

KIC 007838214

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})
007838214-01	OBS	No	1.735257	132.924398	69.4	6.948	10.8	11.1	1.21	6528	1.78	2728.99
007838214-02	OBS	No	1.734570	132.288202	13.4	0.948	10.5	0.7	1.21	6528	0.46	2730.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007838214-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
007838214-02	OBS	FP	0.00	1	0	1	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—HALO_GHOST

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

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

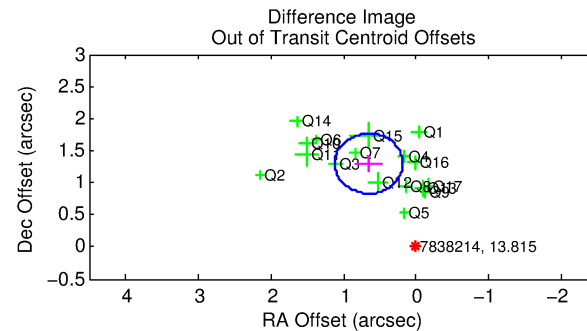
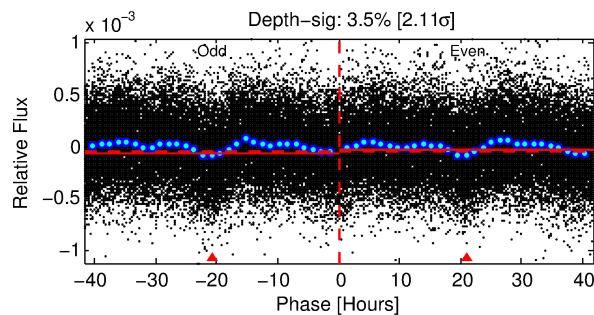
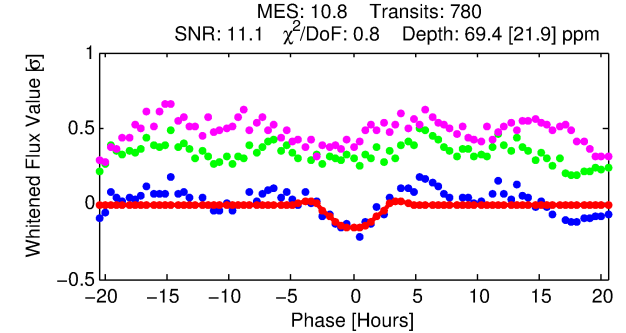
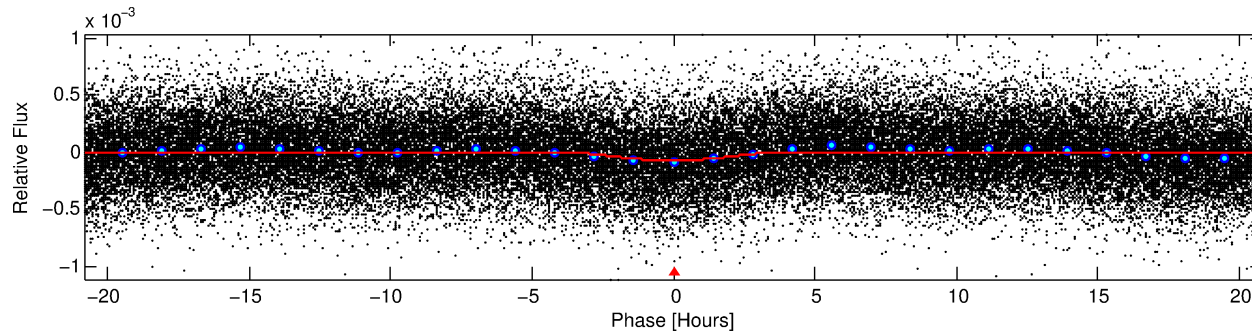
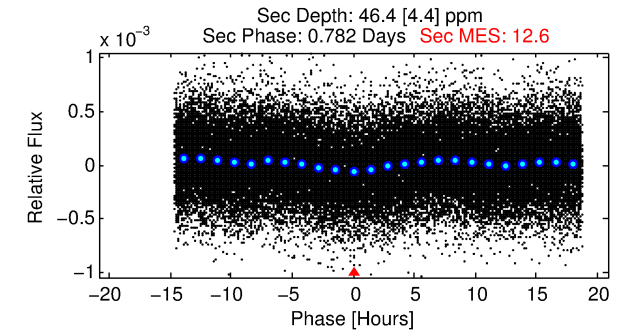
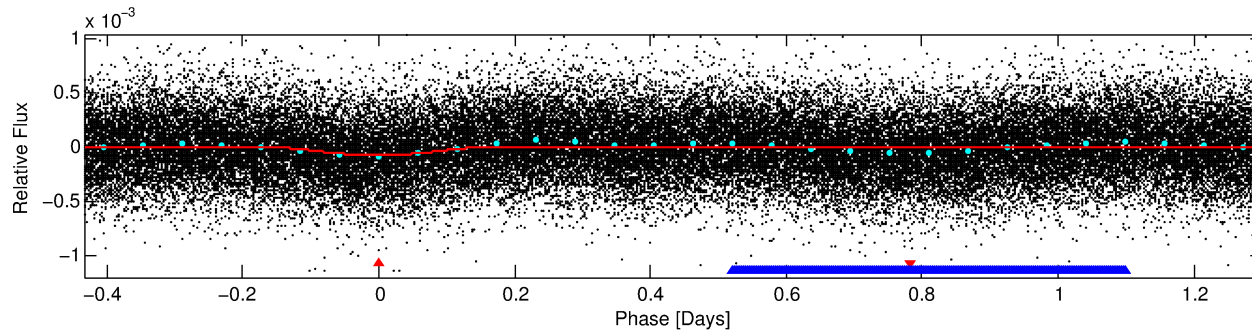
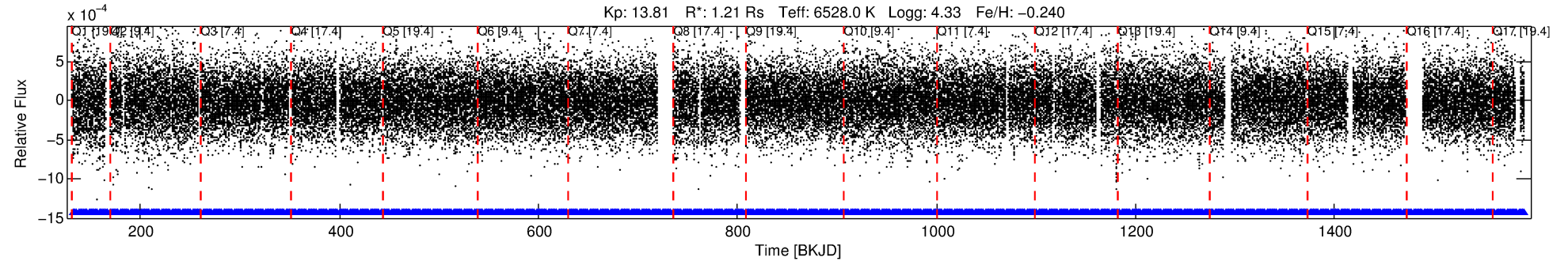
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007838214-01

No Significant Match Found

DV One-Page Summary

KIC: 7838214 Candidate: 1 of 2 Period: 1.735 d



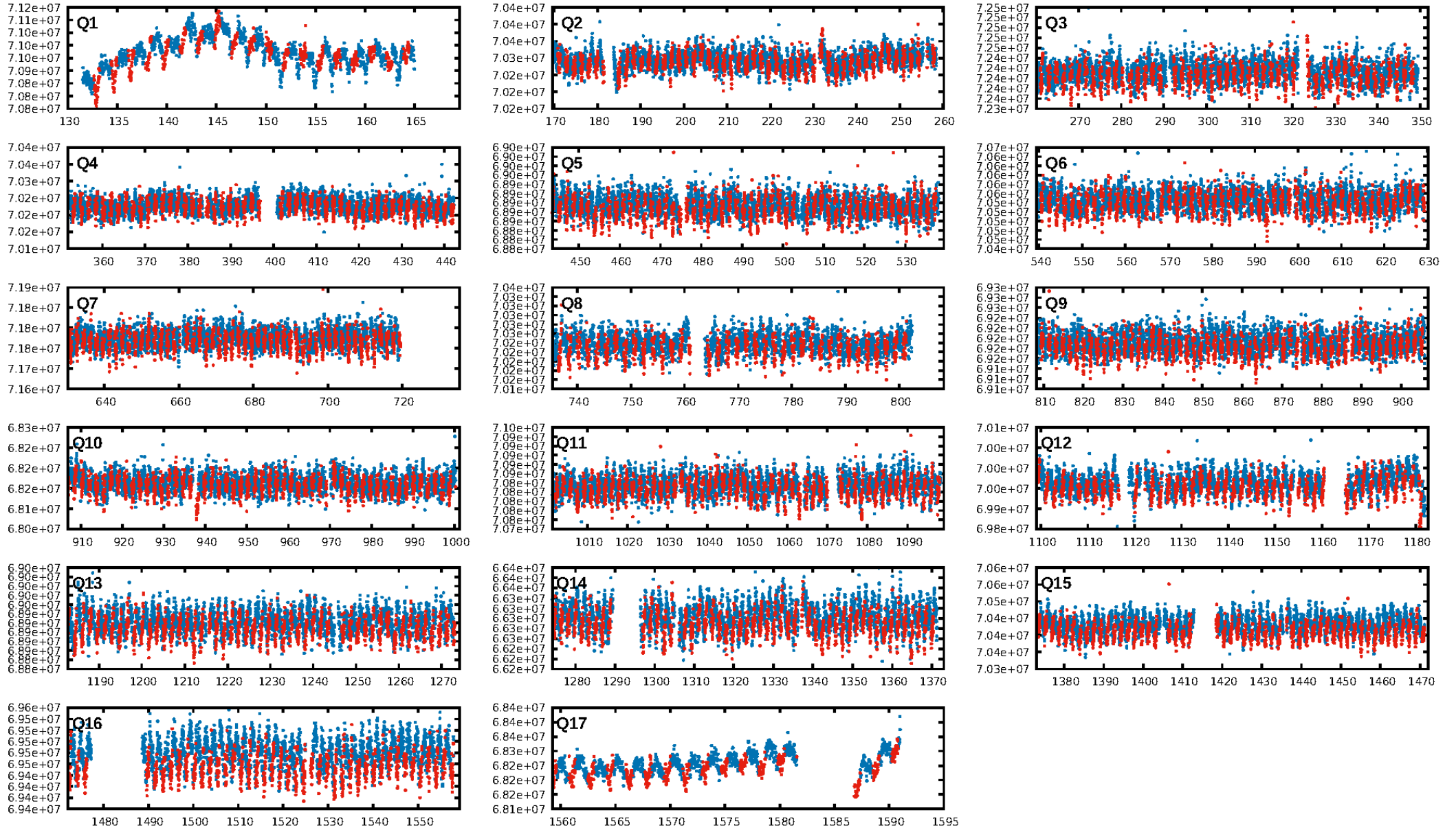
DV Fit Results:

Period = 1.73526 [0.00003] d
Epoch = 132.9244 [0.0100] BKJD
Rp/R* = 0.0135 [0.0144]
a/R* = 1.06 [0.02]
b = 1.00 [0.02]
Seff = 2728.99 [1032.40]
Teq = 1843 [174] K
Rp = 1.78 [1.97] Re
a = 0.0295 [0.0074] AU
Ag = 6.98 [15.09] [0.40σ]
Teffp = 4632 [2473] K [1.12σ]

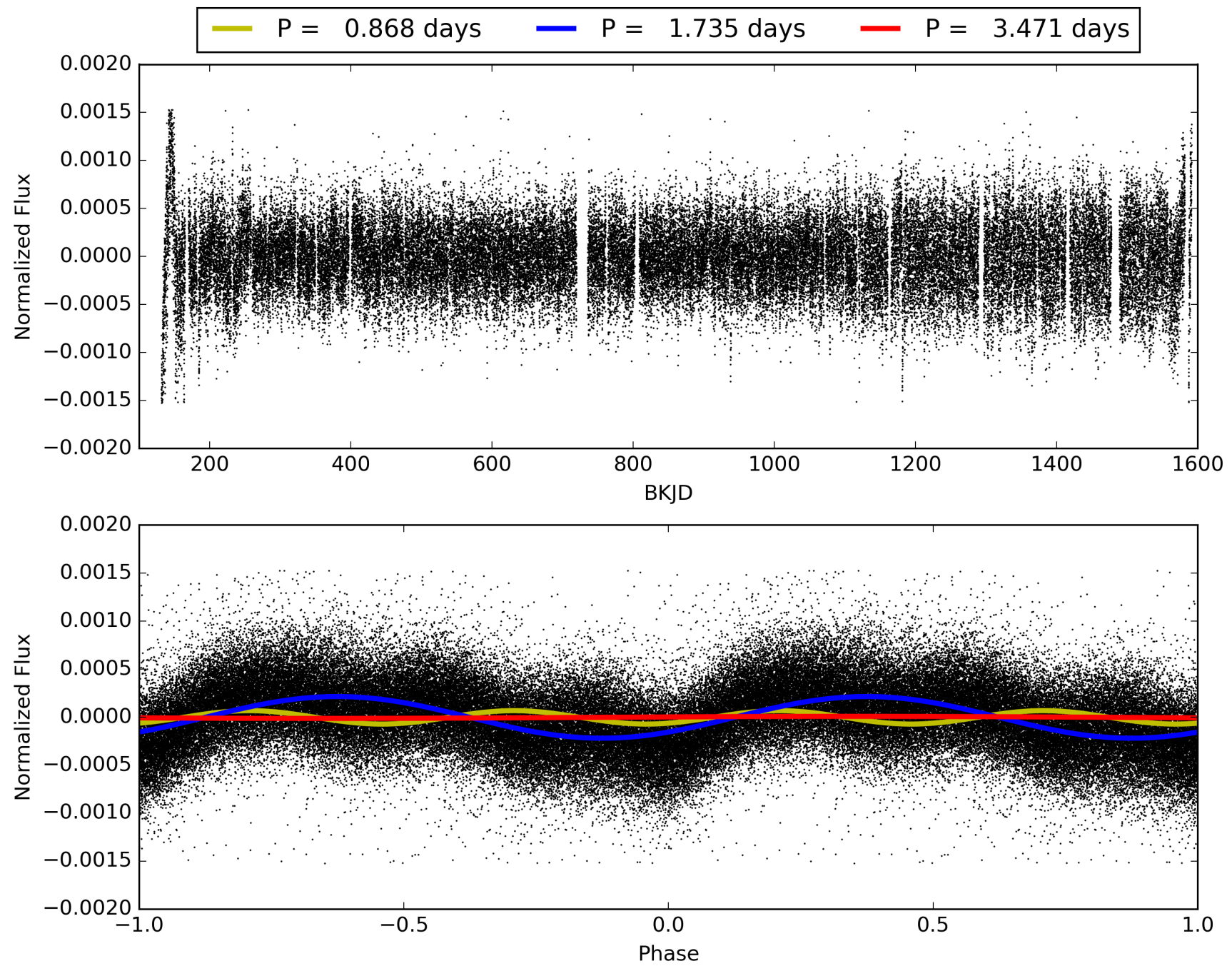
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.57e-21
RollingBand-fgt: 1.00 [745/745]
GhostDiagnostic-chr: 1.355
Centroid-sig: 0.0%
Centroid-so: 1.633 arcsec [3.76σ]
OotOffset-rm: 1.454 arcsec [9.32σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.133 arcsec [1.25σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.88 [15/17]

