

KIC 008331561

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})
008331561-01	OBS	No	1.074092	131.930598	0.9	1.185	11.0	0.0	0.62	3977	0.08	282.74
008331561-02	OBS	No	1.074228	132.020369	2515.8	1.500	9.5	-1.0	0.62	3977	3.02	282.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008331561-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
008331561-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

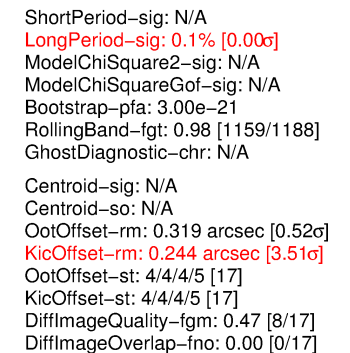
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

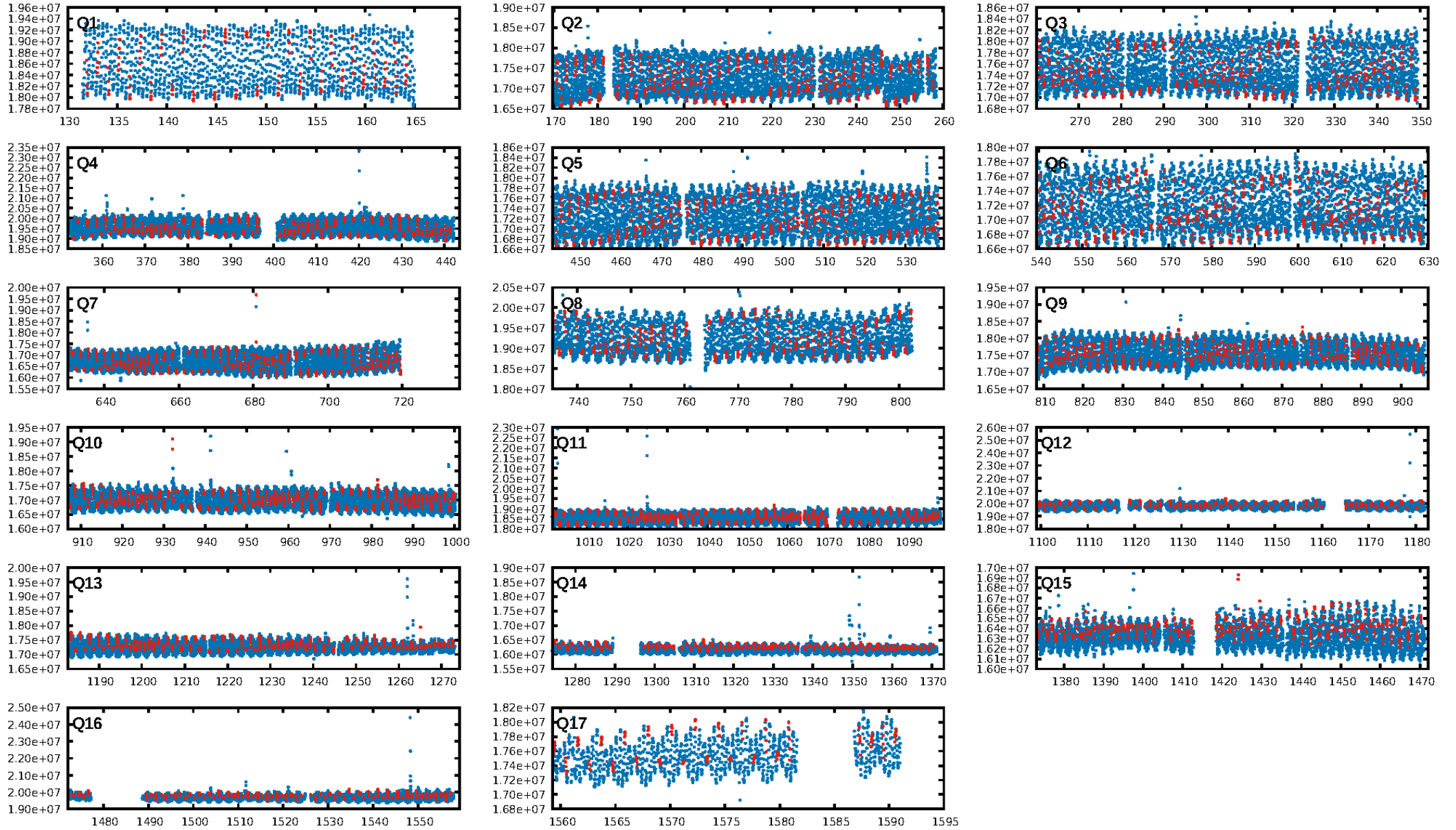
Ephemeris Match Information For 008331561-01

No Significant Match Found

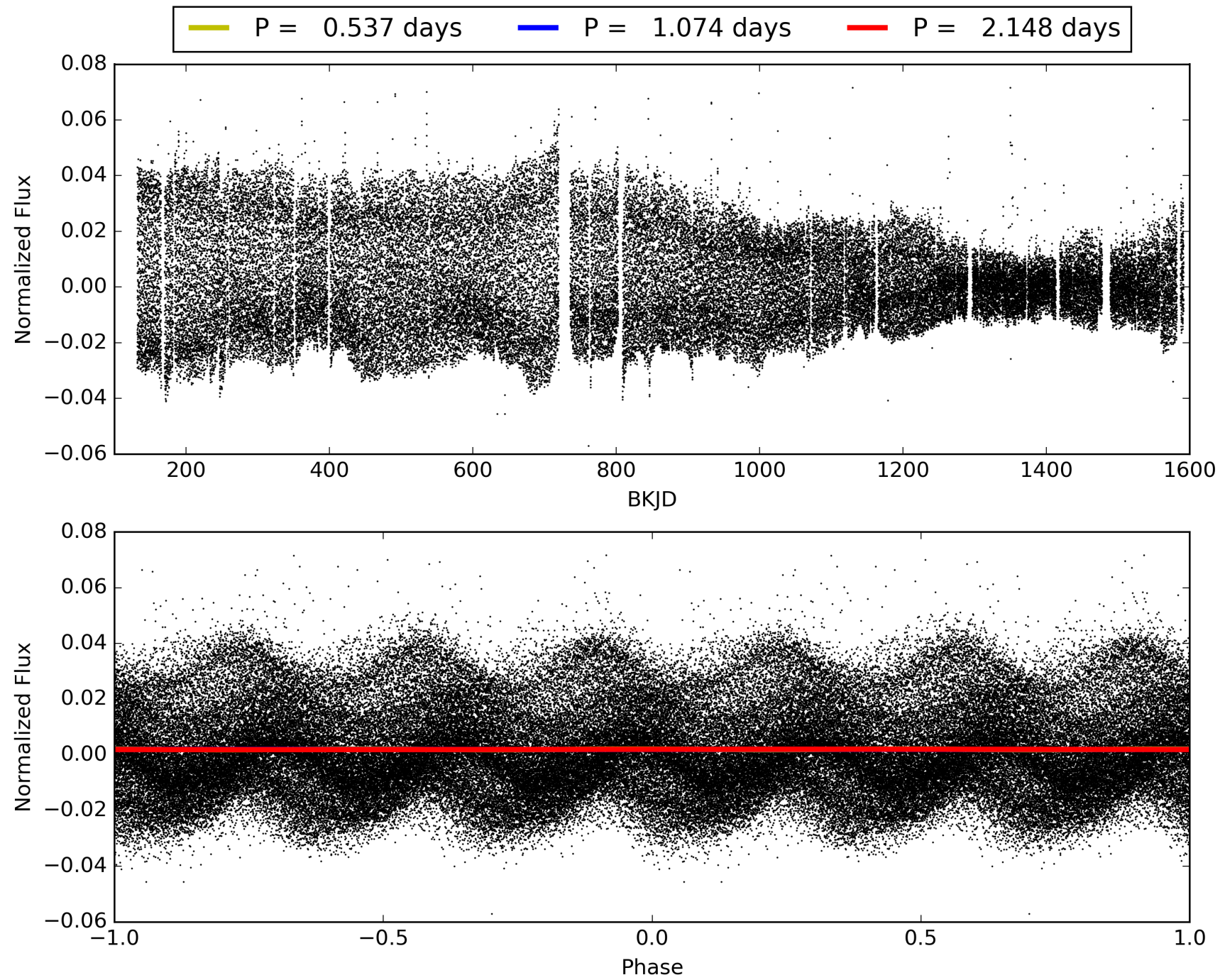
KIC: 8331561 Candidate: 1 of 2 Period: 1.074 d



