

KIC 003957739

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})
003957739-01	OBS	No	2.633486	132.142693	1106.3	8.567	61.8	36.4	3.16	4718	12.95	3197.61
003957739-02	OBS	No	2.633567	133.929458	812.9	21.559	19.1	17.4	3.16	4718	10.47	3197.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003957739-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003957739-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

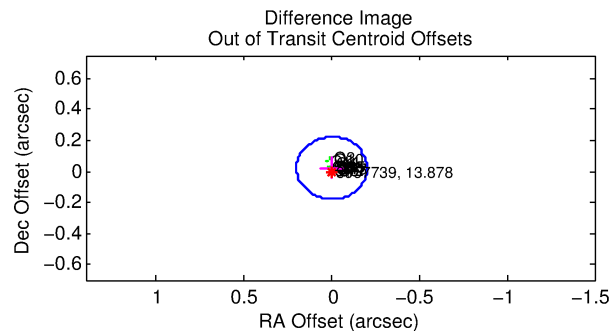
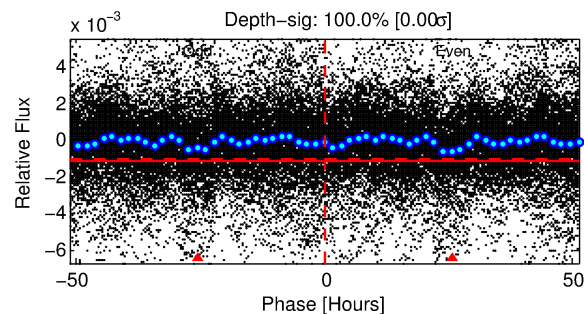
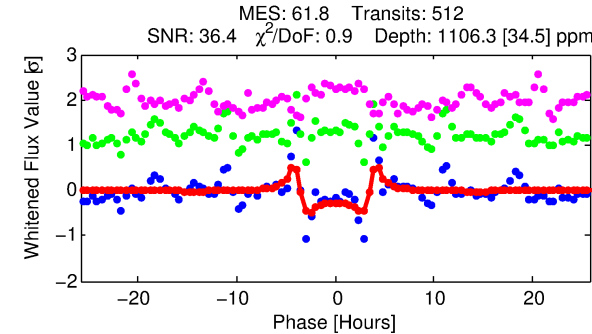
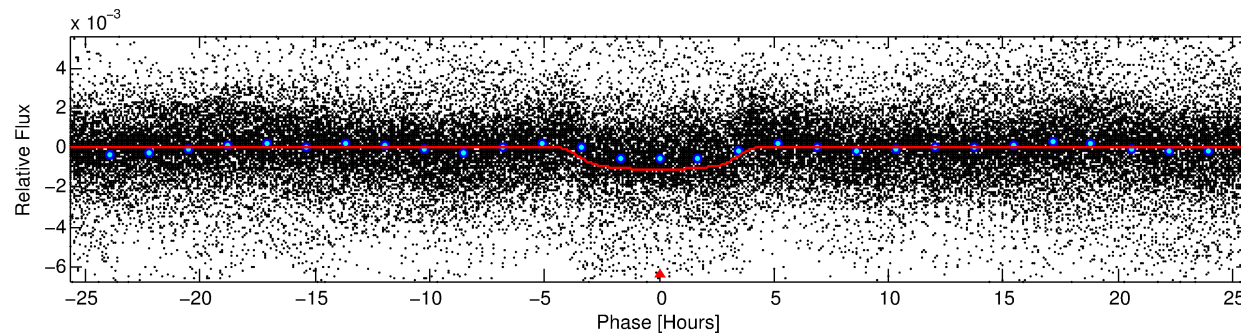
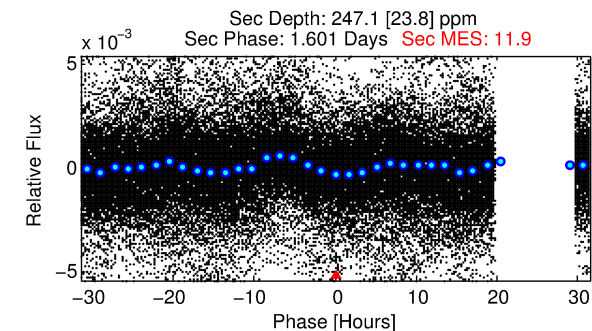
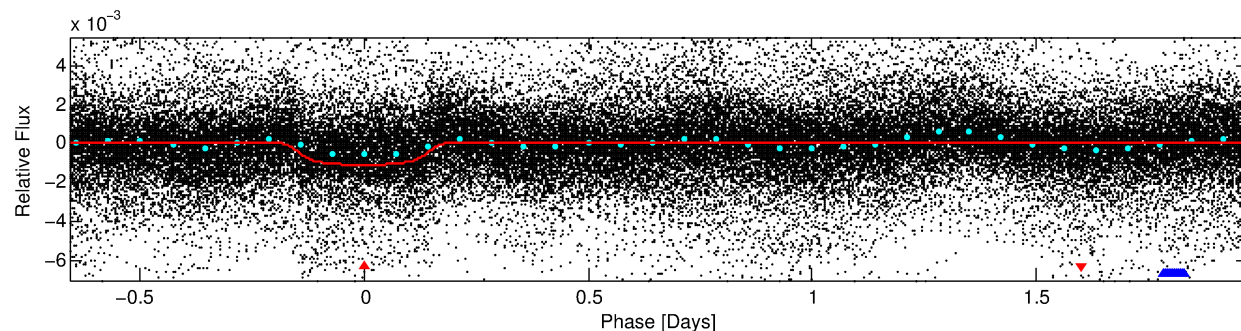
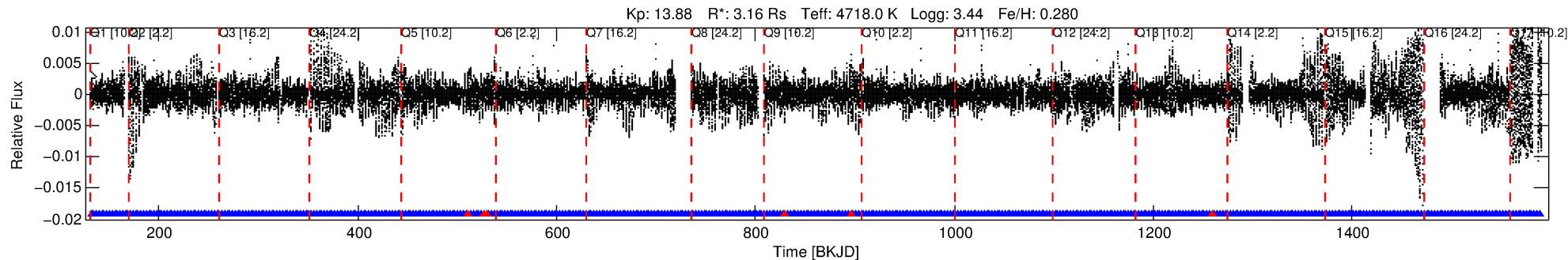
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003957739-01

No Significant Match Found

DV One-Page Summary

KIC: 3957739 Candidate: 1 of 2 Period: 2.633 d



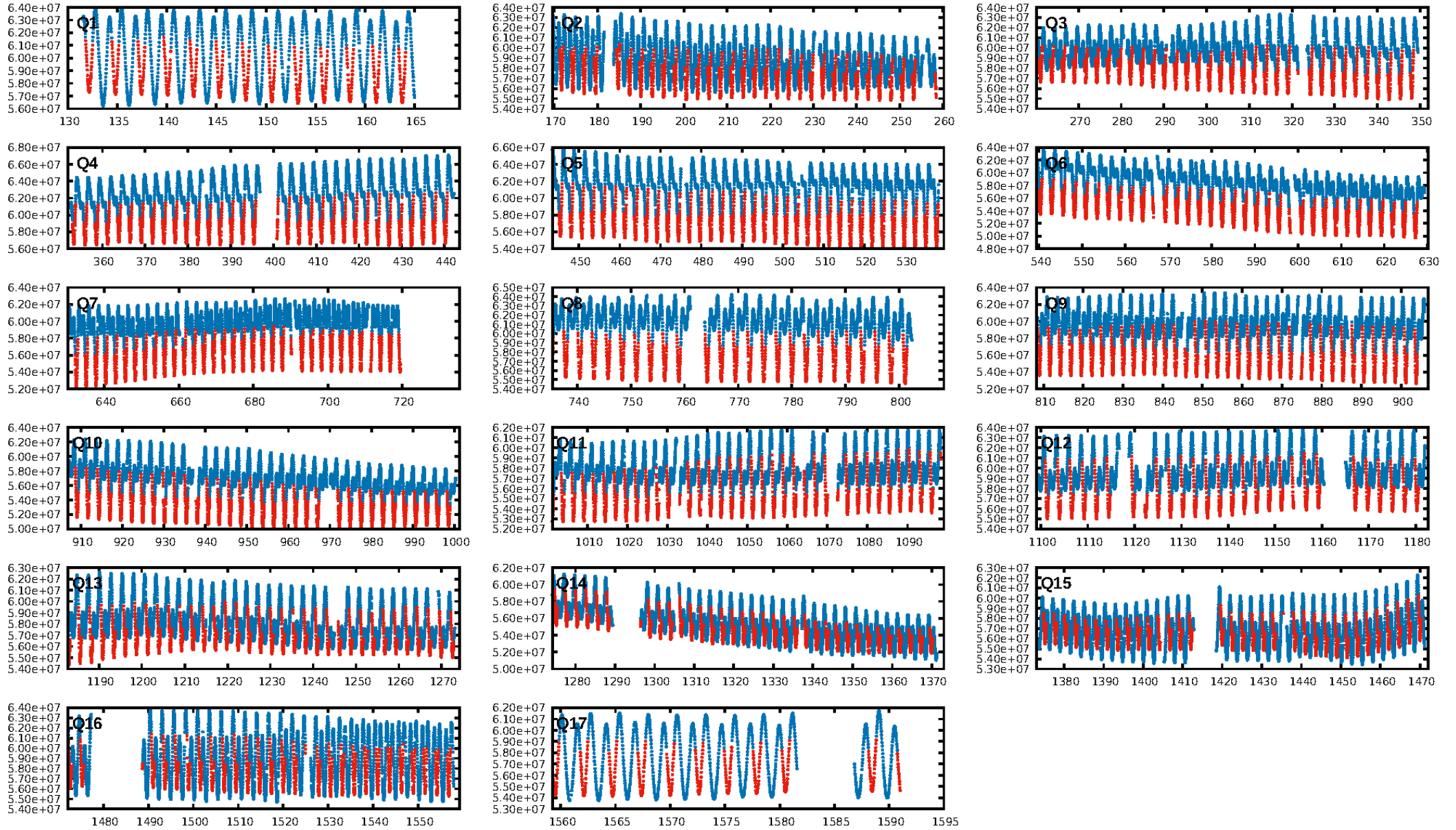
DV Fit Results:

Period = 2.63349 [0.00001] d
Epoch = 132.1427 [0.0011] BKJD
Rp/R* = 0.0376 [0.0006]
a/R* = 1.54 [0.02]
b = 0.90 [0.01]
Seff = 3197.62 [847.71]
Teq = 1917 [127] K
Rp = 12.95 [3.00] Re
a = 0.0372 [0.0069] AU
Ag = 1.12 [0.31] [0.39σ]
Teff = 3052 [90] K [7.28σ]

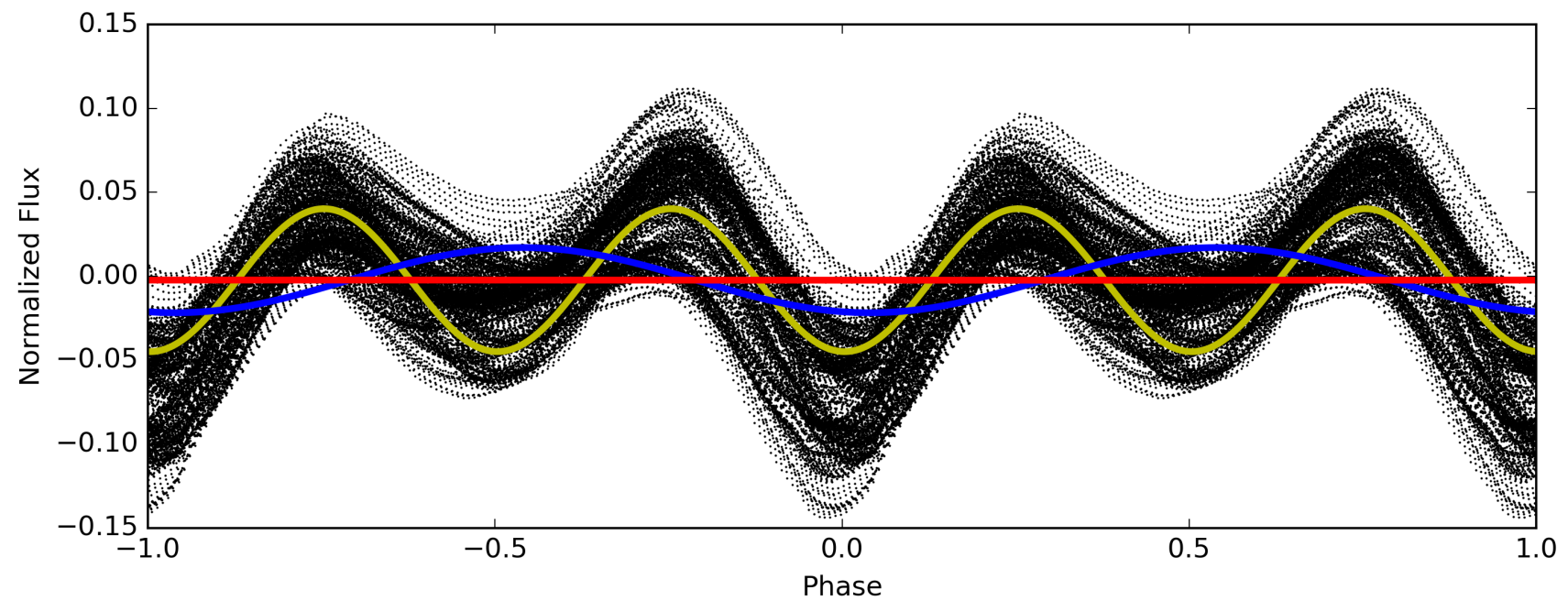
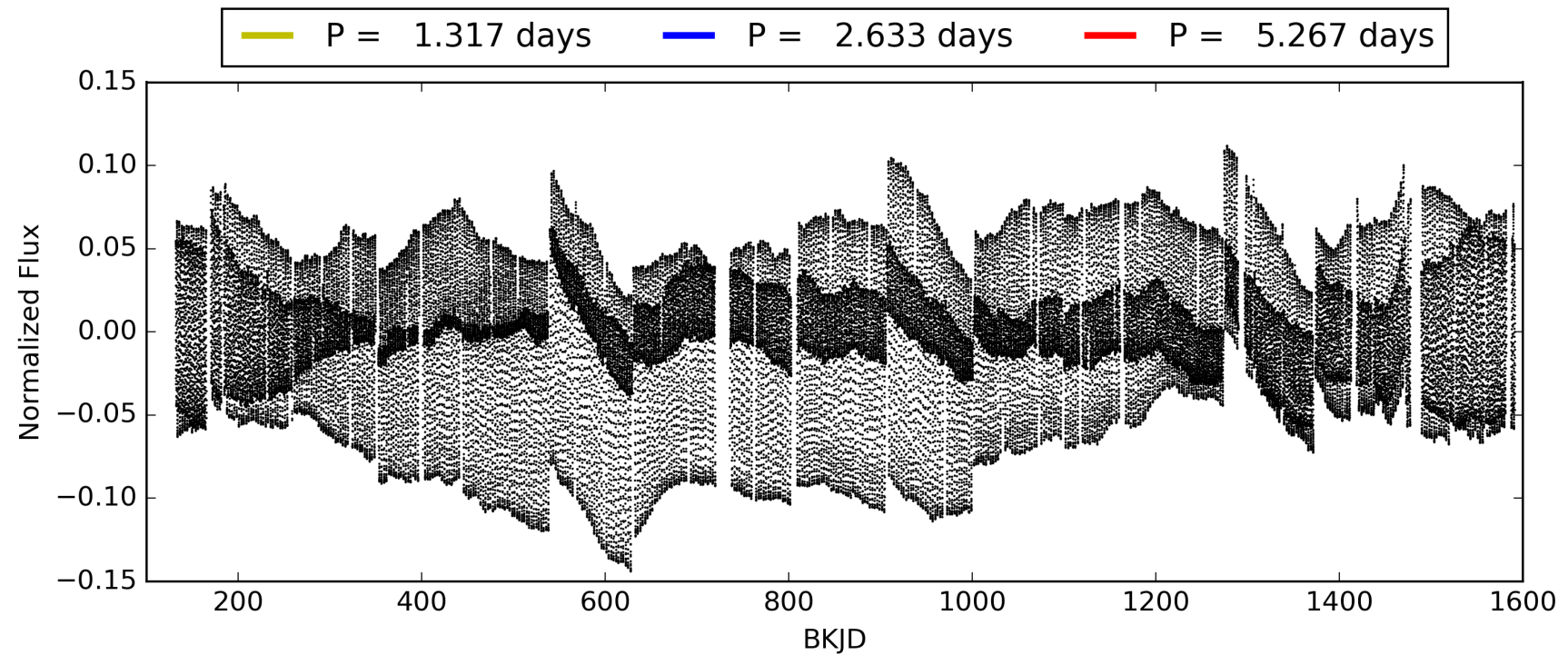
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [482/488]
GhostDiagnostic-chr: 0.9436
Centroid-sig: 4.2%
Centroid-so: 0.134 arcsec [2.56σ]
OotOffset-rm: 0.023 arcsec [0.34σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.069 arcsec [1.01σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 003957739-01, PDC Light Curves

