

KIC 008074805

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})
008074805-01	OBS	2670.01	170.863988	299.665780	29785.7	17.384	938.0	840.4	1.32	5989	24.44	5.34
008074805-02	OBS	No	170.861785	186.080785	1224.8	12.568	44.4	44.1	1.32	5989	5.22	5.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008074805-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
008074805-02	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.

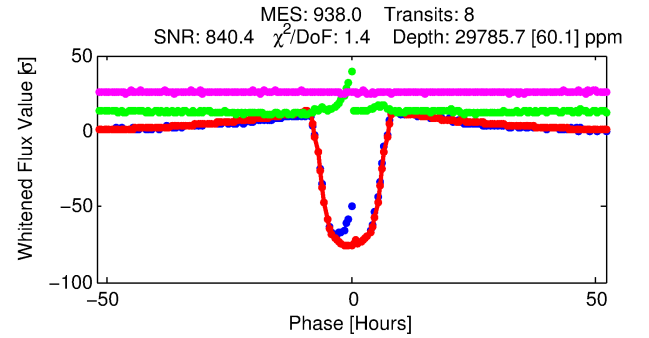
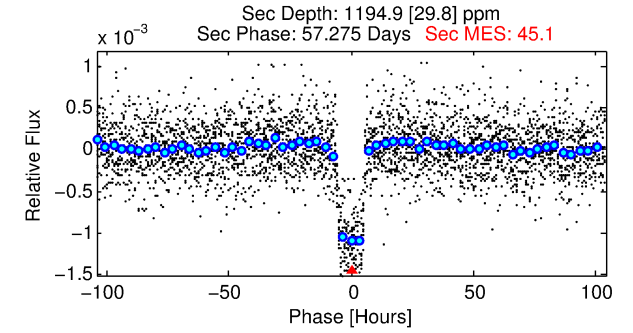
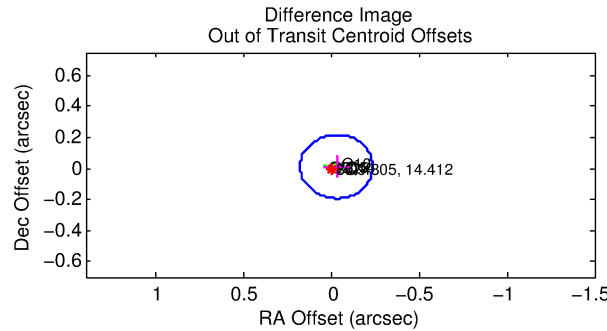
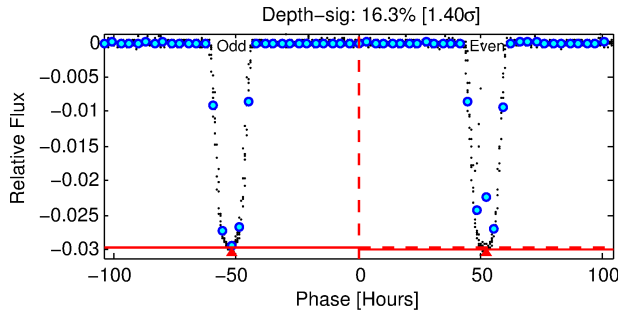
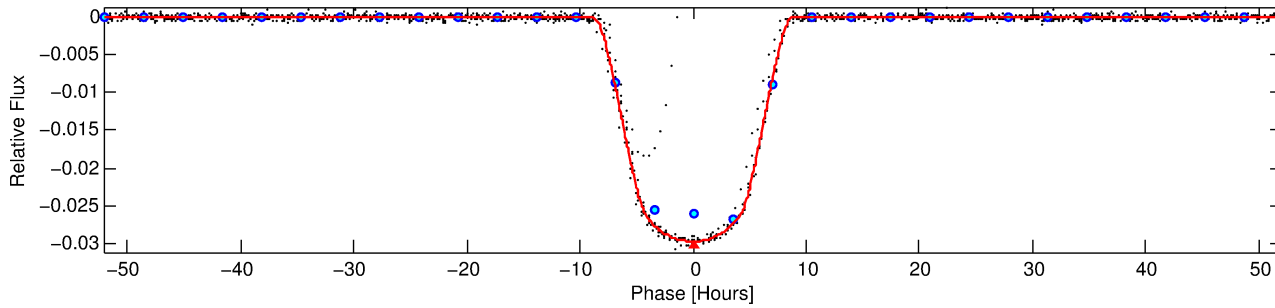
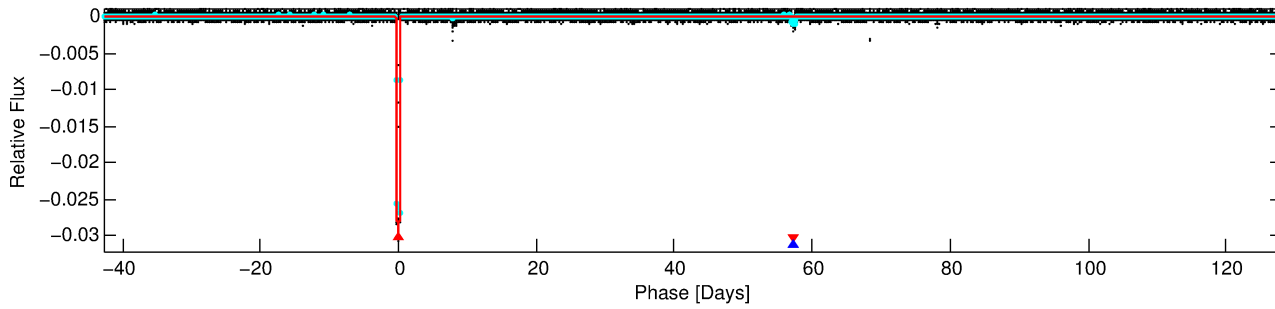
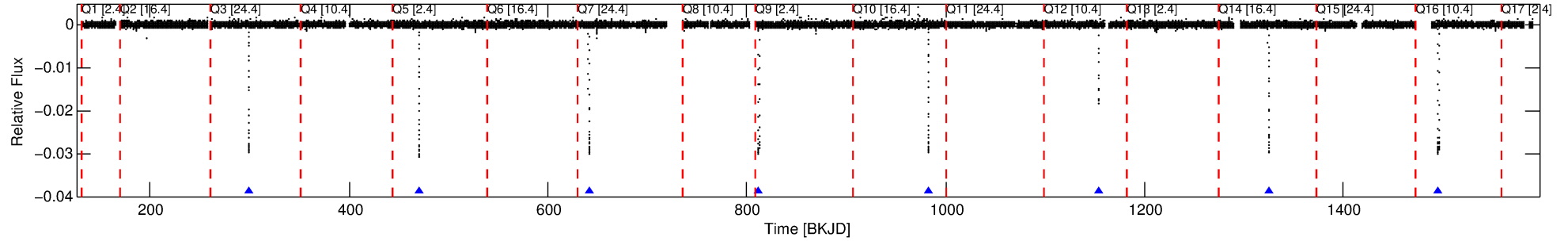
Ephemeris Match Information For 008074805-01

No Significant Match Found

DV One-Page Summary

KIC: 8074805 Candidate: 1 of 2 Period: 170.864 d
KOI: K02670.01 Corr: 0.985

Kp: 14.41 R*: 1.32 Rs Teff: 5989.0 K Logg: 4.22 Fe/H: 0.000



DV Fit Results:

Period = 170.86399 [0.00014] d
Epoch = 299.6658 [0.0006] BKJD
Rp/R* = 0.1692 [0.0003]
a/R* = 71.00 [0.31]
b = 0.69 [0.00]
Seff = 5.34 [1.44]
Teq = 388 [26] K
Rp = 24.44 [4.30] Re
a = 0.6153 [0.1008] AU
Ag = 416.45 [107.56] [3.86σ]
Teffp = 2707 [56] K [37.32σ]

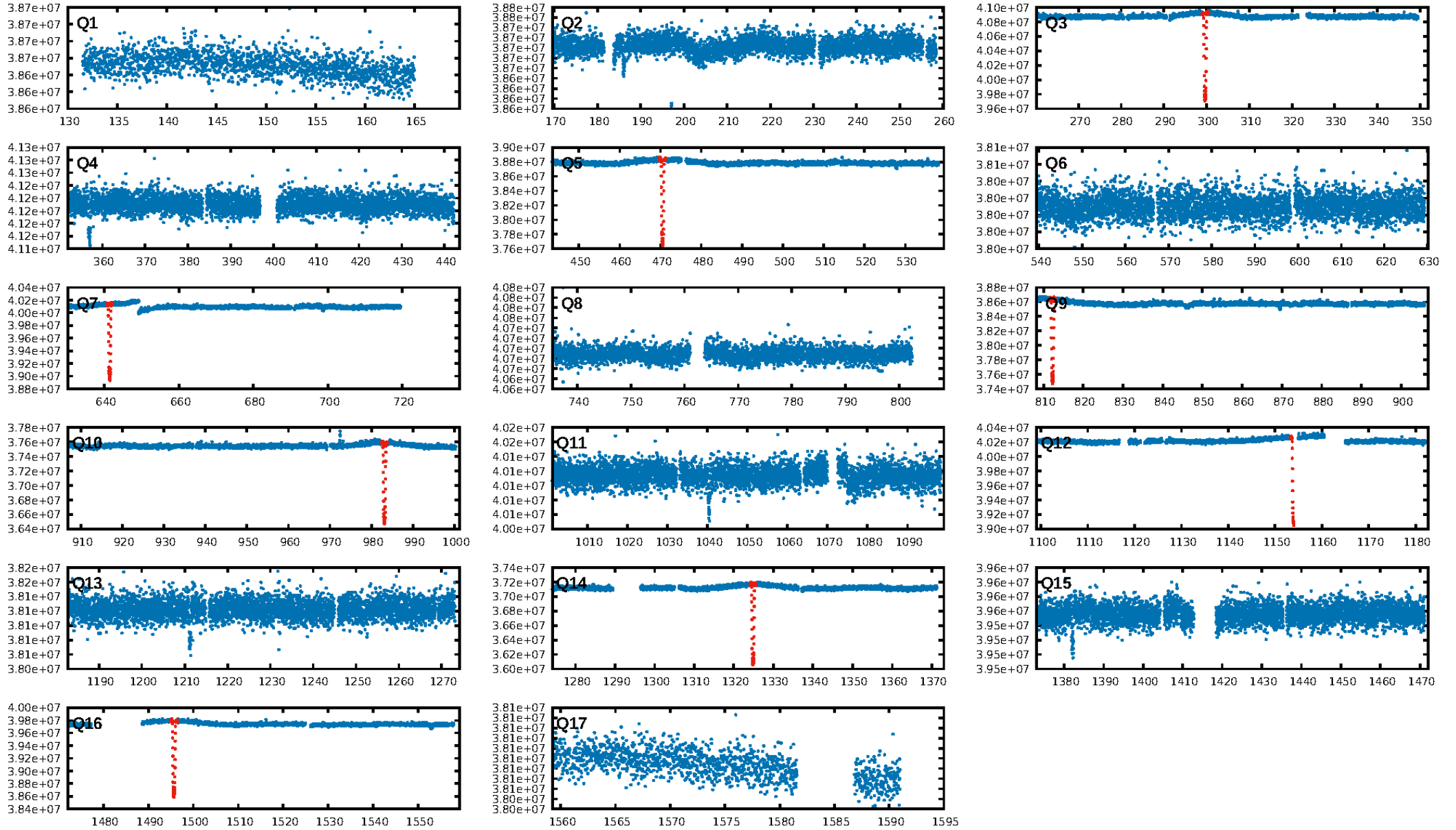
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 33.1%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 3.27
Centroid-sig: 67.8%
Centroid-so: 0.608 arcsec [43.22σ]
OotOffset-rm: 0.031 arcsec [0.46σ]
KicOffset-rm: 0.106 arcsec [1.51σ]
OotOffset-st: 2/2/1/2 [7]
KicOffset-st: 2/2/1/2 [7]
DiffImageQuality-fgm: 1.00 [7/7]
DiffImageOverlap-fno: 1.00 [7/7]

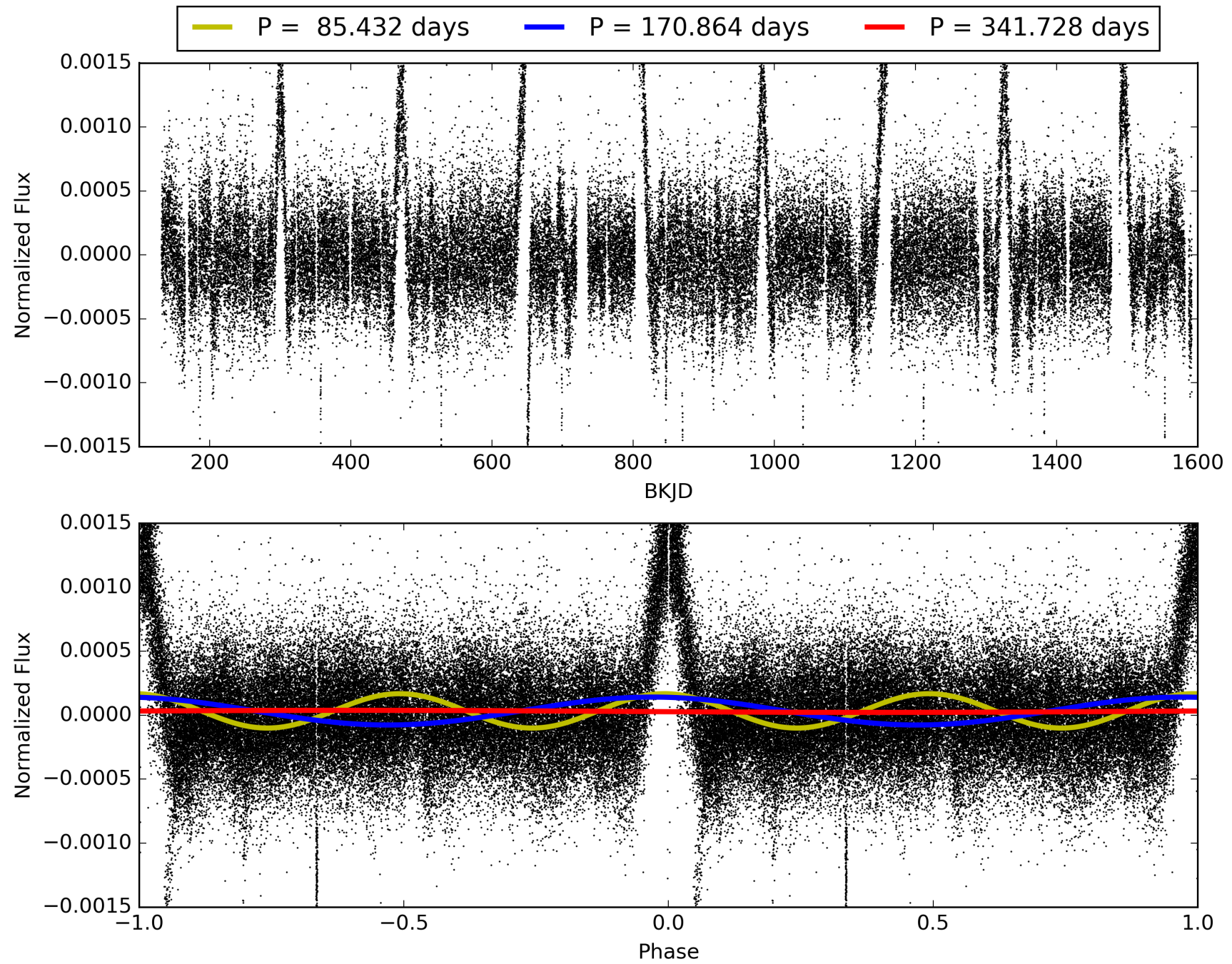
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:06:22 Z

