

KIC 008153747

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})
008153747-01	OBS	No	1.367204	132.625682	305.3	1.403	10.0	6.1	1.83	7442	3.69	11640.83
008153747-02	OBS	No	1.367198	131.750715	136.5	1.538	8.1	2.7	1.83	7442	2.48	11640.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008153747-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008153747-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD

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

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

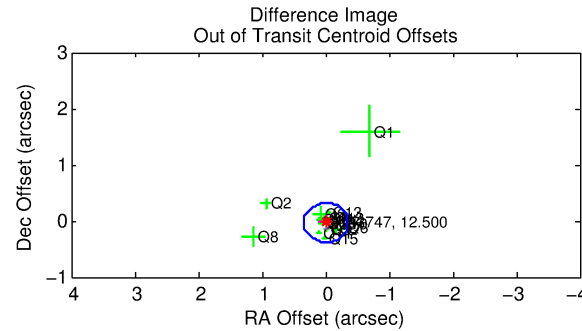
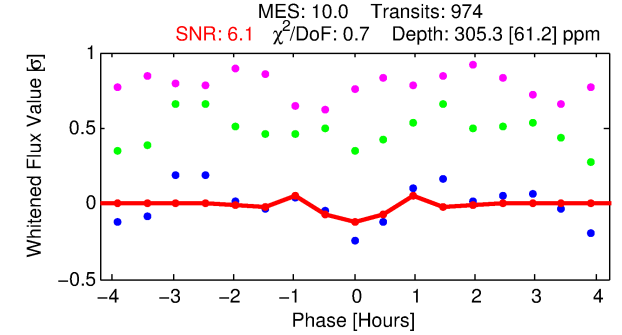
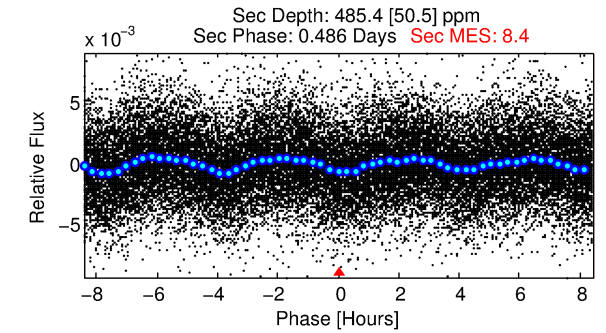
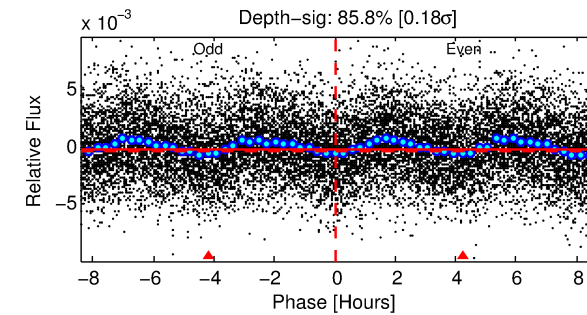
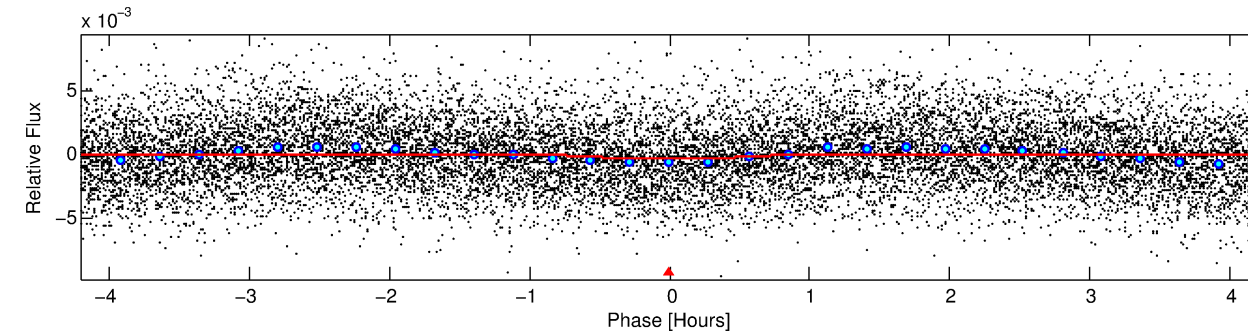
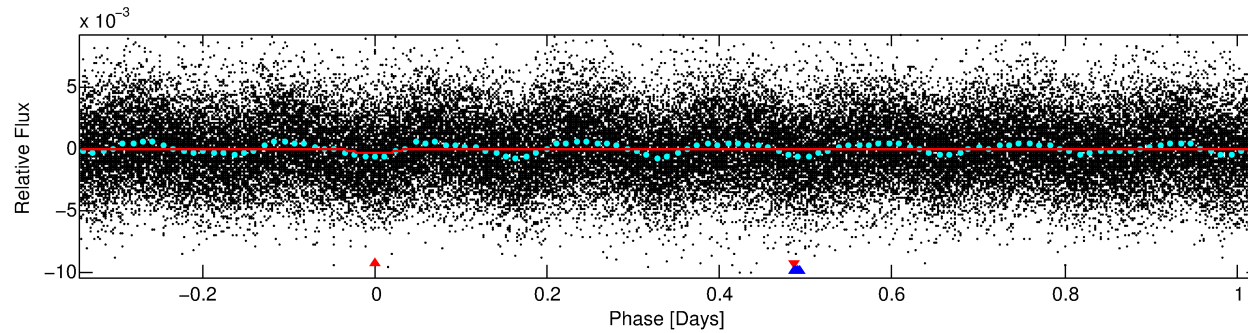
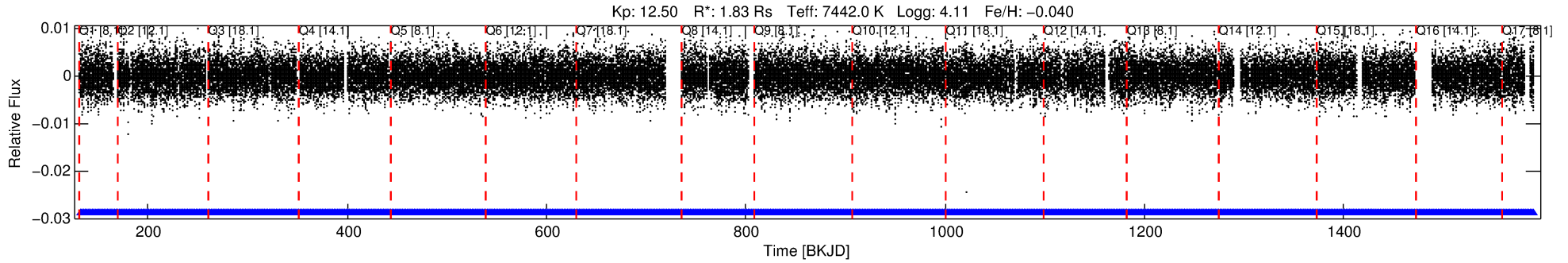
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008153747-01

No Significant Match Found

DV One-Page Summary

KIC: 8153747 Candidate: 1 of 2 Period: 1.367 d



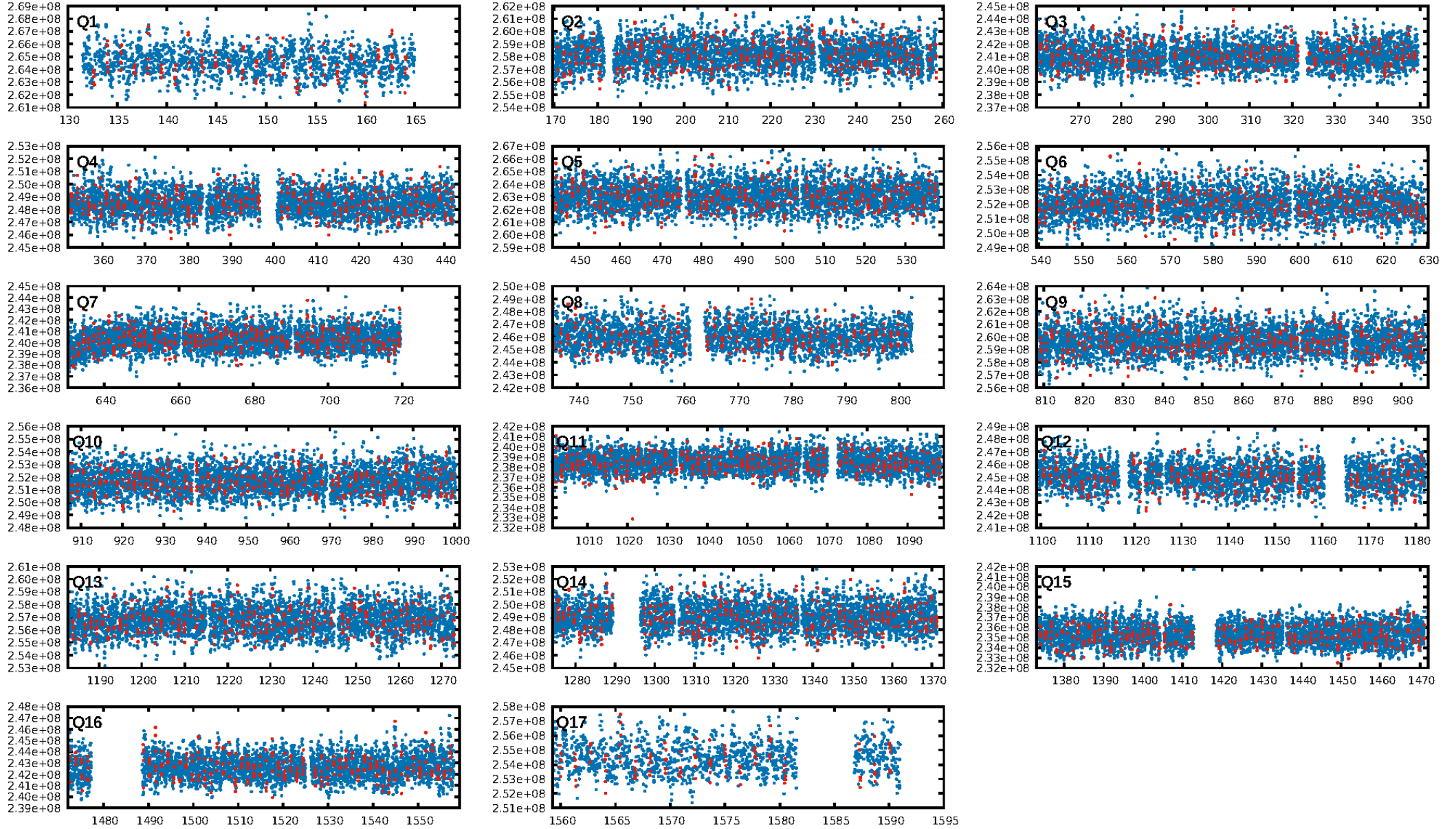
DV Fit Results:

Period = 1.36720 [0.00001] d
Epoch = 132.6257 [0.0018] BKJD
Rp/R* = 0.0185 [0.0073]
a/R* = 3.80 [8.43]
b = 0.89 [0.56]
Seff = 11640.82 [4365.82]
Teq = 2649 [248] K
Rp = 3.69 [1.83] Re
a = 0.0282 [0.0068] AU
Ag = 15.53 [13.41] [1.08σ]
Teffp = 8129 [1652] K [3.28σ]

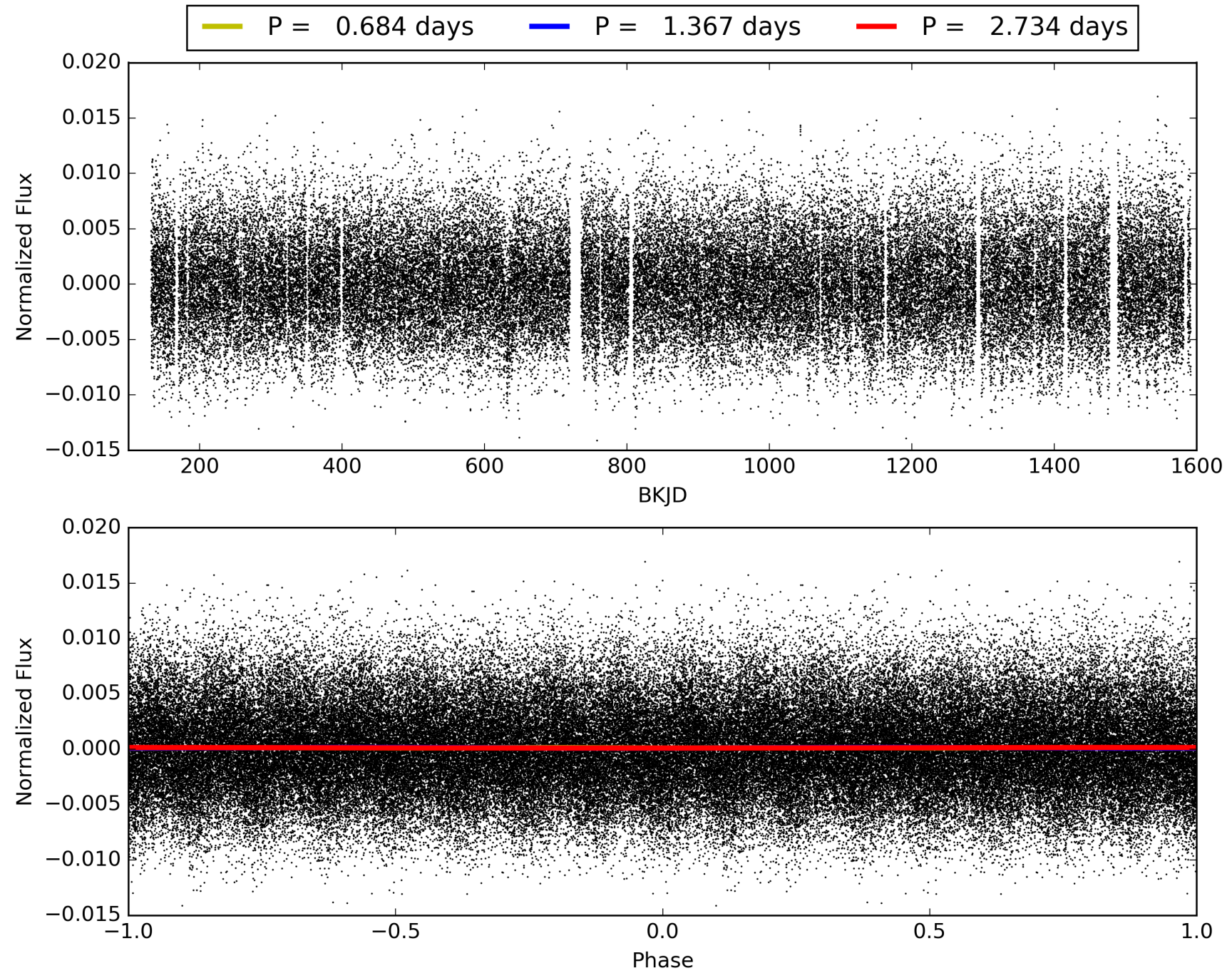
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.39e-22
RollingBand-fgt: 1.00 [931/931]
GhostDiagnostic-chr: 4.957
Centroid-sig: 11.5%
Centroid-so: 0.236 arcsec [3.05σ]
OotOffset-rm: 0.032 arcsec [0.28σ]
KicOffset-rm: 0.026 arcsec [0.24σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008153747-01, PDC Light Curves

