

KIC 007985733

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})
007985733-01	OBS	3219.01	0.544550	131.954396	20.9	1.540	16.1	18.5	80.53	3715	47.15	0.00
007985733-02	OBS	No	0.544567	131.676286	15.7	2.117	11.2	15.3	80.53	3715	40.94	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007985733-01	OBS	FP	0.00	0	1	1	0	PLANET_IN_STAR—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
007985733-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

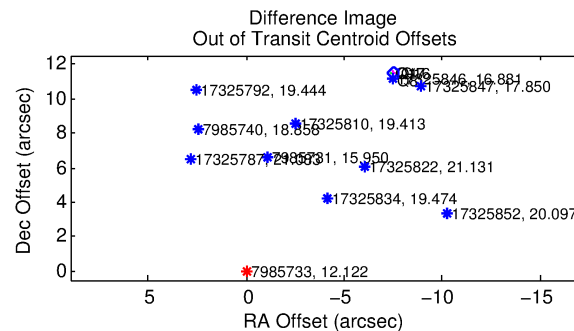
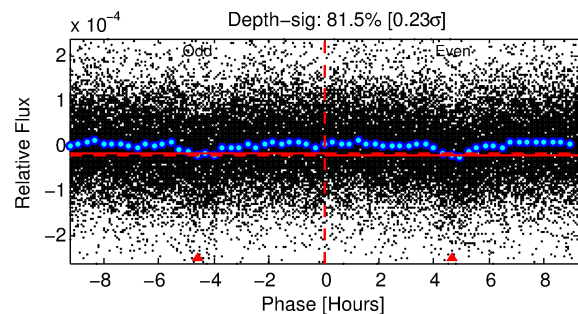
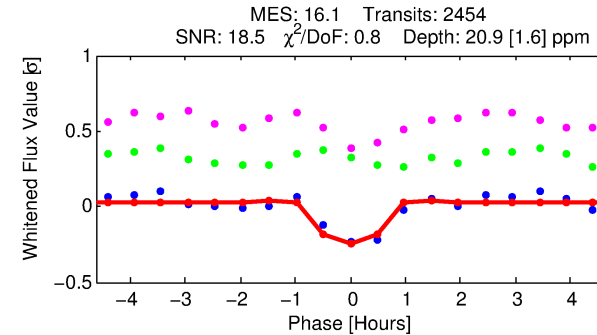
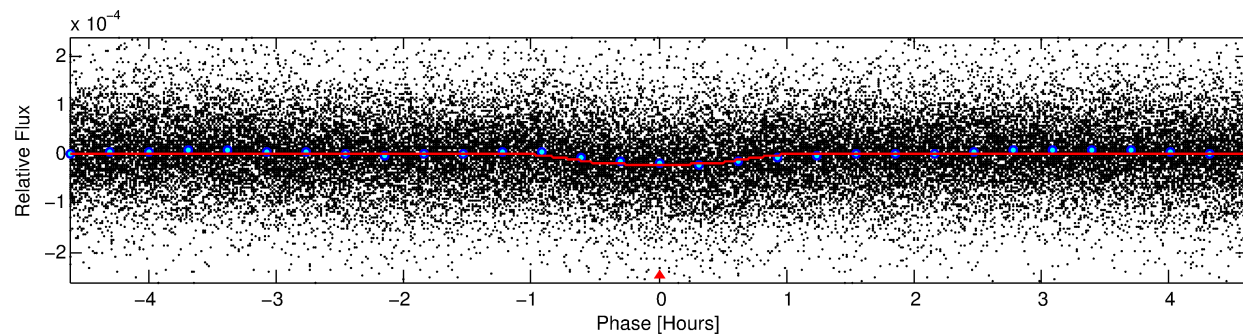
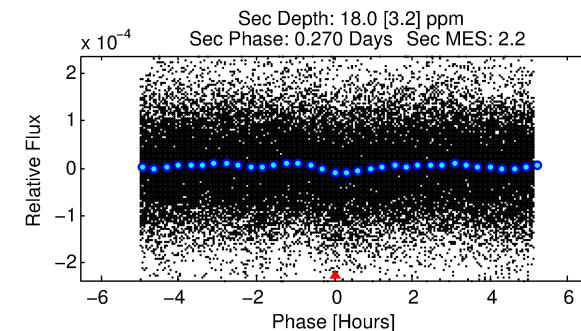
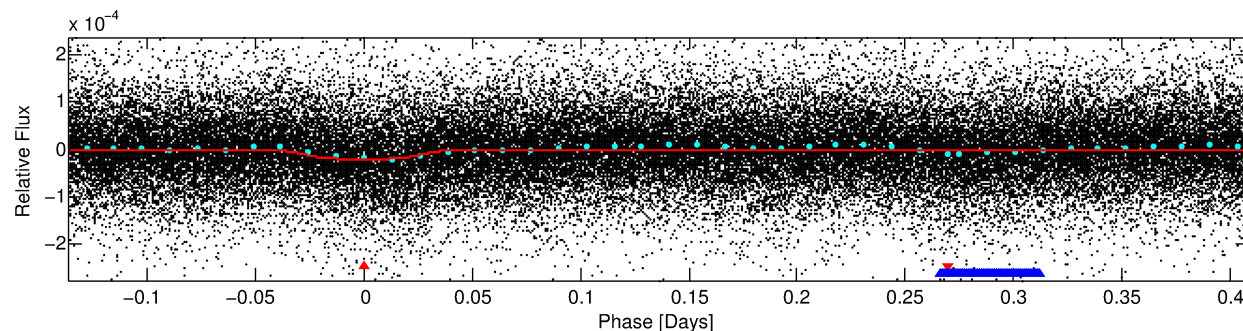
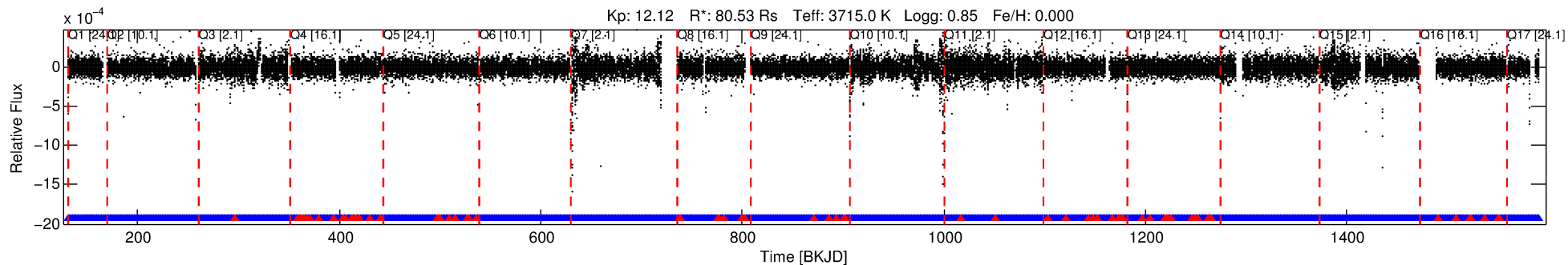
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007985733-01

No Significant Match Found

DV One-Page Summary

KIC: 7985733 Candidate: 1 of 2 Period: 0.545 d
KOI: K03219.01 Corr: 0.865



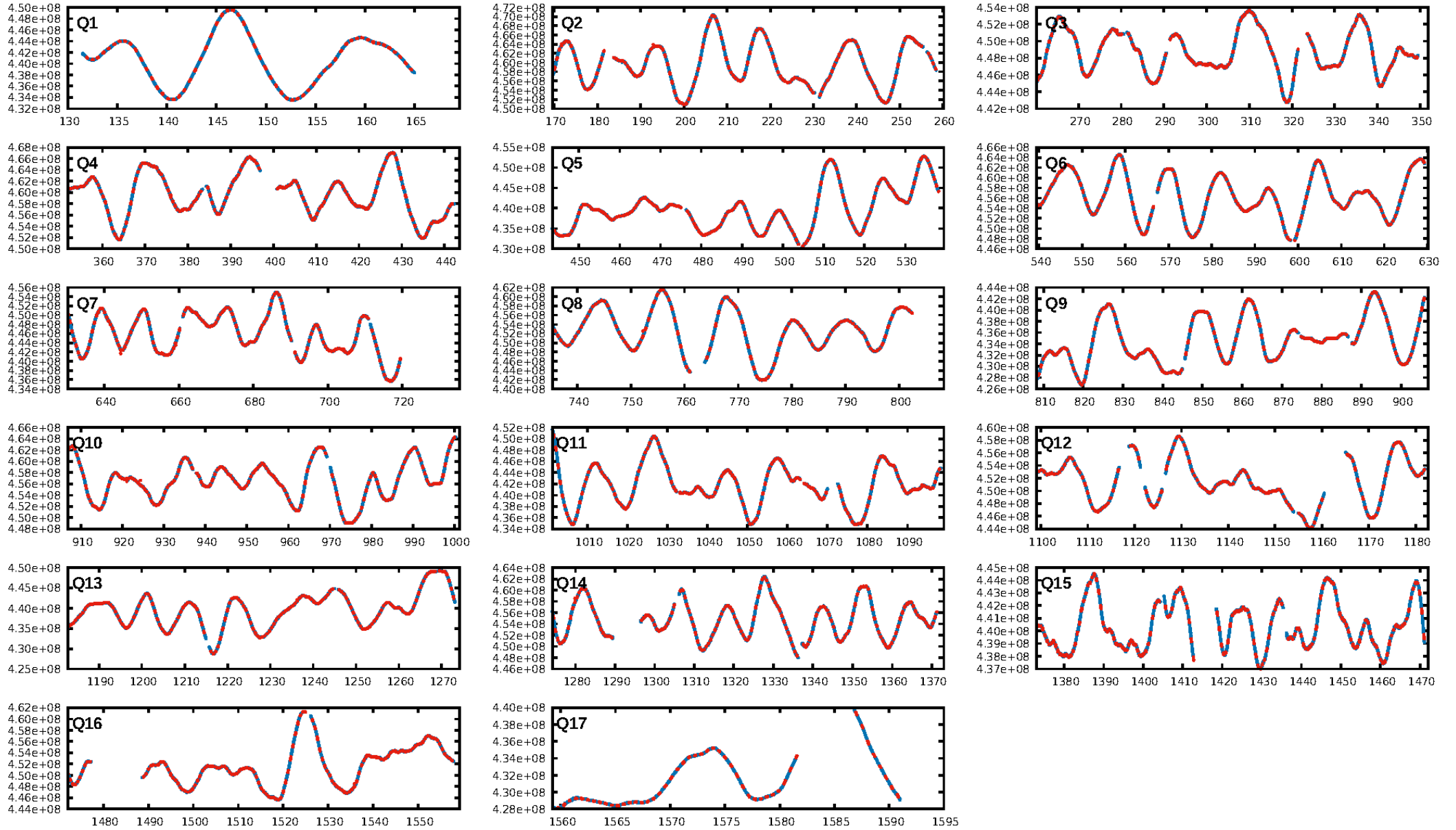
DV Fit Results:

Period = 0.54455 [0.00001] d
Epoch = 131.9544 [0.0011] BKJD
Rp/R* = 0.0054 [0.0014]
a/R* = 1.53 [0.72]
b = 0.90 [0.18]
Seff = N/A
Teq = N/A
Rp = 47.15 [14.93] Re
a = N/A
Ag = N/A
Teff = N/A

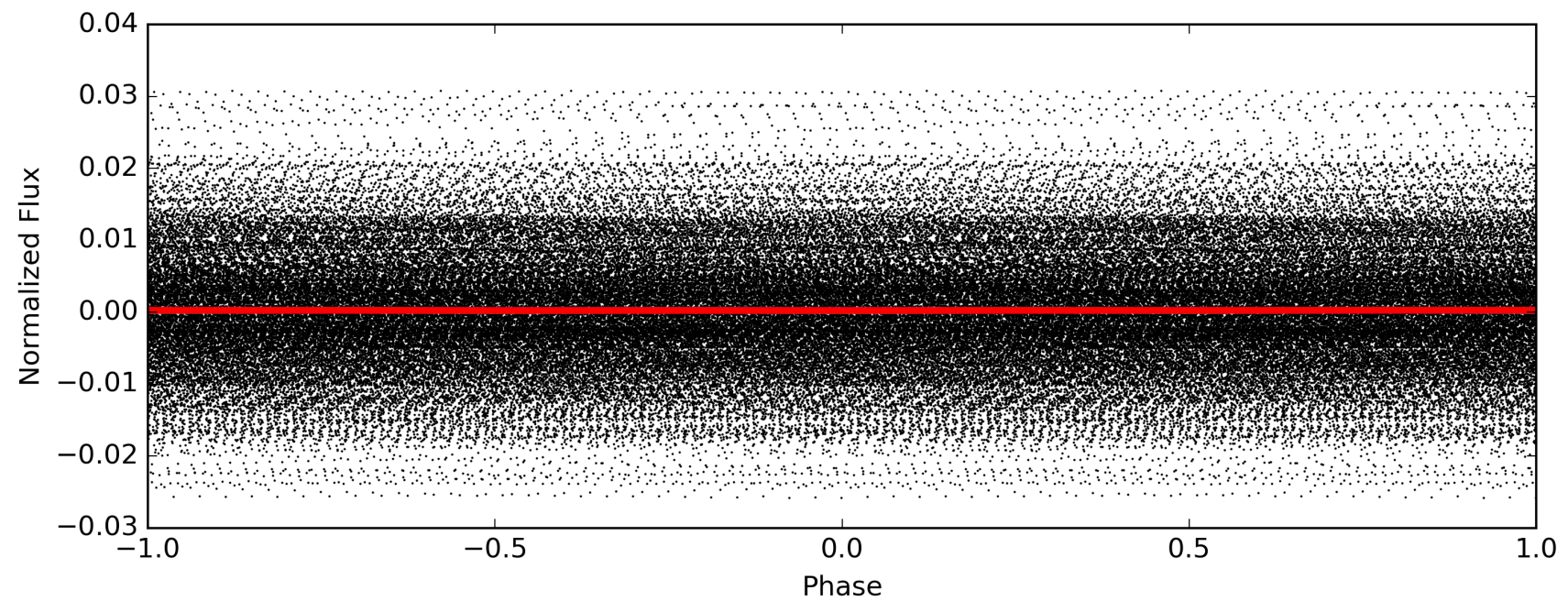
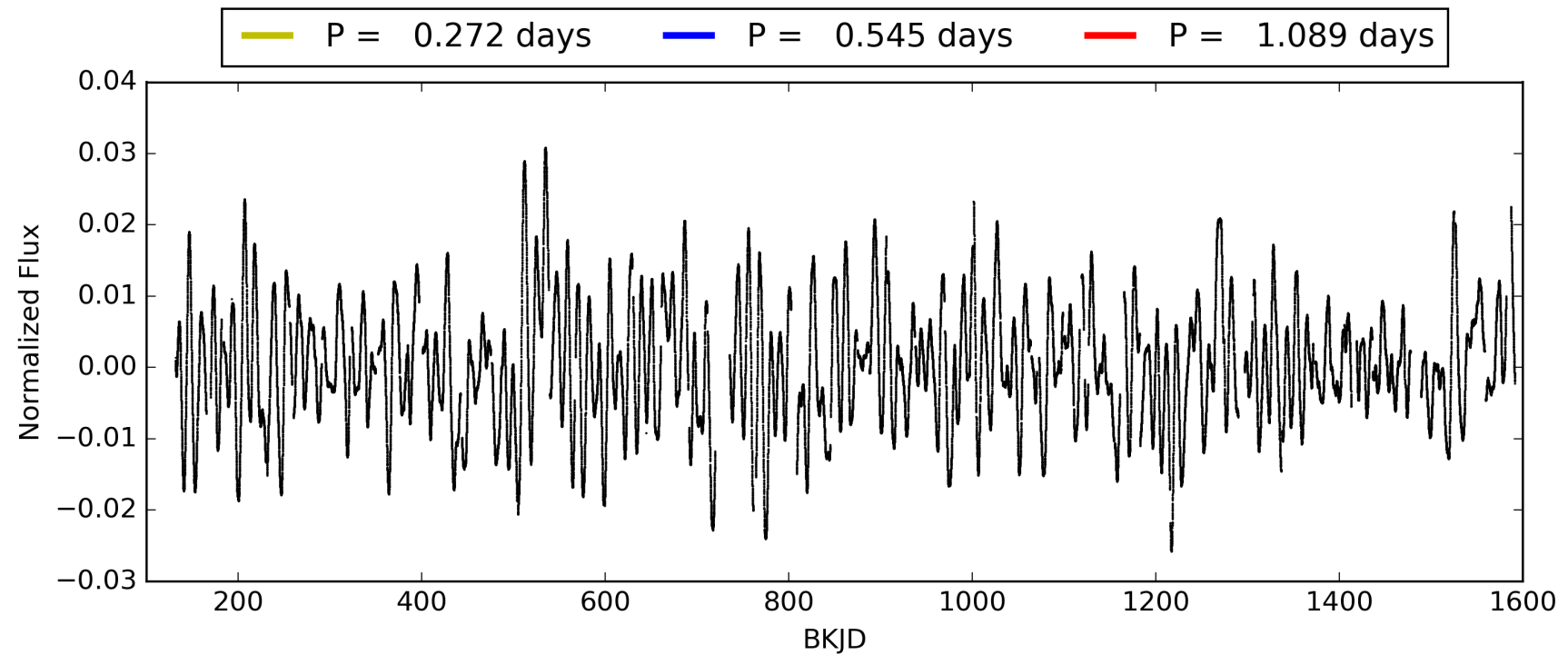
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.81e-49
RollingBand-fgt: 0.97 [2275/2343]
GhostDiagnostic-chr: -0.1052
Centroid-sig: 0.0%
Centroid-so: 34.637 arcsec [52.82σ]
OotOffset-rm: 13.703 arcsec [137.27σ]
KicOffset-rm: 13.532 arcsec [153.07σ]
OotOffset-st: 0/0/2/2 [4]
KicOffset-st: 0/0/2/2 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 0.35 [6/17]

