

KIC 008914866

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})
008914866-01	OBS	No	0.572659	132.072390	88.9	1.638	10.4	9.9	3.17	8361	3.48	150823.91
008914866-02	OBS	No	3.139199	132.185802	234.9	3.112	9.8	10.8	3.17	8361	5.54	15604.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008914866-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008914866-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

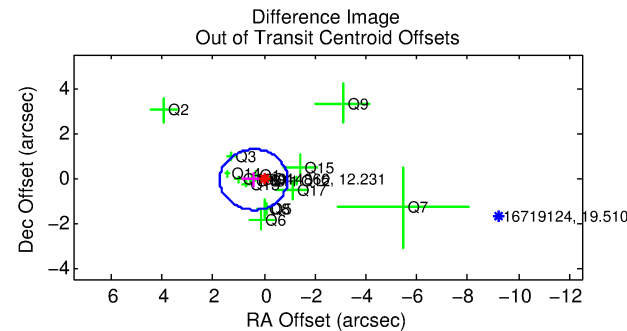
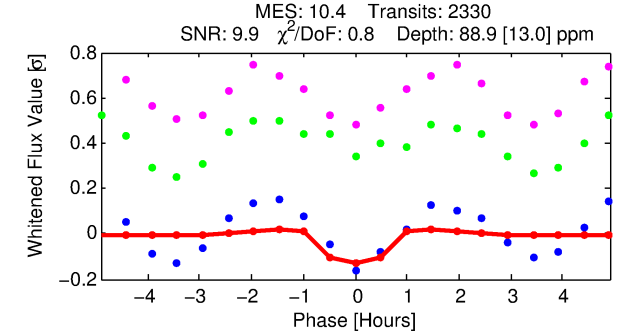
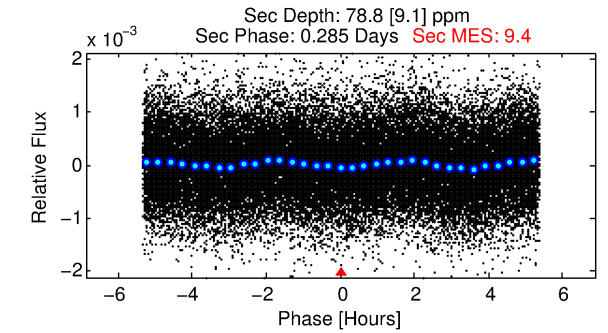
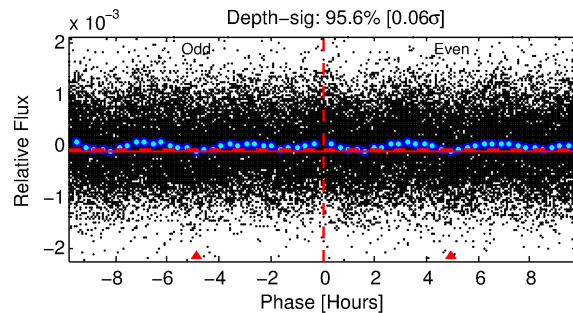
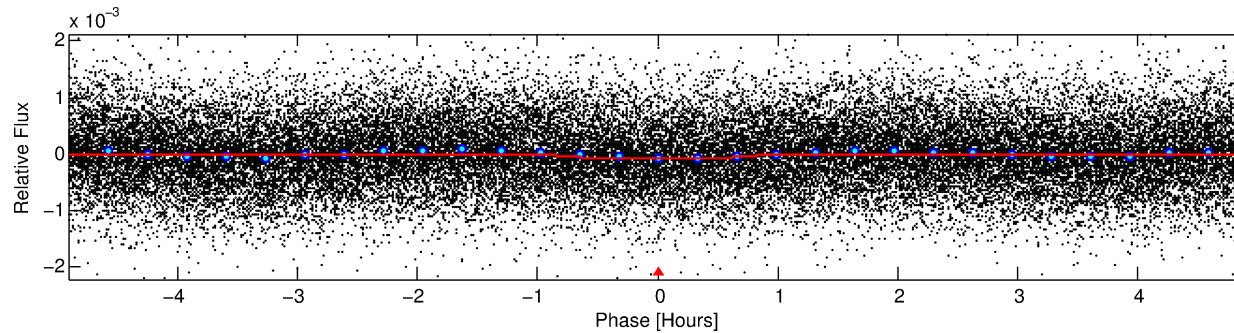
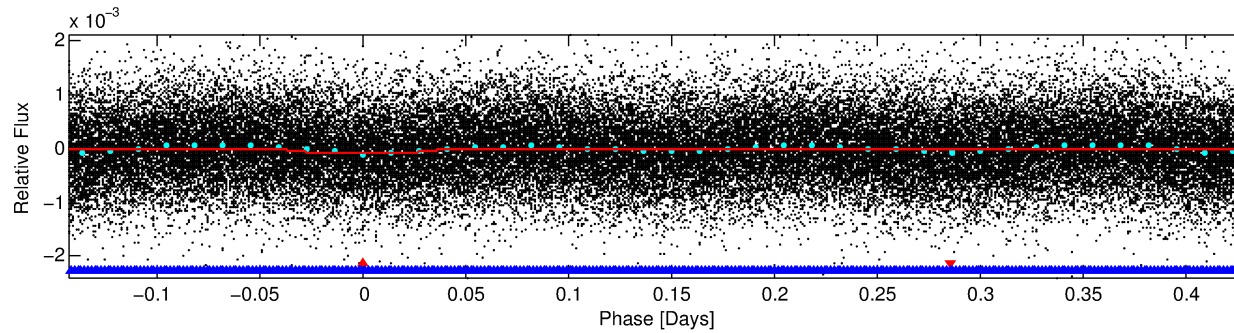
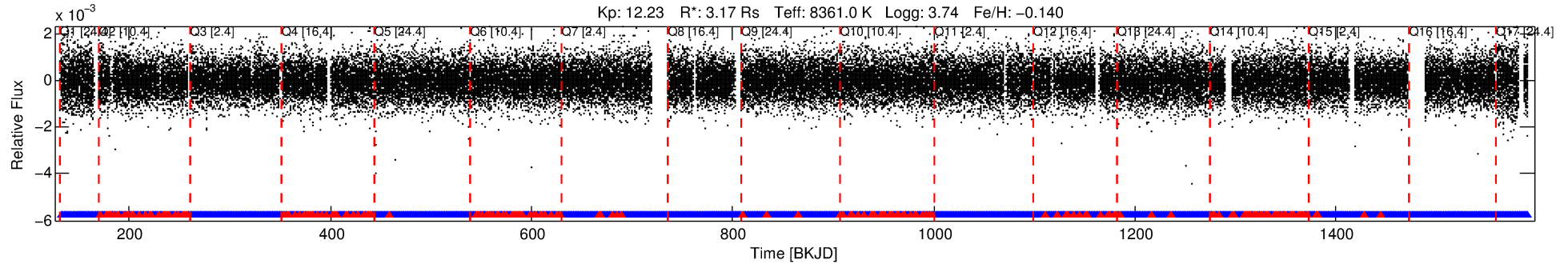
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008914866-01

No Significant Match Found

DV One-Page Summary

KIC: 8914866 Candidate: 1 of 2 Period: 0.573 d



DV Fit Results:

Period = 0.57266 [0.00001] d
Epoch = 132.0724 [0.0019] BKJD
Rp/R* = 0.0101 [0.0036]
a/R* = 1.54 [2.02]
b = 0.90 [0.48]
Seff = 150823.91 [103616.76]
Teq = 5025 [863] K
Rp = 3.49 [2.00] Re
a = 0.0171 [0.0072] AU
Ag = 1.04 [1.02] [0.04 σ]
Teffp = 7853 [1462] K [1.67 σ]

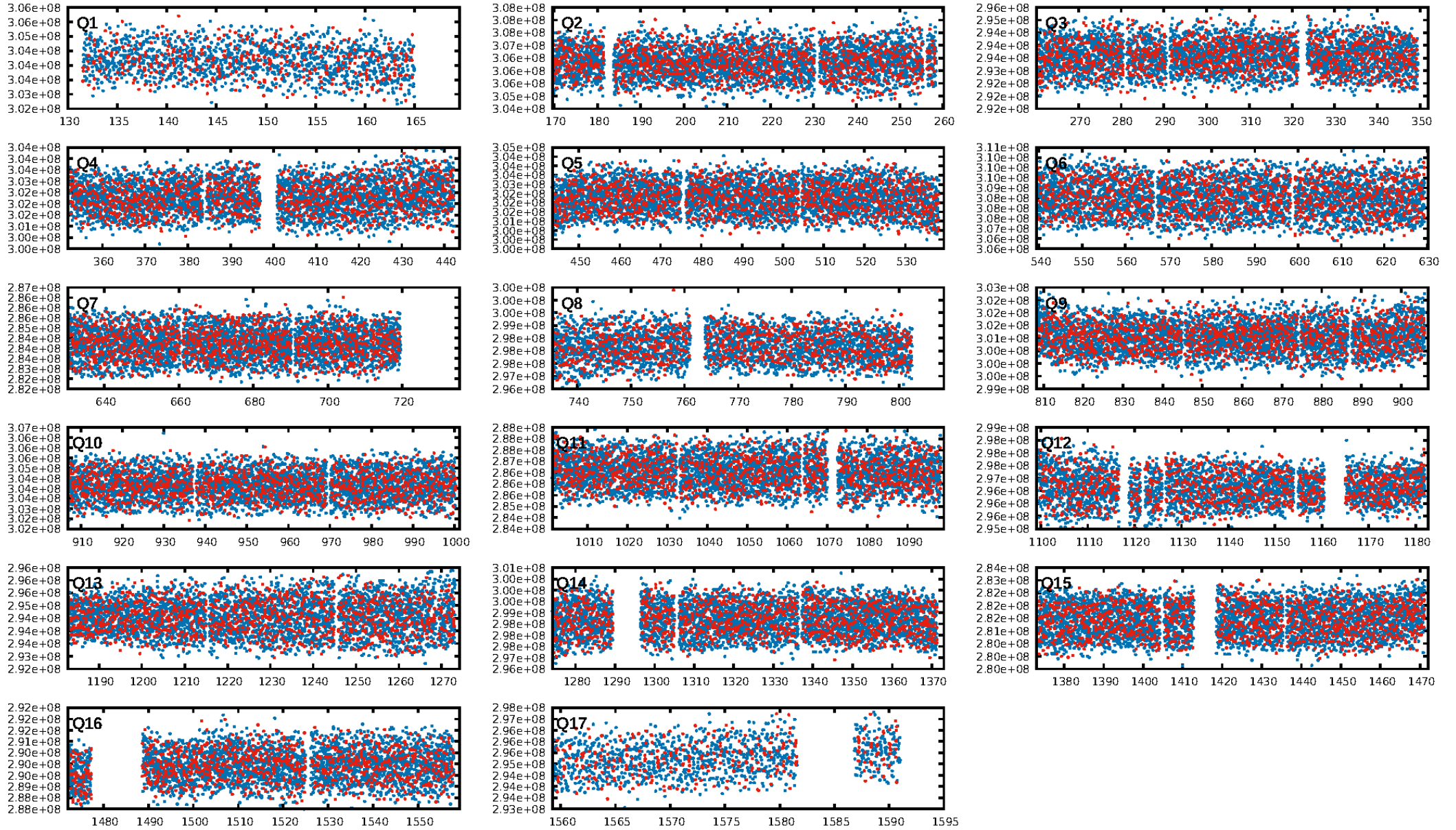
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [17.52 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.87e-24
RollingBand-fgt: 0.91 [2017/2225]
GhostDiagnostic-chr: 2.82
Centroid-sig: 15.9%
Centroid-so: 0.392 arcsec [1.56 σ]
OotOffset-rm: 0.411 arcsec [0.92 σ]
KicOffset-rm: 0.372 arcsec [0.93 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.53 [9/17]
DiffImageOverlap-fno: 1.00 [17/17]

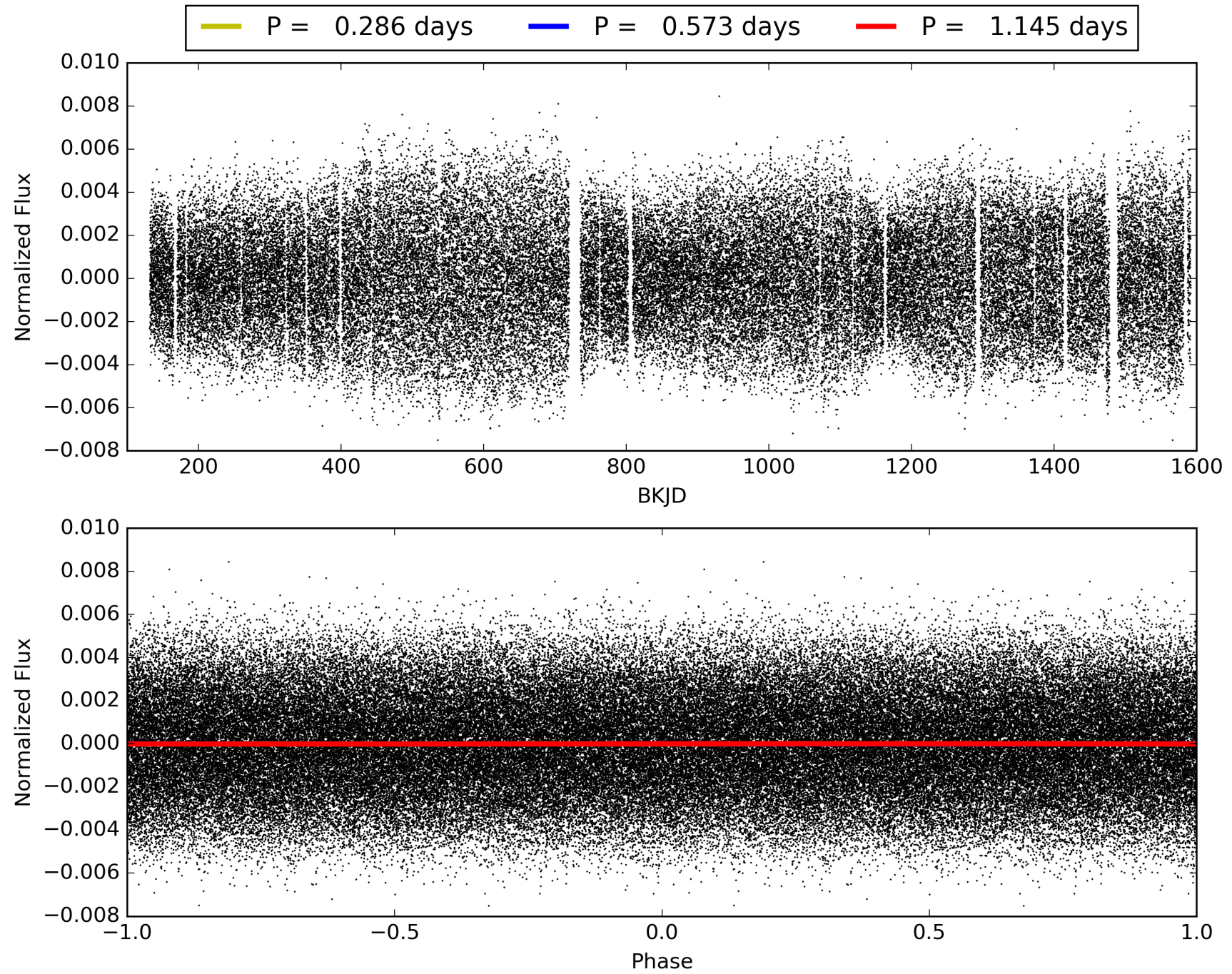
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008914866-01, PDC Light Curves

