

KIC 008104030

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})
008104030-01	OBS	3269.01	46.840106	164.133925	6276.0	3.755	149.7	143.1	1.05	6006	13.26	22.04
008104030-02	OBS	No	46.840308	149.892201	2436.7	4.922	64.4	65.9	1.05	6006	8.54	22.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008104030-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
008104030-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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.

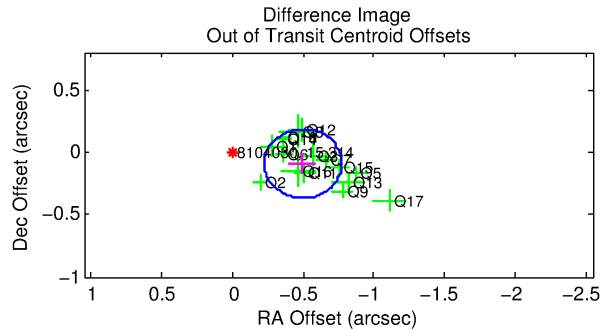
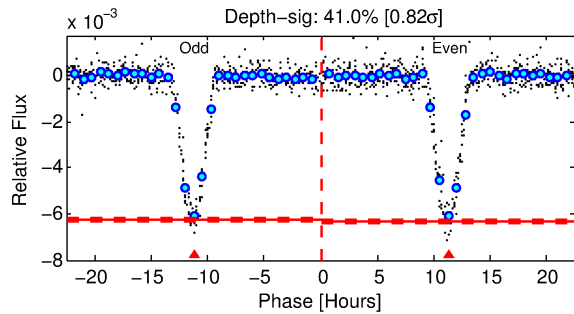
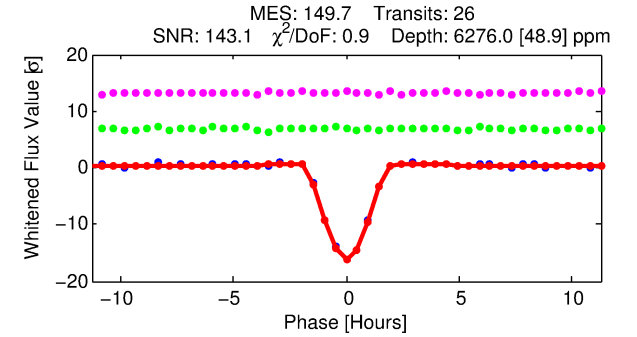
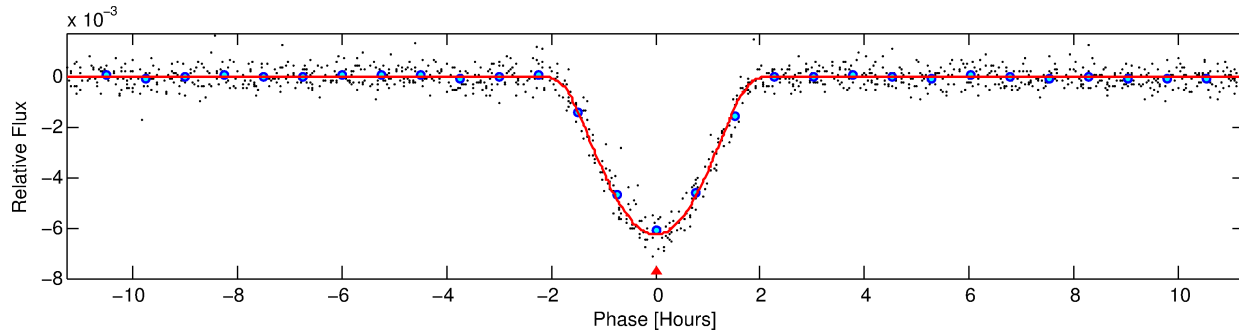
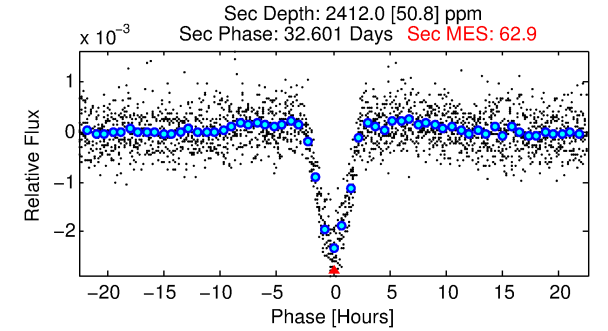
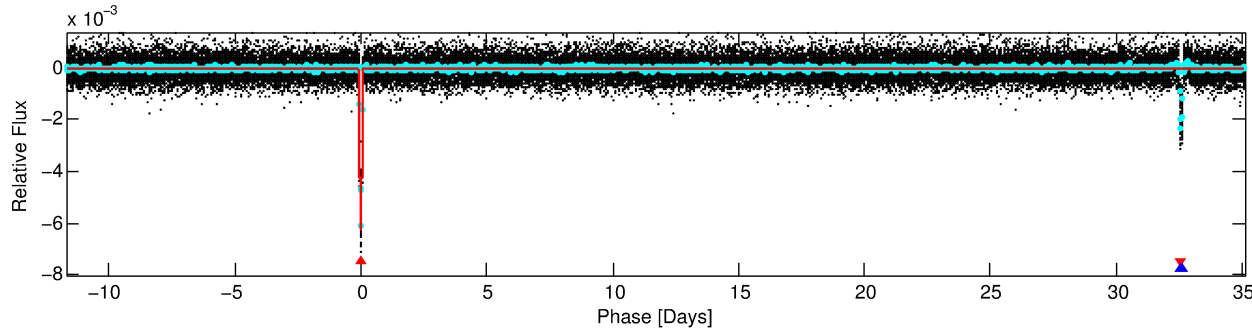
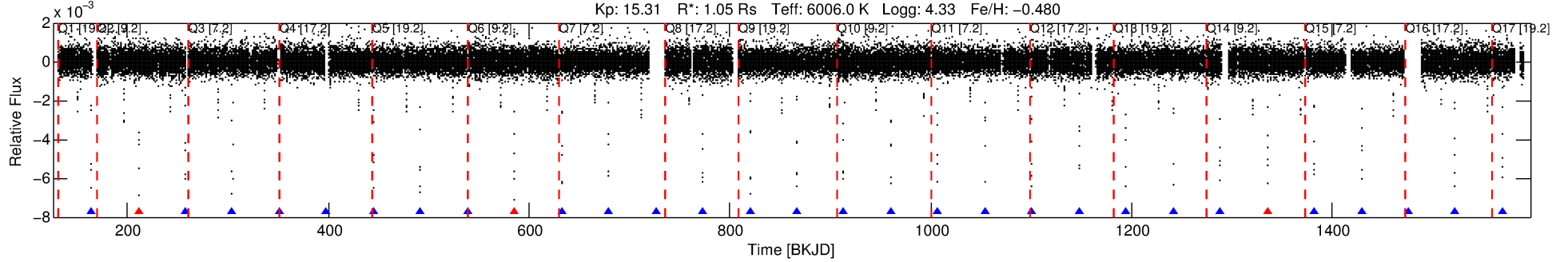
Ephemeris Match Information For 008104030-01

No Significant Match Found

DV One-Page Summary

KIC: 8104030 Candidate: 1 of 2 Period: 46.840 d
KOI: K03269.01 Corr: 0.989

Kp: 15.31 R*: 1.05 Rs Teff: 6006.0 K Logg: 4.33 Fe/H: -0.480



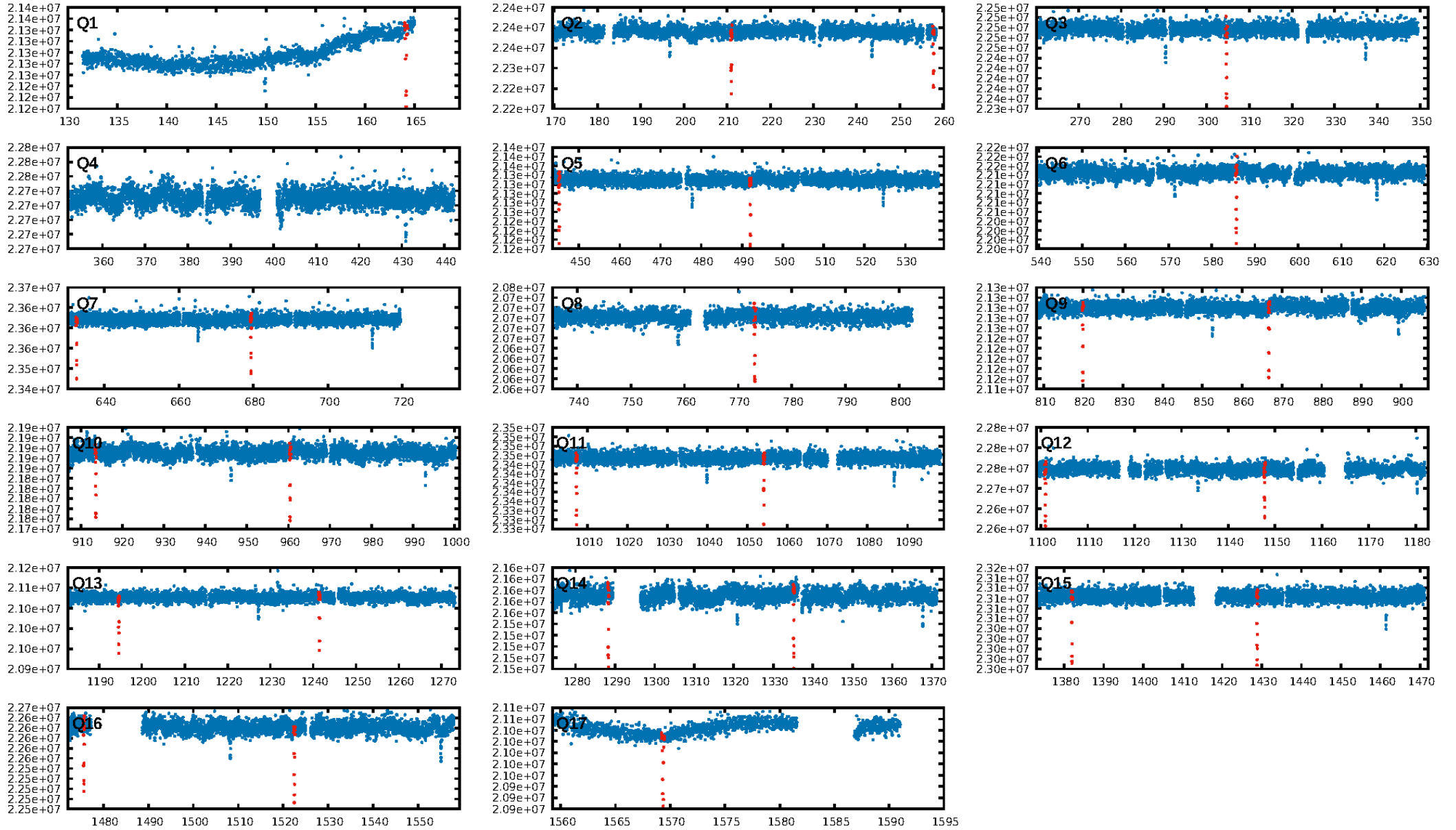
DV Fit Results:

Period = 46.84011 [0.00004] d
Epoch = 164.1339 [0.0007] BKJD
Rp/R* = 0.1152 [0.0246]
a/R* = 51.51 [2.59]
b = 0.98 [0.04]
Seff = 22.04 [8.14]
Teq = 553 [51] K
Rp = 13.26 [4.77] Re
a = 0.2426 [0.0586] AU
Ag = 444.08 [245.28] [1.81σ]
Teffp = 3921 [435] K [7.69σ]

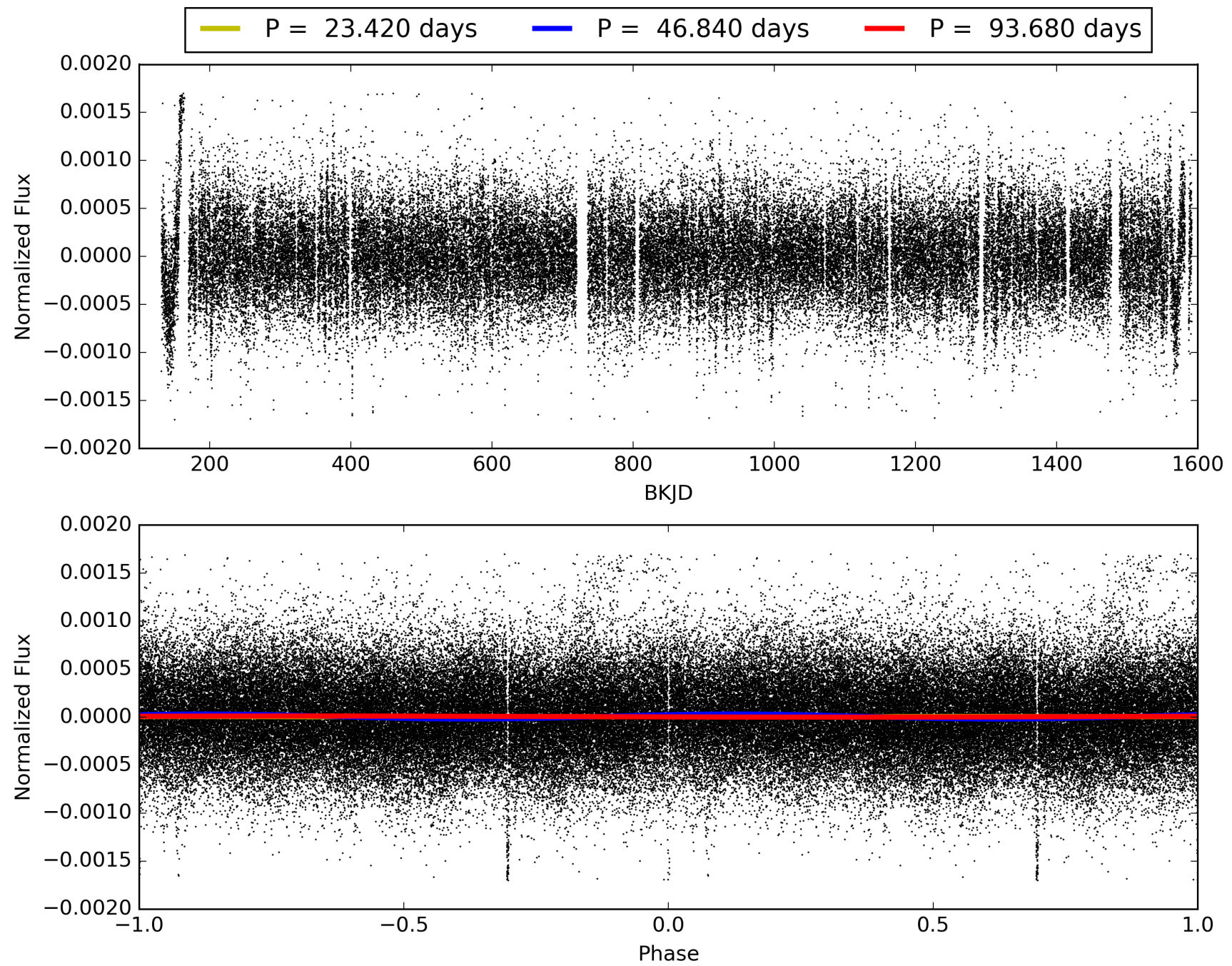
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.88 [21/24]
GhostDiagnostic-chr: 5.072
Centroid-sig: 0.0%
Centroid-so: 0.252 arcsec [2.05σ]
OotOffset-rm: 0.506 arcsec [5.51σ]
KicOffset-rm: 0.190 arcsec [2.48σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 008104030-01, PDC Light Curves

