

KIC 001432214

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})
001432214-01	OBS	0998.01	161.788317	214.039098	87697.8	5.303	807.0	714.8	1.21	6018	36.08	4.69
001432214-02	OBS	No	161.777662	230.890613	993.5	7.741	10.9	11.3	1.21	6018	3.95	4.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001432214-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
001432214-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

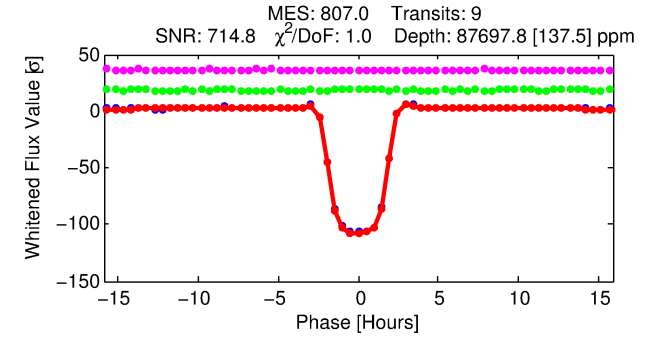
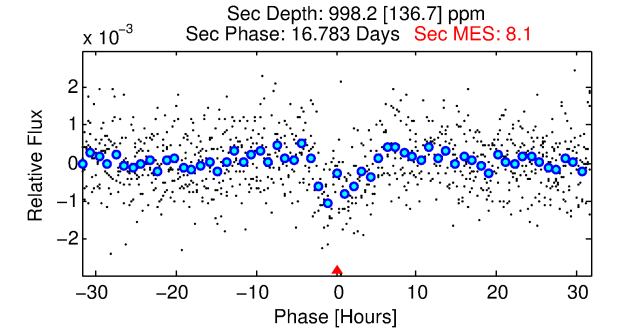
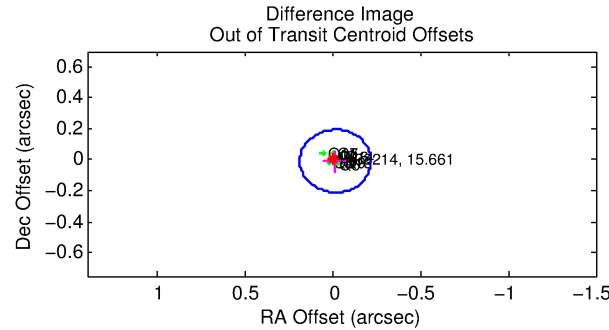
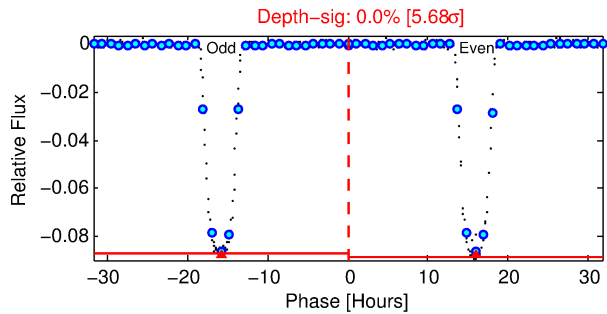
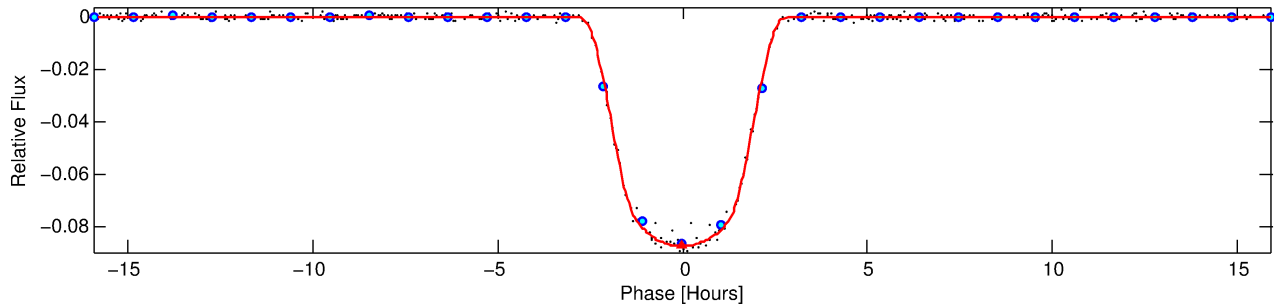
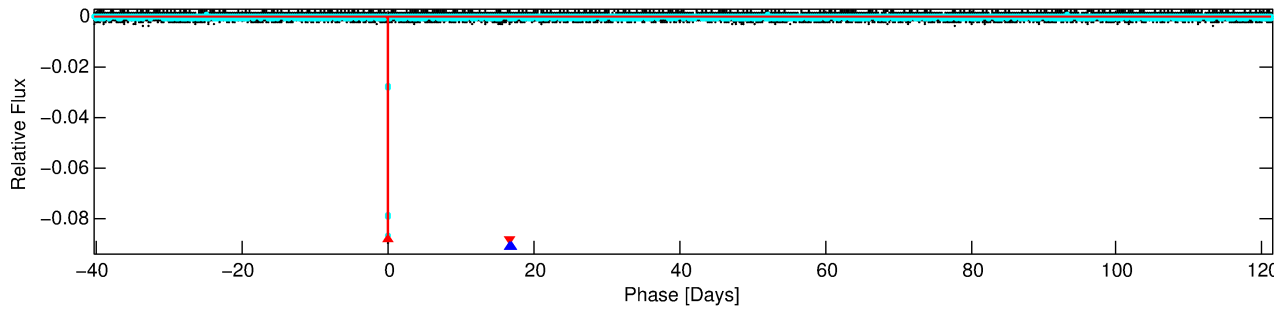
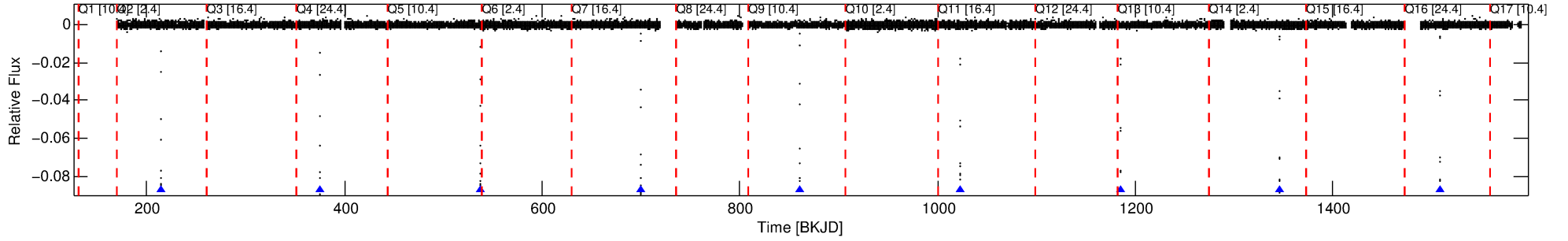
Ephemeris Match Information For 001432214-01

No Significant Match Found

DV One-Page Summary

KIC: 1432214 Candidate: 1 of 2 Period: 161.788 d
KOI: K00998.01 Corr: 0.999

Kp: 15.66 R*: 1.21 Rs Teff: 6018.0 K Logg: 4.33 Fe/H: 0.180



DV Fit Results:

Period = 161.78832 [0.00003] d
Epoch = 214.0391 [0.0002] BKJD
Rp/R* = 0.2728 [0.0004]
a/R* = 290.47 [1.44]
b = 0.26 [0.02]
Seff = 4.69 [1.06]
Teq = 375 [21] K
Rp = 36.08 [6.22] Re
a = 0.6067 [0.0894] AU
Ag = 155.25 [39.86] [3.87σ]
Teffp = 2048 [77] K [21.07σ]

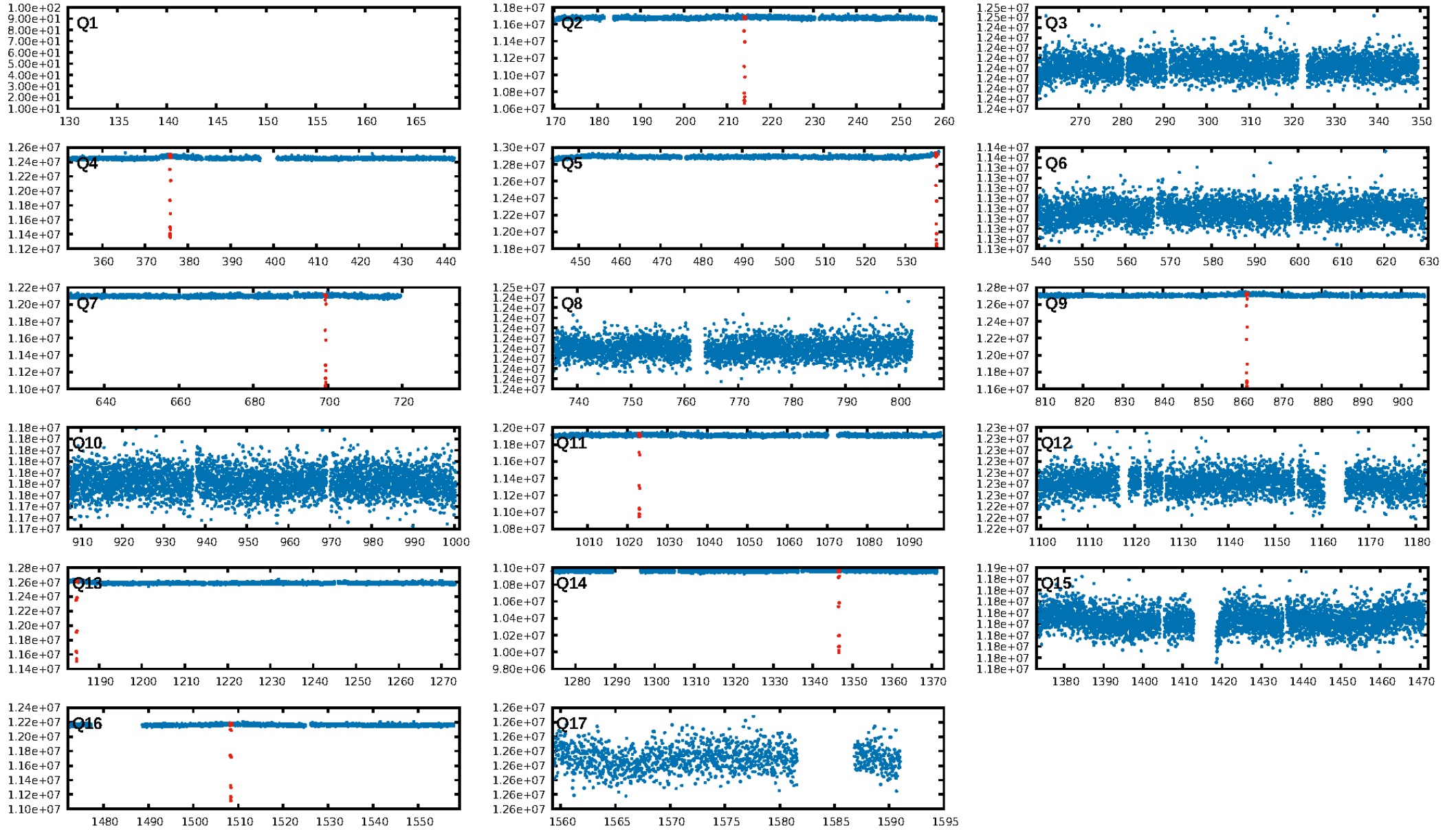
DV Diagnostic Results:

ShortPeriod-sig: 2.2% [0.03σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 24.6%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 3.215
Centroid-sig: 27.8%
Centroid-so: 1.340 arcsec [72.70σ]
OotOffset-rm: 0.016 arcsec [0.24σ]
KicOffset-rm: 0.113 arcsec [1.57σ]
OotOffset-st: 2/2/2/3 [9]
KicOffset-st: 2/2/2/3 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [9/9]

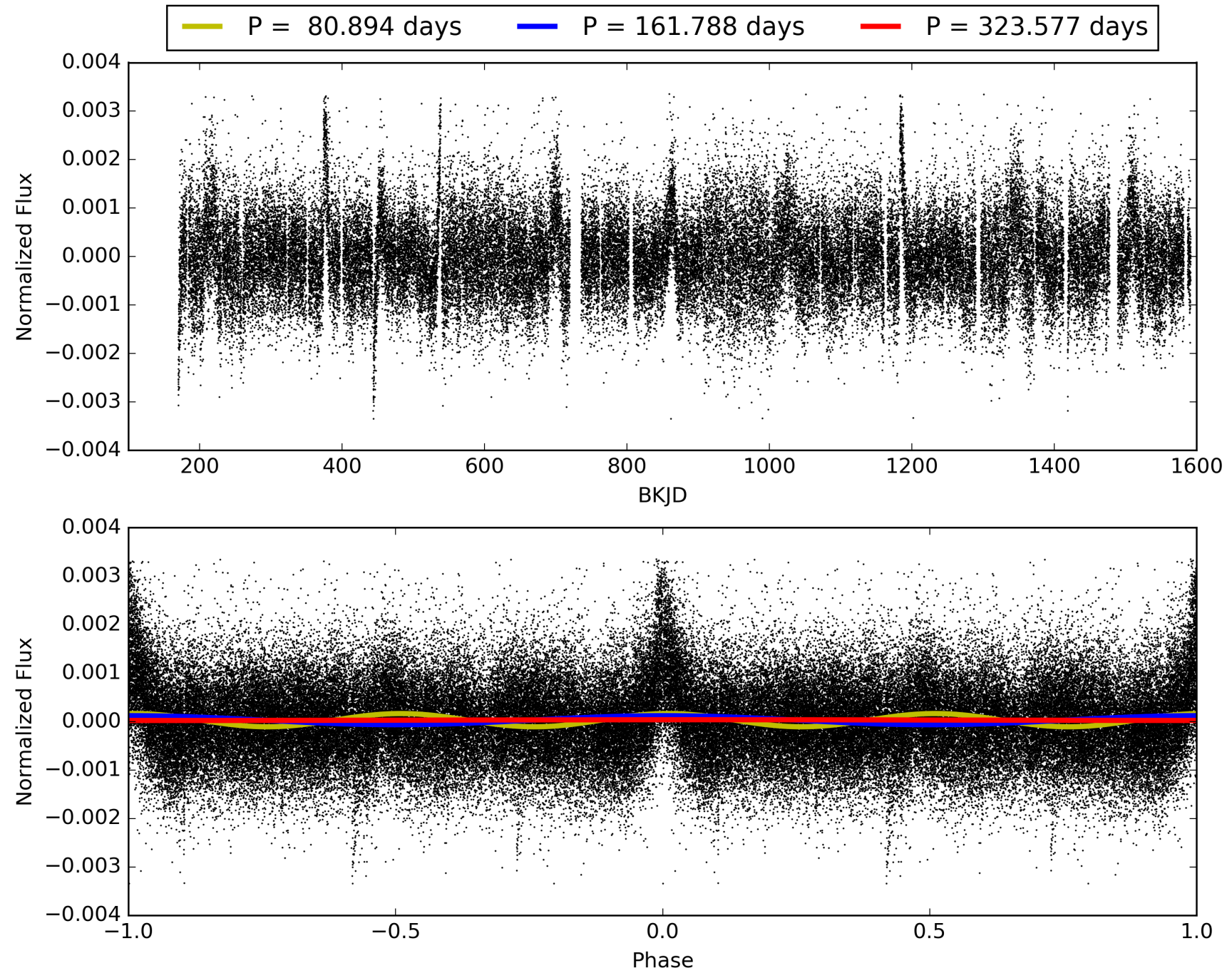
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:08:27 Z

