

KIC 004847843

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})
004847843-01	OBS	3505.01	30.960467	139.429685	500.9	5.896	26.2	28.8	3.56	5367	15.51	303.54
004847843-02	OBS	No	30.960510	156.149149	405.6	13.660	20.4	21.8	3.56	5367	14.11	303.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004847843-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
004847843-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

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 004847843-01

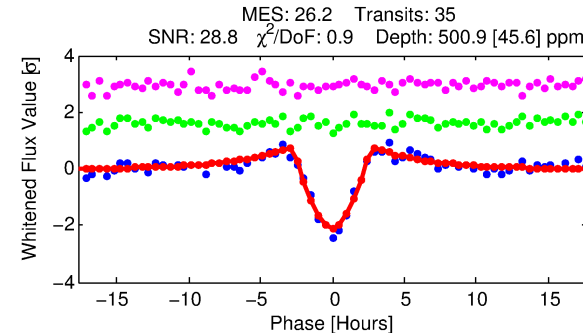
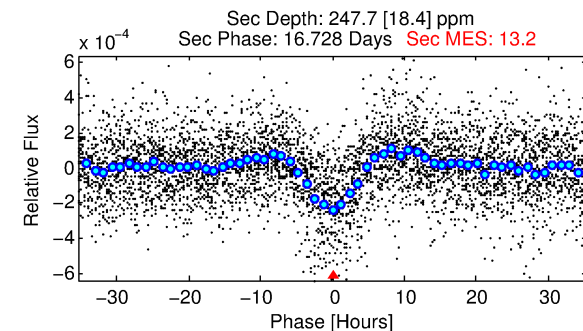
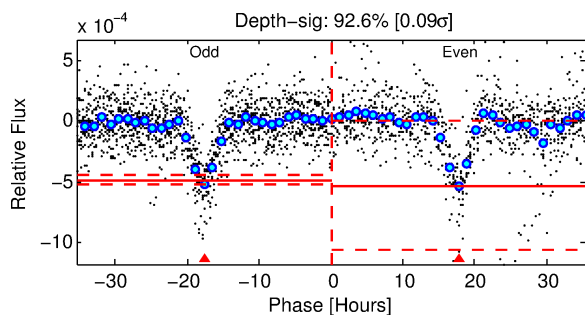
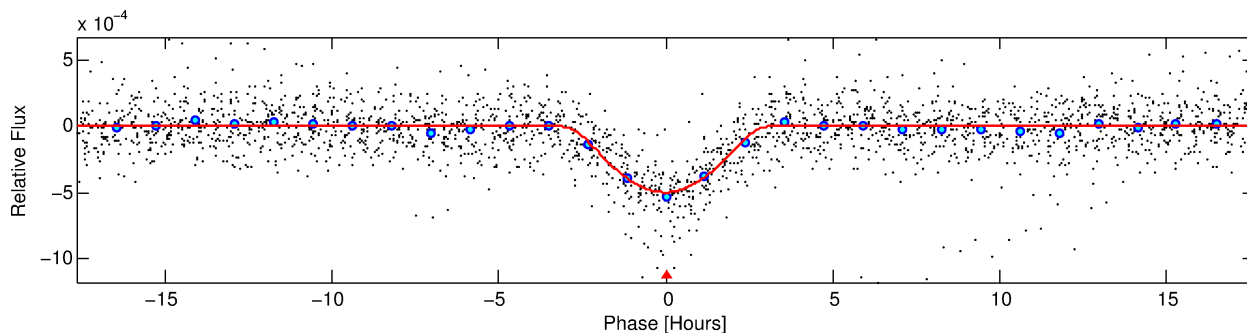
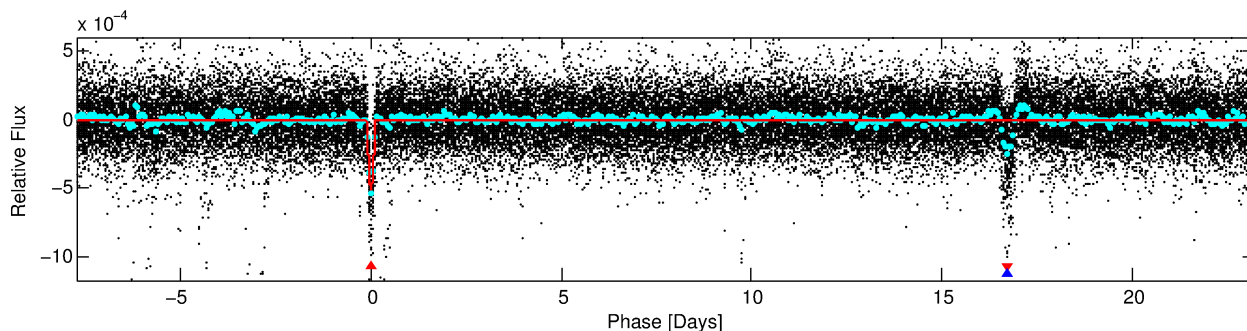
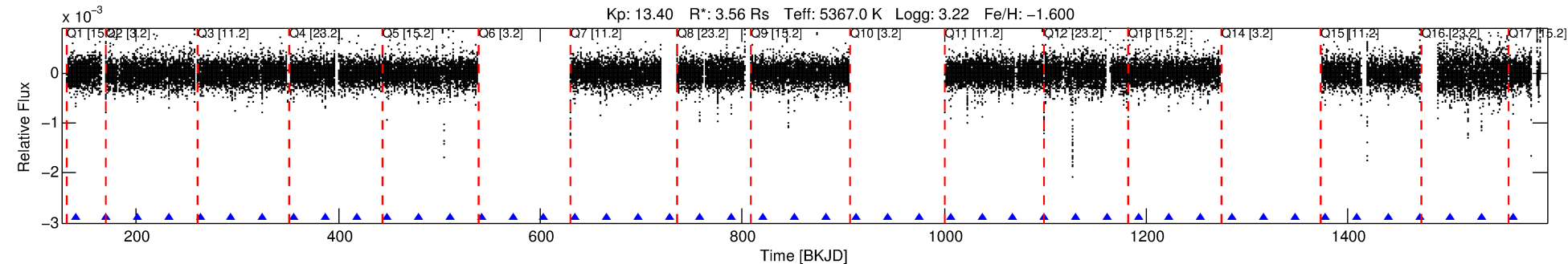
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (")	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004847843-01	4847843	004847832-02	4847832	1:1	17.4	-2	-3	12.45	13.41	785.01	Direct-PRF	0	0.12	0.06

