

KIC 007270230

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})
007270230-01	OBS	0876.01	6.998100	136.908437	20056.5	2.054	551.3	538.9	0.83	5612	16.86	125.63
007270230-02	OBS	No	6.998107	133.410686	995.5	1.859	21.2	25.3	0.83	5612	4.70	125.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007270230-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
007270230-02	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.

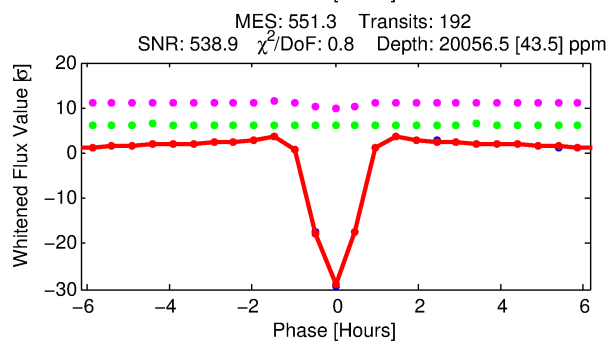
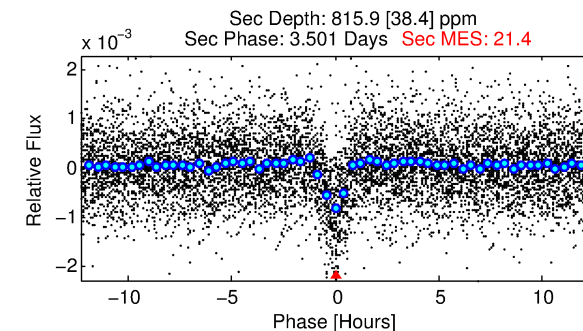
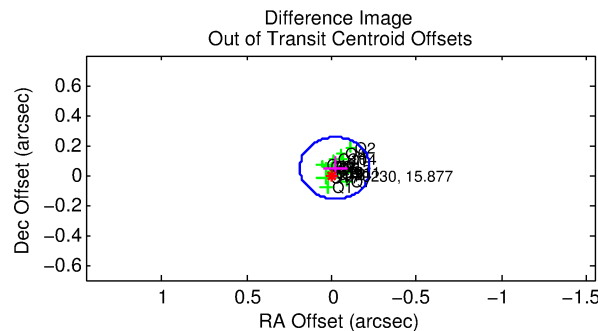
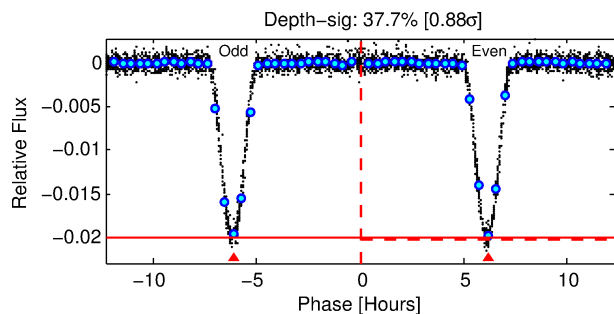
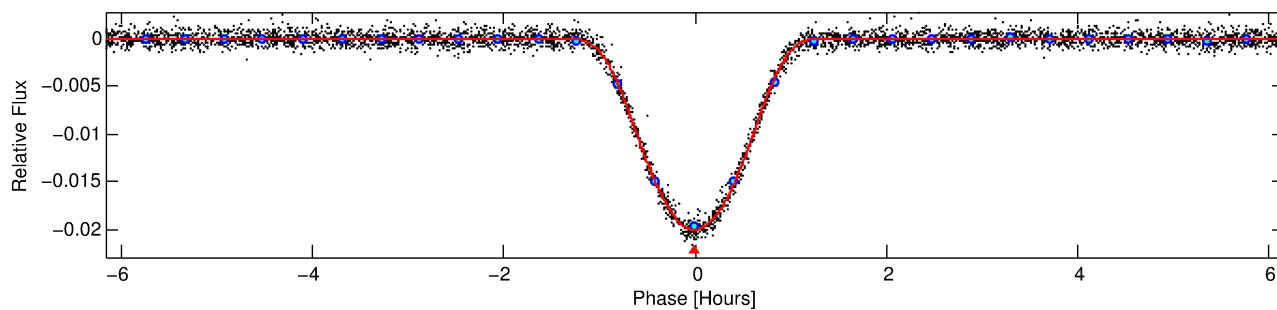
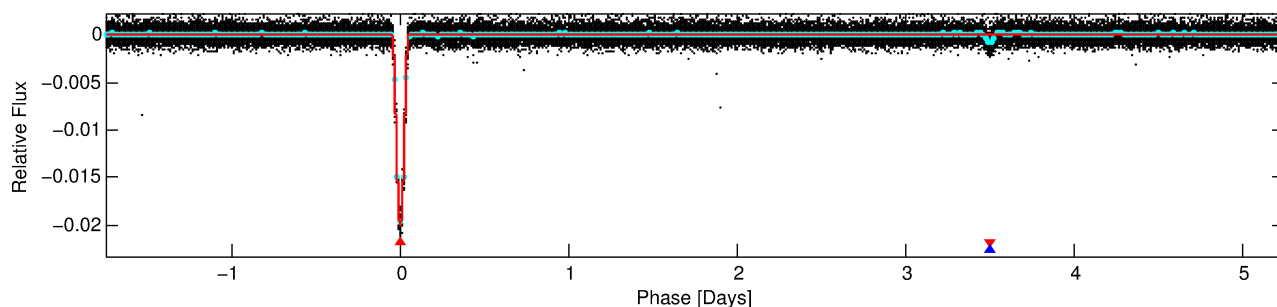
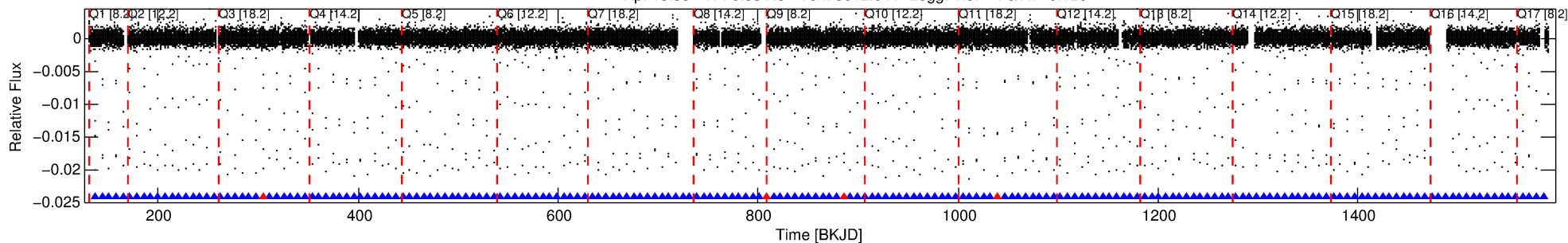
Ephemeris Match Information For 007270230-01

No Significant Match Found

DV One-Page Summary

KIC: 7270230 Candidate: 1 of 2 Period: 6.998 d
KOI: K00876.01 Corr: 0.999

Kp: 15.88 R*: 0.83 Rs Teff: 5612.0 K Logg: 4.57 Fe/H: -0.120



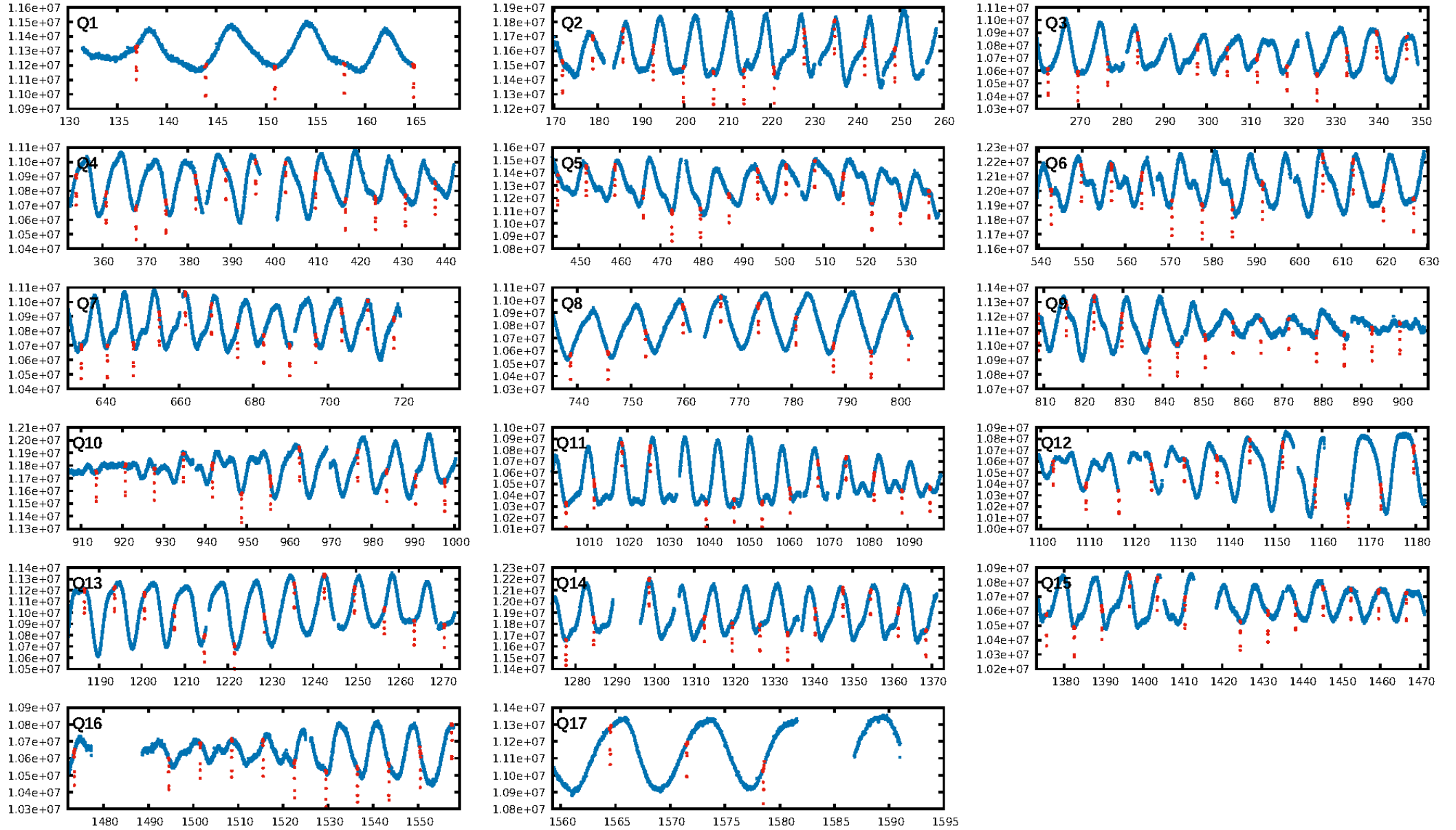
DV Fit Results:

Period = 6.99810 [0.00000] d
Epoch = 136.9084 [0.0001] BKJD
Rp/R* = 0.1864 [0.0105]
a/R* = 19.25 [0.23]
b = 0.93 [0.02]
Seff = 125.63 [37.13]
Teq = 854 [63] K
Rp = 16.86 [3.80] Re
a = 0.0697 [0.0130] AU
Ag = 7.67 [2.31] [2.89σ]
Teffp = 2197 [89] K [12.27σ]

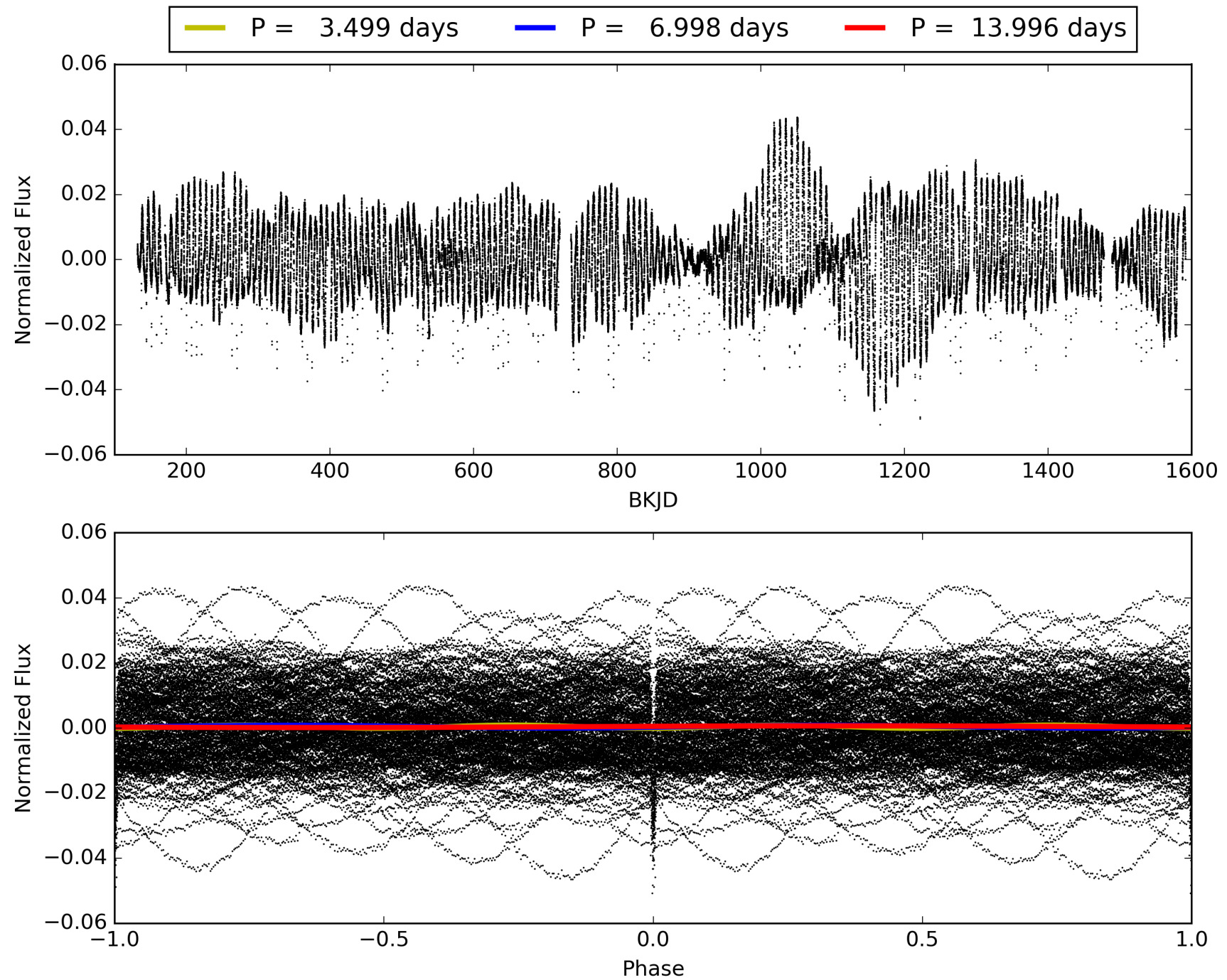
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 4.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.98 [180/184]
GhostDiagnostic-chr: 2.741
Centroid-sig: 0.0%
Centroid-so: 0.025 arcsec [0.98σ]
OotOffset-rm: 0.051 arcsec [0.75σ]
KicOffset-rm: 0.123 arcsec [1.82σ]
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 007270230-01, PDC Light Curves

