

KIC 003455863

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})
003455863-01	OBS	No	3.413057	131.598711	228.5	13.153	13.3	16.7	1.61	7140	2.50	2634.27
003455863-02	OBS	No	3.412885	133.841956	206.6	15.965	9.8	11.7	1.61	7140	3.58	2634.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003455863-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
003455863-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

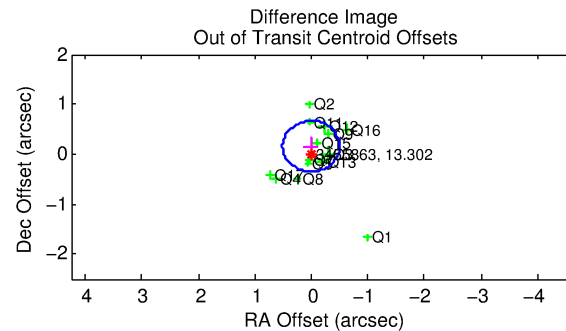
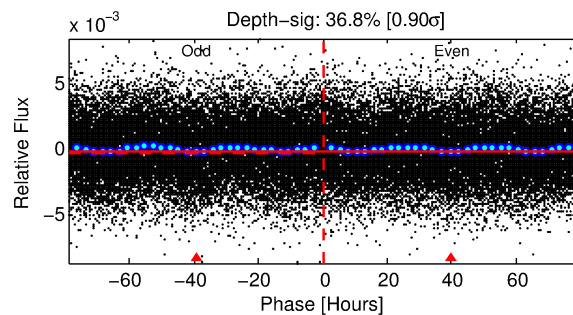
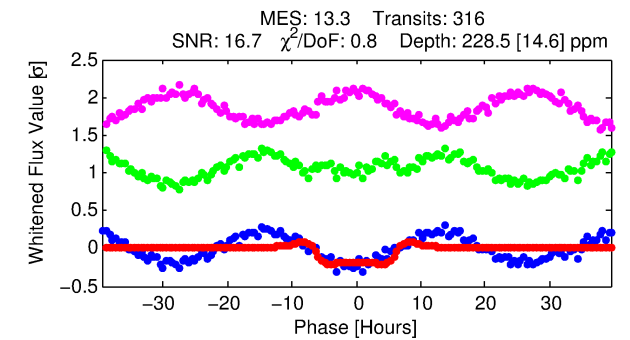
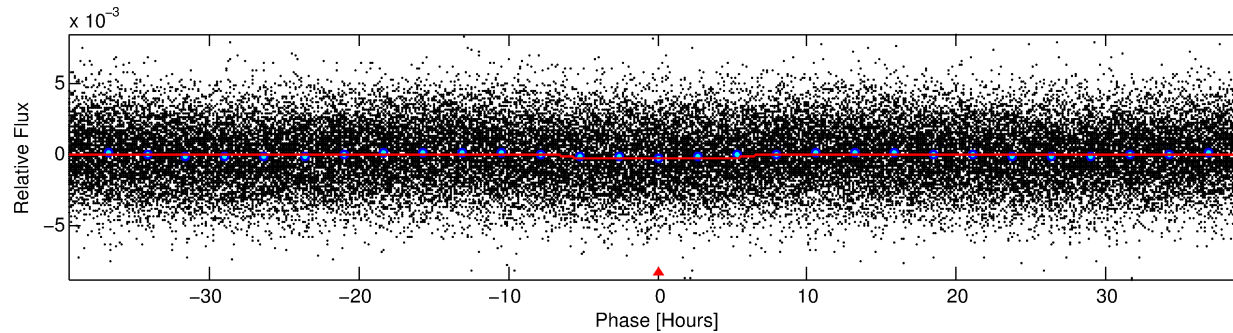
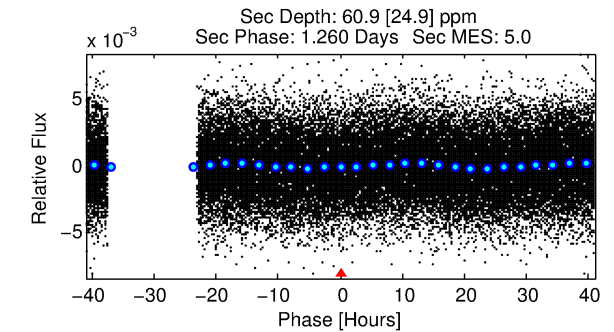
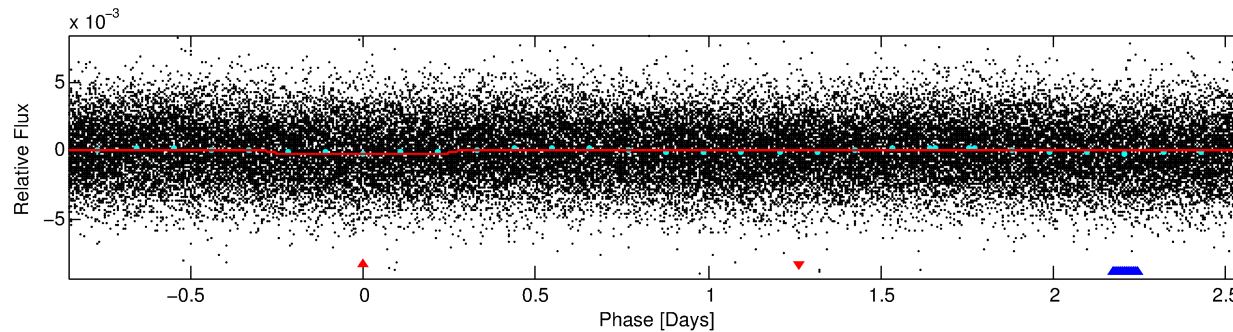
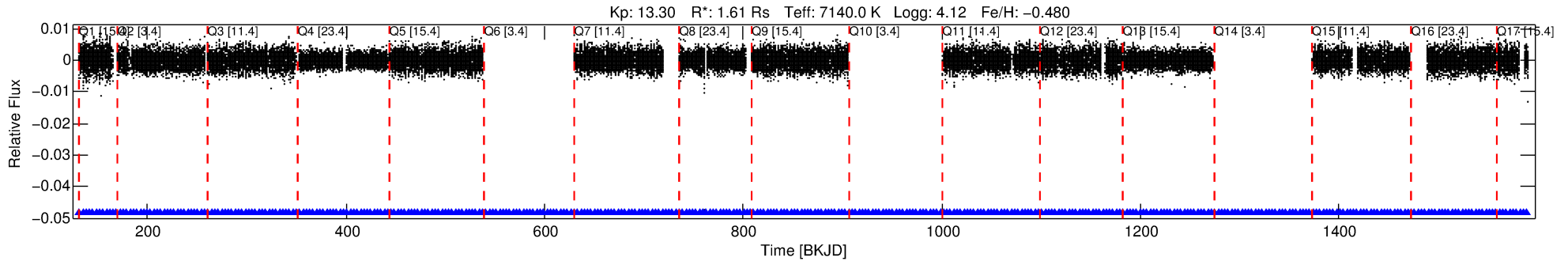
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003455863-01

No Significant Match Found

DV One-Page Summary

KIC: 3455863 Candidate: 1 of 2 Period: 3.413 d



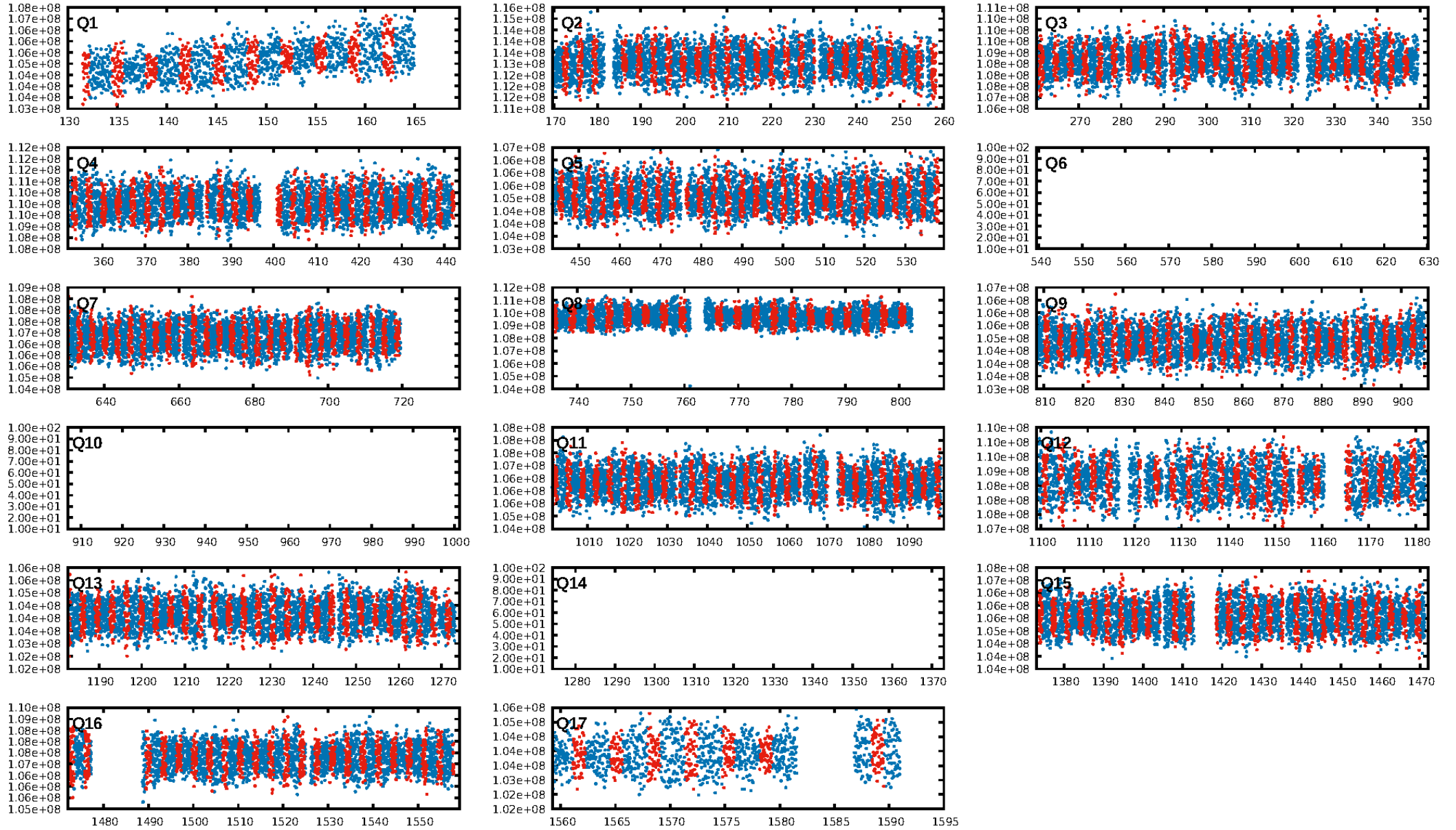
DV Fit Results:

Period = 3.41306 [0.00004] d
Epoch = 131.5987 [0.0097] BKJD
Rp/R* = 0.0143 [0.0092]
a/R* = 1.94 [5.41]
b = 0.45 [6.86]
Seff = 2634.27 [1052.79]
Teff = 1827 [183] K
Rp = 2.50 [1.76] Re
a = 0.0477 [0.0116] AU
Ag = 12.18 [17.12] [0.65σ]
Teffp = 5276 [1801] K [1.91σ]

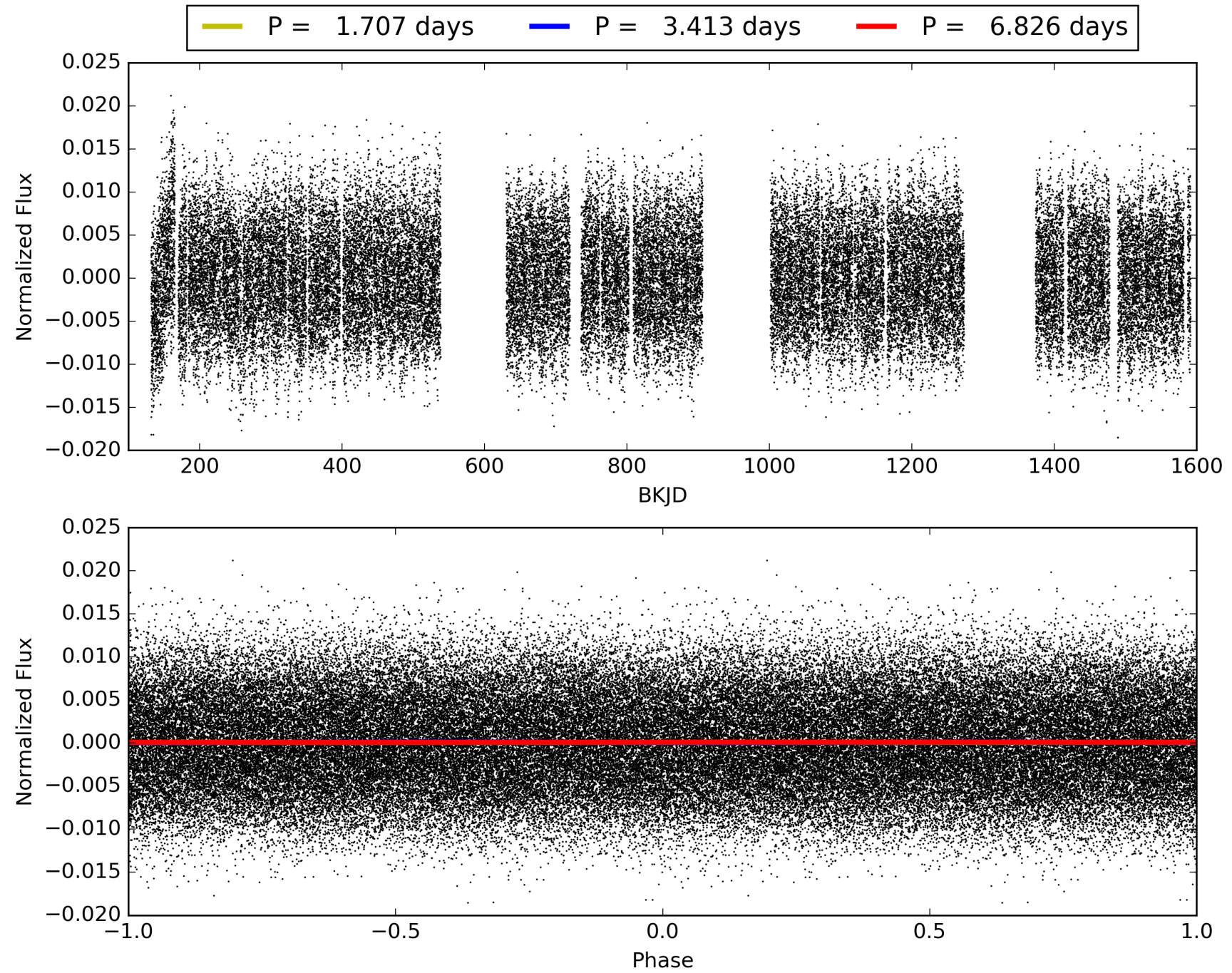
DV Diagnostic Results:

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 [299/299]
GhostDiagnostic-chr: 1.13
Centroid-sig: 0.0%
Centroid-so: 0.077 arcsec [0.54σ]
OotOffset-rm: 0.159 arcsec [0.94σ]
KicOffset-rm: 0.207 arcsec [1.07σ]
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 003455863-01, PDC Light Curves