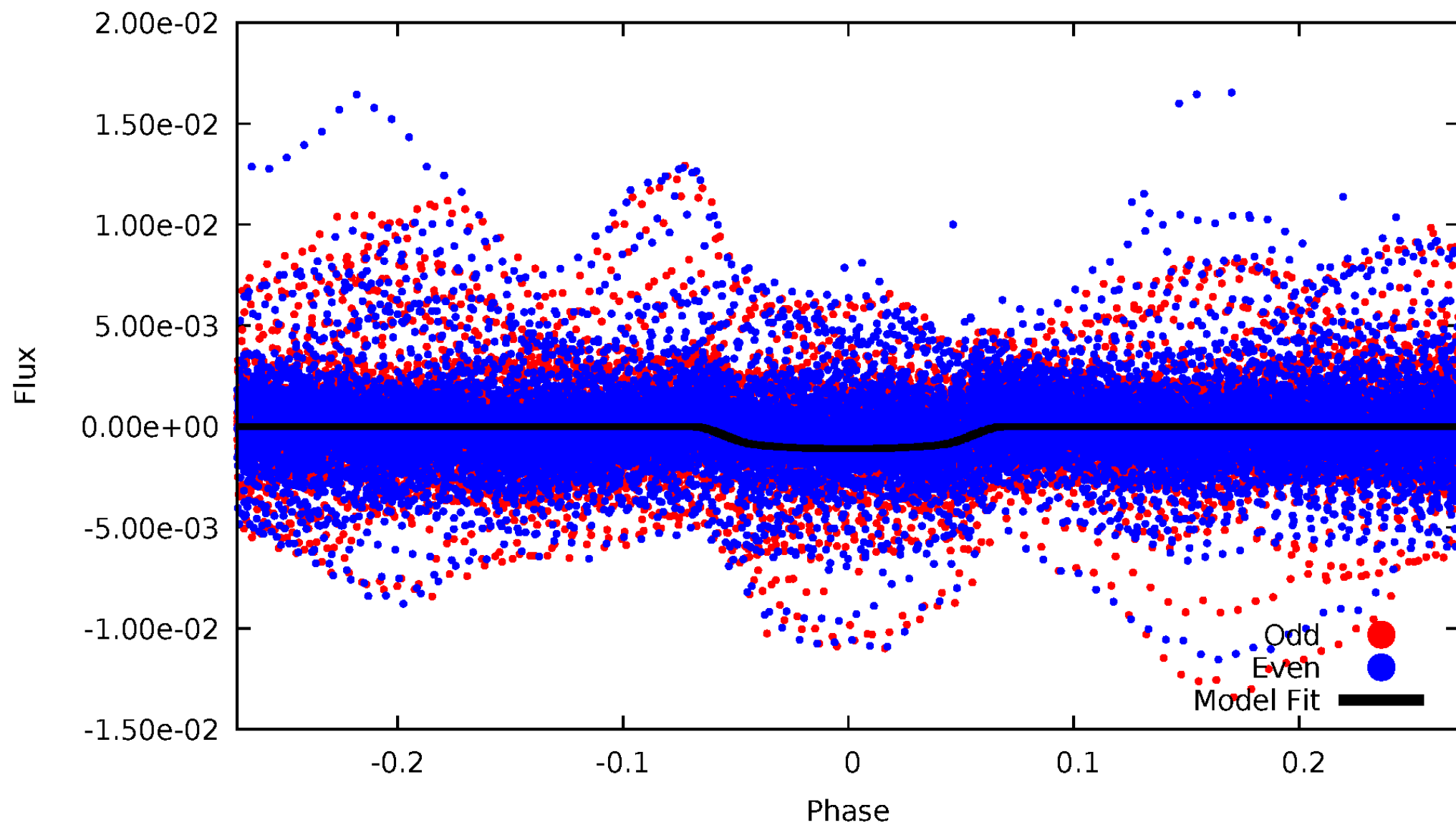


TCE 003957739-01



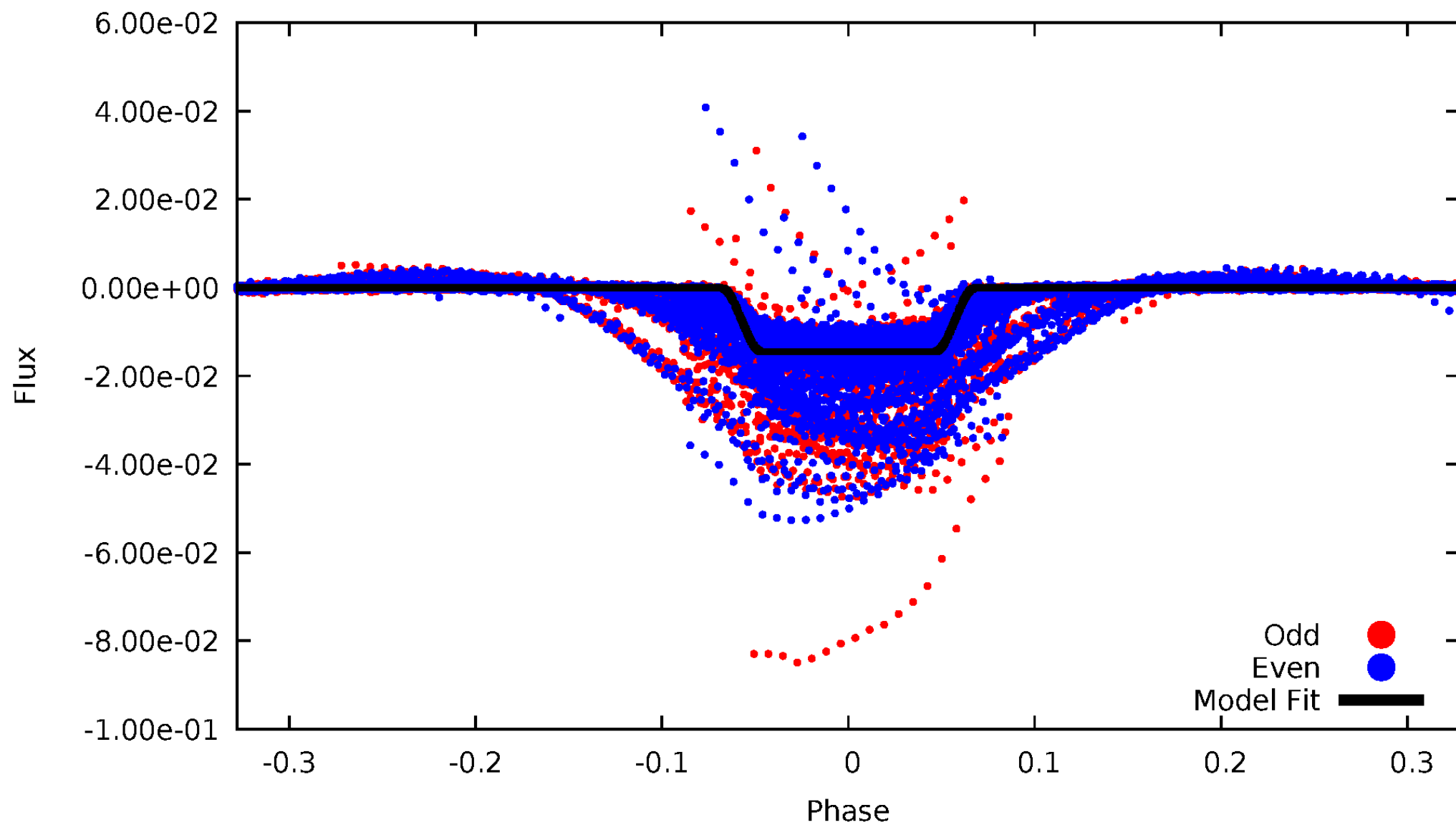
DV Odd/Even

TCE 003957739-01



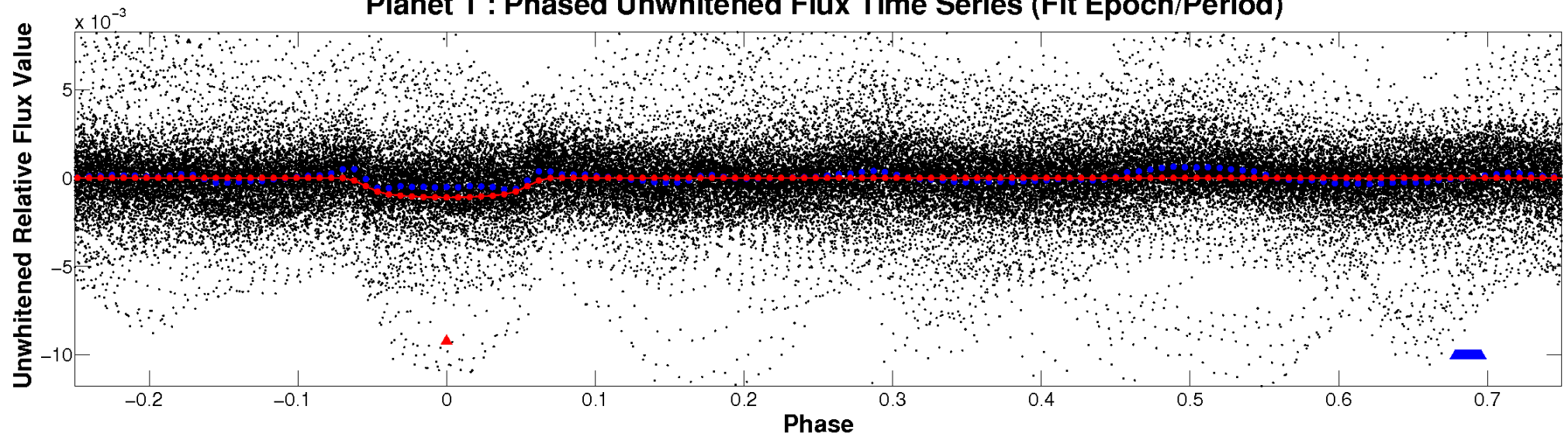
ALT Odd/Even

TCE 003957739-01

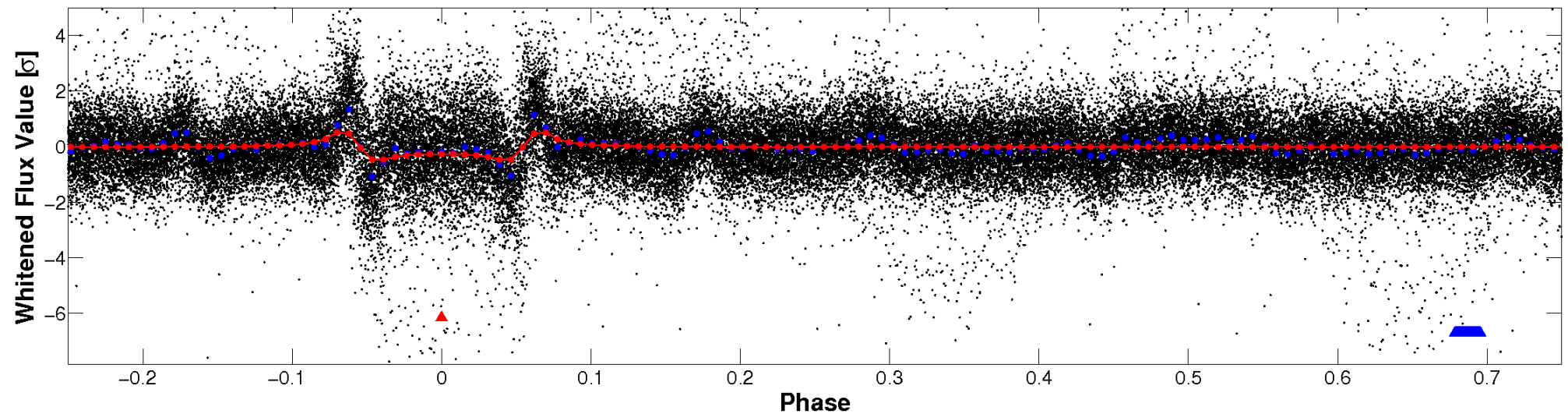


Non-Whitened Vs. Whitened Light Curve

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

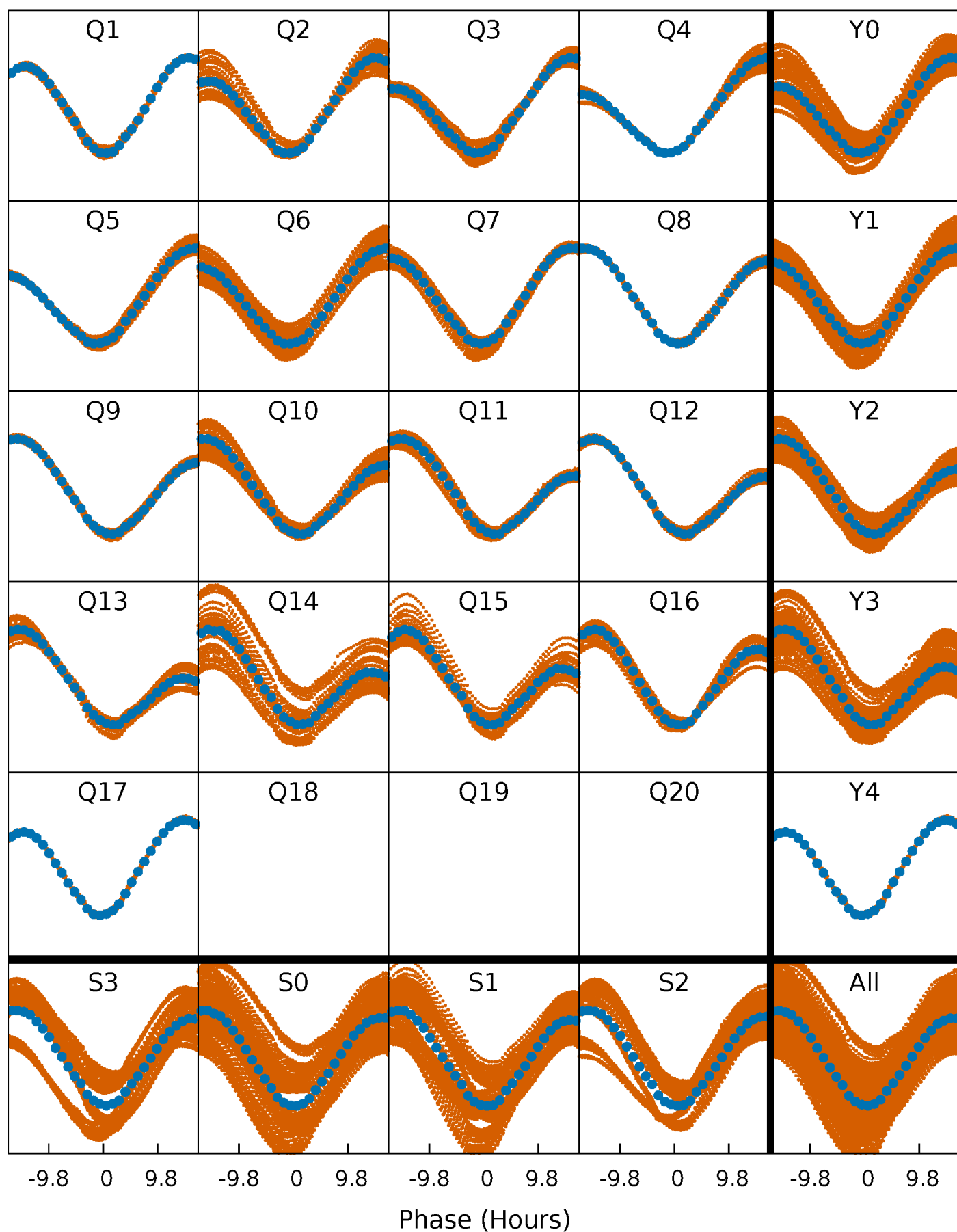


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



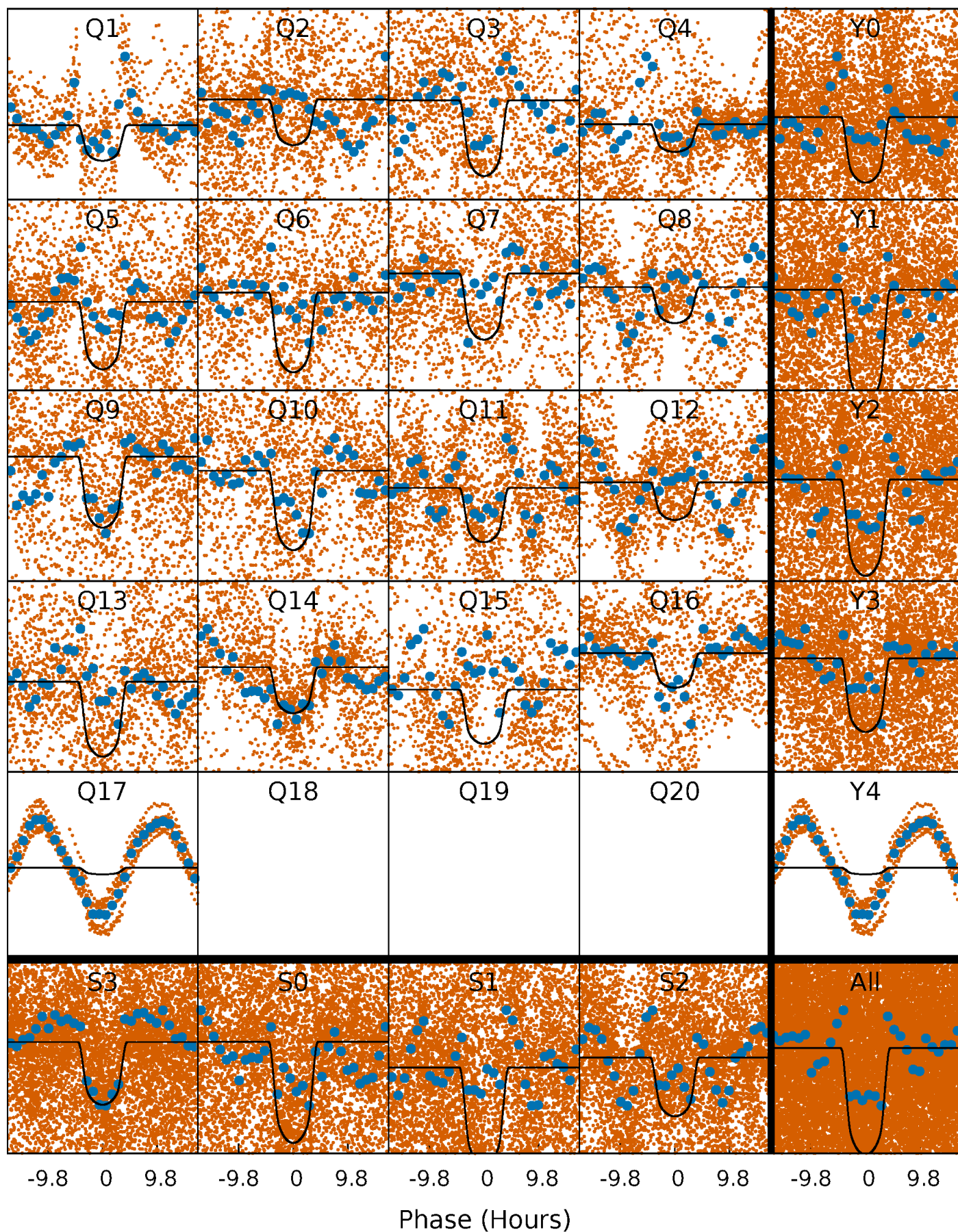
PDC Quarter-Phased Transit Curves

TCE 003957739-01 P= 2.633486 Days $T_0=132.142693$ (BKJD)



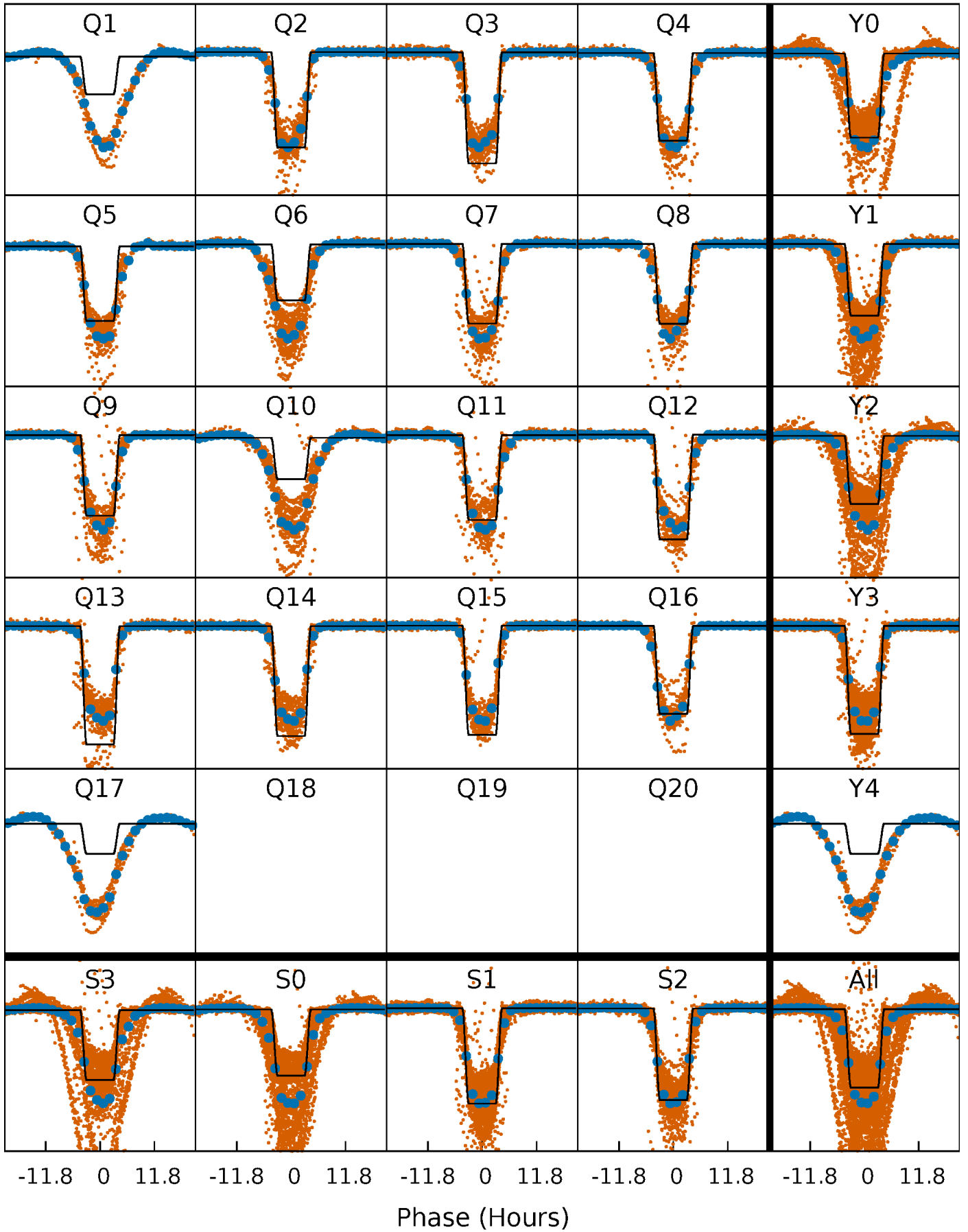
DV Quarter-Phased Transit Curves

TCE 003957739-01 P= 2.633486 Days $T_0=132.142693$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

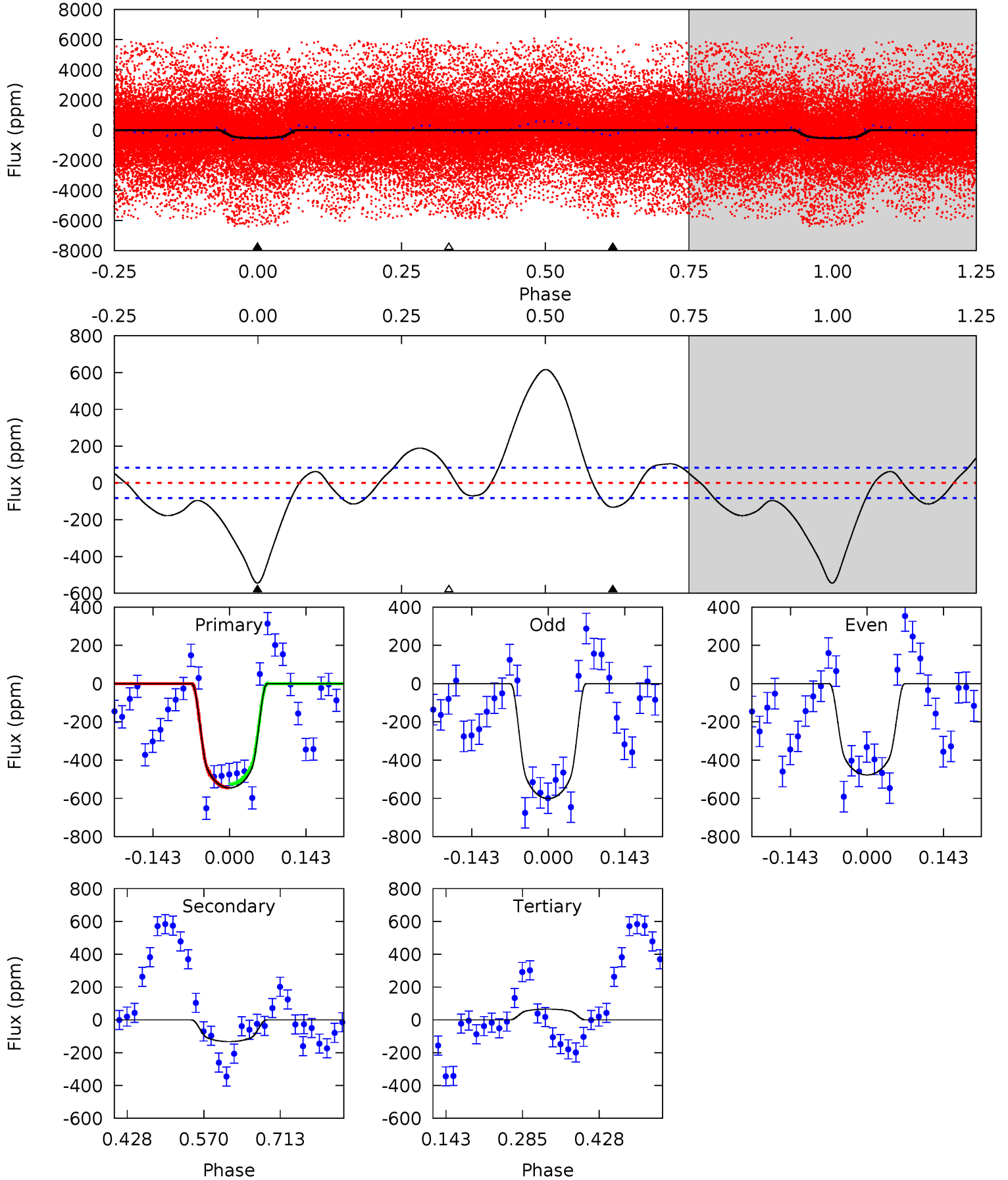
TCE 003957739-01 P= 2.633596 Days $T_0=132.111085$ (BKJD)