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 4847843 Candidate: 1 of 2 Period: 30.960 d
KOI: K03505 Corr: No Ephemeris Match

Kp: 13.40 R*: 3.56 Rs Teff: 5367.0 K Logg: 3.22 Fe/H: -1.600



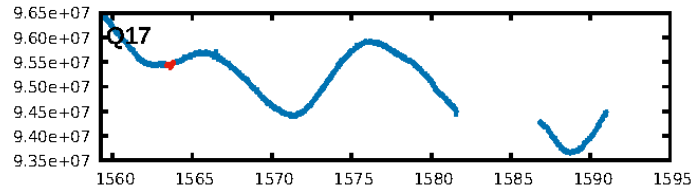
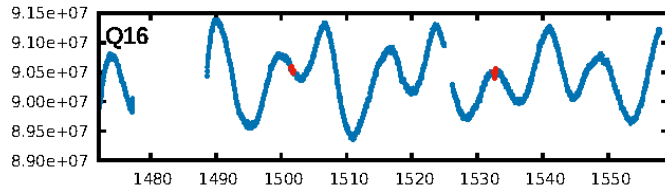
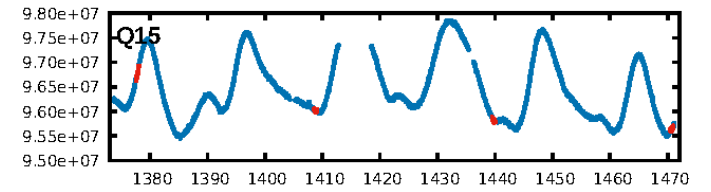
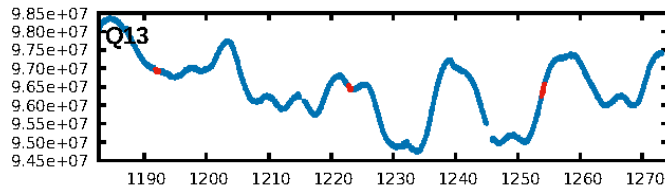
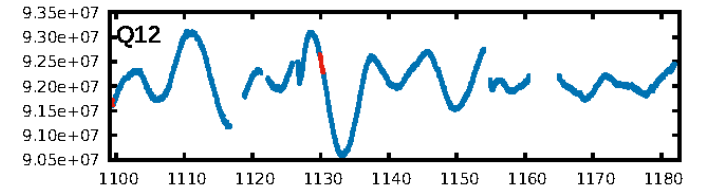
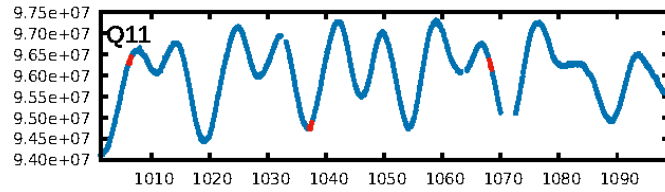
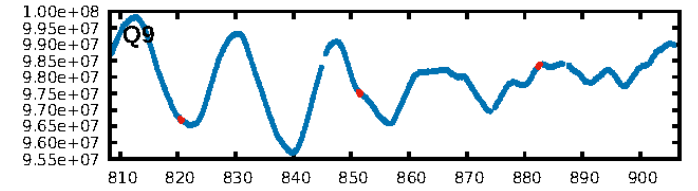
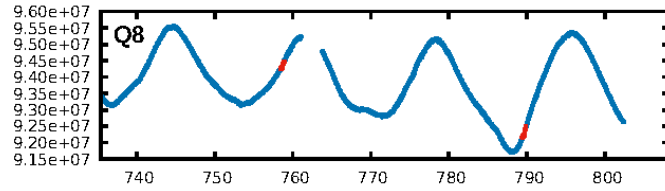
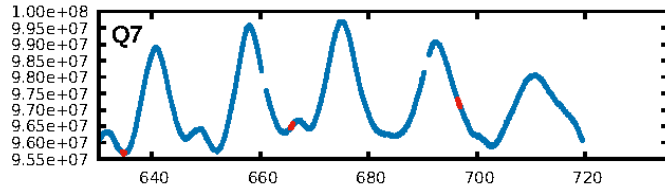
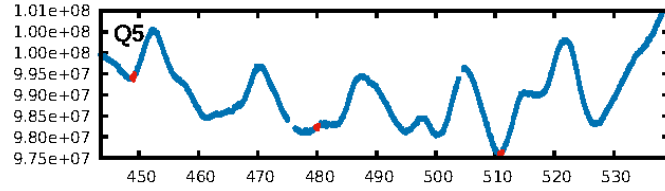
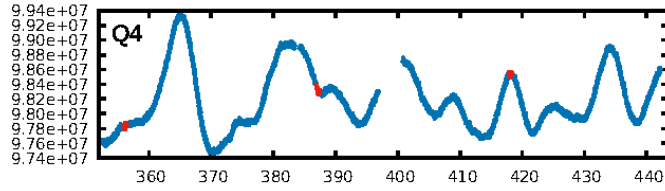
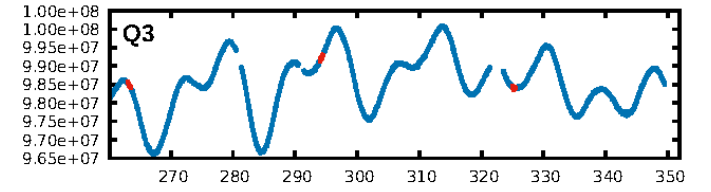
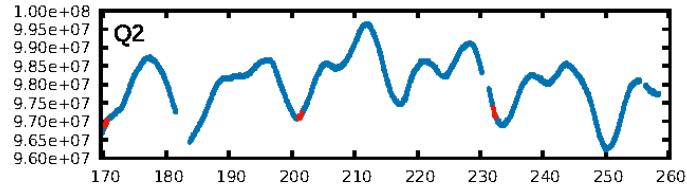
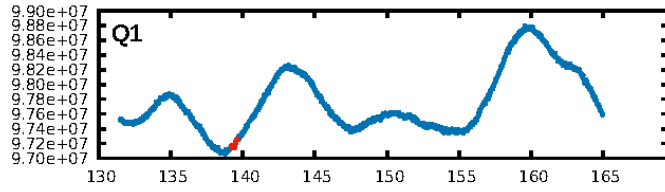
DV Fit Results:

Period = 30.96047 [0.00014] d
Epoch = 139.4297 [0.0034] BKJD
Rp/R* = 0.0400 [0.0357]
a/R* = 11.55 [2.60]
b = 1.00 [0.05]
Seff = 303.54 [708.19]
Teq = 1064 [621] K
Rp = 15.51 [18.55] Re
a = 0.1761 [0.2197] AU
Ag = 17.56 [51.47] [0.32σ]
Teff = 3369 [1522] K [1.40σ]

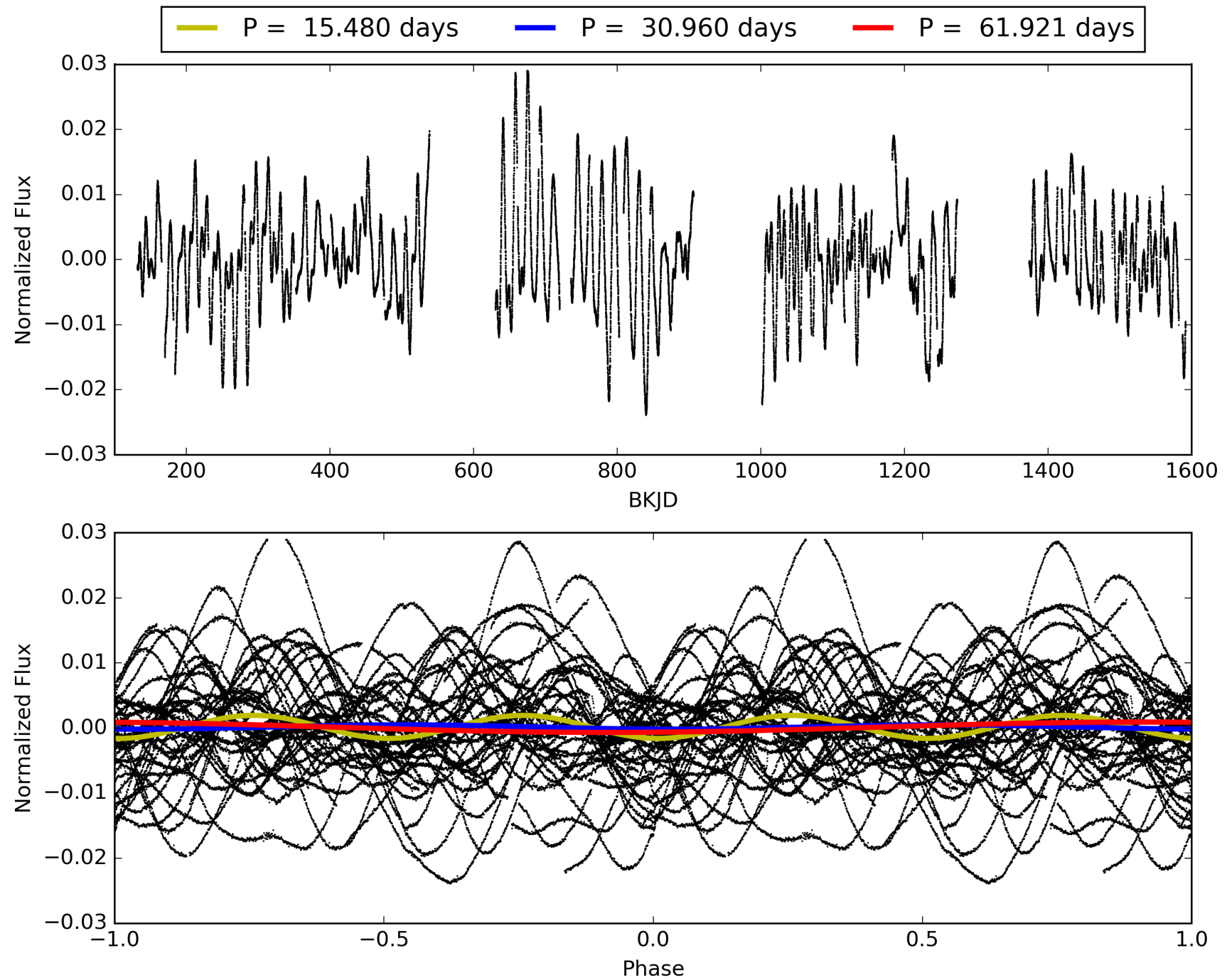
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 57.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.84e-113
RollingBand-fgt: 1.00 [33/33]
GhostDiagnostic-chr: -0.07471
Centroid-sig: 0.0%
Centroid-so: 179.414 arcsec [466.50σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [13/13]