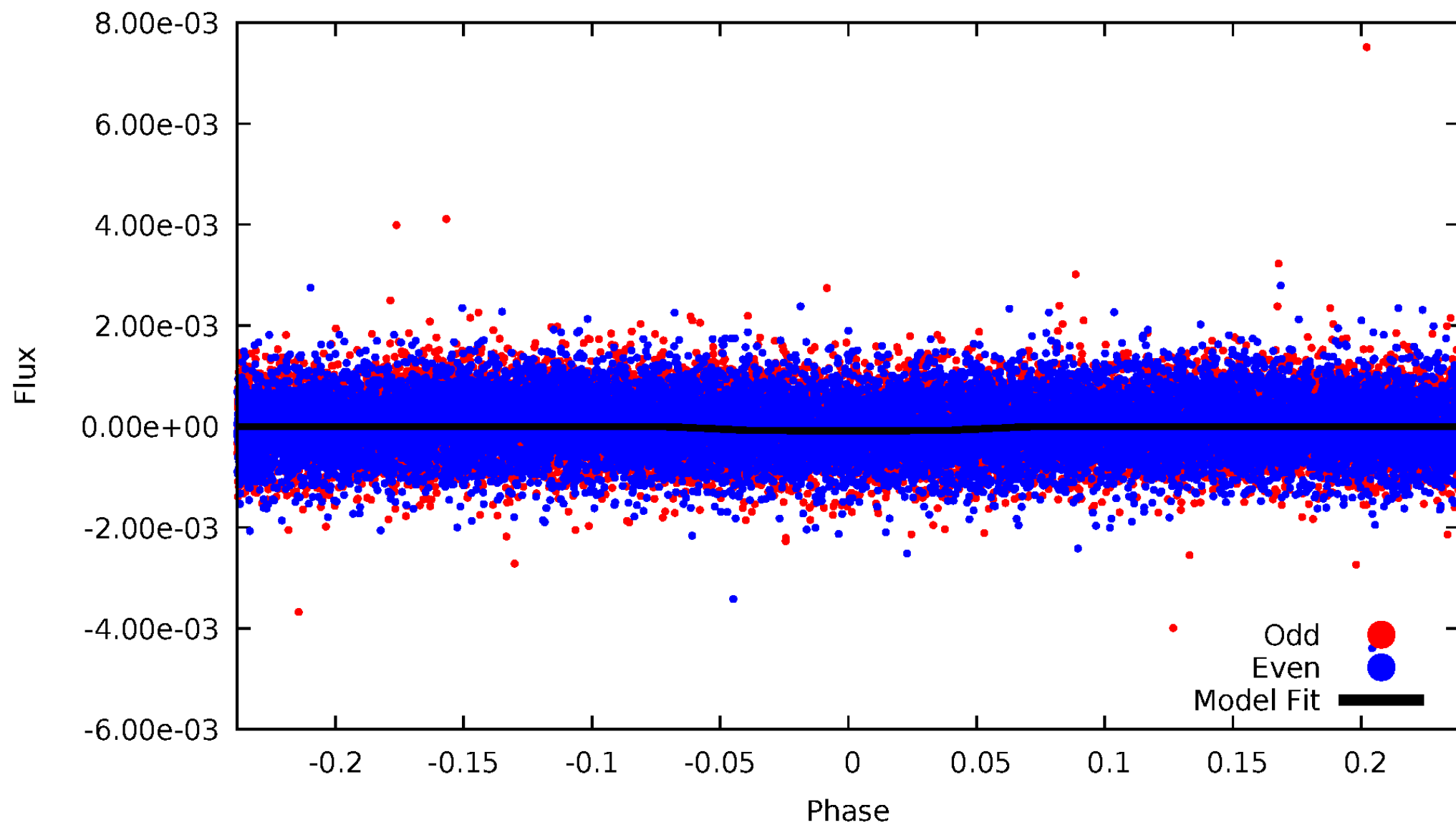


TCE 008914866-01



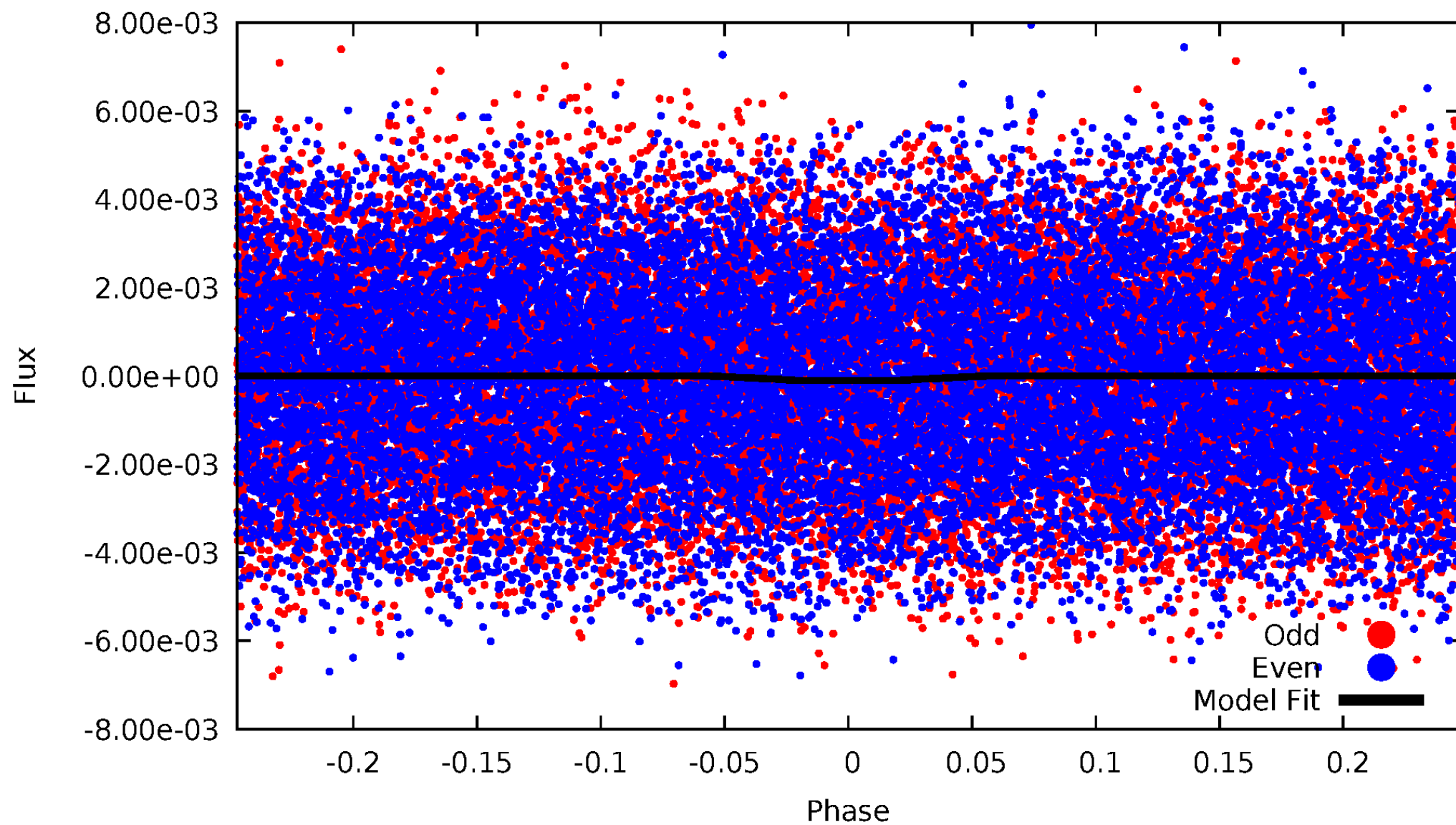
DV Odd/Even

TCE 008914866-01

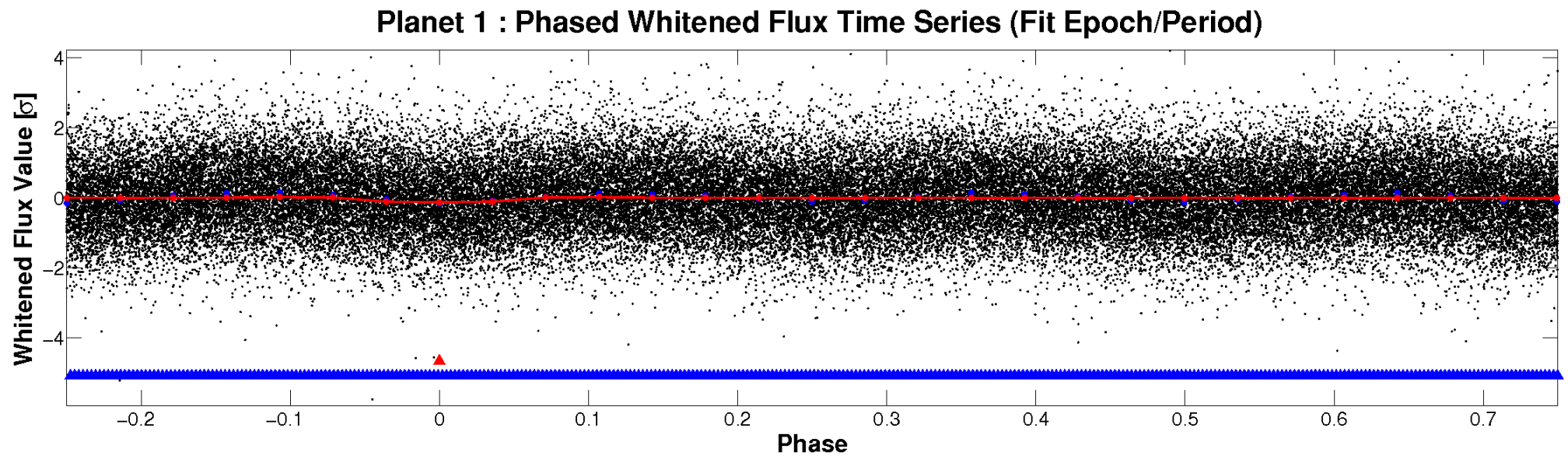
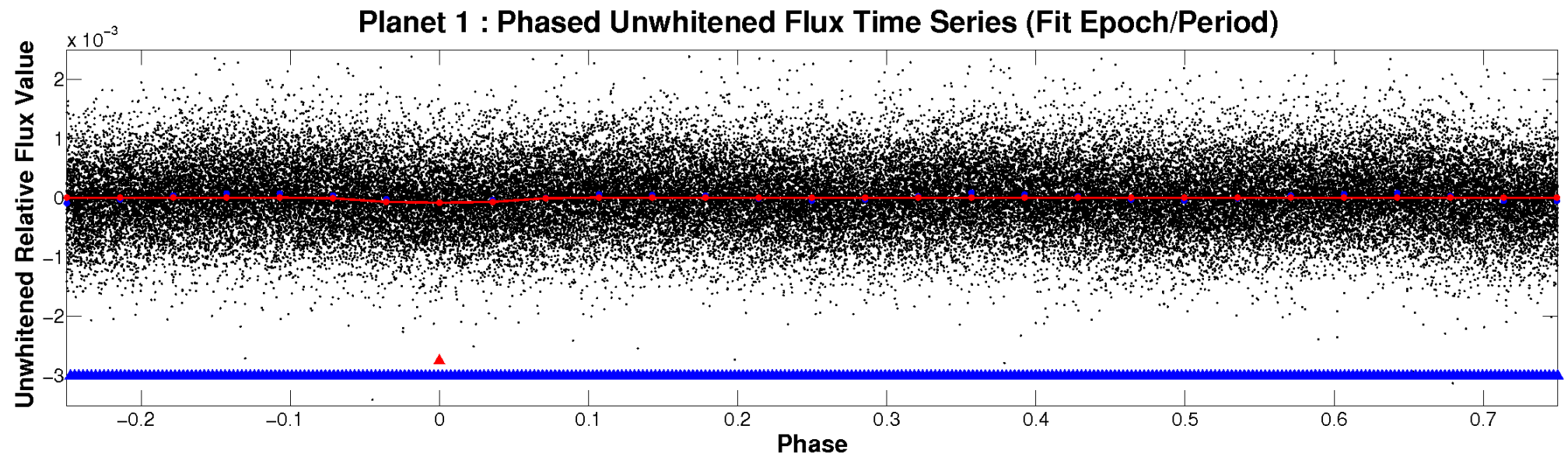


ALT Odd/Even

TCE 008914866-01

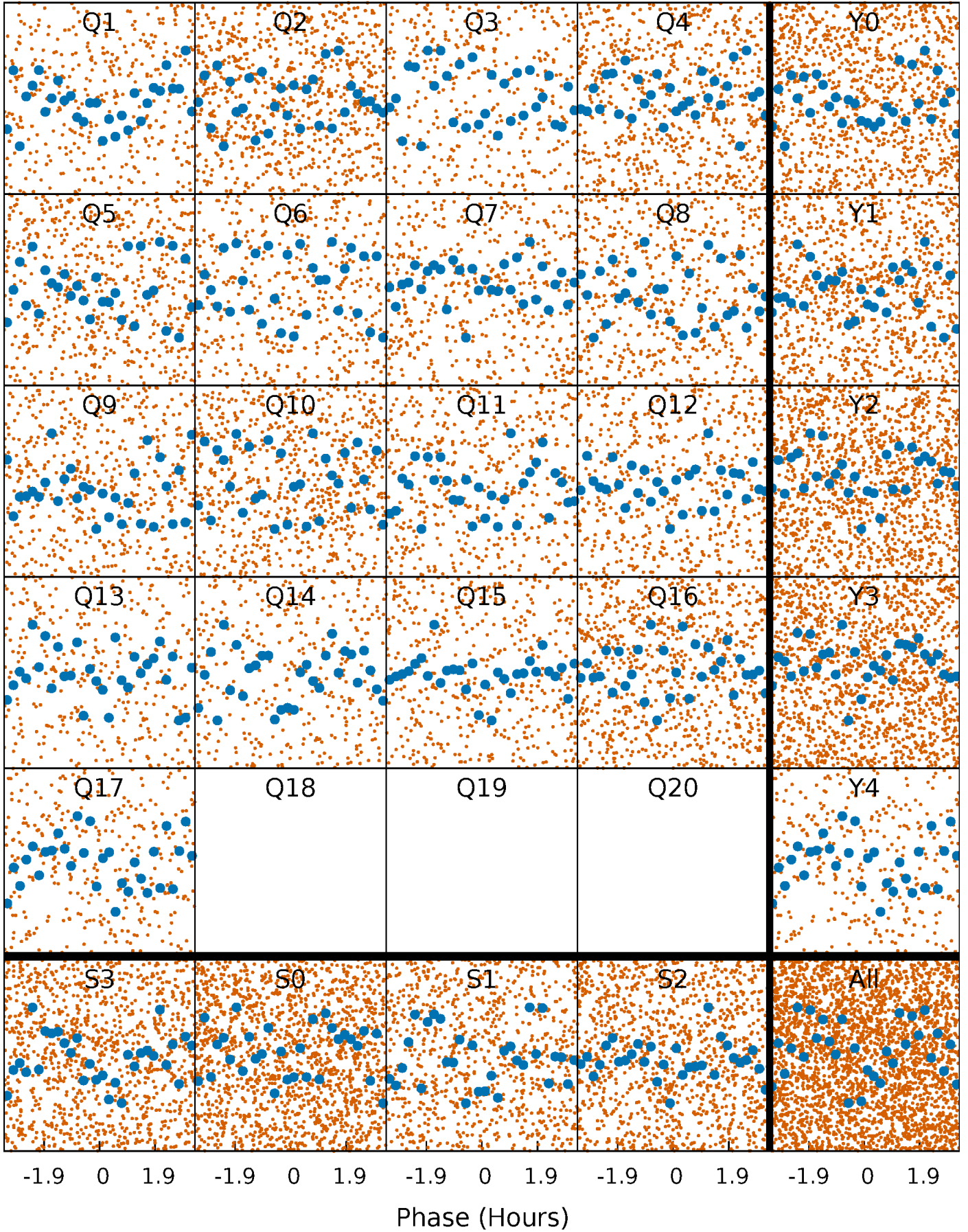


Non-Whitened Vs. Whitened Light Curve



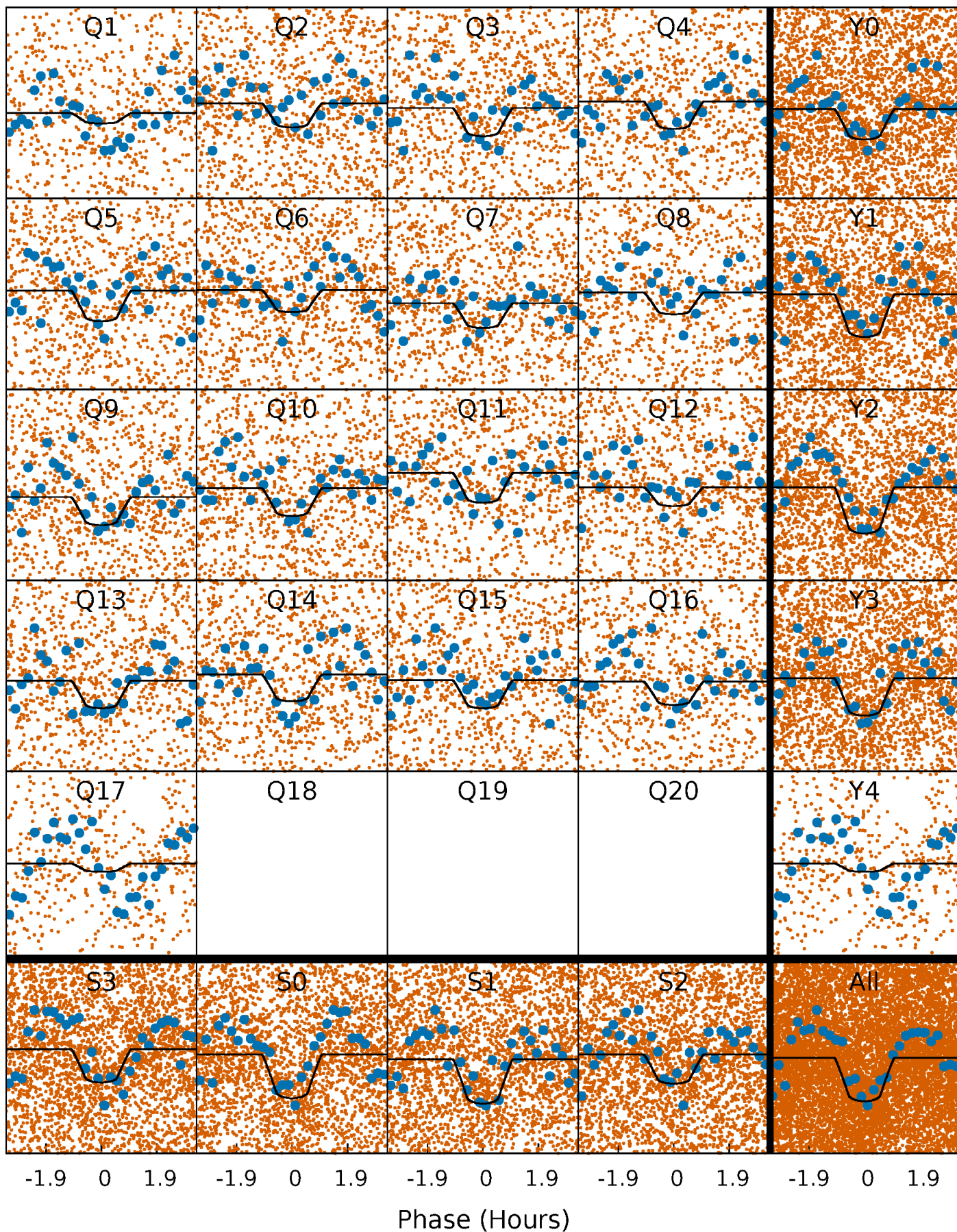
PDC Quarter-Phased Transit Curves

TCE 008914866-01 P= 0.572659 Days $T_0=132.072390$ (BKJD)



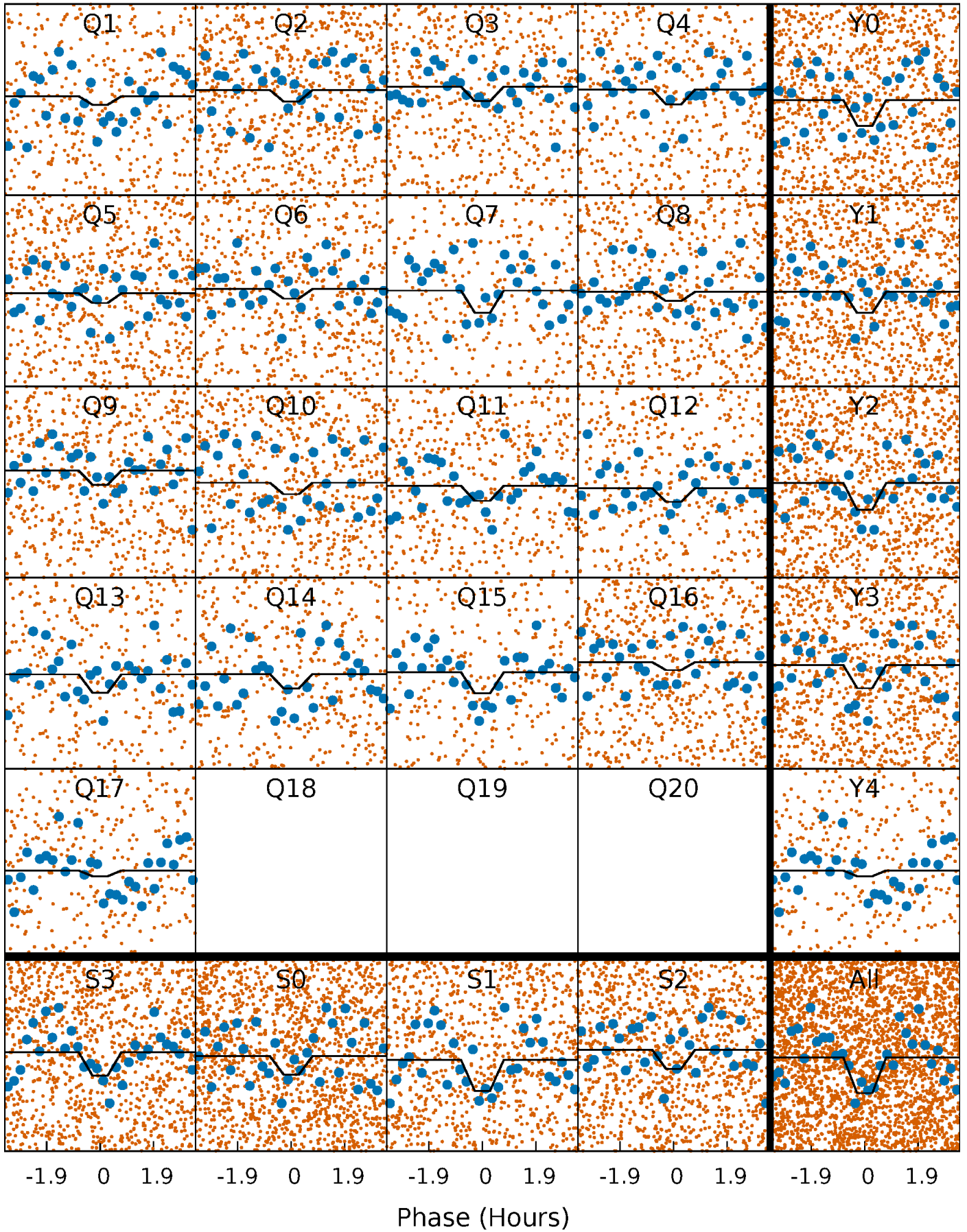
DV Quarter-Phased Transit Curves

TCE 008914866-01 P= 0.572659 Days $T_0=132.072390$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

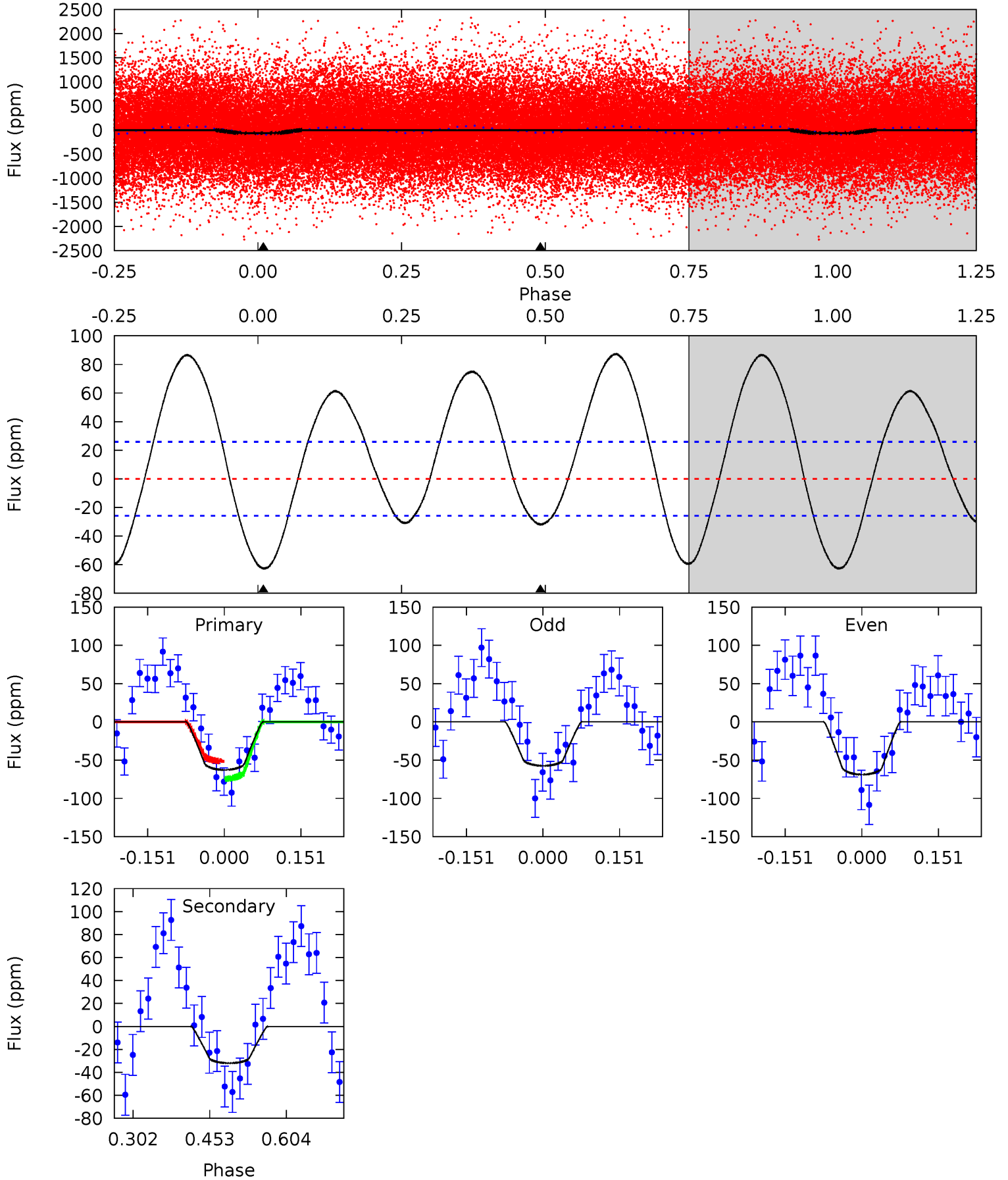
TCE 008914866-01 P= 0.572662 Days $T_0=132.071812$ (BKJD)