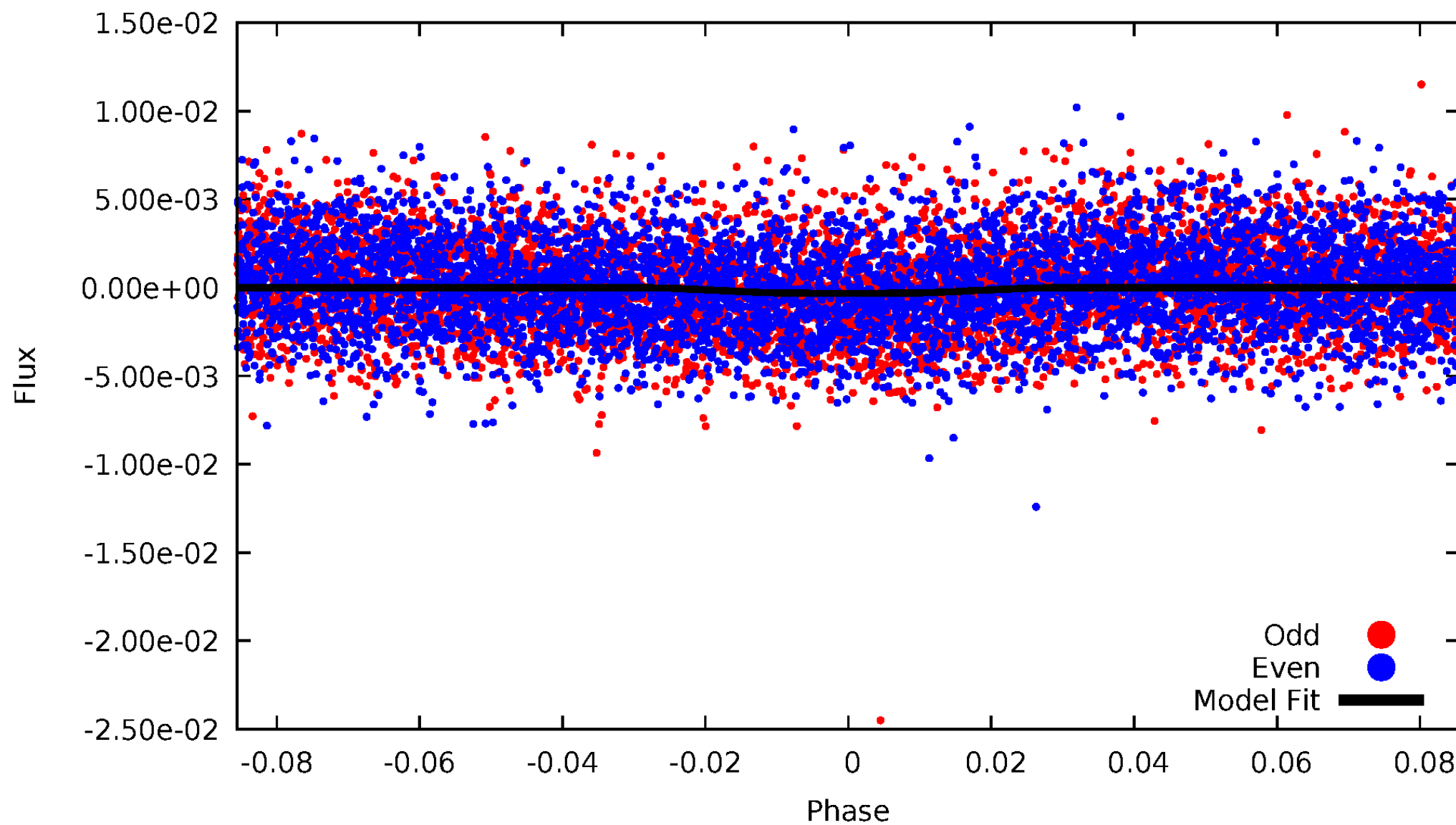


TCE 008153747-01



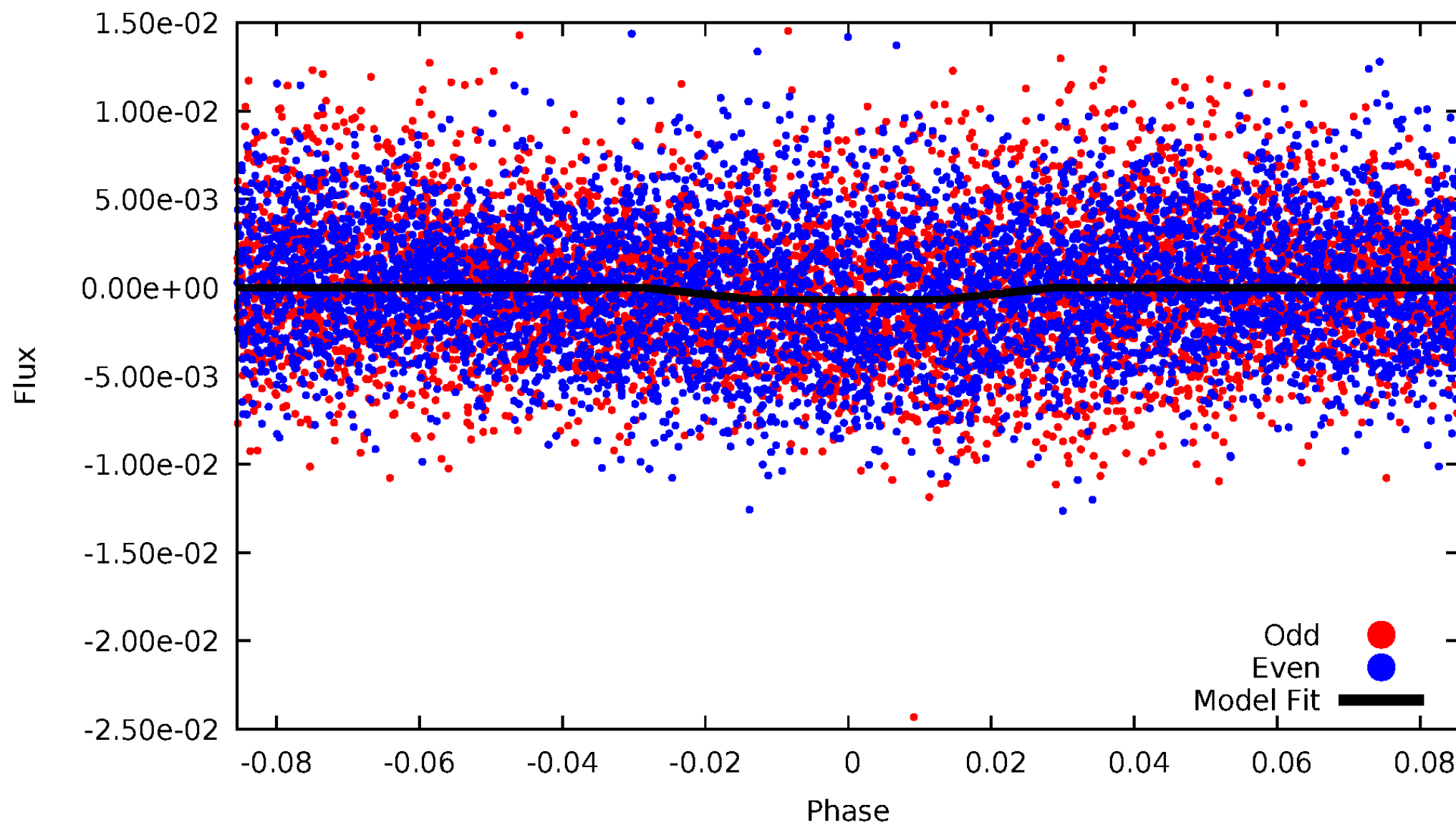
DV Odd/Even

TCE 008153747-01



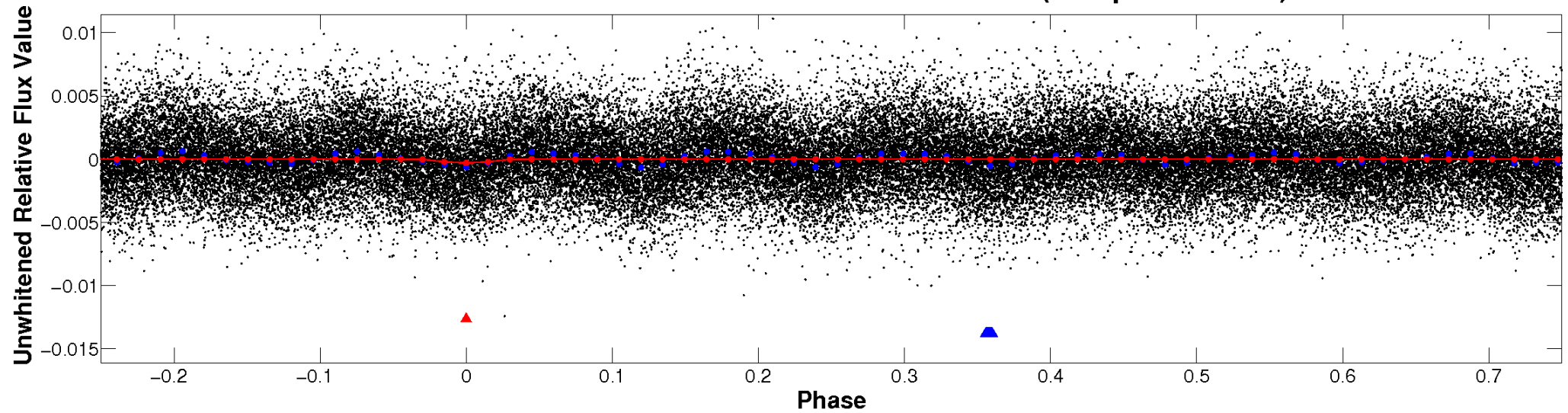
ALT Odd/Even

TCE 008153747-01

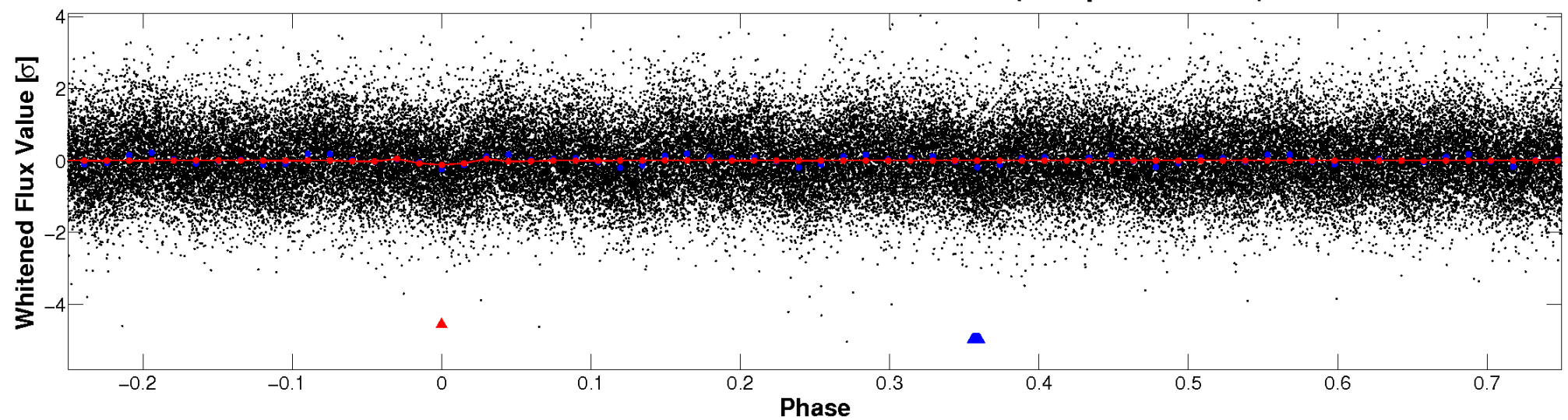


Non-Whitened Vs. Whitened Light Curve

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

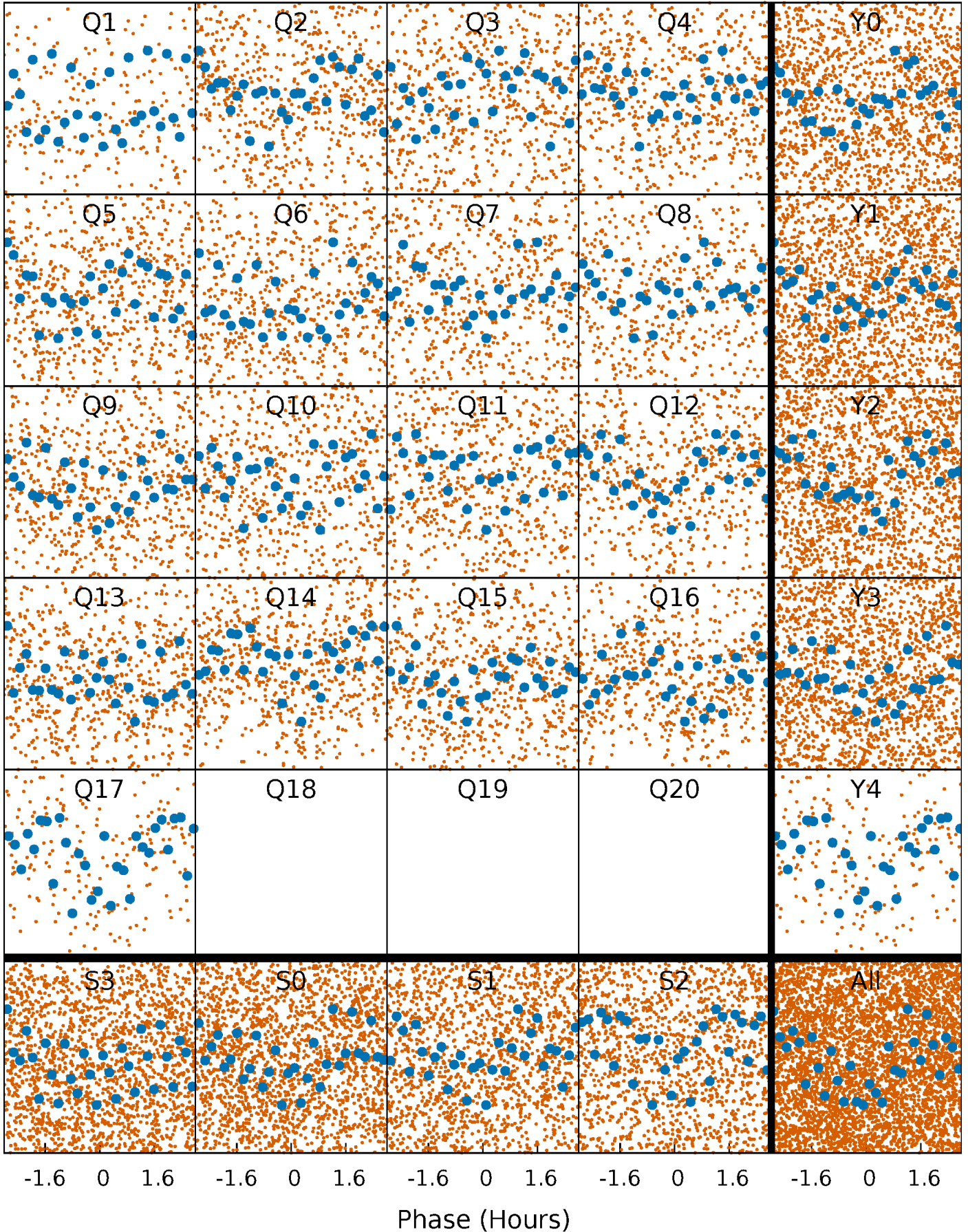


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



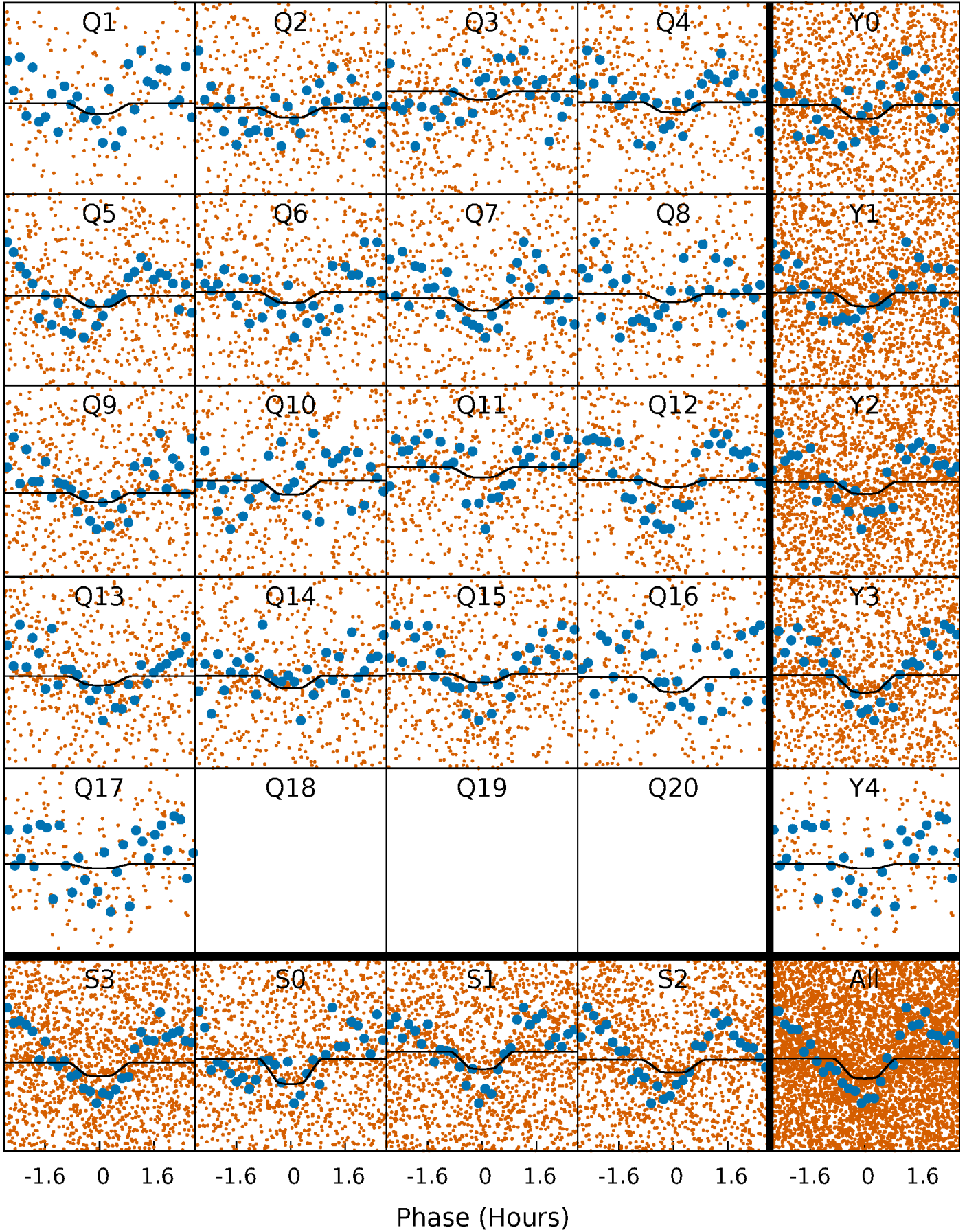
PDC Quarter-Phased Transit Curves

TCE 008153747-01 P= 1.367204 Days $T_0=132.625682$ (BKJD)



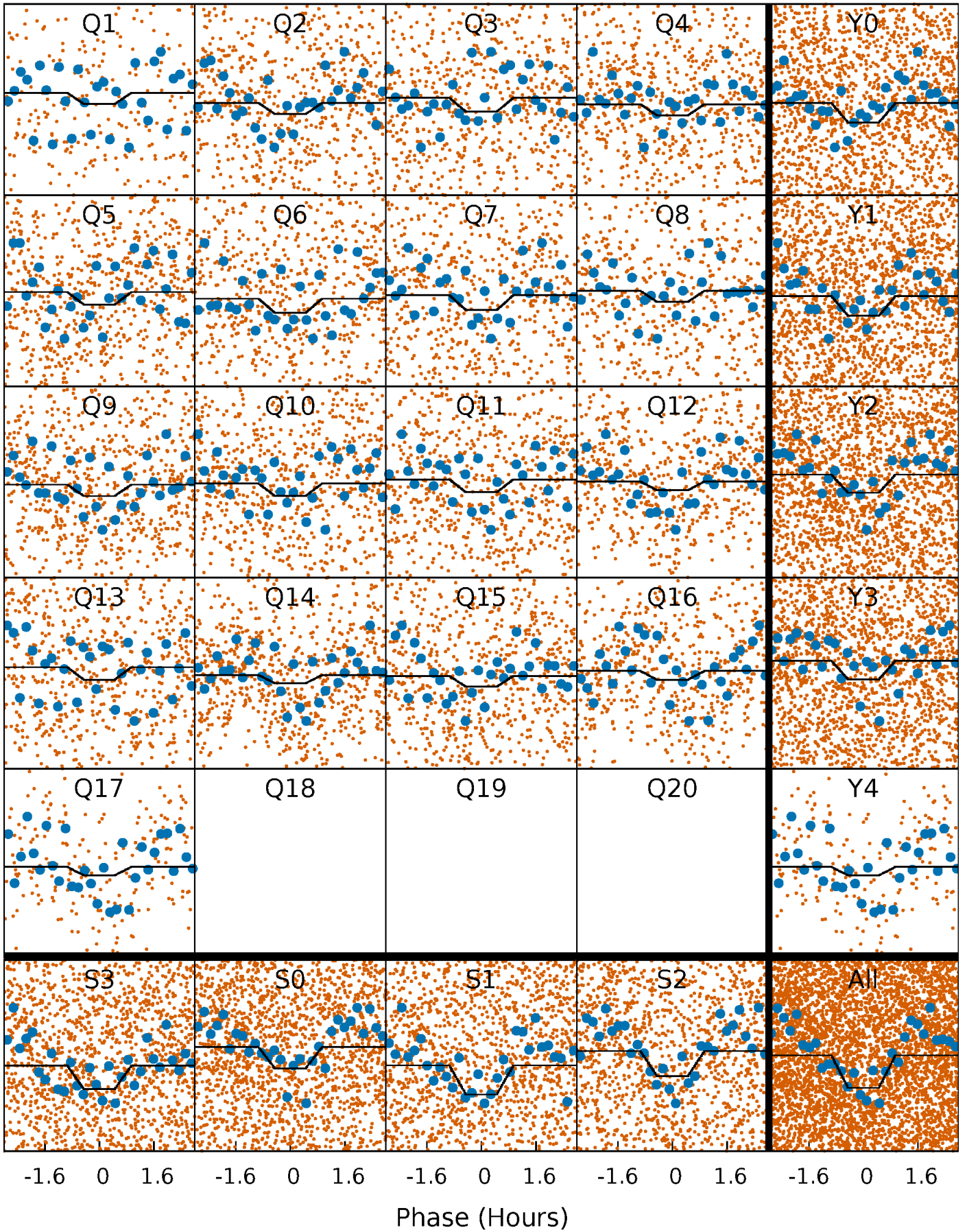
DV Quarter-Phased Transit Curves

TCE 008153747-01 P= 1.367204 Days $T_0=132.625682$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

