

KIC 003241248

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})
003241248-01	OBS	4141.01	0.978033	131.693688	72.8	1.300	11.5	12.6	4.57	5100	4.74	23187.35
003241248-02	OBS	No	0.978047	132.178010	75.3	1.313	11.4	13.4	4.57	5100	4.84	23186.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003241248-01	OBS	FP	0.00	1	0	1	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
003241248-02	OBS	FP	0.00	1	0	1	0	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.

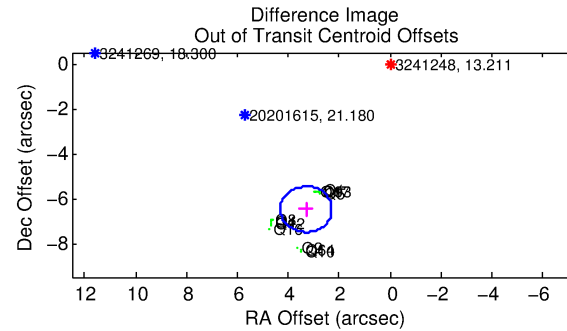
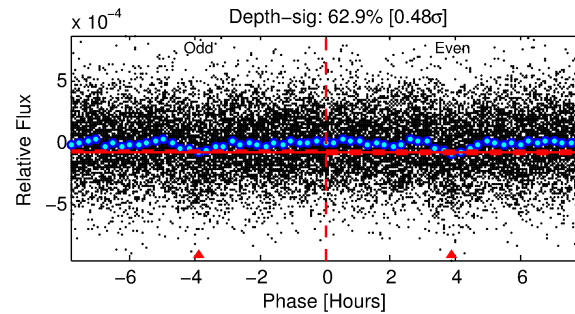
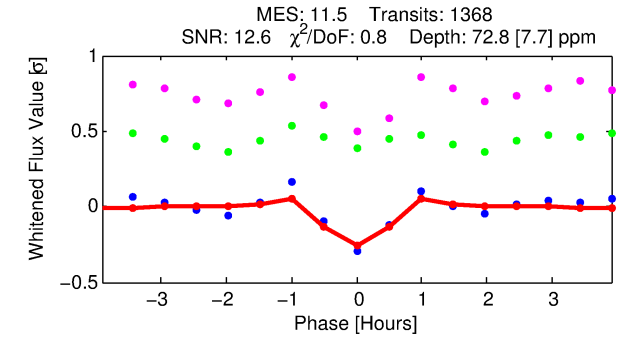
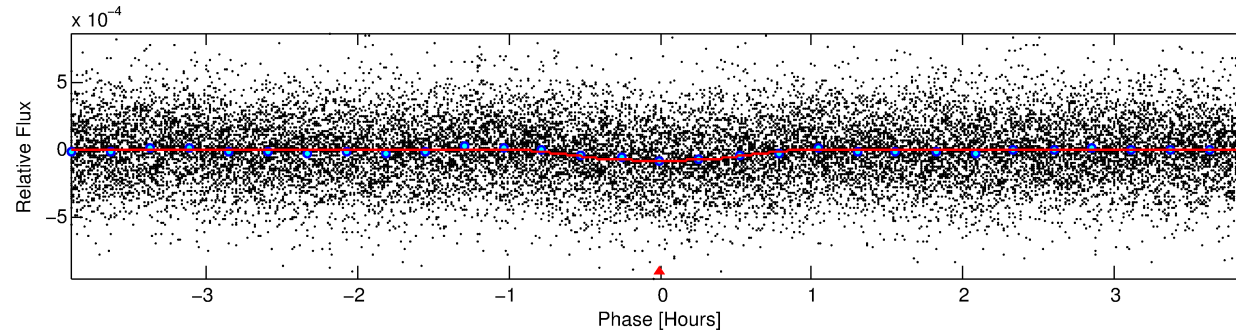
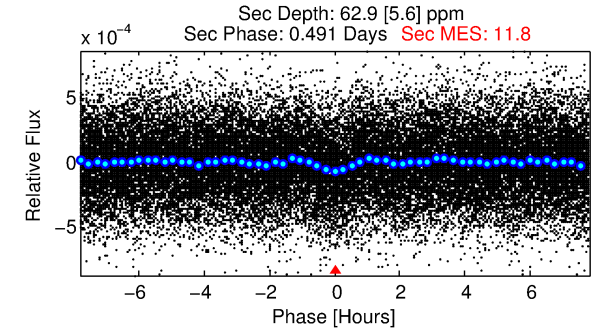
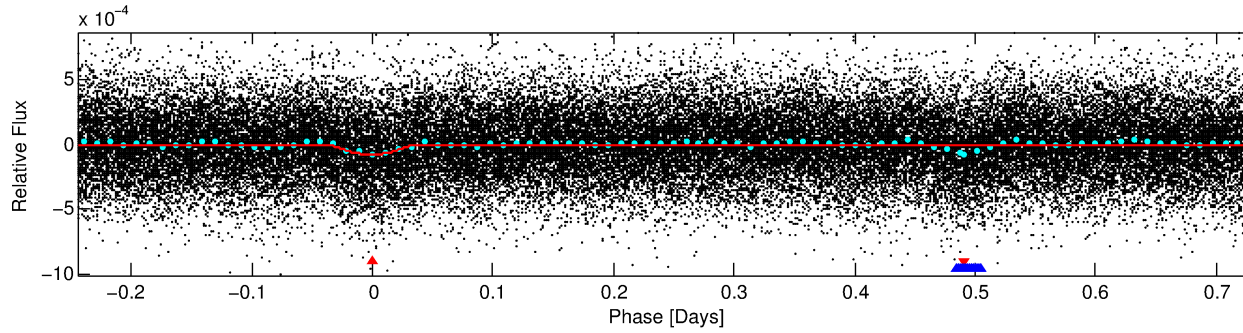
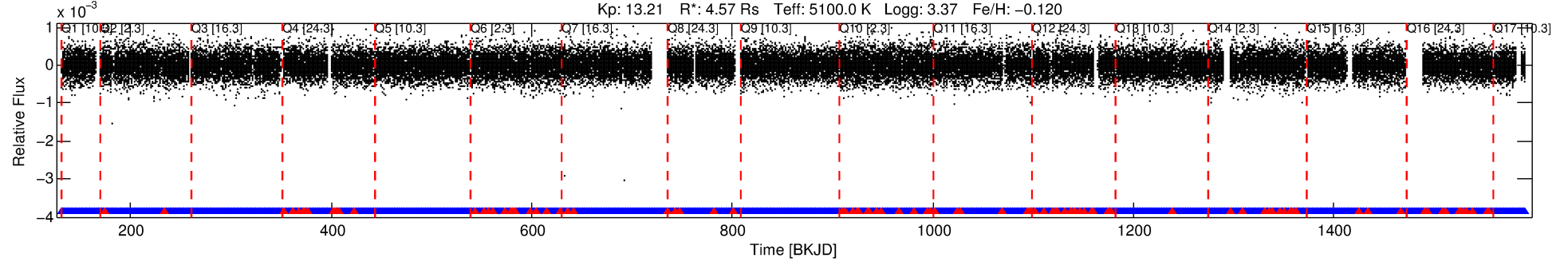
Ephemeris Match Information For 003241248-01

No Significant Match Found

DV One-Page Summary

KIC: 3241248 Candidate: 1 of 2 Period: 0.978 d
KOI: K04141 Corr: No Ephemeris Match

Kp: 13.21 R*: 4.57 Rs Teff: 5100.0 K Logg: 3.37 Fe/H: -0.120



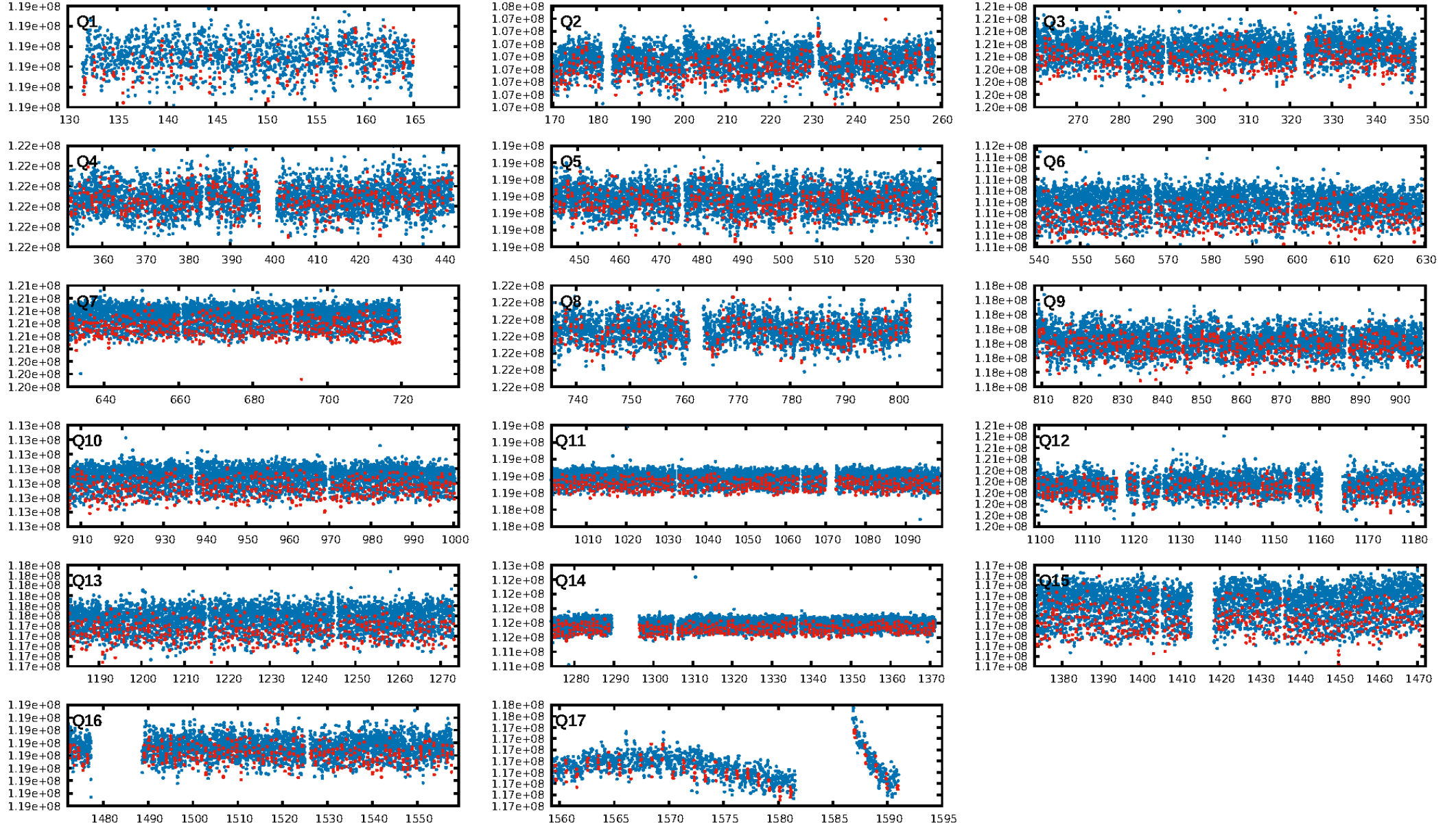
DV Fit Results:

Period = 0.97803 [0.00001] d
Epoch = 131.6937 [0.0013] BKJD
Rp/R* = 0.0095 [0.0049]
a/R* = 2.80 [5.18]
b = 0.90 [0.47]
Seff = 23187.35 [15230.11]
Teff = 3147 [517] K
Rp = 4.74 [3.26] Re
a = 0.0234 [0.0098] AU
Ag = 0.84 [1.02] [-0.16σ]
Teffp = 4659 [1203] K [1.16σ]

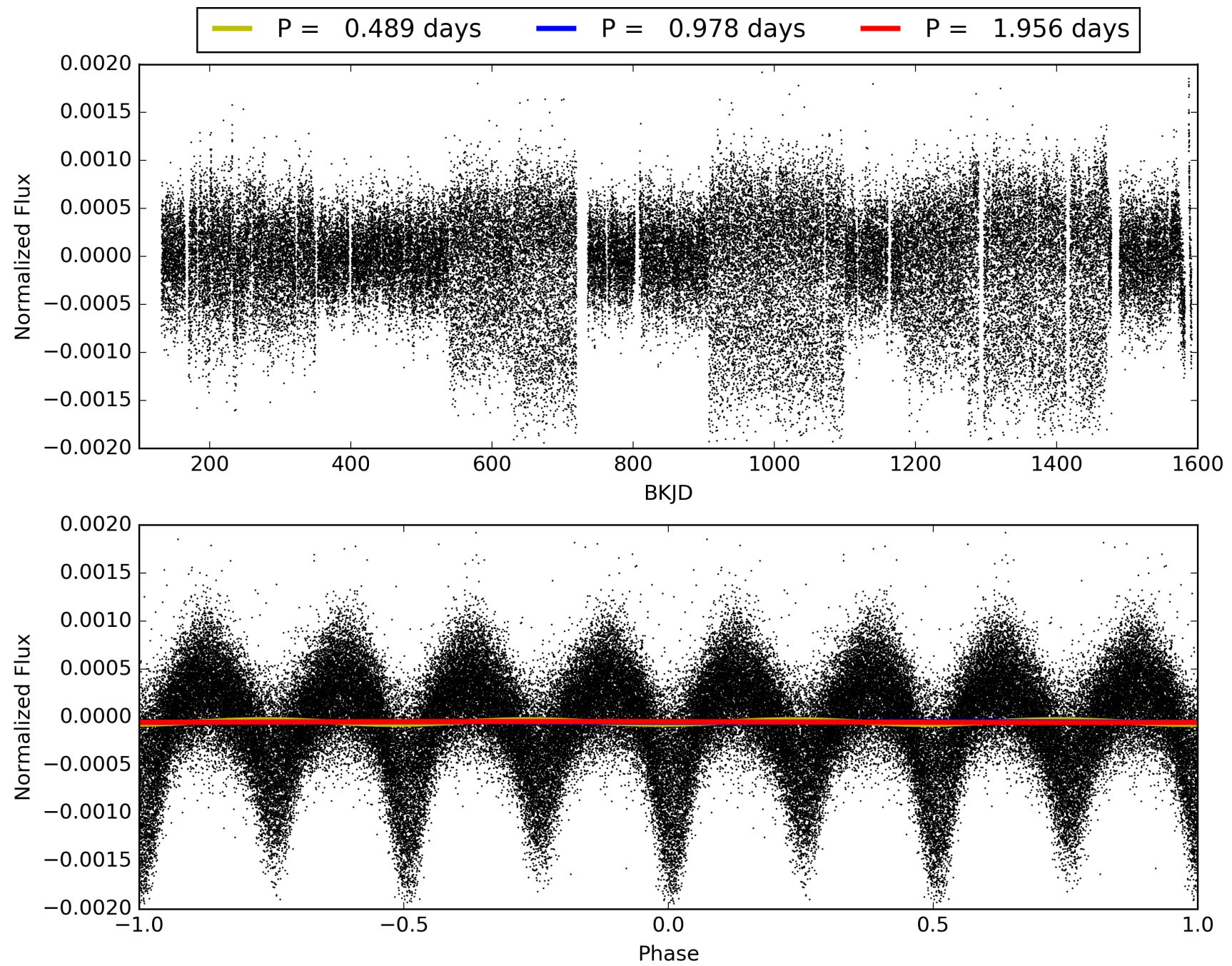
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.87e-32
RollingBand-fgt: 0.92 [1205/1305]
GhostDiagnostic-chr: -0.2448
Centroid-sig: 0.0%
Centroid-so: 6.134 arcsec [12.38σ]
OotOffset-rm: 7.282 arcsec [21.52σ]
KicOffset-rm: 7.308 arcsec [22.64σ]
OotOffset-st: 4/0/4/5 [13]
KicOffset-st: 4/0/4/5 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003241248-01, PDC Light Curves