TCE 004847843-01, PDC Light Curves

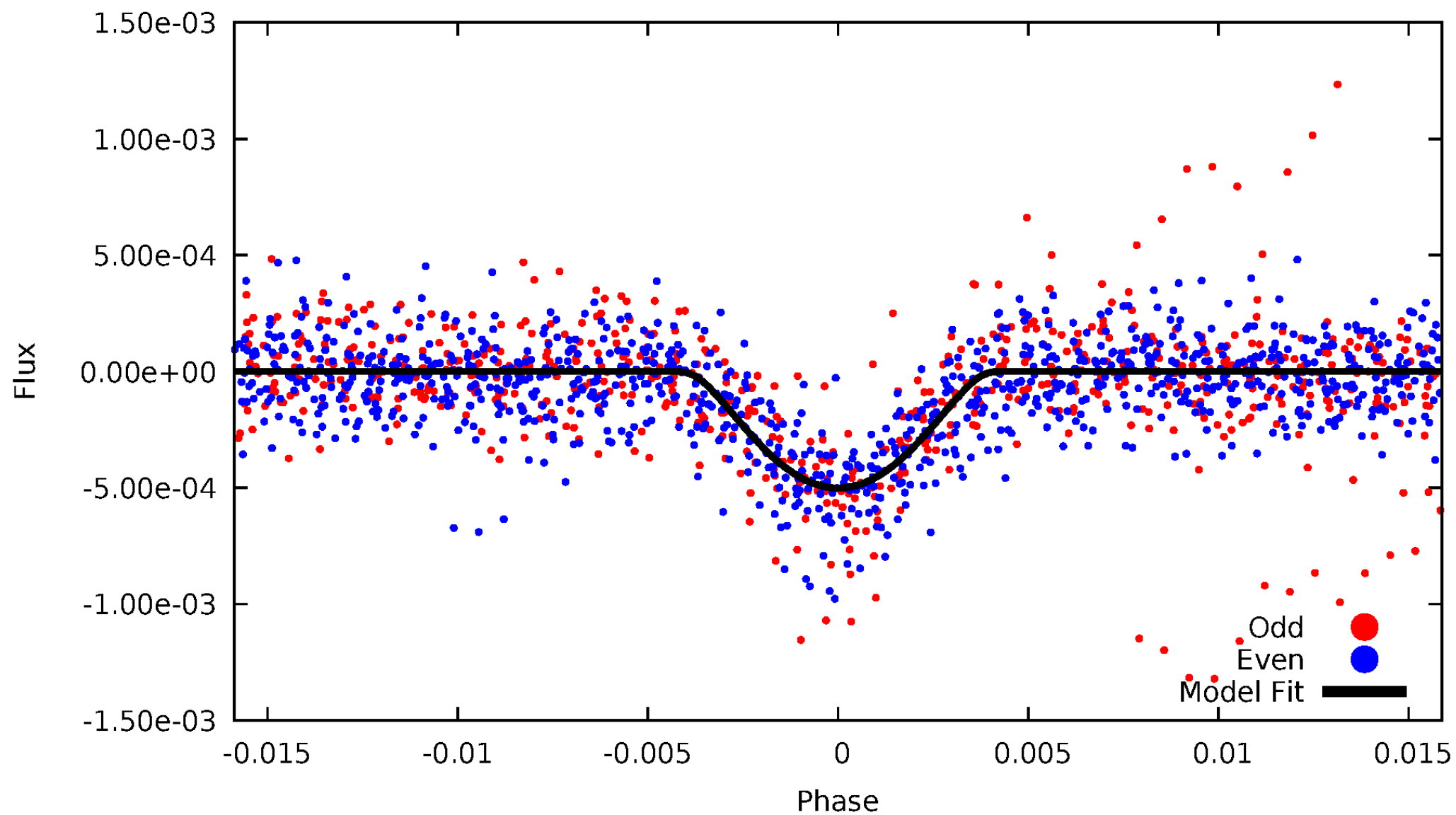


