

KIC 003230227

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})
003230227-01	OBS	6311.01	7.047107	132.749877	67029.1	2.992	6146.4	7156.3	2.32	8162	98.62	2749.05
003230227-02	OBS	No	7.046997	132.674179	108.1	14.756	67.0	11.3	2.32	8162	2.83	2749.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003230227-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—DEEP_V_SHAPED—CENT_SATURATED
003230227-02	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—RESIDUAL_TCE—CENT_SATURATED—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.

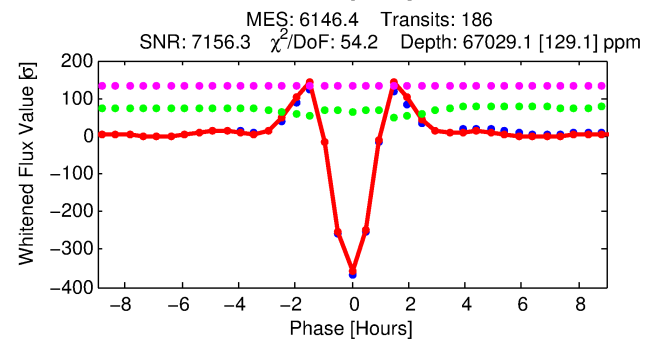
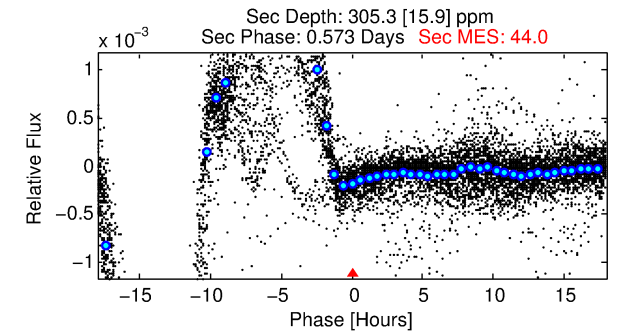
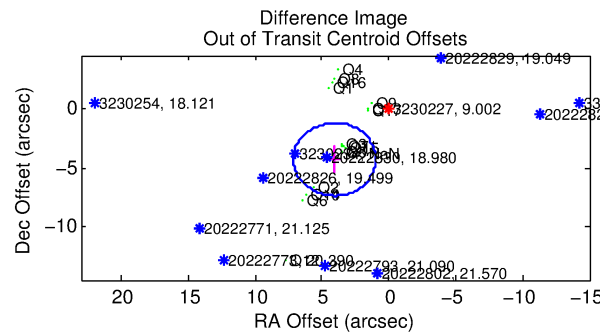
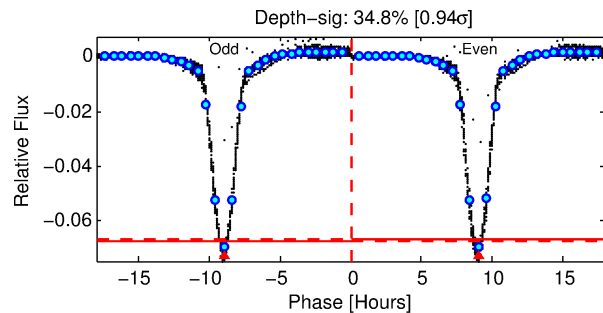
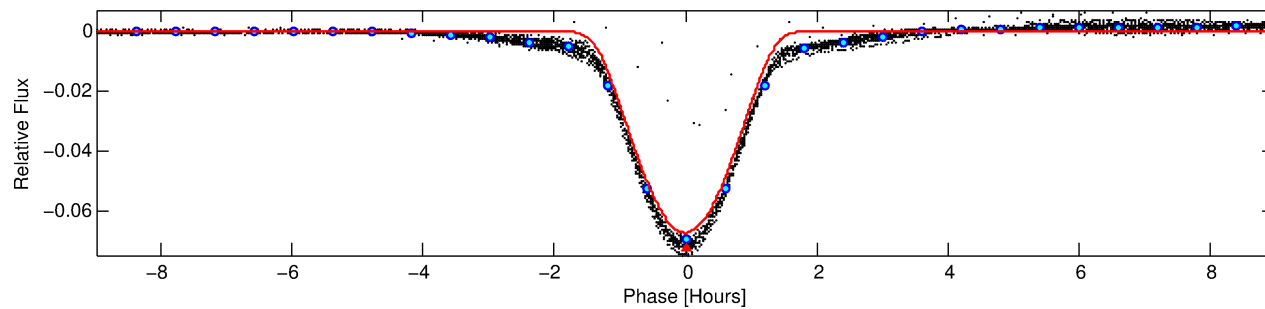
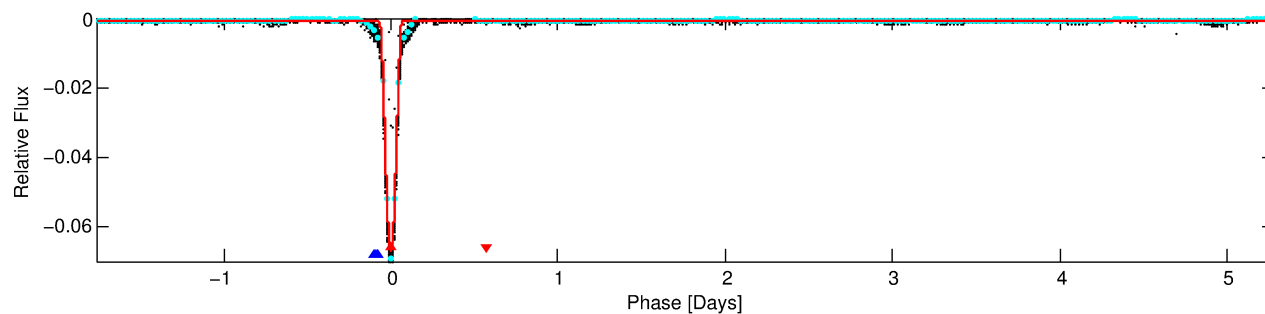
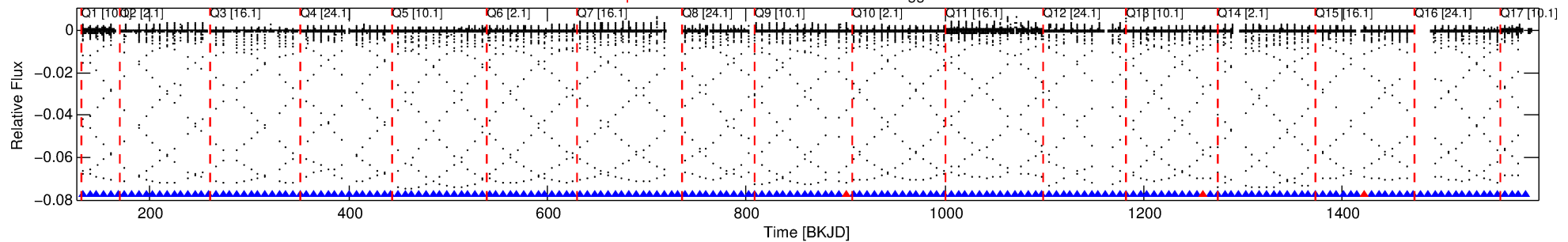
Ephemeris Match Information For 003230227-01

No Significant Match Found

DV One-Page Summary

KIC: 3230227 Candidate: 1 of 2 Period: 7.047 d
KOI: K06311.01 Corr: 0.976

Kp: 9.00 R*: 2.32 Rs Teff: 8162.0 K Logg: 3.97 Fe/H: -0.200



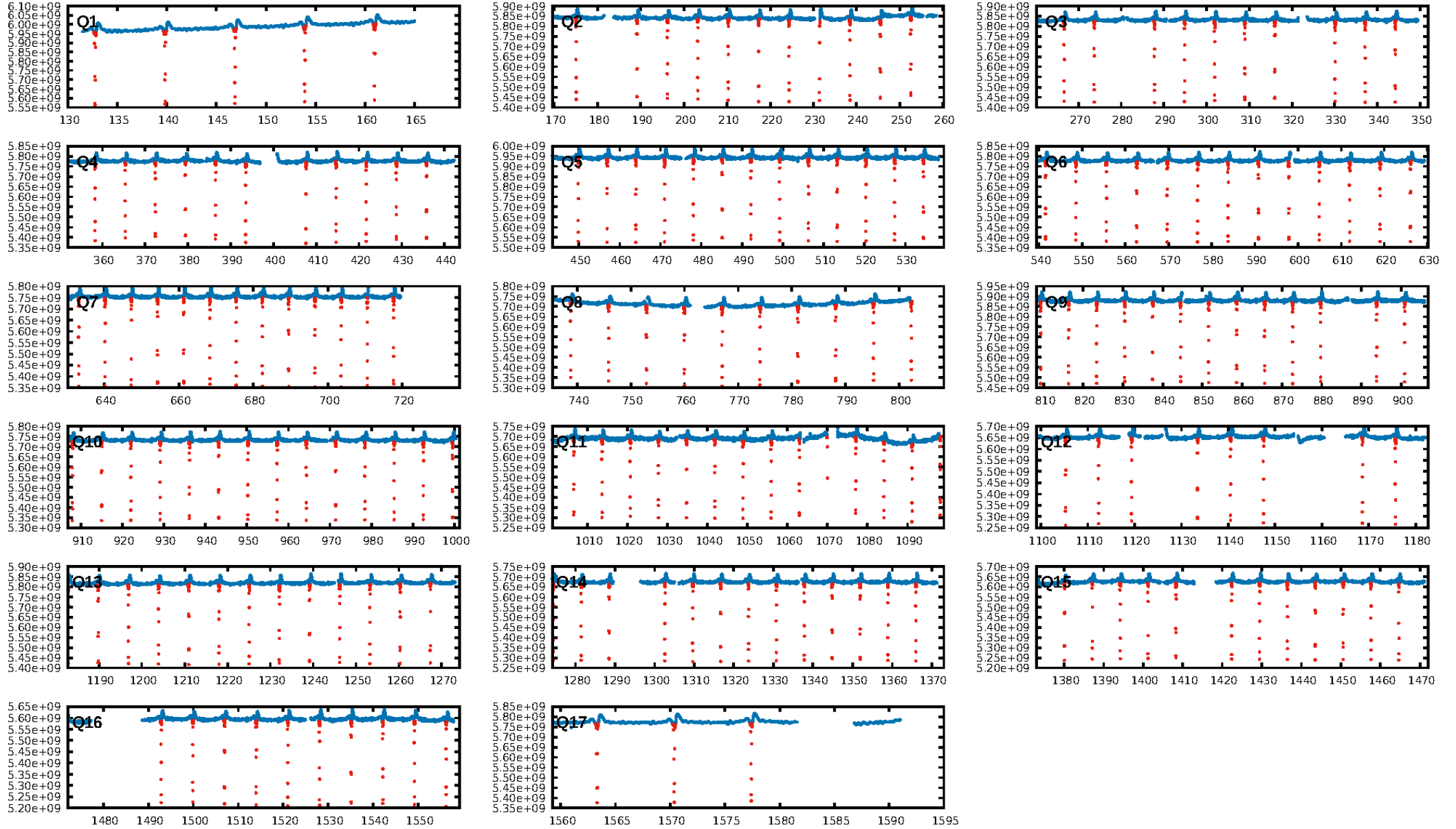
DV Fit Results:

Period = 7.04711 [0.00000] d
Epoch = 132.7499 [0.0000] BKJD
Rp/R* = 0.3894 [0.0363]
a/R* = 17.76 [0.02]
b = 0.98 [0.05]
Seff = 2749.05 [1211.67]
Teq = 1846 [203] K
Rp = 98.62 [30.08] Re
a = 0.0883 [0.0233] AU
Ag = 0.13 [0.06] [-14.24σ]
Teffp = 1729 [110] K [-0.51σ]

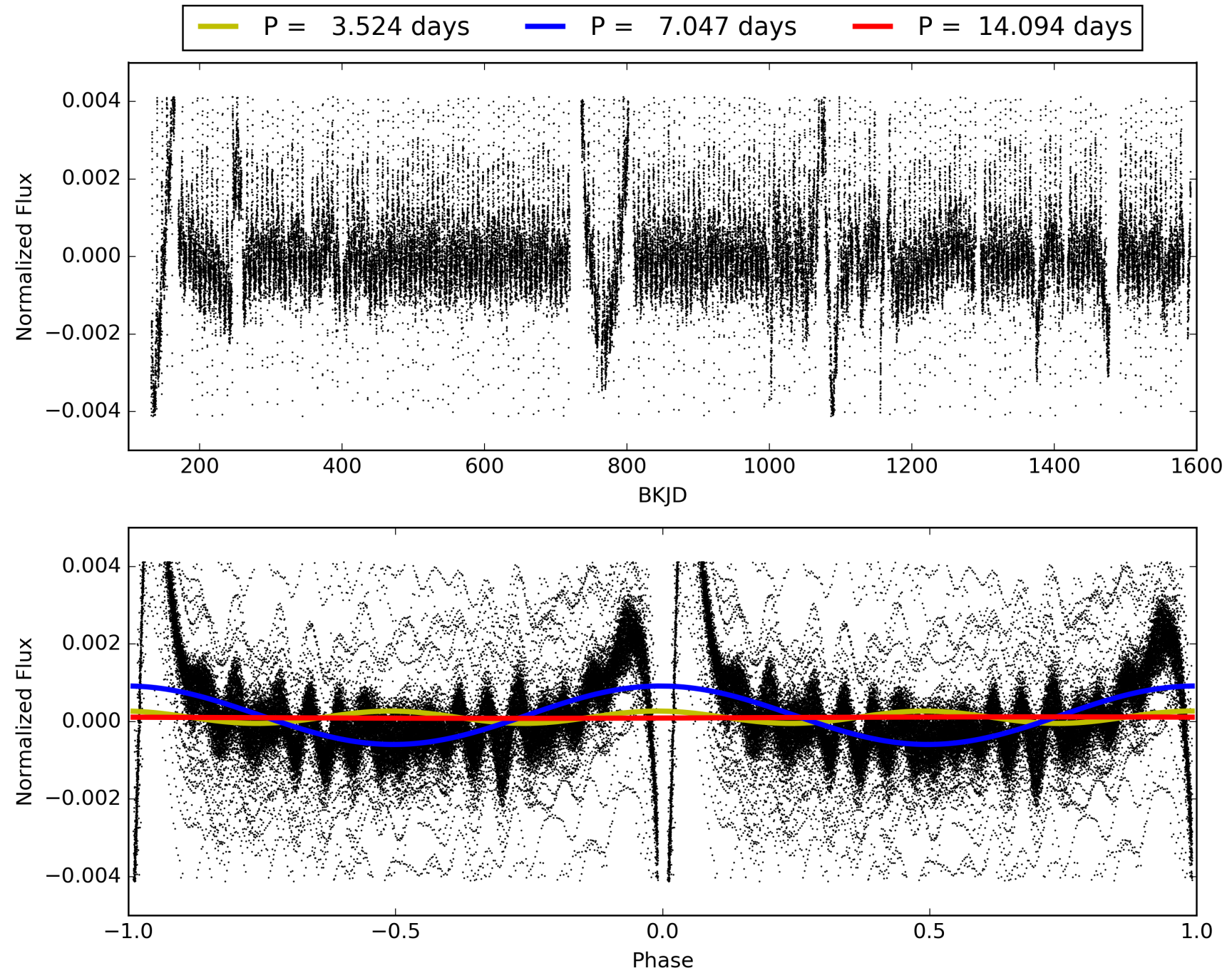
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [175/178]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 0.639 arcsec [725.87σ]
OotOffset-rm: 5.914 arcsec [5.76σ]
KicOffset-rm: 5.912 arcsec [6.93σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 003230227-01, PDC Light Curves

