

KIC 001718594

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})
001718594-01	OBS	No	2.718664	132.800318	16.1	6.579	11.3	10.5	2.35	7796	1.06	8239.51
001718594-02	OBS	No	0.774508	132.248974	7.0	1.264	8.1	4.2	2.35	7796	0.72	43954.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001718594-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
001718594-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

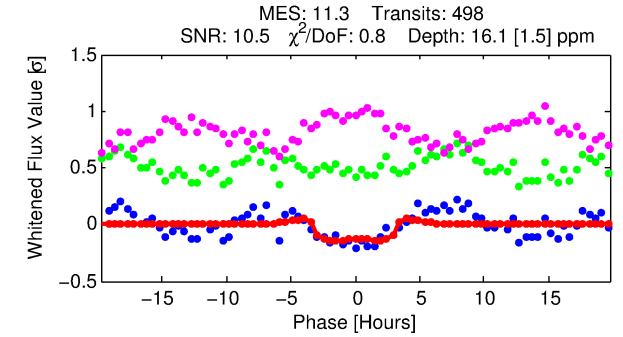
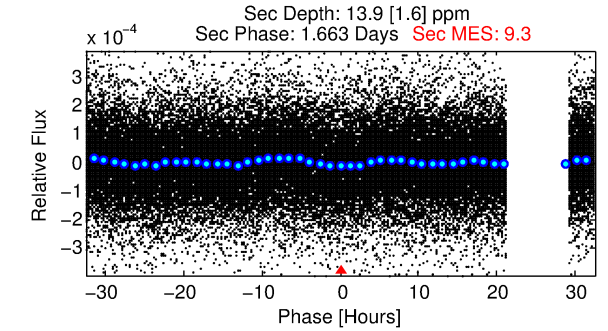
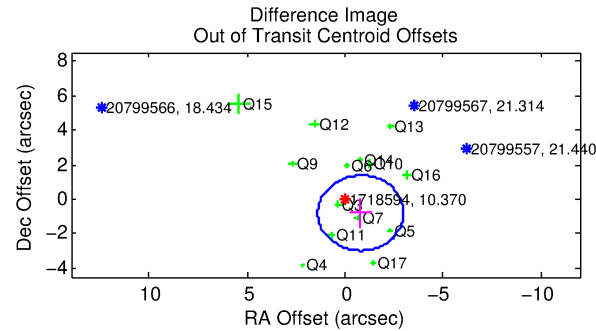
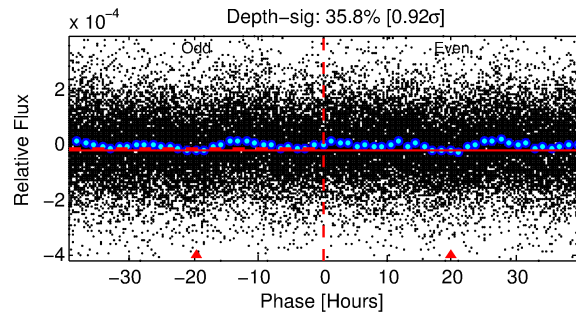
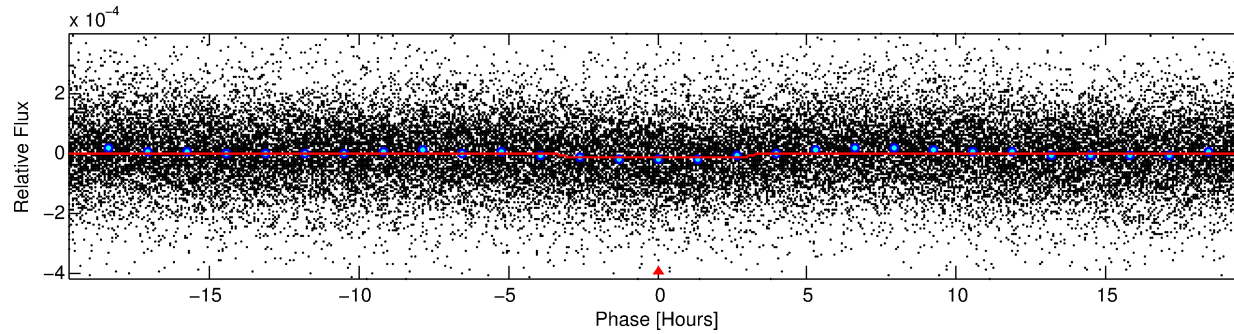
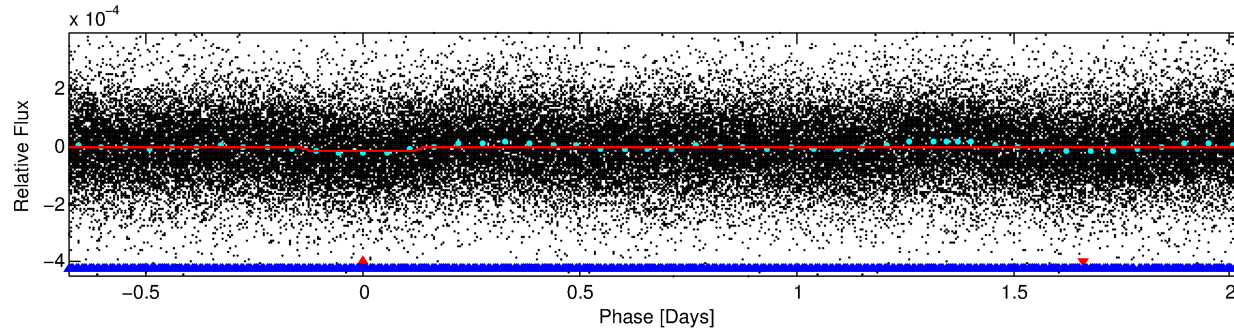
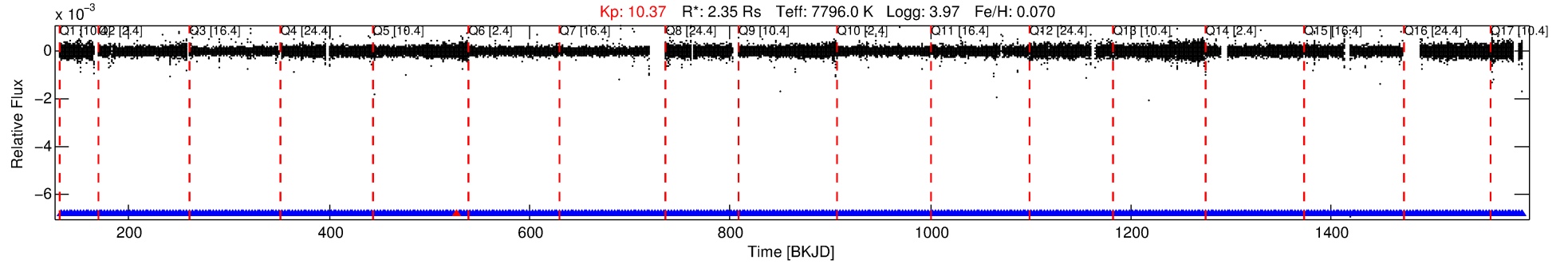
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001718594-01

No Significant Match Found

DV One-Page Summary

KIC: 1718594 Candidate: 1 of 2 Period: 2.719 d



DV Fit Results:

Period = 2.71866 [0.00003] d
Epoch = 132.8003 [0.0058] BKJD
 R_p/R^* = 0.0041 [0.0009]
 a/R^* = 1.94 [2.04]
 b = 0.84 [0.49]
 Seff = 8239.52 [3326.17]
 T_{eq} = 2429 [245] K
 R_p = 1.06 [0.39] R_e
 a = 0.0472 [0.0118] AU
 A_g = 15.18 [9.12] [1.56 σ]
 T_{eff} = 7414 [931] K [5.18 σ]

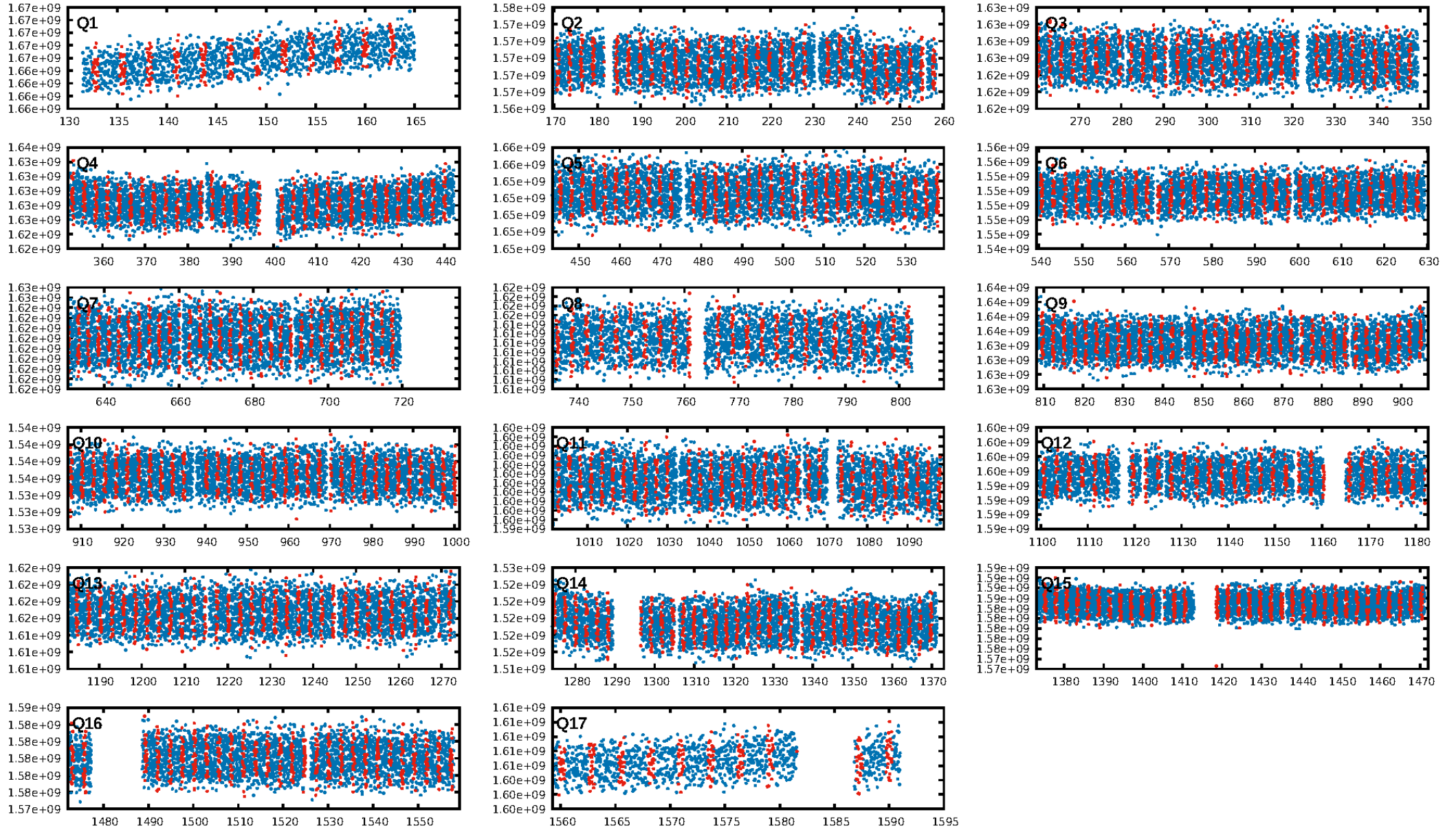
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.96 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.44e-26
RollingBand-fgt: 1.00 [475/476]
GhostDiagnostic-chr: N/A
Centroid-sig: 13.9%
Centroid-so: 1.294 arcsec [1.50 σ]
OotOffset-rm: 1.127 arcsec [1.55 σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-rm: 0.990 arcsec [1.67 σ]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 0.00 [0/17]

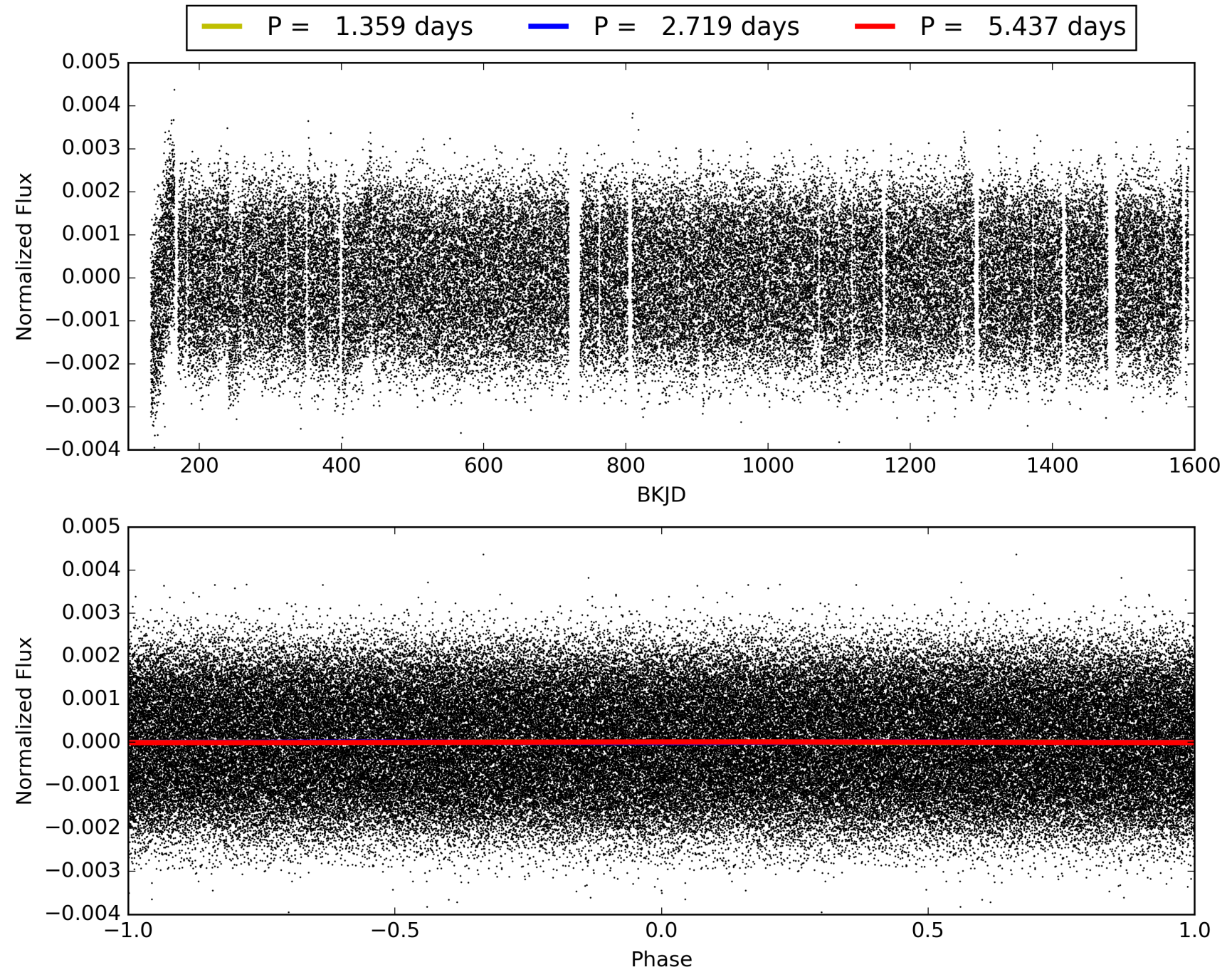
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:30:25 Z