DV Model-Shift Uniqueness Test

003957739-01, P = 2.633486 Days, E = 129.509207 Days

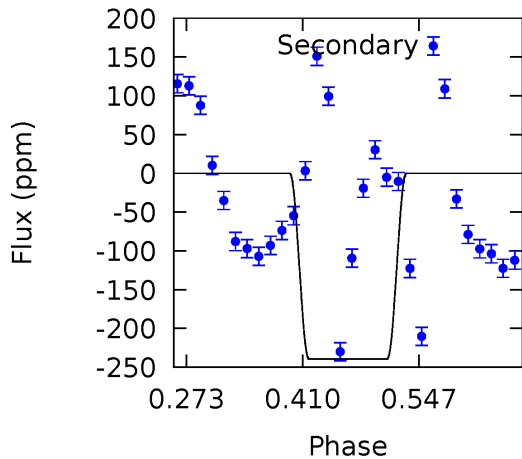
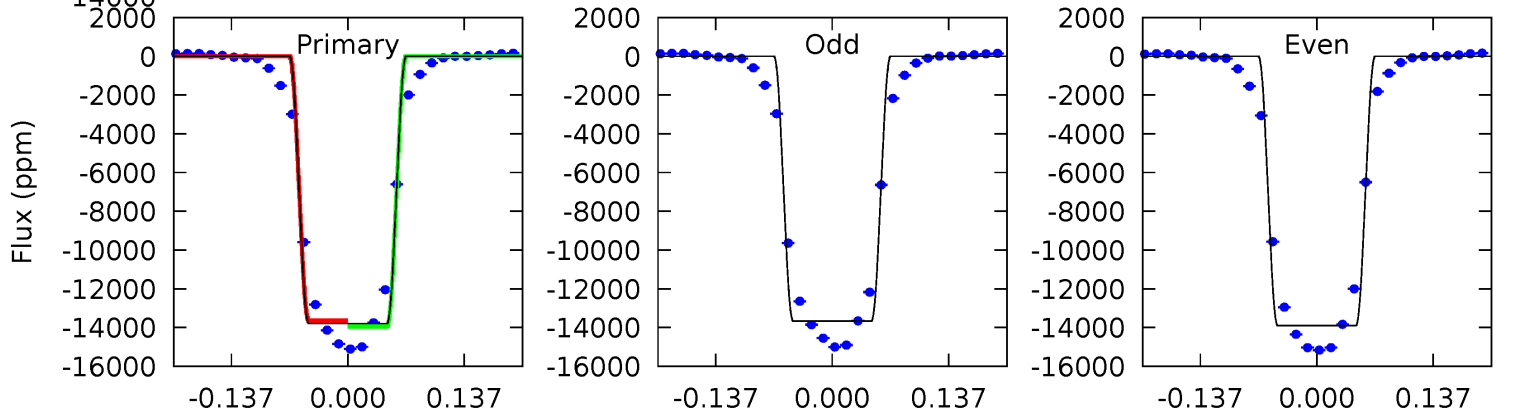
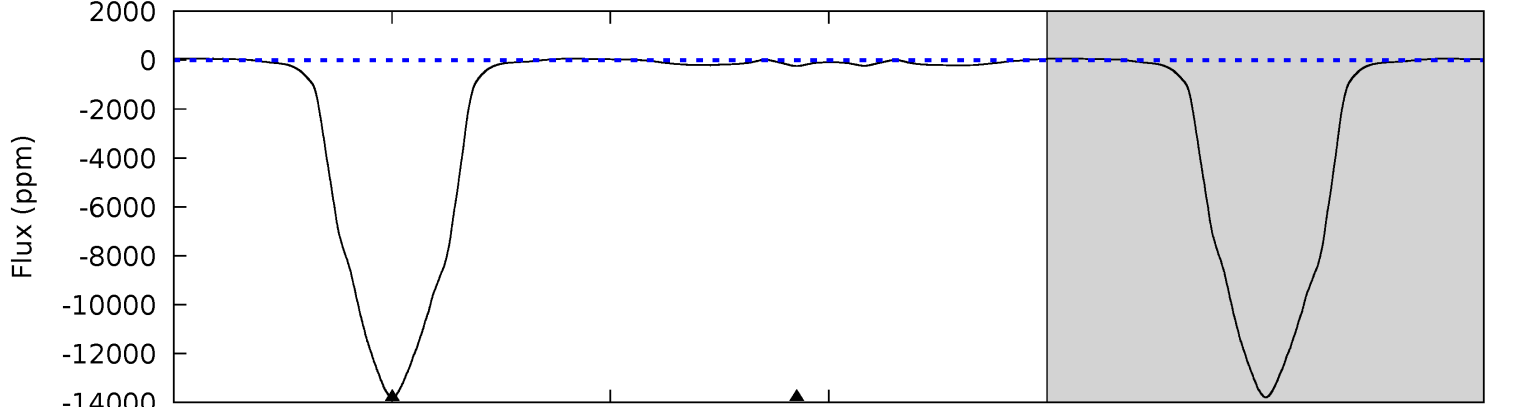
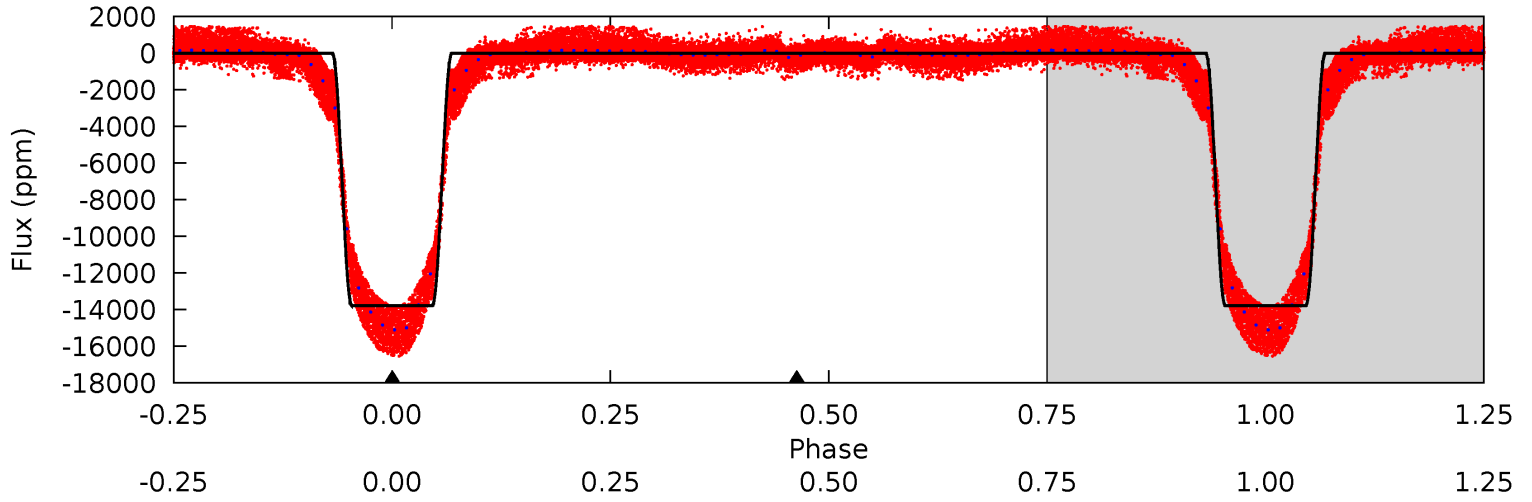
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.7	7.21	-3.56	0	4.49	1.47	8.56	33.2	29.7	10.8	7.21	3.42	0.94	0.53	0.56



Alt Model-Shift Uniqueness Test

003957739-01, P = 2.633596 Days, E = 129.477489 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2285	39.6	0	0	4.50	1.49	15.5	2285	2285	39.6	39.6	19.3	1.19	0.00	25.0



Stellar Parameters For KIC 003957739

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4718^{+70}_{-42}	$3.435^{+0.135}_{-0.135}$	$0.280^{+0.150}_{-0.100}$	$3.158^{+0.731}_{-0.426}$	$0.991^{+0.195}_{-0.023}$	$0.044^{+0.024}_{-0.018}$
	+1%/-1%	+4%/-4%	+54%/-36%	+23%/-13%	+20%/-2%	+54%/-41%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003957739-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-132 ± 18	$13.04^{+1.75}_{-1.12}$	2678^{+162}_{-119}	2850^{+130}_{-179}	$0.594^{+0.162}_{-0.144}$
Alt.	-239 ± 6	$41.68^{+5.57}_{-3.50}$	2676^{+150}_{-129}	-2692^{+106}_{-117}	$0.107^{+0.021}_{-0.020}$

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 $A_{obs} \gg 1.0$

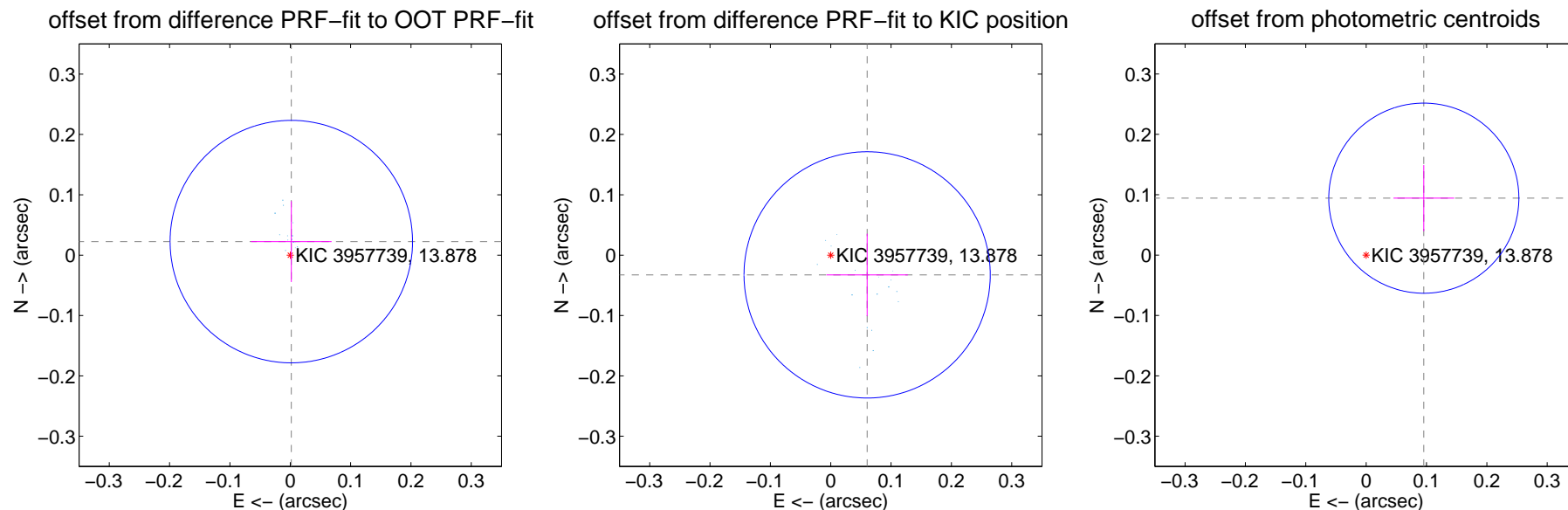
DV Centroid Data

Supplemental centroid analysis for 003957739-01. Kepler magnitude: 13.88. Transit SNR 36.37

There are 17 quarters with good PRF difference image offsets

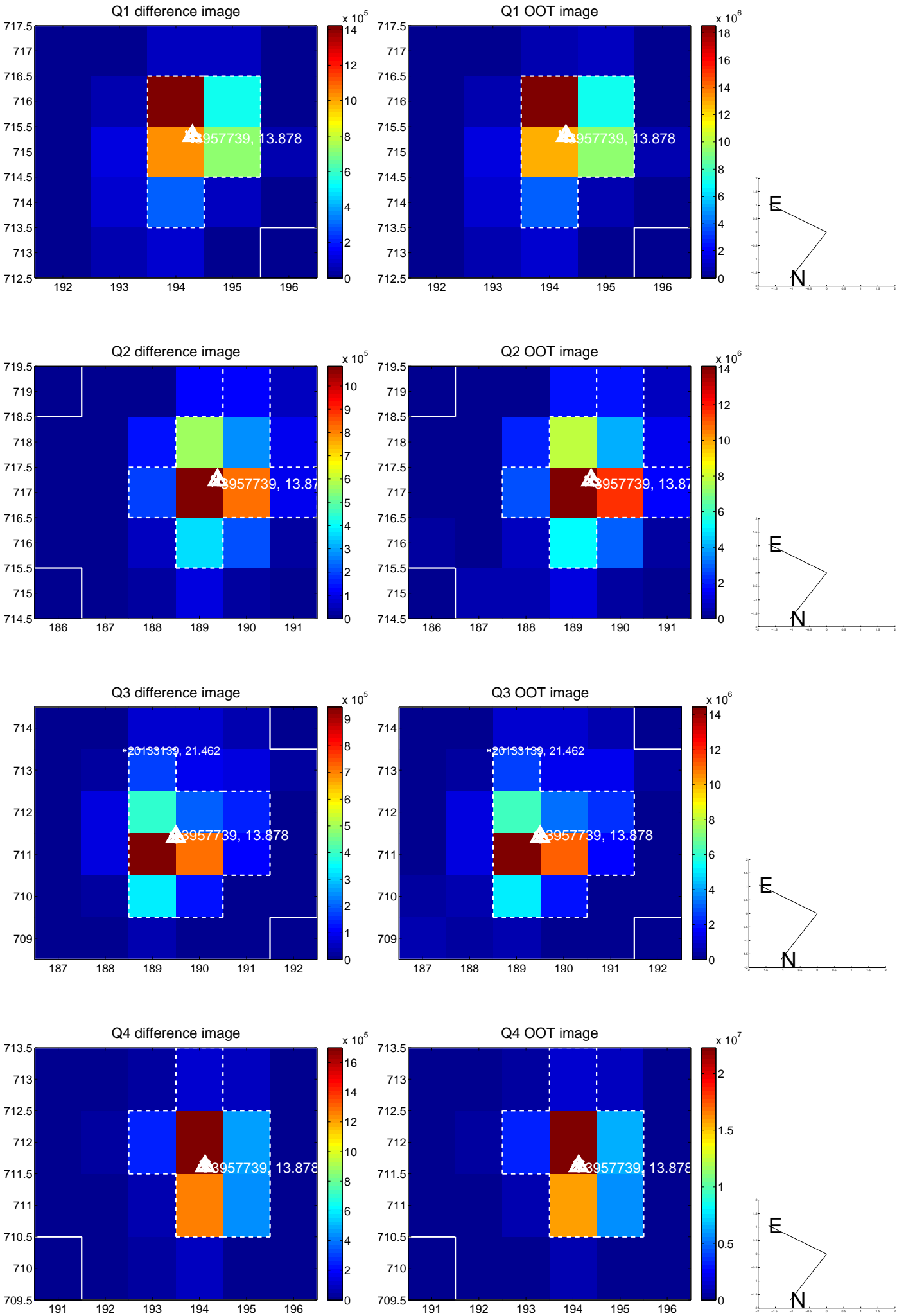
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.023 ± 0.067	0.34	-0.002 ± 0.067	0.022 ± 0.067
PRF-fit source offset from KIC position	0.069 ± 0.068	1.01	-0.060 ± 0.067	-0.033 ± 0.068
photometric centroid source offset	0.13 ± 0.05	2.56	-0.10 ± 0.05	0.09 ± 0.05

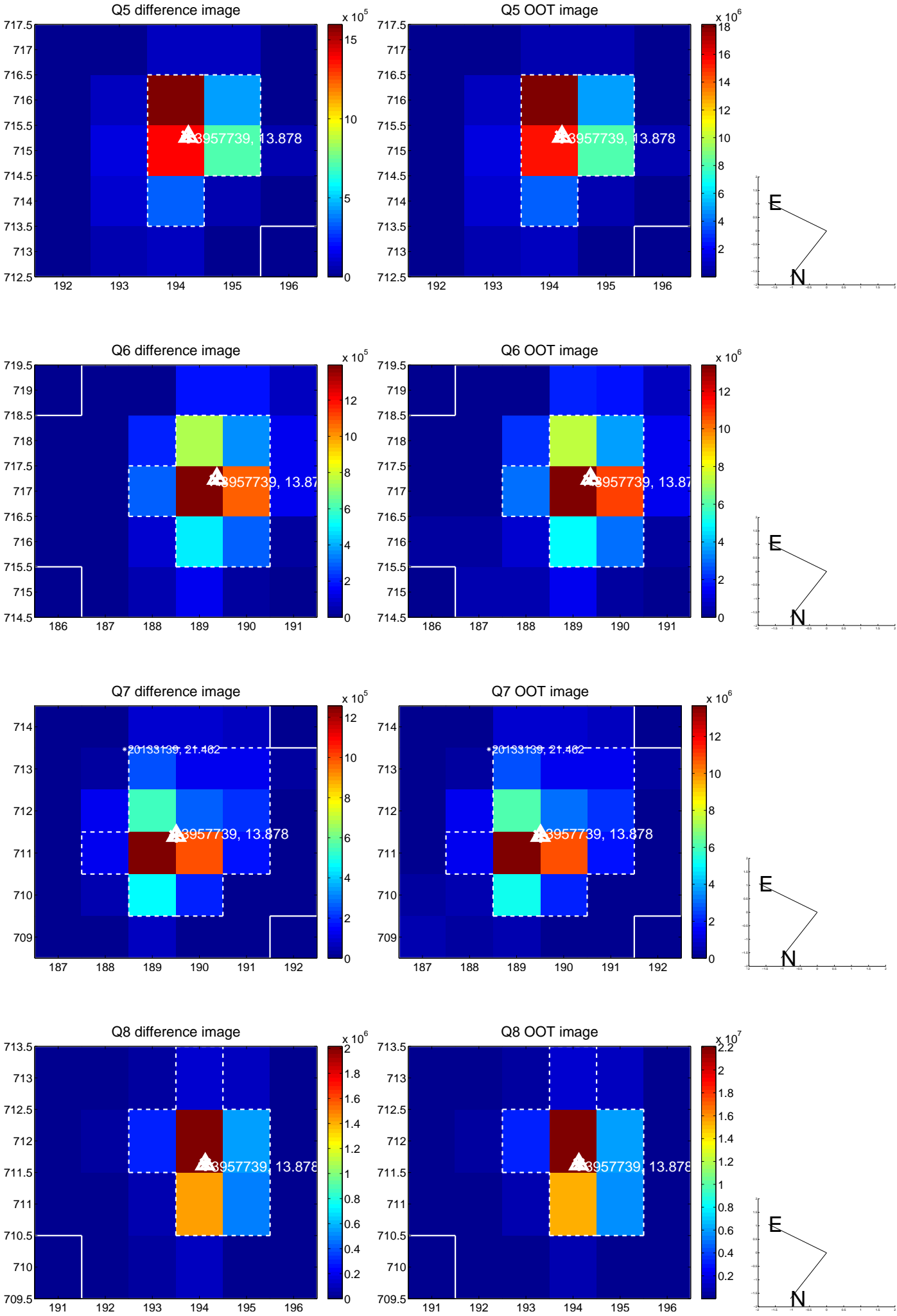


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

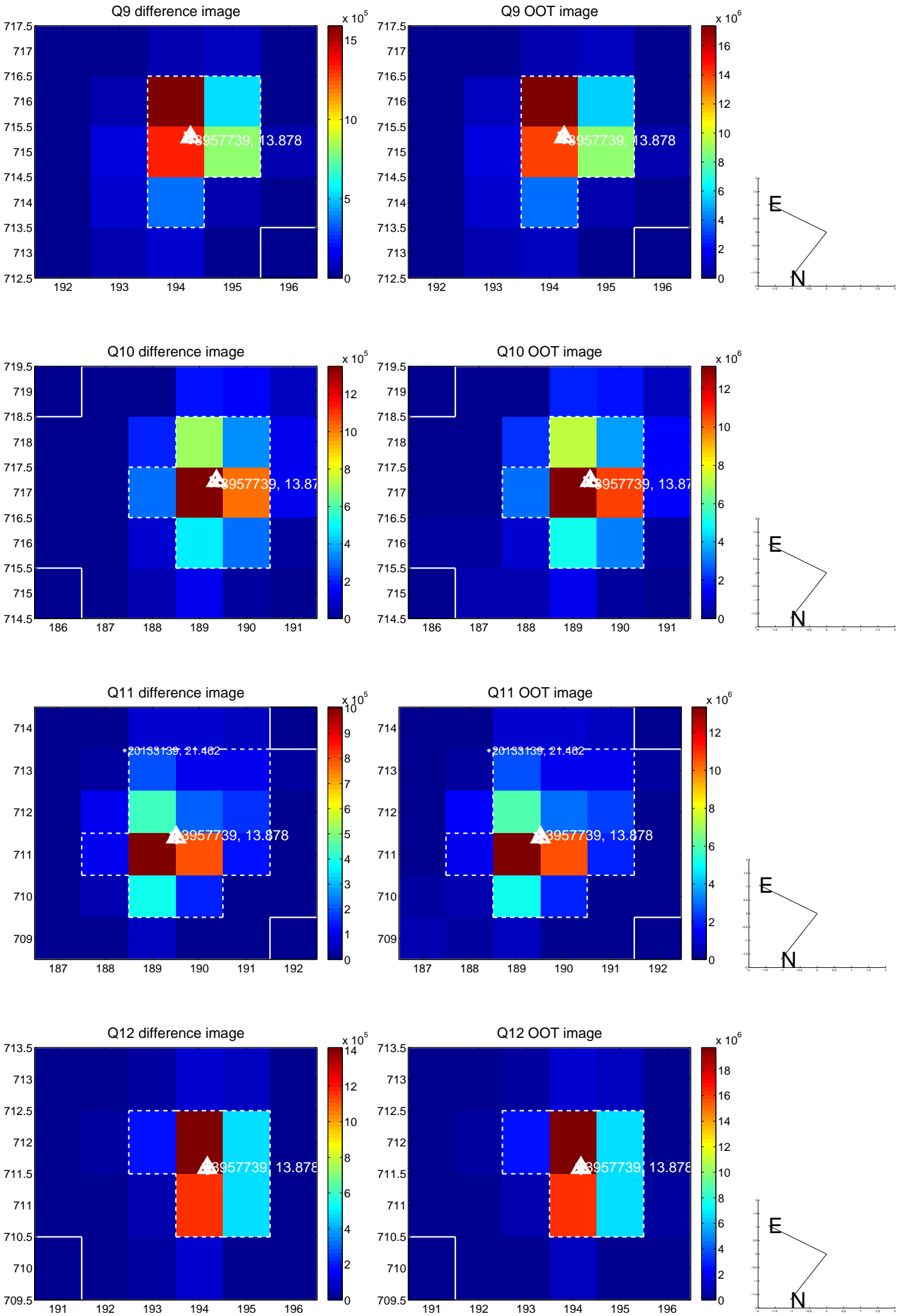
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