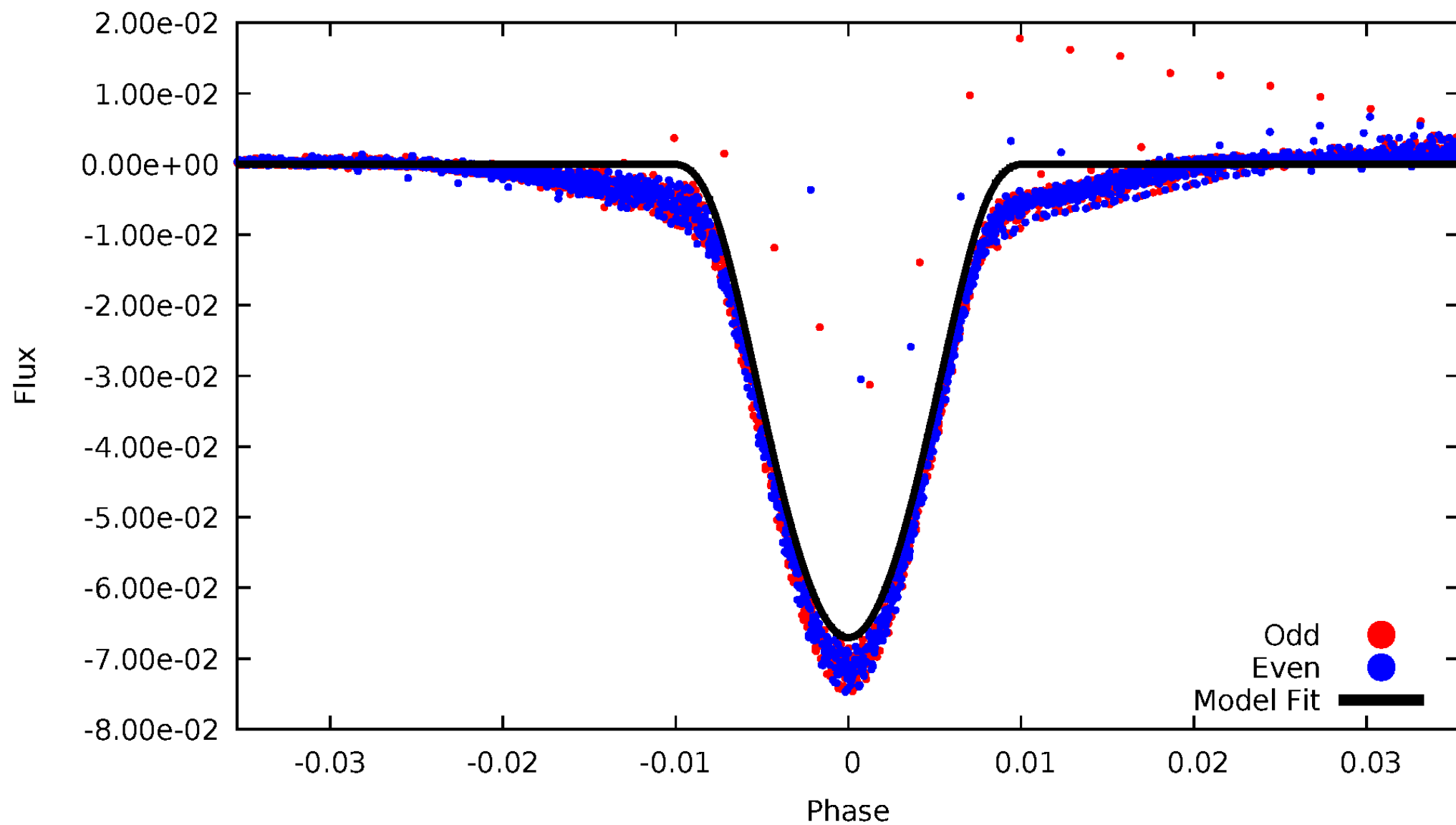


TCE 003230227-01



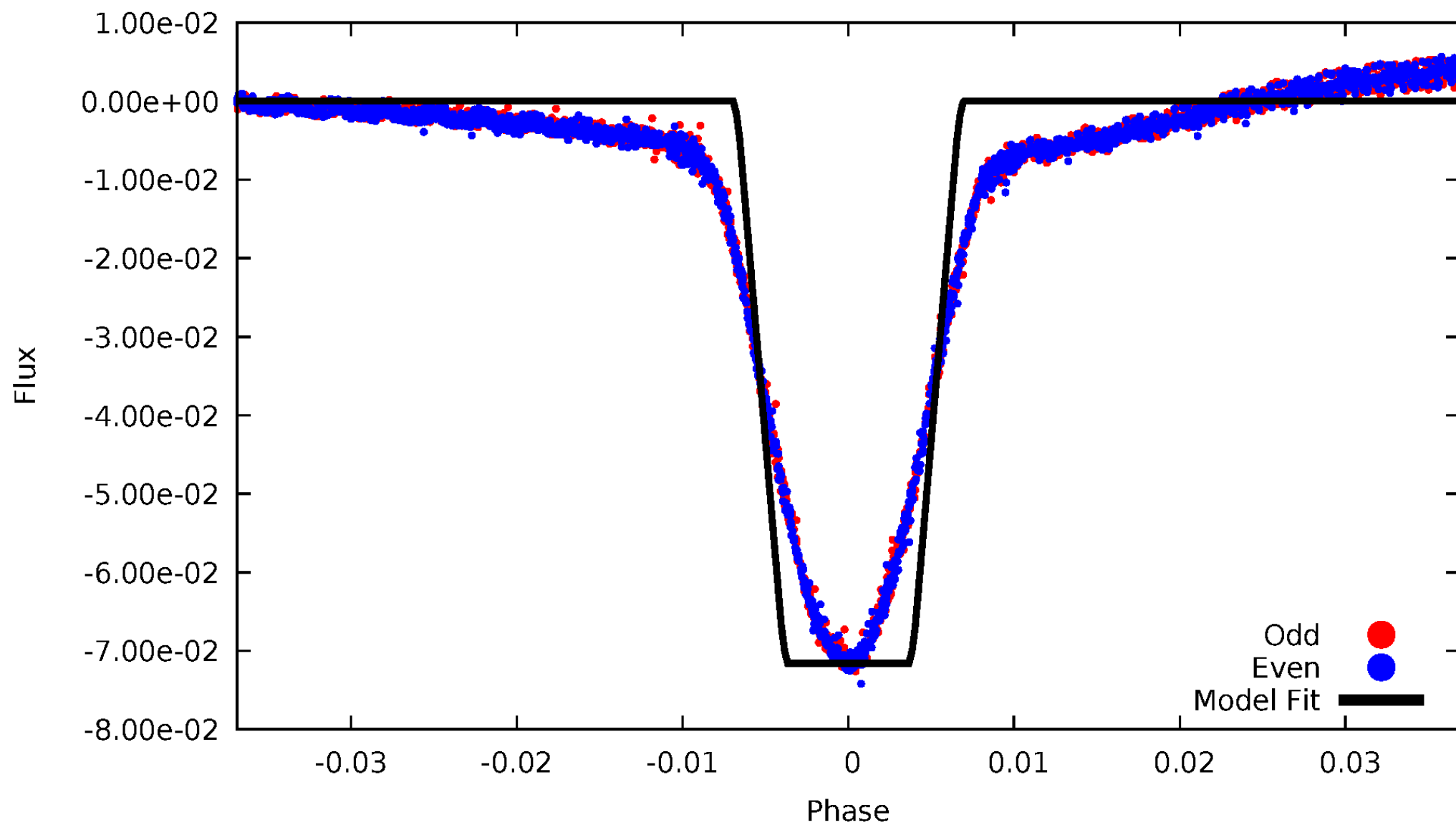
DV Odd/Even

TCE 003230227-01



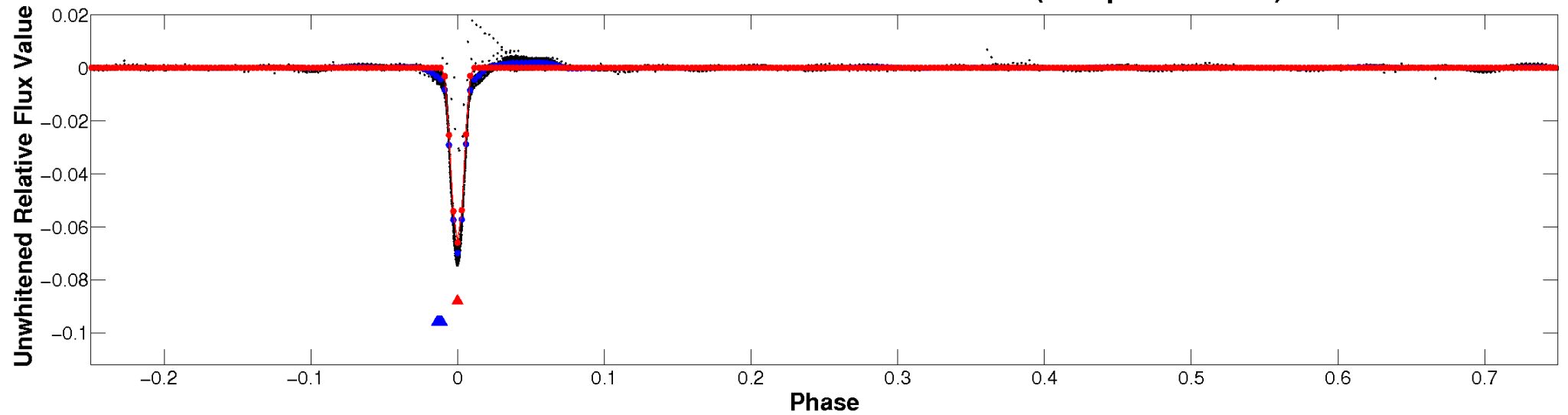
ALT Odd/Even

TCE 003230227-01

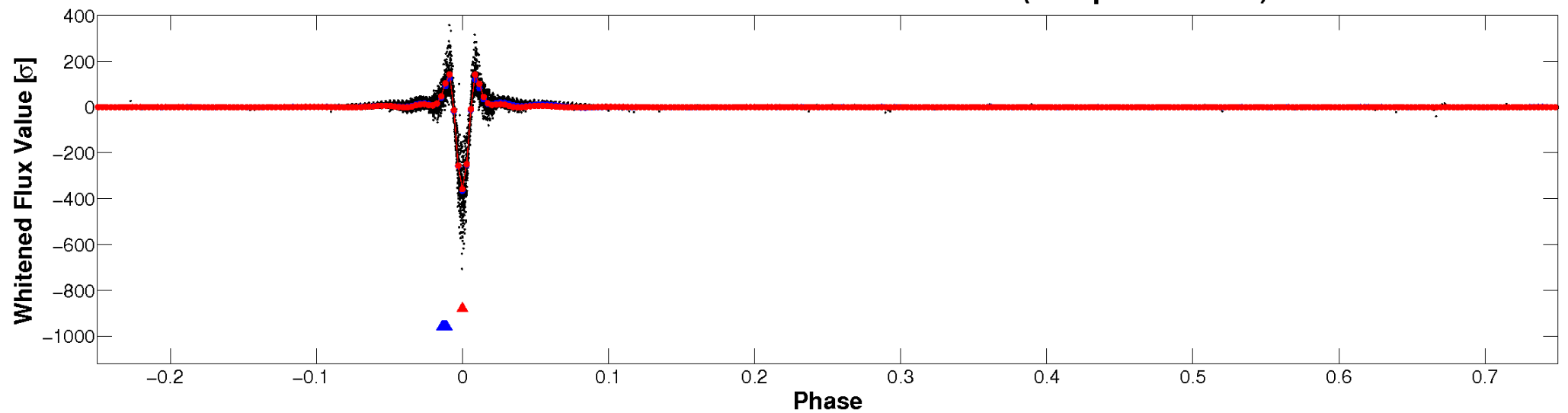


Non-Whitened Vs. Whitened Light Curve

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

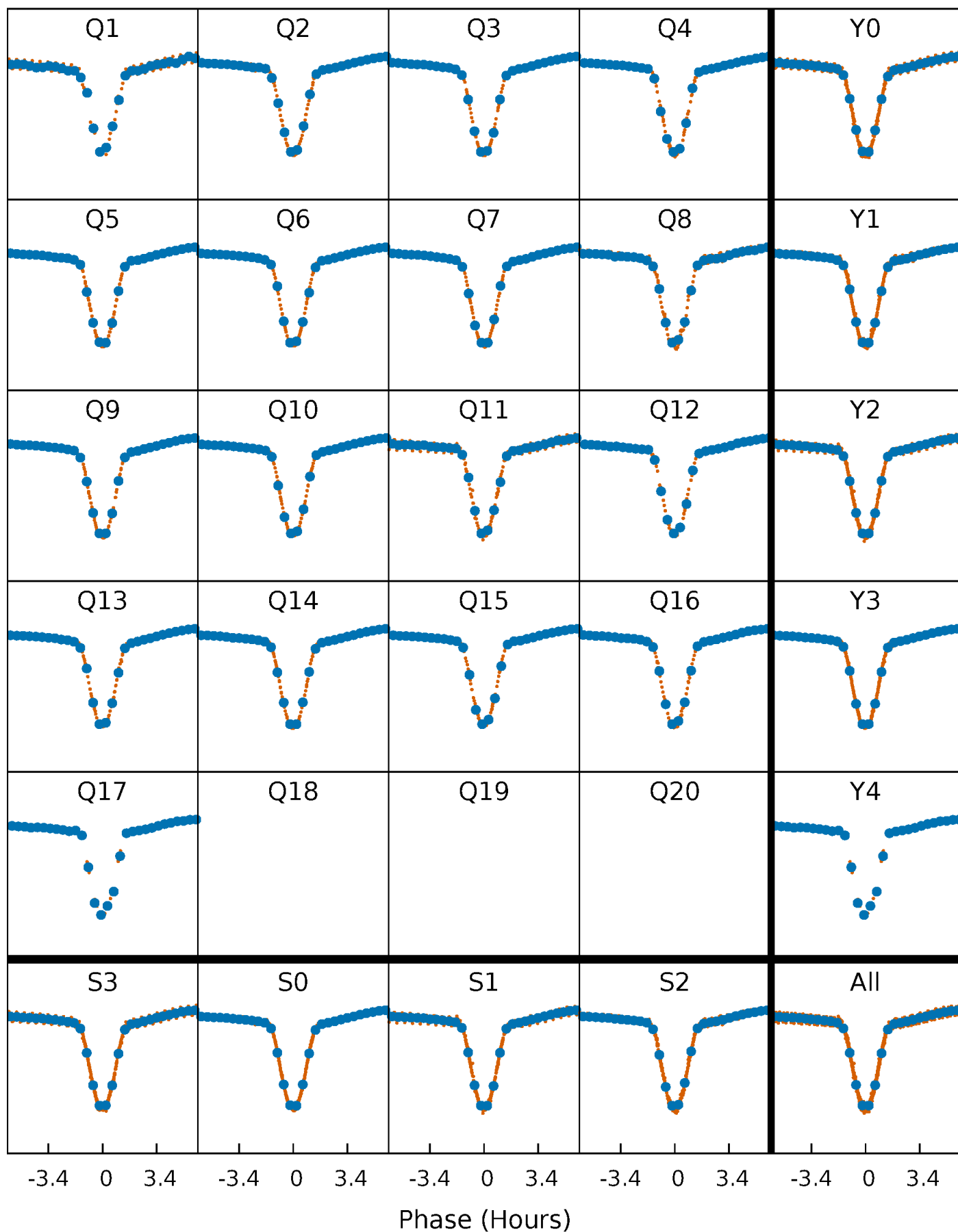


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



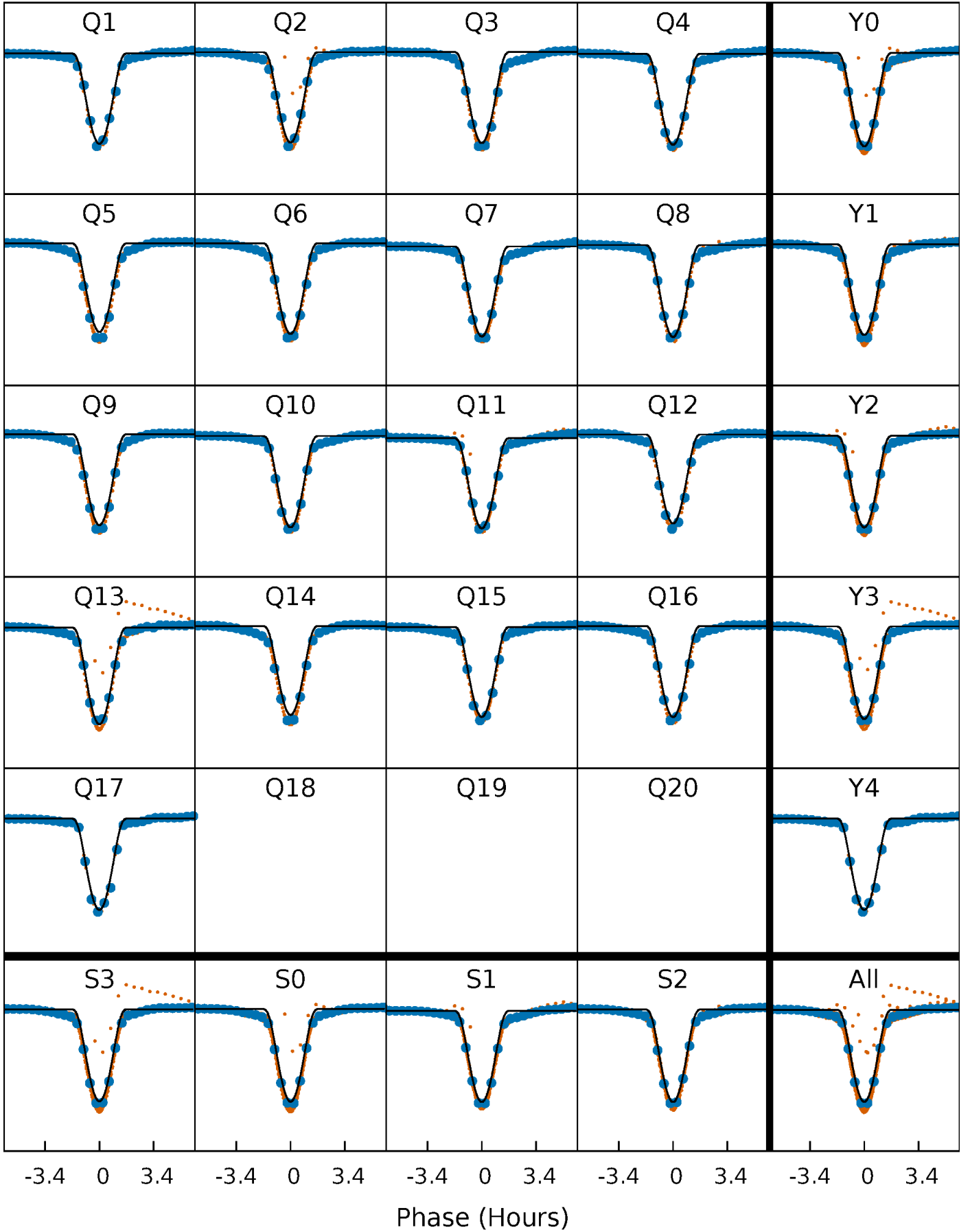
PDC Quarter-Phased Transit Curves

TCE 003230227-01 P= 7.047107 Days $T_0=132.749877$ (BKJD)



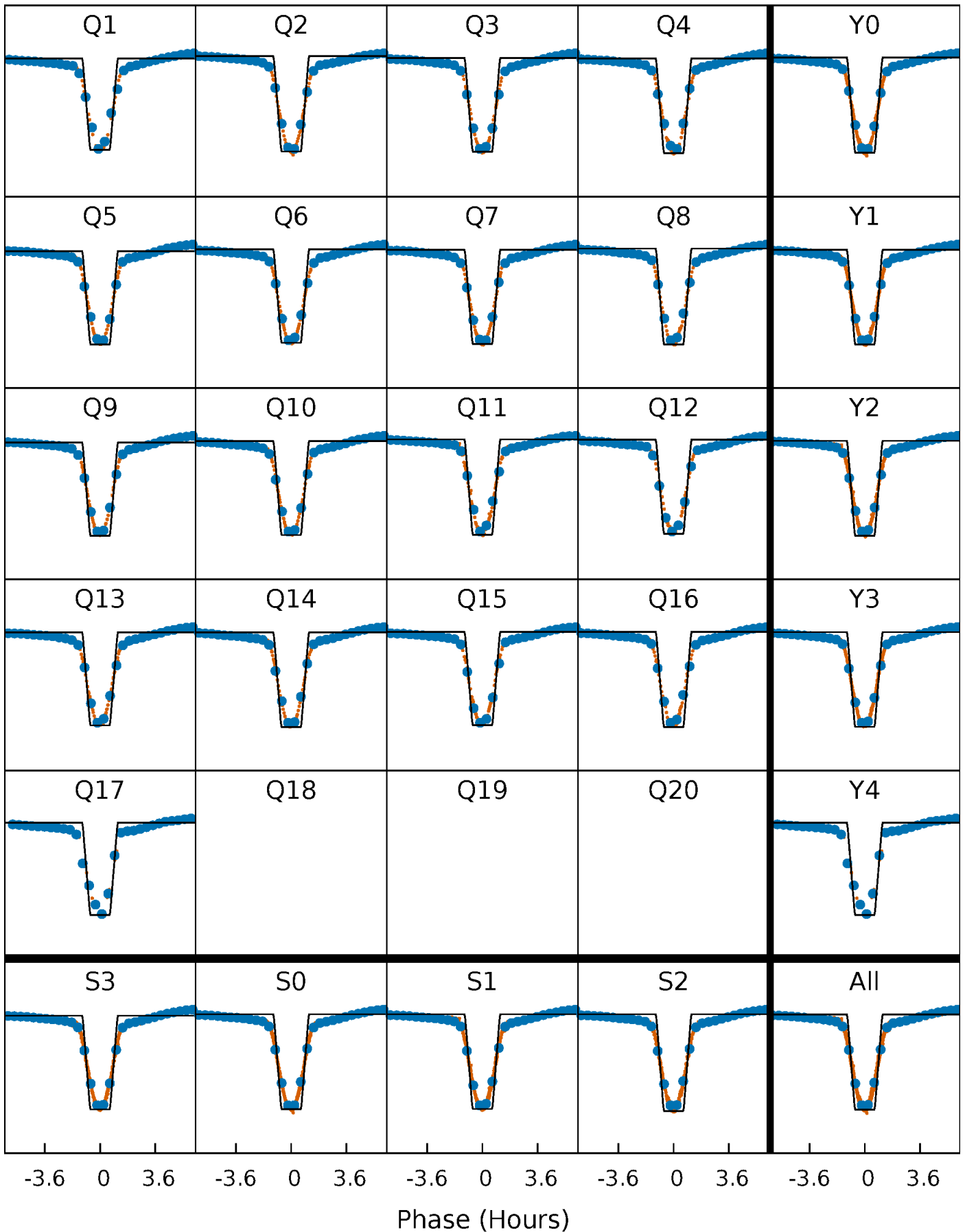
DV Quarter-Phased Transit Curves

TCE 003230227-01 P= 7.047107 Days $T_0=132.749877$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