TCE 007838214-01, PDC Light Curves

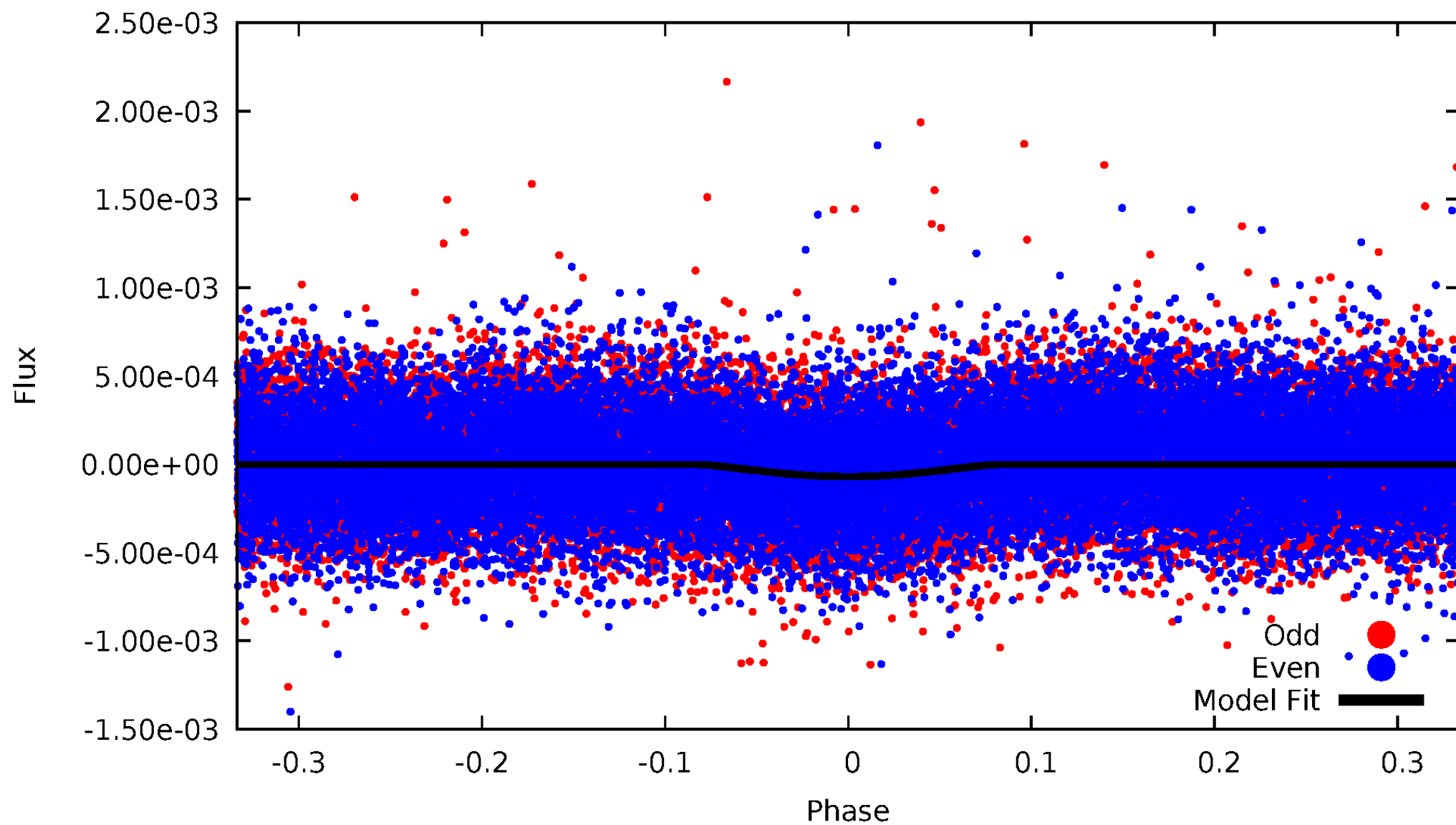


TCE 007838214-01



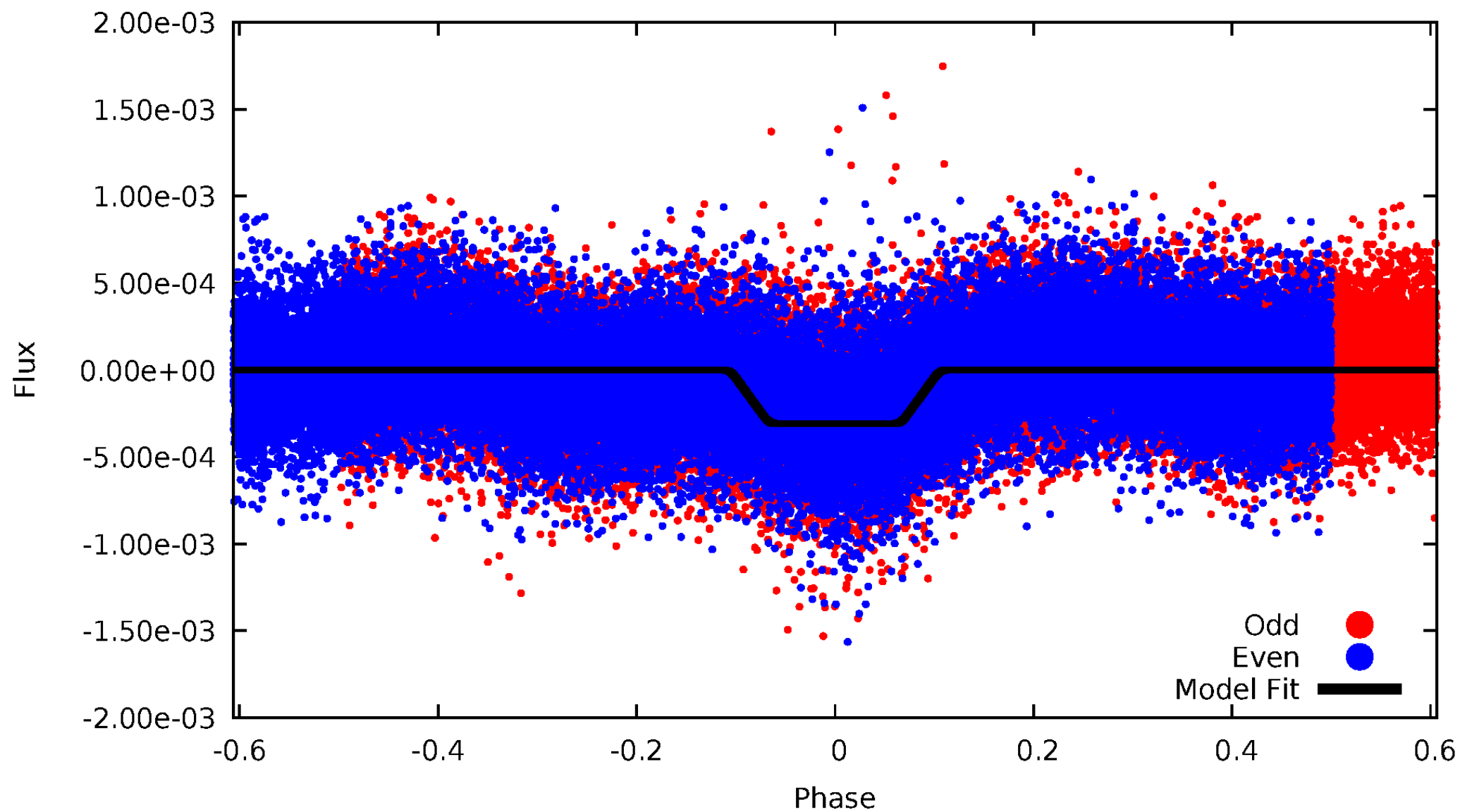
DV Odd/Even

TCE 007838214-01

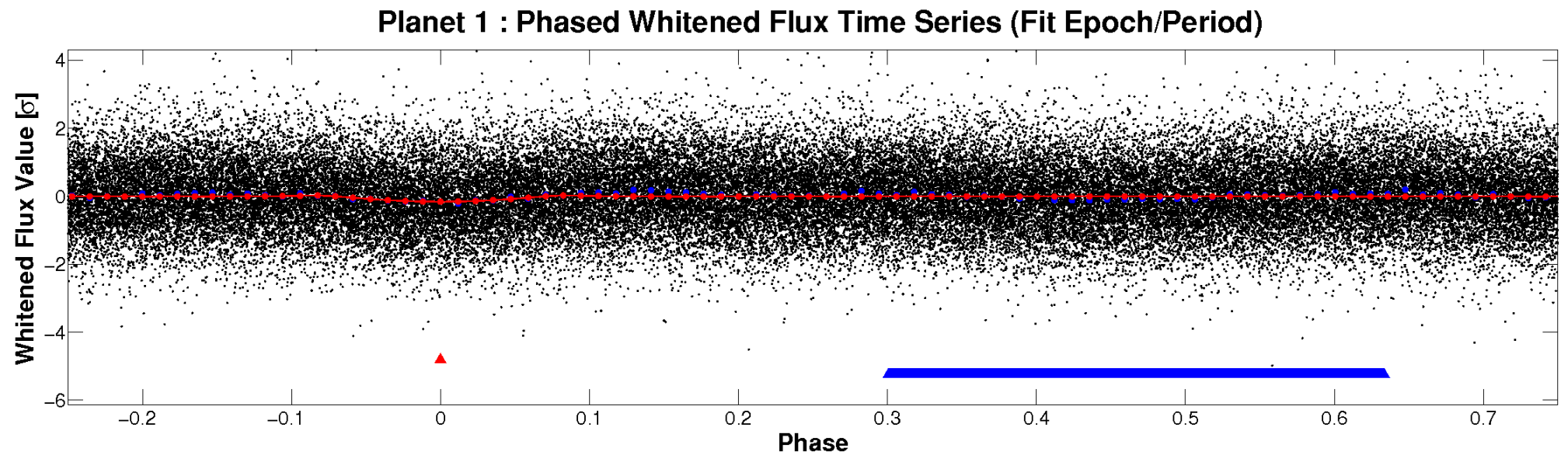
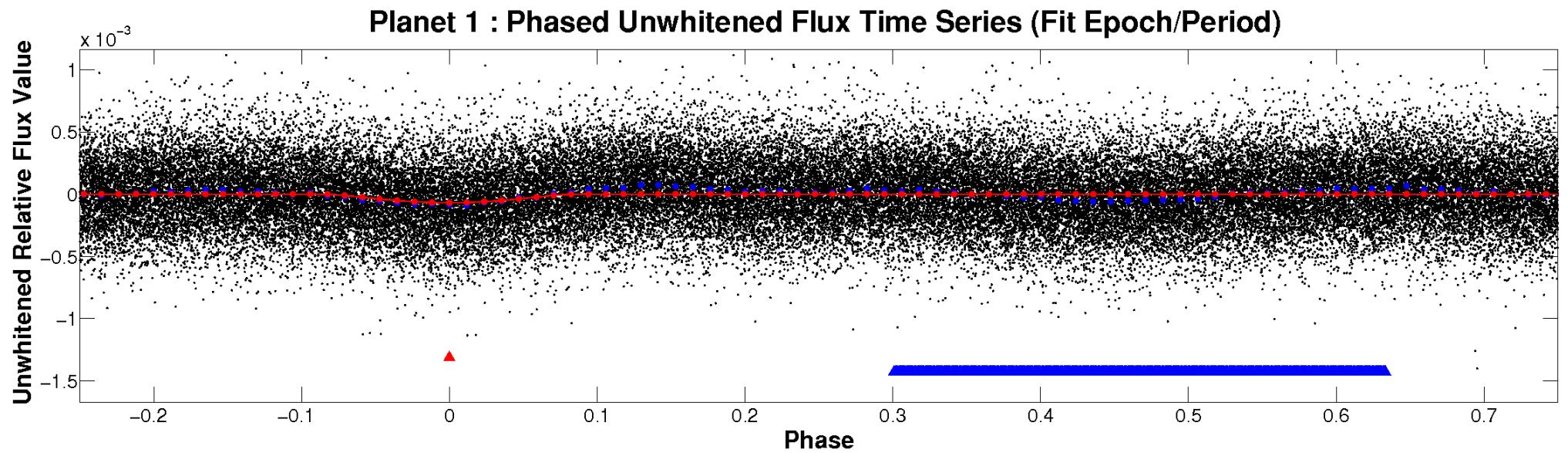


ALT Odd/Even

TCE 007838214-01

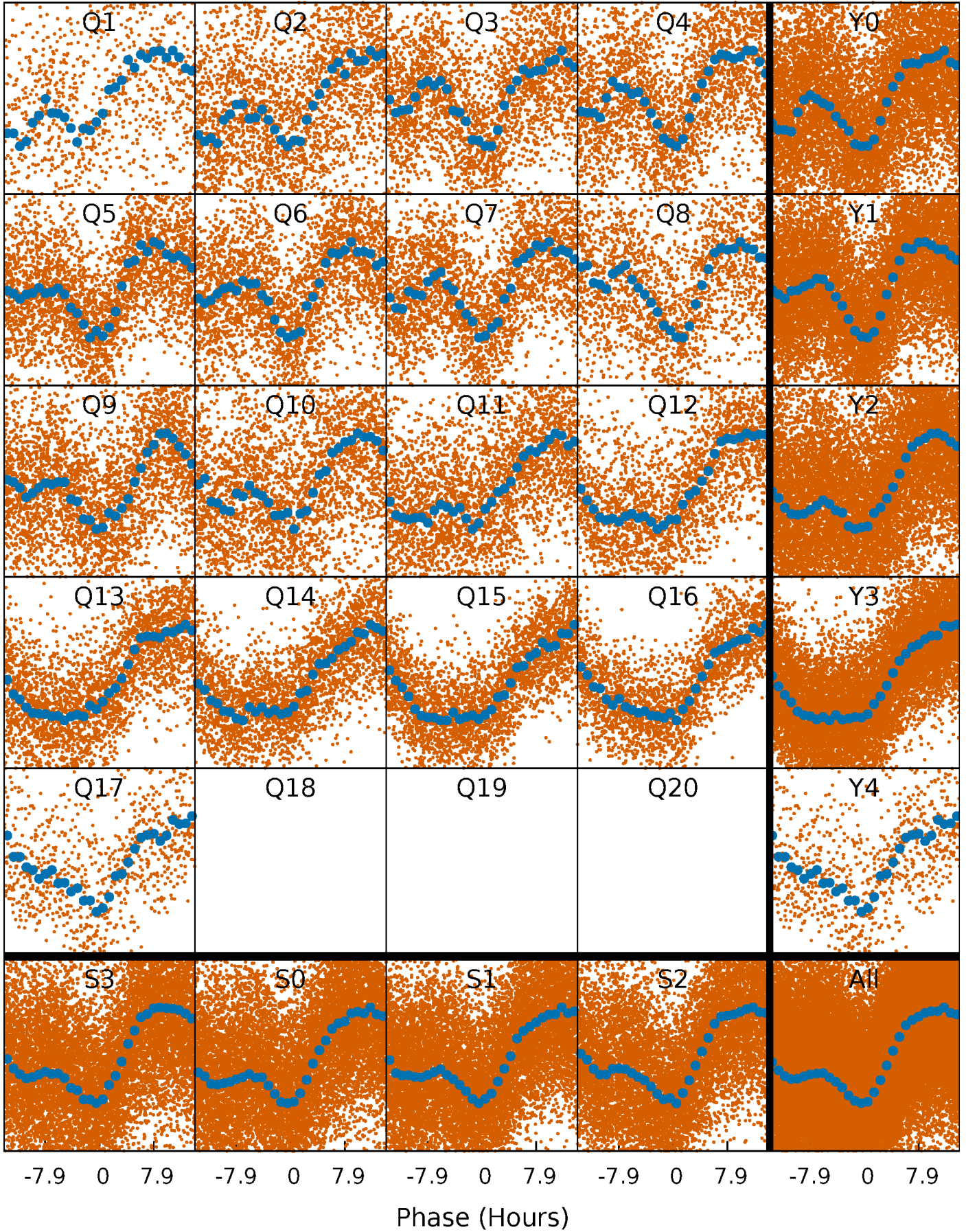


Non-Whitened Vs. Whitened Light Curve



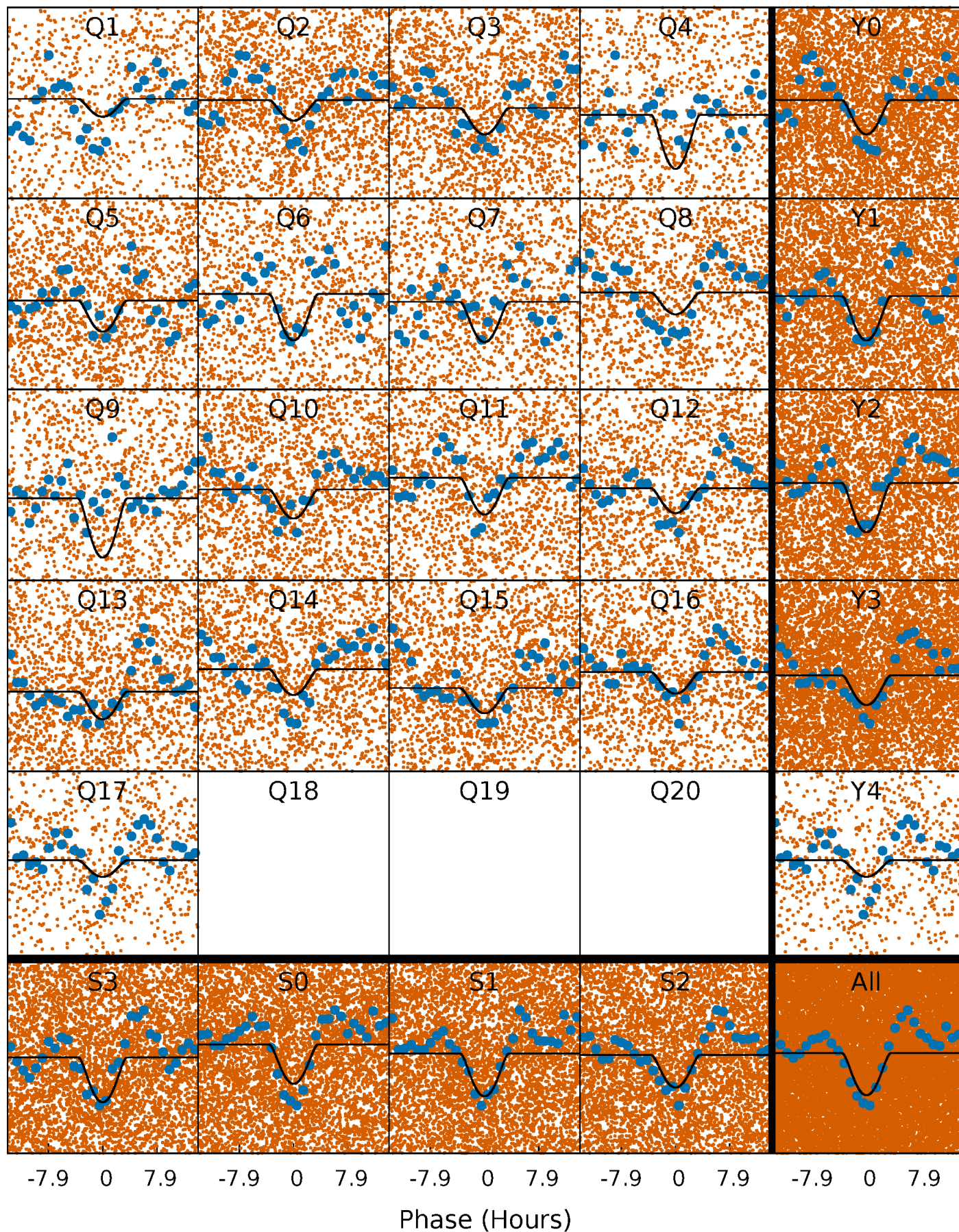
PDC Quarter-Phased Transit Curves

TCE 007838214-01 P= 1.735257 Days $T_0=132.924398$ (BKJD)



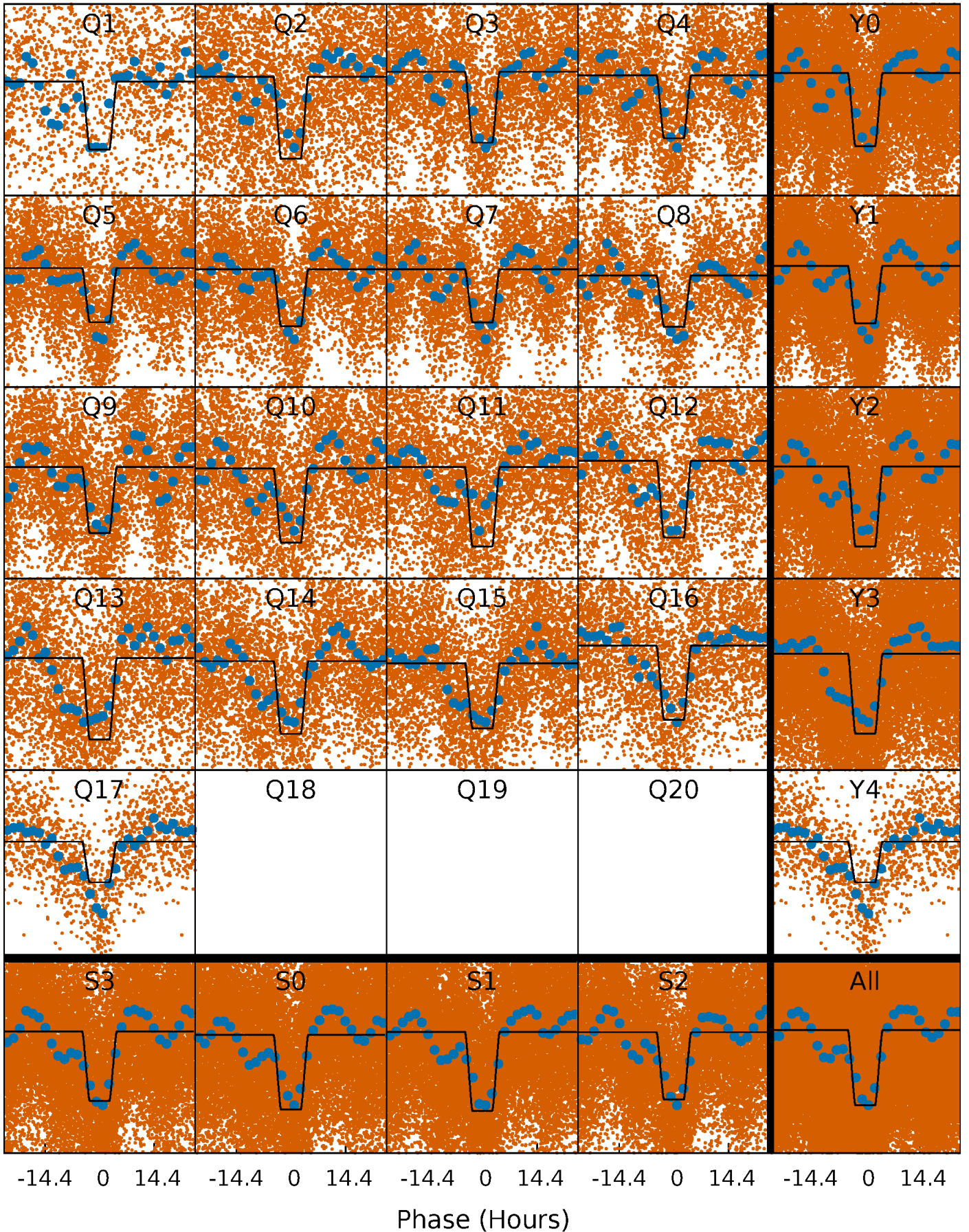
DV Quarter-Phased Transit Curves

TCE 007838214-01 P= 1.735257 Days $T_0=132.924398$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

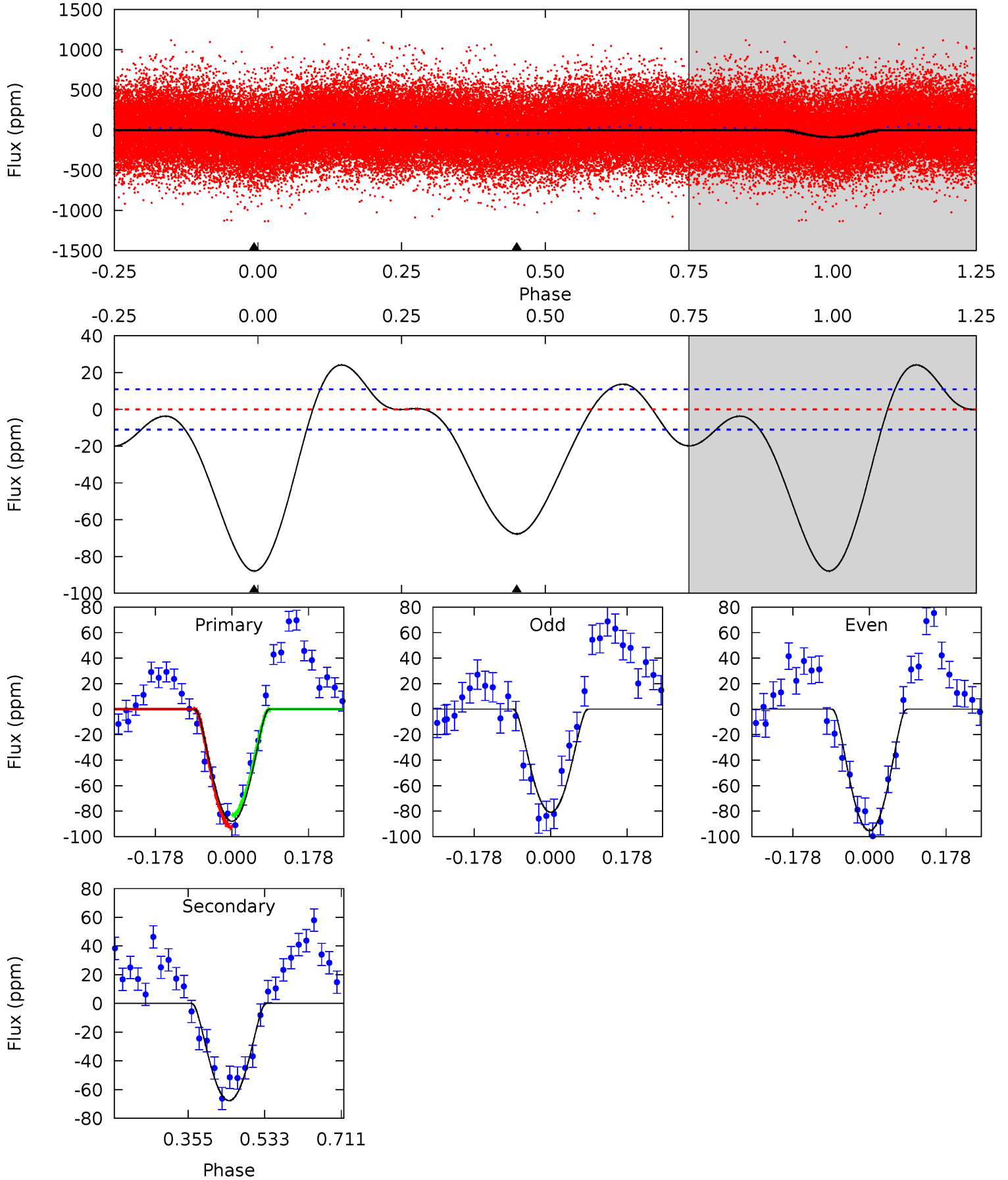
TCE 007838214-01 P= 1.735263 Days $T_0=132.901728$ (BKJD)



DV Model-Shift Uniqueness Test

007838214-01, P = 1.735257 Days, E = 131.189141 Days

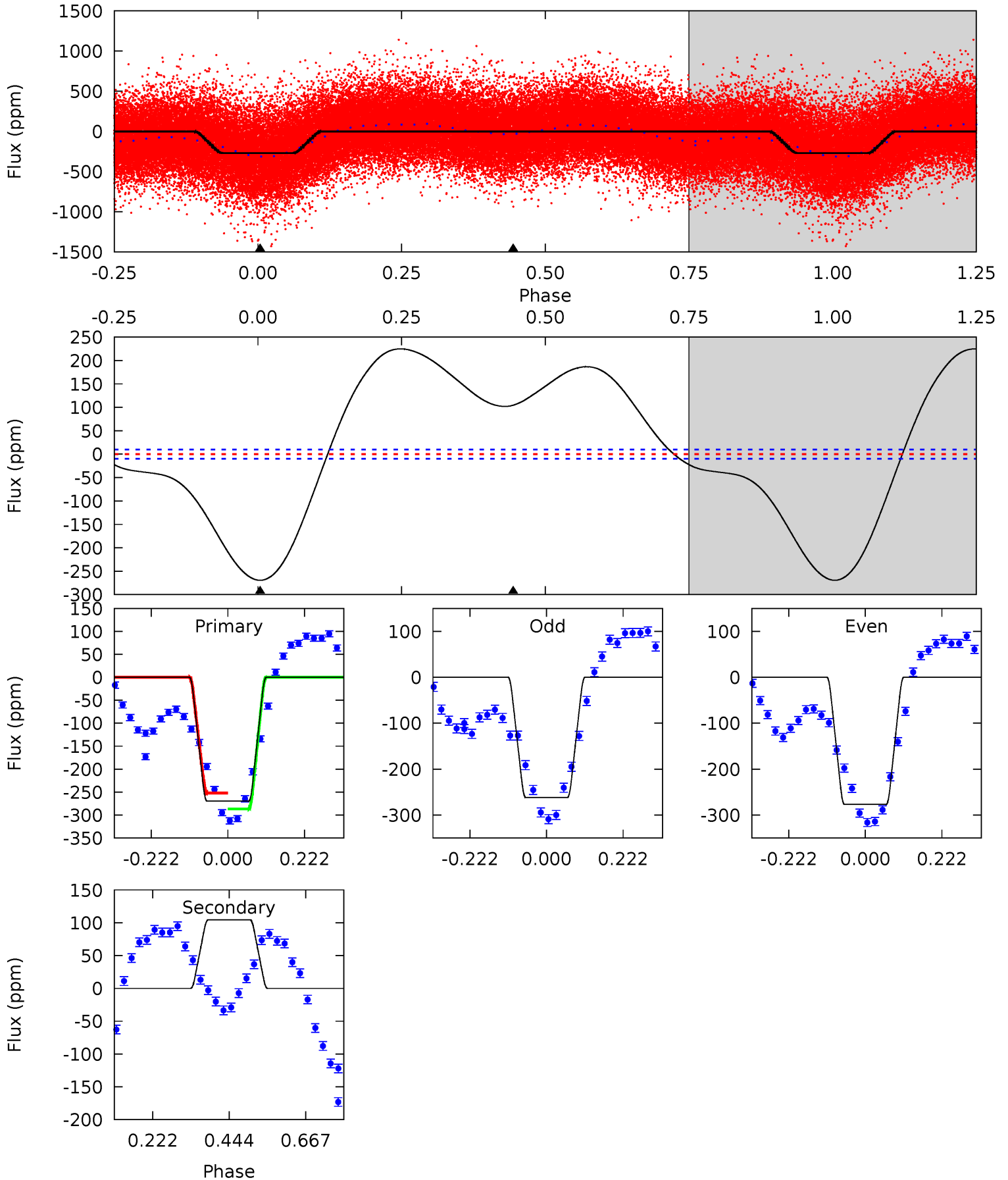
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.6	27.4	0	0	4.44	1.35	4.67	35.6	35.6	27.4	27.4	2.94	1.05	0.22	1.92



