

KIC 011873166

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})
011873166-01	OBS	7487.01	1.468843	132.670442	118725.4	2.671	2211.6	2249.7	1.00	6108	38.75	1849.21
011873166-02	OBS	No	1.468845	131.933929	69828.0	2.592	2679.4	1524.2	1.00	6108	37.02	1849.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011873166-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011873166-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

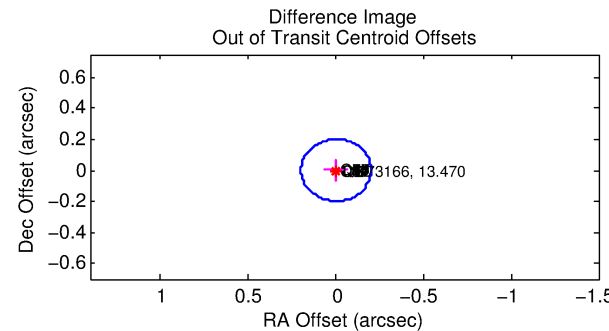
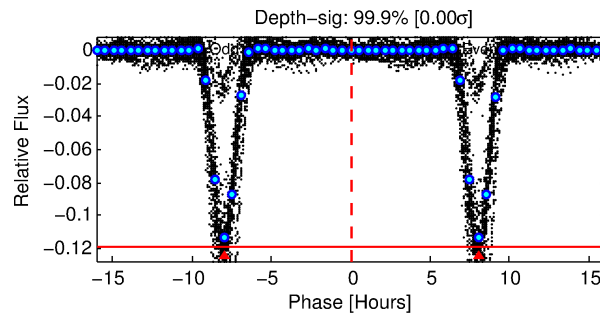
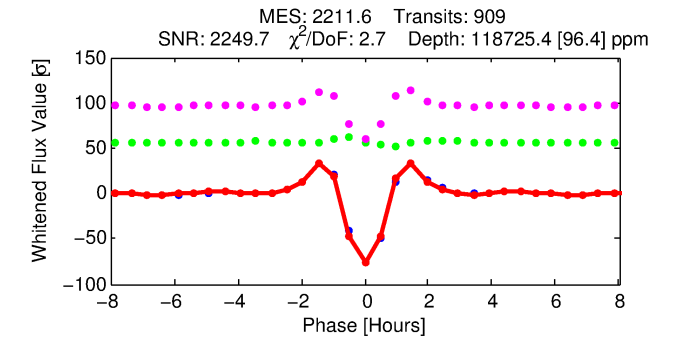
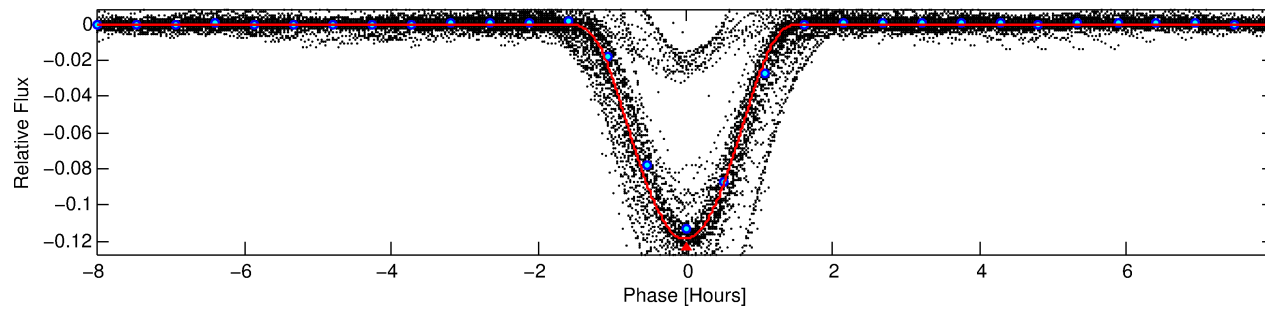
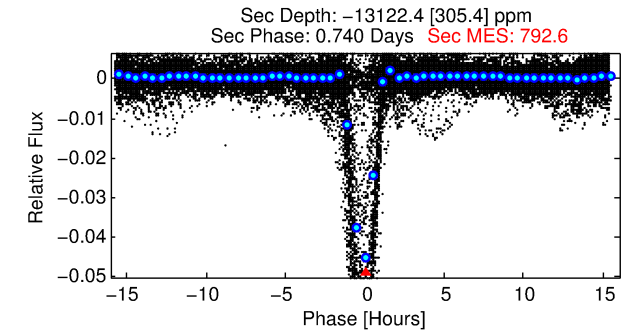
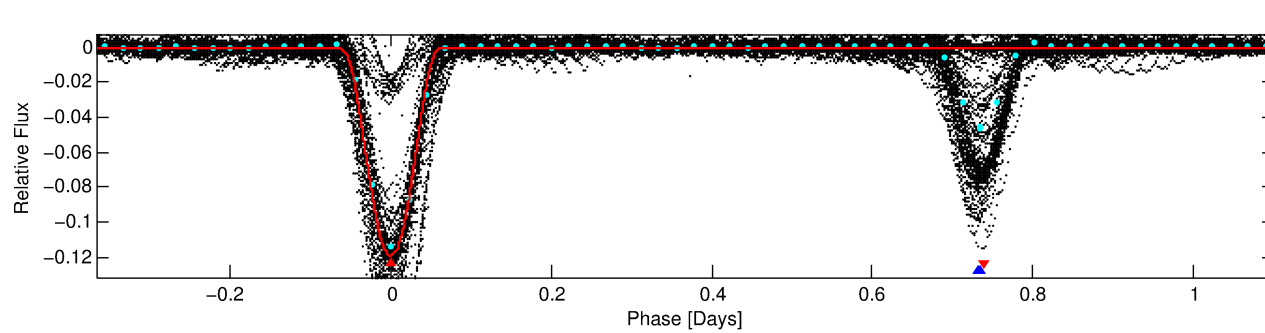
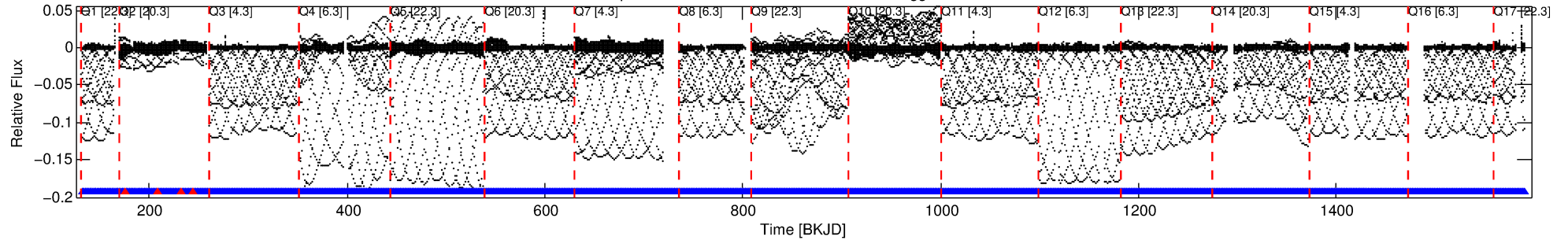
Ephemeris Match Information For 011873166-01

No Significant Match Found

DV One-Page Summary

KIC: 11873166 Candidate: 1 of 2 Period: 1.469 d
KOI: K07487 Corr: No Ephemeris Match

Kp: 13.47 R*: 1.00 Rs Teff: 6108.0 K Logg: 4.47 Fe/H: -0.080



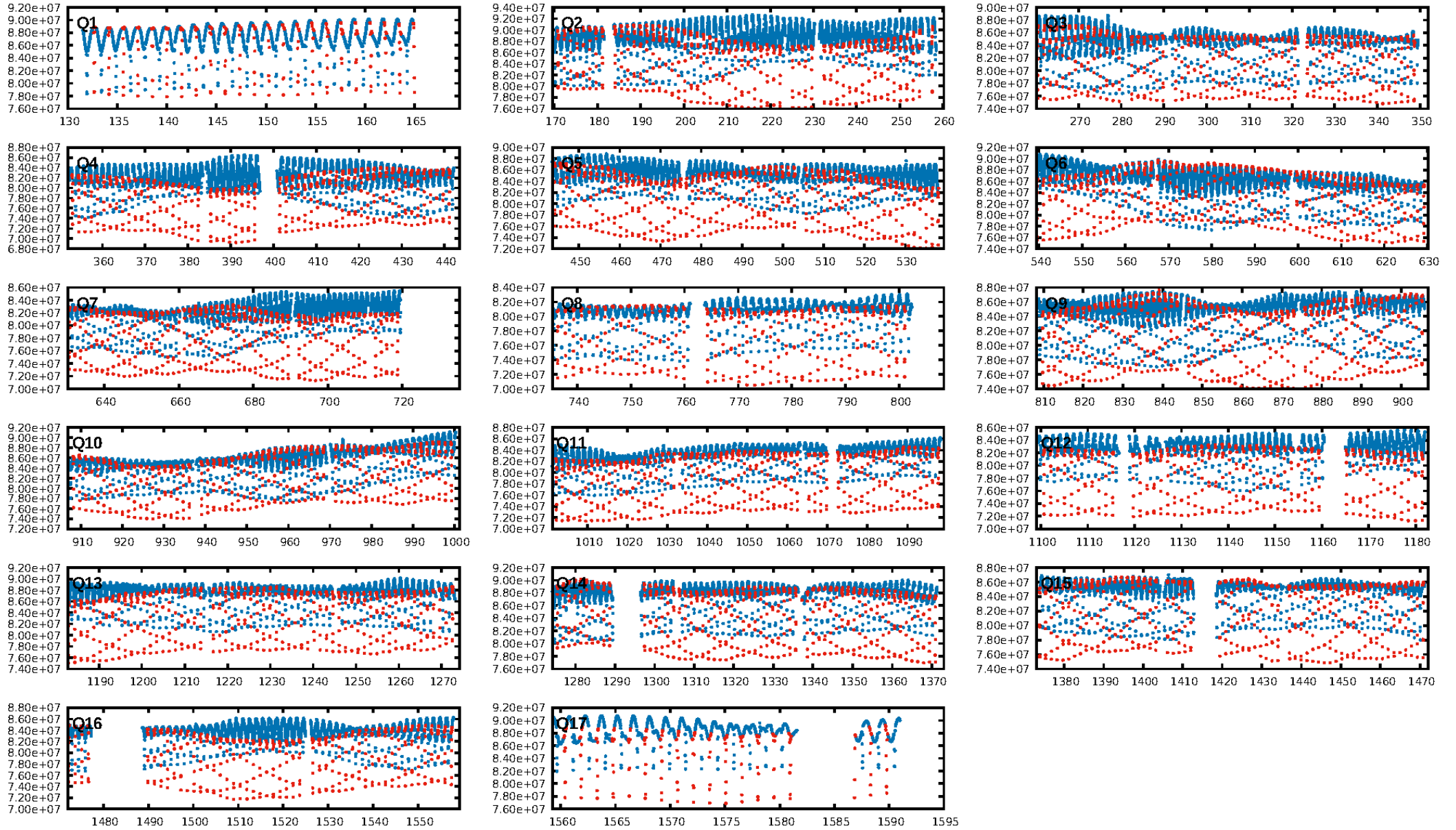
DV Fit Results:

Period = 1.46884 [0.00000] d
Epoch = 132.6704 [0.0000] BKJD
Rp/R* = 0.3562 [0.0005]
a/R* = 4.98 [0.00]
b = 0.70 [0.00]
Seff = 1849.21 [746.13]
Teff = 1672 [169] K
Rp = 38.75 [12.13] Re
a = 0.0259 [0.0068] AU
Ag = N/A
Teffp = N/A

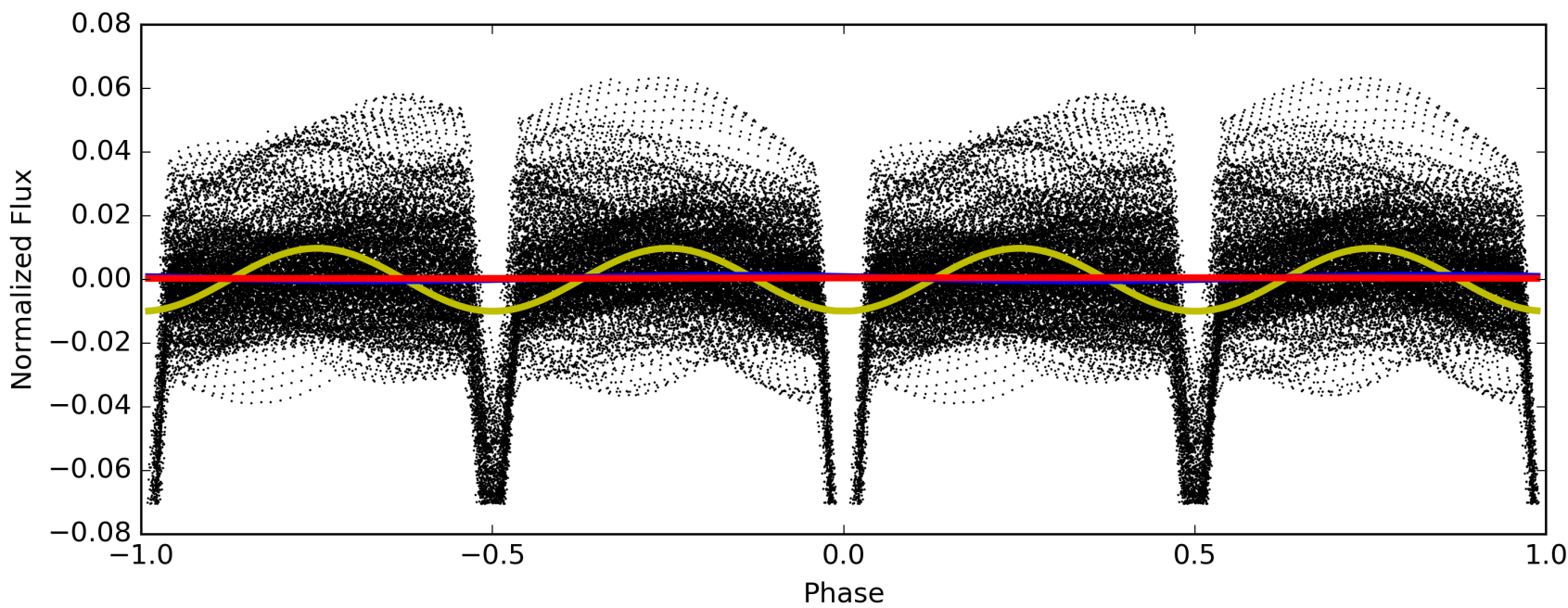
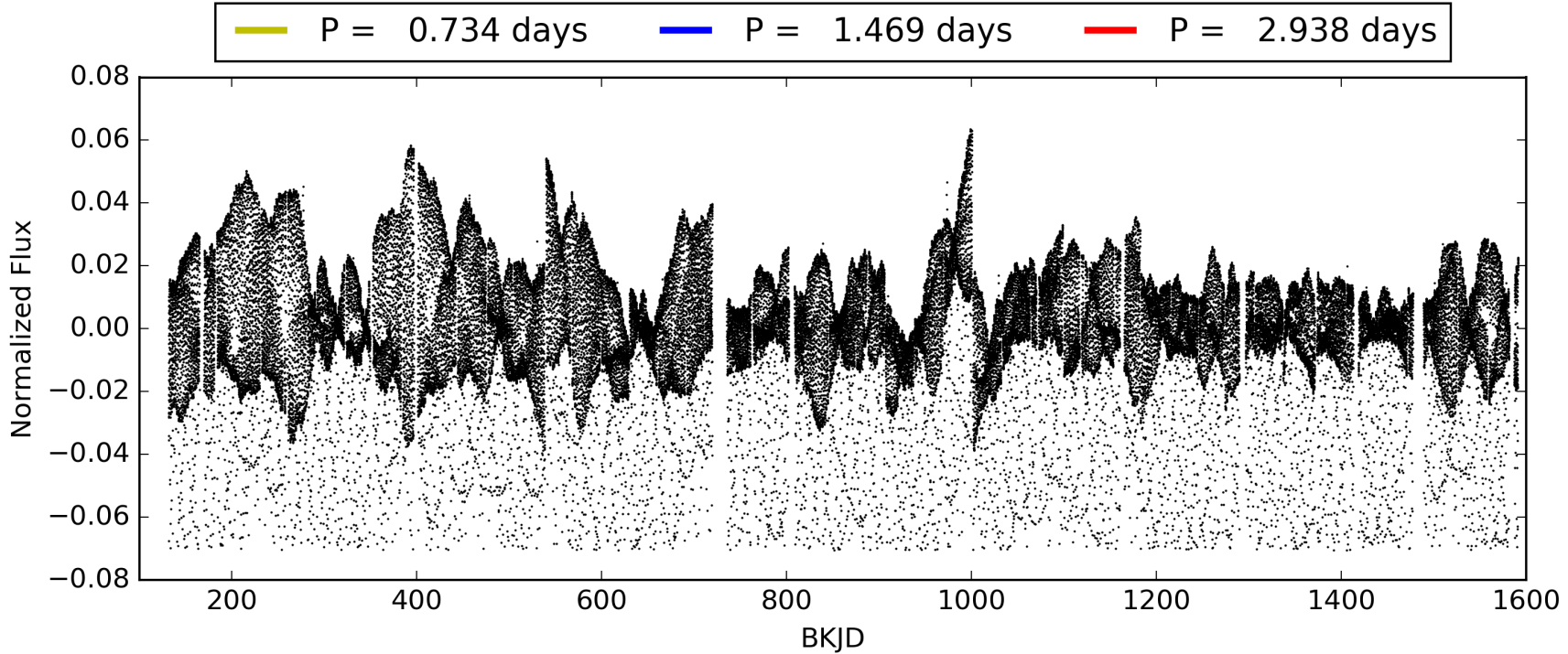
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [864/868]
GhostDiagnostic-chr: 1.11
Centroid-sig: 0.0%
Centroid-so: 0.211 arcsec [347.65σ]
OotOffset-rm: 0.003 arcsec [0.05σ]
KicOffset-rm: 0.040 arcsec [0.59σ]
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 011873166-01, PDC Light Curves