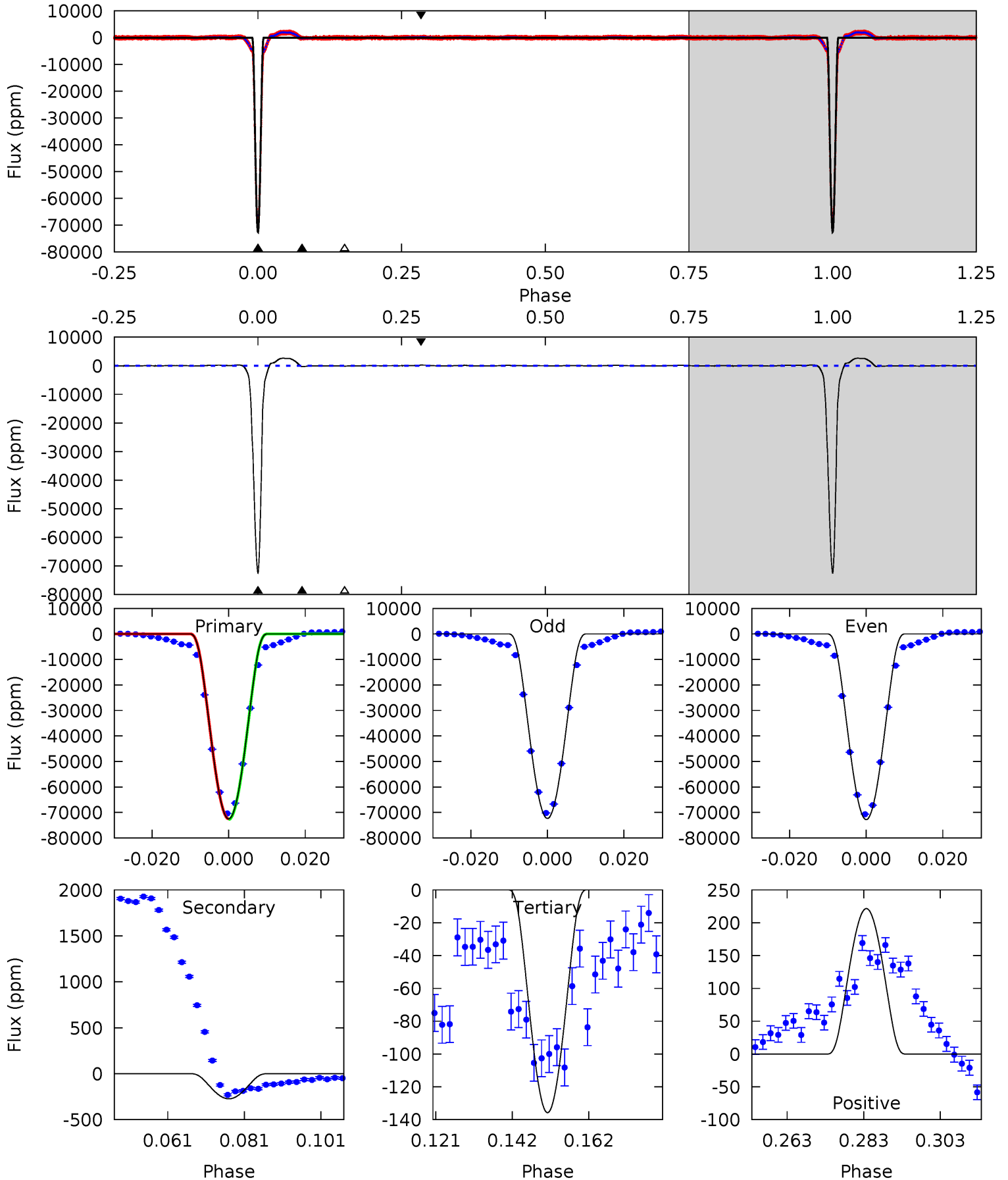
TCE 003230227-01 P= 7.047116 Days $T_0=132.749316$ (BKJD)



DV Model-Shift Uniqueness Test

003230227-01, P = 7.047107 Days, E = 125.702770 Days

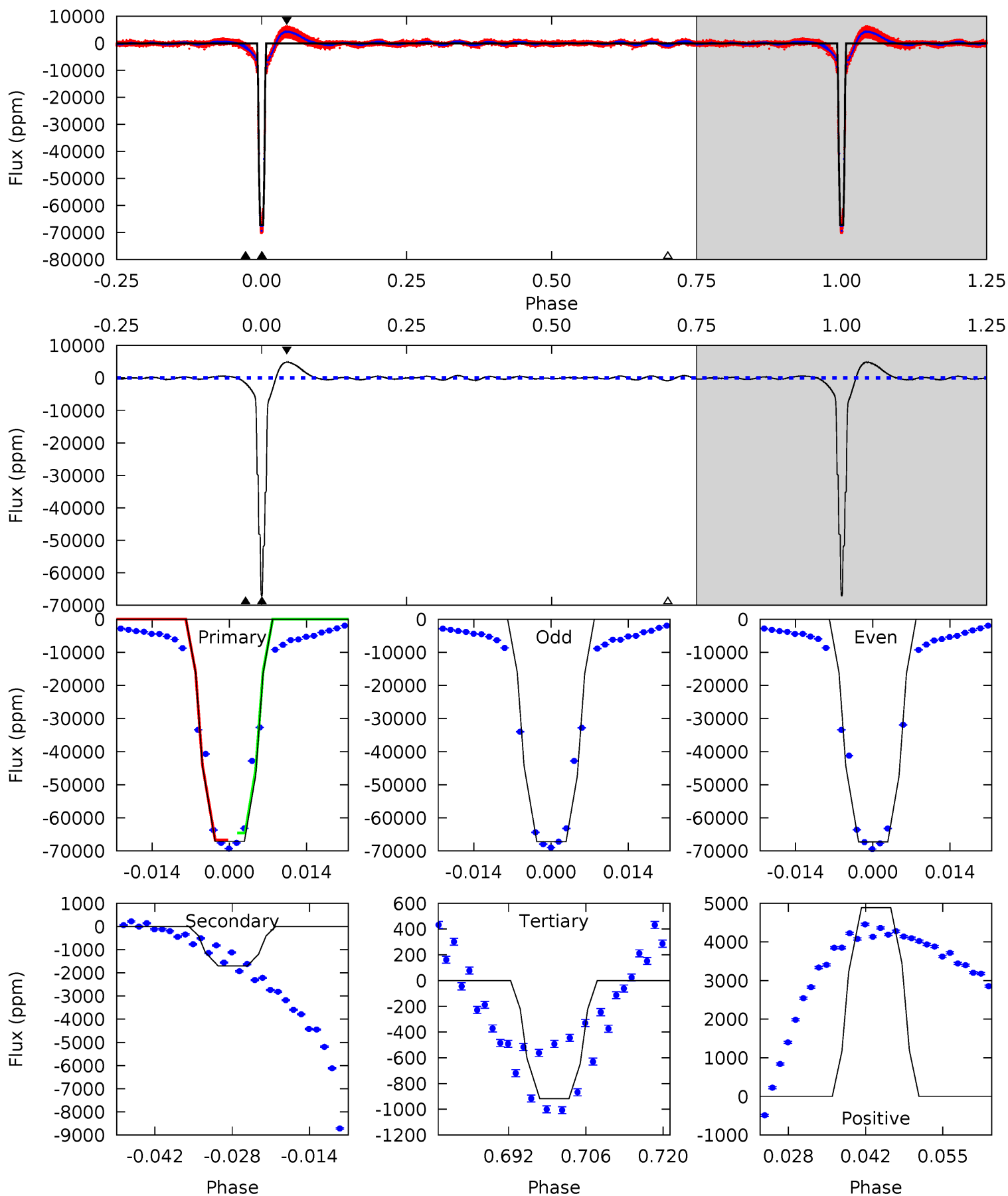
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5067	19.1	9.49	15.5	4.89	2.32	22.5	5058	5052	9.64	3.64	16.3	1.00	0.03	0



Alt Model-Shift Uniqueness Test

003230227-01, P = 7.047116 Days, E = 125.702200 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1292	32.7	17.6	94.1	4.96	2.46	18.7	1275	1198	15.1	-61.4	0.62	1.00	0.07	0



Stellar Parameters For KIC 003230227

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8162^{+226}_{-340}	$3.973^{+0.234}_{-0.126}$	$-0.200^{+0.250}_{-0.350}$	$2.321^{+0.449}_{-0.674}$	$1.845^{+0.120}_{-0.360}$	$0.208^{+0.319}_{-0.077}$
	+3%/-4%	+6%/-3%	+125%/-175%	+19%/-29%	+7%/-20%	+153%/-37%
Source	KIC0	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 003230227-01 / KOI 6311.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-274 ± 14	$94.82^{+15.37}_{-16.17}$	2537^{+173}_{-204}	-2585^{+200}_{-125}	$0.128^{+0.054}_{-0.033}$
Alt.	-1699 ± 52	$64.86^{+13.55}_{-12.03}$	2548^{+169}_{-200}	3454^{+211}_{-191}	$1.682^{+0.835}_{-0.509}$

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 $A_{obs} \gg 1.0$

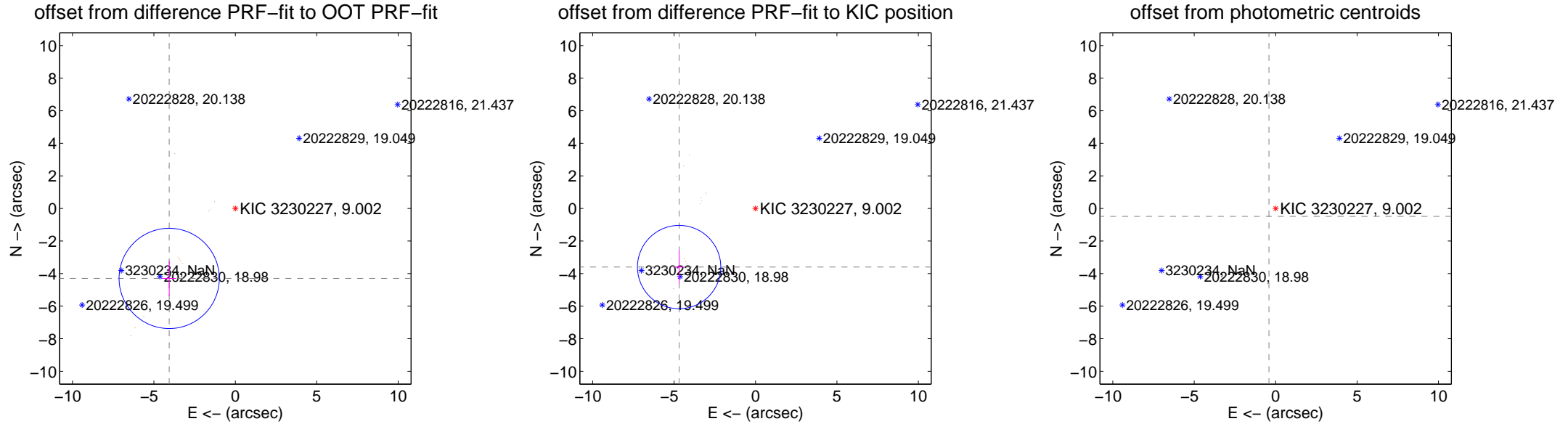
DV Centroid Data

Supplemental centroid analysis for 003230227-01. **Kepler magnitude: 9.00.** Transit SNR 7156.30

There are 0 quarters with good PRF difference image offsets

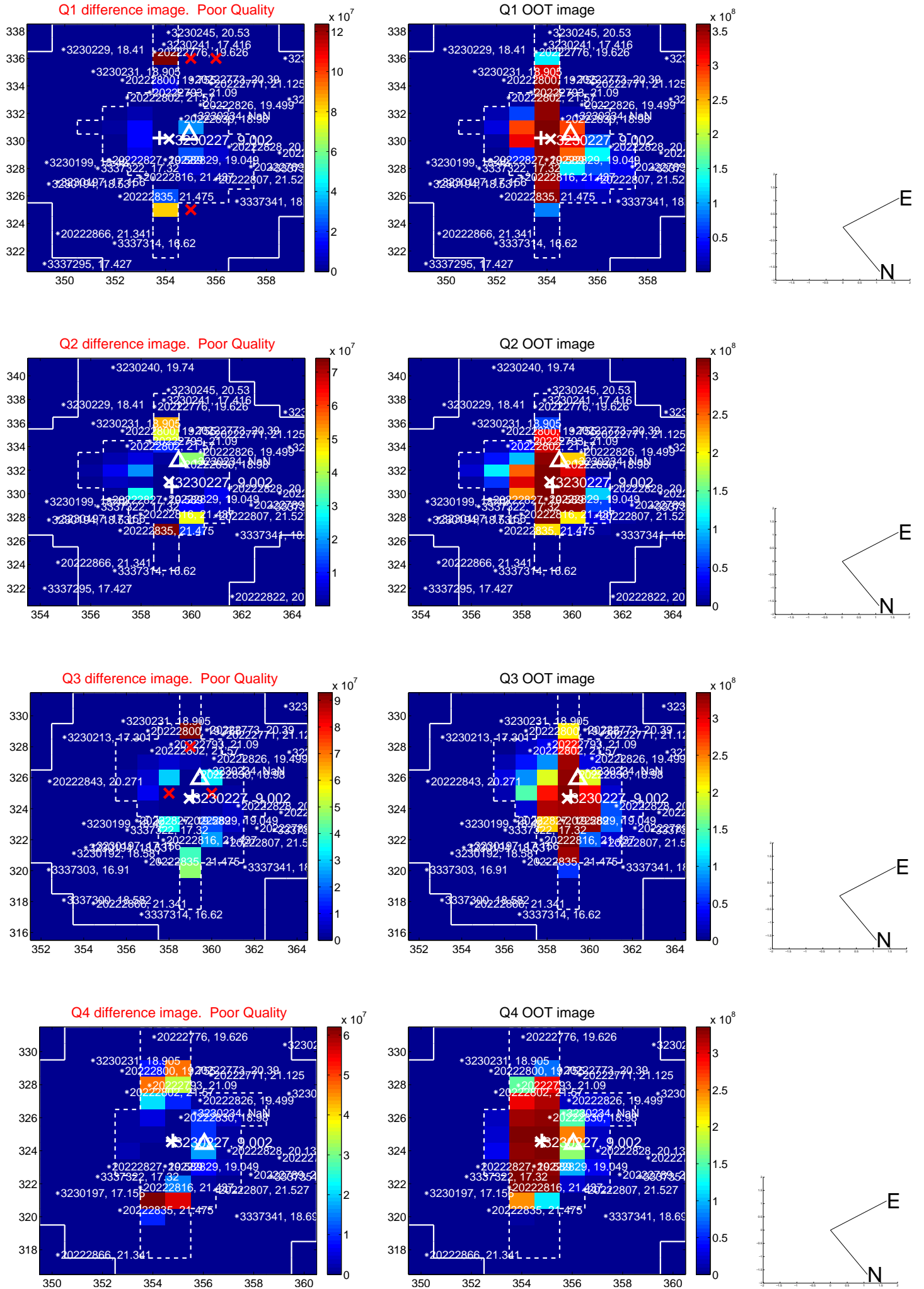
The direct PRF centroid is offset from the target star catalog position by about 1.83 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.914 ± 1.026	5.76	4.062 ± 0.440	-4.298 ± 1.077
PRF-fit source offset from KIC position	5.912 ± 0.853	6.93	4.690 ± 0.325	-3.600 ± 1.030
photometric centroid source offset	0.64 ± 0.00	725.87	0.41 ± 0.00	-0.49 ± 0.00

