

KIC 005988566

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})
005988566-01	OBS	No	0.865448	132.069858	13.9	1.956	10.8	12.8	11.80	6351	5.15	0.00
005988566-02	OBS	No	0.865442	131.644523	11.7	2.071	10.8	11.5	11.80	6351	4.74	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005988566-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
005988566-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—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.

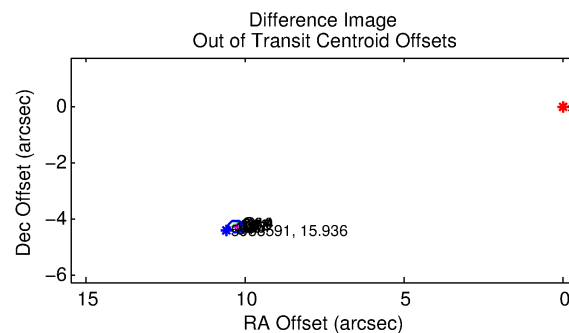
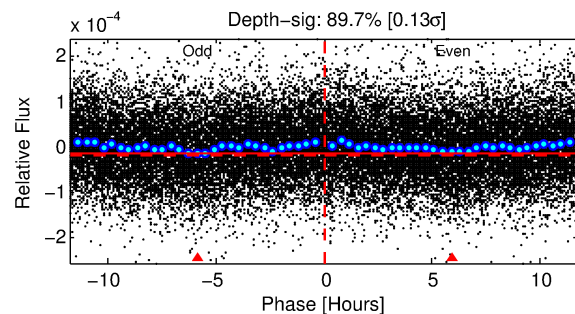
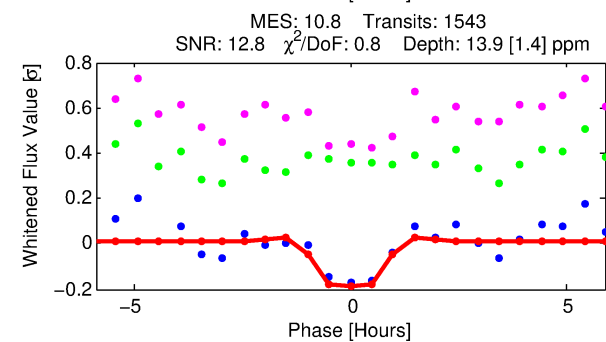
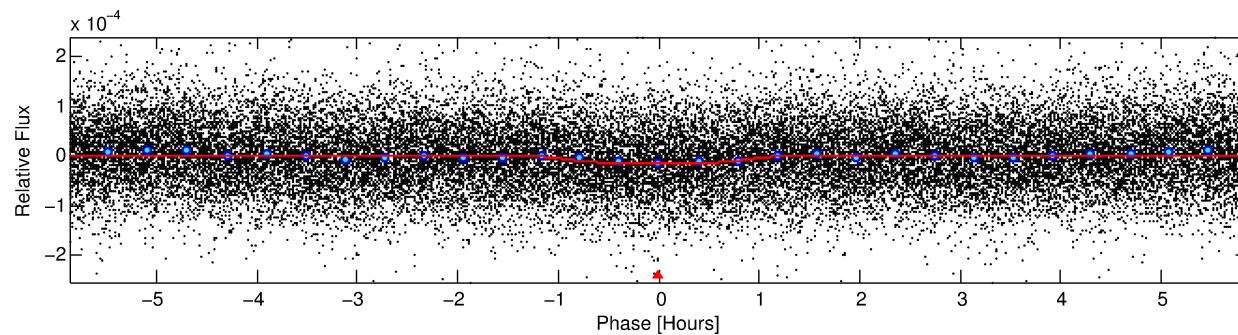
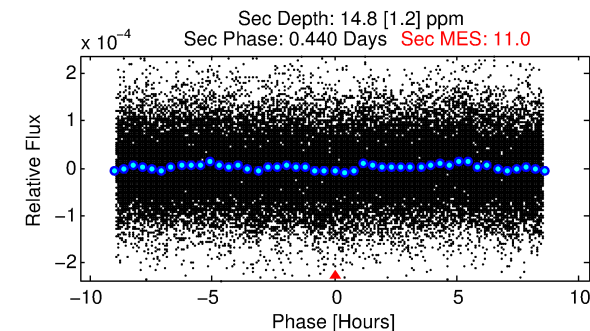
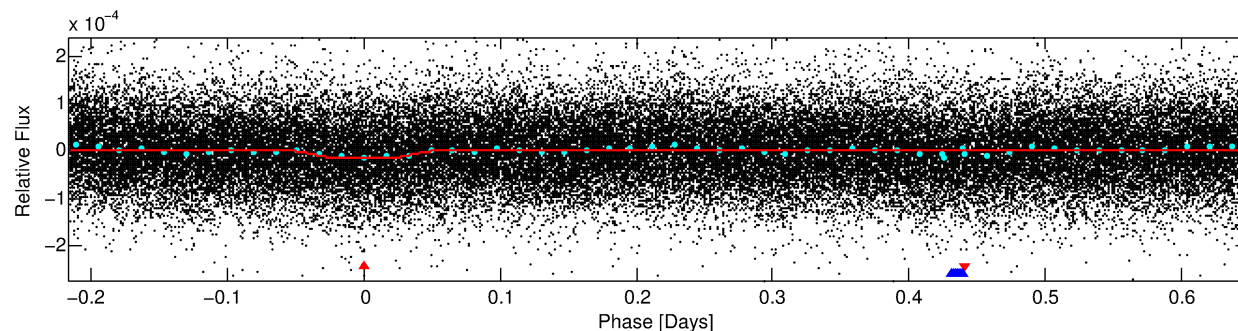
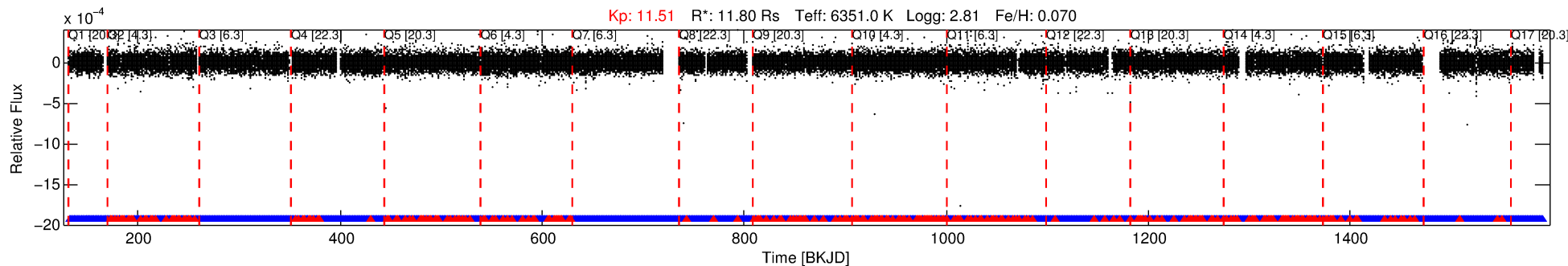
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005988566-01

No Significant Match Found

DV One-Page Summary

KIC: 5988566 Candidate: 1 of 2 Period: 0.865 d



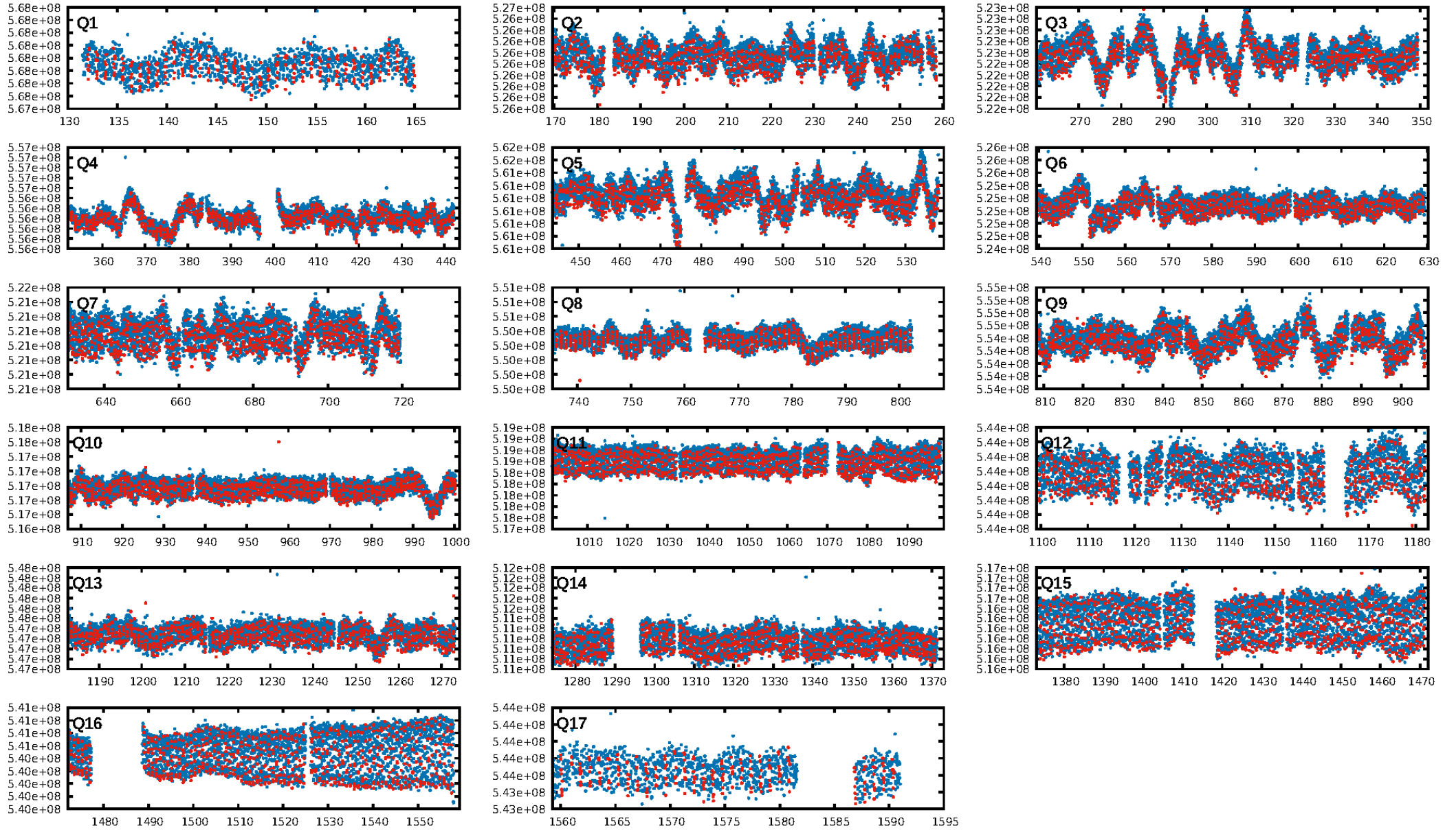
DV Fit Results:

Period = 0.86545 [0.00001] d
Epoch = 132.0699 [0.0019] BKJD
Rp/R* = 0.0040 [0.0006]
a/R* = 1.77 [0.91]
b = 0.90 [0.16]
Seff = N/A
Teq = N/A
Rp = 5.15 [3.04] Re
a = N/A
Ag = N/A
Teff = N/A

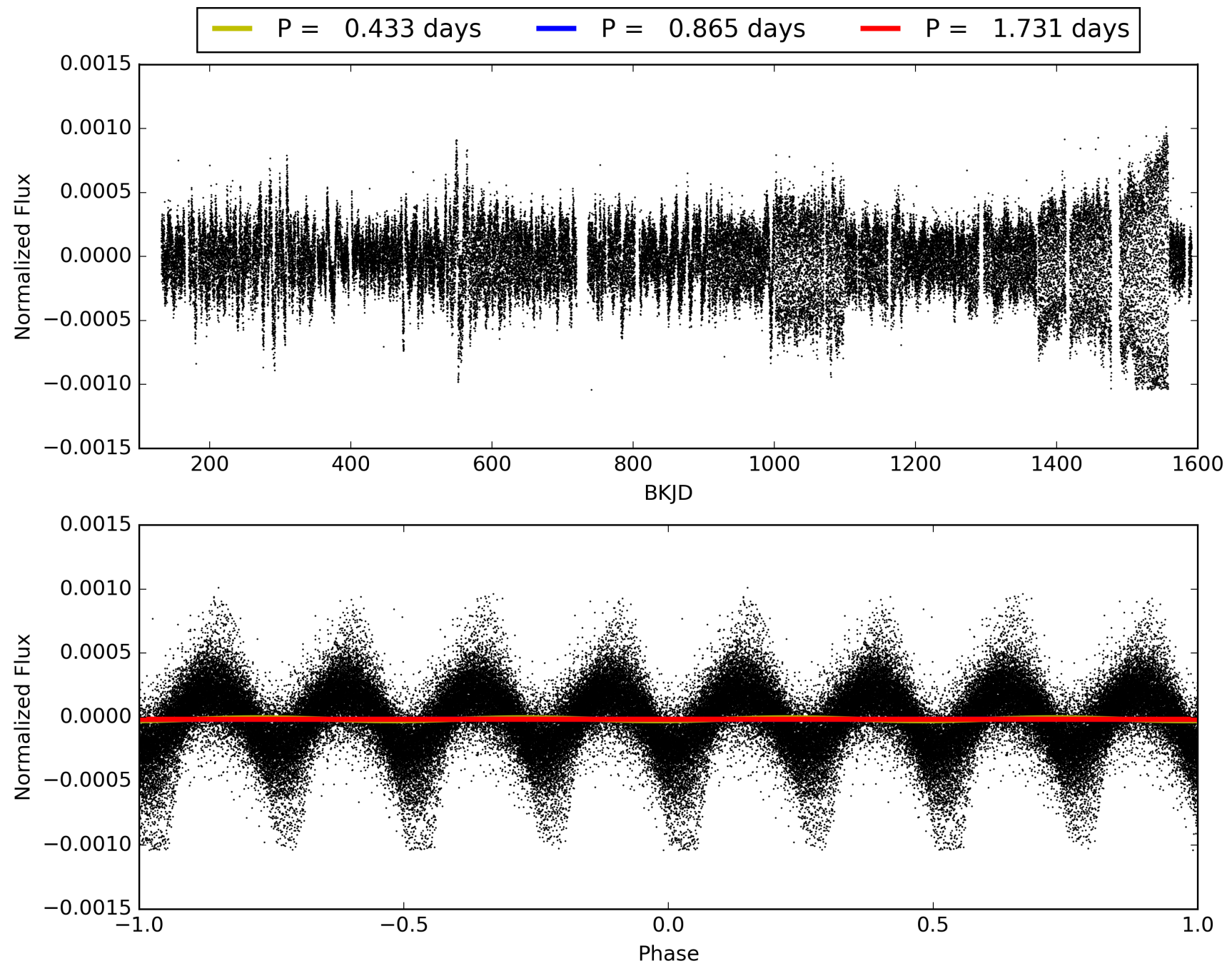
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.03e-30
RollingBand-fgt: 0.81 [1198/1474]
GhostDiagnostic-chr: -0.2206
Centroid-sig: 23.7%
Centroid-so: 0.898 arcsec [0.80σ]
OotOffset-rm: 11.155 arcsec [158.72σ]
KicOffset-rm: 11.401 arcsec [160.77σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005988566-01, PDC Light Curves

