

KIC 011913012

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})
011913012-01	OBS	0544.01	3.747835	134.185761	403.9	4.828	42.4	48.4	1.05	6161	3.25	584.45
011913012-02	OBS	No	3.747787	132.326208	70.6	4.231	9.9	10.4	1.05	6161	1.01	584.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011913012-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
011913012-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

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 011913012-01

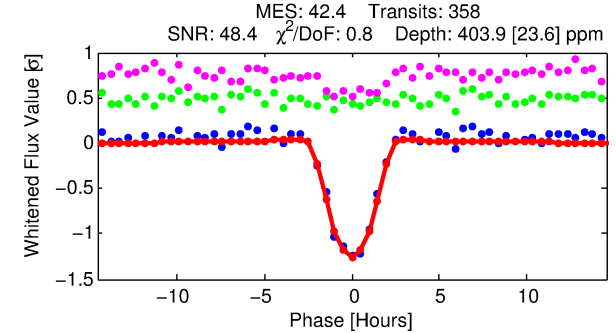
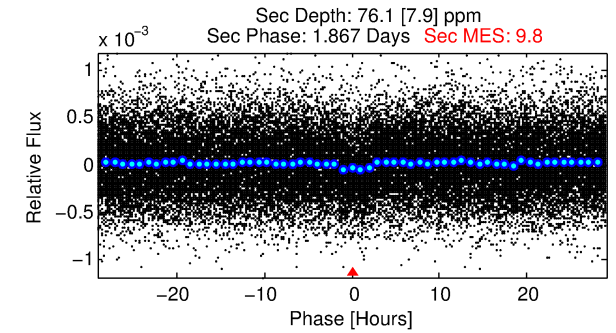
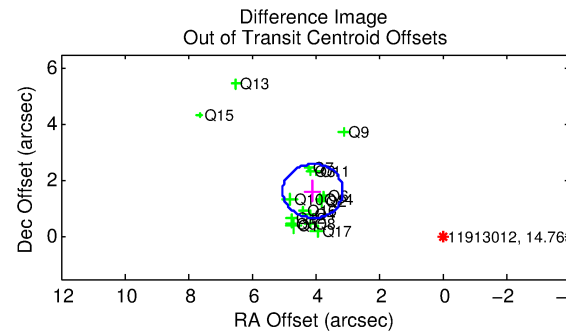
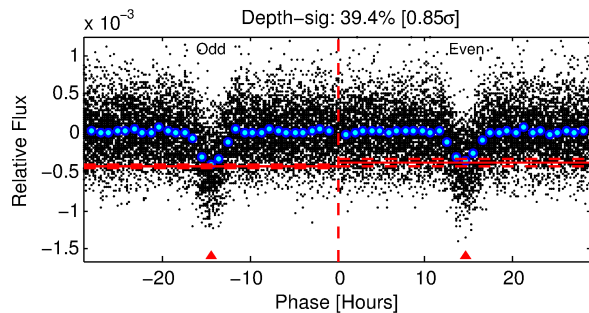
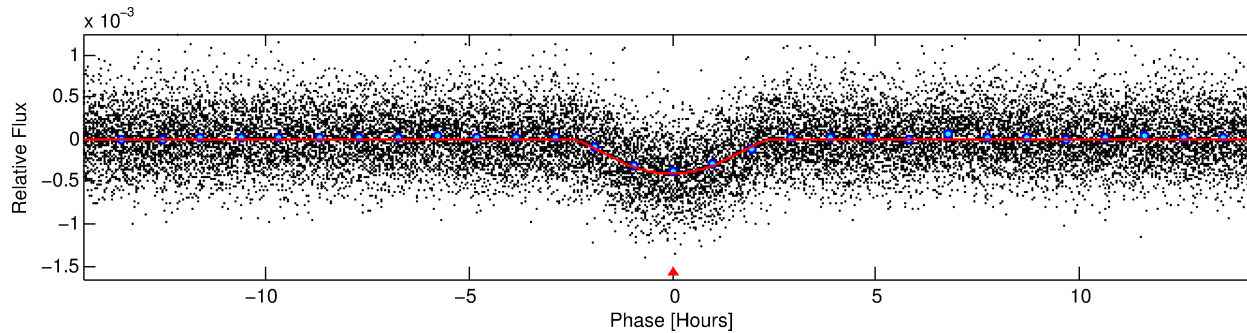
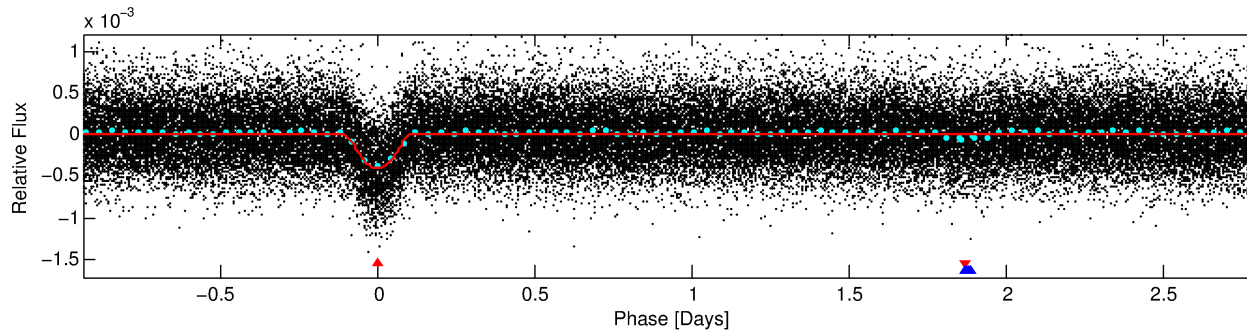
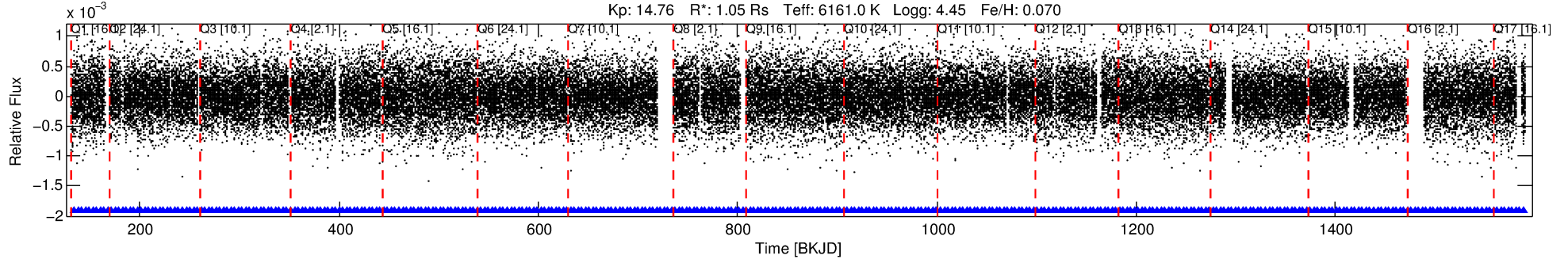
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	ΔRow	ΔCol	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
011913012-01	11913012	011913071-pri	11913071	1:1	90.4	15	17	9.53	14.76	467.82	Direct-PRF	0	0.01	0.06

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 11913012 Candidate: 1 of 2 Period: 3.748 d
KOI: K00544.01 Corr: 0.980

Kp: 14.76 R*: 1.05 Rs Teff: 6161.0 K Logg: 4.45 Fe/H: 0.070



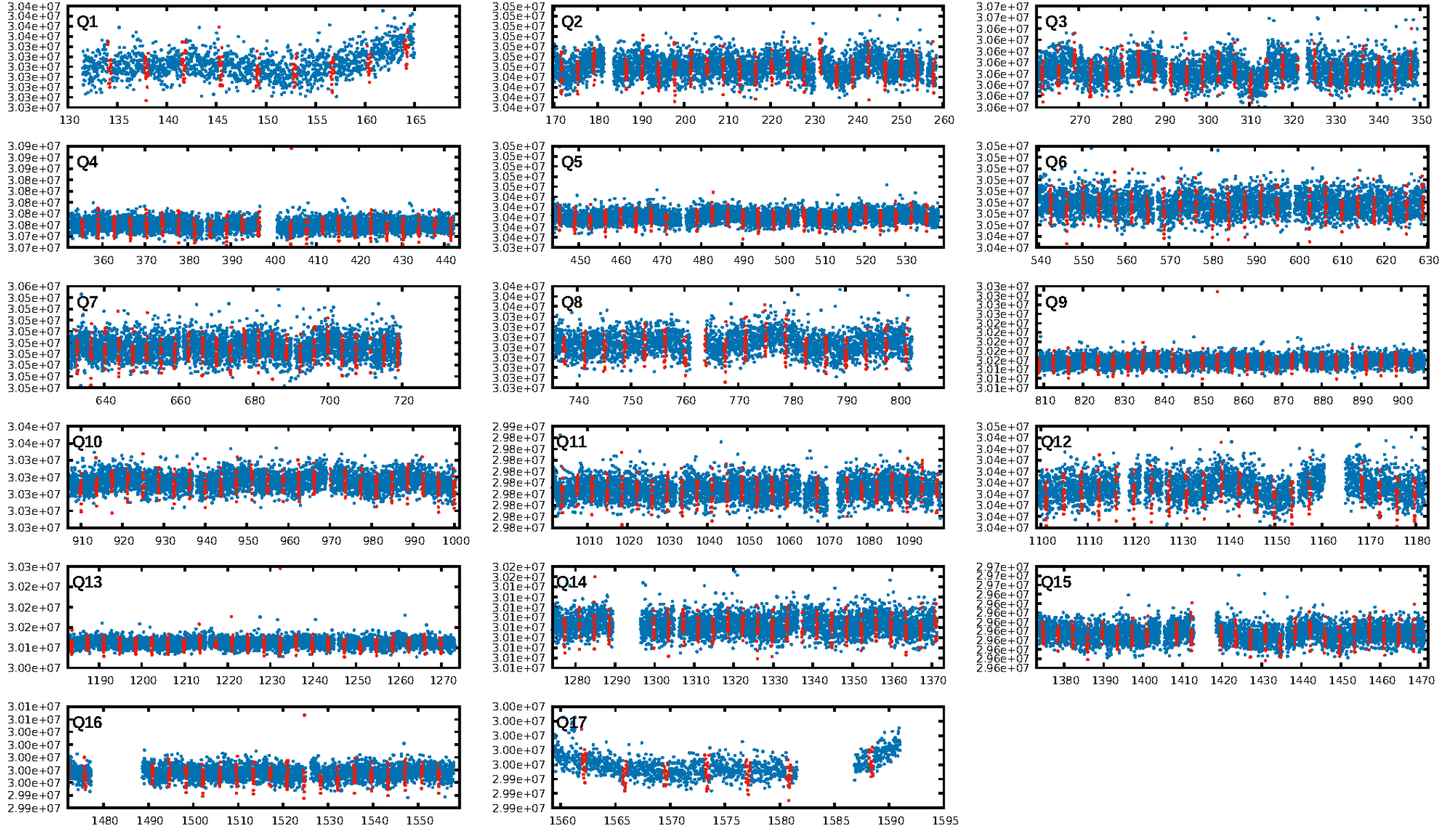
DV Fit Results:

Period = 3.74783 [0.00001] d
Epoch = 134.1858 [0.0022] BKJD
Rp/R* = 0.0283 [0.0073]
a/R* = 2.00 [0.17]
b = 0.99 [0.01]
Seff = 584.45 [245.79]
Teq = 1254 [132] K
Rp = 3.25 [1.35] Re
a = 0.0495 [0.0134] AU
Ag = 9.70 [6.40] [1.36σ]
Teffp = 3421 [468] K [4.45σ]

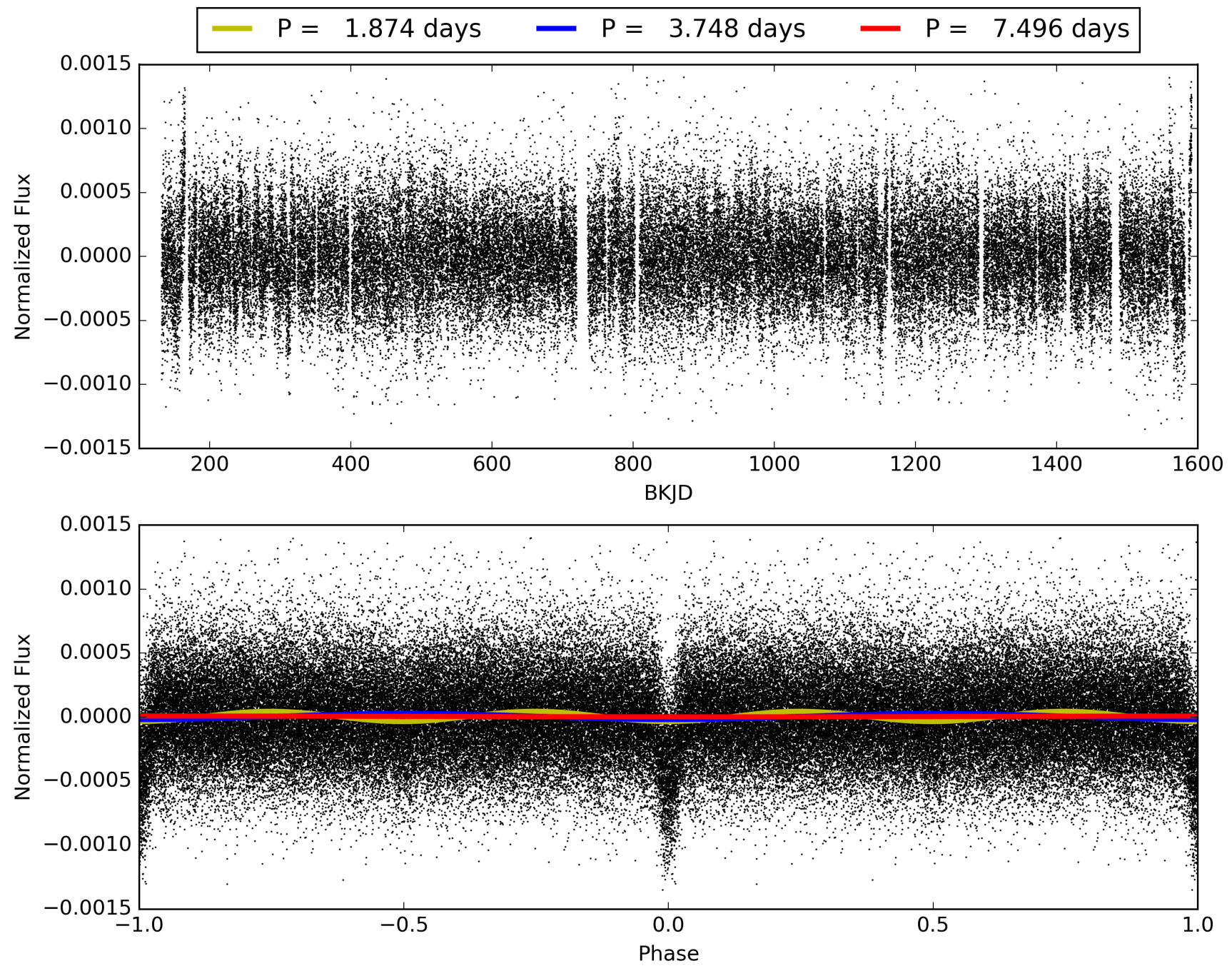
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [342/342]
GhostDiagnostic-chr: -0.08448
Centroid-sig: 0.0%
Centroid-so: 2.829 arcsec [10.92σ]
OotOffset-rm: 4.392 arcsec [13.79σ]
KicOffset-rm: 4.290 arcsec [13.05σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 011913012-01, PDC Light Curves