TCE 007985733-01, PDC Light Curves

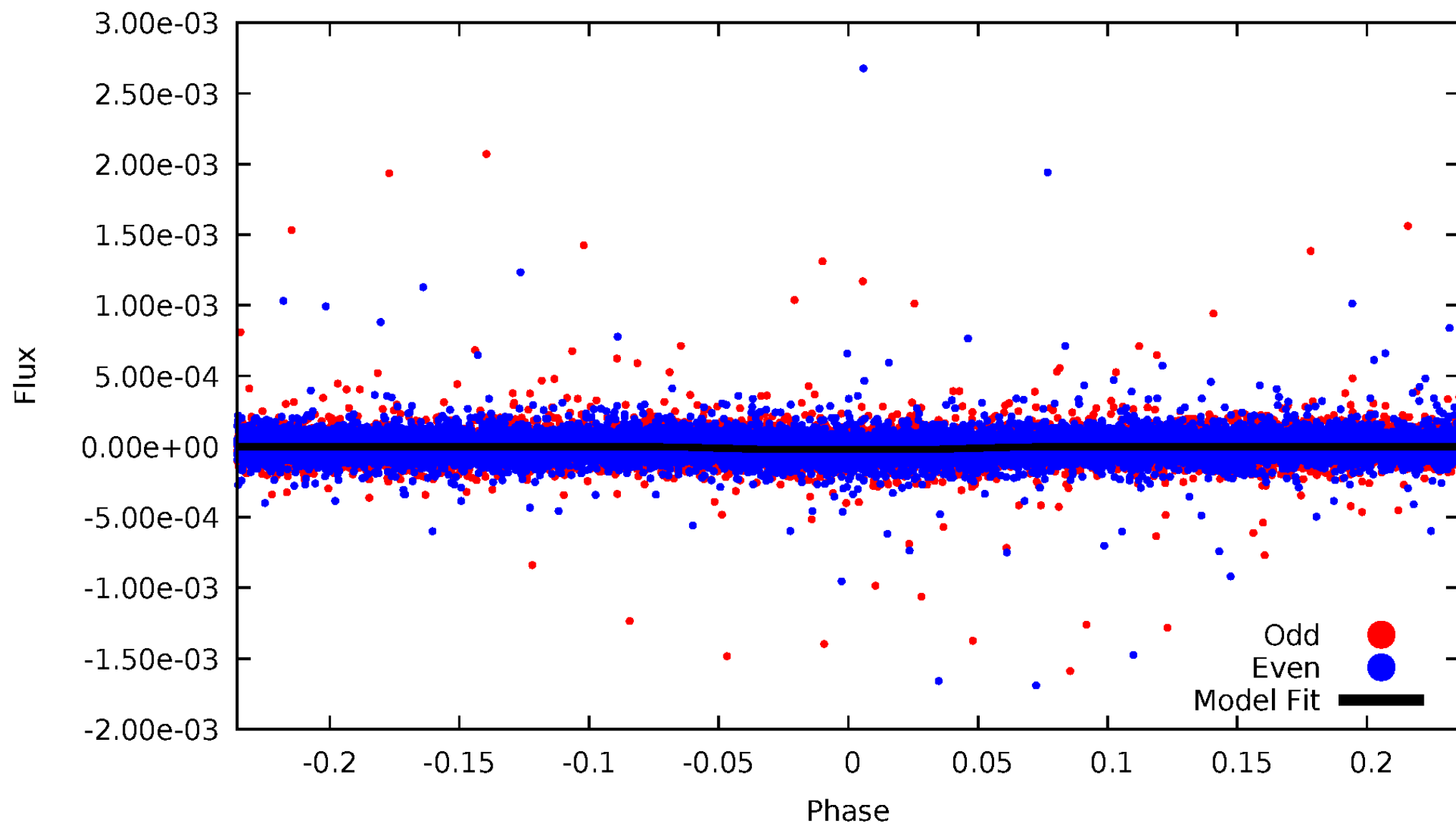


TCE 007985733-01



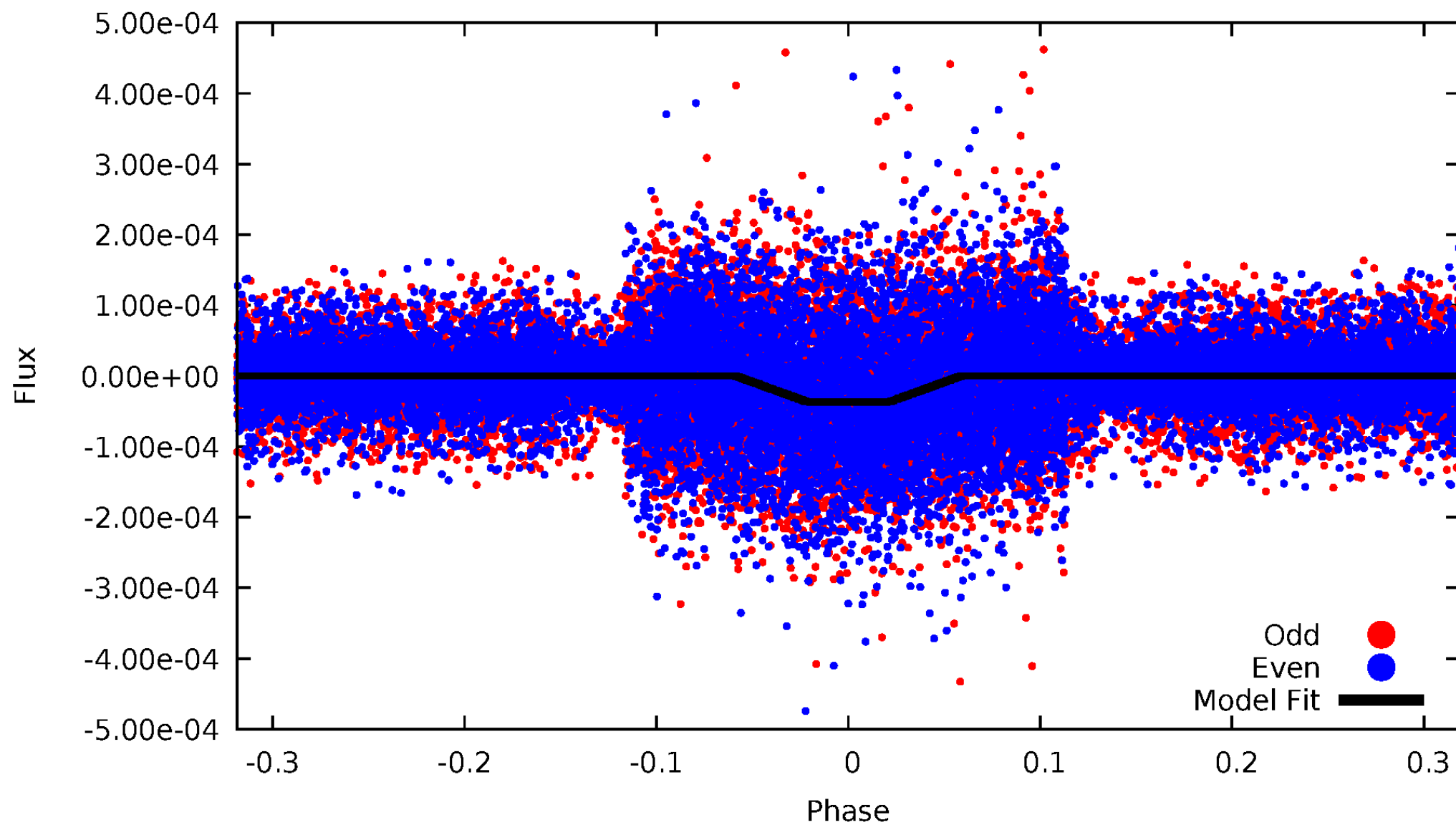
DV Odd/Even

TCE 007985733-01



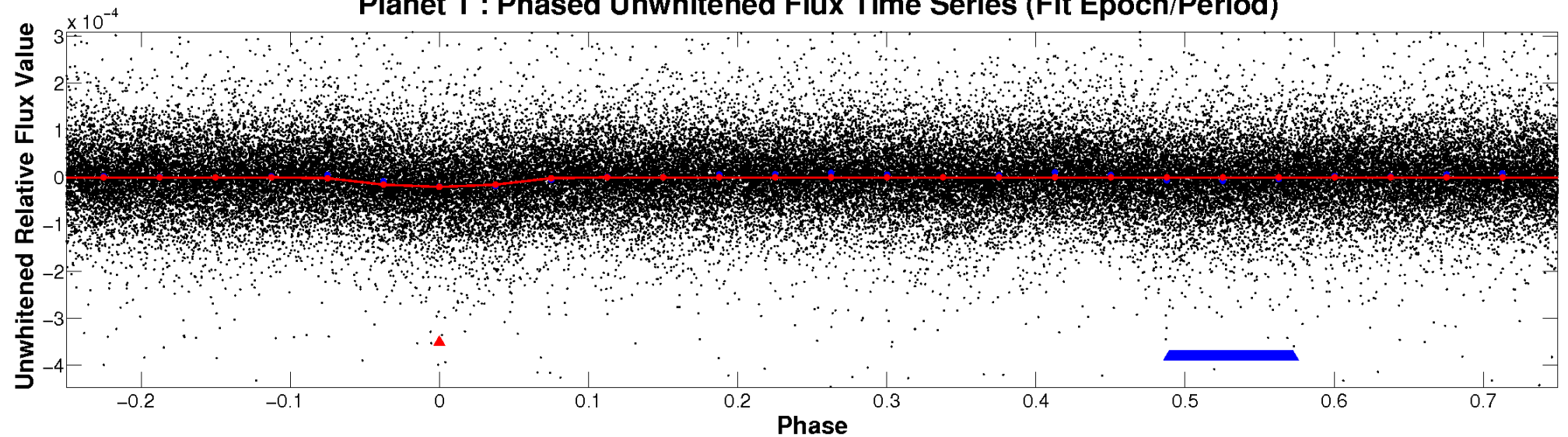
ALT Odd/Even

TCE 007985733-01

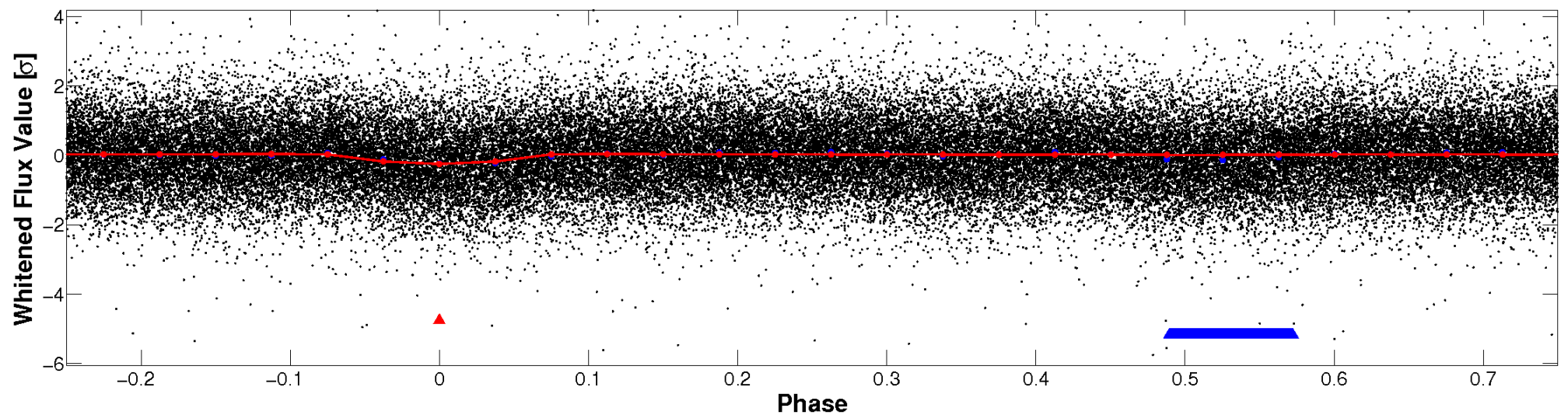


Non-Whitened Vs. Whitened Light Curve

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

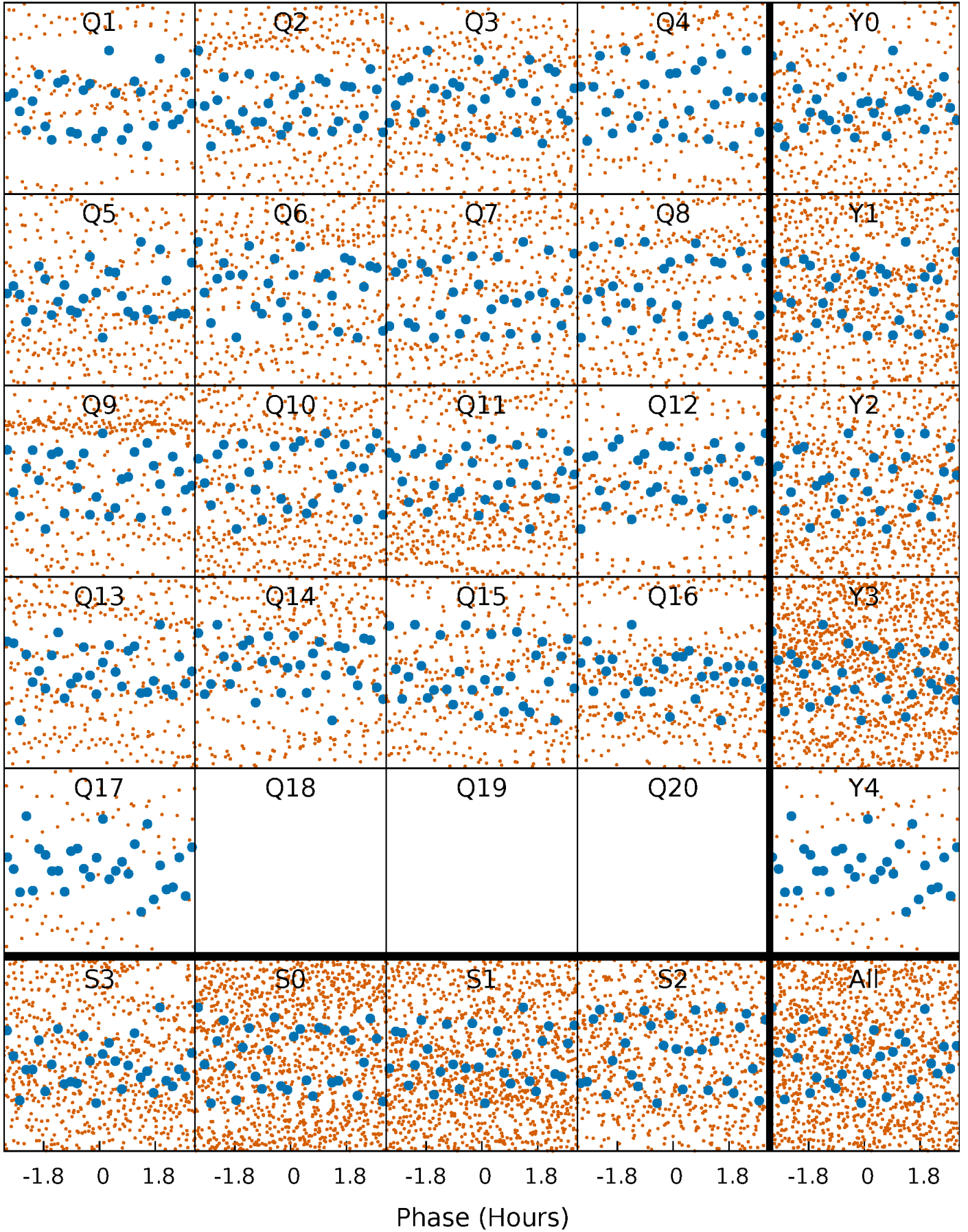


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



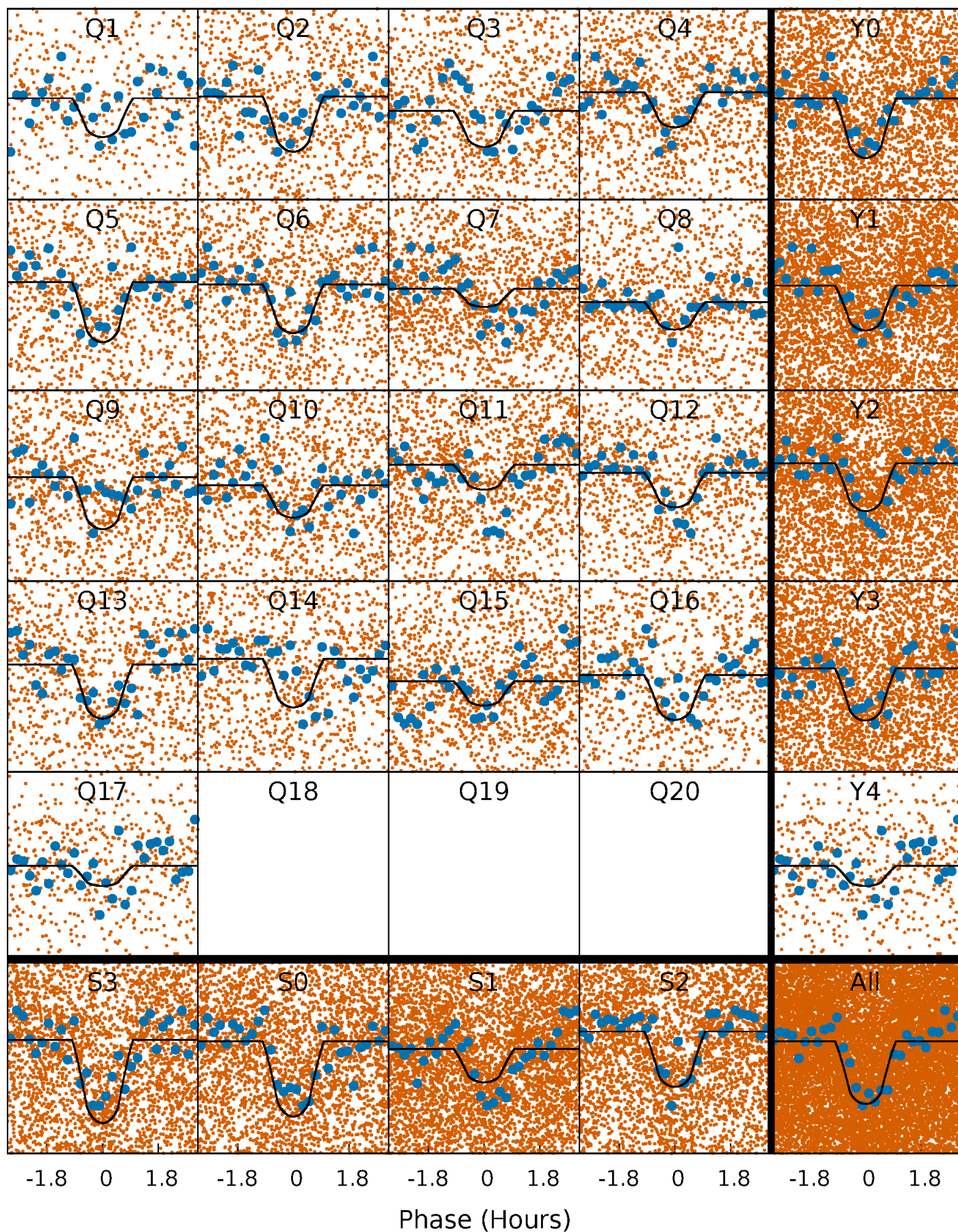
PDC Quarter-Phased Transit Curves

TCE 007985733-01 P= 0.544550 Days $T_0=131.954396$ (BKJD)



