

KIC 003864443

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})
003864443-01	OBS	No	0.973835	132.525725	473.1	5.483	62.4	0.9	2.71	6781	6.31	28044.93
003864443-02	OBS	No	0.973861	132.085994	2769.5	1.500	16.9	-1.0	2.71	6781	14.44	28043.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003864443-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
003864443-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

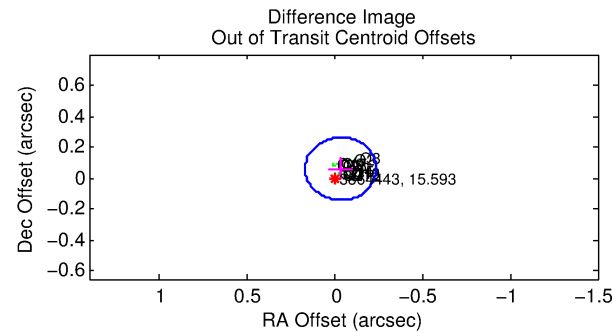
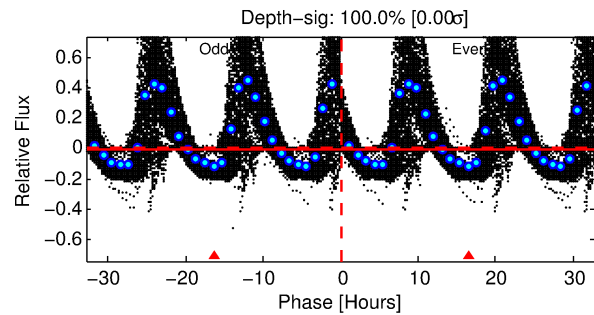
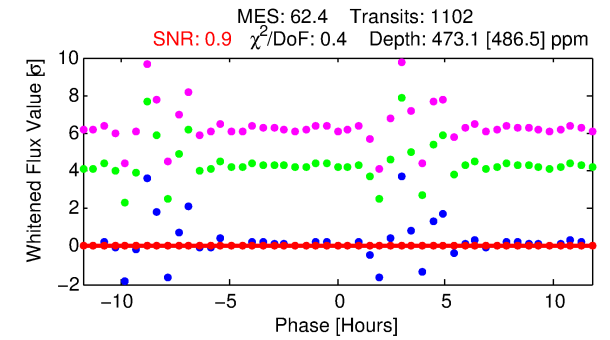
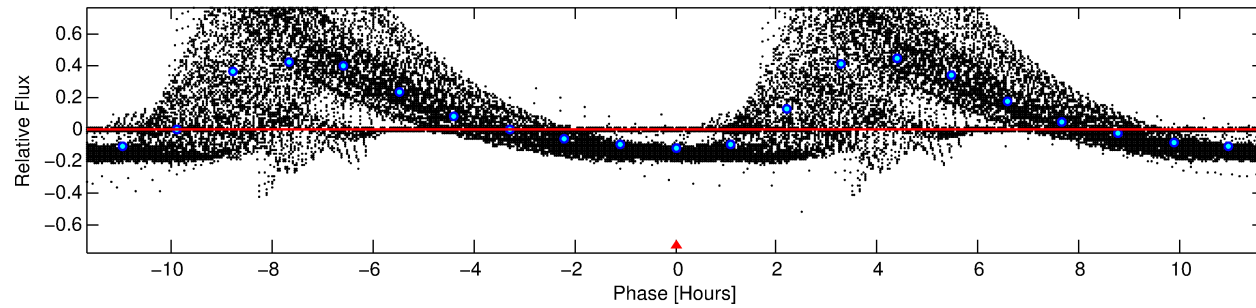
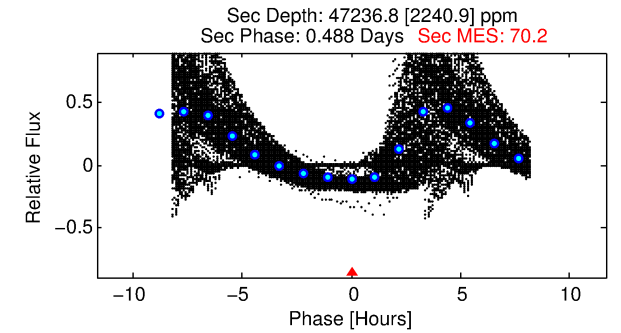
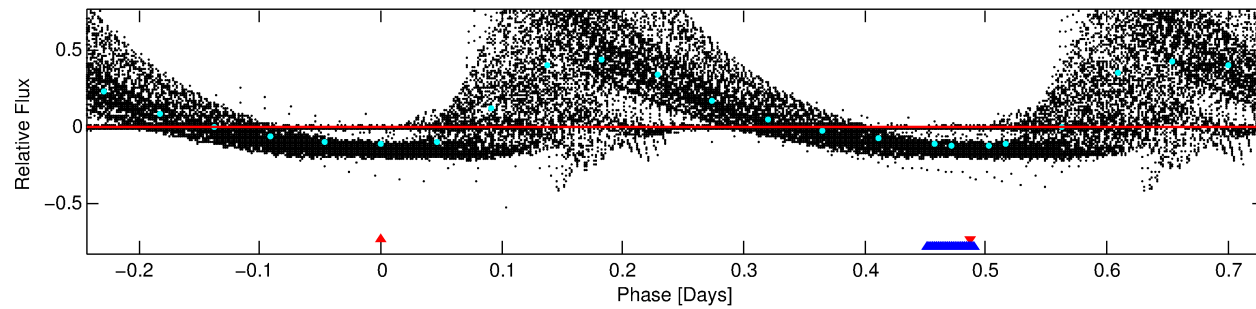
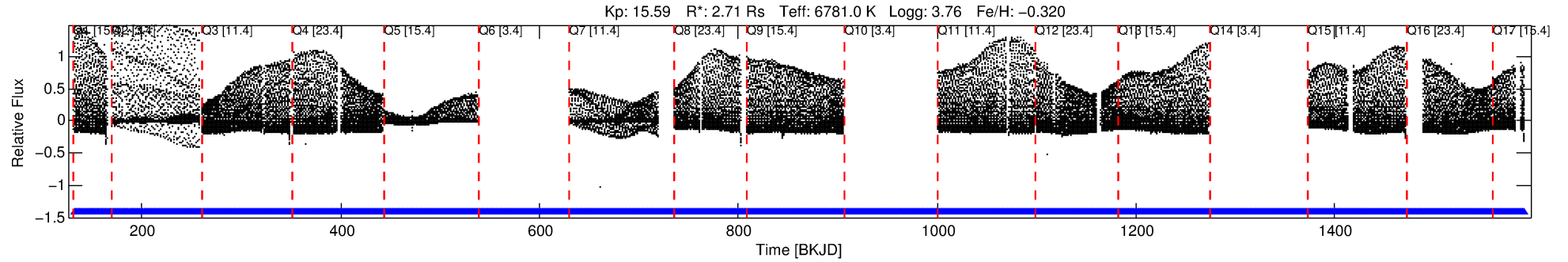
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003864443-01

No Significant Match Found

DV One-Page Summary

KIC: 3864443 Candidate: 1 of 2 Period: 0.974 d



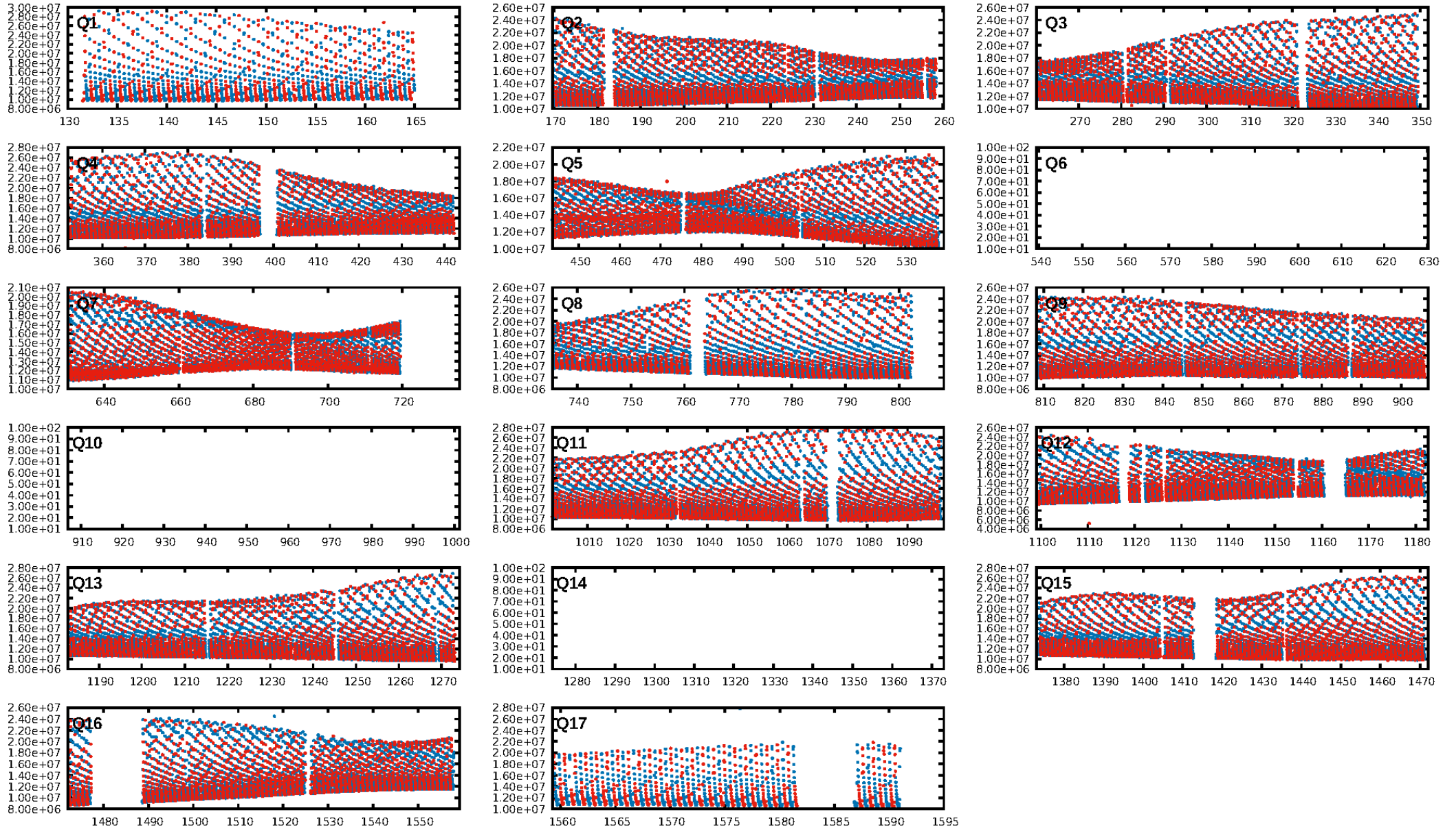
DV Fit Results:

Period = 0.97384 [0.00010] d
Epoch = 132.5257 [0.0120] BKJD
Rp/R* = 0.0214 [0.0238]
a/R* = 1.31 [2.70]
b = 0.70 [3.64]
Seff = 28044.93 [24078.57]
Teq = 3300 [708] K
Rp = 6.31 [7.67] Re
a = 0.0223 [0.0112] AU
Ag = 323.39 [769.39] [0.42 σ]
Teffp = 21635 [12097] K [1.51 σ]

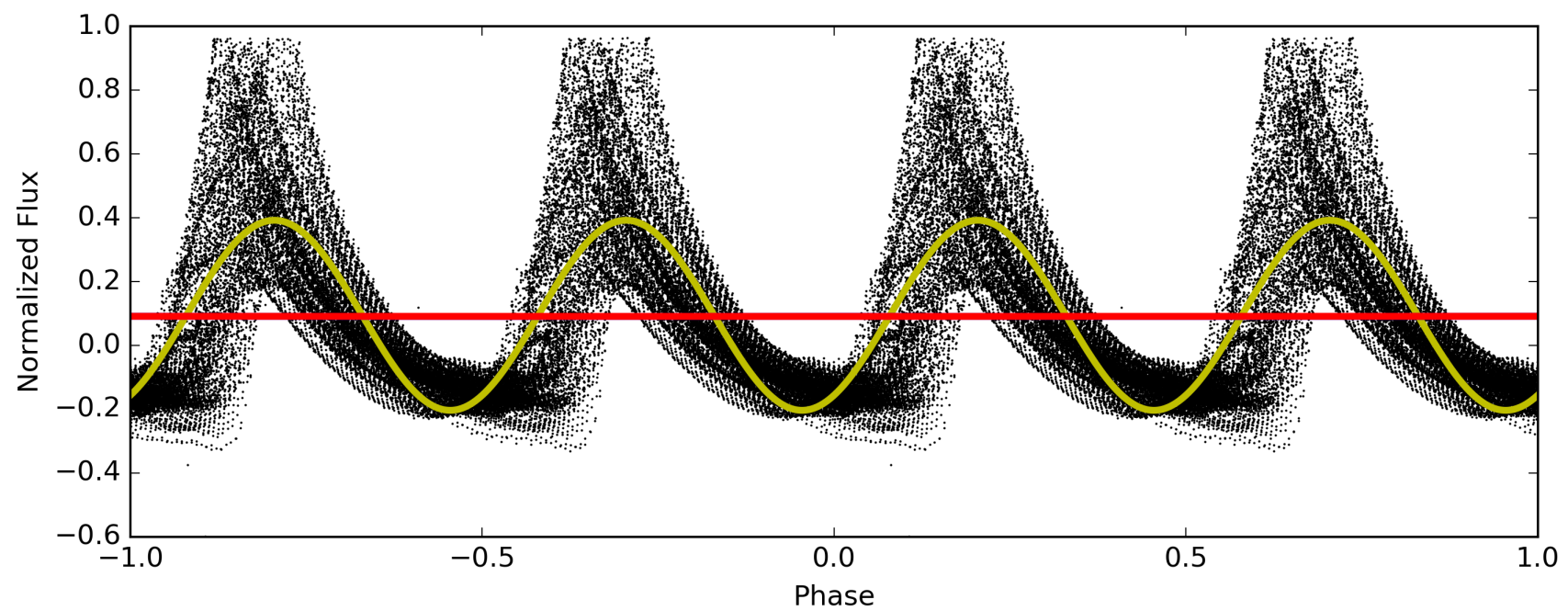
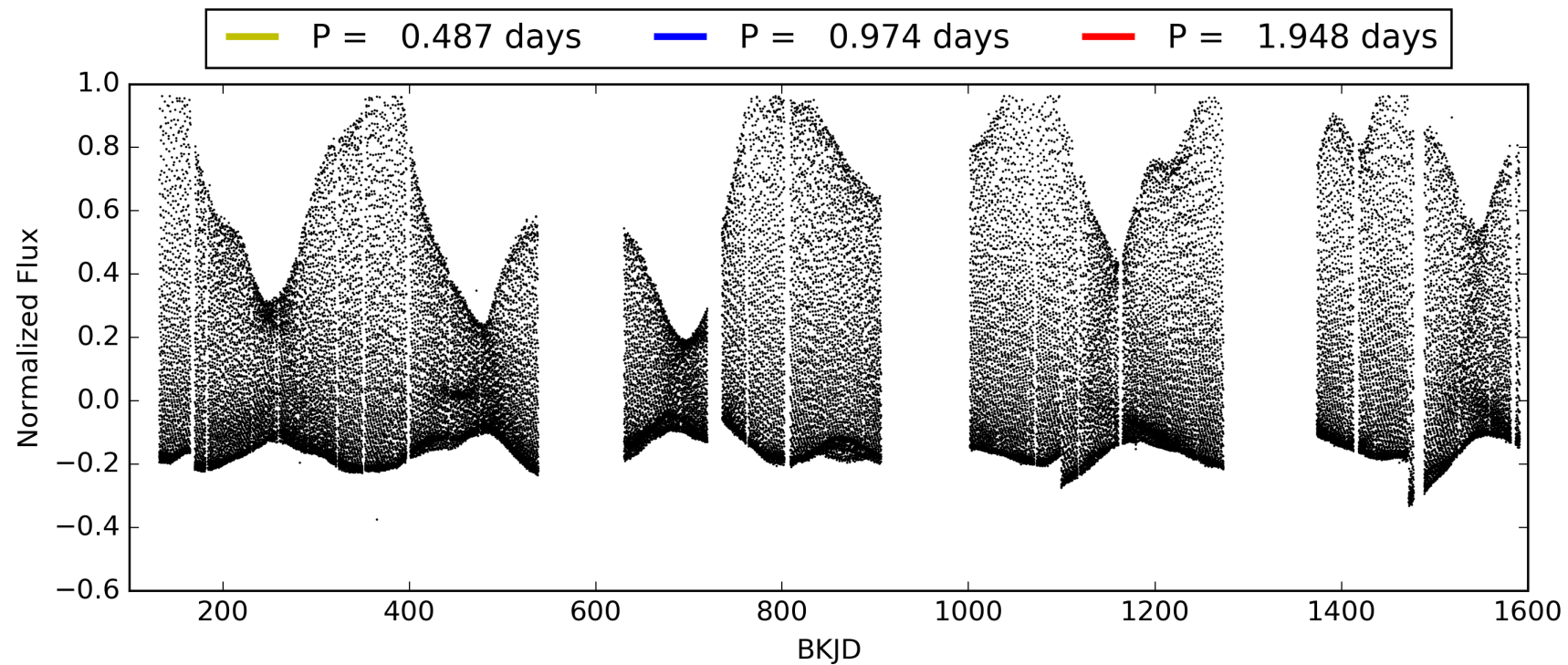
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1039/1039]
GhostDiagnostic-chr: 0.622
Centroid-sig: 8.5%
Centroid-so: 0.228 arcsec [0.73 σ]
OotOffset-rm: 0.069 arcsec [1.03 σ]
KicOffset-rm: 0.162 arcsec [2.40 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 003864443-01, PDC Light Curves