Alt Model-Shift Uniqueness Test

007838214-01, P = 1.735263 Days, E = 131.166465 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
119.8	-46.5	0	0	4.39	1.22	16.0	119.8	119.8	-46.5	-46.5	3.35	0.99	0.45	7.76



Stellar Parameters For KIC 007838214

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6528^{+158}_{-218}	$4.329^{+0.101}_{-0.188}$	$-0.240^{+0.250}_{-0.300}$	$1.207^{+0.371}_{-0.171}$	$1.133^{+0.178}_{-0.146}$	$0.909^{+0.428}_{-0.470}$
	+2%/-3%	+2%/-4%	+104%/-125%	+31%/-14%	+16%/-13%	+47%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007838214-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-68 ± 2	$2.24^{+1.71}_{-1.45}$	2584^{+192}_{-136}	4731^{+2954}_{-1010}	$6.611^{+42.812}_{-4.537}$
Alt.	105 ± 2	$2.57^{+1.82}_{-1.49}$	2596^{+185}_{-147}	-4915^{+838}_{-2461}	$-7.465^{+4.901}_{-36.813}$

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

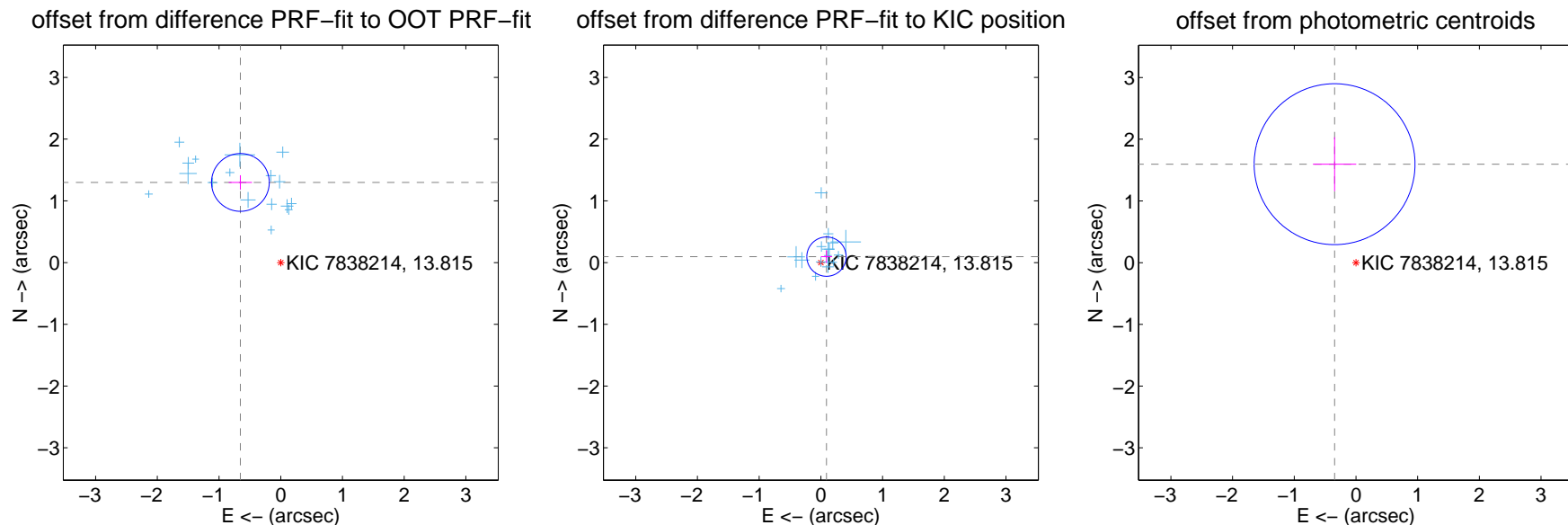
DV Centroid Data

Supplemental centroid analysis for 007838214-01. Kepler magnitude: 13.81. Transit SNR 11.08

There are 17 quarters with good PRF difference image offsets

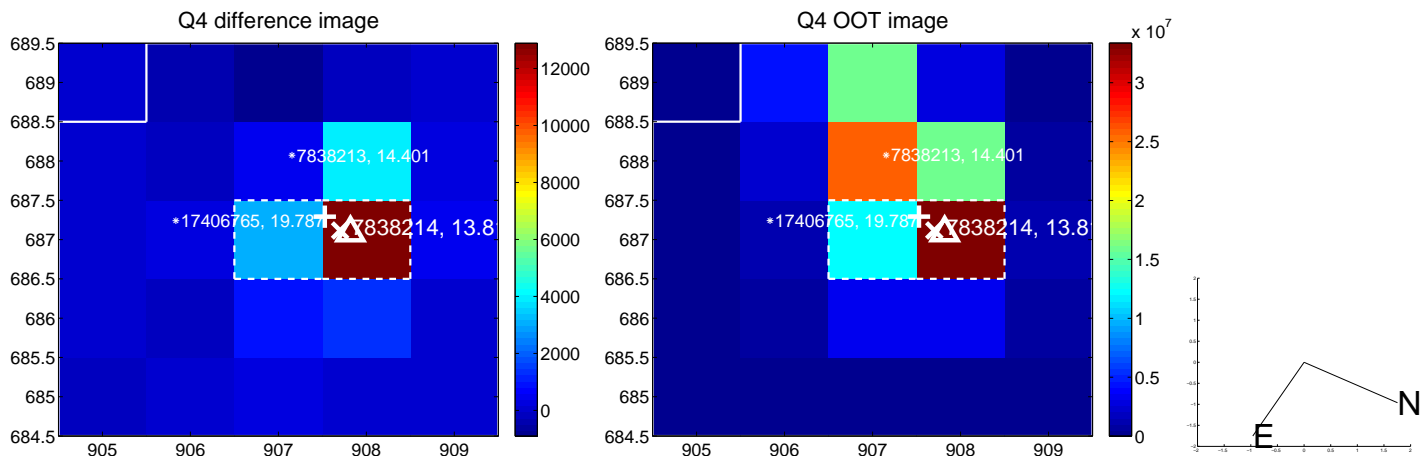
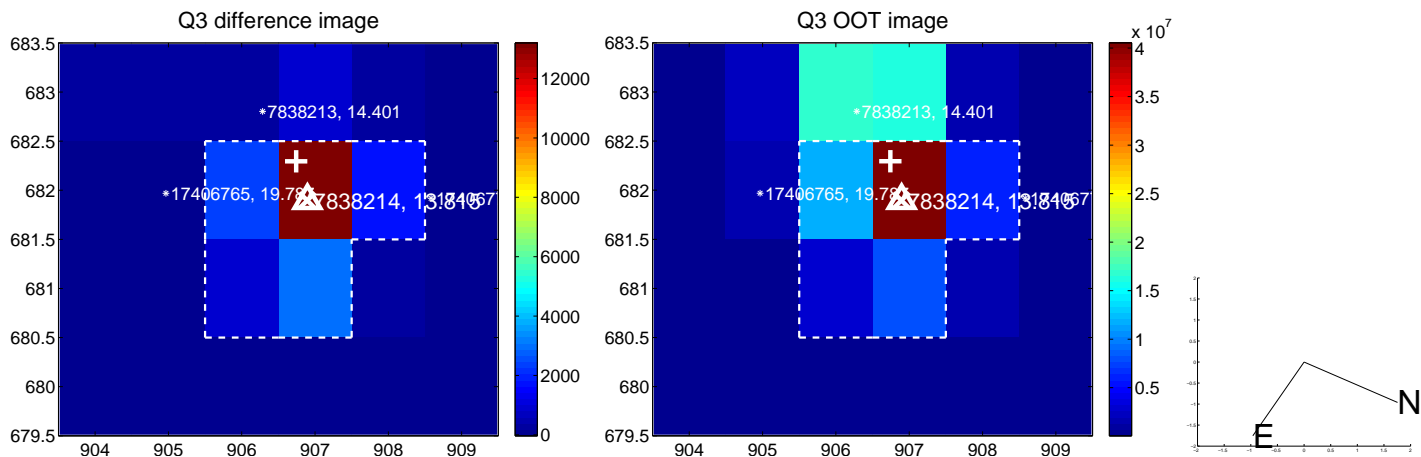
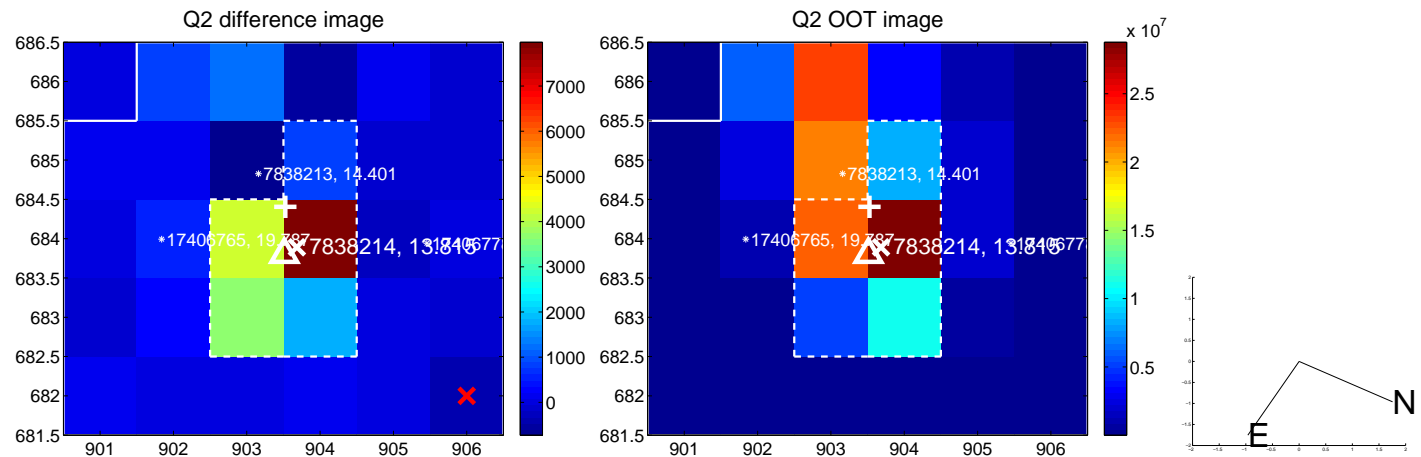
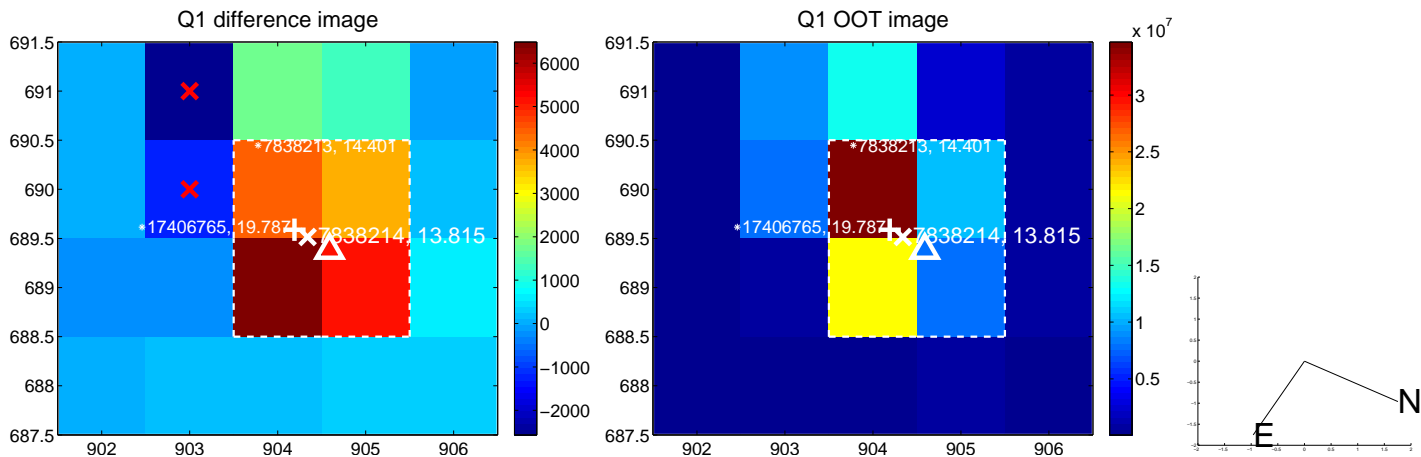
The direct PRF centroid is offset from the target star catalog position by about 0.74 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.454 ± 0.156	9.32	0.654 ± 0.188	1.299 ± 0.116
PRF-fit source offset from KIC position	0.133 ± 0.106	1.25	-0.091 ± 0.091	0.096 ± 0.103
photometric centroid source offset	1.63 ± 0.43	3.76	0.35 ± 0.35	1.60 ± 0.44

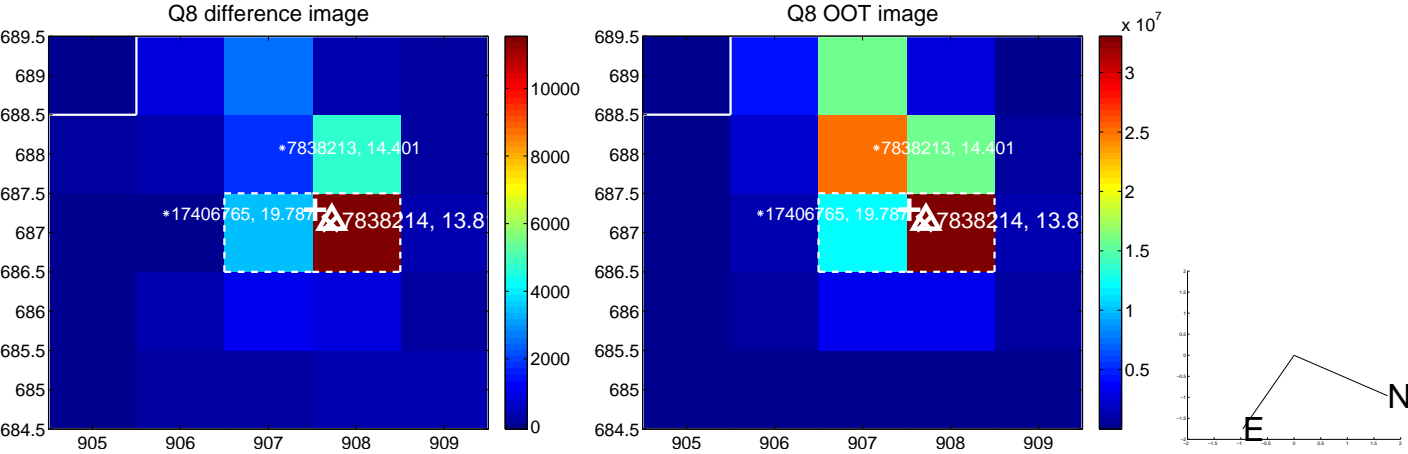
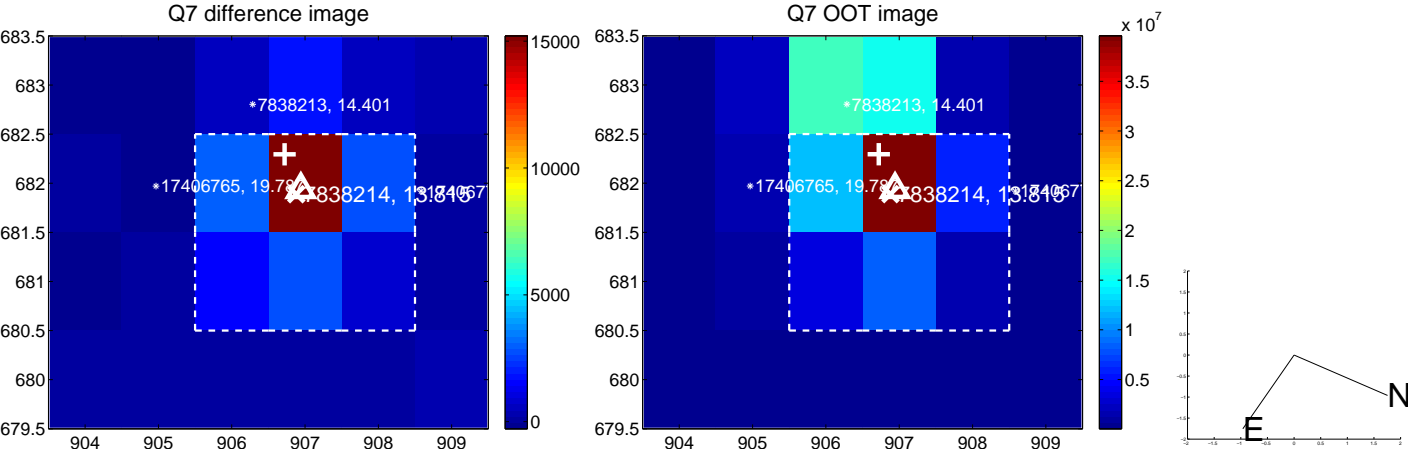
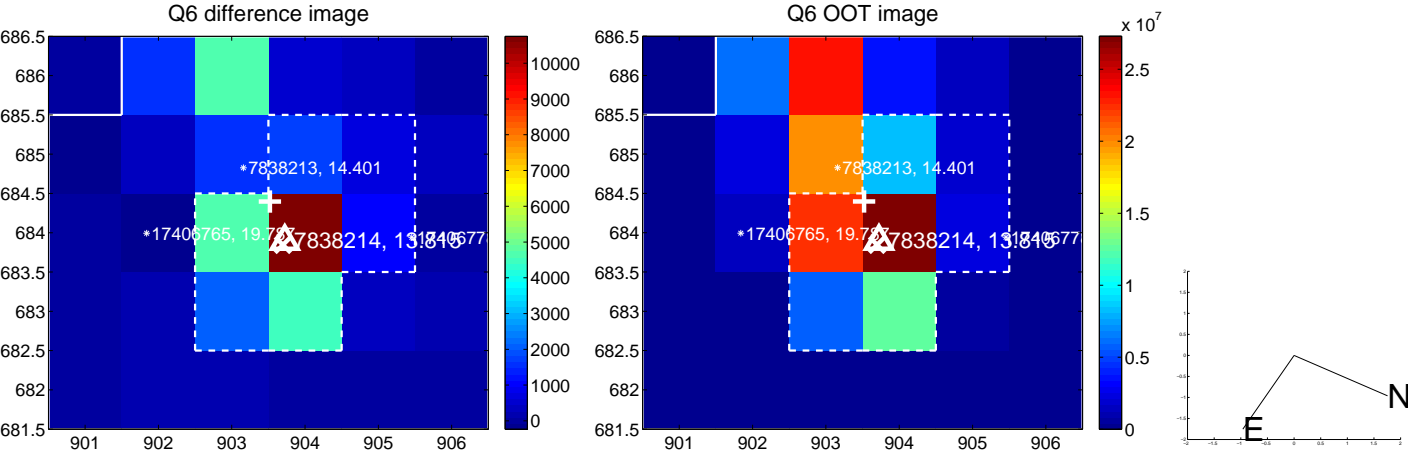
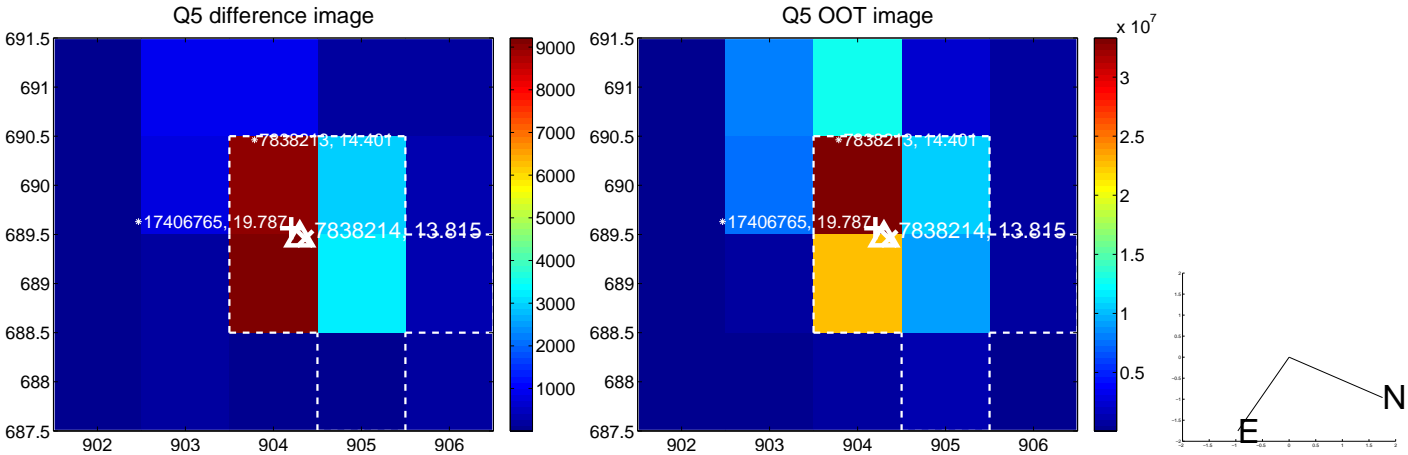


