

KIC 009474717

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})
009474717-01	OBS	No	1.147625	131.942062	18.5	4.579	10.0	9.4	3.21	6671	1.42	27161.61
009474717-02	OBS	No	2.592573	131.732175	28.1	25.111	9.7	12.0	3.21	6671	1.72	9163.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009474717-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
009474717-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

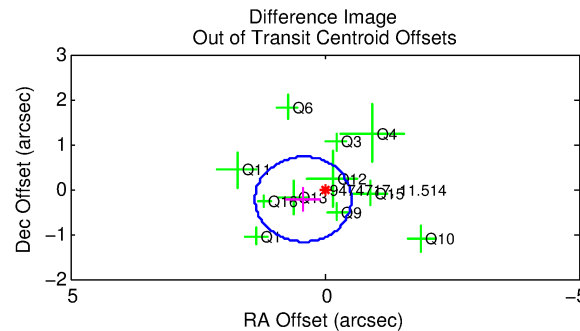
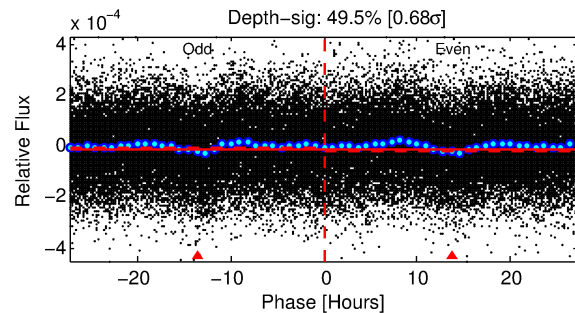
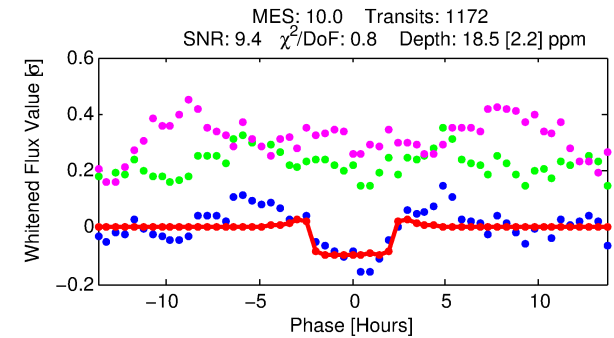
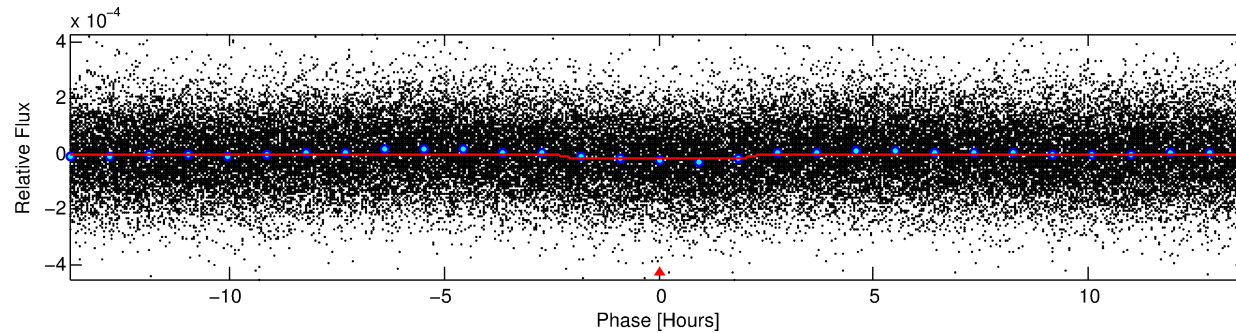
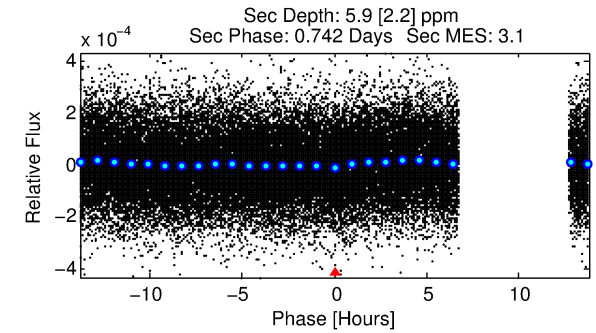
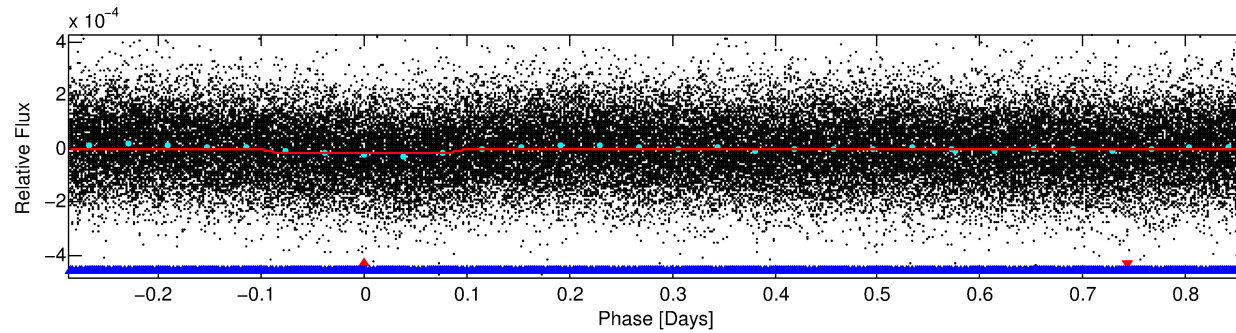
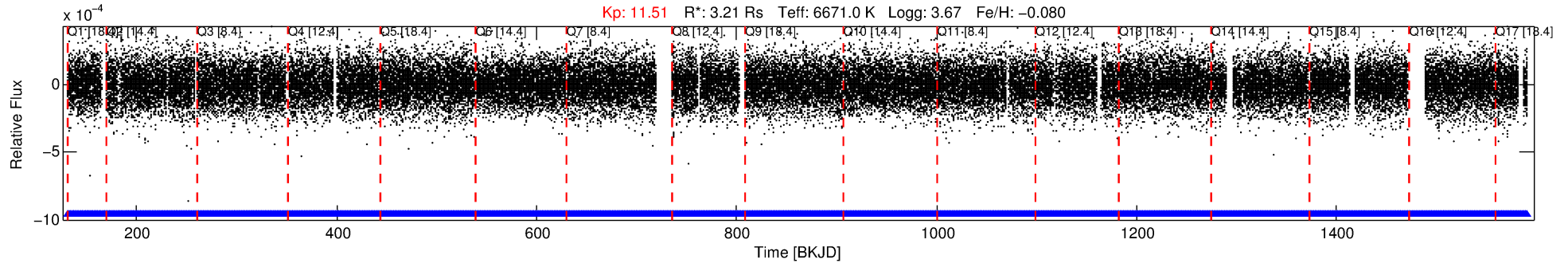
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009474717-01

No Significant Match Found

DV One-Page Summary

KIC: 9474717 Candidate: 1 of 2 Period: 1.148 d



DV Fit Results:

Period = 1.14762 [0.00001] d
Epoch = 131.9421 [0.0033] BKJD
 $R_p/R^* = 0.0041$ [0.0010]
 $a/R^* = 1.86$ [1.69]
 $b = 0.45$ [2.30]
 $\text{Seff} = 27161.61$ [14074.86]
 $T_{\text{eq}} = 3274$ [424] K
 $R_p = 1.42$ [0.63] R_e
 $a = 0.0260$ [0.0086] AU
 $A_g = 1.09$ [0.86] [0.10σ]
 $T_{\text{eff}} = 5170$ [792] K [2.11σ]

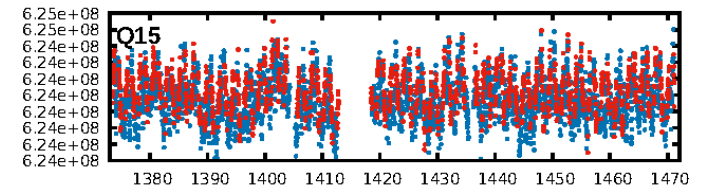
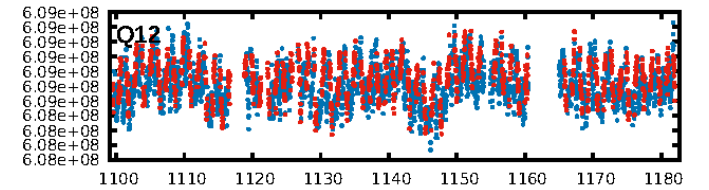
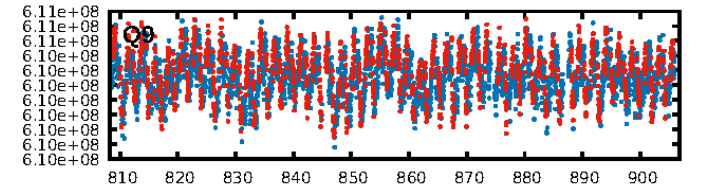
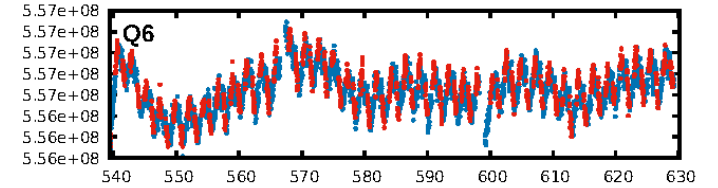
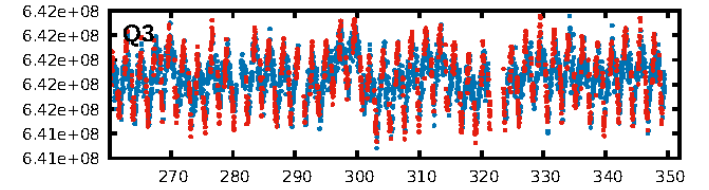
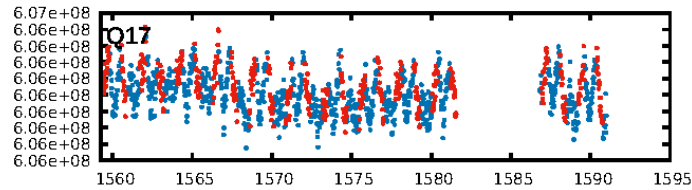
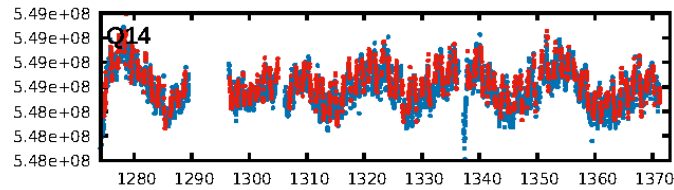
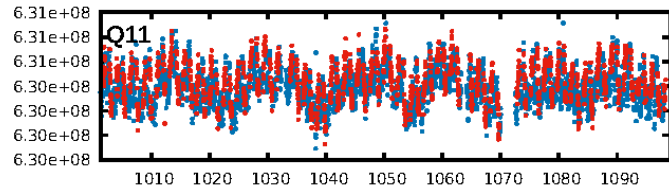
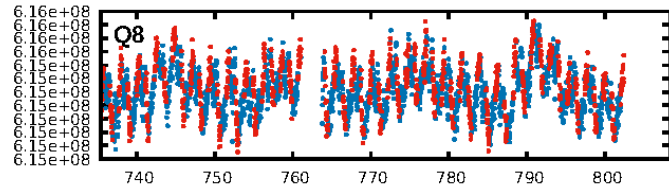
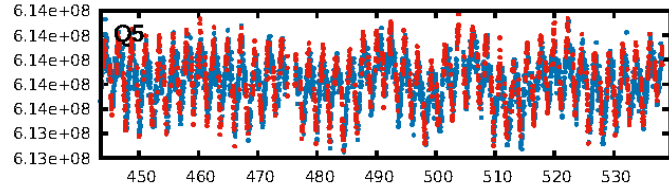
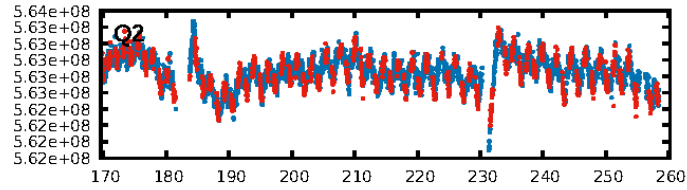
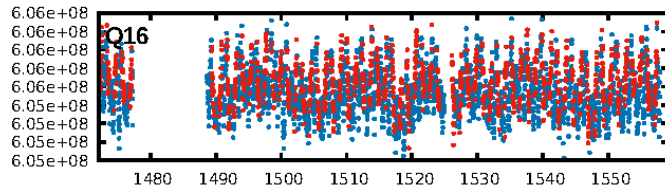
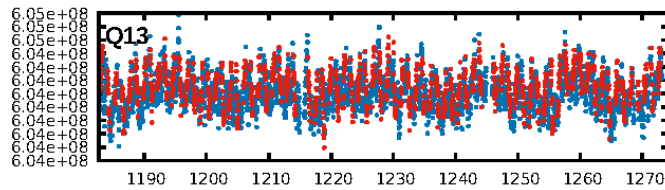
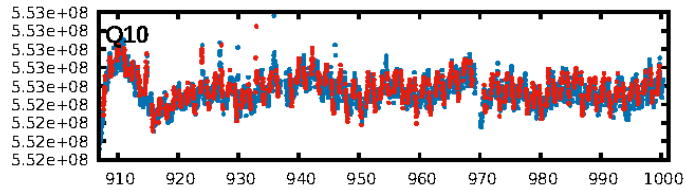
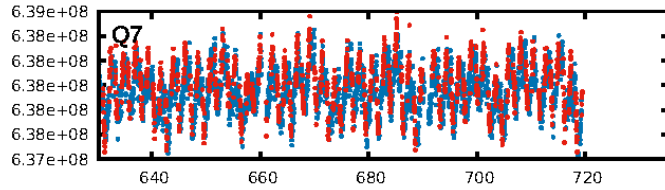
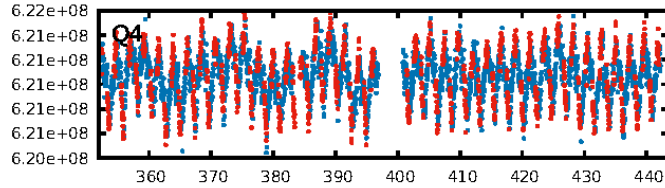
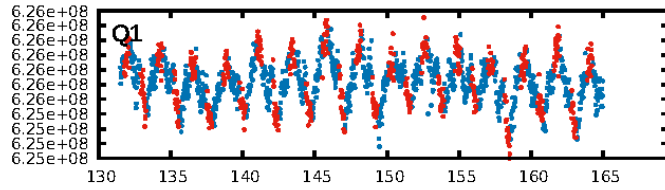
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 82.6% [1.36σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1119/1119]
GhostDiagnostic-chr: 5.638
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.477 arcsec [1.51σ]
KicOffset-rm: 0.564 arcsec [1.73σ]
OotOffset-st: 2/3/3/3 [11]
KicOffset-st: 2/3/3/3 [11]
DiffImageQuality-fgm: 0.73 [8/11]
DiffImageOverlap-fno: 1.00 [17/17]

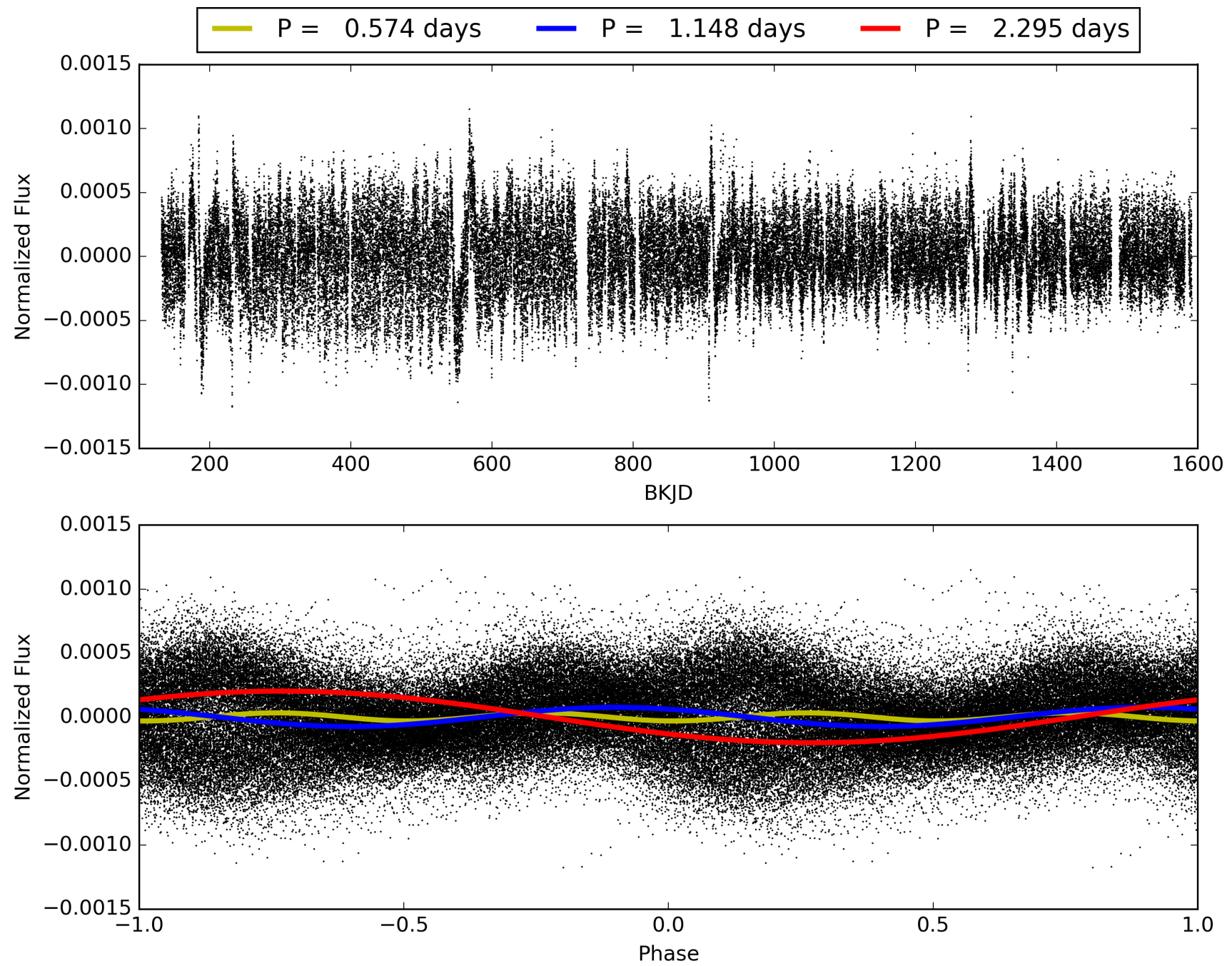
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:14:12 Z