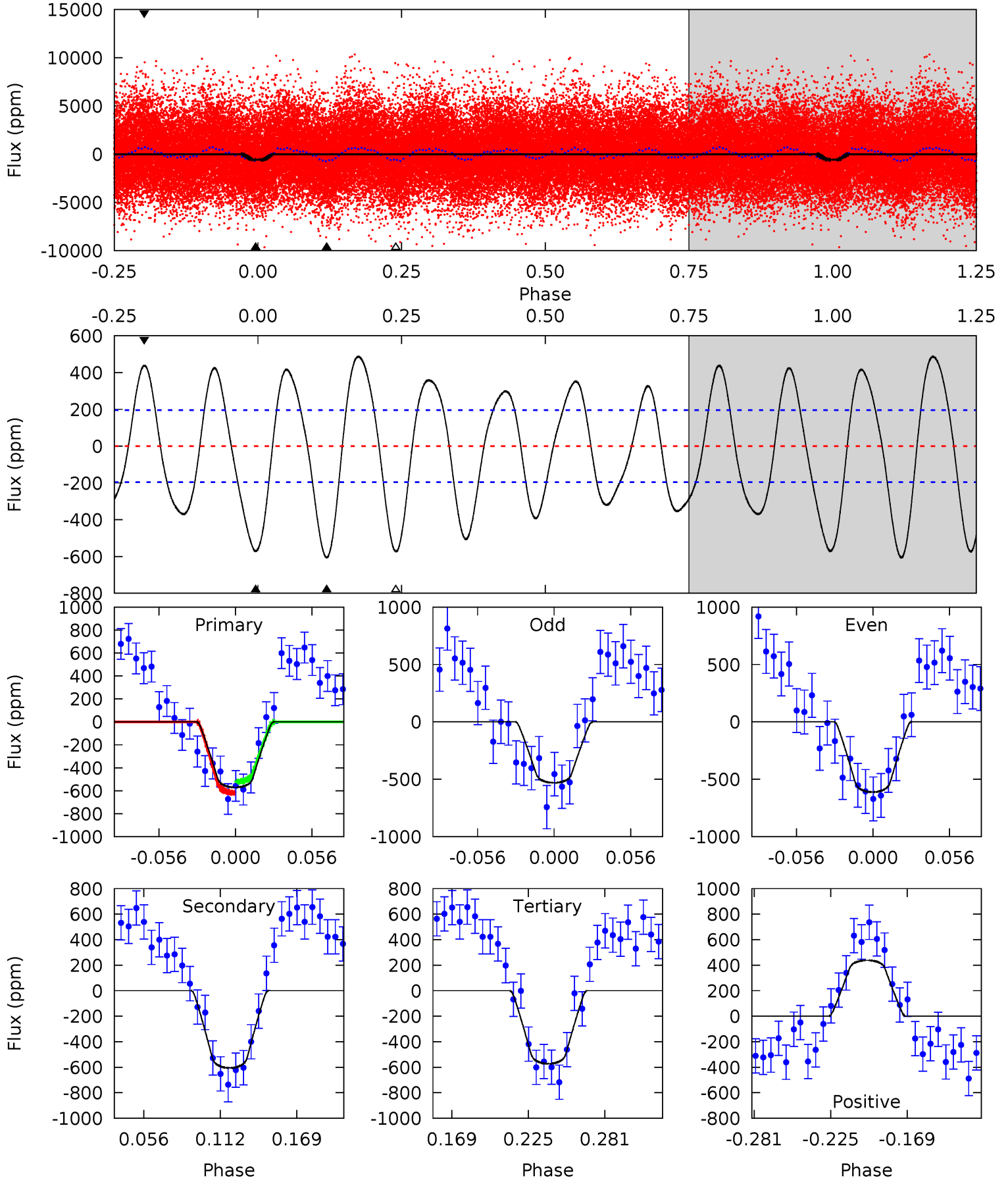
TCE 008153747-01 P= 1.367211 Days $T_0=132.614683$ (BKJD)



DV Model-Shift Uniqueness Test

008153747-01, P = 1.367204 Days, E = 131.258478 Days

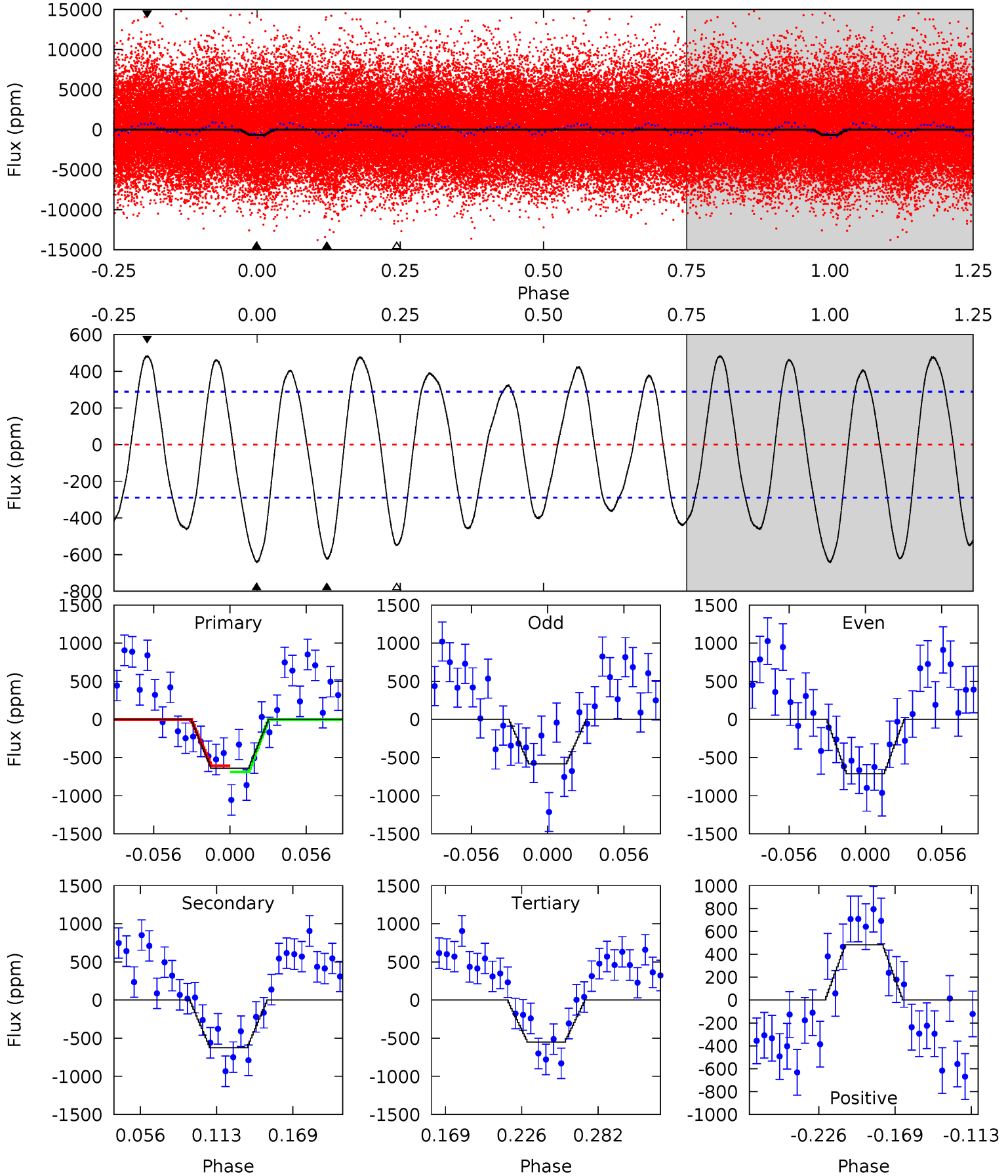
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	14.5	13.7	10.5	4.68	1.91	6.84	-0.04	3.17	0.80	4.01	0.97	0.93	0.45	1.14



Alt Model-Shift Uniqueness Test

008153747-01, P = 1.367211 Days, E = 131.247472 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	10.1	8.90	7.83	4.68	1.91	4.98	1.48	2.55	1.18	2.25	1.06	0.79	0.43	0.66



Stellar Parameters For KIC 008153747

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7442^{+207}_{-311}	$4.114^{+0.128}_{-0.176}$	$-0.040^{+0.200}_{-0.350}$	$1.833^{+0.548}_{-0.365}$	$1.592^{+0.200}_{-0.244}$	$0.364^{+0.261}_{-0.174}$
	+3%/-4%	+3%/-4%	+500%/-875%	+30%/-20%	+13%/-15%	+72%/-48%
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 008153747-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-606 ± 42	$3.72^{+1.64}_{-1.47}$	3697^{+276}_{-209}	8782^{+4054}_{-1657}	19^{+32}_{-10}
Alt.	-623 ± 62	$5.18^{+1.64}_{-1.65}$	3716^{+284}_{-234}	7217^{+1917}_{-989}	$9.892^{+10.619}_{-4.100}$

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 $A_{obs} \gg 1.0$

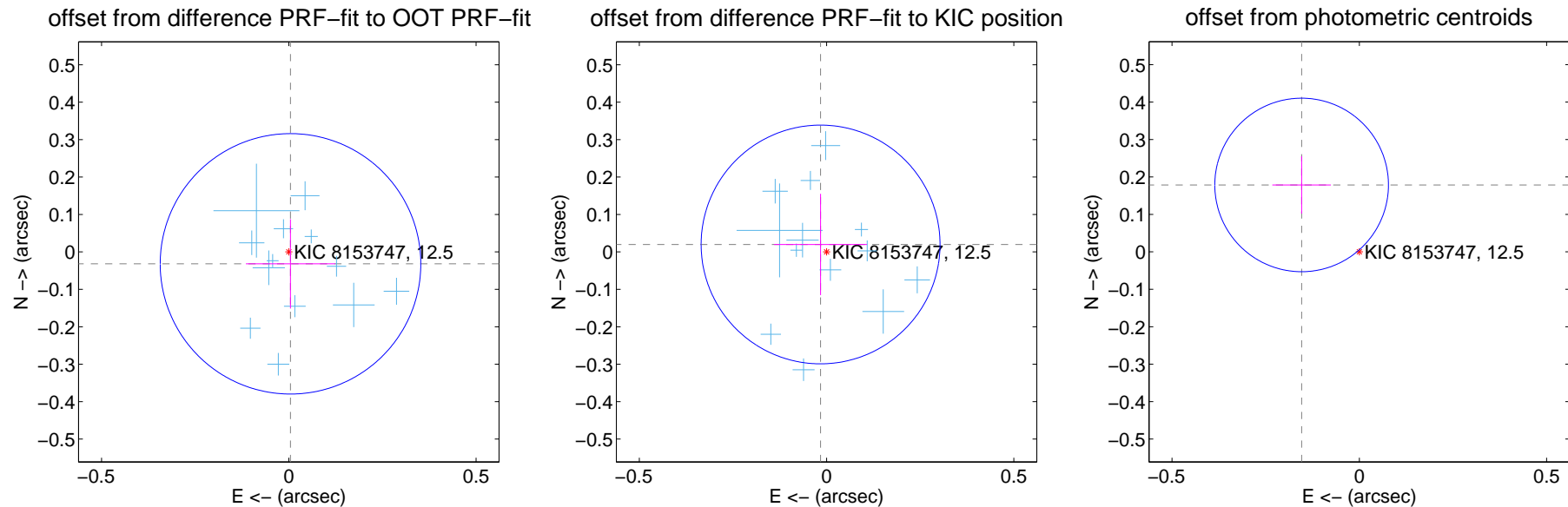
DV Centroid Data

Supplemental centroid analysis for 008153747-01. Kepler magnitude: 12.50. Transit SNR 6.11

There are 16 quarters with good PRF difference image offsets

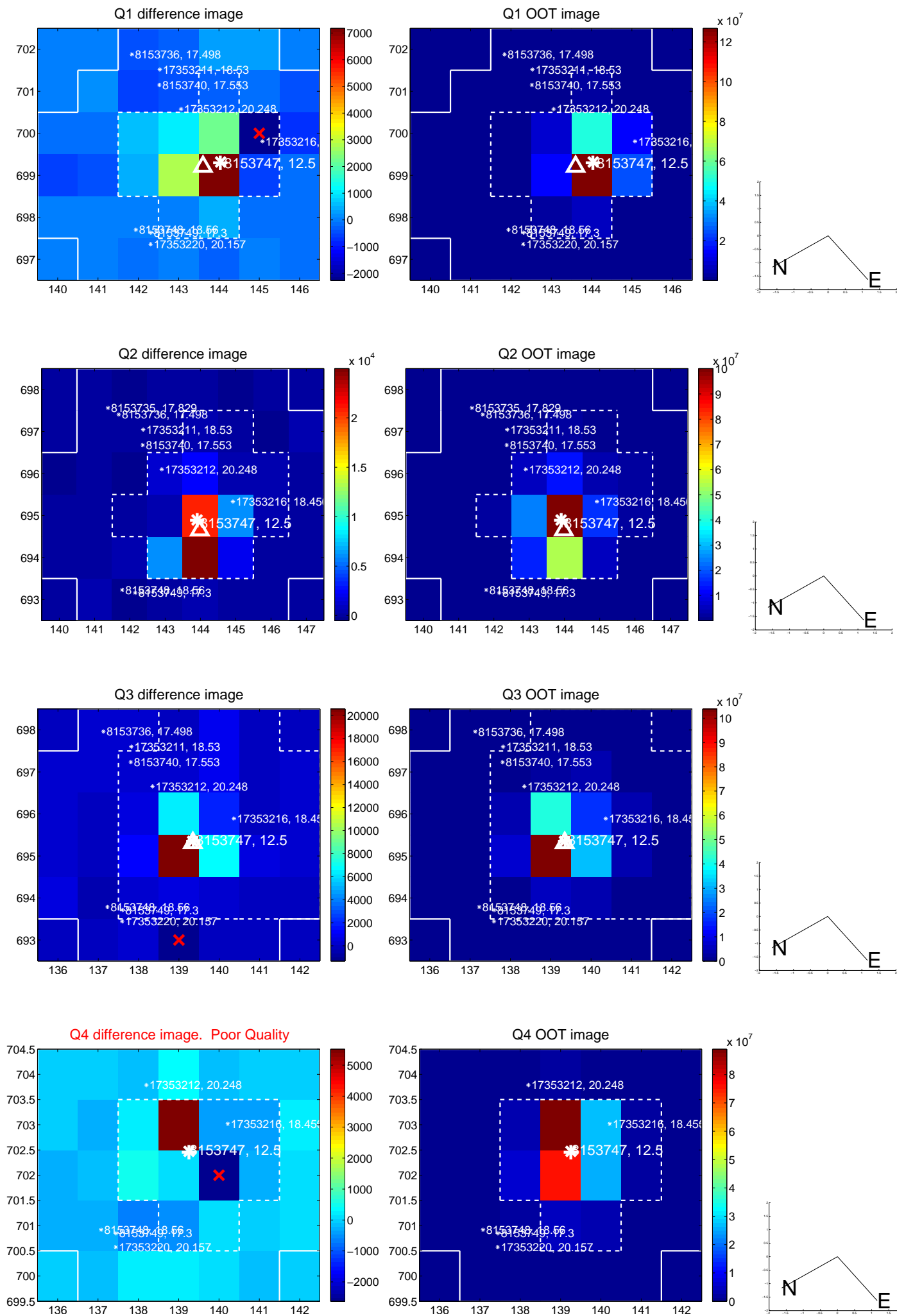
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.032 ± 0.116	0.28	-0.005 ± 0.119	-0.032 ± 0.119
PRF-fit source offset from KIC position	0.026 ± 0.106	0.24	0.016 ± 0.124	0.020 ± 0.135
photometric centroid source offset	0.24 ± 0.08	3.05	0.15 ± 0.08	0.18 ± 0.08