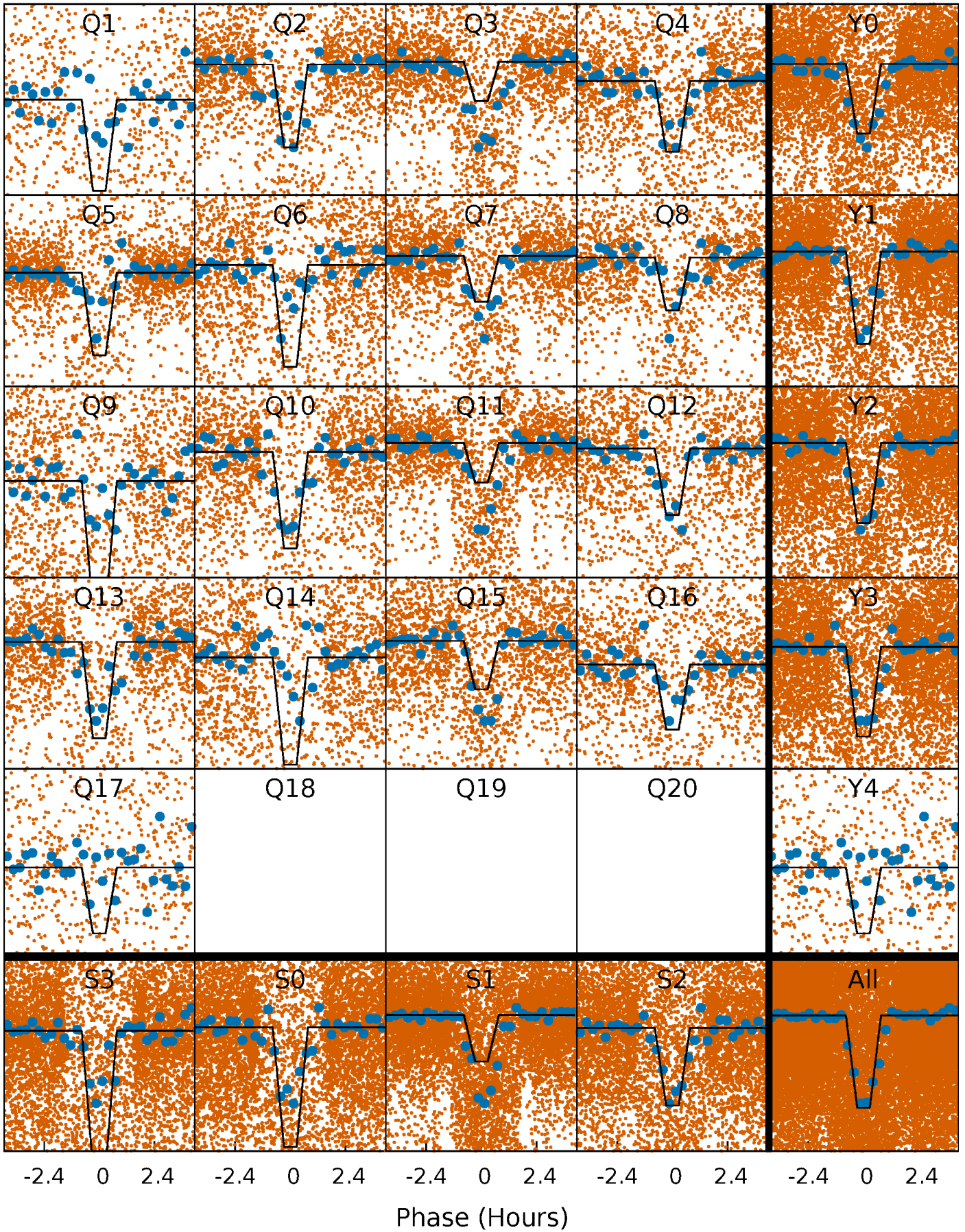
DV Quarter-Phased Transit Curves

TCE 007985733-01 P= 0.544550 Days $T_0=131.954396$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

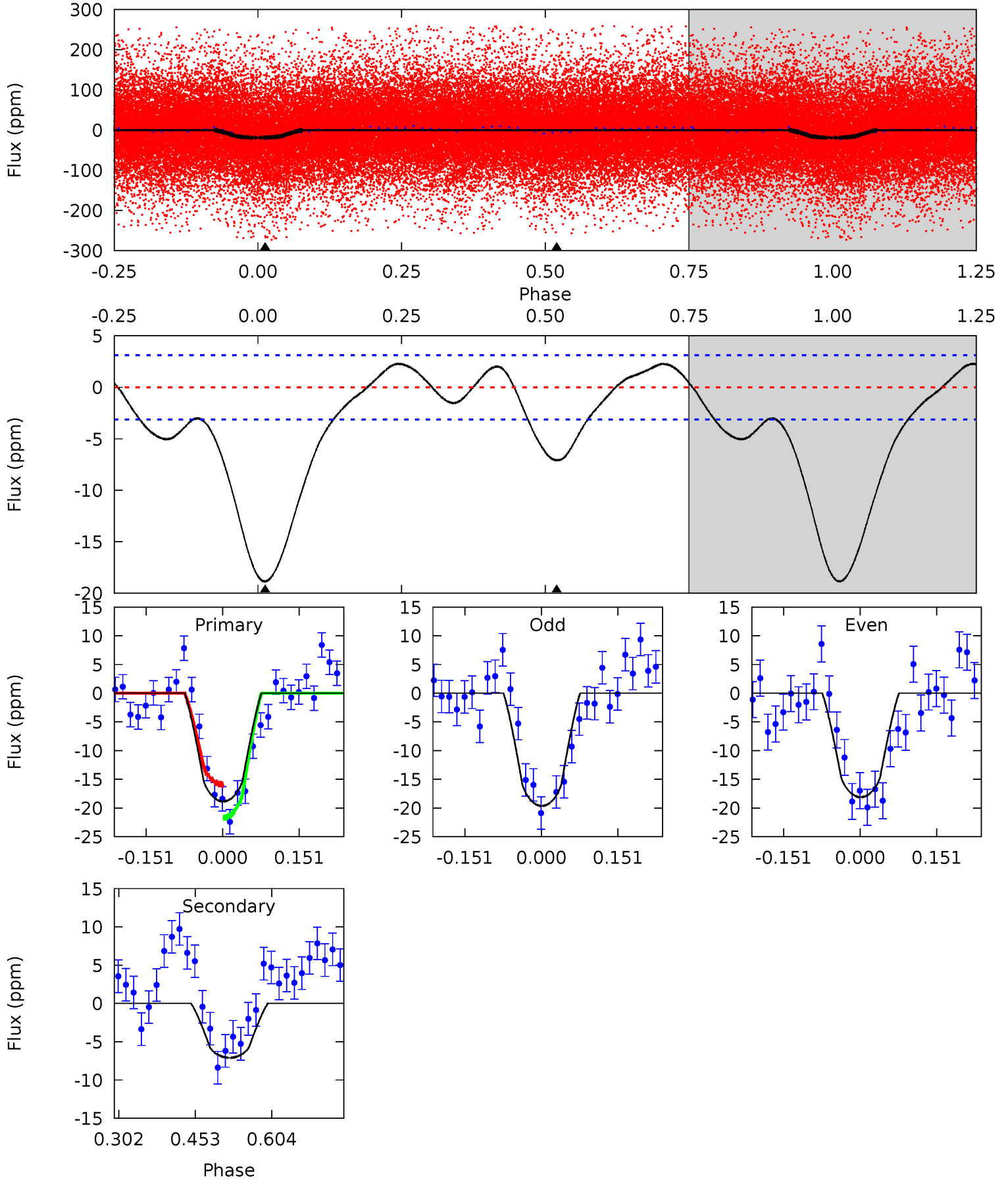
TCE 007985733-01 P= 0.544561 Days $T_0=131.941709$ (BKJD)



DV Model-Shift Uniqueness Test

007985733-01, P = 0.544550 Days, E = 131.409846 Days

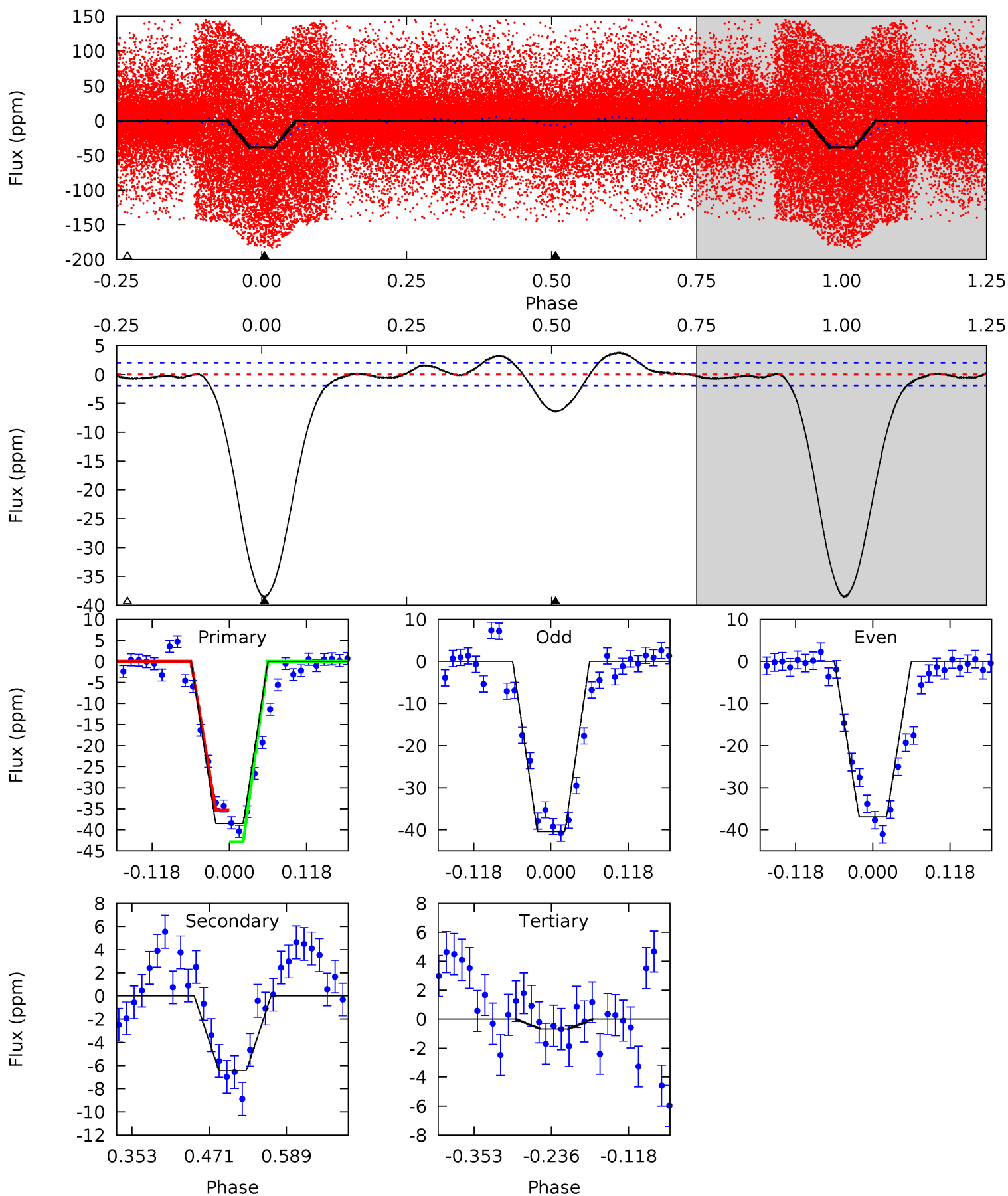
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.0	10.2	0	0	4.48	1.44	3.29	27.0	27.0	10.2	10.2	1.10	1.02	0.11	4.18



Alt Model-Shift Uniqueness Test

007985733-01, P = 0.544561 Days, E = 131.397148 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
86.9	14.5	1.52	0	4.53	1.56	2.10	85.4	86.9	13.0	14.5	3.99	0.97	0.09	8.51



Stellar Parameters For KIC 007985733

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3715^{+83}_{-102}	$0.851^{+0.030}_{-0.030}$	$0.000^{+0.200}_{-0.250}$	$80.529^{+3.558}_{-14.232}$	$1.678^{+0.063}_{-0.536}$	$0.000^{+0.000}_{-0.000}$
	+2%/-3%	+4%/-4%	+inf%/-inf%	+4%/-18%	+4%/-32%	+25%/-8%
Source	PHO54	AST54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007985733-01 / KOI 3219.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-7 ± 1	$47.52^{+11.60}_{-12.83}$	16499^{+426}_{-467}	-15657^{+1189}_{-1199}	$0.000^{+0.000}_{-0.000}$
Alt.	-6 ± 0	$53.56^{+13.04}_{-13.22}$	16473^{+461}_{-441}	-15599^{+1159}_{-1267}	$0.000^{+0.000}_{-0.000}$

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 $A_{obs} \gg 1.0$

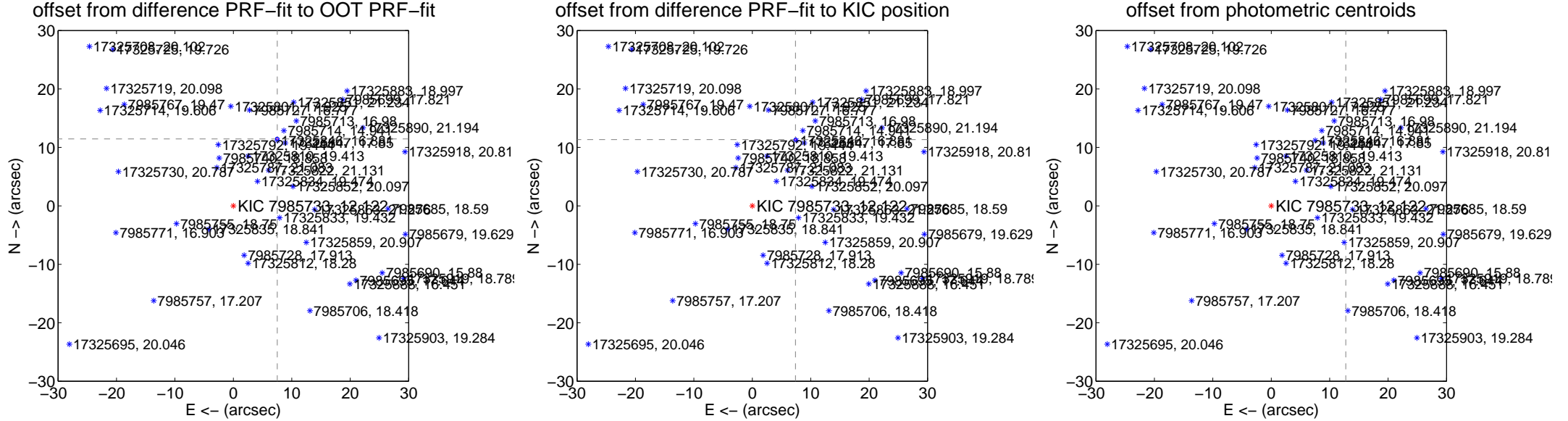
DV Centroid Data

Supplemental centroid analysis for 007985733-01. Kepler magnitude: 12.12. Transit SNR 18.50

There are 4 quarters with good PRF difference image offsets

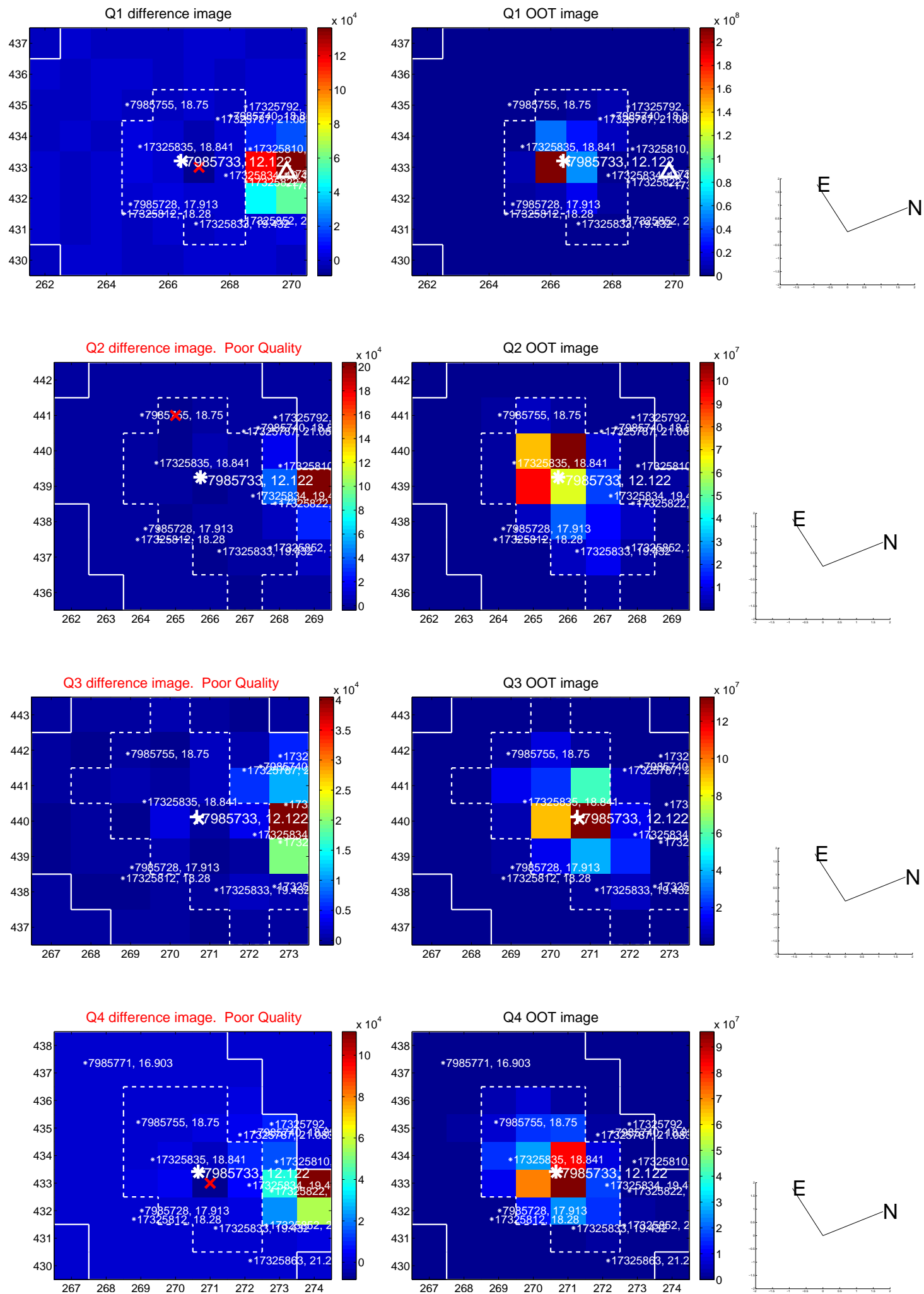
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	13.703 \pm 0.100	137.27	-7.519 \pm 0.077	11.456 \pm 0.108
PRF-fit source offset from KIC position	13.532 \pm 0.088	153.07	-7.396 \pm 0.078	11.331 \pm 0.092
photometric centroid source offset	34.64 \pm 0.66	52.82	-12.75 \pm 0.88	32.20 \pm 0.61