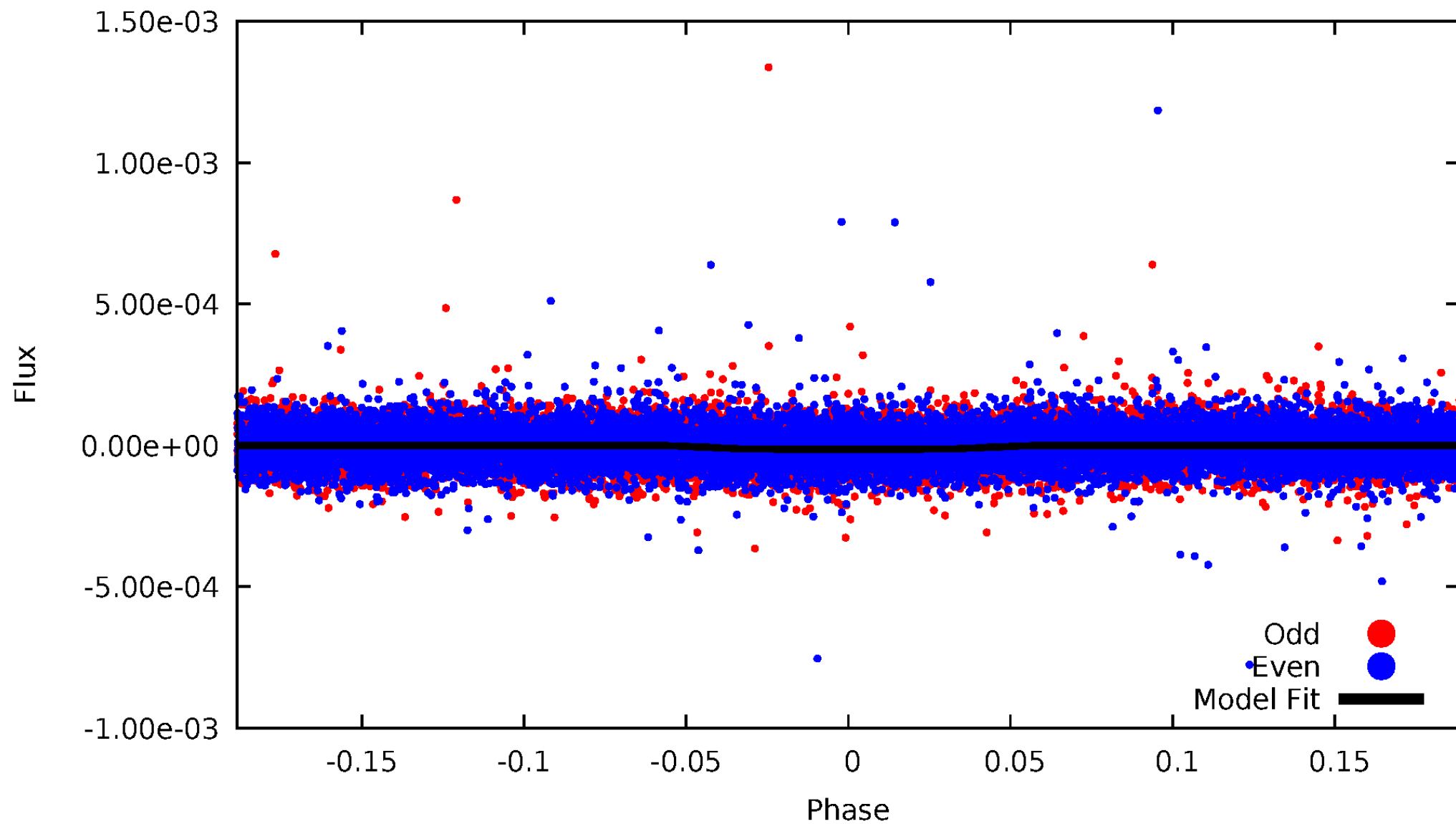


TCE 005988566-01



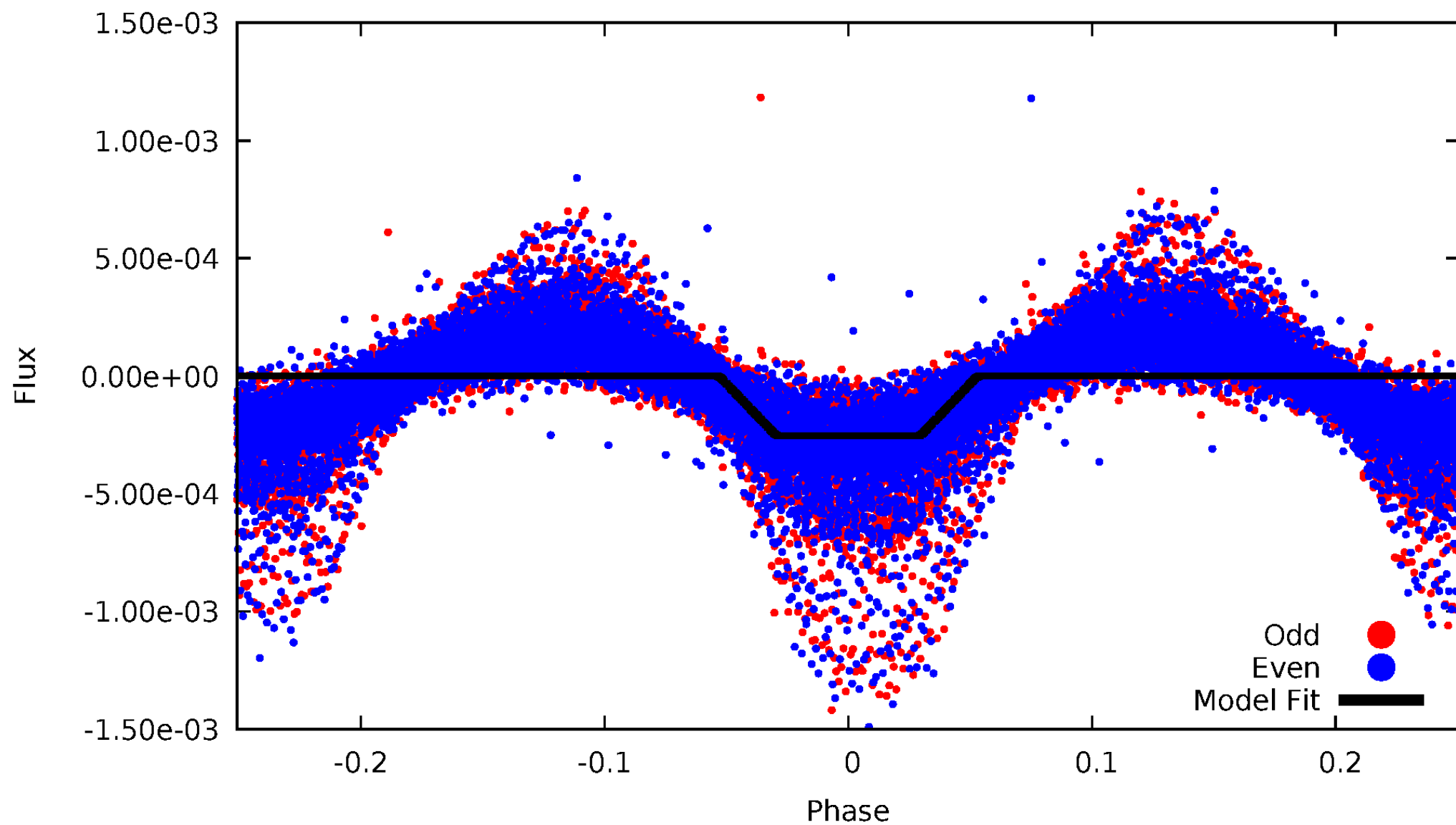
DV Odd/Even

TCE 005988566-01



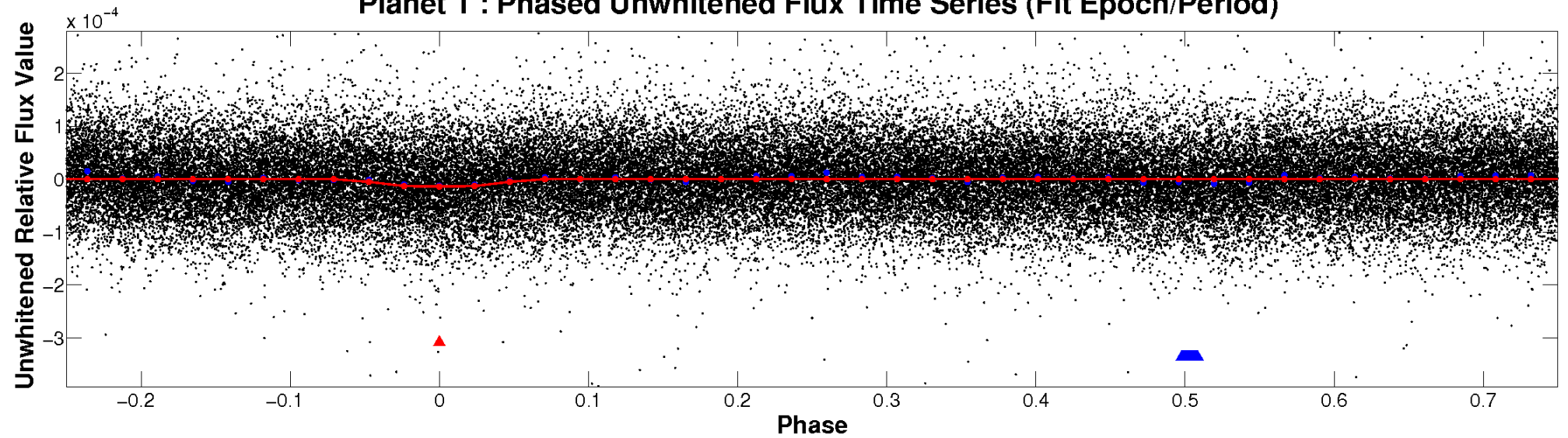
ALT Odd/Even

TCE 005988566-01

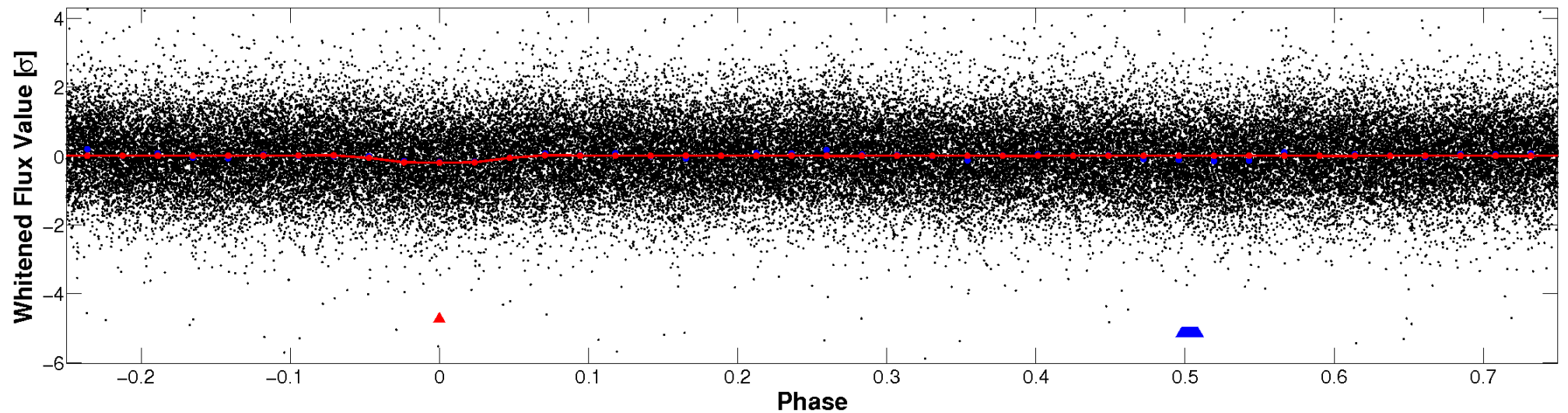


Non-Whitened Vs. Whitened Light Curve

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

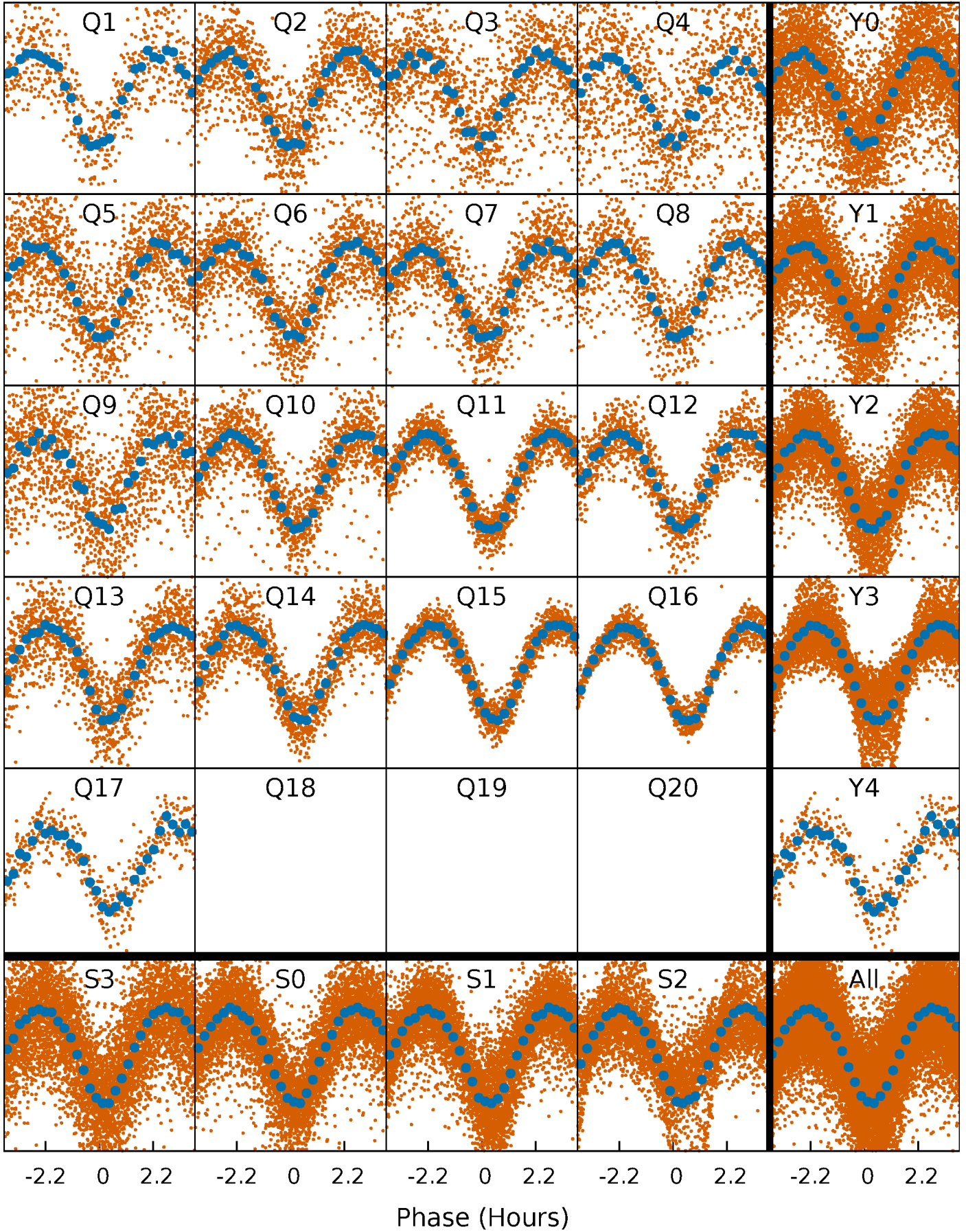


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



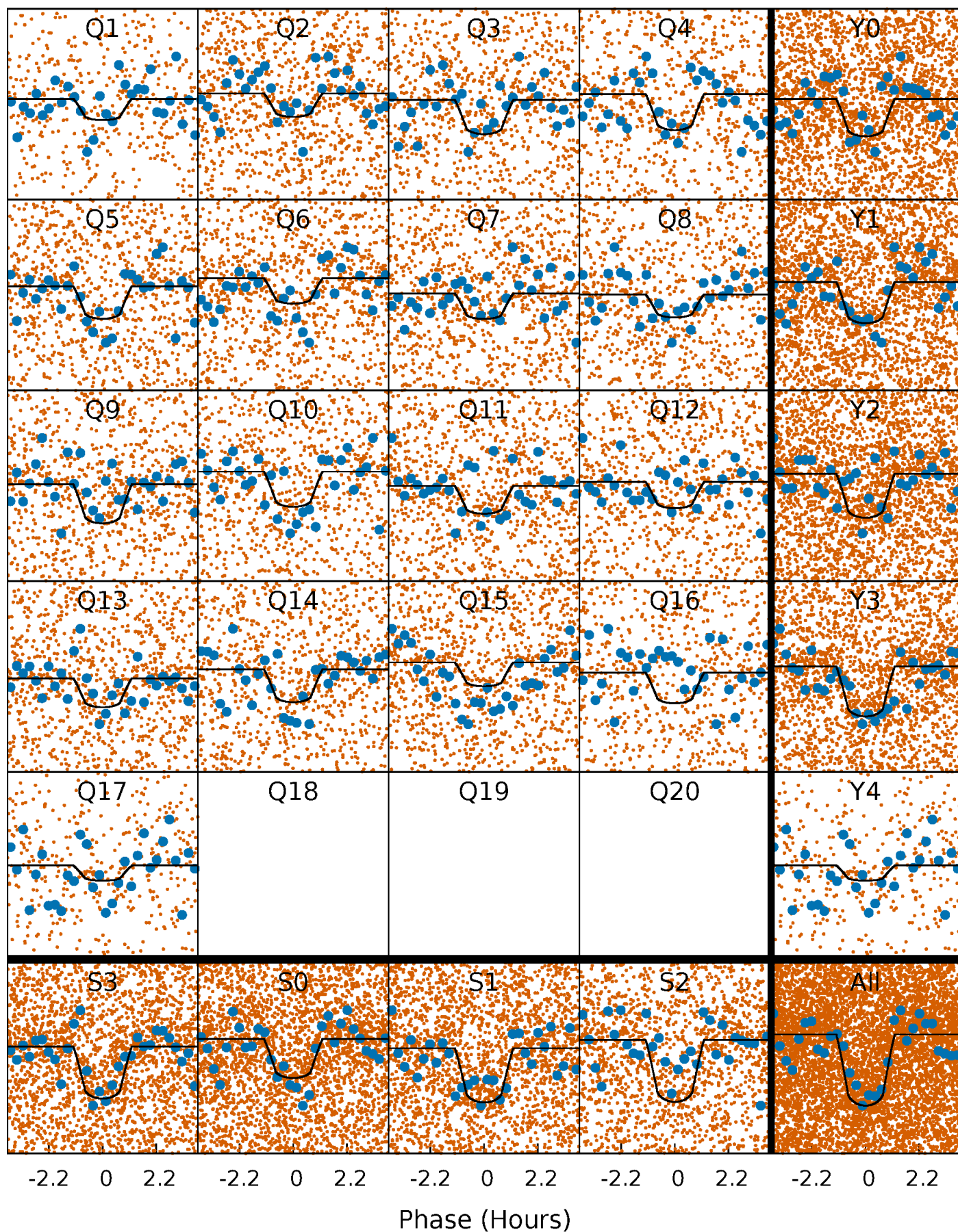
PDC Quarter-Phased Transit Curves

TCE 005988566-01 P= 0.865448 Days $T_0=132.069858$ (BKJD)