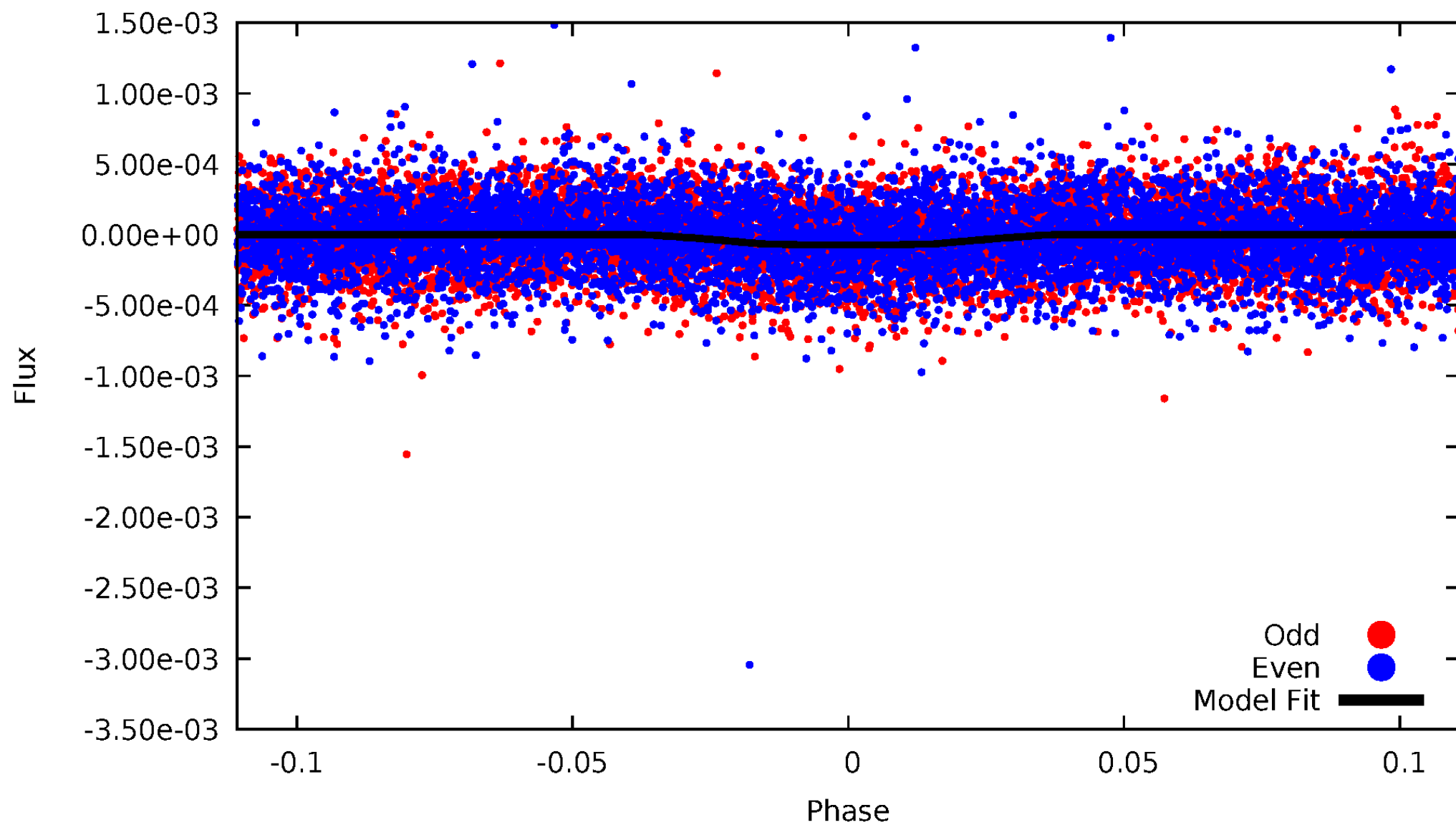


TCE 003241248-01



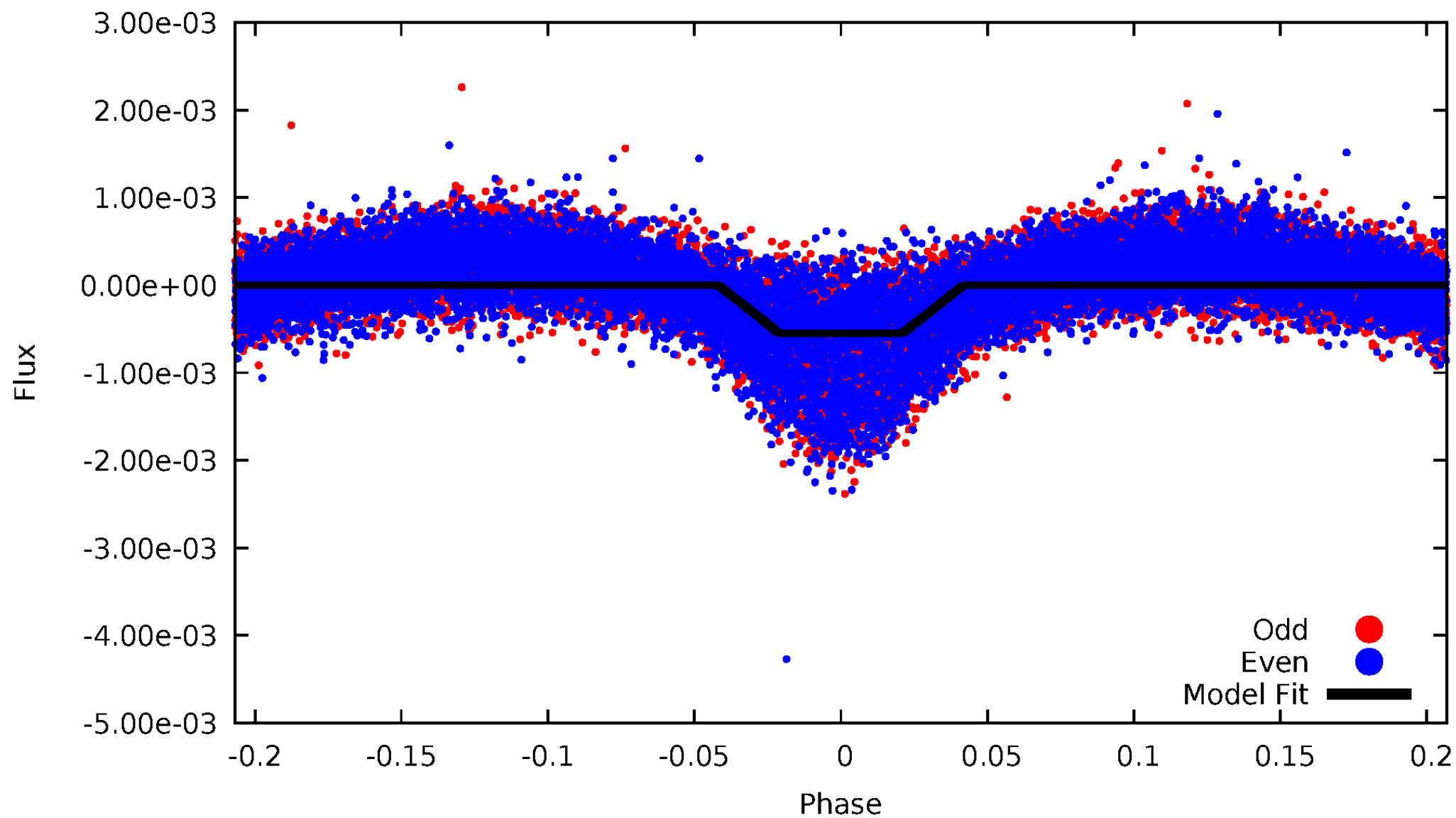
DV Odd/Even

TCE 003241248-01



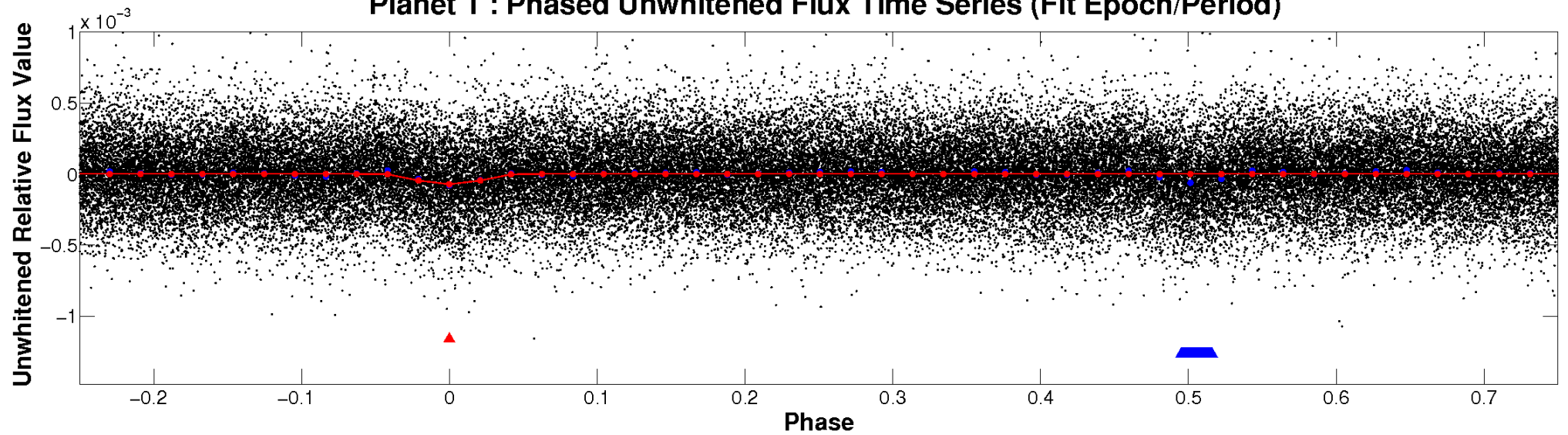
ALT Odd/Even

TCE 003241248-01

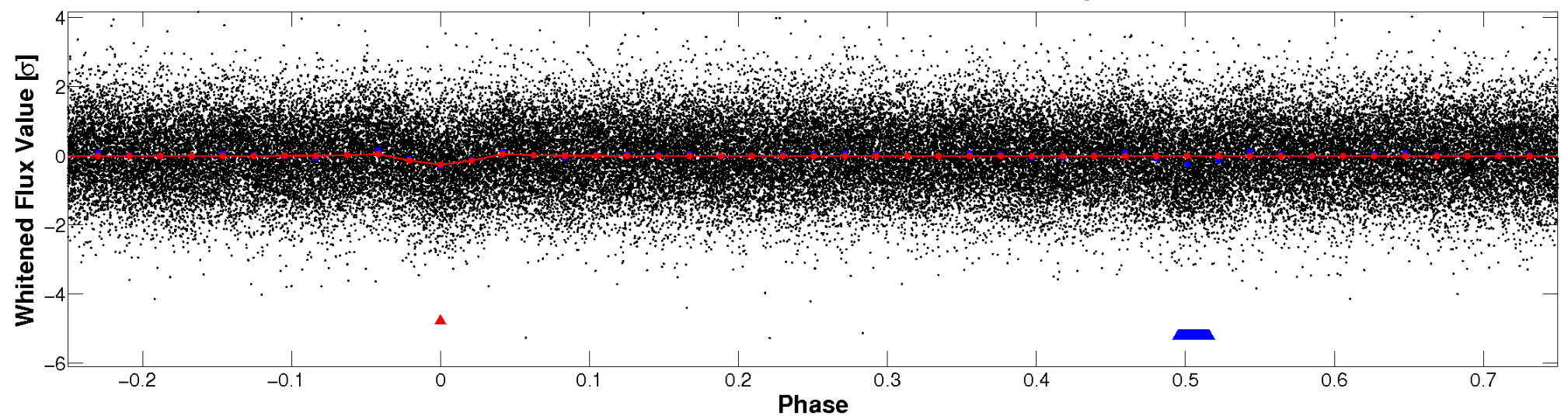


Non-Whitened Vs. Whitened Light Curve

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

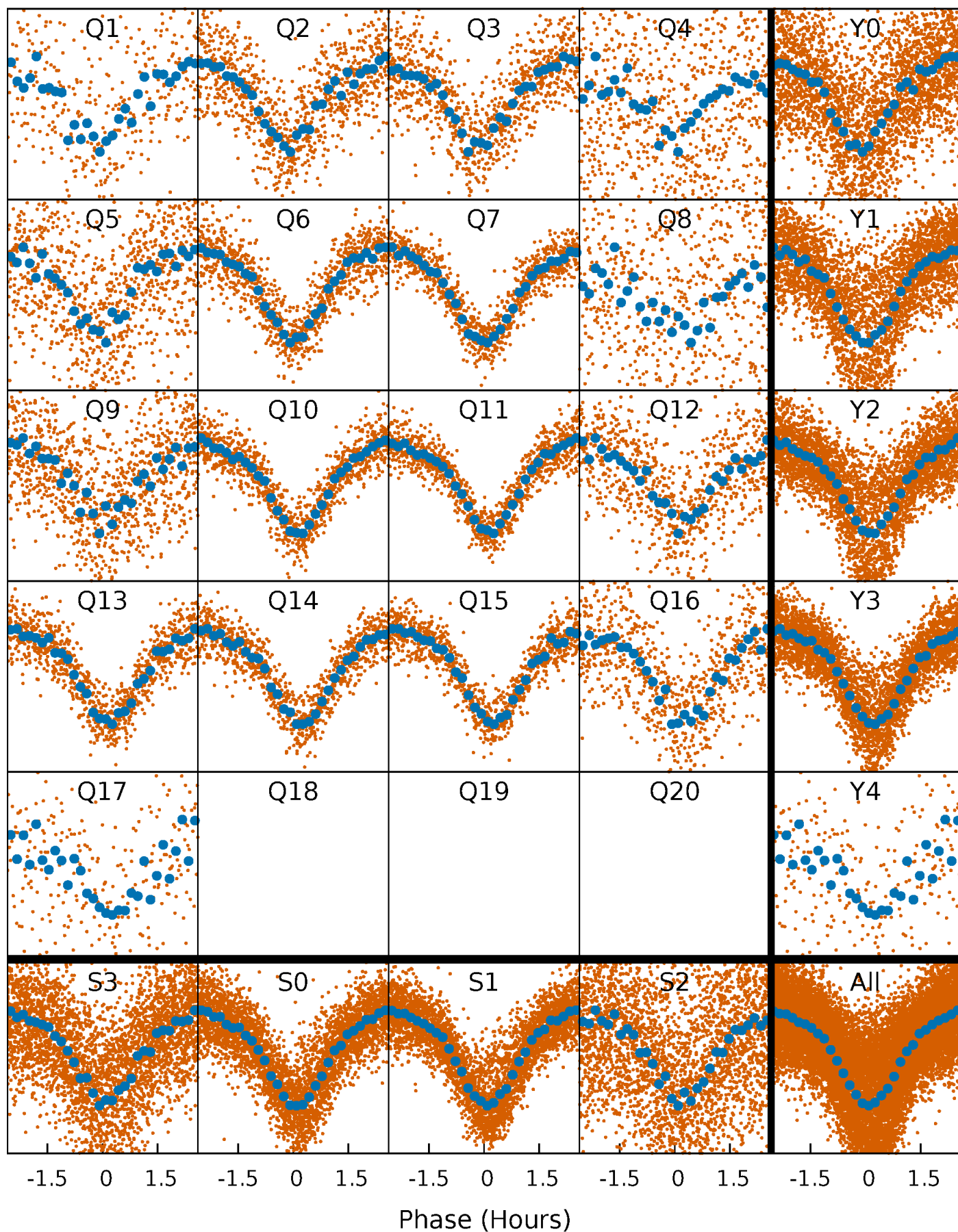


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



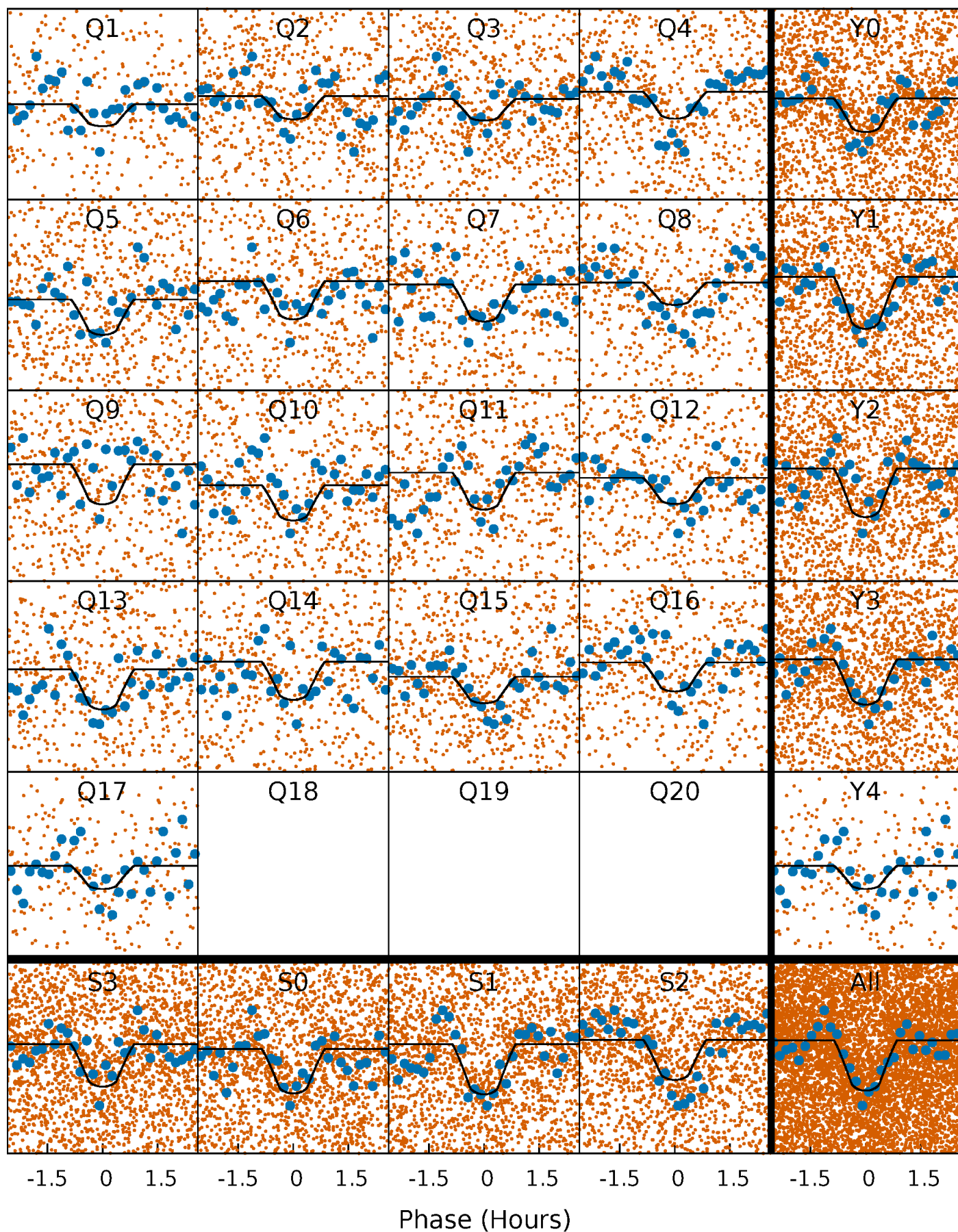
PDC Quarter-Phased Transit Curves

TCE 003241248-01 P= 0.978033 Days $T_0=131.693688$ (BKJD)



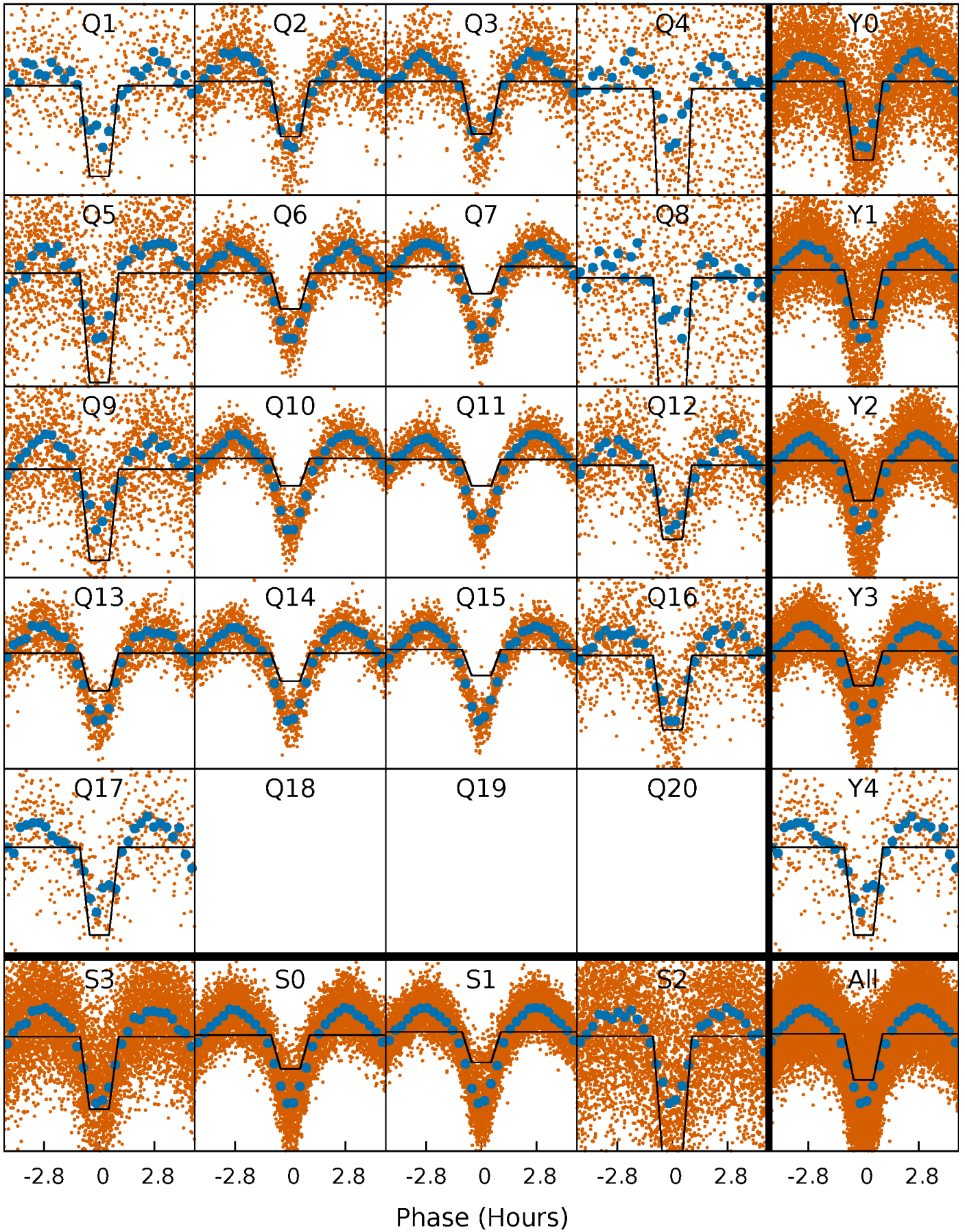
DV Quarter-Phased Transit Curves

TCE 003241248-01 P= 0.978033 Days $T_0=131.693688$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

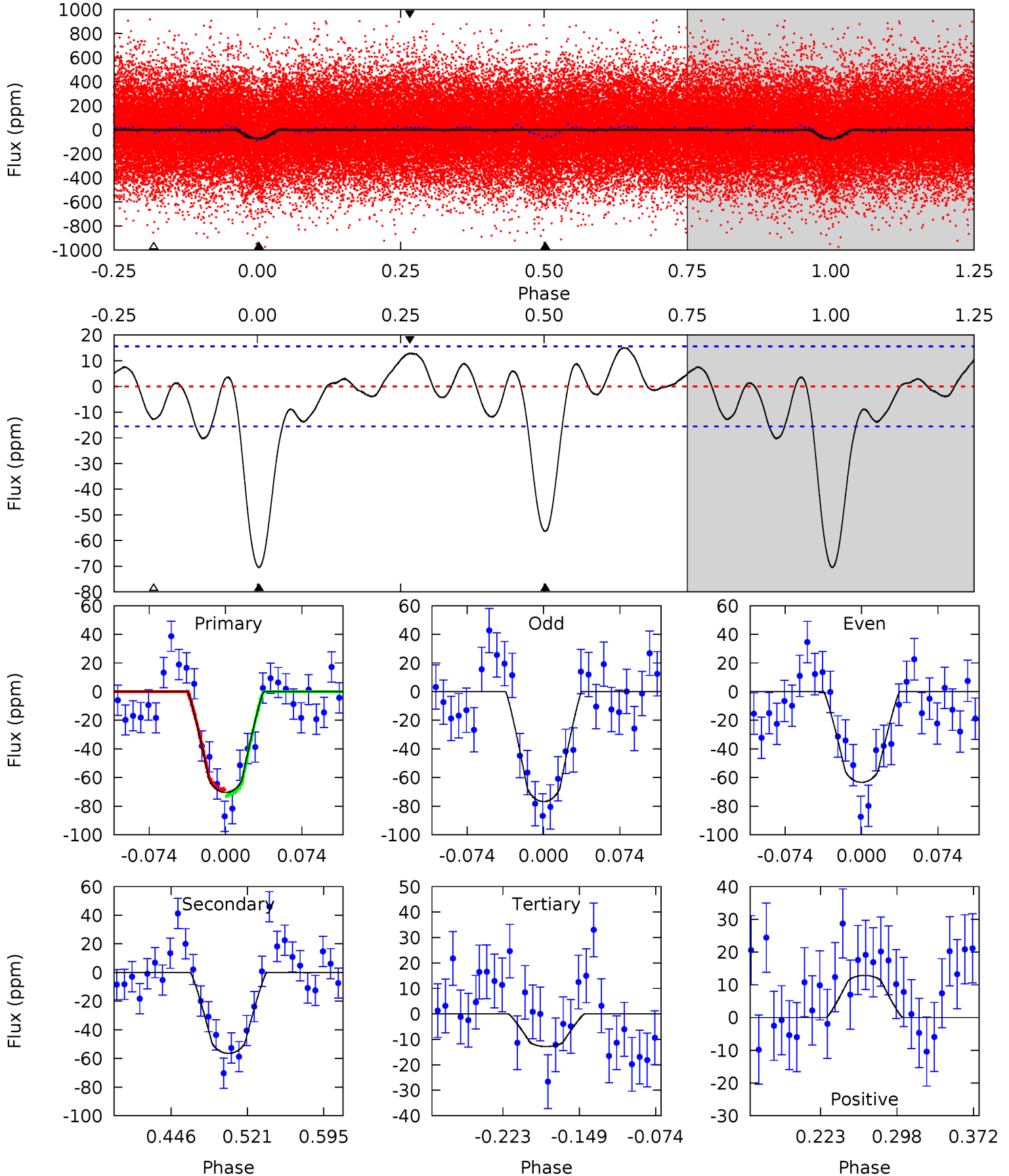
TCE 003241248-01 P= 0.978048 Days $T_0=131.686057$ (BKJD)