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

TCE 001718594-01, PDC Light Curves

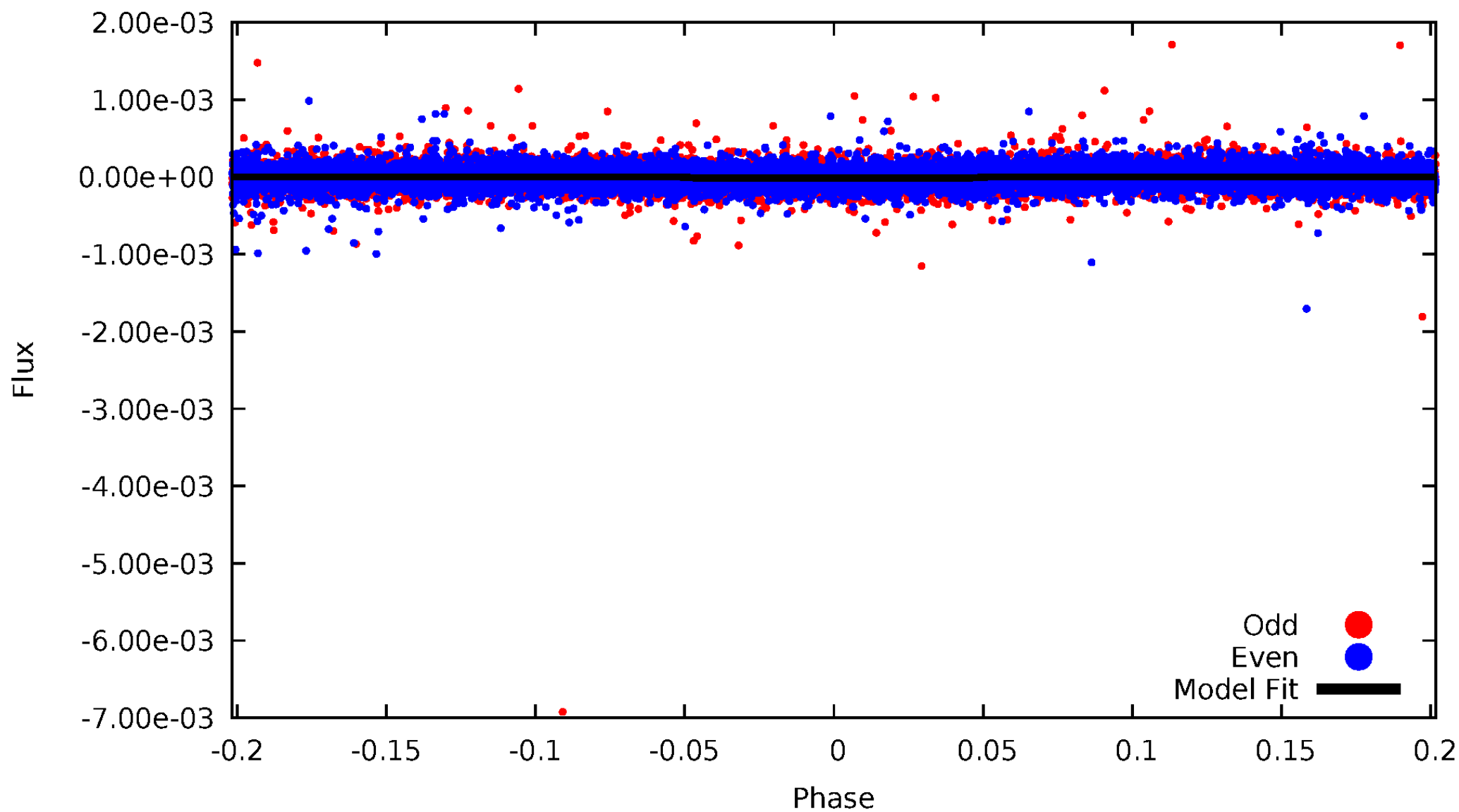


TCE 001718594-01



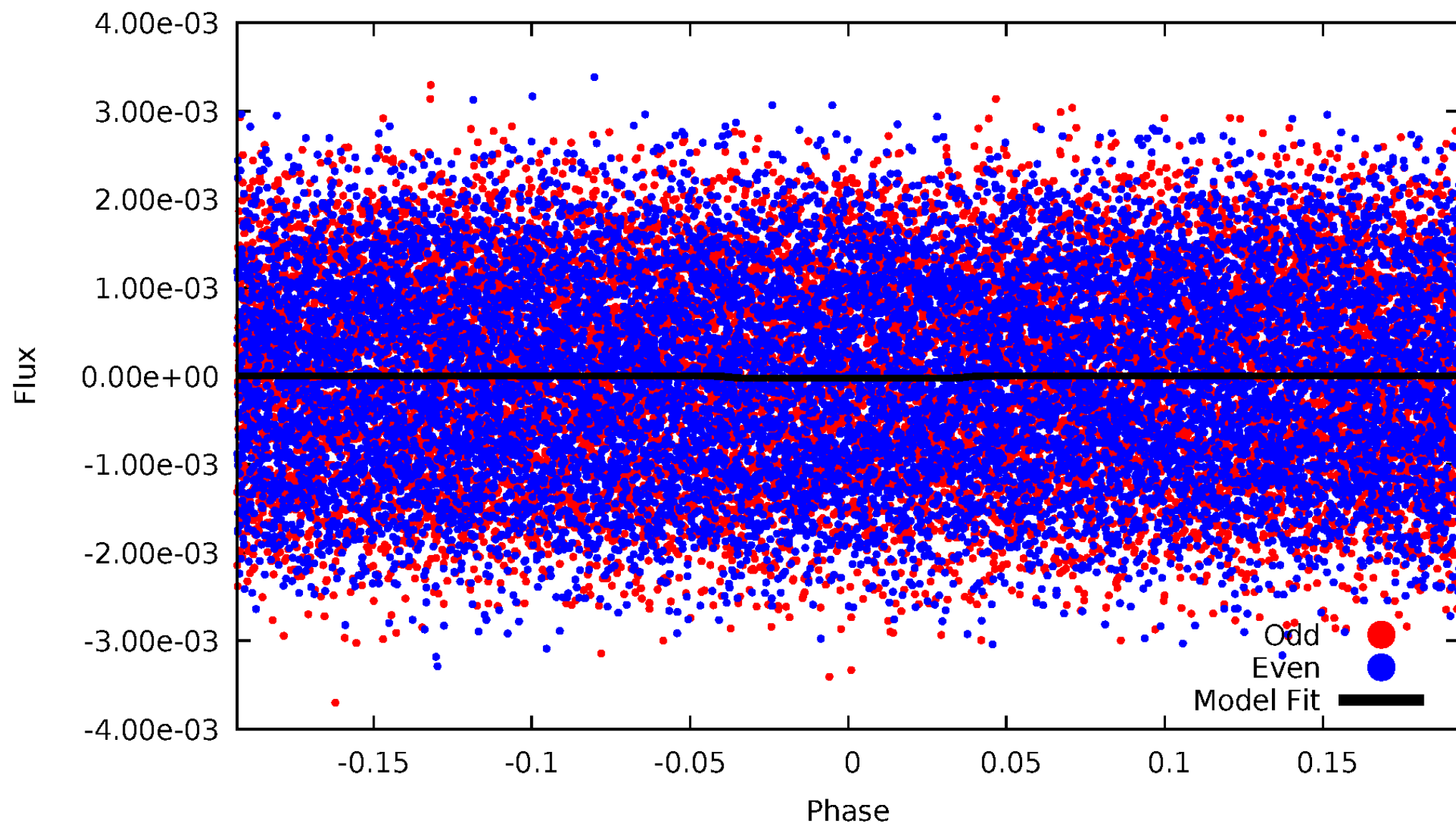
DV Odd/Even

TCE 001718594-01



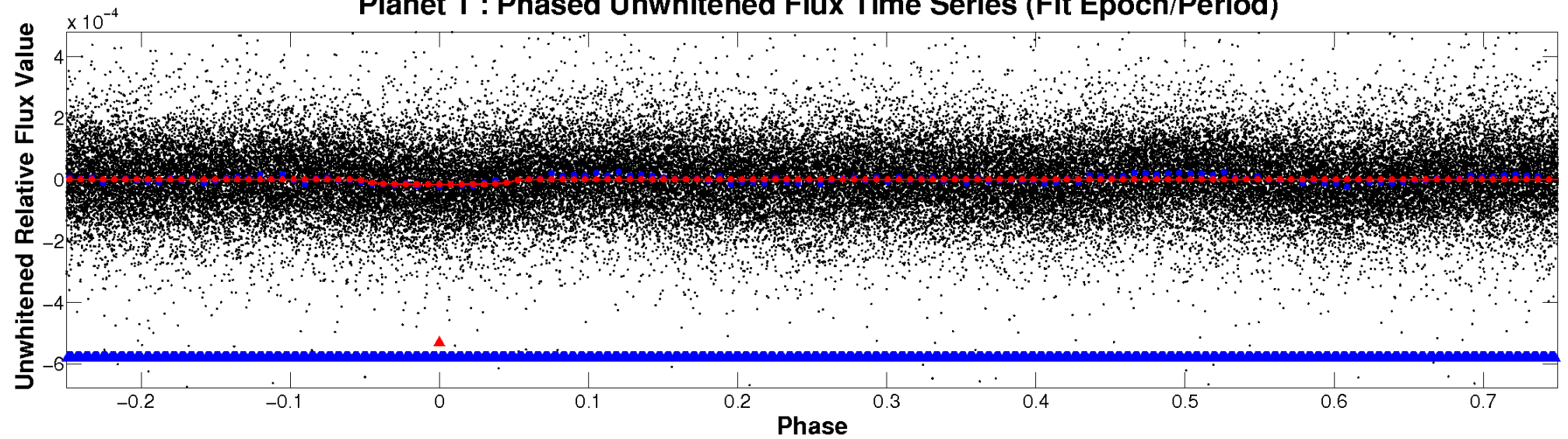
ALT Odd/Even

TCE 001718594-01

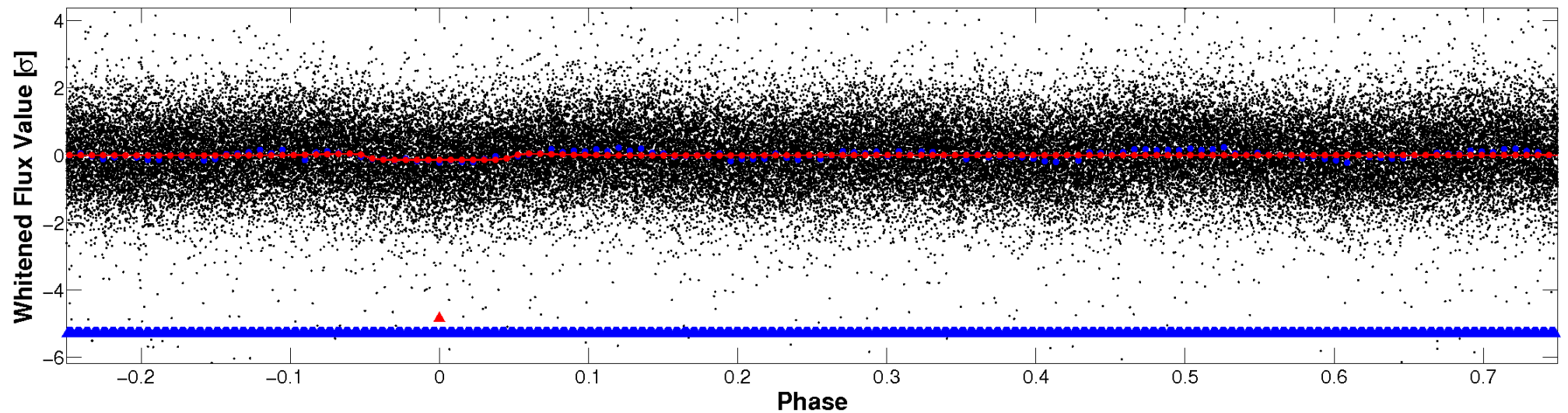


Non-Whitened Vs. Whitened Light Curve

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

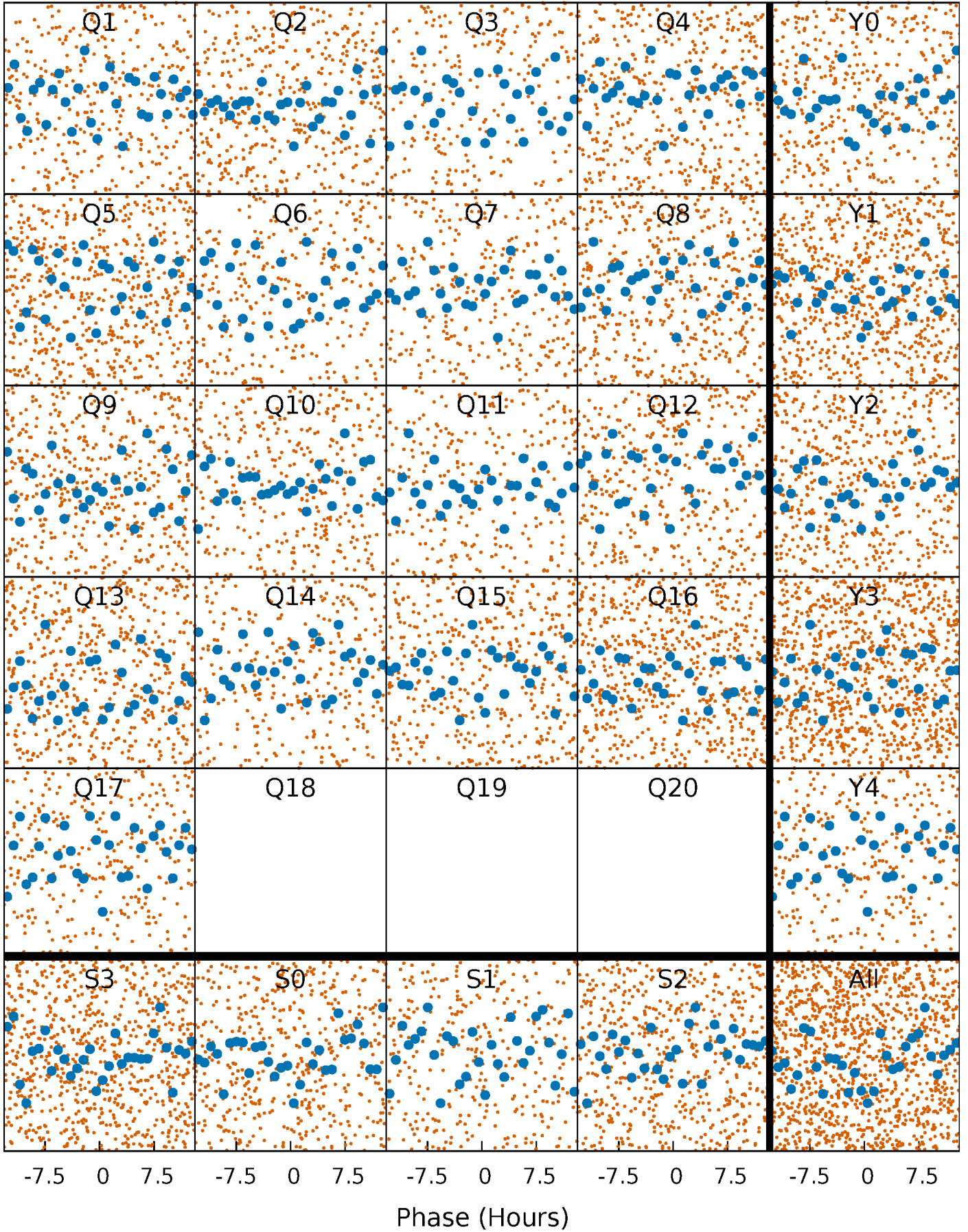


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



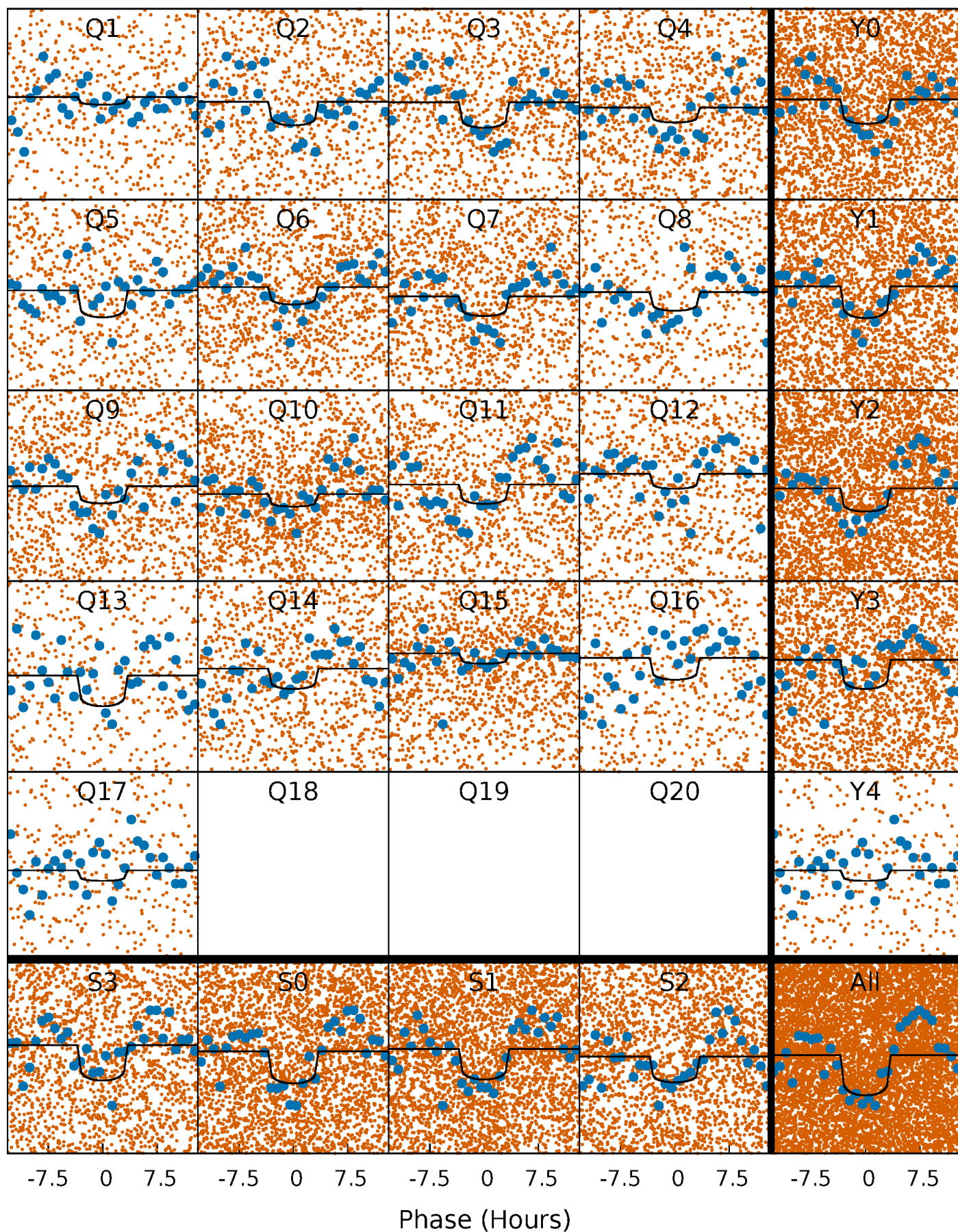
PDC Quarter-Phased Transit Curves

TCE 001718594-01 P= 2.718664 Days $T_0=132.800318$ (BKJD)



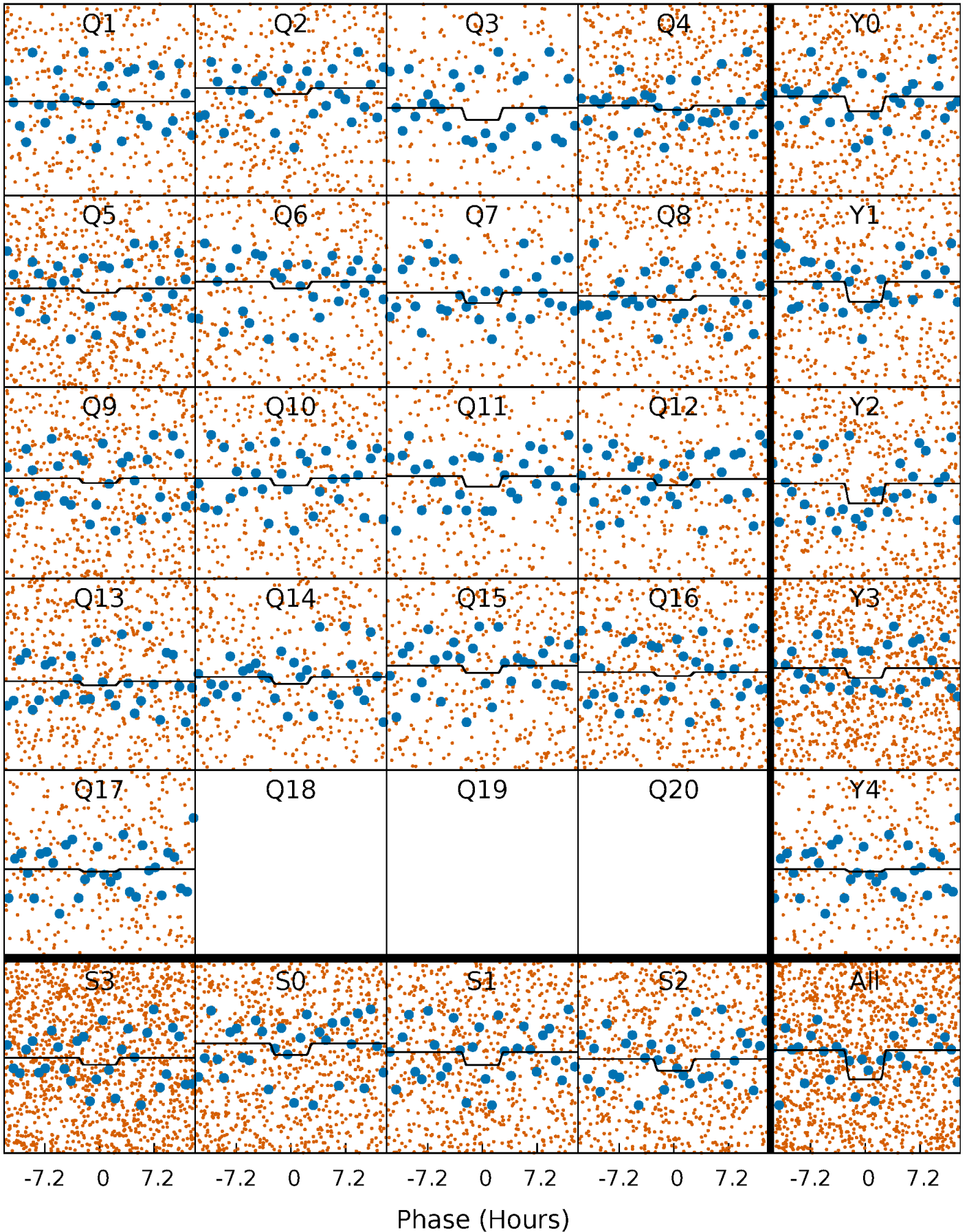
DV Quarter-Phased Transit Curves

TCE 001718594-01 P= 2.718664 Days $T_0=132.800318$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