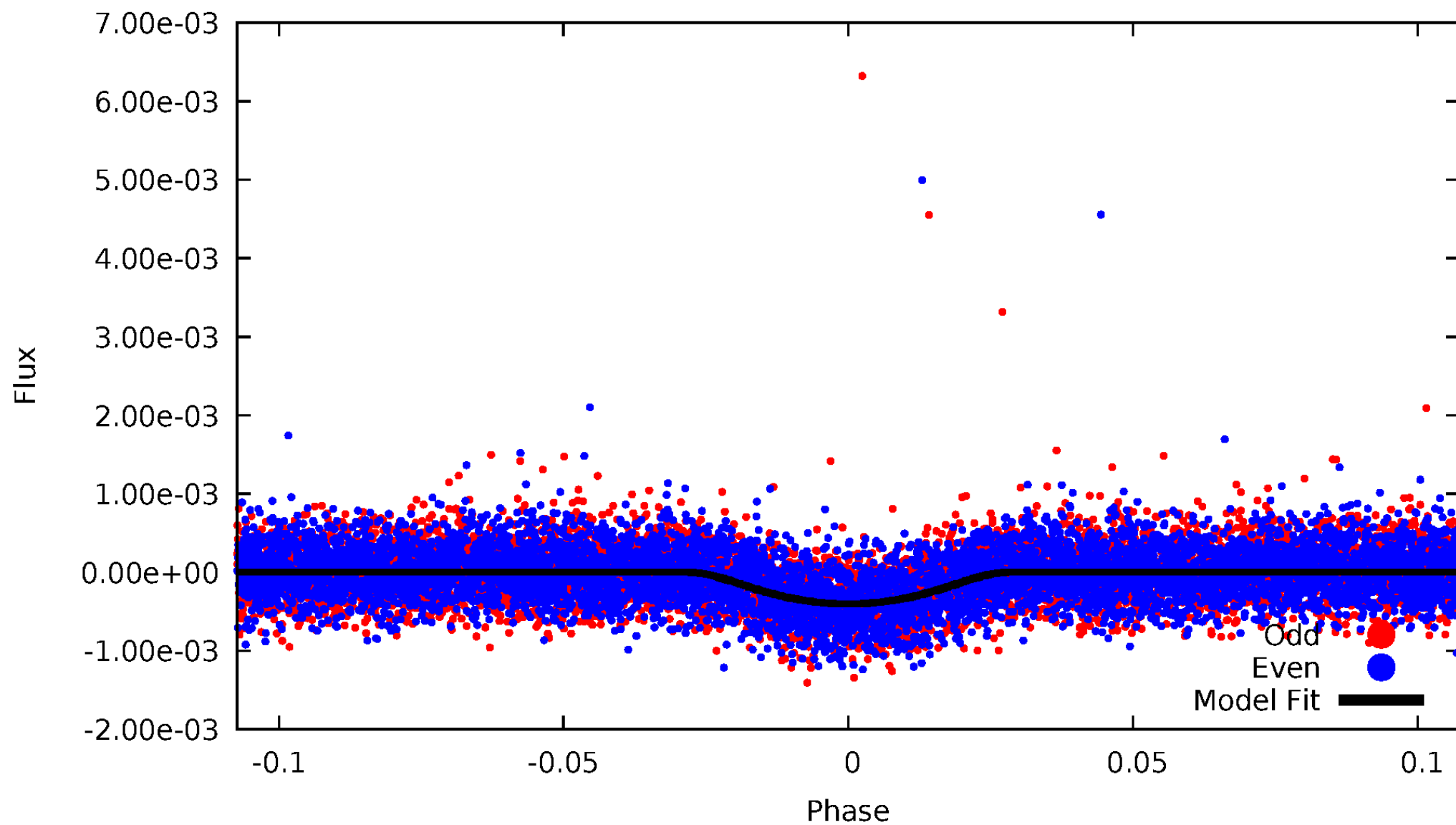


TCE 011913012-01



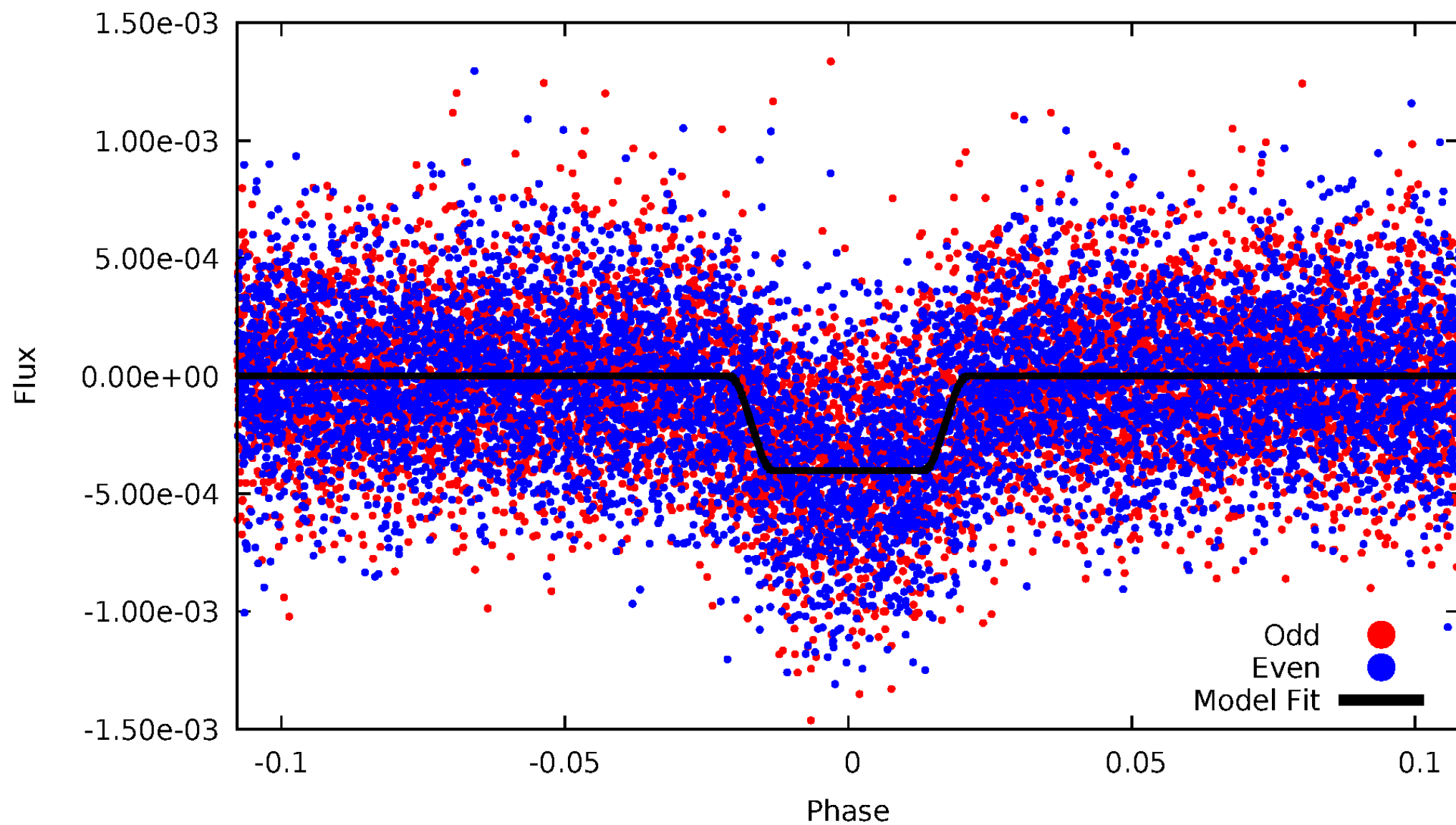
DV Odd/Even

TCE 011913012-01

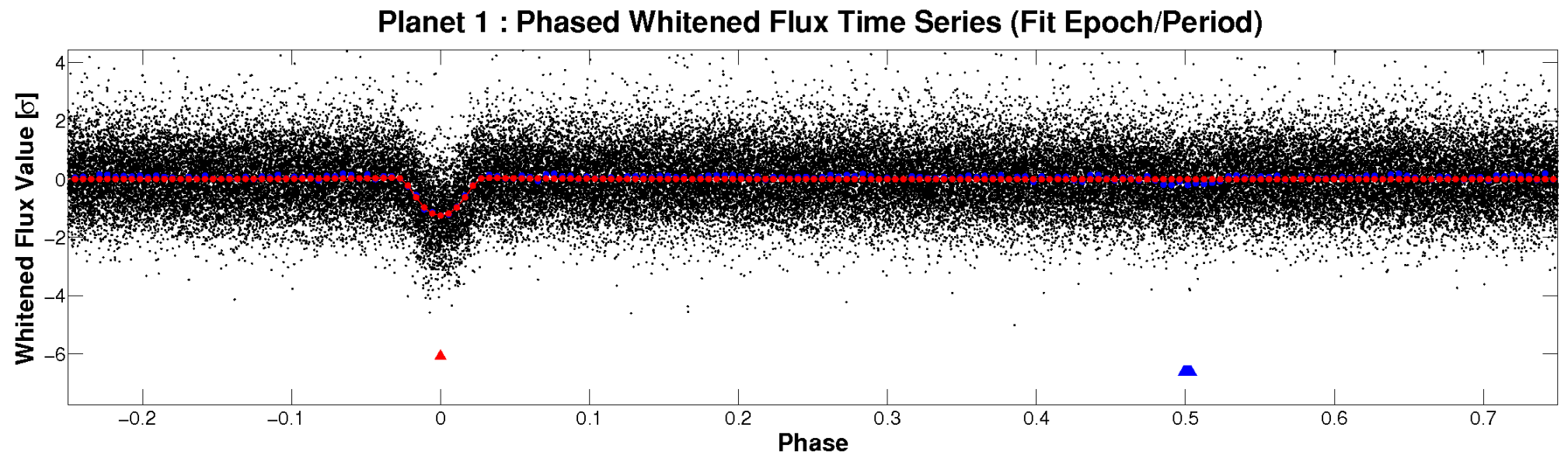
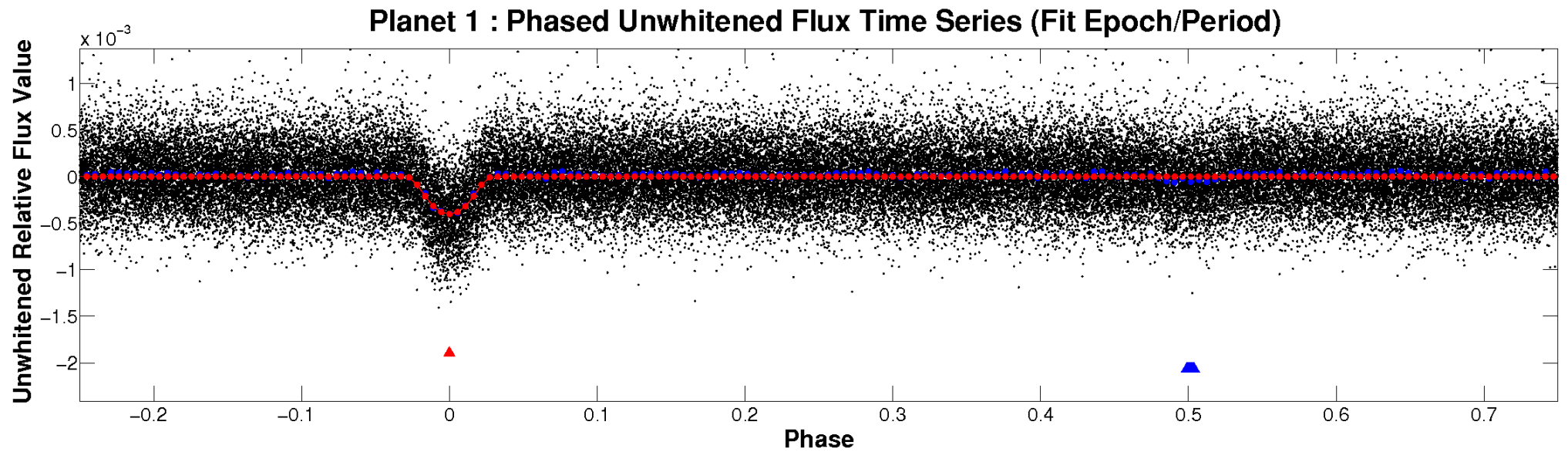


ALT Odd/Even

TCE 011913012-01

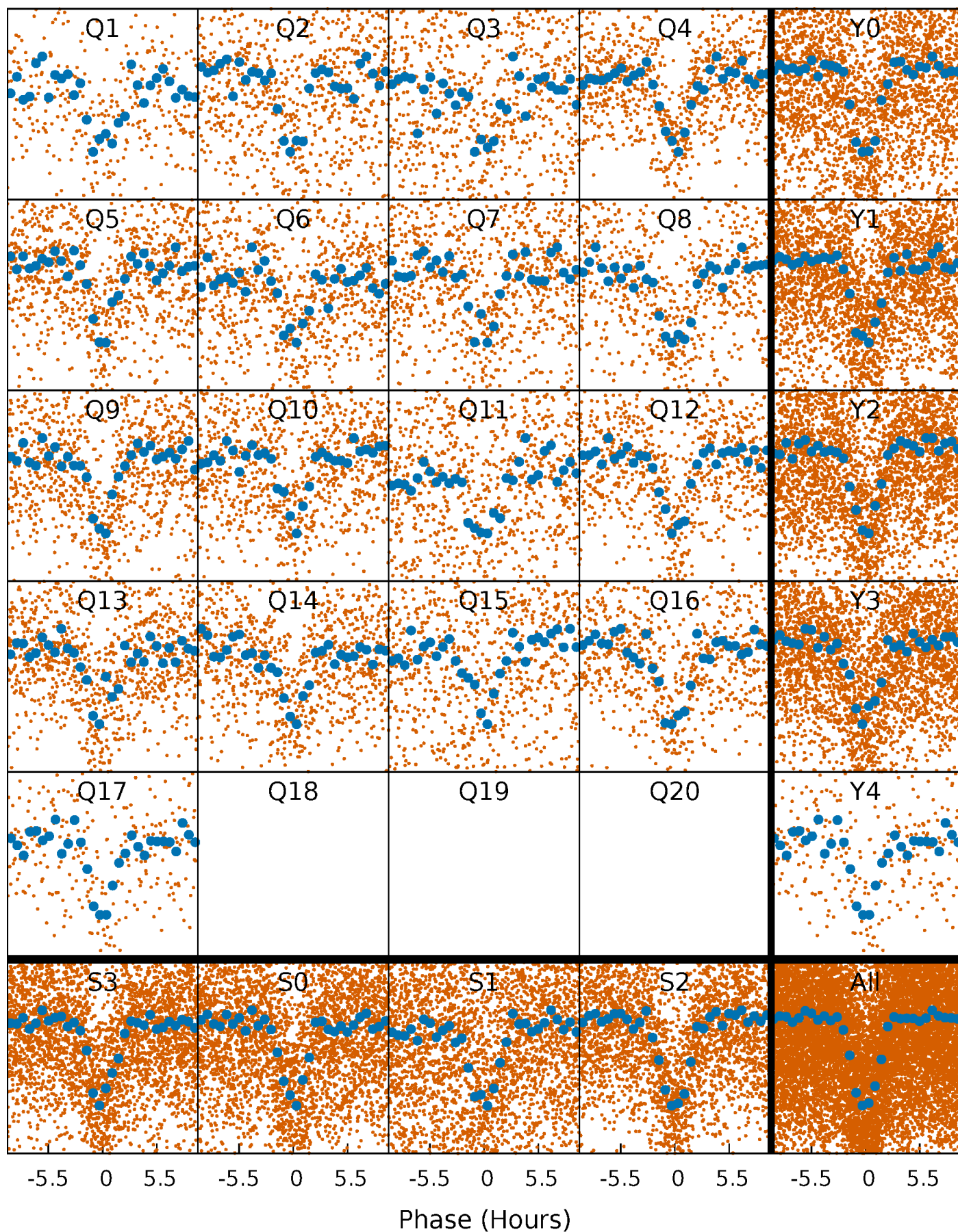


Non-Whitened Vs. Whitened Light Curve



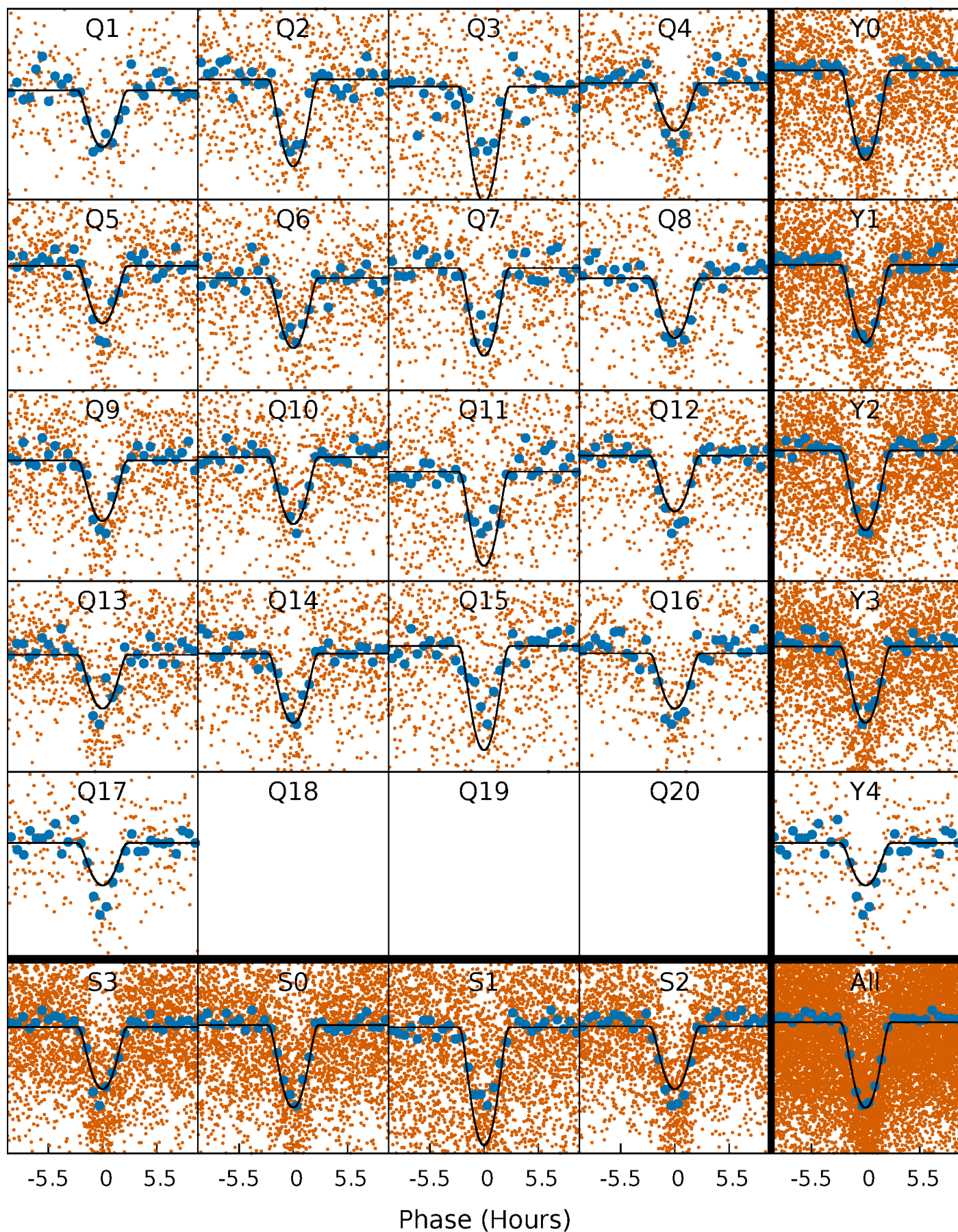
PDC Quarter-Phased Transit Curves

TCE 011913012-01 P= 3.747835 Days $T_0=134.185761$ (BKJD)



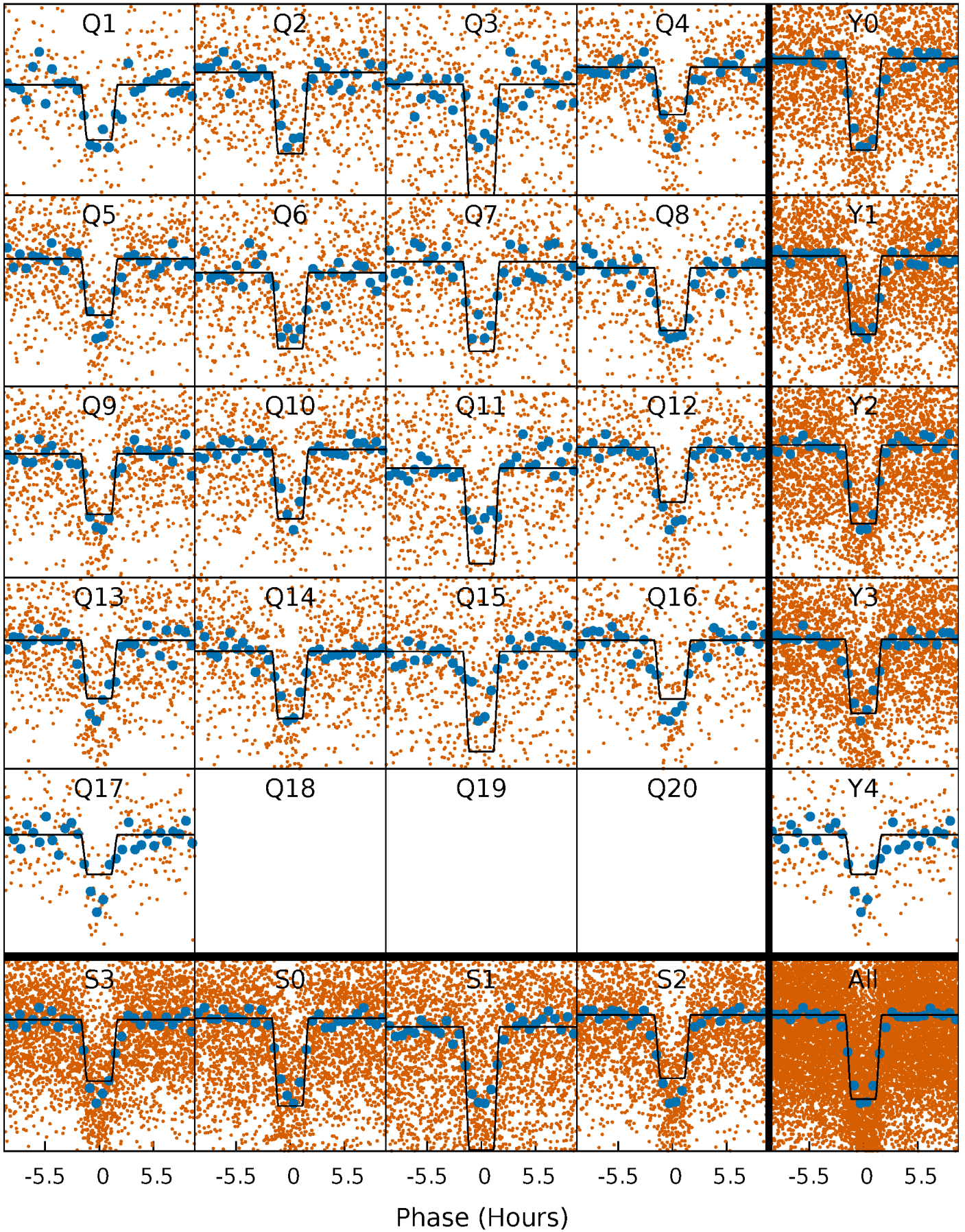
DV Quarter-Phased Transit Curves

TCE 011913012-01 P= 3.747835 Days $T_0=134.185761$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