TCE 008331561-01, PDC Light Curves

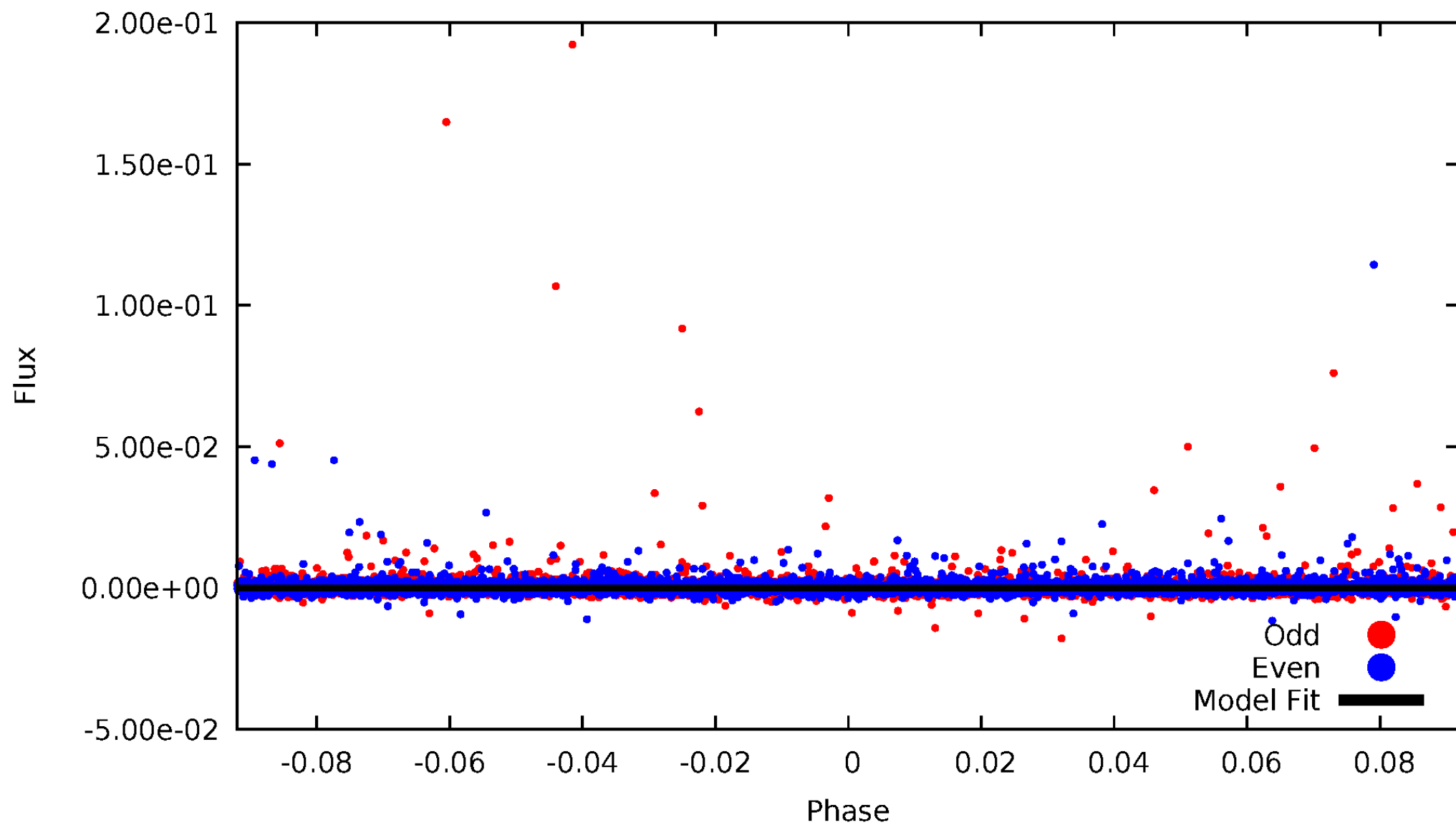


TCE 008331561-01



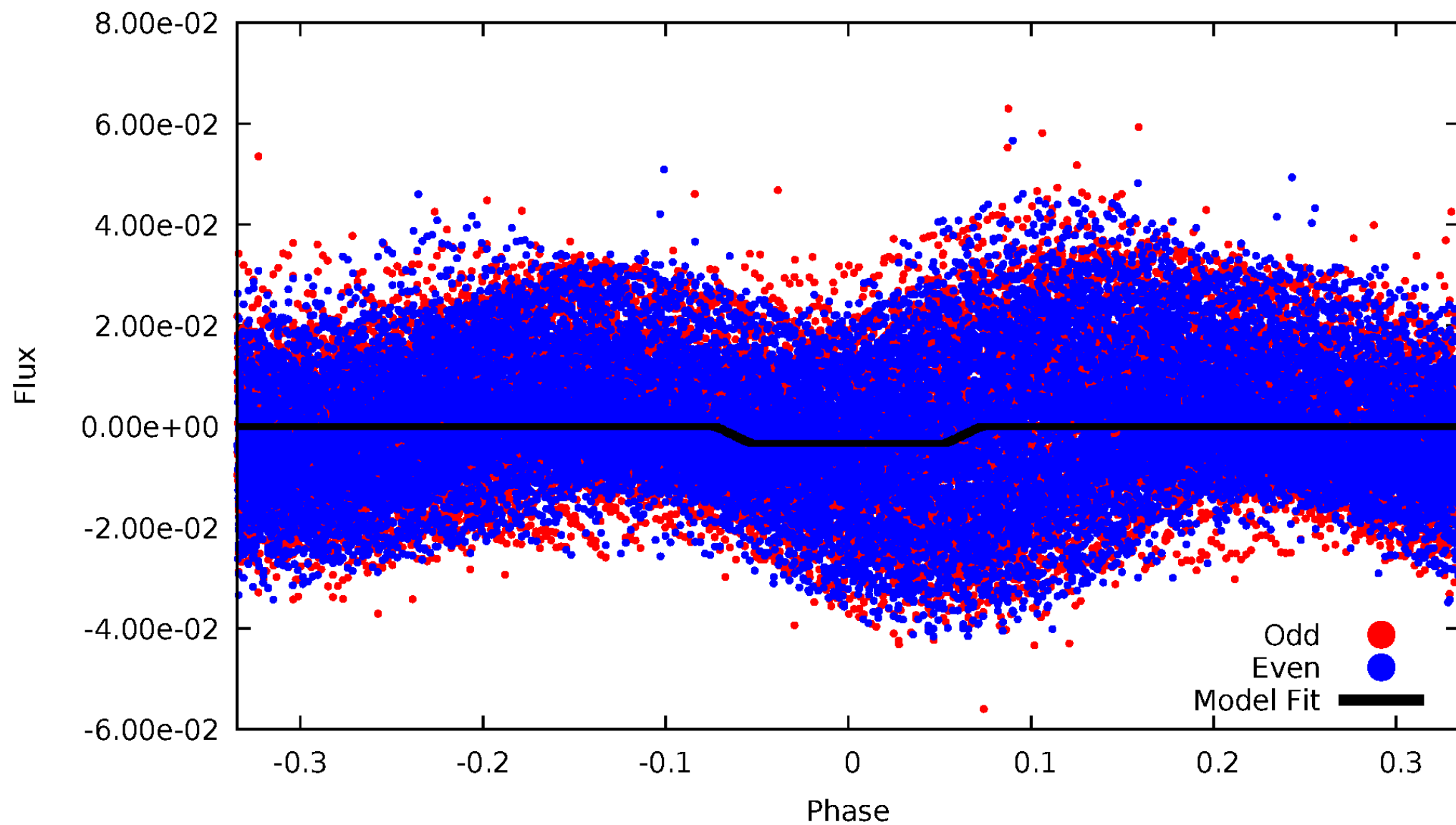
DV Odd/Even

TCE 008331561-01



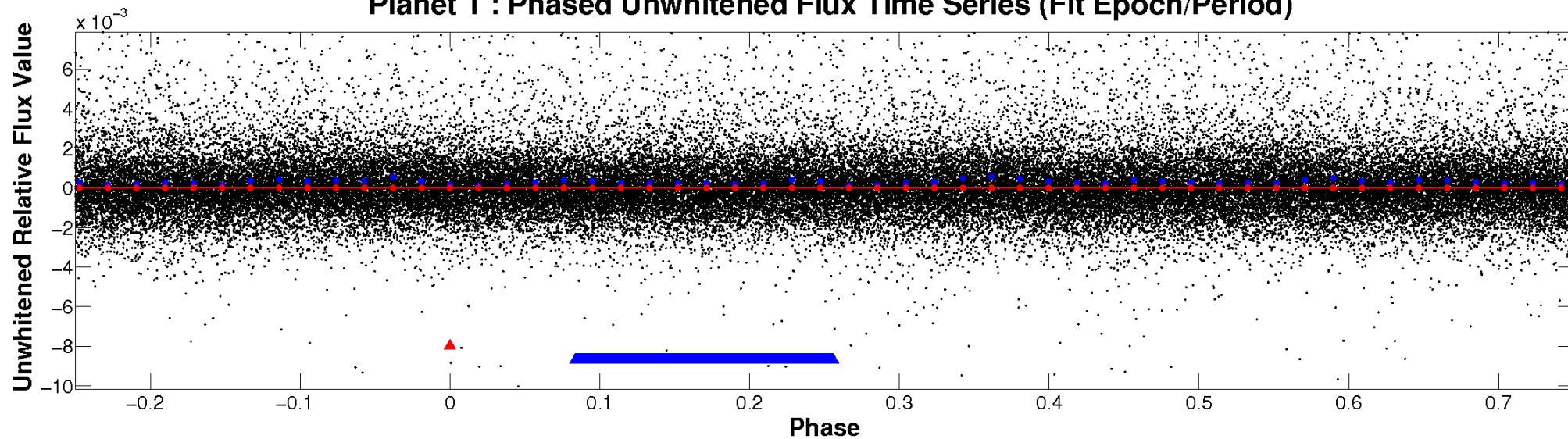
ALT Odd/Even

TCE 008331561-01

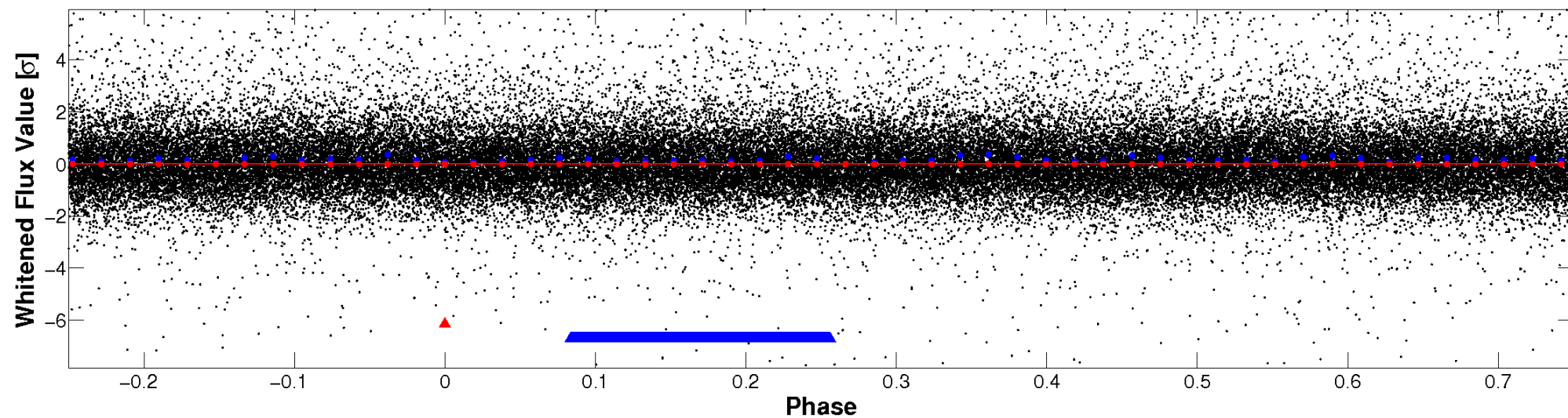


Non-Whitened Vs. Whitened Light Curve

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

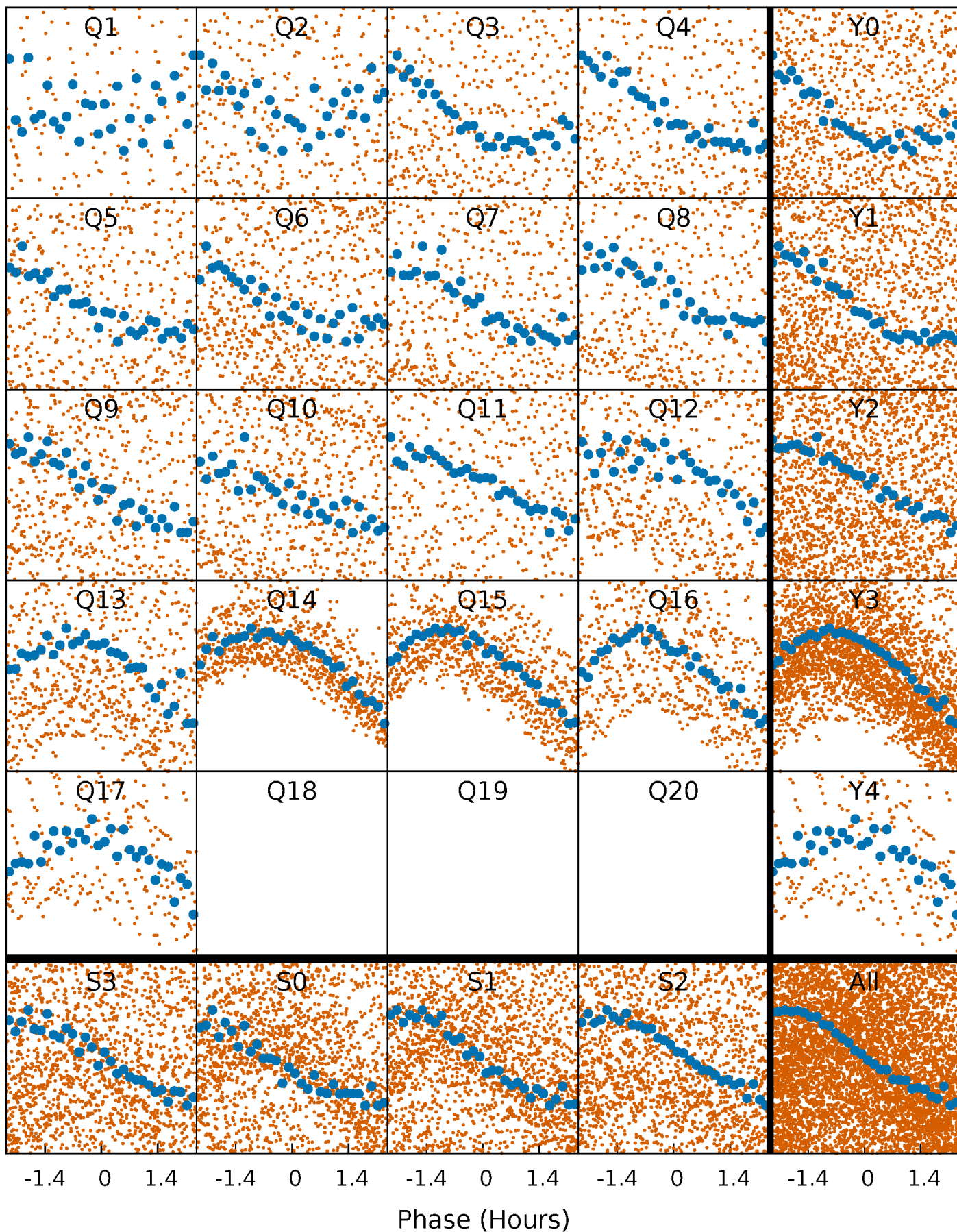


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



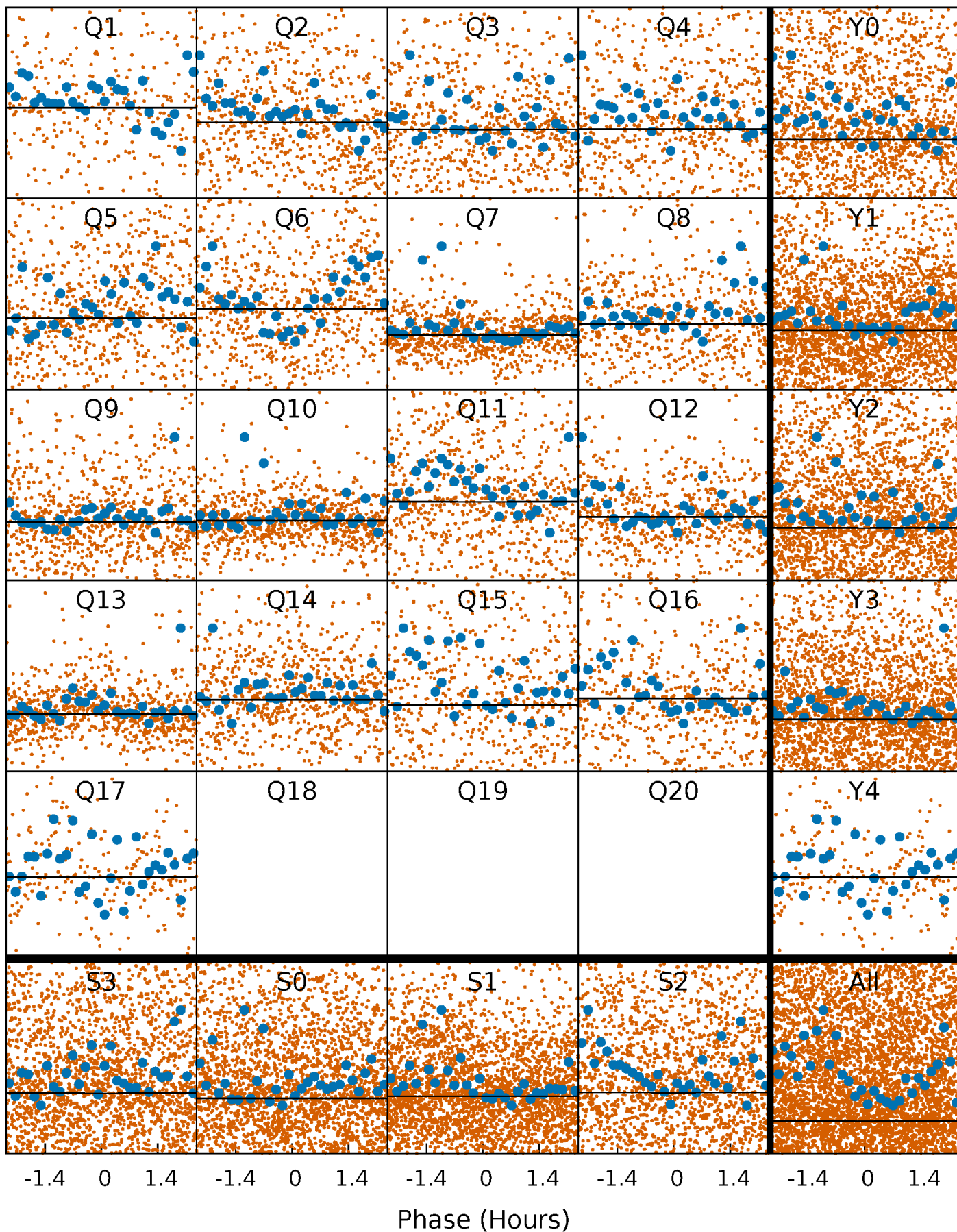
PDC Quarter-Phased Transit Curves

TCE 008331561-01 P= 1.074092 Days $T_0=131.930598$ (BKJD)



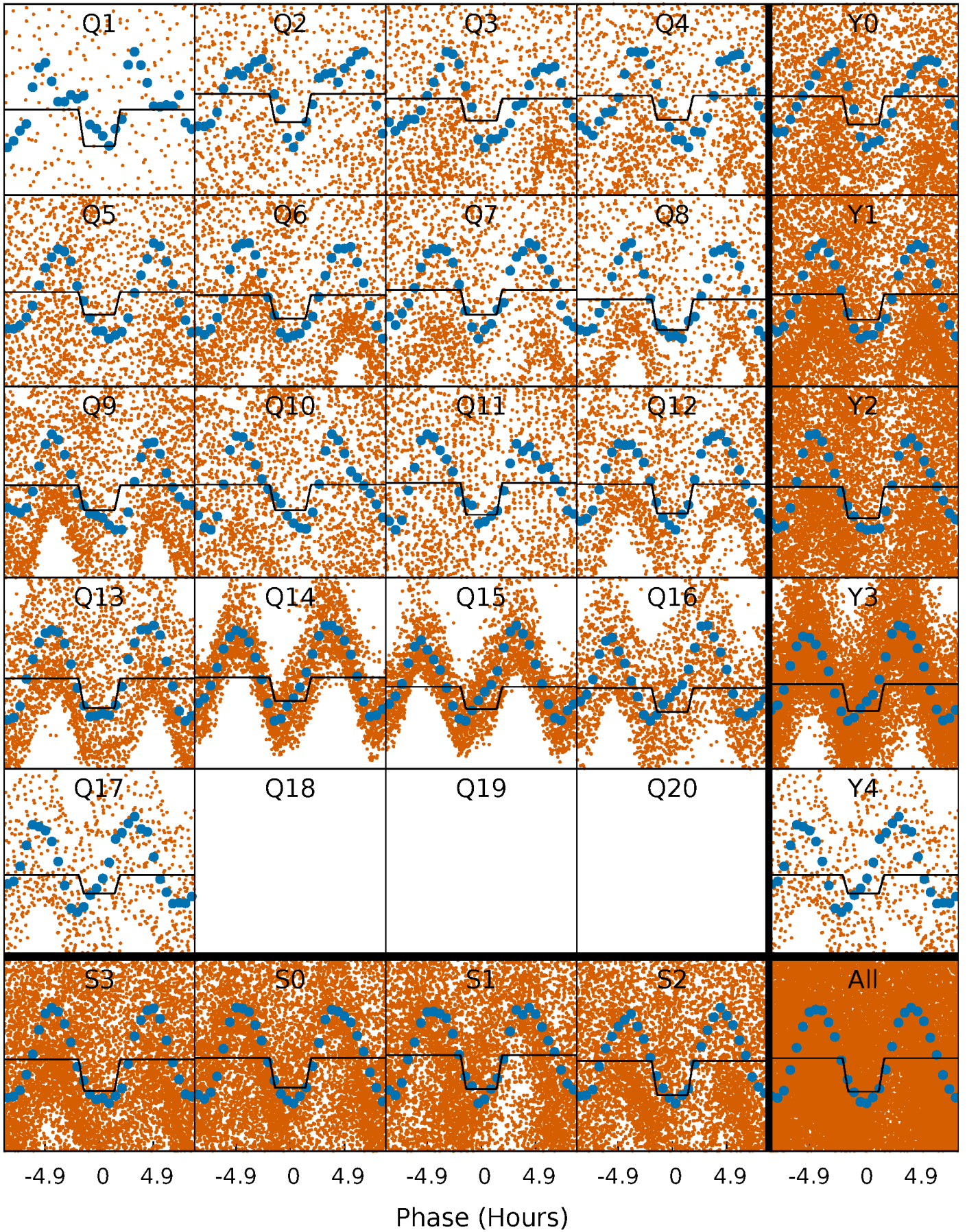
DV Quarter-Phased Transit Curves

TCE 008331561-01 P= 1.074092 Days $T_0=131.930598$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

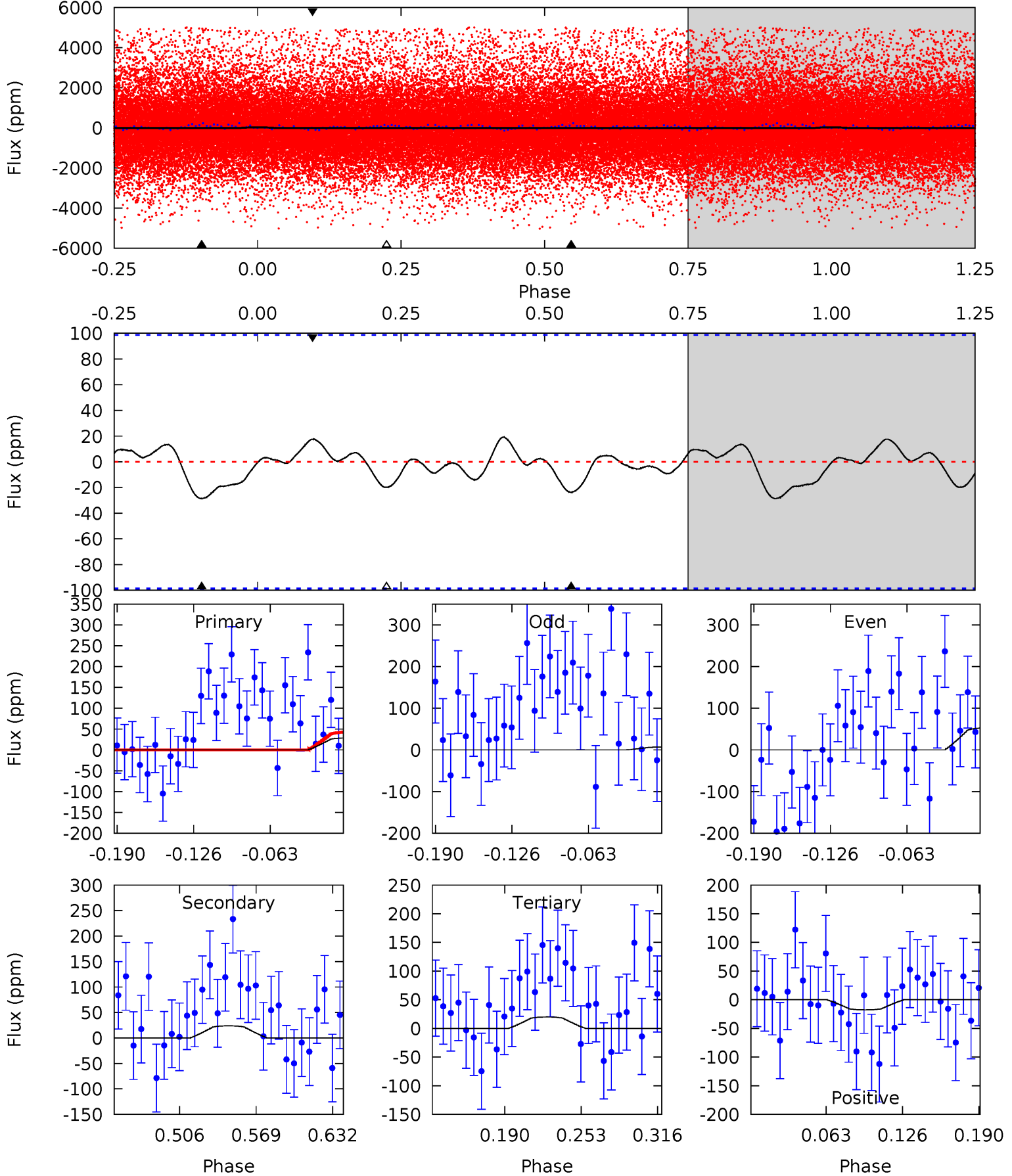
TCE 008331561-01 P= 1.074265 Days $T_0=131.908325$ (BKJD)