DV Model-Shift Uniqueness Test

003241248-01, P = 0.978033 Days, E = 130.715655 Days

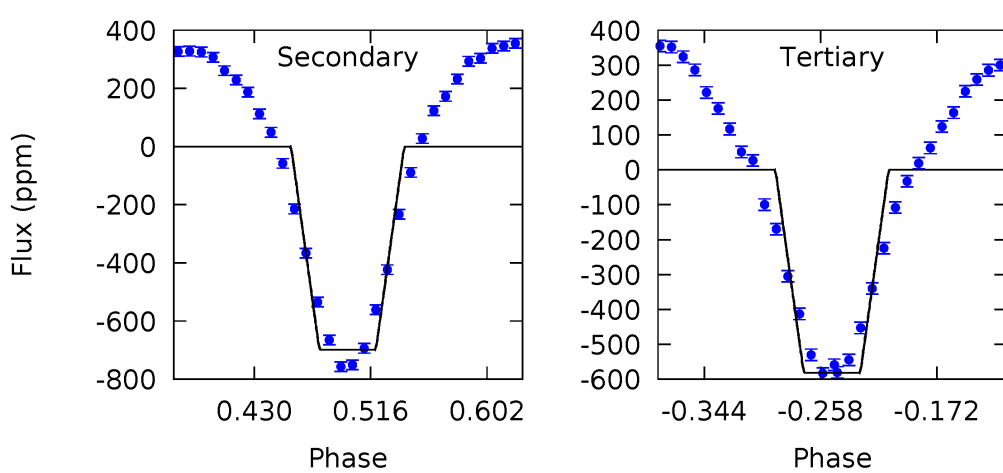
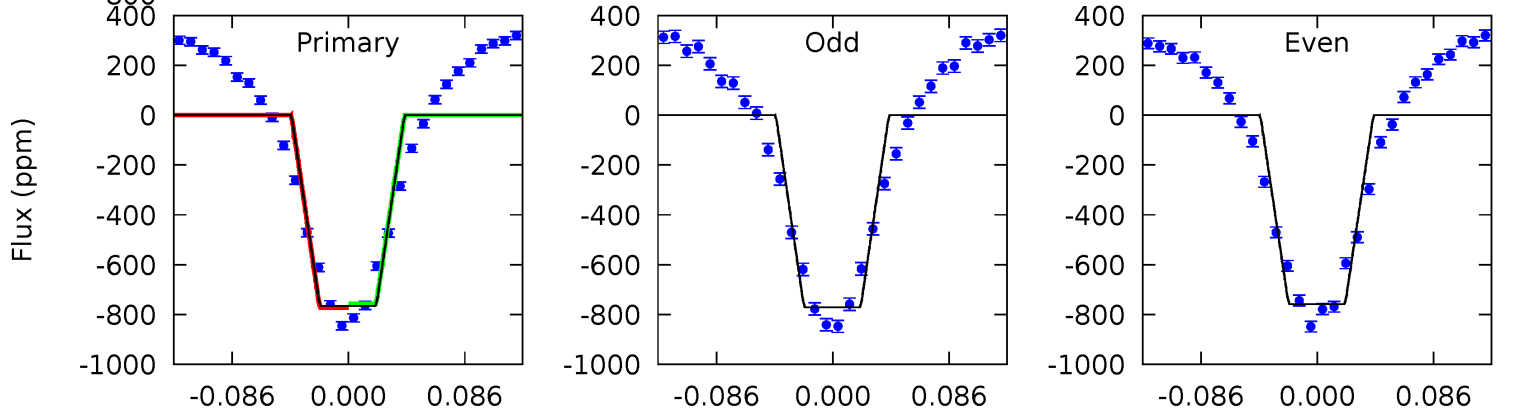
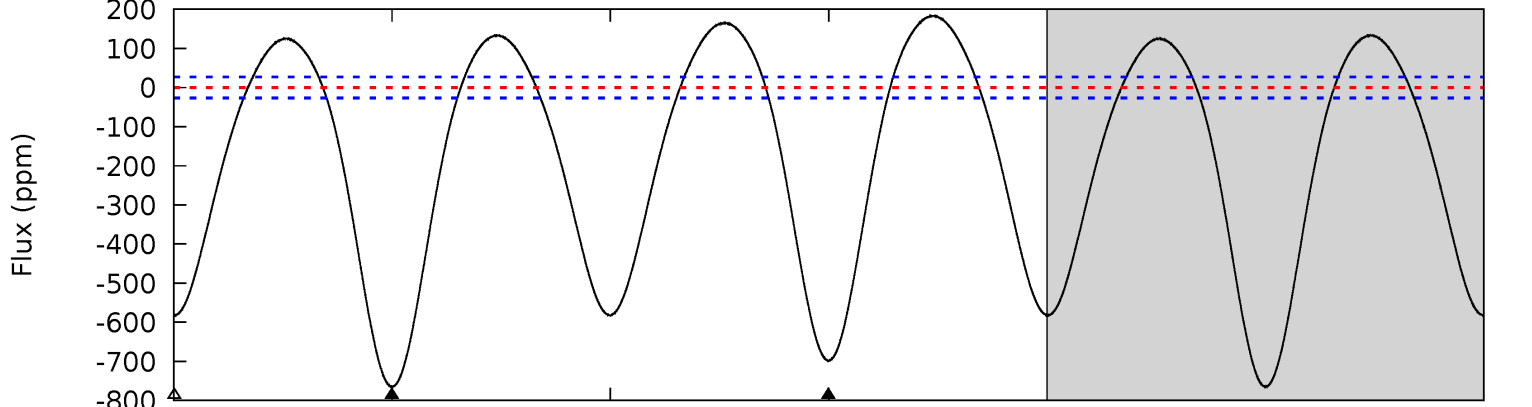
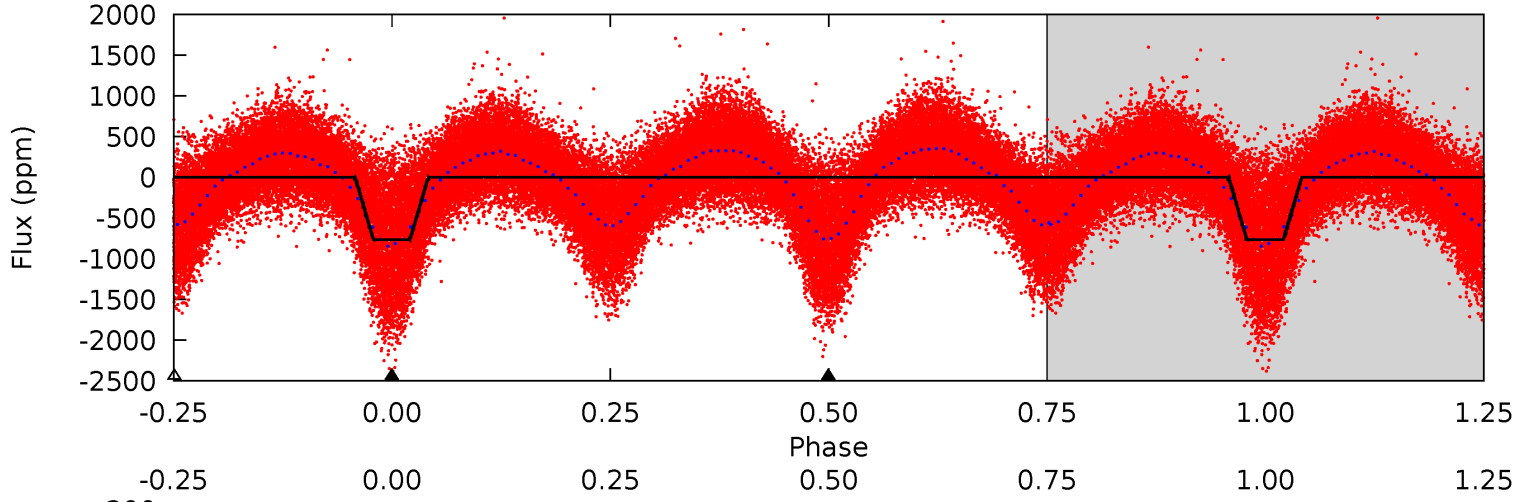
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.9	16.8	3.81	3.82	4.63	1.78	2.37	17.1	17.1	12.9	12.9	2.00	1.08	0.18	0.53



Alt Model-Shift Uniqueness Test

003241248-01, P = 0.978048 Days, E = 130.708009 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
131.1	119.7	99.8	0	4.60	1.72	43.6	31.3	131.1	19.9	119.7	1.17	1.06	0.19	1.44



Stellar Parameters For KIC 003241248

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5100^{+123}_{-138}	$3.368^{+0.372}_{-0.248}$	$-0.120^{+0.250}_{-0.300}$	$4.569^{+1.398}_{-2.097}$	$1.778^{+0.201}_{-0.806}$	$0.026^{+0.087}_{-0.014}$
	+2%/-3%	+11%/-7%	+208%/-250%	+31%/-46%	+11%/-45%	+330%/-53%
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 003241248-01 / KOI 4141.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-56 ± 3	$4.80^{+2.44}_{-2.52}$	4374^{+454}_{-502}	4025^{+1807}_{-2043}	$0.701^{+2.501}_{-0.400}$
Alt.	-698 ± 6	$11.29^{+4.01}_{-3.02}$	4427^{+393}_{-507}	5084^{+717}_{-559}	$1.564^{+1.360}_{-0.679}$

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

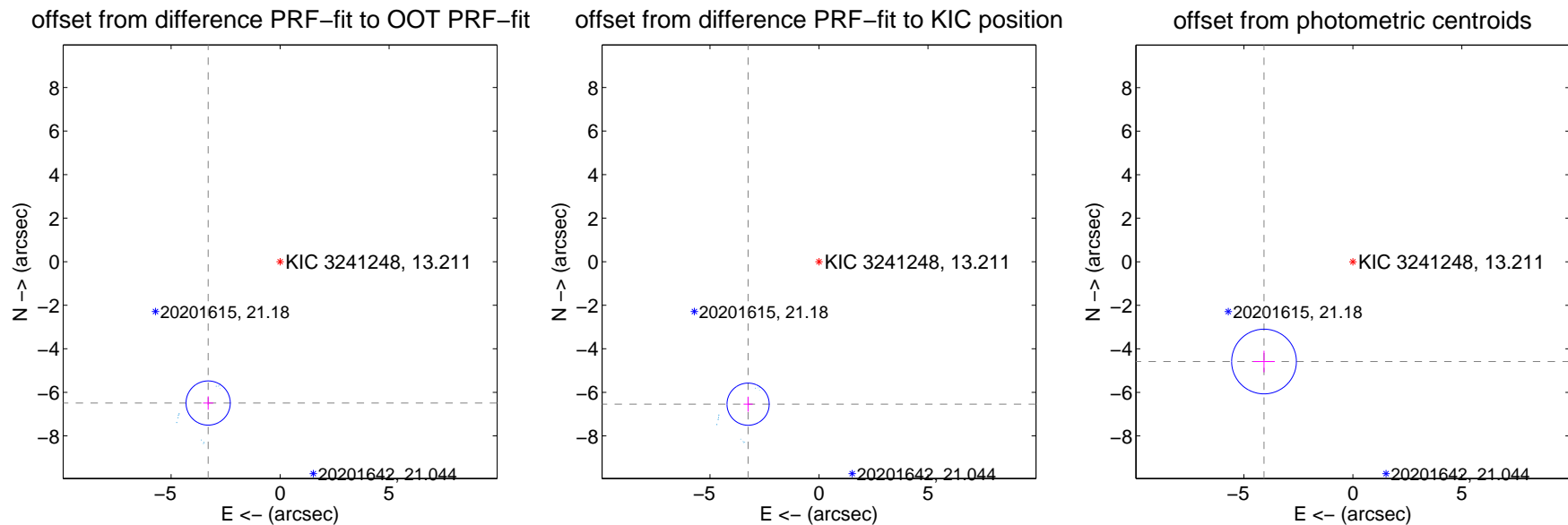
DV Centroid Data

Supplemental centroid analysis for 003241248-01. Kepler magnitude: 13.21. Transit SNR 12.58

There are 13 quarters with good PRF difference image offsets

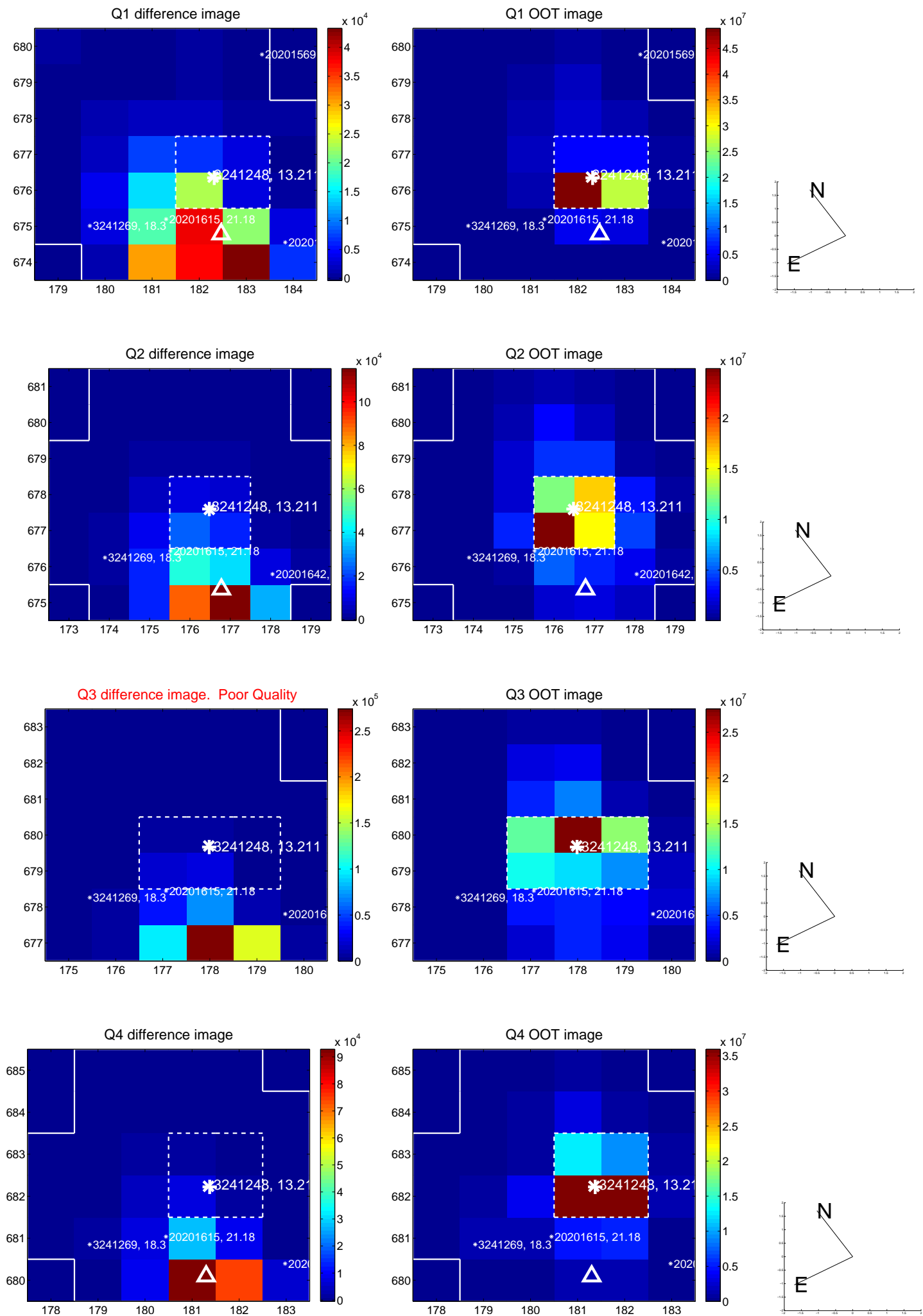
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.282 \pm 0.338	21.52	3.302 \pm 0.230	-6.490 \pm 0.305
PRF-fit source offset from KIC position	7.308 \pm 0.323	22.64	3.254 \pm 0.210	-6.544 \pm 0.345
photometric centroid source offset	6.13 \pm 0.50	12.38	4.08 \pm 0.49	-4.58 \pm 0.50

