

KIC 003938073

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})
003938073-01	OBS	6373.01	31.024307	158.865234	96031.7	7.632	7443.9	5858.0	1.74	6011	80.96	89.05
003938073-02	OBS	No	31.024316	135.088904	29083.3	7.244	2403.0	2290.5	1.74	6011	50.31	89.05
003938073-03	OBS	No	230.953504	260.282129	1534.1	49.350	23.7	23.5	1.74	6011	12.92	6.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003938073-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
003938073-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
003938073-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

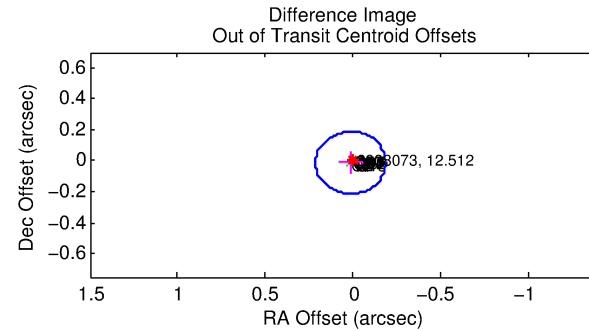
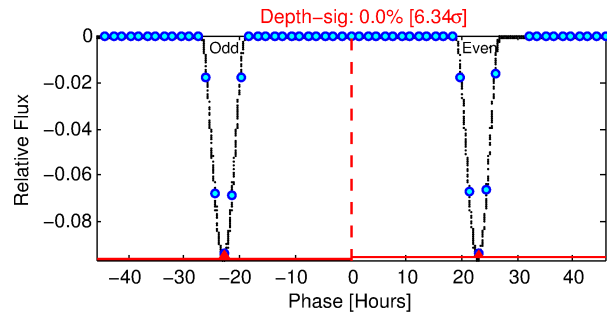
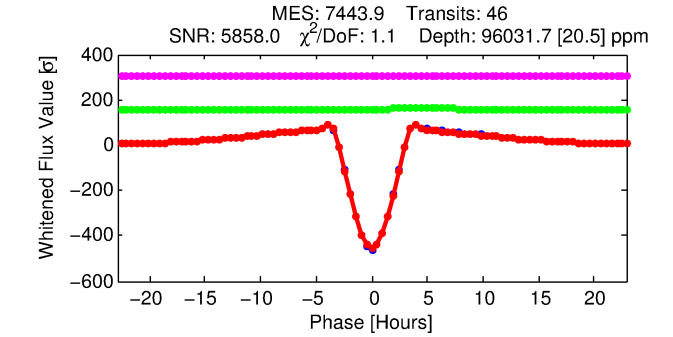
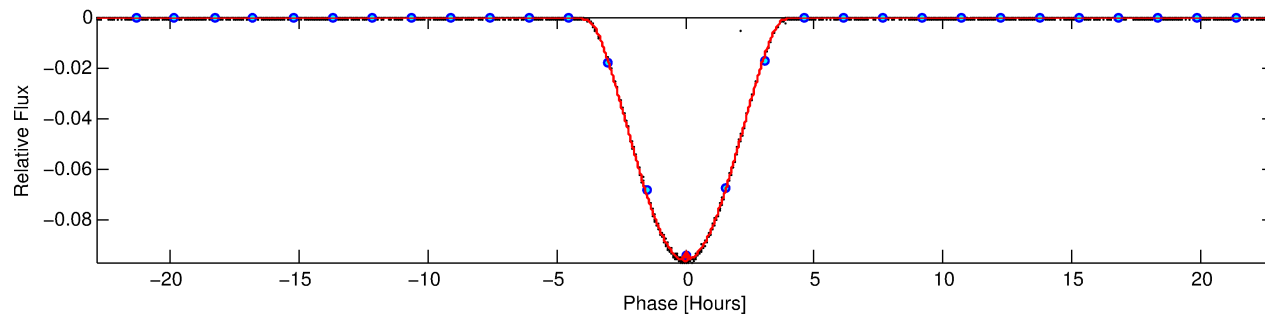
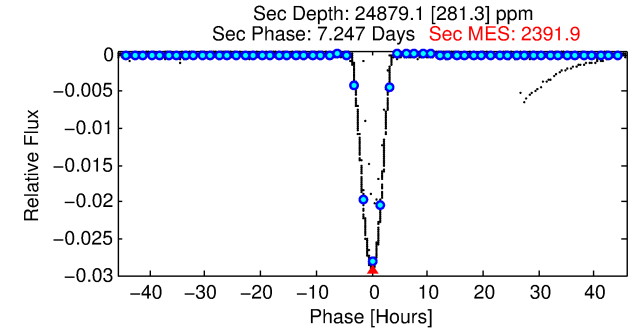
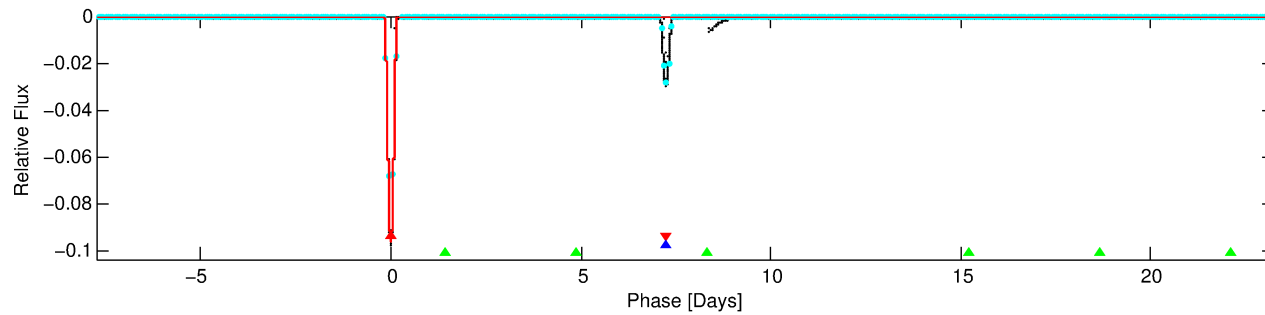
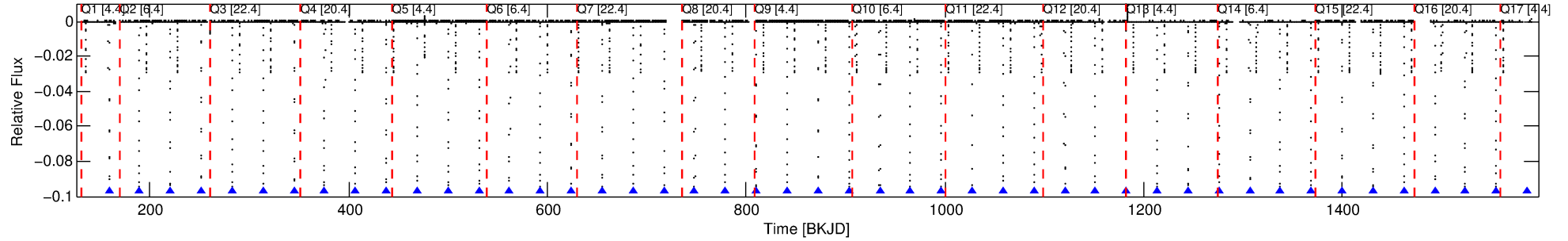
Ephemeris Match Information For 003938073-01

No Significant Match Found

DV One-Page Summary

KIC: 3938073 Candidate: 1 of 3 Period: 31.024 d
KOI: K06373.01 Corr: 1.000

Kp: 12.51 R*: 1.74 Rs Teff: 6011.0 K Logg: 4.00 Fe/H: -0.120



DV Fit Results:

Period = 31.02431 [0.00000] d
Epoch = 158.8652 [0.0000] BKJD
Rp/R* = 0.4261 [0.0061]
a/R* = 33.77 [0.01]
b = 0.92 [0.01]
Seff = 89.05 [42.54]
Teq = 783 [94] K
Rp = 80.96 [24.53] Re
a = 0.1995 [0.0580] AU
Ag = 83.14 [38.76] [2.12σ]
Teffp = 3657 [104] K [20.57σ]

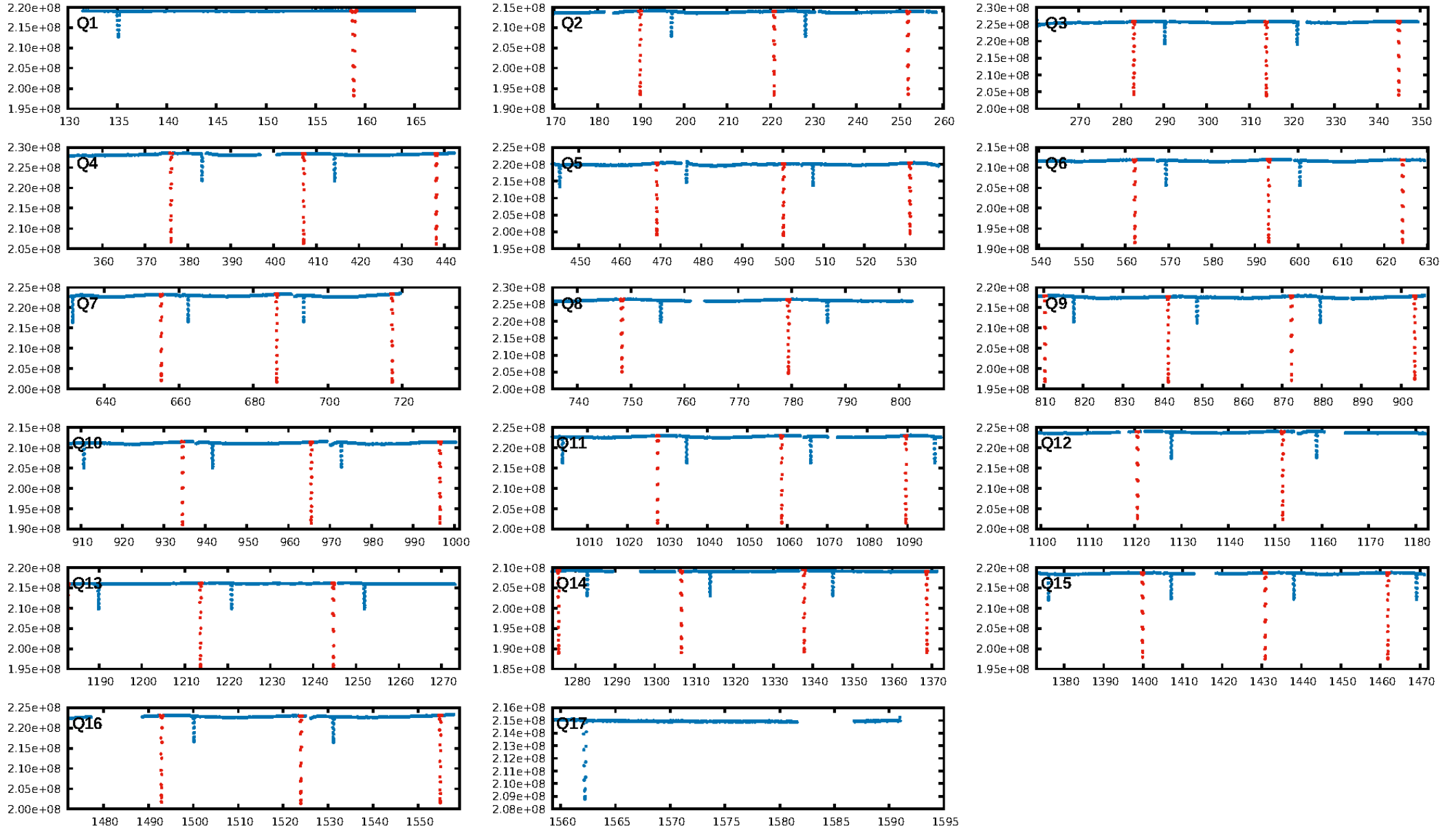
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 26.2%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [45/45]
GhostDiagnostic-chr: 7.009
Centroid-sig: 0.0%
Centroid-so: 0.322 arcsec [325.52σ]
OotOffset-rm: 0.019 arcsec [0.28σ]
KicOffset-rm: 0.233 arcsec [3.14σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

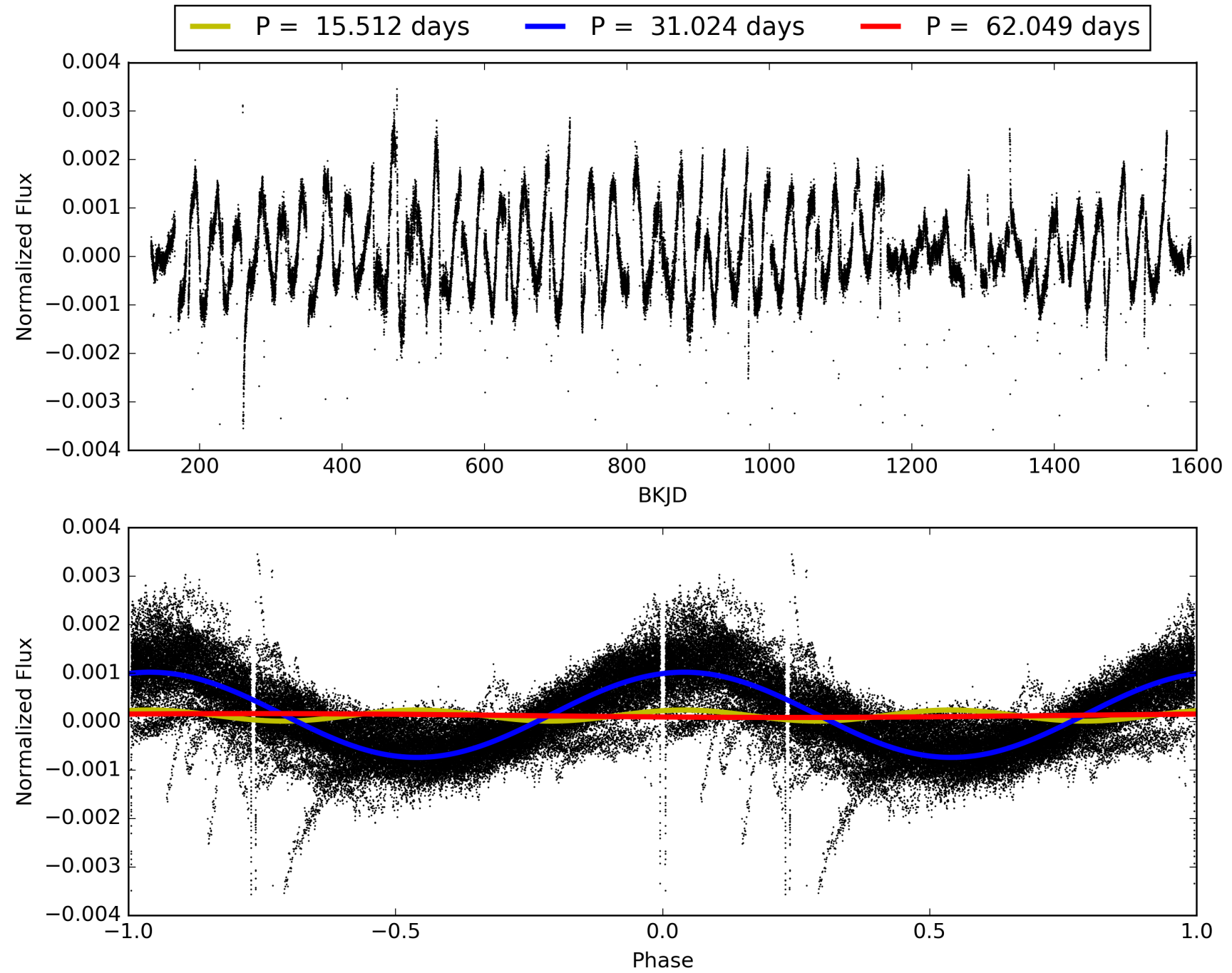
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 15:52:46 Z

