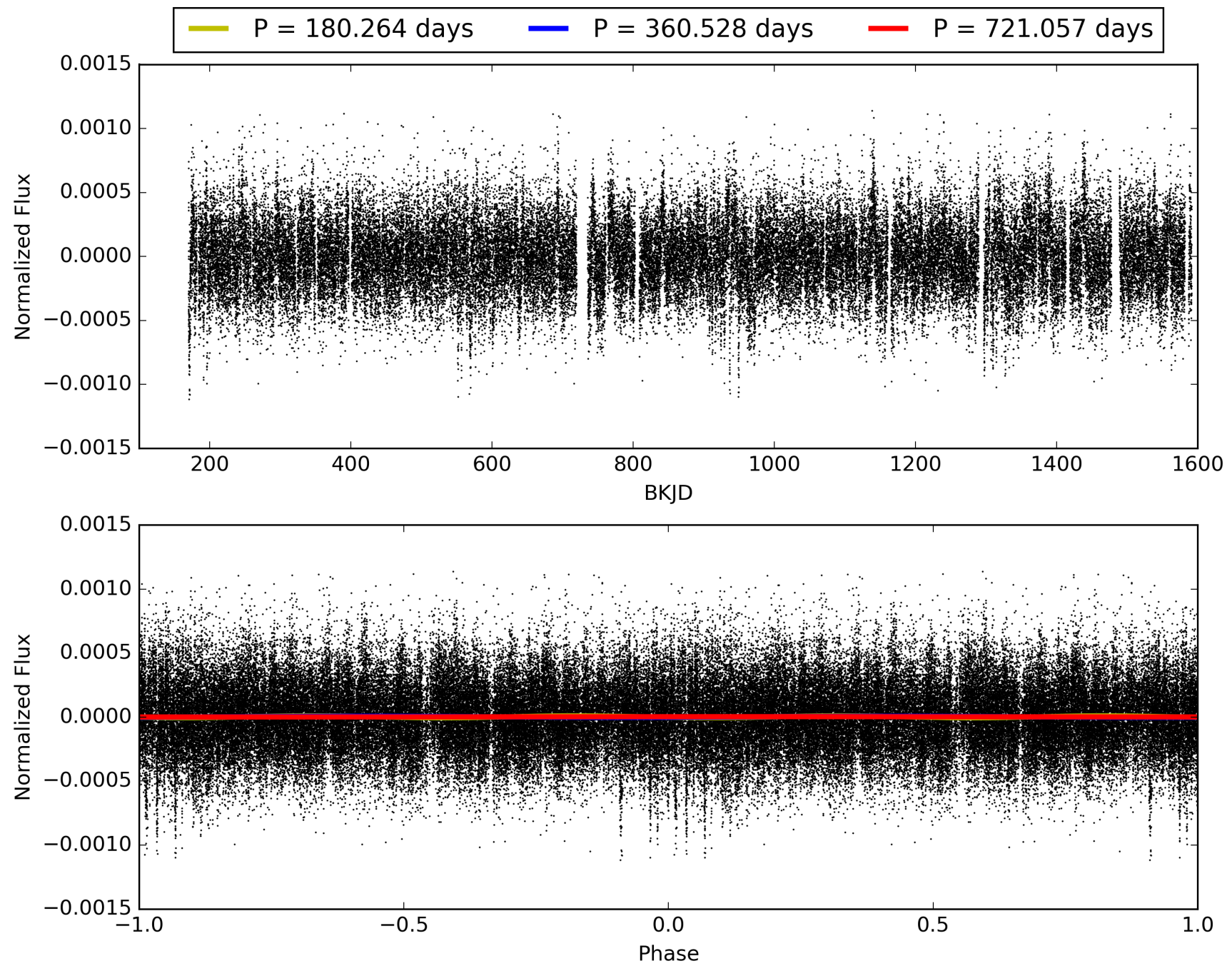
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:46:53 Z