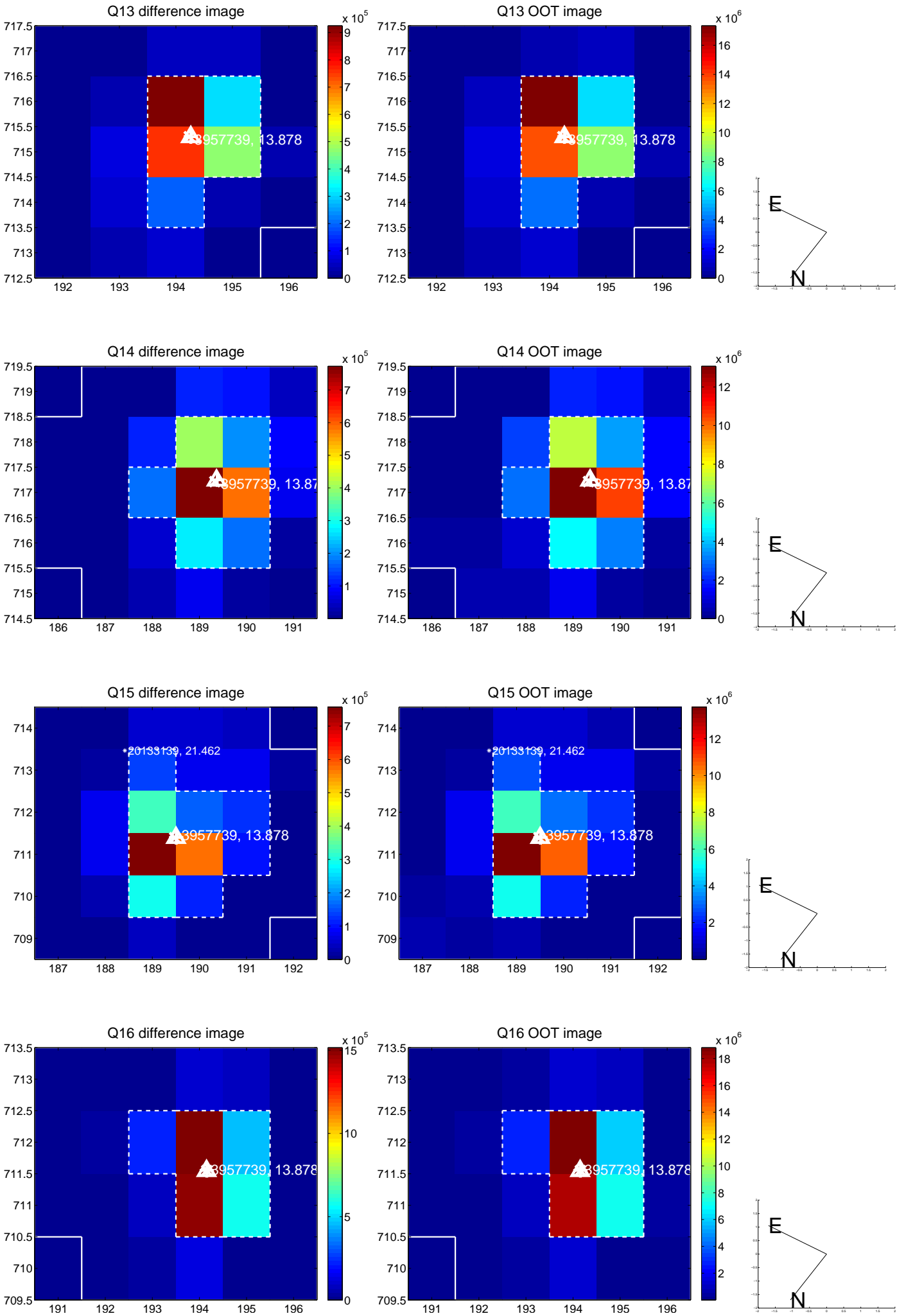
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



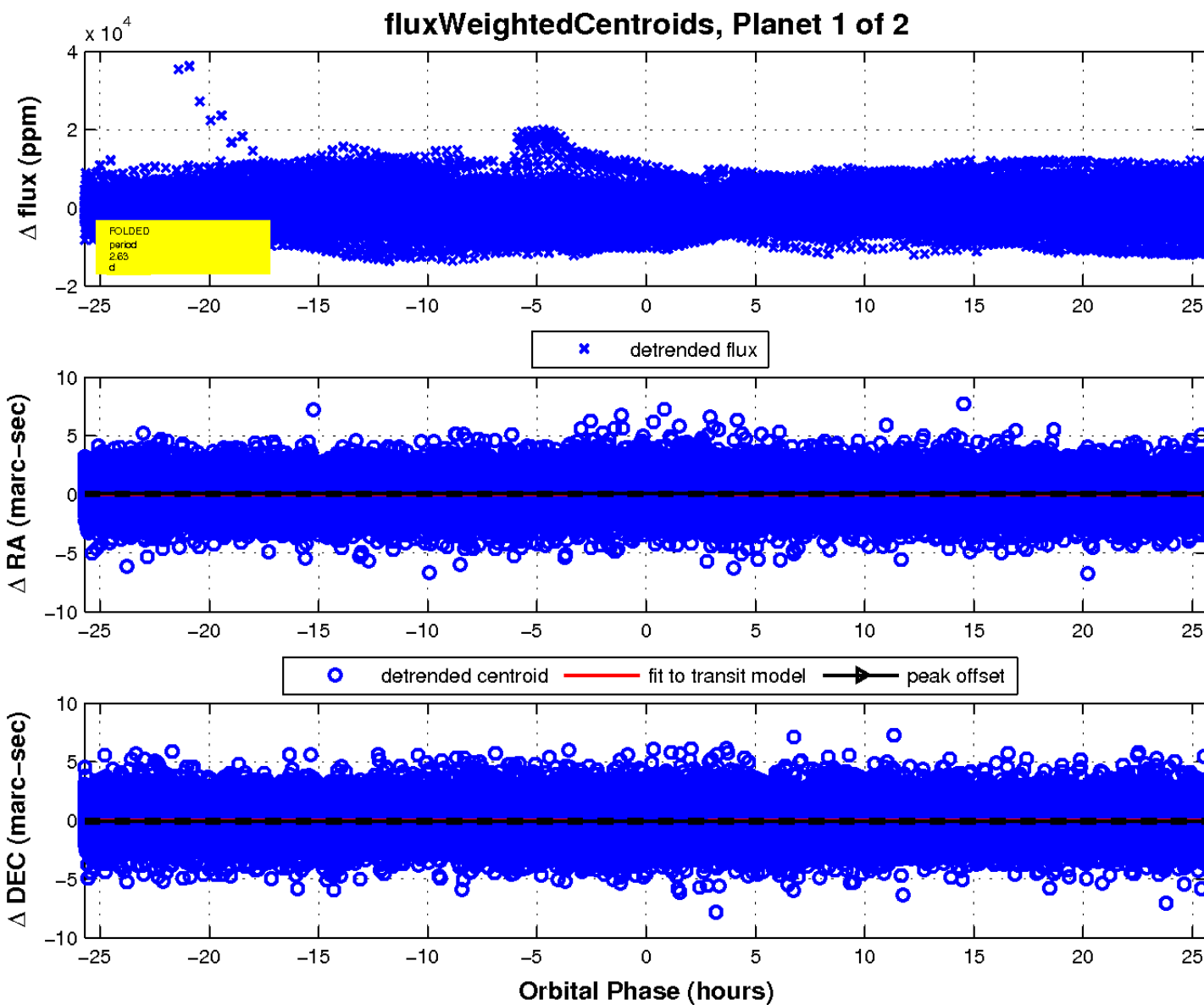
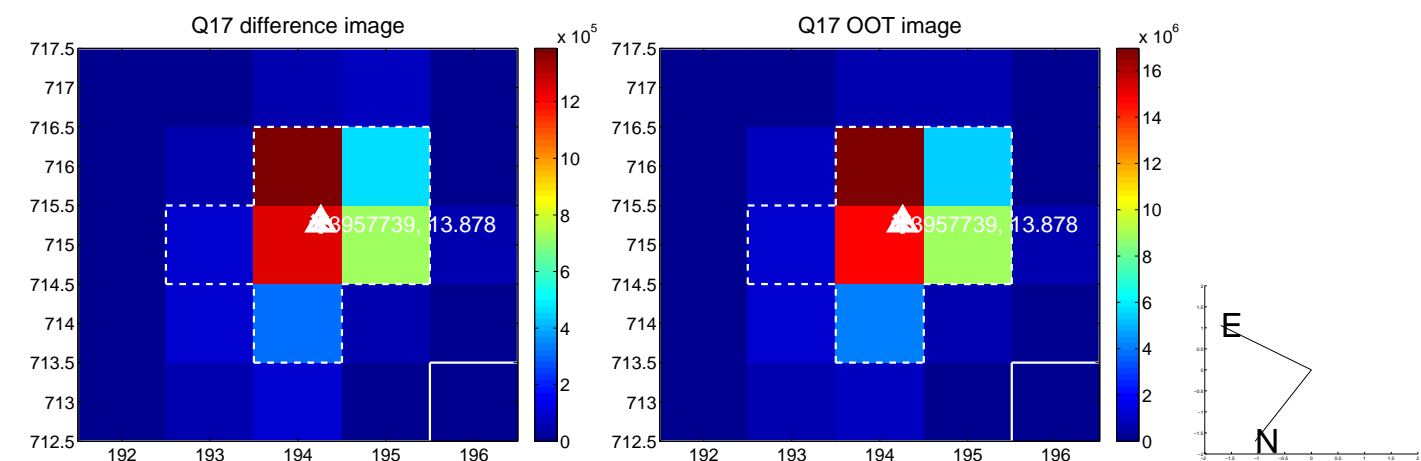
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

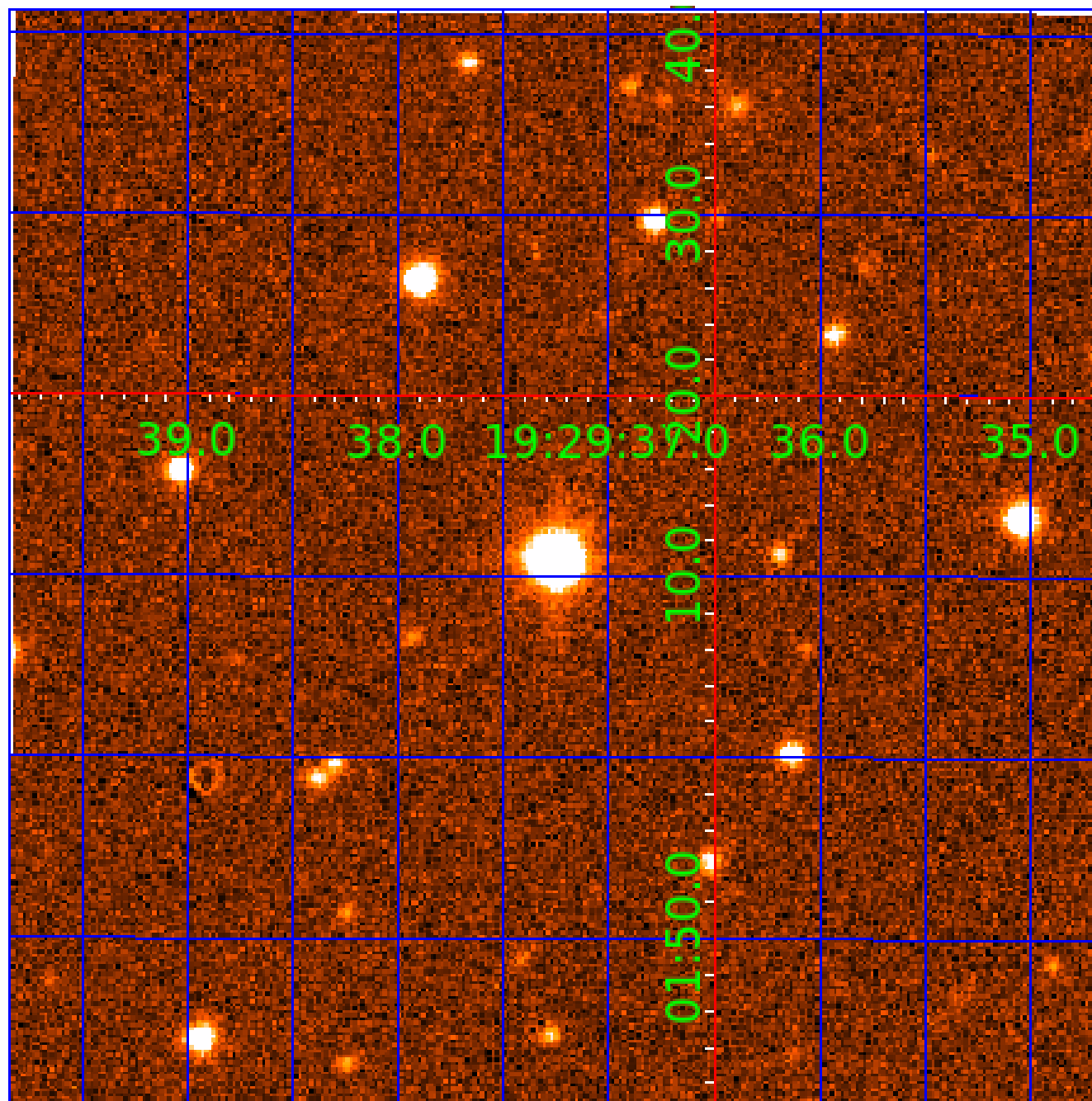


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003957739

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})
003957739-01	OBS	No	2.633486	132.142693	1106.3	8.567	61.8	36.4	3.16	4718	12.95	3197.61
003957739-02	OBS	No	2.633567	133.929458	812.9	21.559	19.1	17.4	3.16	4718	10.47	3197.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003957739-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003957739-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

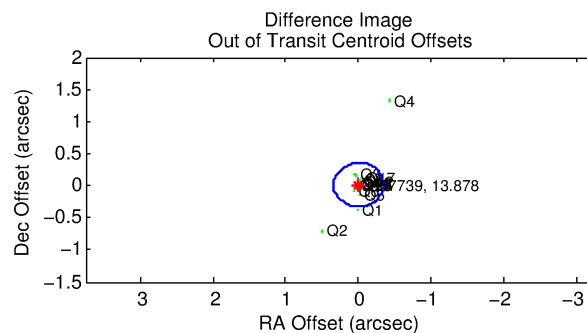
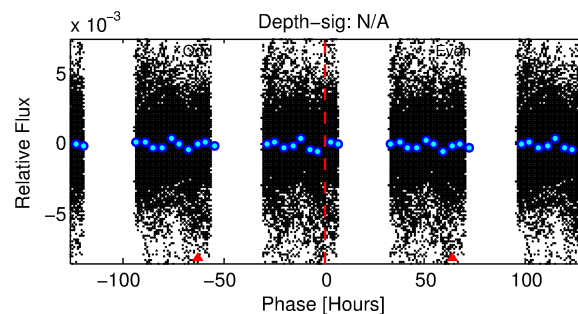
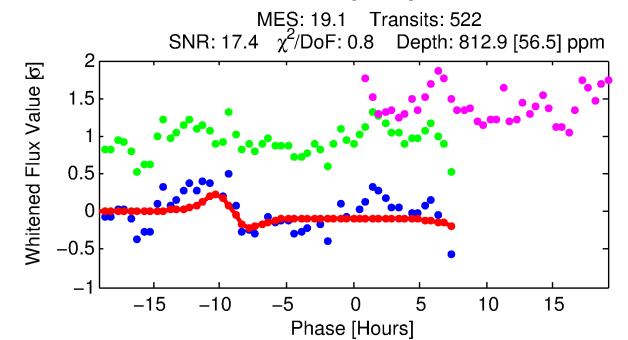
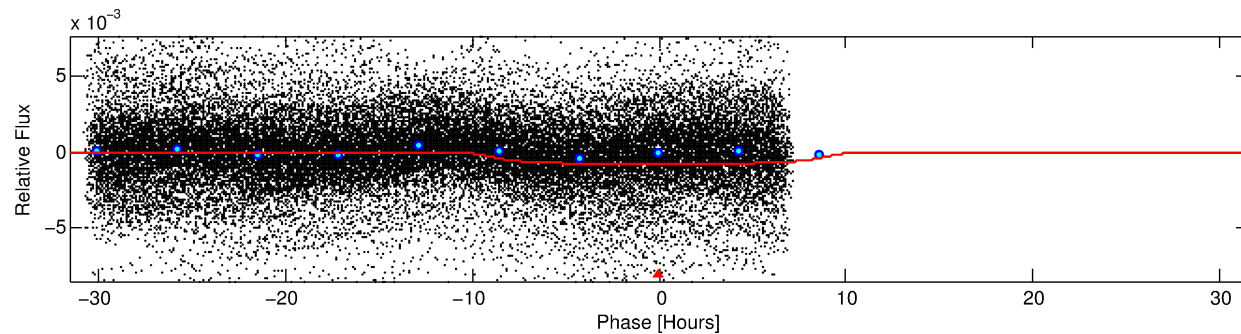
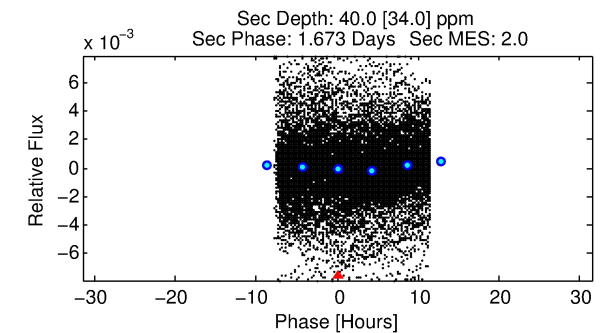
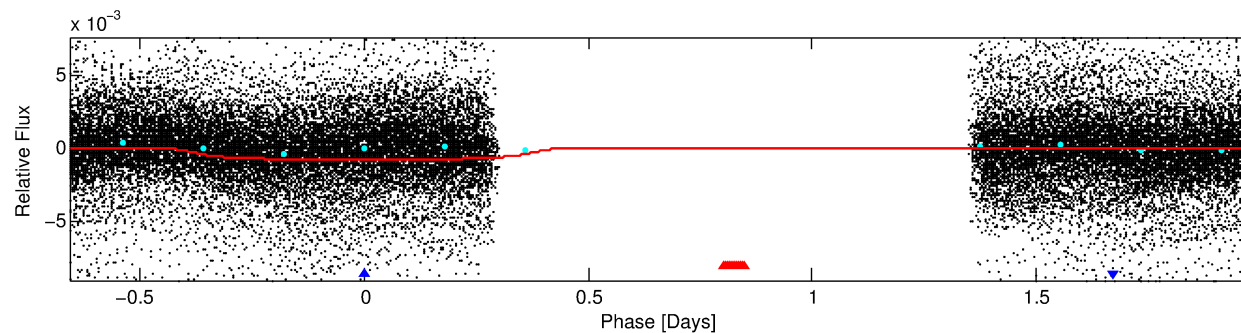
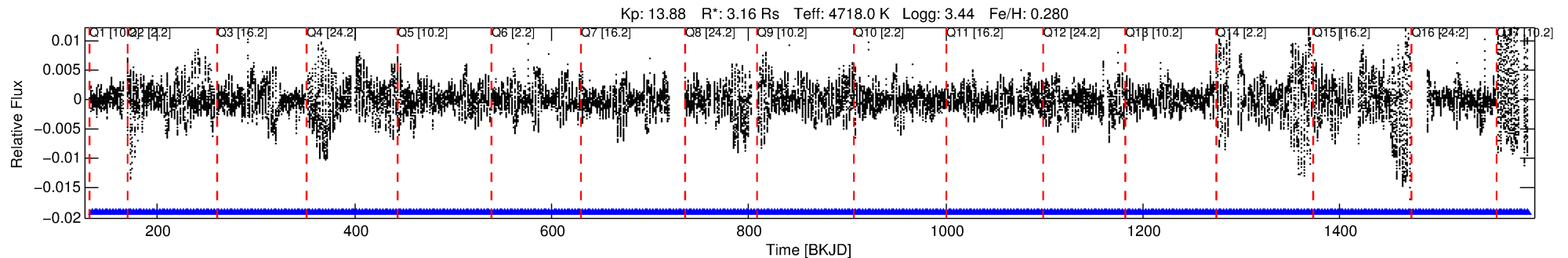
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003957739-02