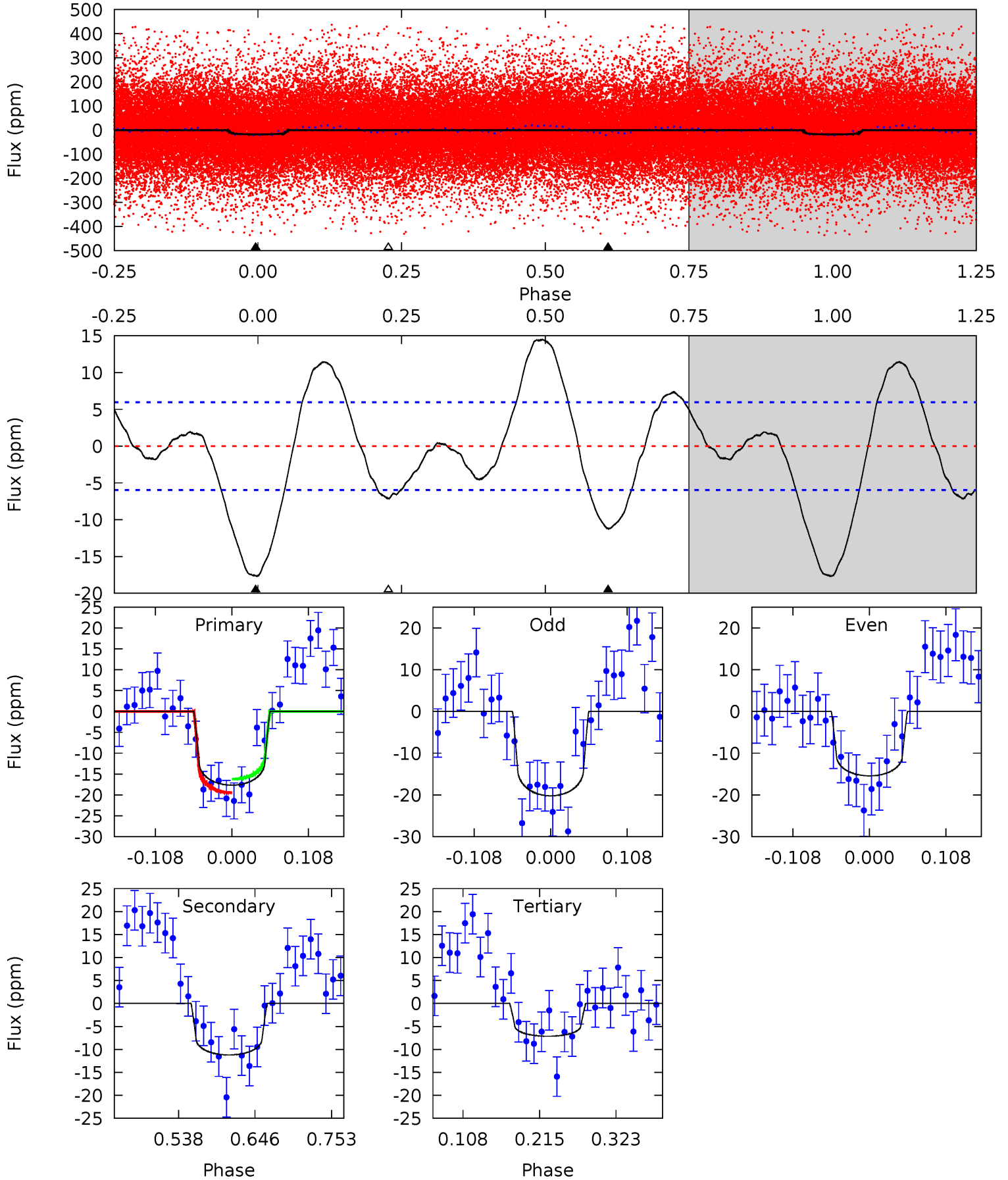
TCE 001718594-01 P= 2.718580 Days $T_0=132.806229$ (BKJD)



DV Model-Shift Uniqueness Test

001718594-01, P = 2.718664 Days, E = 130.081654 Days

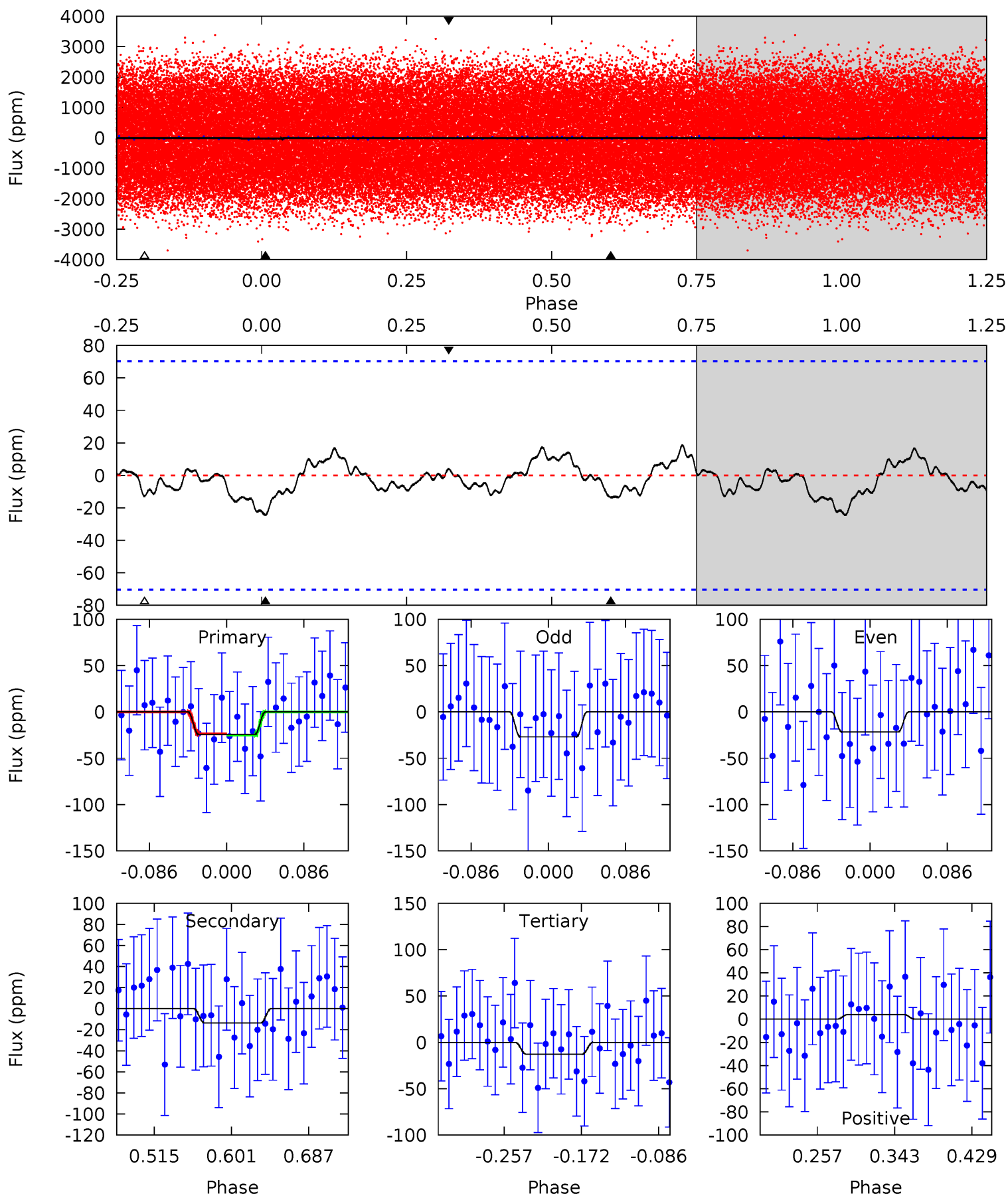
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	8.53	5.43	0	4.55	1.61	4.28	8.01	13.4	3.10	8.53	1.83	0.99	0.45	1.24



Alt Model-Shift Uniqueness Test

001718594-01, P = 2.718580 Days, E = 130.087649 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.59	0.89	0.83	0.26	4.60	1.72	0.49	0.76	1.33	0.05	0.63	0.17	1.17	0.43	0.04



Stellar Parameters For KIC 001718594

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7796^{+214}_{-322}	$3.972^{+0.204}_{-0.136}$	$0.070^{+0.200}_{-0.350}$	$2.355^{+0.514}_{-0.685}$	$1.895^{+0.155}_{-0.362}$	$0.204^{+0.262}_{-0.081}$
	+3%/-4%	+5%/-3%	+286%/-500%	+22%/-29%	+8%/-19%	+128%/-39%
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 001718594-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 1	$1.03^{+0.30}_{-0.27}$	3354^{+242}_{-238}	6800^{+1180}_{-797}	13^{+10}_{-5}
Alt.	-14 ± 15	$1.30^{+0.31}_{-0.29}$	3360^{+219}_{-233}	6344^{+1855}_{-9731}	$9.526^{+13.910}_{-9.584}$

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

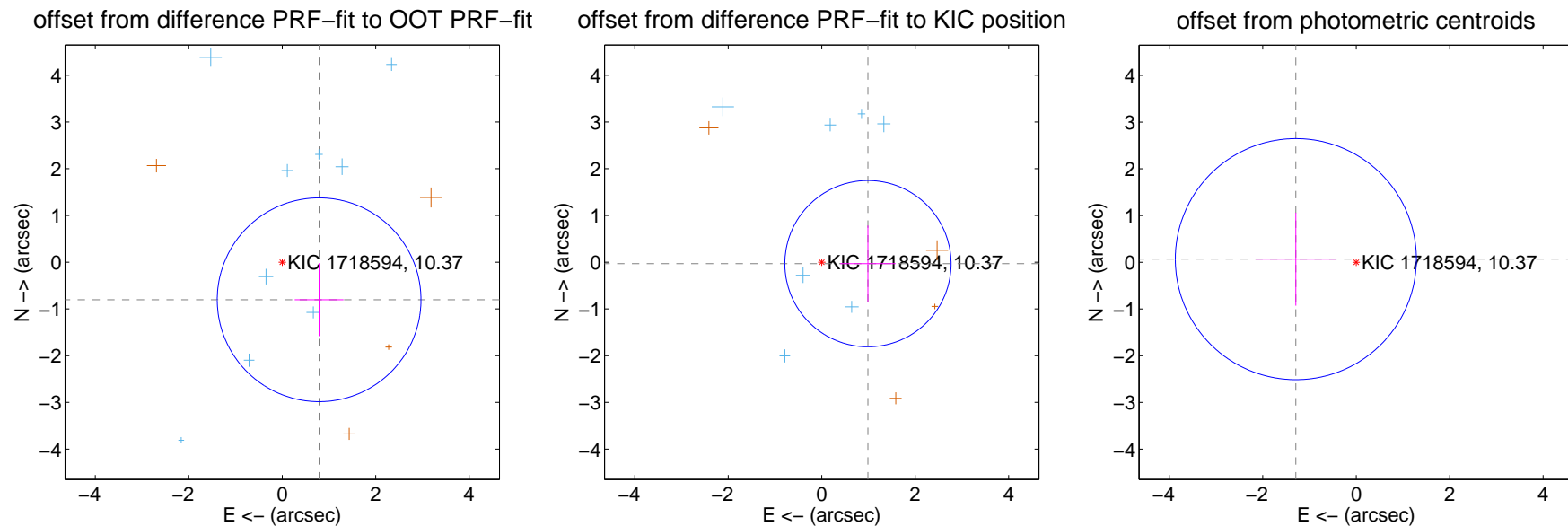
DV Centroid Data

Supplemental centroid analysis for 001718594-01. **Kepler magnitude: 10.37.** Transit SNR 10.55

There are 9 quarters with good PRF difference image offsets

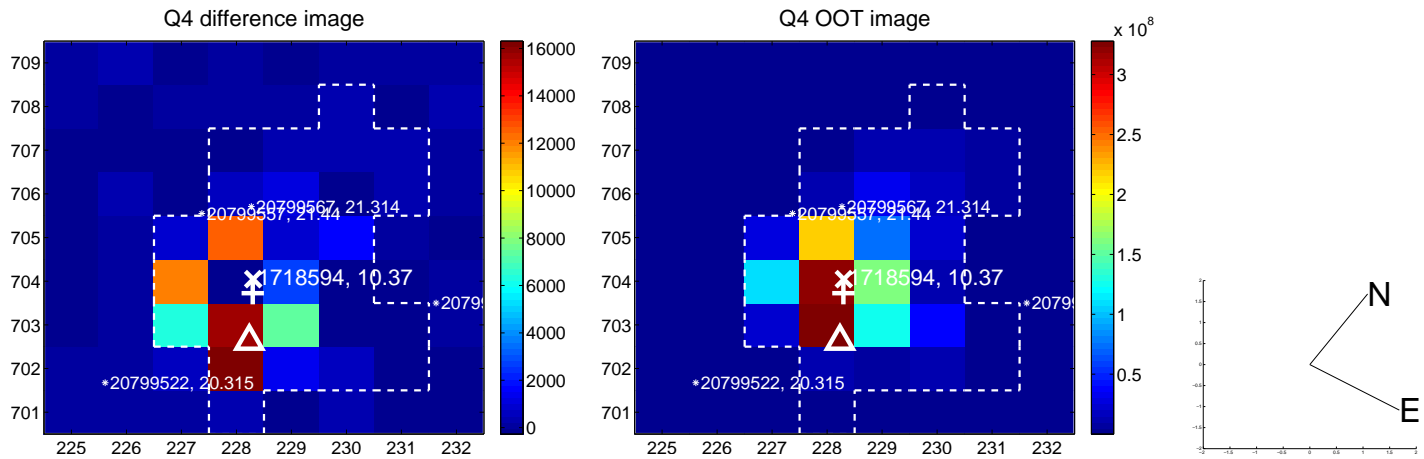
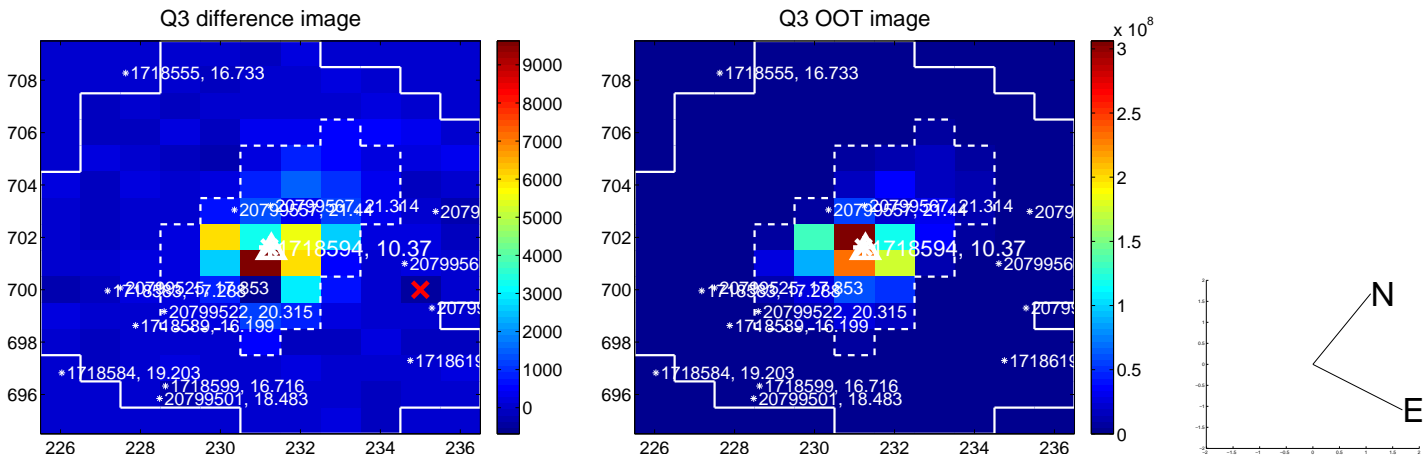
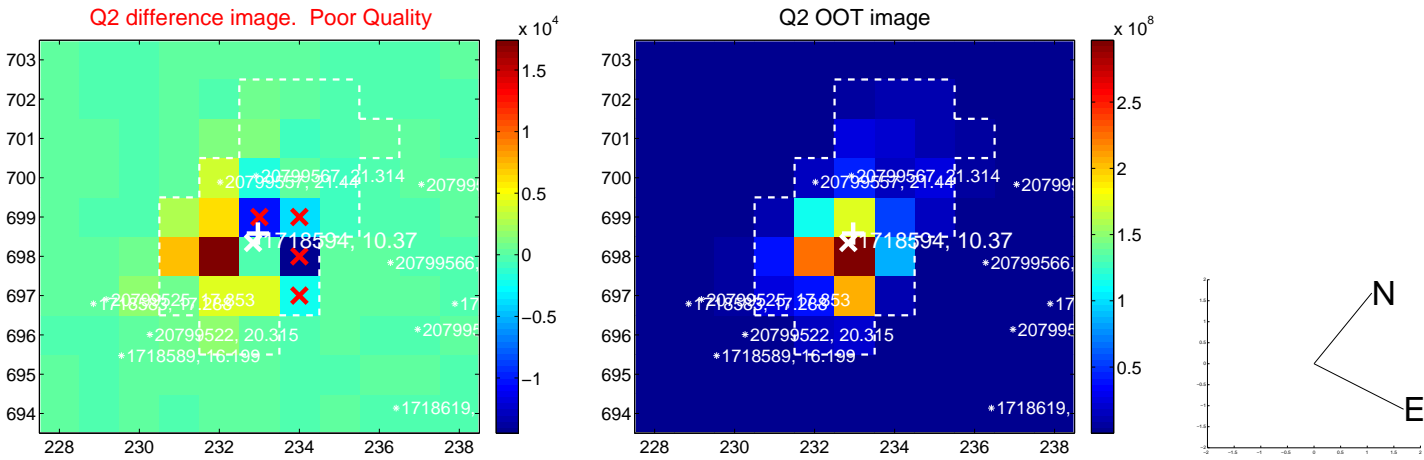
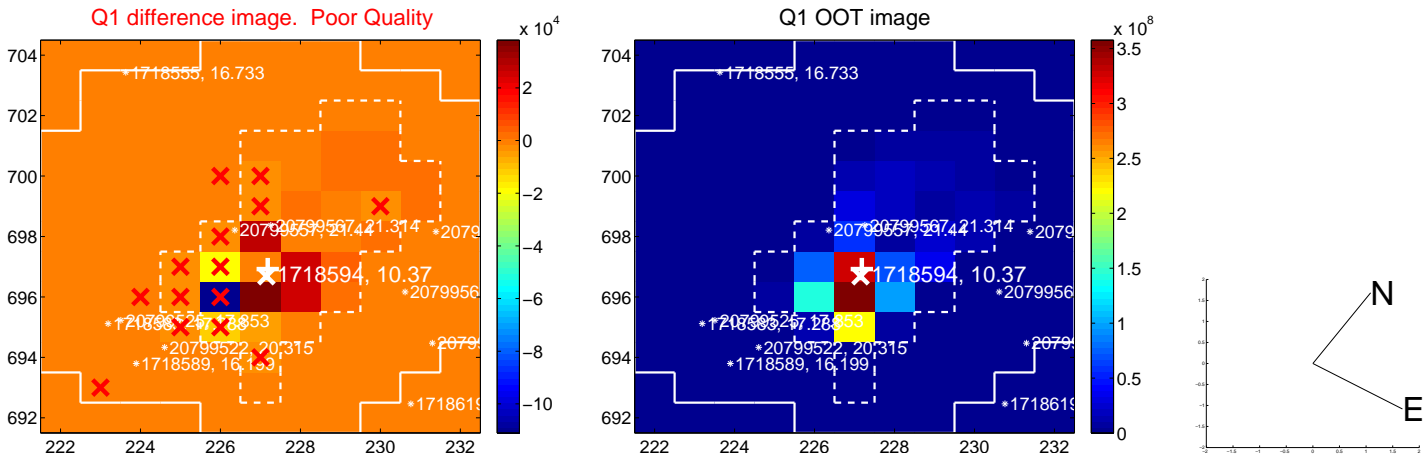
The direct PRF centroid is offset from the target star catalog position by about 0.78 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.127 ± 0.727	1.55	-0.789 ± 0.523	-0.804 ± 0.780
PRF-fit source offset from KIC position	0.990 ± 0.593	1.67	-0.990 ± 0.592	-0.032 ± 0.815
photometric centroid source offset	1.29 ± 0.86	1.50	1.29 ± 0.86	0.07 ± 1.00