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

TCE 001432214-01, PDC Light Curves

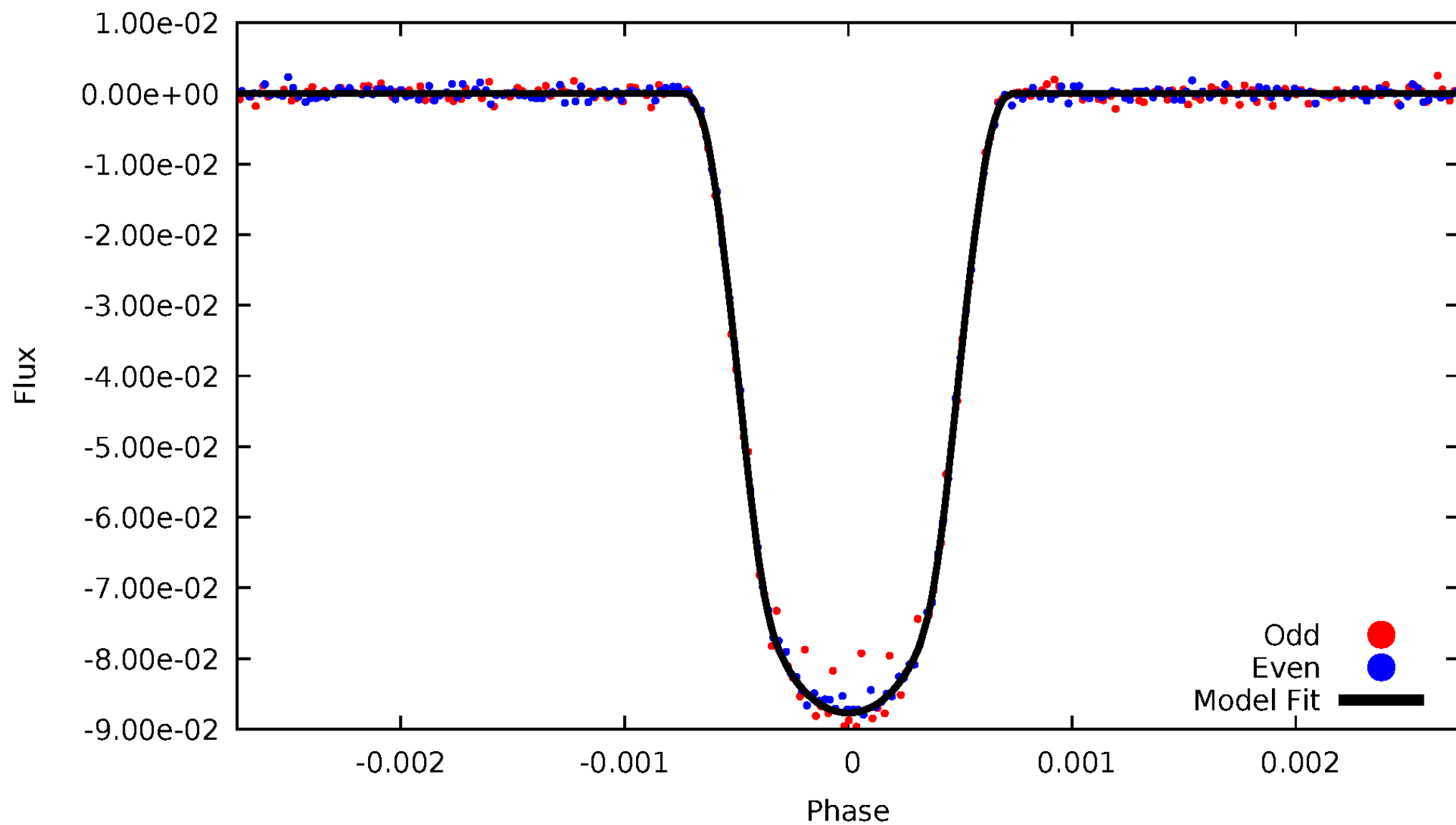


TCE 001432214-01



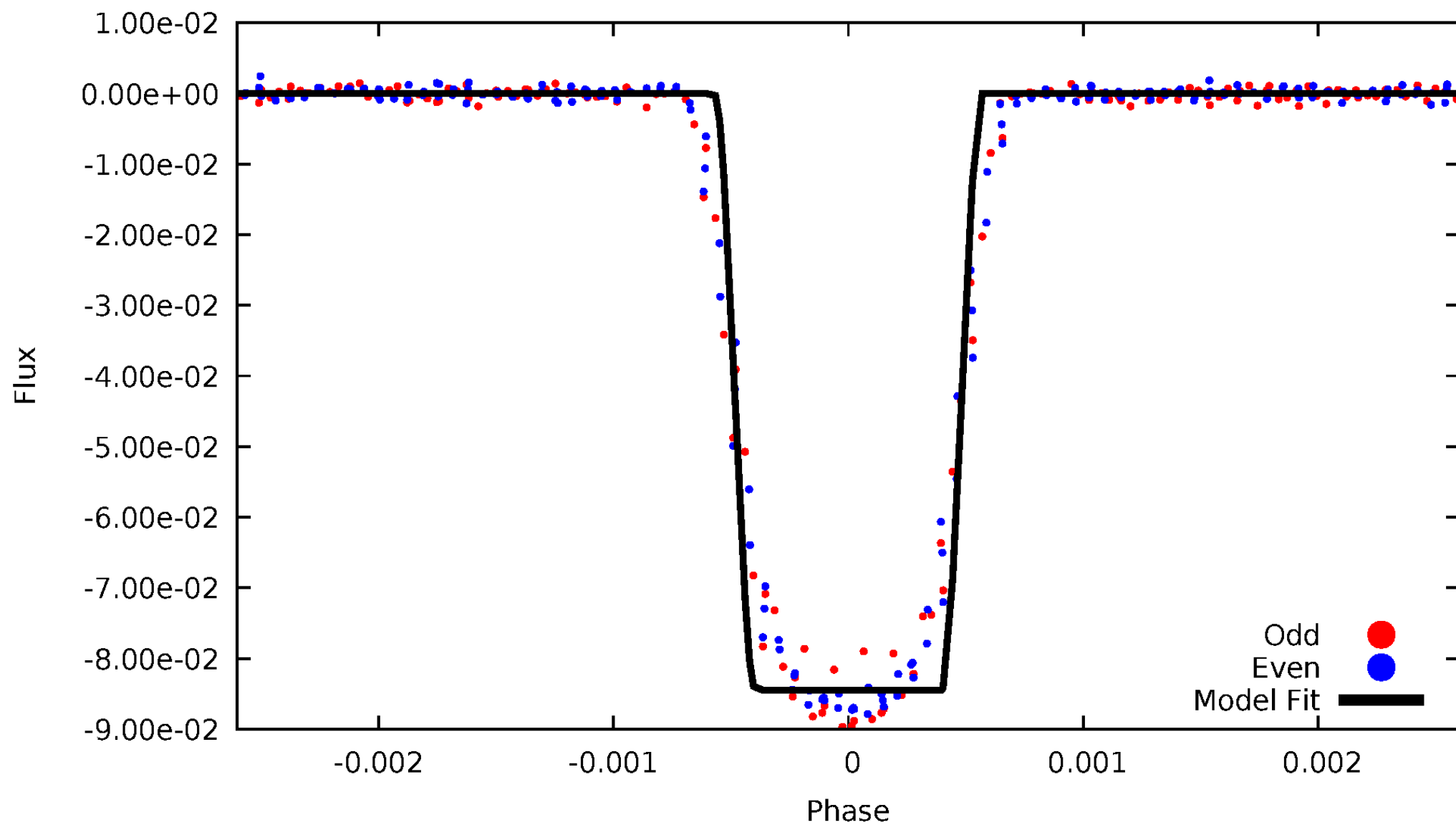
DV Odd/Even

TCE 001432214-01



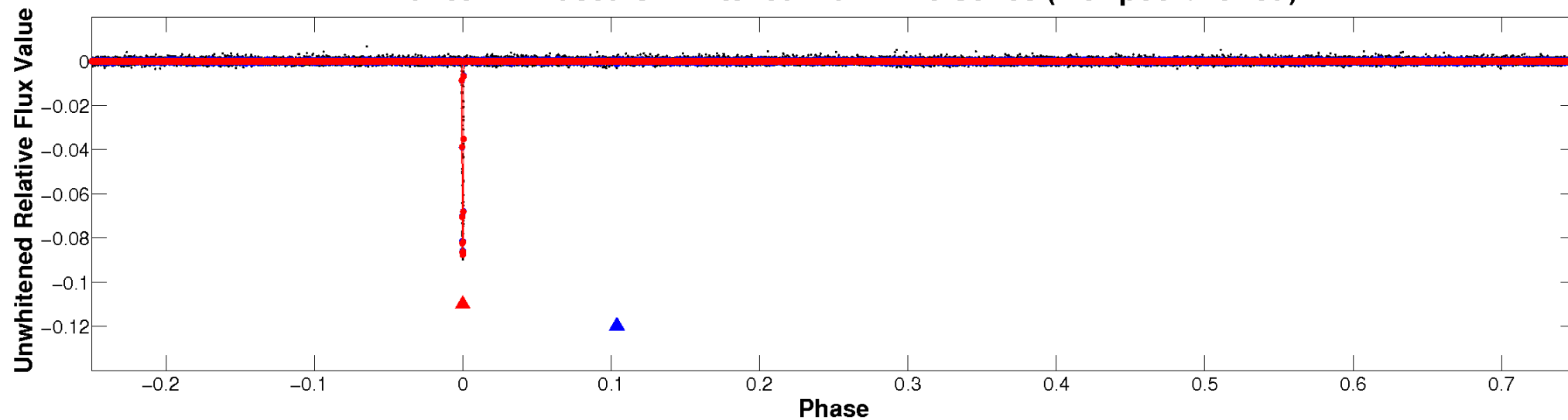
ALT Odd/Even

TCE 001432214-01

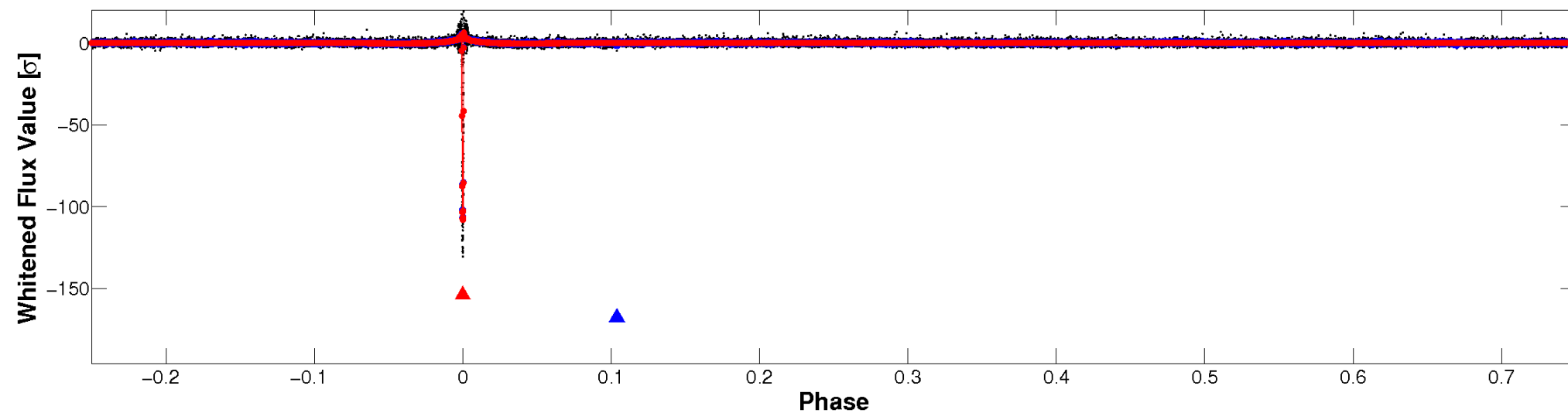


Non-Whitened Vs. Whitened Light Curve

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

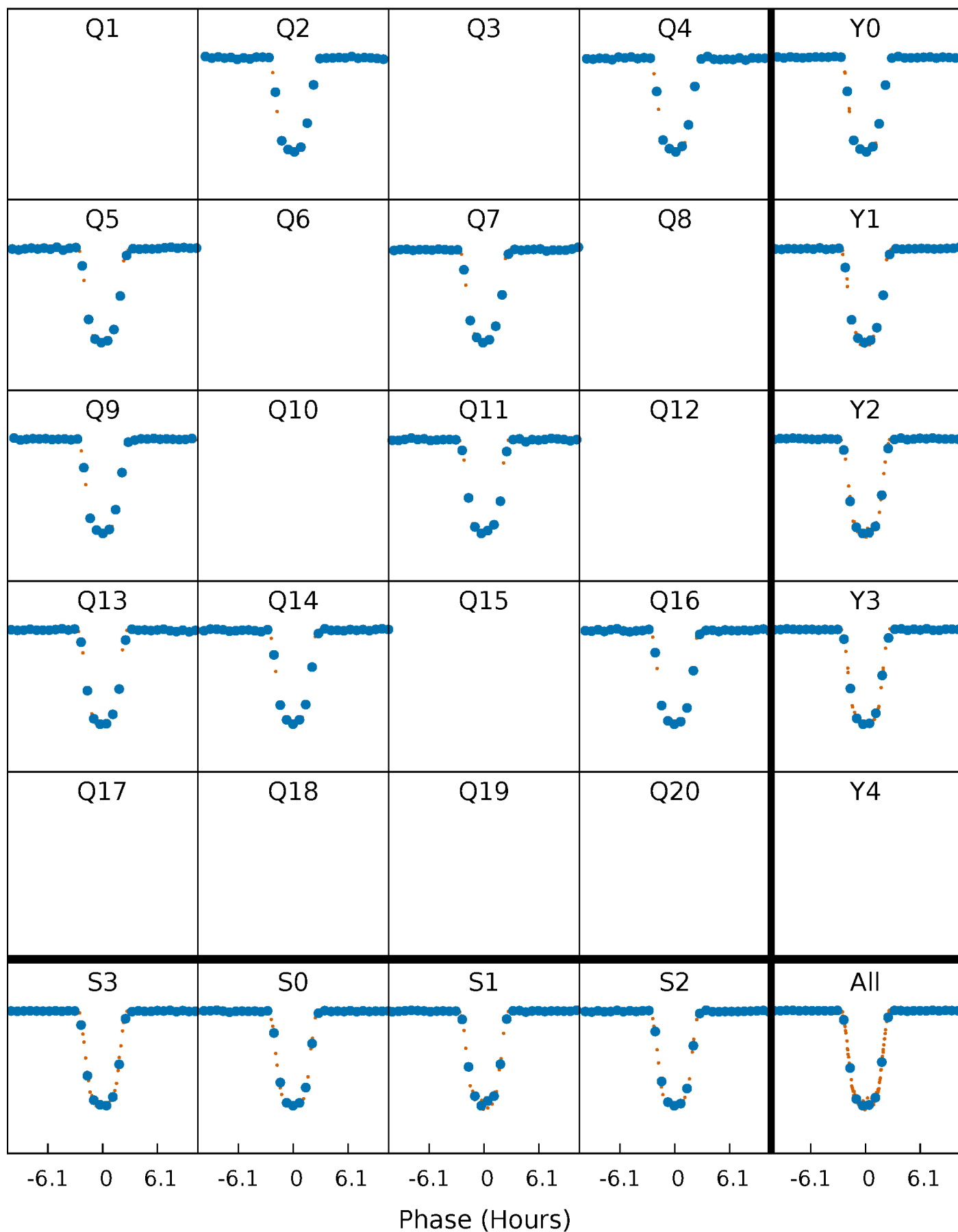


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



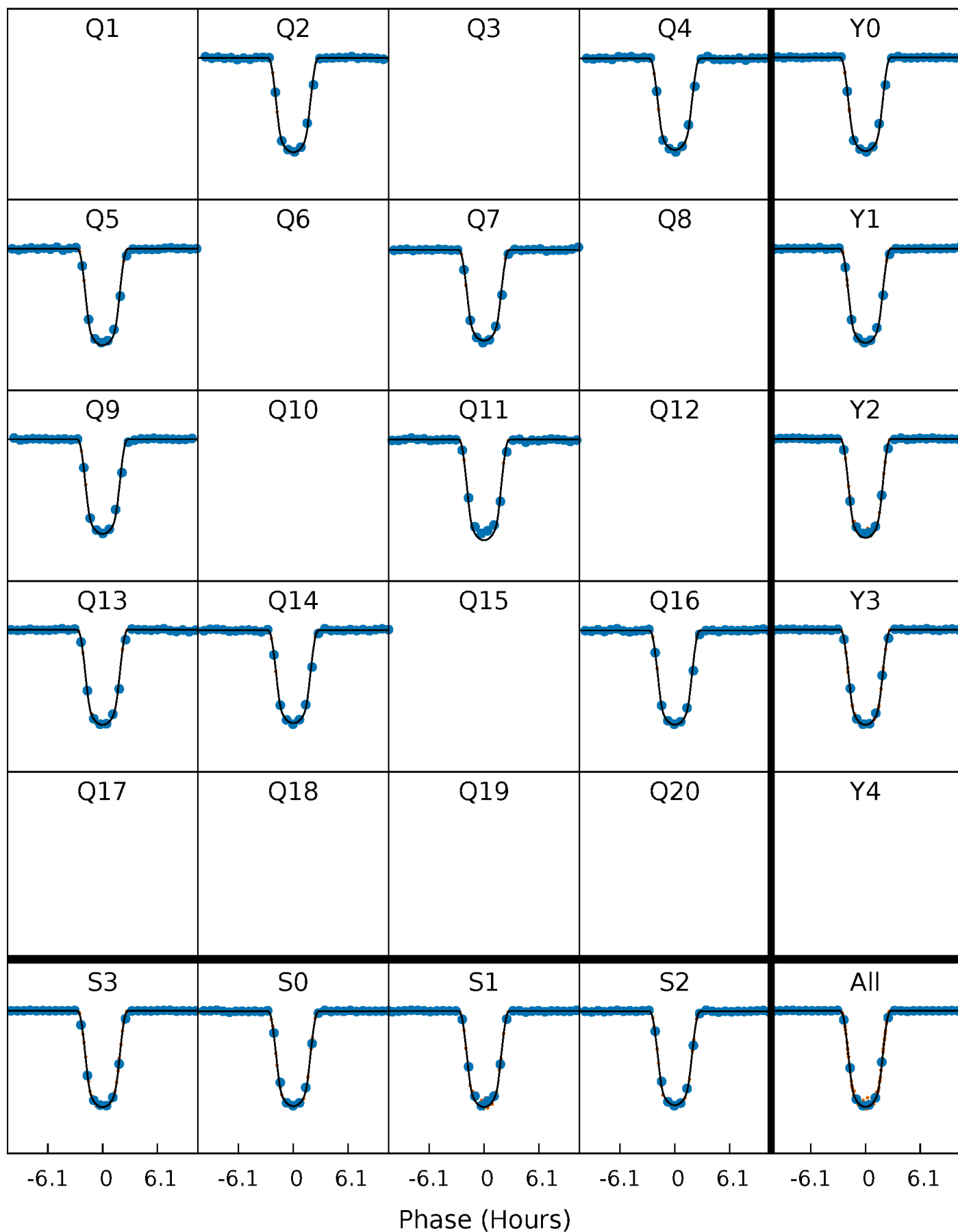
PDC Quarter-Phased Transit Curves

TCE 001432214-01 P=161.788317 Days $T_0=214.039098$ (BKJD)



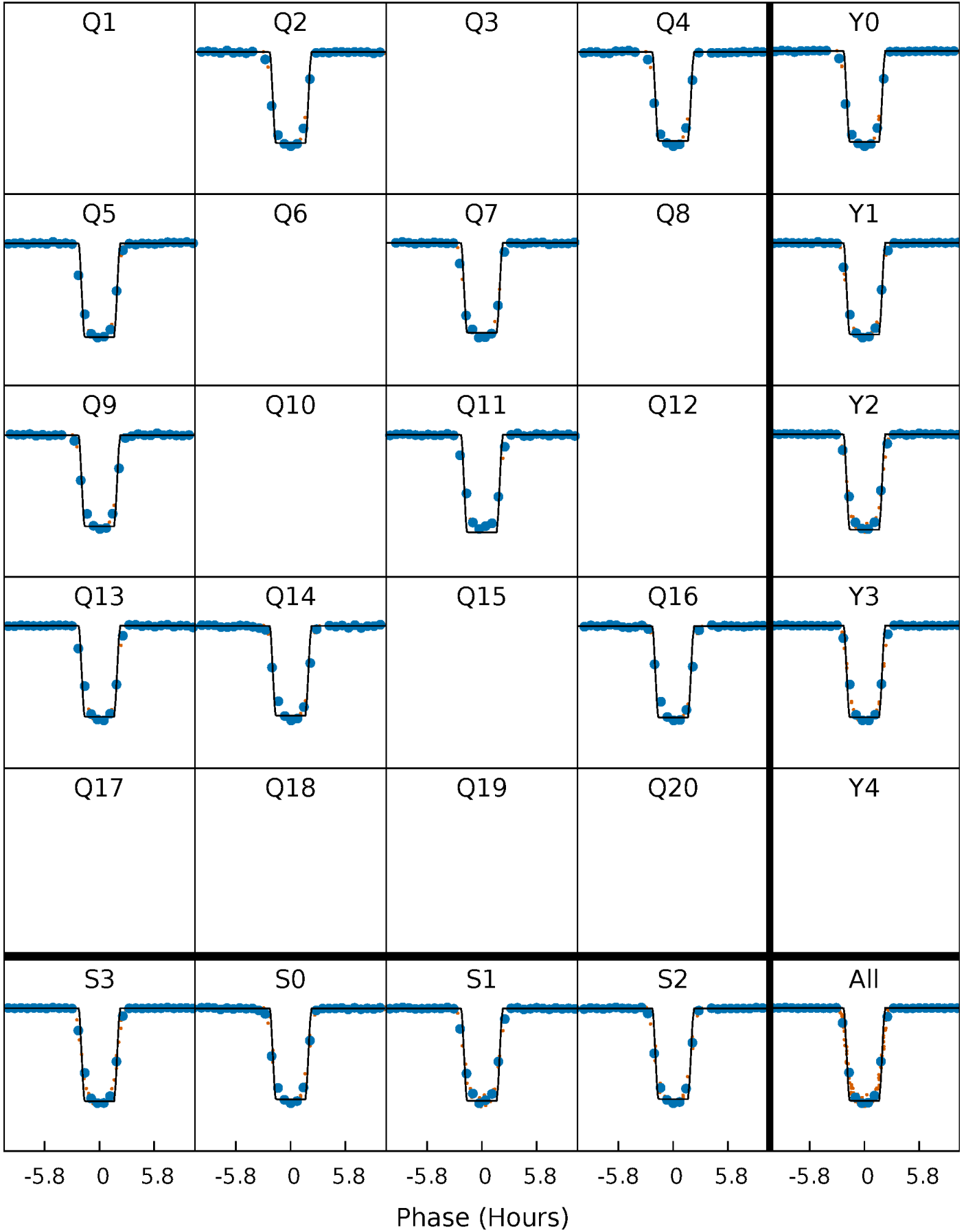
DV Quarter-Phased Transit Curves

TCE 001432214-01 P=161.788317 Days $T_0=214.039098$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