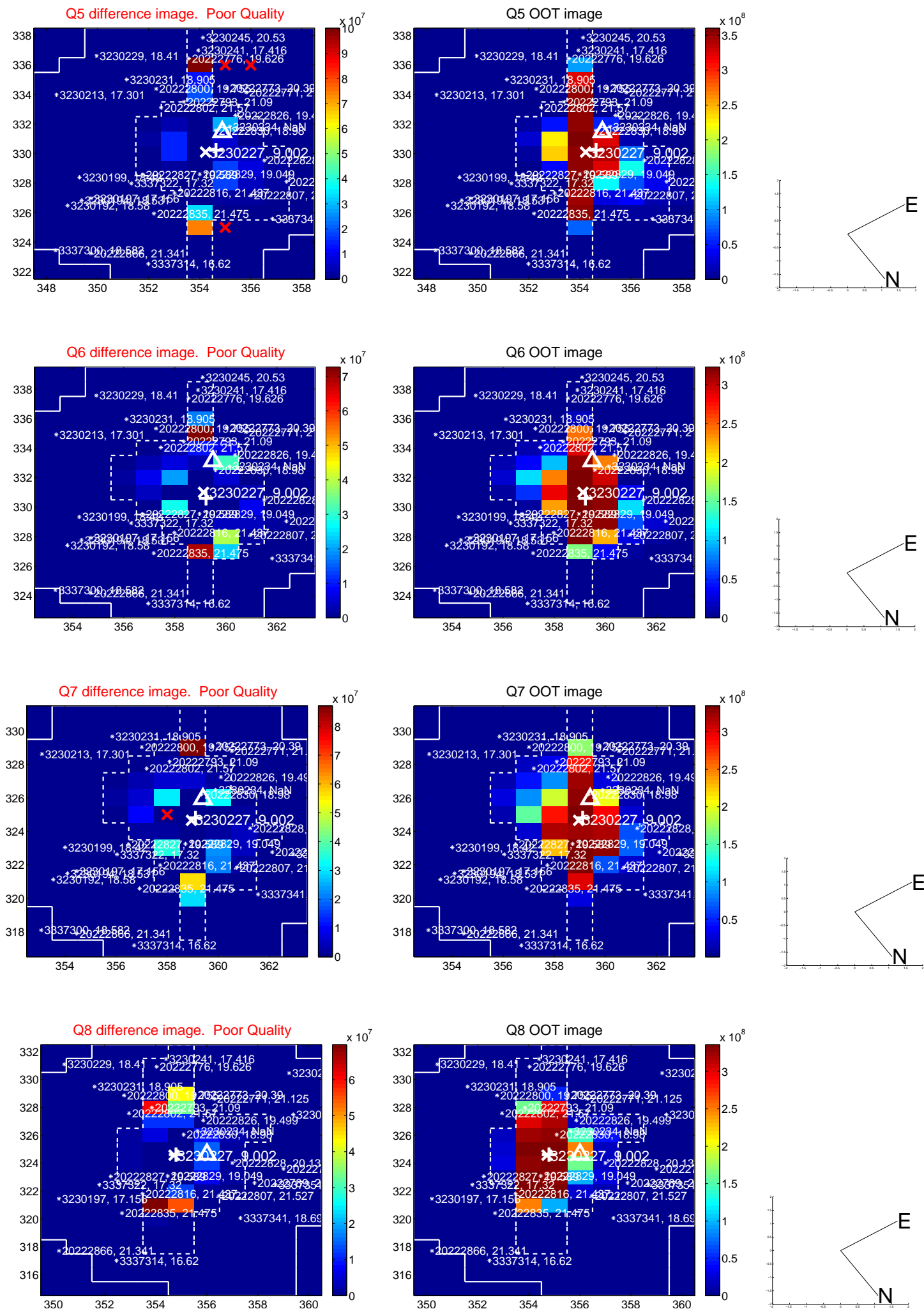


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

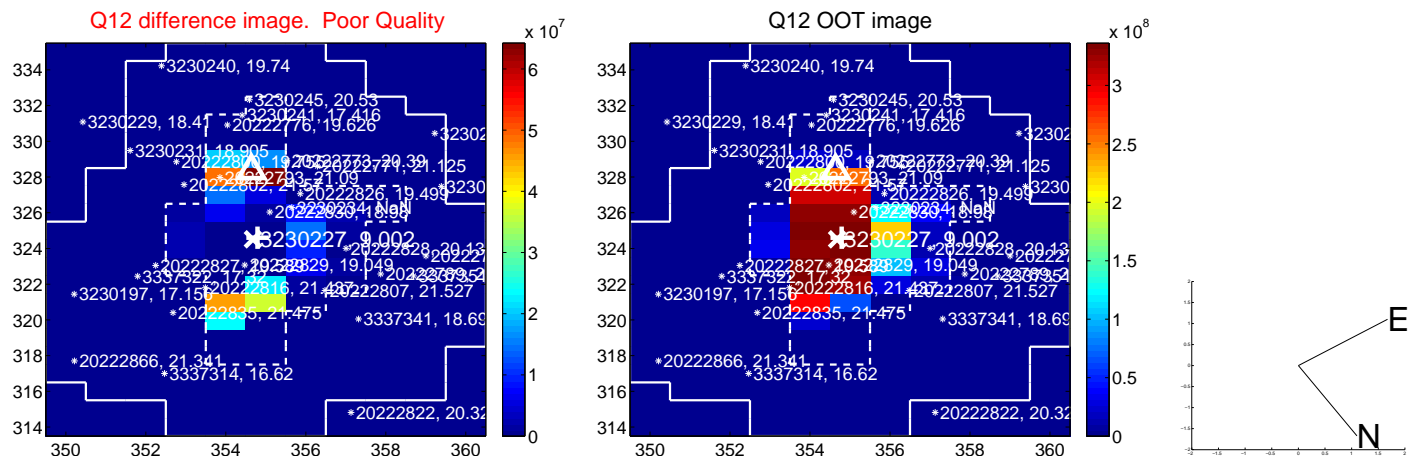
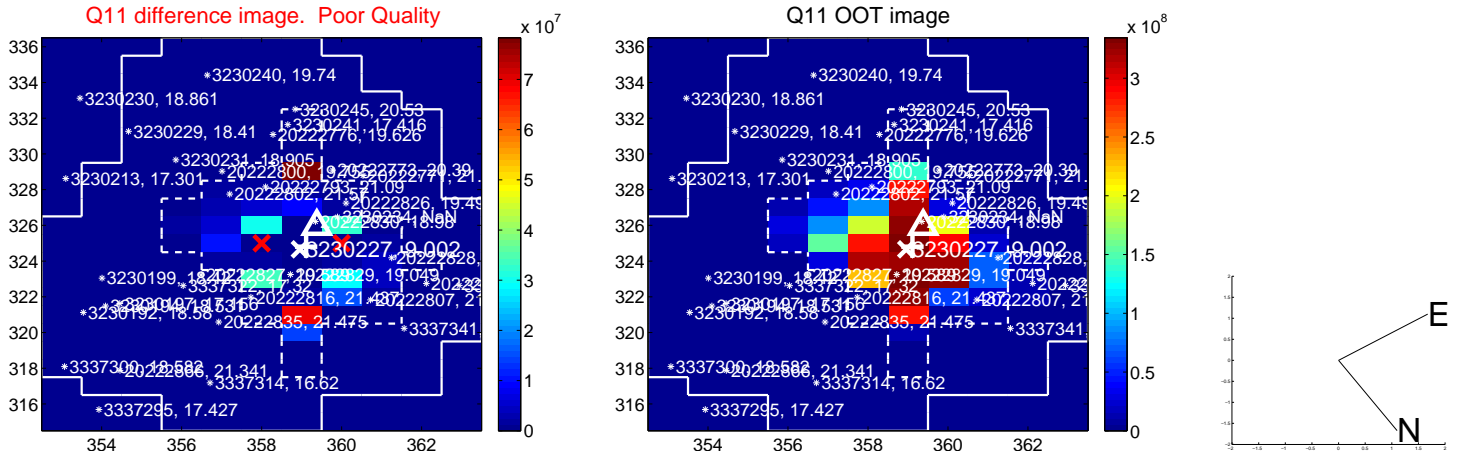
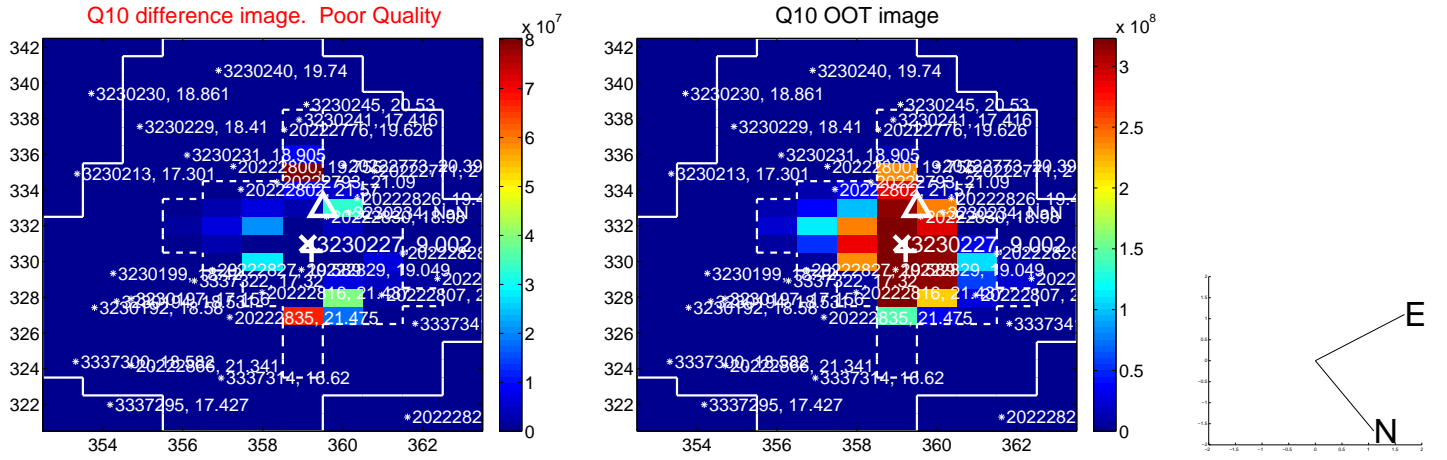
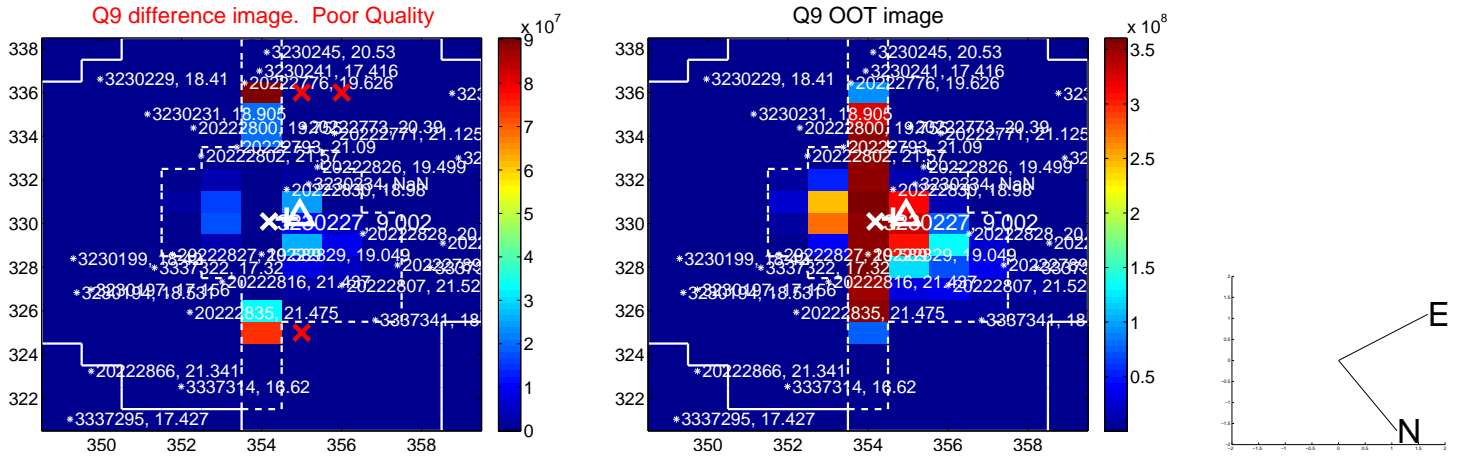
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



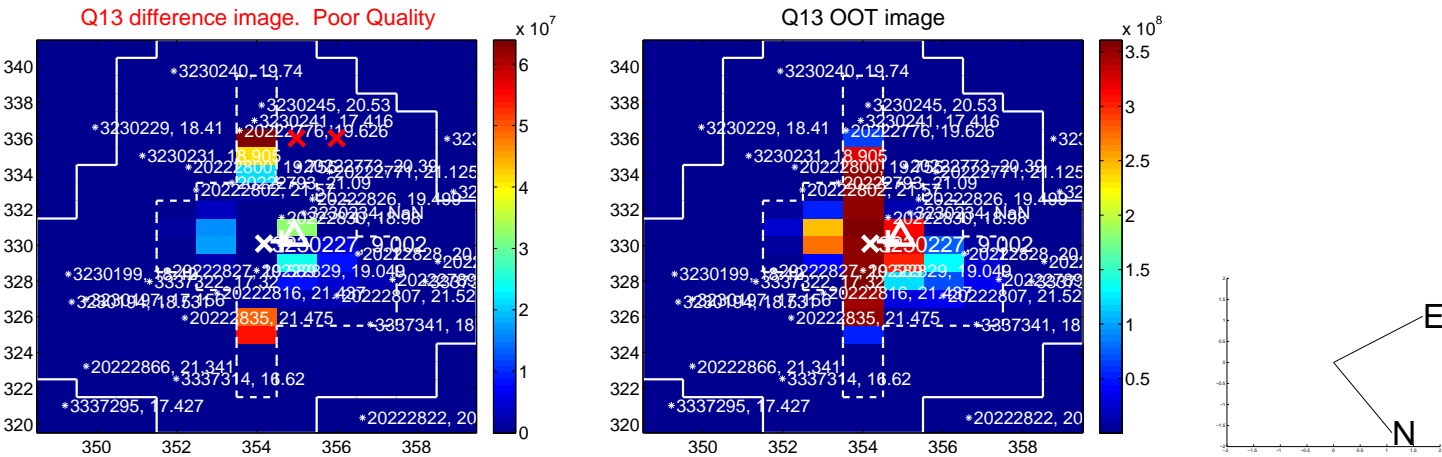
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



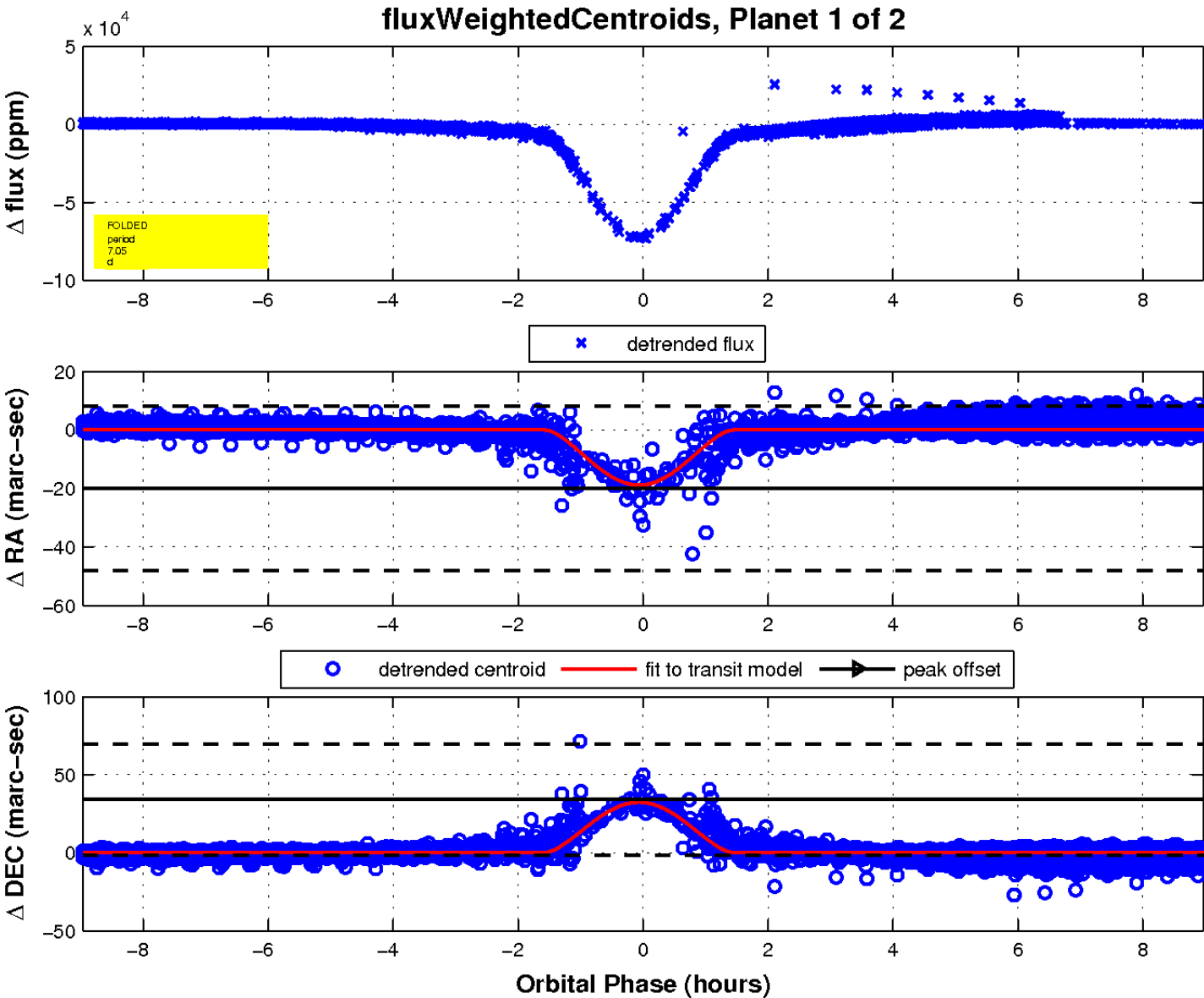
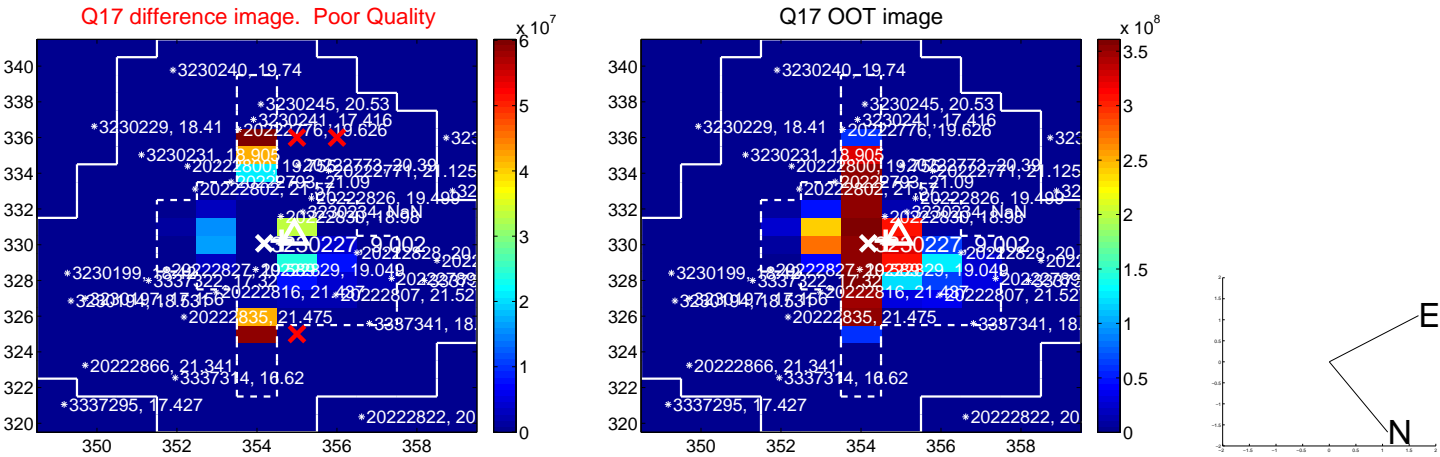
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