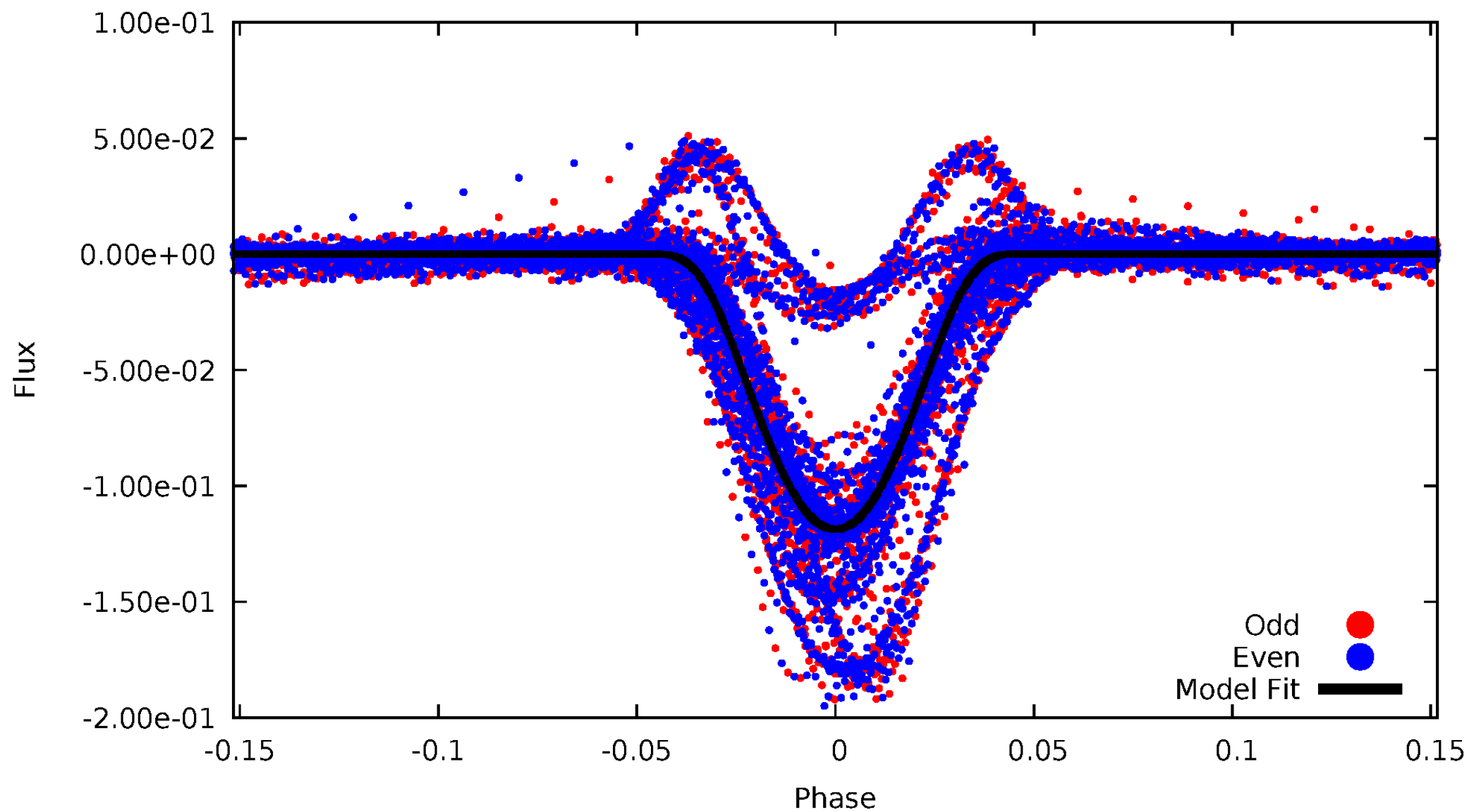


TCE 011873166-01



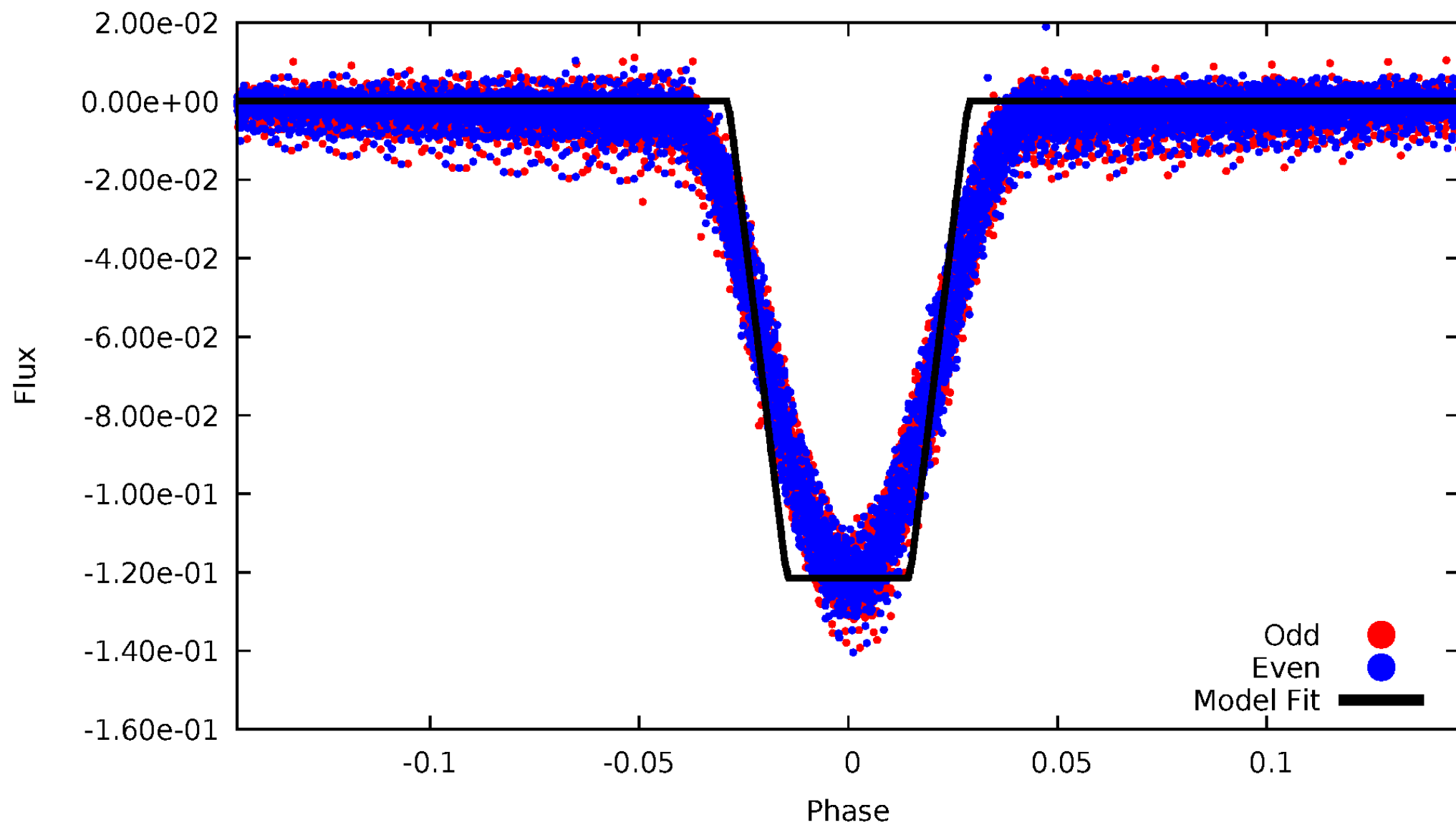
DV Odd/Even

TCE 011873166-01



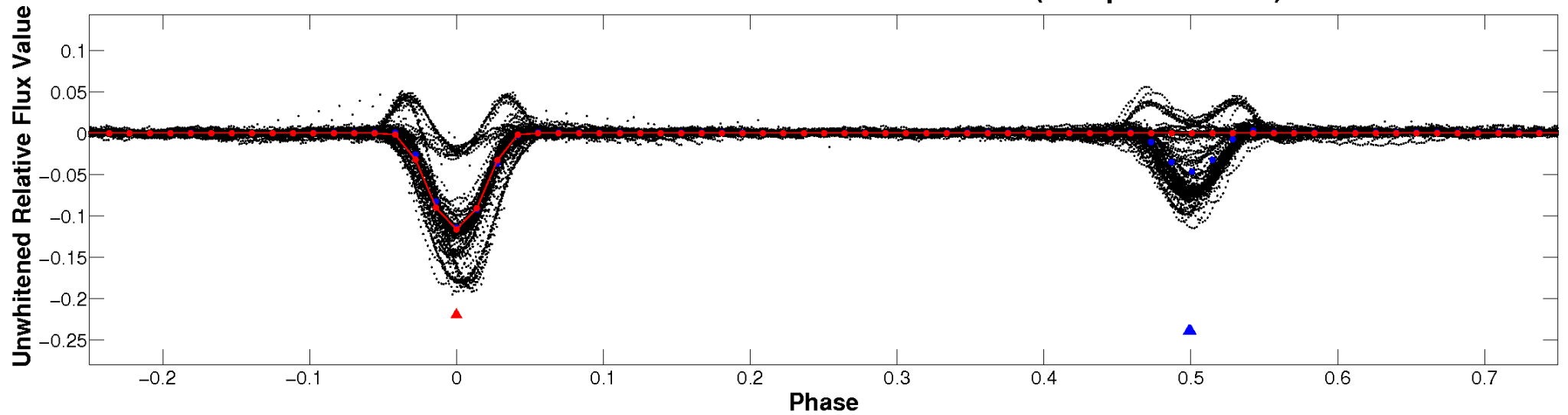
ALT Odd/Even

TCE 011873166-01

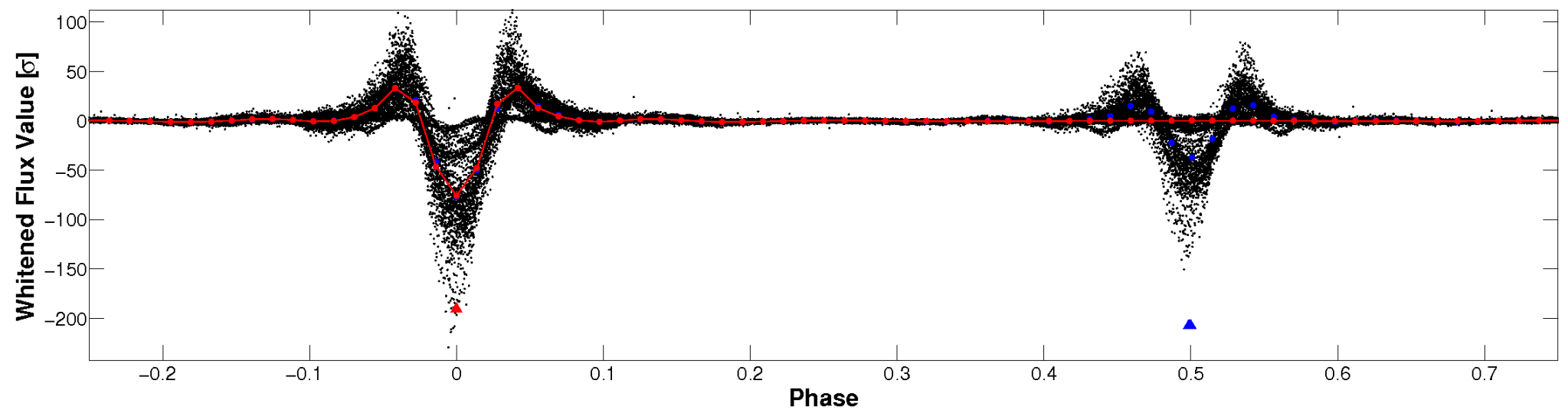


Non-Whitened Vs. Whitened Light Curve

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

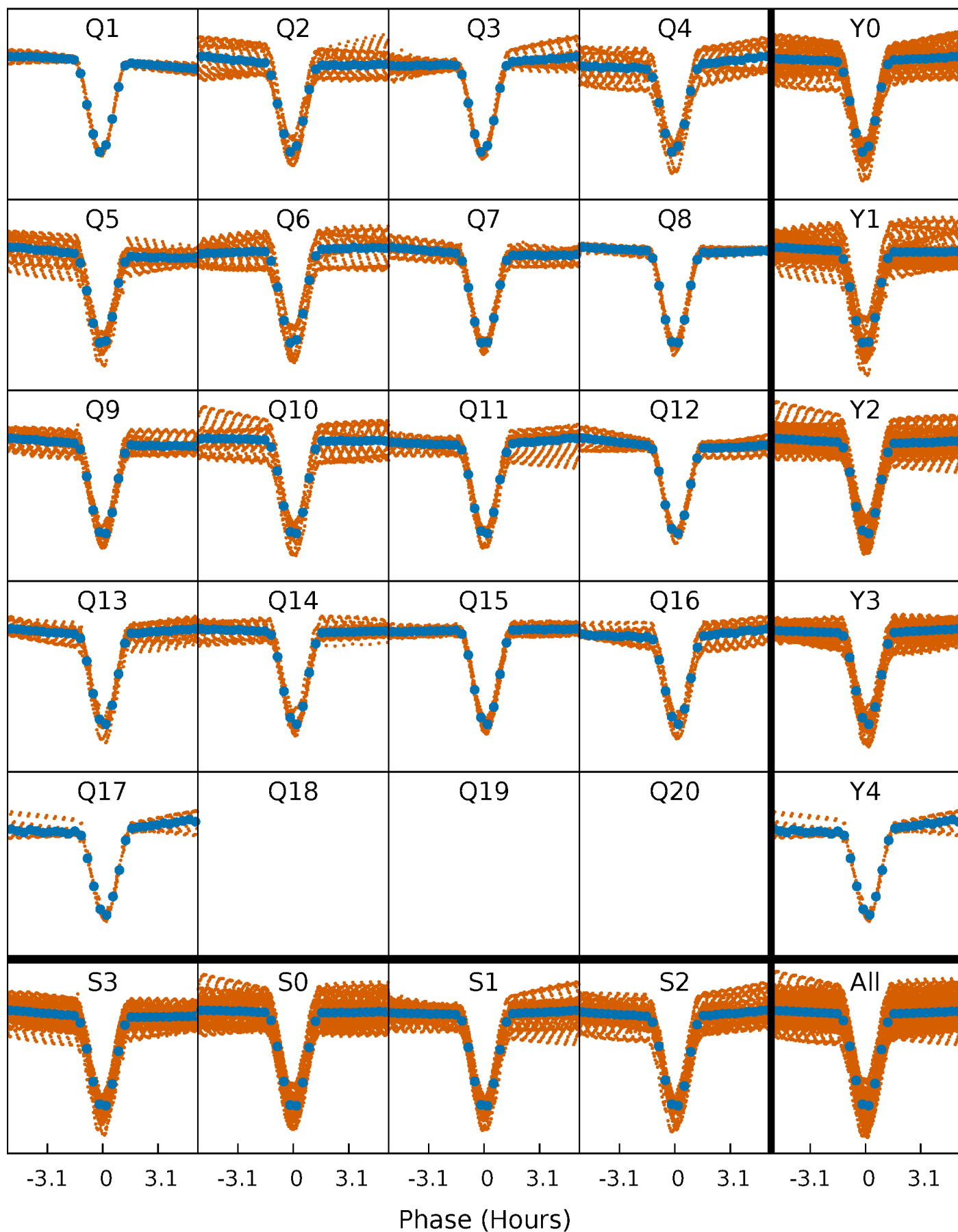


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



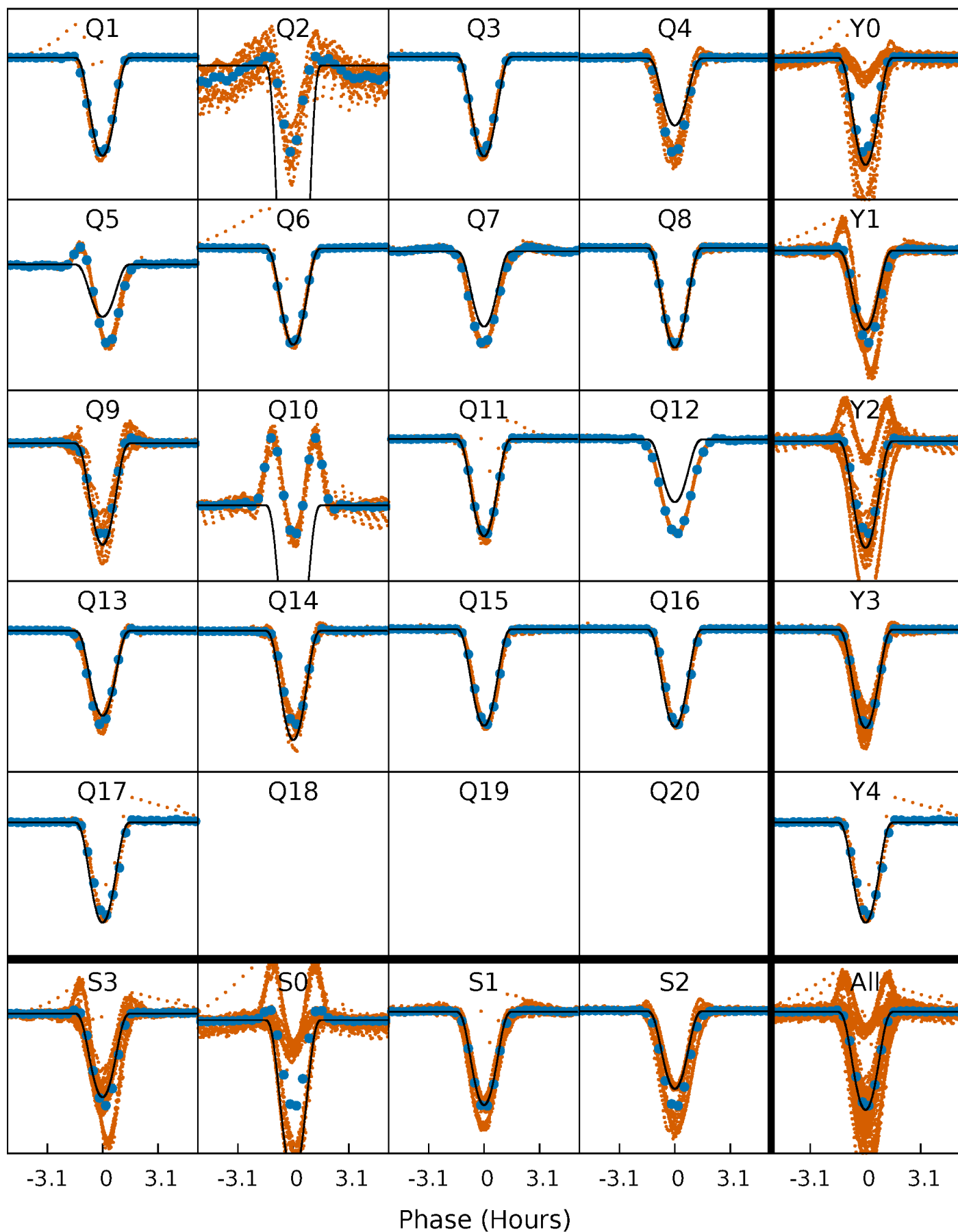
PDC Quarter-Phased Transit Curves

TCE 011873166-01 P= 1.468843 Days $T_0=132.670442$ (BKJD)