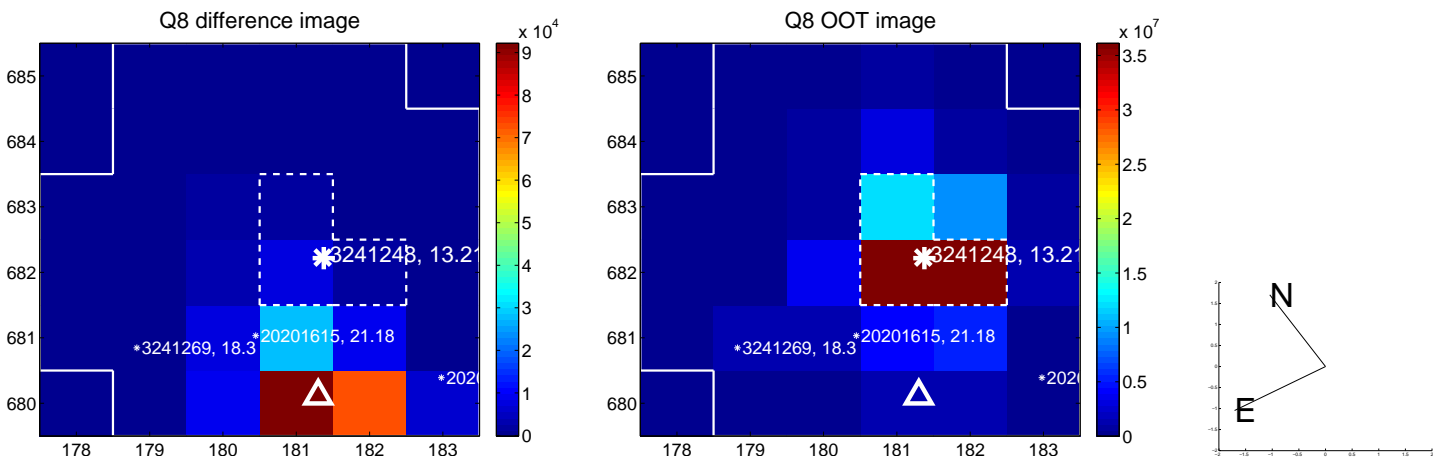
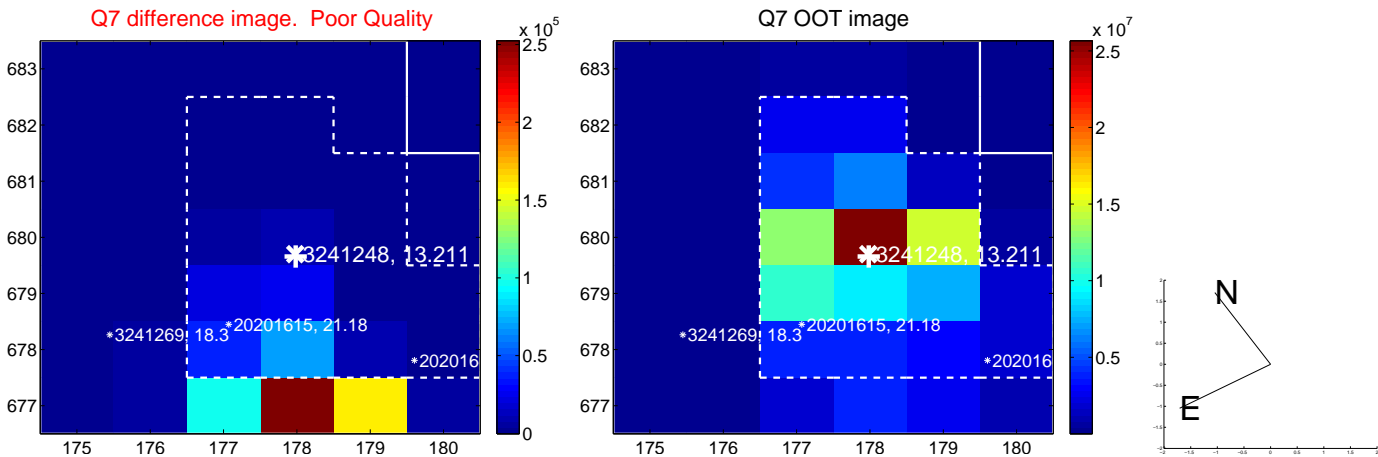
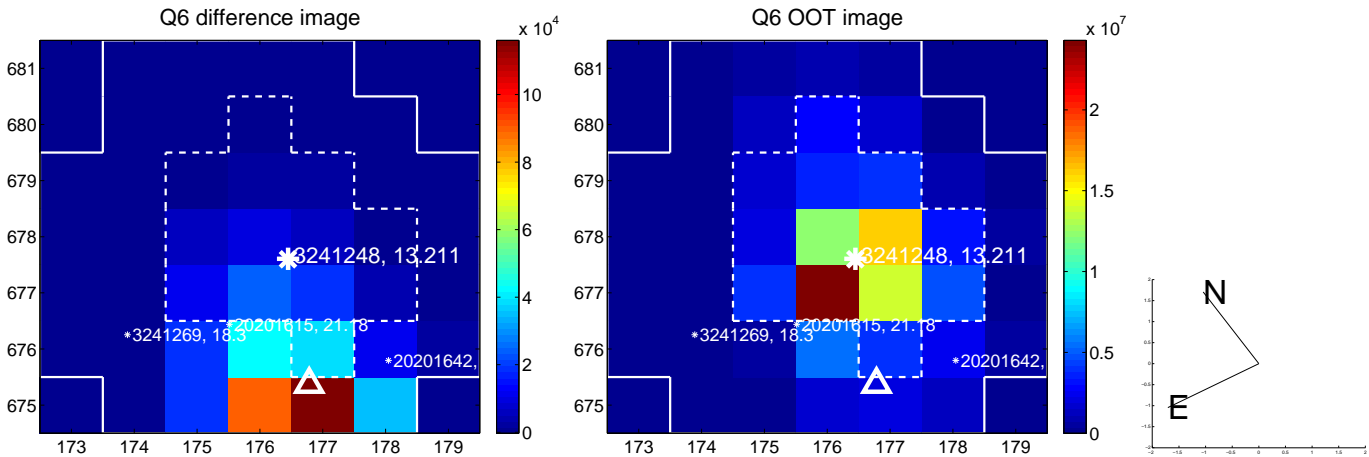
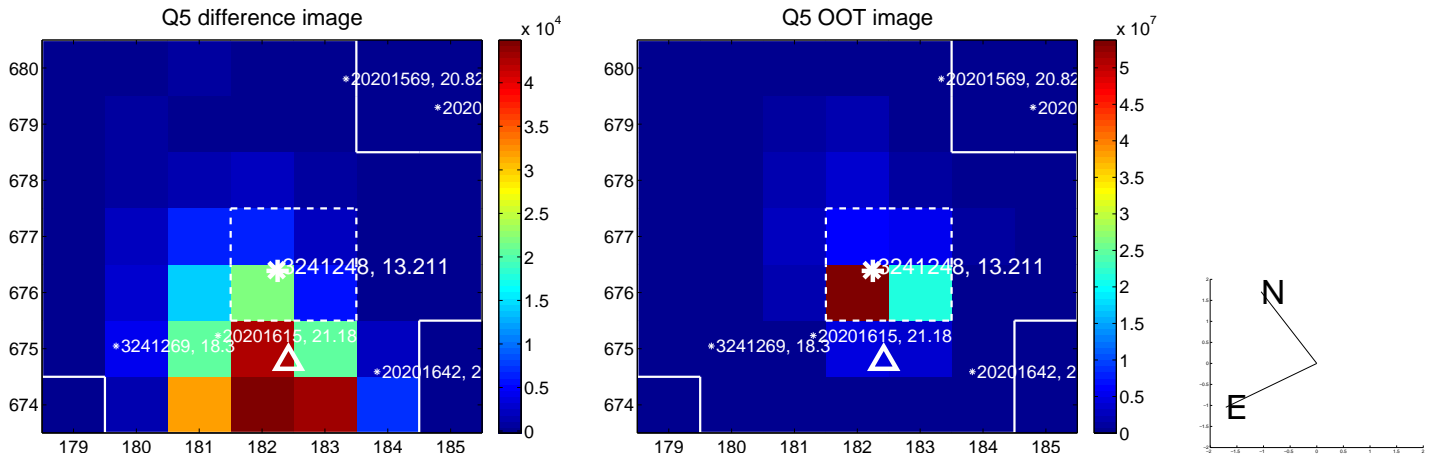


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

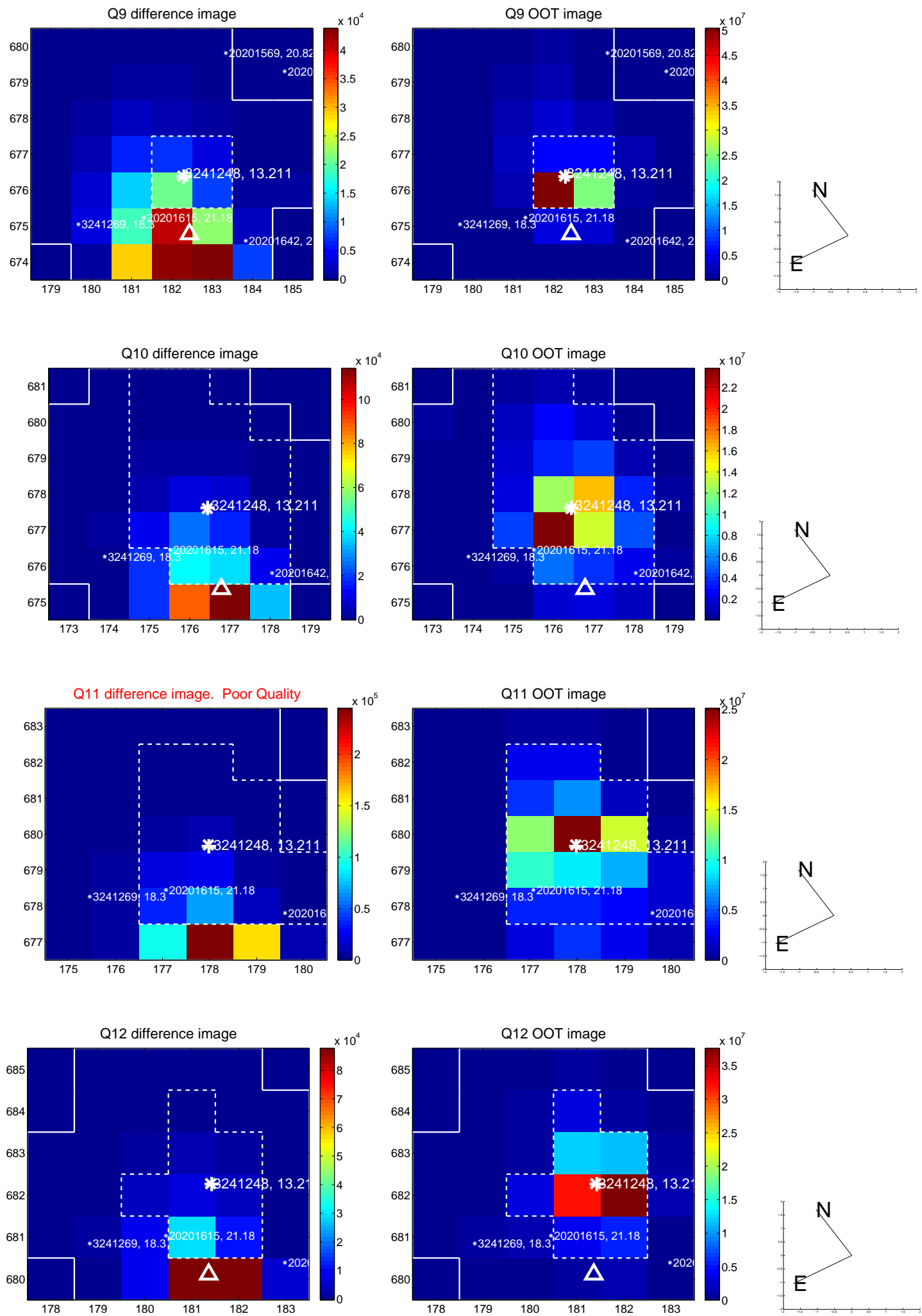
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



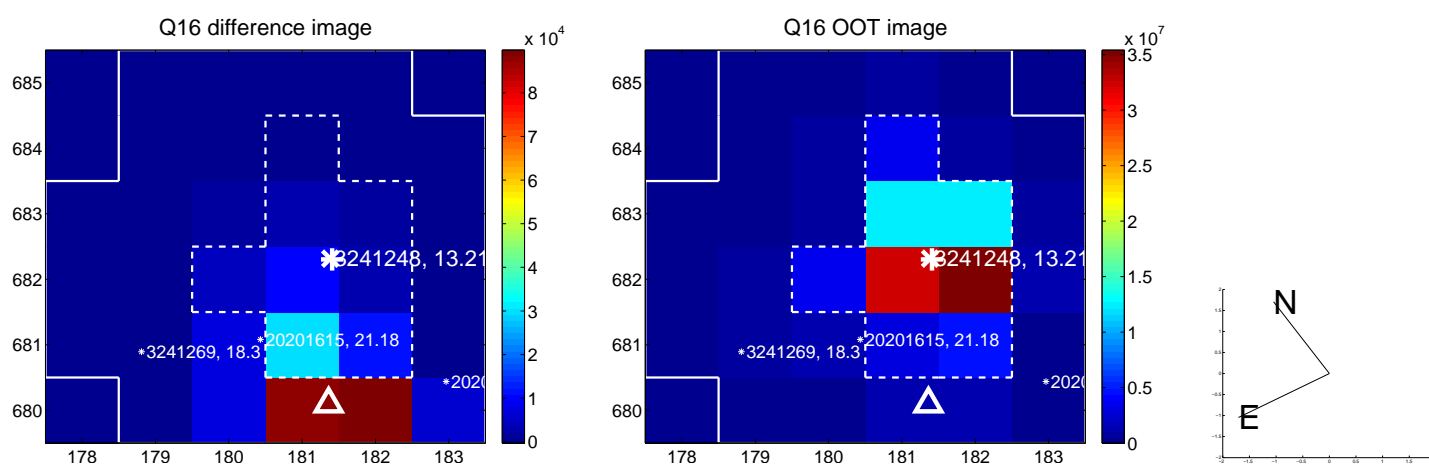
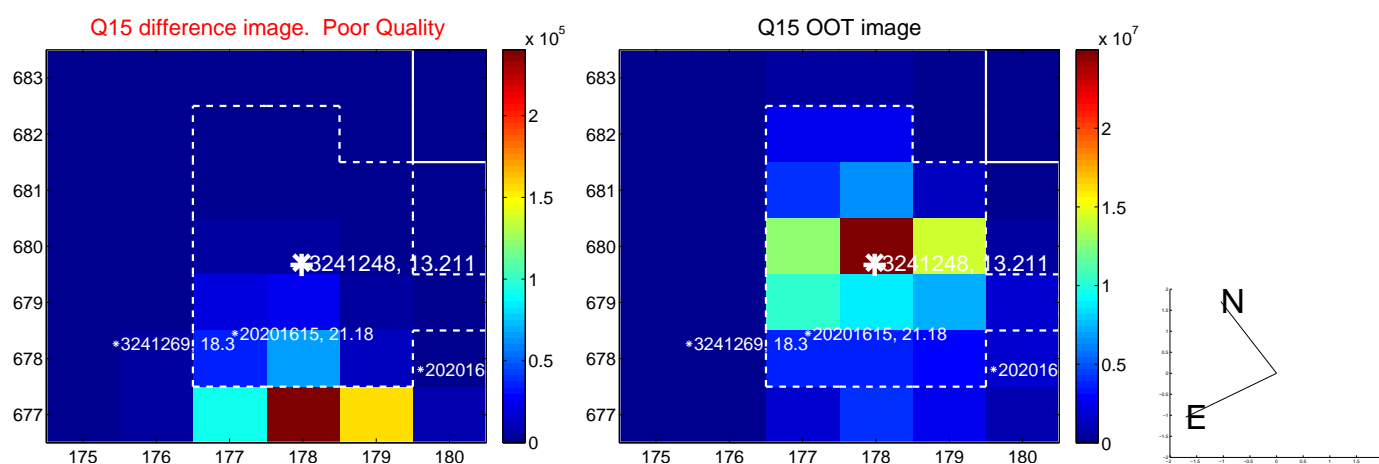
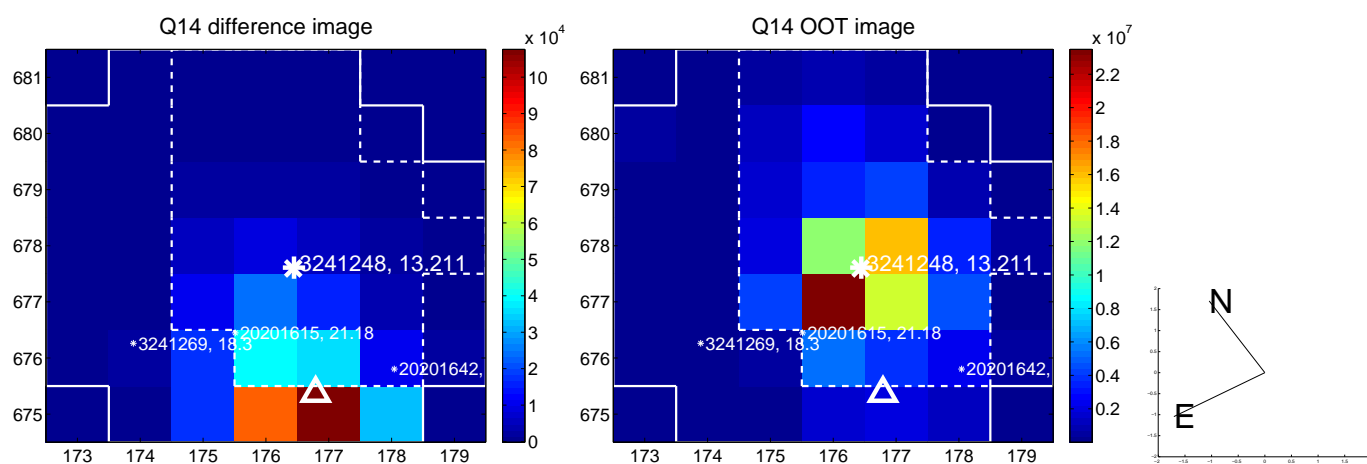
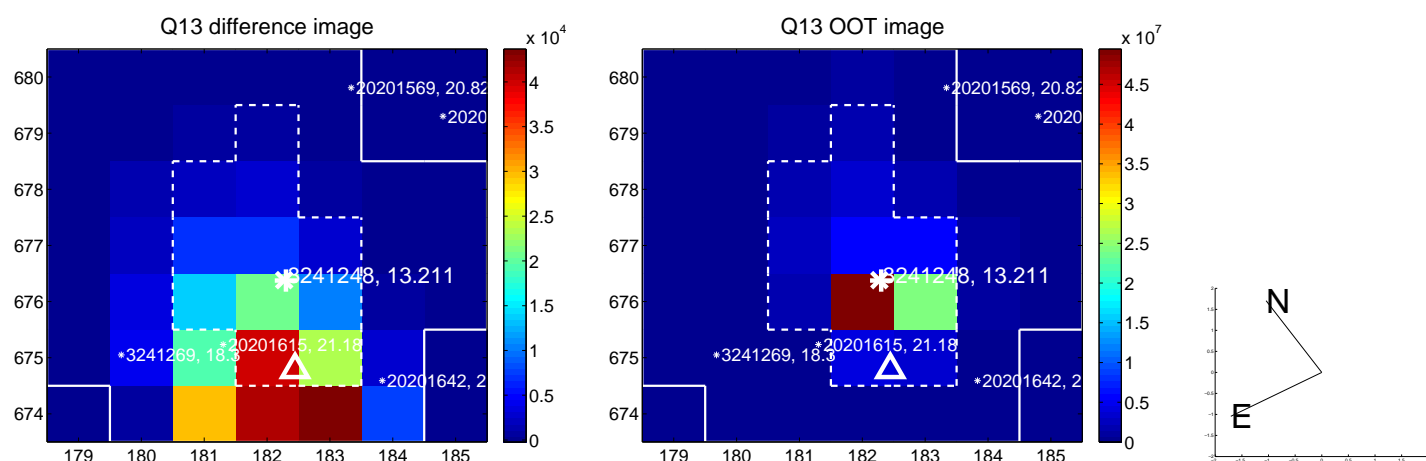
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



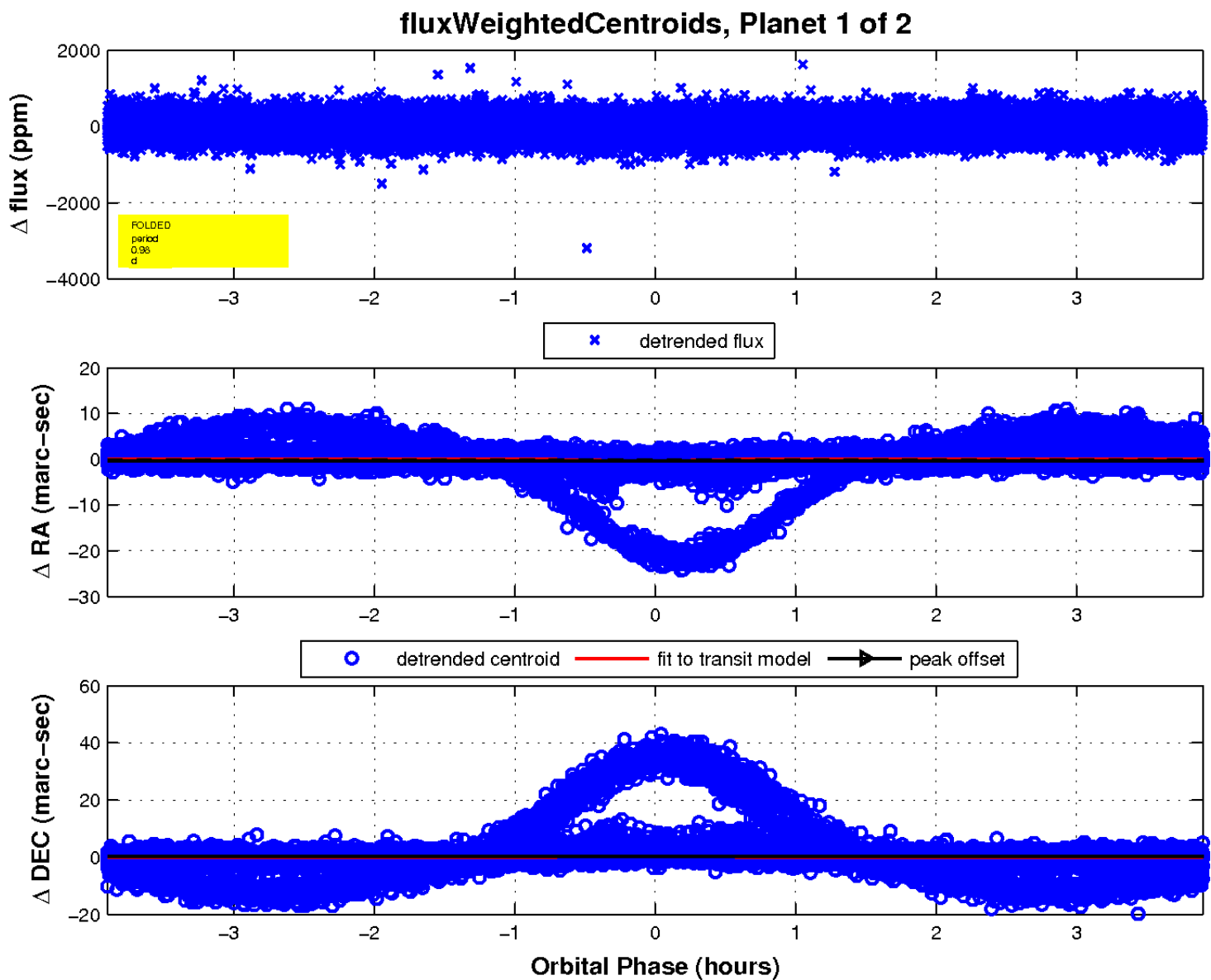
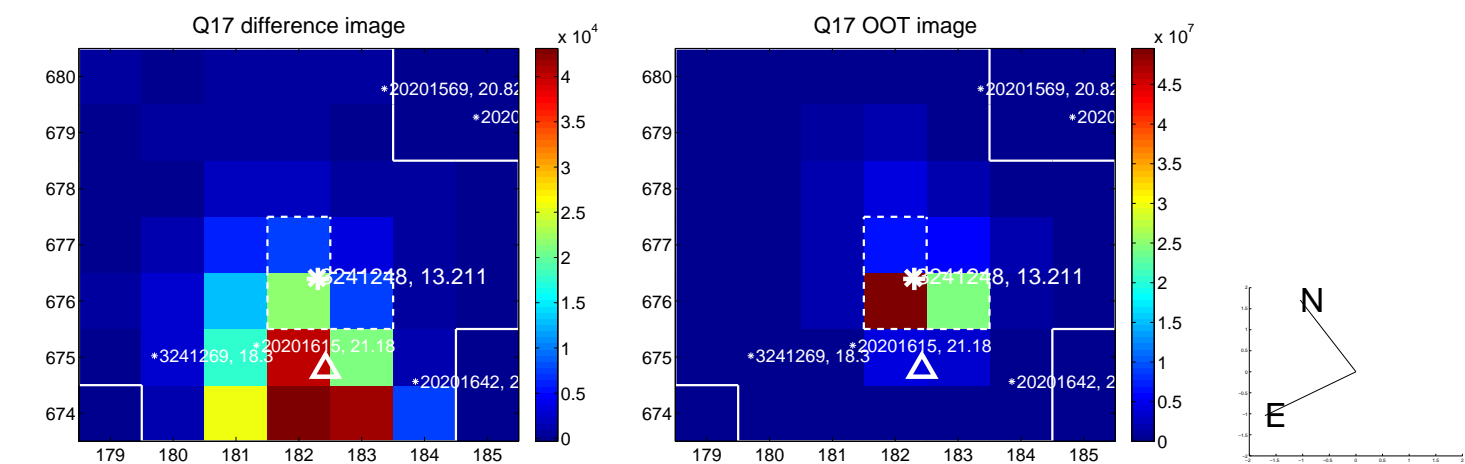
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