TCE 004847843-01



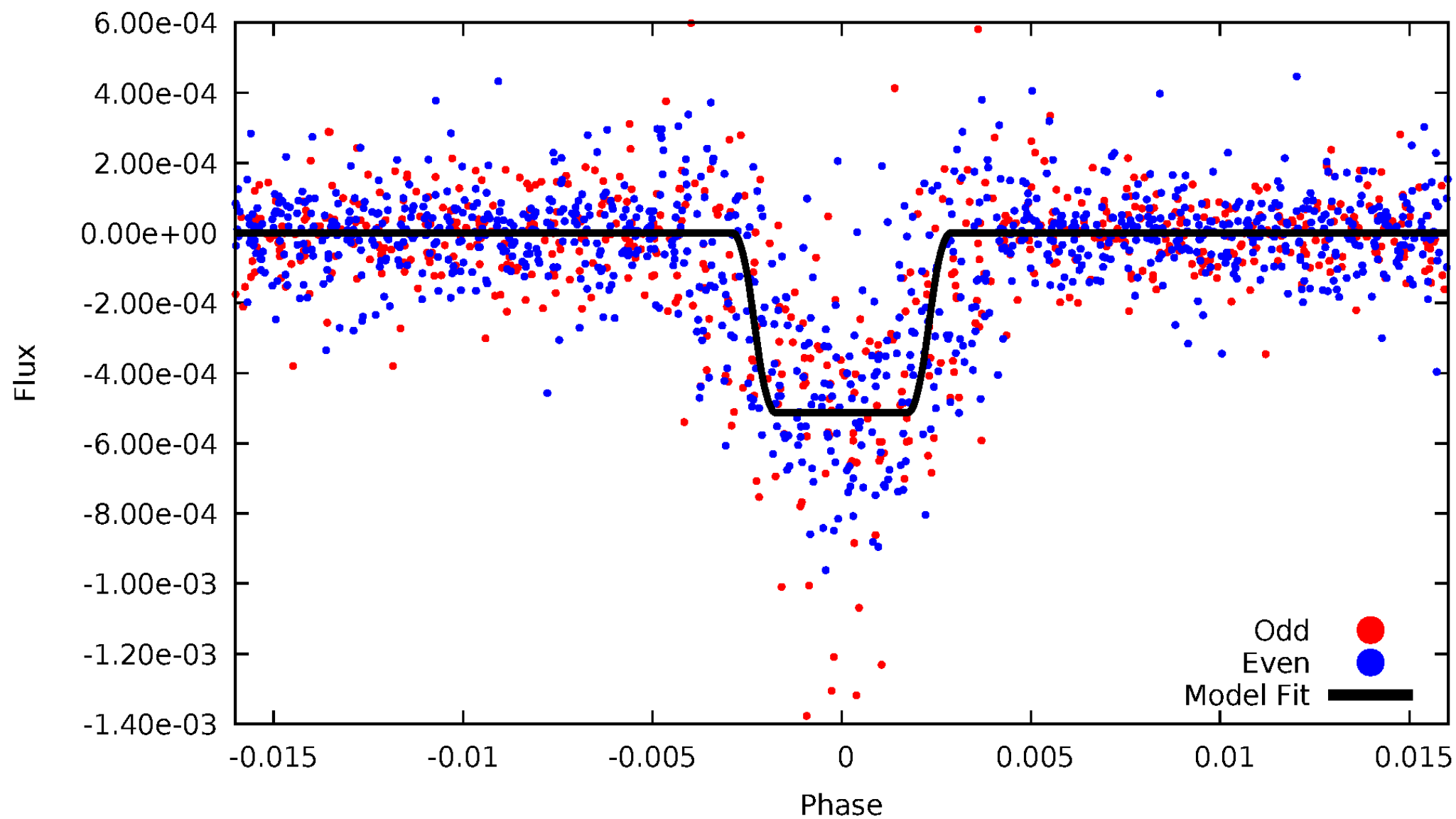
DV Odd/Even

TCE 004847843-01