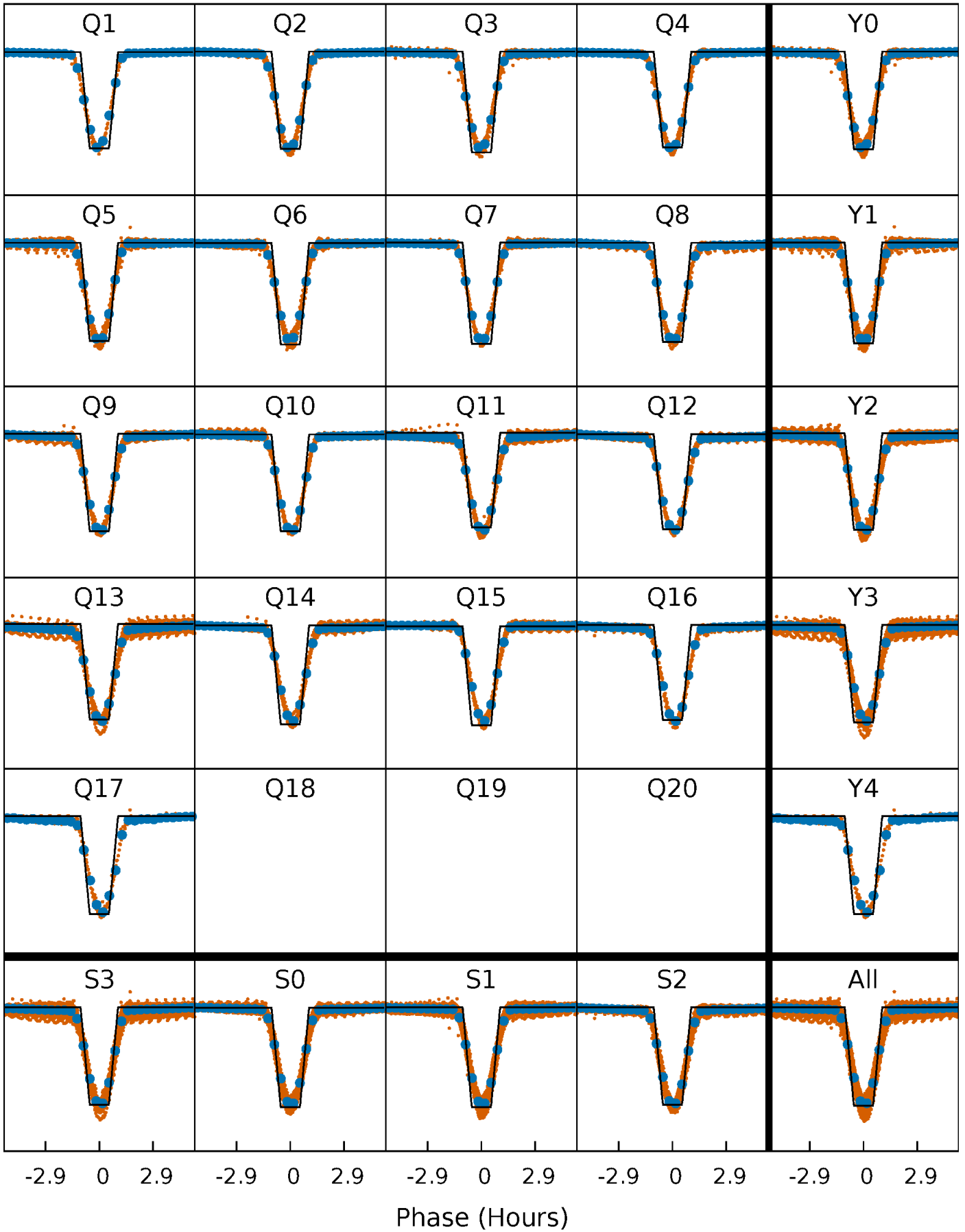
DV Quarter-Phased Transit Curves

TCE 011873166-01 P= 1.468843 Days $T_0=132.670442$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

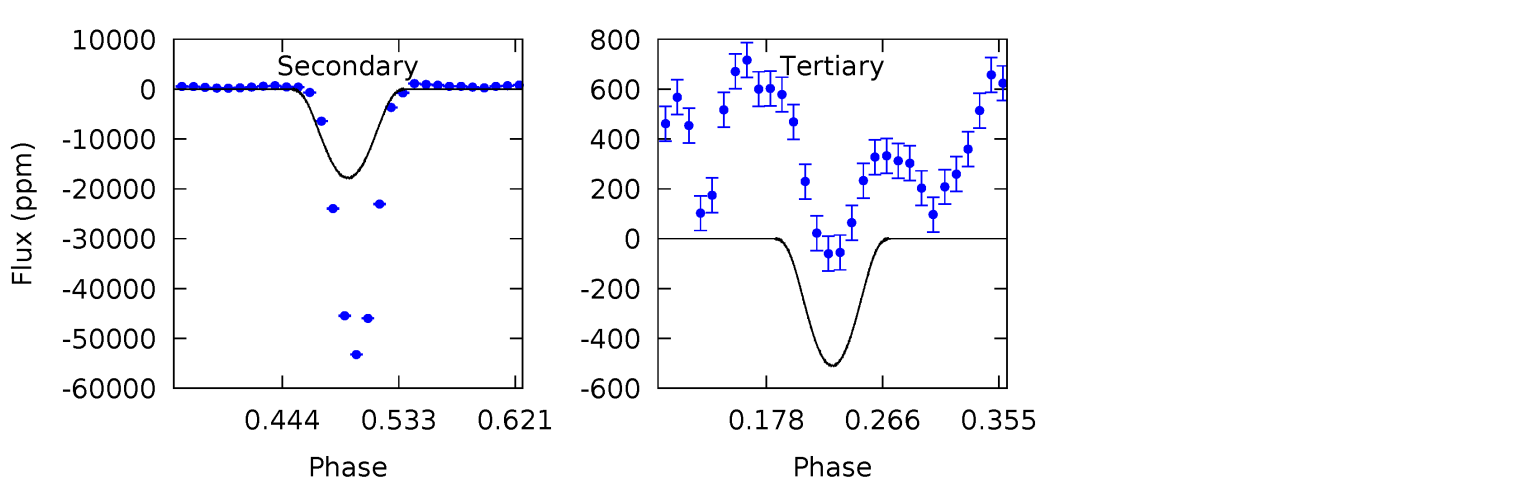
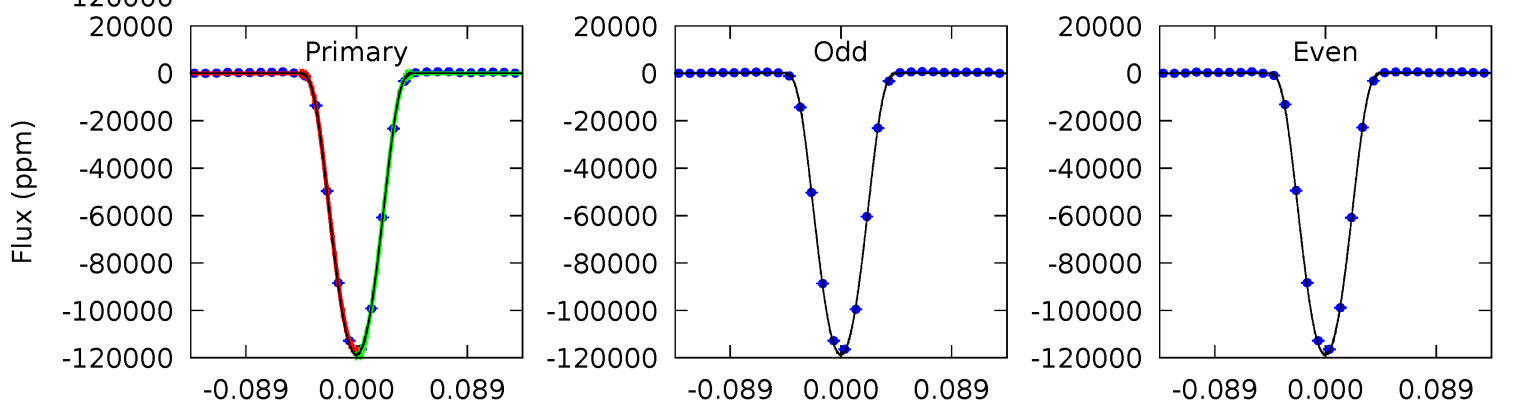
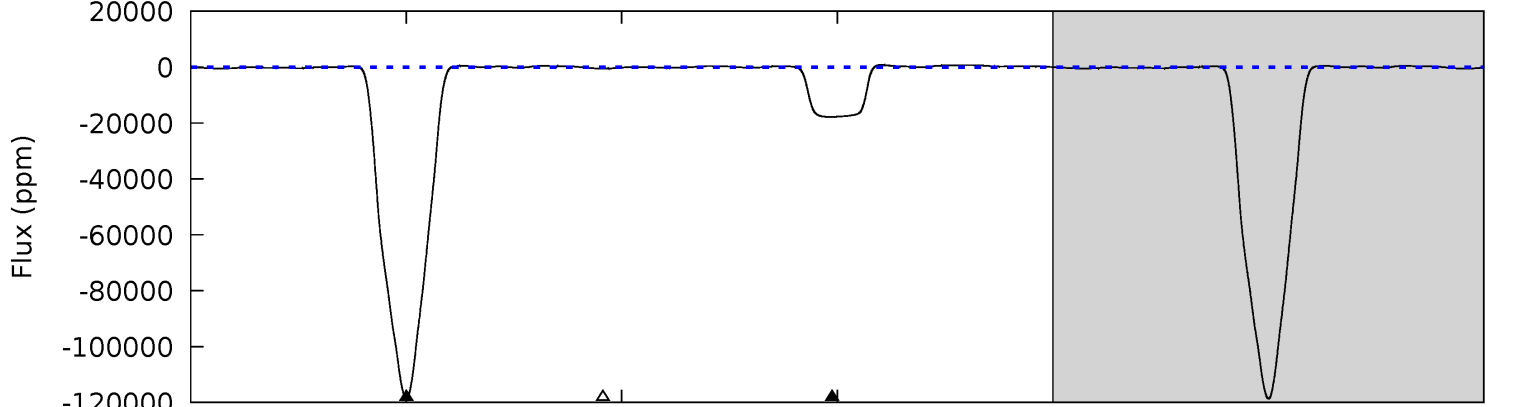
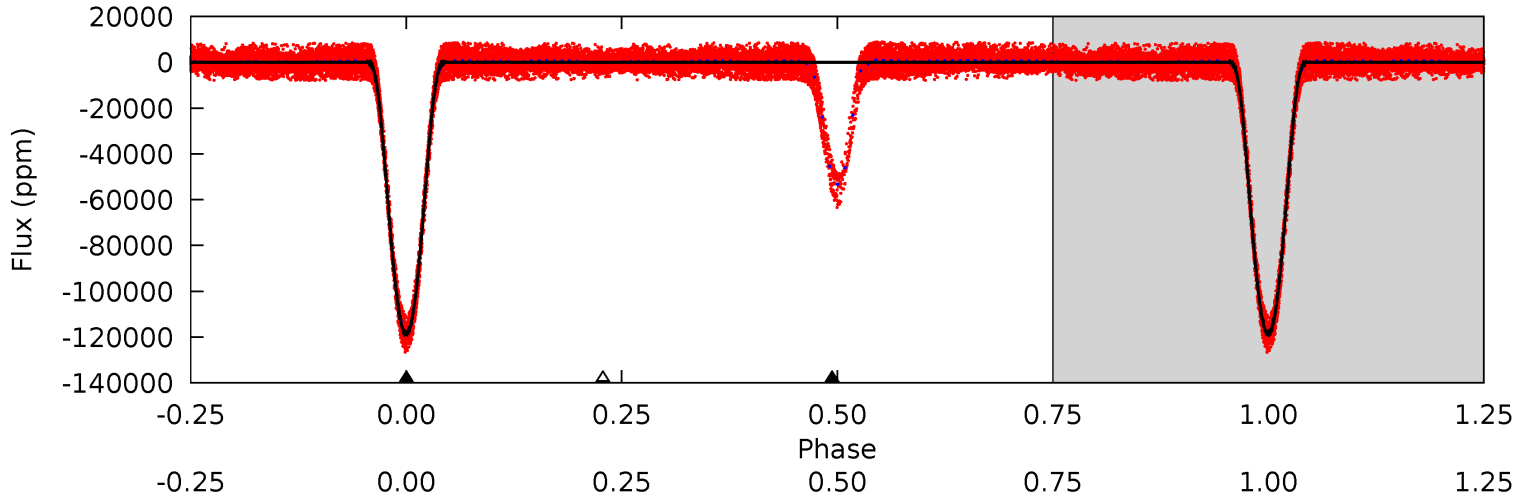
TCE 011873166-01 P= 1.468844 Days $T_0=132.669095$ (BKJD)



DV Model-Shift Uniqueness Test

011873166-01, P = 1.468843 Days, E = 131.201599 Days

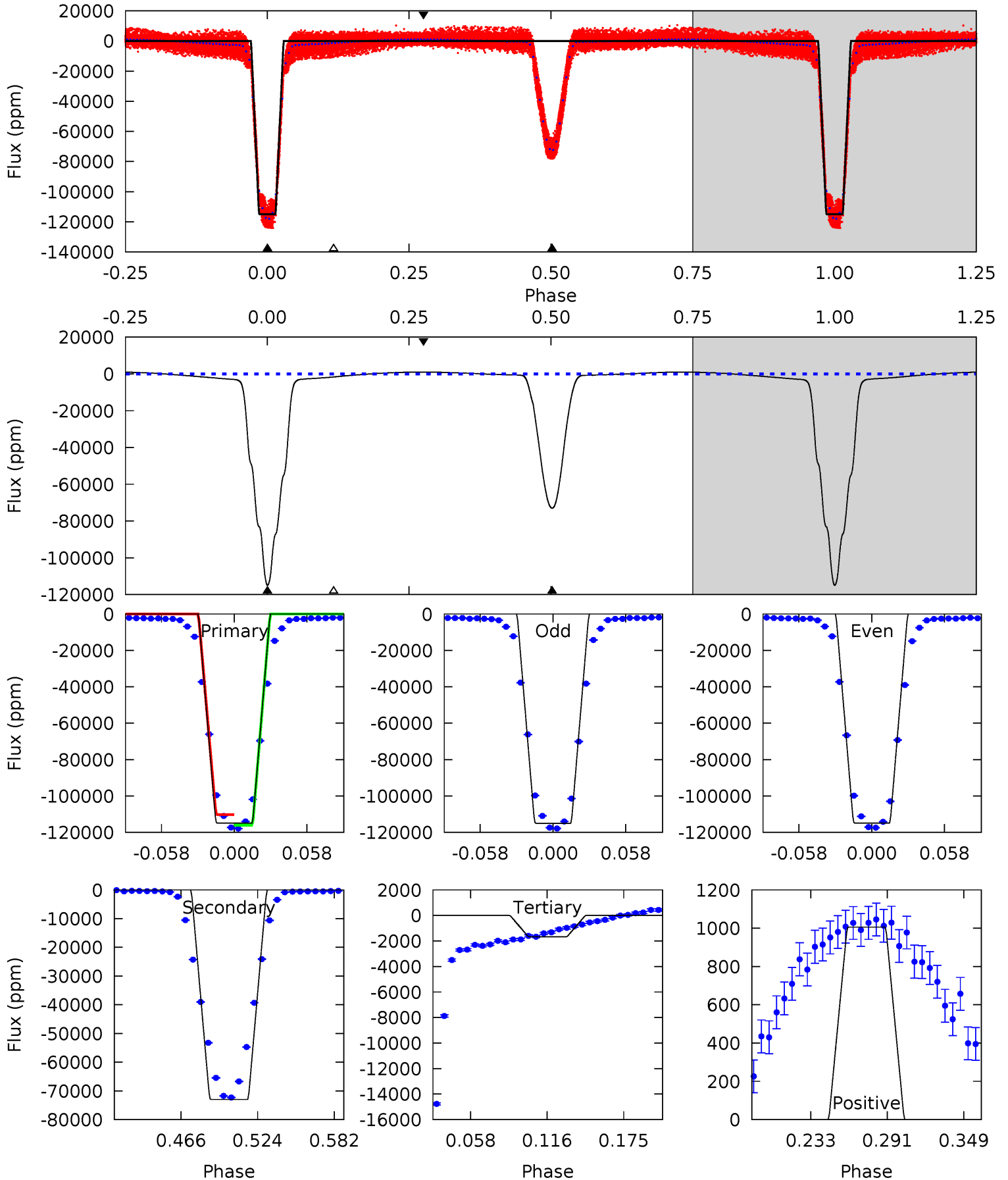
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2920	438.5	12.5	0	4.59	1.70	7.66	2907	2920	425.9	438.5	0.24	0.97	0.01	0



Alt Model-Shift Uniqueness Test

011873166-01, P = 1.468844 Days, E = 131.200251 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2206	1401	32.0	19.3	4.68	1.89	21.1	2174	2187	1369	1382	1.18	1.00	0.01	0



Stellar Parameters For KIC 011873166

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6108^{+165}_{-201}	$4.471^{+0.052}_{-0.208}$	$-0.080^{+0.250}_{-0.350}$	$0.997^{+0.312}_{-0.104}$	$1.072^{+0.137}_{-0.137}$	$1.525^{+0.422}_{-0.831}$
	+3%/-3%	+1%/-5%	+312%/-438%	+31%/-10%	+13%/-13%	+28%/-55%
Source	PHO1	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 011873166-01 / KOI 7487.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-17812 ± 41	$39.72^{+6.51}_{-3.20}$	2380^{+180}_{-110}	4003^{+71}_{-98}	$4.172^{+0.602}_{-1.001}$
Alt.	-72980 ± 52	$39.14^{+6.24}_{-3.22}$	2397^{+160}_{-114}	5495^{+136}_{-163}	18^{+3}_{-4}

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 $A_{obs} \gg 1.0$

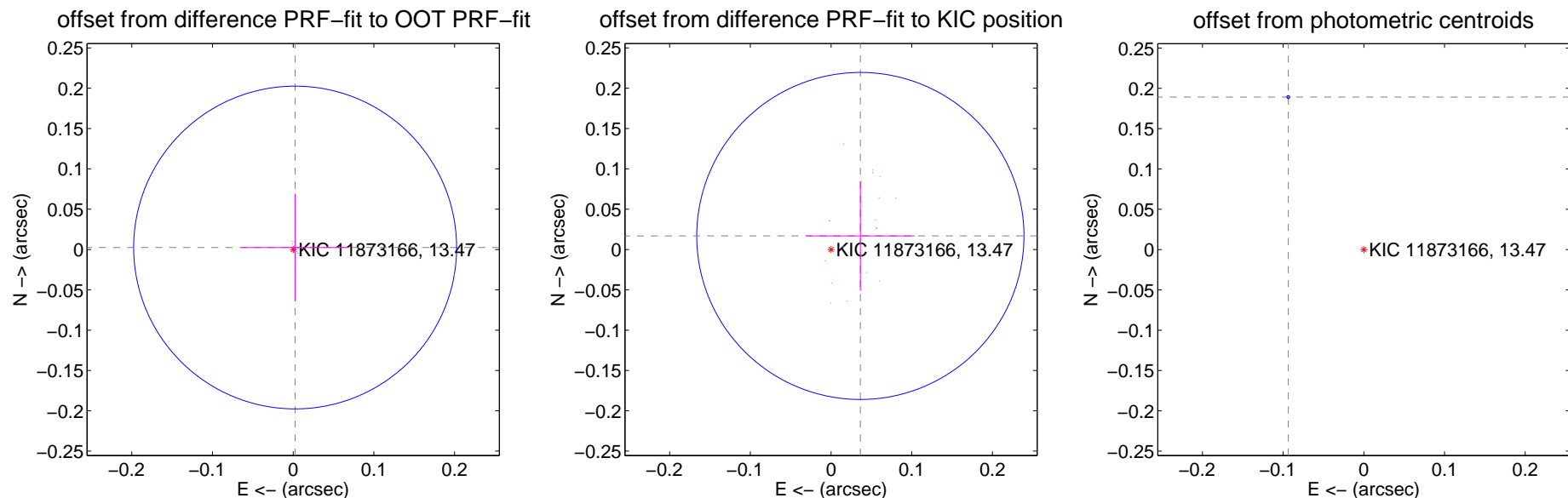
DV Centroid Data

Supplemental centroid analysis for 011873166-01. Kepler magnitude: 13.47. Transit SNR 2249.74

