

KIC 010874226

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})
010874226-01	OBS	1290.01	11.973613	139.250772	4746.8	2.618	168.3	169.5	0.94	6146	11.30	106.98
010874226-02	OBS	No	11.973608	132.805733	3814.2	4.242	161.2	163.3	0.94	6146	10.55	106.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010874226-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
010874226-02	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.

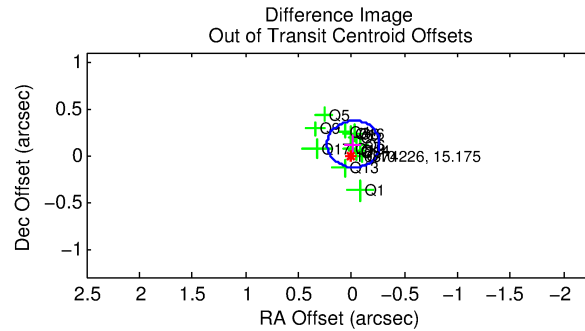
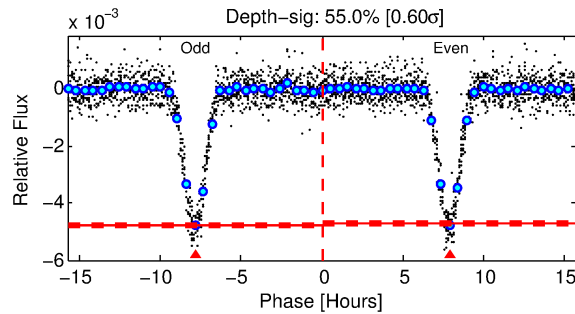
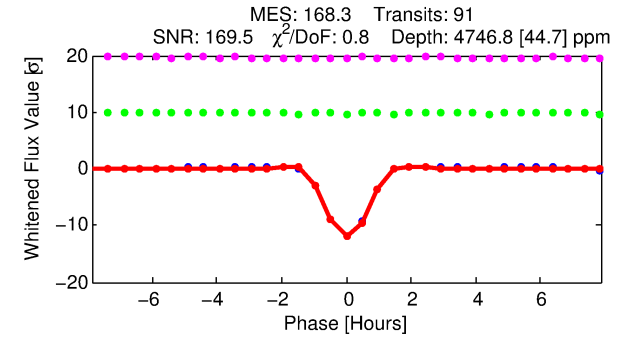
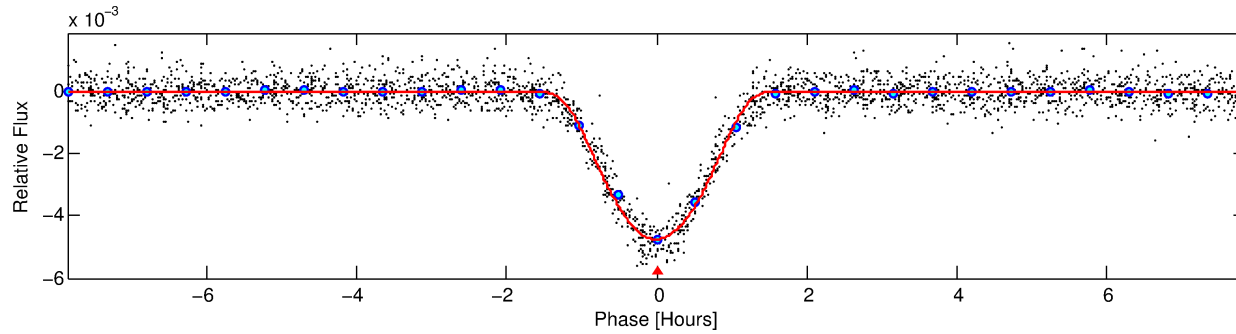
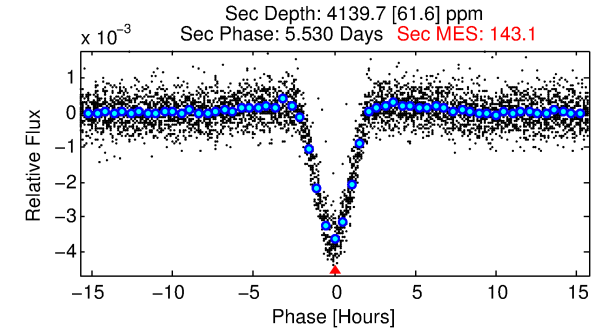
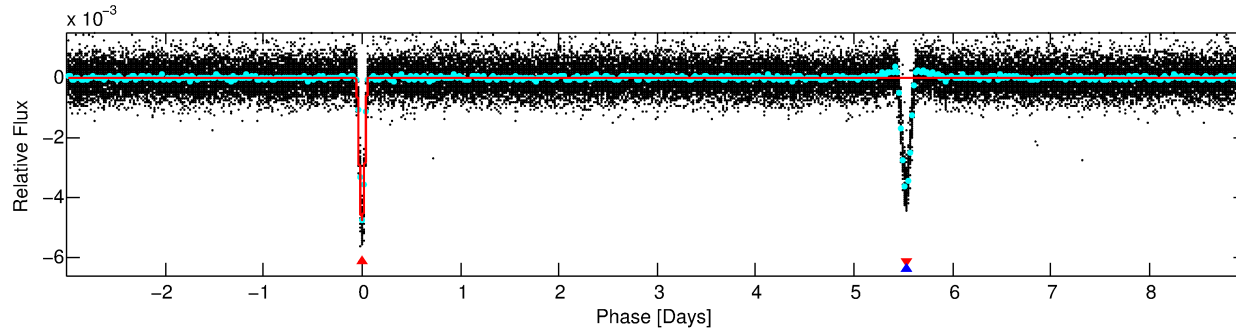
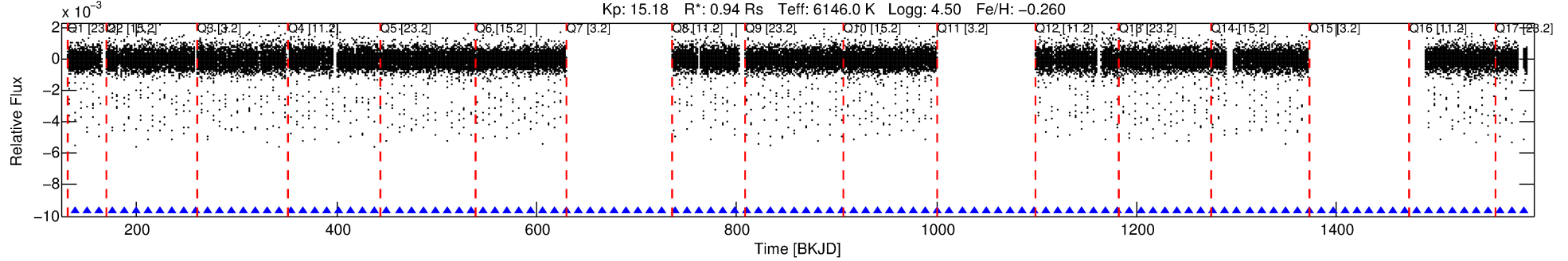
Ephemeris Match Information For 010874226-01

No Significant Match Found

DV One-Page Summary

KIC: 10874226 Candidate: 1 of 2 Period: 11.974 d
KOI: K01290 Corr: No Ephemeris Match

Kp: 15.18 R*: 0.94 Rs Teff: 6146.0 K Logg: 4.50 Fe/H: -0.260



DV Fit Results:

Period = 11.97361 [0.00001] d
Epoch = 139.2508 [0.0003] BKJD
Rp/R* = 0.1098 [0.0316]
a/R* = 17.46 [1.05]
b = 0.99 [0.05]
Seff = 106.98 [45.47]
Teq = 820 [87] K
Rp = 11.30 [5.04] Re
a = 0.1031 [0.0290] AU
Ag = 189.63 [133.27] [1.42sigma]
Teffp = 4705 [698] K [5.53sigma]

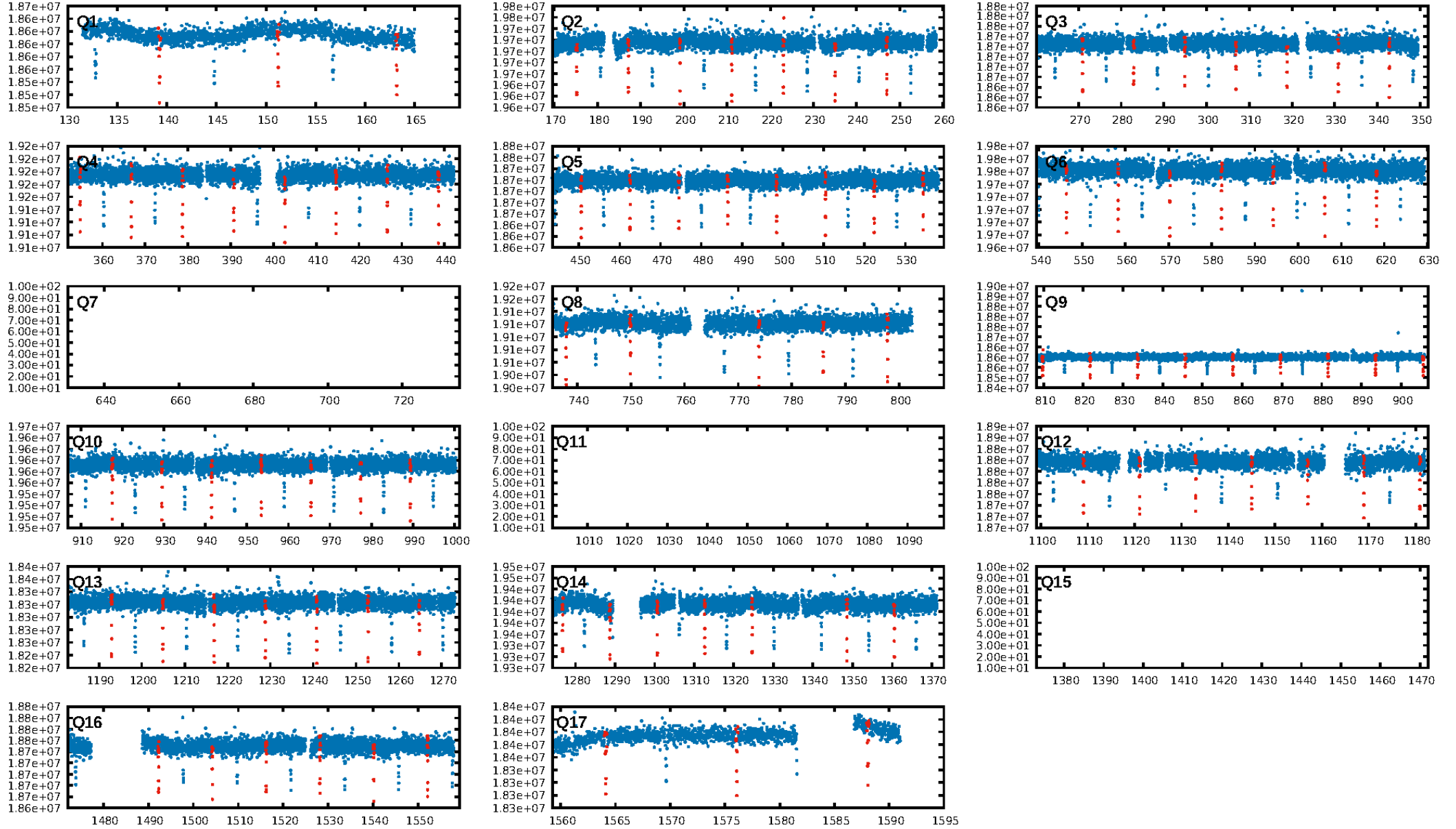
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00sigma]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [85/85]
GhostDiagnostic-chr: 3.728
Centroid-sig: 0.1%
Centroid-so: 0.159 arcsec [2.03sigma]
OotOffset-rm: 0.121 arcsec [1.46sigma]
KicOffset-rm: 0.094 arcsec [1.11sigma]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
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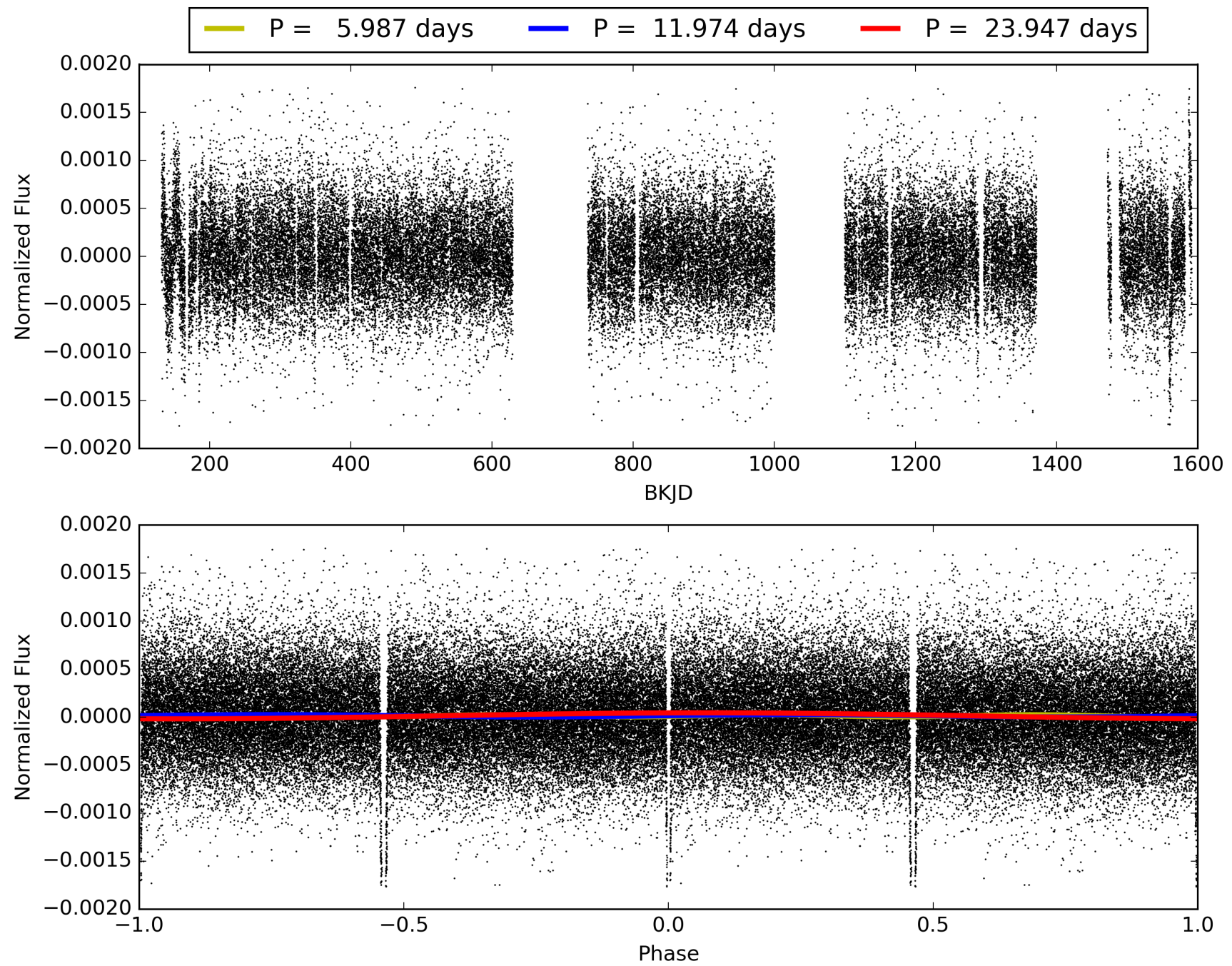
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:52:13 Z