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

TCE 008074805-01, PDC Light Curves

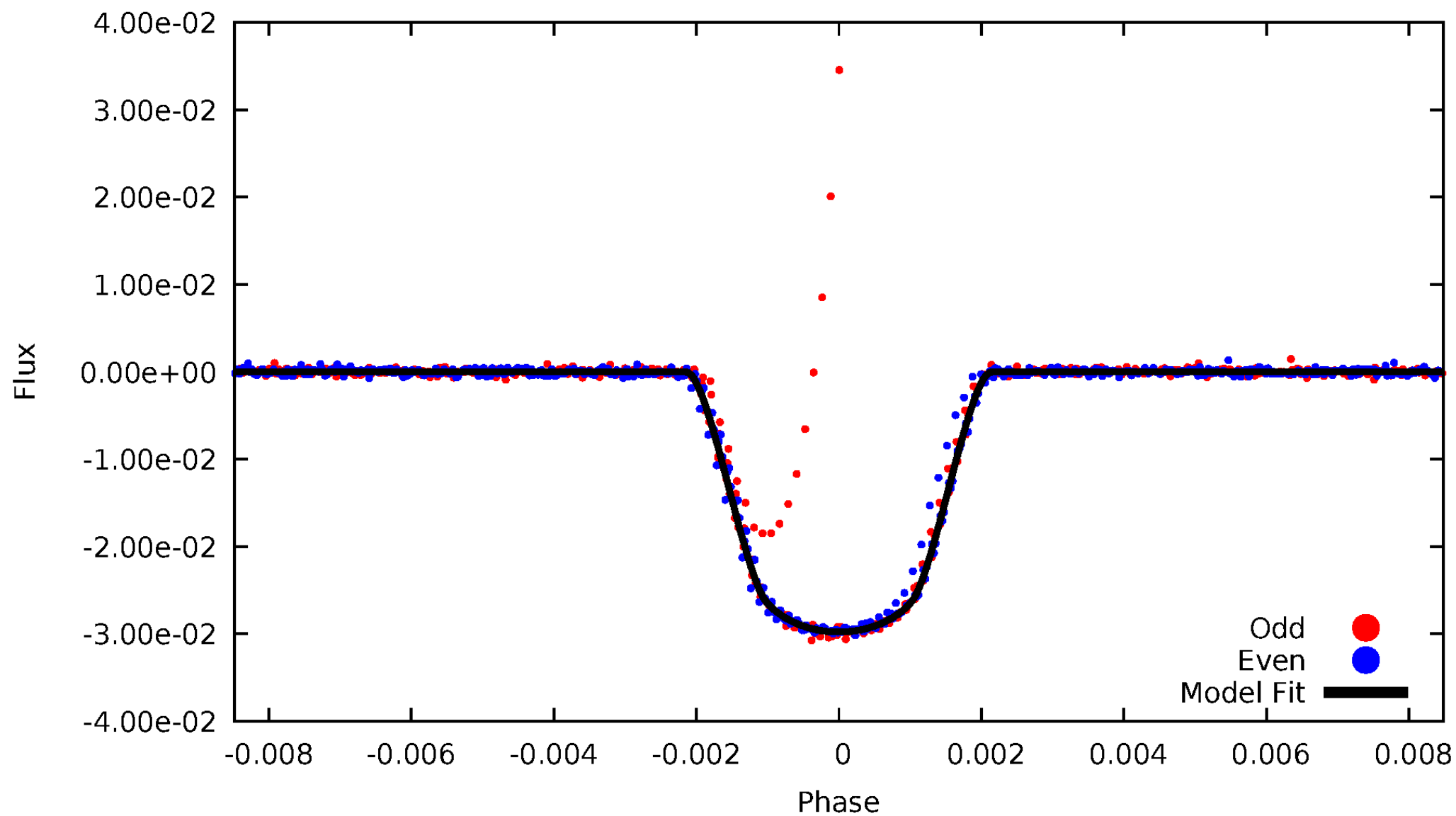


TCE 008074805-01



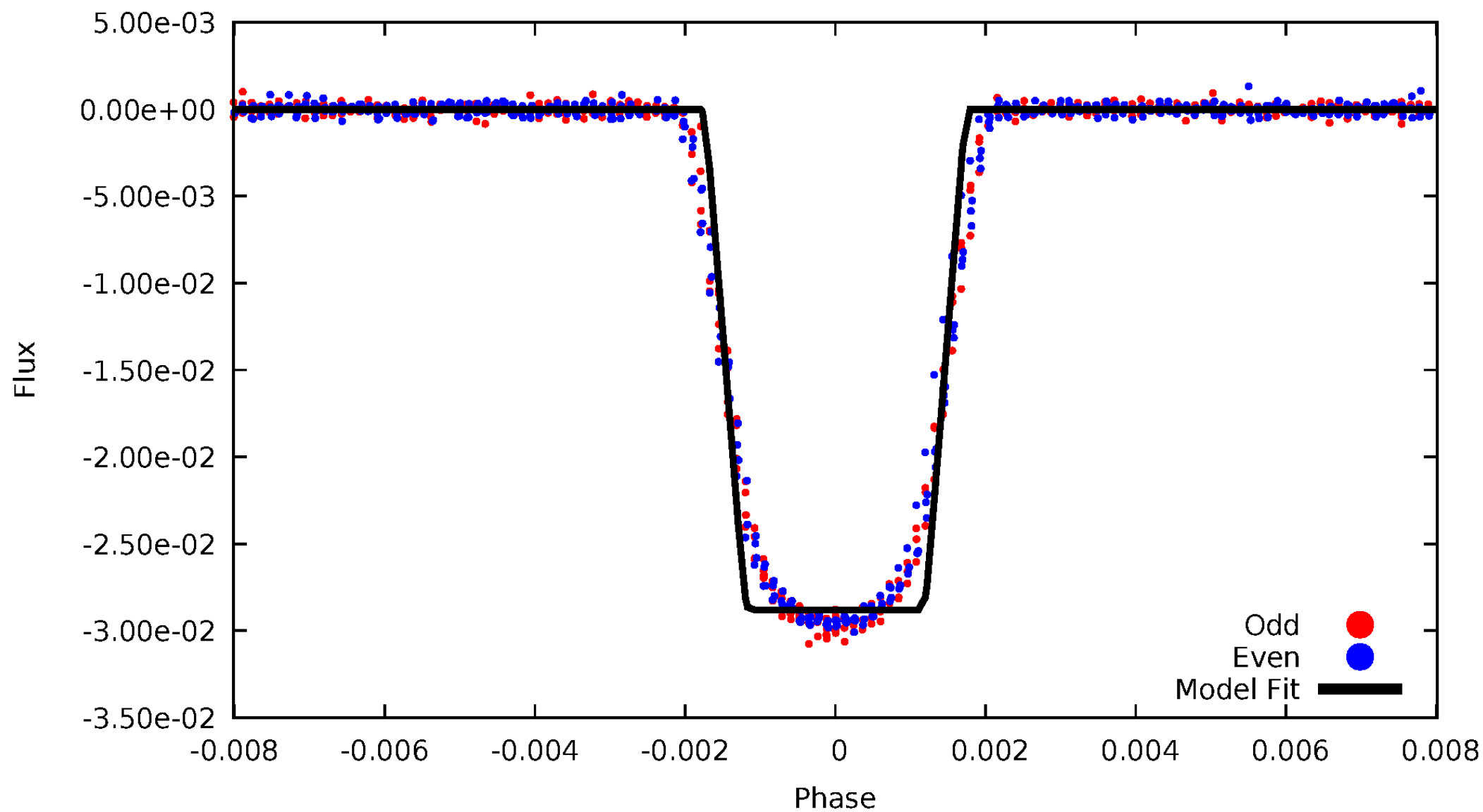
DV Odd/Even

TCE 008074805-01



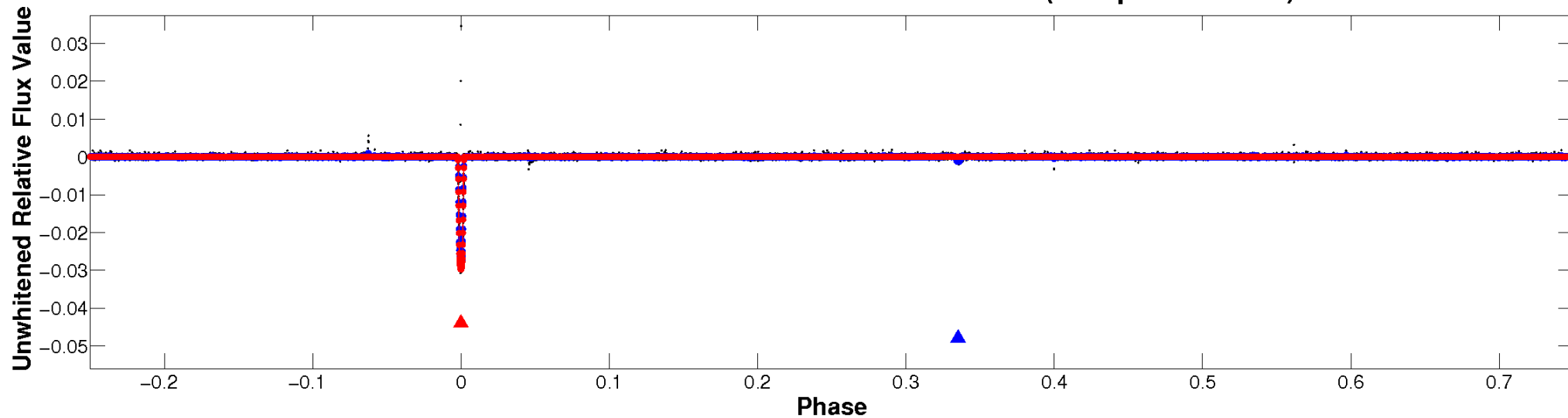
ALT Odd/Even

TCE 008074805-01

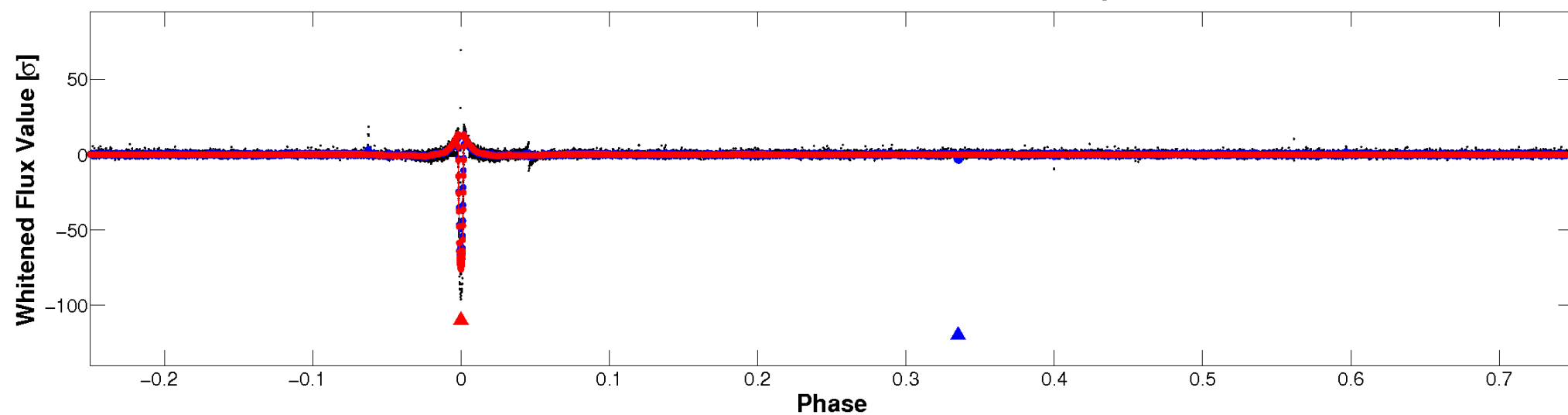


Non-Whitened Vs. Whitened Light Curve

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

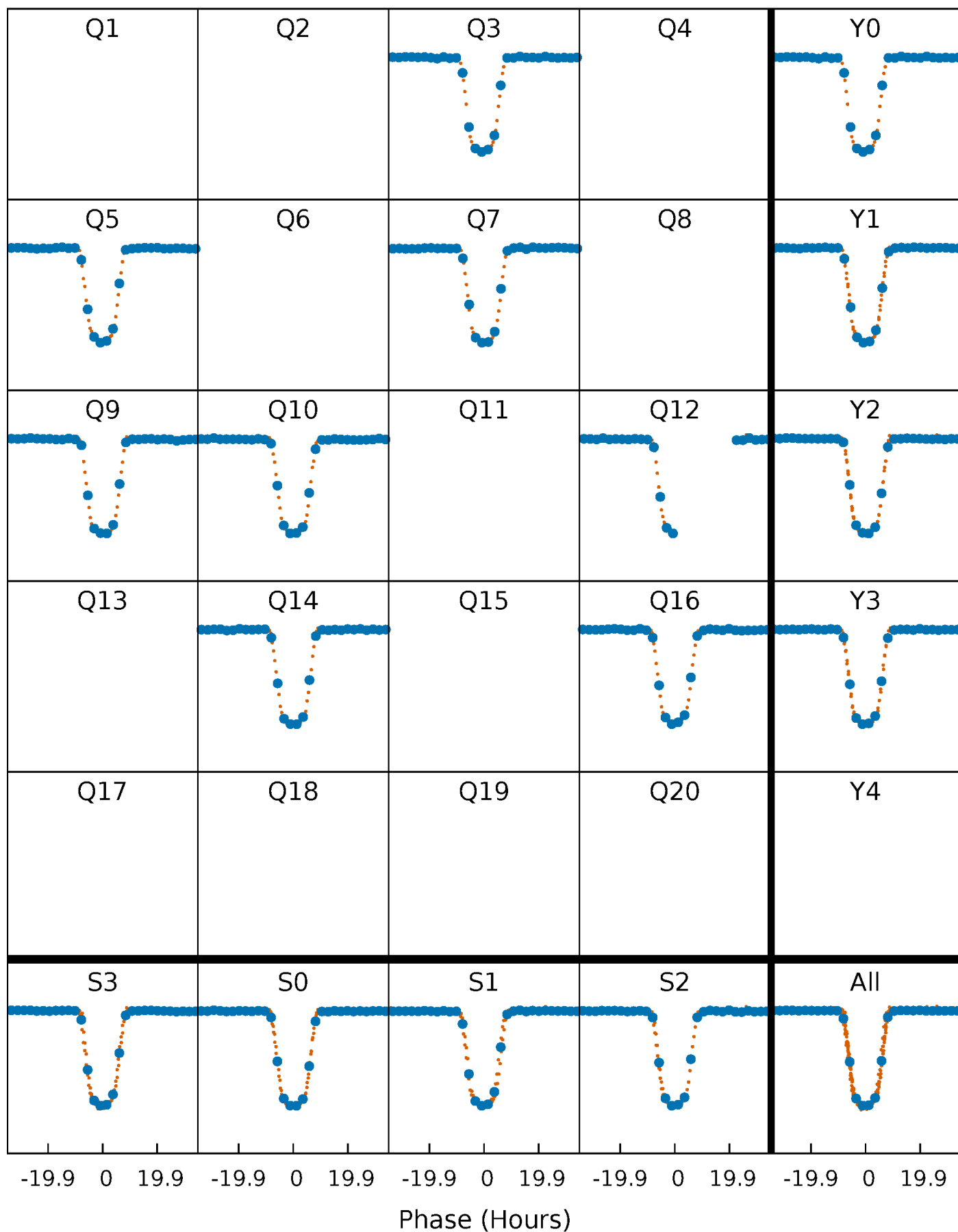


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



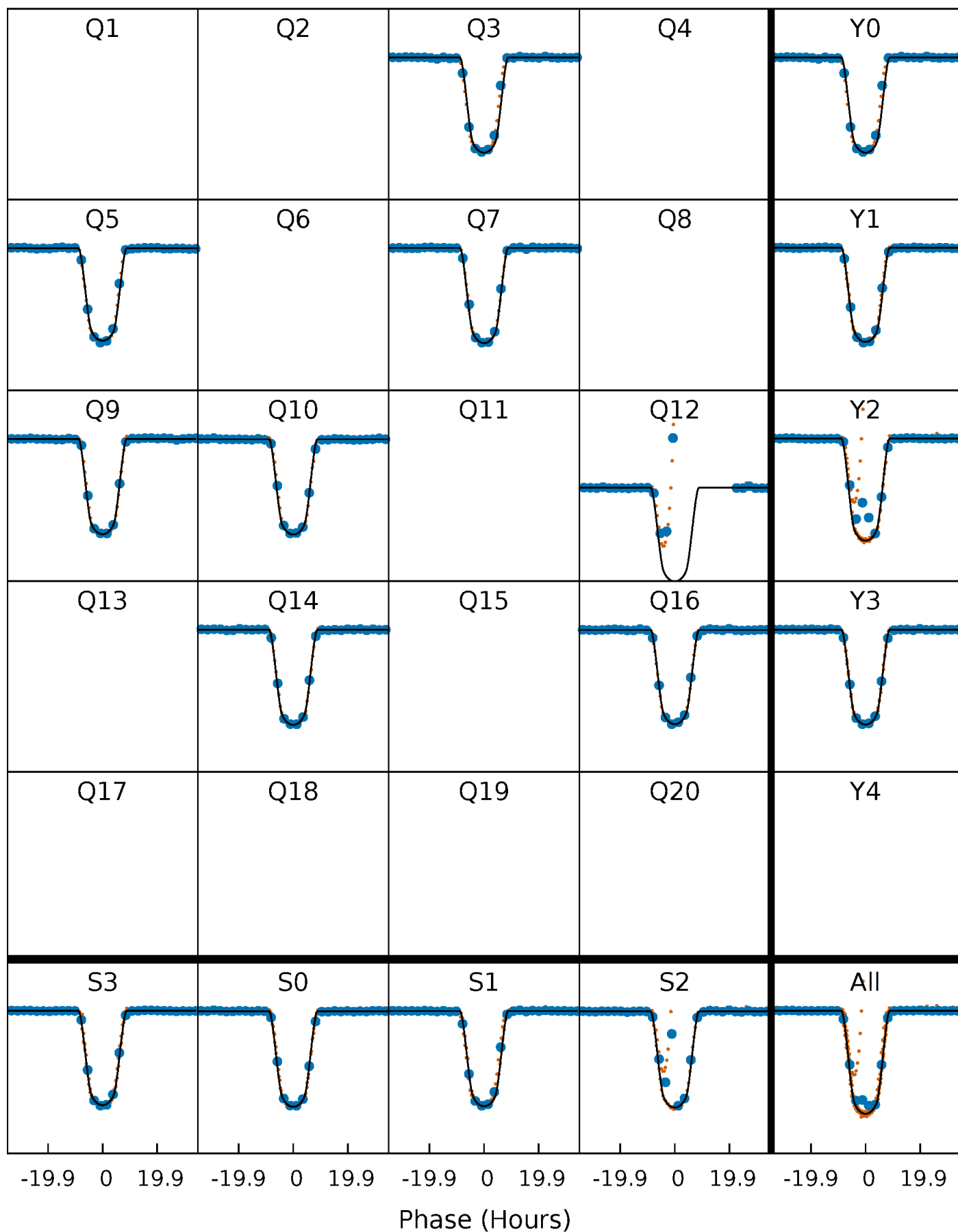
PDC Quarter-Phased Transit Curves

TCE 008074805-01 P=170.863988 Days $T_0=299.665780$ (BKJD)



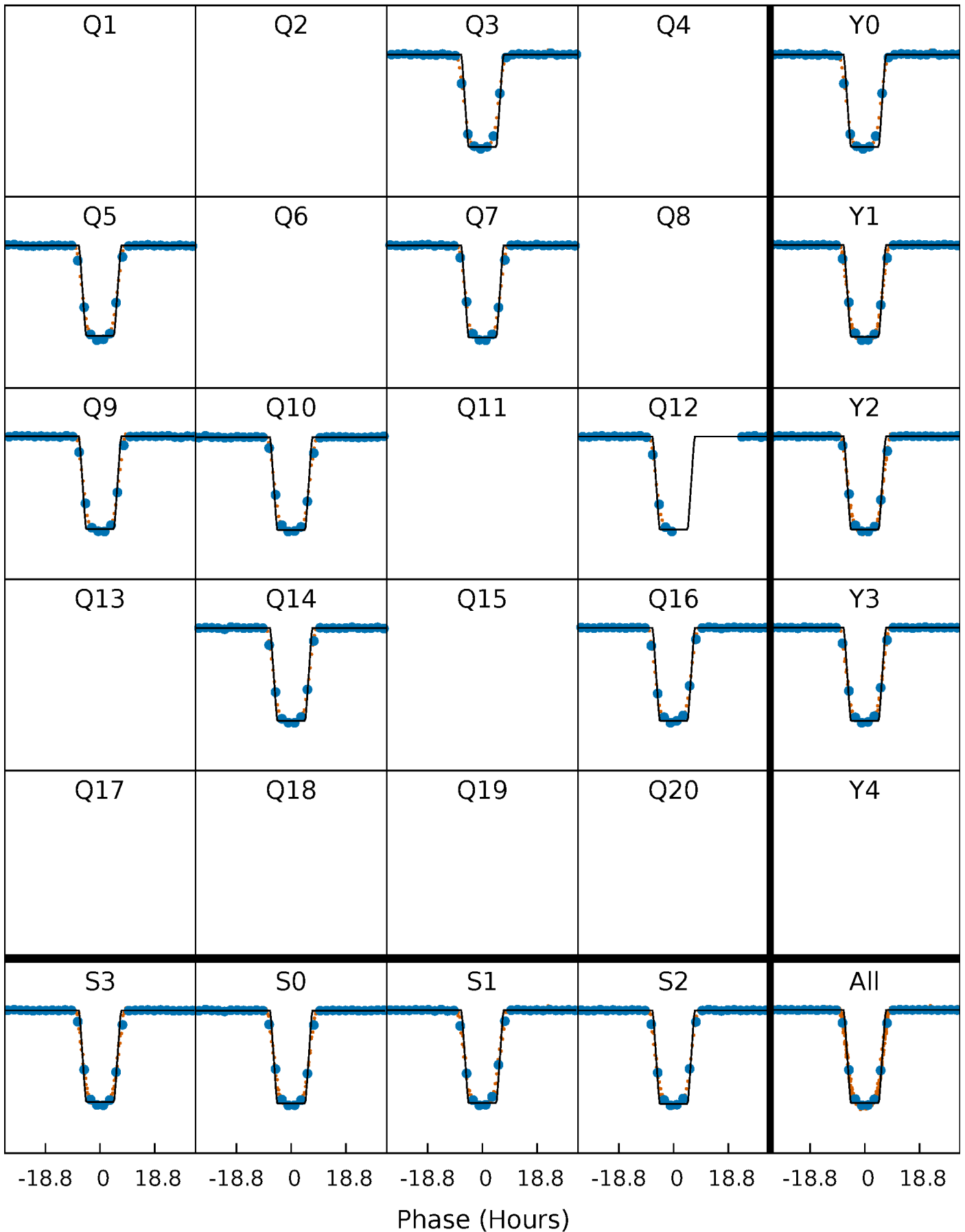
DV Quarter-Phased Transit Curves

TCE 008074805-01 P=170.863988 Days $T_0=299.665780$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