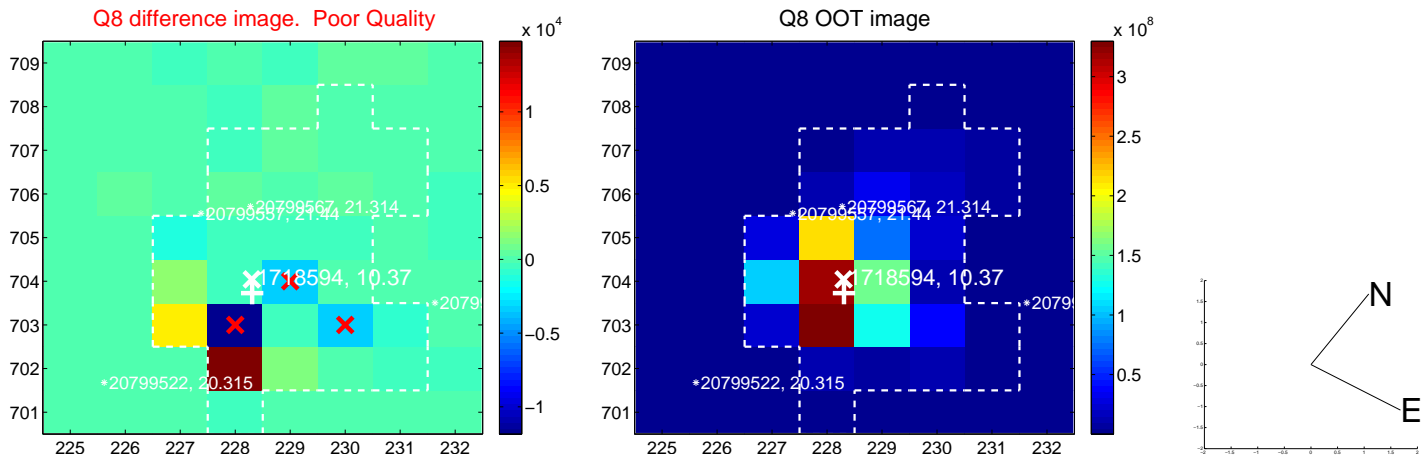
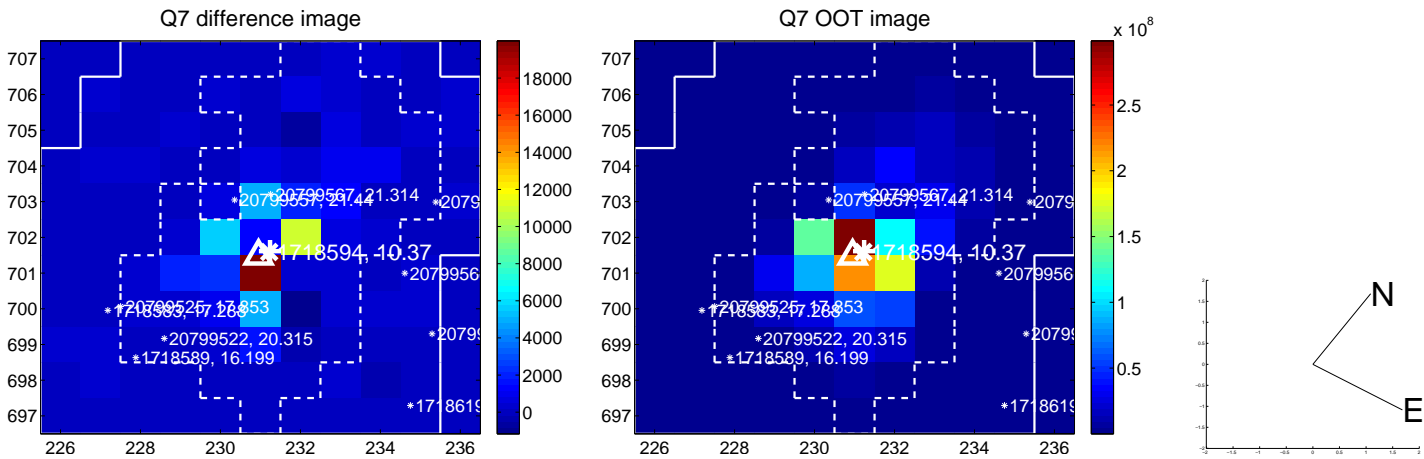
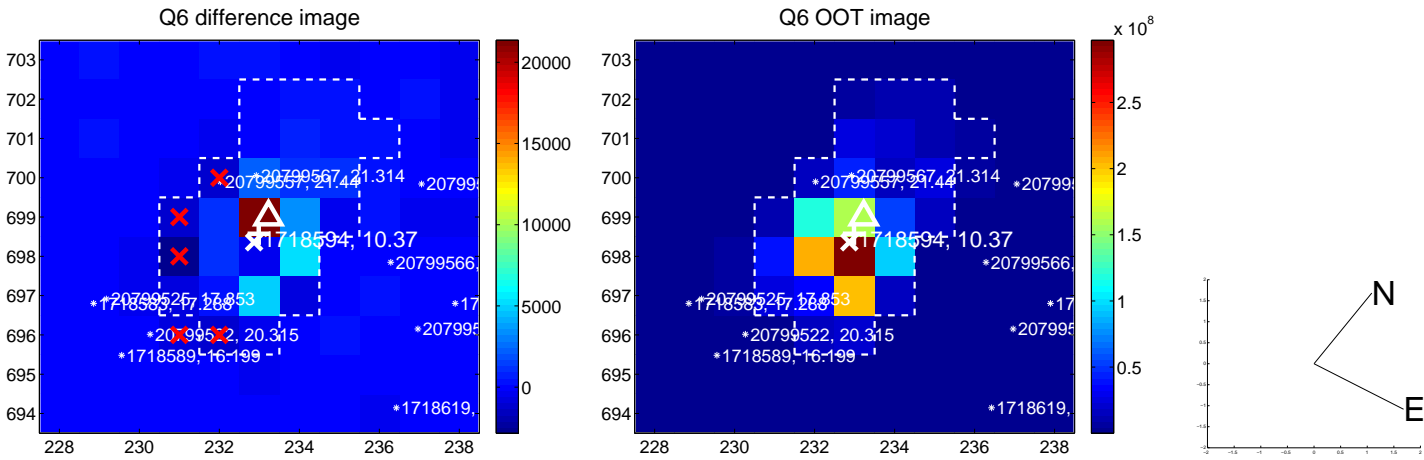
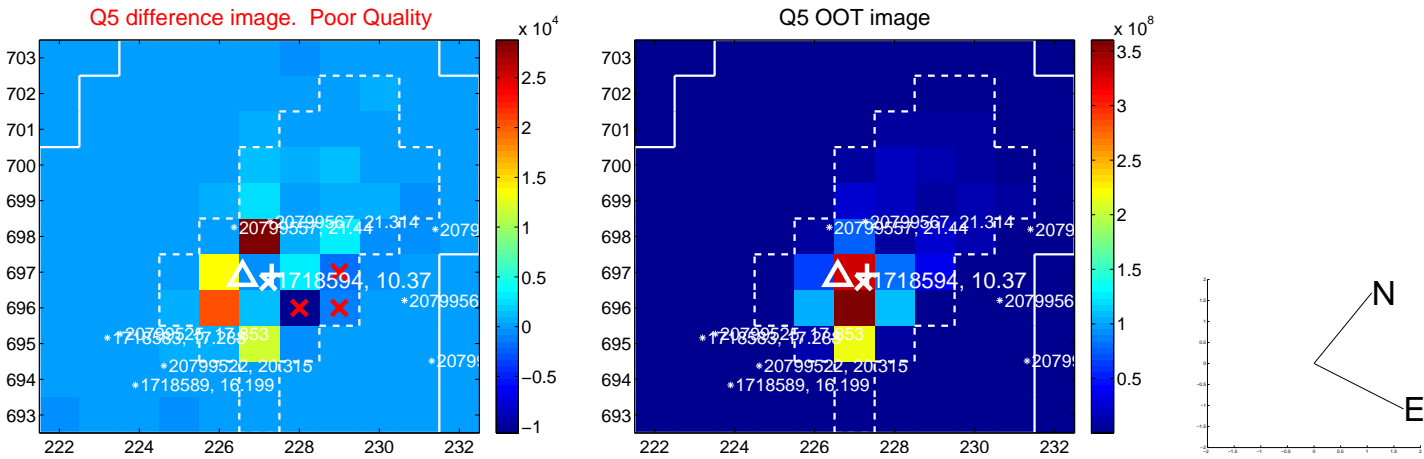


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

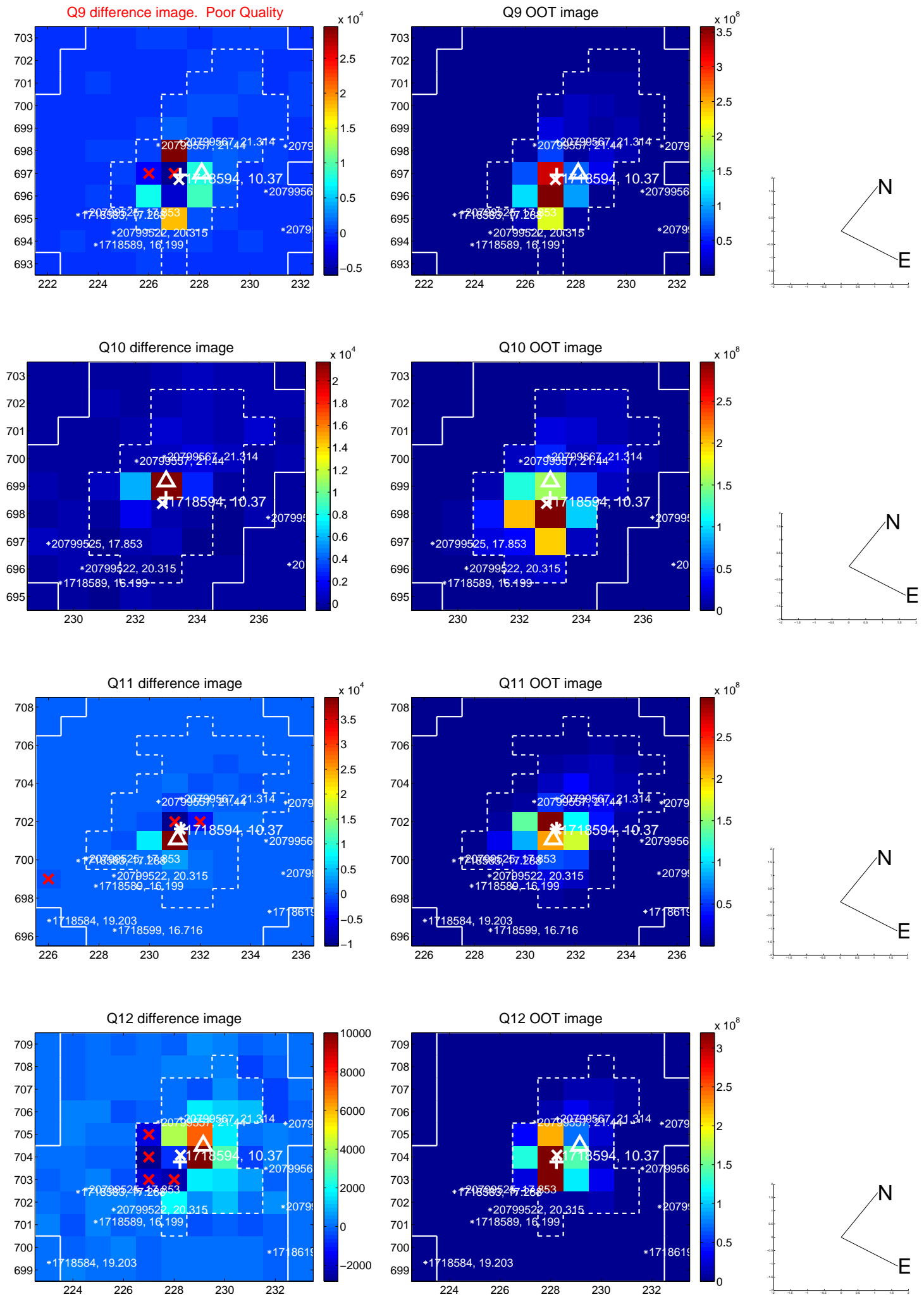
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



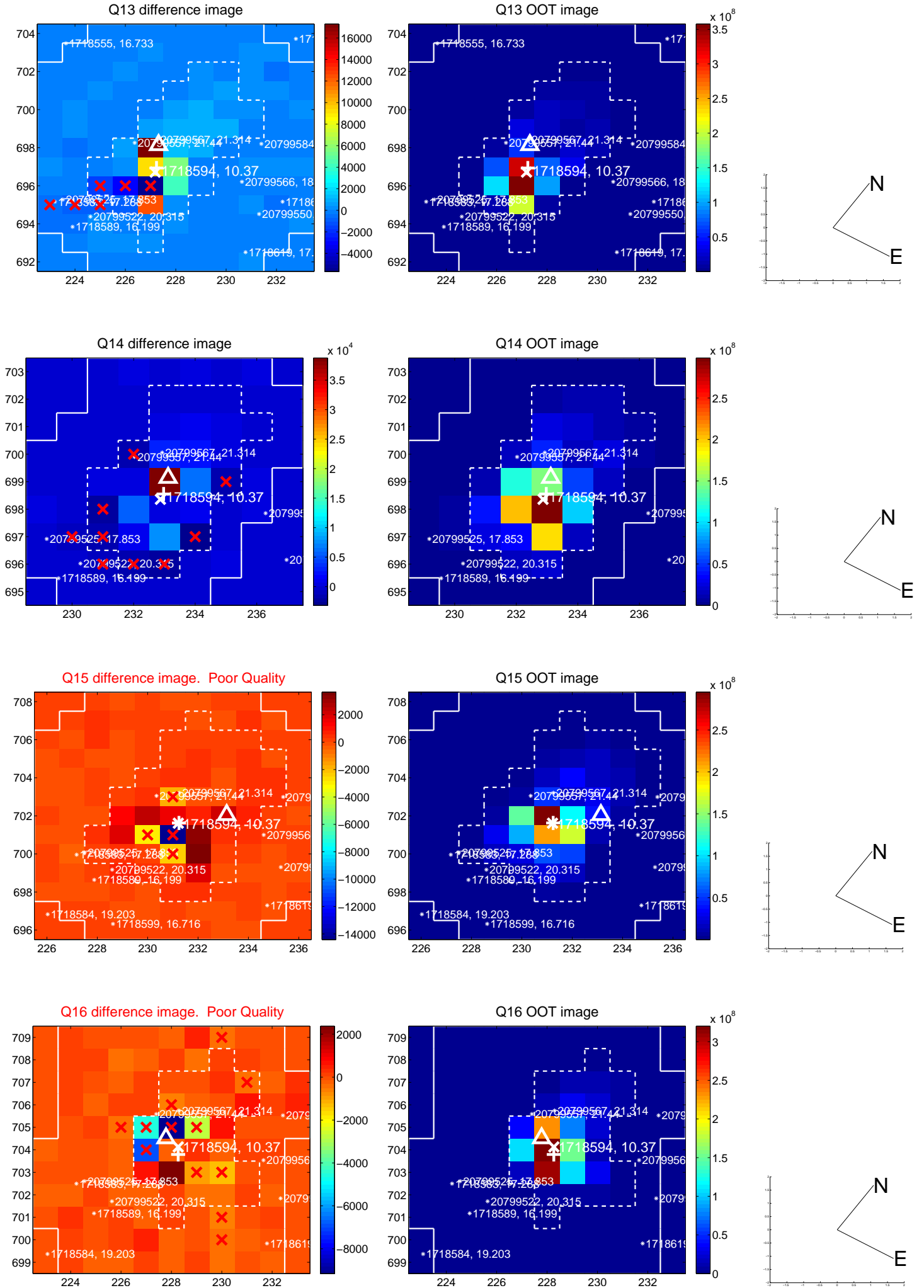
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



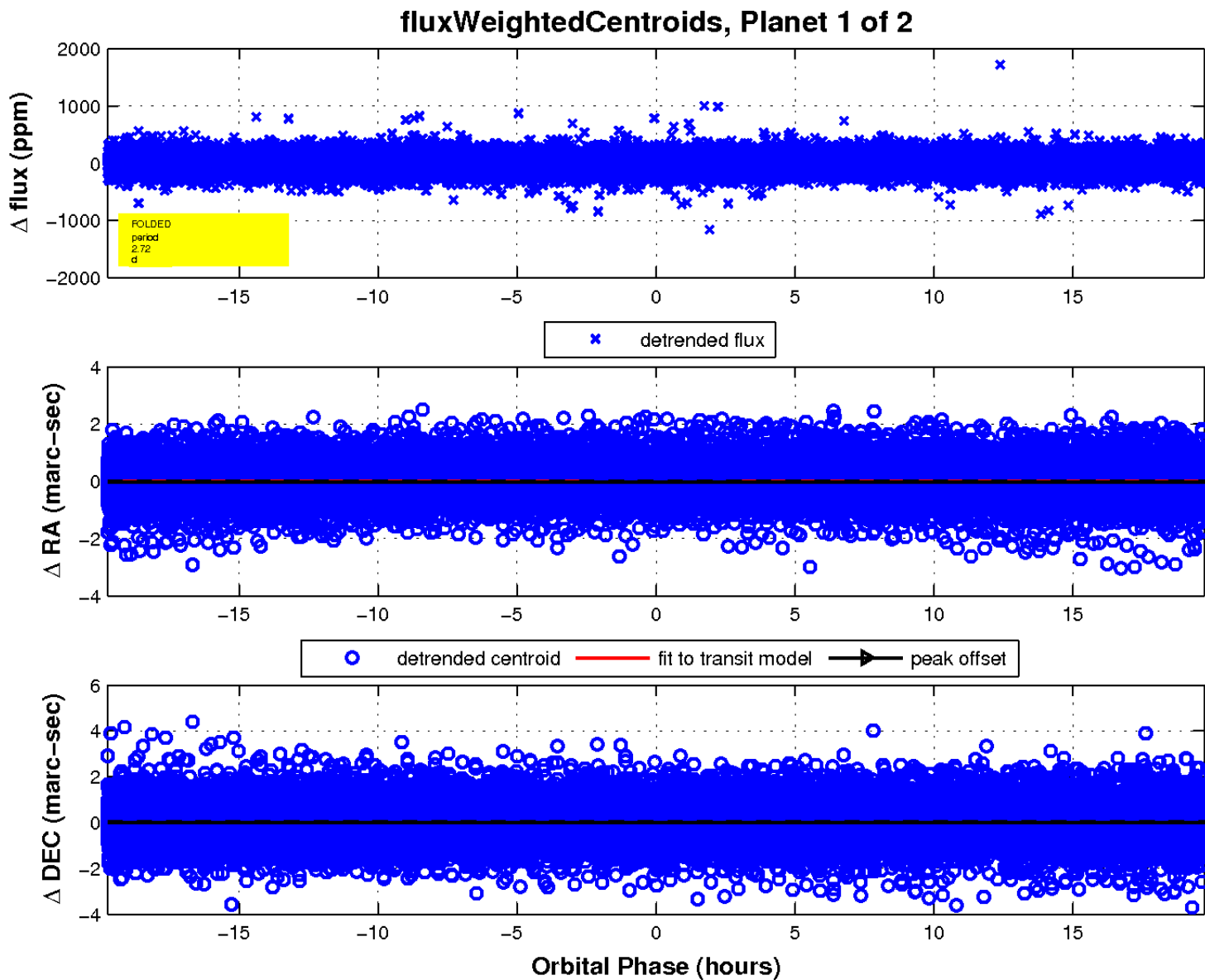
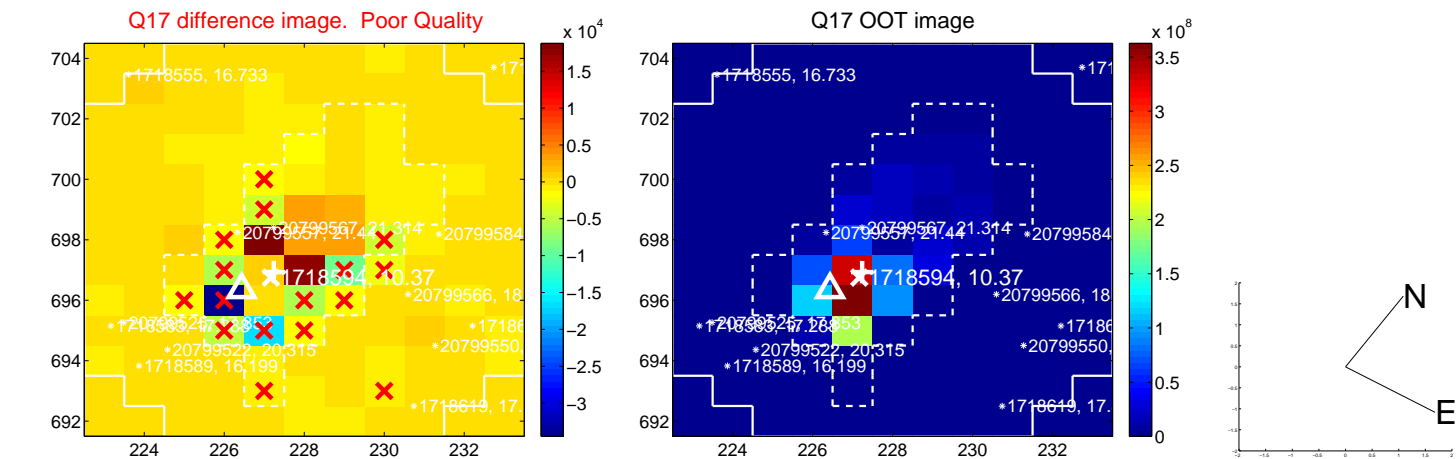
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