There are 17 quarters with good PRF difference image offsets

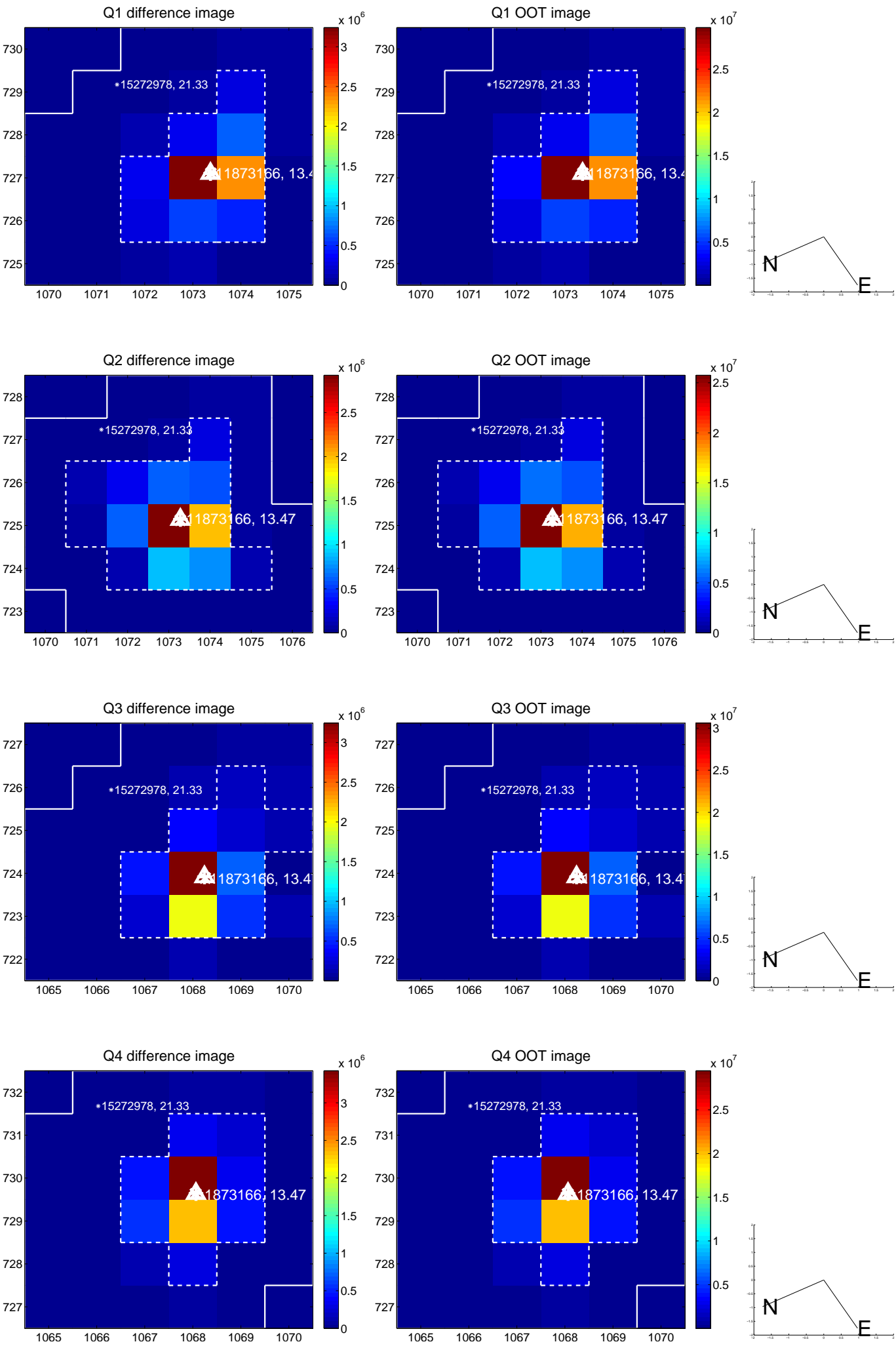
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.003 ± 0.067	0.05	-0.002 ± 0.067	0.002 ± 0.067
PRF-fit source offset from KIC position	0.040 ± 0.068	0.59	-0.036 ± 0.067	0.017 ± 0.068
photometric centroid source offset	0.21 ± 0.00	347.65	0.09 ± 0.00	0.19 ± 0.00

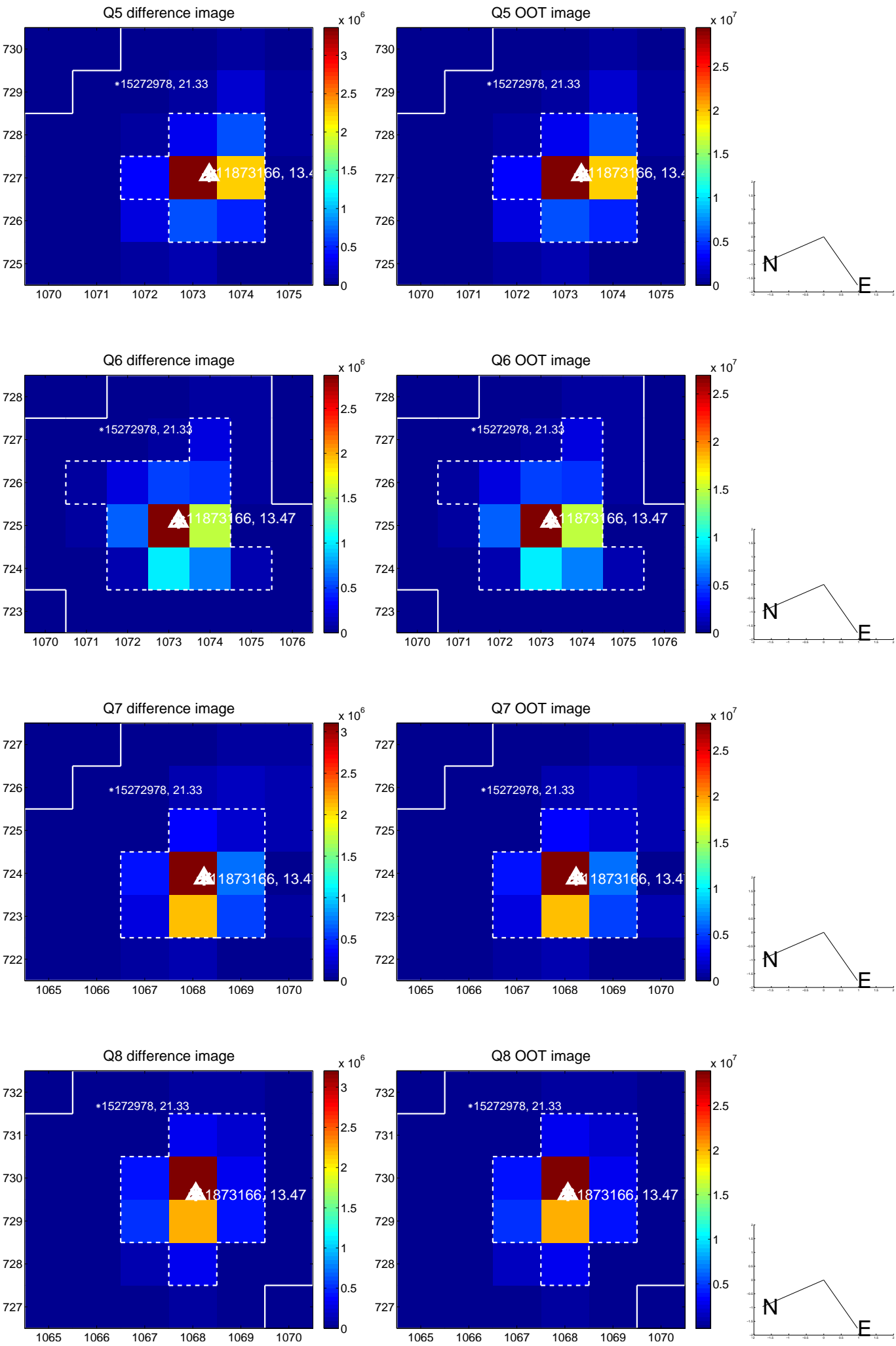


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

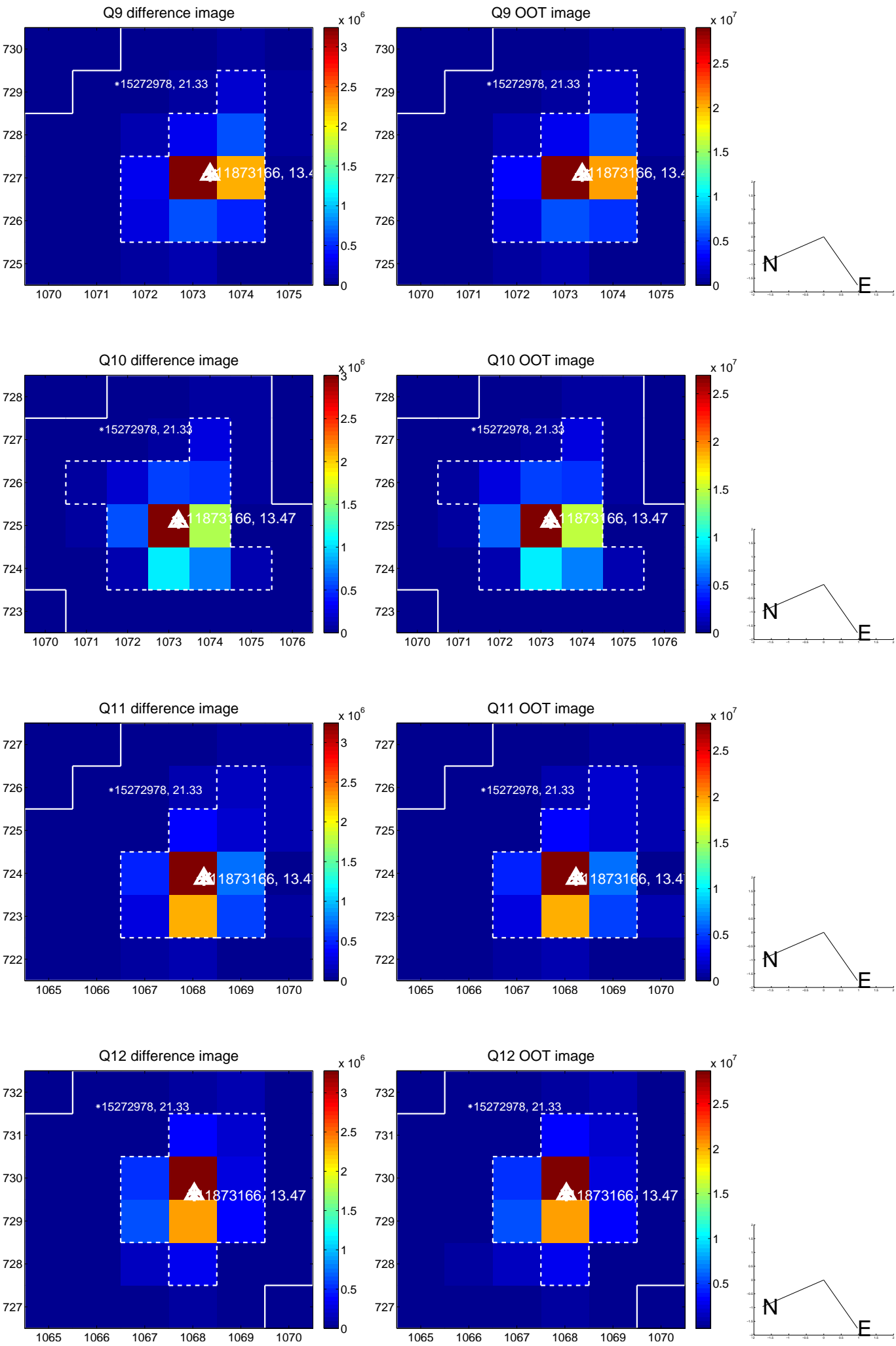
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



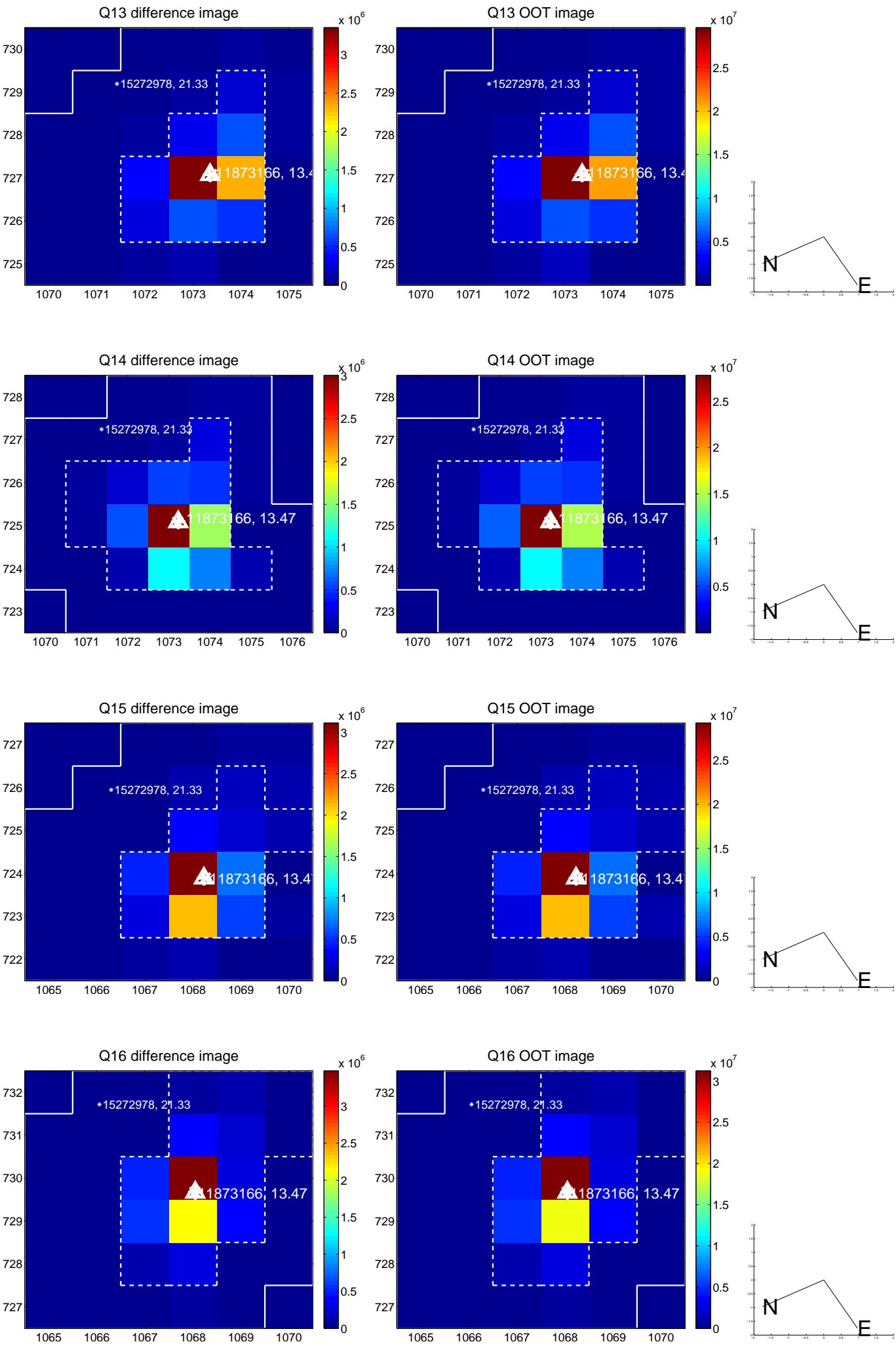
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



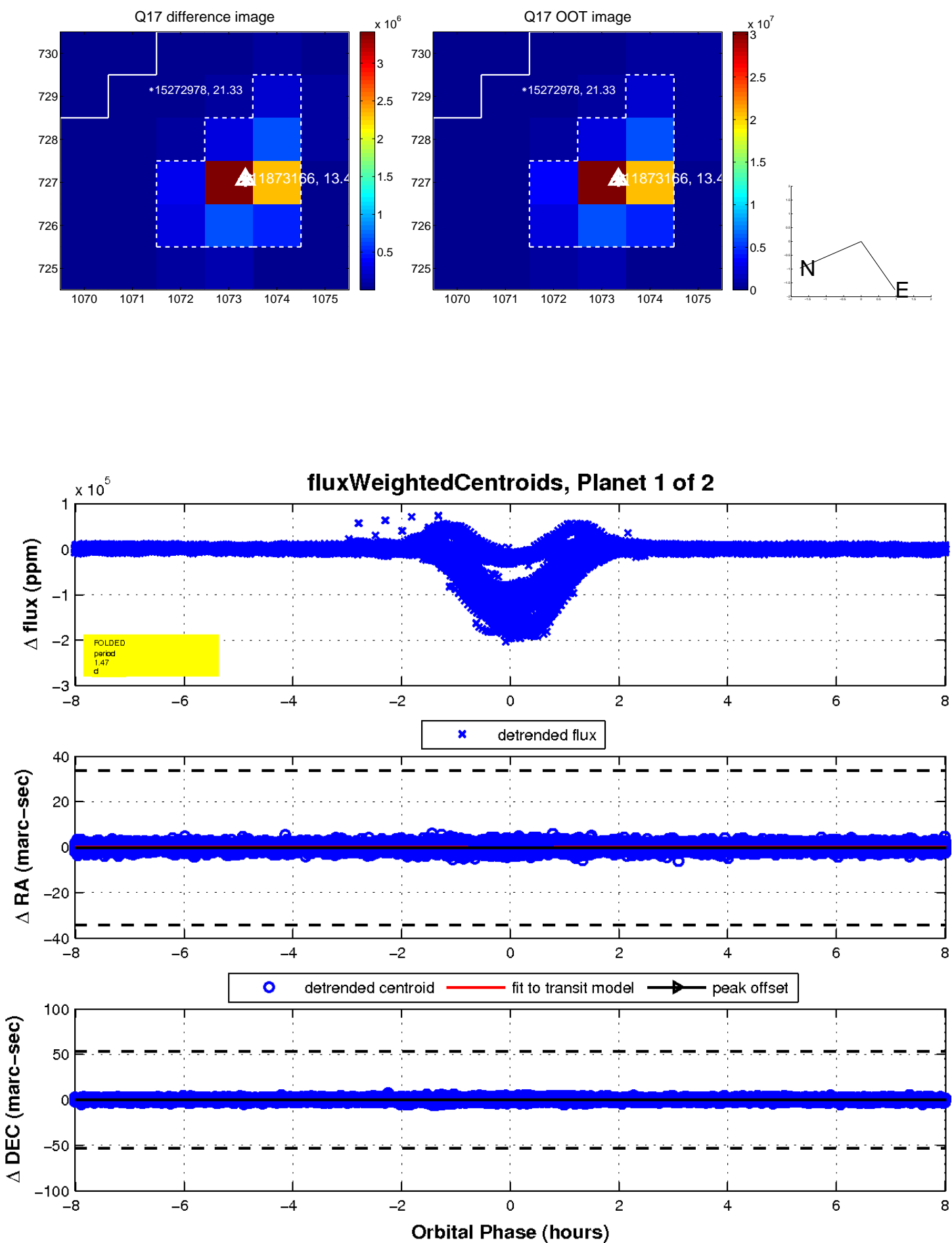
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