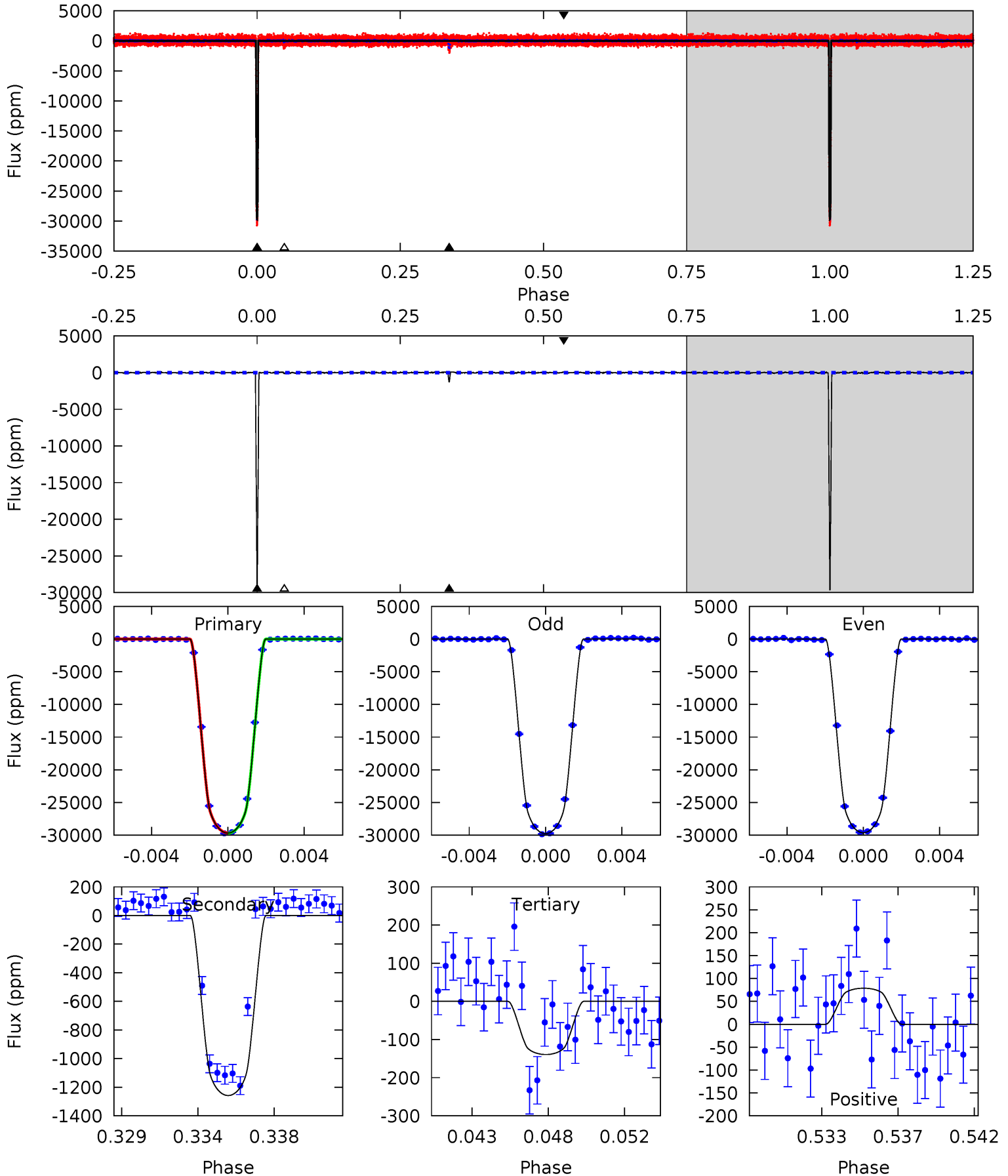
TCE 008074805-01 P=170.865429 Days $T_0=299.659332$ (BKJD)



DV Model-Shift Uniqueness Test

008074805-01, P = 170.863988 Days, E = 128.801792 Days

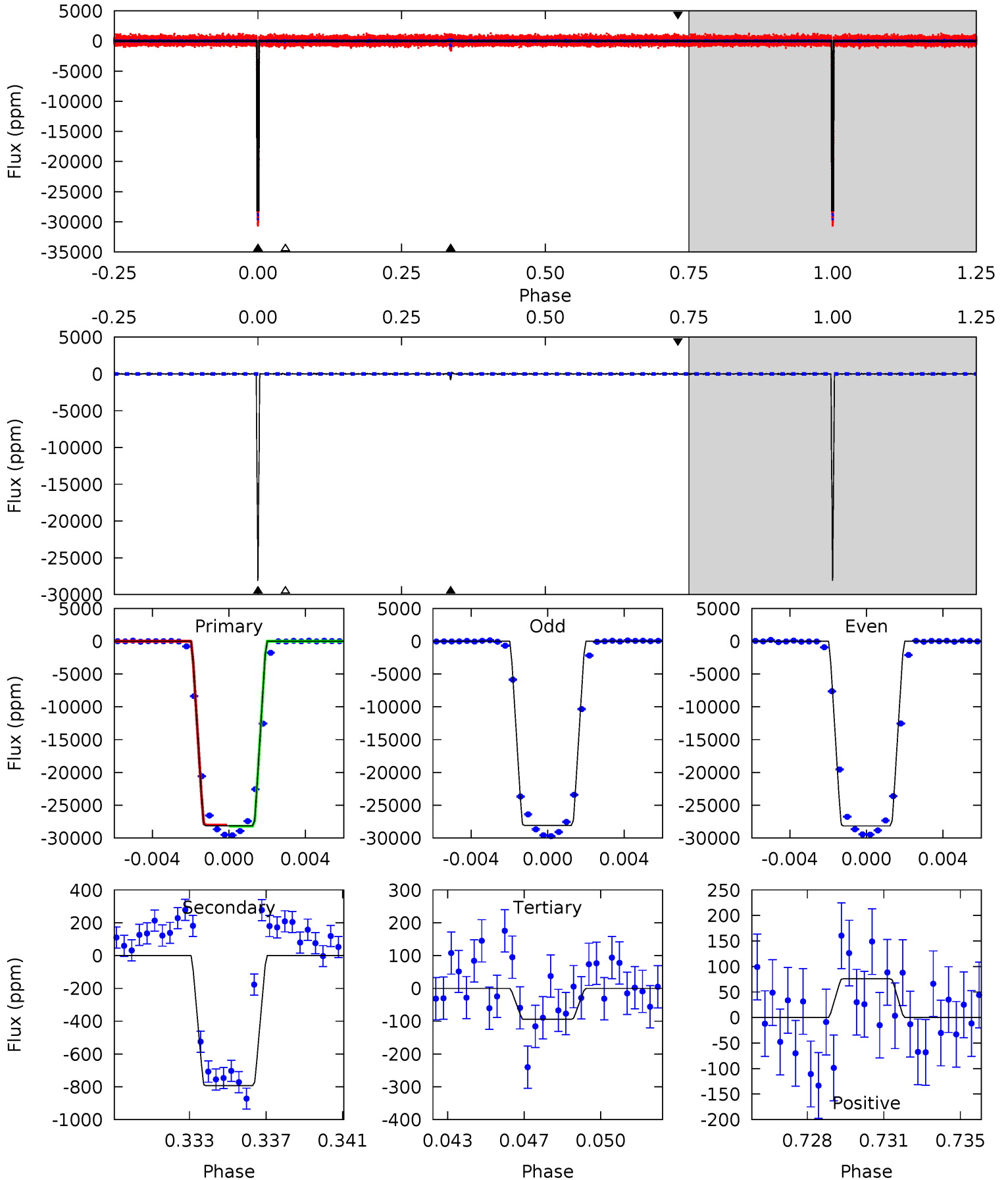
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1459	61.8	6.85	3.87	5.18	2.85	1.47	1452	1455	55.0	58.0	3.40	0.89	0.00	1.08



Alt Model-Shift Uniqueness Test

008074805-01, P = 170.865429 Days, E = 128.793903 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1305	36.8	4.38	3.52	5.22	2.91	0.88	1301	1301	32.5	33.3	1.20	1.00	0.01	4.57



Stellar Parameters For KIC 008074805

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5989^{+119}_{-119}	$4.221^{+0.149}_{-0.108}$	$0.000^{+0.150}_{-0.150}$	$1.324^{+0.209}_{-0.233}$	$1.063^{+0.098}_{-0.080}$	$0.645^{+0.500}_{-0.204}$
	+2%/-2%	+4%/-3%	+inf%/-inf%	+16%/-18%	+9%/-8%	+78%/-32%
Source	SPE57	SPE57	SPE57	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008074805-01 / KOI 2670.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1258 ± 20	$24.36^{+2.04}_{-2.34}$	538^{+25}_{-27}	3300^{+43}_{-42}	444^{+97}_{-66}
Alt.	-794 ± 22	$24.60^{+1.99}_{-2.55}$	540^{+25}_{-27}	3084^{+34}_{-39}	278^{+58}_{-40}

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 $A_{obs} \gg 1.0$

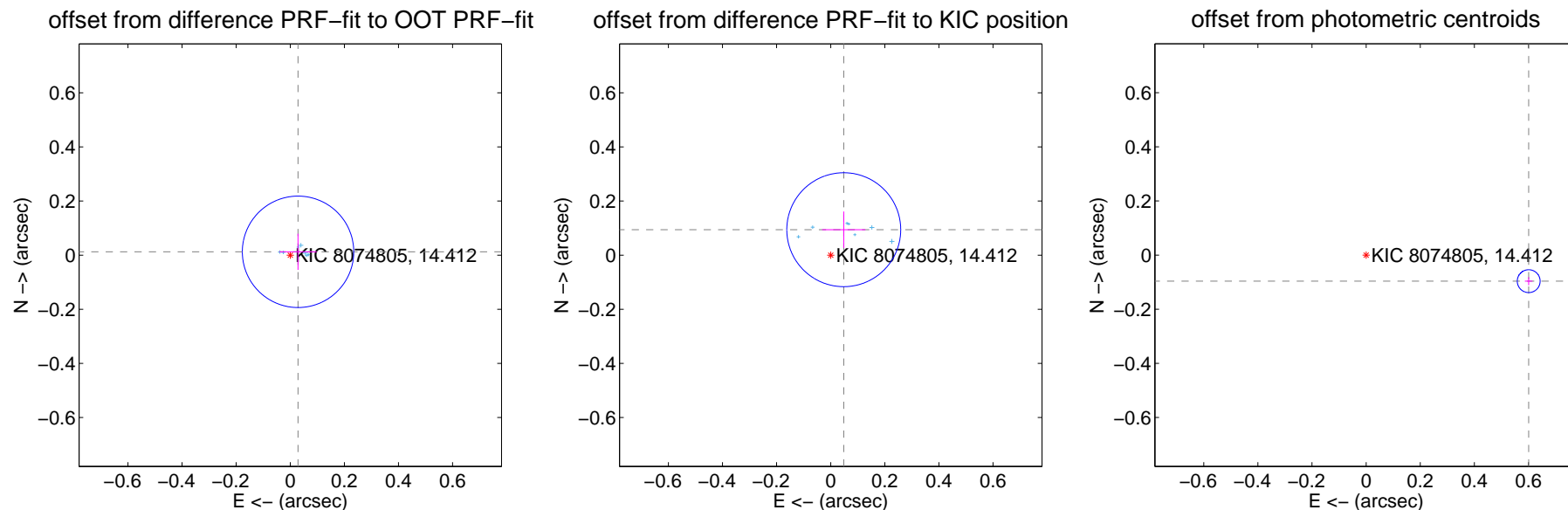
DV Centroid Data

Supplemental centroid analysis for 008074805-01. Kepler magnitude: 14.41. Transit SNR 840.37

There are 7 quarters with good PRF difference image offsets

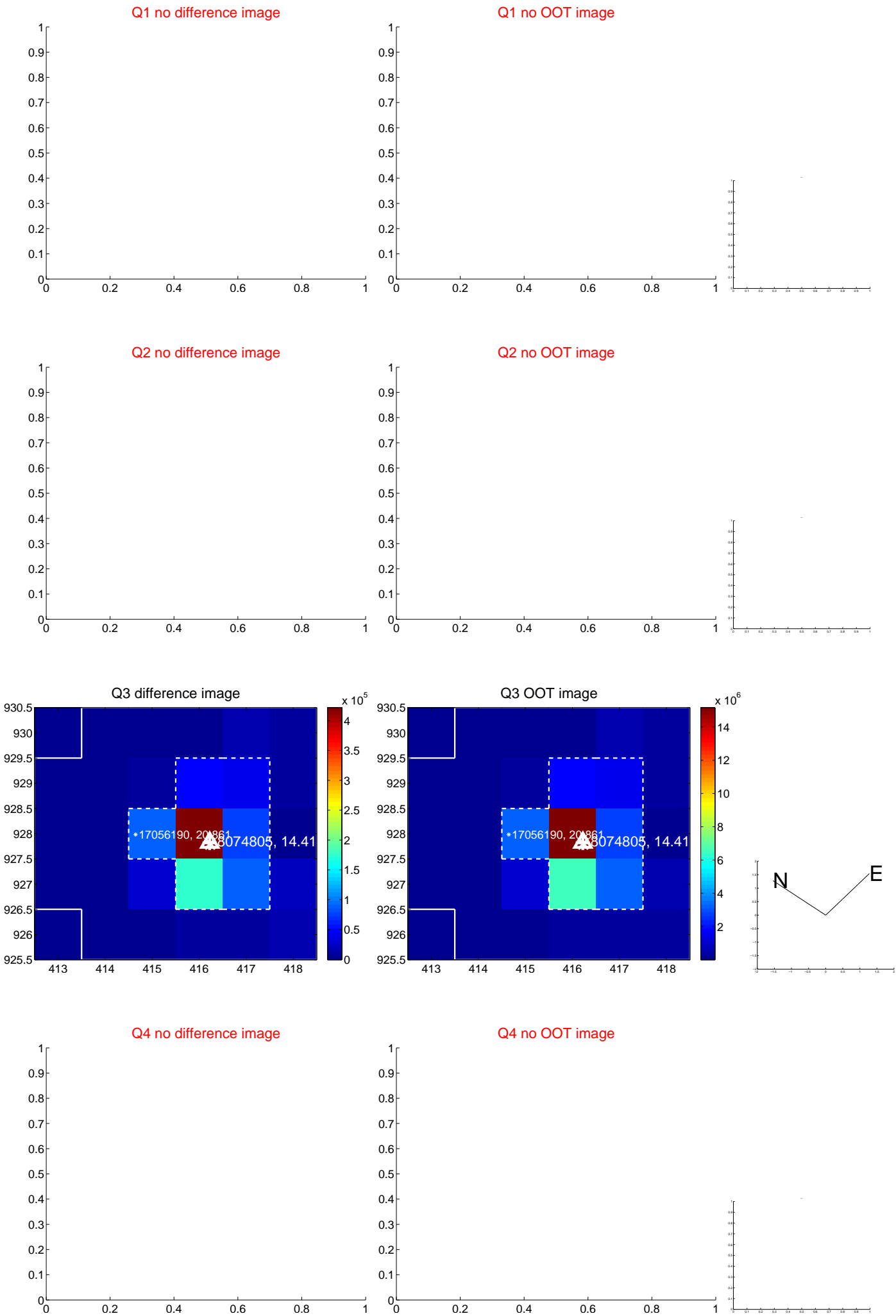
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.031 ± 0.069	0.46	-0.029 ± 0.069	0.012 ± 0.067
PRF-fit source offset from KIC position	0.106 ± 0.070	1.51	-0.048 ± 0.080	0.094 ± 0.067
photometric centroid source offset	0.61 ± 0.01	43.22	-0.60 ± 0.01	-0.10 ± 0.01

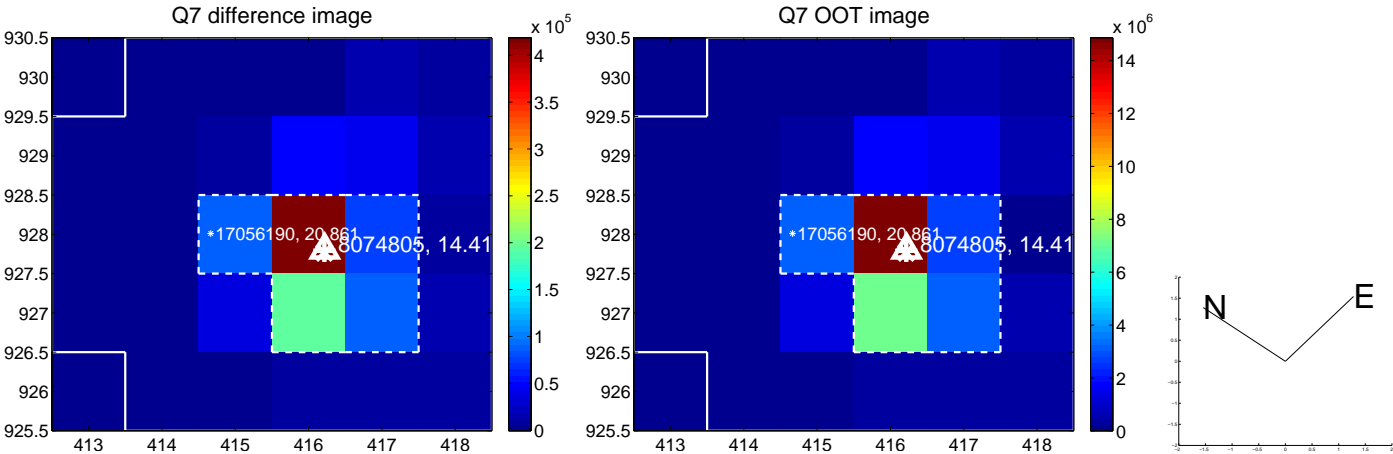
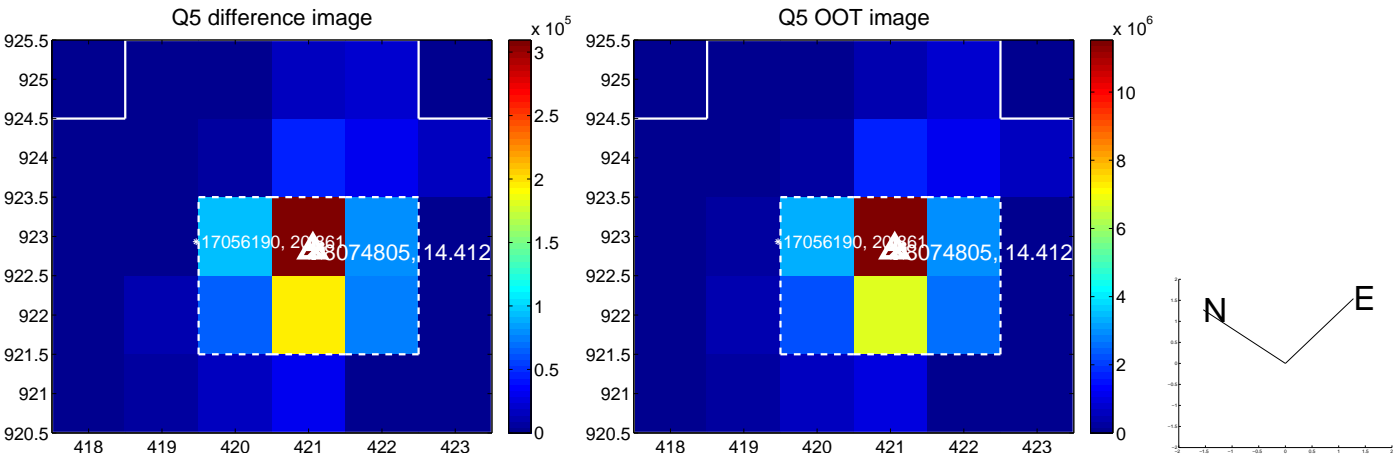