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

TCE 006715434-04, PDC Light Curves

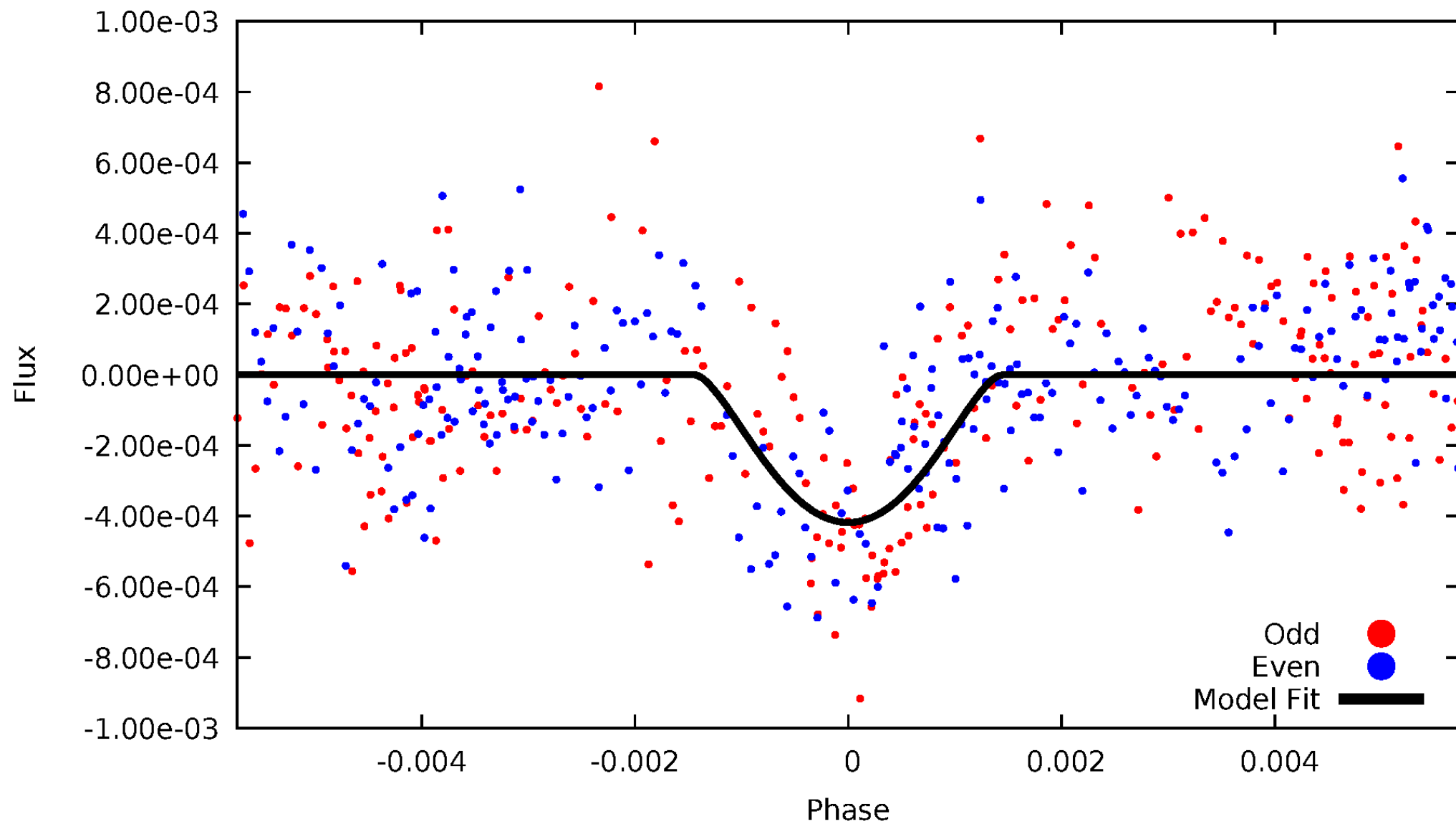


TCE 006715434-04



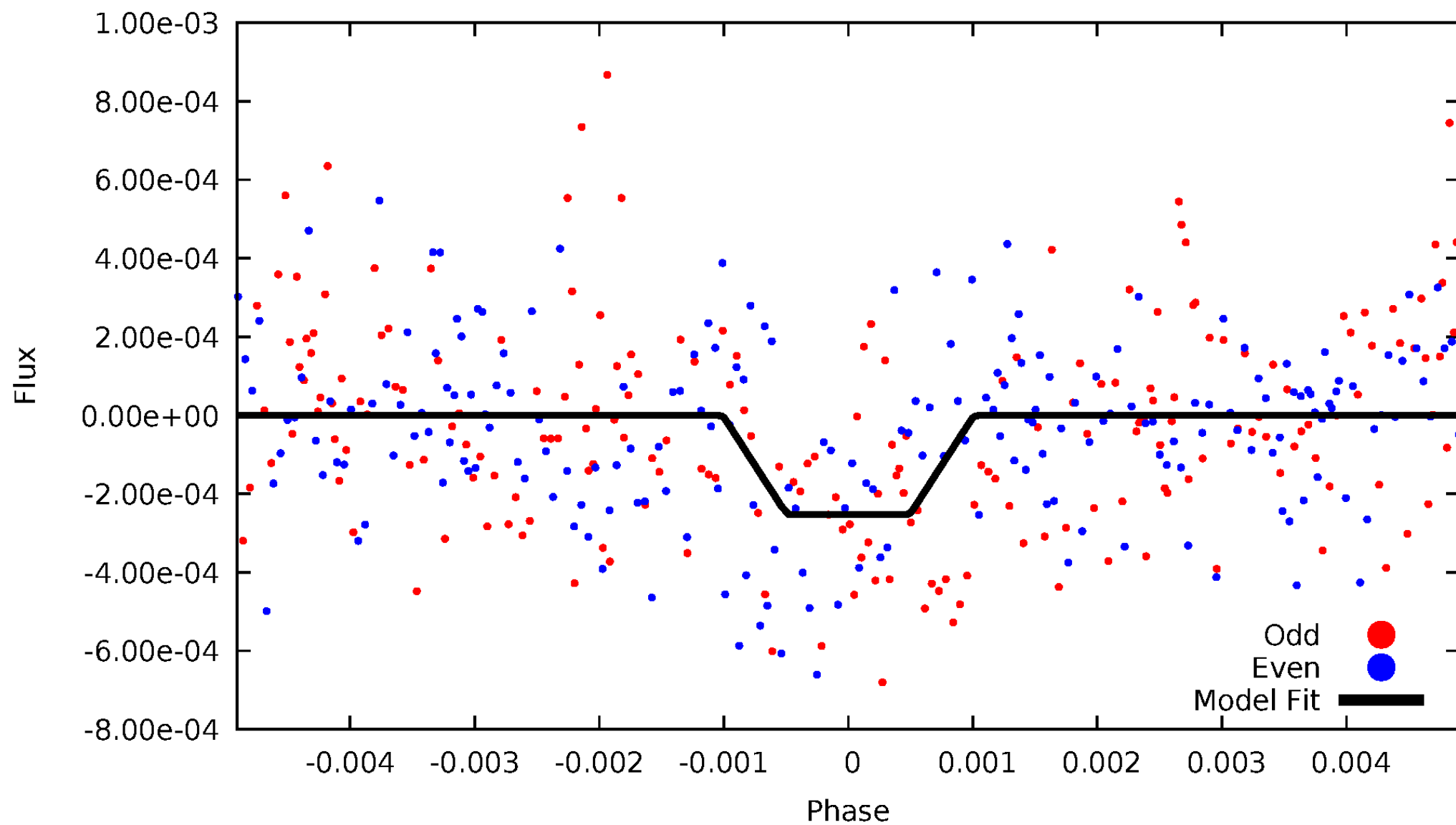
DV Odd/Even

TCE 006715434-04



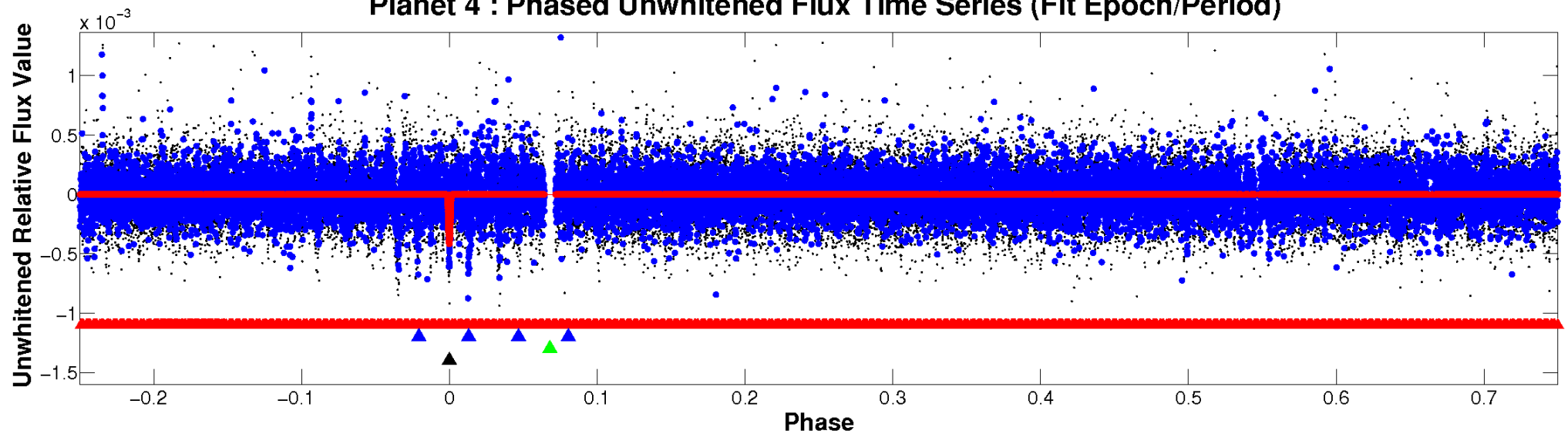
ALT Odd/Even

TCE 006715434-04