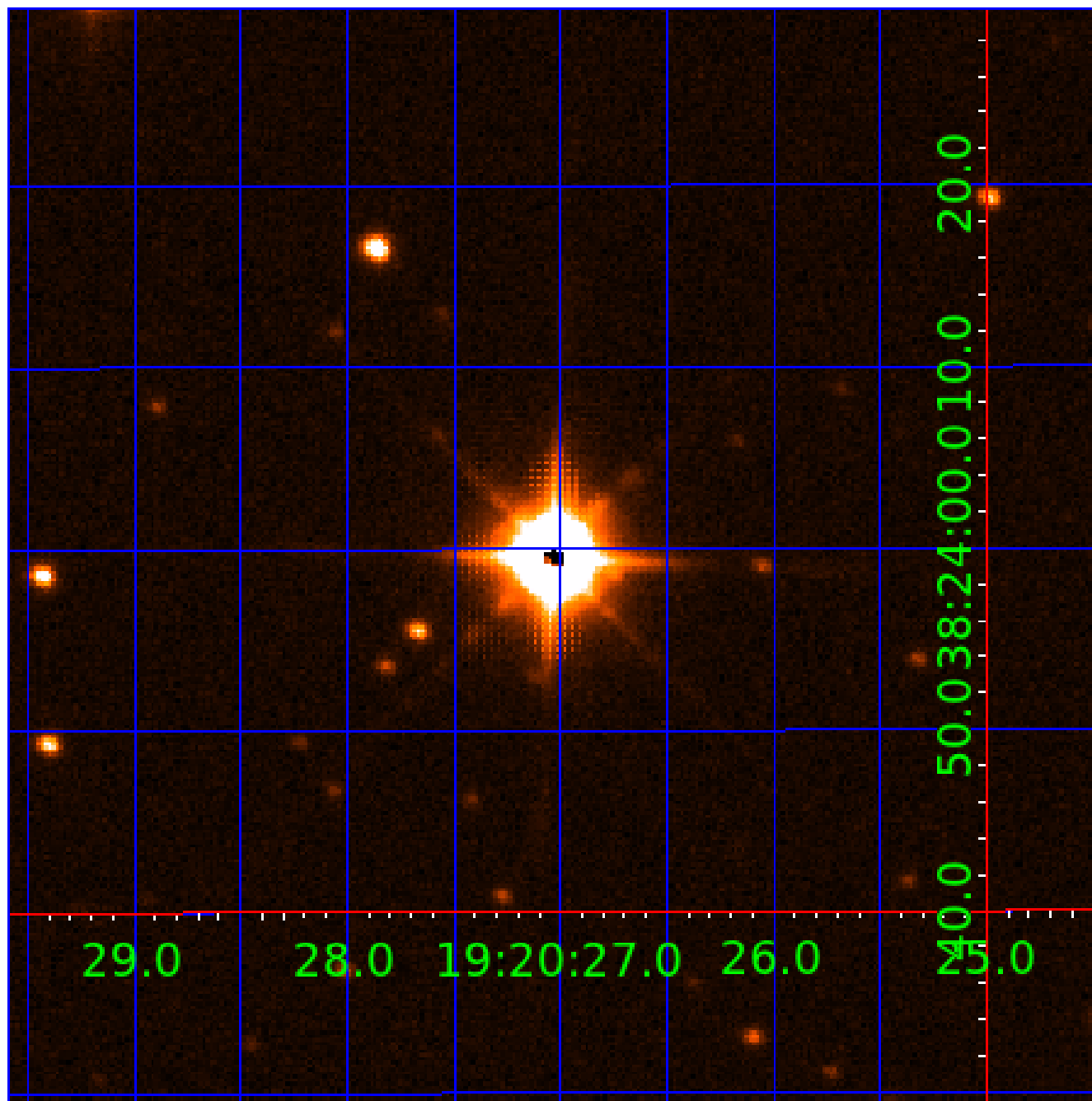


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003230227

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})
003230227-01	OBS	6311.01	7.047107	132.749877	67029.1	2.992	6146.4	7156.3	2.32	8162	98.62	2749.05
003230227-02	OBS	No	7.046997	132.674179	108.1	14.756	67.0	11.3	2.32	8162	2.83	2749.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003230227-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—DEEP_V_SHAPED—CENT_SATURATED
003230227-02	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—RESIDUAL_TCE—CENT_SATURATED—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.

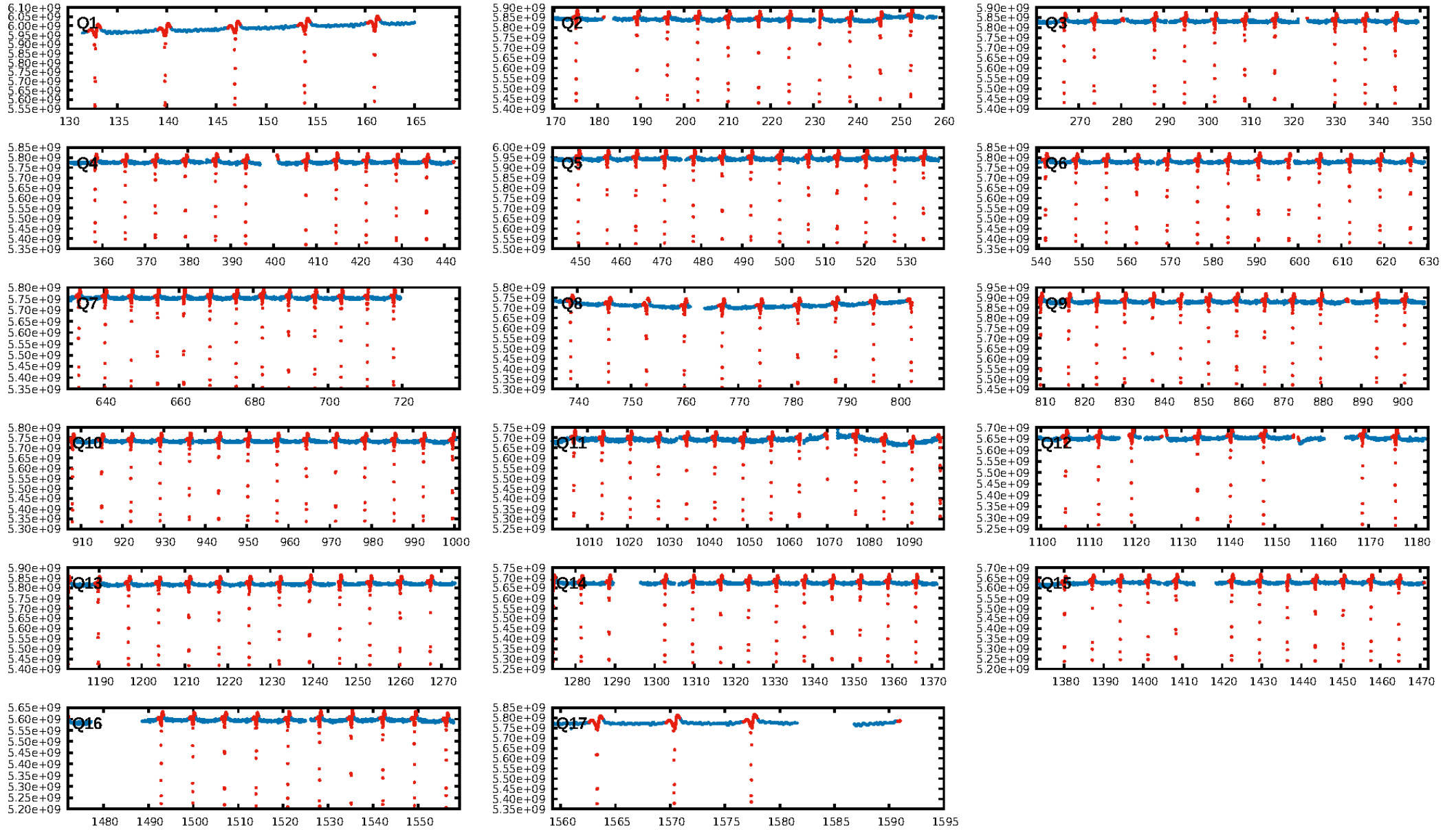
Ephemeris Match Information For 003230227-02

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (μ)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
003230227-02	3230227	003337351-01	3337351	1:1	17.8	2	-4	13.36	9.00	545.98	Direct-PRF	0	0.76	2.68

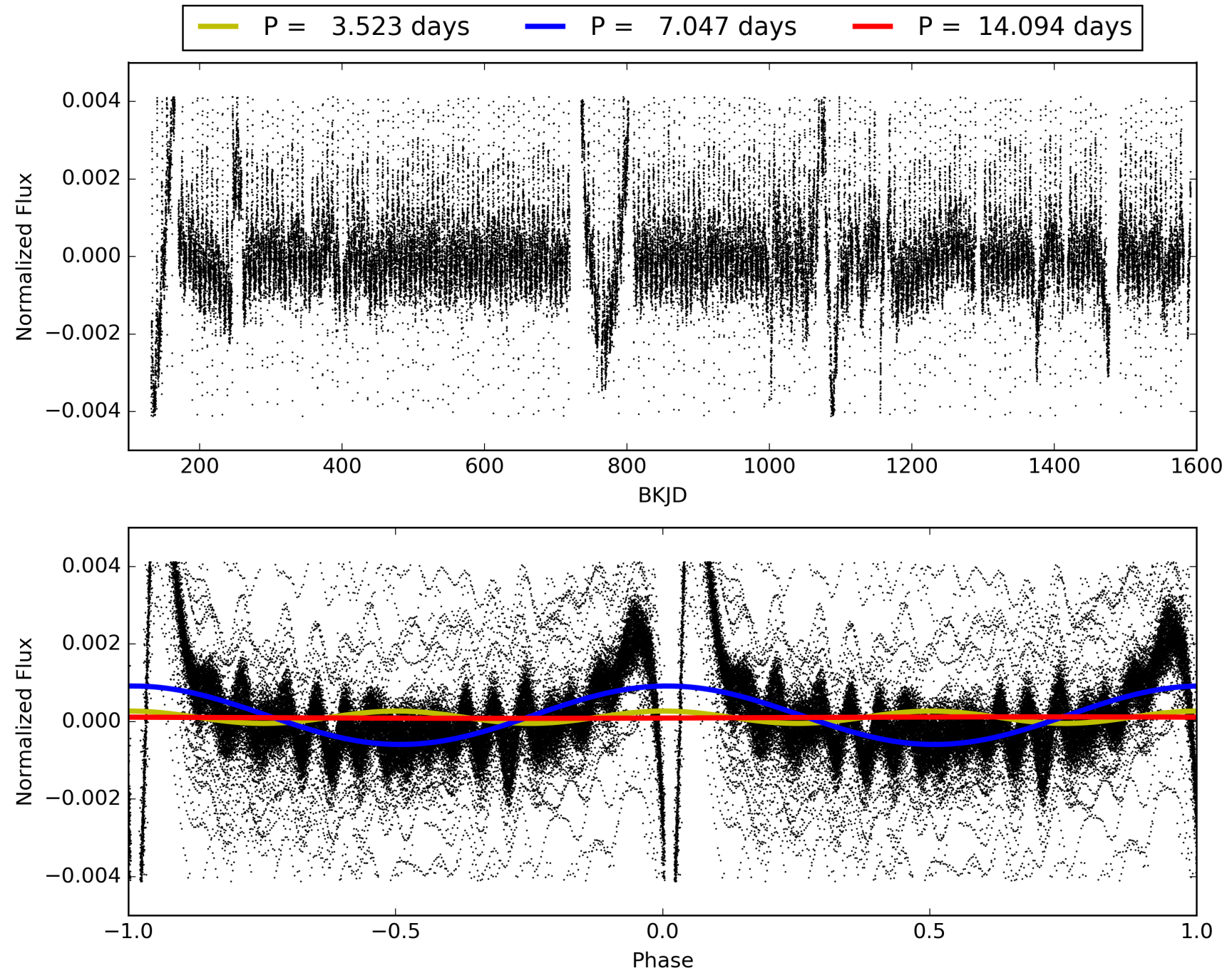
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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.