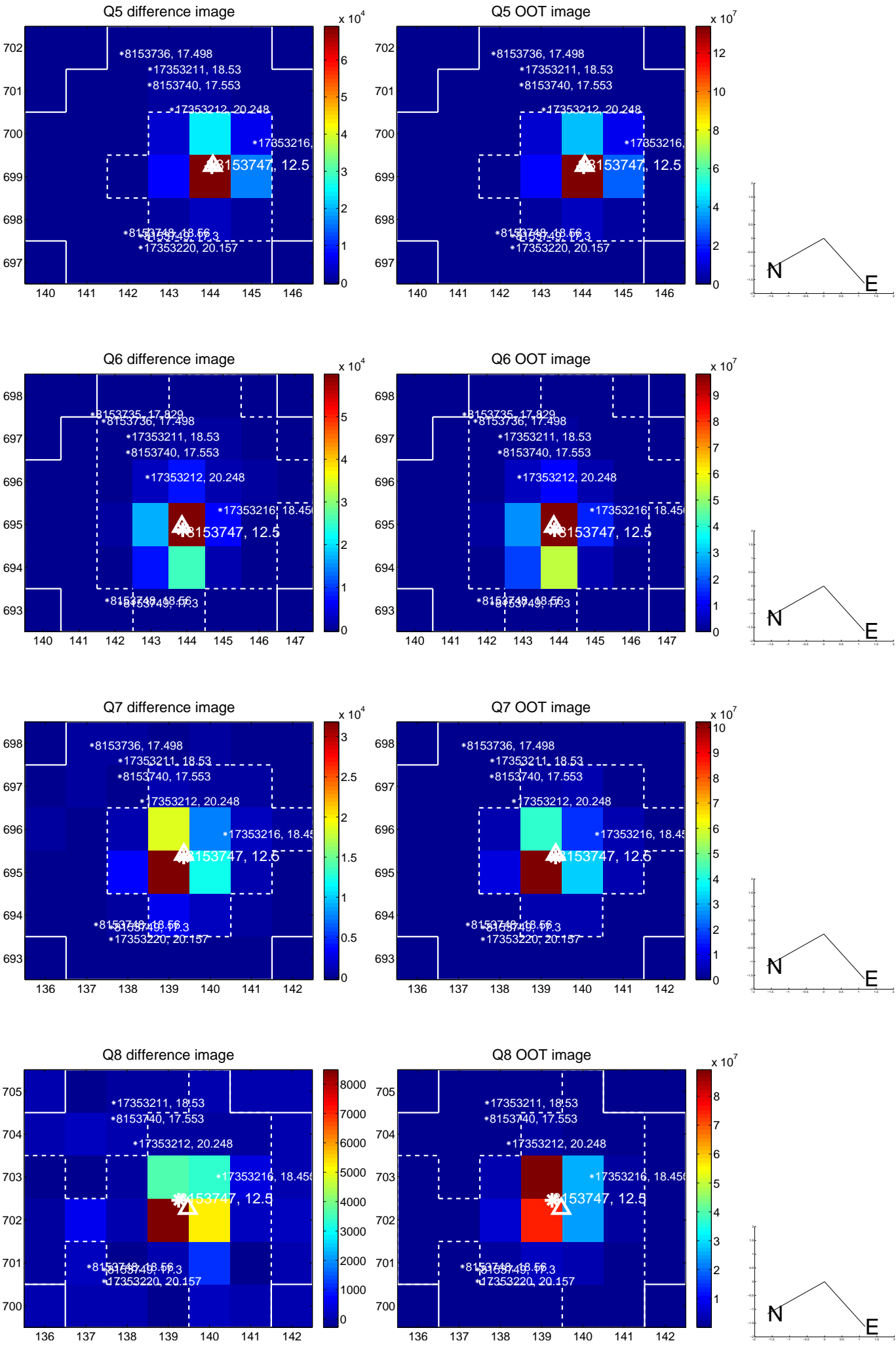


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

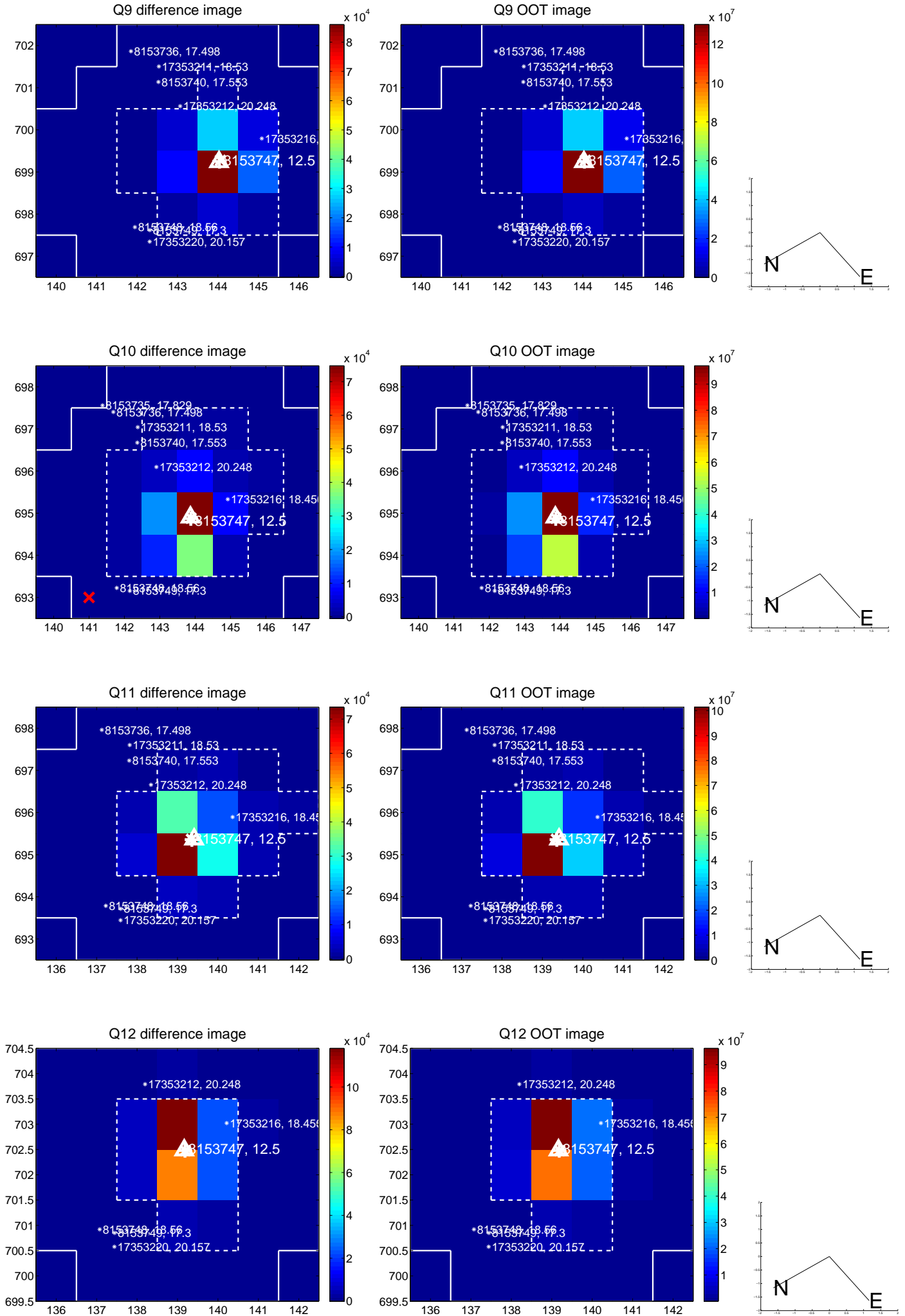
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



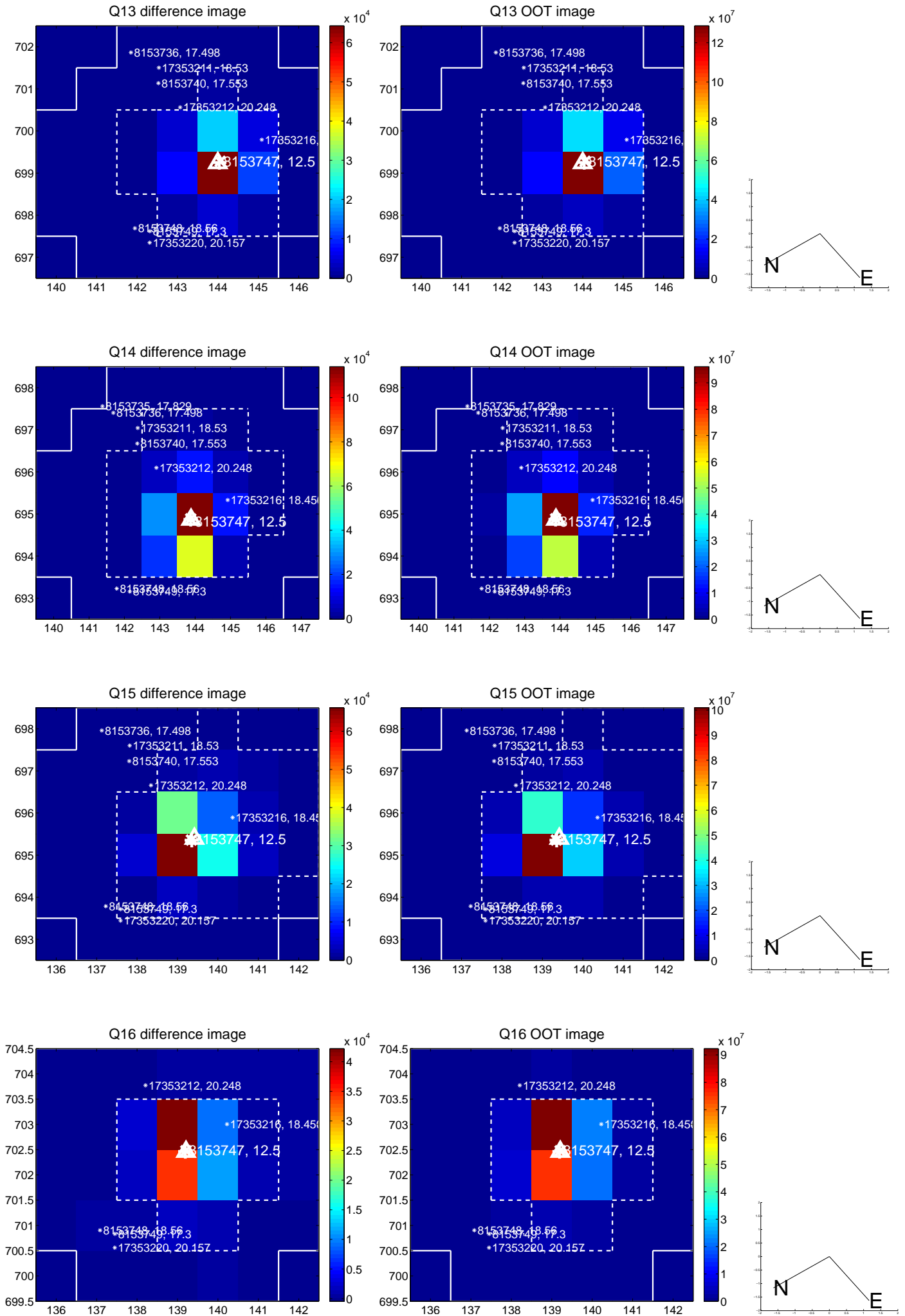
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



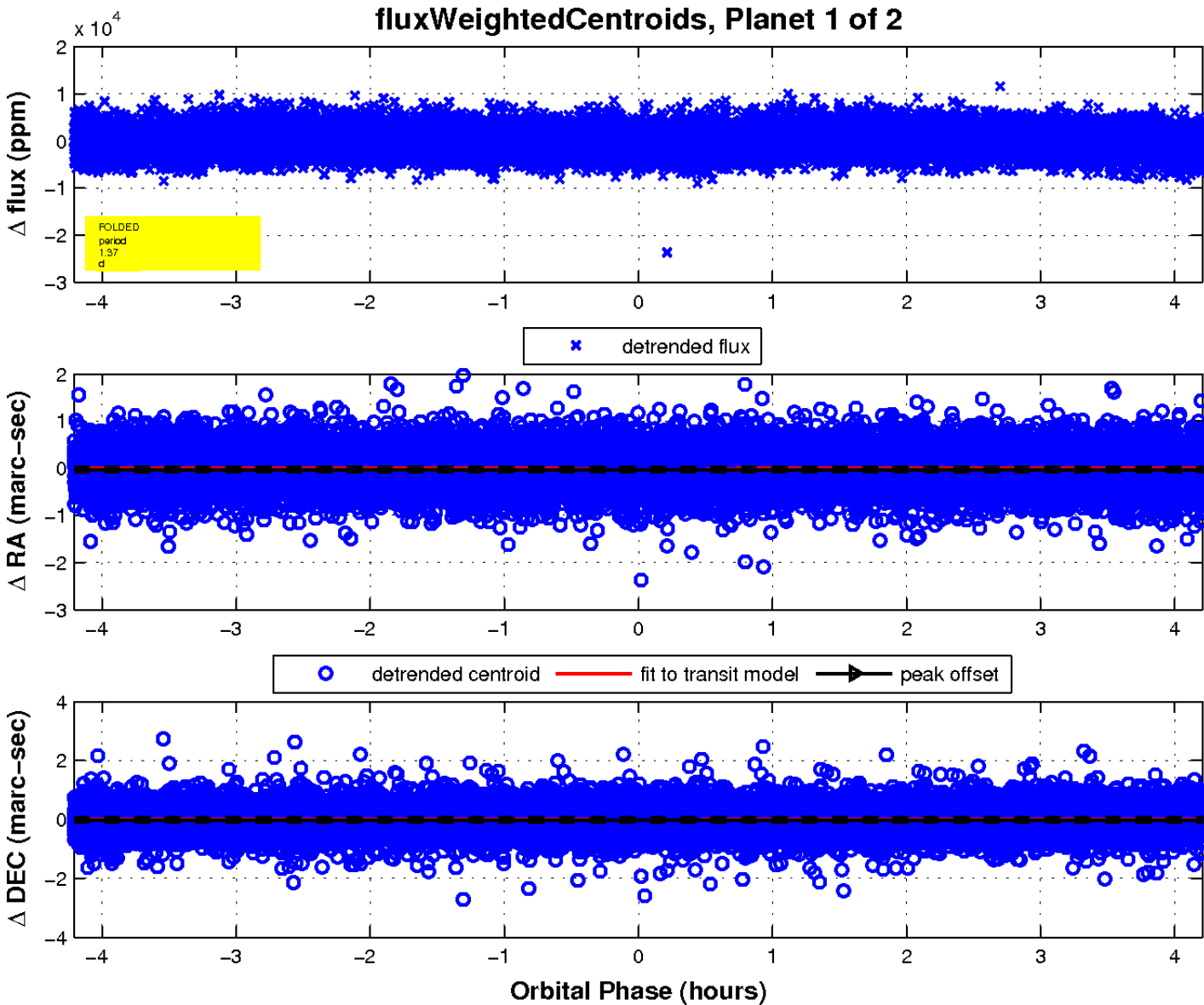
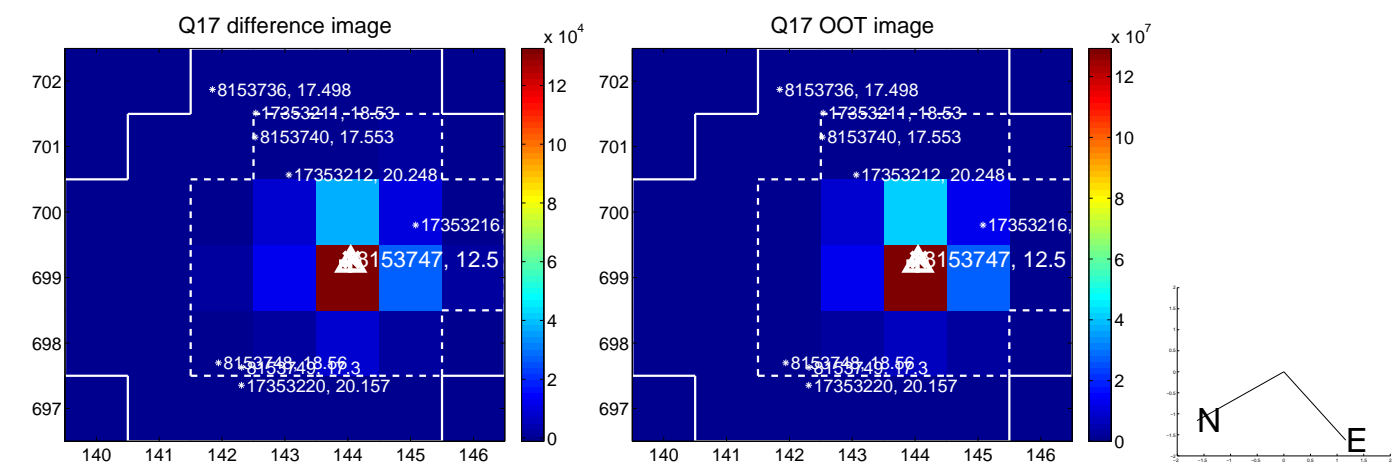
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

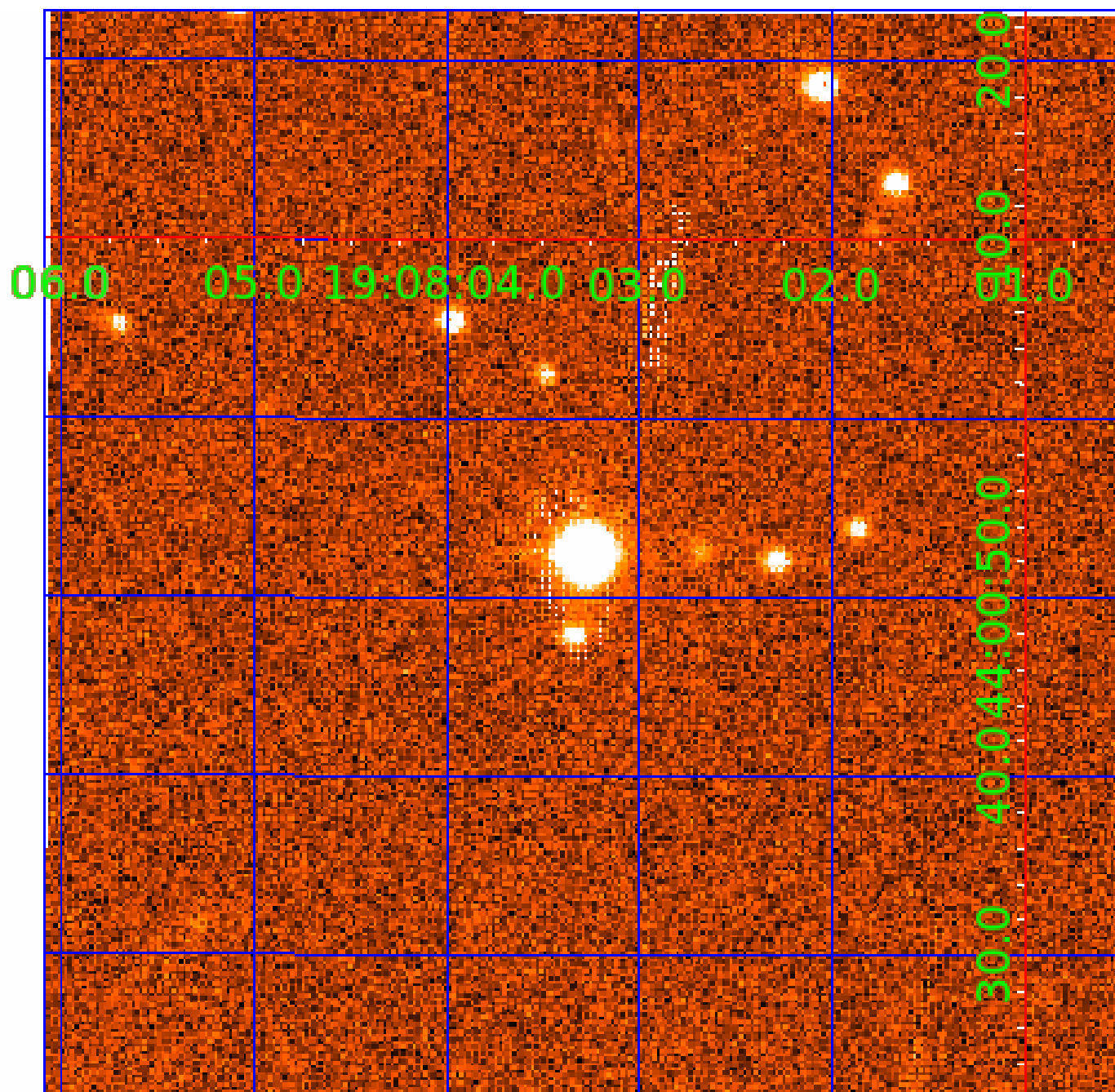


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008153747

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})
008153747-01	OBS	No	1.367204	132.625682	305.3	1.403	10.0	6.1	1.83	7442	3.69	11640.83
008153747-02	OBS	No	1.367198	131.750715	136.5	1.538	8.1	2.7	1.83	7442	2.48	11640.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008153747-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008153747-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD