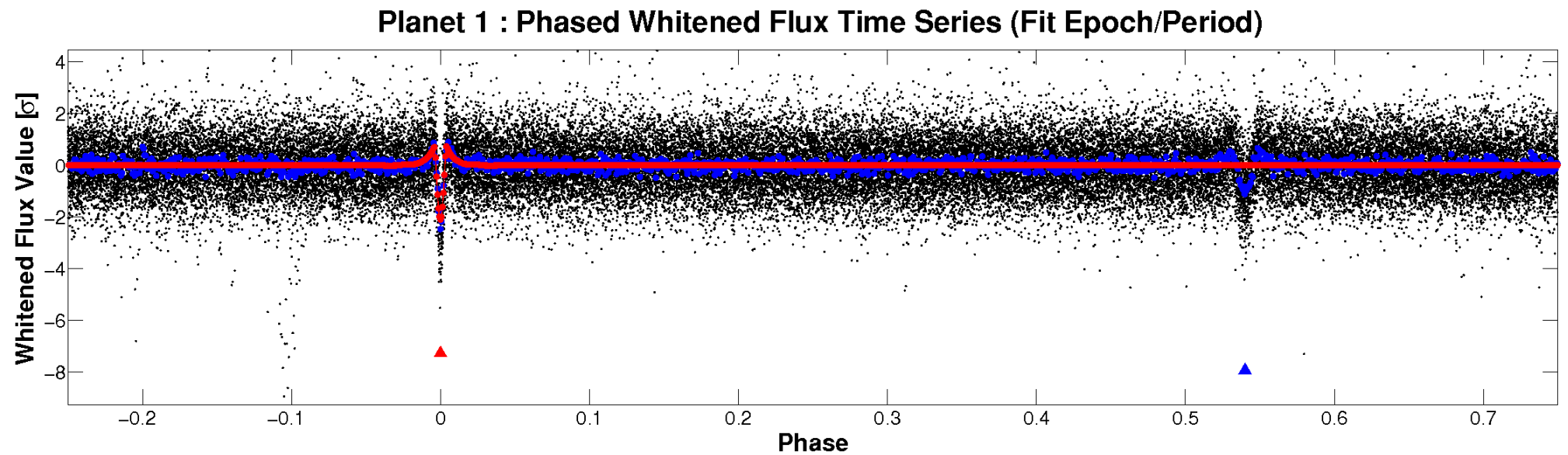
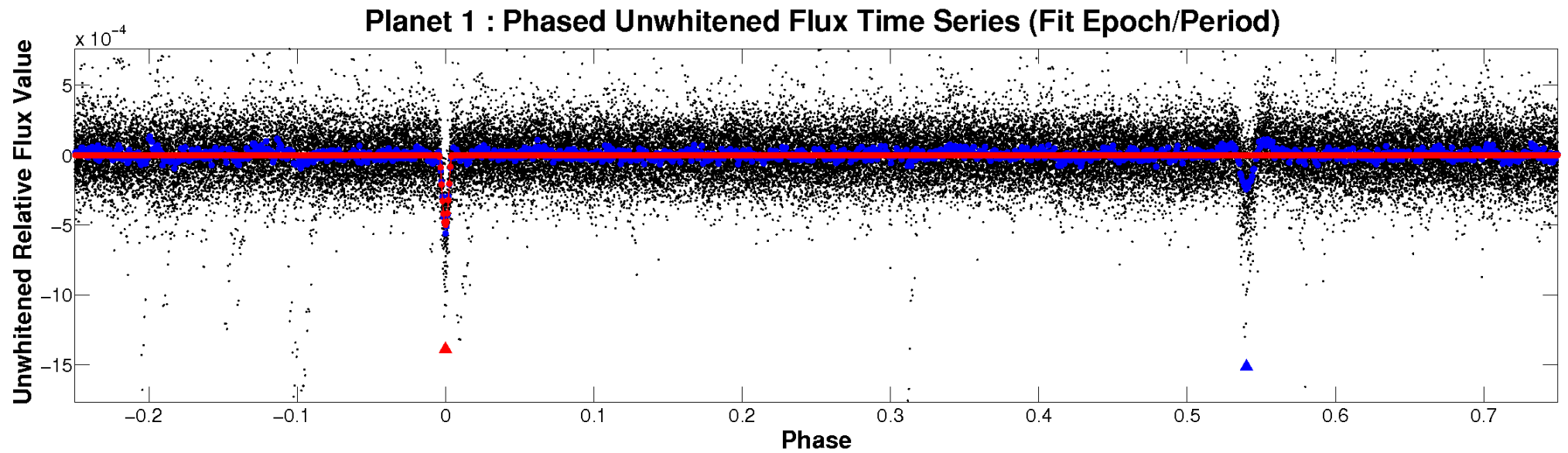