No Significant Match Found

DV One-Page Summary

KIC: 3957739 Candidate: 2 of 2 Period: 2.634 d



DV Fit Results:

Period = 2.63357 [0.00002] d
Epoch = 133.9295 [0.0145] BKJD
Rp/R* = 0.0304 [0.0010]
a/R* = 1.08 [0.01]
b = 0.84 [0.02]
Seff = 3197.48 [847.67]
Teq = 1917 [127] K
Rp = 10.47 [2.45] Re
a = 0.0372 [0.0069] AU
Ag = 0.28 [0.25] [-2.92σ]
Teffp = 2152 [460] K [0.49σ]

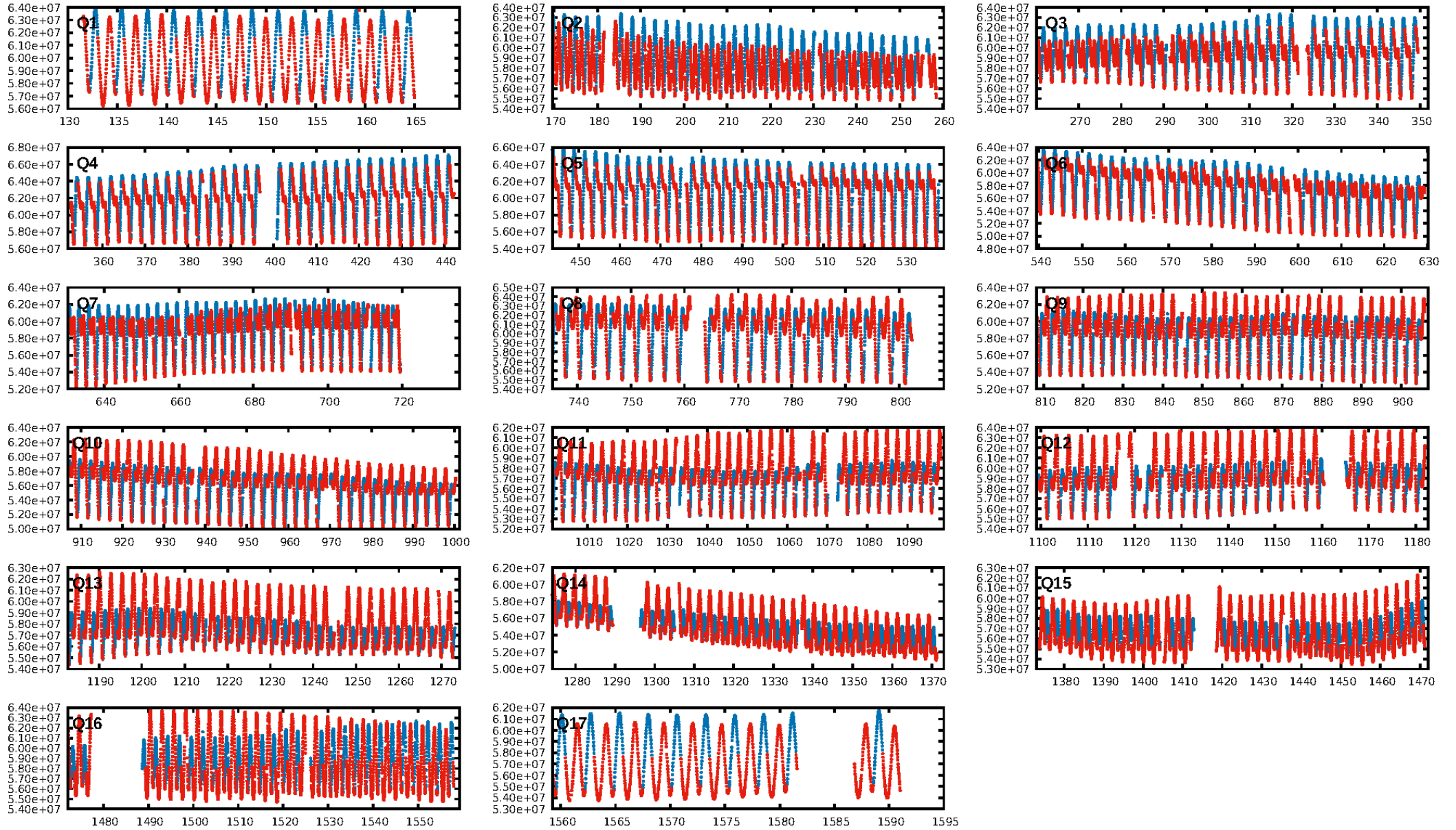
DV Diagnostic Results:

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 [499/499]
GhostDiagnostic-chr: 1.216
Centroid-sig: 14.3%
Centroid-so: 0.012 arcsec [0.26σ]
OotOffset-rm: 0.014 arcsec [0.13σ]
KicOffset-rm: 0.088 arcsec [1.12σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.00 [0/17]

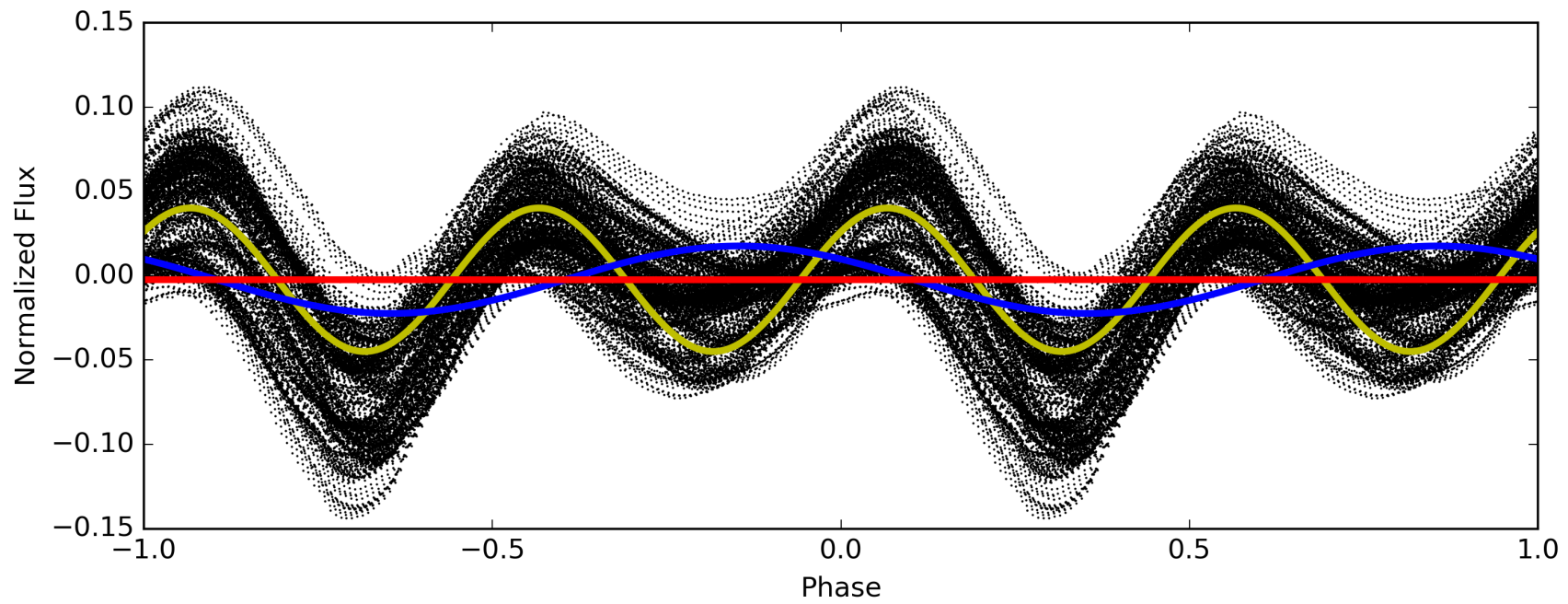
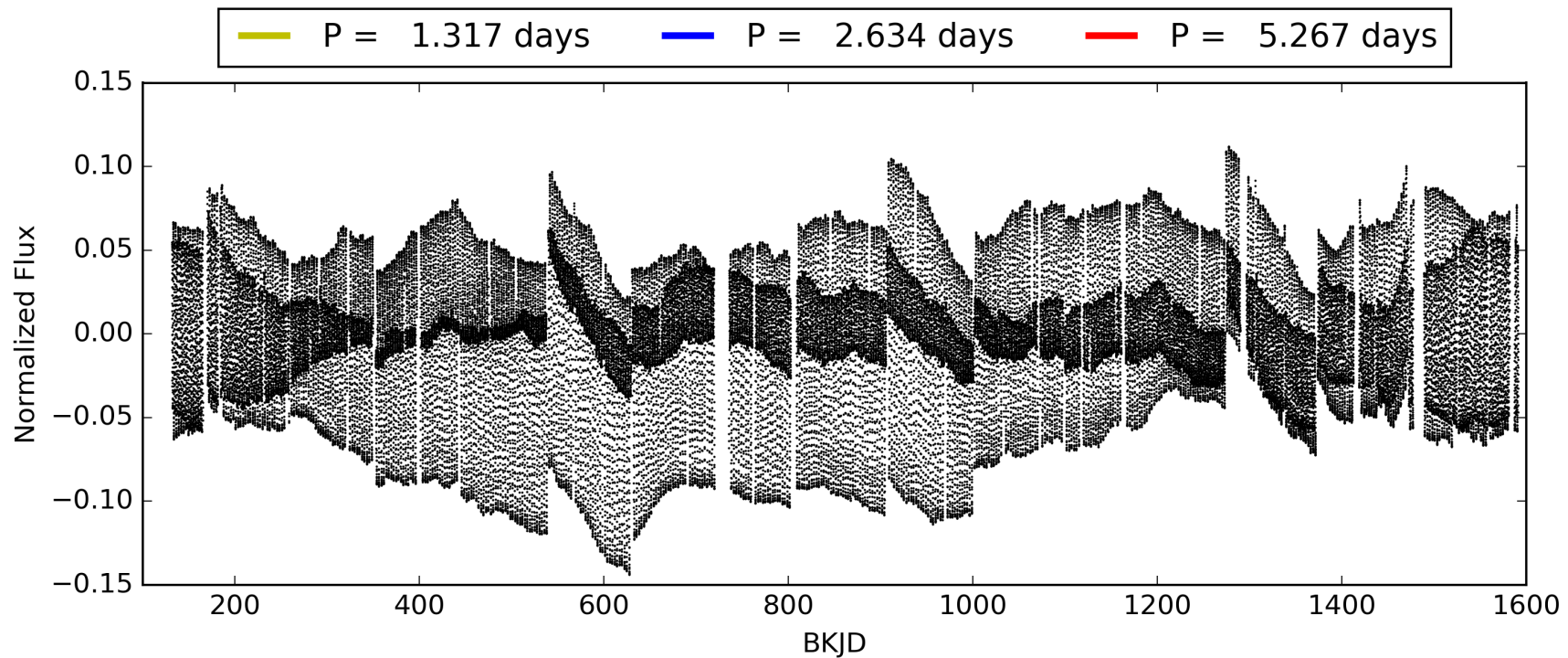
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:53:01 Z