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

TCE 003938073-01, PDC Light Curves

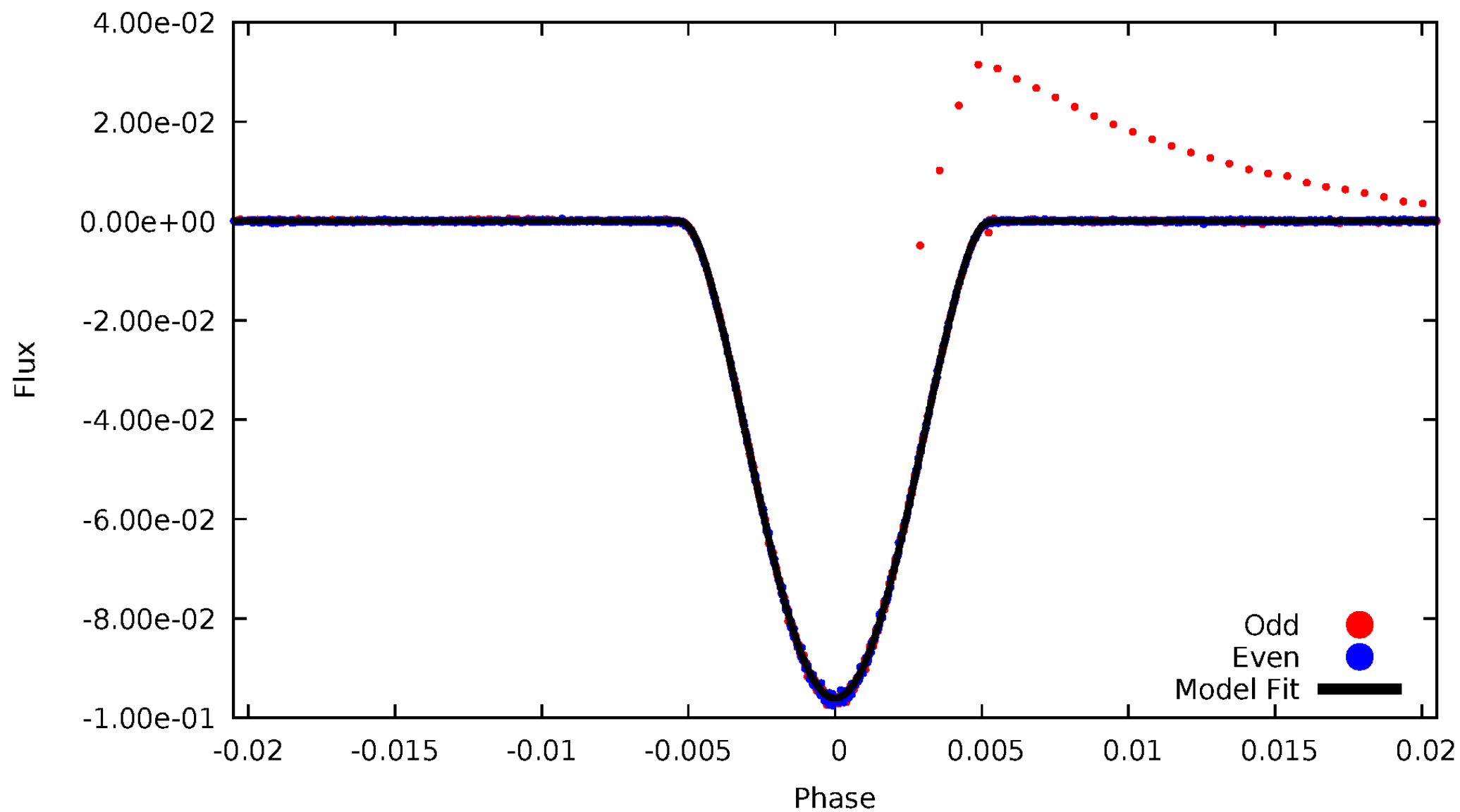


TCE 003938073-01



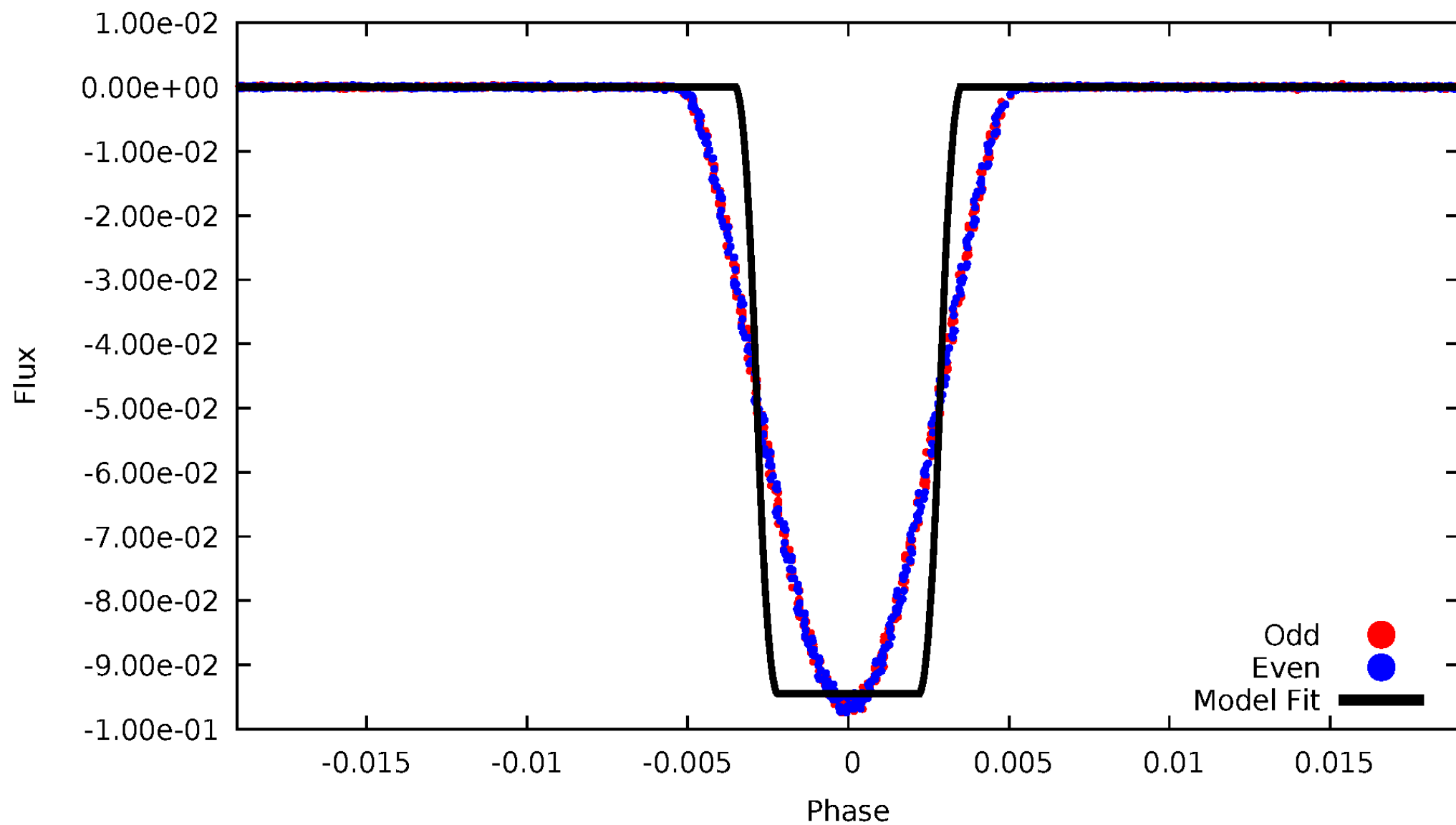
DV Odd/Even

TCE 003938073-01



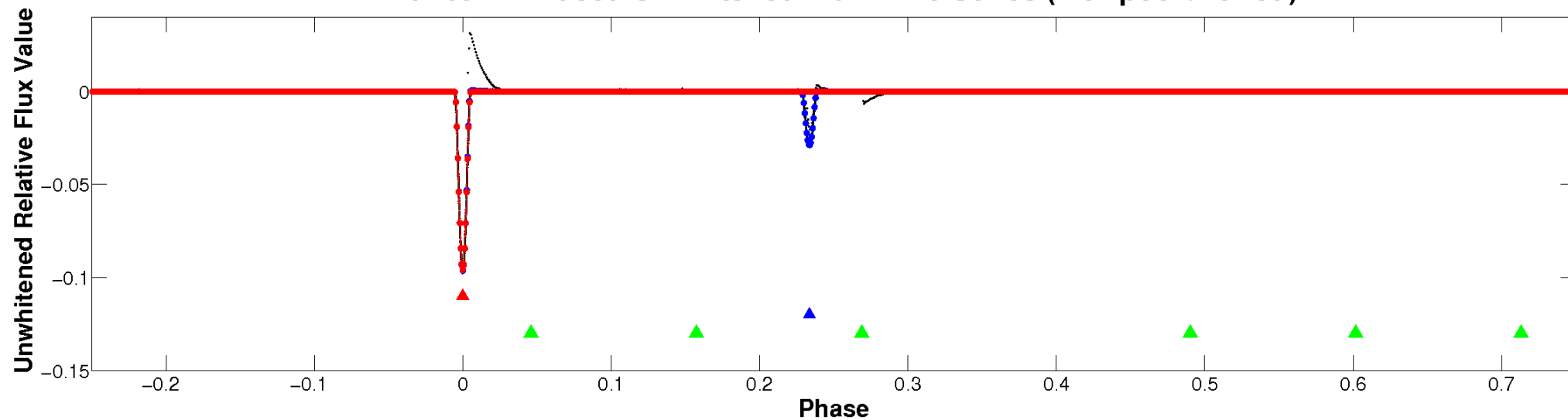
ALT Odd/Even

TCE 003938073-01

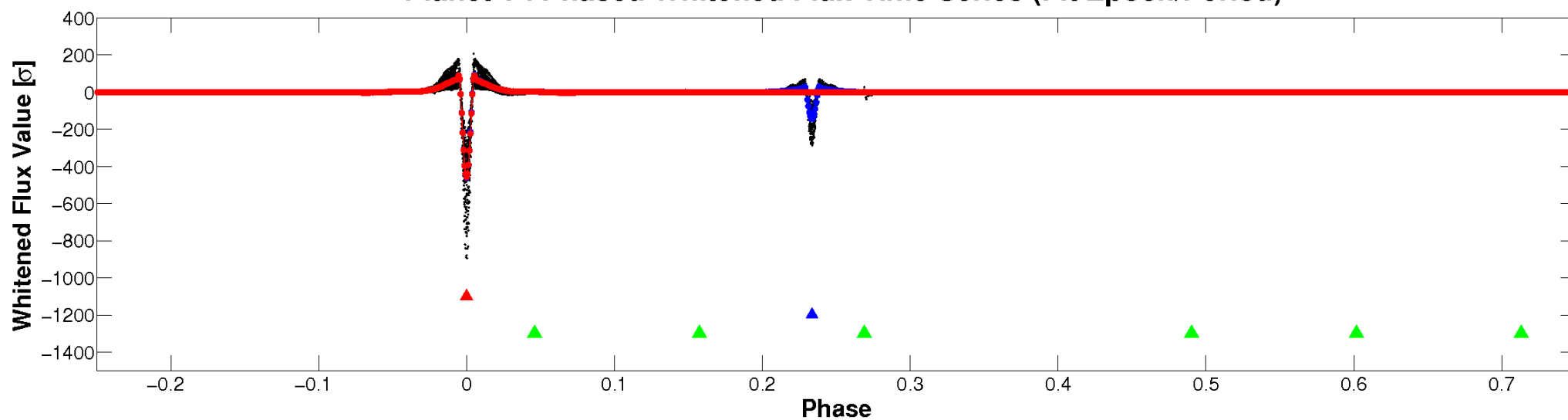


Non-Whitened Vs. Whitened Light Curve

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

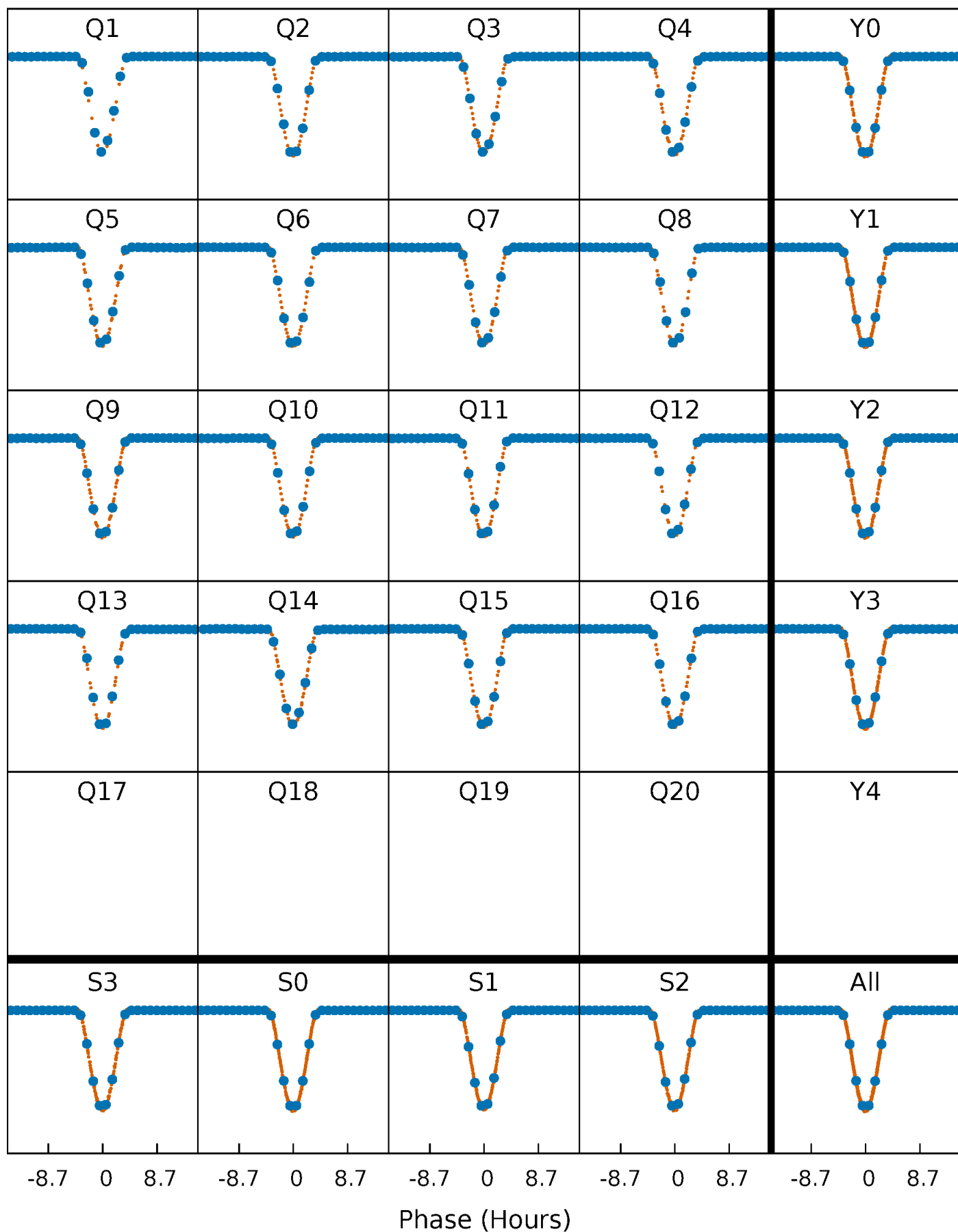


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



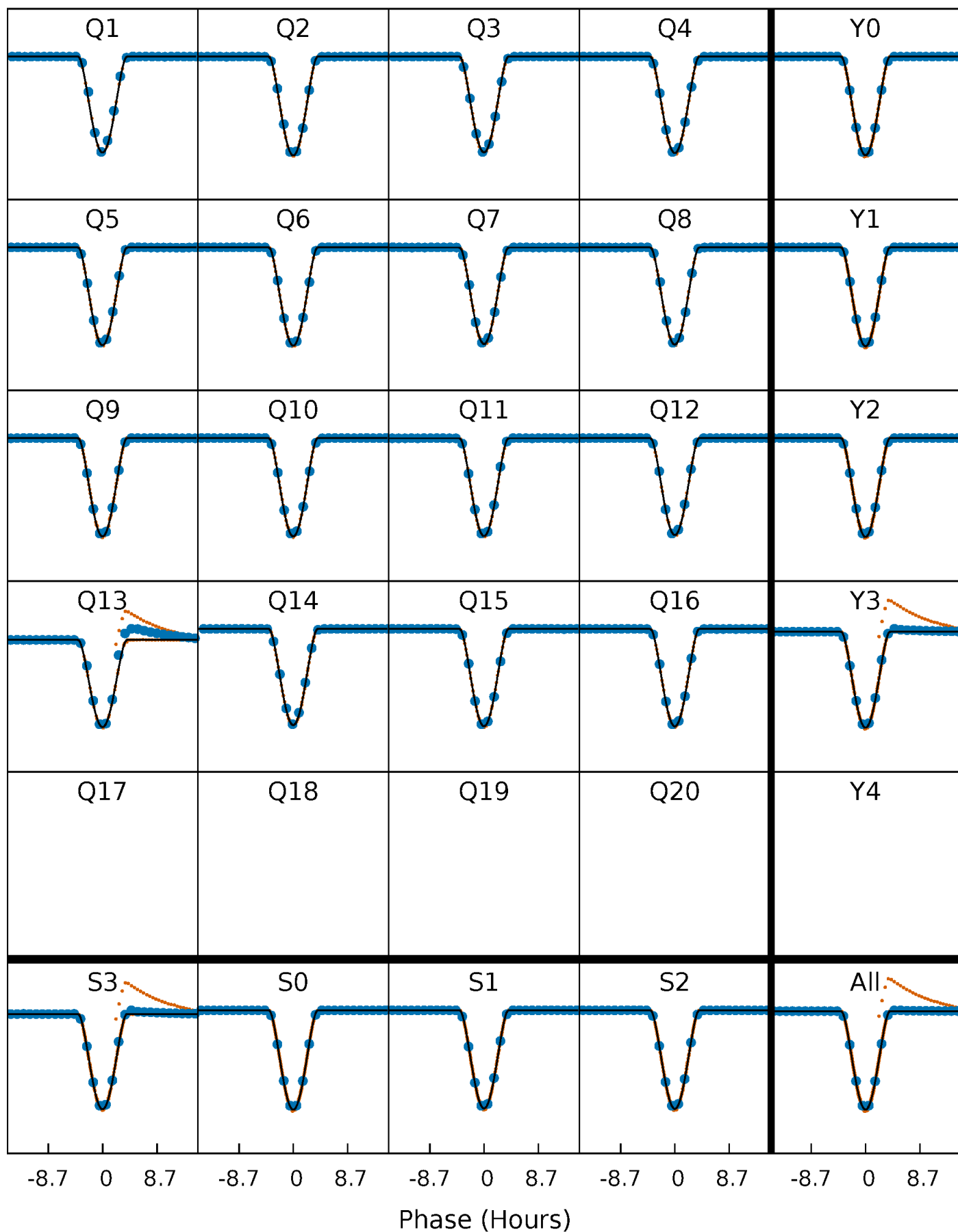
PDC Quarter-Phased Transit Curves

TCE 003938073-01 P= 31.024307 Days $T_0=158.865234$ (BKJD)



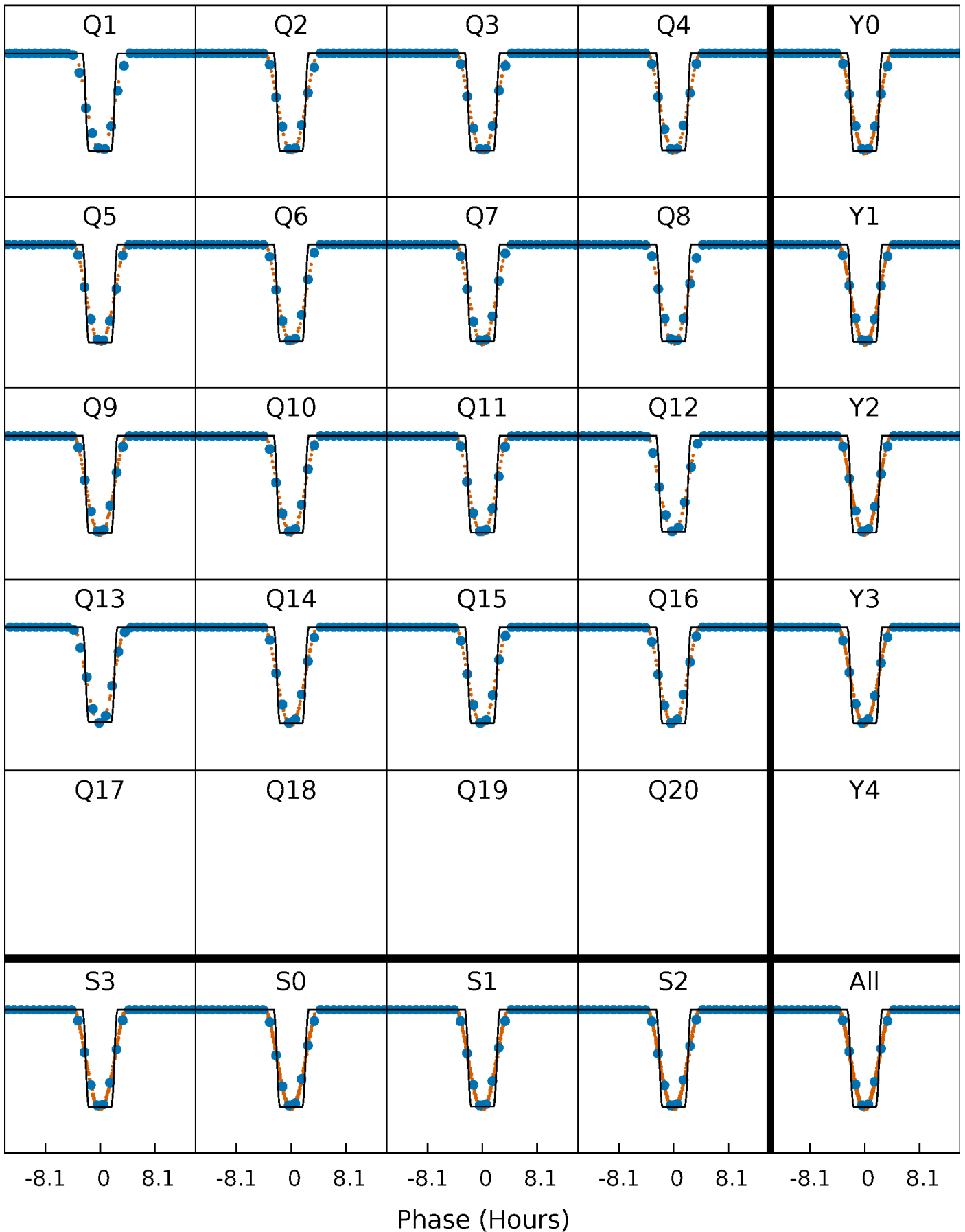
DV Quarter-Phased Transit Curves

TCE 003938073-01 P= 31.024307 Days $T_0=158.865234$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

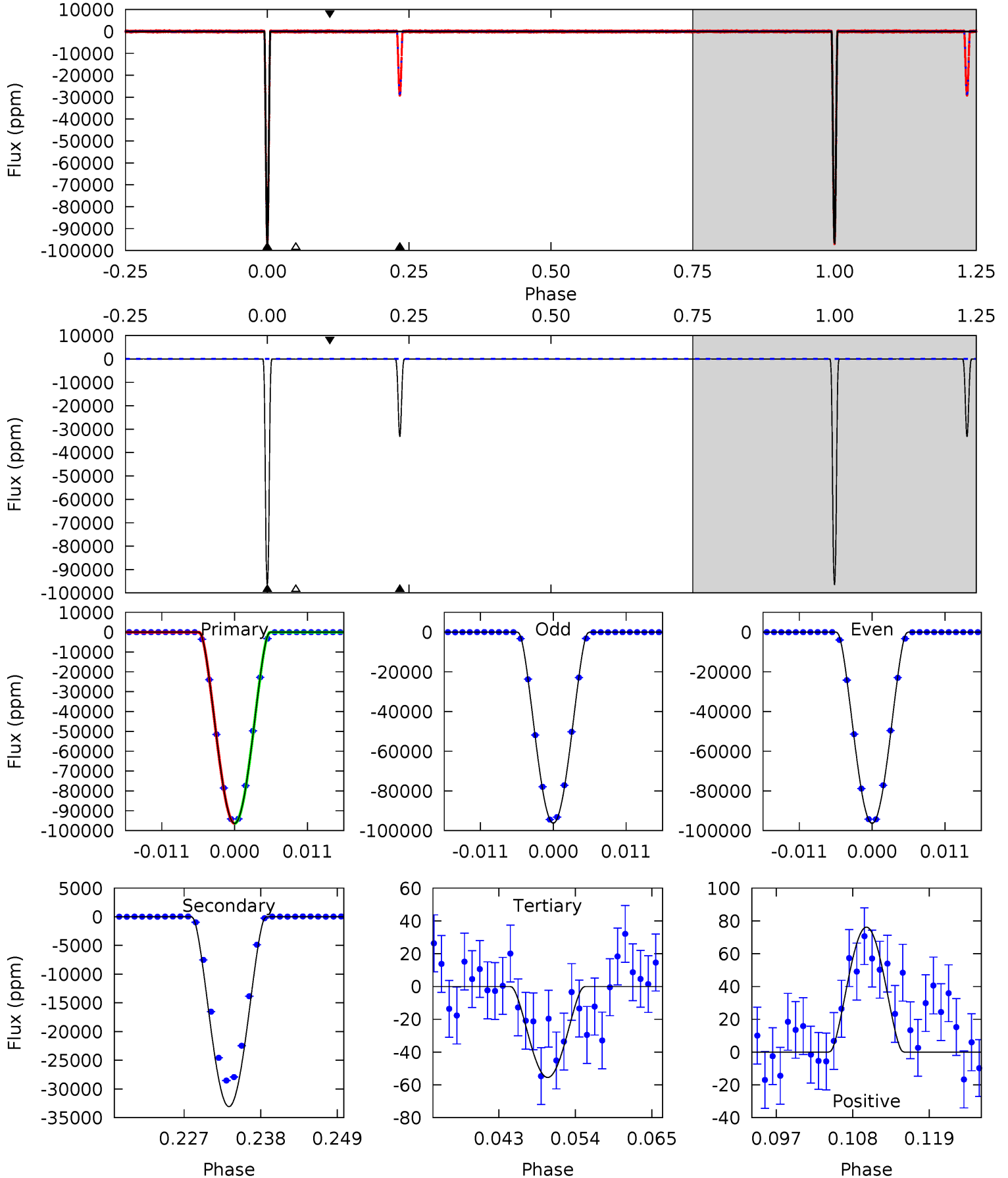
TCE 003938073-01 P= 31.024448 Days $T_0=158.861883$ (BKJD)



DV Model-Shift Uniqueness Test

003938073-01, P = 31.024307 Days, E = 127.840927 Days

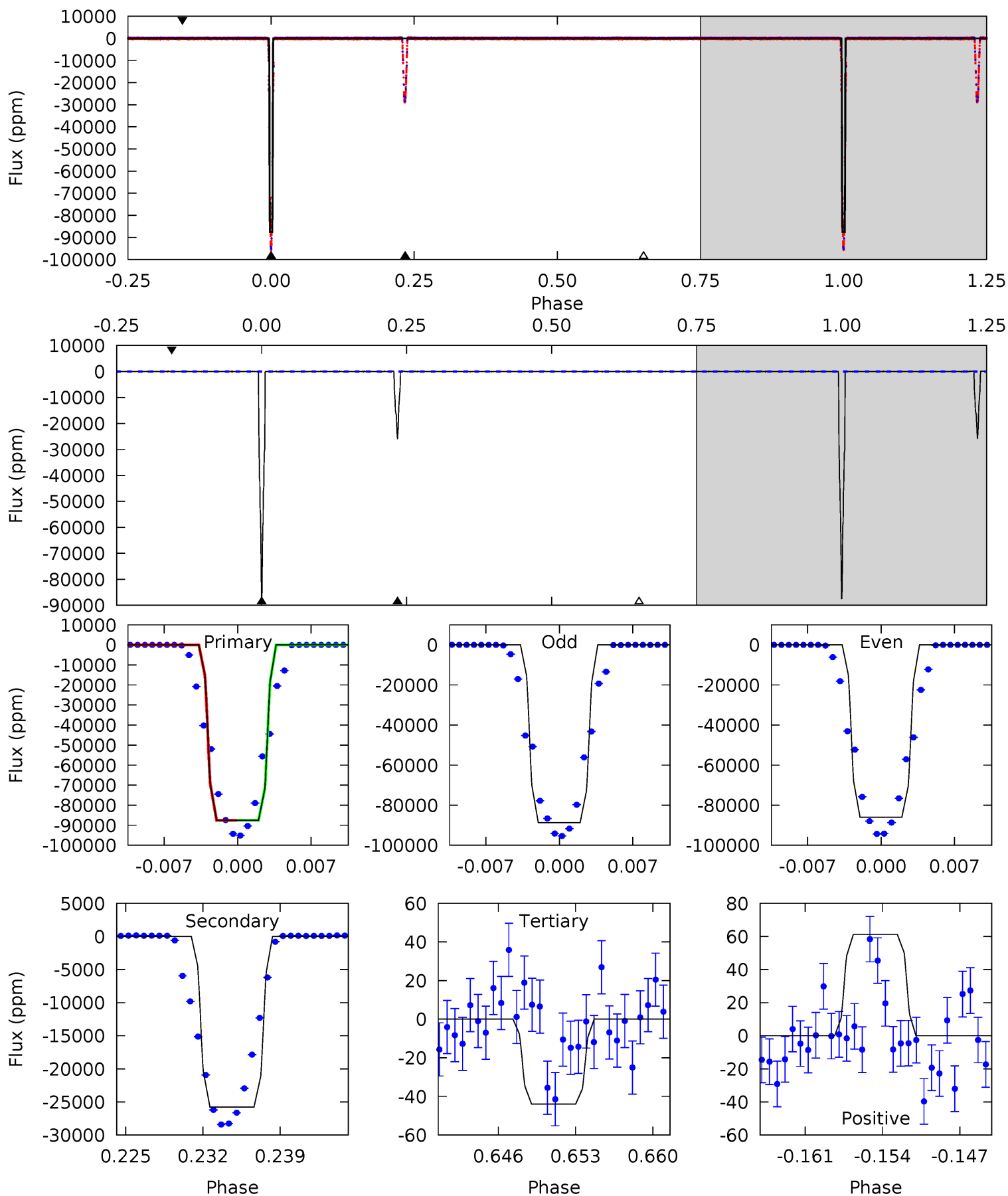
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17542	6022	10.1	13.9	5.01	2.55	3.76	17532	17528	6012	6008	12.4	0.98	0.00	0.18



Alt Model-Shift Uniqueness Test

003938073-01, P = 31.024448 Days, E = 127.837435 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7540	2219	3.79	5.27	5.09	2.70	1.47	7536	7535	2215	2213	130.1	1.00	0.00	0



Stellar Parameters For KIC 003938073

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6011^{+164}_{-164}	$3.998^{+0.273}_{-0.117}$	$-0.120^{+0.300}_{-0.250}$	$1.741^{+0.351}_{-0.527}$	$1.100^{+0.189}_{-0.154}$	$0.294^{+0.505}_{-0.104}$
	+3%/-3%	+7%/-3%	+250%/-208%	+20%/-30%	+17%/-14%	+172%/-35%
Source	PHO1	FLK73	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 003938073-01 / KOI 6373.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-33077 ± 5	$80.03^{+9.02}_{-13.66}$	1077^{+70}_{-85}	4215^{+86}_{-94}	121^{+46}_{-24}
Alt.	-25761 ± 12	$57.96^{+7.72}_{-9.39}$	1084^{+69}_{-88}	4549^{+100}_{-114}	176^{+67}_{-35}

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

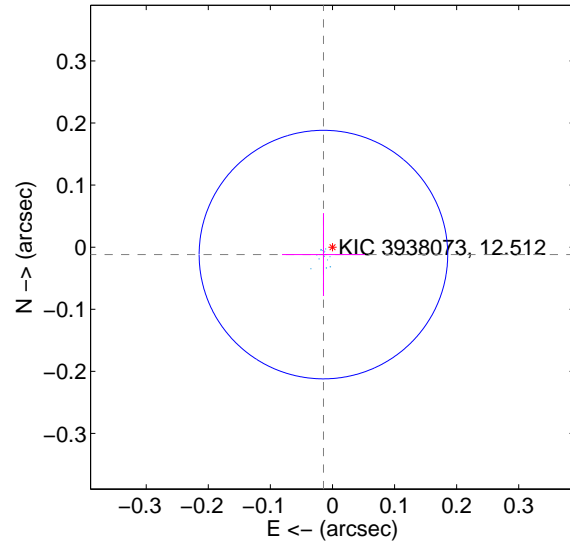
Supplemental centroid analysis for 003938073-01. Kepler magnitude: 12.51. Transit SNR 5858.00

There are 16 quarters with good PRF difference image offsets

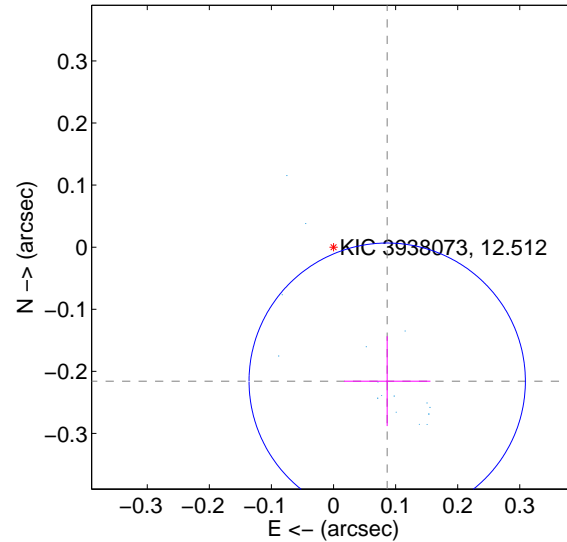
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.019 ± 0.067	0.28	0.015 ± 0.067	-0.012 ± 0.067
PRF-fit source offset from KIC position	0.233 ± 0.074	3.14	-0.087 ± 0.070	-0.216 ± 0.072
photometric centroid source offset	0.32 ± 0.00	325.52	-0.17 ± 0.00	-0.27 ± 0.00

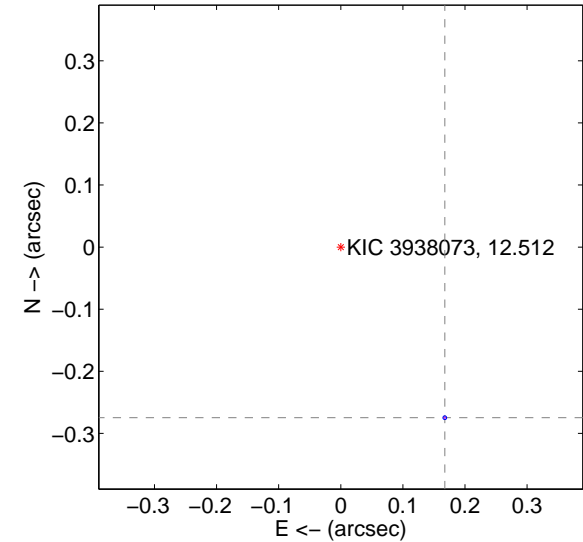
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