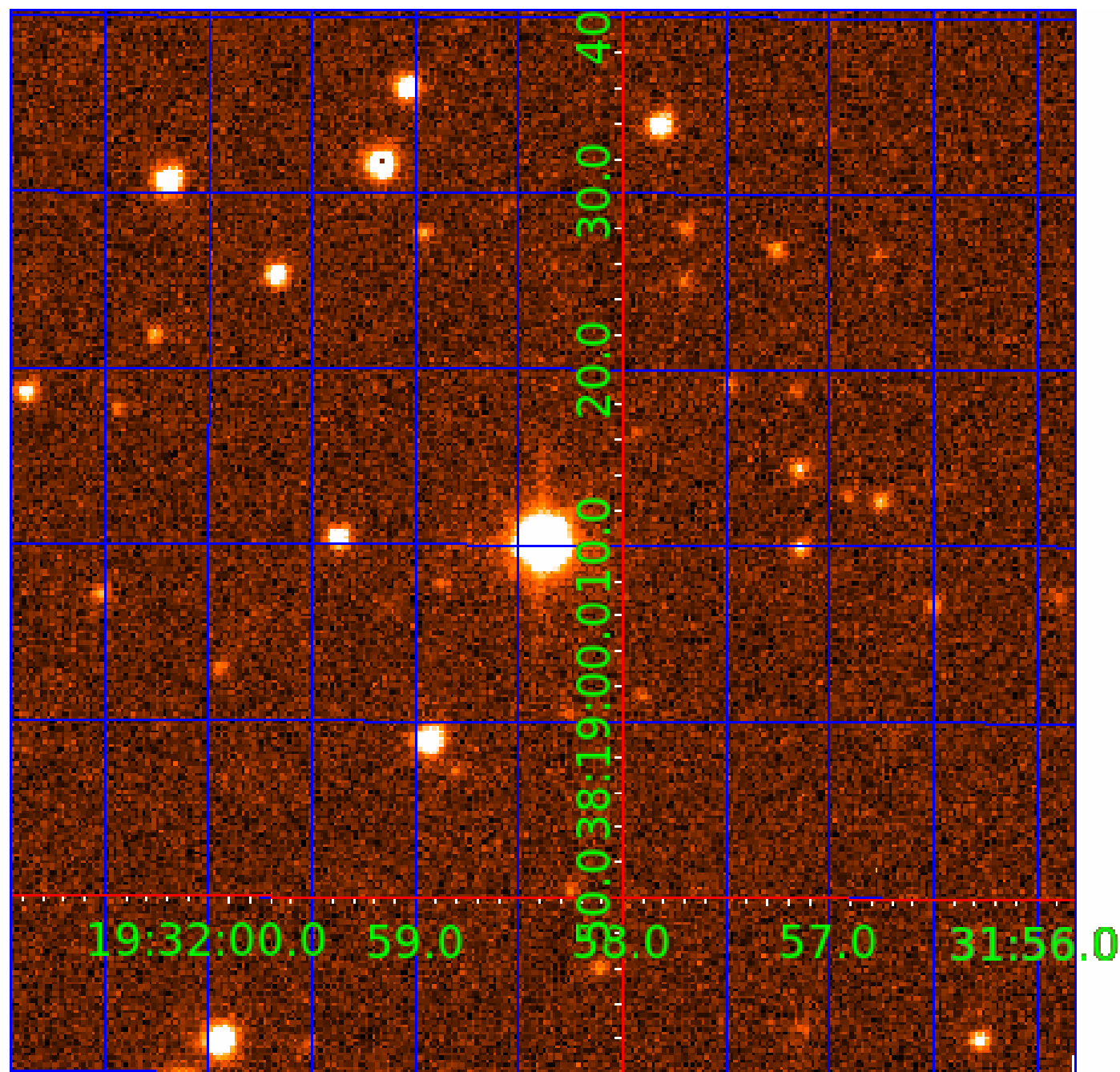


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003241248

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})
003241248-01	OBS	4141.01	0.978033	131.693688	72.8	1.300	11.5	12.6	4.57	5100	4.74	23187.35
003241248-02	OBS	No	0.978047	132.178010	75.3	1.313	11.4	13.4	4.57	5100	4.84	23186.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003241248-01	OBS	FP	0.00	1	0	1	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
003241248-02	OBS	FP	0.00	1	0	1	0	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.

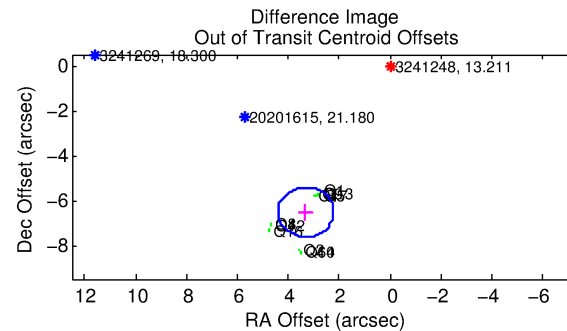
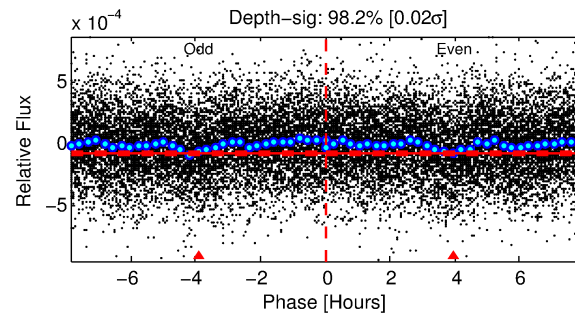
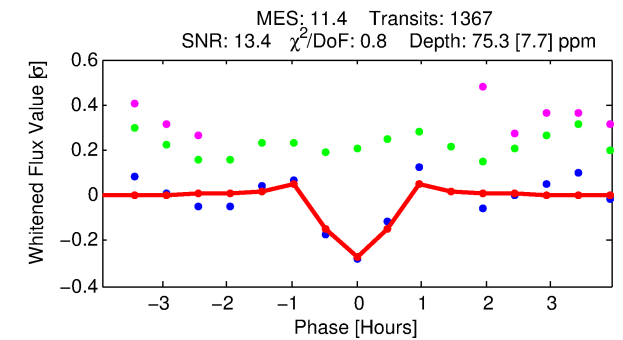
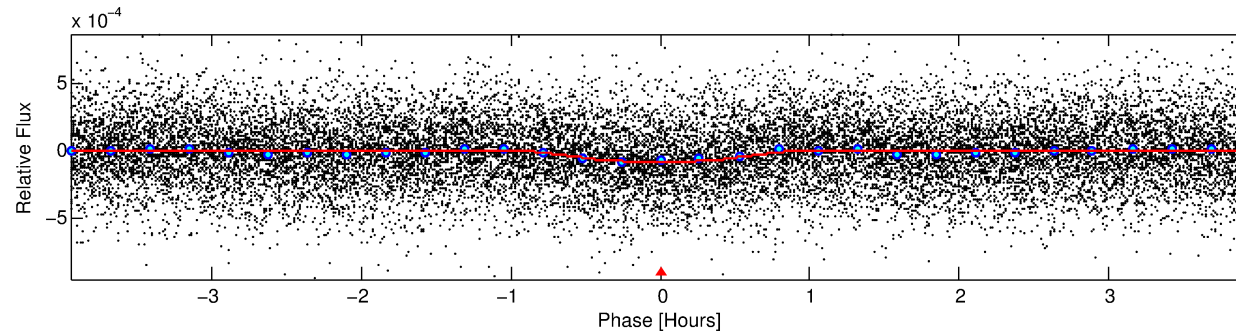
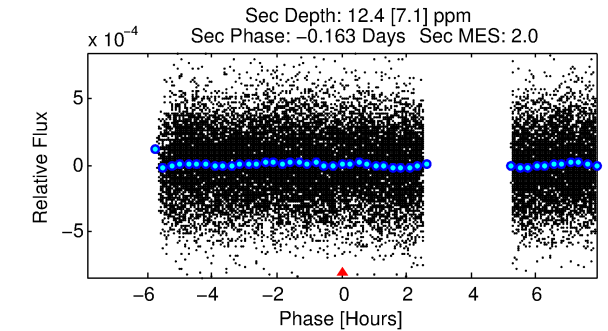
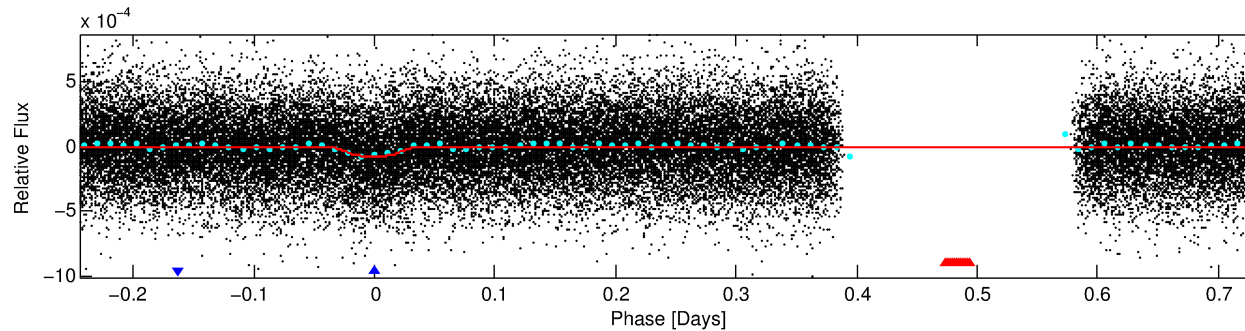
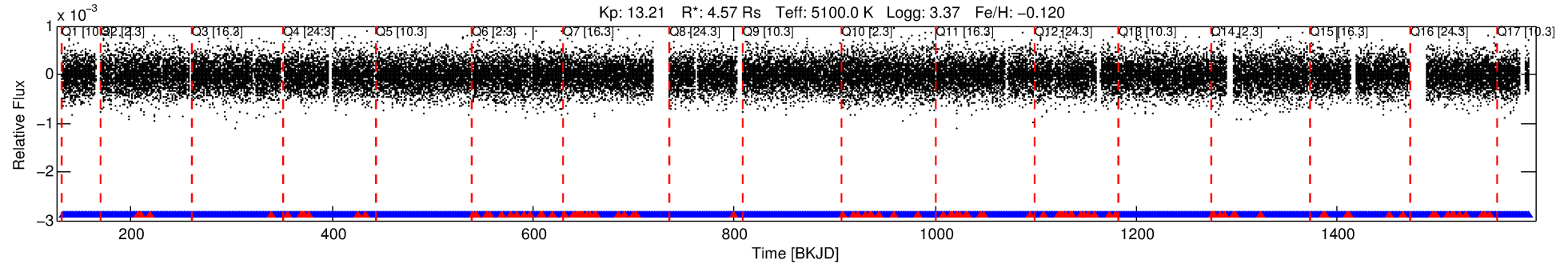
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003241248-02

No Significant Match Found

DV One-Page Summary

KIC: 3241248 Candidate: 2 of 2 Period: 0.978 d
KOI: K04141 Corr: No Ephemeris Match



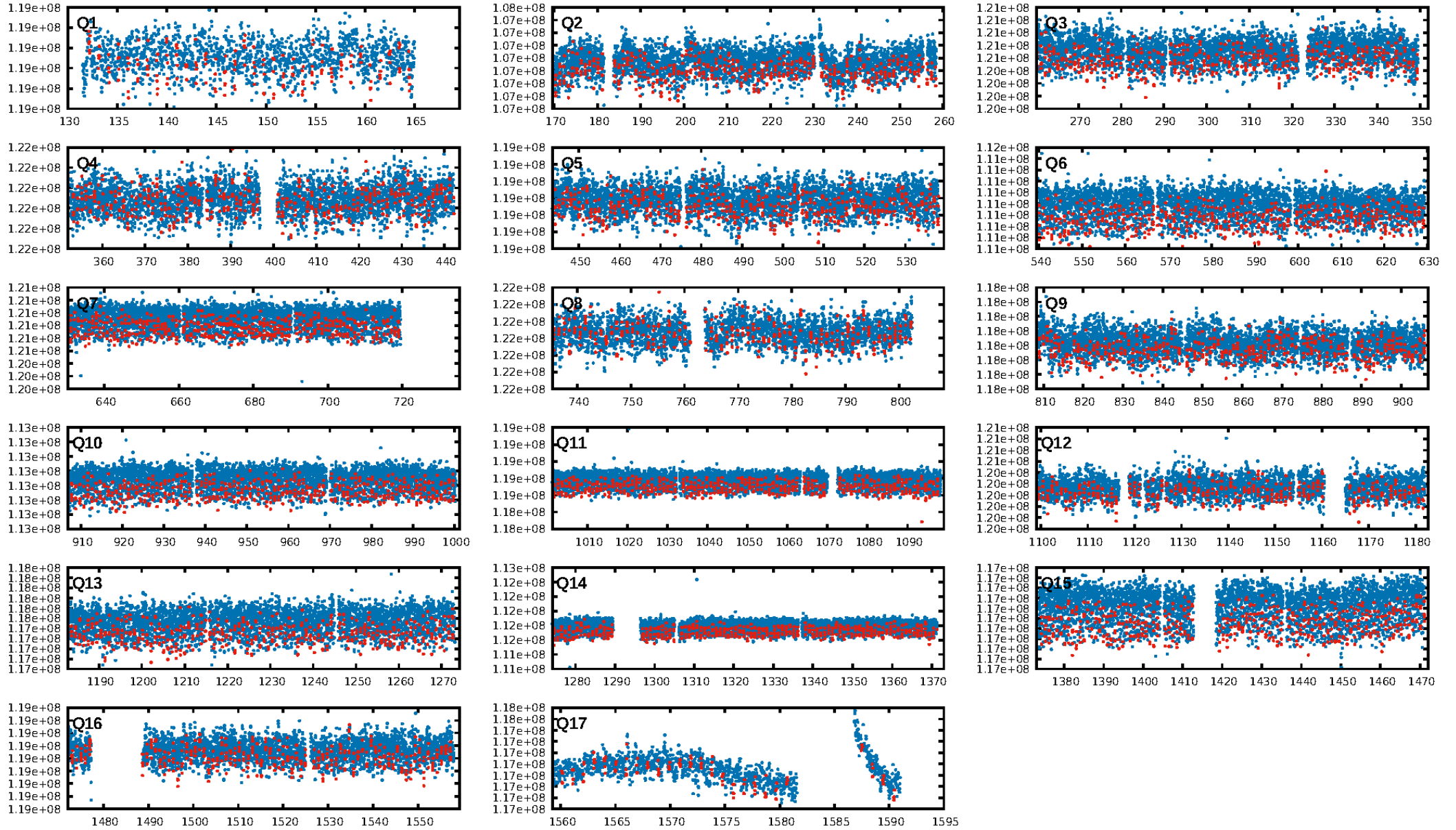
DV Fit Results:

Period = 0.97805 [0.00001] d
Epoch = 132.1780 [0.0012] BKJD
Rp/R* = 0.0097 [0.0049]
a/R* = 2.75 [5.05]
b = 0.90 [0.45]
Seff = 23186.92 [15229.83]
Teq = 3147 [517] K
Rp = 4.84 [3.31] Re
a = 0.0234 [0.0098] AU
Ag = 0.16 [0.21] [-3.94σ]
Teffp = 3076 [901] K [-0.07σ]

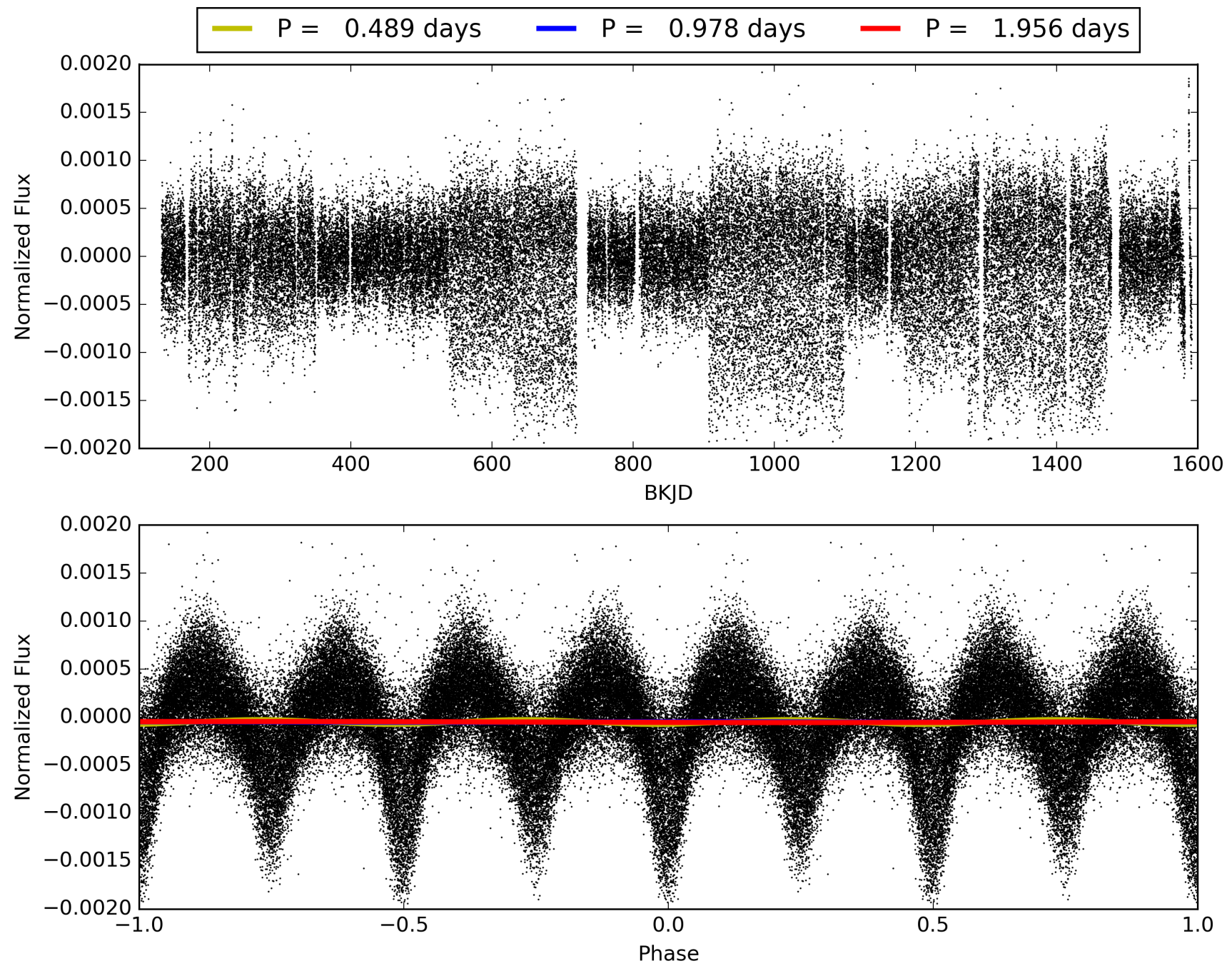
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.07e-32
RollingBand-fgt: 0.92 [1204/1307]
GhostDiagnostic-chr: -0.182
Centroid-sig: 0.0%
Centroid-so: 6.099 arcsec [12.78σ]
OotOffset-rm: 7.315 arcsec [19.94σ]
KicOffset-rm: 7.345 arcsec [22.50σ]
OotOffset-st: 4/0/4/5 [13]
KicOffset-st: 4/0/4/5 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003241248-02, PDC Light Curves