DV Model-Shift Uniqueness Test

008331561-01, P = 1.074092 Days, E = 130.856506 Days

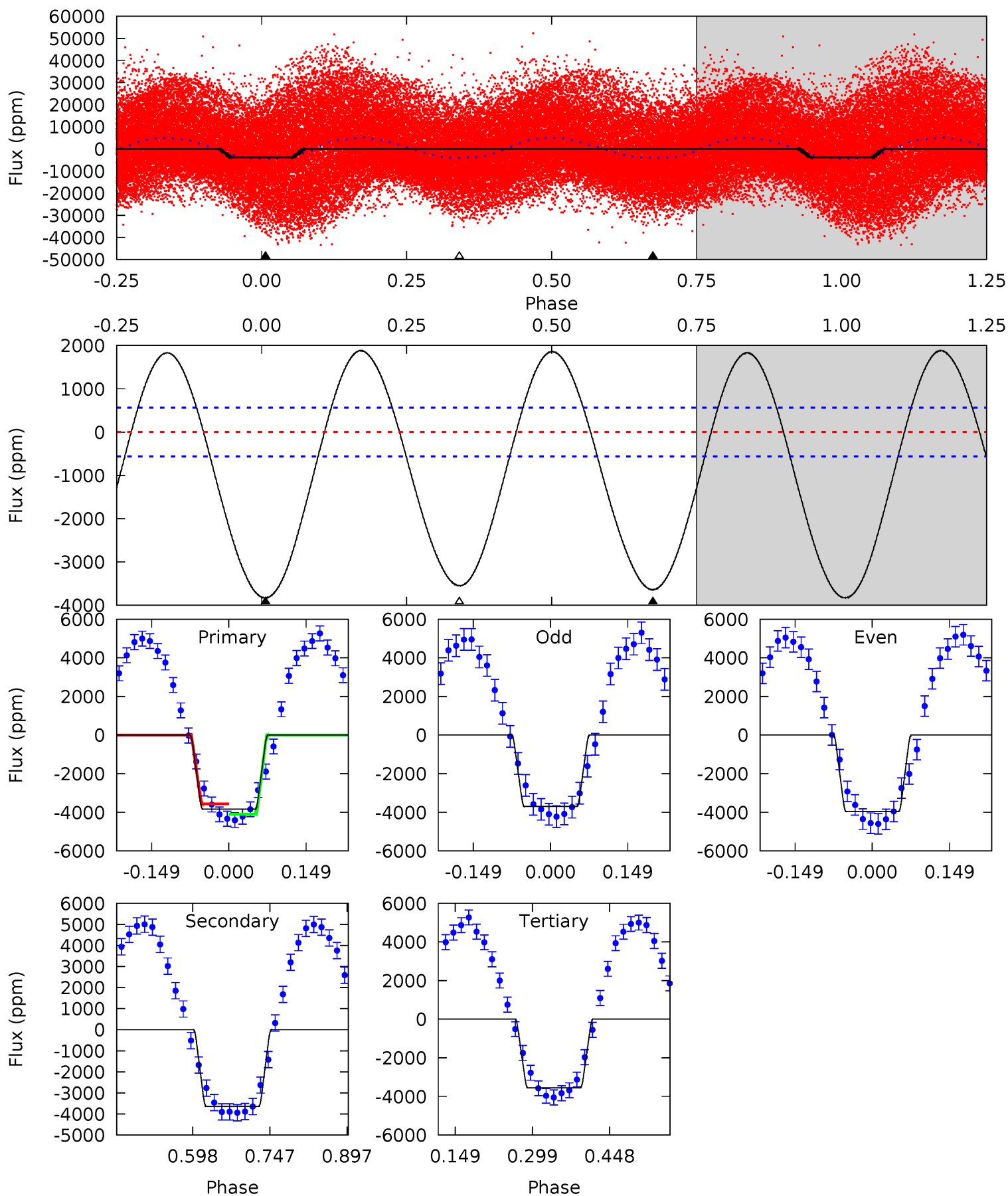
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.36	1.13	0.94	0.83	4.66	1.86	0.41	0.41	0.52	0.18	0.29	1.08	8.24	0.40	0.68



Alt Model-Shift Uniqueness Test

008331561-01, P = 1.074265 Days, E = 130.834060 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.5	29.1	28.3	0	4.48	1.44	16.0	2.23	30.5	0.75	29.1	1.02	1.20	0.33	2.10



Stellar Parameters For KIC 008331561

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3977^{+124}_{-155}	$4.644^{+0.056}_{-0.020}$	$0.280^{+0.150}_{-0.300}$	$0.623^{+0.029}_{-0.064}$	$0.624^{+0.041}_{-0.057}$	$3.634^{+0.994}_{-0.301}$
	+3%/-4%	+1%/-0%	+54%/-107%	+5%/-10%	+7%/-9%	+27%/-8%
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 008331561-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-24 ± 21	$1.71^{+1.81}_{-1.16}$	1446^{+52}_{-59}	2276^{+1011}_{-4299}	$1.045^{+10.874}_{-0.985}$
Alt.	-3644 ± 125	$3.97^{+2.67}_{-2.29}$	1447^{+53}_{-58}	3976^{+1745}_{-591}	39^{+189}_{-25}

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 $A_{obs} \gg 1.0$

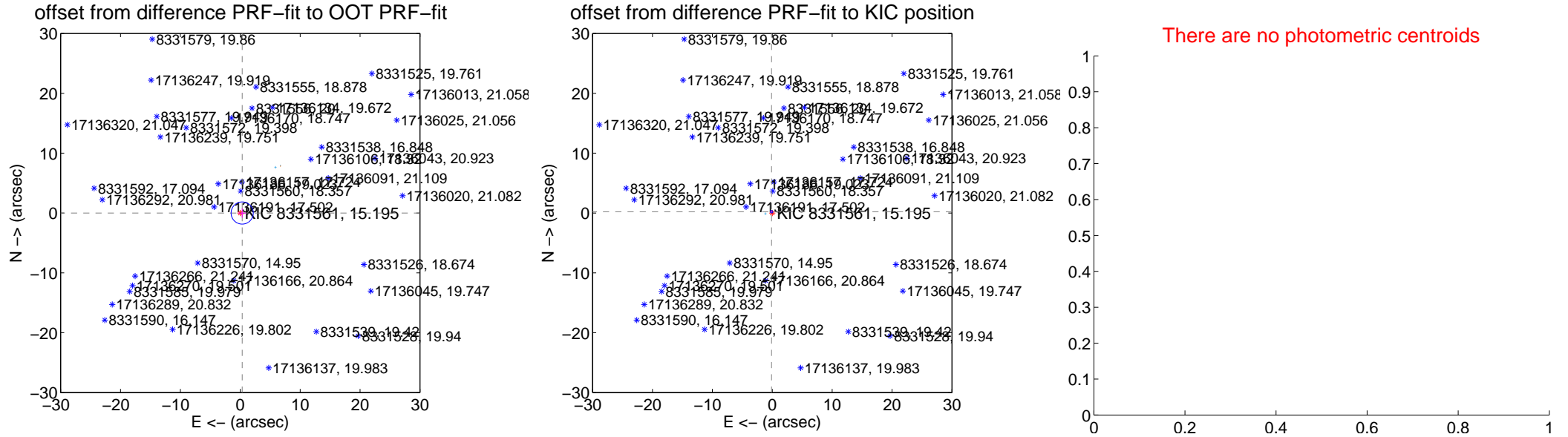
DV Centroid Data

Supplemental centroid analysis for 008331561-01. Kepler magnitude: 15.20. Transit SNR 0.03

There are 8 quarters with good PRF difference image offsets

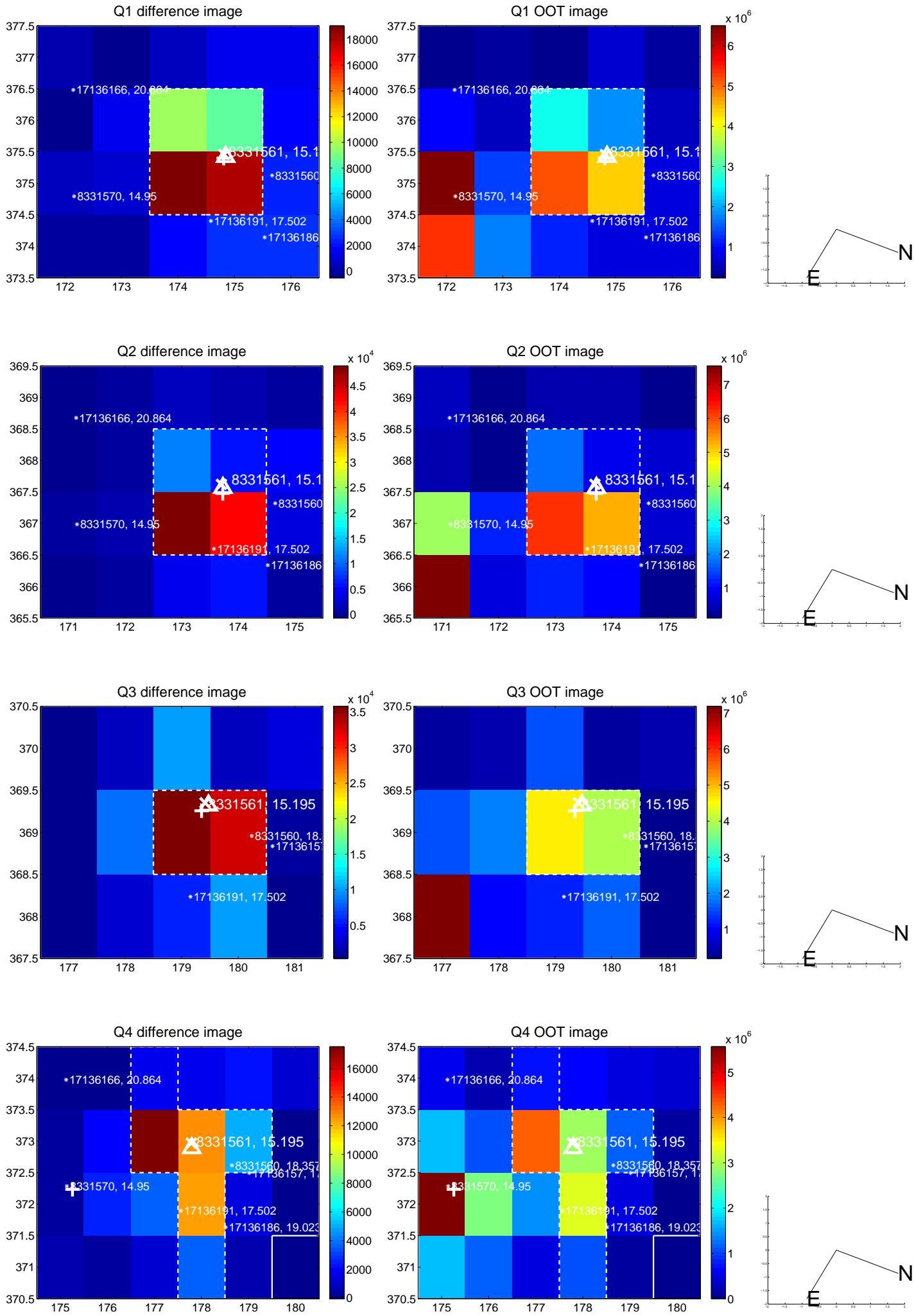
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.319 ± 0.618	0.52	-0.319 ± 0.620	-0.001 ± 0.772
PRF-fit source offset from KIC position	0.244 ± 0.069	3.51	0.126 ± 0.092	0.209 ± 0.071
photometric centroid source offset	—	—	—	—

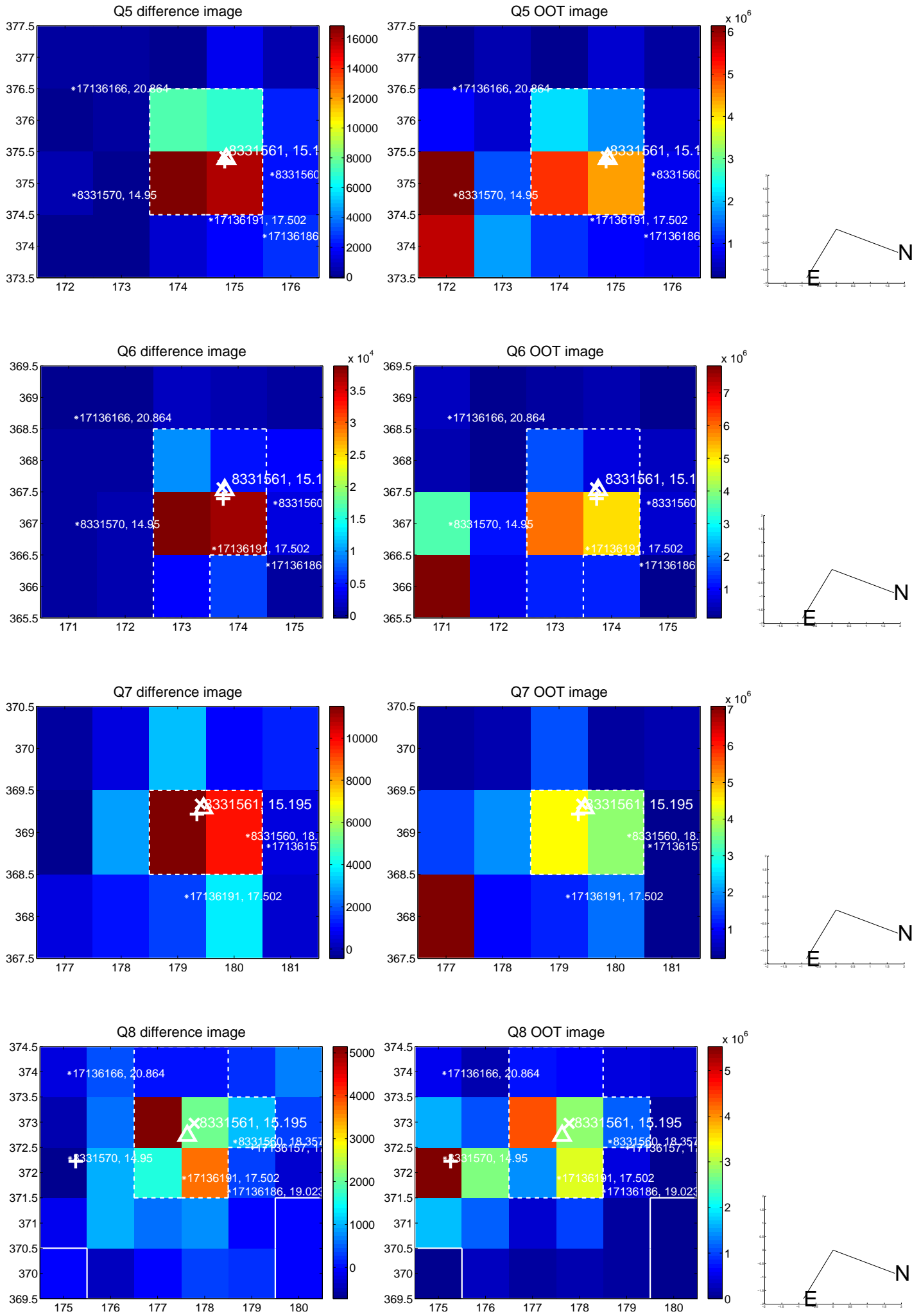


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

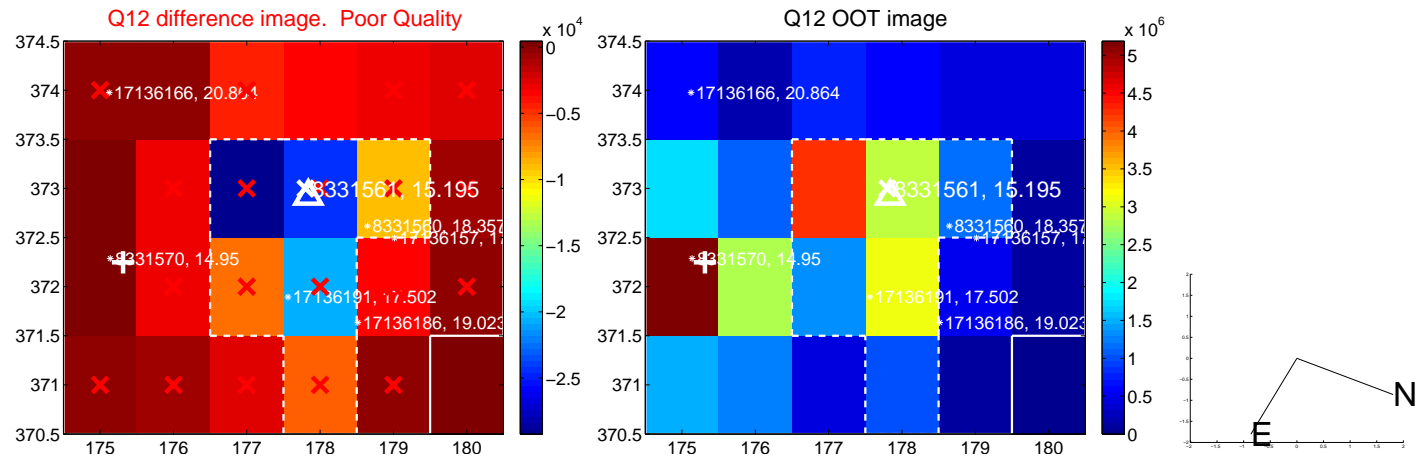
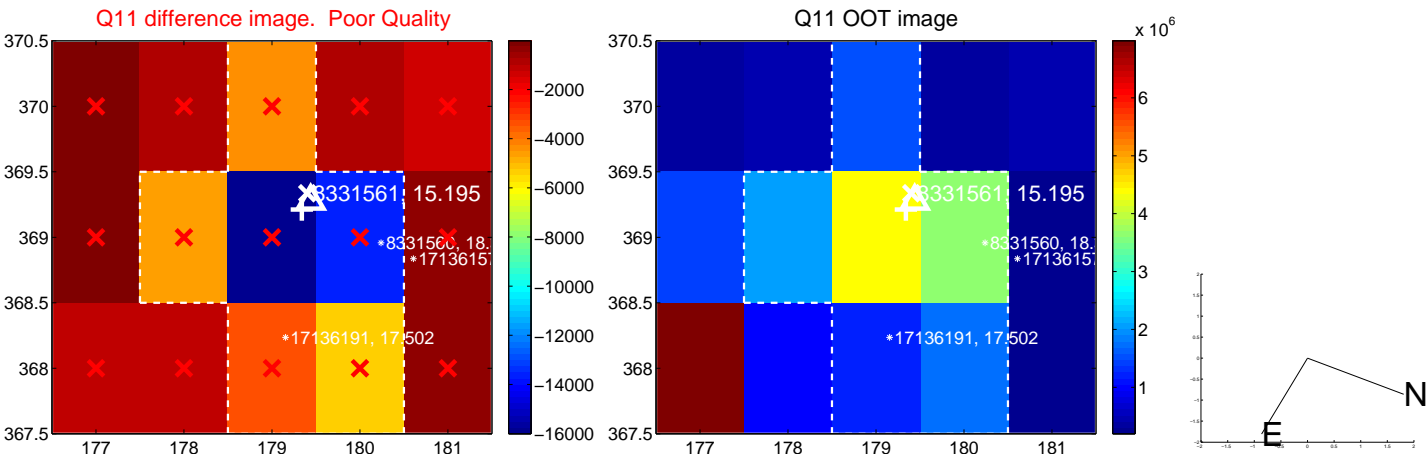
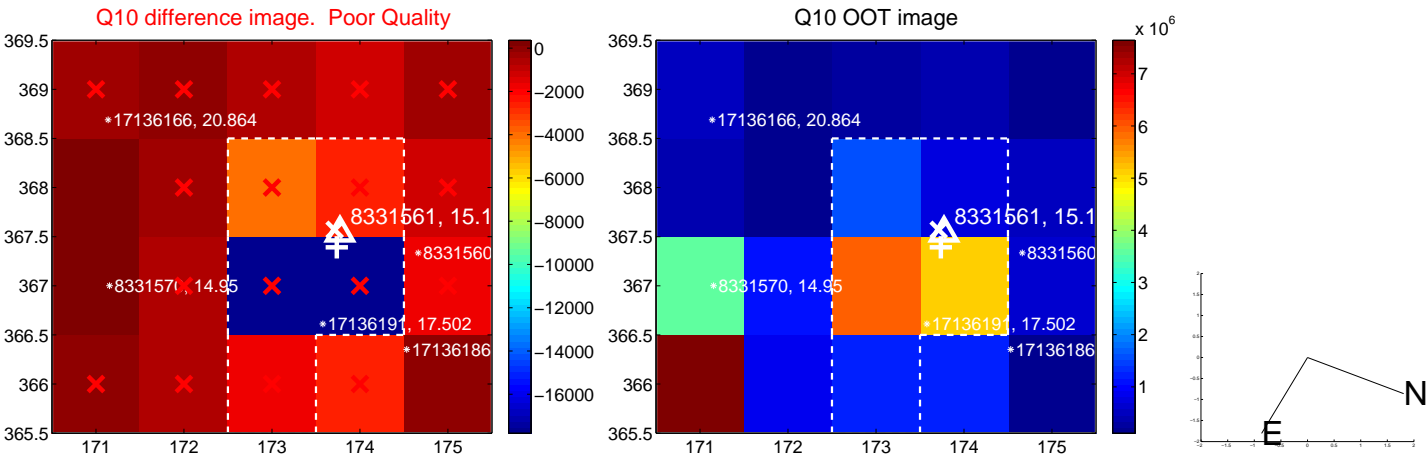
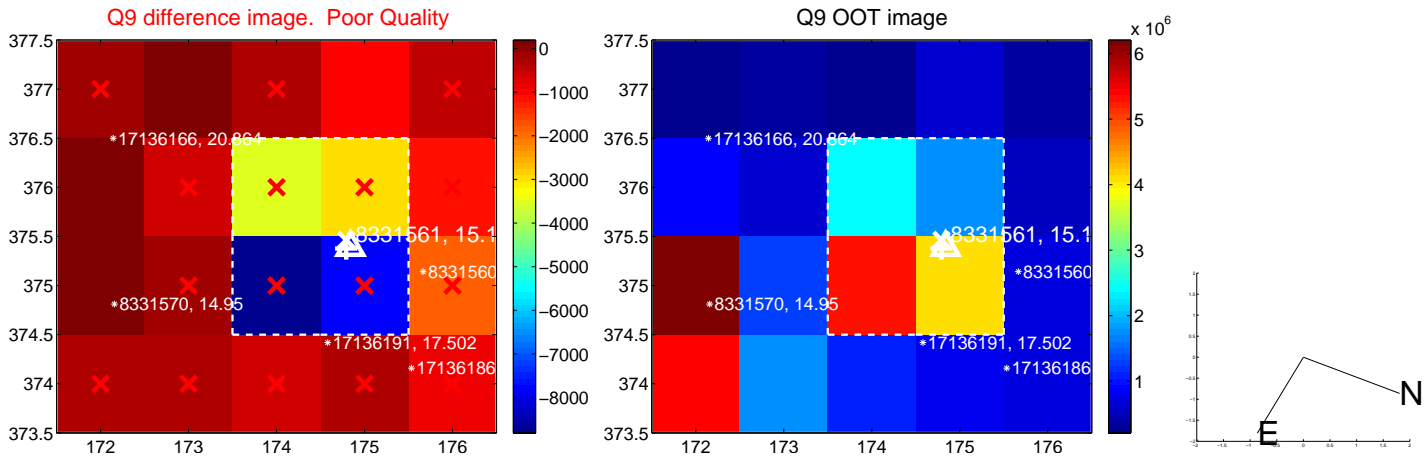
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