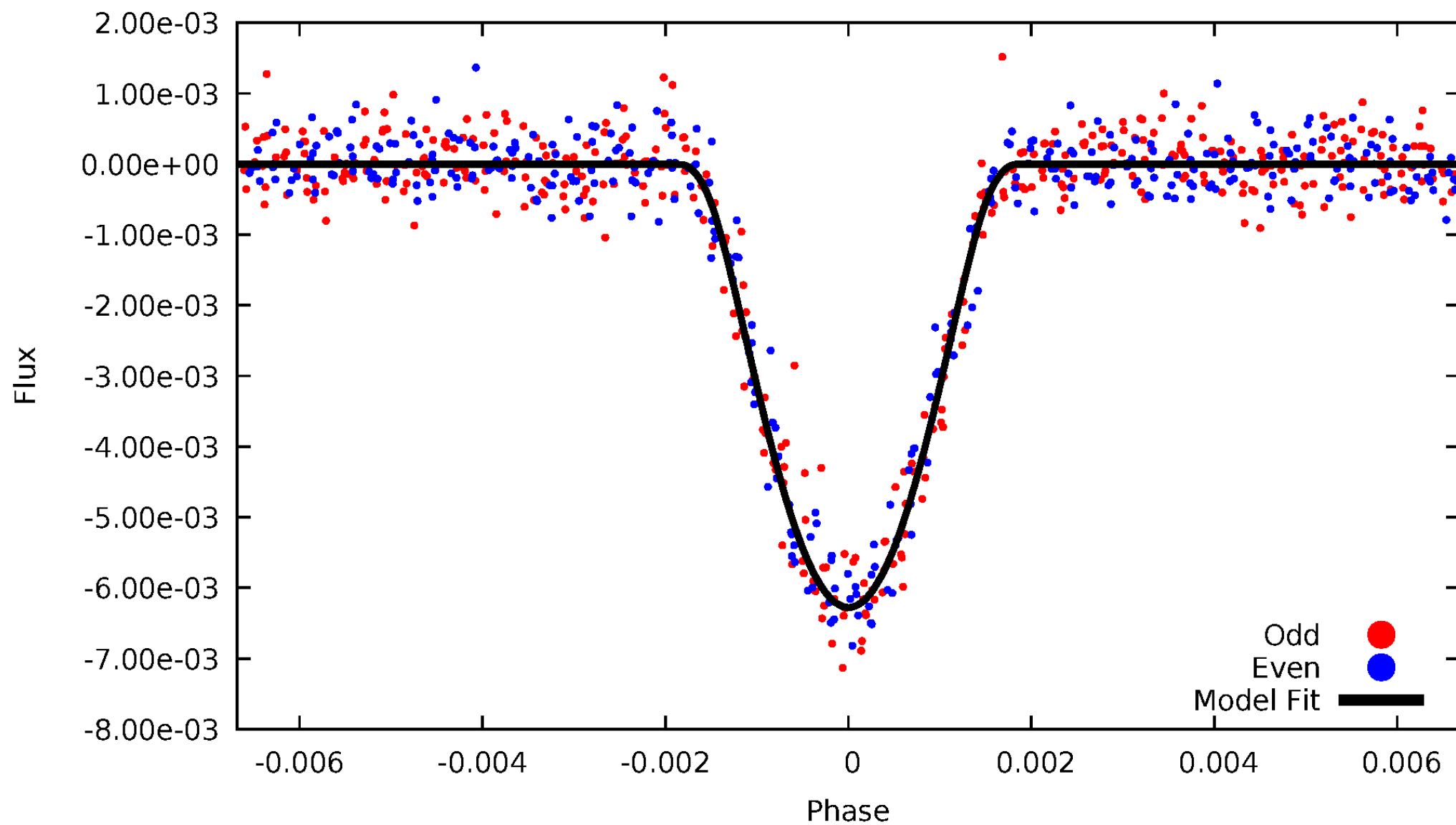


TCE 008104030-01



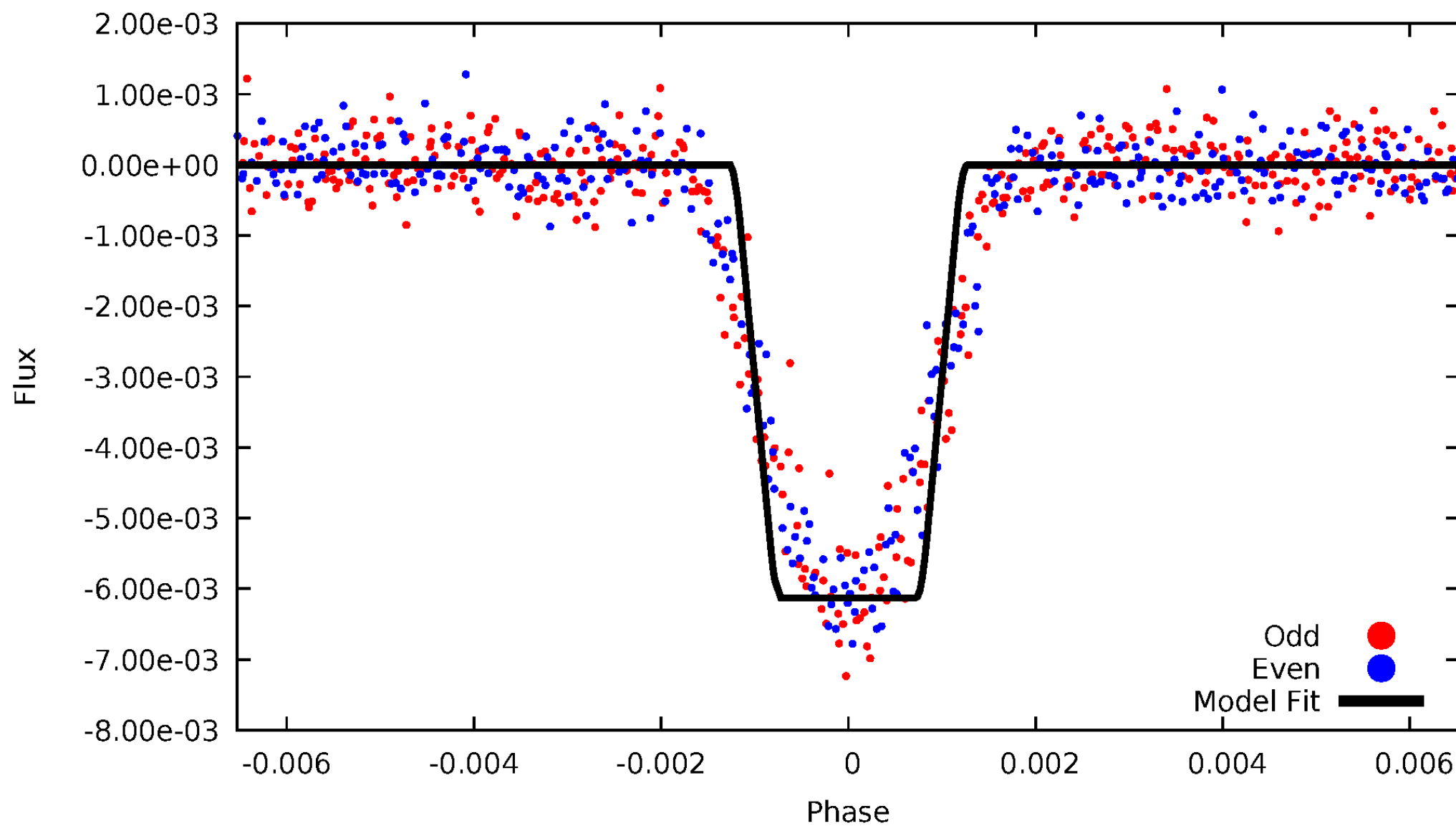
DV Odd/Even

TCE 008104030-01

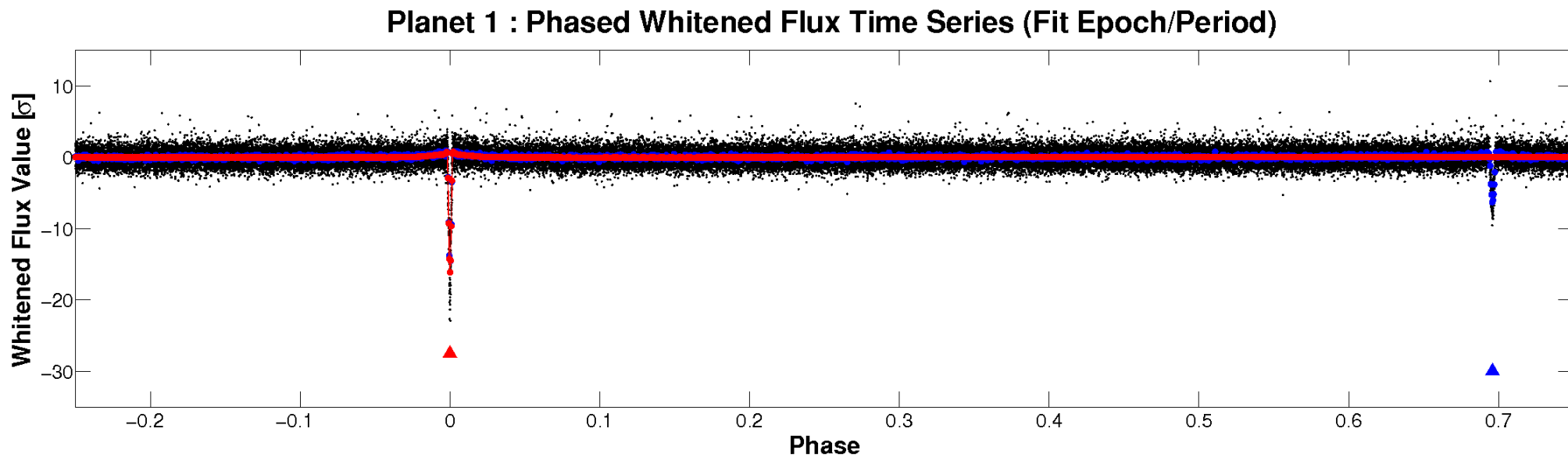
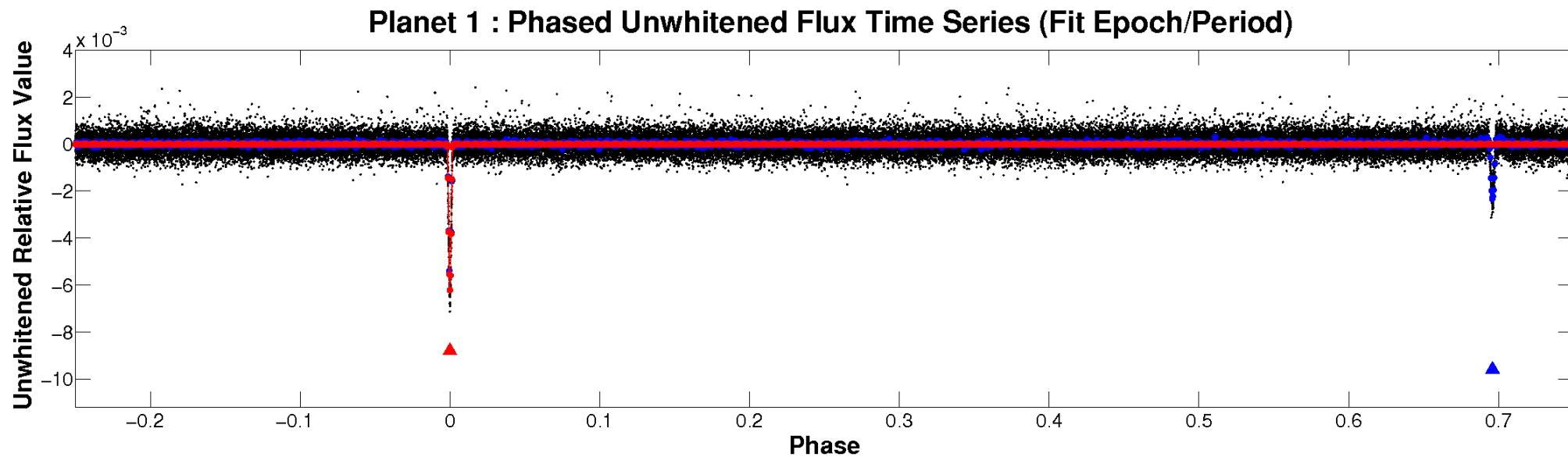


ALT Odd/Even

TCE 008104030-01

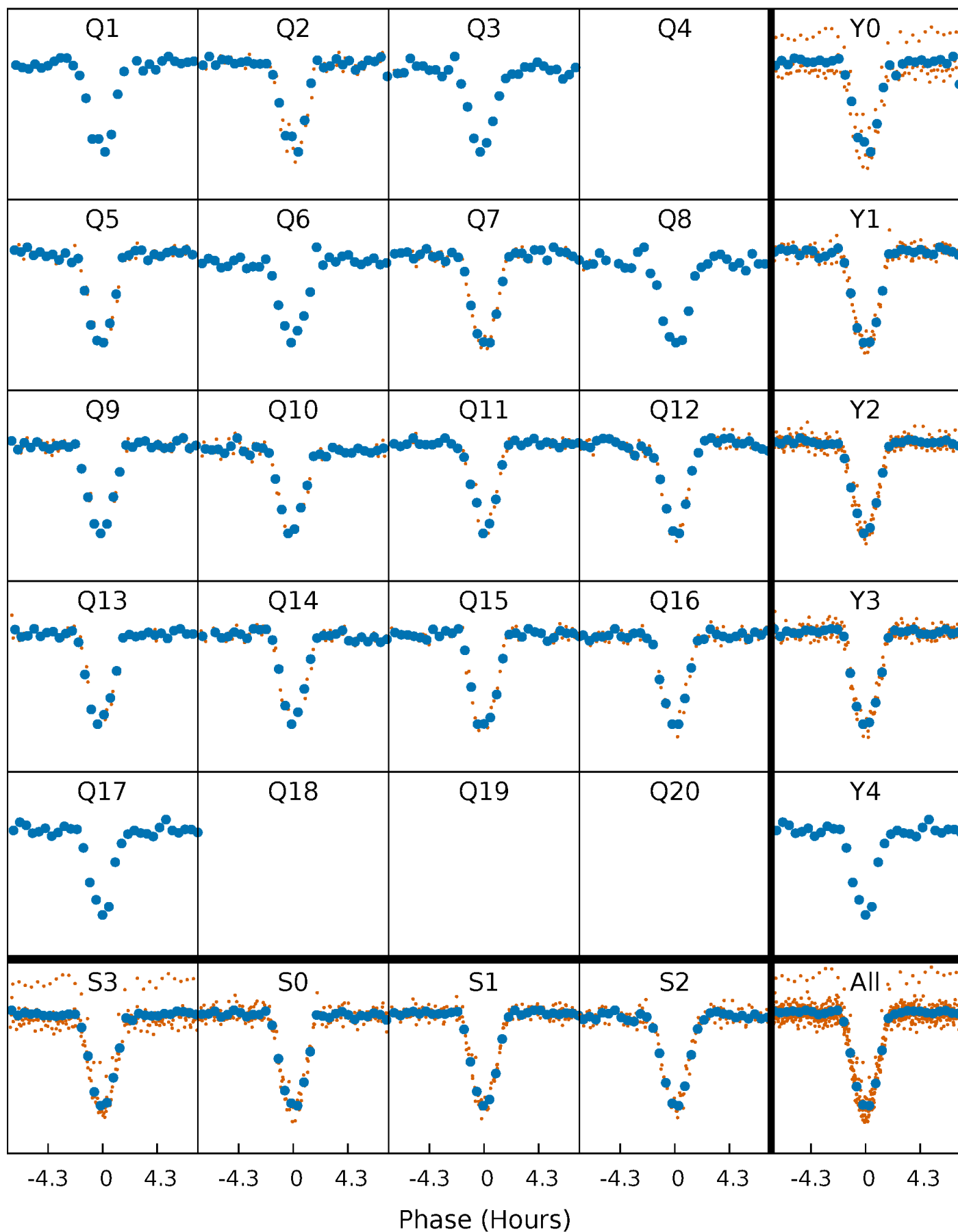


Non-Whitened Vs. Whitened Light Curve



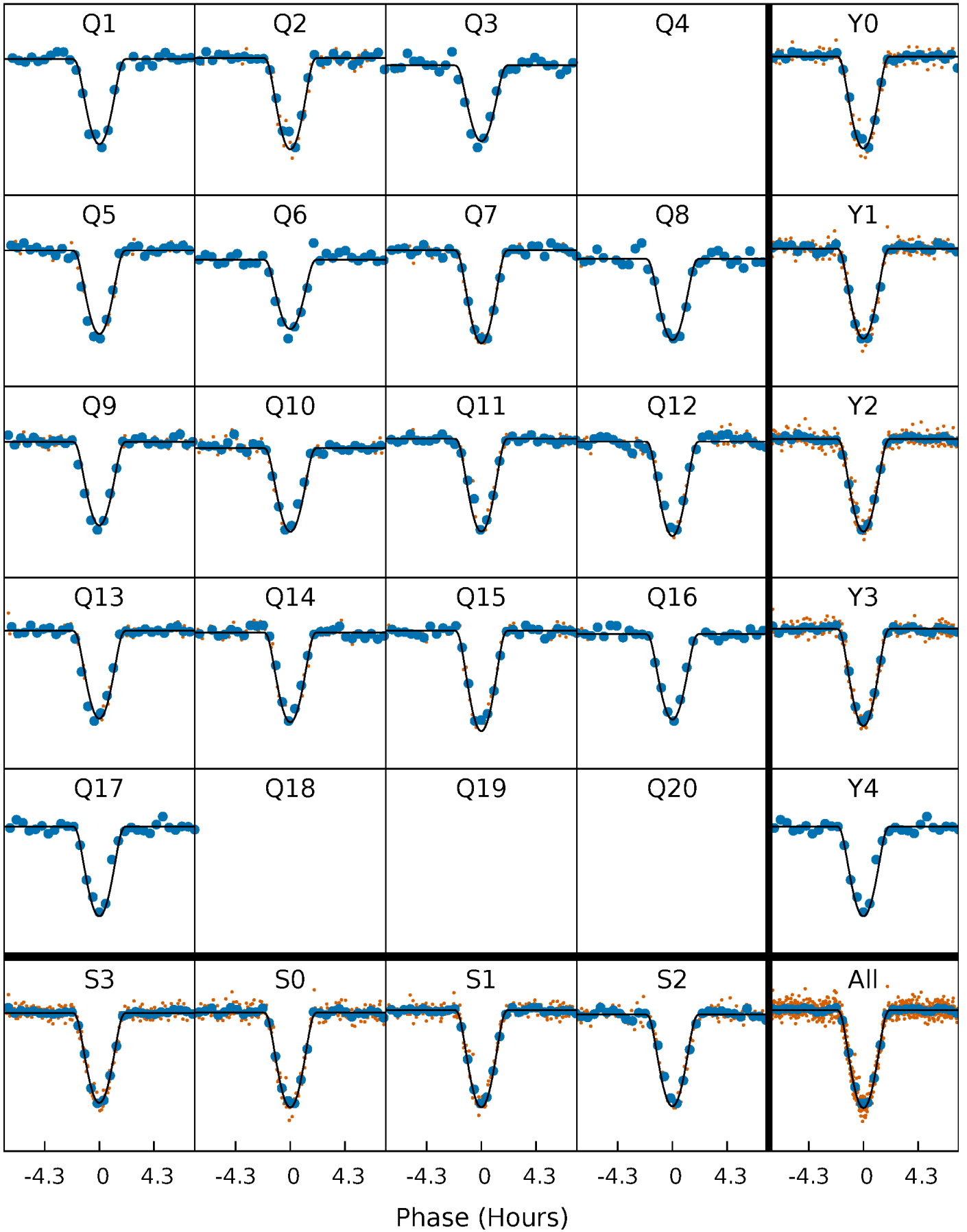
PDC Quarter-Phased Transit Curves

TCE 008104030-01 P= 46.840106 Days $T_0=164.133925$ (BKJD)



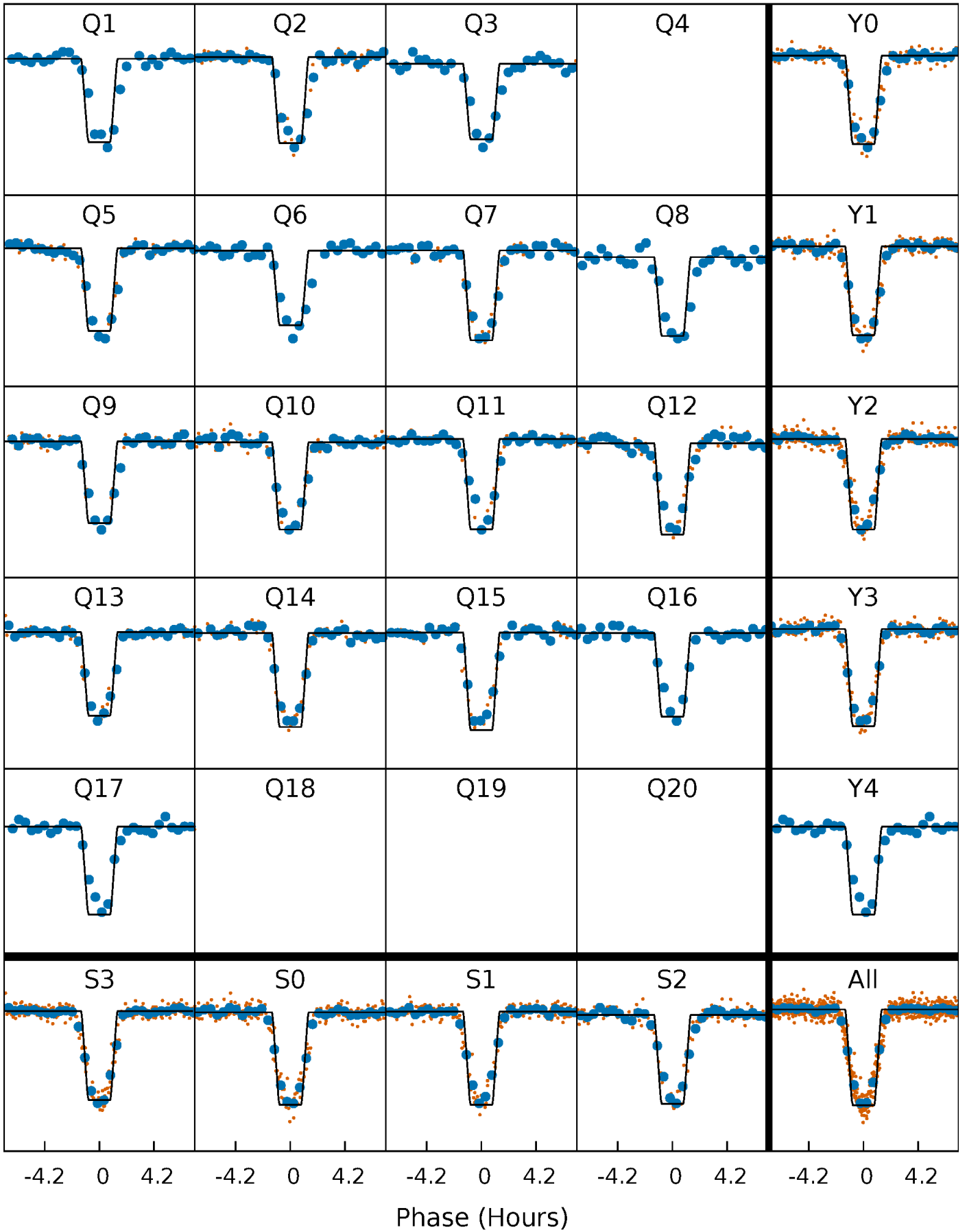
DV Quarter-Phased Transit Curves

TCE 008104030-01 P= 46.840106 Days $T_0=164.133925$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