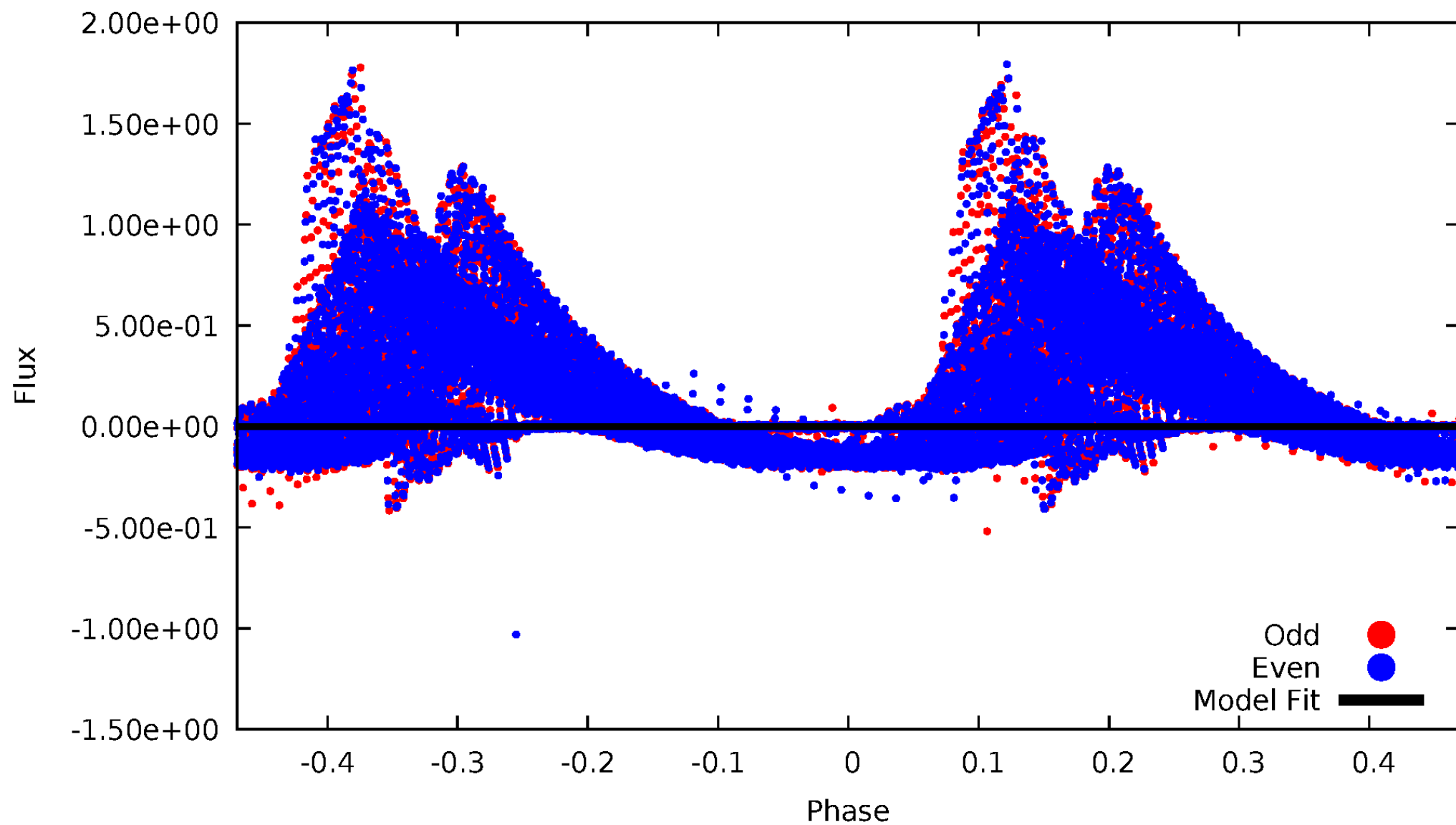


TCE 003864443-01



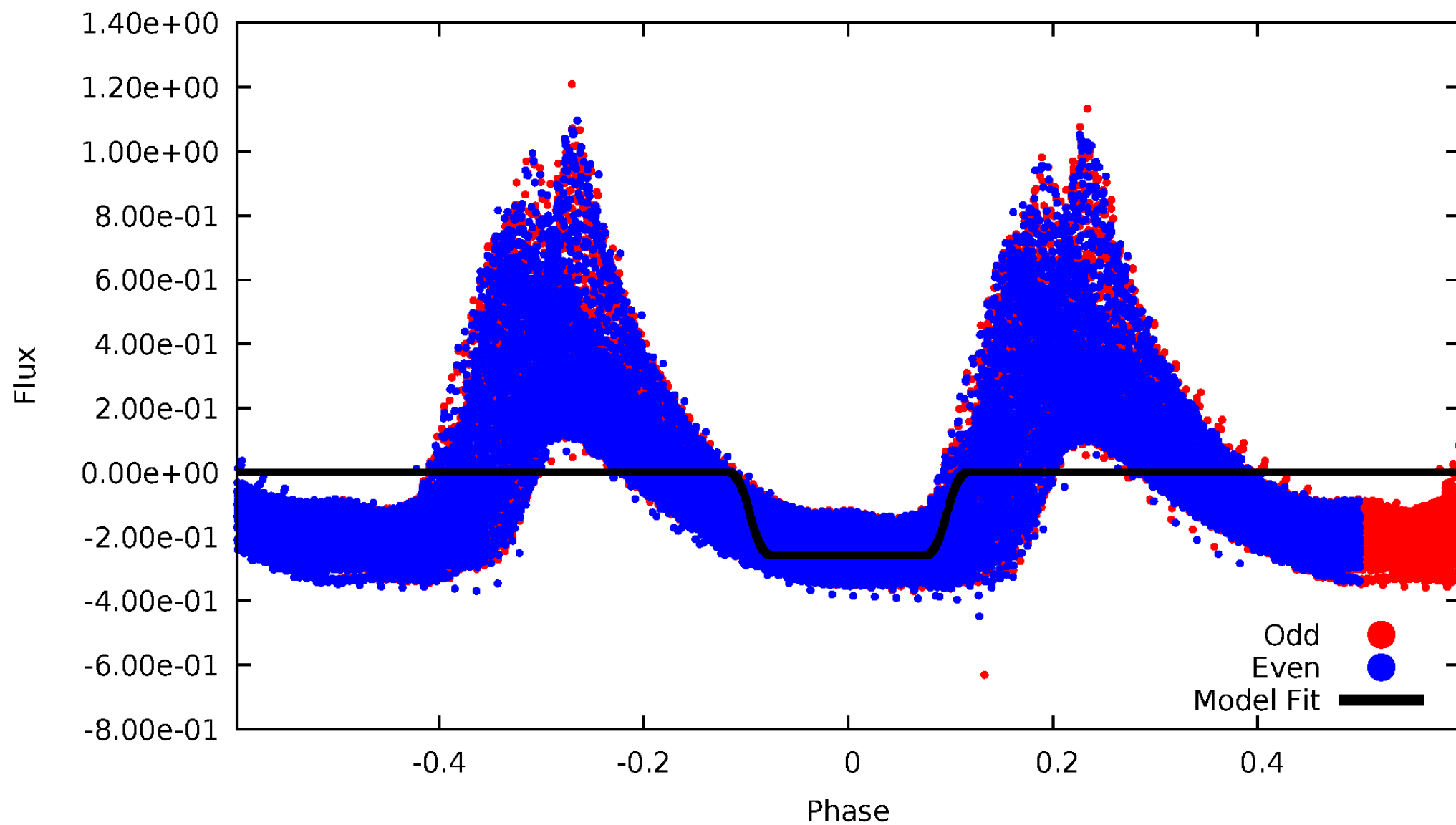
DV Odd/Even

TCE 003864443-01



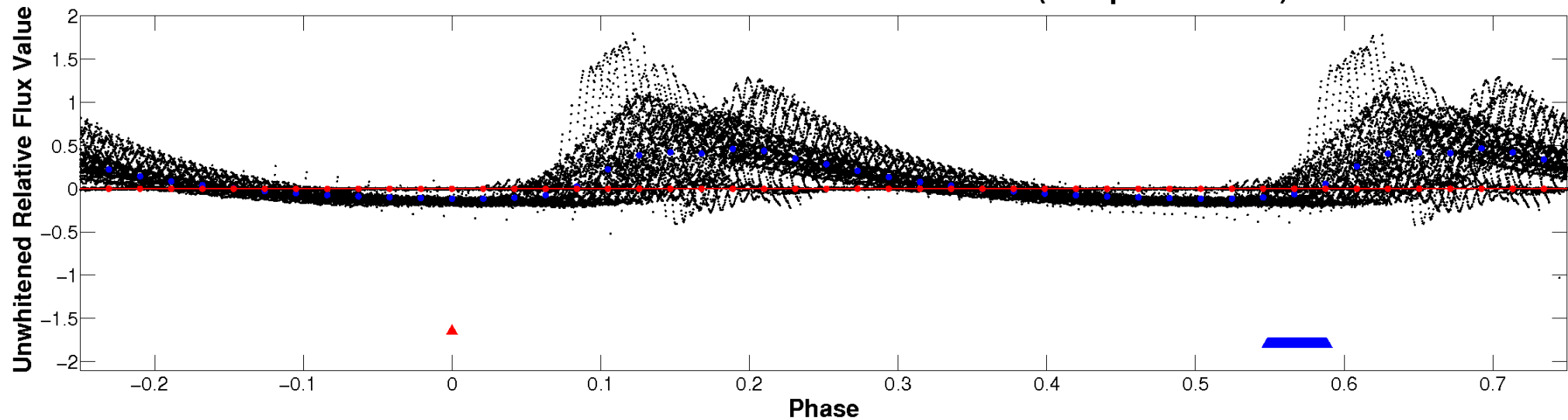
ALT Odd/Even

TCE 003864443-01

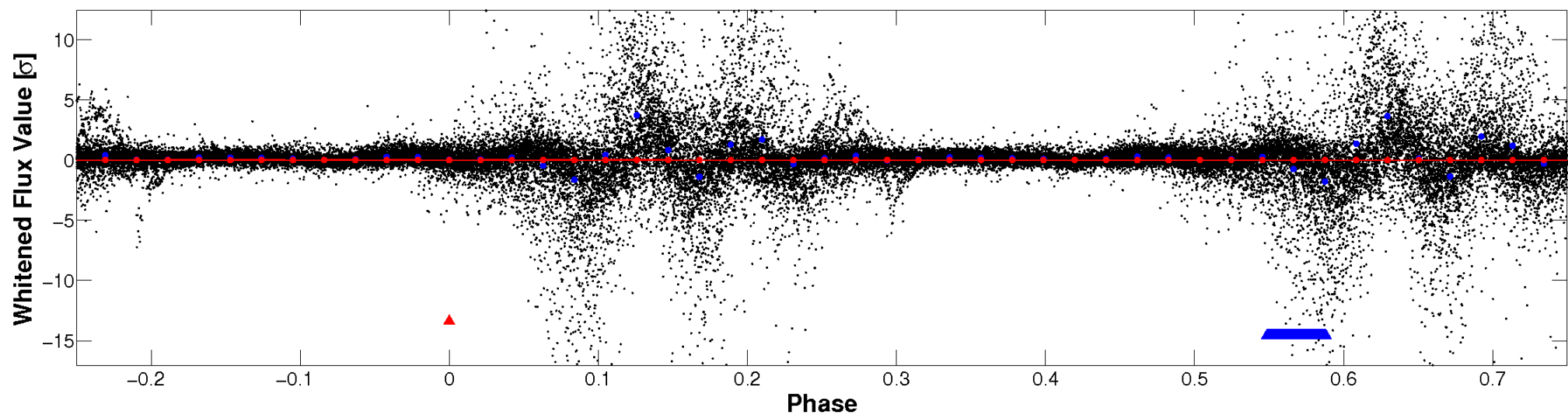


Non-Whitened Vs. Whitened Light Curve

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

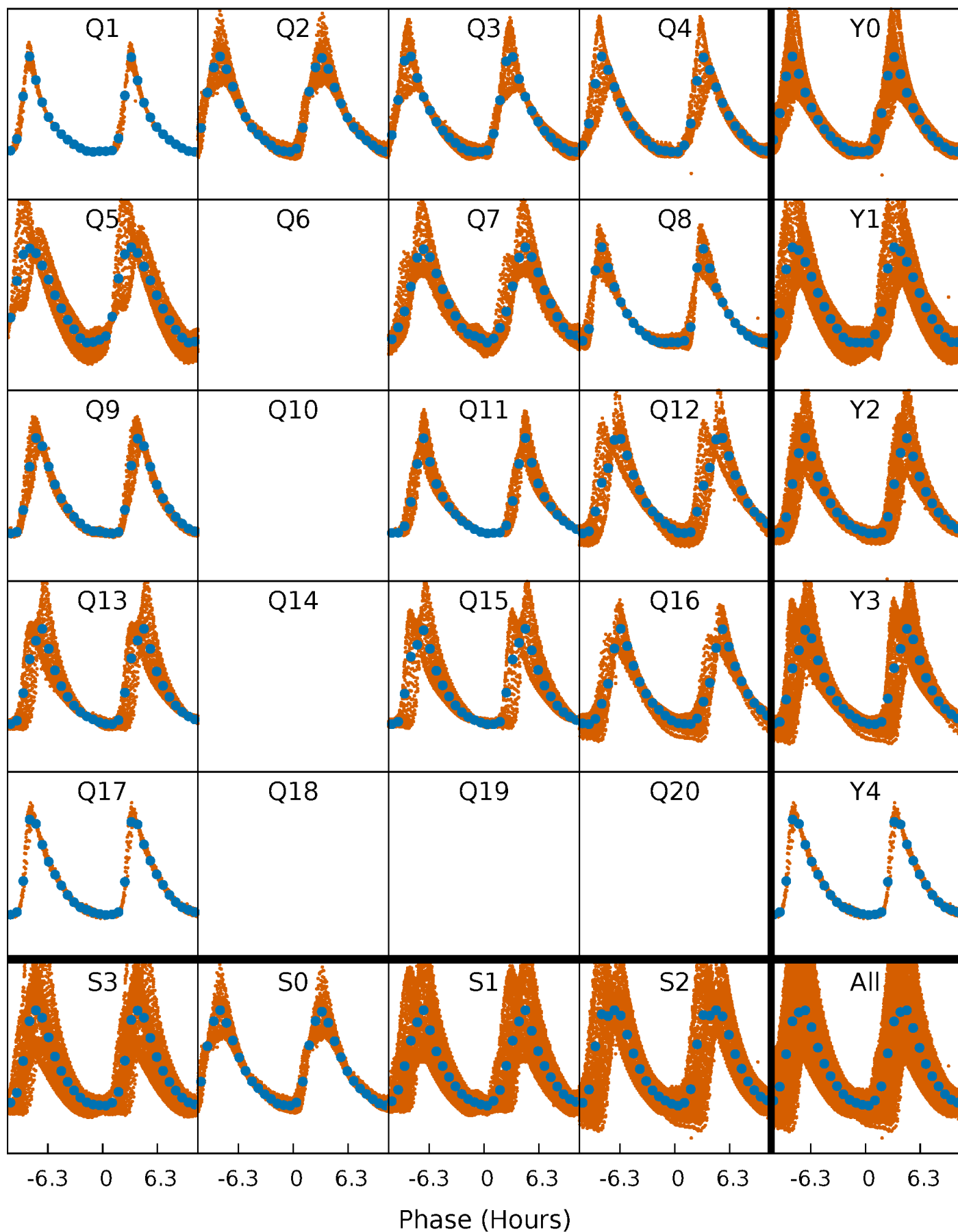


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



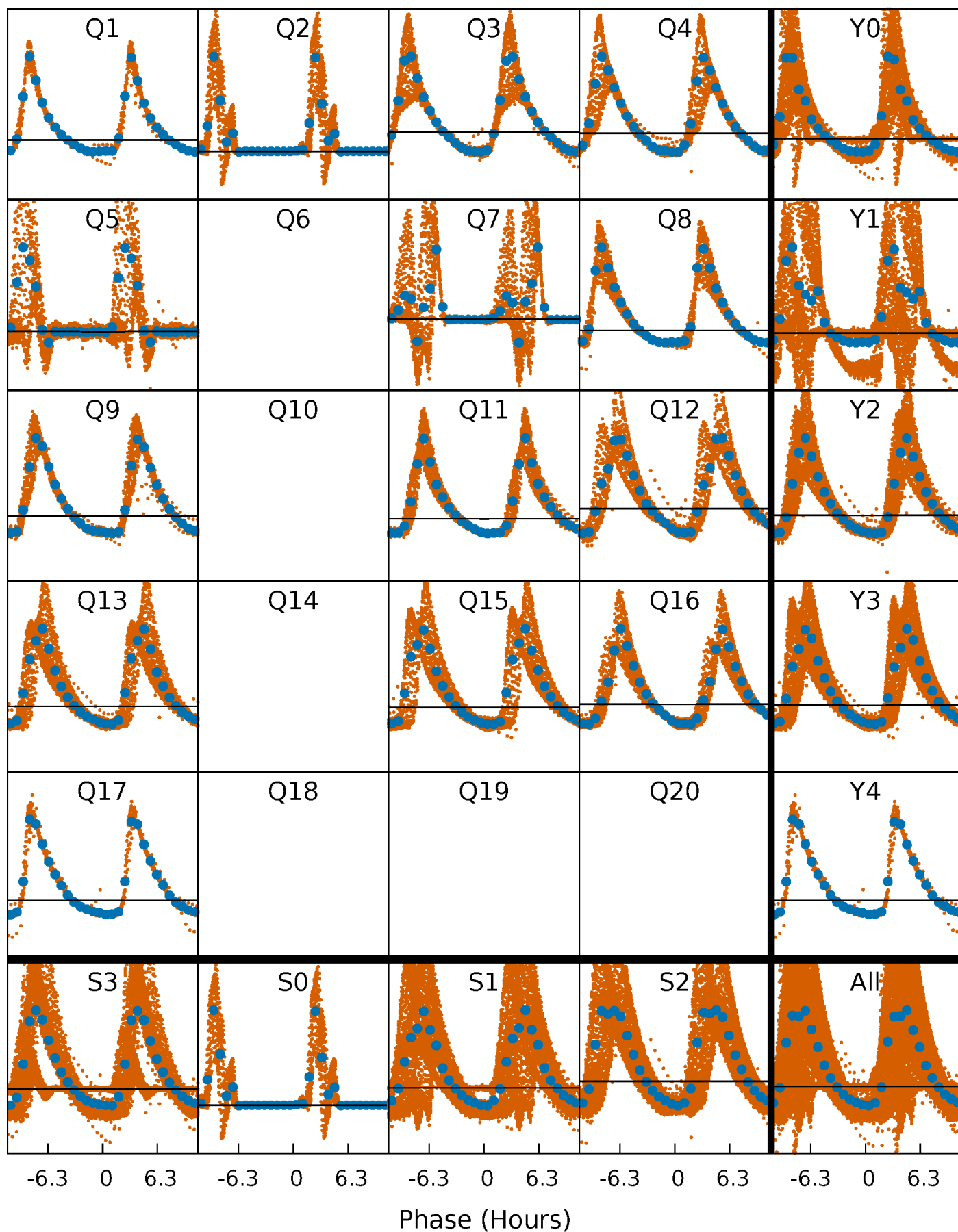
PDC Quarter-Phased Transit Curves

TCE 003864443-01 P= 0.973835 Days $T_0=132.525725$ (BKJD)



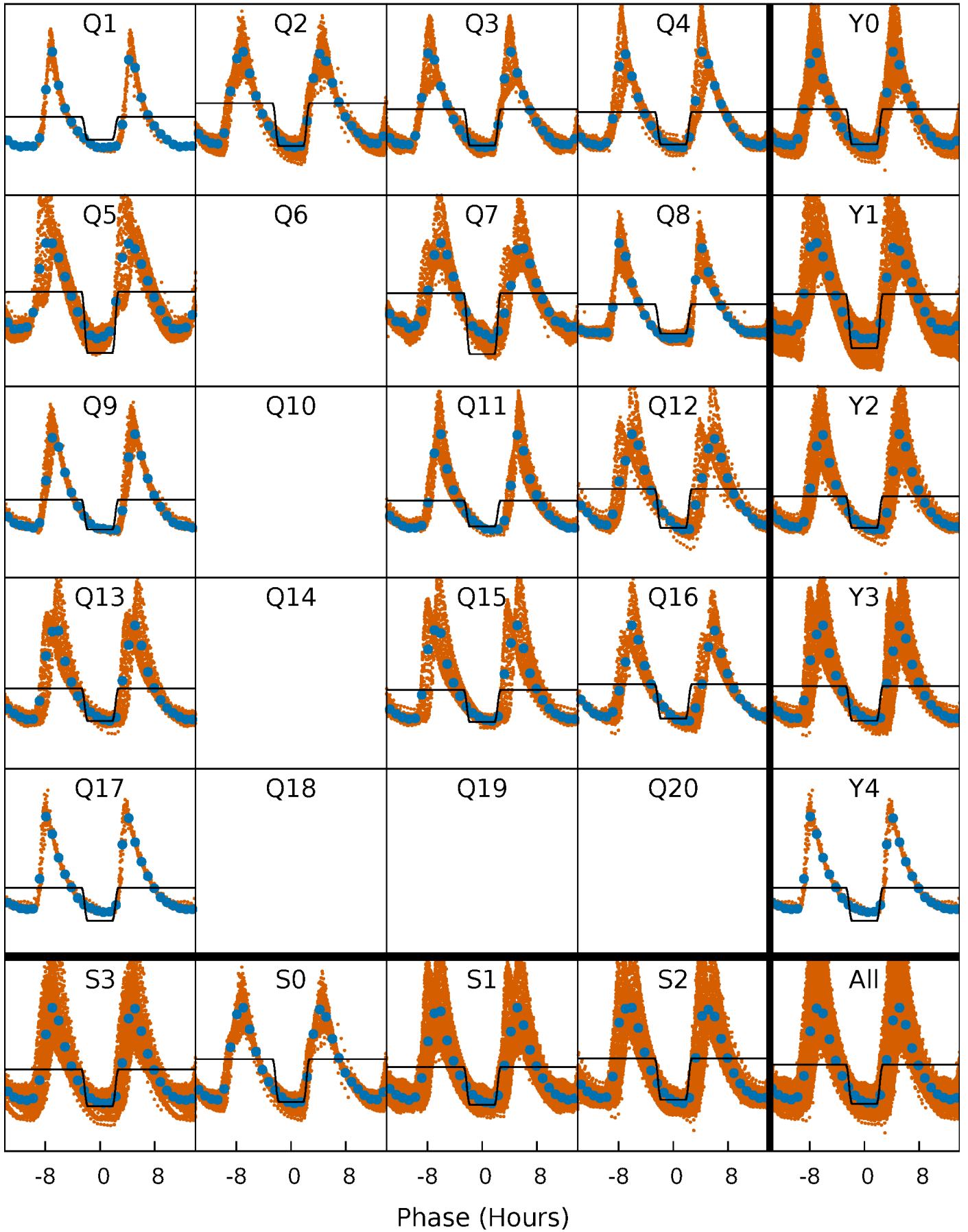
DV Quarter-Phased Transit Curves

TCE 003864443-01 P= 0.973835 Days $T_0=132.525725$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

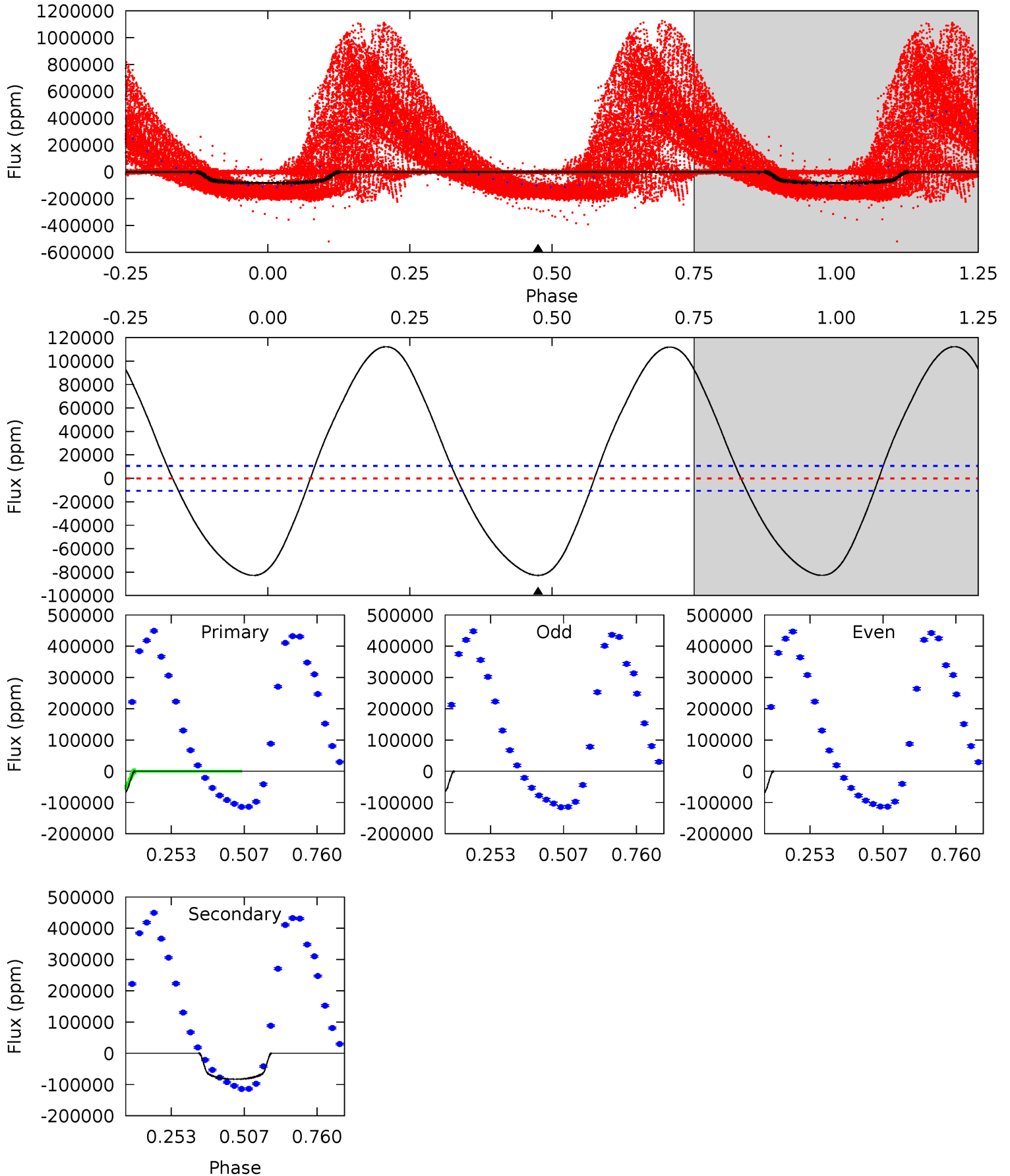
TCE 003864443-01 P= 0.973861 Days $T_0=132.473929$ (BKJD)