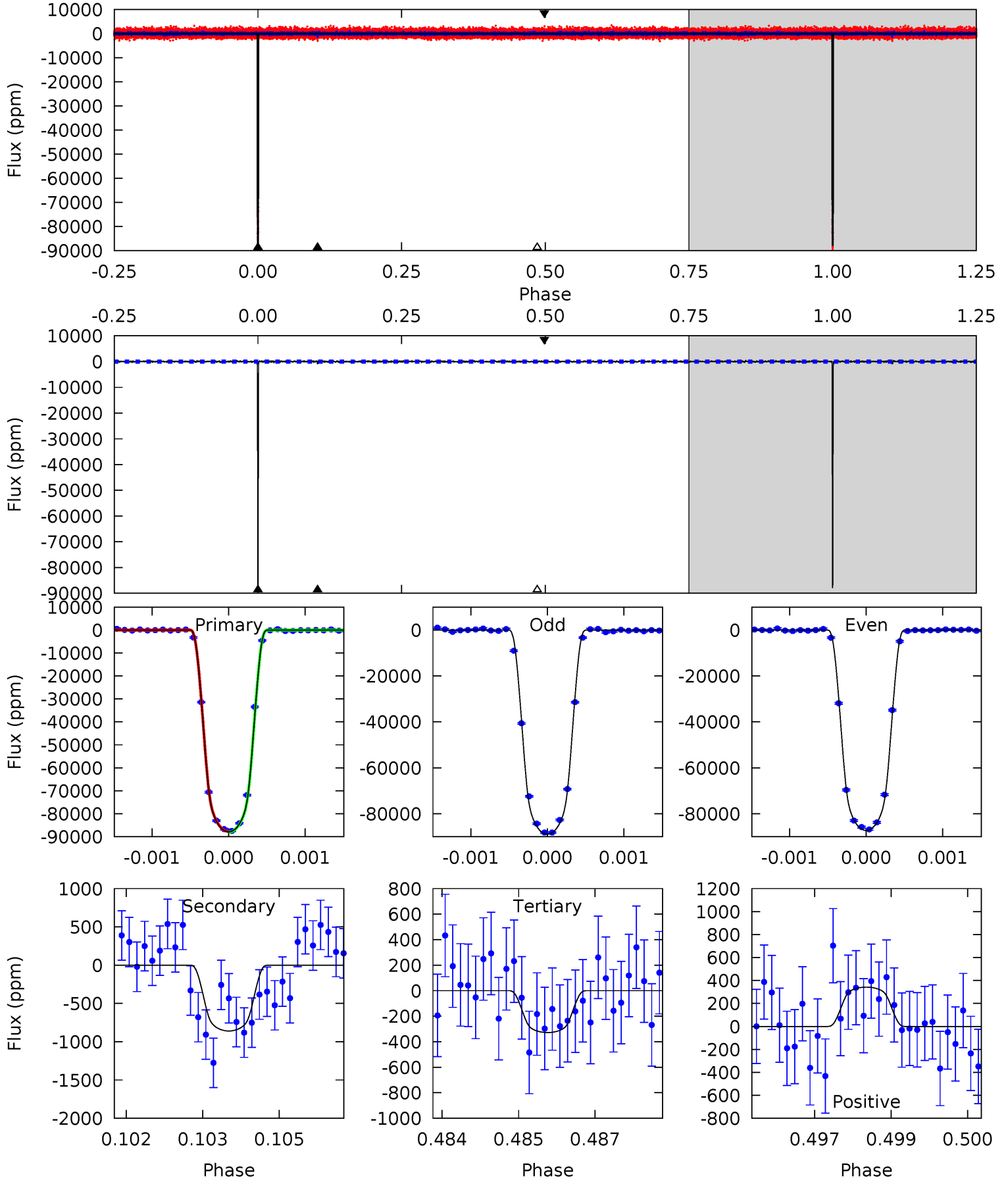
TCE 001432214-01 P=161.787155 Days $T_0=214.043708$ (BKJD)



DV Model-Shift Uniqueness Test

001432214-01, P = 161.788317 Days, E = 52.250781 Days

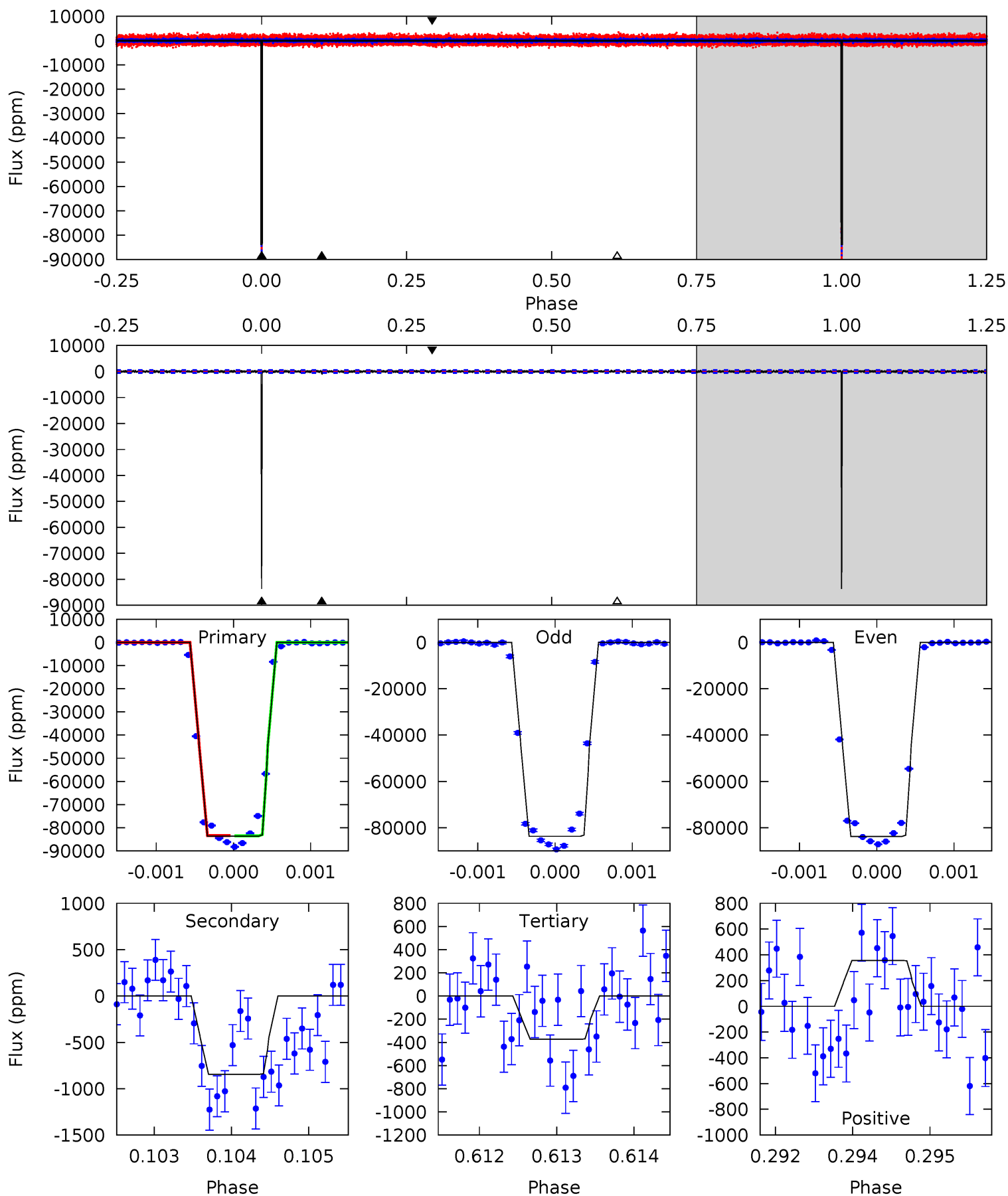
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1173	11.5	4.38	4.57	5.38	3.18	1.34	1169	1169	7.10	6.91	10.6	0.99	0.00	1.95



Alt Model-Shift Uniqueness Test

001432214-01, P = 161.787155 Days, E = 52.256553 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
793.7	8.01	3.54	3.38	5.44	3.27	1.00	790.1	790.3	4.47	4.63	0.18	0.99	0.00	0



Stellar Parameters For KIC 001432214

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6018^{+72}_{-90}	$4.327^{+0.080}_{-0.120}$	$0.180^{+0.150}_{-0.150}$	$1.212^{+0.209}_{-0.122}$	$1.142^{+0.075}_{-0.075}$	$0.902^{+0.306}_{-0.319}$
	+1%/-1%	+2%/-3%	+83%/-83%	+17%/-10%	+7%/-7%	+34%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 001432214-01 / KOI 0998.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-860 ± 75	$35.96^{+3.33}_{-2.03}$	524^{+21}_{-16}	2740^{+36}_{-38}	133^{+21}_{-23}
Alt.	-844 ± 105	$38.36^{+3.59}_{-2.19}$	525^{+22}_{-16}	2688^{+48}_{-49}	114^{+22}_{-21}

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 $A_{obs} \gg 1.0$

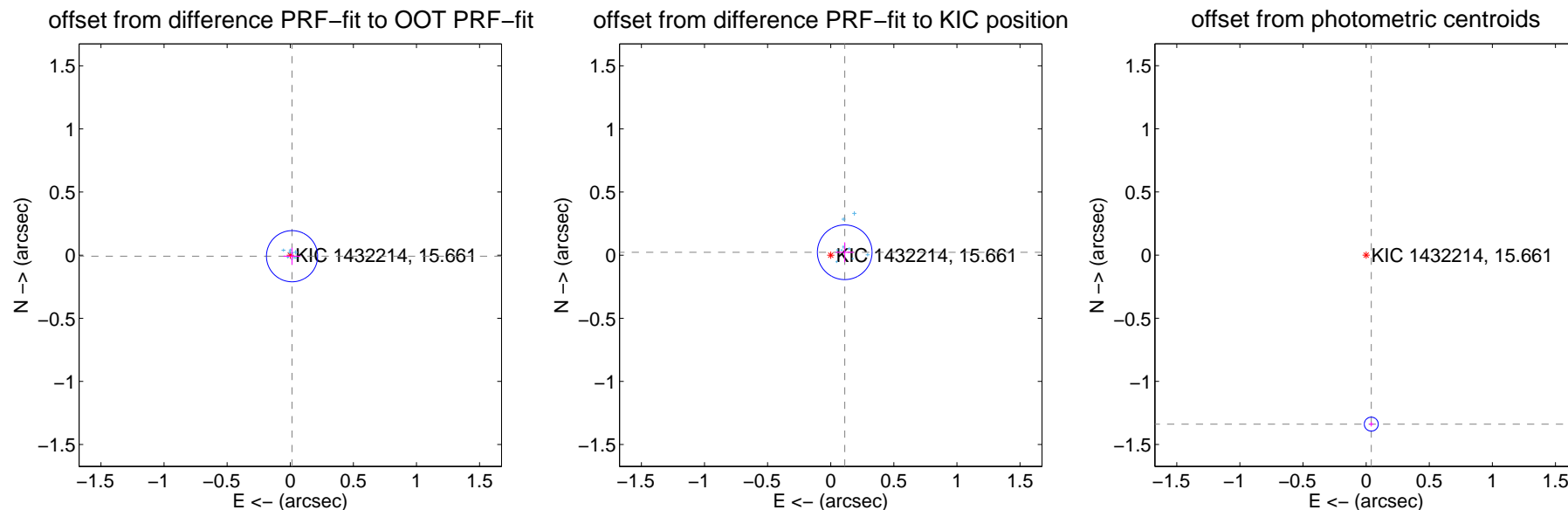
DV Centroid Data

Supplemental centroid analysis for 001432214-01. Kepler magnitude: 15.66. Transit SNR 714.83

There are 9 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.016 ± 0.068	0.24	-0.014 ± 0.067	-0.008 ± 0.067
PRF-fit source offset from KIC position	0.113 ± 0.072	1.57	-0.111 ± 0.072	0.023 ± 0.079
photometric centroid source offset	1.34 ± 0.02	72.70	-0.04 ± 0.02	-1.34 ± 0.02



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

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

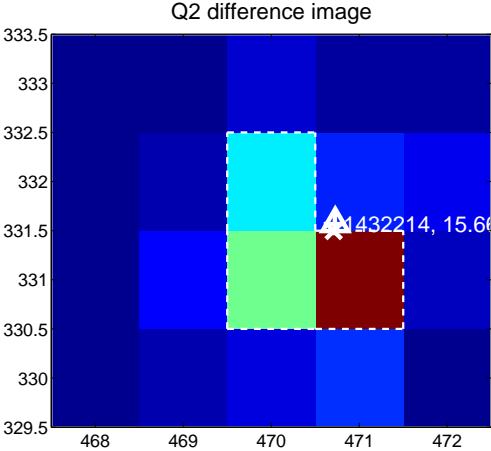
Q1 no difference image



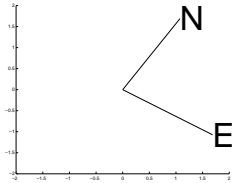
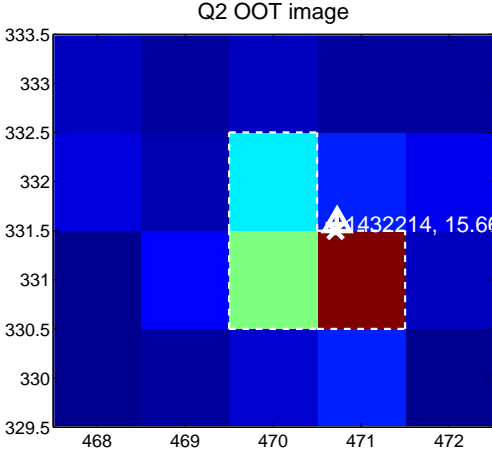
Q1 no OOT image



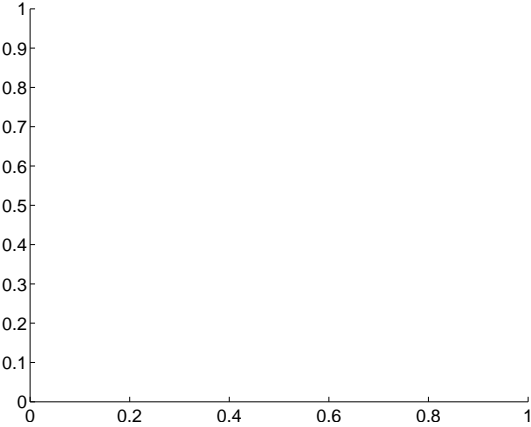
Q2 difference image



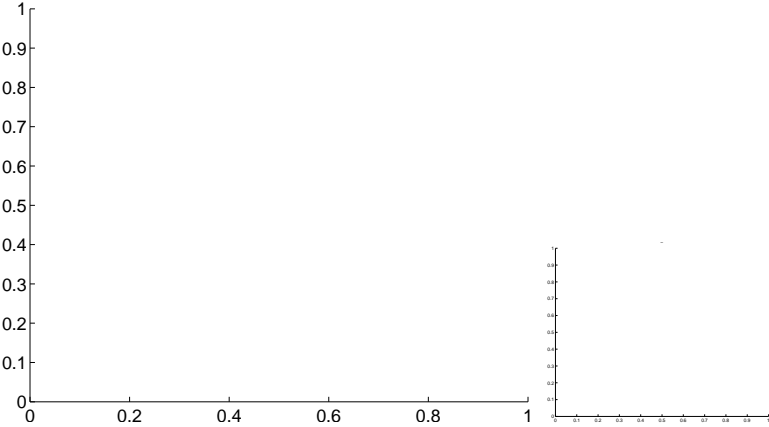
Q2 OOT image



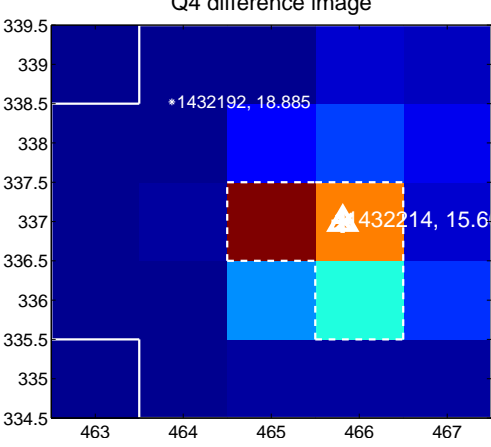
Q3 no difference image



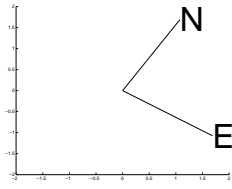
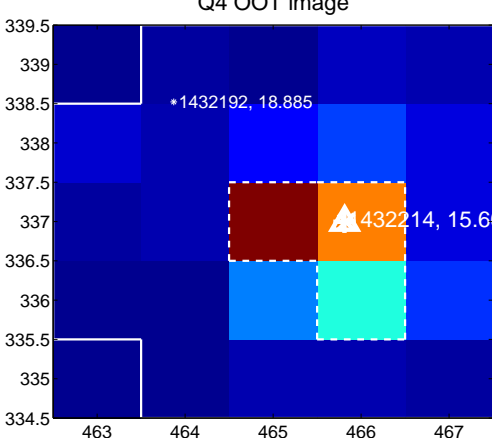
Q3 no OOT image