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

TCE 003230227-02, PDC Light Curves

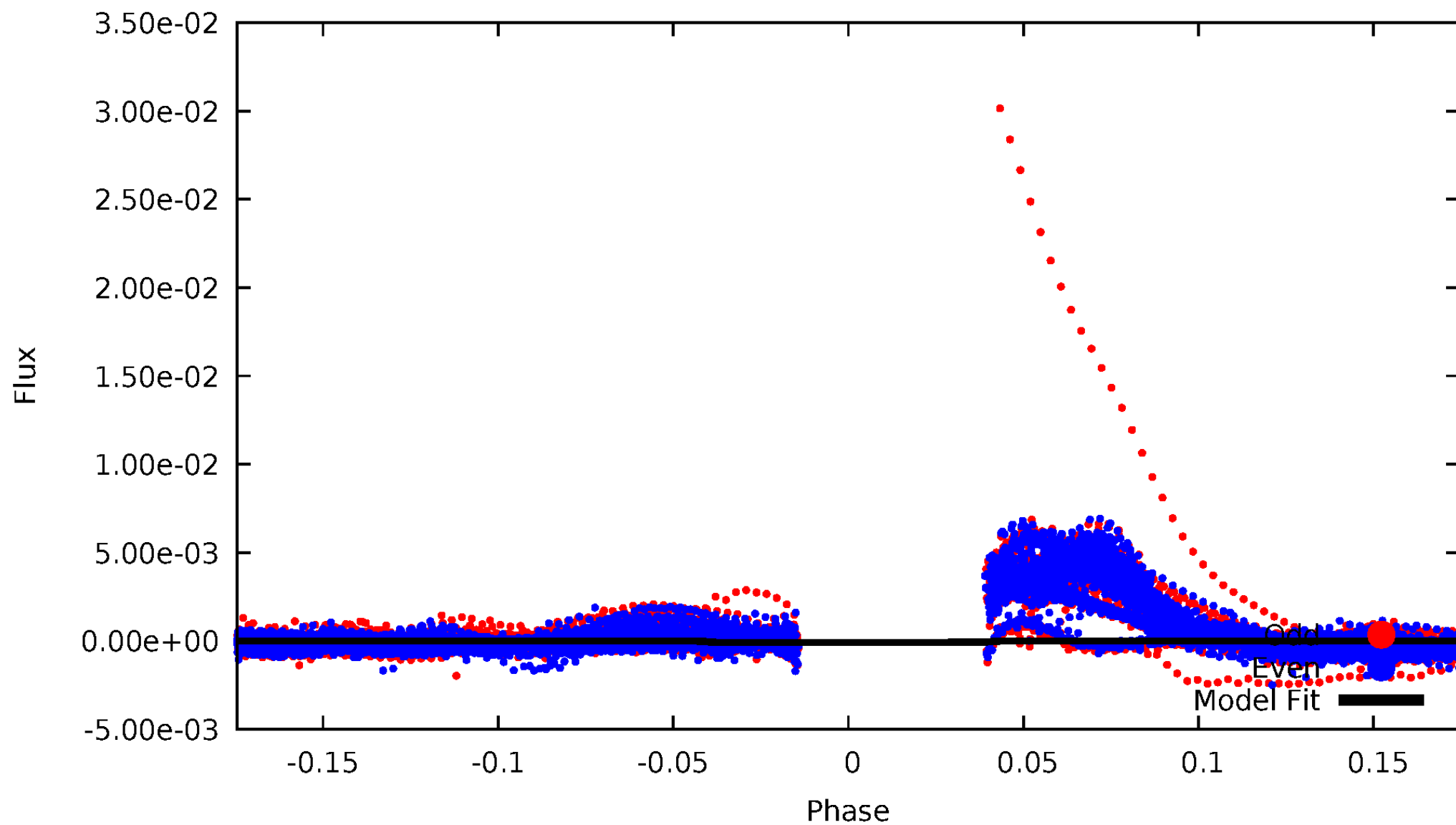


TCE 003230227-02



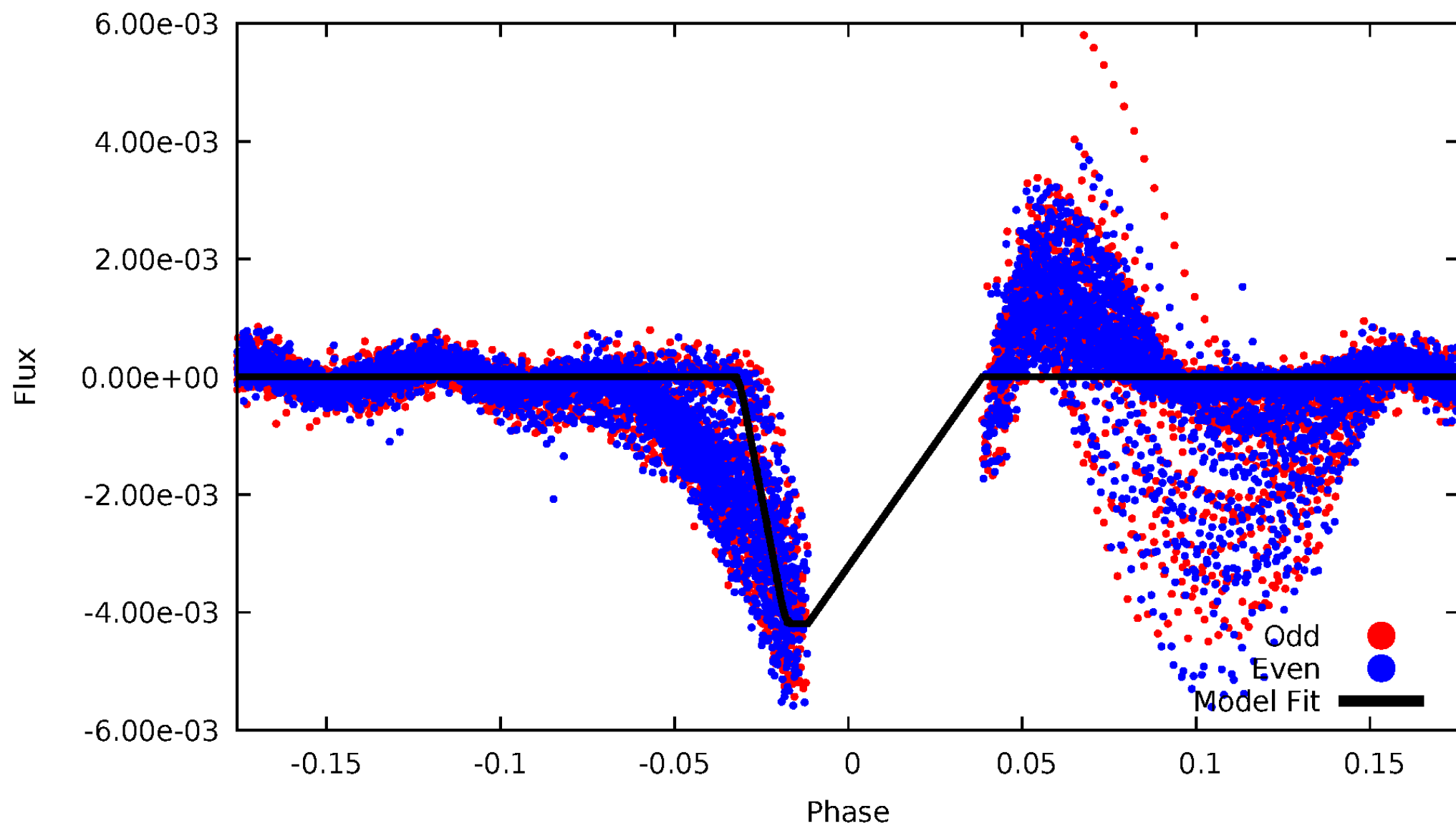
DV Odd/Even

TCE 003230227-02



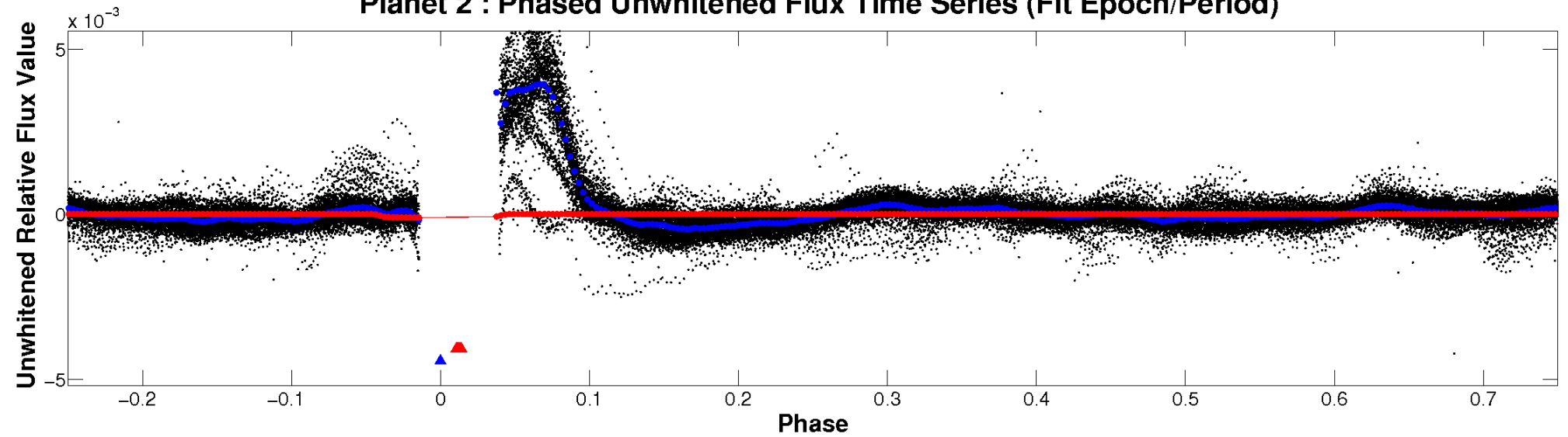
ALT Odd/Even

TCE 003230227-02

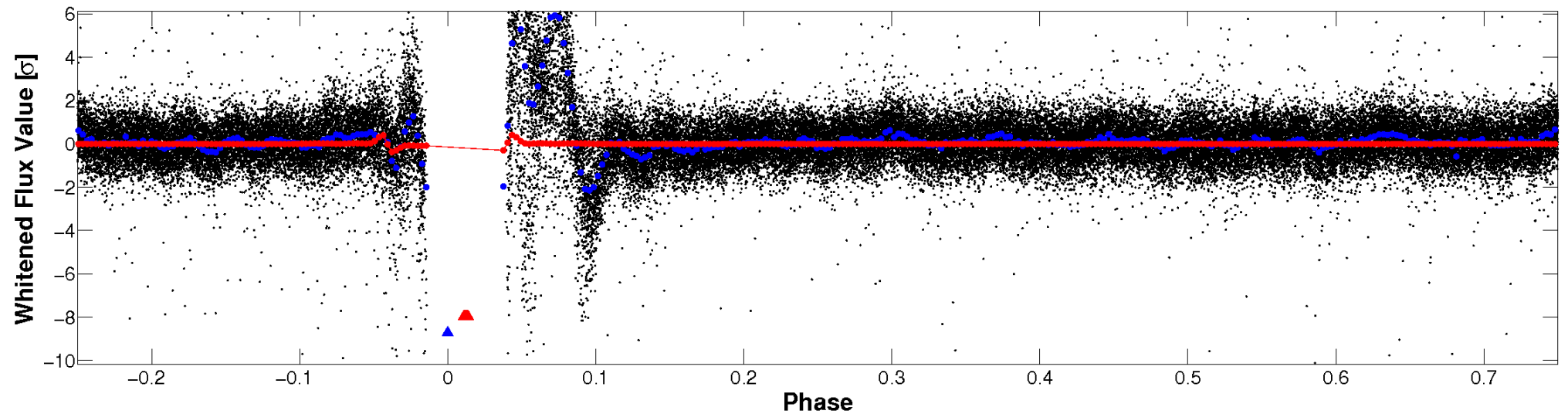


Non-Whitened Vs. Whitened Light Curve

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

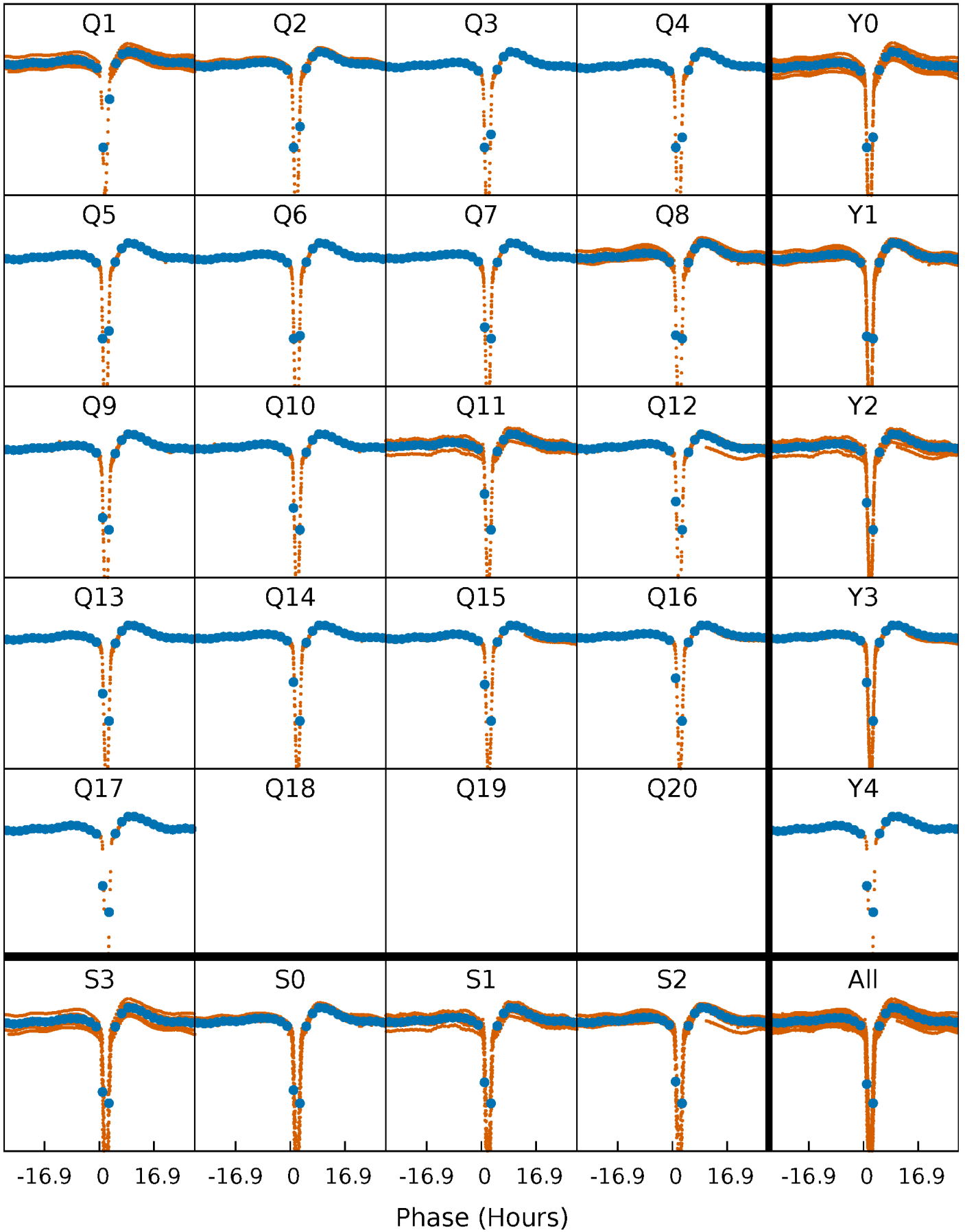


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



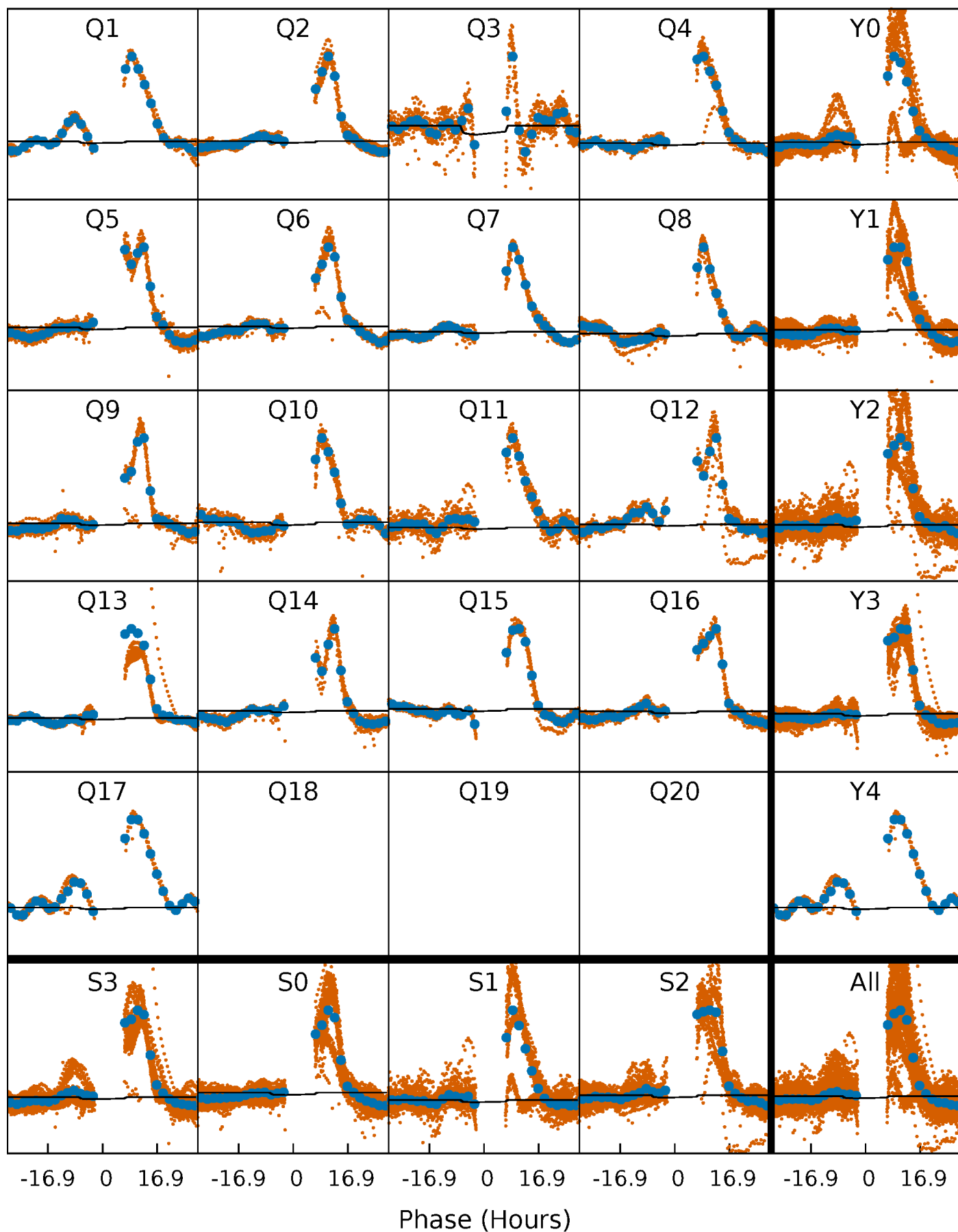
PDC Quarter-Phased Transit Curves

TCE 003230227-02 $P = 7.046997$ Days $T_0 = 132.674179$ (BKJD)



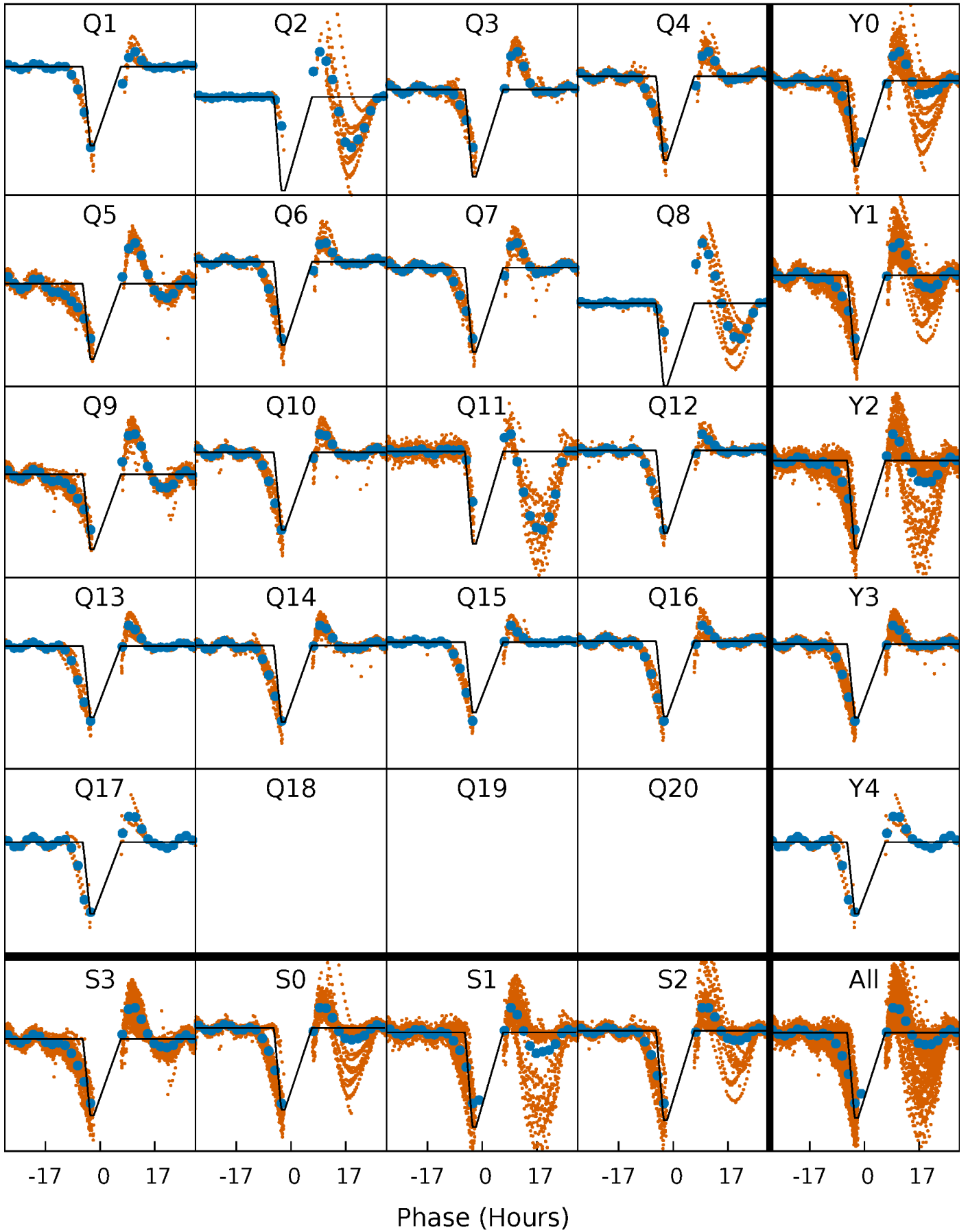
DV Quarter-Phased Transit Curves

TCE 003230227-02 $P = 7.046997$ Days $T_0 = 132.674179$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