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

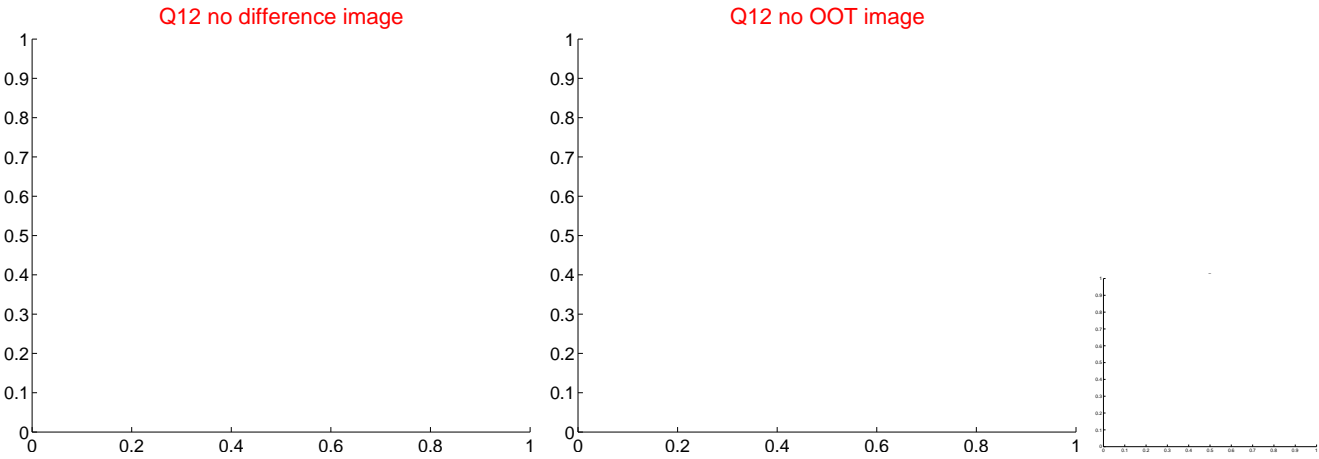
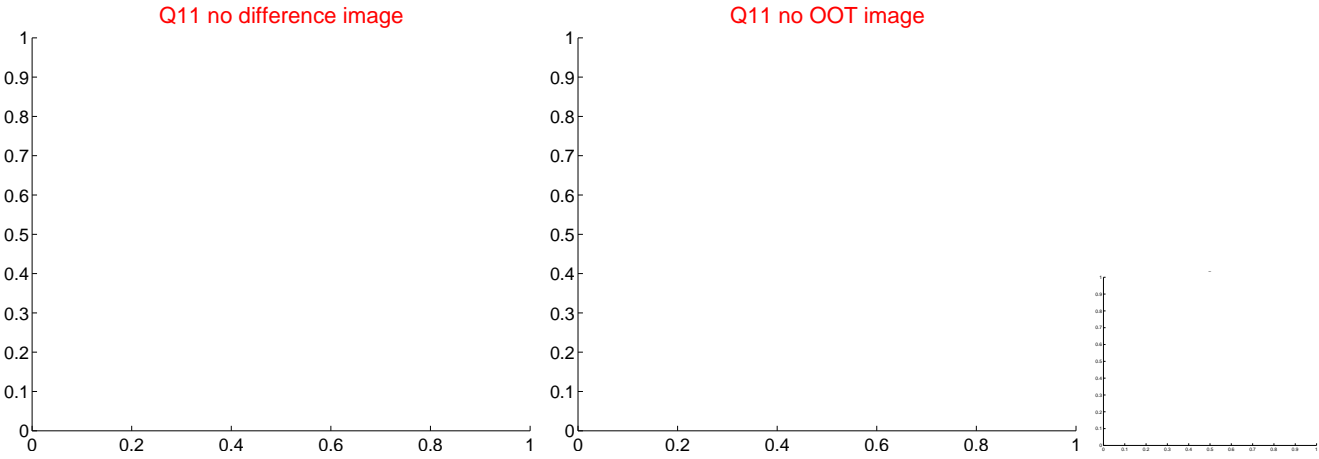
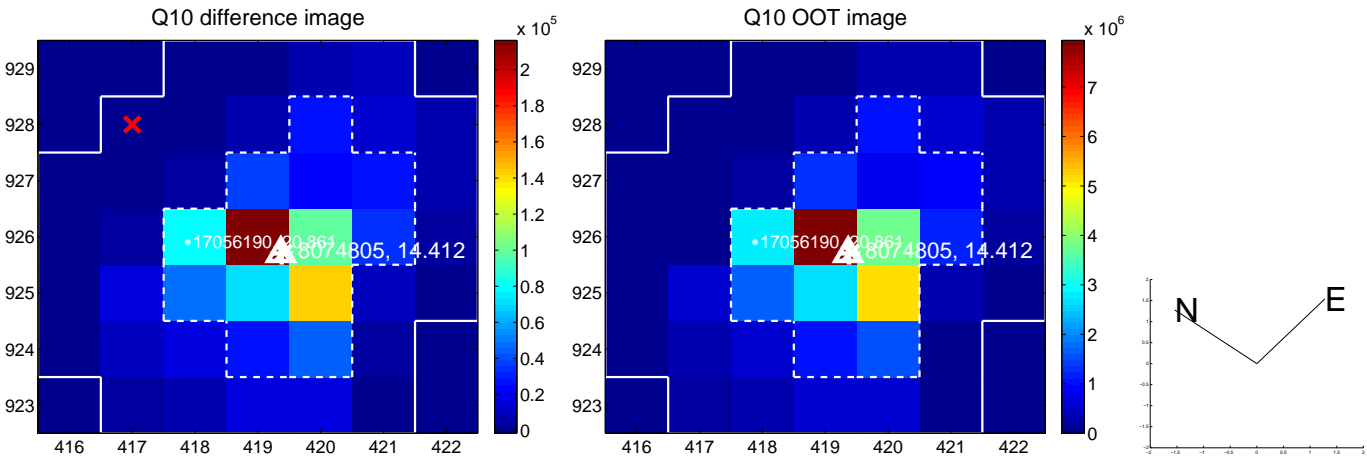
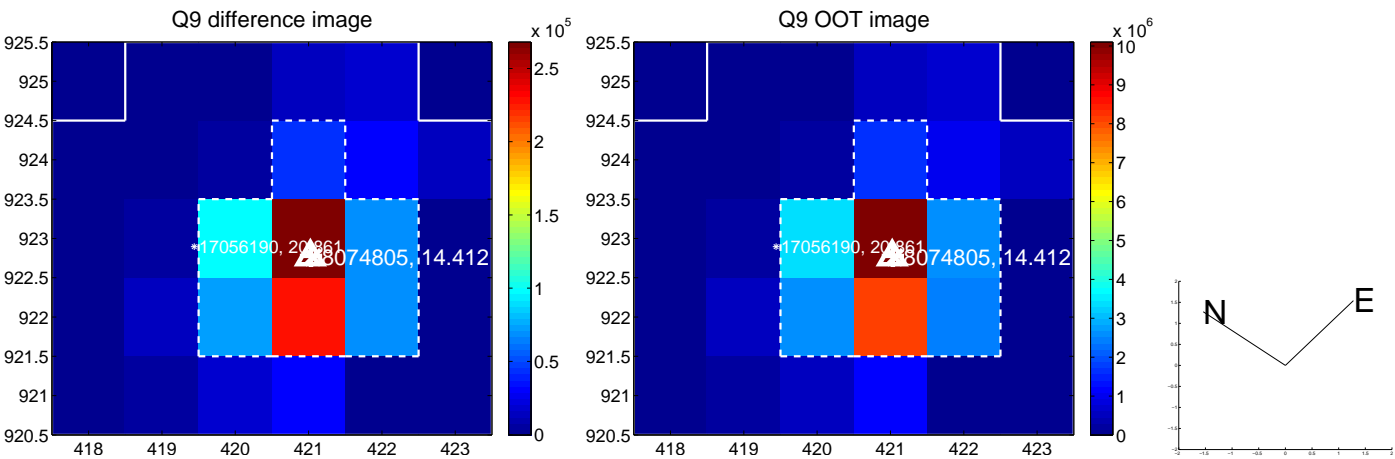
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



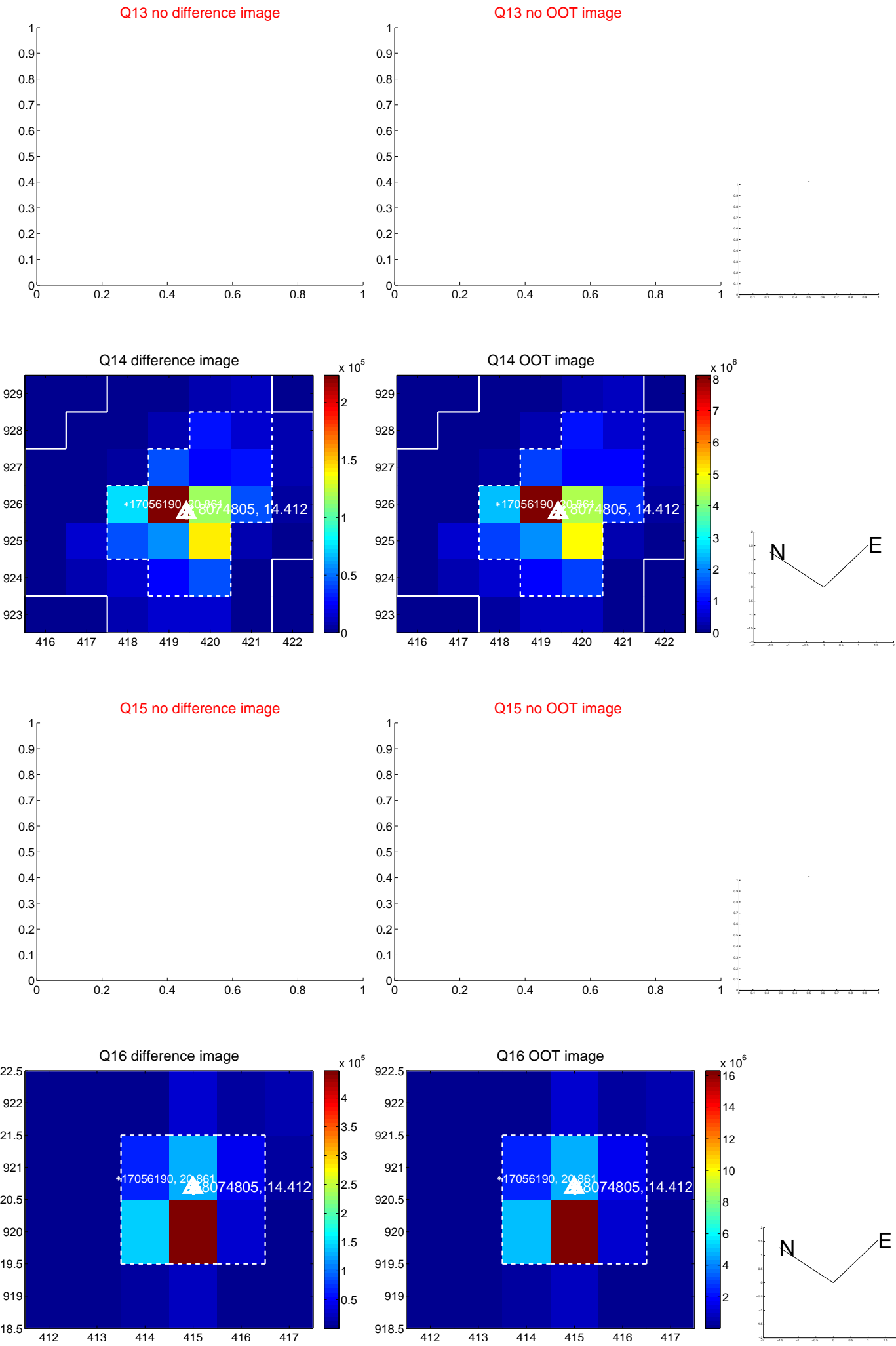
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



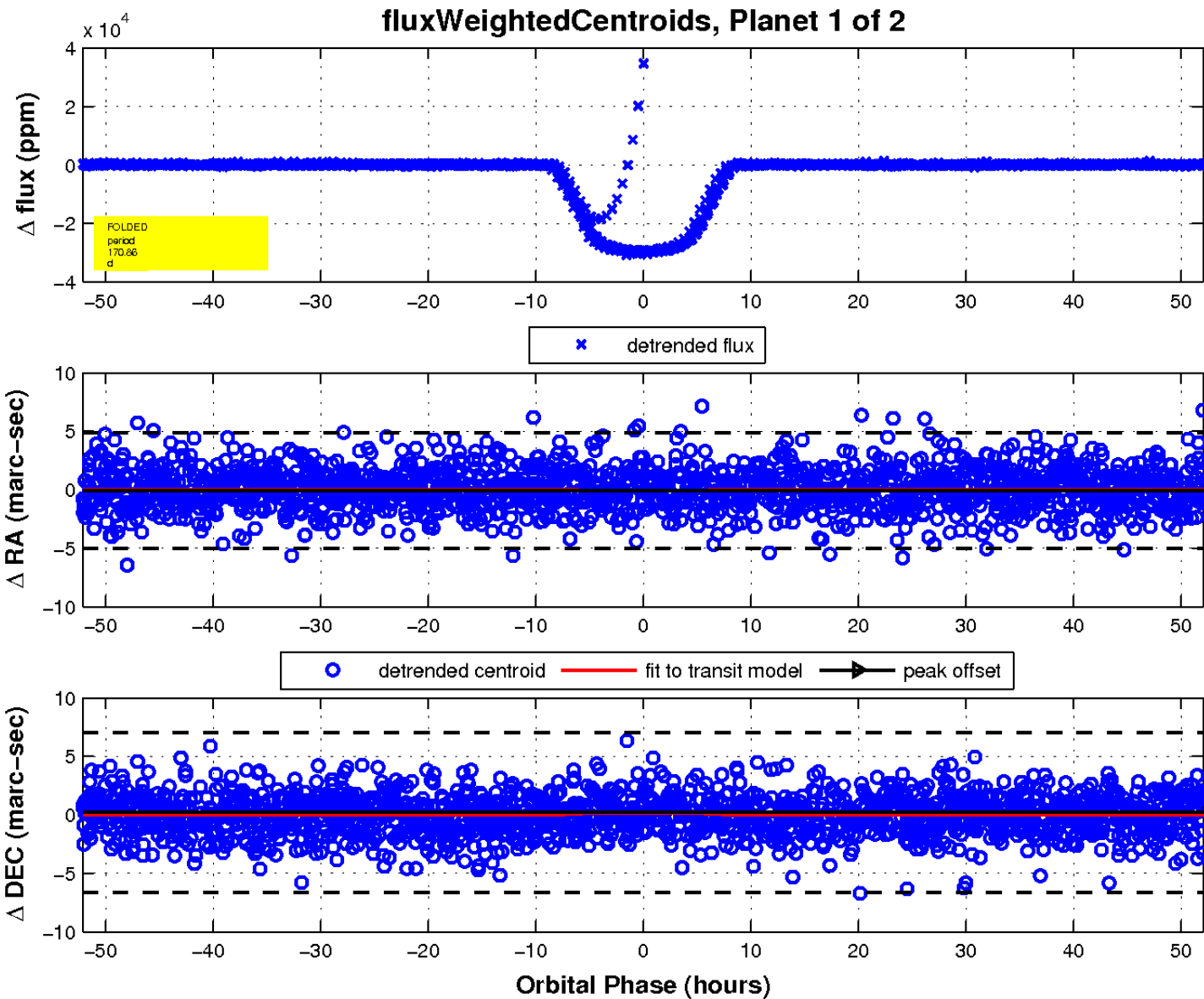
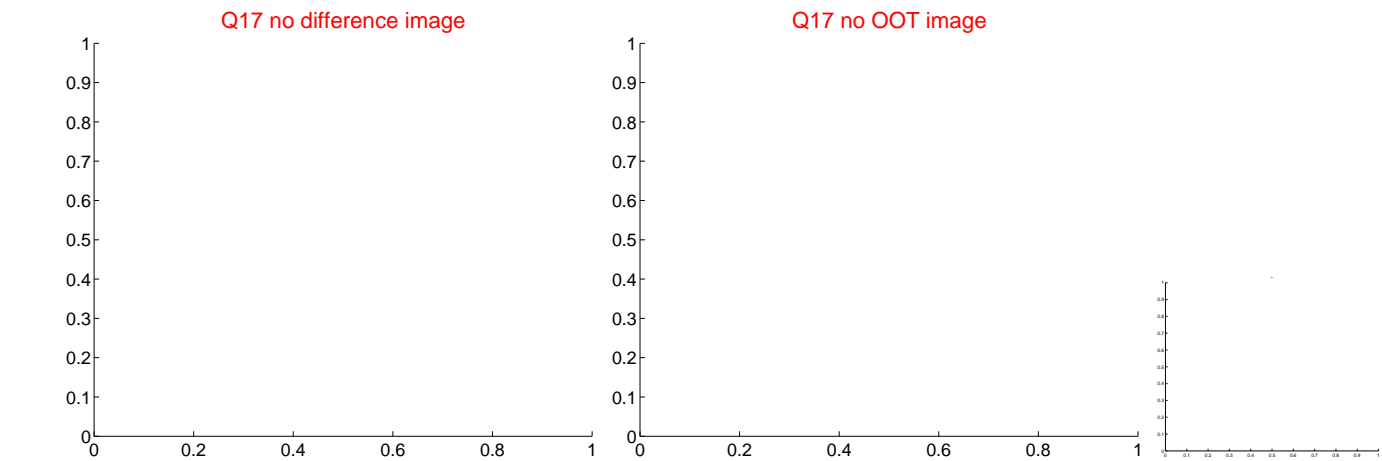
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

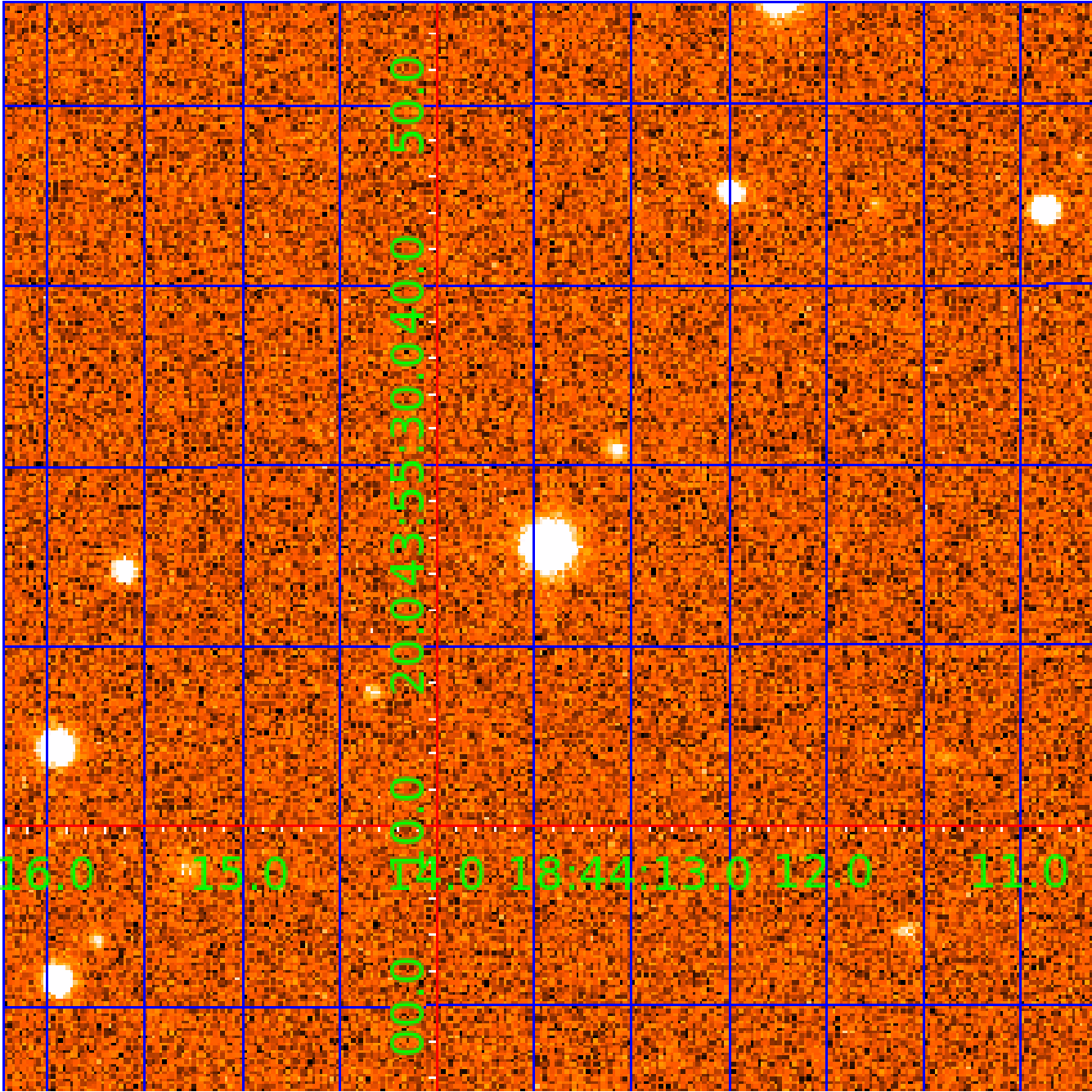


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008074805

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})
008074805-01	OBS	2670.01	170.863988	299.665780	29785.7	17.384	938.0	840.4	1.32	5989	24.44	5.34
008074805-02	OBS	No	170.861785	186.080785	1224.8	12.568	44.4	44.1	1.32	5989	5.22	5.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008074805-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
008074805-02	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.