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

TCE 009474717-01, PDC Light Curves

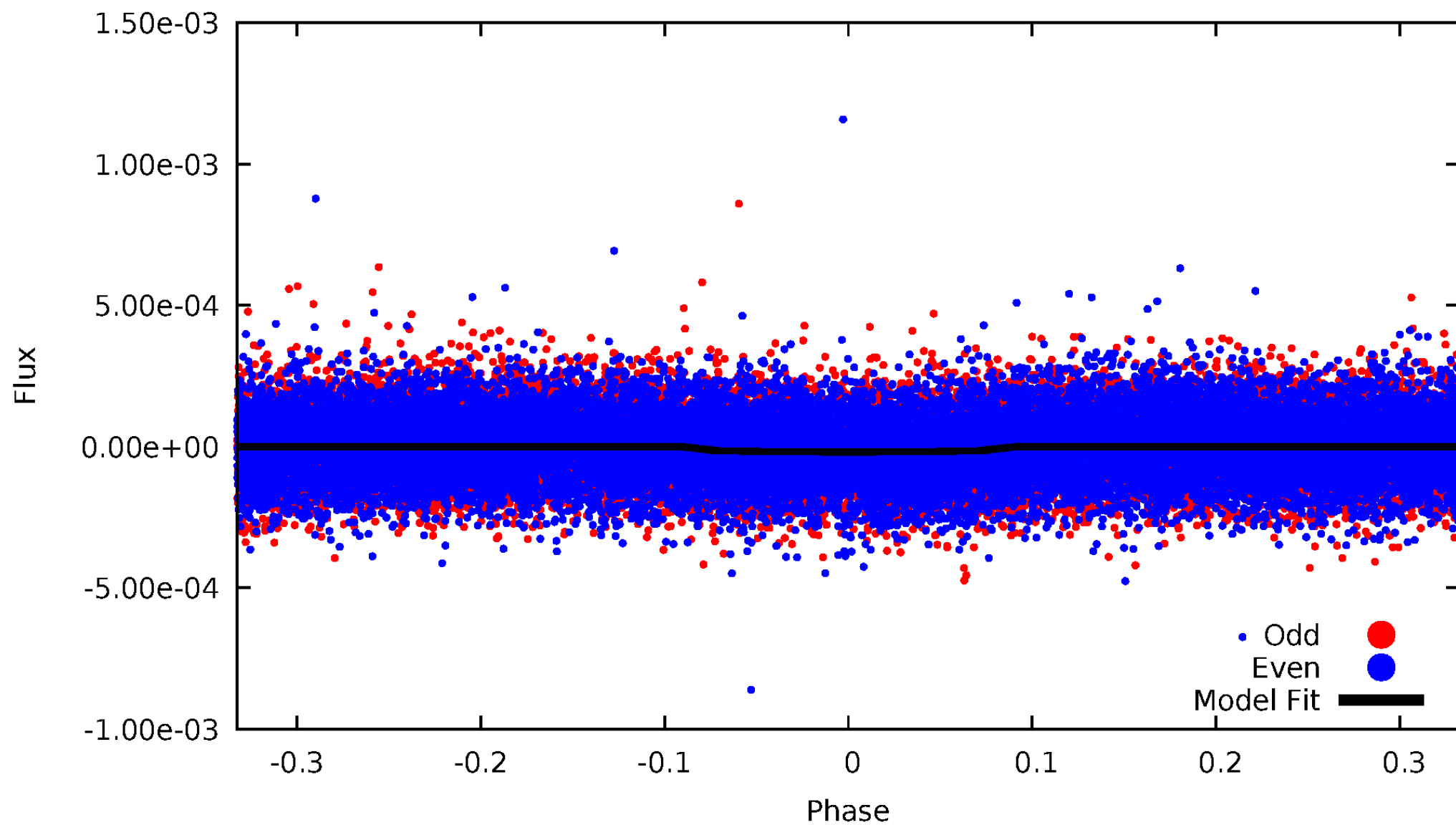


TCE 009474717-01



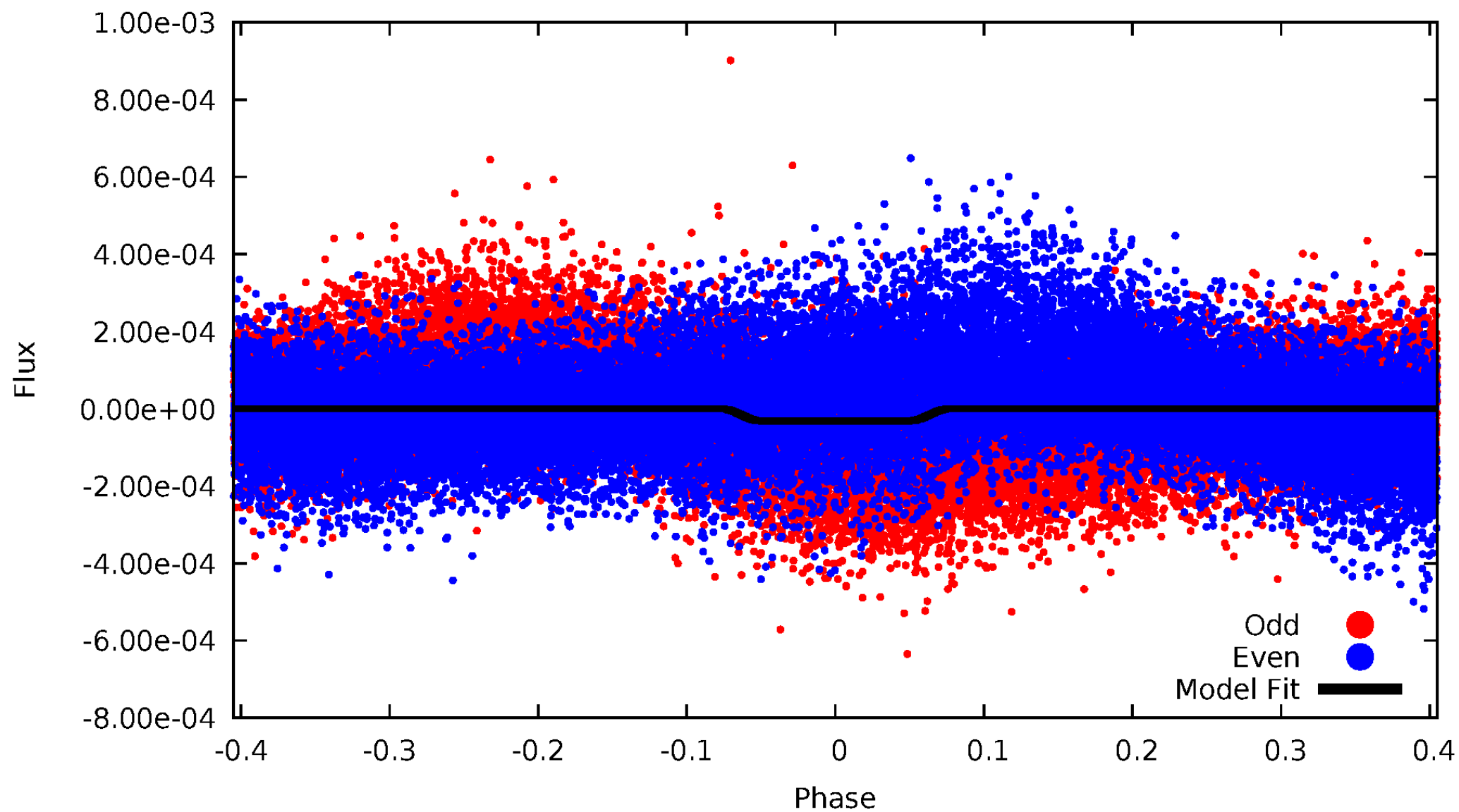
DV Odd/Even

TCE 009474717-01

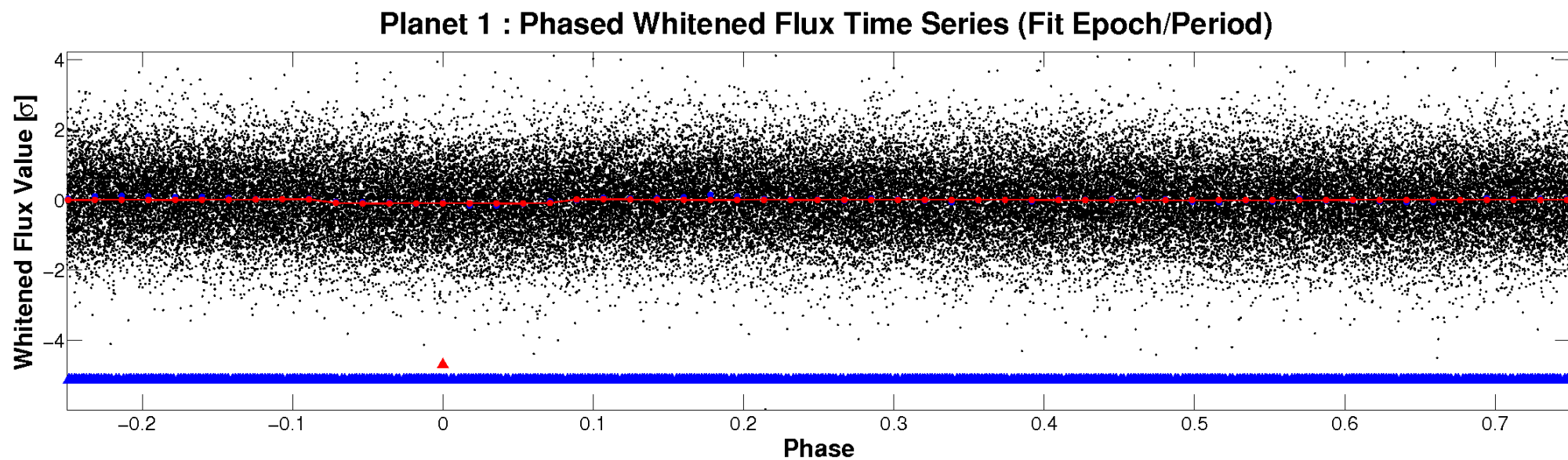
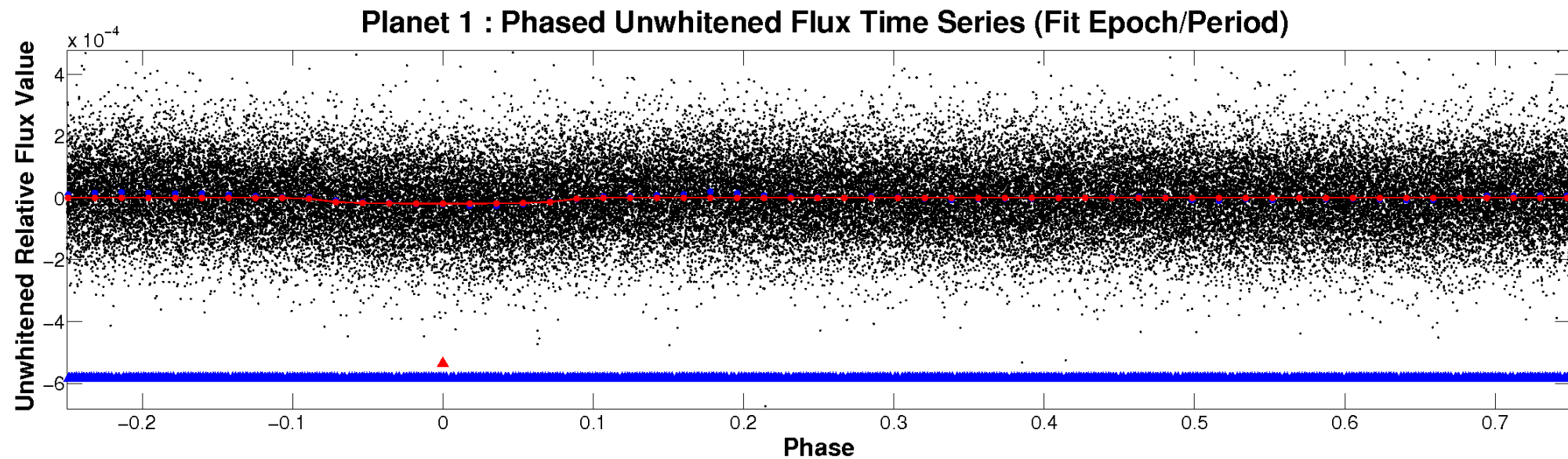


ALT Odd/Even

TCE 009474717-01

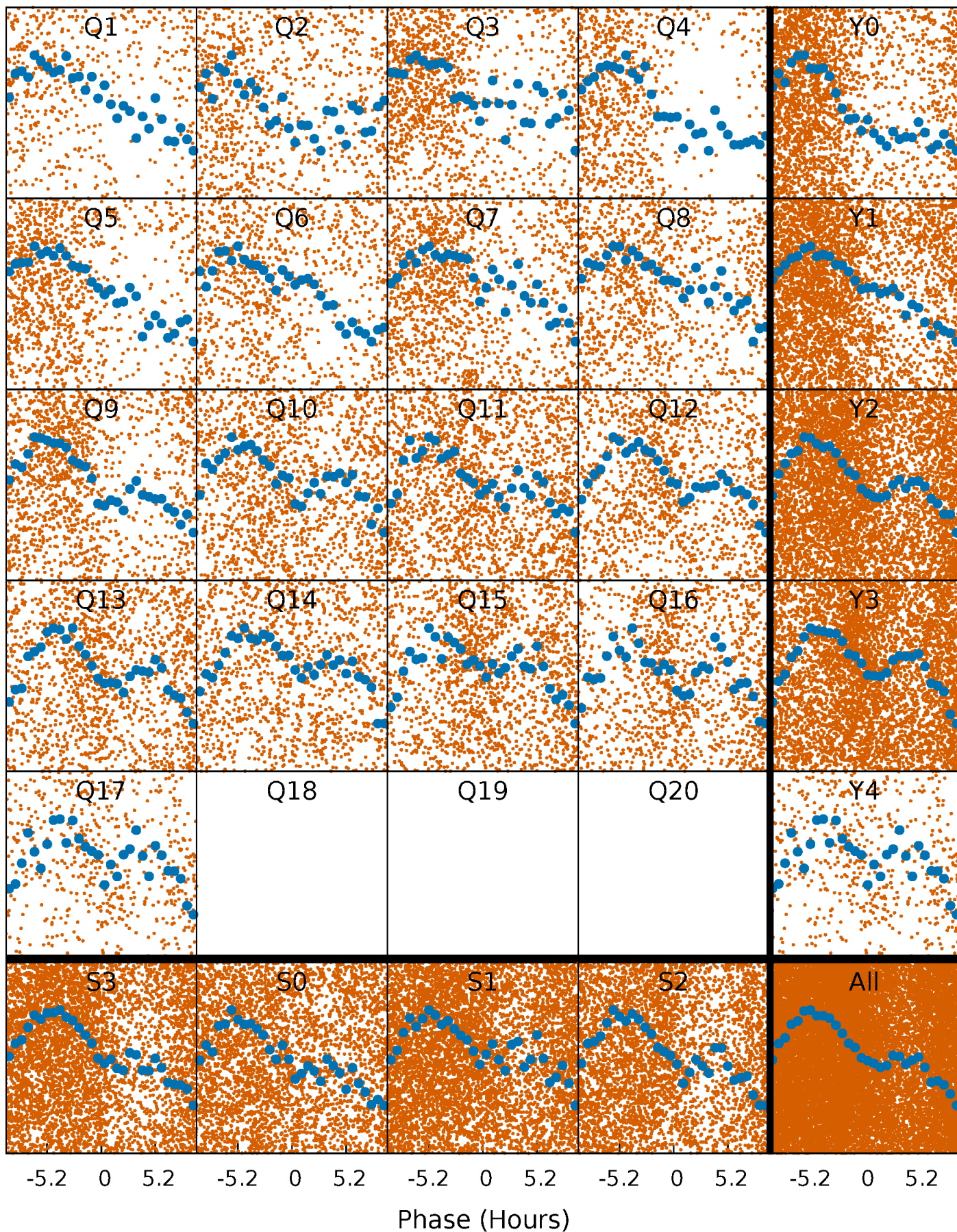


Non-Whitened Vs. Whitened Light Curve



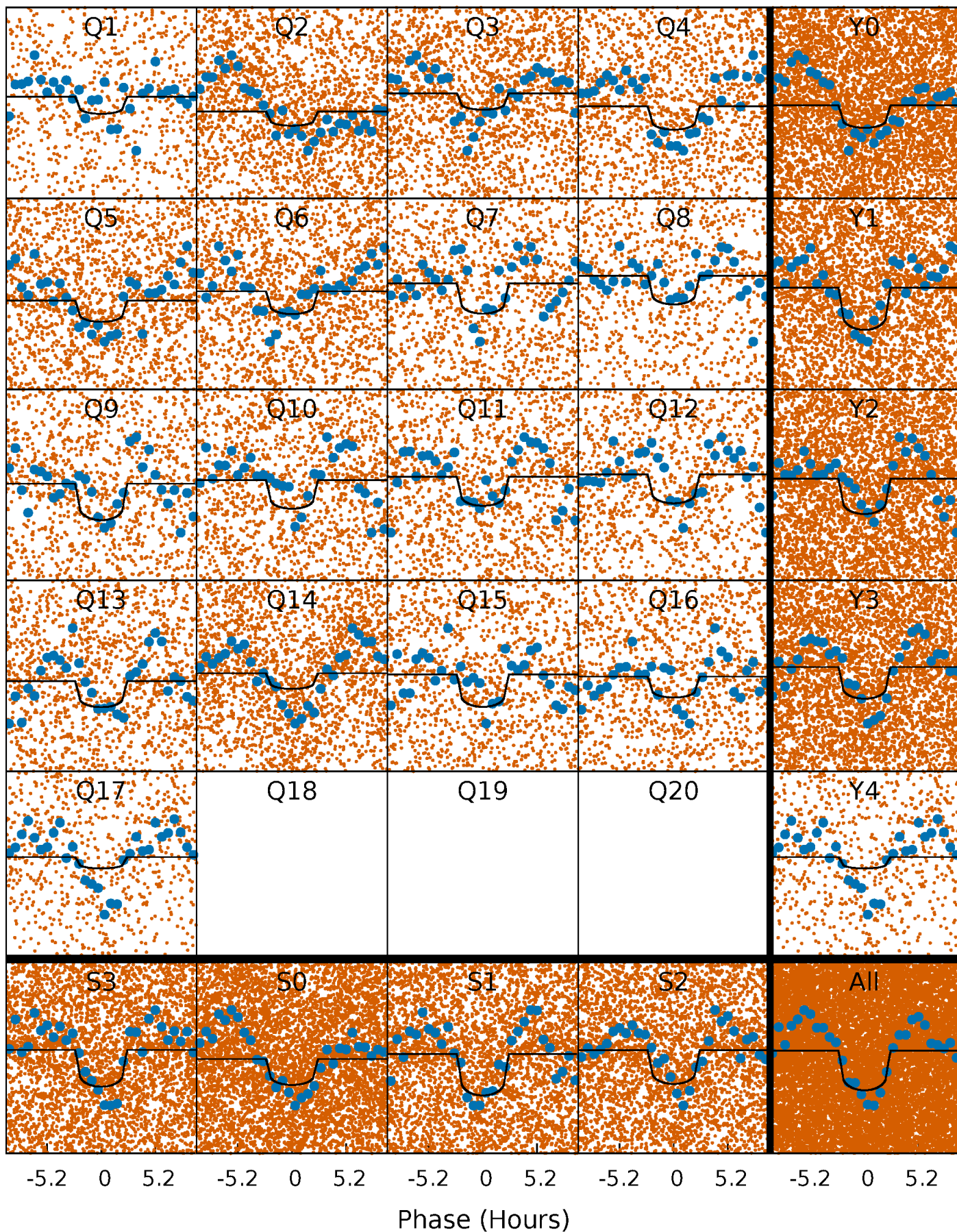
PDC Quarter-Phased Transit Curves

TCE 009474717-01 P= 1.147625 Days $T_0=131.942061$ (BKJD)



