

KIC 008737501

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})
008737501-01	OBS	No	1.081417	132.043655	4.2	6.275	9.6	11.0	2.93	8074	0.64	45092.85
008737501-02	OBS	No	73.800644	191.081002	55.5	1.677	9.7	8.7	2.93	8074	2.33	161.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008737501-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_SATURATED
008737501-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—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.

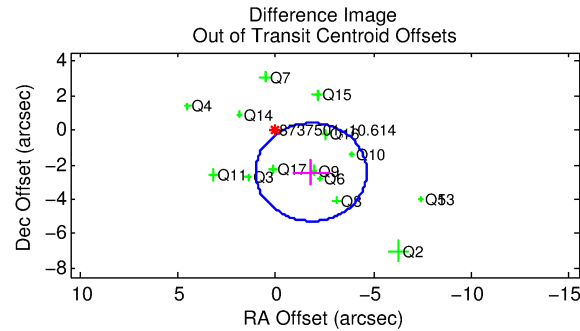
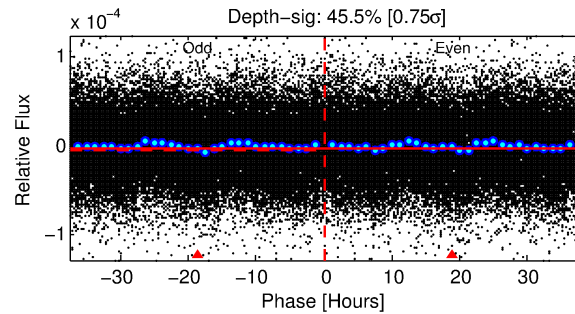
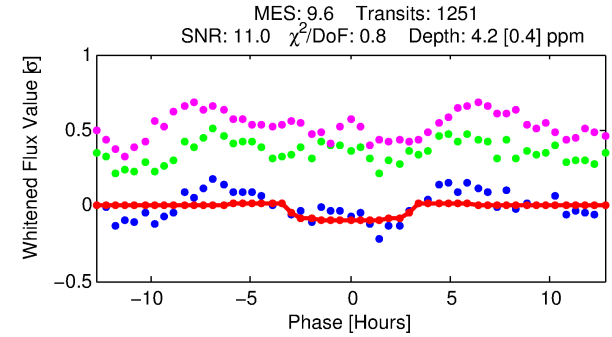
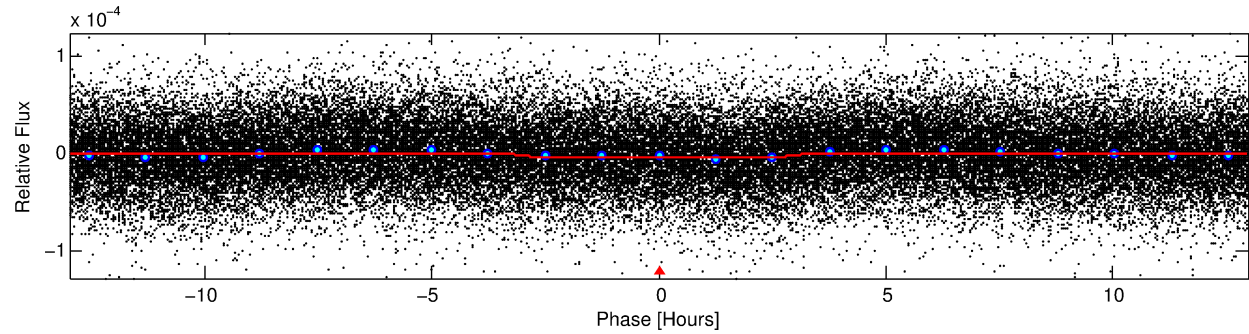
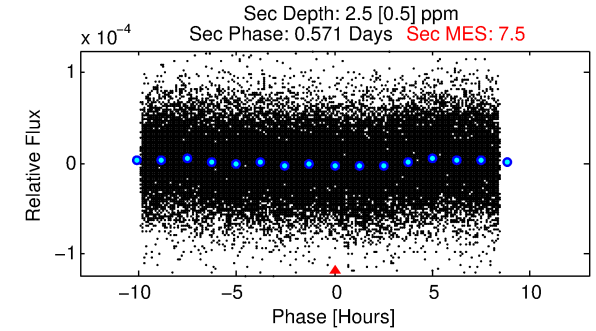
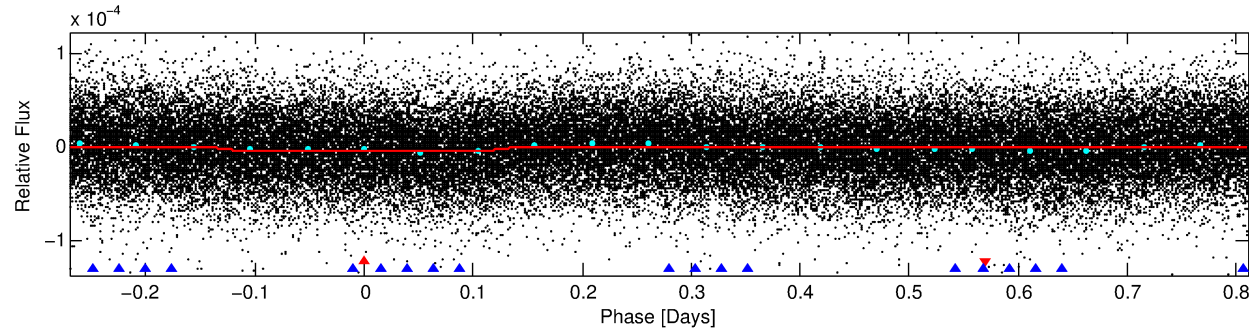
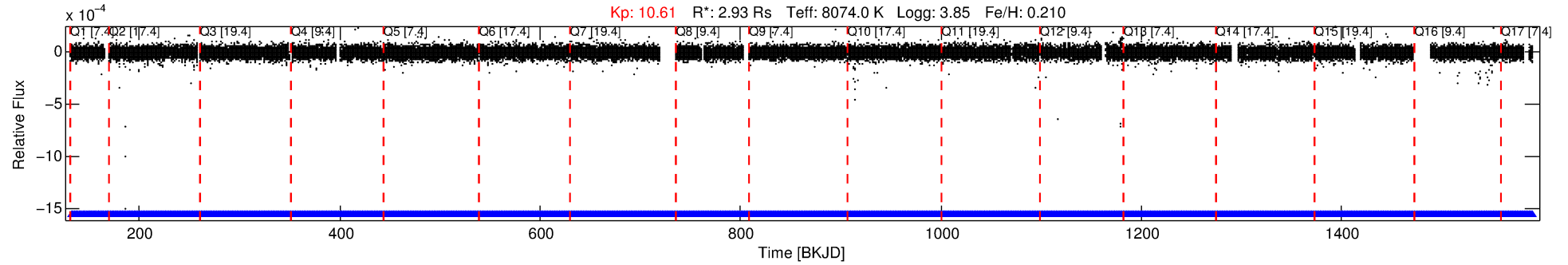
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008737501-01

No Significant Match Found

DV One-Page Summary

KIC: 8737501 Candidate: 1 of 2 Period: 1.081 d



DV Fit Results:

Period = 1.08142 [0.00001] d
Epoch = 132.0437 [0.0047] BKJD
Rp/R* = 0.0020 [0.0003]
a/R* = 1.28 [0.35]
b = 0.66 [0.60]
Seff = 45092.85 [24233.20]
Teq = 3716 [499] K
Rp = 0.64 [0.26] Re
a = 0.0269 [0.0090] AU
Ag = 2.50 [1.49] [1.00σ]
Teffp = 7221 [659] K [4.24σ]

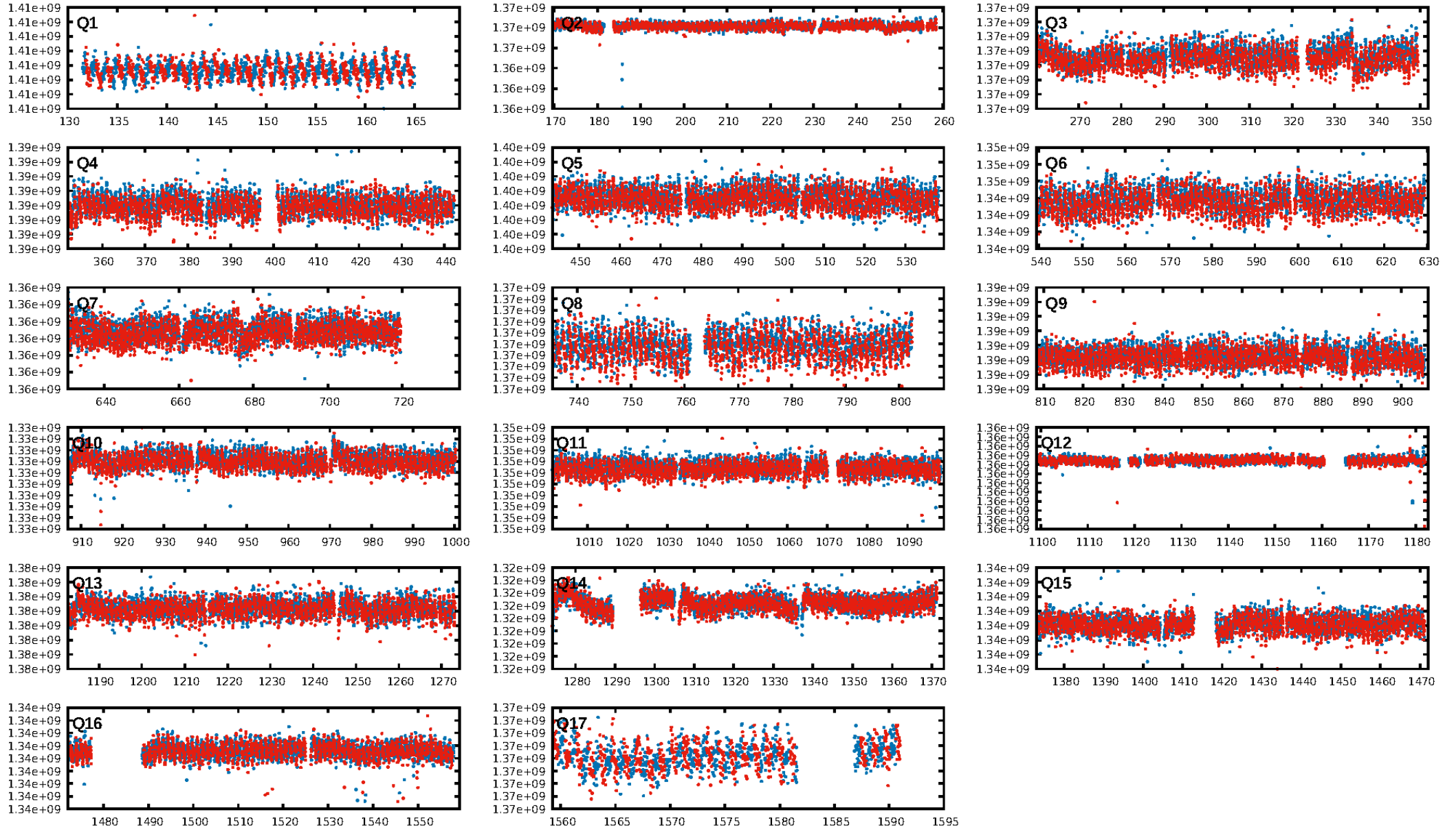
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [268.69σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.36e-12
RollingBand-fgt: 1.00 [1195/1195]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 3.032 arcsec [3.21σ]
KicOffset-rm: 2.491 arcsec [2.70σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.40 [6/15]
DiffImageOverlap-fno: 1.00 [17/17]

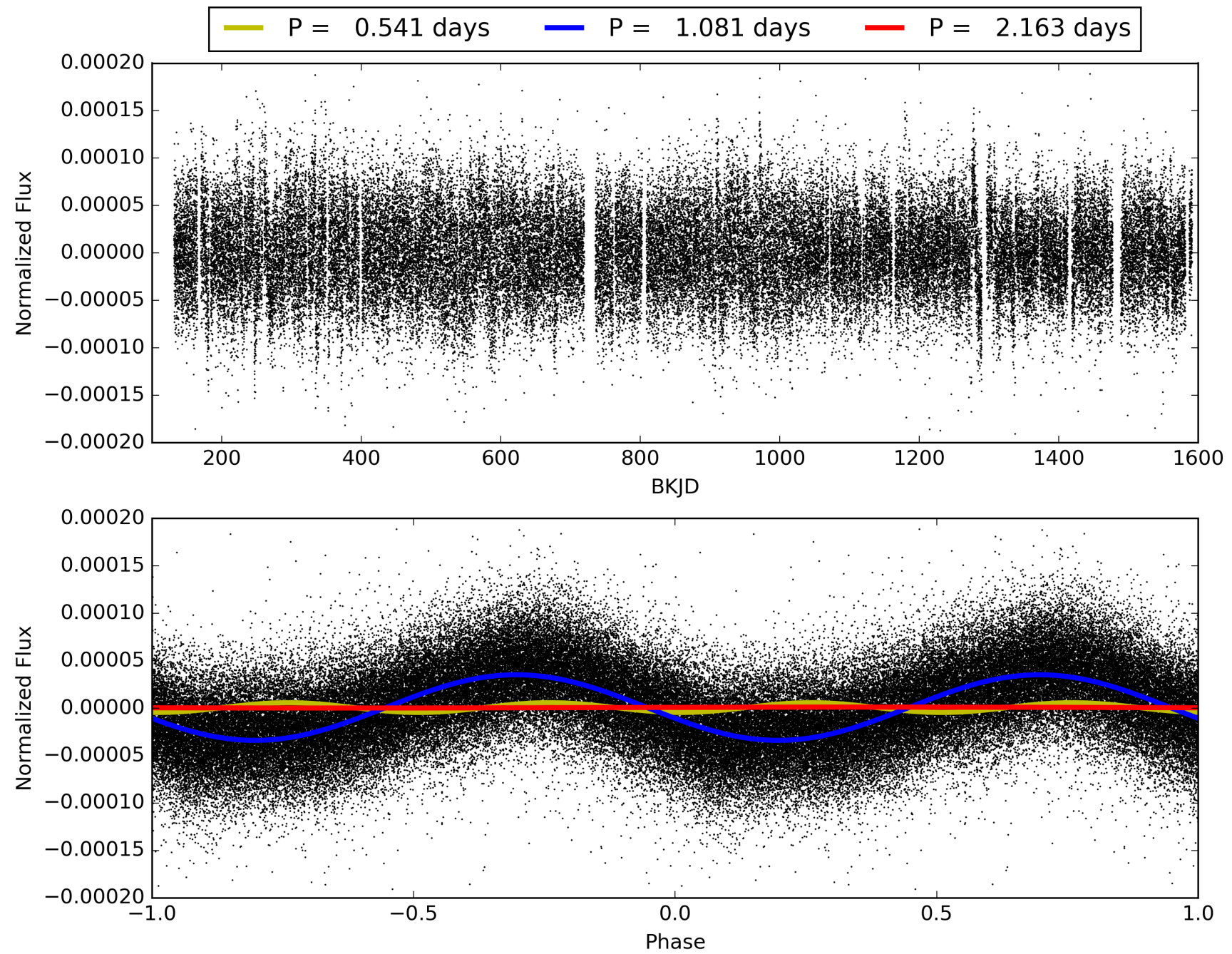
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:16:47 Z