DV Model-Shift Uniqueness Test

003864443-01, P = 0.973835 Days, E = 130.578055 Days

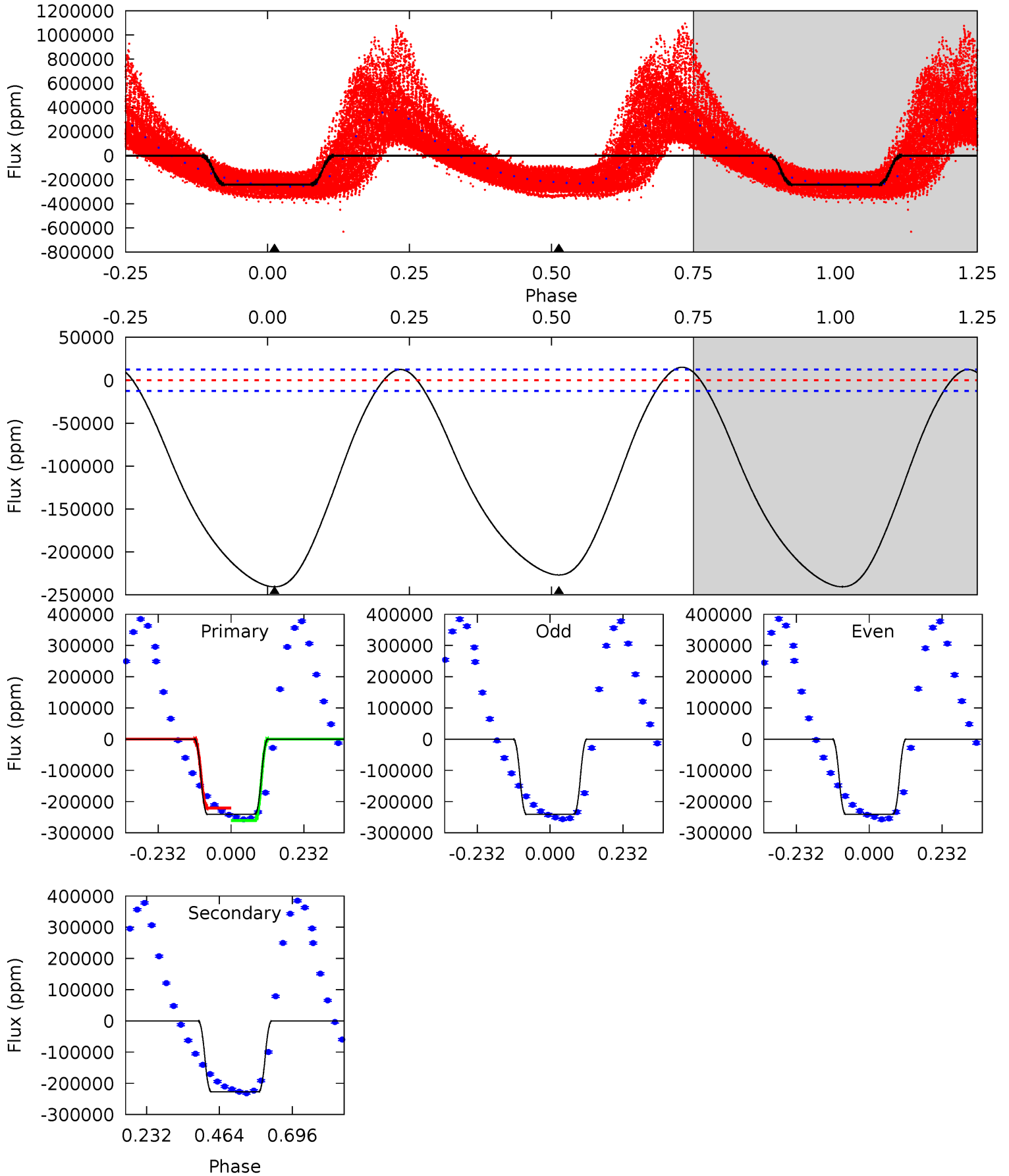
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.9	33.9	0	0	4.37	1.14	27.7	33.9	33.9	33.9	33.9	0.29	0.71	0.58	8.30



Alt Model-Shift Uniqueness Test

003864443-01, P = 0.973861 Days, E = 131.500068 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
84.4	79.5	0	0	4.39	1.20	4.49	84.4	84.4	79.5	79.5	0.11	0.99	0.06	8.20



Stellar Parameters For KIC 003864443

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6781^{+245}_{-336}	$3.763^{+0.501}_{-0.088}$	$-0.320^{+0.300}_{-0.300}$	$2.708^{+0.473}_{-1.325}$	$1.549^{+0.195}_{-0.454}$	$0.110^{+0.603}_{-0.030}$
	+4%/-5%	+13%/-2%	+94%/-94%	+17%/-49%	+13%/-29%	+549%/-28%
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 003864443-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-82804 ± 2442	$6.43^{+6.13}_{-4.20}$	4414^{+366}_{-596}	$94028^{+608214}_{-56982}$	587^{+3993}_{-428}
Alt.	-226860 ± 2852	$141.27^{+22.08}_{-34.49}$	4409^{+355}_{-515}	6856^{+334}_{-368}	$4.025^{+2.600}_{-0.920}$

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 $A_{obs} \gg 1.0$

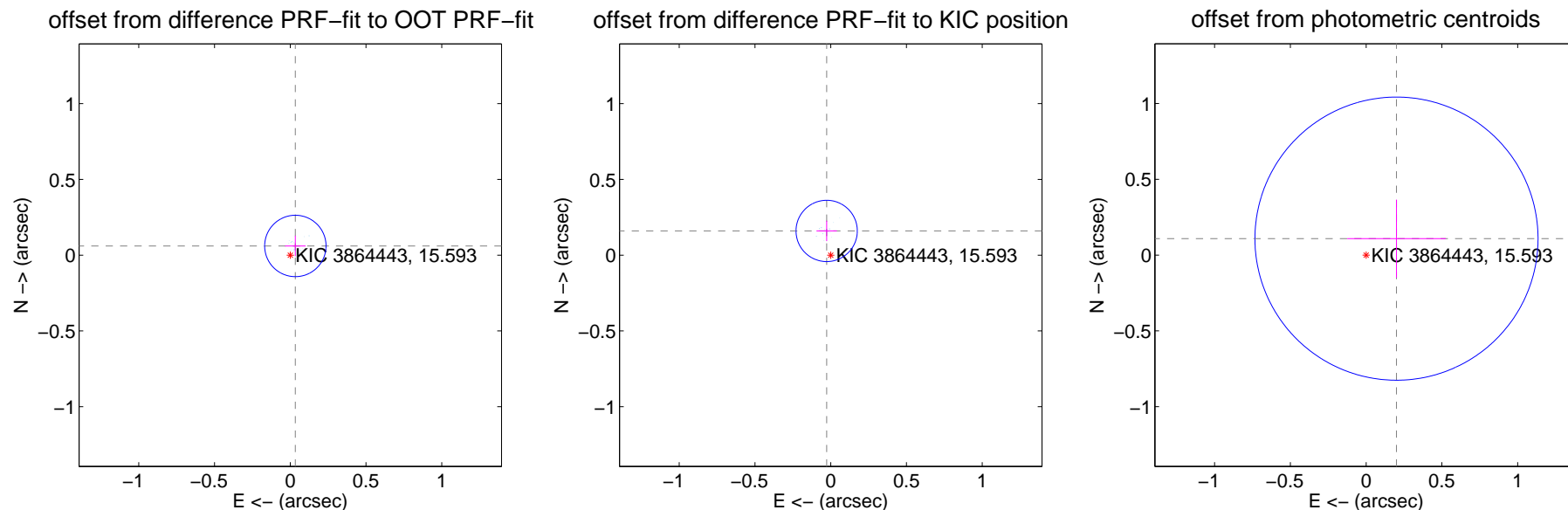
DV Centroid Data

Supplemental centroid analysis for 003864443-01. Kepler magnitude: 15.59. Transit SNR 0.85

There are 14 quarters with good PRF difference image offsets

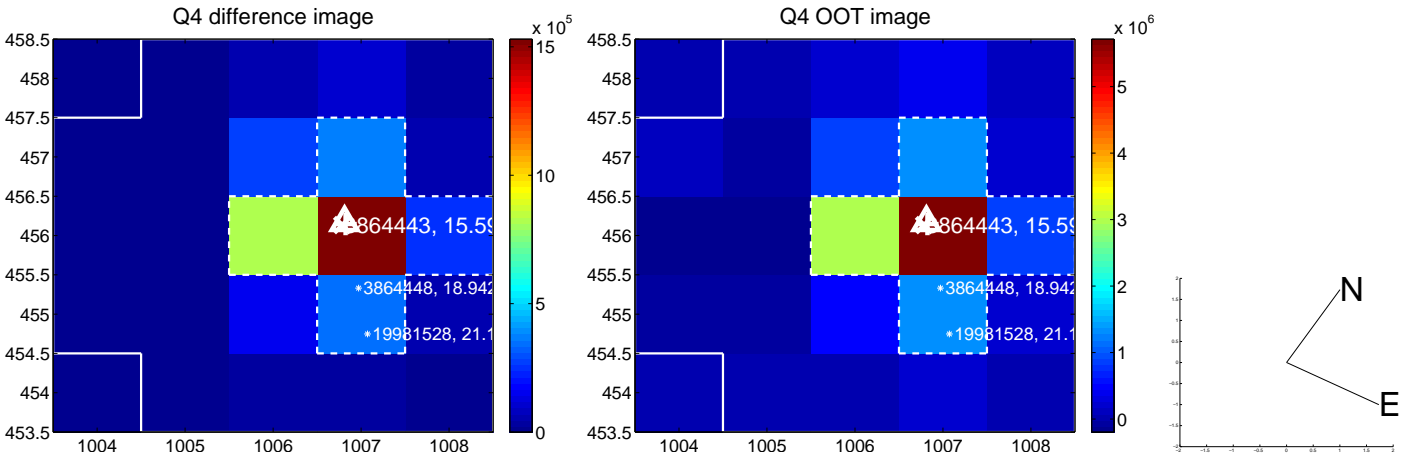
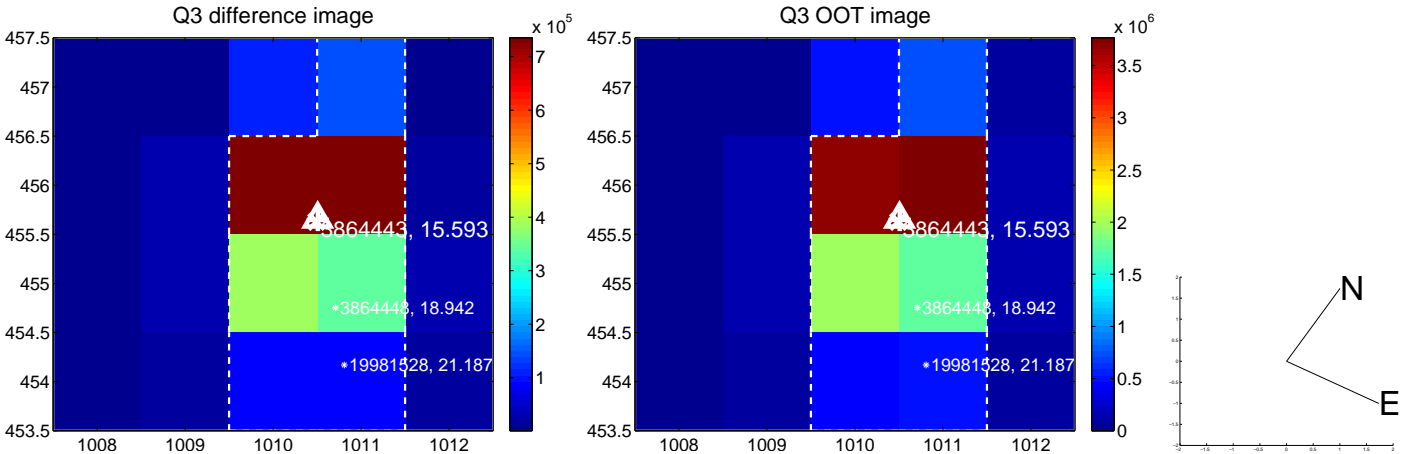
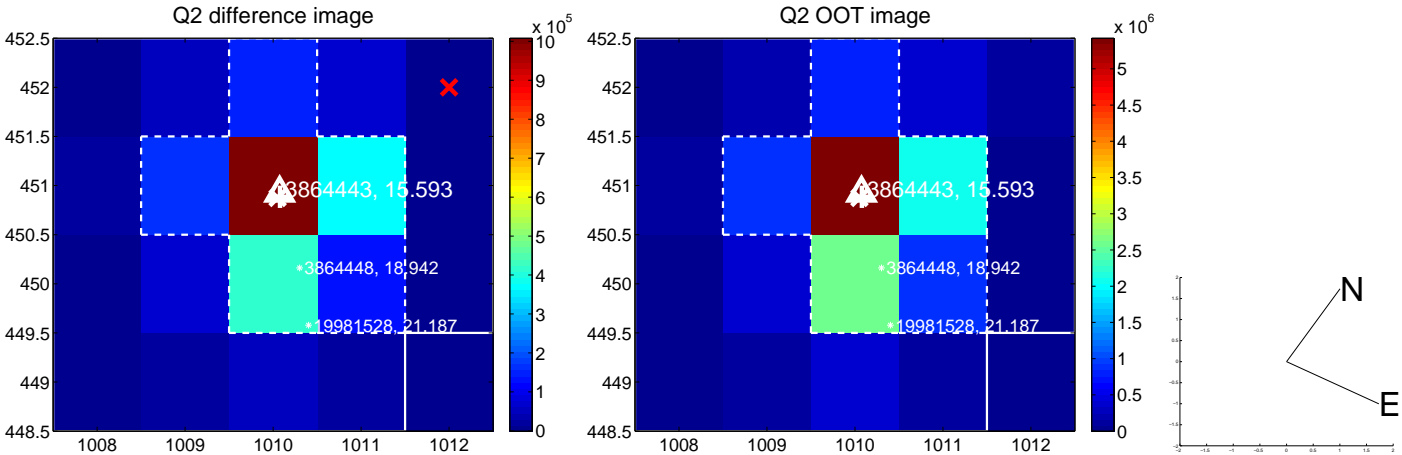
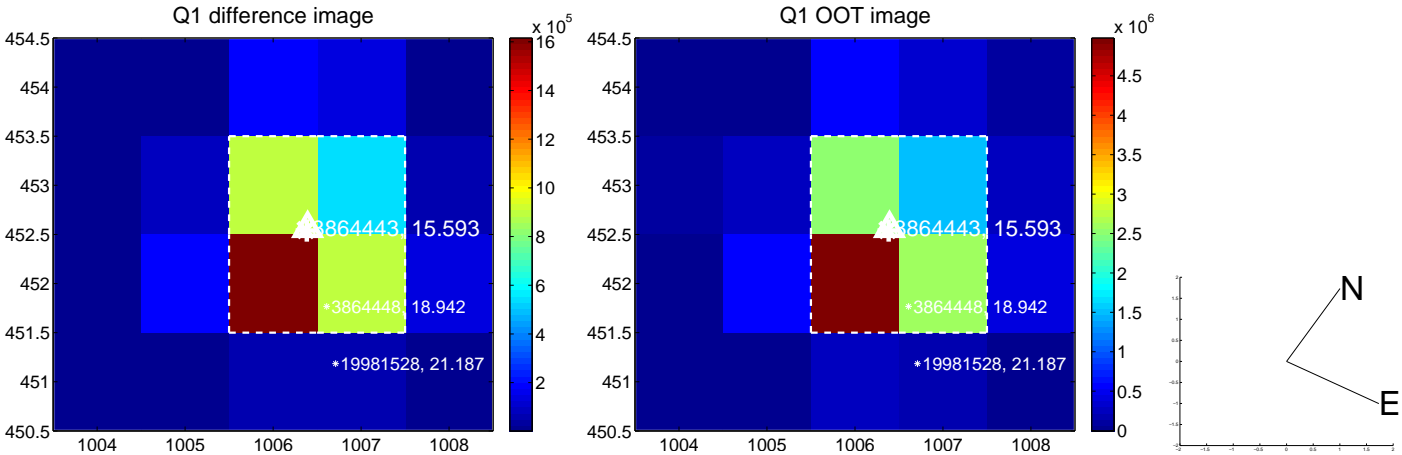
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.069 ± 0.068	1.03	-0.034 ± 0.068	0.061 ± 0.067
PRF-fit source offset from KIC position	0.162 ± 0.067	2.40	0.027 ± 0.068	0.160 ± 0.067
photometric centroid source offset	0.23 ± 0.31	0.73	-0.20 ± 0.33	0.11 ± 0.26

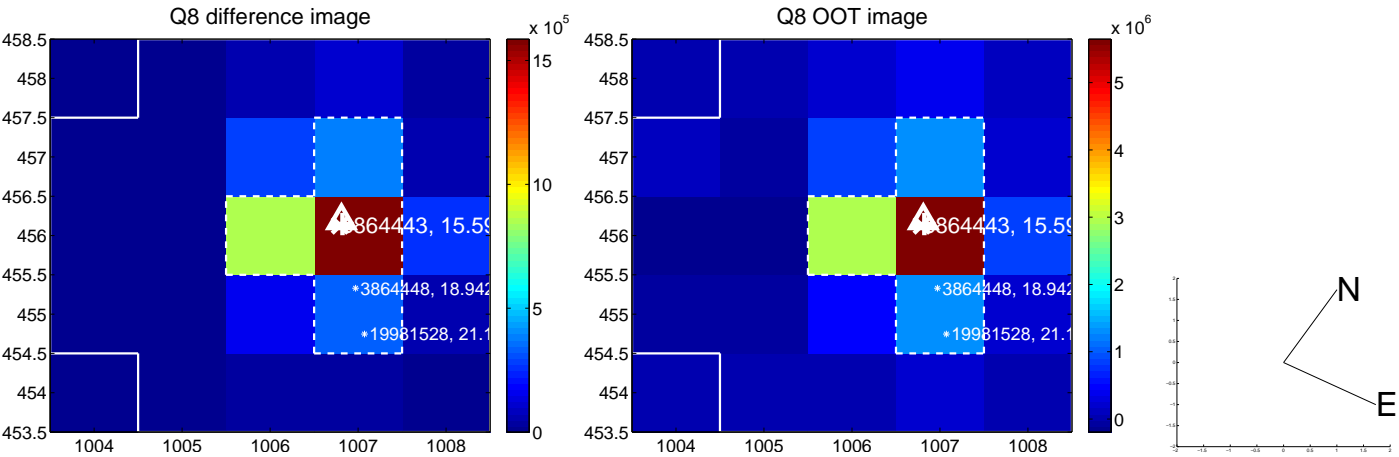
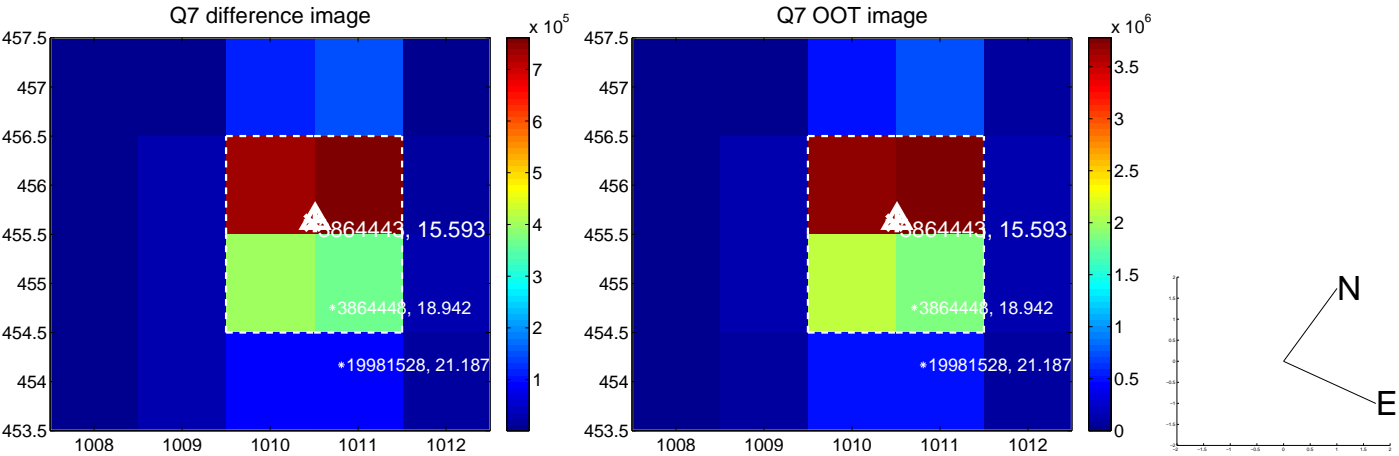
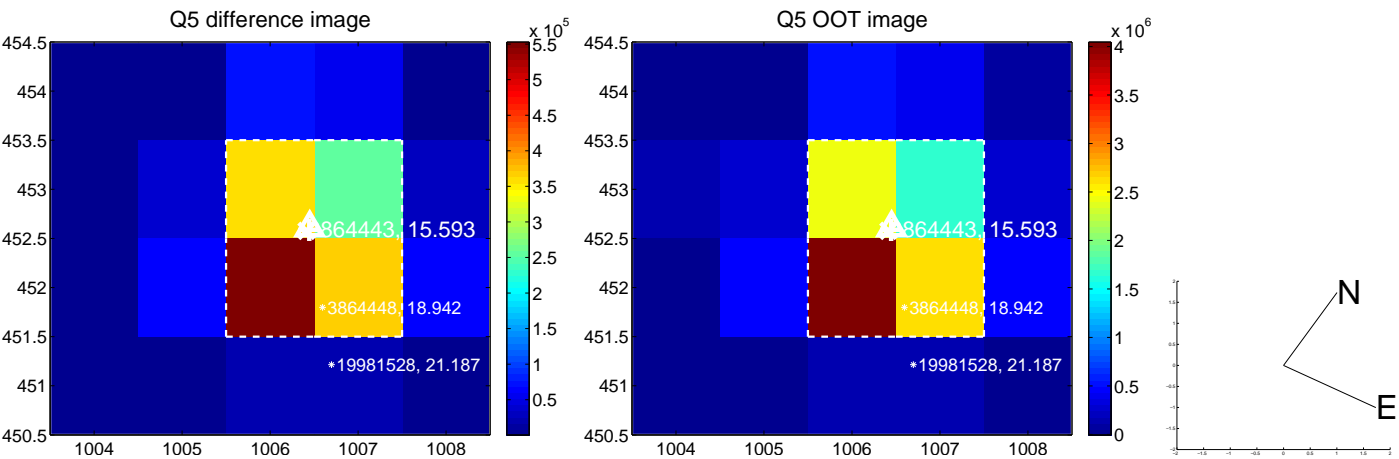