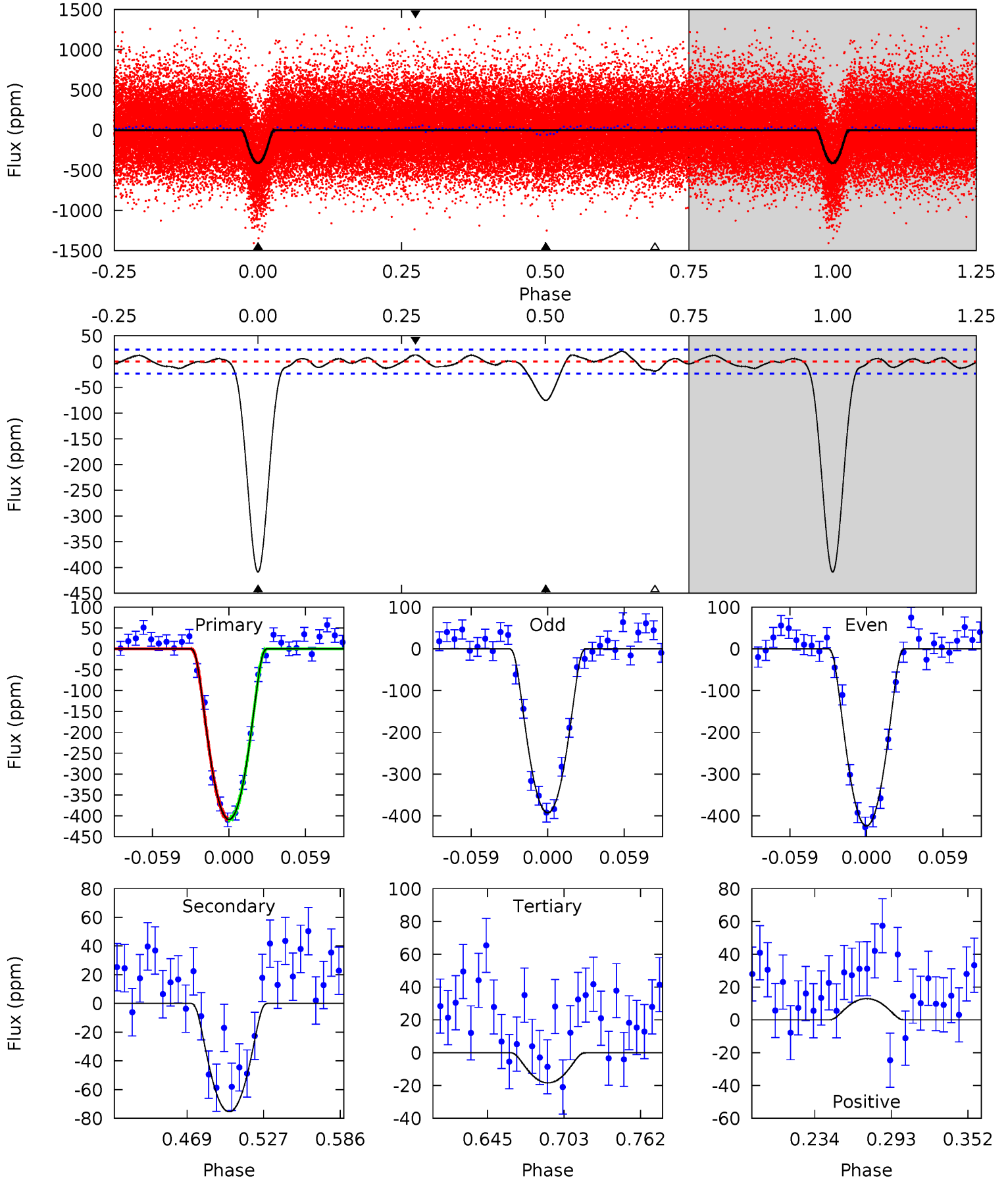
TCE 011913012-01 P= 3.747857 Days $T_0=134.181386$ (BKJD)



DV Model-Shift Uniqueness Test

011913012-01, P = 3.747835 Days, E = 130.437926 Days

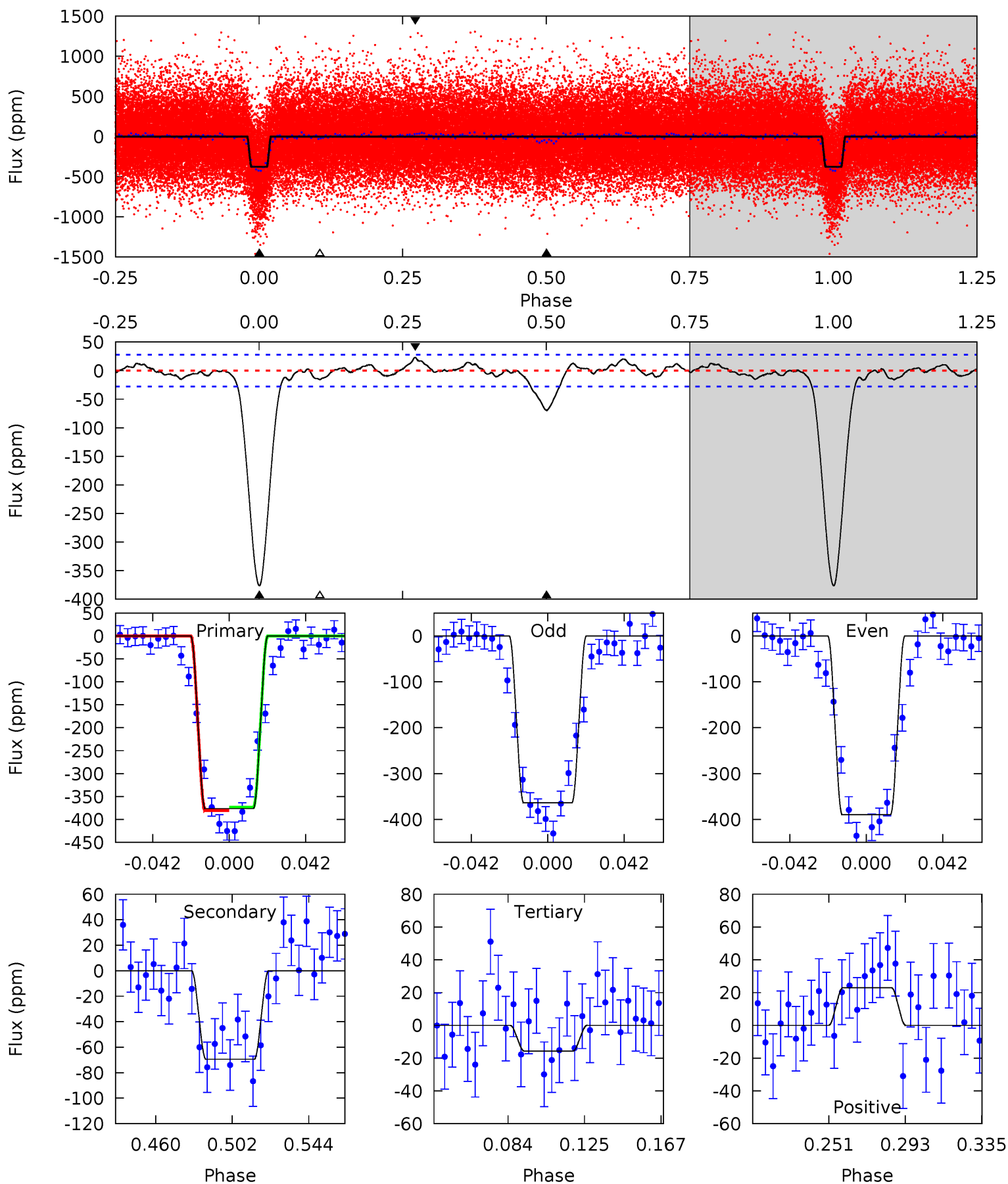
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
81.8	15.1	3.69	2.59	4.68	1.89	1.60	78.1	79.2	11.4	12.5	3.16	0.96	0.05	0.04



Alt Model-Shift Uniqueness Test

011913012-01, P = 3.747857 Days, E = 130.433529 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
64.0	11.8	2.68	3.91	4.74	2.04	1.35	61.4	60.1	9.14	7.90	2.20	1.00	0.06	0.62



Stellar Parameters For KIC 011913012

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6161^{+184}_{-221}	$4.454^{+0.054}_{-0.216}$	$0.070^{+0.250}_{-0.300}$	$1.053^{+0.340}_{-0.113}$	$1.150^{+0.138}_{-0.169}$	$1.388^{+0.316}_{-0.782}$
	+3%/-4%	+1%/-5%	+357%/-429%	+32%/-11%	+12%/-15%	+23%/-56%
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 011913012-01 / KOI 0544.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-75 ± 5	$3.40^{+1.10}_{-0.91}$	1798^{+129}_{-103}	3779^{+420}_{-325}	$8.522^{+7.498}_{-3.567}$
Alt.	-69 ± 6	$2.43^{+0.99}_{-0.85}$	1792^{+144}_{-92}	4211^{+784}_{-489}	16^{+20}_{-7}

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 $A_{obs} \gg 1.0$

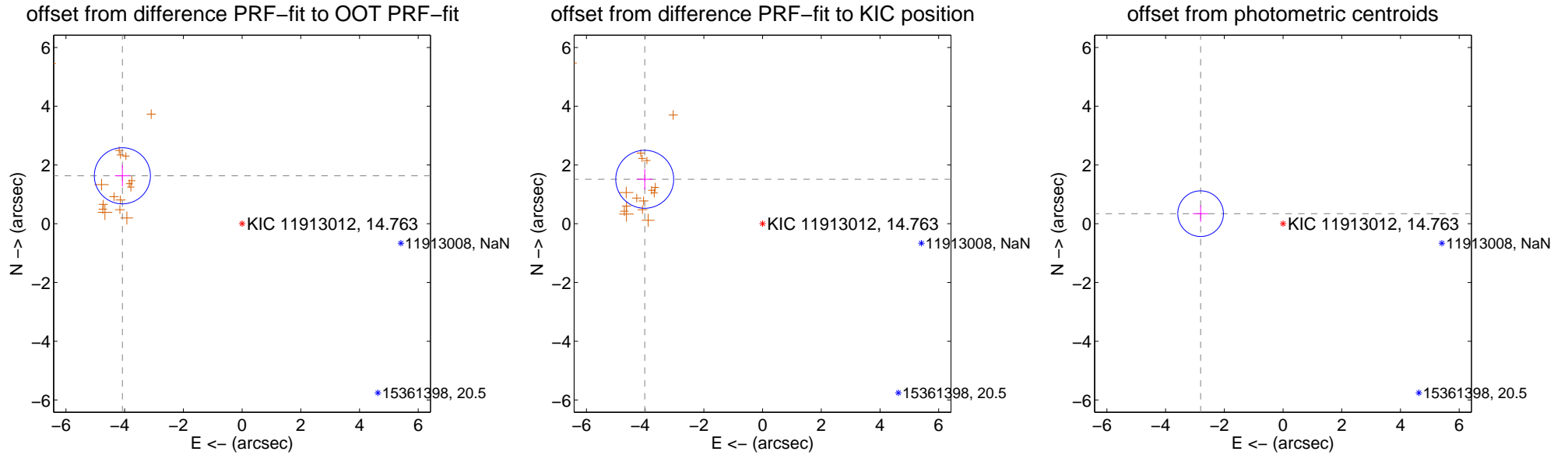
DV Centroid Data

Supplemental centroid analysis for 011913012-01. Kepler magnitude: 14.76. Transit SNR 48.43

There are 0 quarters with good PRF difference image offsets

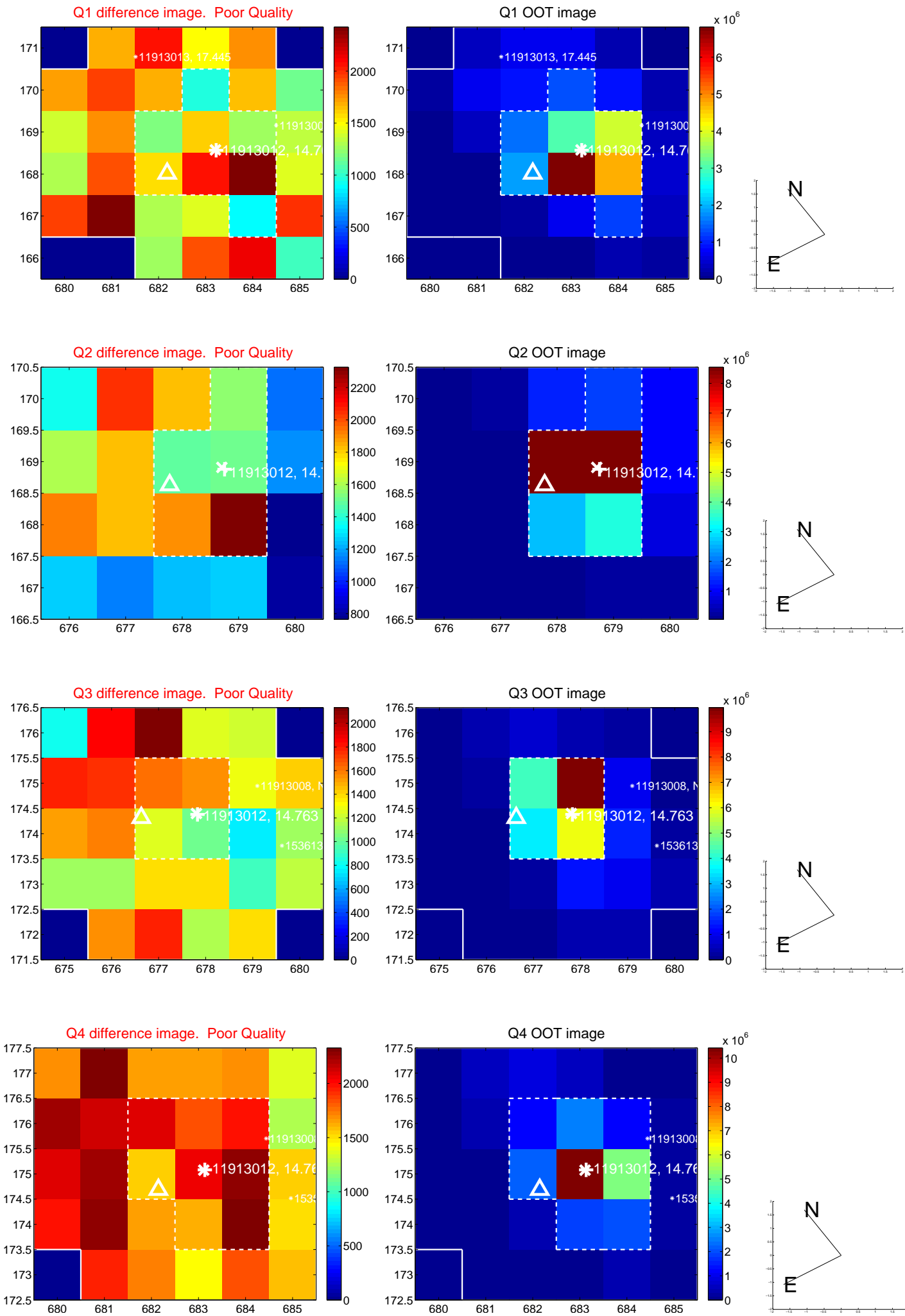
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.392 ± 0.318	13.79	4.078 ± 0.253	1.632 ± 0.361
PRF-fit source offset from KIC position	4.290 ± 0.329	13.05	4.014 ± 0.263	1.513 ± 0.350
photometric centroid source offset	2.83 ± 0.26	10.92	2.81 ± 0.26	0.34 ± 0.28