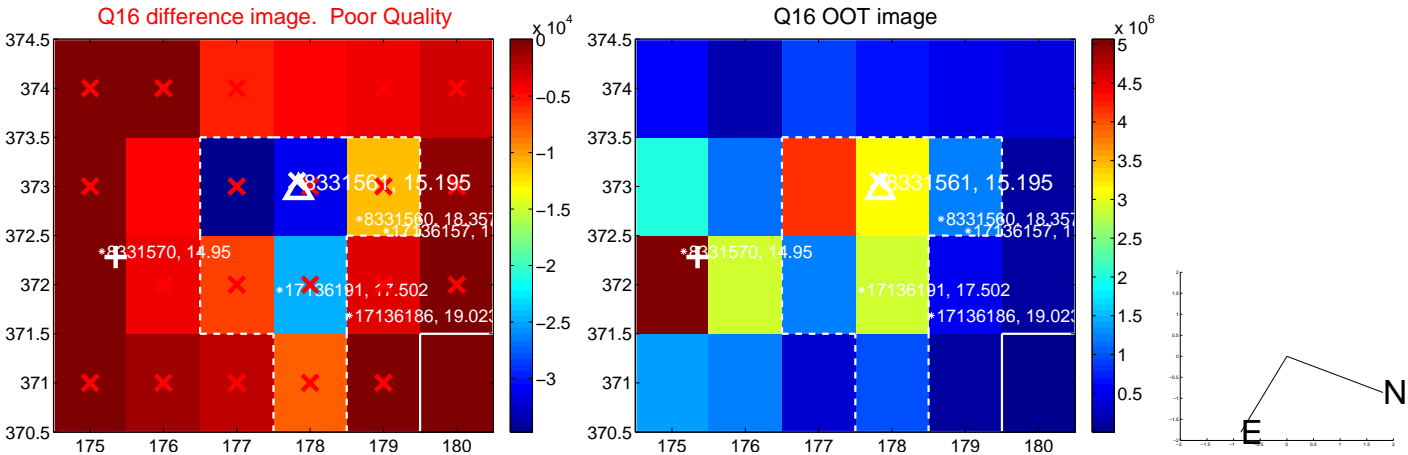
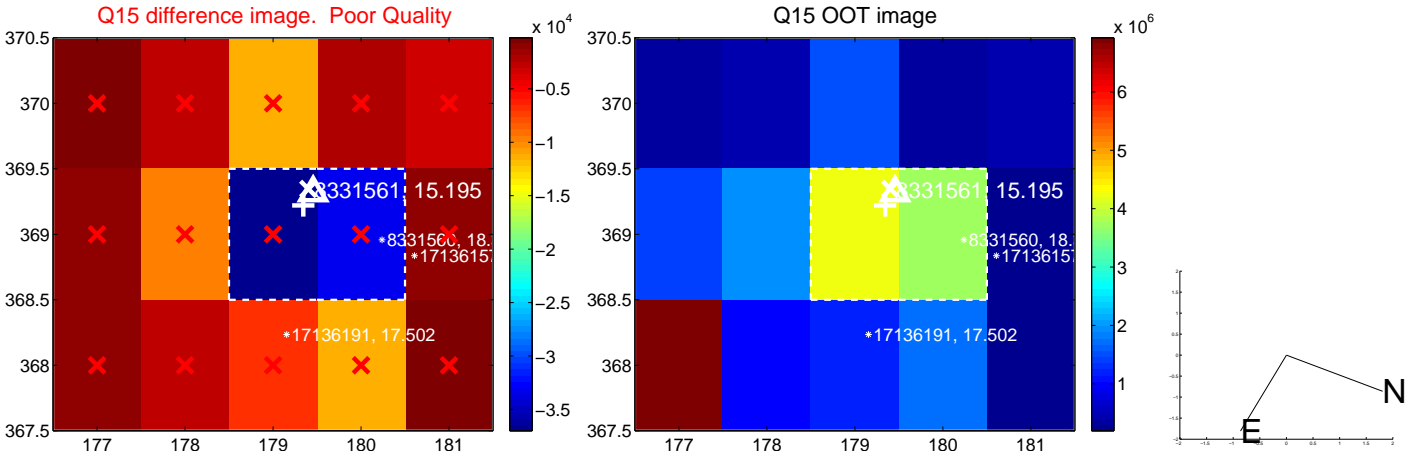
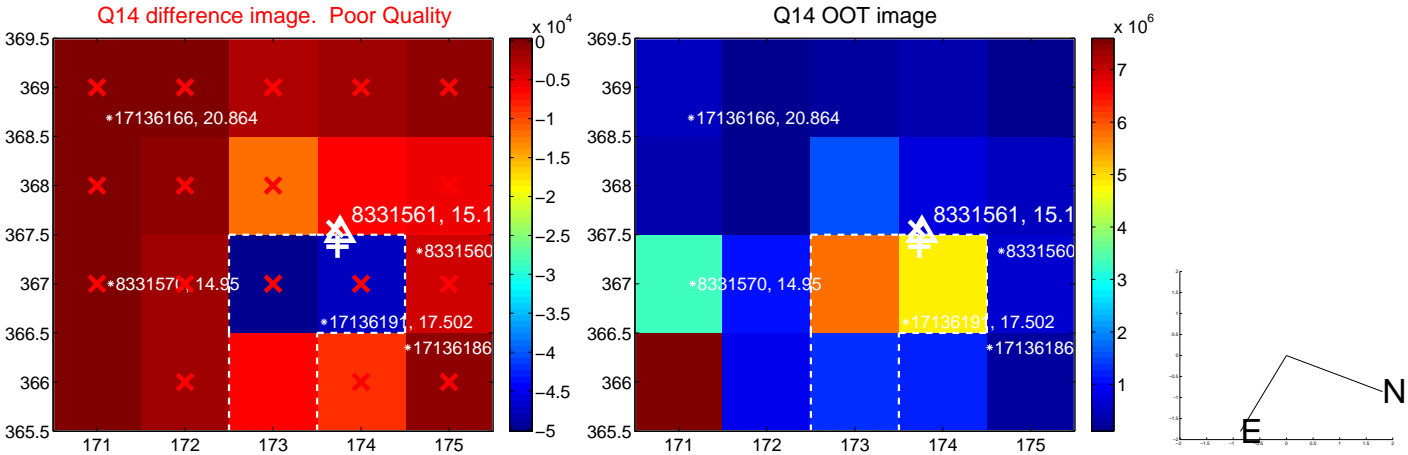
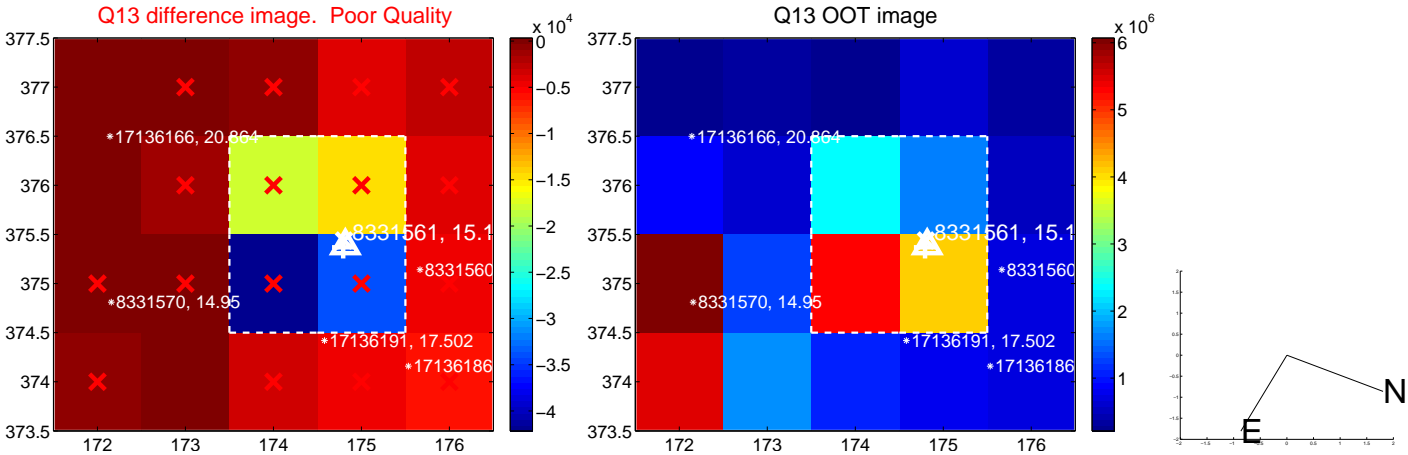
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



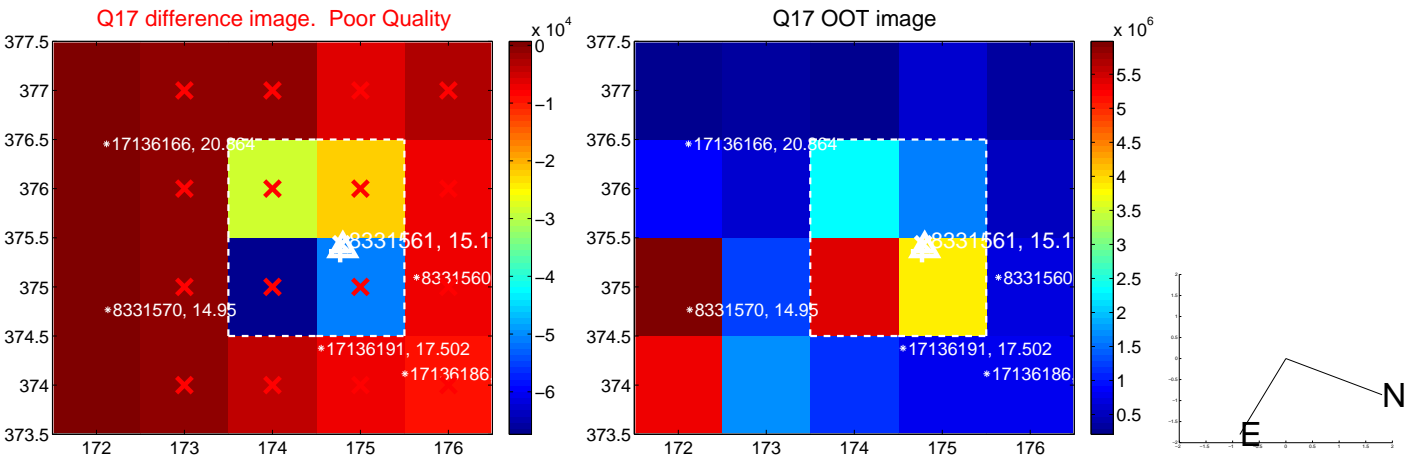
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



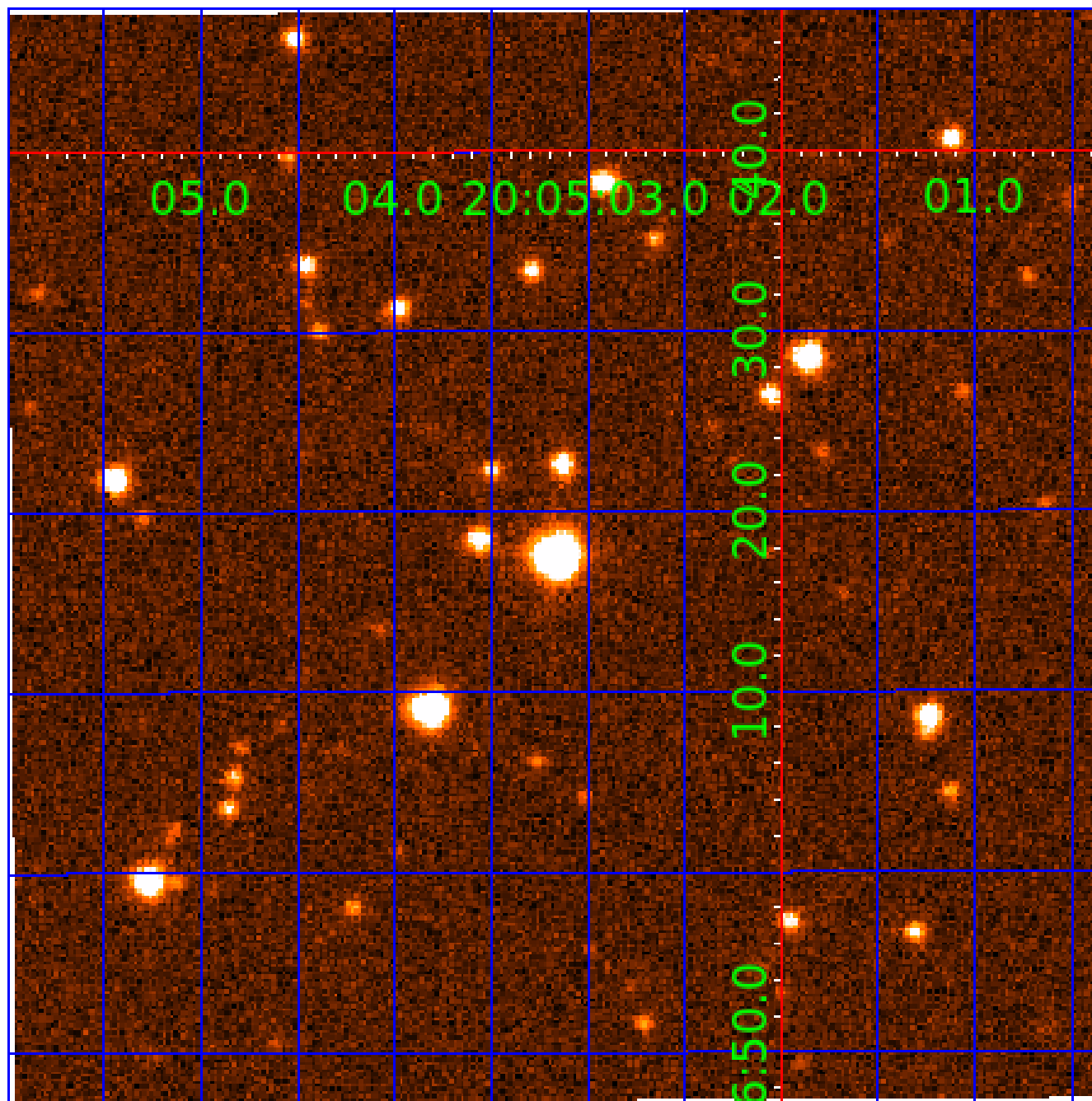
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 008331561

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})
008331561-01	OBS	No	1.074092	131.930598	0.9	1.185	11.0	0.0	0.62	3977	0.08	282.74
008331561-02	OBS	No	1.074228	132.020369	2515.8	1.500	9.5	-1.0	0.62	3977	3.02	282.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008331561-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
008331561-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