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

TCE 008737501-01, PDC Light Curves

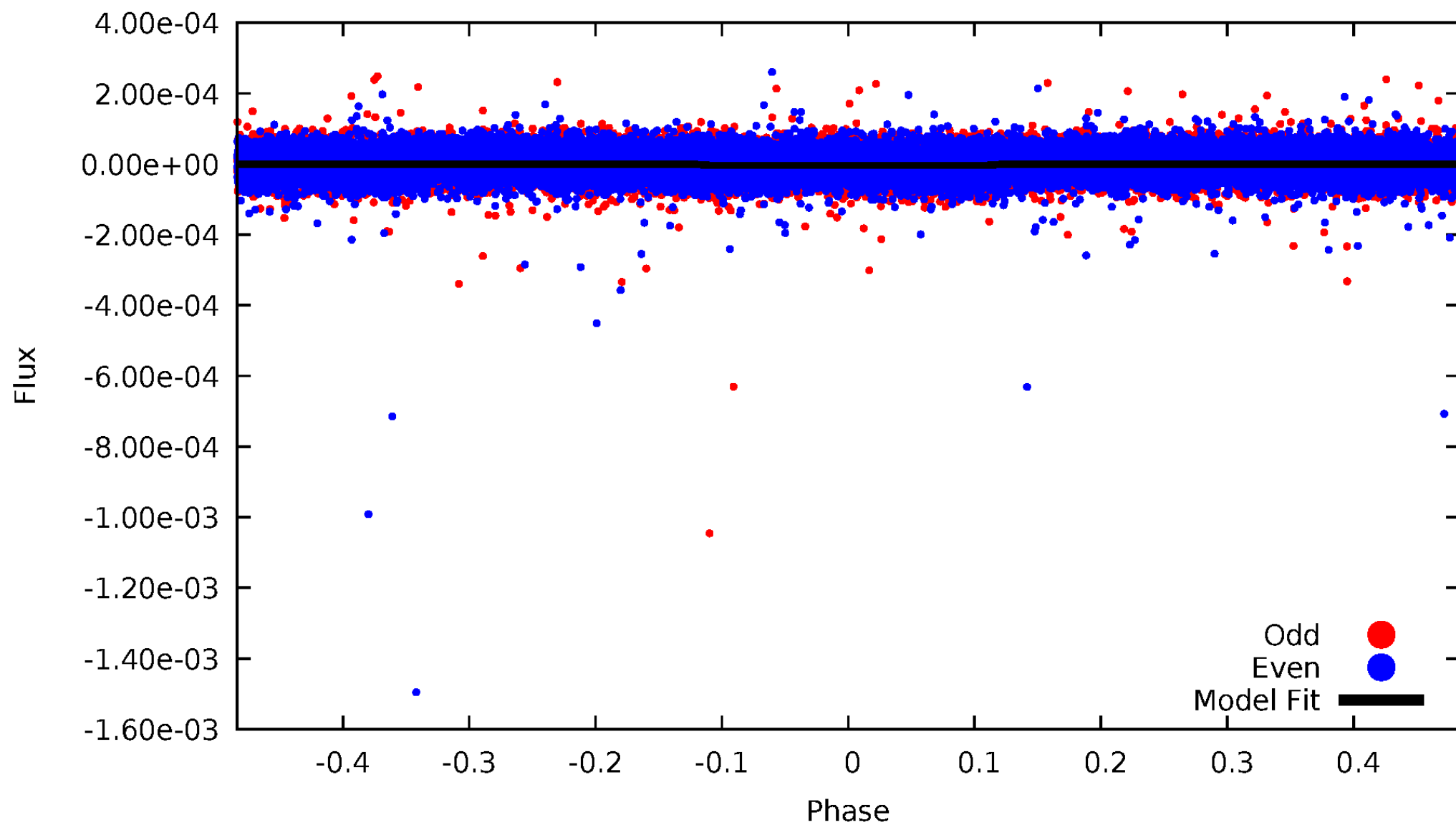


TCE 008737501-01



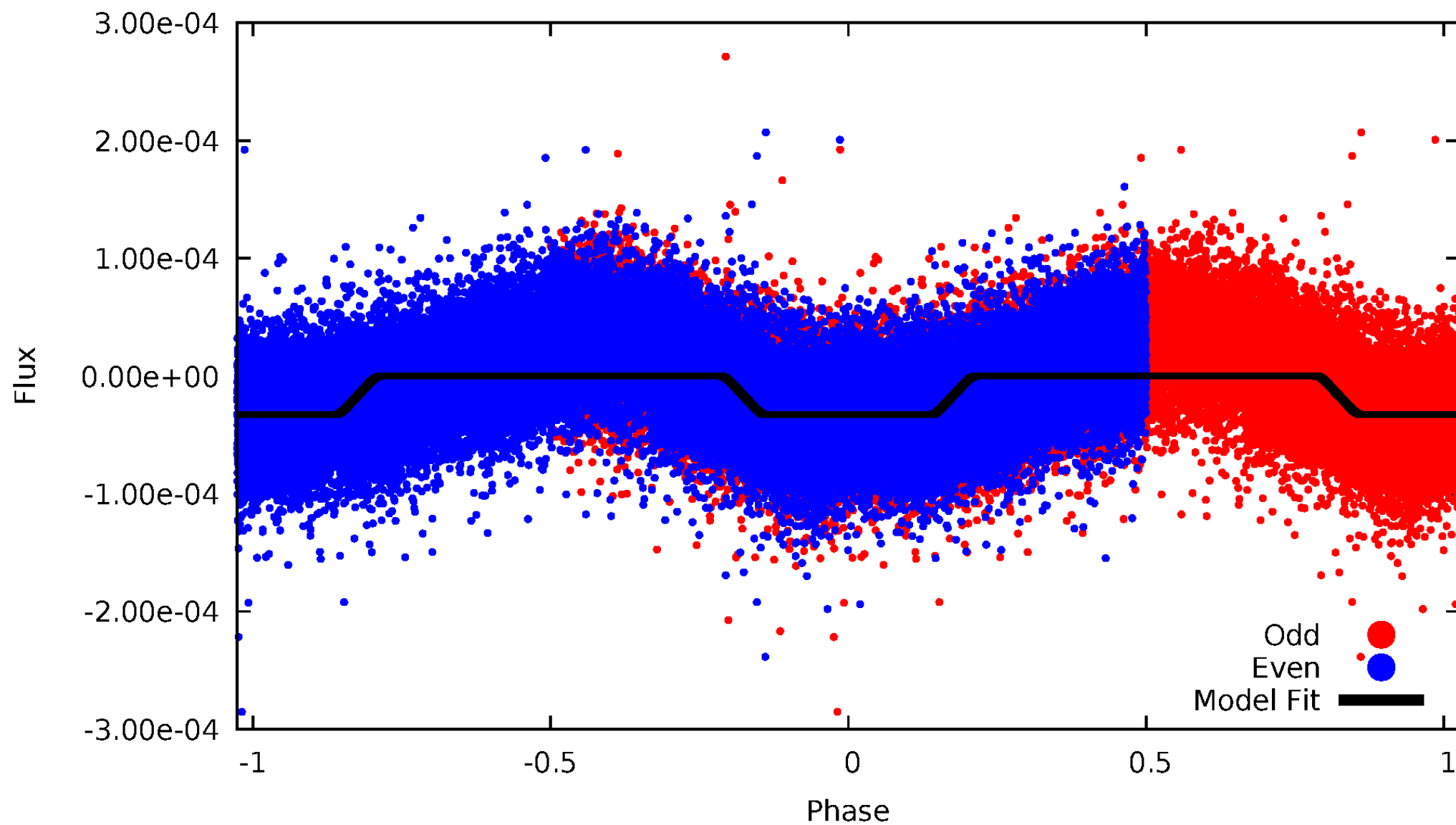
DV Odd/Even

TCE 008737501-01

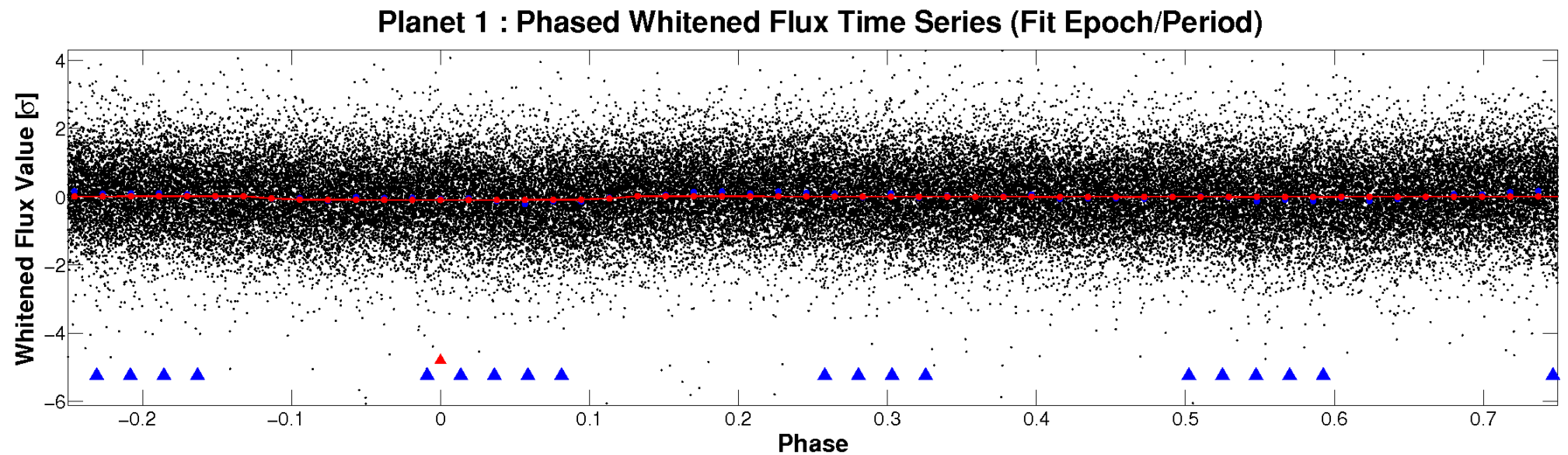
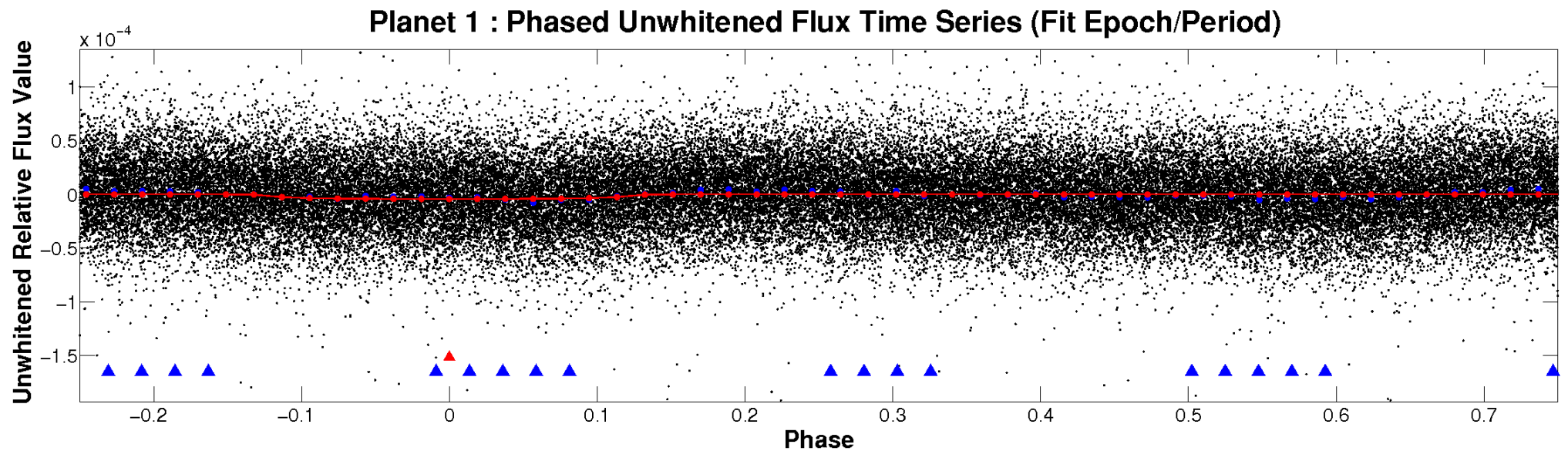


ALT Odd/Even

TCE 008737501-01

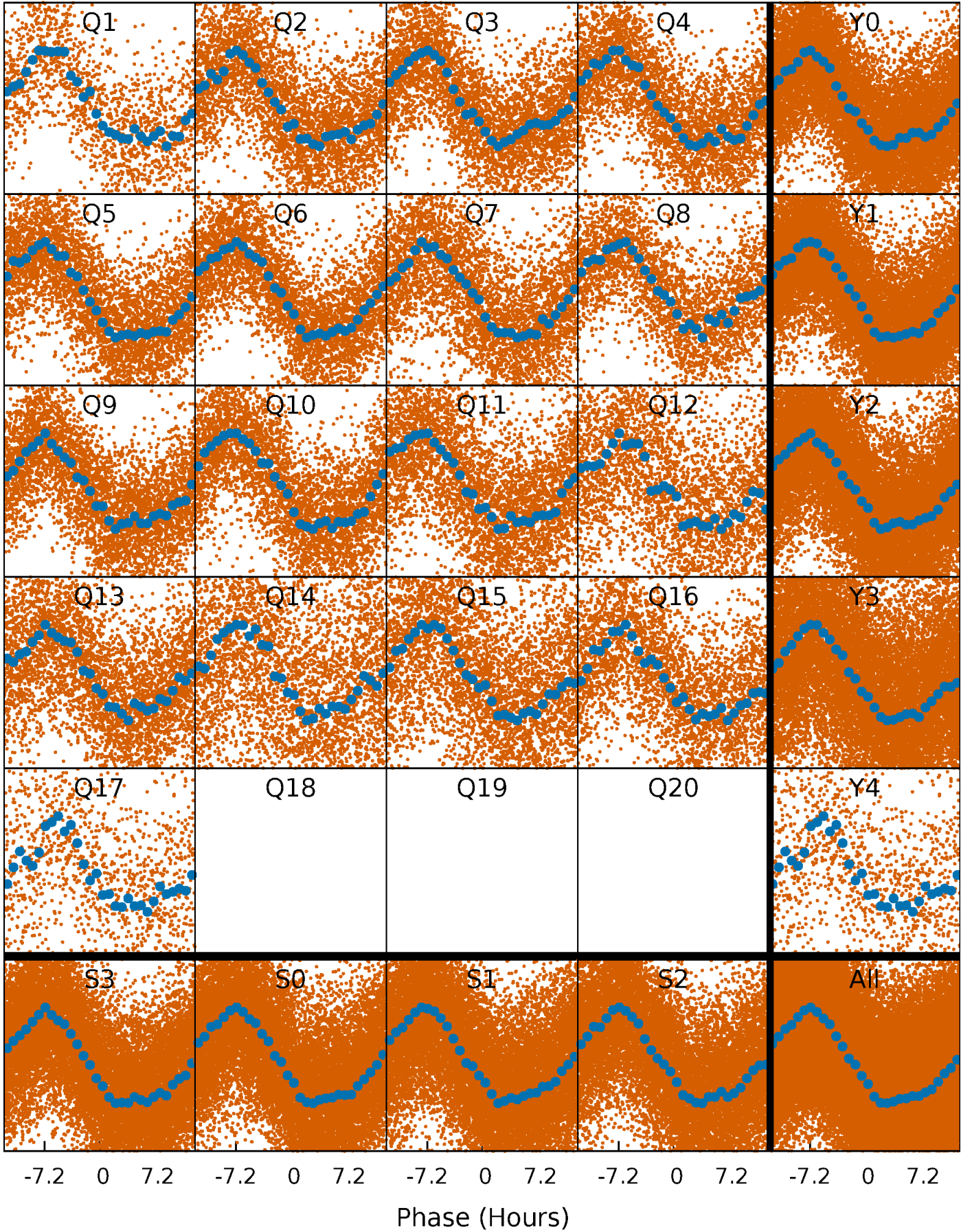


Non-Whitened Vs. Whitened Light Curve



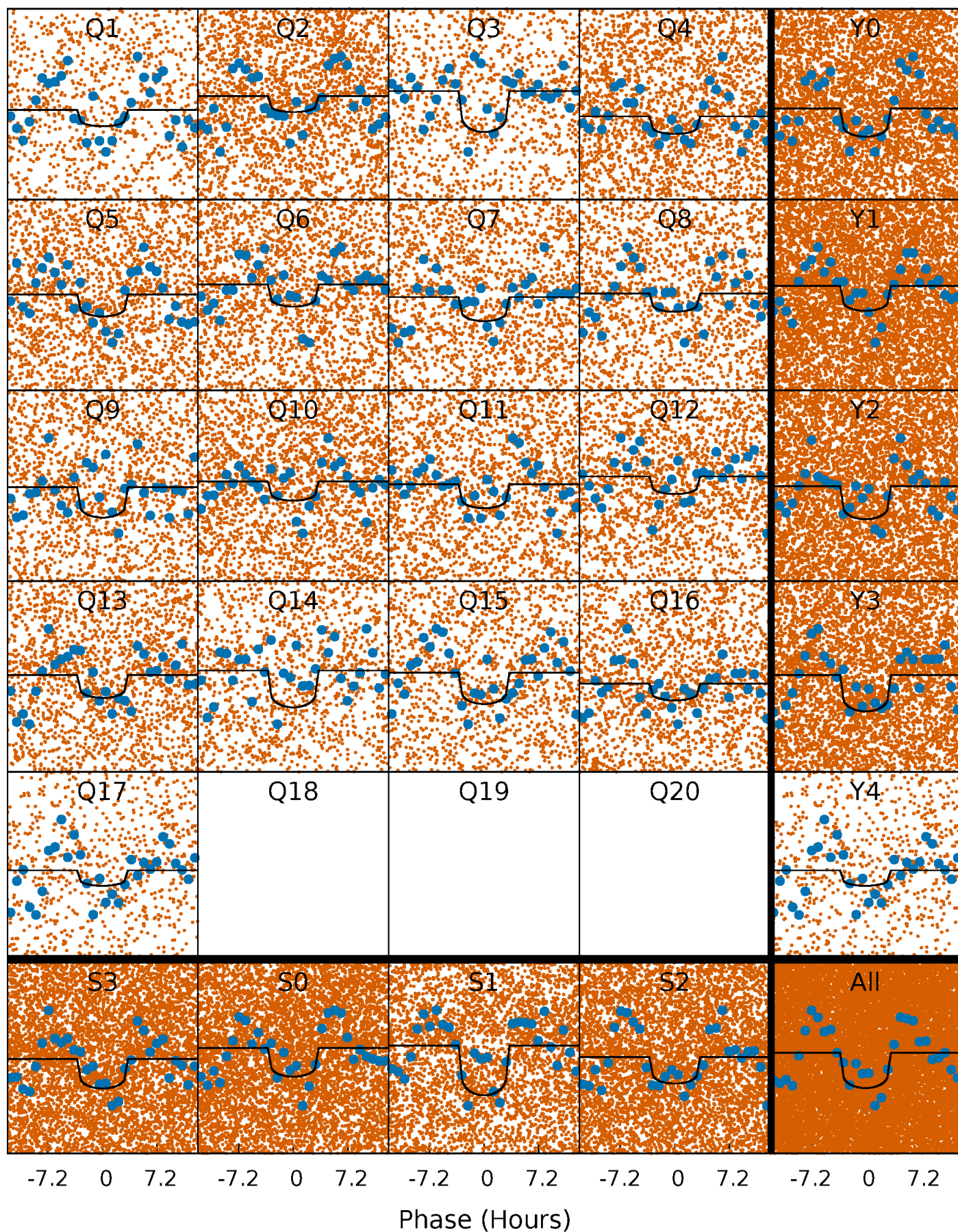
PDC Quarter-Phased Transit Curves

TCE 008737501-01 P= 1.081417 Days $T_0=132.043655$ (BKJD)