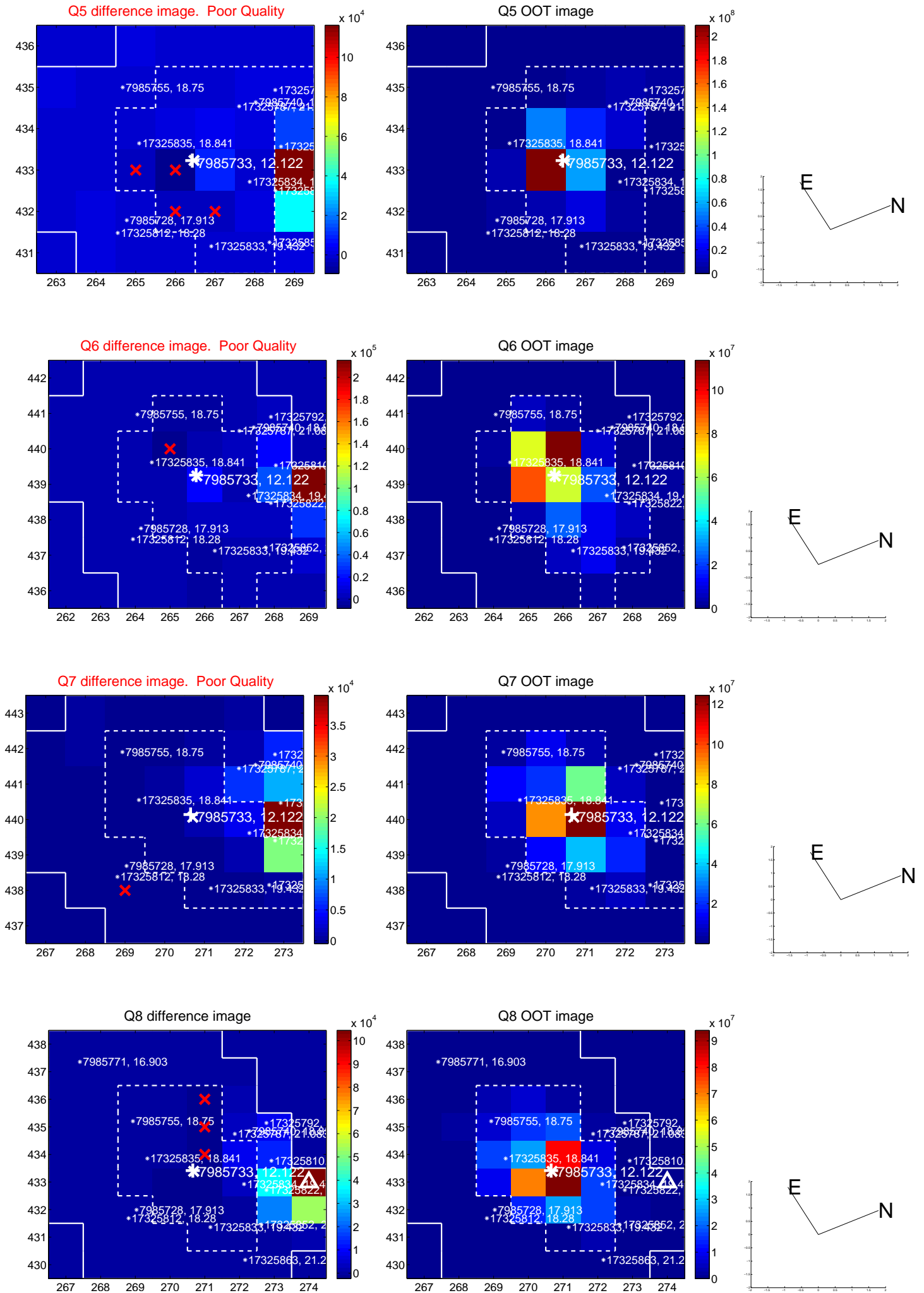


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

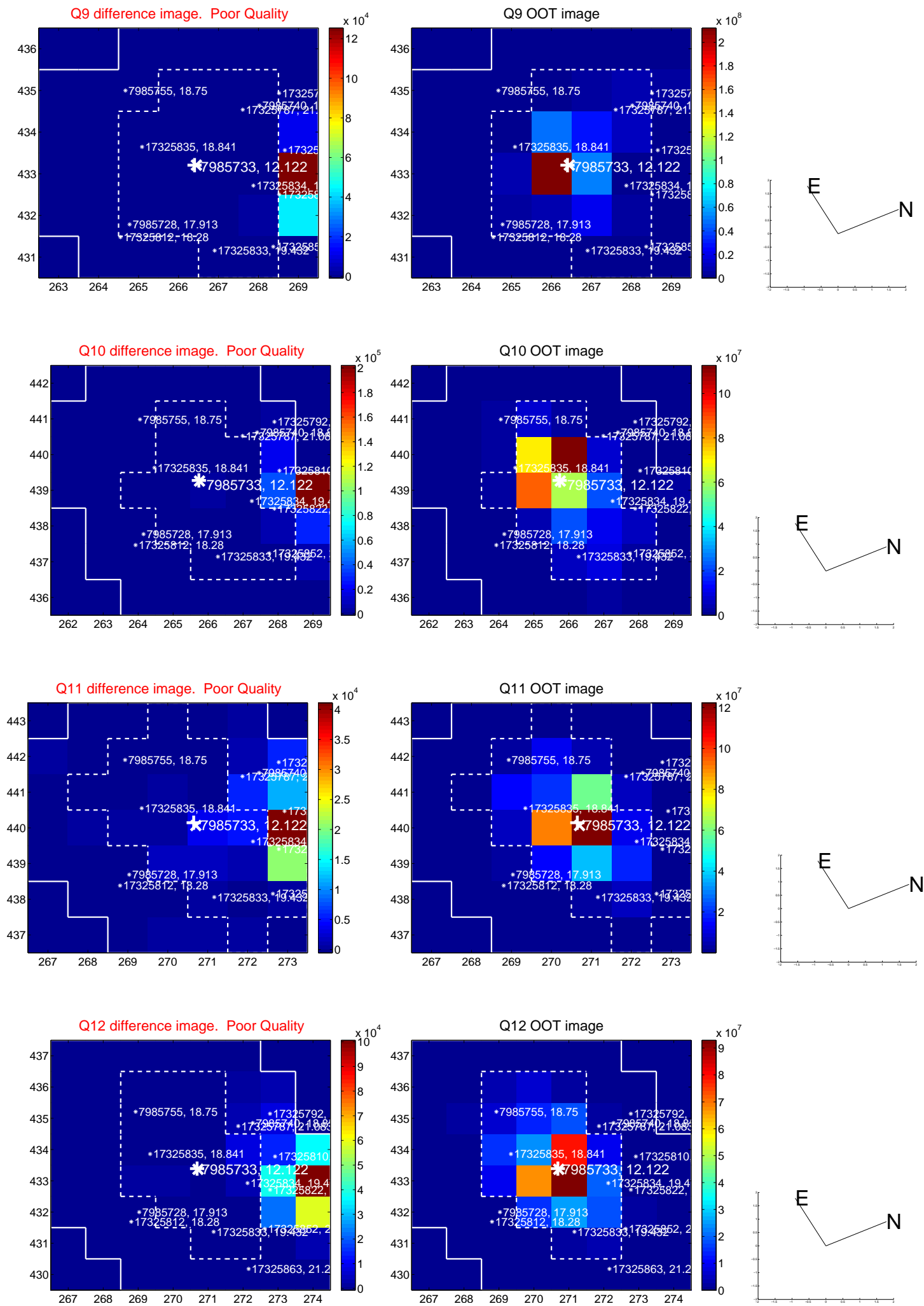
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



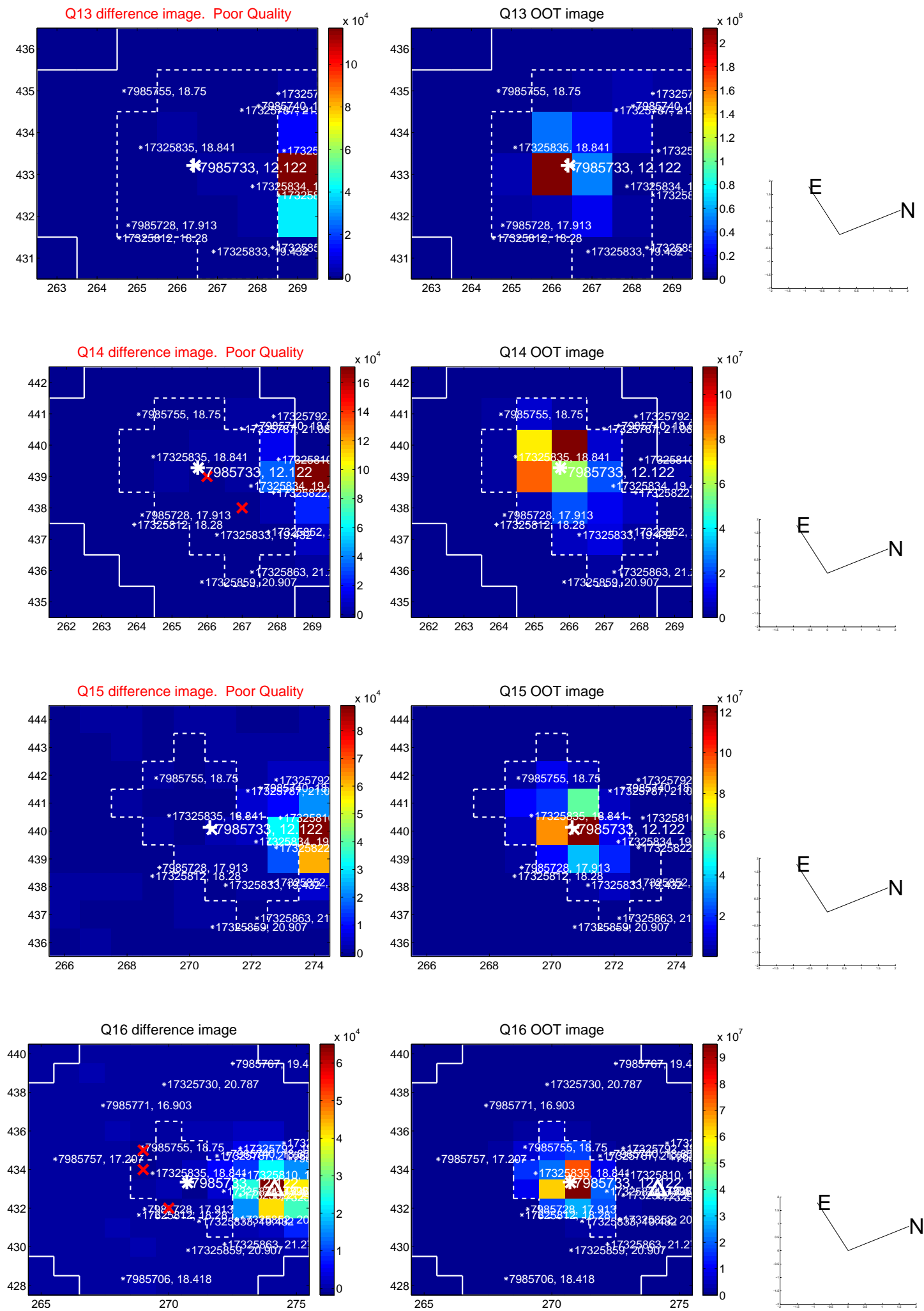
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



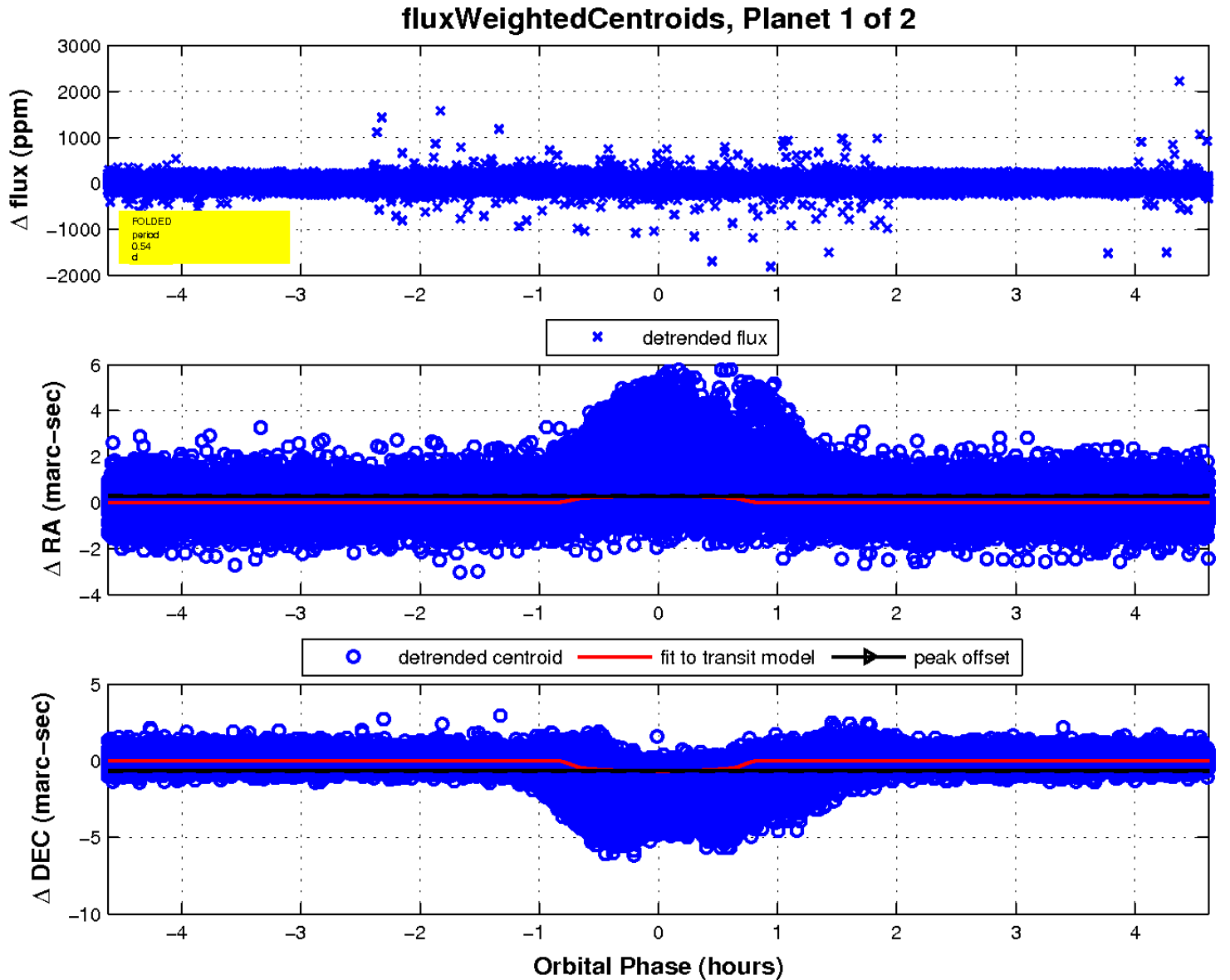
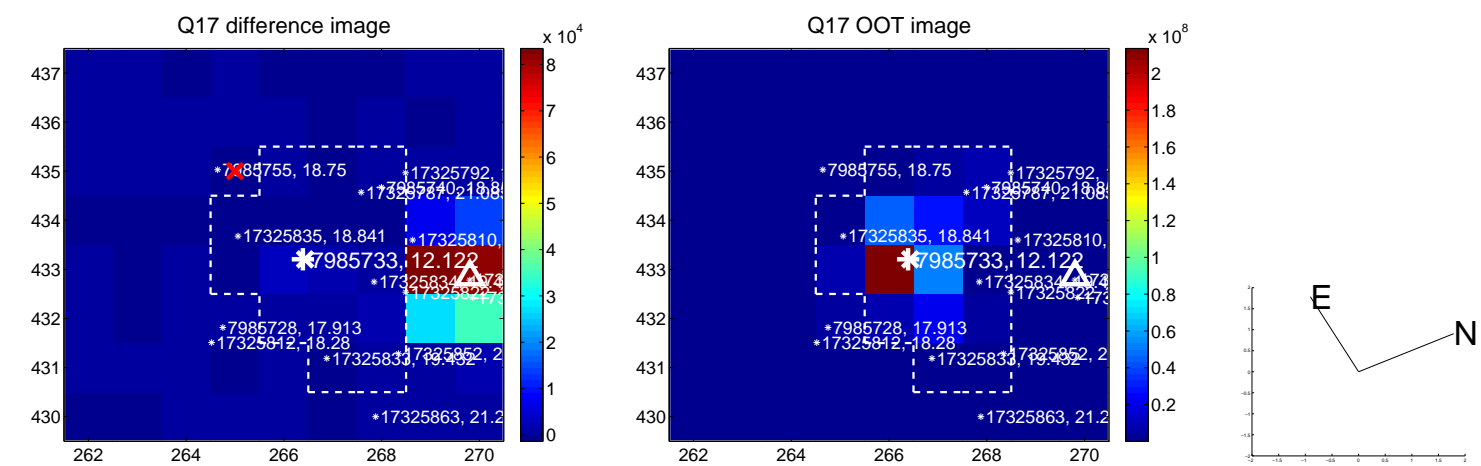
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