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

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

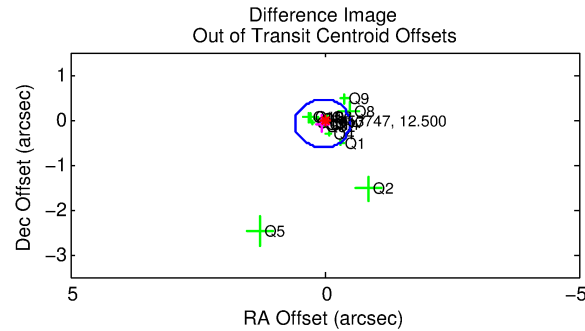
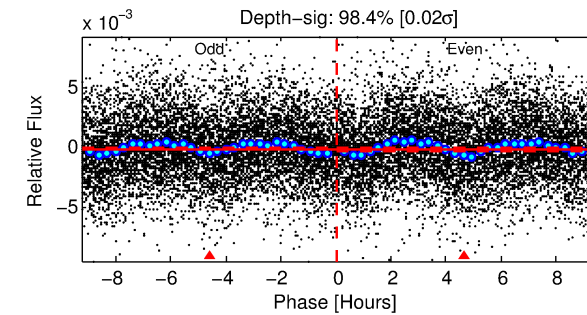
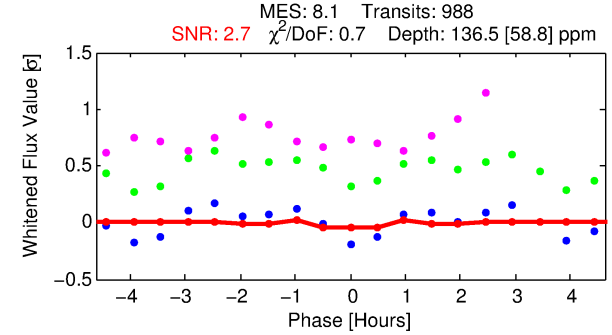
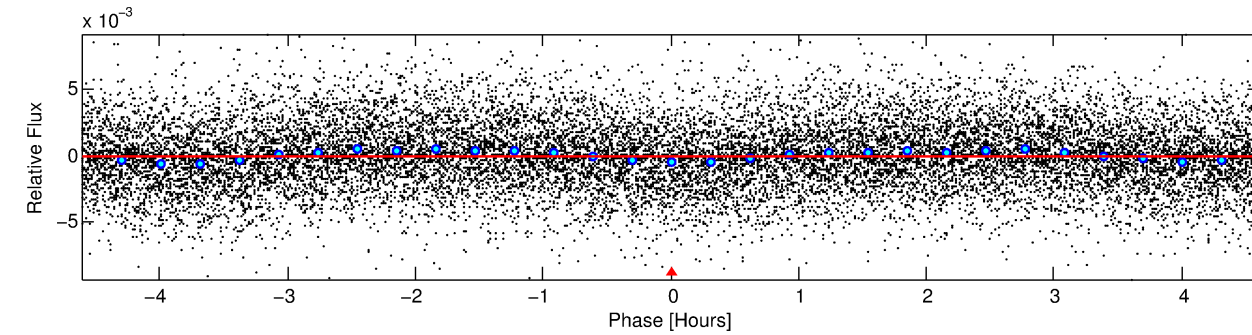
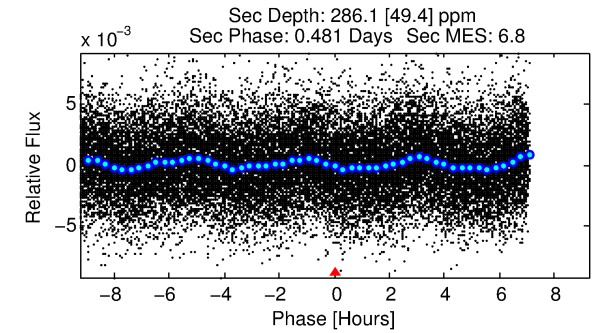
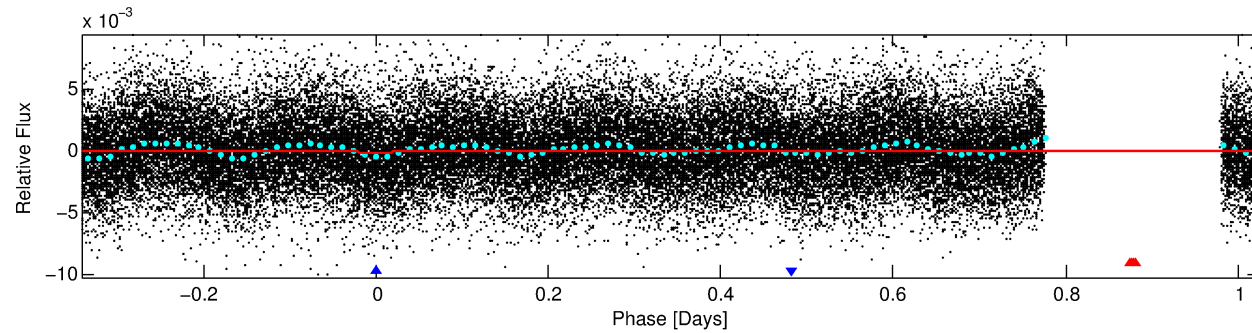
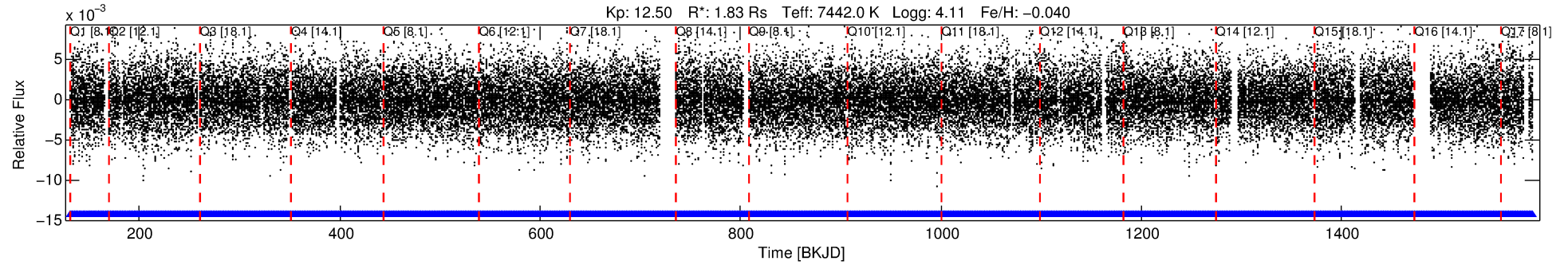
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008153747-02

No Significant Match Found

DV One-Page Summary

KIC: 8153747 Candidate: 2 of 2 Period: 1.367 d



DV Fit Results:

Period = 1.36720 [0.00003] d
Epoch = 131.7507 [0.0041] BKJD
Rp/R* = 0.0124 [0.0096]
a/R* = 3.28 [14.18]
b = 0.90 [1.01]
Seff = 11640.89 [4365.85]
Teff = 2649 [248] K
Rp = 2.48 [2.05] Re
a = 0.0282 [0.0068] AU
Ag = 20.23 [32.08] [0.60σ]
Teffp = 8685 [3384] K [1.78σ]

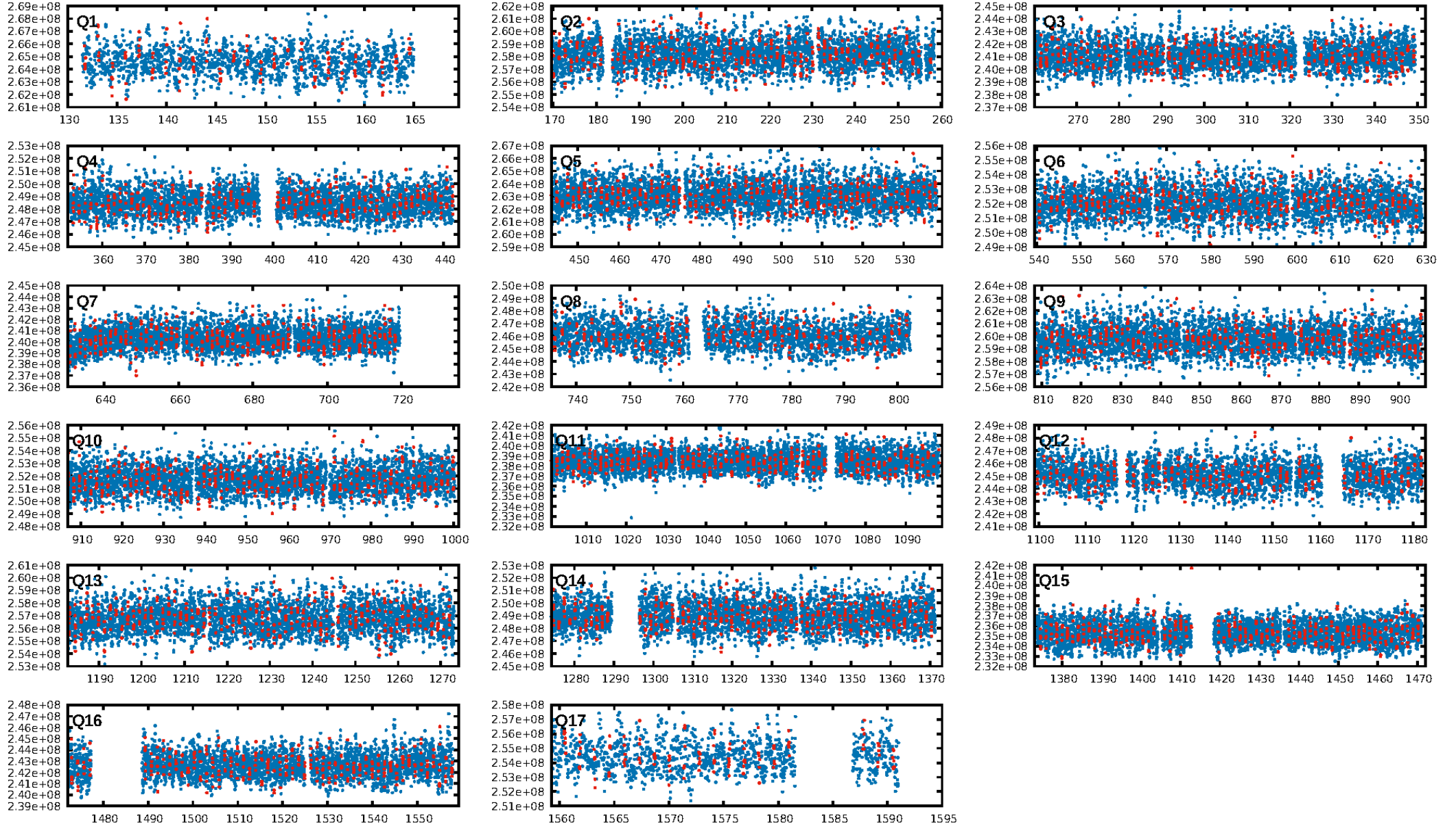
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.90e-15
RollingBand-fgt: 1.00 [944/944]
GhostDiagnostic-chr: 2.198
Centroid-sig: 0.0%
Centroid-so: 0.393 arcsec [2.43σ]
OotOffset-rm: 0.094 arcsec [0.52σ]
KicOffset-rm: 0.097 arcsec [0.58σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.82 [14/17]
DiffImageOverlap-fno: 1.00 [17/17]

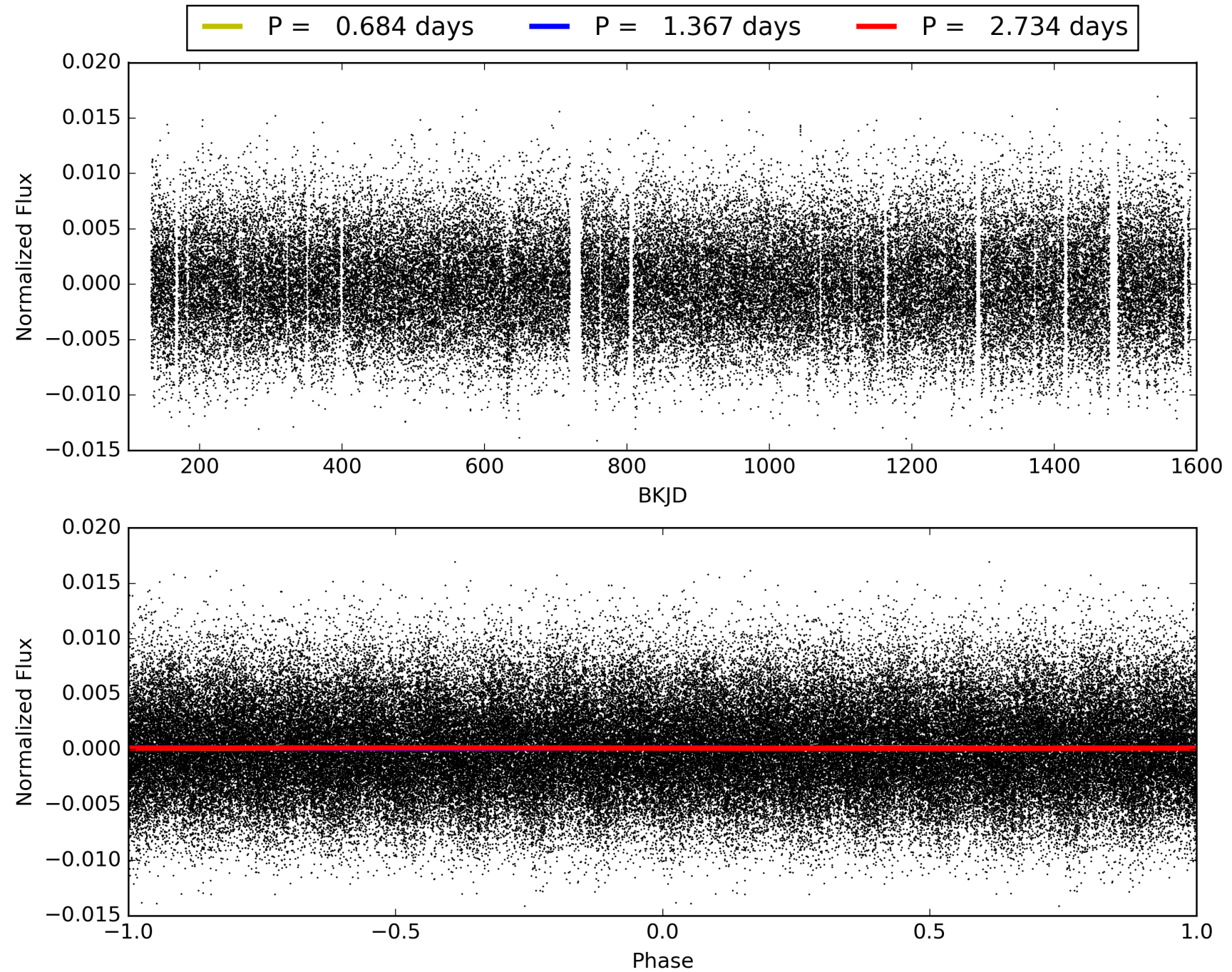
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:58:17 Z