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

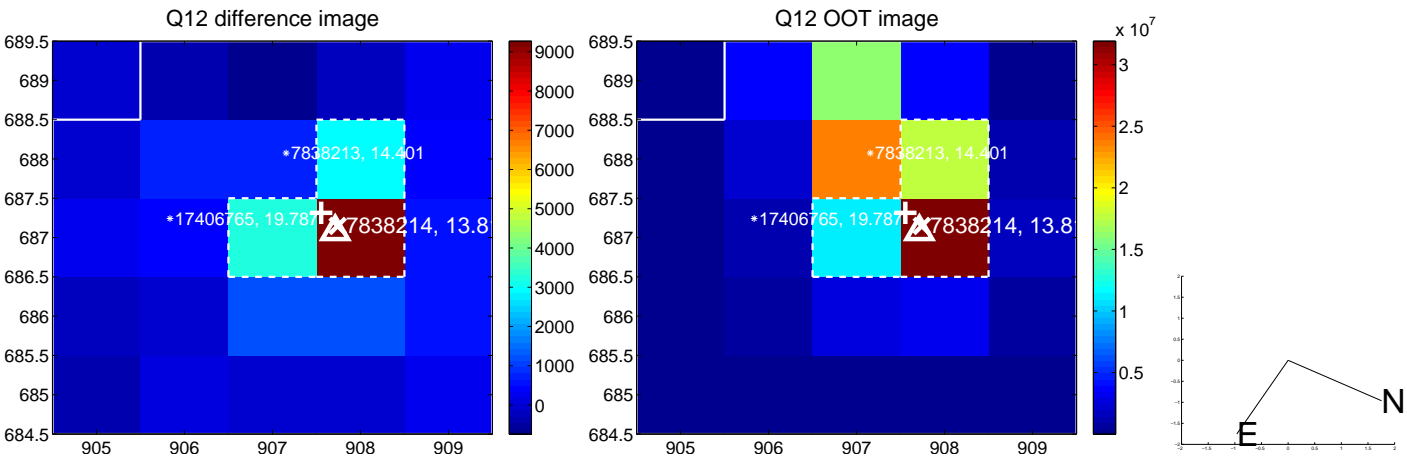
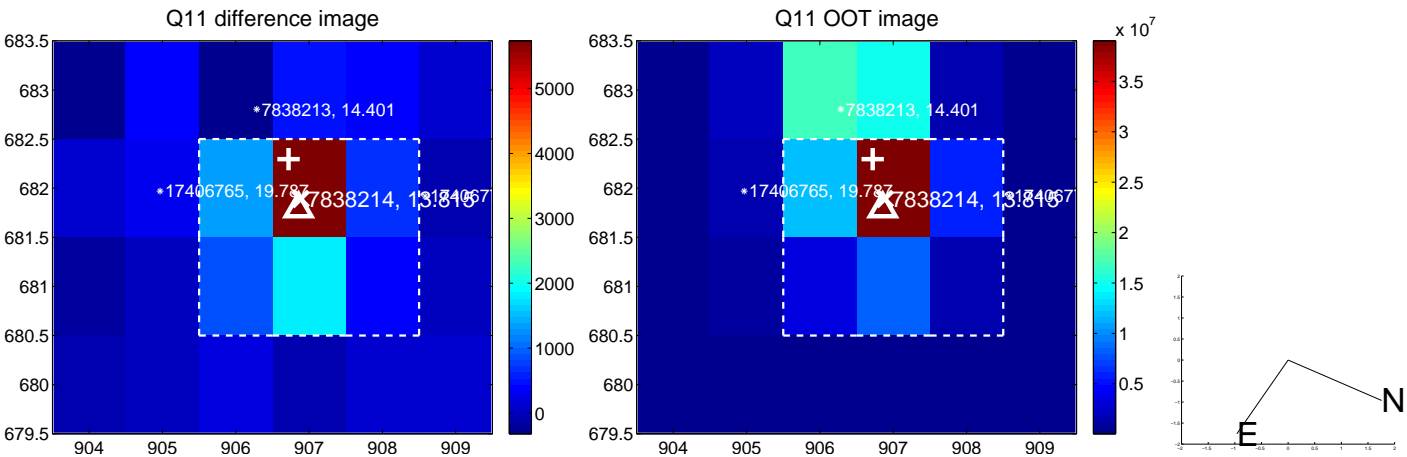
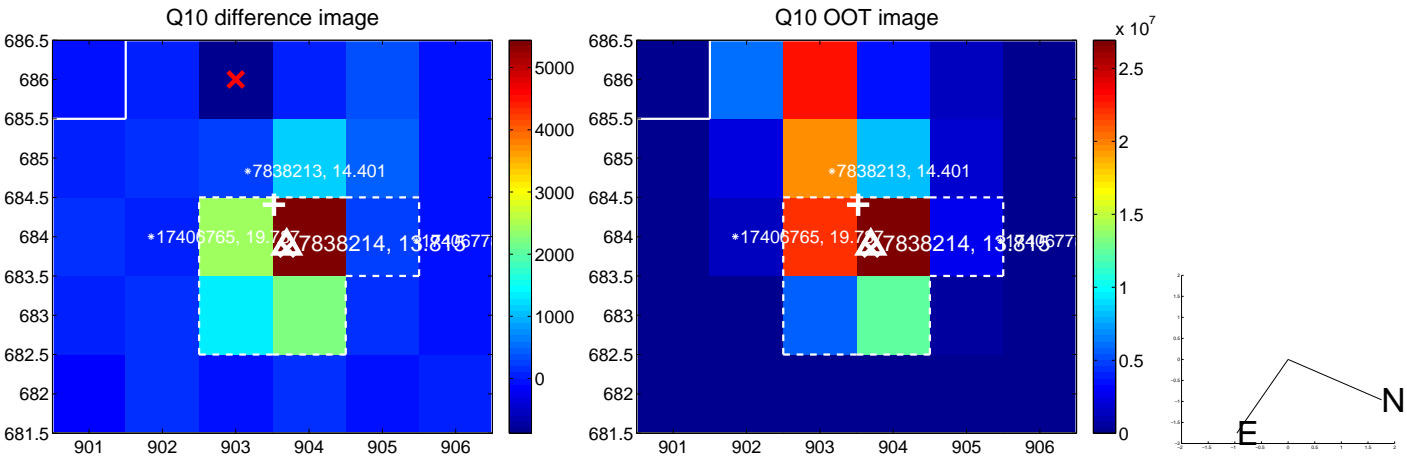
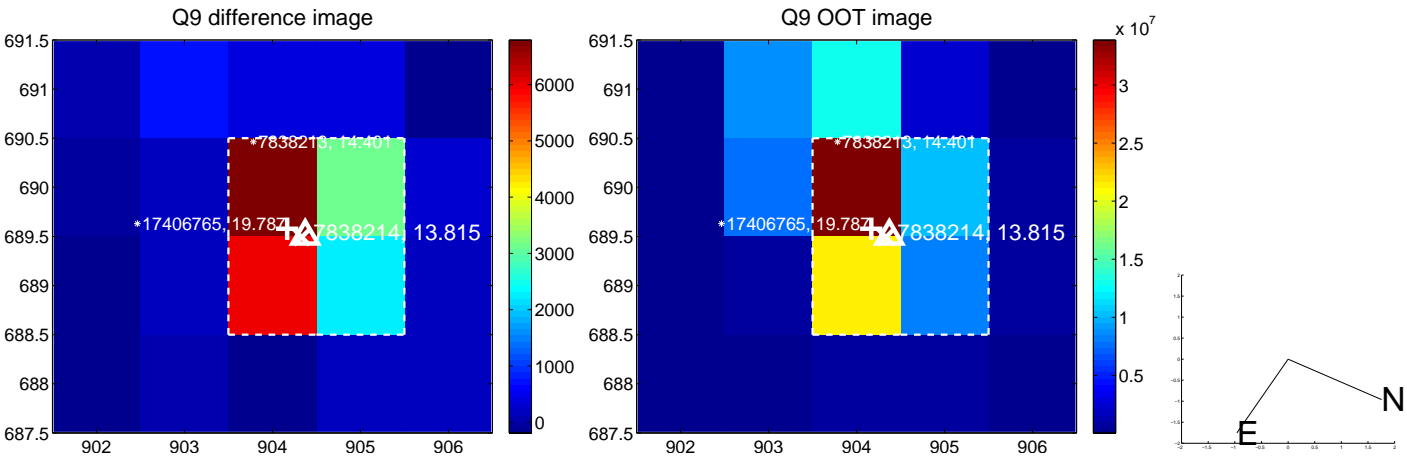
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



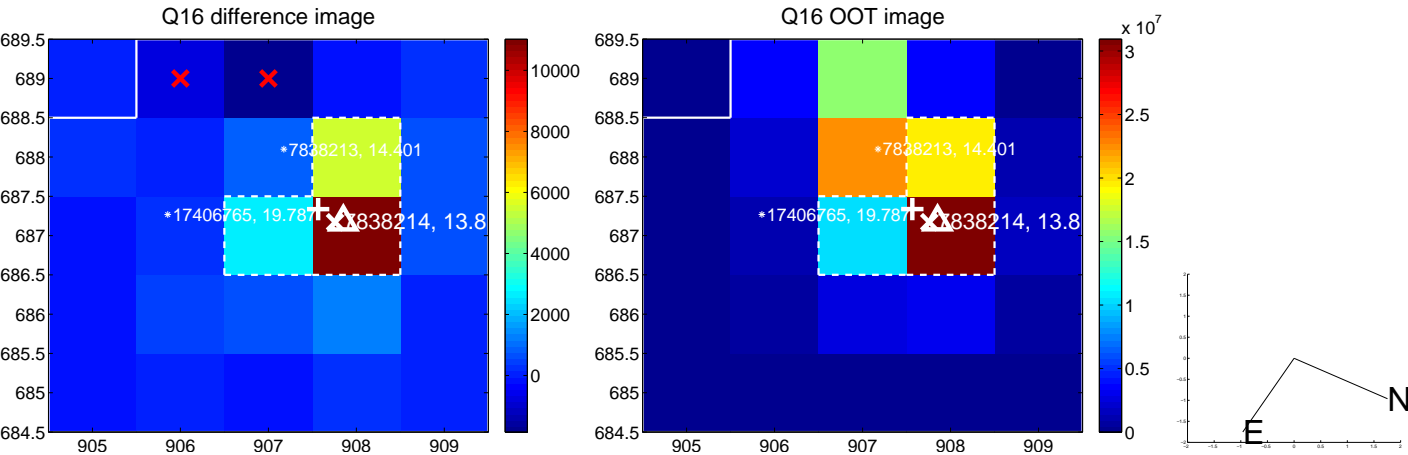
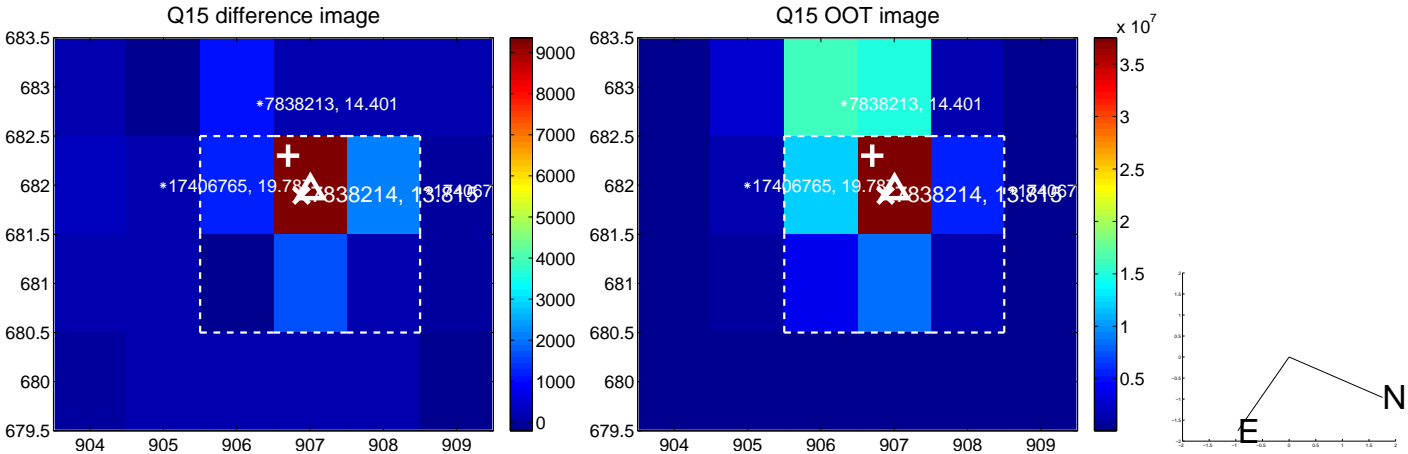
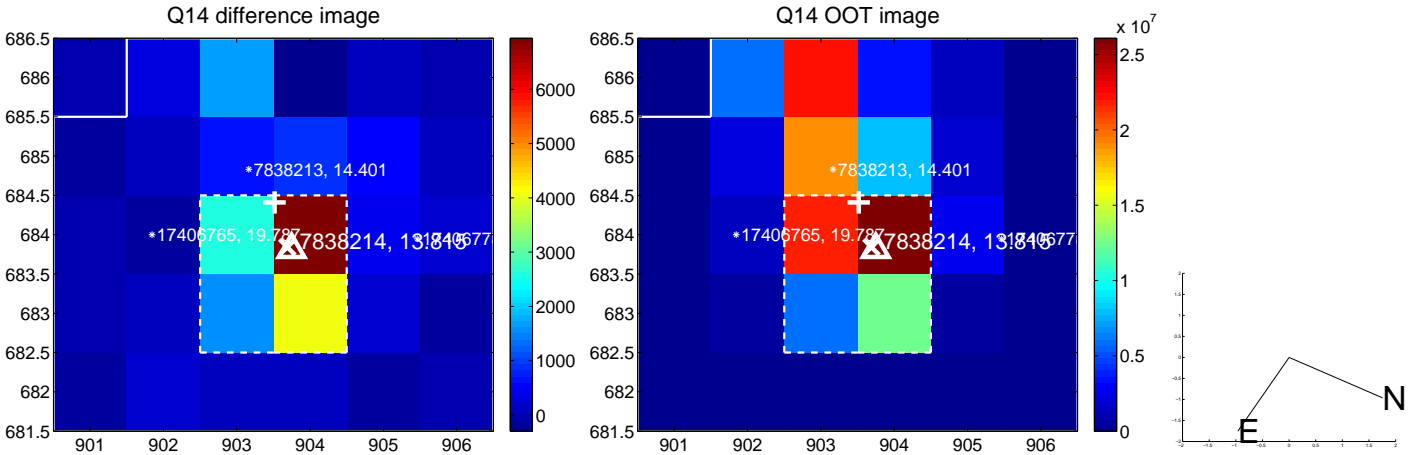
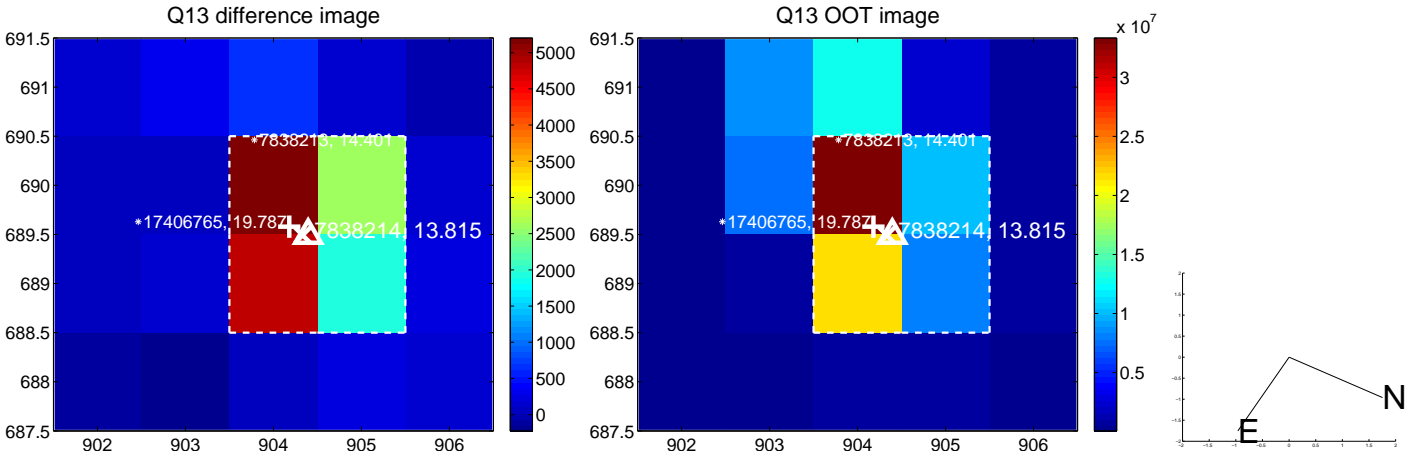
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



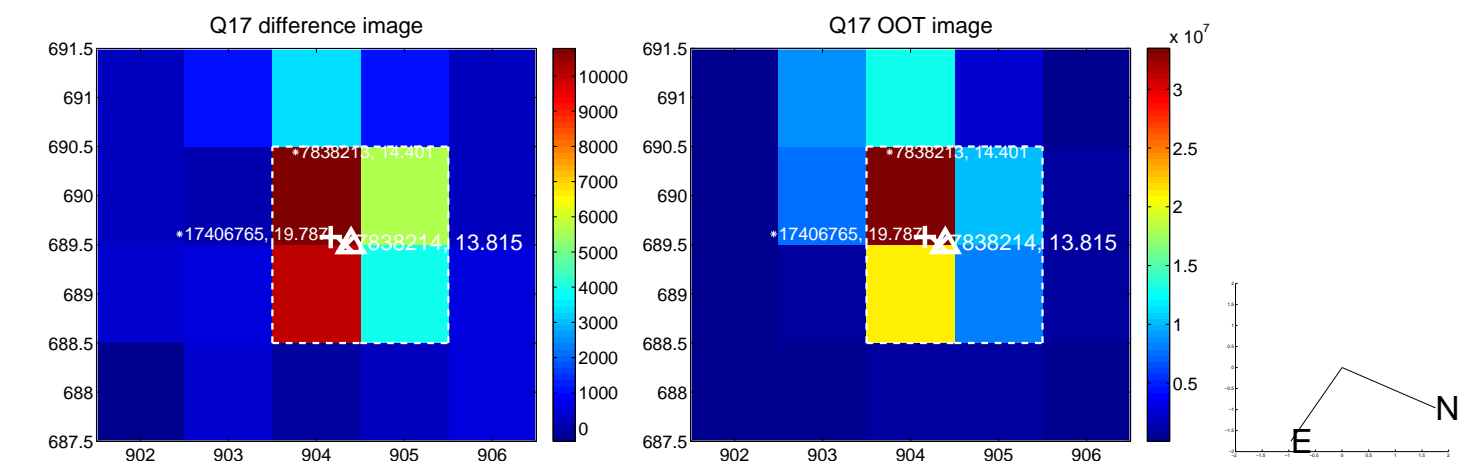
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



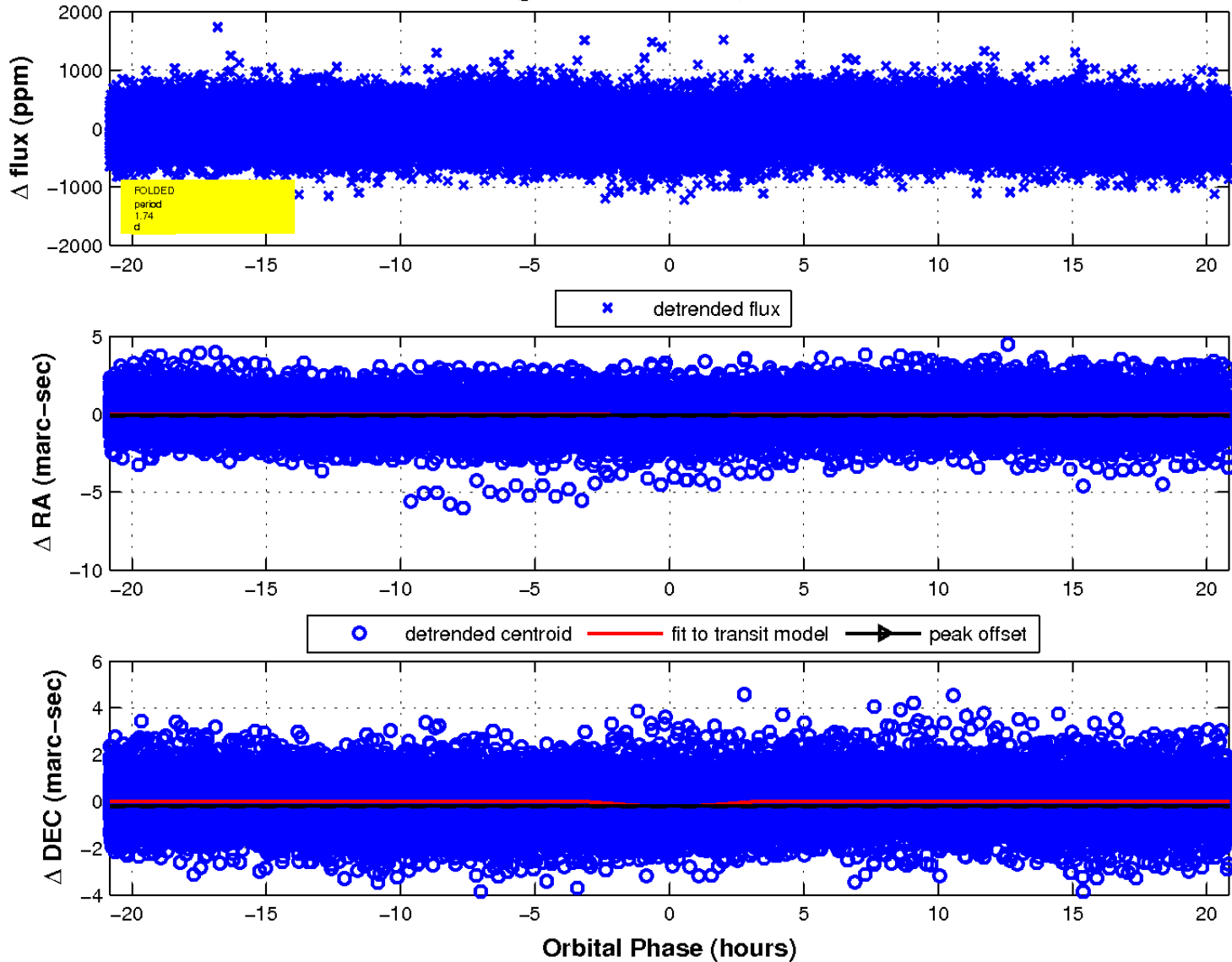
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