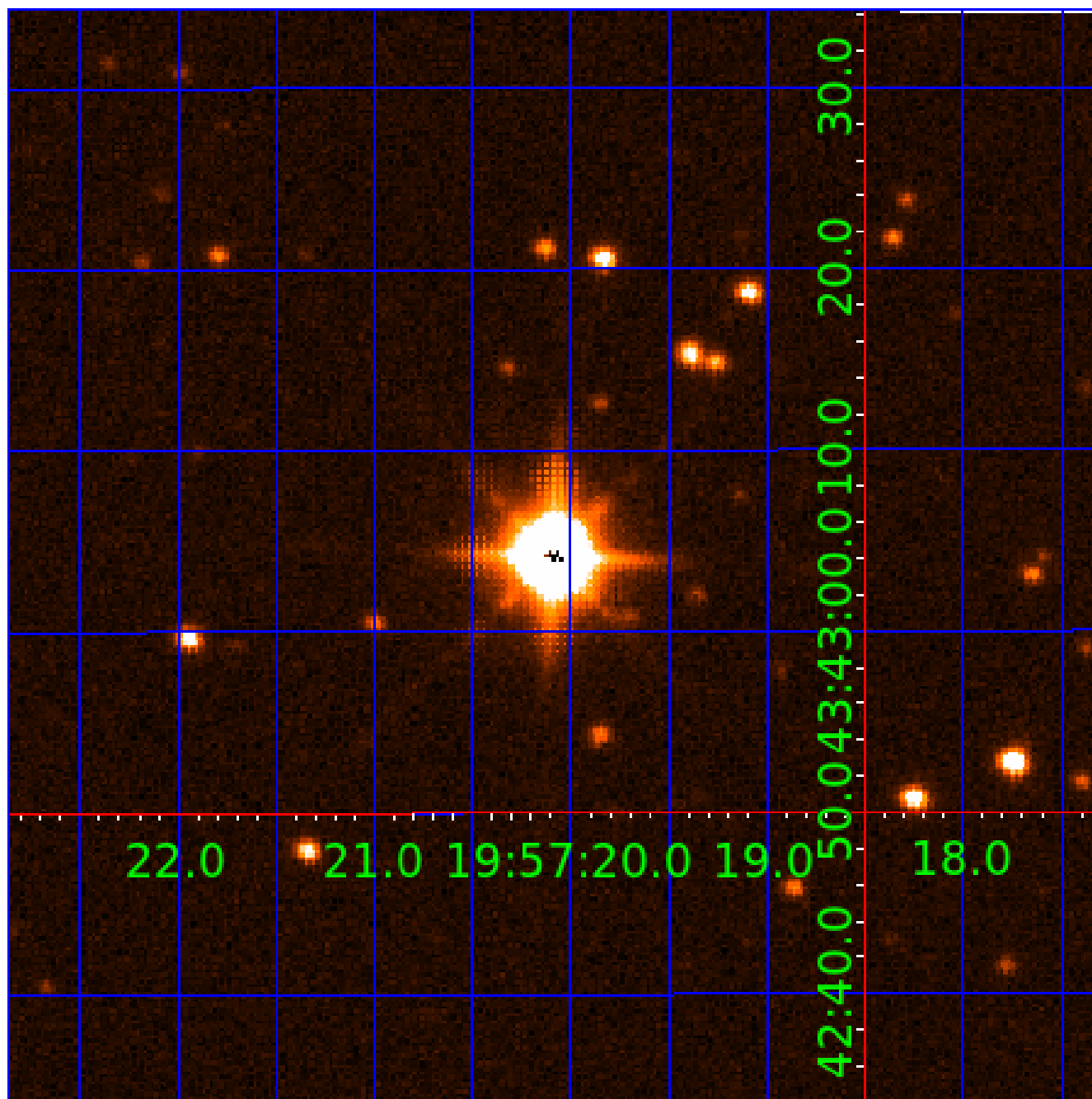


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007985733

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})
007985733-01	OBS	3219.01	0.544550	131.954396	20.9	1.540	16.1	18.5	80.53	3715	47.15	0.00
007985733-02	OBS	No	0.544567	131.676286	15.7	2.117	11.2	15.3	80.53	3715	40.94	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007985733-01	OBS	FP	0.00	0	1	1	0	PLANET_IN_STAR—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
007985733-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST

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.

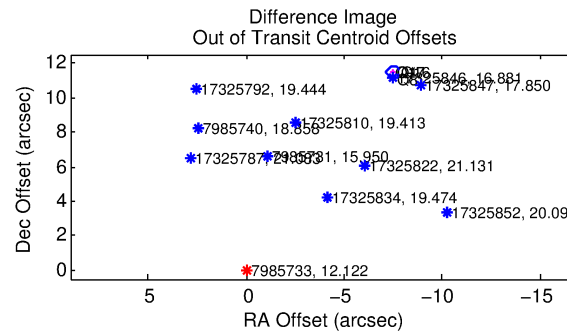
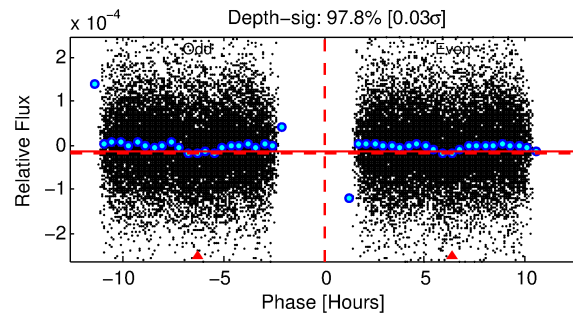
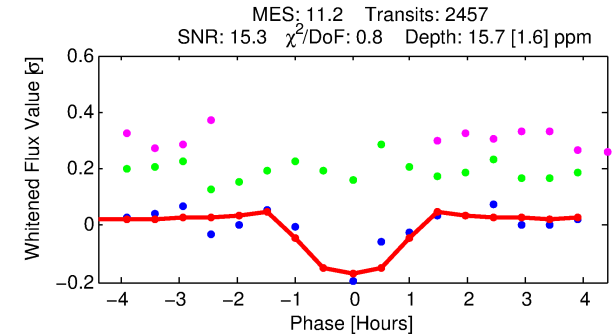
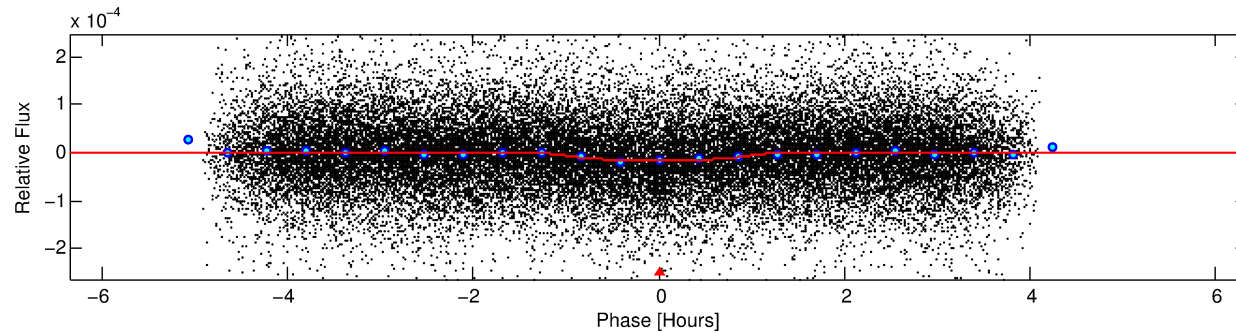
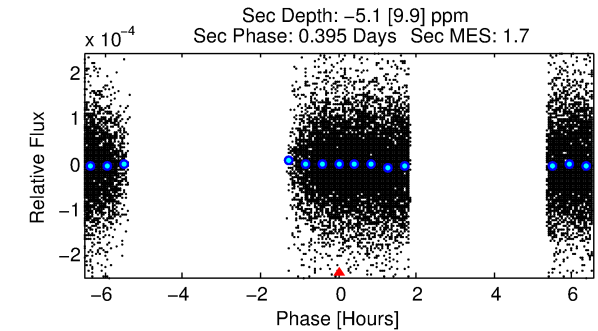
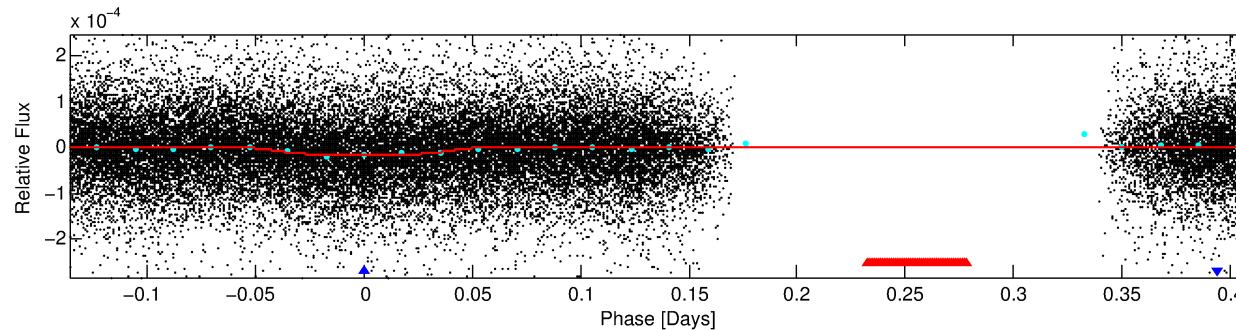
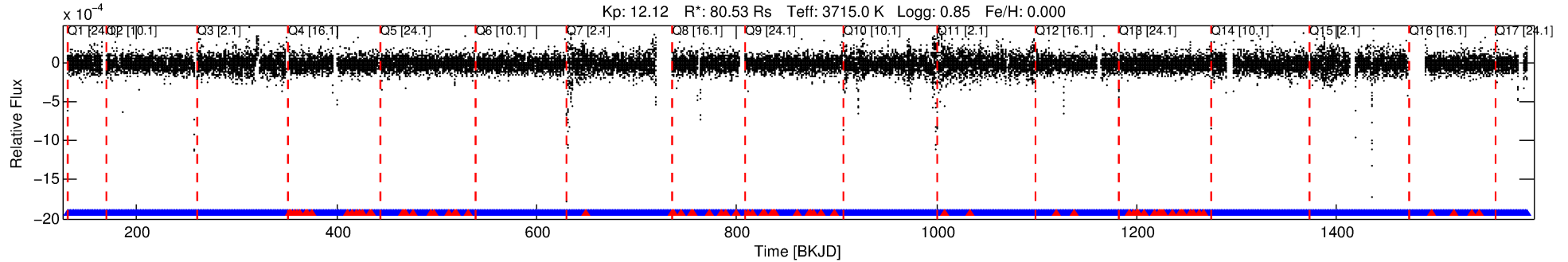
Ephemeris Match Information For 007985733-02

No Significant Match Found

DV One-Page Summary

KIC: 7985733 Candidate: 2 of 2 Period: 0.545 d
KOI: K03219 Corr: No Ephemeris Match

Kp: 12.12 R*: 80.53 Rs Teff: 3715.0 K Logg: 0.85 Fe/H: 0.000



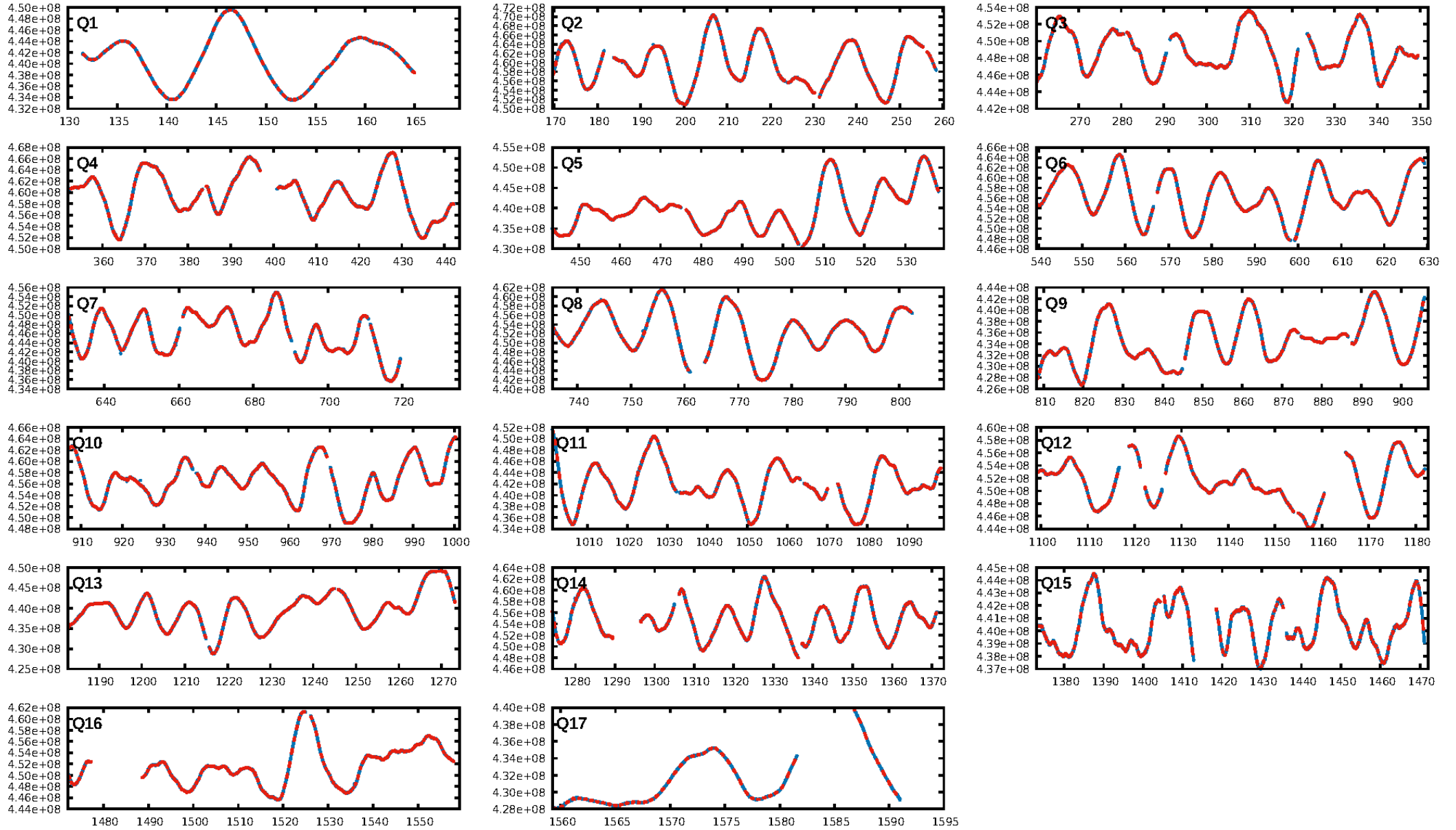
DV Fit Results:

Period = 0.54457 [0.00001] d
Epoch = 131.6763 [0.0016] BKJD
Rp/R* = 0.0047 [0.0017]
a/R* = 1.28 [0.56]
b = 0.90 [0.25]
Seff = N/A
Teq = N/A
Ag = N/A
Teff = N/A

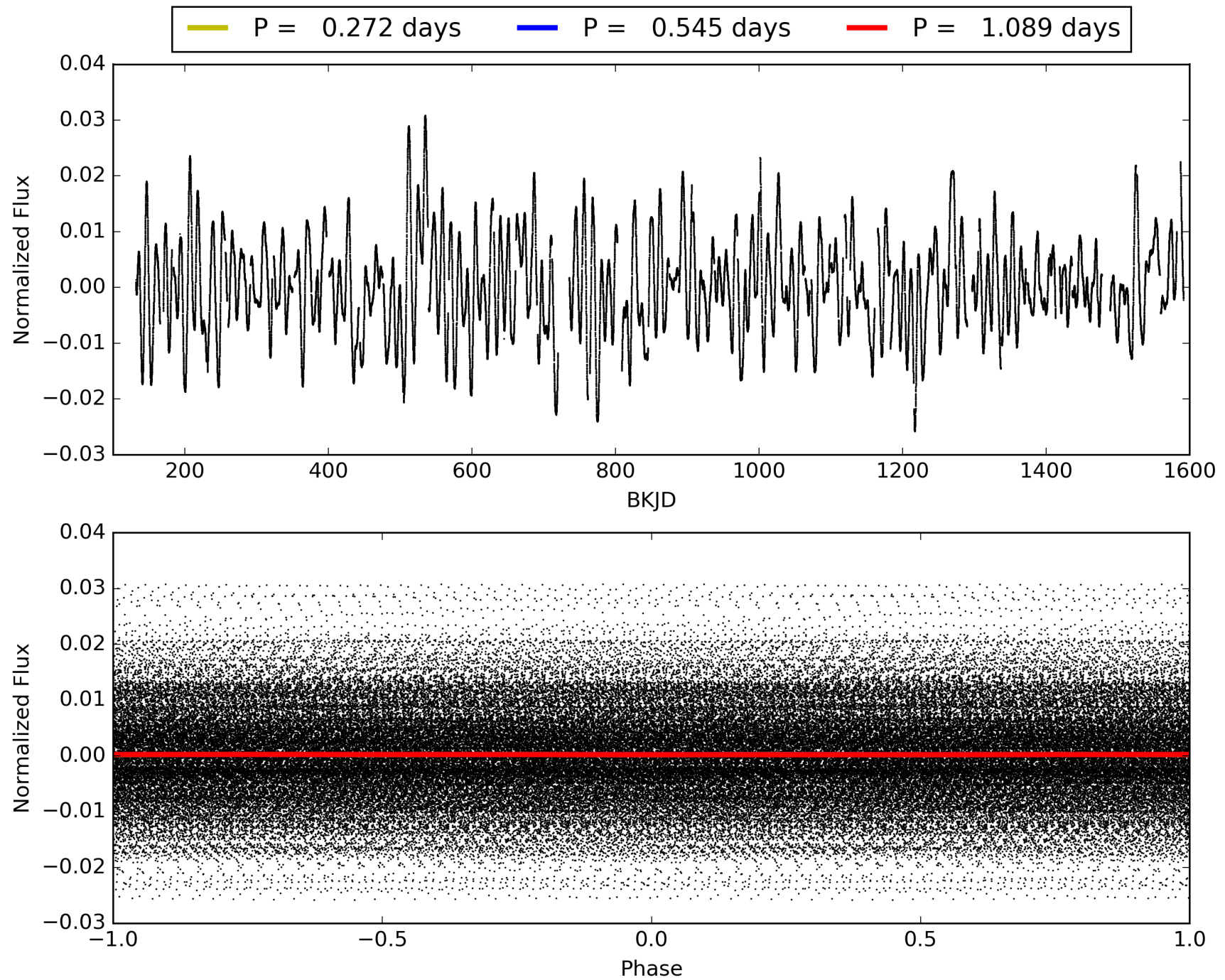
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00e]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.63e-21
RollingBand-fgt: 0.97 [2268/2347]
GhostDiagnostic-chr: 0.1087
Centroid-sig: 0.0%
Centroid-so: 18.926 arcsec [25.56σ]
OotOffset-rm: 13.700 arcsec [116.25σ]
KicOffset-rm: 13.532 arcsec [125.73σ]
OotOffset-st: 0/0/2/2 [4]
KicOffset-st: 0/0/2/2 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 007985733-02, PDC Light Curves