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

TCE 008153747-02, PDC Light Curves

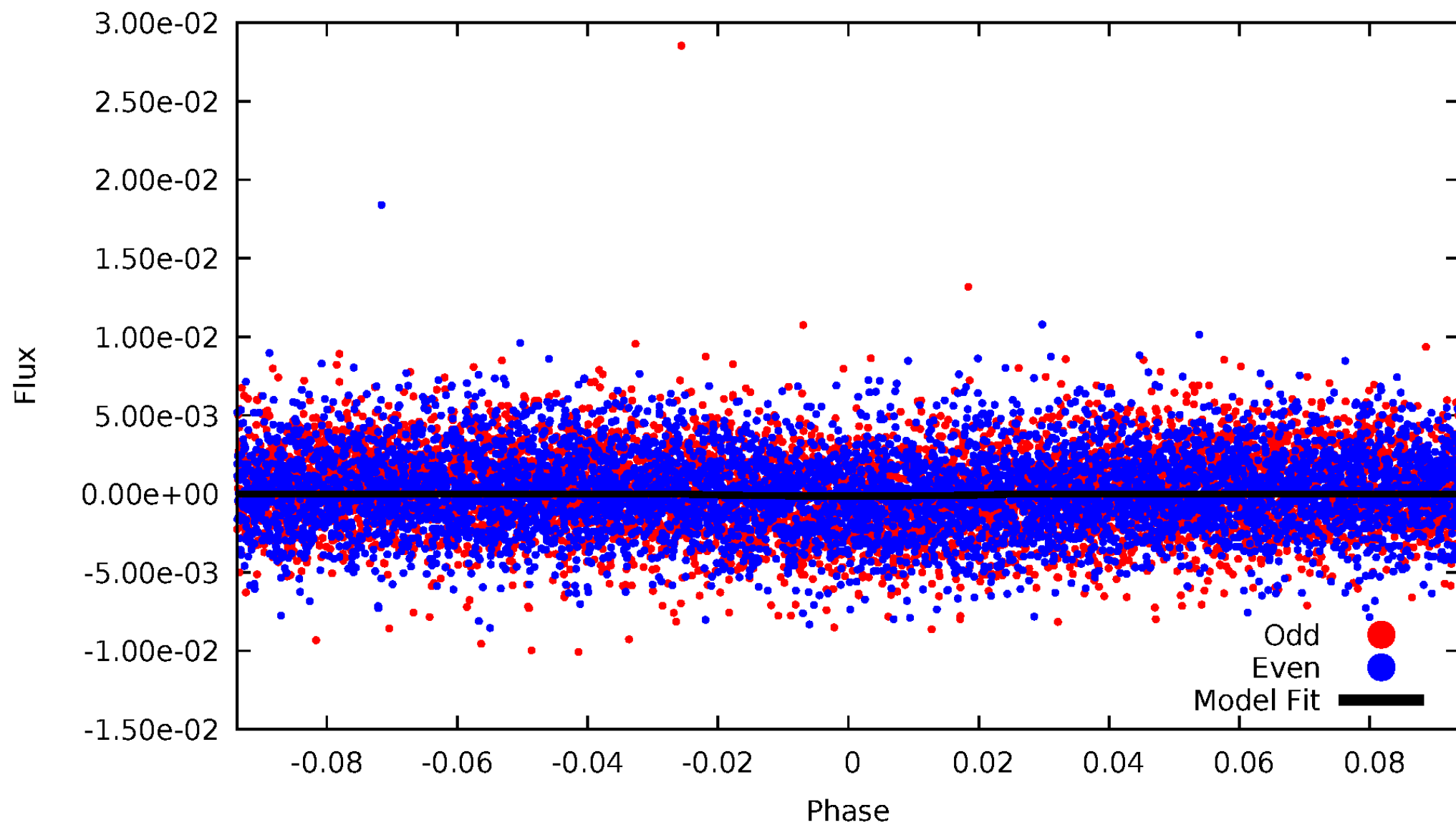


TCE 008153747-02



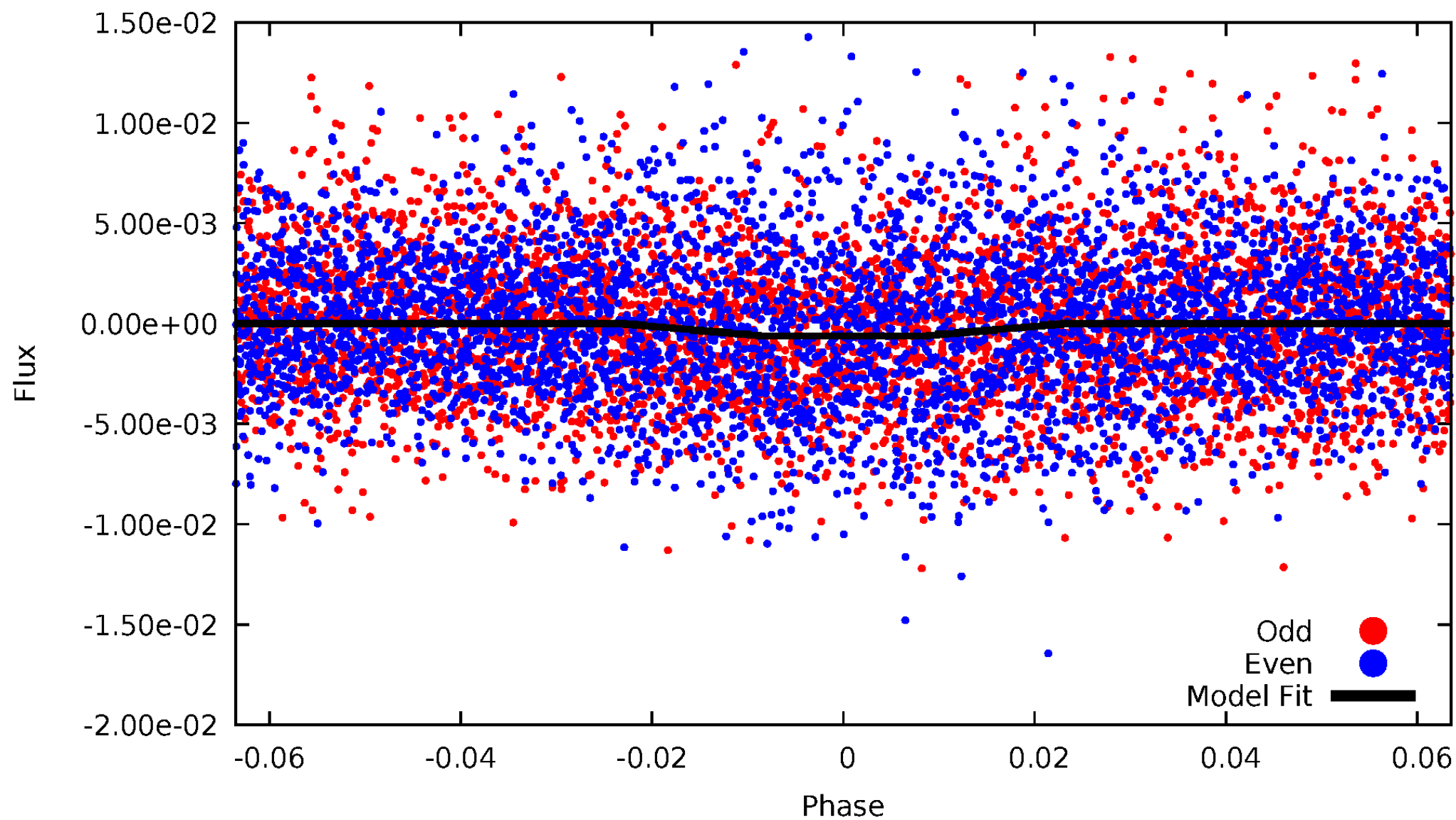
DV Odd/Even

TCE 008153747-02



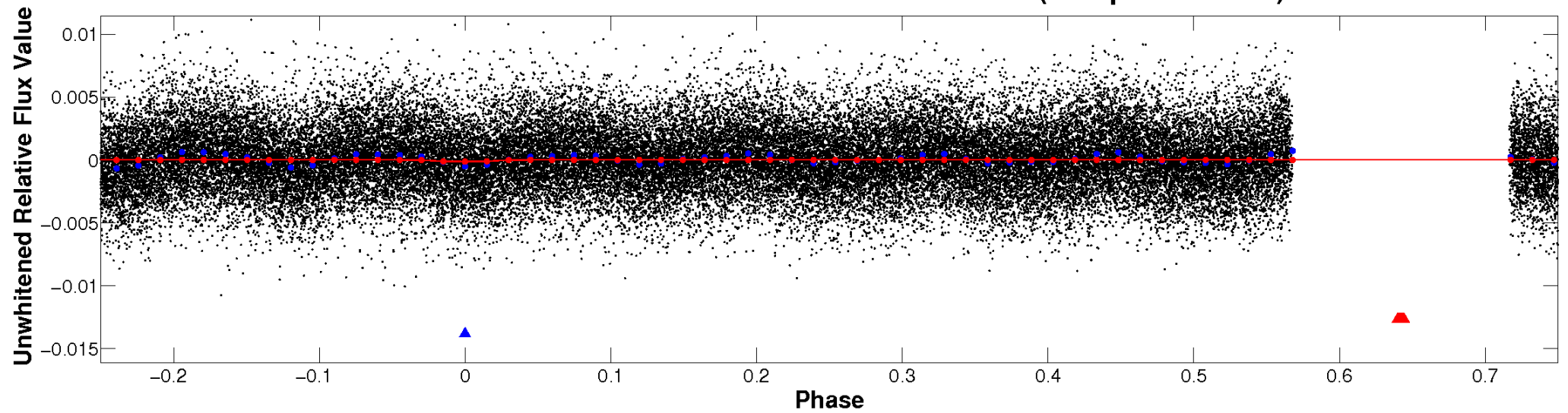
ALT Odd/Even

TCE 008153747-02

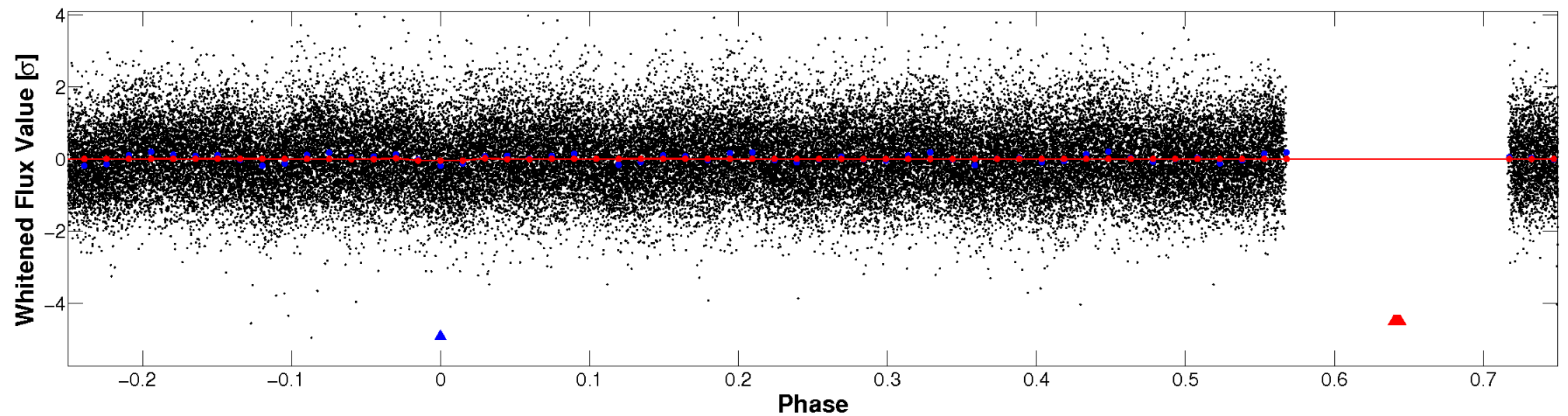


Non-Whitened Vs. Whitened Light Curve

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

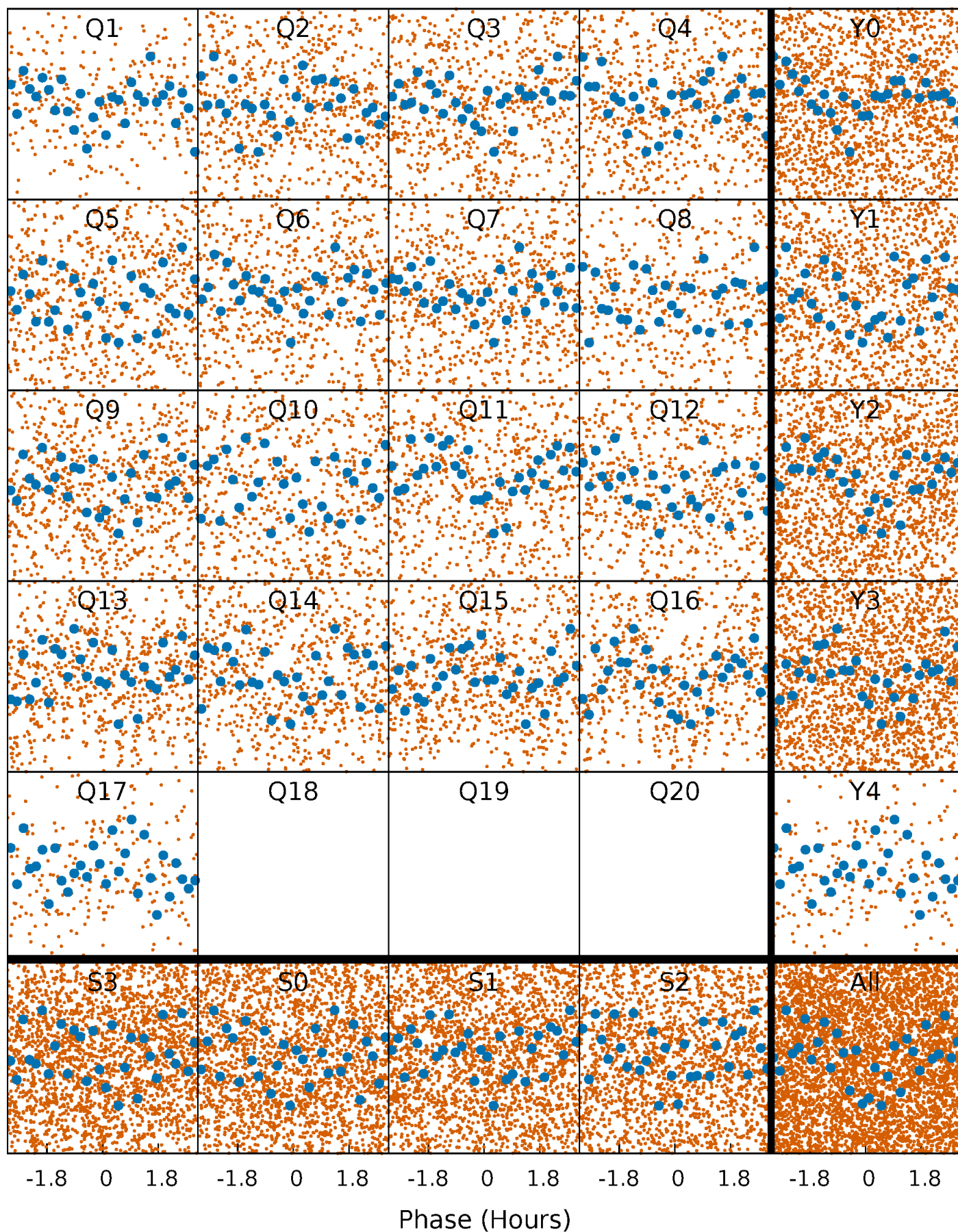


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



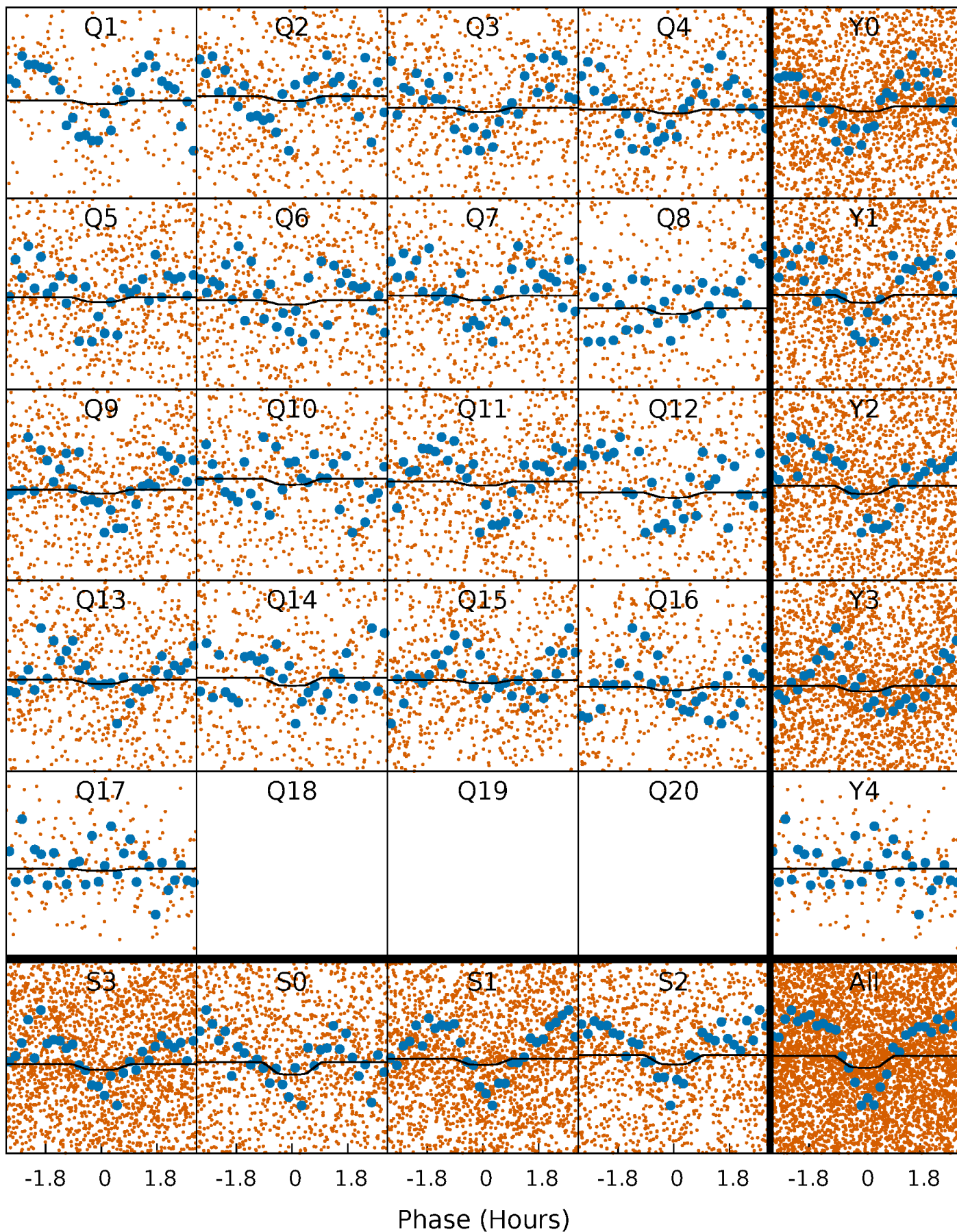
PDC Quarter-Phased Transit Curves

TCE 008153747-02 P= 1.367198 Days $T_0=131.750715$ (BKJD)



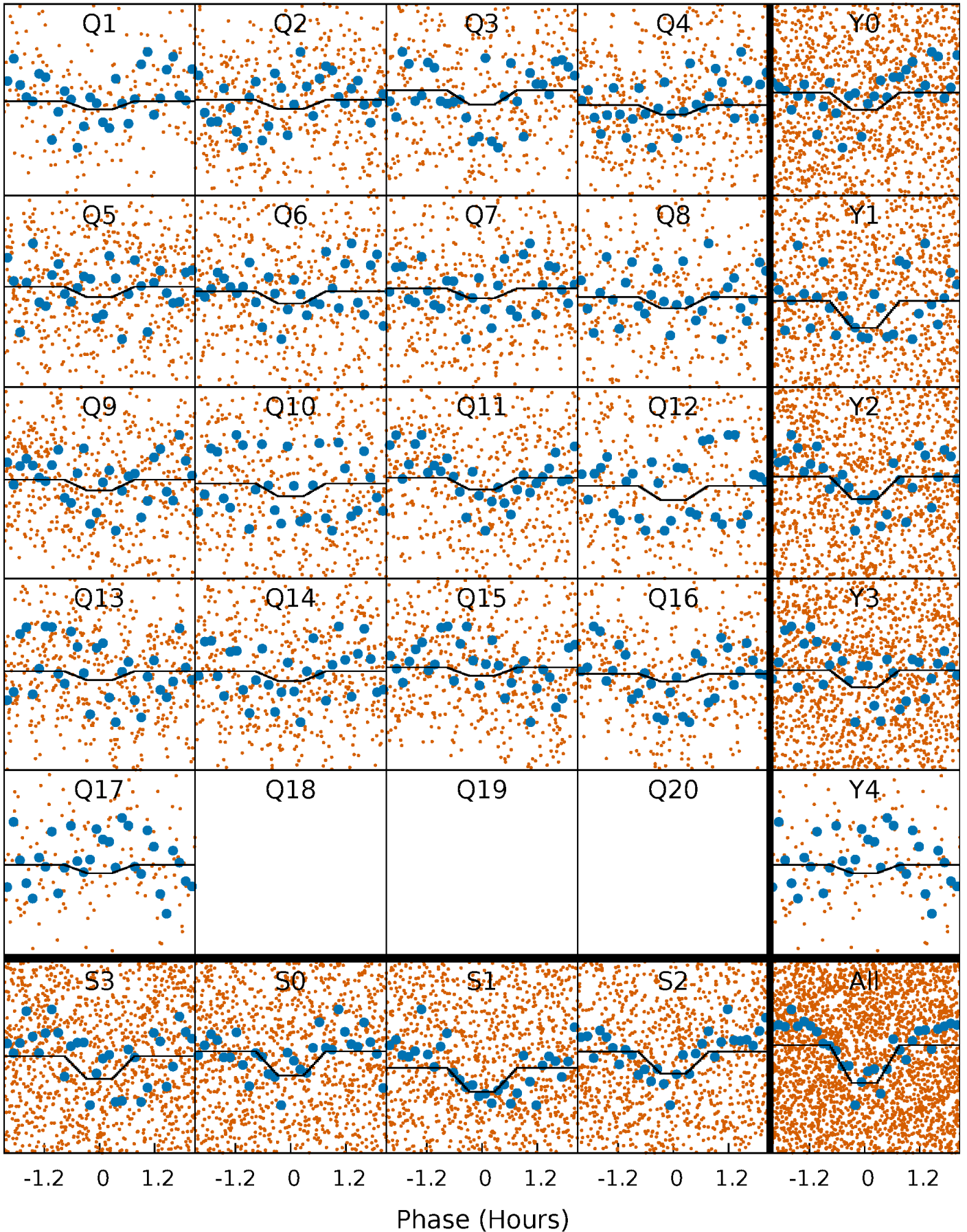
DV Quarter-Phased Transit Curves

TCE 008153747-02 P= 1.367198 Days $T_0=131.750715$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