DV Model-Shift Uniqueness Test

008914866-01, P = 0.572659 Days, E = 131.499731 Days

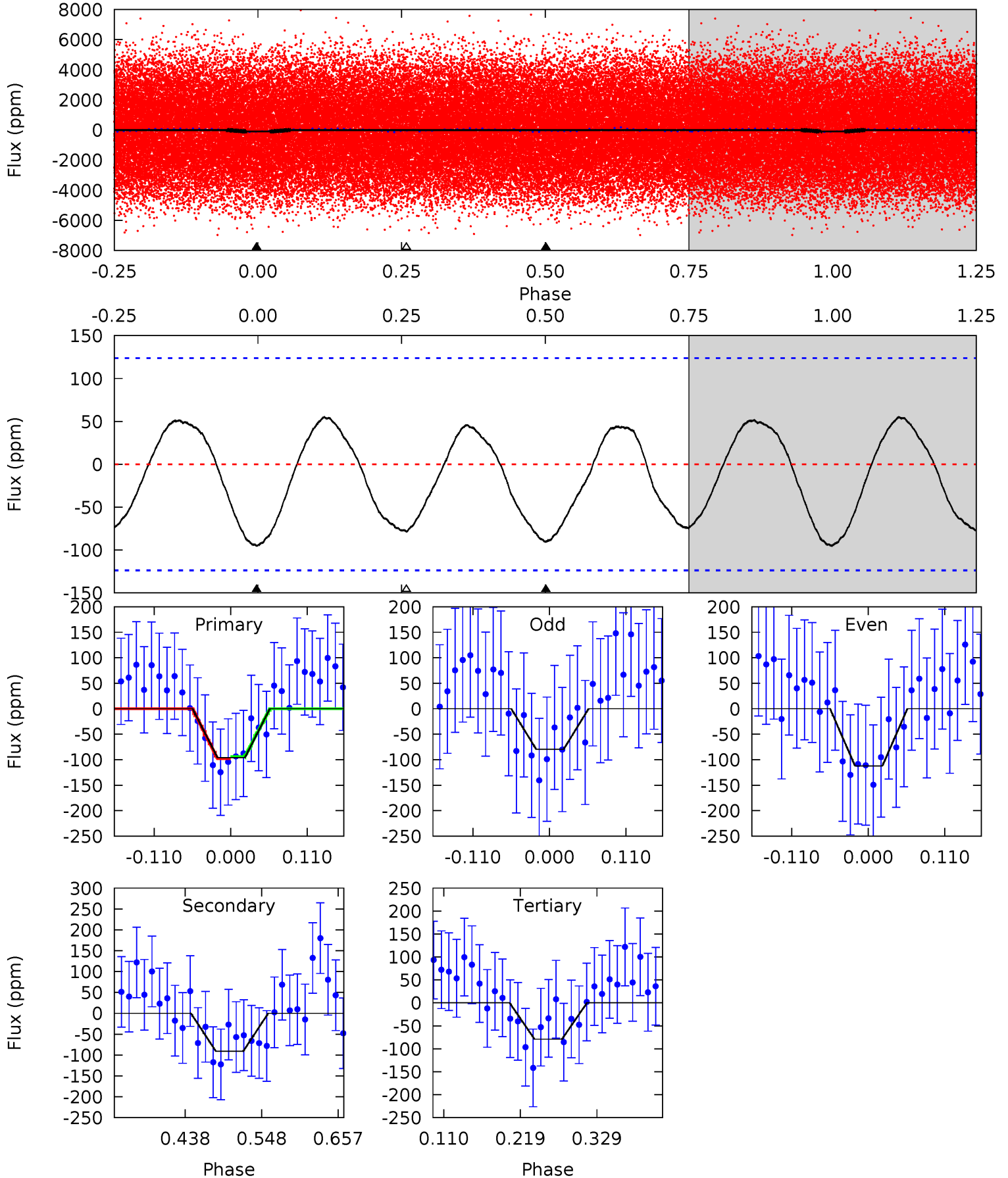
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	5.53	0	0	4.48	1.44	6.67	10.9	10.9	5.53	5.53	1.00	0.85	0.58	1.98



Alt Model-Shift Uniqueness Test

008914866-01, P = 0.572662 Days, E = 131.499150 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.53	3.34	2.91	0	4.55	1.60	1.68	0.62	3.53	0.43	3.34	0.60	0.65	0.37	0.08



Stellar Parameters For KIC 008914866

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8361^{+202}_{-376}	$3.743^{+0.385}_{-0.138}$	$-0.140^{+0.300}_{-0.350}$	$3.174^{+0.954}_{-1.431}$	$2.031^{+0.440}_{-0.484}$	$0.090^{+0.301}_{-0.042}$
	+2%/-4%	+10%/-4%	+214%/-250%	+30%/-45%	+22%/-24%	+337%/-47%
Source	KIC0	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 008914866-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-32 ± 6	$3.28^{+1.51}_{-1.25}$	6826^{+544}_{-780}	4761^{+2100}_{-8899}	$0.483^{+0.778}_{-0.257}$
Alt.	-91 ± 27	$3.23^{+1.43}_{-1.36}$	6798^{+580}_{-783}	7418^{+3287}_{-1745}	$1.413^{+2.851}_{-0.763}$

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

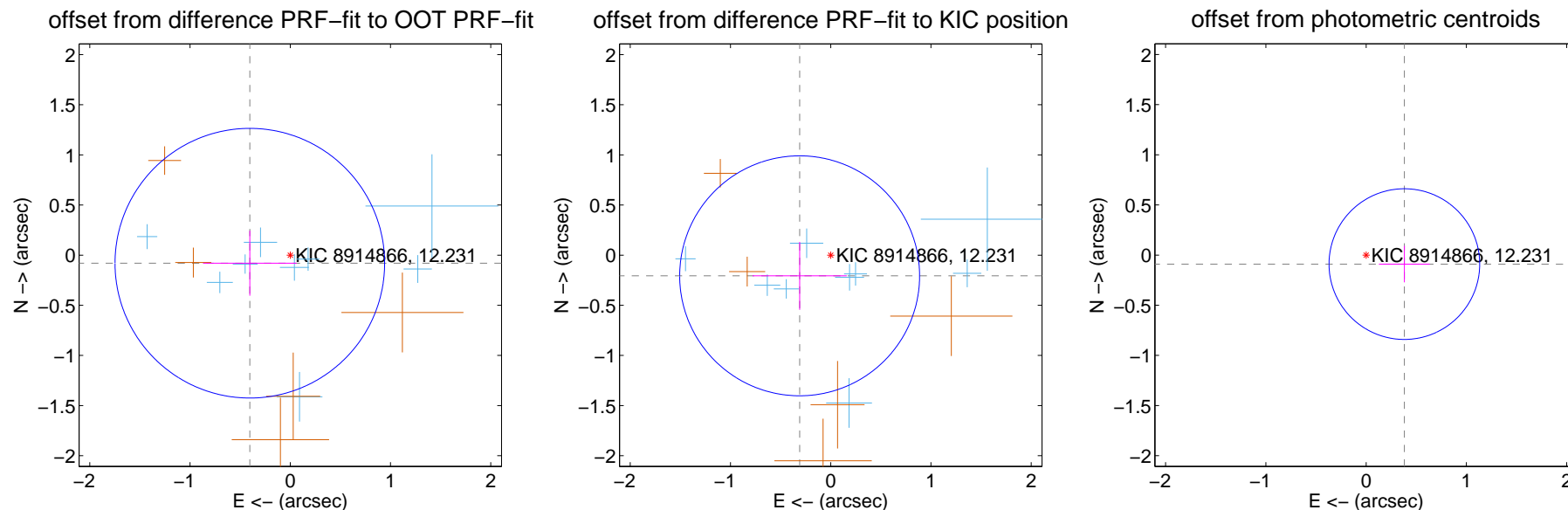
DV Centroid Data

Supplemental centroid analysis for 008914866-01. Kepler magnitude: 12.23. Transit SNR 9.89

There are 9 quarters with good PRF difference image offsets

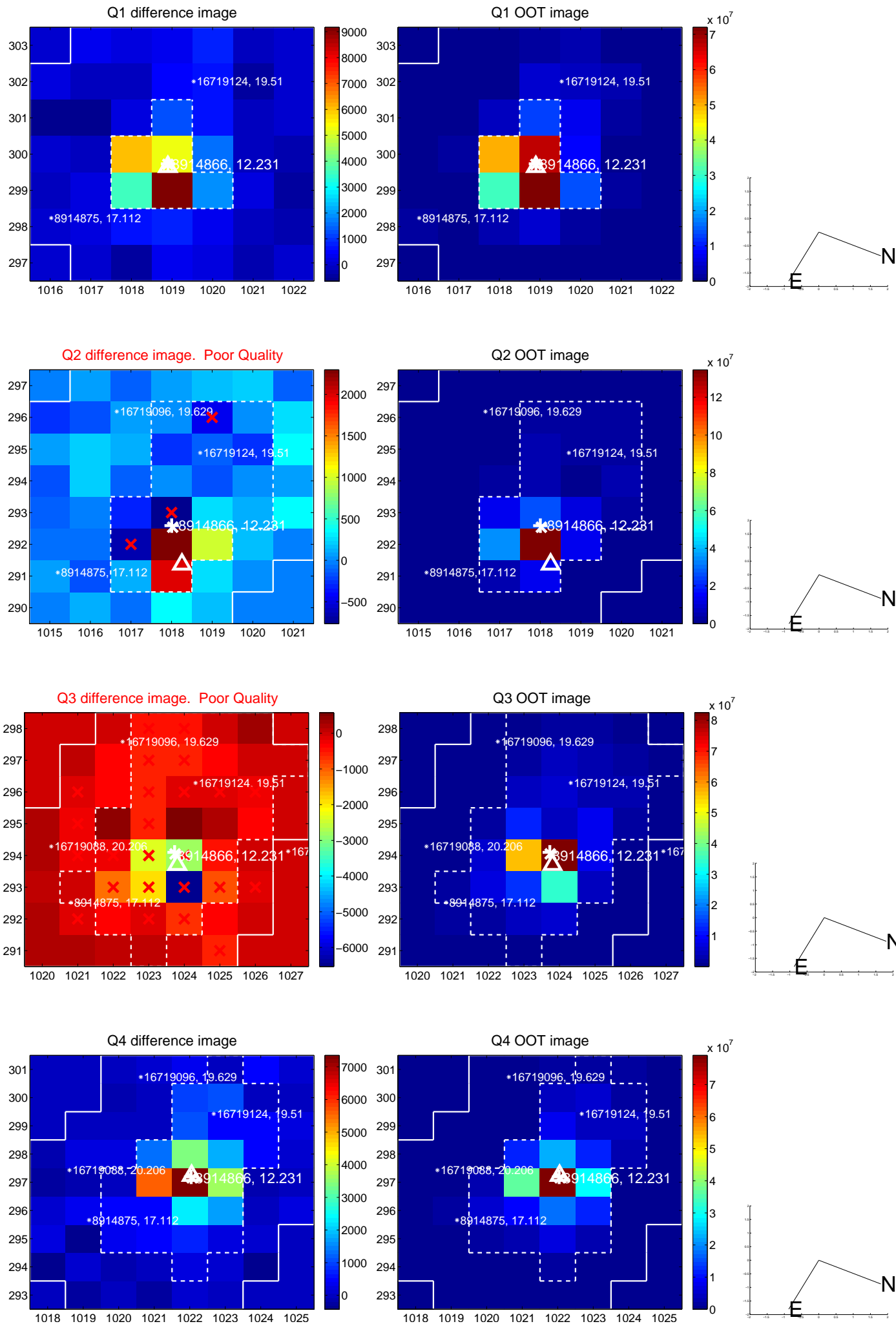
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.411 ± 0.448	0.92	0.403 ± 0.467	-0.080 ± 0.324
PRF-fit source offset from KIC position	0.372 ± 0.399	0.93	0.310 ± 0.470	-0.206 ± 0.338
photometric centroid source offset	0.39 ± 0.25	1.56	-0.38 ± 0.25	-0.09 ± 0.18

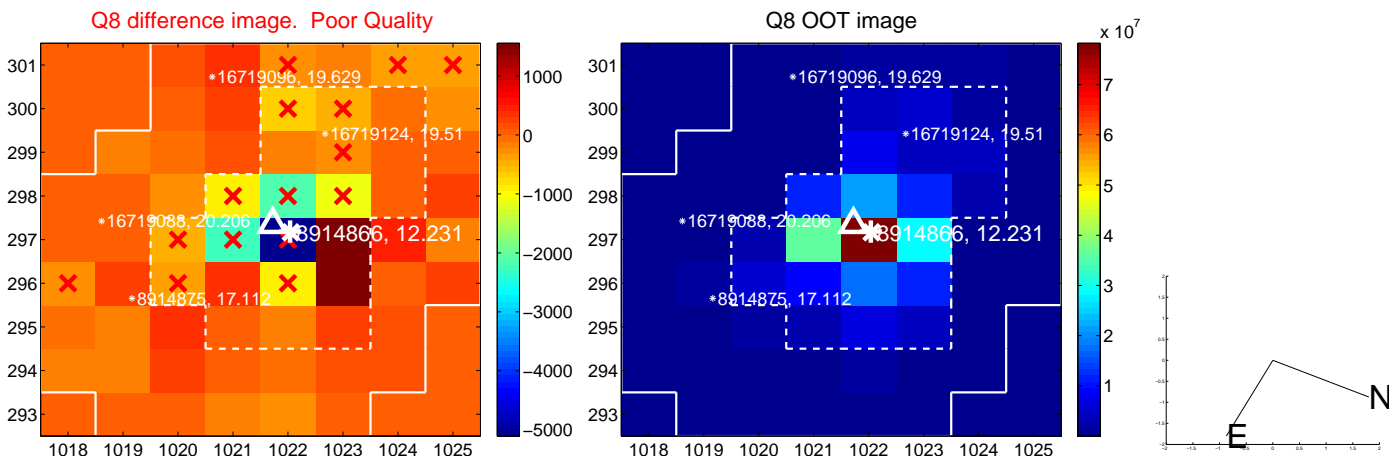
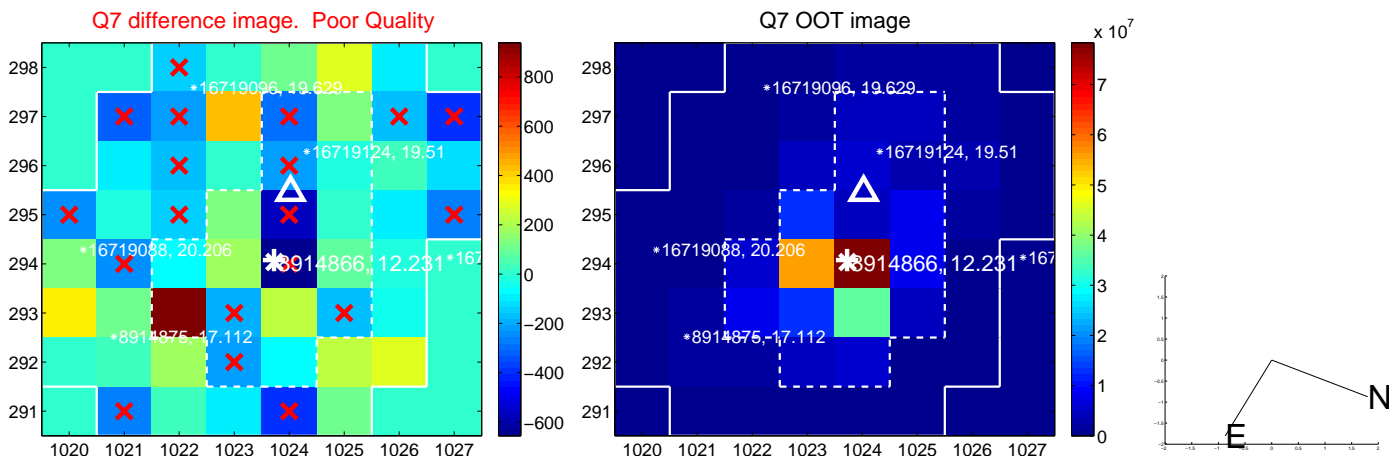
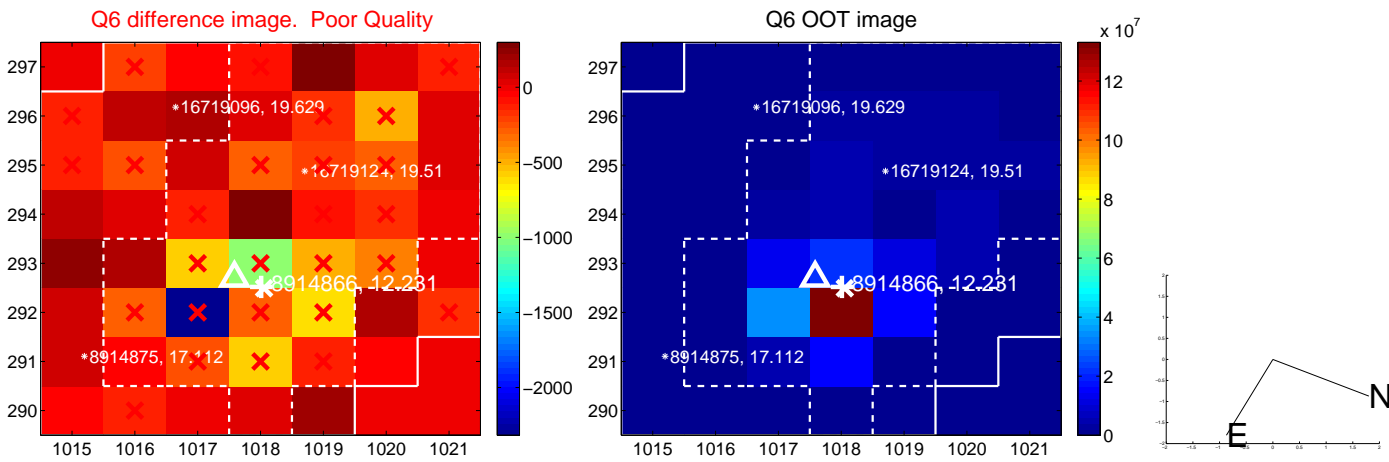
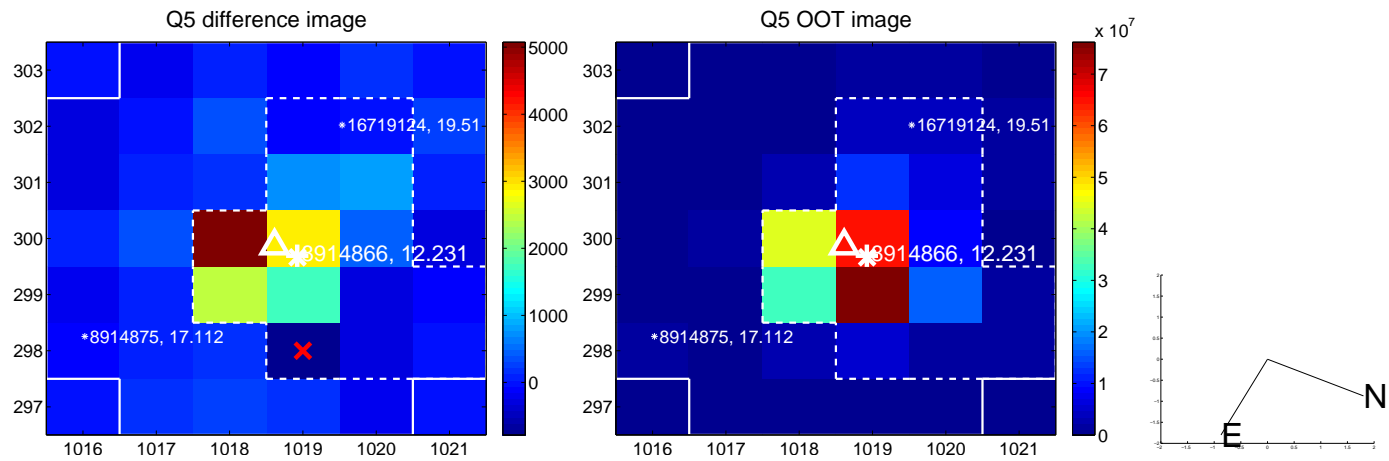