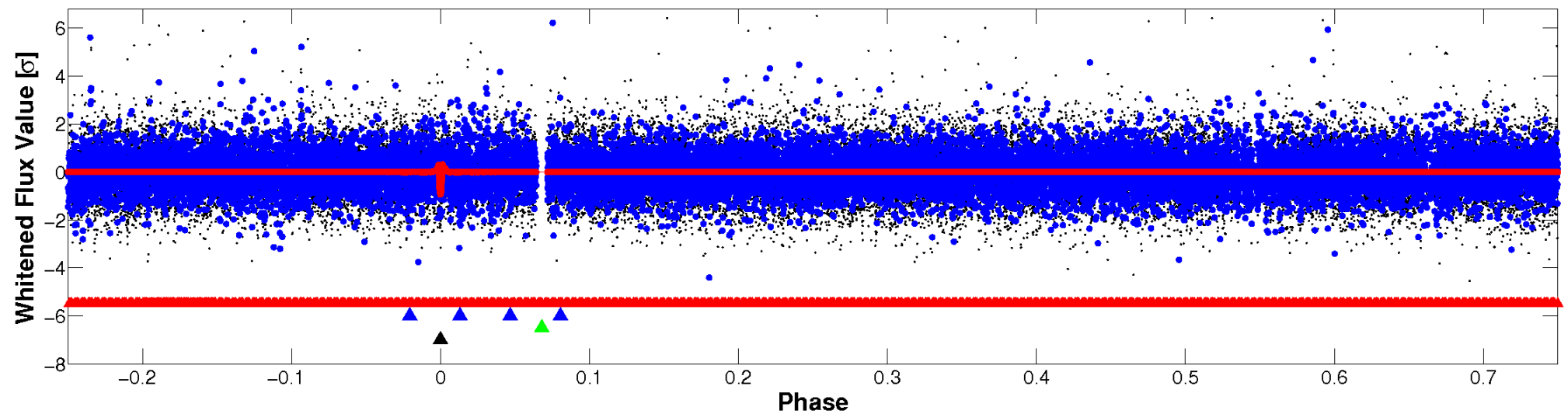


Non-Whitened Vs. Whitened Light Curve

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



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



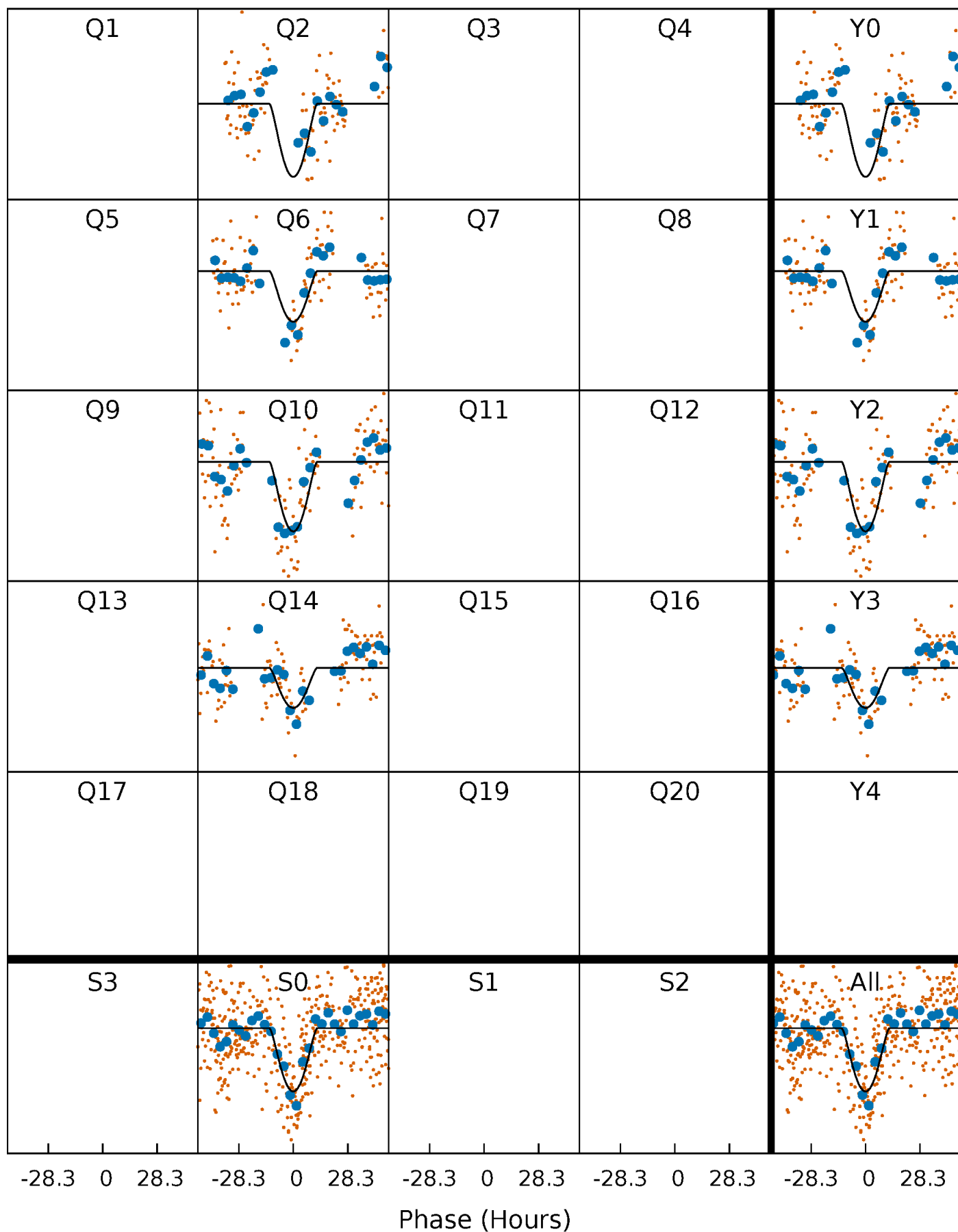
PDC Quarter-Phased Transit Curves

TCE 006715434-04 P=360.528369 Days $T_0=203.508085$ (BKJD)