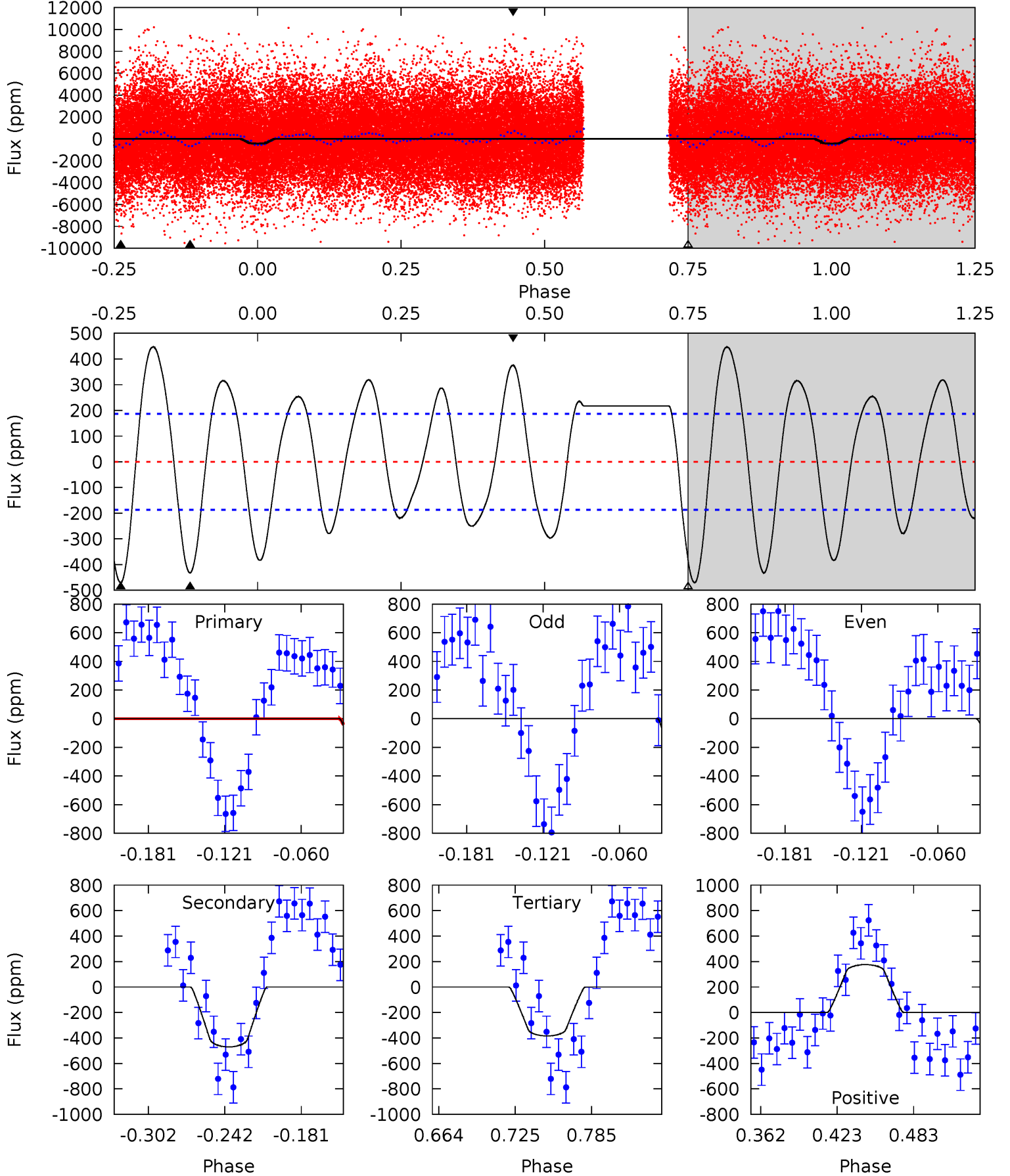
TCE 008153747-02 P= 1.367211 Days $T_0=131.750003$ (BKJD)



DV Model-Shift Uniqueness Test

008153747-02, P = 1.367198 Days, E = 130.383517 Days

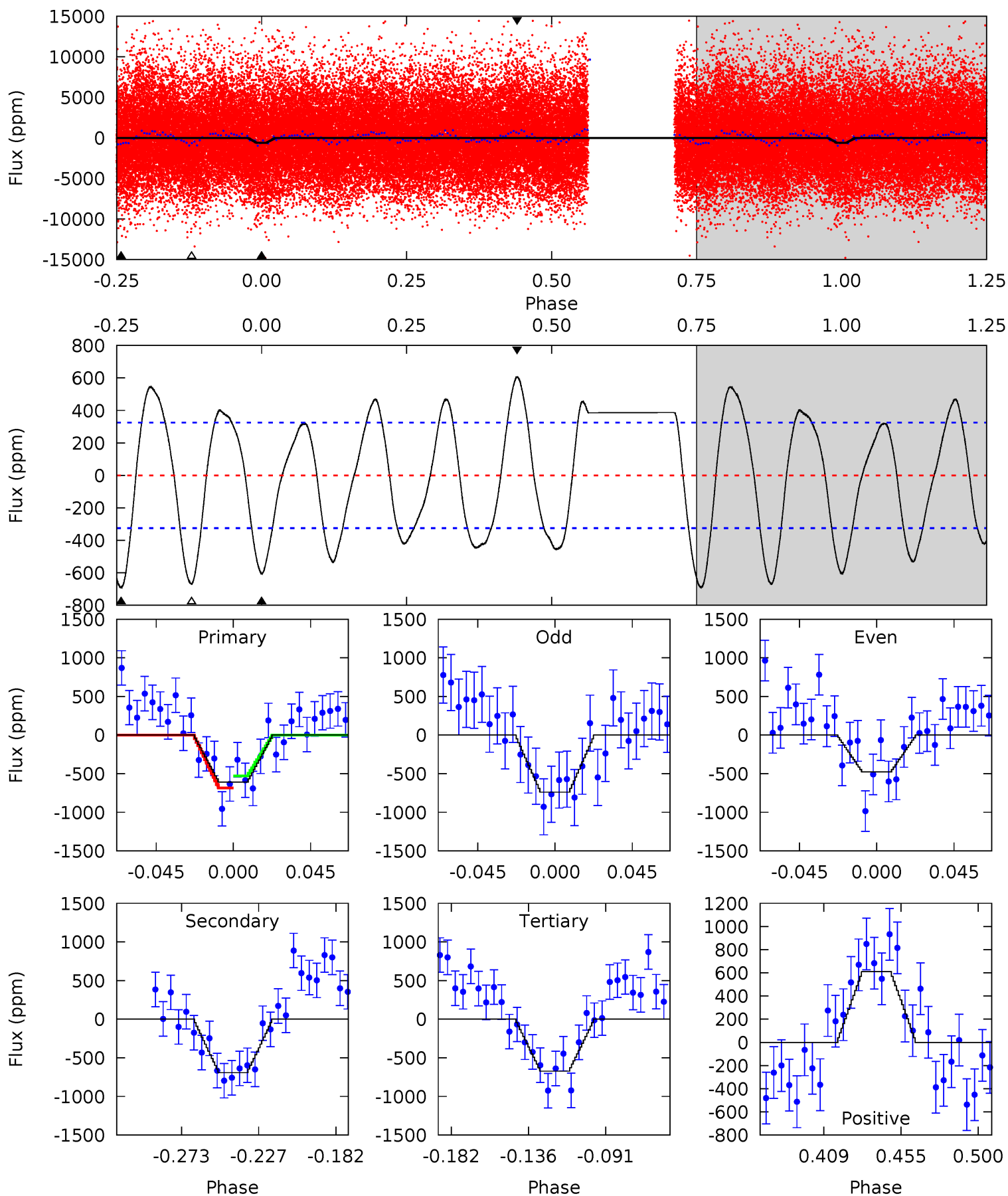
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	11.8	9.60	9.39	4.67	1.88	5.25	1.22	1.43	2.16	2.37	3.50	1.08	0.49	2.05



Alt Model-Shift Uniqueness Test

008153747-02, P = 1.367211 Days, E = 130.382792 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.83	10.1	9.78	8.87	4.73	2.00	5.08	-0.95	-0.03	0.28	1.19	1.90	0.95	0.47	1.13



Stellar Parameters For KIC 008153747

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7442^{+207}_{-311}	$4.114^{+0.128}_{-0.176}$	$-0.040^{+0.200}_{-0.350}$	$1.833^{+0.548}_{-0.365}$	$1.592^{+0.200}_{-0.244}$	$0.364^{+0.261}_{-0.174}$
	+3%/-4%	+3%/-4%	+500%/-875%	+30%/-20%	+13%/-15%	+72%/-48%
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 008153747-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-470 ± 40	$2.79^{+1.78}_{-1.63}$	3711^{+265}_{-228}	10002^{+13125}_{-2848}	26^{+127}_{-16}
Alt.	-692 ± 69	$4.97^{+2.24}_{-1.98}$	3697^{+254}_{-235}	7568^{+2894}_{-1380}	12^{+21}_{-6}

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 $A_{obs} \gg 1.0$

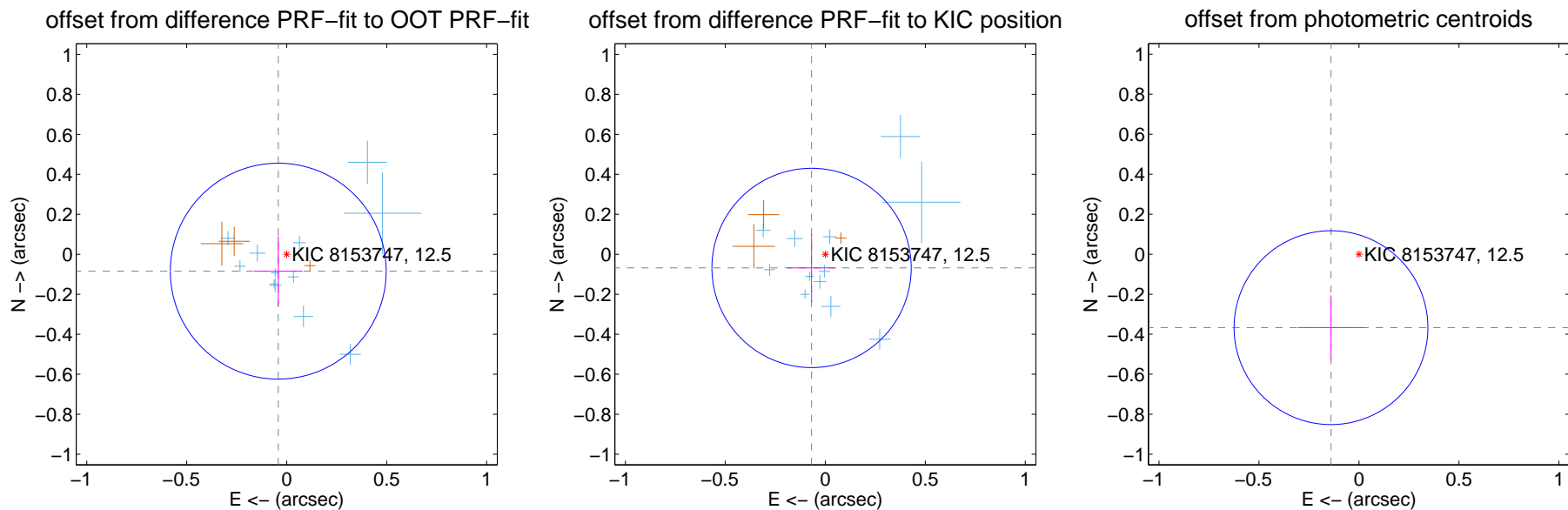
DV Centroid Data

Supplemental centroid analysis for 008153747-02. Kepler magnitude: 12.50. Transit SNR 2.73

There are 14 quarters with good PRF difference image offsets

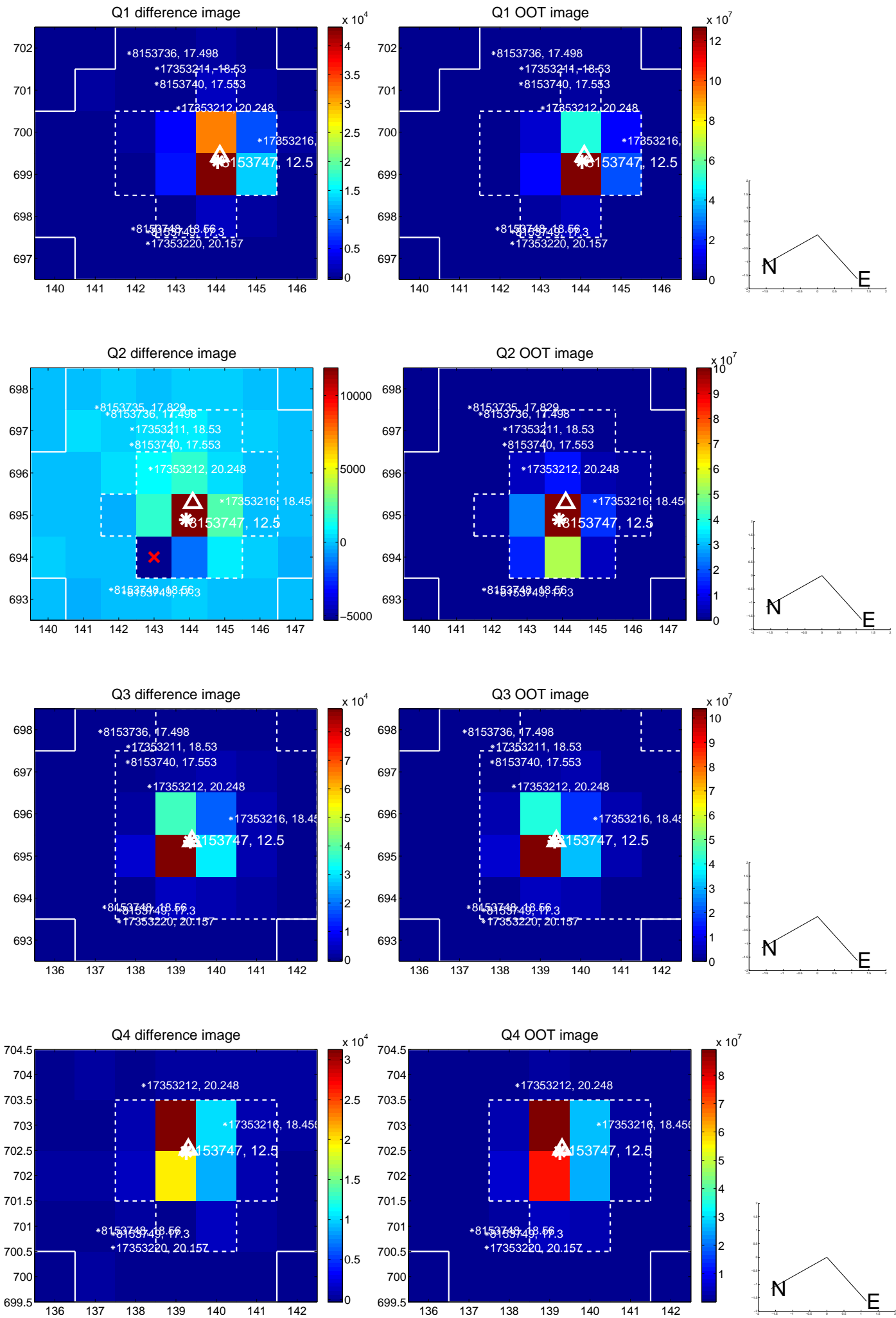
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.094 ± 0.180	0.52	0.042 ± 0.122	-0.084 ± 0.174
PRF-fit source offset from KIC position	0.097 ± 0.166	0.58	0.069 ± 0.121	-0.068 ± 0.172
photometric centroid source offset	0.39 ± 0.16	2.43	0.14 ± 0.17	-0.37 ± 0.16