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

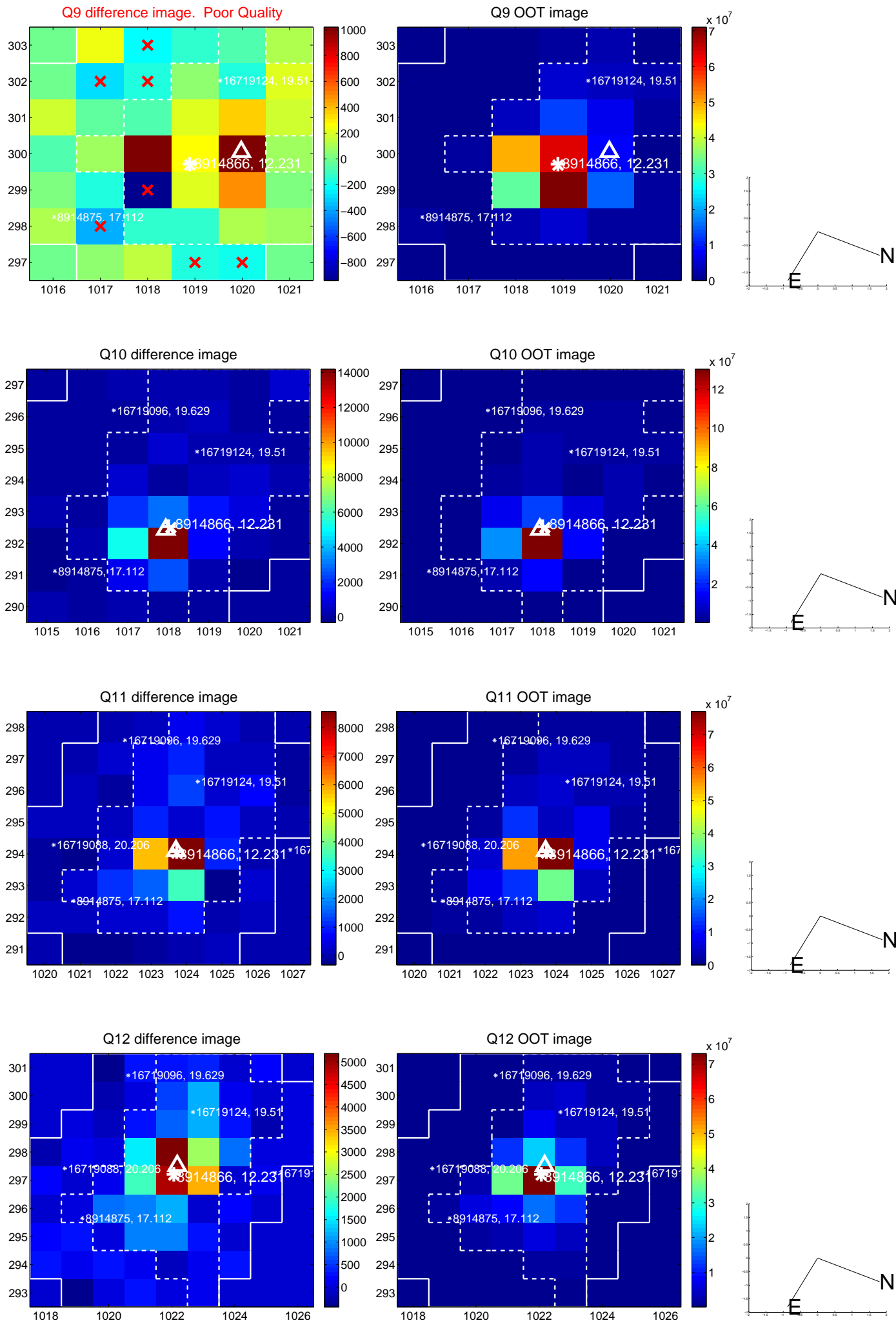
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



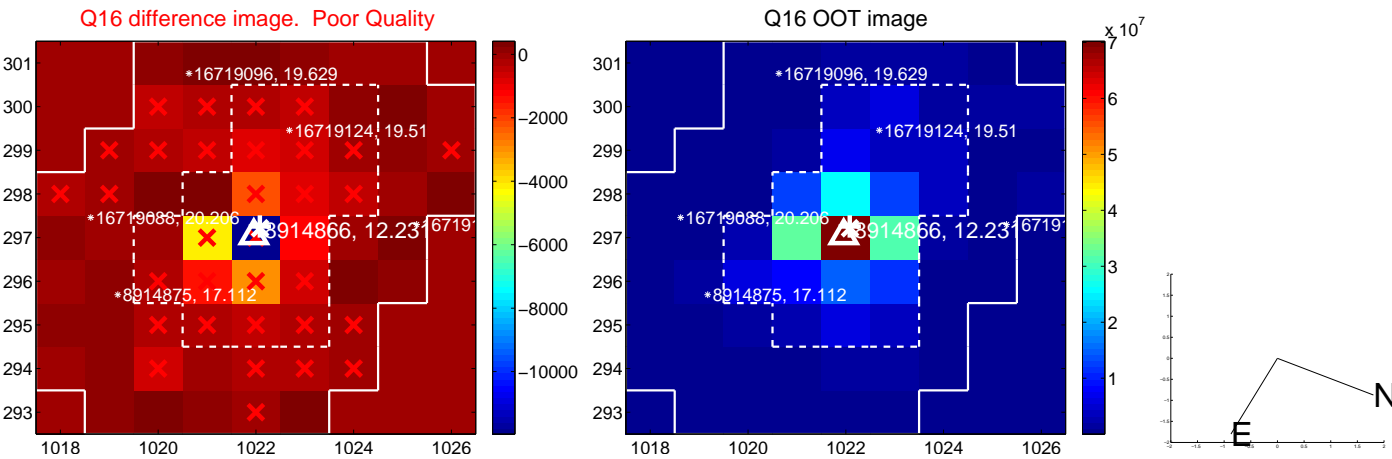
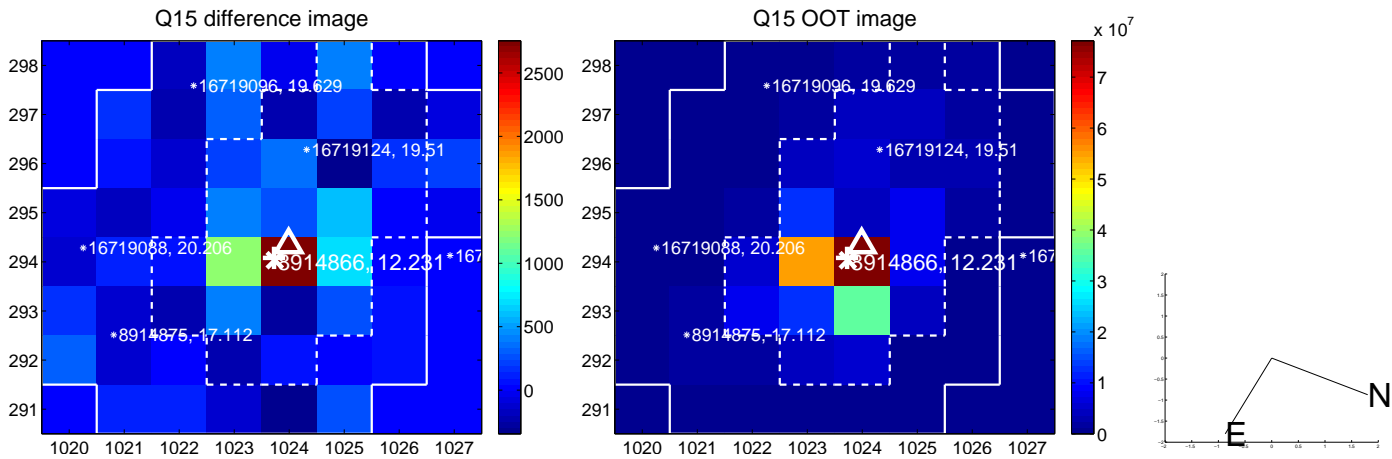
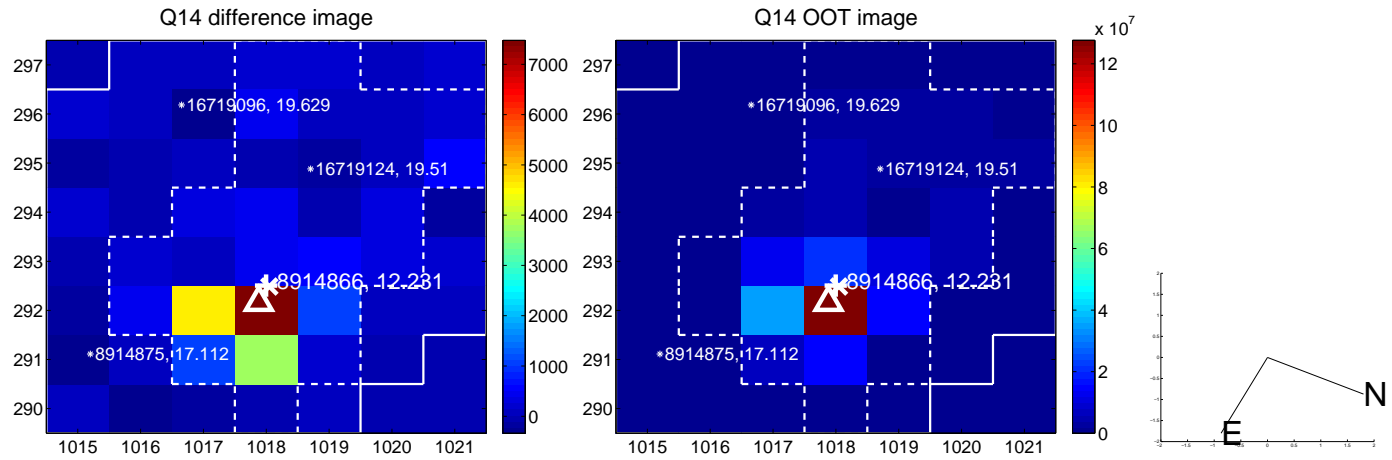
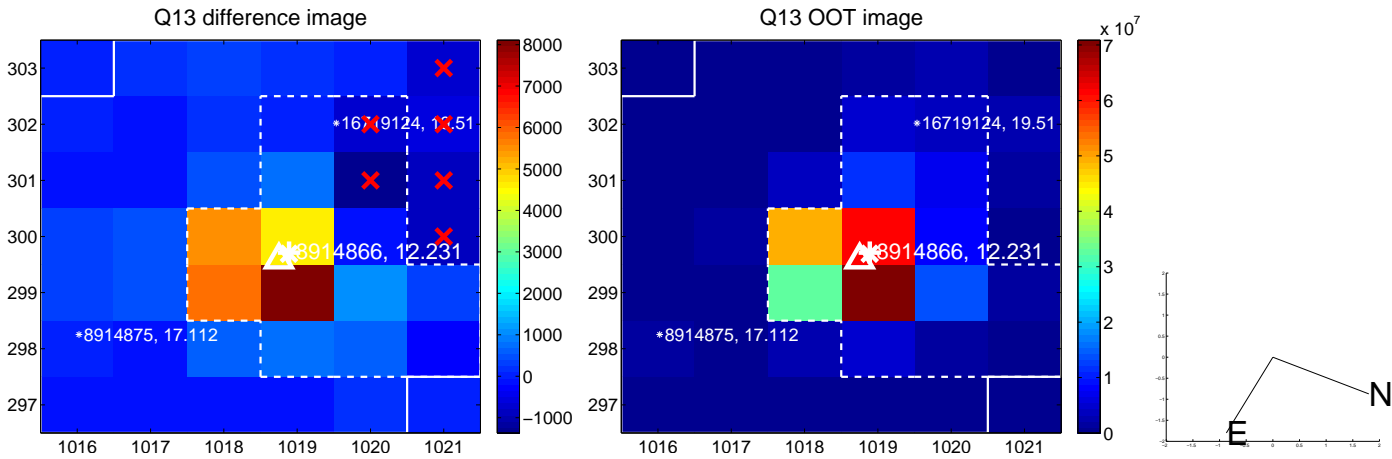
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



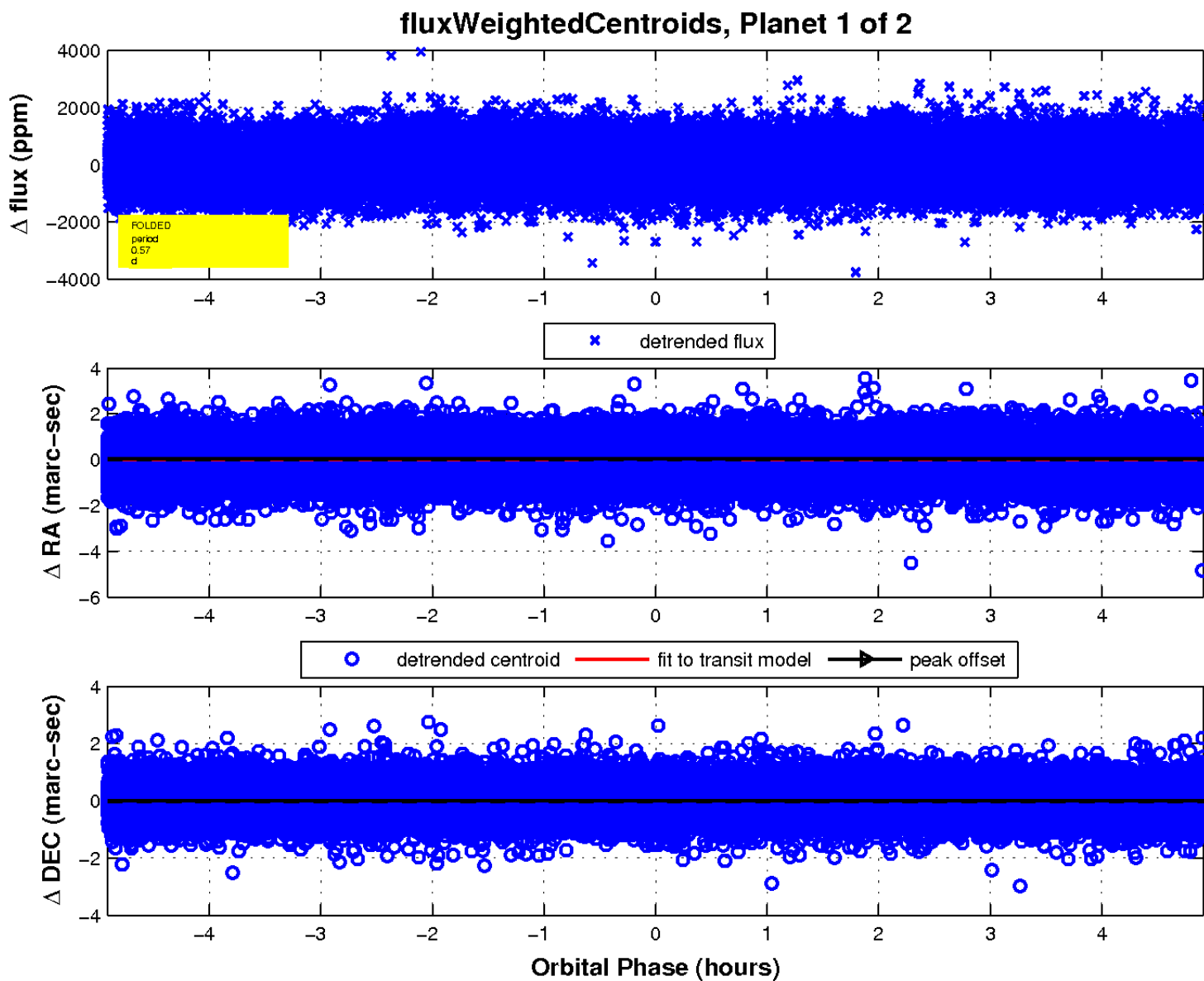
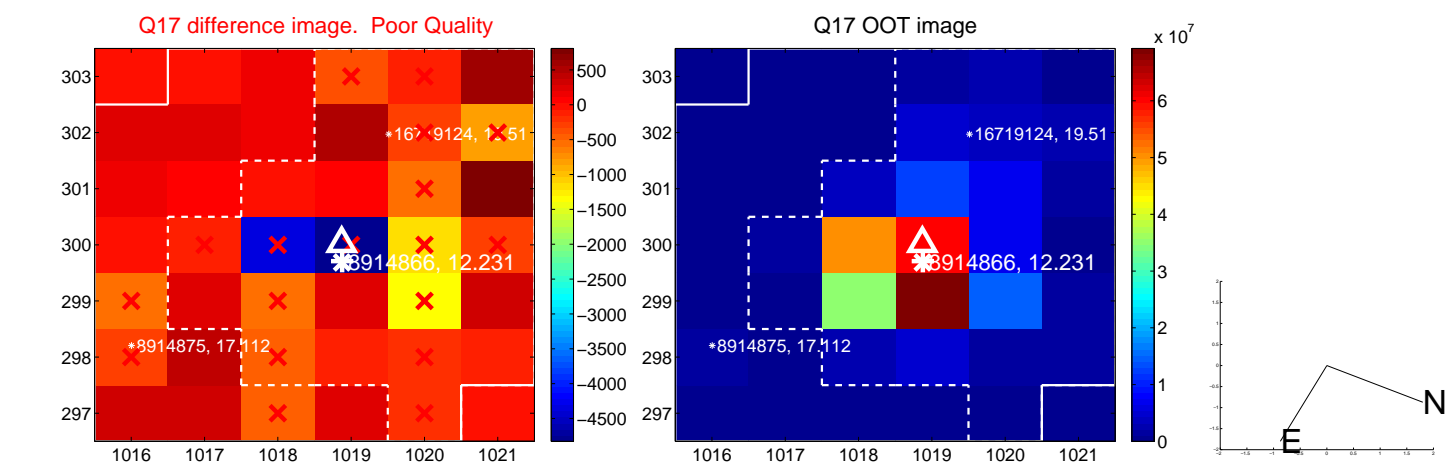
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