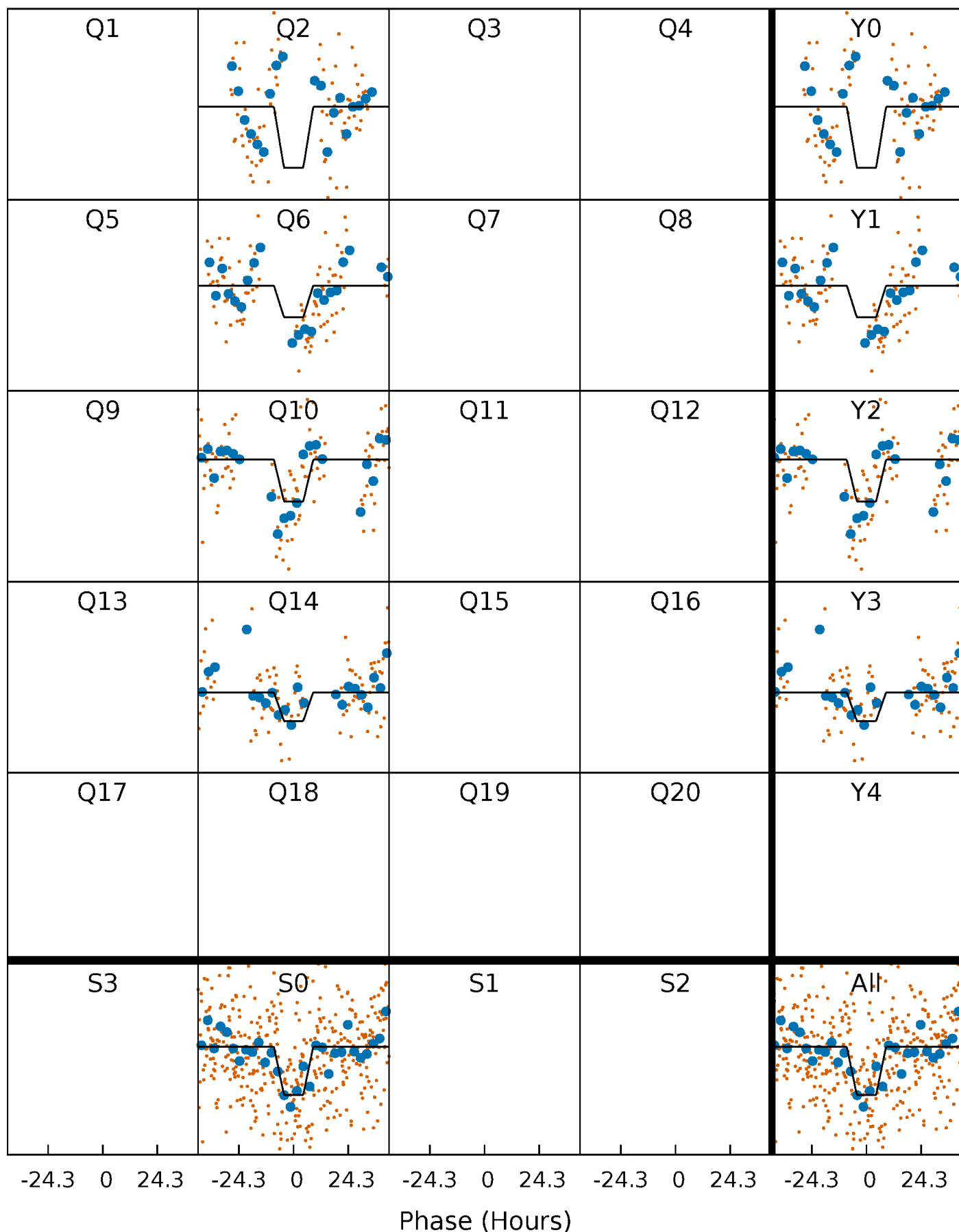
DV Quarter-Phased Transit Curves

TCE 006715434-04 P=360.528369 Days $T_0=203.508085$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

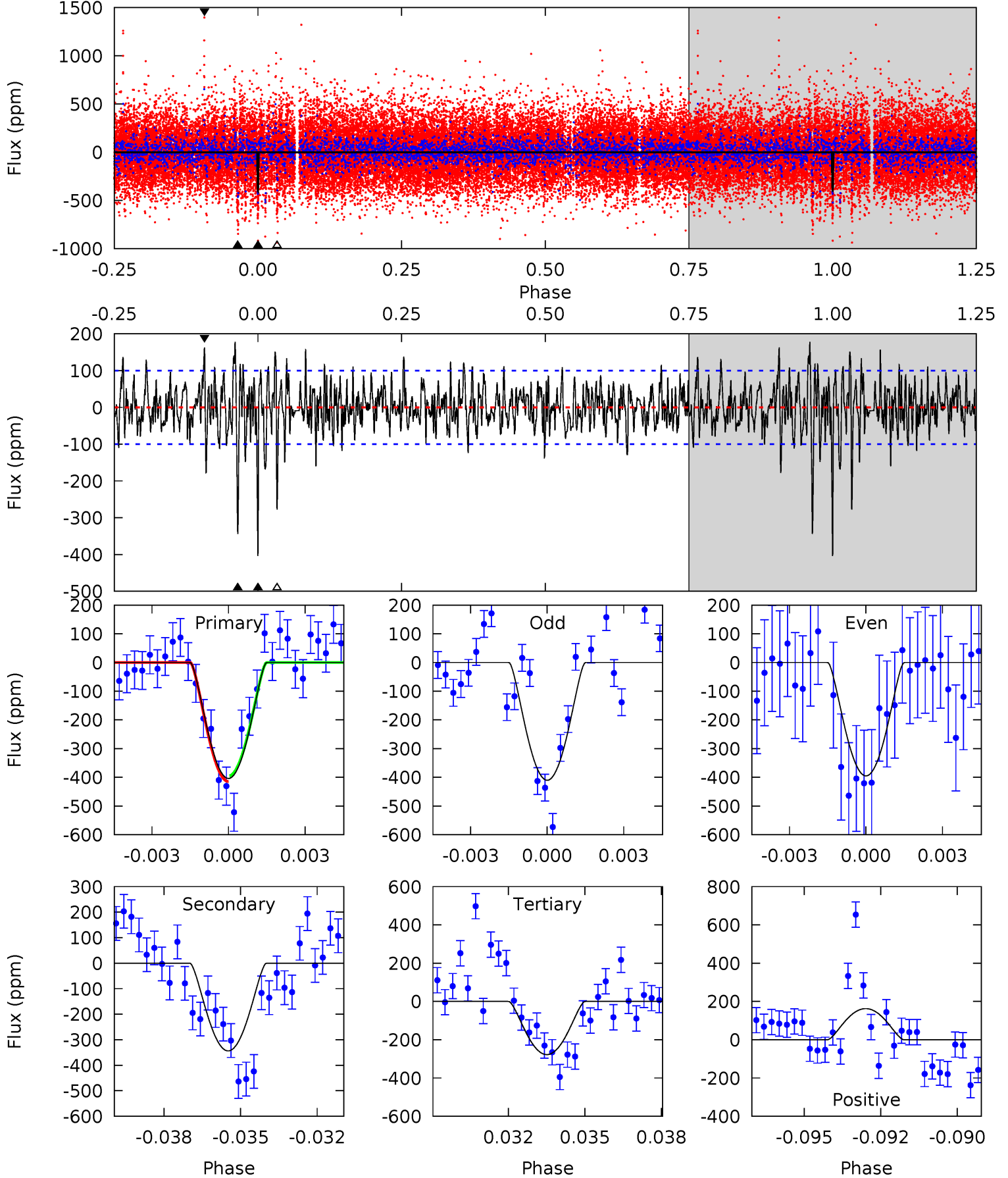
TCE 006715434-04 P=360.659145 Days $T_0=203.233355$ (BKJD)



DV Model-Shift Uniqueness Test

006715434-04, P = 360.528369 Days, E = 203.508085 Days

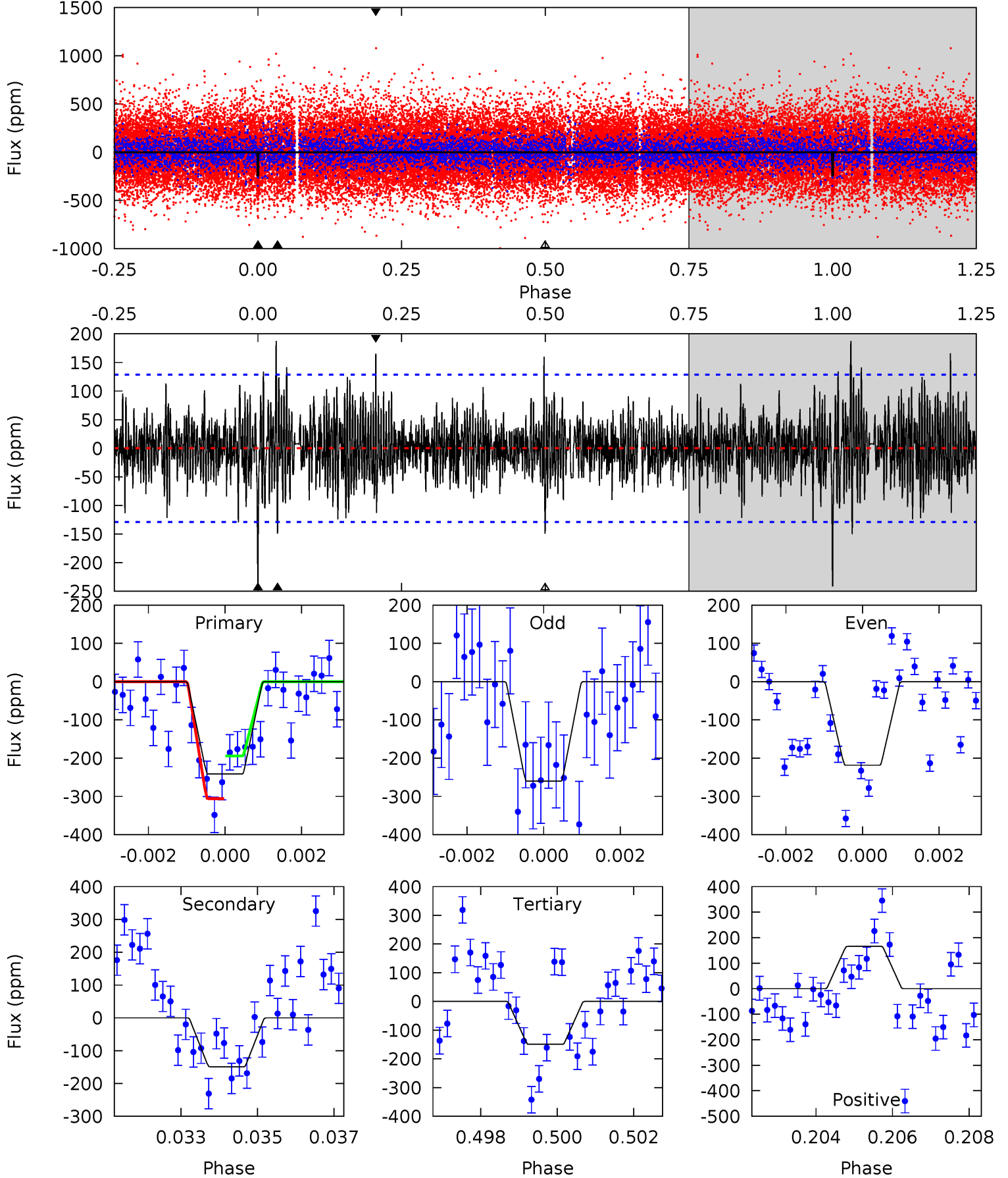
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	18.1	14.6	8.56	5.26	2.98	2.68	6.65	12.7	3.48	9.53	0.40	1.00	0.31	0.51