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

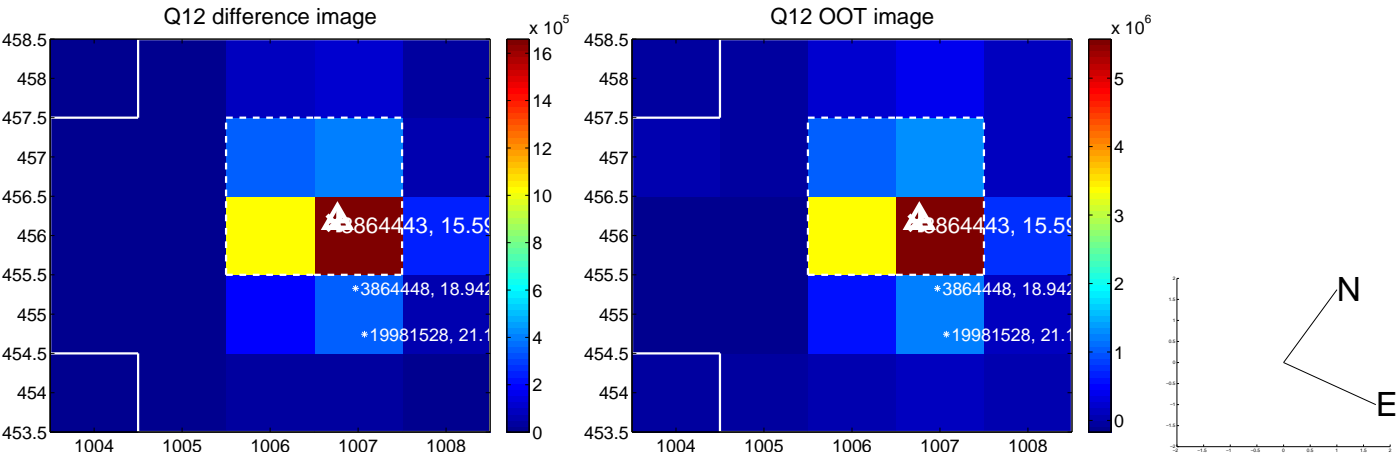
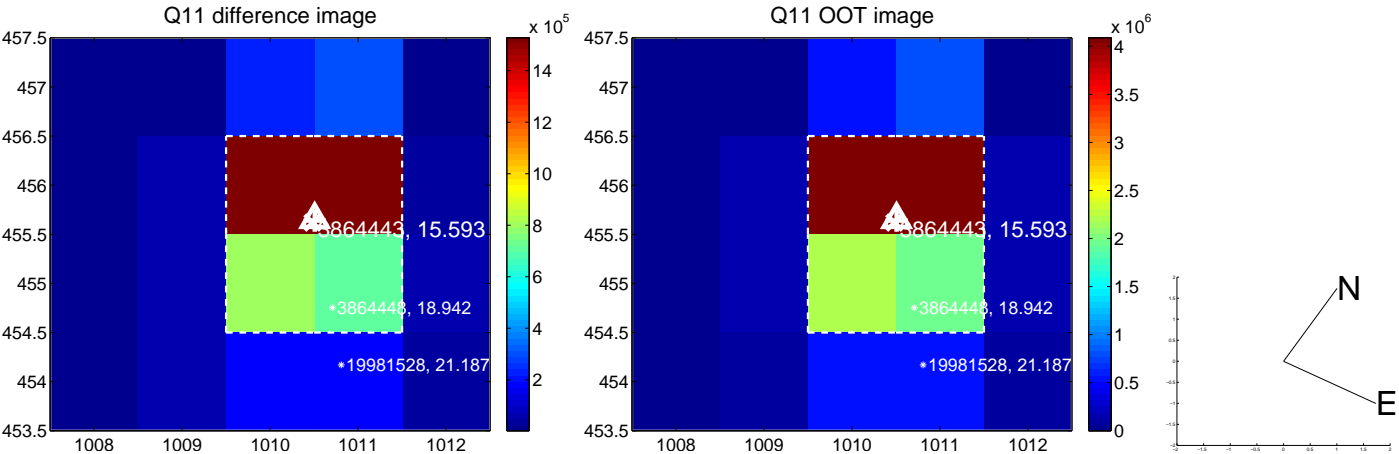
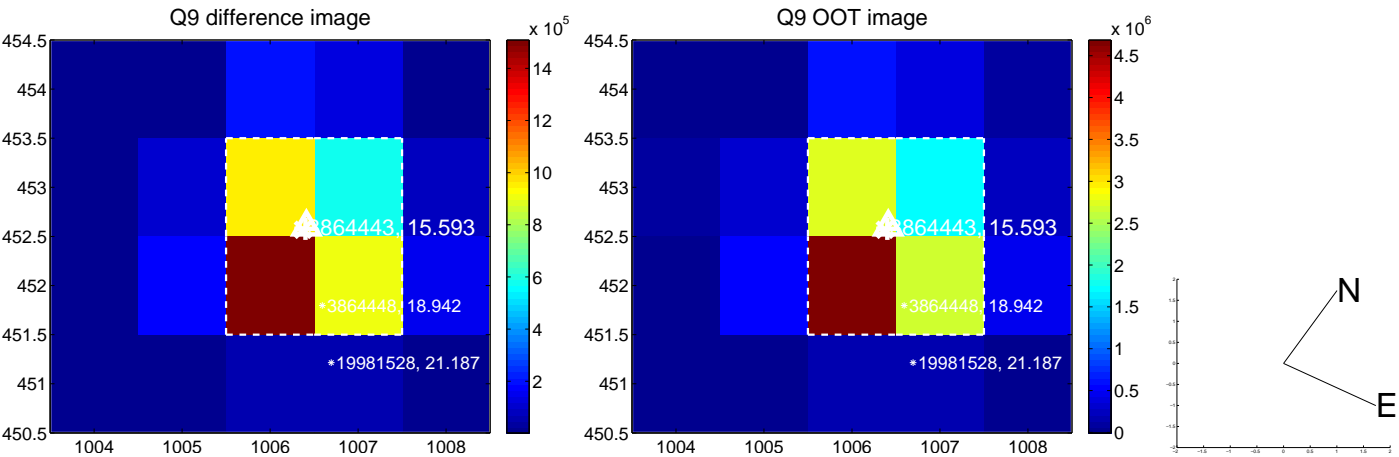
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



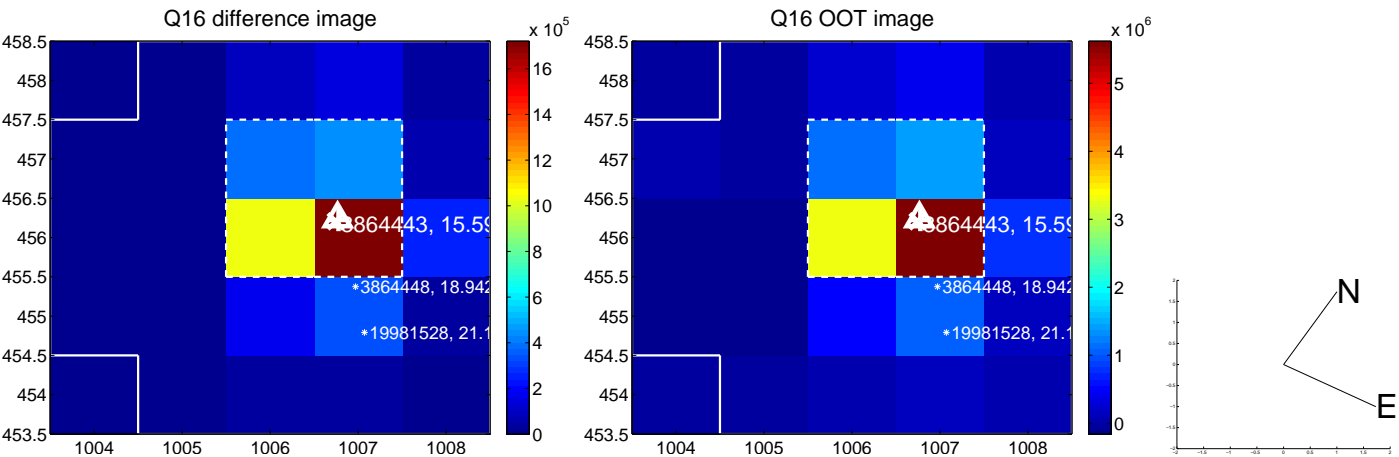
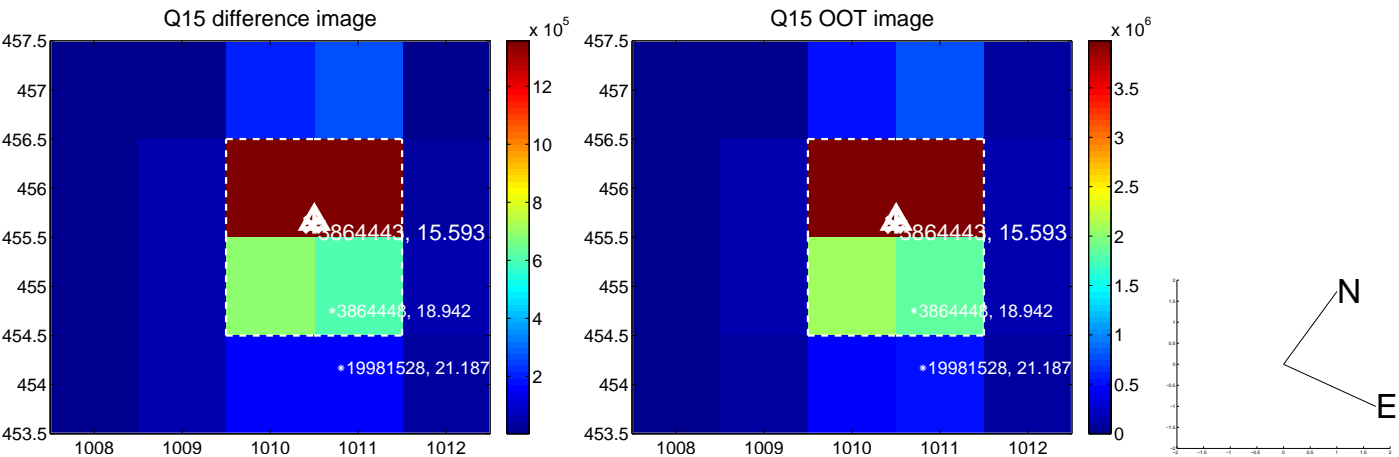
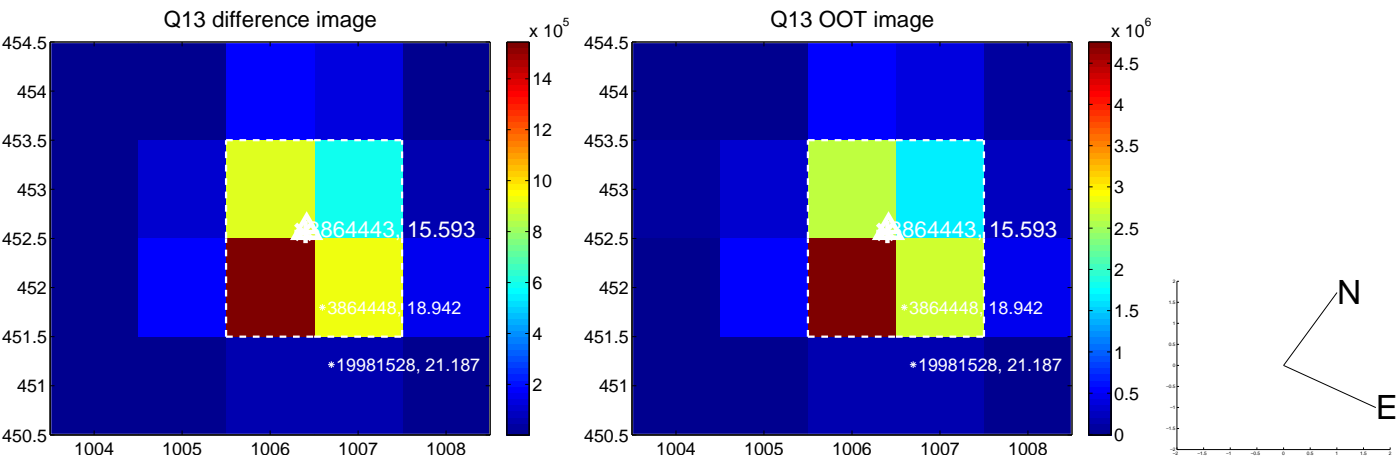
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



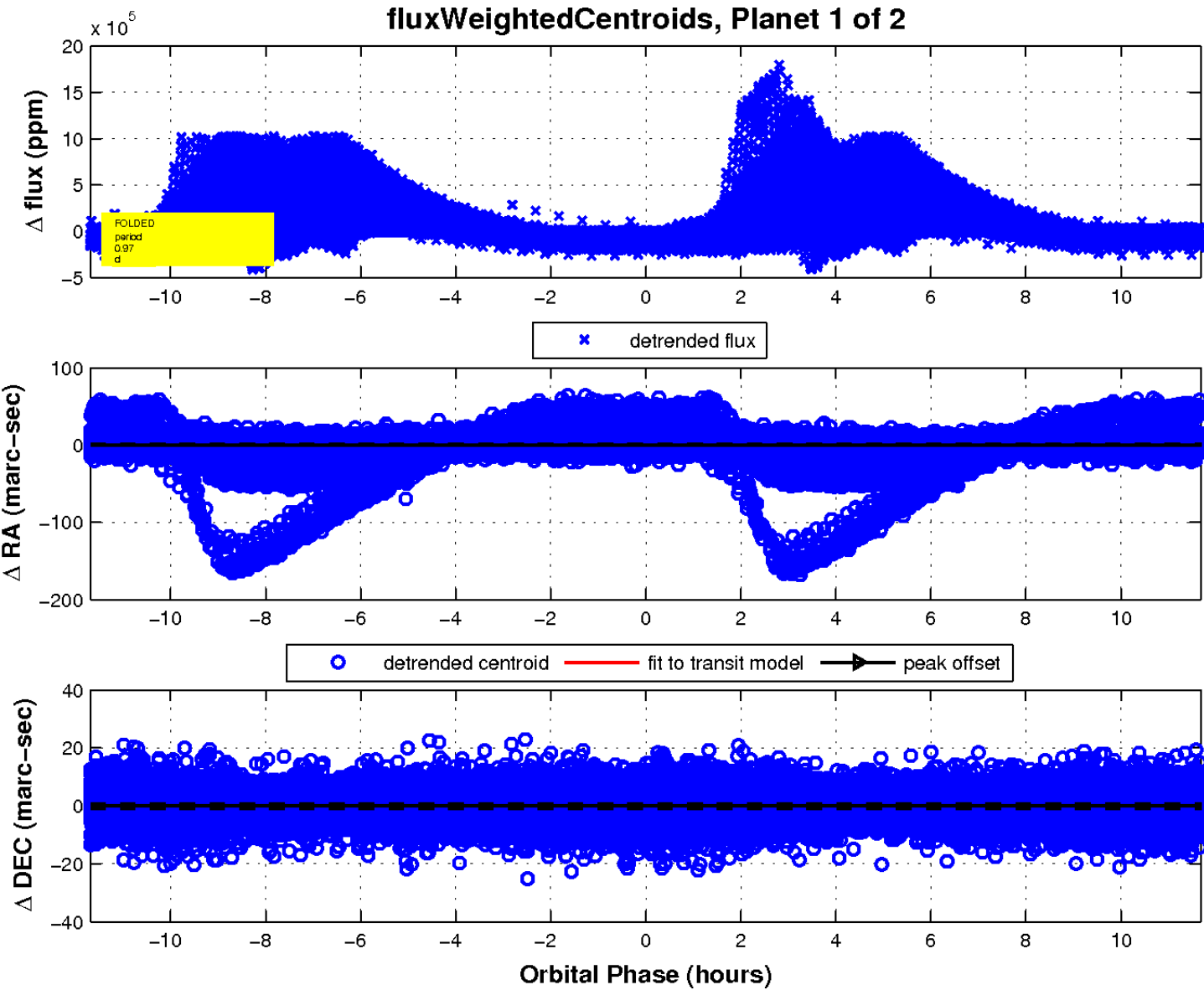
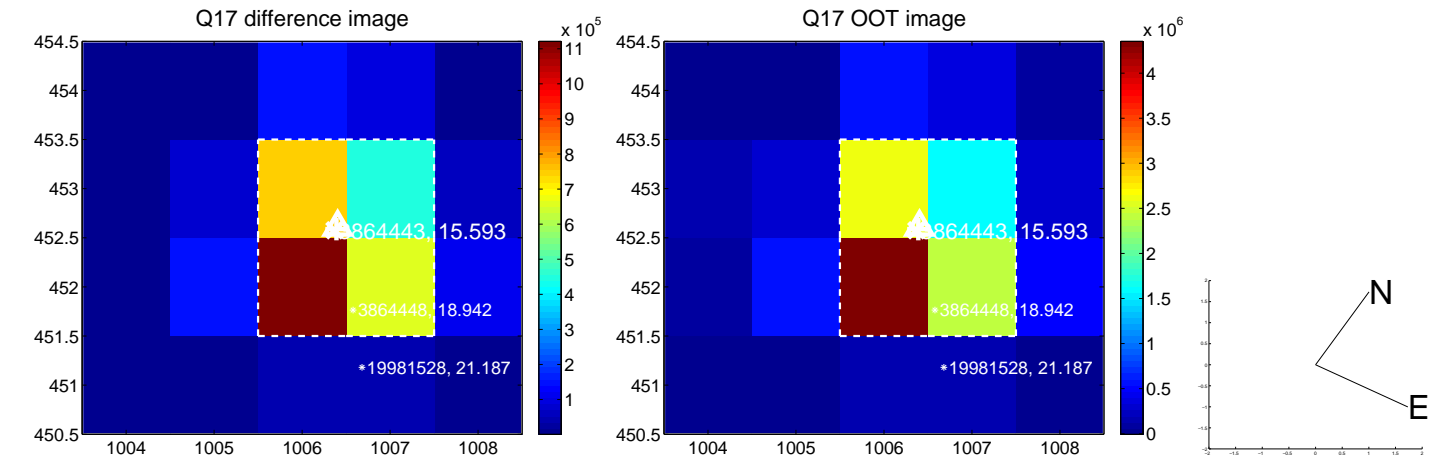
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

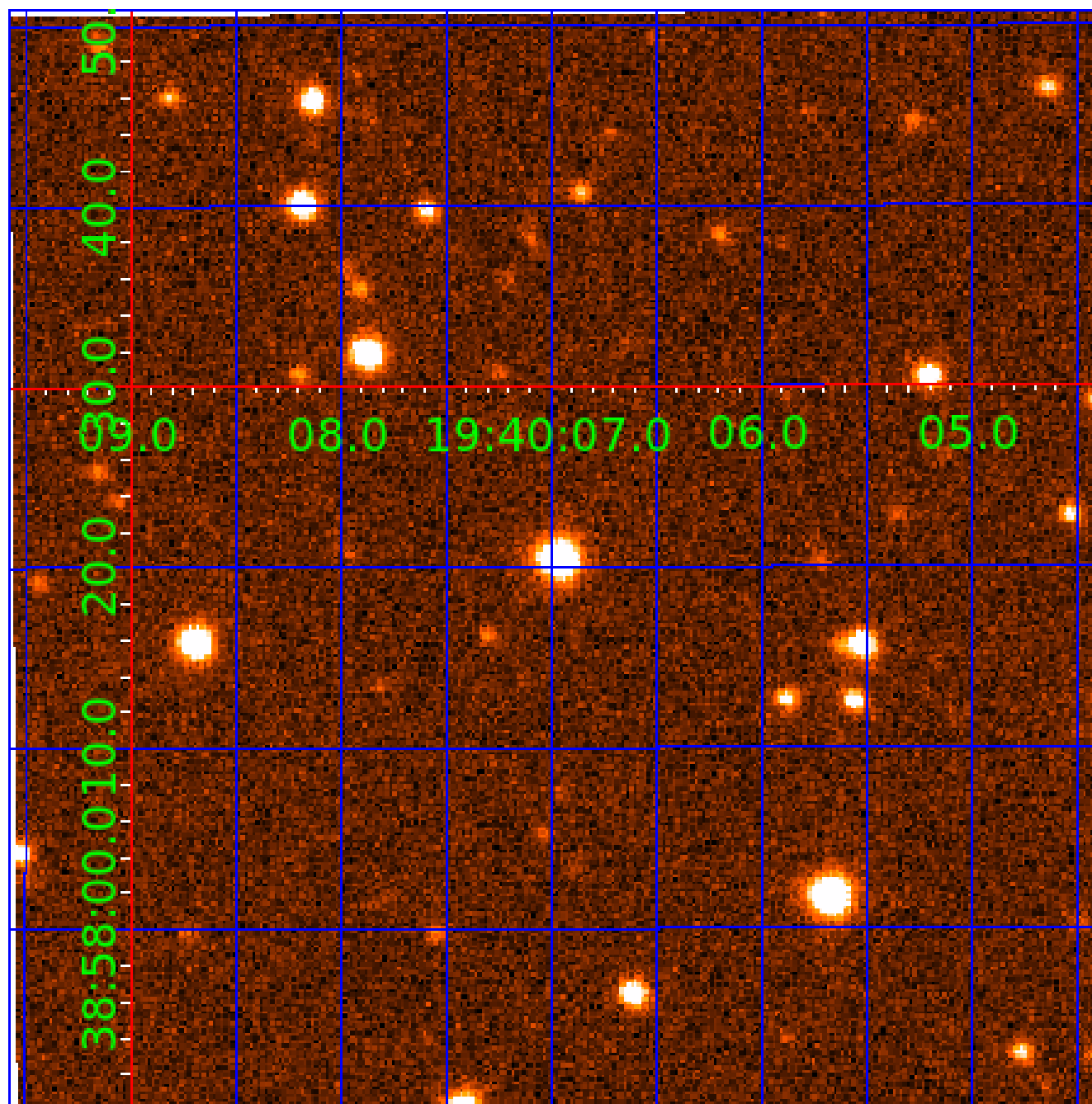


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003864443

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})
003864443-01	OBS	No	0.973835	132.525725	473.1	5.483	62.4	0.9	2.71	6781	6.31	28044.93
003864443-02	OBS	No	0.973861	132.085994	2769.5	1.500	16.9	-1.0	2.71	6781	14.44	28043.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003864443-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
003864443-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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.