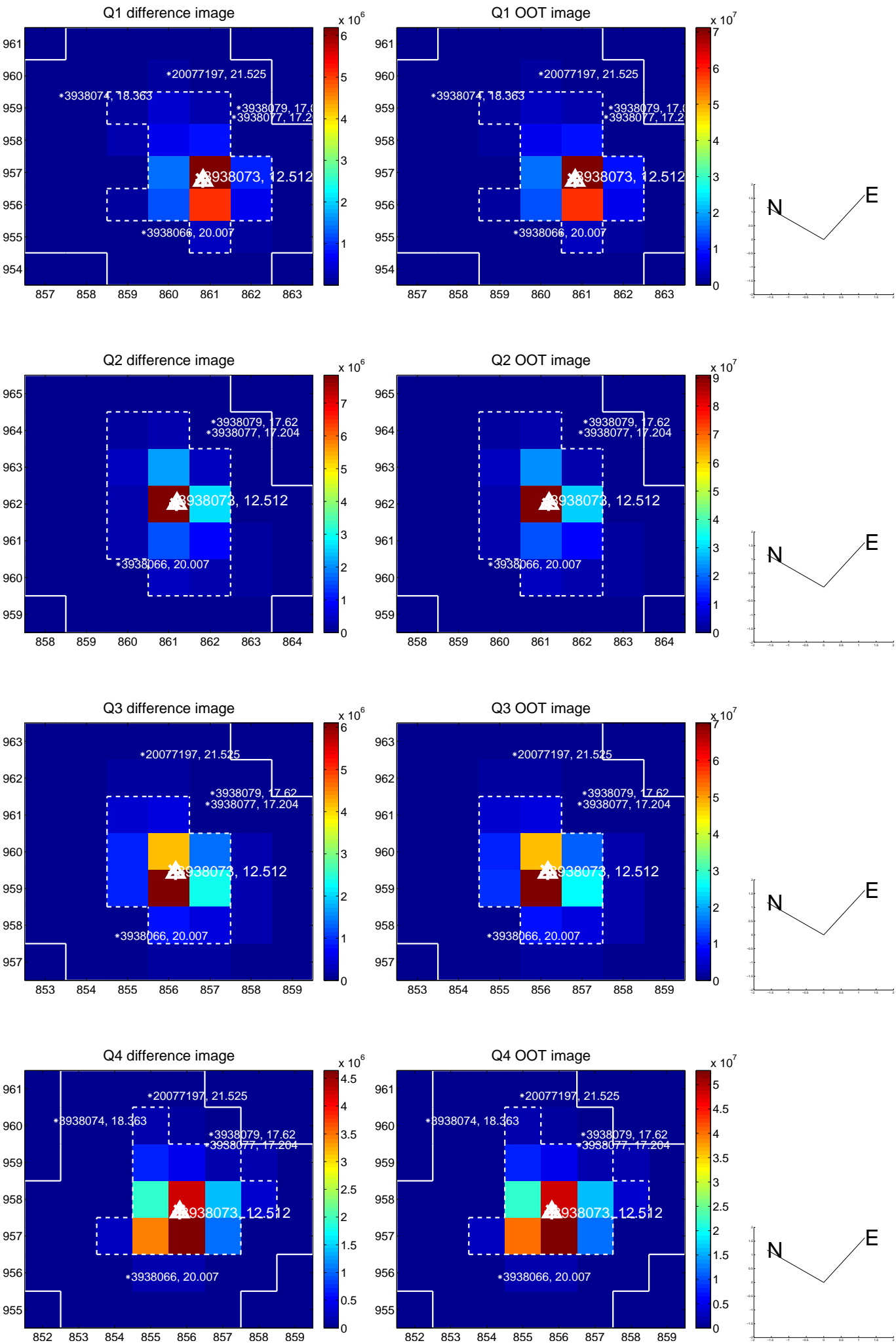


offset from photometric centroids

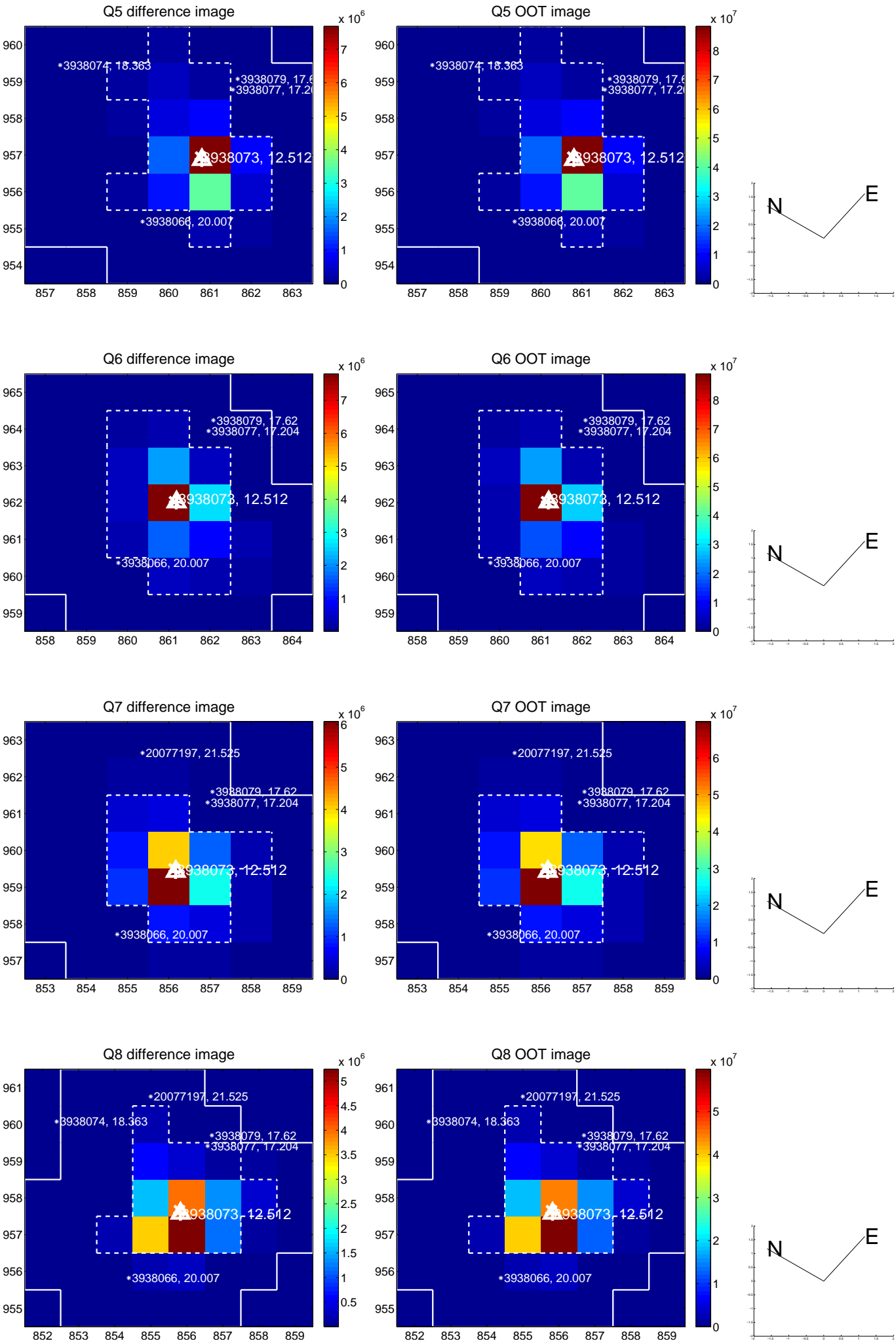


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

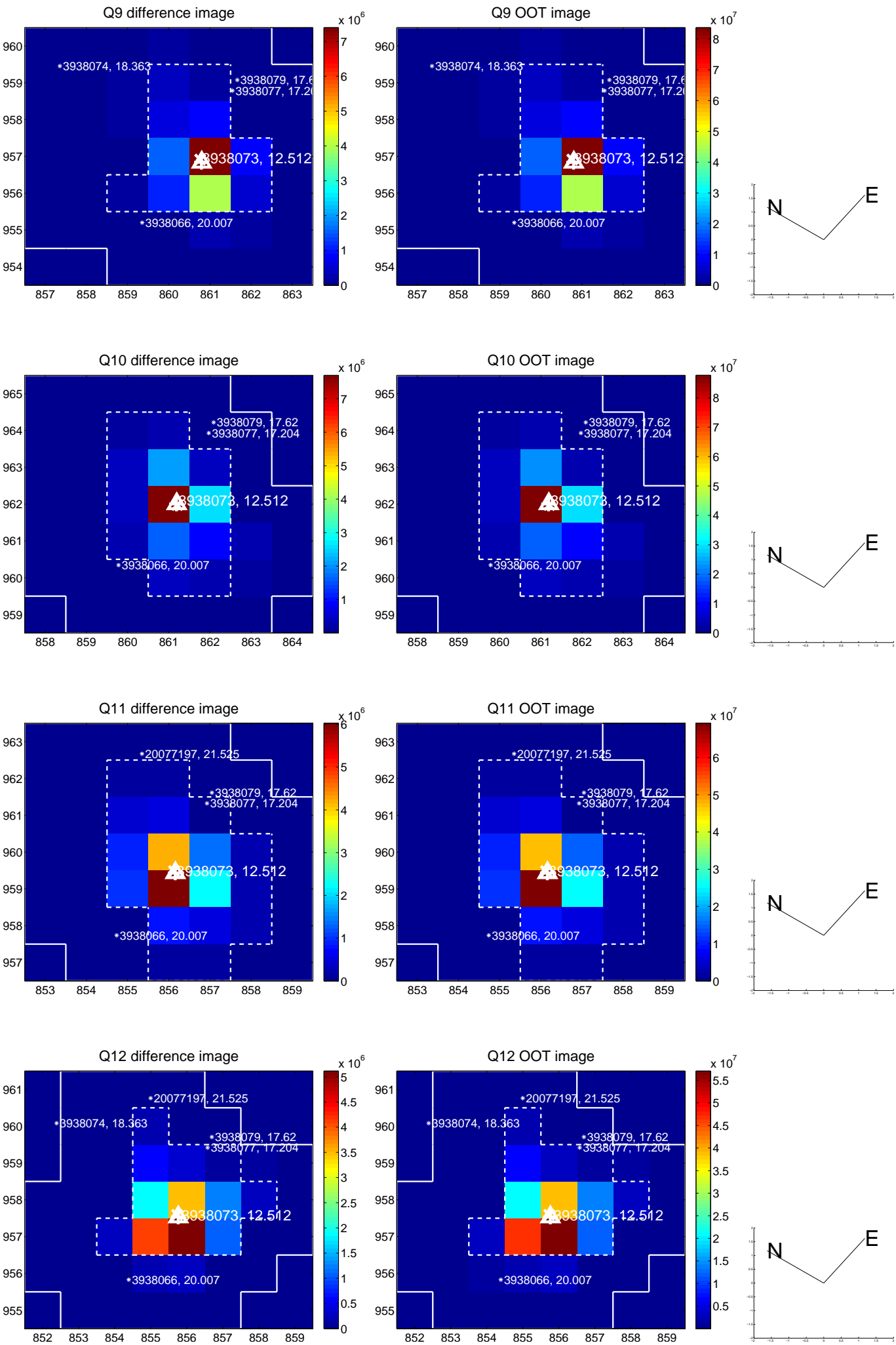
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



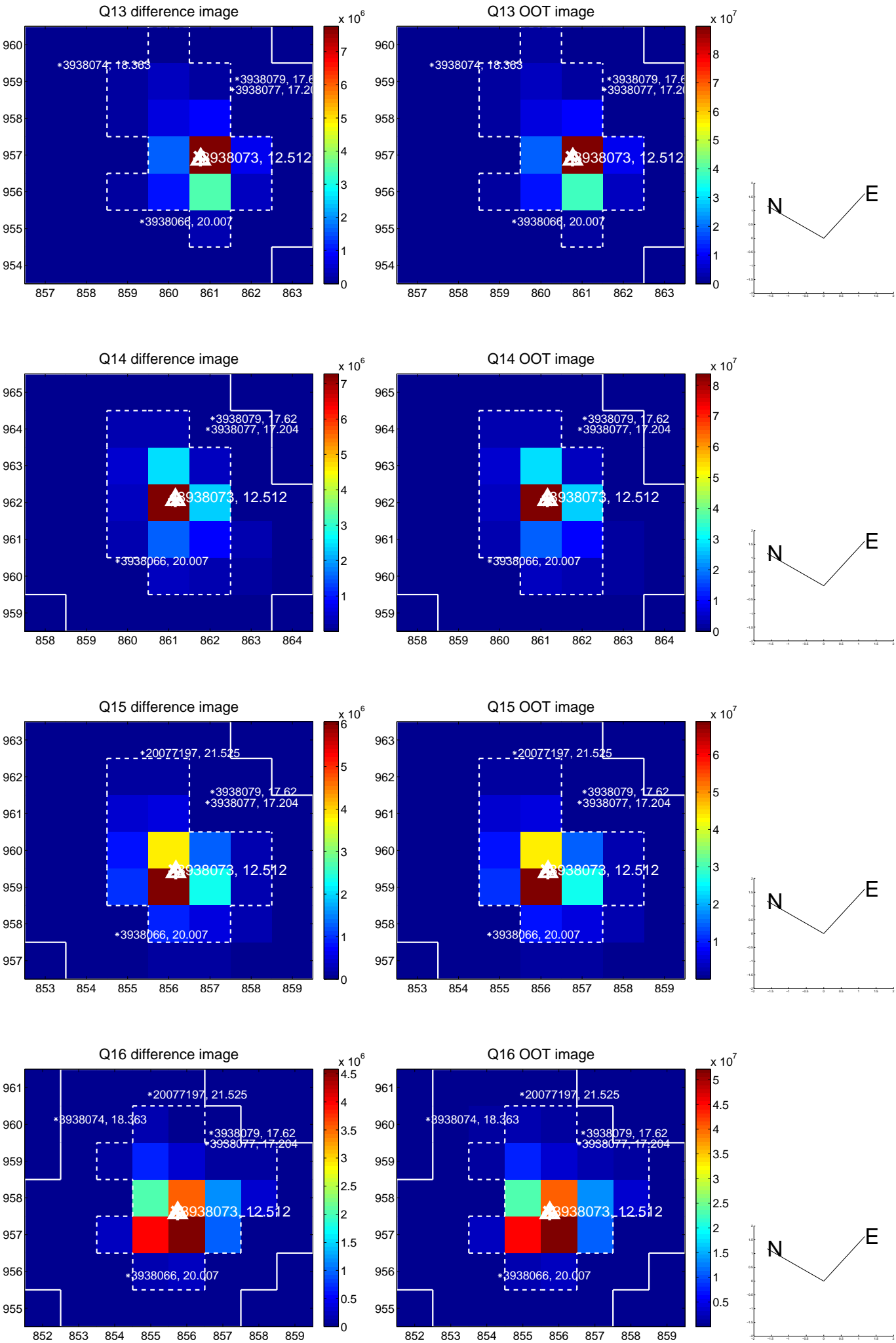
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



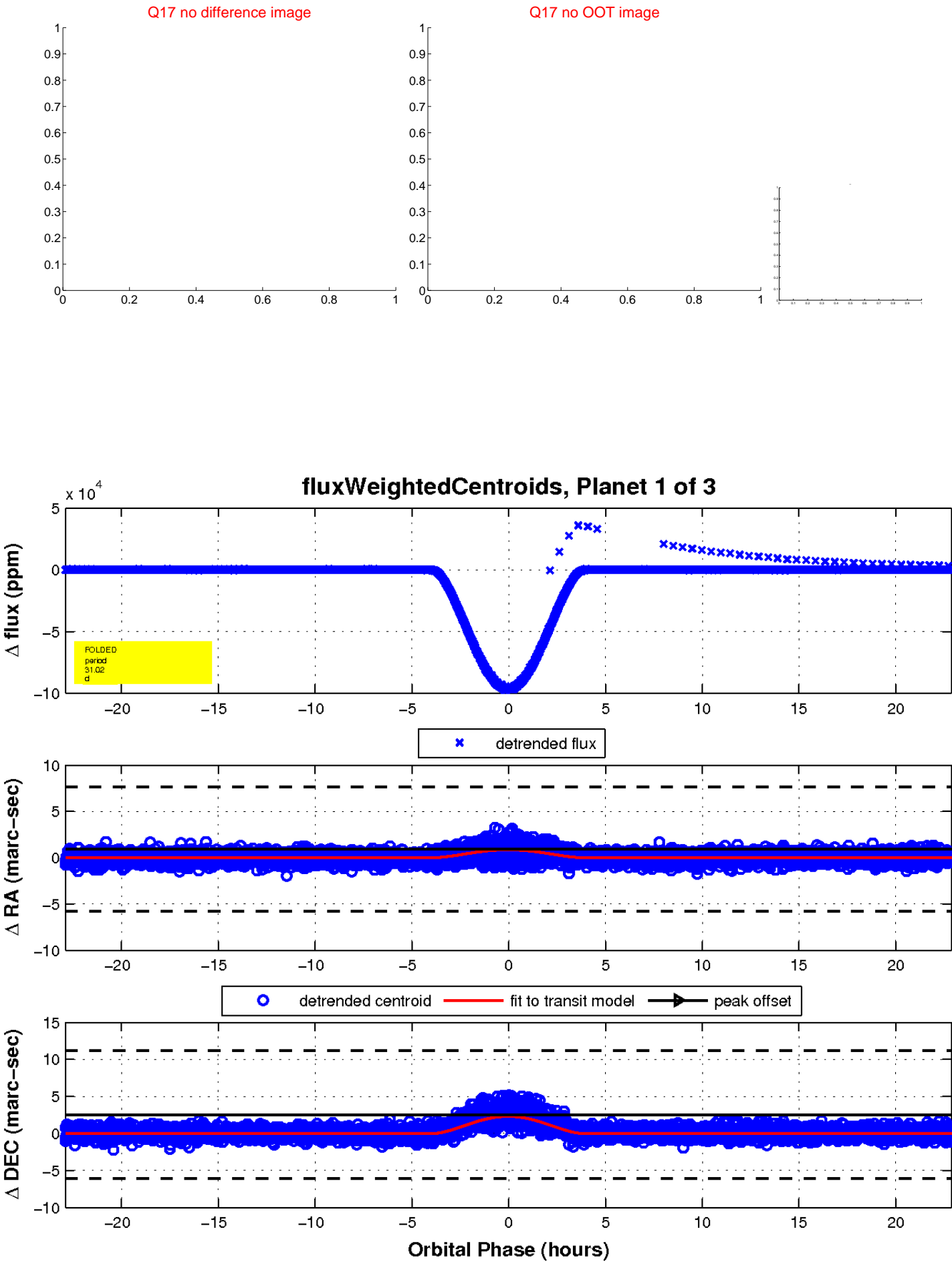
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

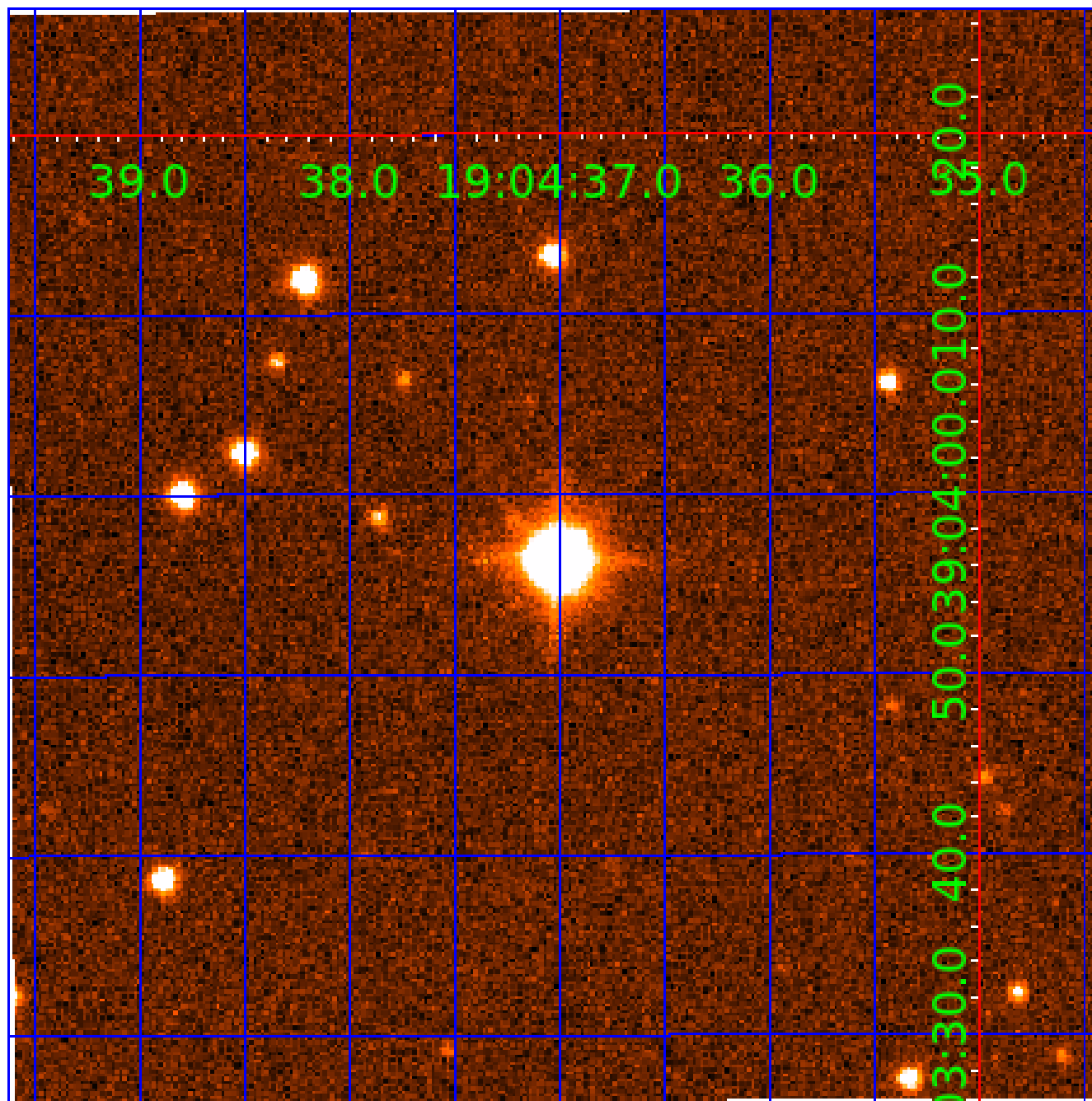


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003938073

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})
003938073-01	OBS	6373.01	31.024307	158.865234	96031.7	7.632	7443.9	5858.0	1.74	6011	80.96	89.05
003938073-02	OBS	No	31.024316	135.088904	29083.3	7.244	2403.0	2290.5	1.74	6011	50.31	89.05
003938073-03	OBS	No	230.953504	260.282129	1534.1	49.350	23.7	23.5	1.74	6011	12.92	6.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003938073-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
003938073-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
003938073-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

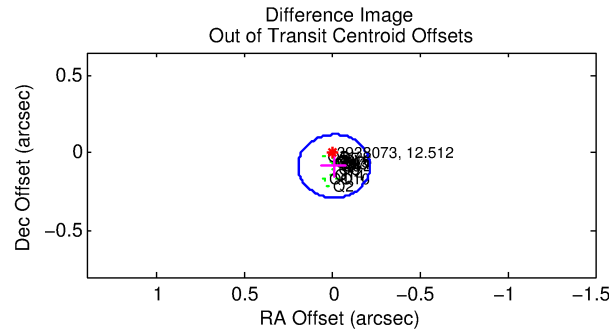
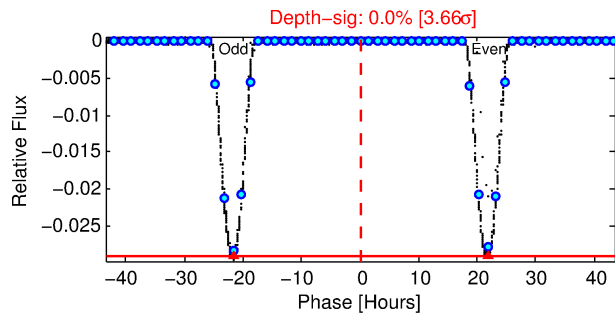
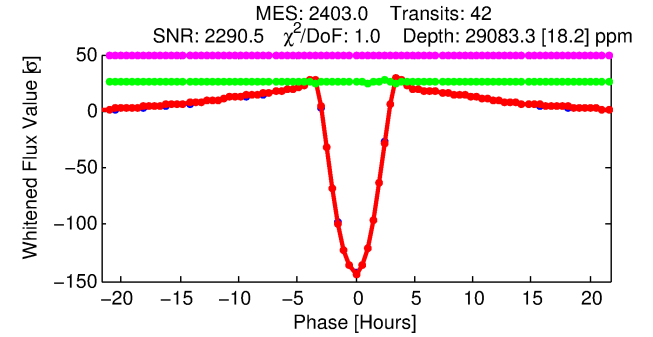
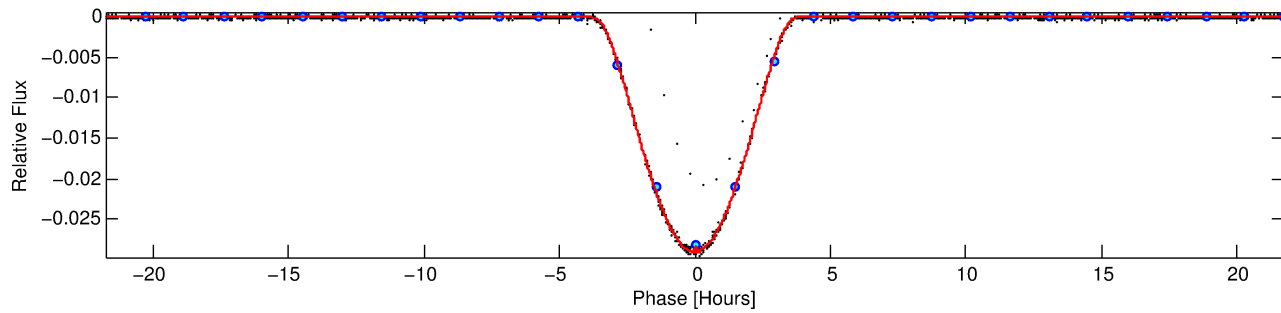
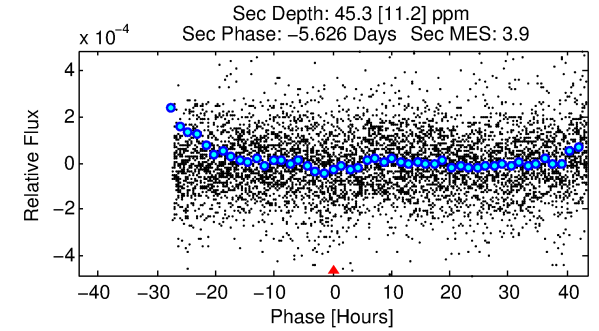
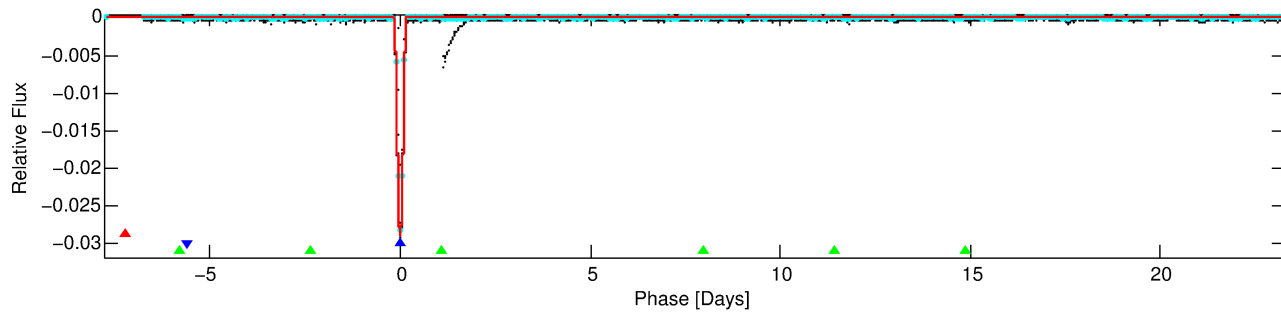
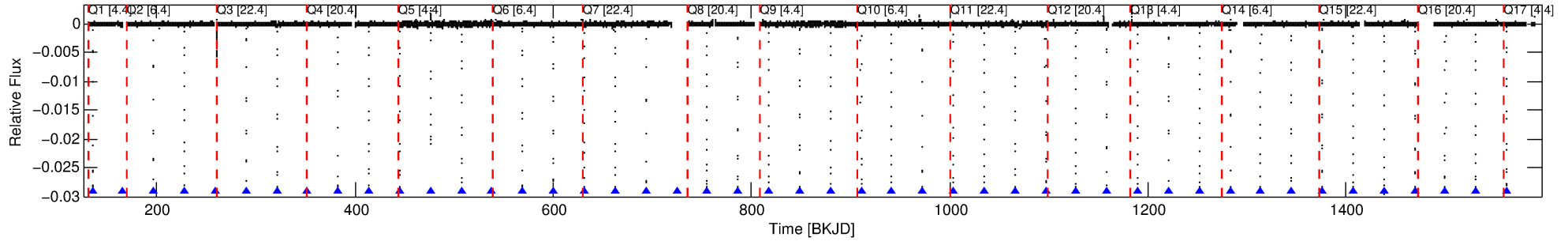
Ephemeris Match Information For 003938073-02

No Significant Match Found

DV One-Page Summary

KIC: 3938073 Candidate: 2 of 3 Period: 31.024 d
KOI: K06373 Corr: No Ephemeris Match