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

TCE 010874226-01, PDC Light Curves

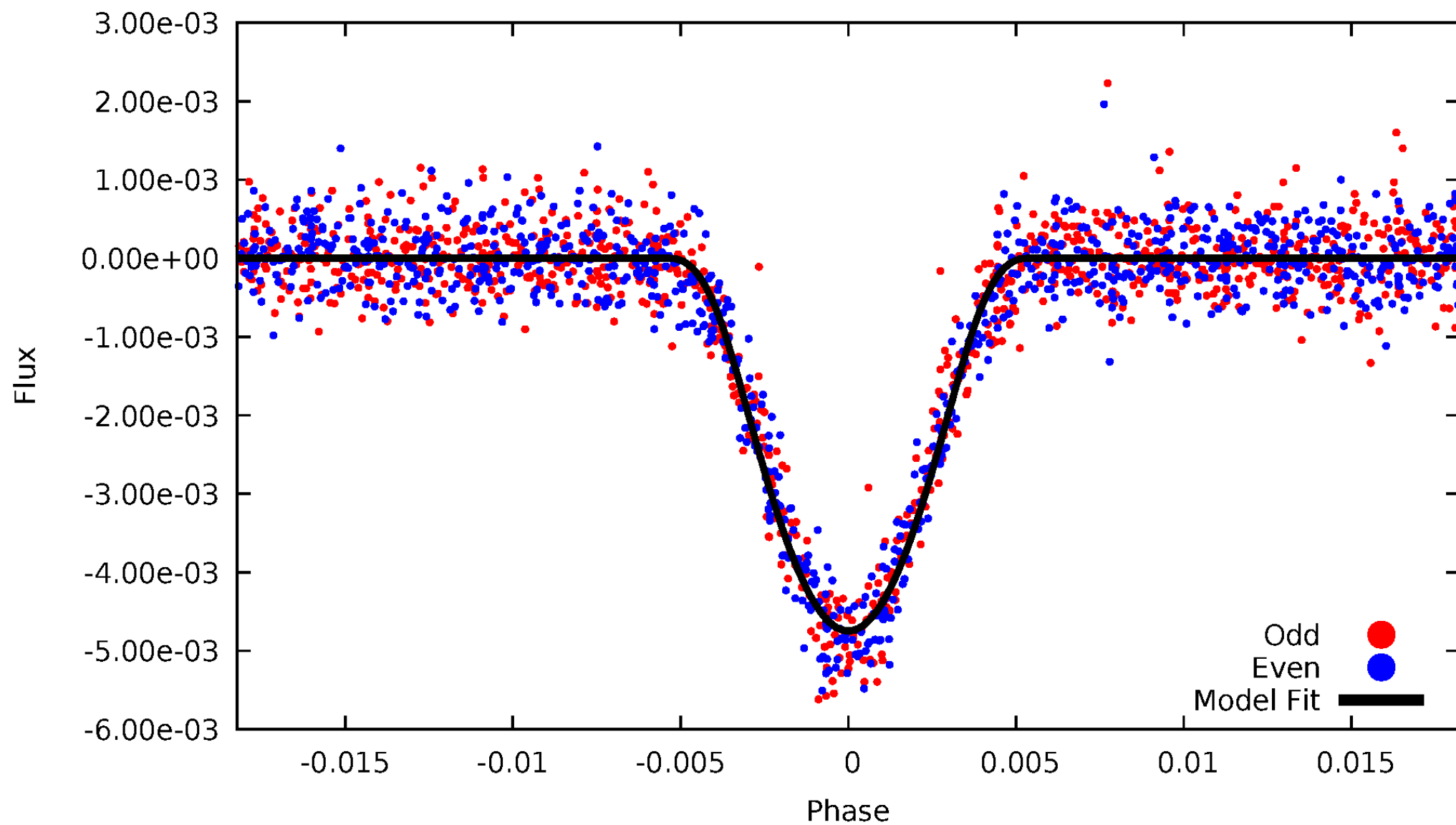


TCE 010874226-01



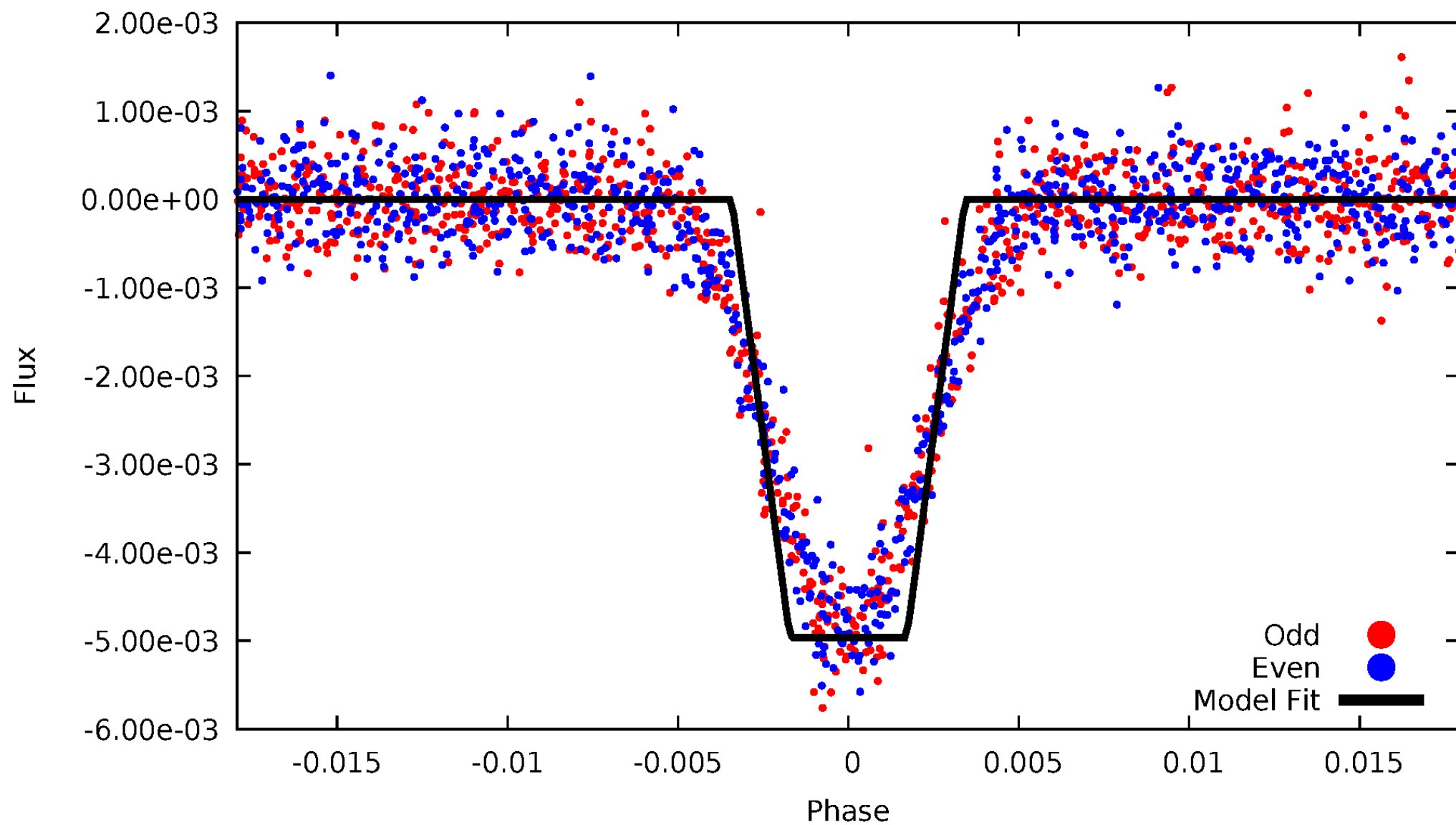
DV Odd/Even

TCE 010874226-01

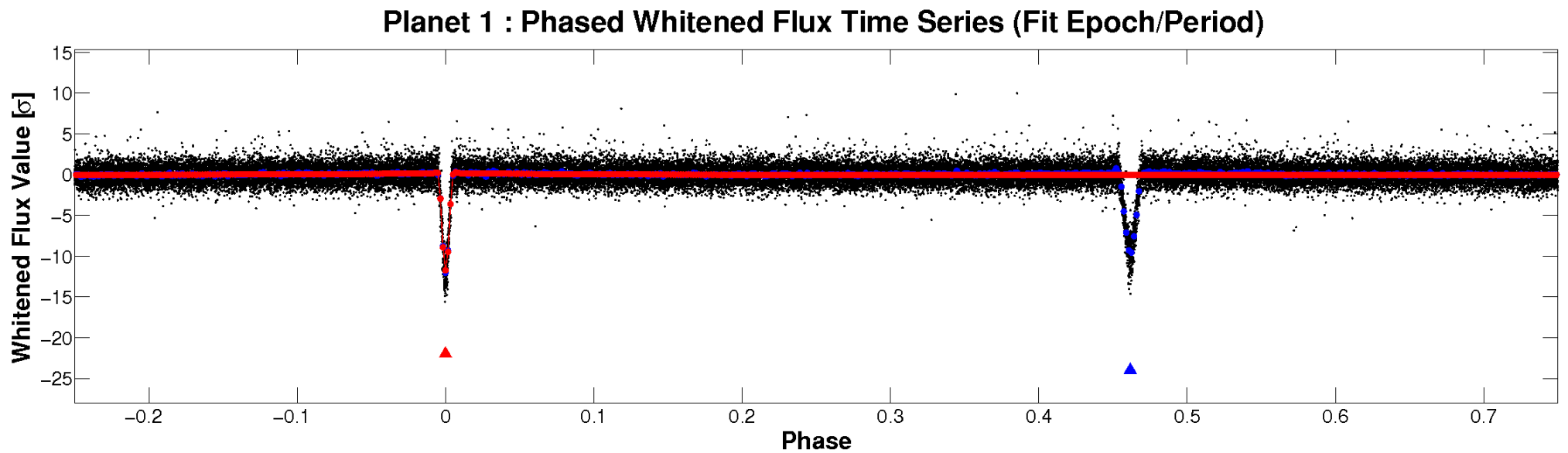
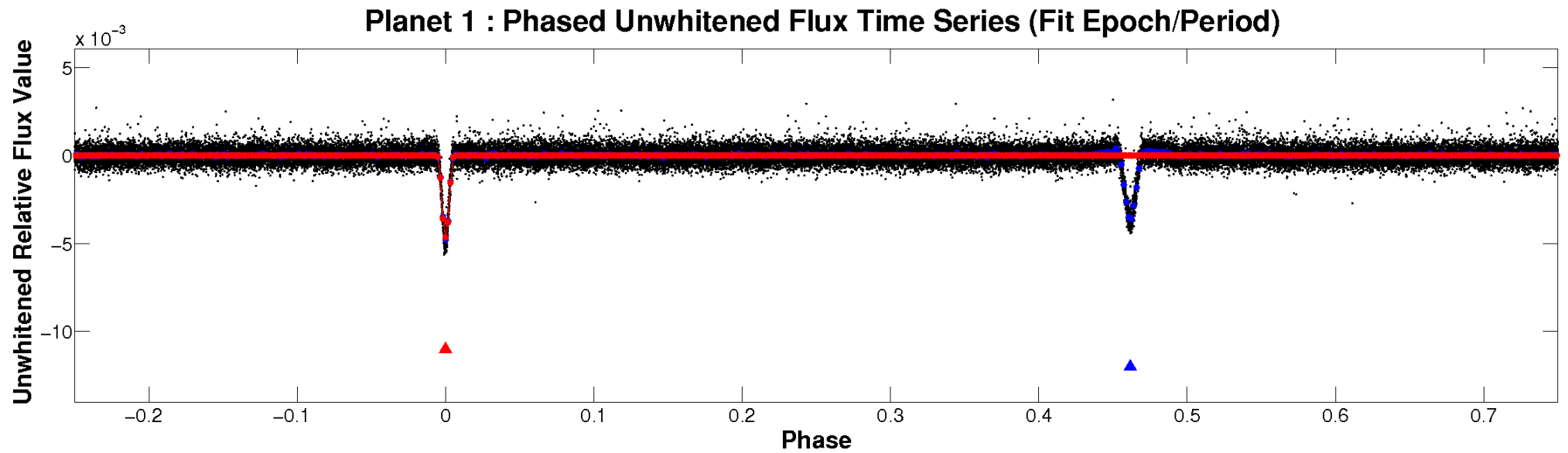


ALT Odd/Even

TCE 010874226-01

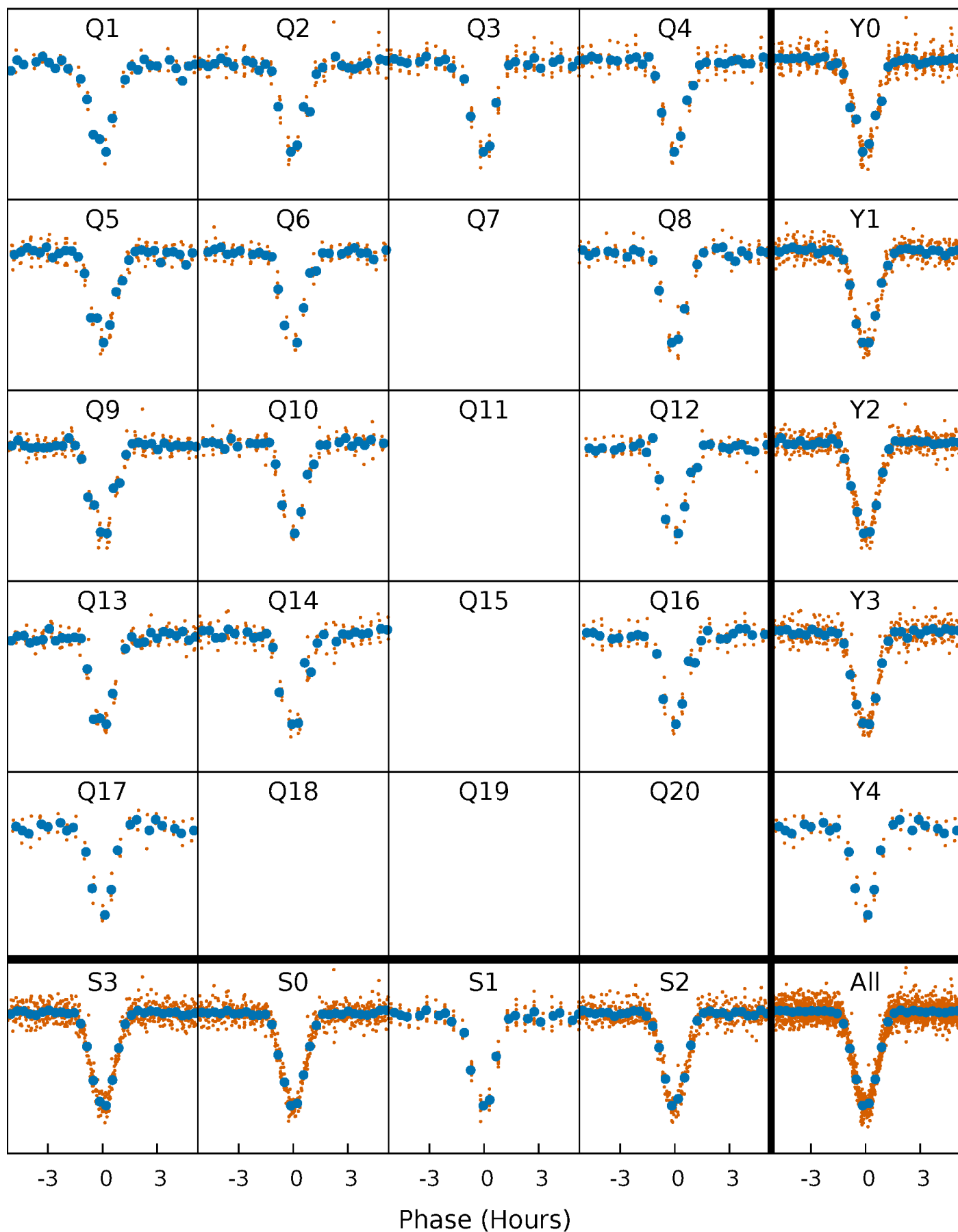


Non-Whitened Vs. Whitened Light Curve



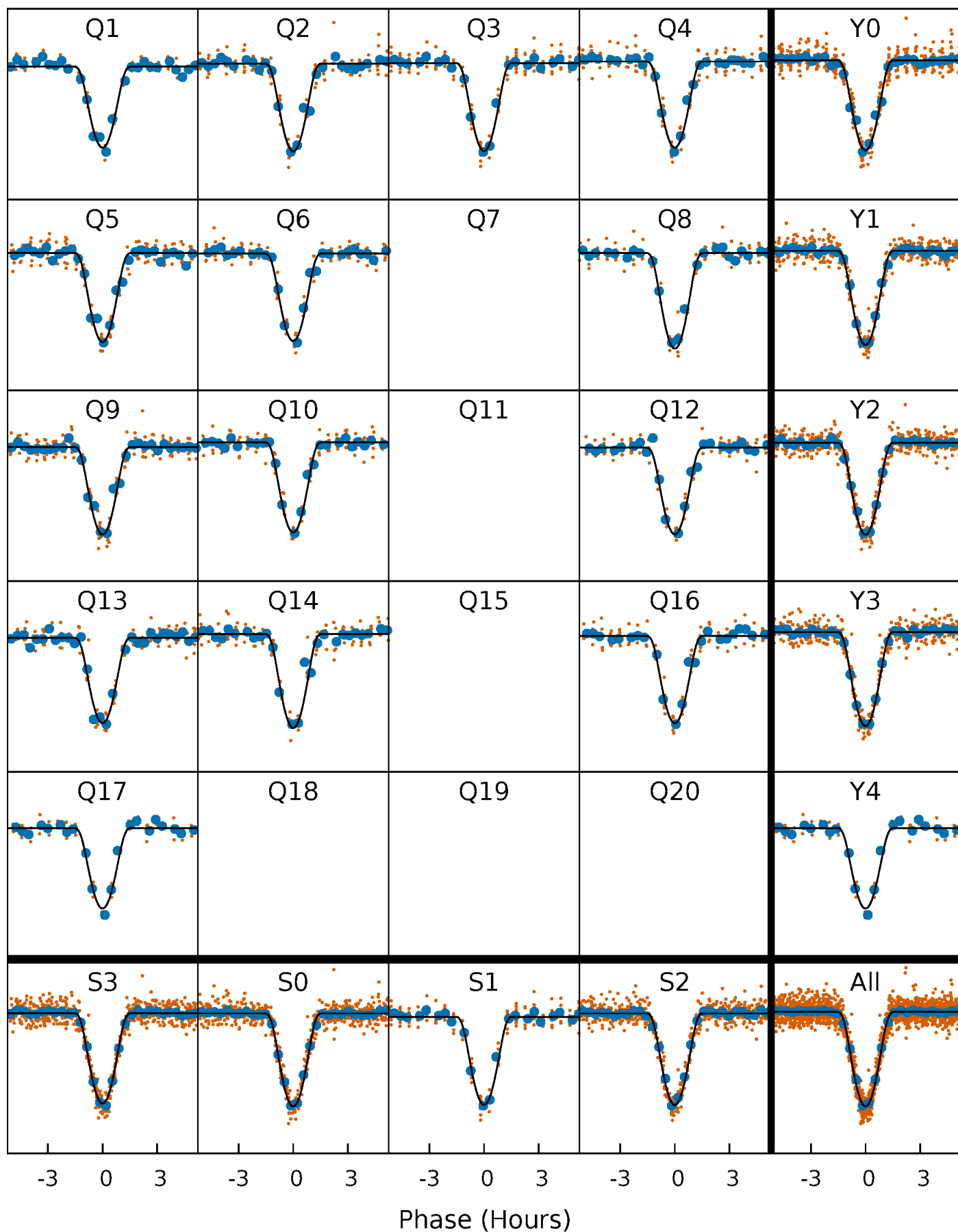
PDC Quarter-Phased Transit Curves

TCE 010874226-01 P= 11.973613 Days $T_0=139.250772$ (BKJD)



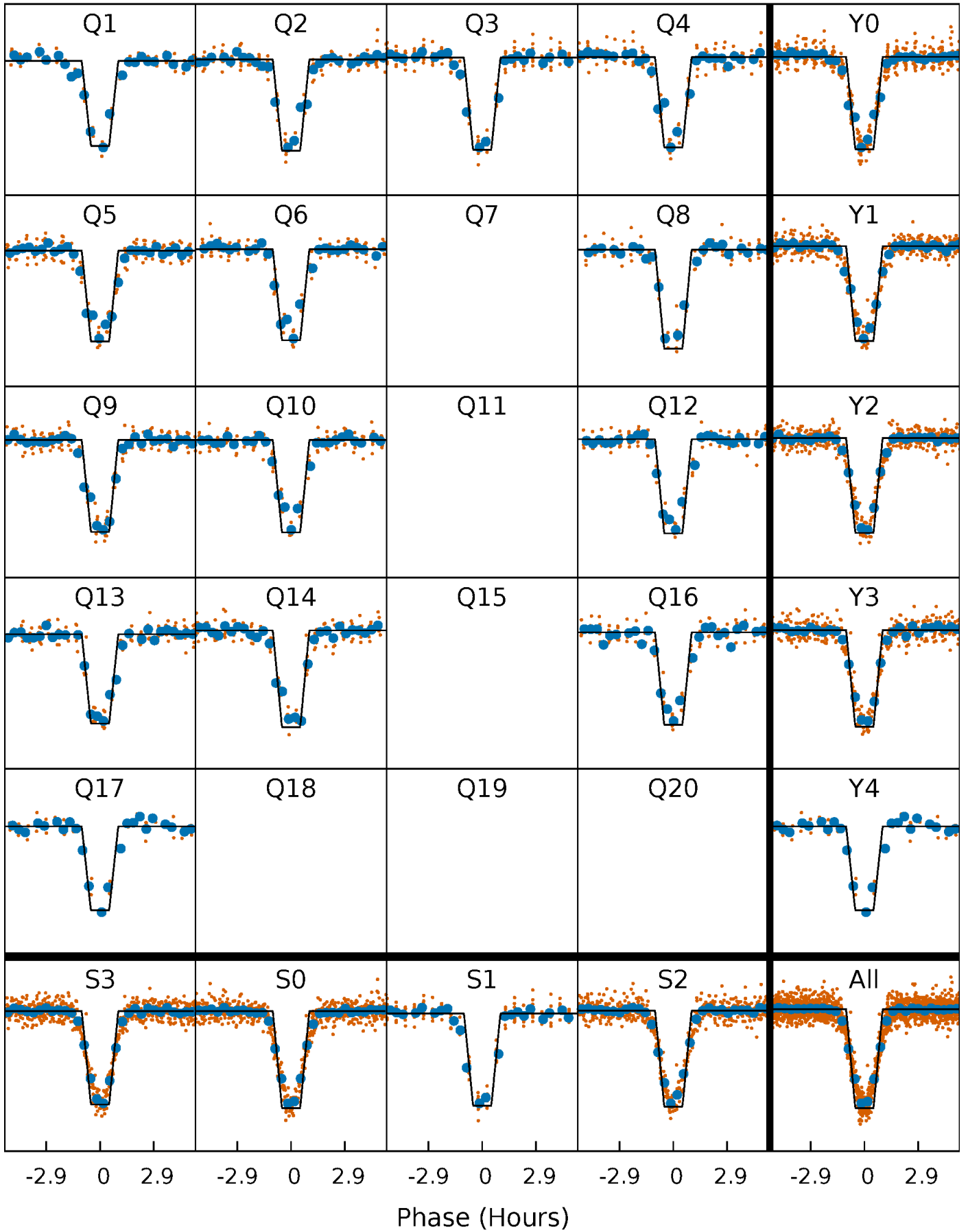
DV Quarter-Phased Transit Curves

TCE 010874226-01 P= 11.973613 Days $T_0=139.250772$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

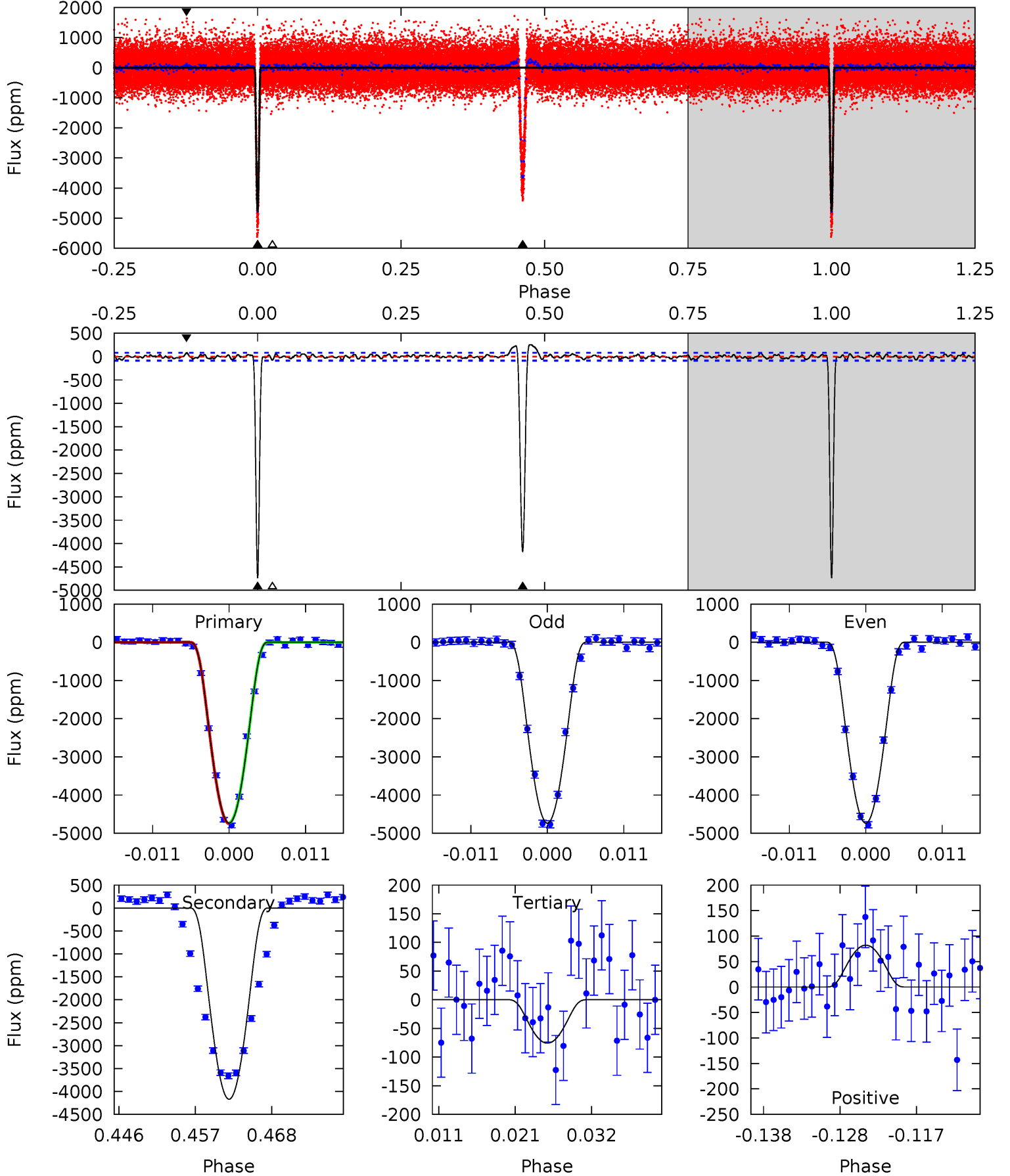
TCE 010874226-01 P= 11.973587 Days $T_0=139.252257$ (BKJD)