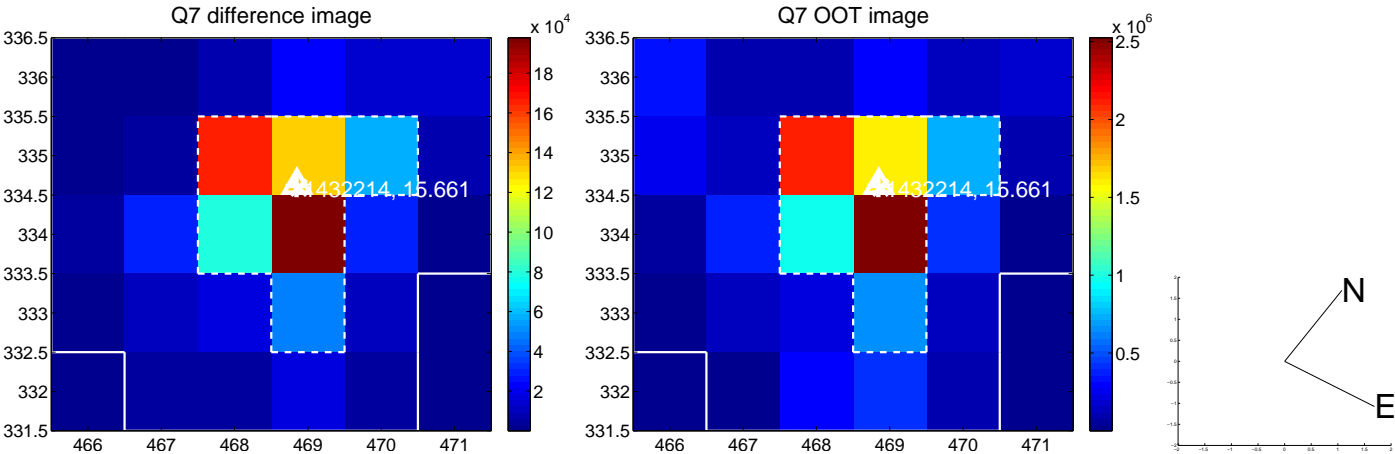
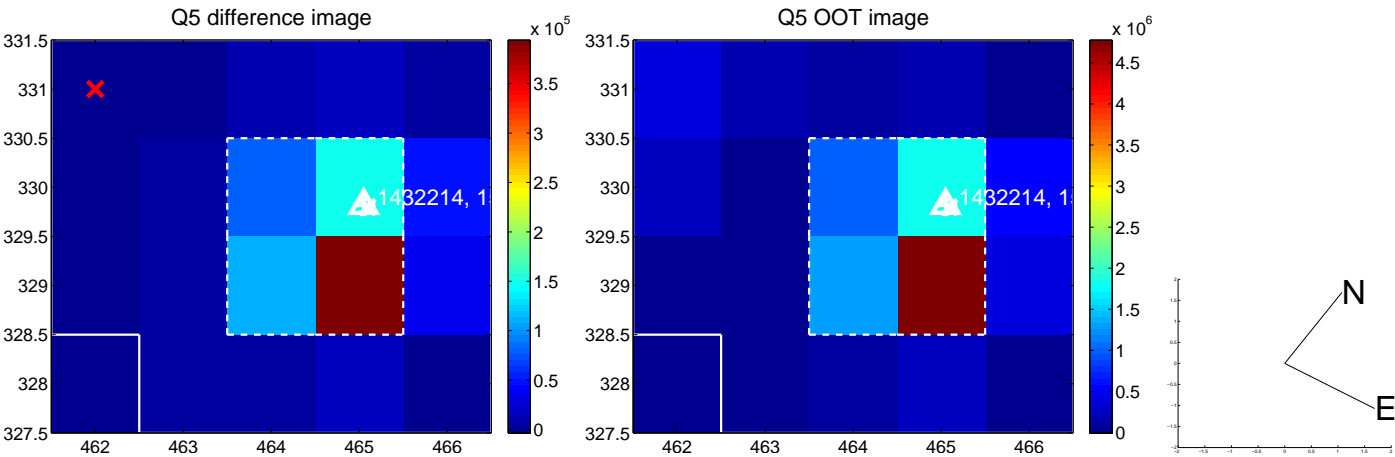
Q4 difference image



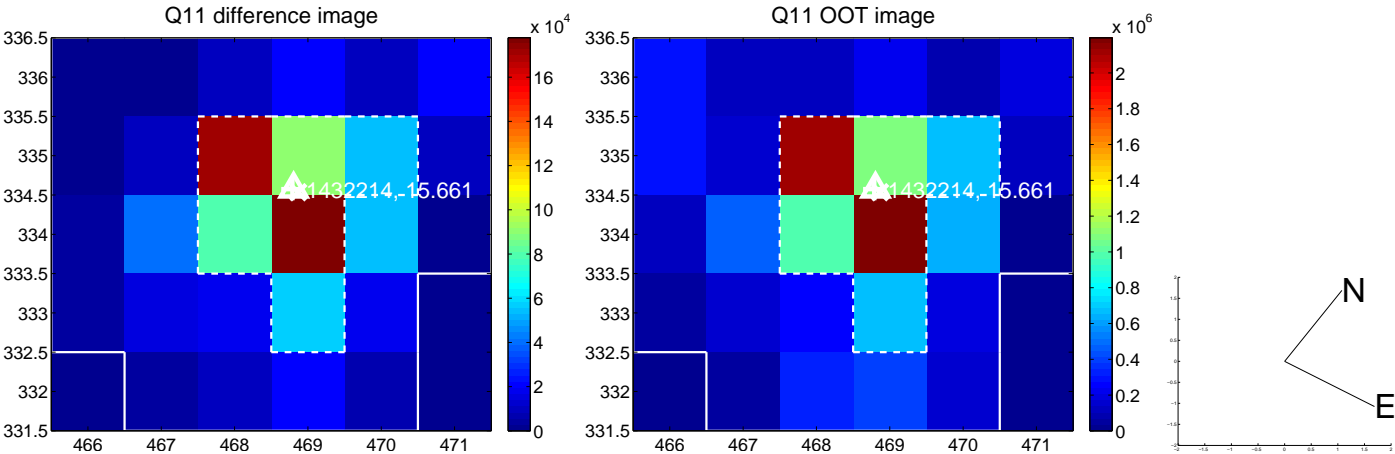
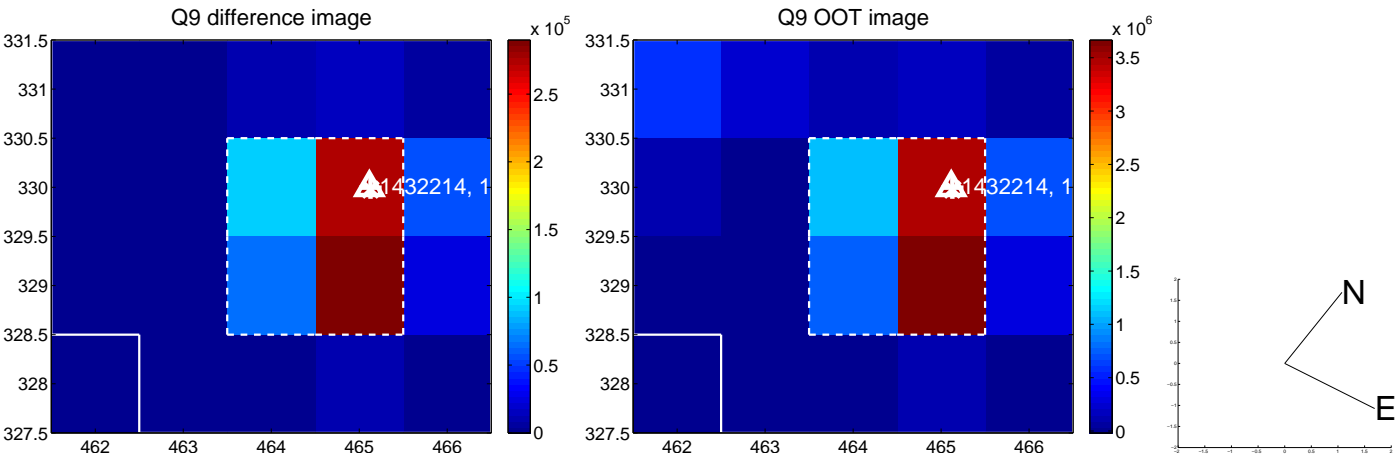
Q4 OOT image



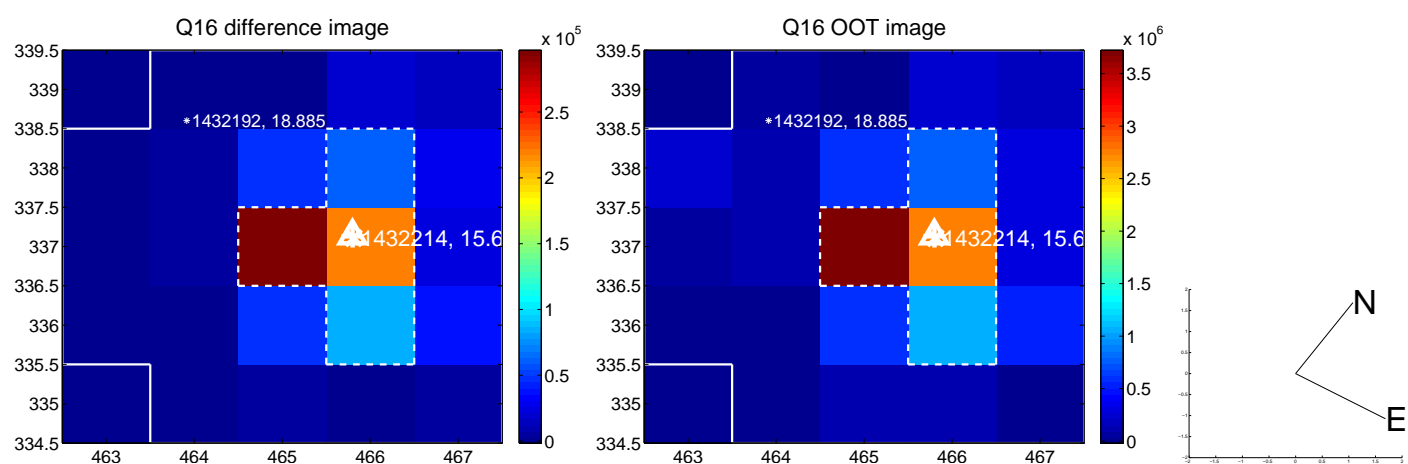
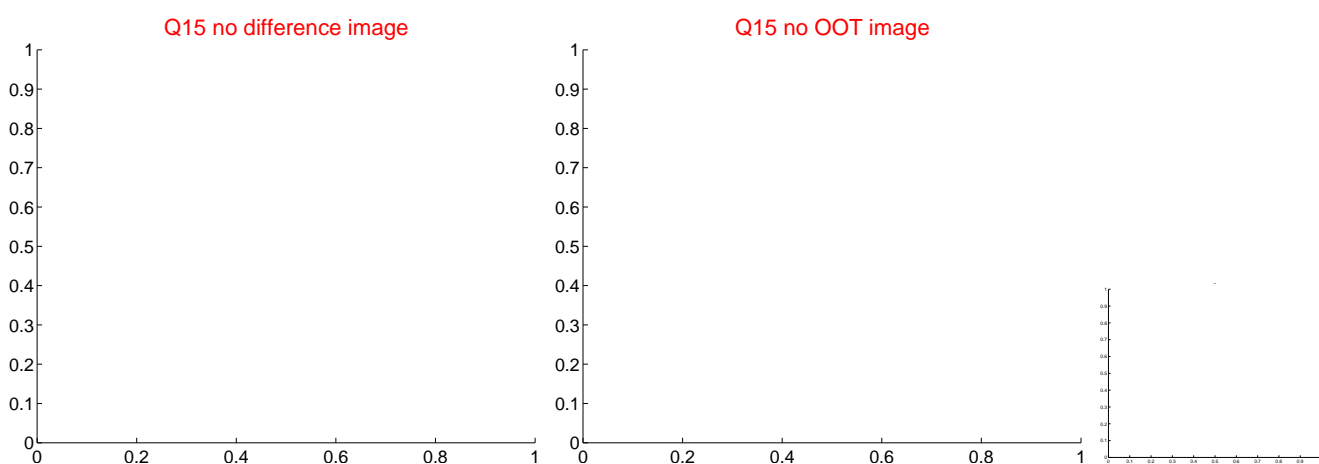
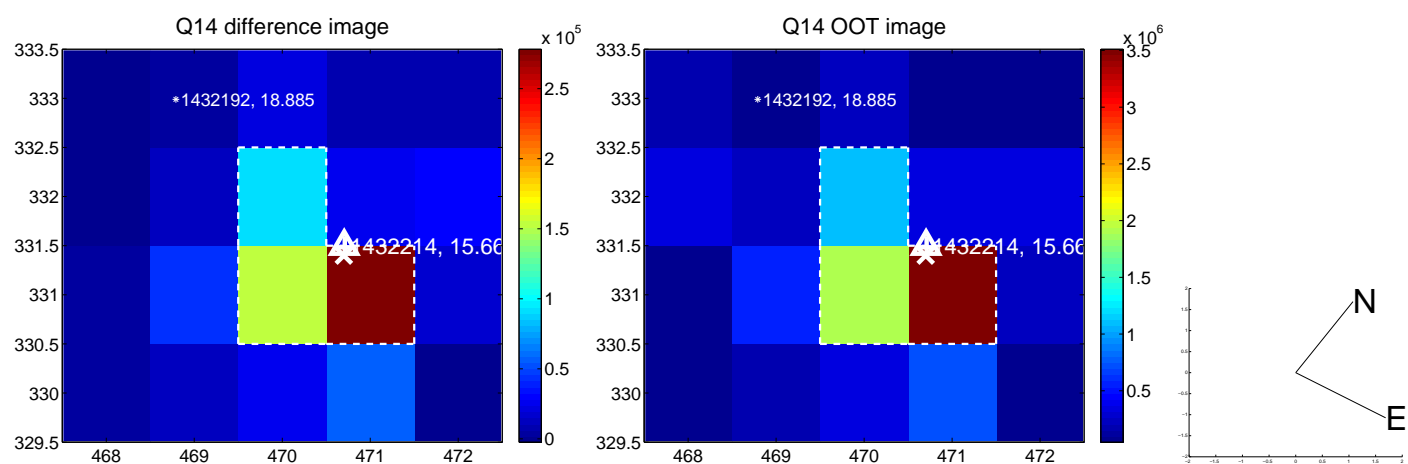
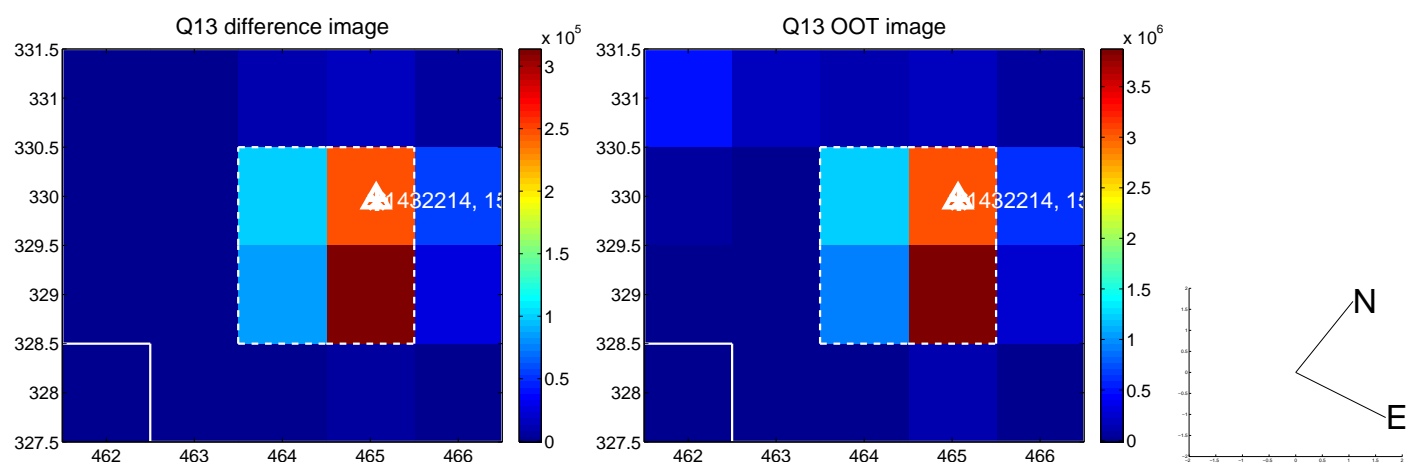
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



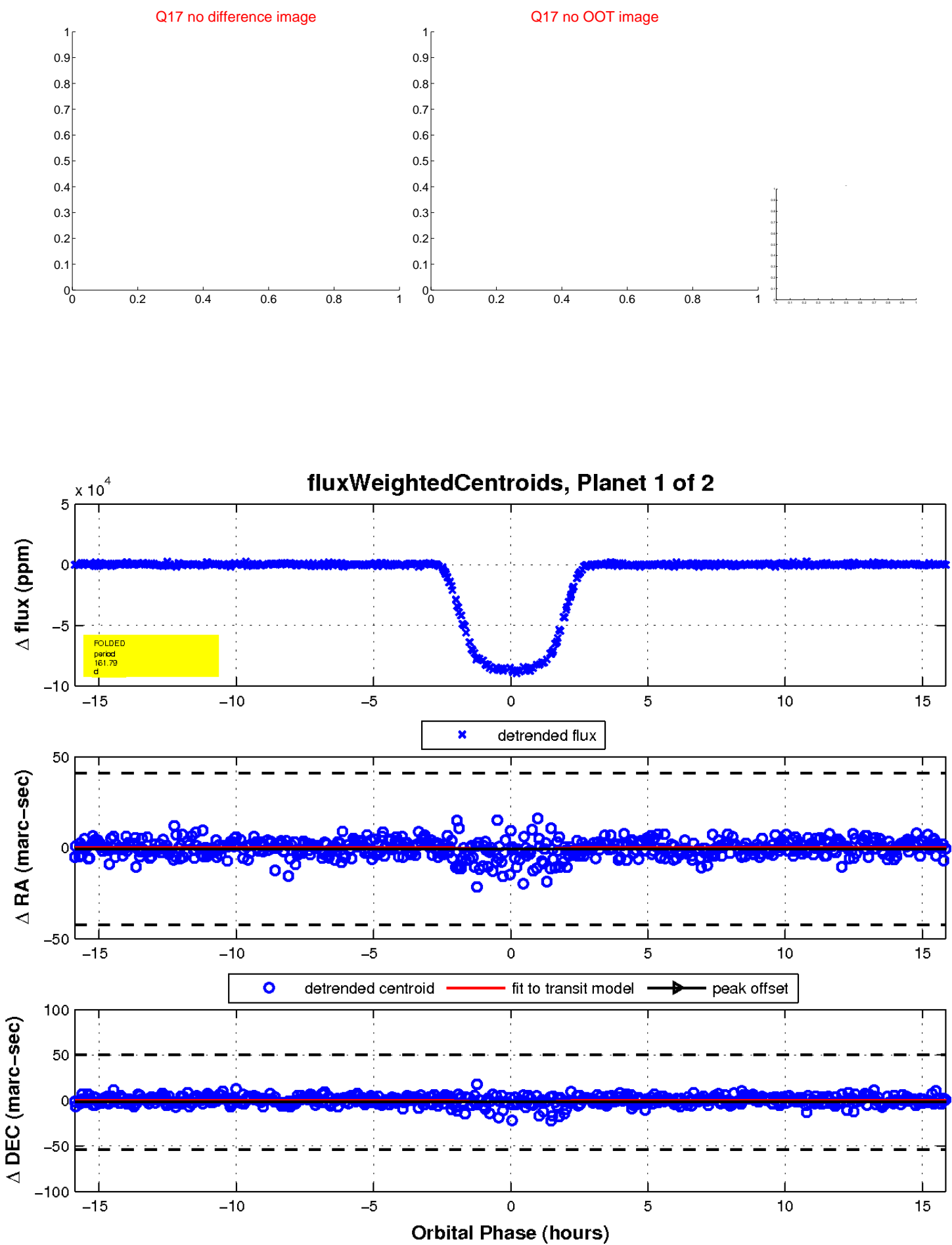
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