Alt Model-Shift Uniqueness Test

006715434-04, P = 360.659145 Days, E = 203.233355 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.97	6.15	6.15	6.84	5.32	3.08	1.68	3.82	3.13	0.00	-0.69	0.86	0.60	0.44	2.31



Stellar Parameters For KIC 006715434

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6253^{+198}_{-242}	$3.893^{+0.420}_{-0.140}$	$-0.040^{+0.250}_{-0.300}$	$2.139^{+0.513}_{-0.953}$	$1.303^{+0.215}_{-0.263}$	$0.188^{+0.698}_{-0.076}$
	+3%/-4%	+11%/-4%	+625%/-750%	+24%/-45%	+17%/-20%	+372%/-40%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006715434-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-344 ± 19	$20.85^{+22.82}_{-14.16}$	532^{+39}_{-66}	3290^{+1550}_{-607}	520^{+4350}_{-406}
Alt.	-149 ± 24	$19.72^{+22.78}_{-13.85}$	533^{+42}_{-62}	2963^{+1380}_{-504}	254^{+2475}_{-200}

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 $A_{obs} \gg 1.0$

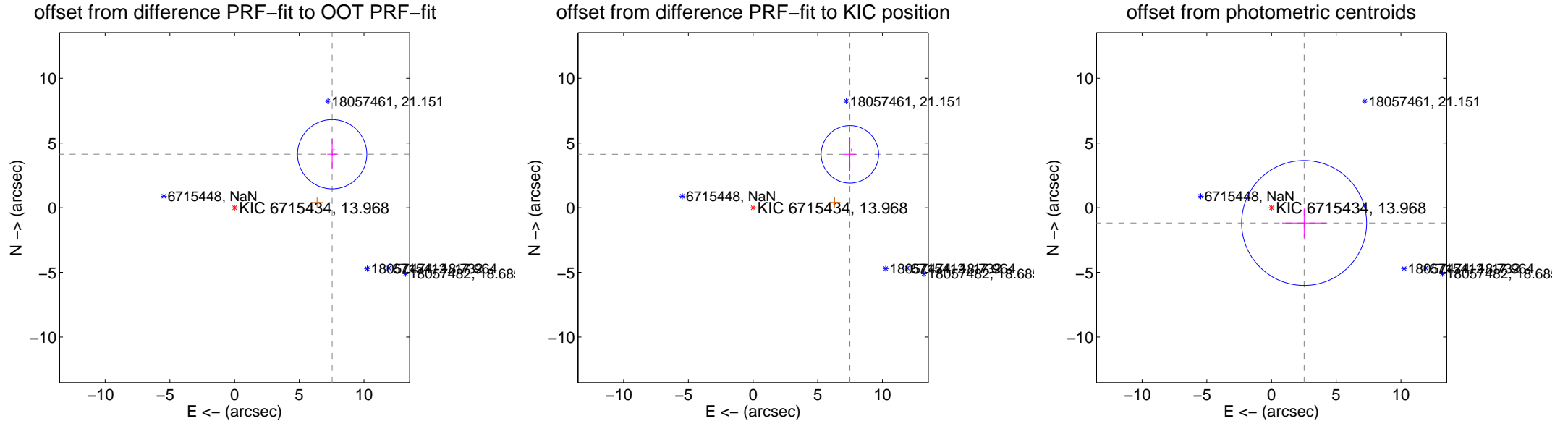
DV Centroid Data

Supplemental centroid analysis for 006715434-04. Kepler magnitude: 13.97. Transit SNR 7.28

There are 0 quarters with good PRF difference image offsets

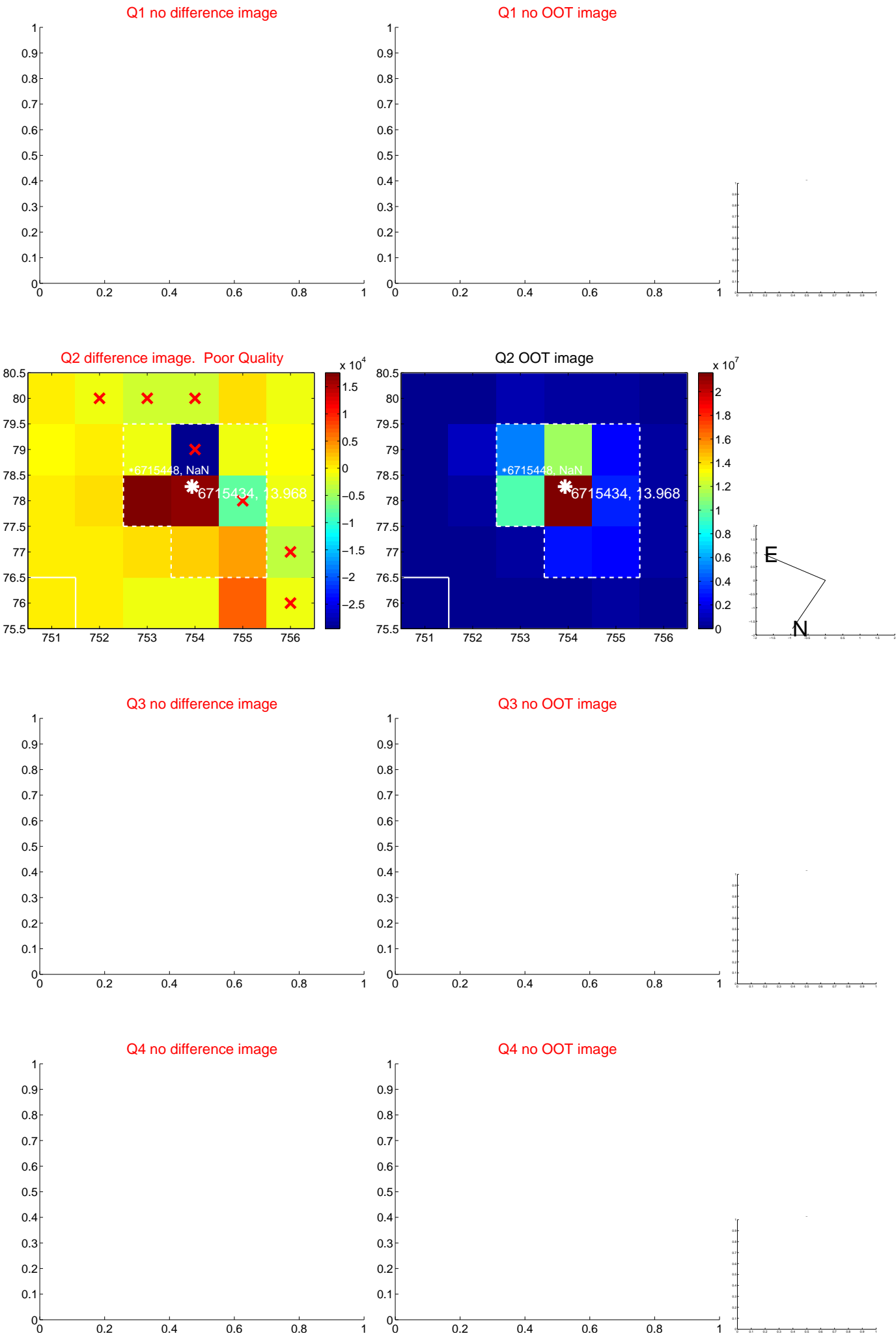
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.601 ± 0.893	9.64	-7.542 ± 0.377	4.134 ± 1.176
PRF-fit source offset from KIC position	8.546 ± 0.740	11.54	-7.484 ± 0.449	4.126 ± 1.299
photometric centroid source offset	2.78 ± 1.61	1.73	-2.52 ± 1.70	-1.18 ± 1.12