DV Model-Shift Uniqueness Test

010874226-01, P = 11.973613 Days, E = 127.277159 Days

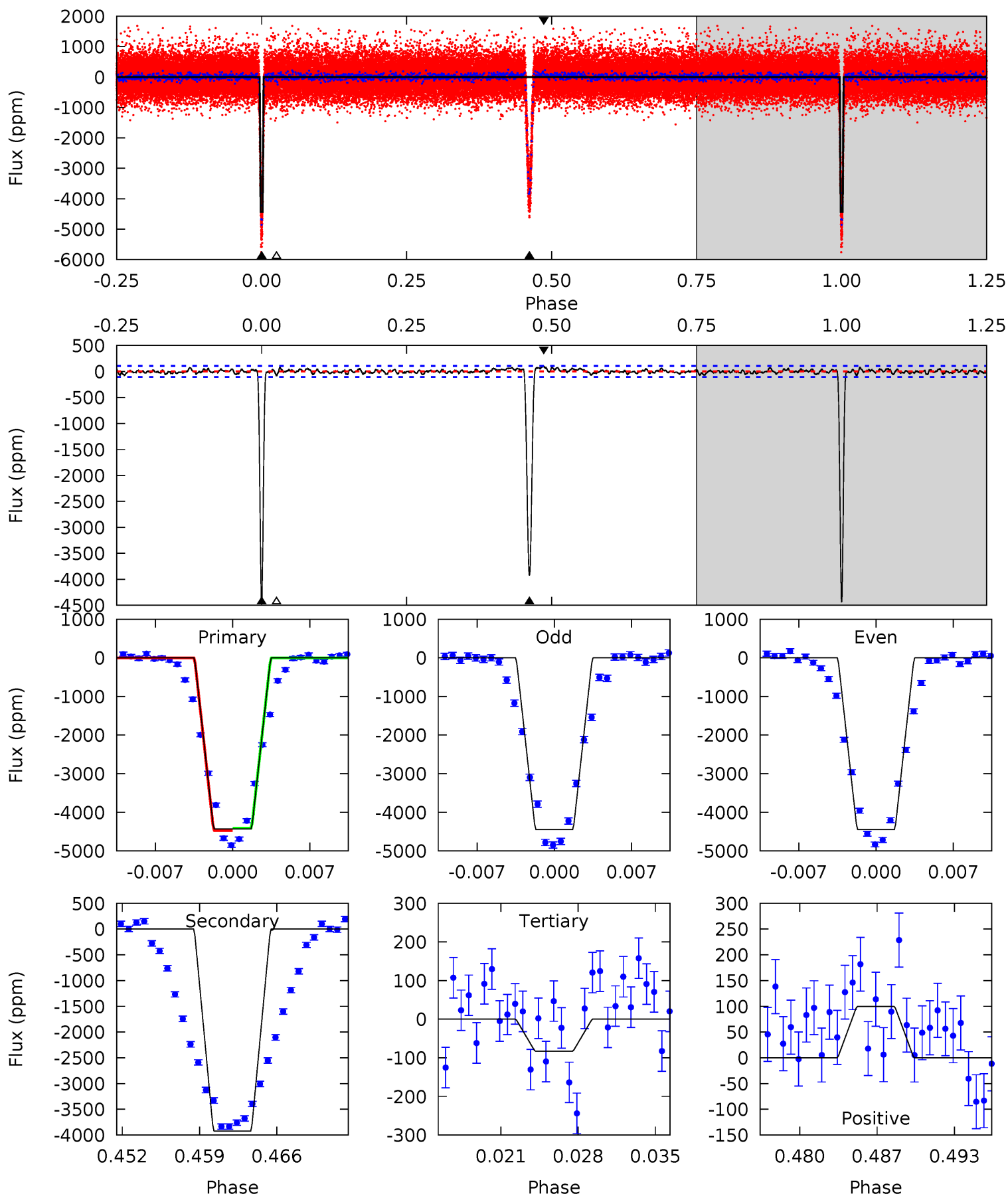
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
283.1	249.4	4.53	4.92	5.01	2.55	2.61	278.6	278.2	244.9	244.5	0.08	1.00	0.05	0.58



Alt Model-Shift Uniqueness Test

010874226-01, P = 11.973587 Days, E = 127.278670 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
214.8	190.1	4.03	4.83	5.10	2.70	1.70	210.8	210.0	186.0	185.2	0.08	1.01	0.02	1.14



Stellar Parameters For KIC 010874226

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6146^{+192}_{-213}	$4.497^{+0.054}_{-0.216}$	$-0.260^{+0.250}_{-0.300}$	$0.943^{+0.321}_{-0.100}$	$1.020^{+0.138}_{-0.138}$	$1.713^{+0.389}_{-0.961}$
	+3%/-3%	+1%/-5%	+96%/-115%	+34%/-11%	+14%/-14%	+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 010874226-01 / KOI 1290.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4171 ± 17	$11.39^{+4.13}_{-3.22}$	1171^{+79}_{-58}	4868^{+787}_{-508}	182^{+177}_{-82}
Alt.	-3924 ± 21	$7.77^{+3.39}_{-3.40}$	1171^{+91}_{-59}	5775^{+2012}_{-867}	370^{+772}_{-186}

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 $A_{obs} \gg 1.0$

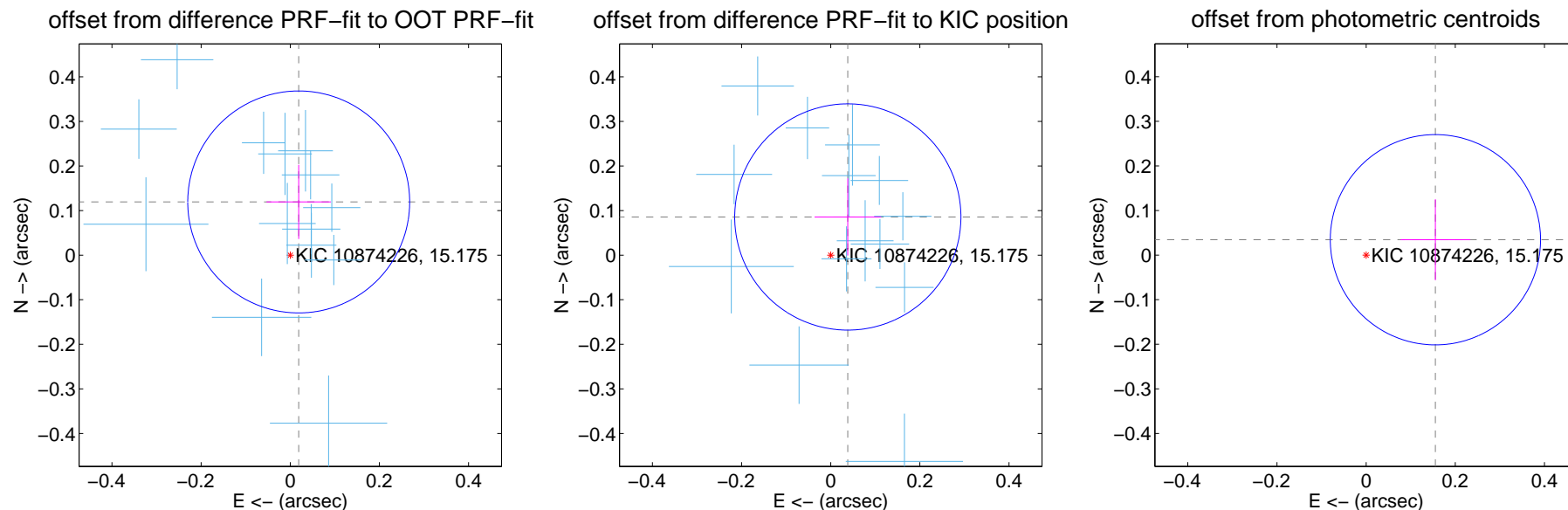
DV Centroid Data

Supplemental centroid analysis for 010874226-01. Kepler magnitude: 15.18. Transit SNR 169.50

There are 14 quarters with good PRF difference image offsets

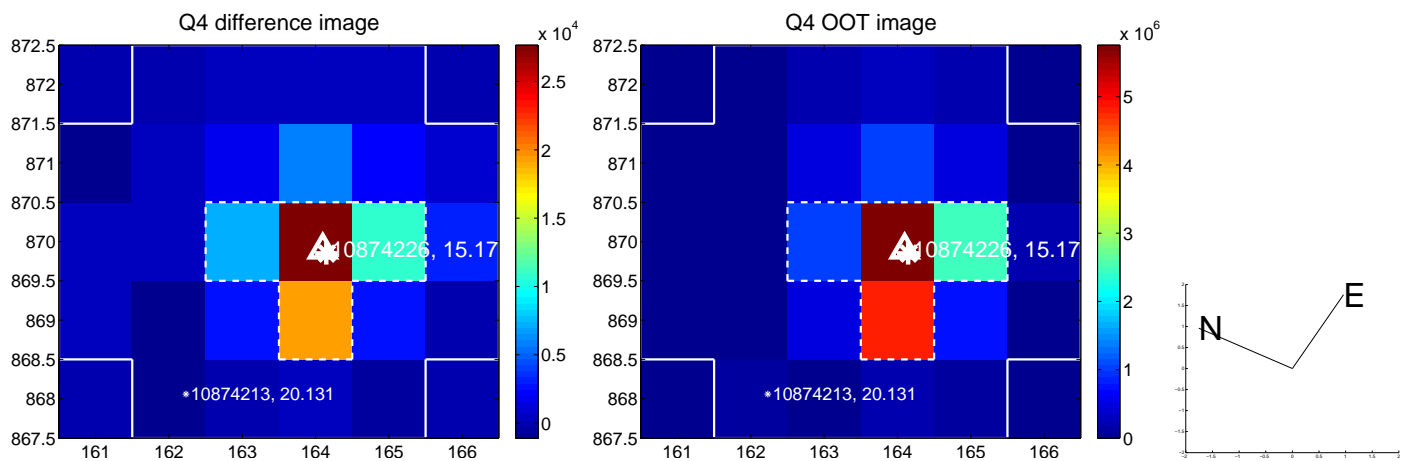
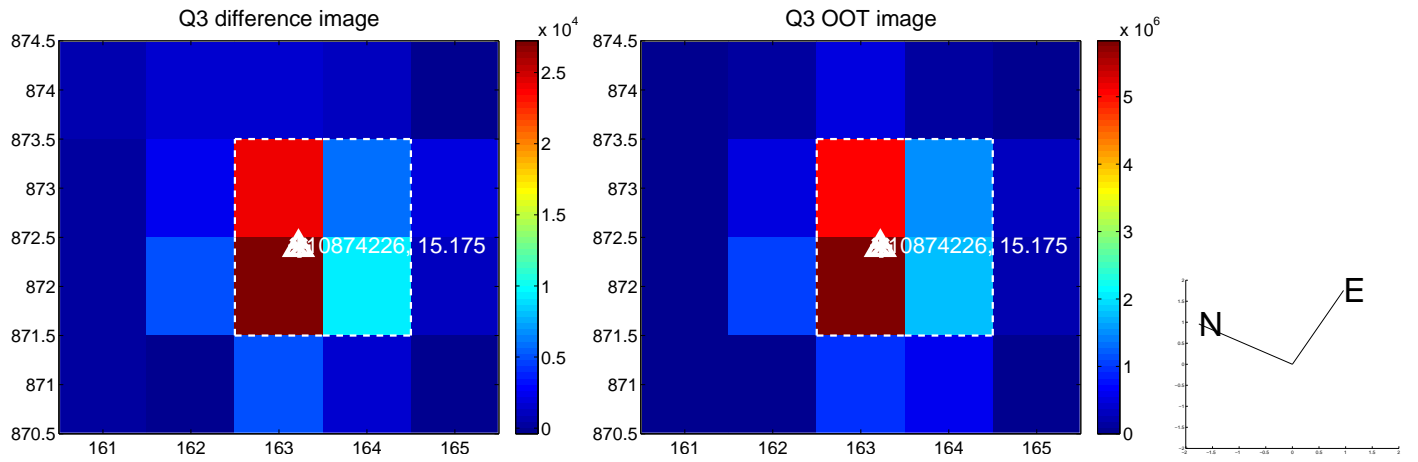
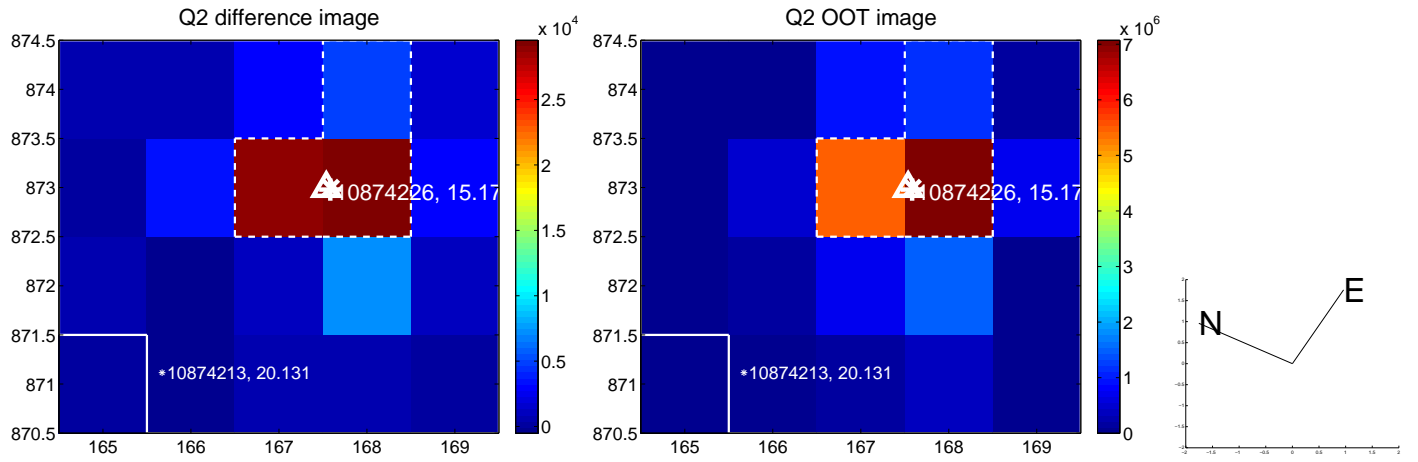
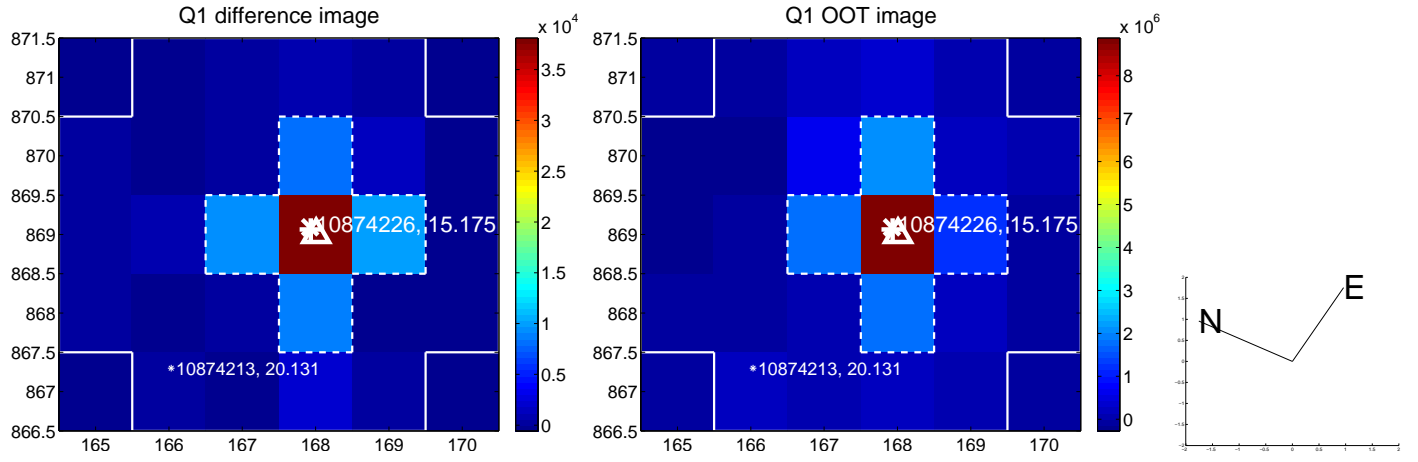
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.121 ± 0.083	1.46	-0.019 ± 0.072	0.119 ± 0.083
PRF-fit source offset from KIC position	0.094 ± 0.085	1.11	-0.038 ± 0.075	0.086 ± 0.086
photometric centroid source offset	0.16 ± 0.08	2.03	-0.16 ± 0.08	0.03 ± 0.09