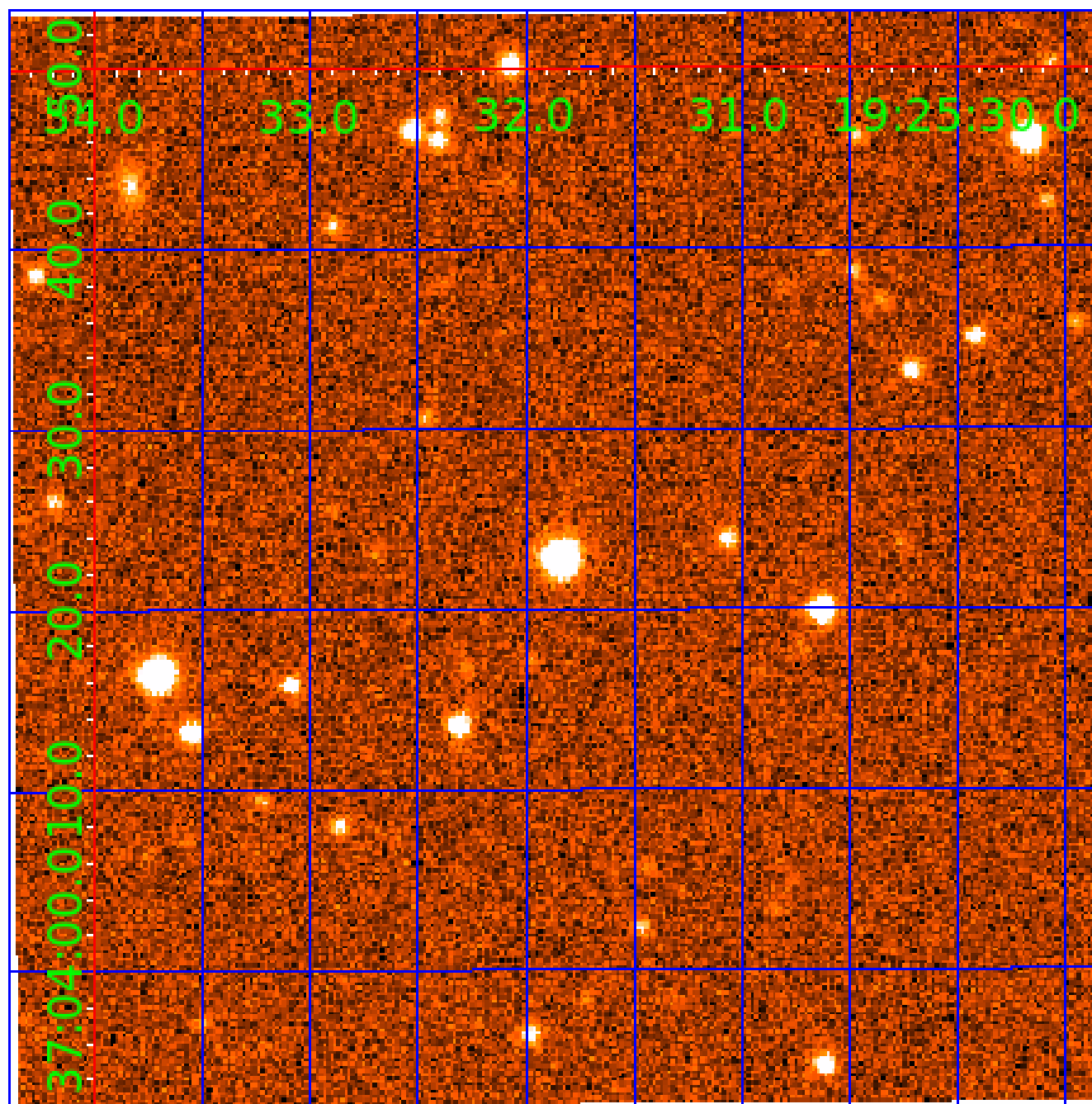


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 001432214

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})
001432214-01	OBS	0998.01	161.788317	214.039098	87697.8	5.303	807.0	714.8	1.21	6018	36.08	4.69
001432214-02	OBS	No	161.777662	230.890613	993.5	7.741	10.9	11.3	1.21	6018	3.95	4.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001432214-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
001432214-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

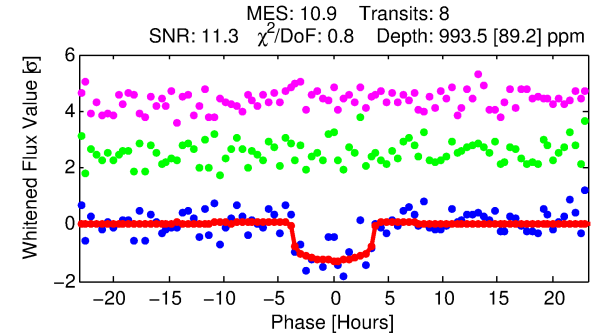
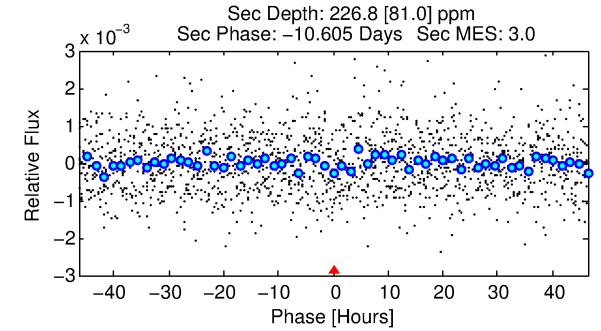
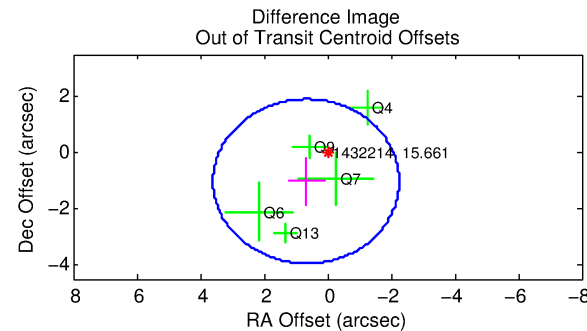
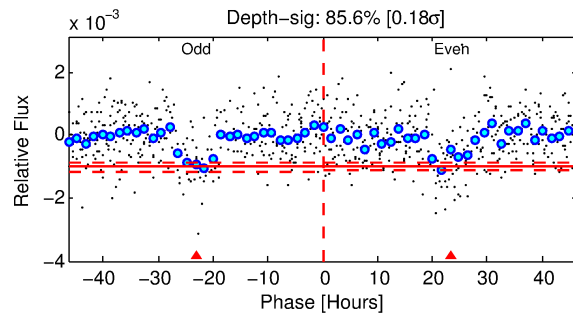
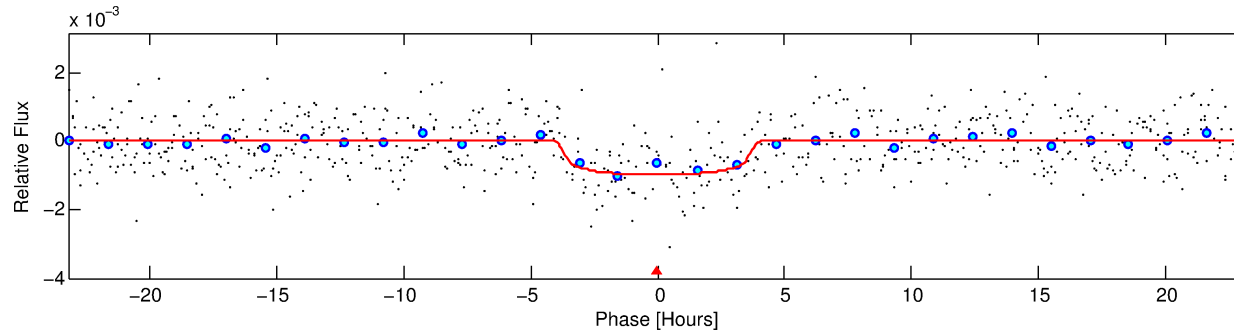
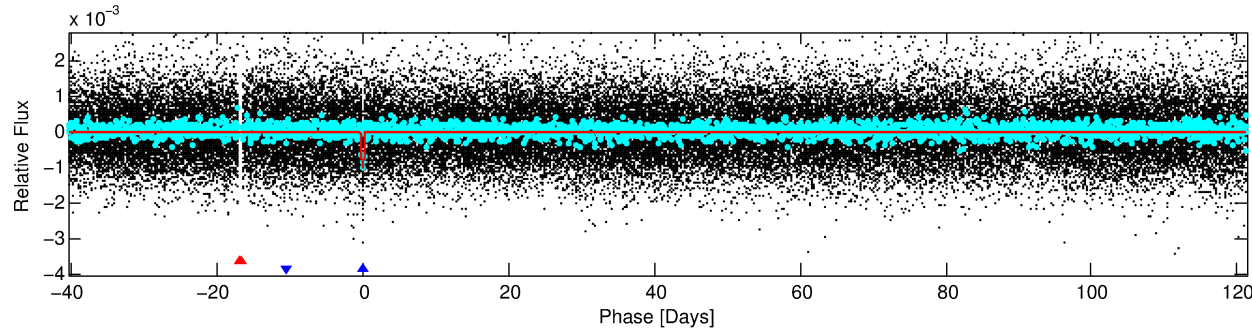
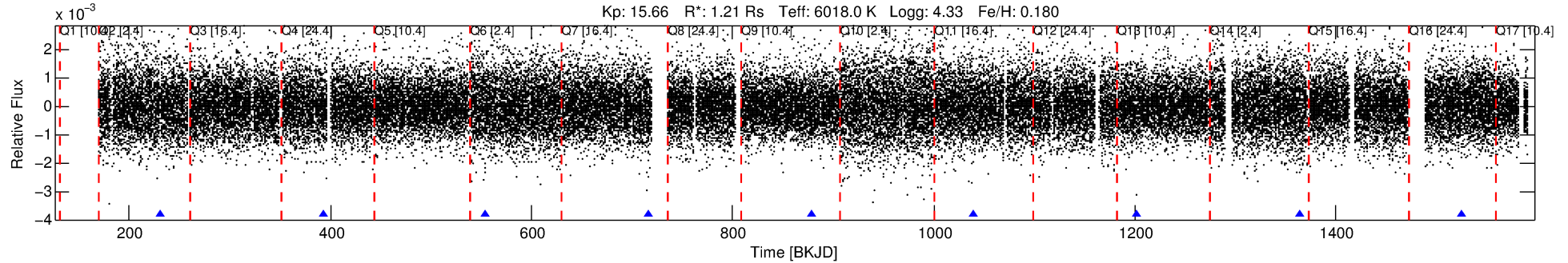
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001432214-02

No Significant Match Found

DV One-Page Summary

KIC: 1432214 Candidate: 2 of 2 Period: 161.778 d
KOI: K00998 Corr: No Ephemeris Match



DV Fit Results:

Period = 161.77766 [0.00305] d
Epoch = 230.8906 [0.0145] BKJD
Rp/R* = 0.0299 [0.0160]
a/R* = 137.87 [334.99]
b = 0.56 [2.99]
Seff = 4.69 [1.06]
Teq = 375 [21] K
Rp = 3.95 [2.22] Re
a = 0.6067 [0.0894] AU
Ag = 2941.12 [3379.67] [0.87 σ]
Teffp = 4272 [1207] K [3.23 σ]

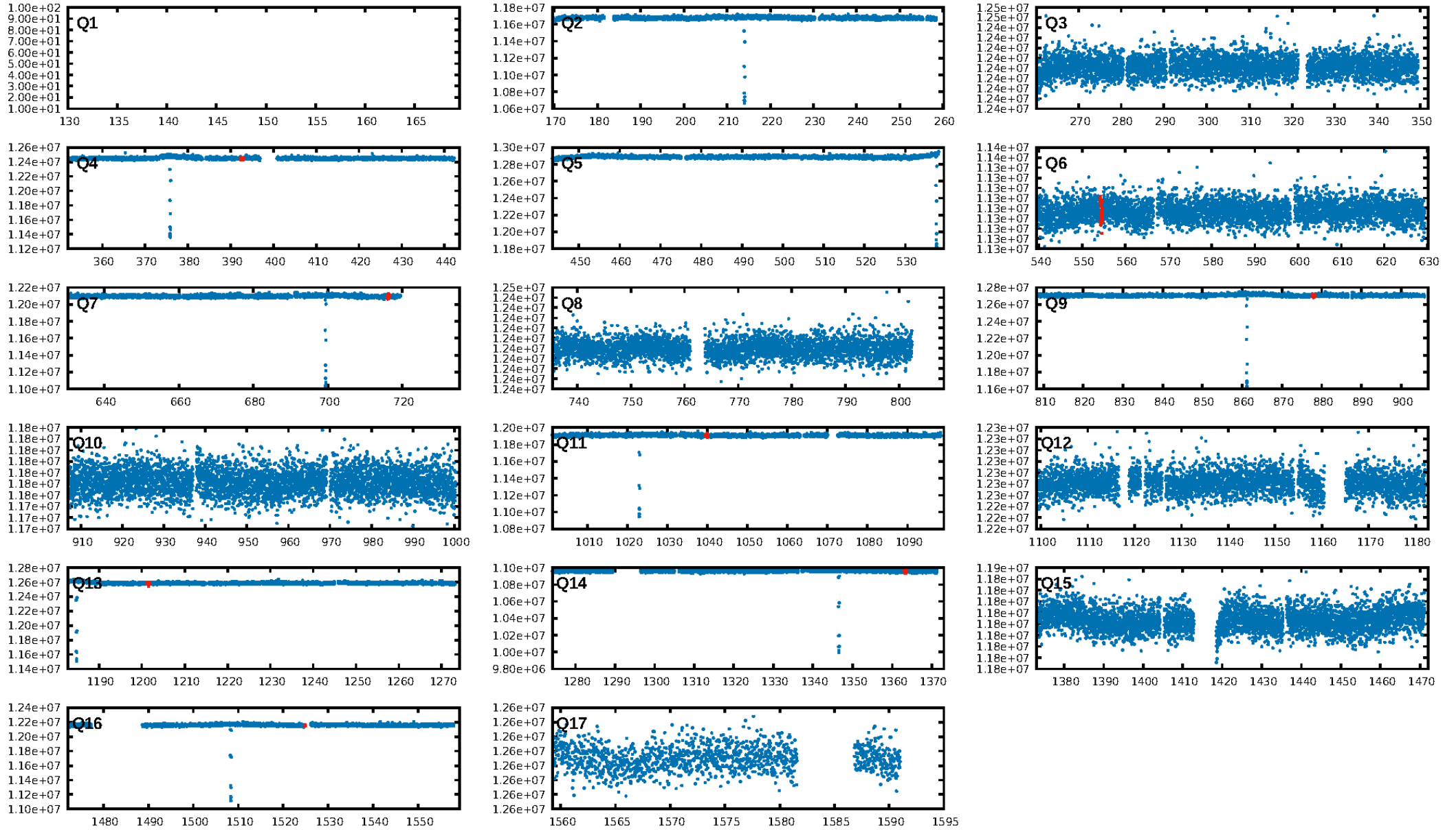
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 2.2% [0.03 σ]
ModelChiSquare2-sig: 86.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.74e-24
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 3.569
Centroid-sig: 2.9%
Centroid-so: 2.319 arcsec [1.72 σ]
OotOffset-rm: 1.223 arcsec [1.25 σ]
KicOffset-rm: 1.199 arcsec [1.39 σ]
OotOffset-st: 1/1/1/2 [5]
KicOffset-st: 1/1/1/2 [5]
DiffImageQuality-fgm: 0.80 [4/5]
DiffImageOverlap-fno: 1.00 [7/7]

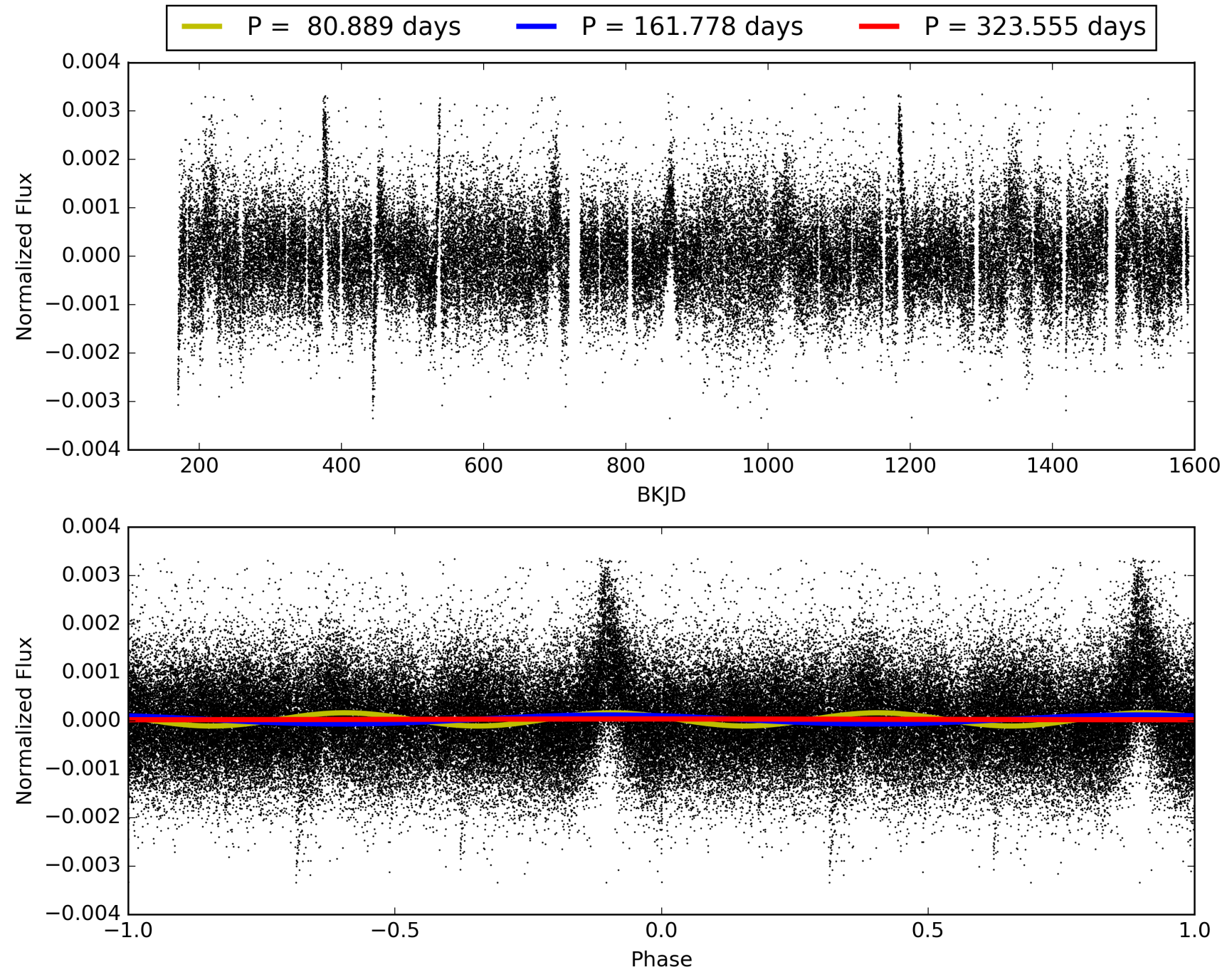
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:08:34 Z