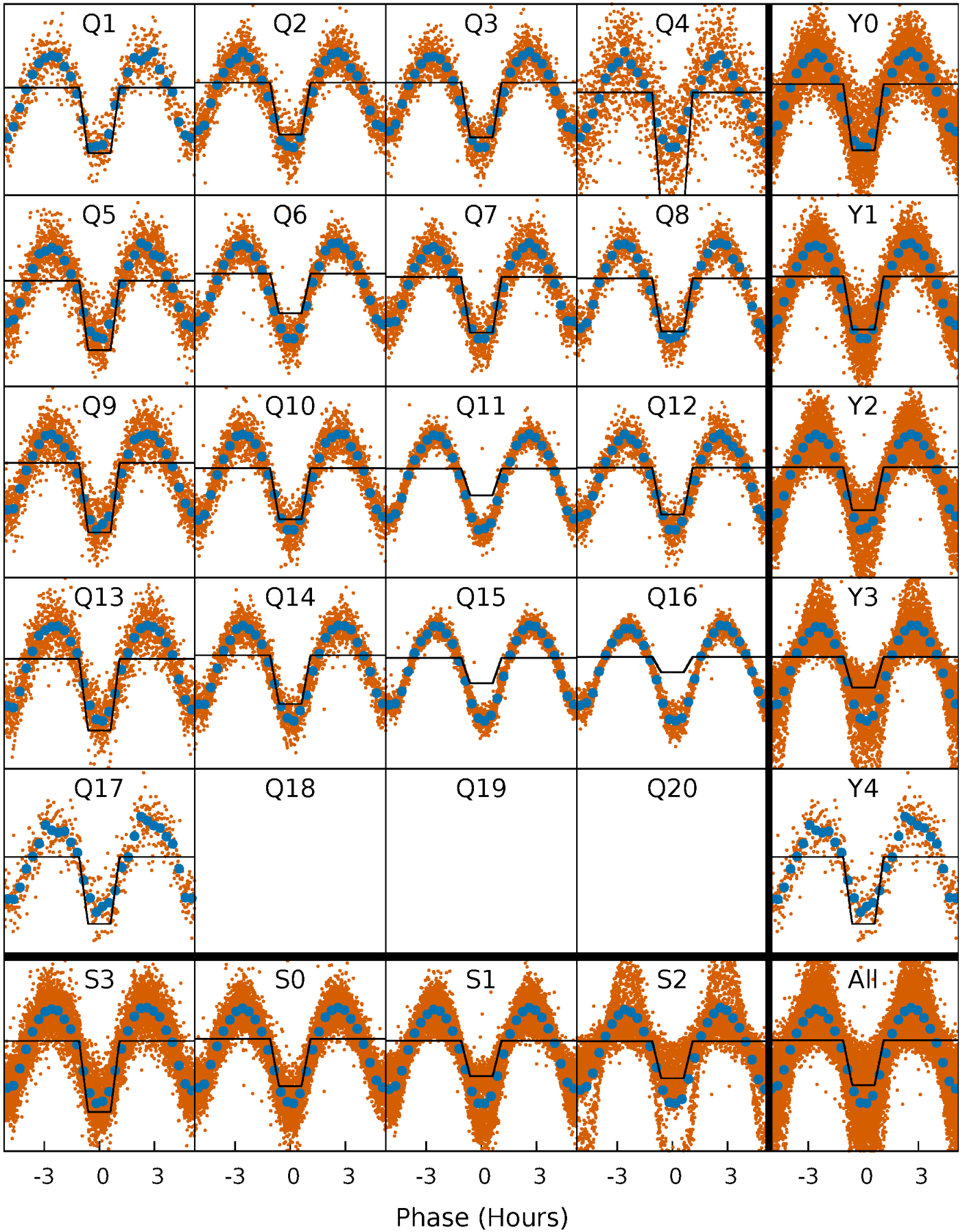
DV Quarter-Phased Transit Curves

TCE 005988566-01 P= 0.865448 Days $T_0=132.069858$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

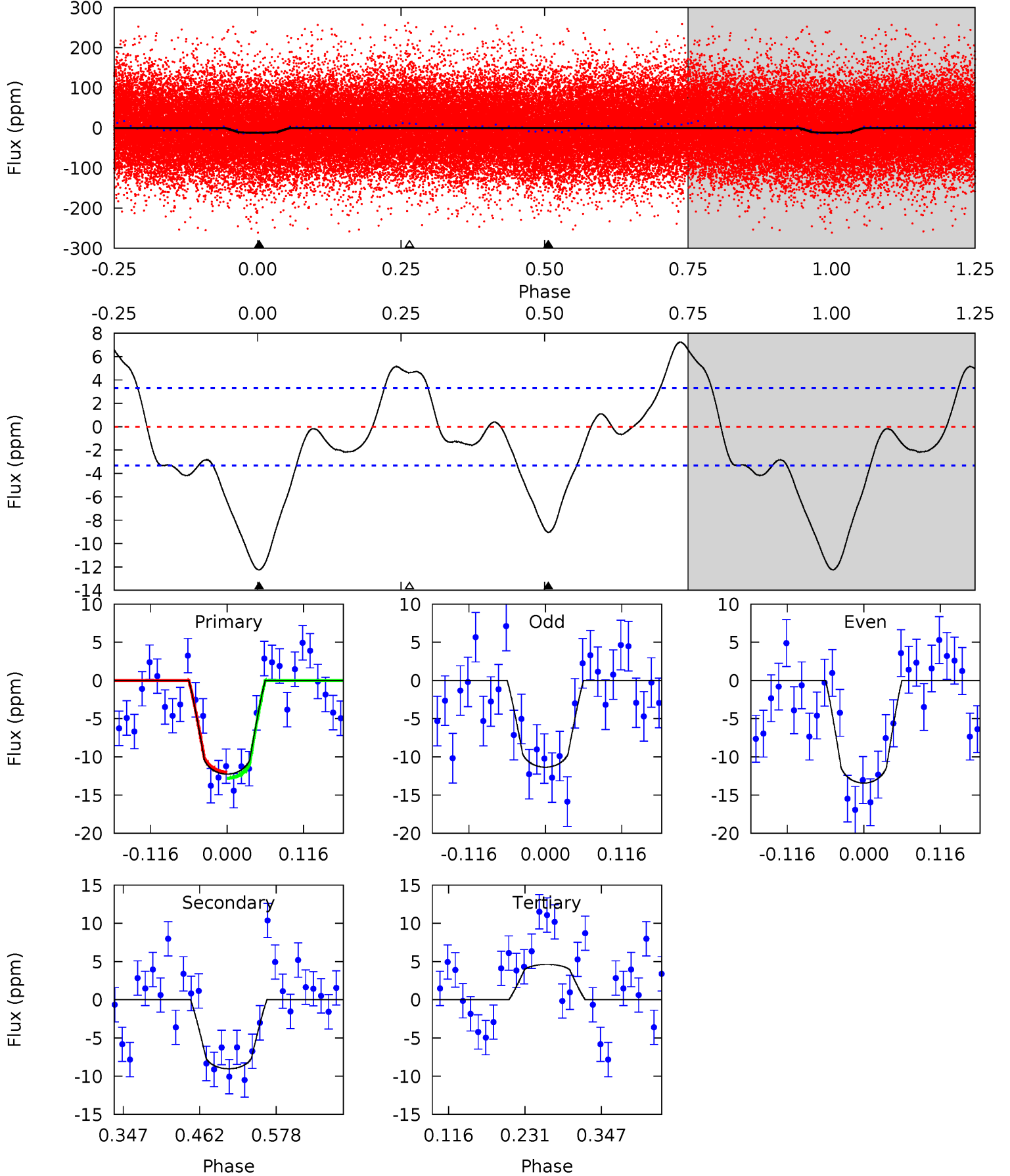
TCE 005988566-01 P= 0.865460 Days $T_0=132.067900$ (BKJD)



DV Model-Shift Uniqueness Test

005988566-01, P = 0.865448 Days, E = 131.204410 Days

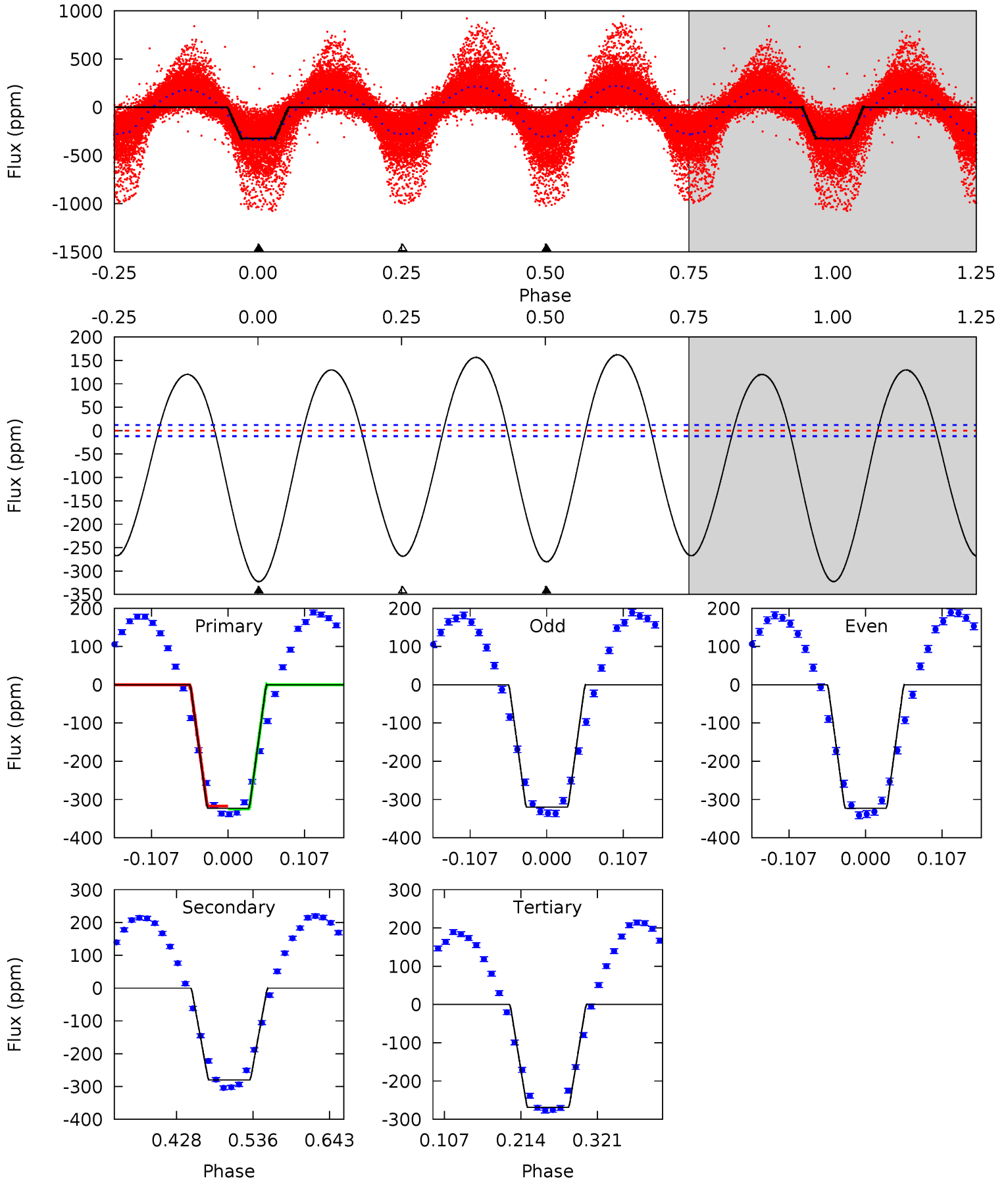
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	12.3	-6.32	0	4.53	1.57	4.45	23.1	16.7	18.7	12.3	1.42	1.05	0.37	0.56



Alt Model-Shift Uniqueness Test

005988566-01, P = 0.865460 Days, E = 131.202440 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
123.8	107.5	103.0	0	4.55	1.61	57.3	20.8	123.8	4.54	107.5	0.49	1.20	0.33	1.56



Stellar Parameters For KIC 005988566

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6351^{+133}_{-266}	$2.807^{+0.518}_{-0.061}$	$0.070^{+0.250}_{-0.350}$	$11.801^{+1.193}_{-6.761}$	$3.255^{+0.138}_{-1.239}$	$0.003^{+0.021}_{-0.001}$
	+2%/-4%	+18%/-2%	+357%/-500%	+10%/-57%	+4%/-38%	+740%/-21%
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 005988566-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-9 ± 1	$4.62^{+1.10}_{-1.31}$	7960^{+526}_{-1061}	-5439^{+2178}_{-726}	$0.159^{+0.128}_{-0.053}$
Alt.	-280 ± 3	$19.22^{+2.57}_{-5.73}$	7935^{+528}_{-1160}	-3474^{+8792}_{-1424}	$0.286^{+0.254}_{-0.057}$

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 $A_{obs} \gg 1.0$

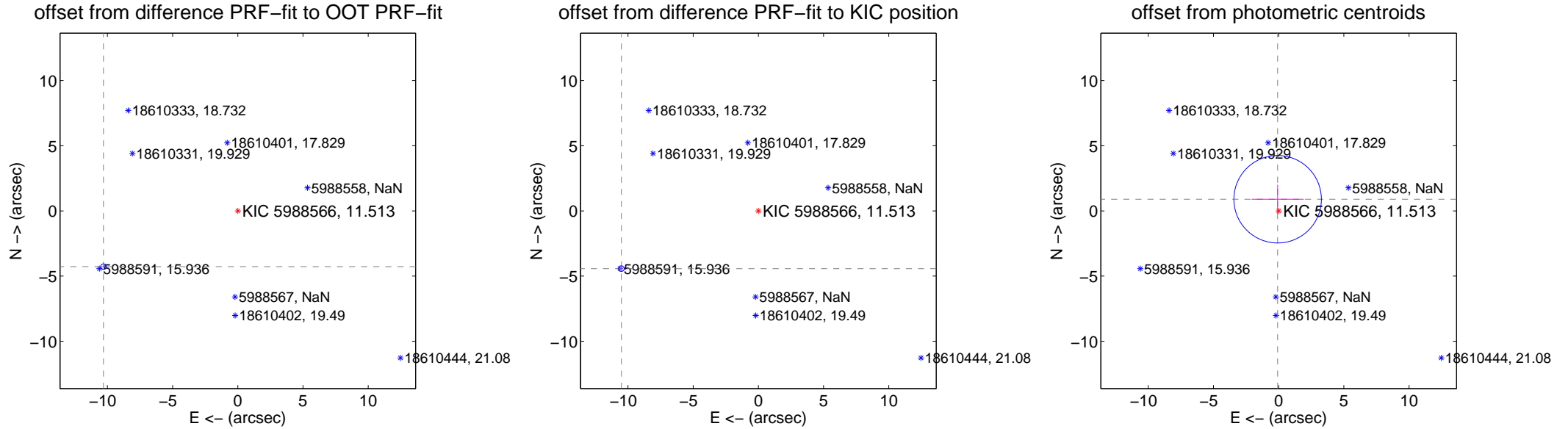
DV Centroid Data

Supplemental centroid analysis for 005988566-01. **Kepler magnitude: 11.51.** Transit SNR 12.78