Kp: 12.51 R*: 1.74 Rs Teff: 6011.0 K Logg: 4.00 Fe/H: -0.120



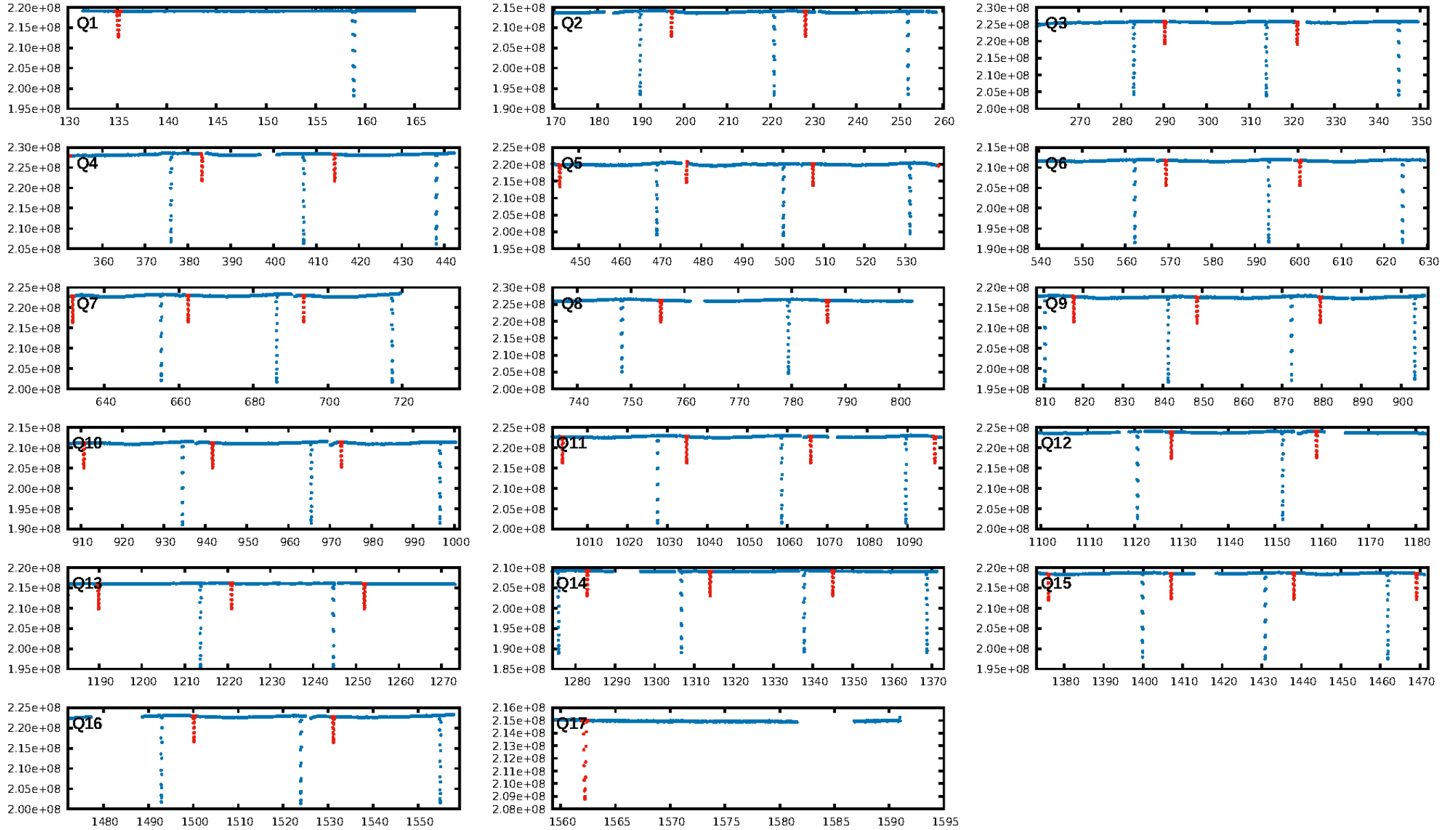
DV Fit Results:

Period = 31.02432 [0.00000] d
Epoch = 135.0889 [0.0001] BKJD
Rp/R* = 0.2648 [0.0054]
a/R* = 25.73 [0.04]
b = 0.99 [0.01]
Seff = 89.05 [42.54]
Teff = 783 [94] K
Rp = 50.31 [15.26] Re
a = 0.1995 [0.0580] AU
Ag = 0.39 [0.21] [-2.93σ]
Teffp = 959 [65] K [1.54σ]

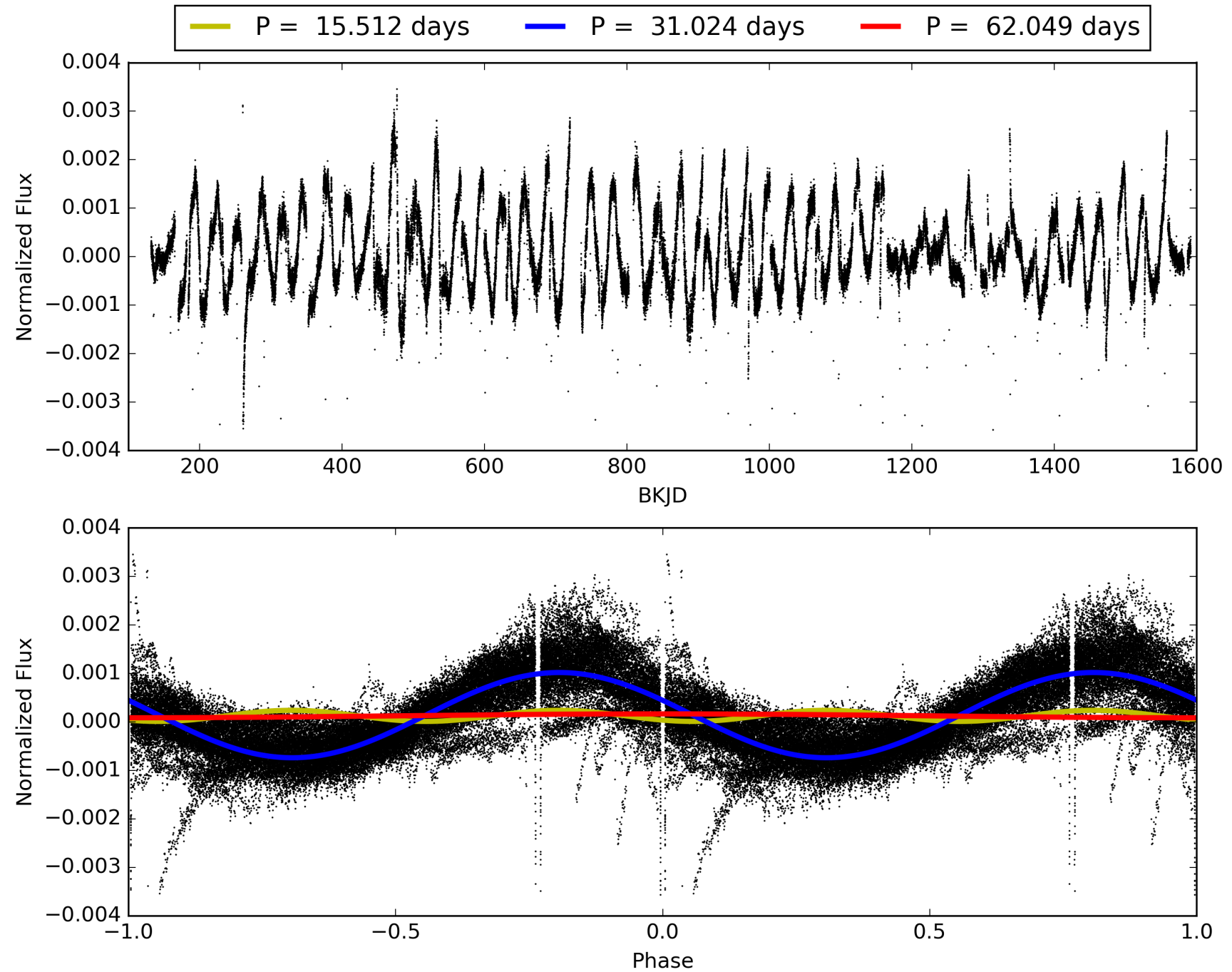
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [96.20σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 98.2%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [40/40]
GhostDiagnostic-chr: 9.439
Centroid-sig: 0.0%
Centroid-so: 0.420 arcsec [124.91σ]
OotOffset-rm: 0.085 arcsec [1.25σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-rm: 0.285 arcsec [4.04σ]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 003938073-02, PDC Light Curves

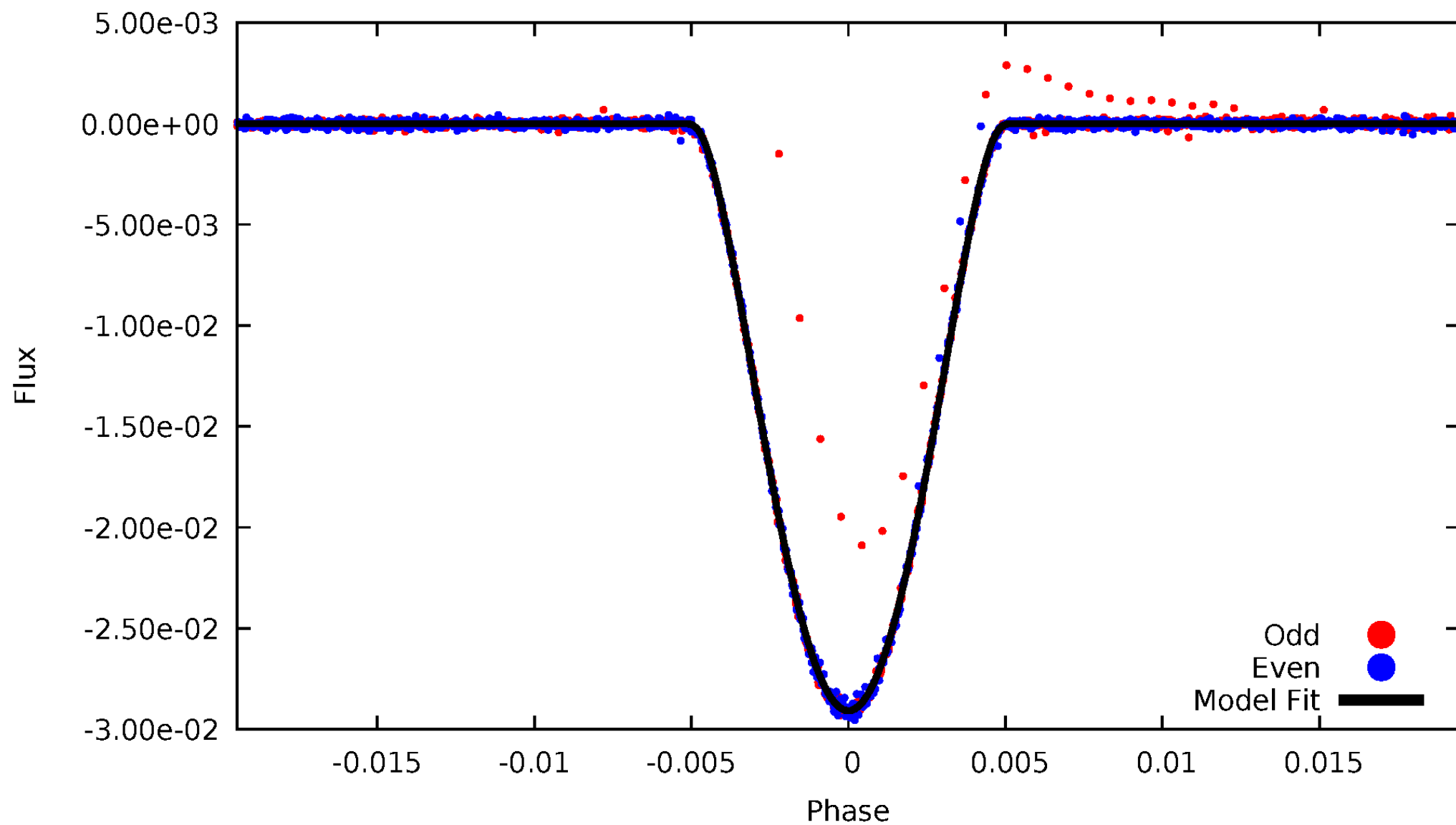


TCE 003938073-02



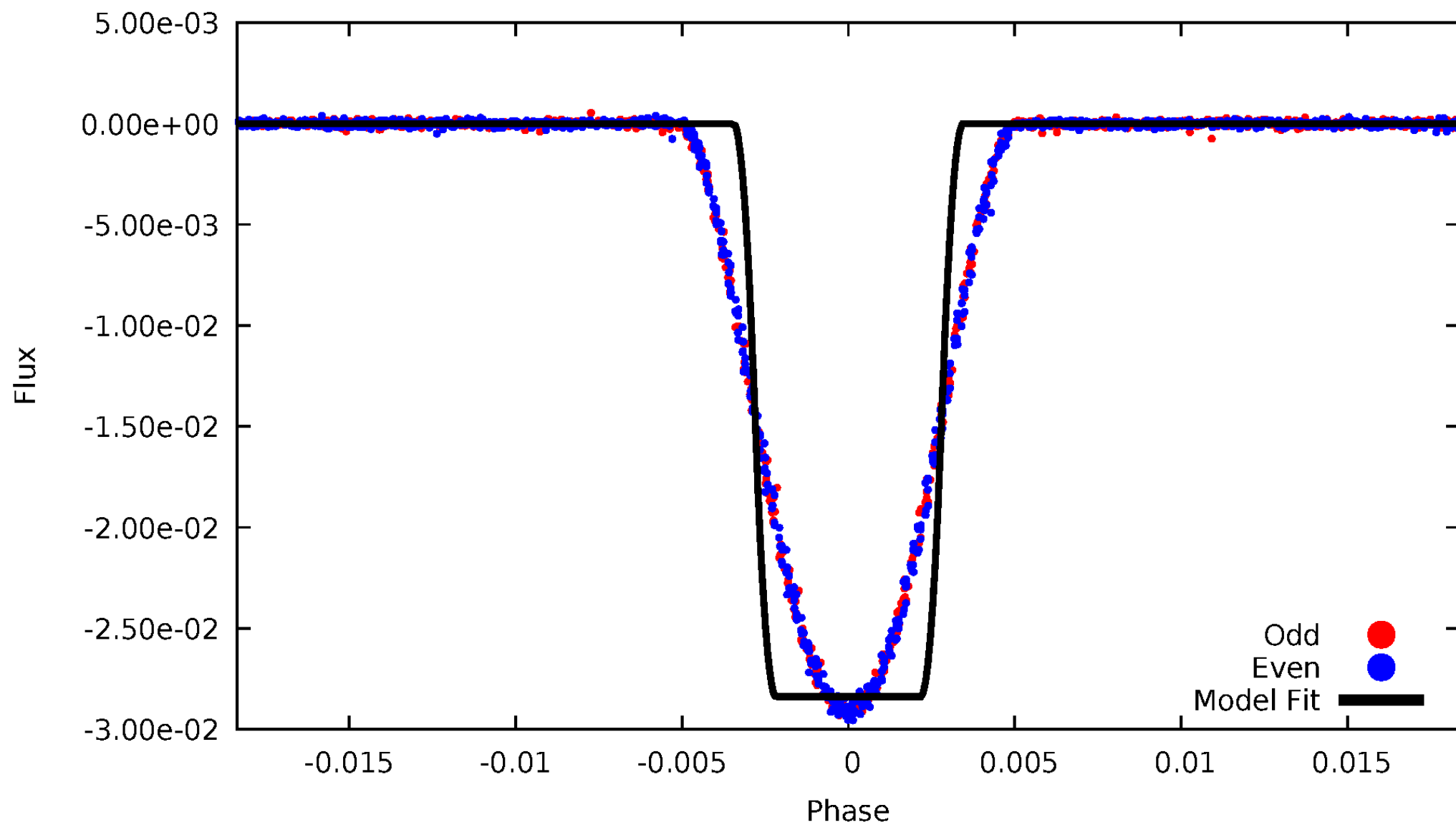
DV Odd/Even

TCE 003938073-02



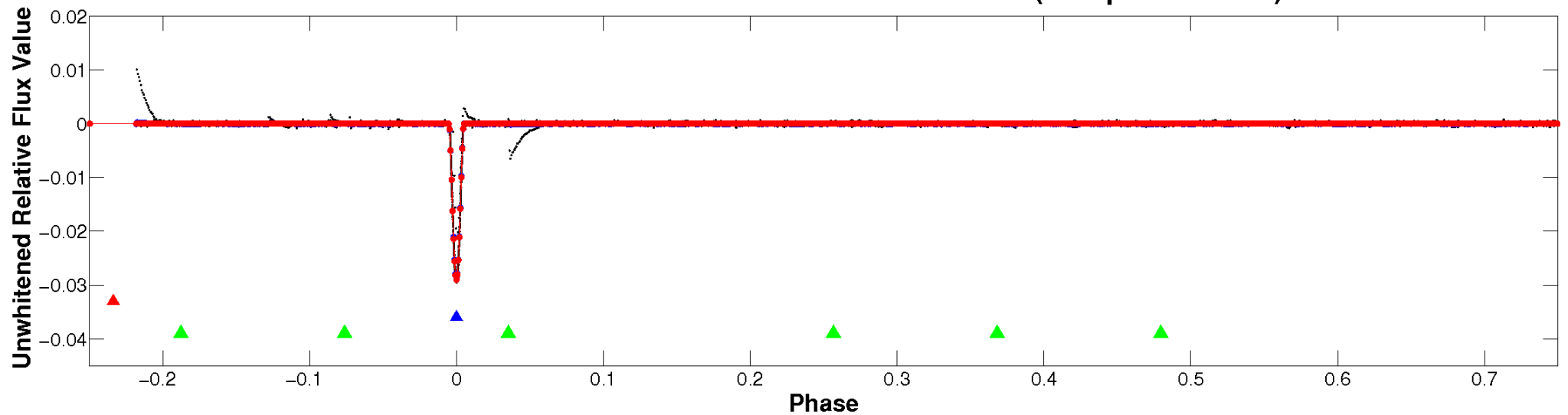
ALT Odd/Even

TCE 003938073-02

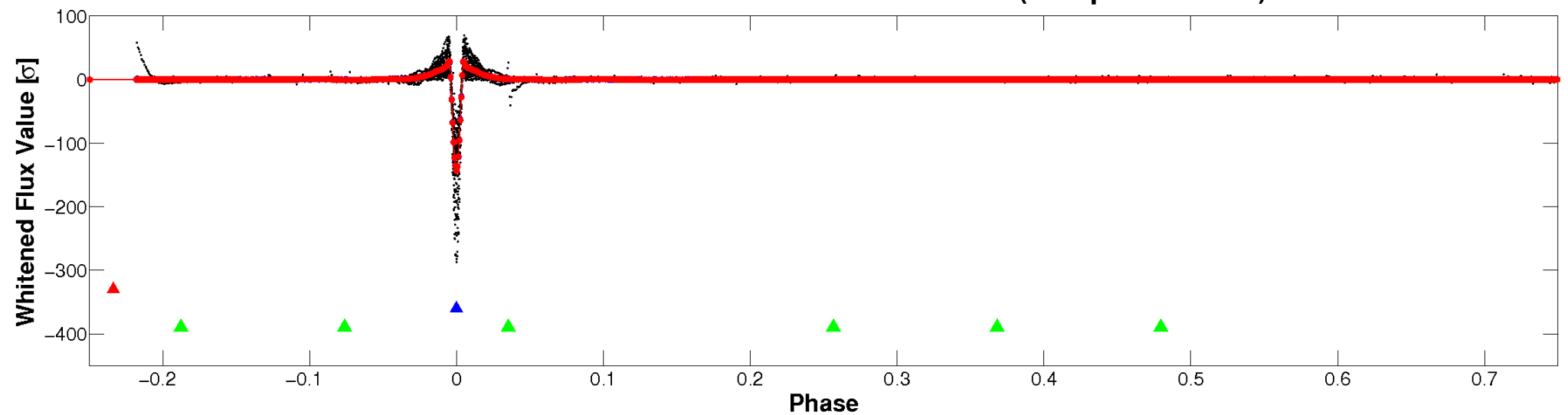


Non-Whitened Vs. Whitened Light Curve

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

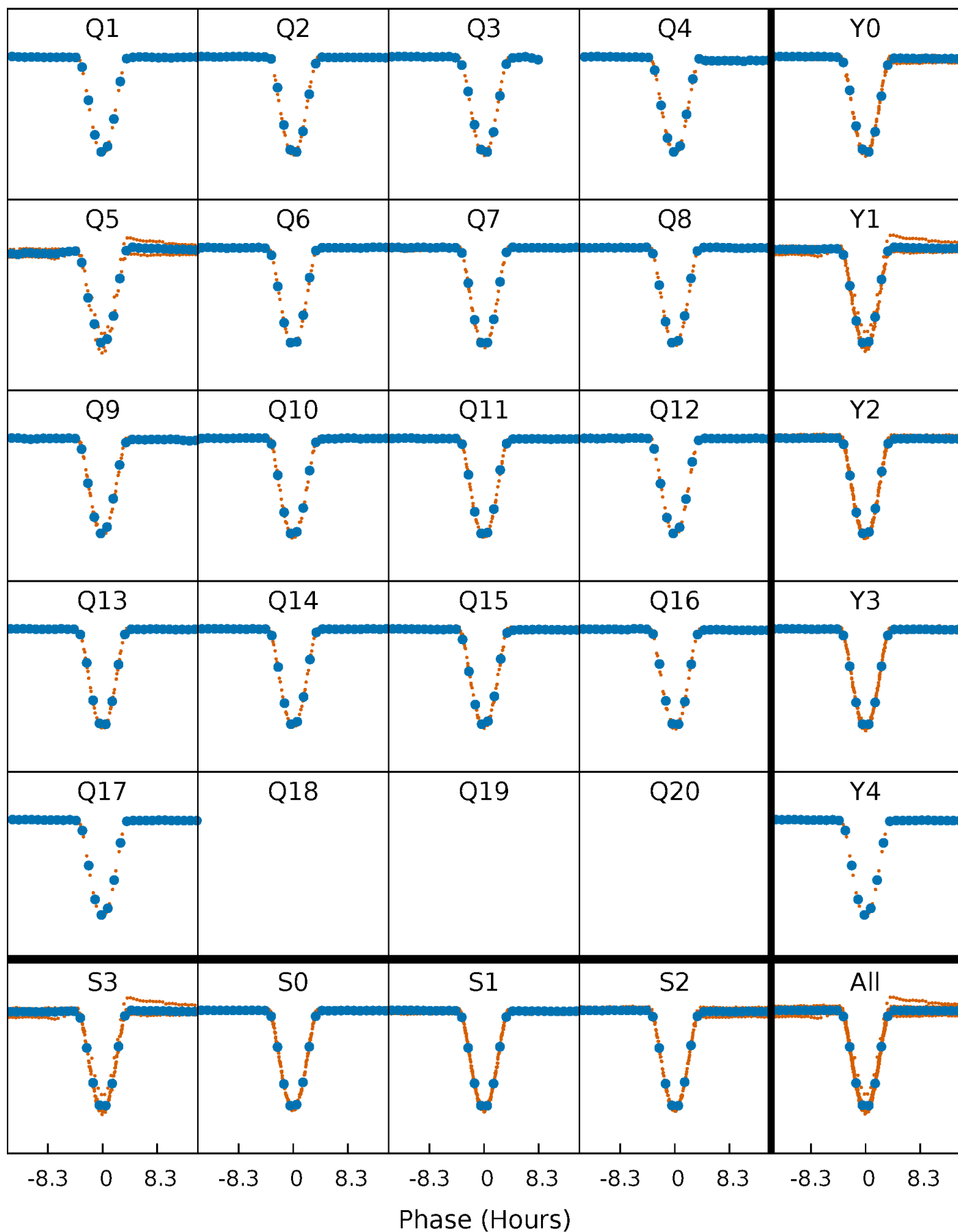


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



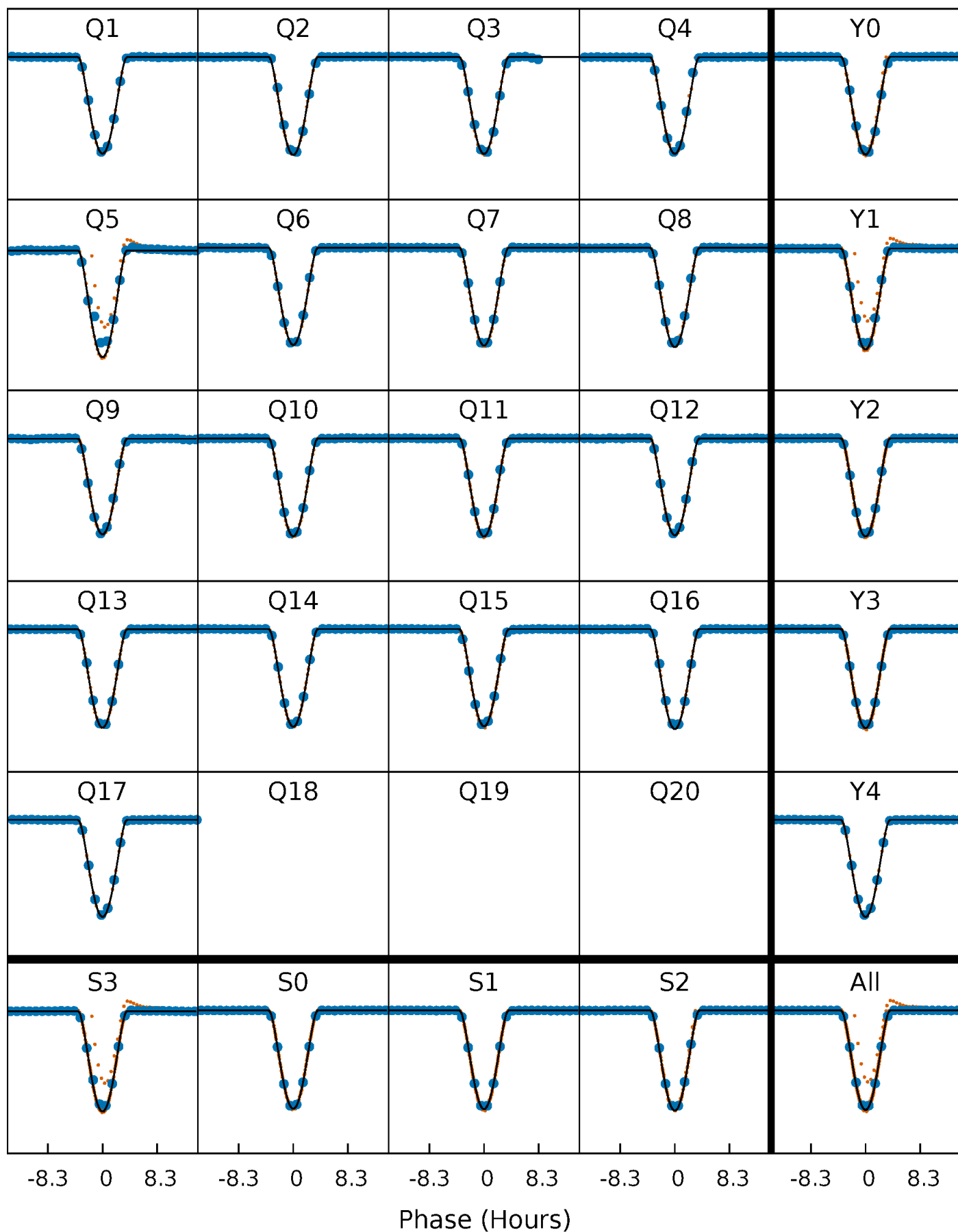
PDC Quarter-Phased Transit Curves

TCE 003938073-02 P= 31.024316 Days $T_0=135.088904$ (BKJD)