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

TCE 003957739-02, PDC Light Curves

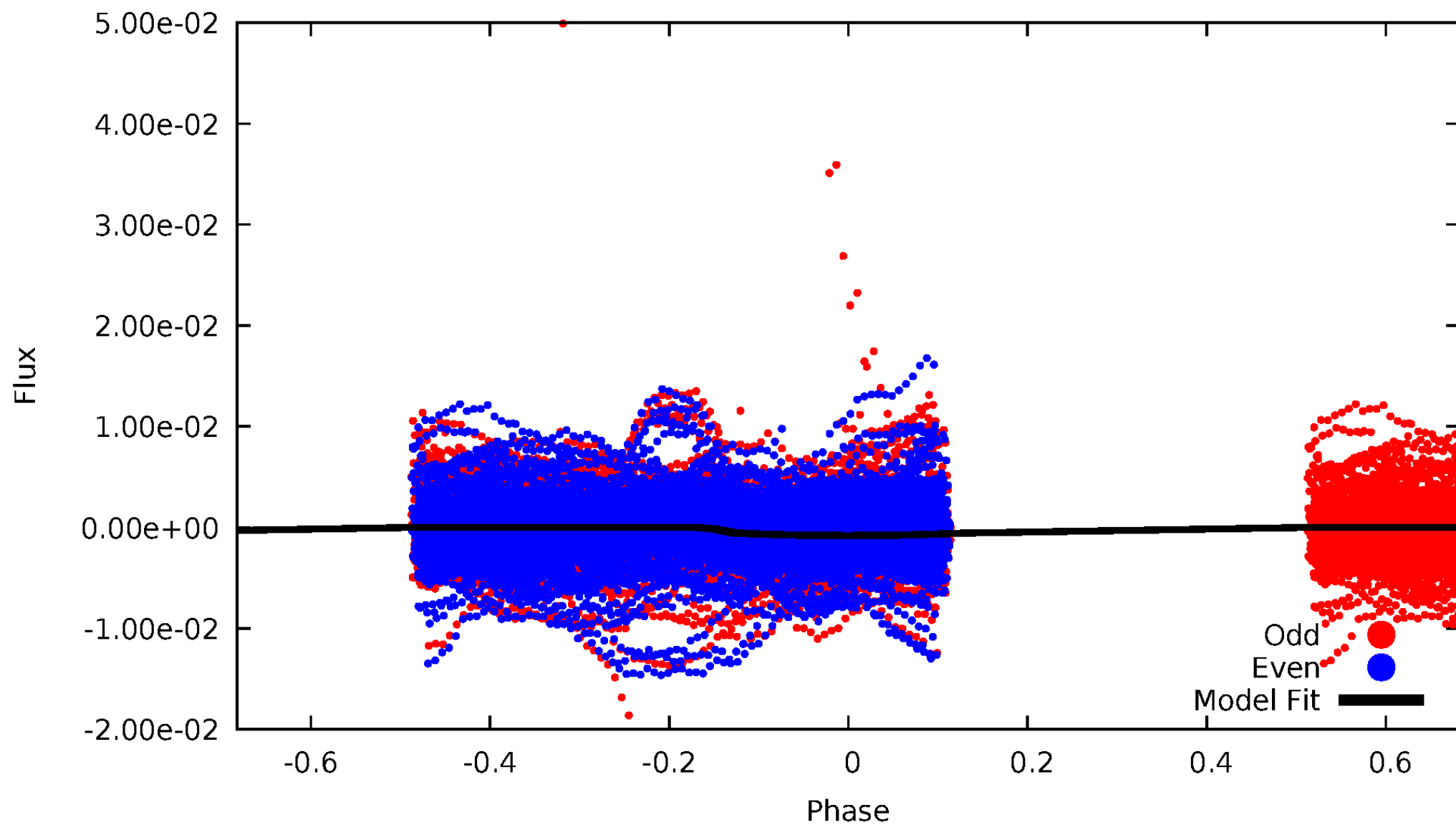


TCE 003957739-02



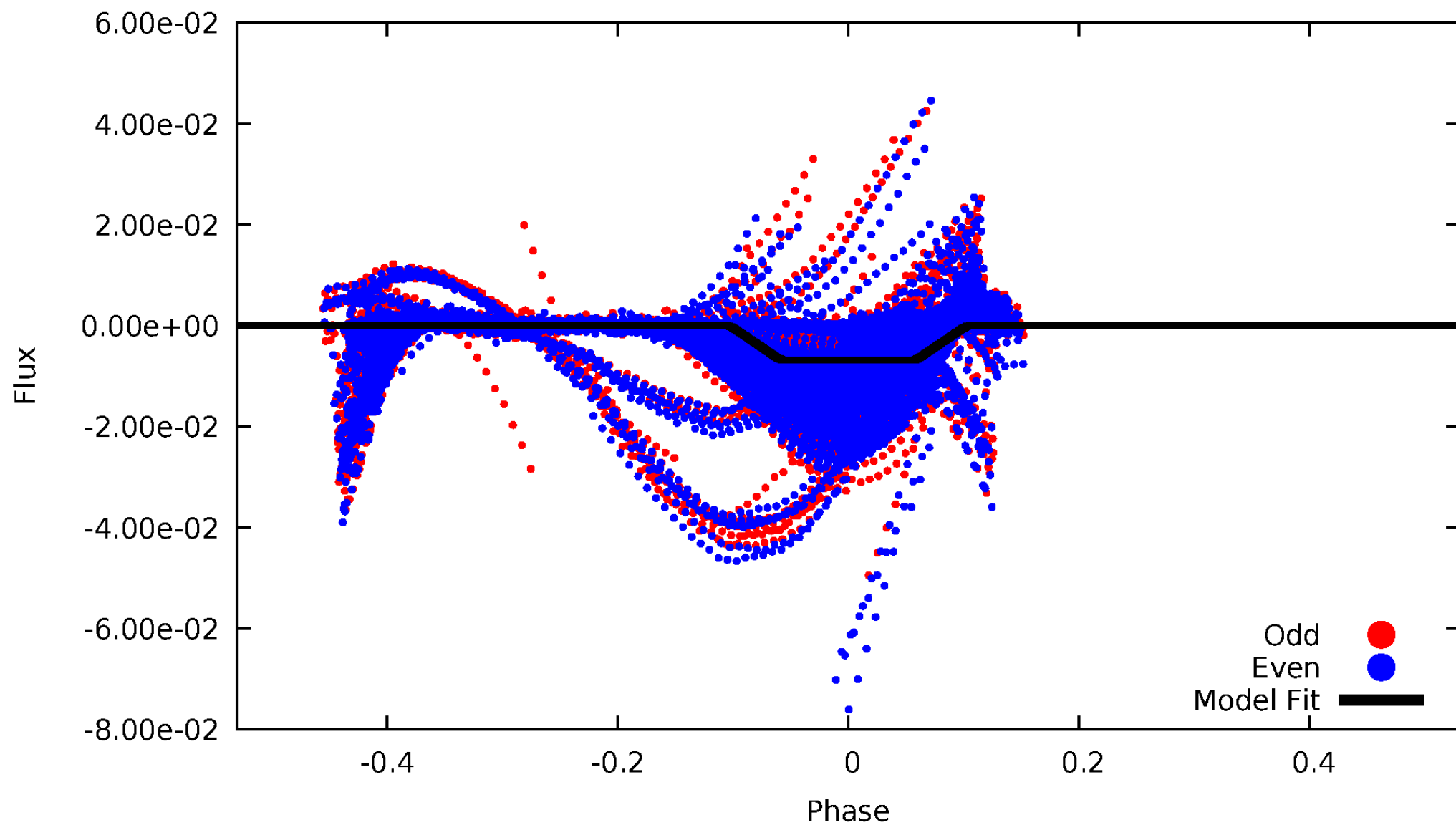
DV Odd/Even

TCE 003957739-02



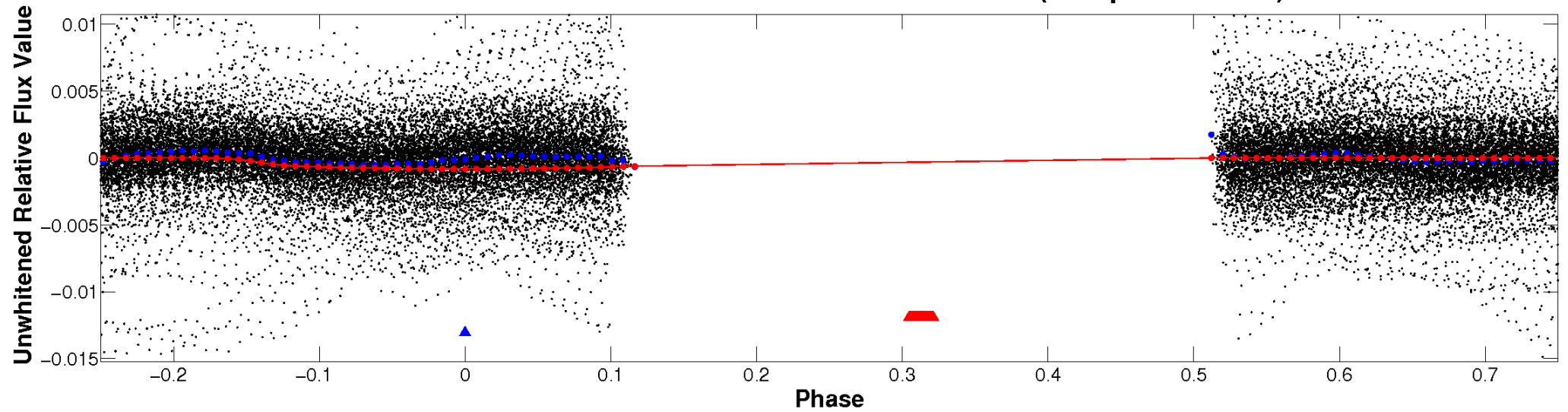
ALT Odd/Even

TCE 003957739-02

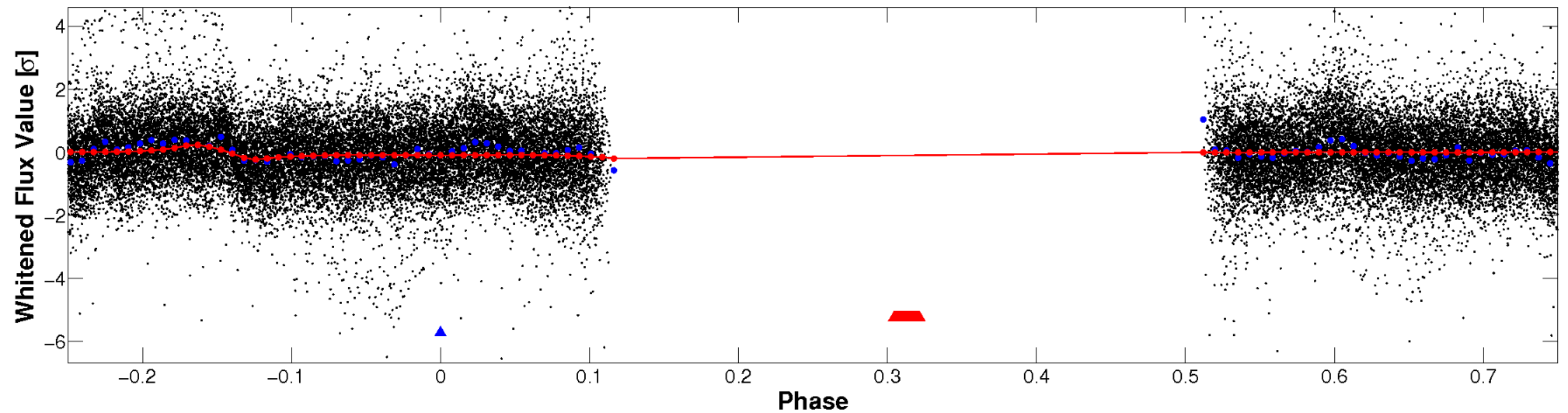


Non-Whitened Vs. Whitened Light Curve

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

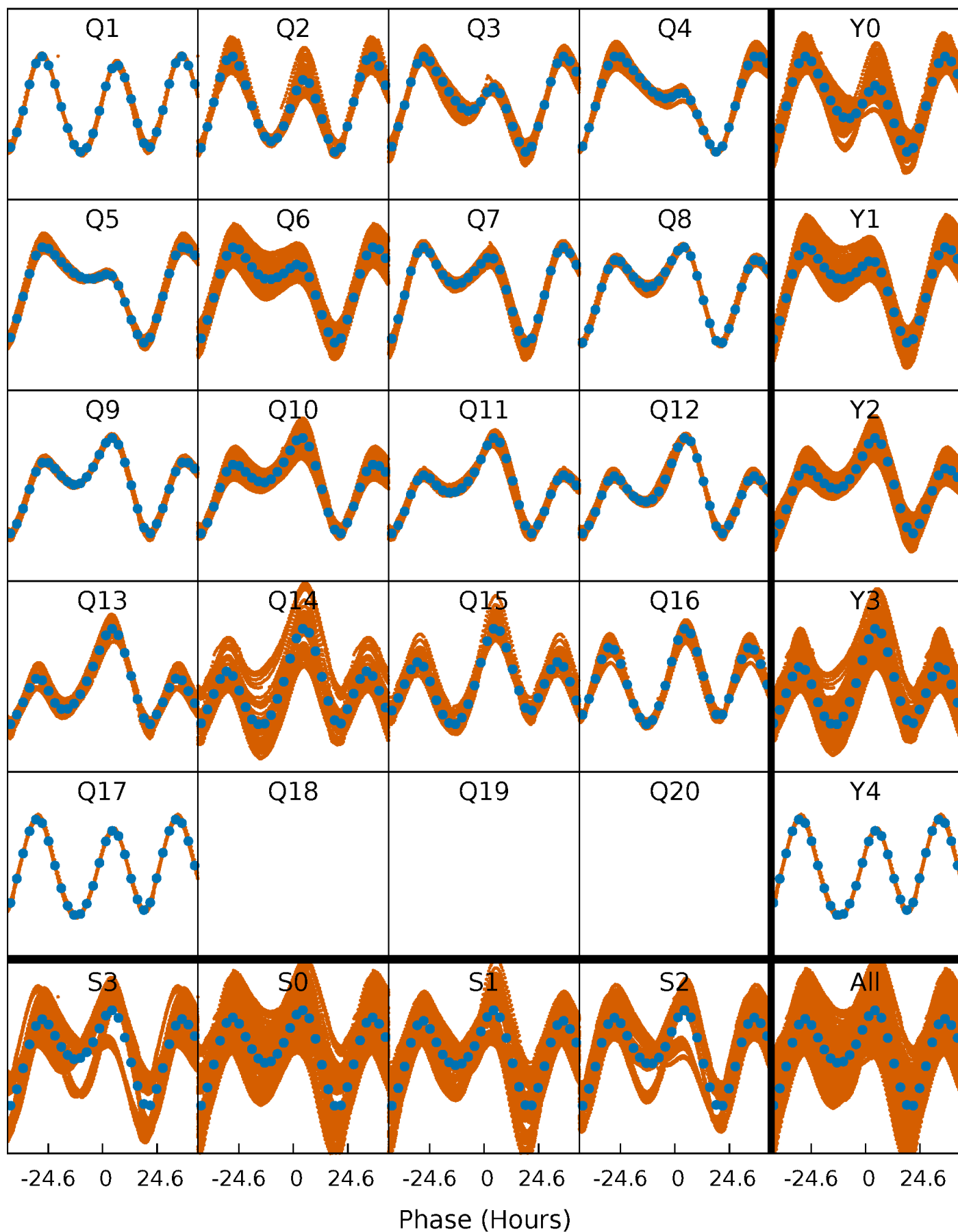


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



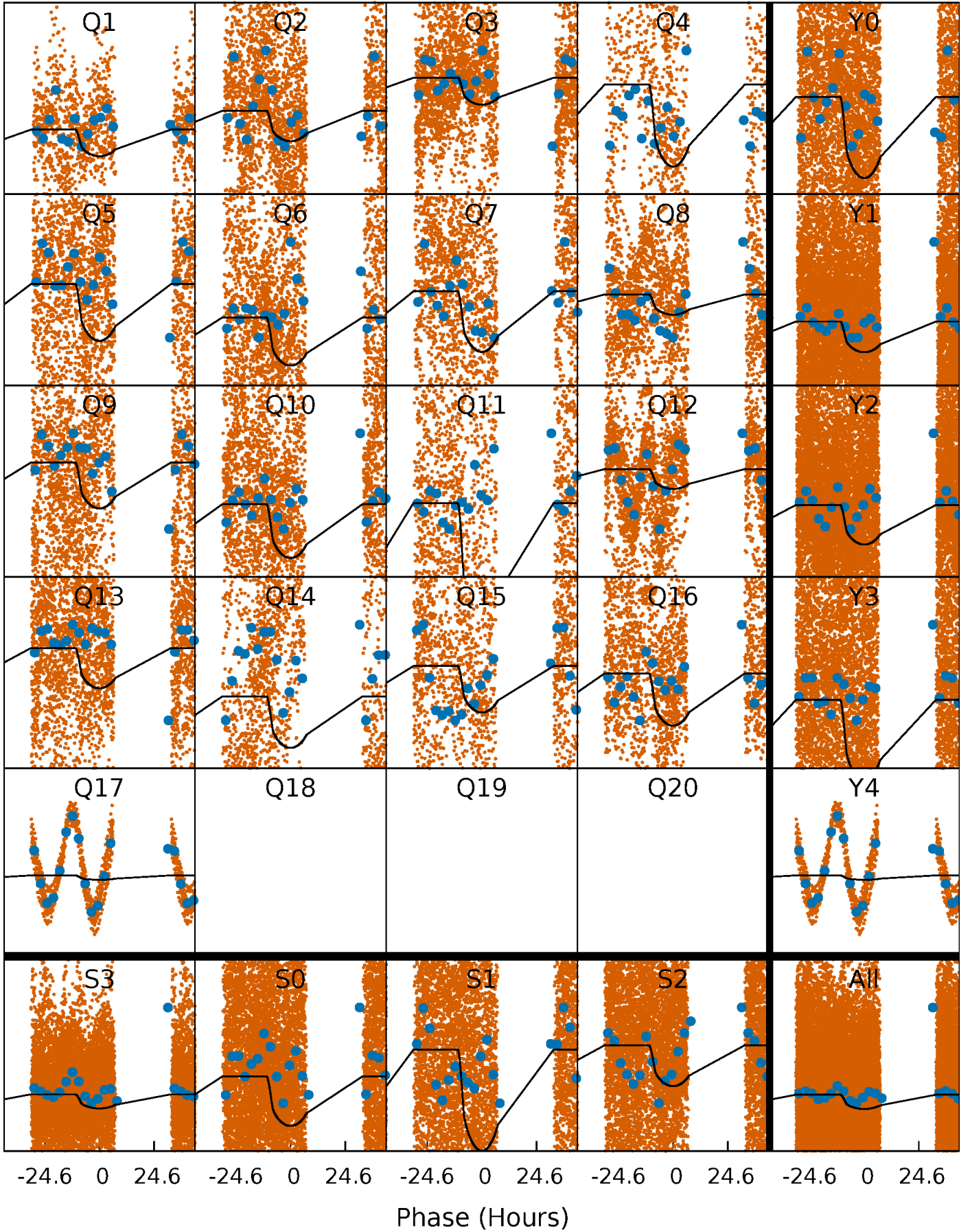
PDC Quarter-Phased Transit Curves

TCE 003957739-02 P= 2.633567 Days $T_0=133.929458$ (BKJD)



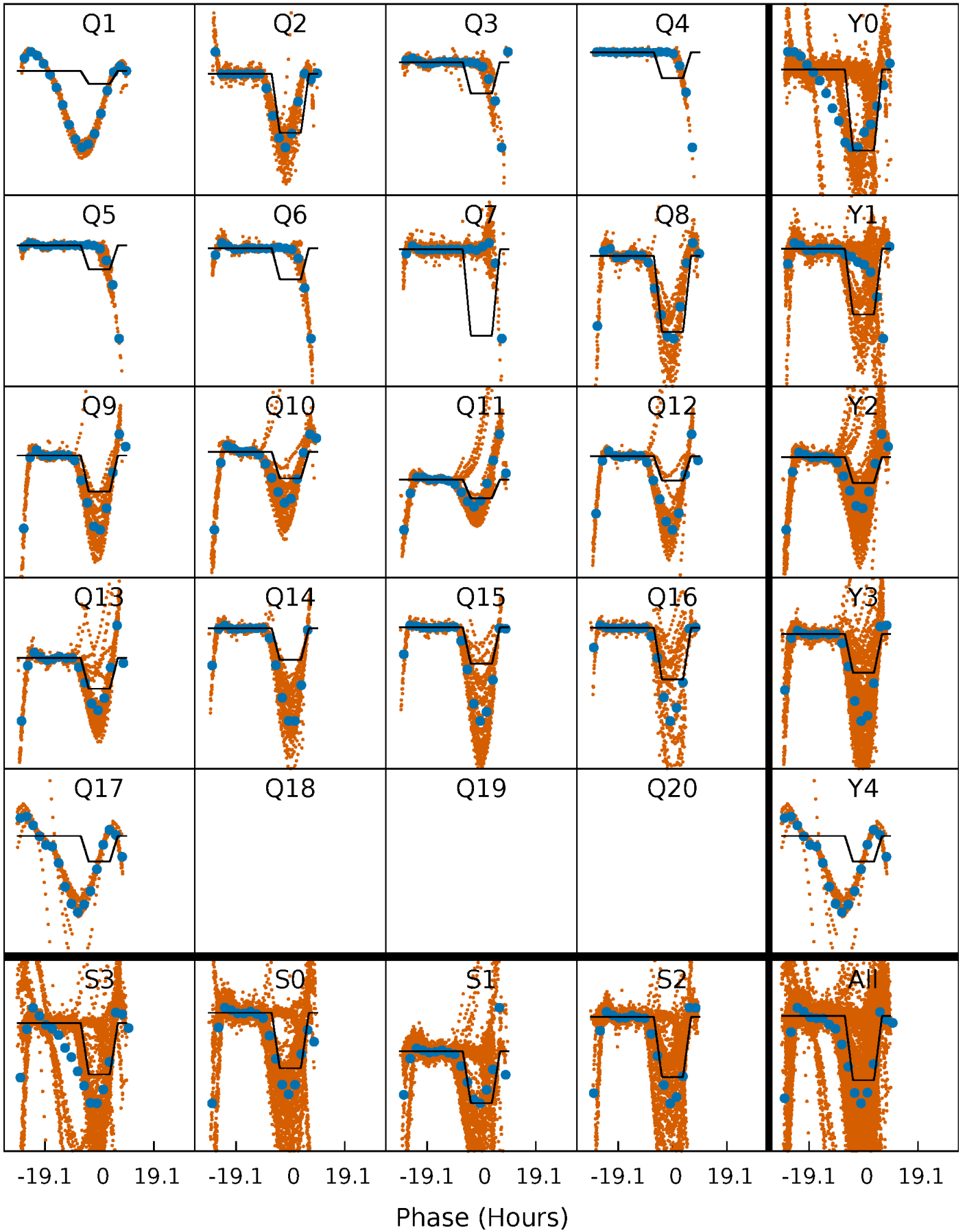
DV Quarter-Phased Transit Curves

TCE 003957739-02 $P = 2.633567$ Days $T_0 = 133.929458$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

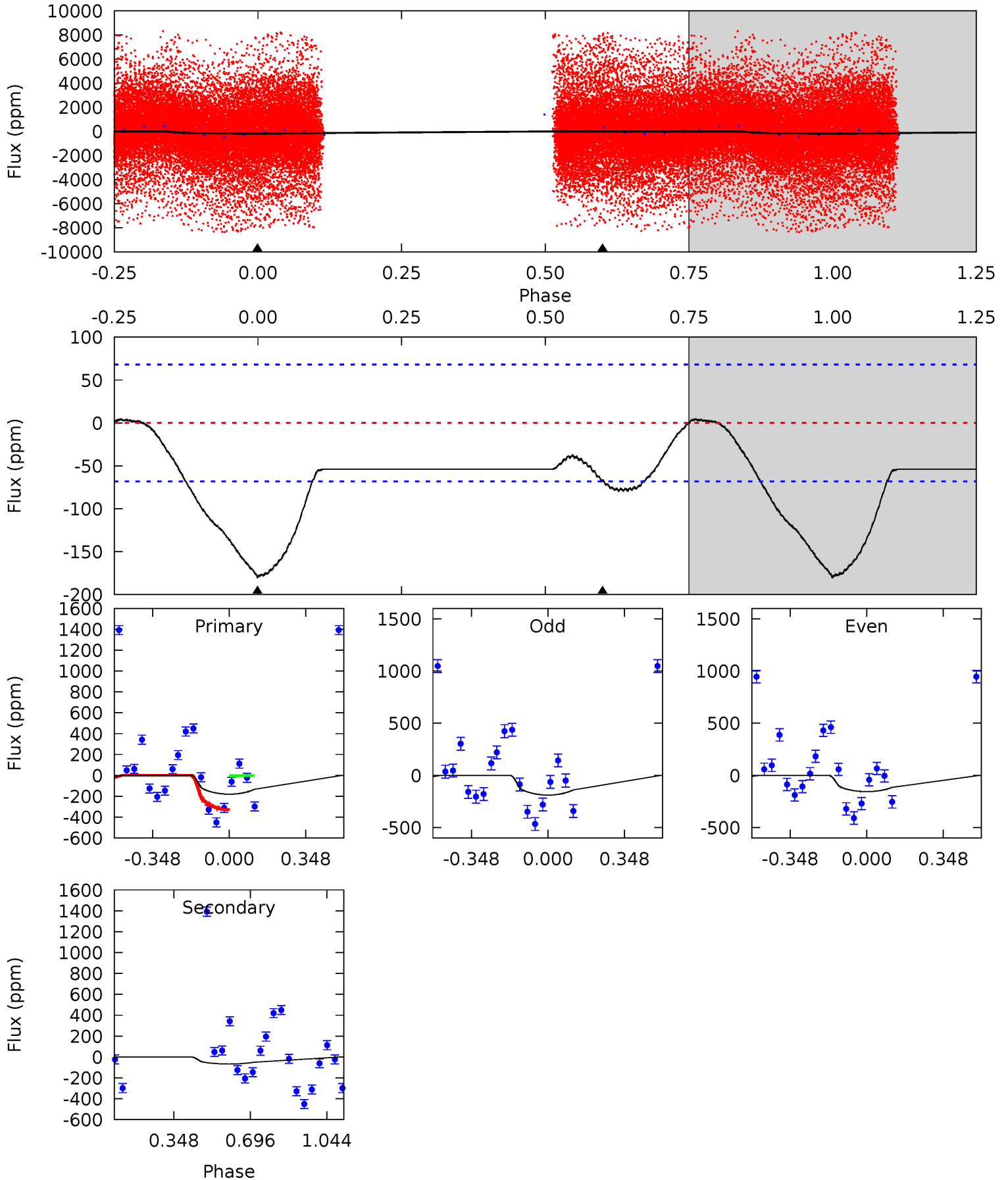
TCE 003957739-02 P= 2.633596 Days $T_0=133.828797$ (BKJD)



DV Model-Shift Uniqueness Test

003957739-02, P = 2.633567 Days, E = 131.295891 Days

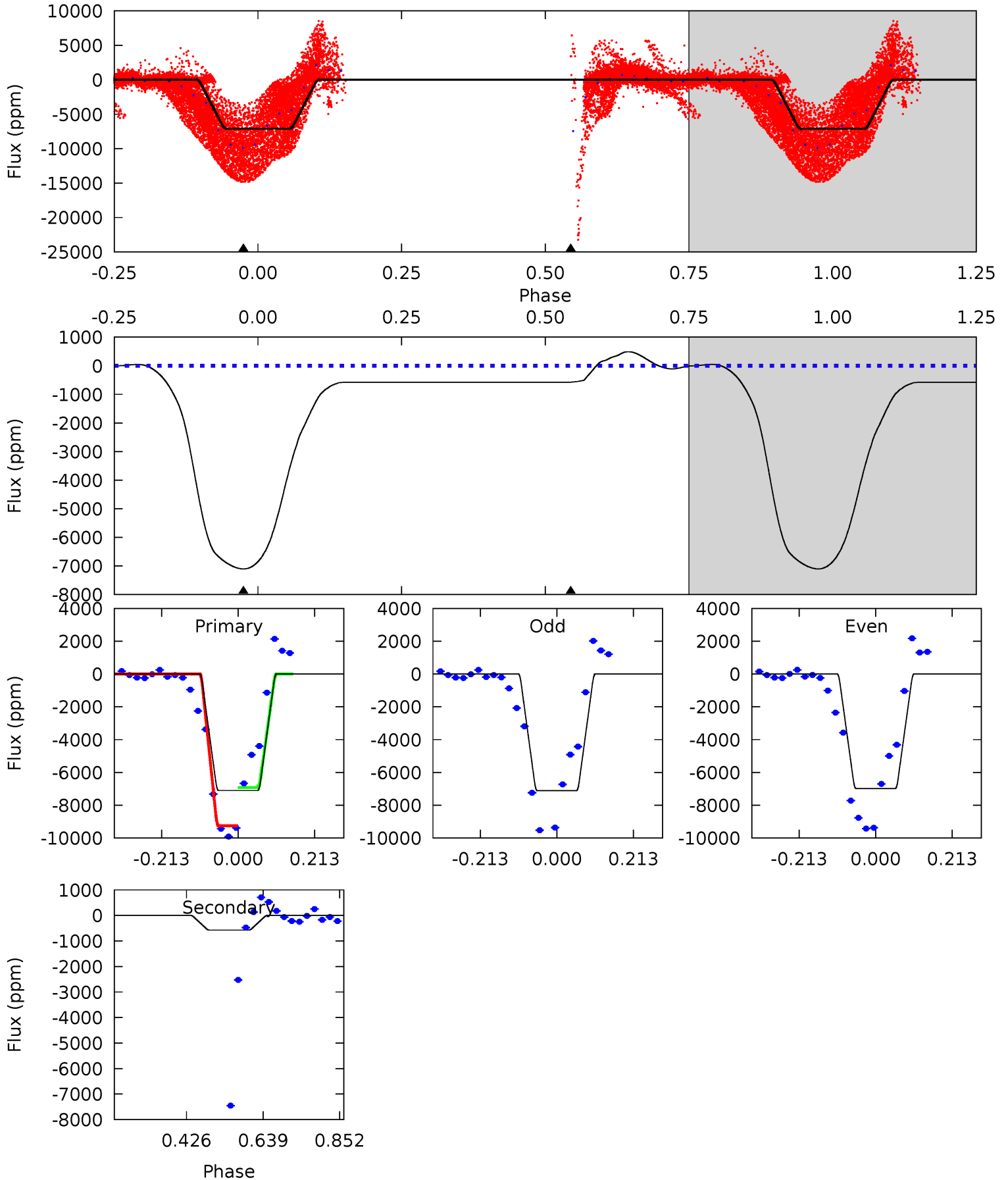
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	4.26	0	0	4.30	0.94	0.42	11.4	11.4	4.26	4.26	1.05	0.98	0.02	9.27