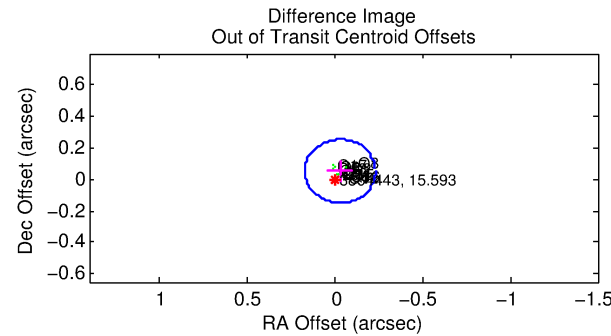
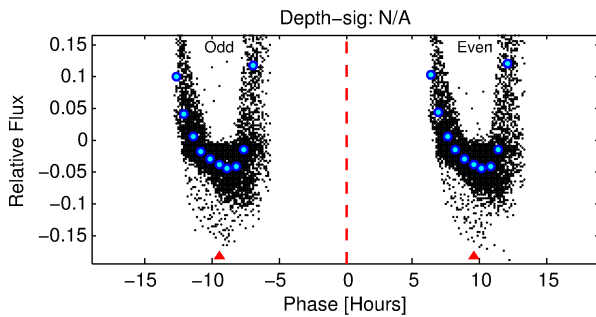
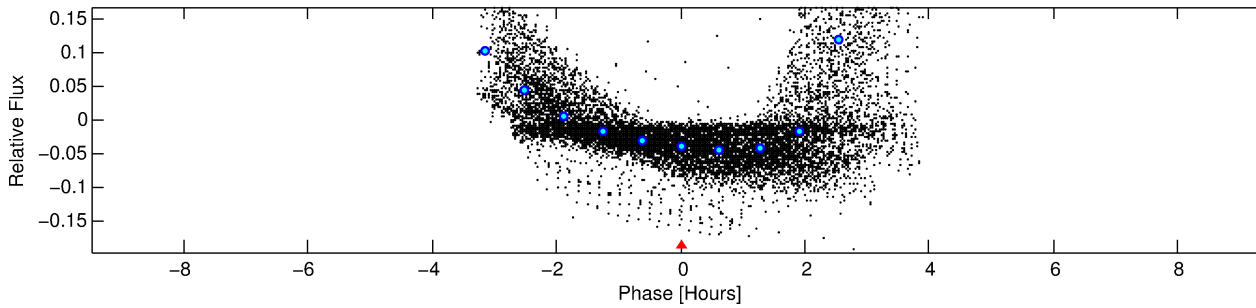
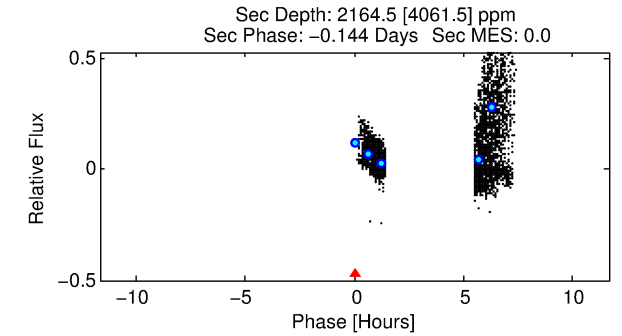
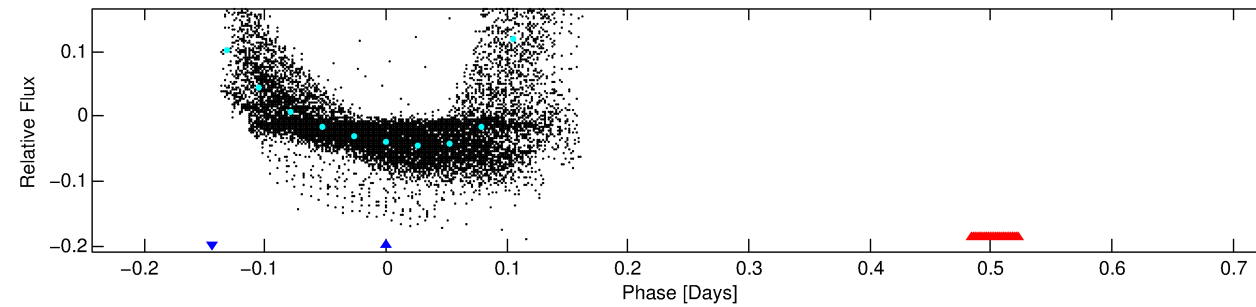
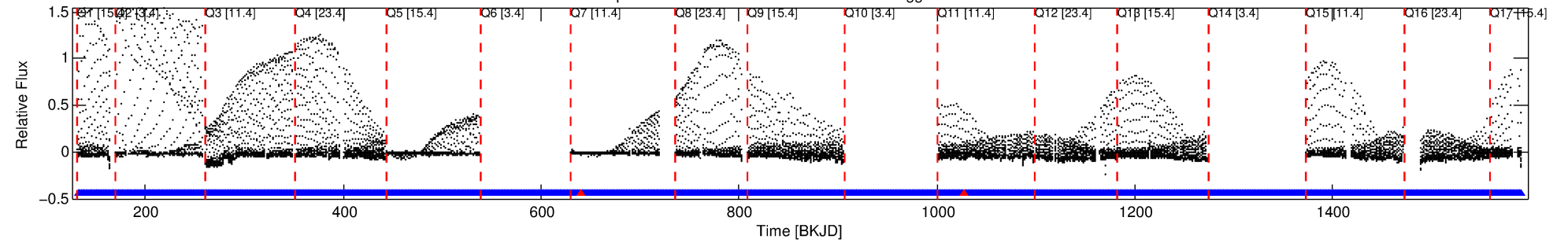
Ephemeris Match Information For 003864443-02

No Significant Match Found

DV One-Page Summary

KIC: 3864443 Candidate: 2 of 2 Period: 0.974 d

Kp: 15.59 R*: 2.71 Rs Teff: 6781.0 K Logg: 3.76 Fe/H: -0.320



TPS TCE Results:

Period = 0.97386 d
Epoch = 132.0860 BKJD

DV fit results are unavailable

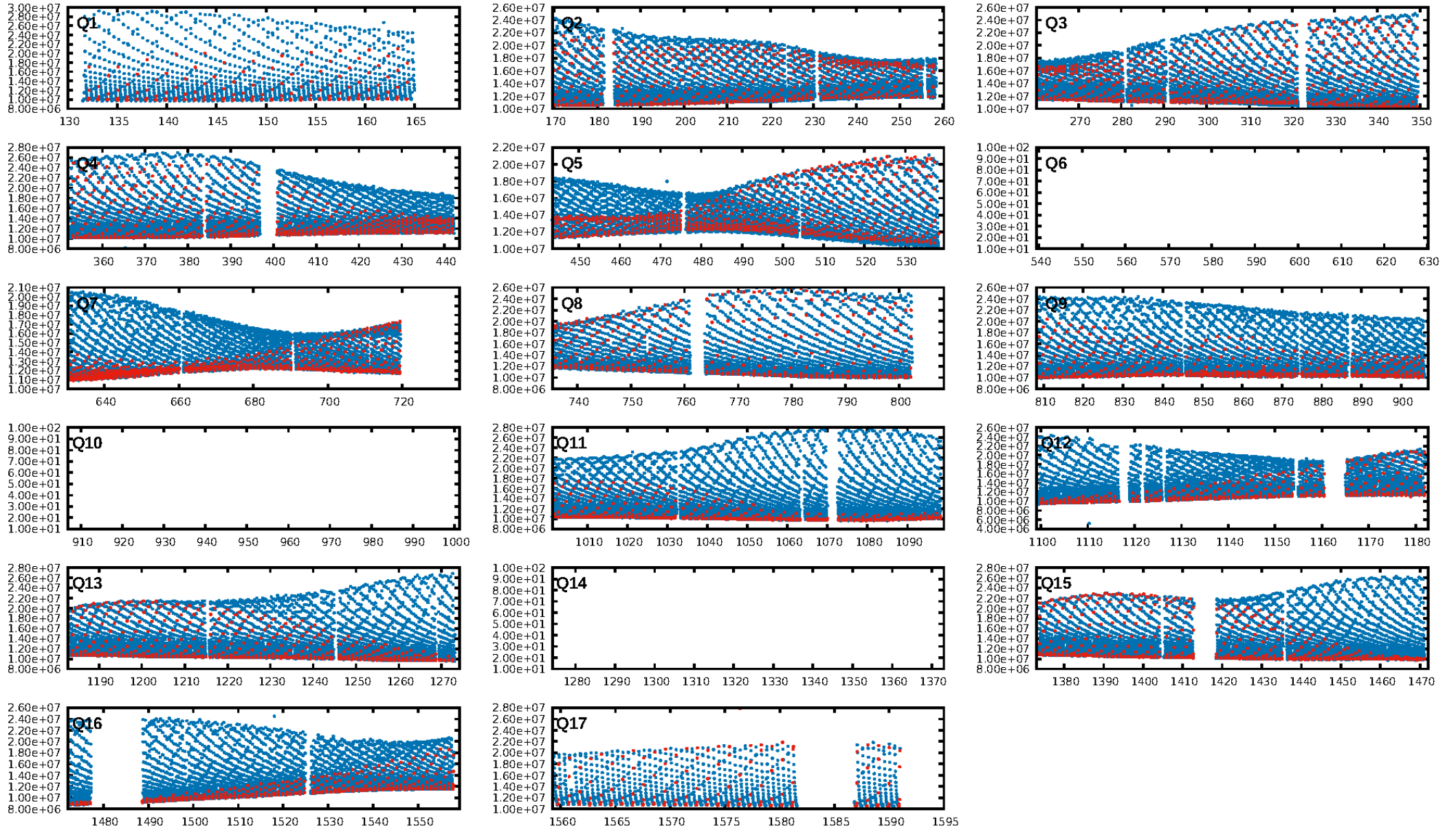
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1039/1041]
GhostDiagnostic-chr: 0.6145
Centroid-sig: 0.3%
Centroid-so: 0.261 arcsec [36.93σ]
OotOffset-rm: 0.061 arcsec [0.91σ]
KicOffset-rm: 0.160 arcsec [2.38σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

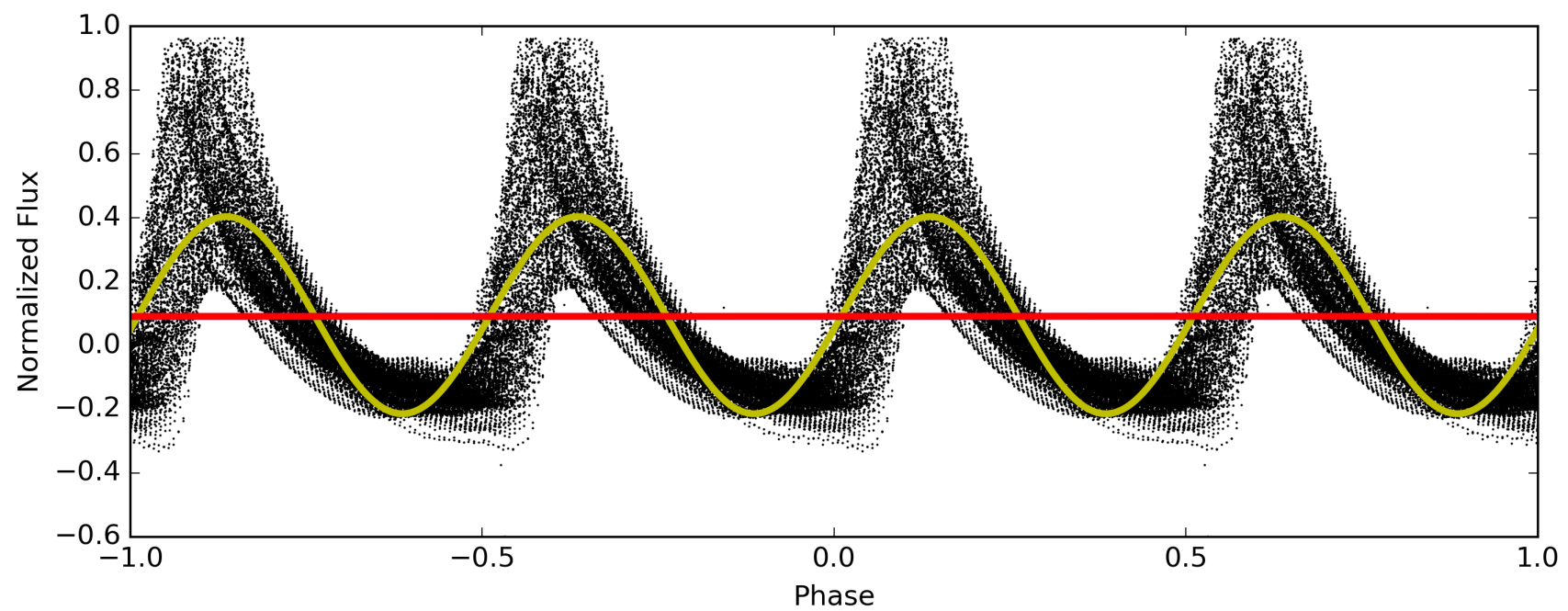
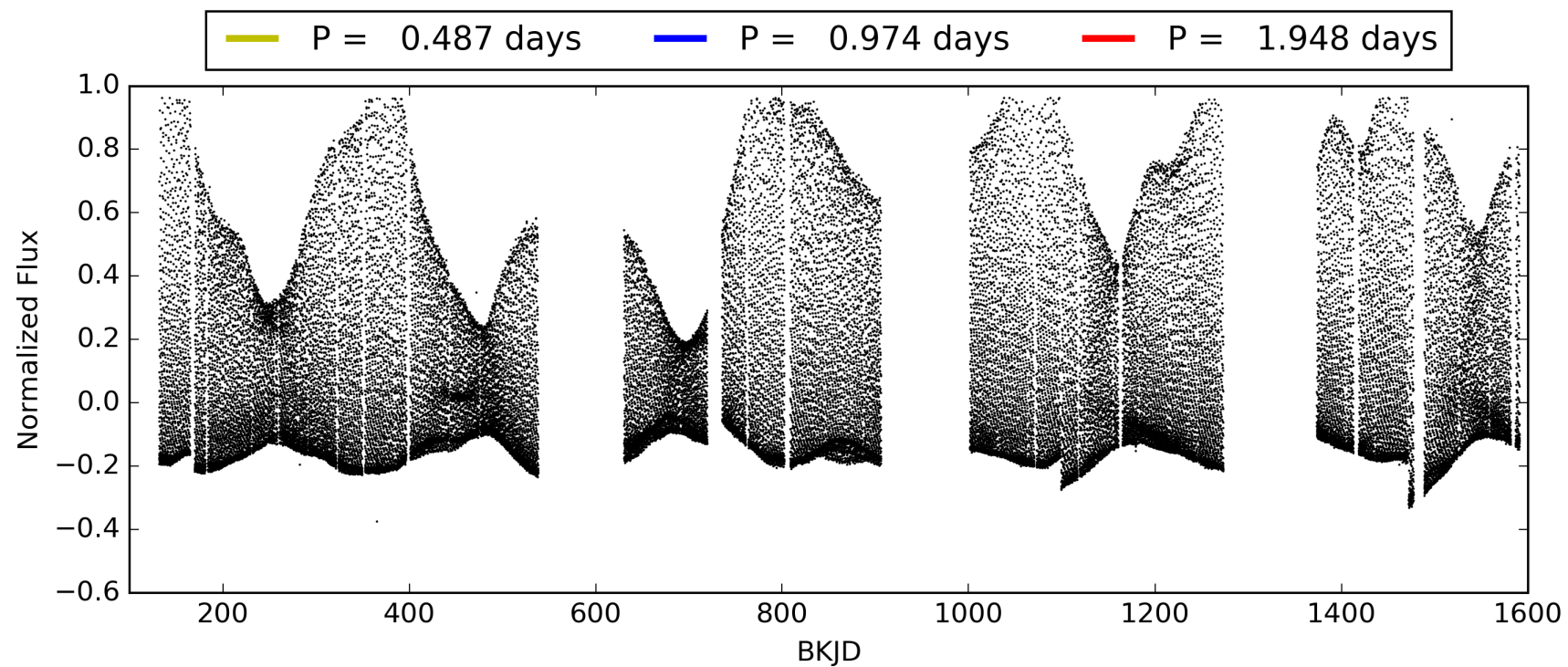
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:20:30 Z