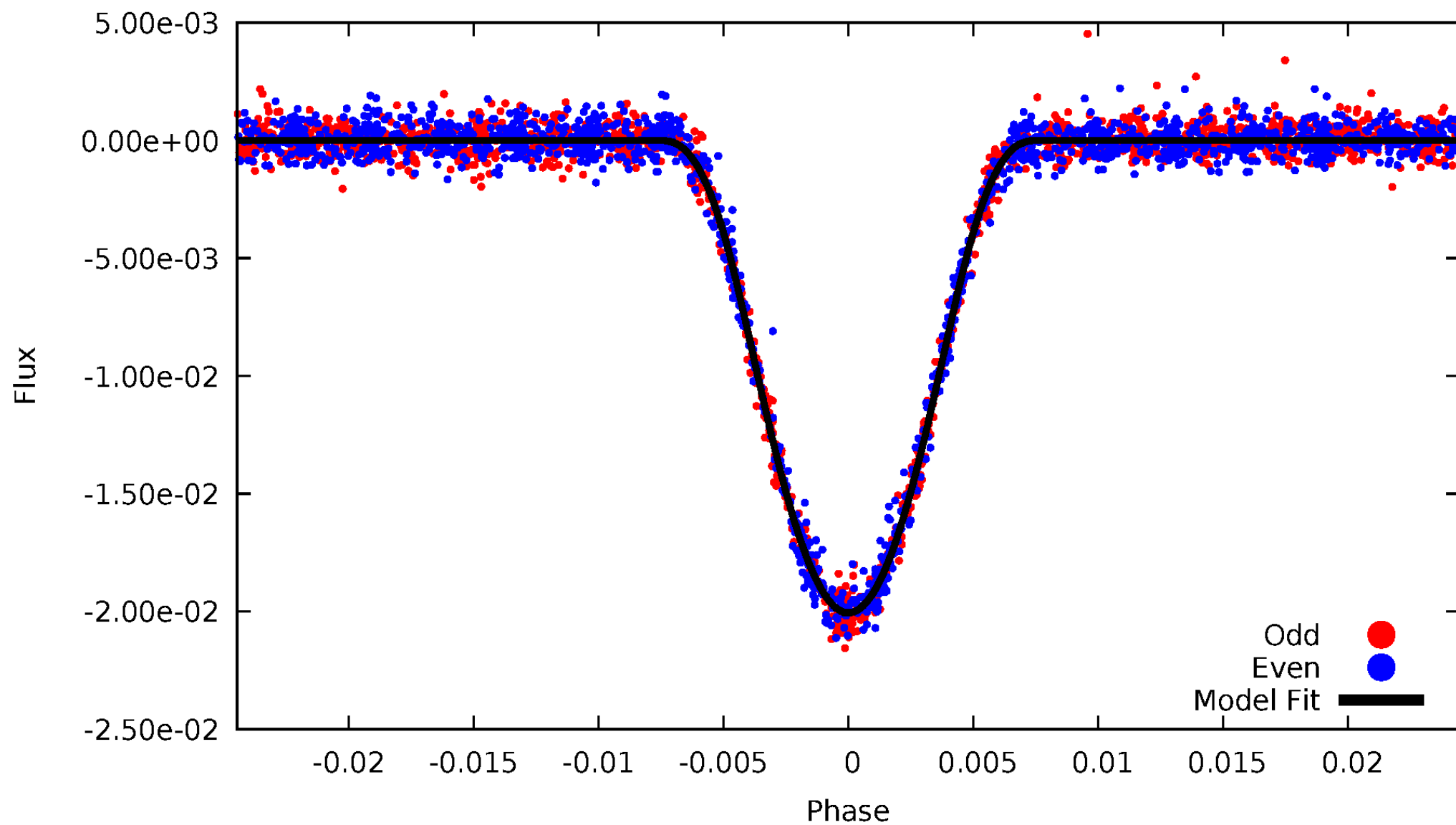


TCE 007270230-01



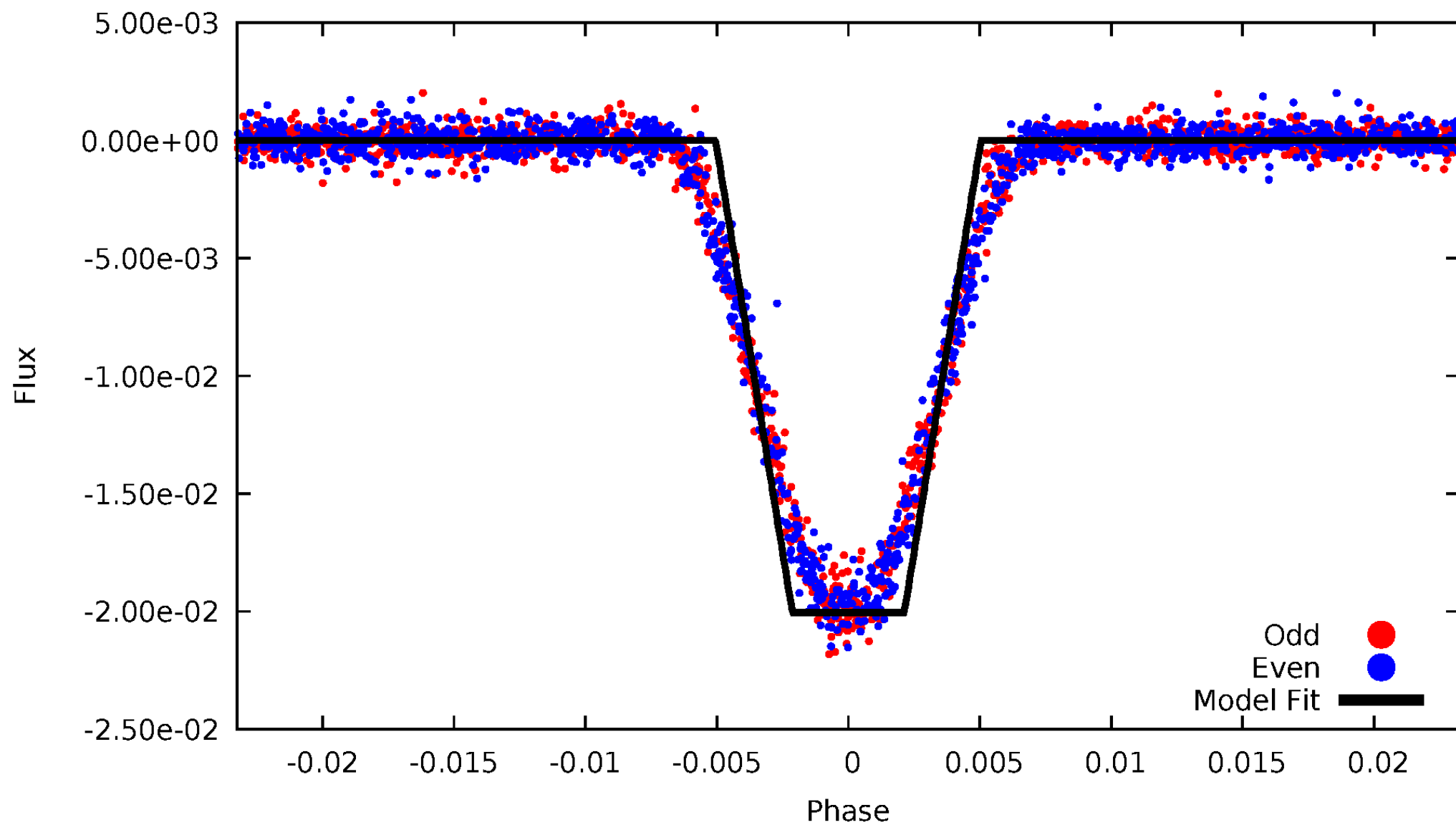
DV Odd/Even

TCE 007270230-01



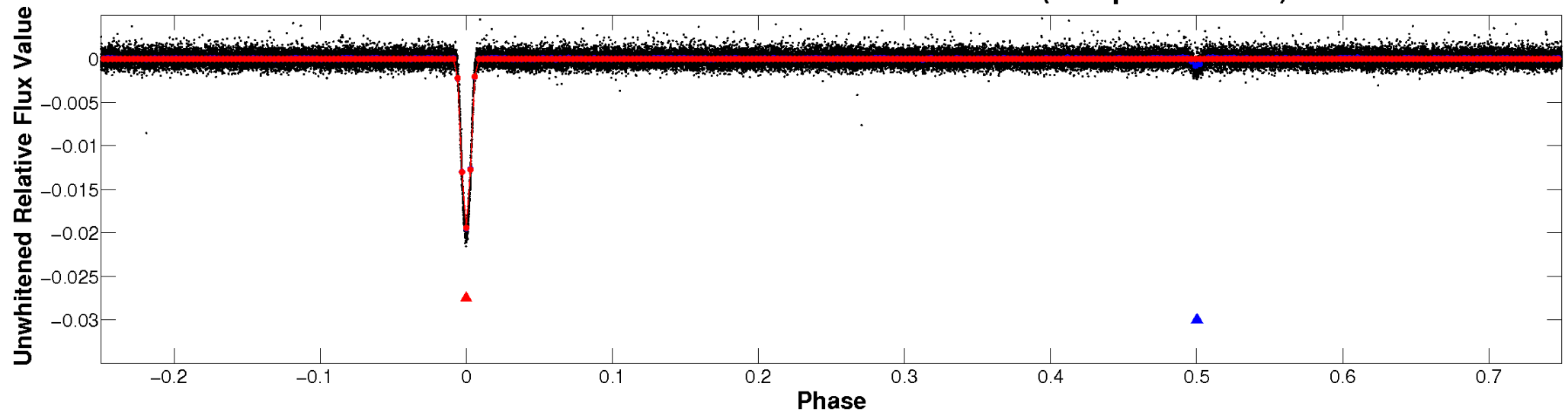
ALT Odd/Even

TCE 007270230-01

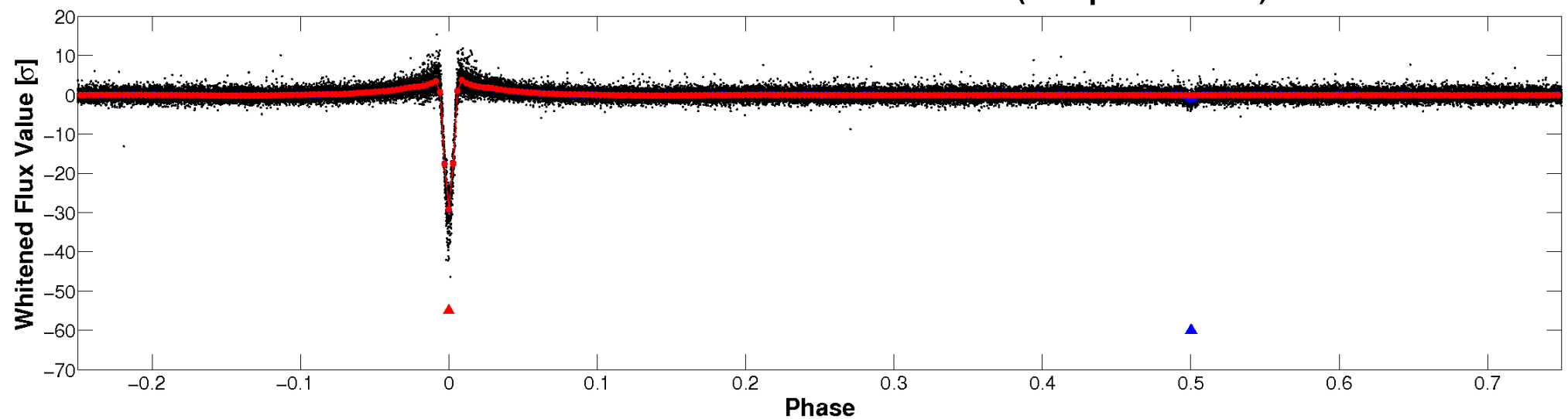


Non-Whitened Vs. Whitened Light Curve

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

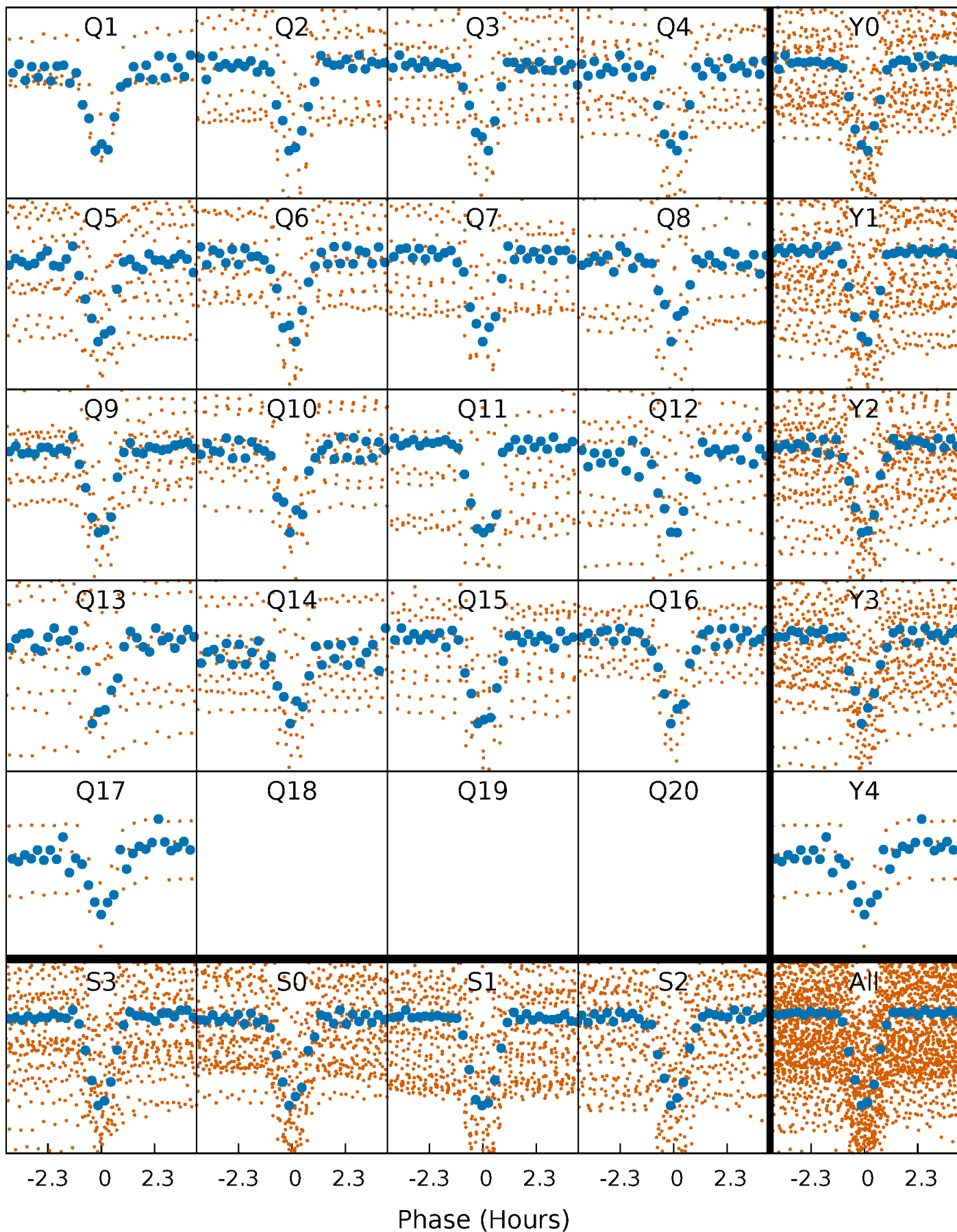


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



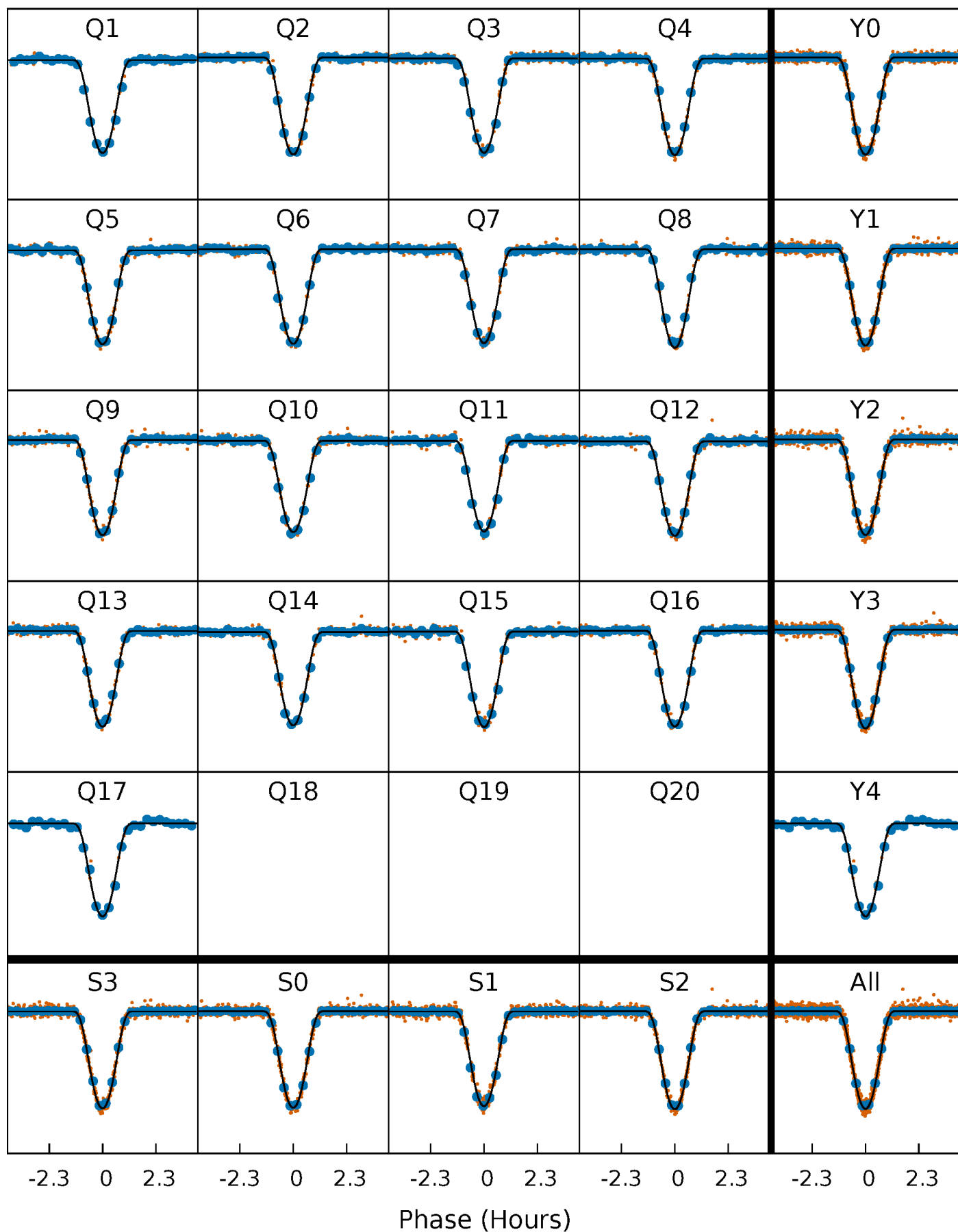
PDC Quarter-Phased Transit Curves

TCE 007270230-01 P= 6.998100 Days $T_0=136.908437$ (BKJD)



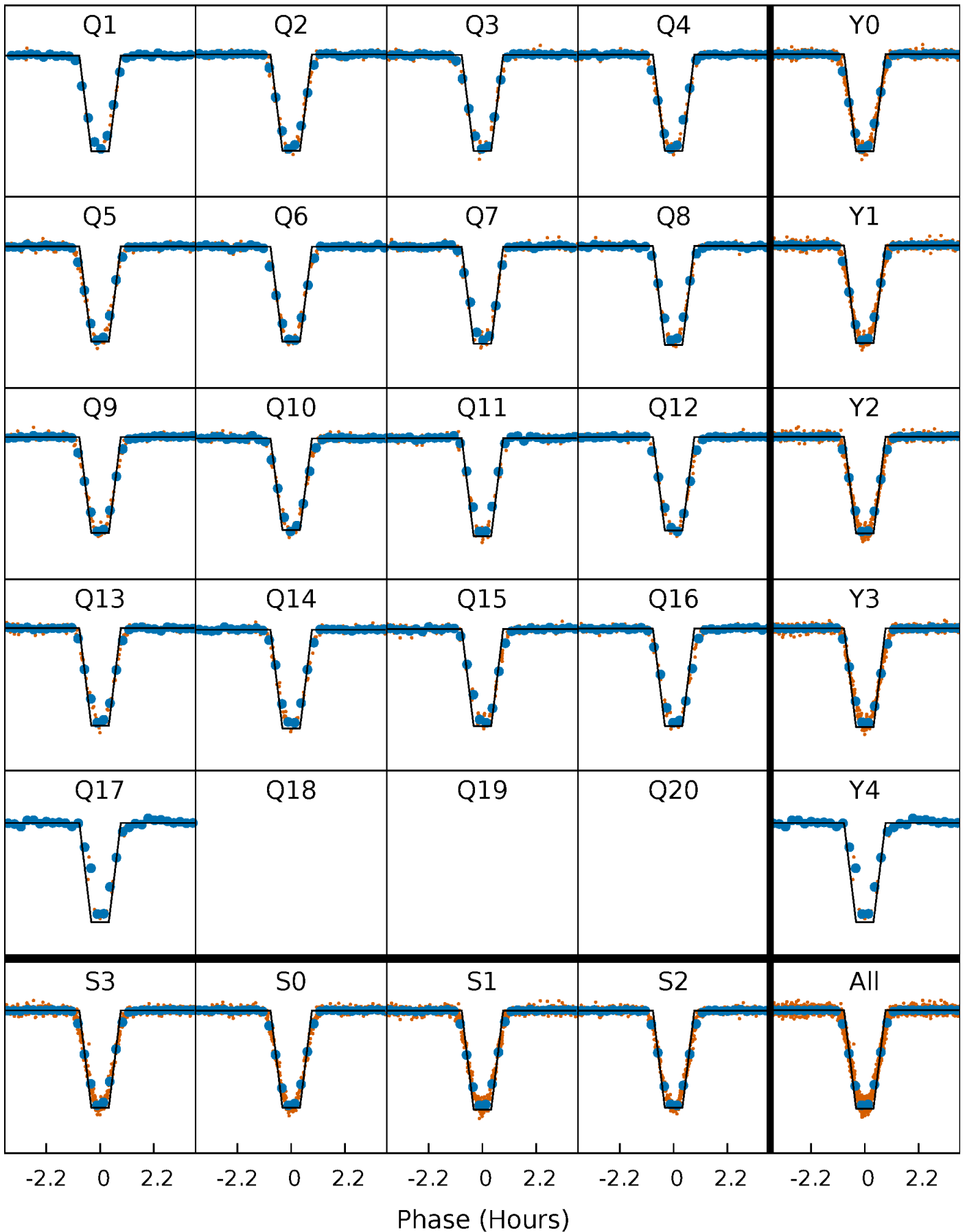
DV Quarter-Phased Transit Curves

TCE 007270230-01 P= 6.998100 Days $T_0=136.908437$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

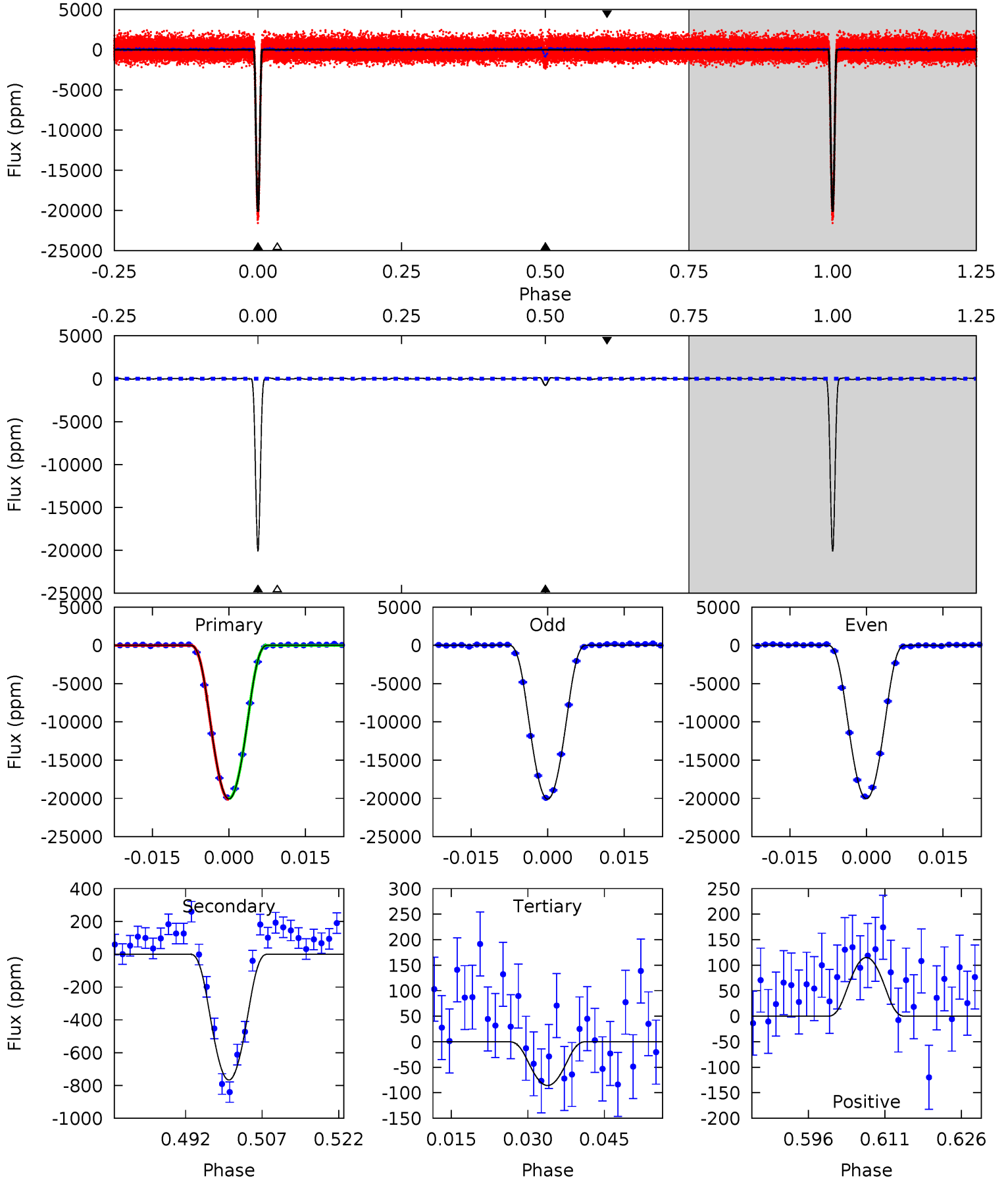
TCE 007270230-01 P= 6.998078 Days $T_0=136.910613$ (BKJD)