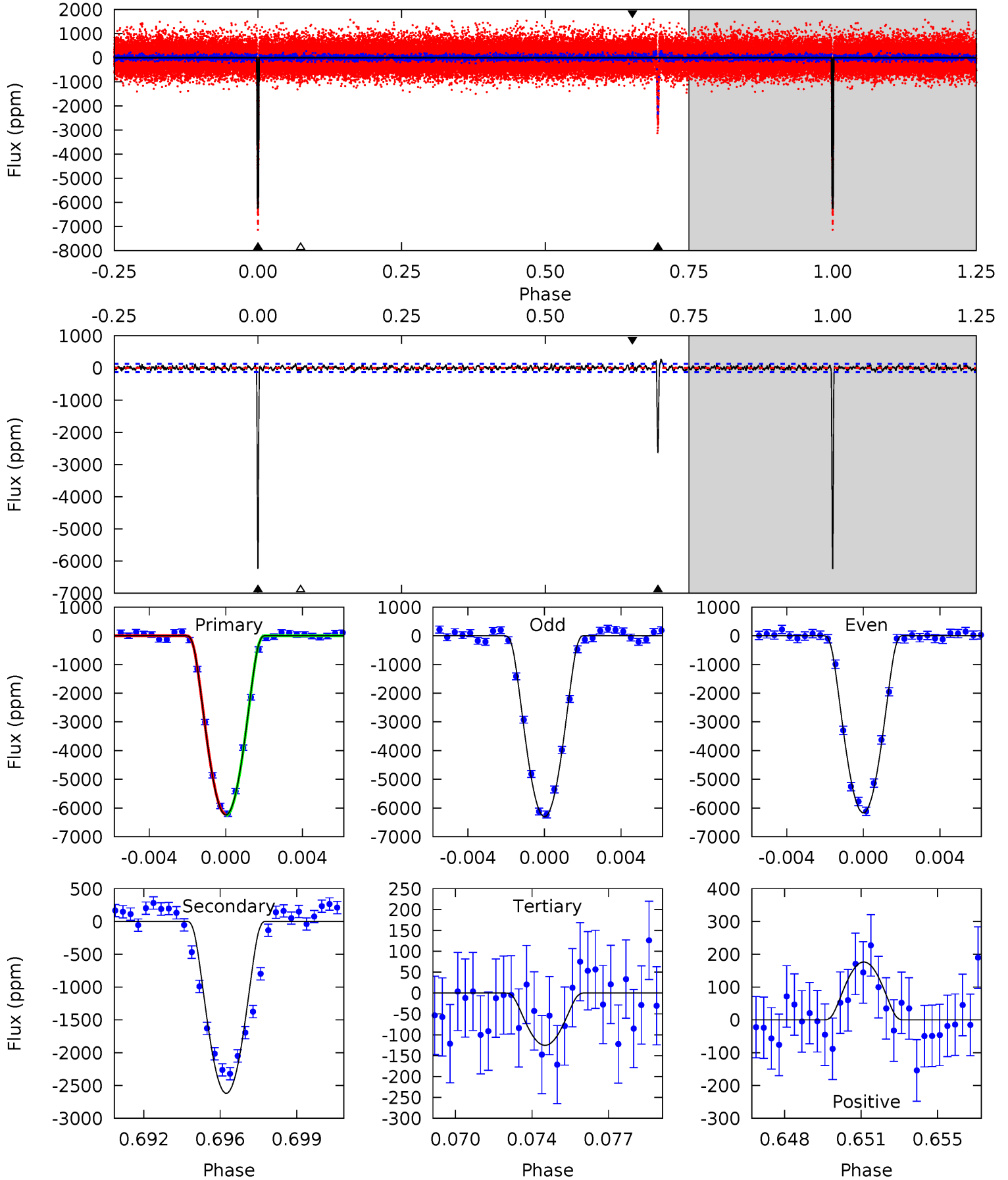
TCE 008104030-01 P= 46.840438 Days $T_0=164.129228$ (BKJD)



DV Model-Shift Uniqueness Test

008104030-01, P = 46.840106 Days, E = 117.293819 Days

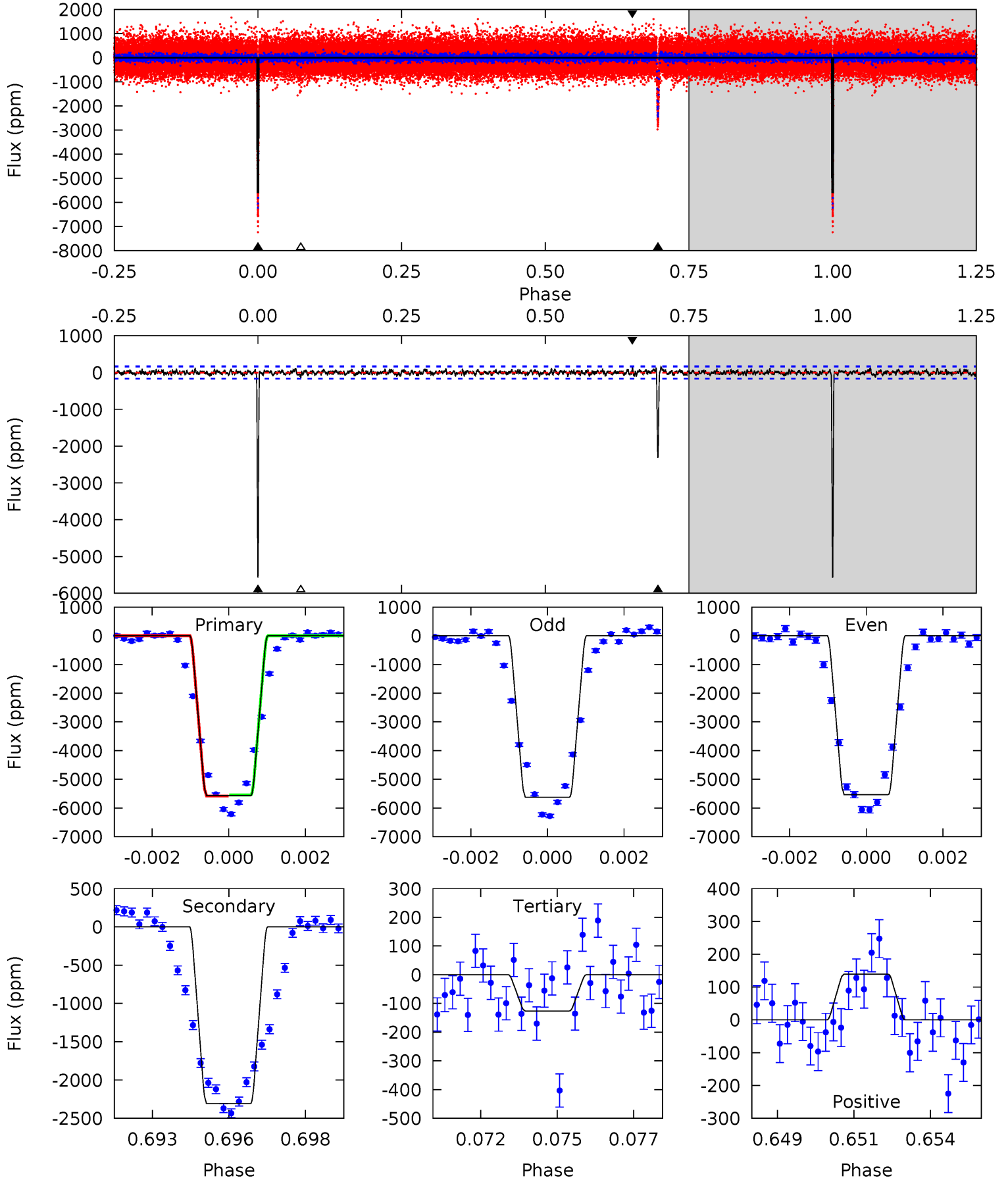
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
249.1	104.5	5.00	7.04	5.21	2.90	1.74	244.1	242.1	99.5	97.5	2.64	1.00	0.04	0.87



Alt Model-Shift Uniqueness Test

008104030-01, P = 46.840438 Days, E = 117.288790 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
181.1	75.0	4.10	4.52	5.29	3.02	1.21	177.0	176.5	70.9	70.4	1.44	1.00	0.03	0.65



Stellar Parameters For KIC 008104030

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6006^{+179}_{-179}	$4.330^{+0.190}_{-0.190}$	$-0.480^{+0.300}_{-0.300}$	$1.055^{+0.305}_{-0.203}$	$0.867^{+0.118}_{-0.069}$	$1.041^{+0.959}_{-0.497}$
	+3%/-3%	+4%/-4%	+62%/-62%	+29%/-19%	+14%/-8%	+92%/-48%
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 008104030-01 / KOI 3269.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2619 ± 25	$13.04^{+3.83}_{-3.10}$	772^{+58}_{-51}	4292^{+430}_{-333}	509^{+350}_{-205}
Alt.	-2307 ± 31	$8.95^{+3.34}_{-2.92}$	769^{+60}_{-52}	4816^{+916}_{-506}	951^{+1068}_{-444}

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 $A_{obs} \gg 1.0$

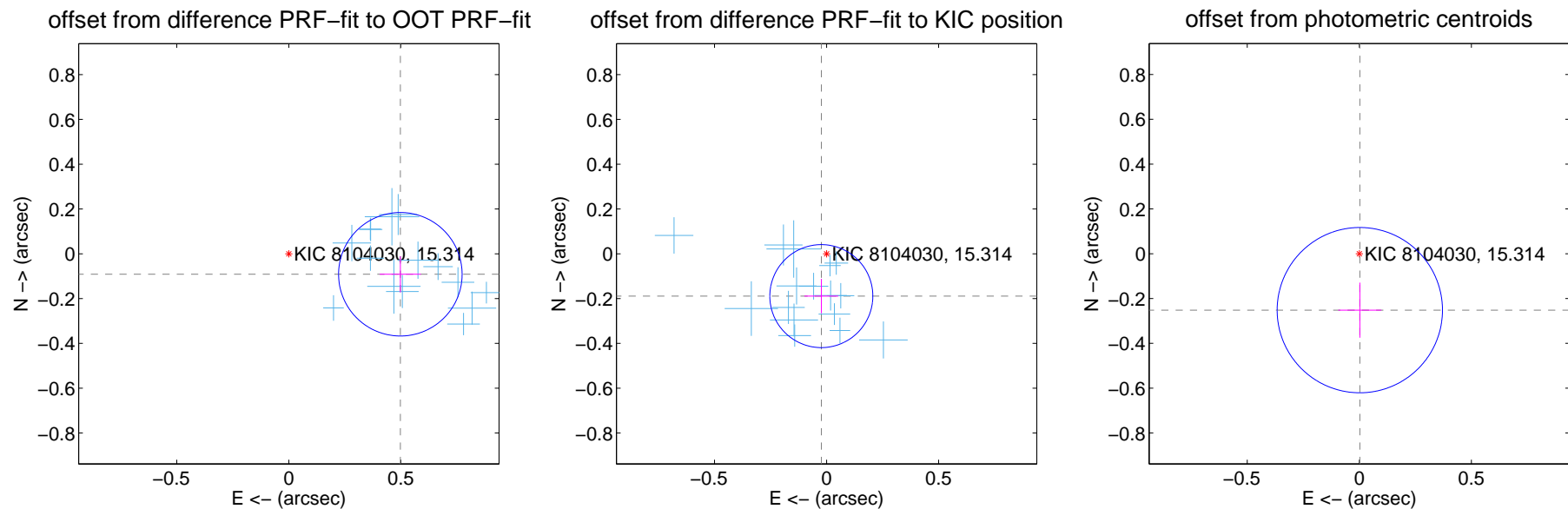
DV Centroid Data

Supplemental centroid analysis for 008104030-01. Kepler magnitude: 15.31. Transit SNR 143.05

There are 16 quarters with good PRF difference image offsets

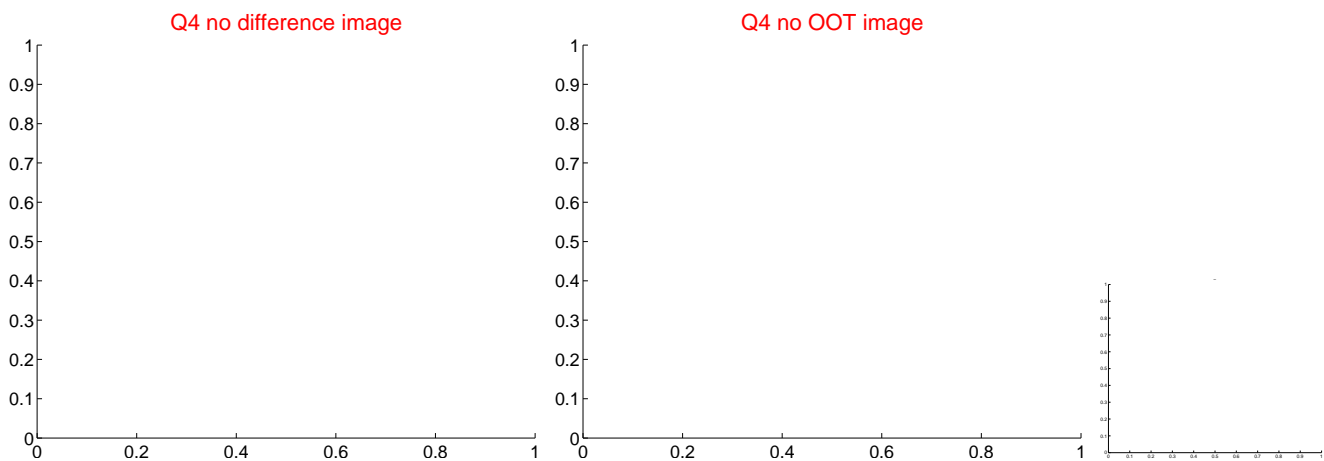
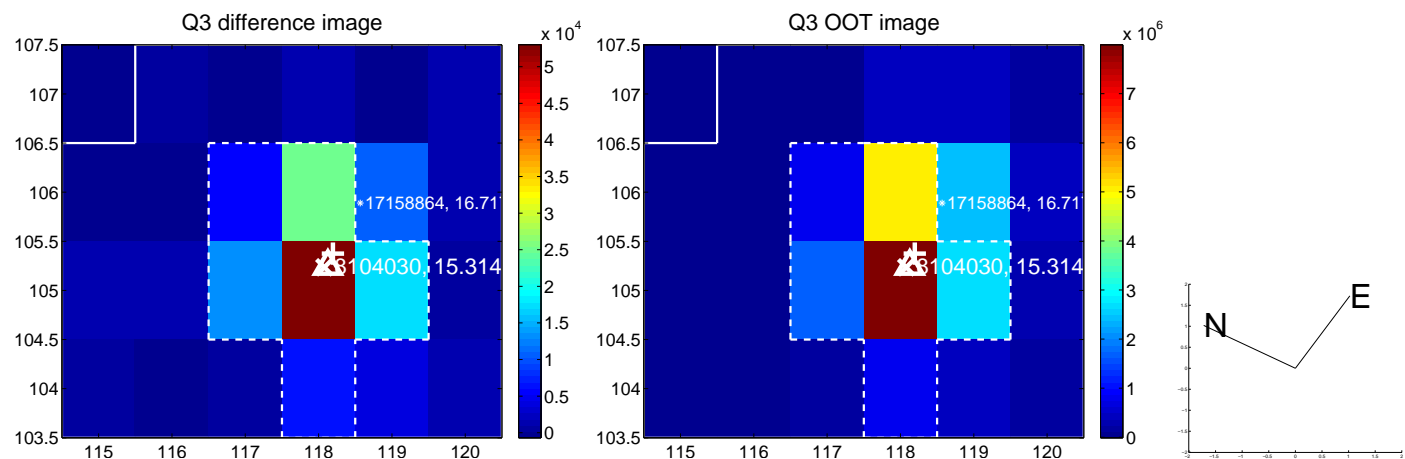
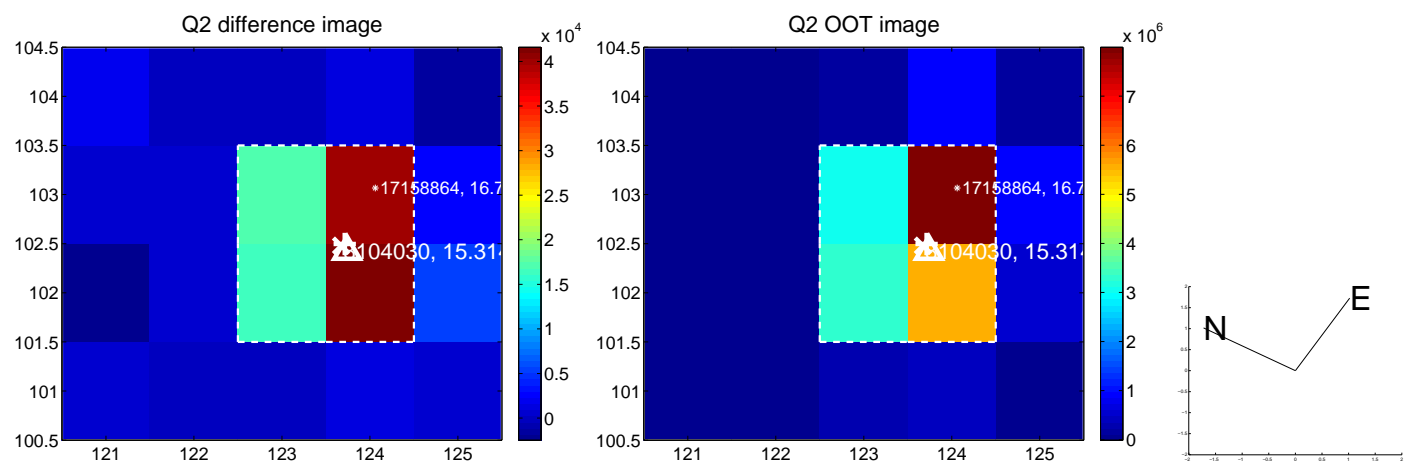
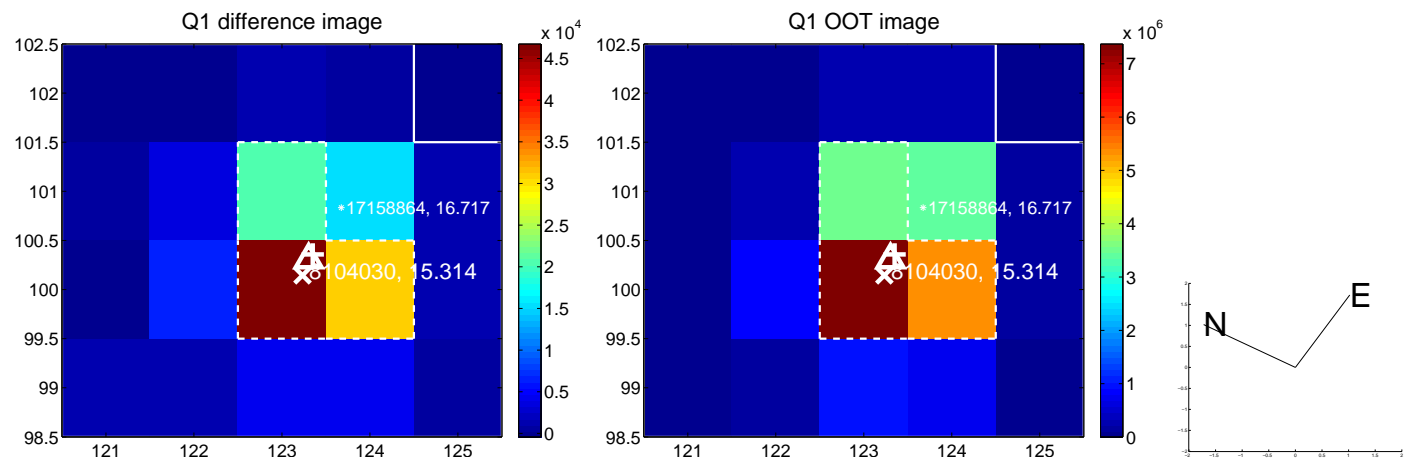
The direct PRF centroid is offset from the target star catalog position by about 0.86 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.506 \pm 0.092	5.51	-0.498 \pm 0.092	-0.091 \pm 0.081
PRF-fit source offset from KIC position	0.190 \pm 0.077	2.48	0.023 \pm 0.076	-0.189 \pm 0.077
photometric centroid source offset	0.25 \pm 0.12	2.05	-0.00 \pm 0.10	-0.25 \pm 0.12