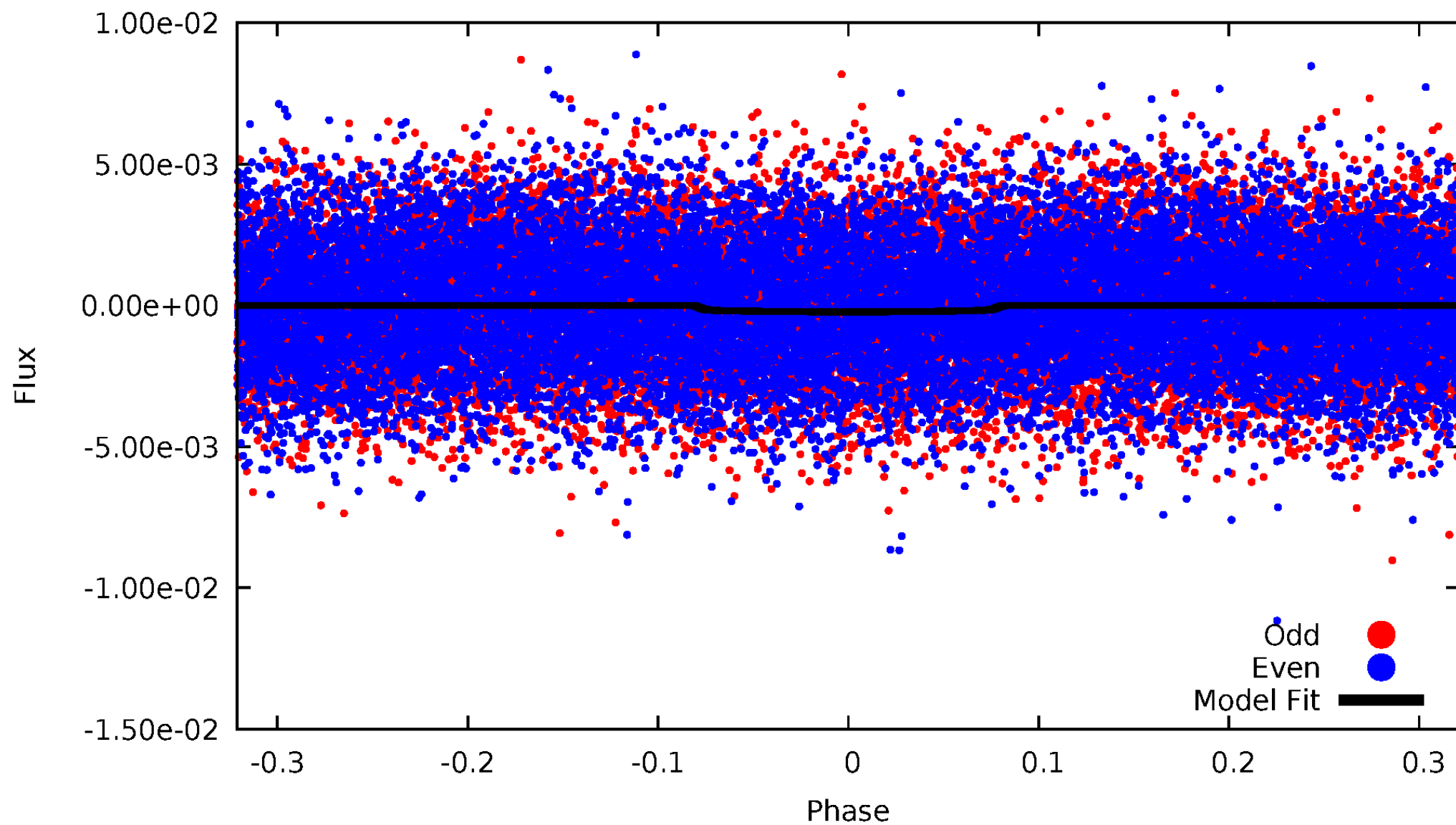


TCE 003455863-01



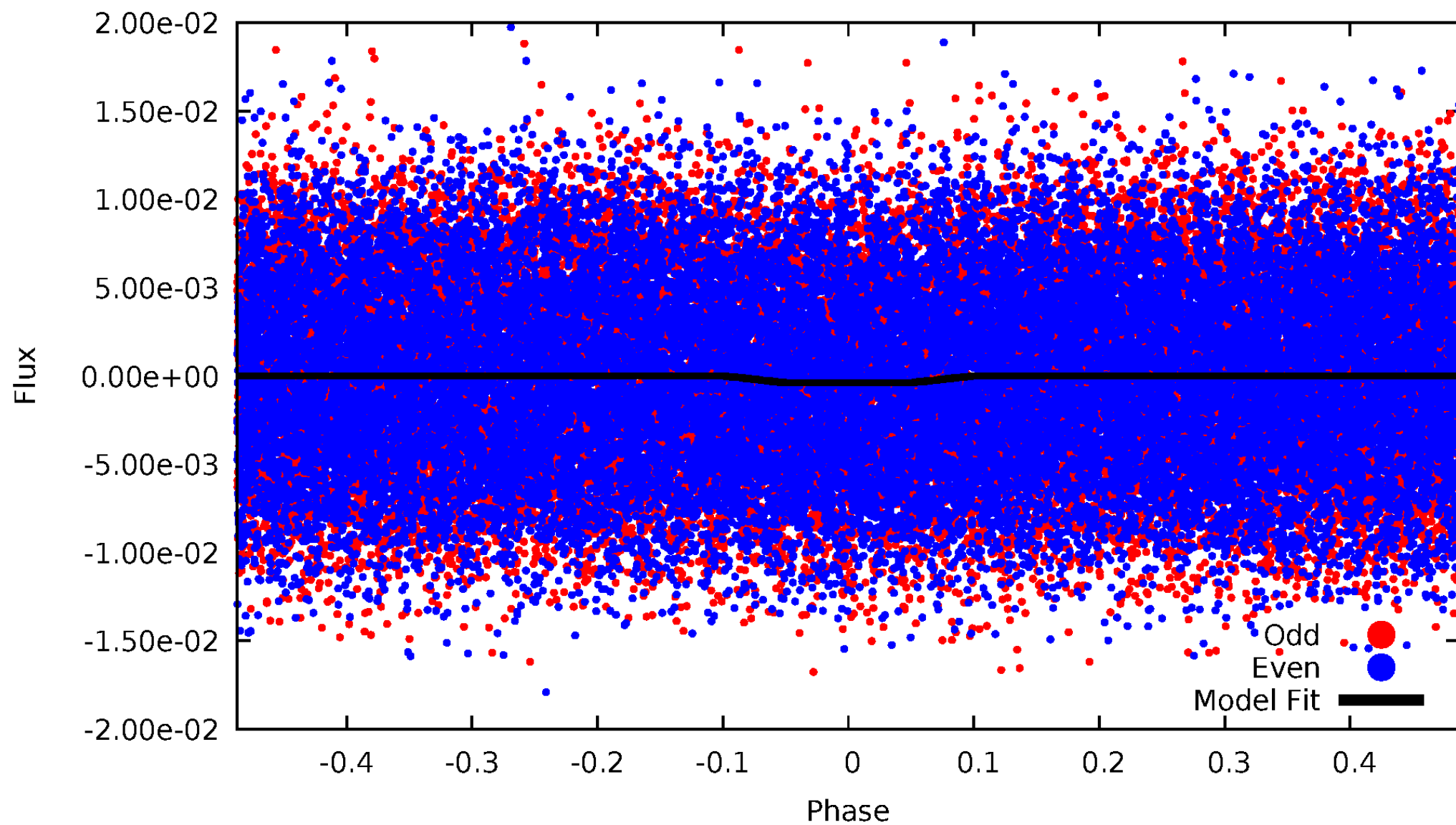
DV Odd/Even

TCE 003455863-01

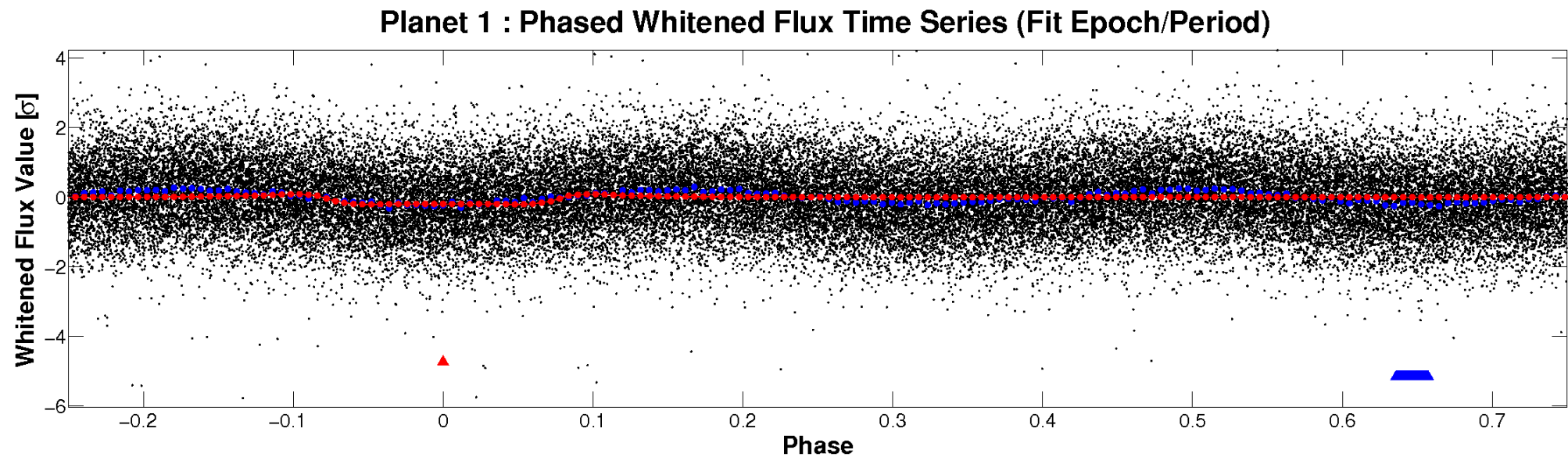
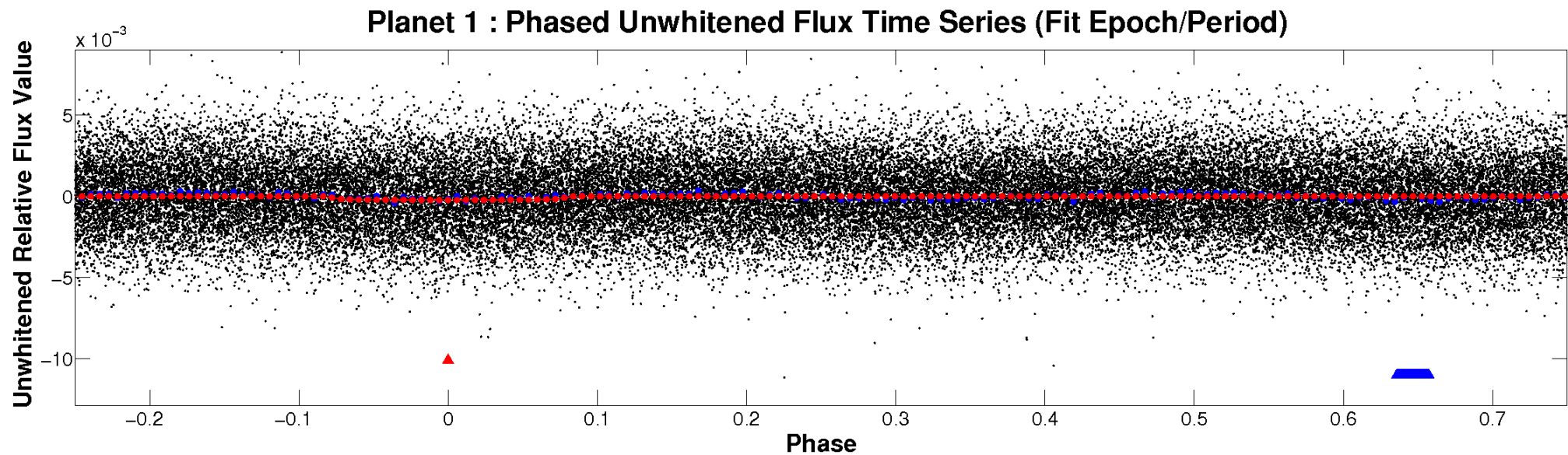


ALT Odd/Even

TCE 003455863-01

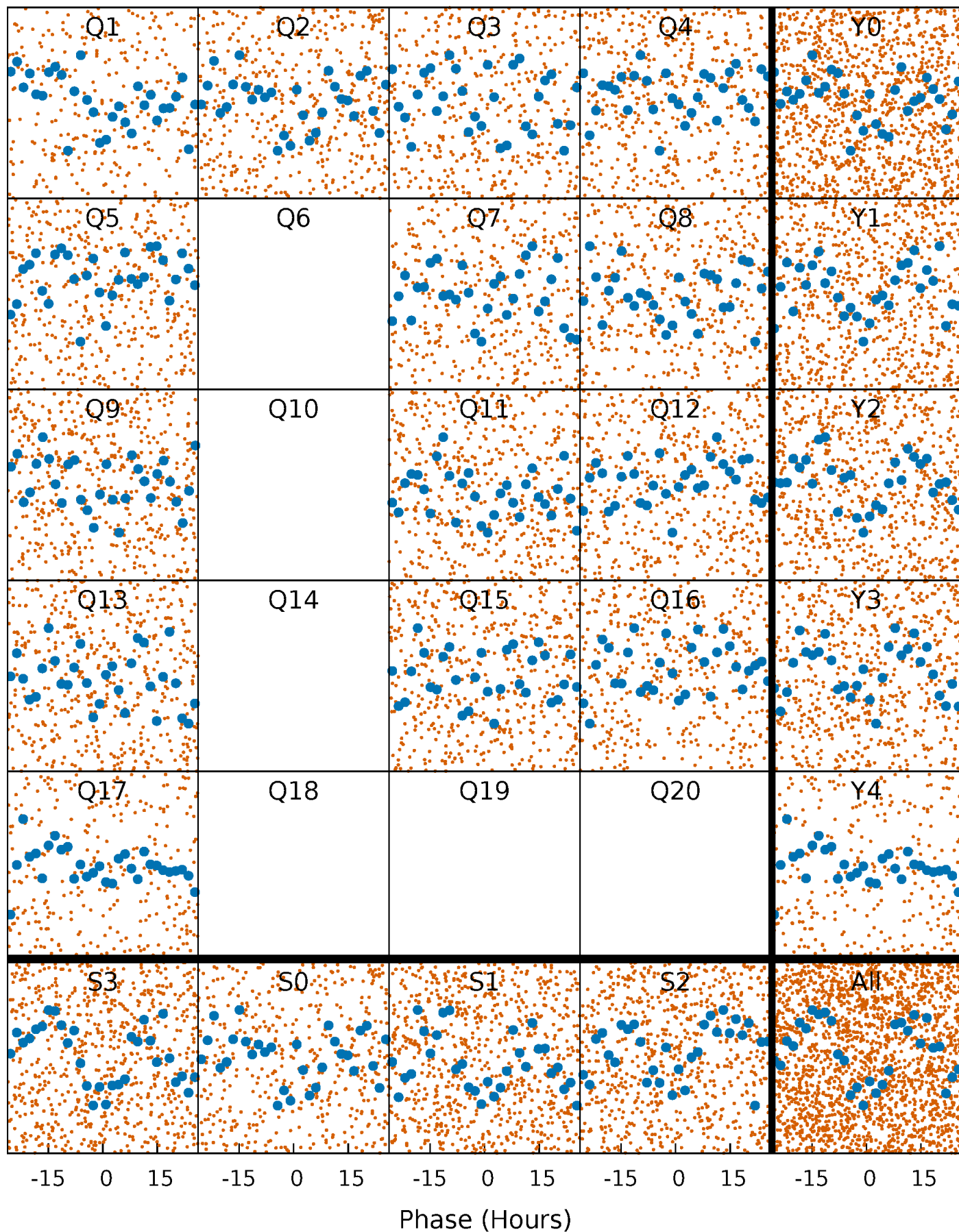


Non-Whitened Vs. Whitened Light Curve



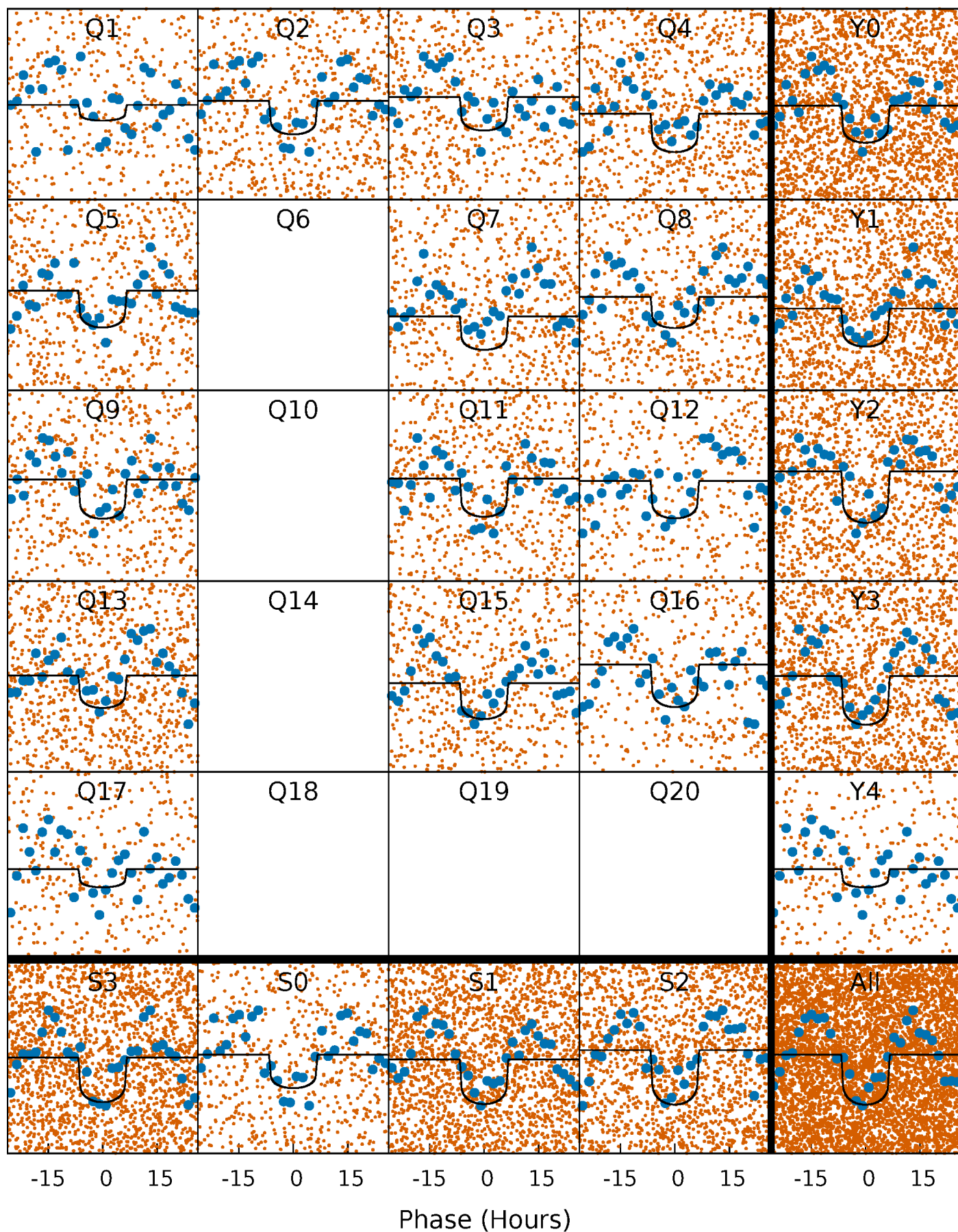
PDC Quarter-Phased Transit Curves

TCE 003455863-01 P= 3.413057 Days $T_0=131.598711$ (BKJD)



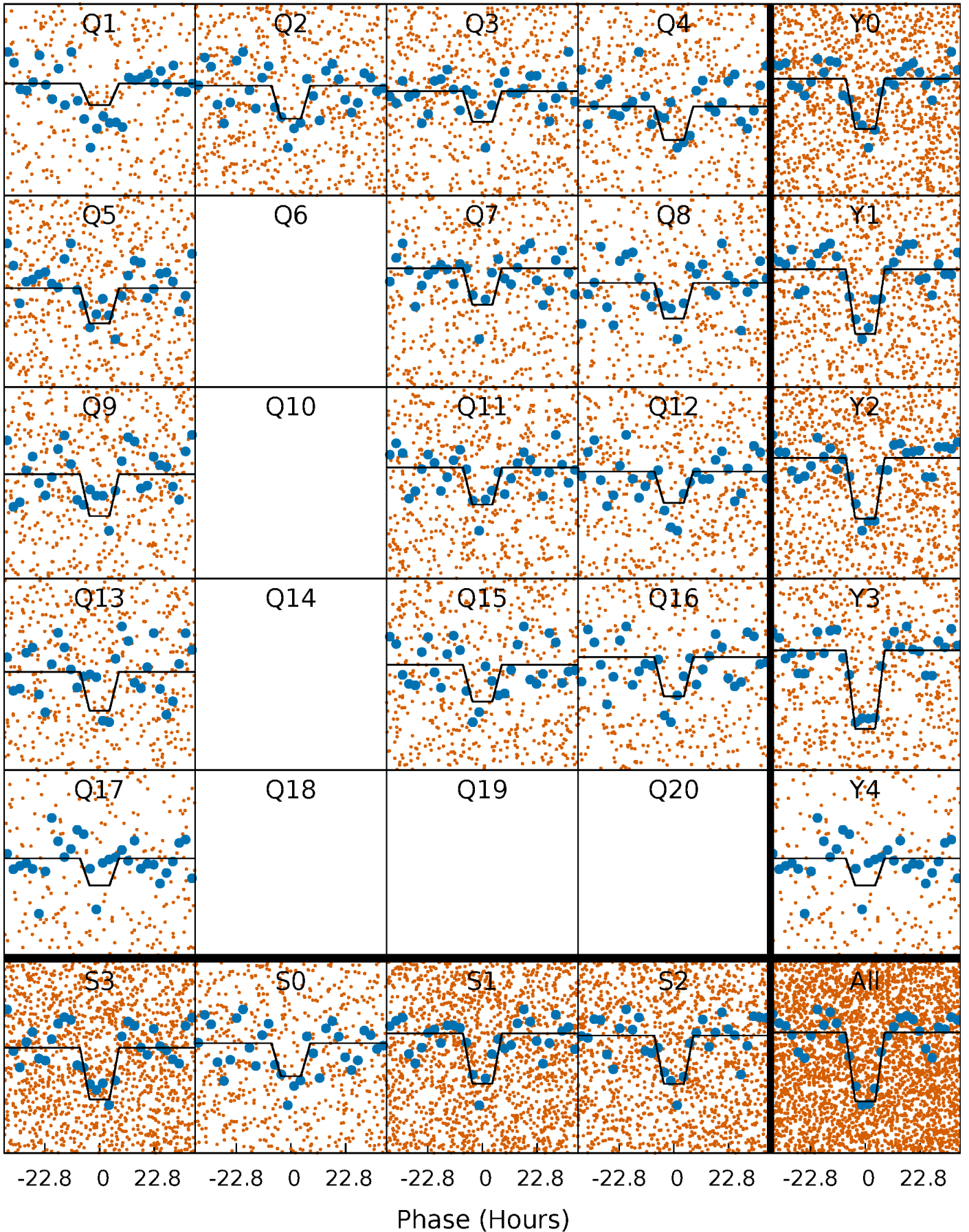
DV Quarter-Phased Transit Curves

TCE 003455863-01 P= 3.413057 Days $T_0=131.598711$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

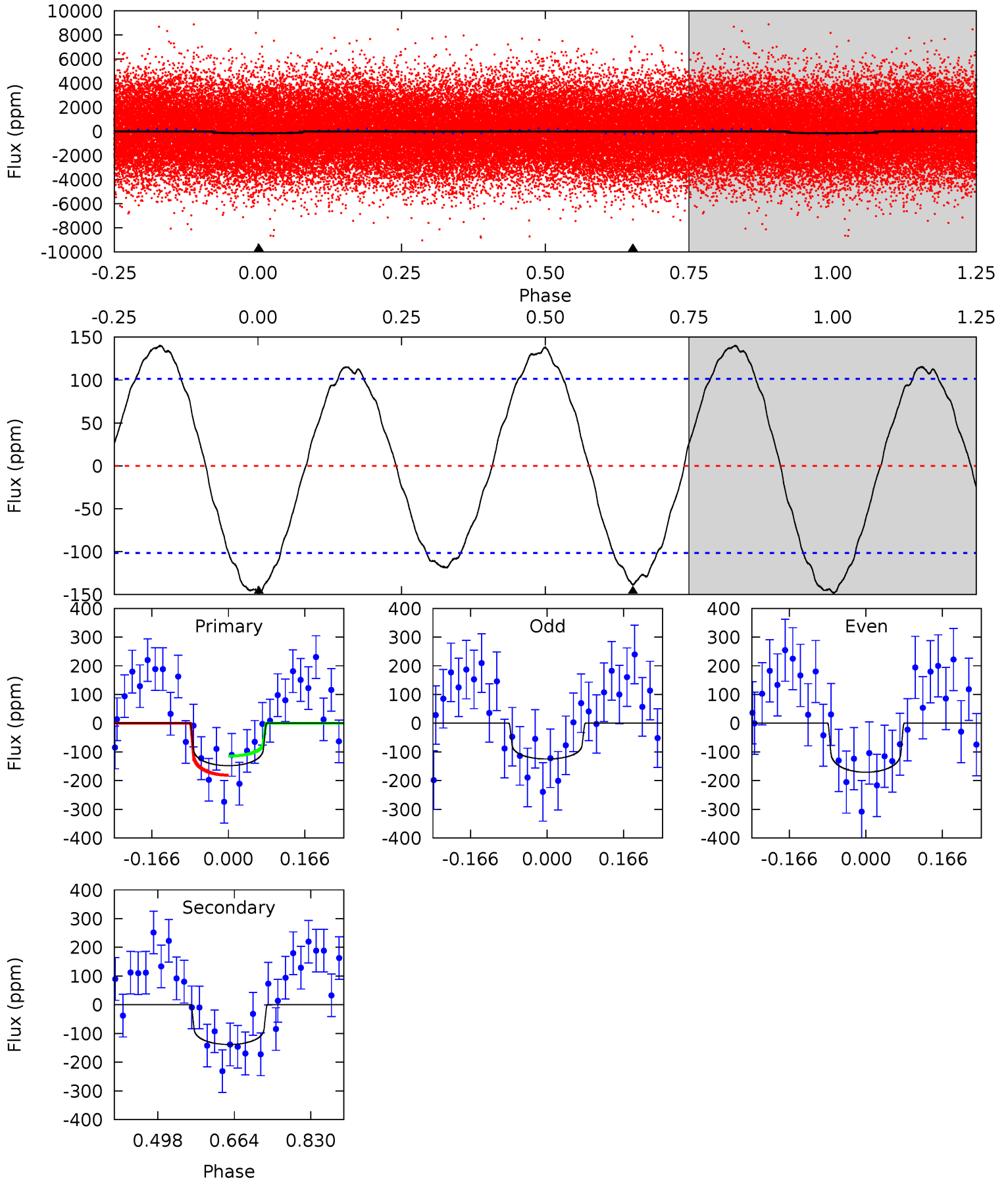
TCE 003455863-01 P= 3.412967 Days $T_0=131.586664$ (BKJD)