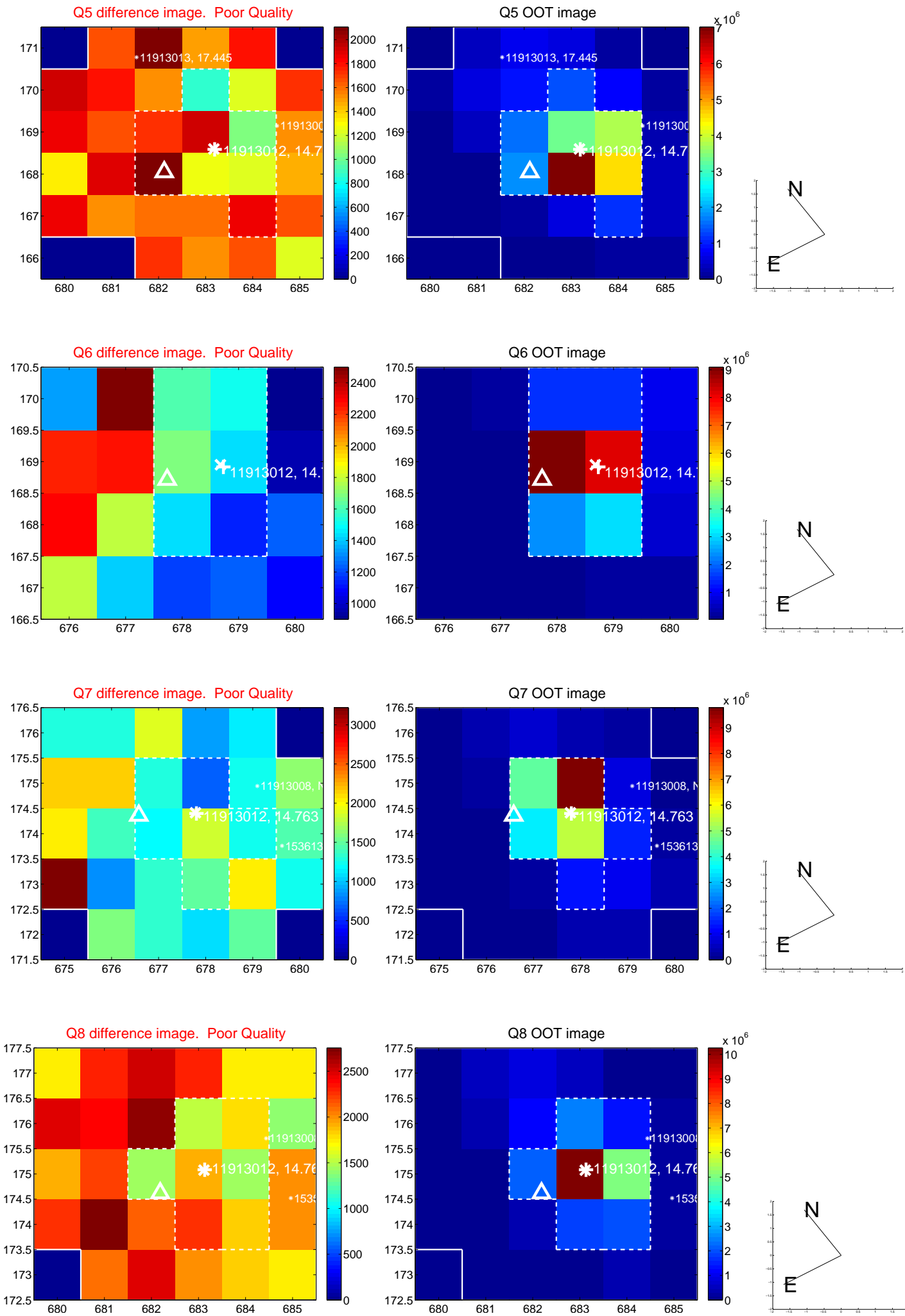


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

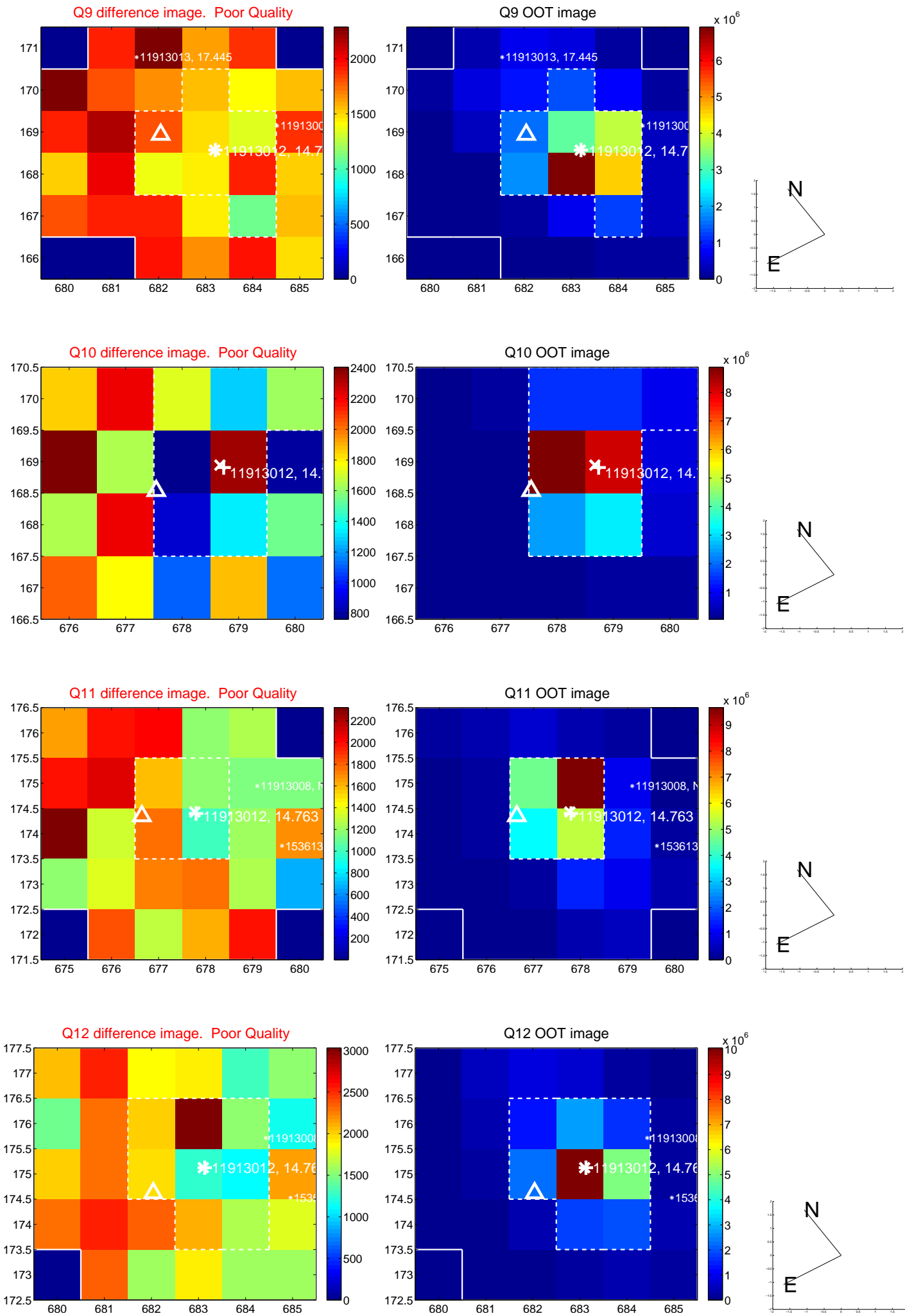
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



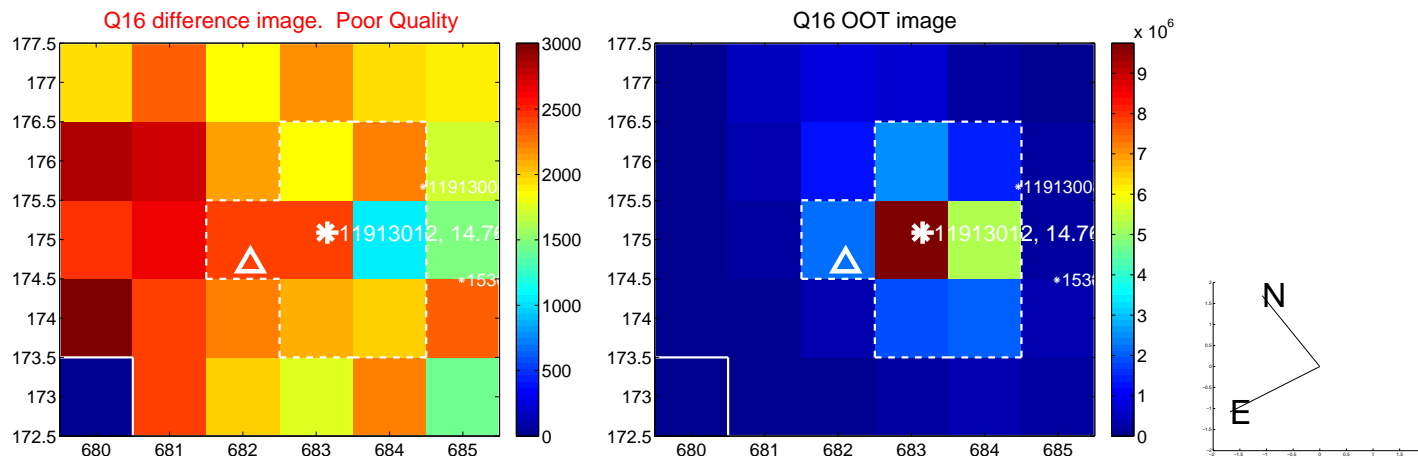
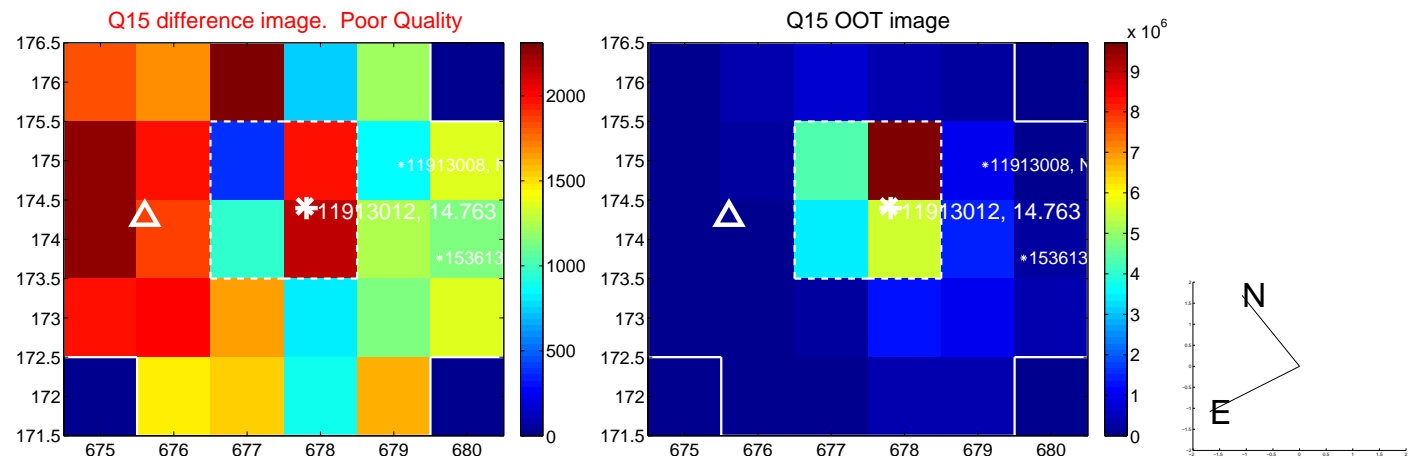
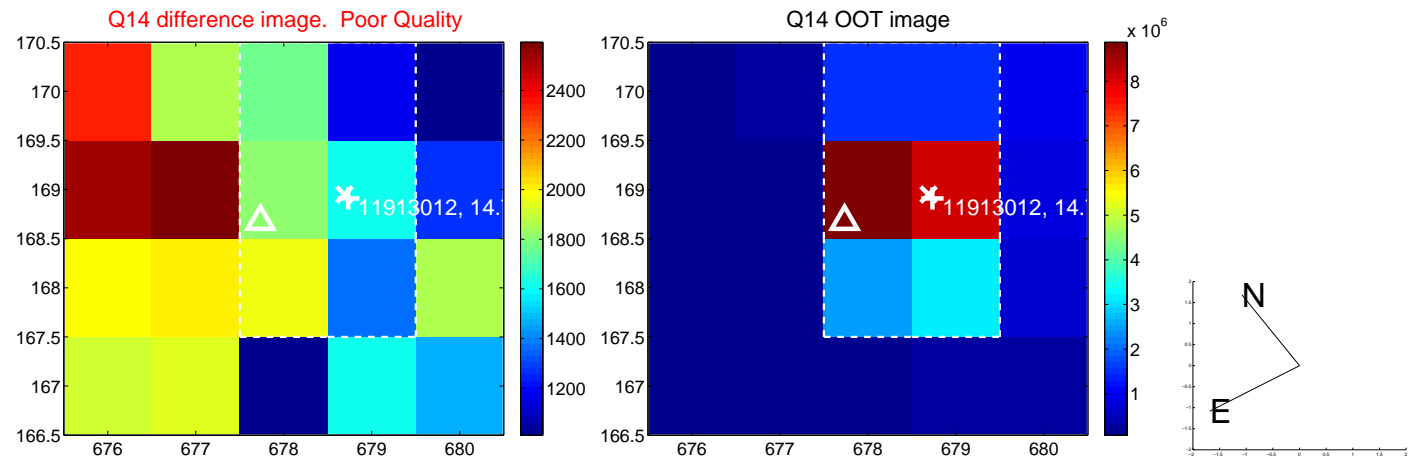
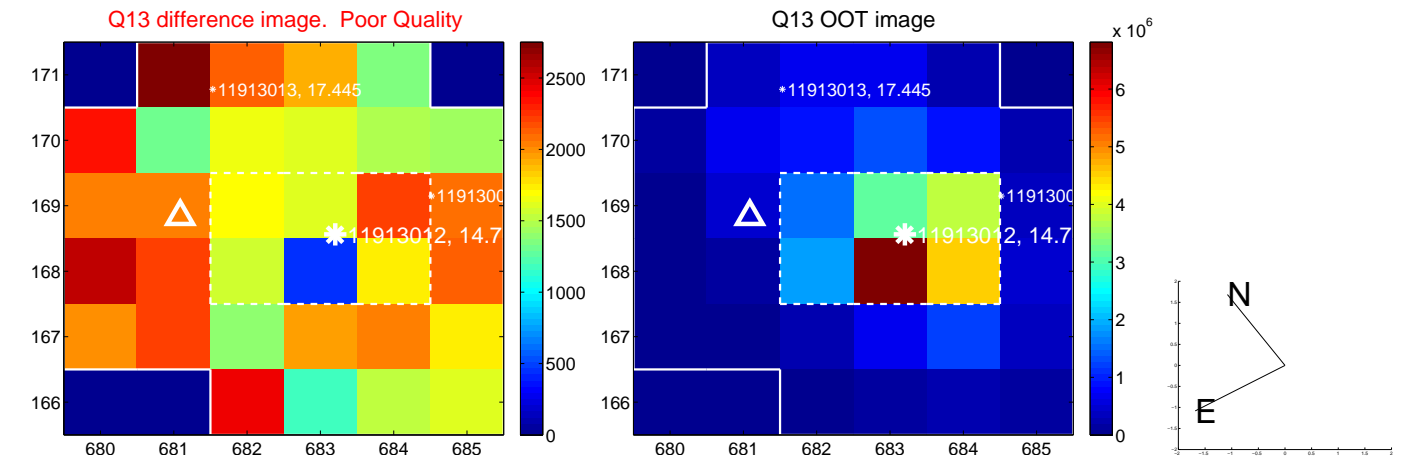
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



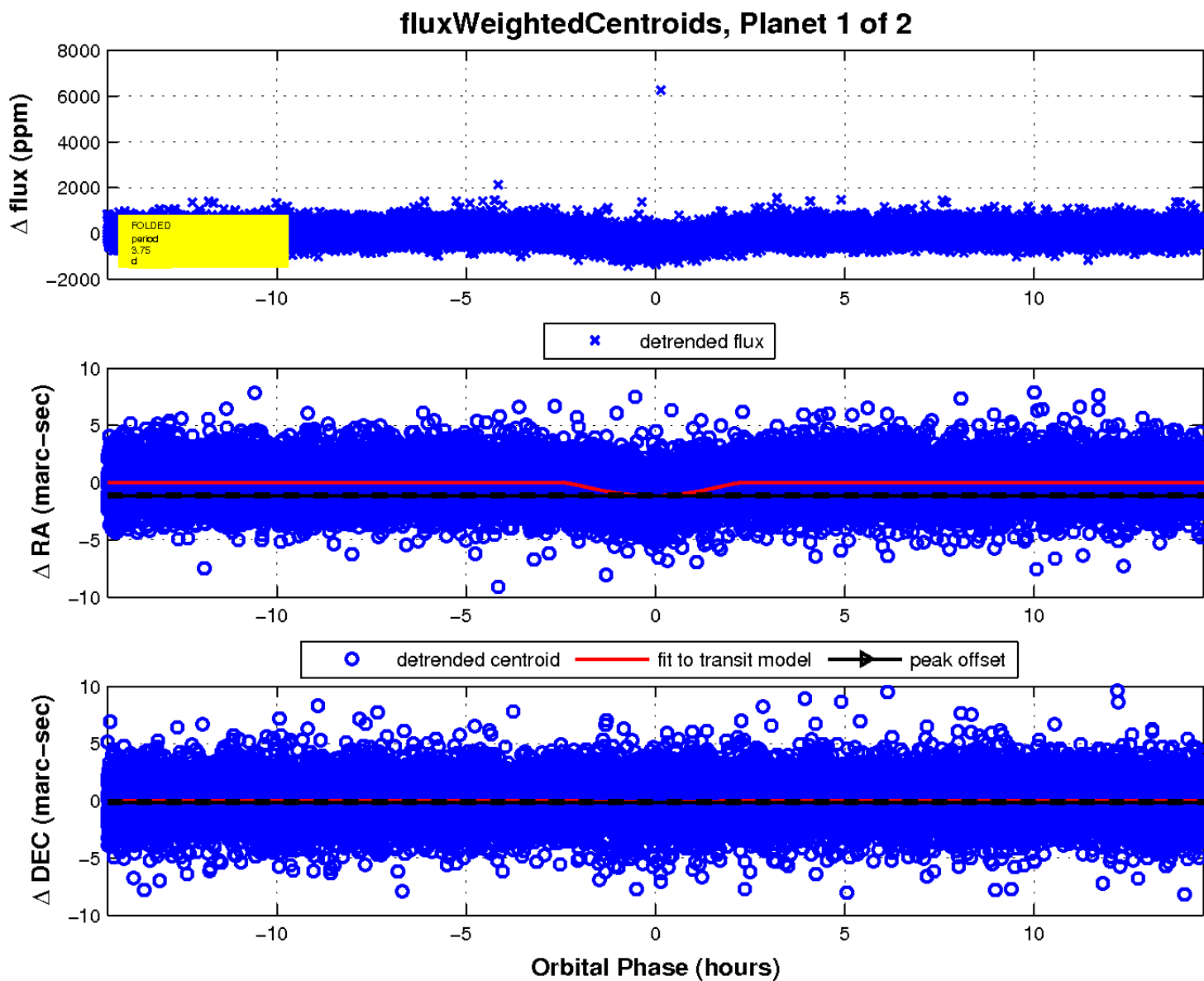
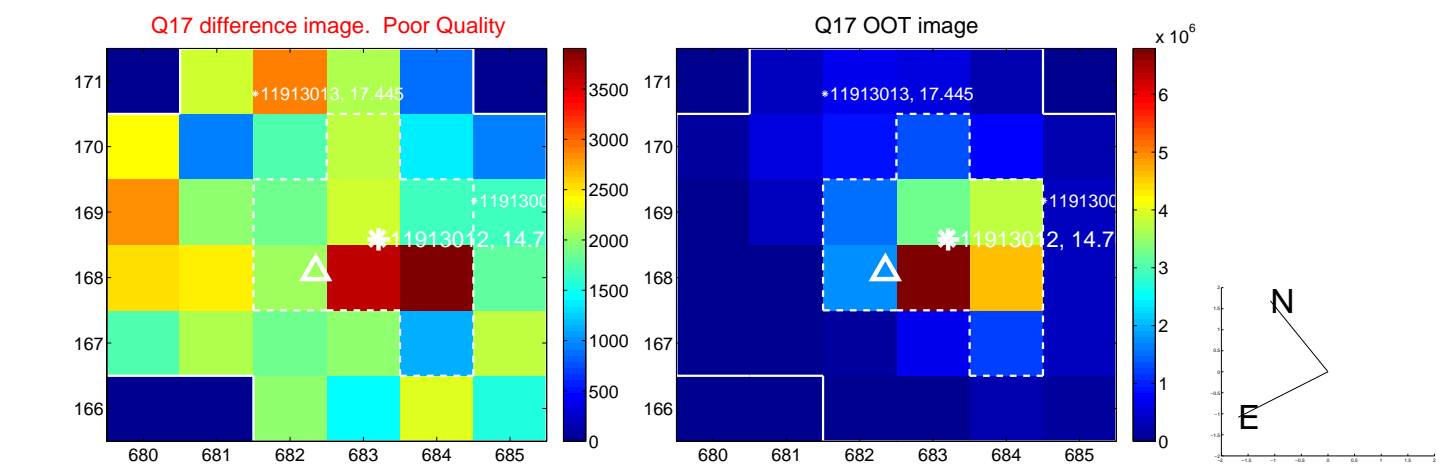
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