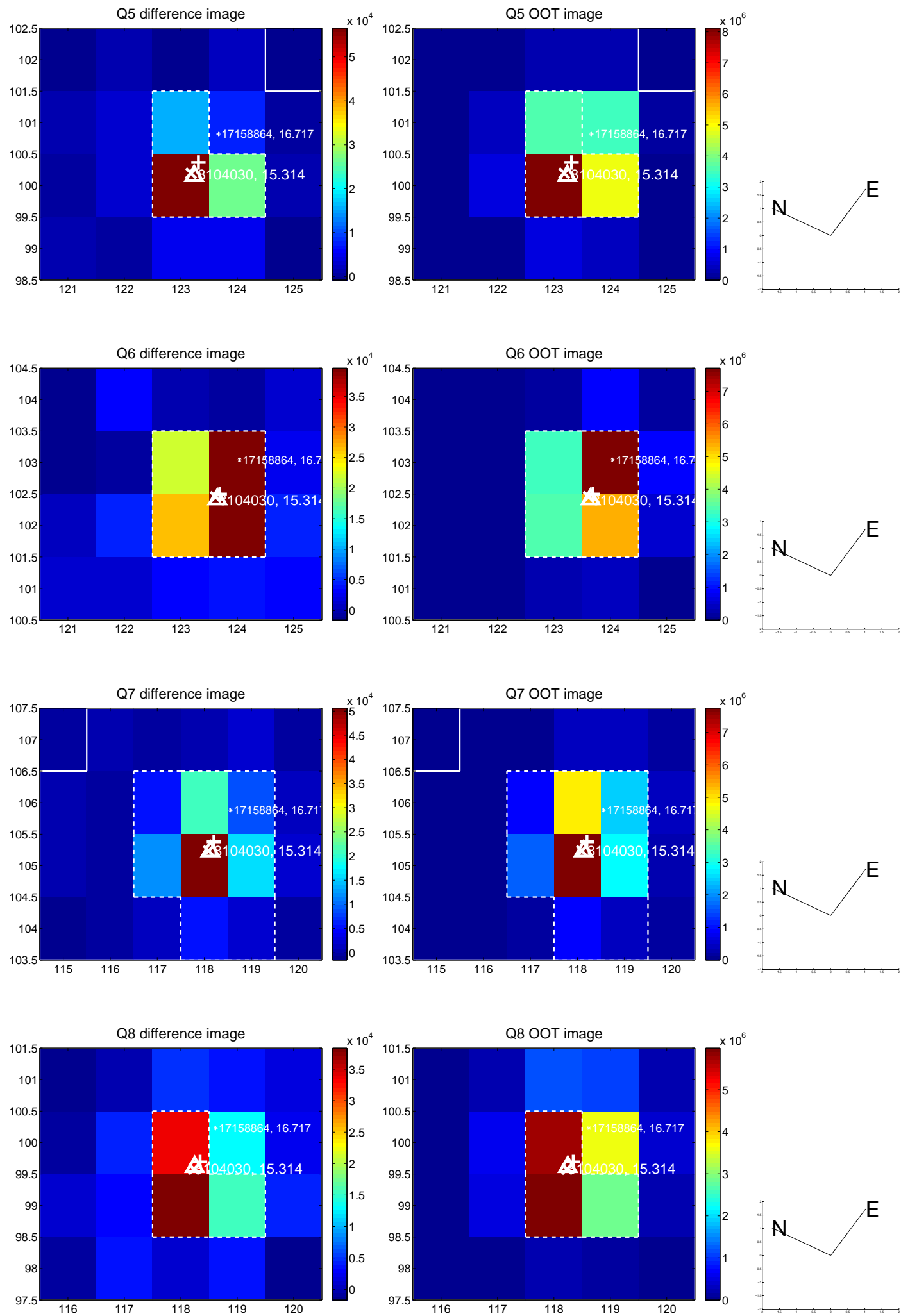


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

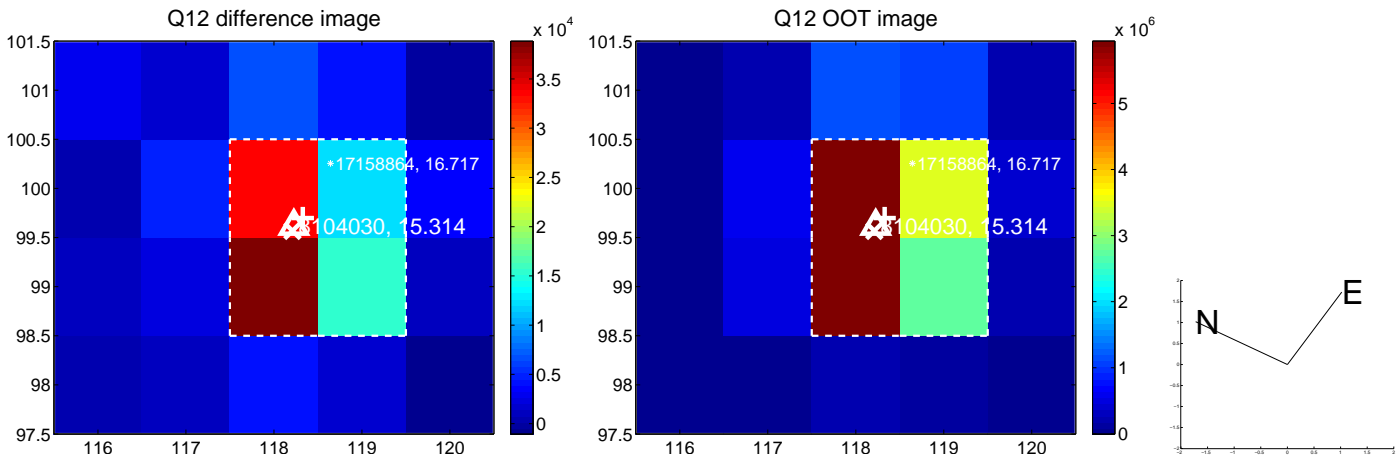
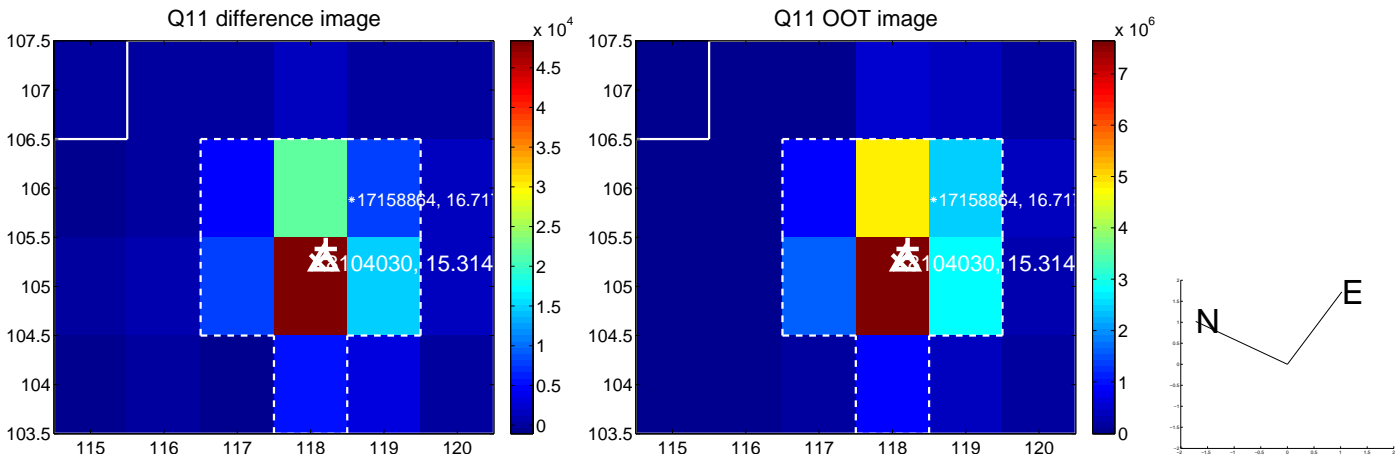
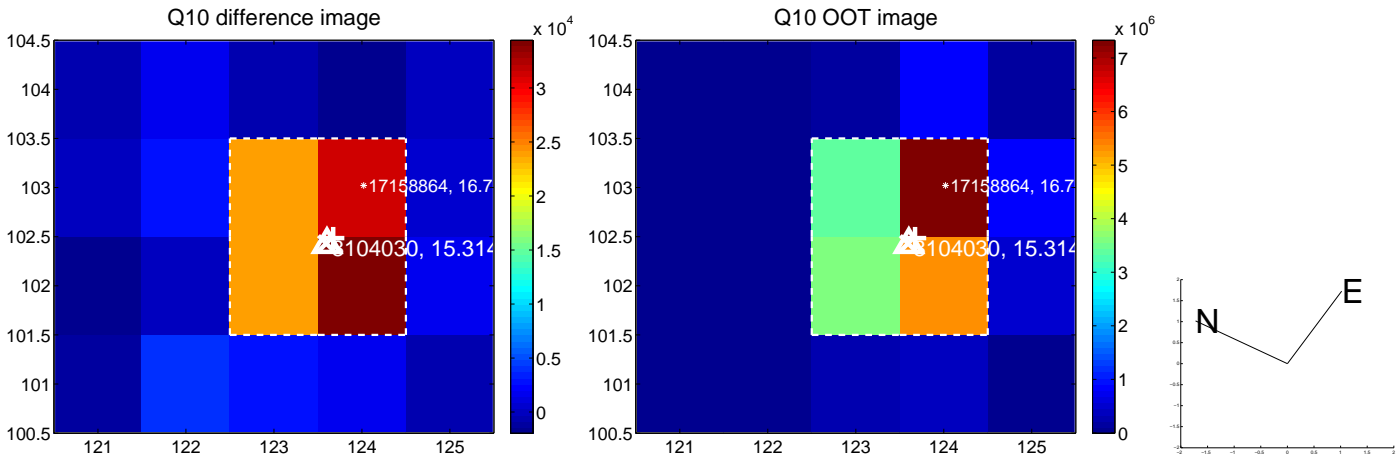
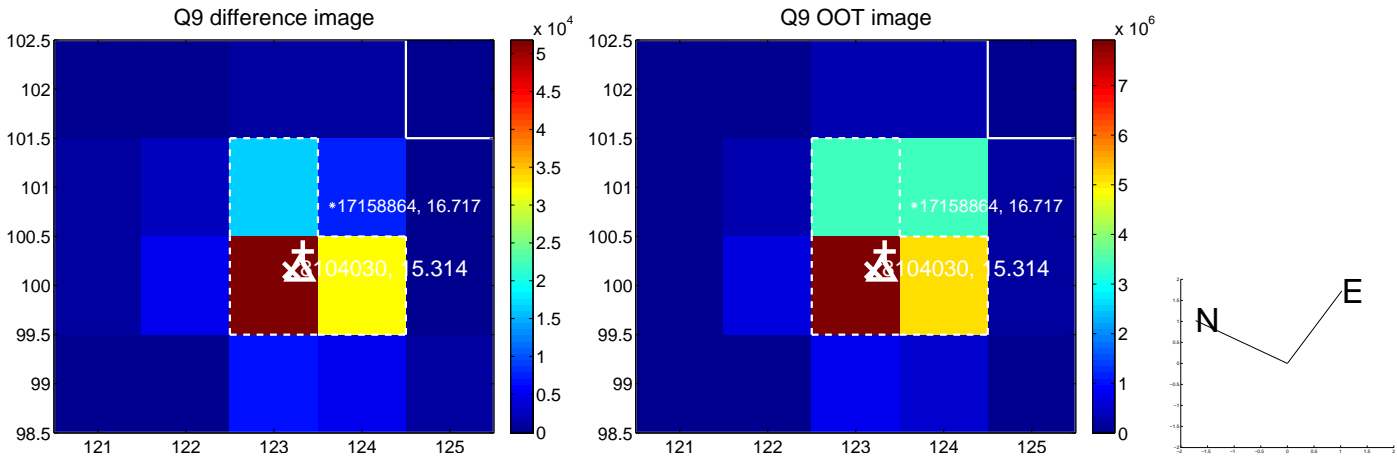
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



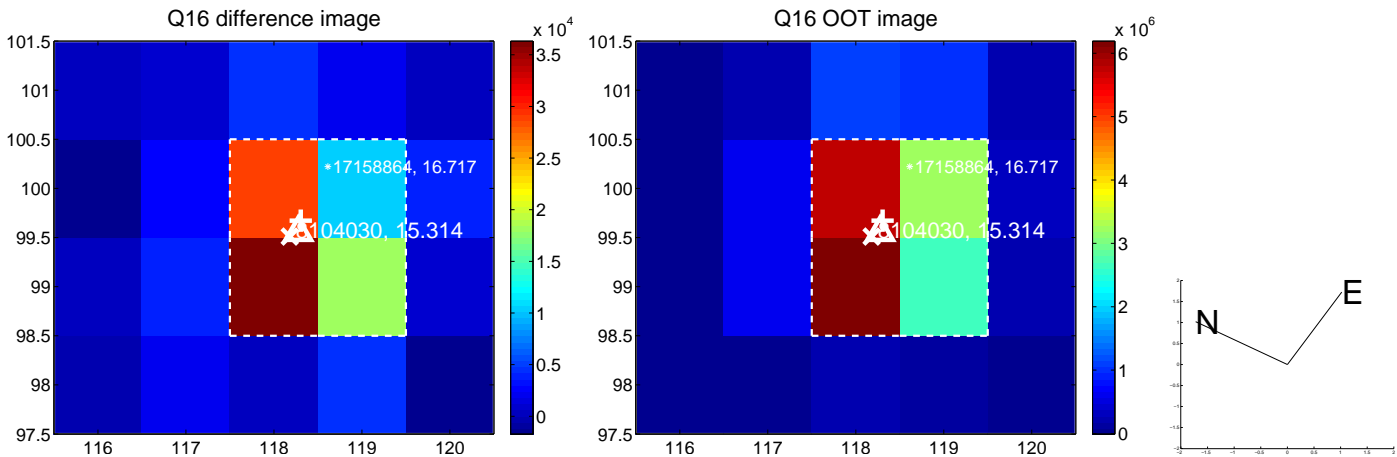
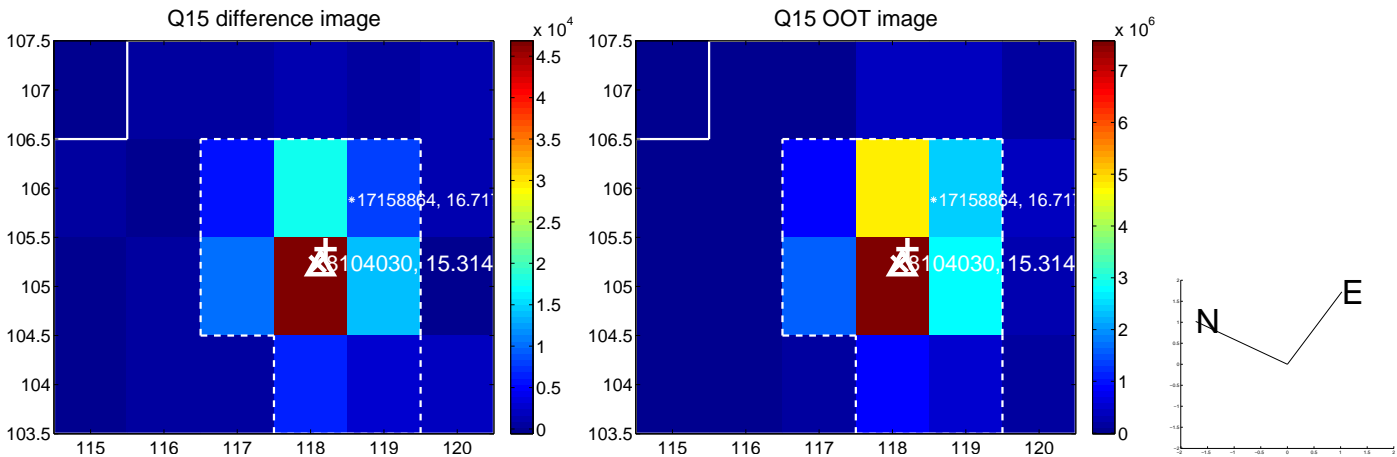
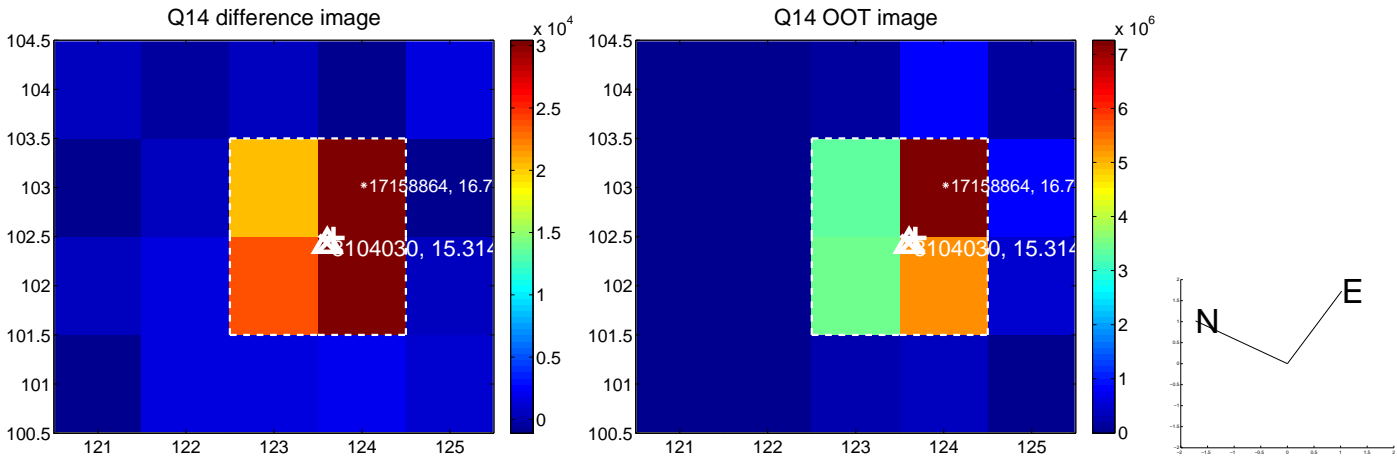
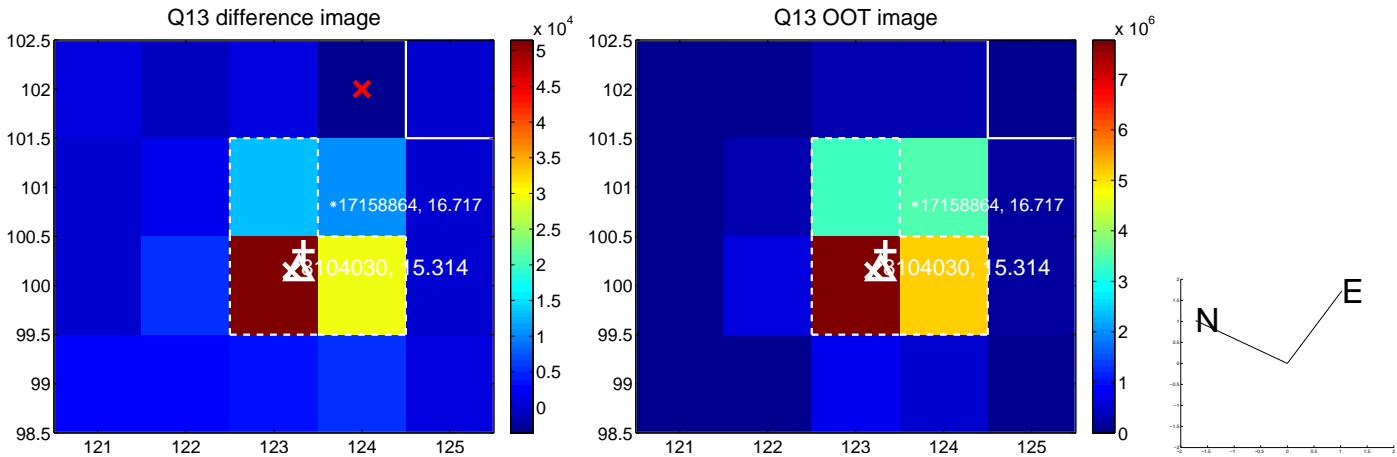
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