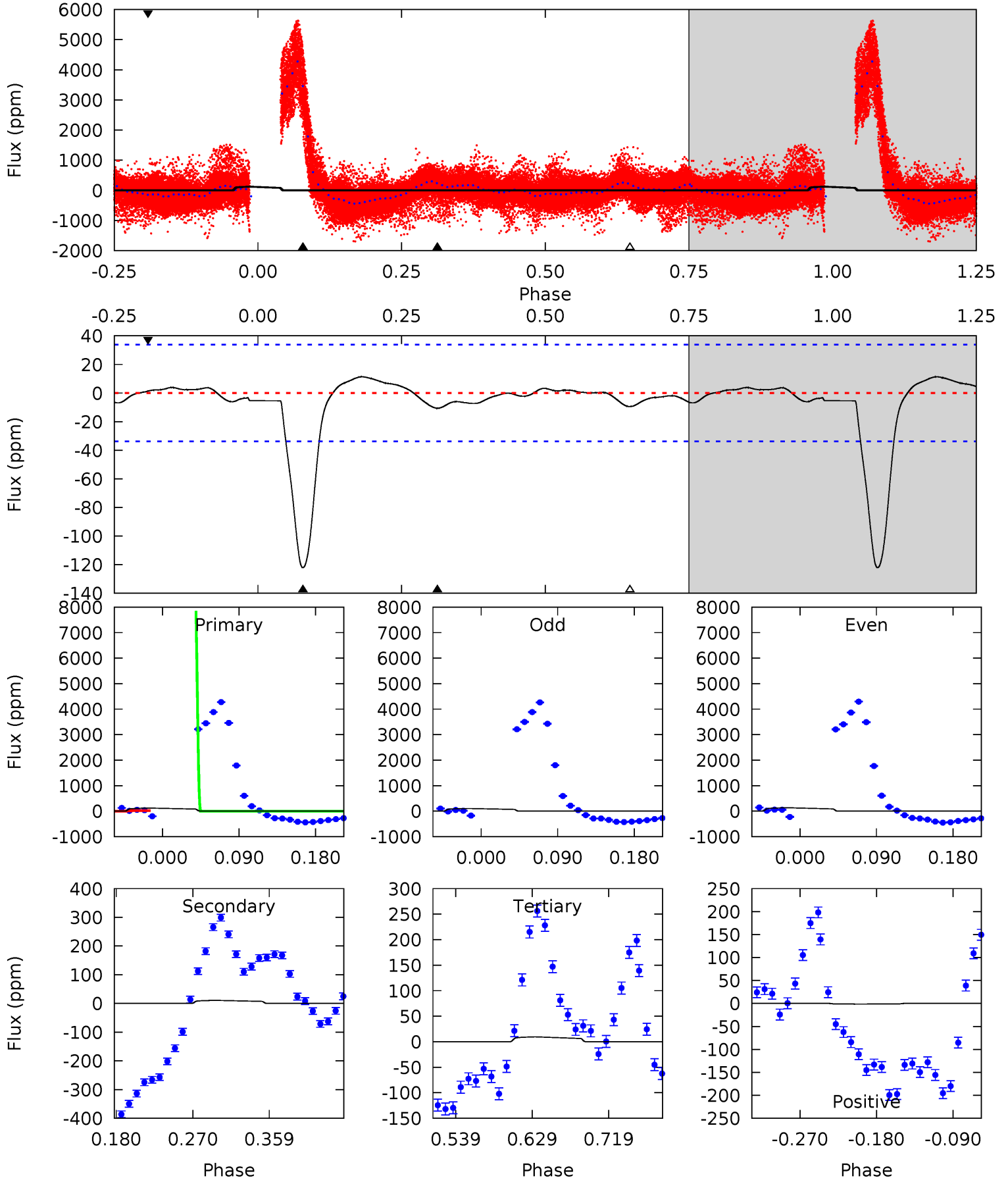
TCE 003230227-02 $P = 7.047354$ Days $T_0 = 132.627975$ (BKJD)



DV Model-Shift Uniqueness Test

003230227-02, P = 7.046997 Days, E = 125.627182 Days

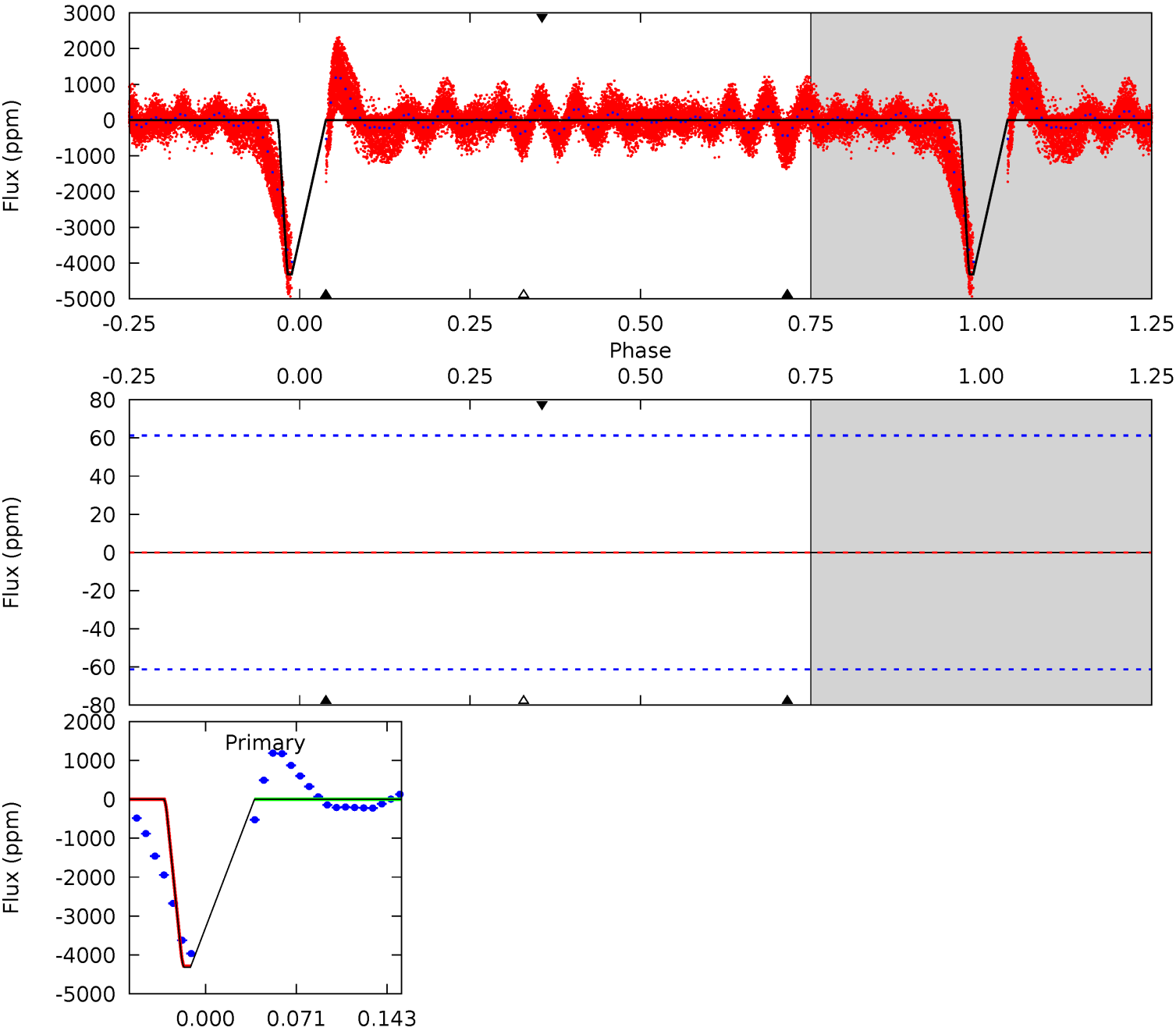
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	1.45	1.29	0.18	4.59	1.70	0.60	15.3	16.4	0.15	1.26	2.03	1.87	0.09	295.4



Alt Model-Shift Uniqueness Test

003230227-02, P = 7.047354 Days, E = 125.580621 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	4.64	1.80	0	0	0	0	0	0	0	0	0



Stellar Parameters For KIC 003230227

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8162^{+226}_{-340}	$3.973^{+0.234}_{-0.126}$	$-0.200^{+0.250}_{-0.350}$	$2.321^{+0.449}_{-0.674}$	$1.845^{+0.120}_{-0.360}$	$0.208^{+0.319}_{-0.077}$
	+3%/-4%	+6%/-3%	+125%/-175%	+19%/-29%	+7%/-20%	+153%/-37%
Source	KIC0	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 003230227-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11 ± 7	$2.78^{+0.38}_{-0.44}$	2560^{+167}_{-202}	4410^{+560}_{-1018}	$6.003^{+4.677}_{-4.554}$
Alt.	-0 ± 13	$15.95^{+1.82}_{-2.35}$	2545^{+162}_{-204}	-2757^{+500}_{-252}	$0.019^{+0.222}_{-0.237}$

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

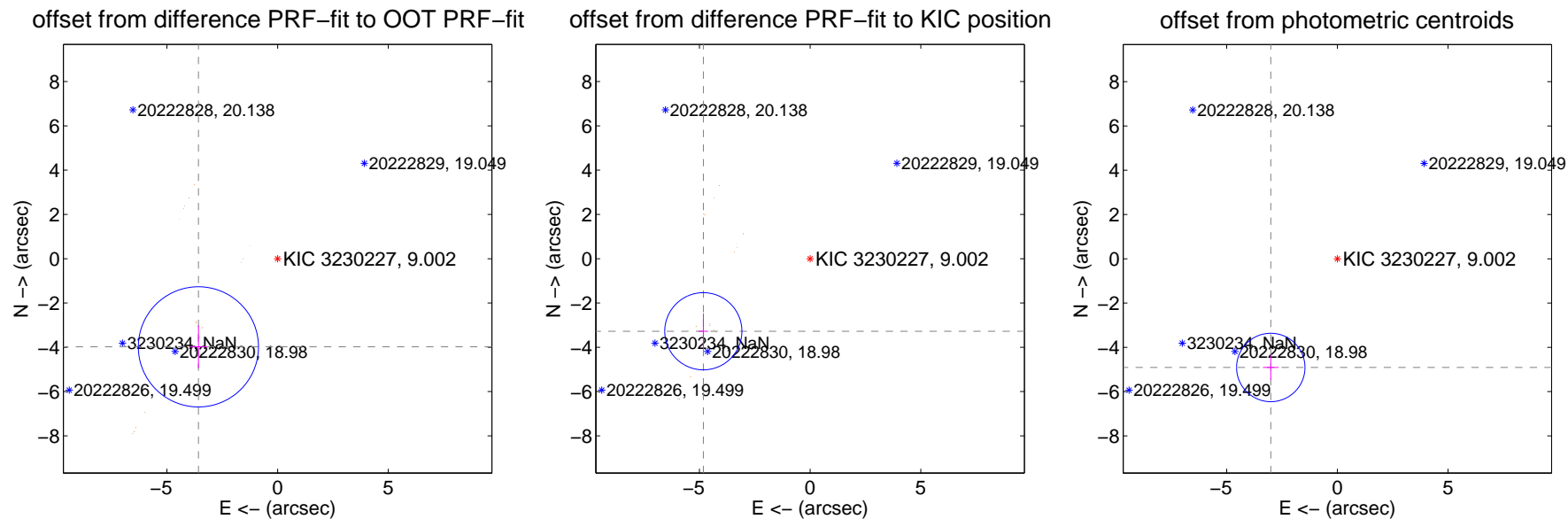
DV Centroid Data

Supplemental centroid analysis for 003230227-02. **Kepler magnitude: 9.00.** Transit SNR 11.30

There are 0 quarters with good PRF difference image offsets

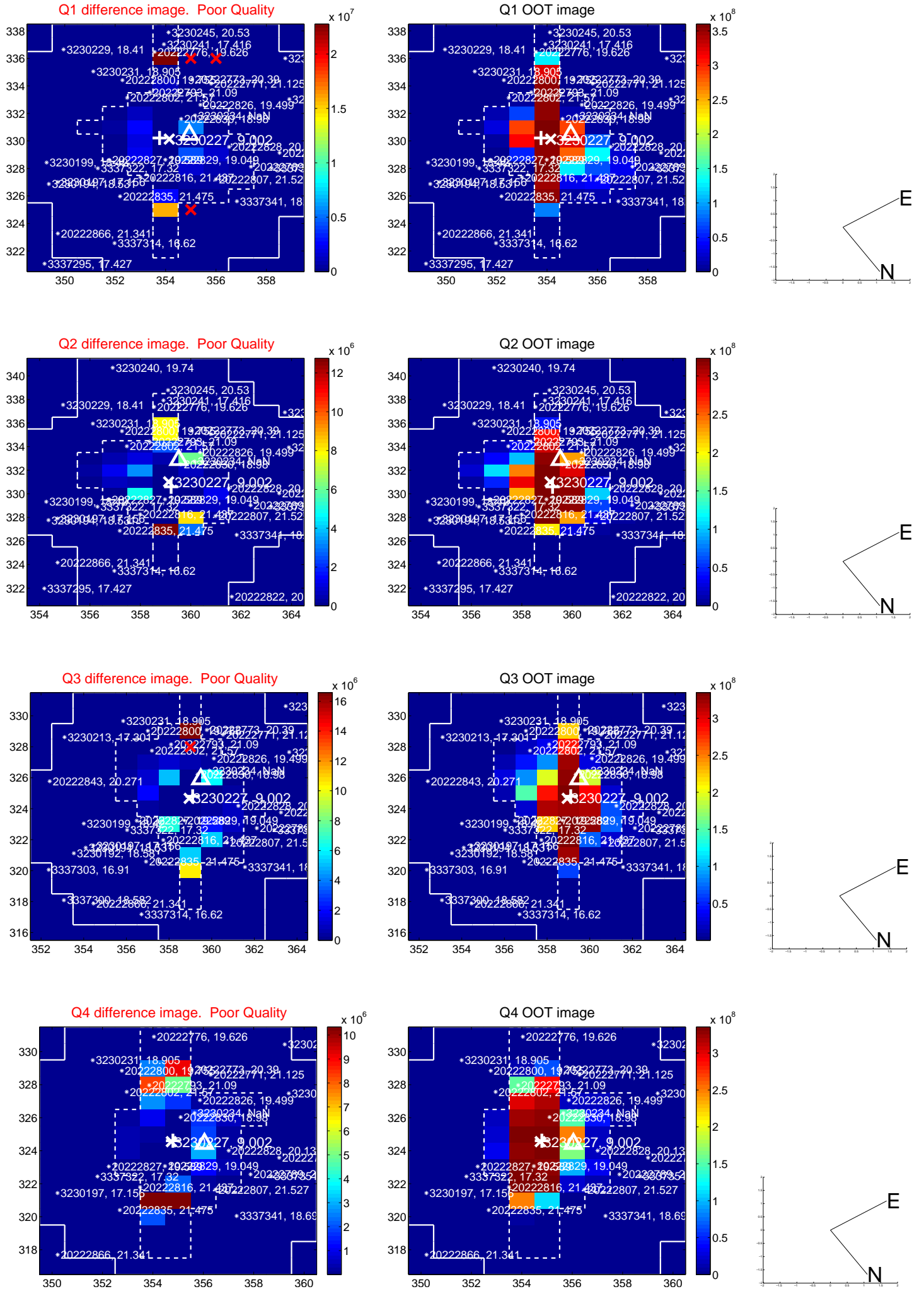
The direct PRF centroid is offset from the target star catalog position by about 1.83 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.352 ± 0.905	5.92	3.577 ± 0.387	-3.980 ± 0.959
PRF-fit source offset from KIC position	5.830 ± 0.581	10.04	4.823 ± 0.216	-3.276 ± 0.801
photometric centroid source offset	5.76 ± 0.51	11.18	3.01 ± 0.35	-4.91 ± 0.56