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

TCE 003864443-02, PDC Light Curves

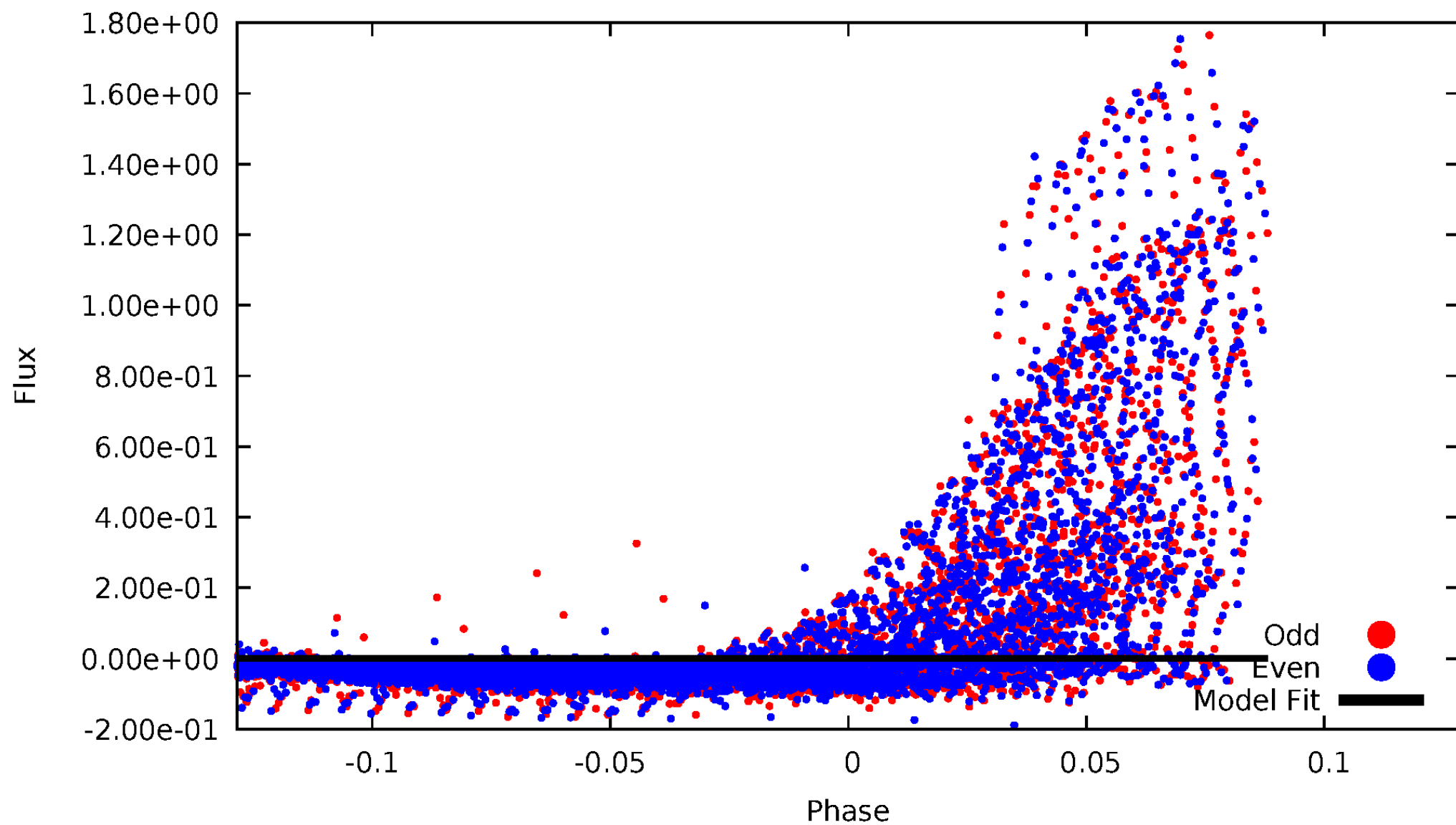


TCE 003864443-02



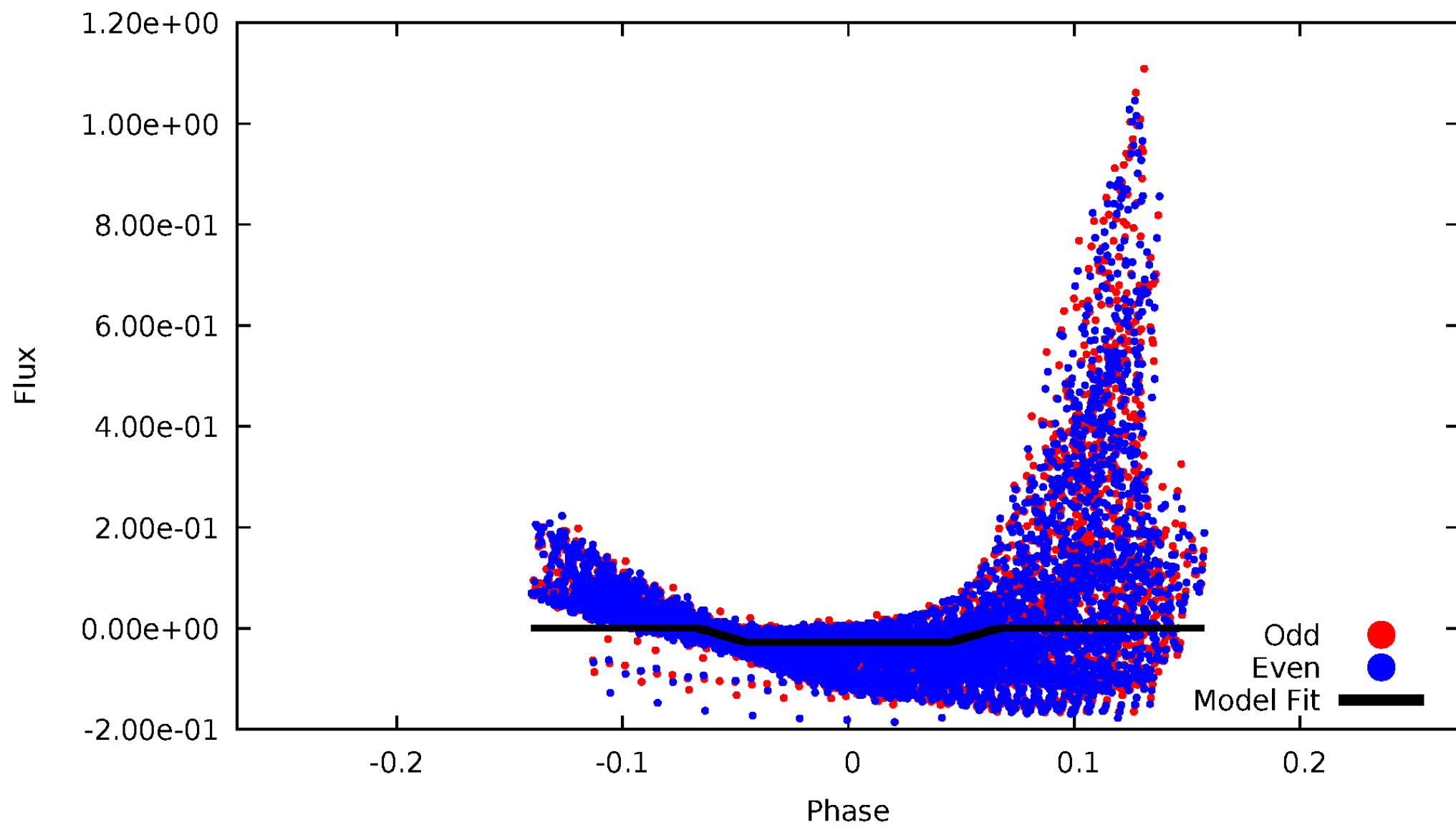
DV Odd/Even

TCE 003864443-02



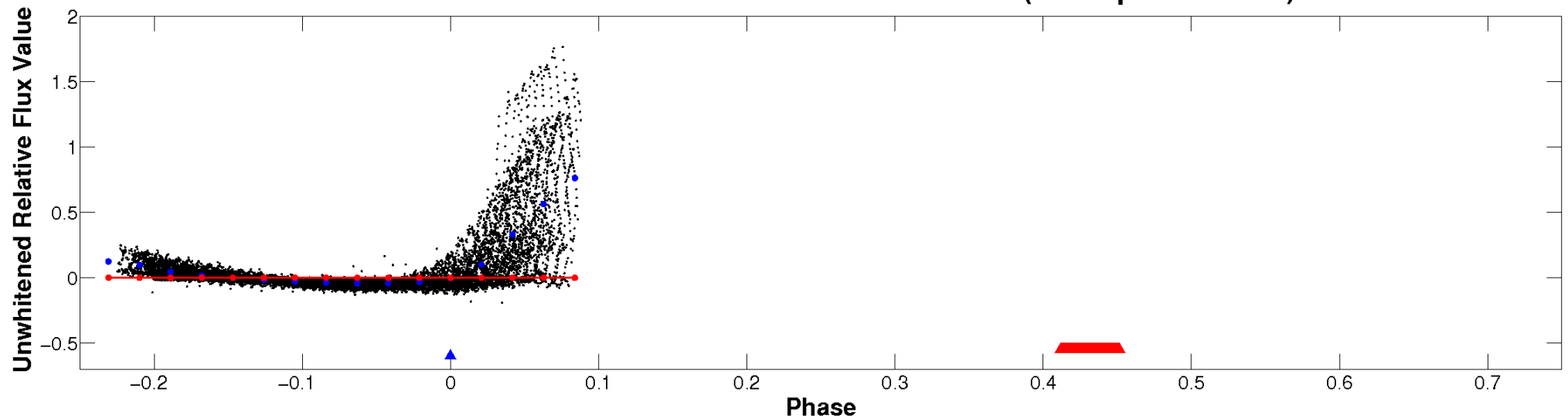
ALT Odd/Even

TCE 003864443-02

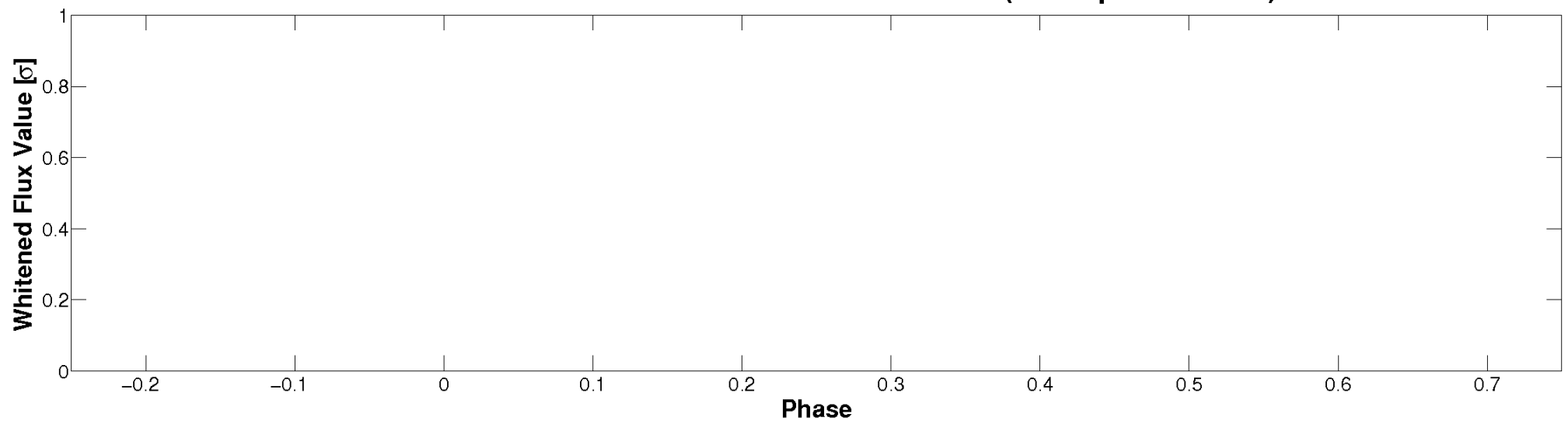


Non-Whitened Vs. Whitened Light Curve

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

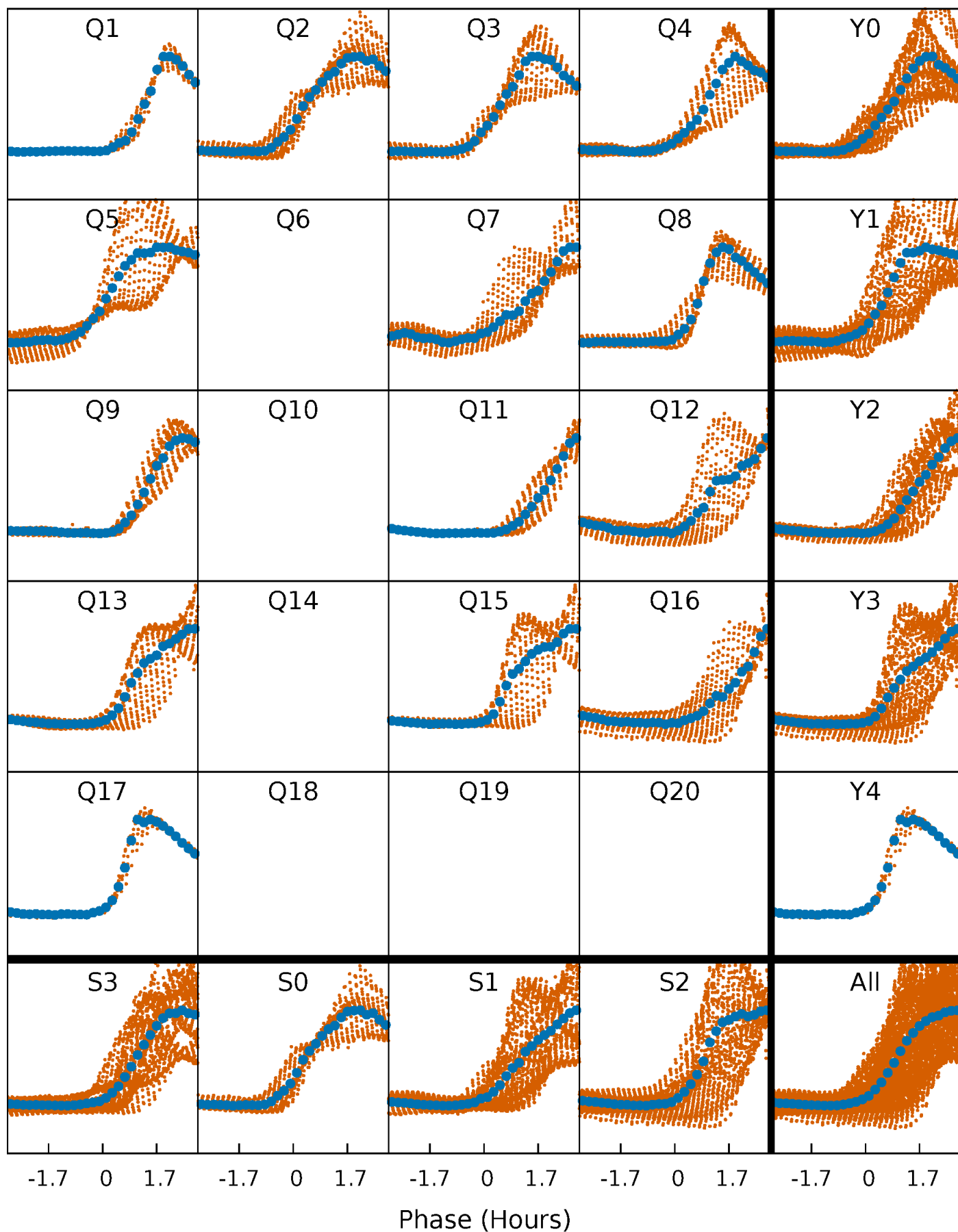


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



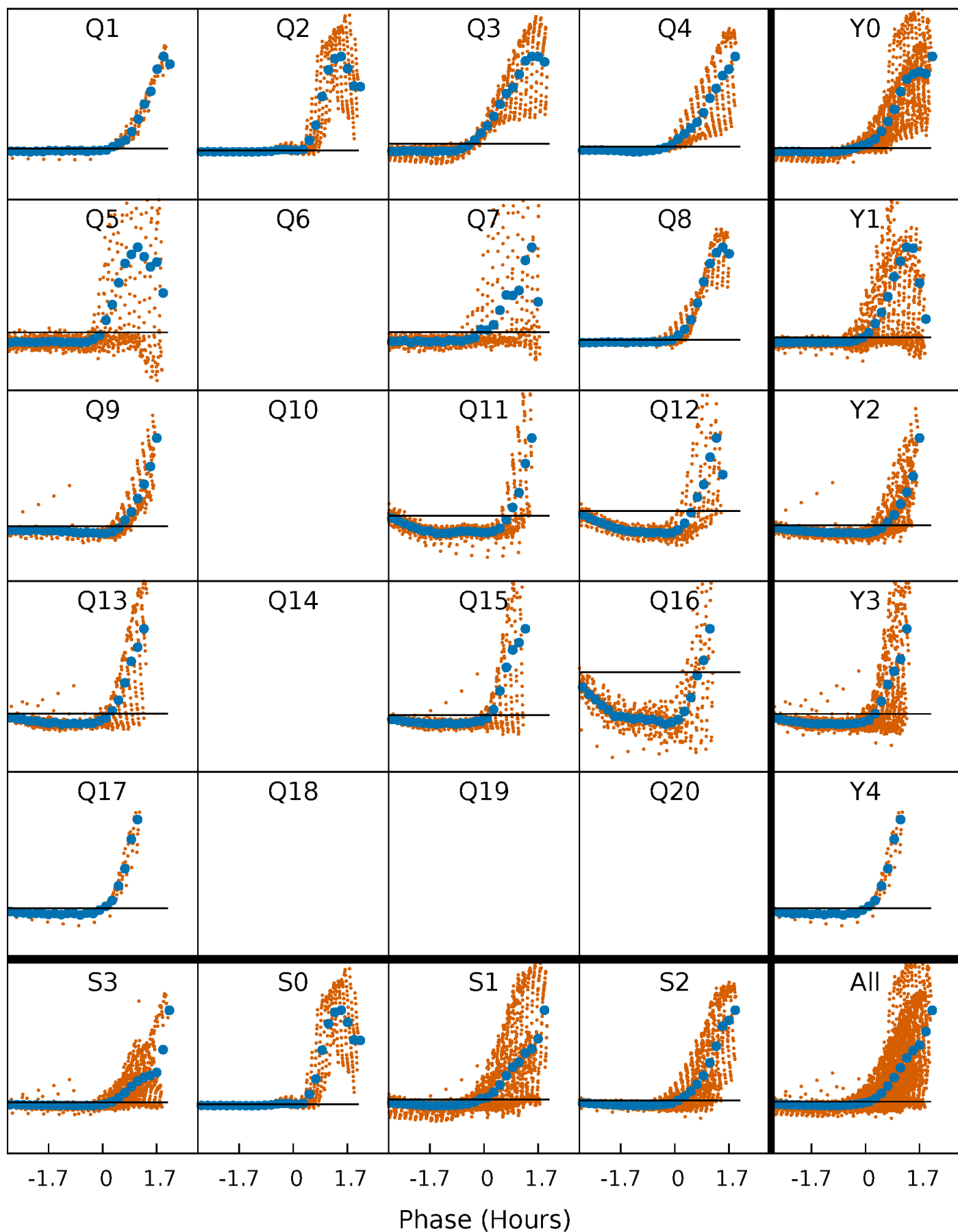
PDC Quarter-Phased Transit Curves

TCE 003864443-02 P= 0.973861 Days $T_0=132.085994$ (BKJD)



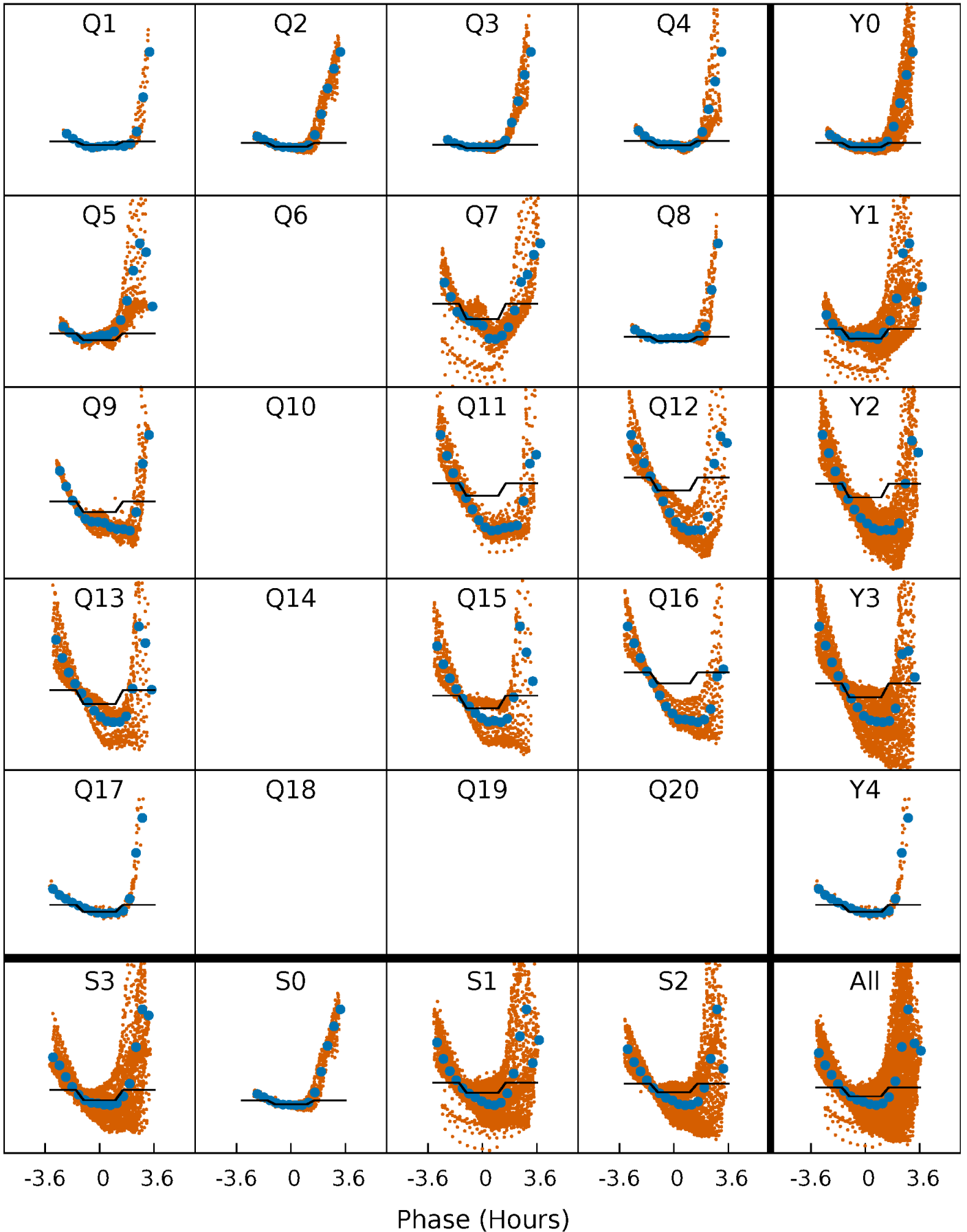
DV Quarter-Phased Transit Curves

TCE 003864443-02 $P = 0.973861$ Days $T_0 = 132.085994$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

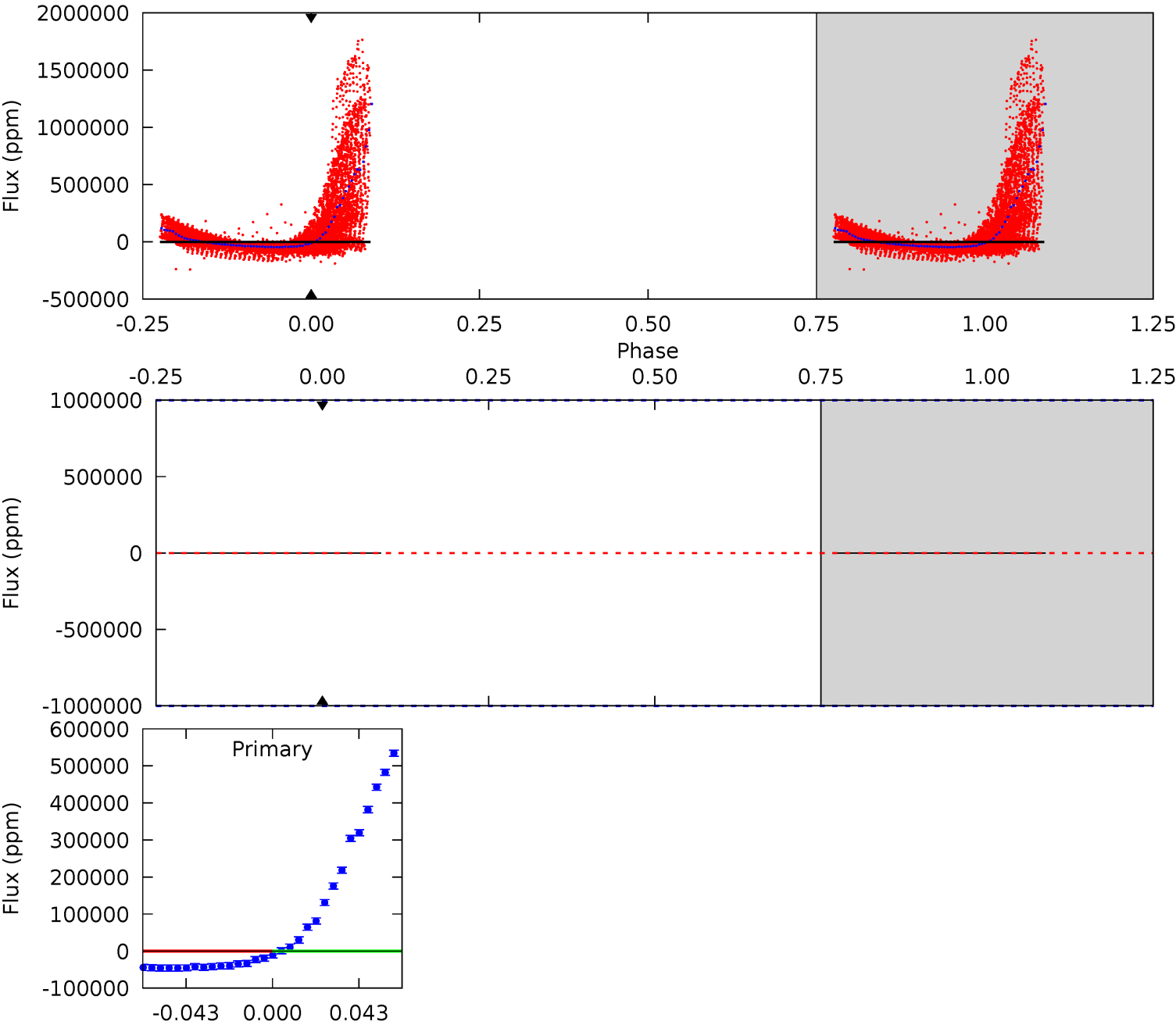
TCE 003864443-02 P= 0.973861 Days $T_0=132.003664$ (BKJD)