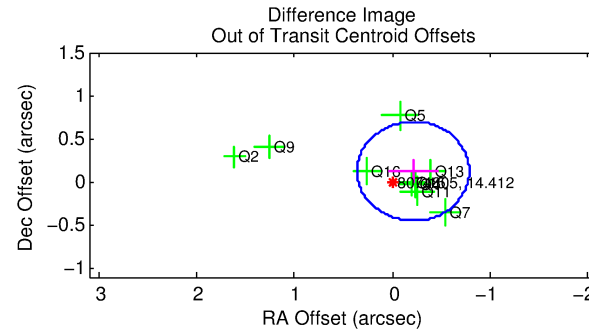
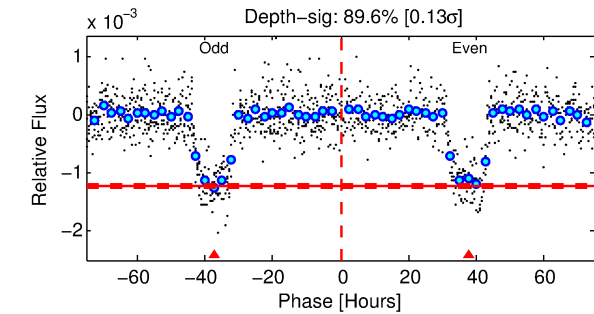
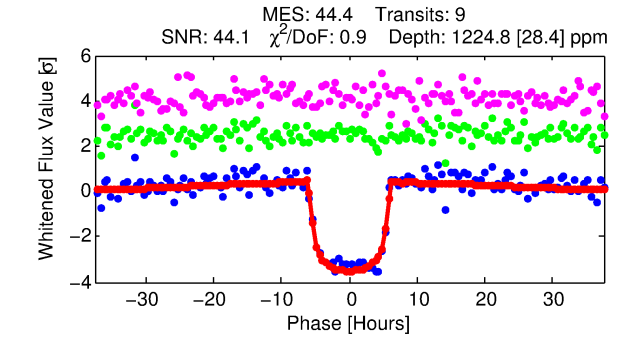
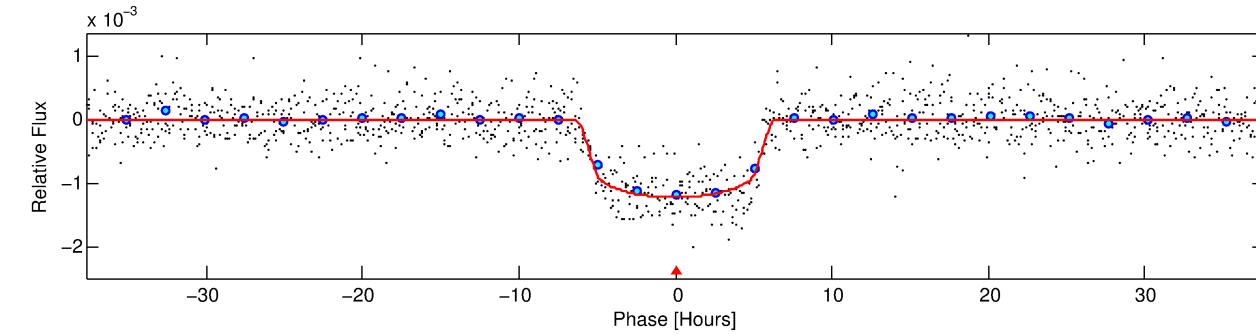
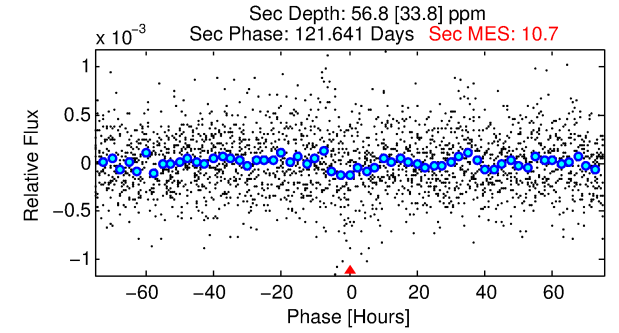
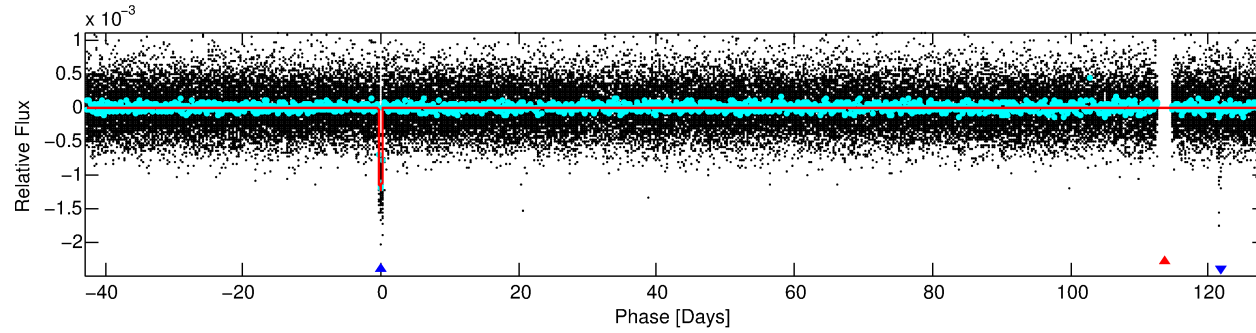
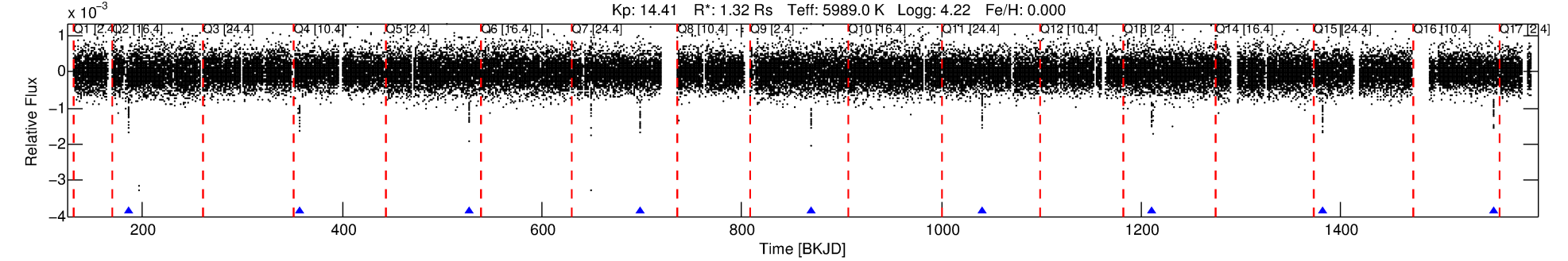
Ephemeris Match Information For 008074805-02

No Significant Match Found

DV One-Page Summary

KIC: 8074805 Candidate: 2 of 2 Period: 170.862 d
KOI: K02670 Corr: No Ephemeris Match

Kp: 14.41 R*: 1.32 Rs Teff: 5989.0 K Logg: 4.22 Fe/H: 0.000



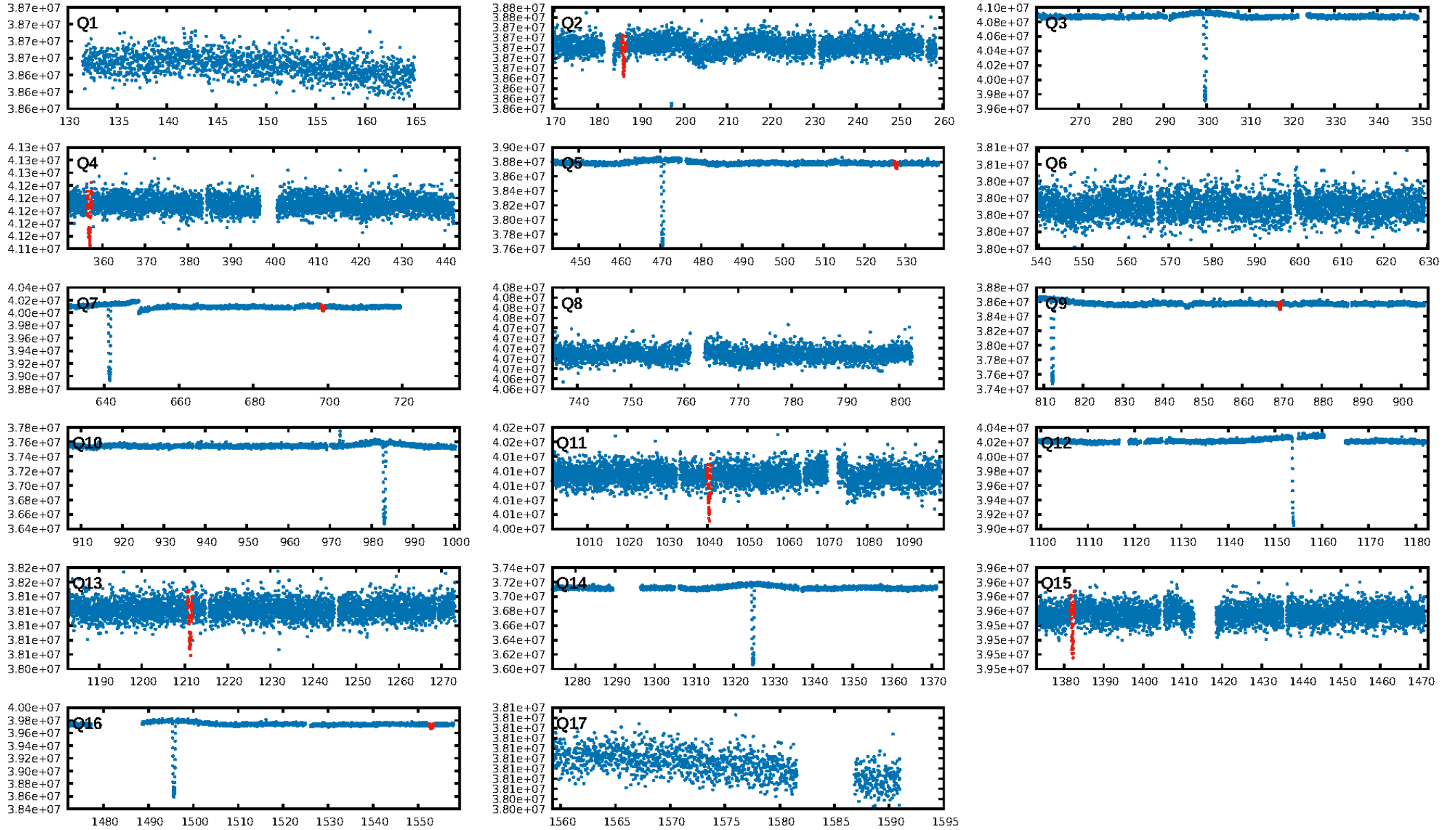
DV Fit Results:

Period = 170.86178 [0.00100] d
Epoch = 186.0808 [0.0048] BKJD
Rp/R* = 0.0361 [0.0010]
a/R* = 64.18 [7.82]
b = 0.83 [0.05]
Seff = 5.34 [1.44]
Teq = 388 [26] K
Rp = 5.22 [0.93] Re
a = 0.6153 [0.1008] AU
Ag = 434.78 [282.85] [1.53σ]
Teffp = 2736 [412] K [5.68σ]

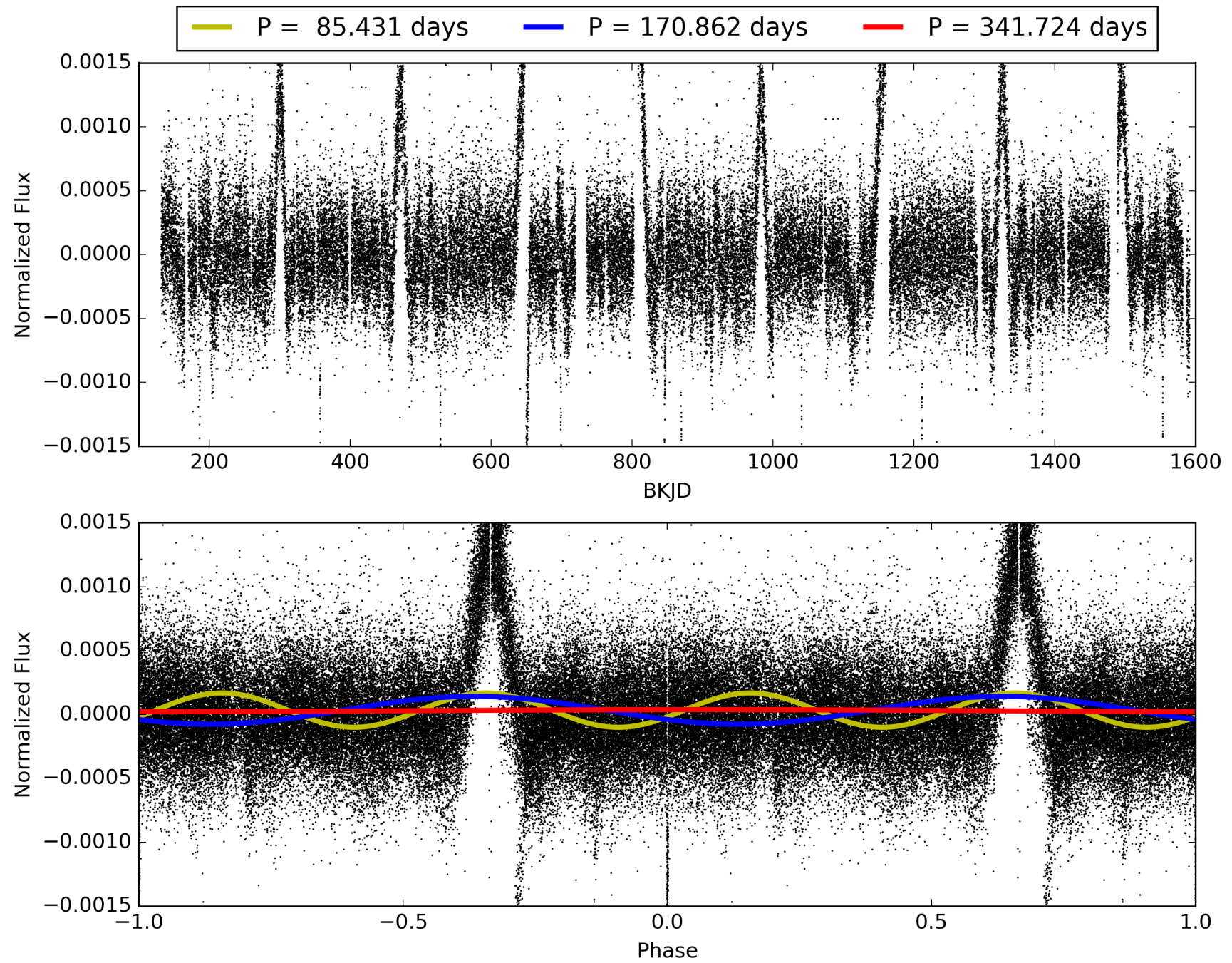
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.2% [0.00σ]
ModelChiSquare2-sig: 48.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.68e-263
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 6.44
Centroid-sig: 29.2%
Centroid-so: 0.927 arcsec [3.03σ]
OotOffset-rm: 0.245 arcsec [1.28σ]
KicOffset-rm: 0.270 arcsec [1.78σ]
OotOffset-st: 1/3/2/3 [9]
KicOffset-st: 1/3/2/3 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [9/9]