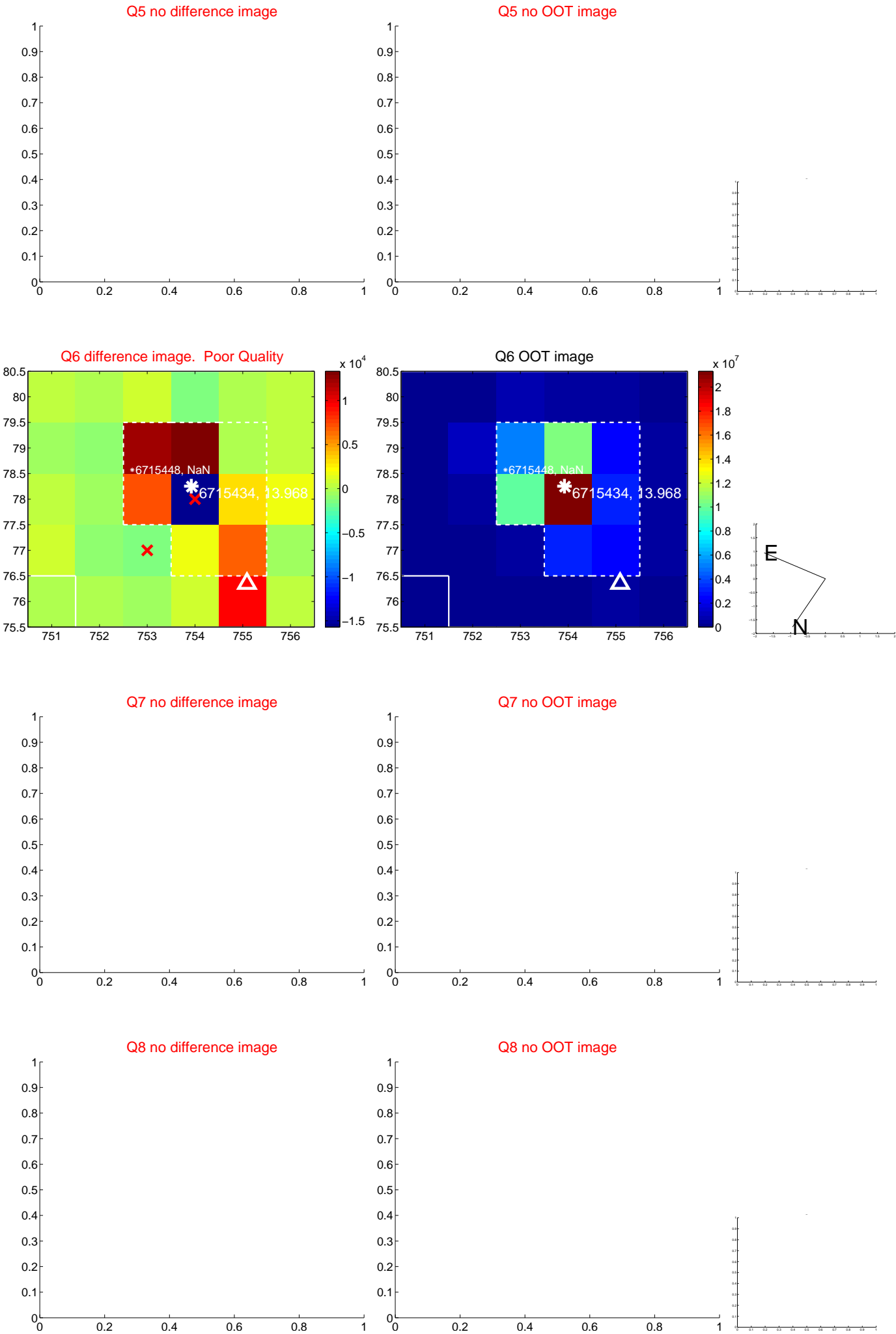


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

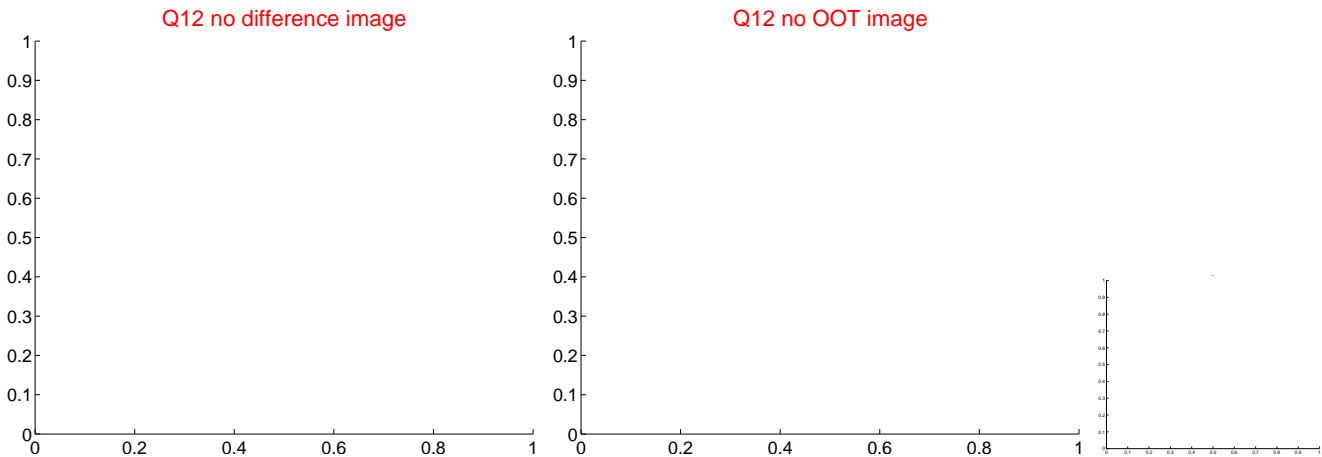
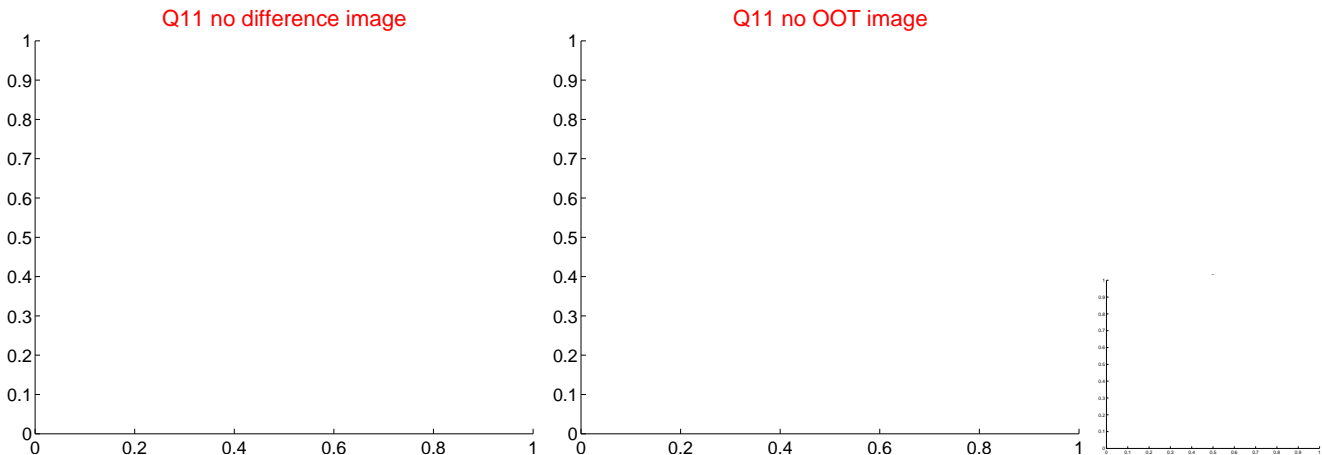