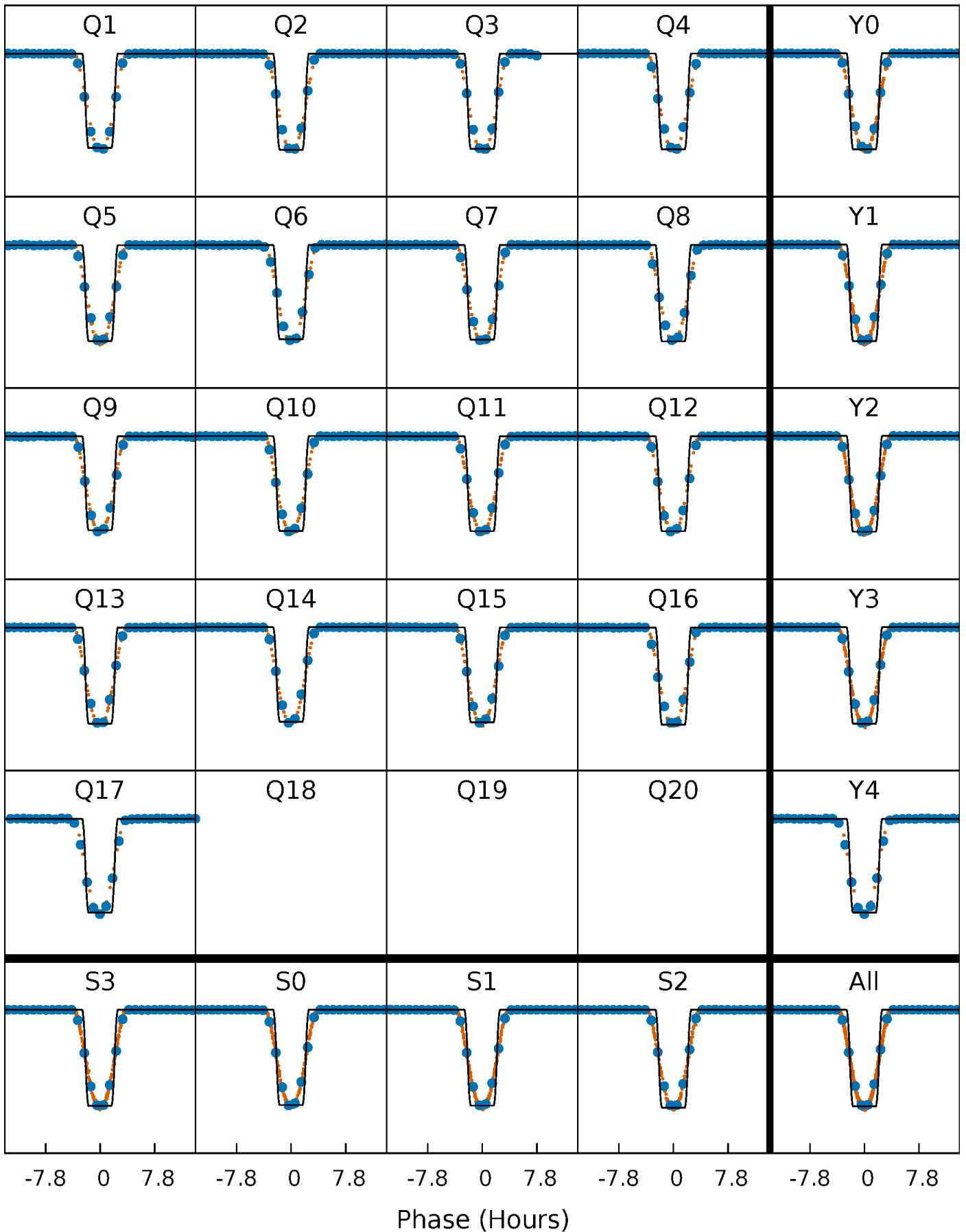
DV Quarter-Phased Transit Curves

TCE 003938073-02 P= 31.024316 Days $T_0=135.088904$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

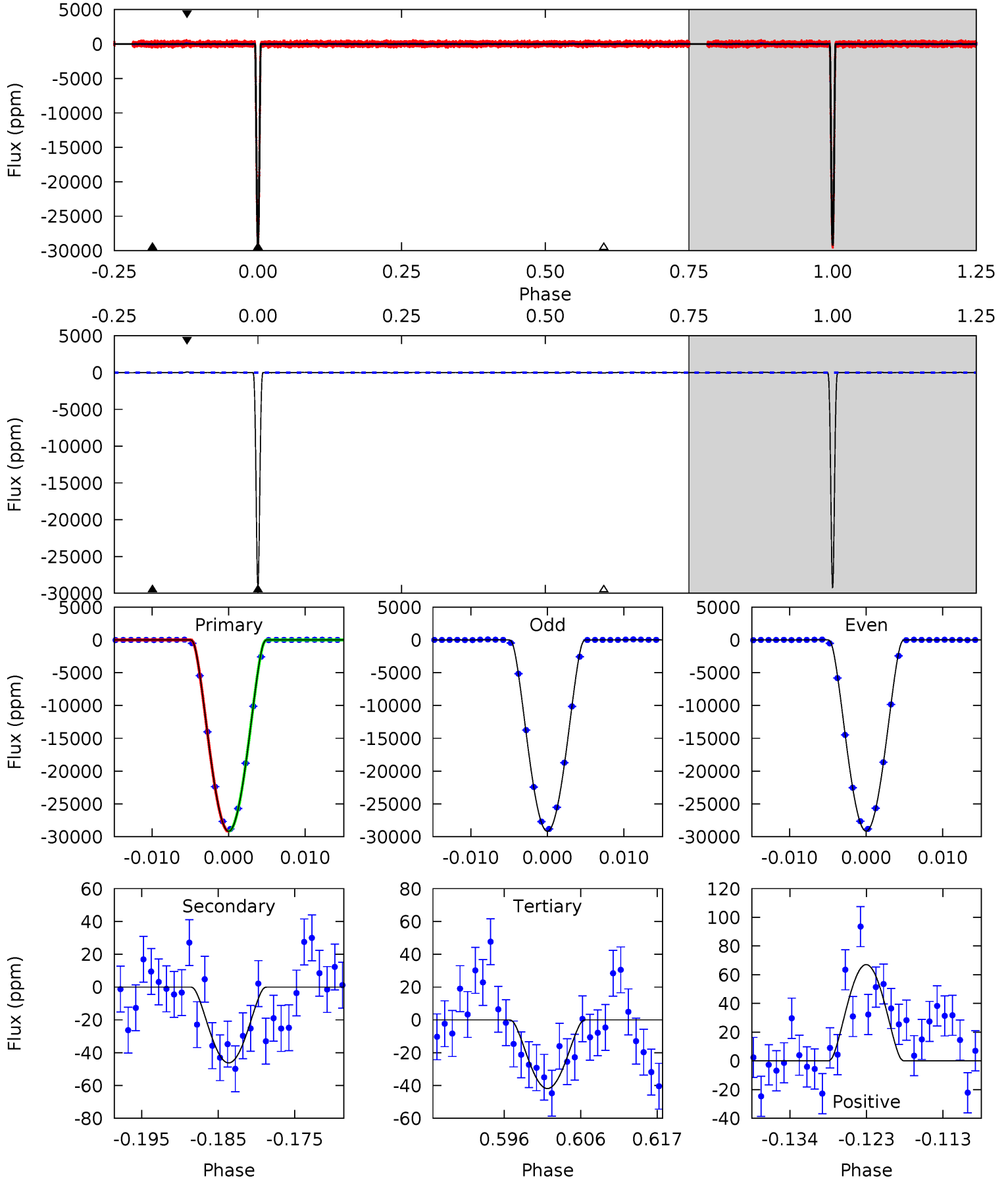
TCE 003938073-02 $P = 31.024448$ Days $T_0 = 135.085509$ (BKJD)



DV Model-Shift Uniqueness Test

003938073-02, P = 31.024316 Days, E = 104.064588 Days

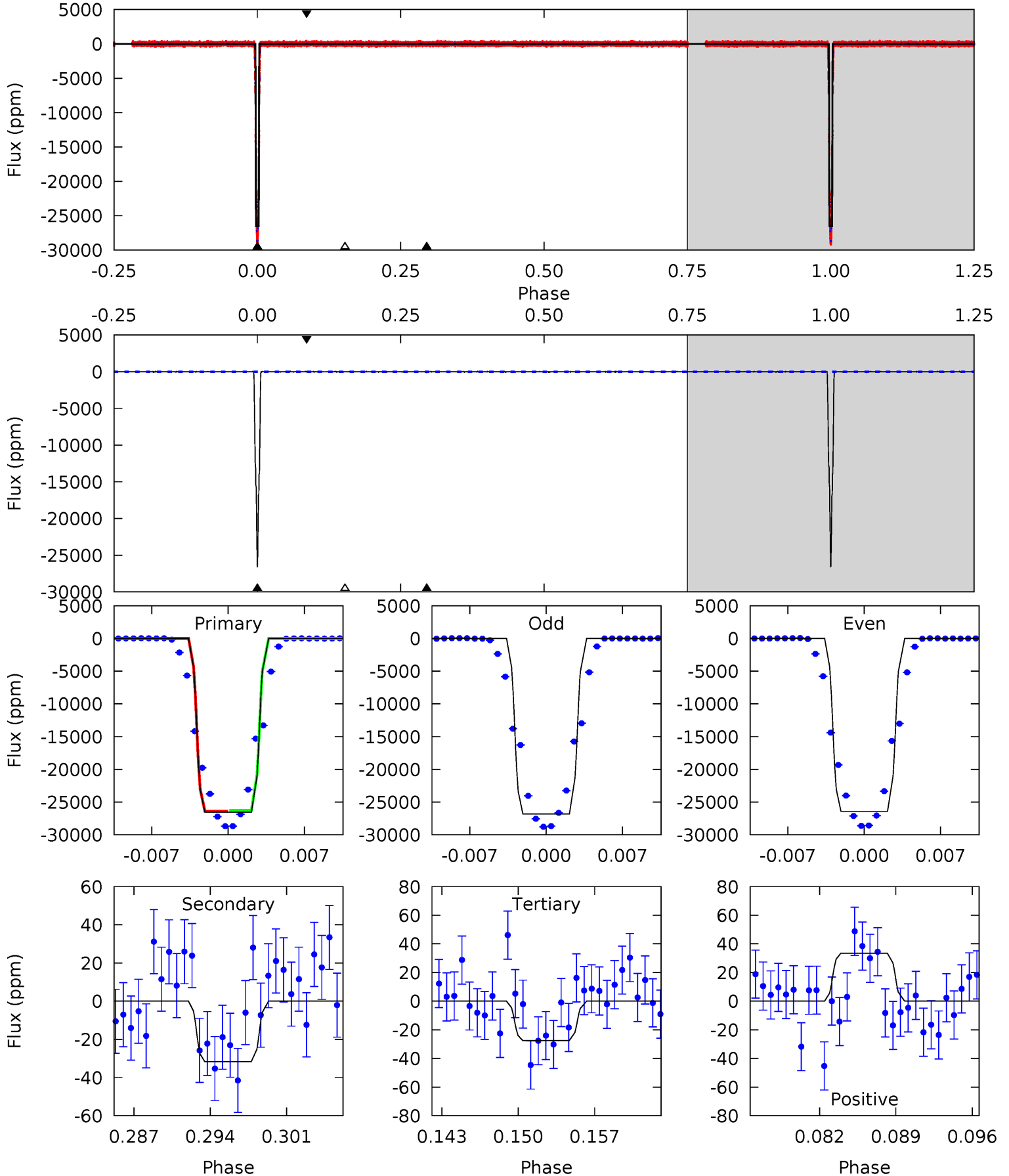
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5527	8.76	7.93	12.7	5.02	2.57	3.18	5519	5514	0.83	-3.95	1.56	0.99	0.00	0.70



Alt Model-Shift Uniqueness Test

003938073-02, P = 31.024448 Days, E = 104.061061 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3707	4.42	3.84	4.69	5.10	2.70	1.30	3703	3702	0.59	-0.26	26.5	1.00	0.00	9.71



Stellar Parameters For KIC 003938073

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6011^{+164}_{-164}	$3.998^{+0.273}_{-0.117}$	$-0.120^{+0.300}_{-0.250}$	$1.741^{+0.351}_{-0.527}$	$1.100^{+0.189}_{-0.154}$	$0.294^{+0.505}_{-0.104}$
	+3%/-3%	+7%/-3%	+250%/-208%	+20%/-30%	+17%/-14%	+172%/-35%
Source	PHO1	FLK73	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 003938073-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-46 ± 5	$49.46^{+6.37}_{-8.32}$	1077^{+71}_{-88}	1749^{+107}_{-207}	$0.423^{+0.176}_{-0.099}$
Alt.	-32 ± 7	$31.54^{+4.37}_{-5.03}$	1084^{+67}_{-88}	1974^{+75}_{-112}	$0.713^{+0.307}_{-0.207}$

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

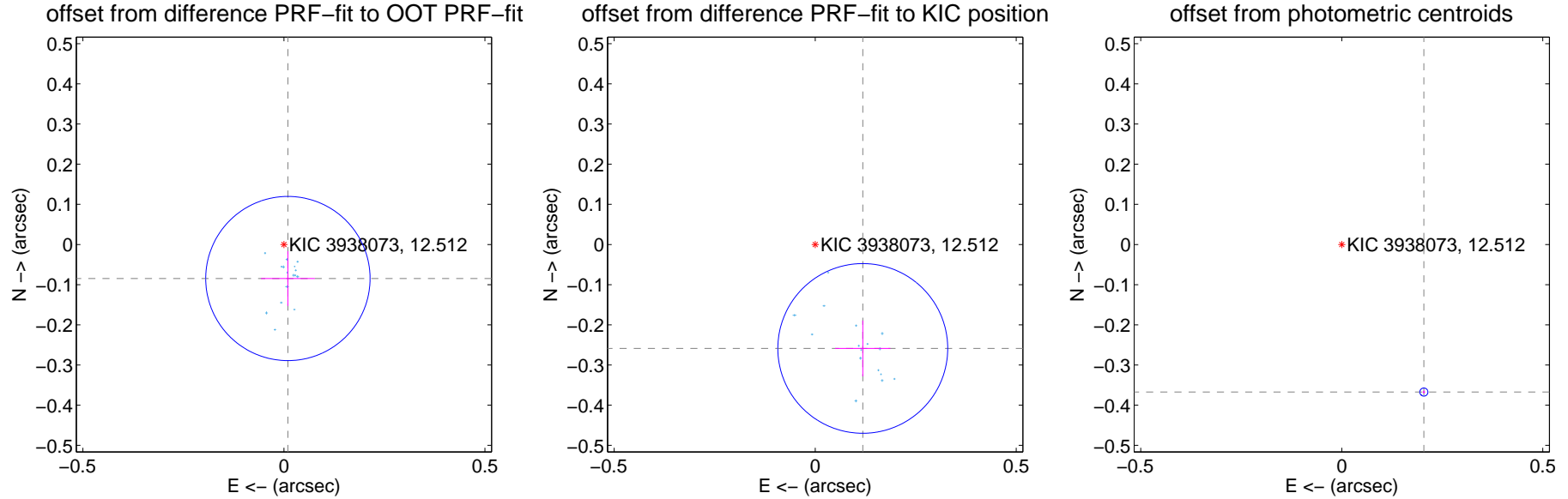
DV Centroid Data

Supplemental centroid analysis for 003938073-02. Kepler magnitude: 12.51. Transit SNR 2290.46

There are 16 quarters with good PRF difference image offsets

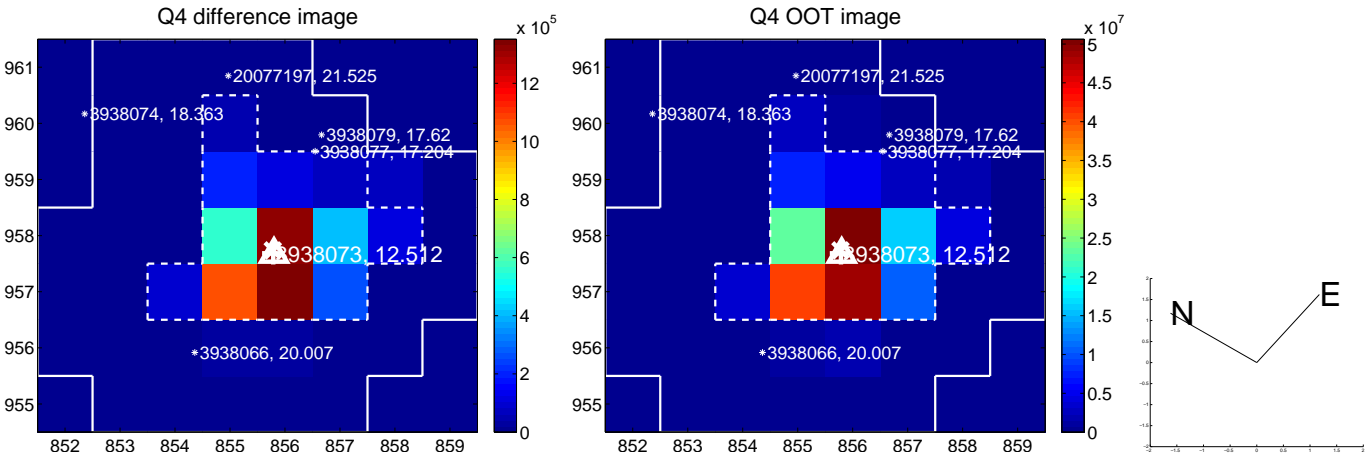
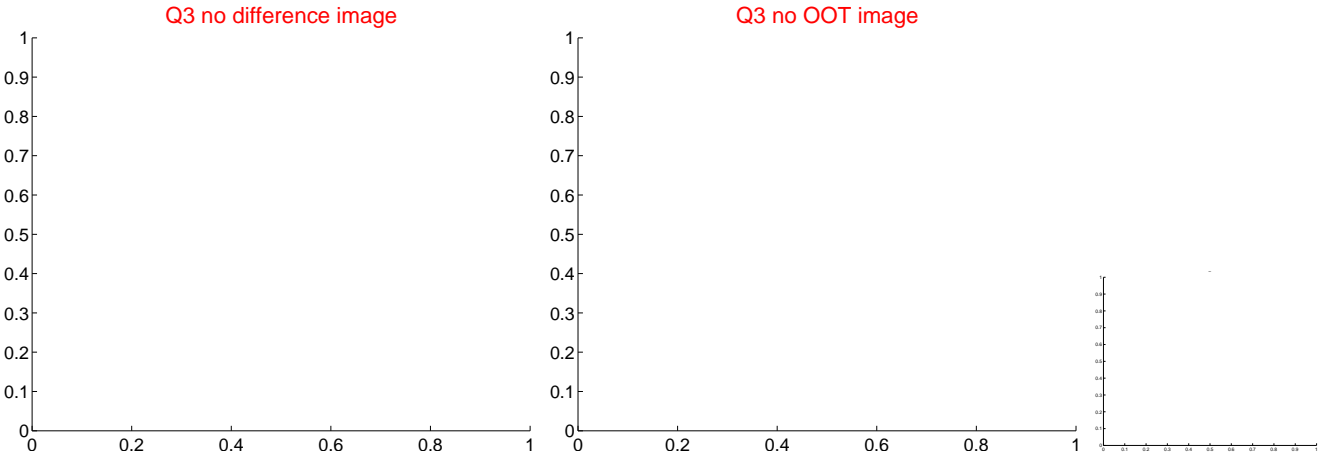
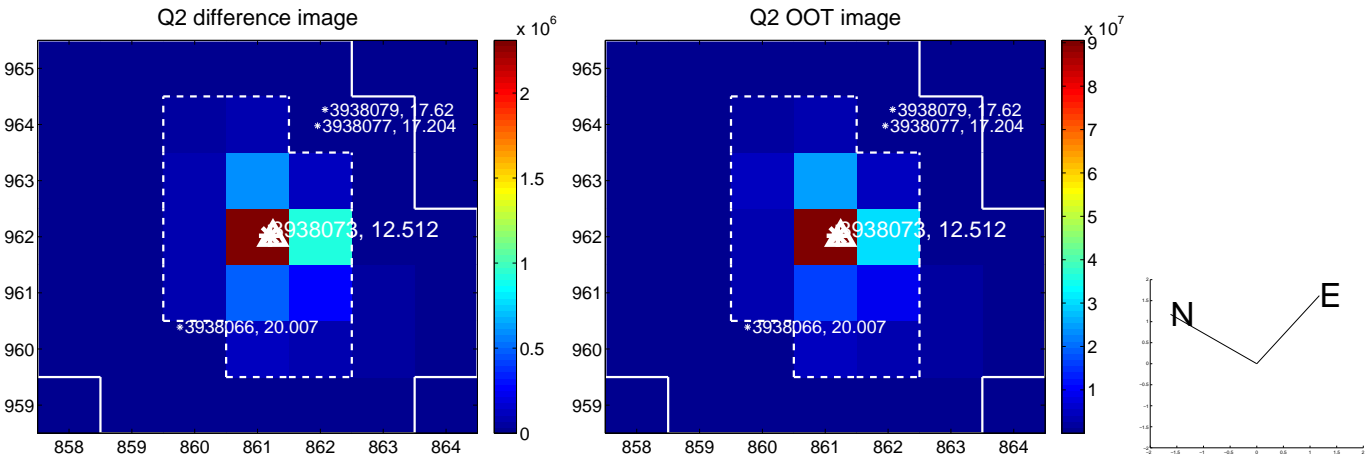
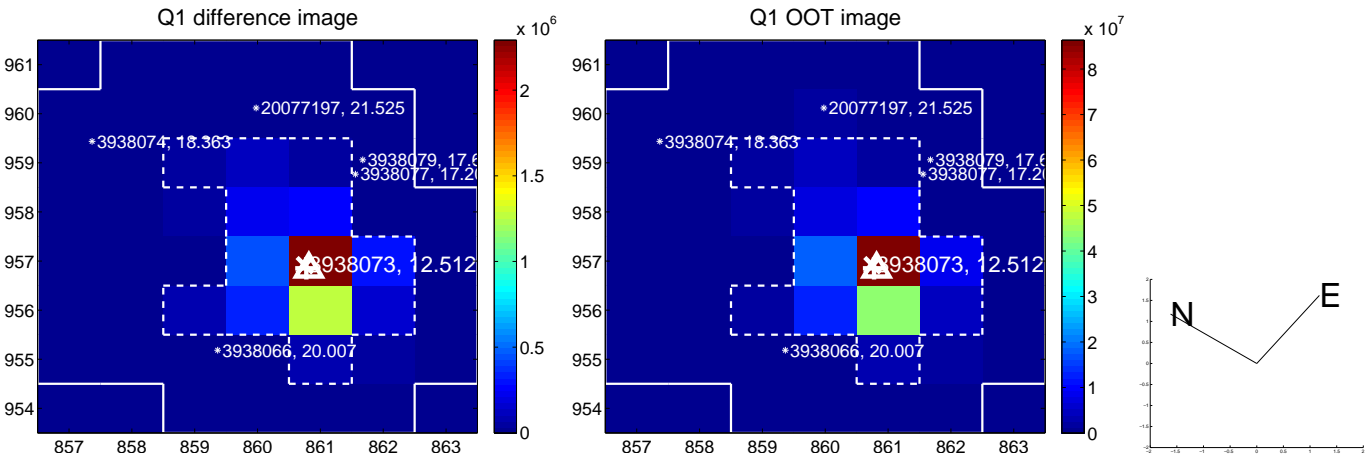
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.085 ± 0.068	1.25	-0.010 ± 0.067	-0.085 ± 0.068
PRF-fit source offset from KIC position	0.285 ± 0.070	4.04	-0.118 ± 0.069	-0.259 ± 0.069
photometric centroid source offset	0.42 ± 0.00	124.91	-0.20 ± 0.00	-0.37 ± 0.00