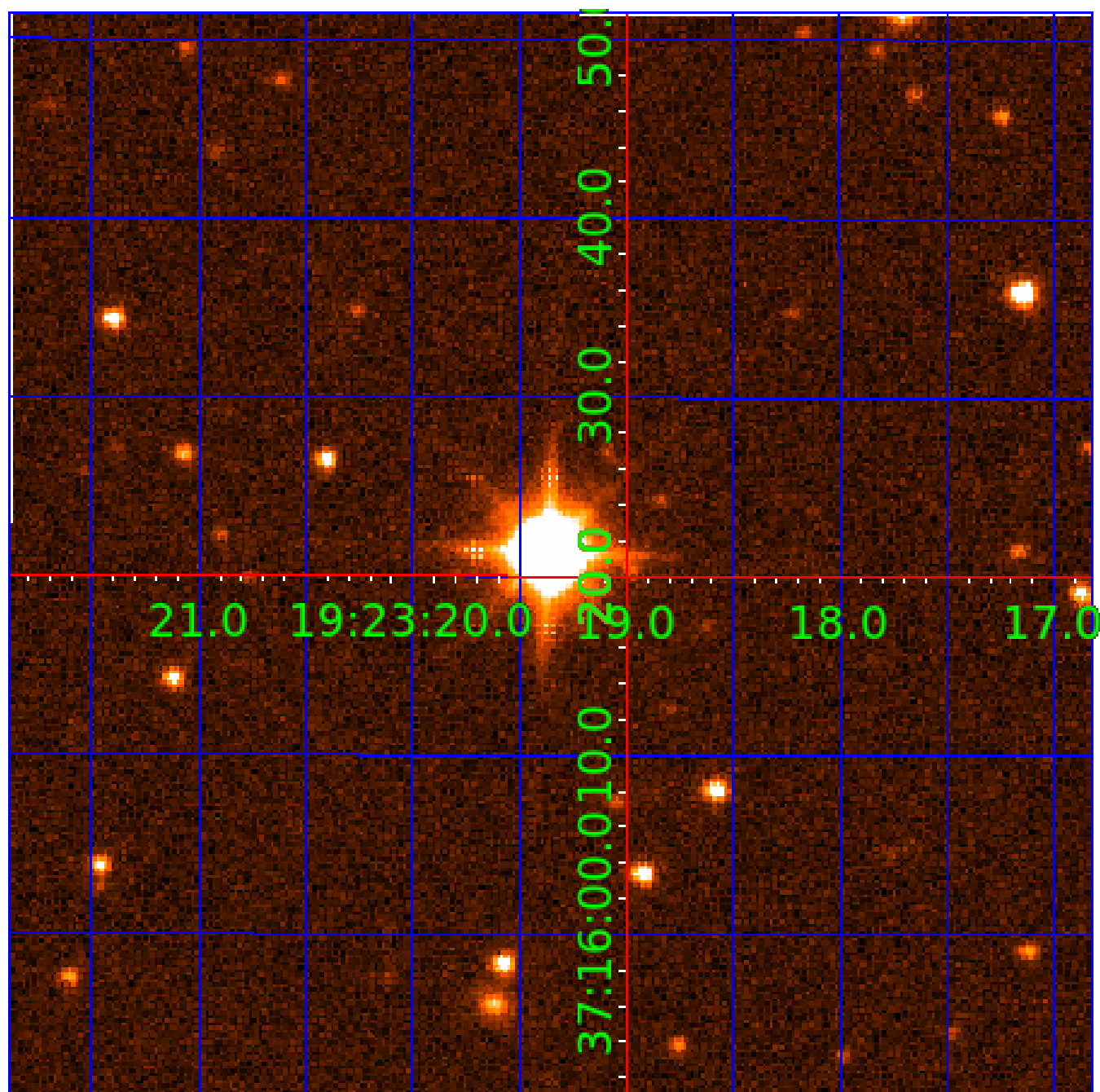


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 001718594

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})
001718594-01	OBS	No	2.718664	132.800318	16.1	6.579	11.3	10.5	2.35	7796	1.06	8239.51
001718594-02	OBS	No	0.774508	132.248974	7.0	1.264	8.1	4.2	2.35	7796	0.72	43954.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001718594-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
001718594-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

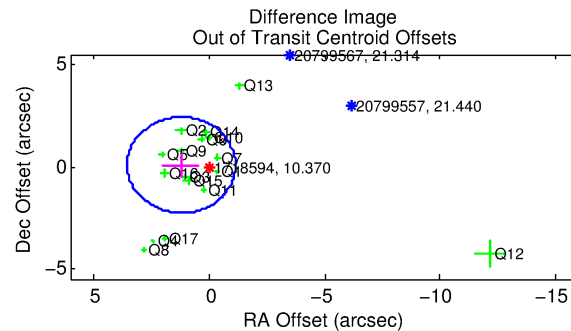
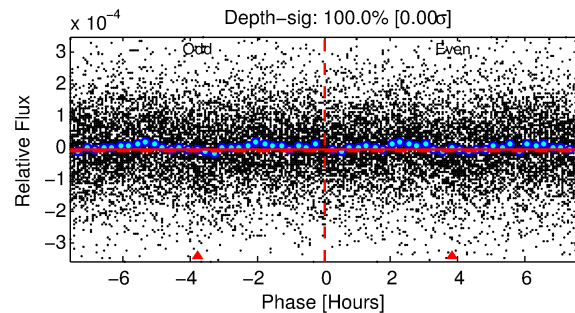
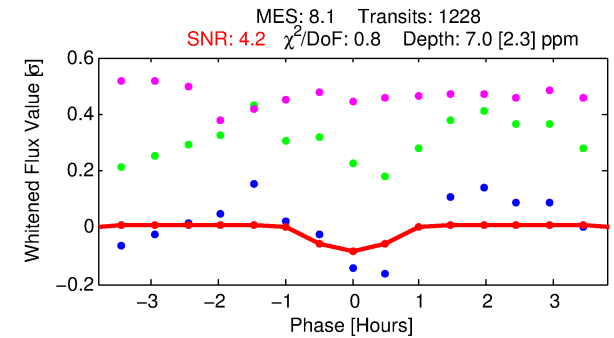
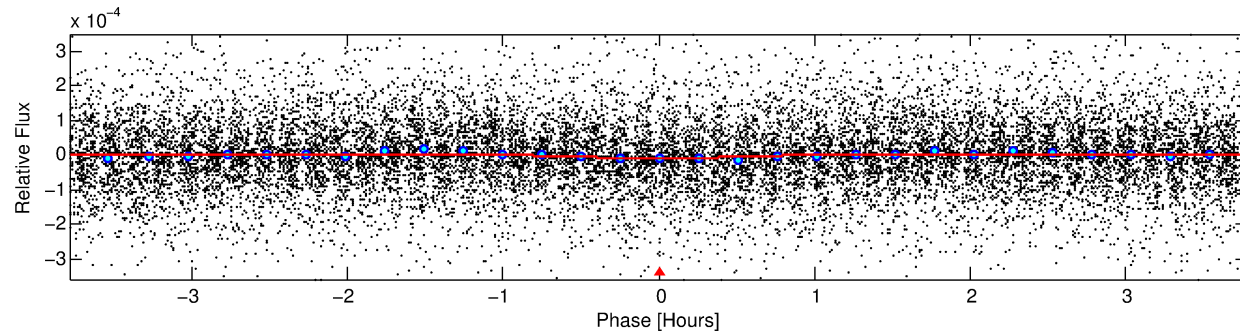
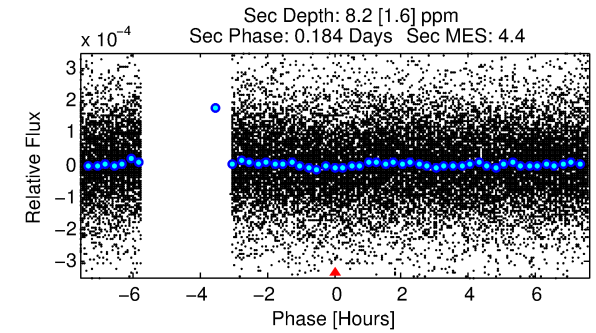
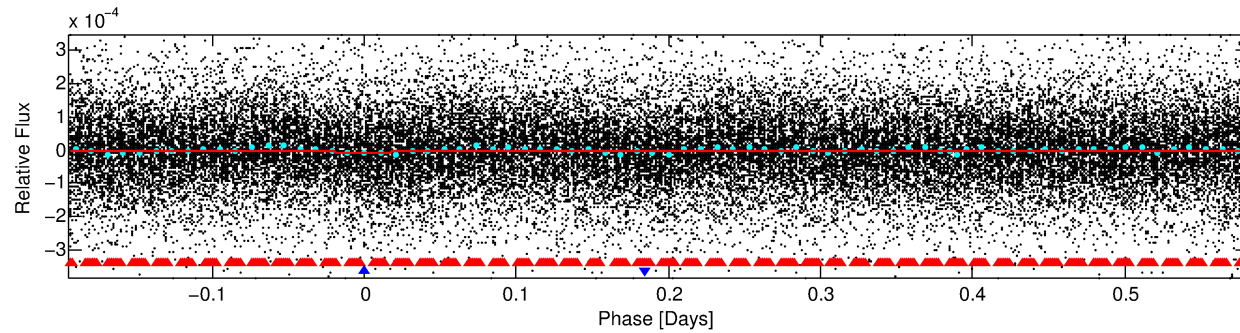
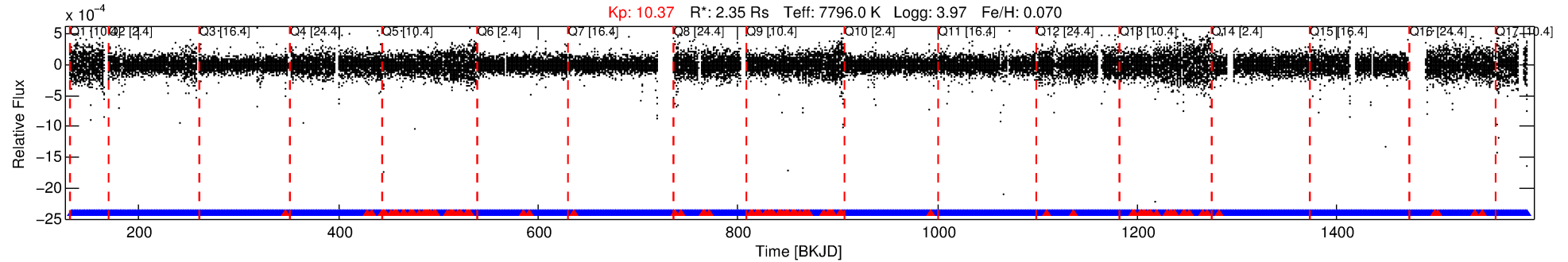
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001718594-02

No Significant Match Found

DV One-Page Summary

KIC: 1718594 Candidate: 2 of 2 Period: 0.775 d



DV Fit Results:

Period = 0.77451 [0.00002] d
Epoch = 132.2490 [0.0050] BKJD
Rp/R* = 0.0028 [0.0008]
a/R* = 2.28 [2.81]
b = 0.90 [0.33]
Seff = 43954.98 [17743.97]
Teq = 3692 [373] K
Rp = 0.72 [0.30] Re
a = 0.0204 [0.0051] AU
Ag = 3.60 [2.58] [1.01σ]
Teffp = 7862 [1250] K [3.20σ]

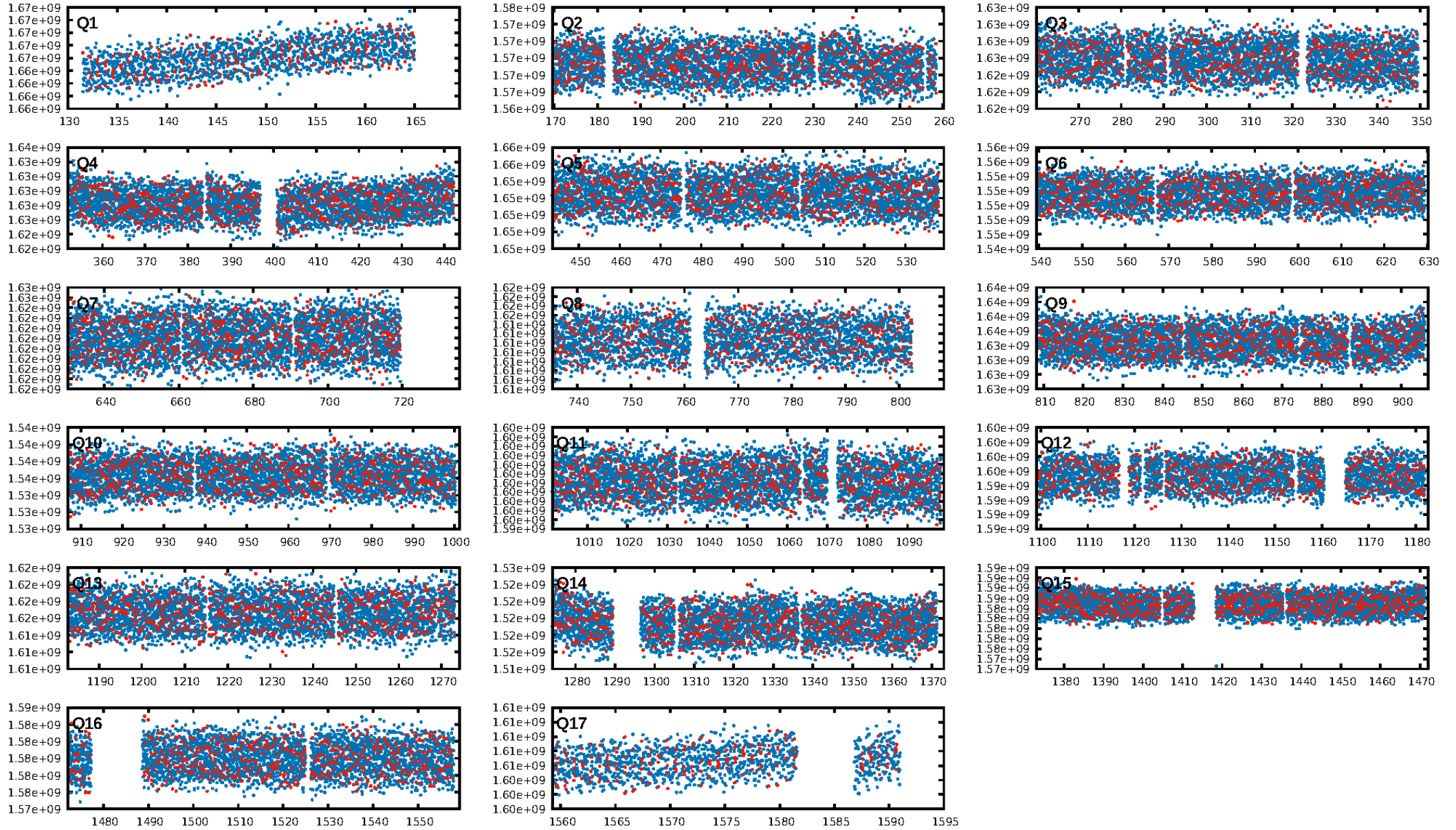
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [6.96σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.14e-17
RollingBand-fgt: 0.91 [1067/1172]
GhostDiagnostic-chr: N/A
Centroid-sig: 65.6%
Centroid-so: 0.958 arcsec [0.48σ]
OotOffset-rm: 1.206 arcsec [1.54σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.875 arcsec [1.05σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.24 [4/17]
DiffImageOverlap-fno: 1.00 [17/17]

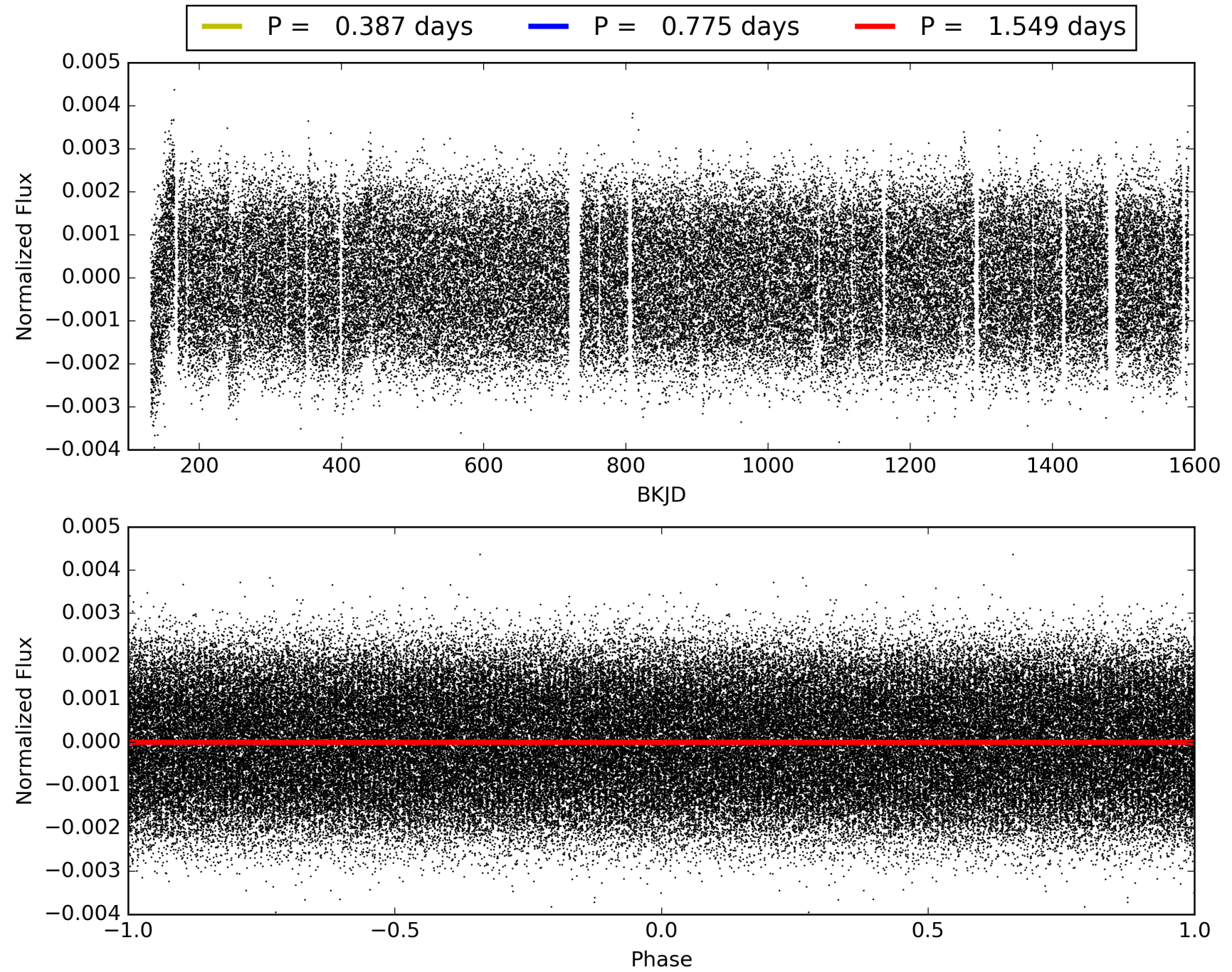
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:30:35 Z