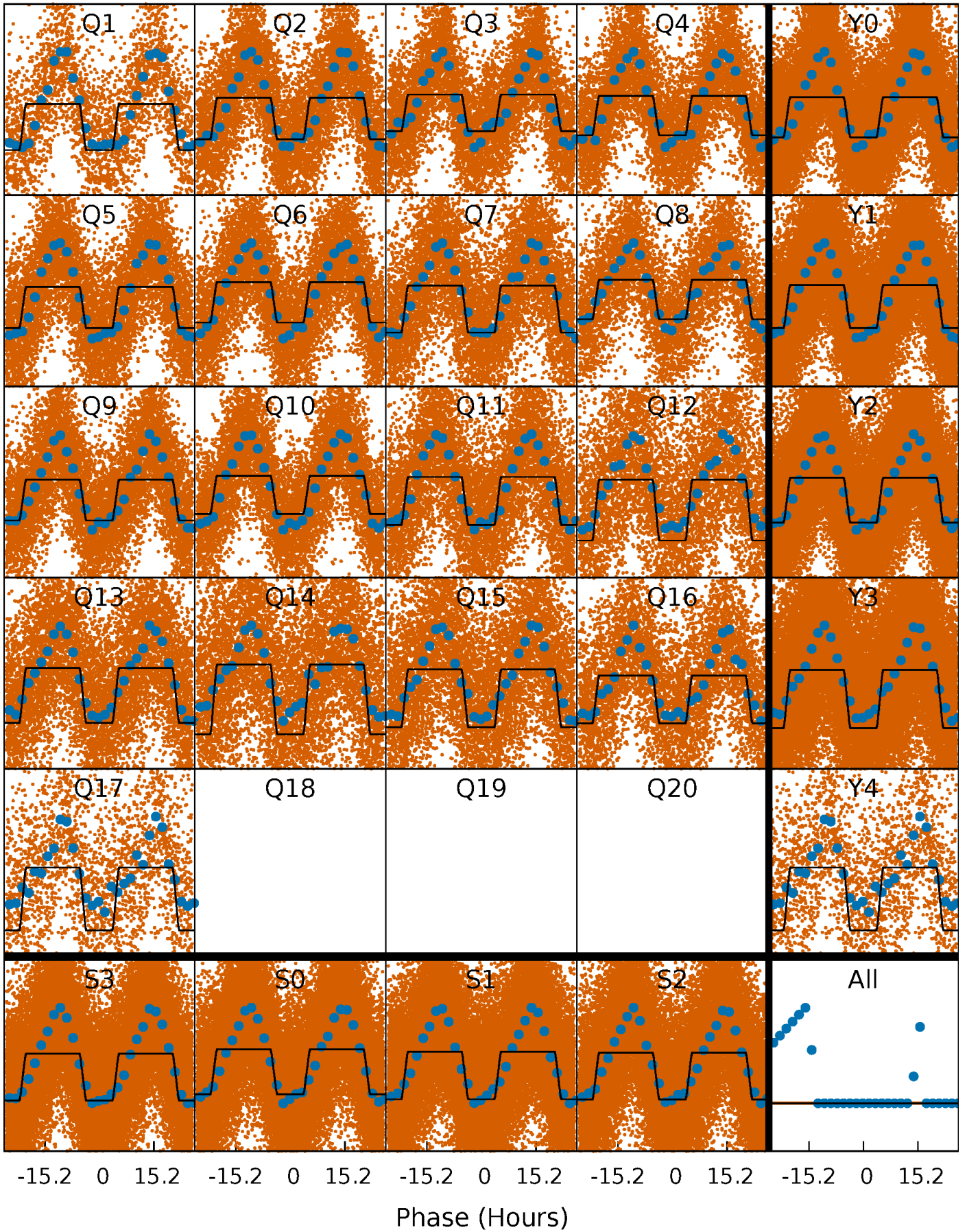
DV Quarter-Phased Transit Curves

TCE 008737501-01 P= 1.081417 Days $T_0=132.043655$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

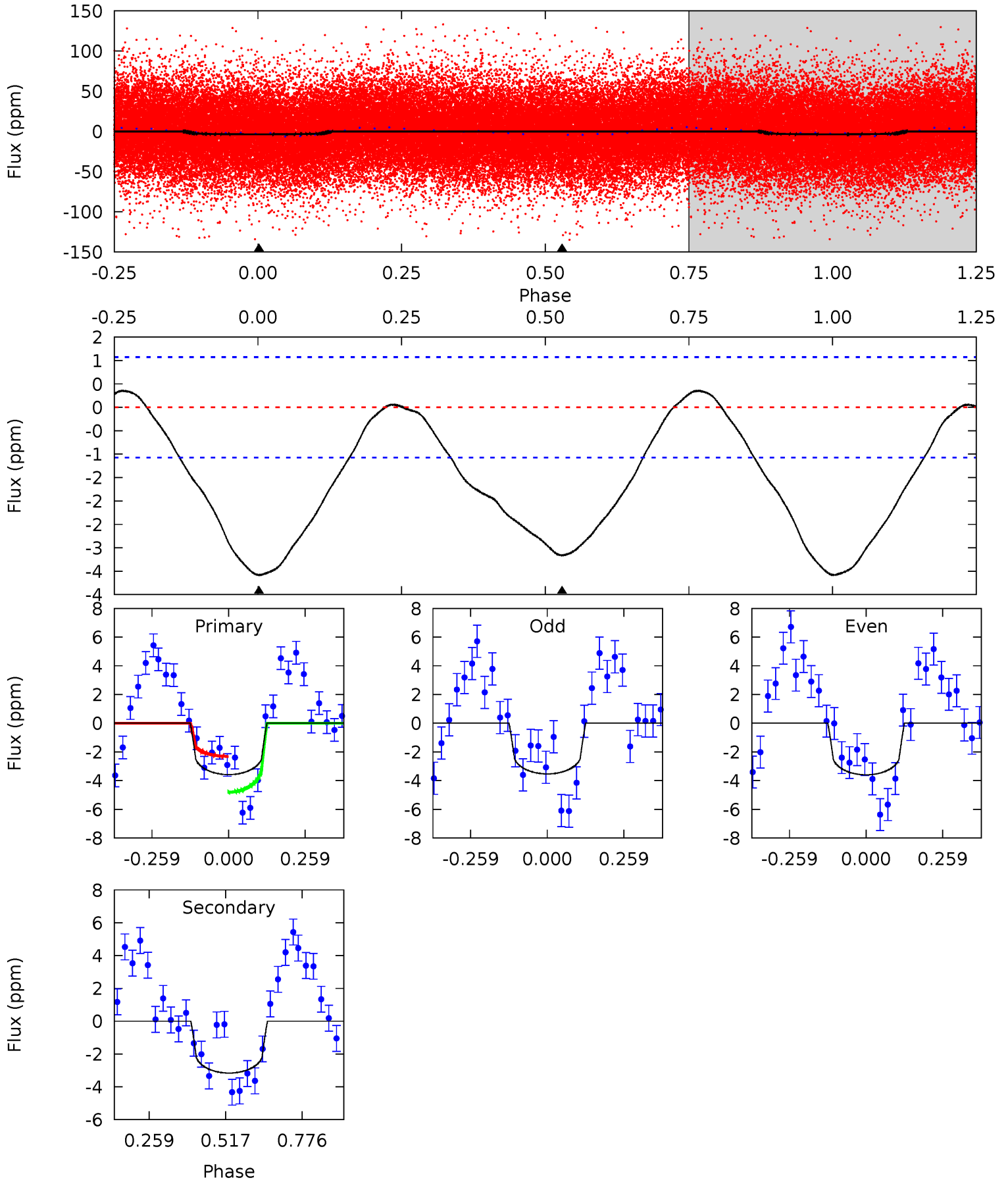
TCE 008737501-01 P= 1.081439 Days $T_0=132.200767$ (BKJD)



DV Model-Shift Uniqueness Test

008737501-01, P = 1.081417 Days, E = 130.962238 Days

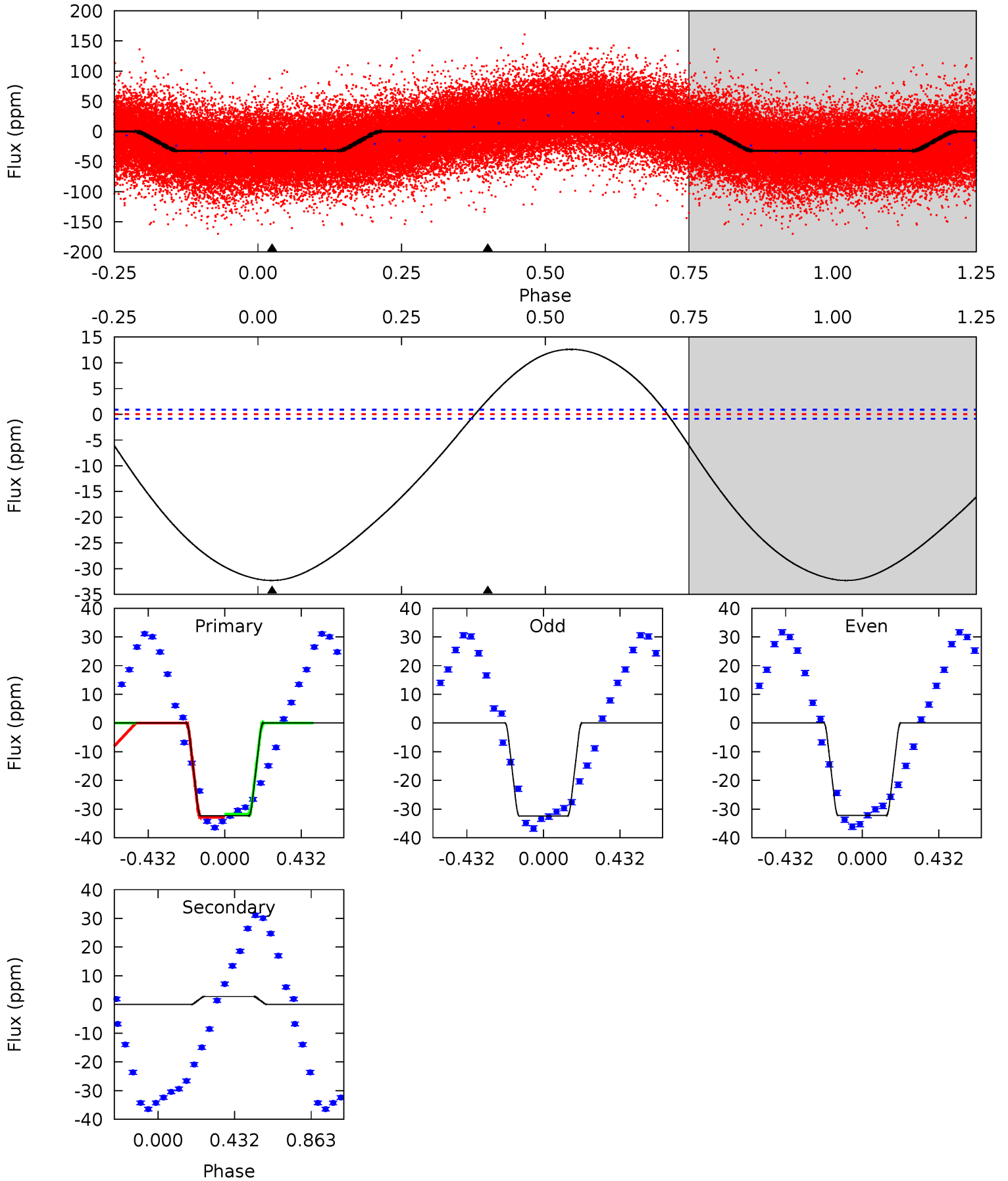
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	12.9	0	0	4.36	1.13	0.96	14.6	14.6	12.9	12.9	0.13	1.07	0.09	5.06



Alt Model-Shift Uniqueness Test

008737501-01, P = 1.081439 Days, E = 131.119328 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
157.3	-13.6	0	0	4.25	0.79	21.3	157.3	157.3	-13.6	-13.6	0.44	1.02	0.28	2.53



Stellar Parameters For KIC 008737501

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8074^{+222}_{-361}	$3.851^{+0.286}_{-0.154}$	$0.210^{+0.150}_{-0.450}$	$2.926^{+0.833}_{-1.111}$	$2.213^{+0.306}_{-0.569}$	$0.124^{+0.276}_{-0.054}$
	+3%/-4%	+7%/-4%	+71%/-214%	+28%/-38%	+14%/-26%	+222%/-43%
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 008737501-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3 ± 0	$0.62^{+0.14}_{-0.14}$	5106^{+441}_{-463}	7277^{+729}_{-600}	$3.263^{+1.922}_{-1.037}$
Alt.	3 ± 0	$1.81^{+0.30}_{-0.37}$	5140^{+411}_{-477}	-5038^{+215}_{-213}	$-0.338^{+0.086}_{-0.149}$

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

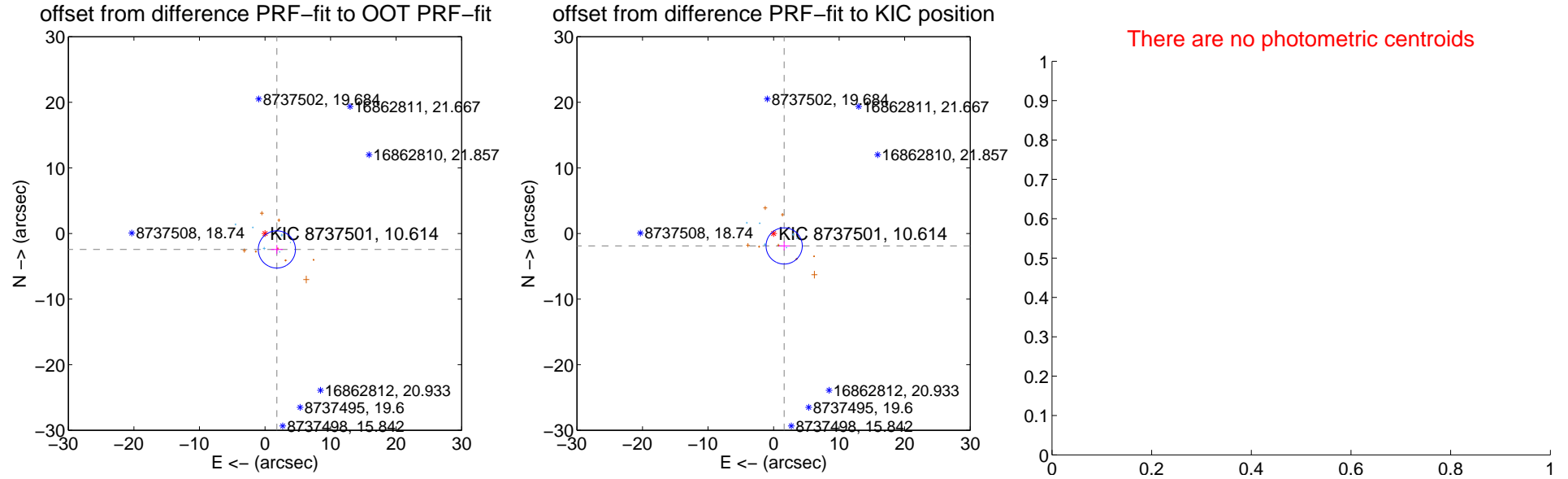
DV Centroid Data

Supplemental centroid analysis for 008737501-01. **Kepler magnitude: 10.61.** Transit SNR 10.96

There are 6 quarters with good PRF difference image offsets

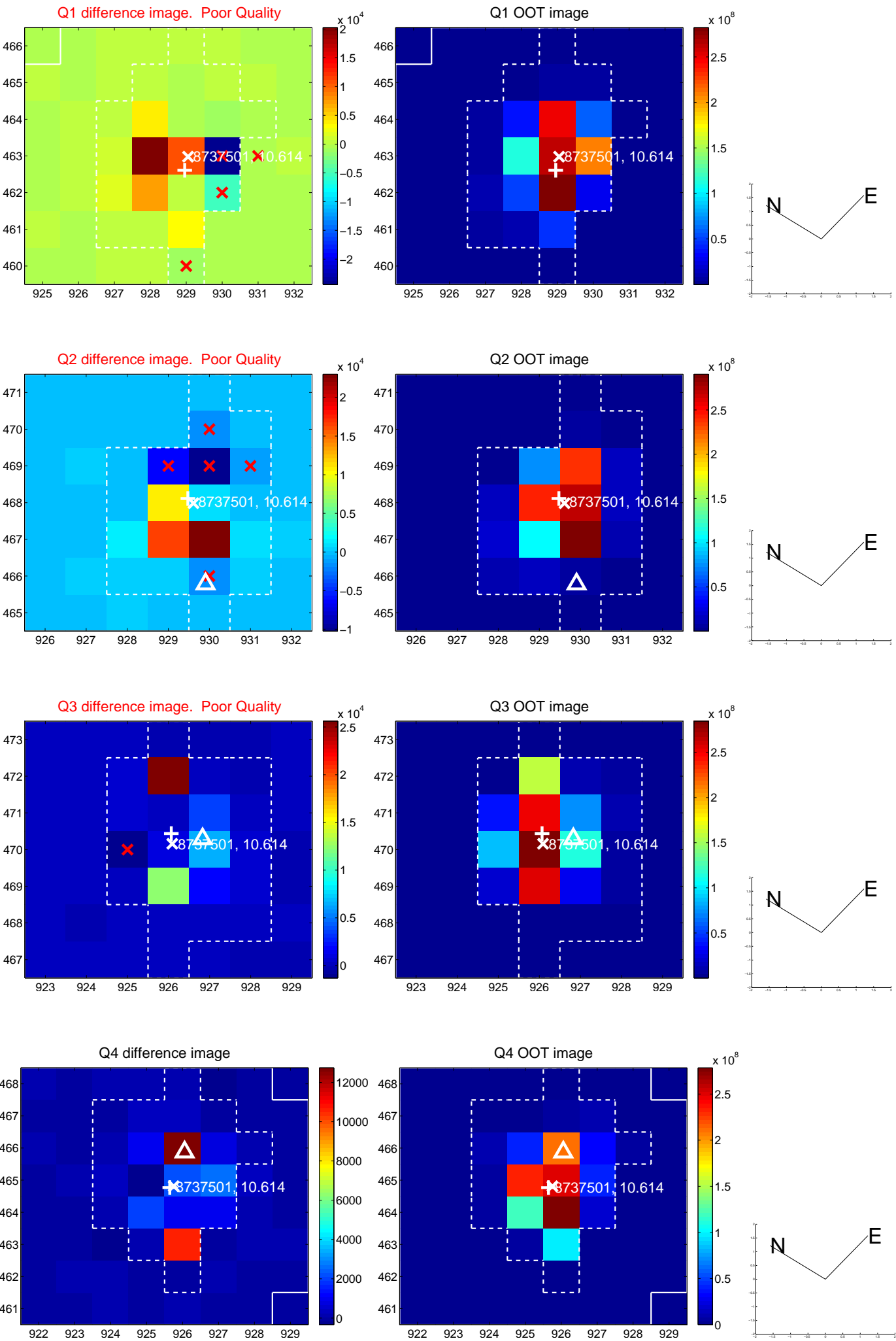
The direct PRF centroid is offset from the target star catalog position by about 1.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.032 ± 0.945	3.21	-1.809 ± 0.898	-2.433 ± 0.684
PRF-fit source offset from KIC position	2.491 ± 0.921	2.70	-1.614 ± 0.845	-1.898 ± 0.667
photometric centroid source offset	—	—	—	—