ALT Odd/Even

TCE 004847843-01

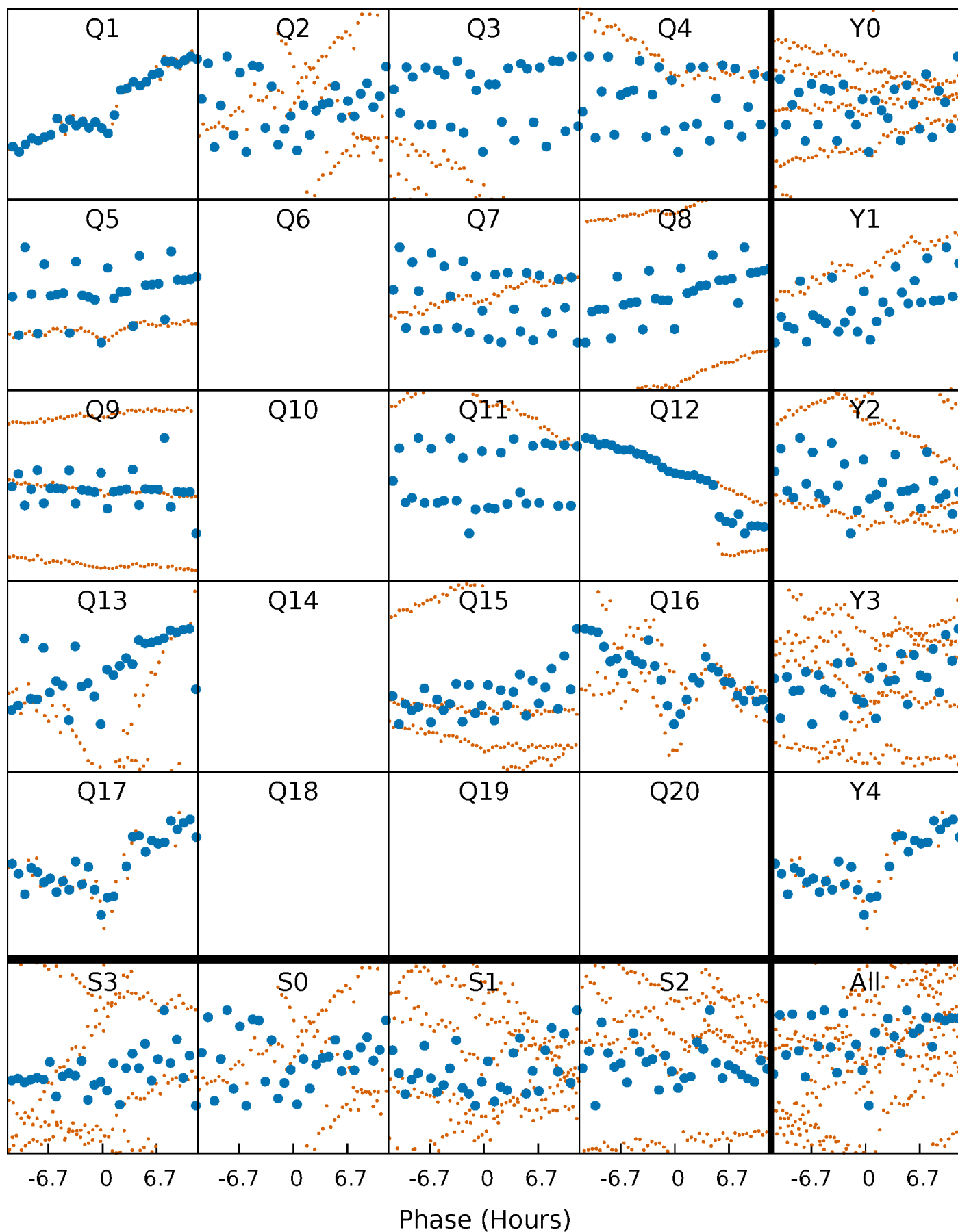


Non-Whitened Vs. Whitened Light Curve



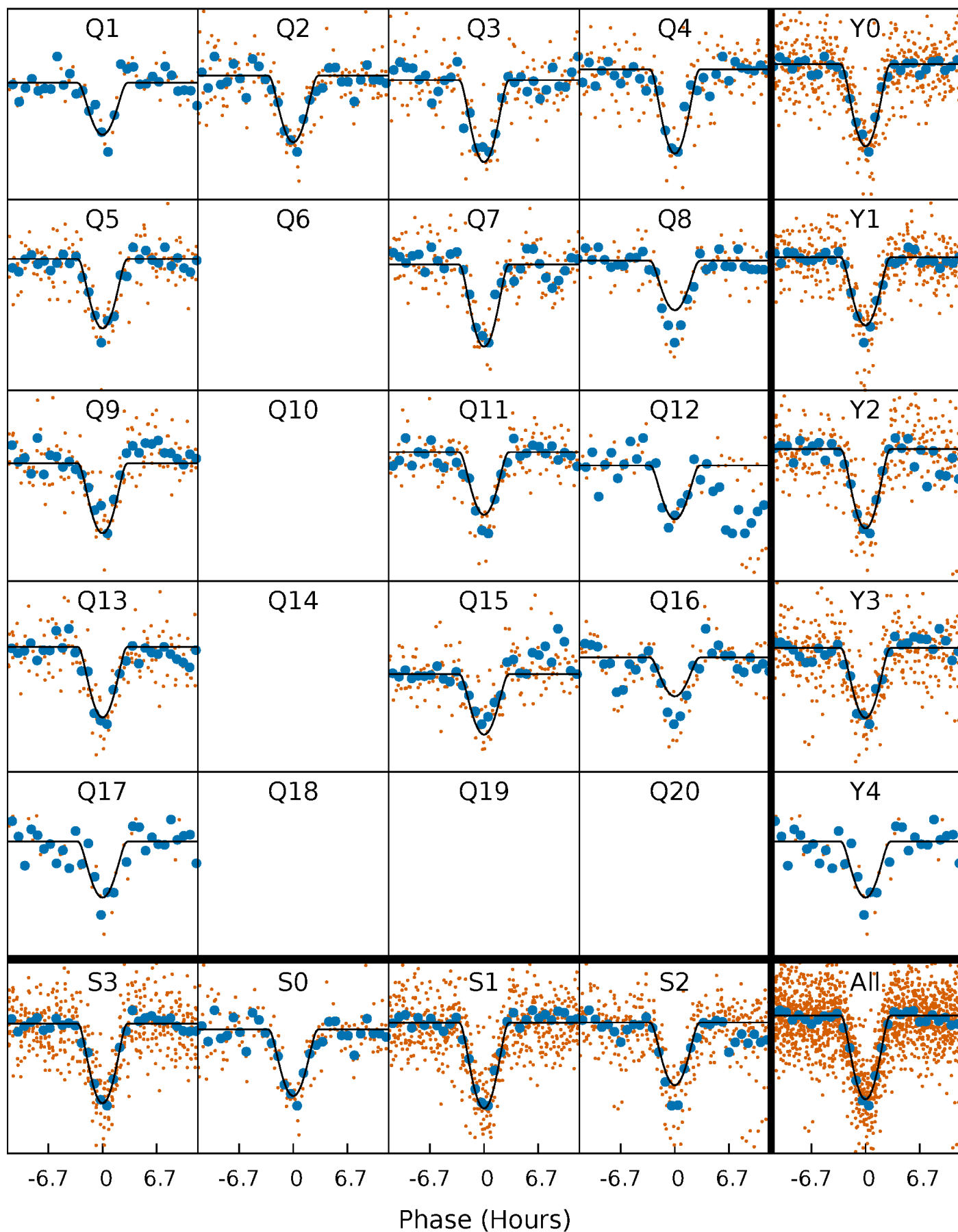
PDC Quarter-Phased Transit Curves