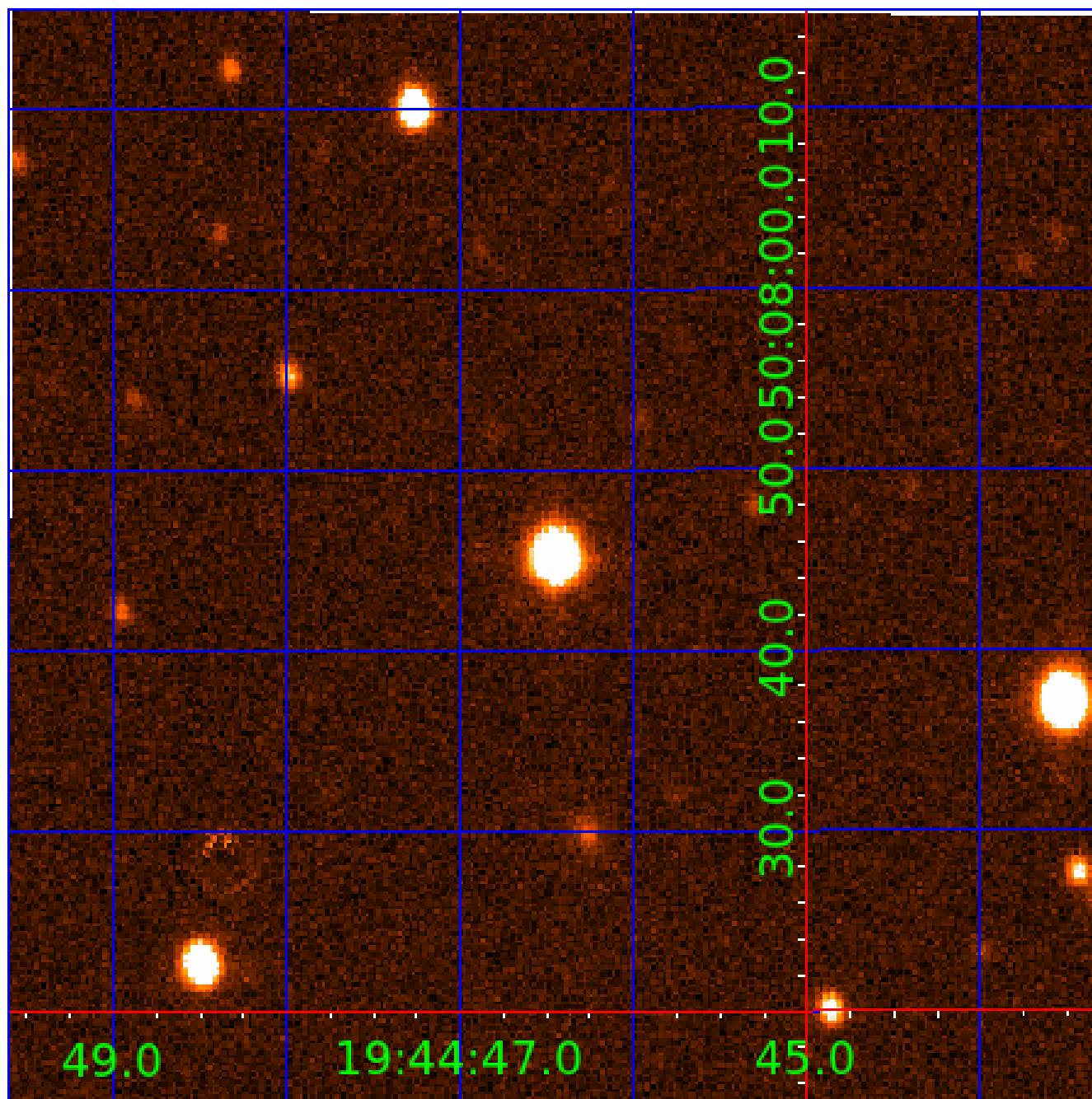


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011873166

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})
011873166-01	OBS	7487.01	1.468843	132.670442	118725.4	2.671	2211.6	2249.7	1.00	6108	38.75	1849.21
011873166-02	OBS	No	1.468845	131.933929	69828.0	2.592	2679.4	1524.2	1.00	6108	37.02	1849.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011873166-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011873166-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 011873166-02

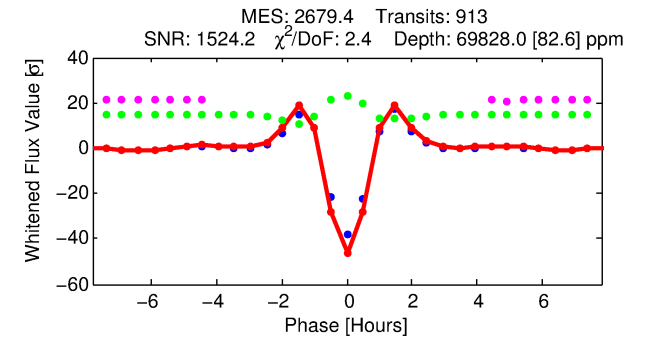
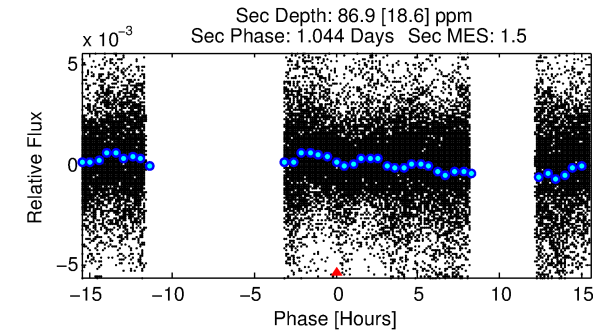
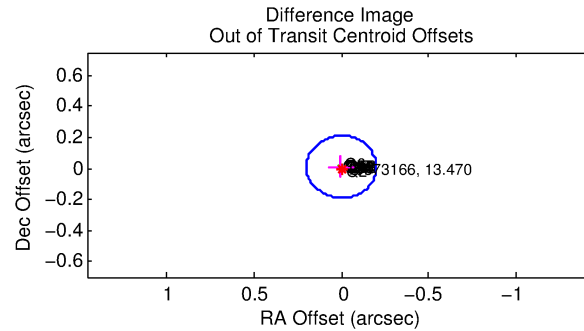
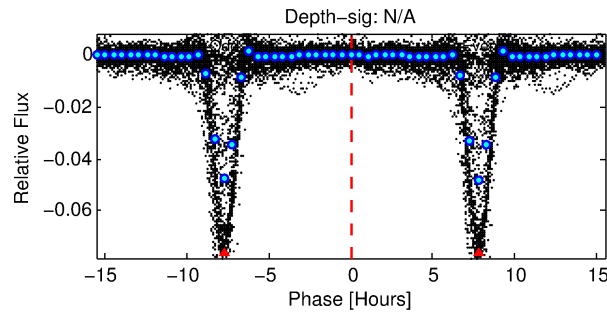
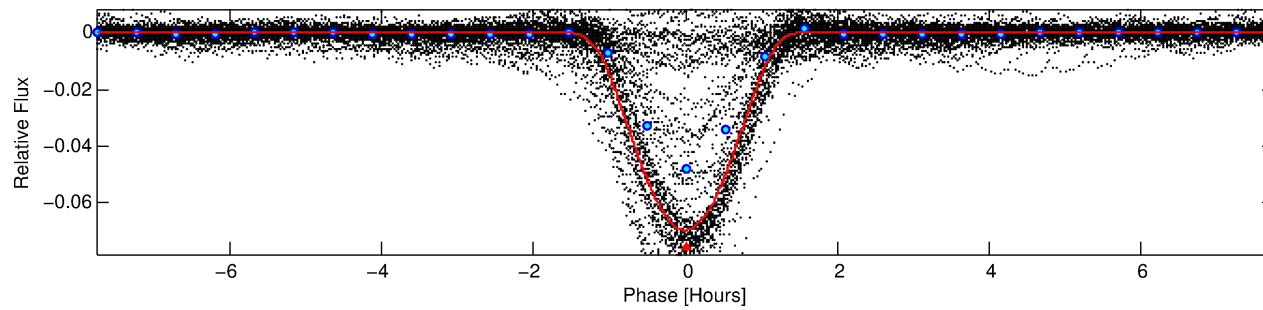
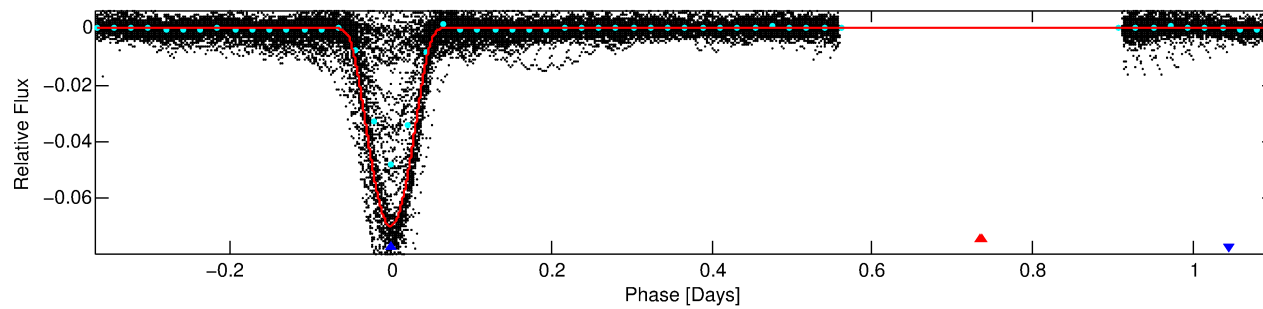
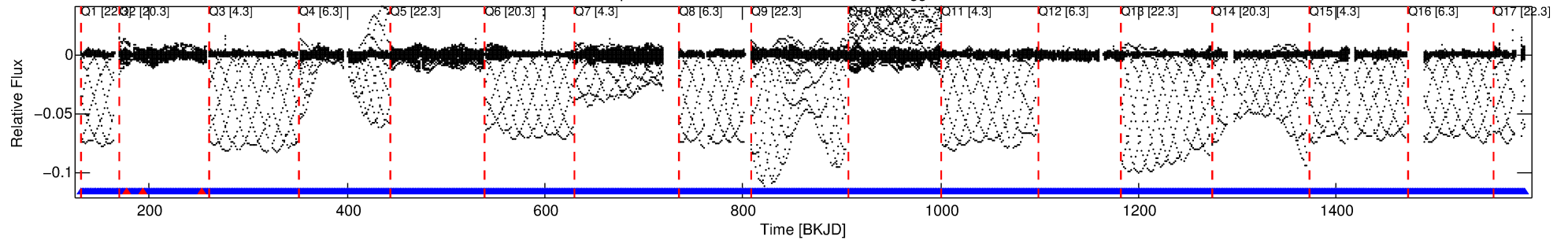
No Significant Match Found

DV One-Page Summary

KIC: 11873166 Candidate: 2 of 2 Period: 1.469 d

KOI: K07487 Corr: No Ephemeris Match

Kp: 13.47 R*: 1.00 Rs Teff: 6108.0 K Logg: 4.47 Fe/H: -0.080



DV Fit Results:

Period = 1.46884 [0.00000] d
Epoch = 131.9339 [0.0000] BKJD
Rp/R* = 0.3403 [0.0070]
a/R* = 4.47 [0.00]
b = 0.89 [0.01]
Seff = 1849.21 [746.12]
Teff = 1672 [169] K
Rp = 37.02 [11.61] Re
a = 0.0259 [0.0068] AU
Ag = 0.02 [0.01] [-95.09σ]
Teffp = 1011 [64] K [-3.66σ]

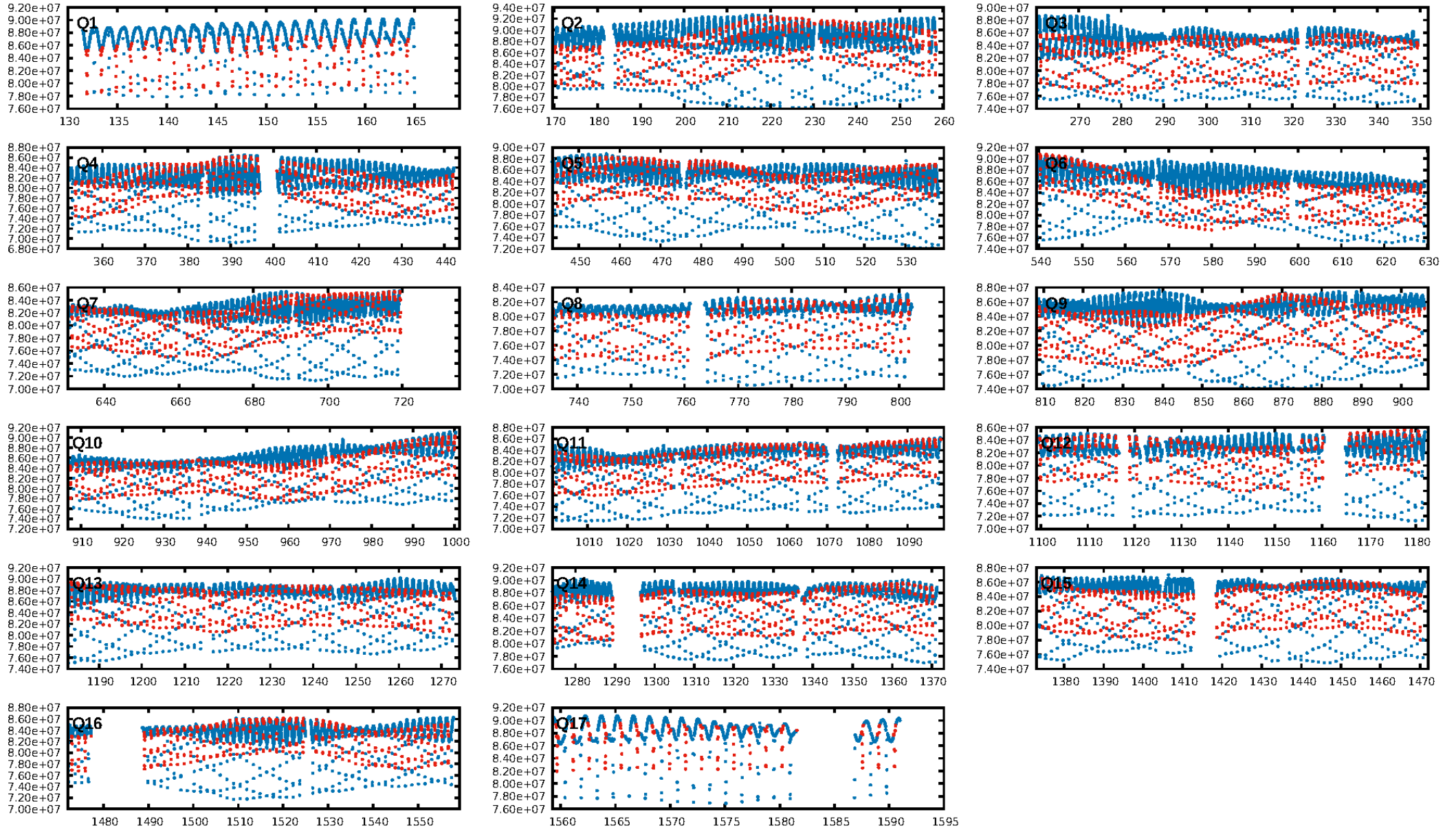
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [869/872]
GhostDiagnostic-chr: 1.134
Centroid-sig: 0.0%
Centroid-so: 0.220 arcsec [228.24σ]
OotOffset-rm: 0.011 arcsec [0.17σ]
KicOffset-rm: 0.042 arcsec [0.62σ]
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]

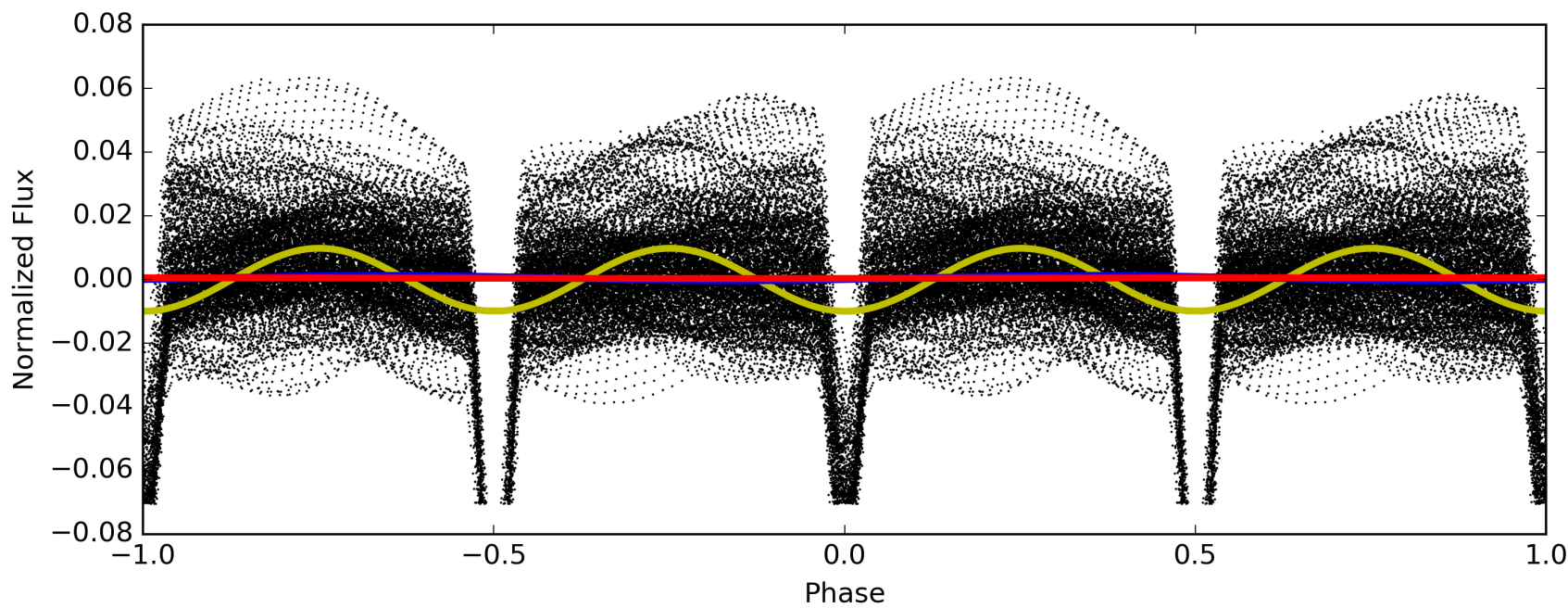
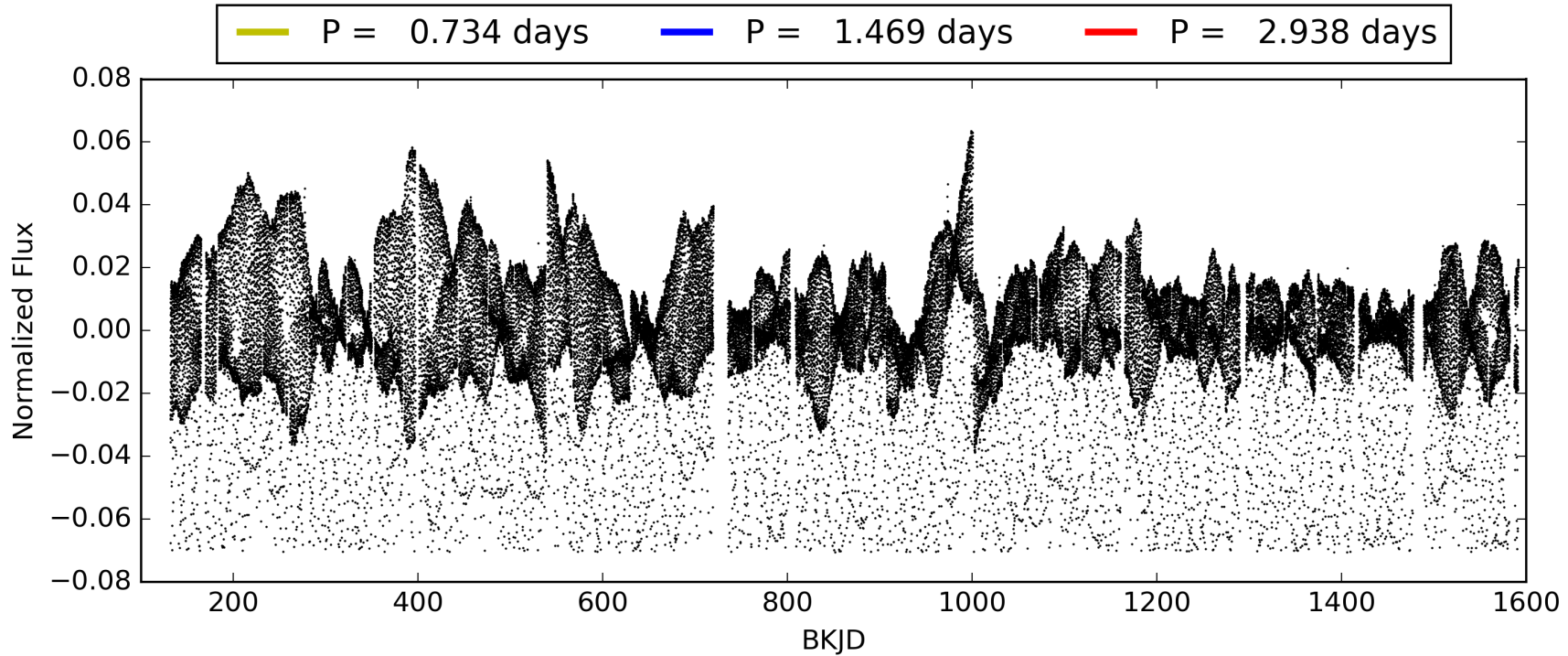
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011873166-02, PDC Light Curves