TCE 008074805-02, PDC Light Curves

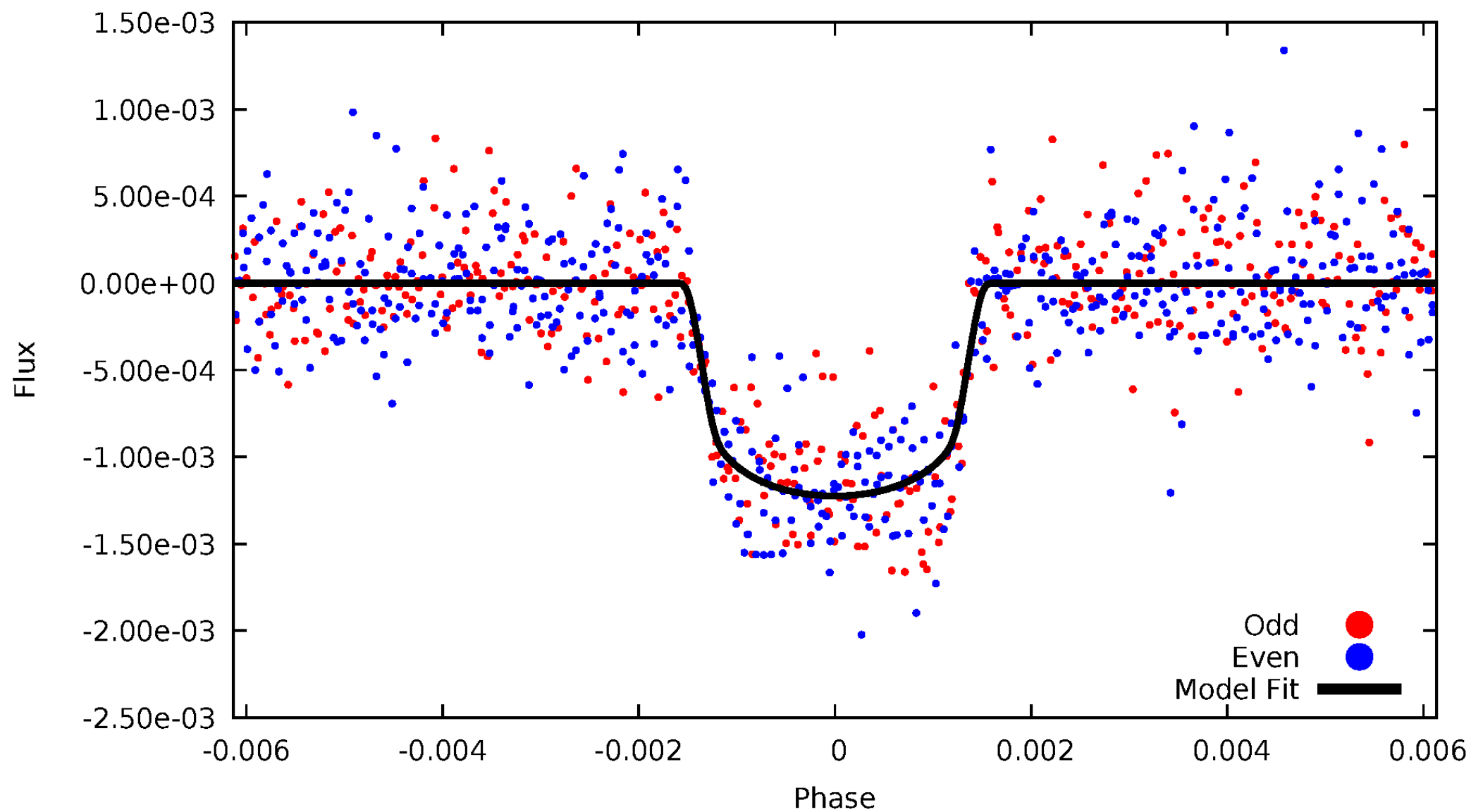


TCE 008074805-02



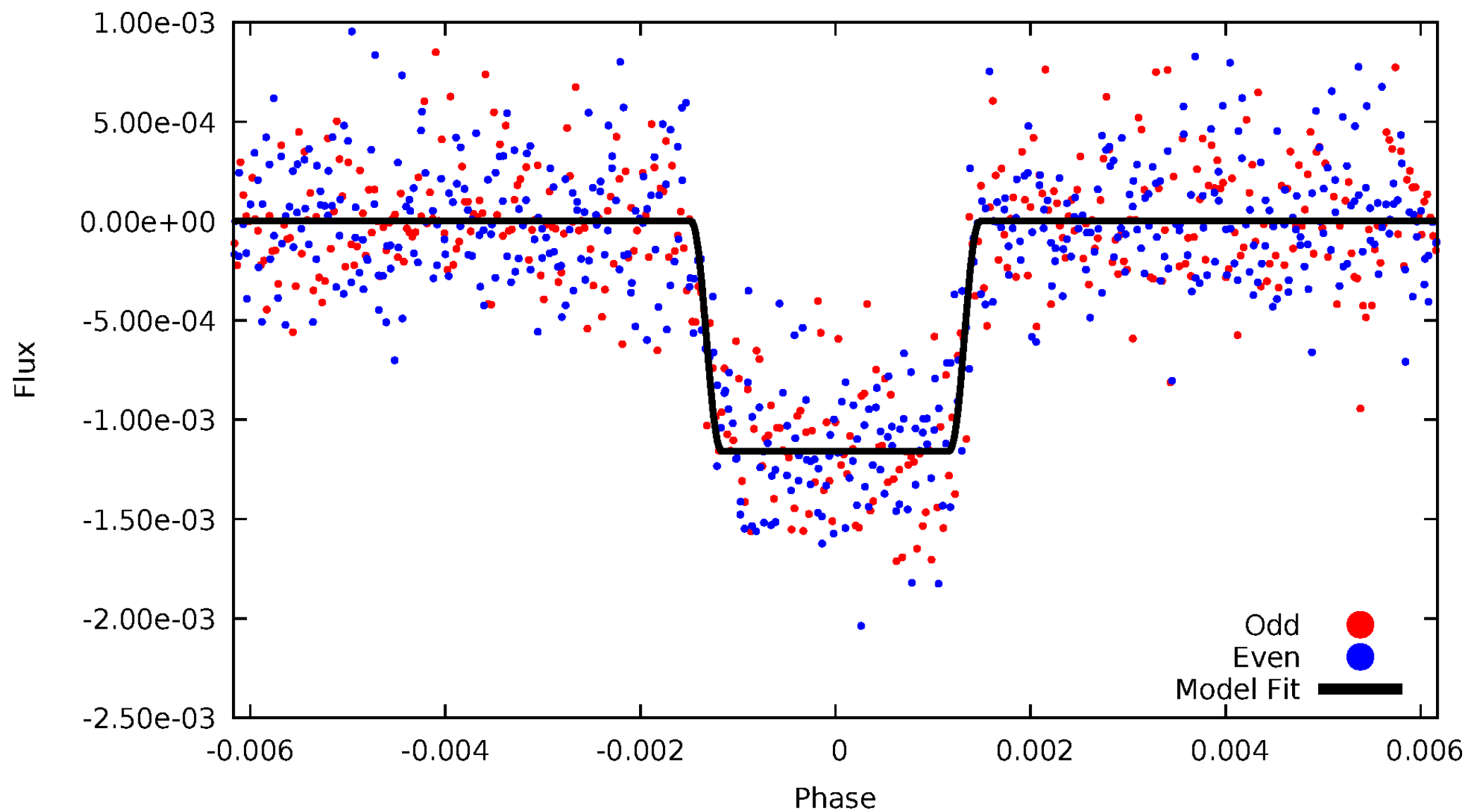
DV Odd/Even

TCE 008074805-02



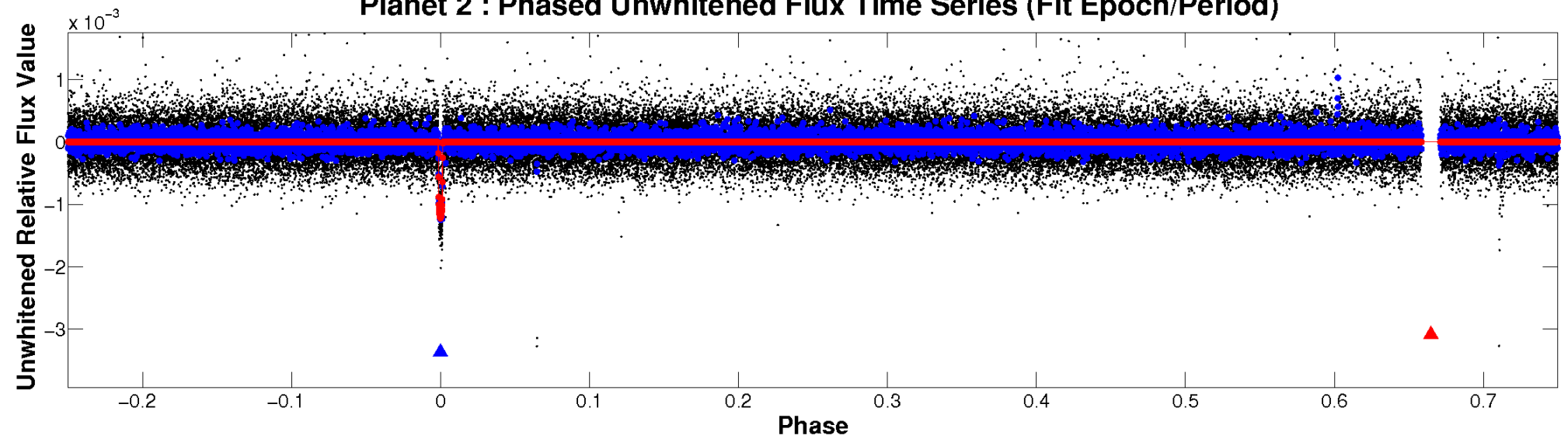
ALT Odd/Even

TCE 008074805-02

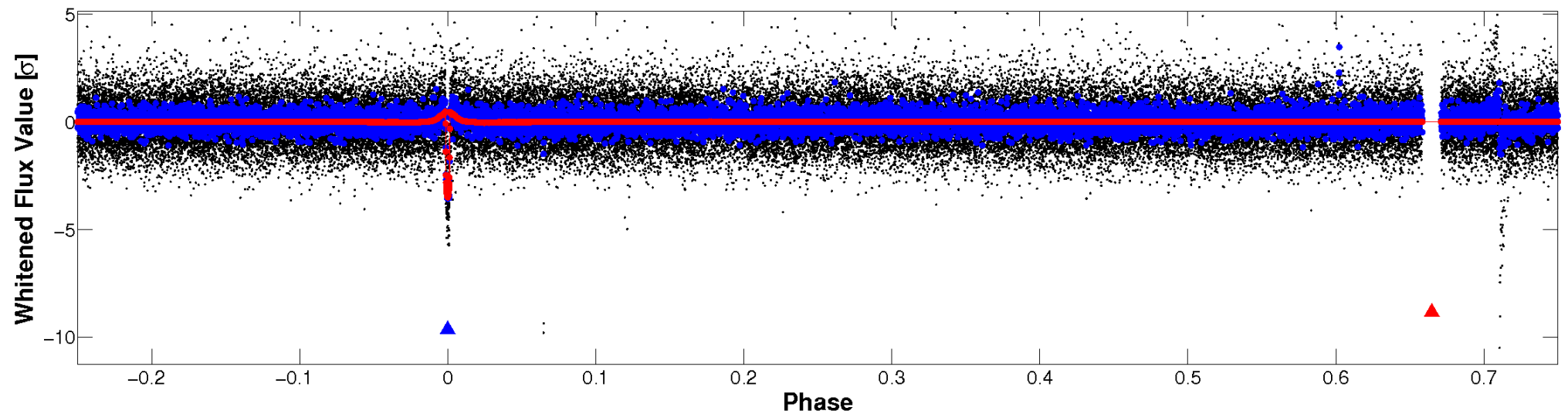


Non-Whitened Vs. Whitened Light Curve

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

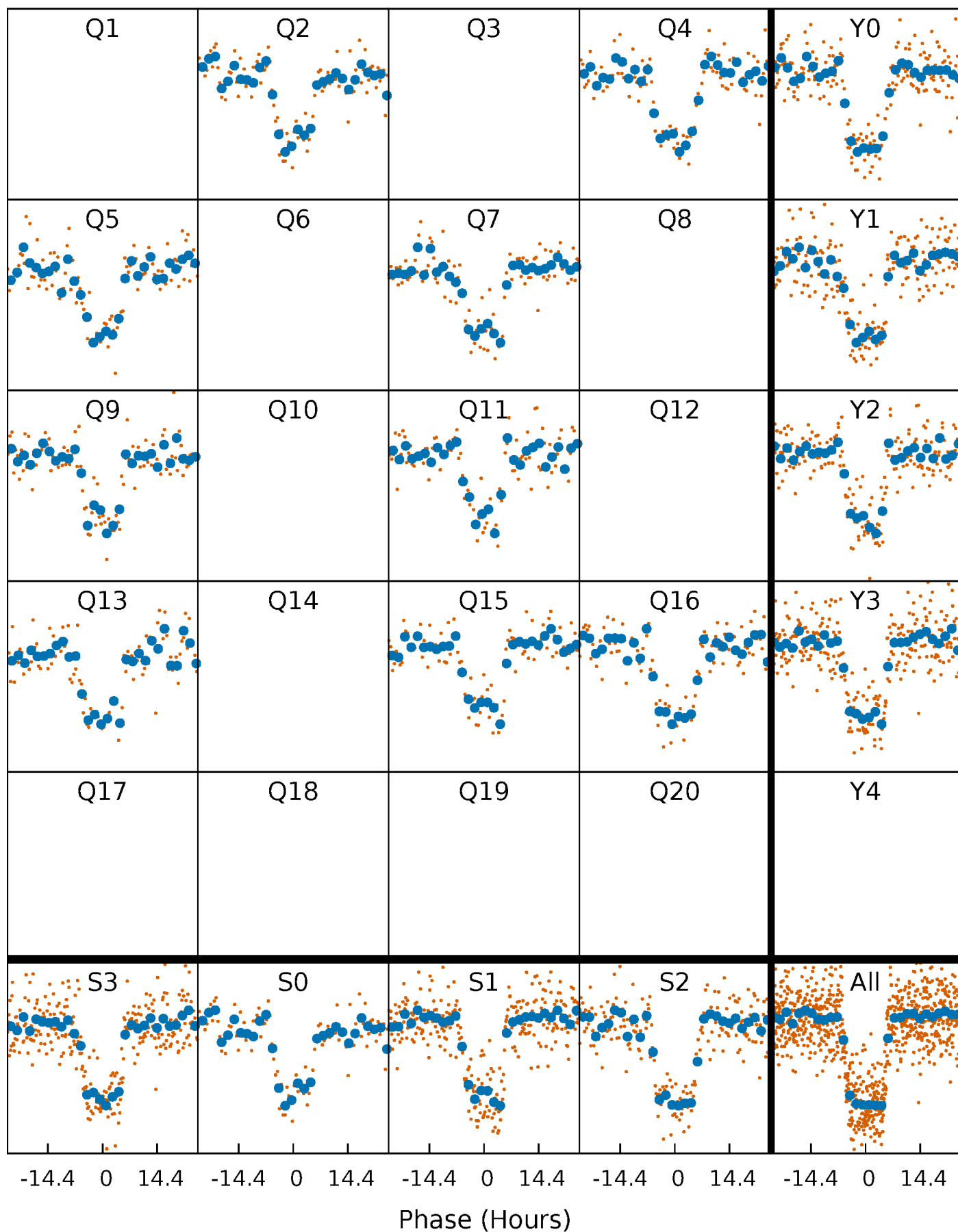


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



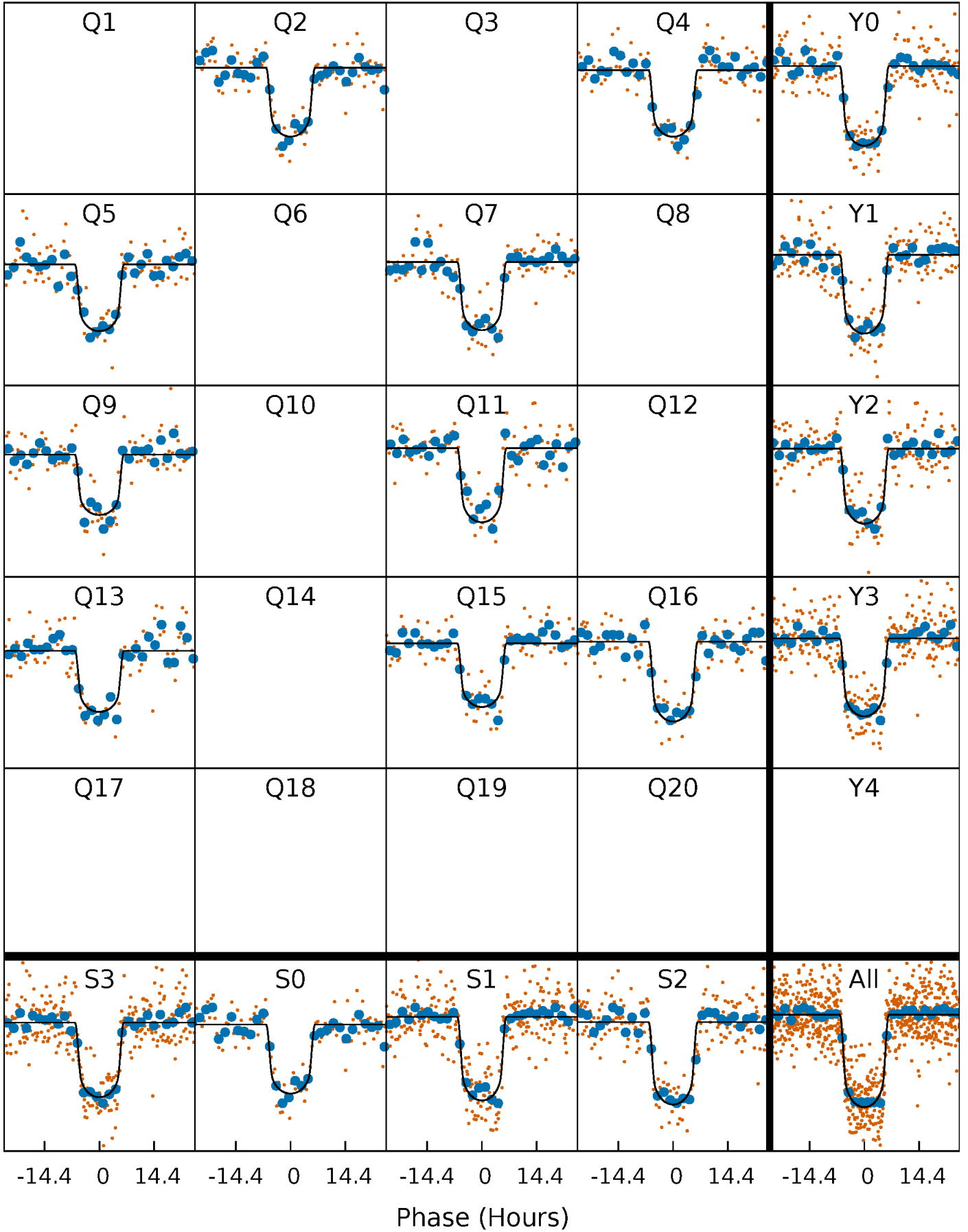
PDC Quarter-Phased Transit Curves

TCE 008074805-02 P=170.861785 Days $T_0=186.080785$ (BKJD)