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

TCE 001432214-02, PDC Light Curves

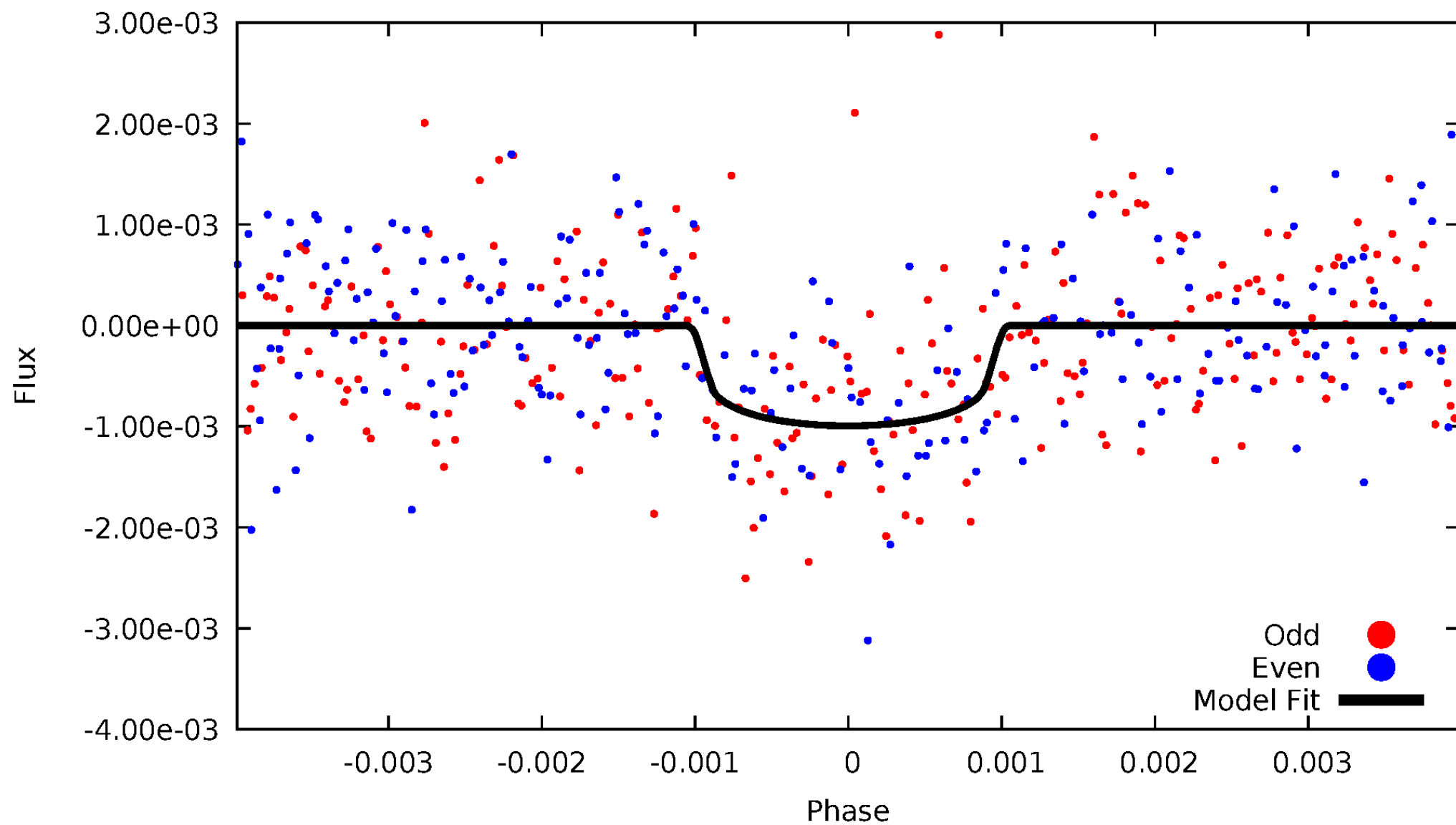


TCE 001432214-02



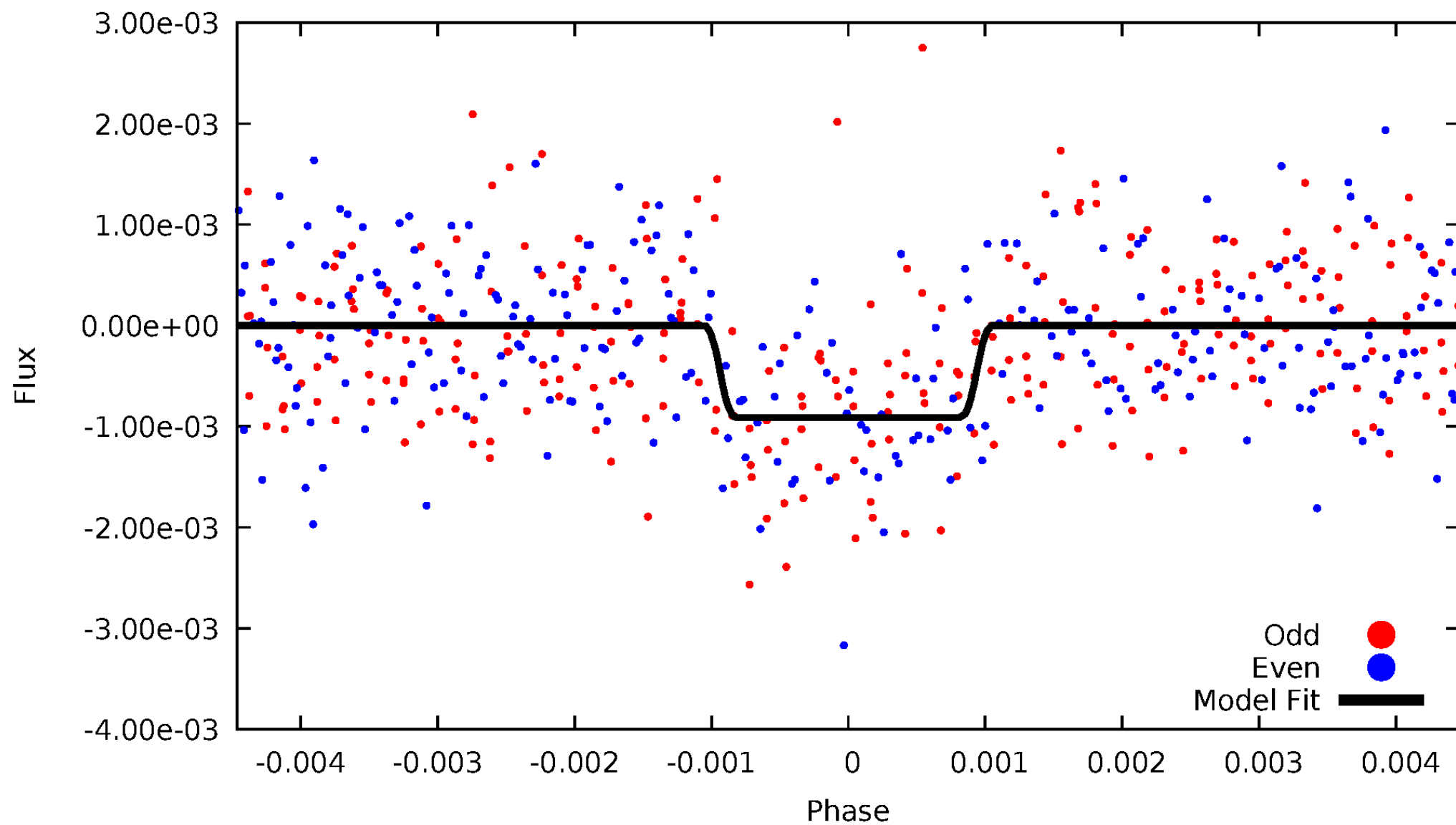
DV Odd/Even

TCE 001432214-02



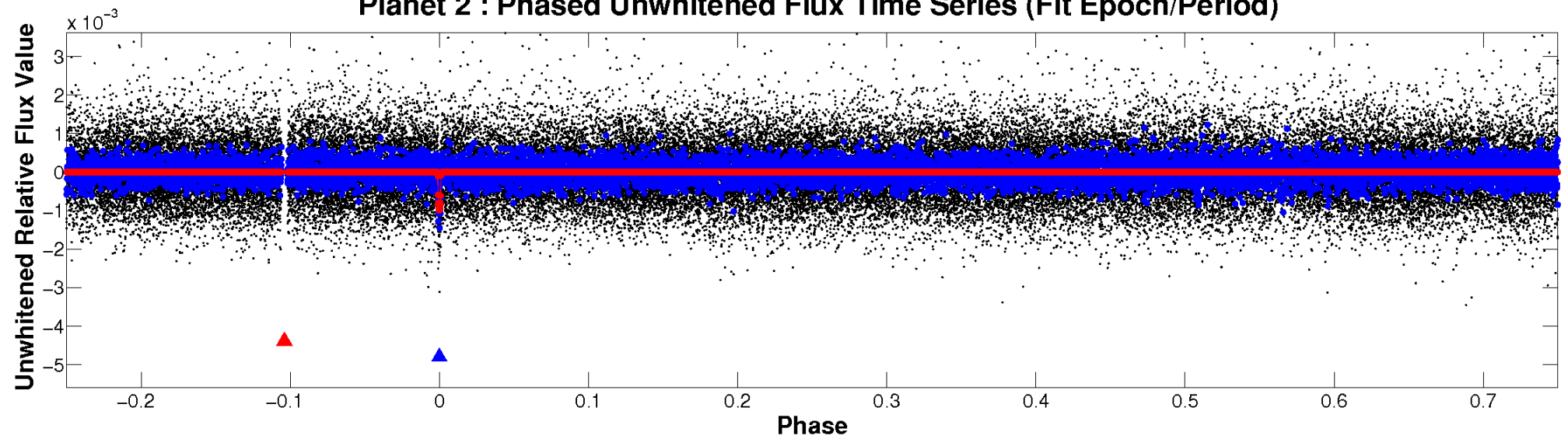
ALT Odd/Even

TCE 001432214-02

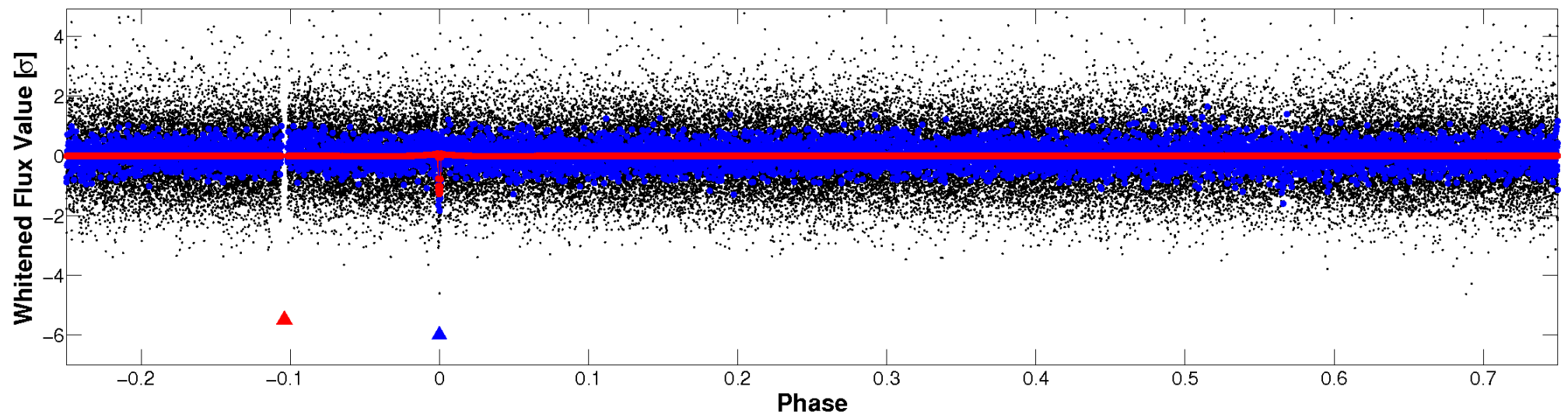


Non-Whitened Vs. Whitened Light Curve

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

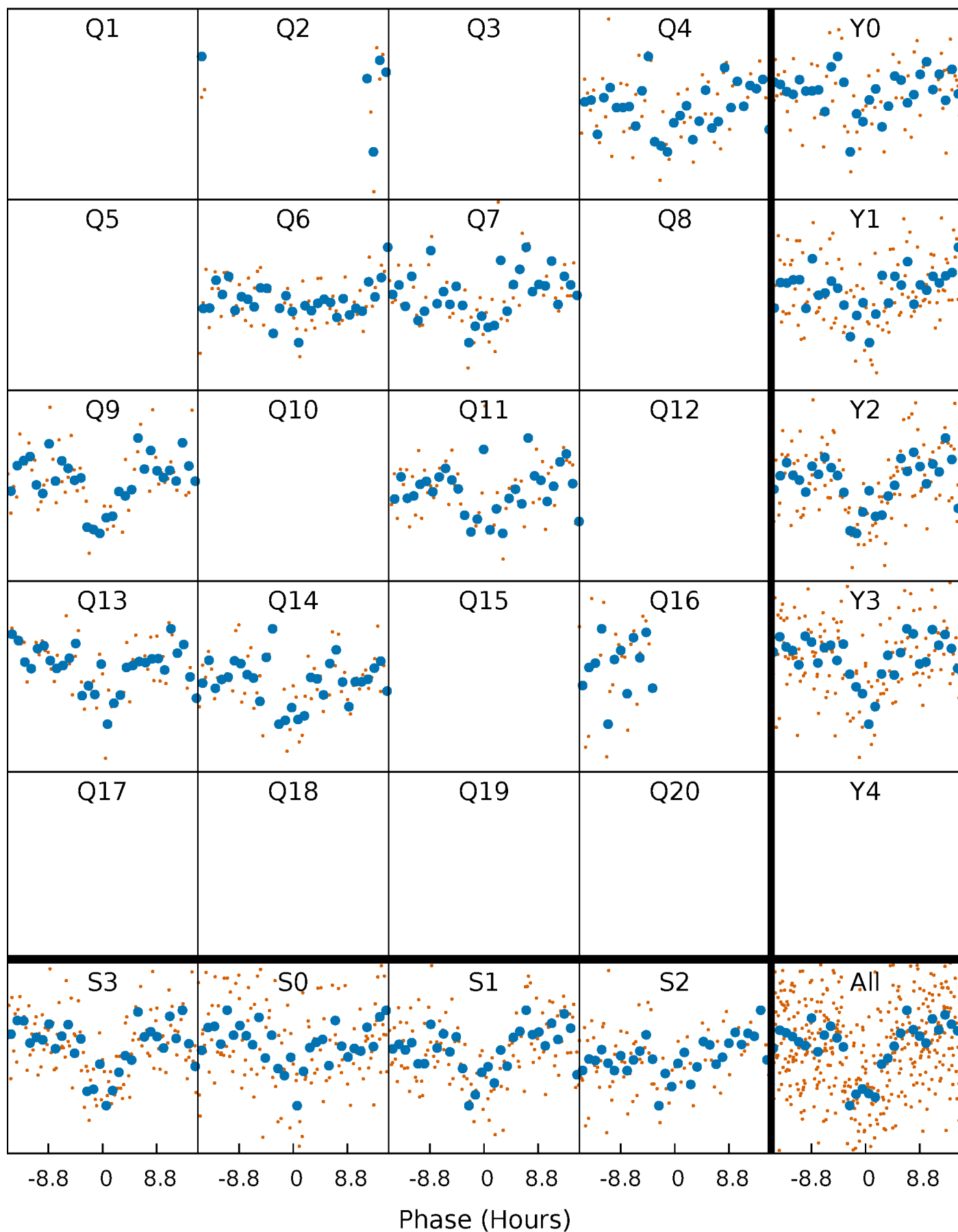


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



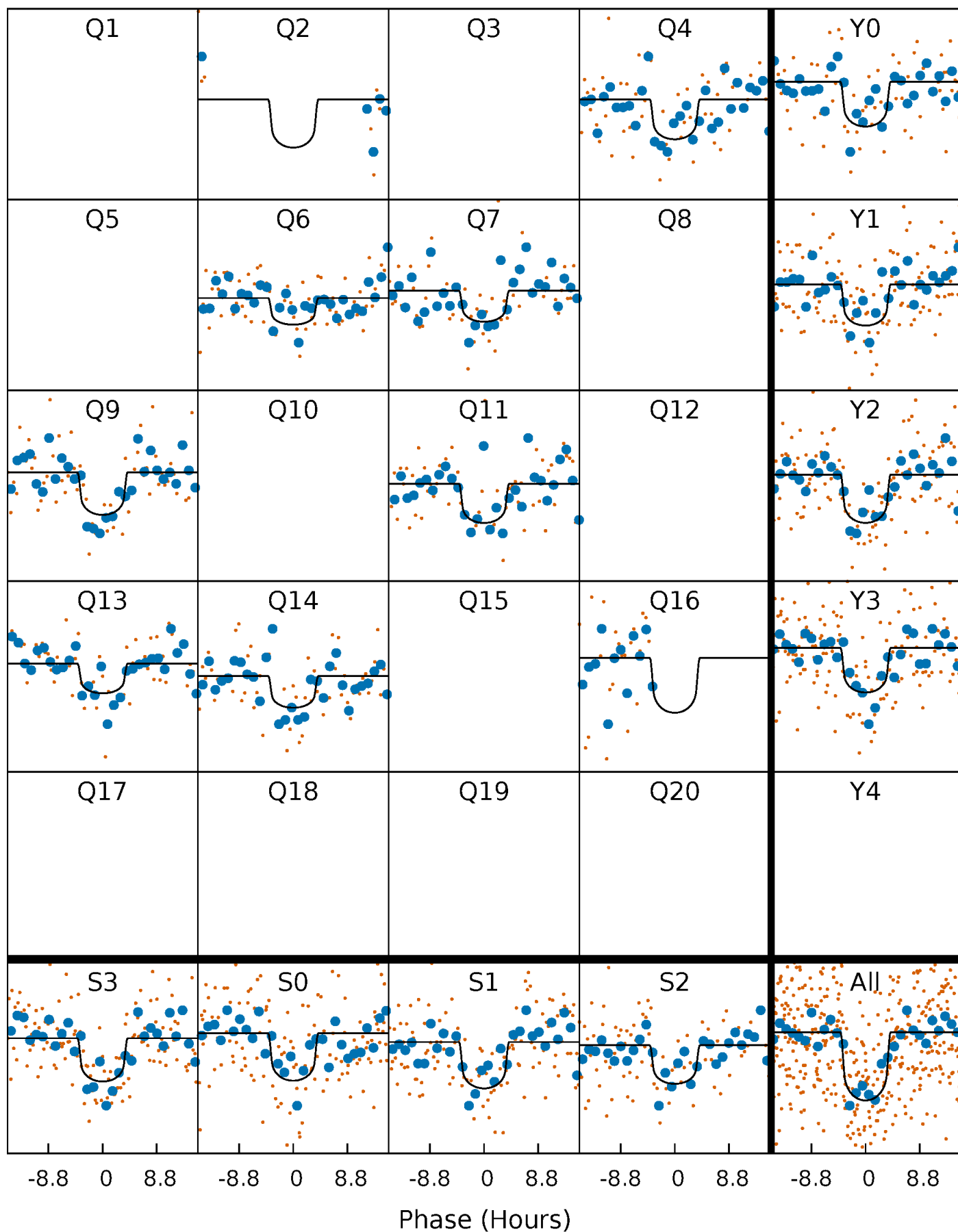
PDC Quarter-Phased Transit Curves

TCE 001432214-02 P=161.777662 Days $T_0=230.890613$ (BKJD)