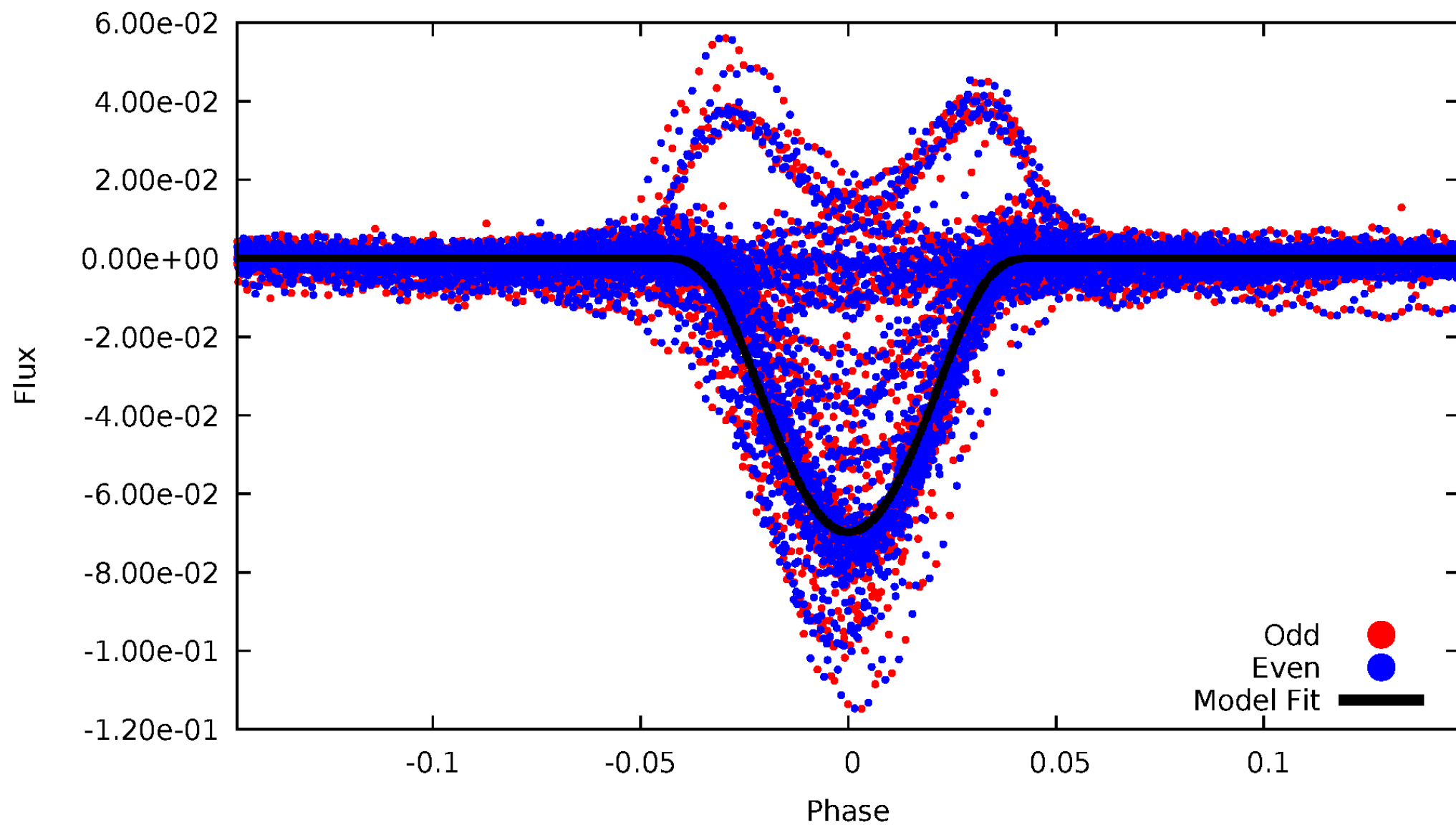


TCE 011873166-02



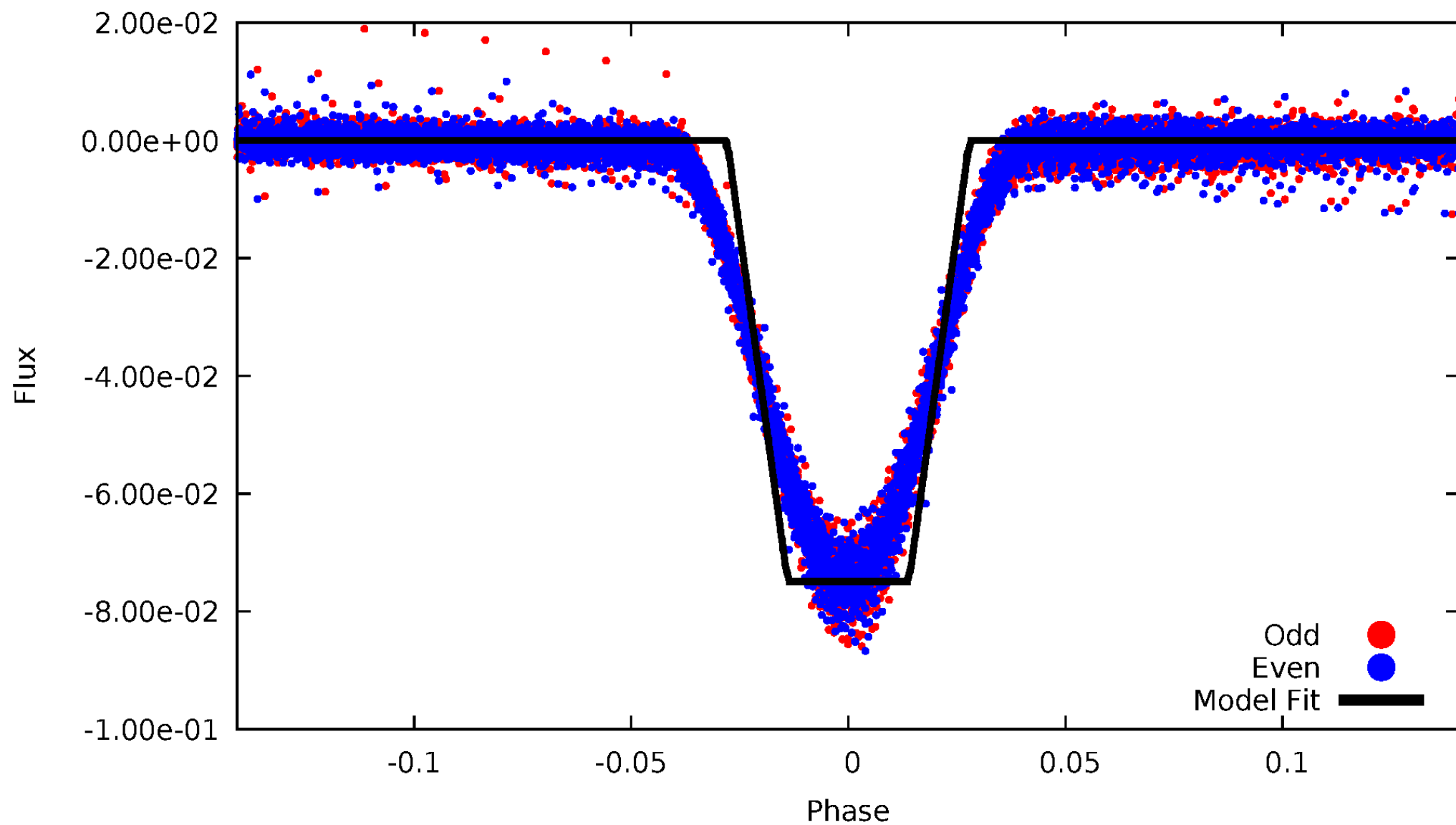
DV Odd/Even

TCE 011873166-02



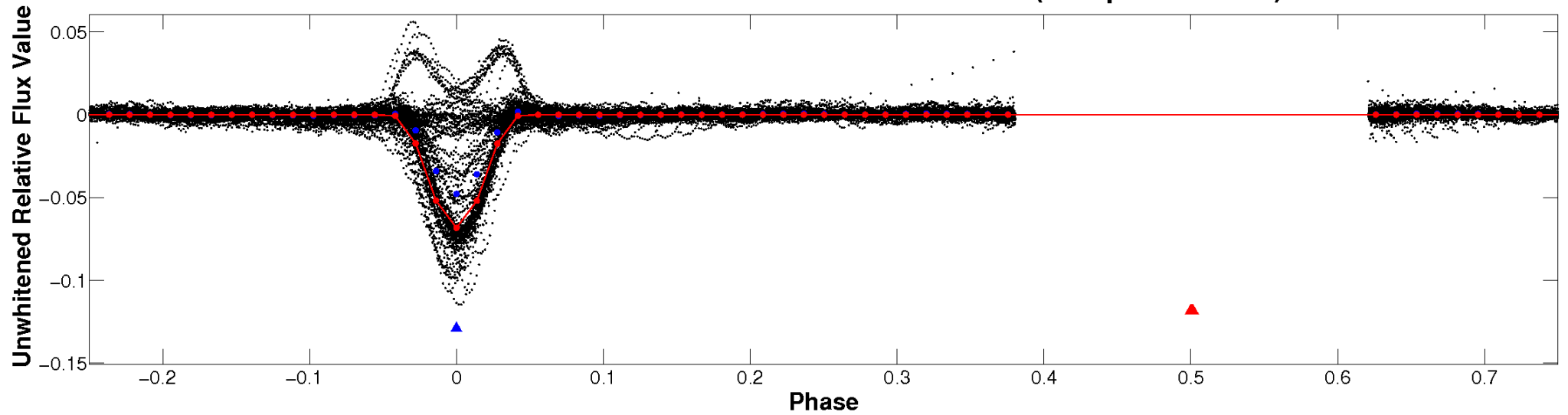
ALT Odd/Even

TCE 011873166-02

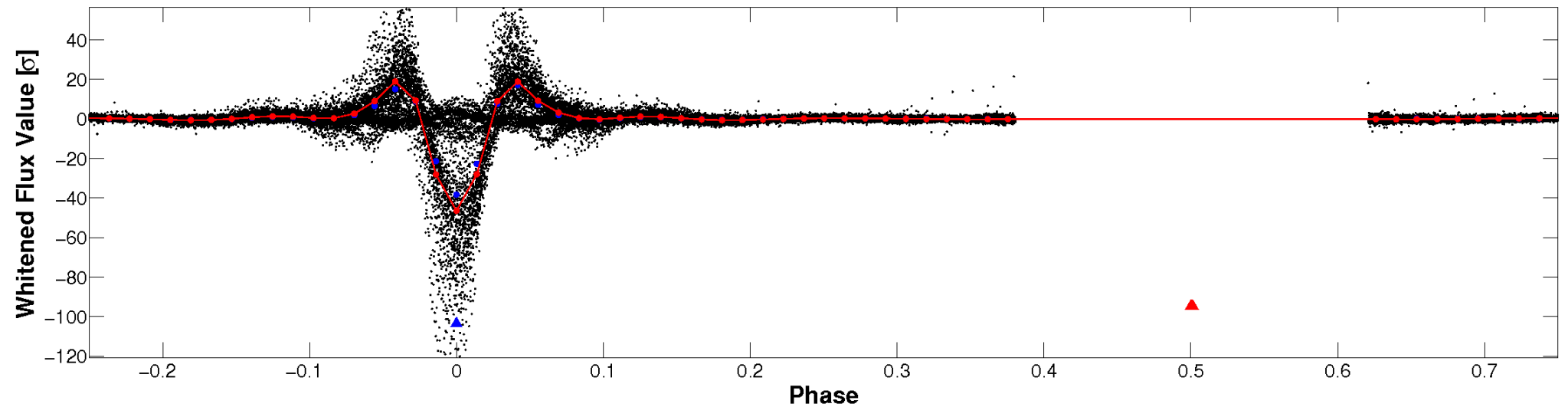


Non-Whitened Vs. Whitened Light Curve

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

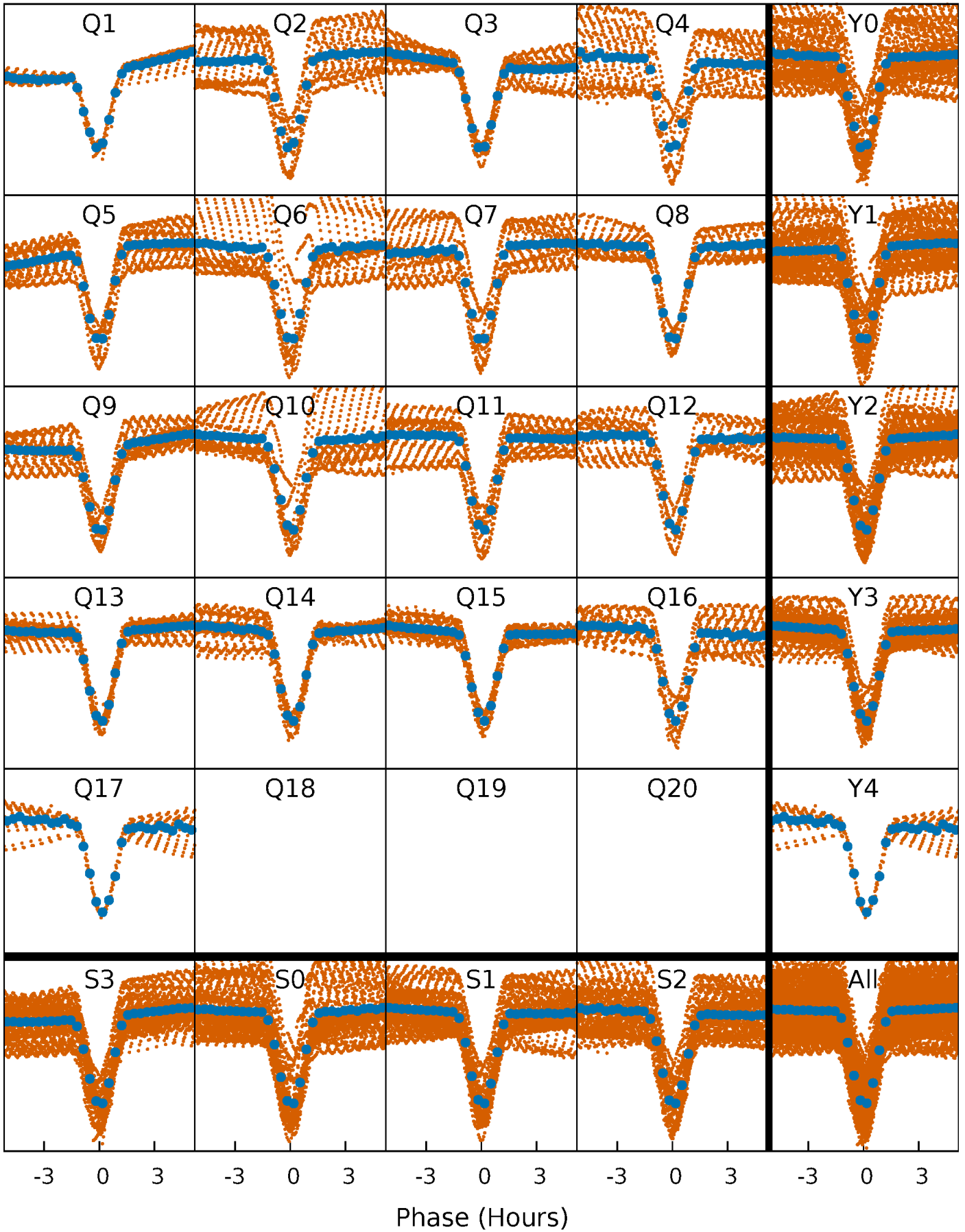


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



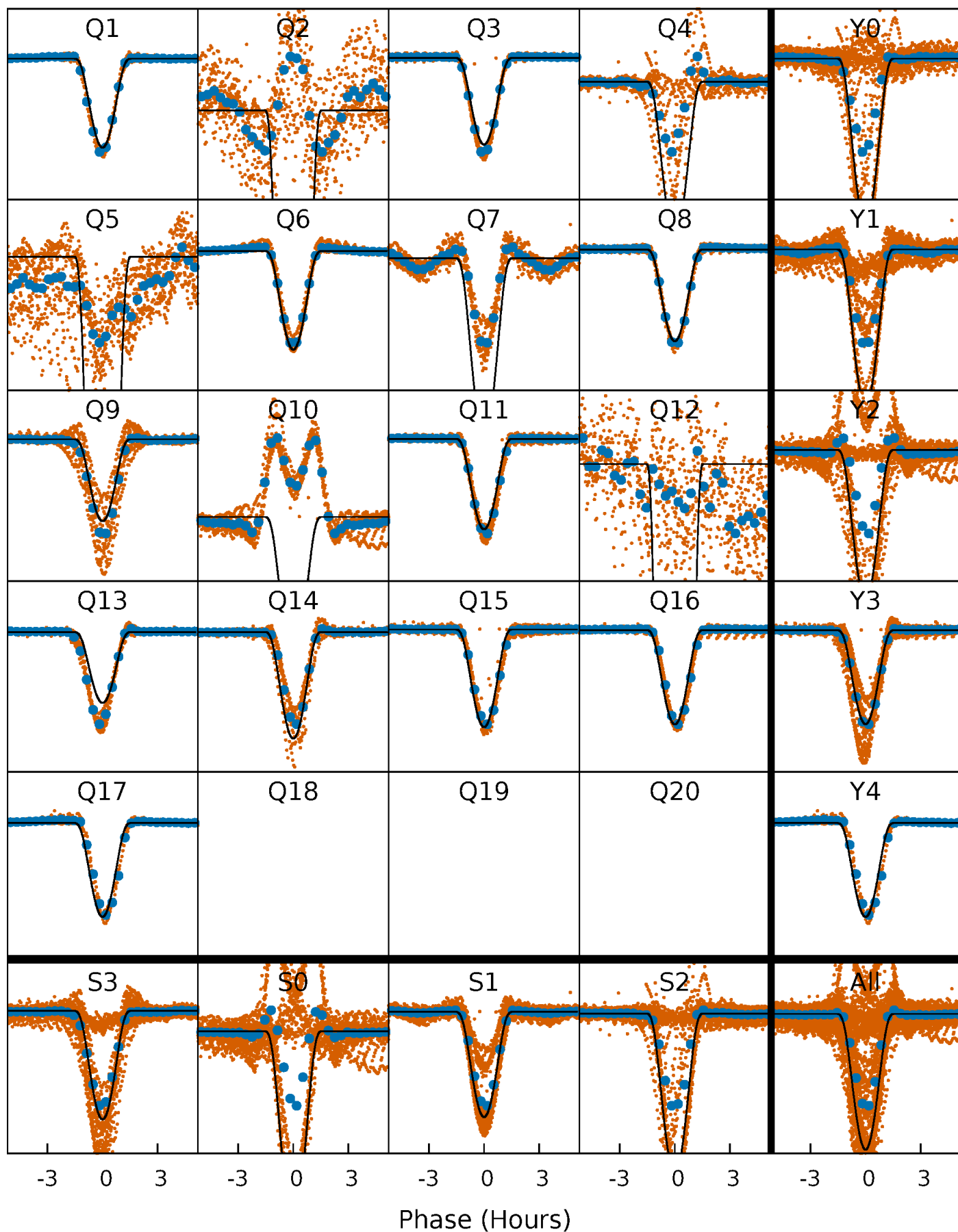
PDC Quarter-Phased Transit Curves

TCE 011873166-02 P= 1.468845 Days $T_0=131.933929$ (BKJD)