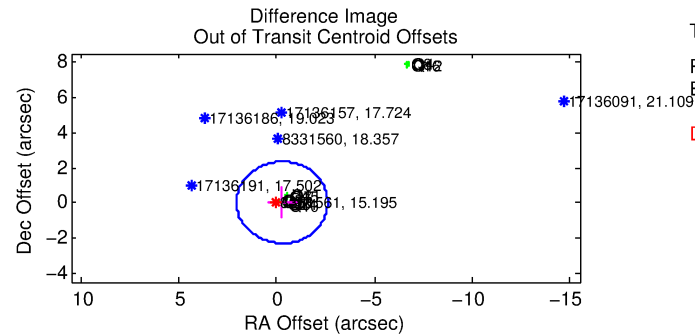
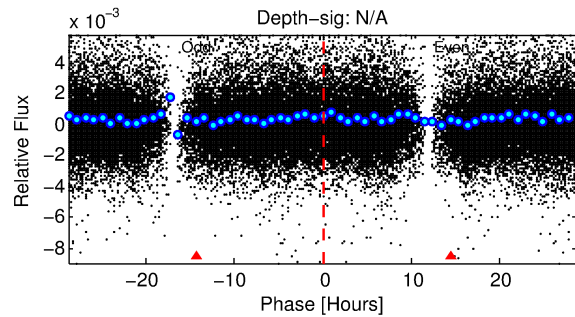
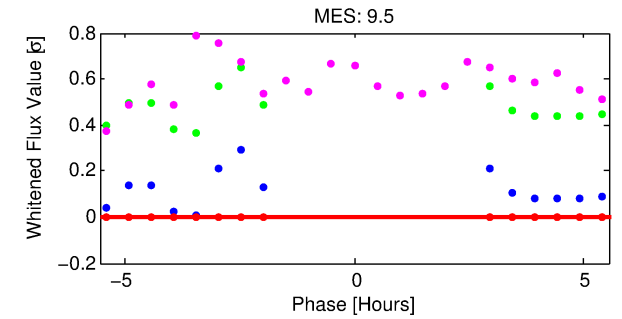
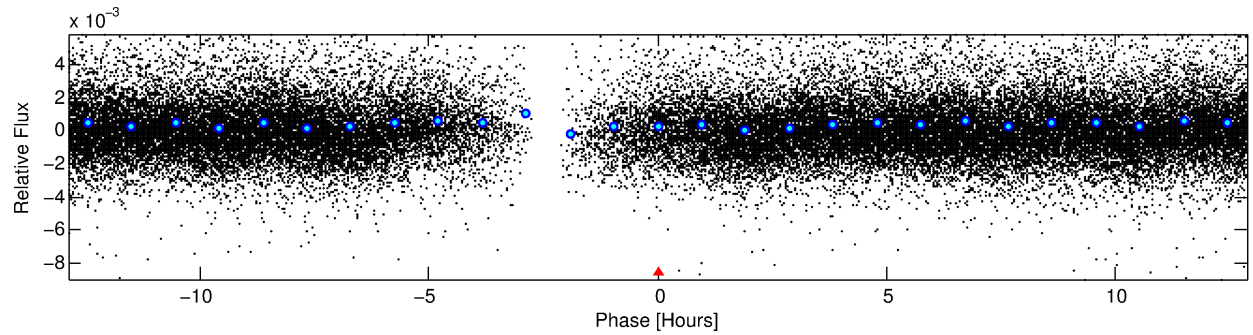
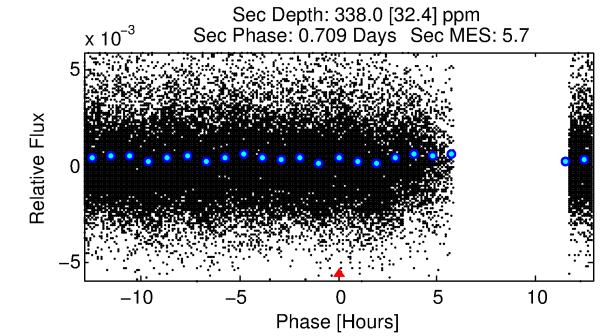
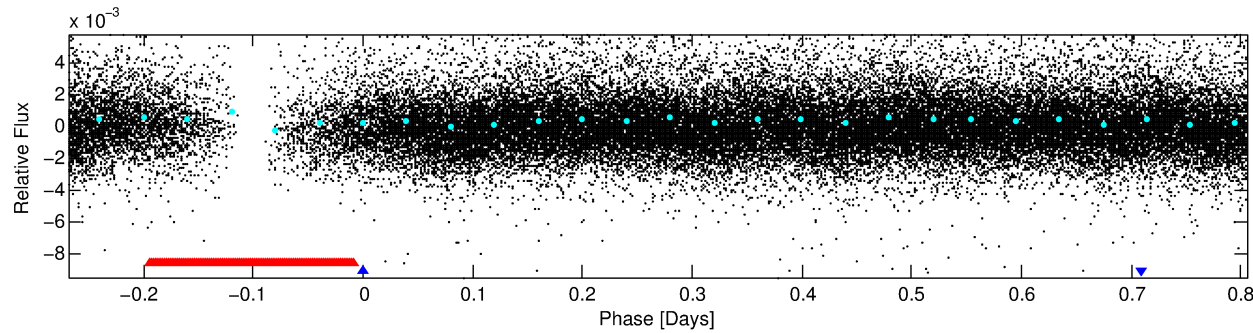
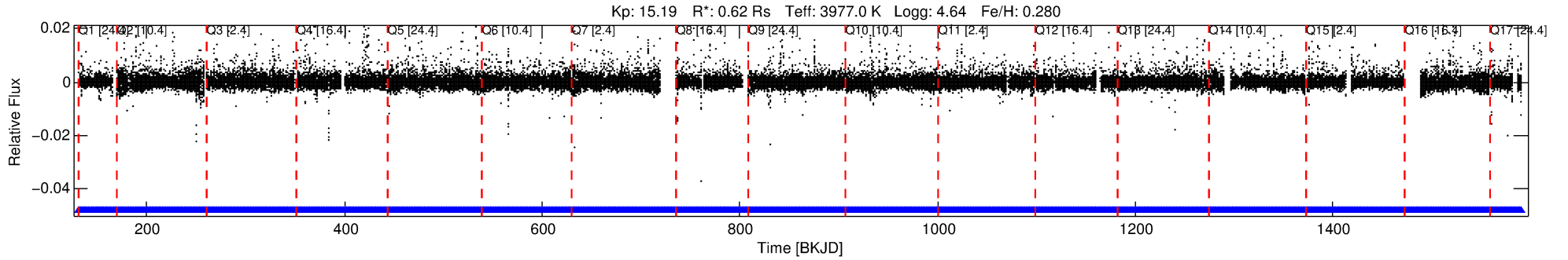
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008331561-02

No Significant Match Found

DV One-Page Summary

KIC: 8331561 Candidate: 2 of 2 Period: 1.074 d



TPS TCE Results:

Period = 1.07423 d
Epoch = 132.0204 BKJD

DV fit results are unavailable

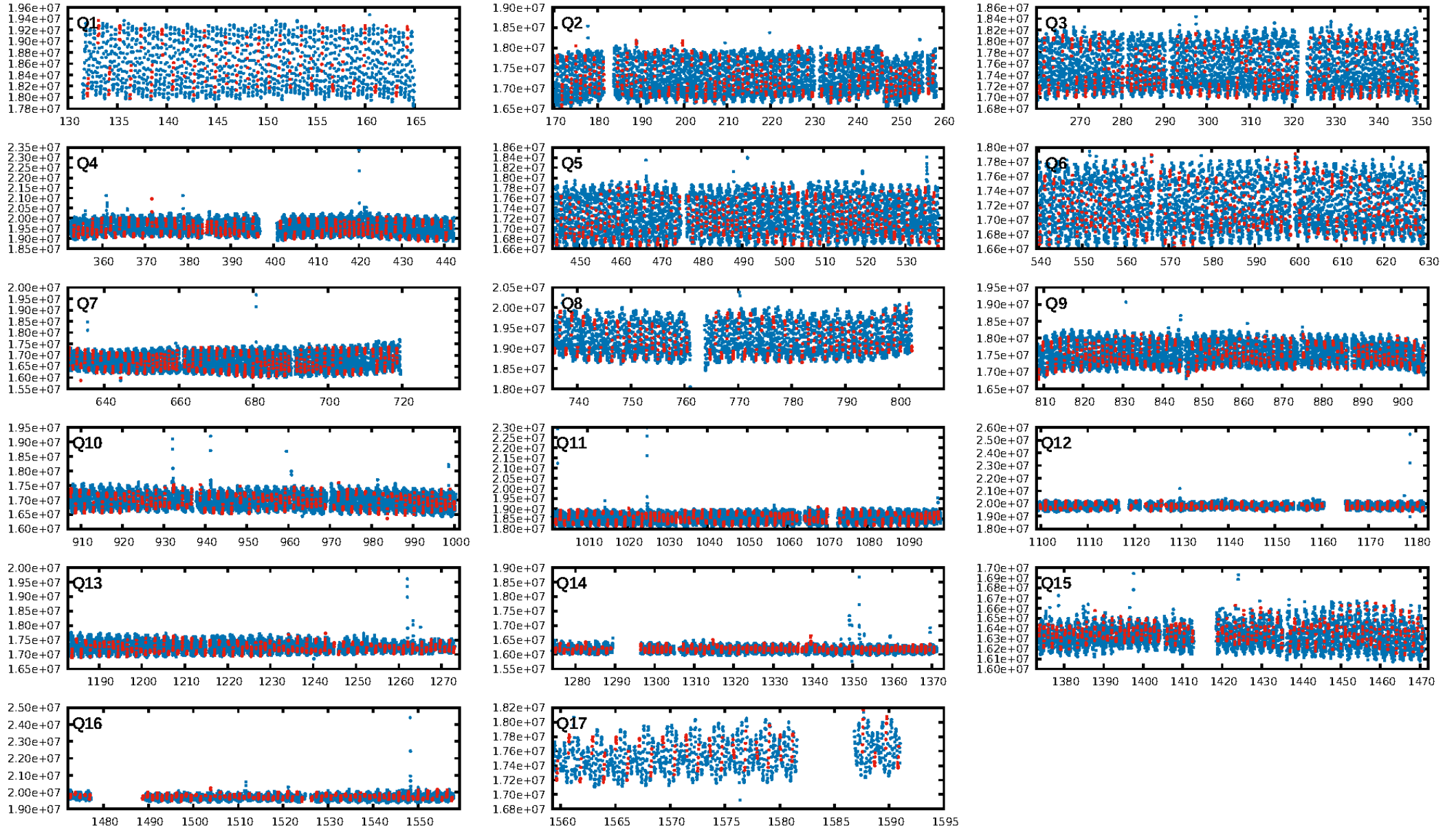
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.25e-17
RollingBand-fgt: 1.00 [1190/1190]
GhostDiagnostic-chr: 0.989
Centroid-sig: 0.0%
Centroid-so: 2.233 arcsec [88.97σ]
OotOffset-rm: 0.280 arcsec [0.36σ]
KicOffset-rm: 0.273 arcsec [3.93σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

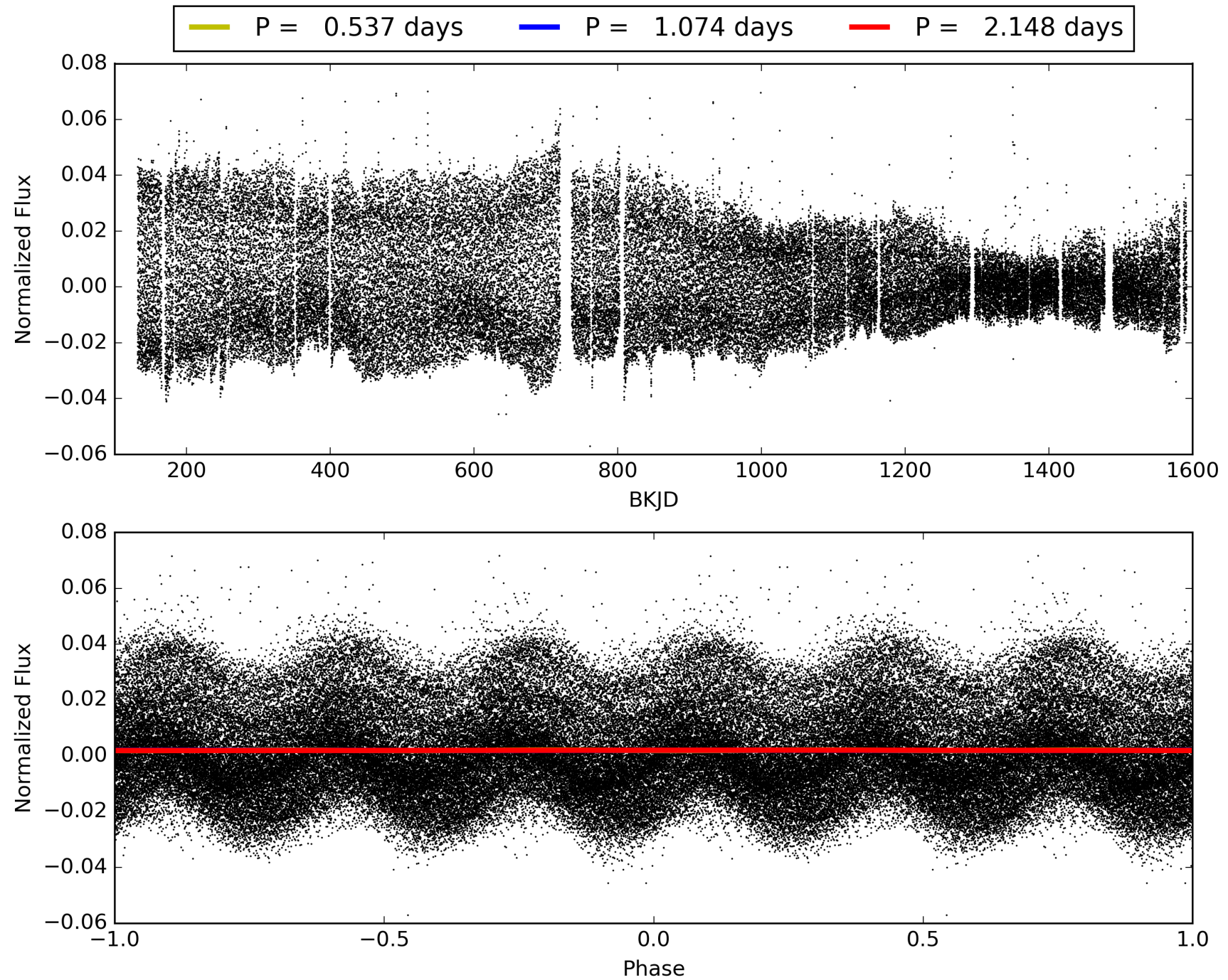
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:03:10 Z