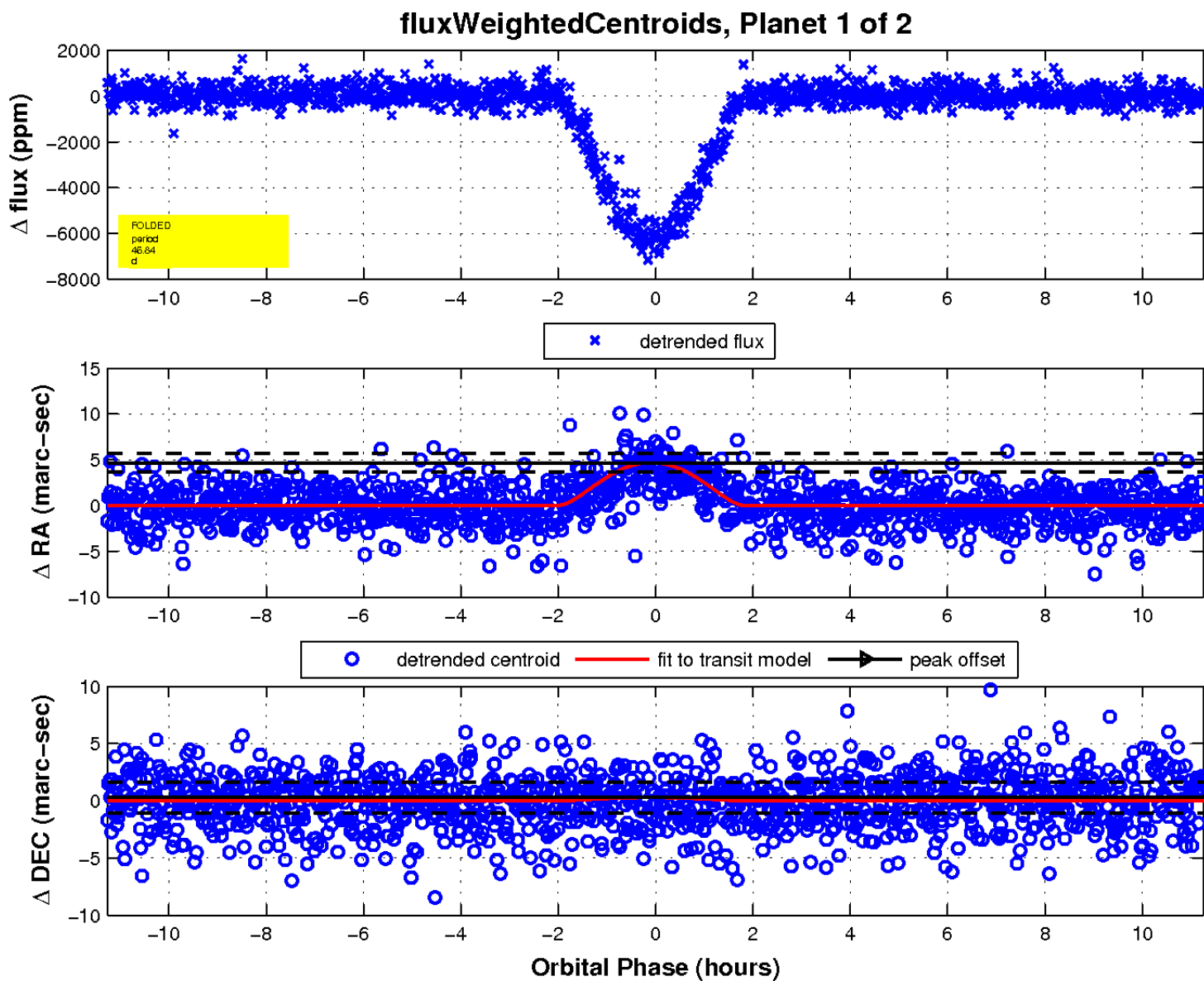
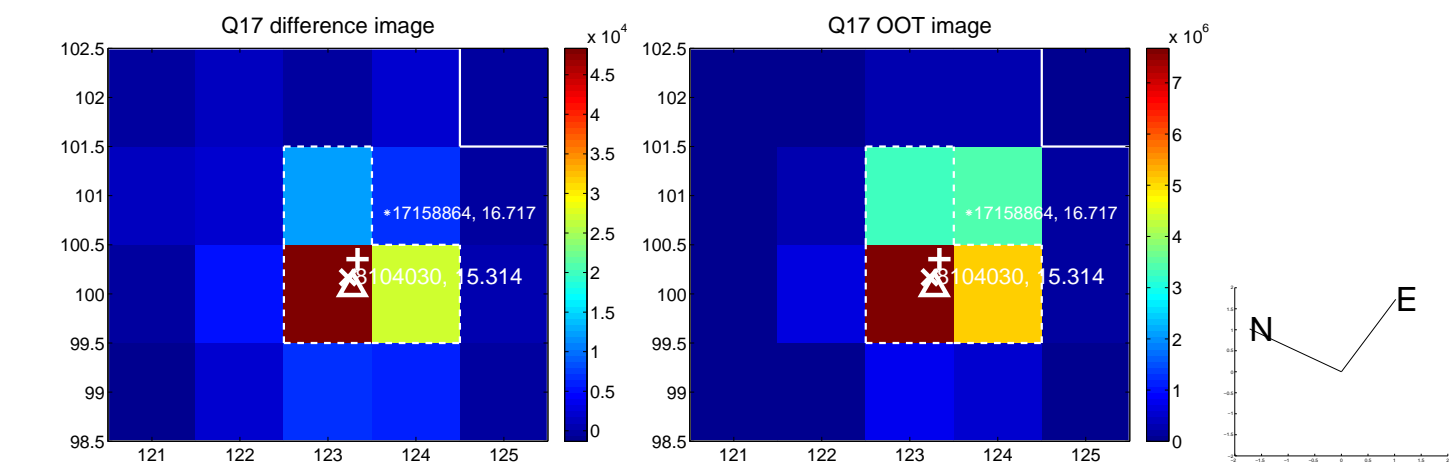
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

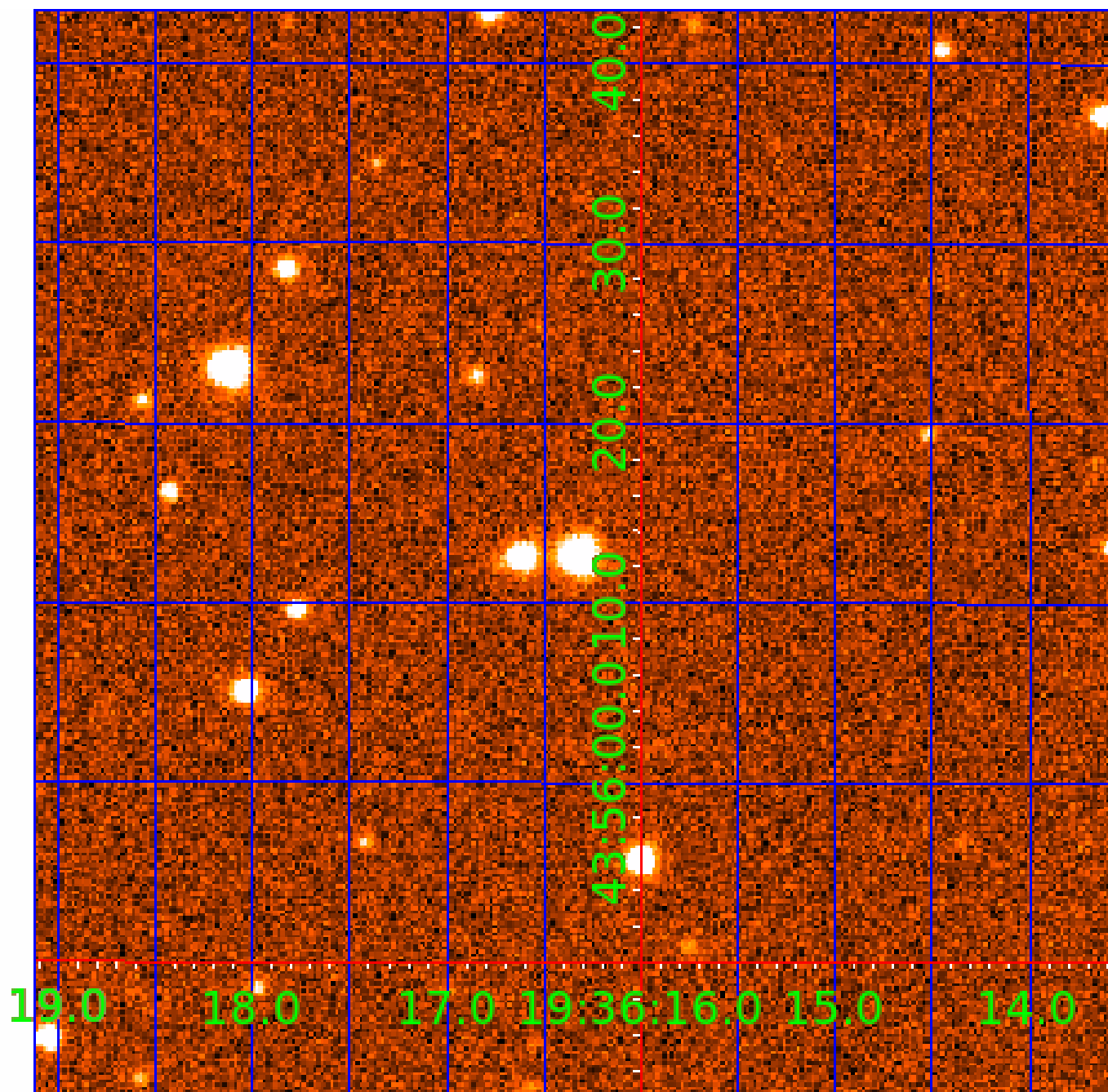


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008104030

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})
008104030-01	OBS	3269.01	46.840106	164.133925	6276.0	3.755	149.7	143.1	1.05	6006	13.26	22.04
008104030-02	OBS	No	46.840308	149.892201	2436.7	4.922	64.4	65.9	1.05	6006	8.54	22.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008104030-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
008104030-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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.

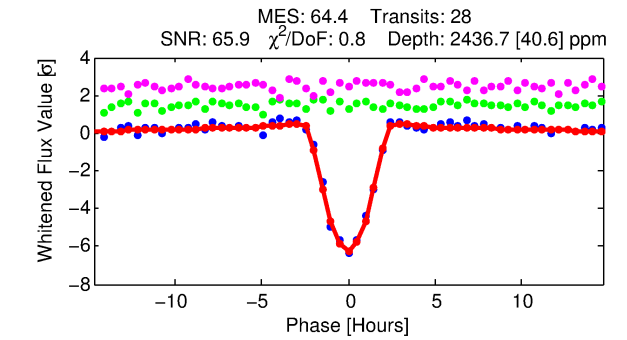
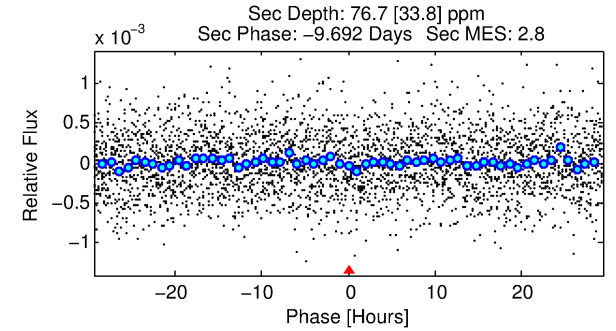
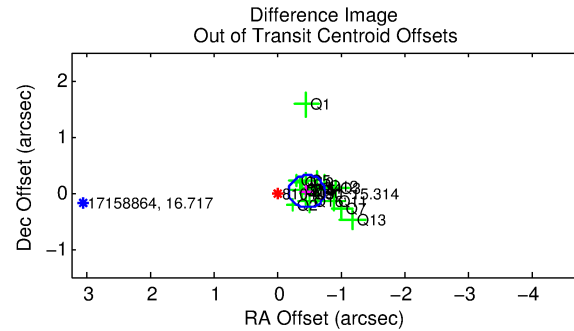
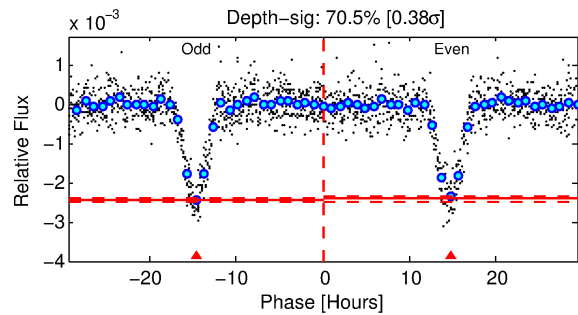
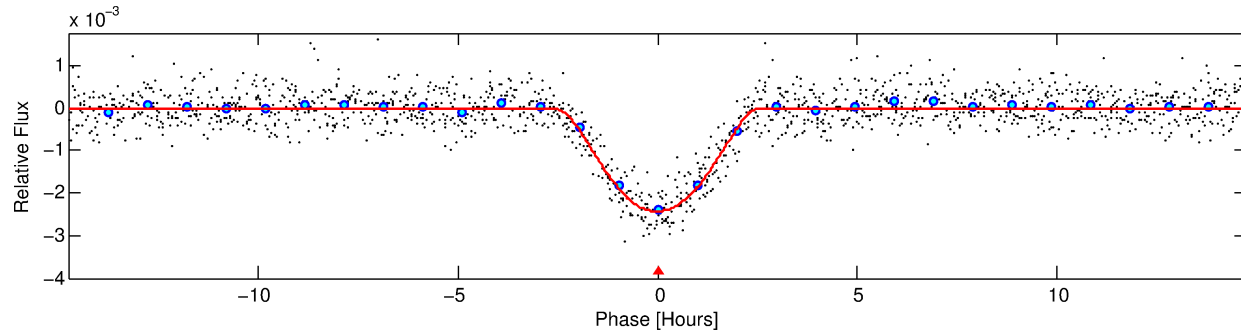
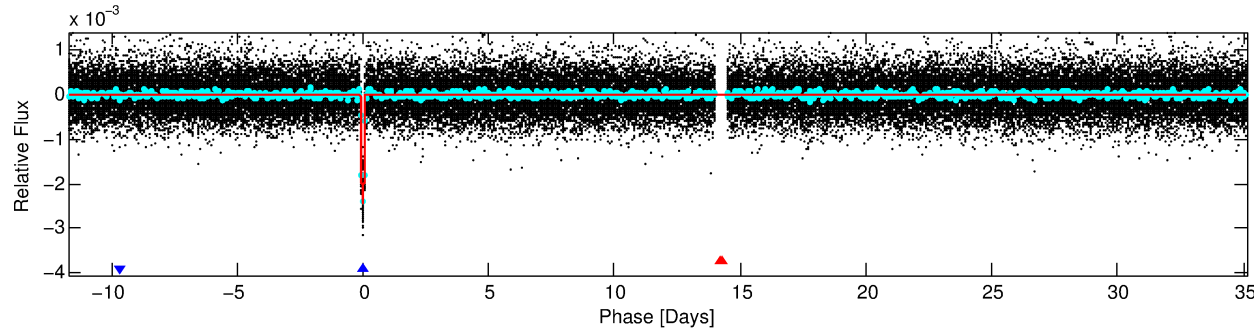
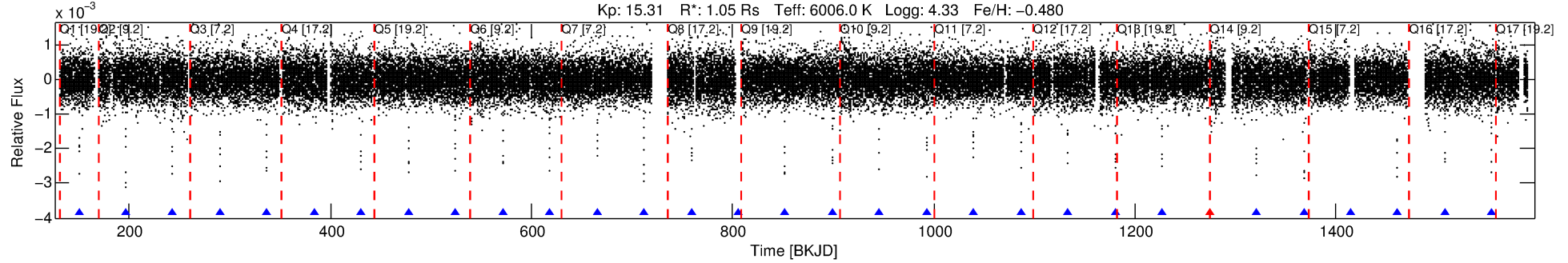
Ephemeris Match Information For 008104030-02

No Significant Match Found

DV One-Page Summary

KIC: 8104030 Candidate: 2 of 2 Period: 46.840 d
KOI: K03269 Corr: No Ephemeris Match

Kp: 15.31 R*: 1.05 Rs Teff: 6006.0 K Logg: 4.33 Fe/H: -0.480



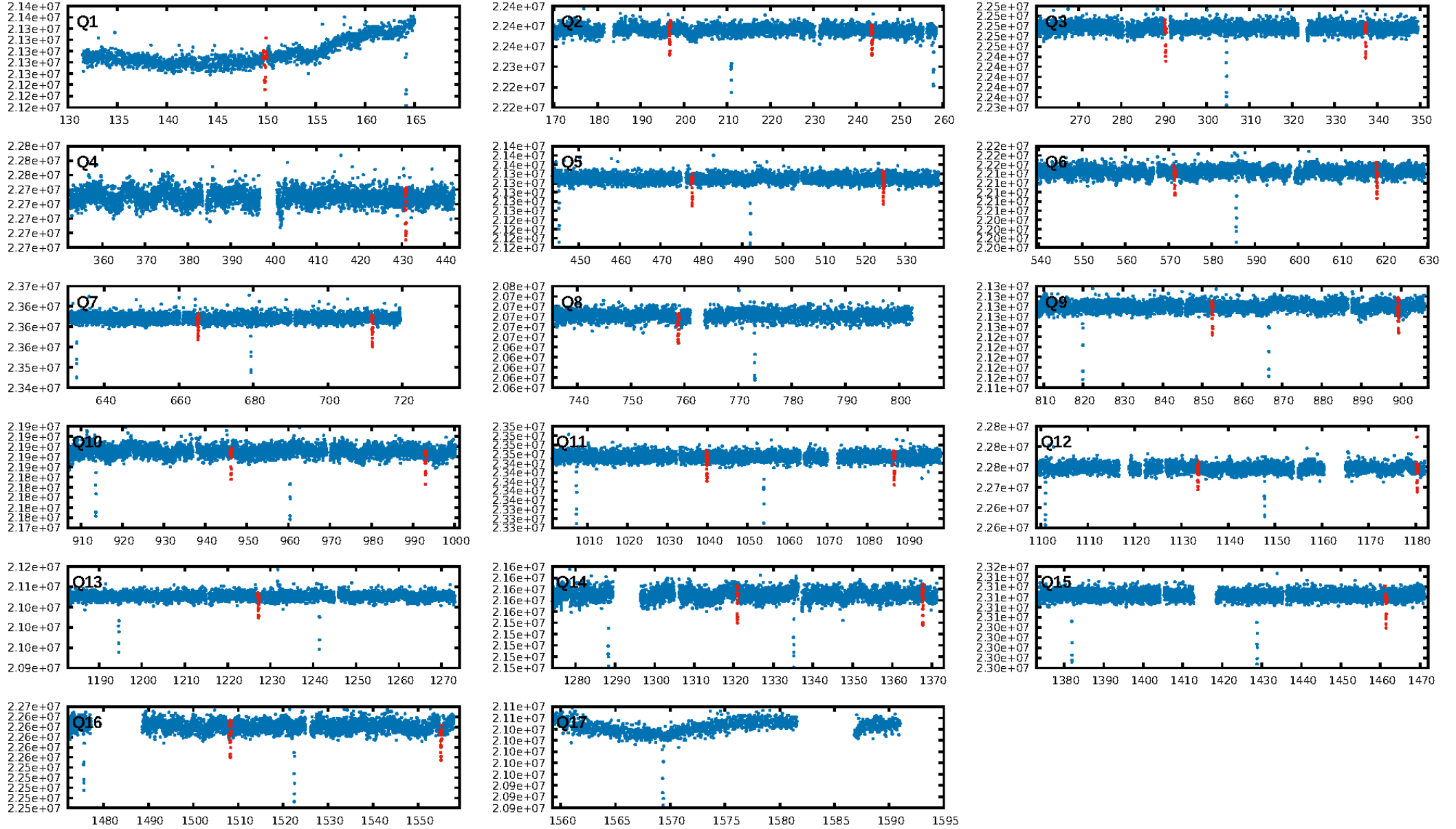
DV Fit Results:

Period = 46.84031 [0.00010] d
Epoch = 149.8922 [0.0017] BKJD
Rp/R* = 0.0742 [0.0291]
a/R* = 31.23 [3.30]
b = 0.98 [0.05]
Seff = 22.04 [8.14]
Teq = 553 [51] K
Rp = 8.54 [4.16] Re
a = 0.2426 [0.0586] AU
Ag = 34.09 [32.88] [1.01σ]
Teffp = 2064 [468] K [3.21σ]