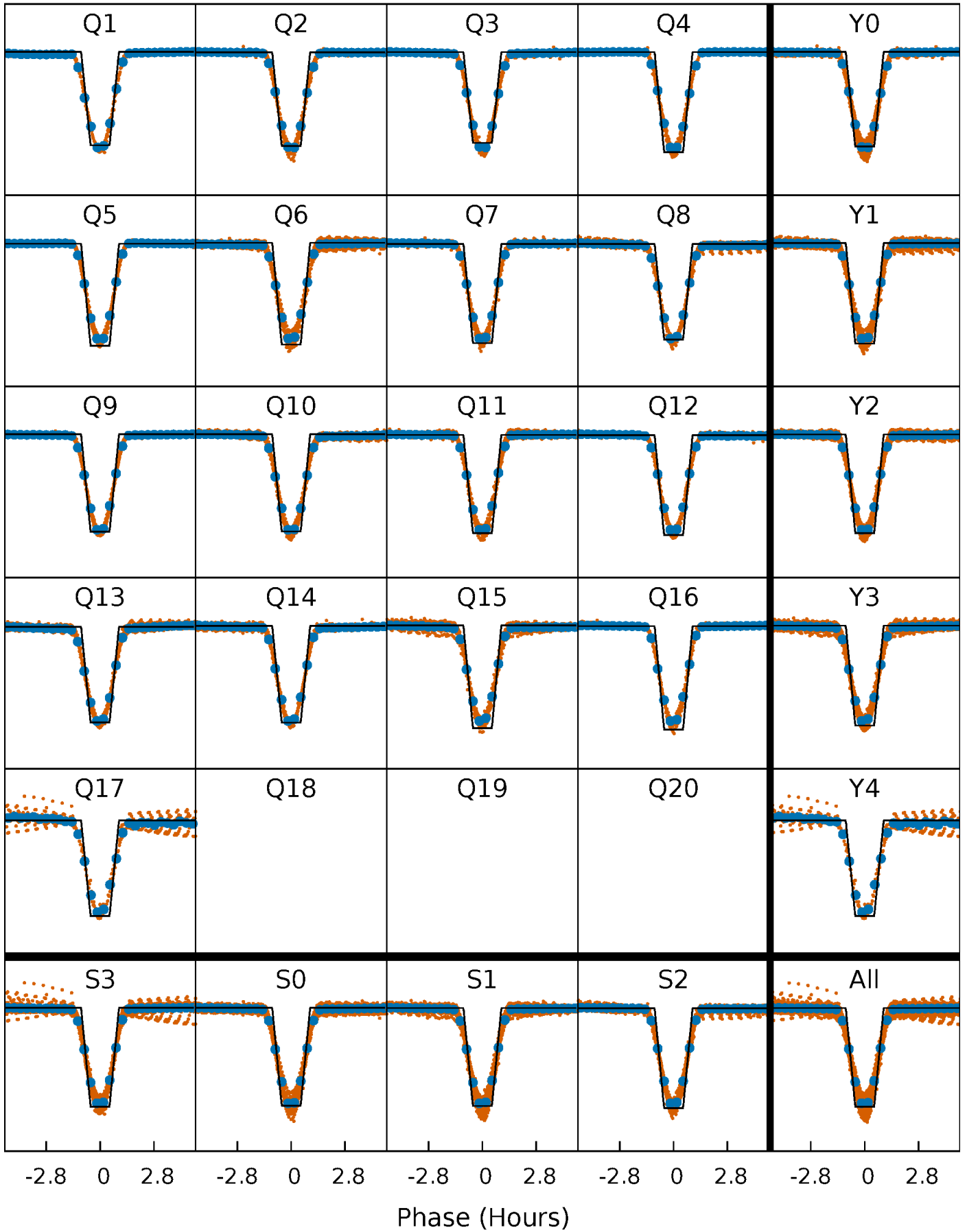
DV Quarter-Phased Transit Curves

TCE 011873166-02 P= 1.468845 Days $T_0=131.933929$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

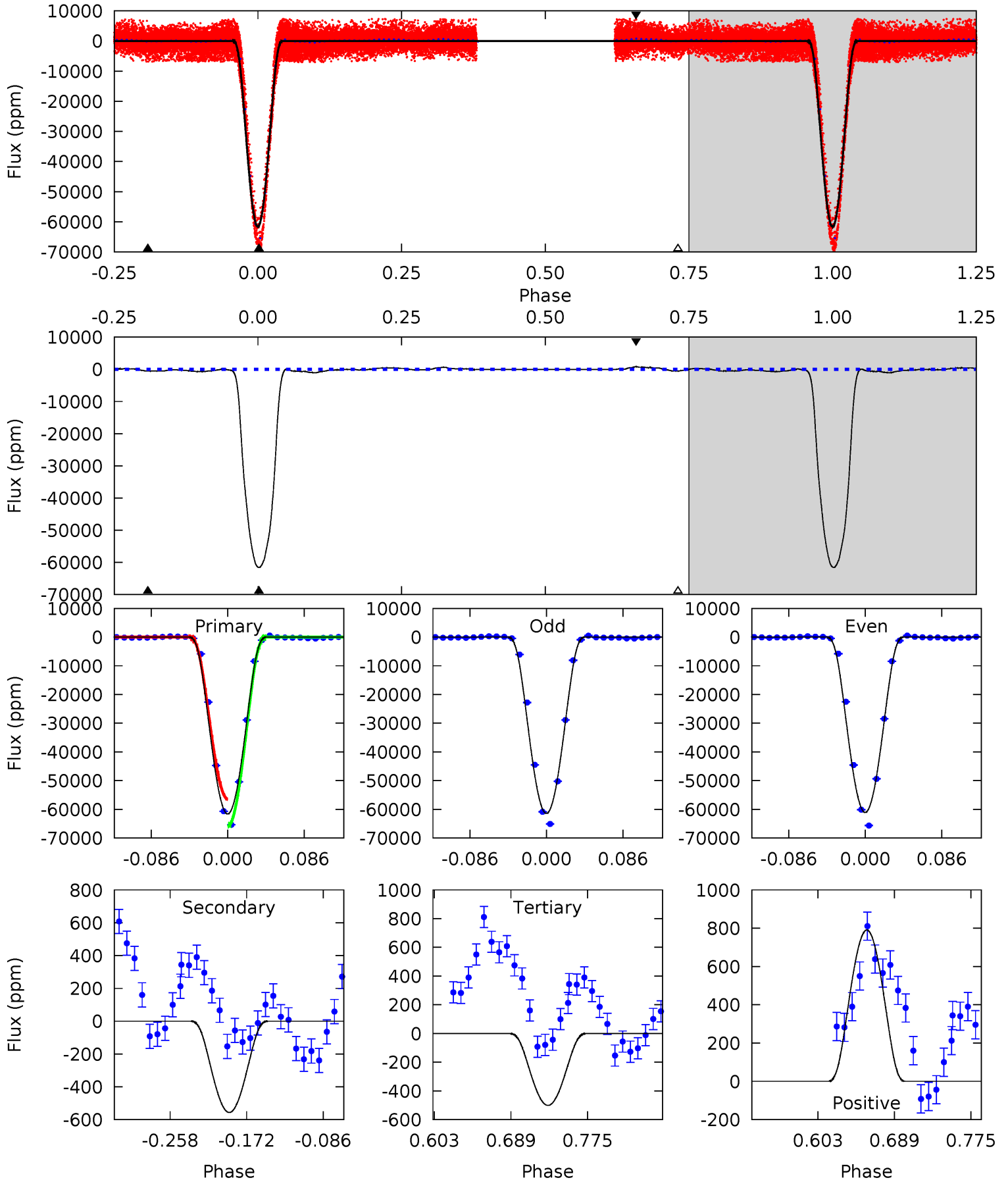
TCE 011873166-02 P= 1.468854 Days $T_0=131.931348$ (BKJD)



DV Model-Shift Uniqueness Test

011873166-02, P = 1.468845 Days, E = 130.465084 Days

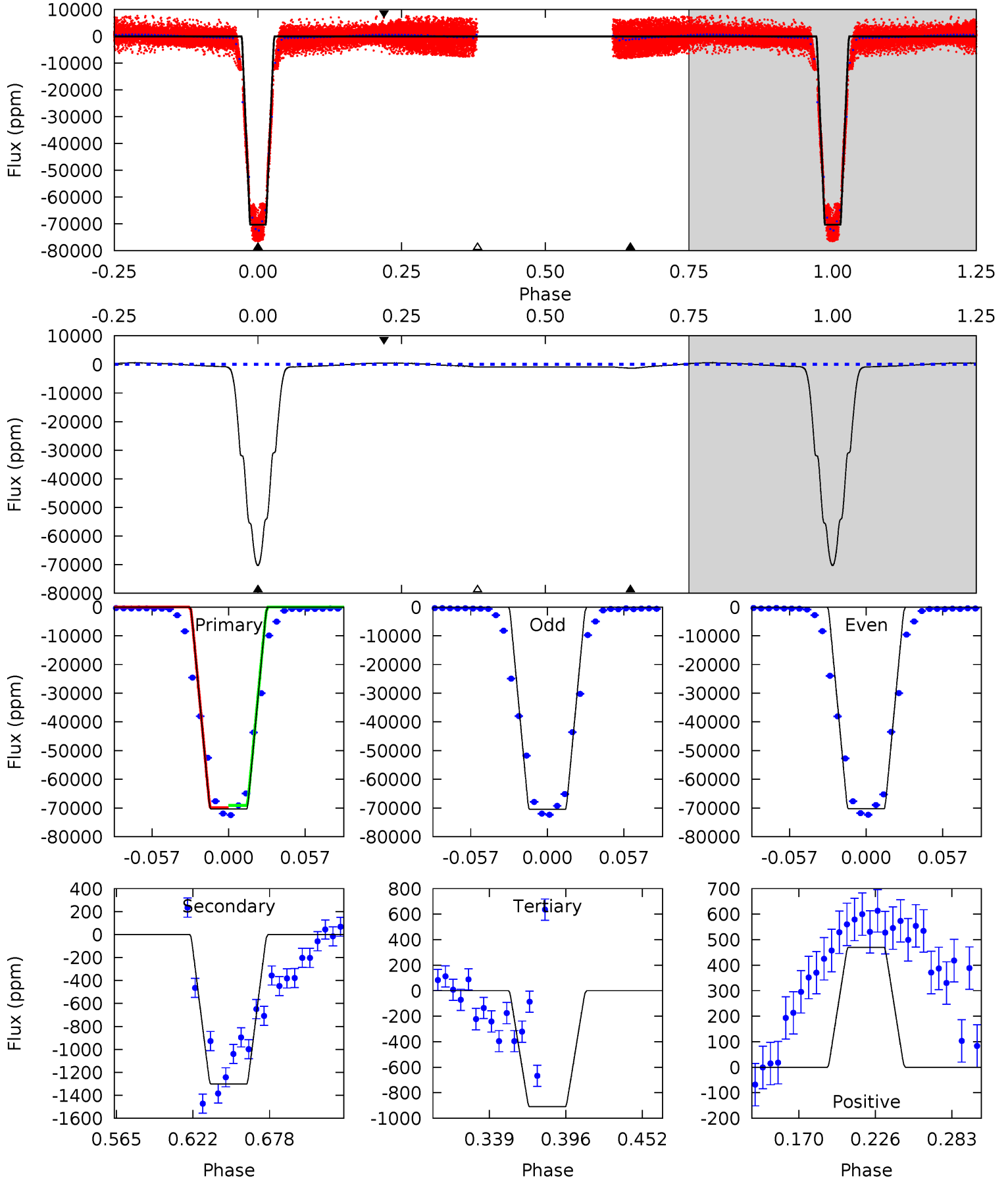
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1537	13.9	12.5	19.7	4.60	1.72	10.3	1524	1517	1.39	-5.83	4.41	0.72	0.01	0



Alt Model-Shift Uniqueness Test

011873166-02, P = 1.468854 Days, E = 130.462494 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1777	32.9	23.0	11.9	4.68	1.91	11.1	1754	1765	9.91	21.0	2.90	1.00	0.01	0



Stellar Parameters For KIC 011873166

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6108^{+165}_{-201}	$4.471^{+0.052}_{-0.208}$	$-0.080^{+0.250}_{-0.350}$	$0.997^{+0.312}_{-0.104}$	$1.072^{+0.137}_{-0.137}$	$1.525^{+0.422}_{-0.831}$
	+3%/-3%	+1%/-5%	+312%/-438%	+31%/-10%	+13%/-13%	+28%/-55%
Source	PHO1	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 011873166-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-557 ± 40	$37.79^{+6.86}_{-3.01}$	2375^{+179}_{-107}	-2513^{+98}_{-155}	$0.139^{+0.026}_{-0.035}$
Alt.	-1301 ± 40	$30.67^{+4.93}_{-2.48}$	2385^{+159}_{-117}	2578^{+90}_{-202}	$0.500^{+0.087}_{-0.120}$

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

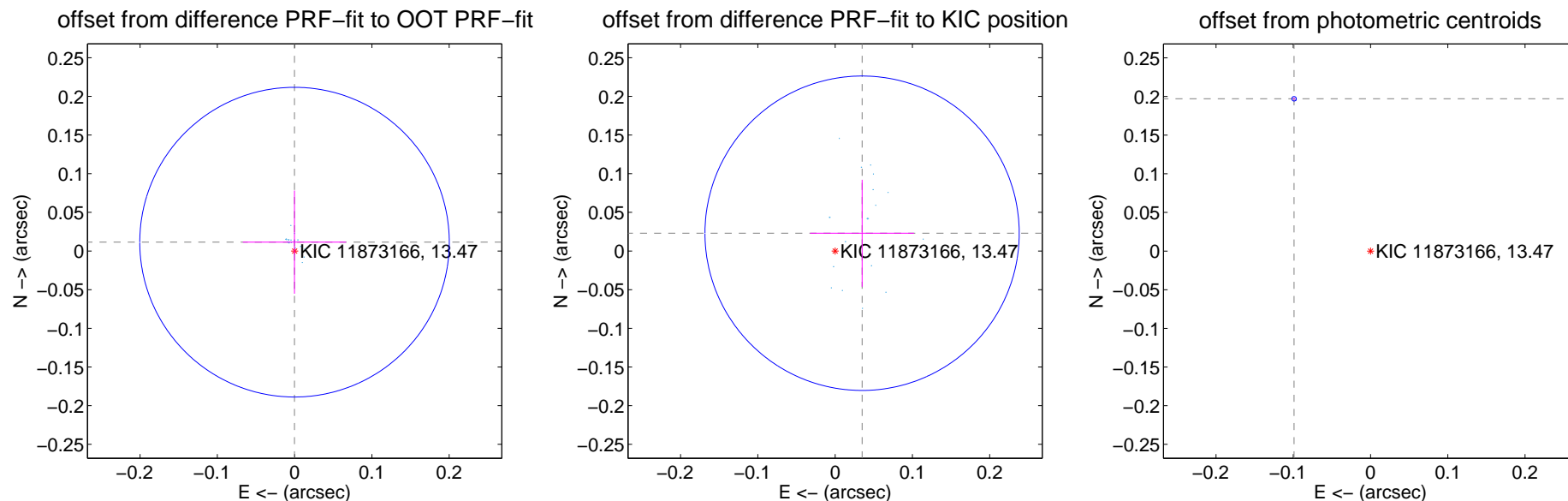
DV Centroid Data

Supplemental centroid analysis for 011873166-02. Kepler magnitude: 13.47. Transit SNR 1524.23