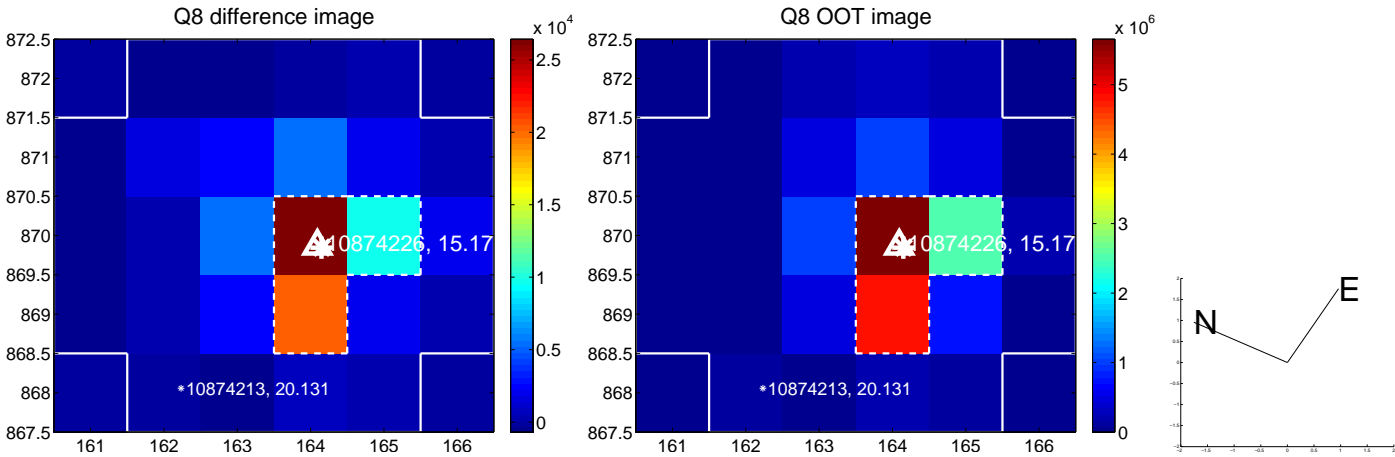
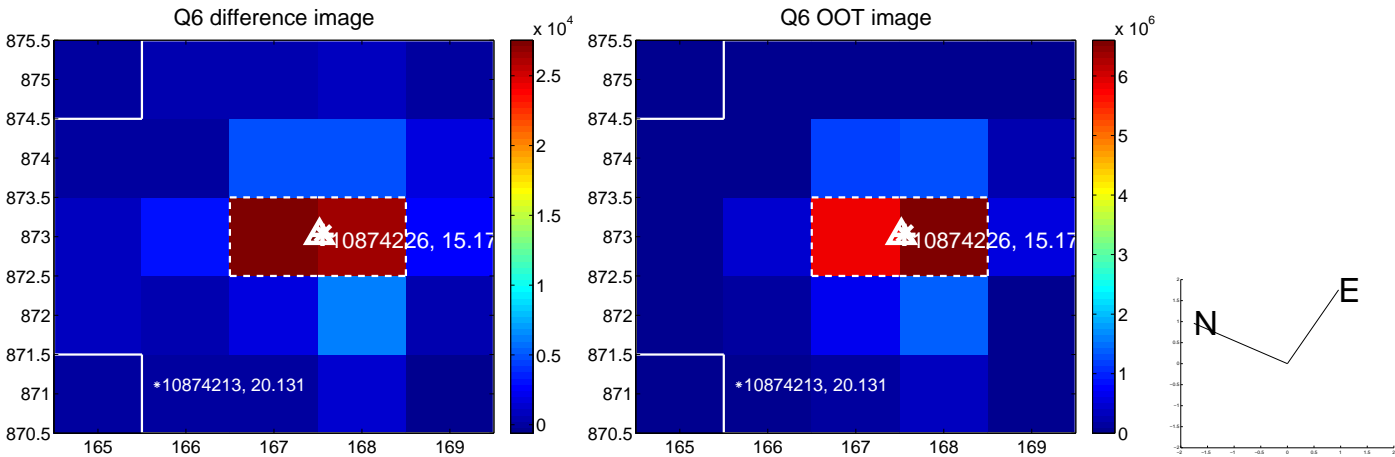
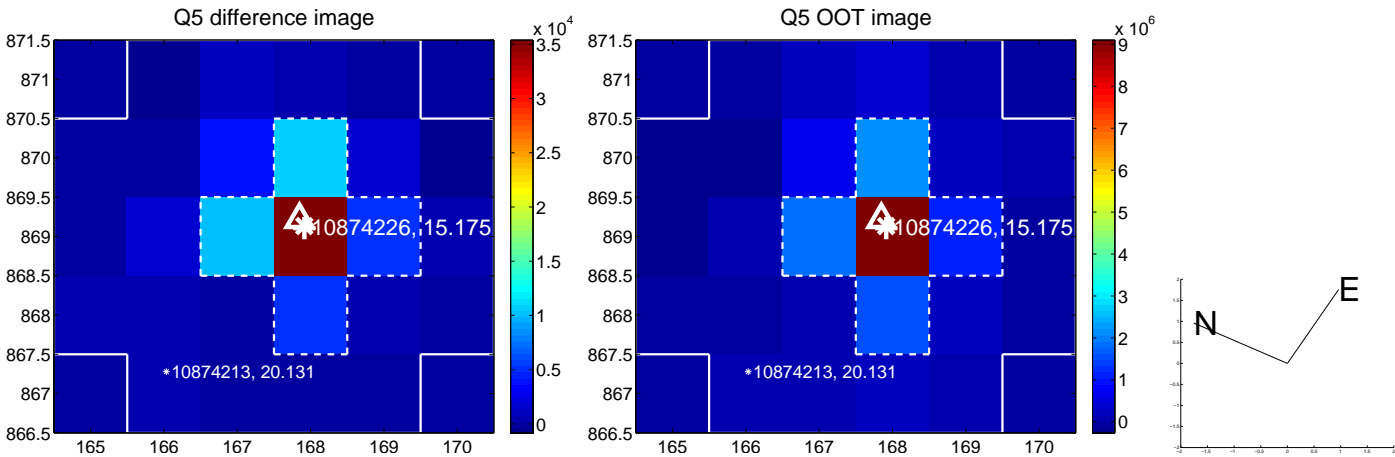


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

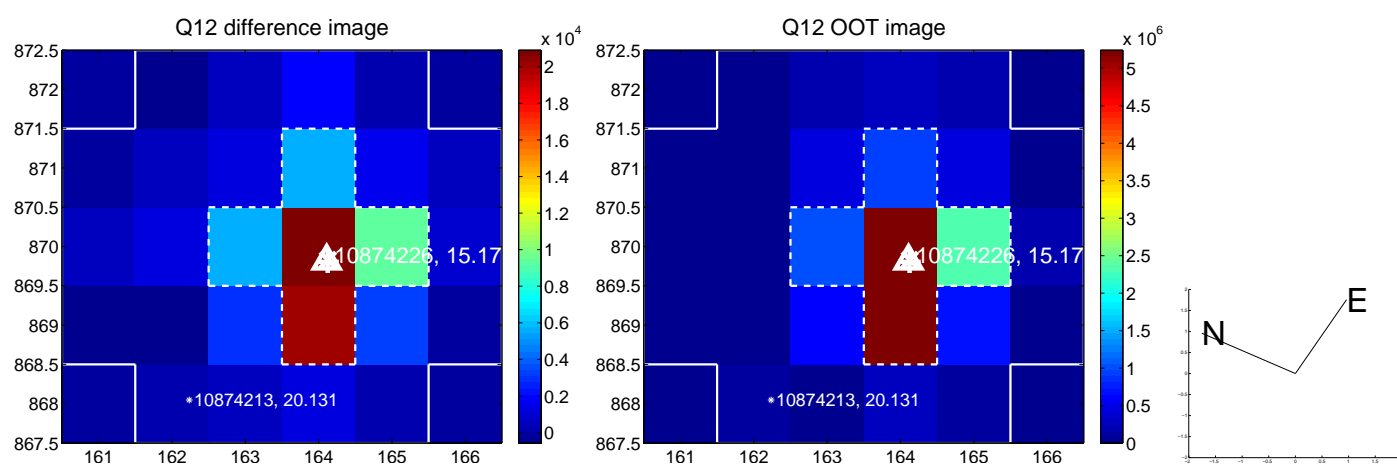
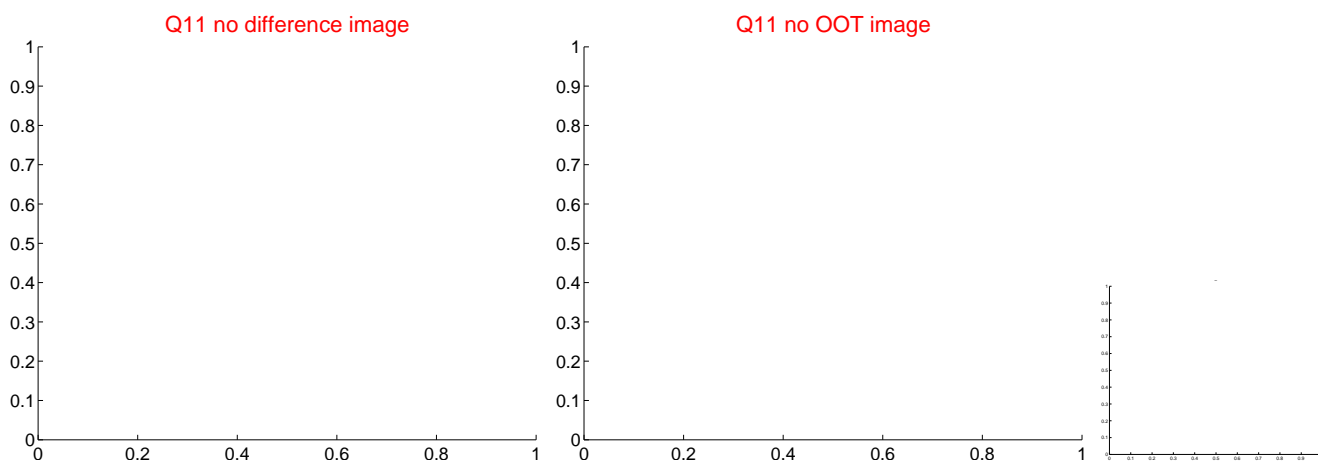
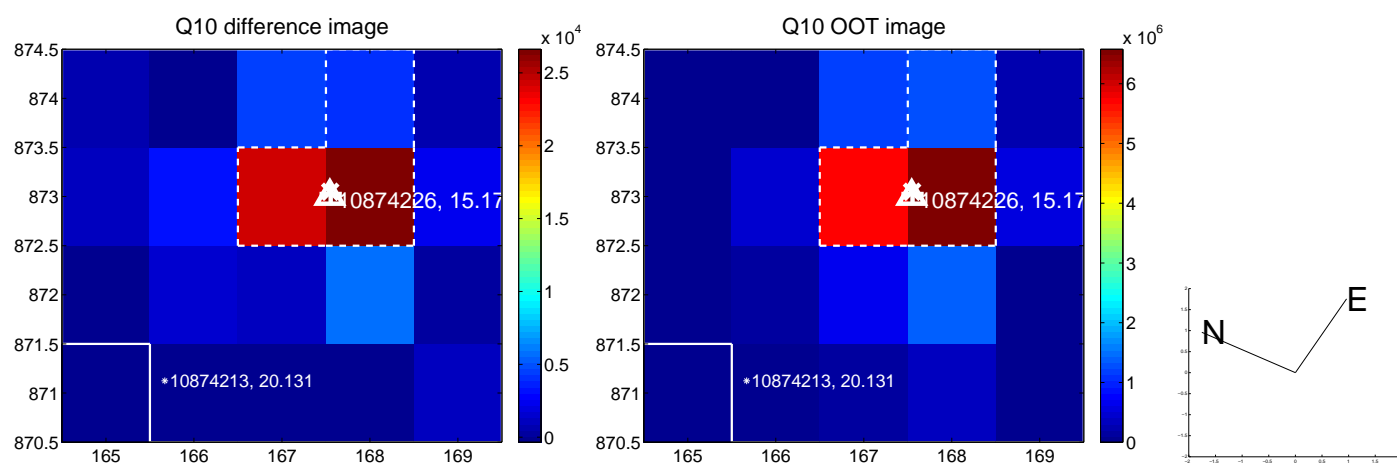
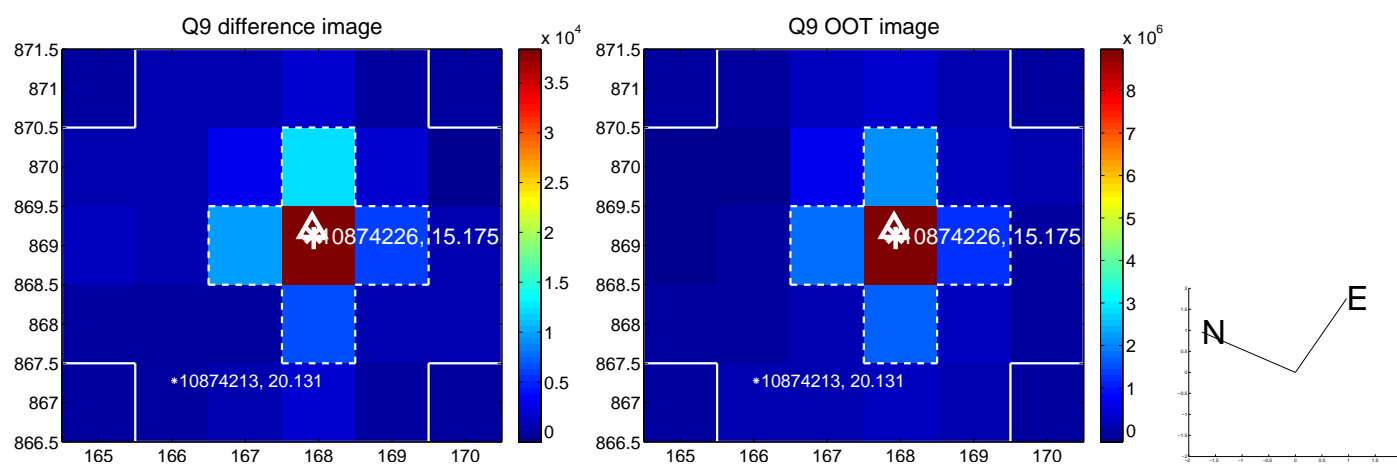
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



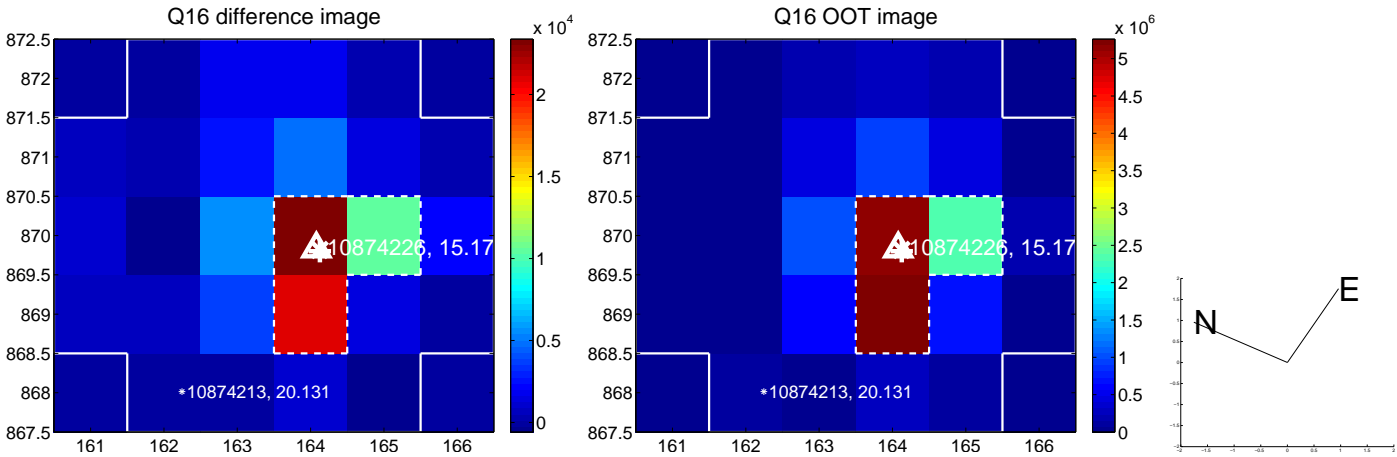
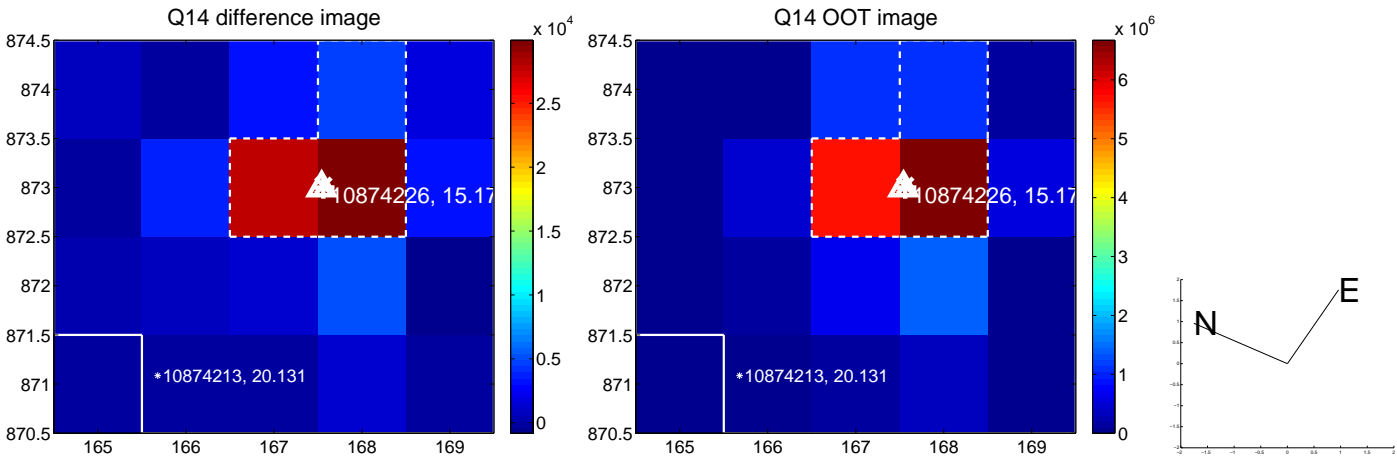
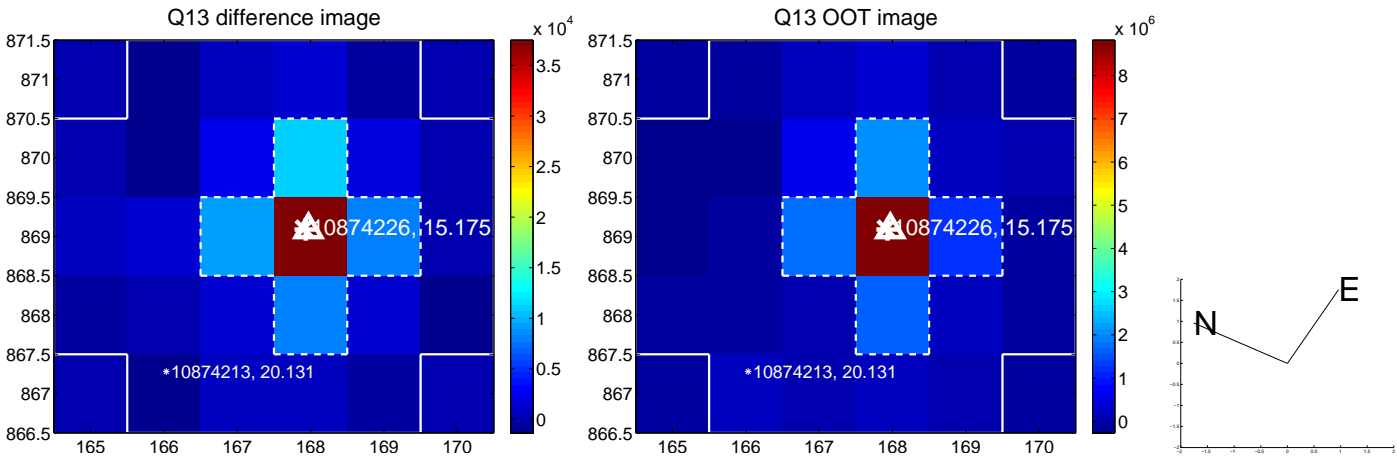
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



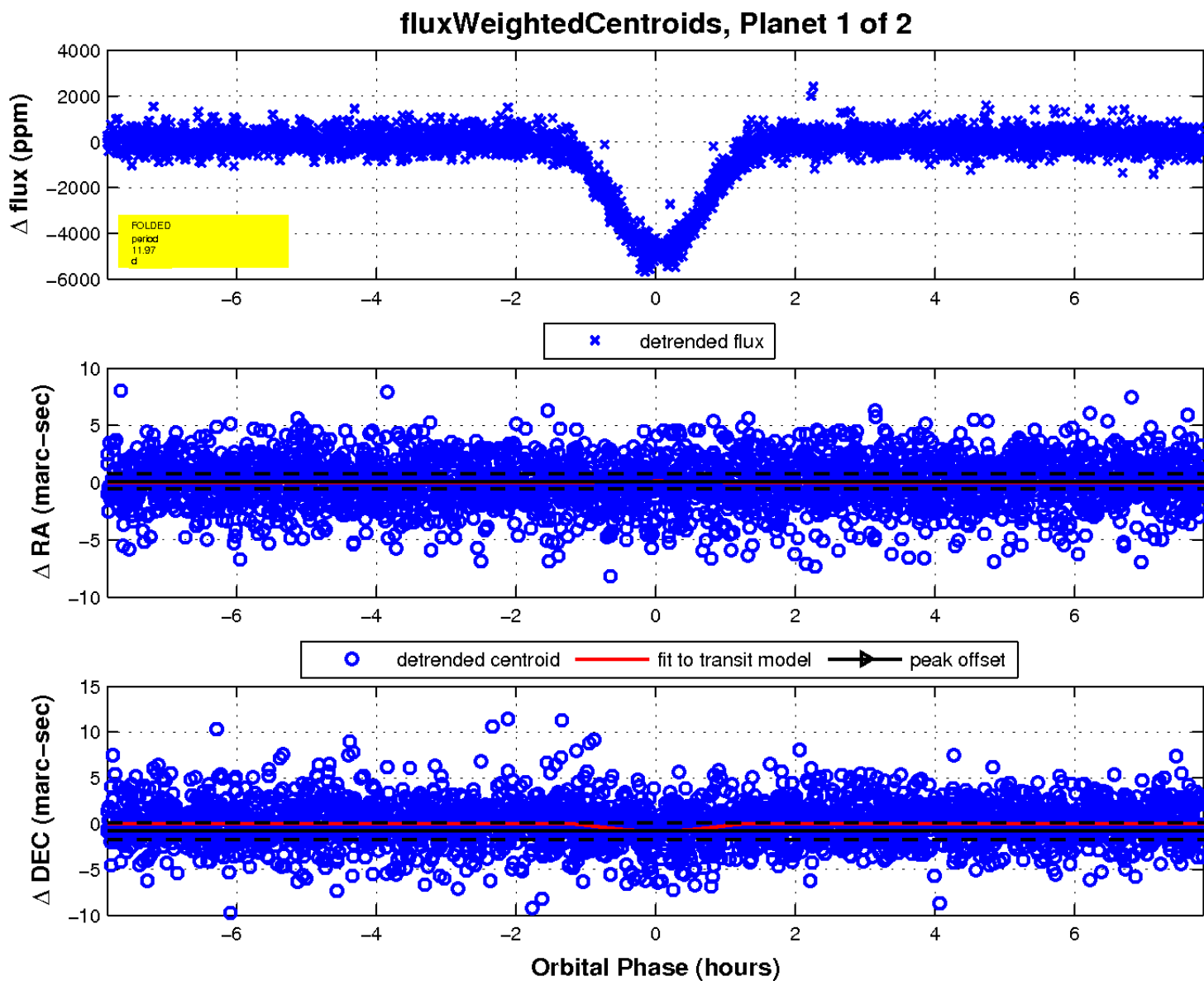
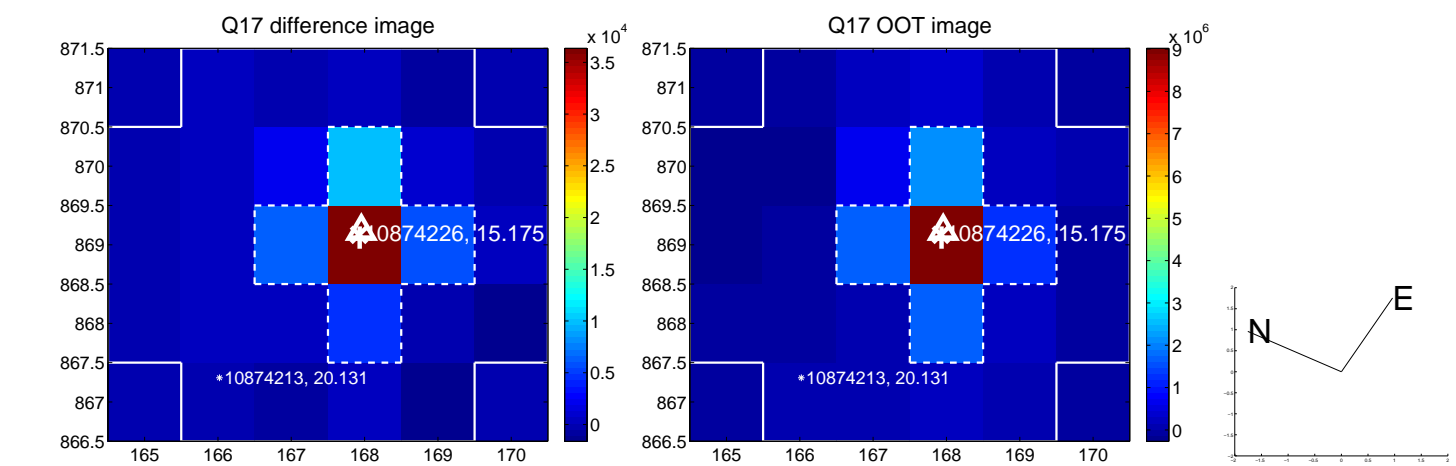
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