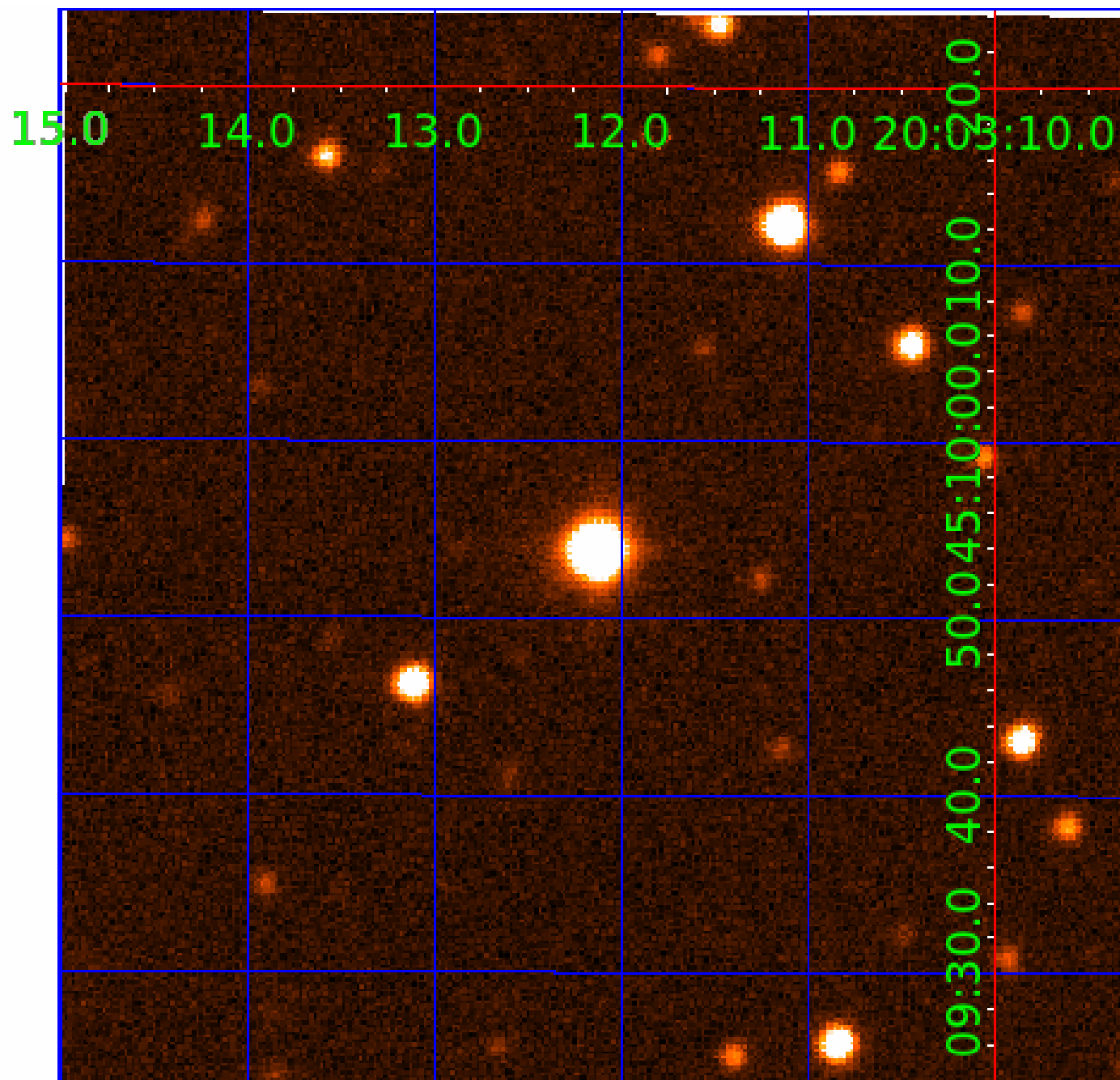


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008914866

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})
008914866-01	OBS	No	0.572659	132.072390	88.9	1.638	10.4	9.9	3.17	8361	3.48	150823.91
008914866-02	OBS	No	3.139199	132.185802	234.9	3.112	9.8	10.8	3.17	8361	5.54	15604.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008914866-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008914866-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

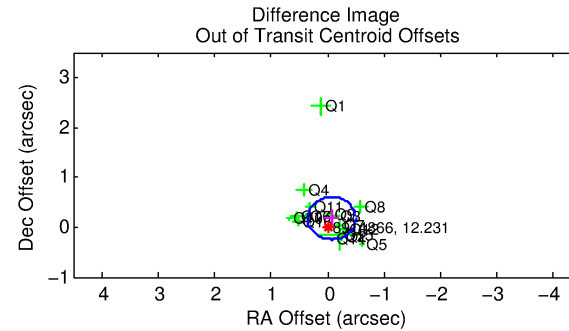
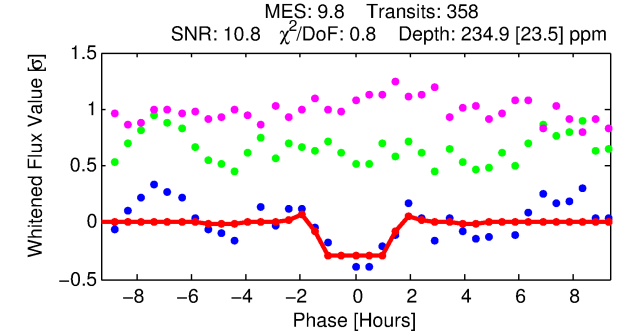
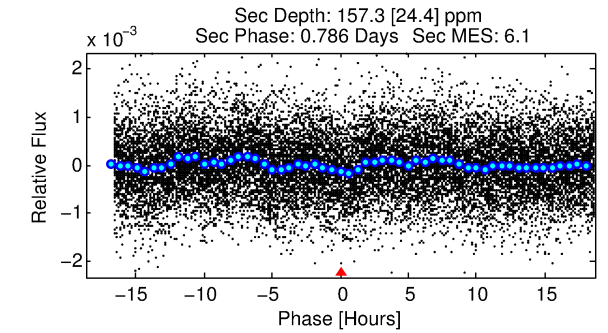
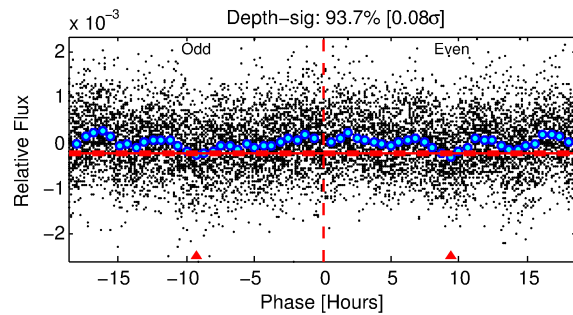
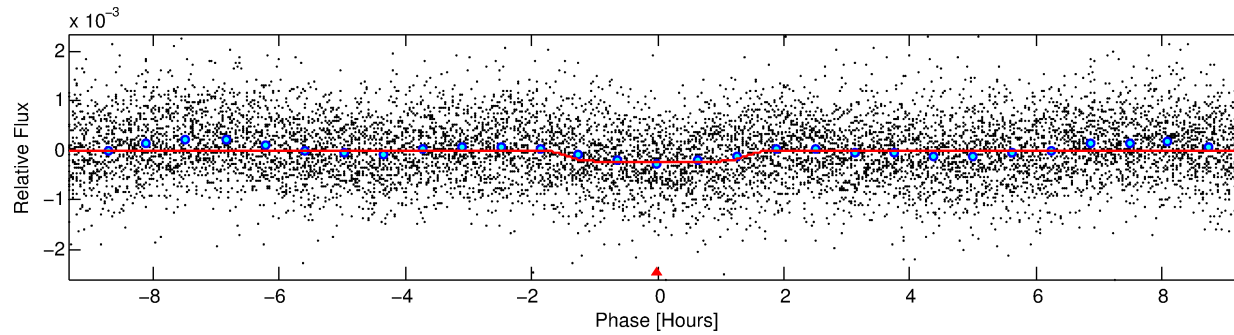
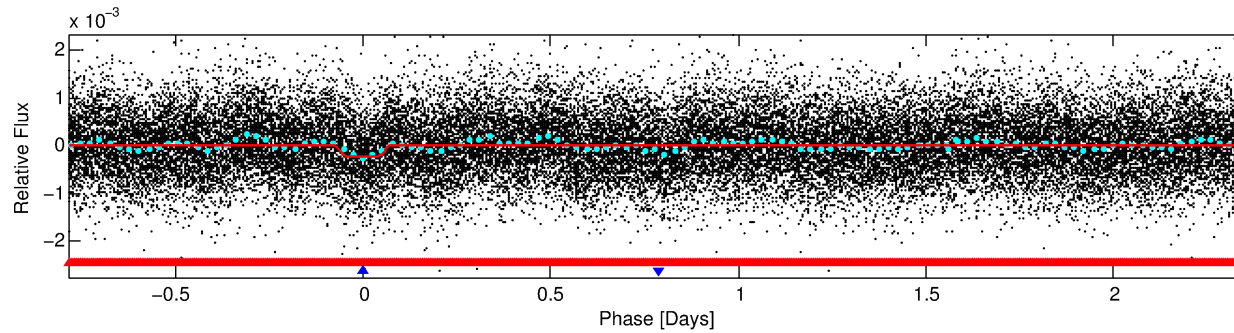
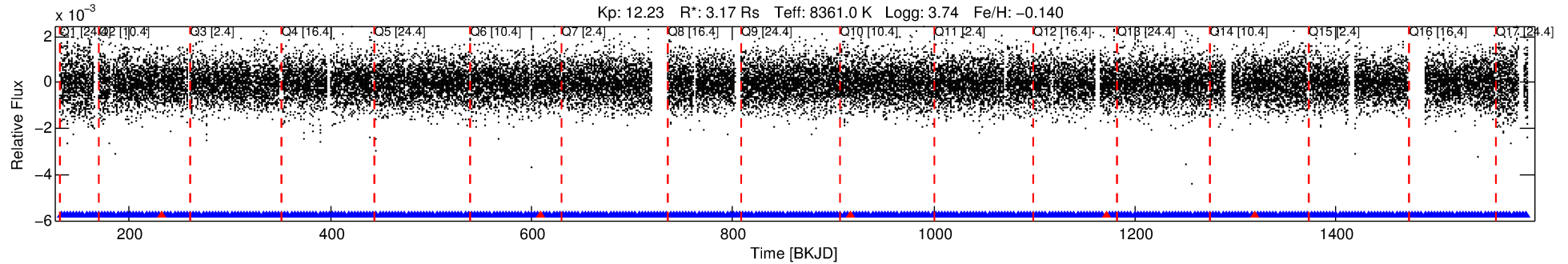
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008914866-02

No Significant Match Found

DV One-Page Summary

KIC: 8914866 Candidate: 2 of 2 Period: 3.139 d



DV Fit Results:

Period = 3.13920 [0.00002] d
Epoch = 132.1858 [0.0032] BKJD
Rp/R* = 0.0160 [0.0052]
a/R* = 4.17 [7.86]
b = 0.87 [0.57]
Seff = 15604.15 [10720.12]
Teff = 2850 [489] K
Rp = 5.54 [3.08] Re
a = 0.0532 [0.0224] AU
Ag = 7.97 [7.50] [0.93 σ]
Teffp = 7404 [1281] K [3.32 σ]

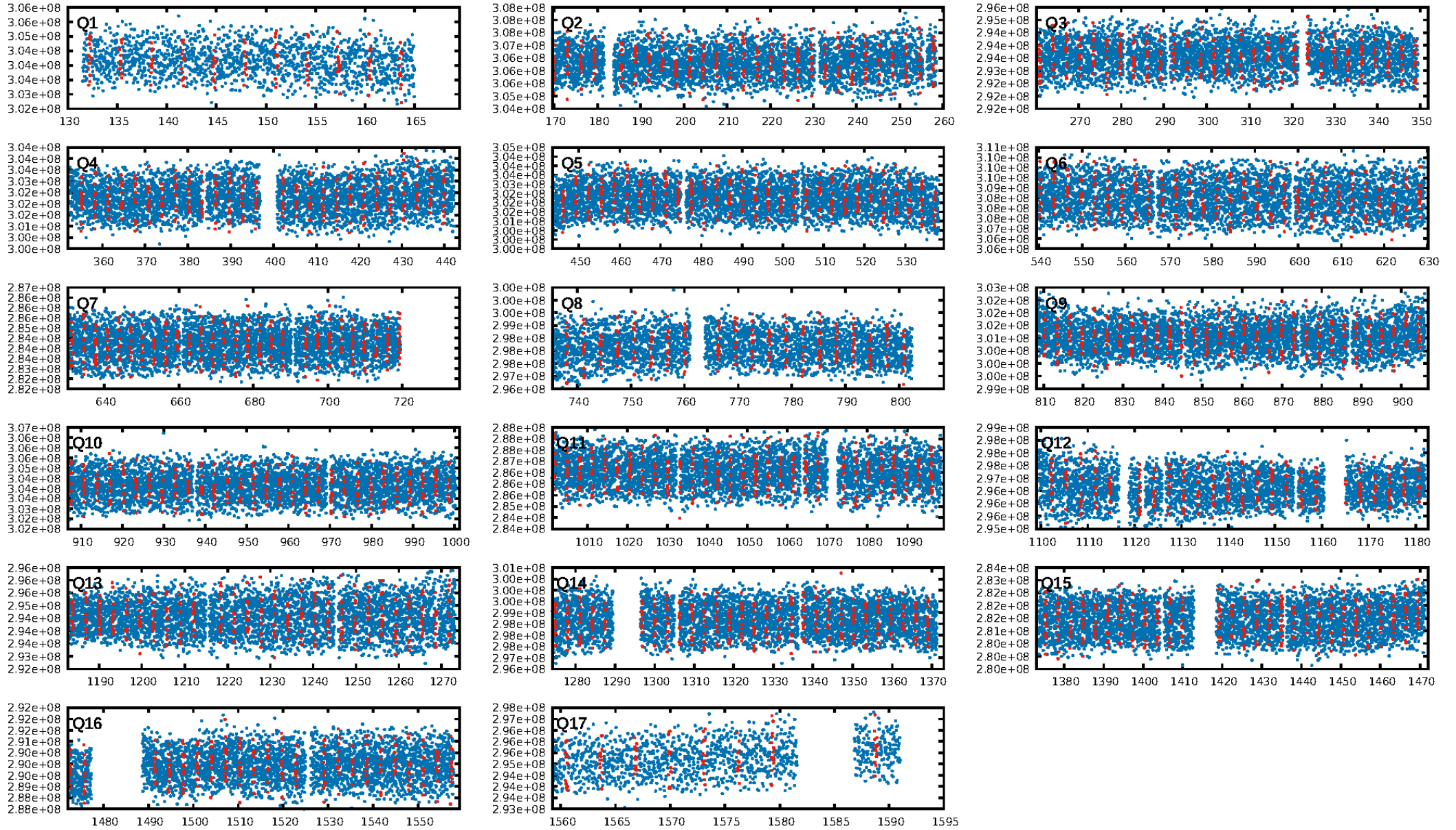
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.52 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.01e-20
RollingBand-fgt: 0.99 [336/341]
GhostDiagnostic-chr: 1.015
Centroid-sig: 0.5%
Centroid-so: 0.424 arcsec [3.20 σ]
OotOffset-rm: 0.190 arcsec [1.34 σ]
KicOffset-rm: 0.190 arcsec [1.35 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.50 [8/16]
DiffImageOverlap-fno: 0.00 [0/17]

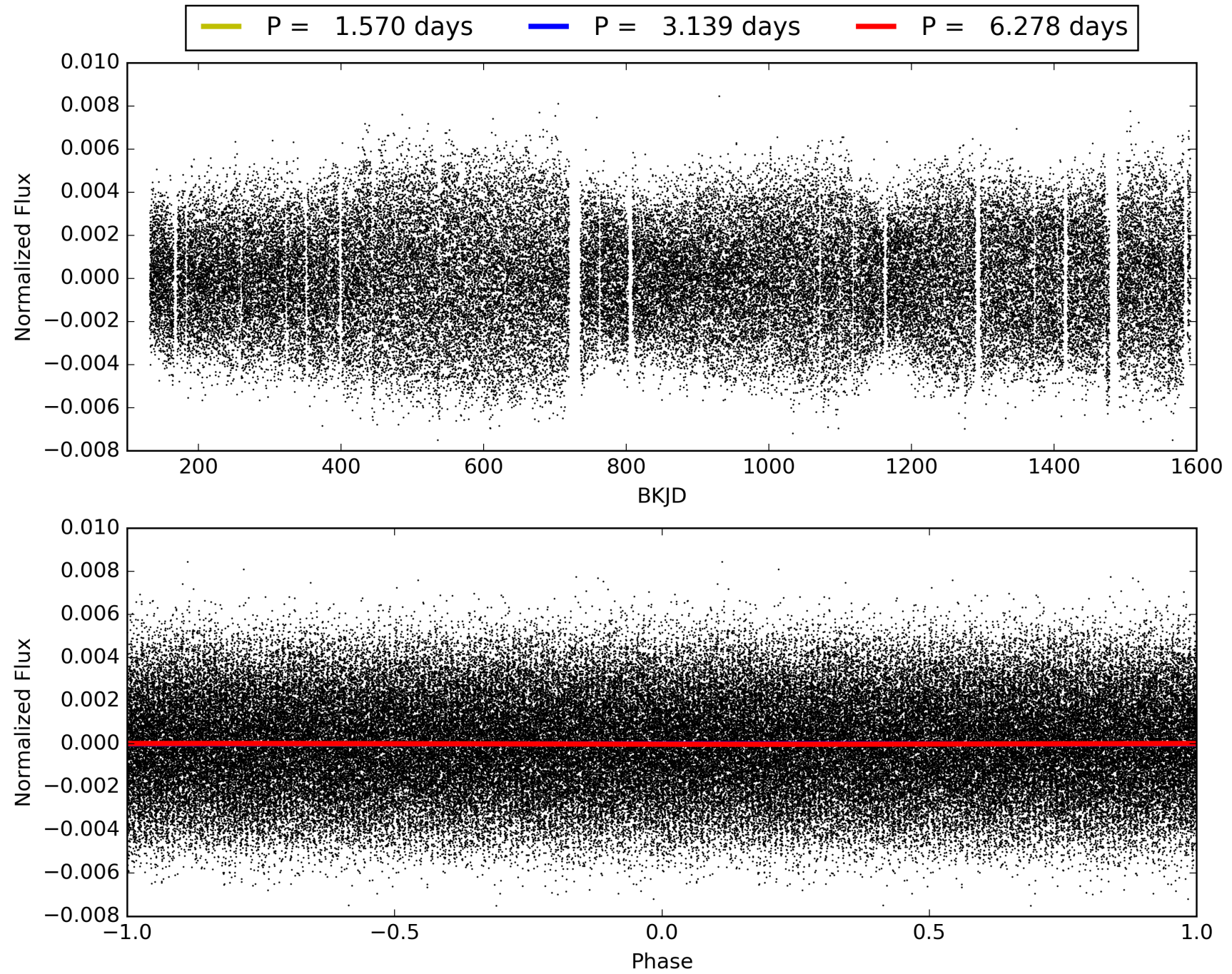
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008914866-02, PDC Light Curves