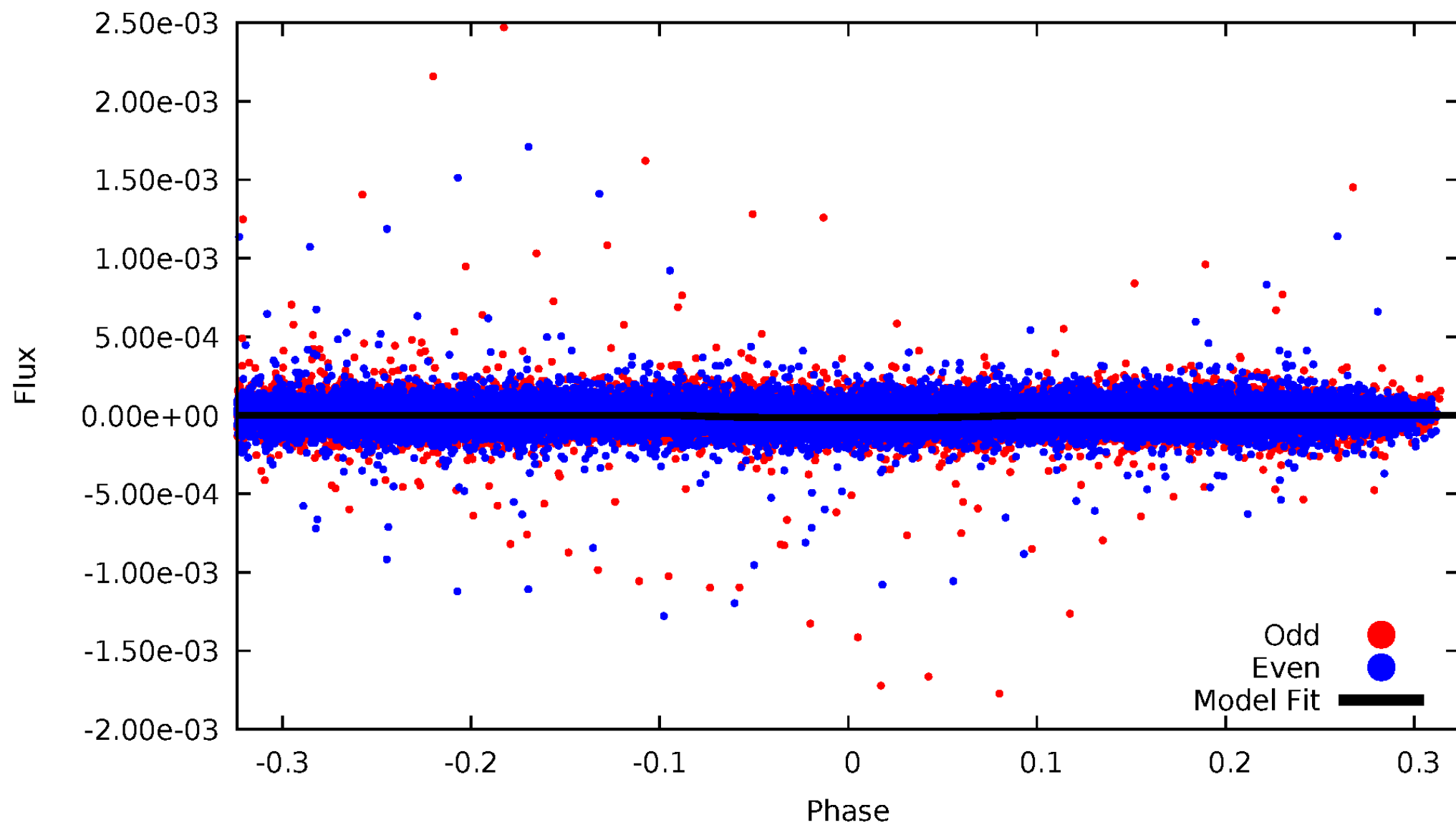


TCE 007985733-02



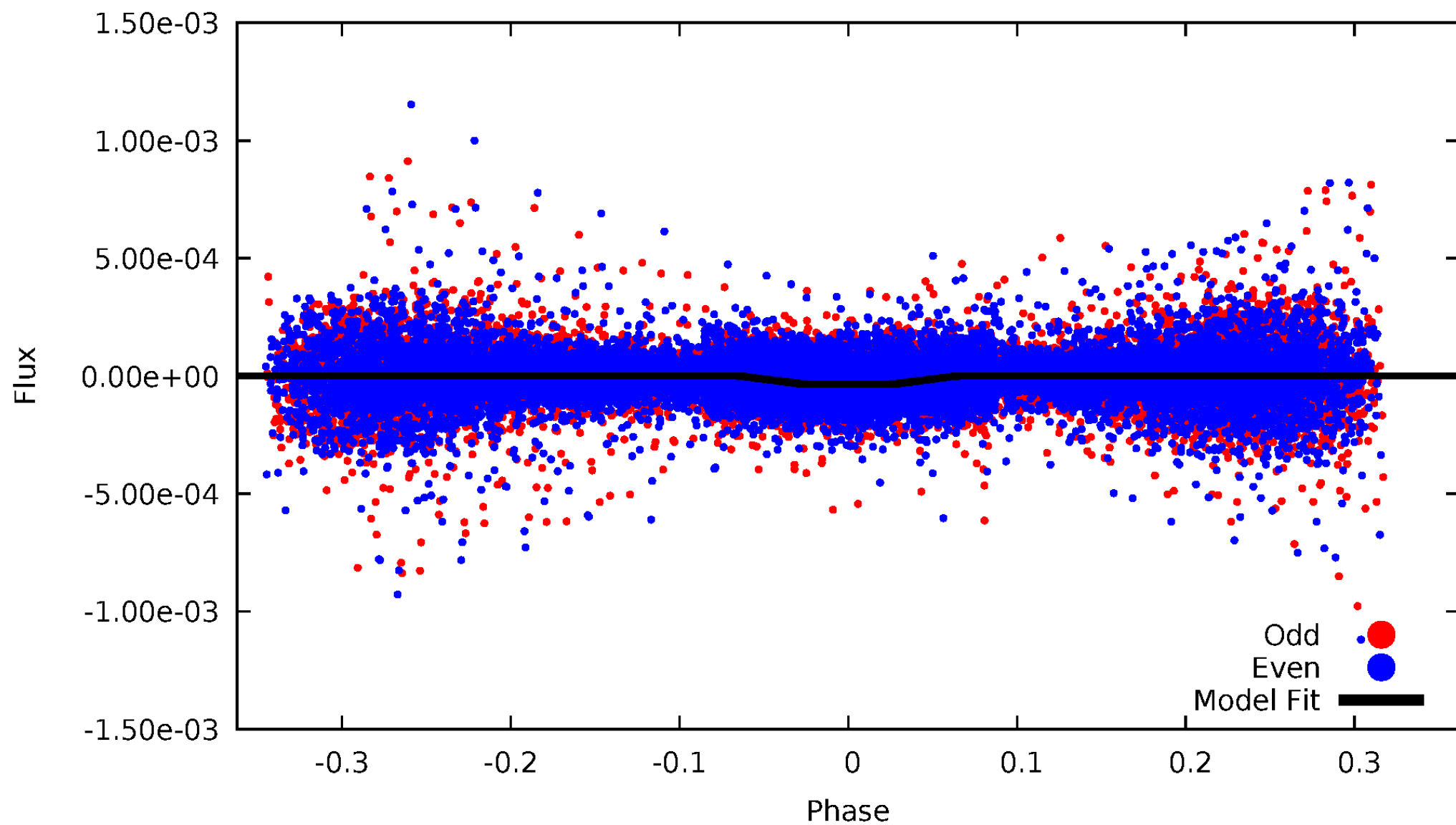
DV Odd/Even

TCE 007985733-02



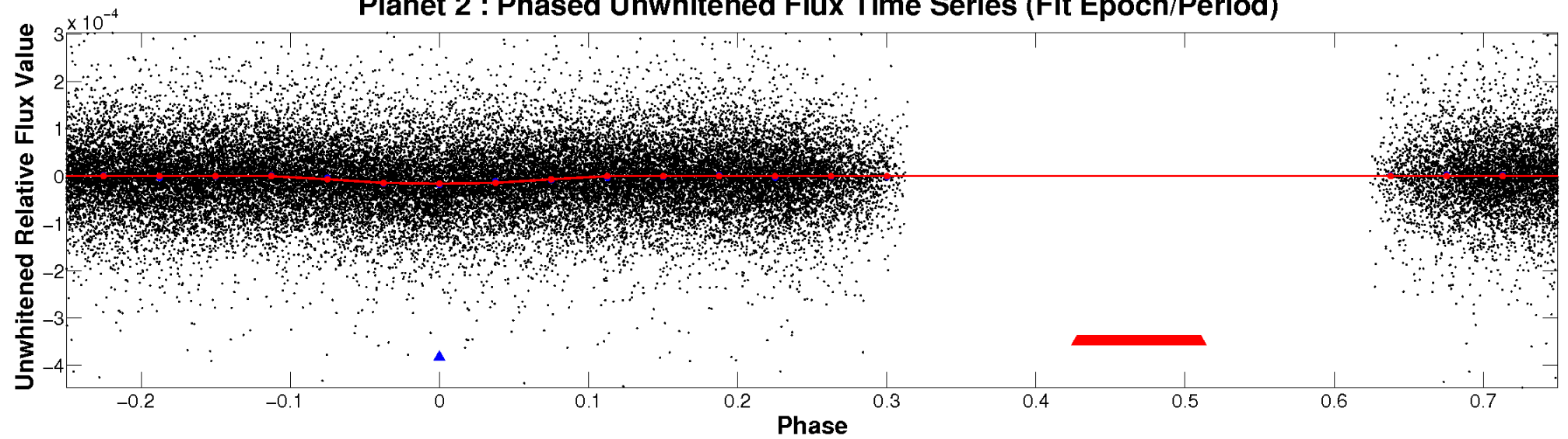
ALT Odd/Even

TCE 007985733-02

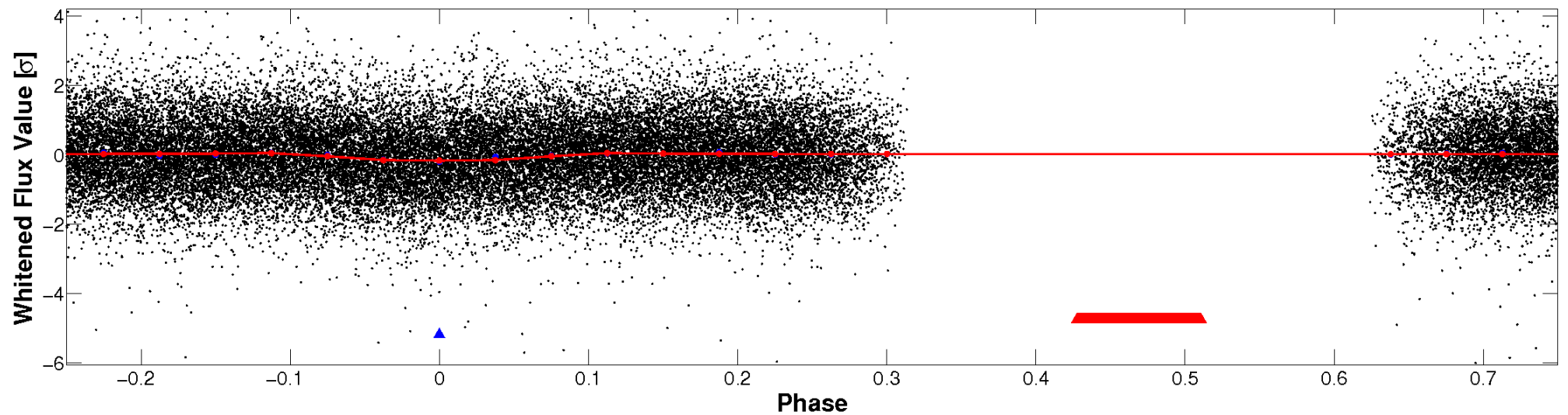


Non-Whitened Vs. Whitened Light Curve

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

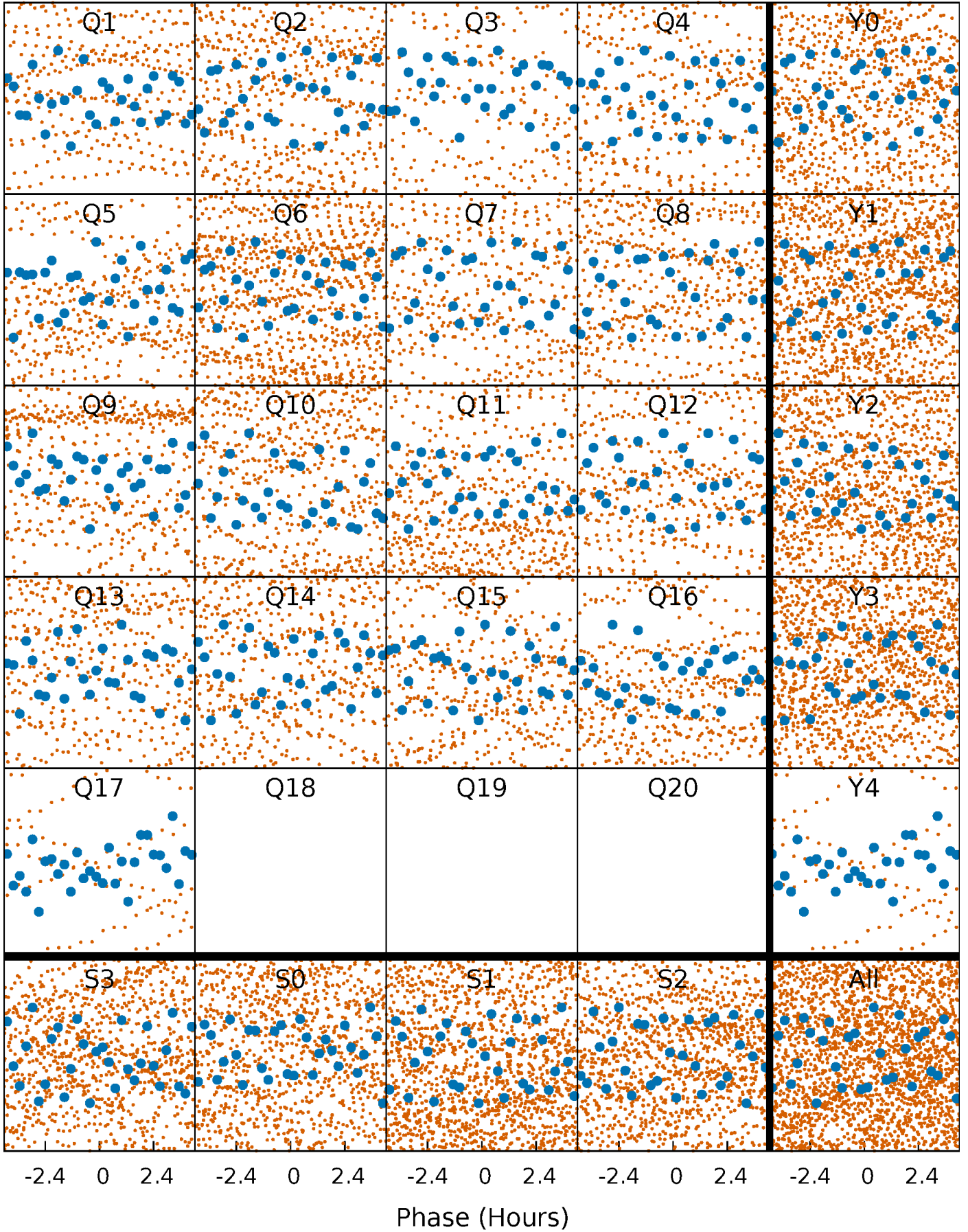


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



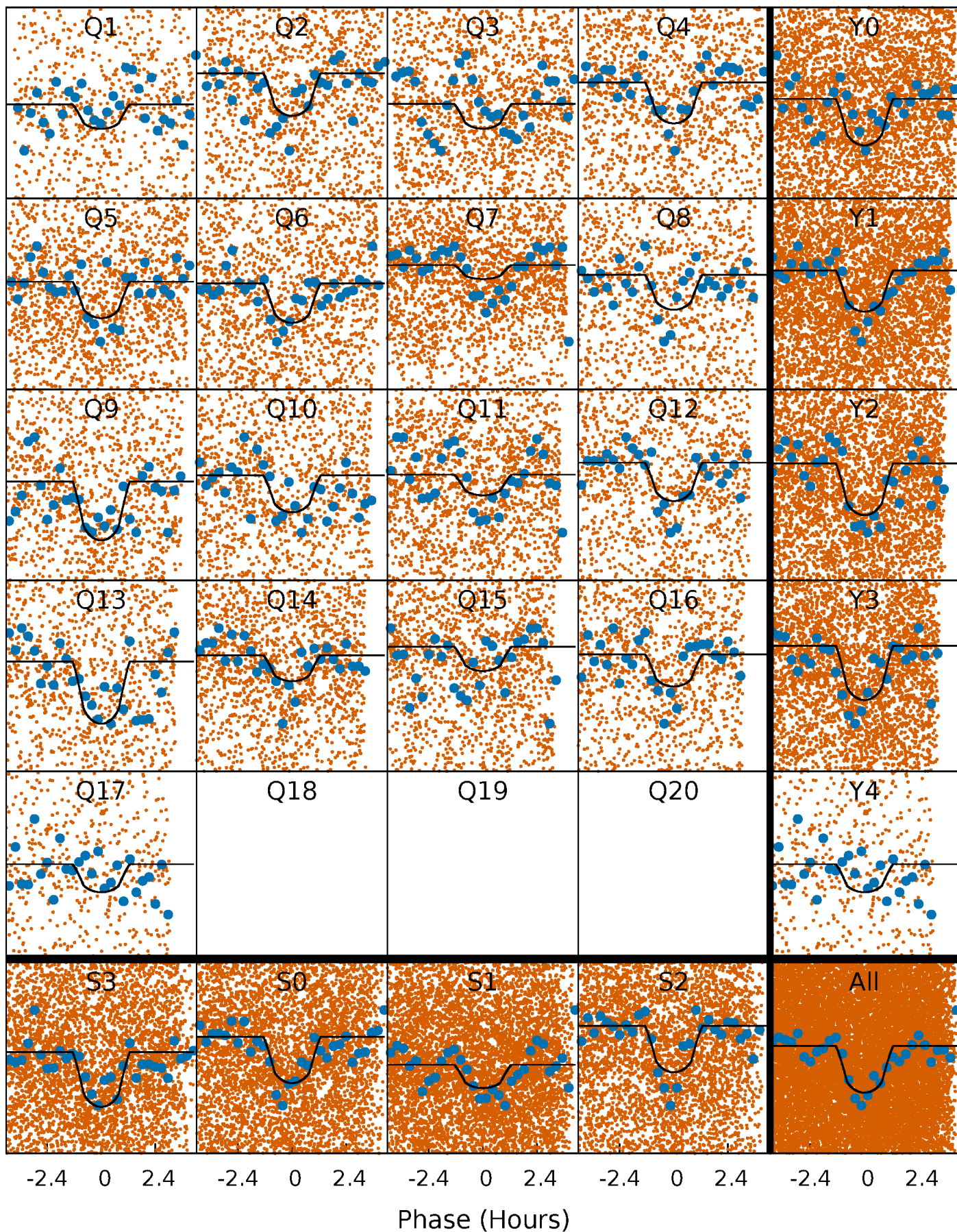
PDC Quarter-Phased Transit Curves

TCE 007985733-02 $P = 0.544567$ Days $T_0 = 131.676286$ (BKJD)