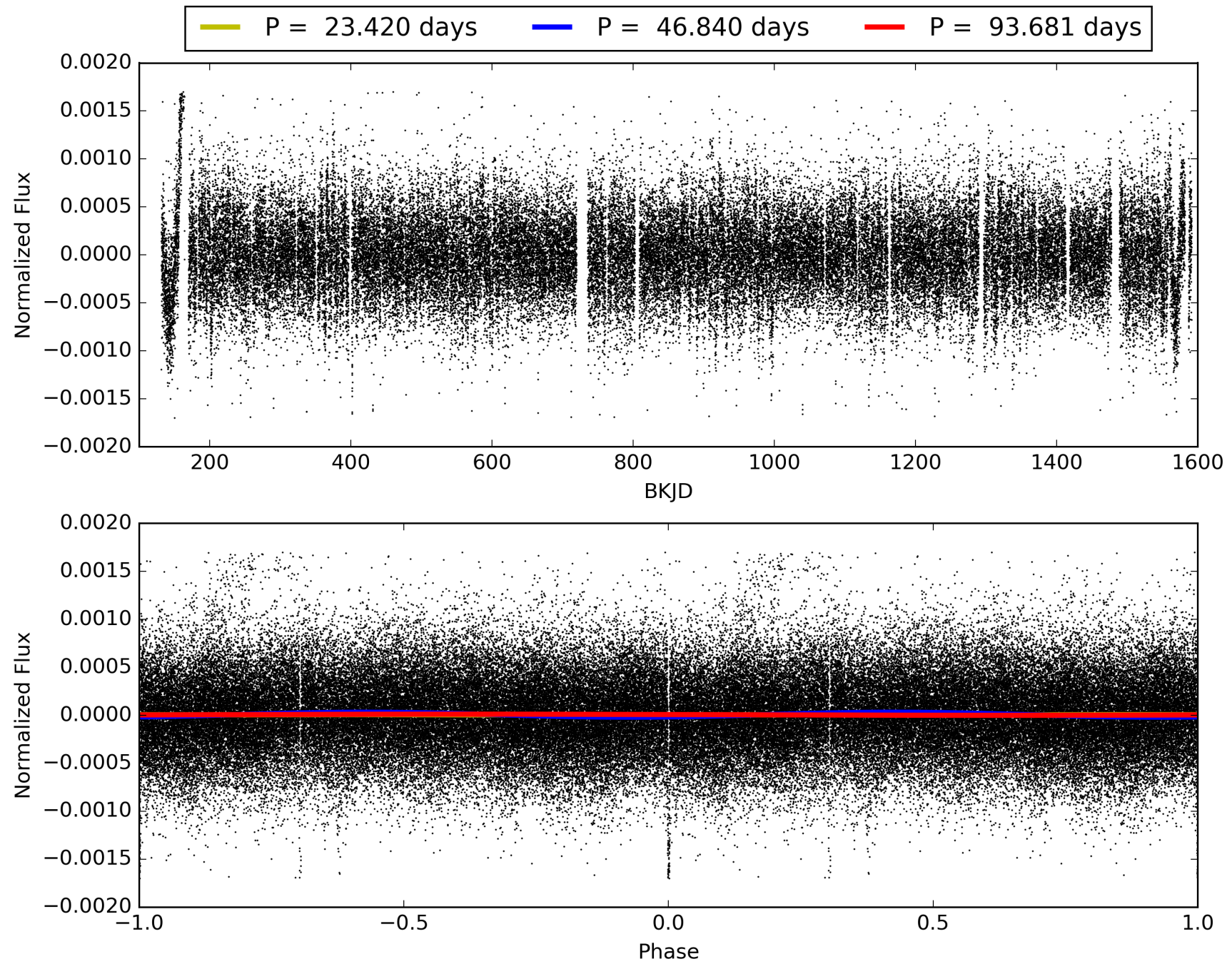
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.96 [26/27]
GhostDiagnostic-chr: 4.287
Centroid-sig: 0.0%
Centroid-so: 0.522 arcsec [1.99σ]
OotOffset-rm: 0.452 arcsec [4.70σ]
KicOffset-rm: 0.080 arcsec [0.66σ]
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]

TCE 008104030-02, PDC Light Curves

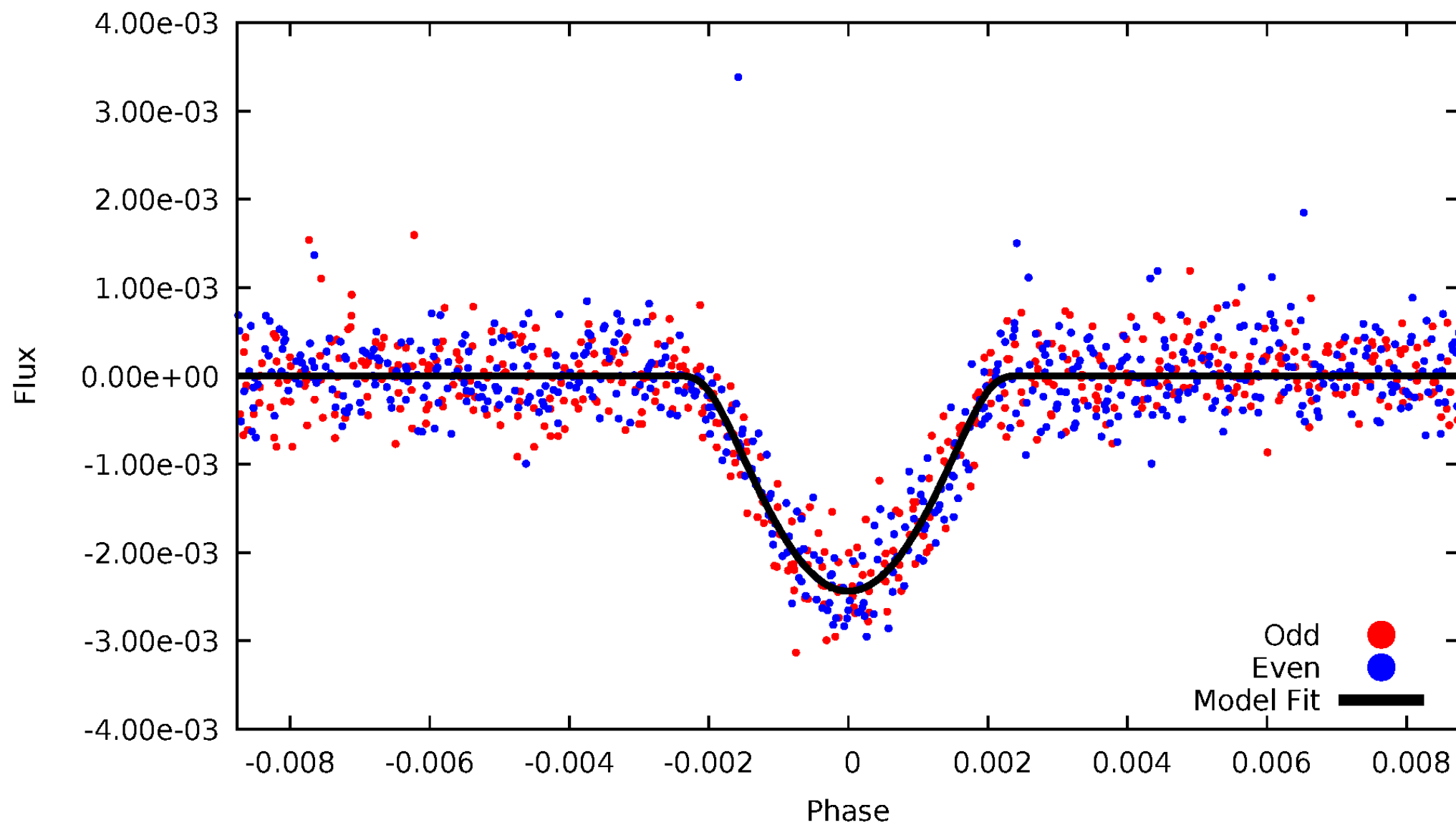


TCE 008104030-02



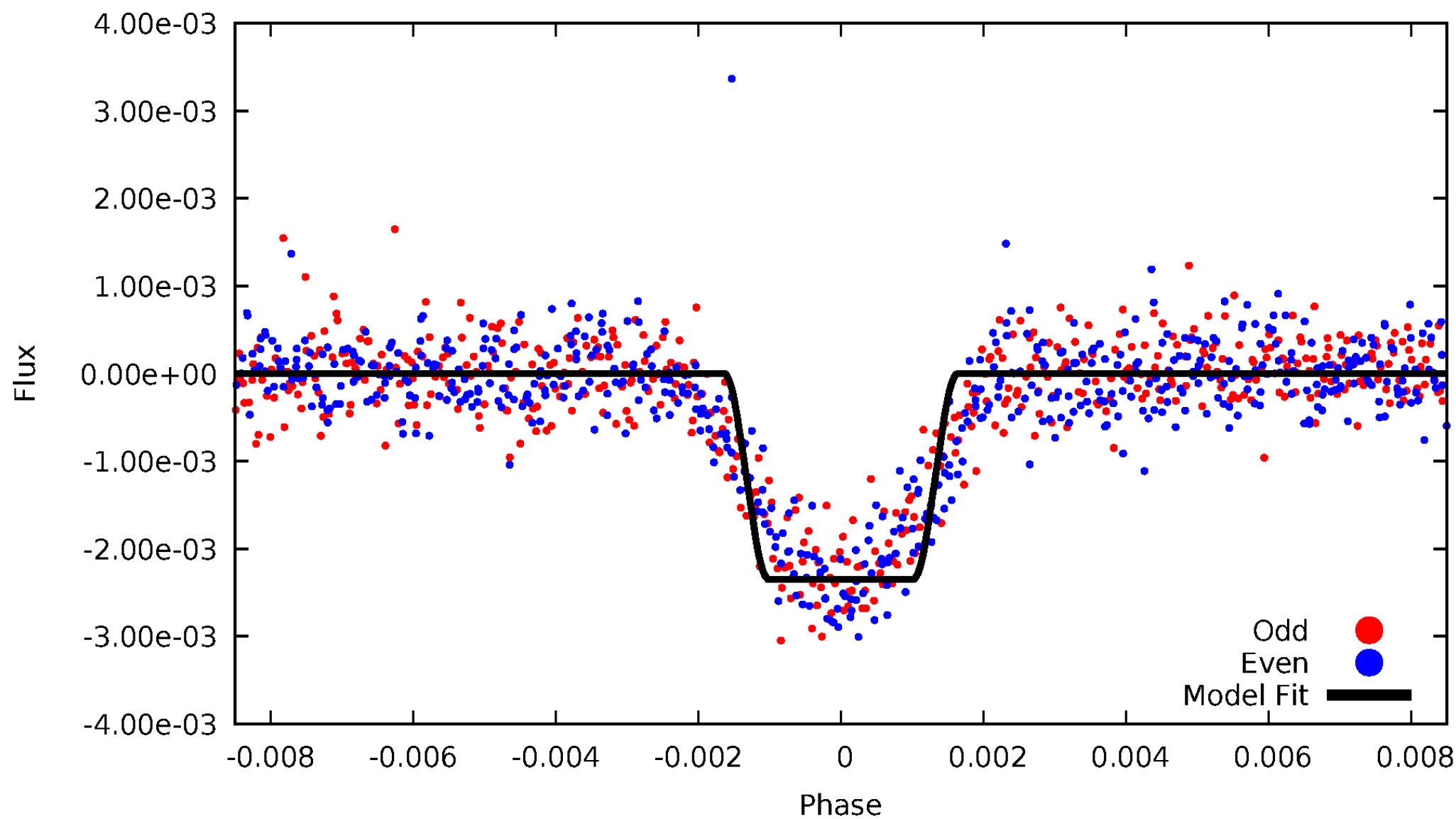
DV Odd/Even

TCE 008104030-02



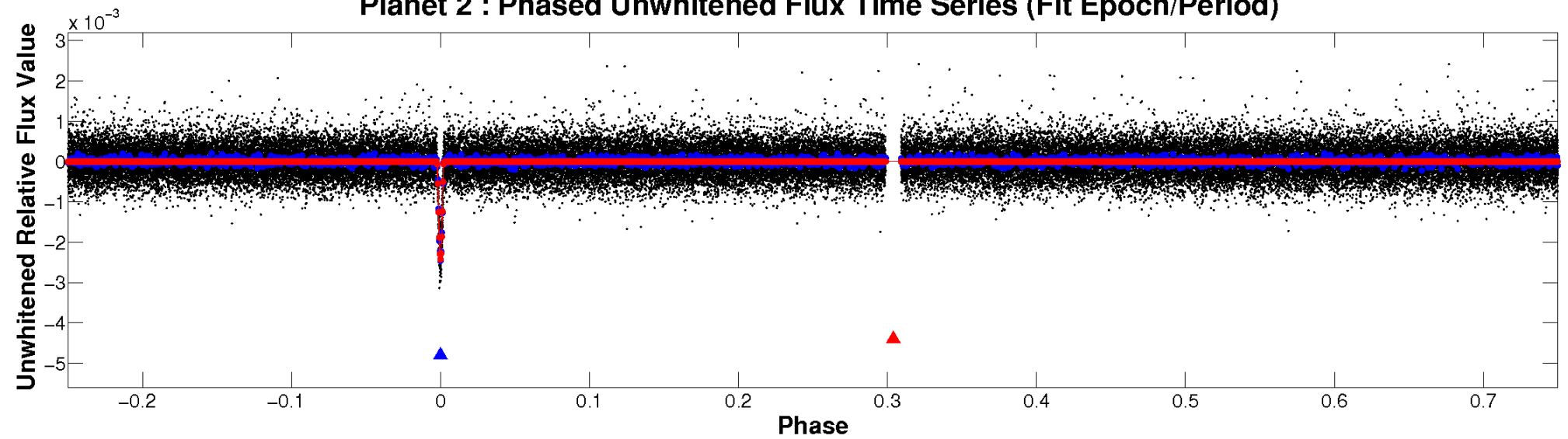
ALT Odd/Even

TCE 008104030-02

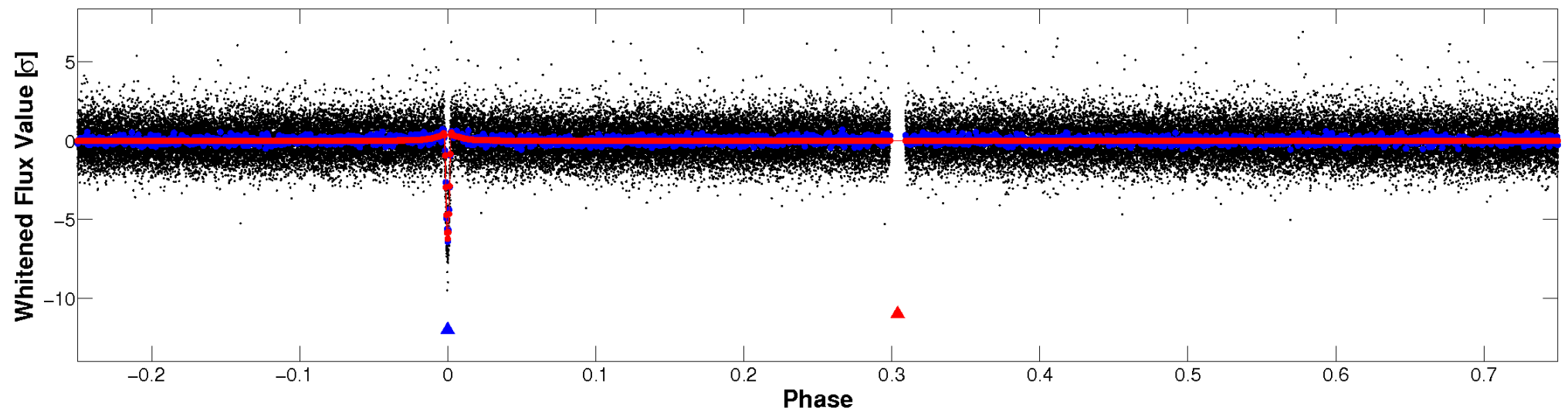


Non-Whitened Vs. Whitened Light Curve

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

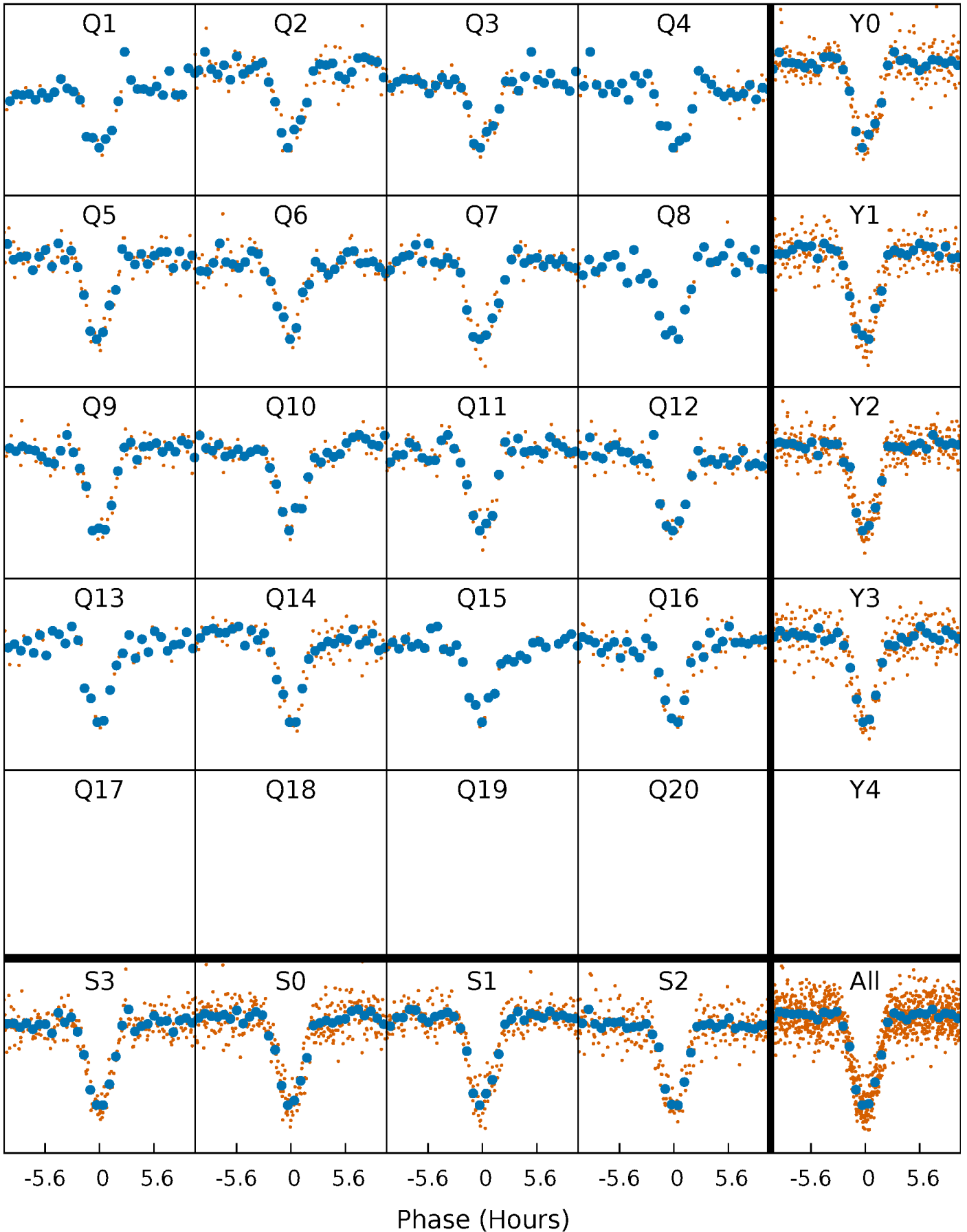


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



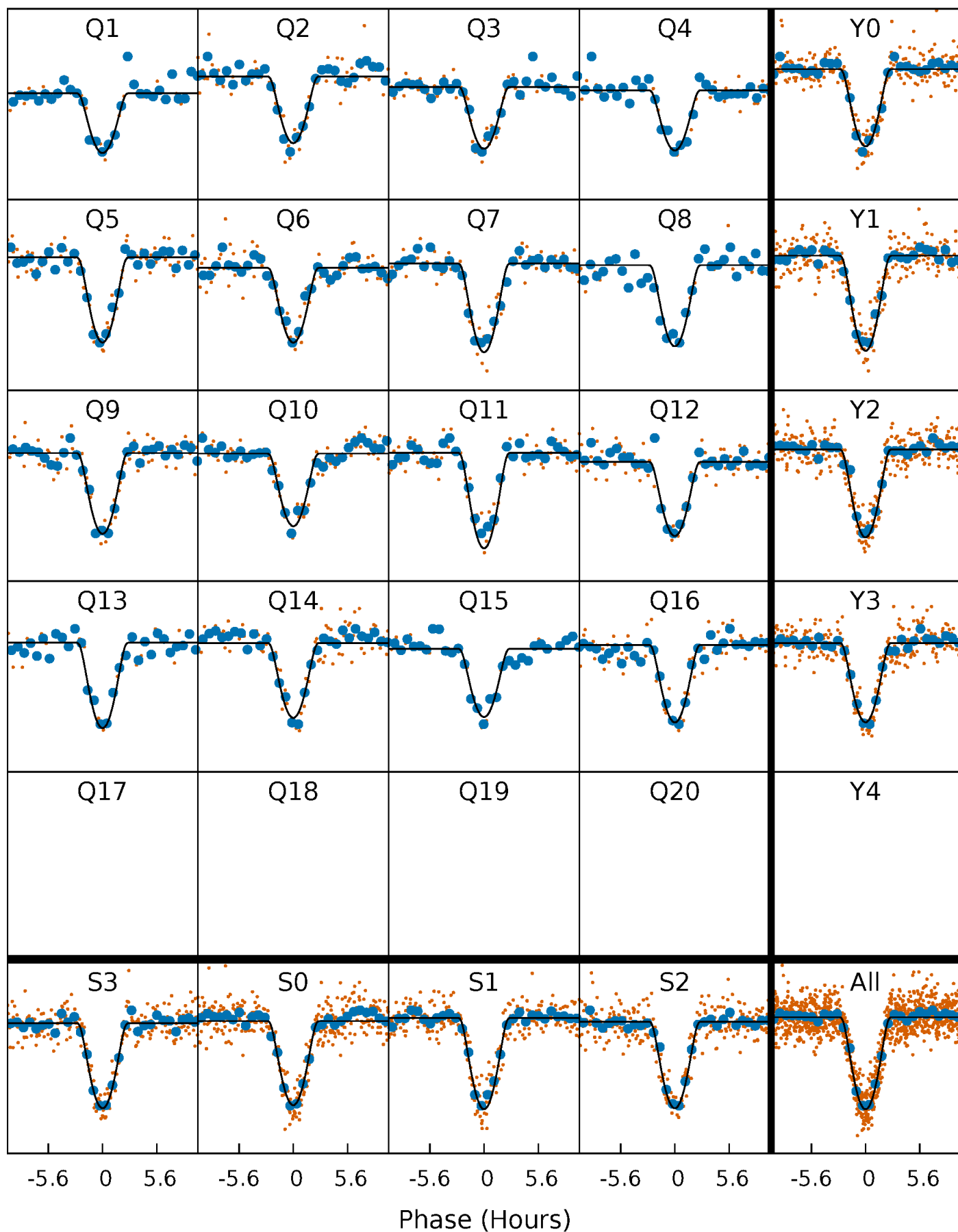
PDC Quarter-Phased Transit Curves

TCE 008104030-02 P= 46.840308 Days $T_0=149.892201$ (BKJD)