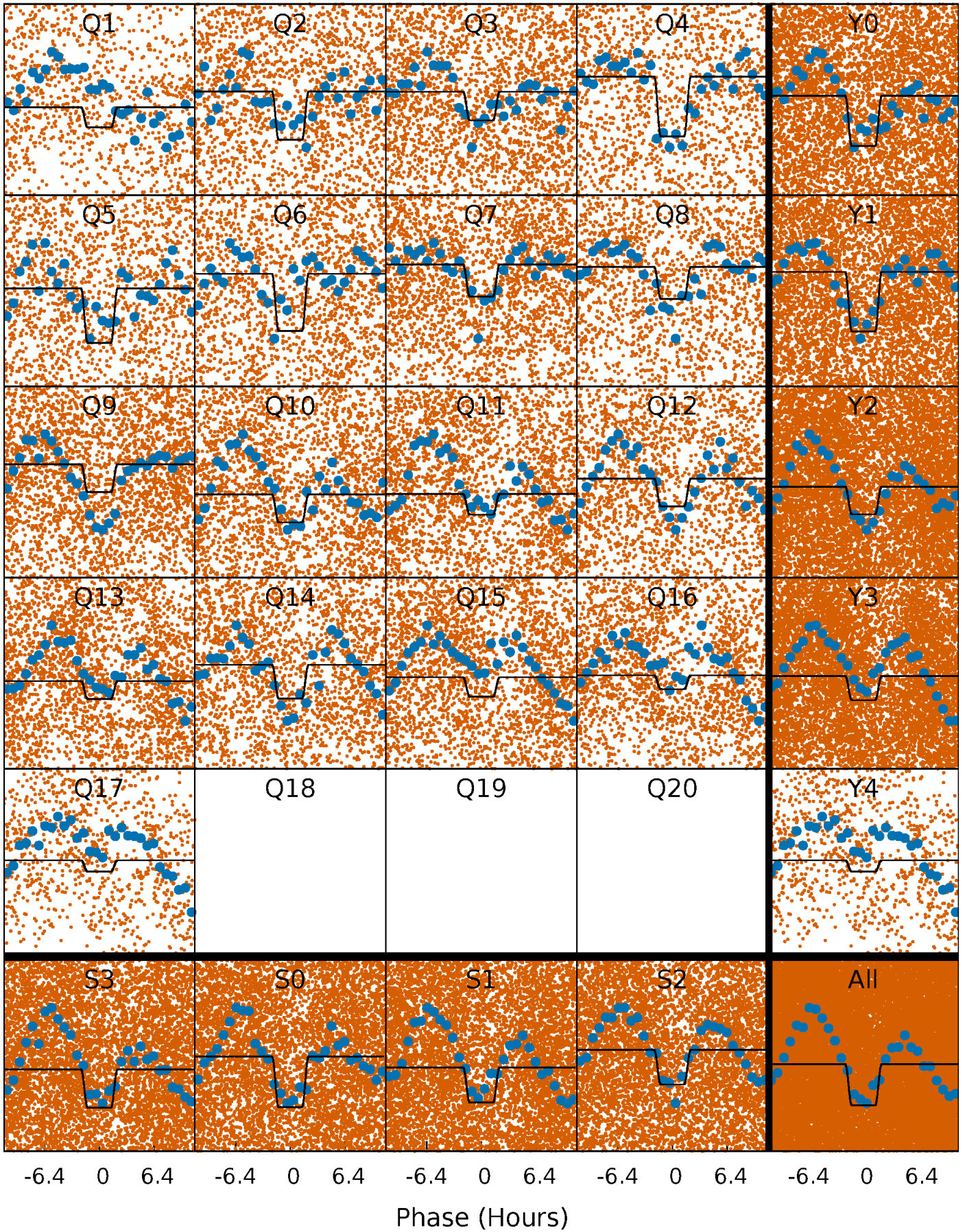
DV Quarter-Phased Transit Curves

TCE 009474717-01 P= 1.147625 Days $T_0=131.942061$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

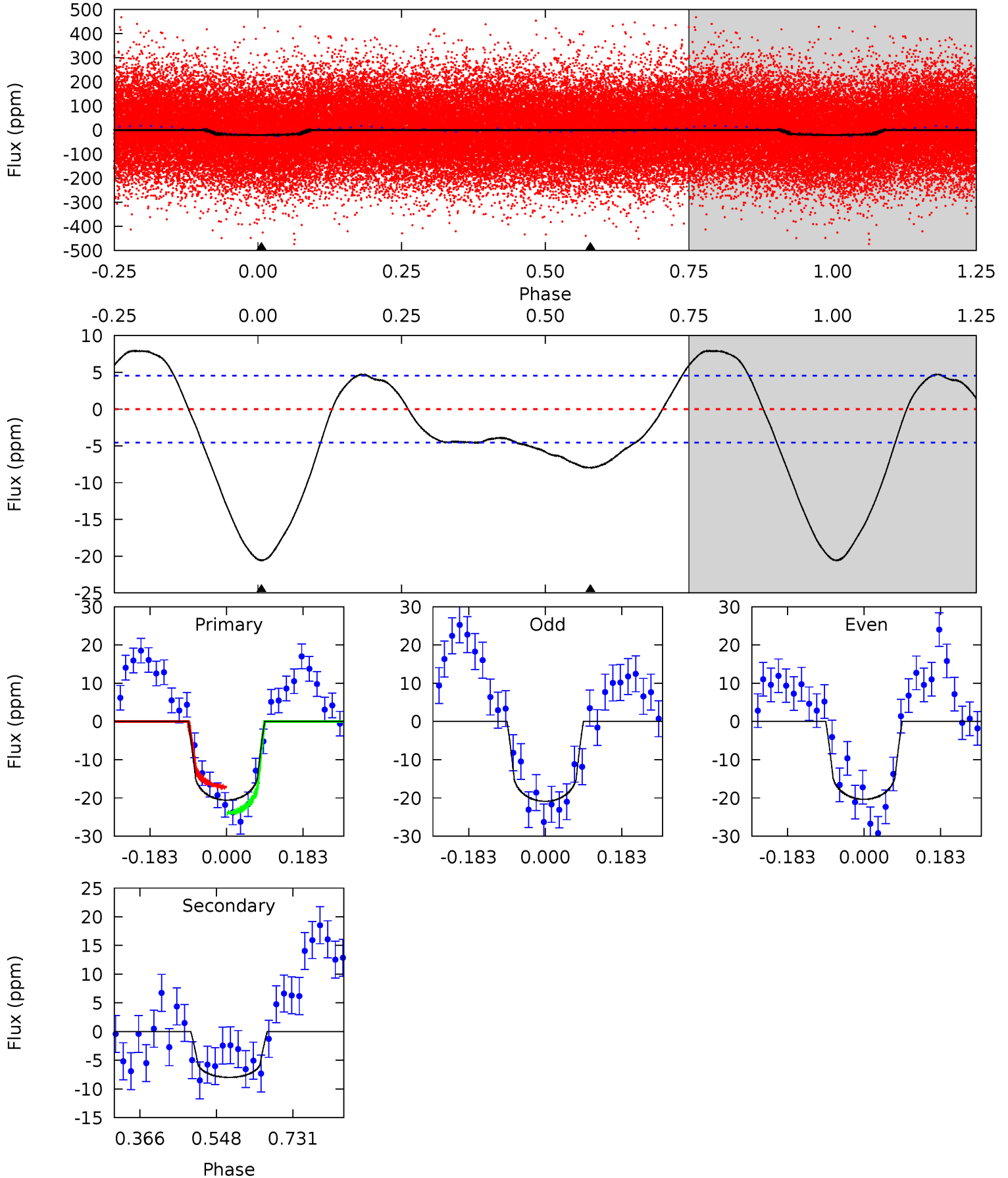
TCE 009474717-01 P= 1.147679 Days $T_0=131.916944$ (BKJD)



DV Model-Shift Uniqueness Test

009474717-01, P = 1.147625 Days, E = 130.794436 Days

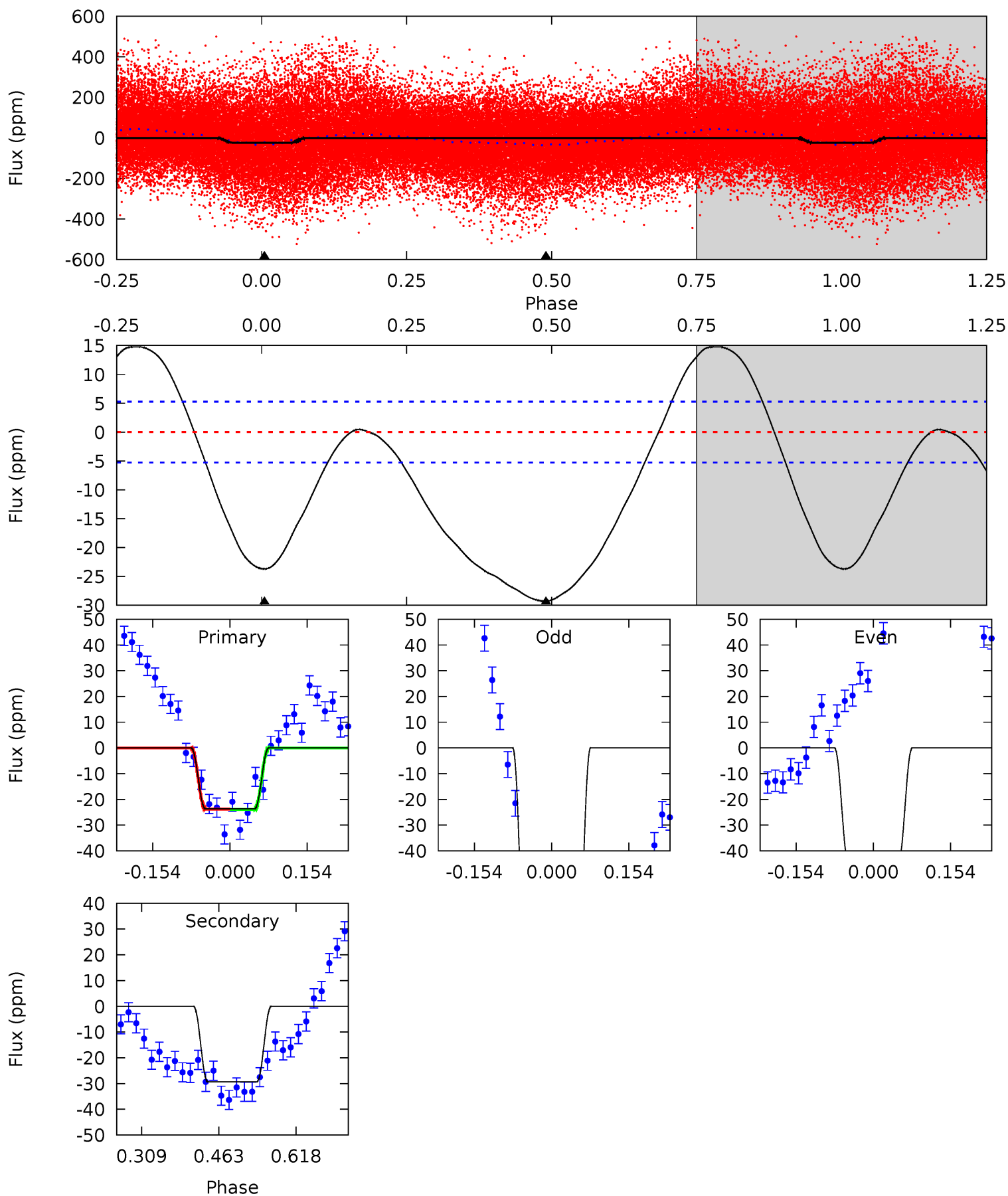
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.0	7.78	0	0	4.44	1.33	4.75	20.0	20.0	7.78	7.78	0.25	1.02	0.28	3.33



Alt Model-Shift Uniqueness Test

009474717-01, P = 1.147679 Days, E = 130.769265 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	24.9	0	0	4.47	1.42	8.89	20.2	20.2	24.9	24.9	20.3	0.82	0.34	0.05



Stellar Parameters For KIC 009474717

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6671^{+167}_{-183}	$3.673^{+0.288}_{-0.072}$	$-0.080^{+0.300}_{-0.250}$	$3.214^{+0.397}_{-1.191}$	$1.774^{+0.160}_{-0.374}$	$0.075^{+0.154}_{-0.018}$
	+3%/-3%	+8%/-2%	+375%/-312%	+12%/-37%	+9%/-21%	+205%/-24%
Source	PHO1	FLK73	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 009474717-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8 ± 1	$1.35^{+0.40}_{-0.38}$	4500^{+228}_{-381}	5281^{+948}_{-626}	$1.613^{+1.545}_{-0.663}$
Alt.	-29 ± 1	$1.87^{+0.41}_{-0.43}$	4502^{+217}_{-401}	6339^{+772}_{-551}	$3.107^{+2.004}_{-1.018}$

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

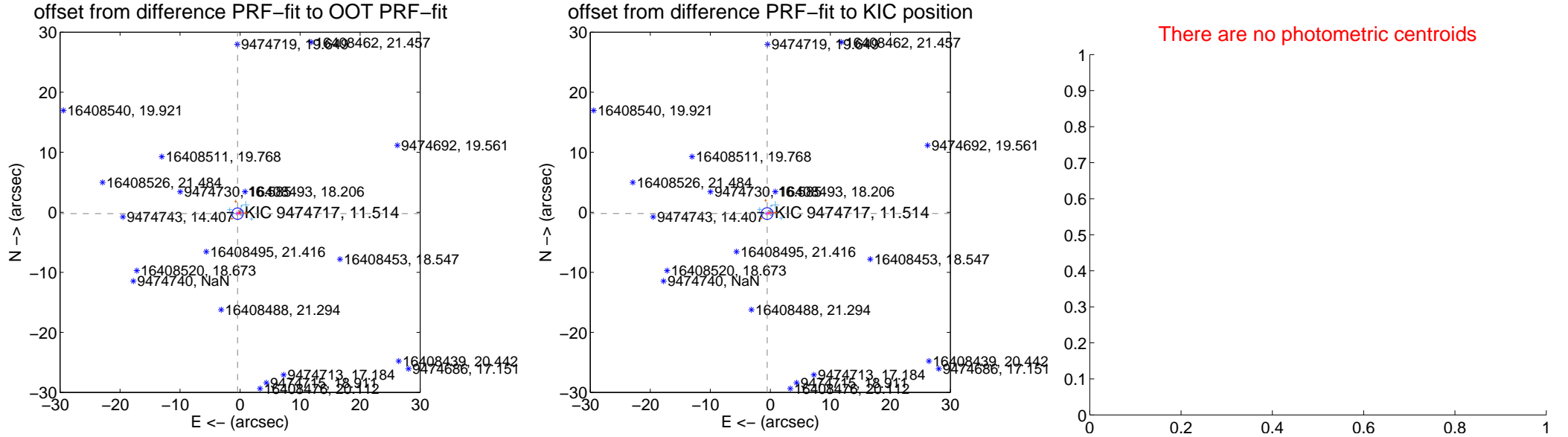
DV Centroid Data

Supplemental centroid analysis for 009474717-01. **Kepler magnitude: 11.51.** Transit SNR 9.40

There are 8 quarters with good PRF difference image offsets

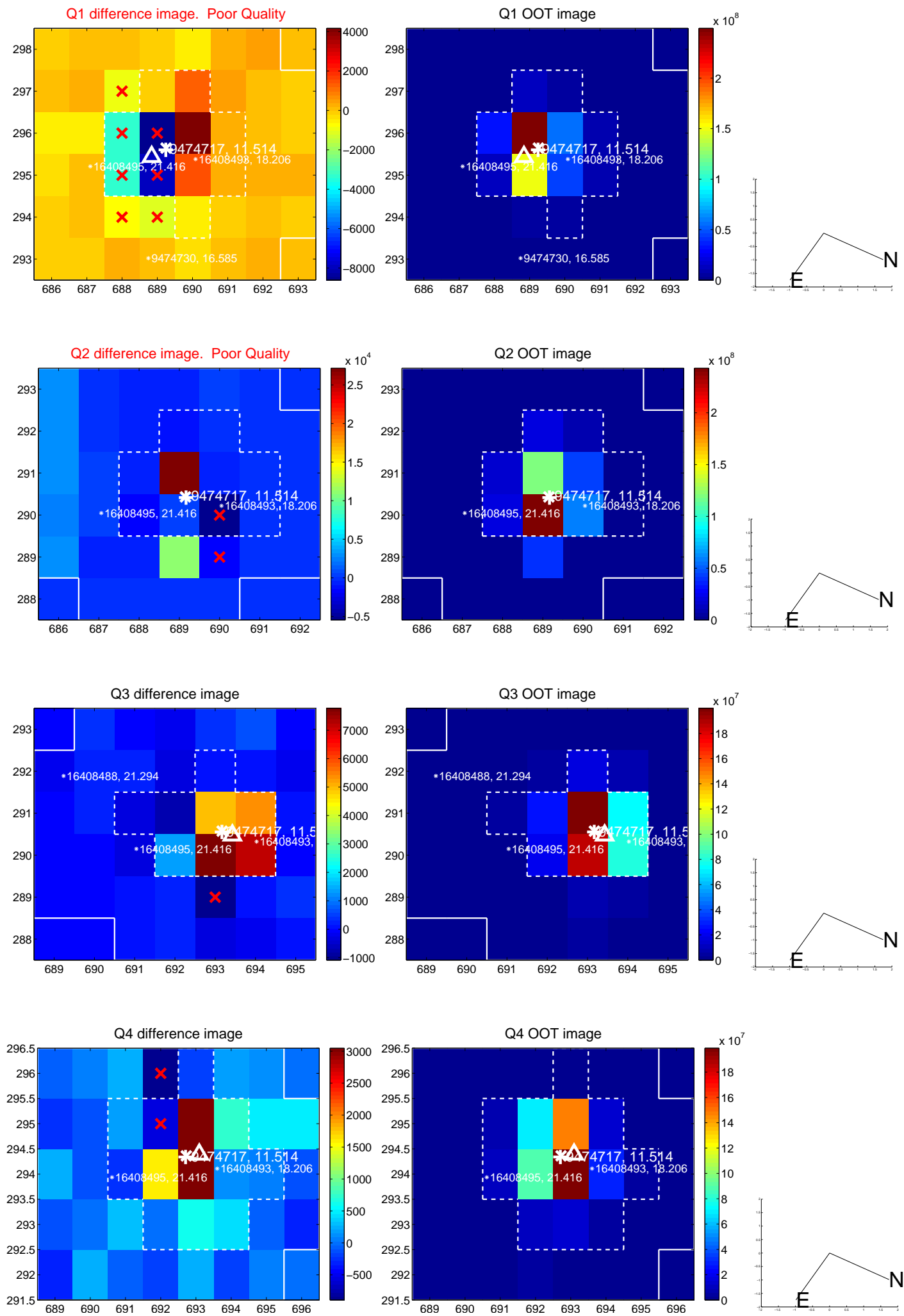
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.477 ± 0.315	1.51	0.420 ± 0.328	-0.226 ± 0.268
PRF-fit source offset from KIC position	0.564 ± 0.325	1.73	0.523 ± 0.335	-0.211 ± 0.260
photometric centroid source offset	—	—	—	—