There are 17 quarters with good PRF difference image offsets

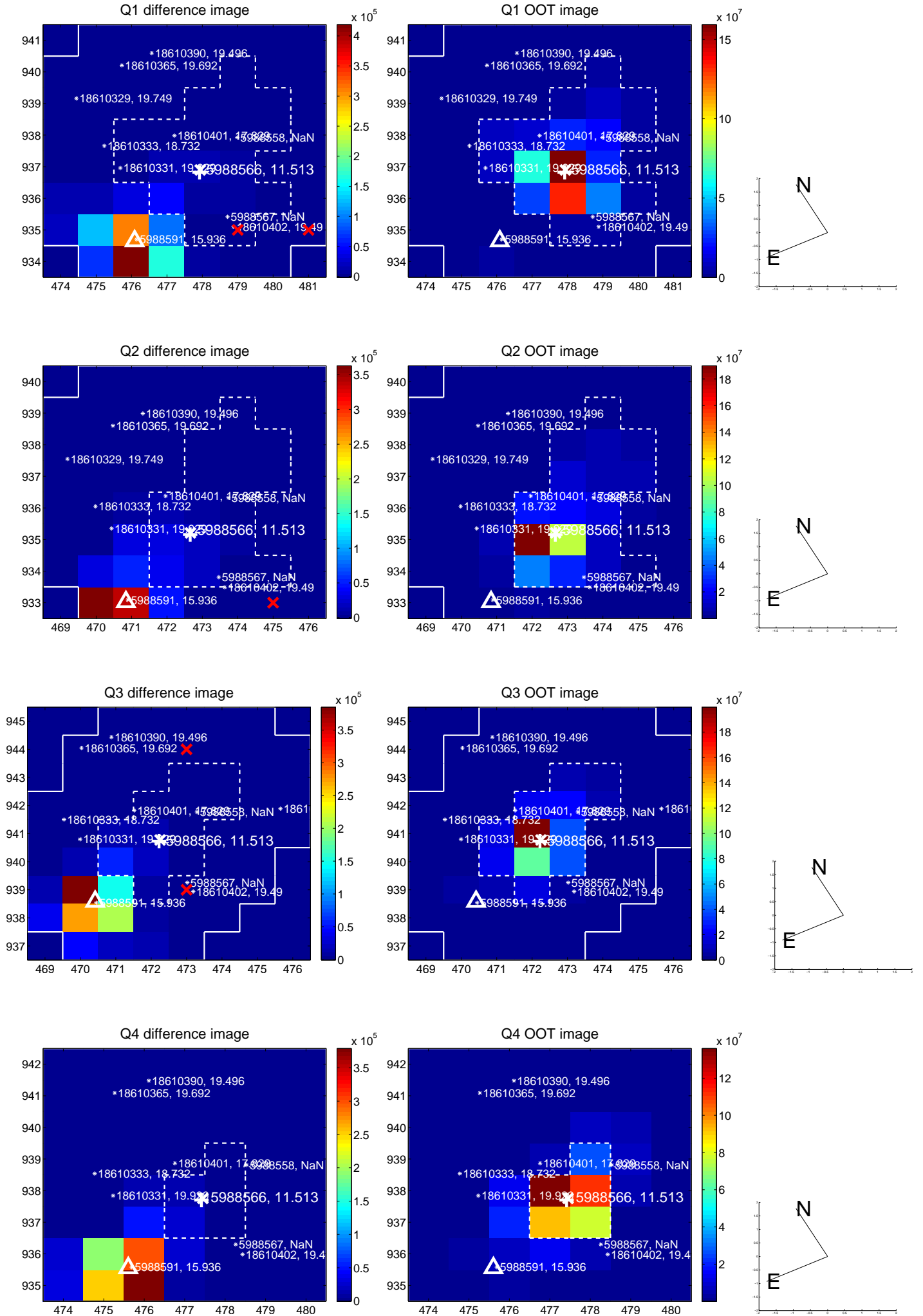
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	11.155 \pm 0.070	158.72	10.303 \pm 0.069	-4.275 \pm 0.068
PRF-fit source offset from KIC position	11.401 \pm 0.071	160.77	10.505 \pm 0.070	-4.429 \pm 0.068
photometric centroid source offset	0.90 \pm 1.12	0.80	0.08 \pm 1.99	0.89 \pm 1.11

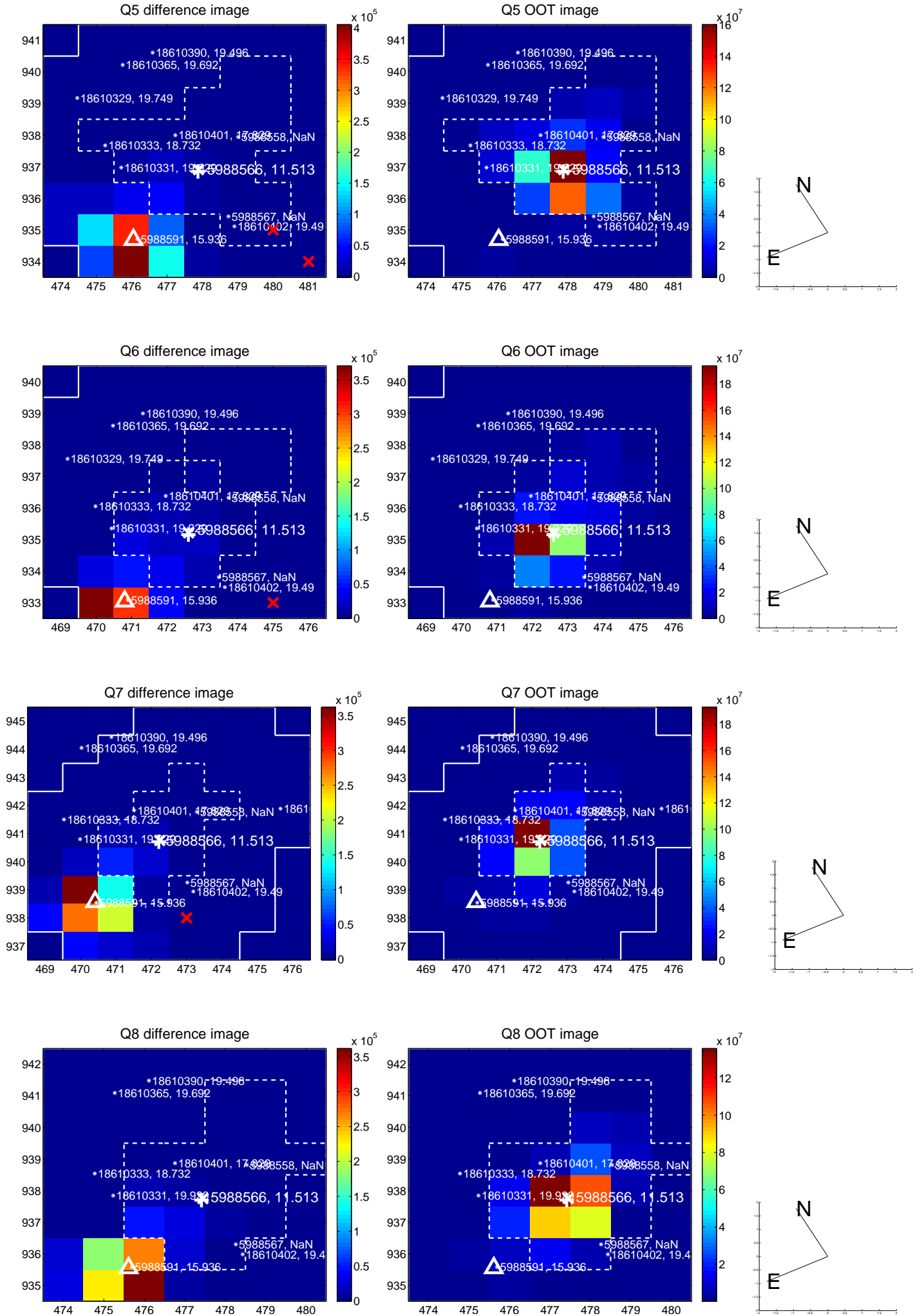


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

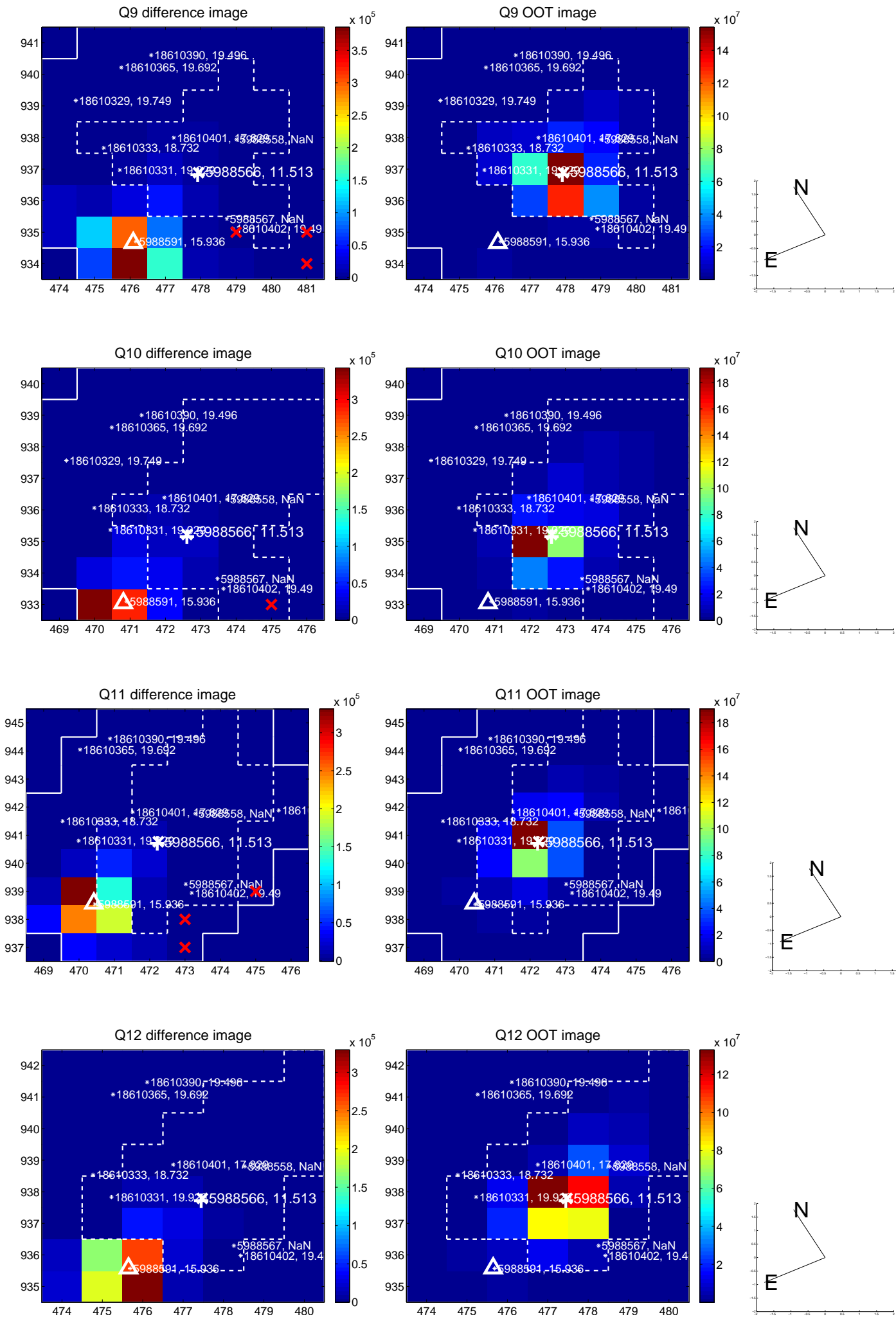
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



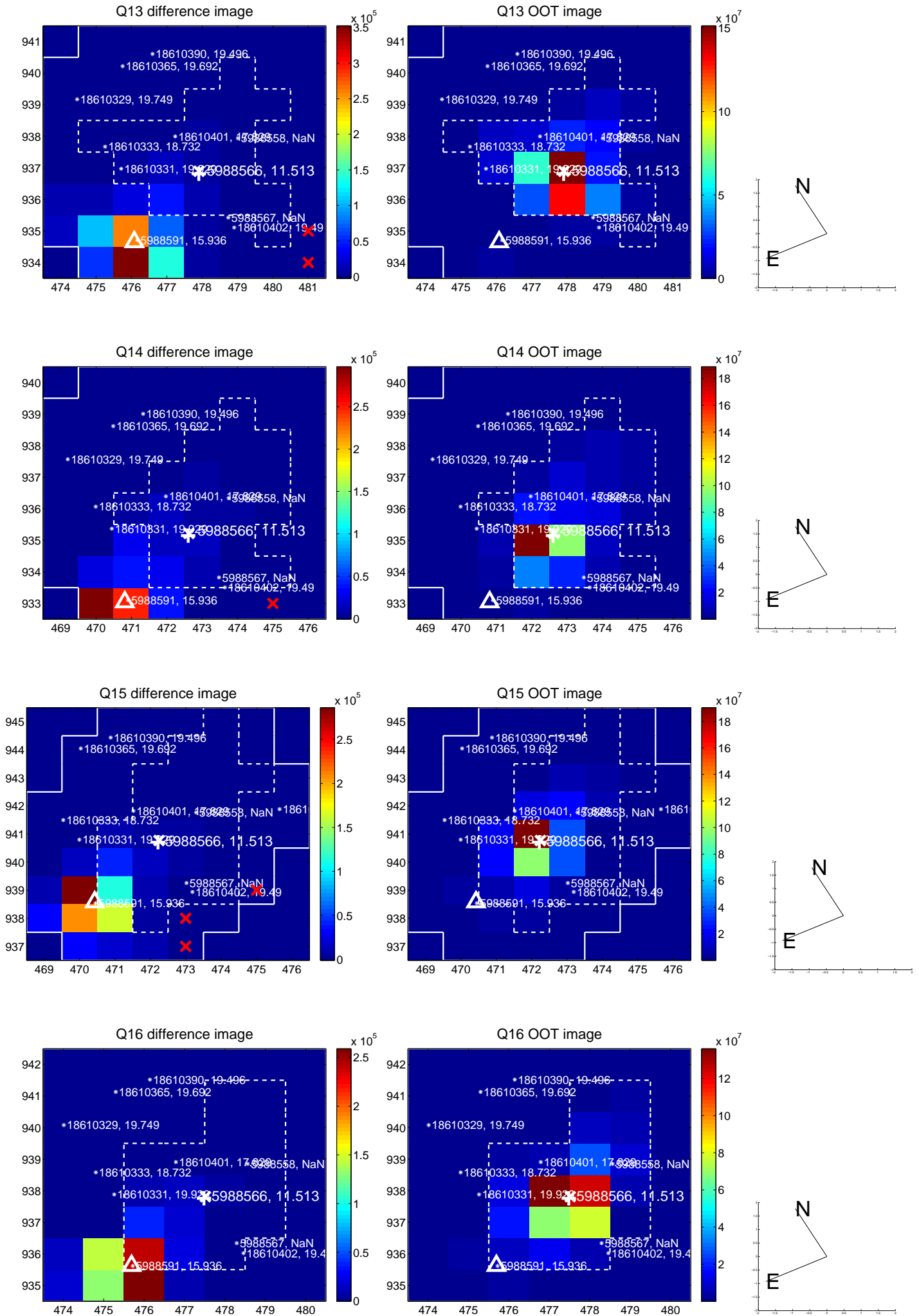
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



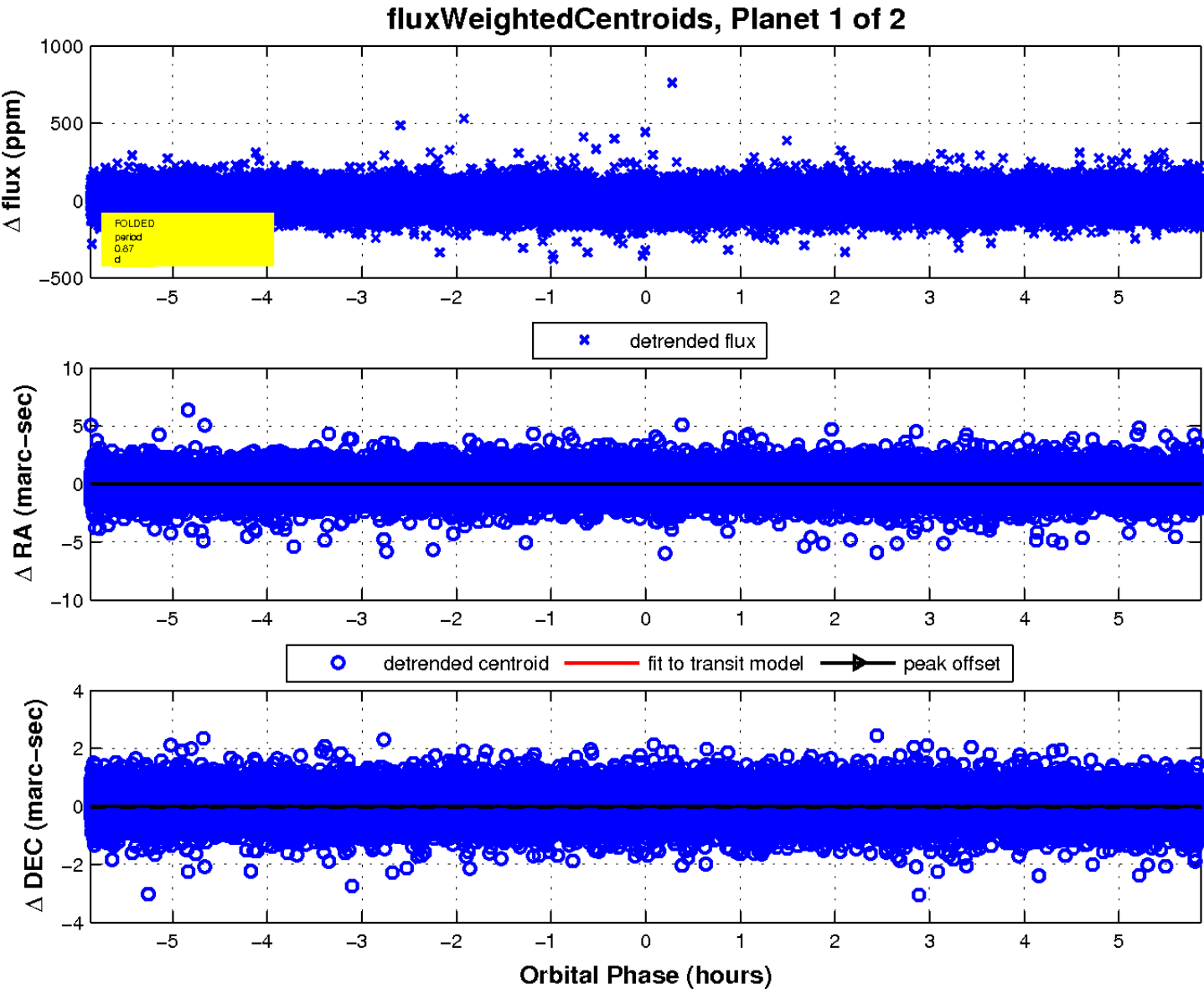
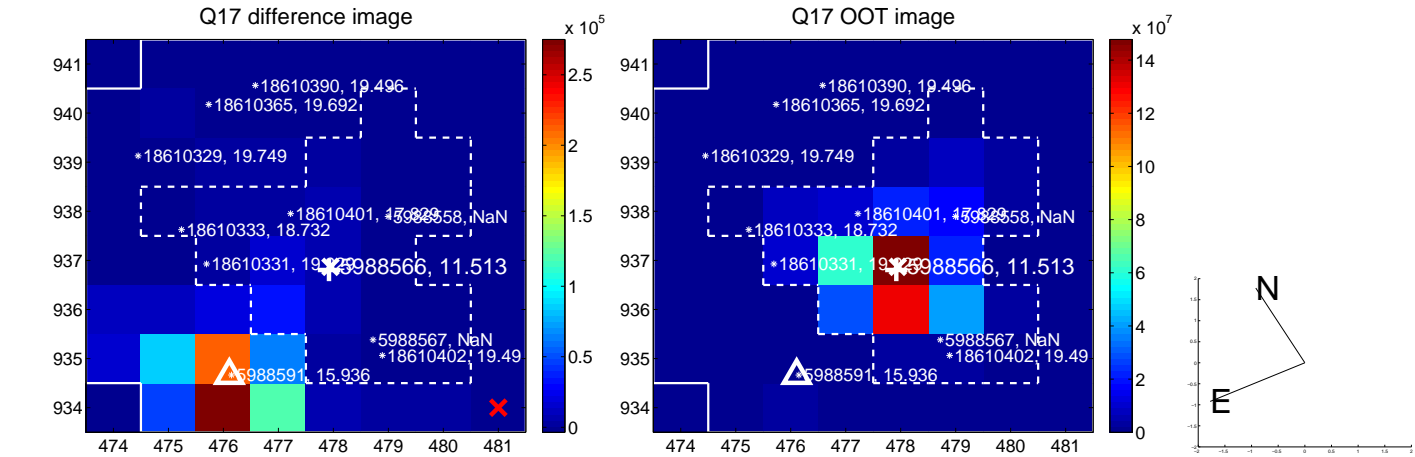
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