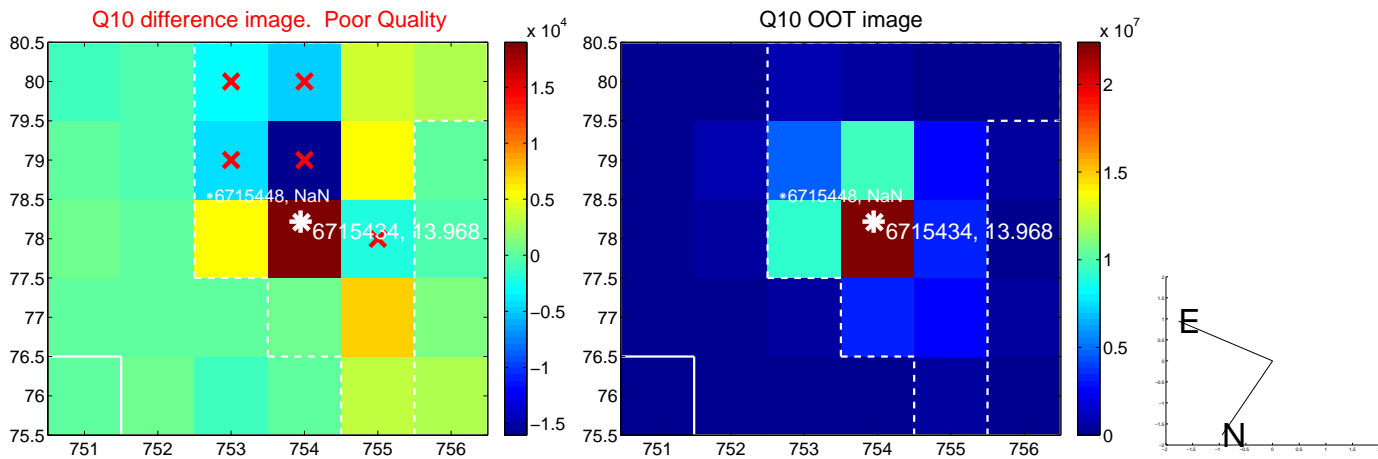
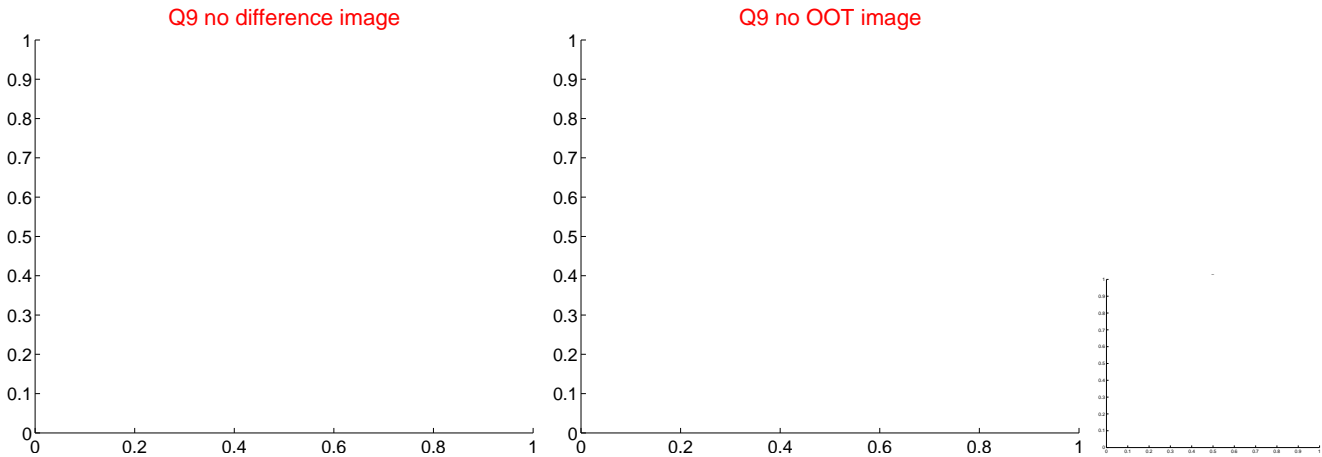
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: 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.