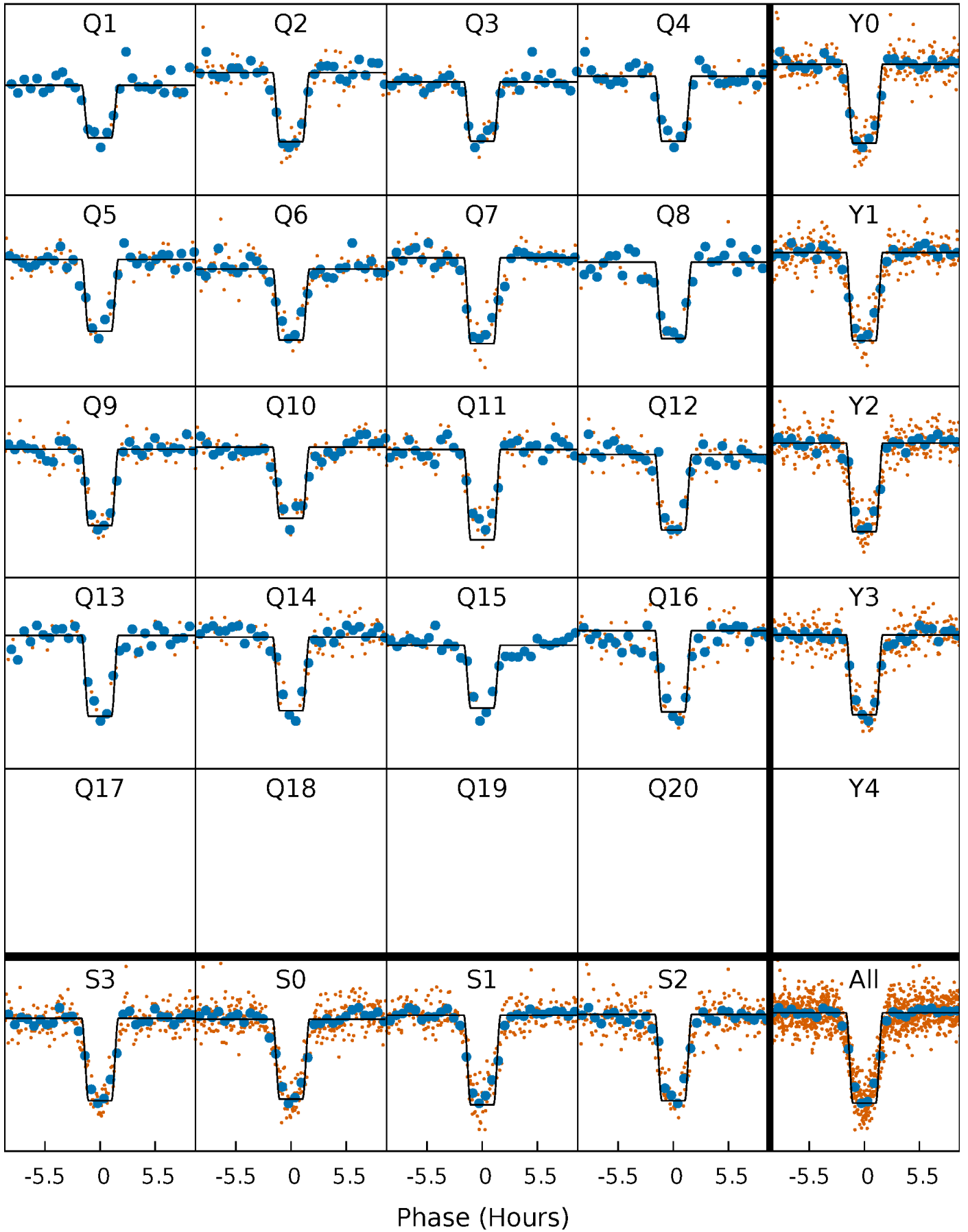
DV Quarter-Phased Transit Curves

TCE 008104030-02 P= 46.840308 Days $T_0=149.892201$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

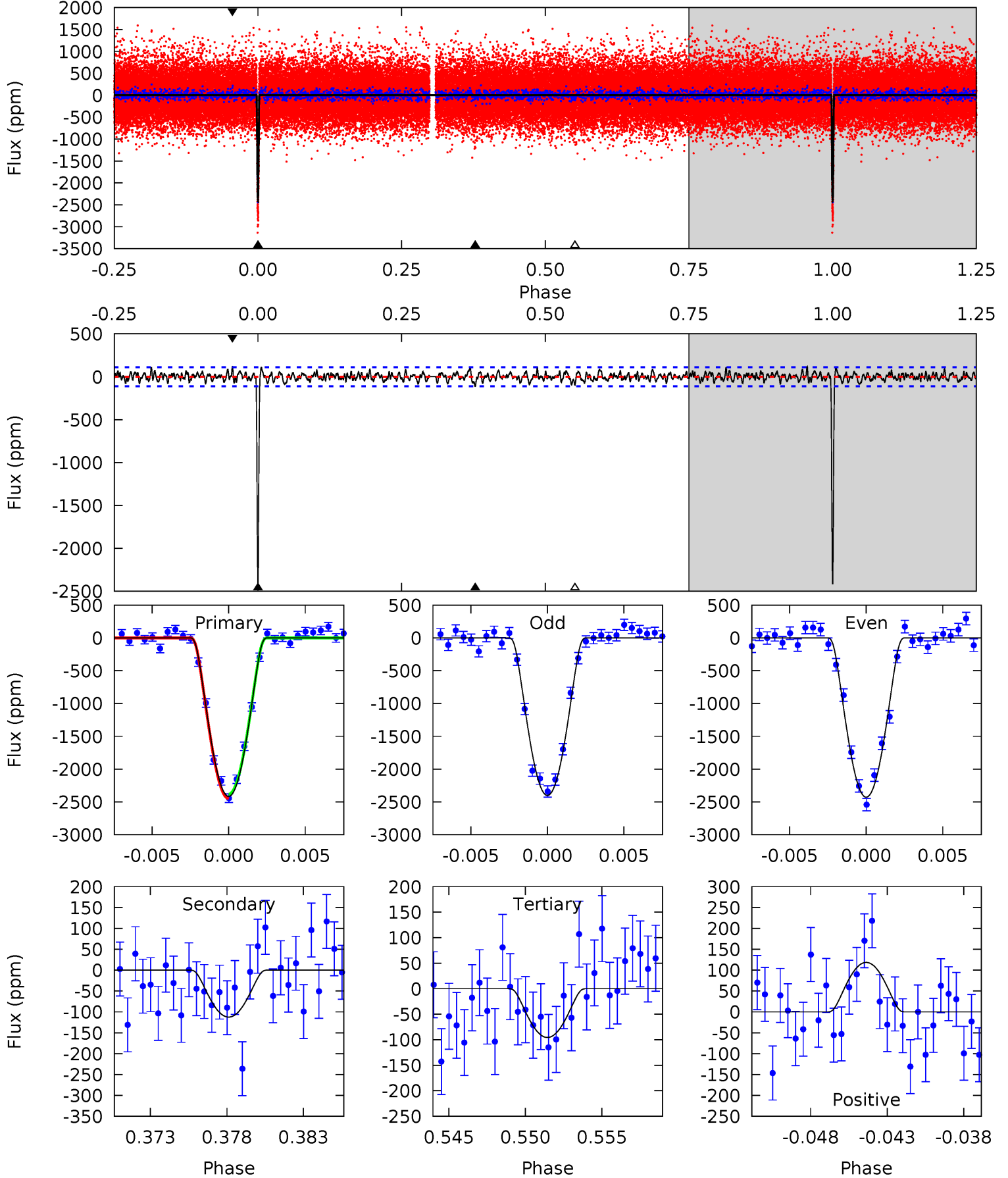
TCE 008104030-02 P= 46.839990 Days $T_0=149.896851$ (BKJD)



DV Model-Shift Uniqueness Test

008104030-02, P = 46.840308 Days, E = 103.051893 Days

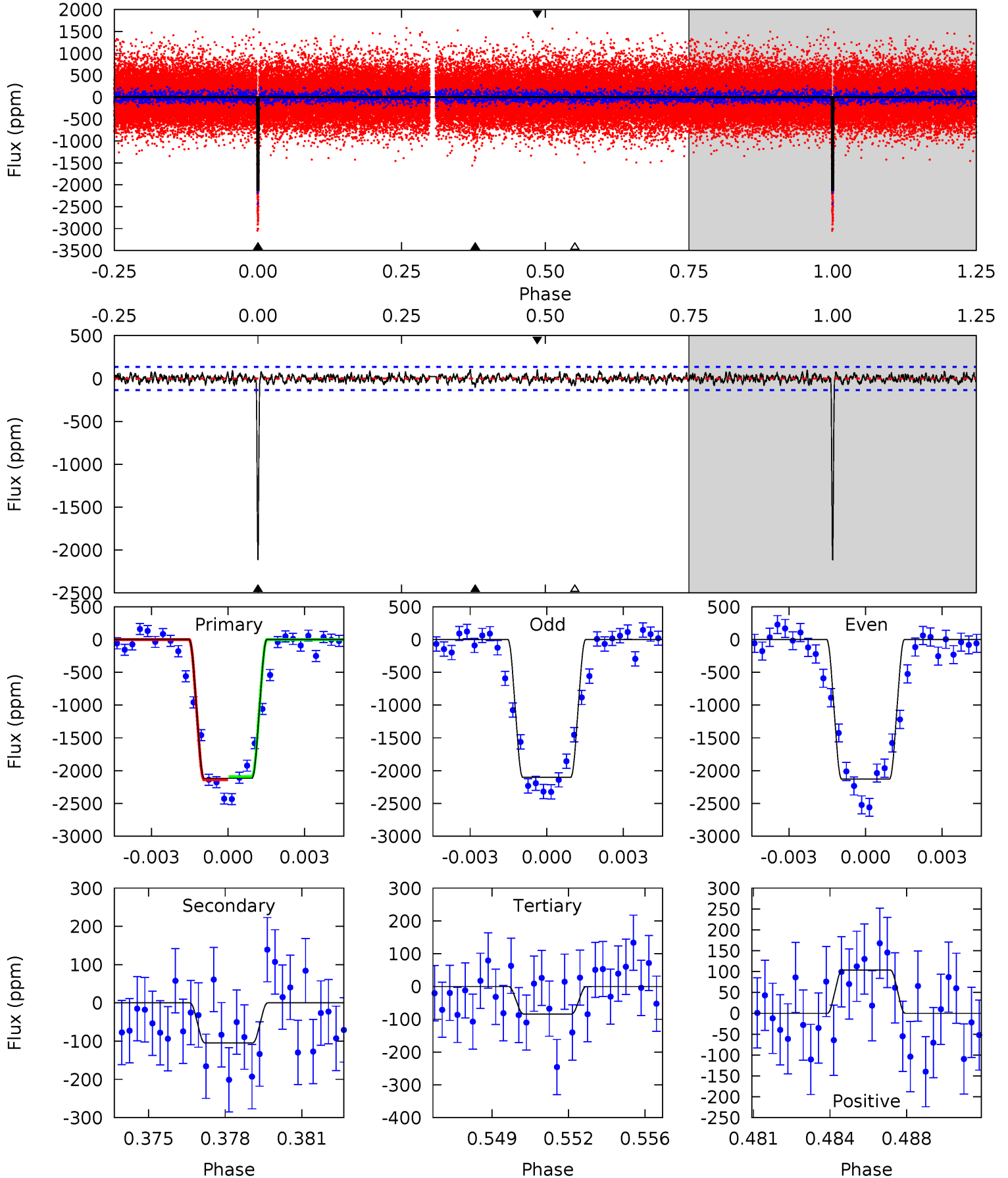
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
112.6	5.24	4.45	5.52	5.17	2.82	1.65	108.1	107.1	0.79	-0.28	0.62	0.99	0.05	1.57



Alt Model-Shift Uniqueness Test

008104030-02, P = 46.839990 Days, E = 103.056861 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
81.4	4.02	3.24	3.99	5.24	2.94	1.17	78.2	77.4	0.78	0.03	0.48	1.00	0.05	0.93



Stellar Parameters For KIC 008104030

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6006^{+179}_{-179}	$4.330^{+0.190}_{-0.190}$	$-0.480^{+0.300}_{-0.300}$	$1.055^{+0.305}_{-0.203}$	$0.867^{+0.118}_{-0.069}$	$1.041^{+0.959}_{-0.497}$
	+3%/-3%	+4%/-4%	+62%/-62%	+29%/-19%	+14%/-8%	+92%/-48%
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 008104030-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-112 ± 21	$8.57^{+3.68}_{-3.69}$	771^{+61}_{-56}	2958^{+489}_{-277}	50^{+98}_{-26}
Alt.	-104 ± 26	$5.66^{+3.45}_{-2.99}$	774^{+56}_{-52}	3294^{+908}_{-423}	106^{+382}_{-68}

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

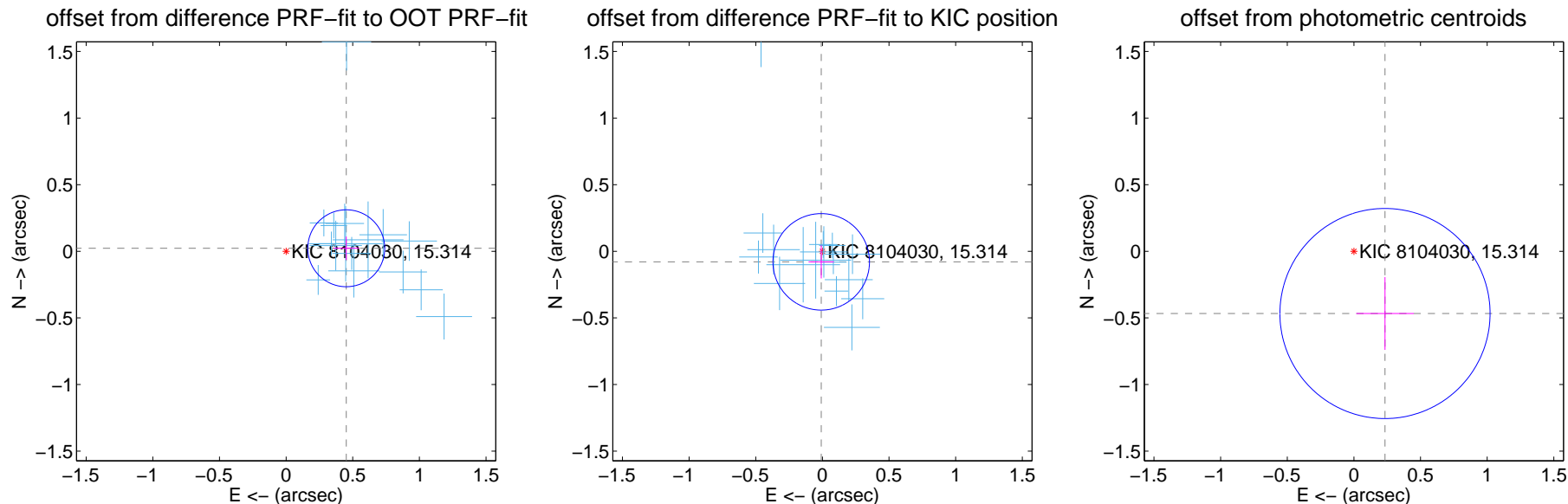
DV Centroid Data

Supplemental centroid analysis for 008104030-02. Kepler magnitude: 15.31. Transit SNR 65.94

There are 16 quarters with good PRF difference image offsets

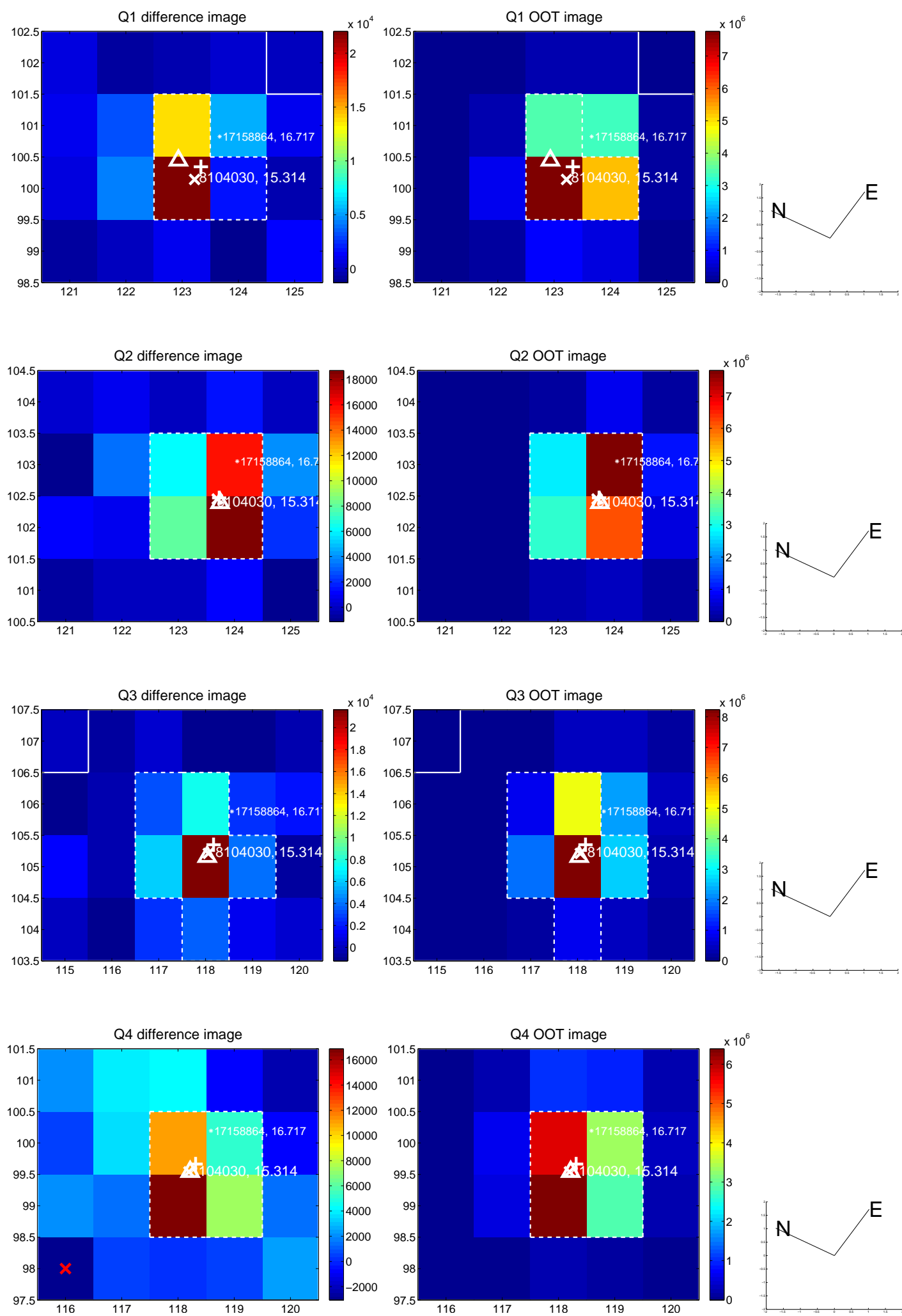
The direct PRF centroid is offset from the target star catalog position by about 0.83 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.452 ± 0.096	4.70	-0.451 ± 0.096	0.023 ± 0.088
PRF-fit source offset from KIC position	0.080 ± 0.121	0.66	0.009 ± 0.095	-0.079 ± 0.124
photometric centroid source offset	0.52 ± 0.26	1.99	-0.23 ± 0.22	-0.47 ± 0.27