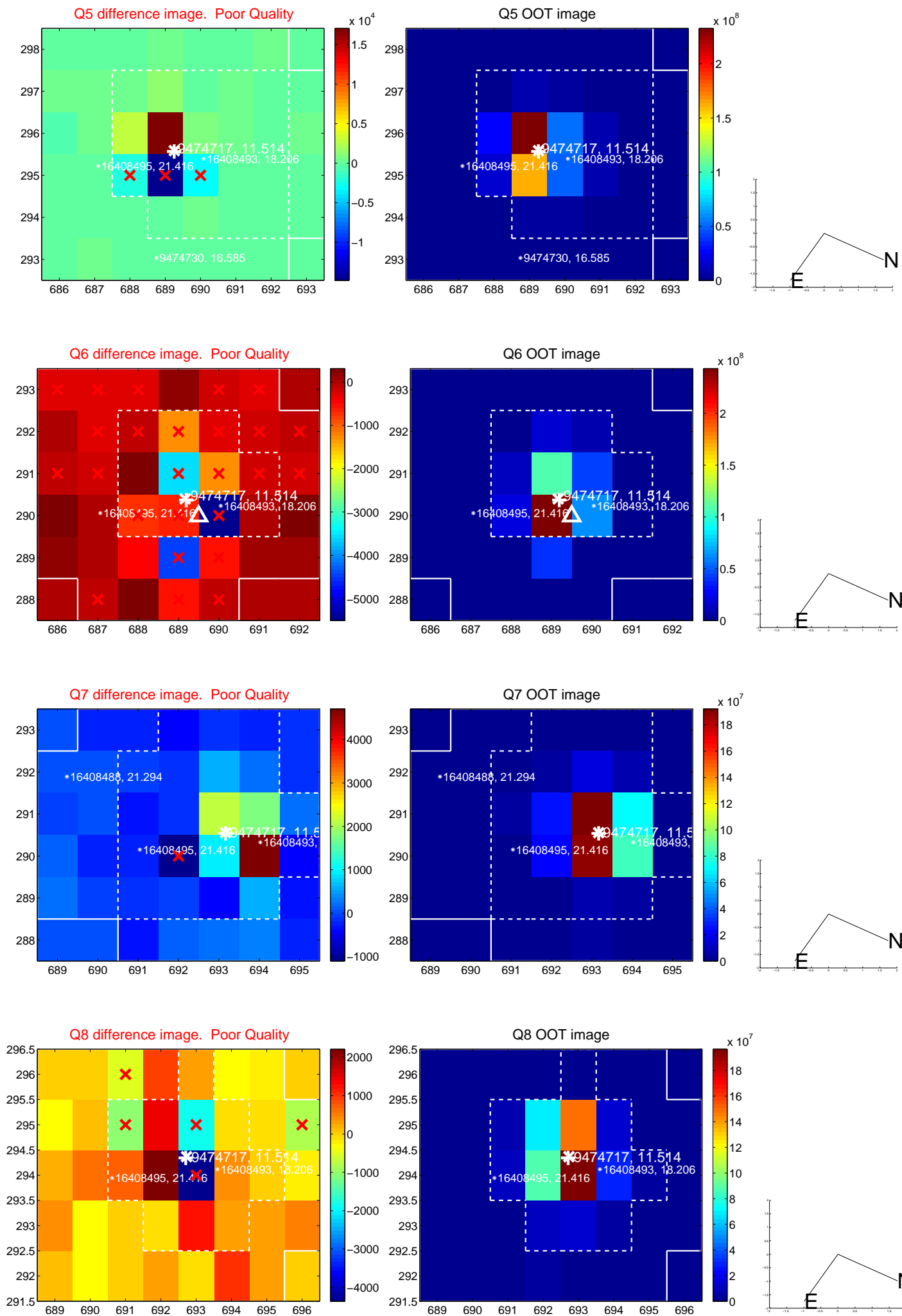


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

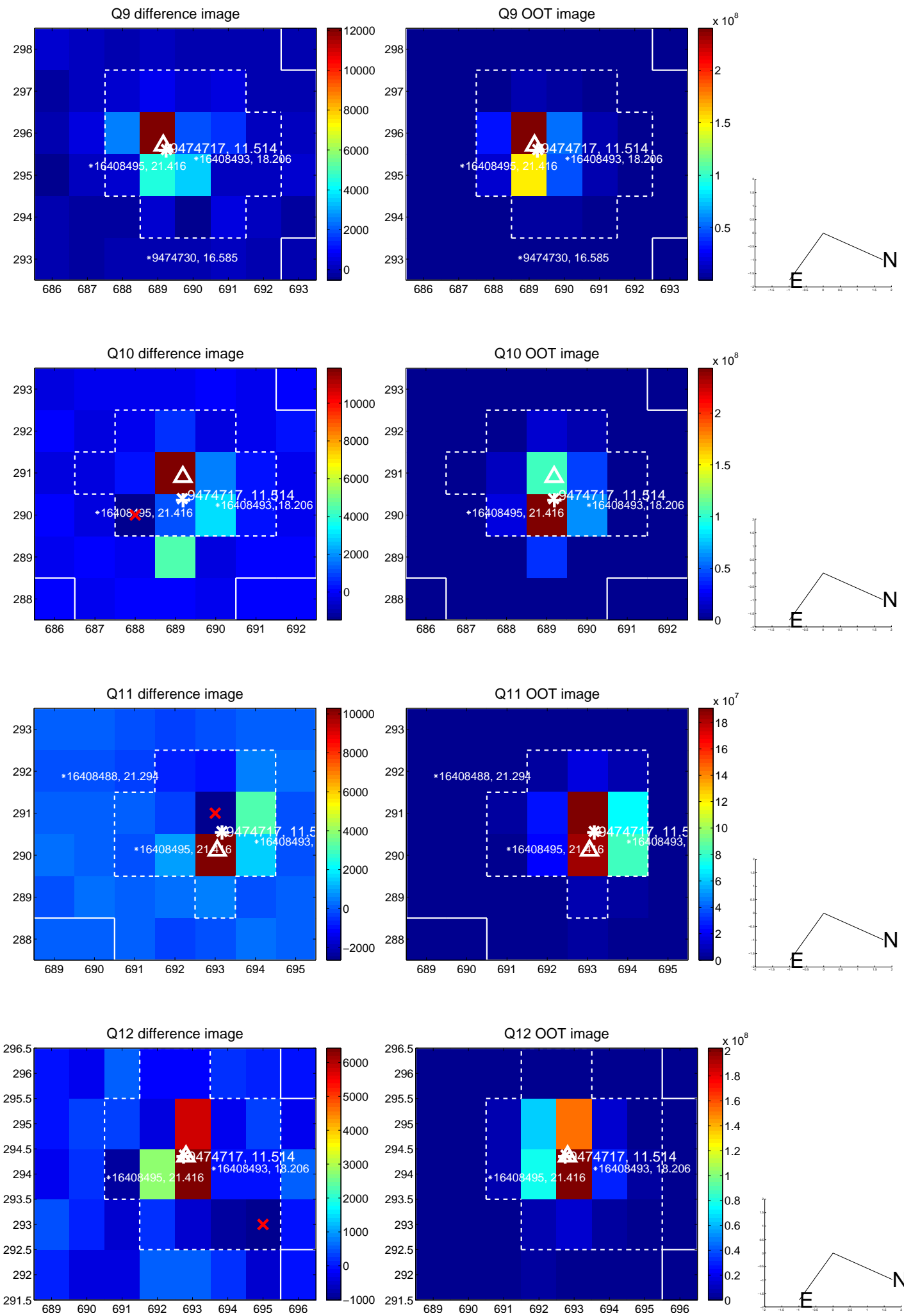
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



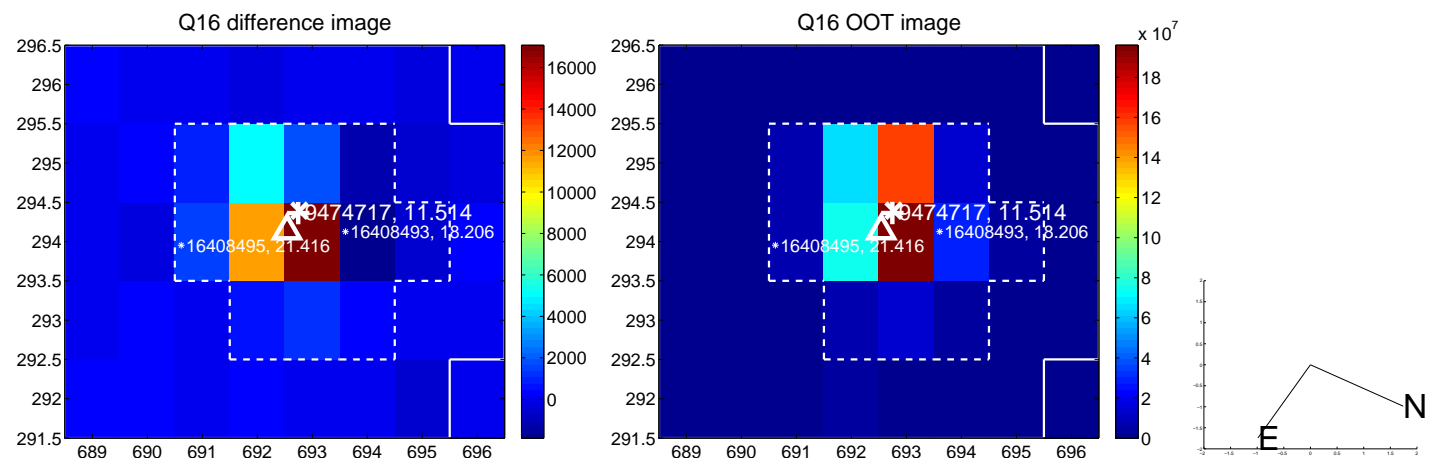
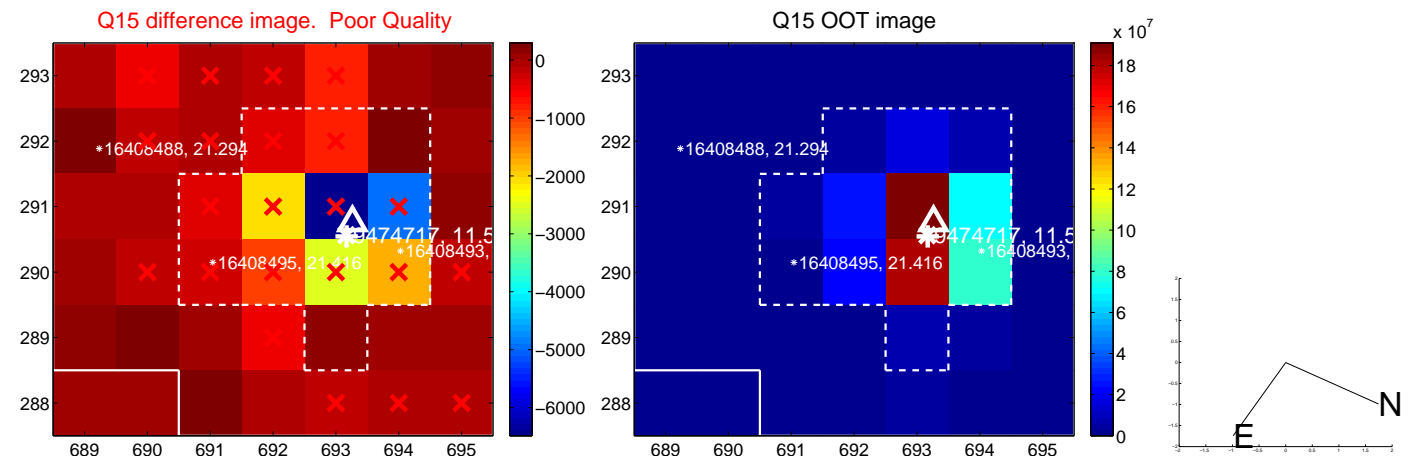
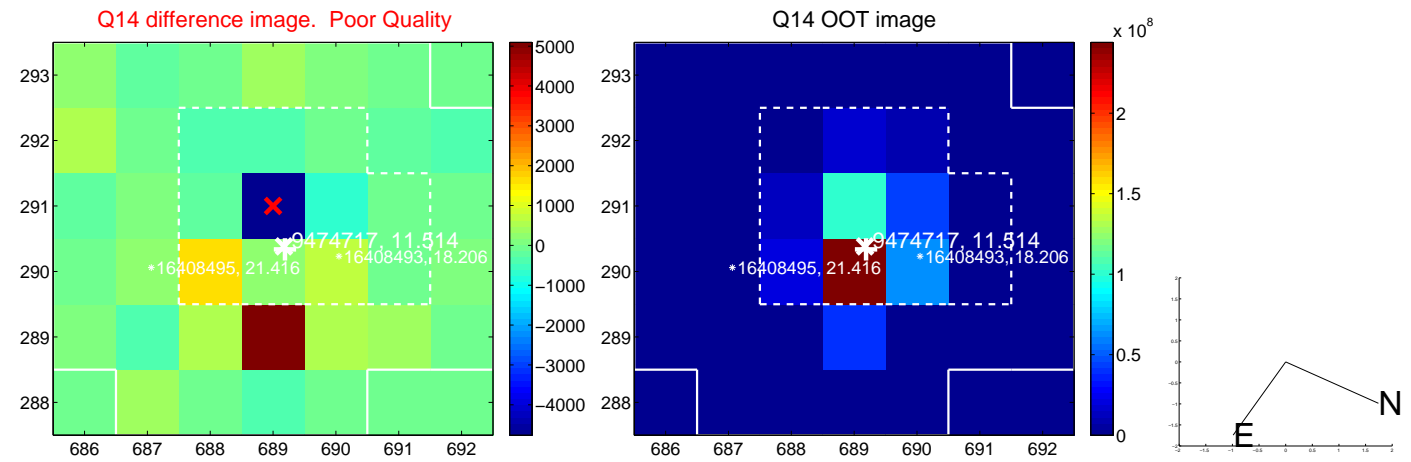
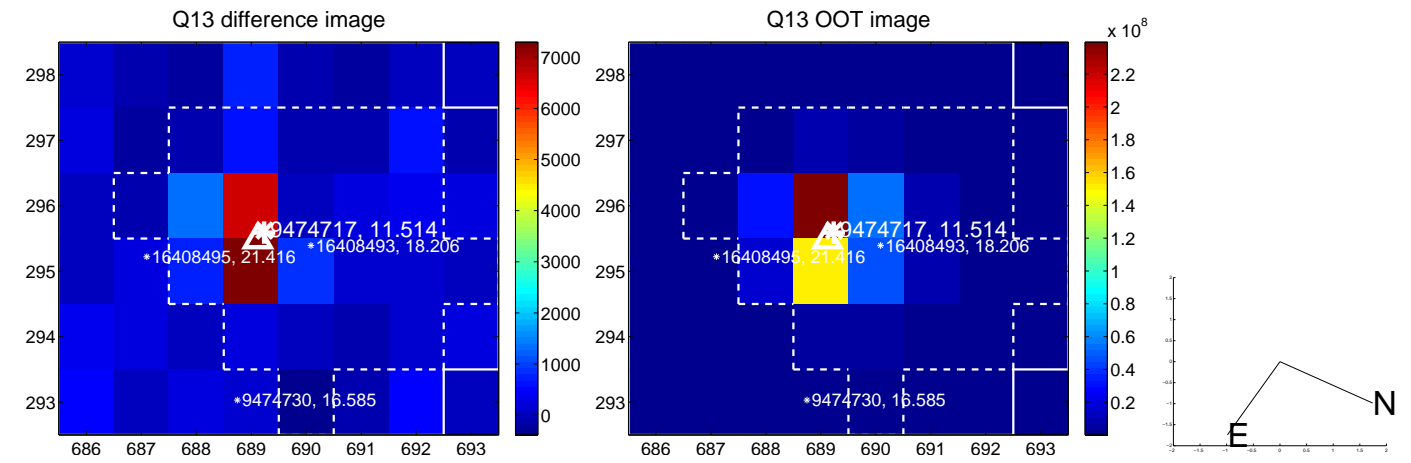
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