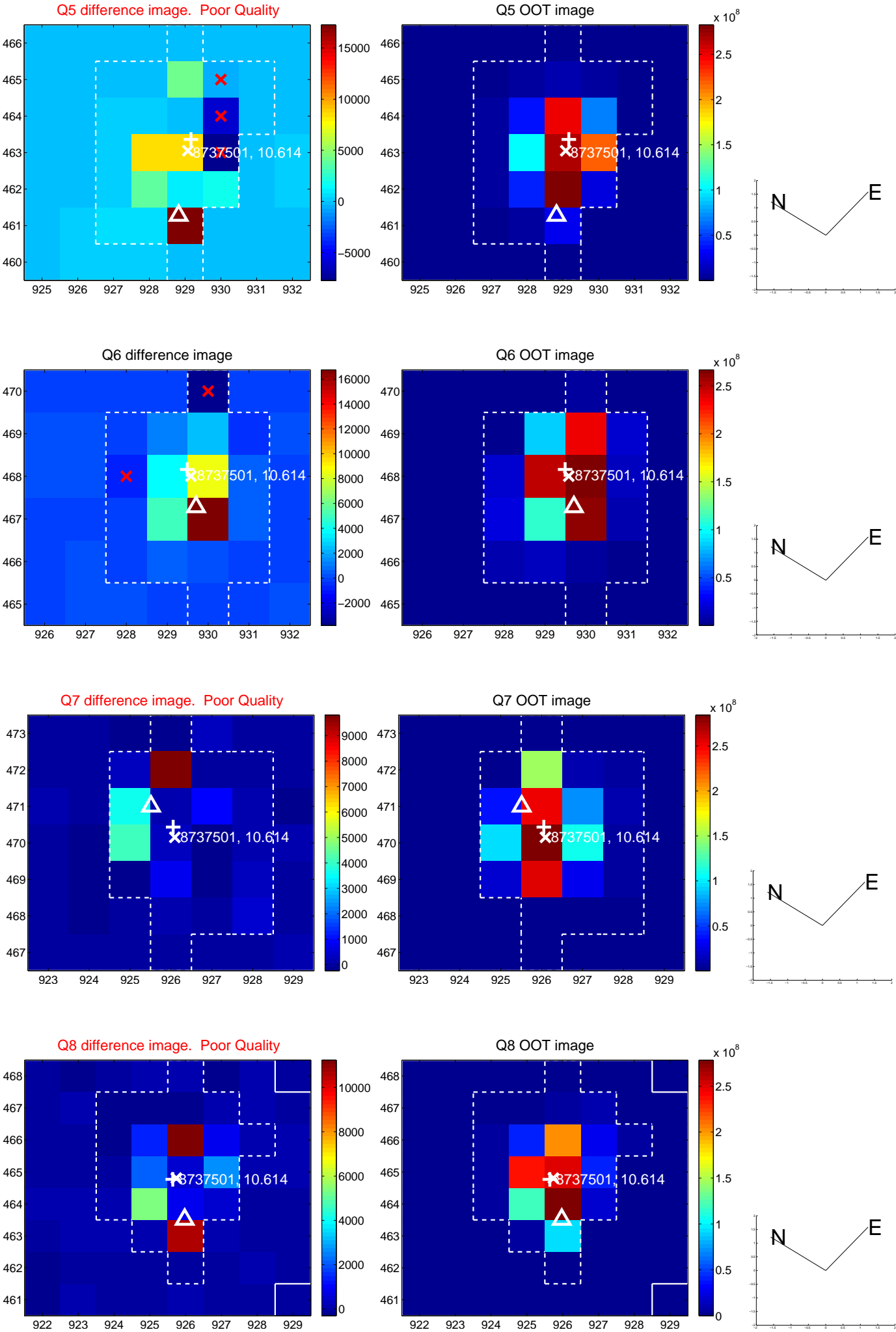


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

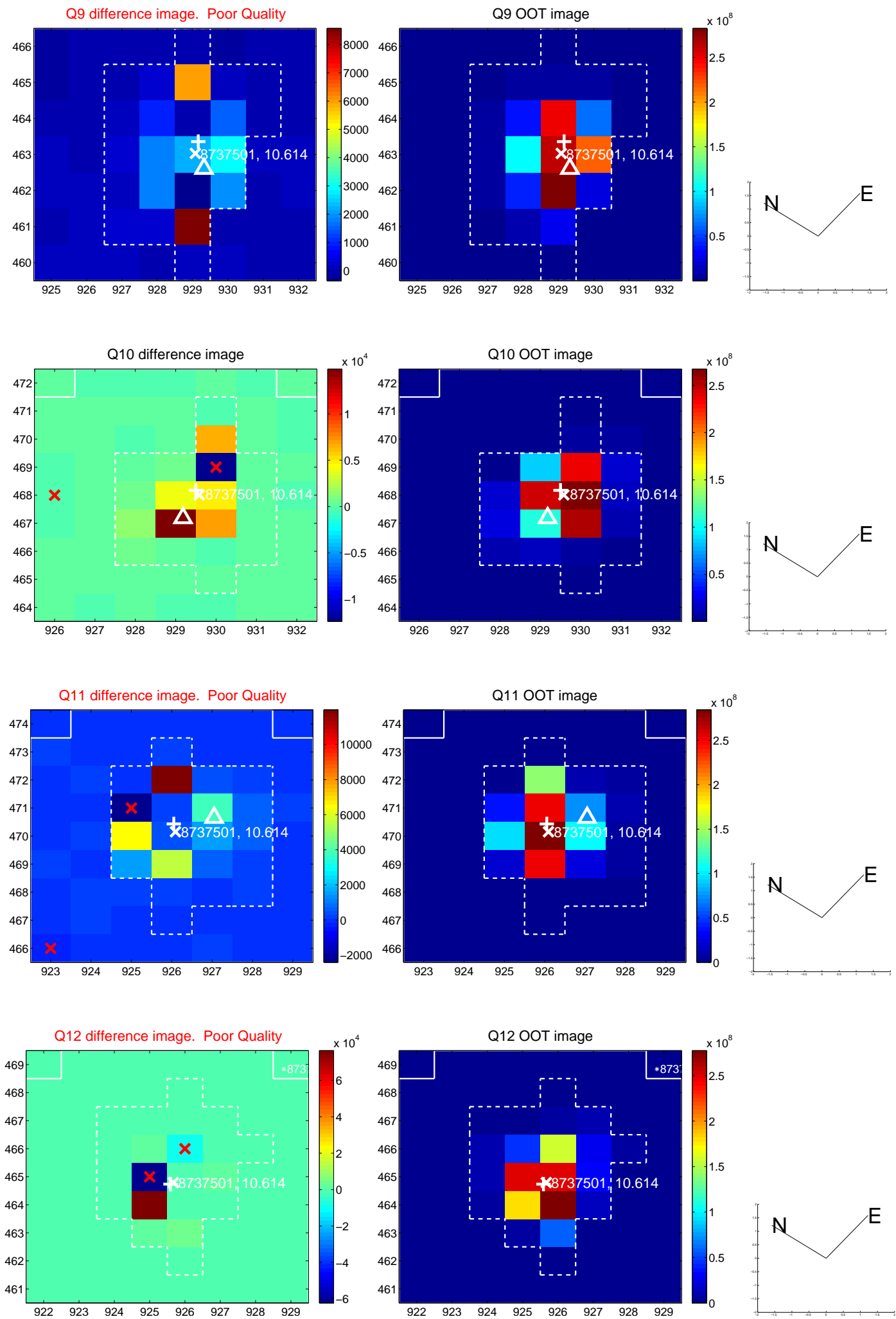
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



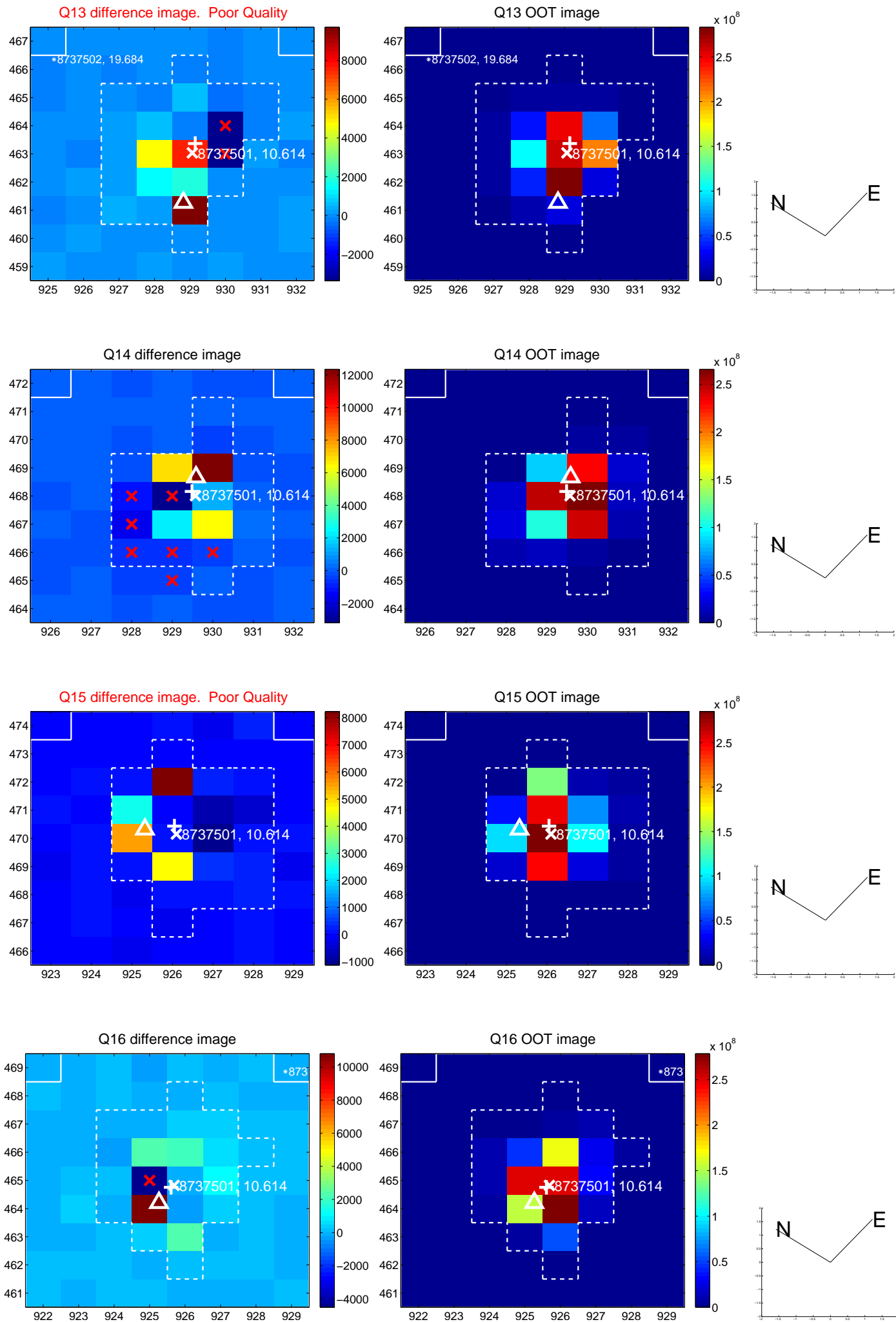
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



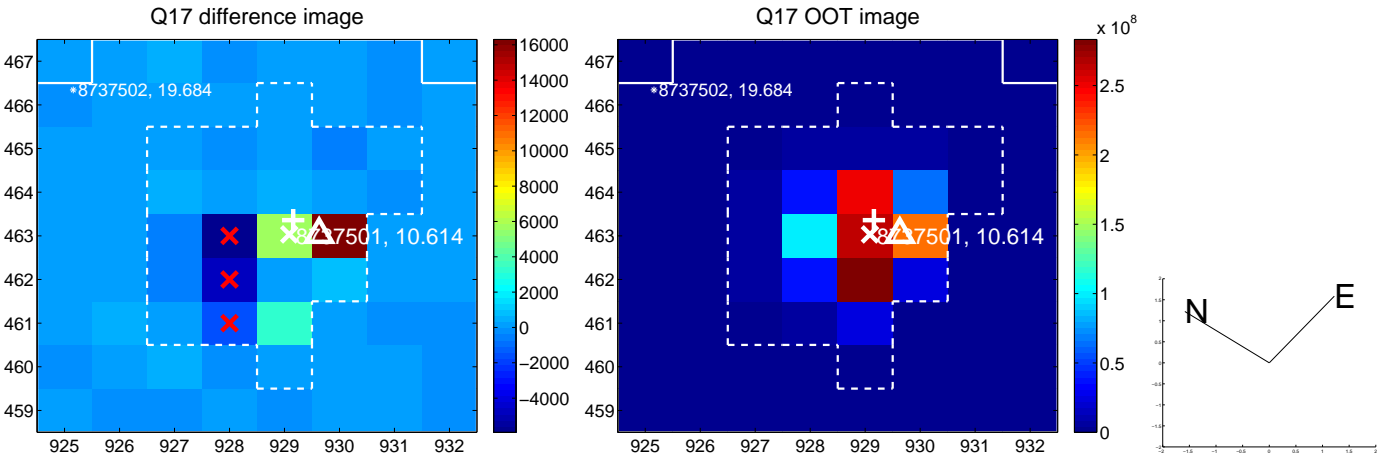
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



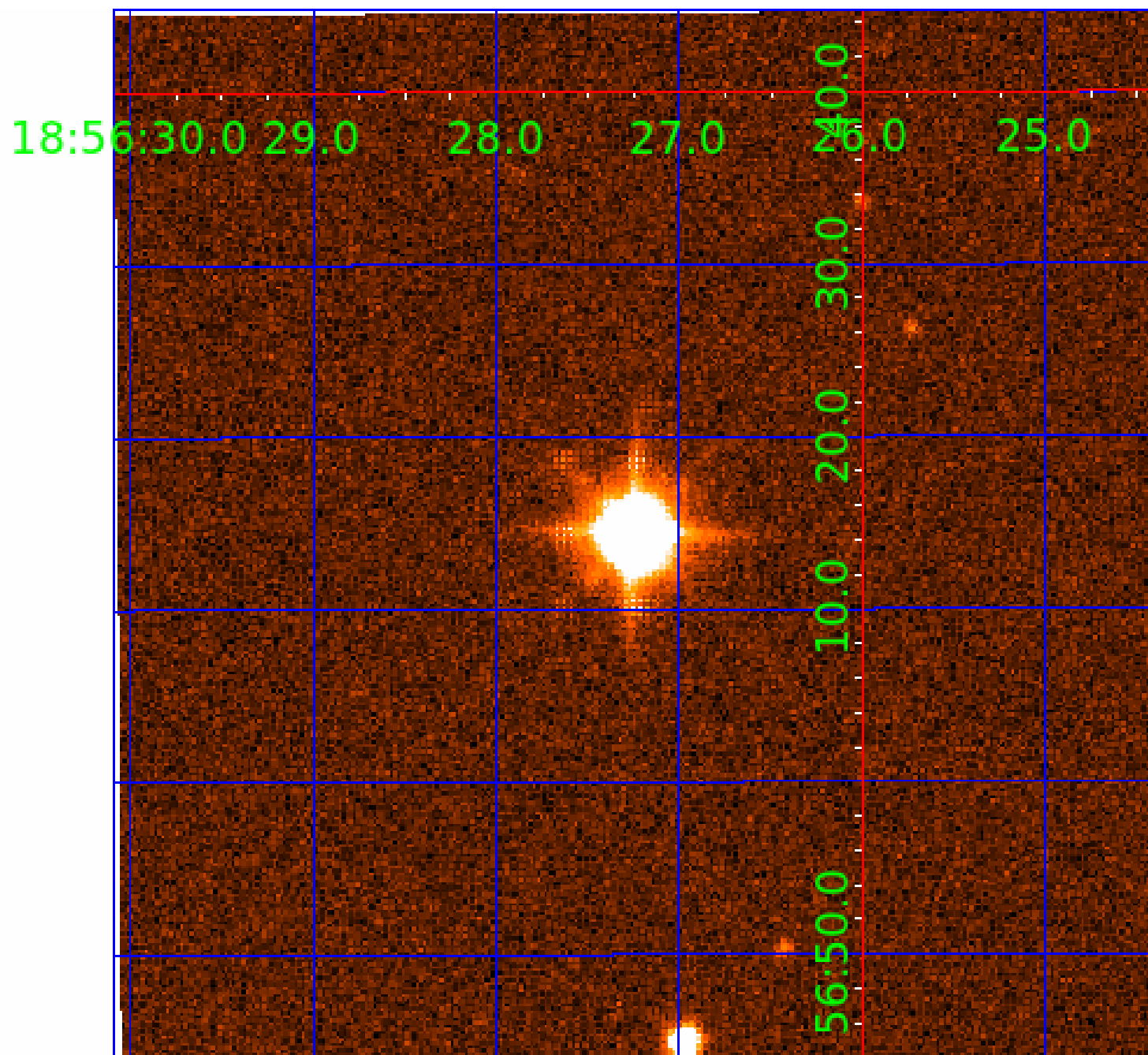
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 008737501

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})
008737501-01	OBS	No	1.081417	132.043655	4.2	6.275	9.6	11.0	2.93	8074	0.64	45092.85
008737501-02	OBS	No	73.800644	191.081002	55.5	1.677	9.7	8.7	2.93	8074	2.33	161.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008737501-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_SATURATED
008737501-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—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.