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

TCE 008331561-02, PDC Light Curves

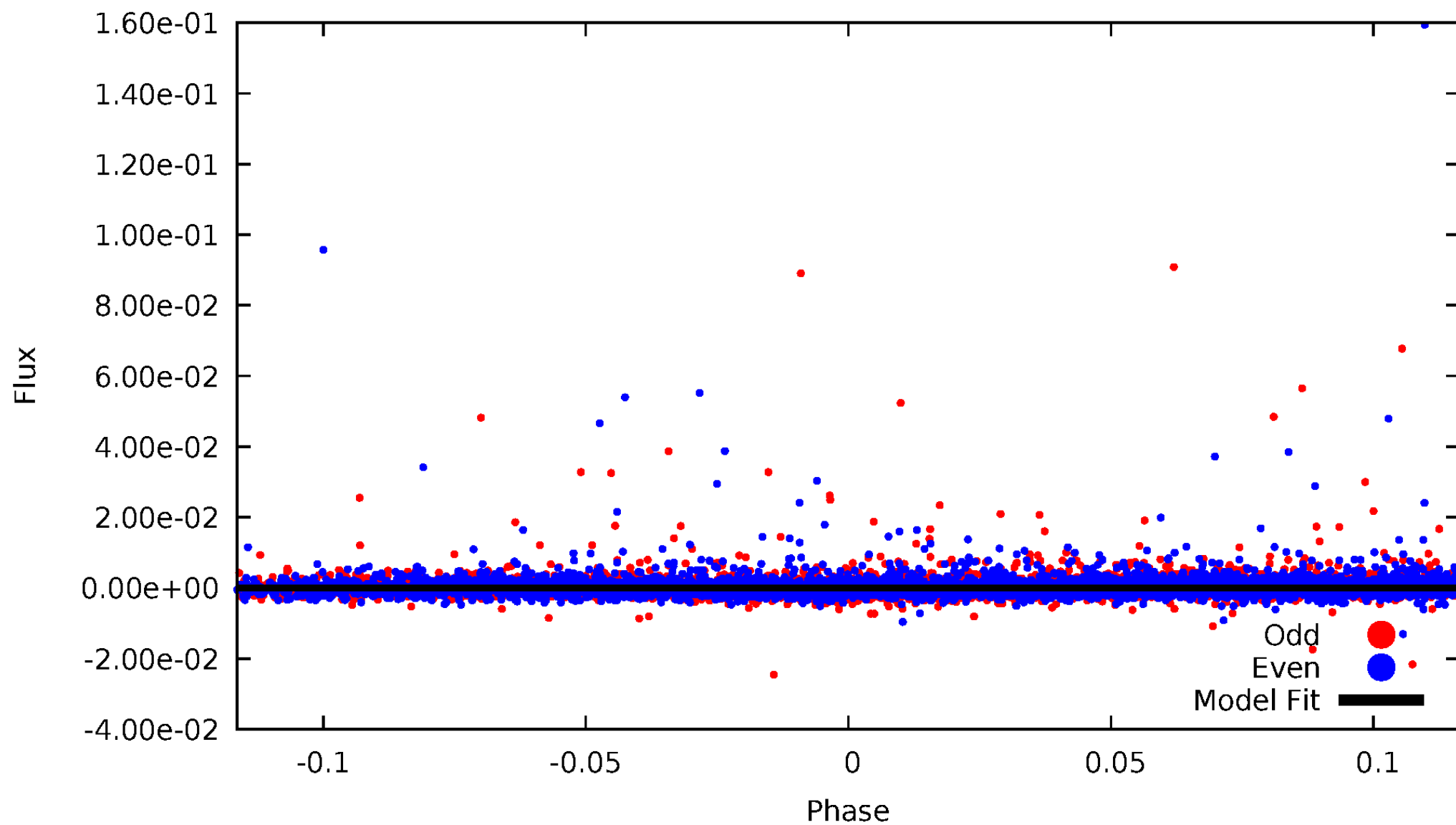


TCE 008331561-02



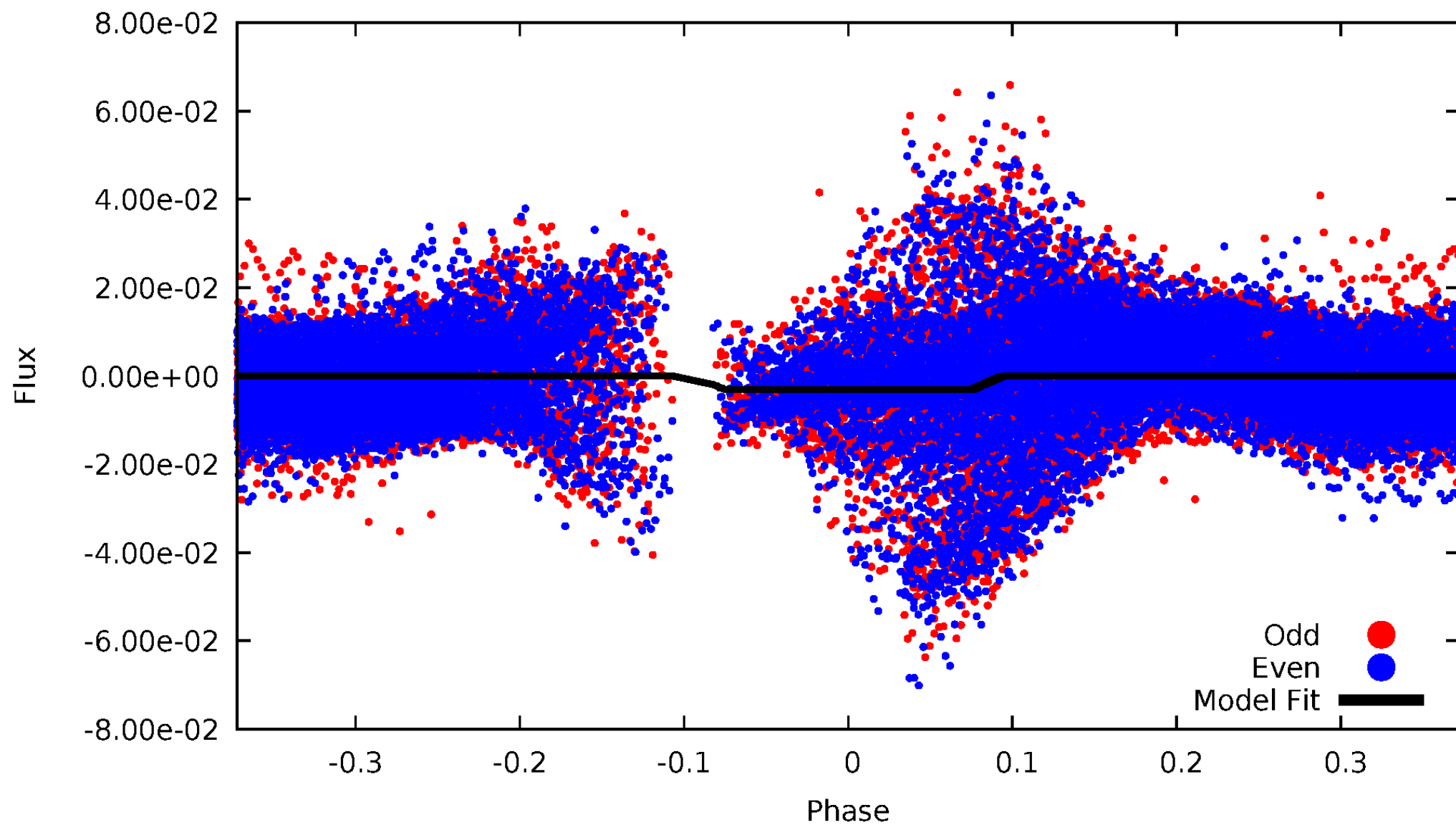
DV Odd/Even

TCE 008331561-02



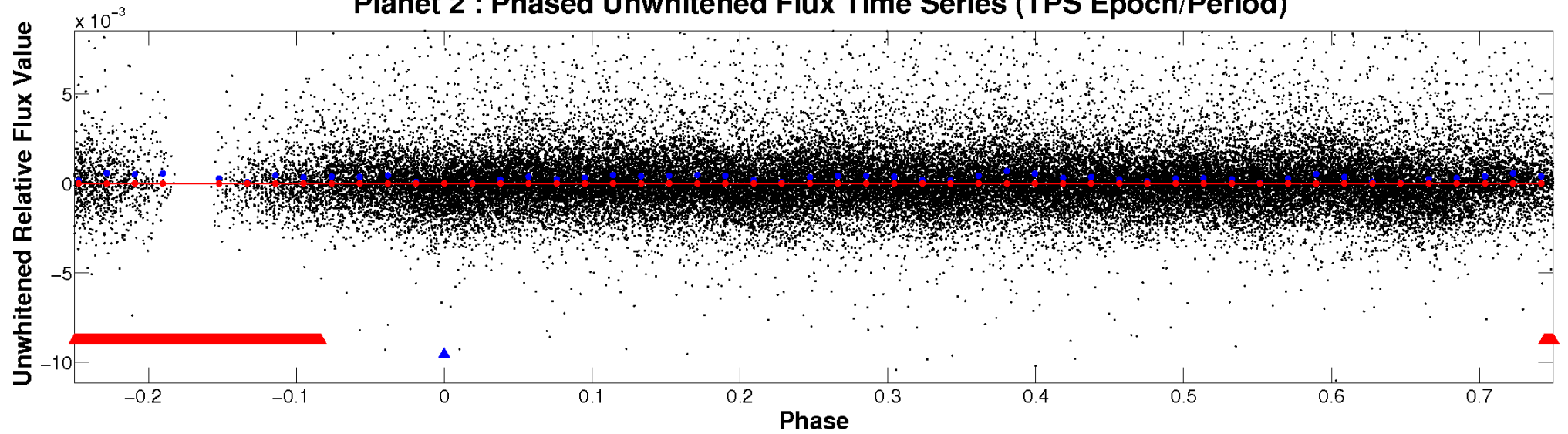
ALT Odd/Even

TCE 008331561-02

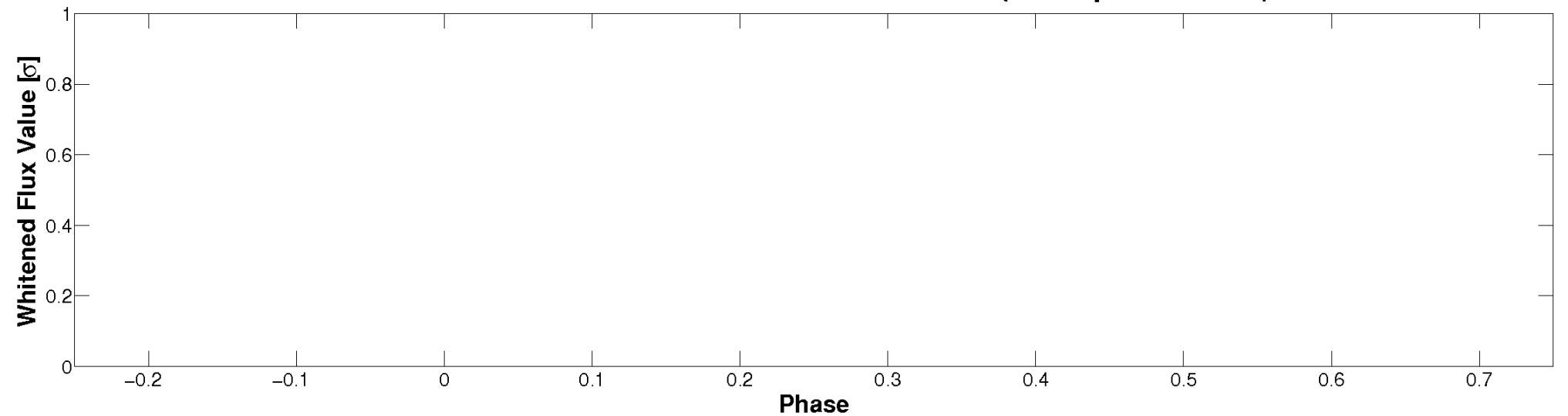


Non-Whitened Vs. Whitened Light Curve

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

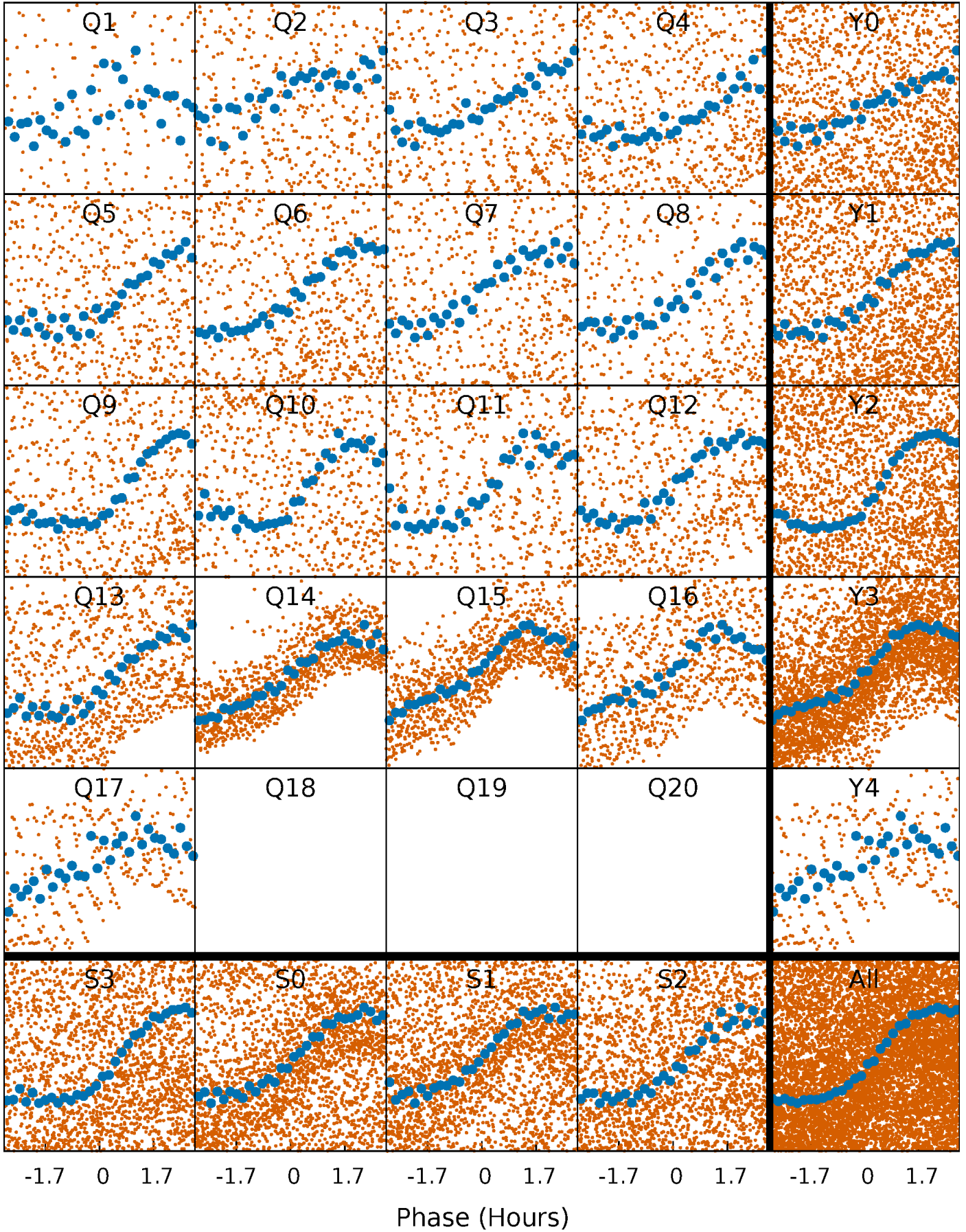


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



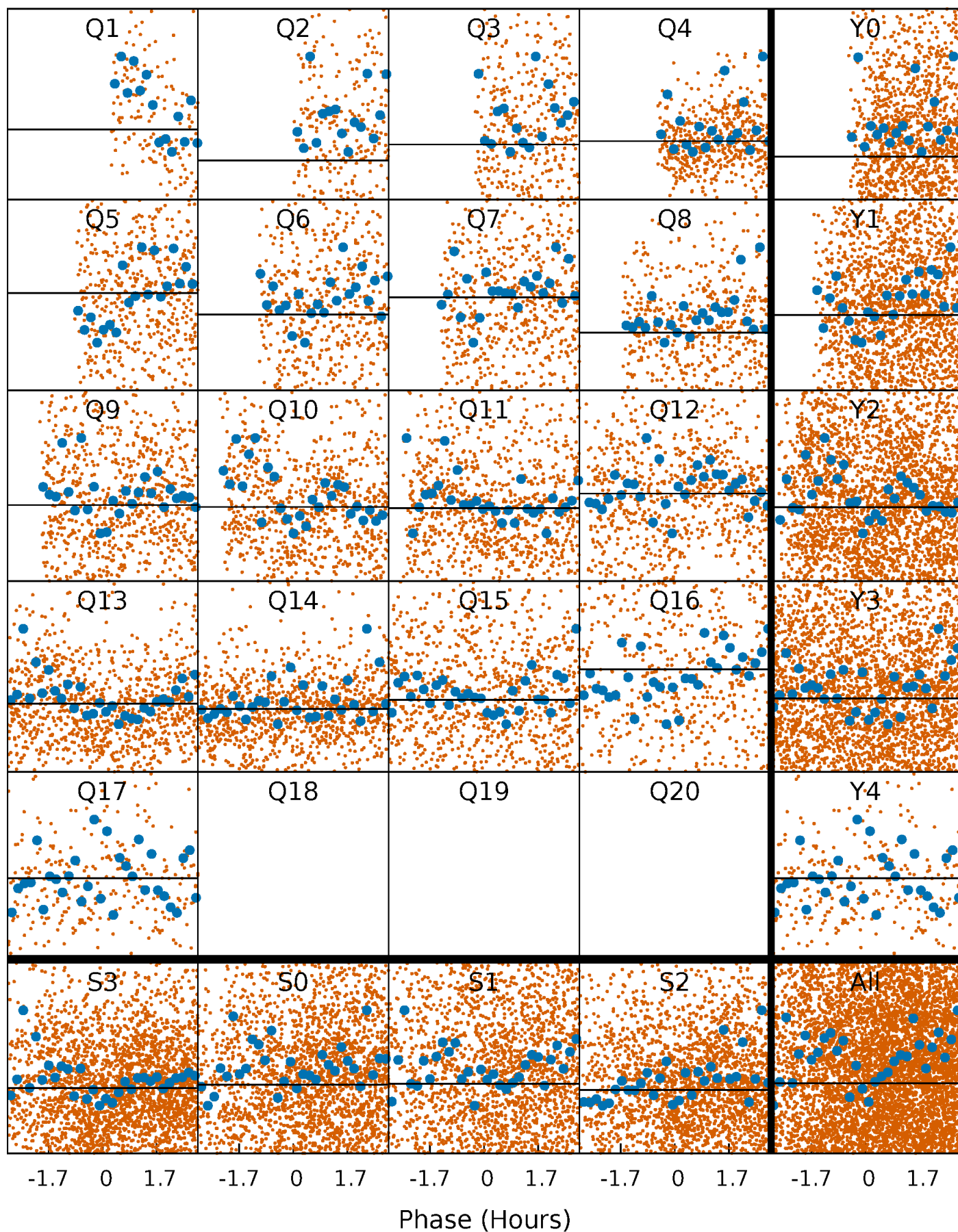
PDC Quarter-Phased Transit Curves

TCE 008331561-02 P= 1.074228 Days $T_0=132.020369$ (BKJD)



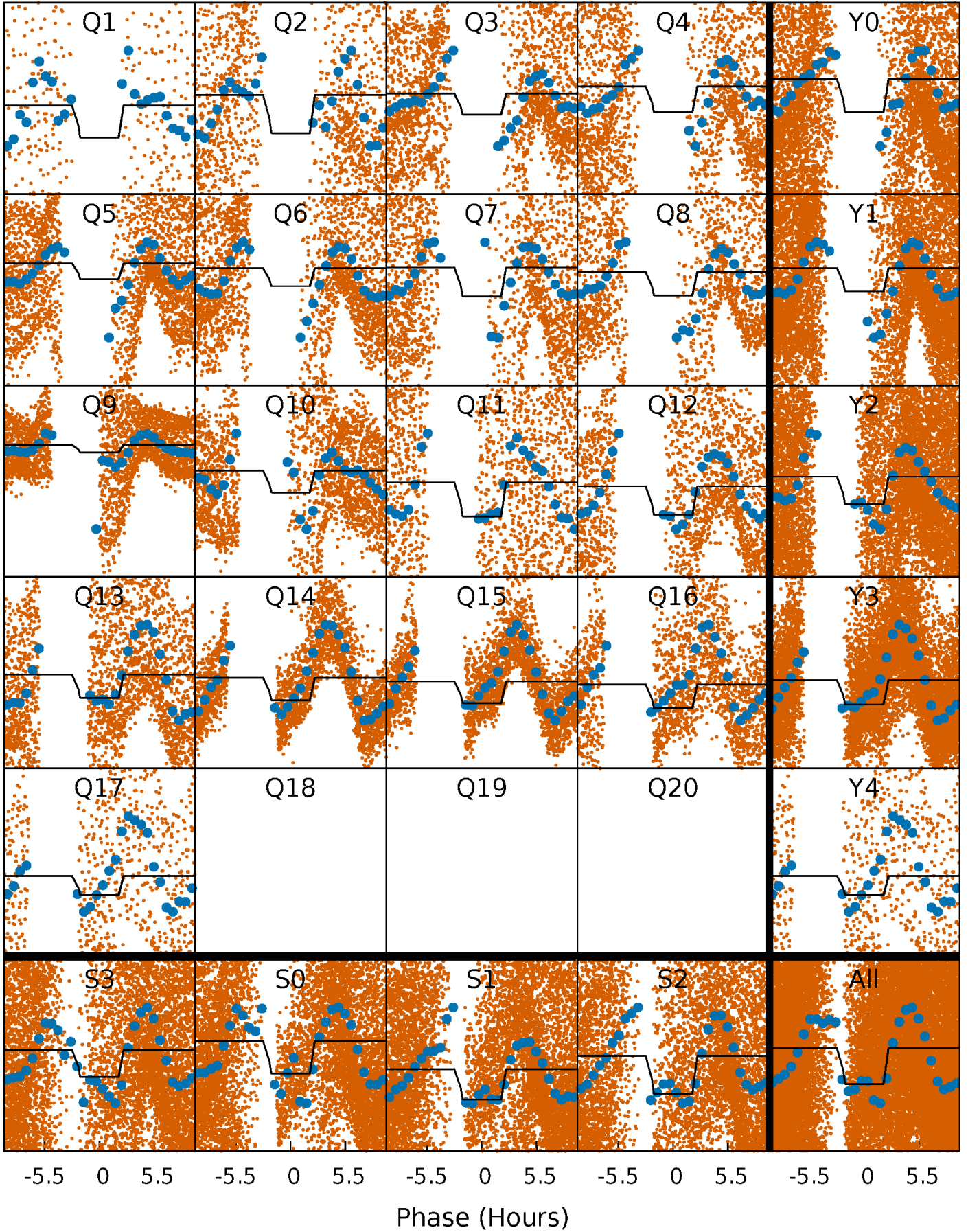
DV Quarter-Phased Transit Curves

TCE 008331561-02 P= 1.074228 Days $T_0=132.020369$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