There are 17 quarters with good PRF difference image offsets

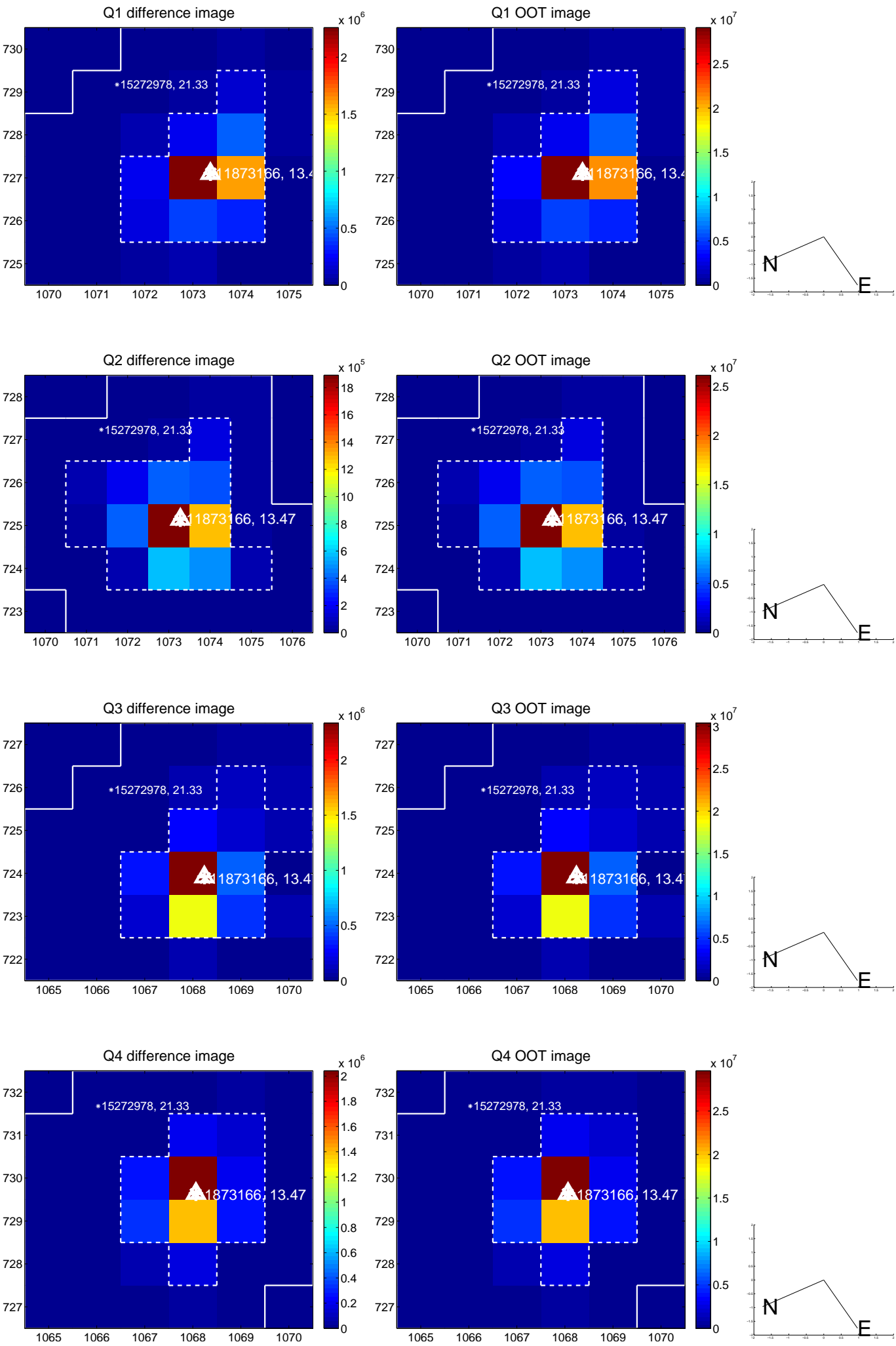
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.011 ± 0.067	0.17	0.000 ± 0.067	0.011 ± 0.067
PRF-fit source offset from KIC position	0.042 ± 0.068	0.62	-0.035 ± 0.067	0.023 ± 0.069
photometric centroid source offset	0.22 ± 0.00	228.24	0.10 ± 0.00	0.20 ± 0.00

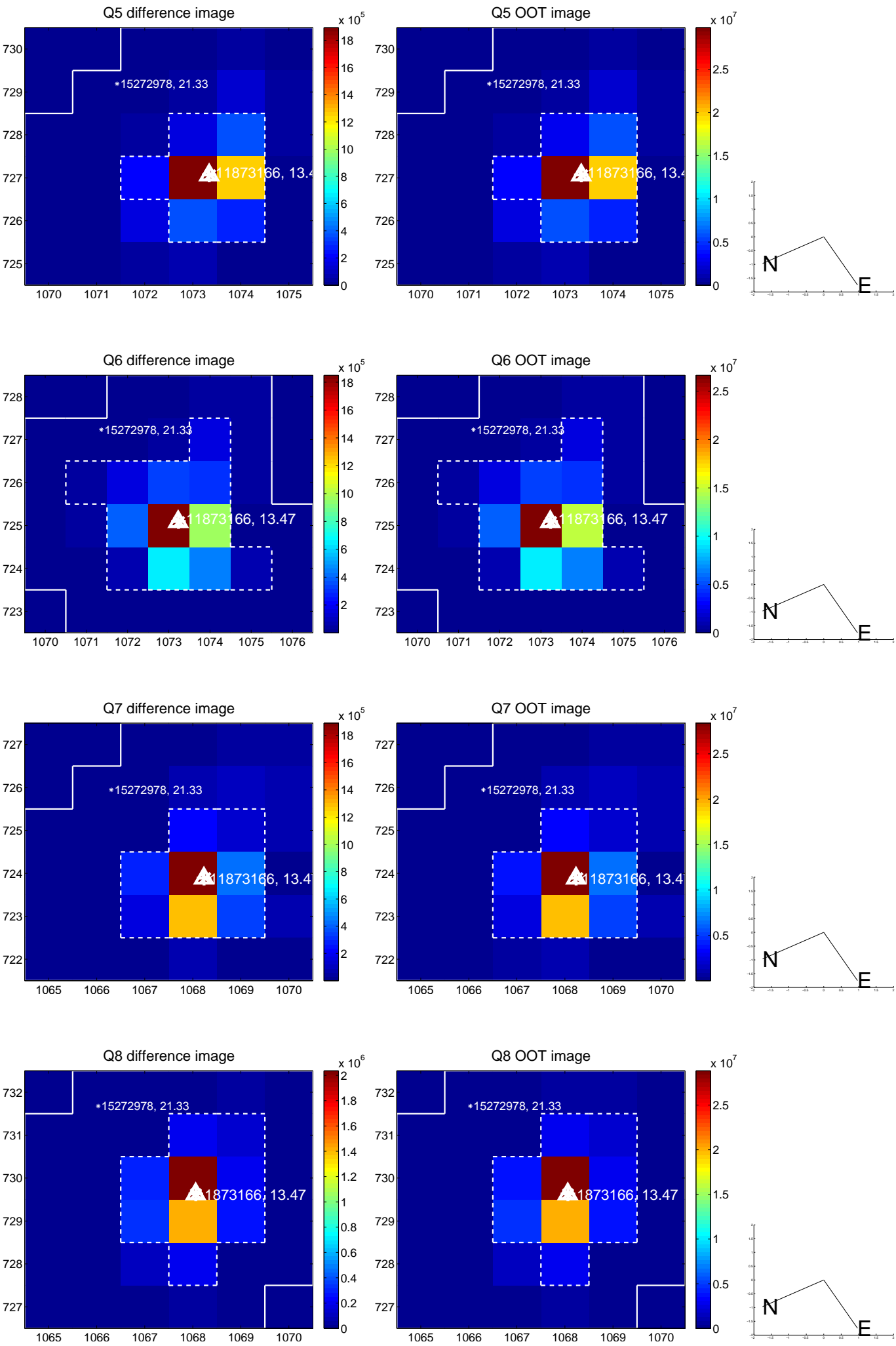


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

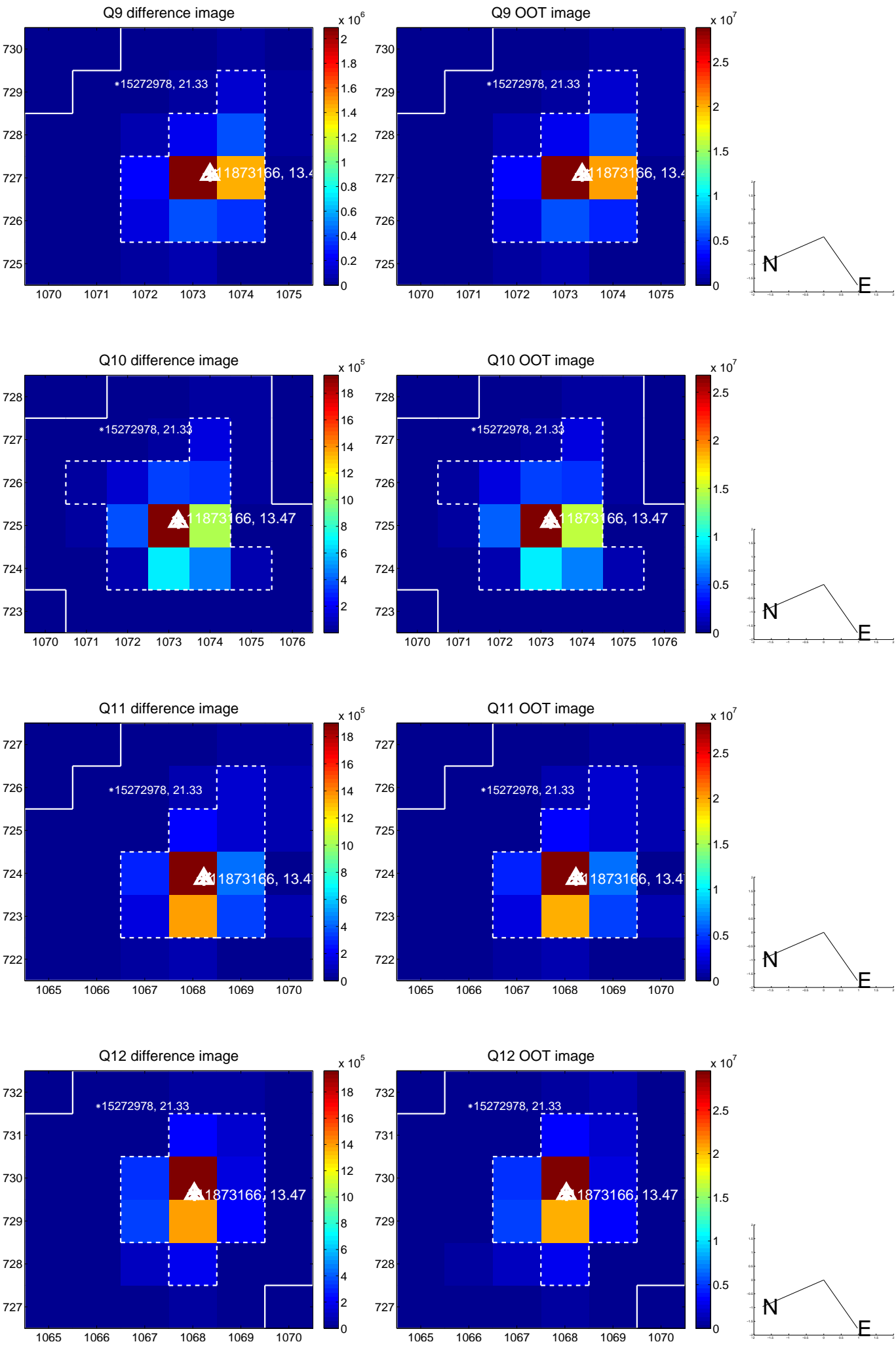
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



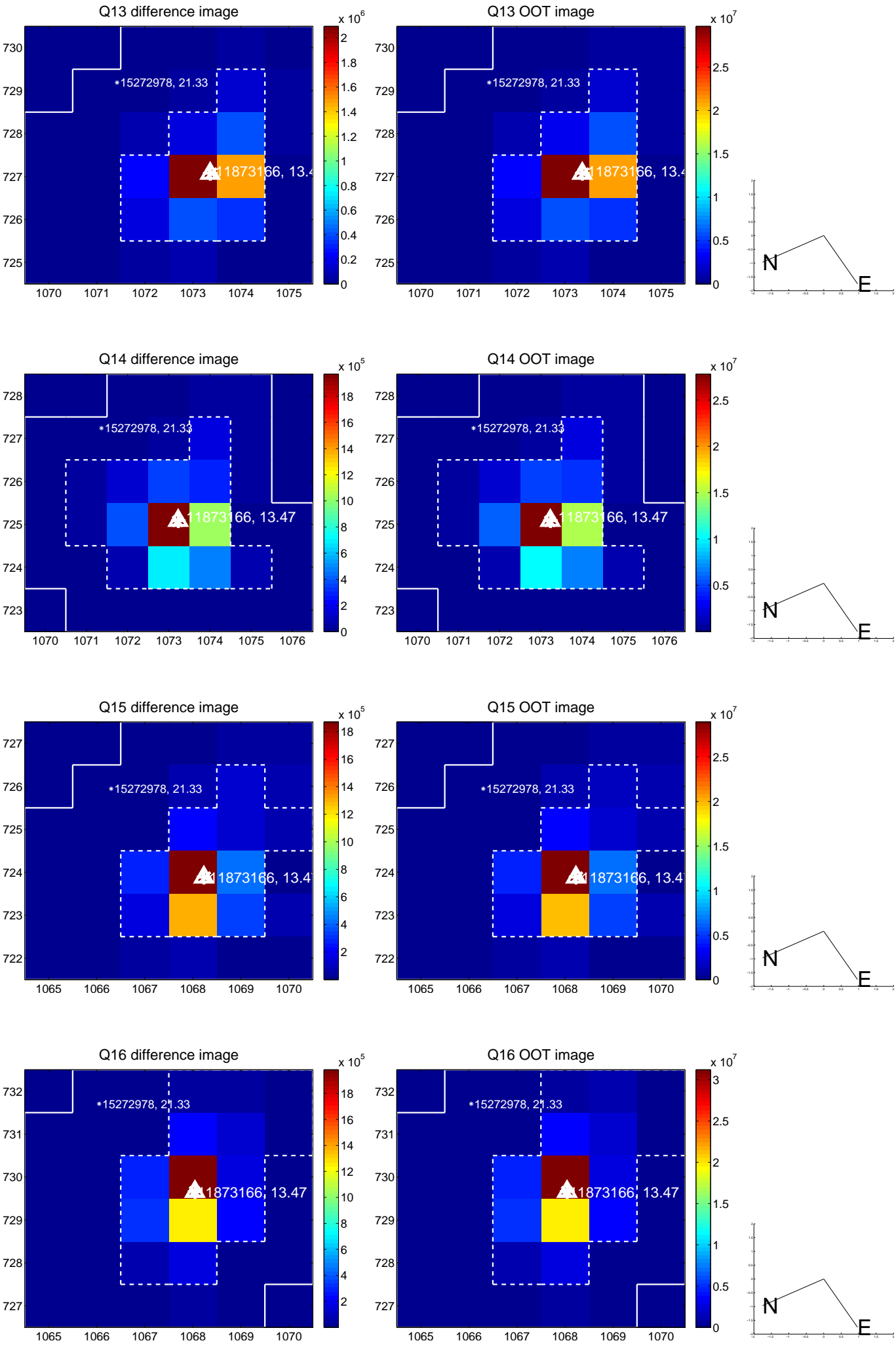
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



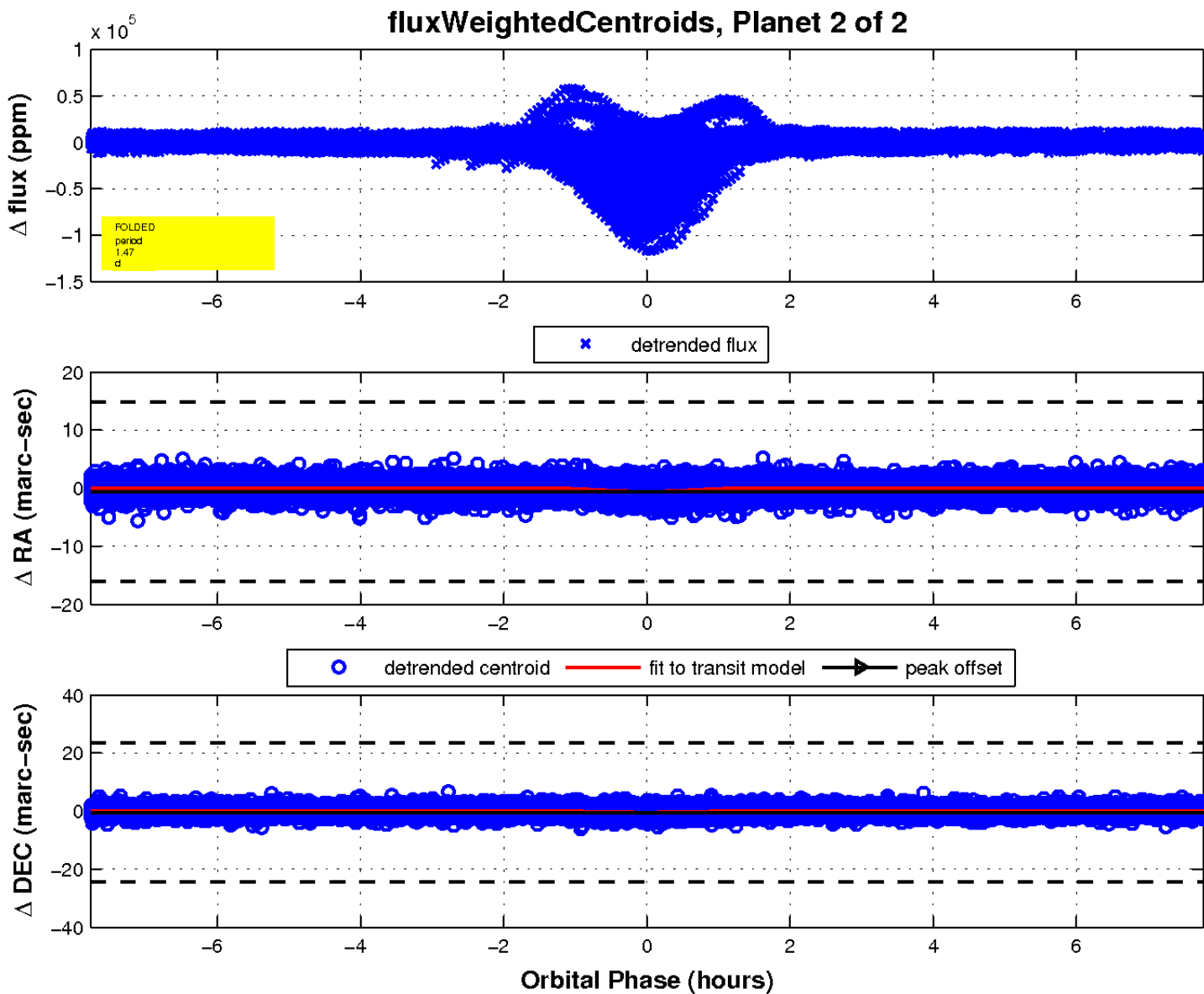
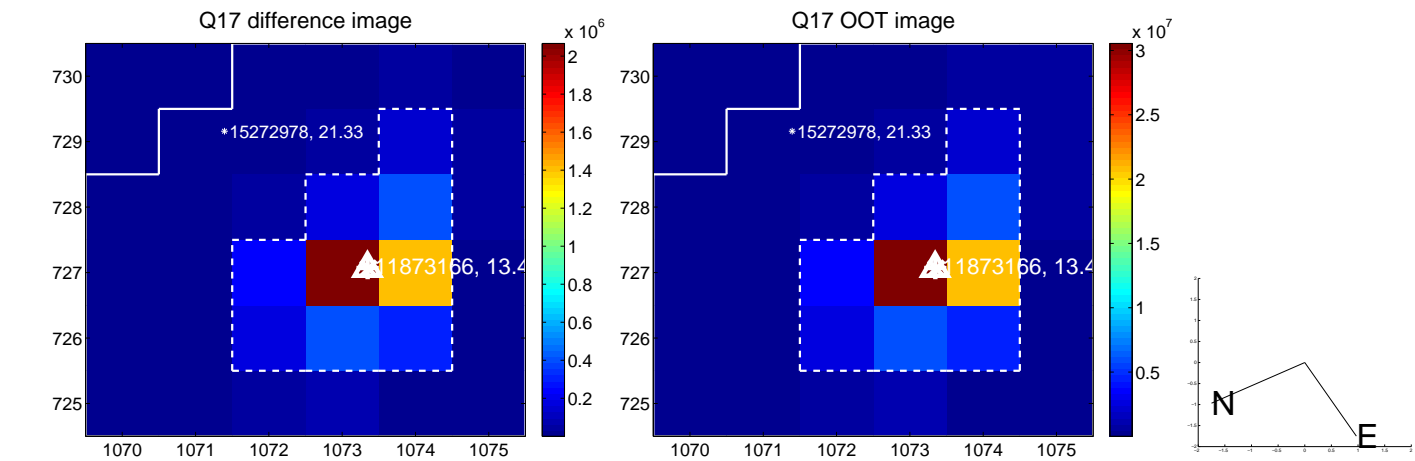
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