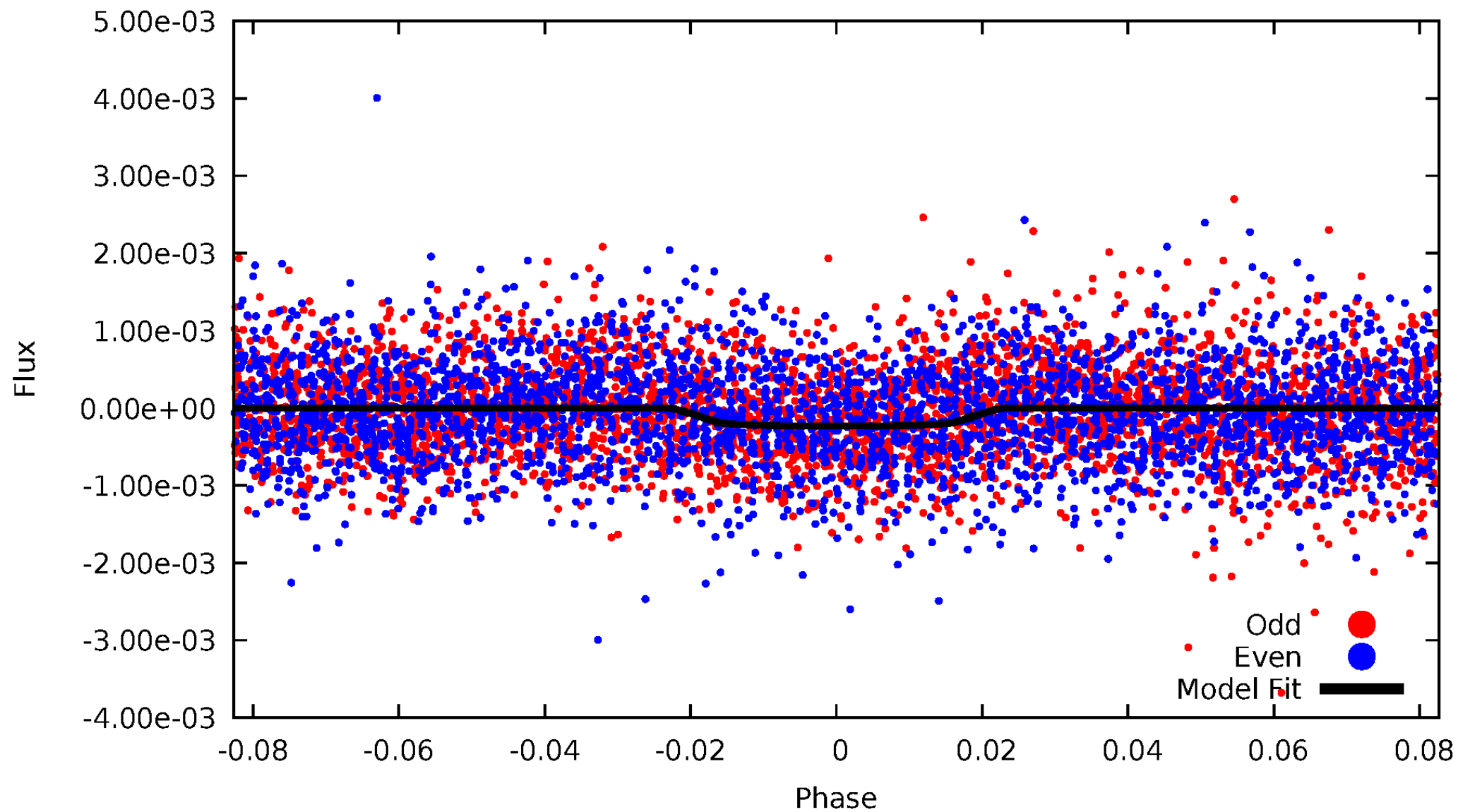


TCE 008914866-02



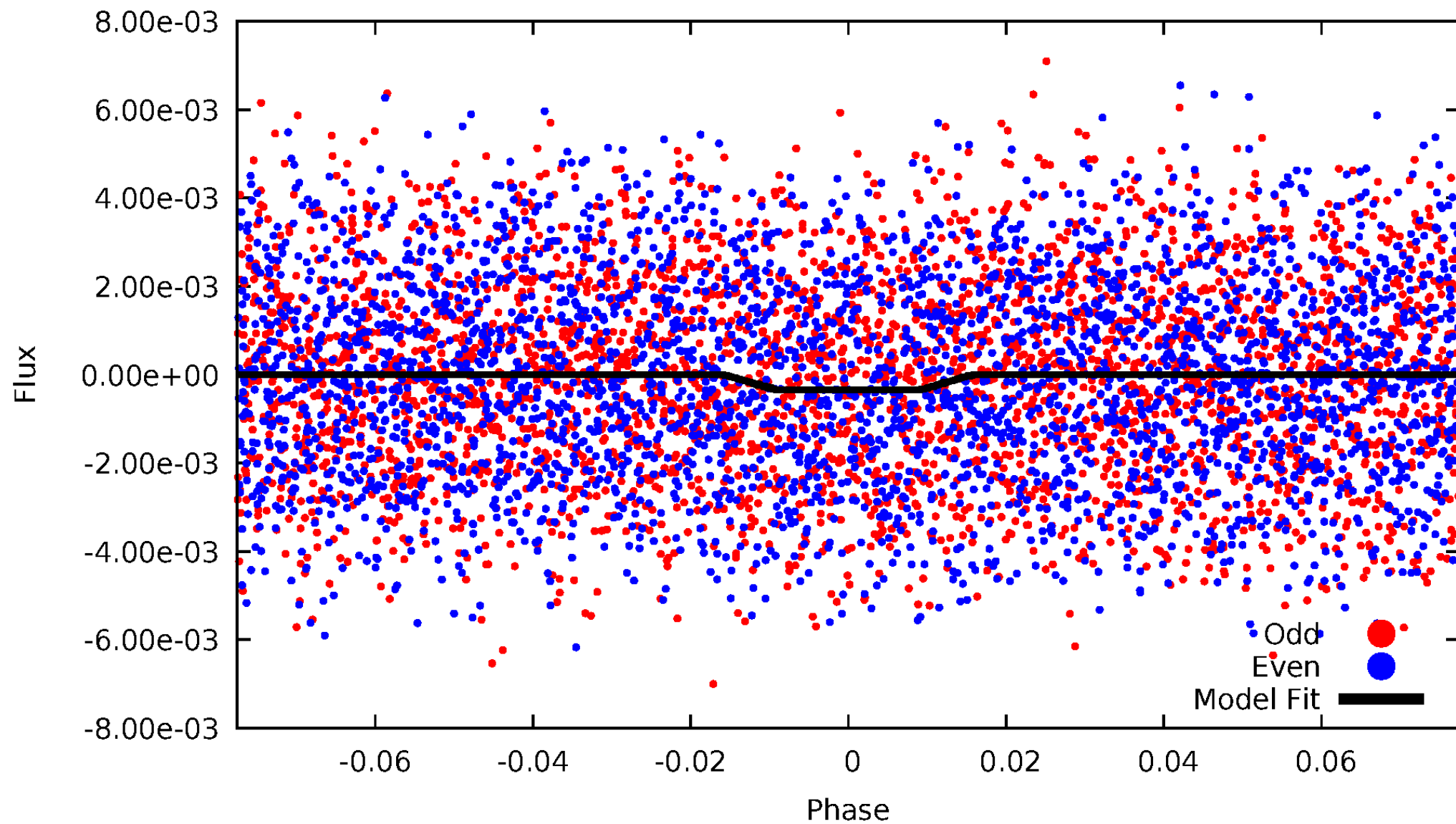
DV Odd/Even

TCE 008914866-02



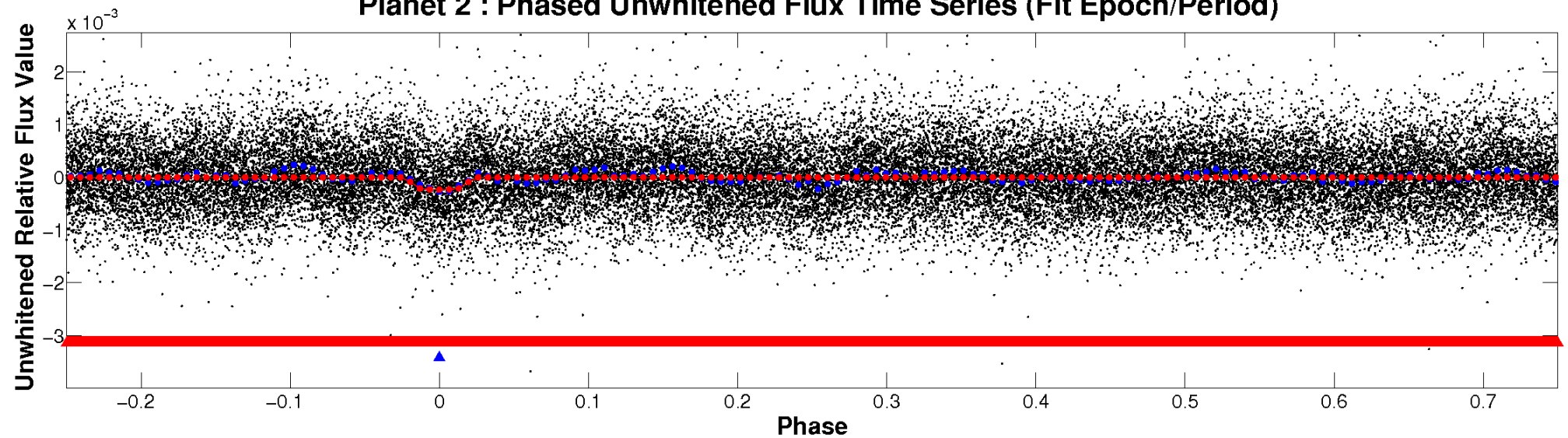
ALT Odd/Even

TCE 008914866-02

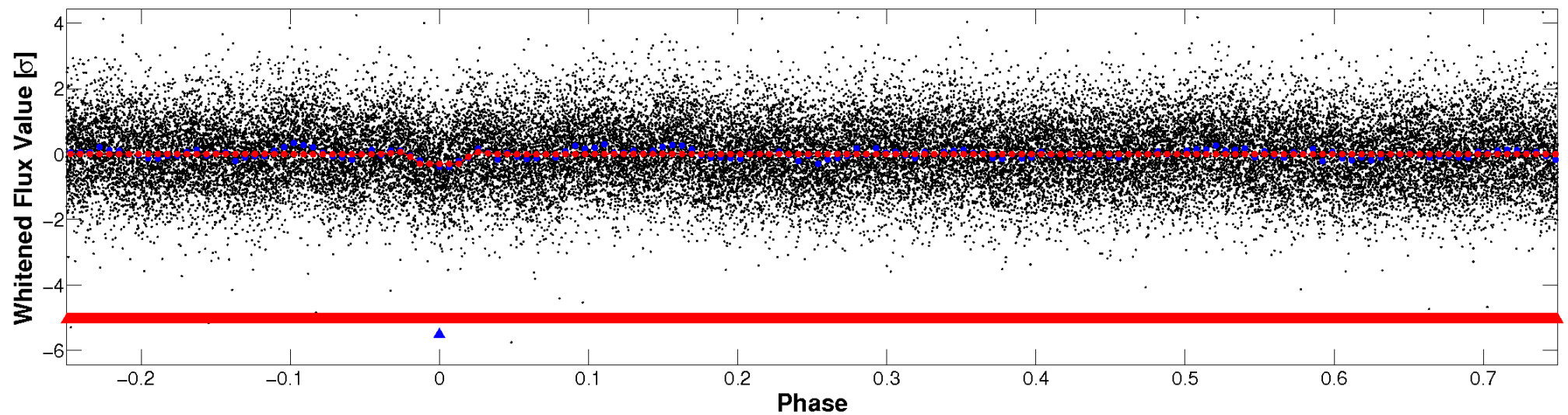


Non-Whitened Vs. Whitened Light Curve

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

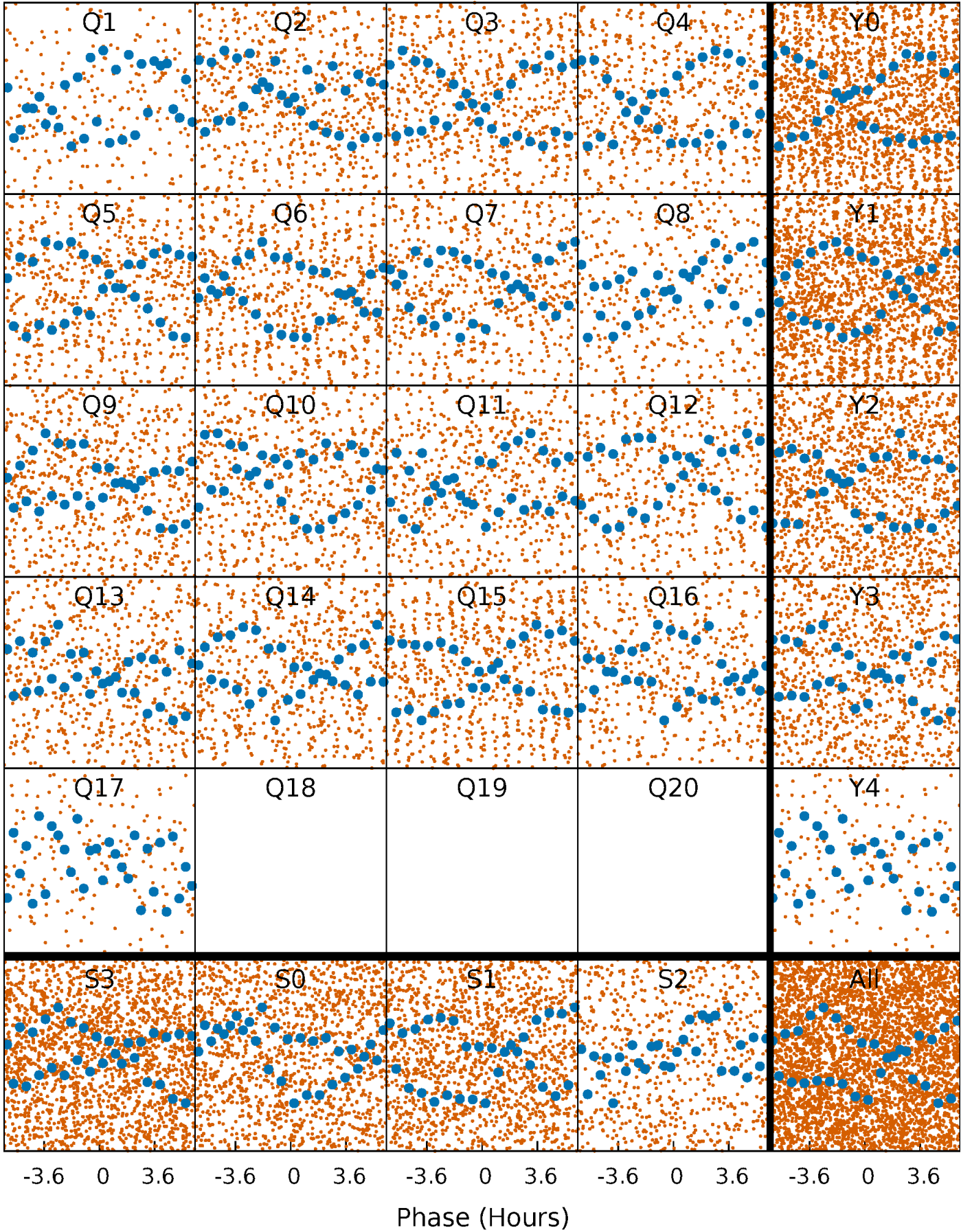


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



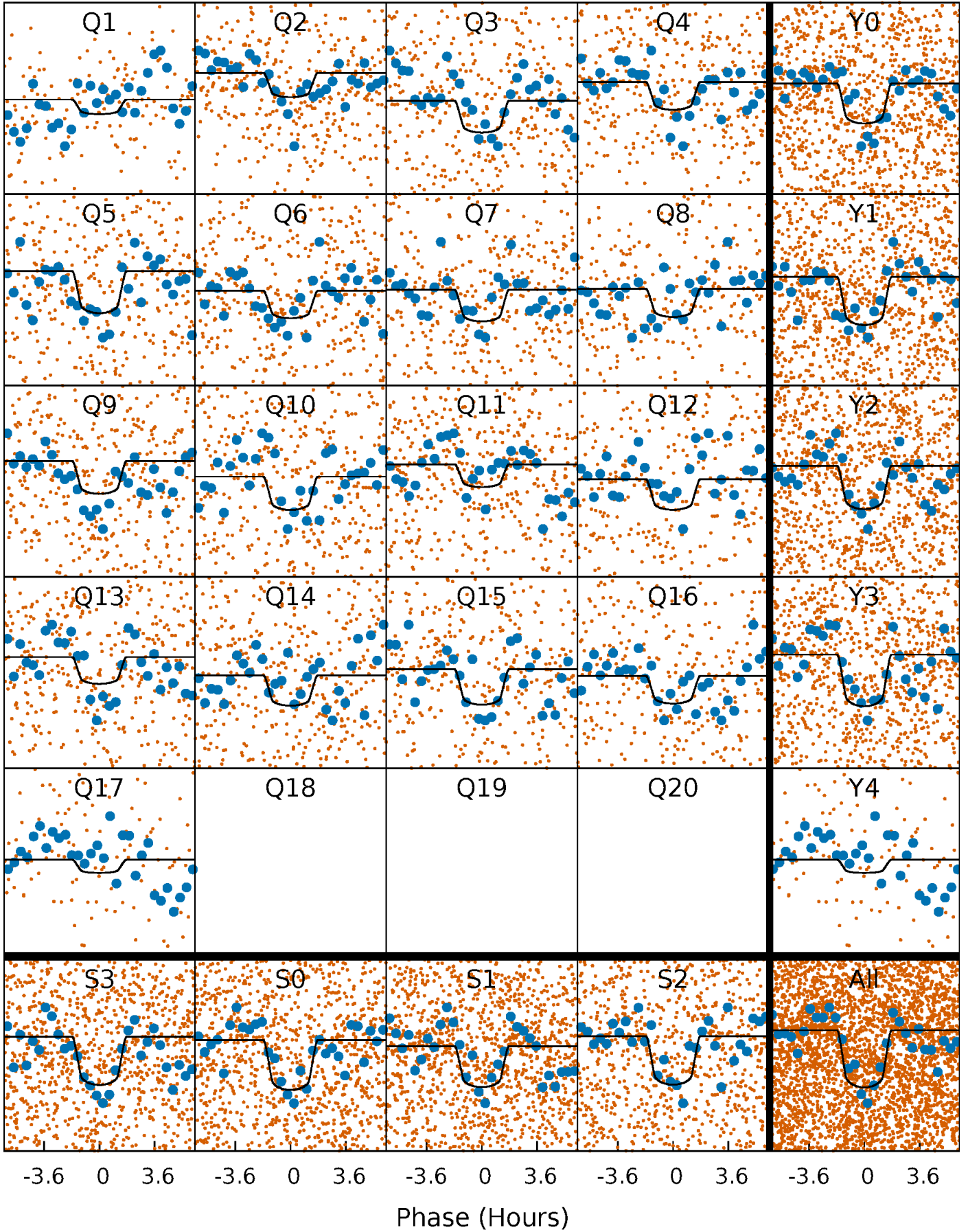
PDC Quarter-Phased Transit Curves

TCE 008914866-02 P= 3.139199 Days $T_0=132.185802$ (BKJD)



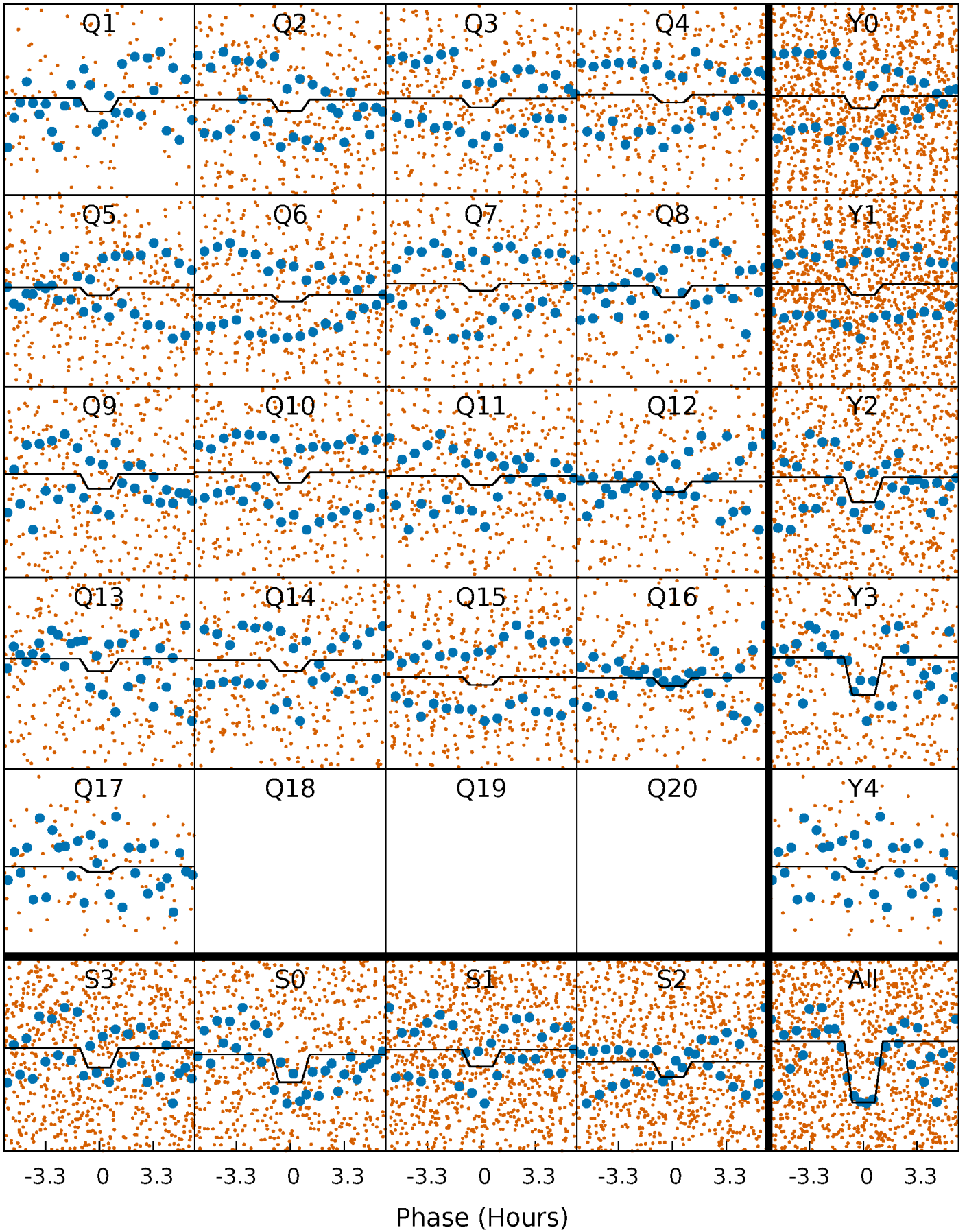
DV Quarter-Phased Transit Curves

TCE 008914866-02 P= 3.139199 Days $T_0=132.185802$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