DV Model-Shift Uniqueness Test

003864443-02, P = 0.973861 Days, E = 131.112133 Days

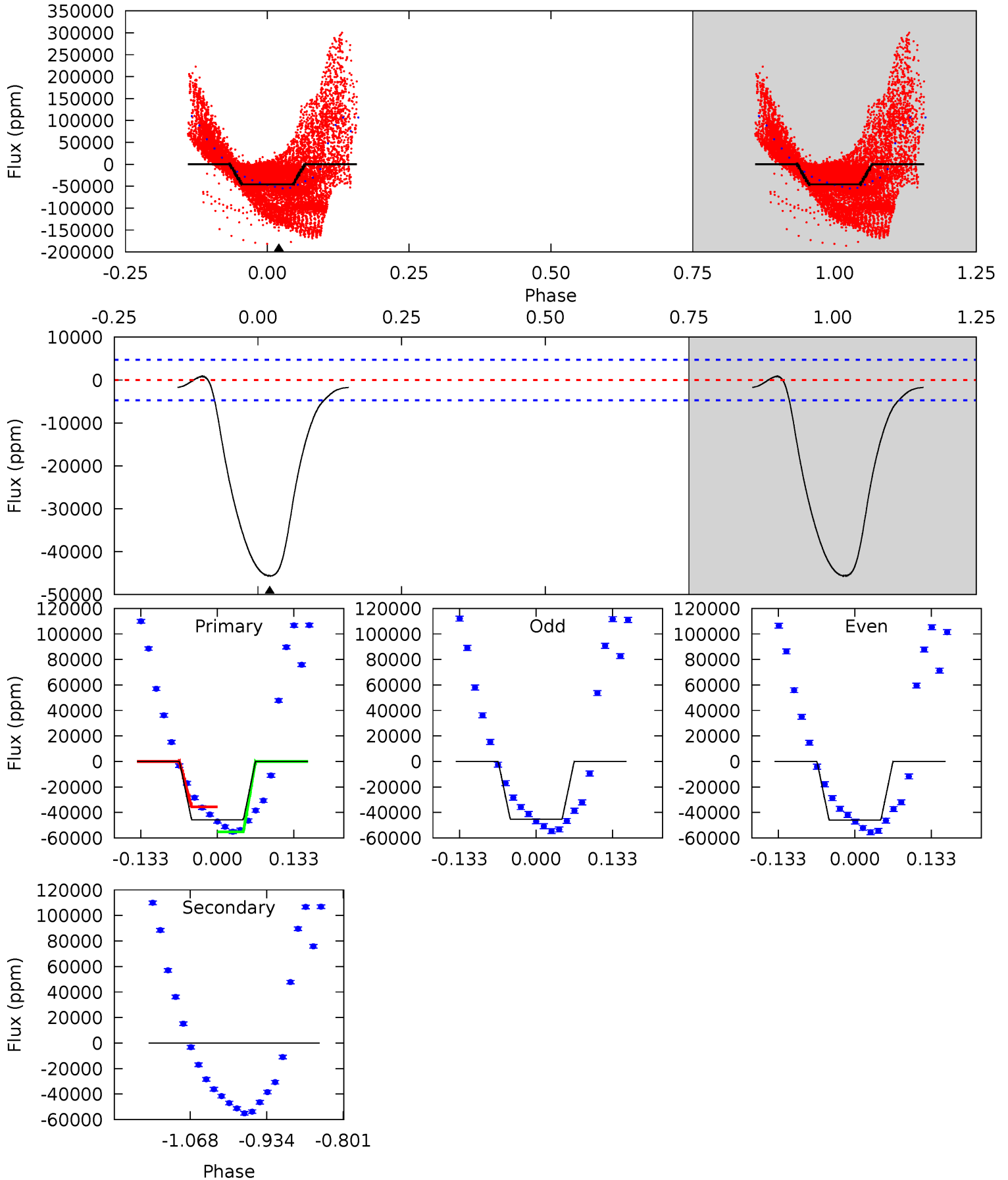
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003864443-02, P = 0.973861 Days, E = 131.029803 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.5	0	0	0	4.50	1.50	0.85	43.5	43.5	0	0	0.28	1.18	0.02	7.00



Stellar Parameters For KIC 003864443

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6781^{+245}_{-336}	$3.763^{+0.501}_{-0.088}$	$-0.320^{+0.300}_{-0.300}$	$2.708^{+0.473}_{-1.325}$	$1.549^{+0.195}_{-0.454}$	$0.110^{+0.603}_{-0.030}$
	+4%/-5%	+13%/-2%	+94%/-94%	+17%/-49%	+13%/-29%	+549%/-28%
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 003864443-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$22.56^{+22.38}_{-16.17}$	4418^{+363}_{-528}	5158^{+22255}_{-26799}	$1.482^{+109.776}_{-76.152}$
Alt.	0 ± 1049	$43.66^{+30.06}_{-24.17}$	4425^{+368}_{-573}	-3928^{+956}_{-436}	$0.001^{+0.200}_{-0.219}$

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 $A_{obs} \gg 1.0$

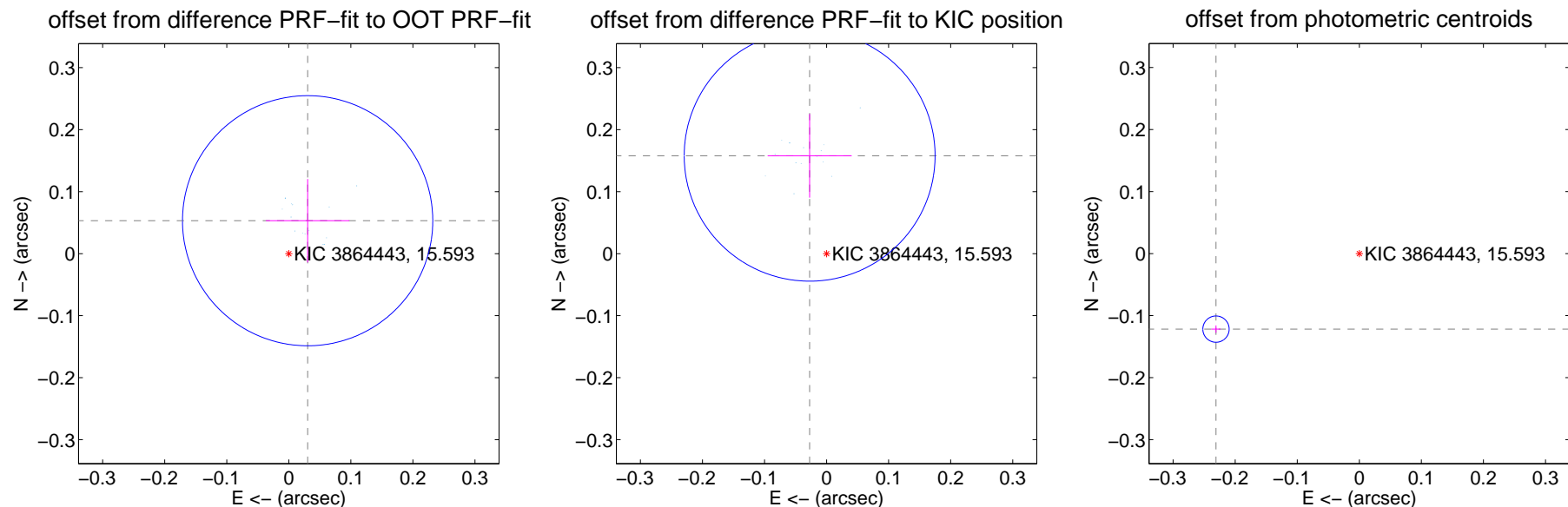
DV Centroid Data

Supplemental centroid analysis for 003864443-02. Kepler magnitude: 15.59. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

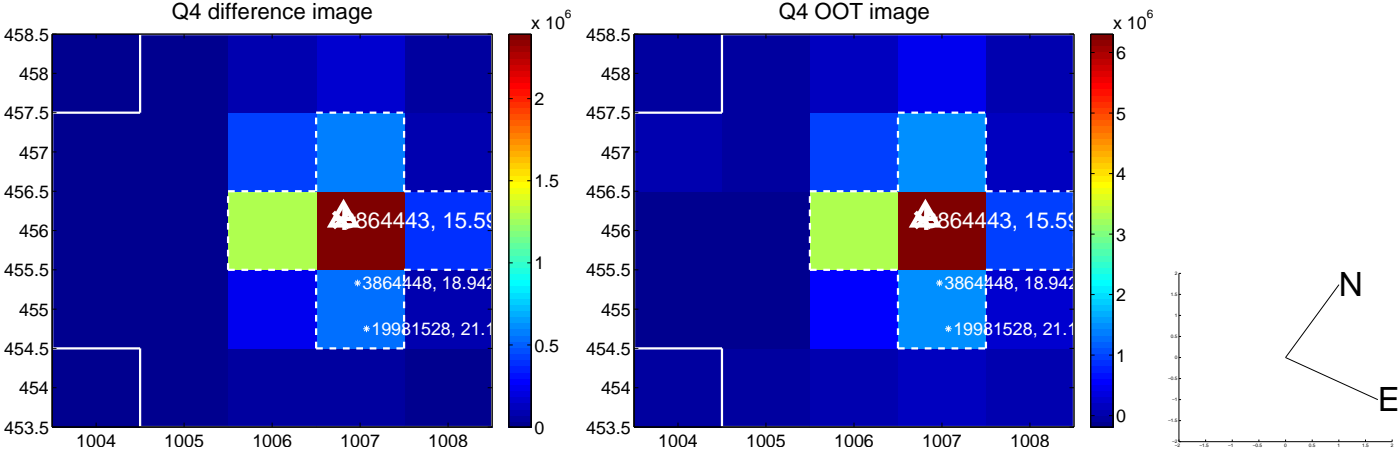
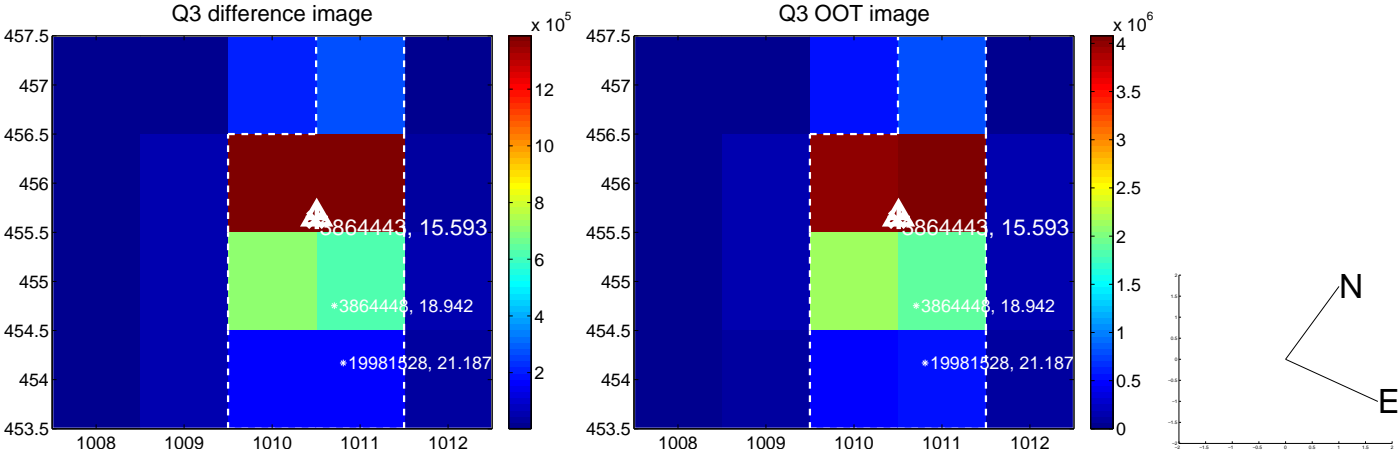
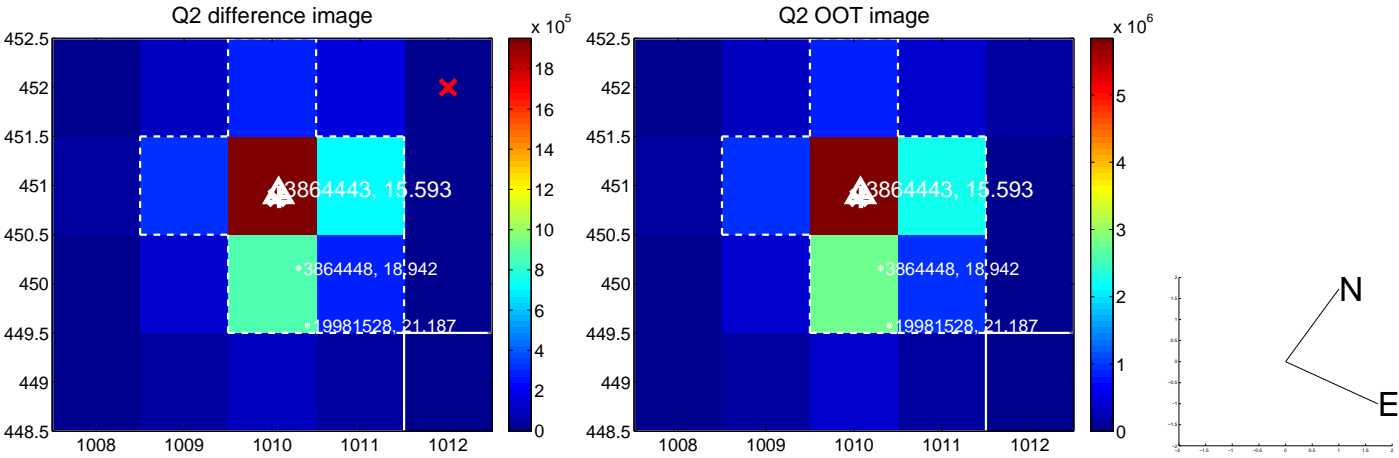
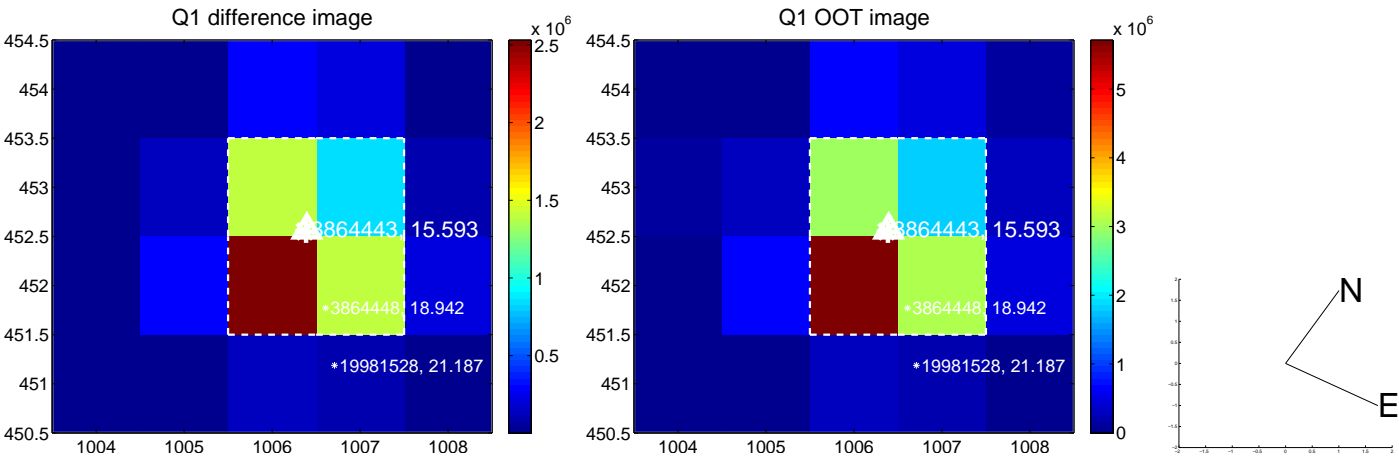
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.061 ± 0.067	0.91	-0.030 ± 0.067	0.053 ± 0.067
PRF-fit source offset from KIC position	0.160 ± 0.067	2.38	0.027 ± 0.068	0.158 ± 0.067
photometric centroid source offset	0.26 ± 0.01	36.93	0.23 ± 0.01	-0.12 ± 0.01

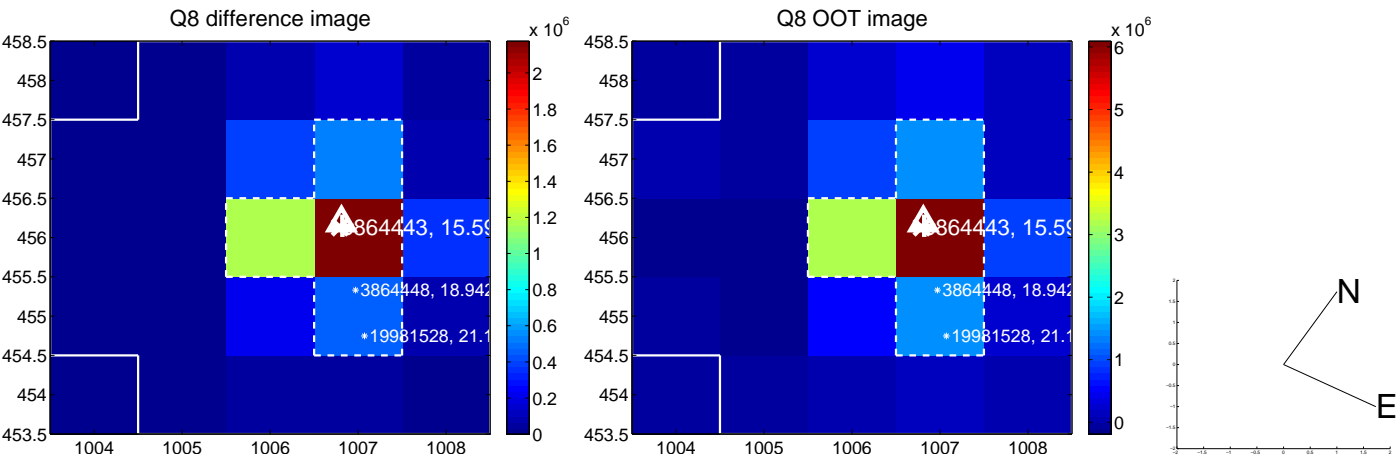
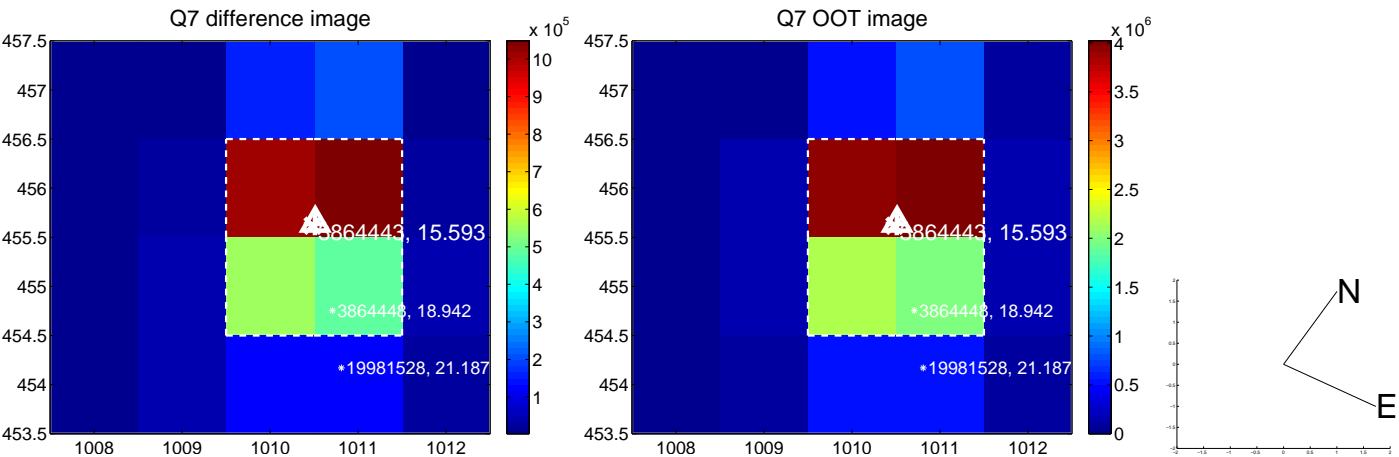
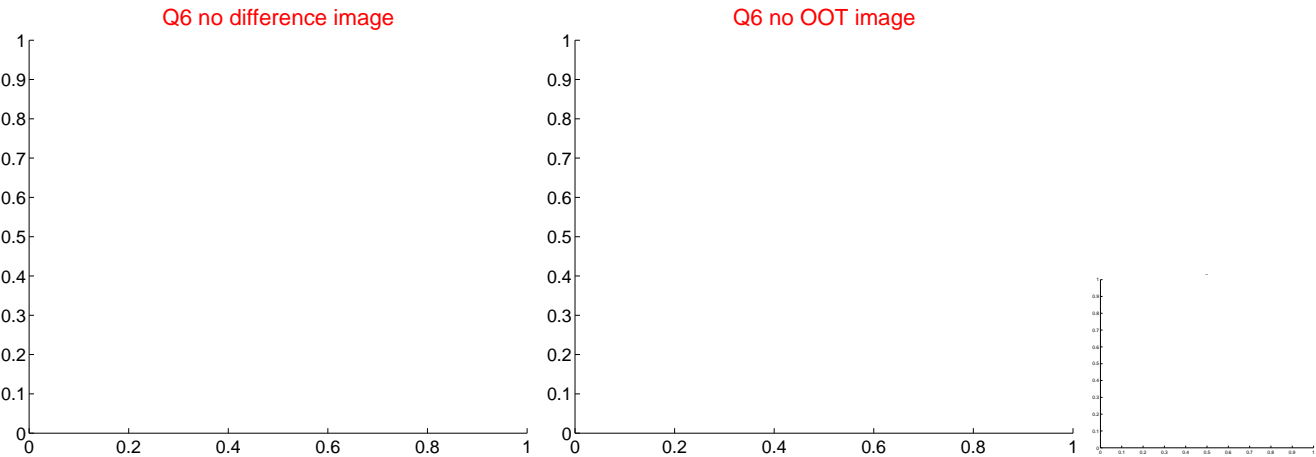
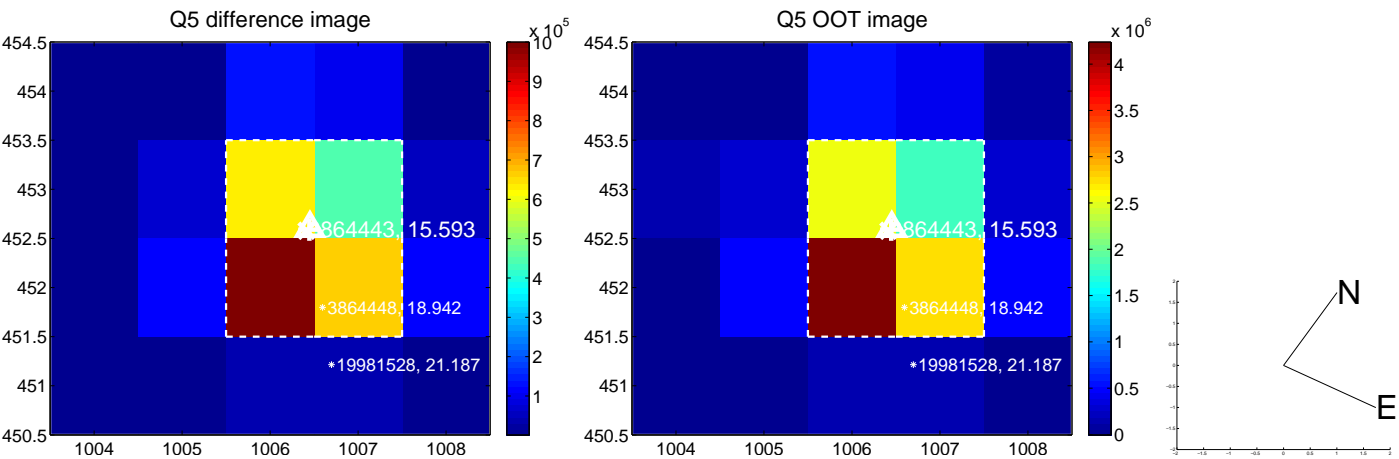