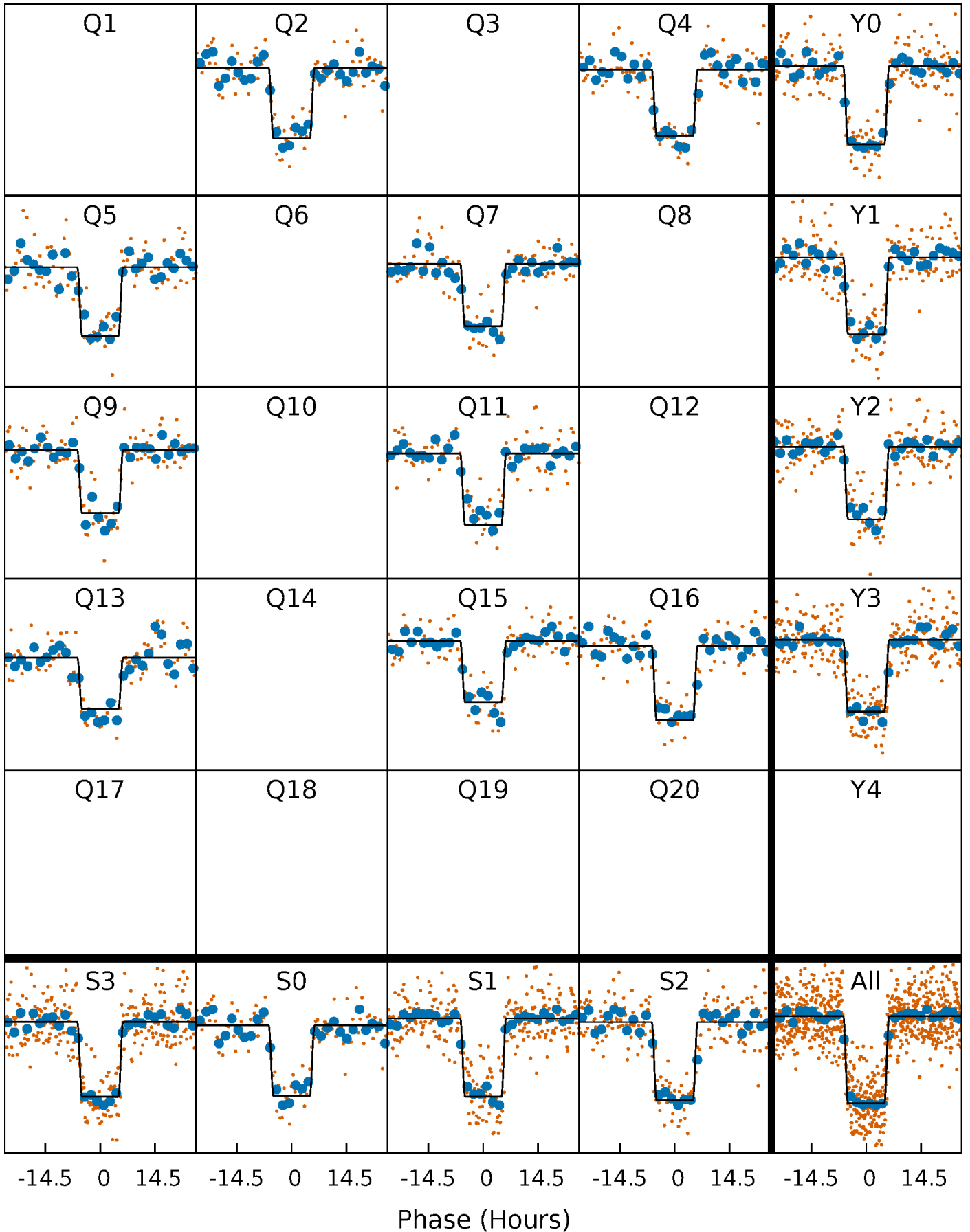
DV Quarter-Phased Transit Curves

TCE 008074805-02 P=170.861785 Days $T_0=186.080785$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

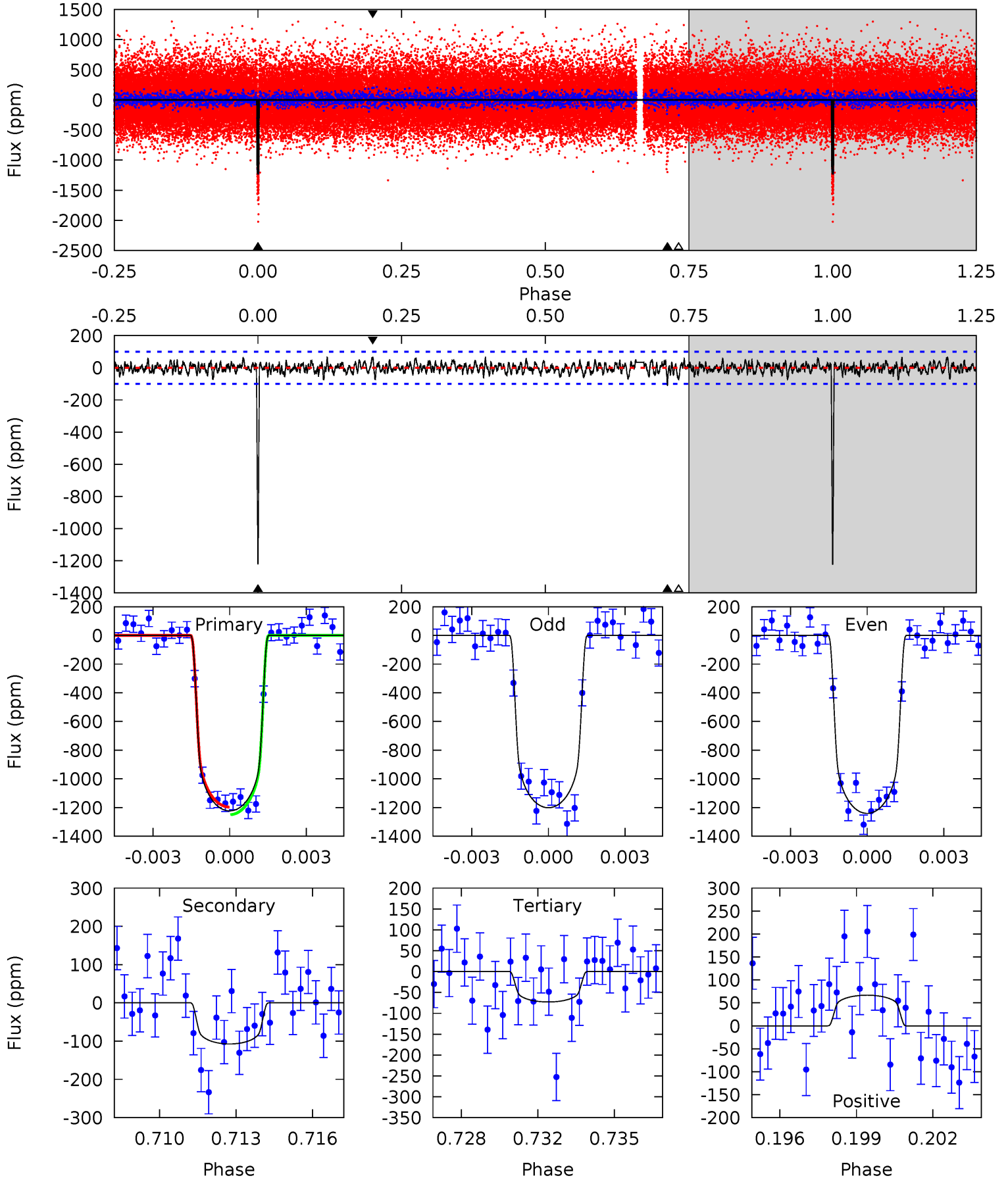
TCE 008074805-02 P=170.858618 Days $T_0=186.094929$ (BKJD)



DV Model-Shift Uniqueness Test

008074805-02, $P = 170.861785$ Days, $E = 15.219000$ Days

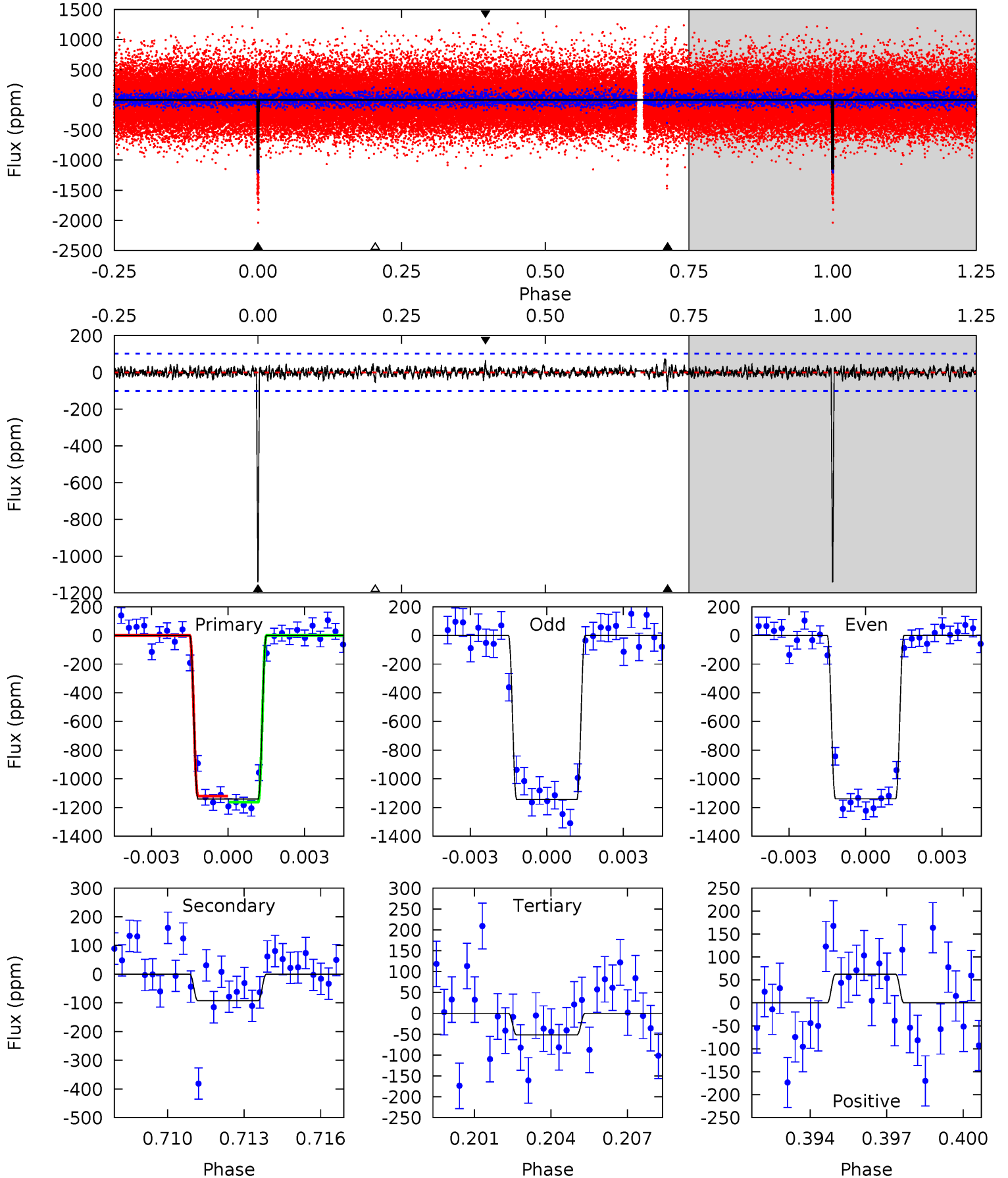
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
64.1	5.63	3.82	3.49	5.25	2.96	1.23	60.3	60.6	1.82	2.14	1.04	0.99	0.05	1.39



Alt Model-Shift Uniqueness Test

008074805-02, $P = 170.858618$ Days, $E = 15.236311$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
59.1	4.79	2.68	3.23	5.26	2.97	0.79	56.4	55.8	2.11	1.56	0.12	0.96	0.06	1.06



Stellar Parameters For KIC 008074805

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5989^{+119}_{-119}	$4.221^{+0.149}_{-0.108}$	$0.000^{+0.150}_{-0.150}$	$1.324^{+0.209}_{-0.233}$	$1.063^{+0.098}_{-0.080}$	$0.645^{+0.500}_{-0.204}$
	+2%/-2%	+4%/-3%	+inf%/-inf%	+16%/-18%	+9%/-8%	+78%/-32%
Source	SPE57	SPE57	SPE57	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008074805-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-107 ± 19	$5.20^{+0.50}_{-0.50}$	539^{+27}_{-26}	3640^{+113}_{-130}	824^{+252}_{-185}
Alt.	-93 ± 19	$4.91^{+0.48}_{-0.52}$	538^{+28}_{-26}	3623^{+134}_{-145}	806^{+262}_{-201}

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

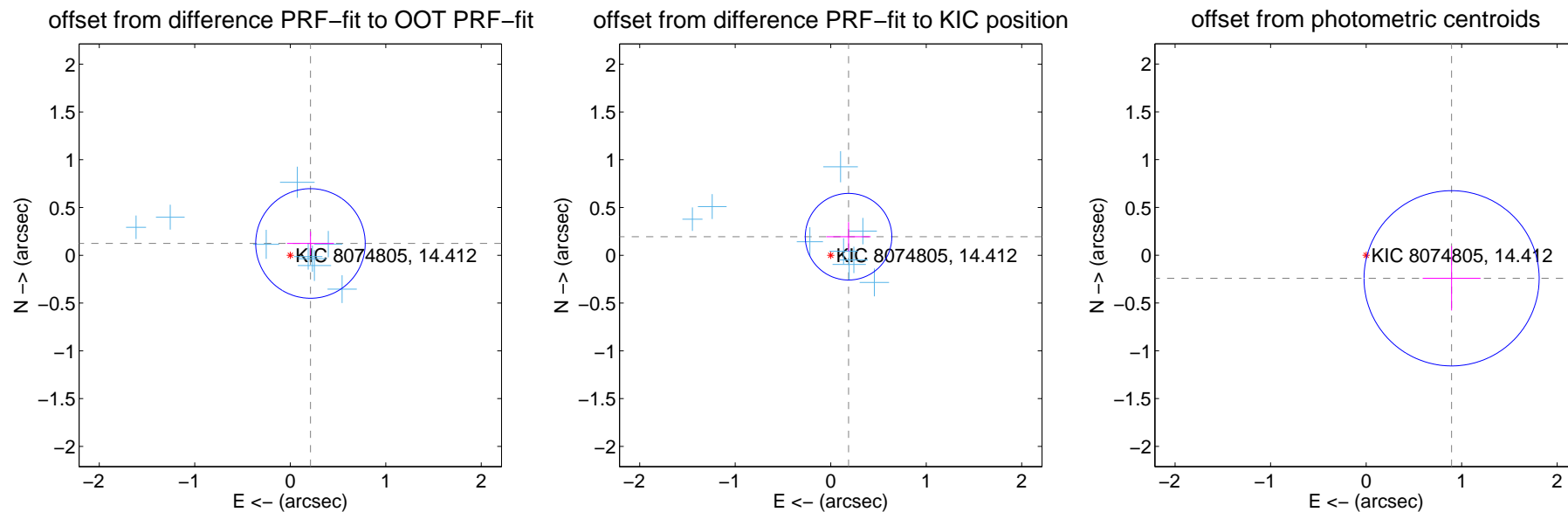
DV Centroid Data

Supplemental centroid analysis for 008074805-02. Kepler magnitude: 14.41. Transit SNR 44.07

There are 9 quarters with good PRF difference image offsets

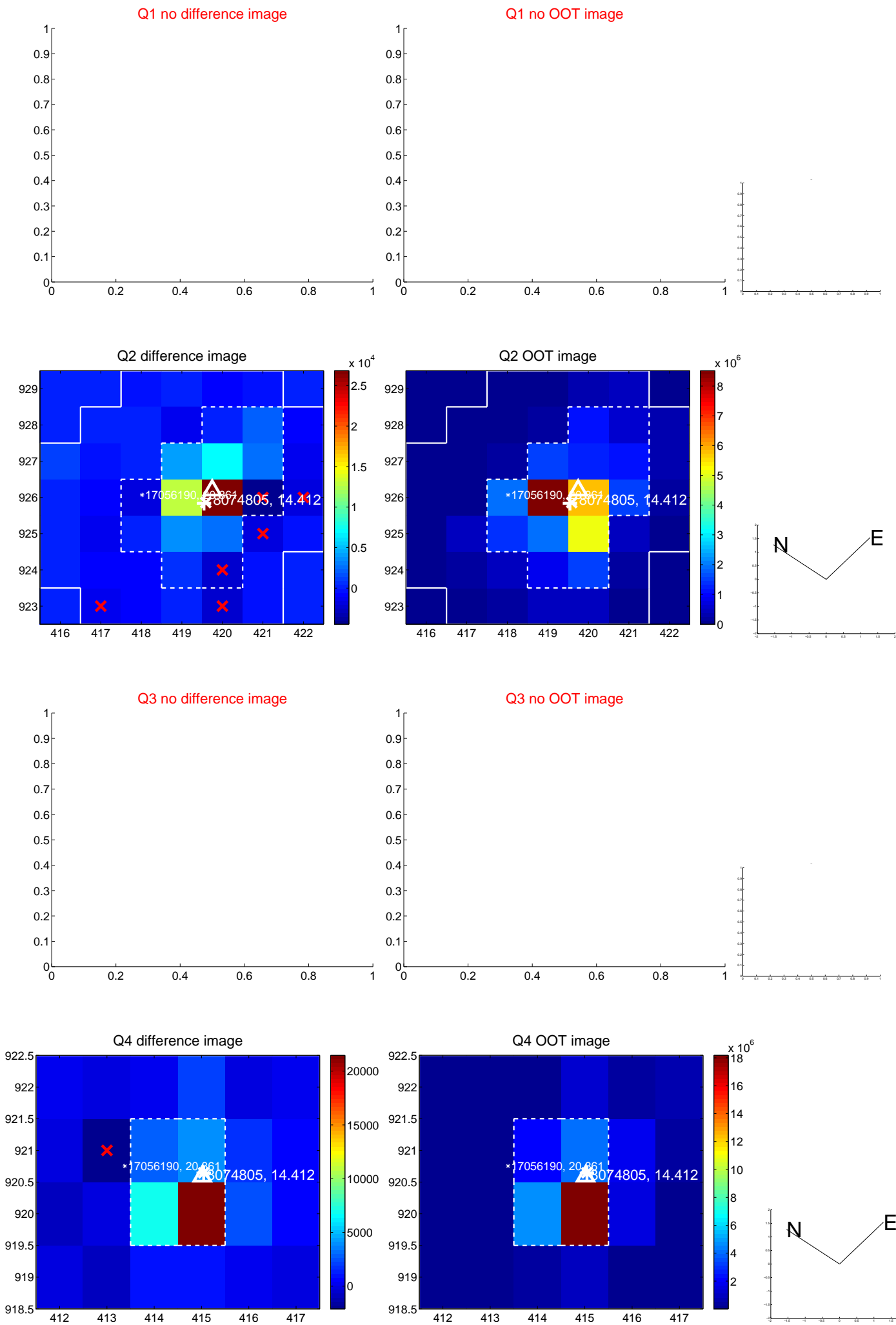
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.245 ± 0.191	1.28	-0.212 ± 0.246	0.124 ± 0.123
PRF-fit source offset from KIC position	0.270 ± 0.151	1.78	-0.187 ± 0.232	0.194 ± 0.152
photometric centroid source offset	0.93 ± 0.31	3.03	-0.89 ± 0.30	-0.24 ± 0.34