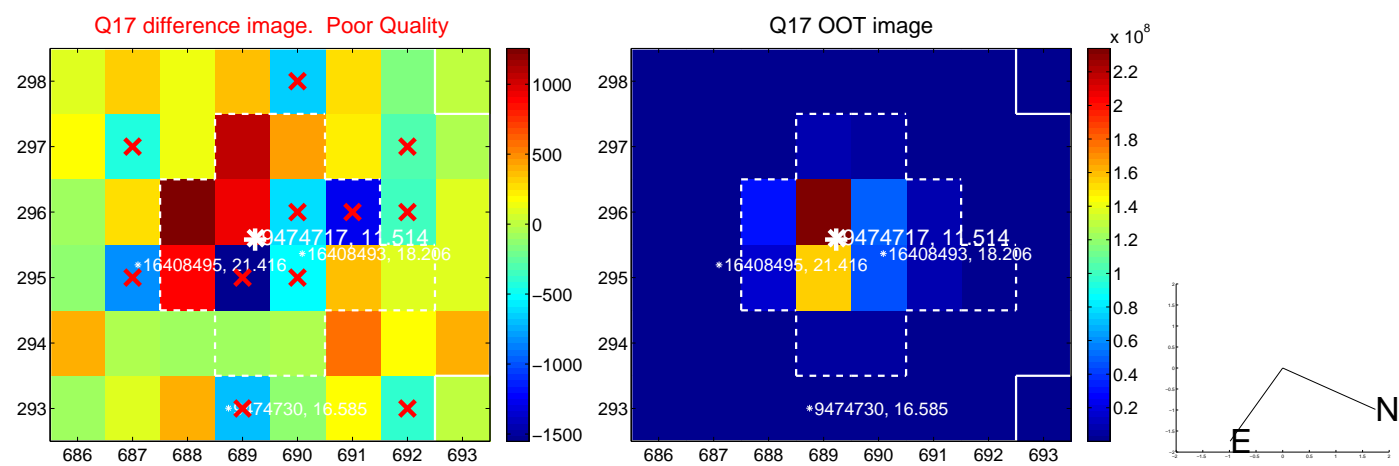
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



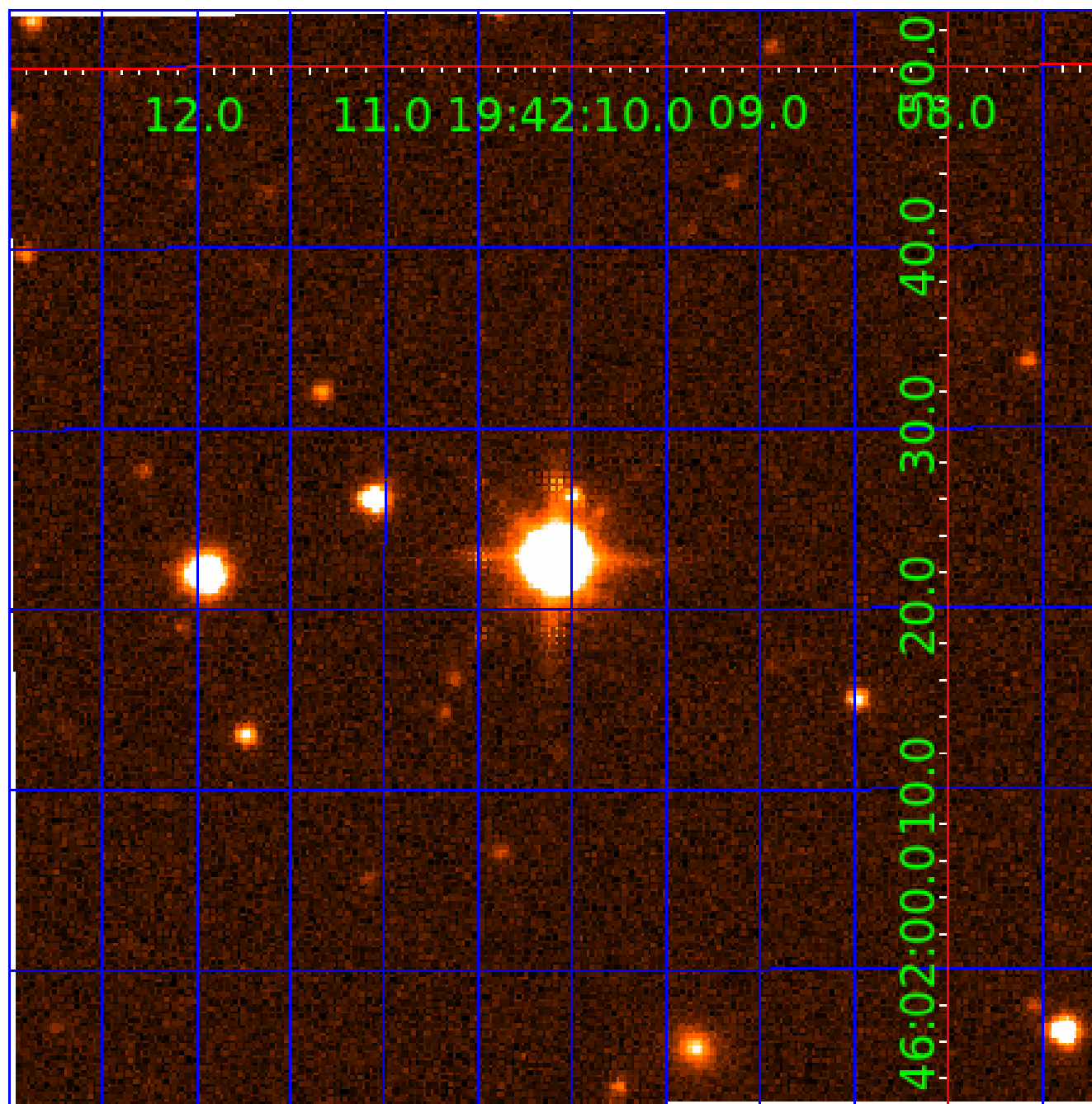
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 009474717

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})
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Robovetter Results

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009474717-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

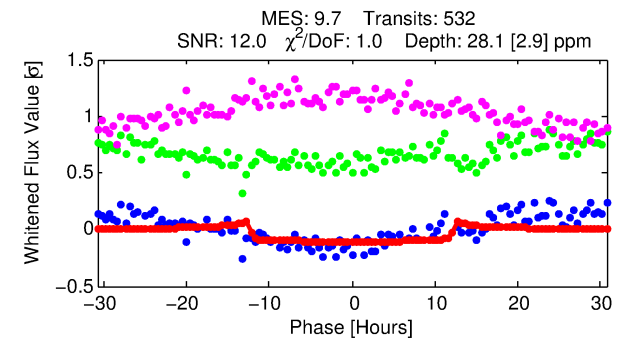
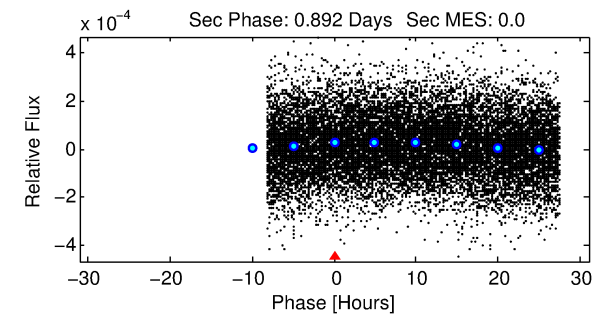
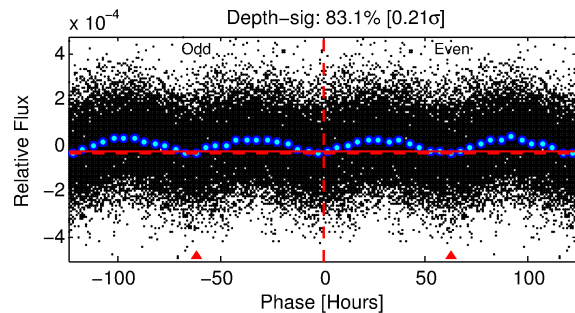
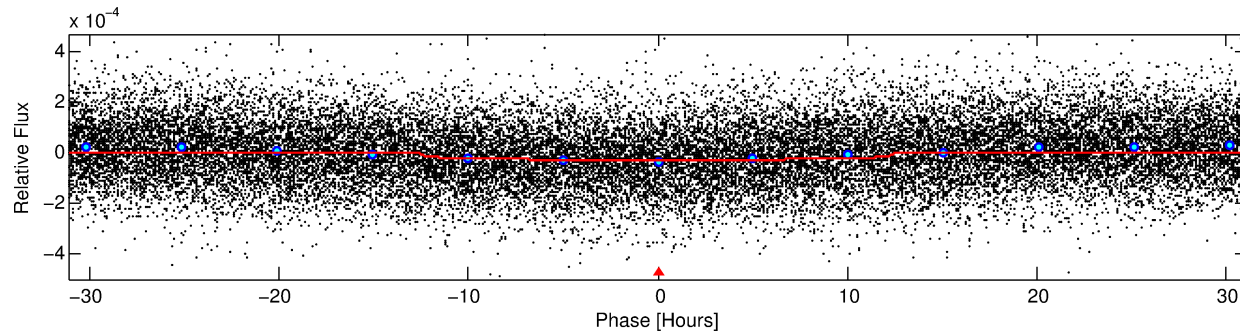
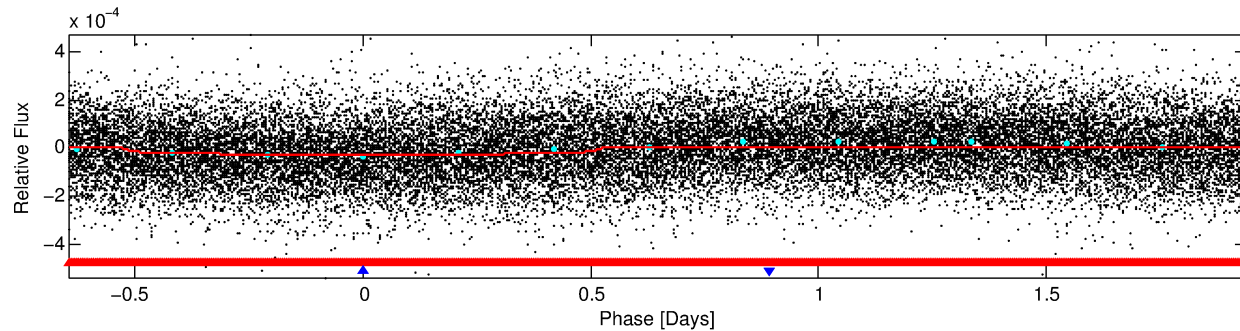
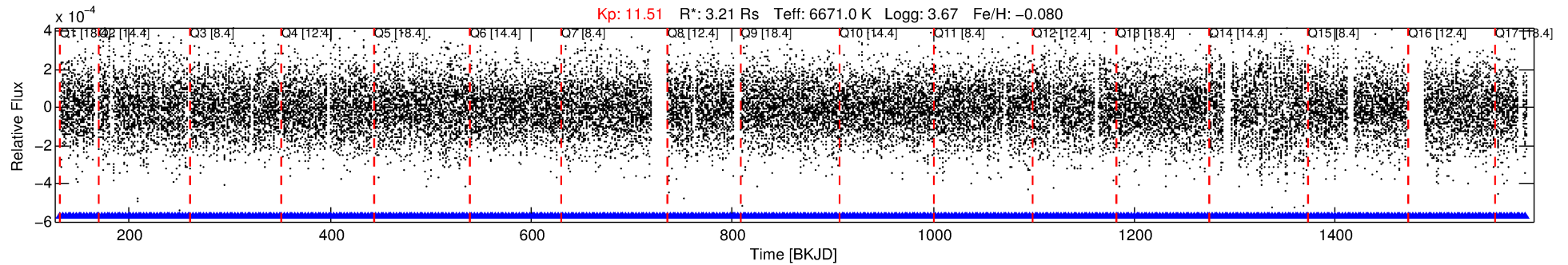
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009474717-02

No Significant Match Found

DV One-Page Summary

KIC: 9474717 Candidate: 2 of 2 Period: 2.593 d



DV Fit Results:

Period = 2.59257 [0.00004] d
 Epoch = 131.7322 [0.0085] BKJD
 Rp/R* = 0.0049 [0.0022]
 a/R* = 1.05 [0.25]
 b = 0.09 [27.17]
 Seff = 9163.21 [4748.28]
 Teq = 2495 [323] K
 Rp = 1.72 [1.01] Re
 a = 0.0447 [0.0148] AU
 Ag = N/A
 Tefp = N/A

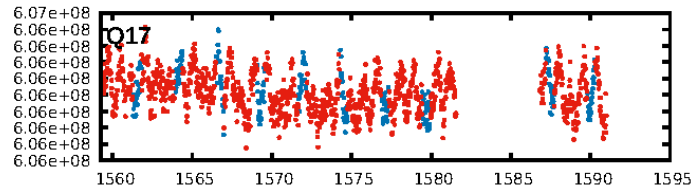
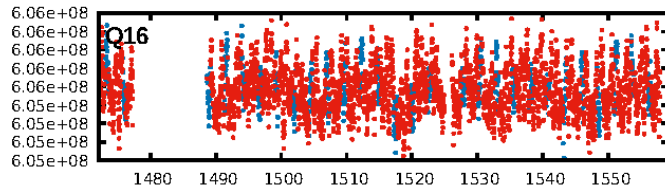
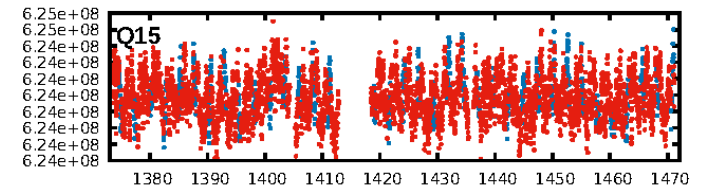
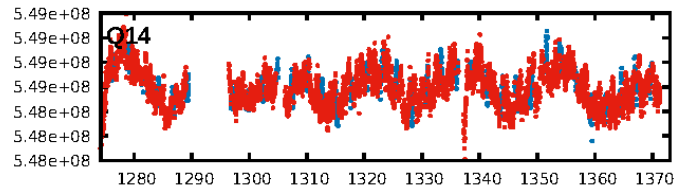
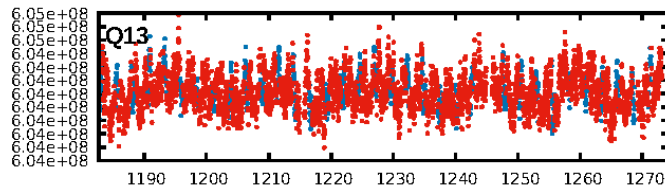
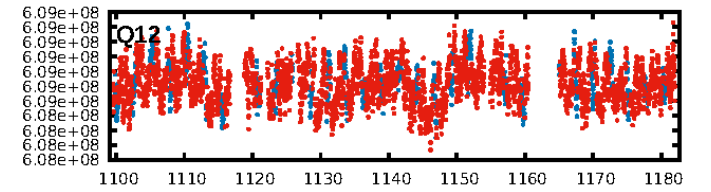
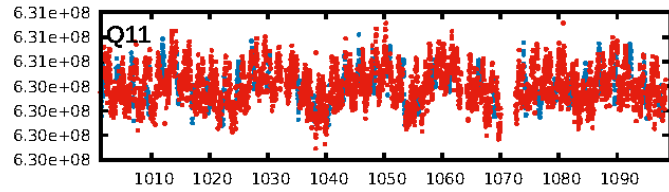
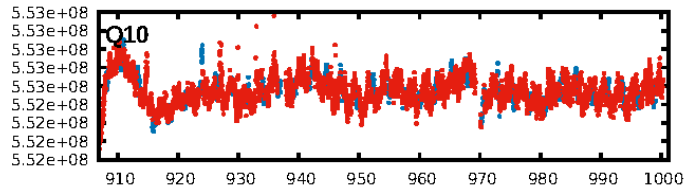
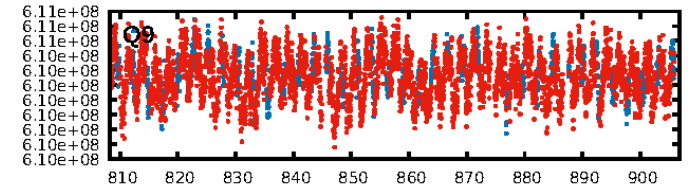
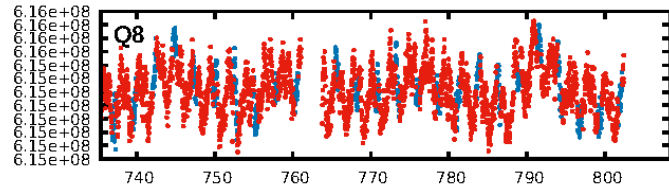
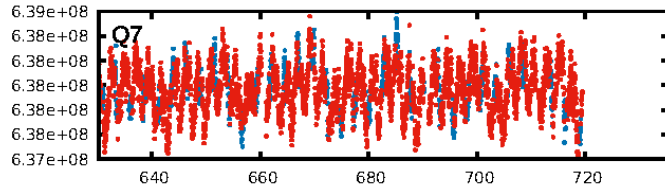
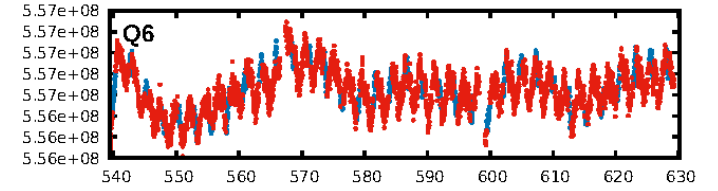
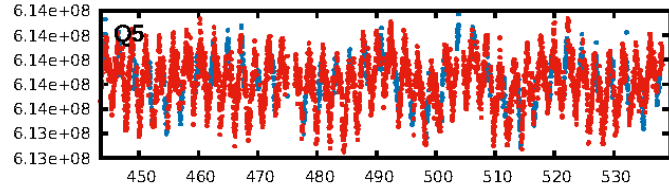
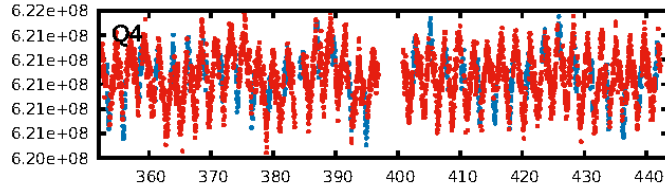
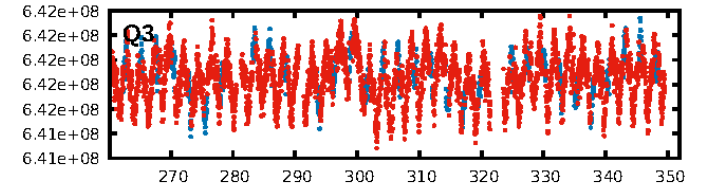
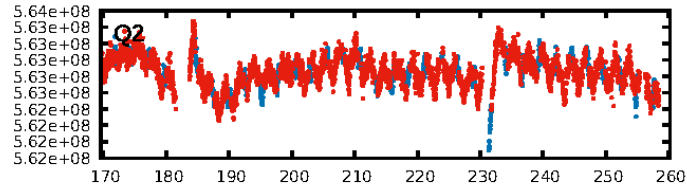
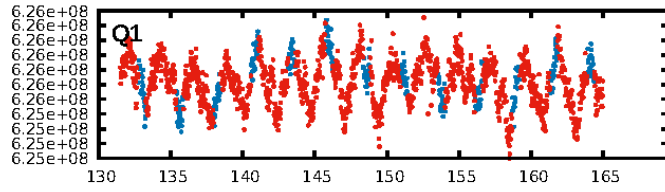
DV Diagnostic Results:

ShortPeriod-sig: 82.6% [1.36 σ]
 LongPeriod-sig: N/A
 ModelChiSquare2-sig: N/A
 ModelChiSquareGof-sig: N/A
 Bootstrap-pfa: N/A
 RollingBand-fgt: 1.00 [507/507]
 GhostDiagnostic-chr: 2.55
 Centroid-sig: N/A
 Centroid-so: N/A
 OotOffset-rm: N/A
 KicOffset-rm: N/A
 OotOffset-st: 0/0/0 [0]
 KicOffset-st: 0/0/0 [0]
 DiffImageQuality-fgm: N/A
 DiffImageOverlap-fno: 0.00 [0/17]

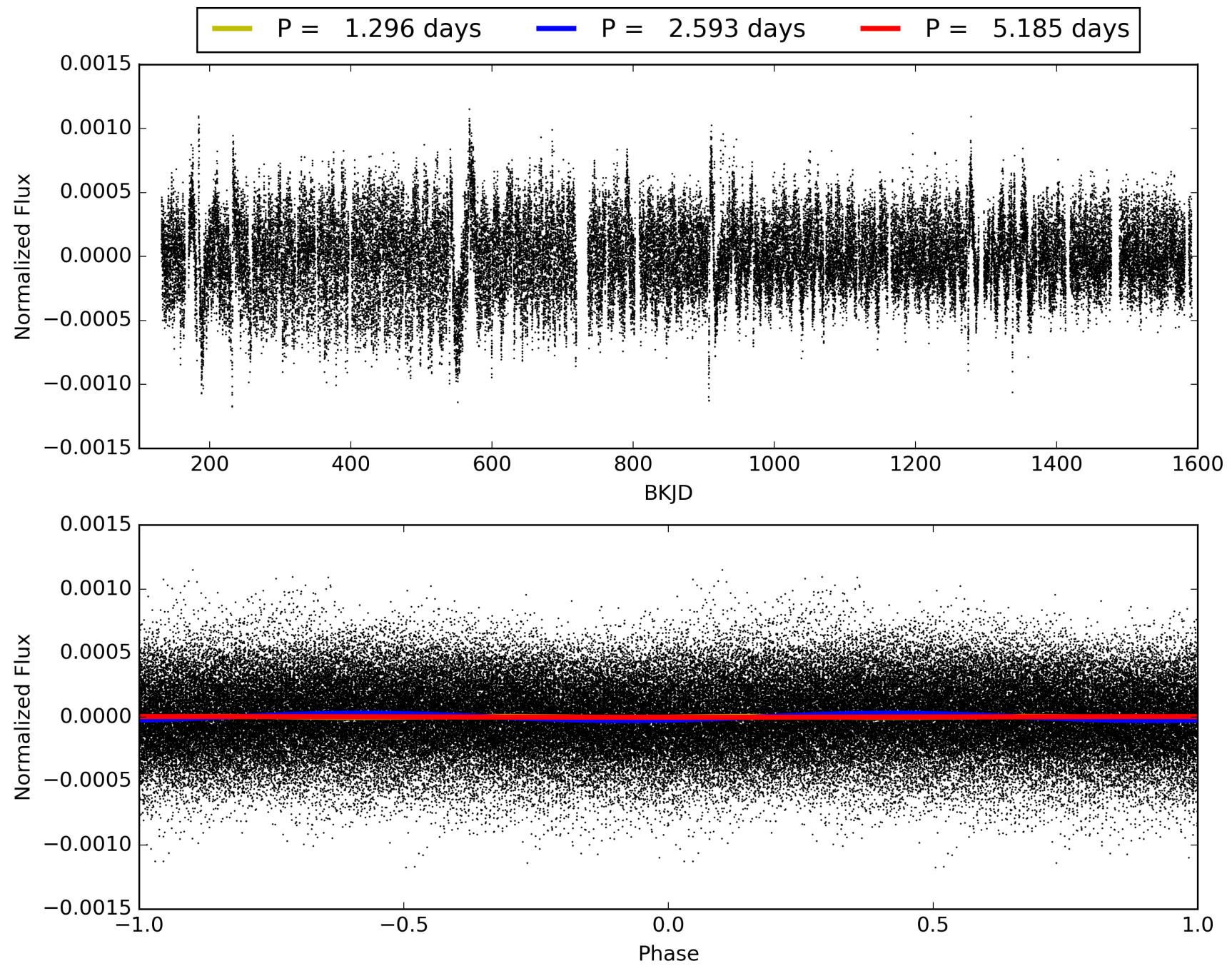
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:14:28 Z