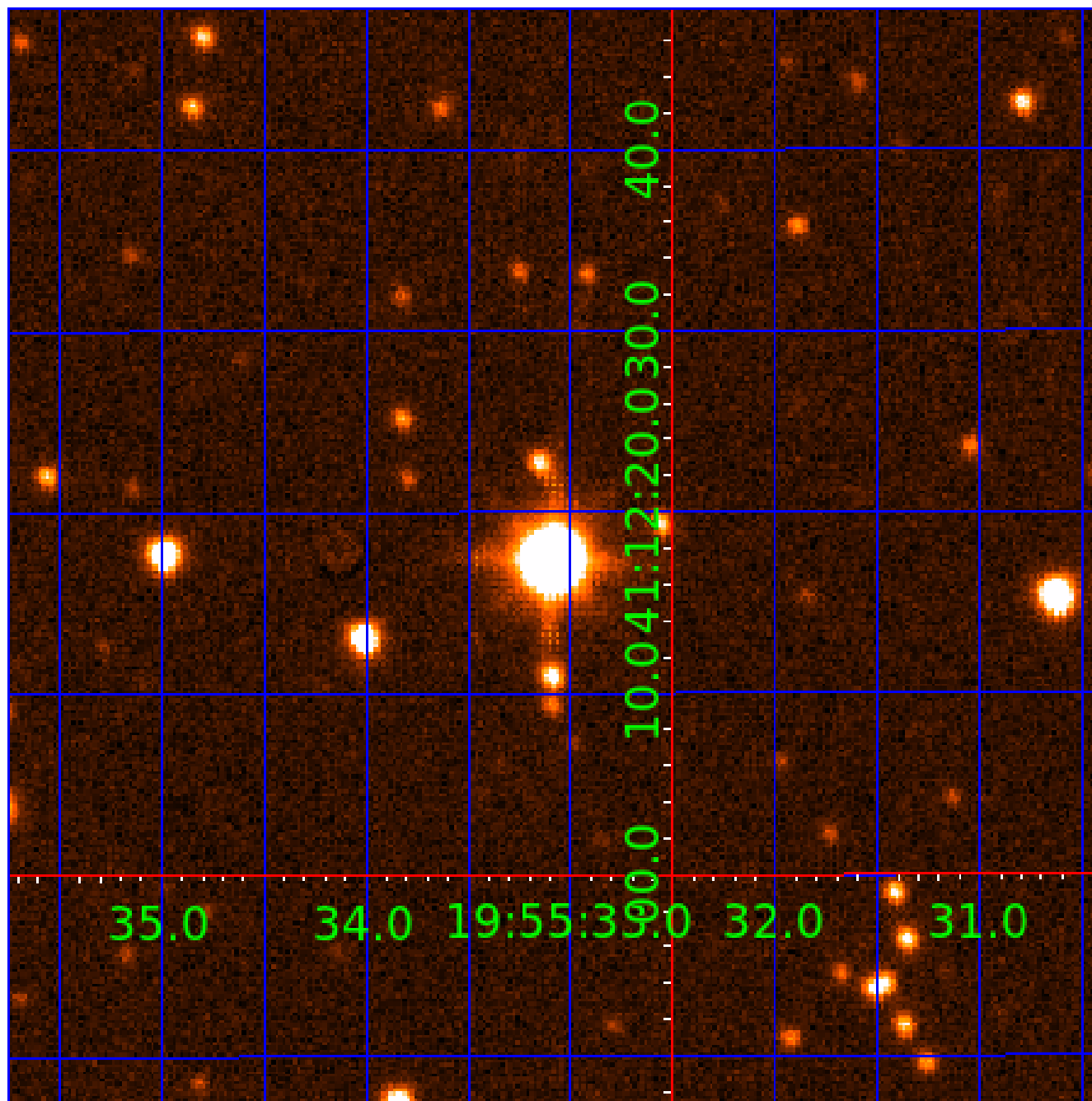


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005988566

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})
005988566-01	OBS	No	0.865448	132.069858	13.9	1.956	10.8	12.8	11.80	6351	5.15	0.00
005988566-02	OBS	No	0.865442	131.644523	11.7	2.071	10.8	11.5	11.80	6351	4.74	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005988566-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
005988566-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—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.

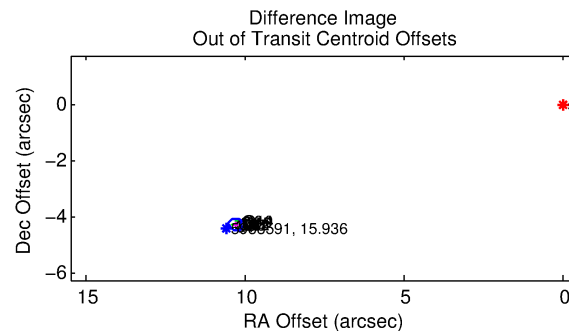
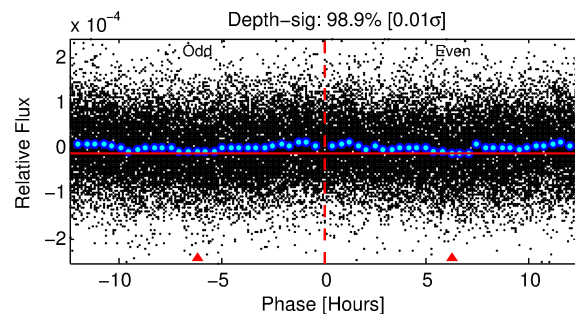
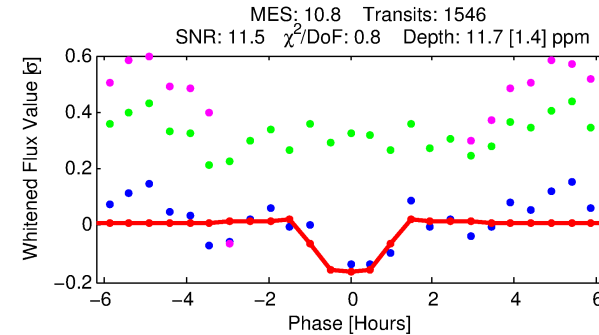
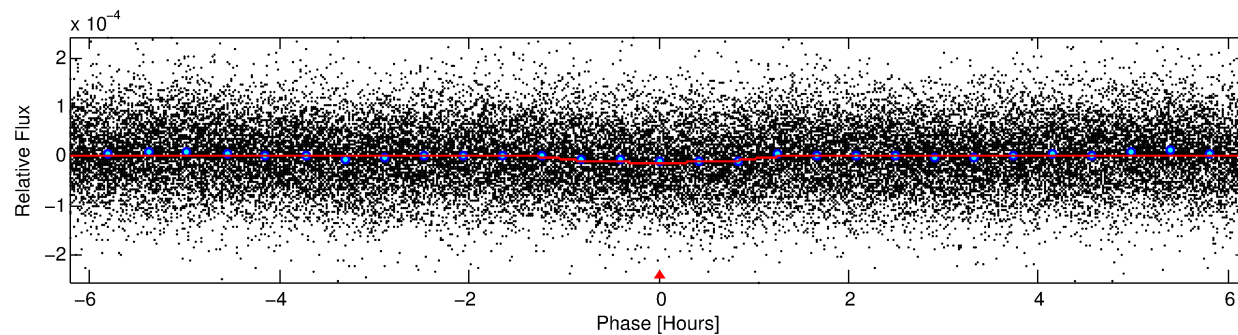
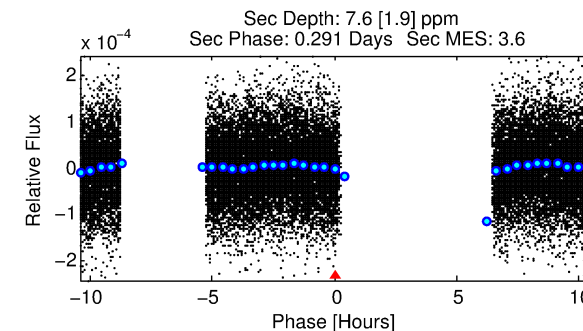
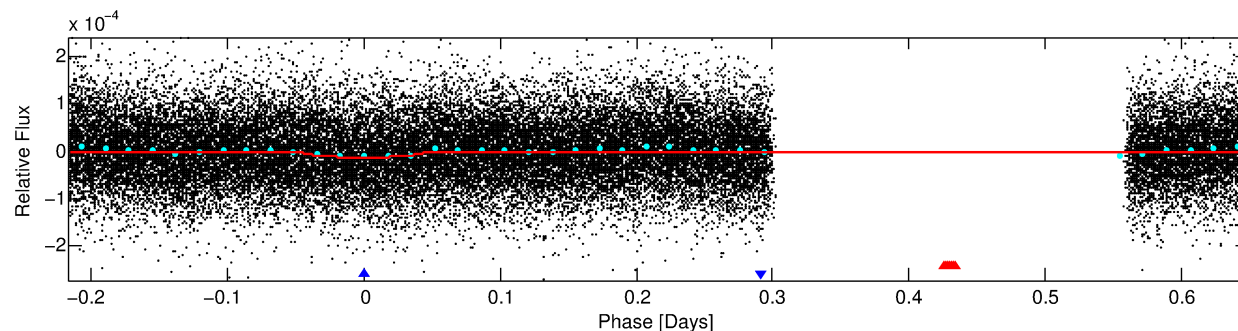
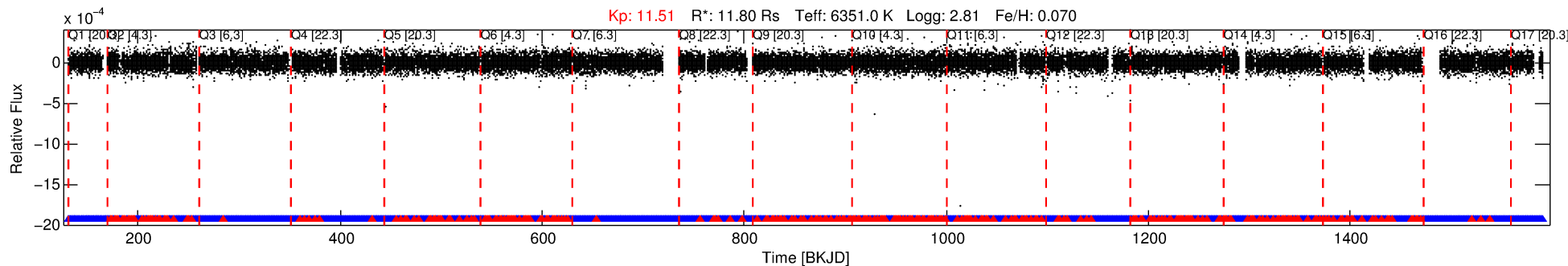
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005988566-02

No Significant Match Found

DV One-Page Summary

KIC: 5988566 Candidate: 2 of 2 Period: 0.865 d



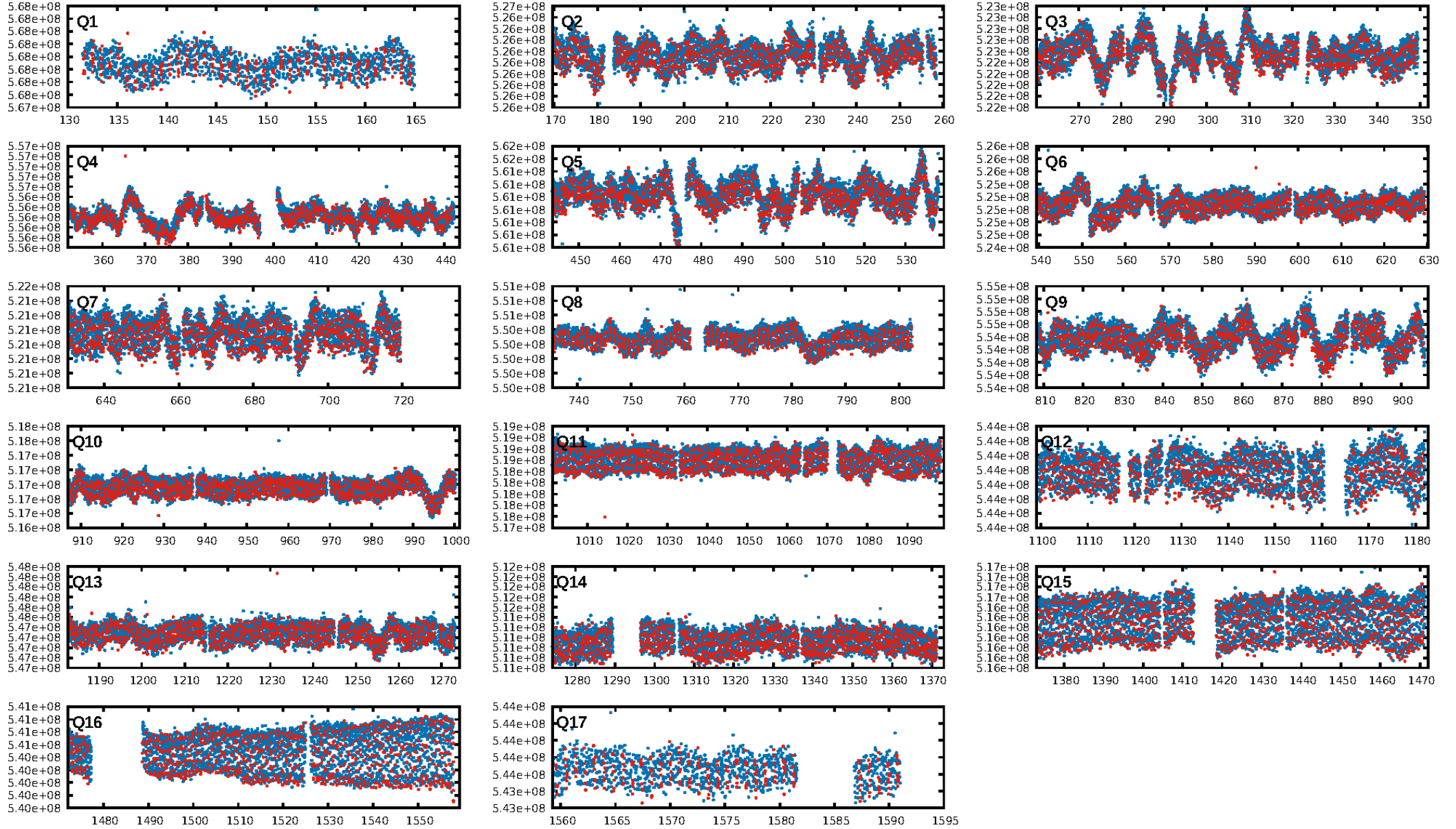
DV Fit Results:

Period = 0.86544 [0.00001] d
Epoch = 131.6445 [0.0023] BKJD
Rp/R* = 0.0037 [0.0006]
a/R* = 1.69 [0.91]
b = 0.90 [0.17]
Seff = N/A
Teq = N/A
Rp = 4.74 [2.81] Re
a = N/A
Ag = N/A
Teff = N/A