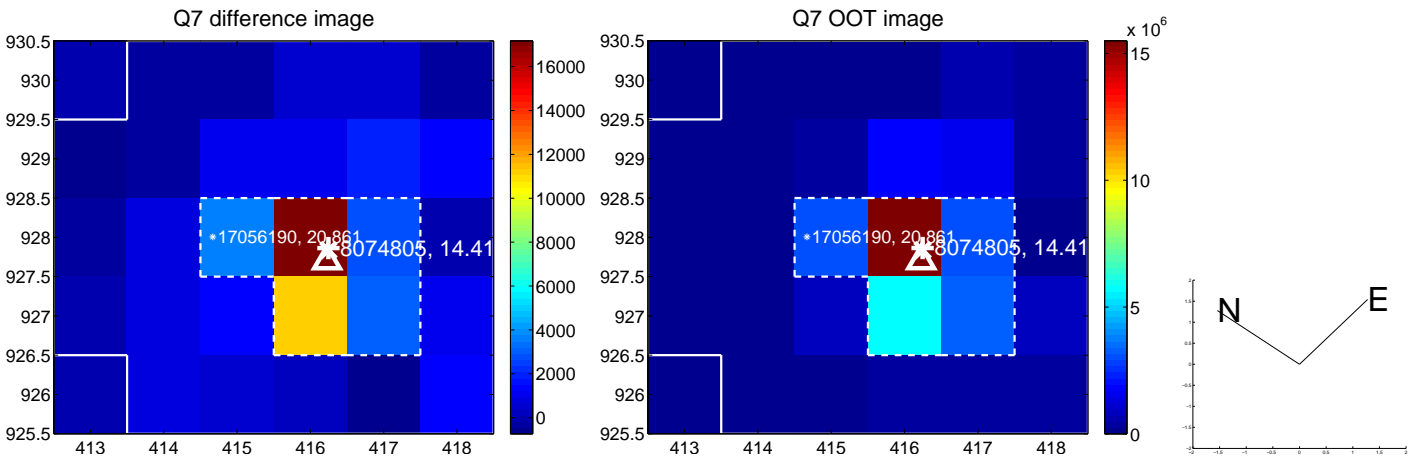
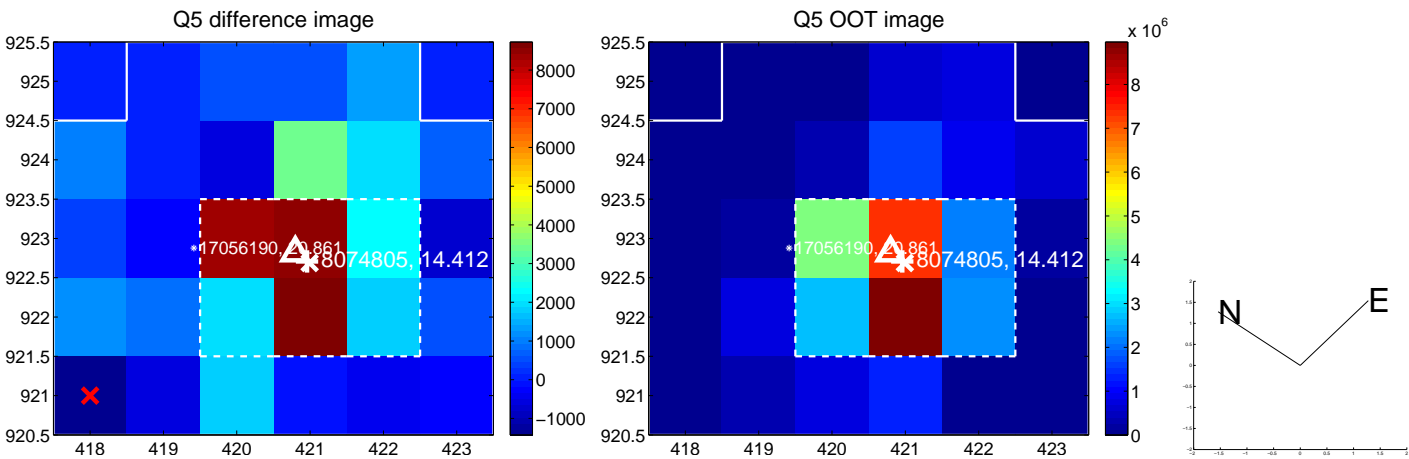


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

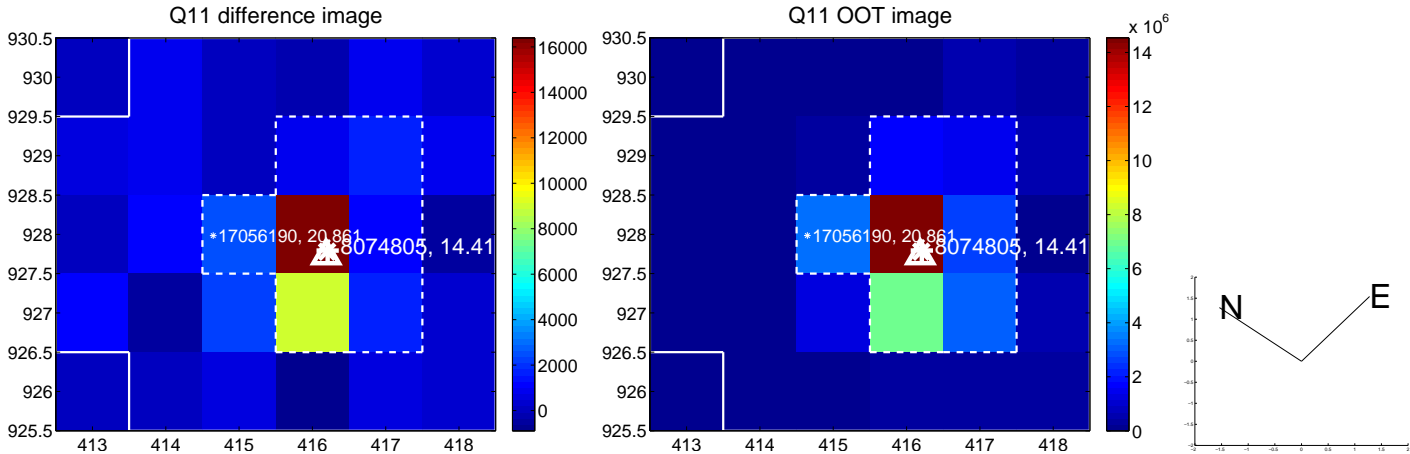
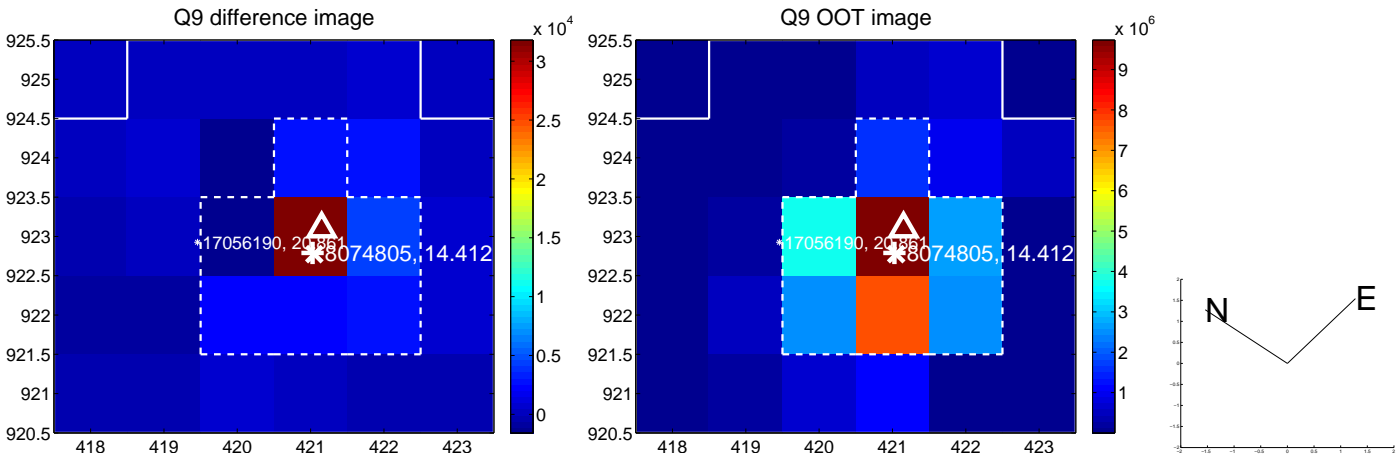
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



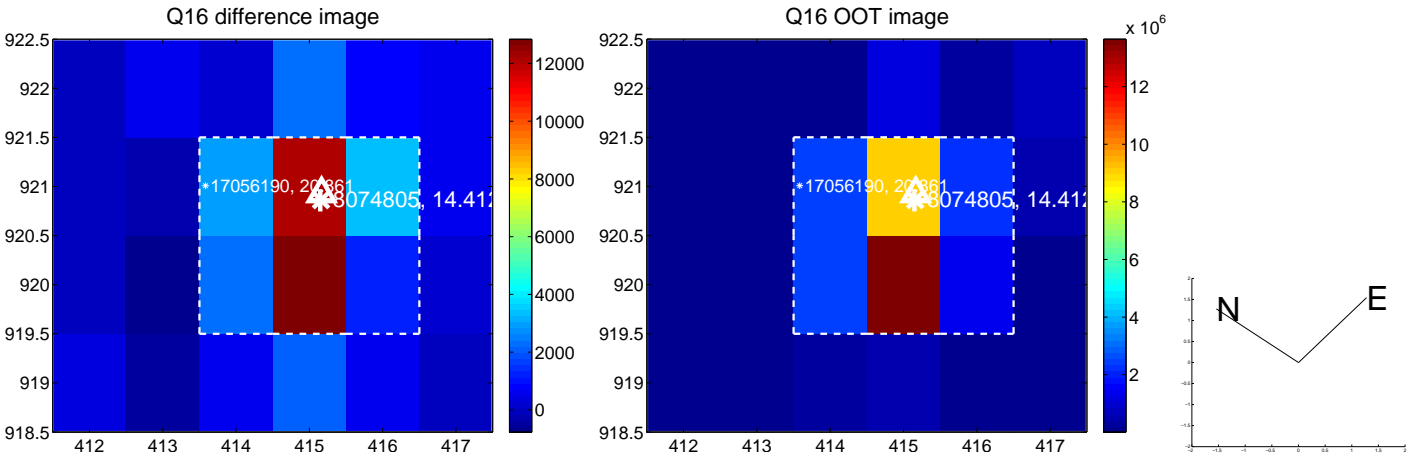
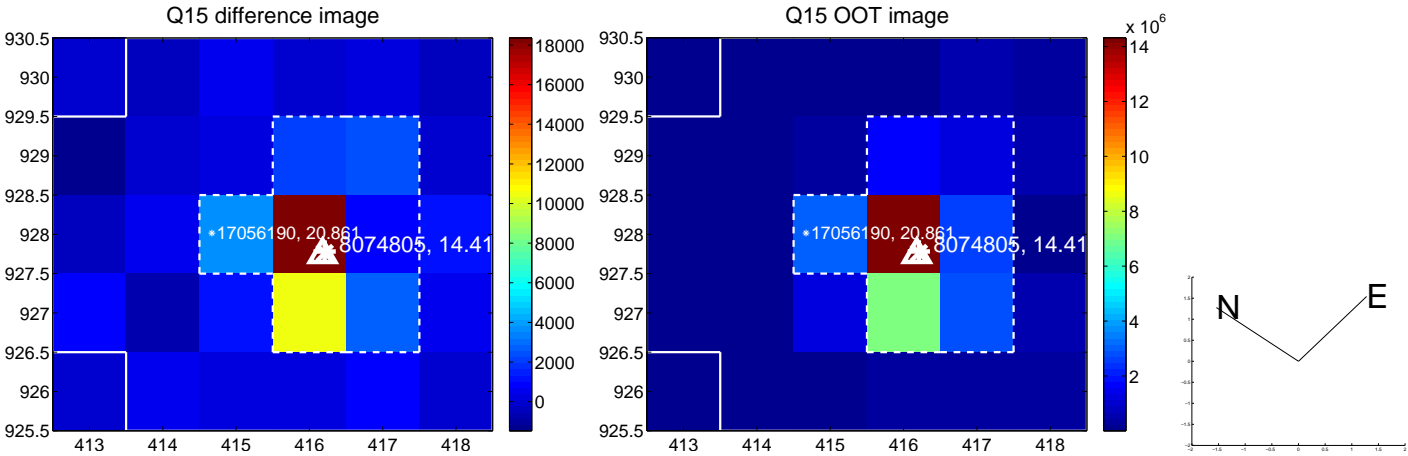
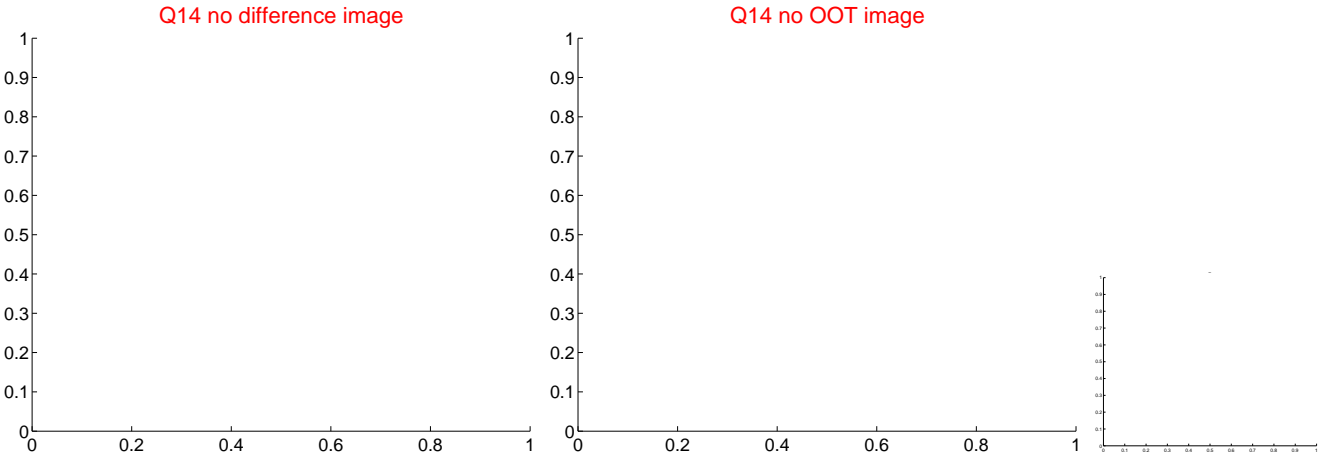
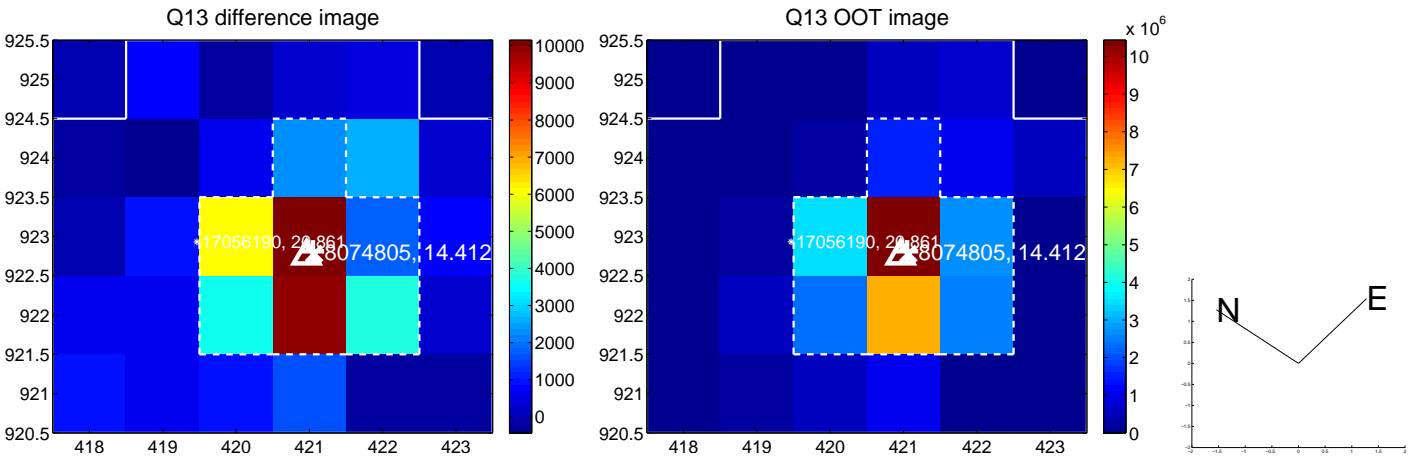
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



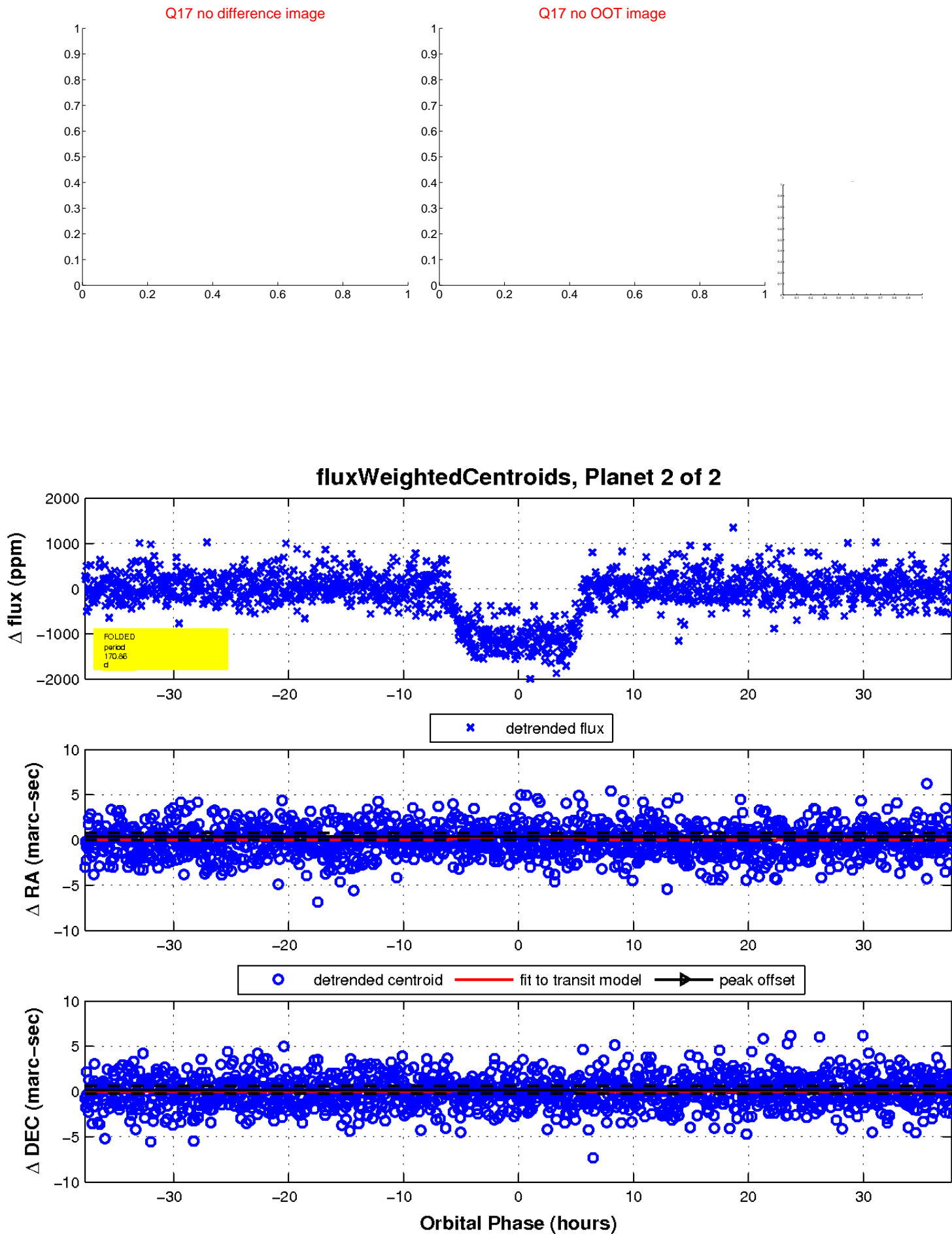
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