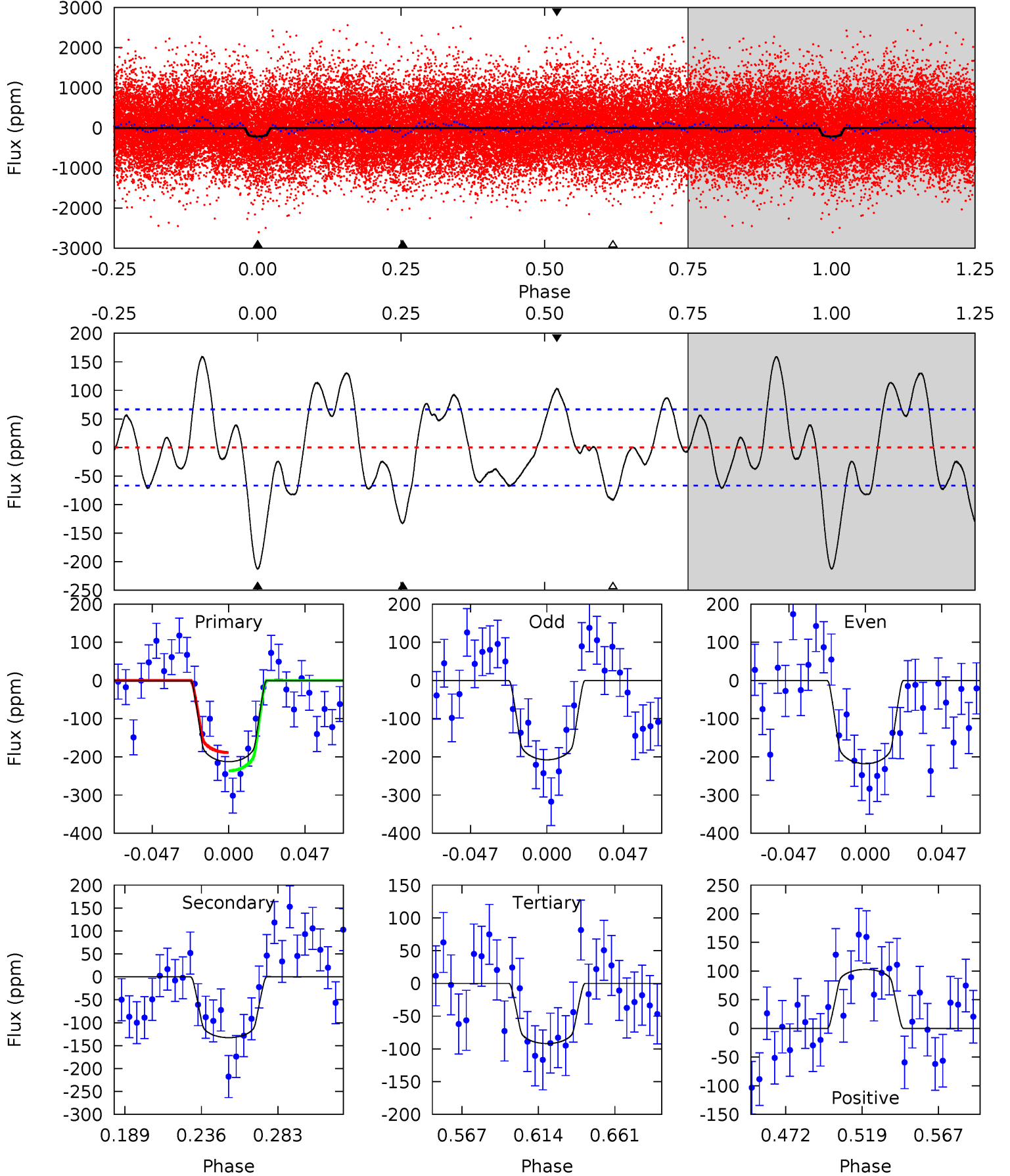
TCE 008914866-02 P= 3.139126 Days $T_0=132.209073$ (BKJD)



DV Model-Shift Uniqueness Test

008914866-02, P = 3.139199 Days, E = 129.046603 Days

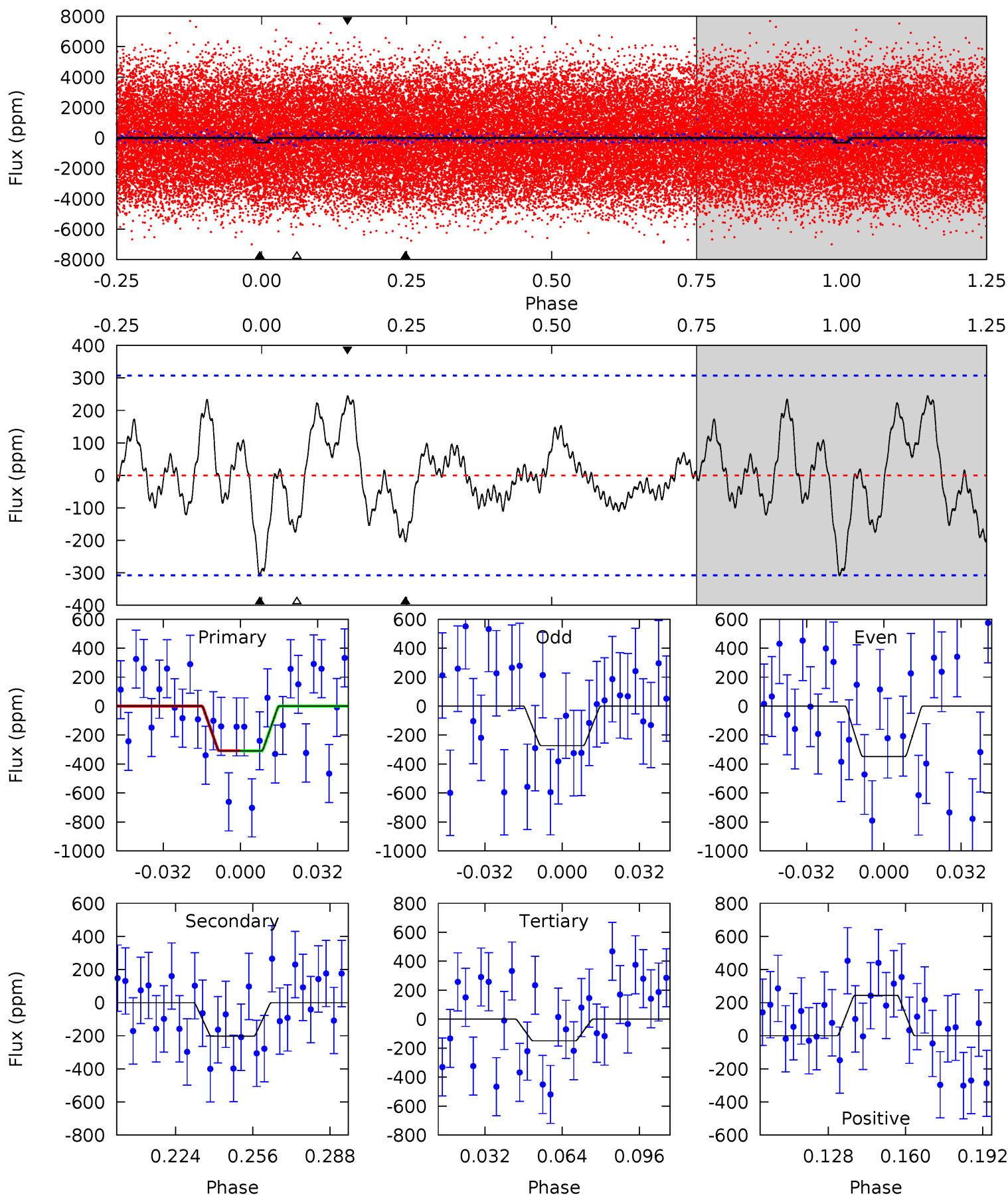
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	9.38	6.50	7.28	4.72	1.98	4.26	8.54	7.75	2.88	2.10	0.37	0.97	0.43	1.69



Alt Model-Shift Uniqueness Test

008914866-02, P = 3.139126 Days, E = 129.069947 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.81	3.17	2.34	3.81	4.80	2.14	1.35	2.48	1.01	0.84	-0.63	0.58	0.97	0.44	0.01



Stellar Parameters For KIC 008914866

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8361^{+202}_{-376}	$3.743^{+0.385}_{-0.138}$	$-0.140^{+0.300}_{-0.350}$	$3.174^{+0.954}_{-1.431}$	$2.031^{+0.440}_{-0.484}$	$0.090^{+0.301}_{-0.042}$
	+2%/-4%	+10%/-4%	+214%/-250%	+30%/-45%	+22%/-24%	+337%/-47%
Source	KIC0	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 008914866-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-133 ± 14	$5.23^{+2.02}_{-1.77}$	3880^{+303}_{-415}	6731^{+1672}_{-955}	$7.839^{+9.533}_{-3.876}$
Alt.	-203 ± 64	$5.88^{+2.43}_{-2.00}$	3855^{+341}_{-429}	6930^{+1972}_{-1162}	$8.774^{+12.204}_{-4.706}$

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

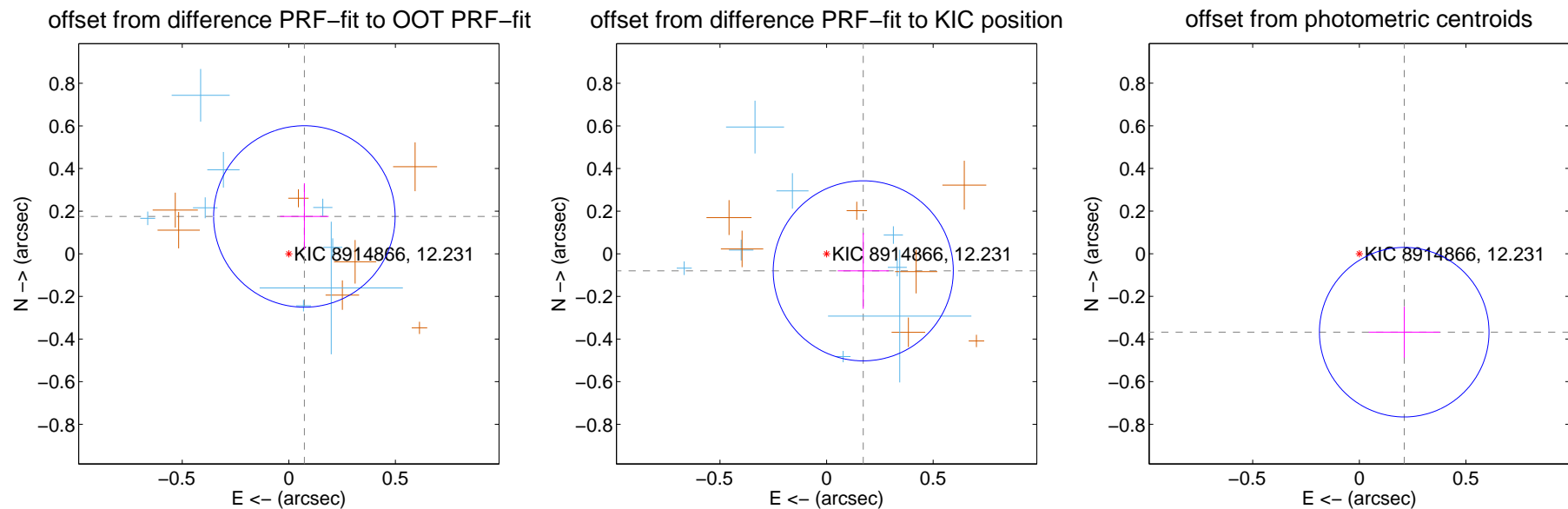
DV Centroid Data

Supplemental centroid analysis for 008914866-02. Kepler magnitude: 12.23. Transit SNR 10.77

There are 8 quarters with good PRF difference image offsets

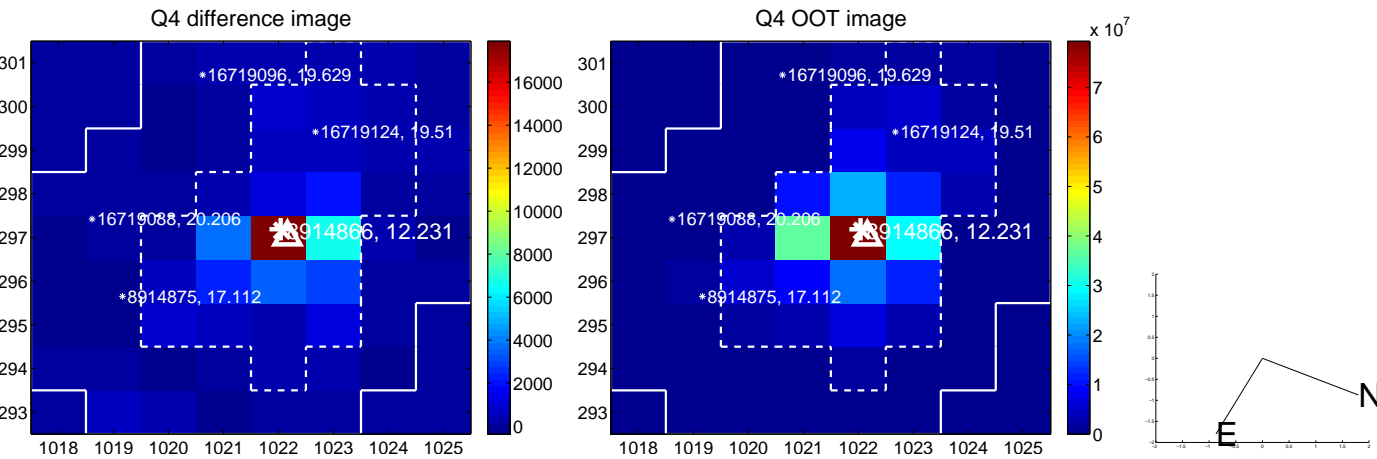
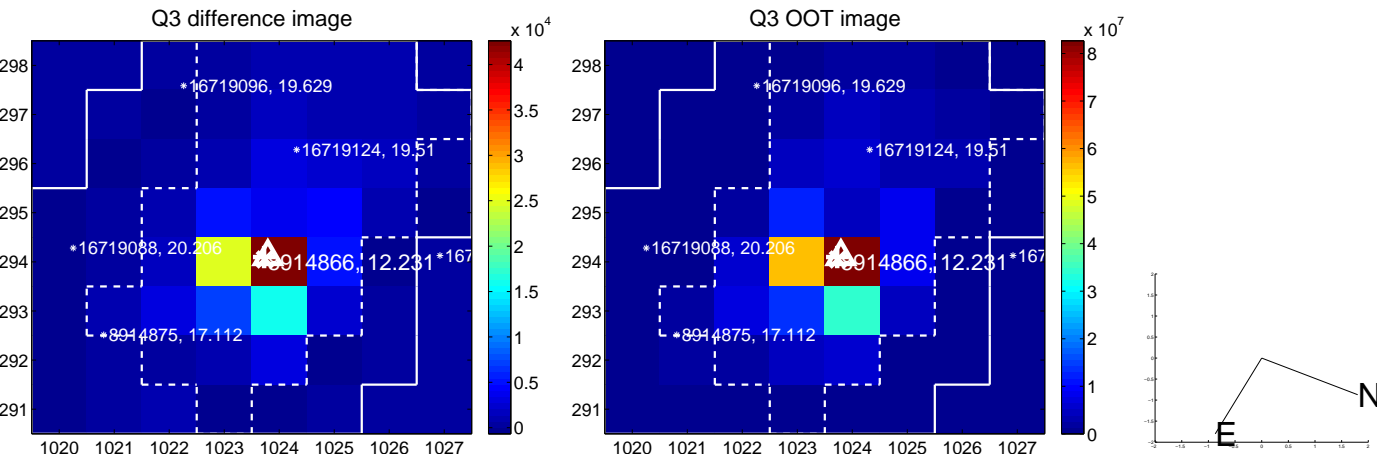
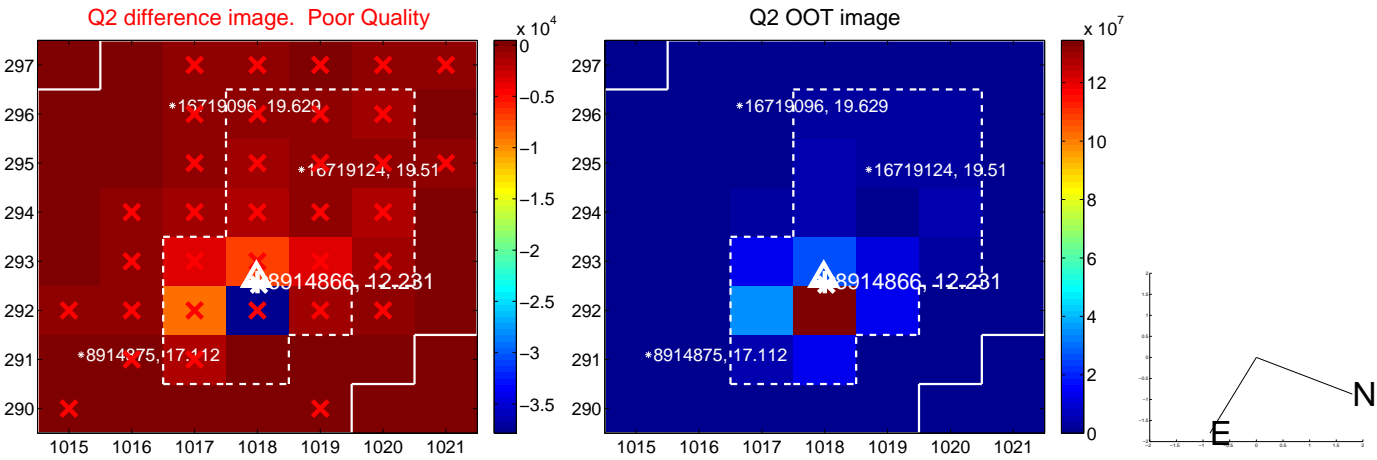
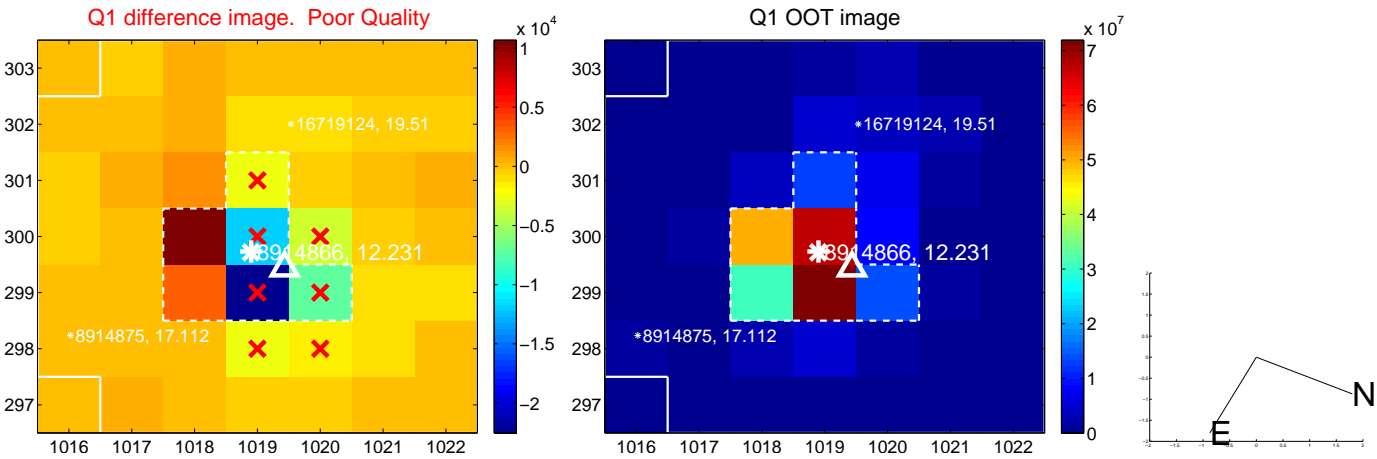
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.190 ± 0.142	1.34	-0.073 ± 0.114	0.175 ± 0.156
PRF-fit source offset from KIC position	0.190 ± 0.141	1.35	-0.172 ± 0.120	-0.080 ± 0.178
photometric centroid source offset	0.42 ± 0.13	3.20	-0.21 ± 0.17	-0.37 ± 0.12