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

TCE 001718594-02, PDC Light Curves

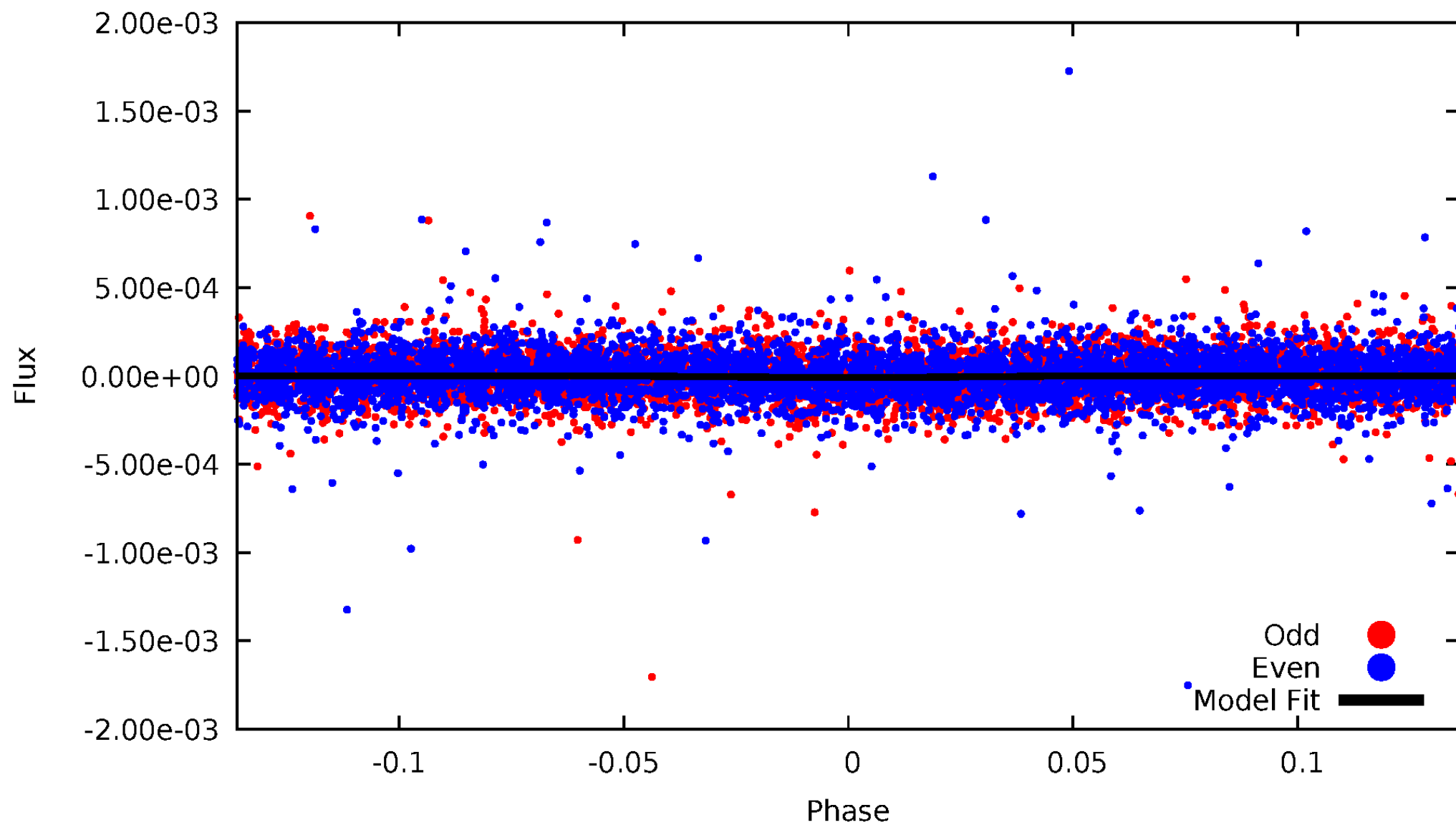


TCE 001718594-02



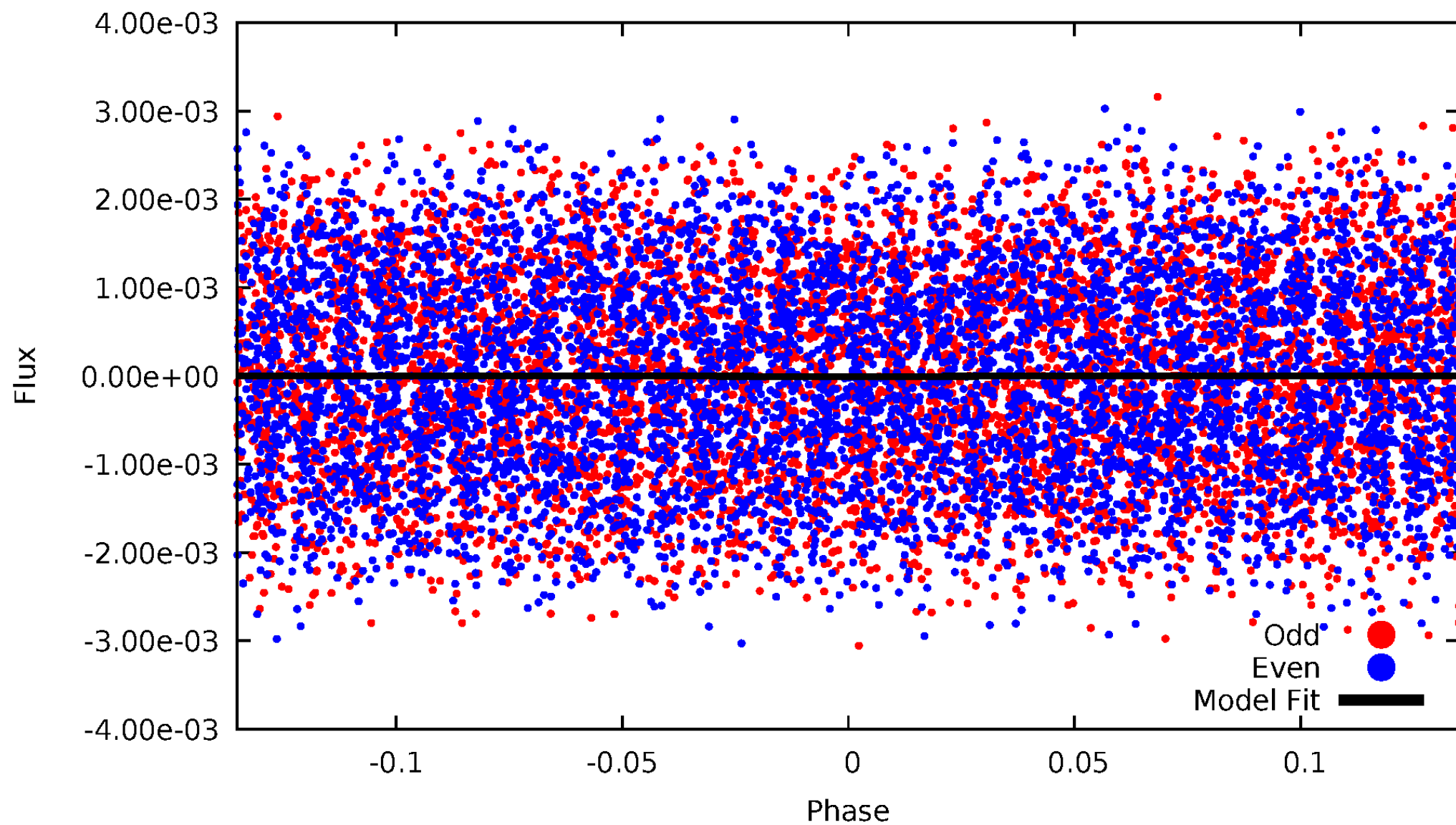
DV Odd/Even

TCE 001718594-02



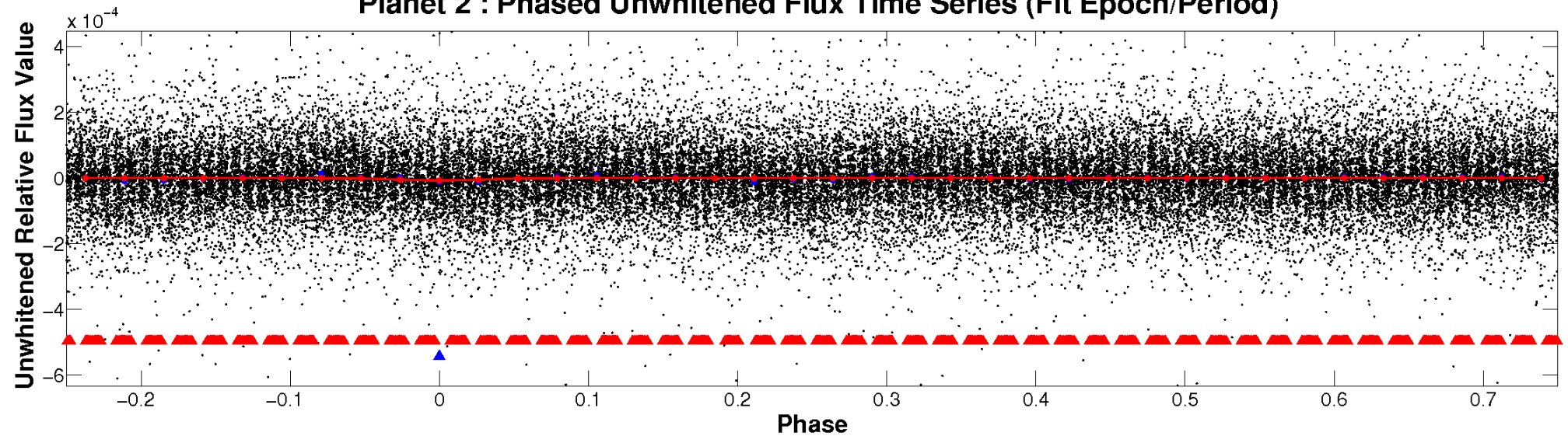
ALT Odd/Even

TCE 001718594-02

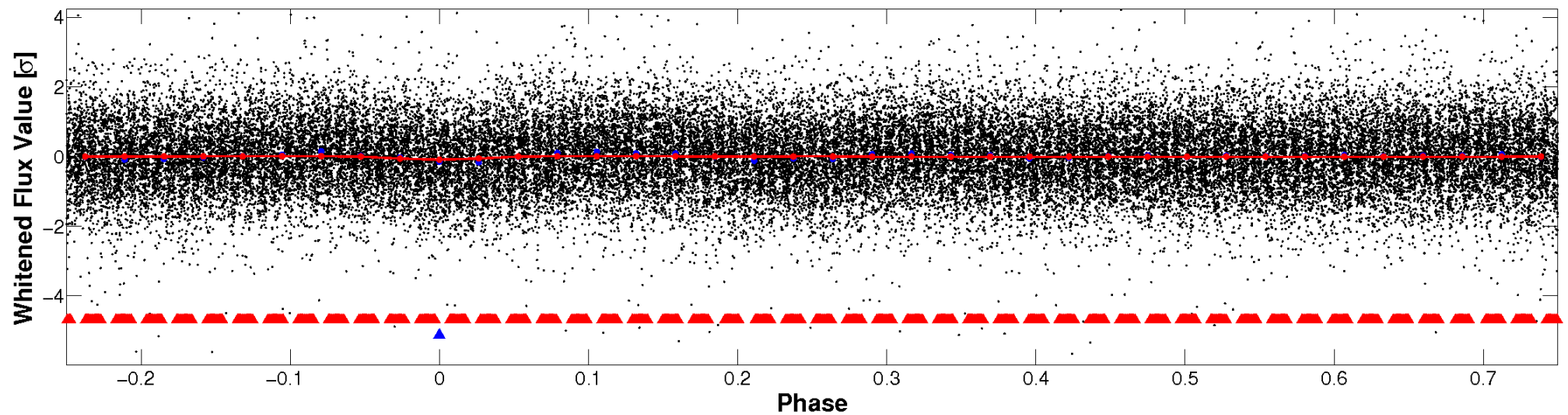


Non-Whitened Vs. Whitened Light Curve

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

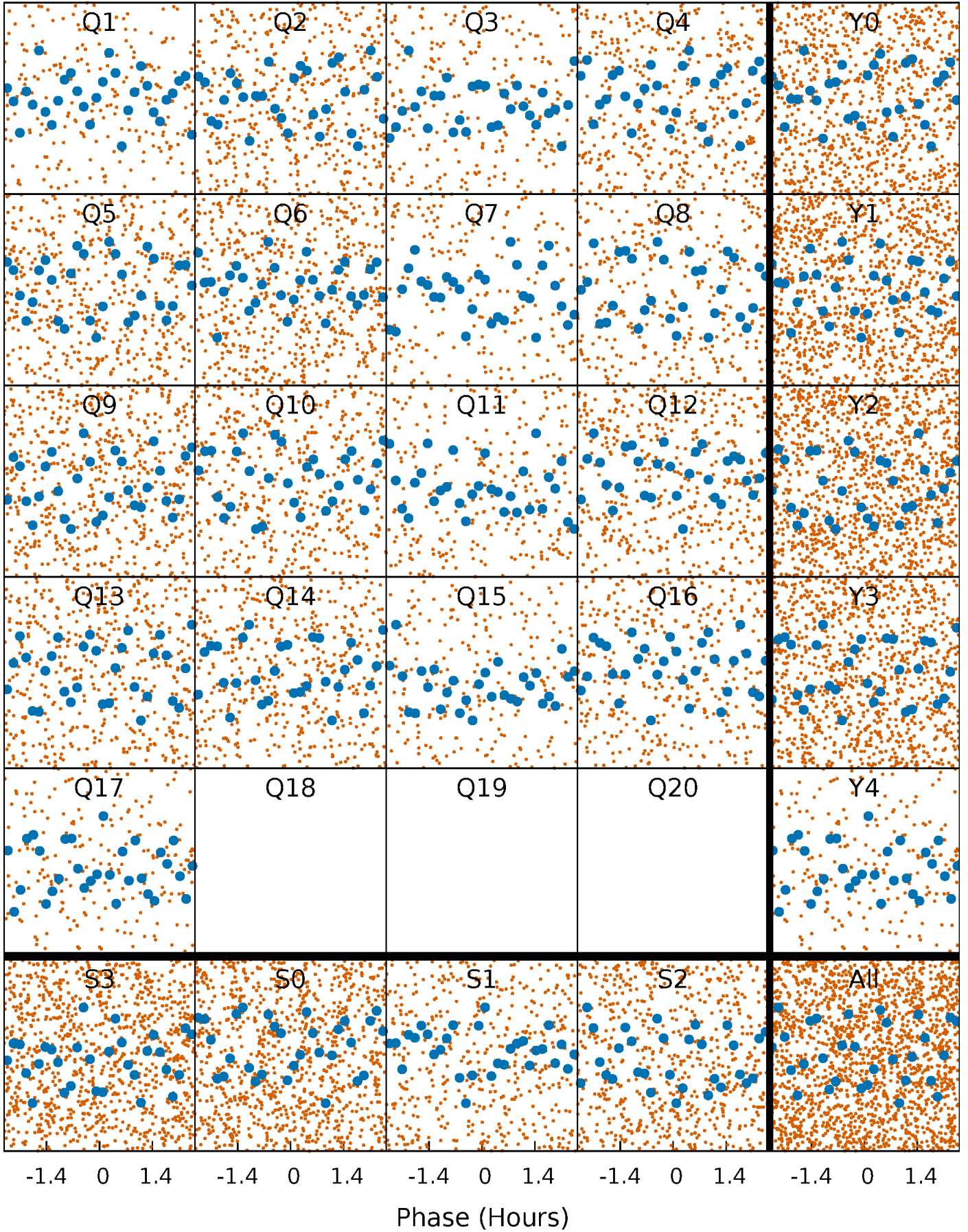


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



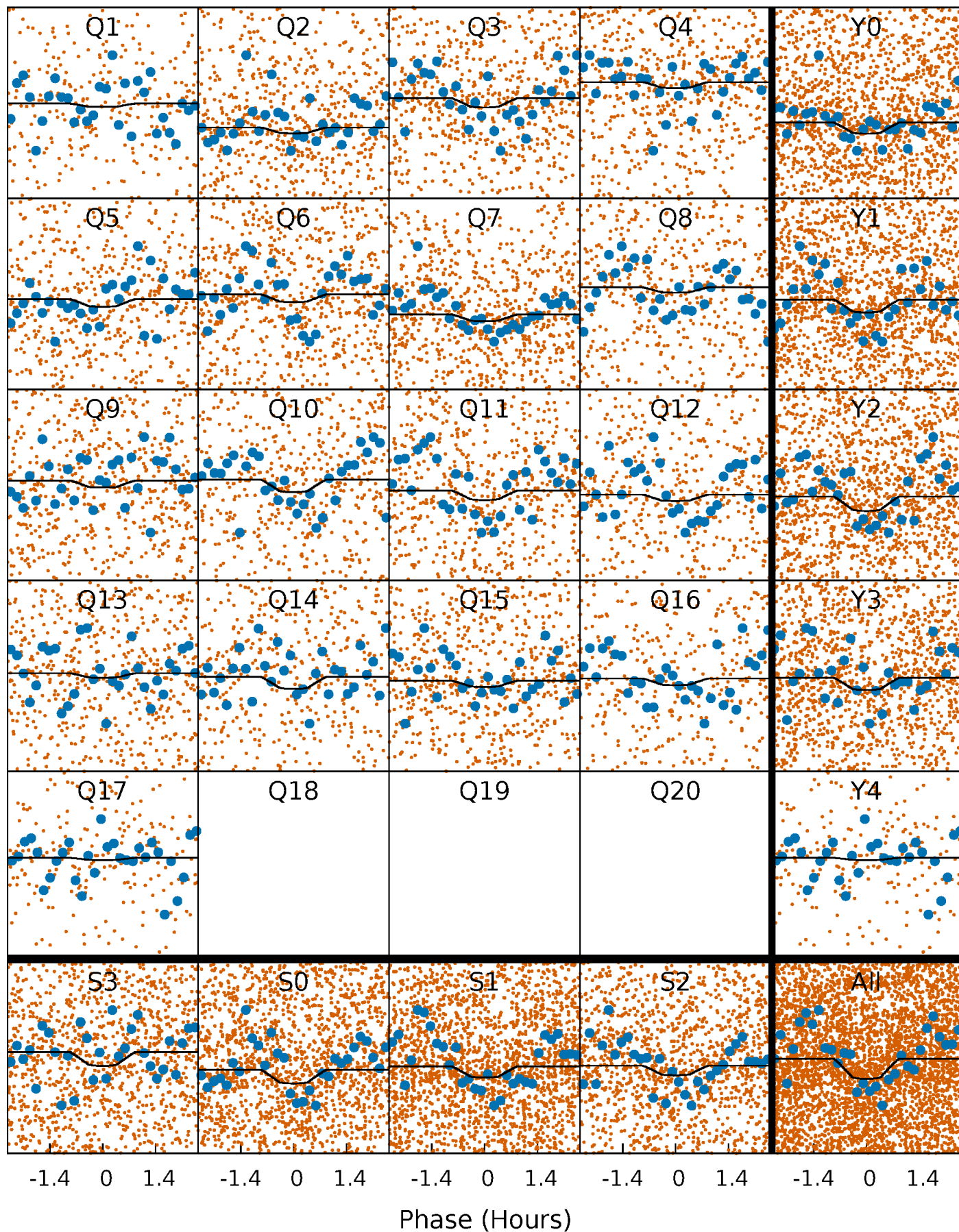
PDC Quarter-Phased Transit Curves

TCE 001718594-02 P= 0.774508 Days $T_0=132.248974$ (BKJD)