DV Model-Shift Uniqueness Test

007270230-01, P = 6.998100 Days, E = 129.910337 Days

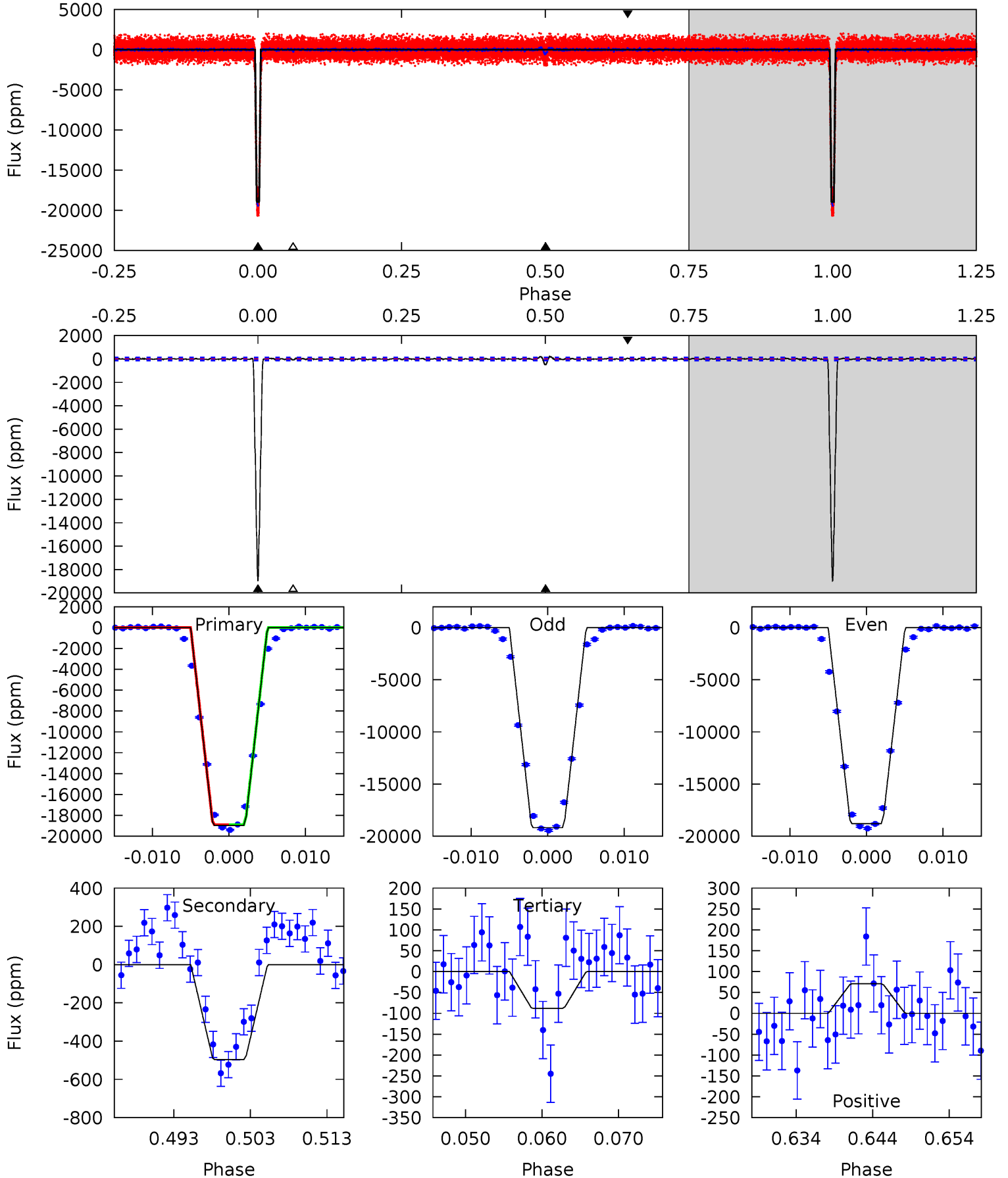
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1041	39.8	4.45	5.97	4.95	2.43	1.85	1036	1035	35.3	33.8	1.40	1.00	0.01	3.05



Alt Model-Shift Uniqueness Test

007270230-01, P = 6.998078 Days, E = 129.912535 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
799.5	21.0	3.72	2.98	5.03	2.57	1.16	795.8	796.5	17.2	18.0	8.20	1.00	0.01	0



Stellar Parameters For KIC 007270230

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5612^{+152}_{-152}	$4.566^{+0.038}_{-0.152}$	$-0.120^{+0.300}_{-0.300}$	$0.829^{+0.181}_{-0.065}$	$0.926^{+0.085}_{-0.114}$	$2.293^{+0.443}_{-0.940}$
	+3%/-3%	+1%/-3%	+250%/-250%	+22%/-8%	+9%/-12%	+19%/-41%
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 007270230-01 / KOI 0876.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-767 ± 19	$17.18^{+2.16}_{-1.47}$	1214^{+62}_{-50}	2858^{+67}_{-64}	$6.799^{+1.176}_{-1.281}$
Alt.	-497 ± 24	$13.17^{+1.58}_{-1.30}$	1216^{+62}_{-47}	2906^{+82}_{-75}	$7.531^{+1.653}_{-1.550}$

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

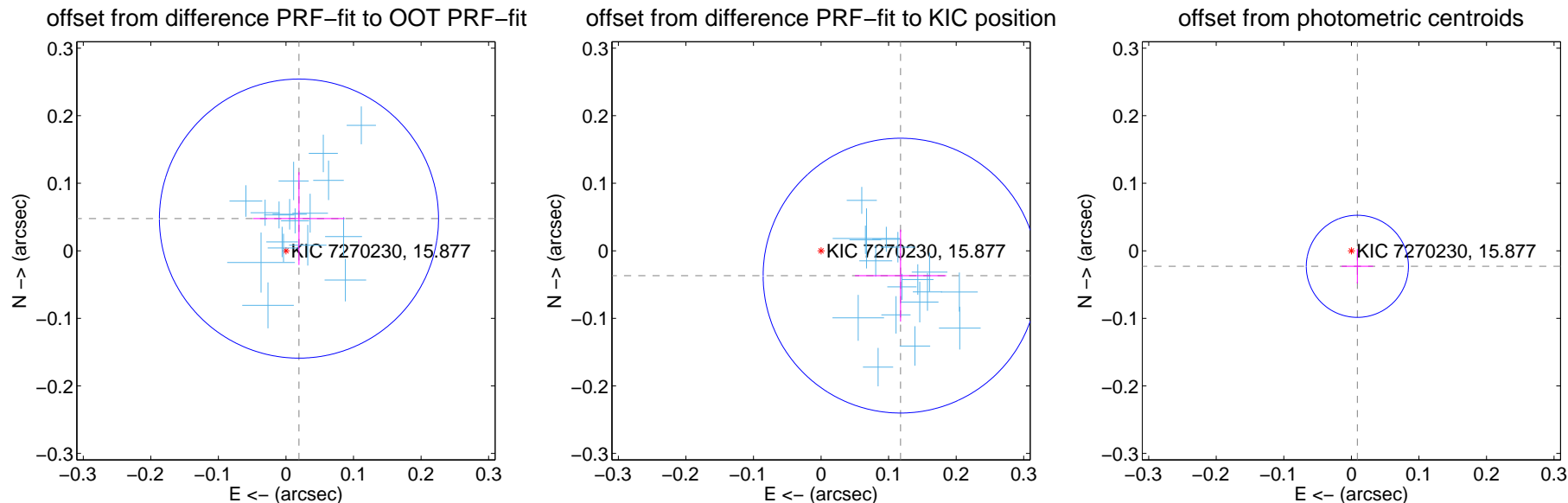
DV Centroid Data

Supplemental centroid analysis for 007270230-01. Kepler magnitude: 15.88. Transit SNR 538.87

There are 17 quarters with good PRF difference image offsets

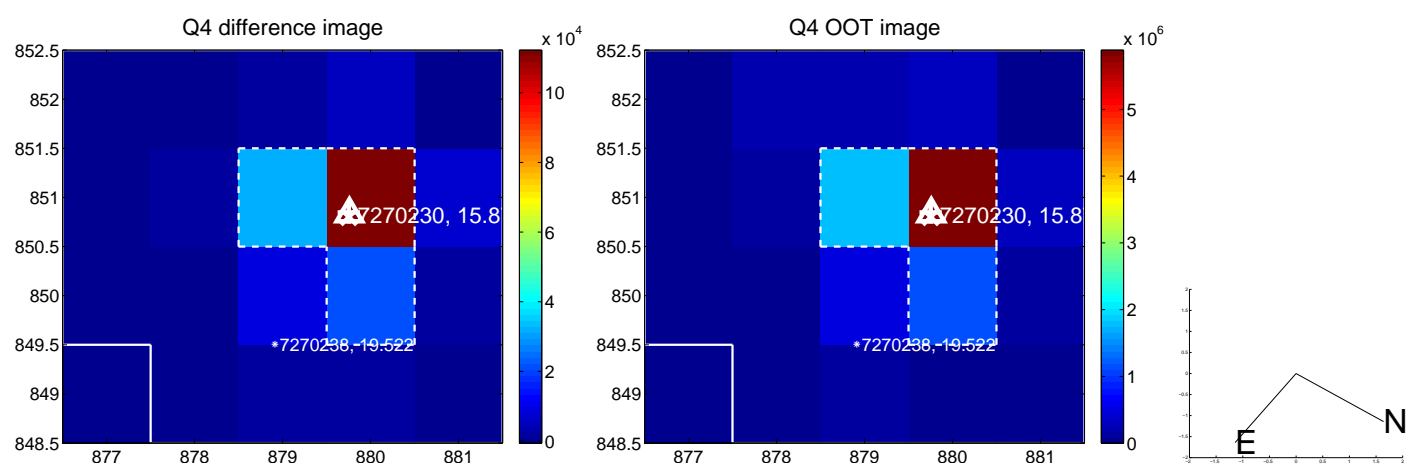
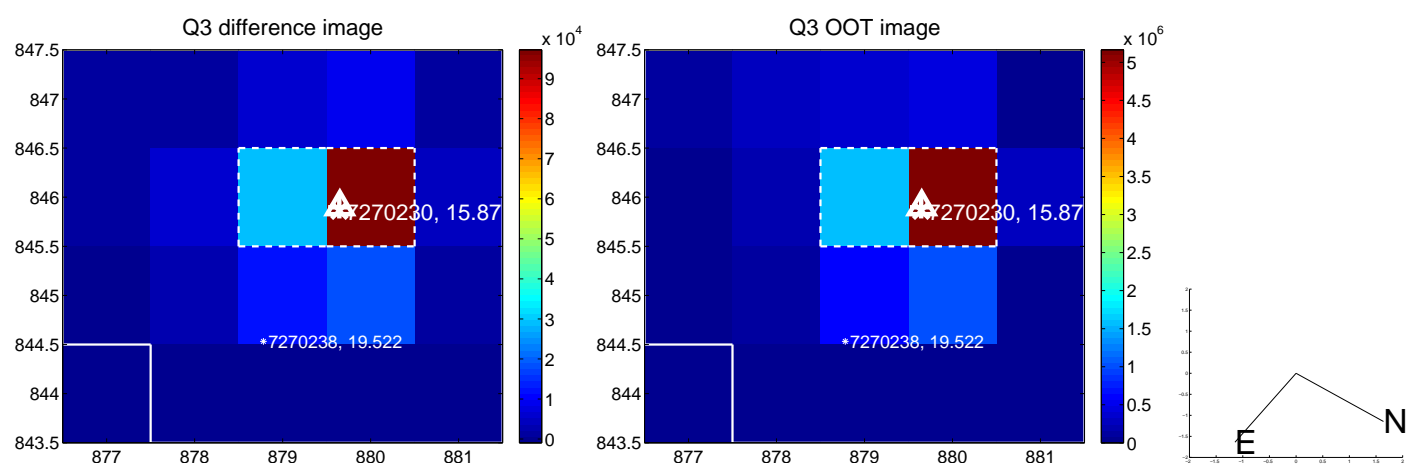
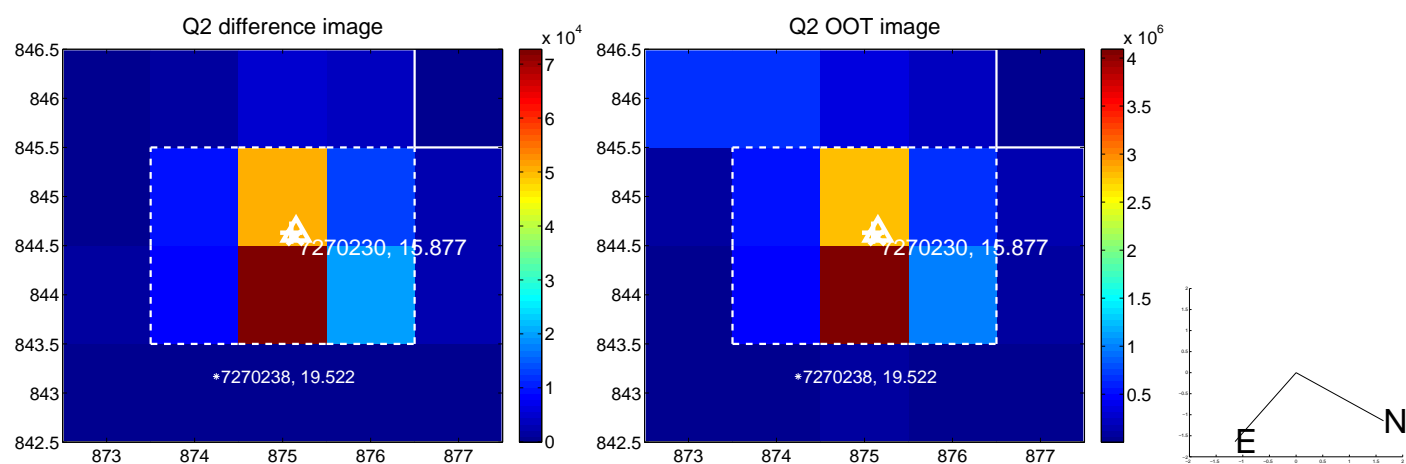
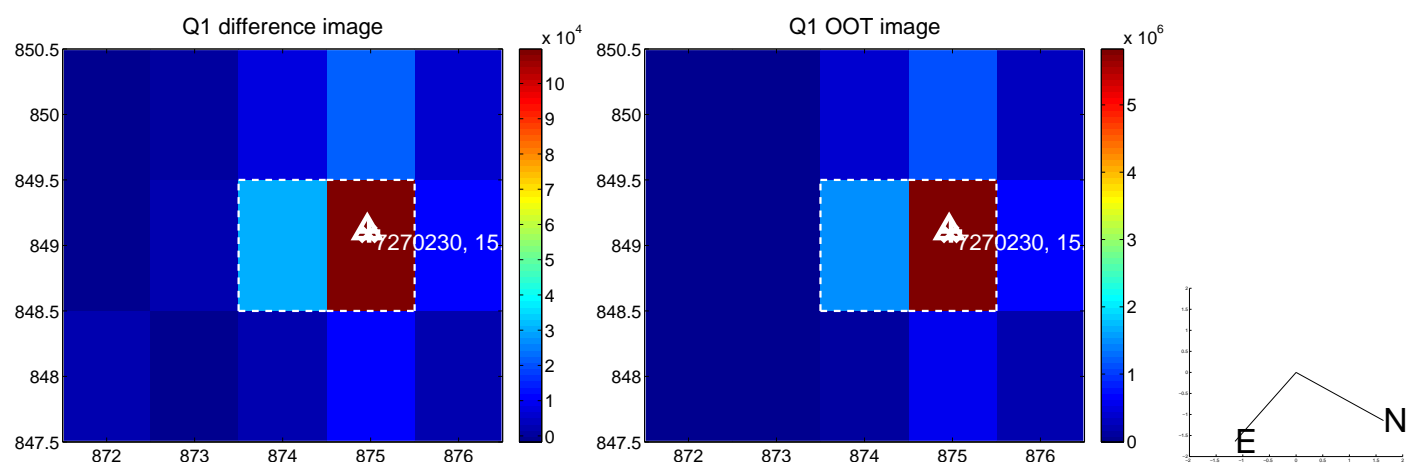
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.051 ± 0.069	0.75	-0.019 ± 0.068	0.048 ± 0.069
PRF-fit source offset from KIC position	0.123 ± 0.068	1.82	-0.118 ± 0.068	-0.037 ± 0.068
photometric centroid source offset	0.02 ± 0.03	0.98	-0.01 ± 0.02	-0.02 ± 0.03