DV Model-Shift Uniqueness Test

003455863-01, P = 3.413057 Days, E = 128.185654 Days

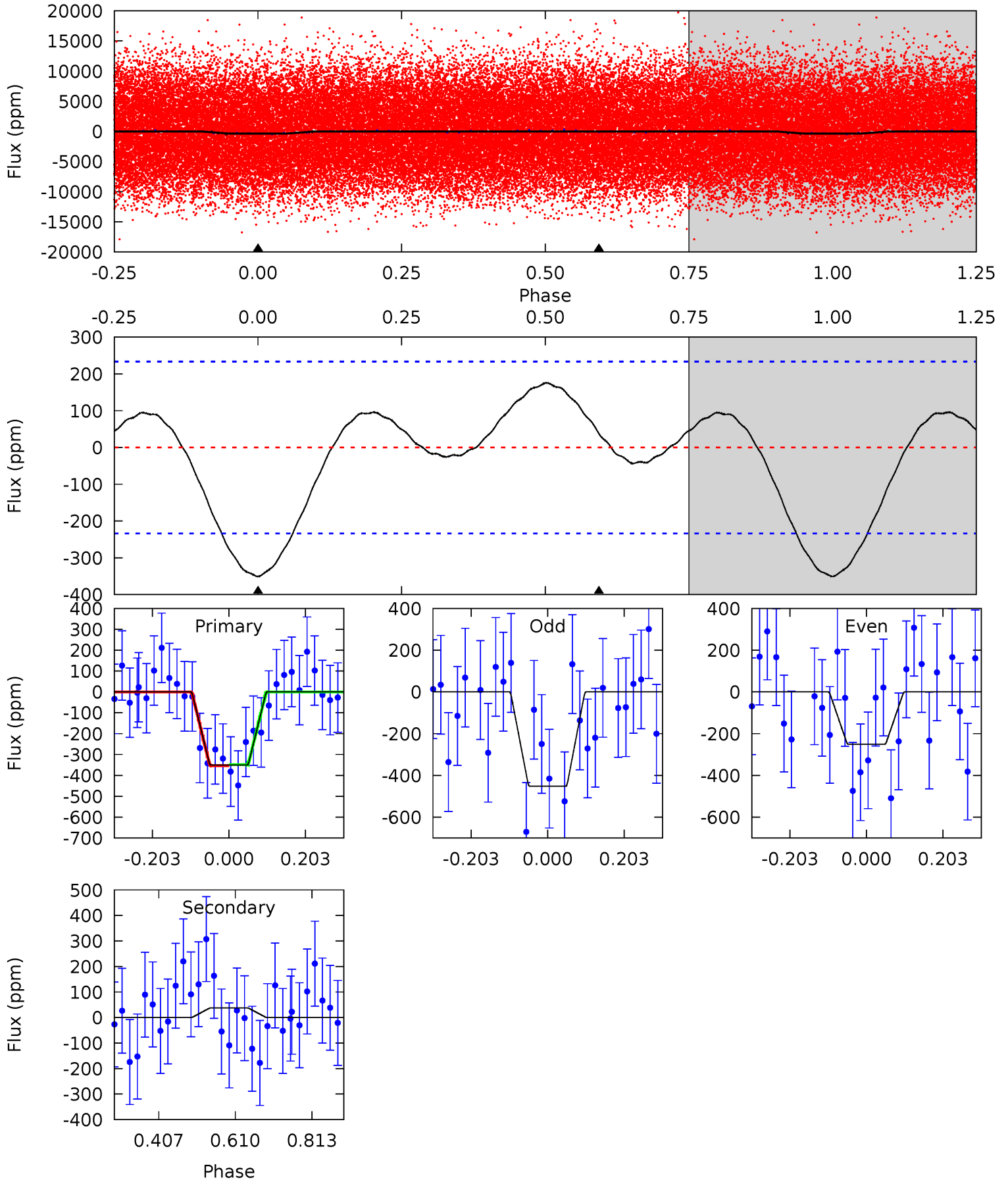
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.50	6.08	0	0	4.46	1.39	3.84	6.50	6.50	6.08	6.08	1.01	0.94	0.49	1.43



Alt Model-Shift Uniqueness Test

003455863-01, P = 3.412967 Days, E = 128.173697 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.62	-0.71	0	0	4.41	1.27	0.74	6.62	6.62	-0.71	-0.71	1.91	1.18	0.33	0.05



Stellar Parameters For KIC 003455863

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7140^{+225}_{-275}	$4.122^{+0.209}_{-0.171}$	$-0.480^{+0.250}_{-0.300}$	$1.606^{+0.438}_{-0.394}$	$1.245^{+0.192}_{-0.174}$	$0.424^{+0.493}_{-0.201}$
	+3%/-4%	+5%/-4%	+52%/-62%	+27%/-25%	+15%/-14%	+116%/-47%
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 003455863-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-138 ± 23	$2.54^{+1.64}_{-1.48}$	2541^{+202}_{-186}	6300^{+4888}_{-1312}	27^{+126}_{-17}
Alt.	38 ± 53	$3.33^{+1.79}_{-1.53}$	2543^{+200}_{-195}	-4185^{+7481}_{-1570}	$-3.484^{+4.661}_{-13.776}$

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 $A_{obs} \gg 1.0$

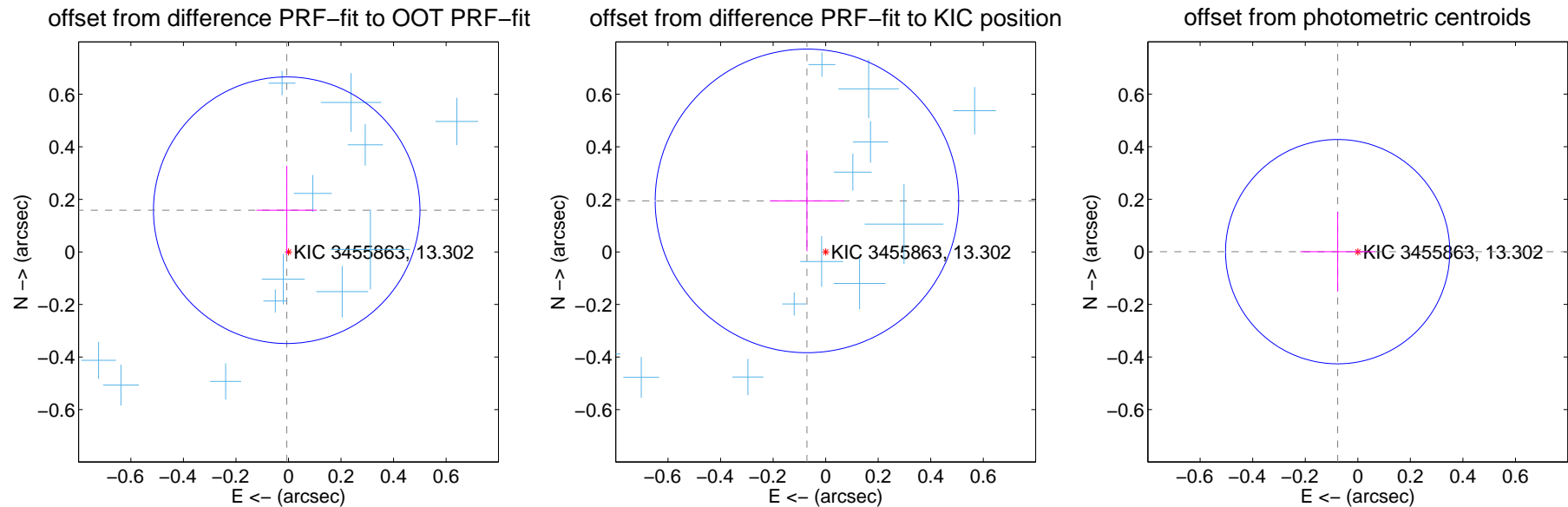
DV Centroid Data

Supplemental centroid analysis for 003455863-01. Kepler magnitude: 13.30. Transit SNR 16.71

There are 14 quarters with good PRF difference image offsets

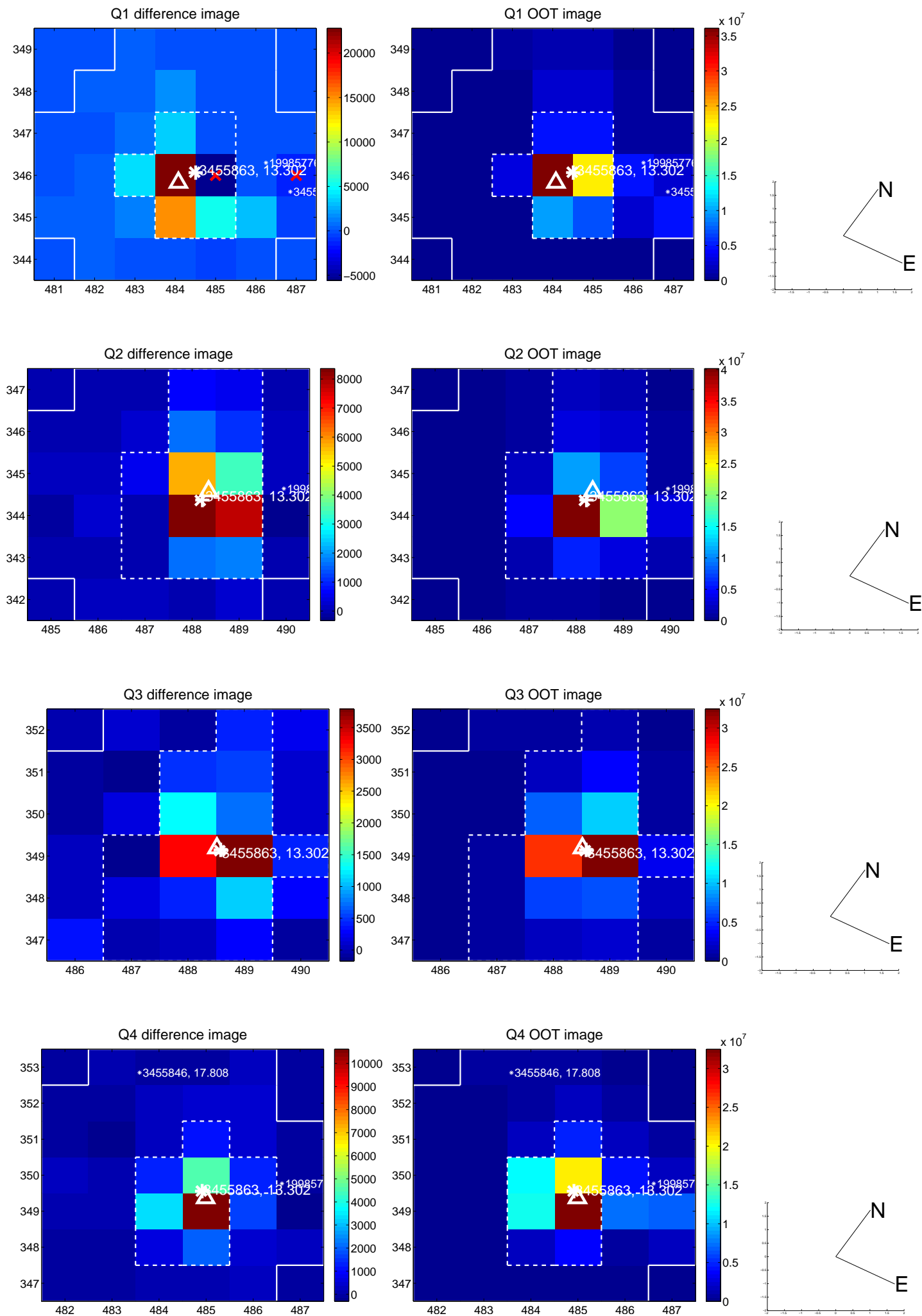
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.159 ± 0.169	0.94	0.007 ± 0.115	0.159 ± 0.169
PRF-fit source offset from KIC position	0.207 ± 0.193	1.07	0.071 ± 0.141	0.194 ± 0.192
photometric centroid source offset	0.08 ± 0.14	0.54	0.08 ± 0.14	0.00 ± 0.15

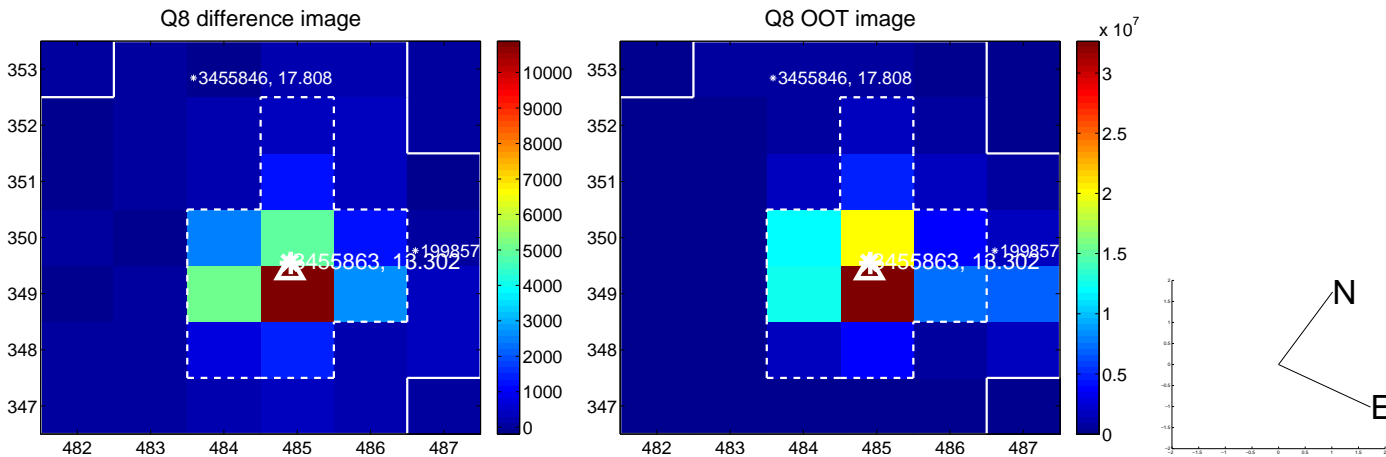
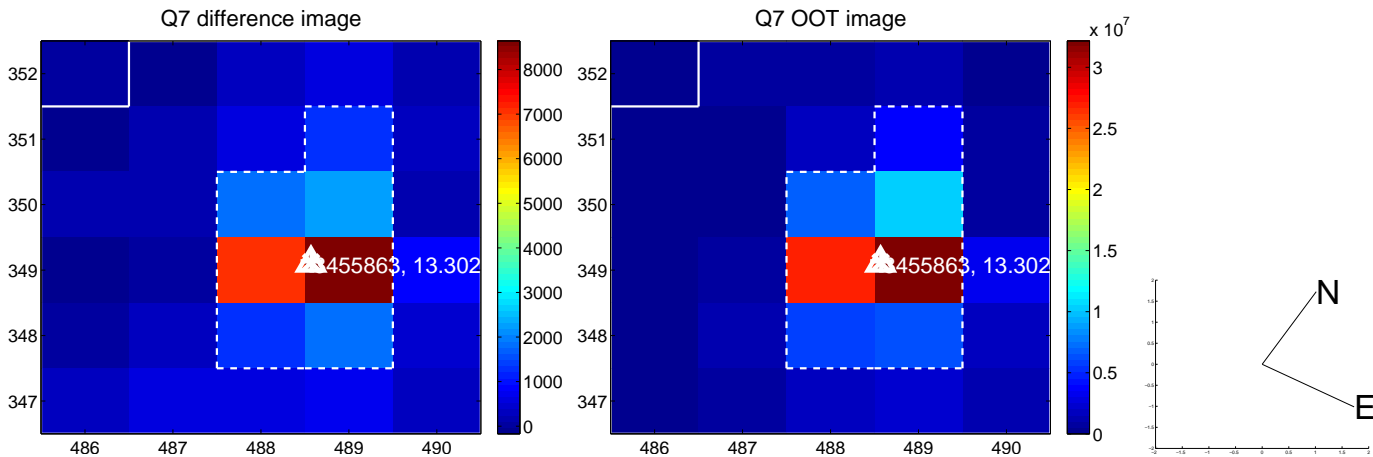
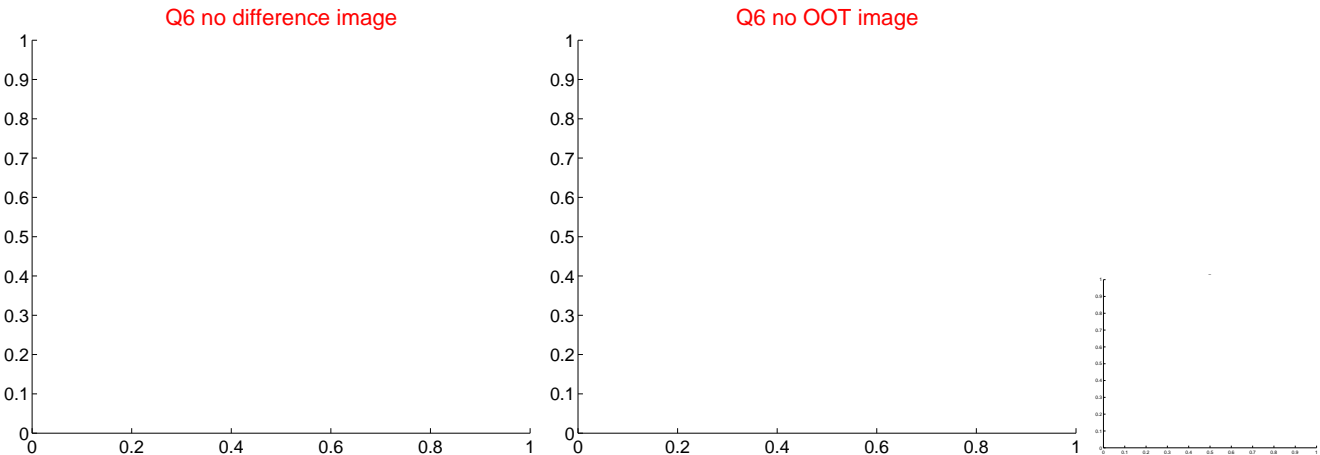
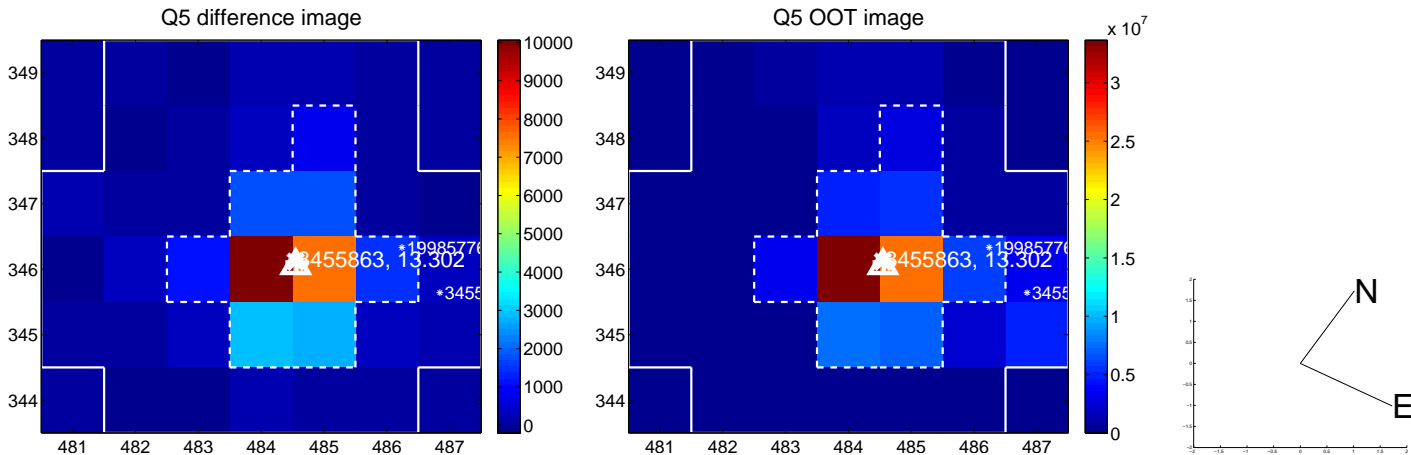