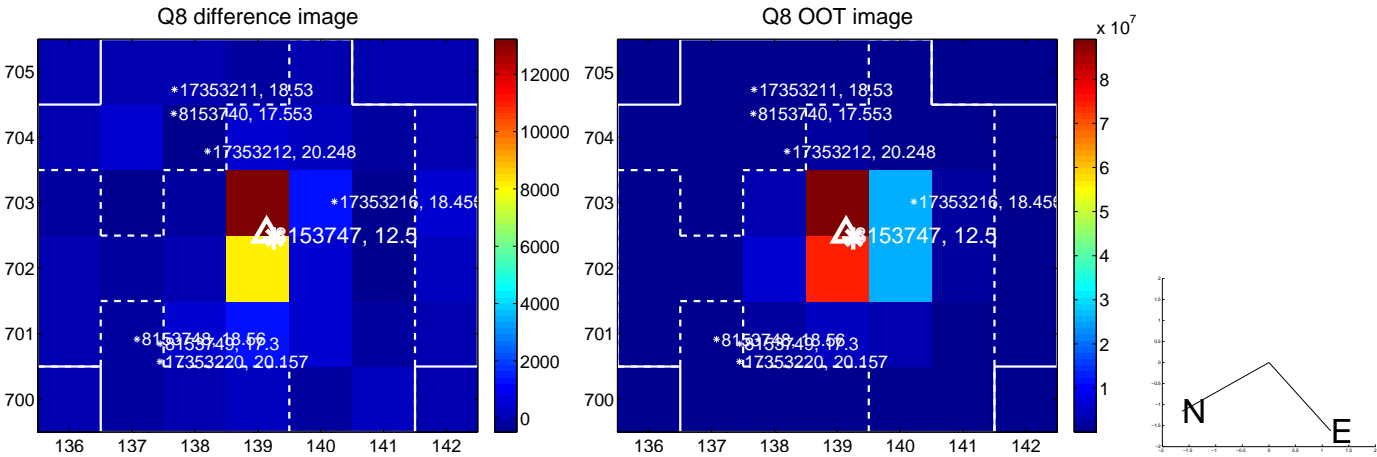
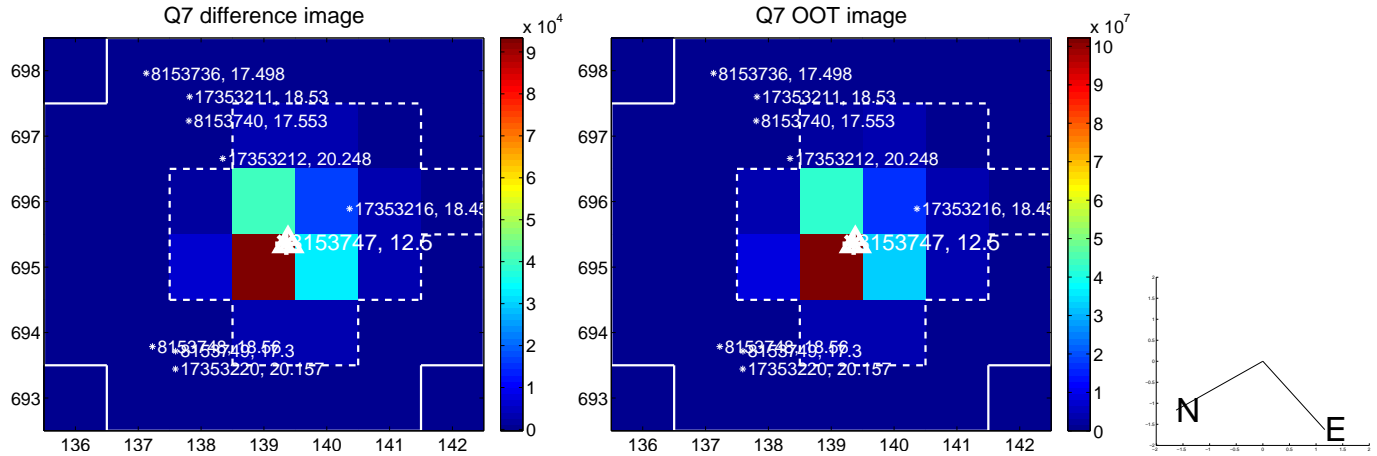
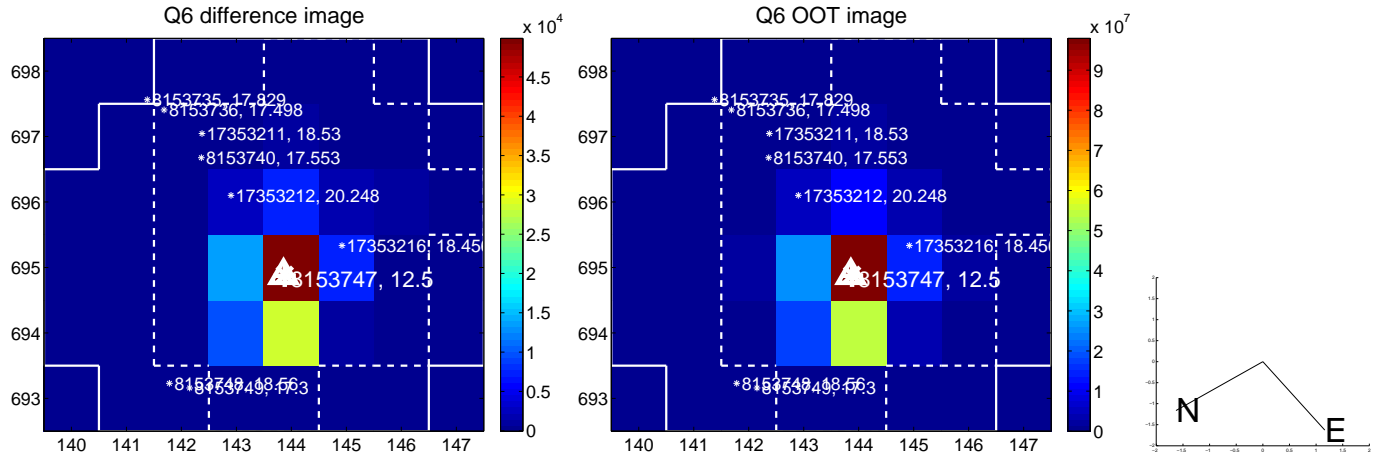
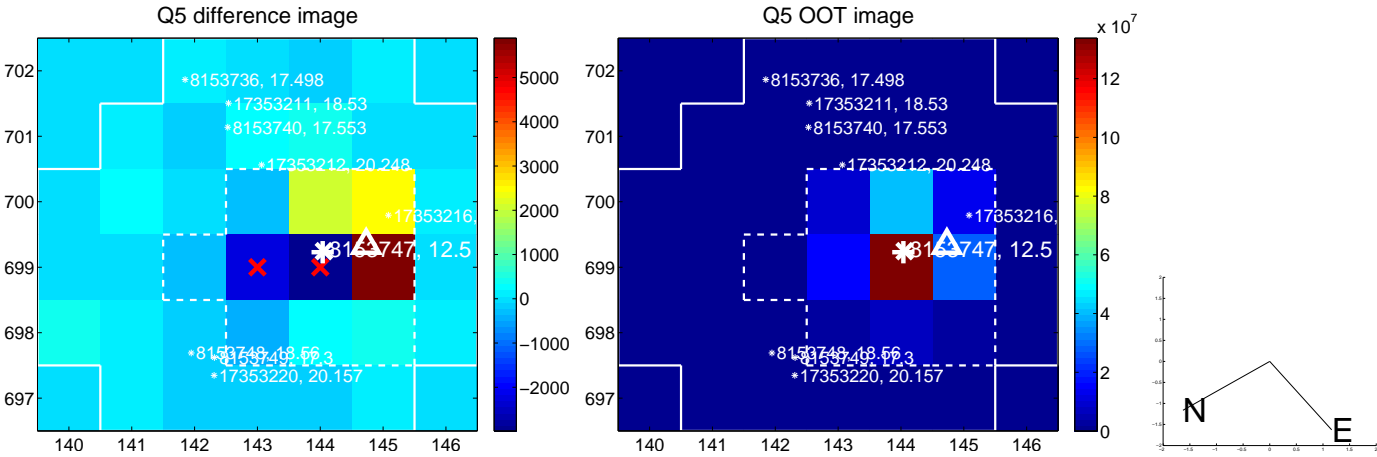


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

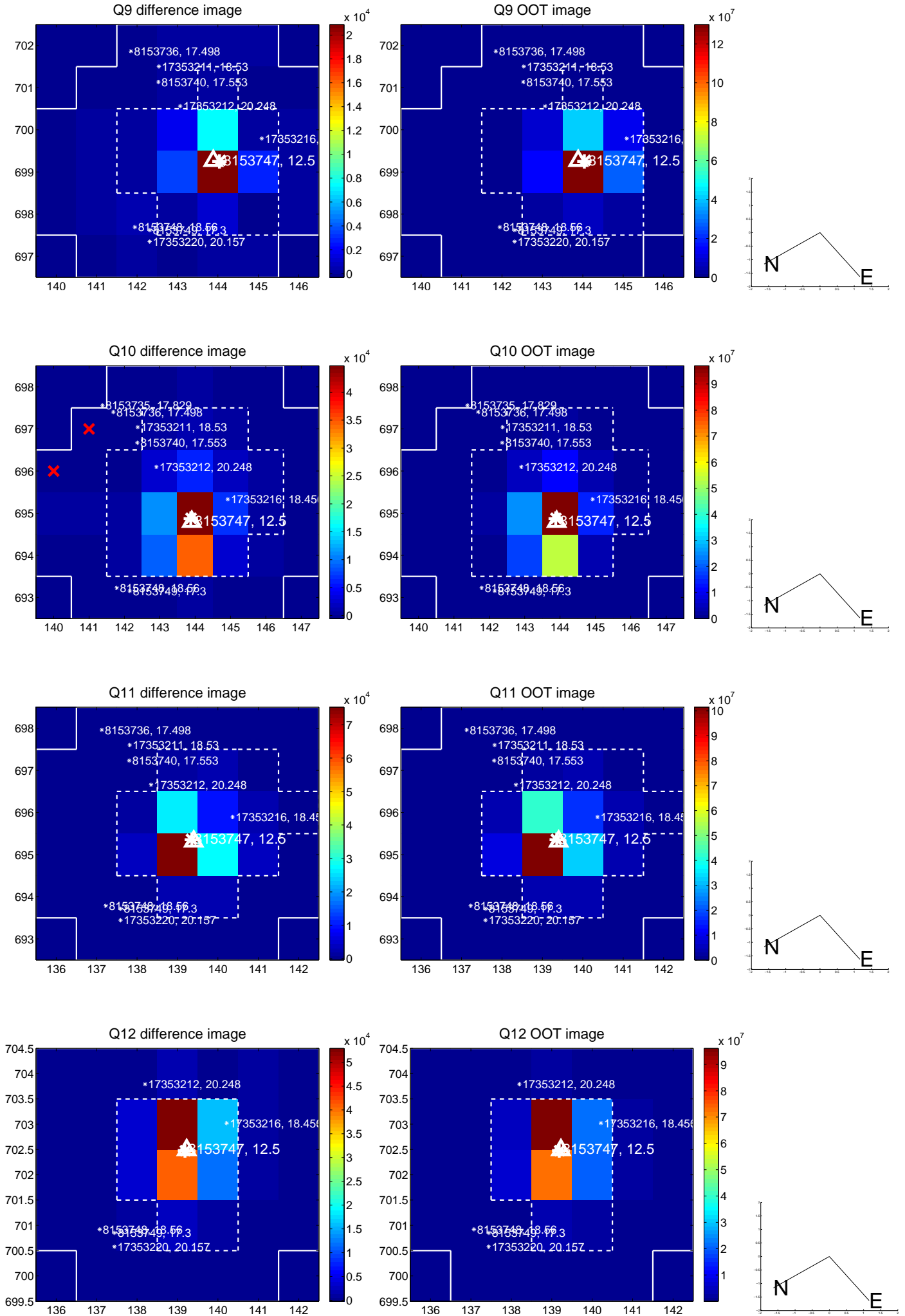
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



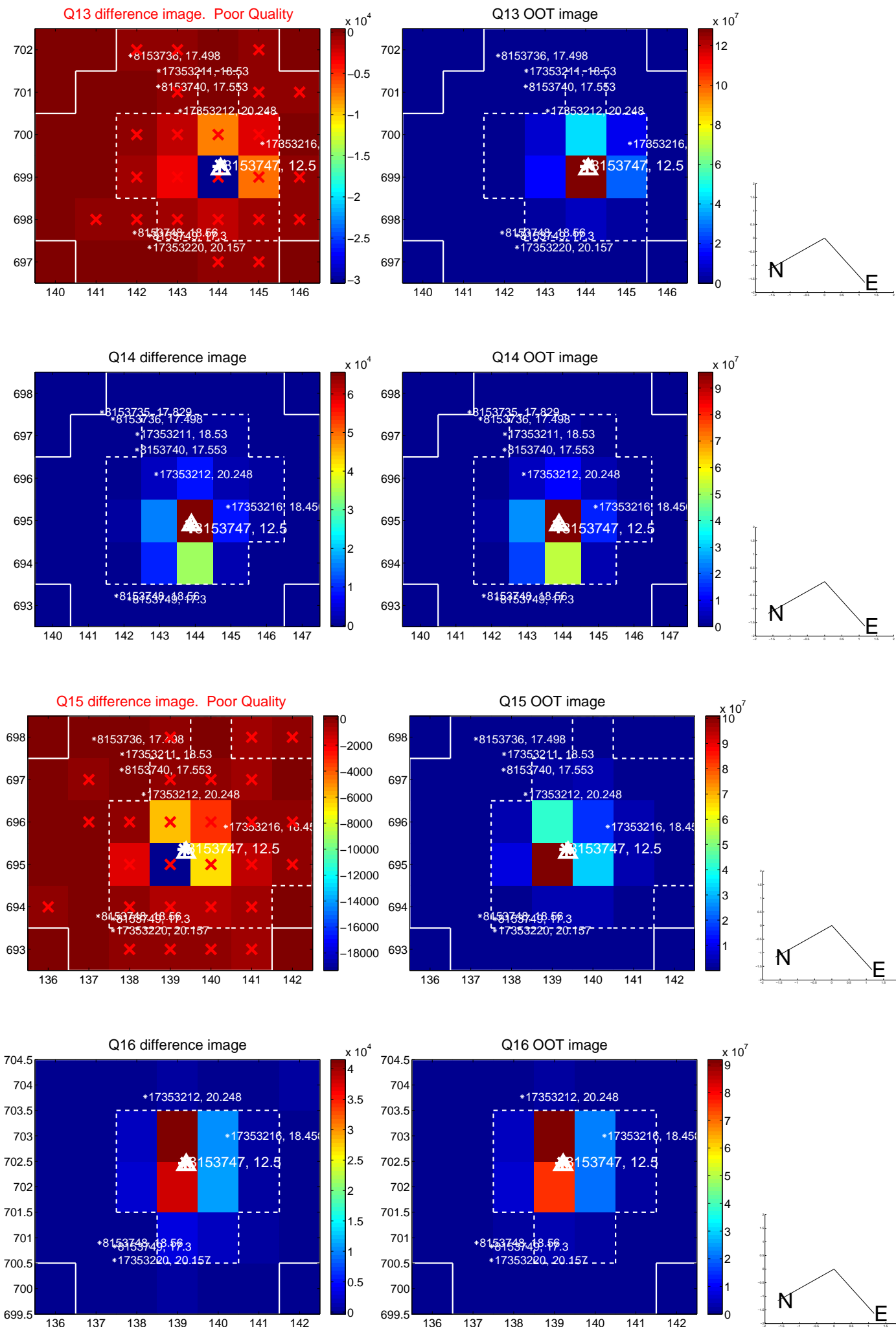
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



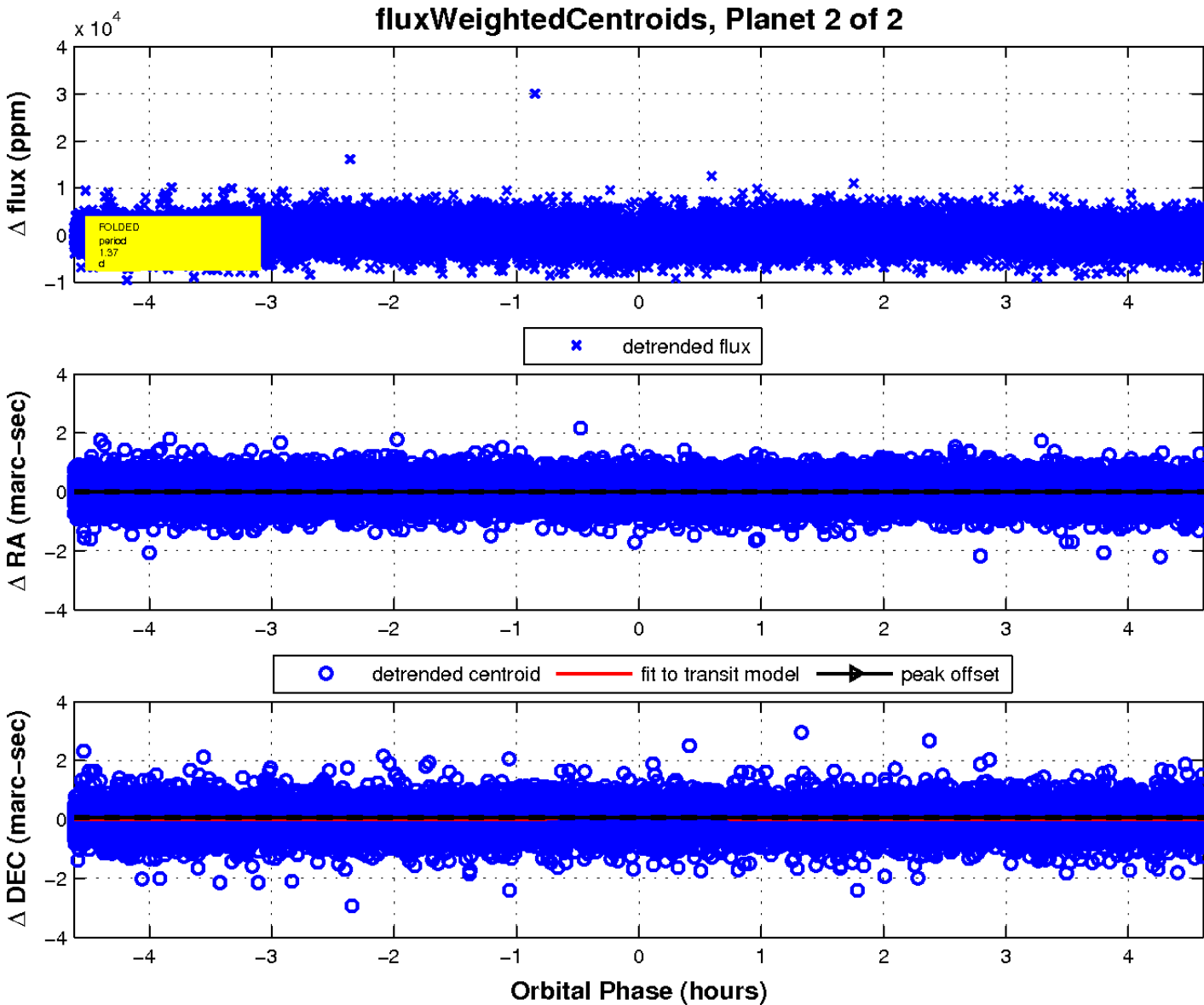
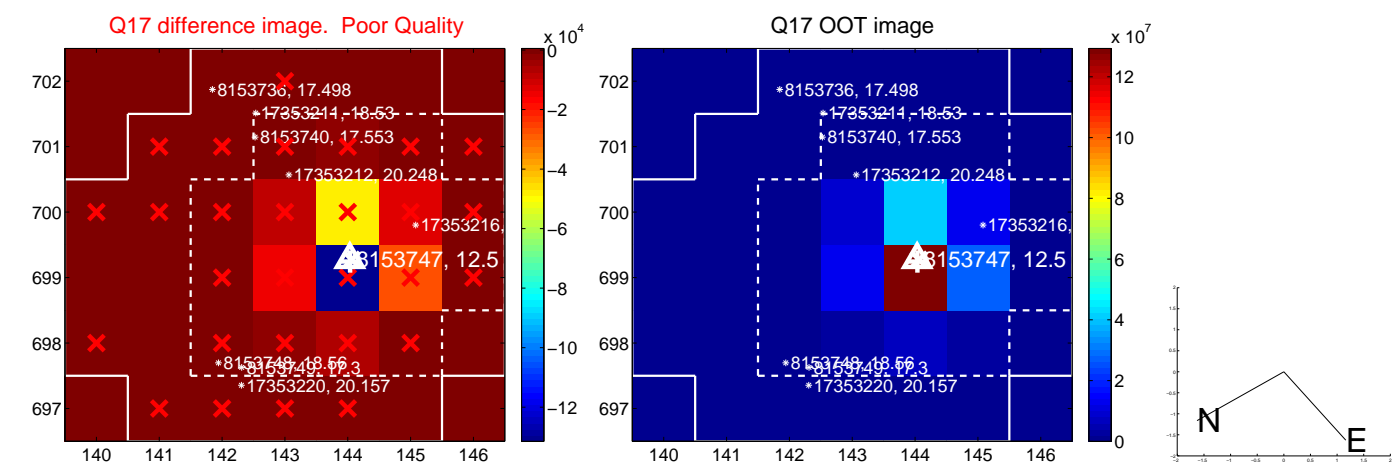
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