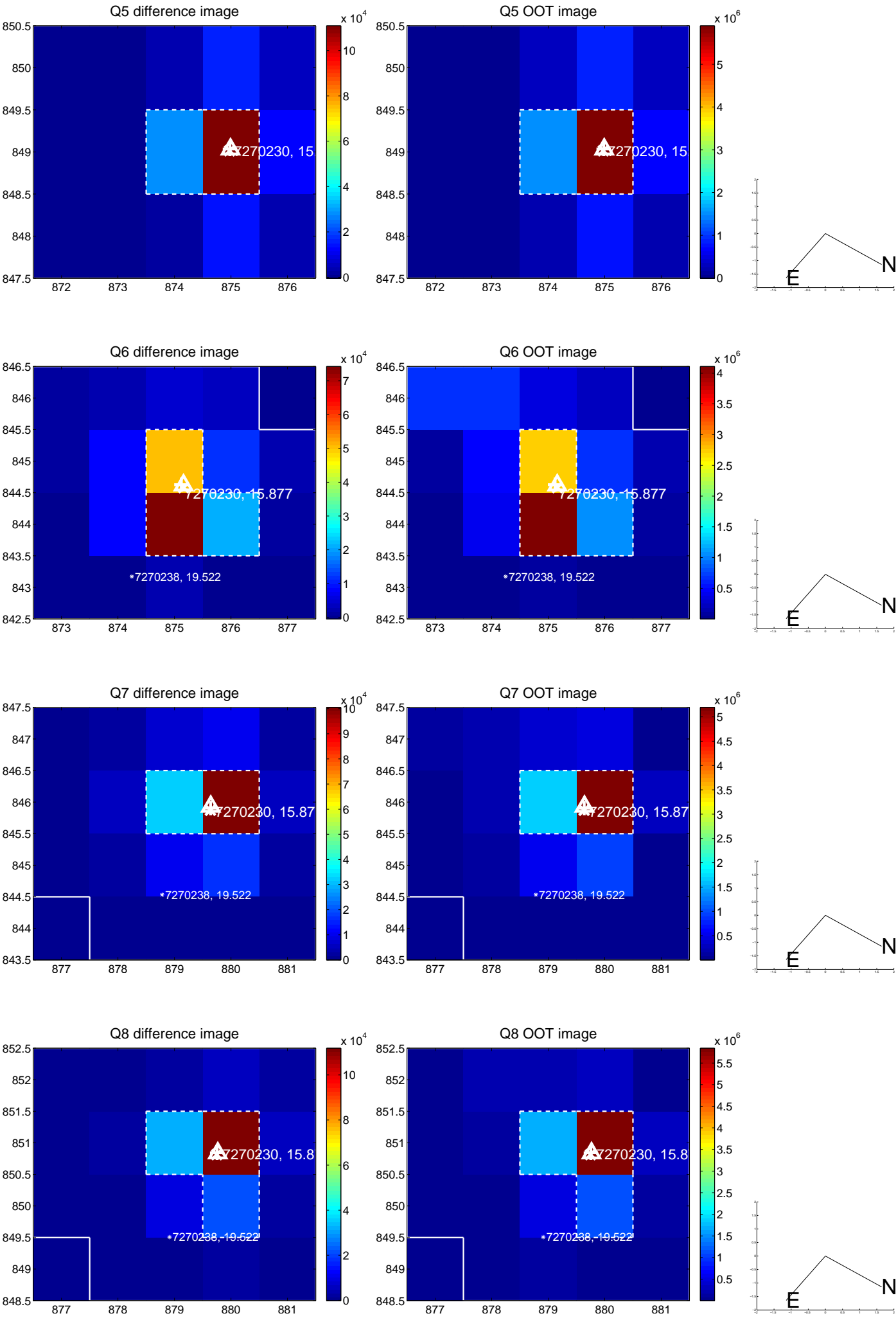


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

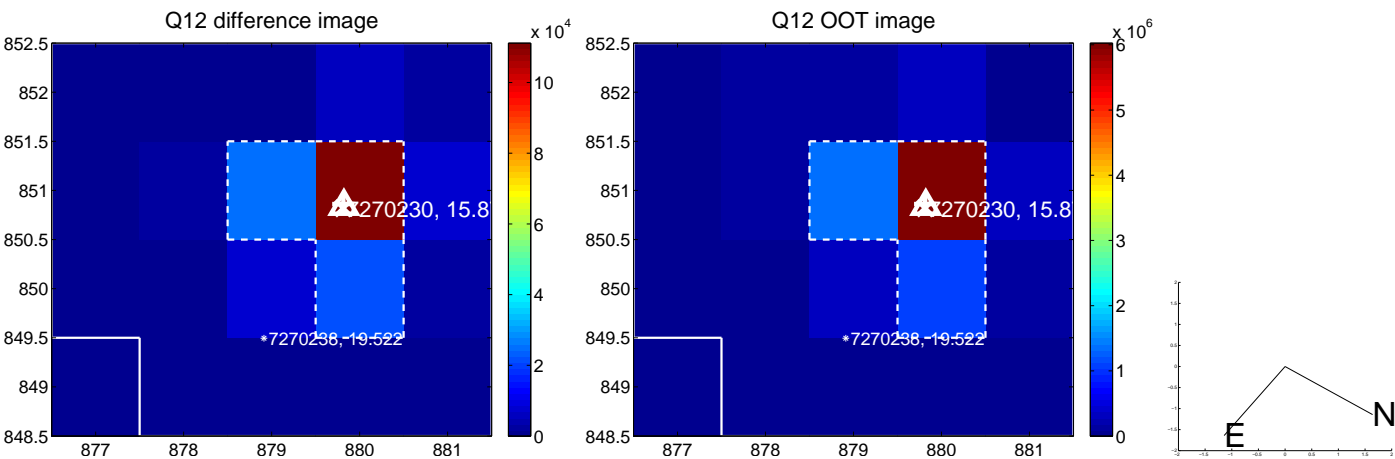
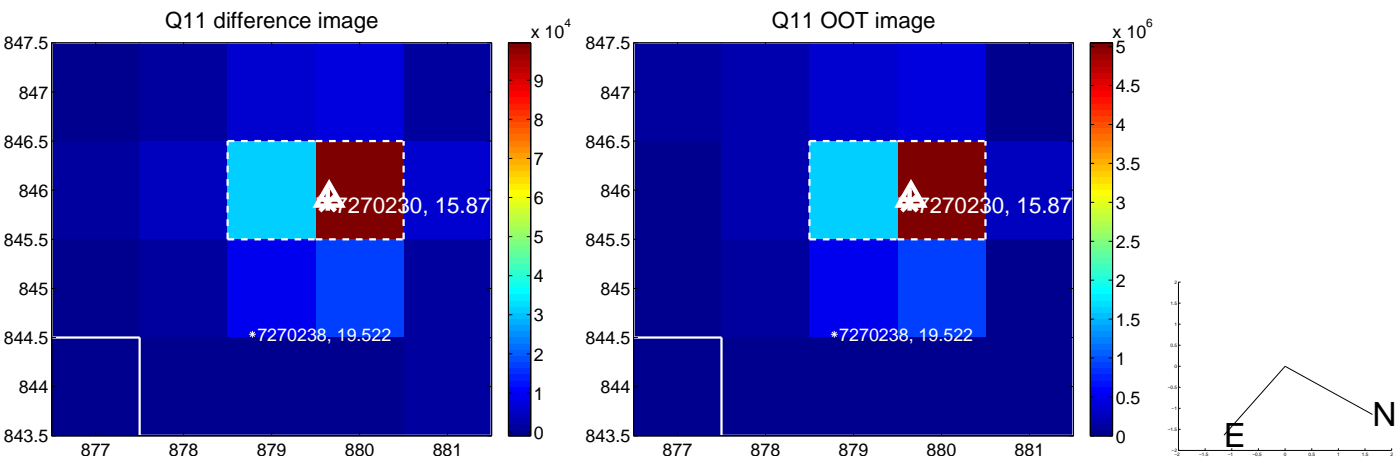
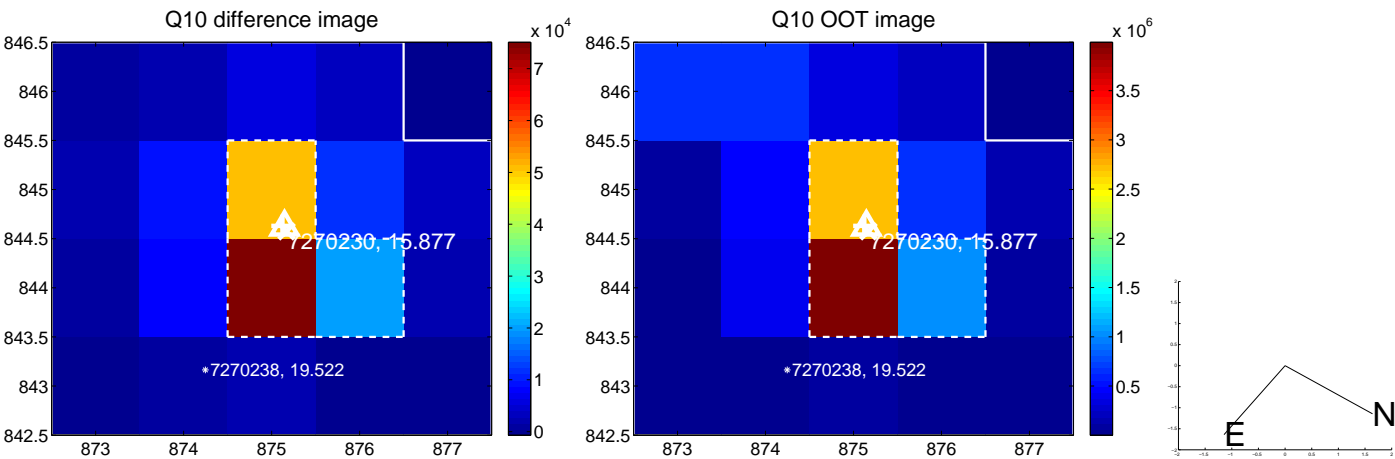
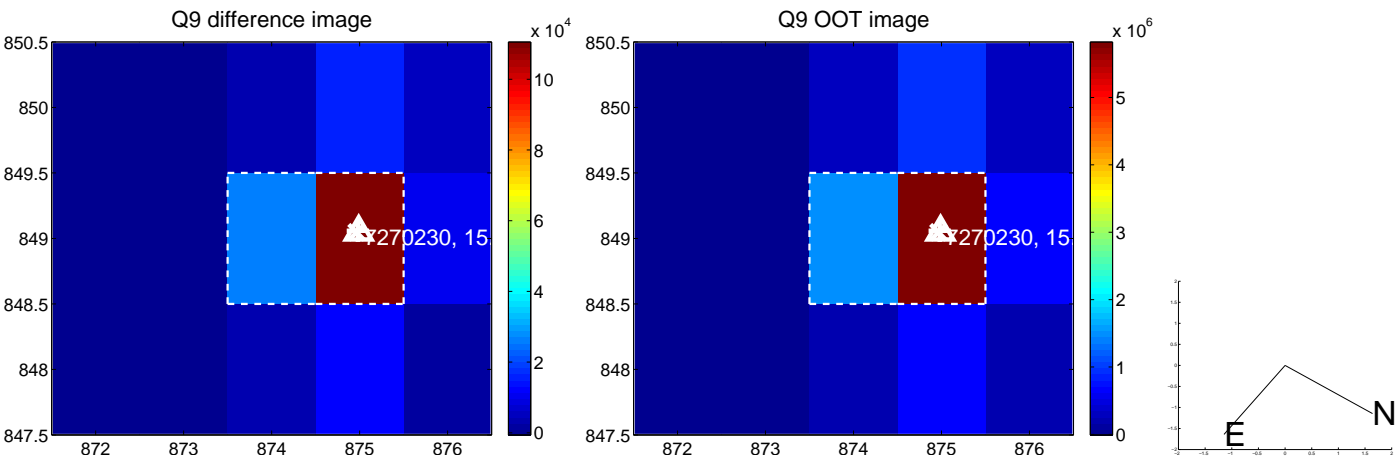
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



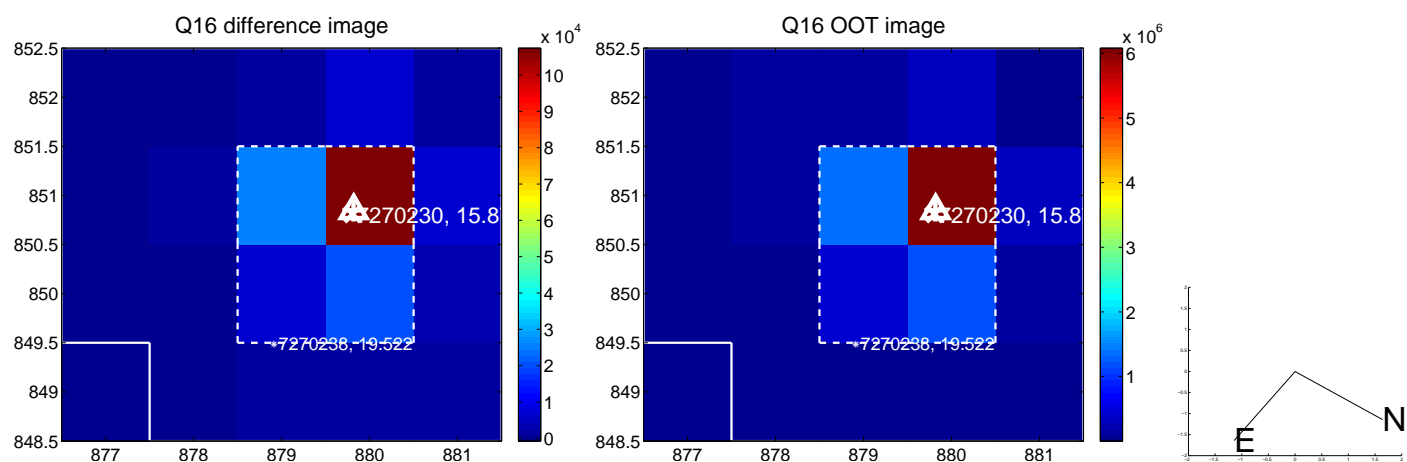
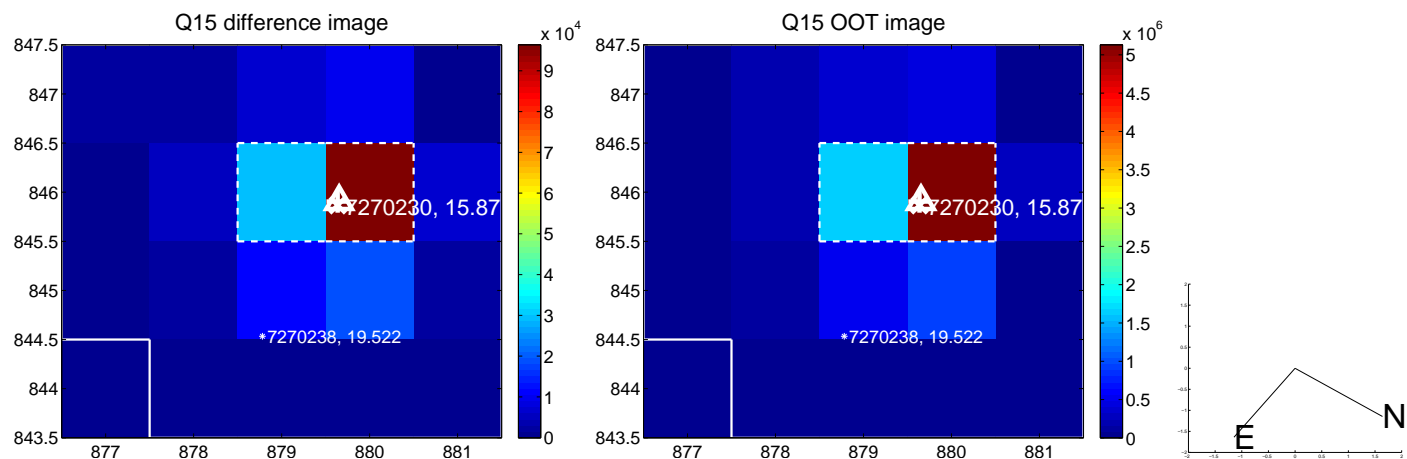
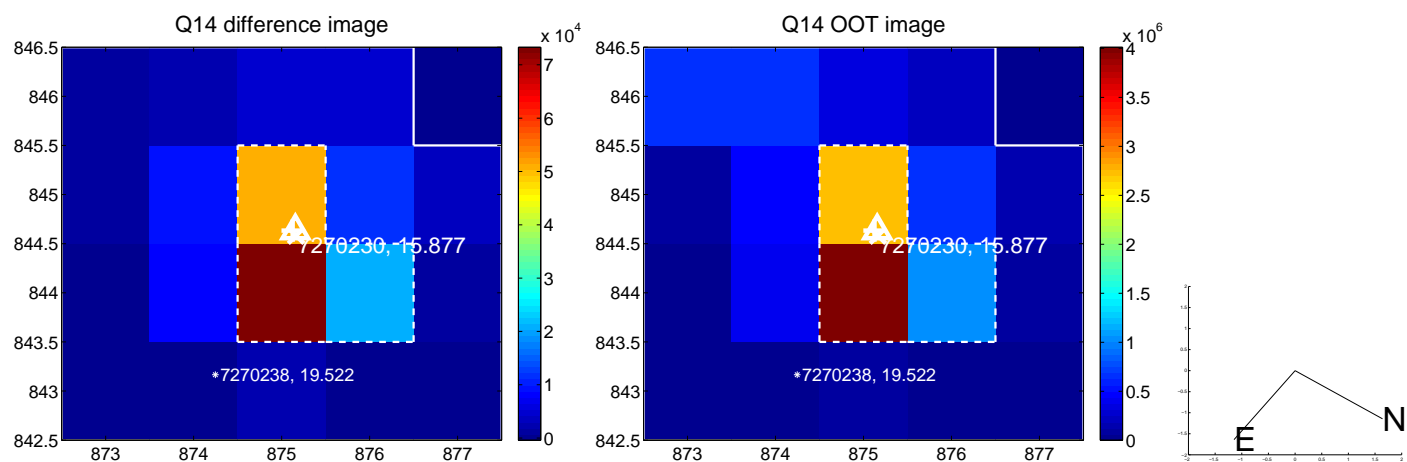
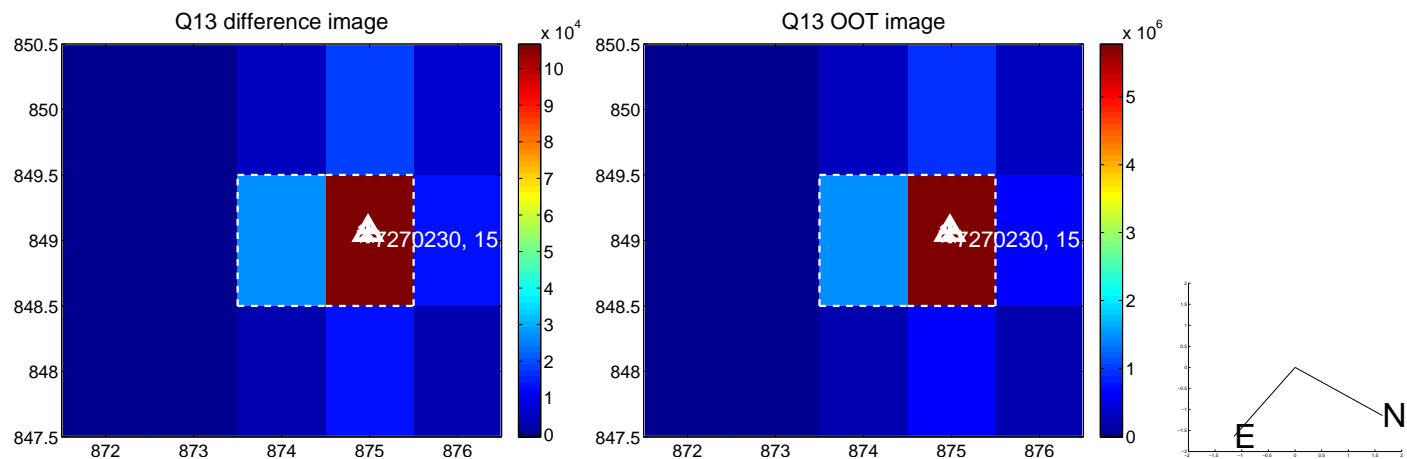
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



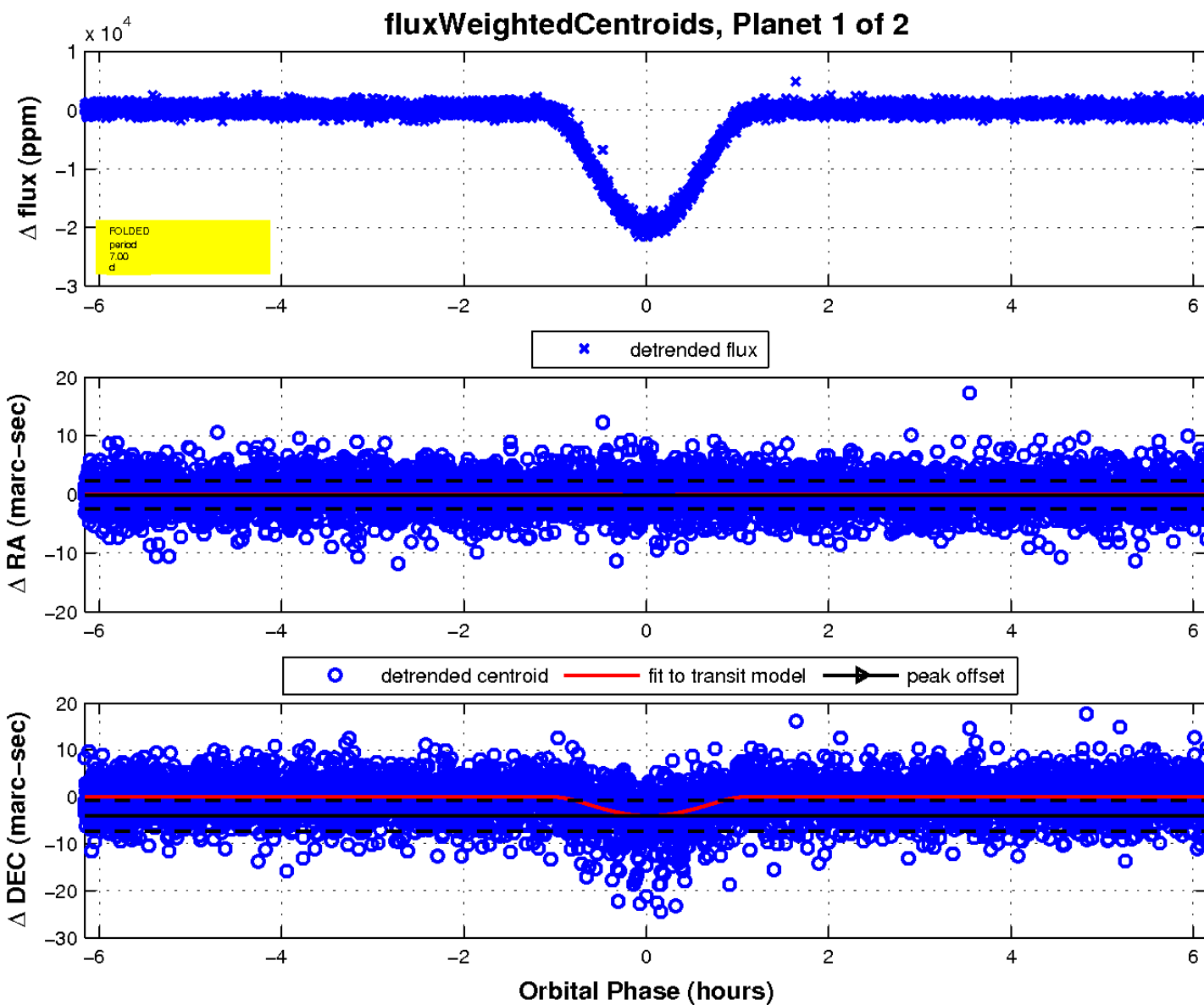
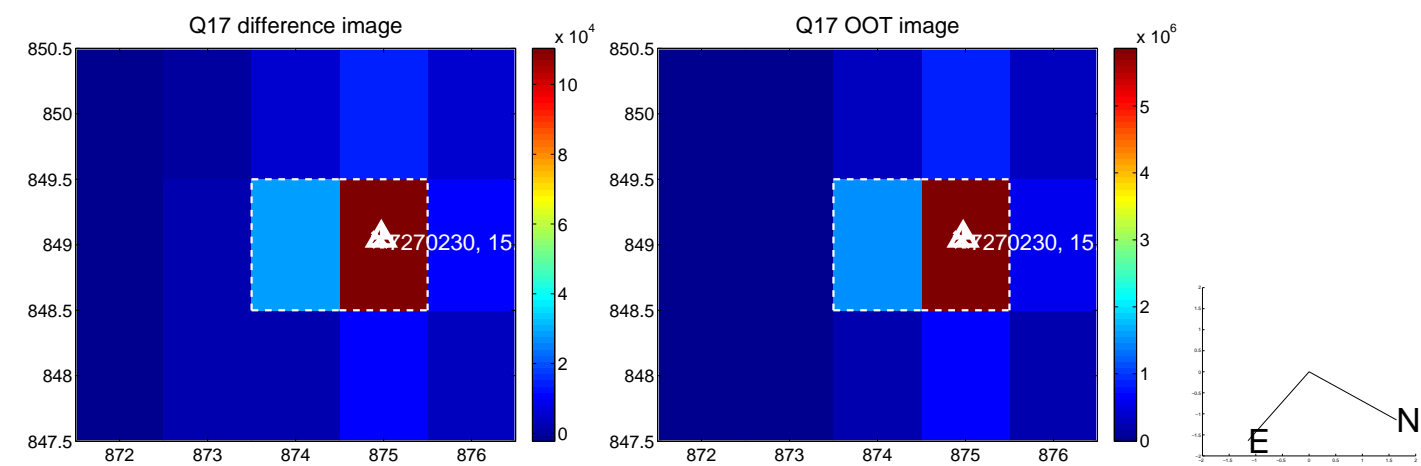
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