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

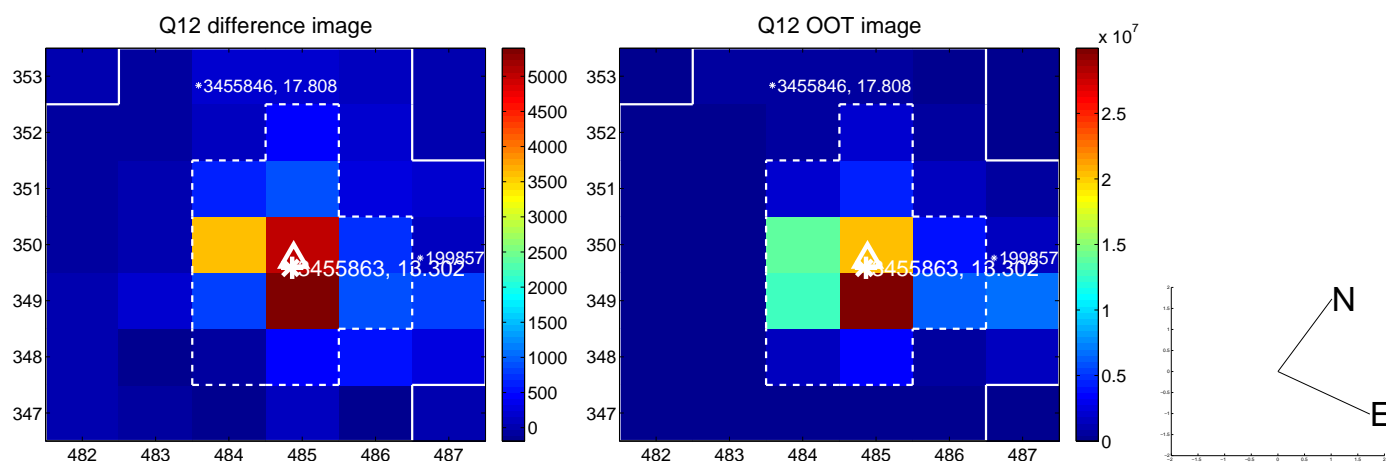
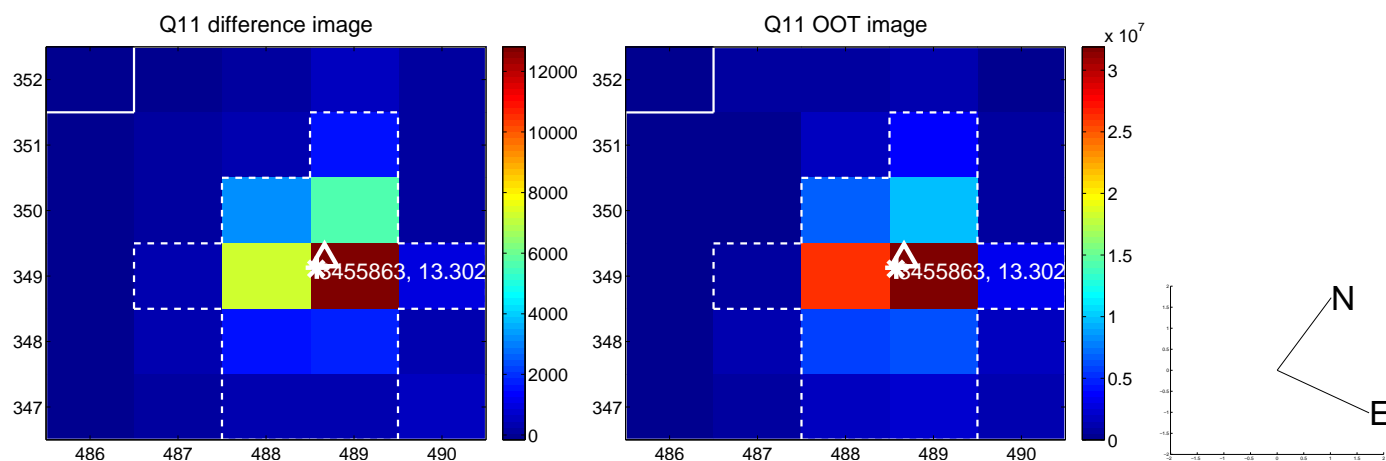
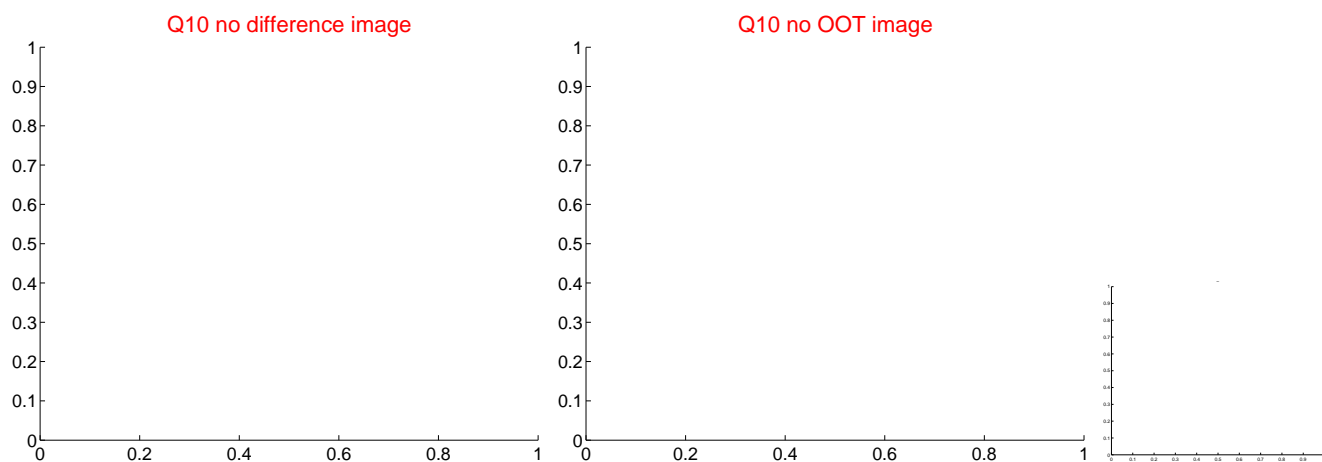
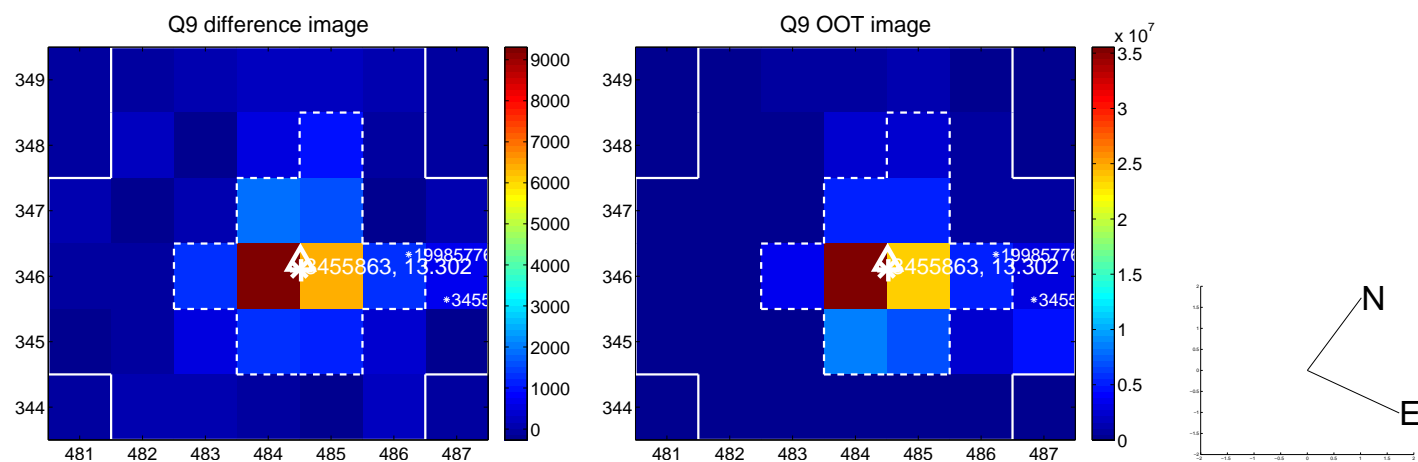
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



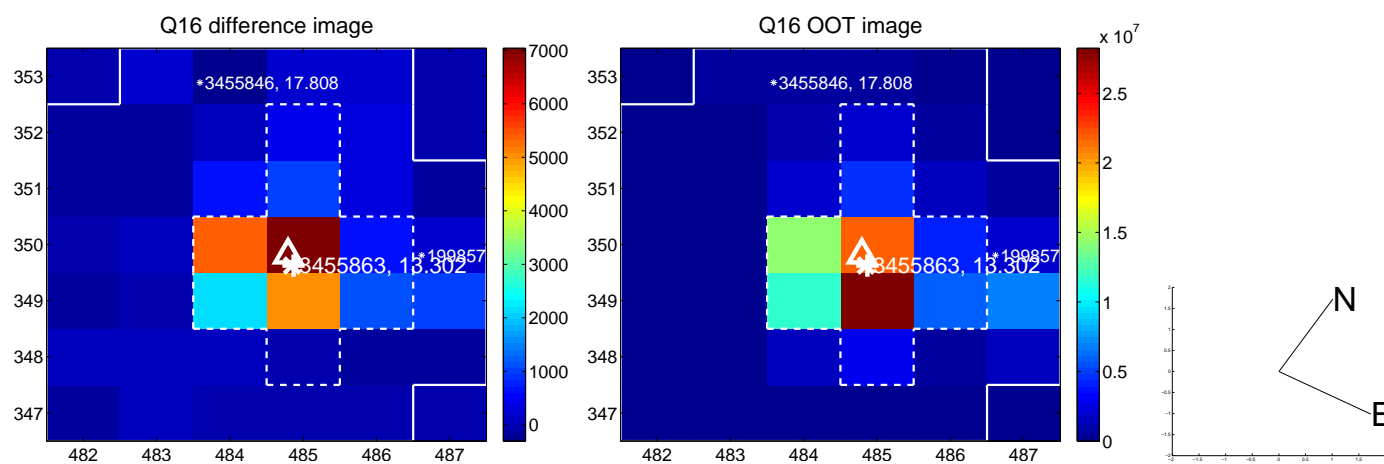
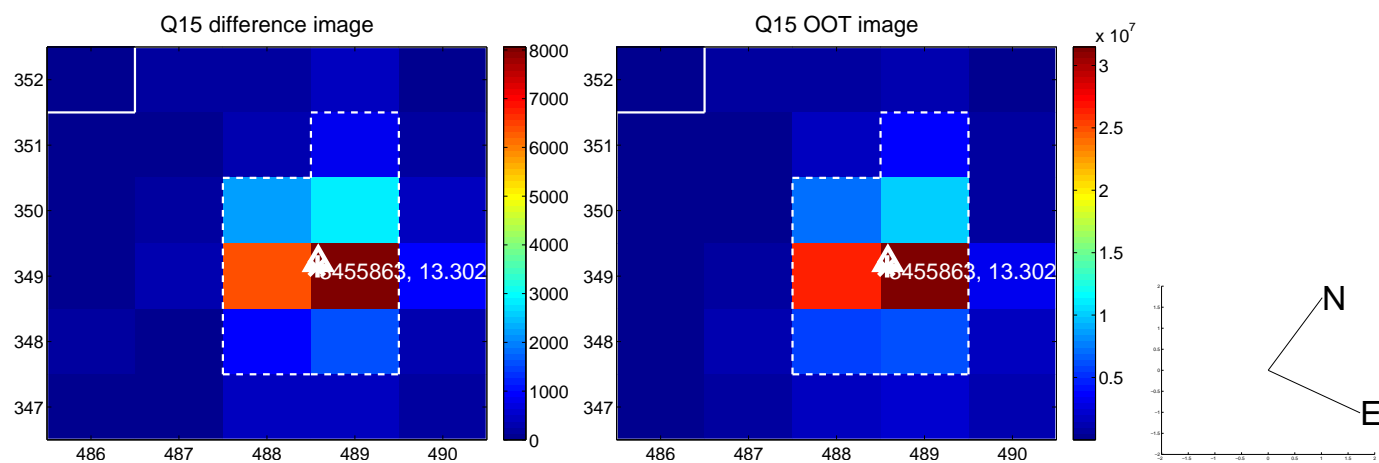
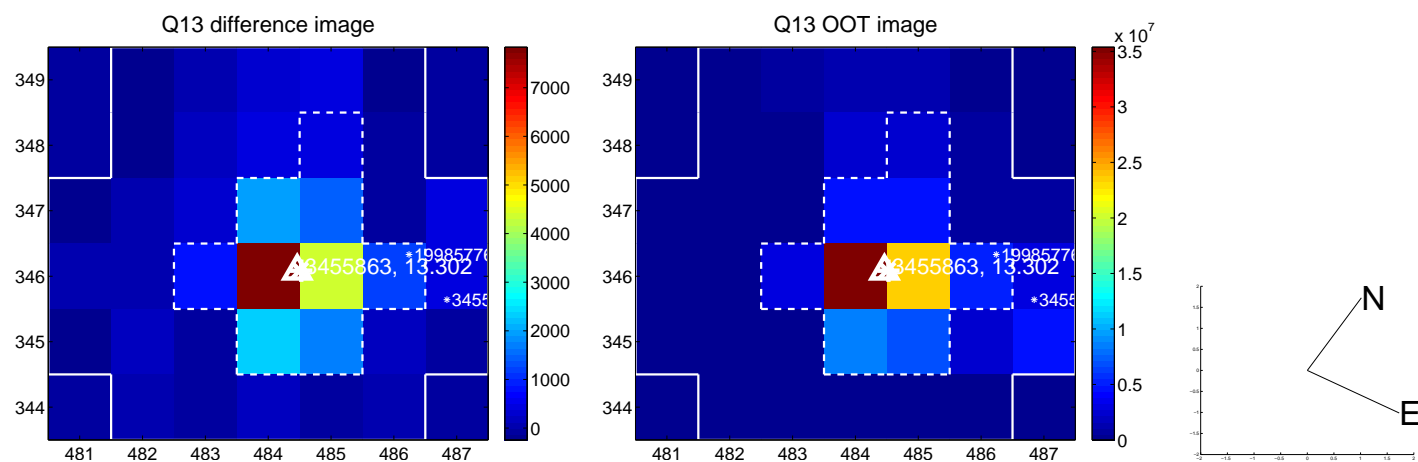
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



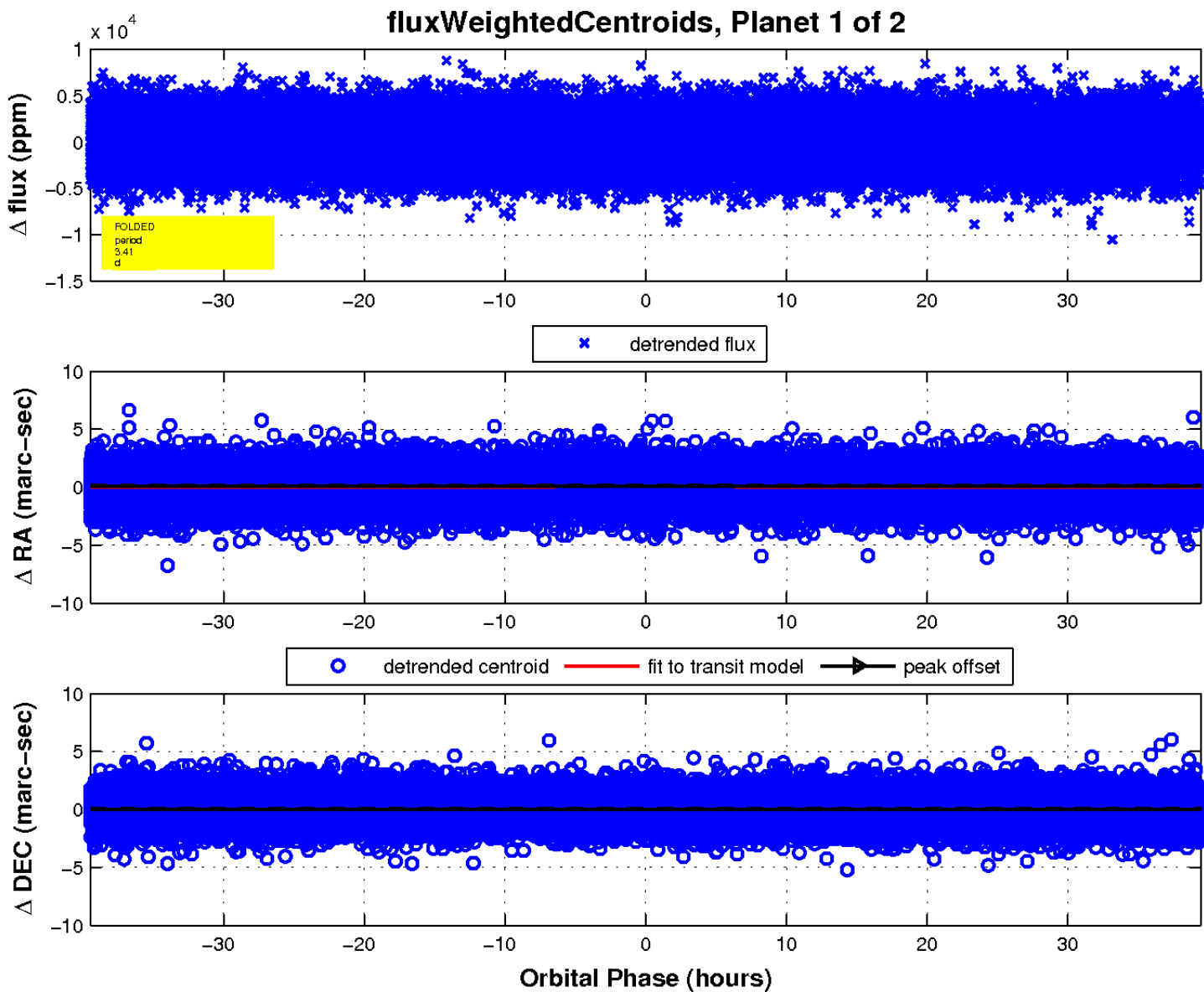
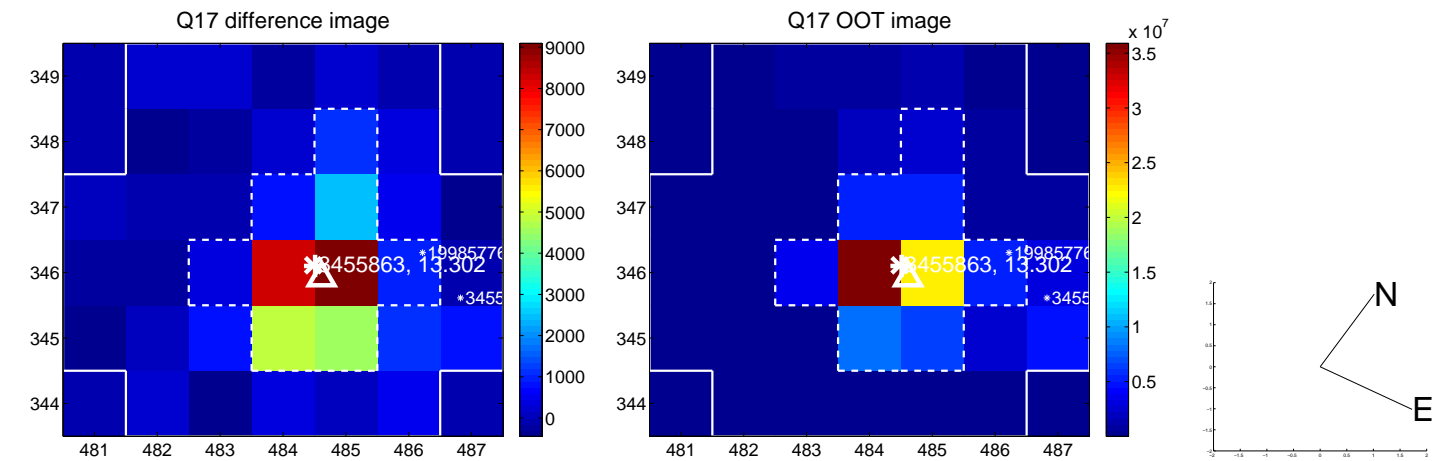
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