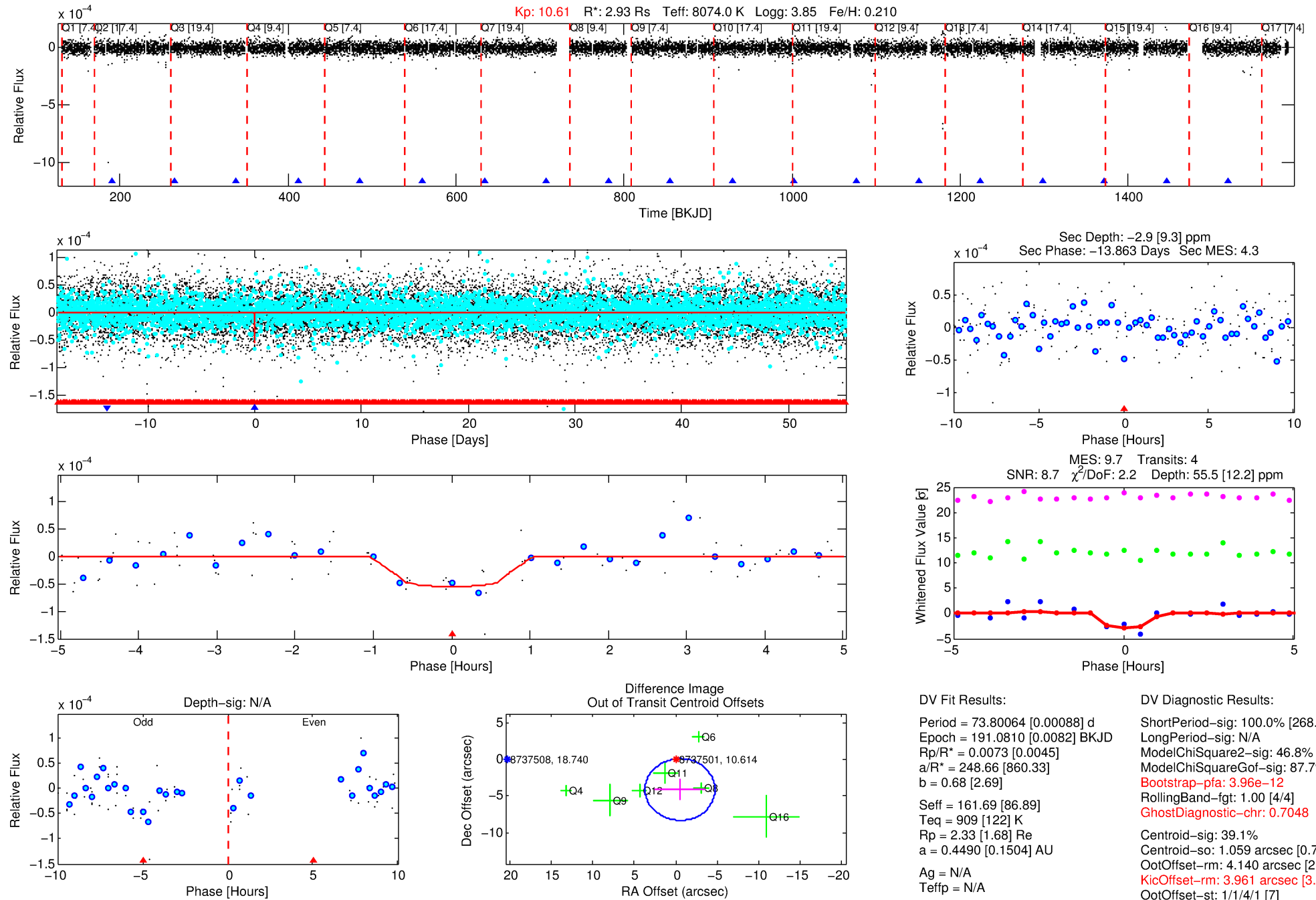
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008737501-02

No Significant Match Found

DV One-Page Summary

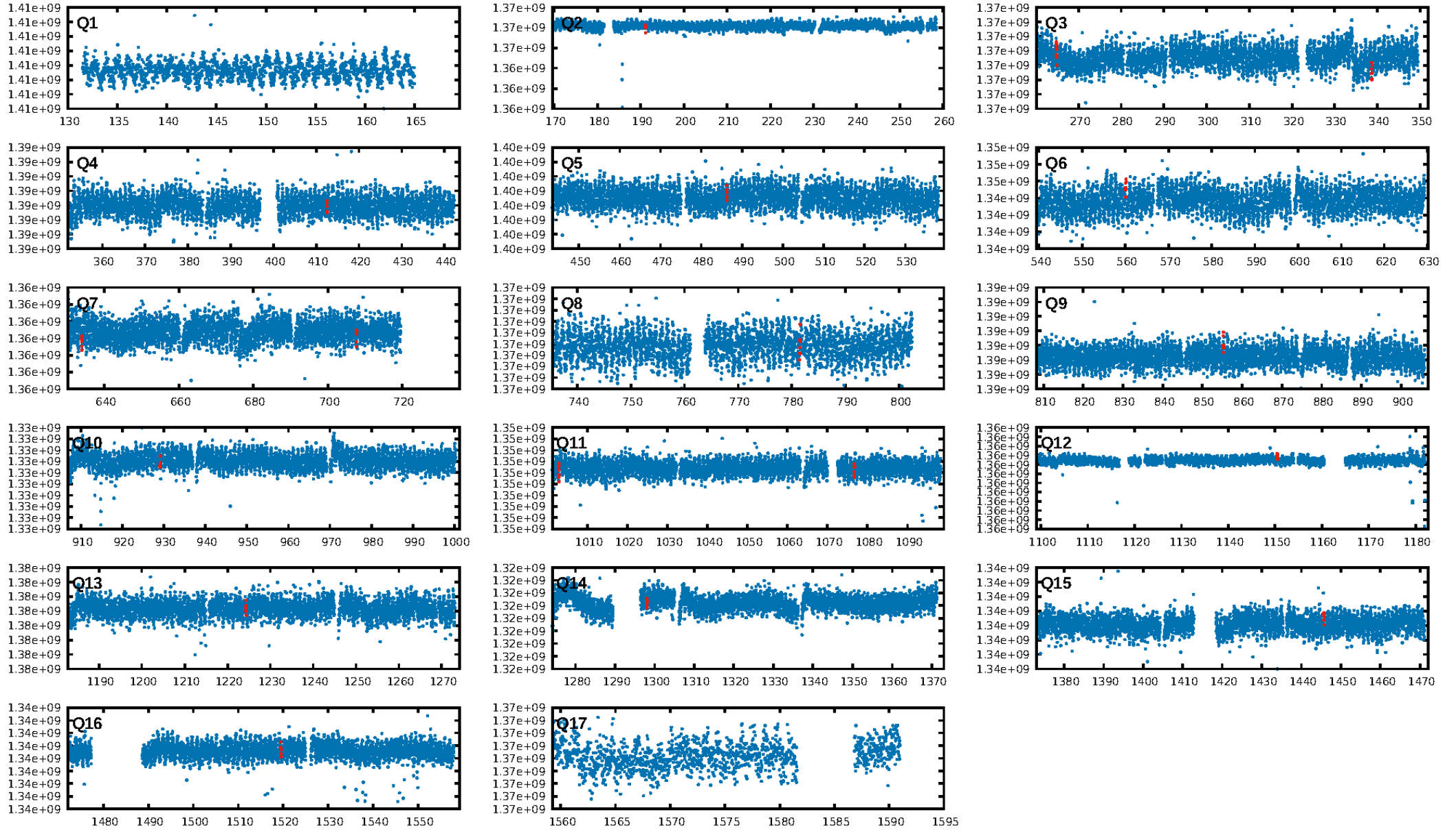
KIC: 8737501 Candidate: 2 of 2 Period: 73.801 d



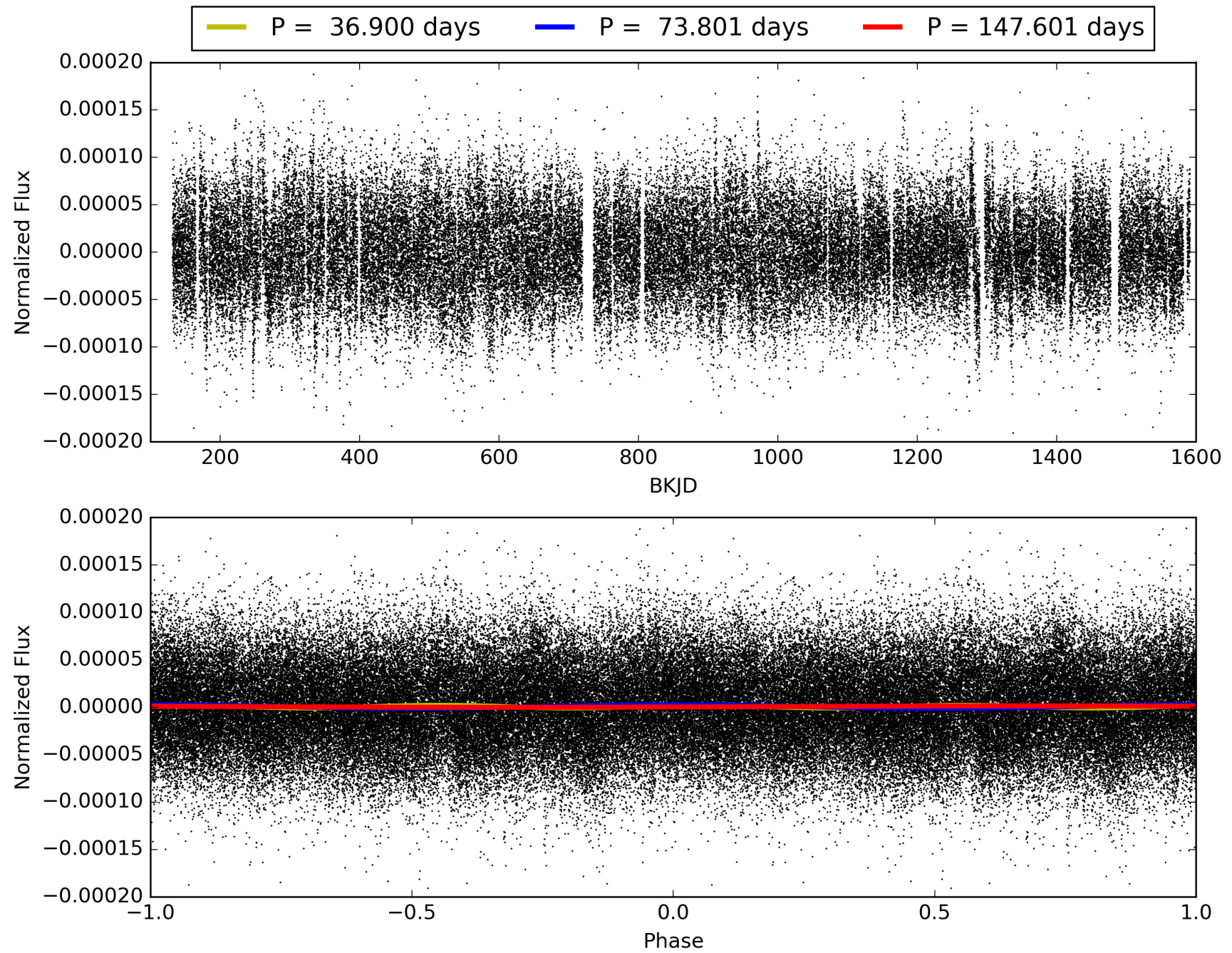
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:16:58 Z