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

TCE 009474717-02, PDC Light Curves

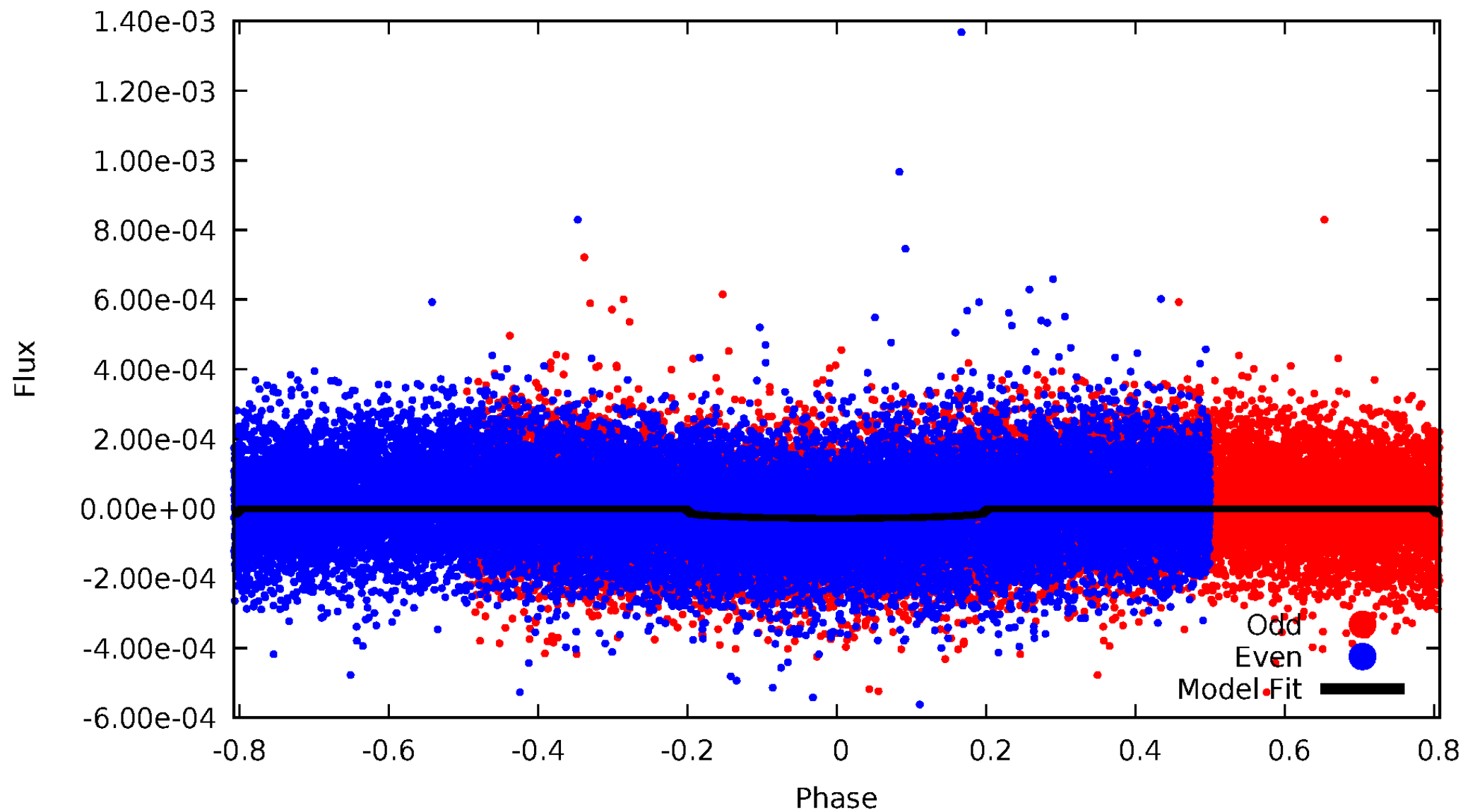


TCE 009474717-02



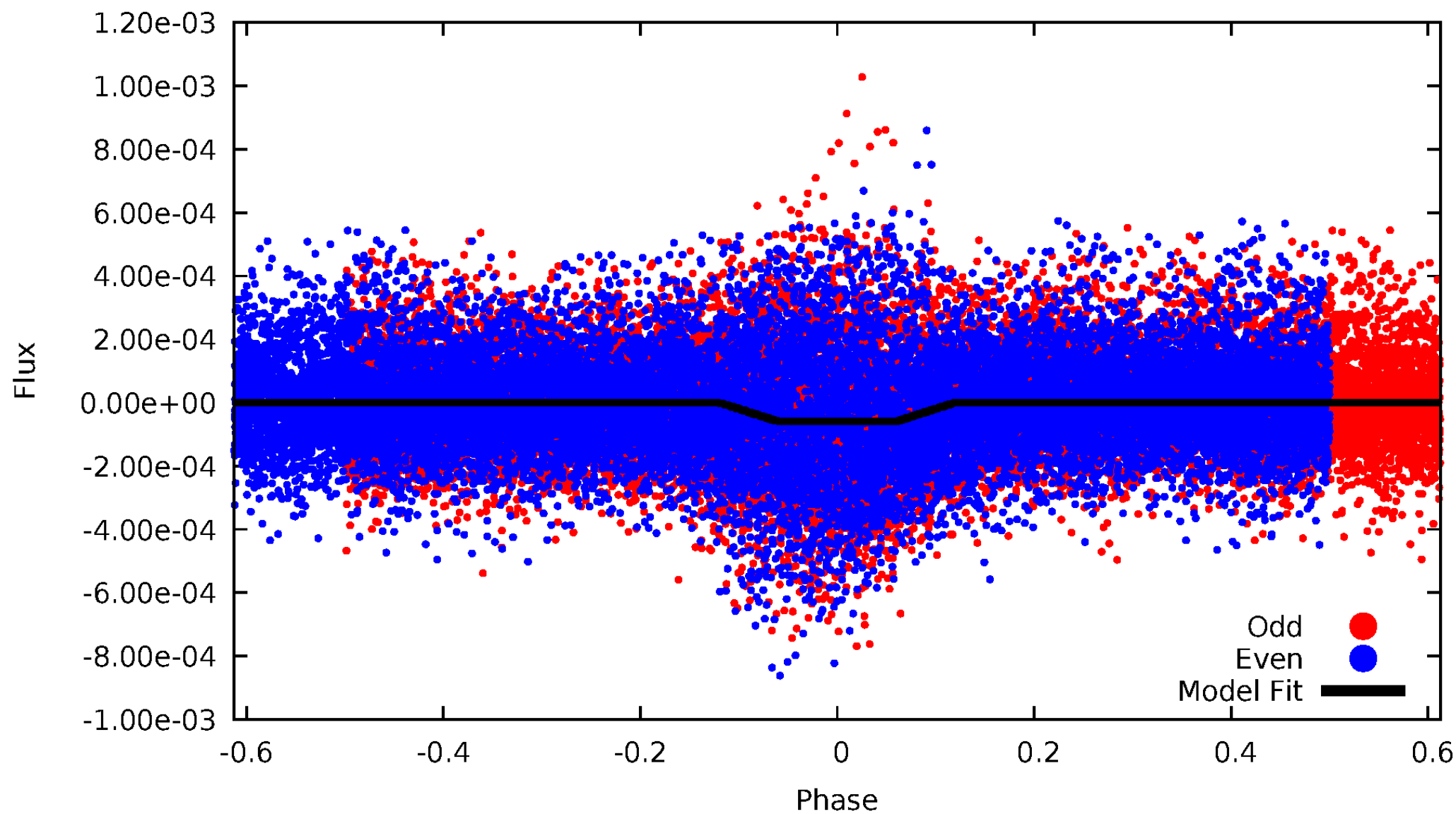
DV Odd/Even

TCE 009474717-02



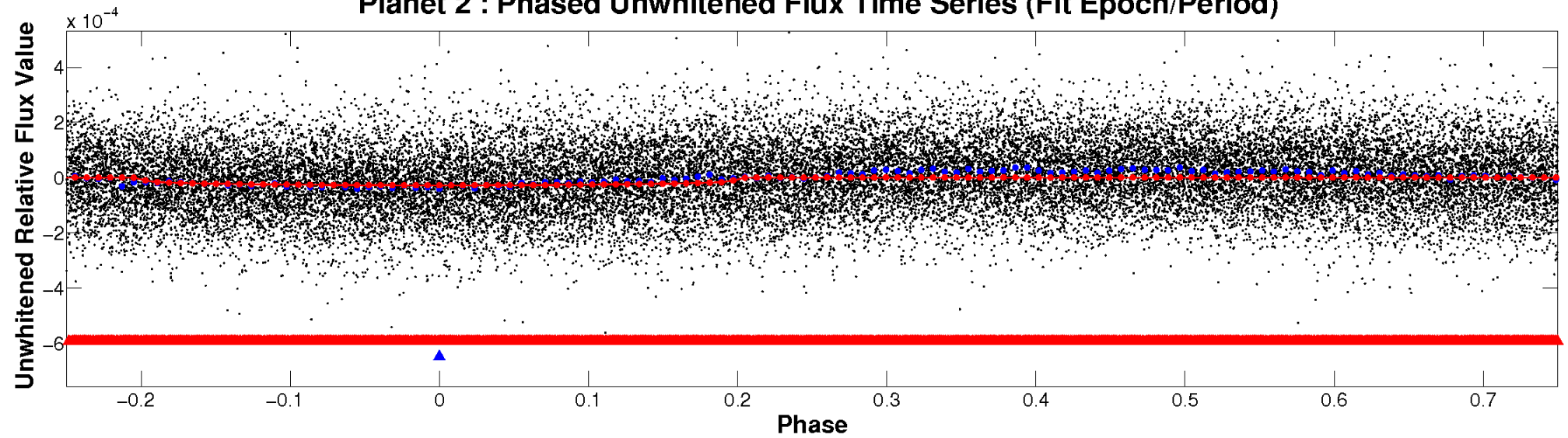
ALT Odd/Even

TCE 009474717-02

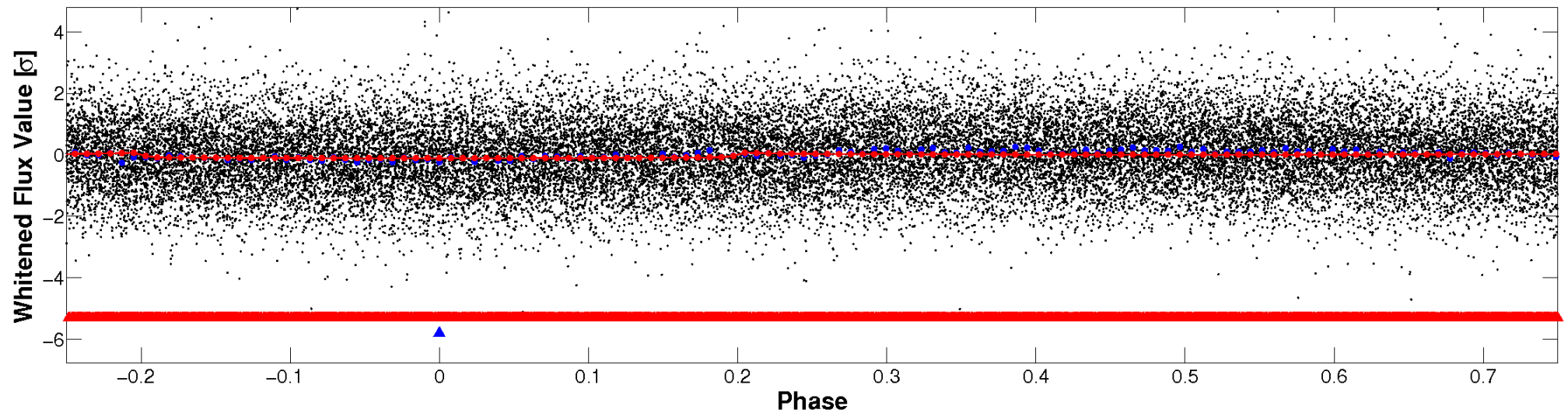


Non-Whitened Vs. Whitened Light Curve

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

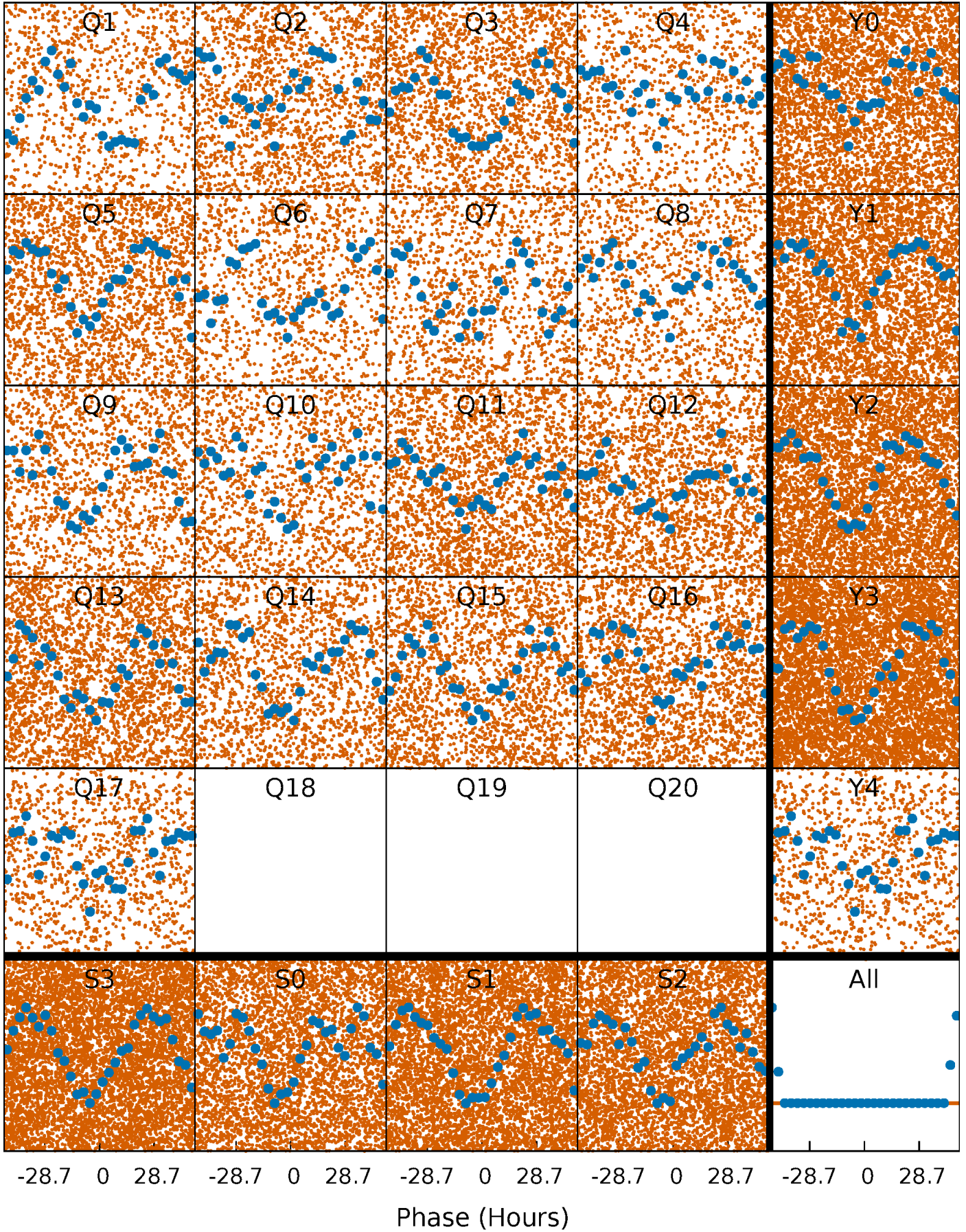


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



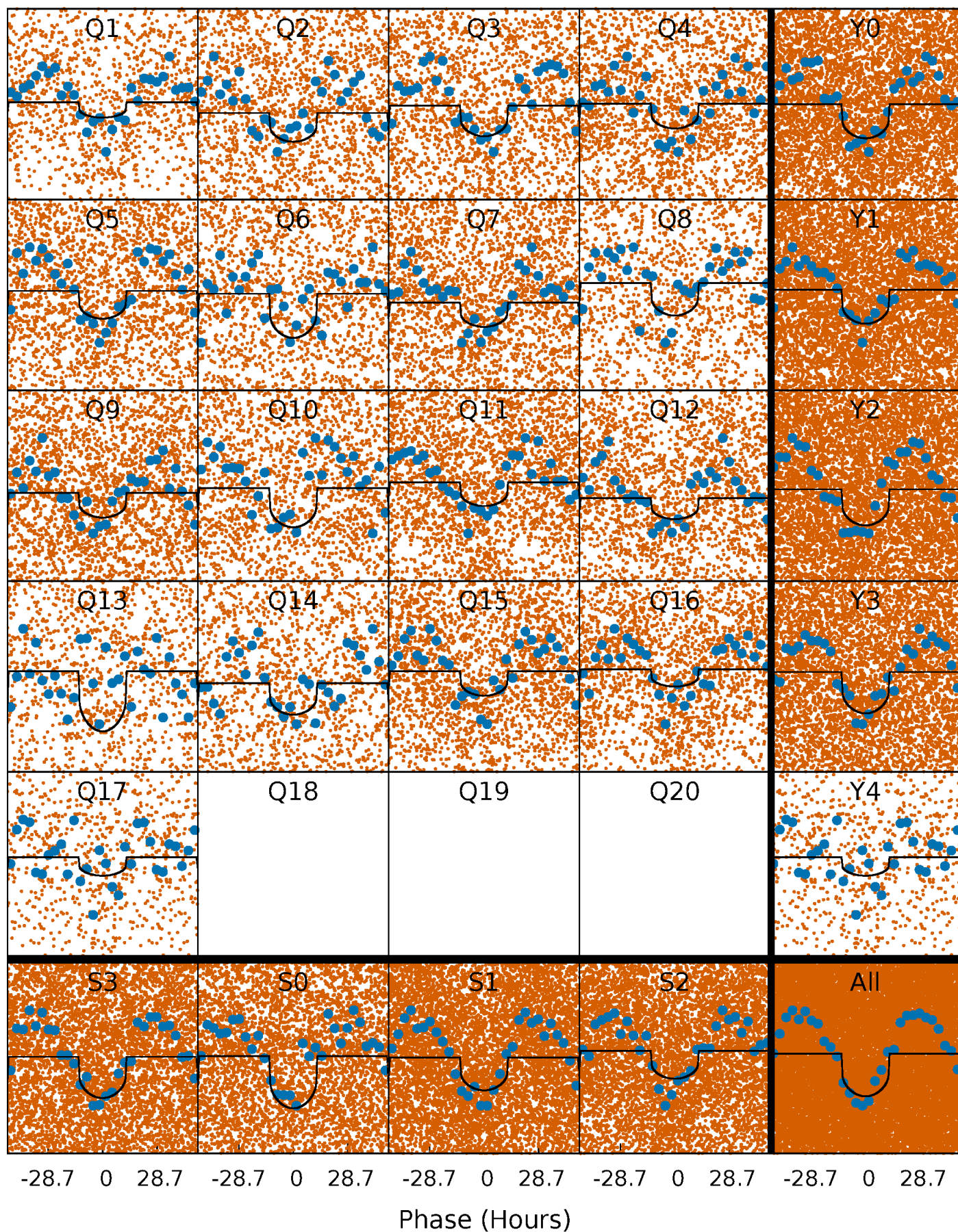
PDC Quarter-Phased Transit Curves

TCE 009474717-02 P= 2.592573 Days $T_0=131.732175$ (BKJD)



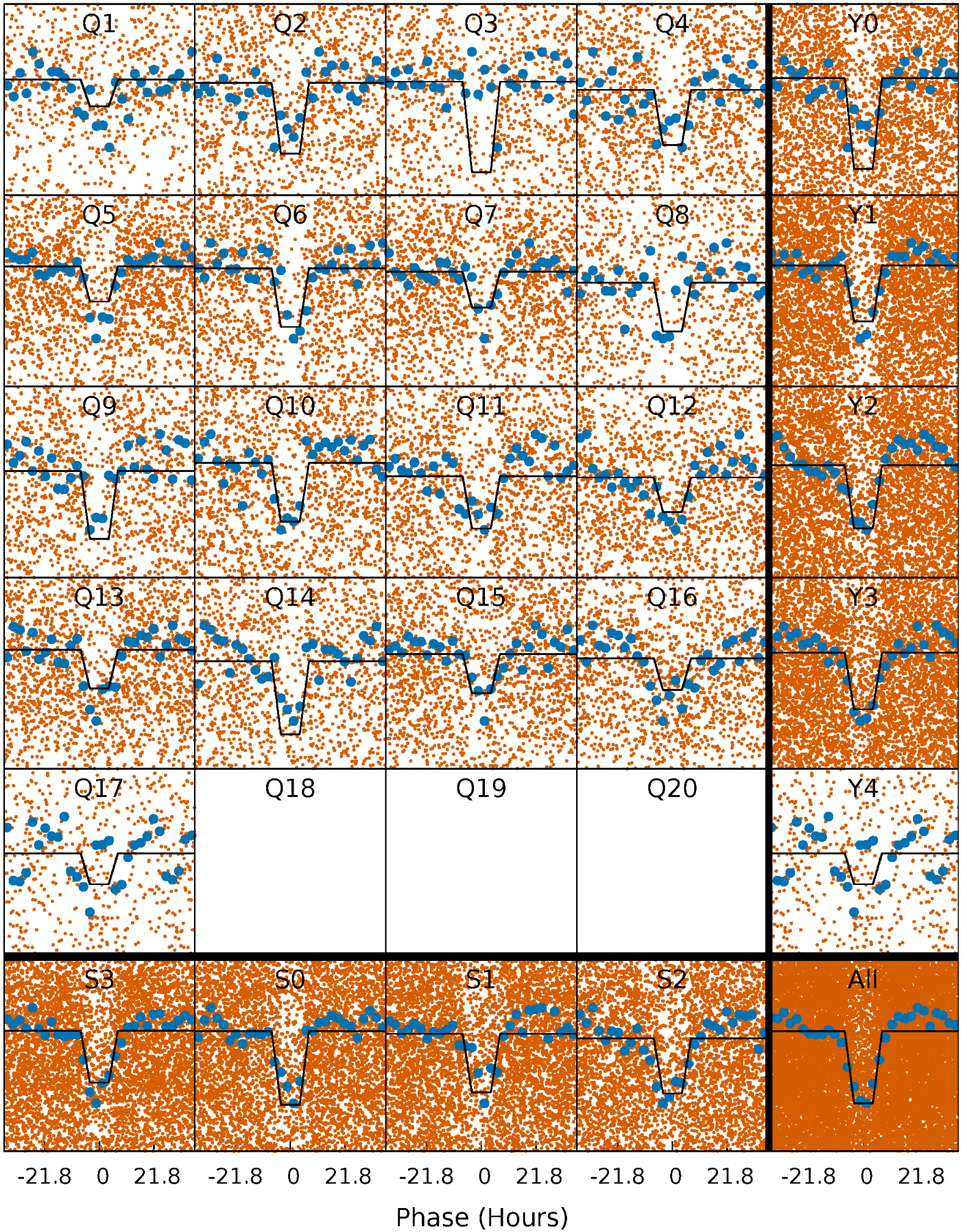
DV Quarter-Phased Transit Curves

TCE 009474717-02 P= 2.592573 Days $T_0=131.732175$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

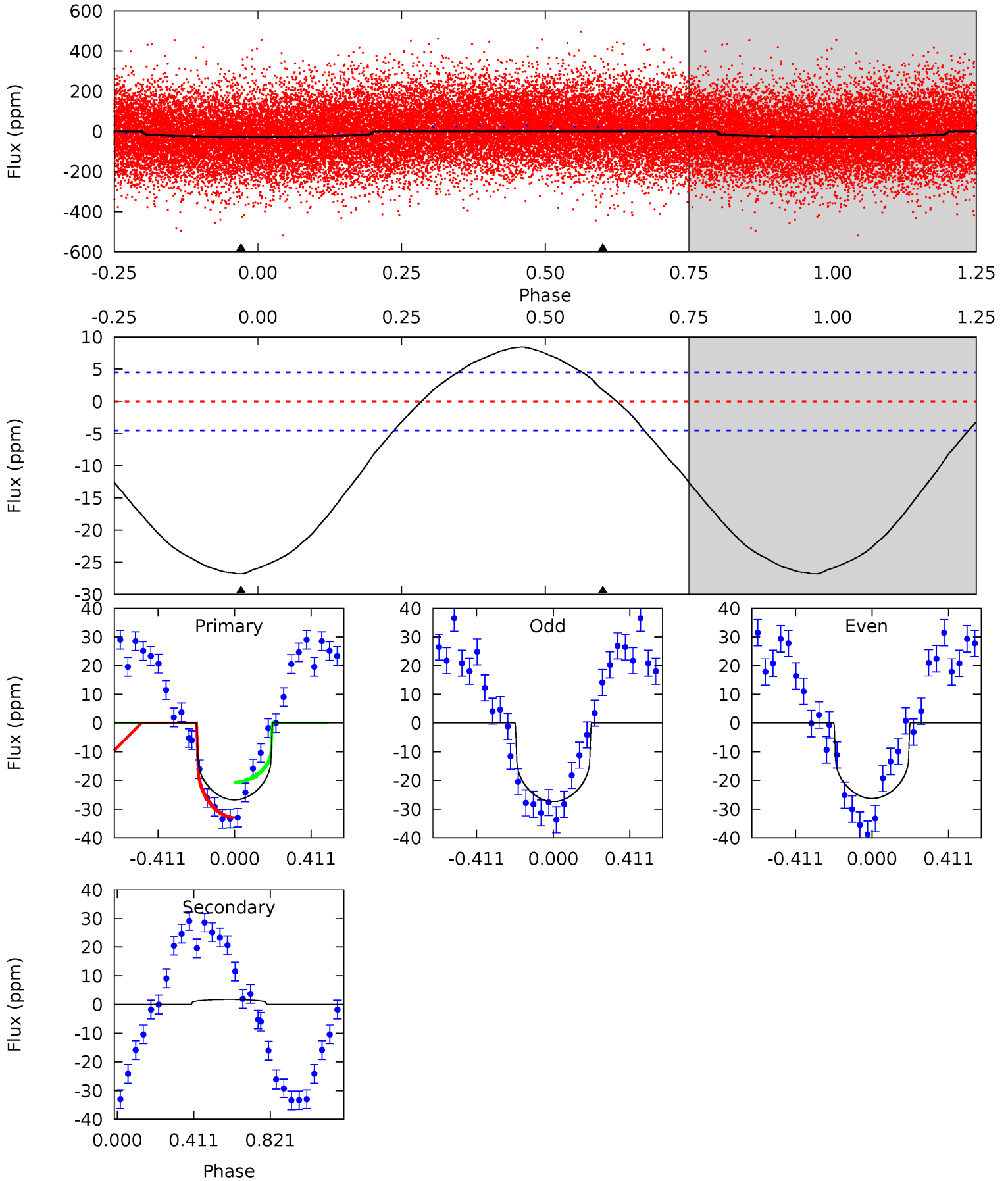
TCE 009474717-02 P= 2.592545 Days $T_0=131.723413$ (BKJD)



DV Model-Shift Uniqueness Test

009474717-02, P = 2.592573 Days, E = 129.139602 Days

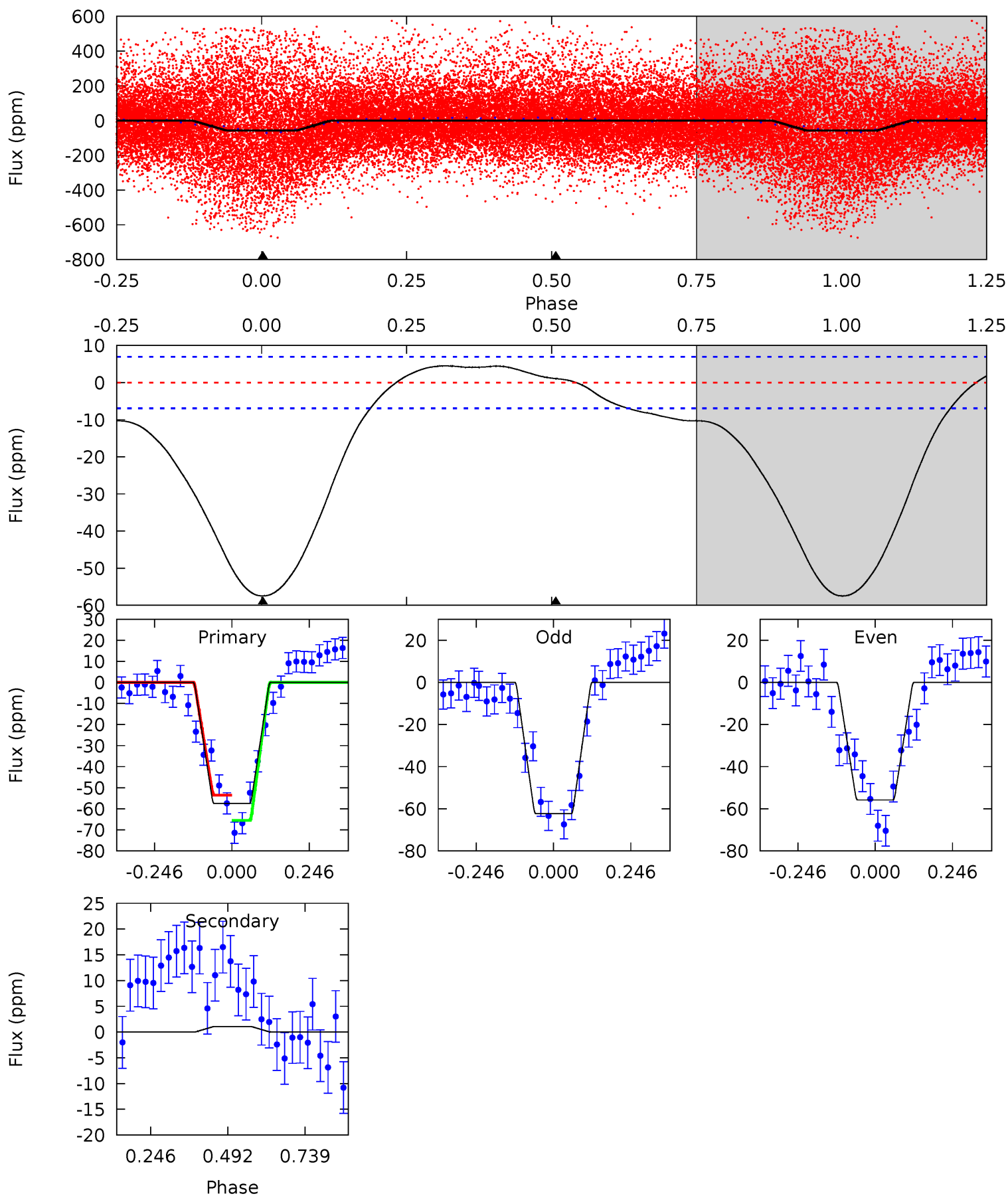
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.3	-1.66	0	0	4.26	0.82	2.42	25.3	25.3	-1.66	-1.66	0.51	0.95	0.24	5.78



Alt Model-Shift Uniqueness Test

009474717-02, P = 2.592545 Days, E = 129.130868 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.2	-0.67	0	0	4.37	1.16	3.92	36.2	36.2	-0.67	-0.67	2.07	-0.85	0.07	3.77



Stellar Parameters For KIC 009474717

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6671^{+167}_{-183}	$3.673^{+0.288}_{-0.072}$	$-0.080^{+0.300}_{-0.250}$	$3.214^{+0.397}_{-1.191}$	$1.774^{+0.160}_{-0.374}$	$0.075^{+0.154}_{-0.018}$
	+3%/-3%	+8%/-2%	+375%/-312%	+12%/-37%	+9%/-21%	+205%/-24%
Source	PHO1	FLK73	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 009474717-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	2 ± 1	$1.60^{+0.77}_{-0.77}$	3409^{+188}_{-276}	-4023^{+460}_{-898}	$-0.657^{+0.447}_{-1.888}$
Alt.	1 ± 2	$2.52^{+0.87}_{-0.85}$	3417^{+178}_{-326}	-3530^{+480}_{-398}	$-0.145^{+0.250}_{-0.423}$