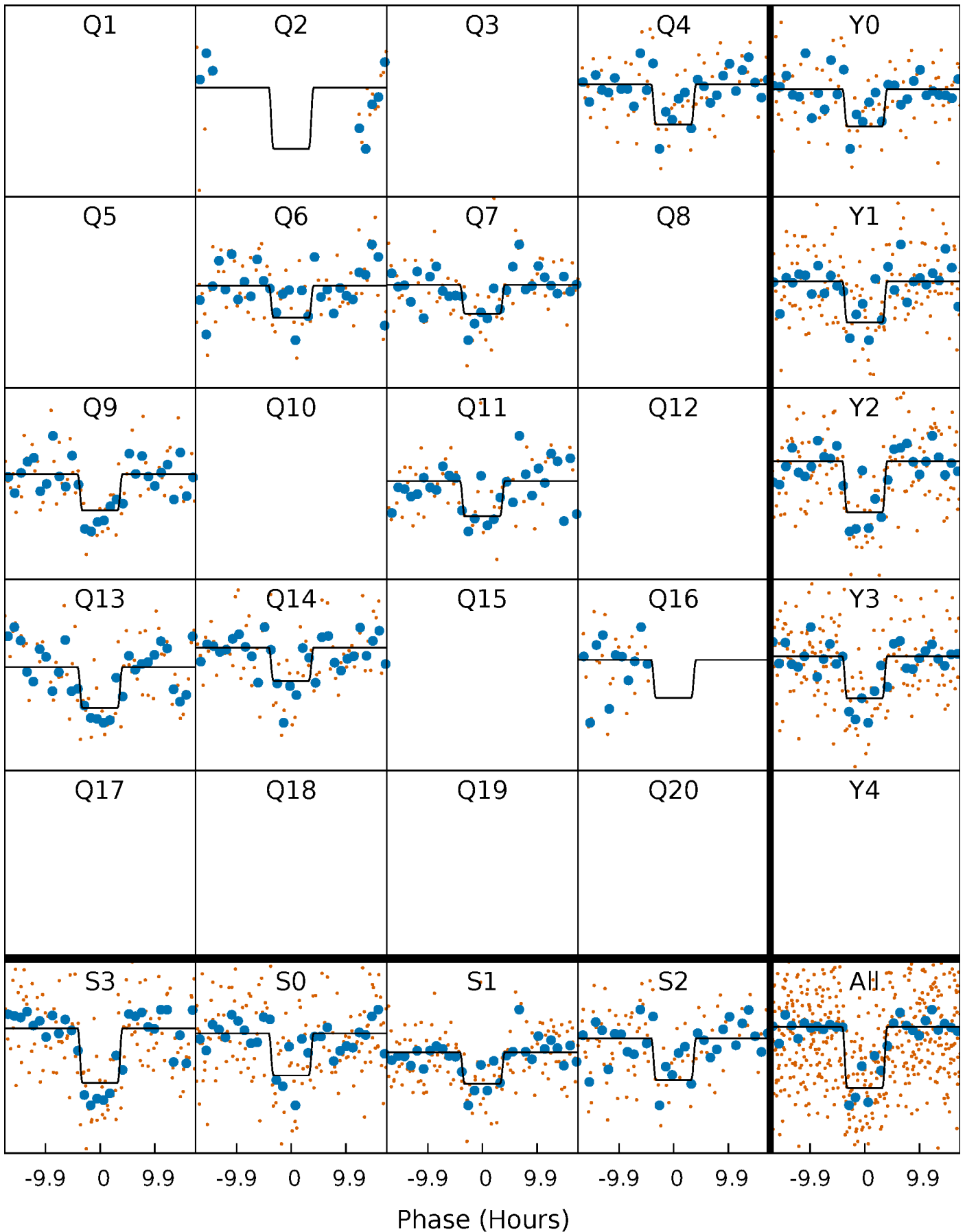
DV Quarter-Phased Transit Curves

TCE 001432214-02 P=161.777662 Days $T_0=230.890613$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

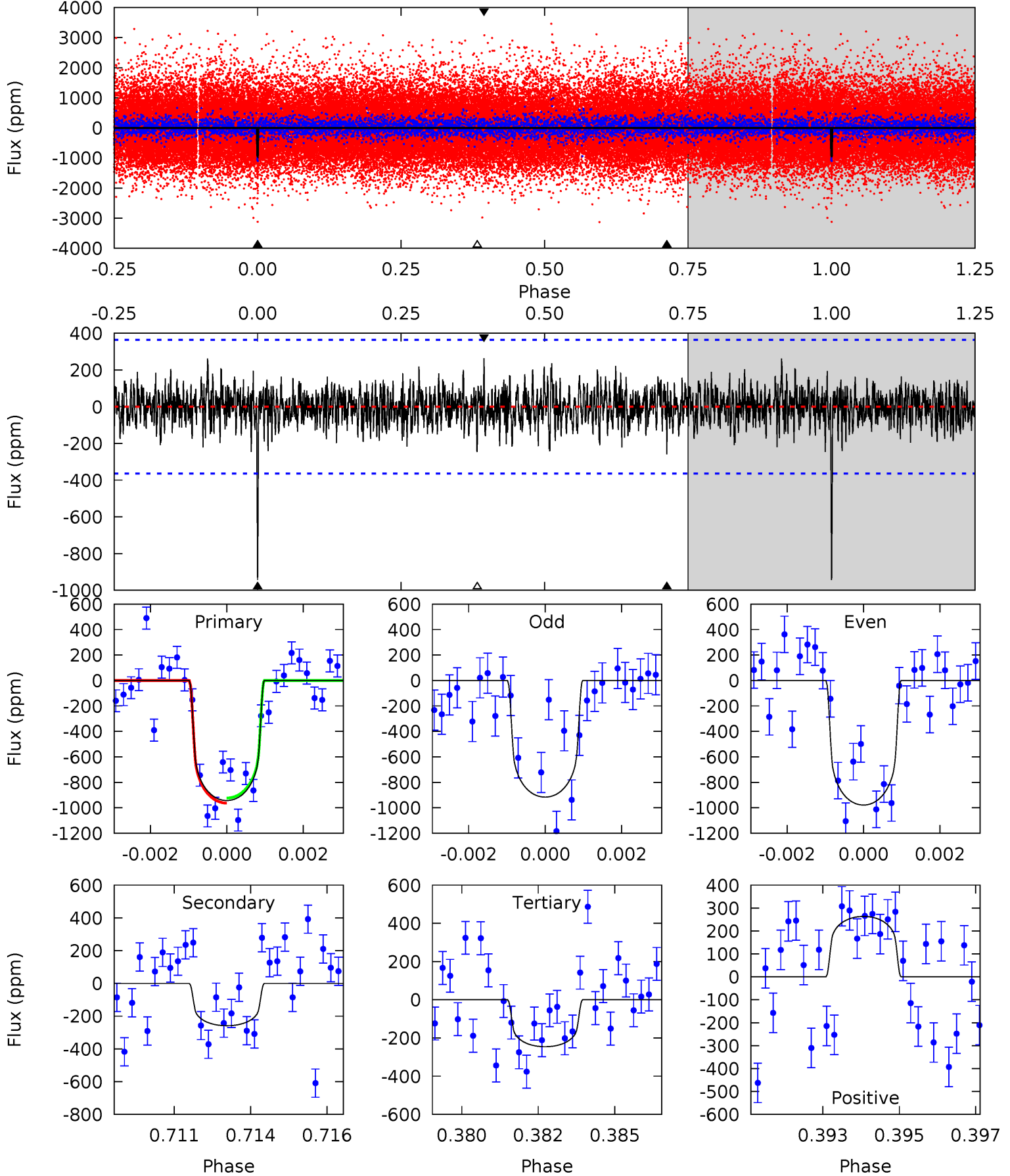
TCE 001432214-02 P=161.783533 Days $T_0=230.881154$ (BKJD)



DV Model-Shift Uniqueness Test

001432214-02, $P = 161.777662$ Days, $E = 69.112951$ Days

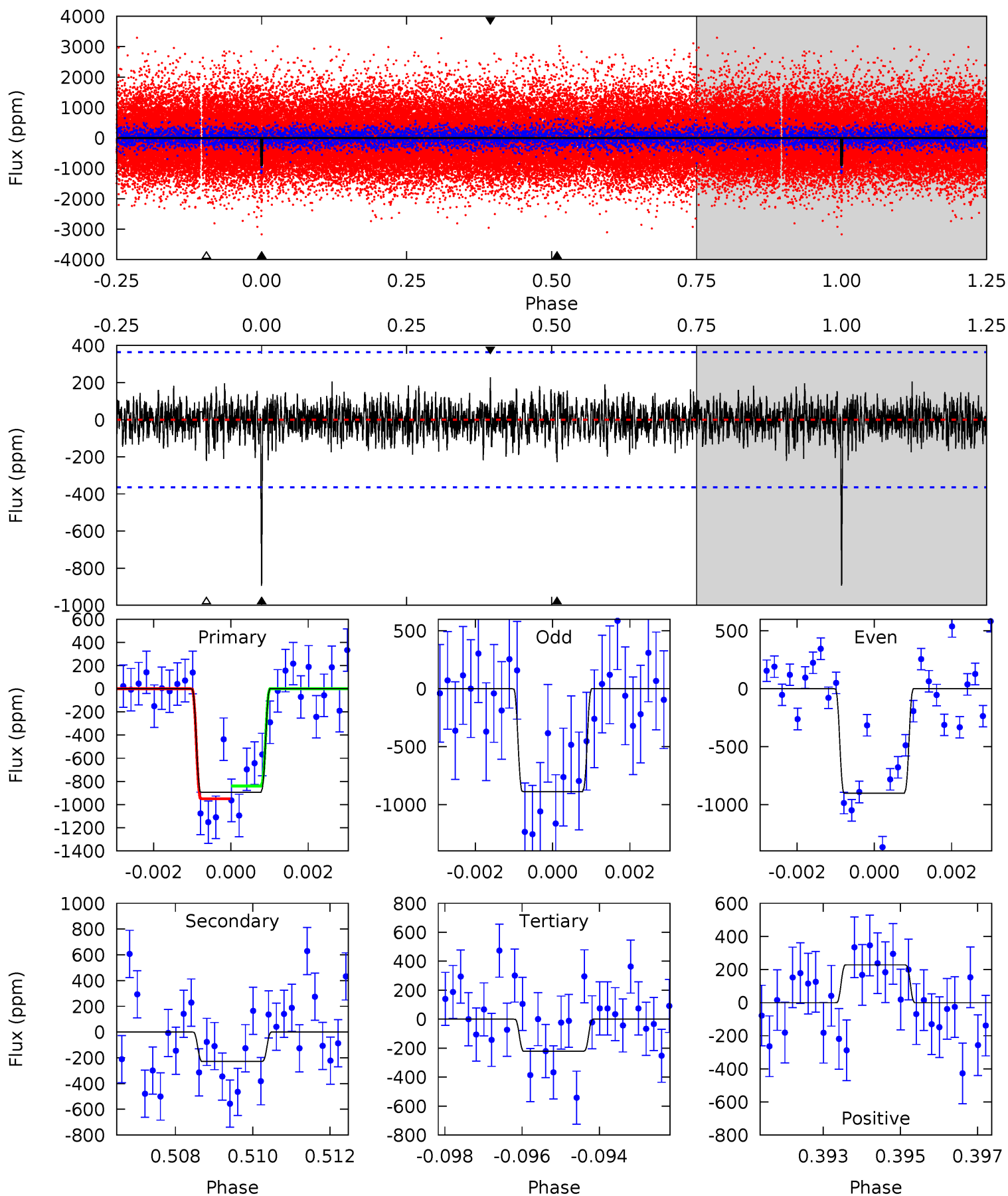
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	3.77	3.59	3.85	5.31	3.07	1.11	10.2	9.91	0.19	-0.07	0.45	1.06	0.22	0.29



Alt Model-Shift Uniqueness Test

001432214-02, P = 161.783533 Days, E = 69.097621 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	3.34	3.24	3.33	5.32	3.08	0.93	9.83	9.73	0.10	0.00	0.10	0.99	0.20	0.80



Stellar Parameters For KIC 001432214

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6018^{+72}_{-90}	$4.327^{+0.080}_{-0.120}$	$0.180^{+0.150}_{-0.150}$	$1.212^{+0.209}_{-0.122}$	$1.142^{+0.075}_{-0.075}$	$0.902^{+0.306}_{-0.319}$
	+1%/-1%	+2%/-3%	+83%/-83%	+17%/-10%	+7%/-7%	+34%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 001432214-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-259 ± 69	$3.91^{+2.10}_{-1.98}$	524^{+23}_{-17}	4607^{+1671}_{-739}	3397^{+9889}_{-2074}
Alt.	-228 ± 68	$3.95^{+2.05}_{-2.02}$	525^{+21}_{-16}	4478^{+1613}_{-693}	2959^{+9183}_{-1802}

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

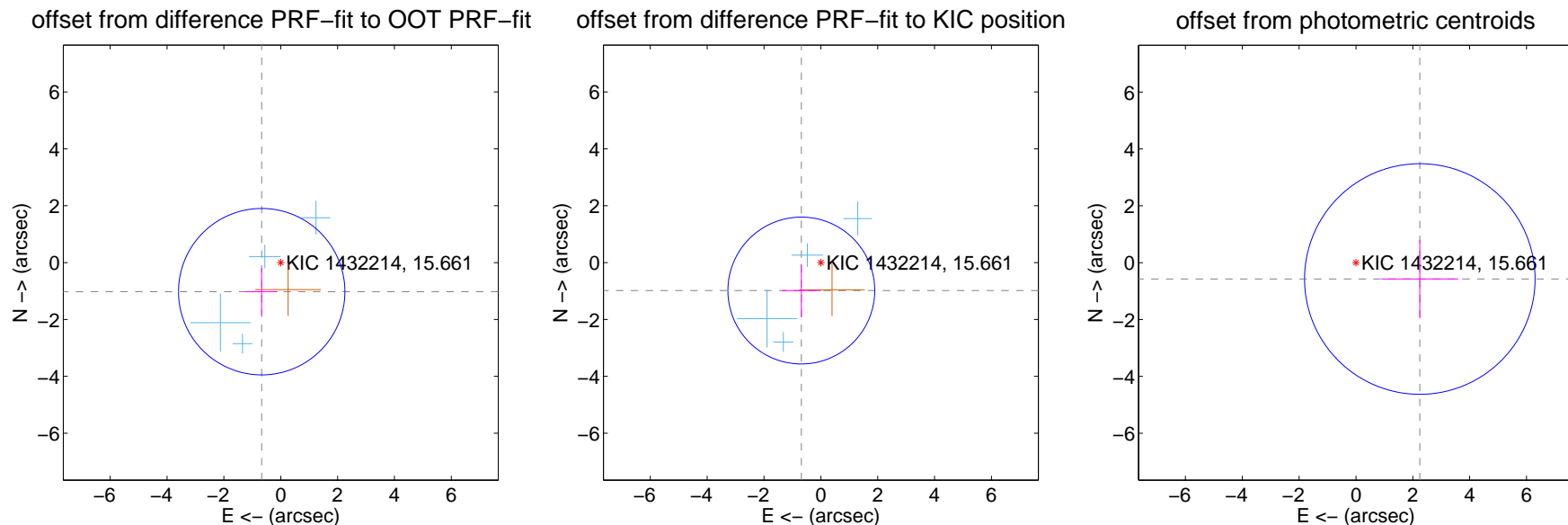
DV Centroid Data

Supplemental centroid analysis for 001432214-02. Kepler magnitude: 15.66. Transit SNR 11.30

There are 4 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.223 ± 0.975	1.25	0.670 ± 0.558	-1.023 ± 0.834
PRF-fit source offset from KIC position	1.199 ± 0.861	1.39	0.687 ± 0.681	-0.982 ± 0.936
photometric centroid source offset	2.32 ± 1.35	1.72	-2.25 ± 1.35	-0.57 ± 1.38



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



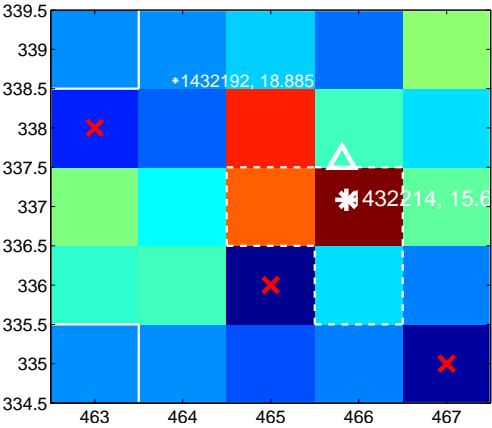
Q3 no difference image



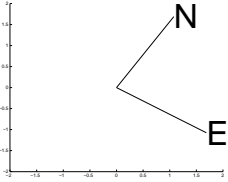
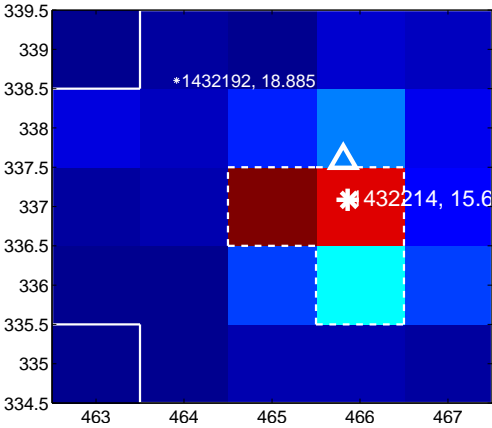
Q3 no OOT image