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

TCE 008737501-02, PDC Light Curves

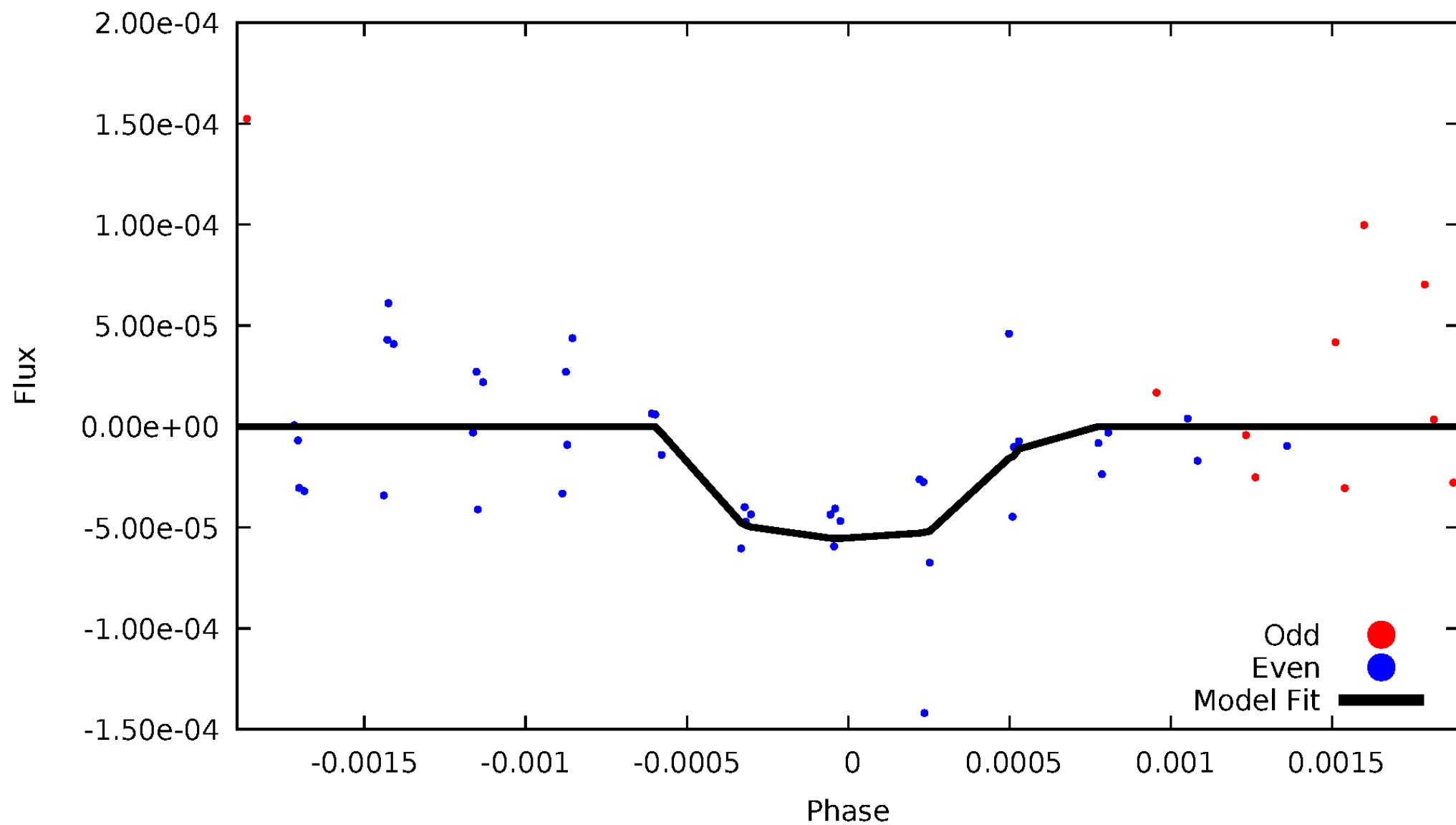


TCE 008737501-02



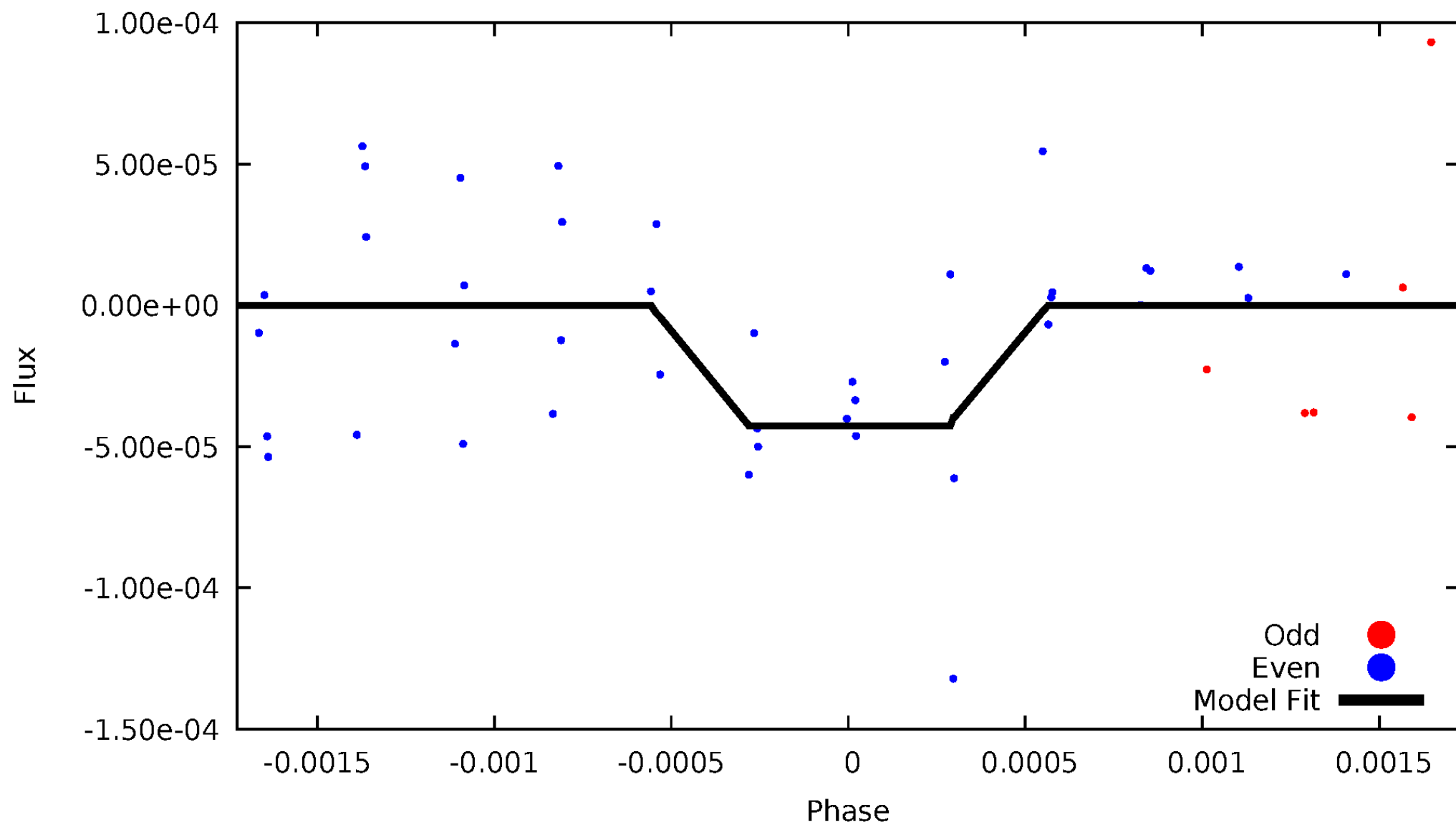
DV Odd/Even

TCE 008737501-02



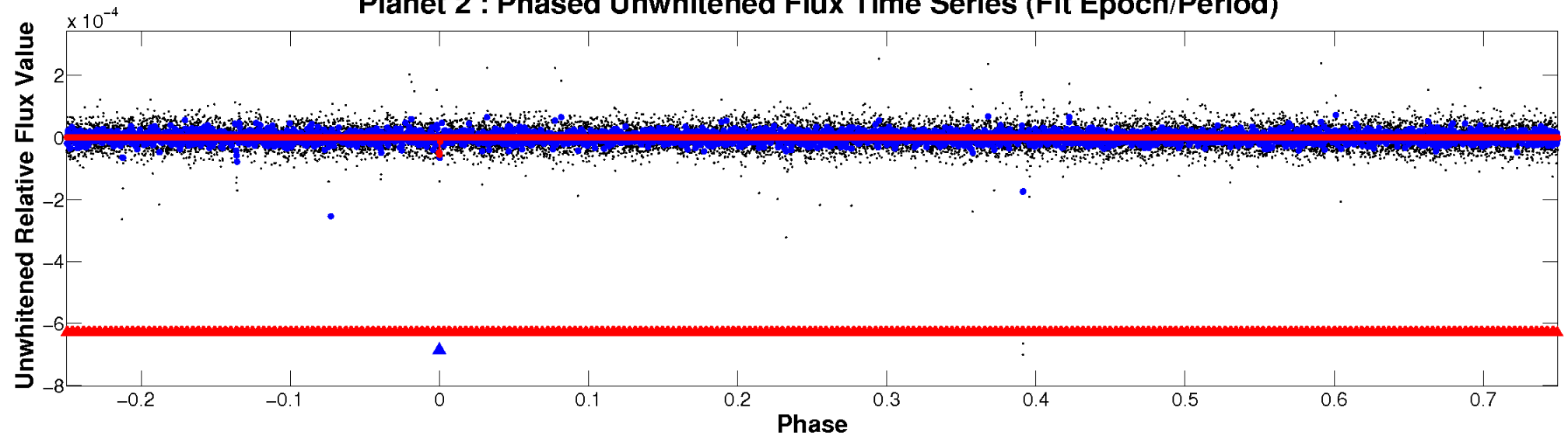
ALT Odd/Even

TCE 008737501-02

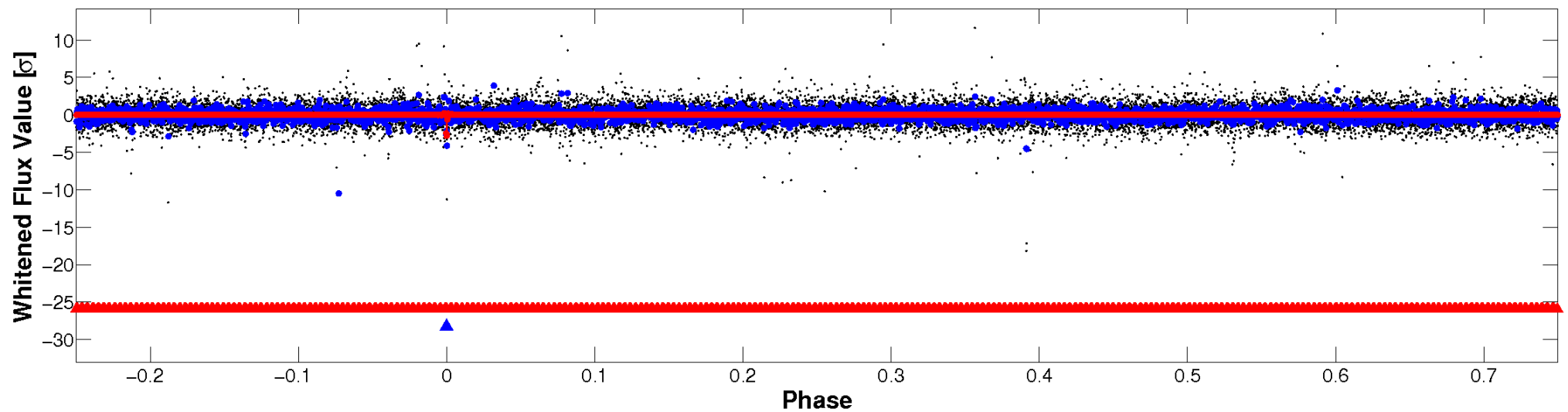


Non-Whitened Vs. Whitened Light Curve

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

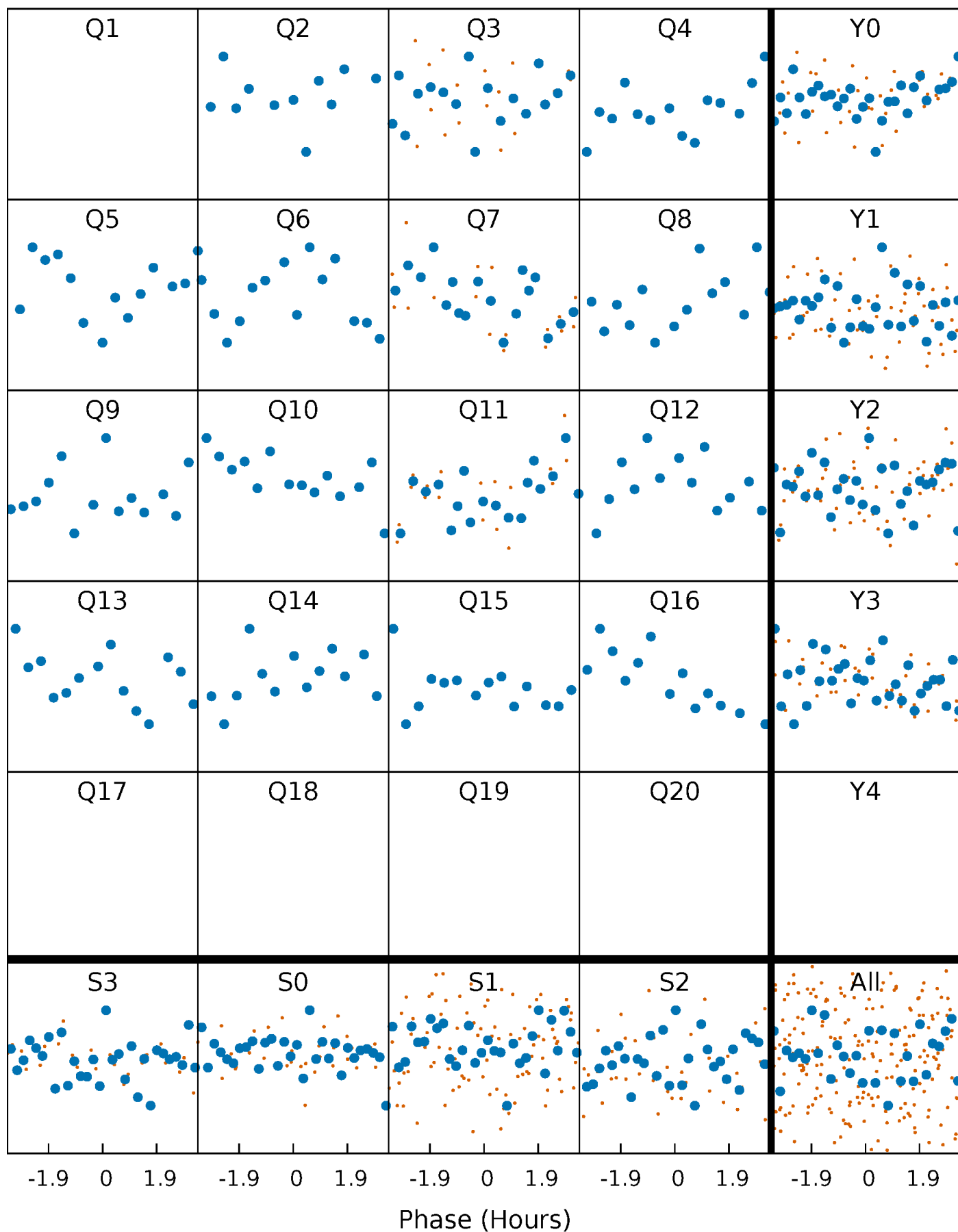


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



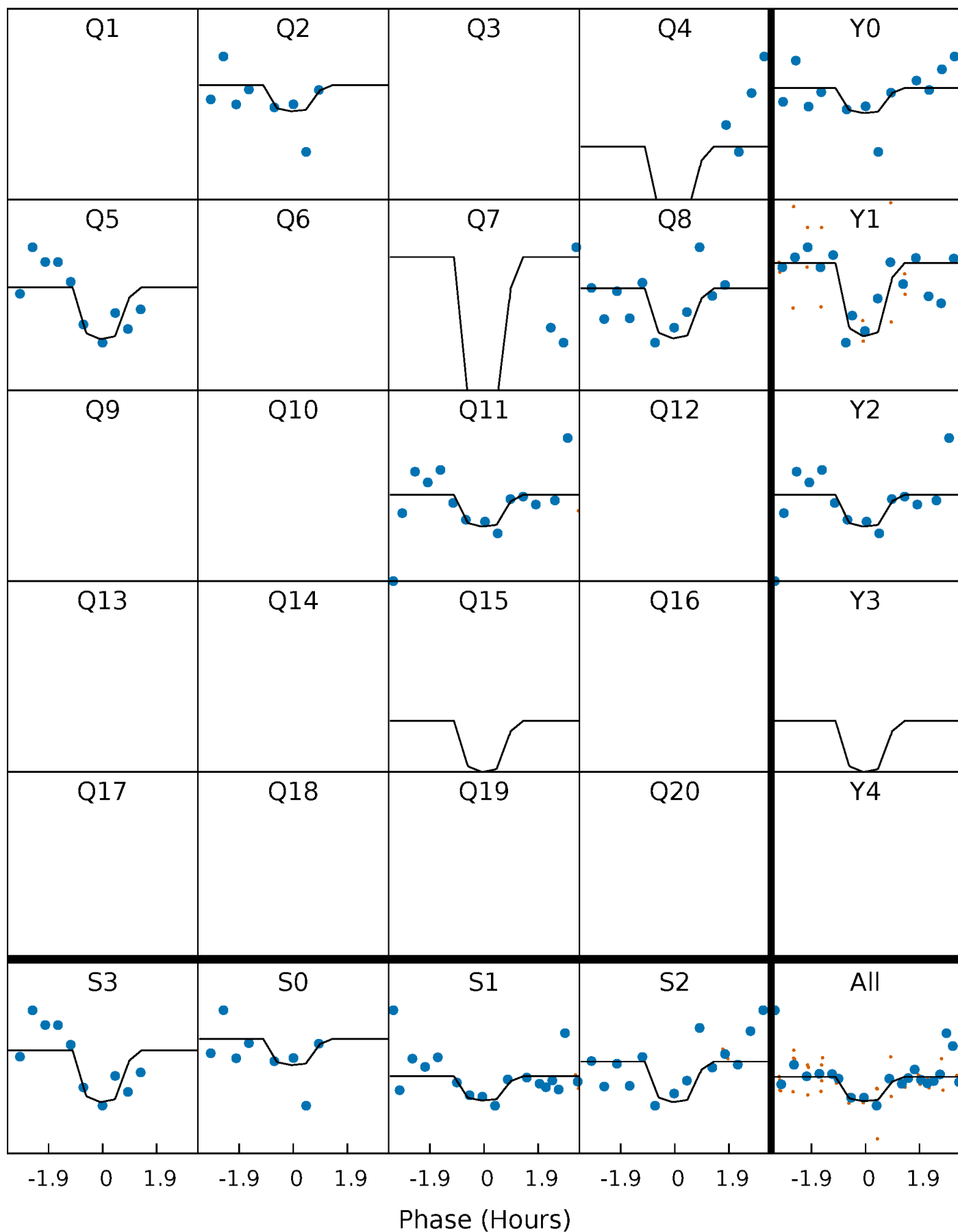
PDC Quarter-Phased Transit Curves

TCE 008737501-02 $P = 73.800644$ Days $T_0 = 191.081002$ (BKJD)



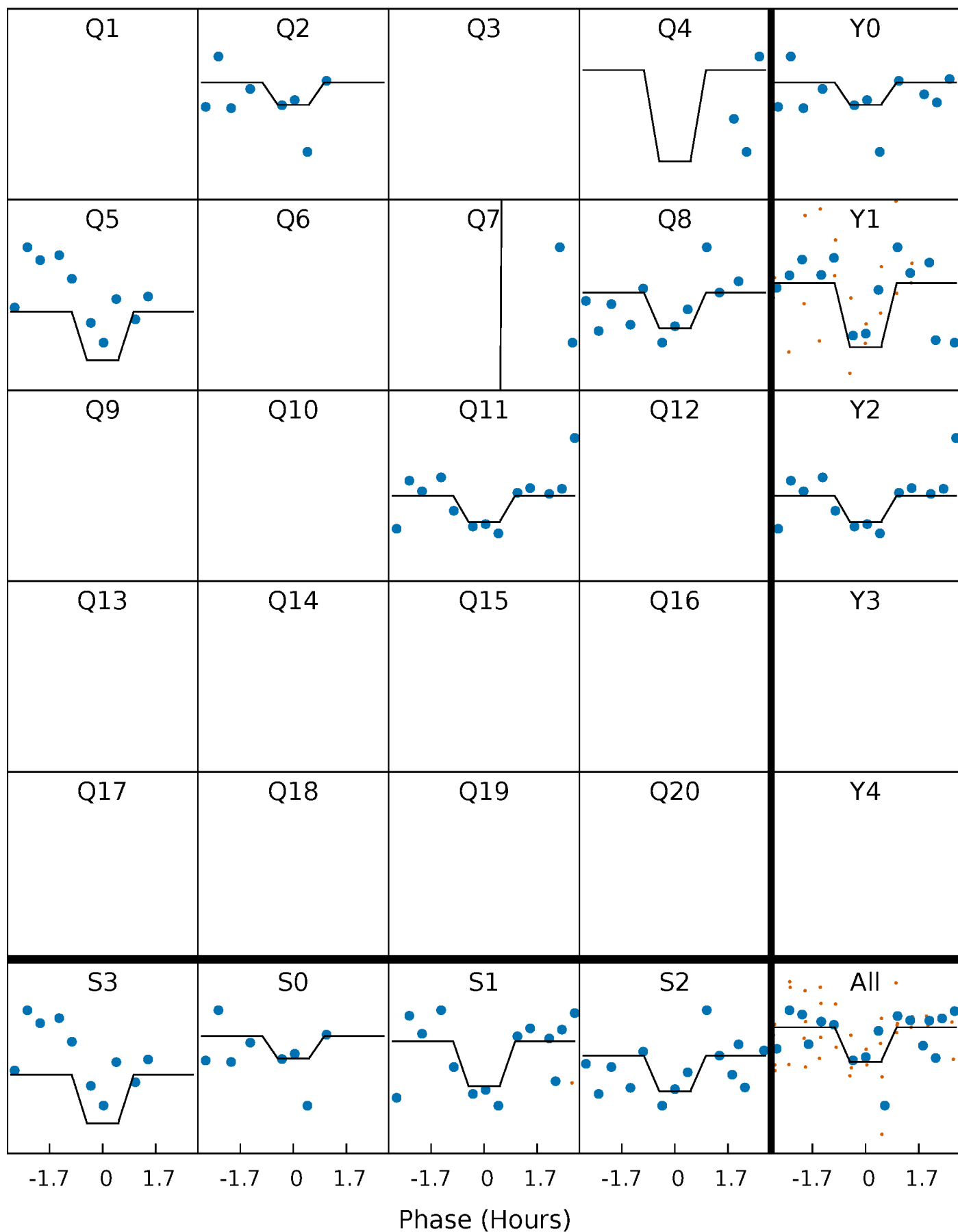
DV Quarter-Phased Transit Curves

TCE 008737501-02 P= 73.800644 Days $T_0=191.081002$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