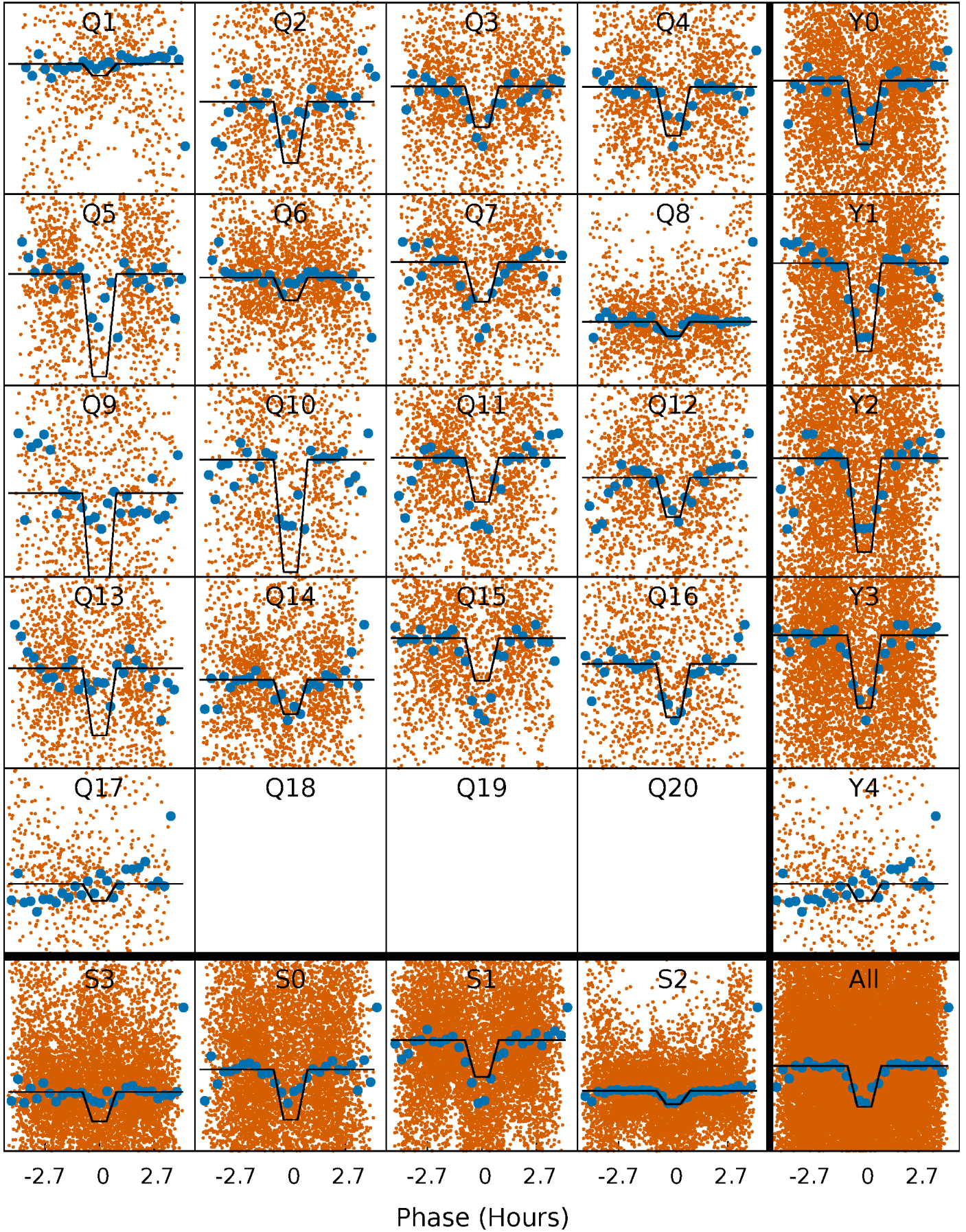
DV Quarter-Phased Transit Curves

TCE 007985733-02 P= 0.544567 Days $T_0=131.676286$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

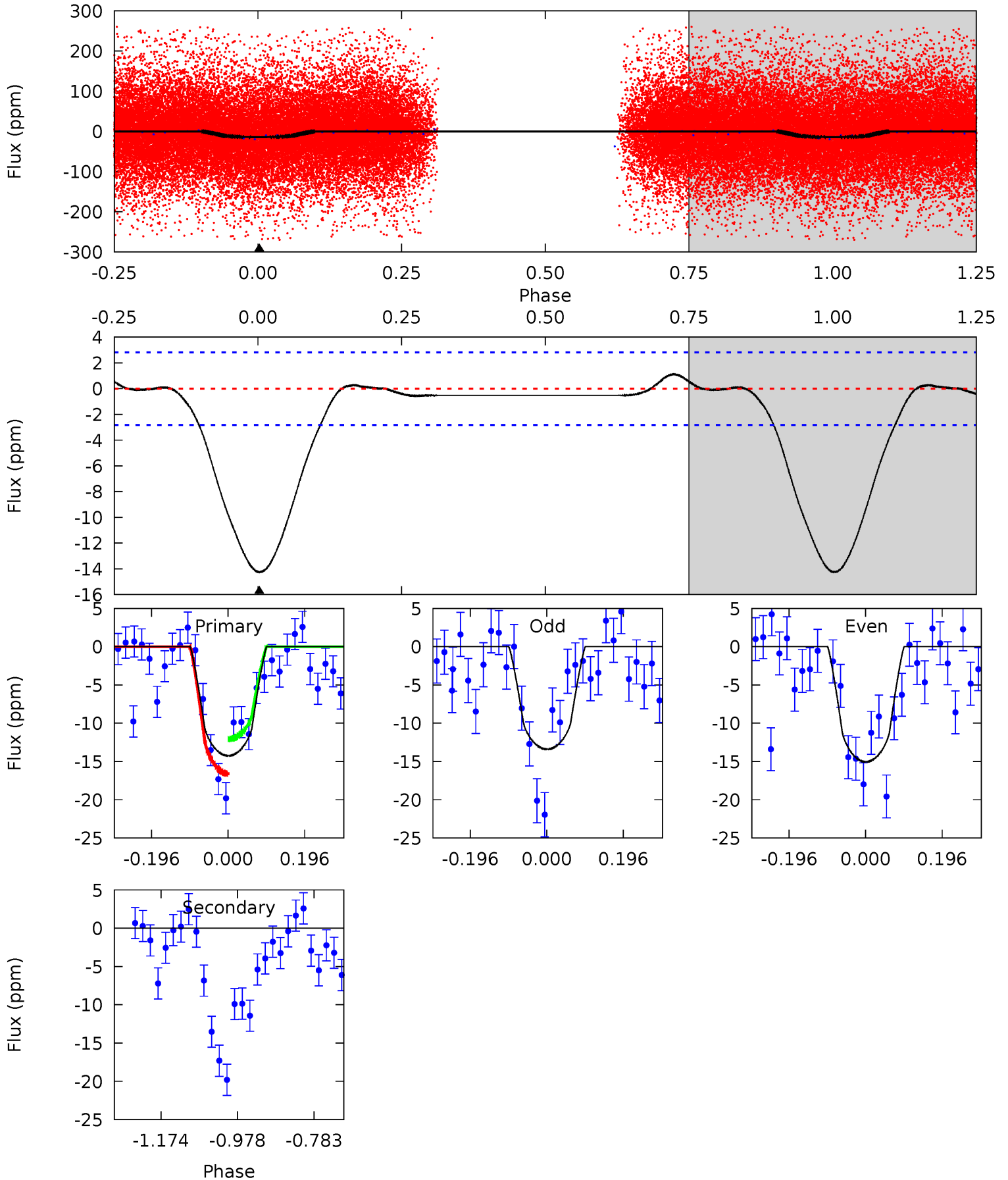
TCE 007985733-02 P= 0.544562 Days $T_0=131.674754$ (BKJD)



DV Model-Shift Uniqueness Test

007985733-02, P = 0.544567 Days, E = 131.131719 Days

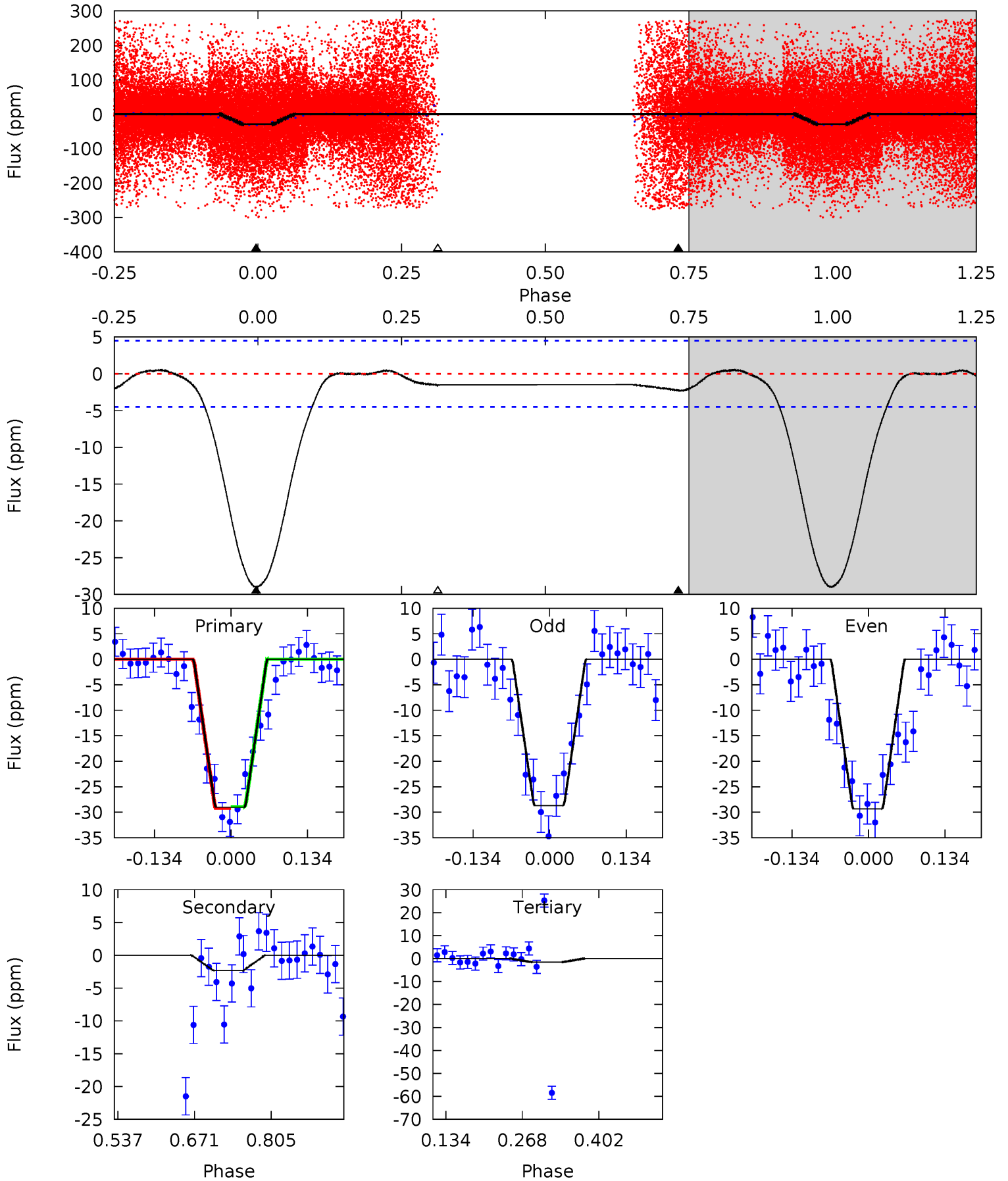
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	0	0	0	4.42	1.29	0.78	22.4	22.4	0	0	1.30	1.05	0.07	3.61



Alt Model-Shift Uniqueness Test

007985733-02, P = 0.544562 Days, E = 131.130192 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.1	2.32	1.58	0	4.50	1.50	0.44	27.5	29.1	0.74	2.32	0.34	1.04	0.02	0.26



Stellar Parameters For KIC 007985733

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3715^{+83}_{-102}	$0.851^{+0.030}_{-0.030}$	$0.000^{+0.200}_{-0.250}$	$80.529^{+3.558}_{-14.232}$	$1.678^{+0.063}_{-0.536}$	$0.000^{+0.000}_{-0.000}$
	+2%/-3%	+4%/-4%	+inf%/-inf%	+4%/-18%	+4%/-32%	+25%/-8%
Source	PHO54	AST54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007985733-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1	$41.43^{+15.37}_{-13.34}$	16489^{+457}_{-489}	-15654^{+1230}_{-1232}	$-0.000^{+0.000}_{-0.000}$
Alt.	-2 ± 1	$51.51^{+14.79}_{-14.81}$	16512^{+463}_{-490}	-15729^{+1260}_{-1233}	$0.000^{+0.000}_{-0.000}$

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 $A_{obs} \gg 1.0$

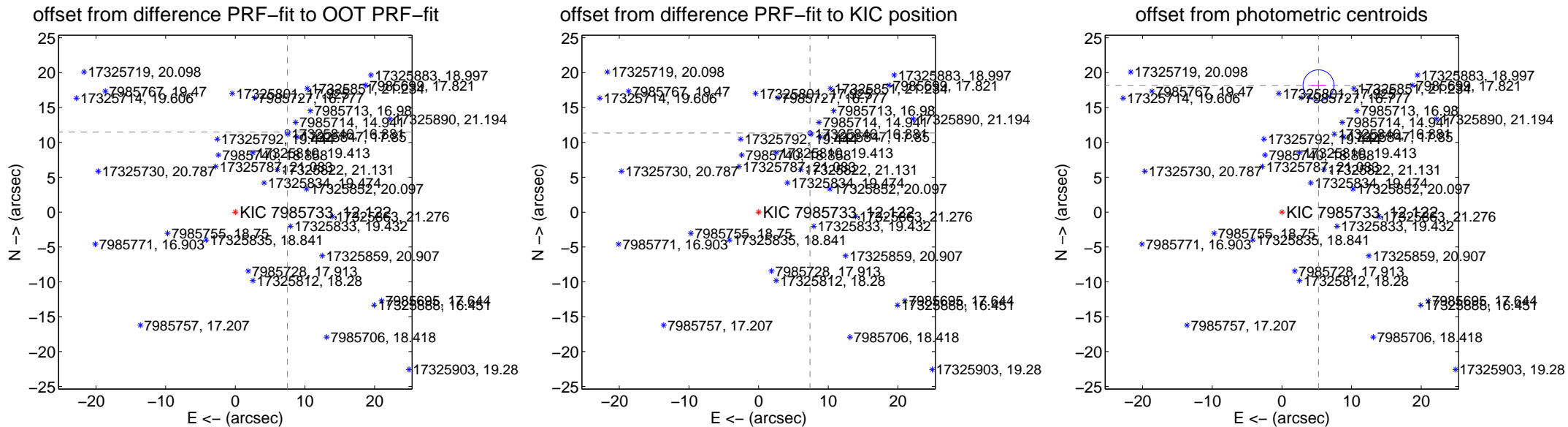
DV Centroid Data

Supplemental centroid analysis for 007985733-02. Kepler magnitude: 12.12. Transit SNR 15.31

There are 4 quarters with good PRF difference image offsets

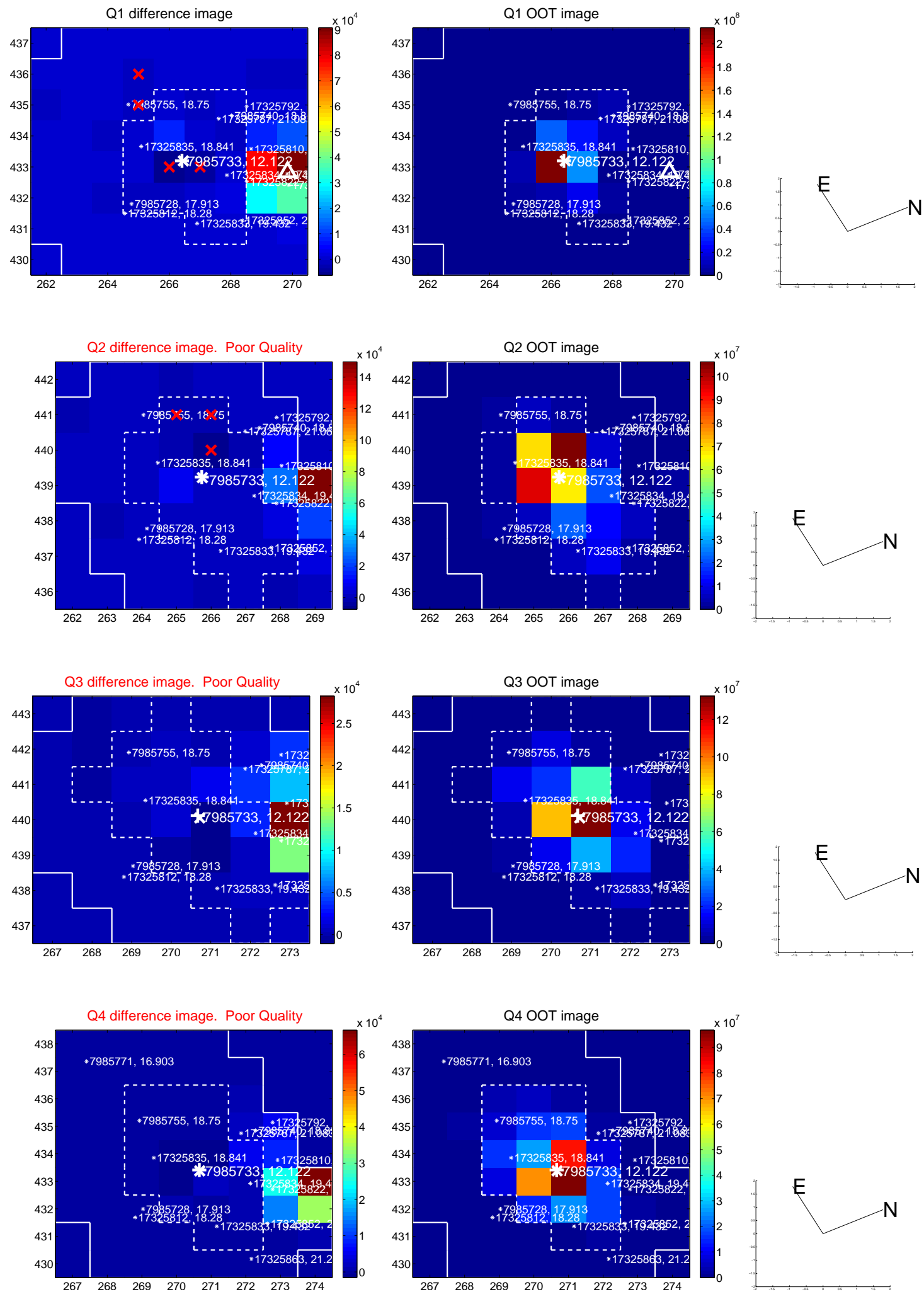
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	13.700 \pm 0.118	116.25	-7.485 \pm 0.075	11.474 \pm 0.140
PRF-fit source offset from KIC position	13.532 \pm 0.108	125.73	-7.380 \pm 0.073	11.342 \pm 0.111
photometric centroid source offset	18.93 \pm 0.74	25.56	-5.25 \pm 1.02	18.18 \pm 0.71