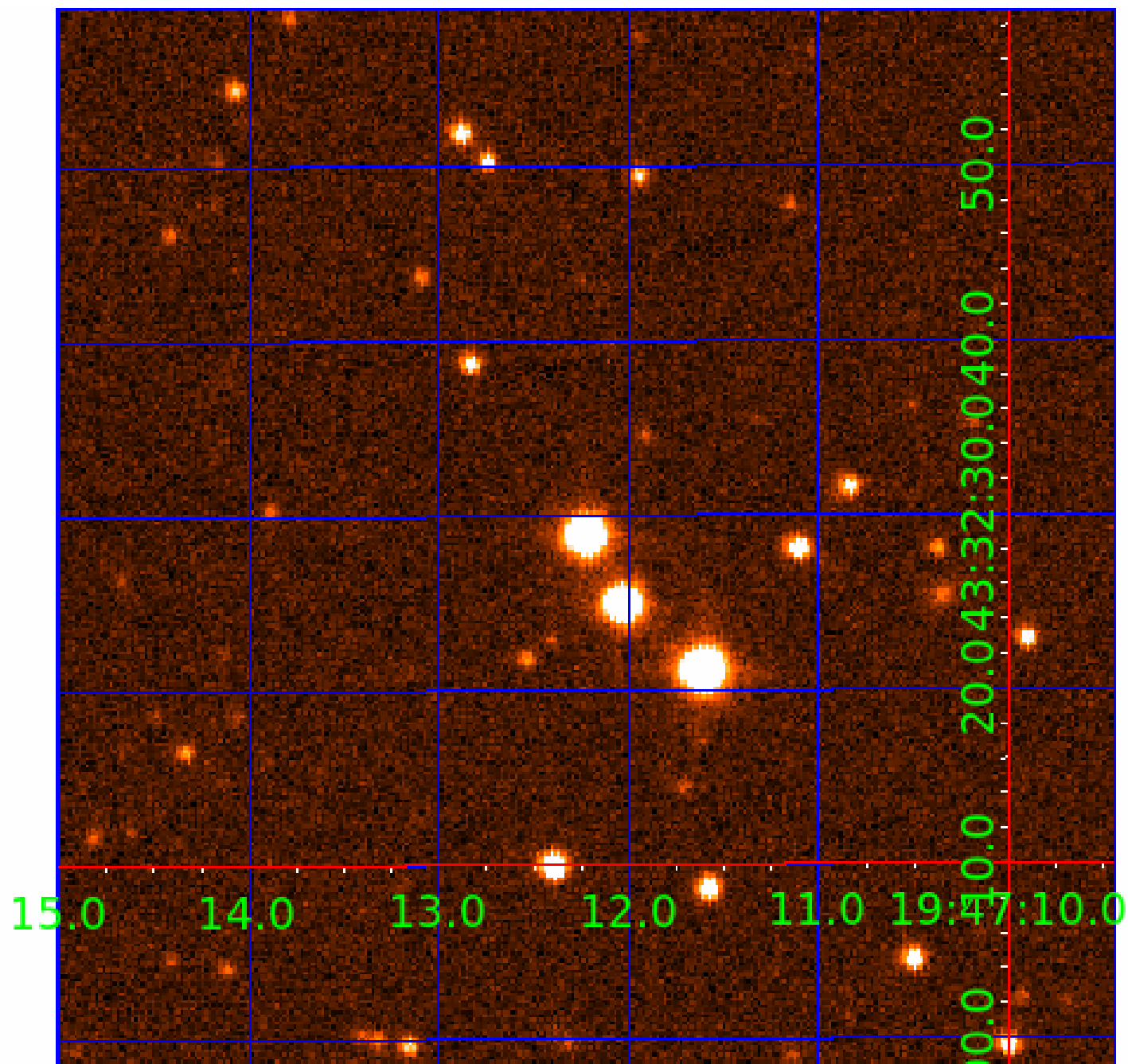


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 007838214

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})
007838214-01	OBS	No	1.735257	132.924398	69.4	6.948	10.8	11.1	1.21	6528	1.78	2728.99
007838214-02	OBS	No	1.734570	132.288202	13.4	0.948	10.5	0.7	1.21	6528	0.46	2730.43

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007838214-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
007838214-02	OBS	FP	0.00	1	0	1	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—HALO_GHOST

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

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

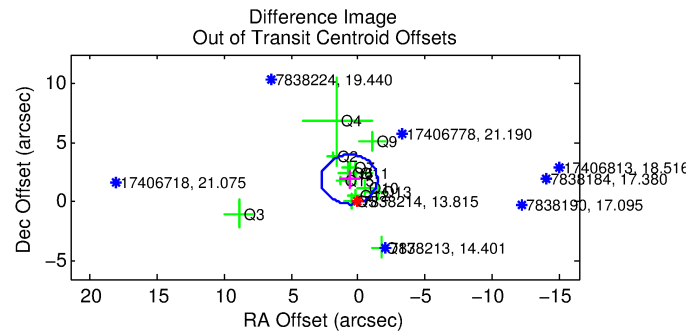
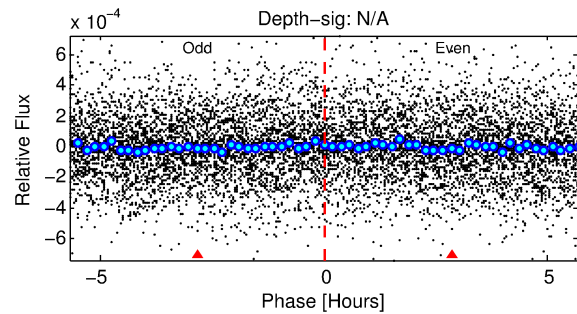
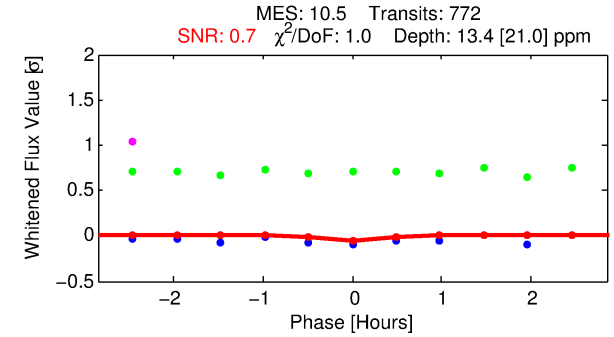
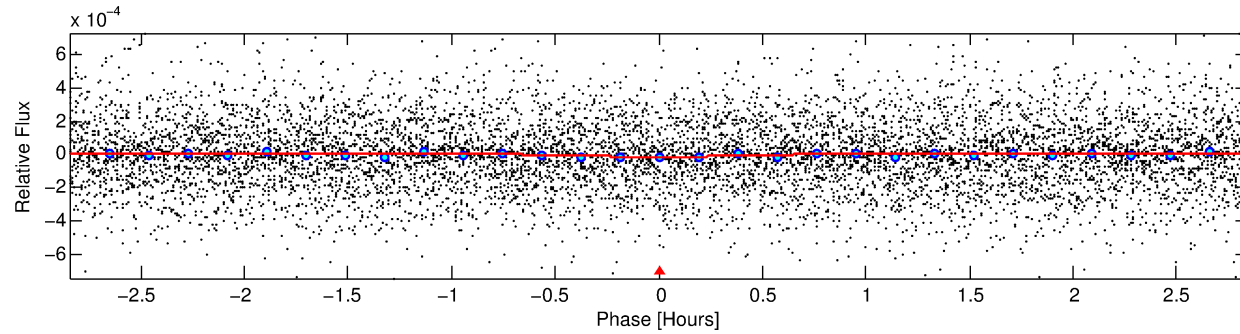
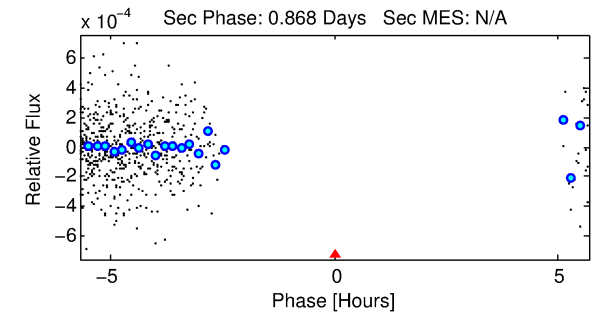
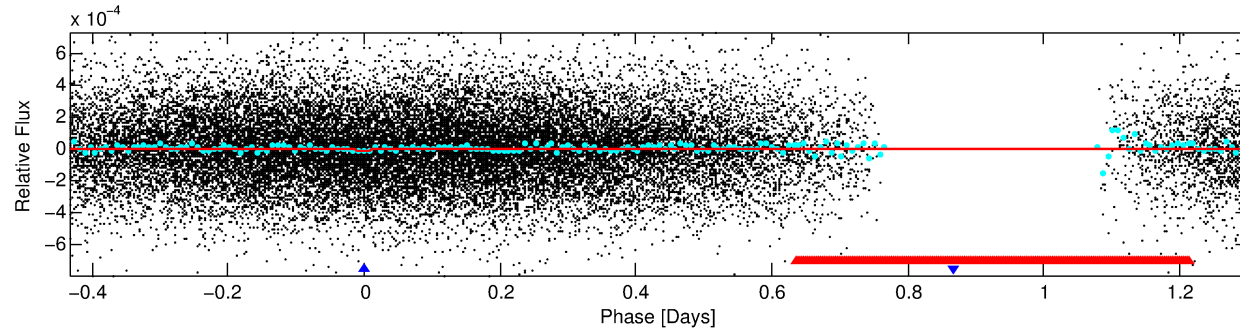
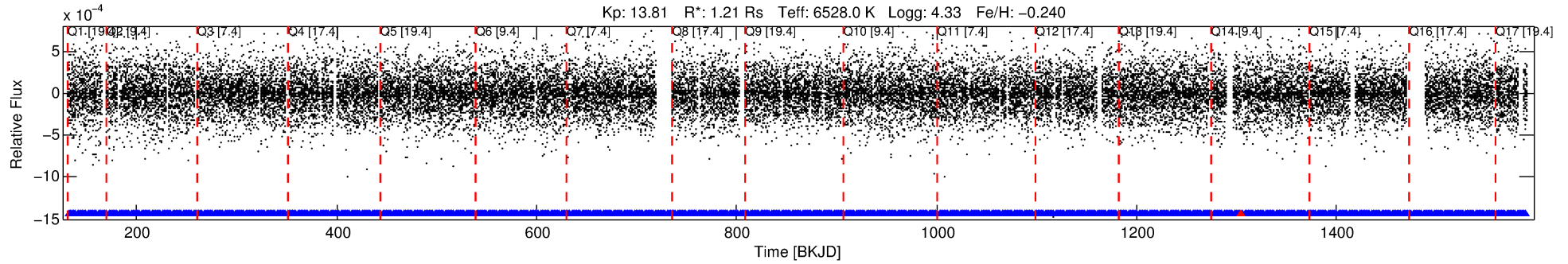
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007838214-02

No Significant Match Found

DV One-Page Summary

KIC: 7838214 Candidate: 2 of 2 Period: 1.735 d



DV Fit Results:

Period = 1.73457 [0.00036] d
Epoch = 132.2882 [0.0351] BKJD
Rp/R* = 0.0035 [0.0131]
a/R* = 12.79 [253.23]
b = 0.41 [40.19]
Seff = 2730.43 [1032.95]
Teq = 1843 [174] K
Rp = 0.46 [1.73] Re
a = 0.0295 [0.0074] AU

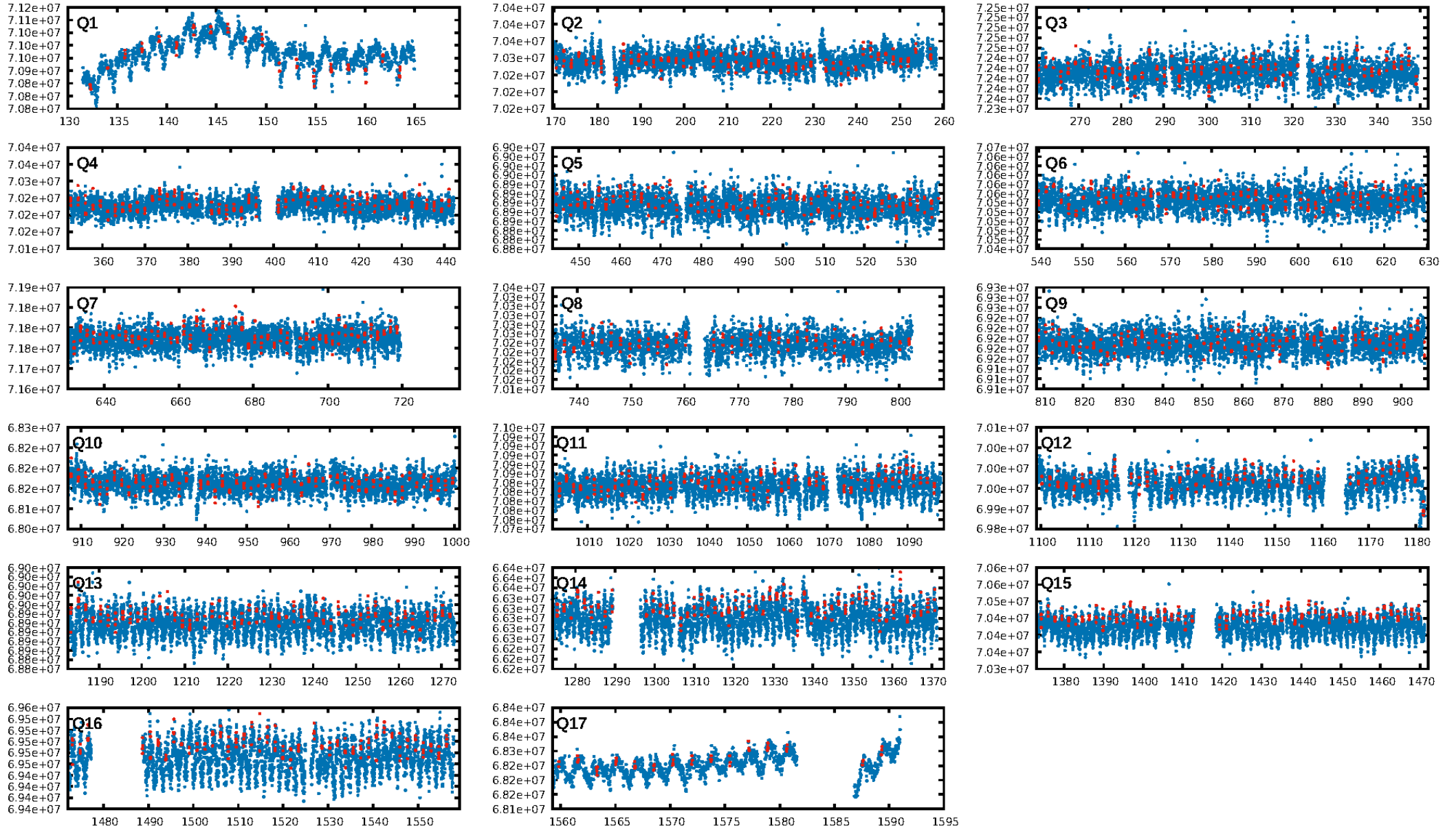
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.2% [0.00σ]
ModelChiSquare2-sig: 85.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.44e-20
RollingBand-fgt: 1.00 [737/738]
GhostDiagnostic-chr: -0.2099
Centroid-sig: 0.1%
Centroid-so: 7.056 arcsec [2.24σ]
OotOffset-rm: 2.030 arcsec [2.91σ]
KicOffset-rm: 0.717 arcsec [0.98σ]
OotOffset-st: 3/4/2/4 [13]
KicOffset-st: 3/4/2/4 [13]
DiffImageQuality-fgm: 0.31 [4/13]
DiffImageOverlap-fno: 1.00 [17/17]

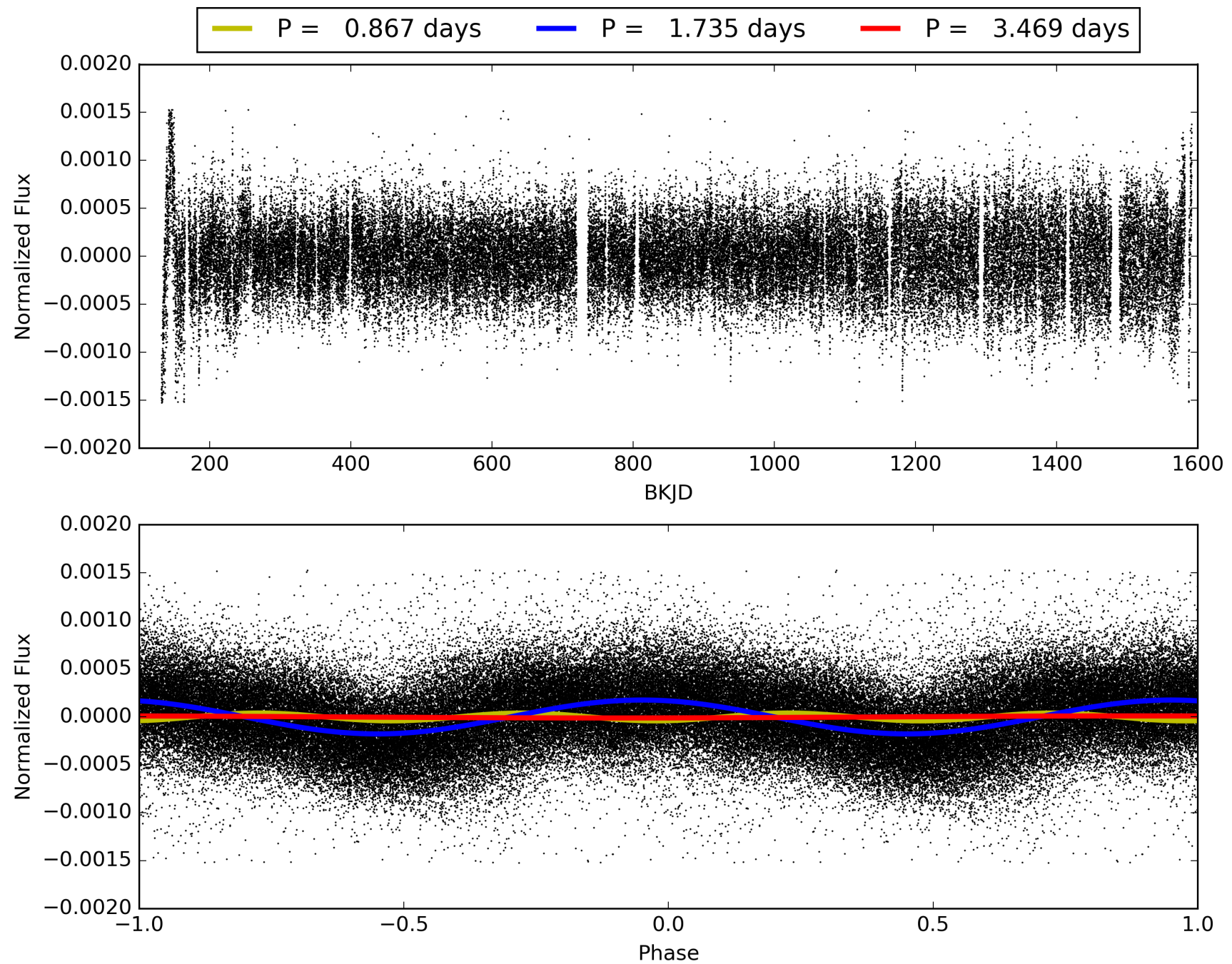
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:00:04 Z