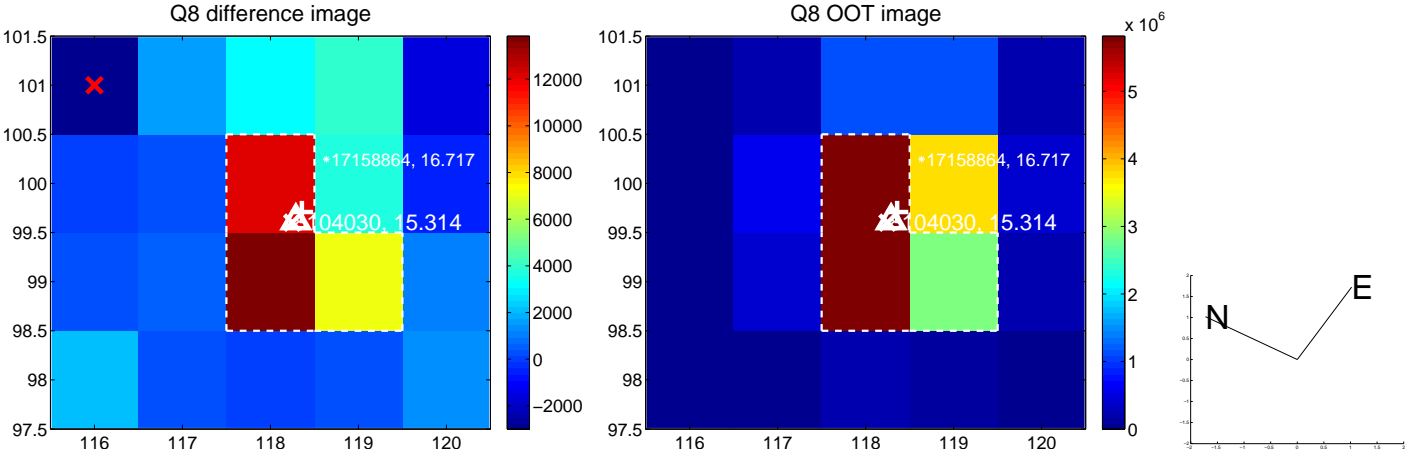
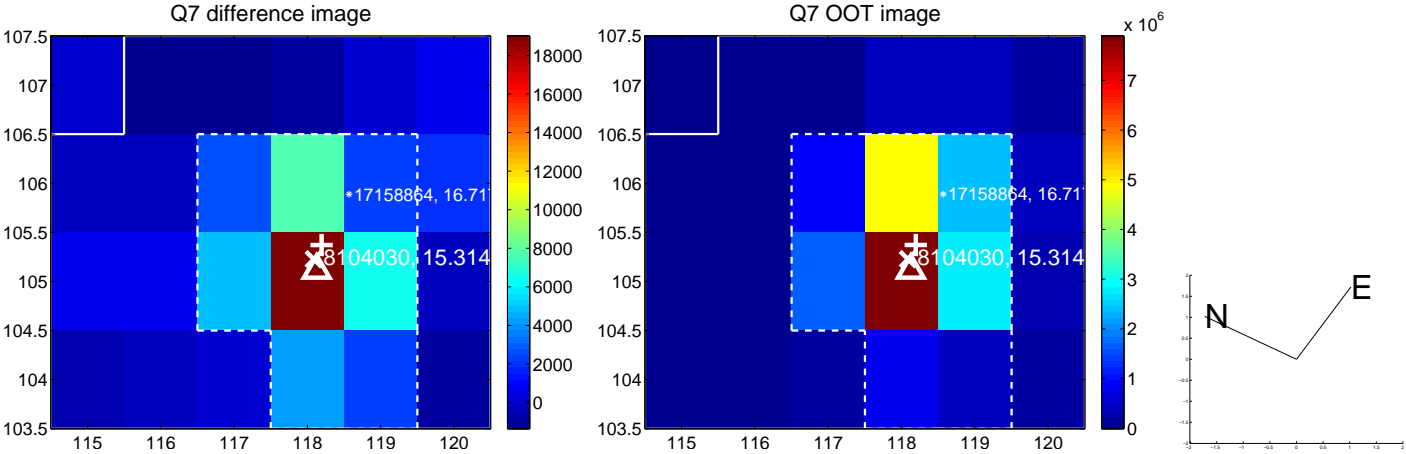
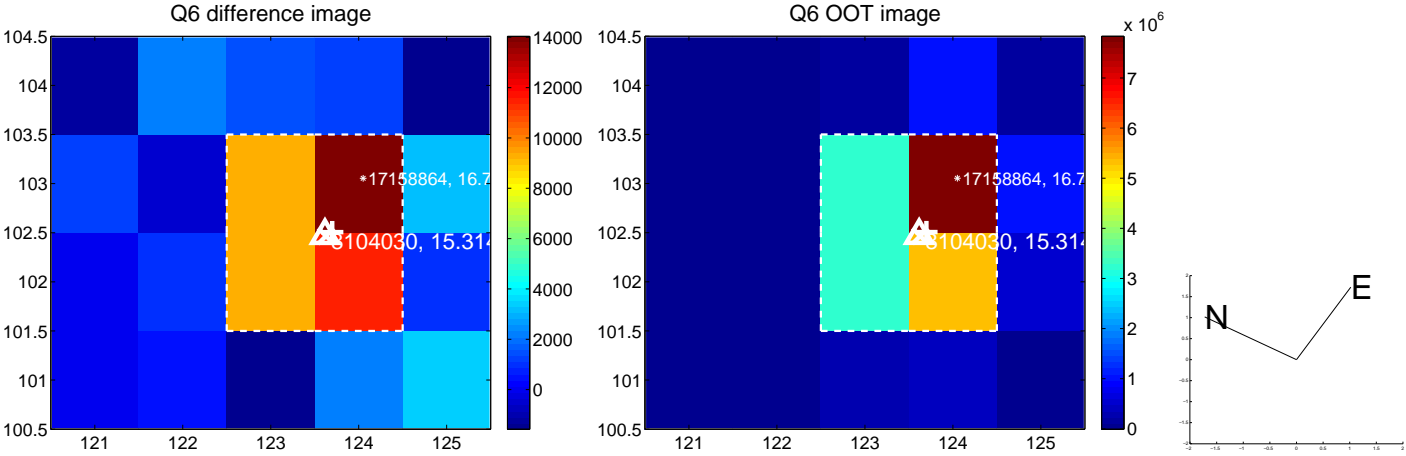
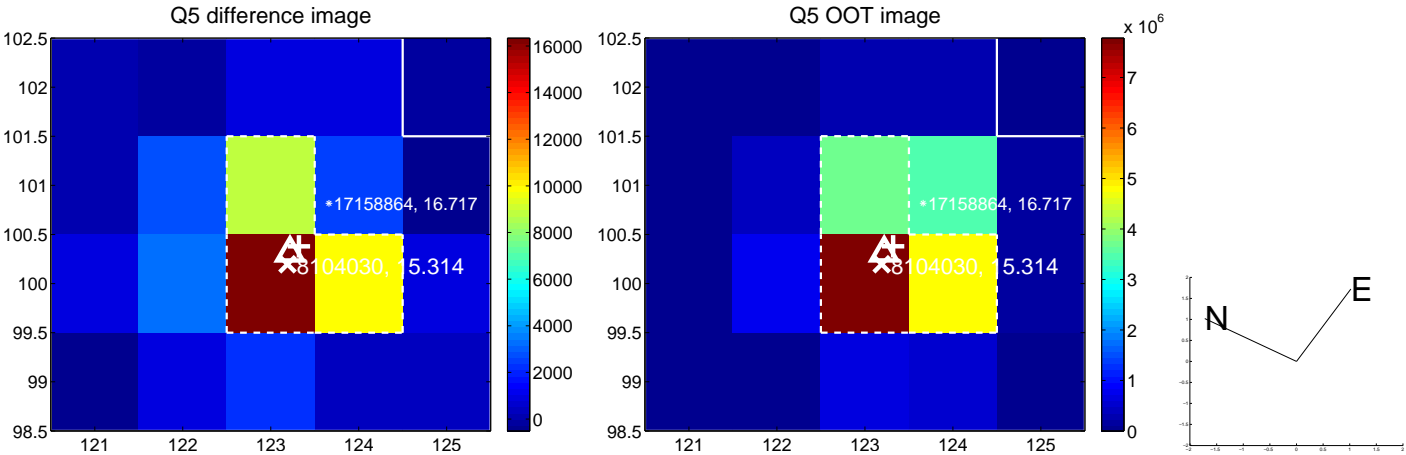


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

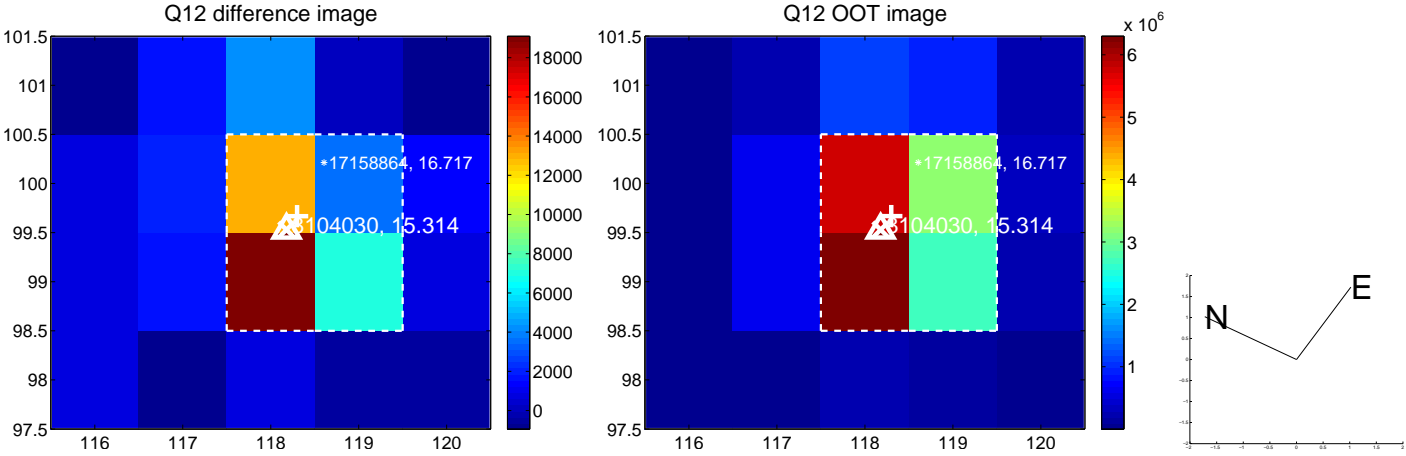
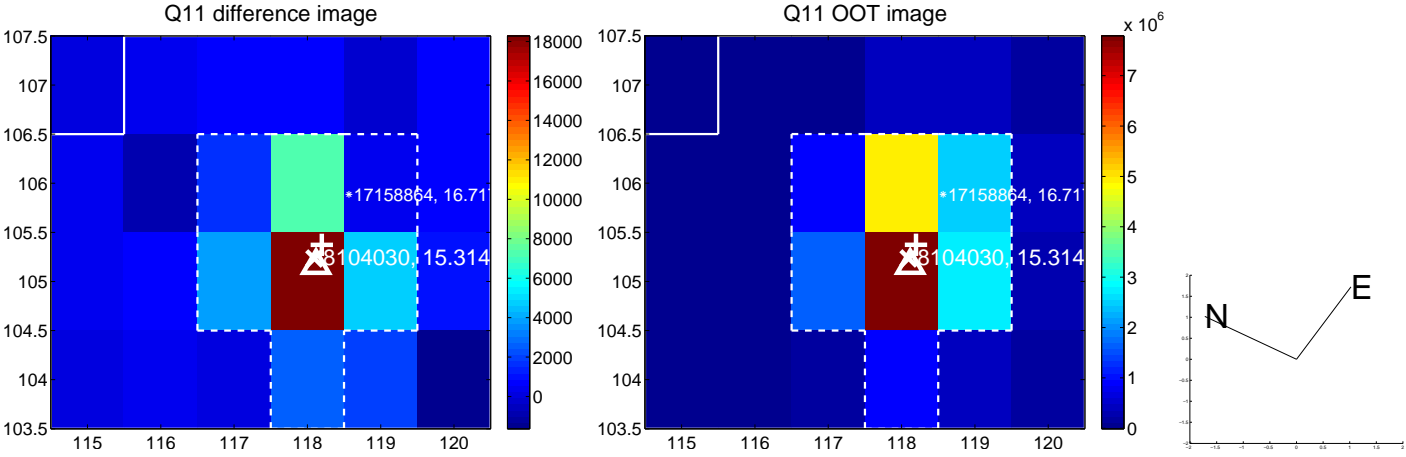
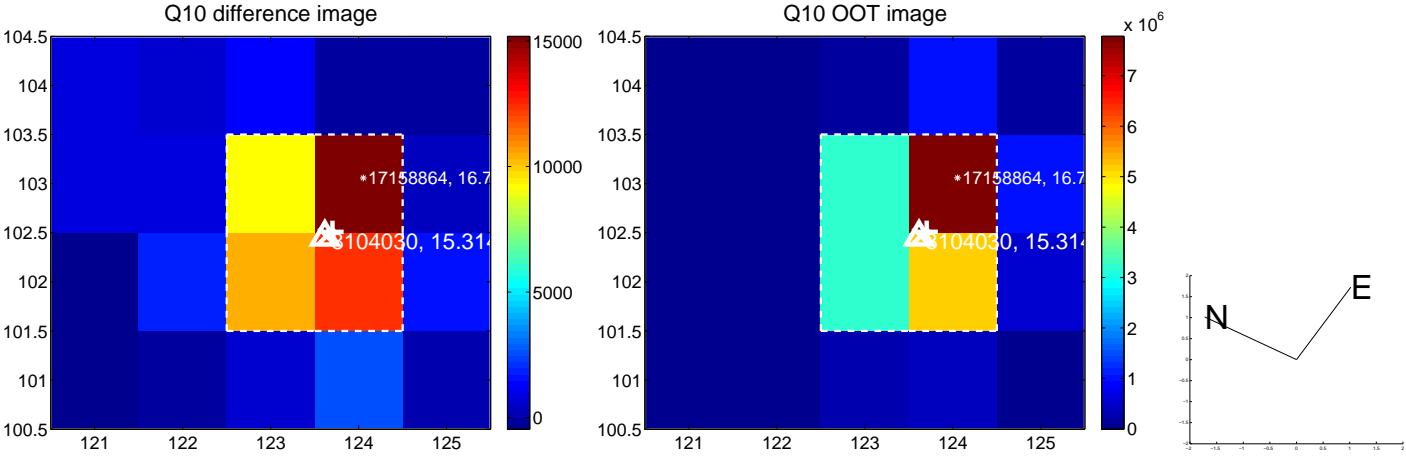
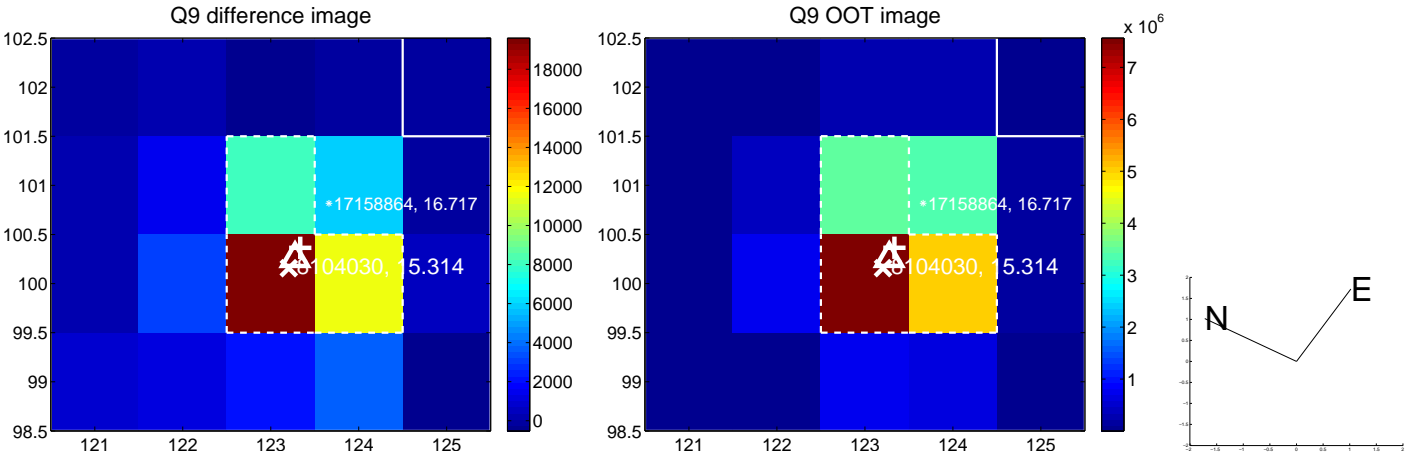
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



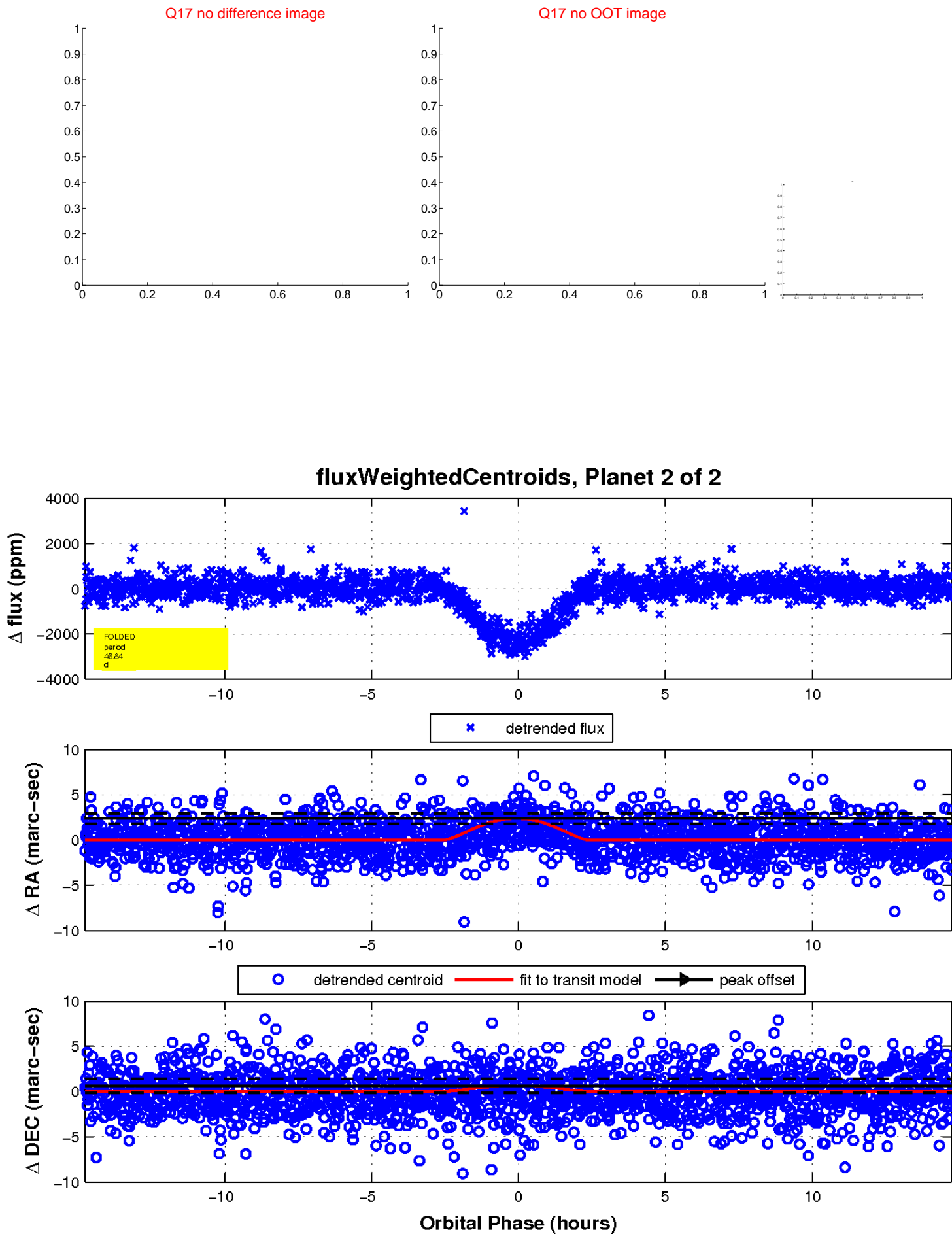
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