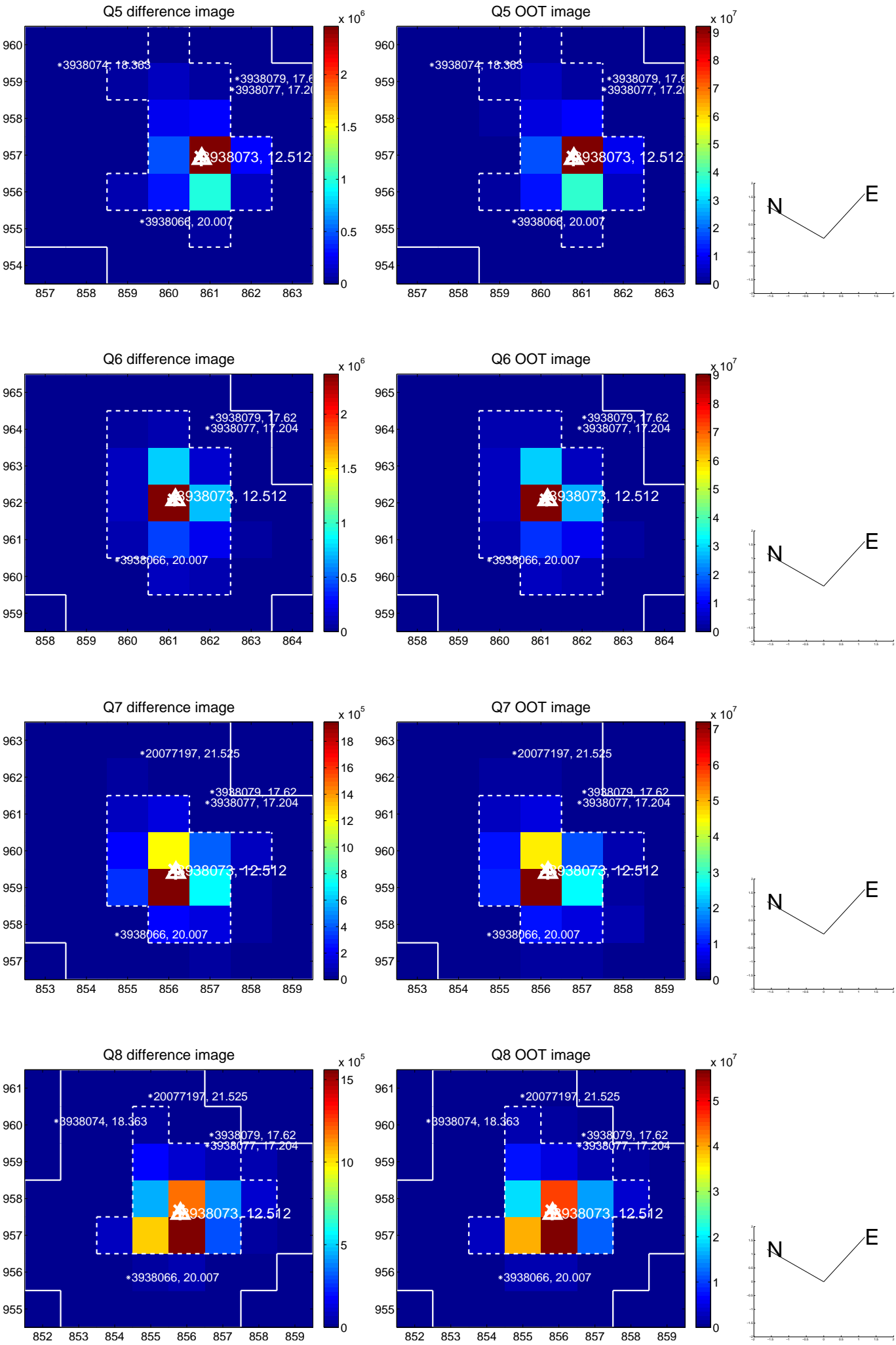


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

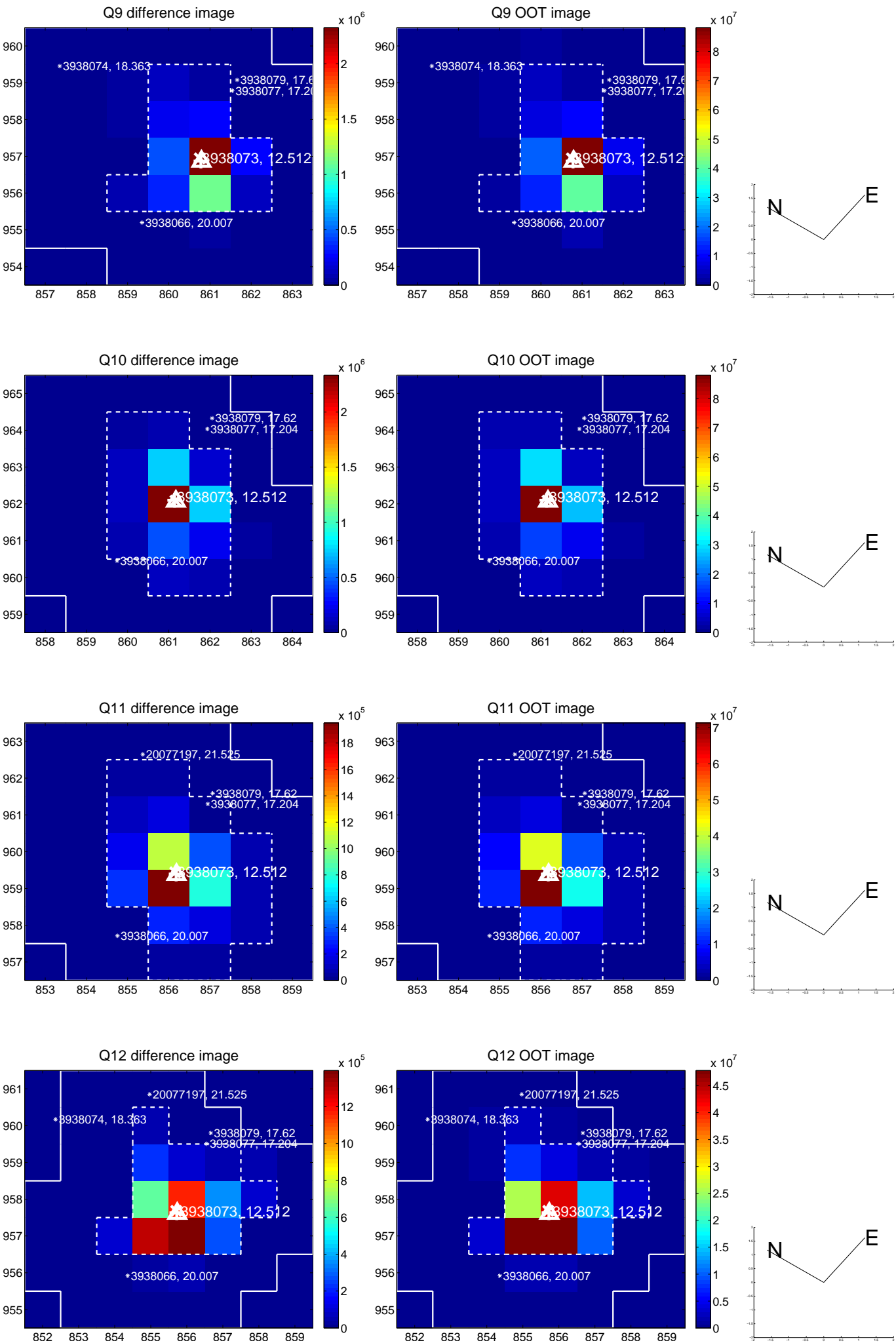
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



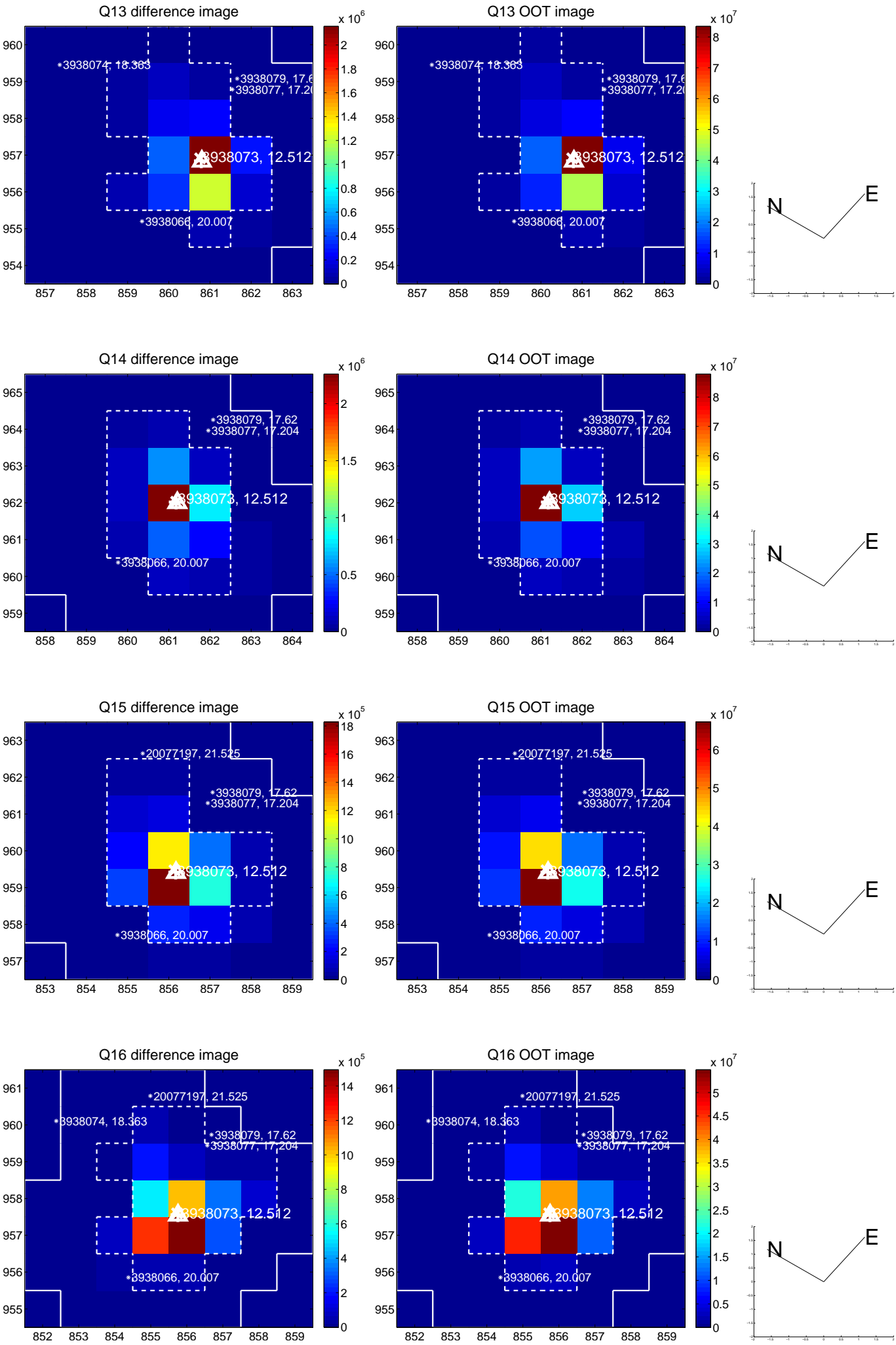
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



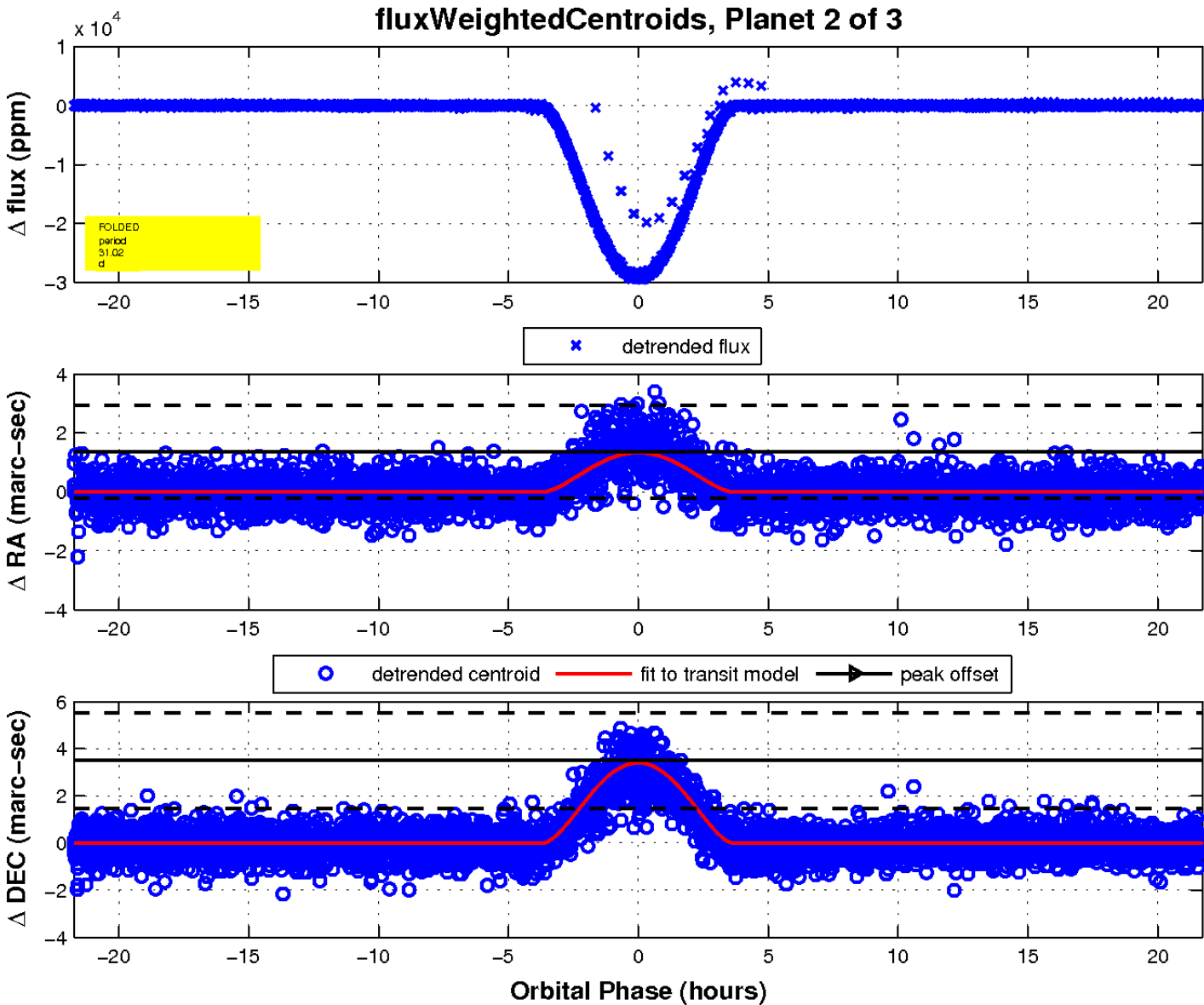
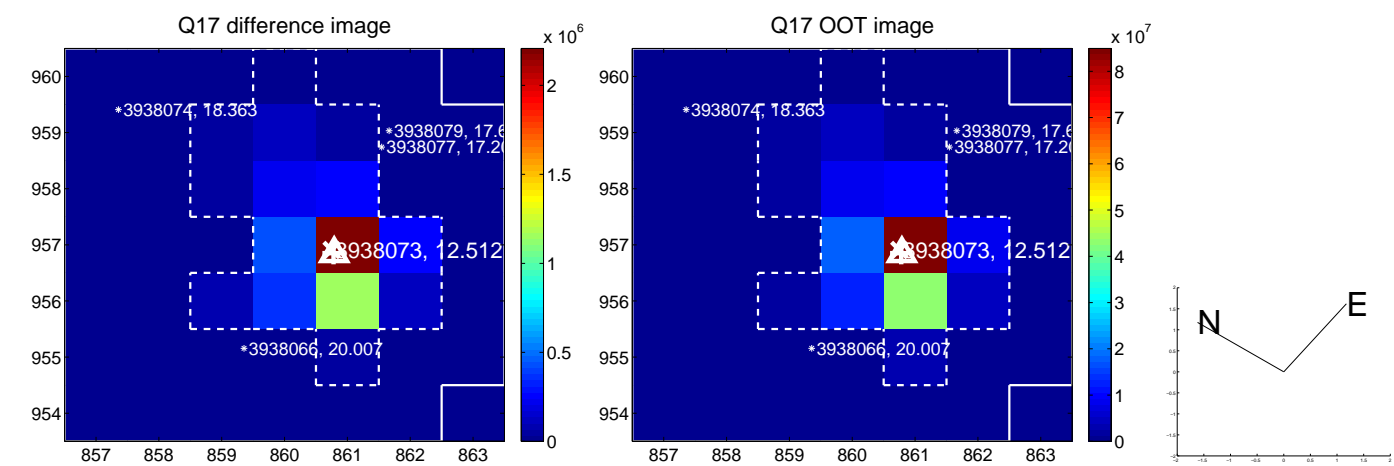
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

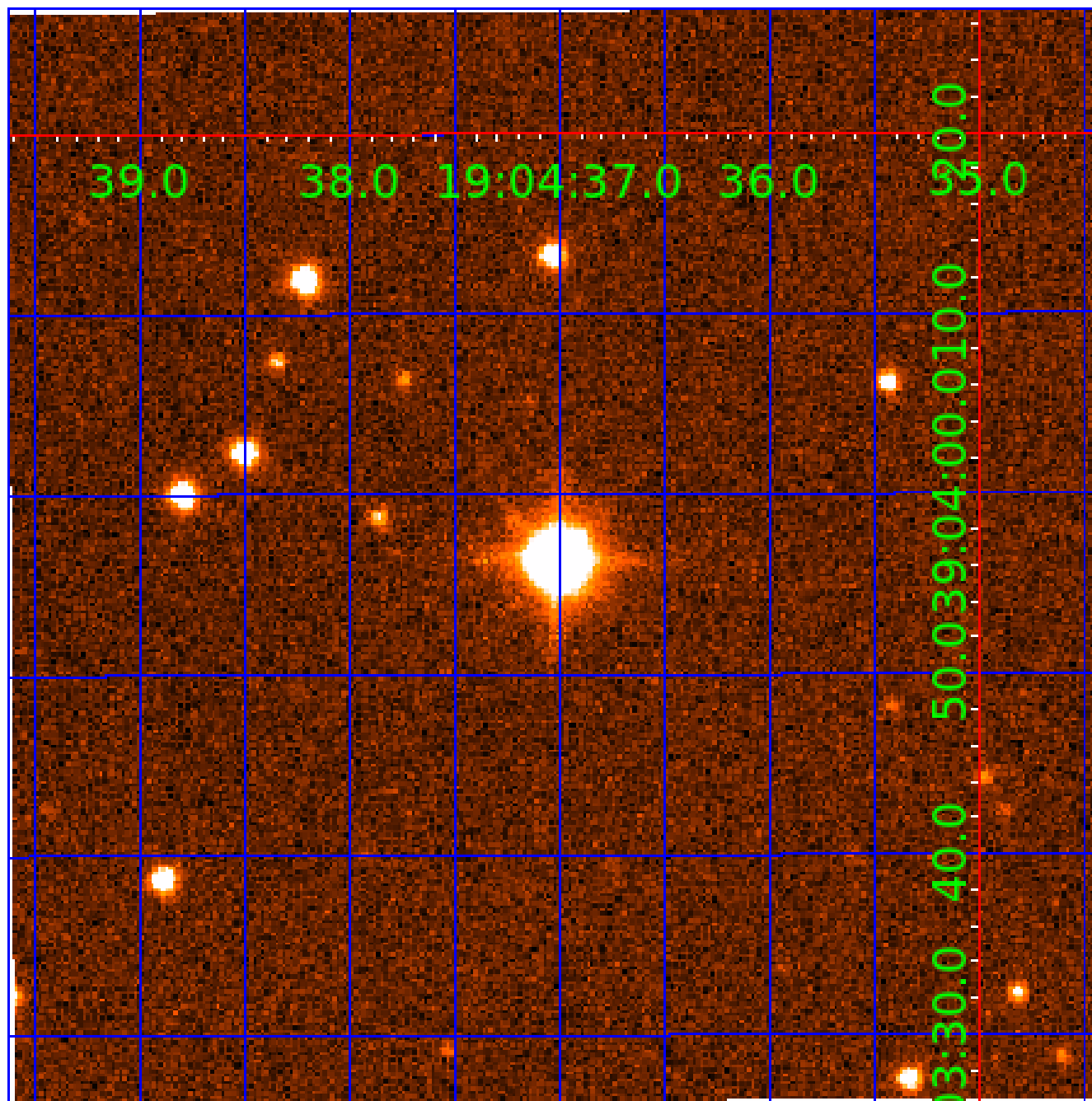


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003938073

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})
003938073-01	OBS	6373.01	31.024307	158.865234	96031.7	7.632	7443.9	5858.0	1.74	6011	80.96	89.05
003938073-02	OBS	No	31.024316	135.088904	29083.3	7.244	2403.0	2290.5	1.74	6011	50.31	89.05
003938073-03	OBS	No	230.953504	260.282129	1534.1	49.350	23.7	23.5	1.74	6011	12.92	6.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003938073-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
003938073-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
003938073-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

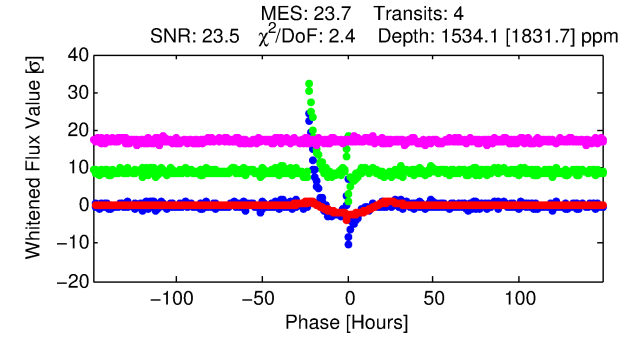
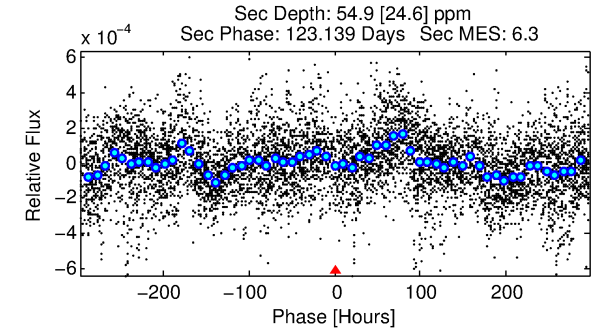
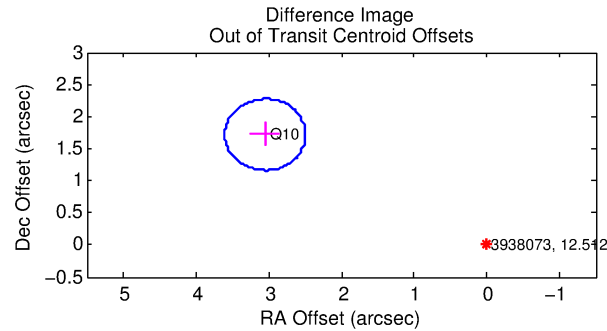
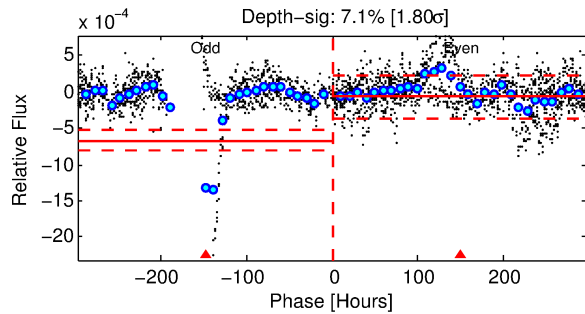
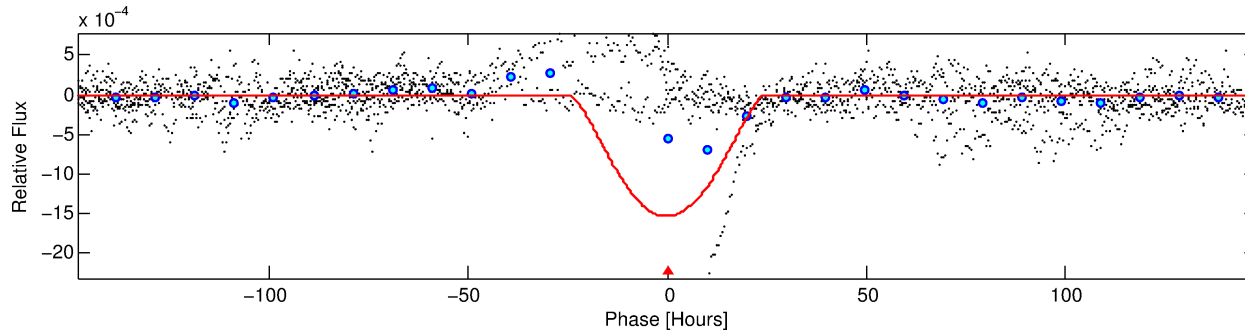
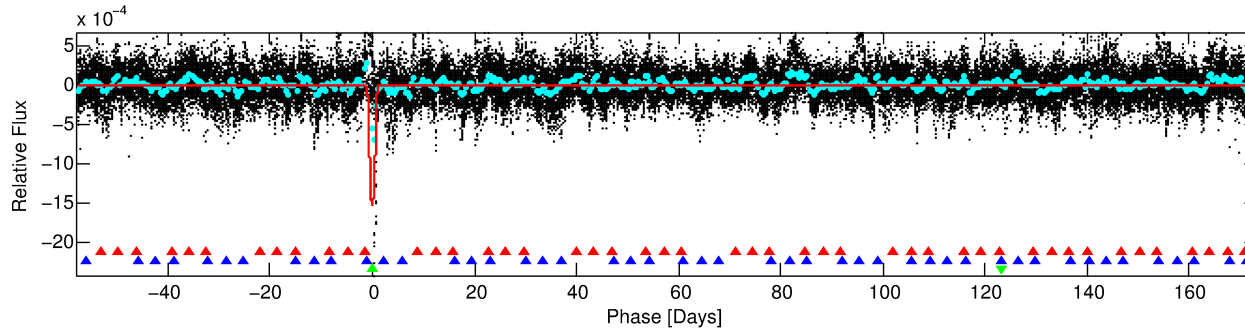
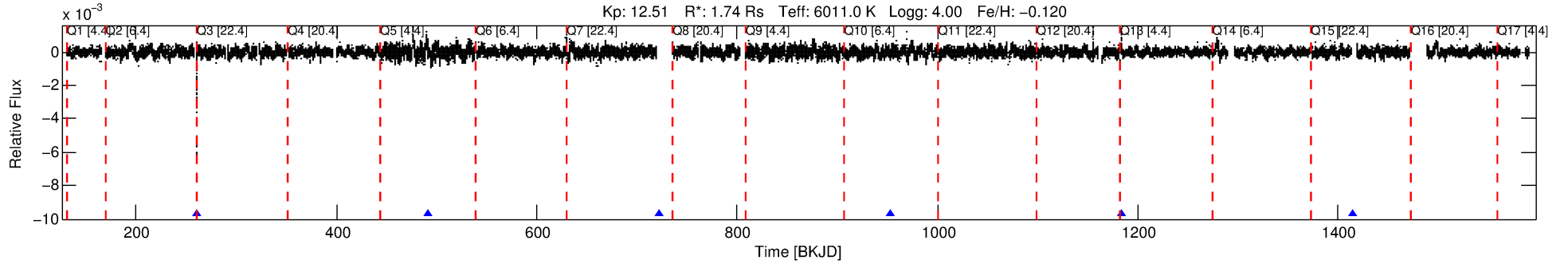
Ephemeris Match Information For 003938073-03

No Significant Match Found

DV One-Page Summary

KIC: 3938073 Candidate: 3 of 3 Period: 230.954 d

KOI: K06373 Corr: No Ephemeris Match



DV Fit Results:

Period = 230.95350 [0.02860] d
Epoch = 260.2821 [0.0994] BKJD
Rp/R* = 0.0680 [0.0963]
a/R* = 13.45 [4.51]
b = 1.00 [0.08]
Seff = 6.13 [2.93]
Teq = 401 [48] K
Rp = 12.92 [18.71] Re
a = 0.7608 [0.2213] AU
Ag = 104.77 [304.42] [0.34 σ]
Teffp = 1984 [1424] K [1.11 σ]