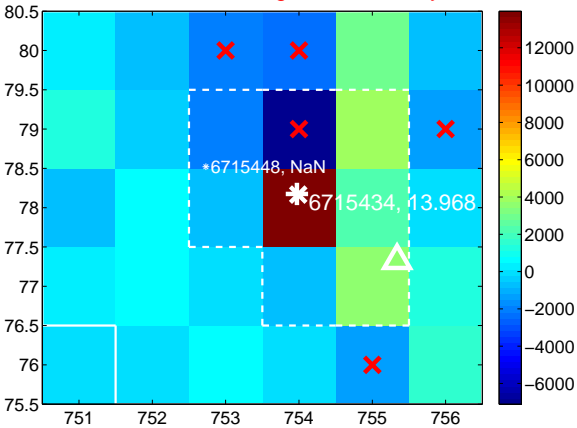
Q13 no difference image



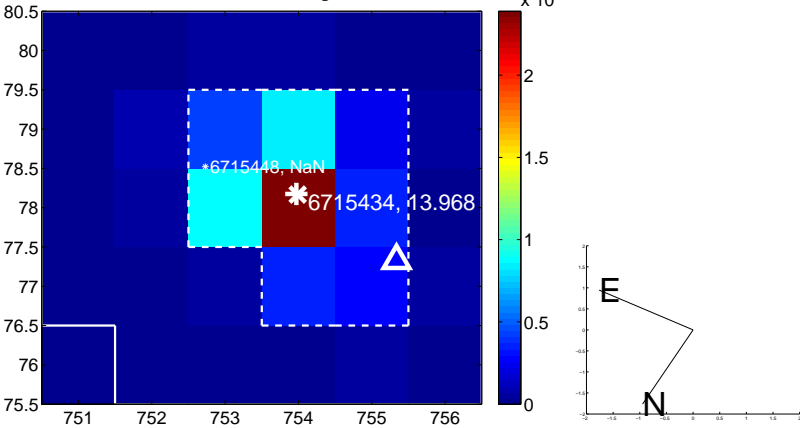
Q13 no OOT image



Q14 difference image. Poor Quality



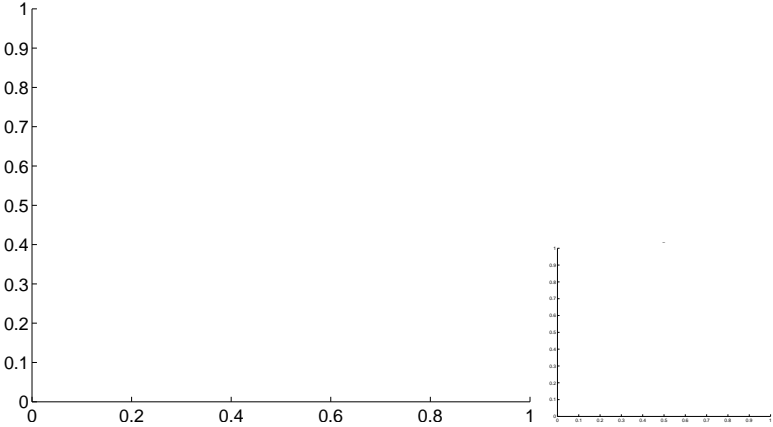
Q14 OOT image



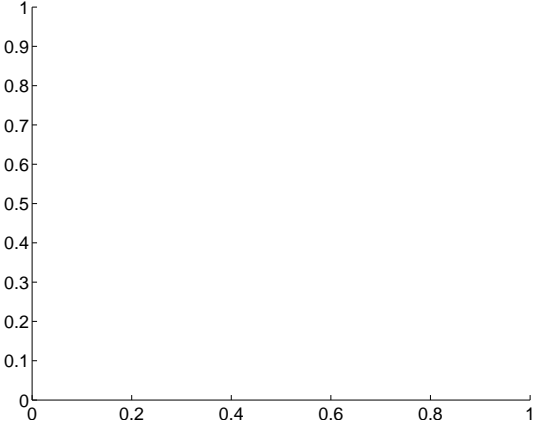
Q15 no difference image



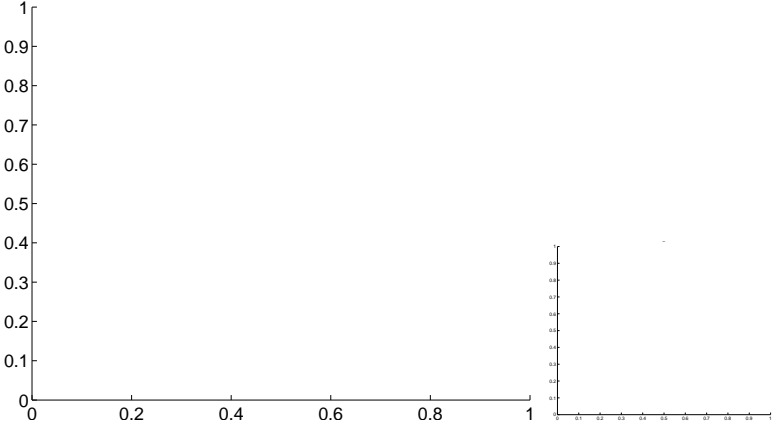
Q15 no OOT image



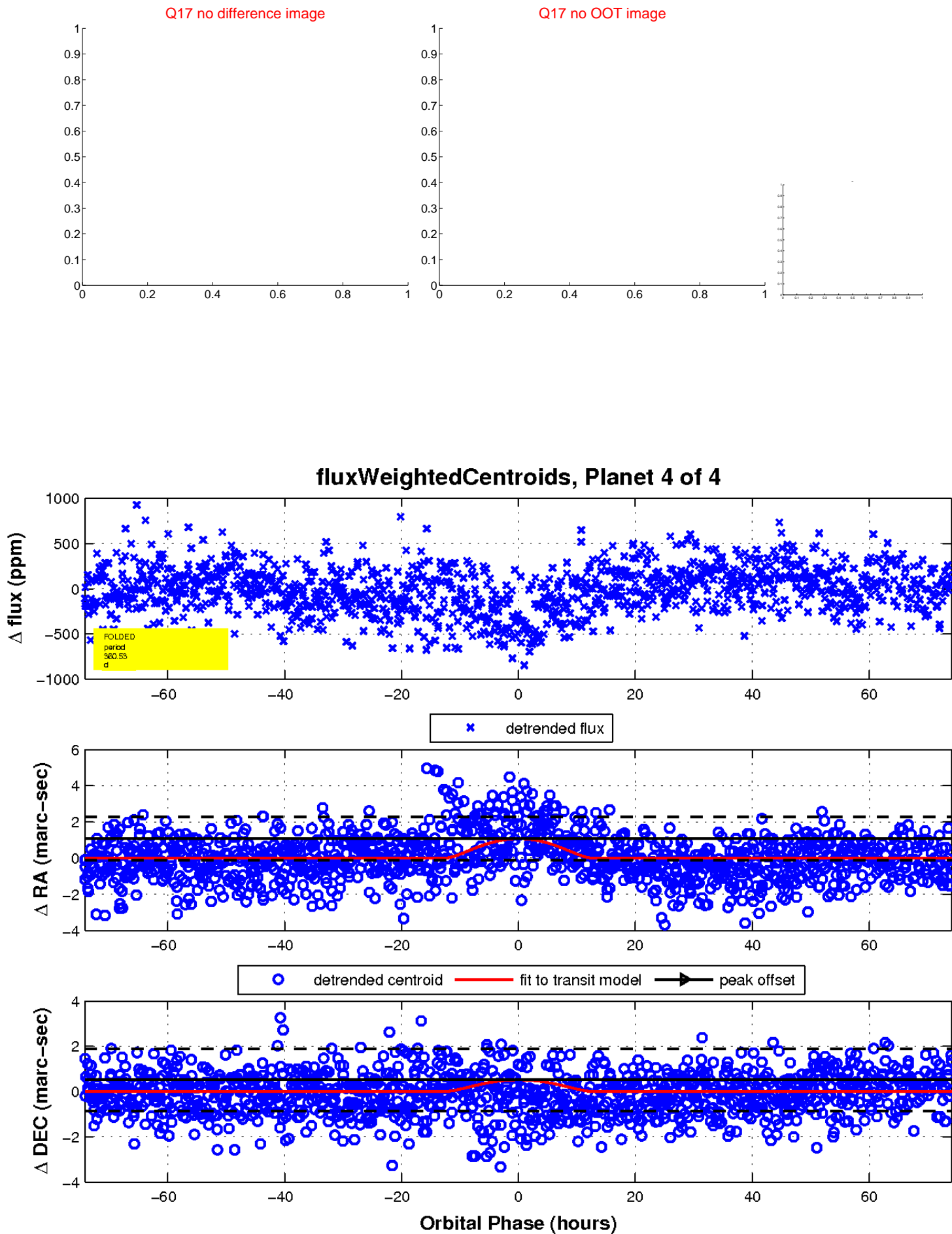
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