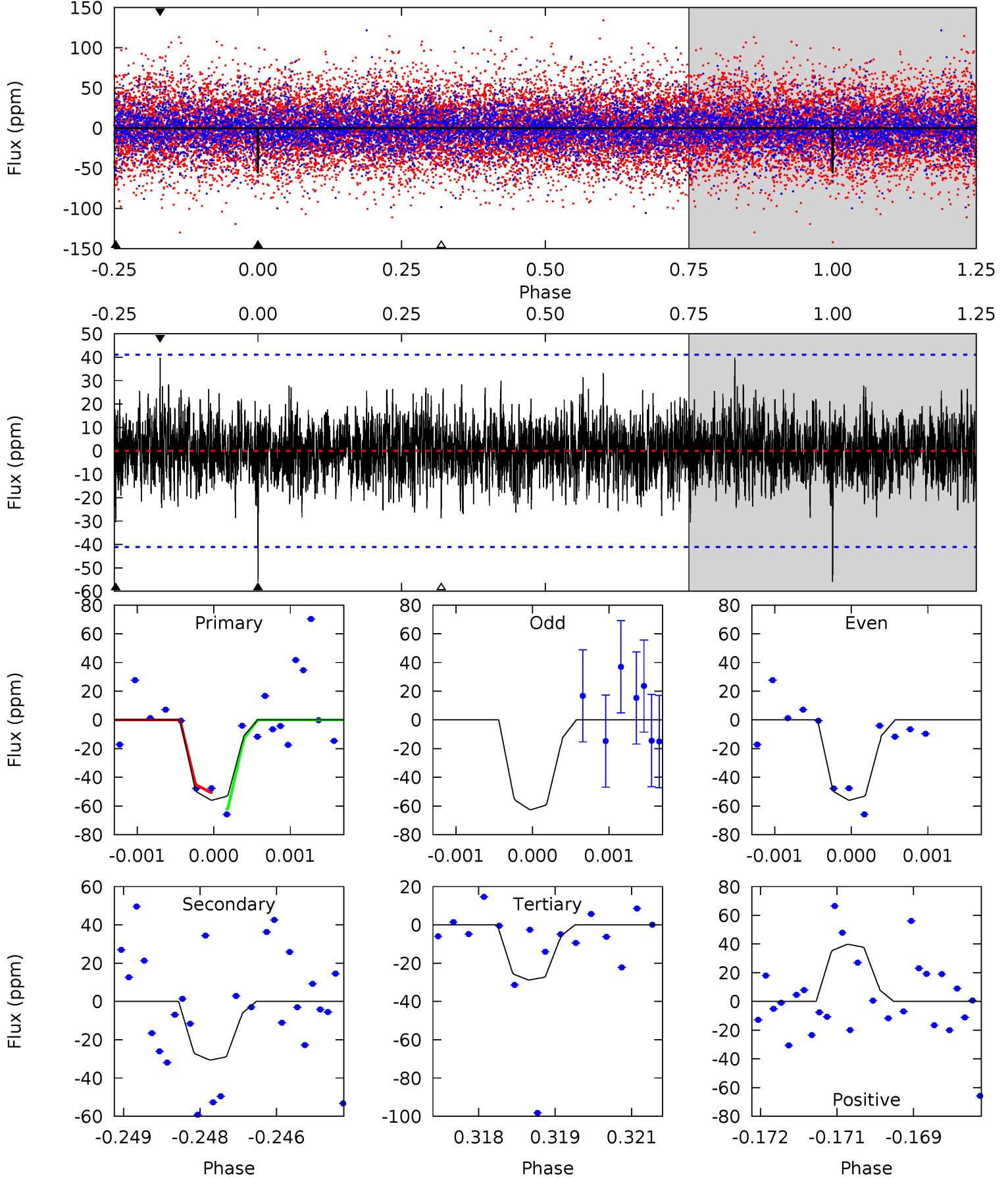
TCE 008737501-02 P= 73.800726 Days $T_0=191.076544$ (BKJD)



DV Model-Shift Uniqueness Test

008737501-02, P = 73.800644 Days, E = 117.280358 Days

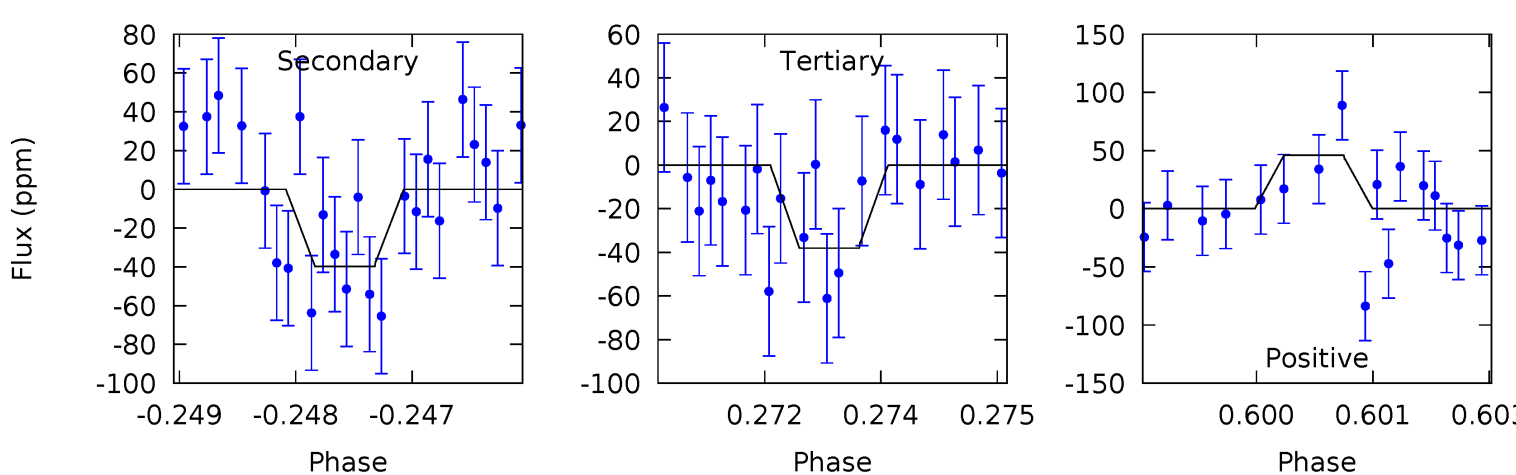
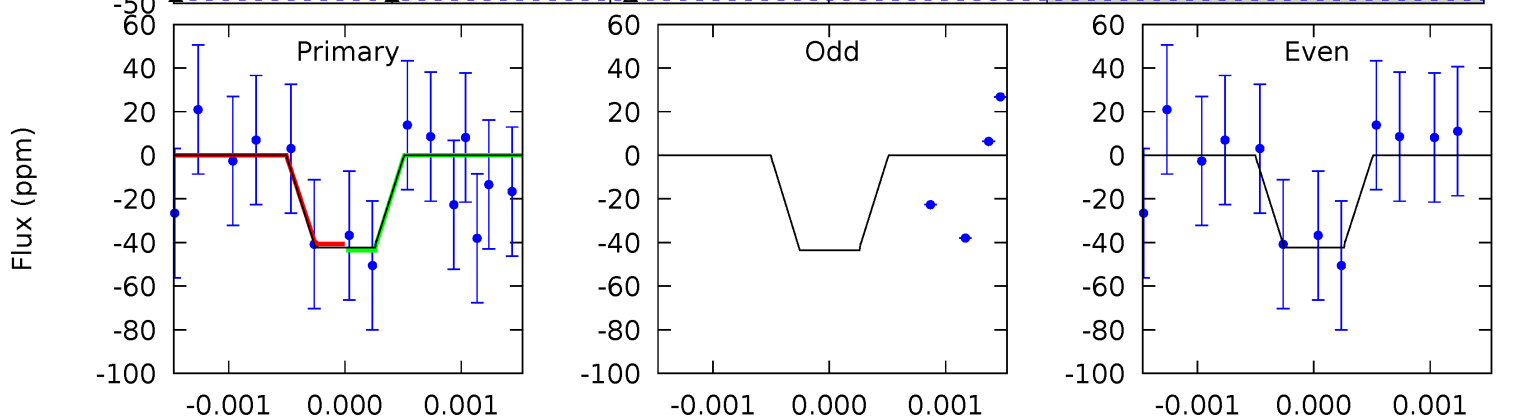
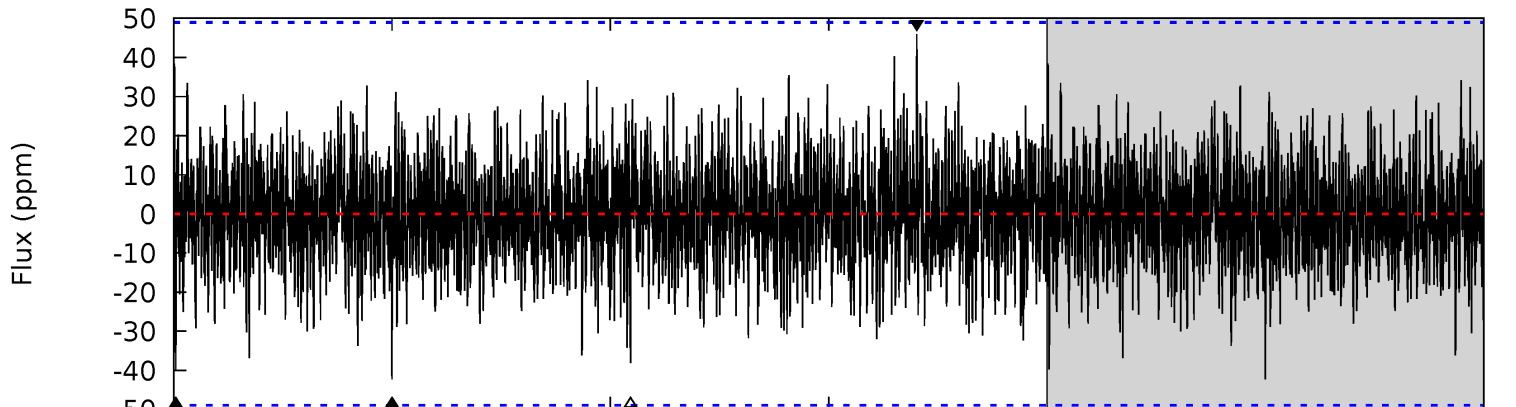
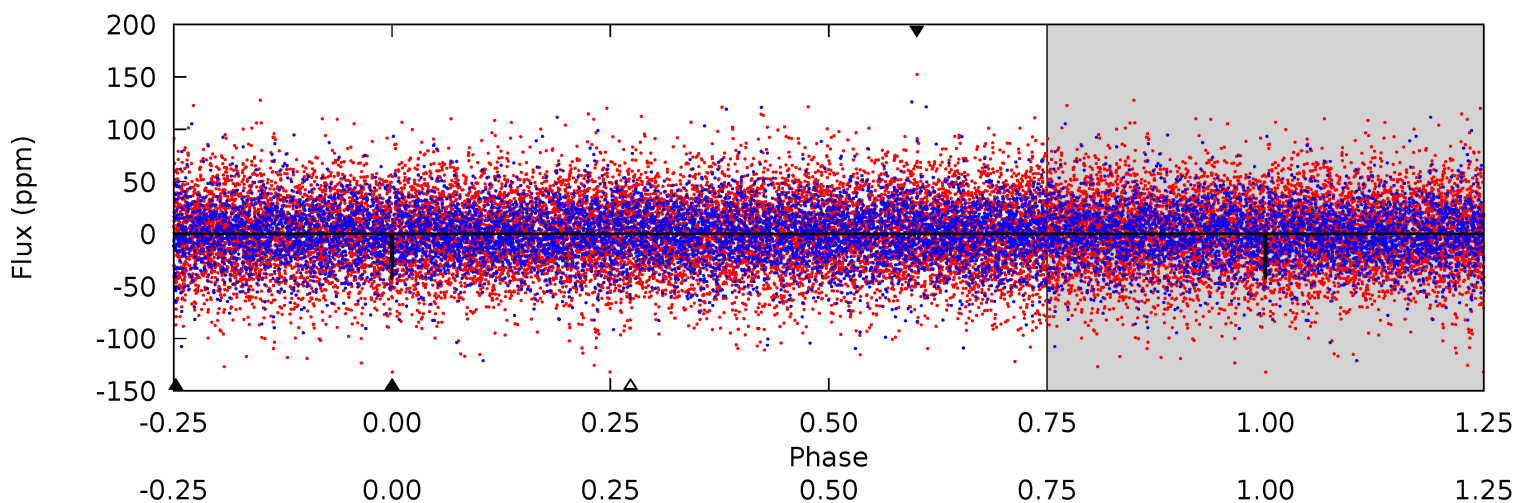
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.35	4.02	3.78	5.23	5.40	3.20	1.18	3.57	2.12	0.23	-1.21	0.51	1.08	0.42	0.78



Alt Model-Shift Uniqueness Test

008737501-02, P = 73.800726 Days, E = 117.275818 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.70	4.42	4.23	5.10	5.43	3.26	1.24	0.47	-0.40	0.18	-0.68	0.08	0.92	0.52	0.16



Stellar Parameters For KIC 008737501

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8074^{+222}_{-361}	$3.851^{+0.286}_{-0.154}$	$0.210^{+0.150}_{-0.450}$	$2.926^{+0.833}_{-1.111}$	$2.213^{+0.306}_{-0.569}$	$0.124^{+0.276}_{-0.054}$
	+3%/-4%	+7%/-4%	+71%/-214%	+28%/-38%	+14%/-26%	+222%/-43%
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 008737501-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-31 ± 8	$2.25^{+1.40}_{-1.28}$	1249^{+100}_{-131}	6642^{+4420}_{-1355}	671^{+2605}_{-439}
Alt.	-40 ± 9	$2.09^{+1.47}_{-1.17}$	1248^{+92}_{-123}	7561^{+5911}_{-1773}	965^{+3967}_{-631}

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 $A_{obs} \gg 1.0$

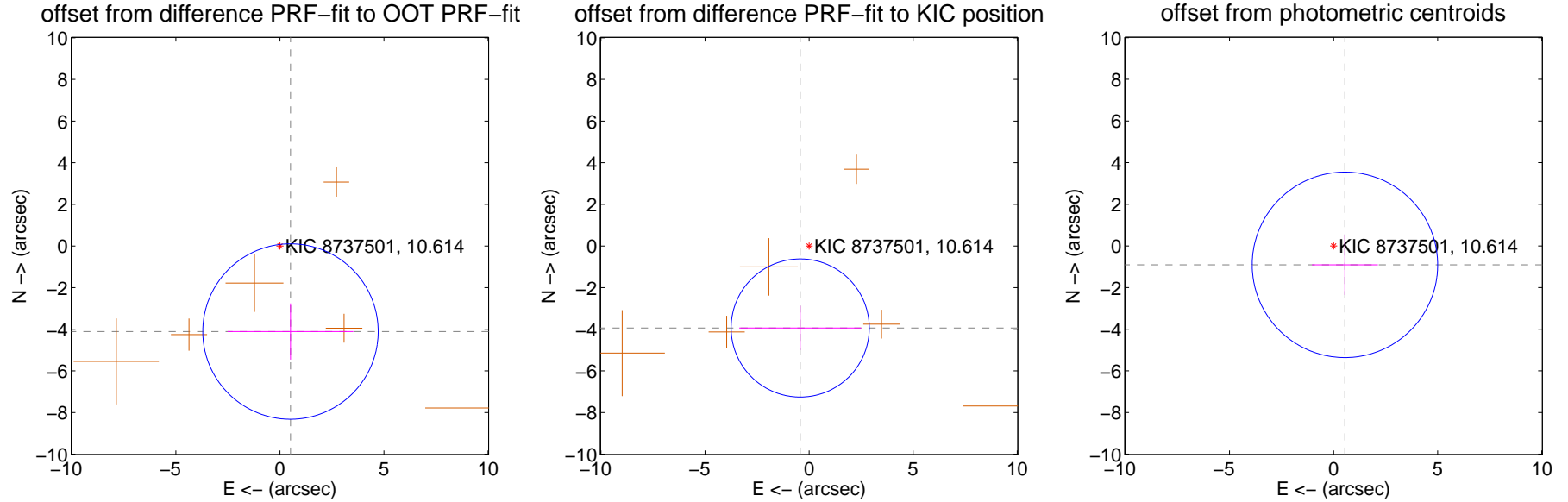
DV Centroid Data

Supplemental centroid analysis for 008737501-02. **Kepler magnitude: 10.61.** Transit SNR 8.67