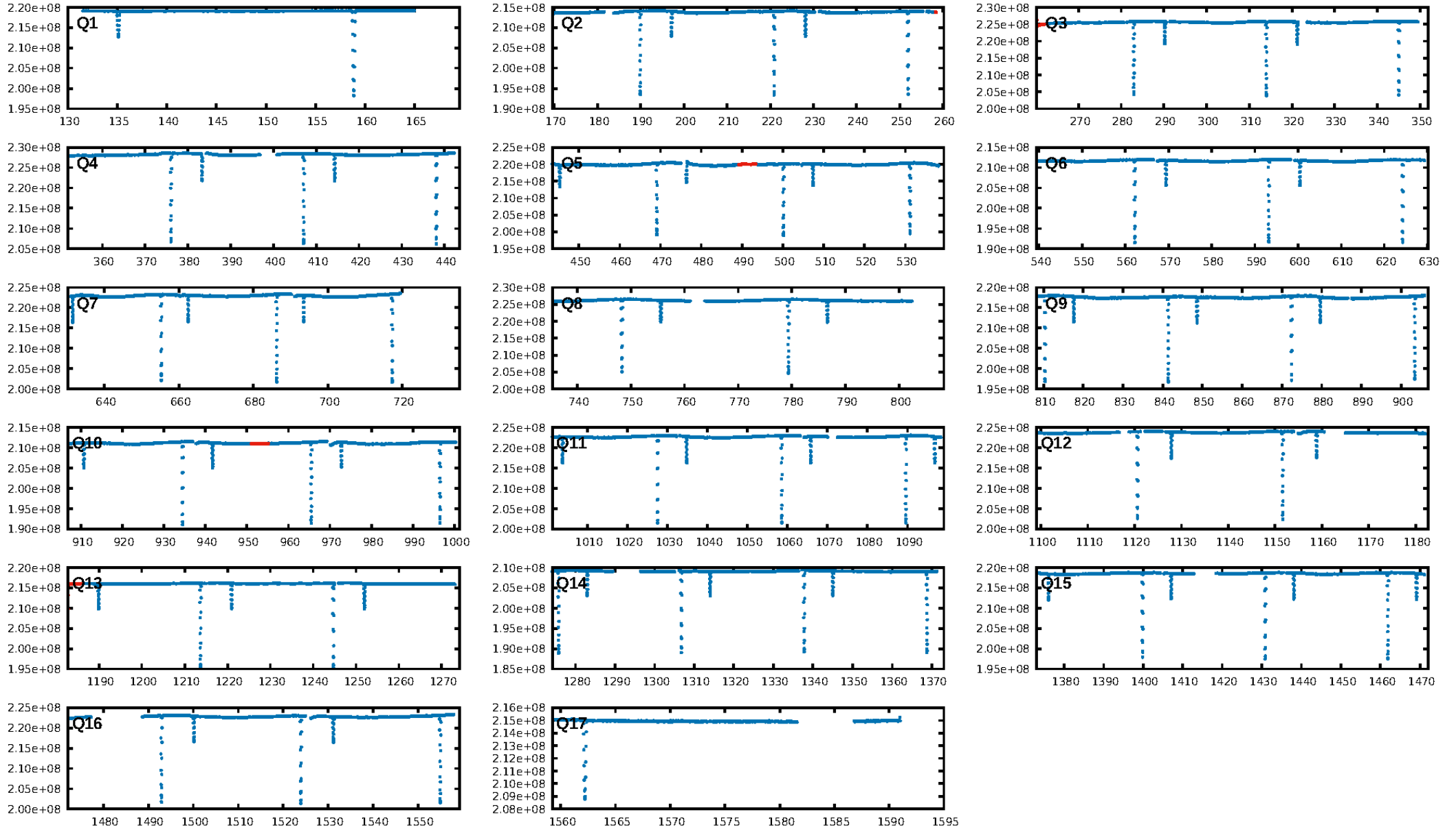
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [96.20 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 1.2%
Bootstrap-pfa: 1.93e-59
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.061
Centroid-sig: 0.0%
Centroid-so: 0.290 arcsec [2.03 σ]
OotOffset-rm: 3.498 arcsec [18.89 σ]
KicOffset-rm: 3.494 arcsec [18.90 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

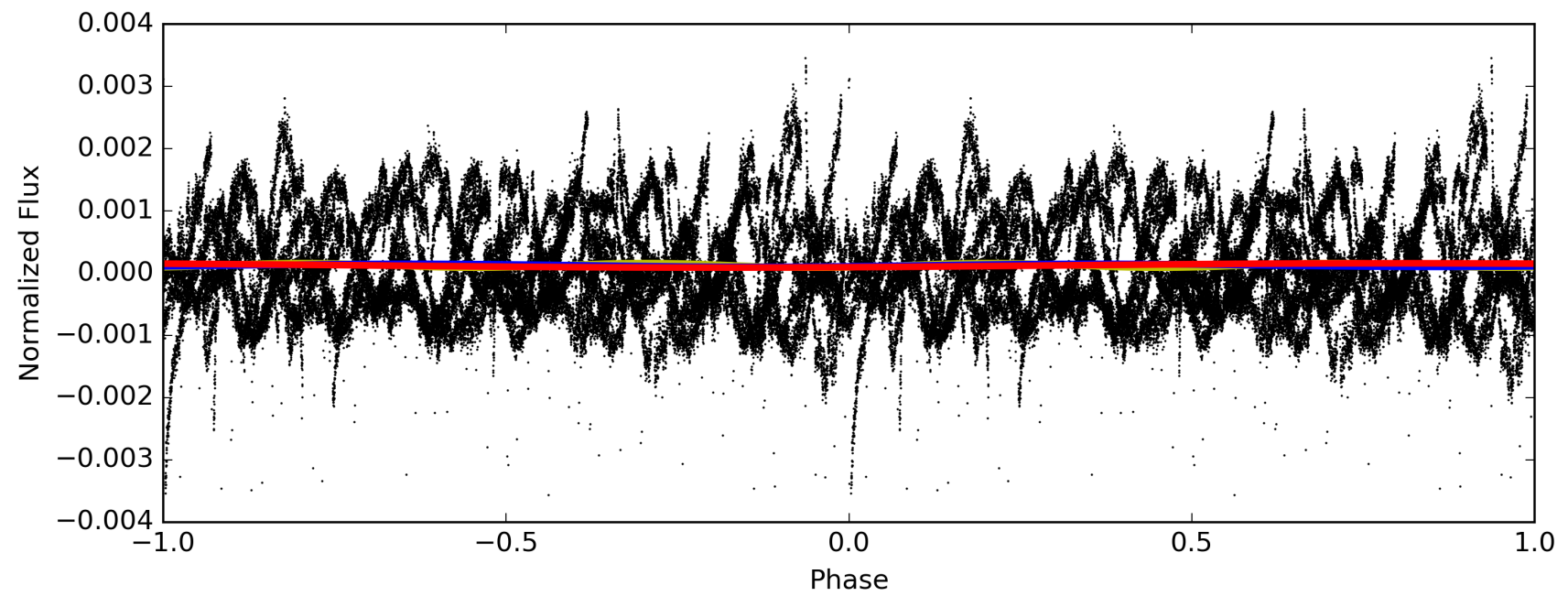
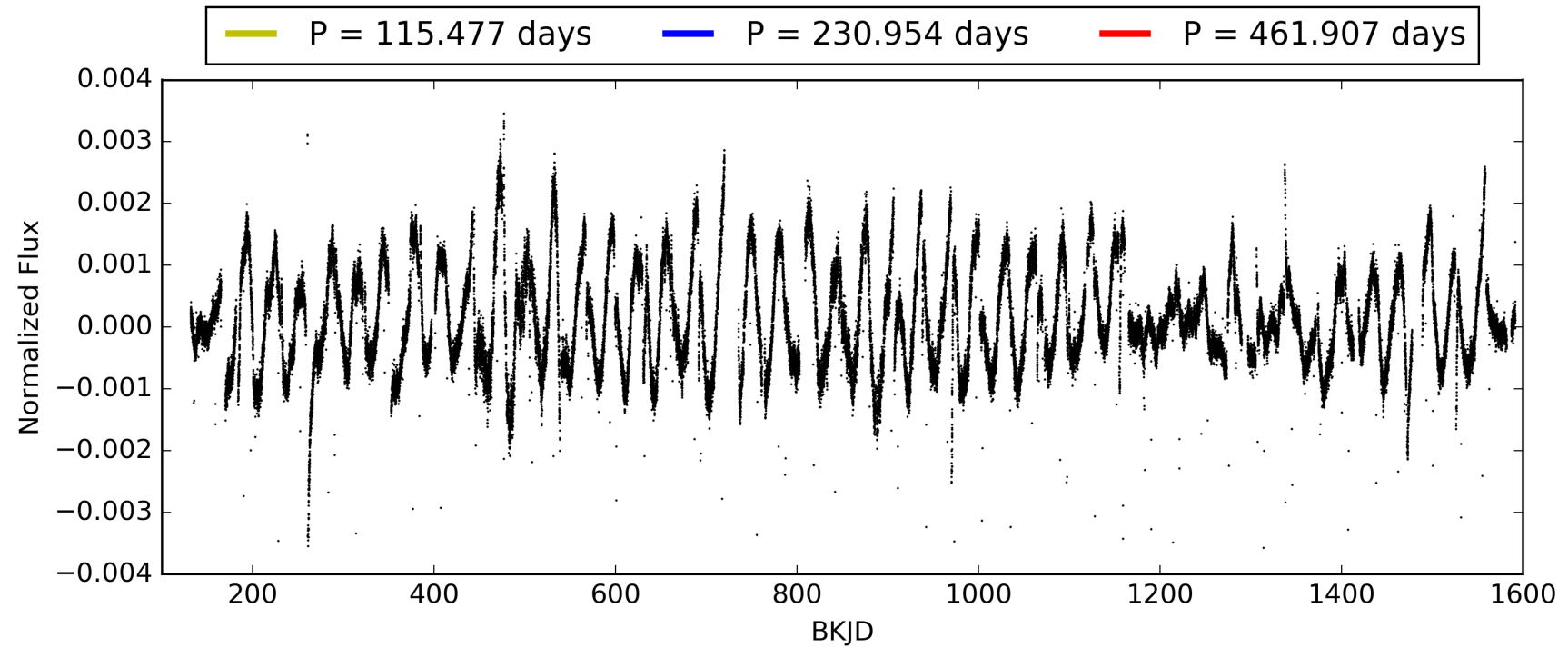
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 15:52:56 Z

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

TCE 003938073-03, PDC Light Curves

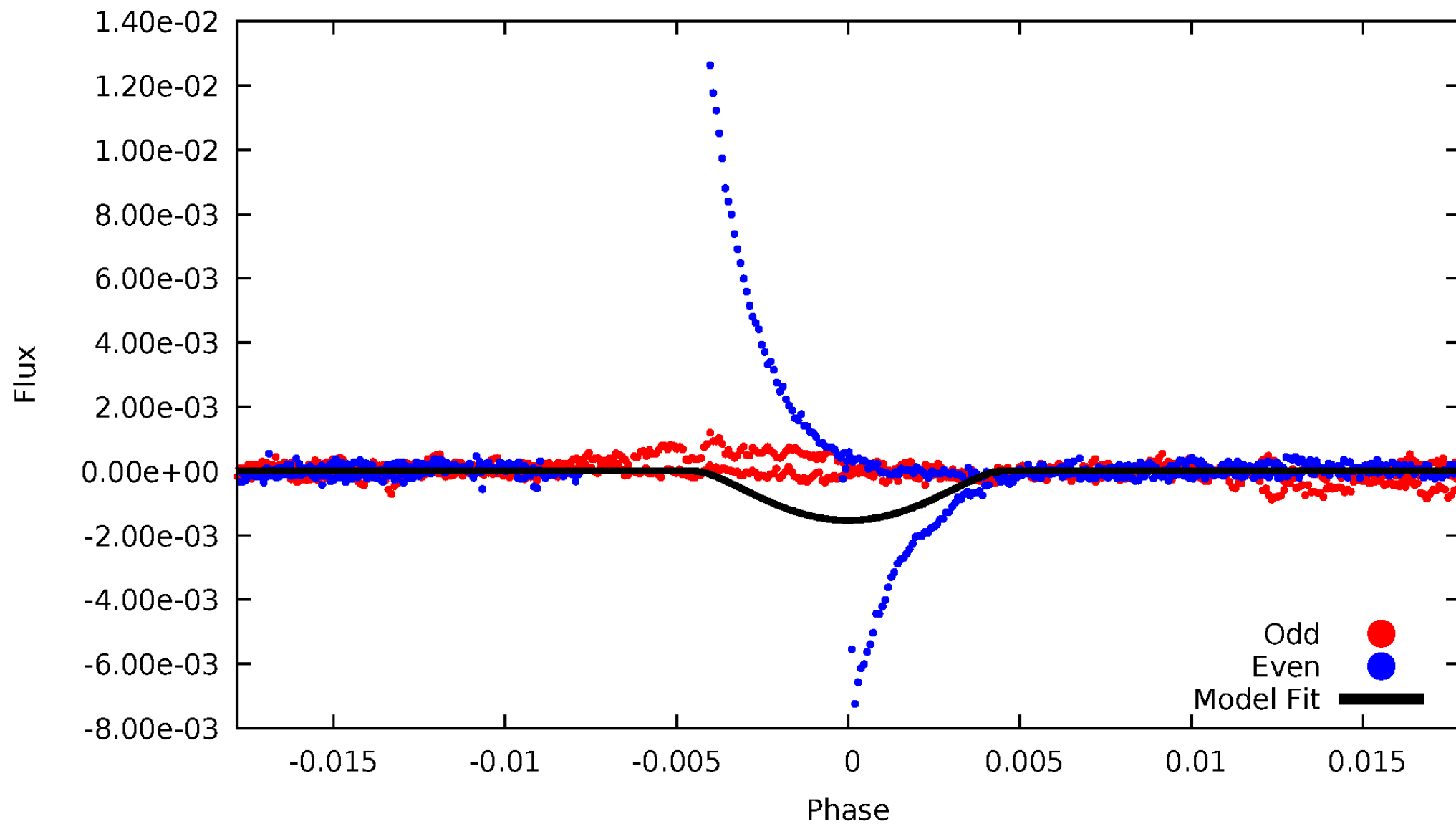


TCE 003938073-03



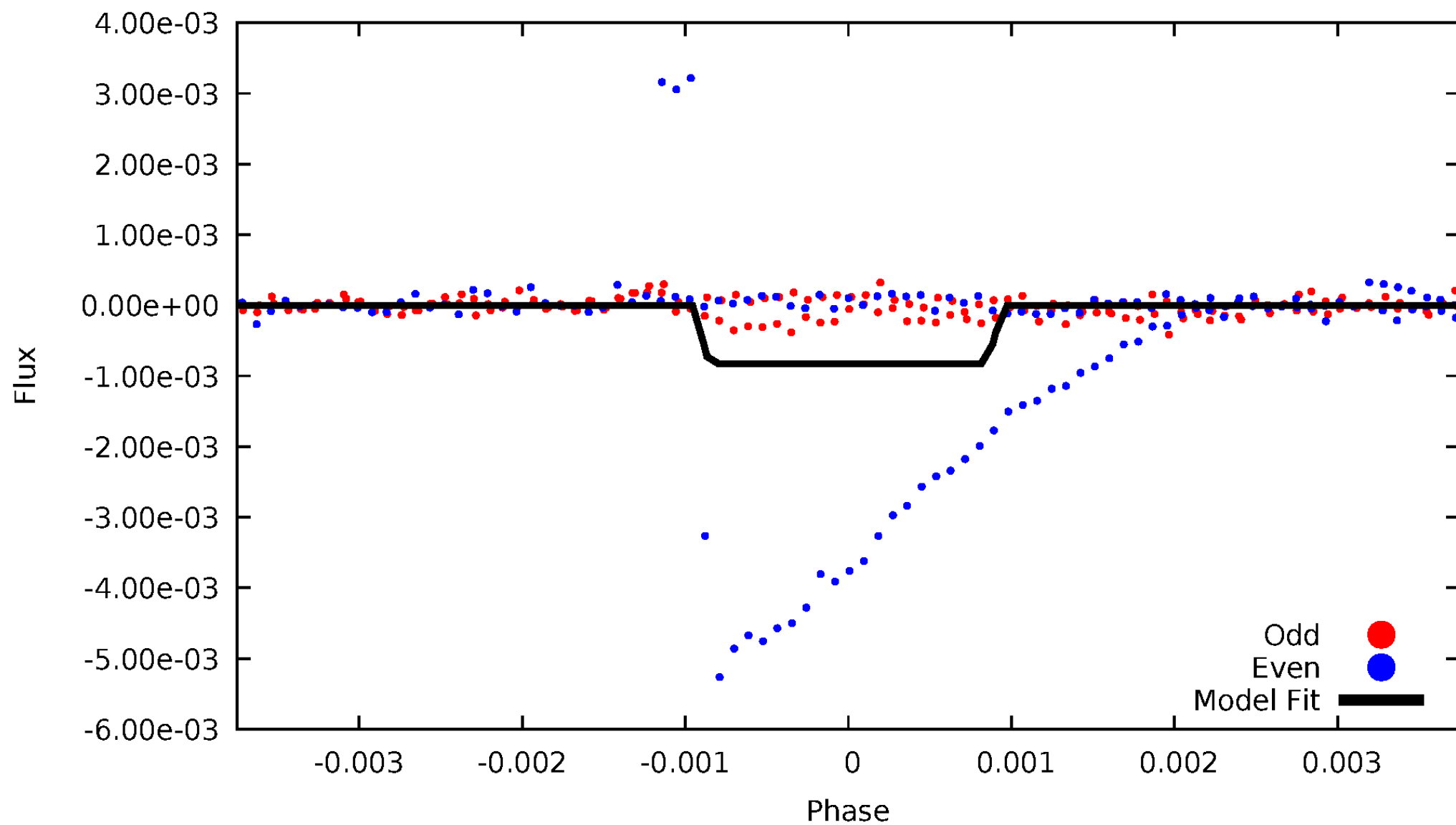
DV Odd/Even

TCE 003938073-03



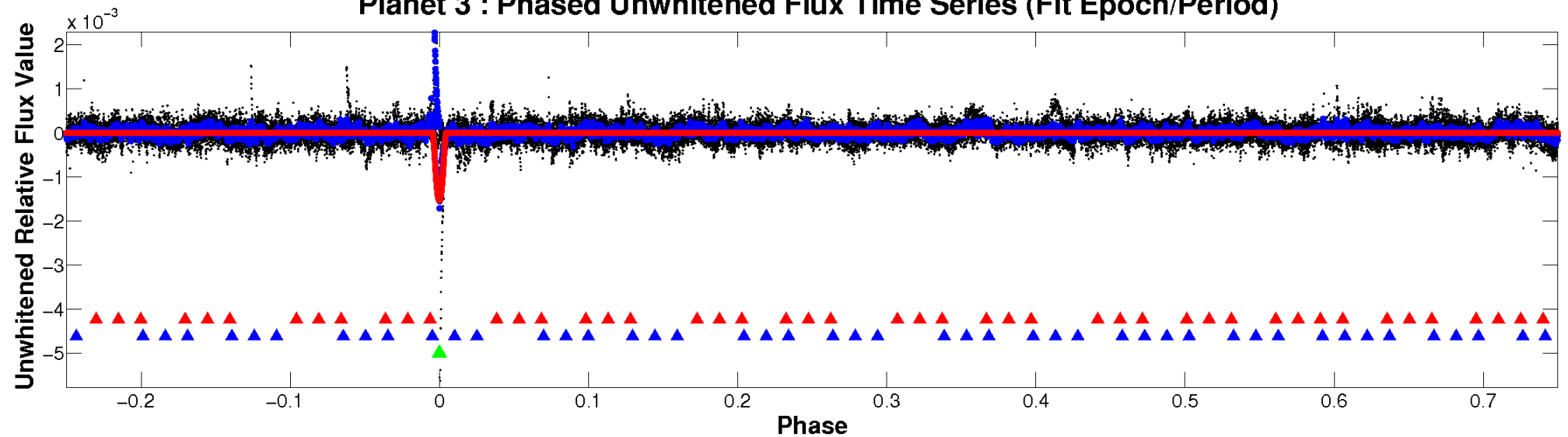
ALT Odd/Even

TCE 003938073-03

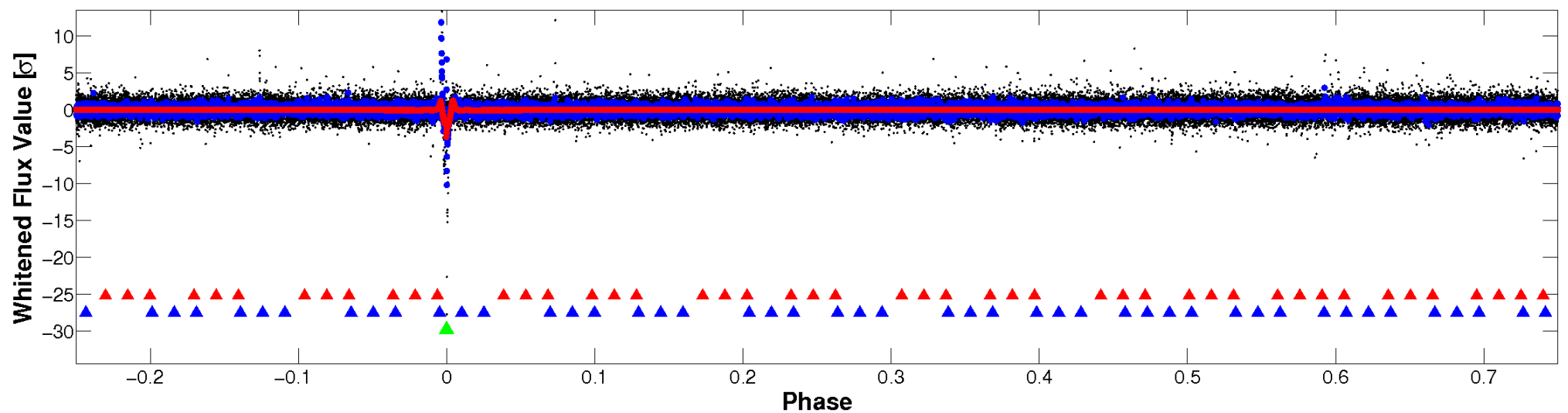


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

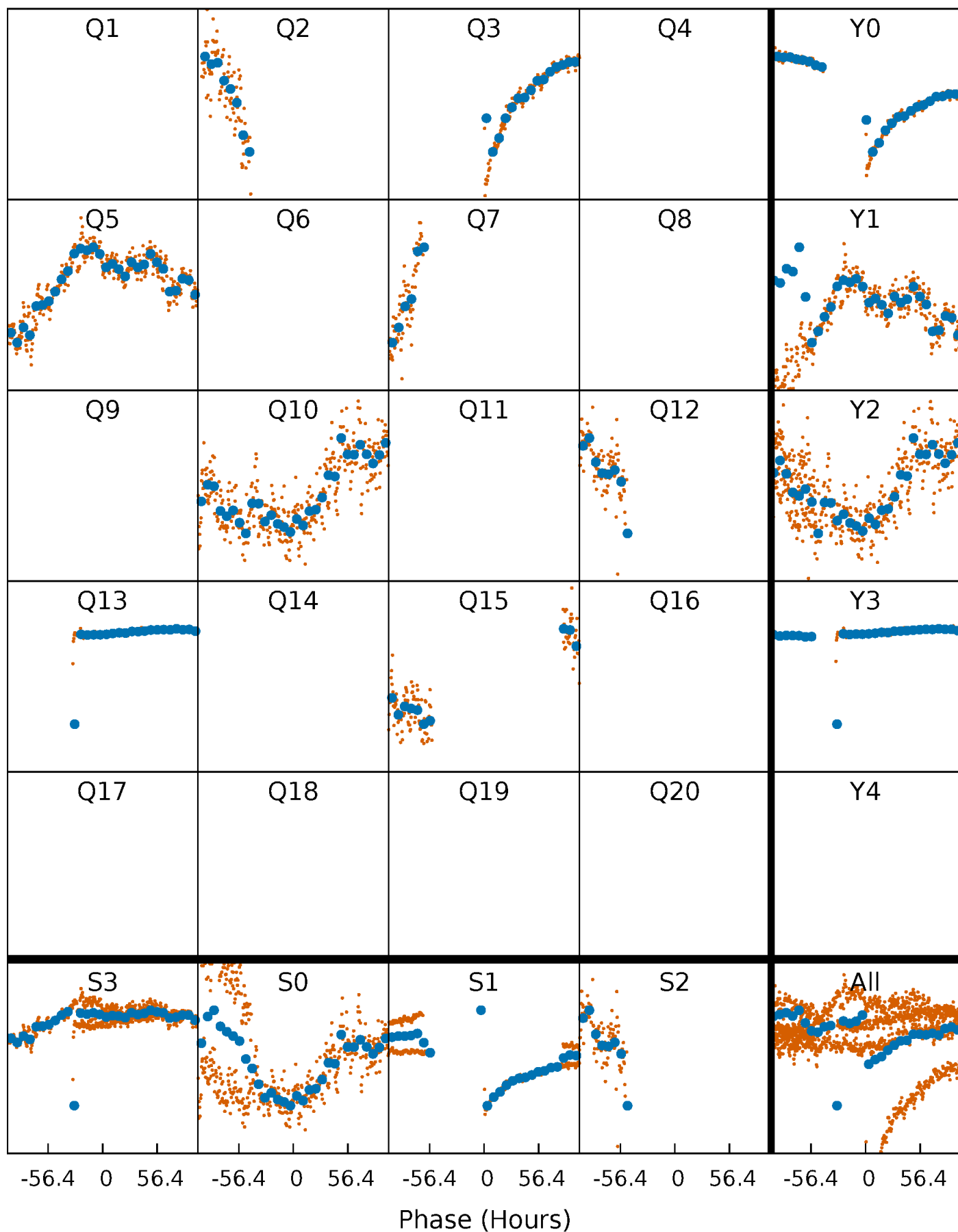


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



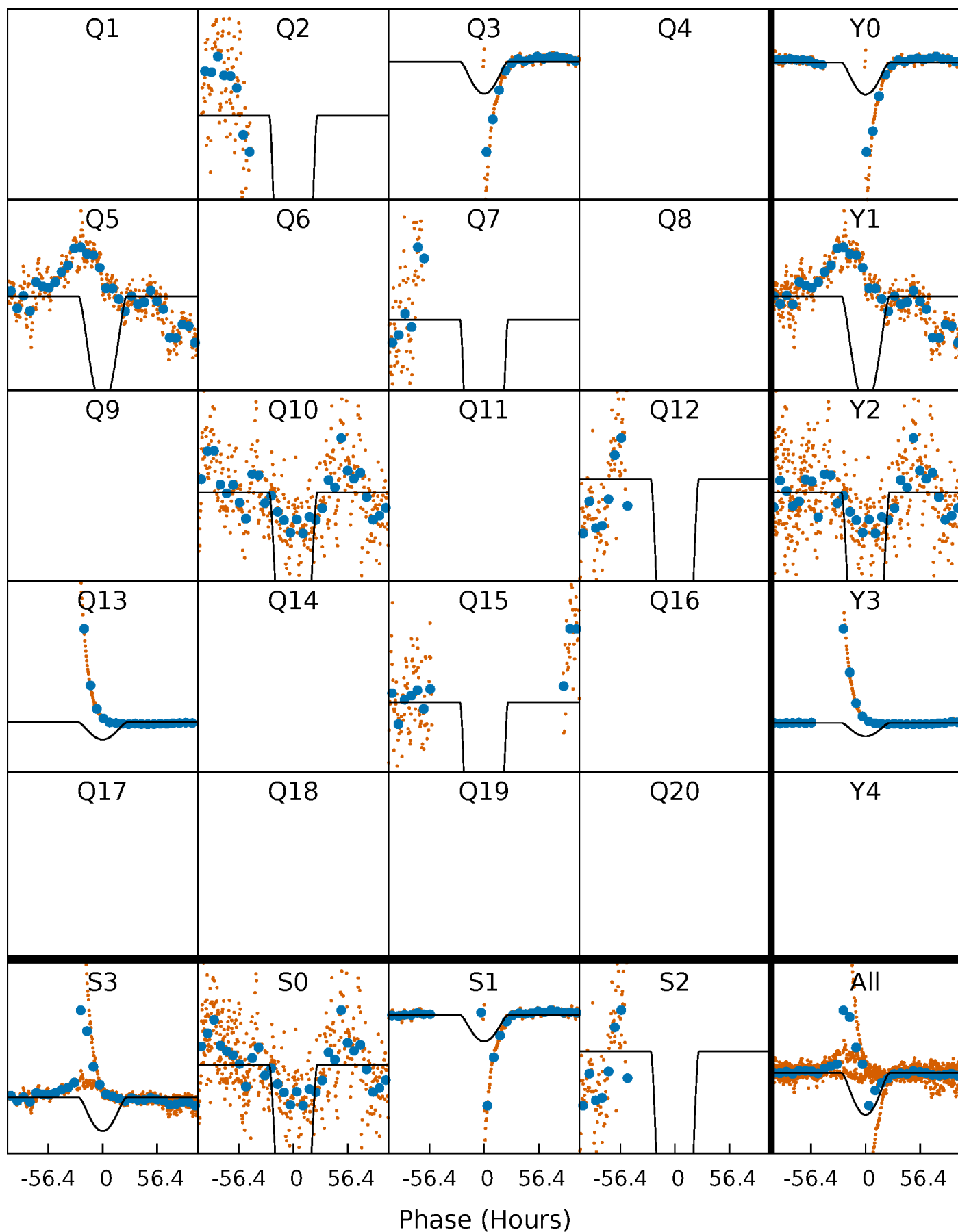
PDC Quarter-Phased Transit Curves

TCE 003938073-03 P=230.953504 Days $T_0=260.282129$ (BKJD)