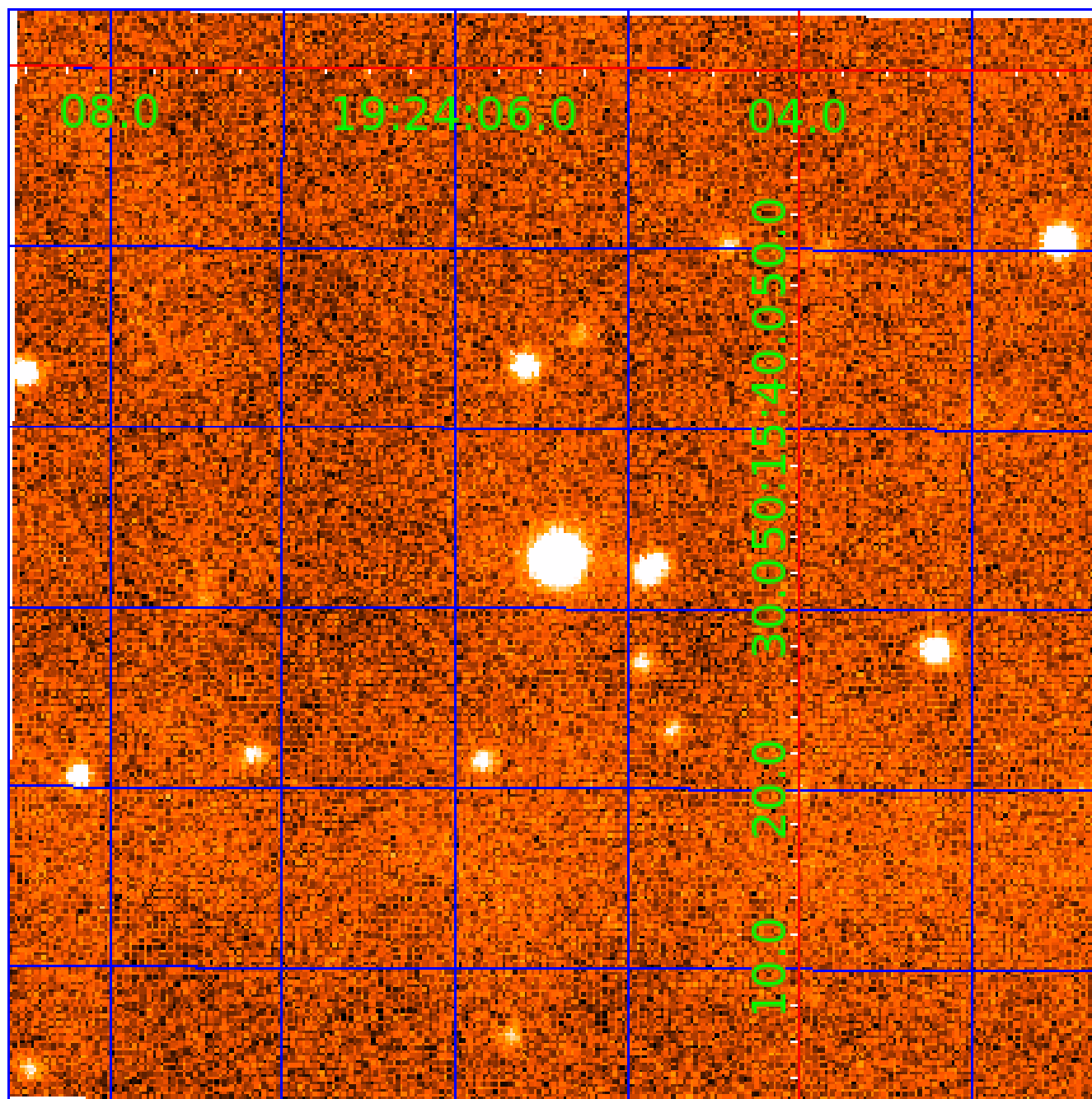


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011913012

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})
011913012-01	OBS	0544.01	3.747835	134.185761	403.9	4.828	42.4	48.4	1.05	6161	3.25	584.45
011913012-02	OBS	No	3.747787	132.326208	70.6	4.231	9.9	10.4	1.05	6161	1.01	584.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011913012-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
011913012-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

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 011913012-02

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
011913012-02	11913012	011913071-sec	11913071	1:1	90.4	15	17	9.53	14.76	657.75	Direct-PRF	0	0.72	0.83

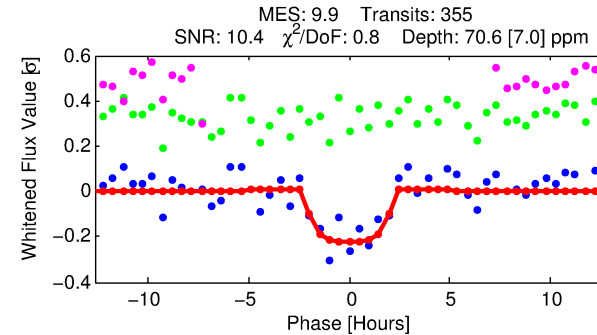
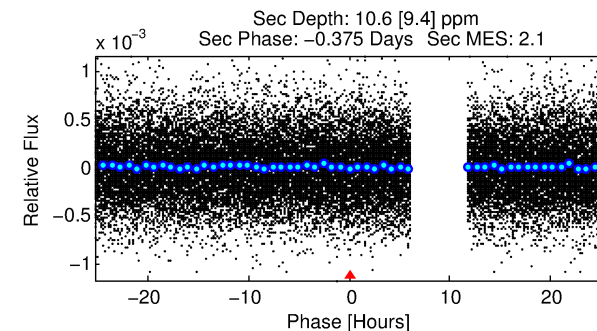
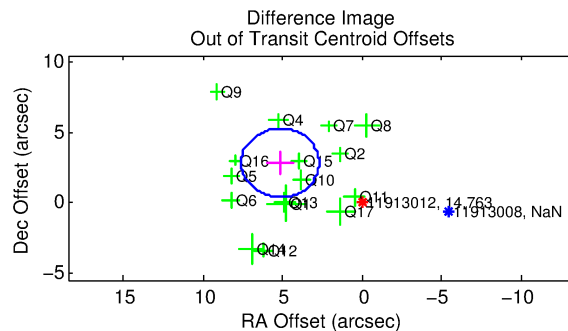
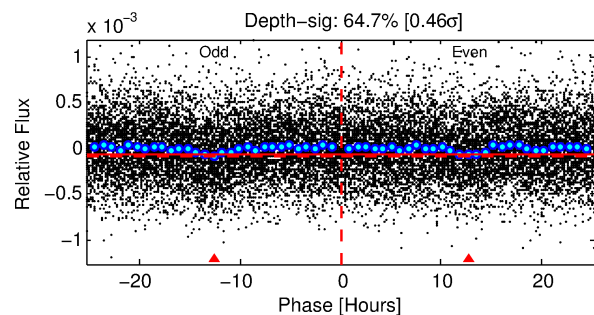
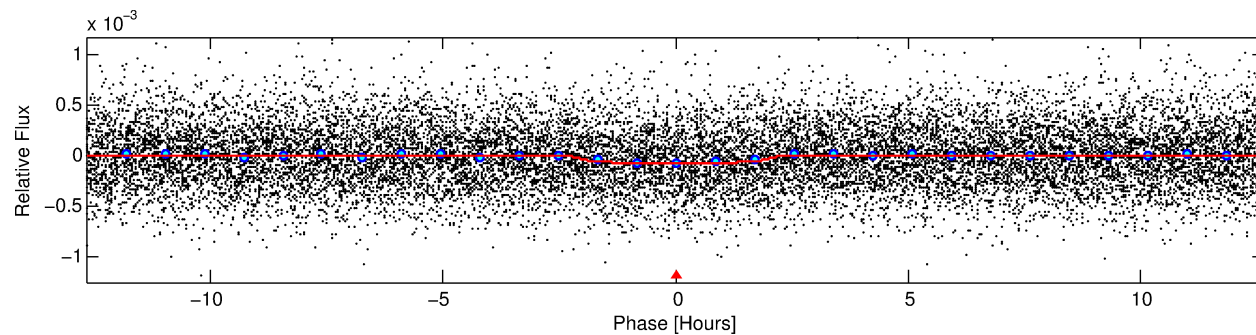
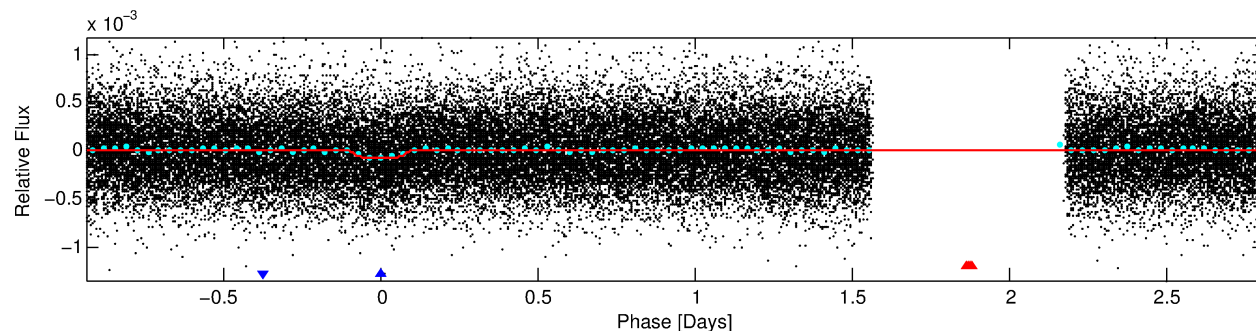
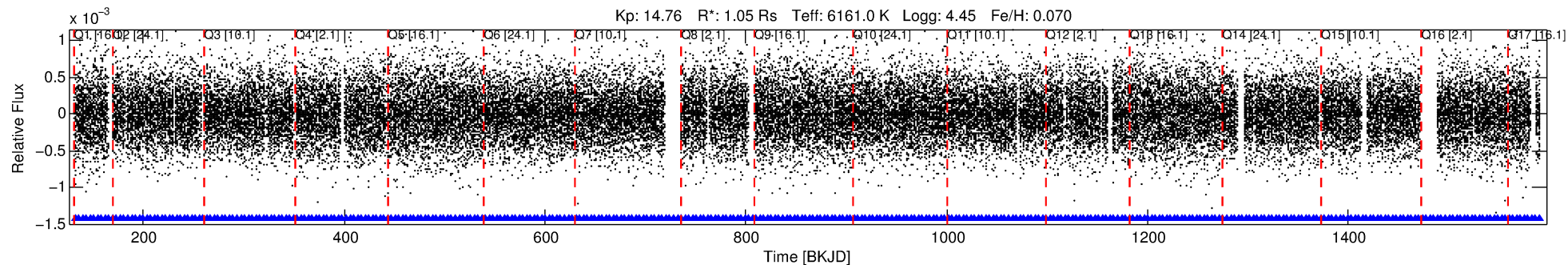
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 11913012 Candidate: 2 of 2 Period: 3.748 d

KOI: K00544 Corr: No Ephemeris Match

Kp: 14.76 R*: 1.05 Rs Teff: 6161.0 K Logg: 4.45 Fe/H: 0.070



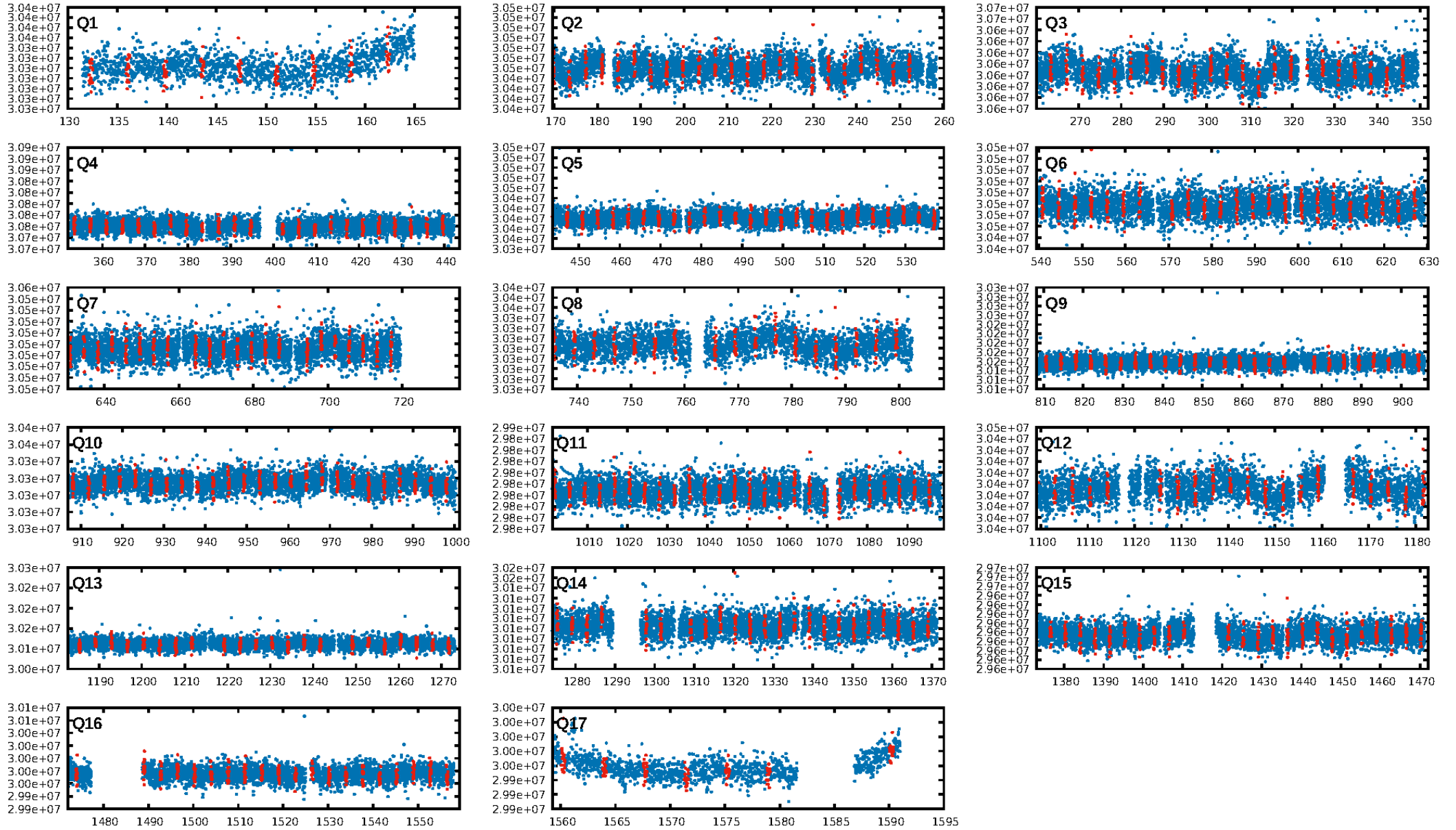
DV Fit Results:

Period = 3.74779 [0.00003] d
Epoch = 132.3262 [0.0059] BKJD
Rp/R* = 0.0088 [0.0050]
a/R* = 3.67 [9.84]
b = 0.86 [0.88]
Seff = 584.46 [245.79]
Teff = 1254 [132] K
Rp = 1.01 [0.66] Re
a = 0.0495 [0.0134] AU
Ag = 14.00 [20.82] [0.62σ]
Teffp = 3750 [1351] K [1.84σ]

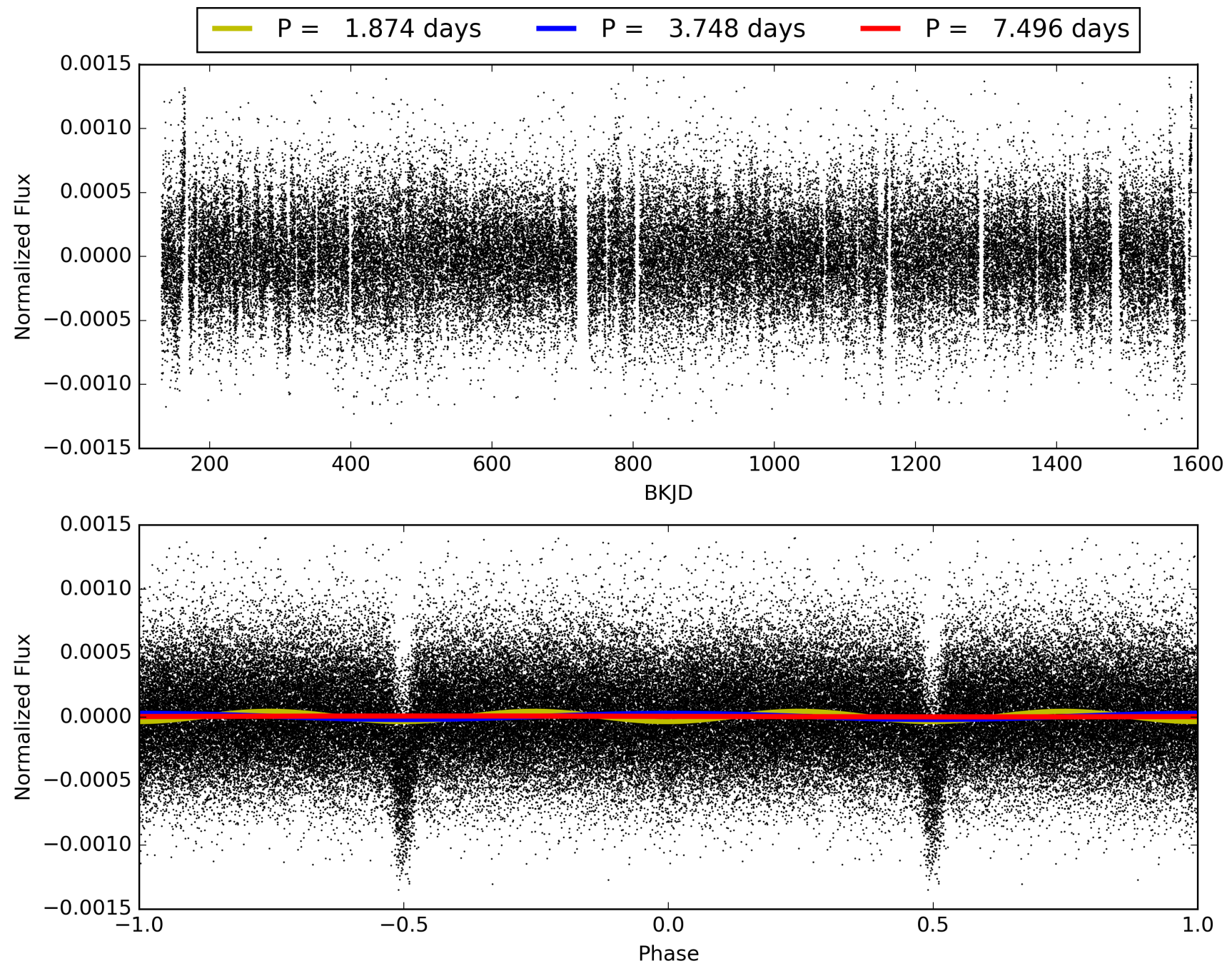
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.29e-25
RollingBand-fgt: 1.00 [339/339]
GhostDiagnostic-chr: 0.1449
Centroid-sig: 4.3%
Centroid-so: 2.574 arcsec [2.07σ]
OotOffset-rm: 5.888 arcsec [7.22σ]
KicOffset-rm: 5.778 arcsec [7.07σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.06 [1/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 011913012-02, PDC Light Curves