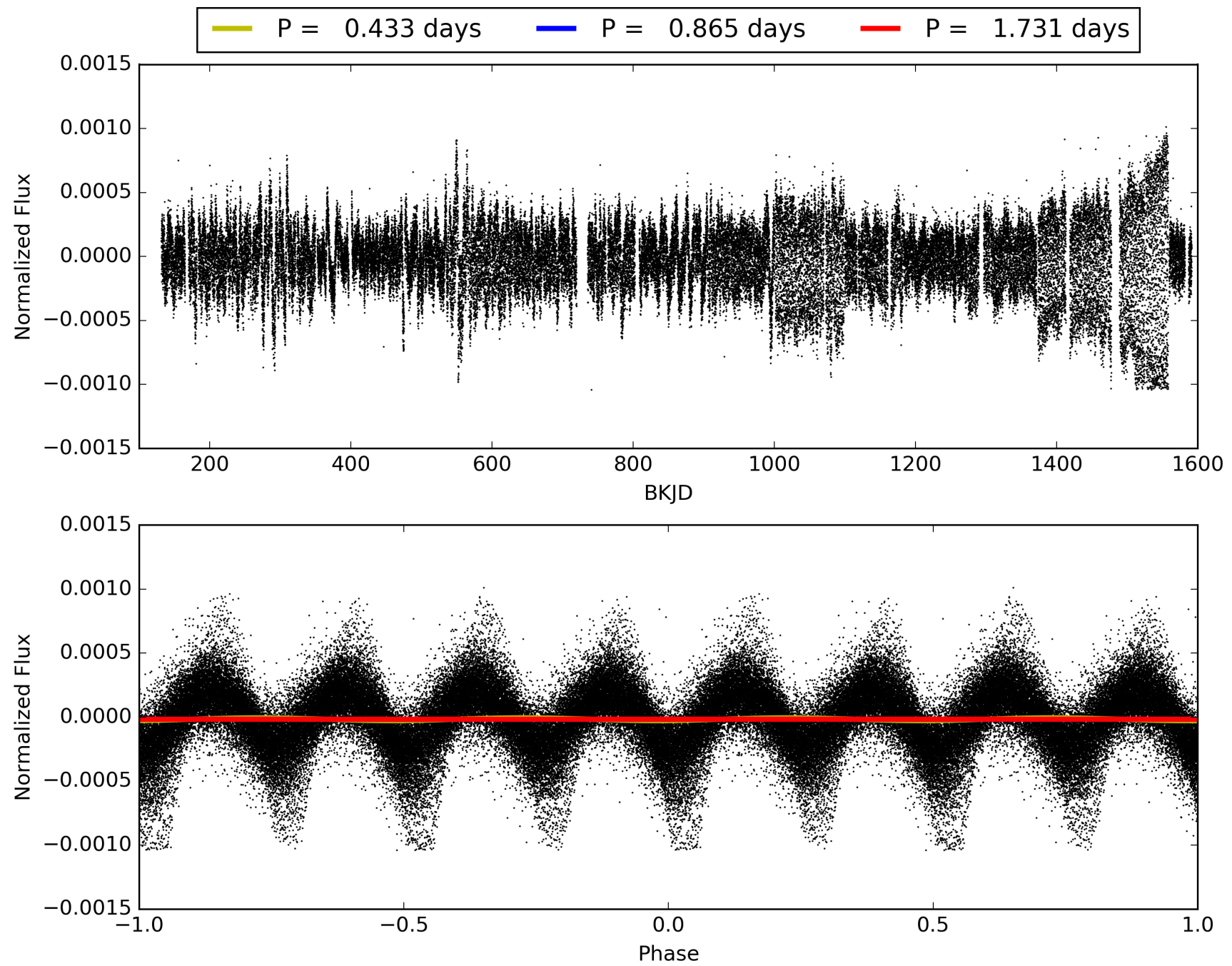
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.63e-30
RollingBand-fgt: 0.79 [1170/1476]
GhostDiagnostic-chr: 0.07392
Centroid-sig: 6.3%
Centroid-so: 1.861 arcsec [1.40σ]
OotOffset-rm: 11.155 arcsec [158.49σ]
KicOffset-rm: 11.402 arcsec [162.24σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005988566-02, PDC Light Curves