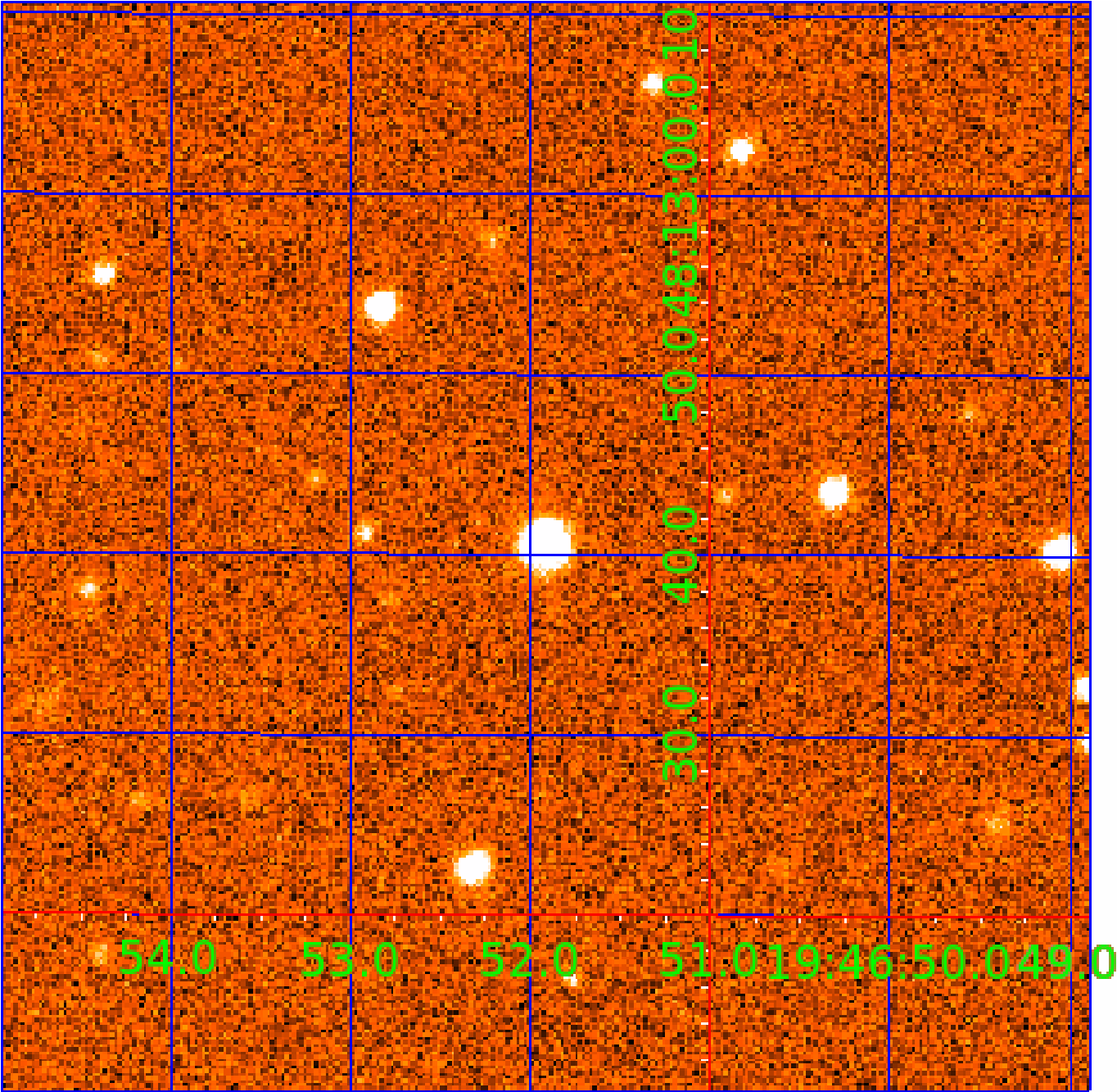


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010874226

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})
010874226-01	OBS	1290.01	11.973613	139.250772	4746.8	2.618	168.3	169.5	0.94	6146	11.30	106.98
010874226-02	OBS	No	11.973608	132.805733	3814.2	4.242	161.2	163.3	0.94	6146	10.55	106.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010874226-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
010874226-02	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 010874226-02

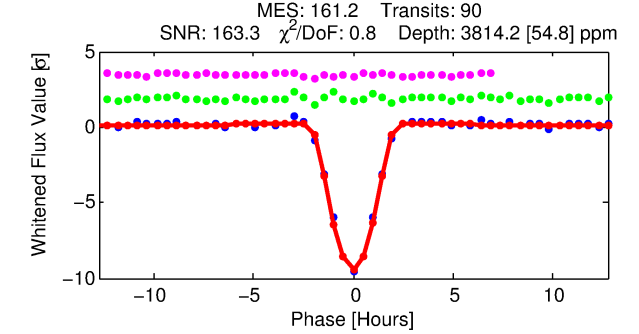
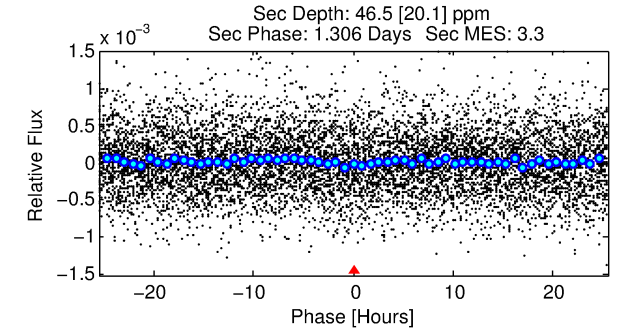
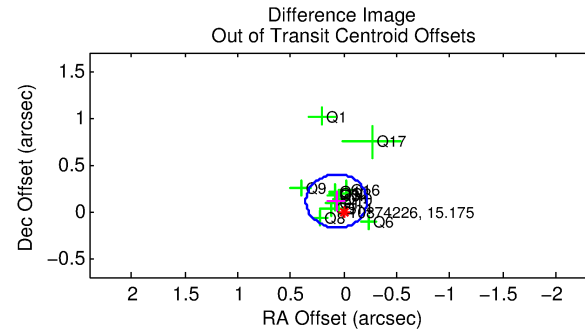
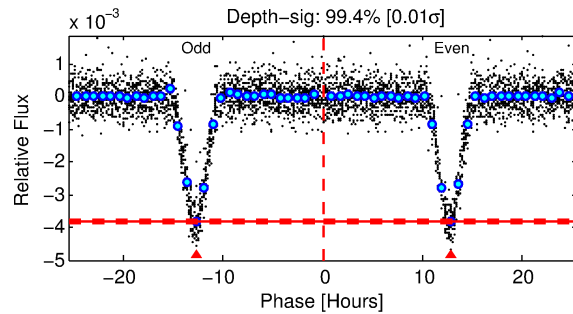
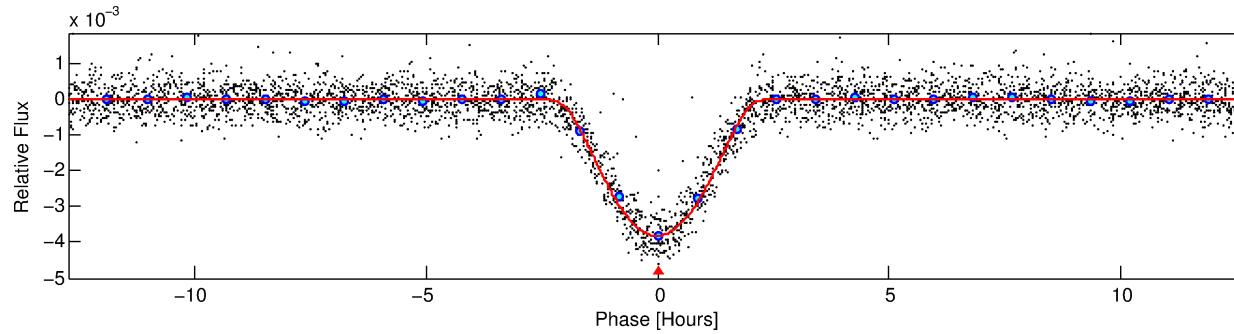
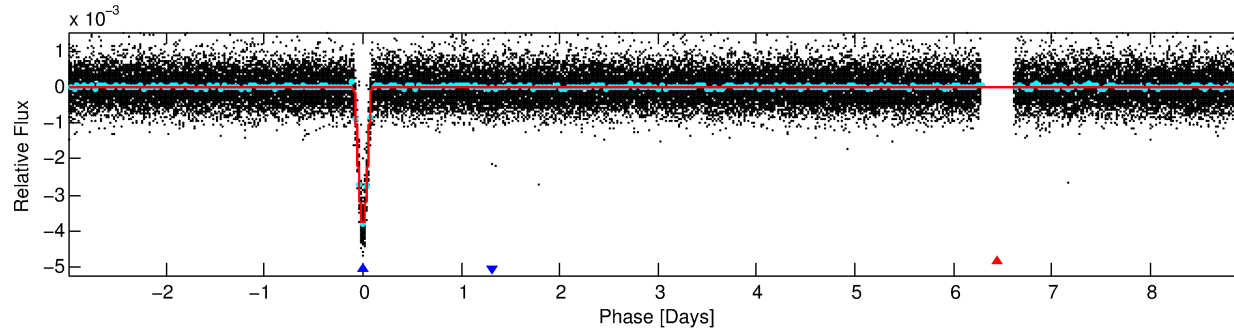
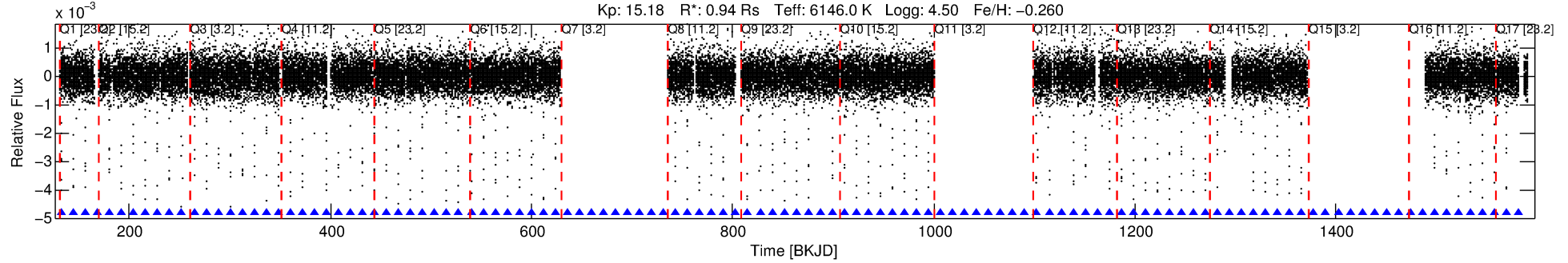
No Significant Match Found

DV One-Page Summary

KIC: 10874226 Candidate: 2 of 2 Period: 11.974 d

KOI: K01290.01 Corr: 0.992

Kp: 15.18 R*: 0.94 Rs Teff: 6146.0 K Logg: 4.50 Fe/H: -0.260



DV Fit Results:

Period = 11.97361 [0.00001] d
Epoch = 132.8057 [0.0006] BKJD
Rp/R* = 0.1025 [0.0293]
a/R* = 10.16 [0.58]
b = 1.00 [0.04]
Seff = 106.98 [45.47]
Teq = 820 [87] K
Rp = 10.55 [4.69] Re
a = 0.1031 [0.0290] AU
Ag = 2.44 [2.01] [0.72σ]
Teffp = 1585 [290] K [2.53σ]

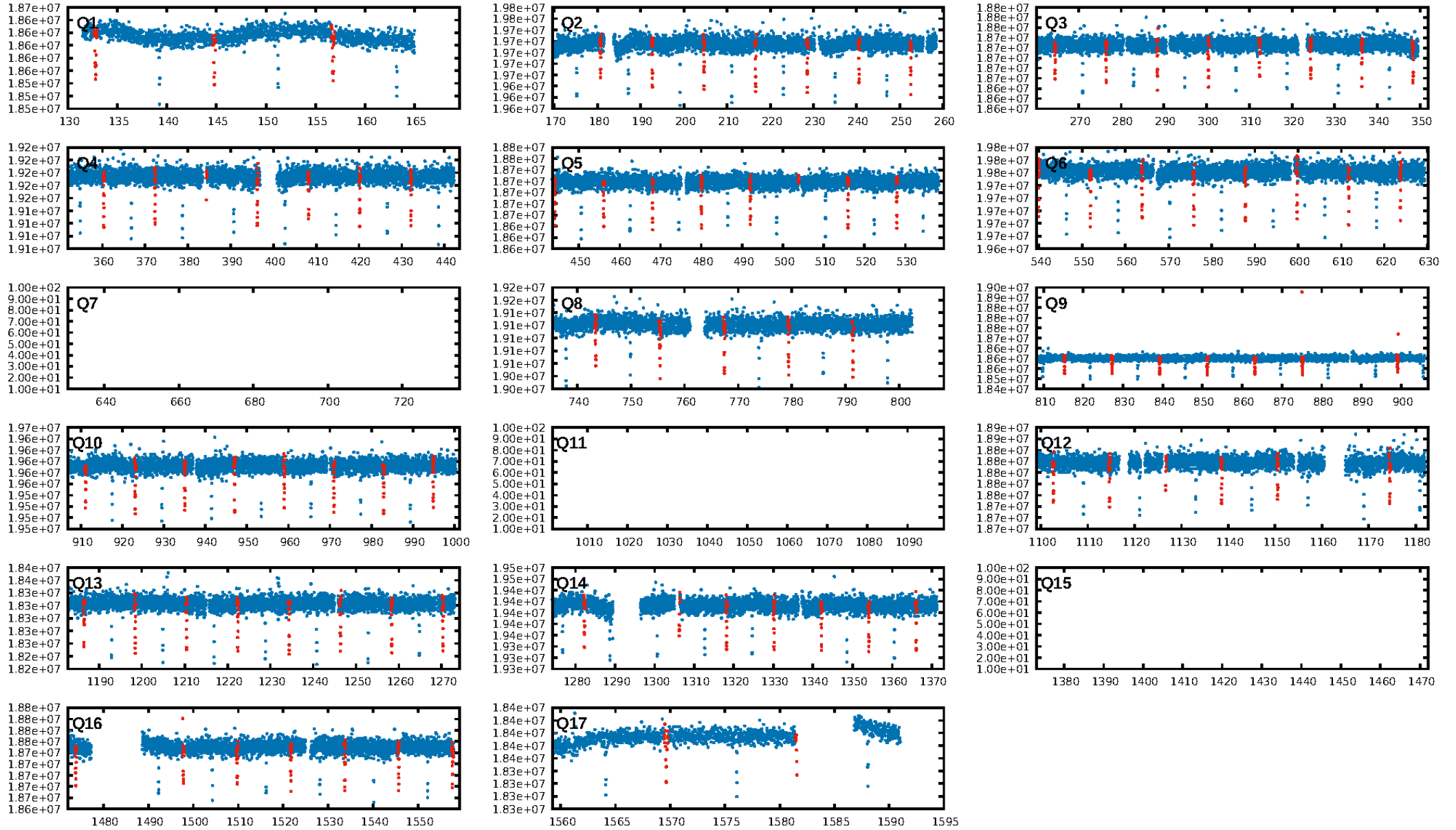
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 98.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [85/85]
GhostDiagnostic-chr: 3.512
Centroid-sig: 36.7%
Centroid-so: 0.142 arcsec [1.76σ]
OotOffset-rm: 0.130 arcsec [1.35σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-rm: 0.081 arcsec [0.79σ]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

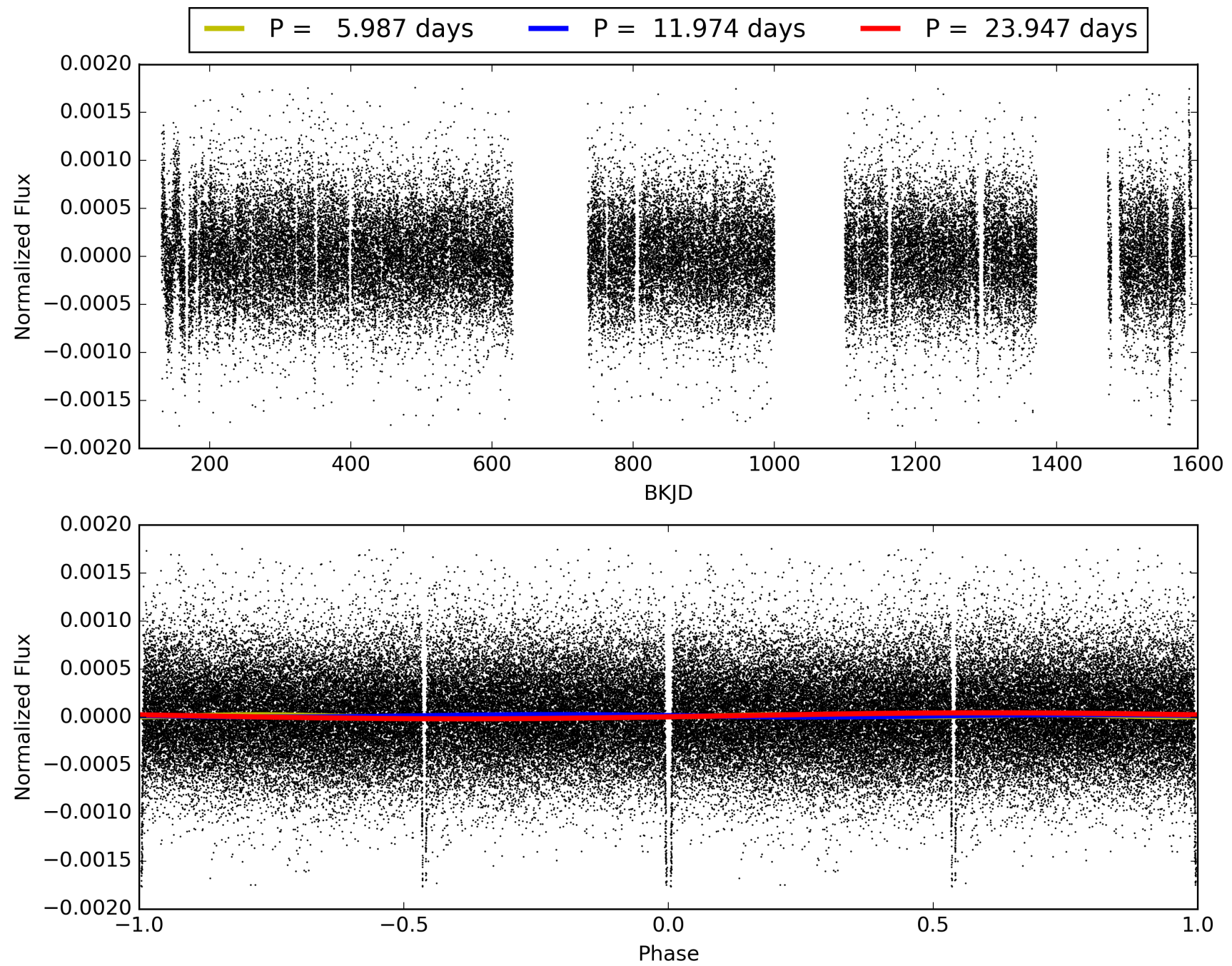
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:52:18 Z