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

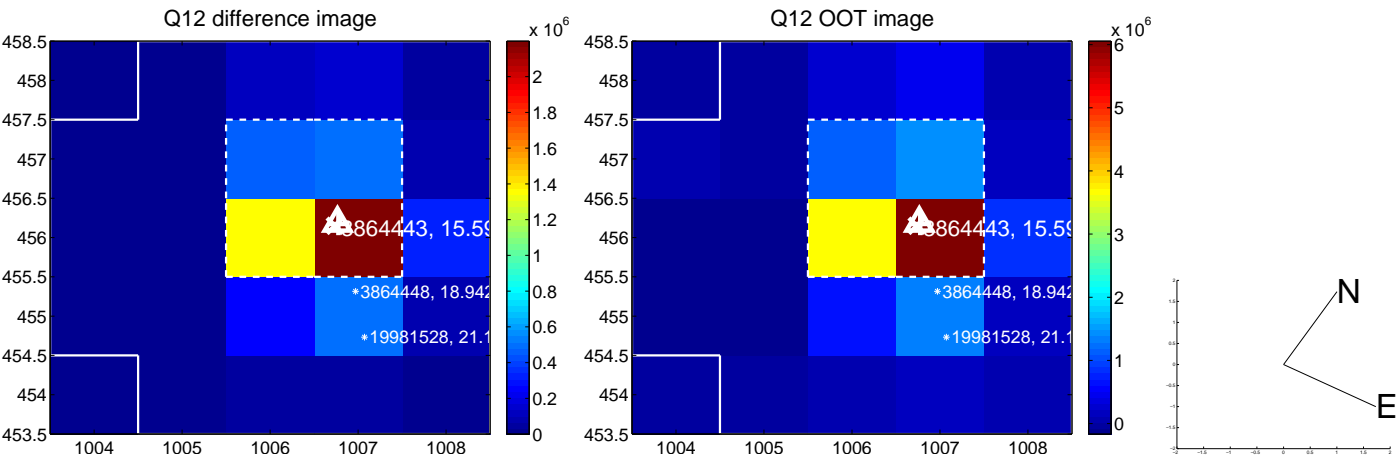
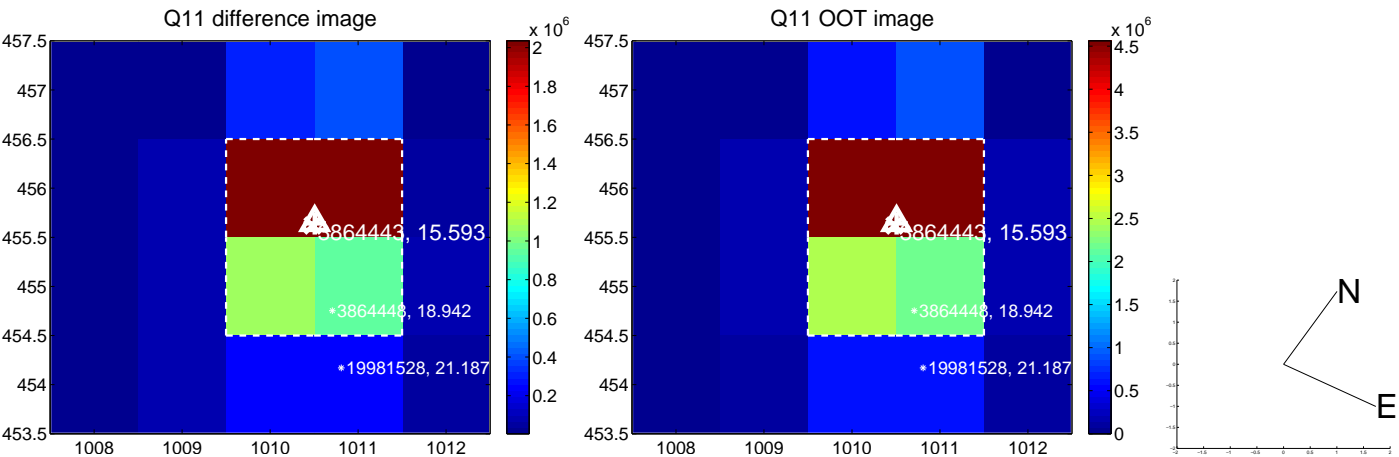
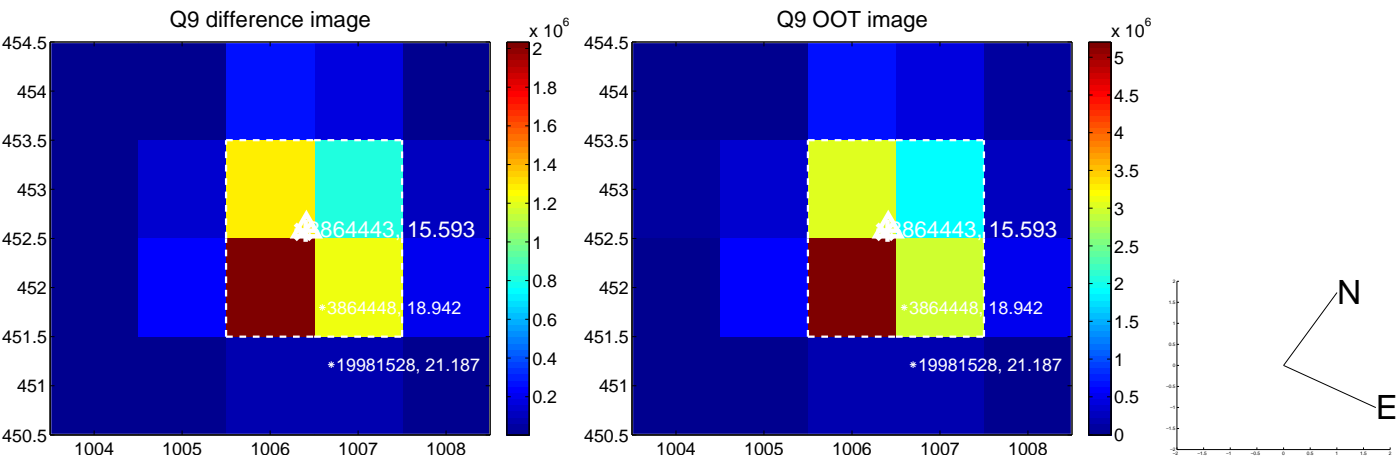
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



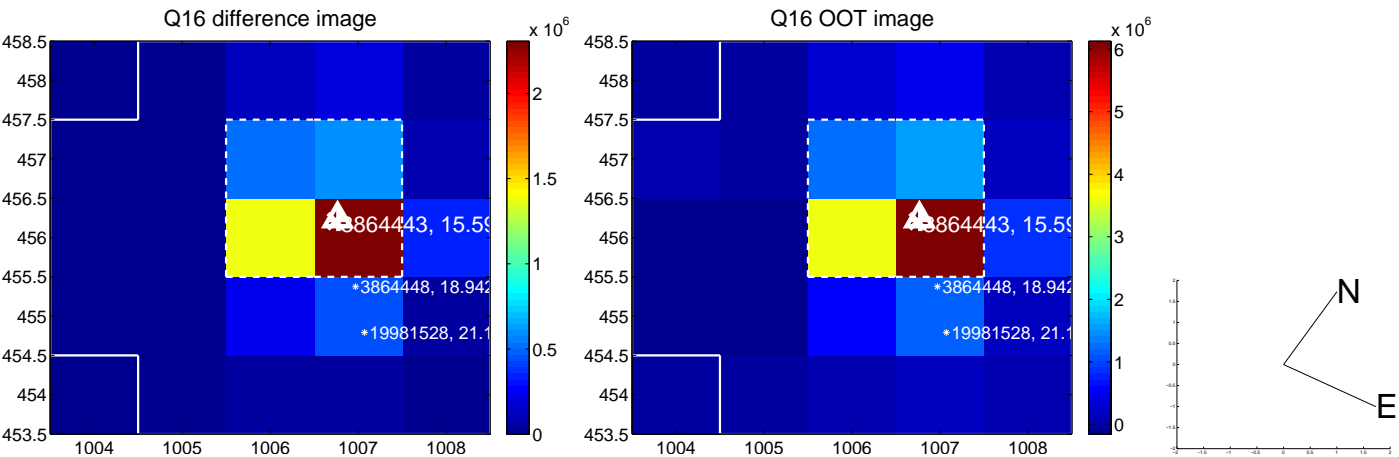
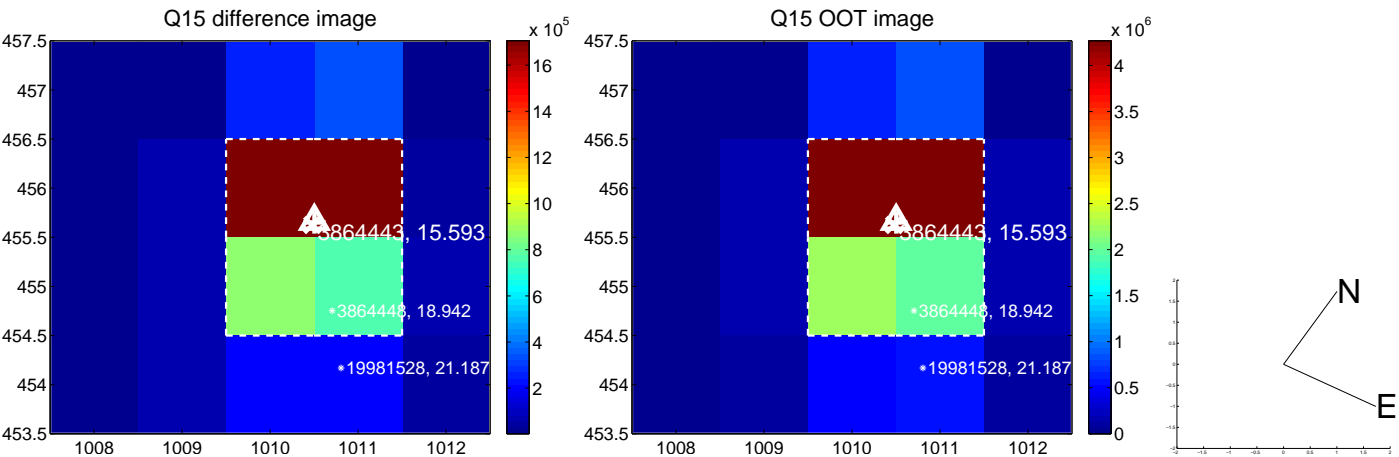
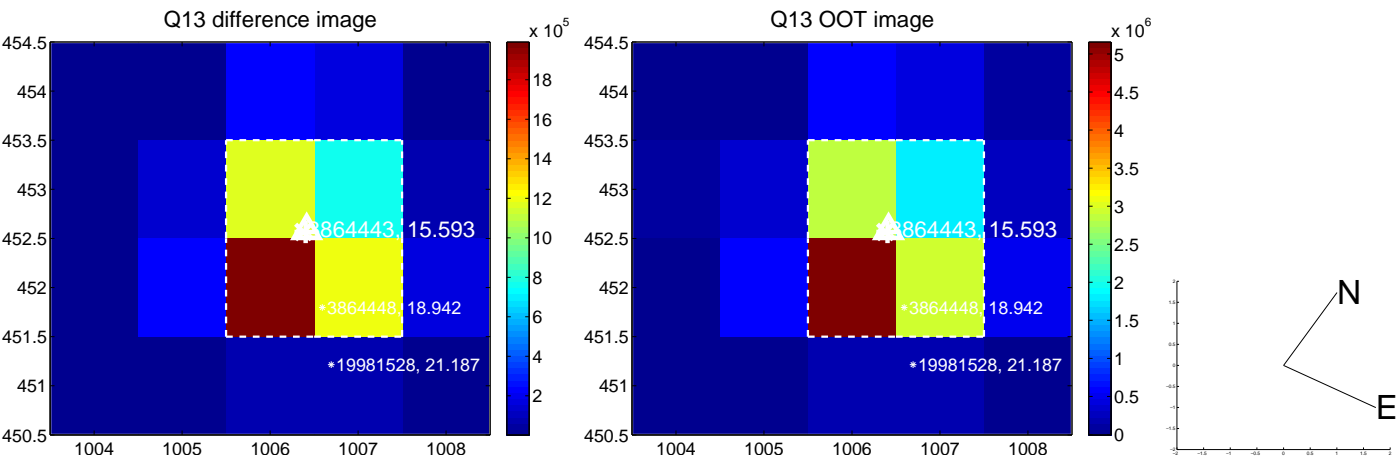
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



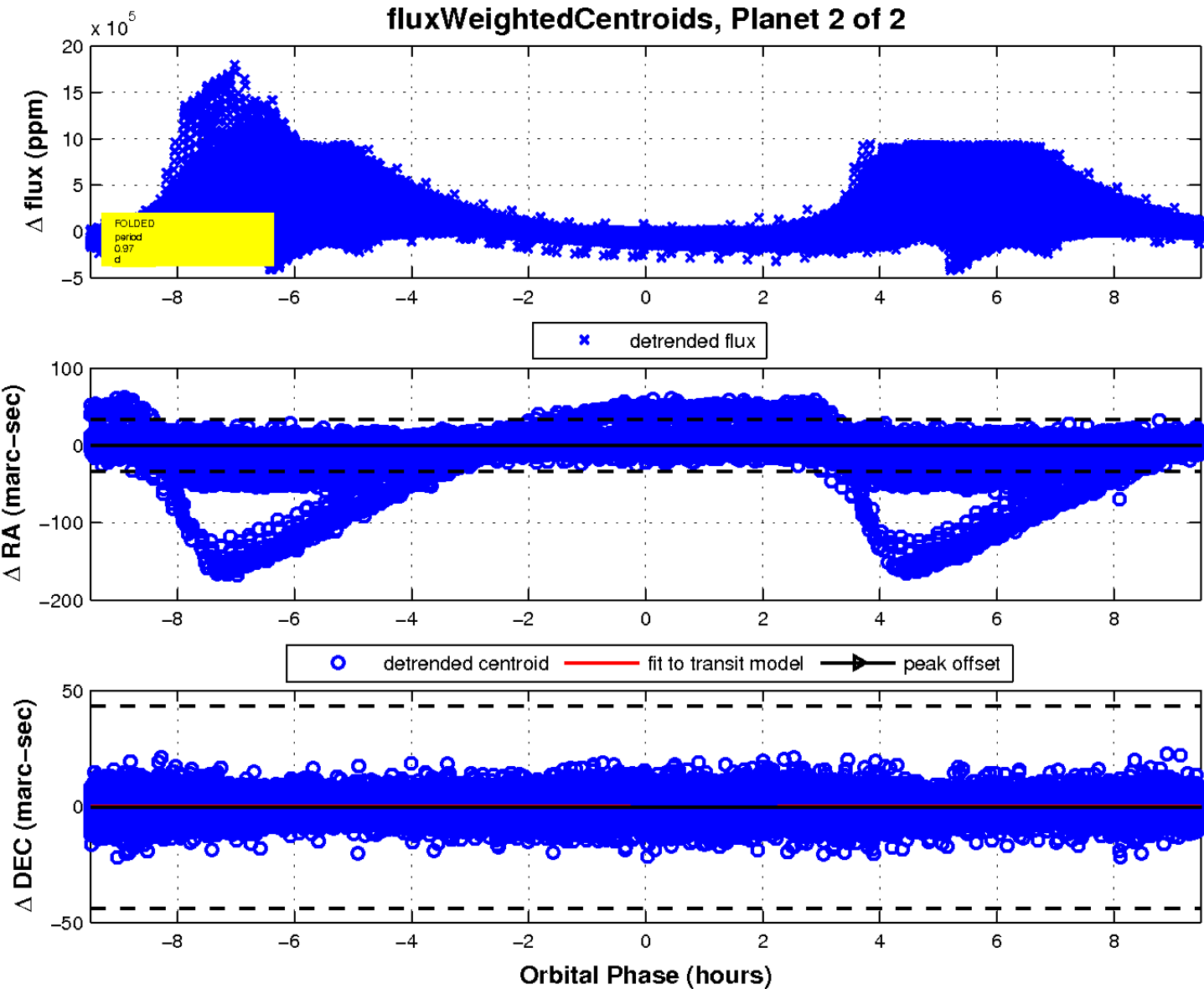
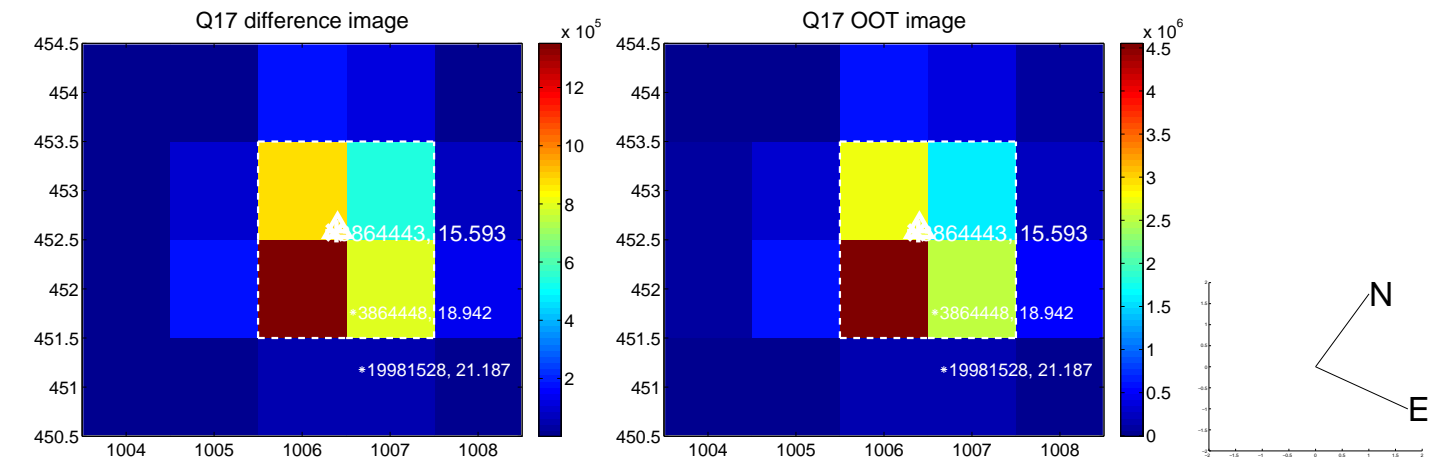
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