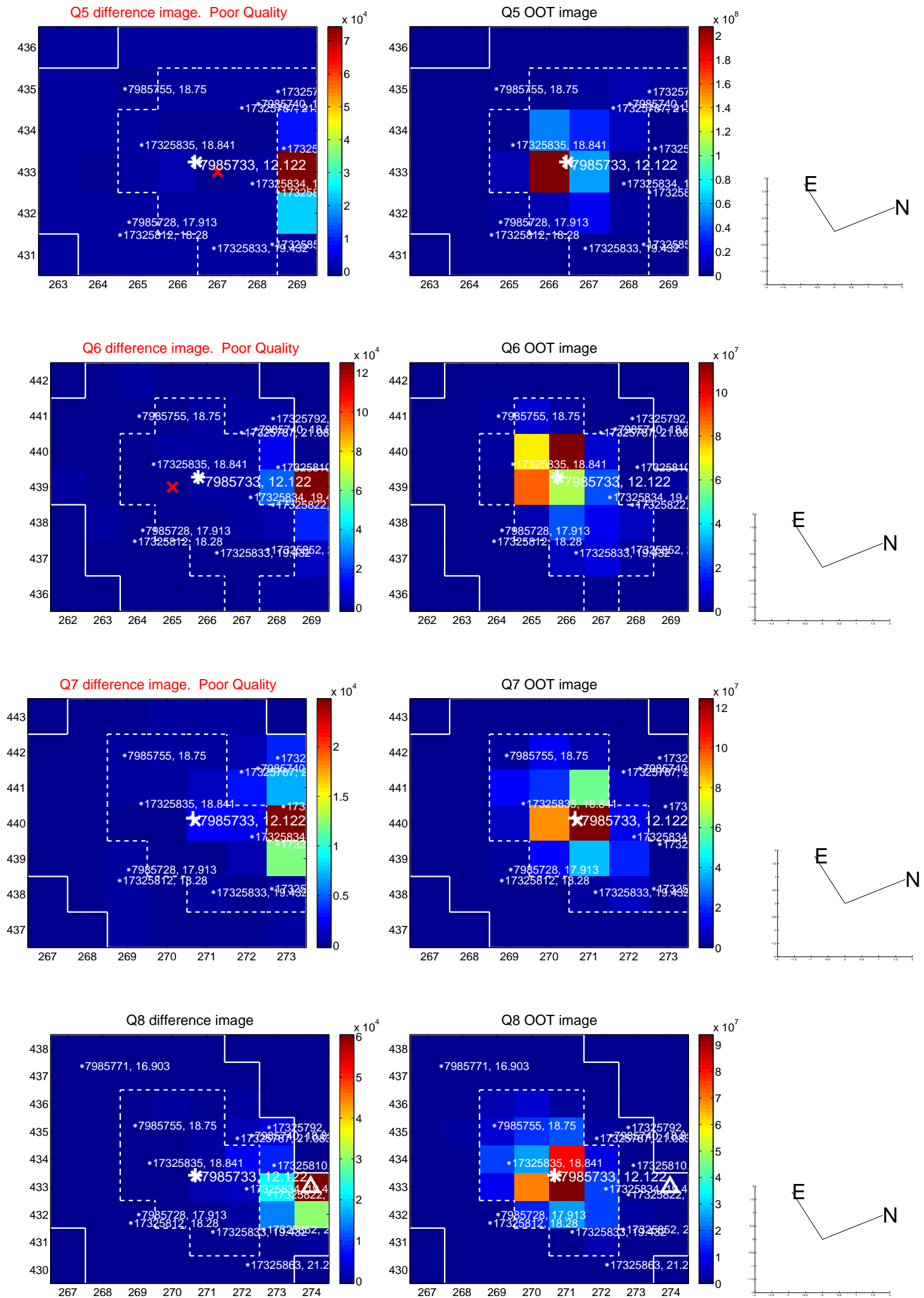


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

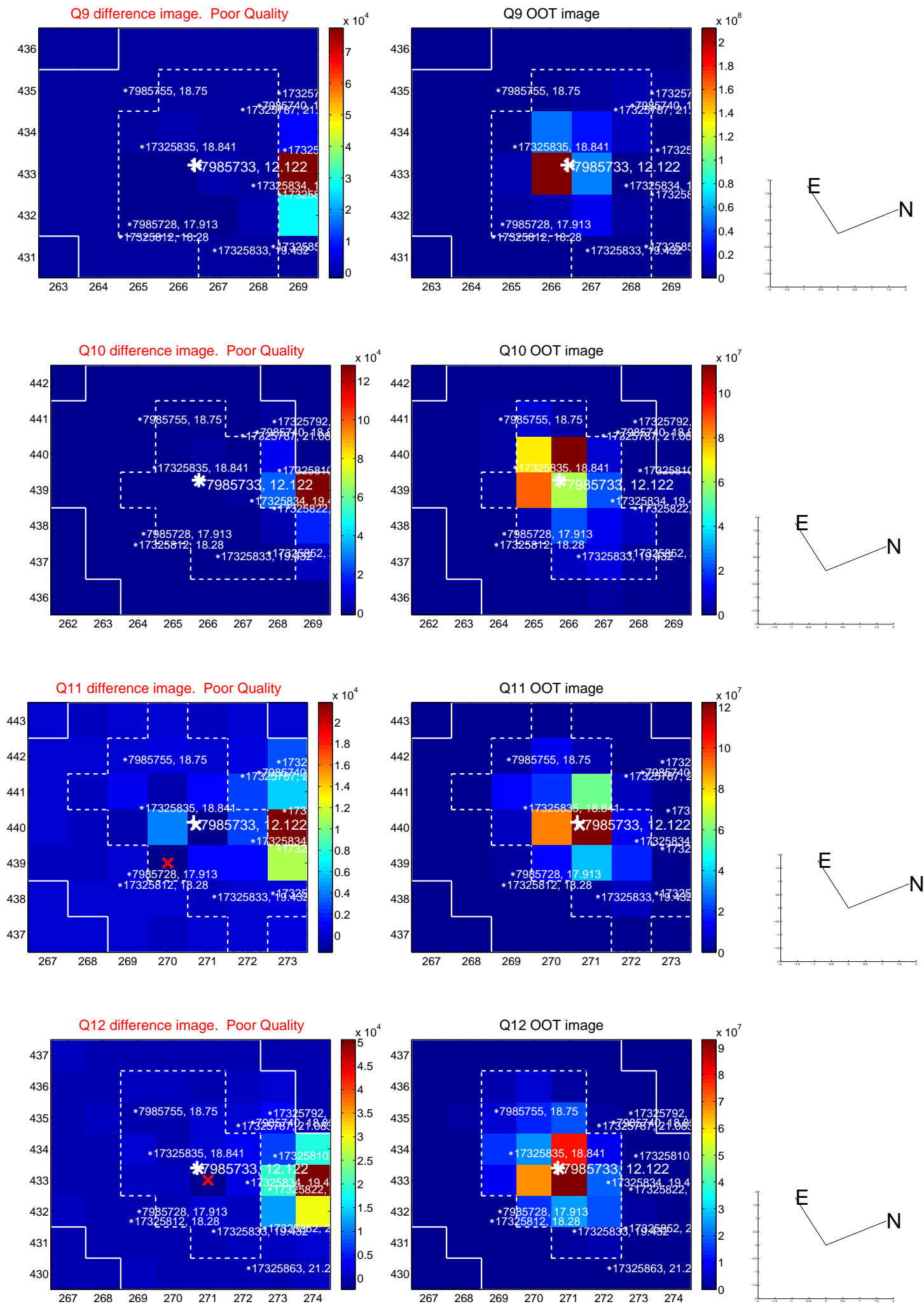
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



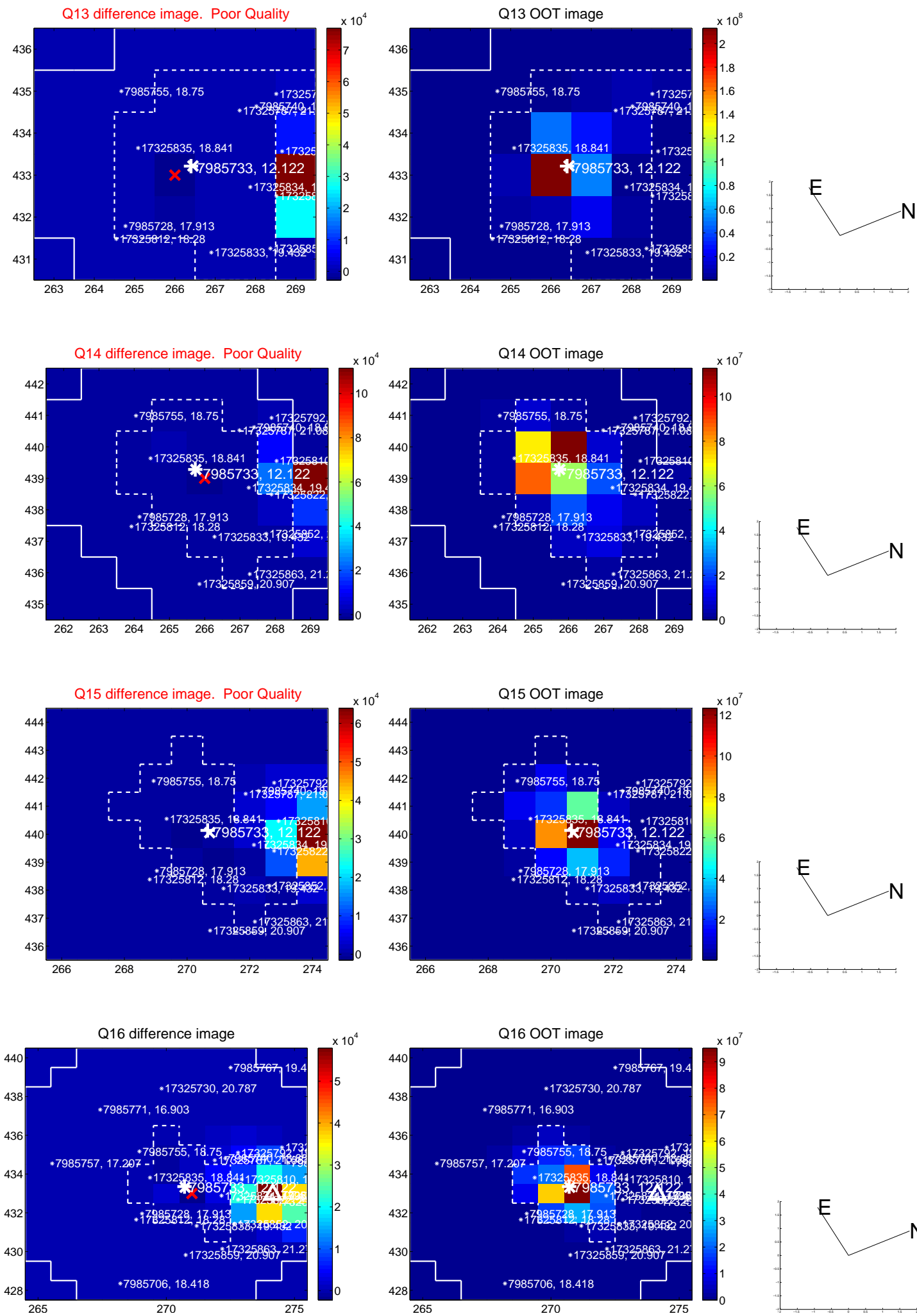
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



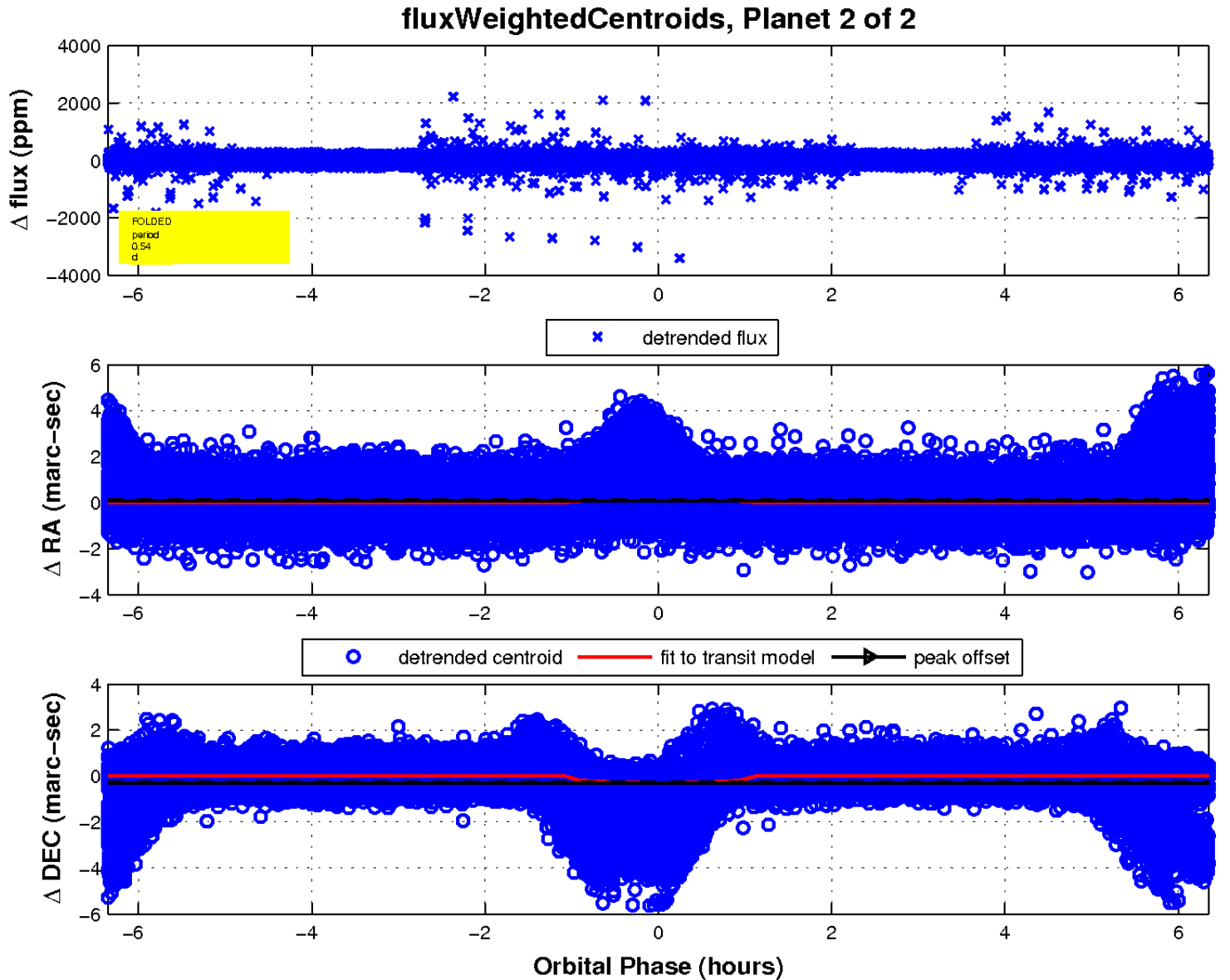
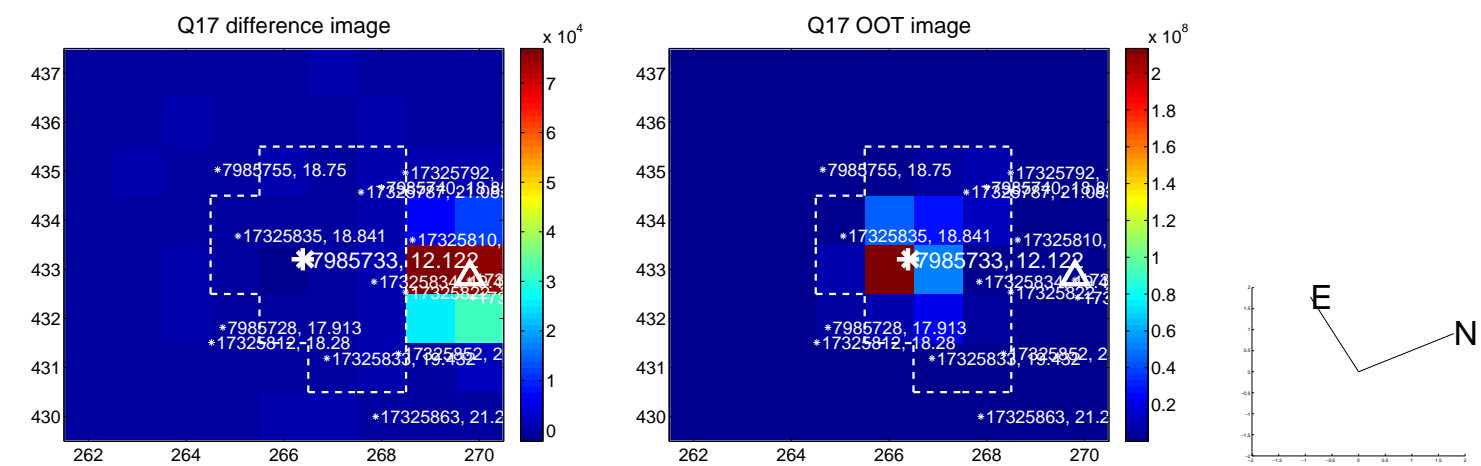
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