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

TCE 010874226-02, PDC Light Curves

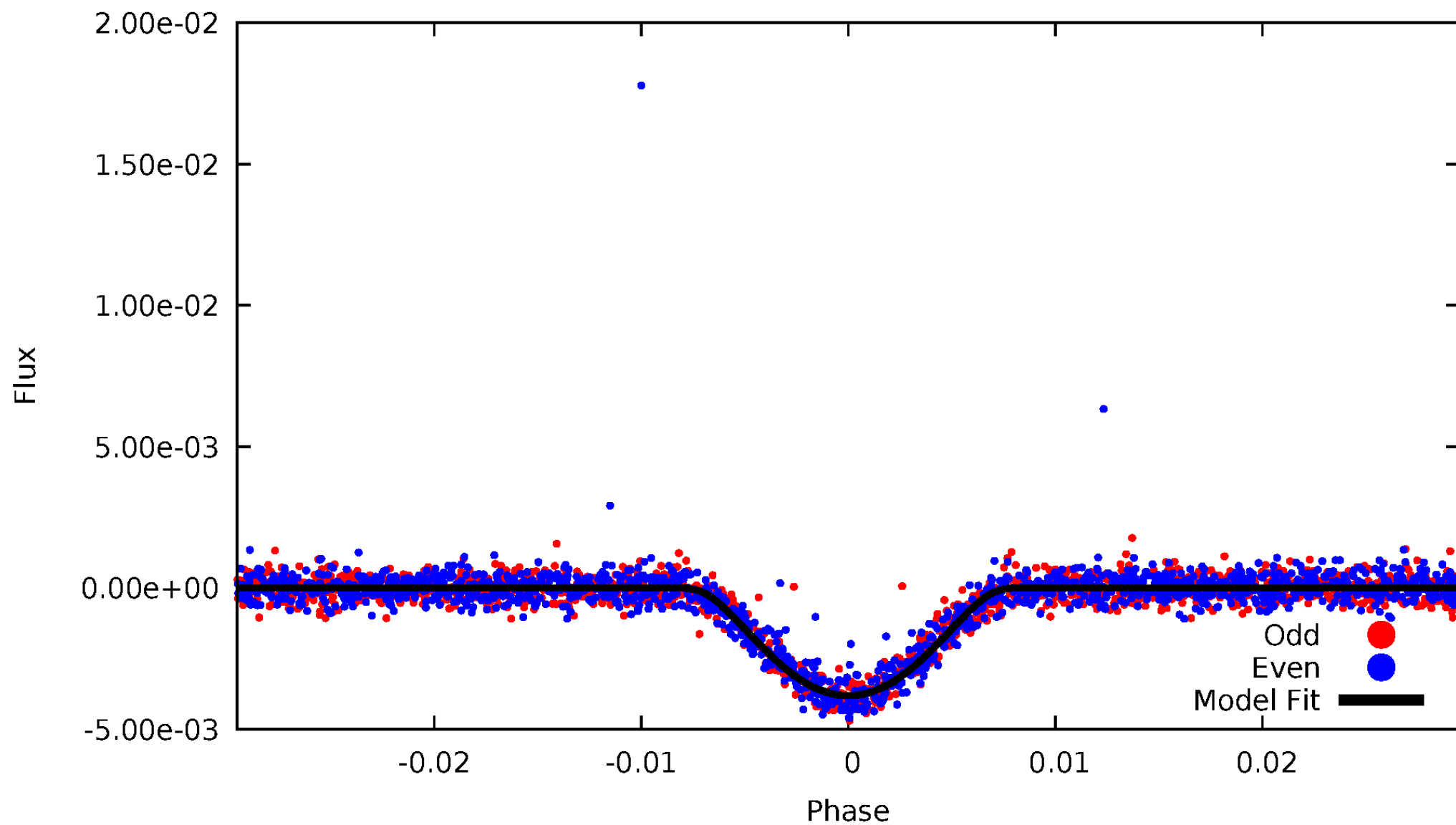


TCE 010874226-02



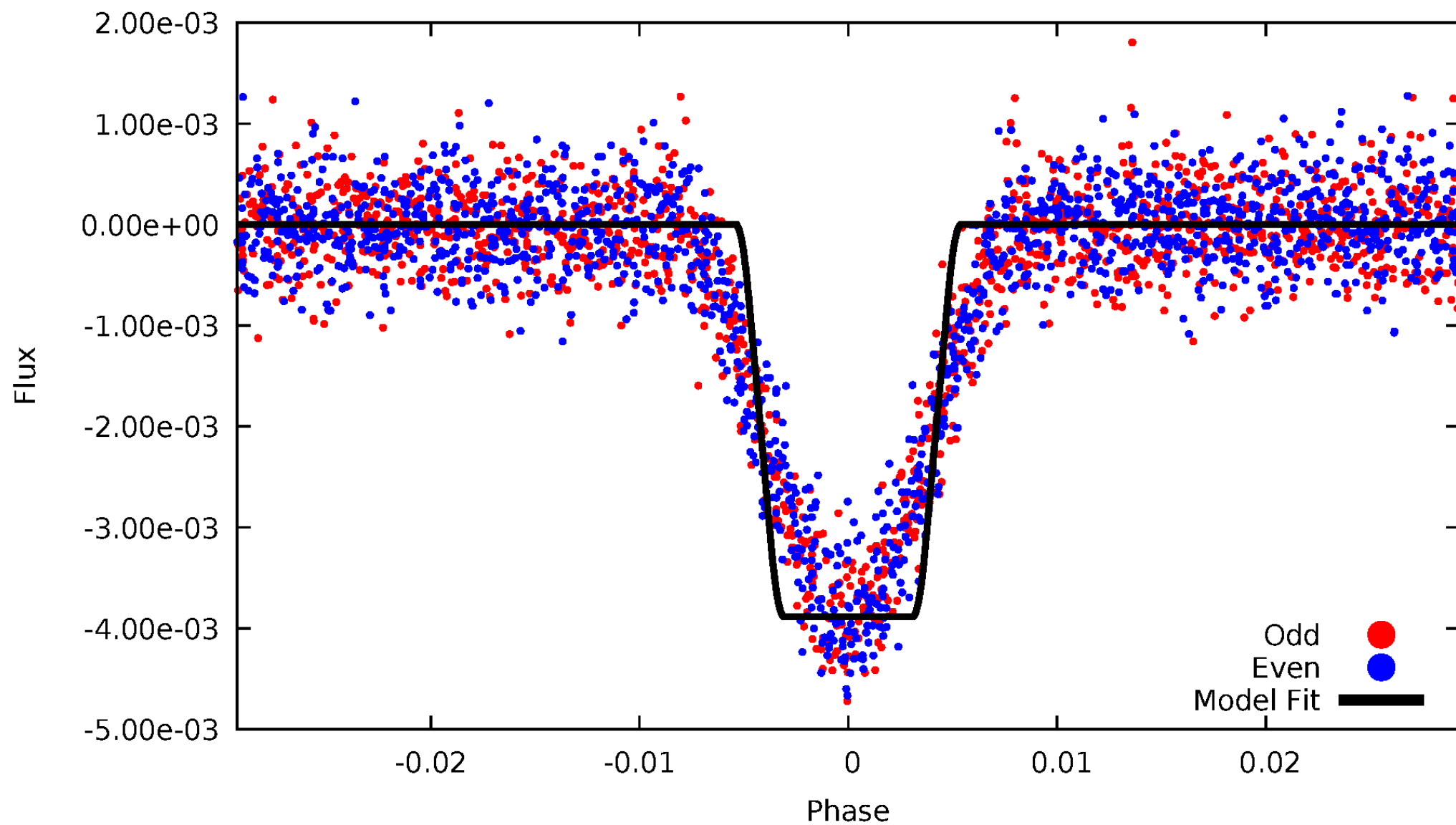
DV Odd/Even

TCE 010874226-02



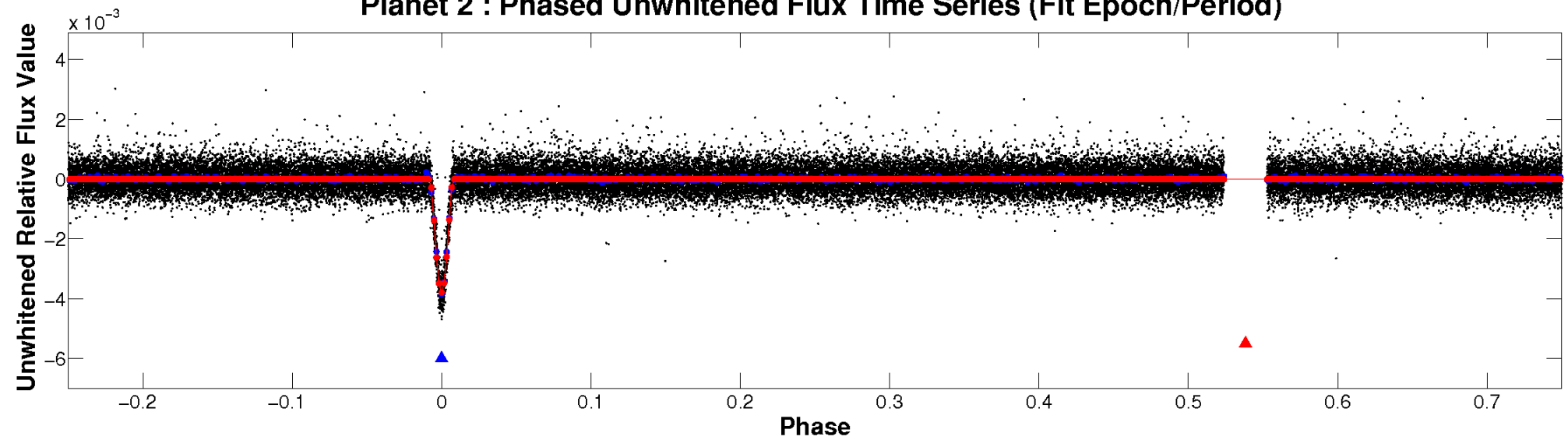
ALT Odd/Even

TCE 010874226-02

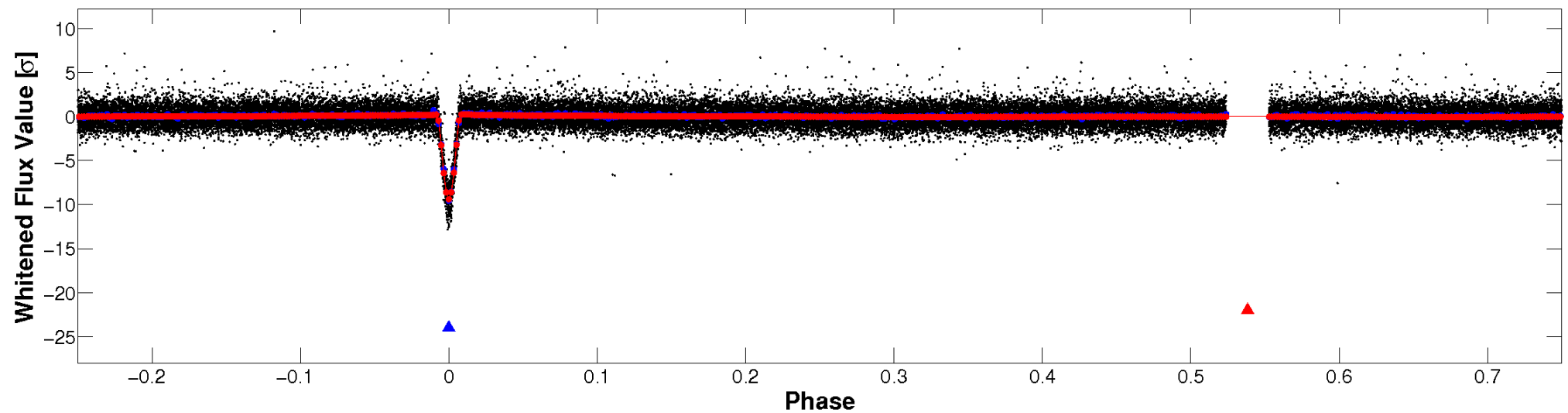


Non-Whitened Vs. Whitened Light Curve

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

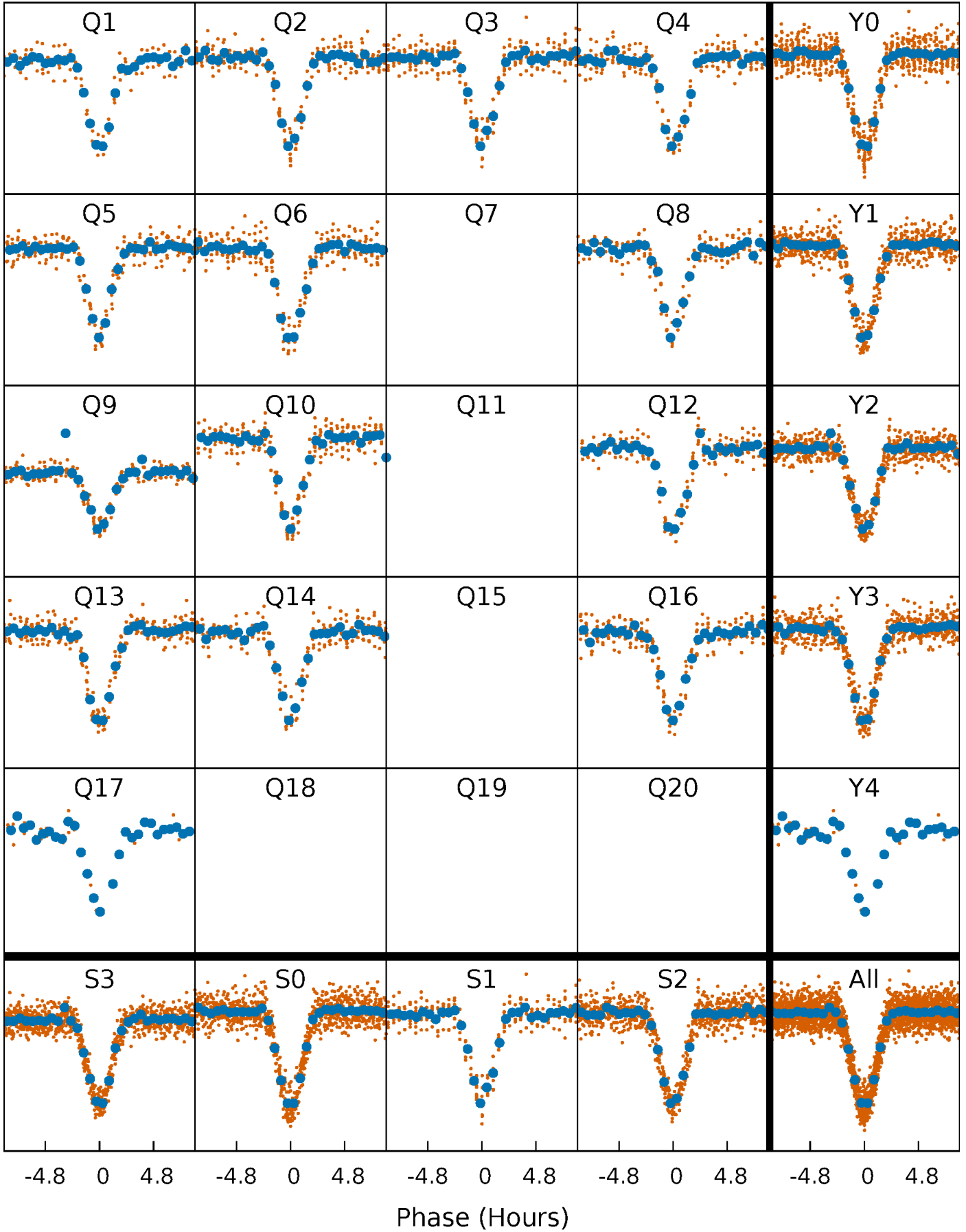


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



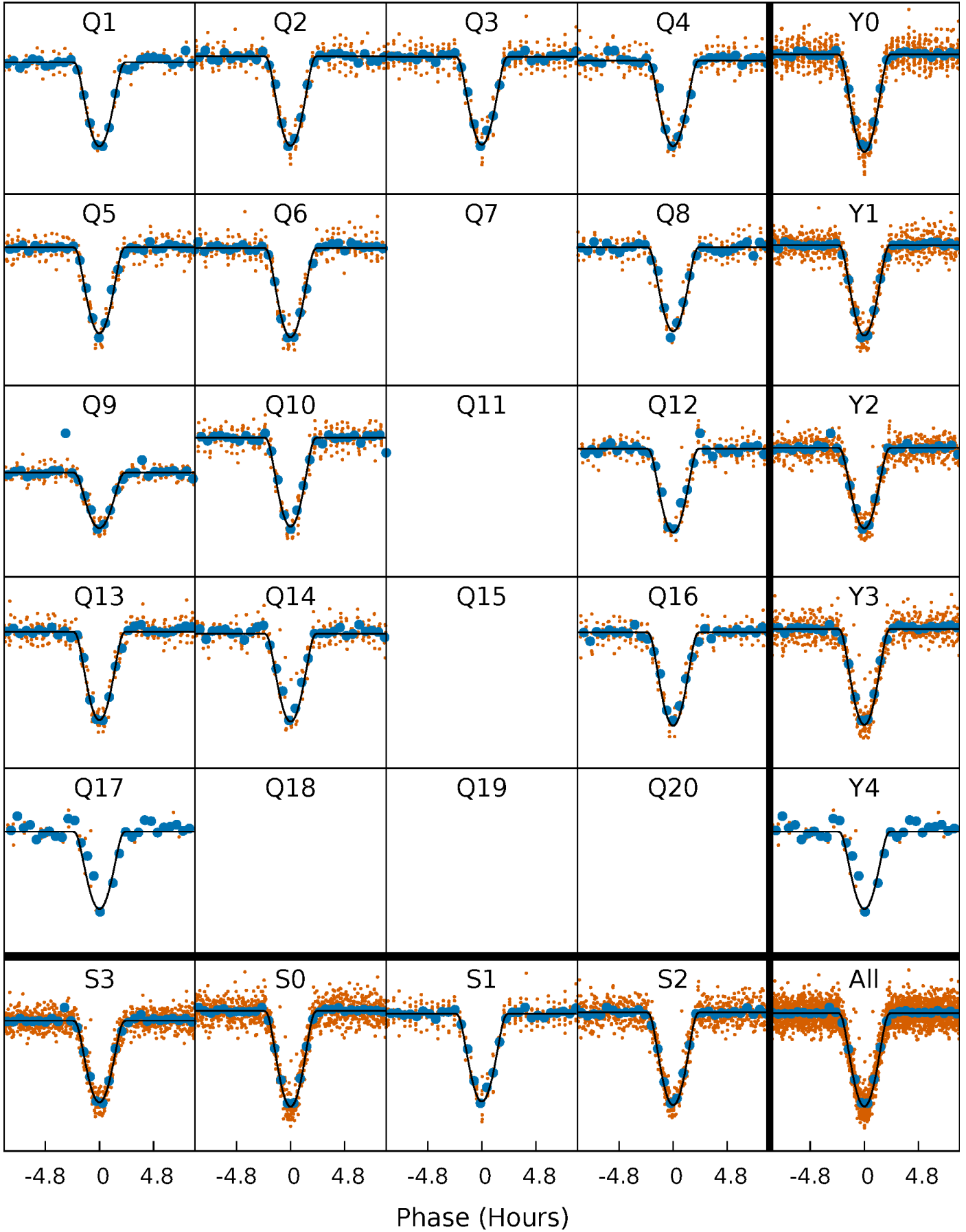
PDC Quarter-Phased Transit Curves

TCE 010874226-02 P= 11.973608 Days $T_0=132.805733$ (BKJD)