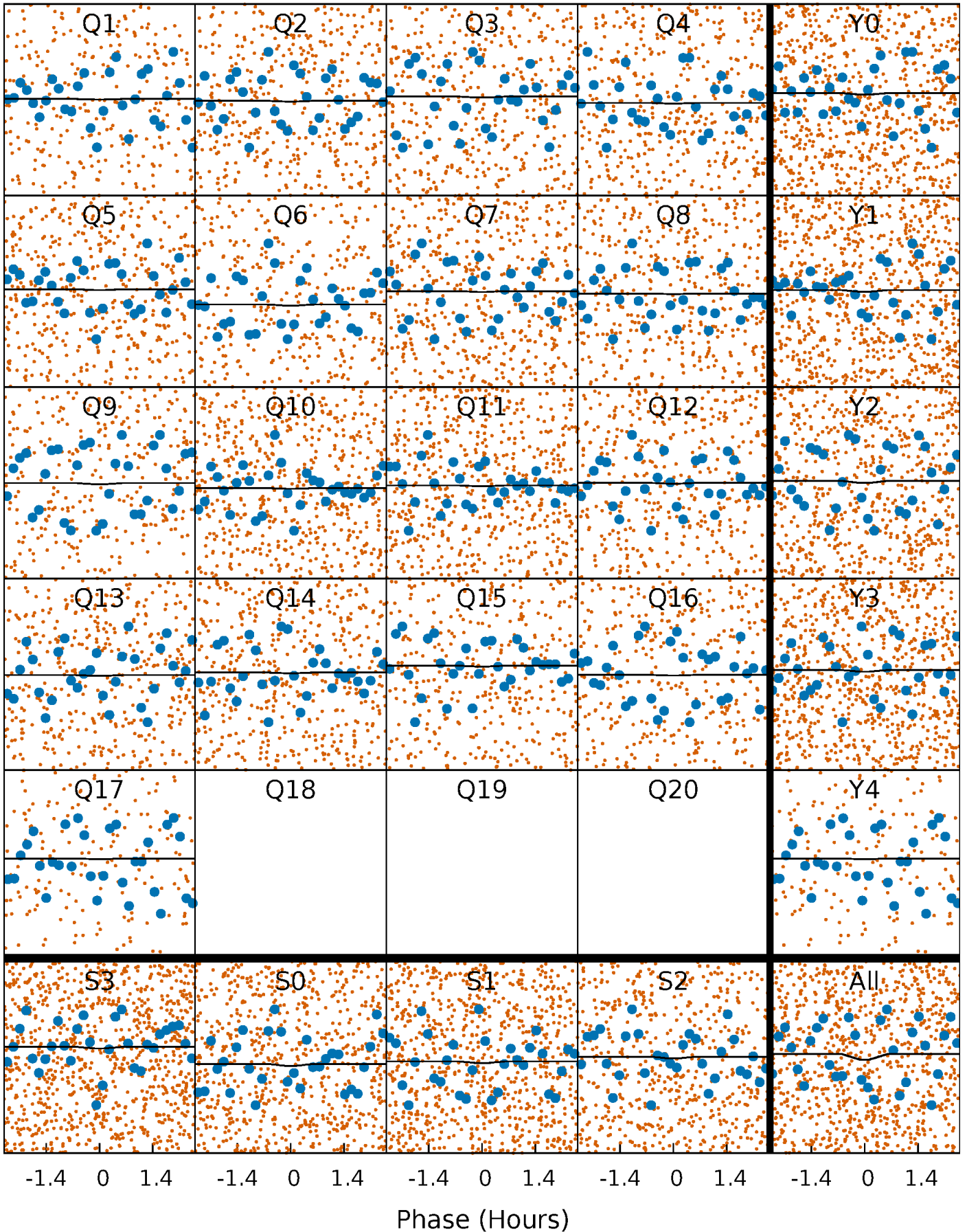
DV Quarter-Phased Transit Curves

TCE 001718594-02 P= 0.774508 Days $T_0=132.248974$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

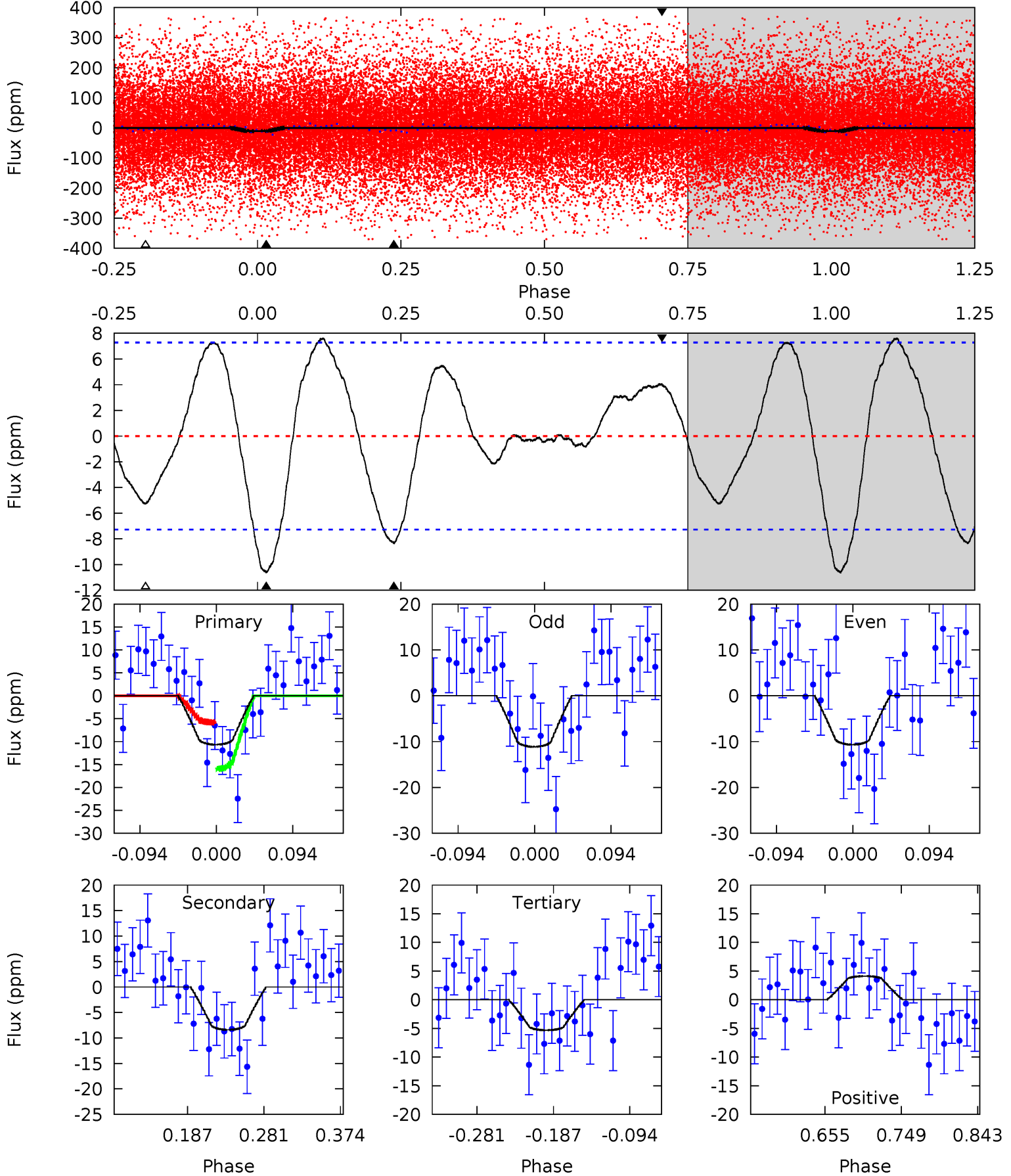
TCE 001718594-02 $P = 0.774508$ Days $T_0 = 132.248865$ (BKJD)



DV Model-Shift Uniqueness Test

001718594-02, P = 0.774508 Days, E = 131.474466 Days

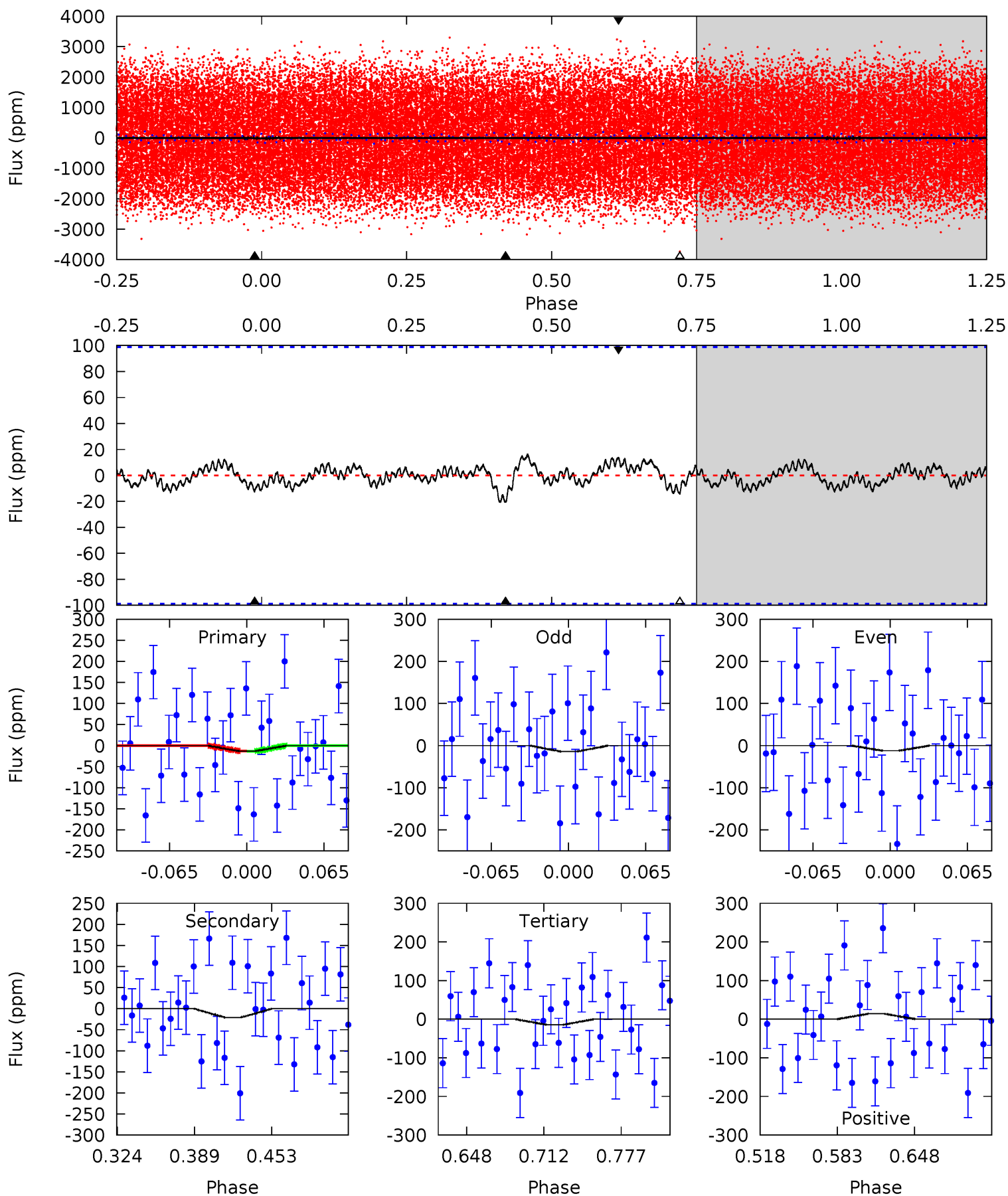
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.72	5.29	3.34	2.59	4.58	1.68	1.92	3.37	4.12	1.94	2.69	0.15	0.75	0.42	3.21



Alt Model-Shift Uniqueness Test

001718594-02, P = 0.774508 Days, E = 131.474357 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.62	0.99	0.69	0.66	4.66	1.85	0.27	-0.07	-0.04	0.30	0.32	0.05	0.12	0.44	0.01



Stellar Parameters For KIC 001718594

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7796^{+214}_{-322}	$3.972^{+0.204}_{-0.136}$	$0.070^{+0.200}_{-0.350}$	$2.355^{+0.514}_{-0.685}$	$1.895^{+0.155}_{-0.362}$	$0.204^{+0.262}_{-0.081}$
	+3%/-4%	+5%/-3%	+286%/-500%	+22%/-29%	+8%/-19%	+128%/-39%
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 001718594-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-8 ± 2	$0.70^{+0.25}_{-0.22}$	5102^{+336}_{-379}	7675^{+2012}_{-1220}	$3.935^{+3.823}_{-1.871}$
Alt.	-21 ± 21	$0.68^{+0.24}_{-0.19}$	5127^{+325}_{-416}	10622^{+6186}_{-15000}	$9.115^{+18.229}_{-9.145}$

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

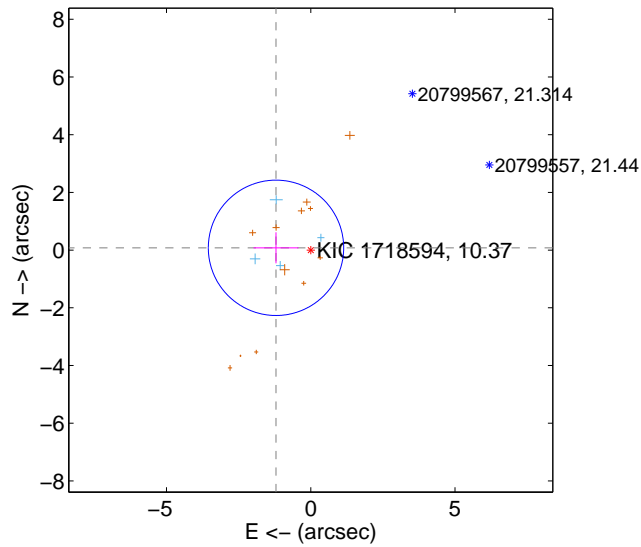
Supplemental centroid analysis for 001718594-02. **Kepler magnitude: 10.37.** Transit SNR 4.20

There are 4 quarters with good PRF difference image offsets

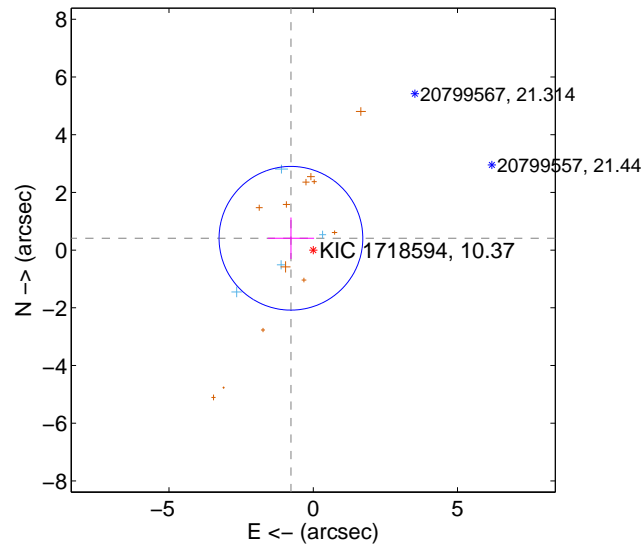
The direct PRF centroid is offset from the target star catalog position by about 0.78 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.206 ± 0.782	1.54	1.204 ± 0.778	0.079 ± 0.538
PRF-fit source offset from KIC position	0.875 ± 0.830	1.05	0.773 ± 0.803	0.410 ± 0.719
photometric centroid source offset	0.96 ± 2.01	0.48	0.49 ± 1.70	-0.82 ± 2.11

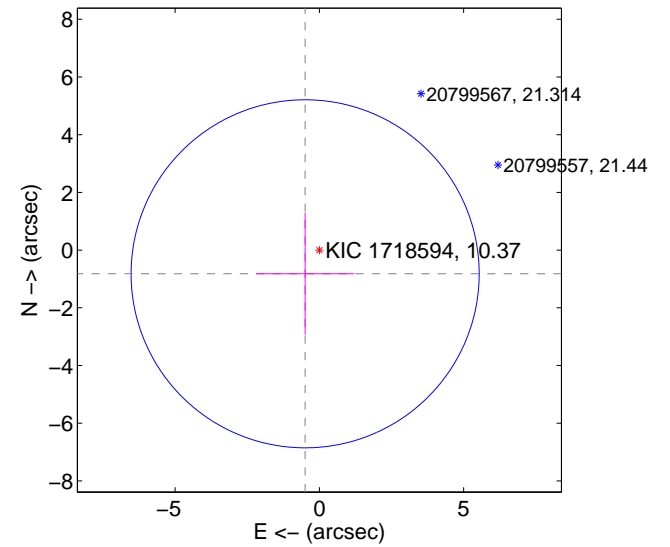
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