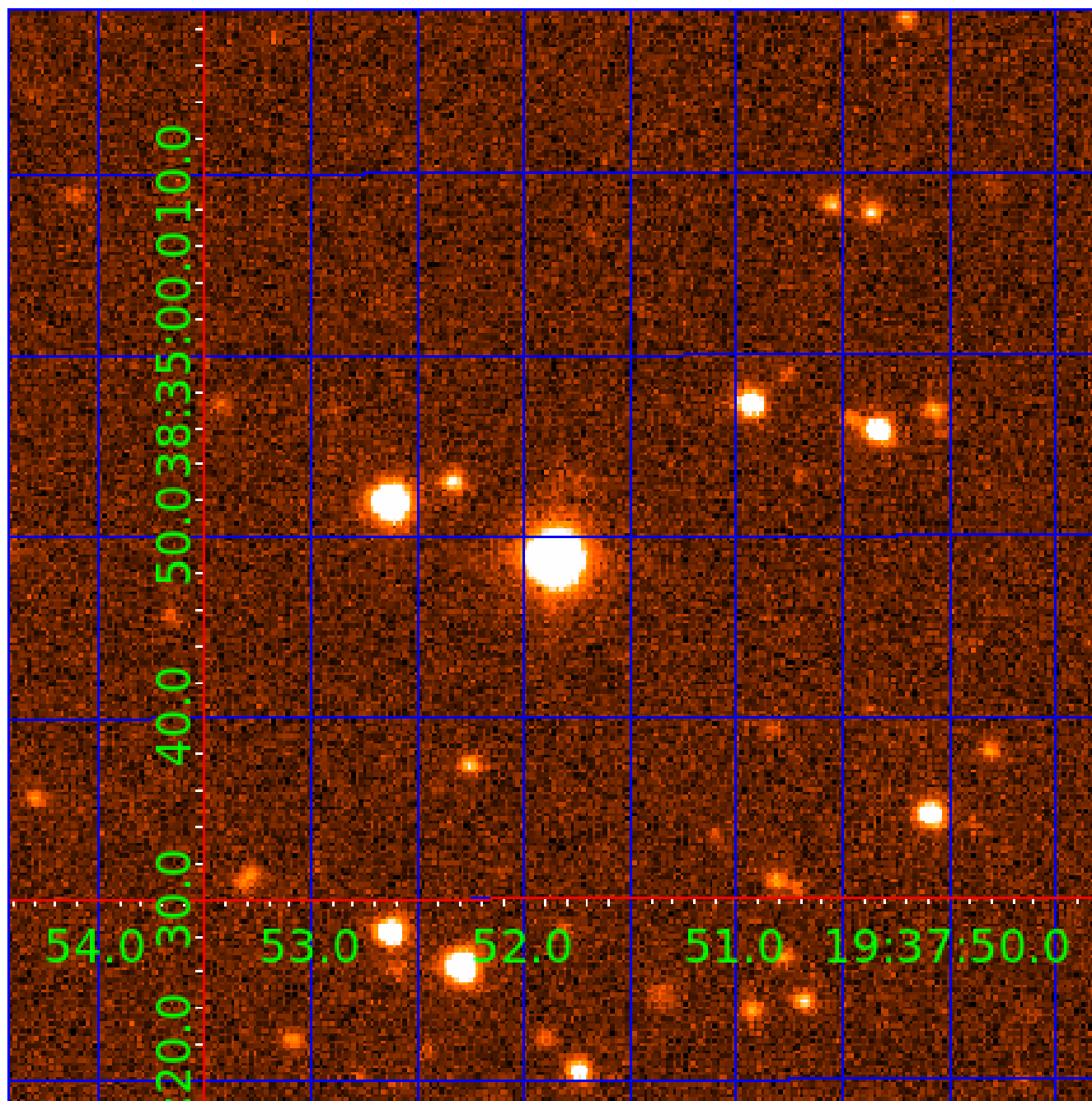


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003455863

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})
003455863-01	OBS	No	3.413057	131.598711	228.5	13.153	13.3	16.7	1.61	7140	2.50	2634.27
003455863-02	OBS	No	3.412885	133.841956	206.6	15.965	9.8	11.7	1.61	7140	3.58	2634.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003455863-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
003455863-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

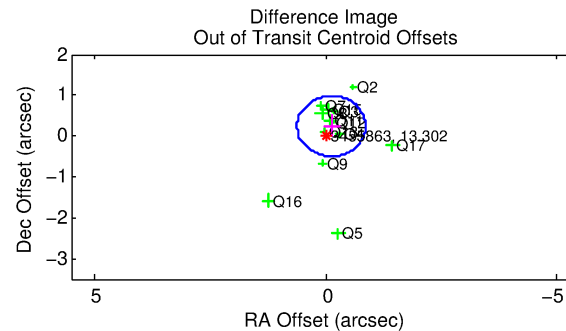
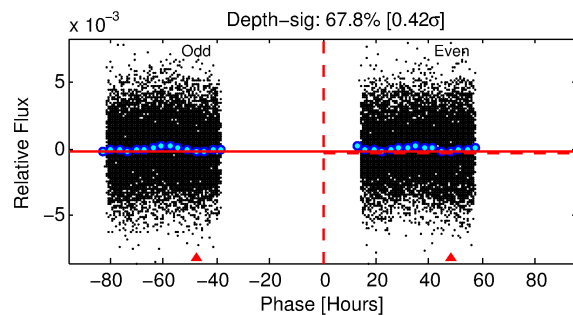
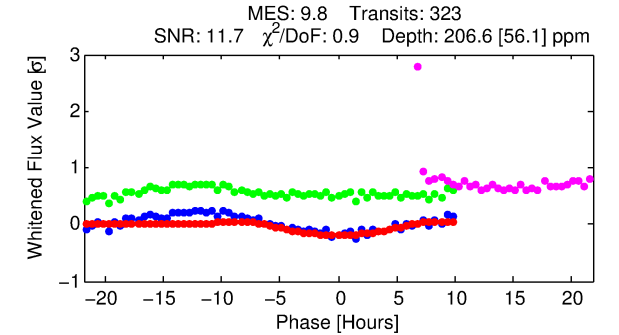
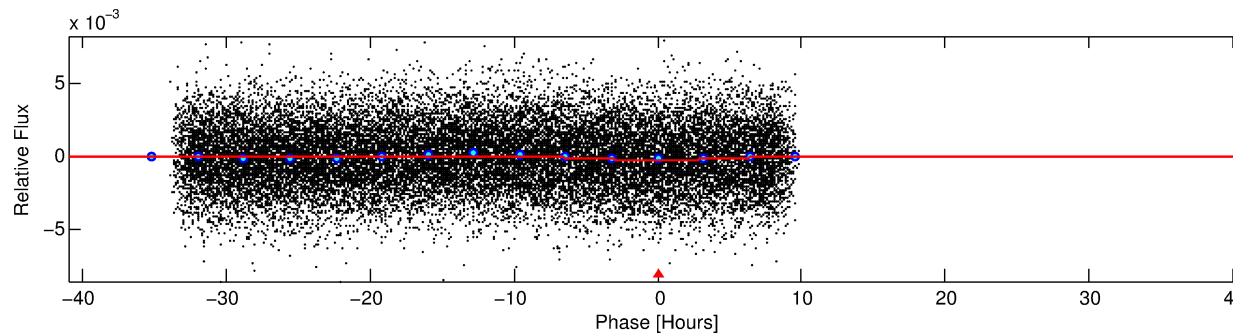
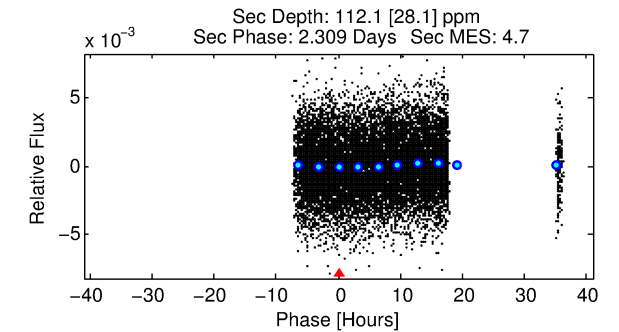
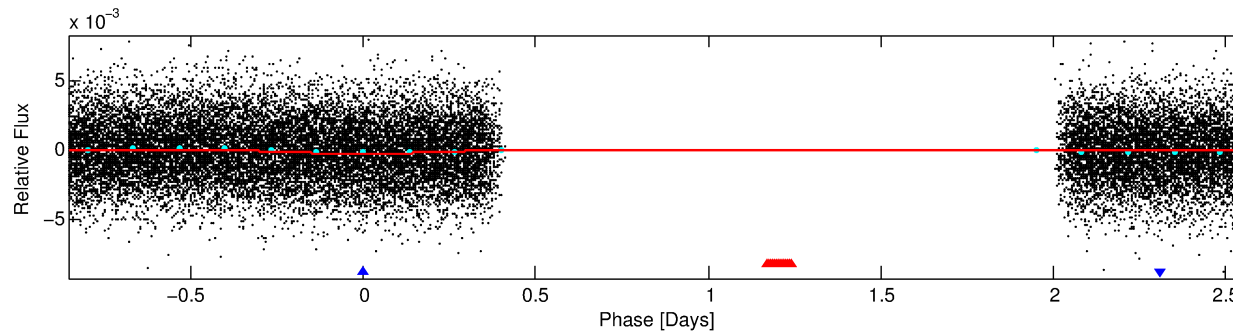
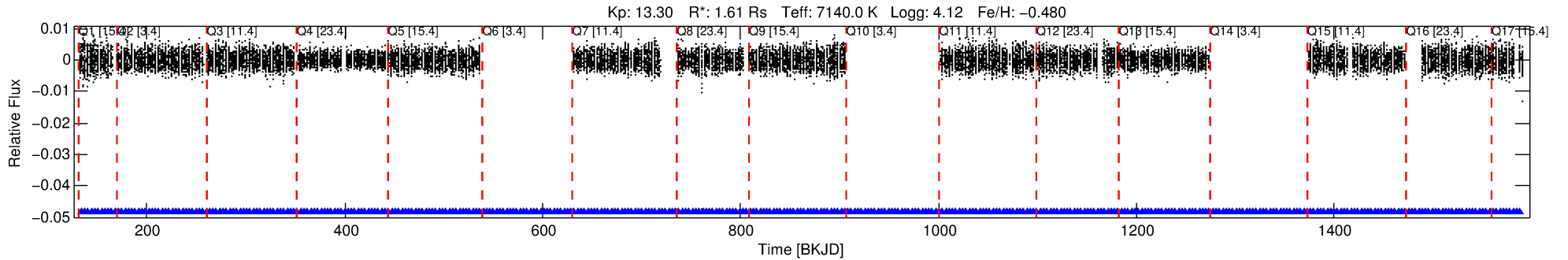
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003455863-02

No Significant Match Found

DV One-Page Summary

KIC: 3455863 Candidate: 2 of 2 Period: 3.413 d



DV Fit Results:

Period = 3.41289 [0.00011] d
Epoch = 133.8420 [0.0269] BKJD
Rp/R* = 0.0204 [0.0186]
a/R* = 1.08 [0.03]
b = 0.99 [0.04]
Seff = 2634.44 [1052.86]
Teq = 1827 [183] K
Rp = 3.58 [3.41] Re
a = 0.0477 [0.0116] AU
Ag = 10.96 [20.58] [0.48σ]
Teffp = 5139 [2373] K [1.39σ]

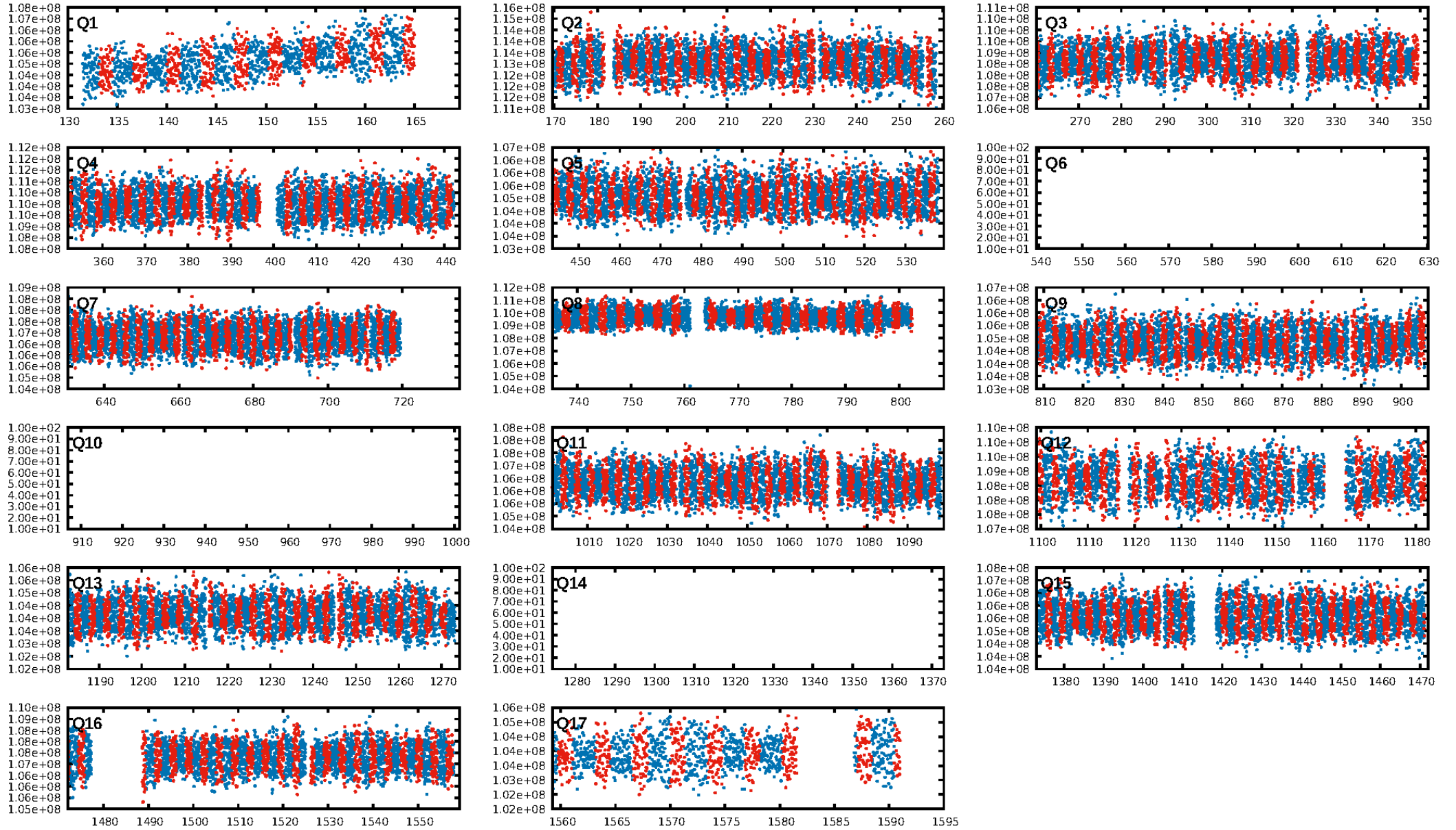
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [304/304]
GhostDiagnostic-chr: 1.265
Centroid-sig: 0.0%
Centroid-so: 0.305 arcsec [1.51σ]
OotOffset-rm: 0.272 arcsec [1.10σ]
KicOffset-rm: 0.294 arcsec [1.04σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 0.00 [0/14]

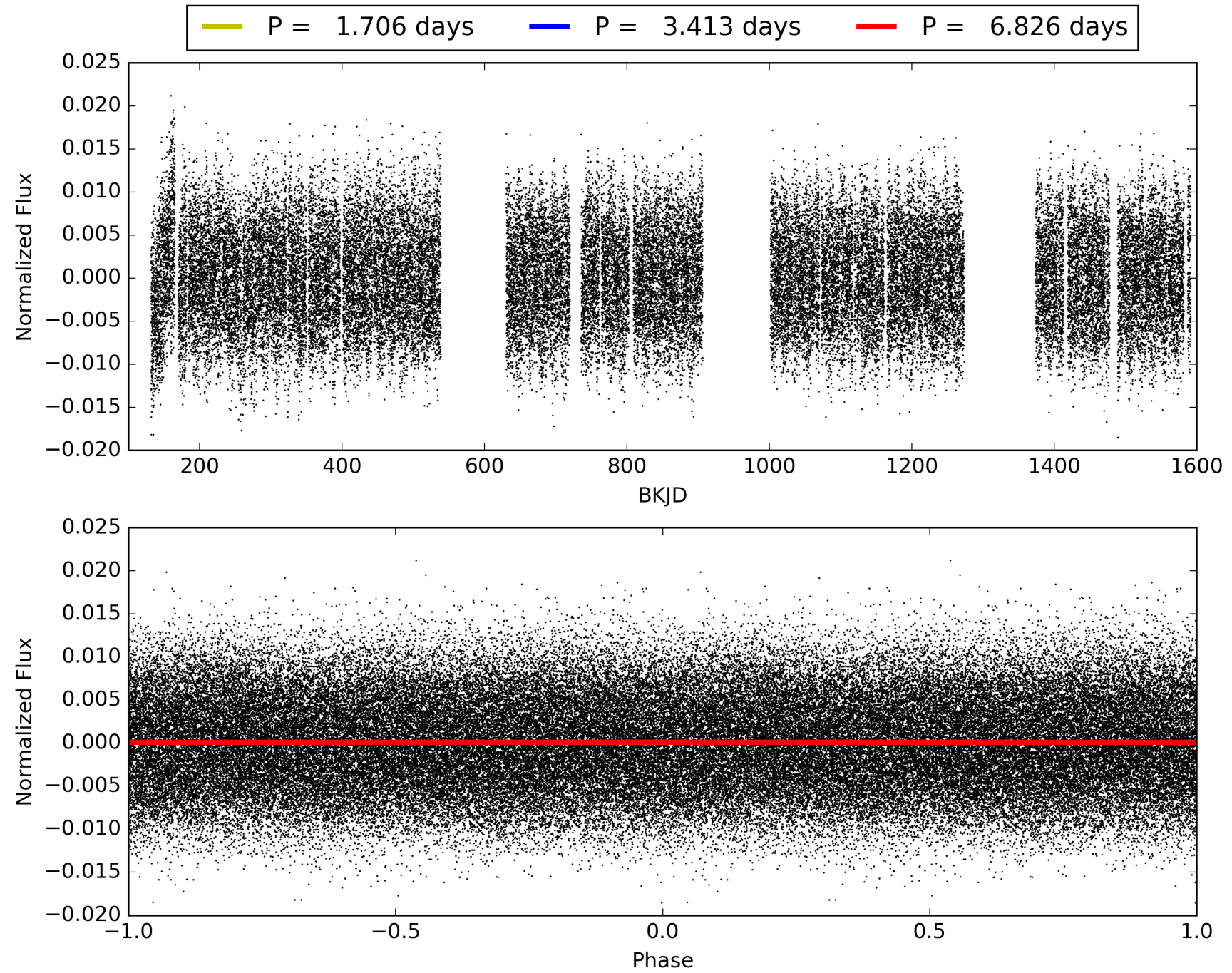
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:03:44 Z