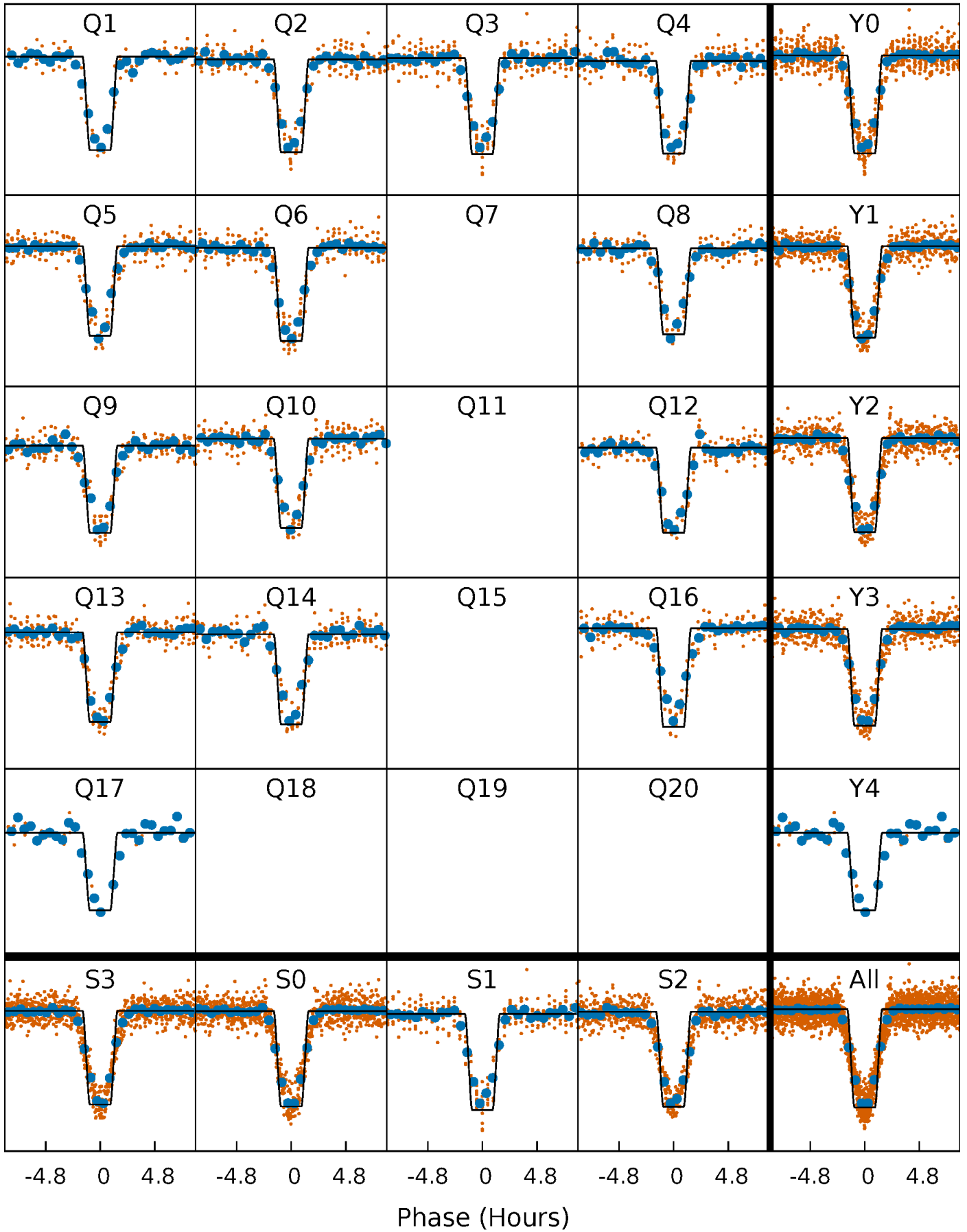
DV Quarter-Phased Transit Curves

TCE 010874226-02 P= 11.973608 Days $T_0=132.805733$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

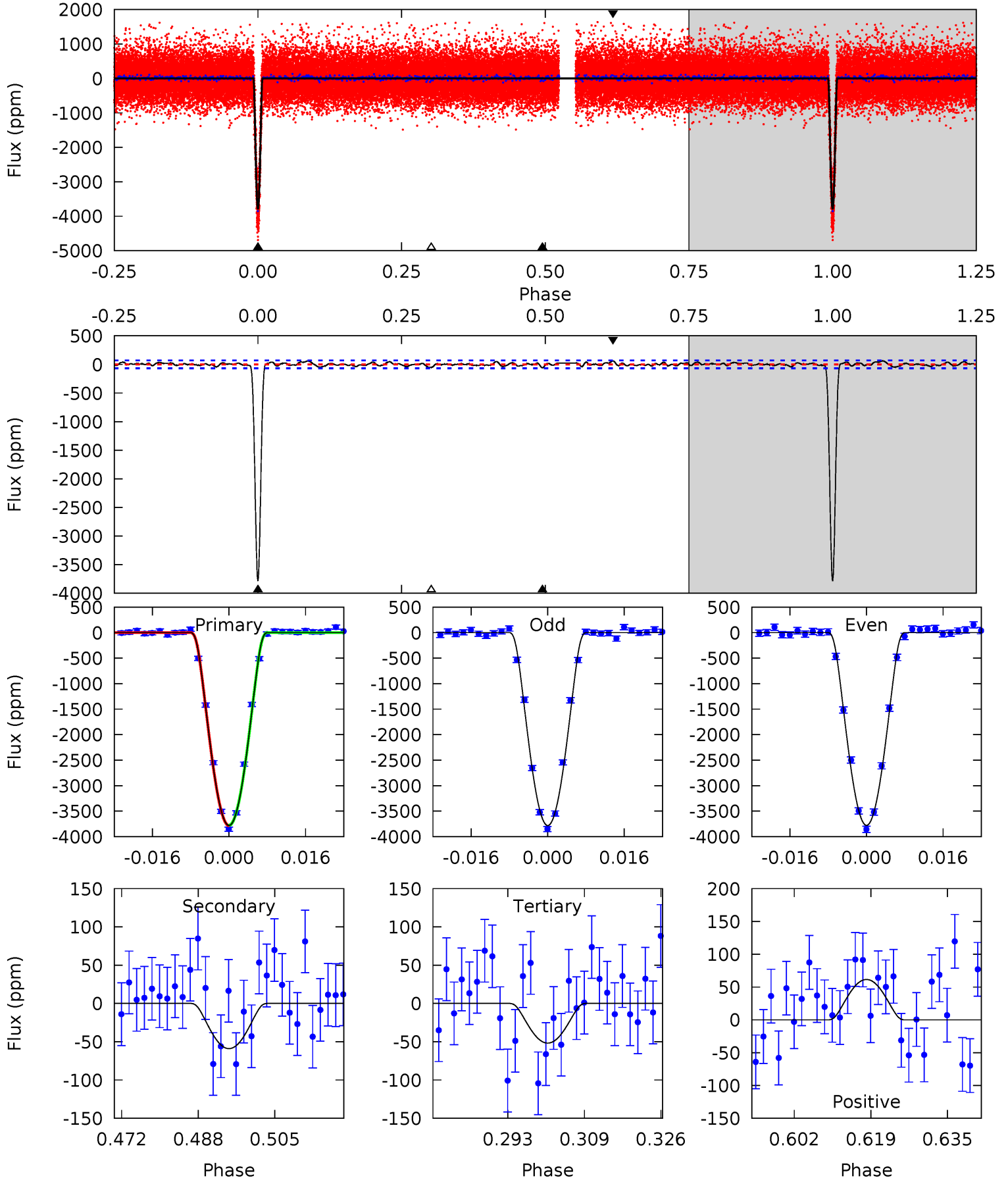
TCE 010874226-02 P= 11.973574 Days $T_0=132.807459$ (BKJD)



DV Model-Shift Uniqueness Test

010874226-02, $P = 11.973608$ Days, $E = 120.832125$ Days

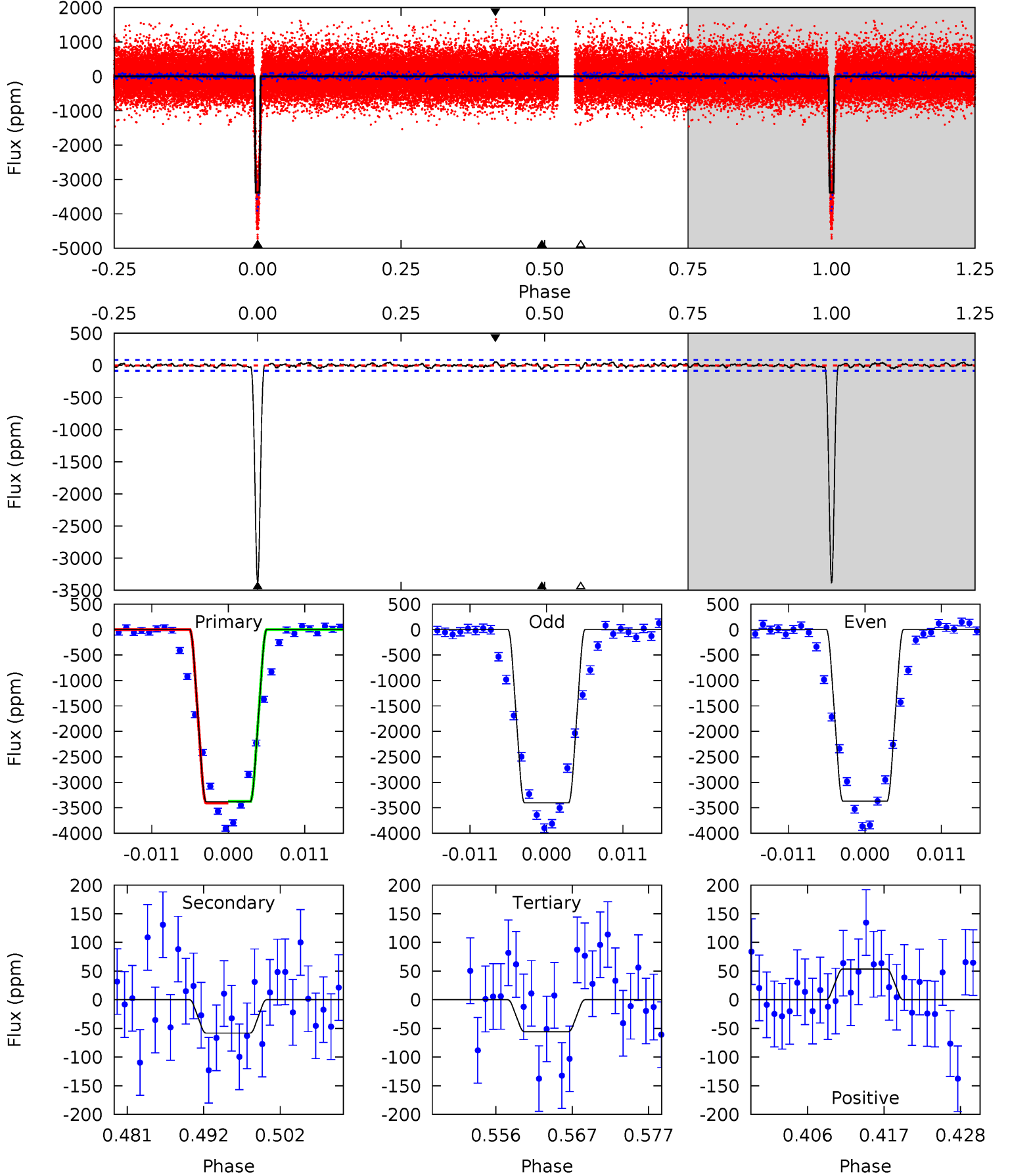
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
270.9	4.23	3.71	4.41	4.93	2.40	1.48	267.1	266.4	0.52	-0.18	0.13	0.98	0.02	0.26



Alt Model-Shift Uniqueness Test

010874226-02, P = 11.973574 Days, E = 120.833885 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
199.4	3.43	3.29	3.16	5.01	2.55	1.09	196.1	196.2	0.14	0.27	0.99	1.00	0.02	0.95



Stellar Parameters For KIC 010874226

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6146^{+192}_{-213}	$4.497^{+0.054}_{-0.216}$	$-0.260^{+0.250}_{-0.300}$	$0.943^{+0.321}_{-0.100}$	$1.020^{+0.138}_{-0.138}$	$1.713^{+0.389}_{-0.961}$
	+3%/-3%	+1%/-5%	+96%/-115%	+34%/-11%	+14%/-14%	+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 010874226-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-59 ± 14	$10.82^{+3.62}_{-3.33}$	1170^{+89}_{-55}	2508^{+242}_{-200}	$2.901^{+3.234}_{-1.380}$
Alt.	-58 ± 17	$6.75^{+3.47}_{-3.20}$	1172^{+87}_{-61}	2835^{+604}_{-318}	$7.161^{+18.908}_{-4.242}$

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

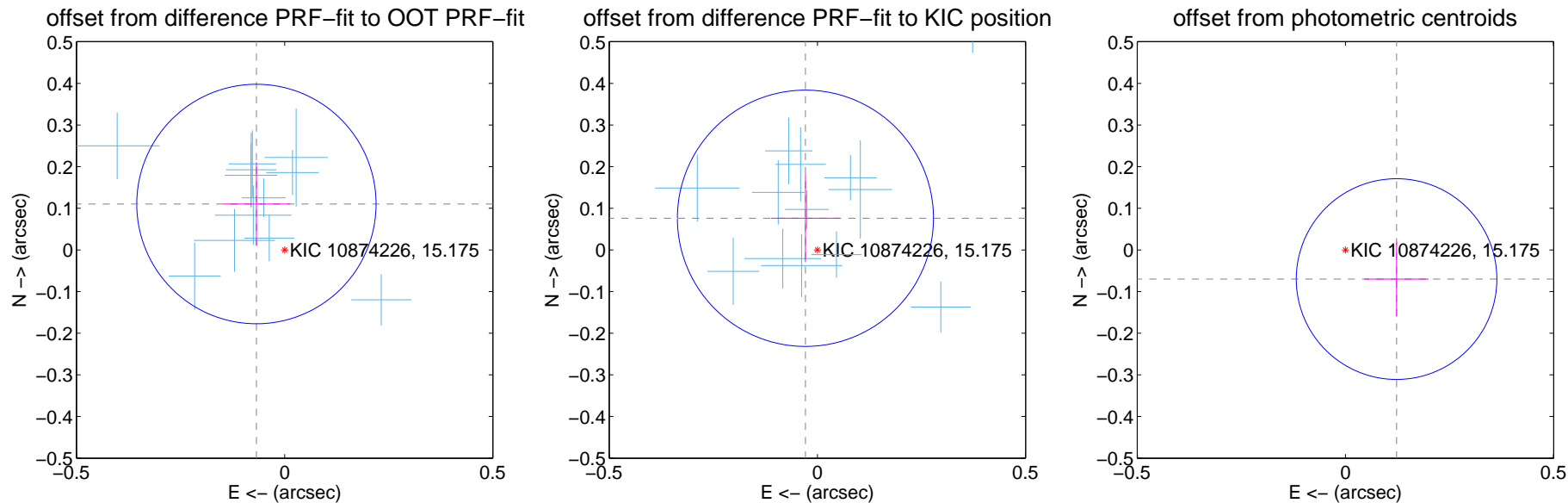
DV Centroid Data

Supplemental centroid analysis for 010874226-02. Kepler magnitude: 15.18. Transit SNR 163.31

There are 14 quarters with good PRF difference image offsets

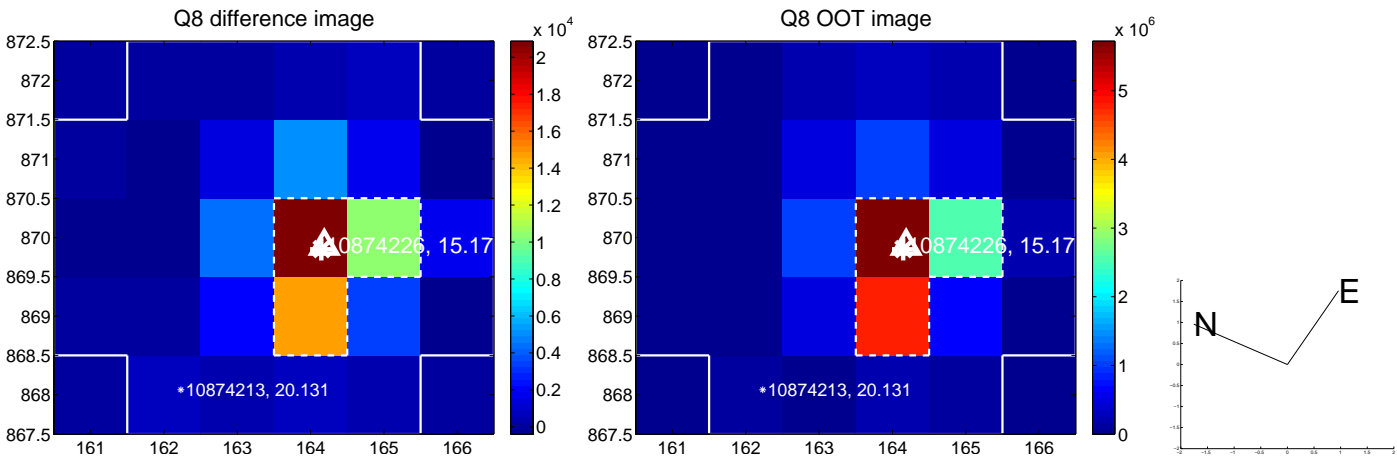
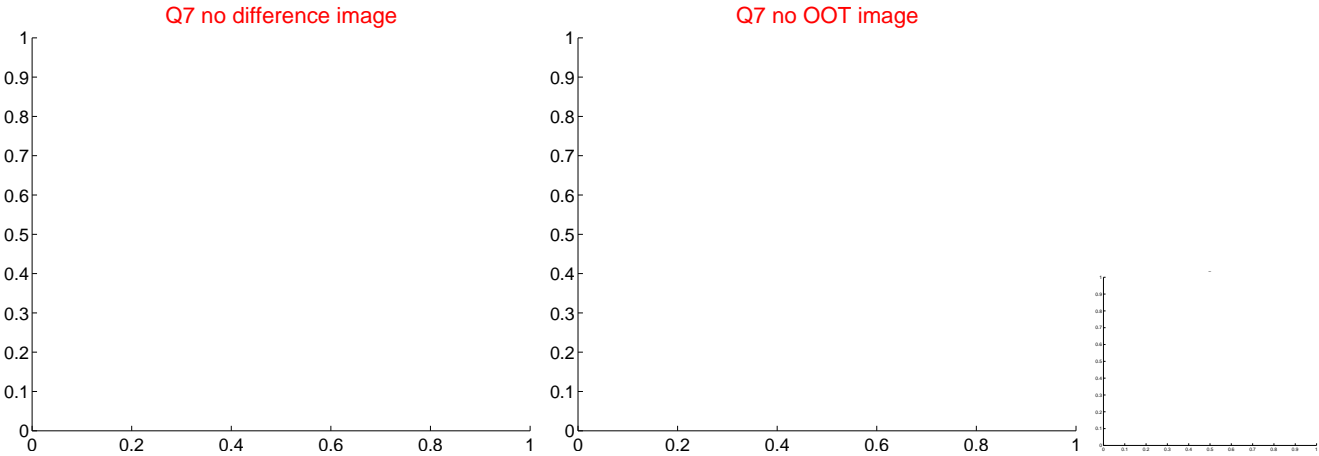
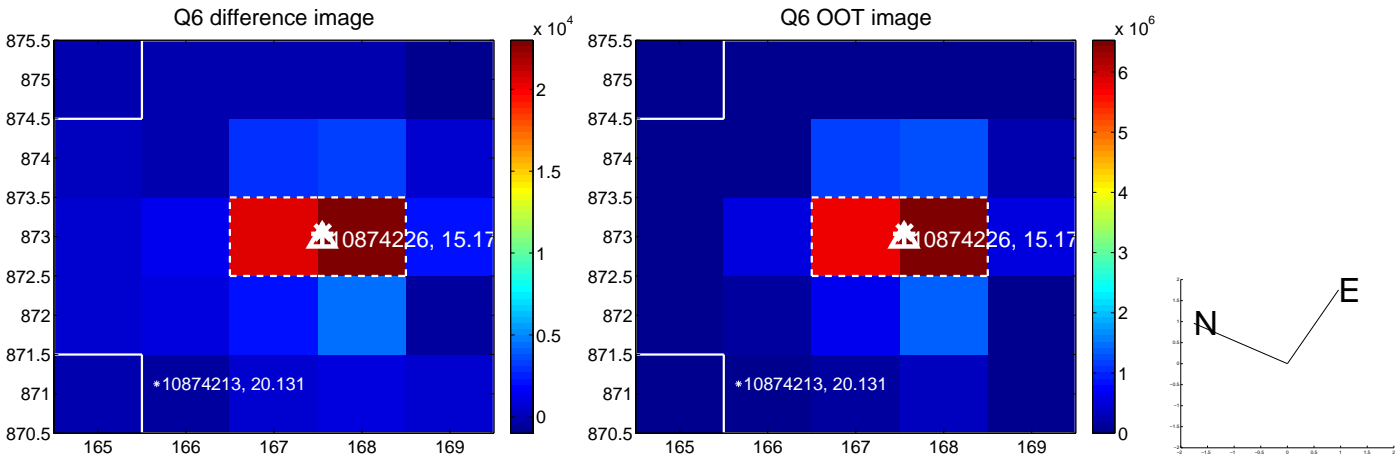
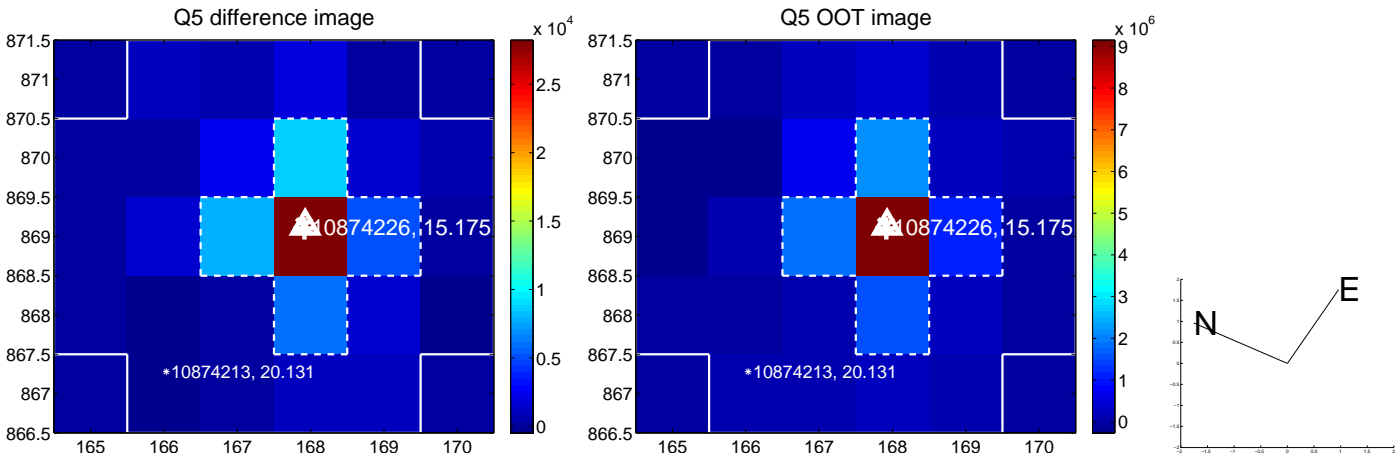
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.130 ± 0.096	1.35	0.068 ± 0.080	0.110 ± 0.101
PRF-fit source offset from KIC position	0.081 ± 0.103	0.79	0.029 ± 0.083	0.076 ± 0.106
photometric centroid source offset	0.14 ± 0.08	1.76	-0.12 ± 0.08	-0.07 ± 0.09