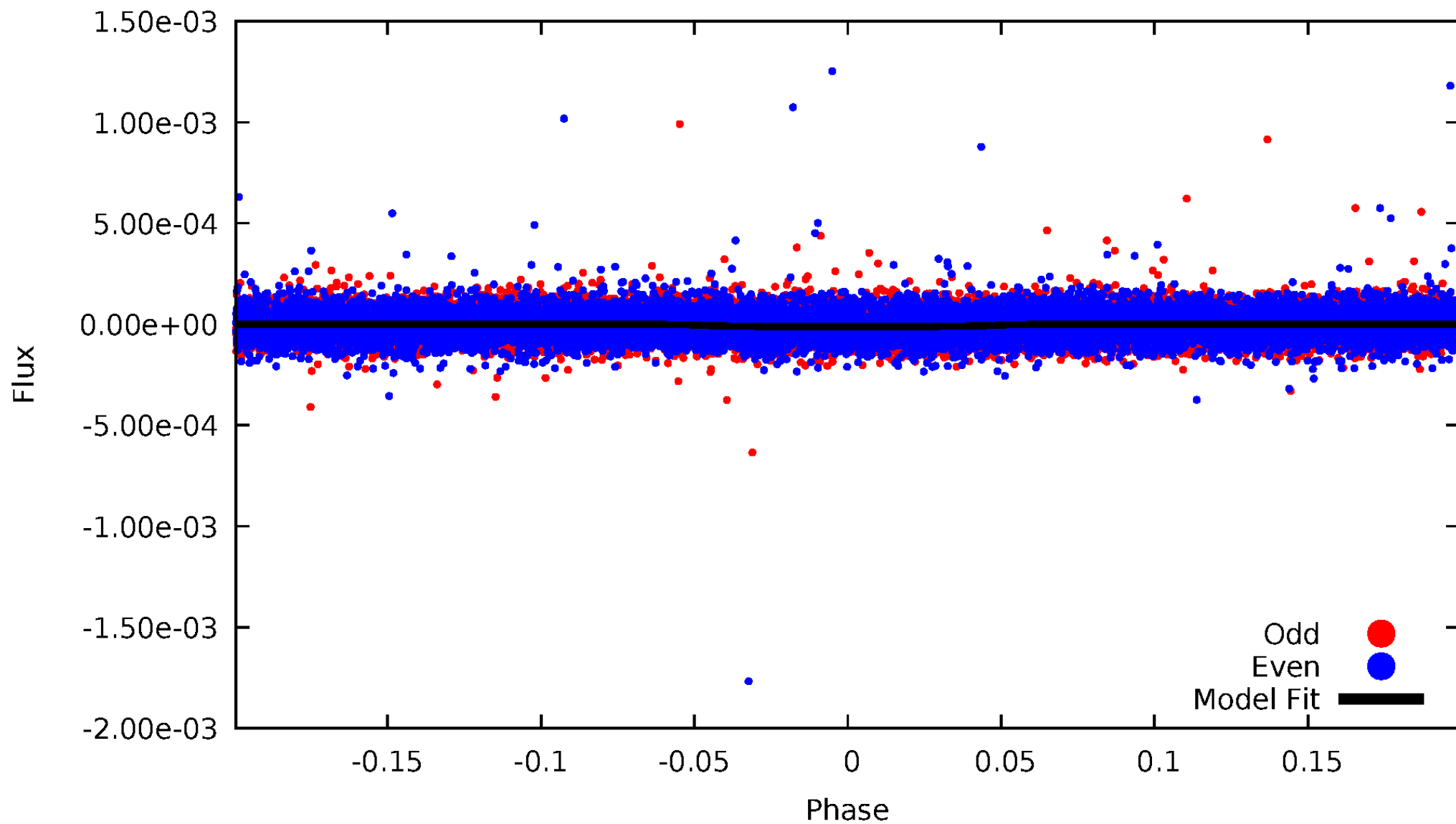


TCE 005988566-02



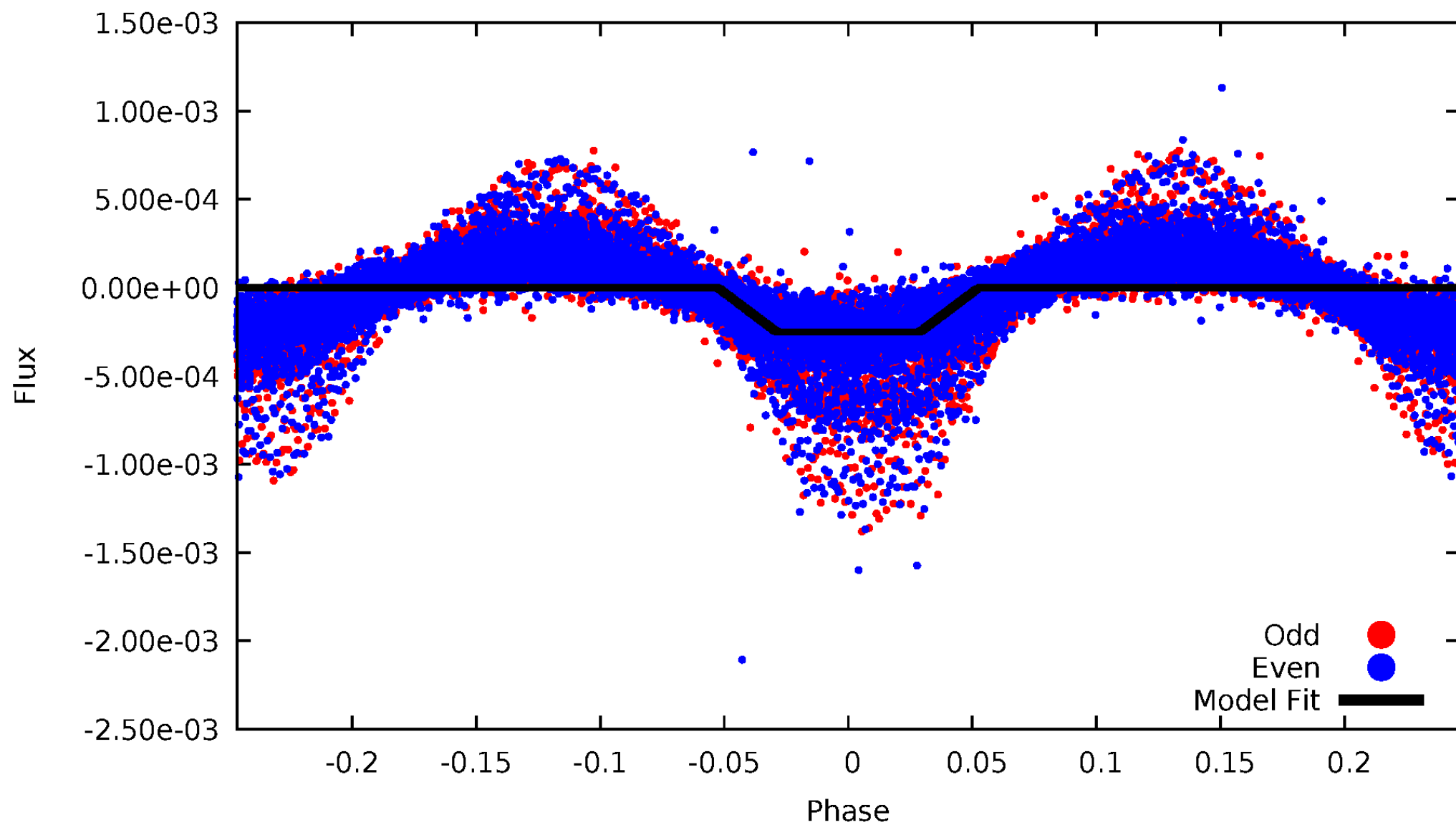
DV Odd/Even

TCE 005988566-02



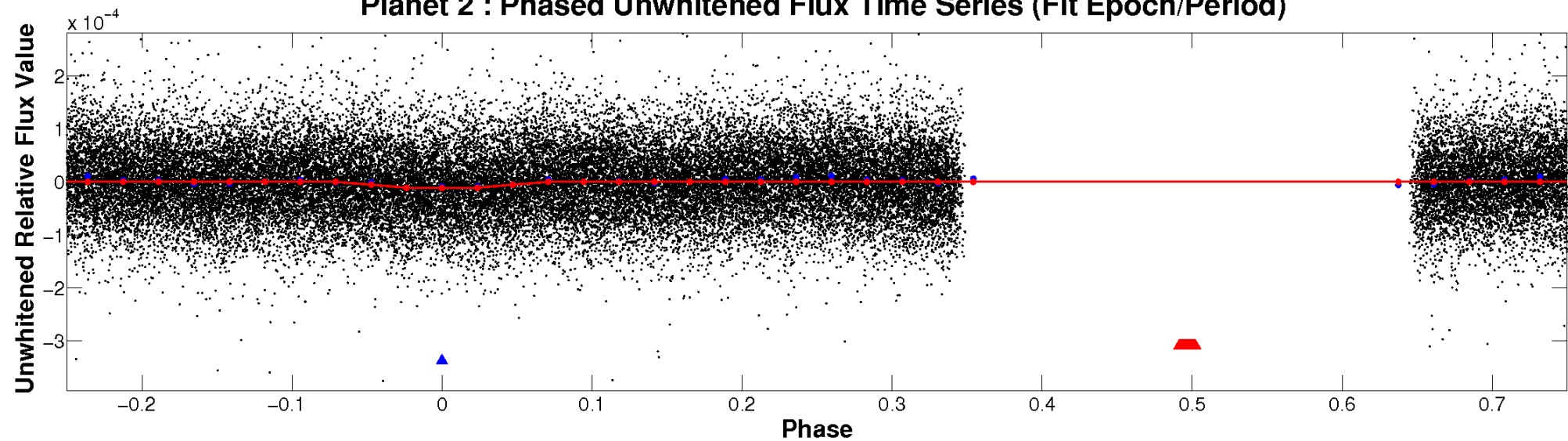
ALT Odd/Even

TCE 005988566-02

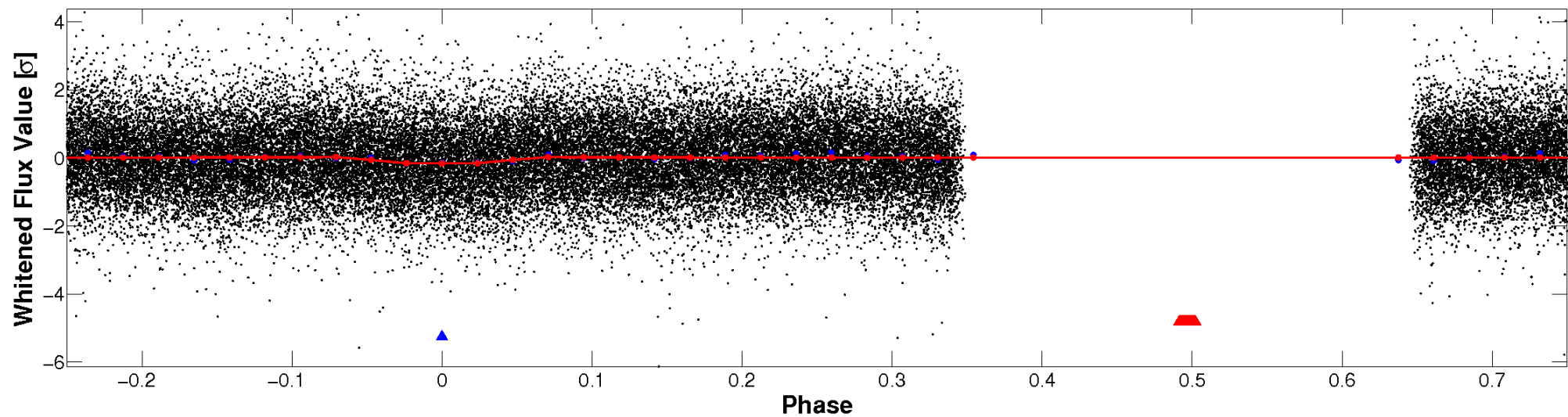


Non-Whitened Vs. Whitened Light Curve

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

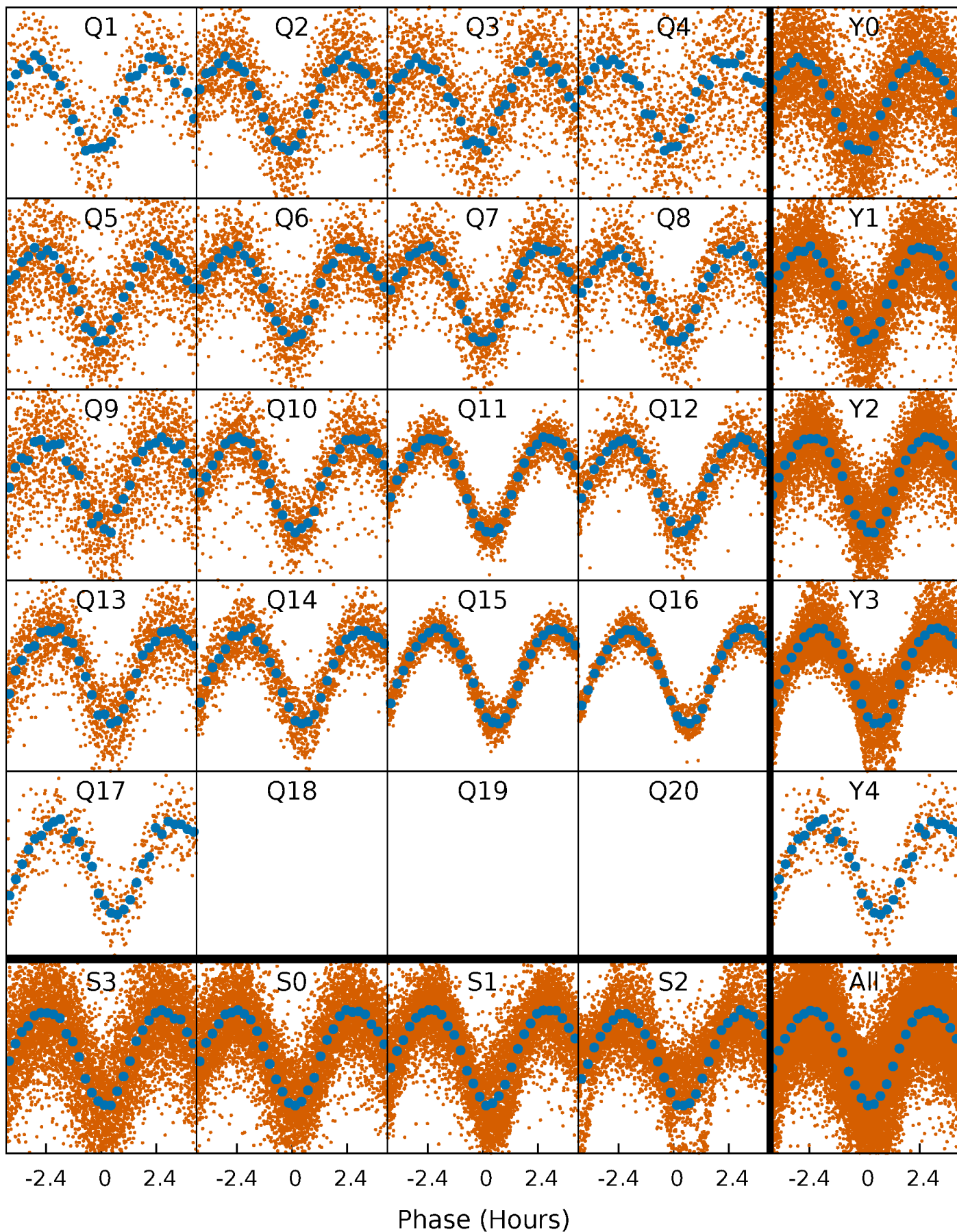


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



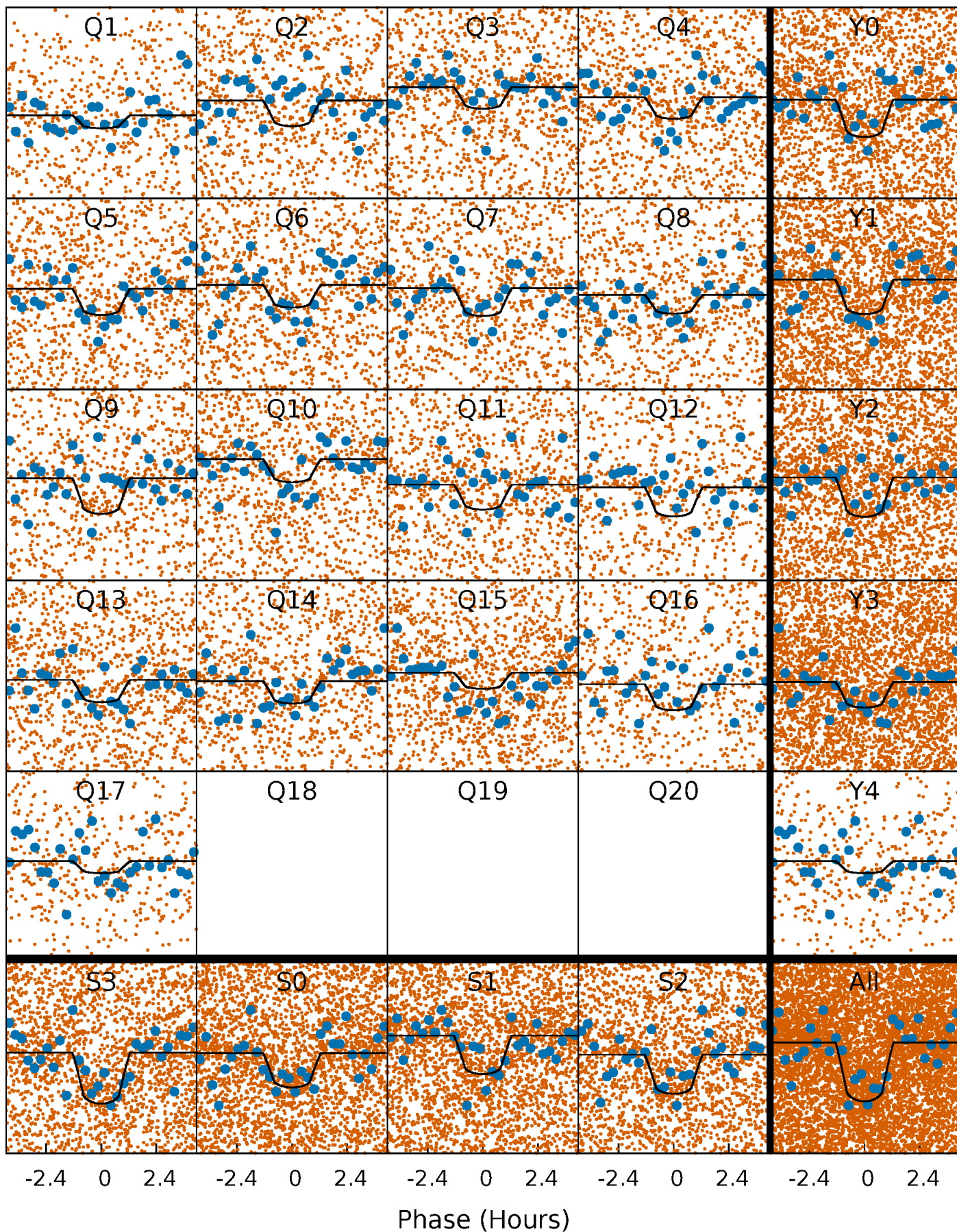
PDC Quarter-Phased Transit Curves

TCE 005988566-02 P= 0.865442 Days $T_0=131.644523$ (BKJD)



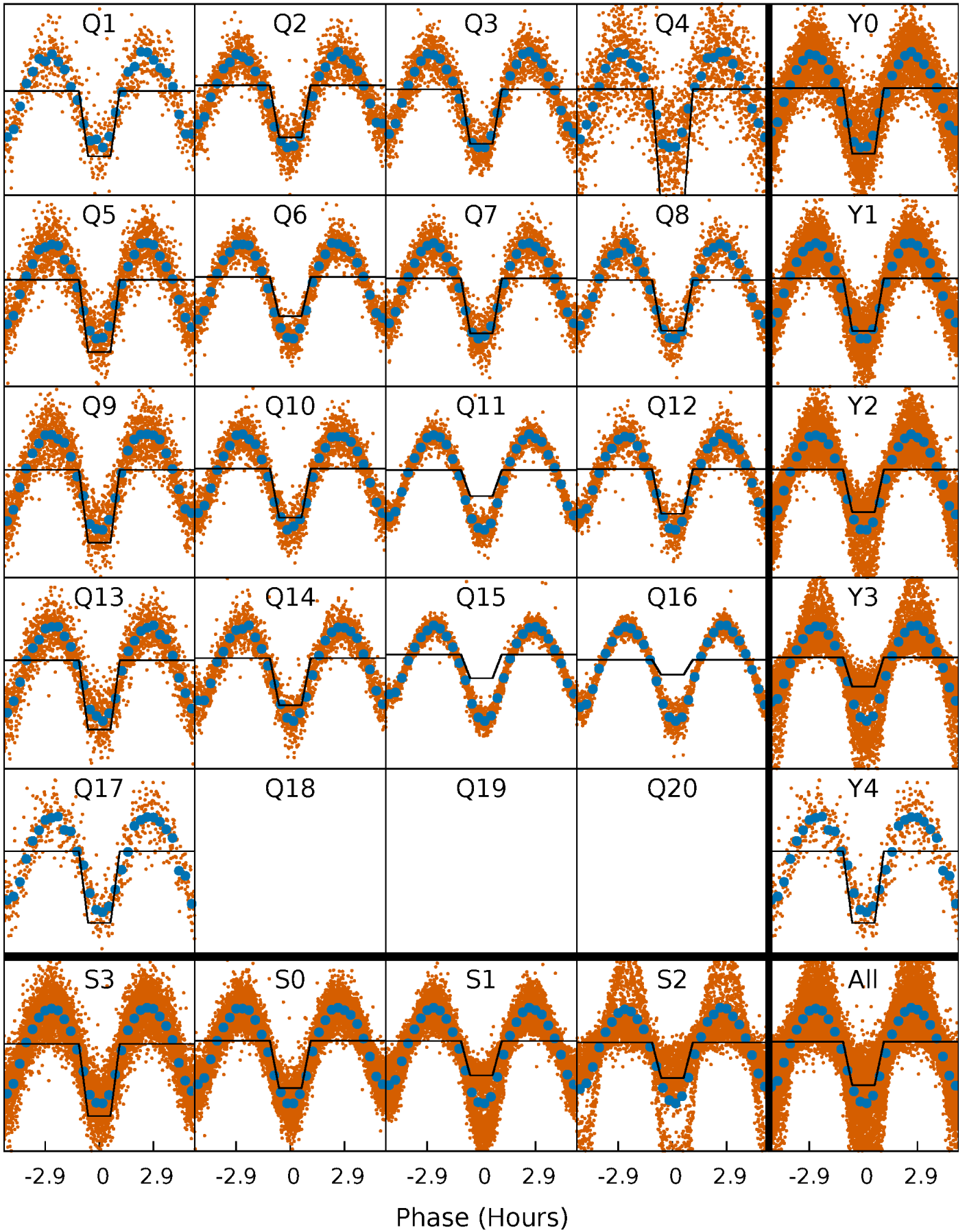
DV Quarter-Phased Transit Curves

TCE 005988566-02 P= 0.865442 Days $T_0=131.644523$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

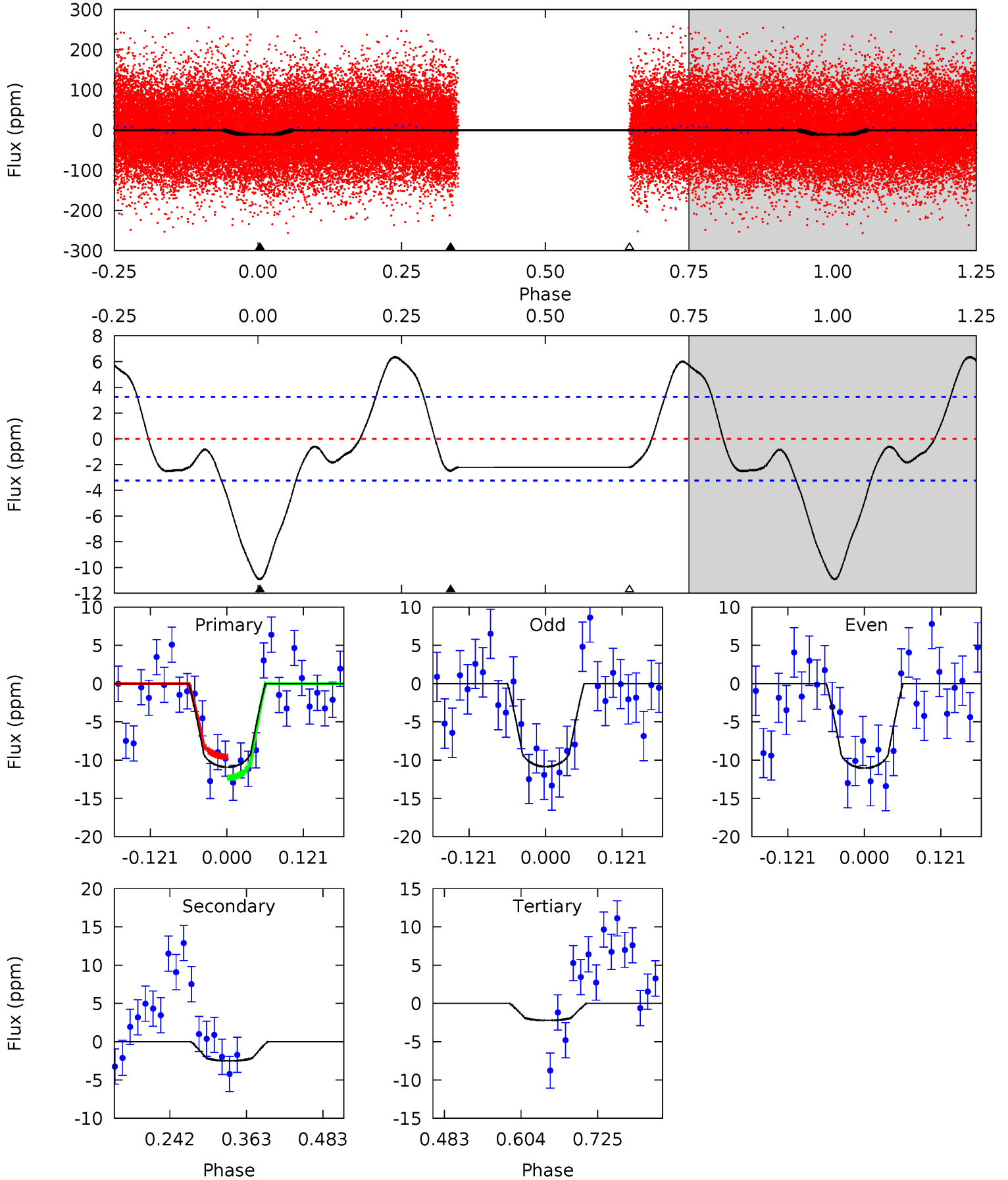
TCE 005988566-02 P= 0.865460 Days $T_0=131.635342$ (BKJD)



DV Model-Shift Uniqueness Test

005988566-02, P = 0.865442 Days, E = 130.779081 Days

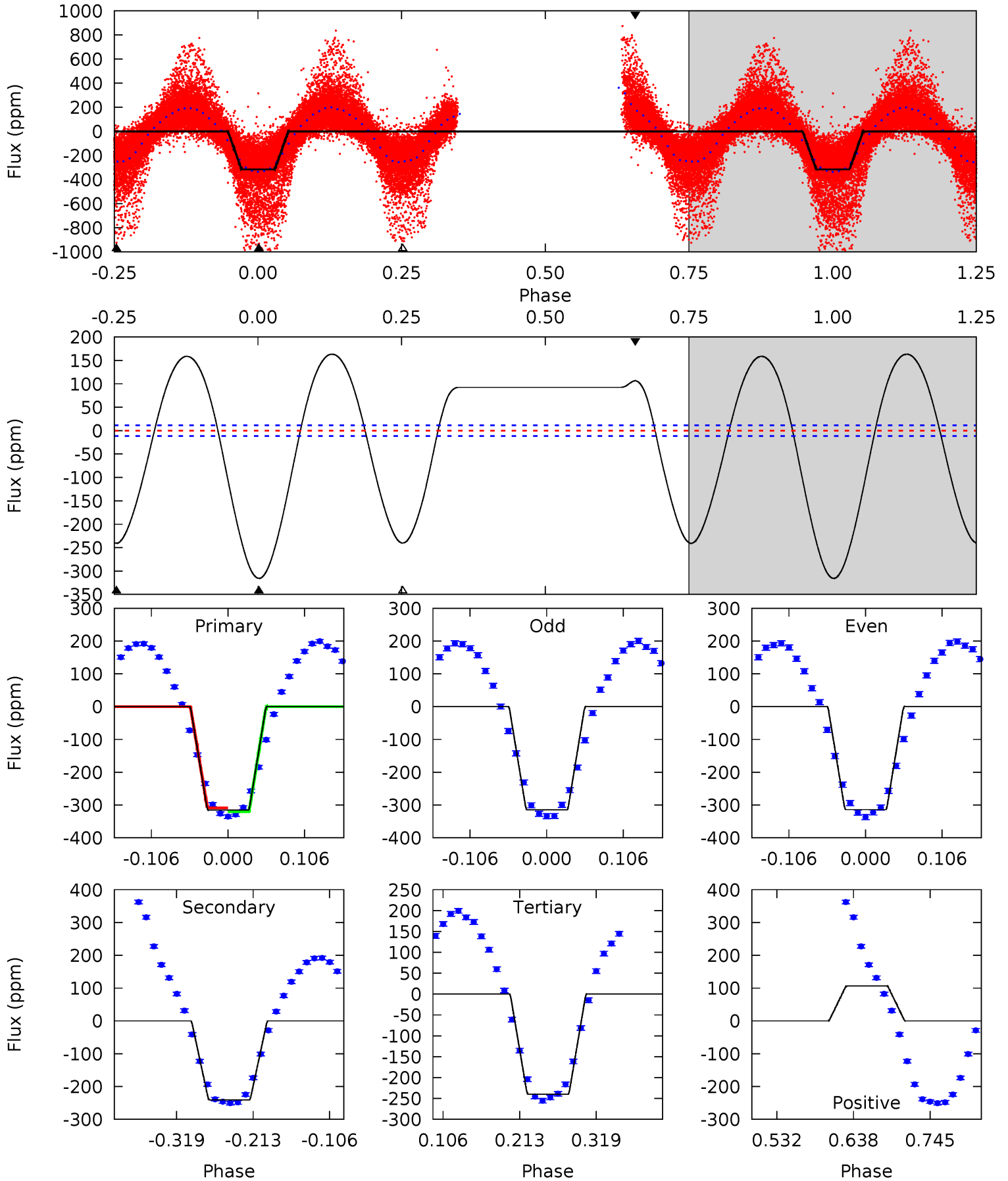
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	3.48	3.10	0	4.52	1.55	4.09	12.2	15.2	0.38	3.48	0.13	0.84	0.37	1.96