Alt Model-Shift Uniqueness Test

003957739-02, P = 2.633596 Days, E = 131.195201 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
848.8	68.6	0	0	4.40	1.25	2.80	848.8	848.8	68.6	68.6	8.05	1.14	0.06	0



Stellar Parameters For KIC 003957739

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4718^{+70}_{-42}	$3.435^{+0.135}_{-0.135}$	$0.280^{+0.150}_{-0.100}$	$3.158^{+0.731}_{-0.426}$	$0.991^{+0.195}_{-0.023}$	$0.044^{+0.024}_{-0.018}$
	+1%/-1%	+4%/-4%	+54%/-36%	+23%/-13%	+20%/-2%	+54%/-41%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003957739-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-67 ± 16	$10.61^{+1.36}_{-1.02}$	2678^{+149}_{-115}	2656^{+195}_{-437}	$0.472^{+0.147}_{-0.140}$
Alt.	-574 ± 8	$28.56^{+3.74}_{-2.31}$	2669^{+155}_{-114}	2778^{+79}_{-123}	$0.549^{+0.104}_{-0.112}$

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

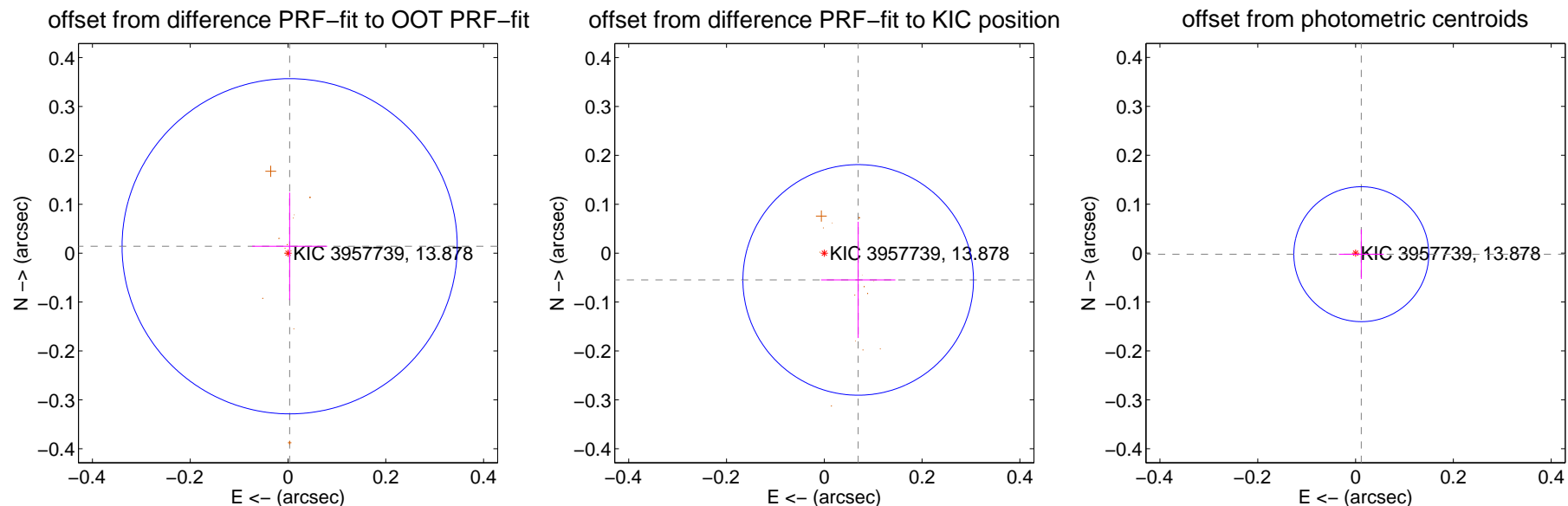
DV Centroid Data

Supplemental centroid analysis for 003957739-02. Kepler magnitude: 13.88. Transit SNR 17.36

There are 0 quarters with good PRF difference image offsets

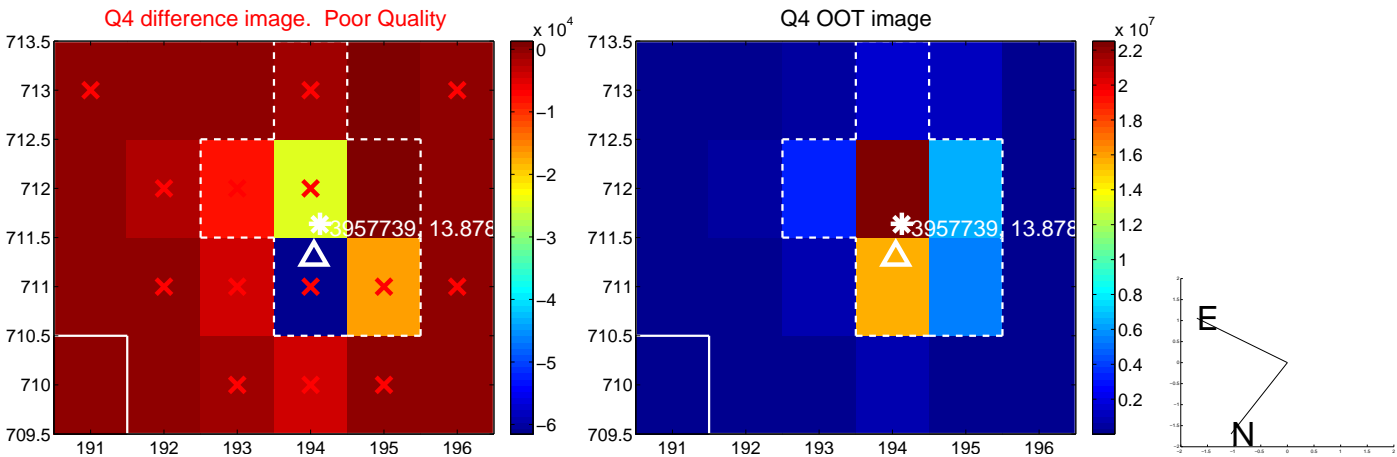
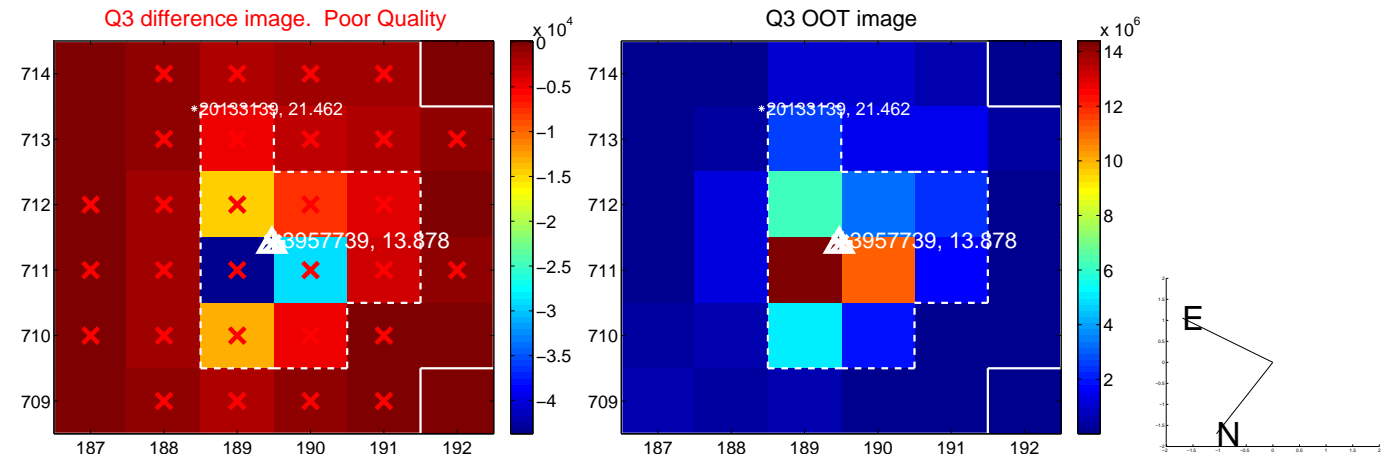
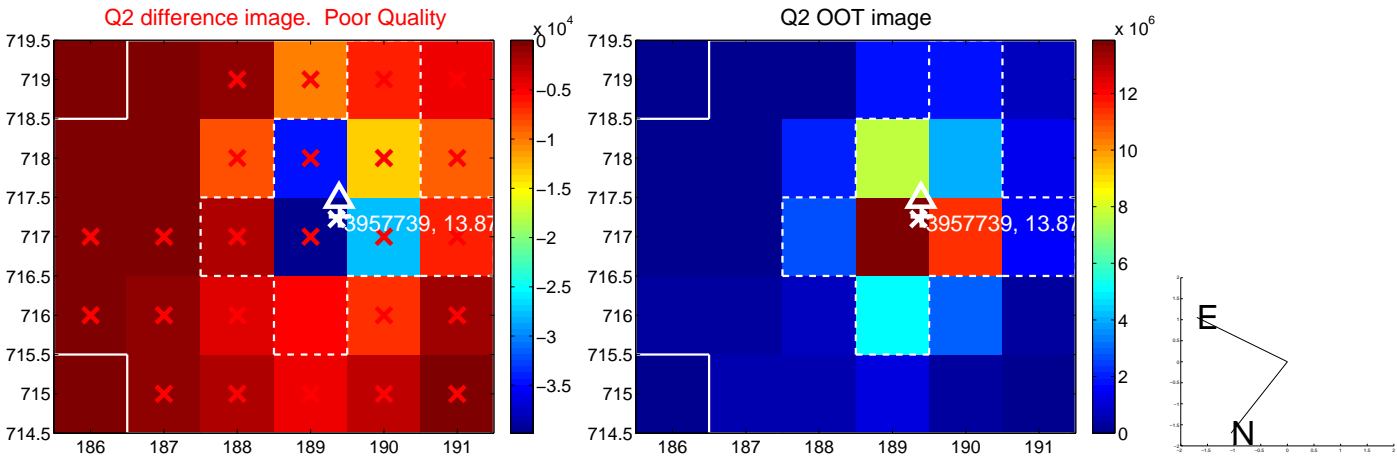
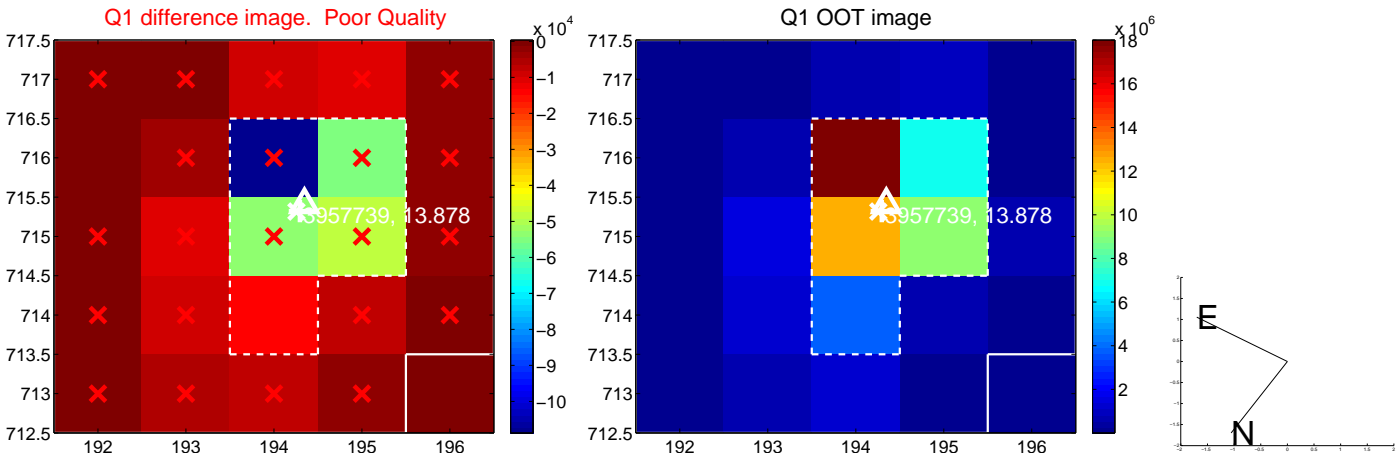
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.014 ± 0.114	0.13	-0.003 ± 0.077	0.014 ± 0.110
PRF-fit source offset from KIC position	0.088 ± 0.079	1.12	-0.069 ± 0.076	-0.055 ± 0.119
photometric centroid source offset	0.01 ± 0.05	0.26	-0.01 ± 0.05	-0.00 ± 0.05

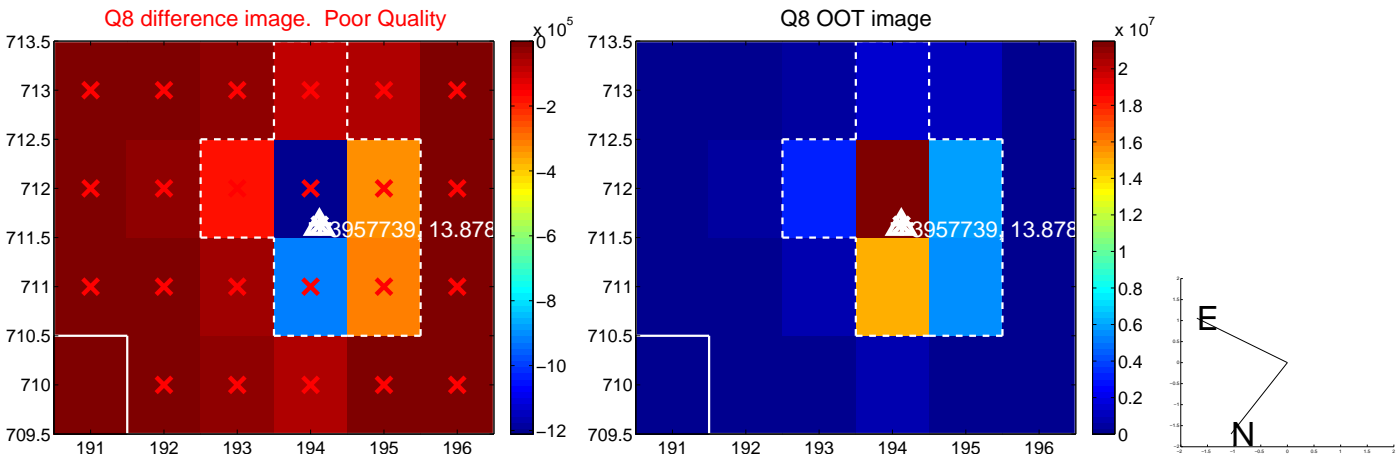
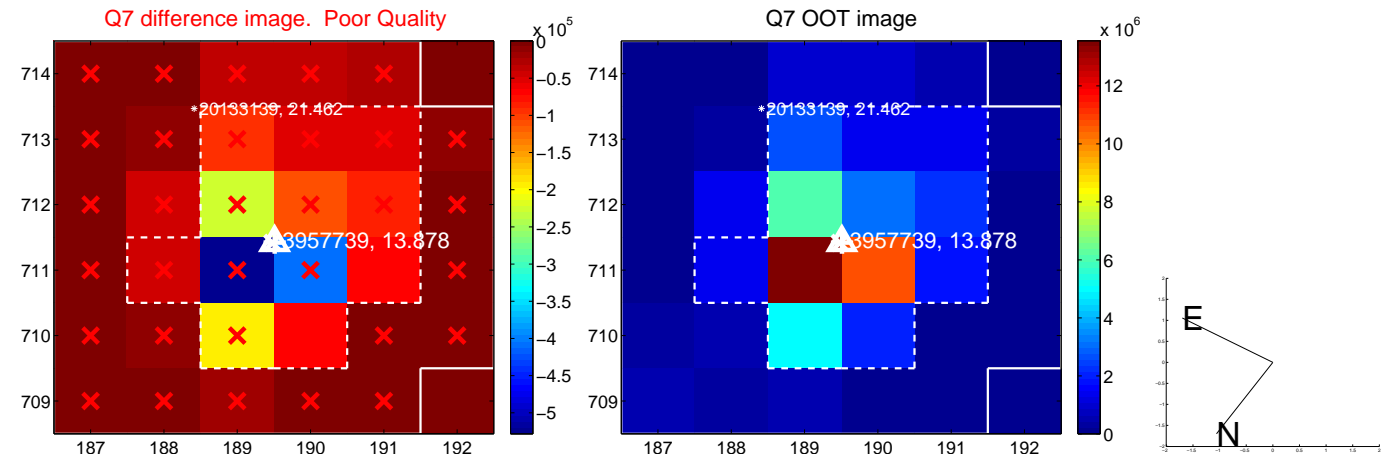
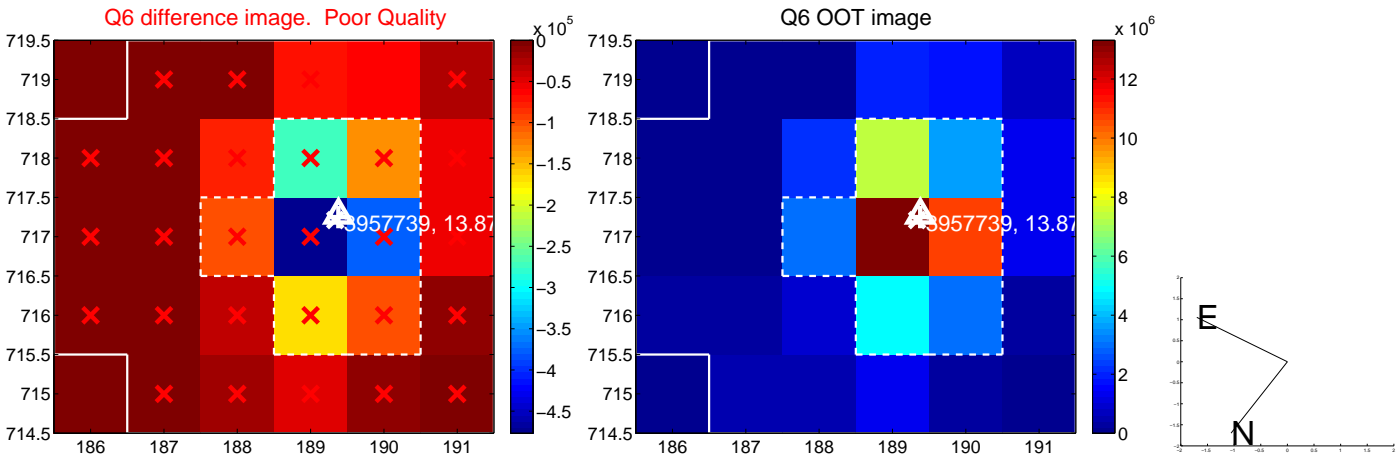
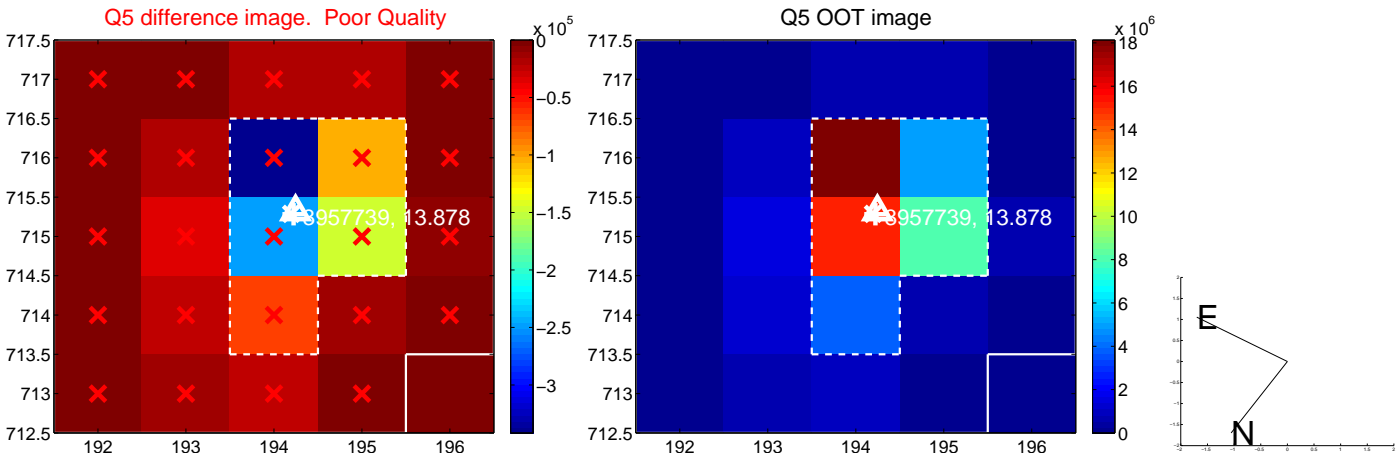