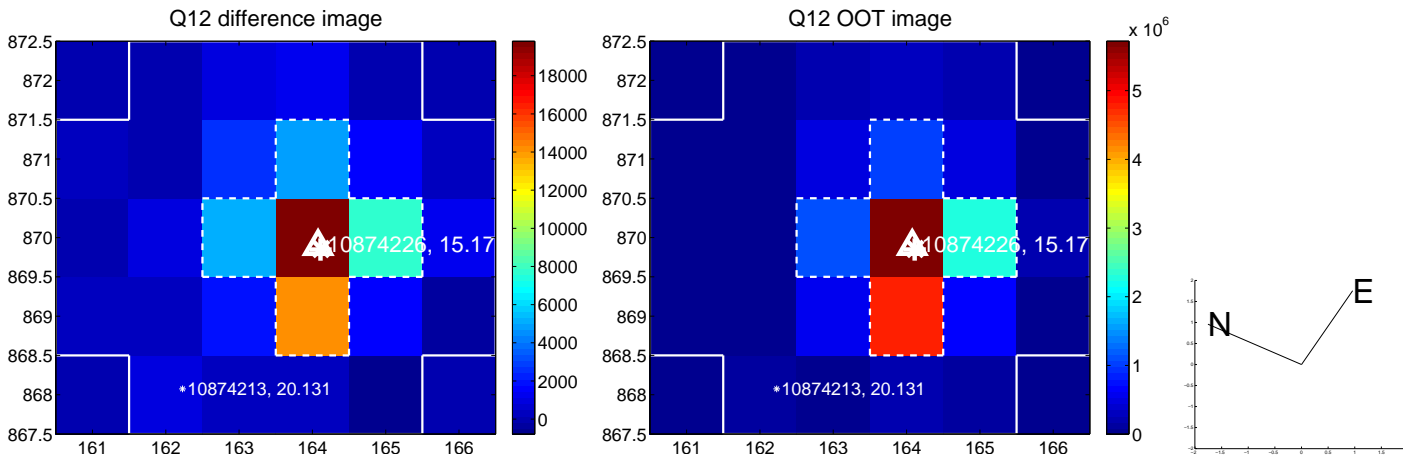
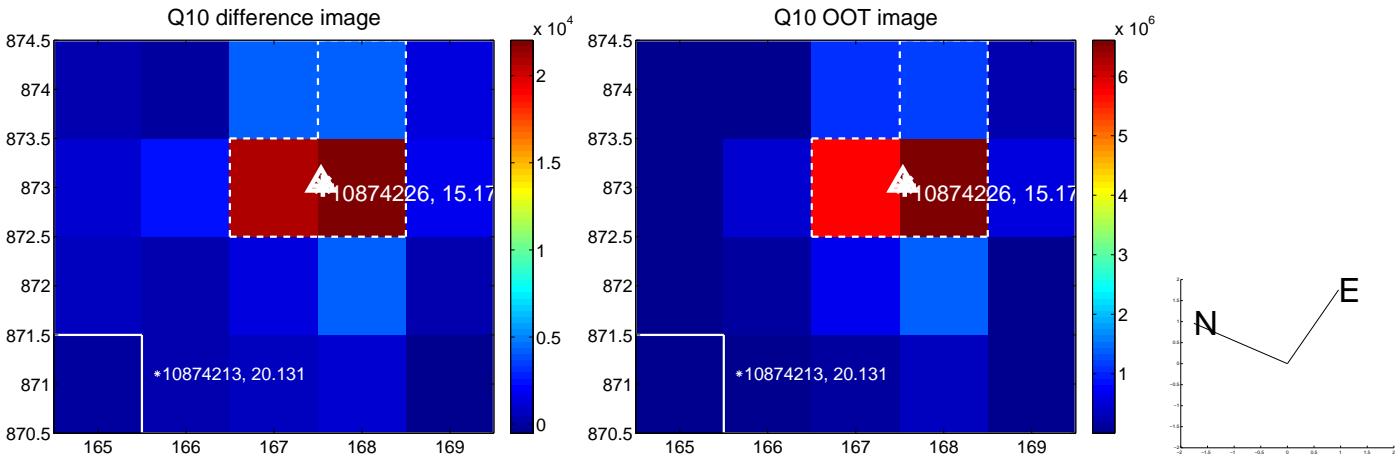
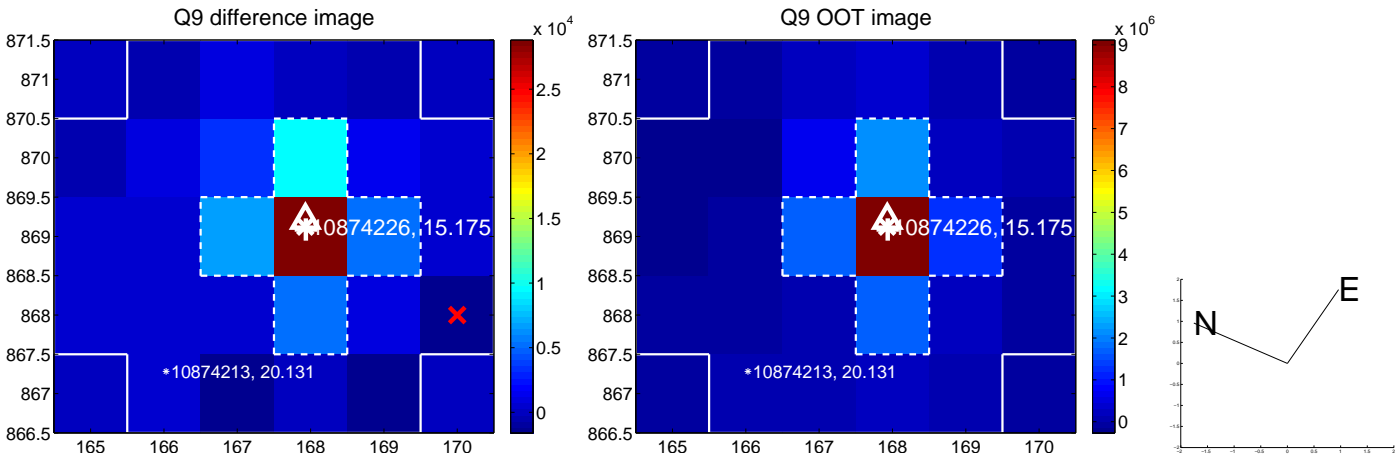


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

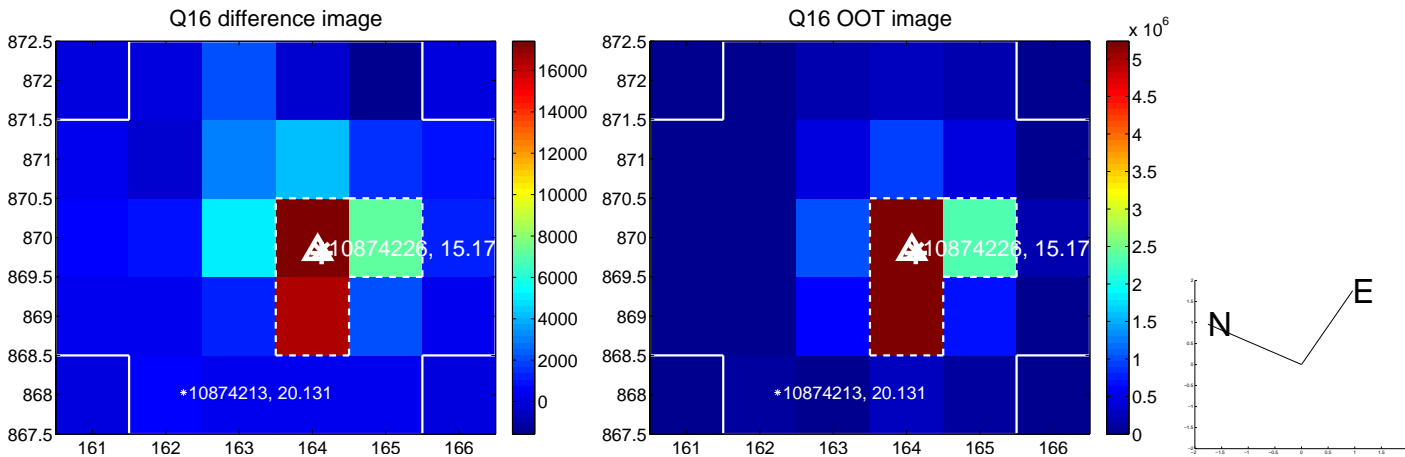
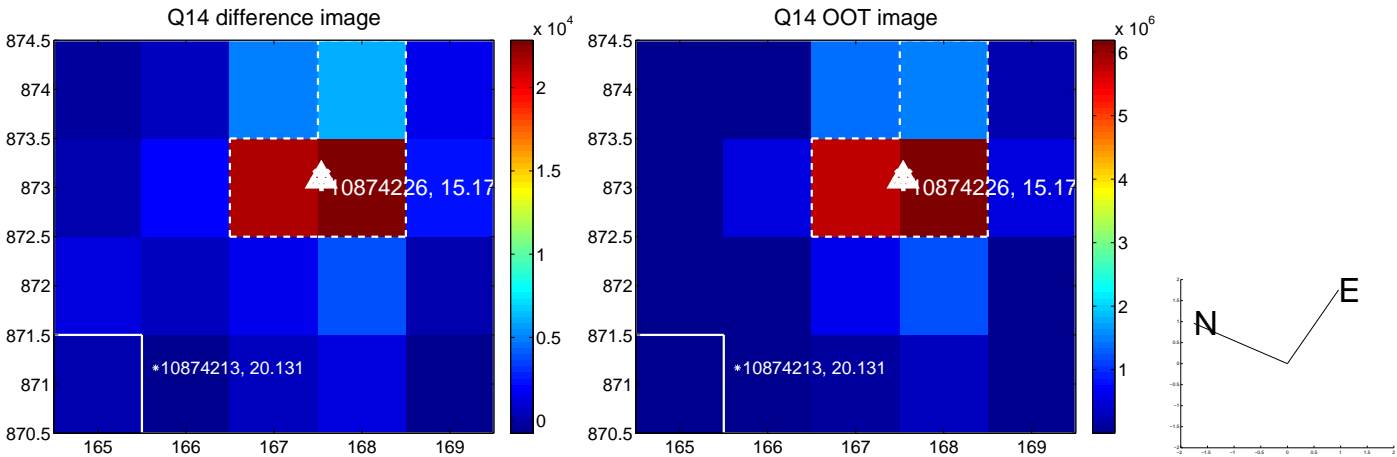
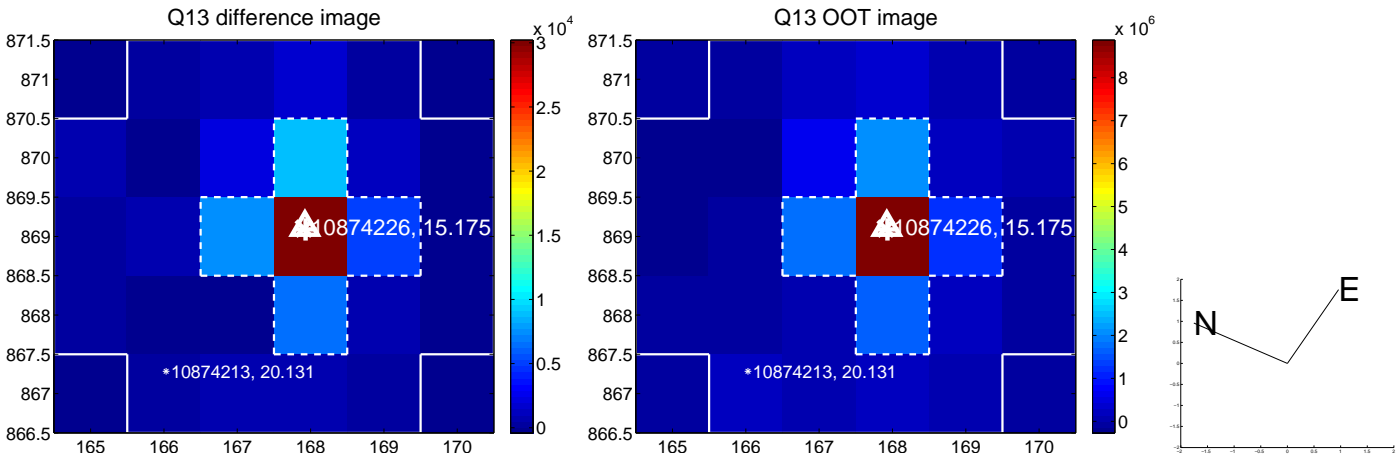
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



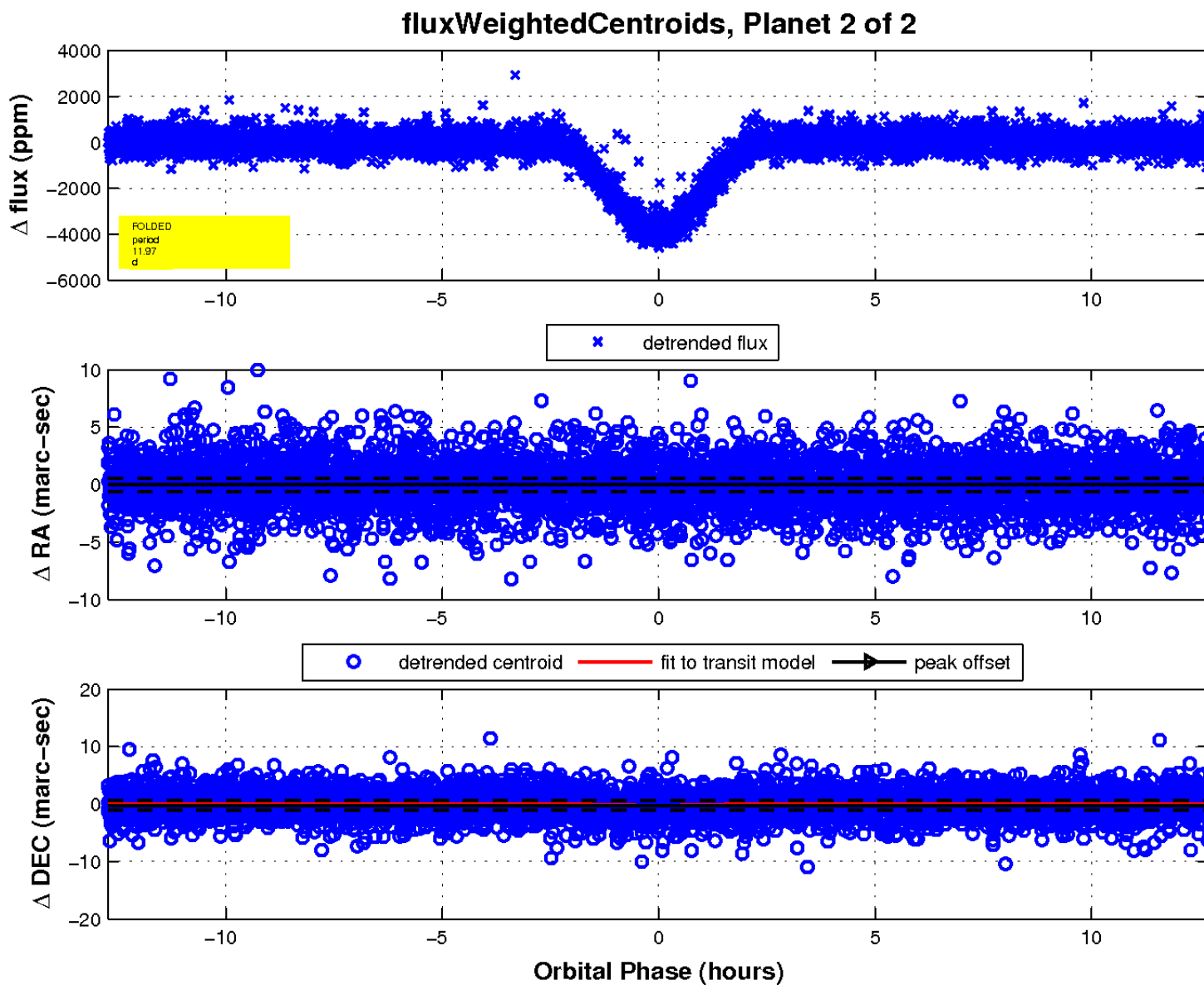
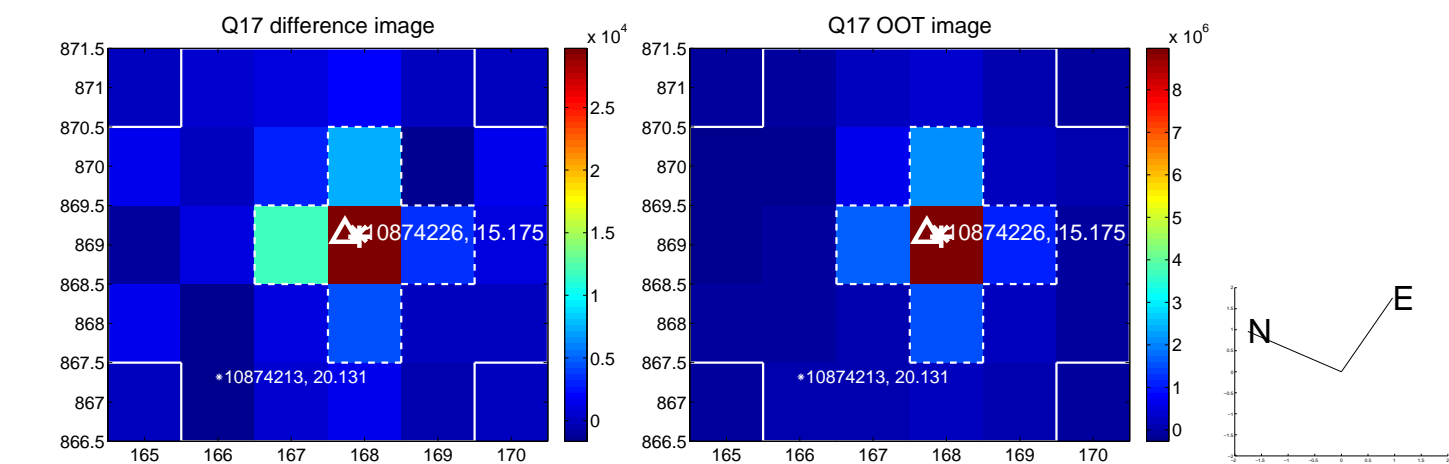
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