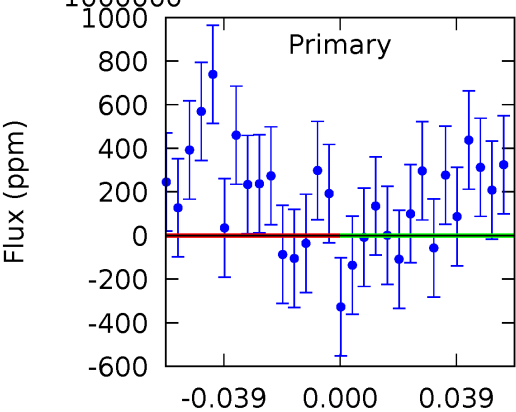
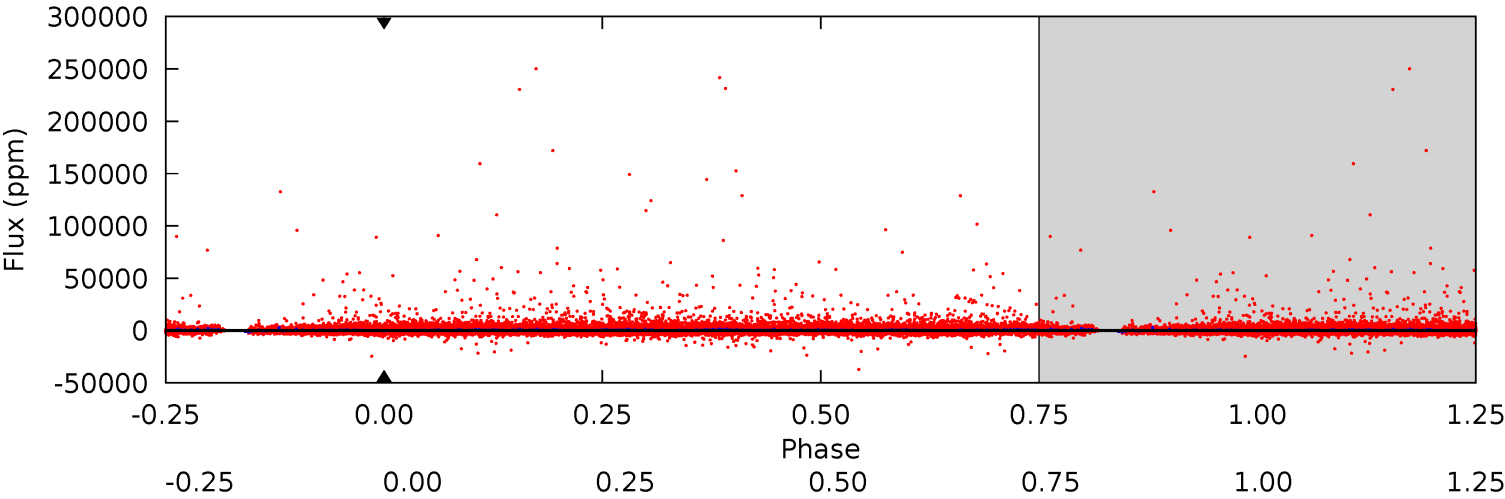
TCE 008331561-02 P= 1.074228 Days $T_0=131.939367$ (BKJD)



DV Model-Shift Uniqueness Test

008331561-02, P = 1.074228 Days, E = 130.946141 Days

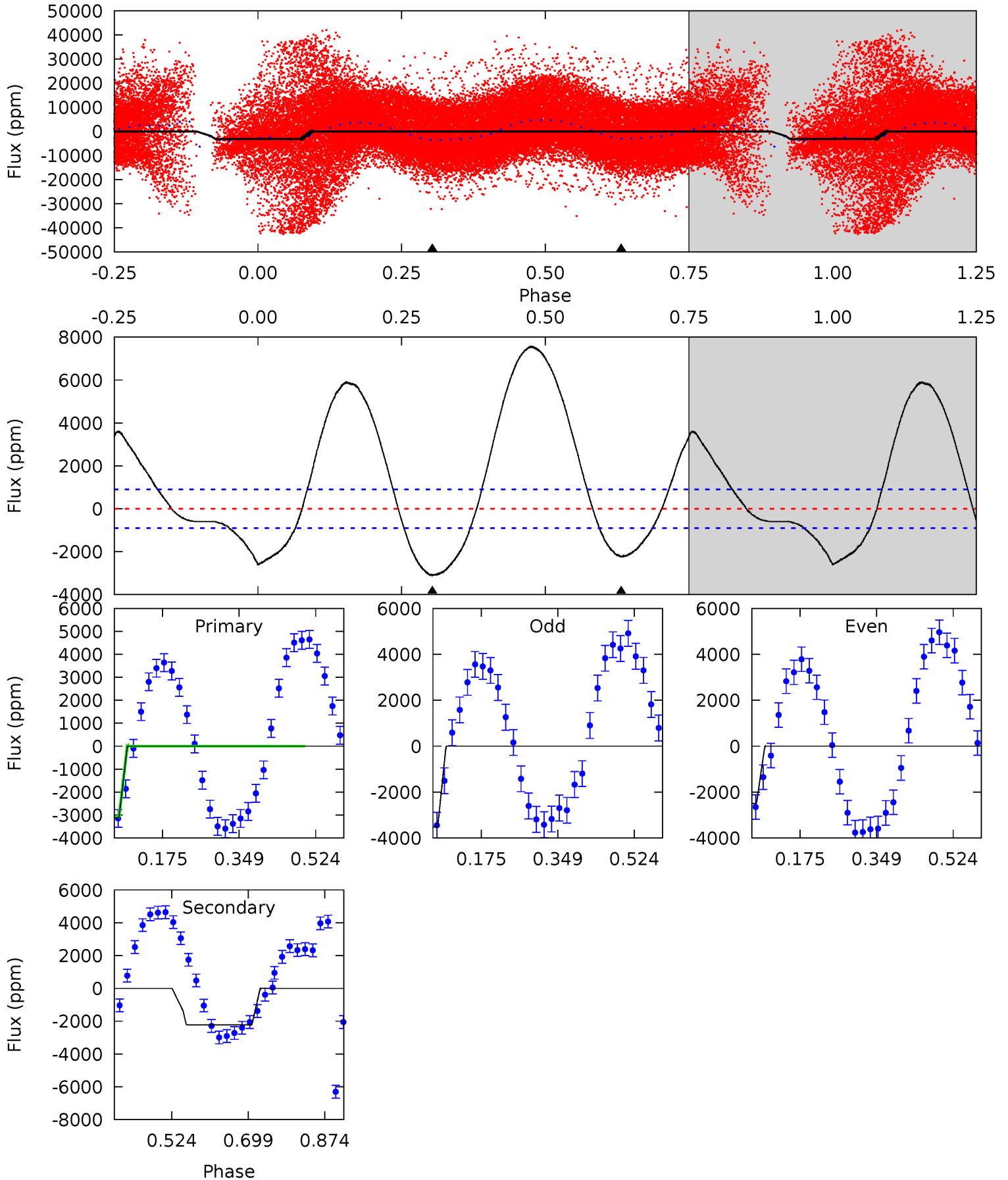
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008331561-02, P = 1.074228 Days, E = 130.865139 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	11.0	0	0	4.45	1.36	13.0	15.4	15.4	11.0	11.0	3.14	2.15	0.71	0.56



Stellar Parameters For KIC 008331561

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3977^{+124}_{-155}	$4.644^{+0.056}_{-0.020}$	$0.280^{+0.150}_{-0.300}$	$0.623^{+0.029}_{-0.064}$	$0.624^{+0.041}_{-0.057}$	$3.634^{+0.994}_{-0.301}$
	+3%/-4%	+1%/-0%	+54%/-107%	+5%/-10%	+7%/-9%	+27%/-8%
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 008331561-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$5.61^{+5.89}_{-3.60}$	1446^{+54}_{-59}	3483^{+5416}_{-11166}	19^{+1092}_{-735}
Alt.	-2232 ± 203	$6.34^{+6.03}_{-3.91}$	1447^{+53}_{-58}	3159^{+1202}_{-557}	$9.313^{+57.911}_{-6.818}$

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

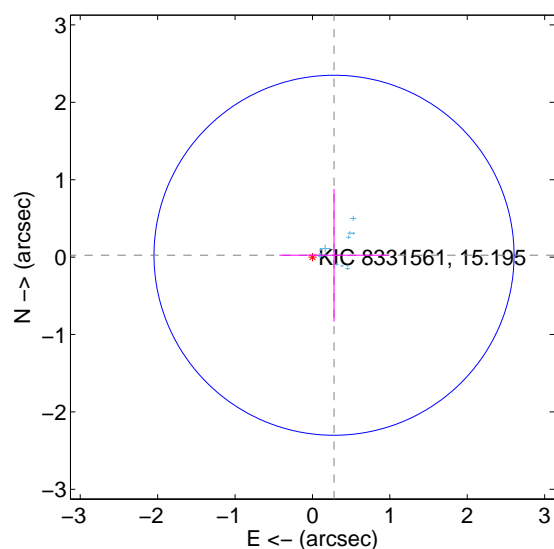
Supplemental centroid analysis for 008331561-02. Kepler magnitude: 15.20. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

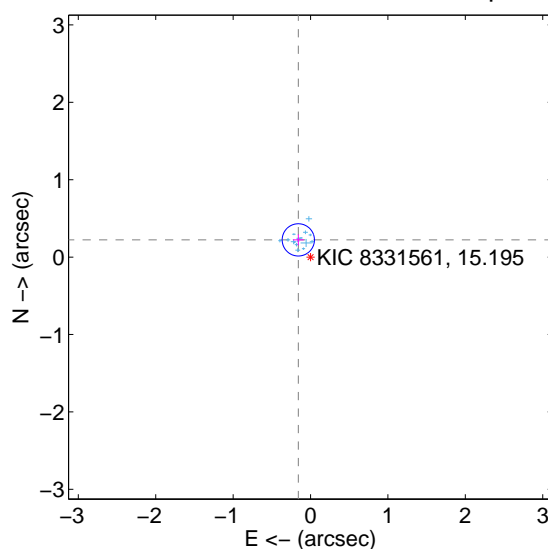
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.280 ± 0.775	0.36	-0.279 ± 0.706	0.024 ± 0.857
PRF-fit source offset from KIC position	0.273 ± 0.069	3.93	0.158 ± 0.071	0.223 ± 0.071
photometric centroid source offset	2.23 ± 0.03	88.97	2.12 ± 0.02	-0.70 ± 0.03

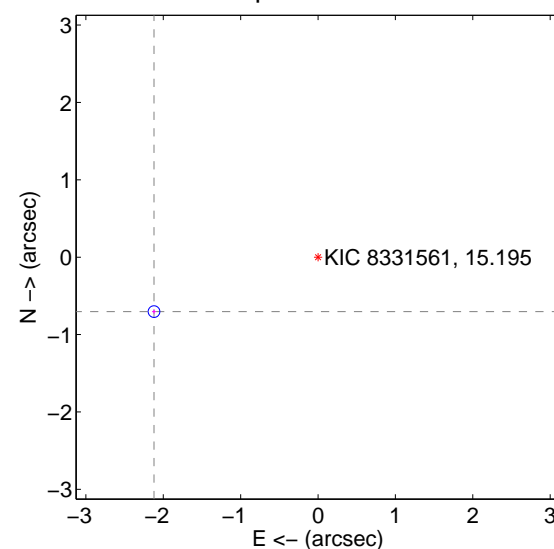
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