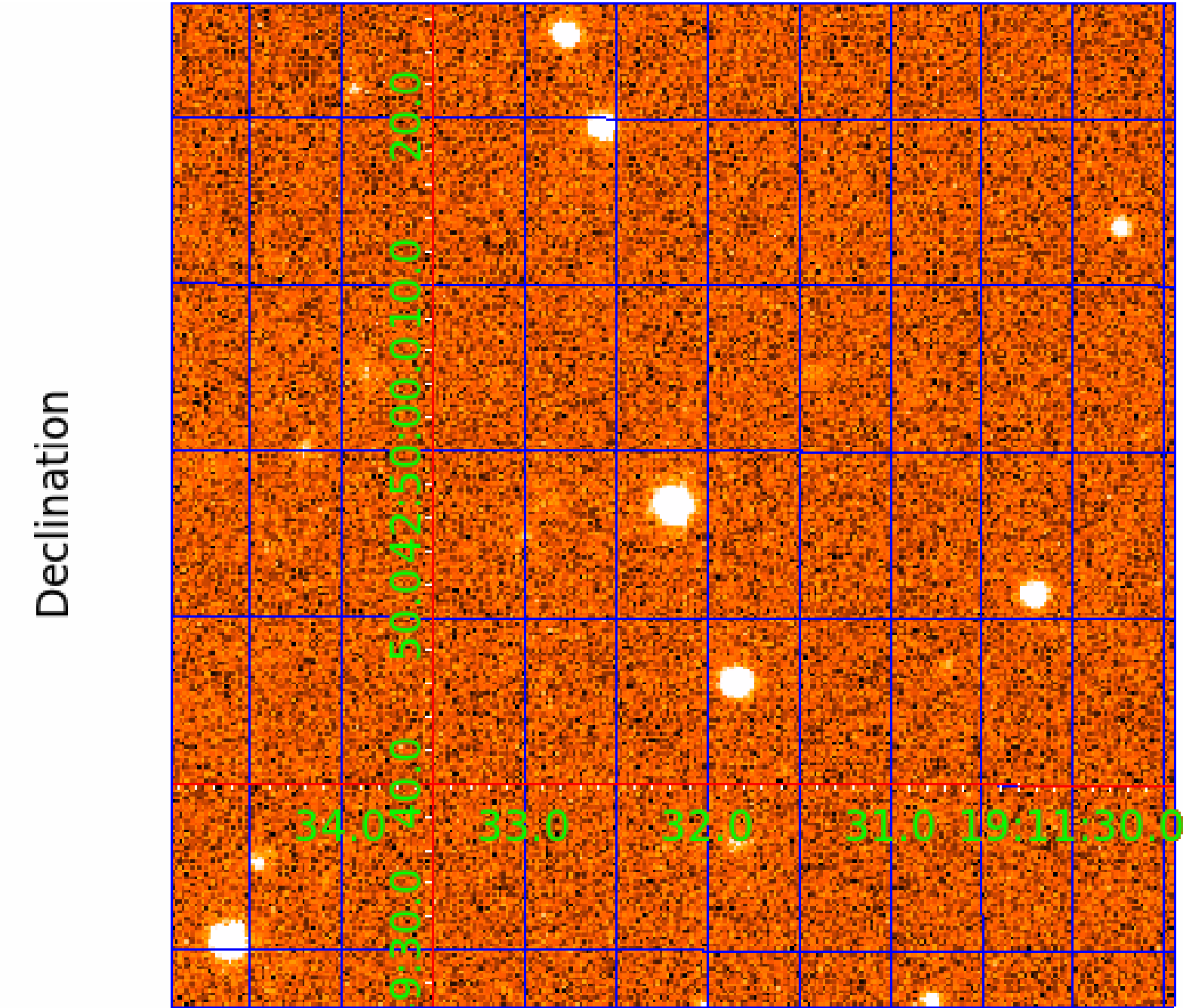
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 007270230

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})
007270230-01	OBS	0876.01	6.998100	136.908437	20056.5	2.054	551.3	538.9	0.83	5612	16.86	125.63
007270230-02	OBS	No	6.998107	133.410686	995.5	1.859	21.2	25.3	0.83	5612	4.70	125.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007270230-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
007270230-02	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.

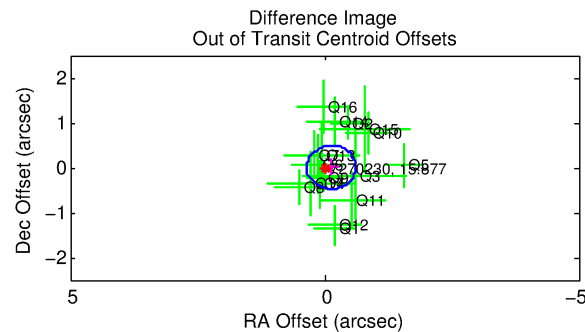
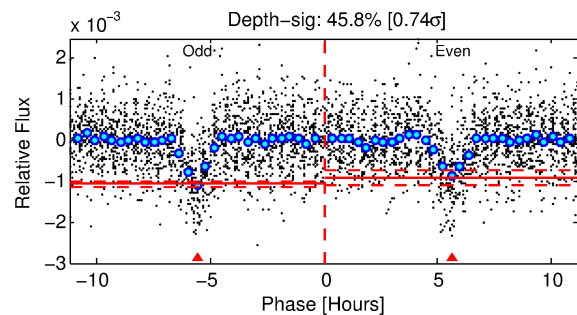
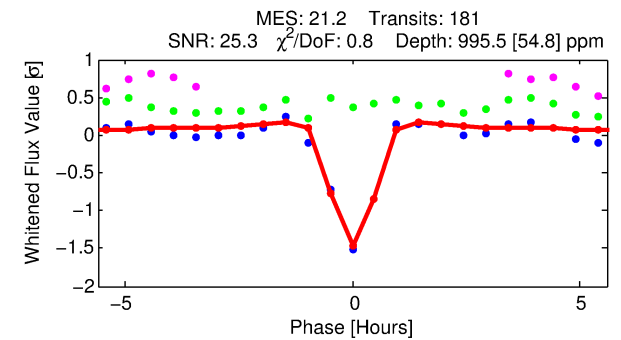
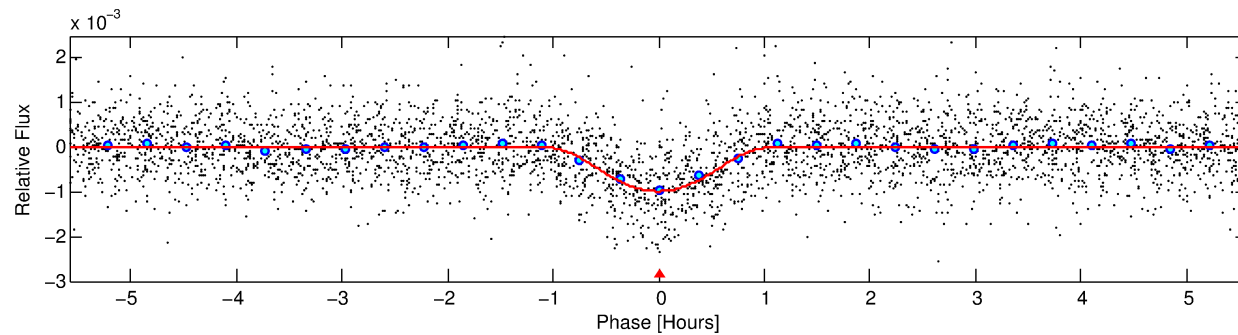
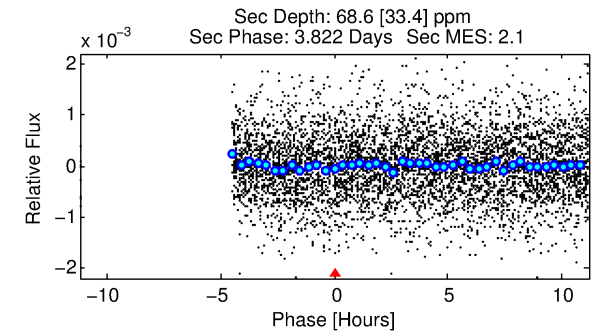
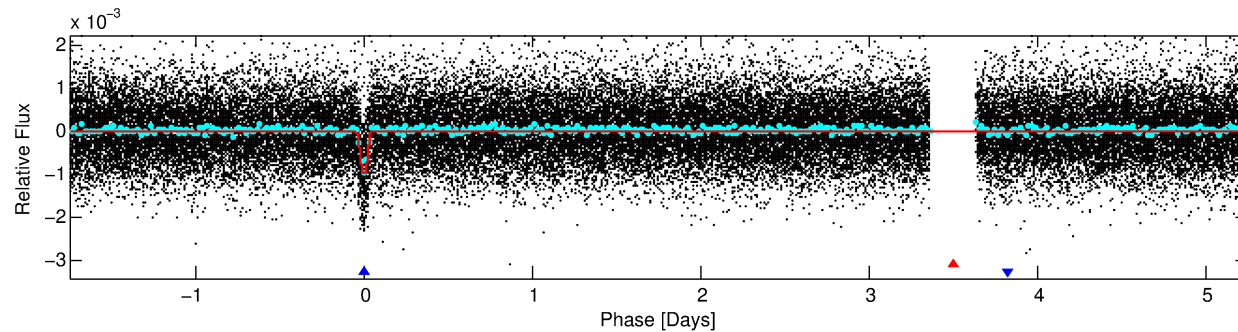
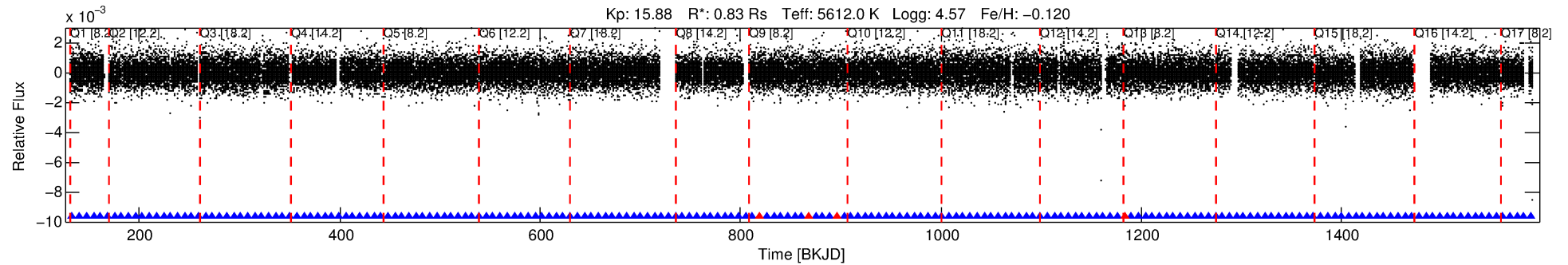
Ephemeris Match Information For 007270230-02

No Significant Match Found

DV One-Page Summary

KIC: 7270230 Candidate: 2 of 2 Period: 6.998 d

KOI: K00876 Corr: No Ephemeris Match



DV Fit Results:

Period = 6.99811 [0.00001] d
Epoch = 133.4107 [0.0015] BKJD
Rp/R* = 0.0520 [0.0875]
a/R* = 10.17 [4.77]
b = 0.99 [0.14]
Seff = 125.63 [37.13]
Teq = 854 [63] K
Rp = 4.70 [7.98] Re
a = 0.0697 [0.0130] AU
Ag = 8.29 [28.29] [0.26σ]
Teffp = 2240 [1905] K [0.73σ]

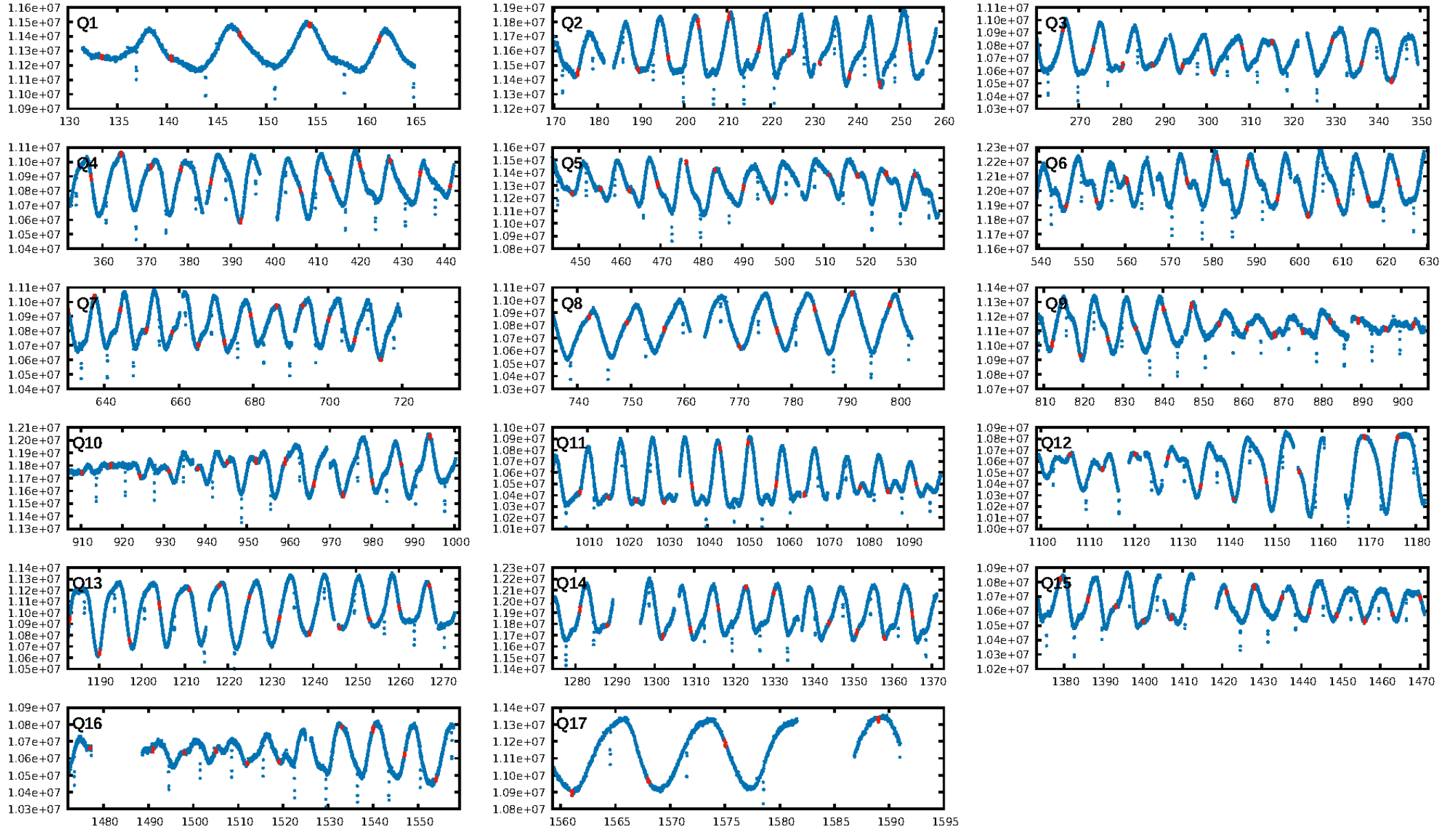
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.90e-96
RollingBand-fgt: 0.98 [168/172]
GhostDiagnostic-chr: 3.716
Centroid-sig: 82.9%
Centroid-so: 0.408 arcsec [0.73σ]
OotOffset-rm: 0.129 arcsec [0.81σ]
KicOffset-rm: 0.233 arcsec [1.46σ]
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]

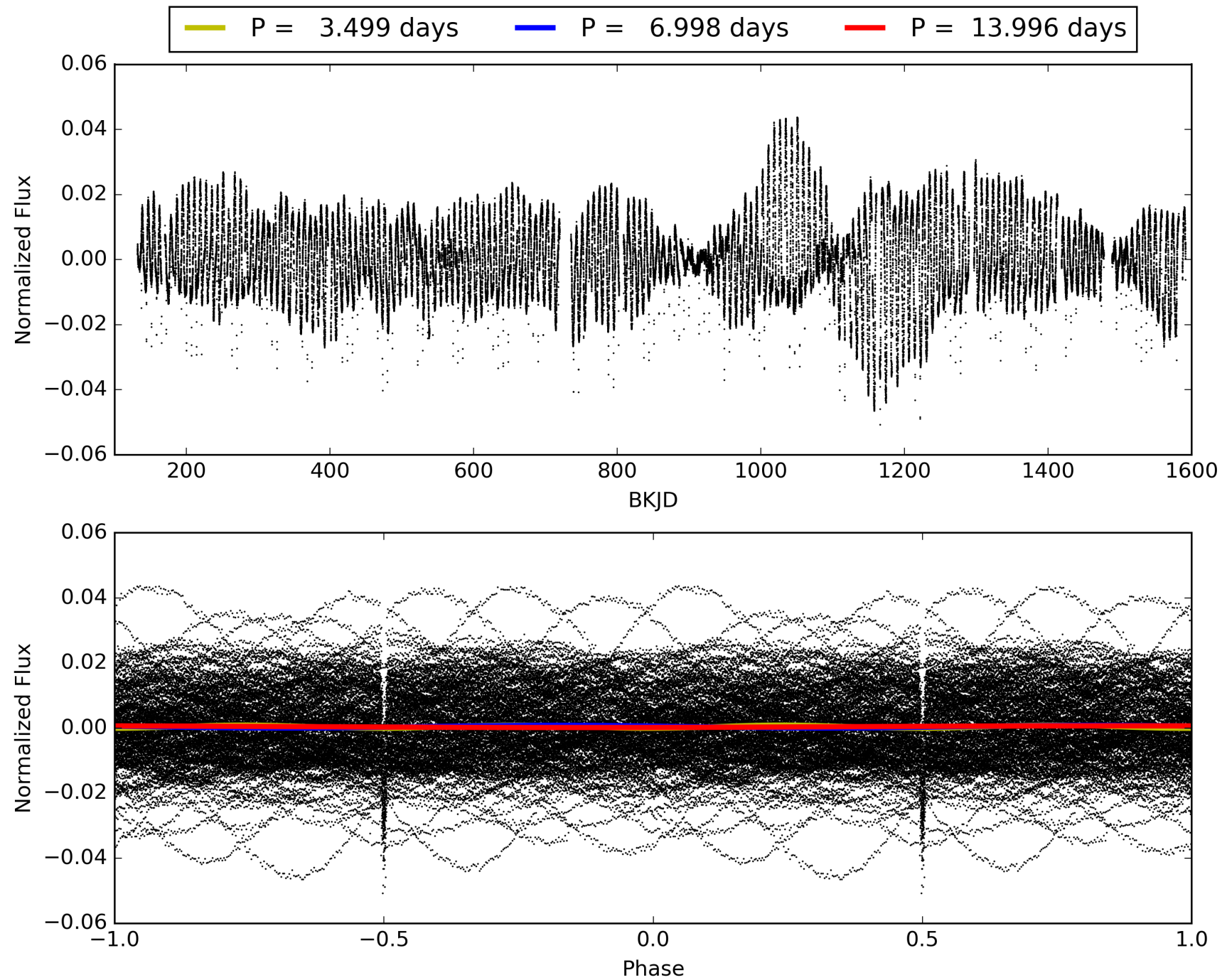
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:29:15 Z