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

TCE 007838214-02, PDC Light Curves

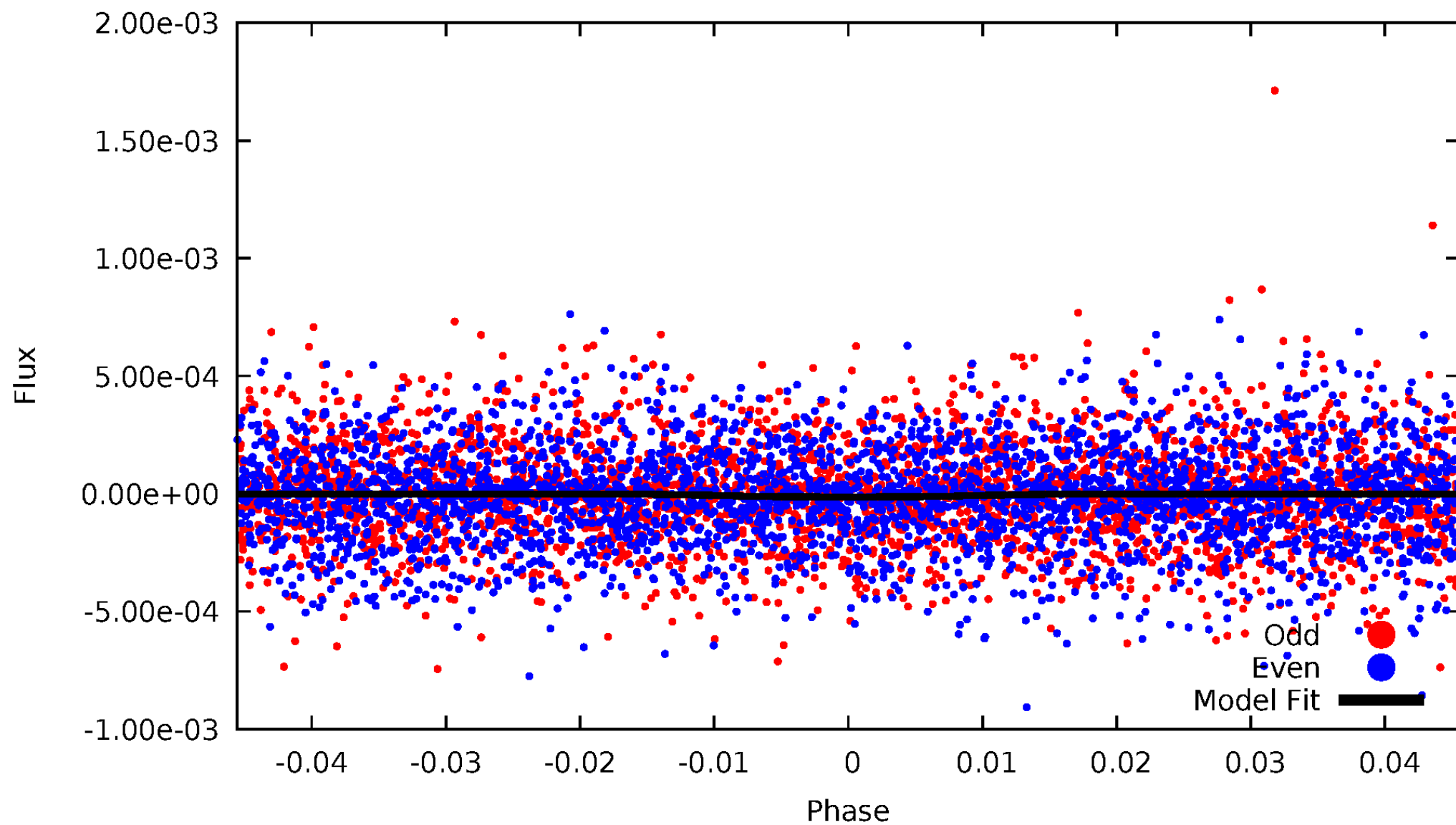


TCE 007838214-02



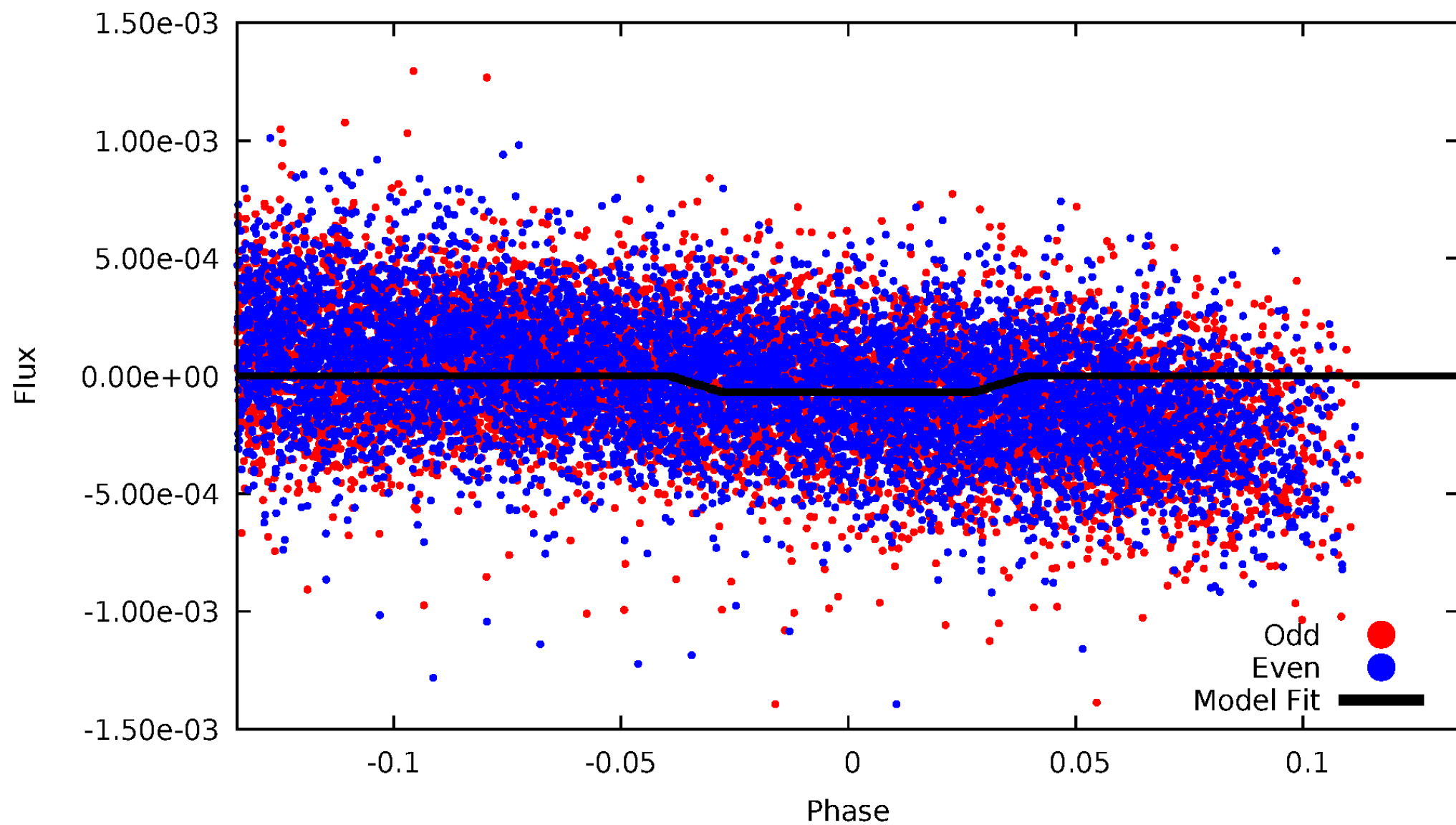
DV Odd/Even

TCE 007838214-02



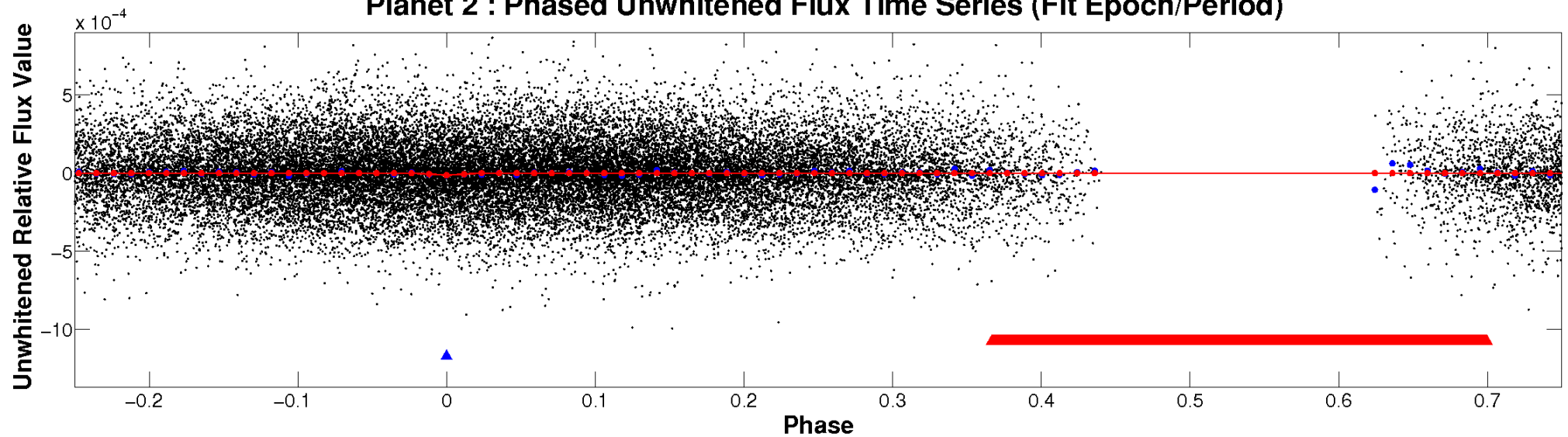
ALT Odd/Even

TCE 007838214-02

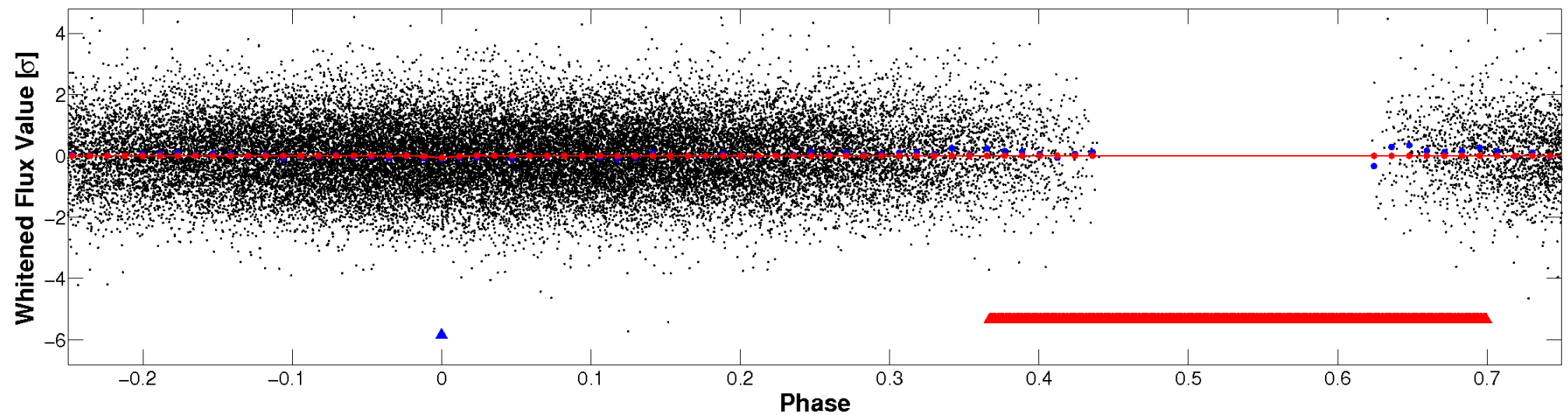


Non-Whitened Vs. Whitened Light Curve

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

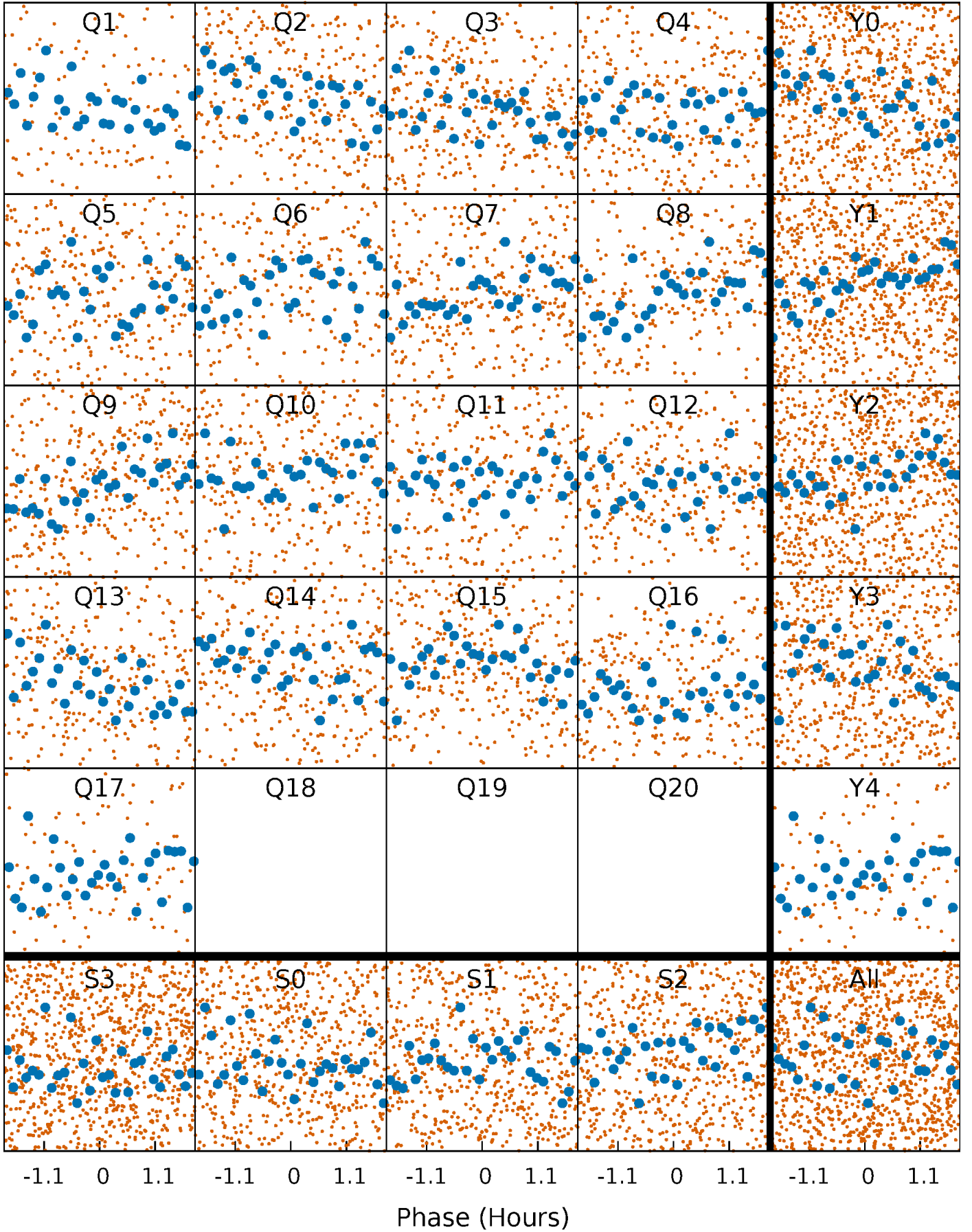


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



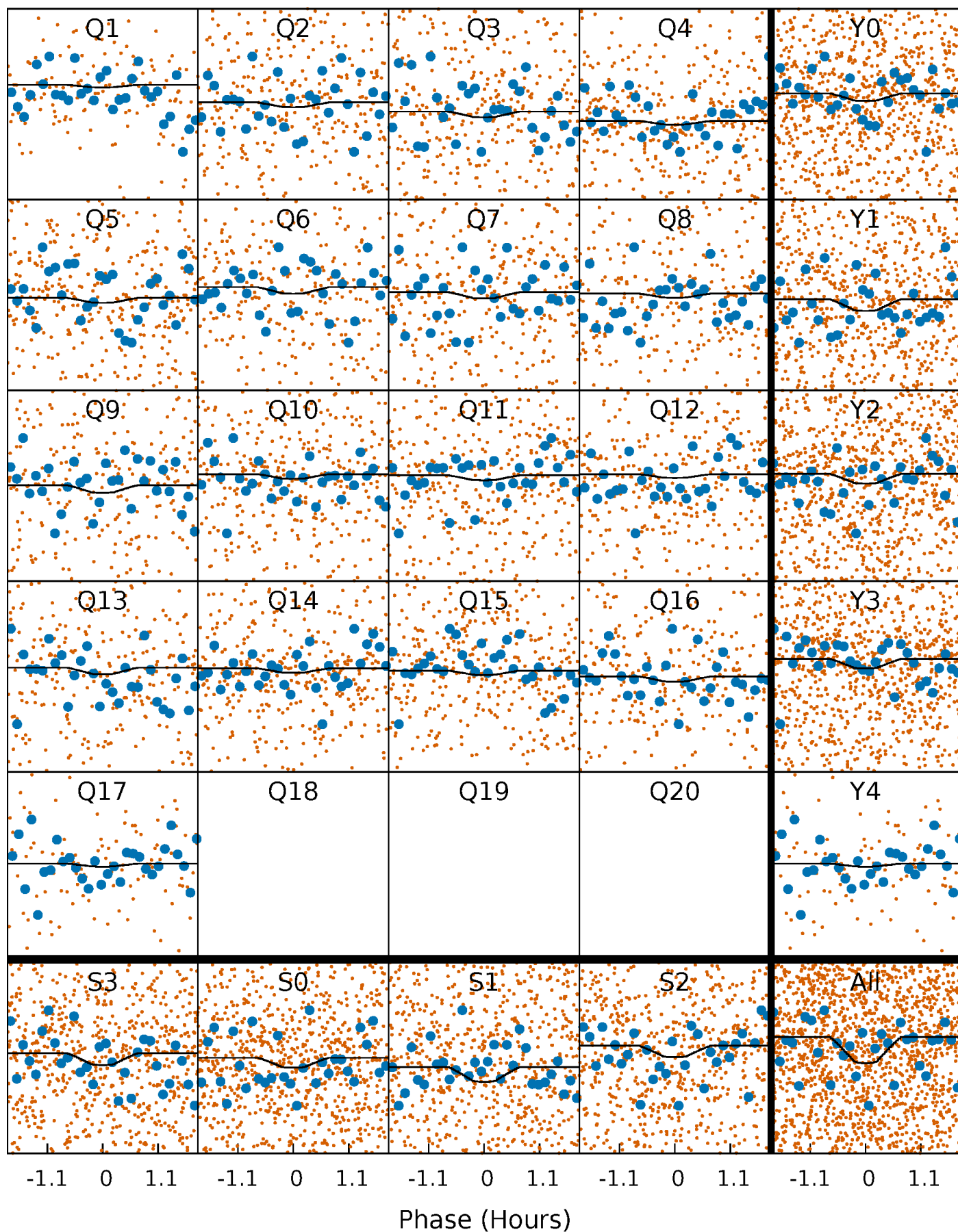
PDC Quarter-Phased Transit Curves

TCE 007838214-02 P= 1.734570 Days $T_0=132.288202$ (BKJD)



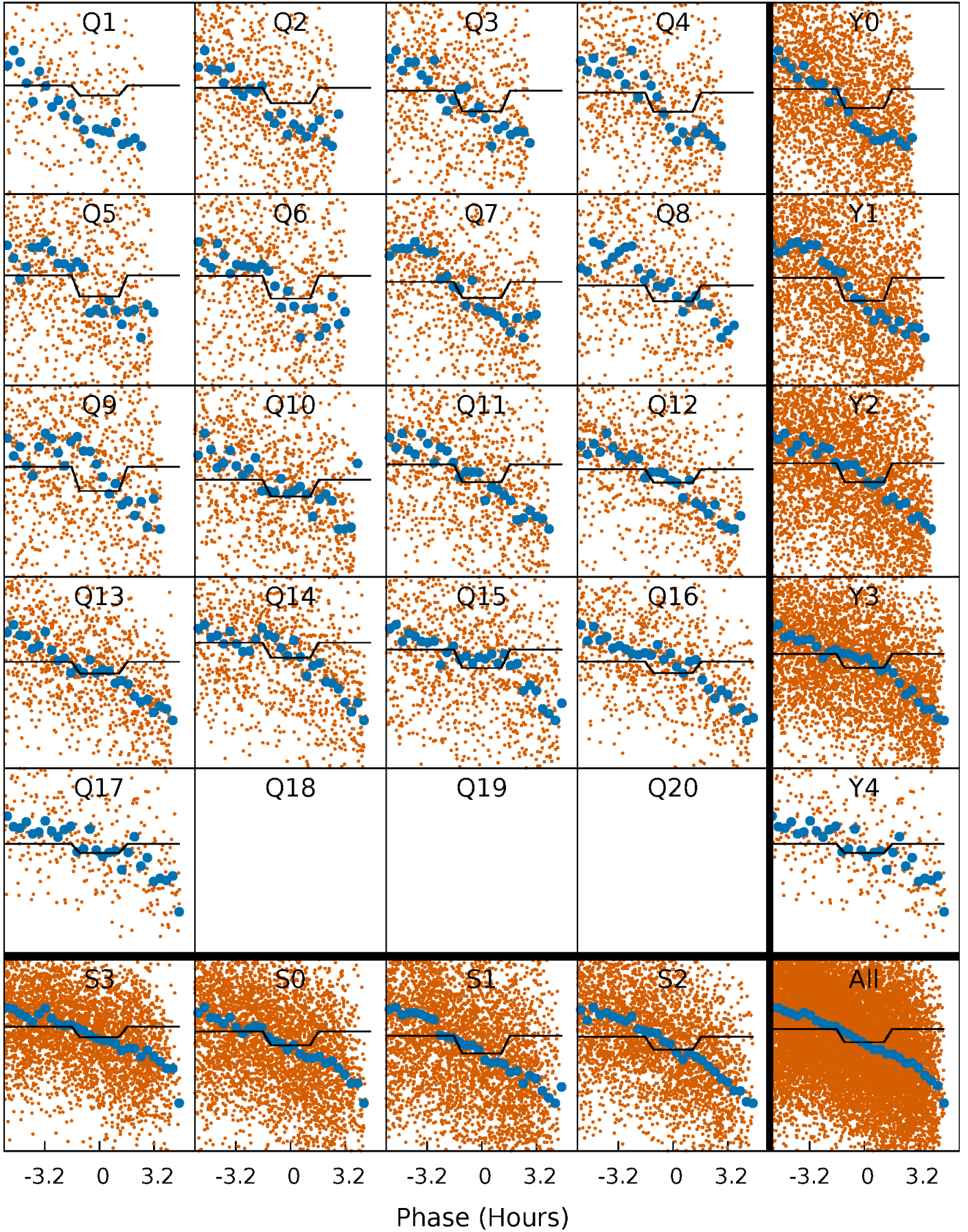
DV Quarter-Phased Transit Curves

TCE 007838214-02 P= 1.734570 Days $T_0=132.288202$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

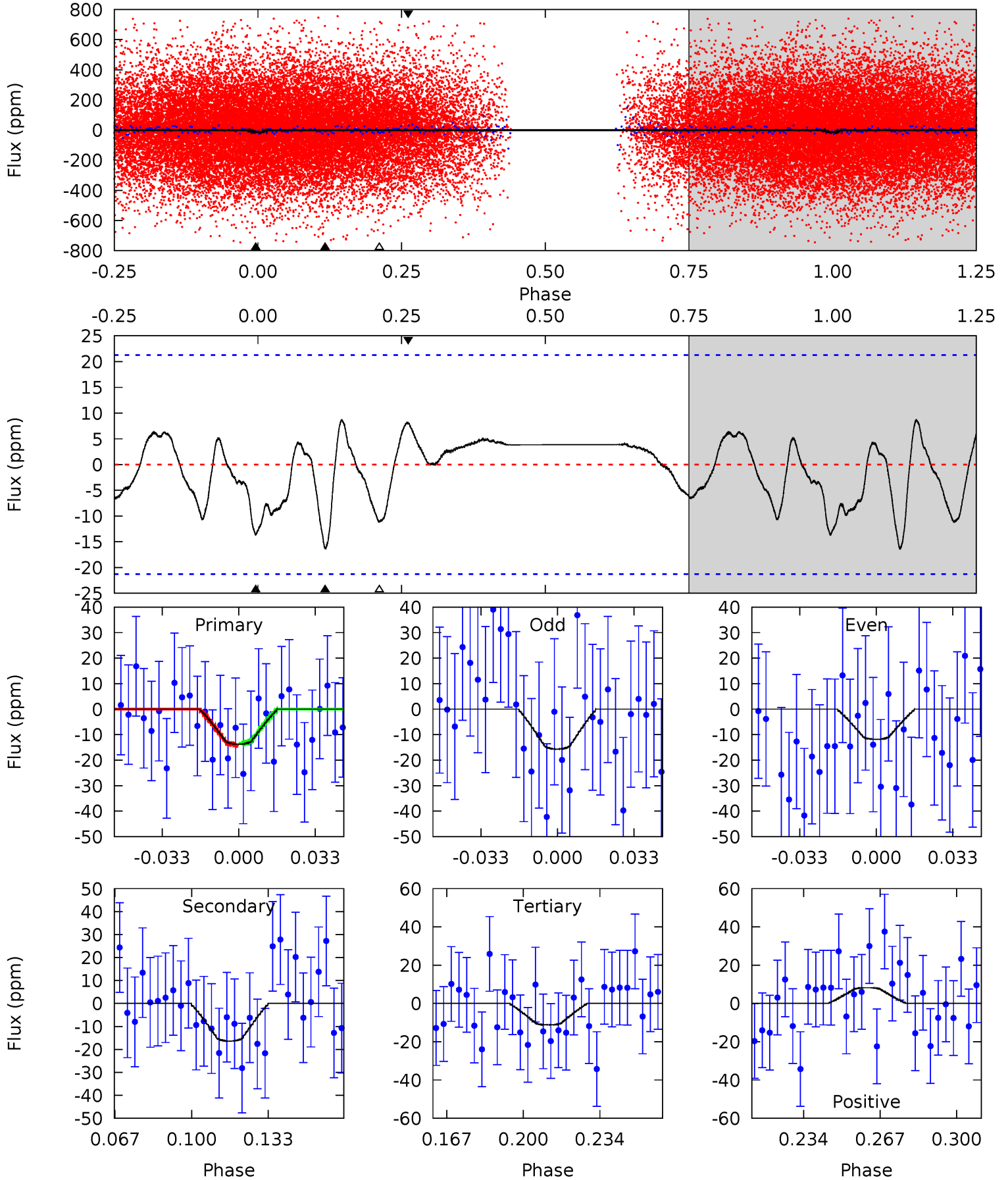
TCE 007838214-02 P= 1.735144 Days $T_0=132.376812$ (BKJD)