Q4 difference image



Q4 OOT image

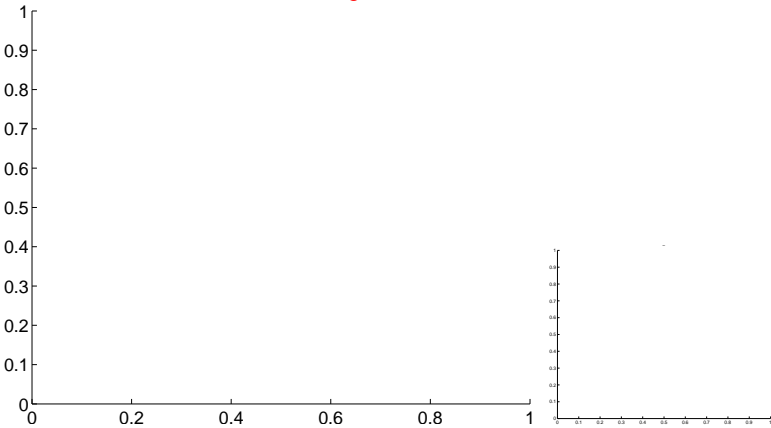


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

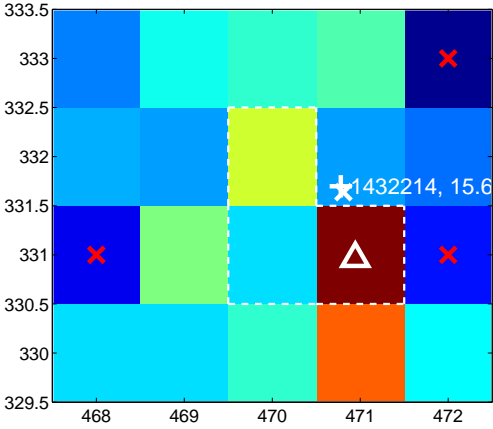
Q5 no difference image



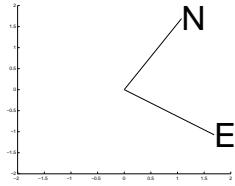
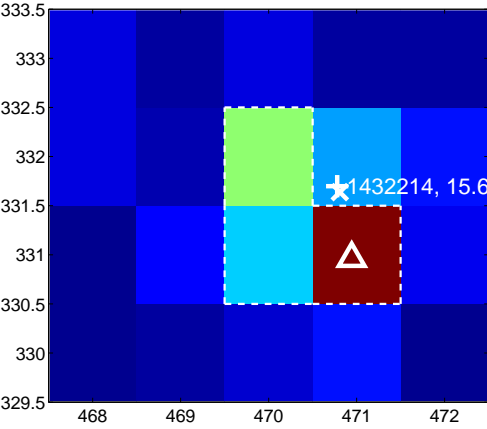
Q5 no OOT image



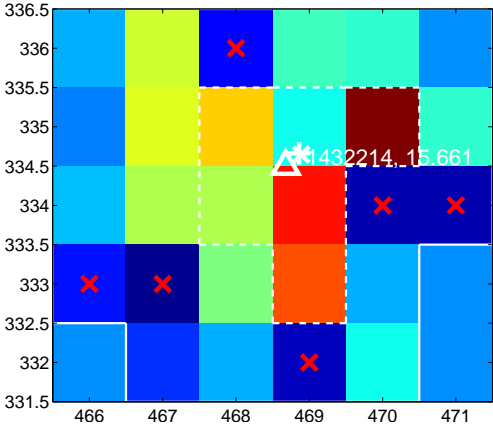
Q6 difference image



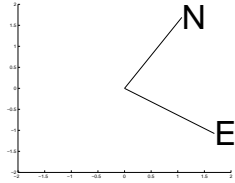
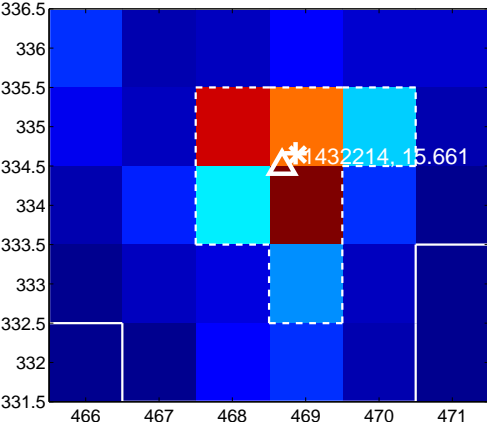
Q6 OOT image



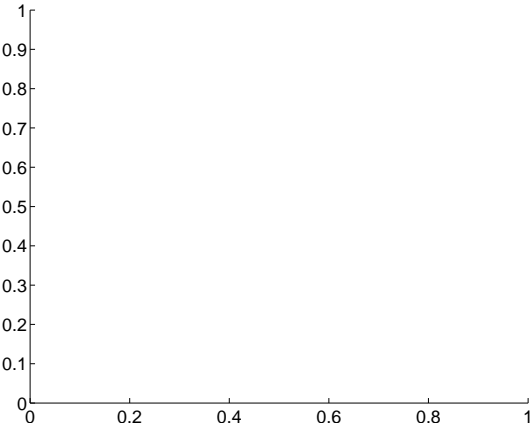
Q7 difference image. Poor Quality



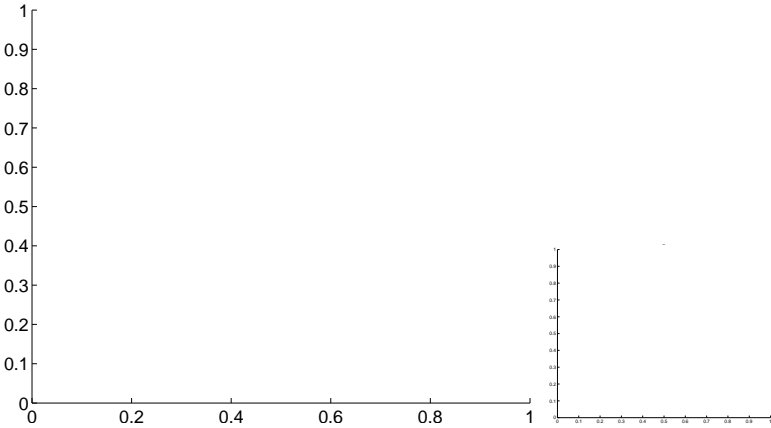
Q7 OOT image



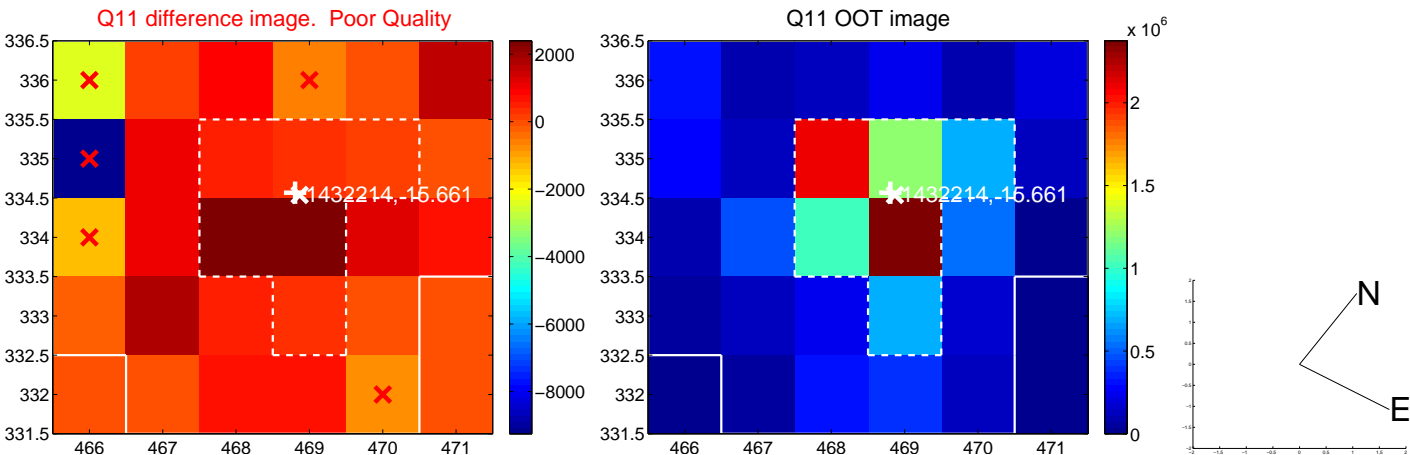
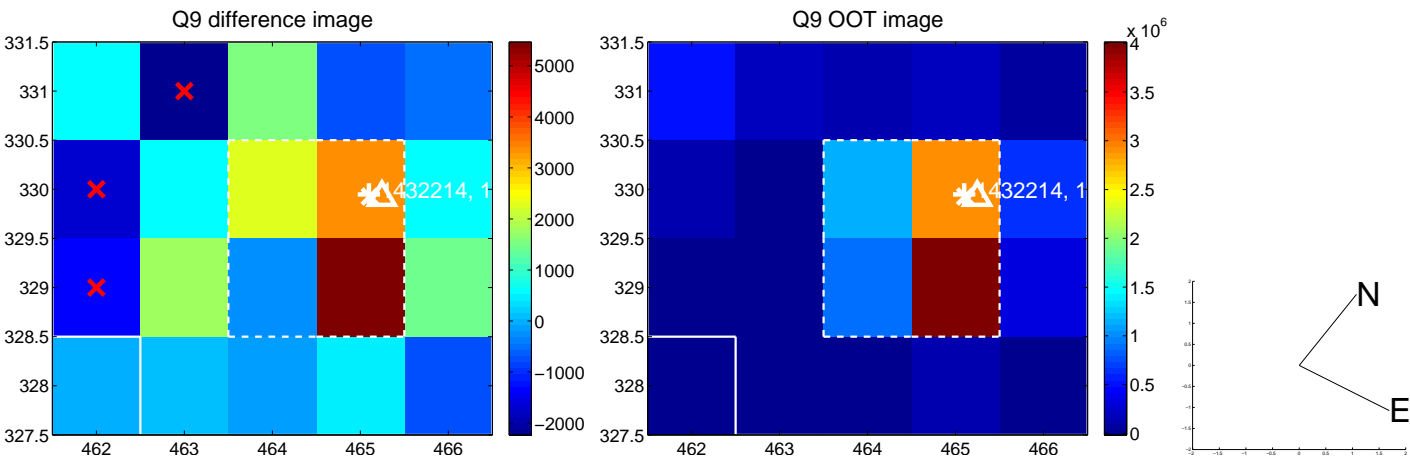
Q8 no difference image



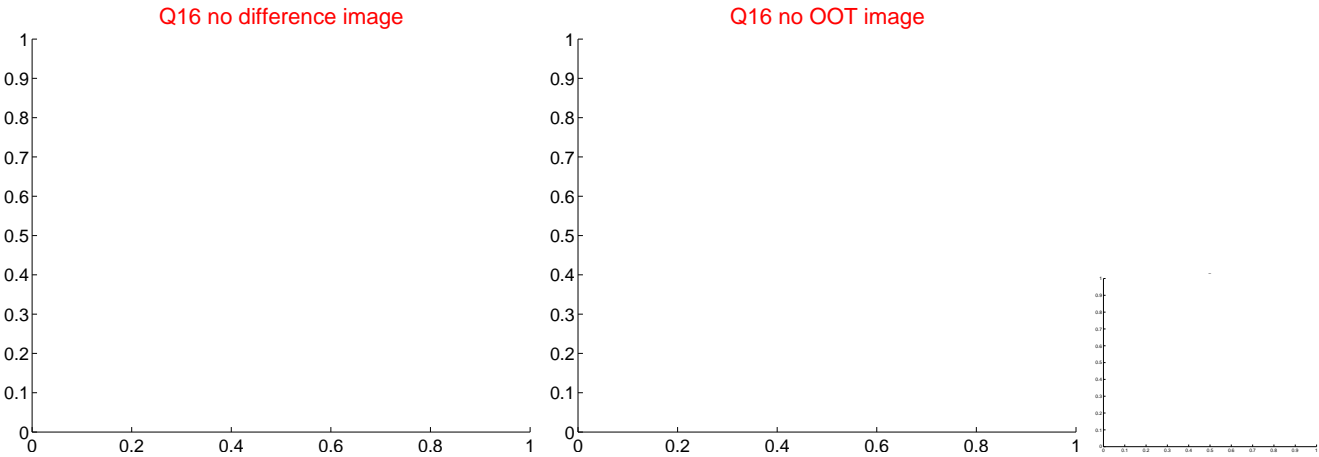
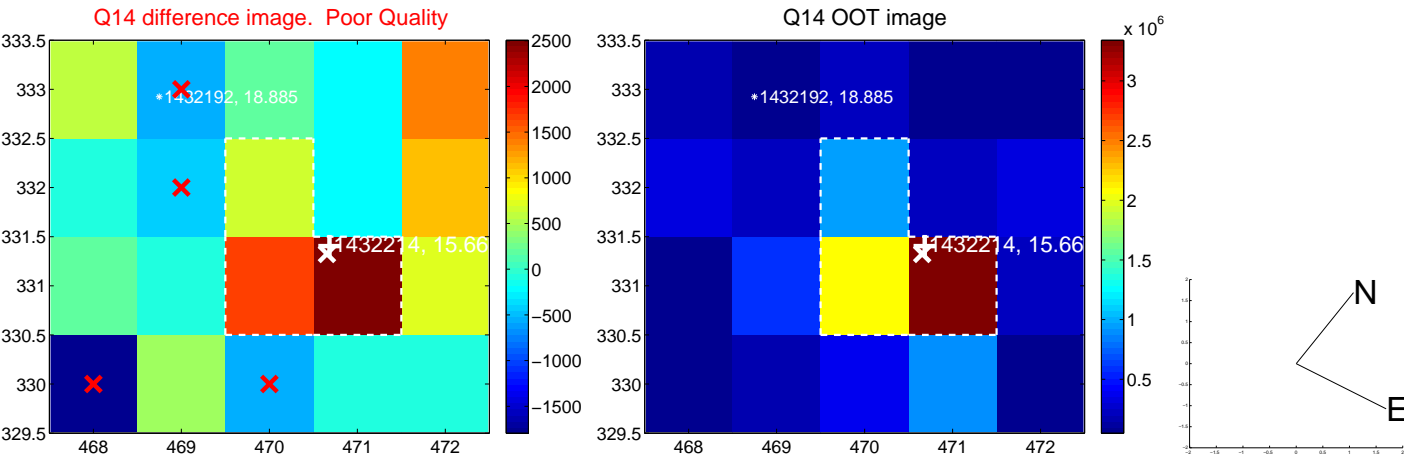
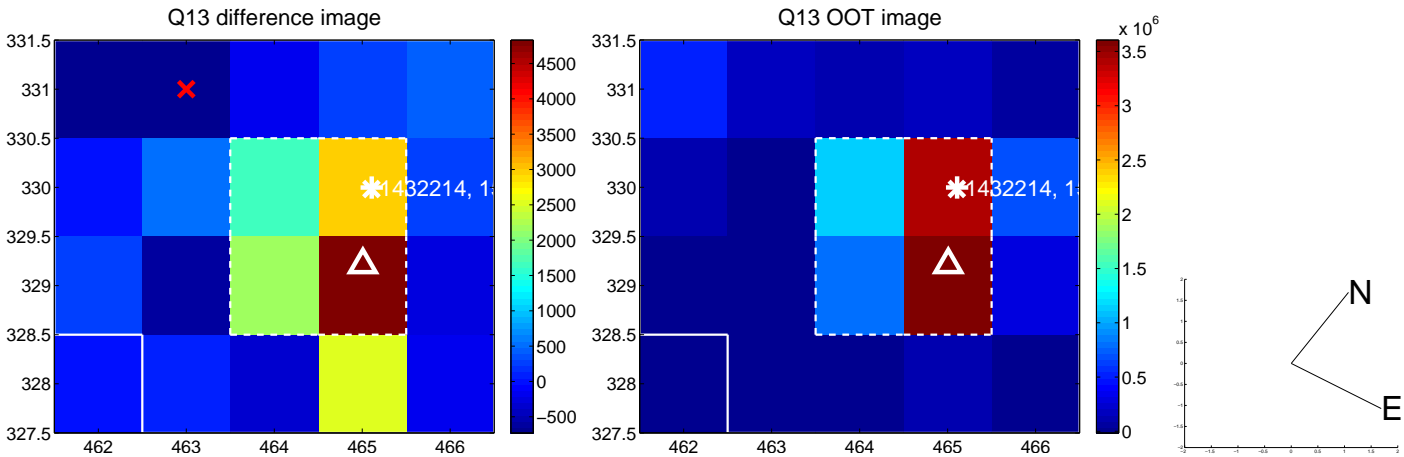
Q8 no OOT image



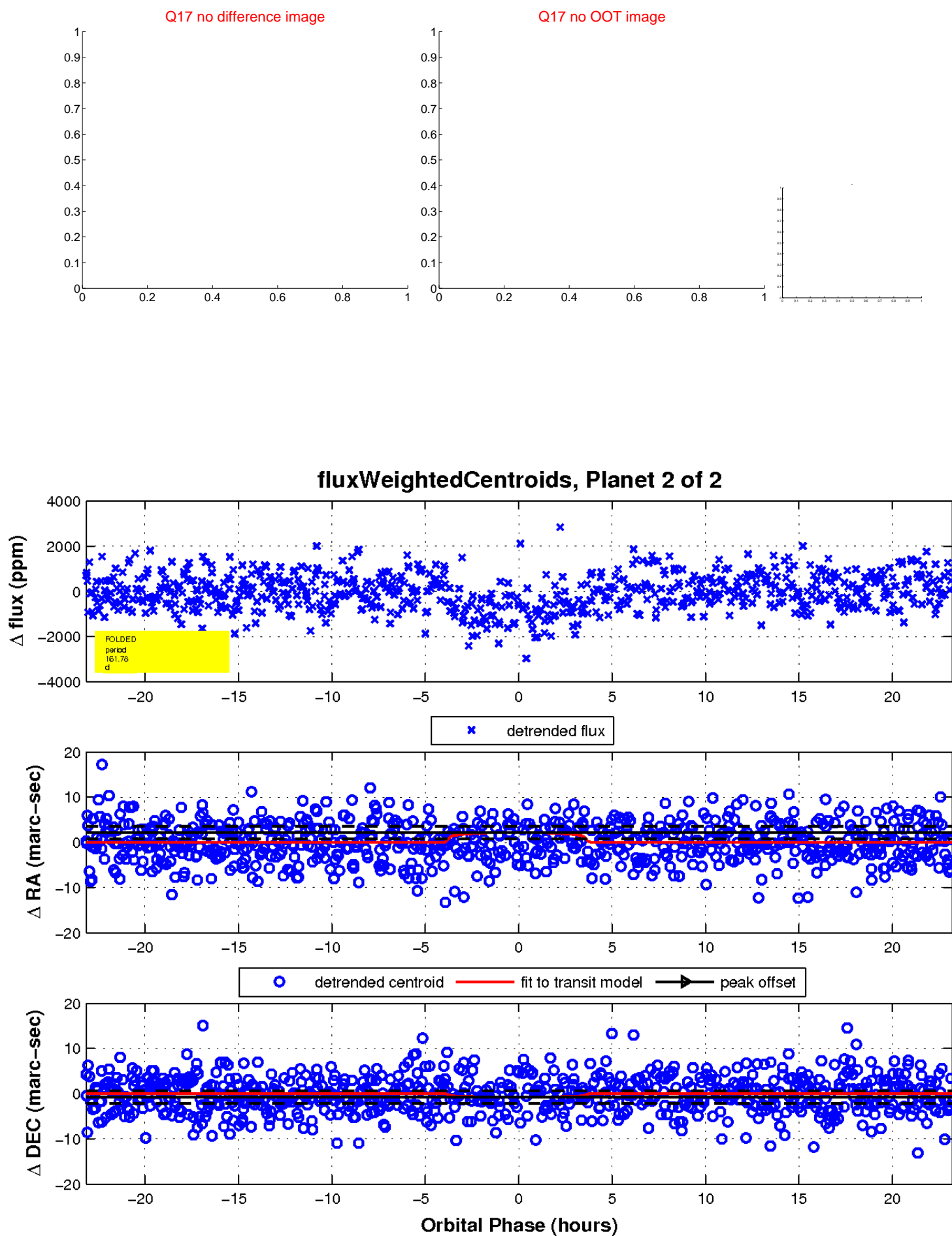
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