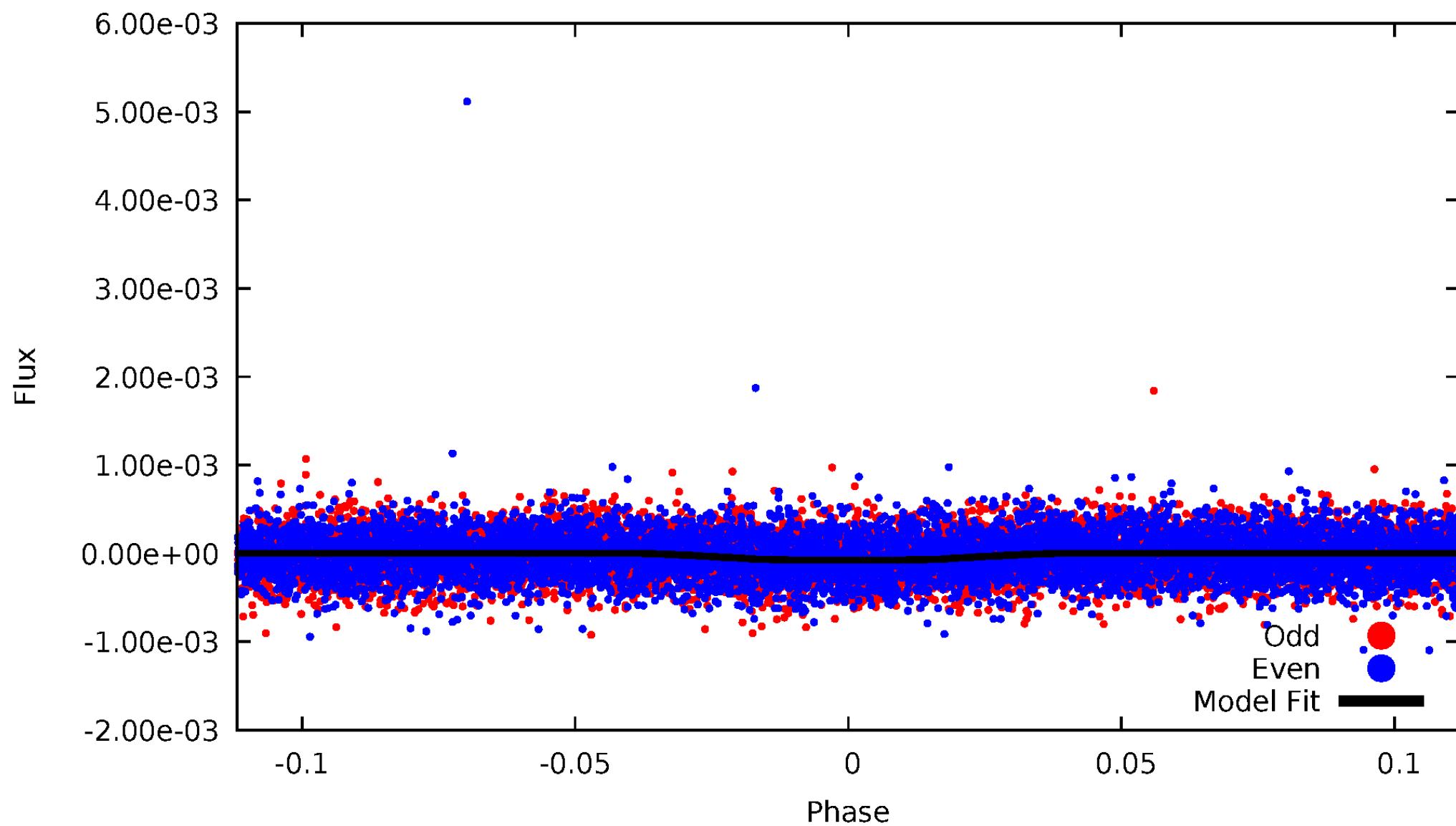


TCE 003241248-02



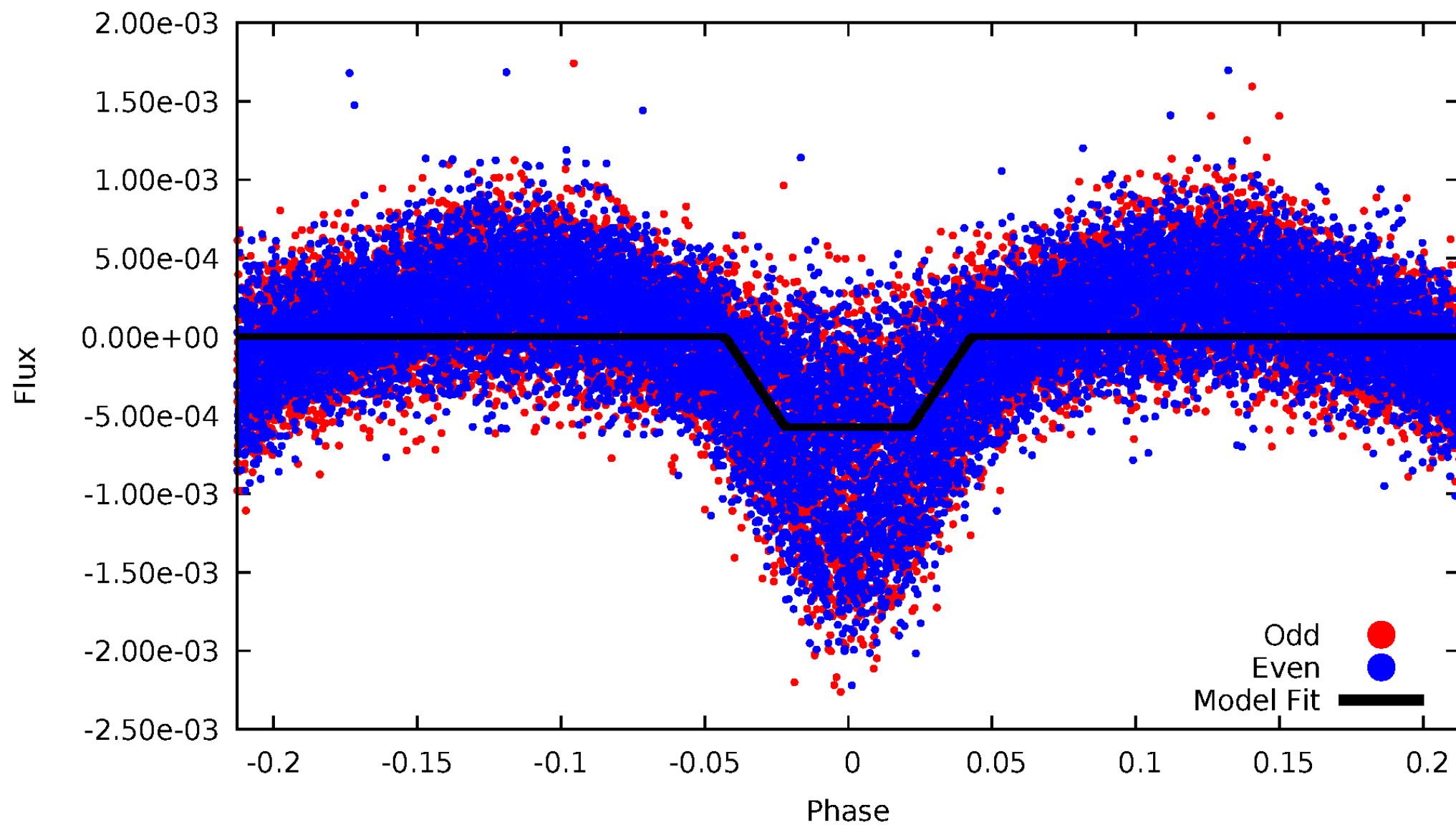
DV Odd/Even

TCE 003241248-02



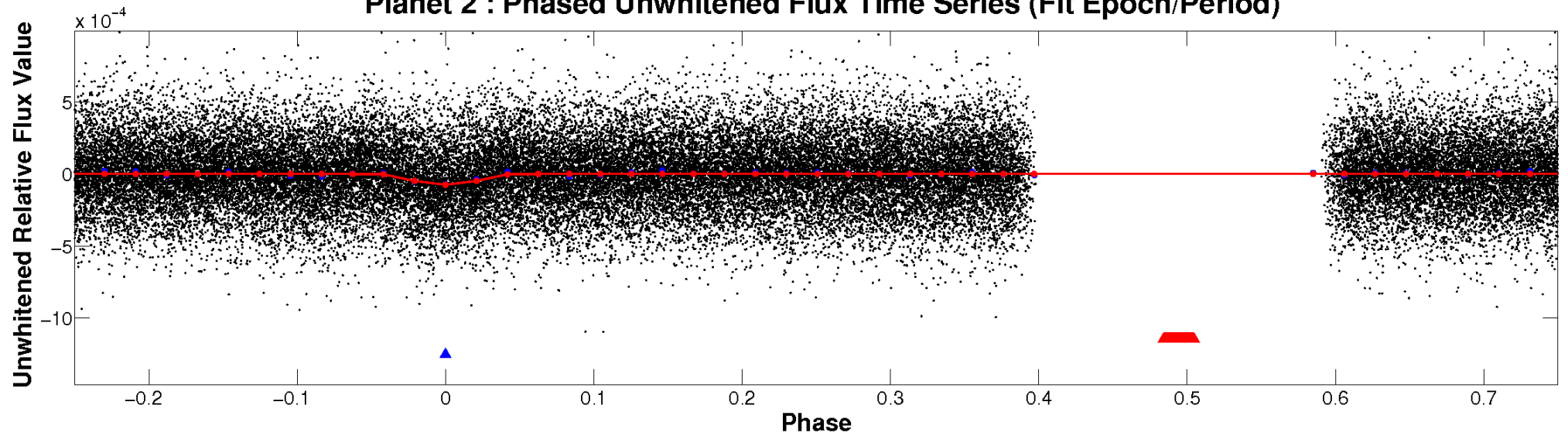
ALT Odd/Even

TCE 003241248-02

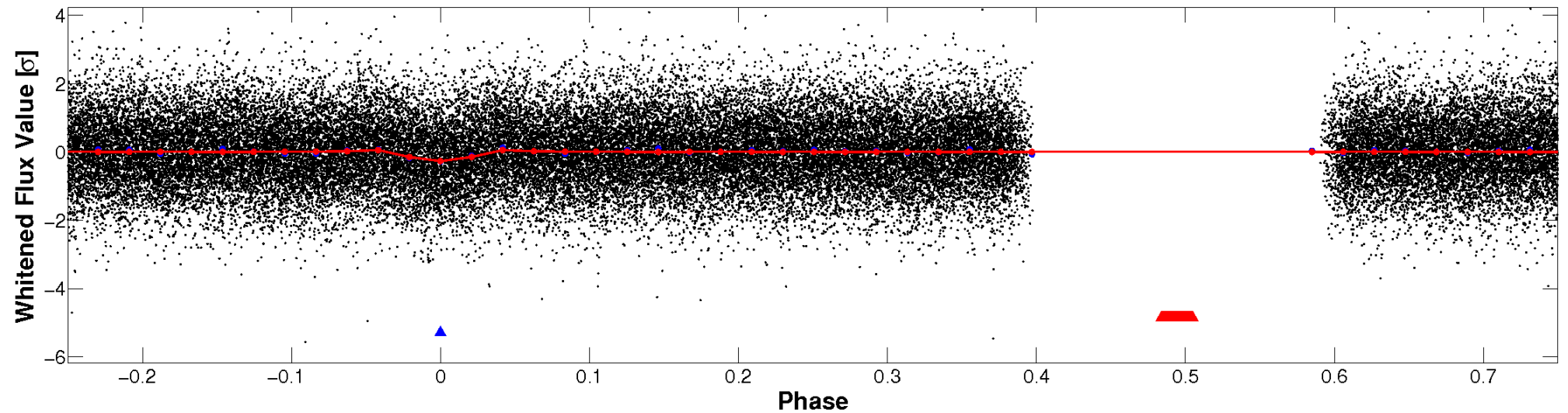


Non-Whitened Vs. Whitened Light Curve

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

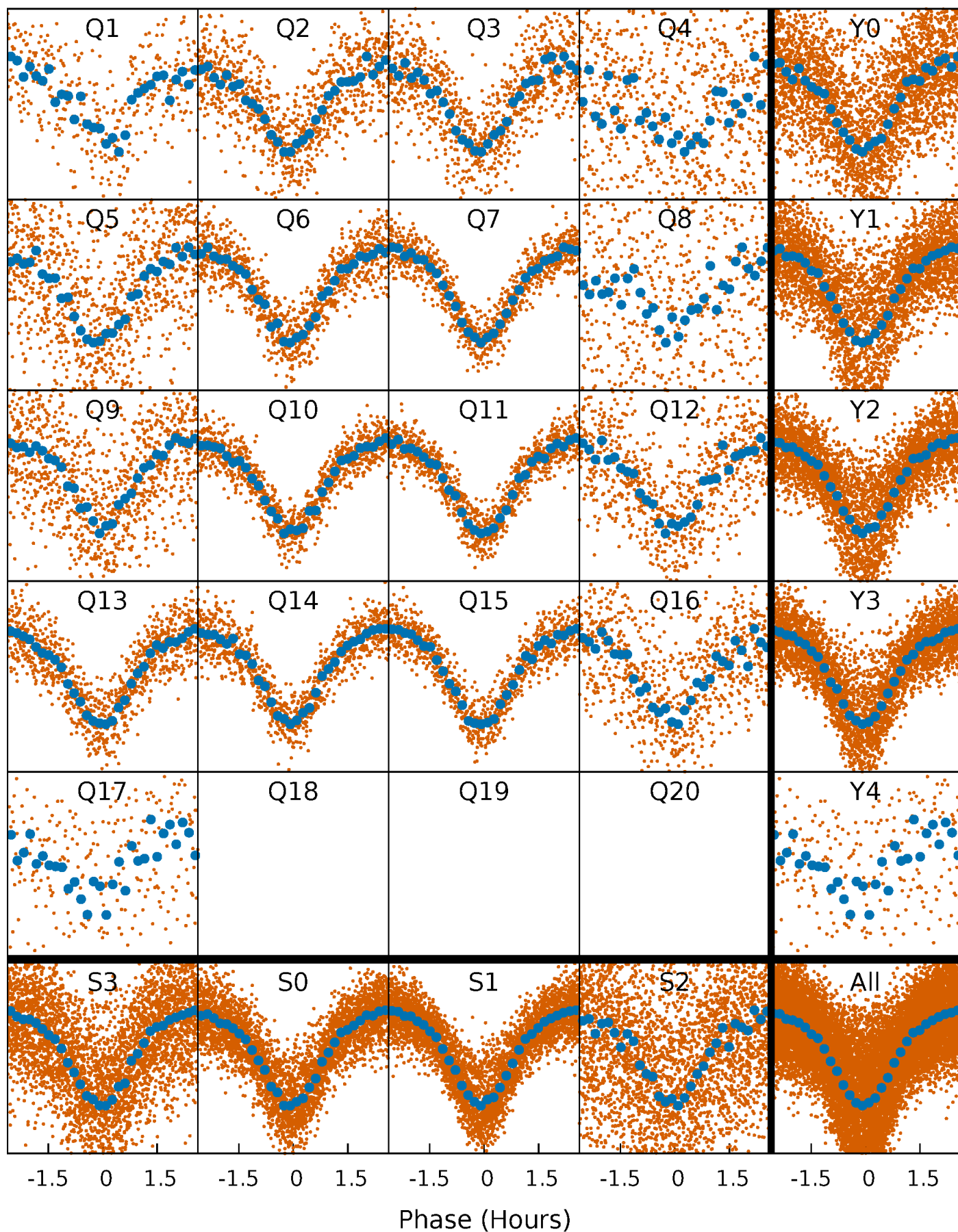


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



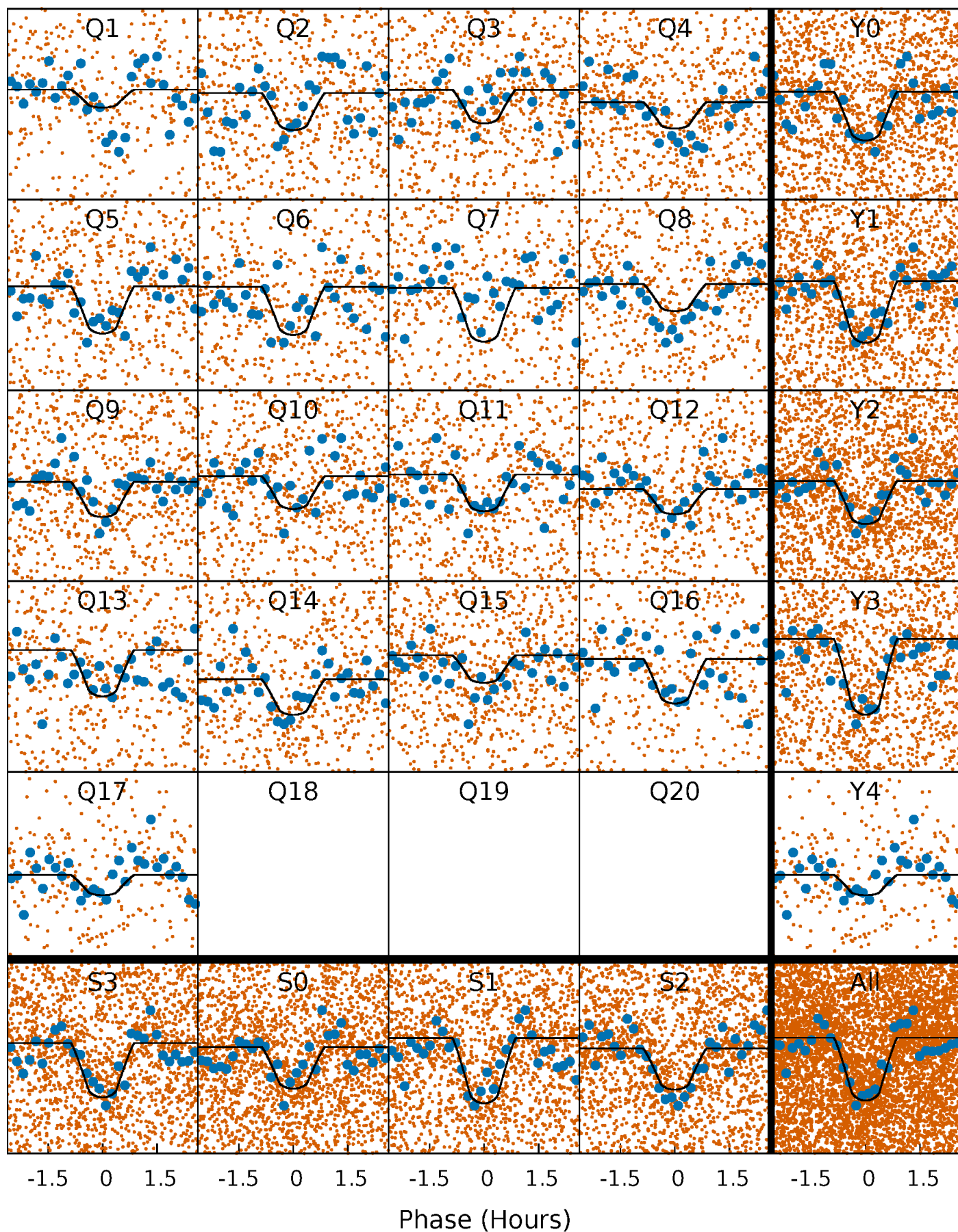
PDC Quarter-Phased Transit Curves

TCE 003241248-02 P= 0.978047 Days $T_0=132.178010$ (BKJD)