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 $A_{obs} \gg 1.0$

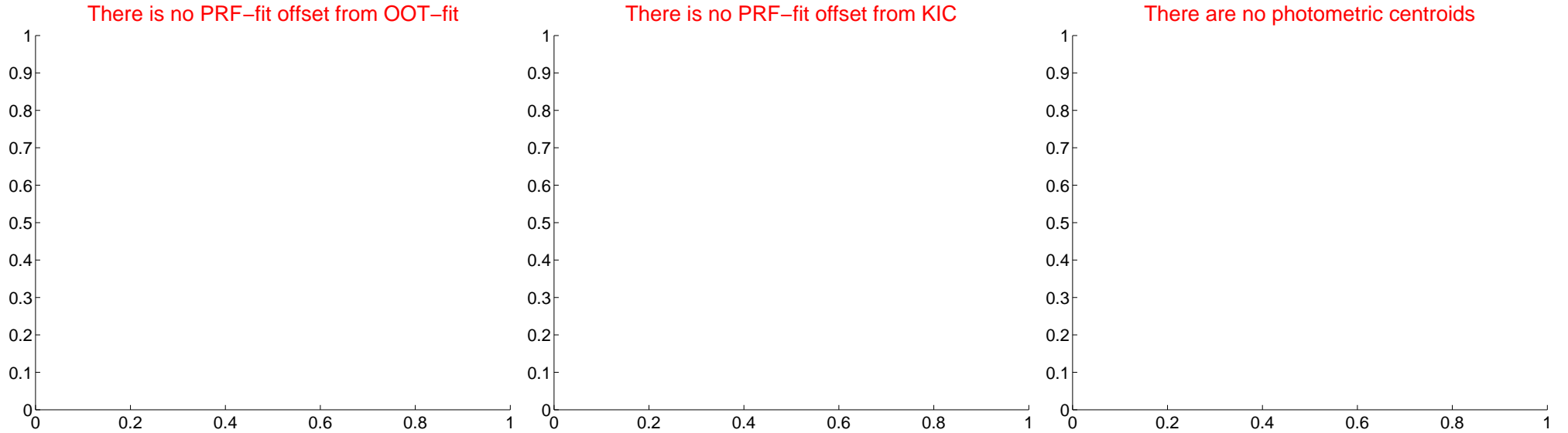
DV Centroid Data

Supplemental centroid analysis for 009474717-02. **Kepler magnitude: 11.51.** Transit SNR 12.03

There are 0 quarters with good PRF difference image offsets

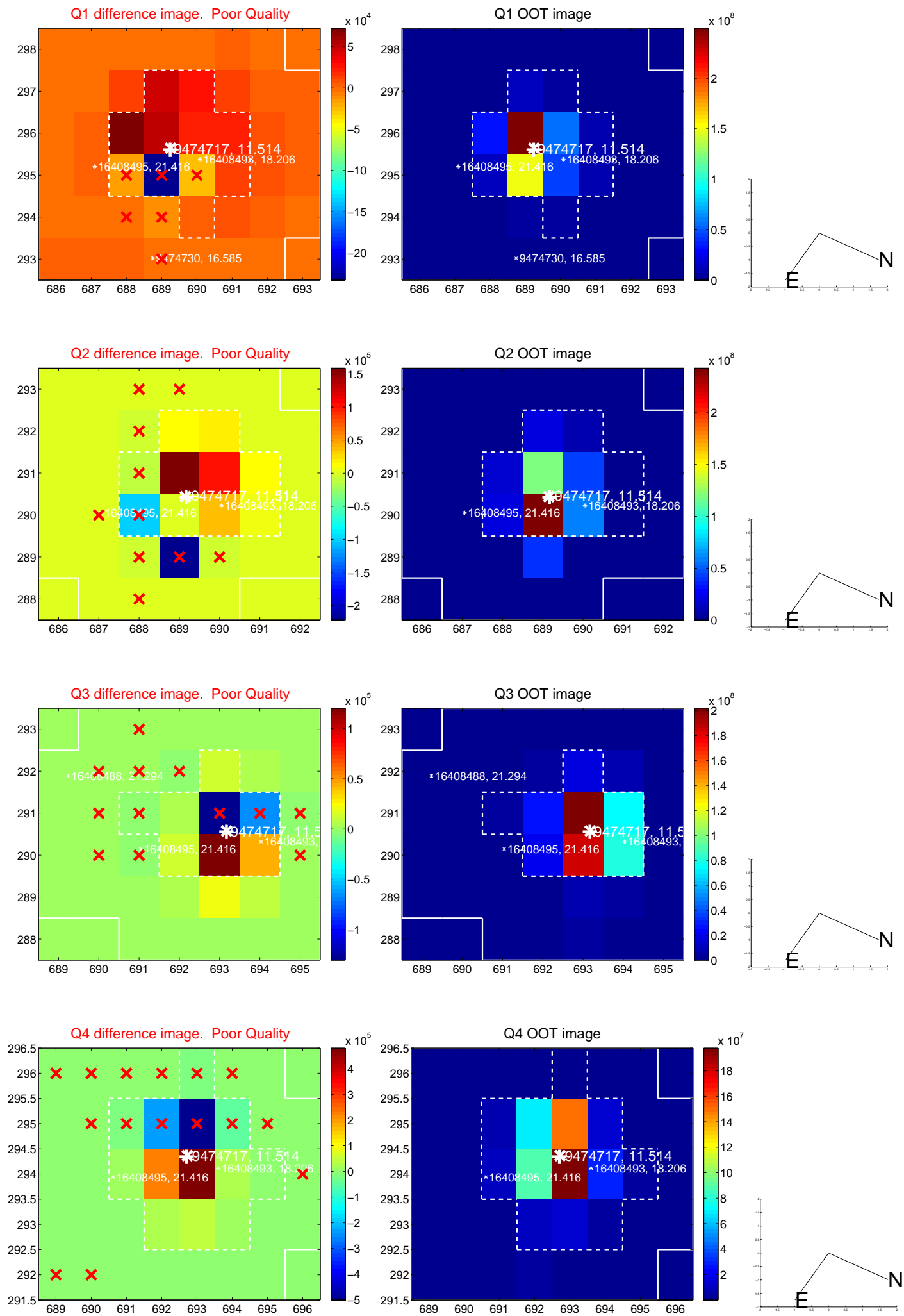
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—

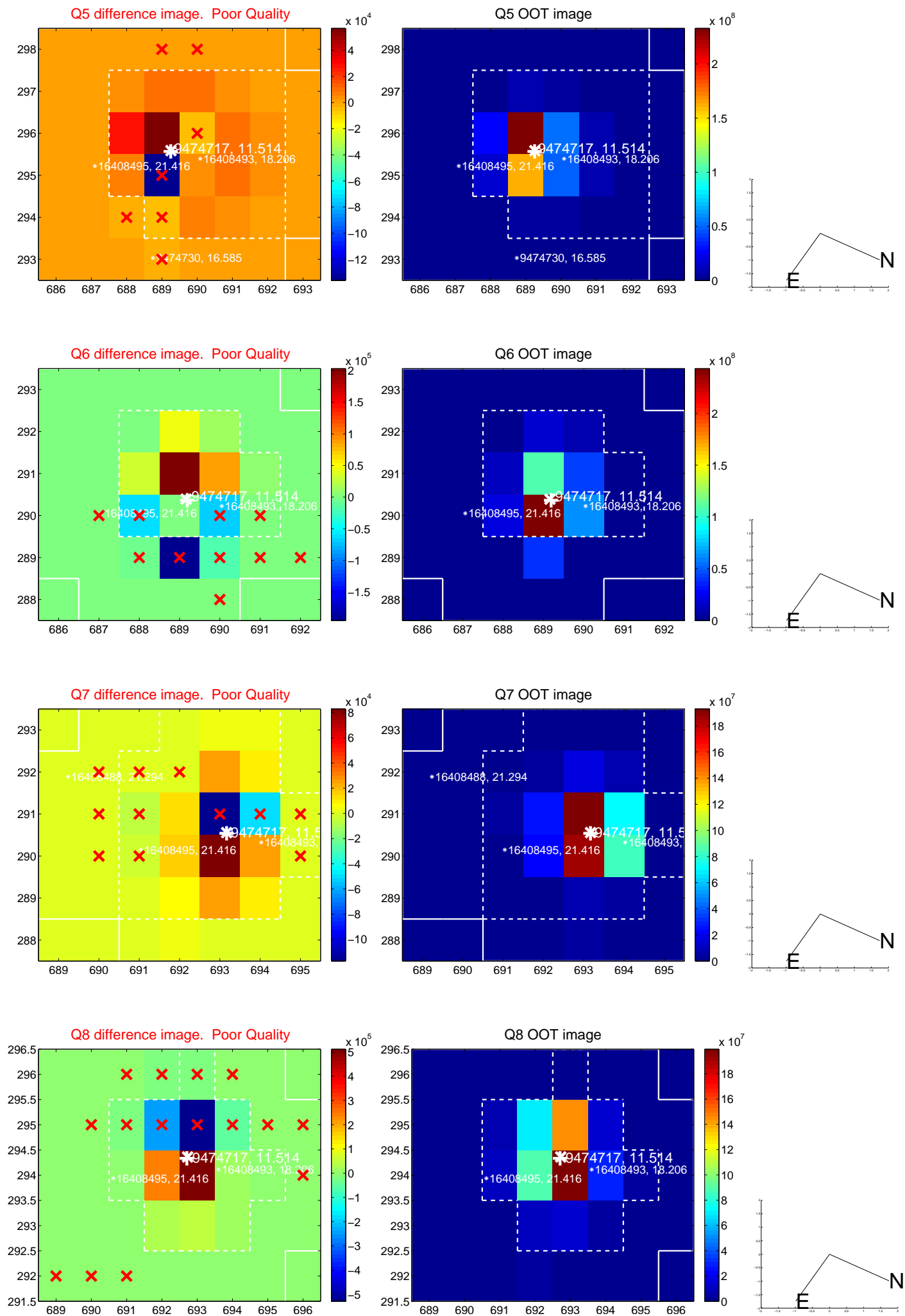


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

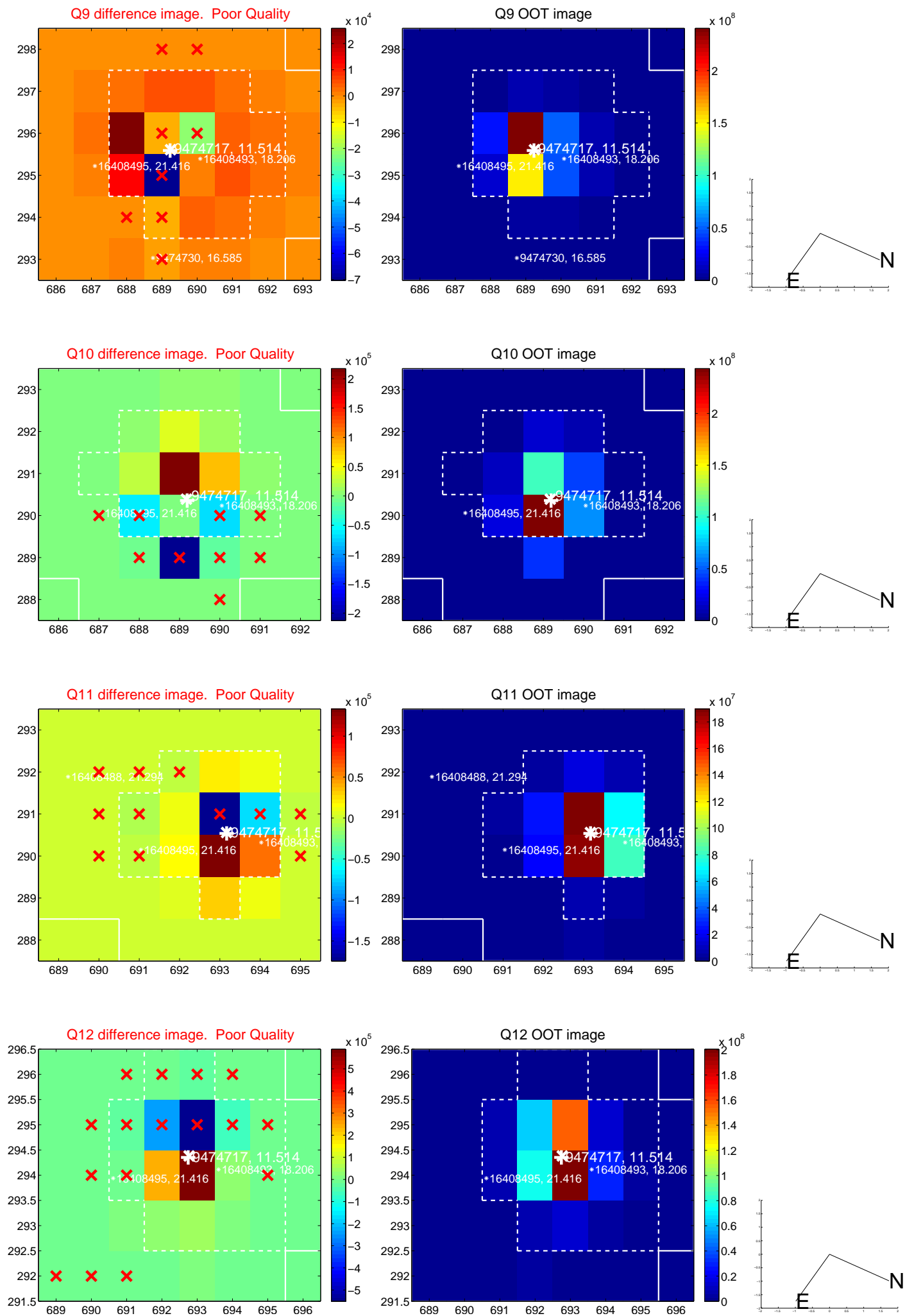
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



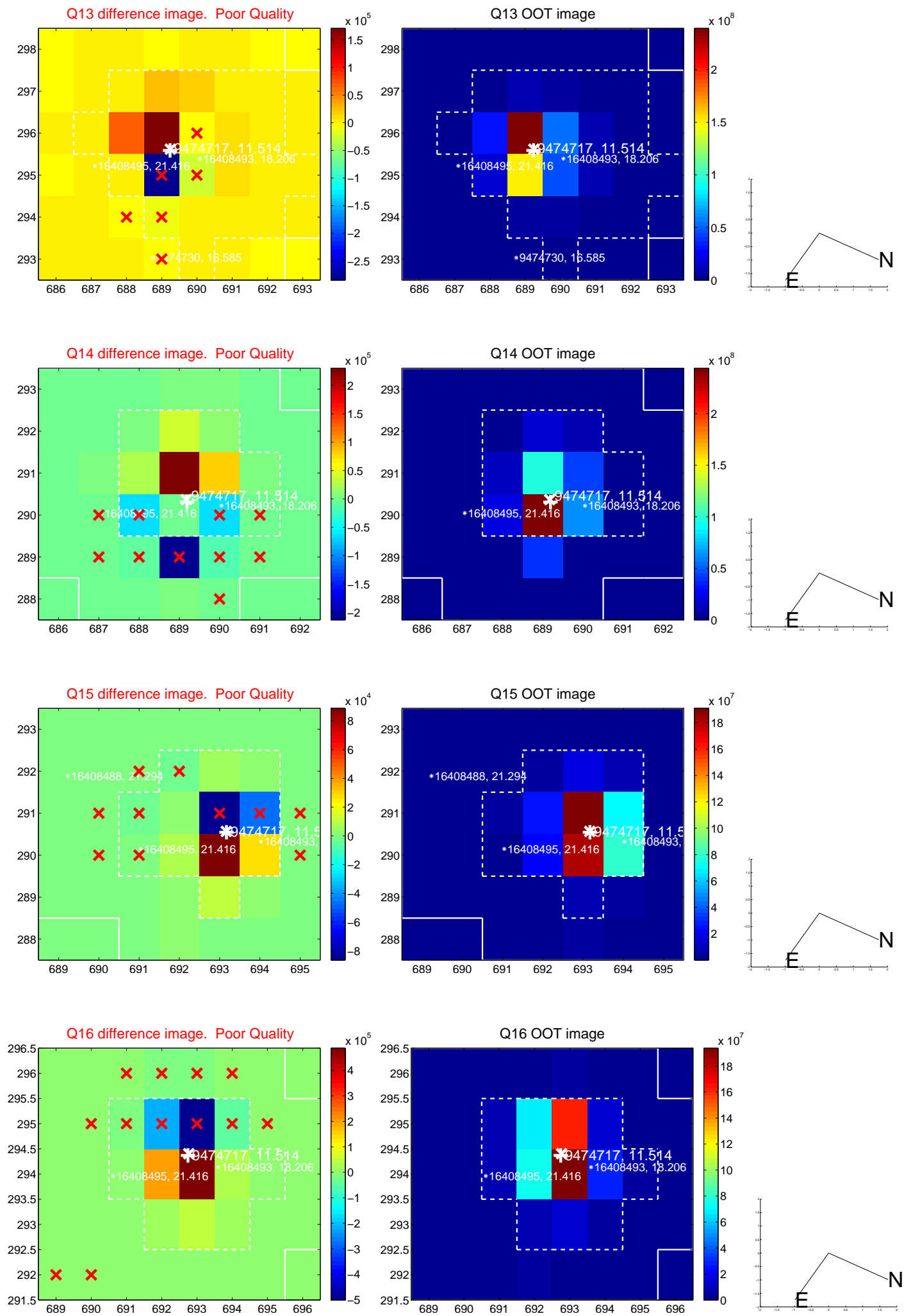
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



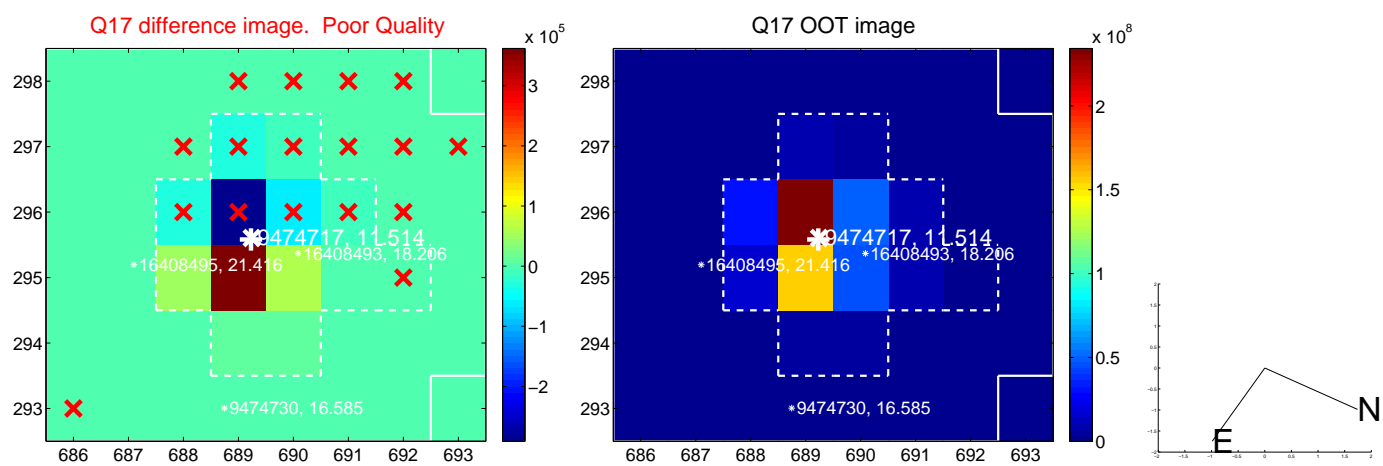
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



folded centroid time series figure for this object.

UKIRT Image

Declination