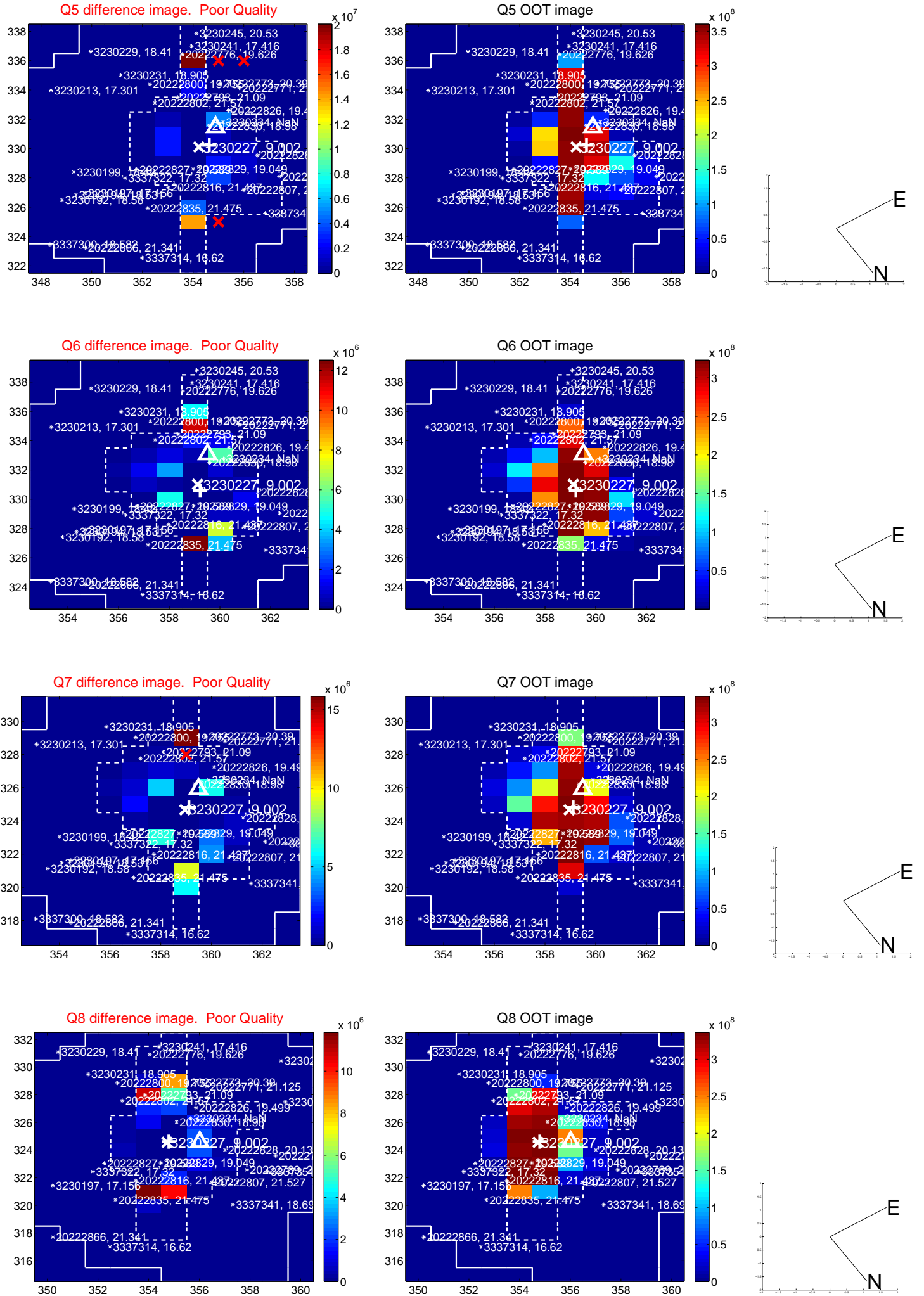


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

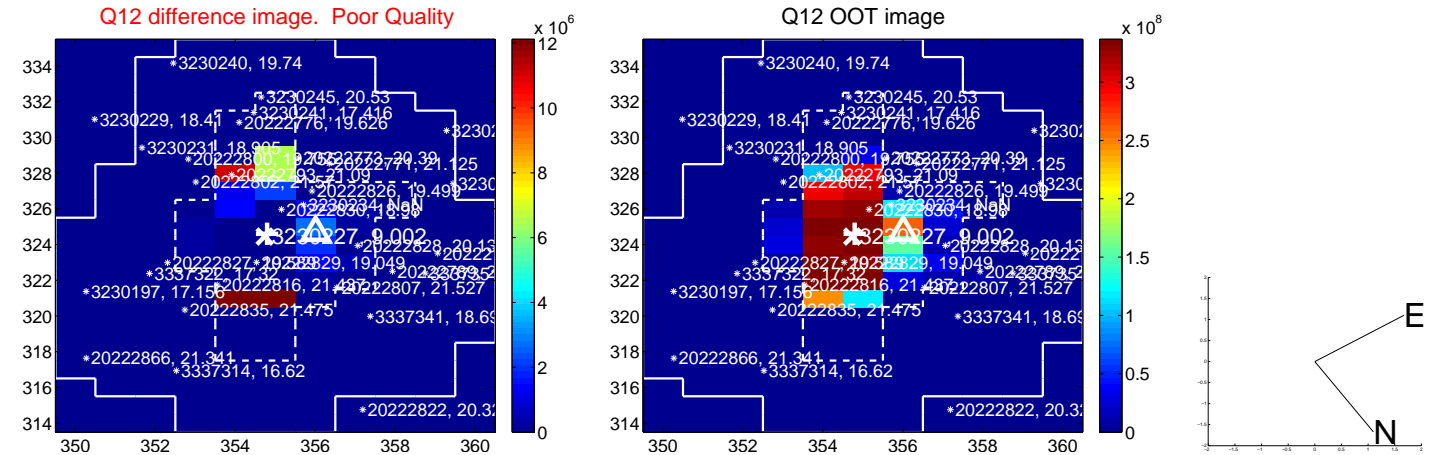
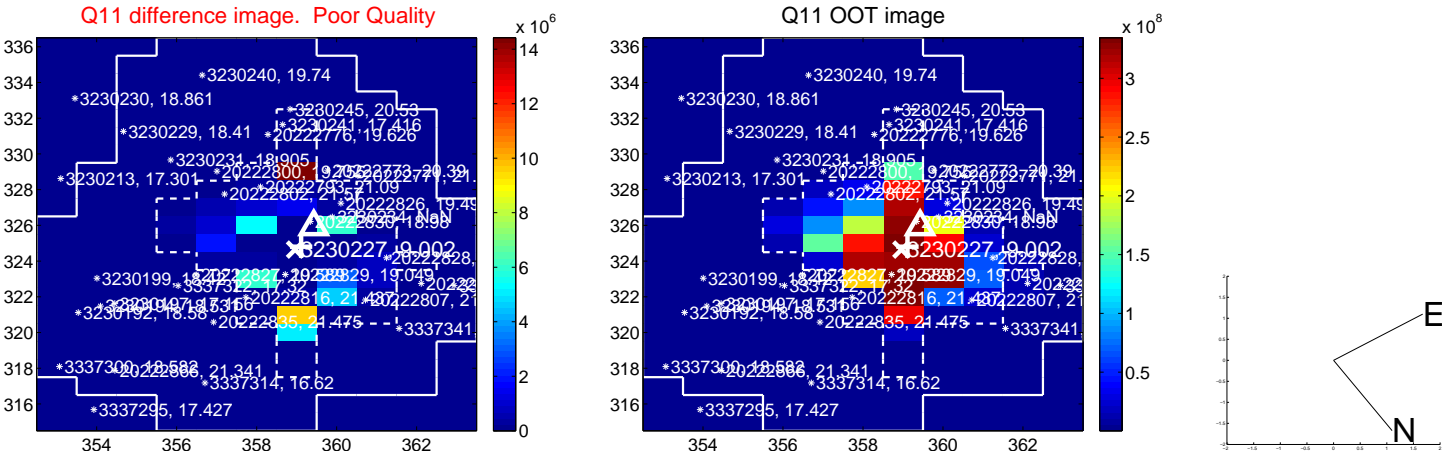
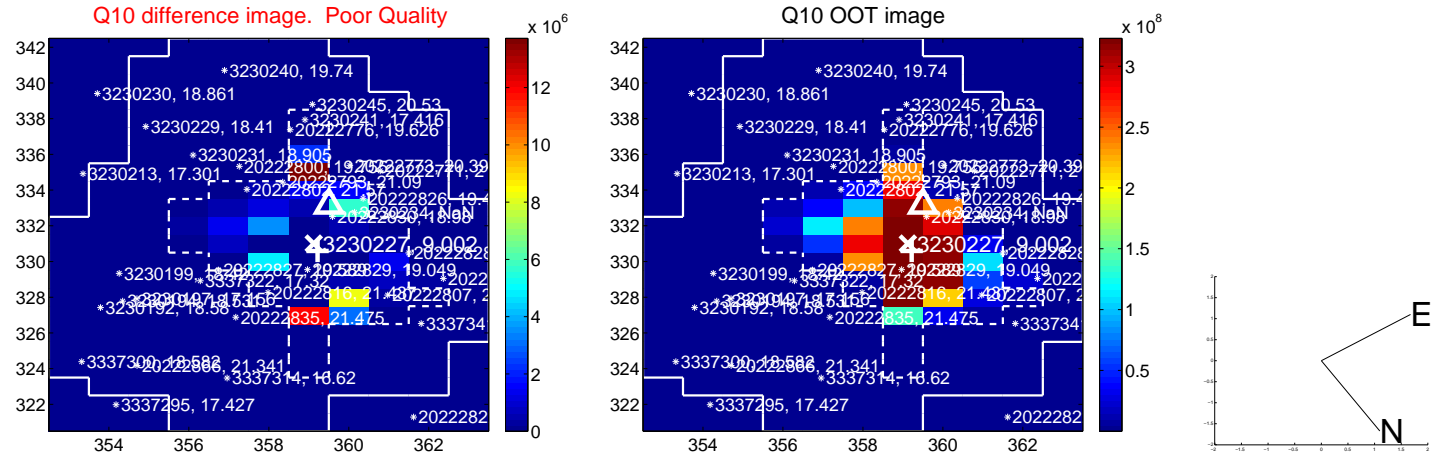
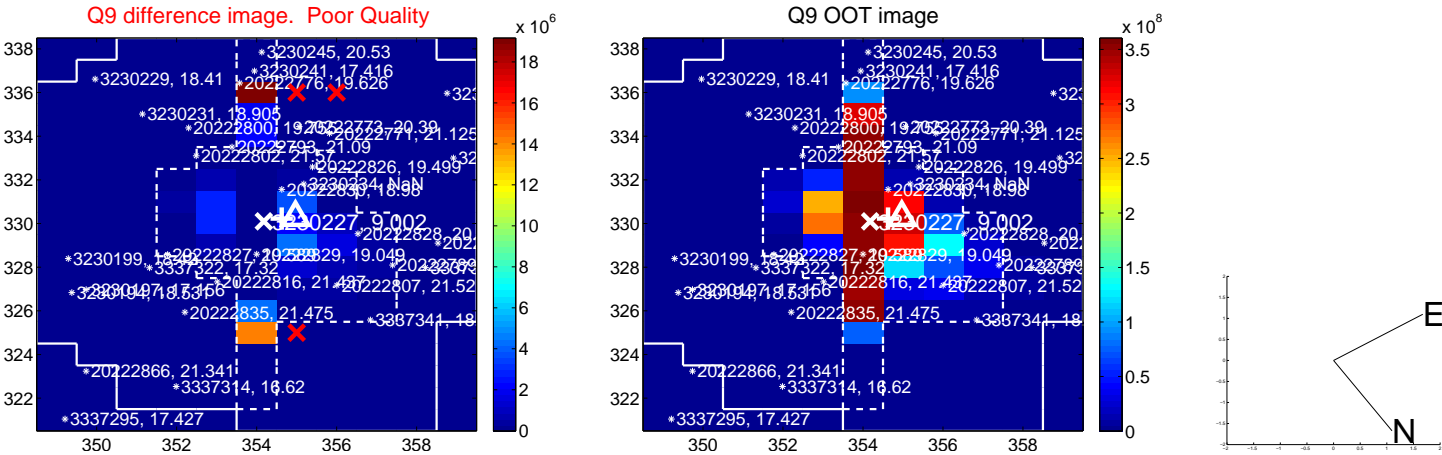
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



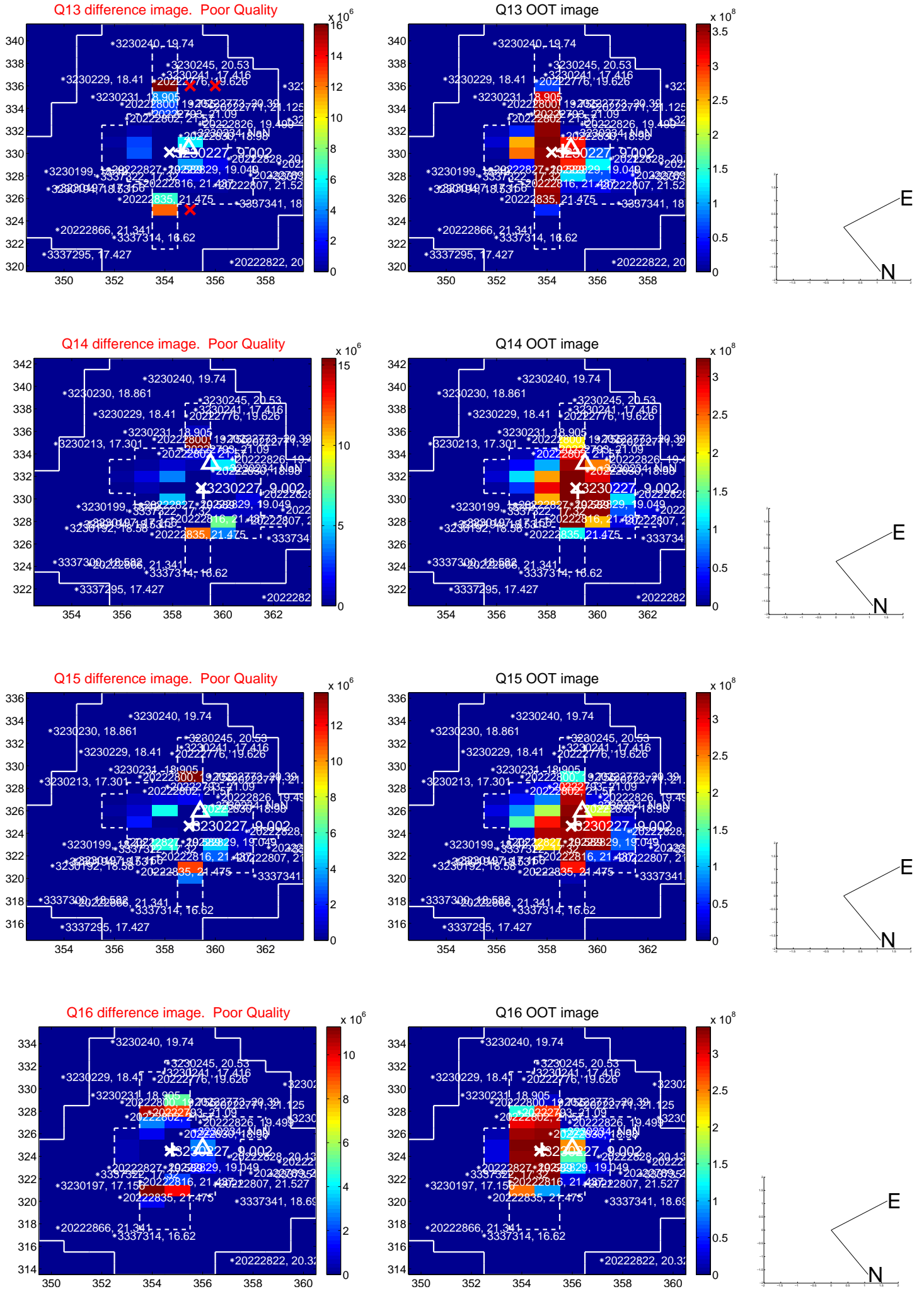
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



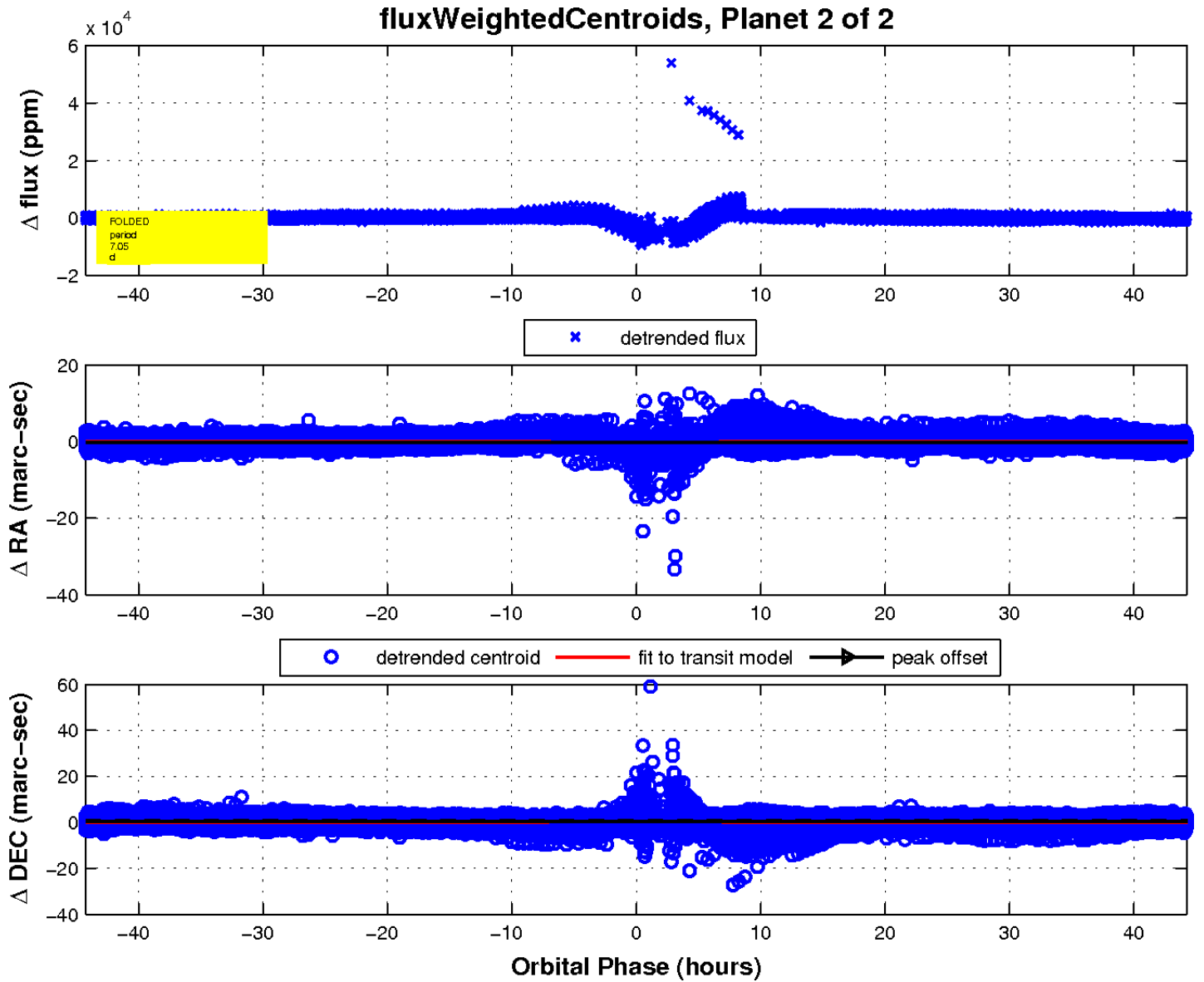
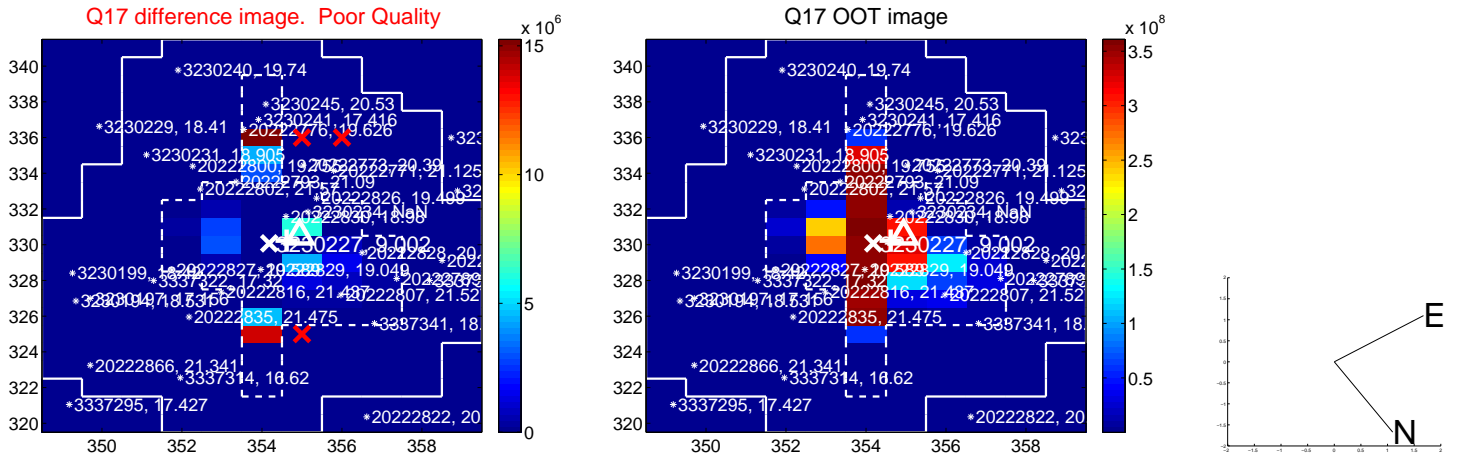
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