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

TCE 007270230-02, PDC Light Curves

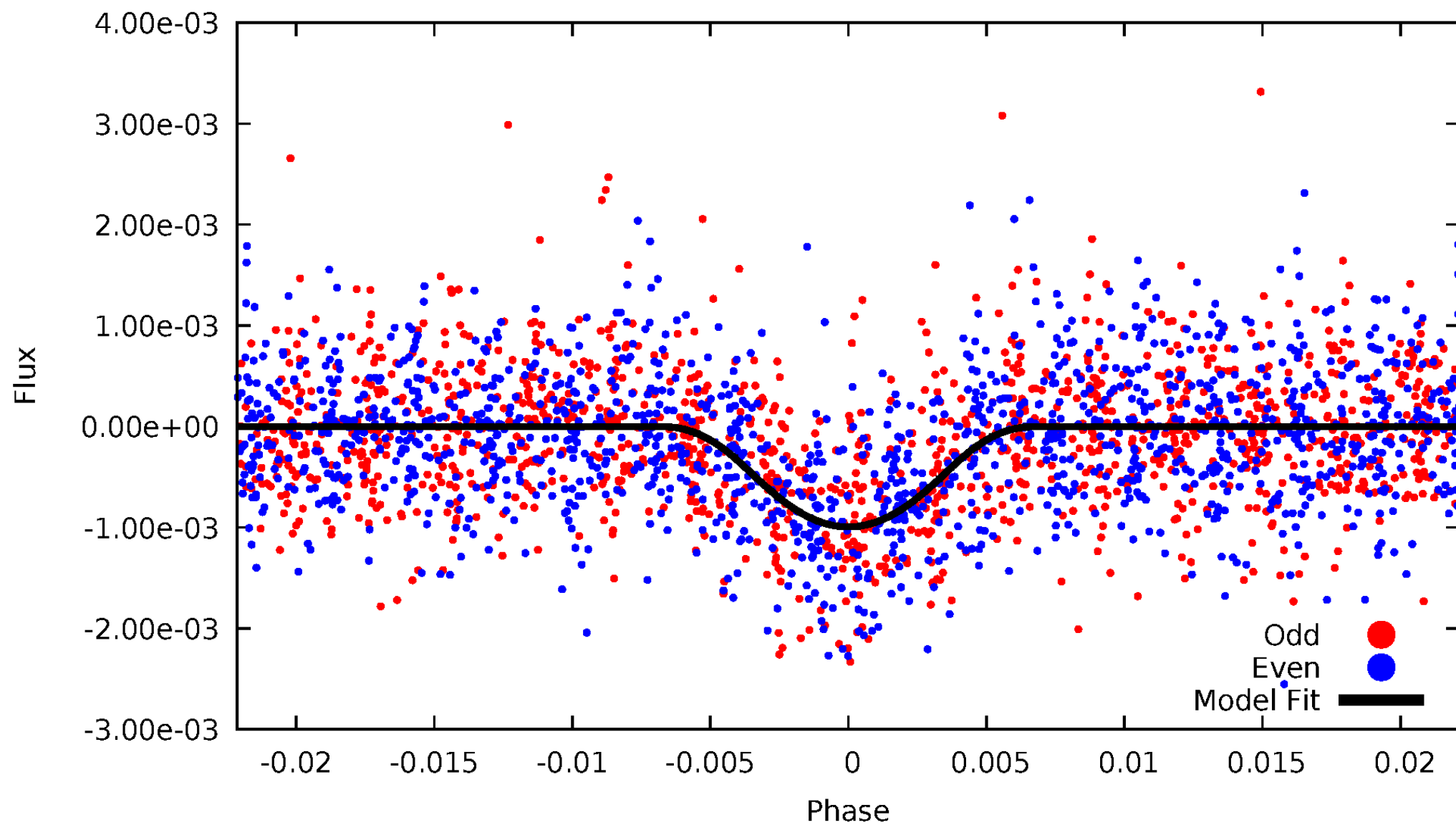


TCE 007270230-02



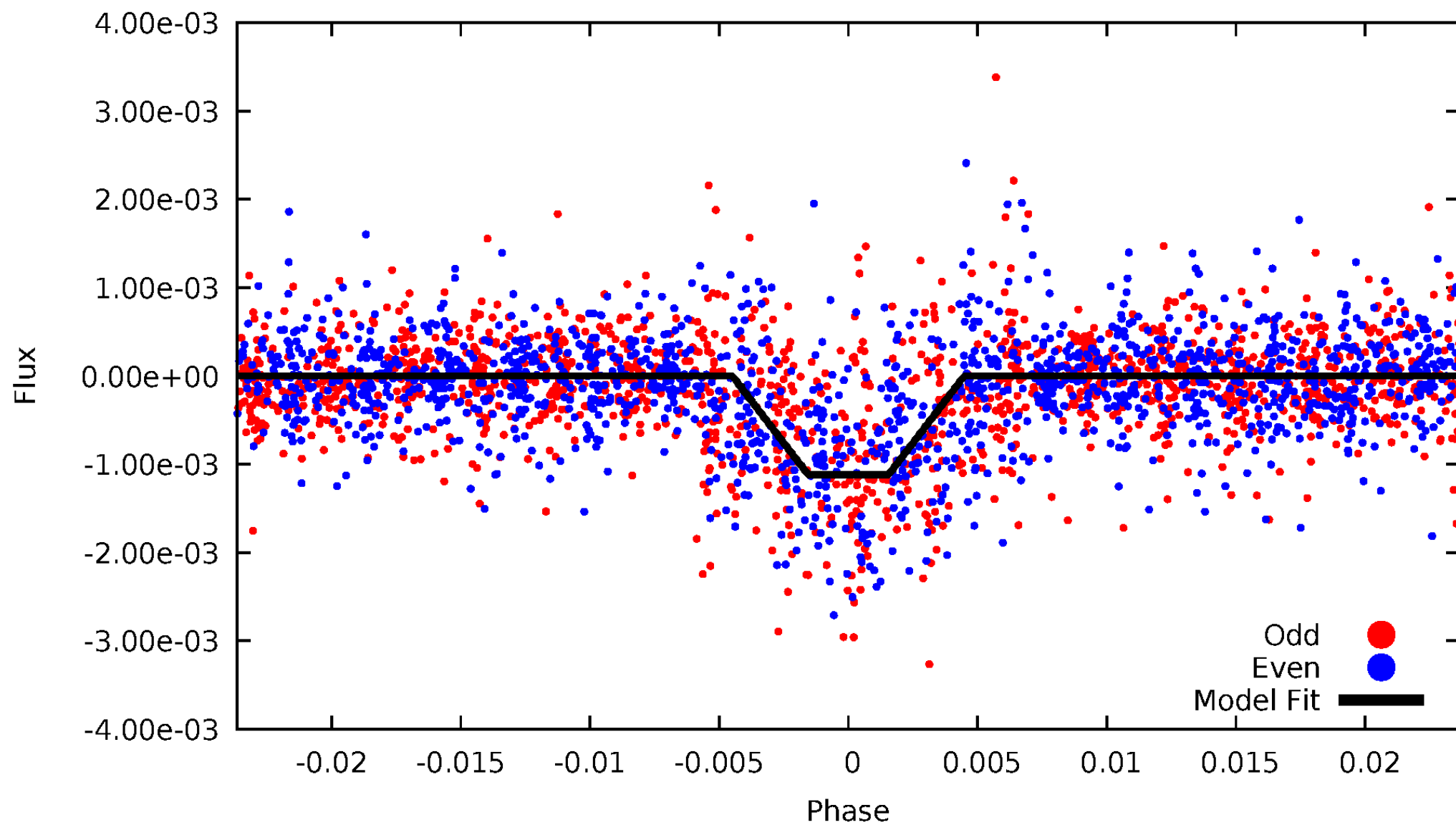
DV Odd/Even

TCE 007270230-02



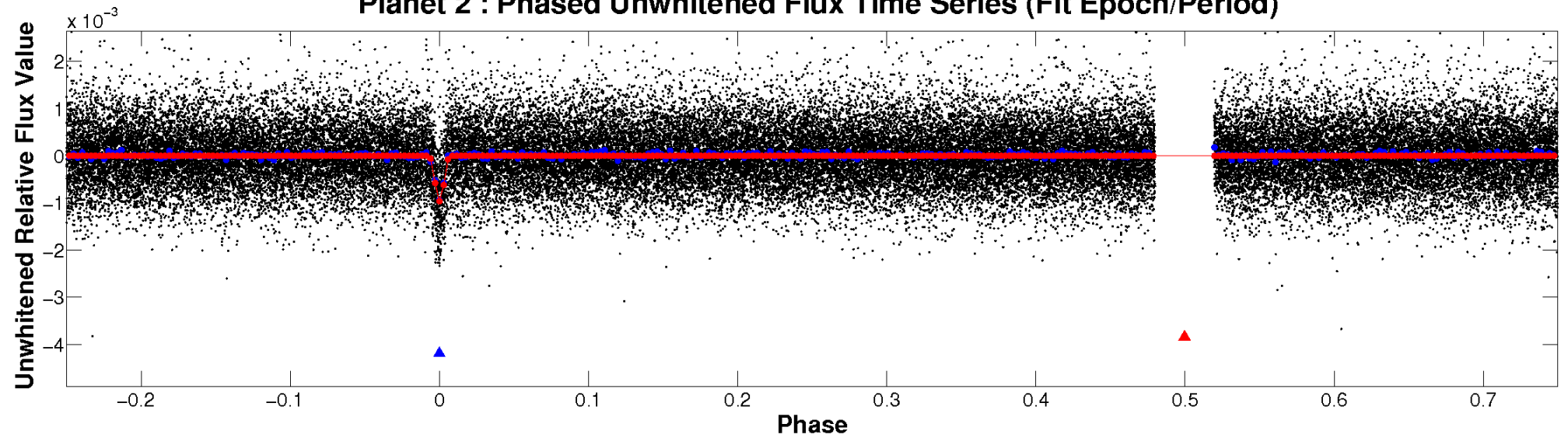
ALT Odd/Even

TCE 007270230-02

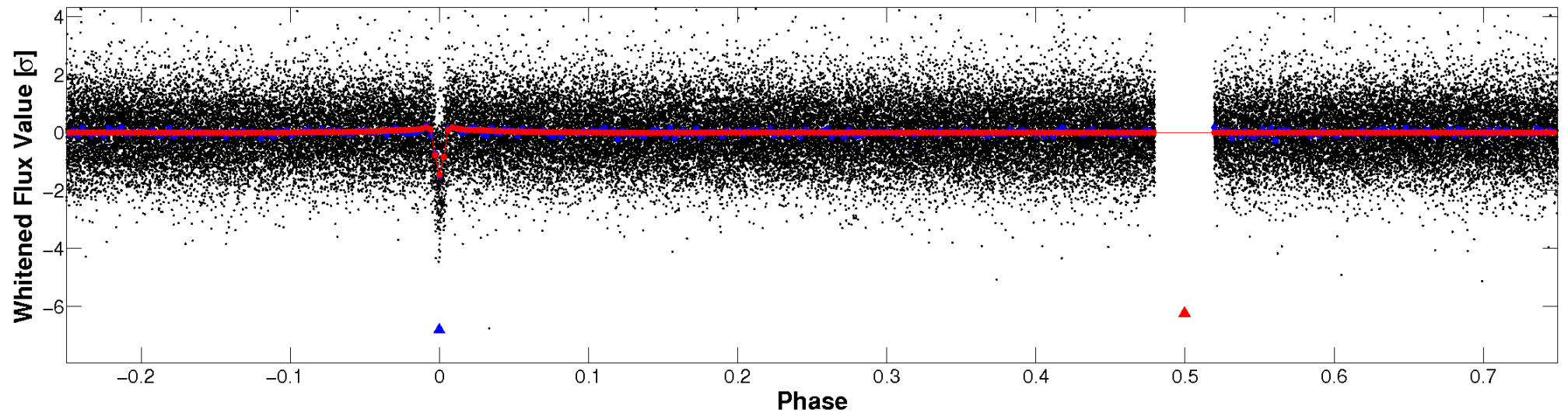


Non-Whitened Vs. Whitened Light Curve

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

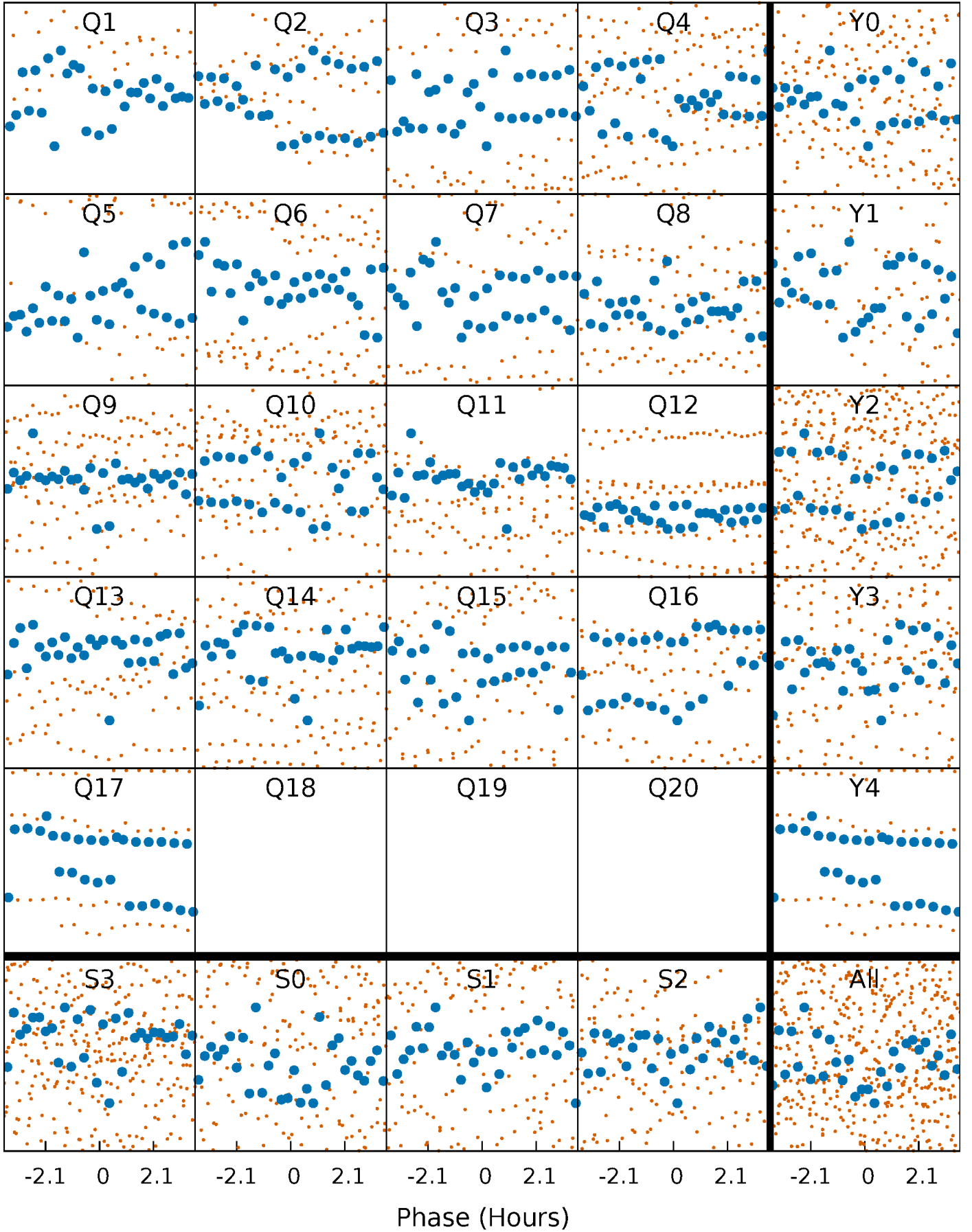


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



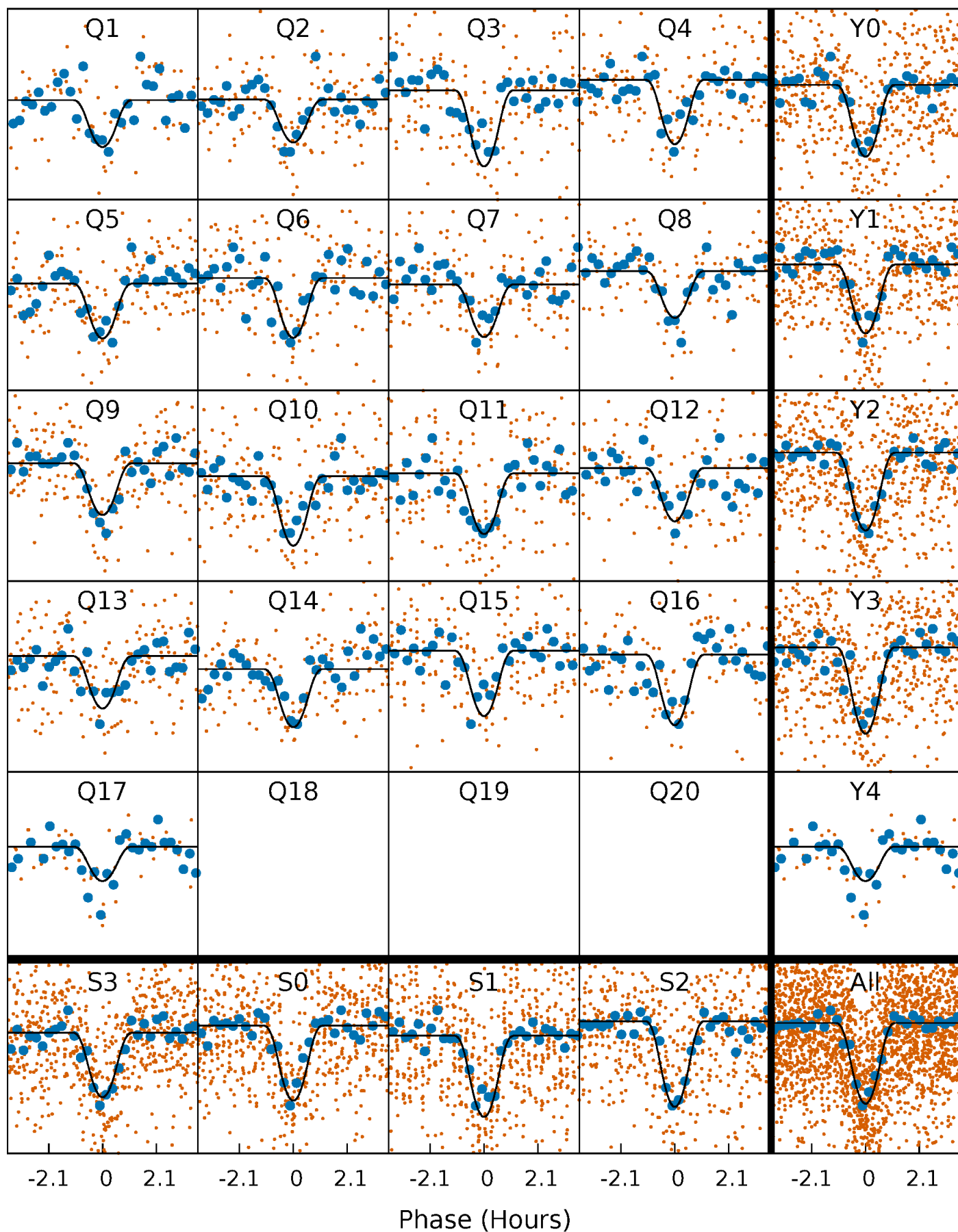
PDC Quarter-Phased Transit Curves

TCE 007270230-02 P= 6.998107 Days $T_0=133.410686$ (BKJD)