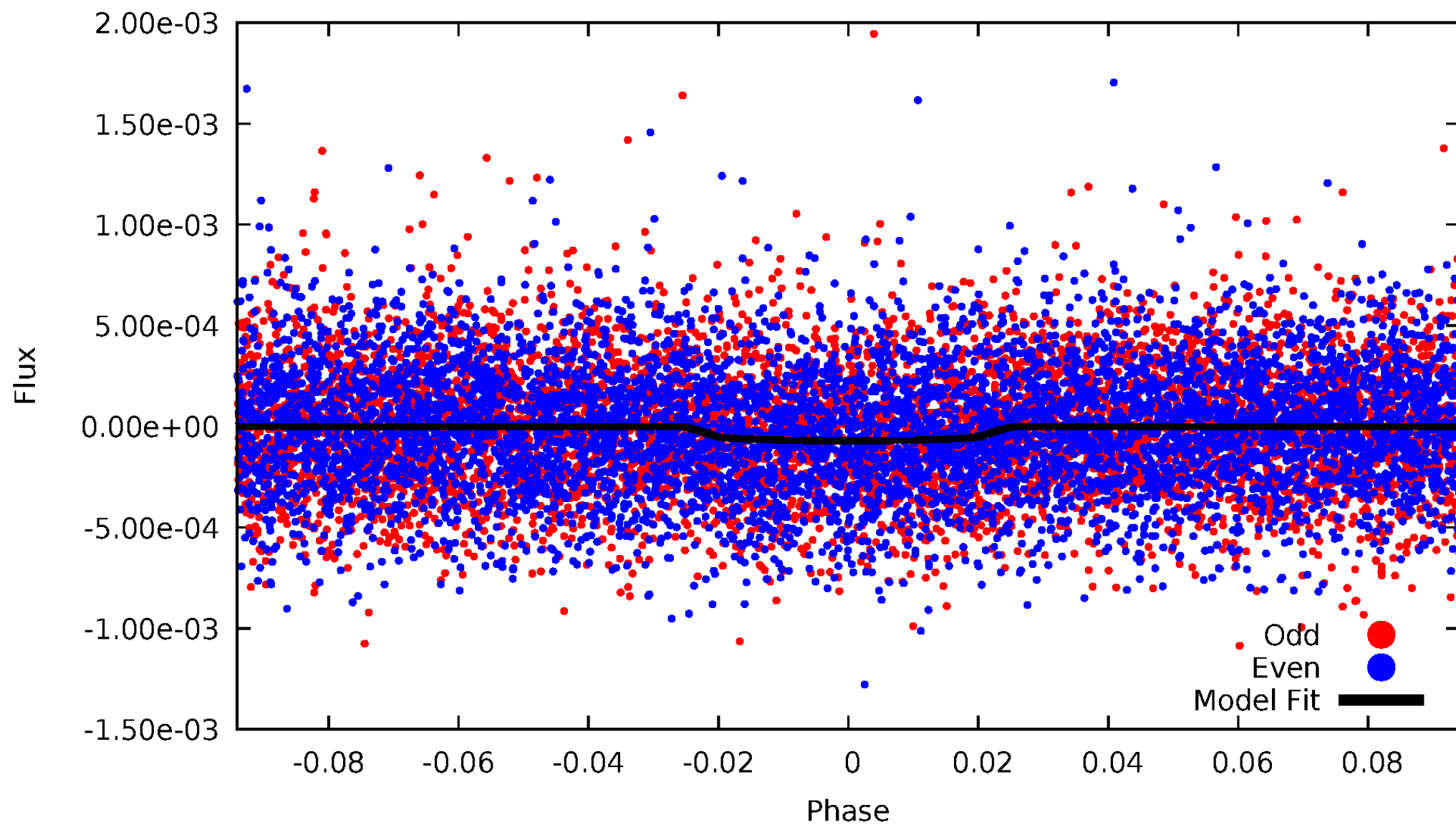


TCE 011913012-02



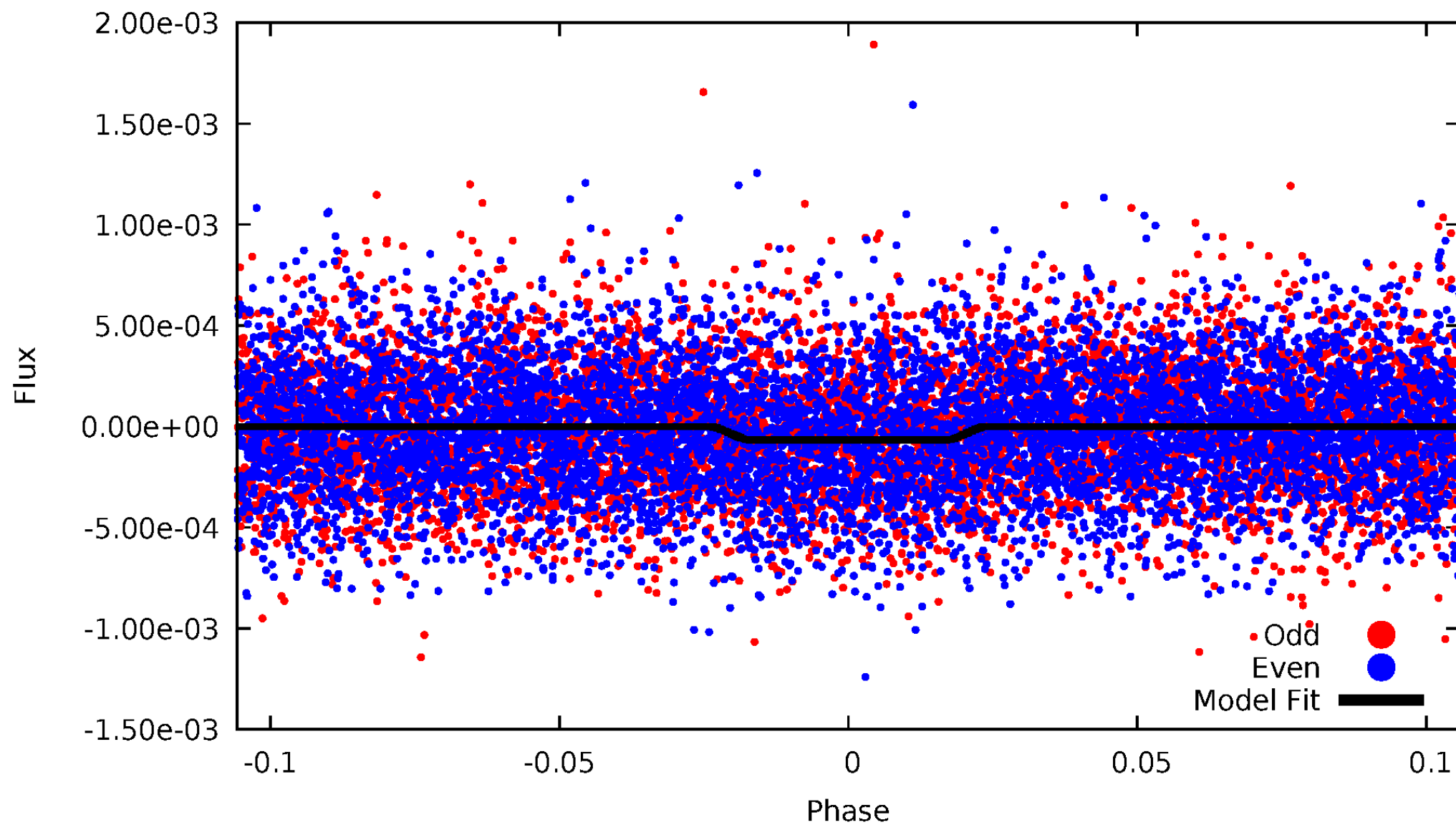
DV Odd/Even

TCE 011913012-02



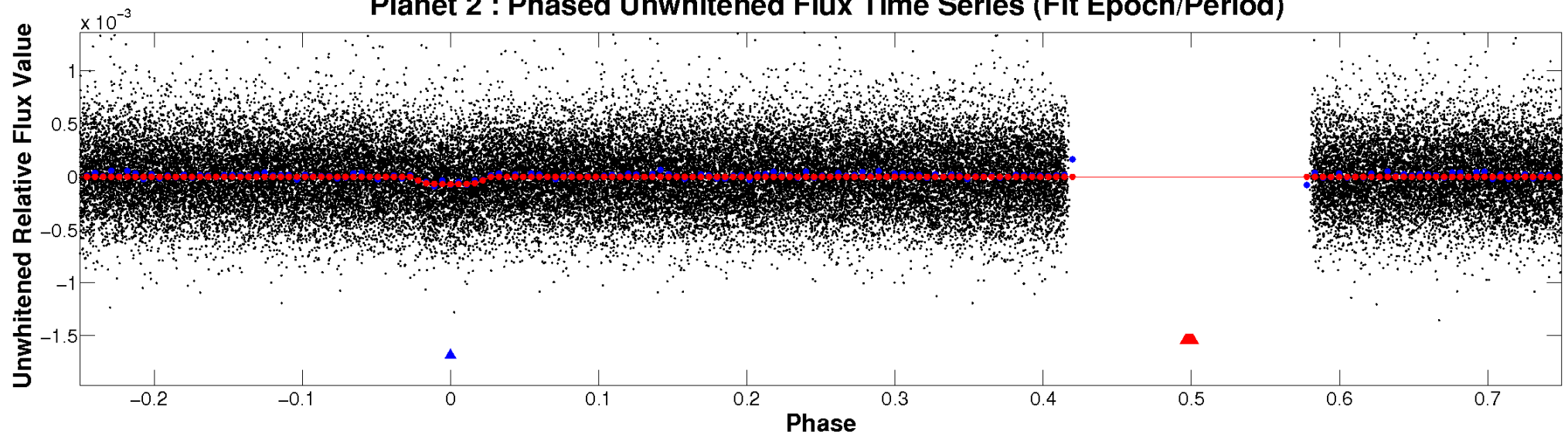
ALT Odd/Even

TCE 011913012-02

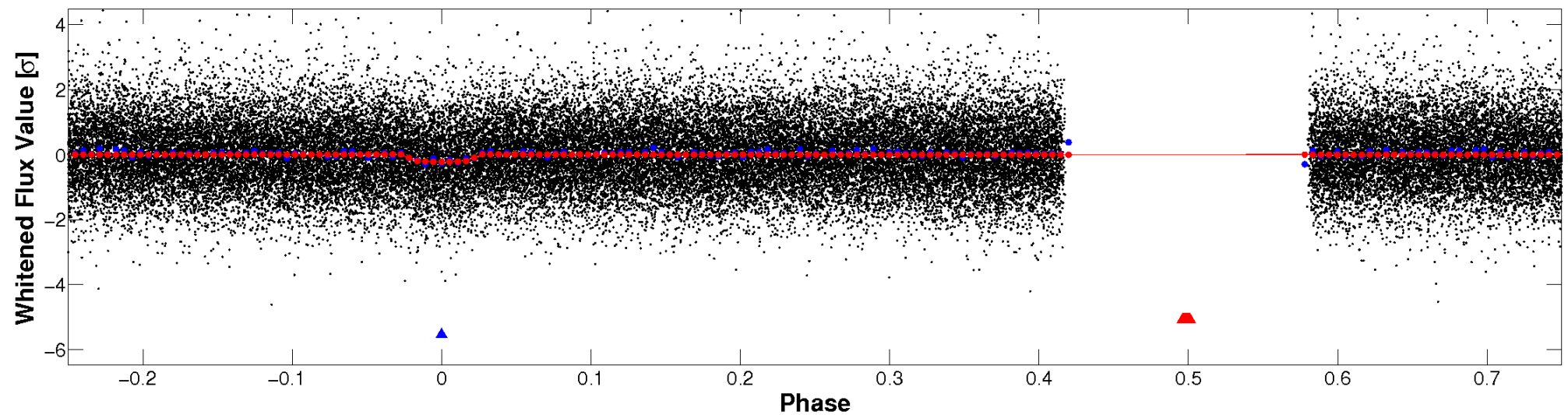


Non-Whitened Vs. Whitened Light Curve

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

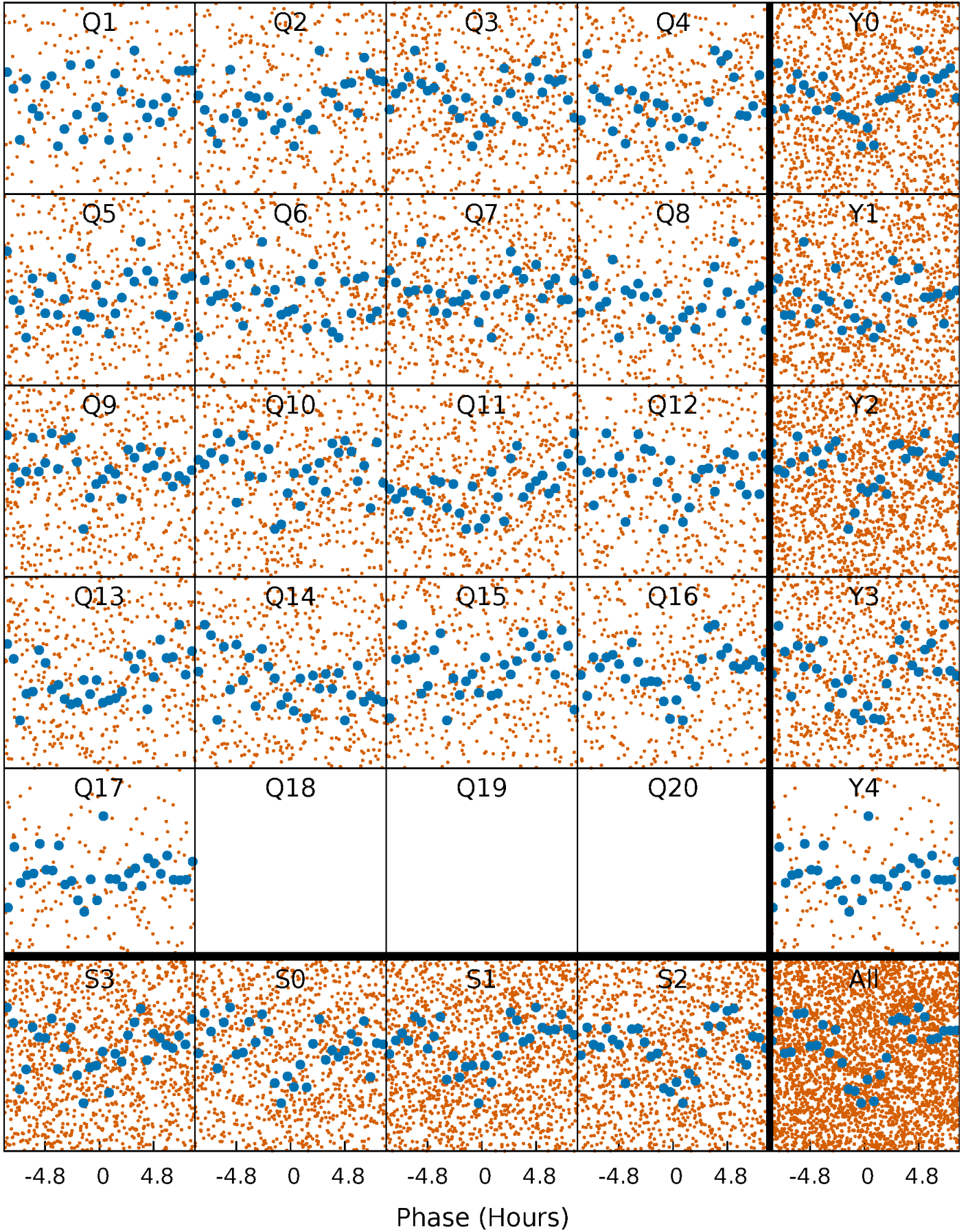


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



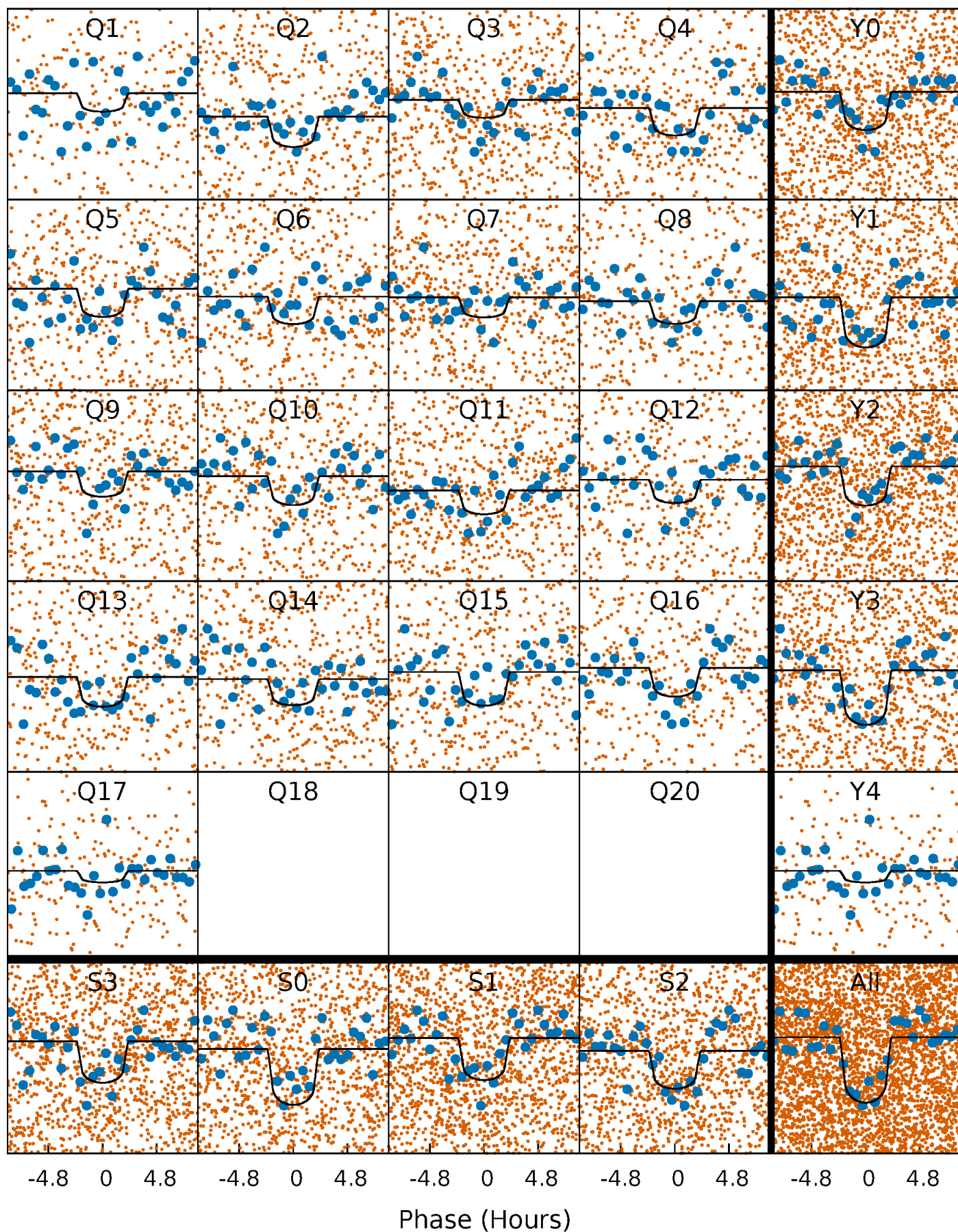
PDC Quarter-Phased Transit Curves

TCE 011913012-02 P= 3.747787 Days $T_0=132.326208$ (BKJD)