DV Model-Shift Uniqueness Test

007838214-02, P = 1.734570 Days, E = 130.553632 Days

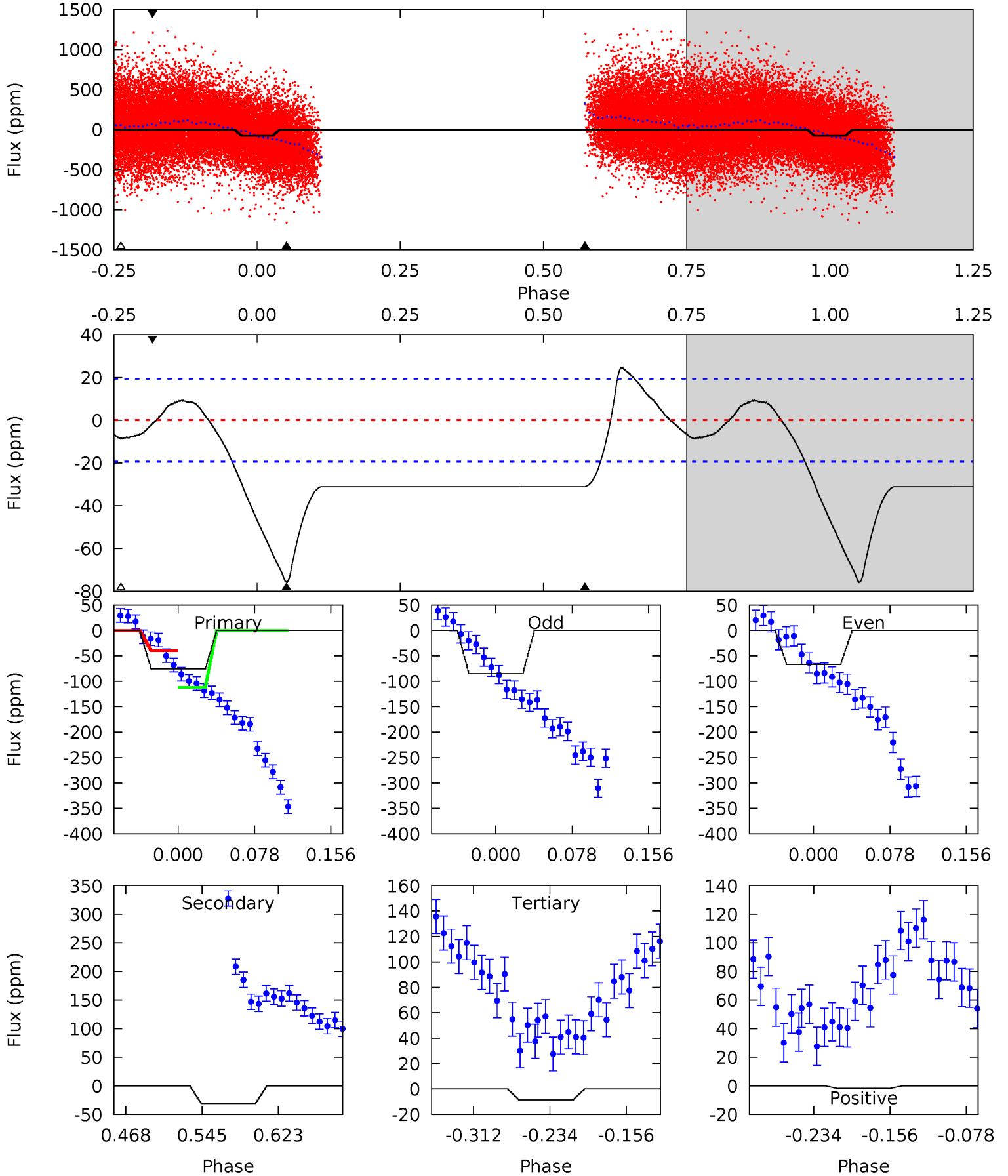
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.09	3.69	2.53	1.85	4.79	2.13	1.14	0.57	1.24	1.17	1.84	0.43	0.91	0.35	0.06



Alt Model-Shift Uniqueness Test

007838214-02, P = 1.735144 Days, E = 130.641668 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.1	7.40	2.02	-0.40	4.62	1.76	2.44	16.0	18.5	5.39	7.80	2.17	1.16	0.25	8.89



Stellar Parameters For KIC 007838214

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6528^{+158}_{-218}	$4.329^{+0.101}_{-0.188}$	$-0.240^{+0.250}_{-0.300}$	$1.207^{+0.371}_{-0.171}$	$1.133^{+0.178}_{-0.146}$	$0.909^{+0.428}_{-0.470}$
	+2%/-3%	+2%/-4%	+104%/-125%	+31%/-14%	+16%/-13%	+47%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007838214-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-16 ± 4	$1.32^{+1.47}_{-0.93}$	2589^{+170}_{-131}	4323^{+3632}_{-1126}	$4.518^{+48.660}_{-3.524}$
Alt.	-31 ± 4	$1.69^{+1.53}_{-1.05}$	2599^{+192}_{-139}	4460^{+2657}_{-968}	$5.096^{+30.535}_{-3.647}$

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

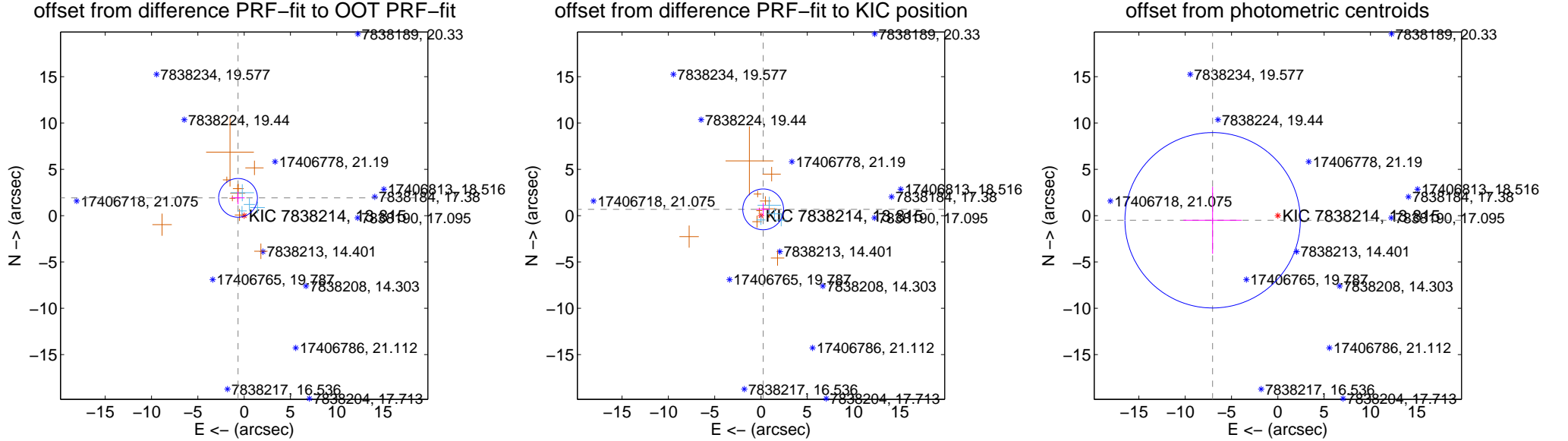
DV Centroid Data

Supplemental centroid analysis for 007838214-02. Kepler magnitude: 13.81. Transit SNR 0.70

There are 4 quarters with good PRF difference image offsets

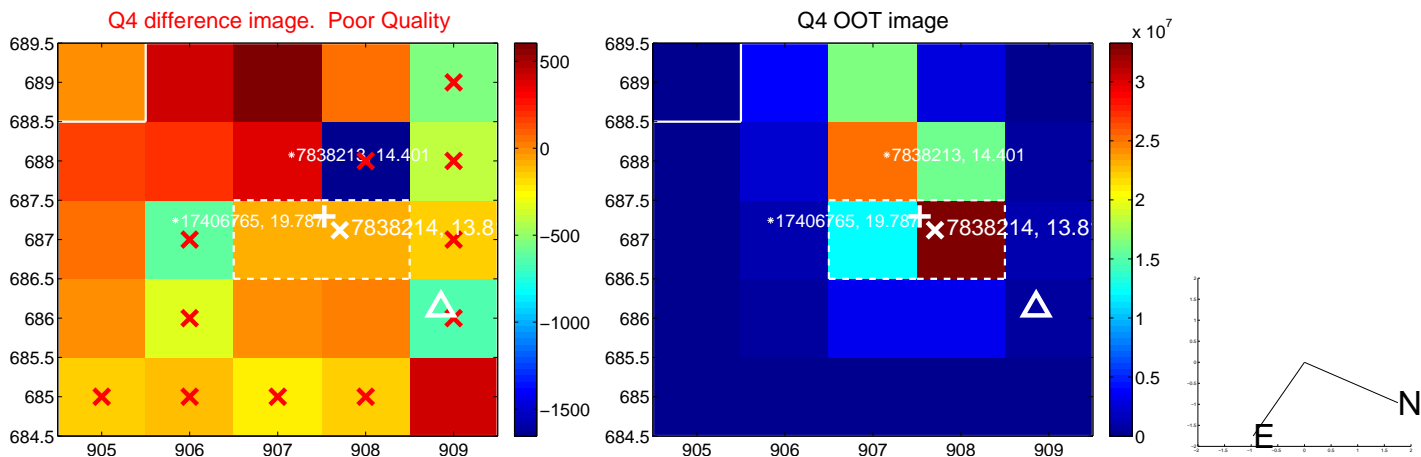
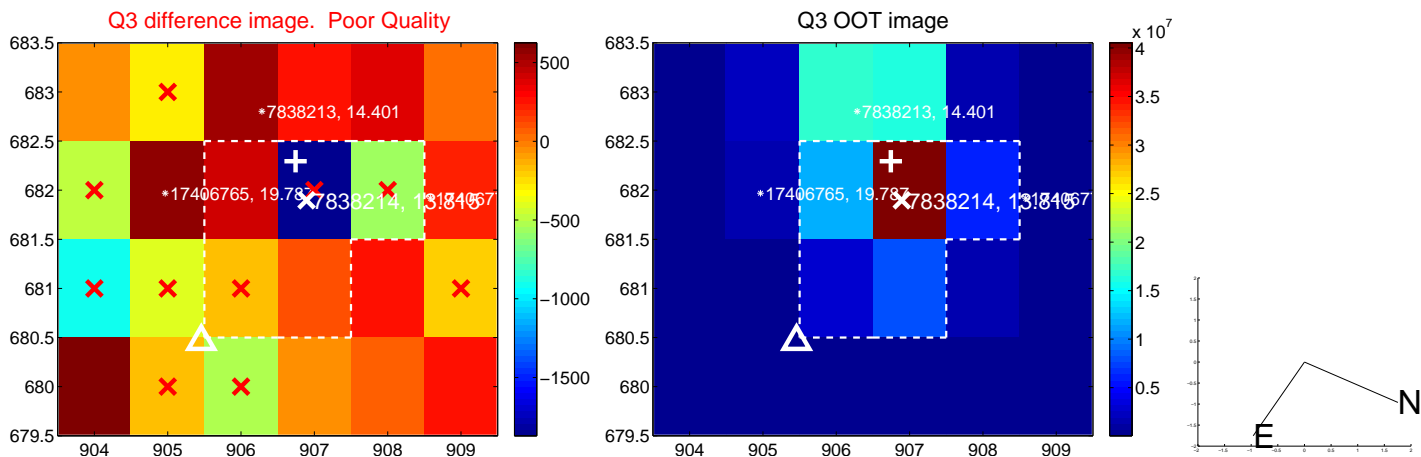
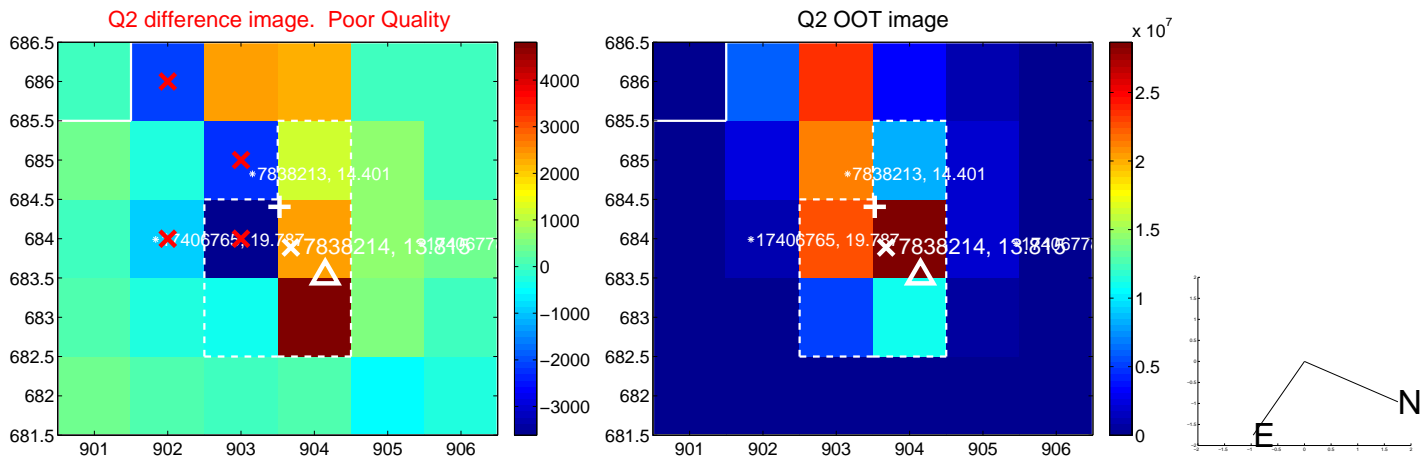
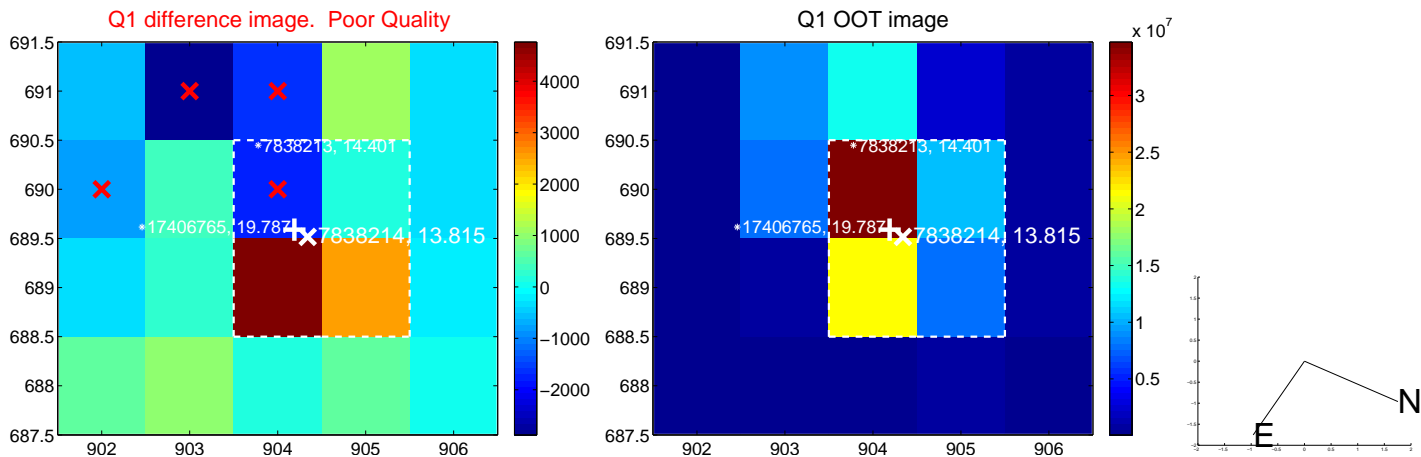
The direct PRF centroid is offset from the target star catalog position by about 0.73 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.030 ± 0.697	2.91	0.662 ± 0.716	1.919 ± 0.695
PRF-fit source offset from KIC position	0.717 ± 0.734	0.98	-0.235 ± 0.716	0.677 ± 0.696
photometric centroid source offset	7.06 ± 3.15	2.24	7.04 ± 3.15	-0.50 ± 3.61

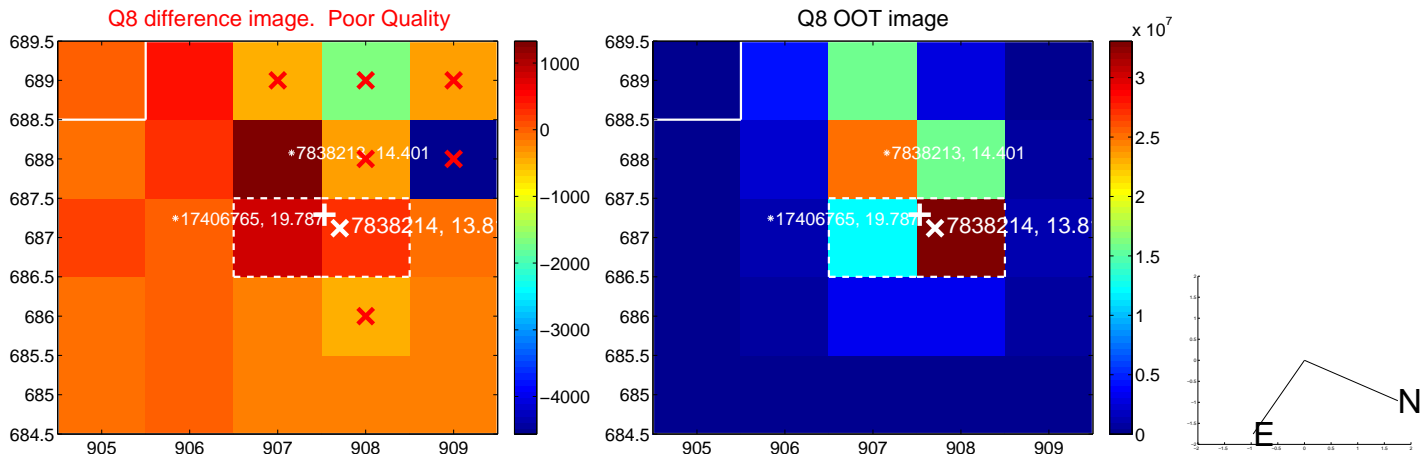
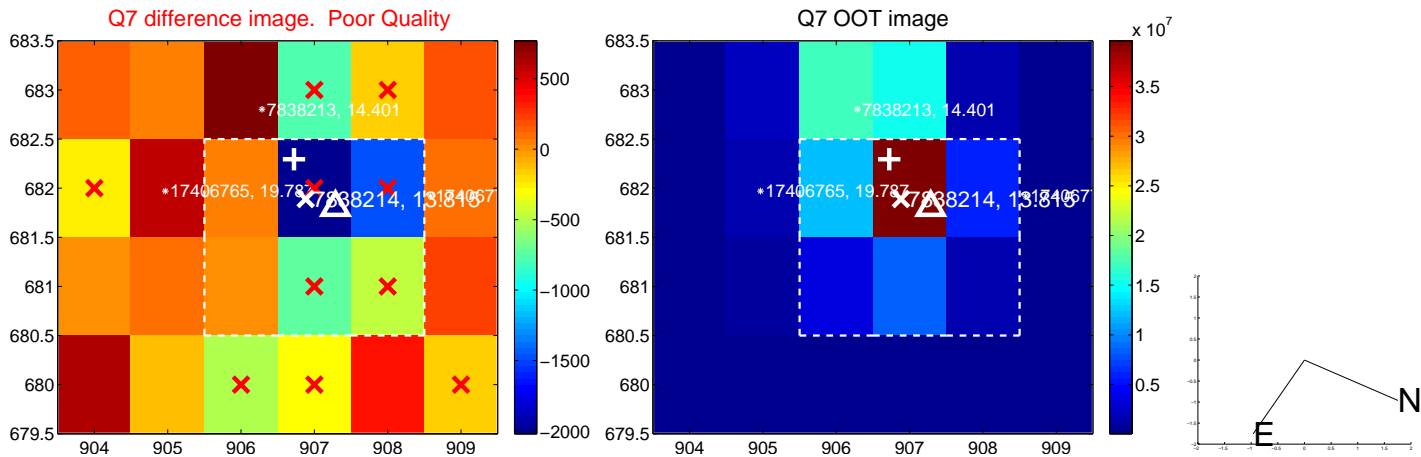
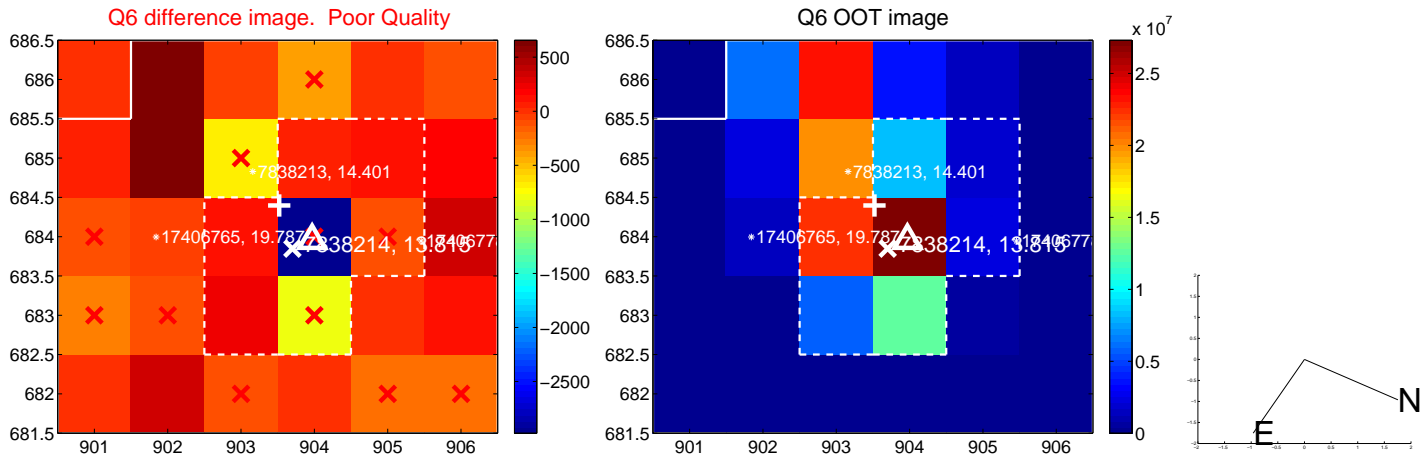
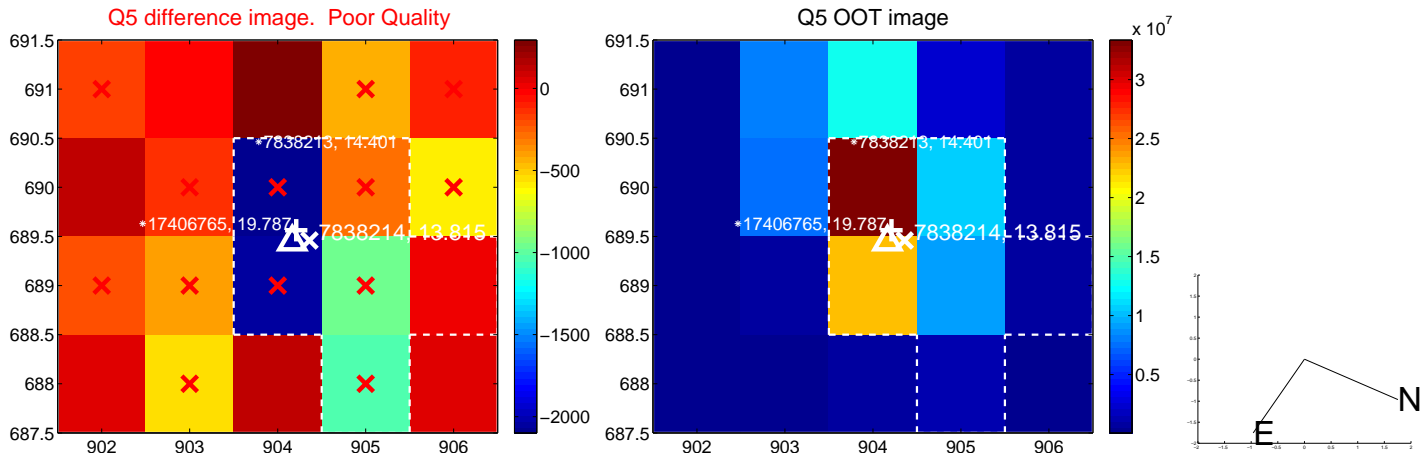