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

TCE 003455863-02, PDC Light Curves

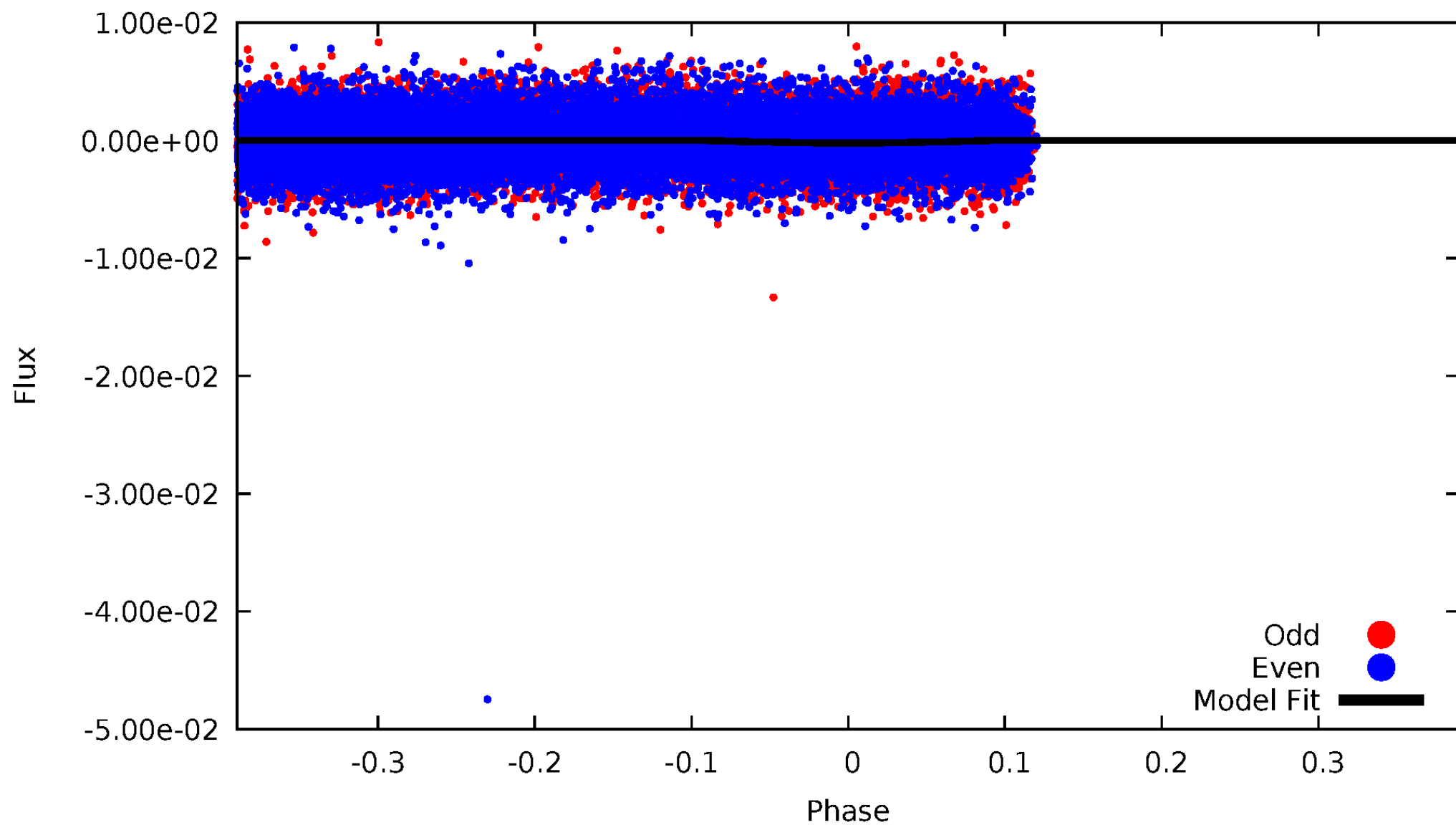


TCE 003455863-02



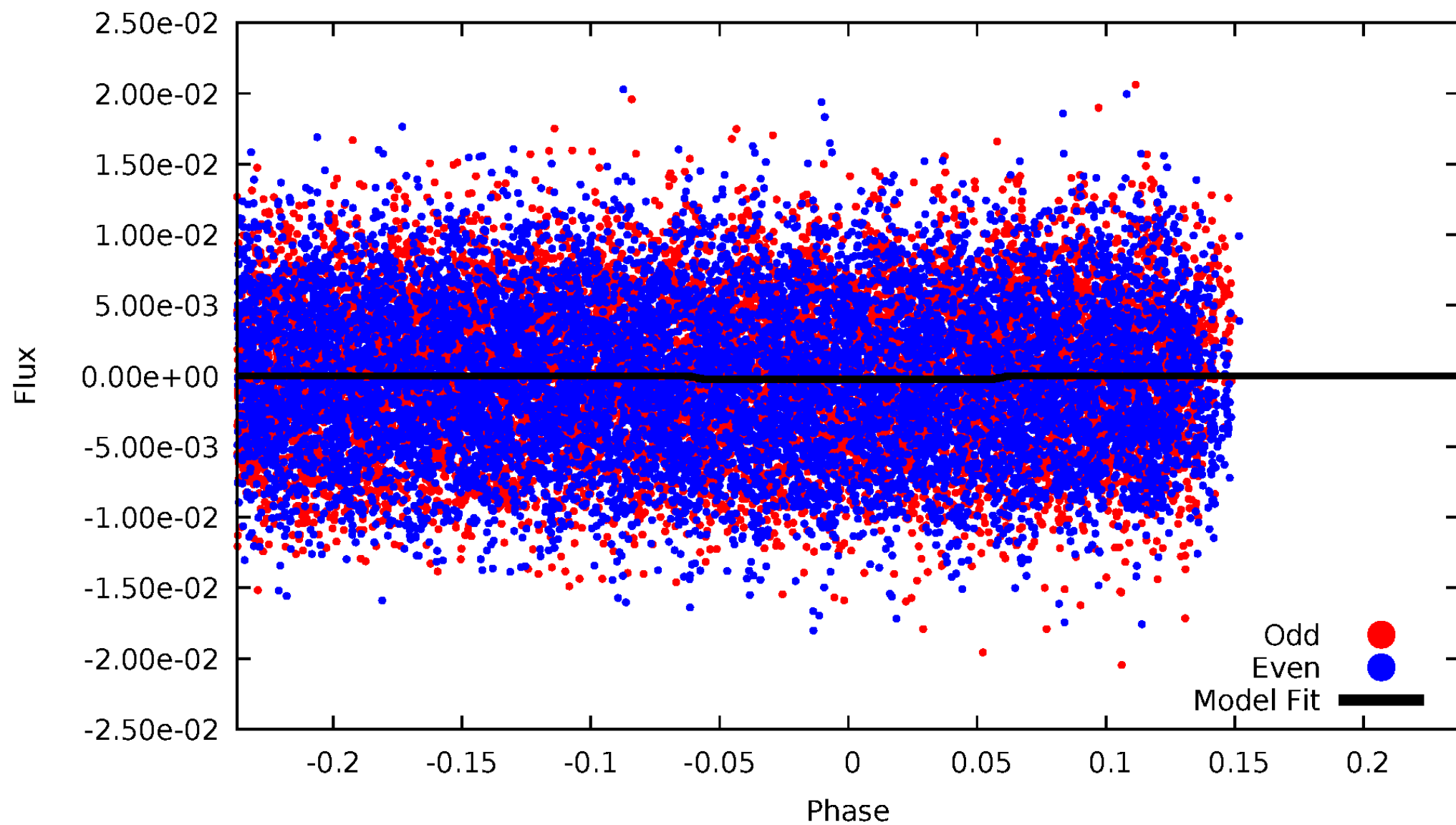
DV Odd/Even

TCE 003455863-02



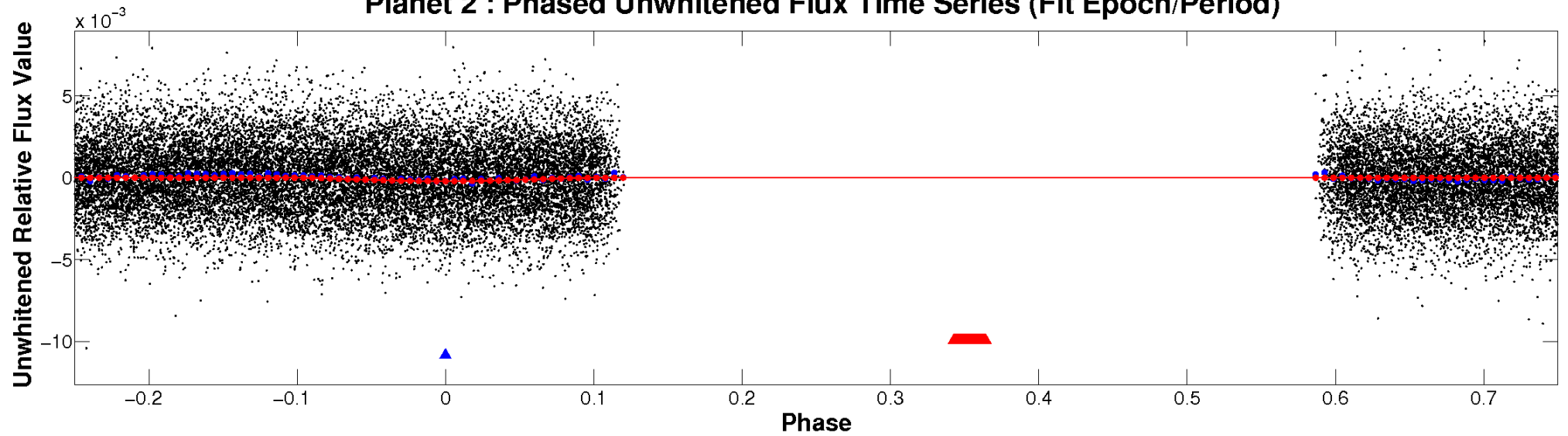
ALT Odd/Even

TCE 003455863-02

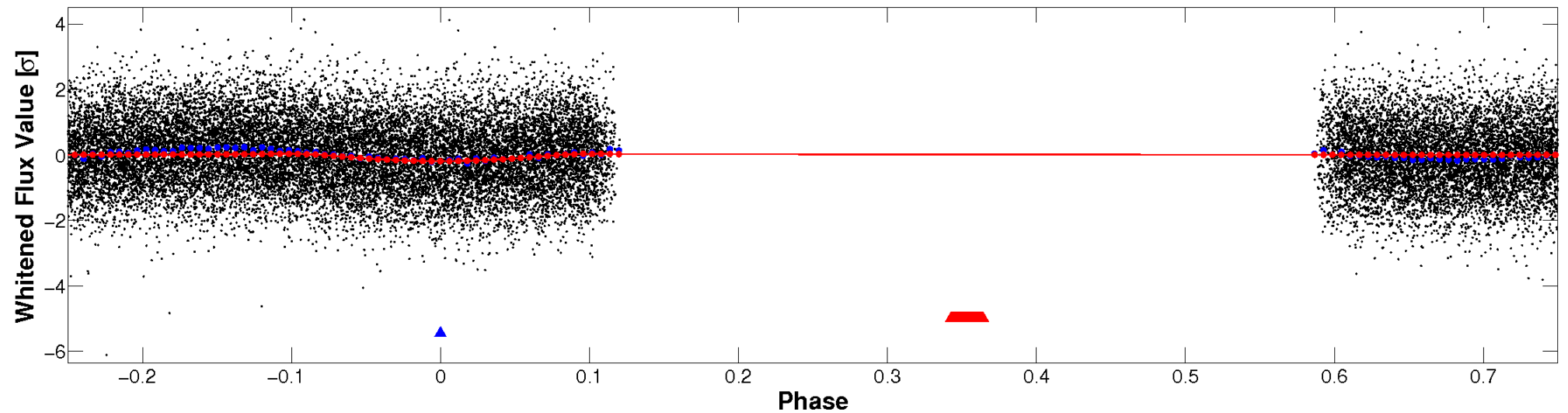


Non-Whitened Vs. Whitened Light Curve

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

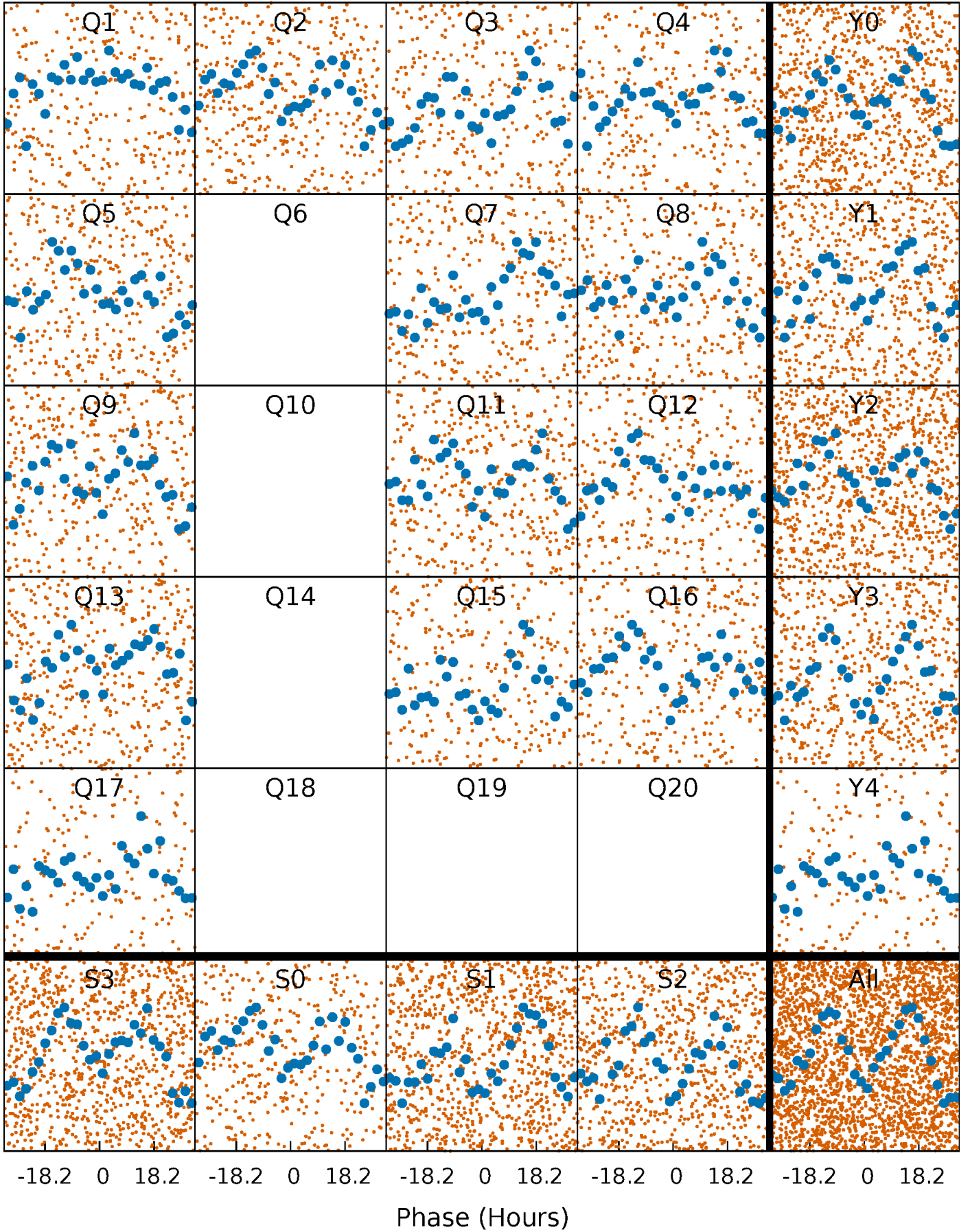


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



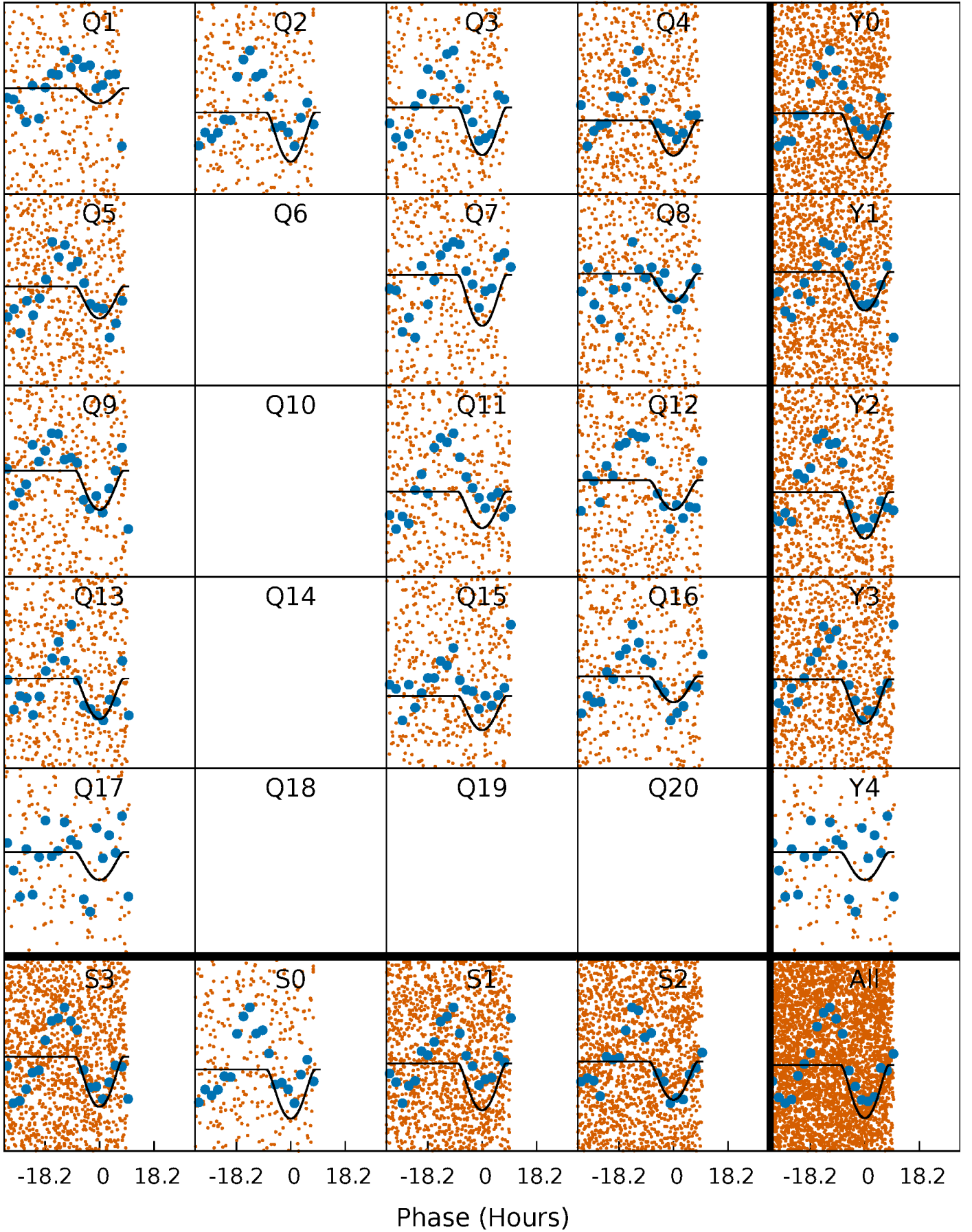
PDC Quarter-Phased Transit Curves

TCE 003455863-02 P= 3.412885 Days $T_0=133.841956$ (BKJD)



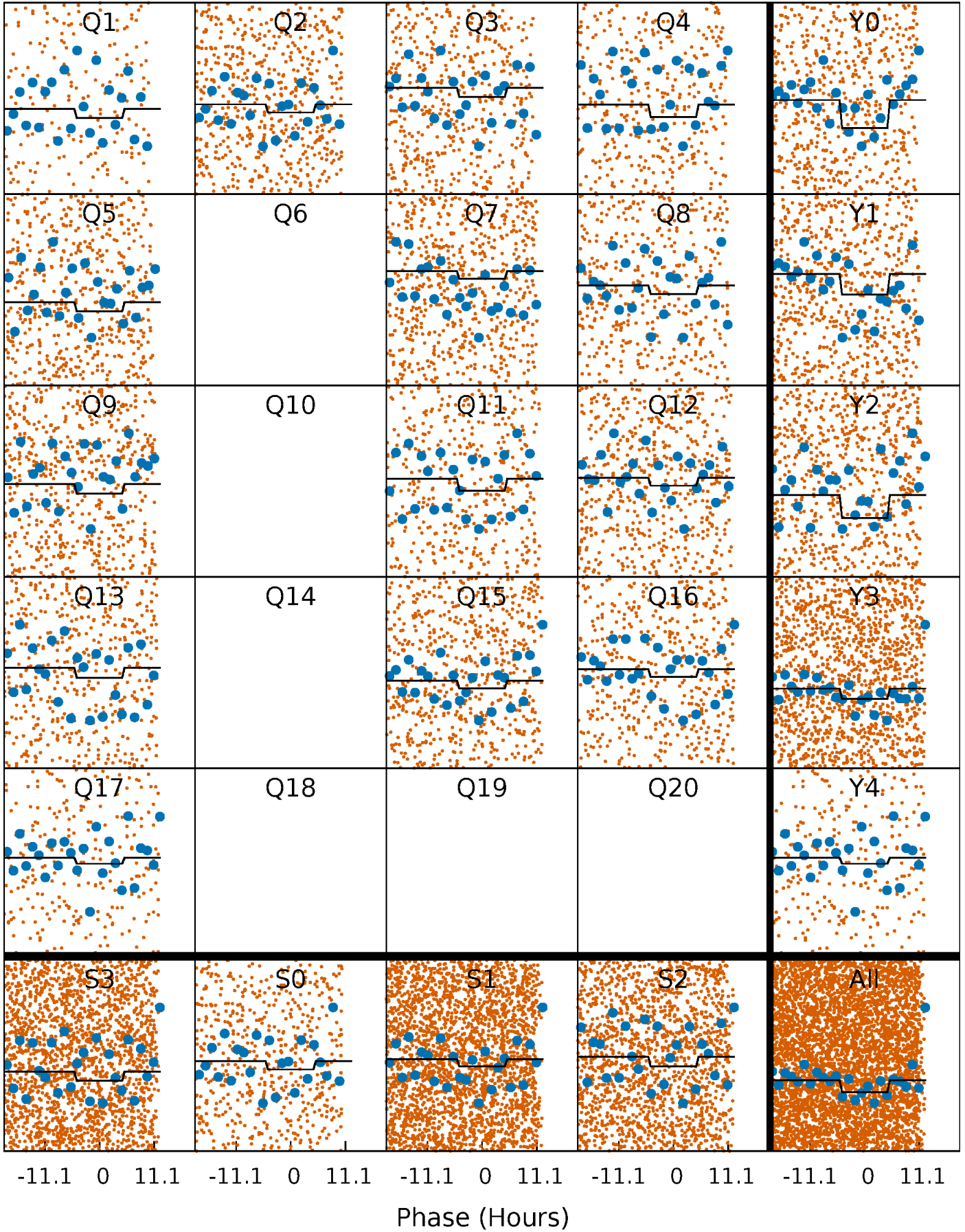
DV Quarter-Phased Transit Curves

TCE 003455863-02 $P = 3.412885$ Days $T_0 = 133.841956$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