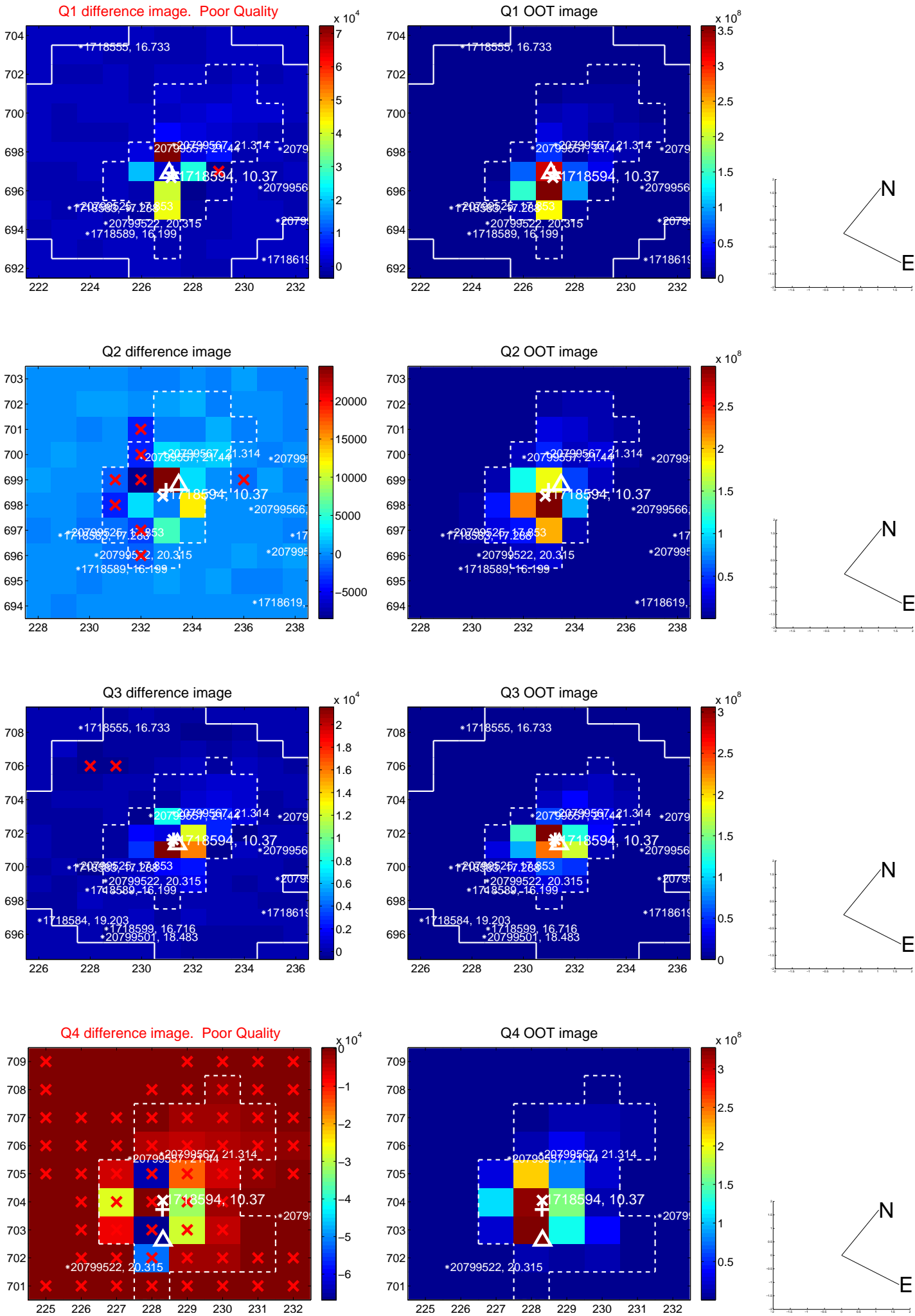


offset from photometric centroids

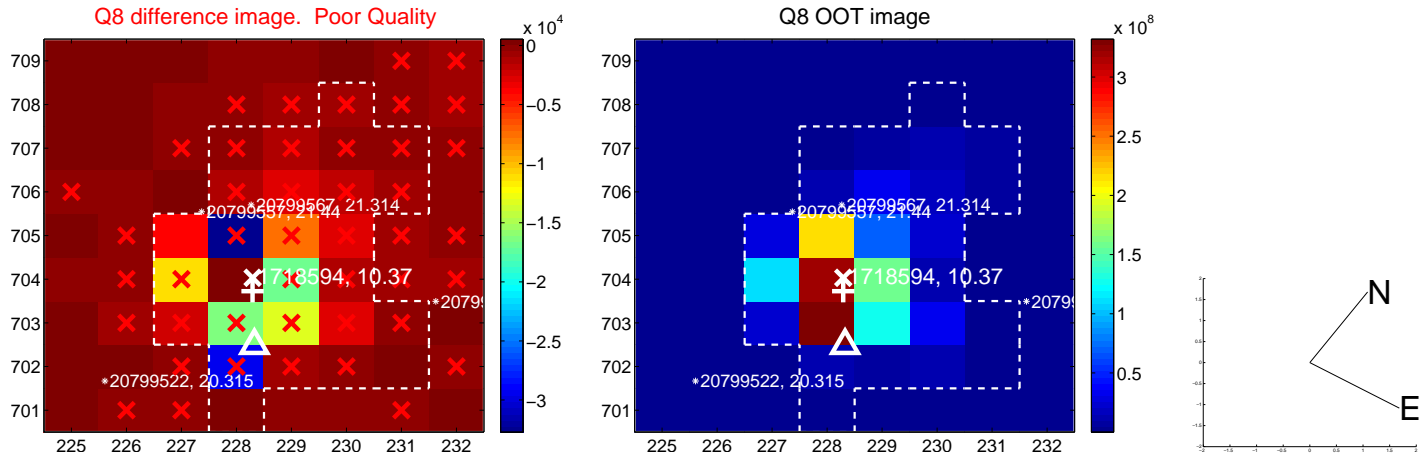
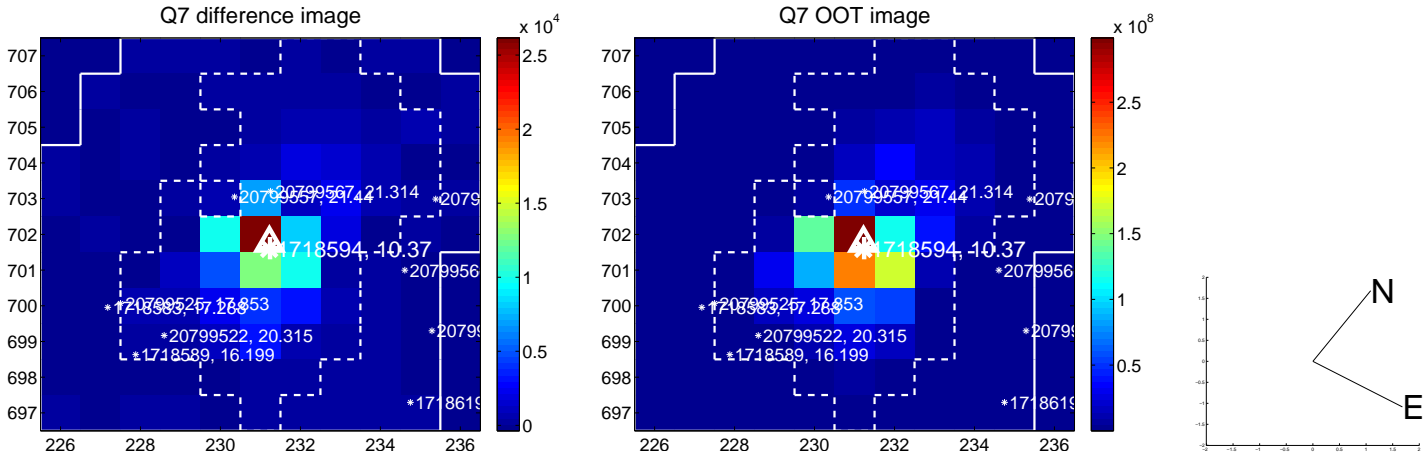
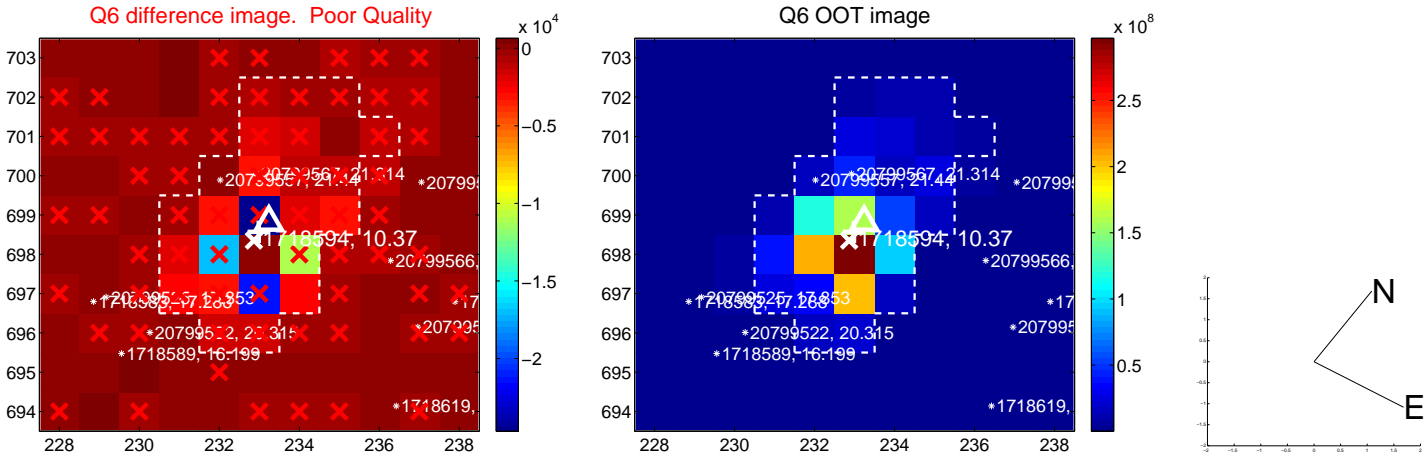
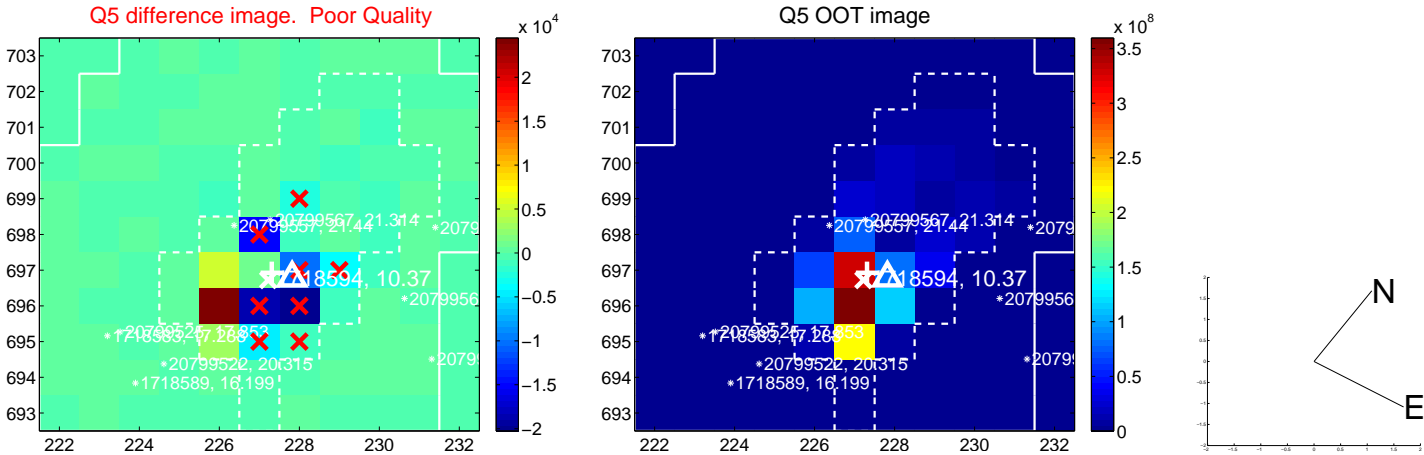


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

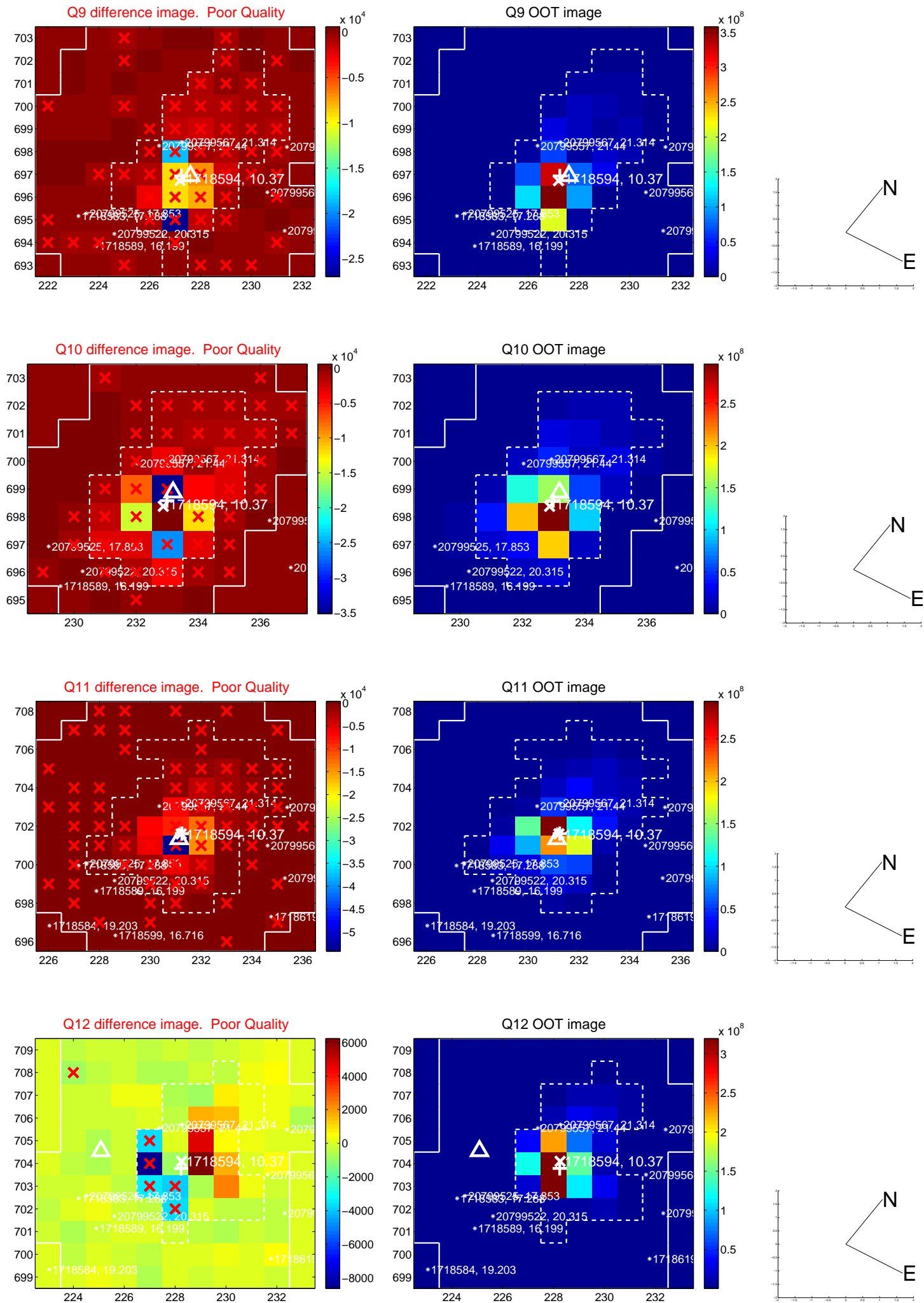
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



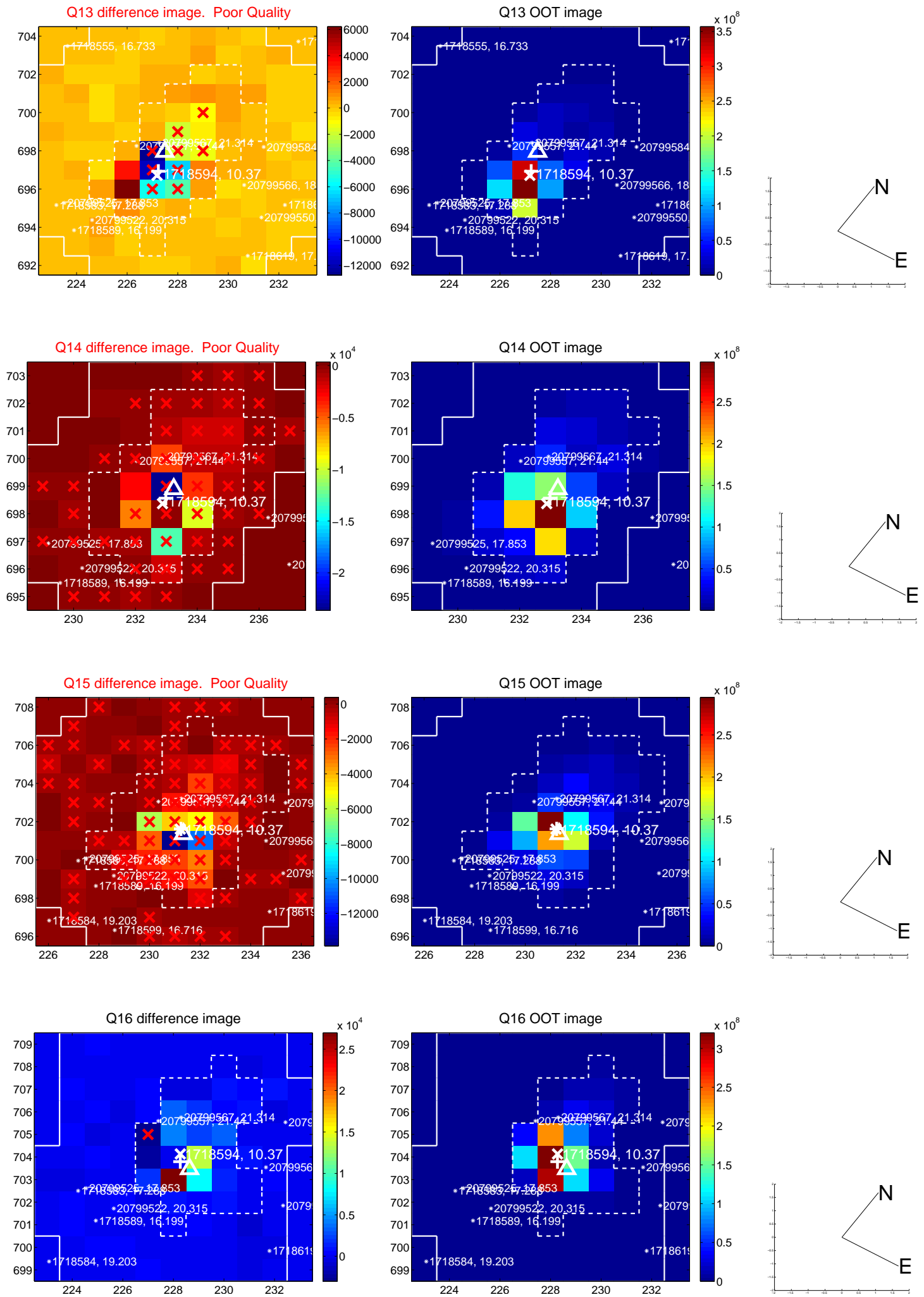
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



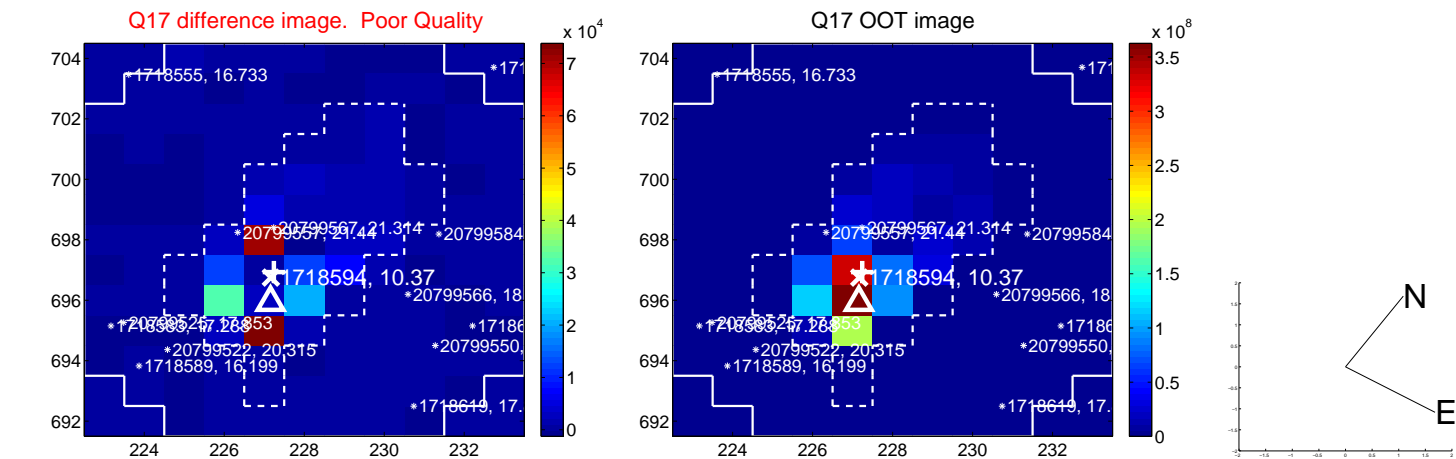
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



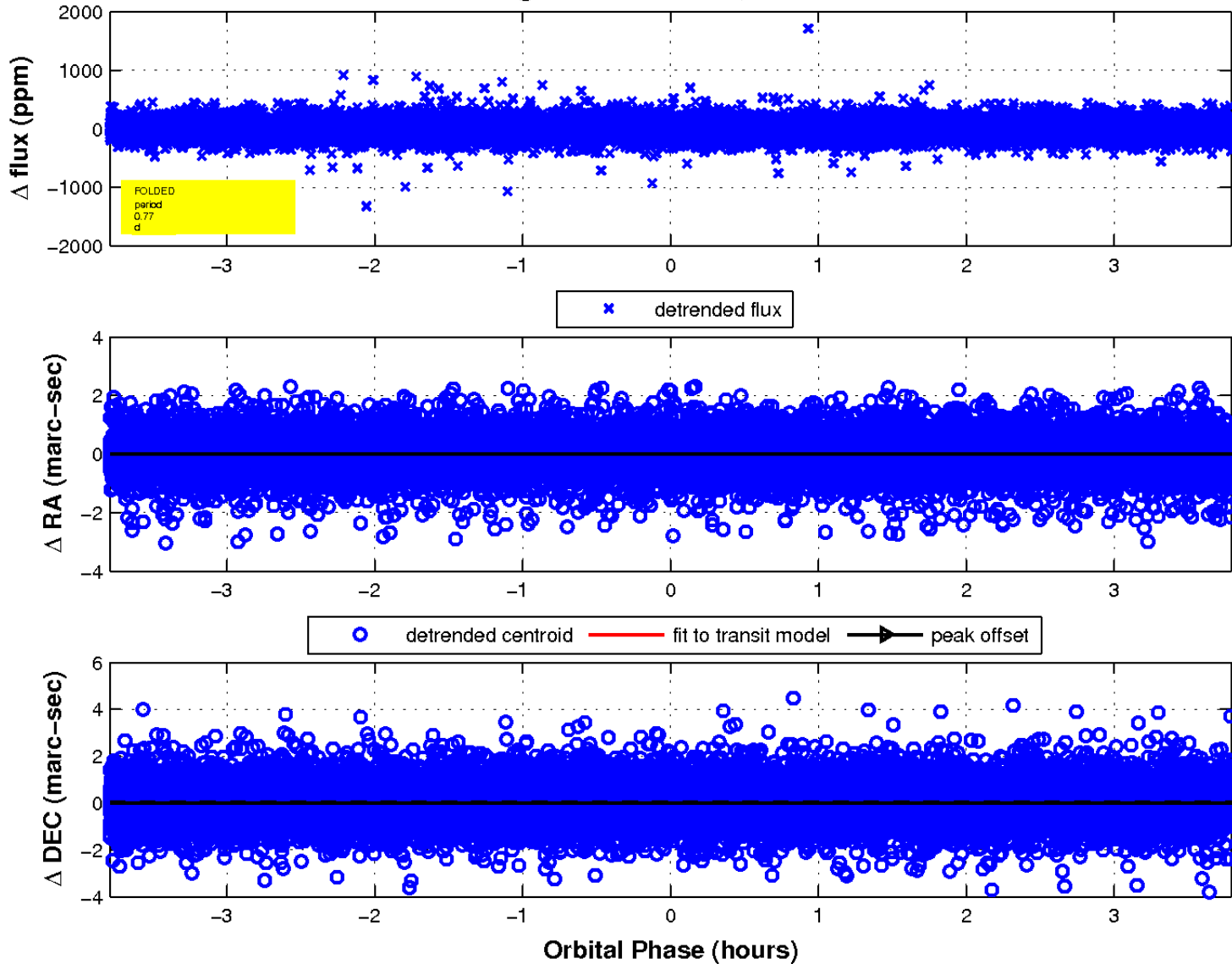
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