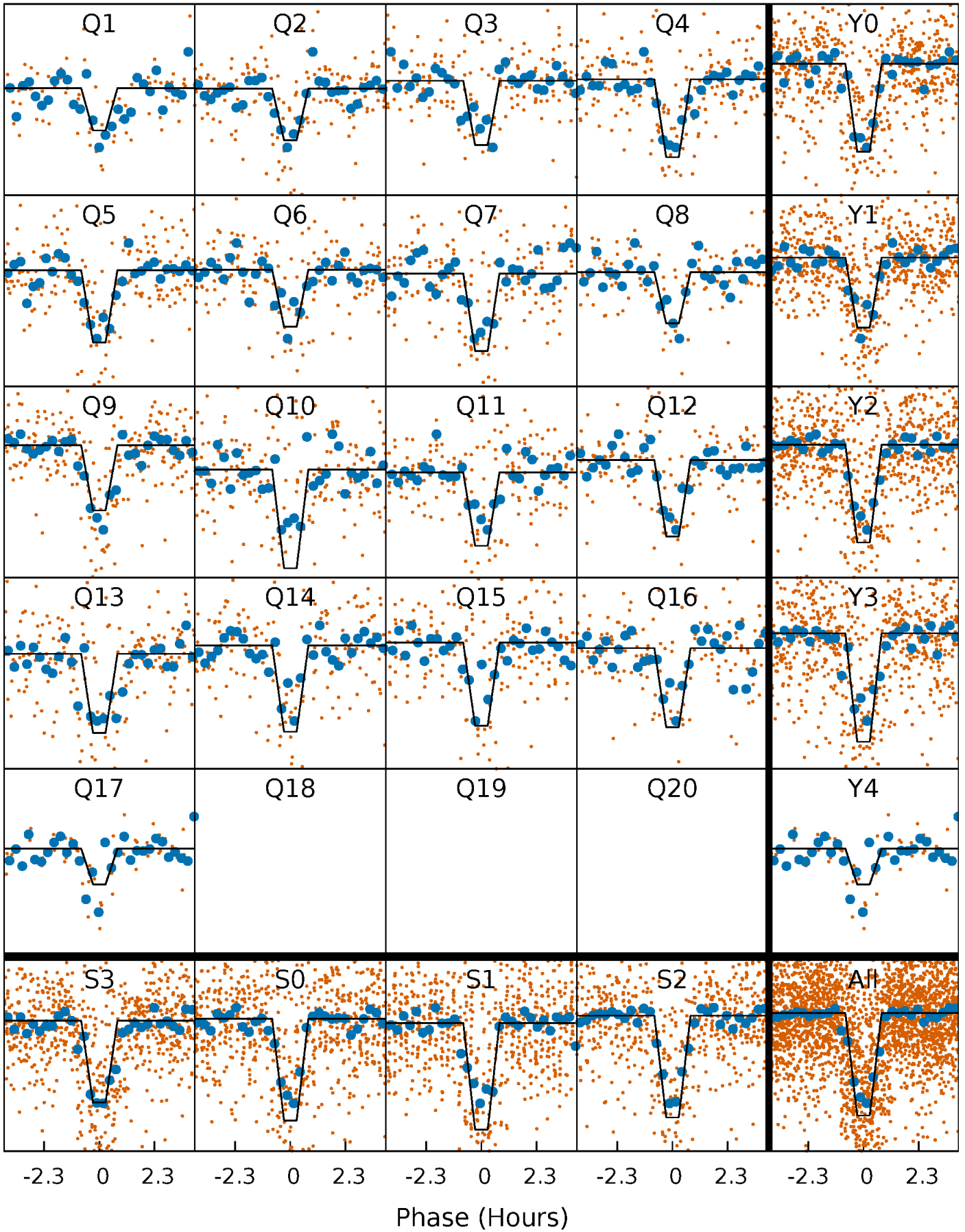
DV Quarter-Phased Transit Curves

TCE 007270230-02 P= 6.998107 Days $T_0=133.410686$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

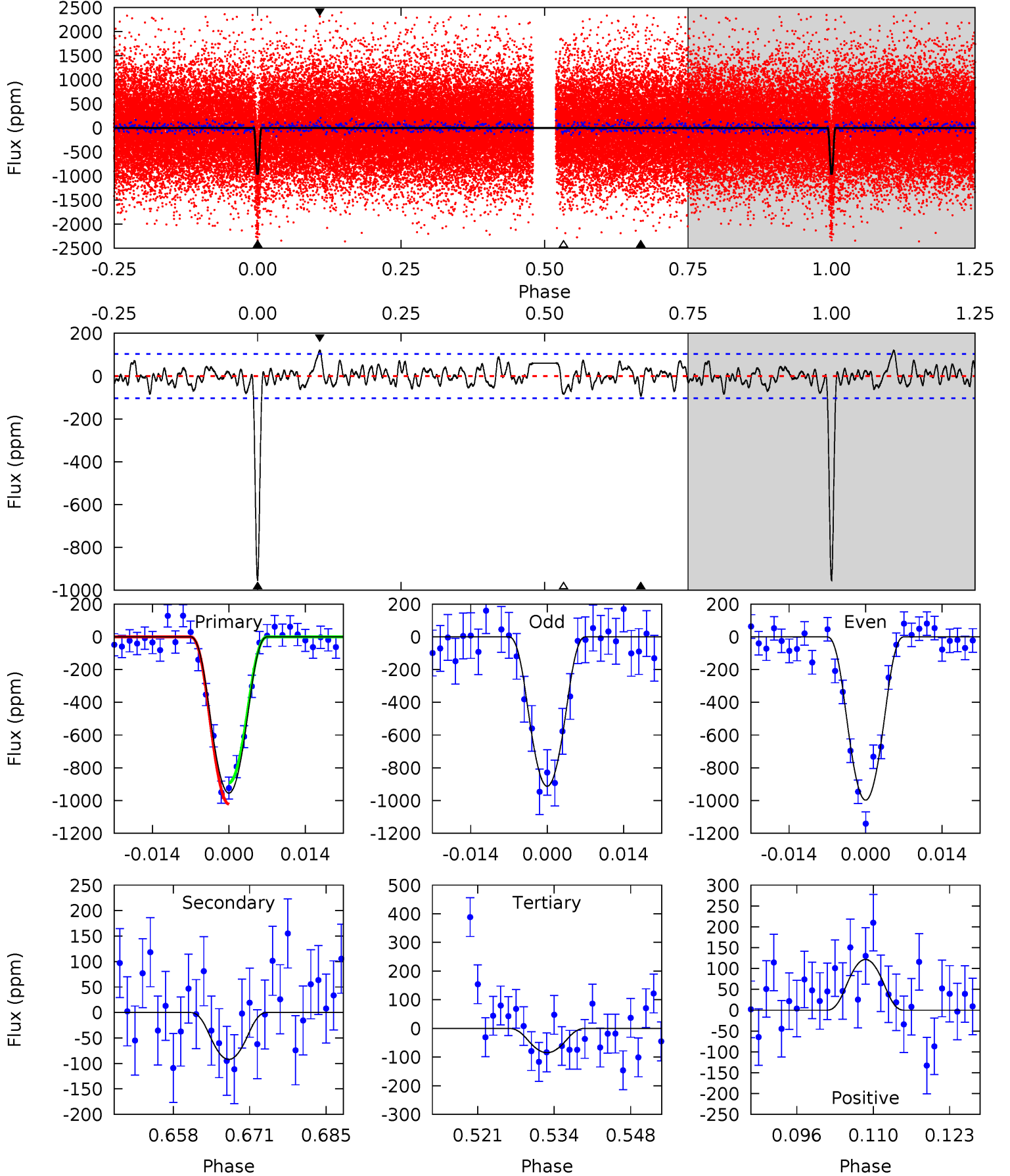
TCE 007270230-02 P= 6.998106 Days $T_0=133.409721$ (BKJD)



DV Model-Shift Uniqueness Test

007270230-02, P = 6.998107 Days, E = 126.412579 Days

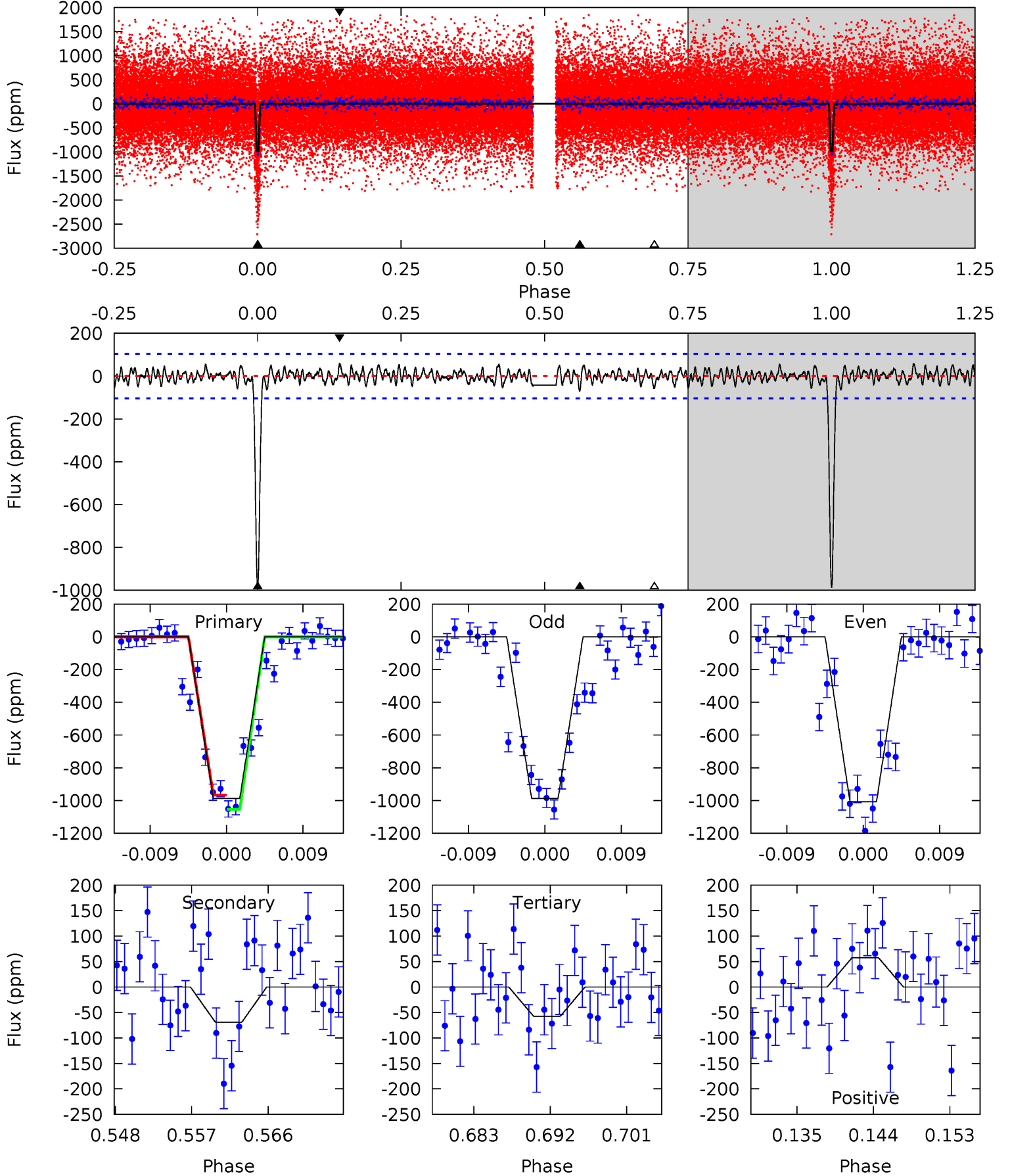
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.9	4.42	4.07	5.84	4.97	2.47	1.65	41.8	40.0	0.35	-1.42	2.04	0.99	0.11	3.10



Alt Model-Shift Uniqueness Test

007270230-02, P = 6.998106 Days, E = 126.411615 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.9	3.35	2.79	2.78	5.05	2.61	1.08	45.1	45.1	0.55	0.56	0.50	1.00	0.05	2.11



Stellar Parameters For KIC 007270230

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5612^{+152}_{-152}	$4.566^{+0.038}_{-0.152}$	$-0.120^{+0.300}_{-0.300}$	$0.829^{+0.181}_{-0.065}$	$0.926^{+0.085}_{-0.114}$	$2.293^{+0.443}_{-0.940}$
	+3%/-3%	+1%/-3%	+250%/-250%	+22%/-8%	+9%/-12%	+19%/-41%
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 007270230-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-92 ± 21	$8.09^{+7.38}_{-5.00}$	1208^{+64}_{-47}	2632^{+880}_{-448}	$3.677^{+23.569}_{-2.677}$
Alt.	-69 ± 21	$6.89^{+6.99}_{-4.55}$	1213^{+65}_{-48}	2632^{+1004}_{-501}	$3.717^{+28.369}_{-2.841}$

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

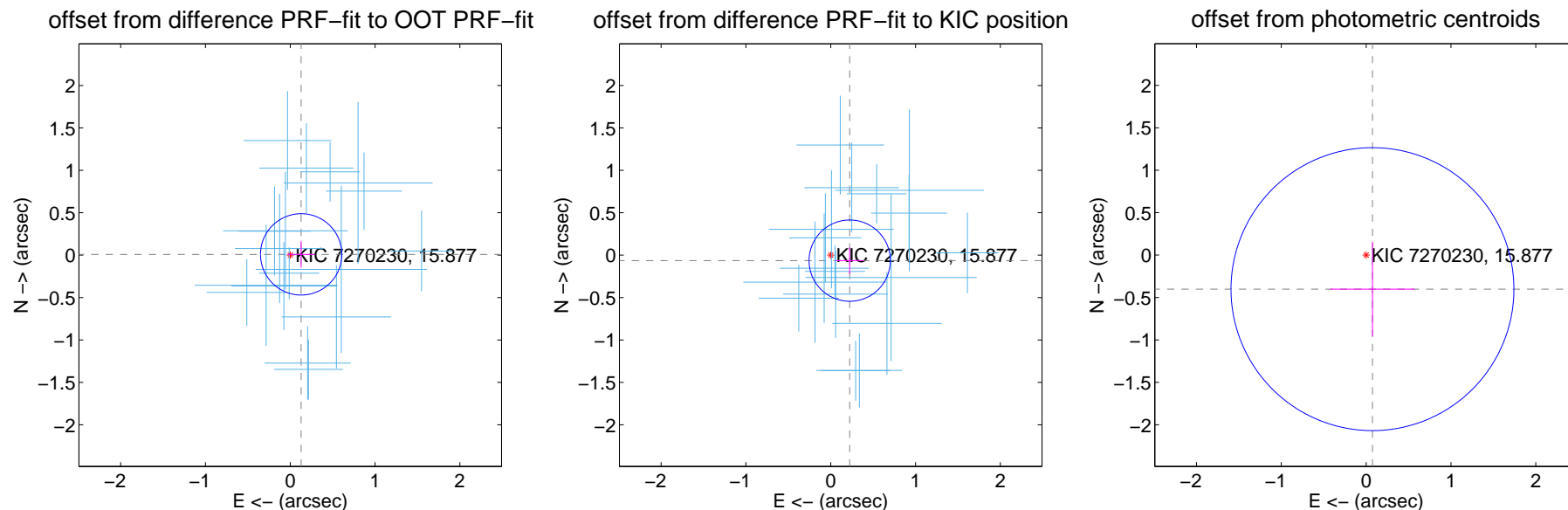
DV Centroid Data

Supplemental centroid analysis for 007270230-02. Kepler magnitude: 15.88. Transit SNR 25.27

There are 17 quarters with good PRF difference image offsets

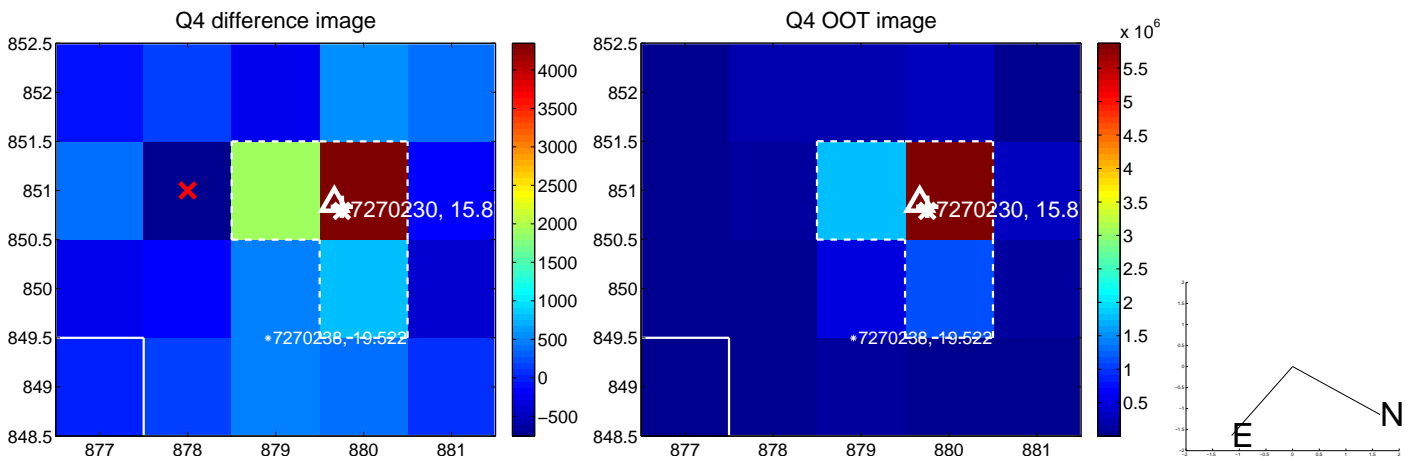
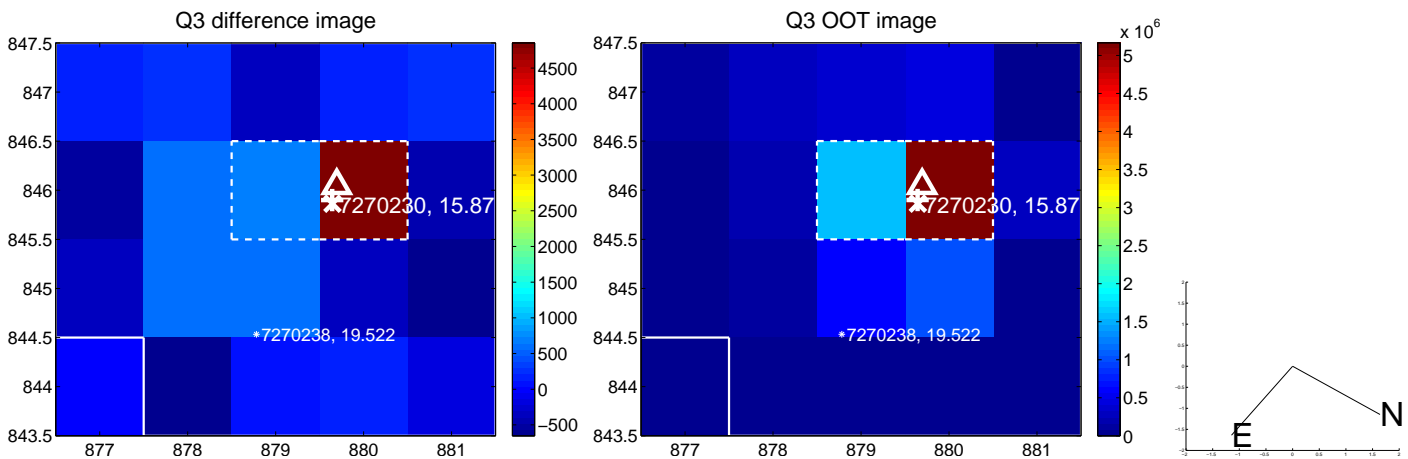
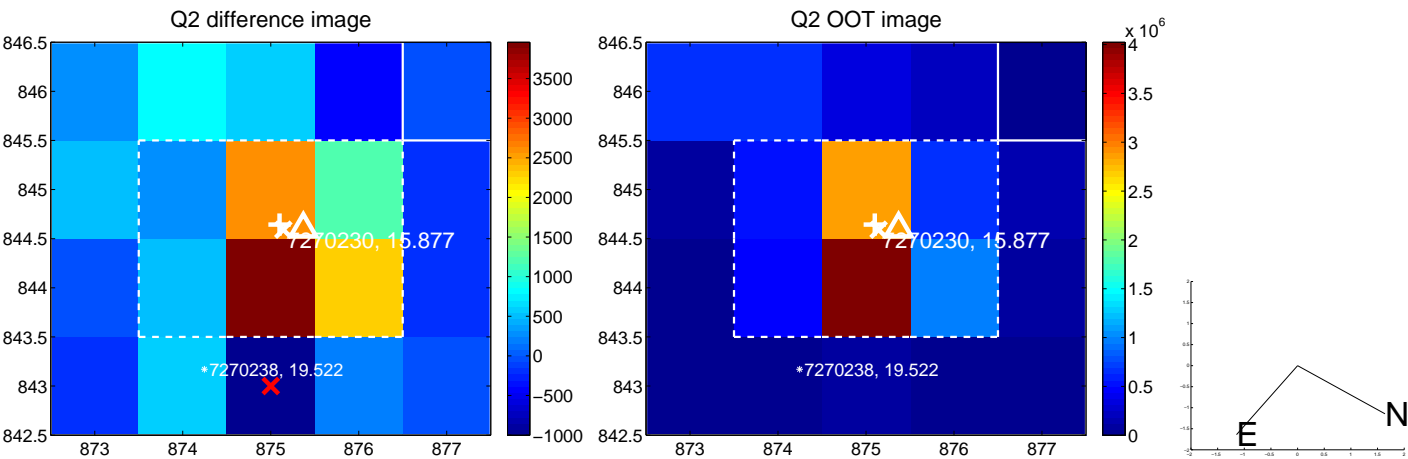
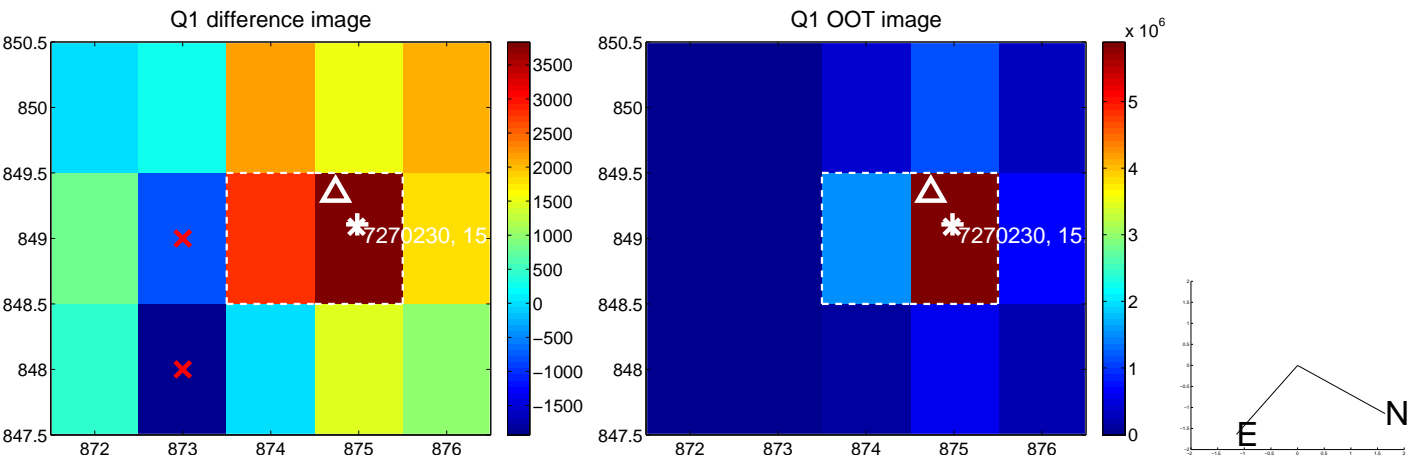
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.129 ± 0.160	0.81	-0.129 ± 0.160	0.009 ± 0.158
PRF-fit source offset from KIC position	0.233 ± 0.160	1.46	-0.224 ± 0.160	-0.065 ± 0.158
photometric centroid source offset	0.41 ± 0.56	0.73	-0.07 ± 0.50	-0.40 ± 0.56