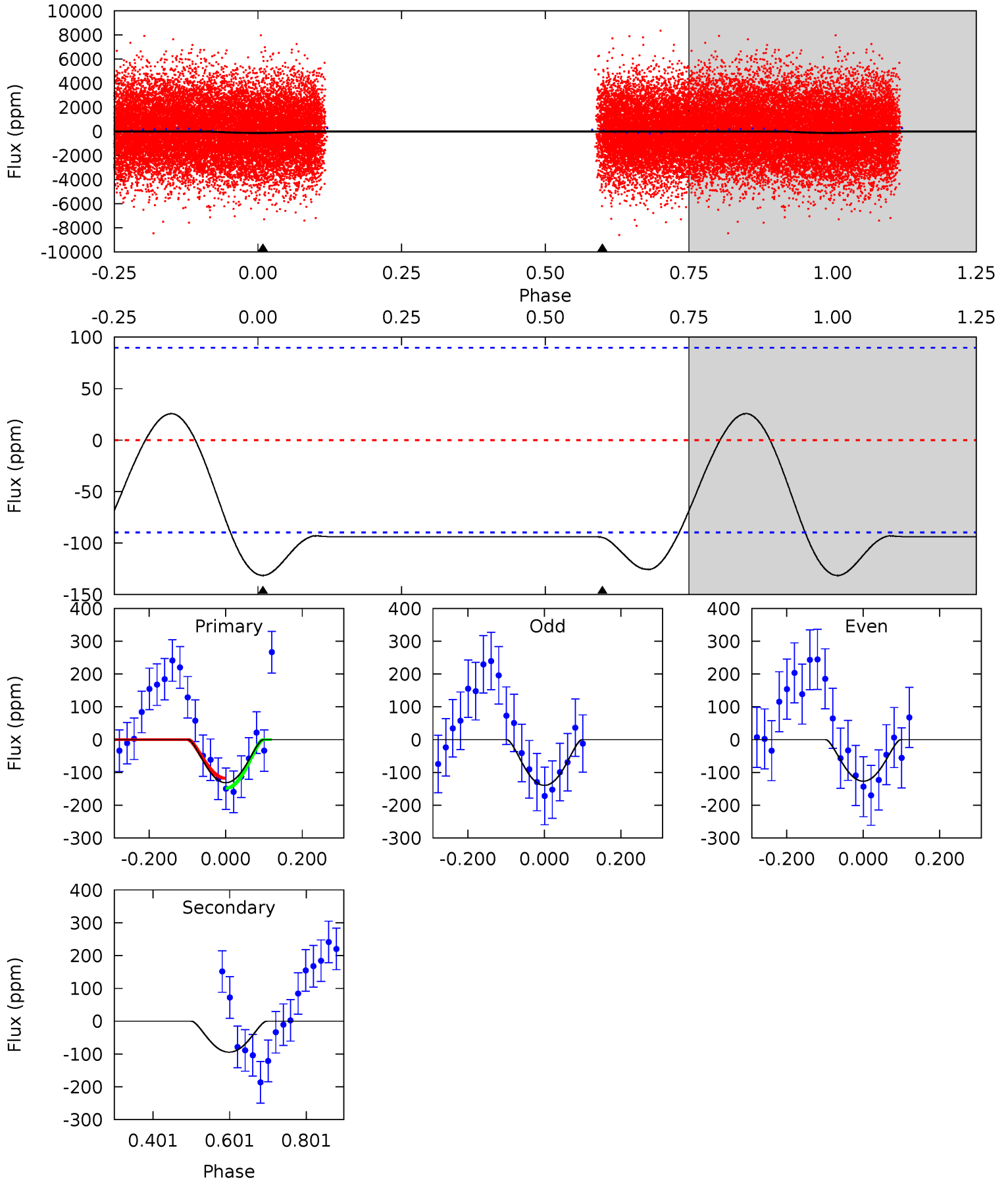
TCE 003455863-02 P= 3.412842 Days $T_0=133.751766$ (BKJD)



DV Model-Shift Uniqueness Test

003455863-02, P = 3.412885 Days, E = 130.429071 Days

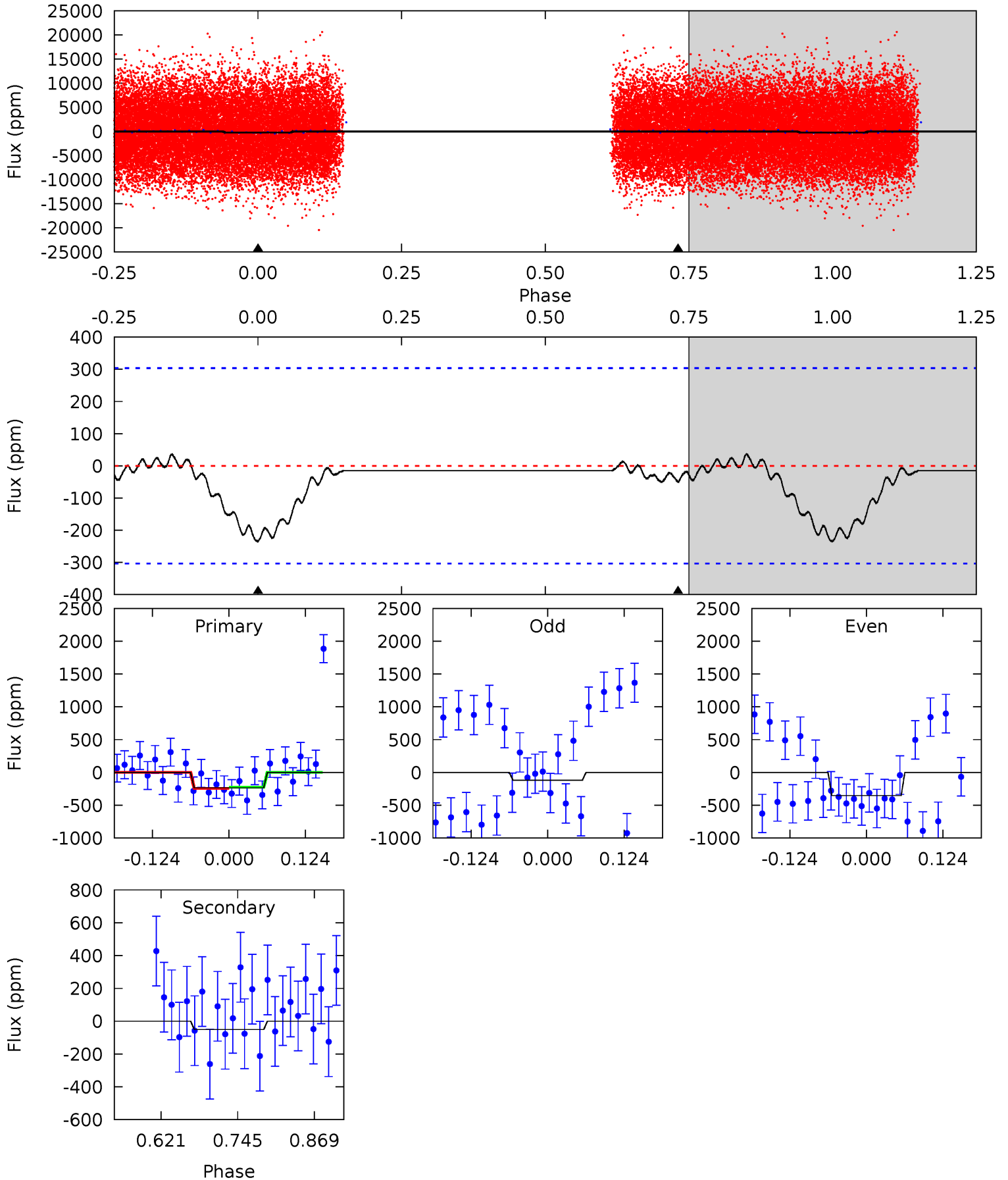
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.48	4.66	0	0	4.42	1.28	0.76	6.48	6.48	4.66	4.66	0.32	0.96	0.16	0.74



Alt Model-Shift Uniqueness Test

003455863-02, P = 3.412842 Days, E = 130.338924 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.50	0.76	0	0	4.52	1.54	0.27	3.50	3.50	0.76	0.76	1.75	1.27	0.14	0.13



Stellar Parameters For KIC 003455863

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7140^{+225}_{-275}	$4.122^{+0.209}_{-0.171}$	$-0.480^{+0.250}_{-0.300}$	$1.606^{+0.438}_{-0.394}$	$1.245^{+0.192}_{-0.174}$	$0.424^{+0.493}_{-0.201}$
	+3%/-4%	+5%/-4%	+52%/-62%	+27%/-25%	+15%/-14%	+116%/-47%
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 003455863-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-95 ± 20	$4.05^{+3.28}_{-2.49}$	2541^{+202}_{-202}	4653^{+2613}_{-975}	$7.141^{+38.863}_{-5.003}$
Alt.	-51 ± 67	$3.36^{+2.83}_{-2.10}$	2537^{+213}_{-195}	4089^{+2690}_{-7704}	$3.917^{+31.752}_{-5.418}$

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 $A_{obs} \gg 1.0$

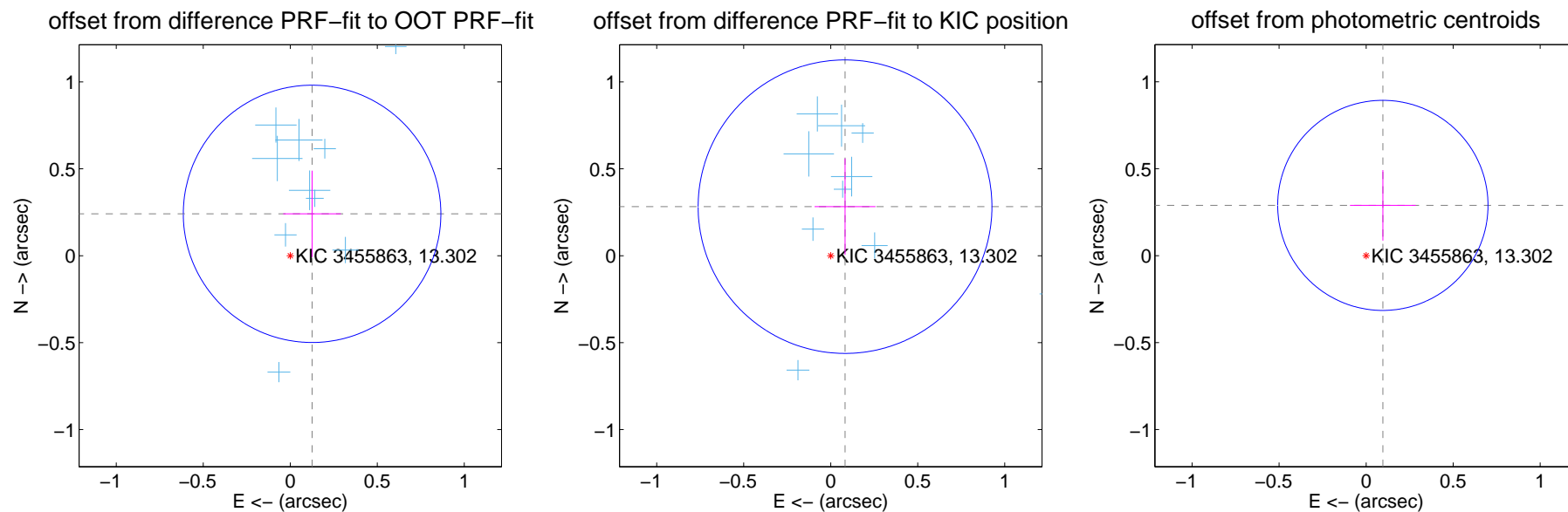
DV Centroid Data

Supplemental centroid analysis for 003455863-02. Kepler magnitude: 13.30. Transit SNR 11.73

There are 13 quarters with good PRF difference image offsets

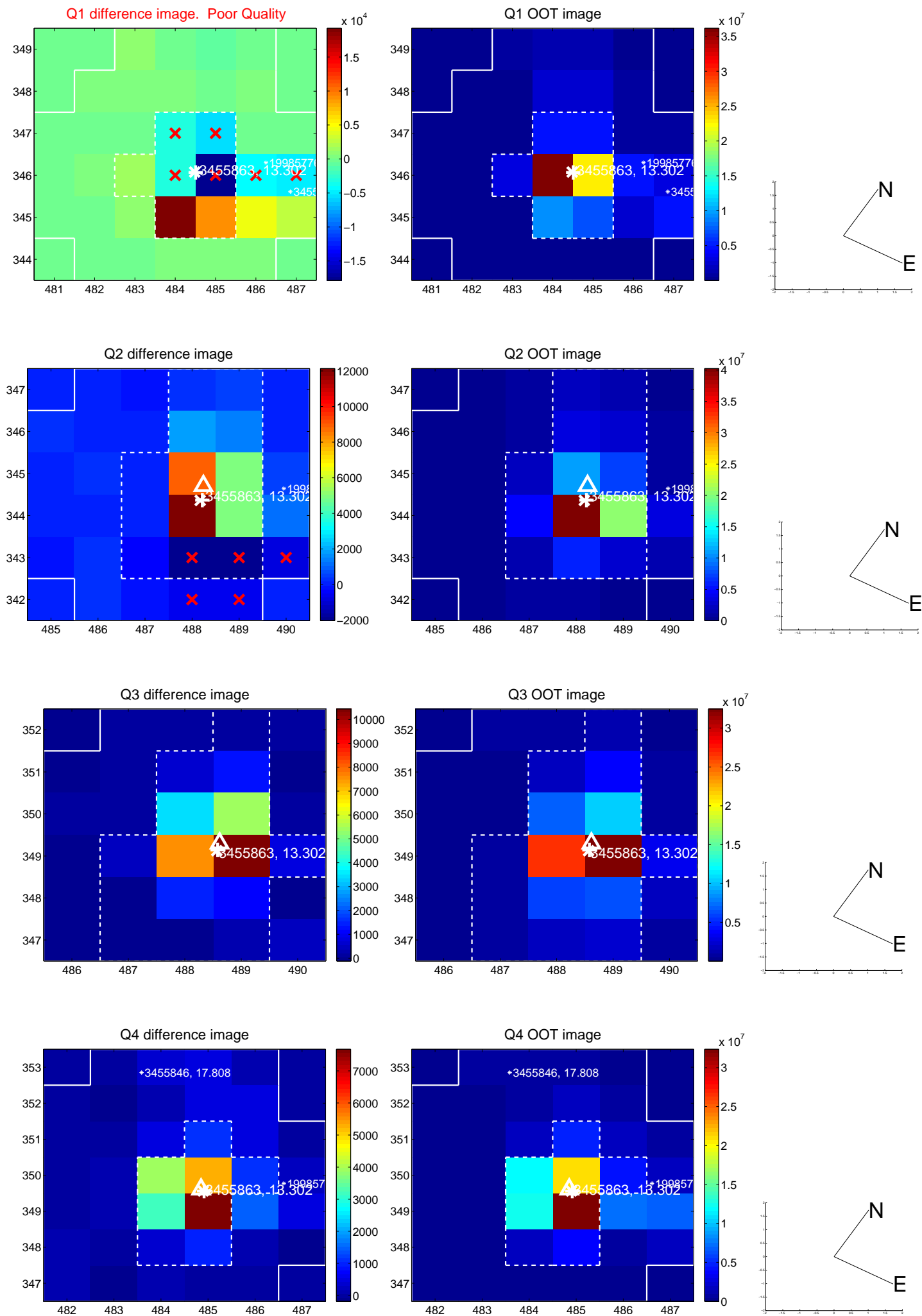
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.272 ± 0.247	1.10	-0.125 ± 0.166	0.241 ± 0.248
PRF-fit source offset from KIC position	0.294 ± 0.281	1.04	-0.082 ± 0.175	0.282 ± 0.277
photometric centroid source offset	0.30 ± 0.20	1.51	-0.10 ± 0.19	0.29 ± 0.20

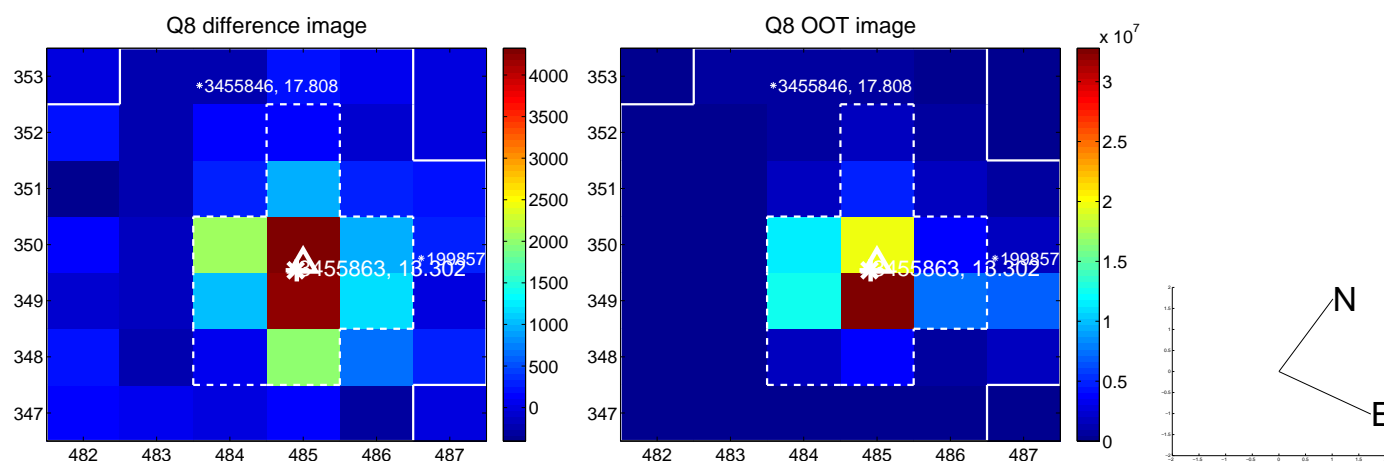
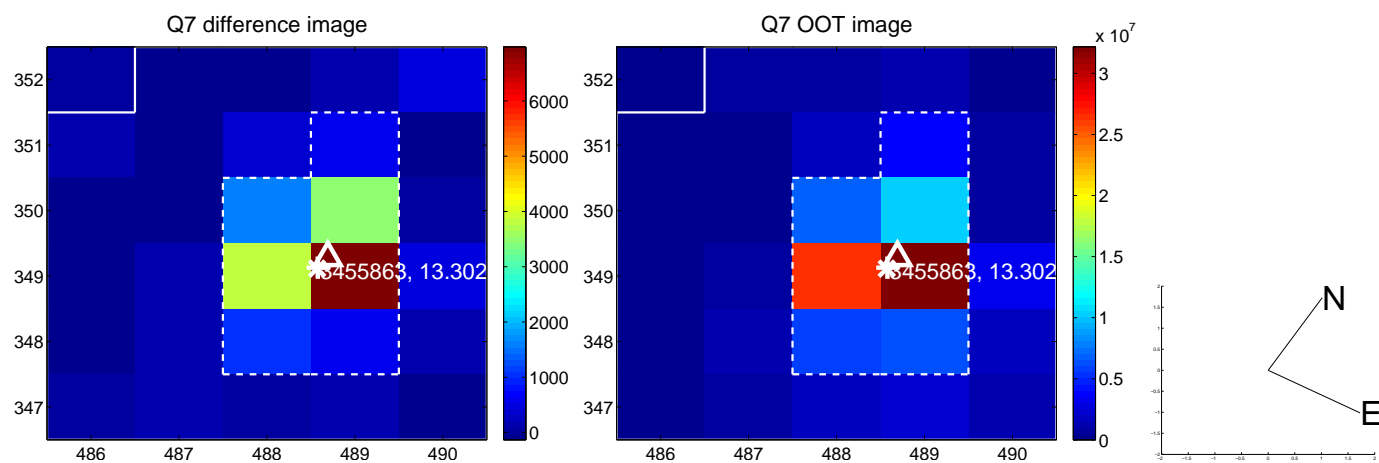
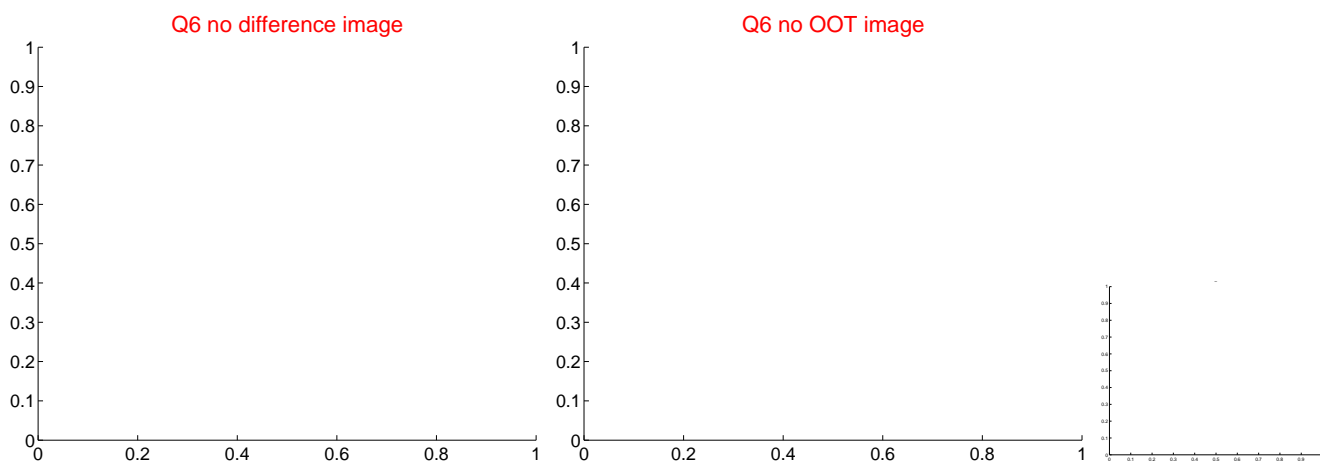
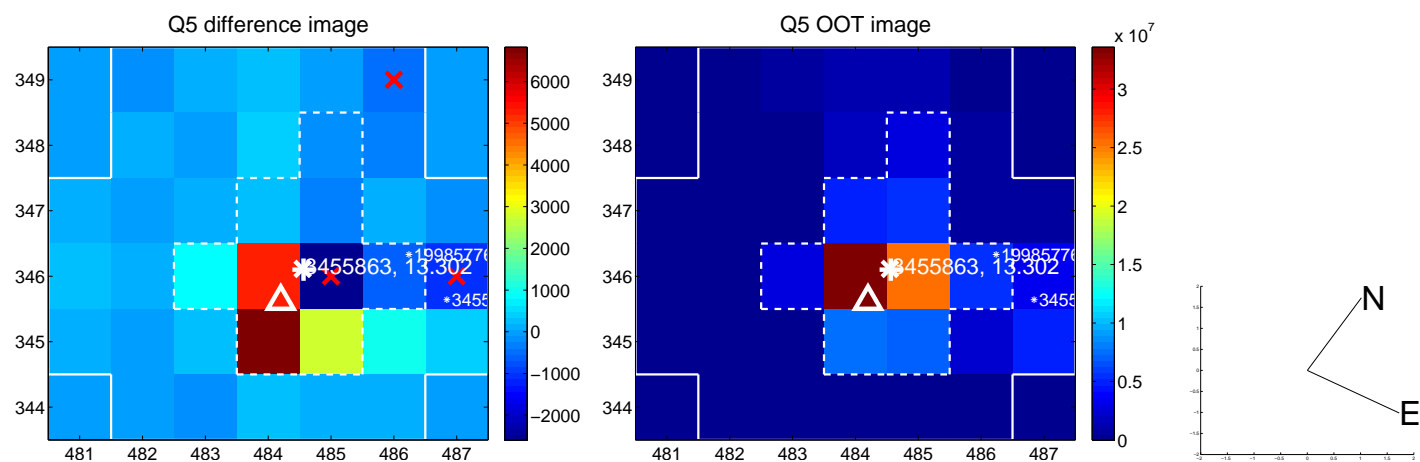