There are 0 quarters with good PRF difference image offsets

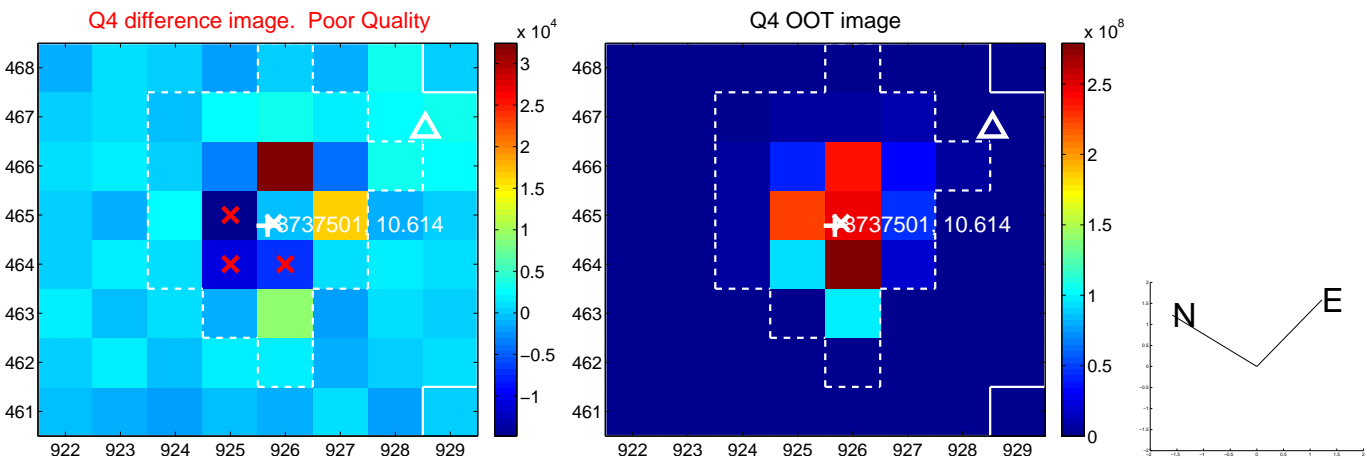
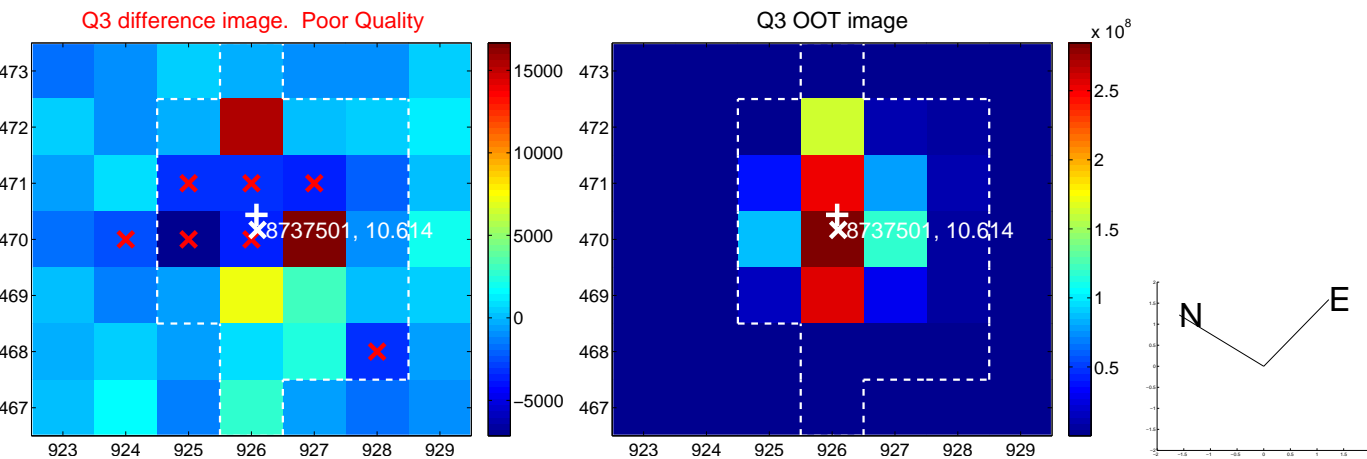
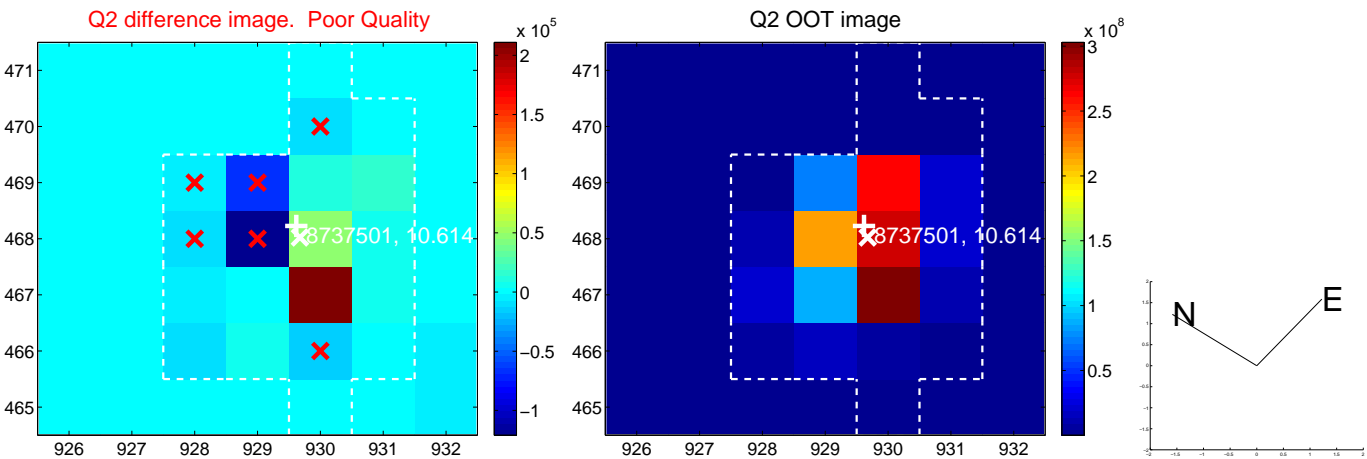
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.140 ± 1.404	2.95	-0.508 ± 3.021	-4.109 ± 1.351
PRF-fit source offset from KIC position	3.961 ± 1.106	3.58	0.427 ± 2.931	-3.938 ± 1.065
photometric centroid source offset	1.06 ± 1.48	0.71	-0.54 ± 1.58	-0.91 ± 1.45

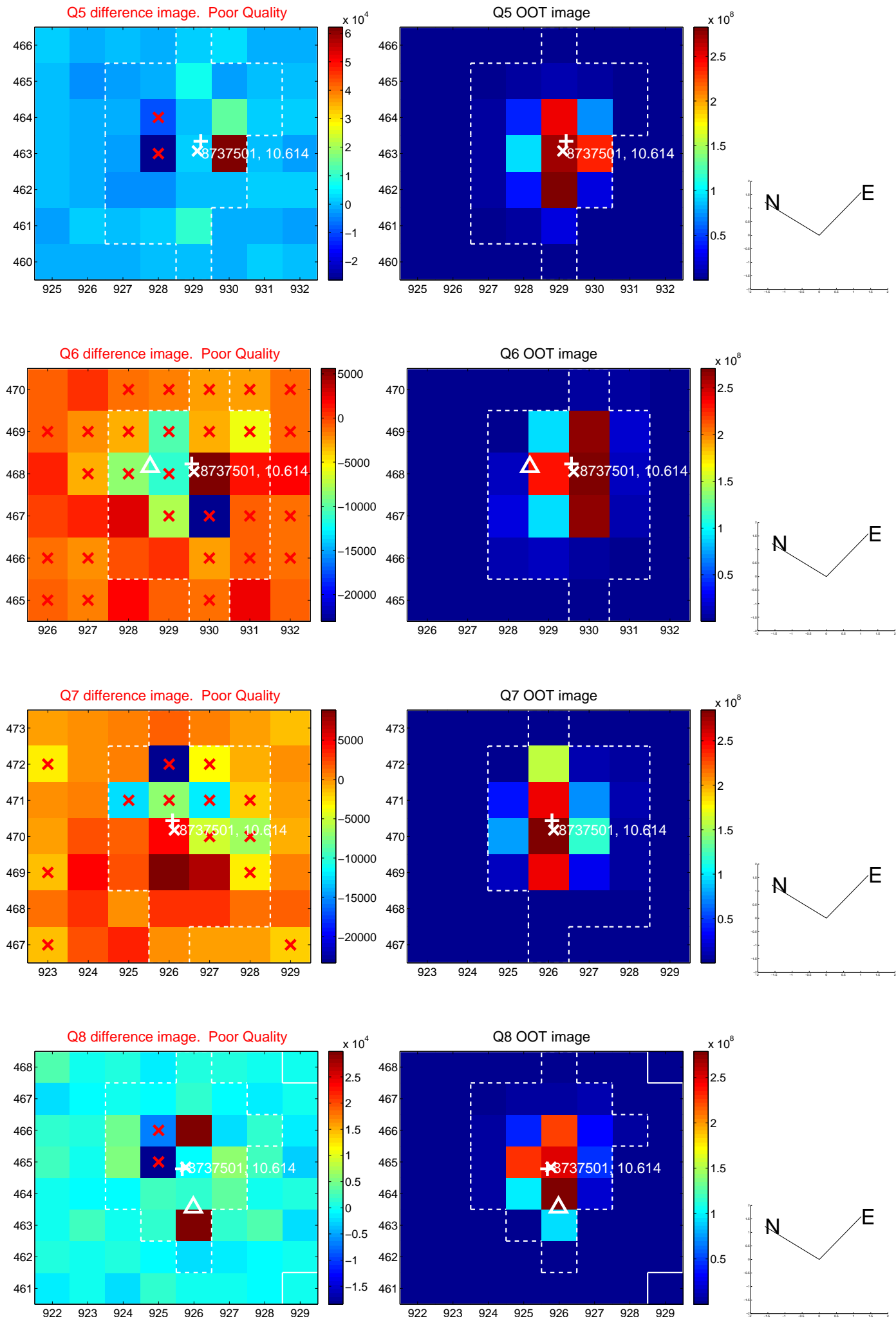


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

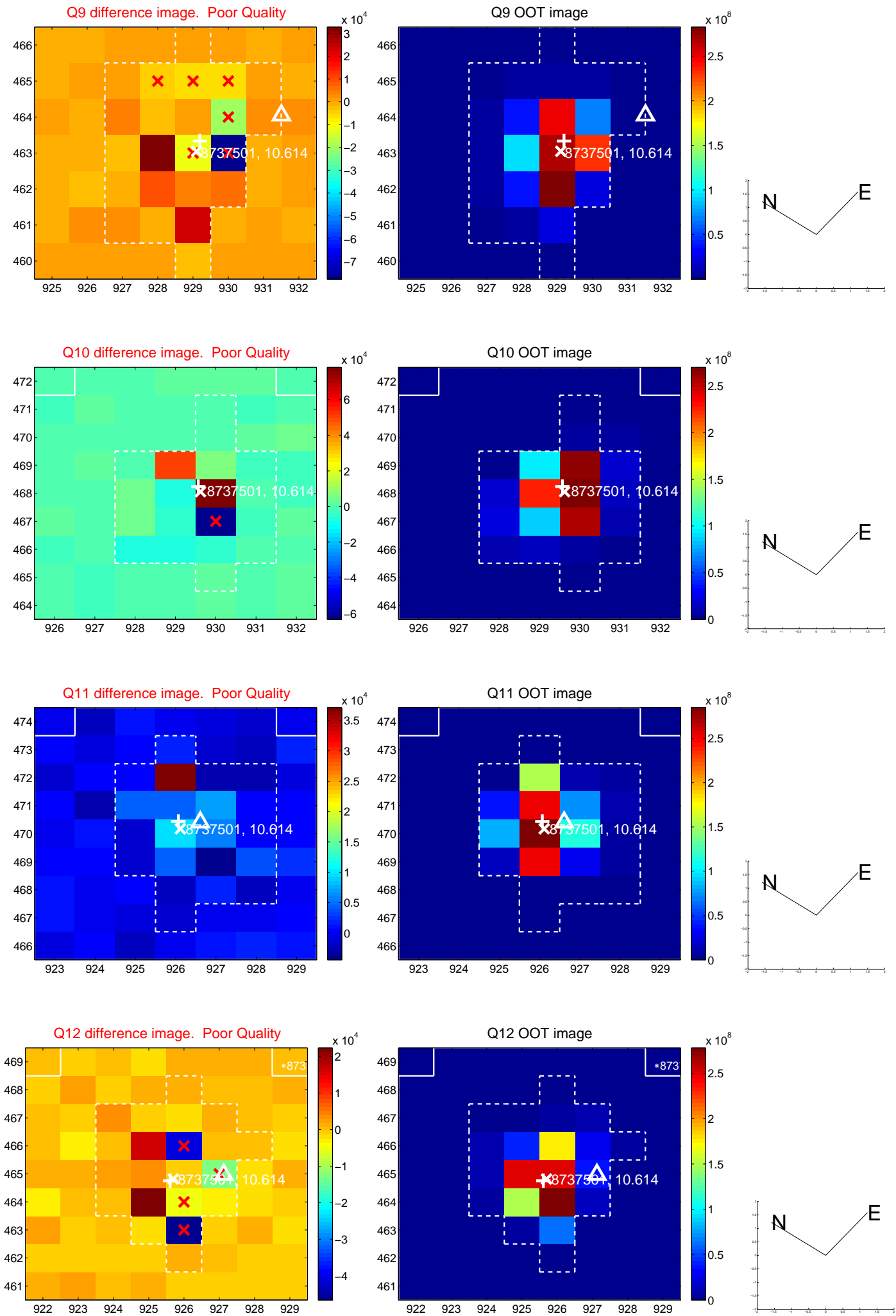
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



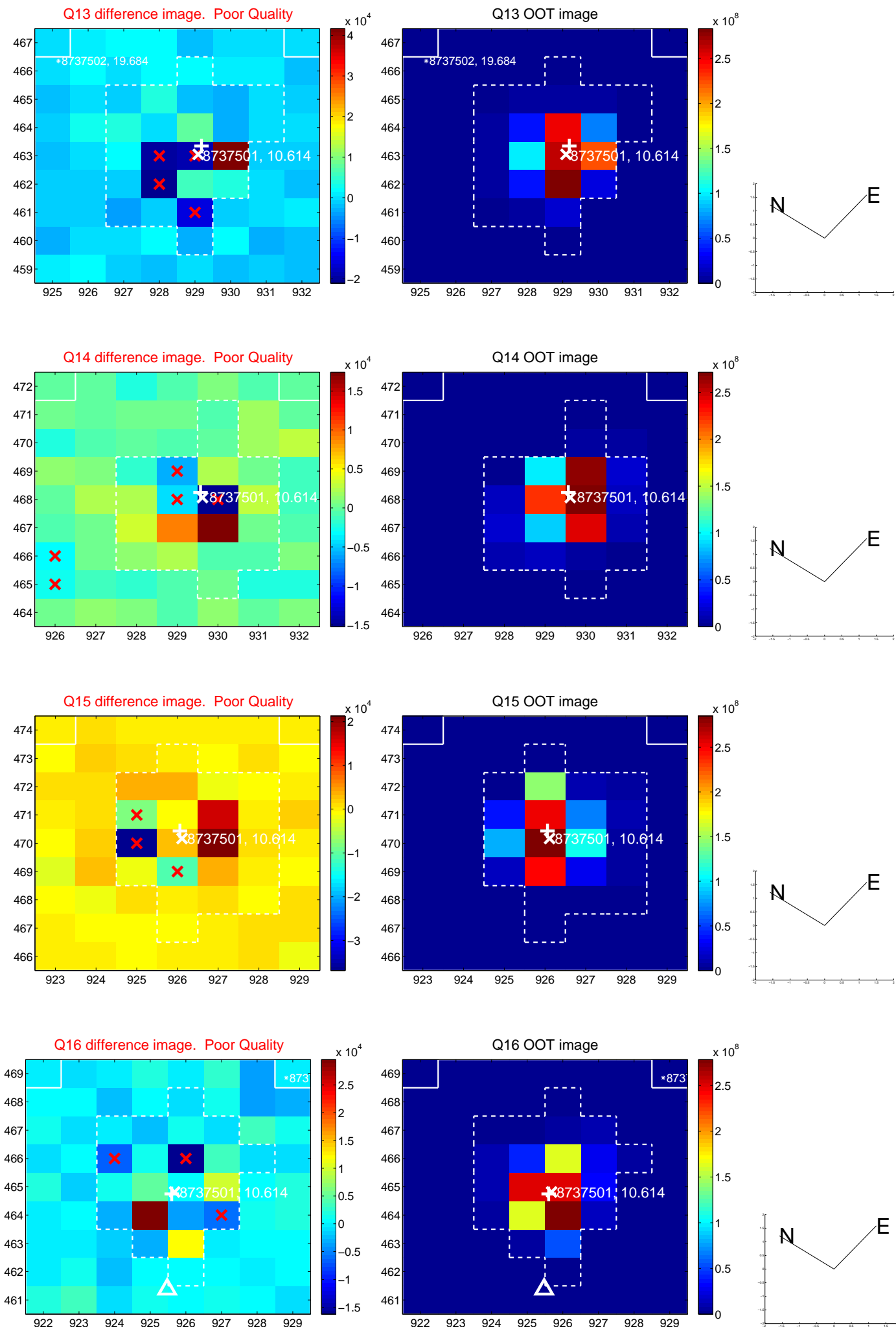
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



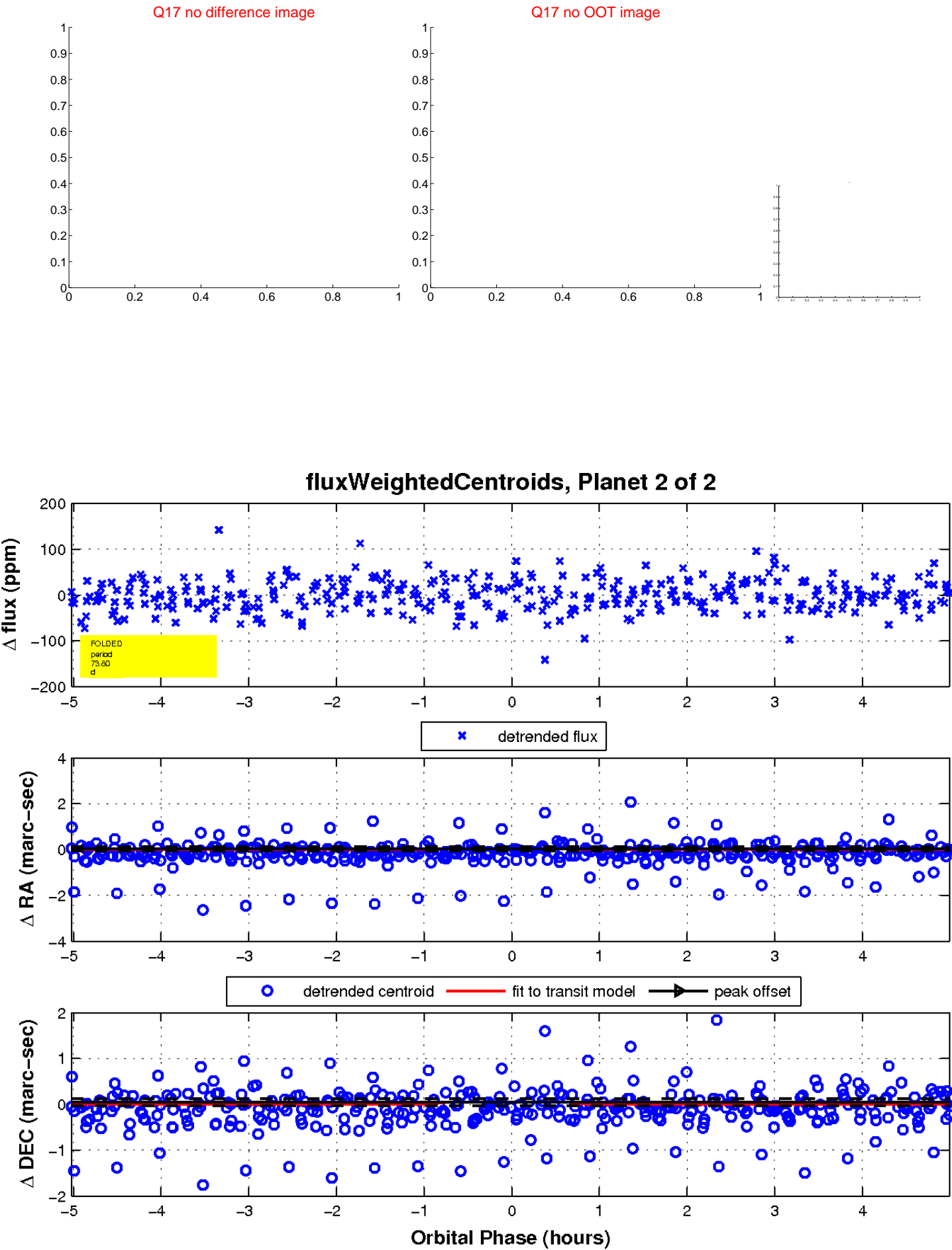
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