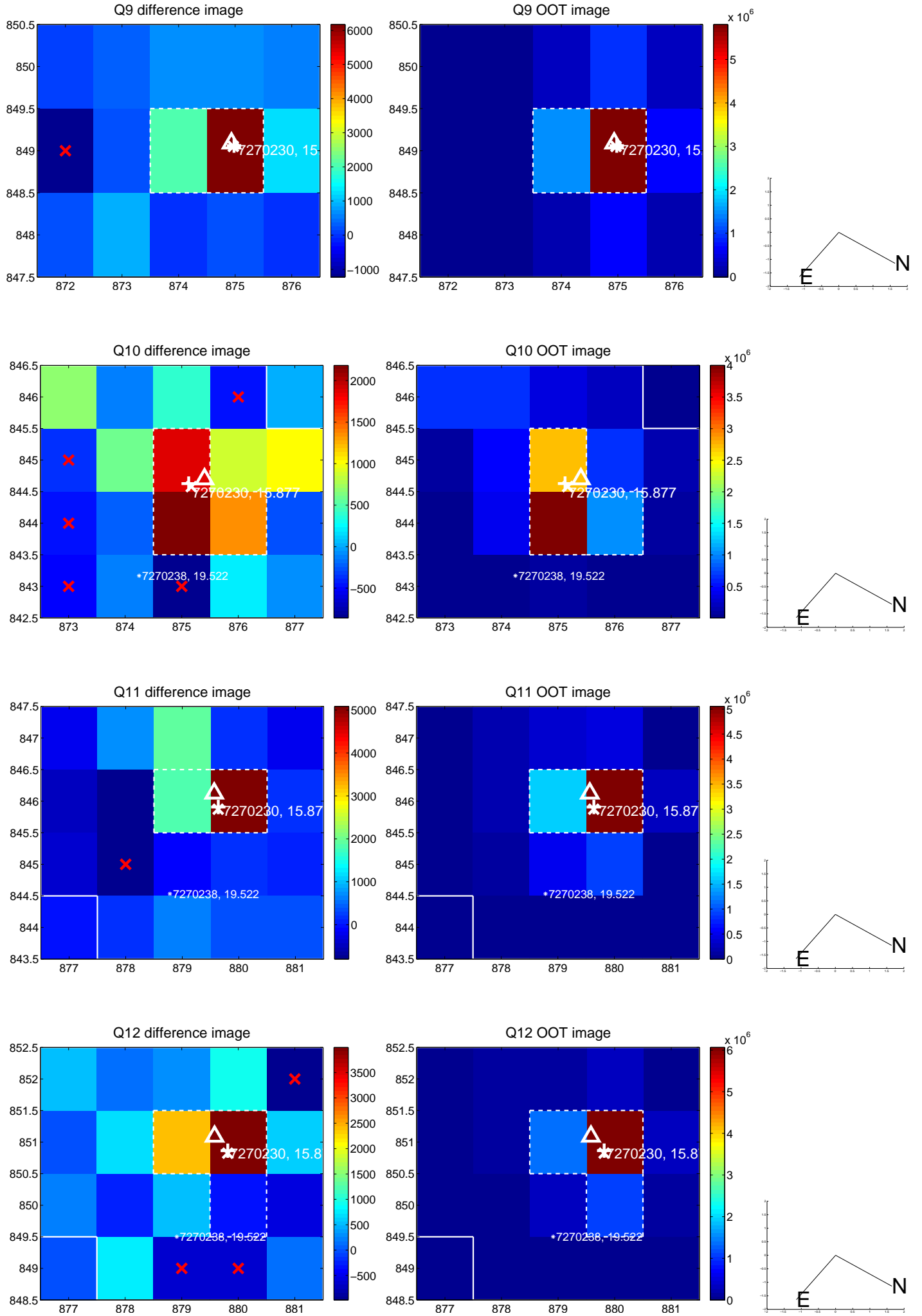


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

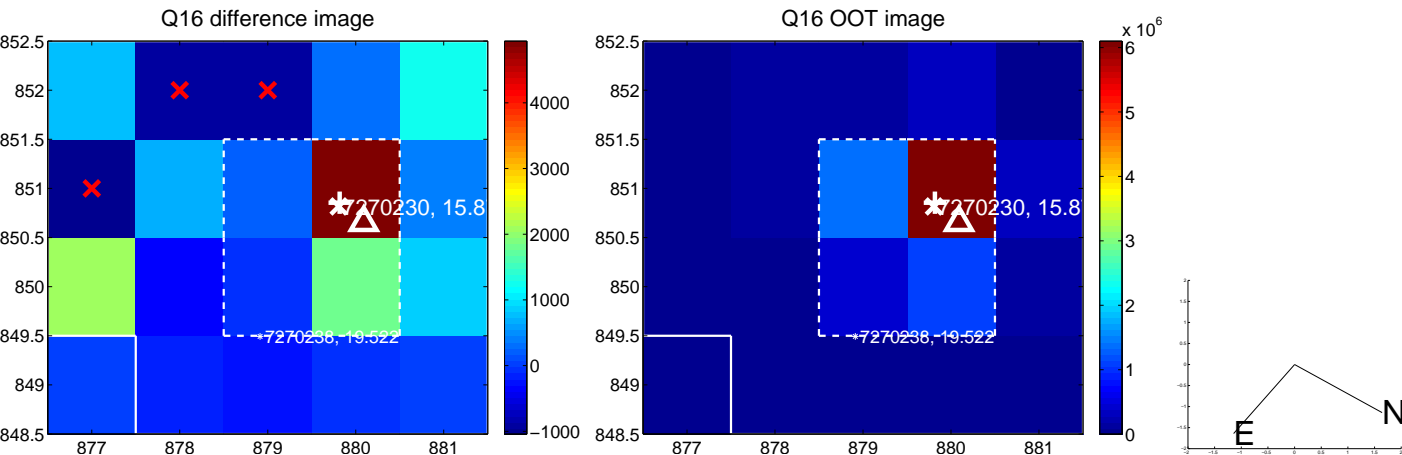
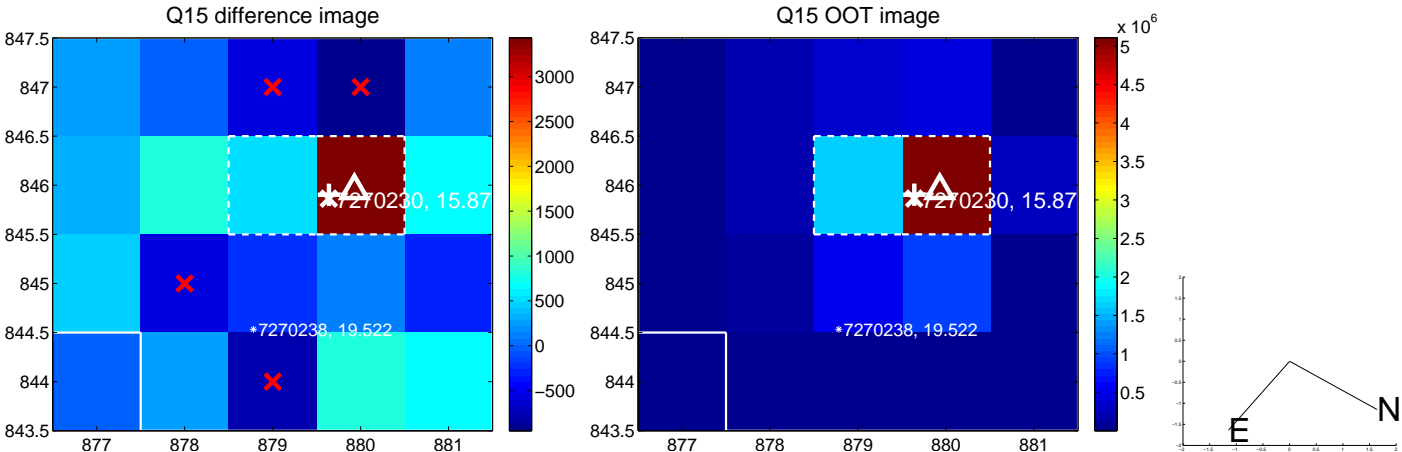
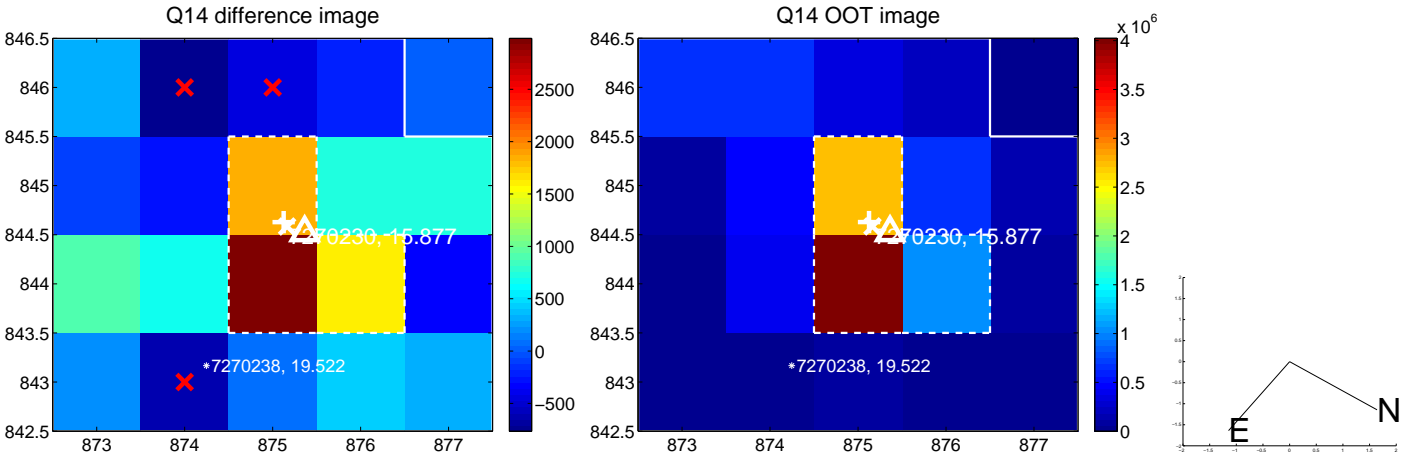
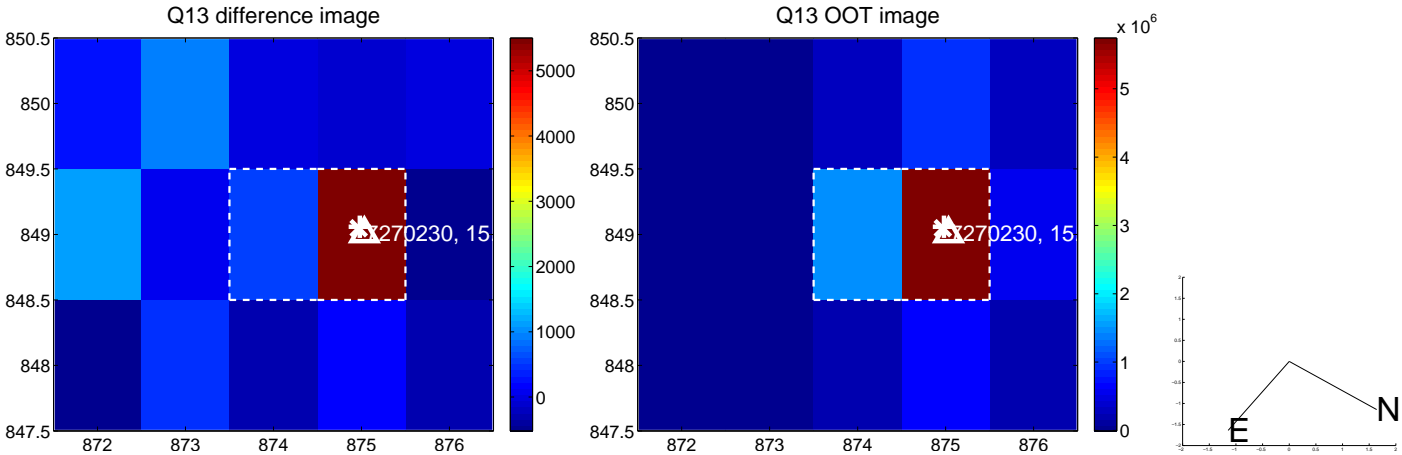
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



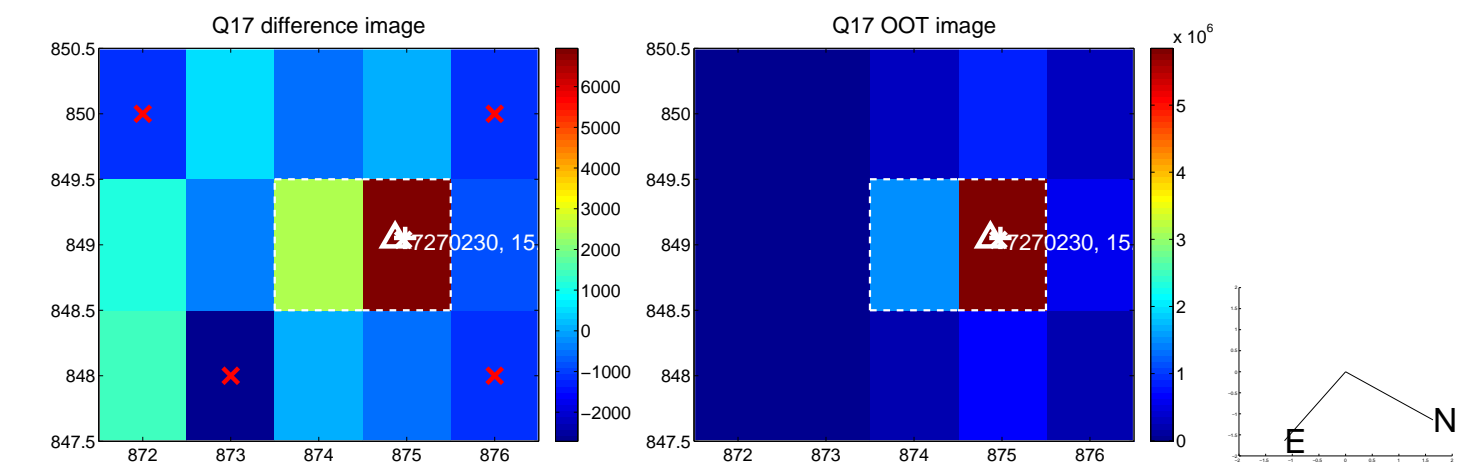
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



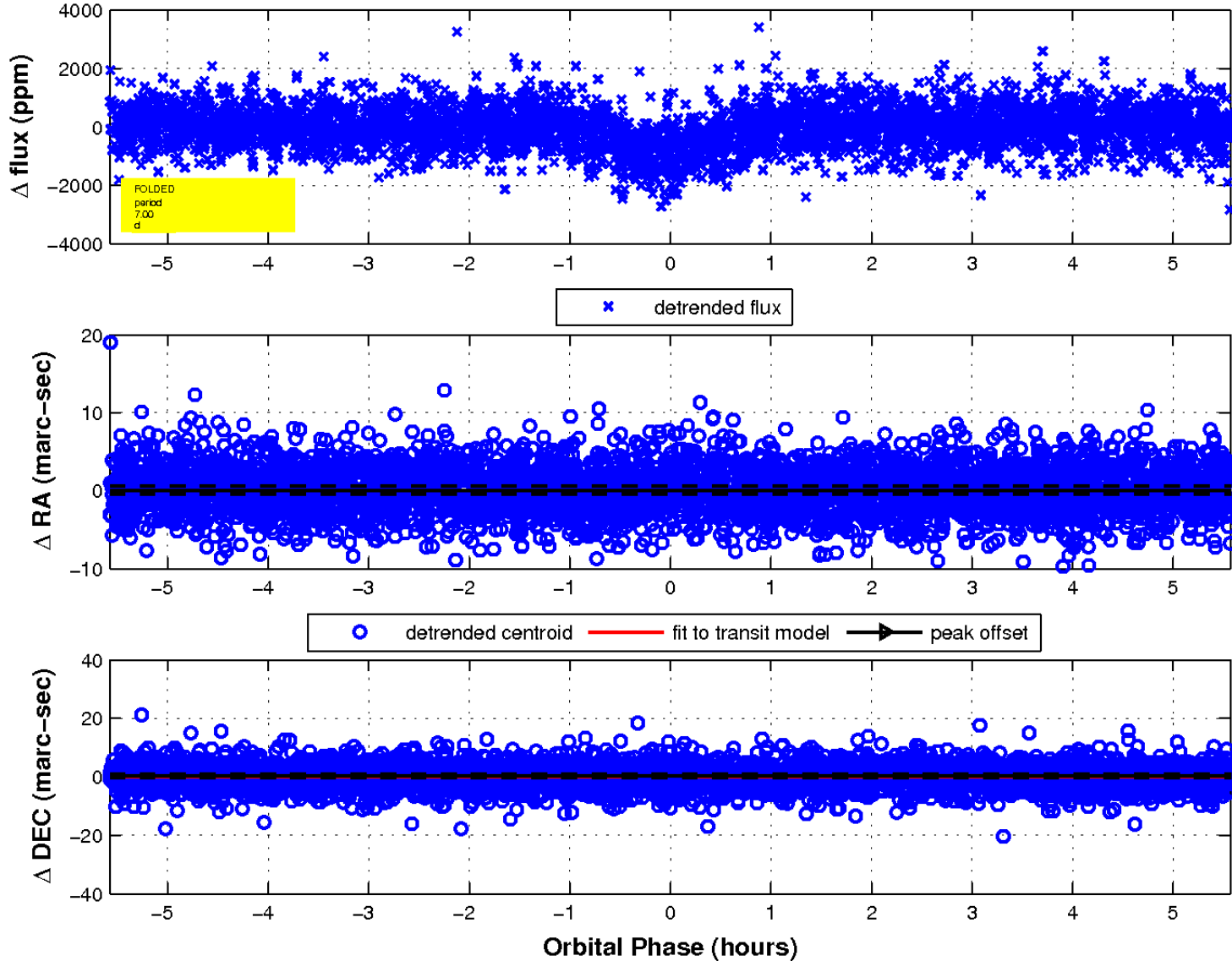
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