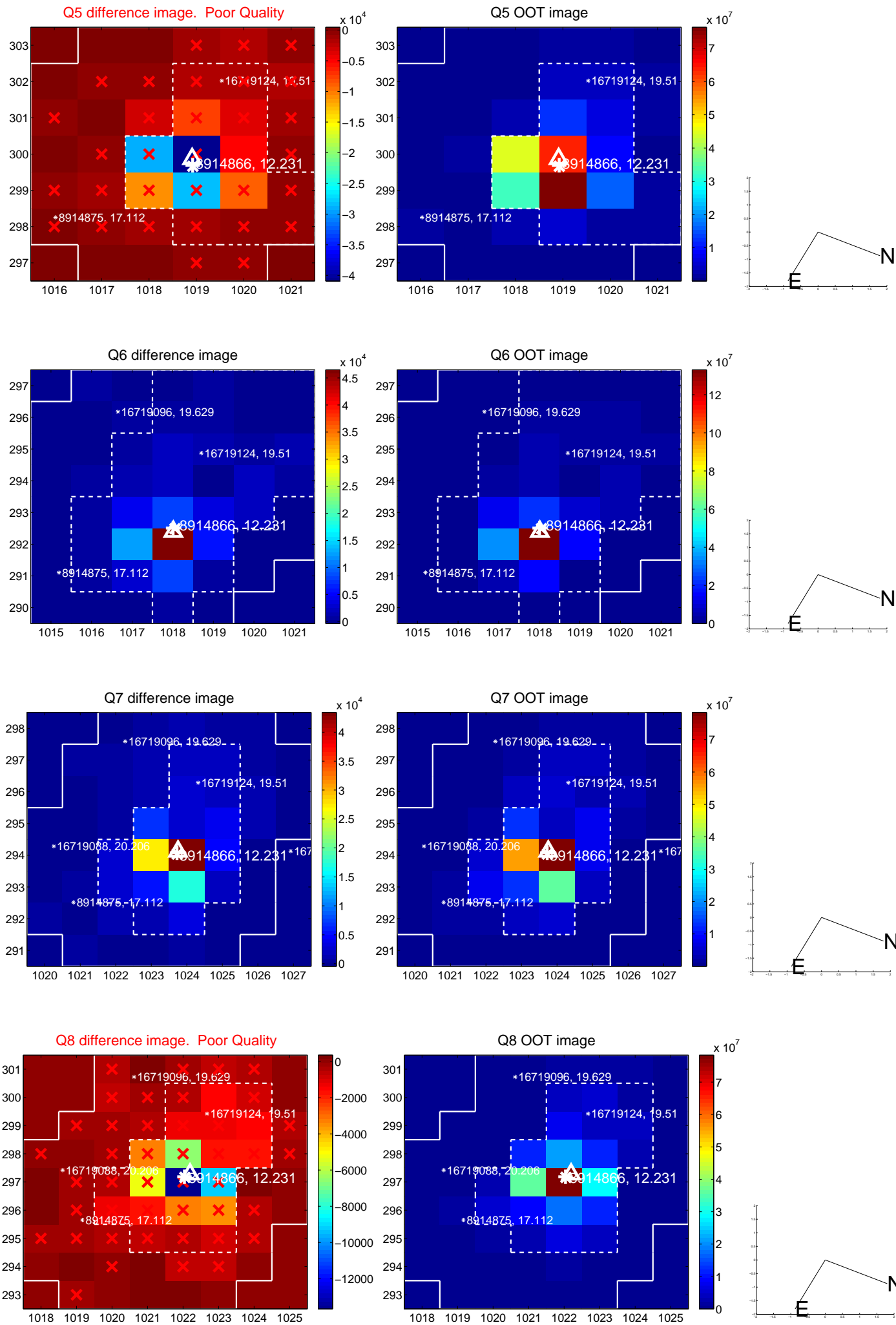


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

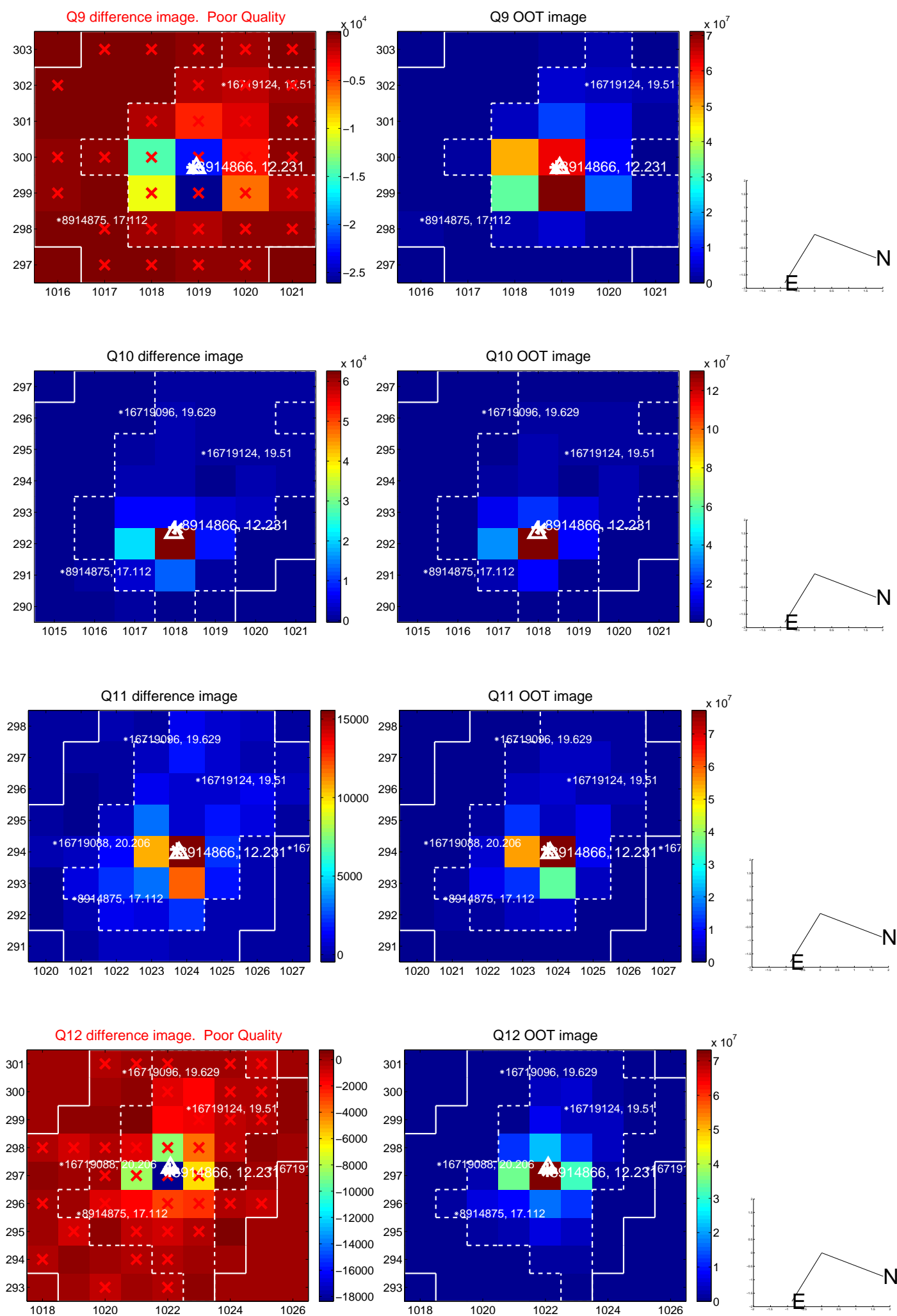
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



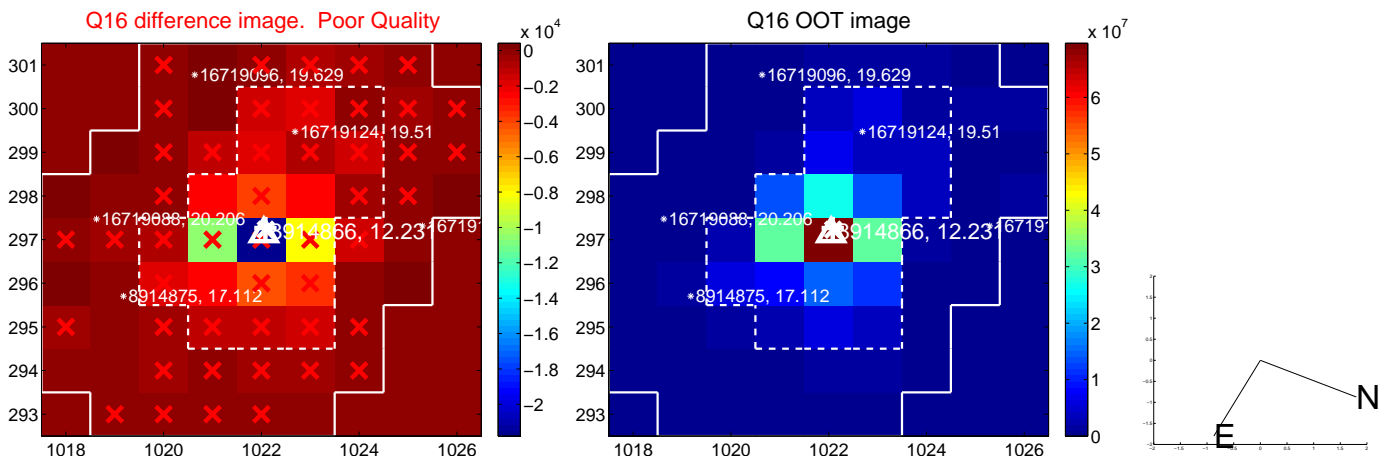
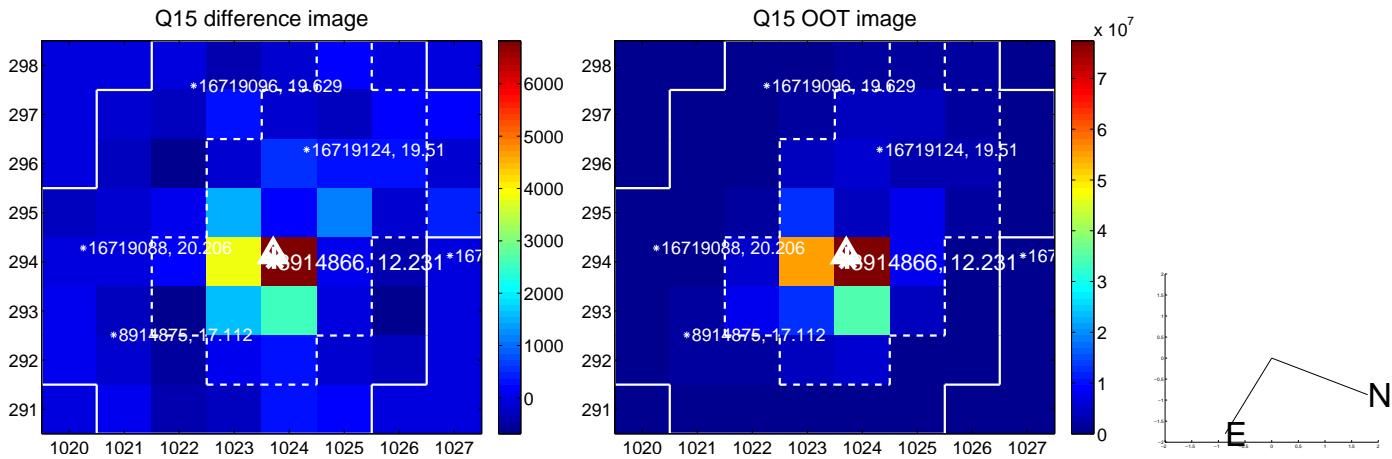
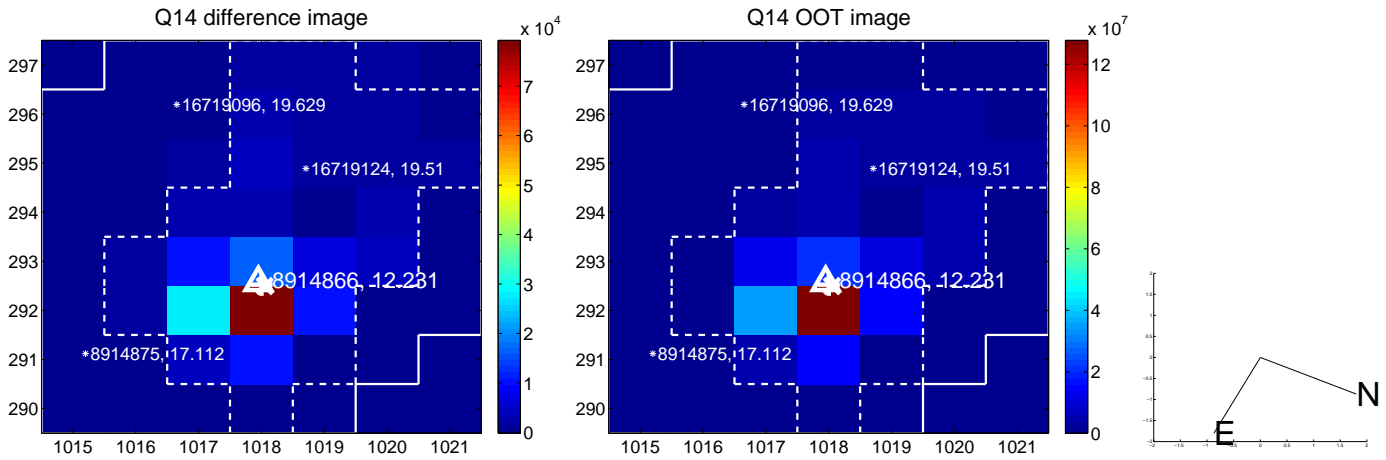
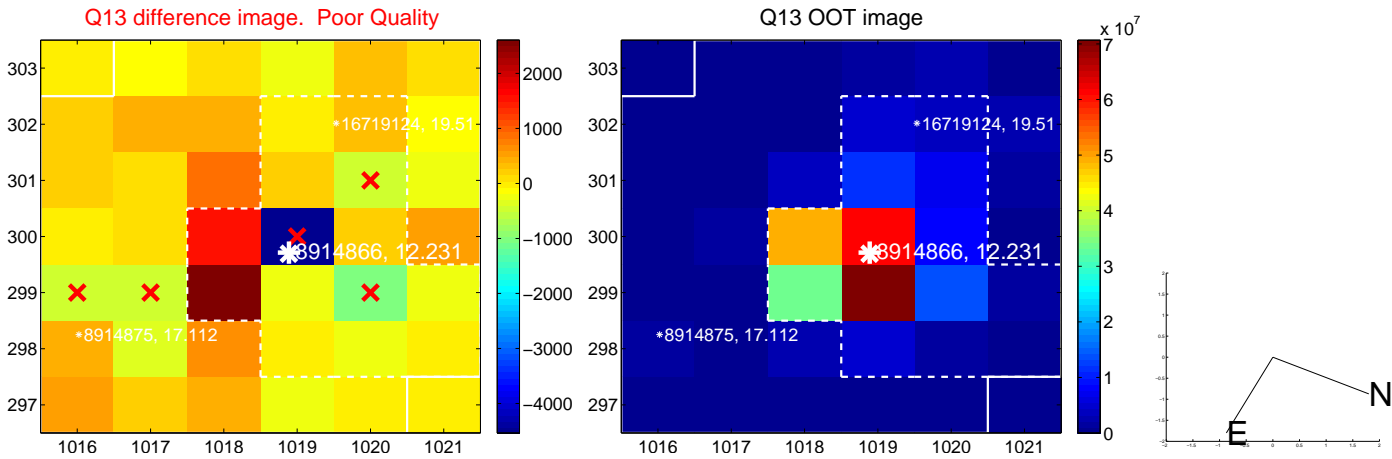
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



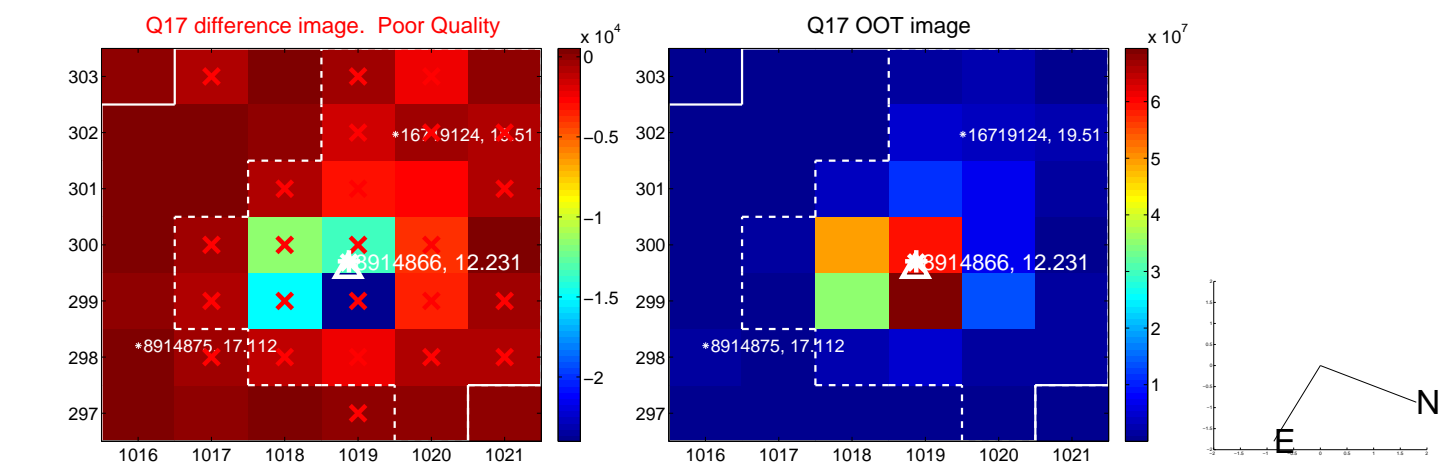
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



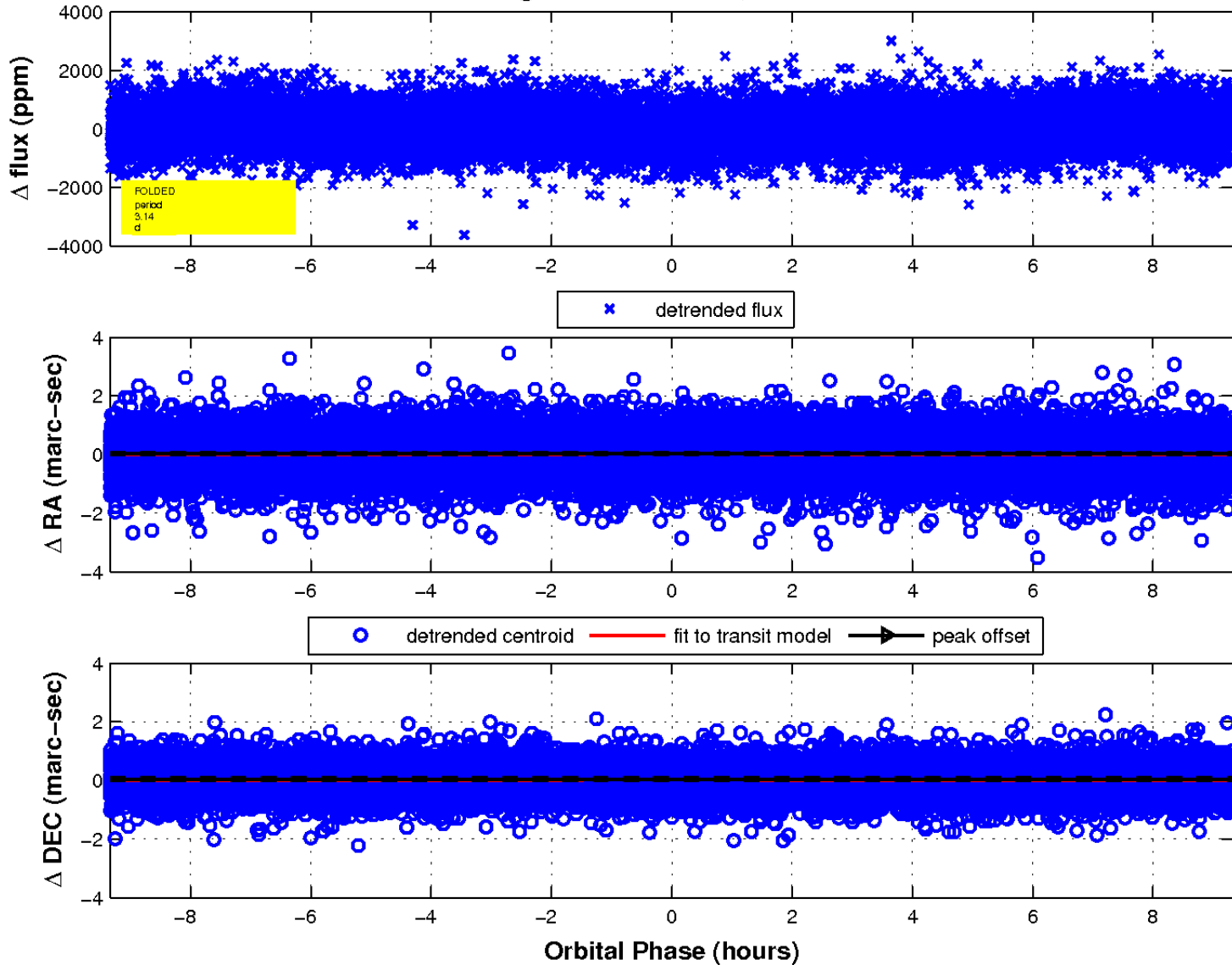
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fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