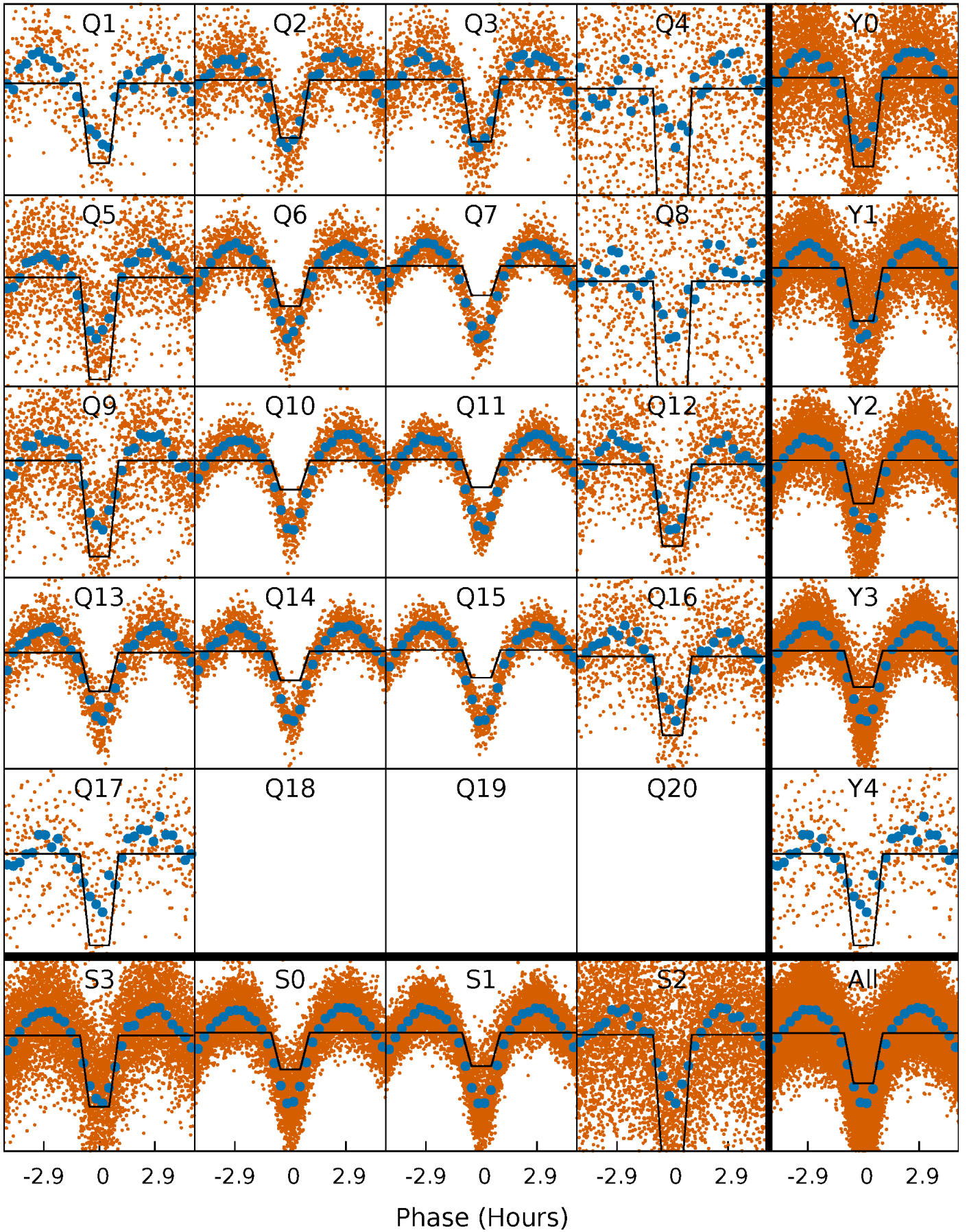
DV Quarter-Phased Transit Curves

TCE 003241248-02 P= 0.978047 Days $T_0=132.178010$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

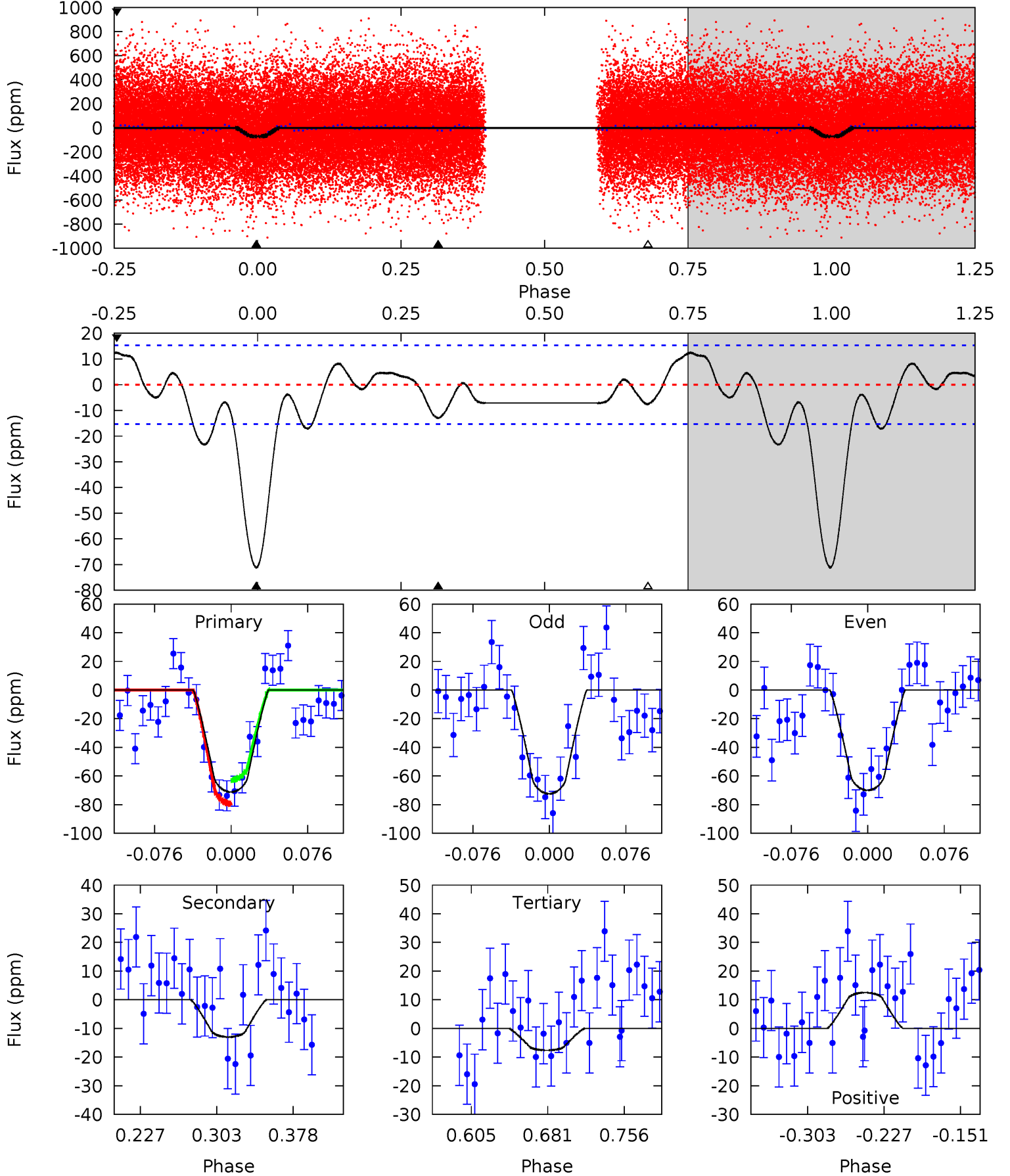
TCE 003241248-02 P= 0.978039 Days $T_0=132.181262$ (BKJD)



DV Model-Shift Uniqueness Test

003241248-02, P = 0.978047 Days, E = 131.199963 Days

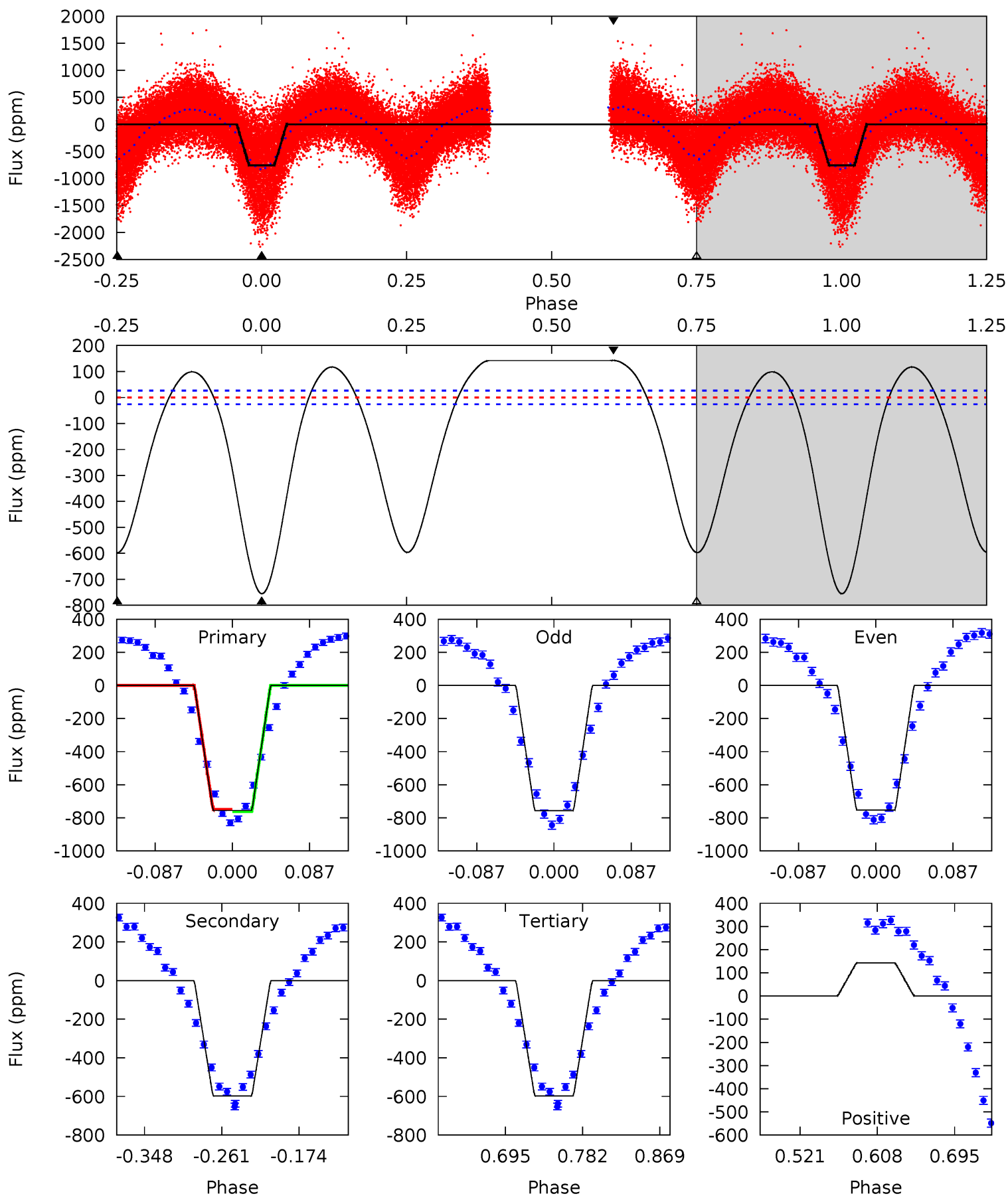
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.5	3.92	2.30	3.77	4.62	1.78	2.64	19.2	17.7	1.62	0.15	0.37	0.95	0.15	2.51



Alt Model-Shift Uniqueness Test

003241248-02, P = 0.978039 Days, E = 131.203223 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
131.6	104.0	104.0	24.8	4.59	1.71	42.8	27.6	106.7	0.04	79.2	0.30	1.05	0.16	1.16



Stellar Parameters For KIC 003241248

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5100^{+123}_{-138}	$3.368^{+0.372}_{-0.248}$	$-0.120^{+0.250}_{-0.300}$	$4.569^{+1.398}_{-2.097}$	$1.778^{+0.201}_{-0.806}$	$0.026^{+0.087}_{-0.014}$
	+2%/-3%	+11%/-7%	+208%/-250%	+31%/-46%	+11%/-45%	+330%/-53%
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 003241248-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-13 ± 3	$4.72^{+2.79}_{-2.43}$	4409^{+433}_{-481}	-3365^{+7232}_{-540}	$0.153^{+0.527}_{-0.090}$
Alt.	-597 ± 6	$11.41^{+3.91}_{-3.42}$	4405^{+413}_{-501}	4865^{+652}_{-571}	$1.325^{+1.280}_{-0.554}$

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

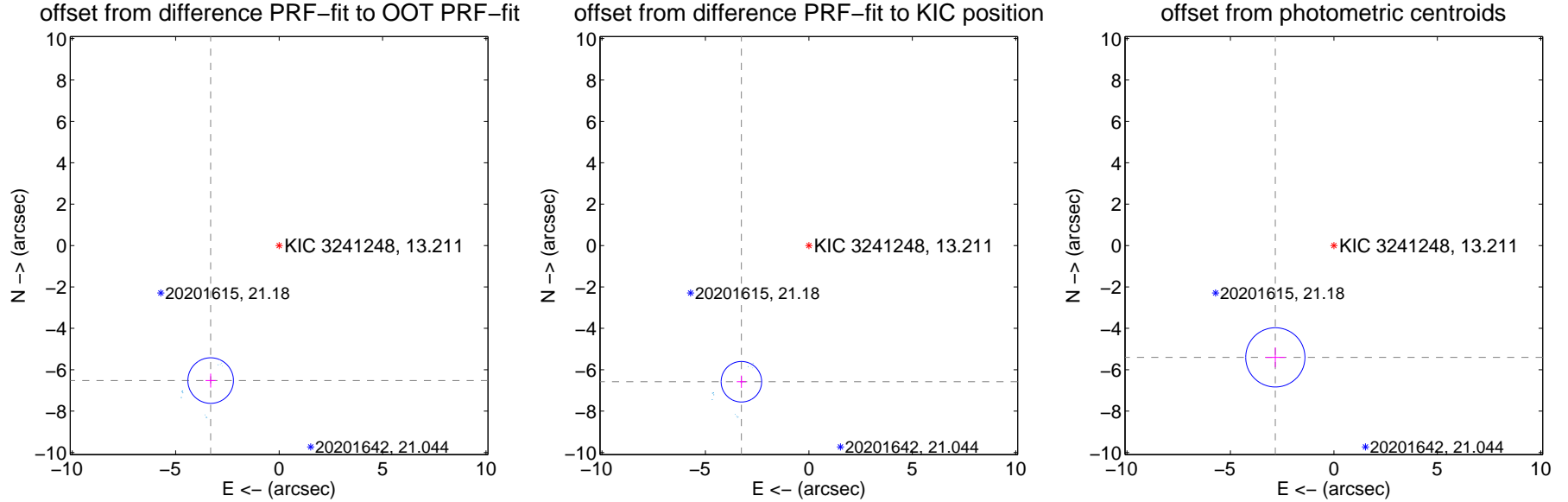
DV Centroid Data

Supplemental centroid analysis for 003241248-02. Kepler magnitude: 13.21. Transit SNR 13.44

There are 13 quarters with good PRF difference image offsets

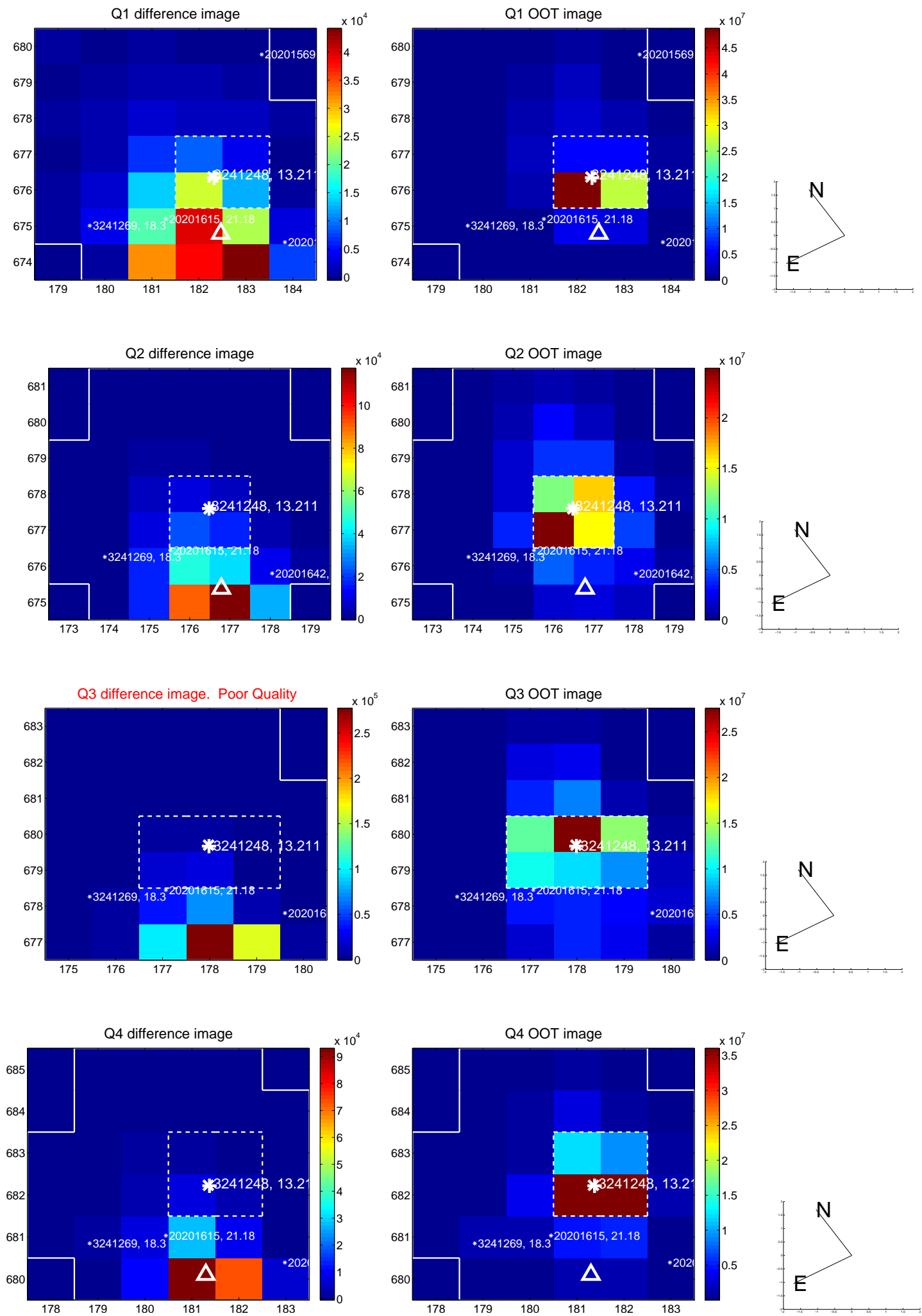
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.315 ± 0.367	19.94	3.310 ± 0.248	-6.524 ± 0.336
PRF-fit source offset from KIC position	7.345 ± 0.326	22.50	3.262 ± 0.226	-6.580 ± 0.297
photometric centroid source offset	6.10 ± 0.48	12.78	2.83 ± 0.48	-5.40 ± 0.48