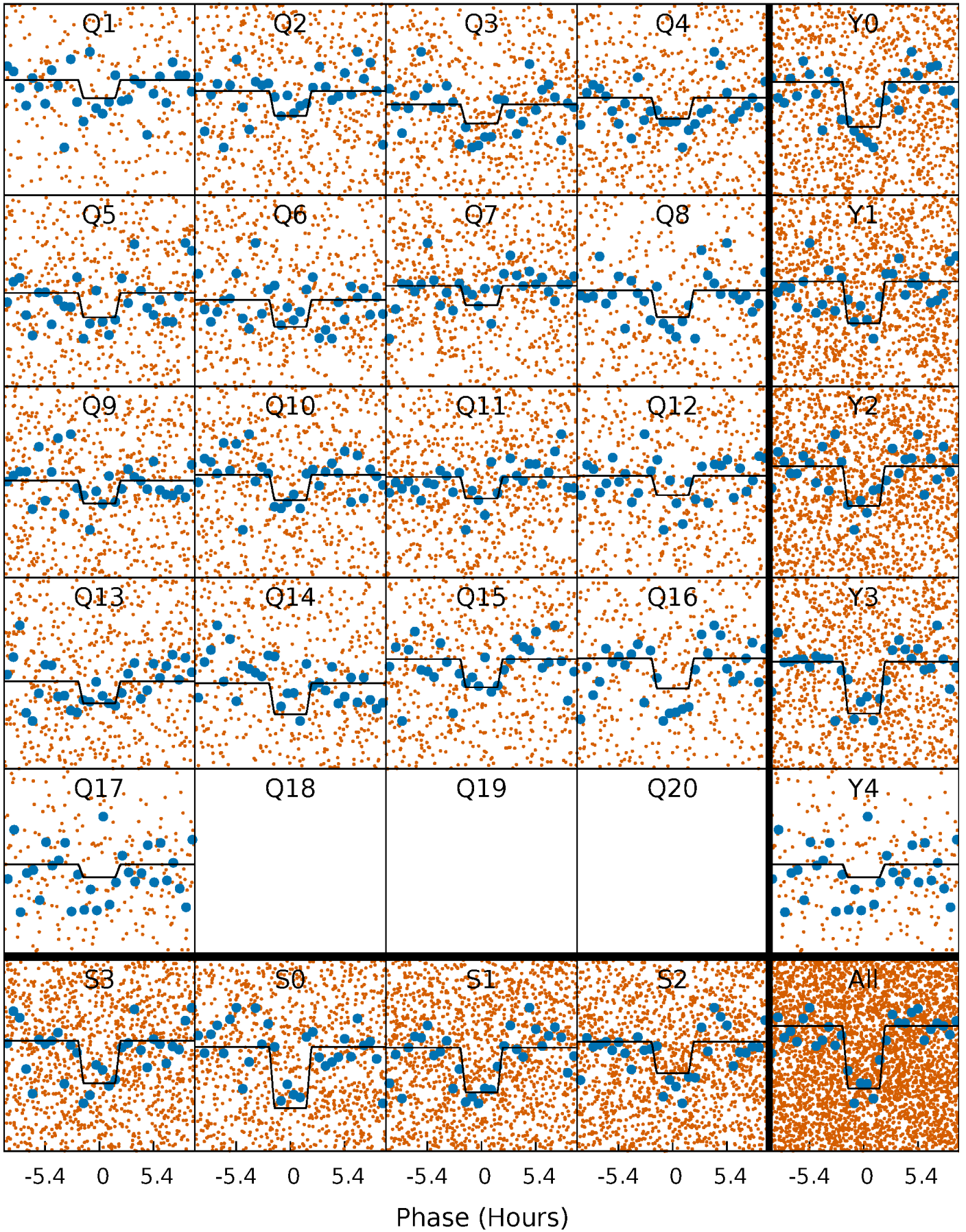
DV Quarter-Phased Transit Curves

TCE 011913012-02 P= 3.747787 Days $T_0=132.326208$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

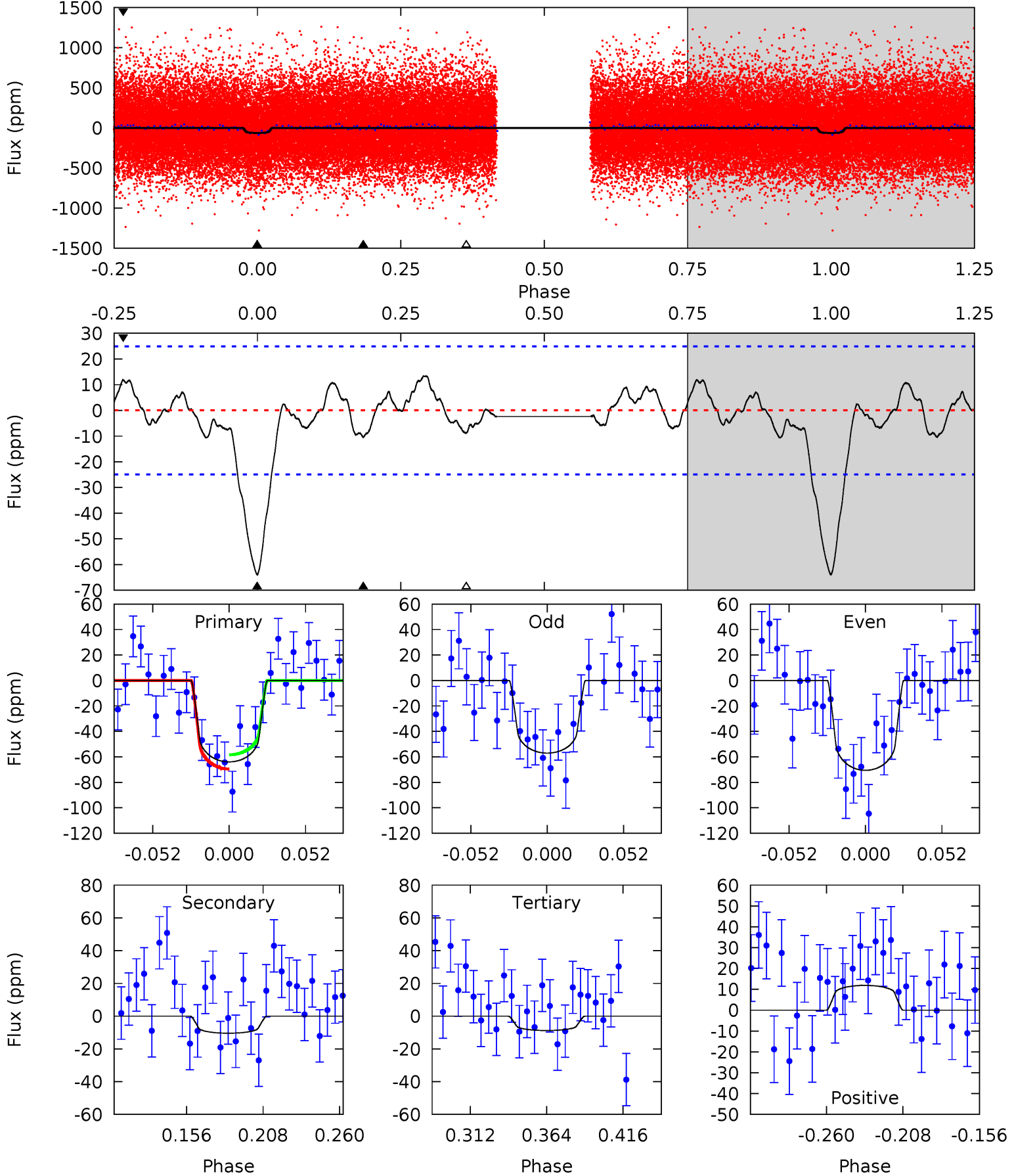
TCE 011913012-02 P= 3.747788 Days $T_0=132.324360$ (BKJD)



DV Model-Shift Uniqueness Test

011913012-02, P = 3.747787 Days, E = 128.578421 Days

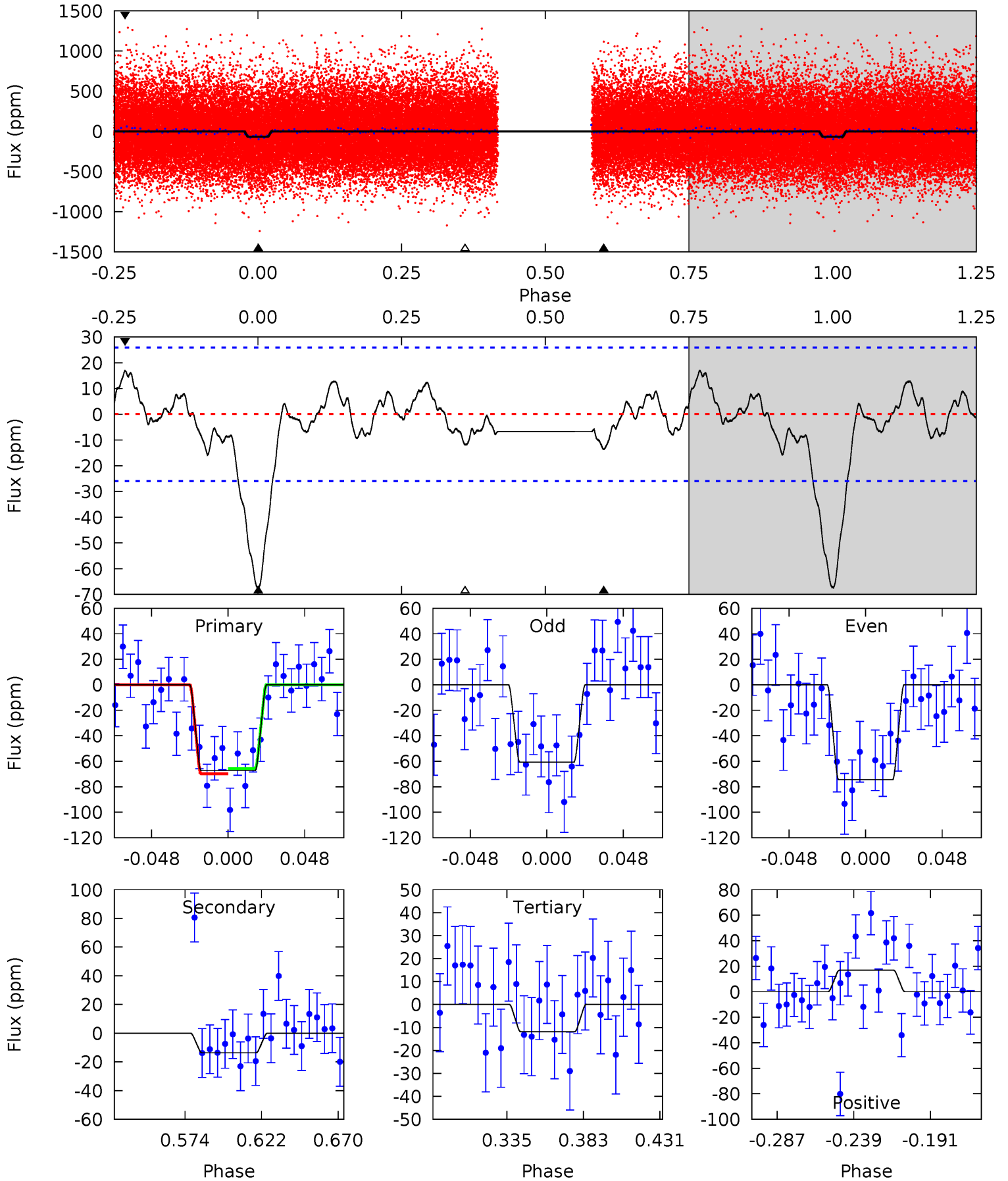
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	1.97	1.65	2.24	4.70	1.94	1.10	10.4	9.81	0.31	-0.28	1.27	0.85	0.17	1.06



Alt Model-Shift Uniqueness Test

011913012-02, P = 3.747788 Days, E = 128.576572 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	2.49	2.15	3.08	4.72	1.98	1.24	10.1	9.17	0.33	-0.59	1.24	0.94	0.20	0.37



Stellar Parameters For KIC 011913012

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6161^{+184}_{-221}	$4.454^{+0.054}_{-0.216}$	$0.070^{+0.250}_{-0.300}$	$1.053^{+0.340}_{-0.113}$	$1.150^{+0.138}_{-0.169}$	$1.388^{+0.316}_{-0.782}$
	+3%/-4%	+1%/-5%	+357%/-429%	+32%/-11%	+12%/-15%	+23%/-56%
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 011913012-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-10 ± 5	$1.12^{+0.62}_{-0.56}$	1793^{+135}_{-94}	3887^{+1265}_{-648}	10^{+32}_{-7}
Alt.	-14 ± 5	$1.02^{+0.62}_{-0.57}$	1786^{+132}_{-94}	4243^{+1750}_{-740}	17^{+70}_{-11}

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

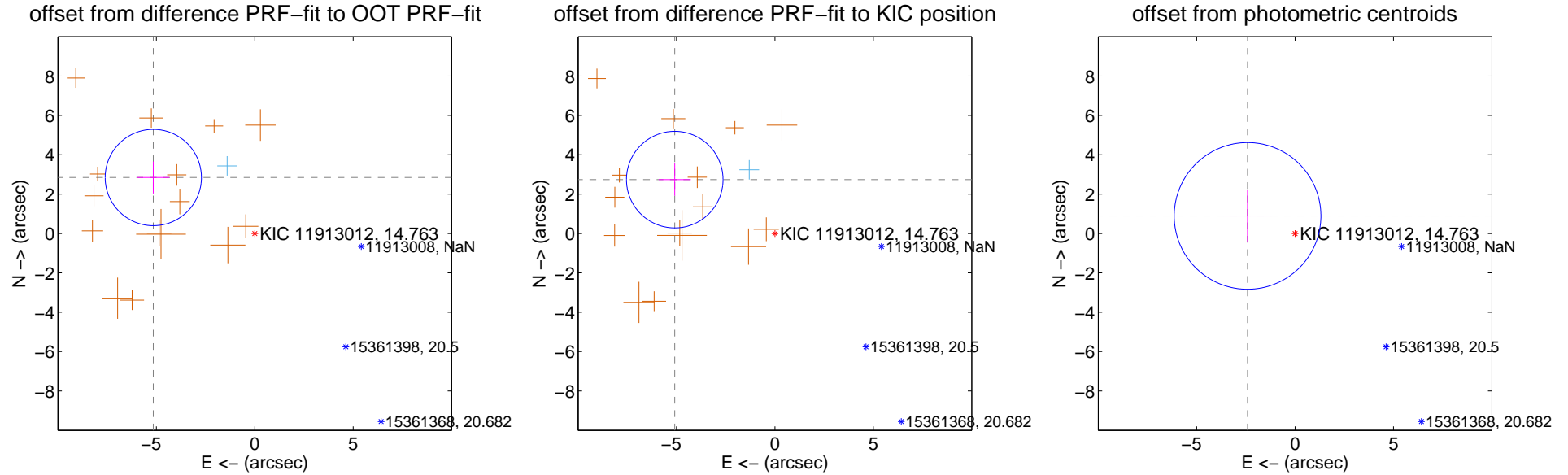
DV Centroid Data

Supplemental centroid analysis for 011913012-02. Kepler magnitude: 14.76. Transit SNR 10.39

There are 1 quarters with good PRF difference image offsets

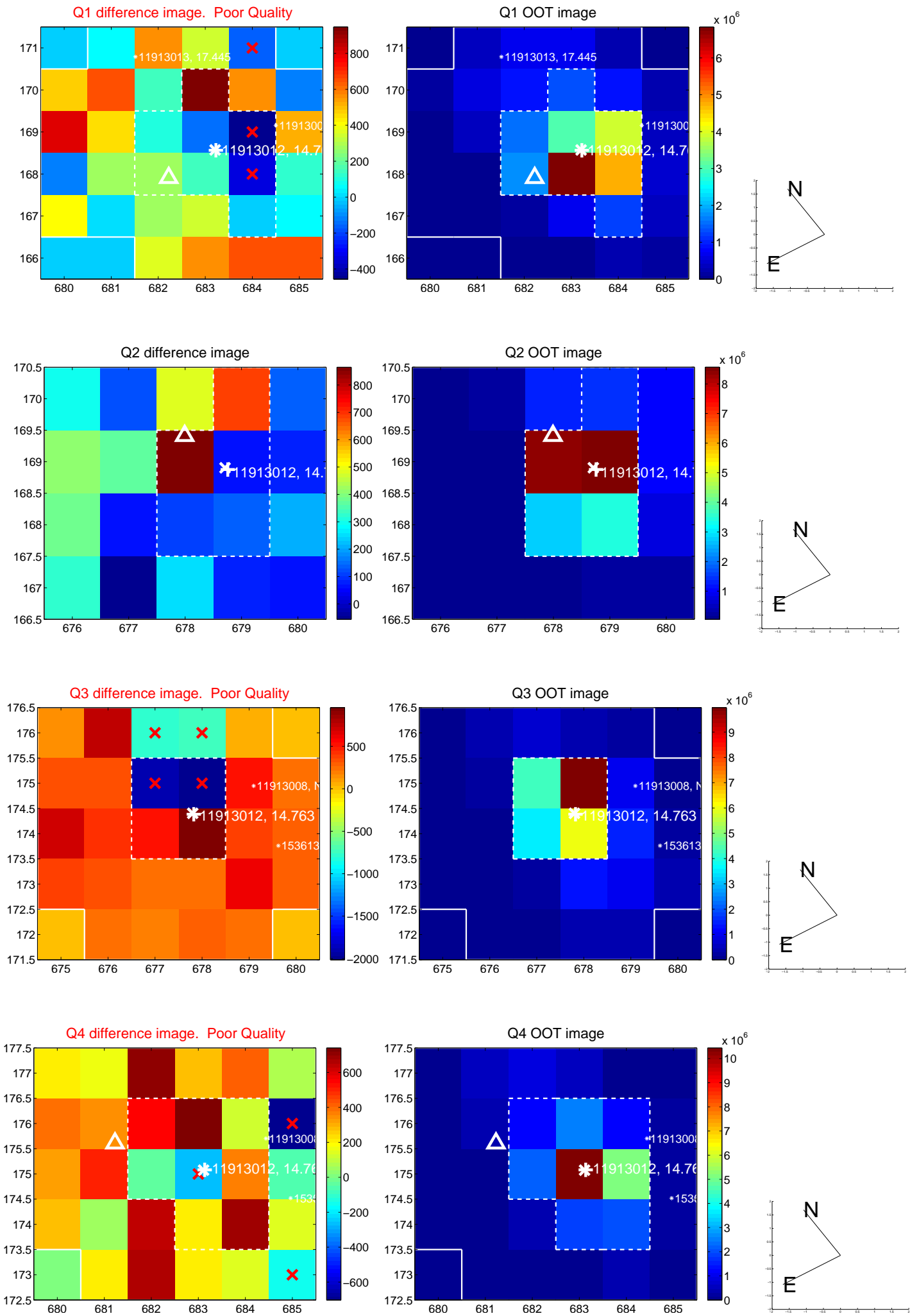
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.888 ± 0.815	7.22	5.155 ± 0.817	2.844 ± 0.810
PRF-fit source offset from KIC position	5.778 ± 0.818	7.07	5.089 ± 0.817	2.738 ± 0.821
photometric centroid source offset	2.57 ± 1.24	2.07	2.41 ± 1.23	0.89 ± 1.34