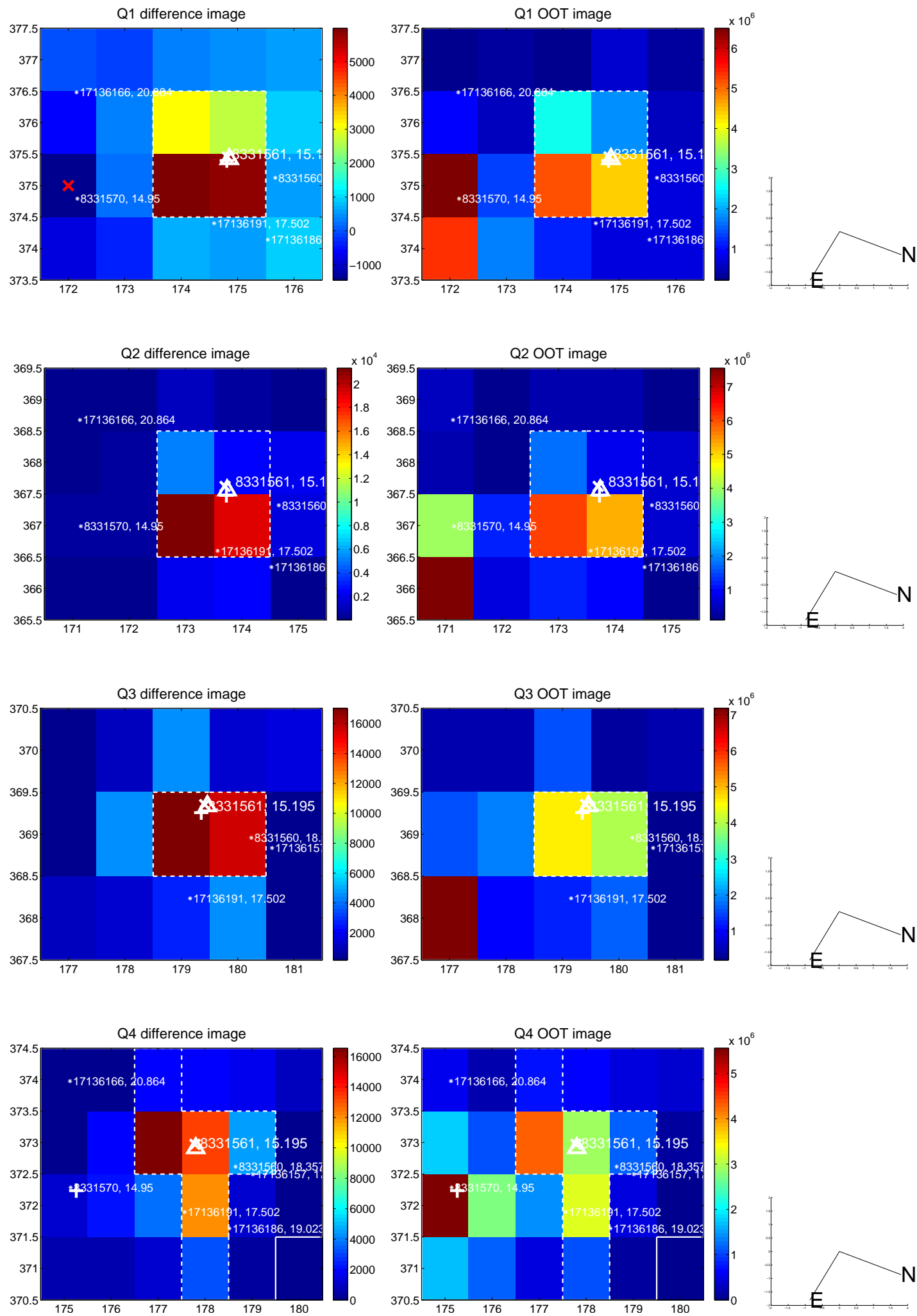


offset from photometric centroids

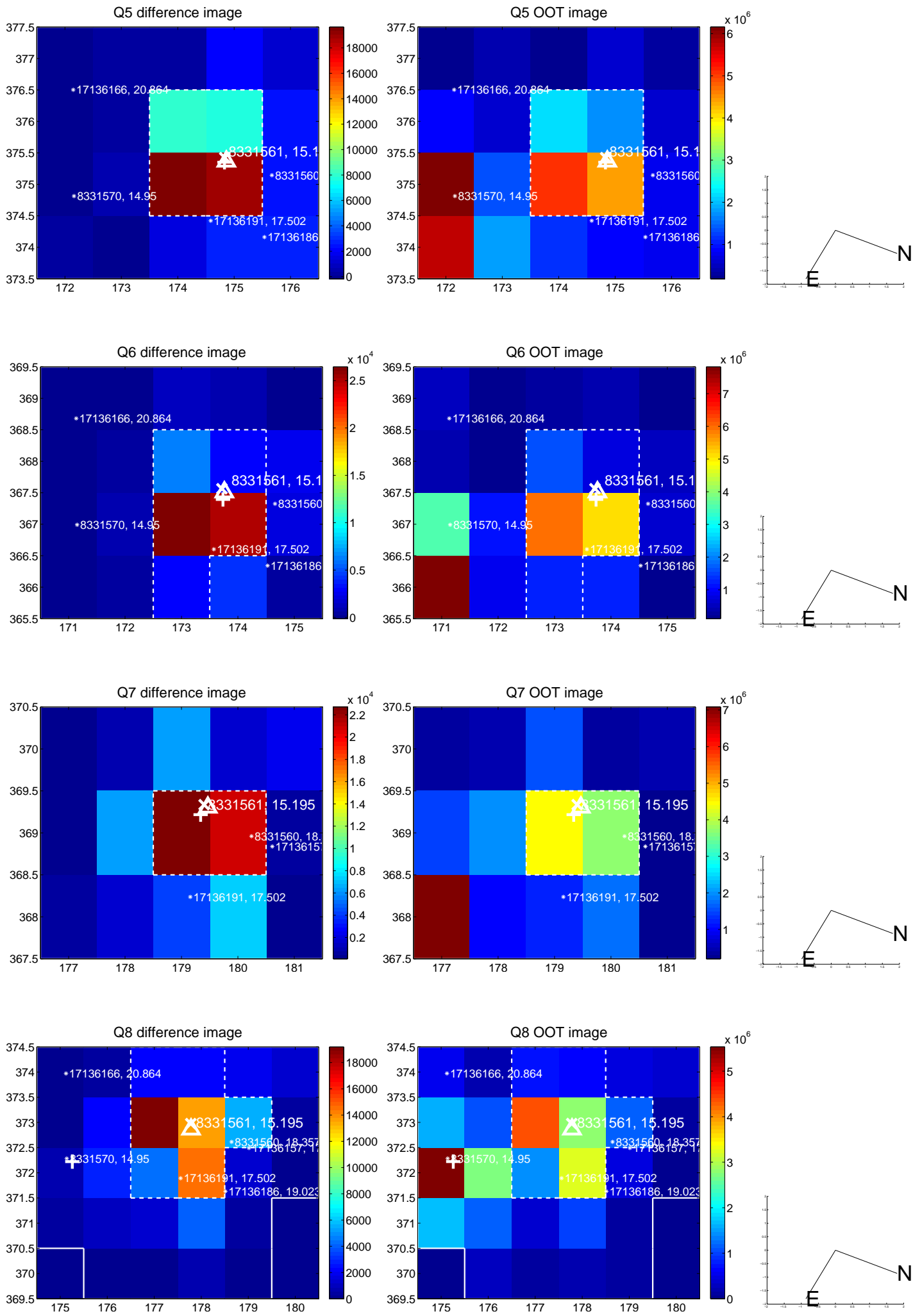


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

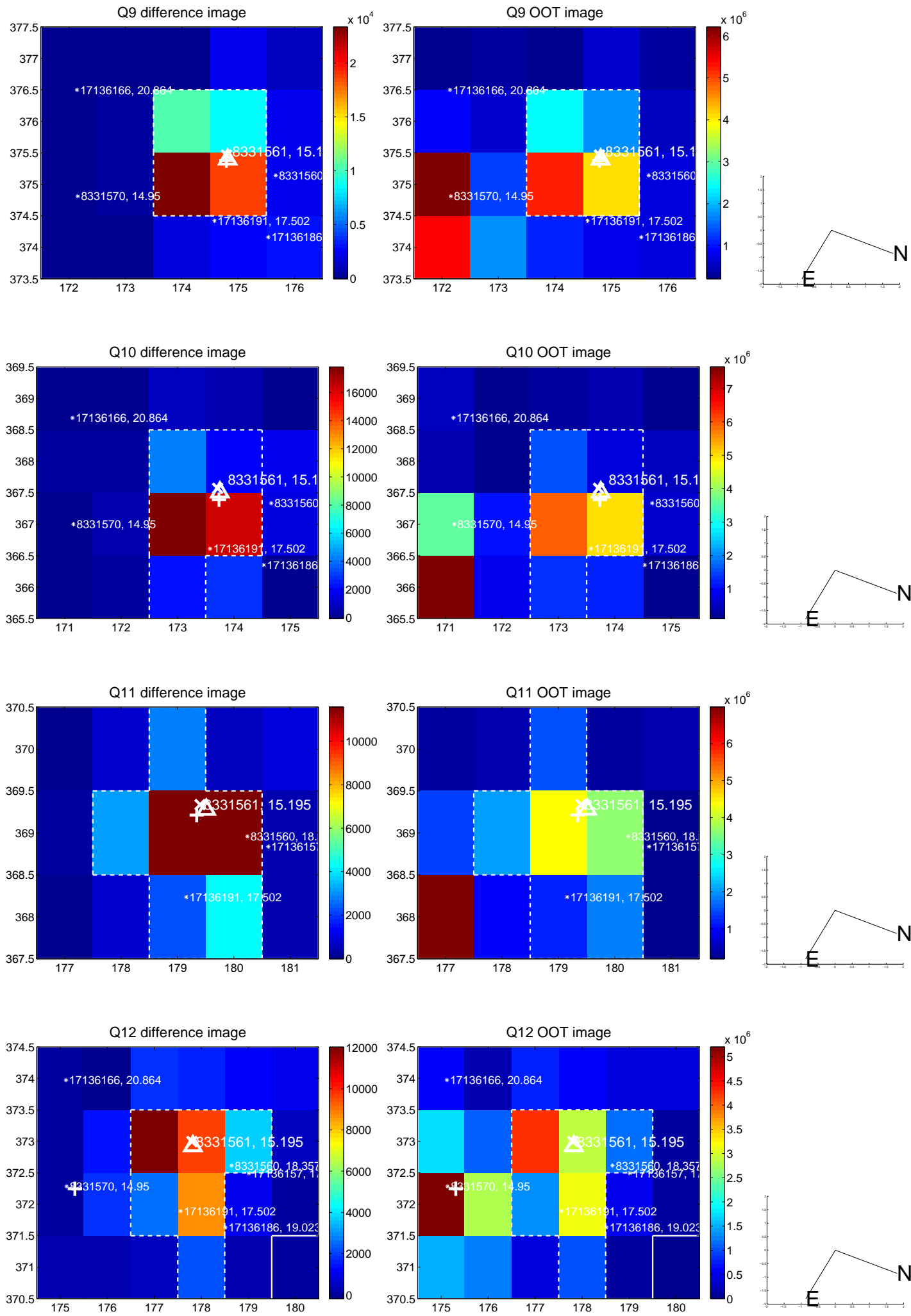
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



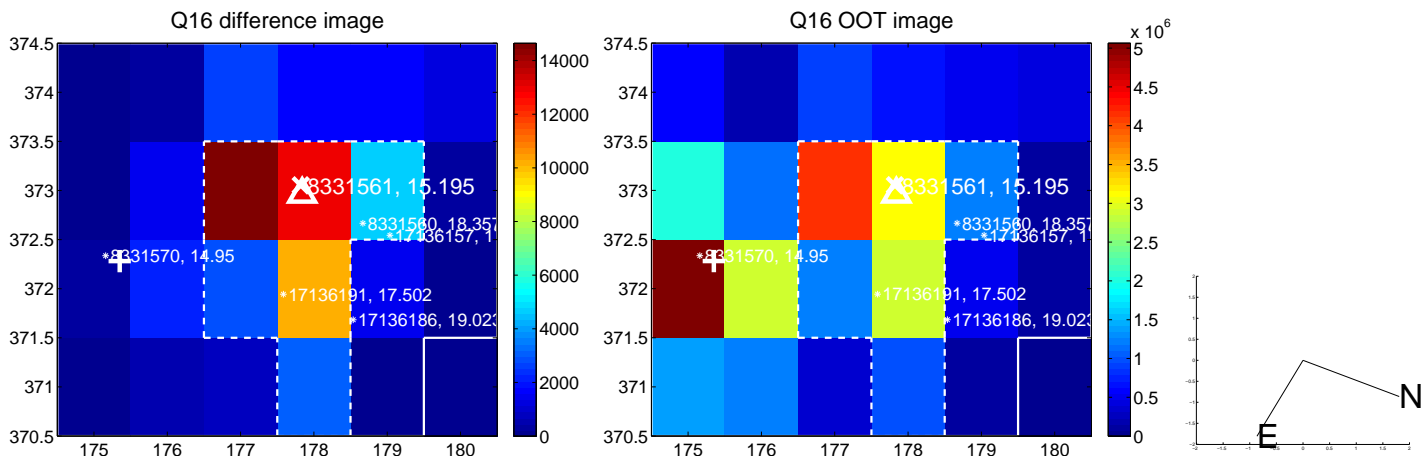
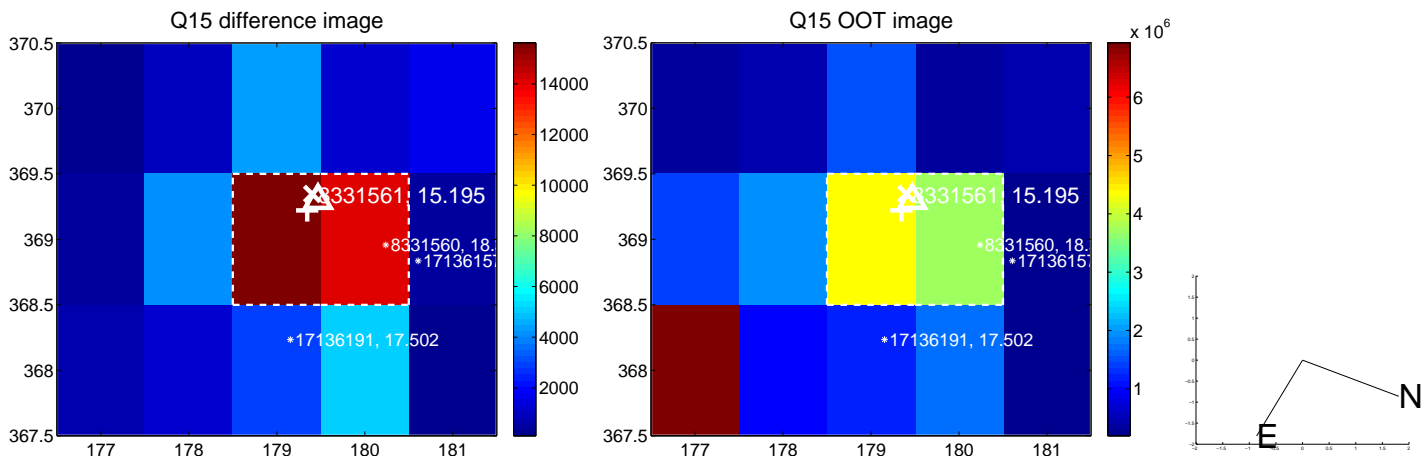
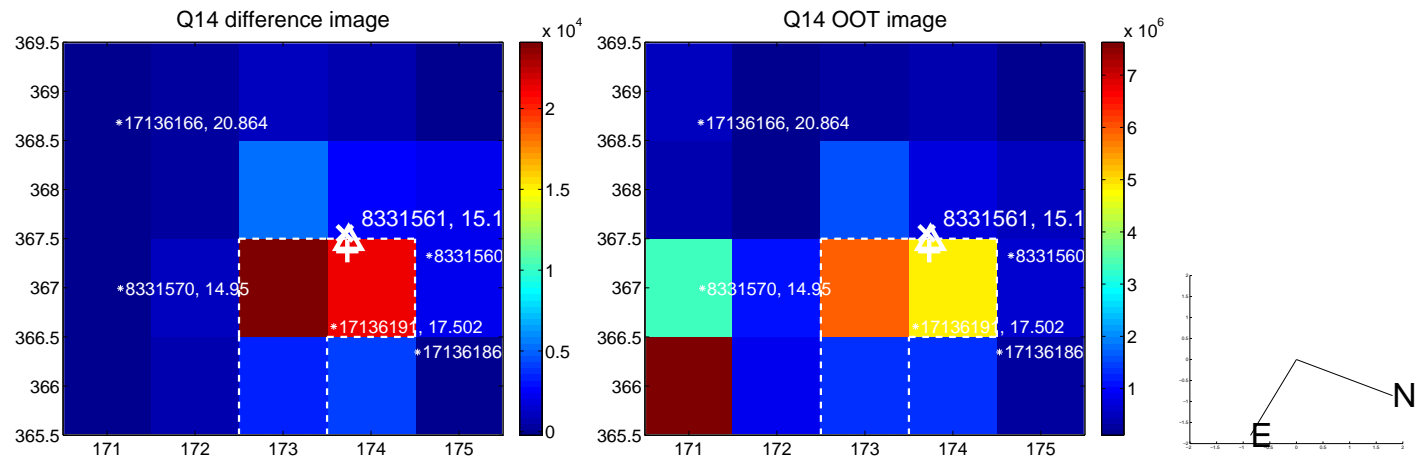
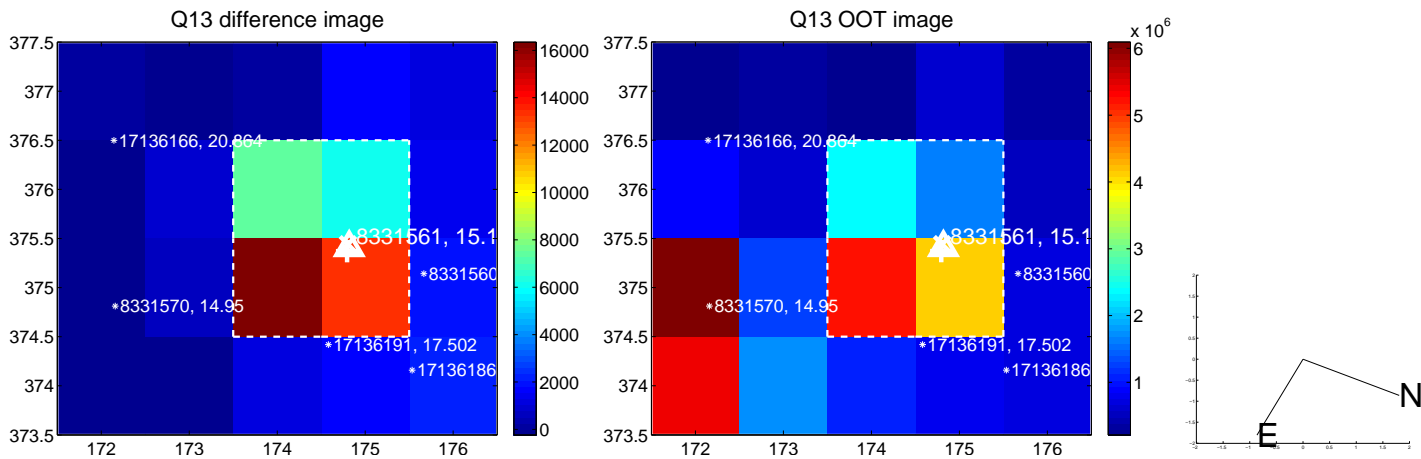
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



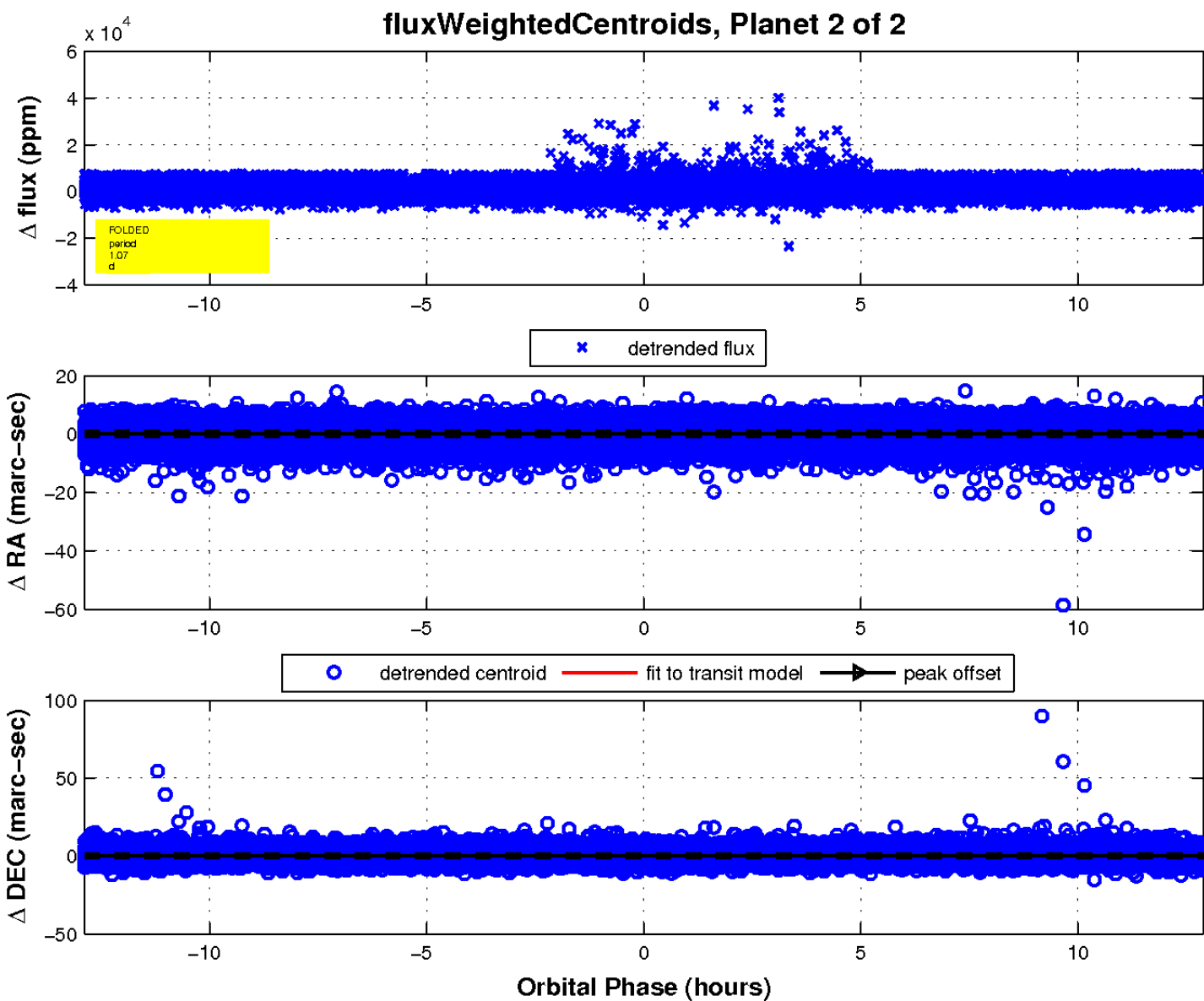
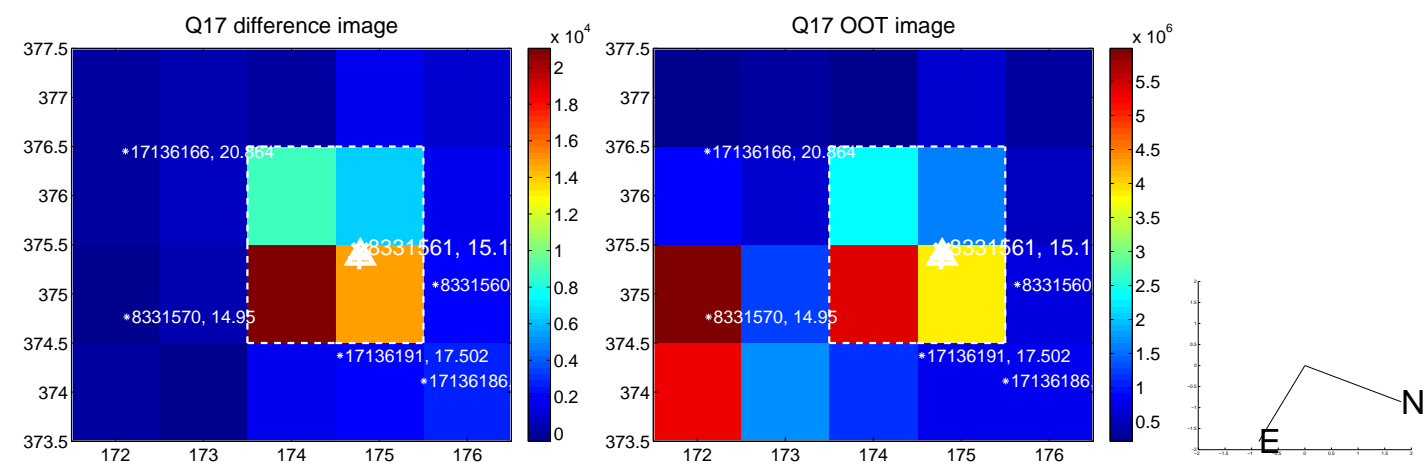
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