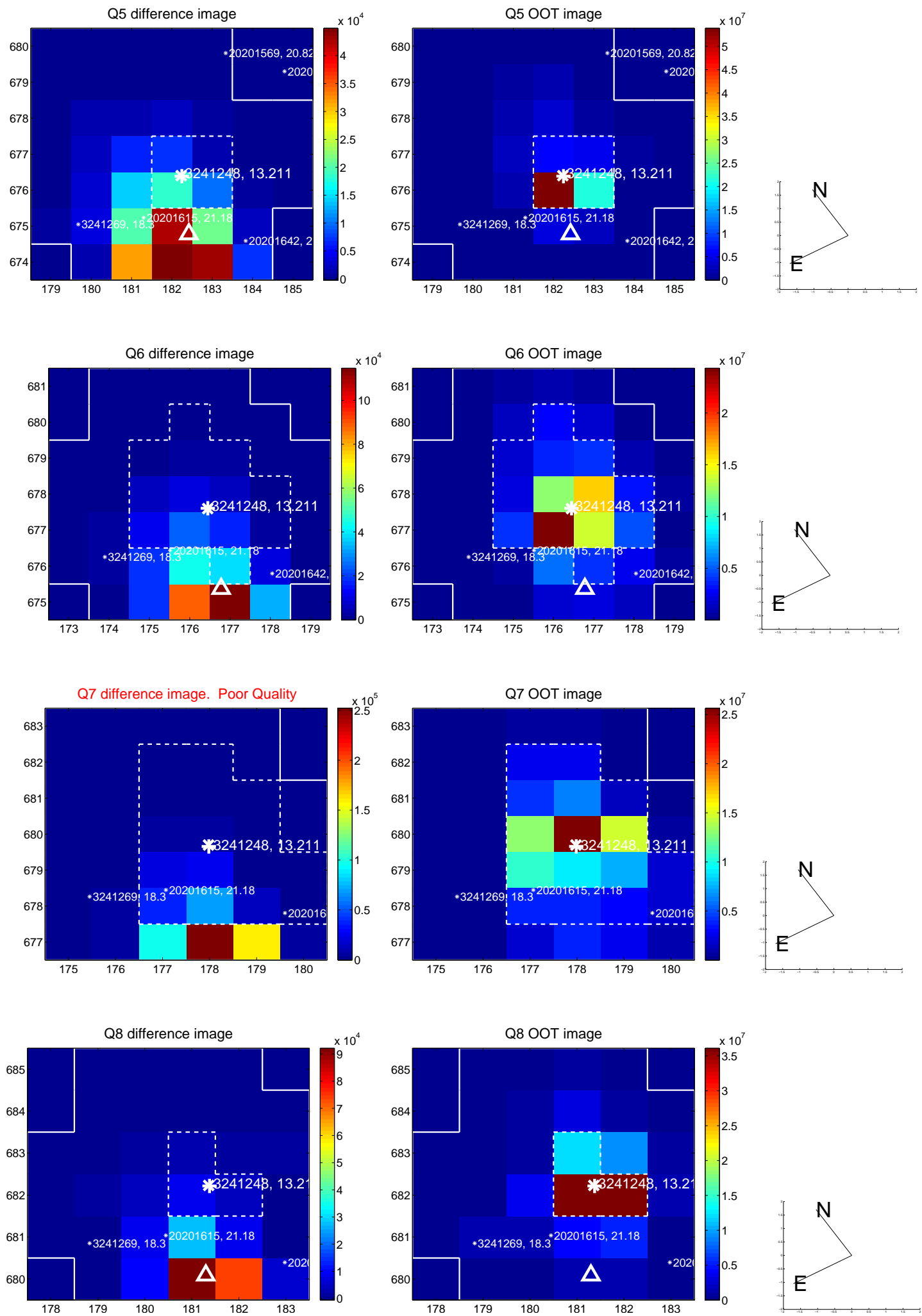


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

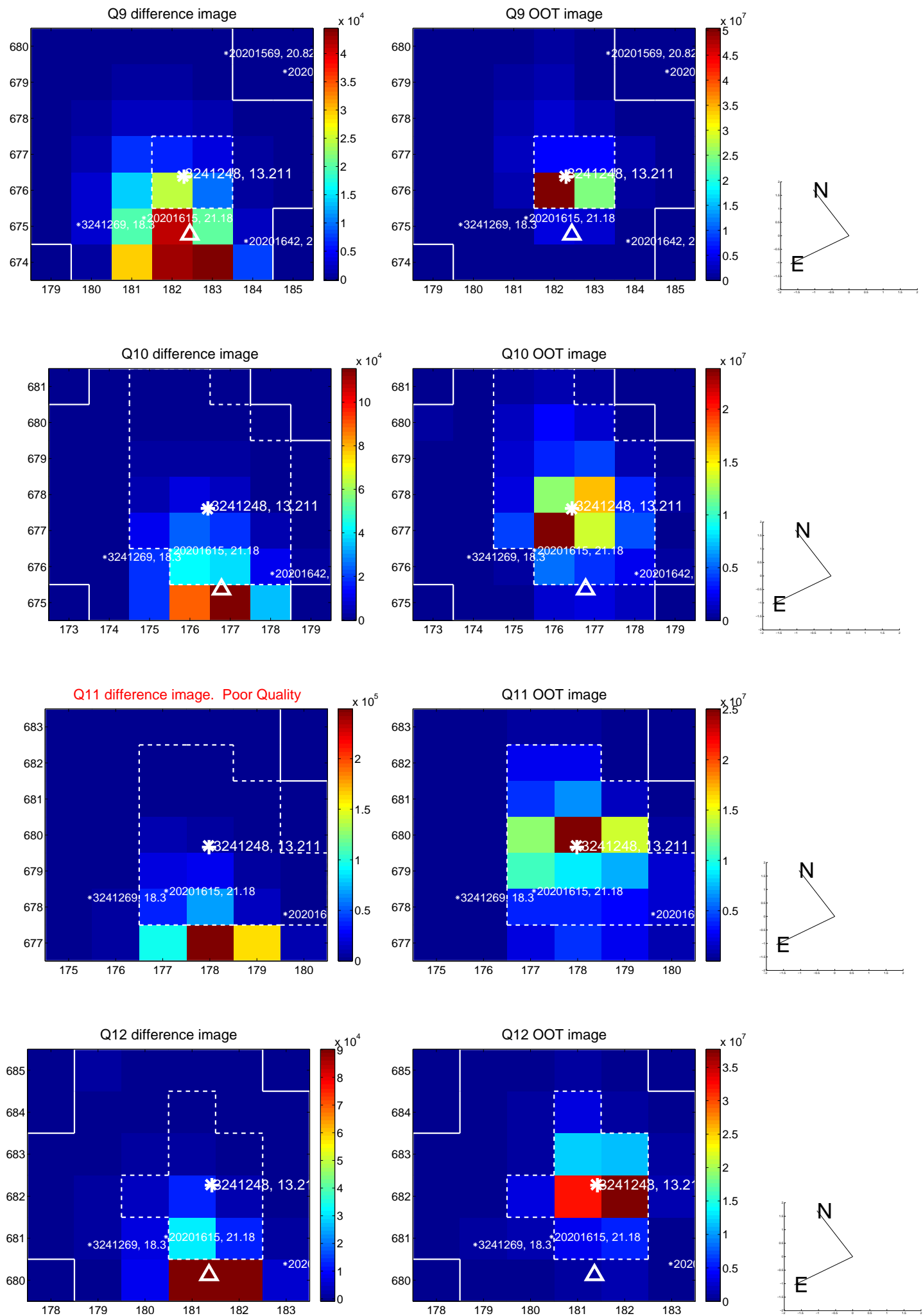
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



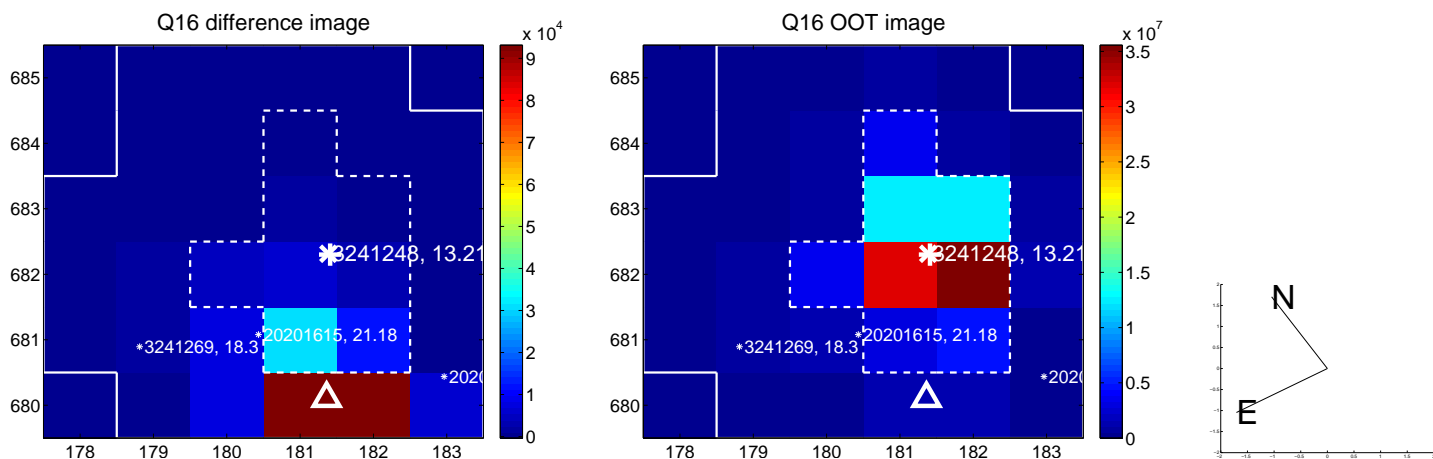
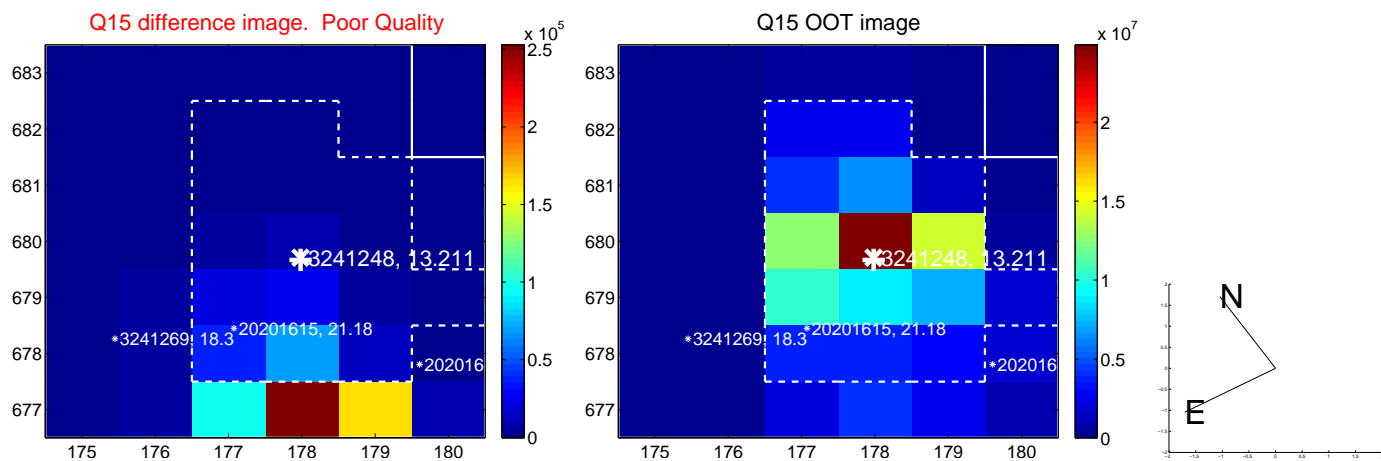
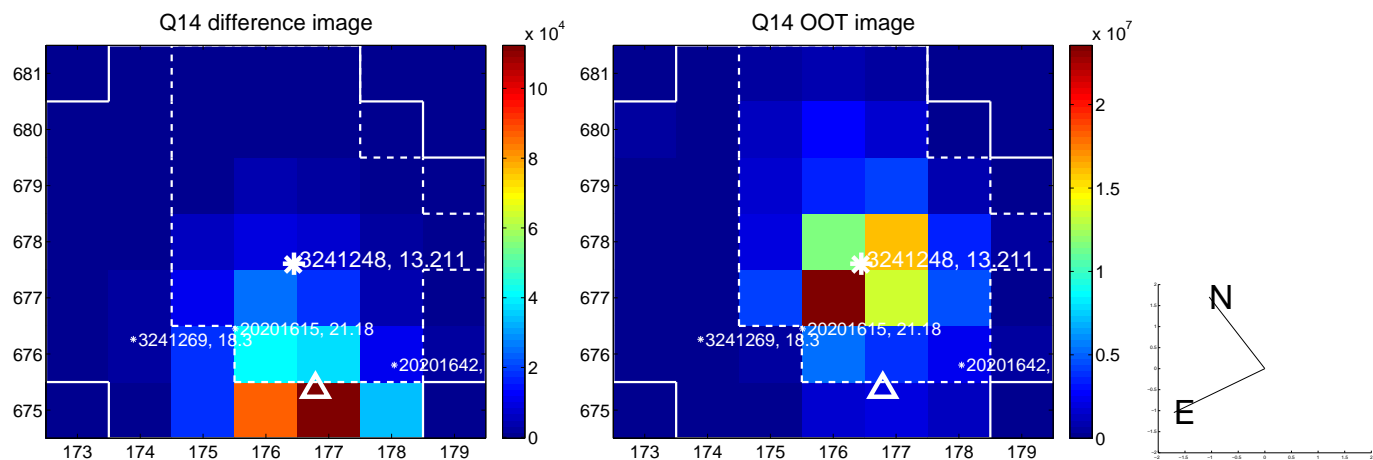
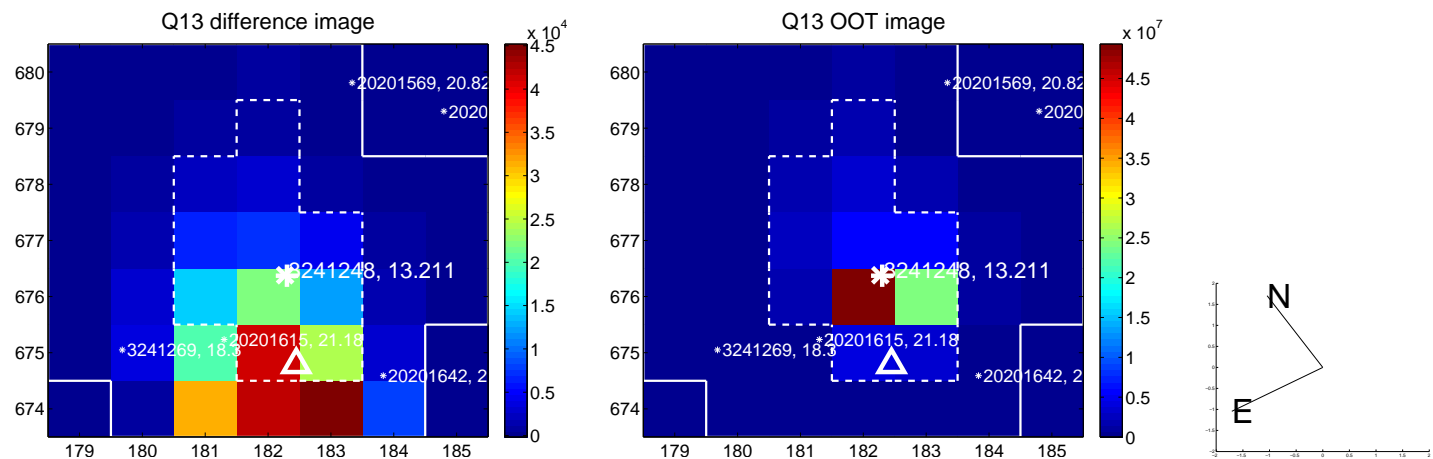
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



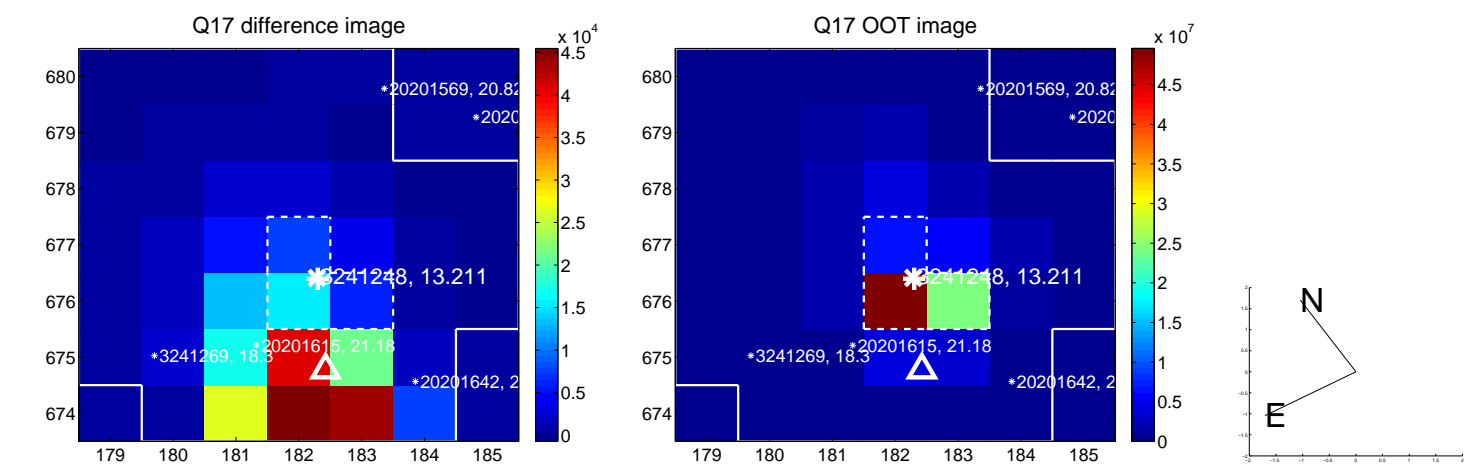
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



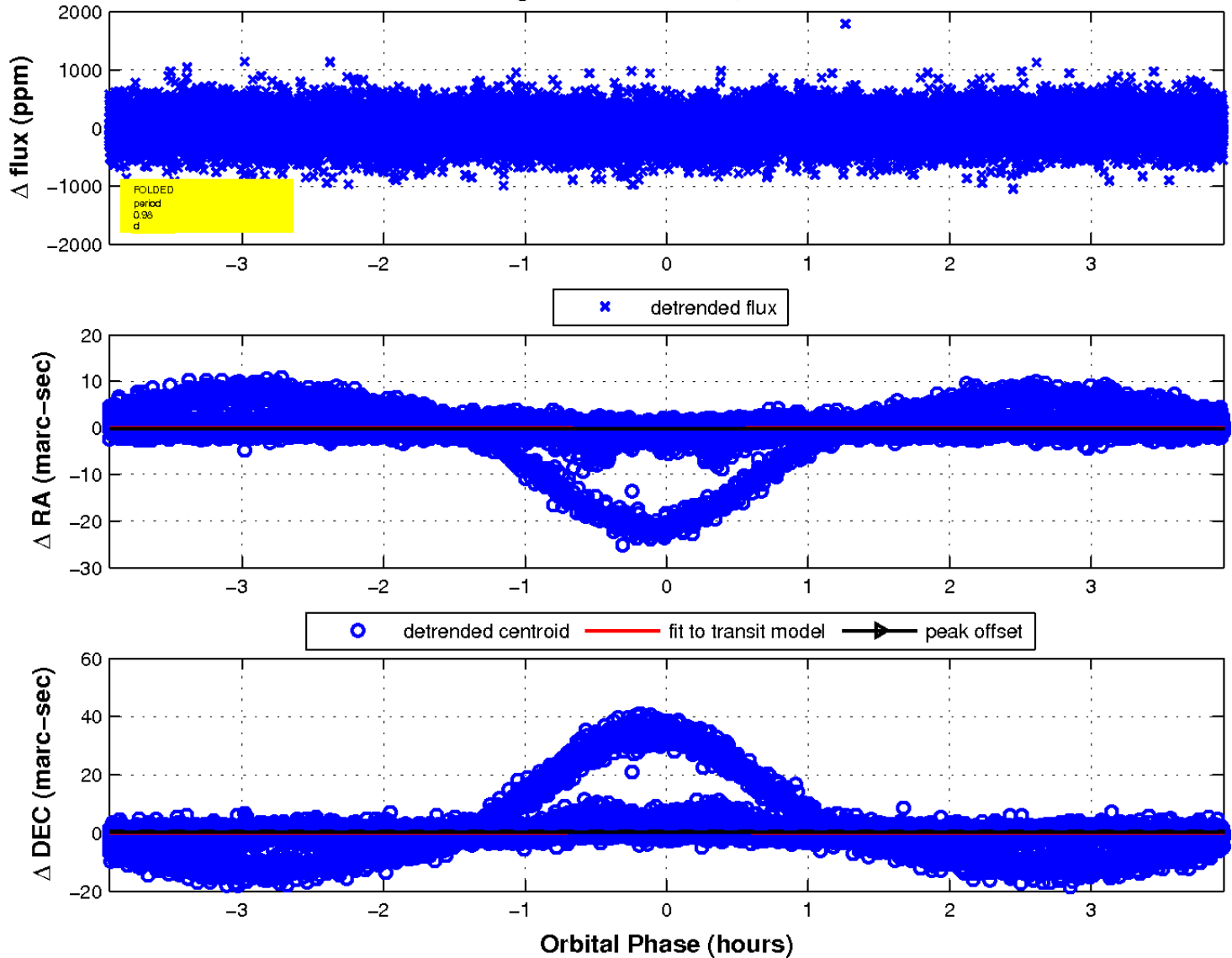
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