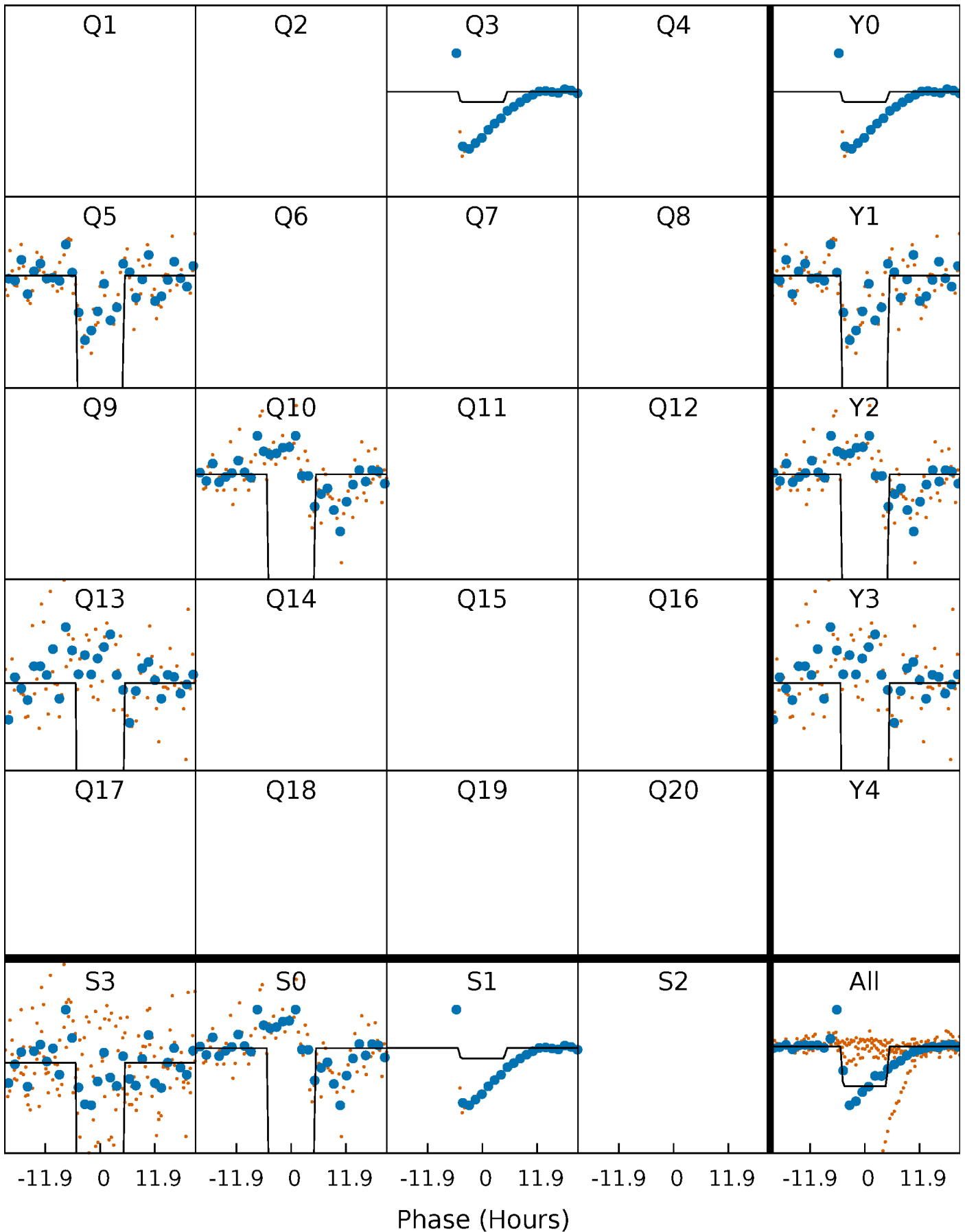
DV Quarter-Phased Transit Curves

TCE 003938073-03 P=230.953504 Days $T_0=260.282129$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

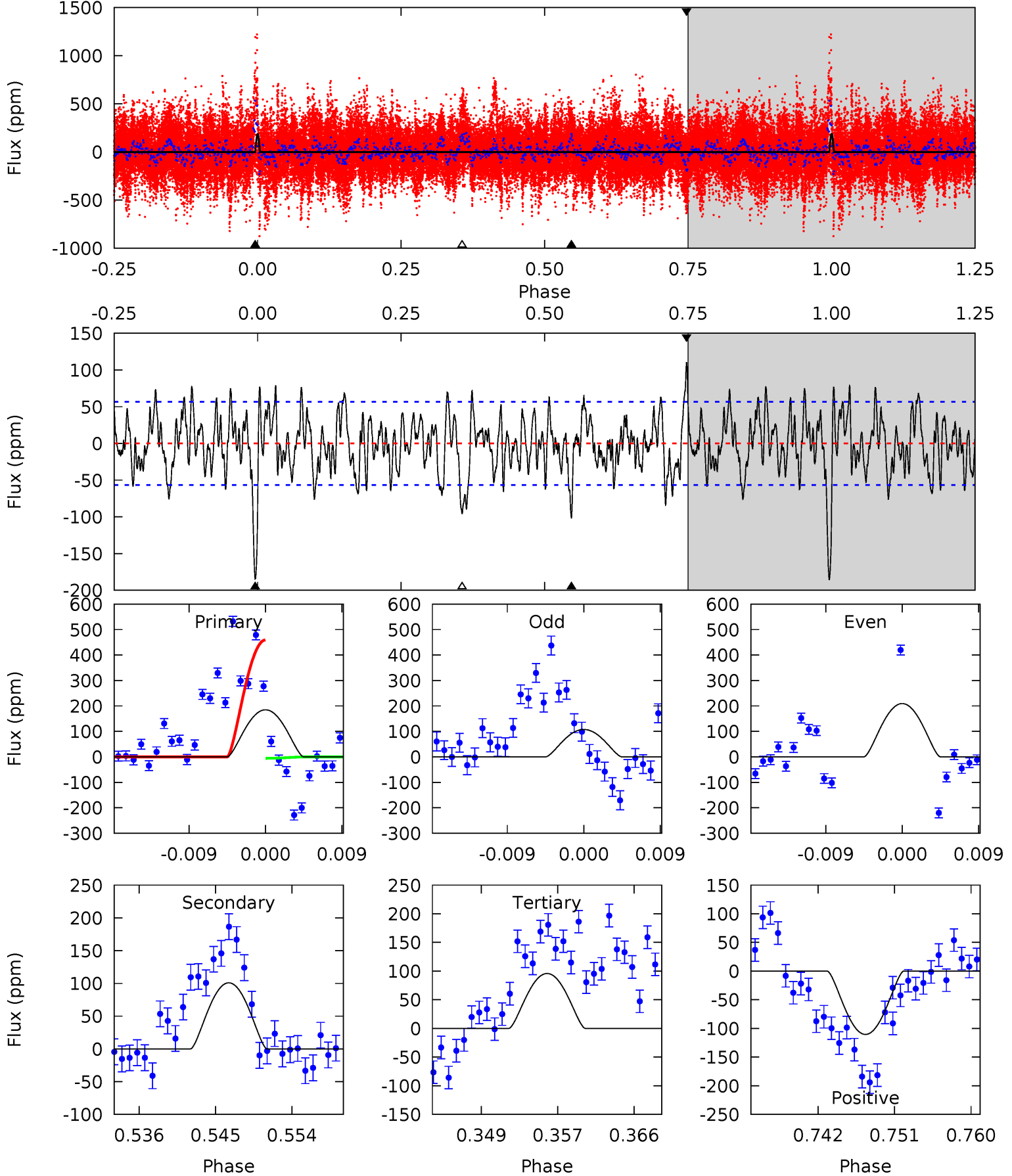
TCE 003938073-03 $P=230.899228$ Days $T_0=260.509009$ (BKJD)



DV Model-Shift Uniqueness Test

003938073-03, P = 230.953504 Days, E = 29.328625 Days

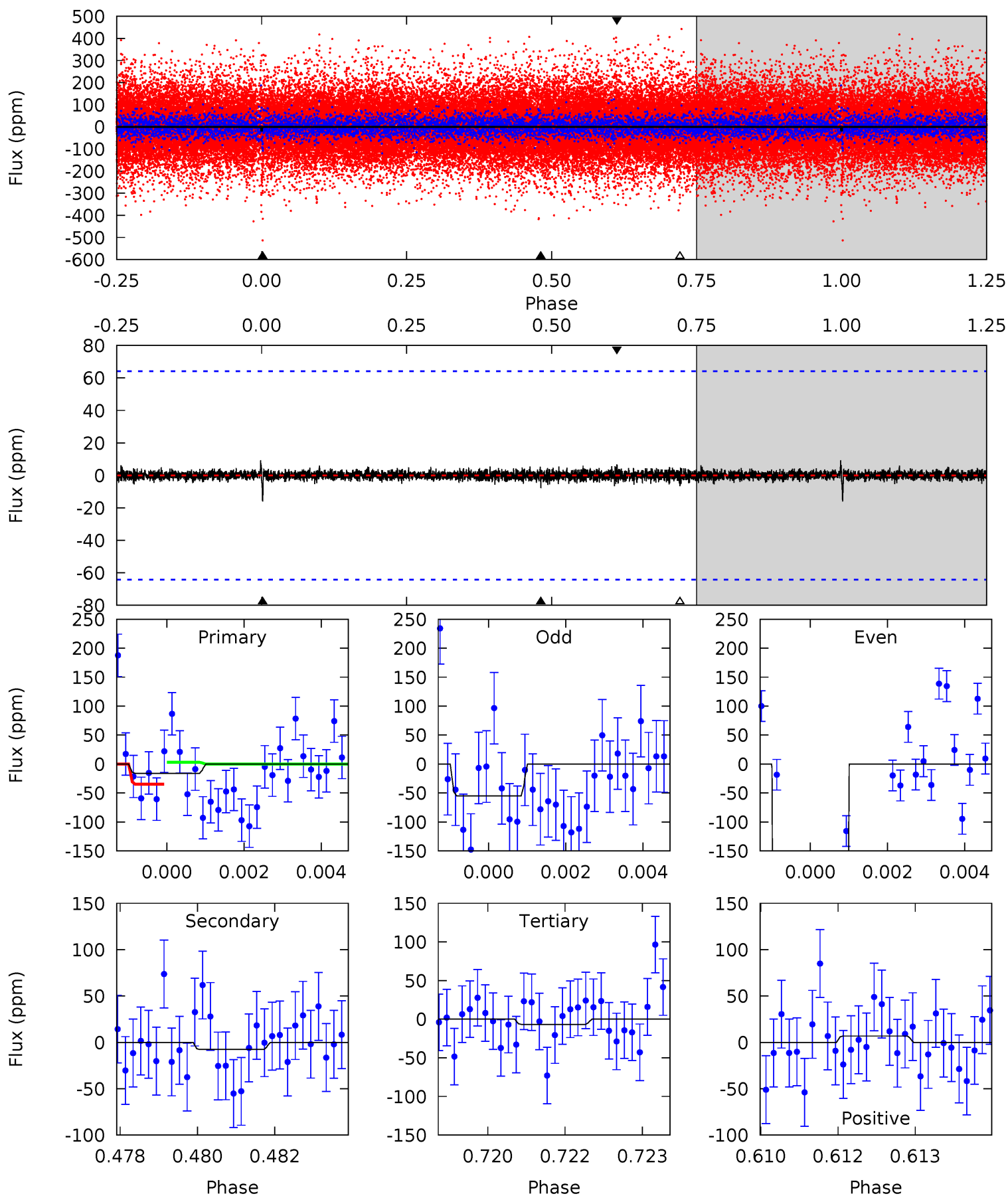
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	8.99	8.54	9.84	5.05	2.61	2.91	7.93	6.62	0.45	-0.86	5.15	-4.96	0.37	19.4



Alt Model-Shift Uniqueness Test

003938073-03, P = 230.899228 Days, E = 29.609781 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.33	0.64	0.56	0.56	5.33	3.10	0.14	0.78	0.77	0.08	0.07	75.5	15.8	0.36	1.34



Stellar Parameters For KIC 003938073

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6011^{+164}_{-164}	$3.998^{+0.273}_{-0.117}$	$-0.120^{+0.300}_{-0.250}$	$1.741^{+0.351}_{-0.527}$	$1.100^{+0.189}_{-0.154}$	$0.294^{+0.505}_{-0.104}$
	+3%/-3%	+7%/-3%	+250%/-208%	+20%/-30%	+17%/-14%	+172%/-35%
Source	PHO1	FLK73	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 003938073-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-101 ± 11	$18.25^{+15.64}_{-12.31}$	552^{+35}_{-49}	2688^{+1012}_{-375}	99^{+893}_{-70}
Alt.	-8 ± 12	$13.38^{+14.20}_{-8.69}$	553^{+35}_{-45}	2006^{+704}_{-4003}	$7.959^{+105.838}_{-14.561}$

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 $A_{obs} \gg 1.0$

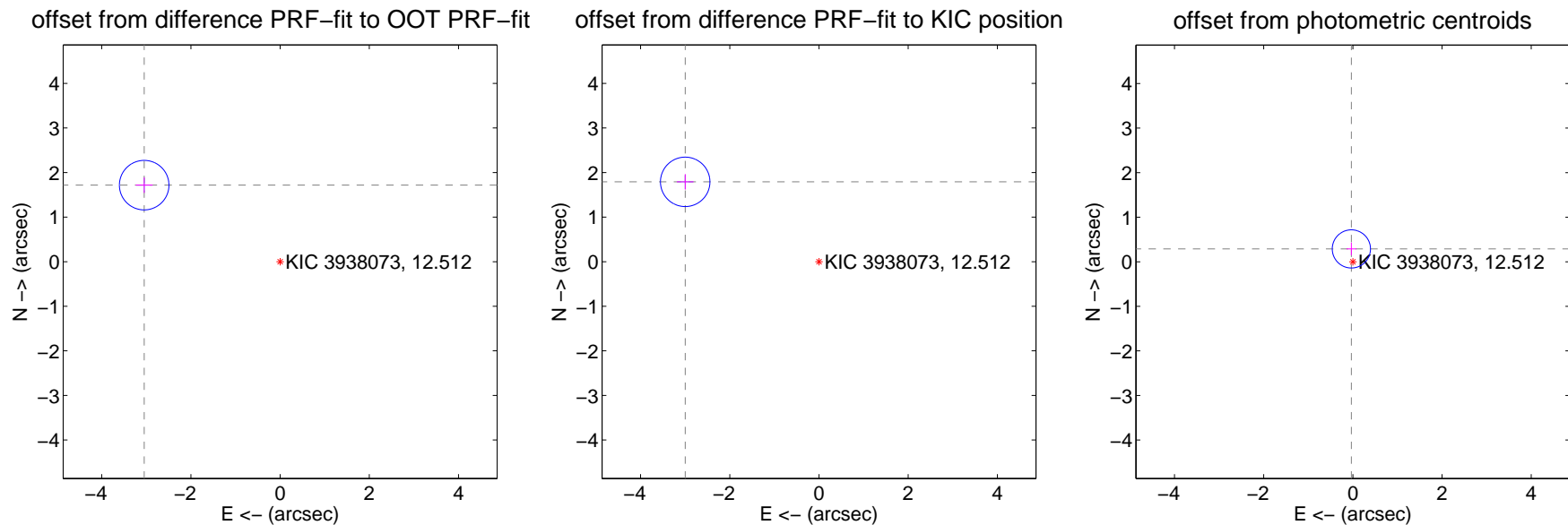
DV Centroid Data

Supplemental centroid analysis for 003938073-03. Kepler magnitude: 12.51. Transit SNR 23.54

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.498 ± 0.185	18.89	3.048 ± 0.189	1.718 ± 0.174
PRF-fit source offset from KIC position	3.494 ± 0.185	18.90	3.000 ± 0.189	1.792 ± 0.174
photometric centroid source offset	0.29 ± 0.14	2.03	0.03 ± 0.11	0.29 ± 0.14

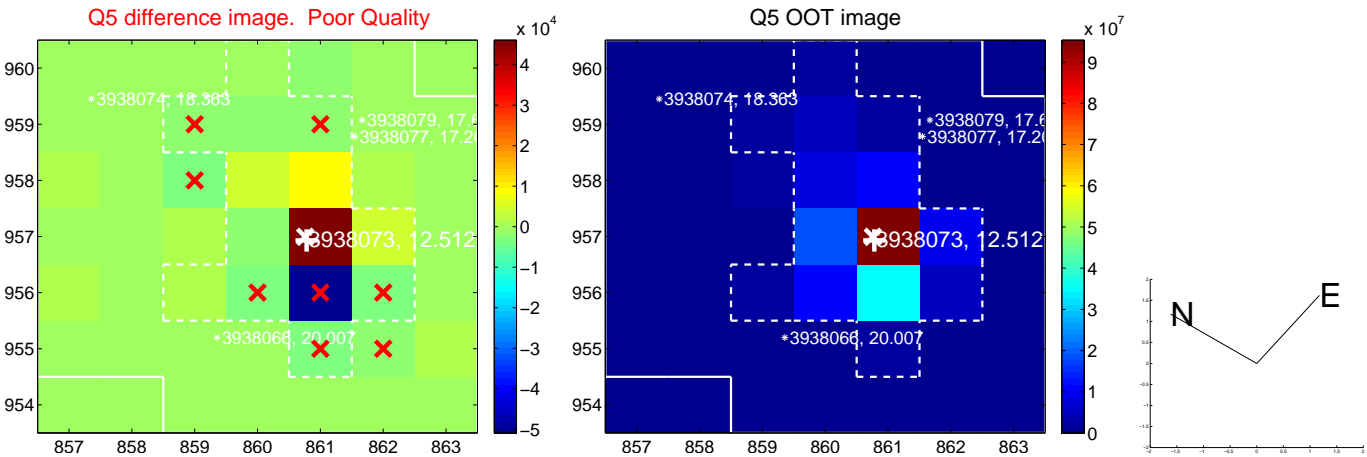


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

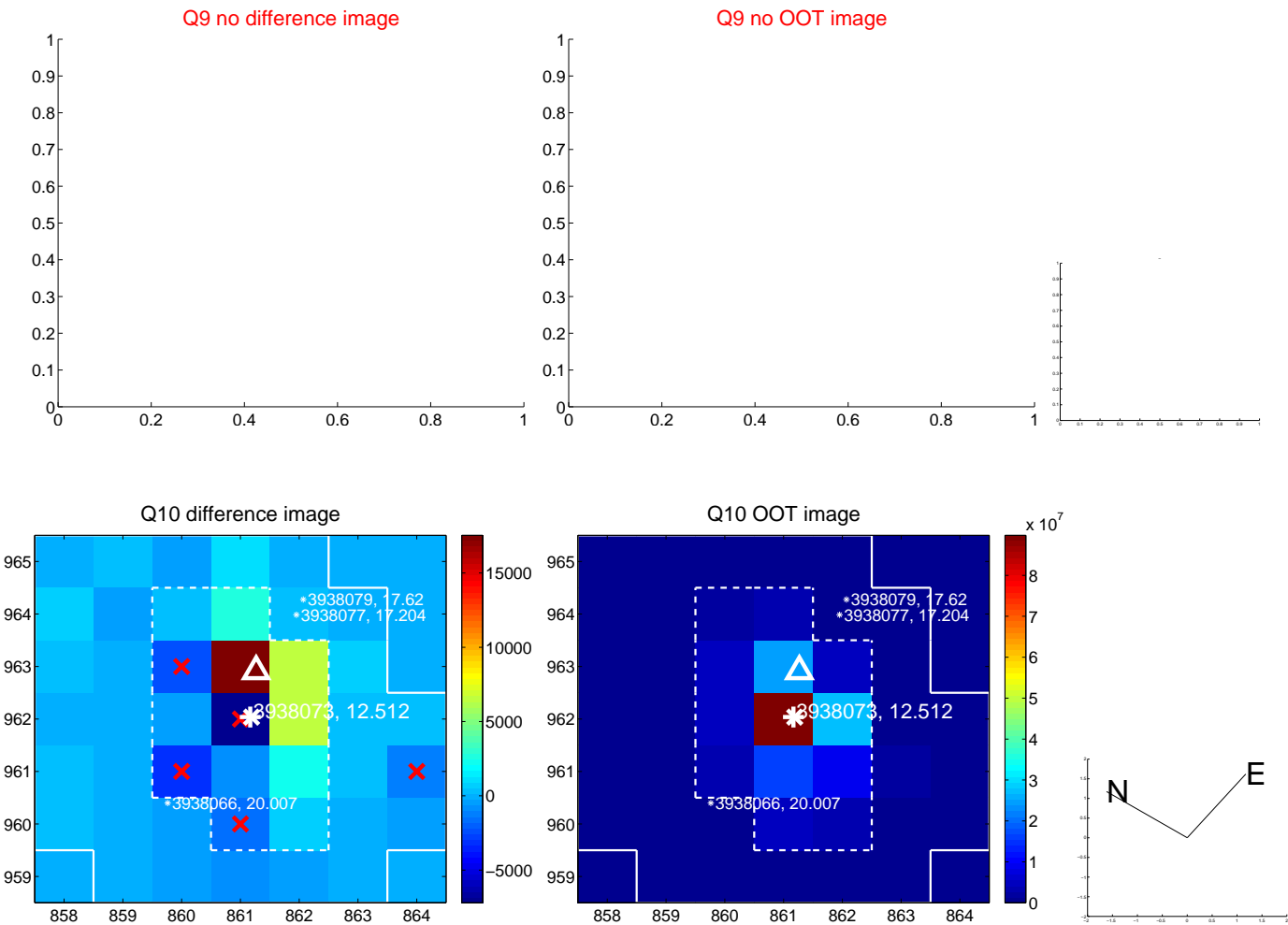
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



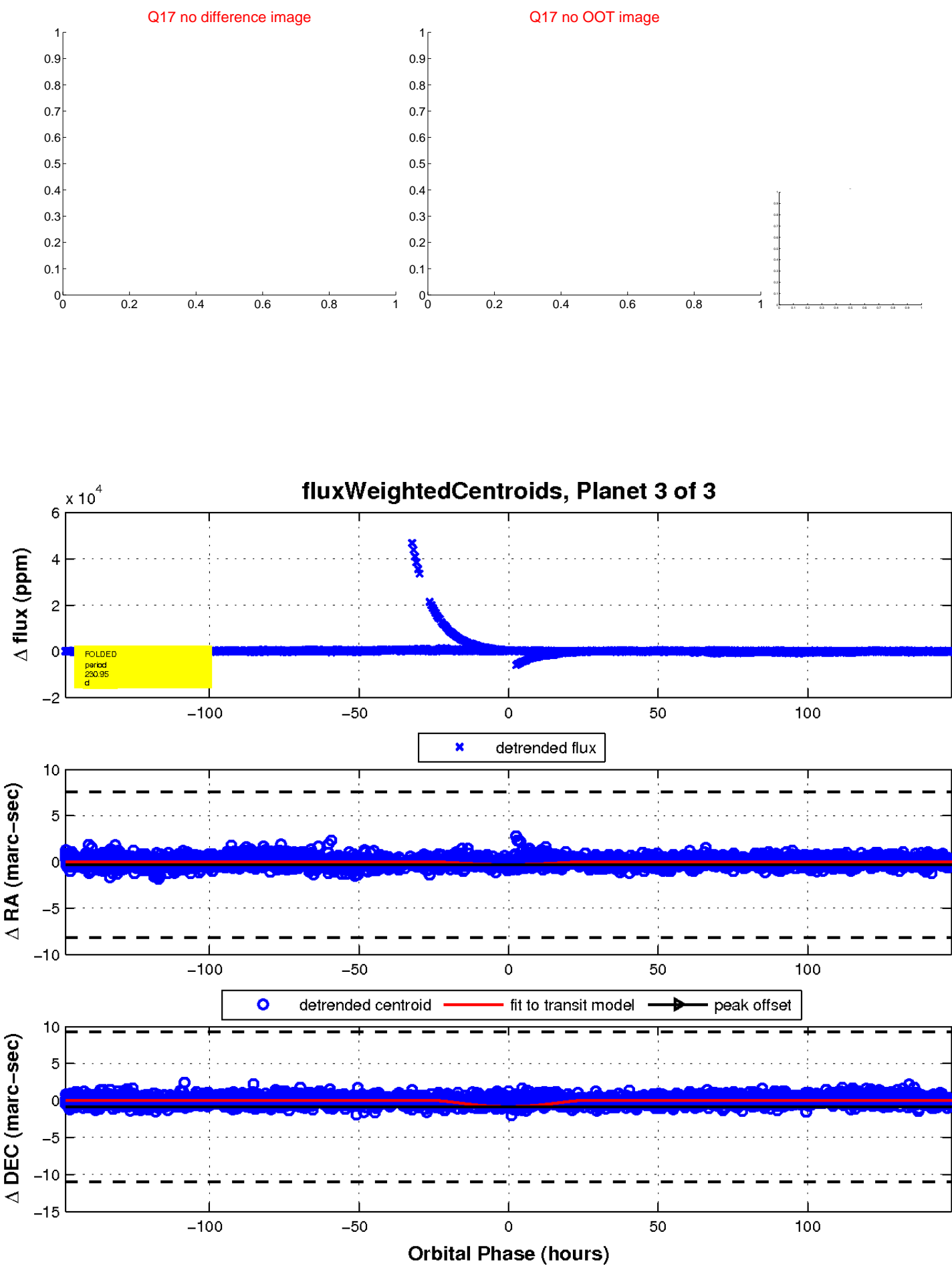
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