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

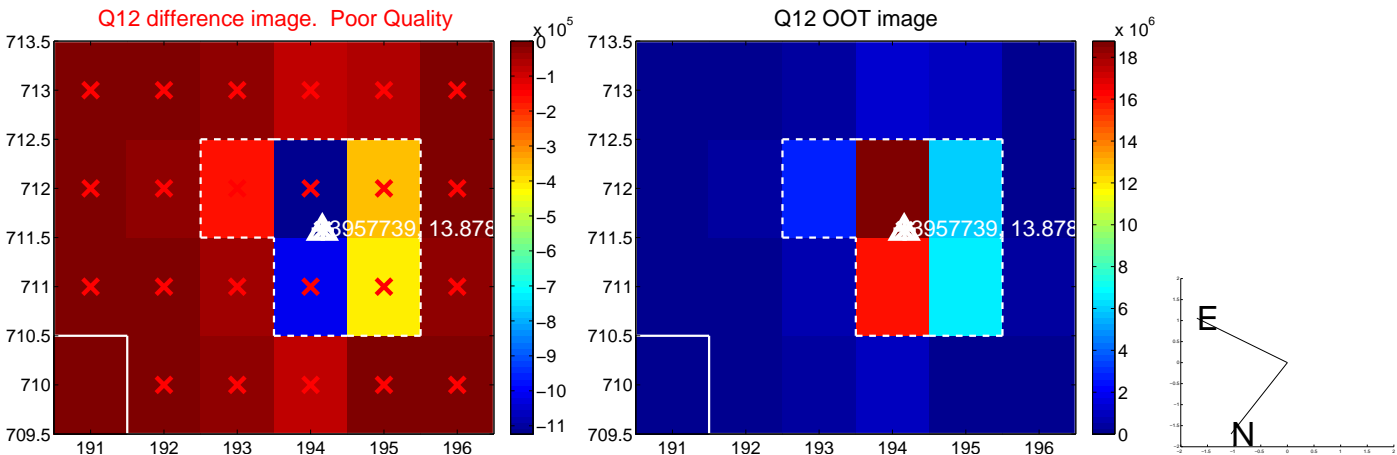
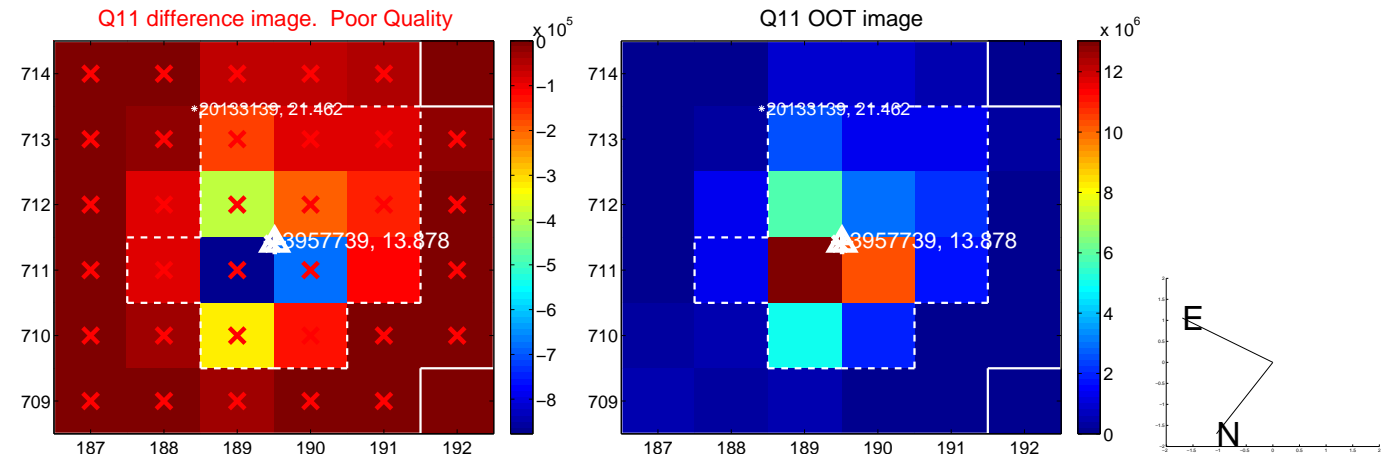
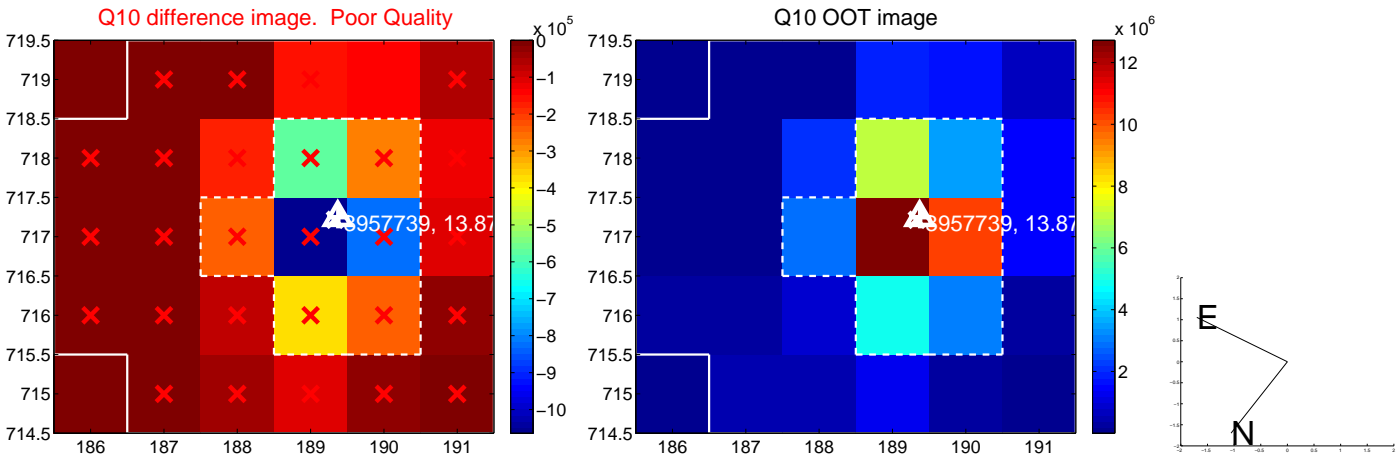
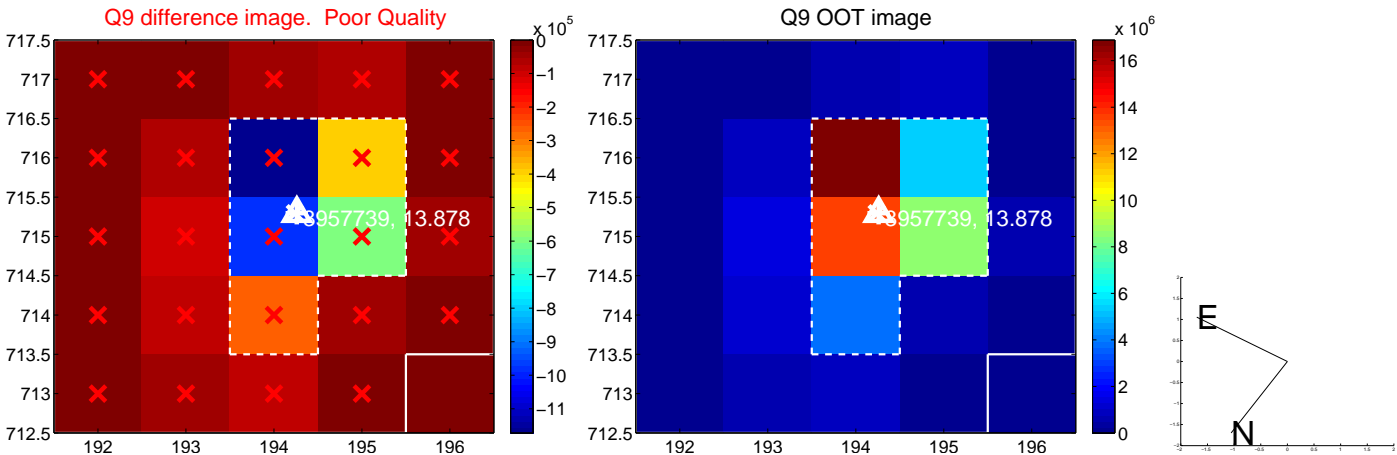
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



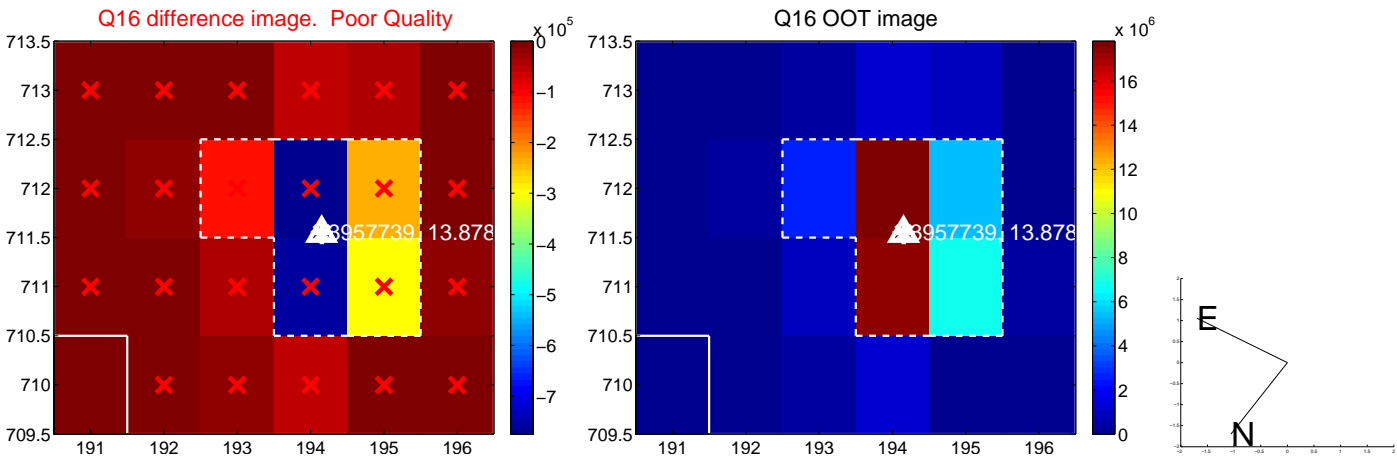
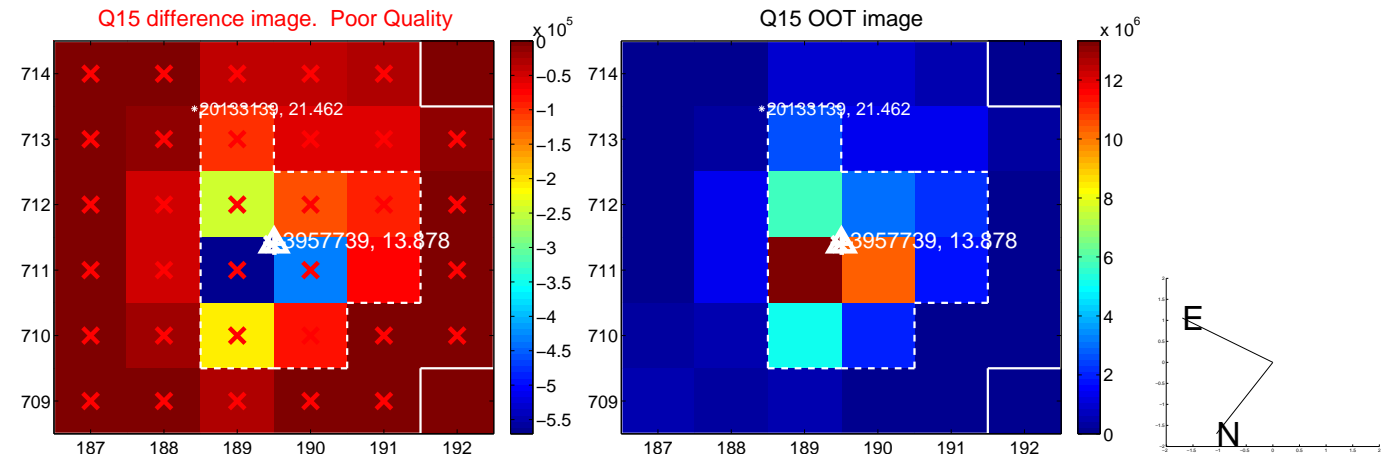
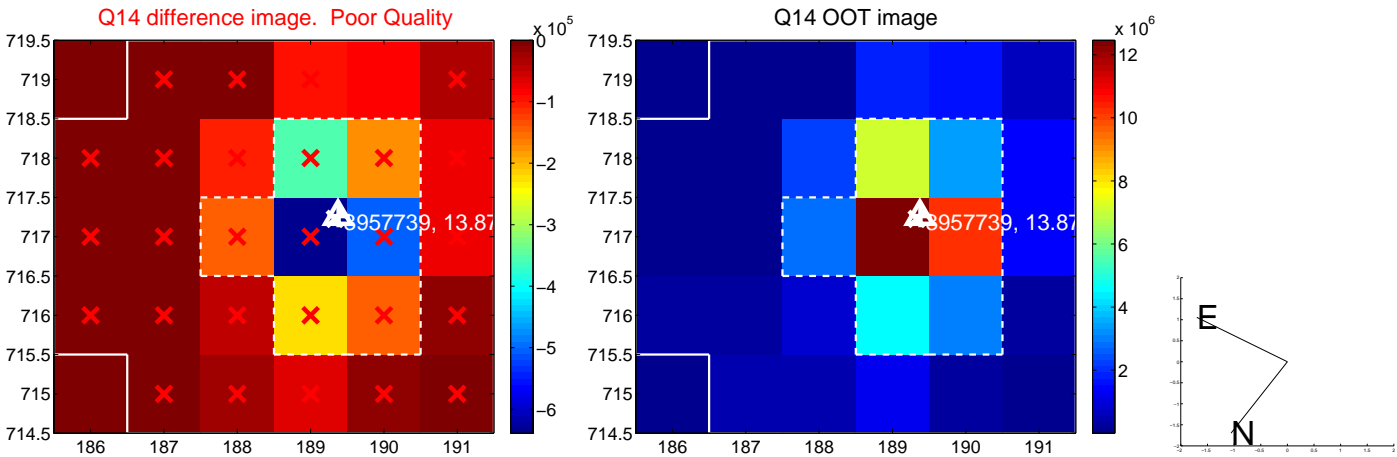
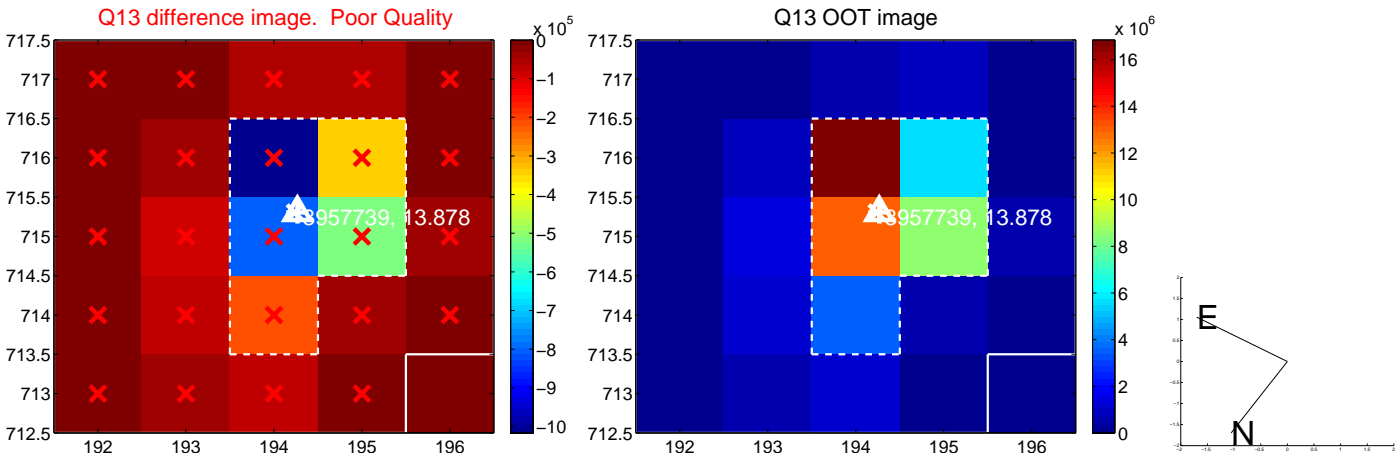
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



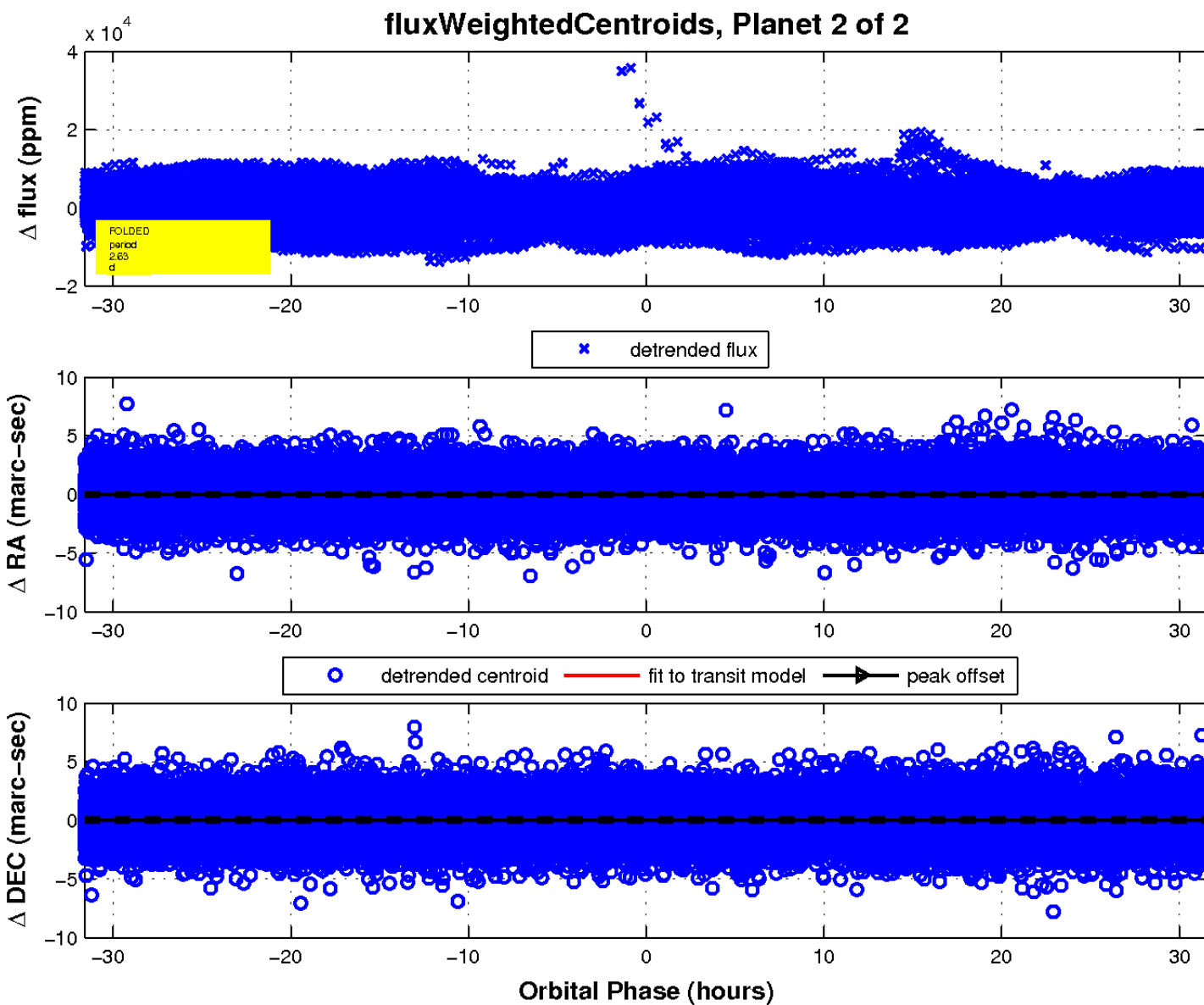
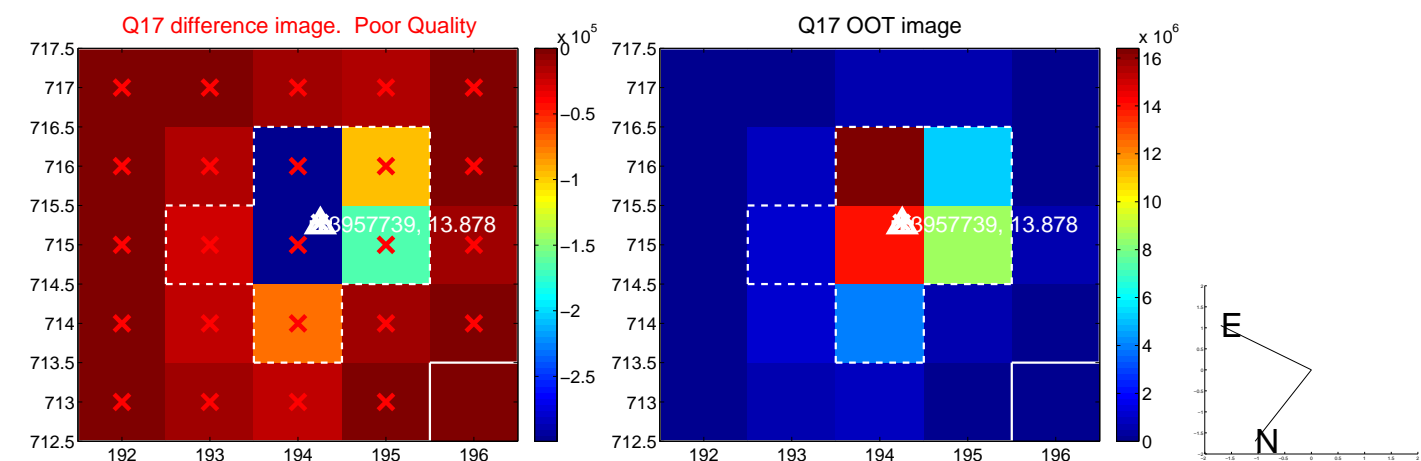
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