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

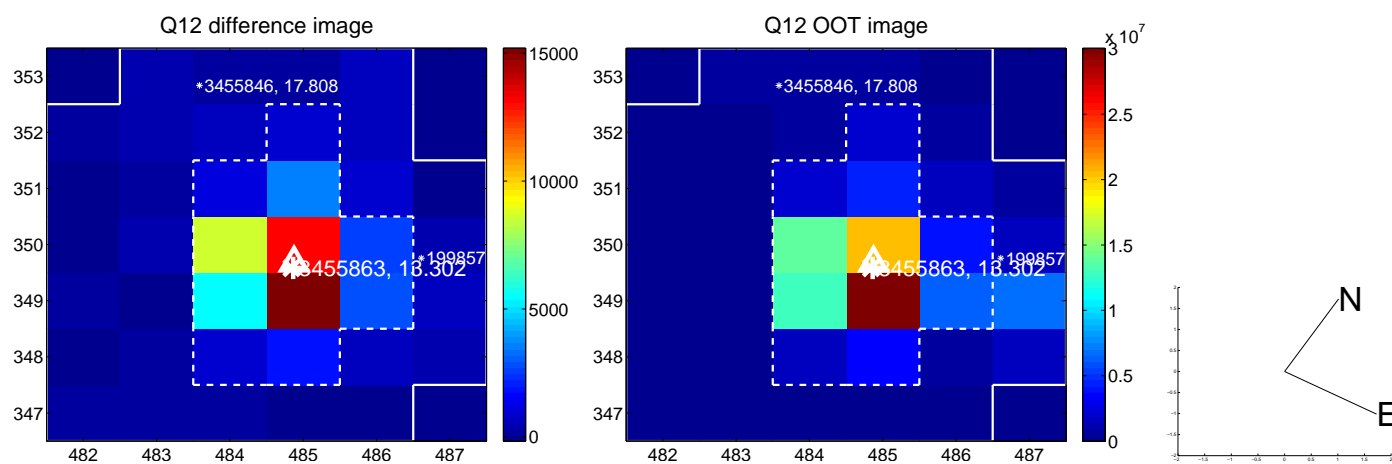
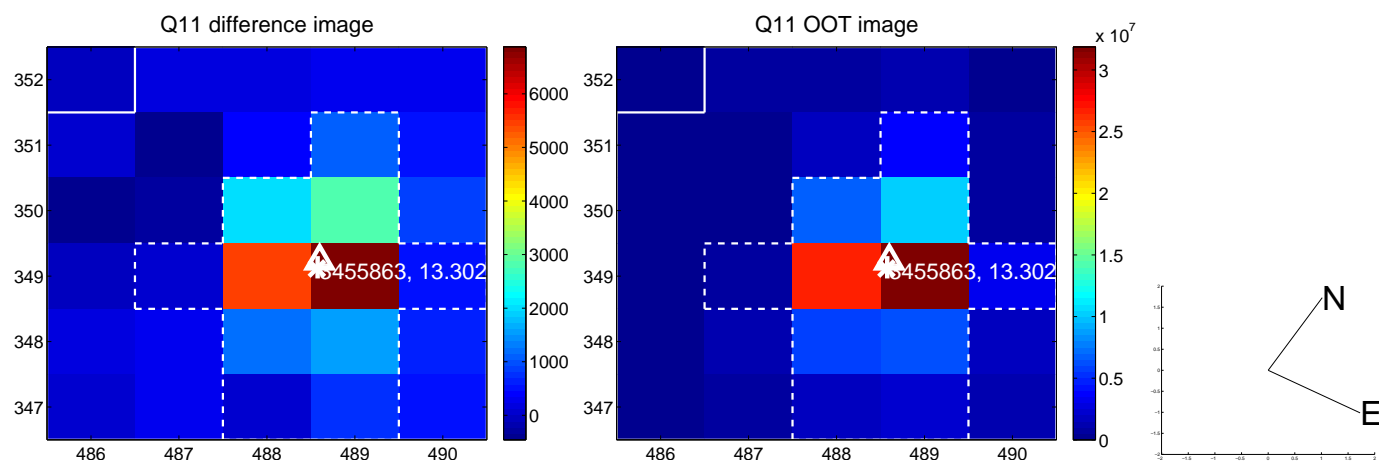
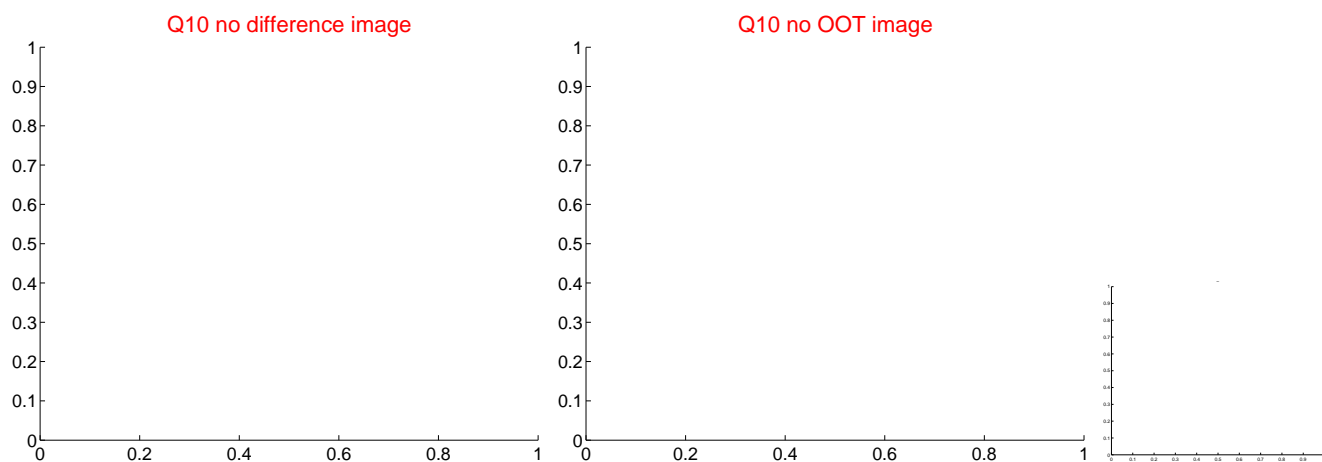
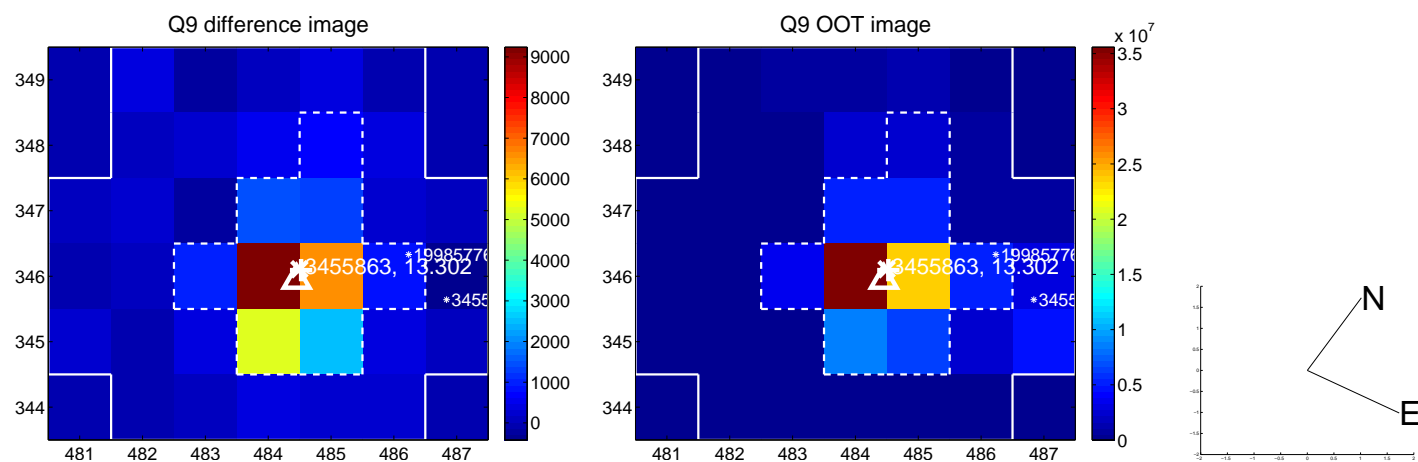
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



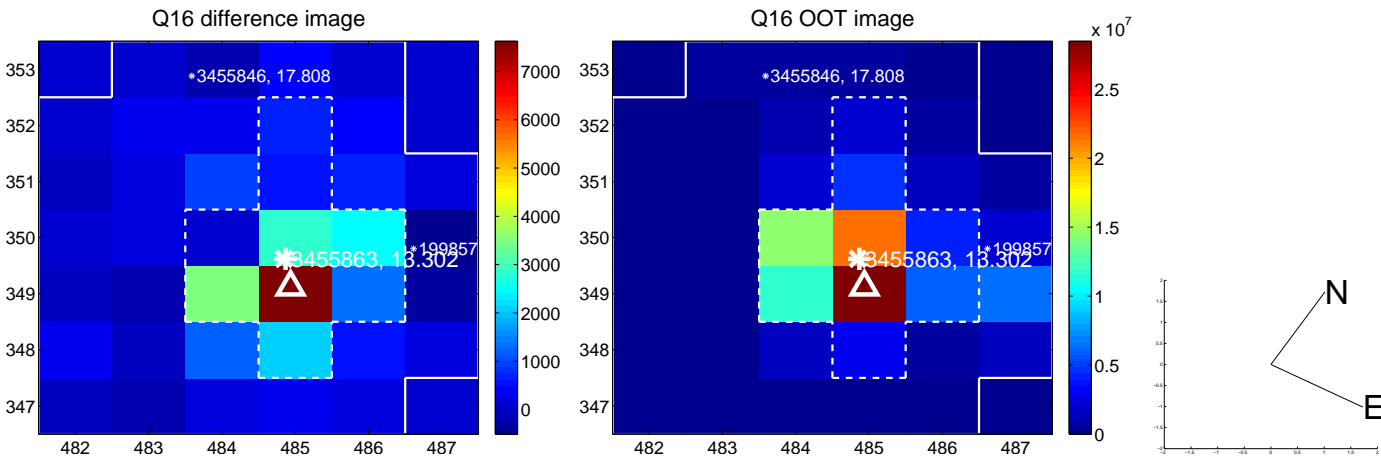
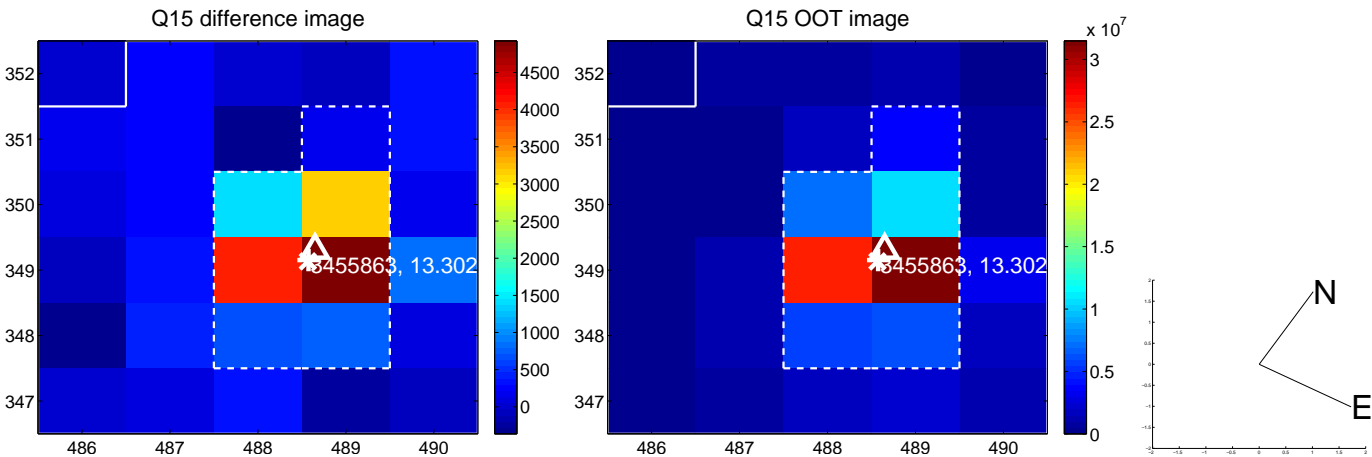
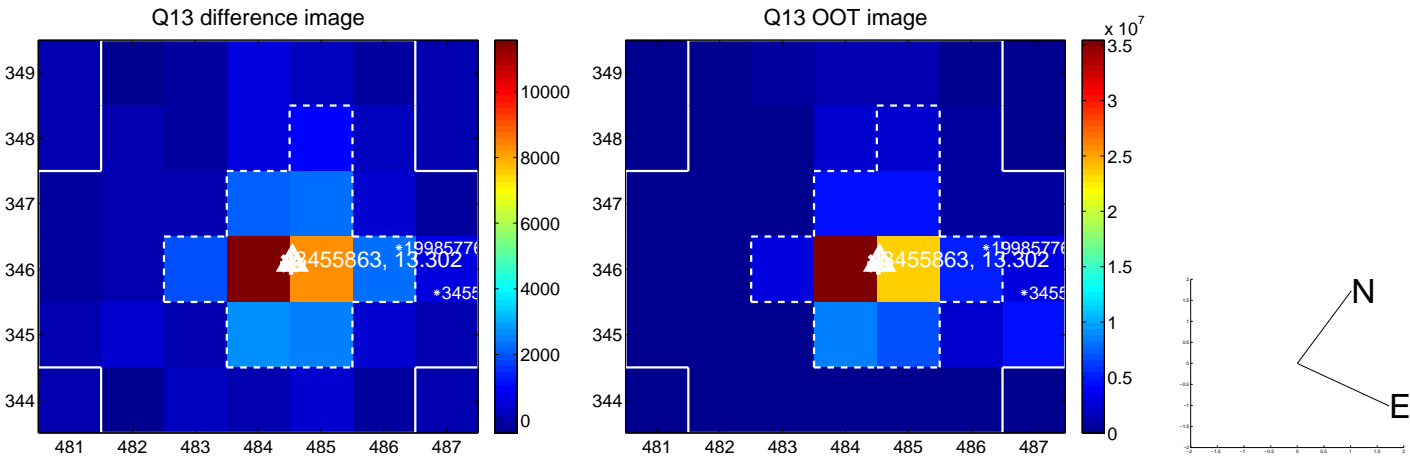
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



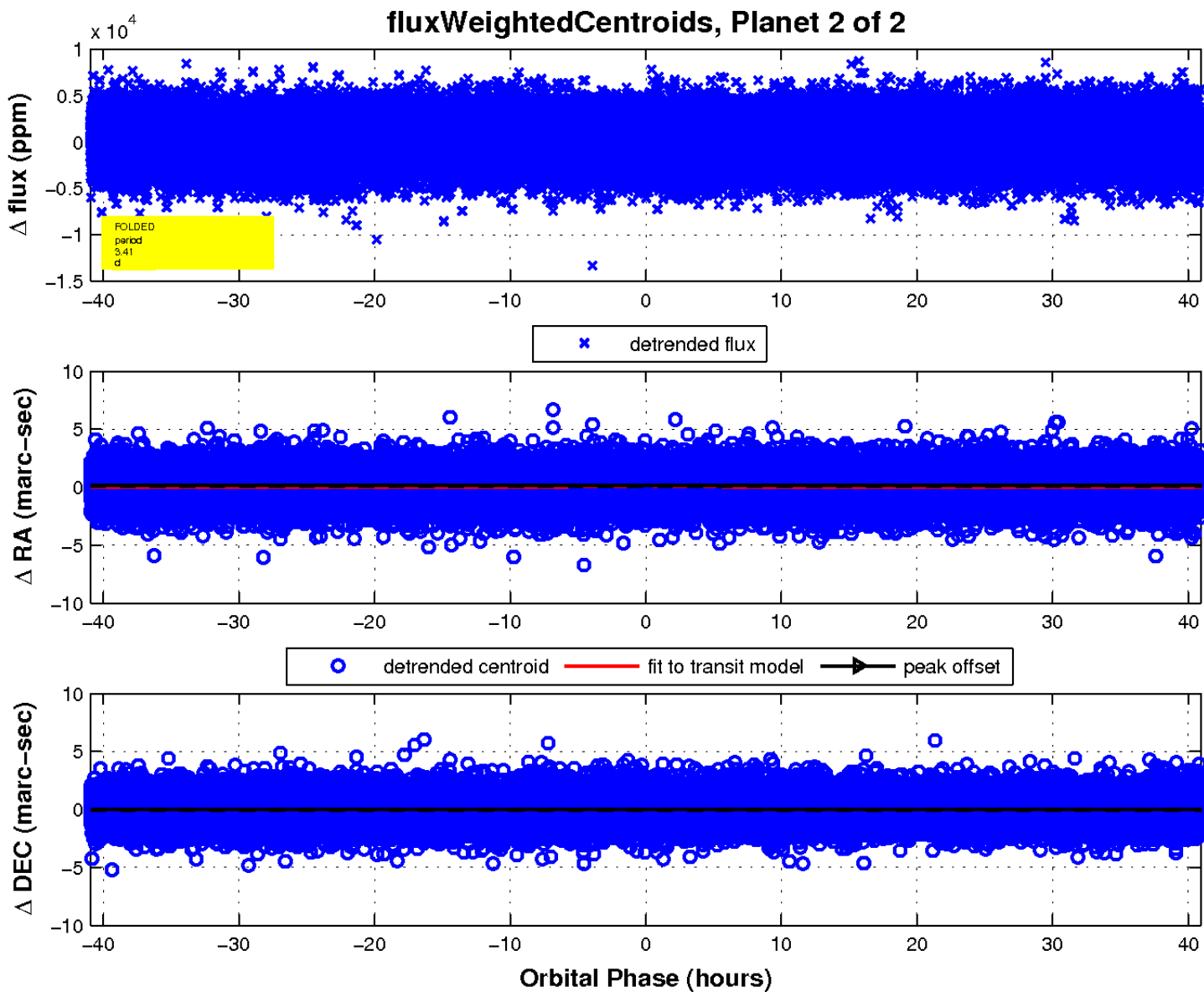
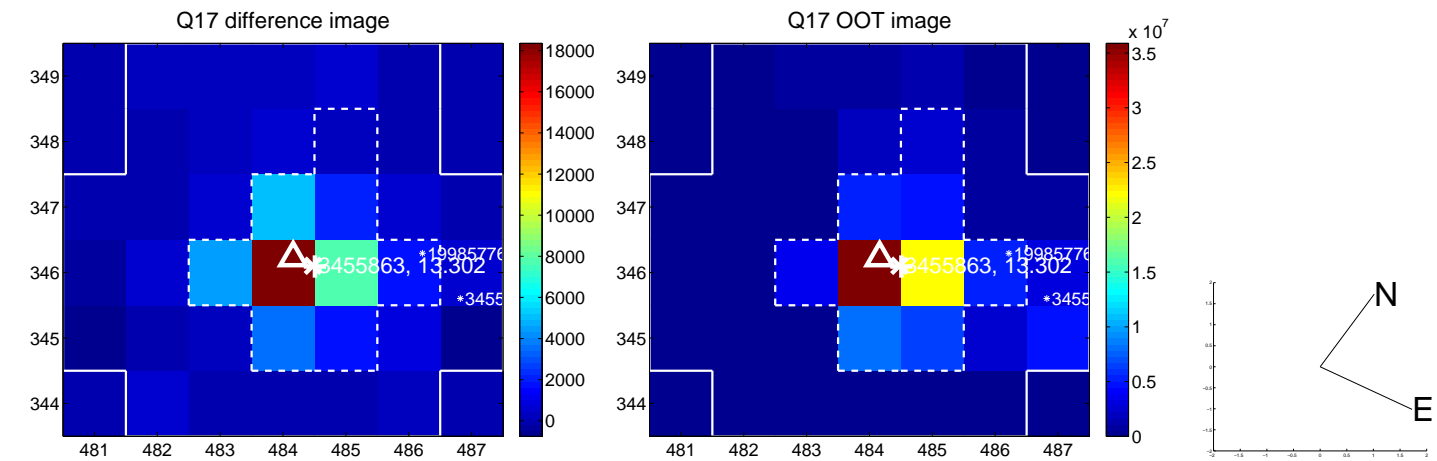
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