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

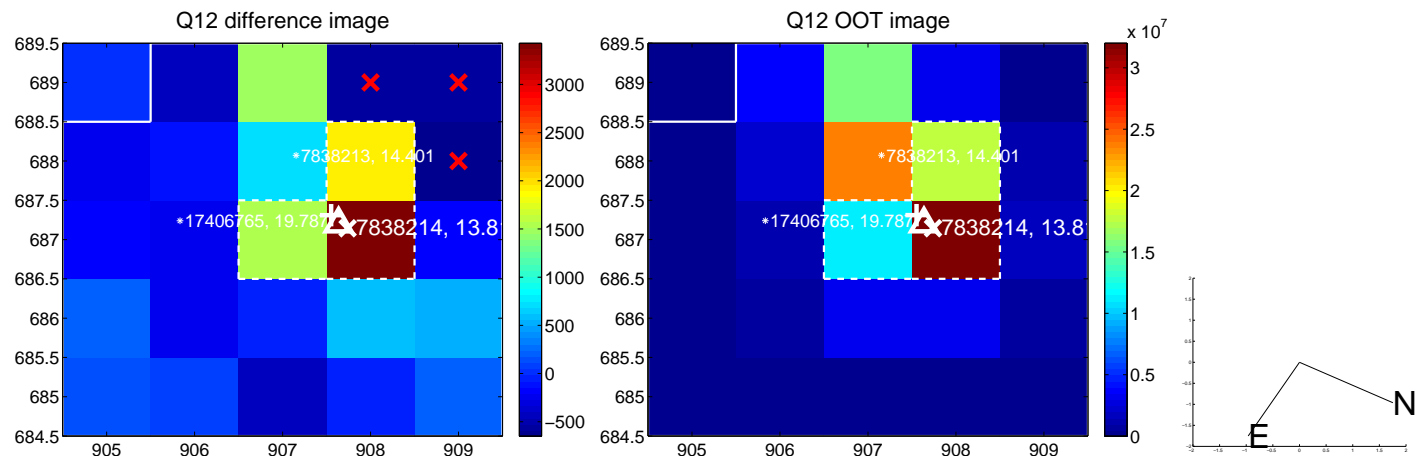
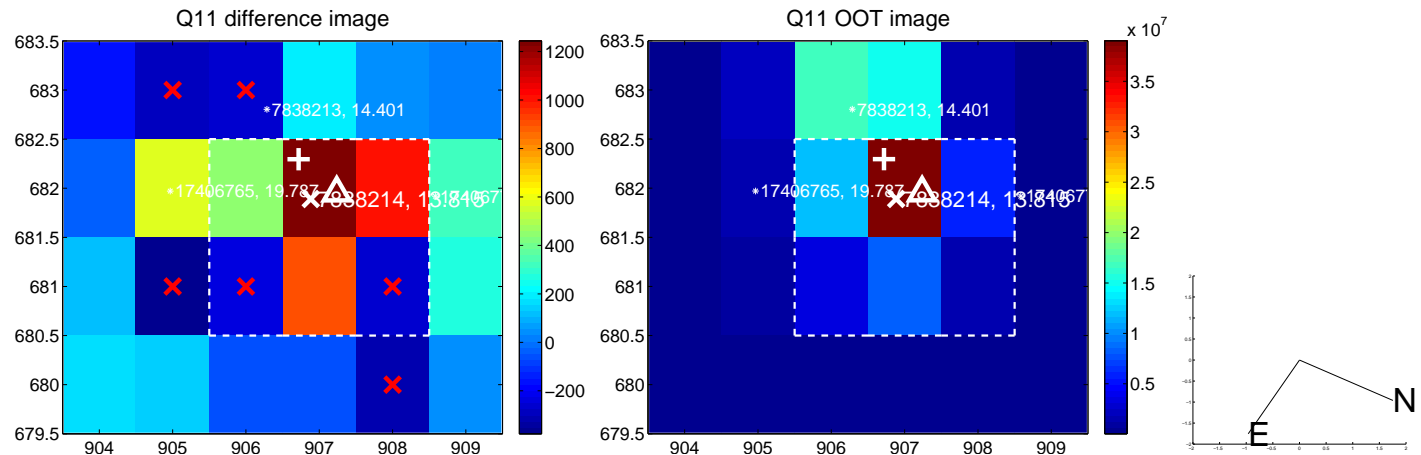
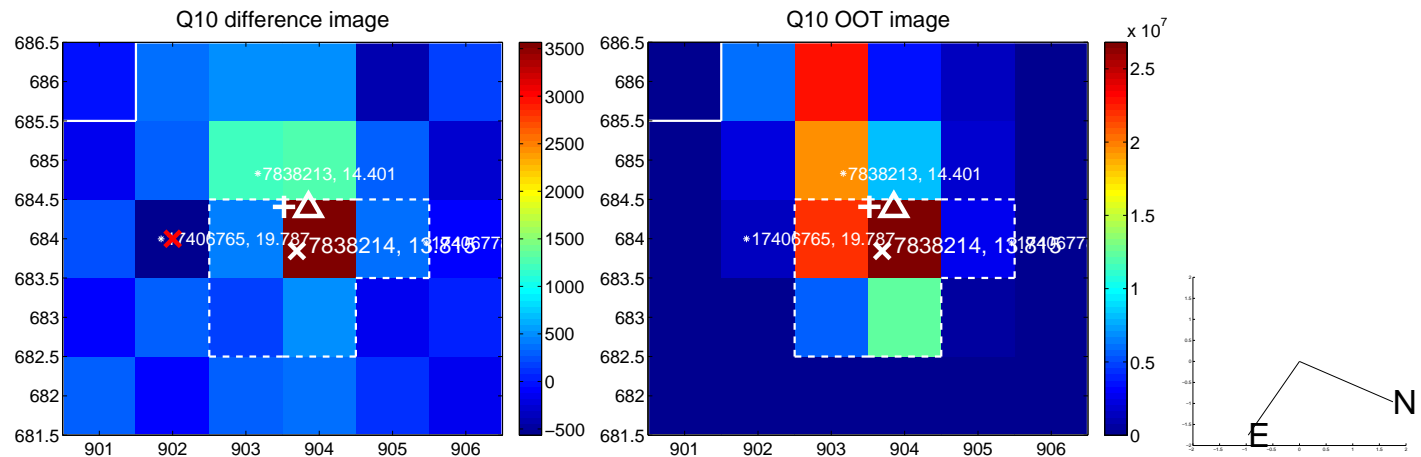
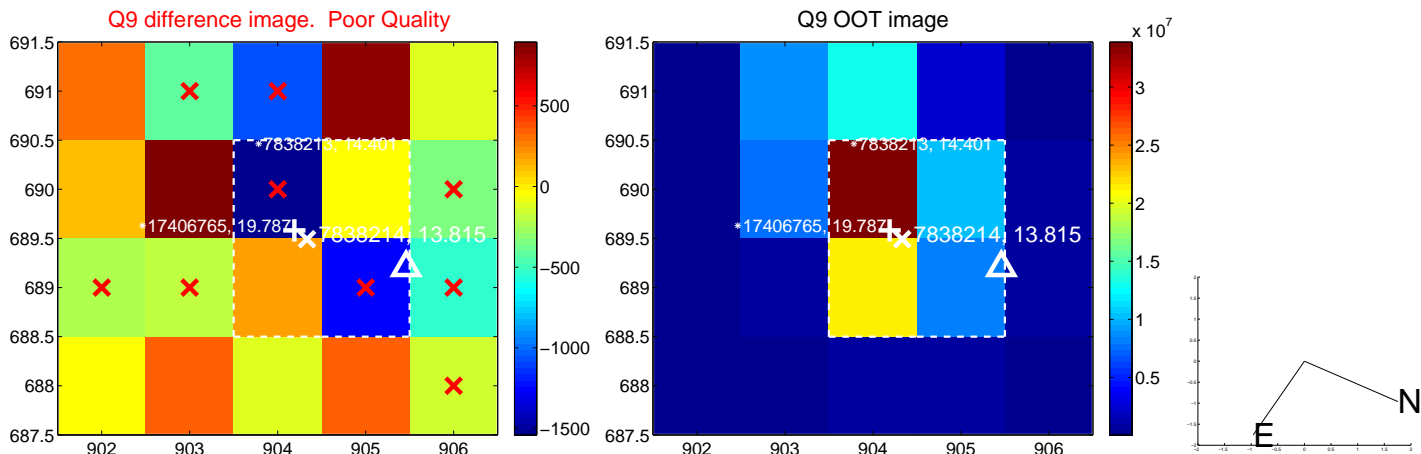
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



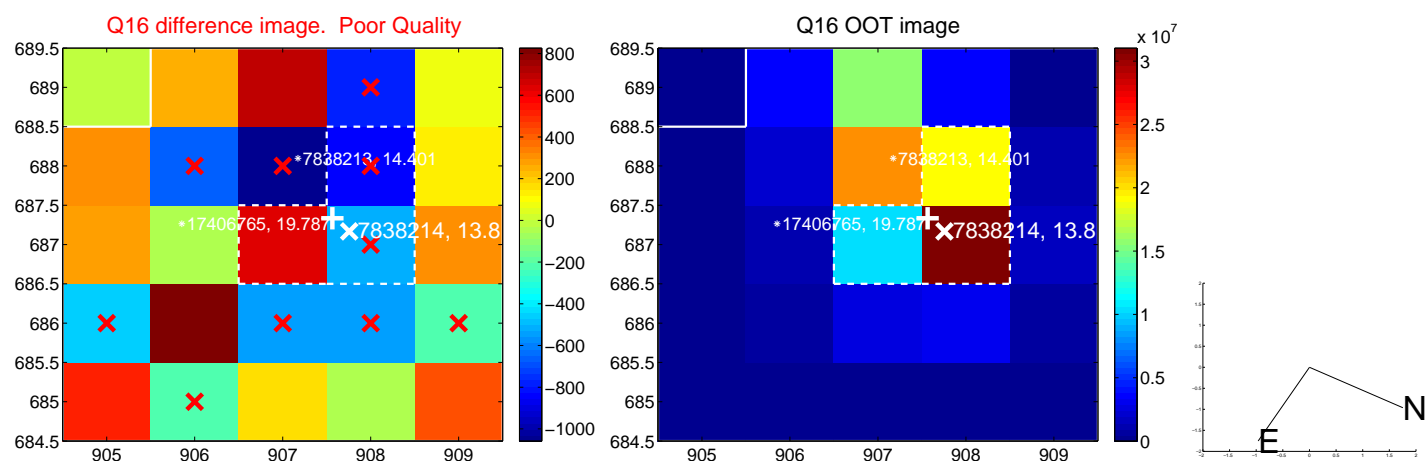
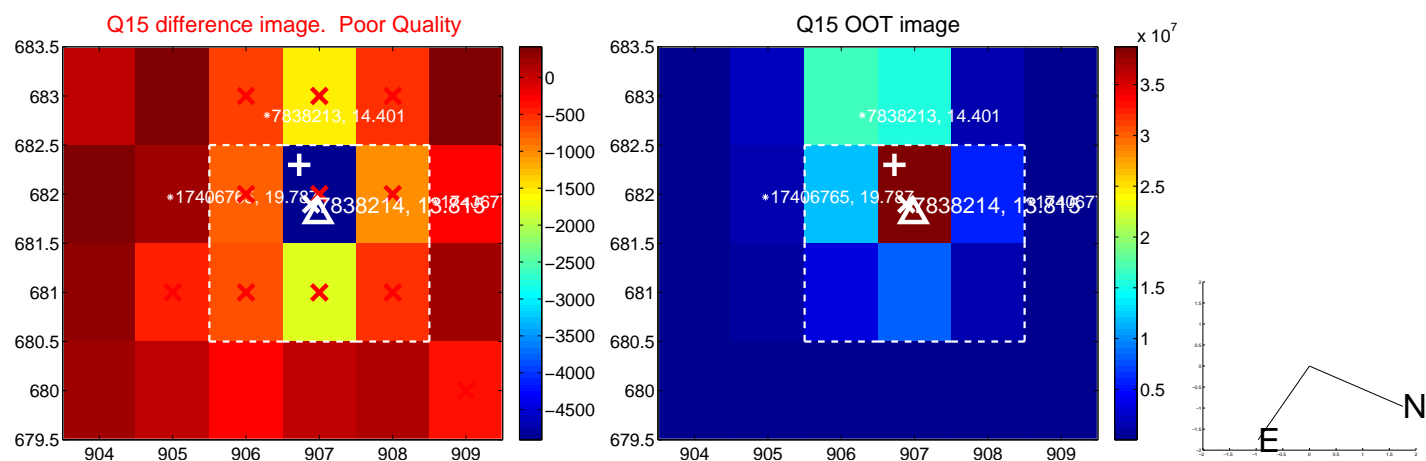
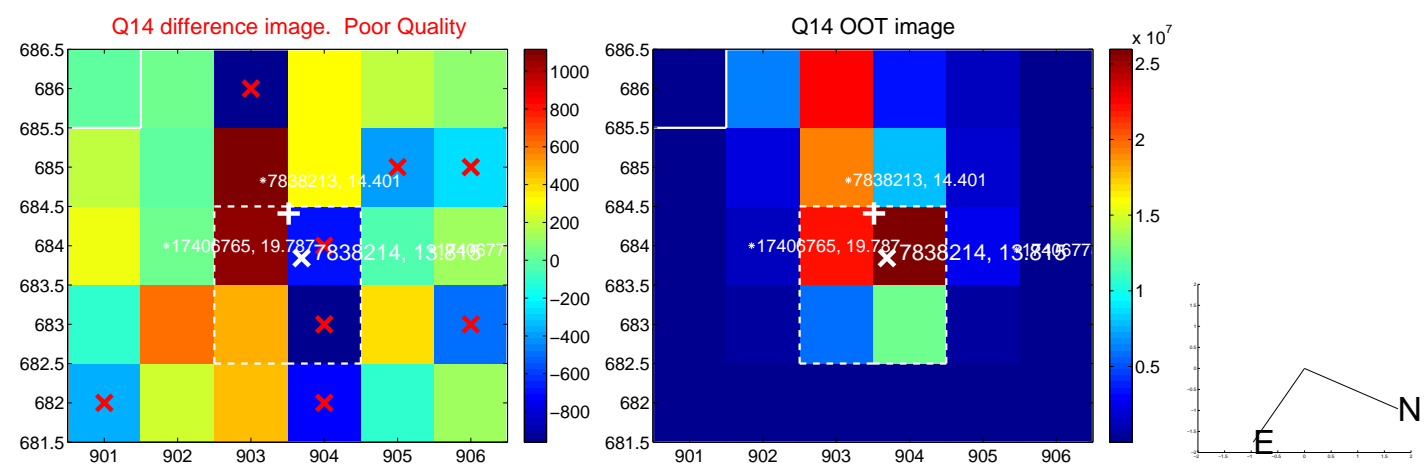
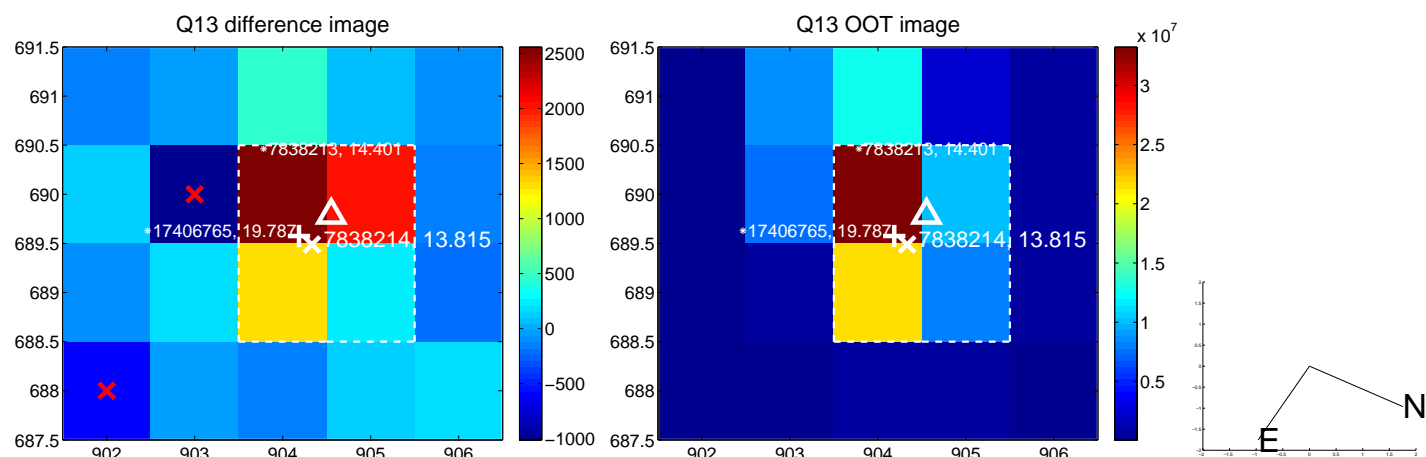
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



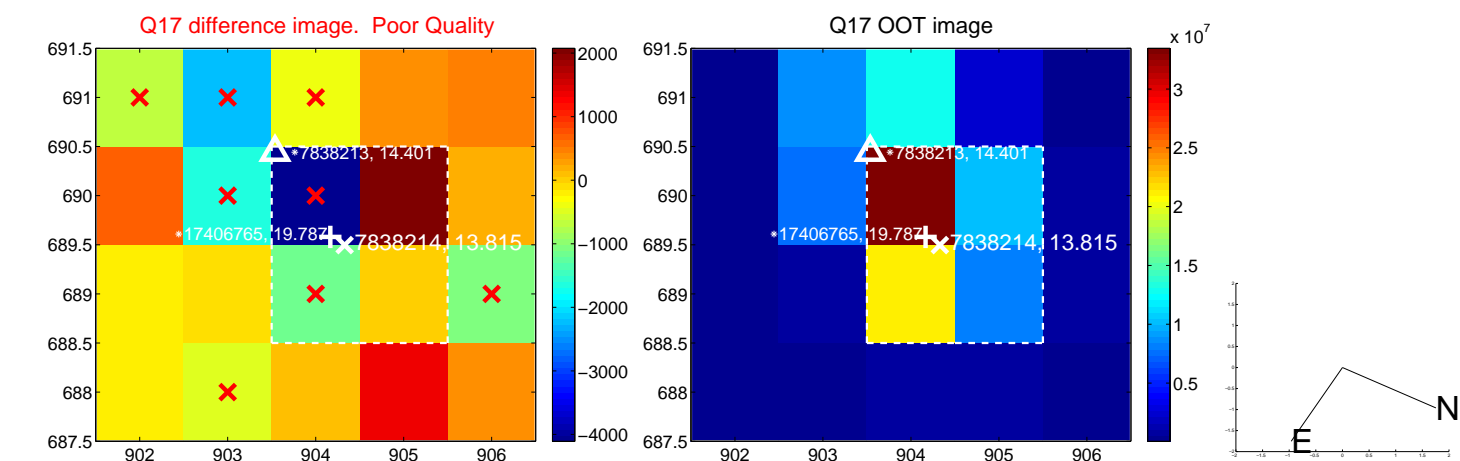
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



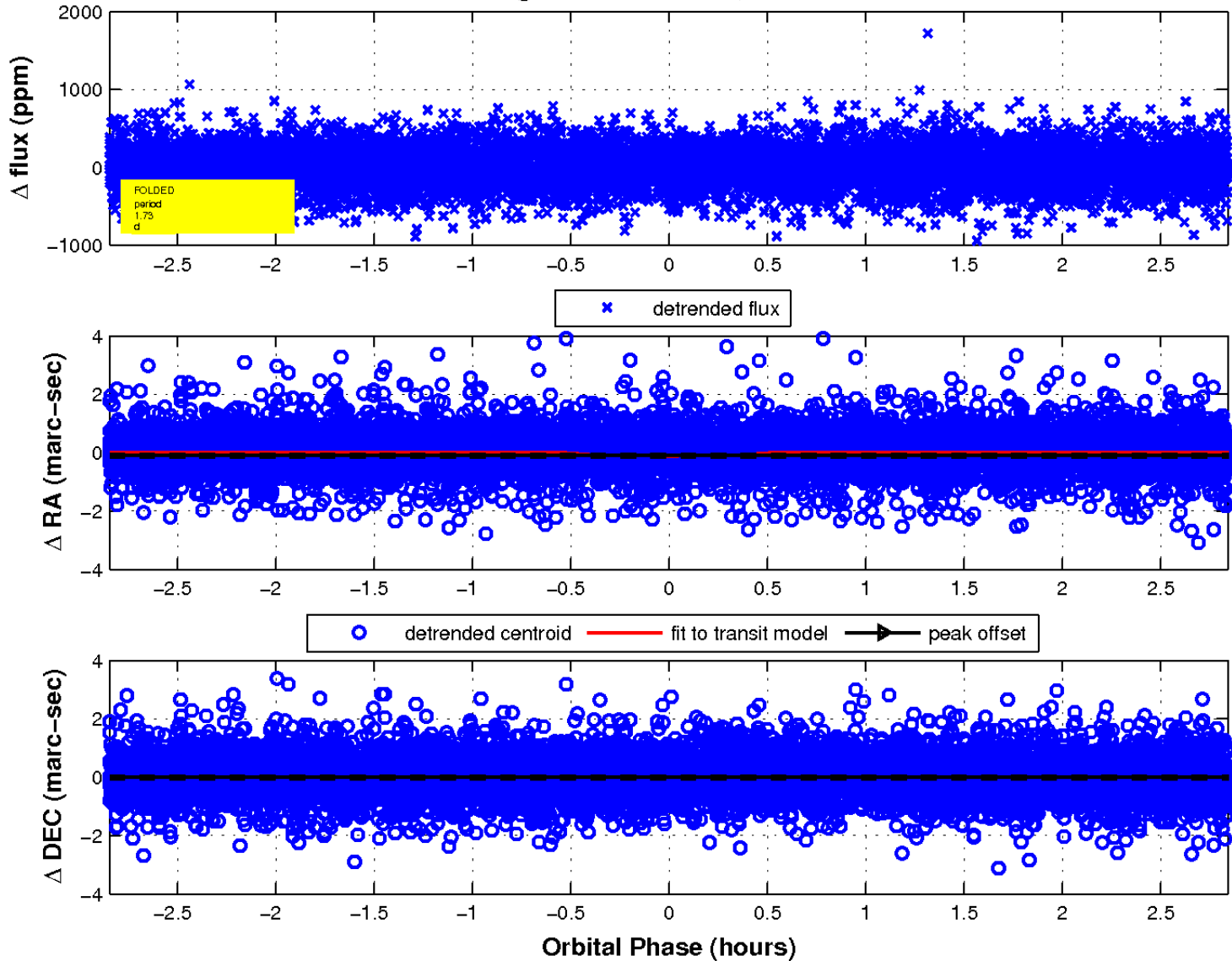
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