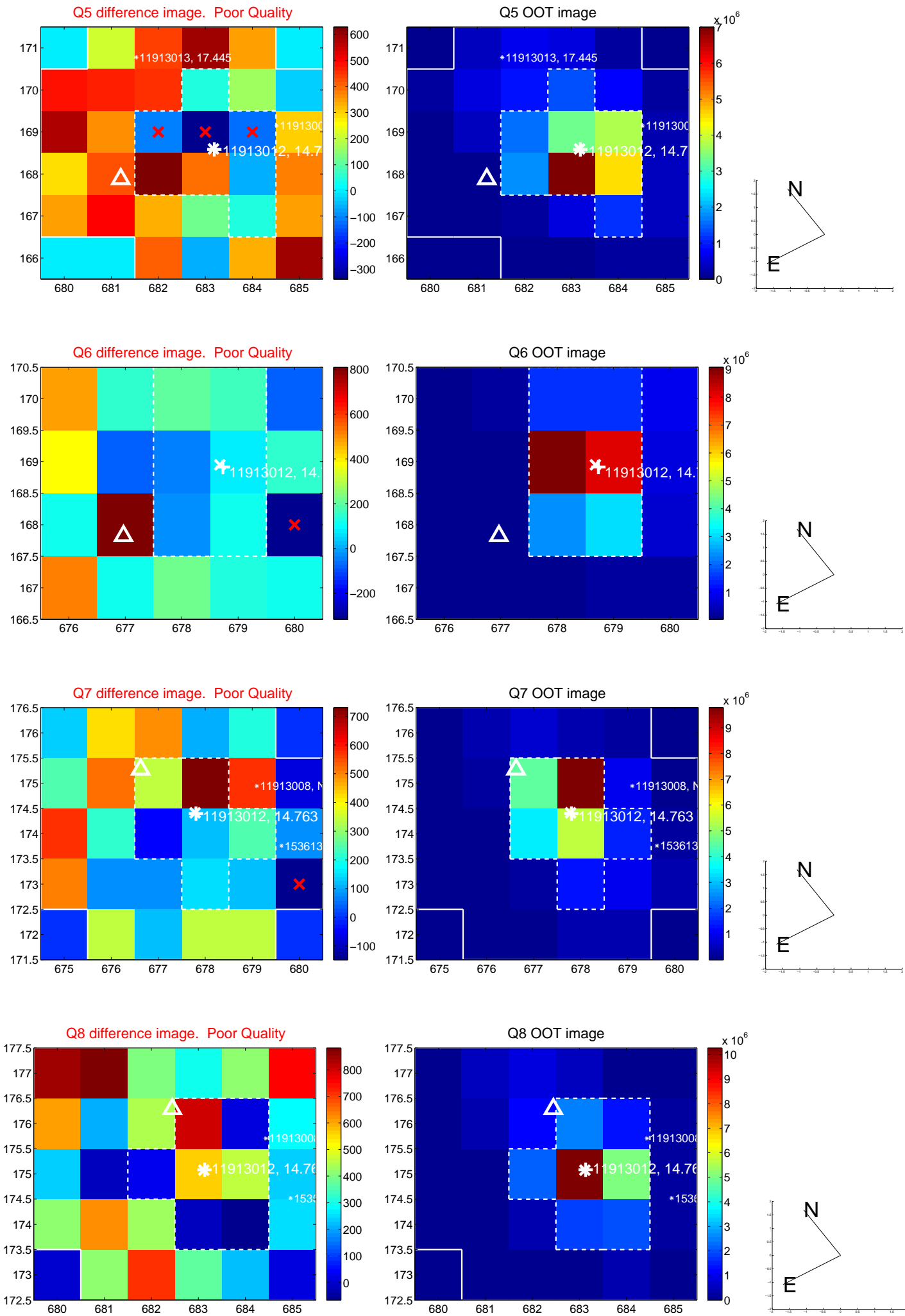


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

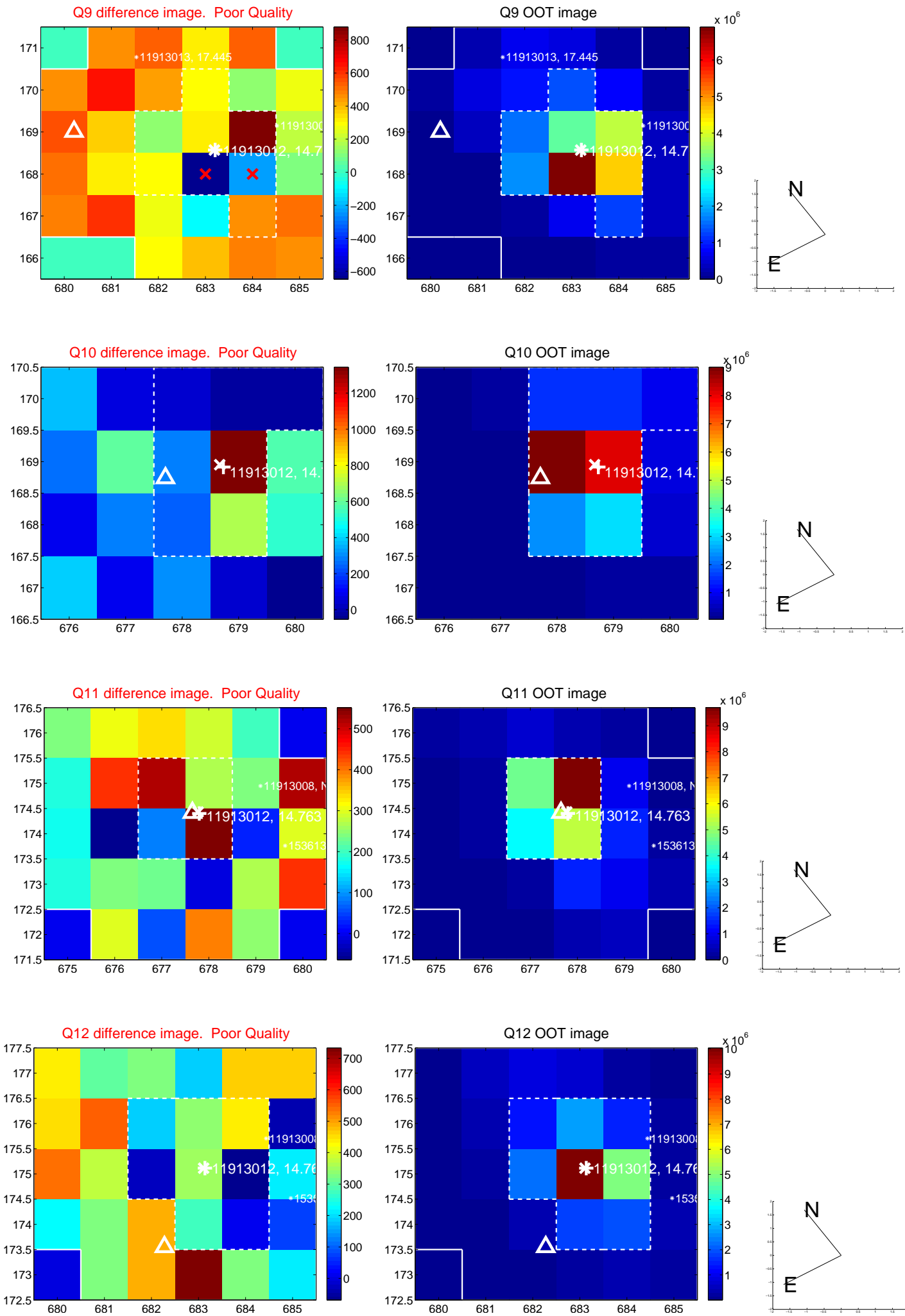
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



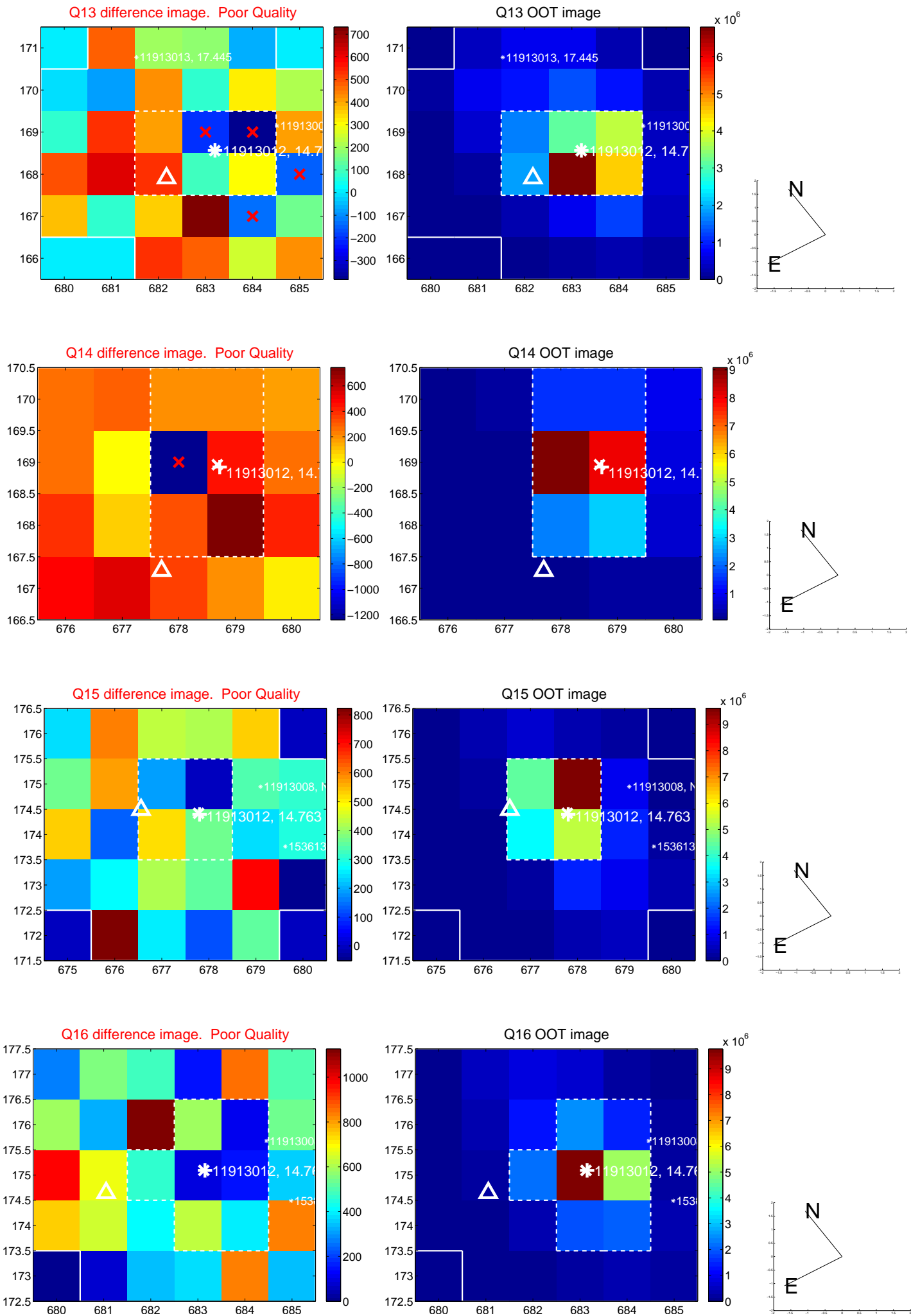
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



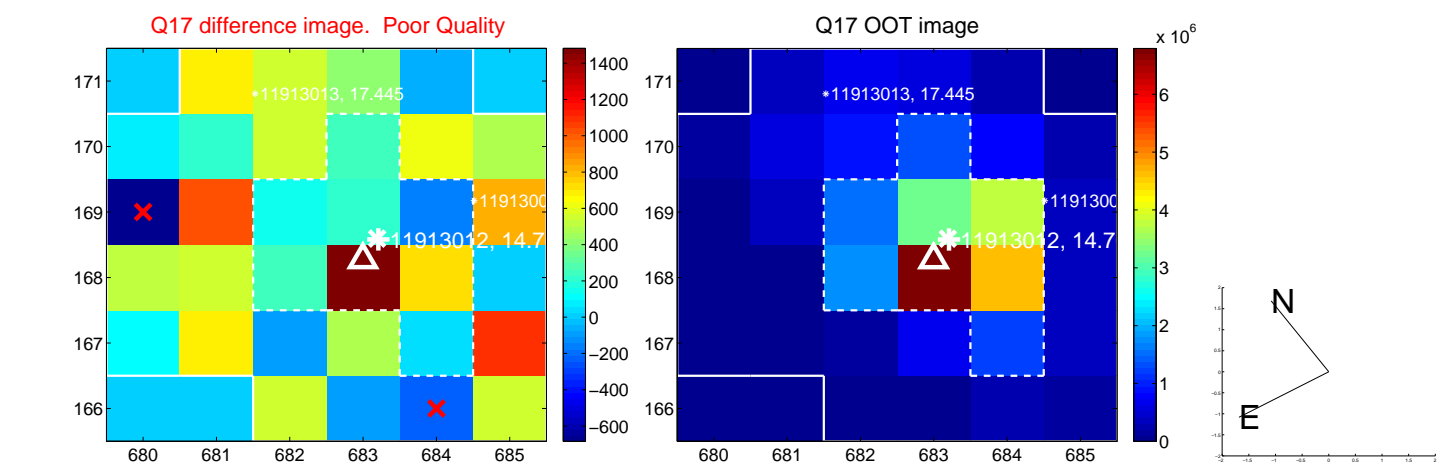
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



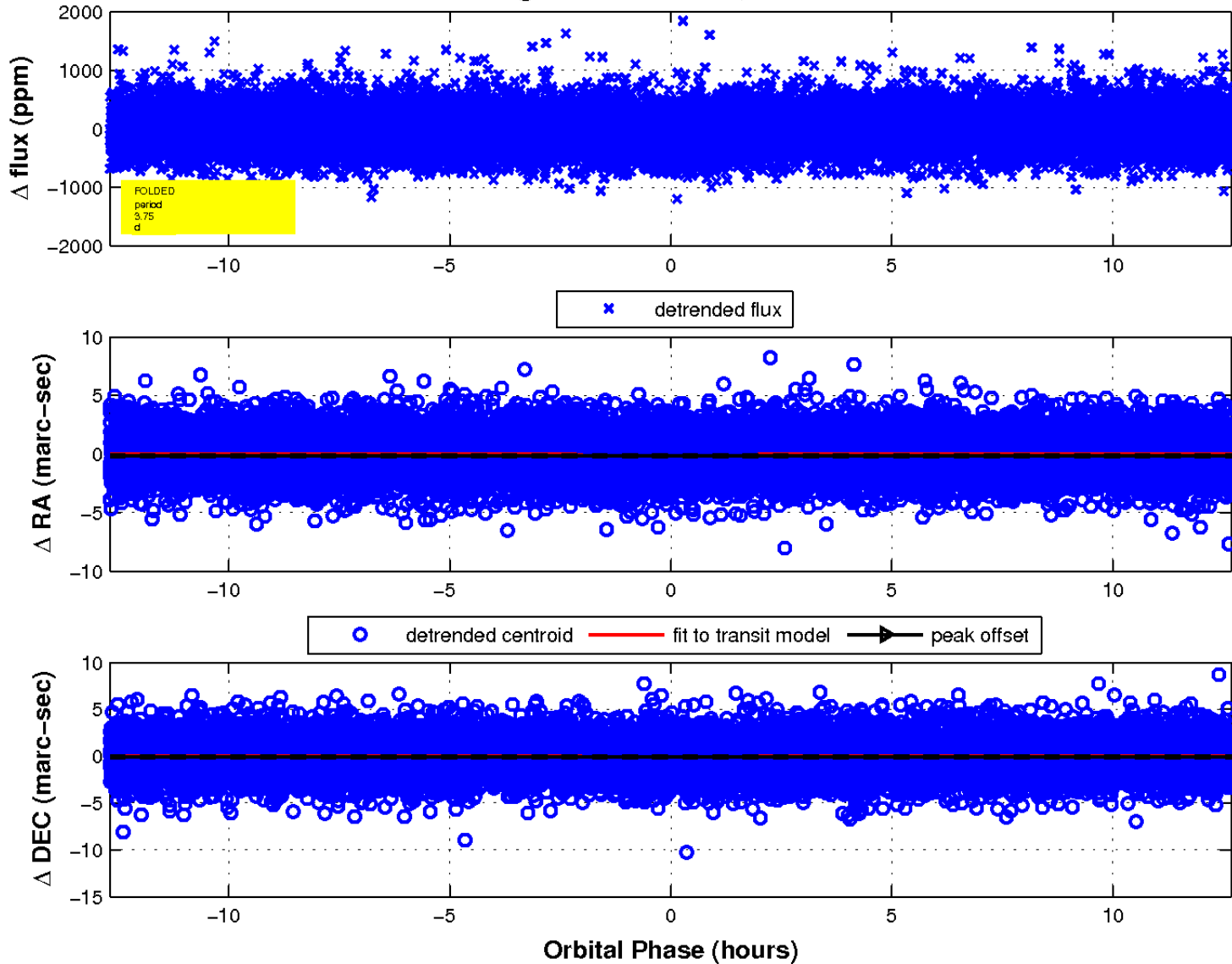
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