Alt Model-Shift Uniqueness Test

005988566-02, P = 0.865460 Days, E = 130.769882 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
126.5	96.4	96.3	42.7	4.55	1.61	56.8	30.3	83.9	0.19	53.8	0.15	1.21	0.34	2.33



Stellar Parameters For KIC 005988566

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6351^{+133}_{-266}	$2.807^{+0.518}_{-0.061}$	$0.070^{+0.250}_{-0.350}$	$11.801^{+1.193}_{-6.761}$	$3.255^{+0.138}_{-1.239}$	$0.003^{+0.021}_{-0.001}$
	+2%/-4%	+18%/-2%	+357%/-500%	+10%/-57%	+4%/-38%	+740%/-21%
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 005988566-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2 ± 1	$4.25^{+1.01}_{-1.23}$	7906^{+599}_{-1093}	-6170^{+1022}_{-549}	$0.052^{+0.046}_{-0.021}$
Alt.	-241 ± 2	$19.17^{+2.32}_{-5.62}$	7902^{+575}_{-1087}	-4441^{+9389}_{-807}	$0.247^{+0.223}_{-0.047}$

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 $A_{obs} \gg 1.0$

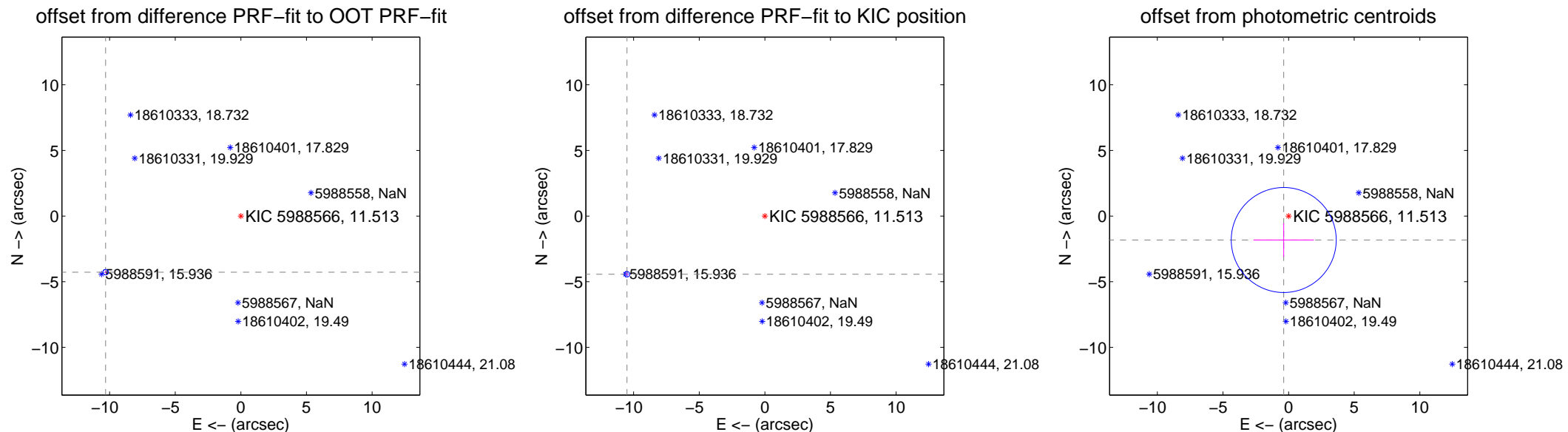
DV Centroid Data

Supplemental centroid analysis for 005988566-02. **Kepler magnitude: 11.51.** Transit SNR 11.47

There are 17 quarters with good PRF difference image offsets

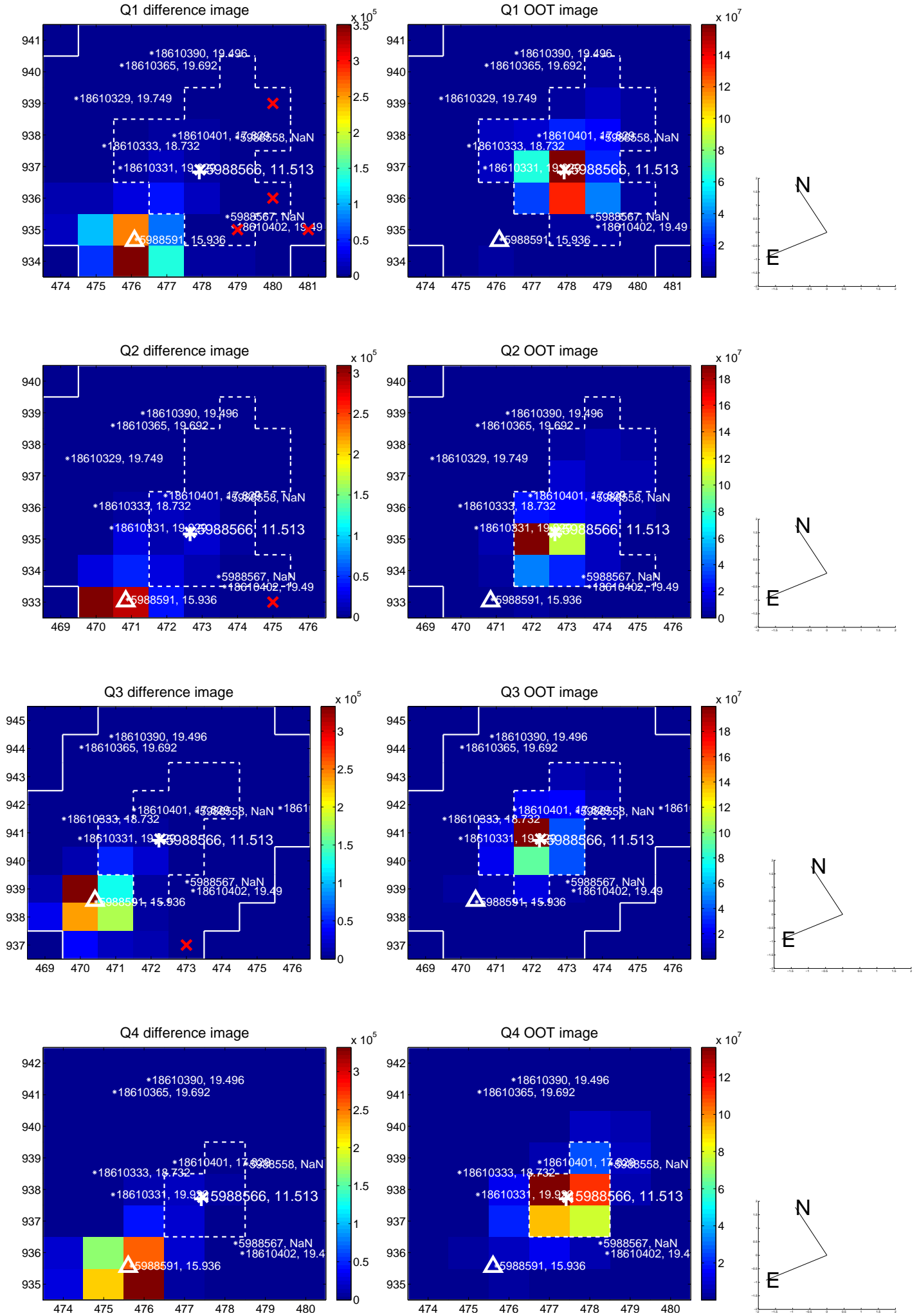
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	11.155 \pm 0.070	158.49	10.304 \pm 0.070	-4.275 \pm 0.068
PRF-fit source offset from KIC position	11.402 \pm 0.070	162.24	10.506 \pm 0.069	-4.430 \pm 0.068
photometric centroid source offset	1.86 \pm 1.33	1.40	0.37 \pm 2.31	-1.82 \pm 1.28

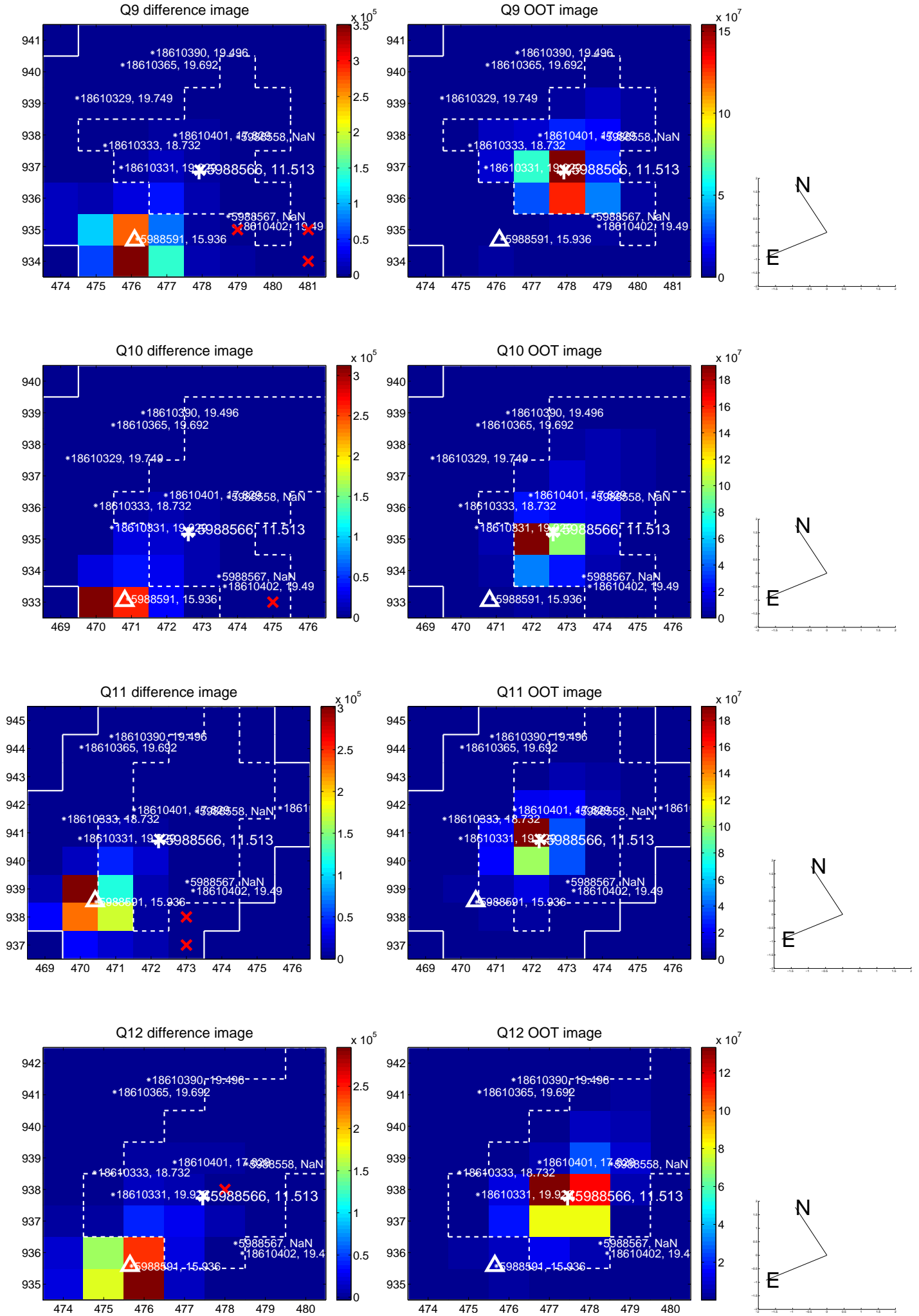


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

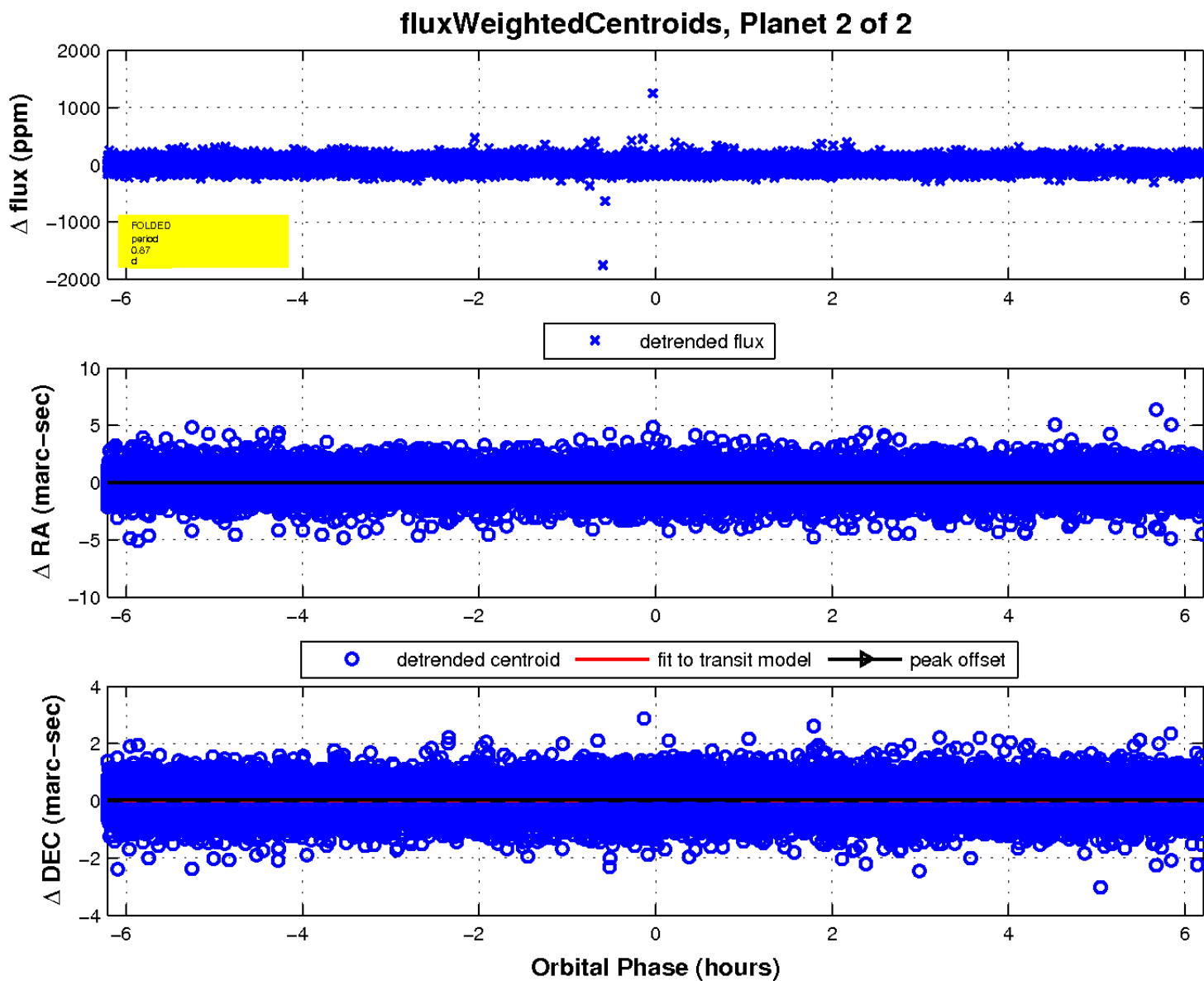
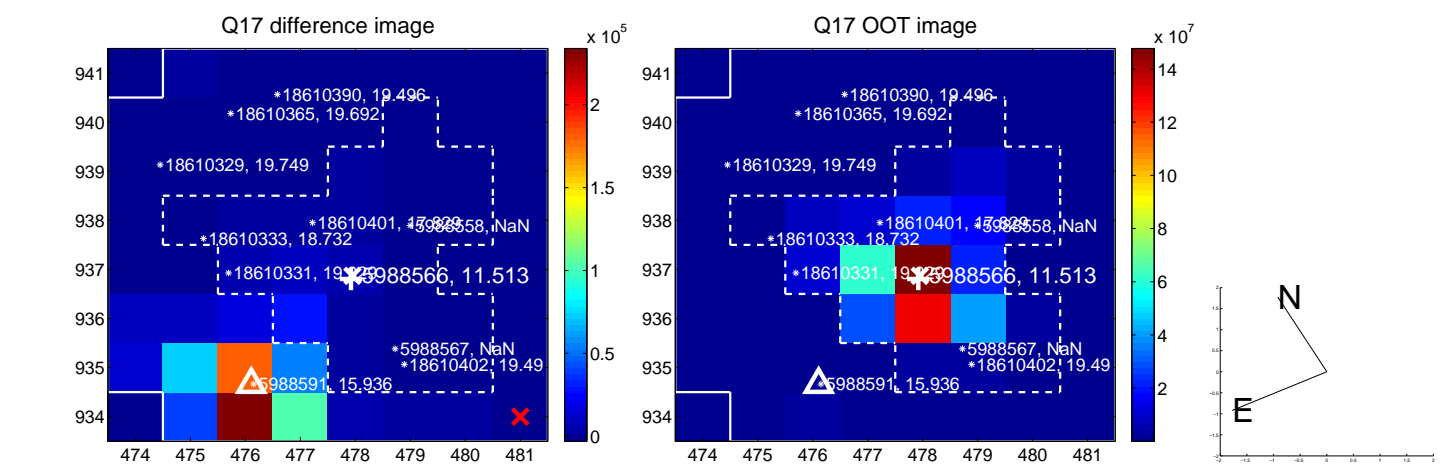
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