TCE 004847843-01 P= 30.960467 Days $T_0=139.429685$ (BKJD)



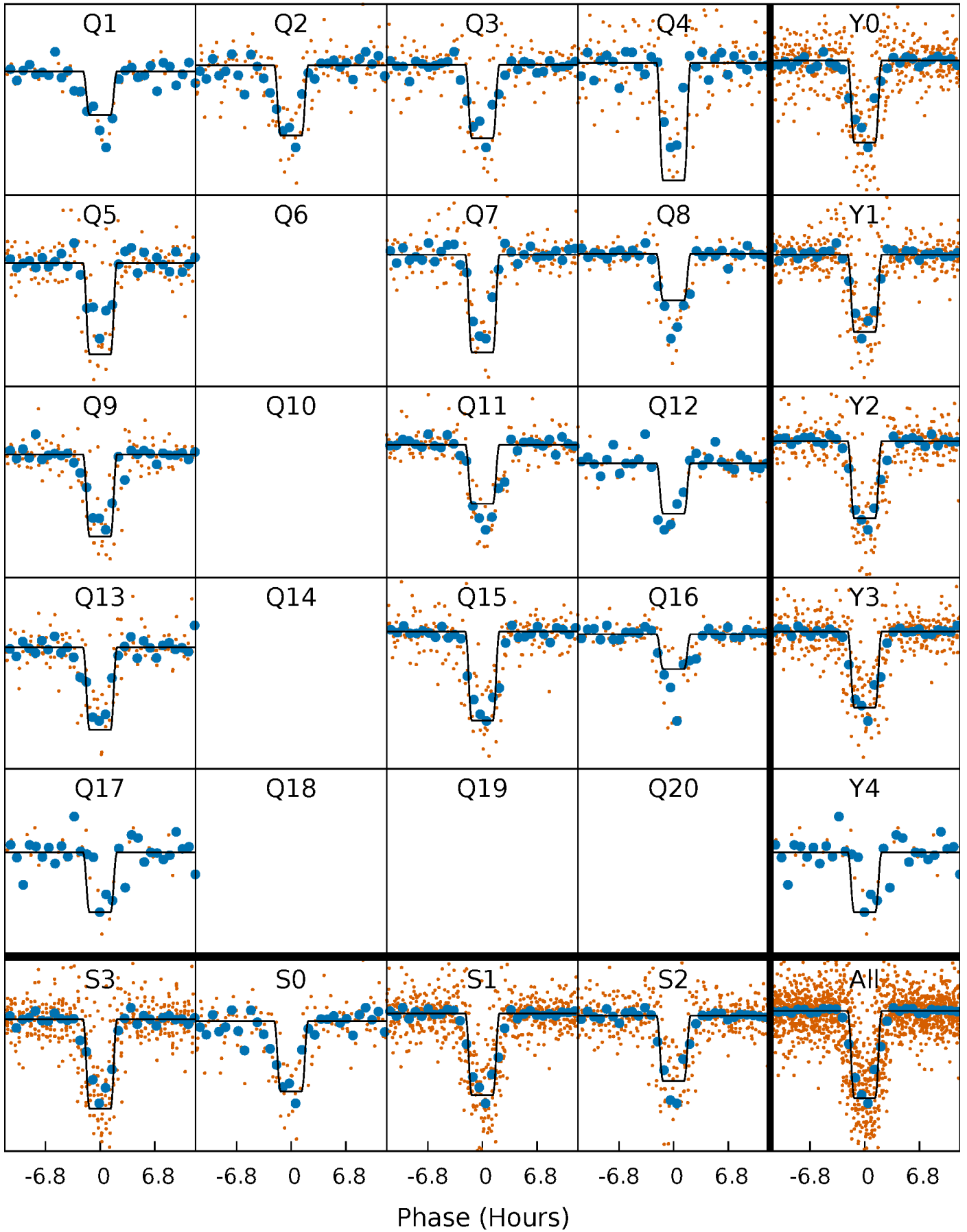
DV Quarter-Phased Transit Curves

TCE 004847843-01 P= 30.960467 Days $T_0=139.429685$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

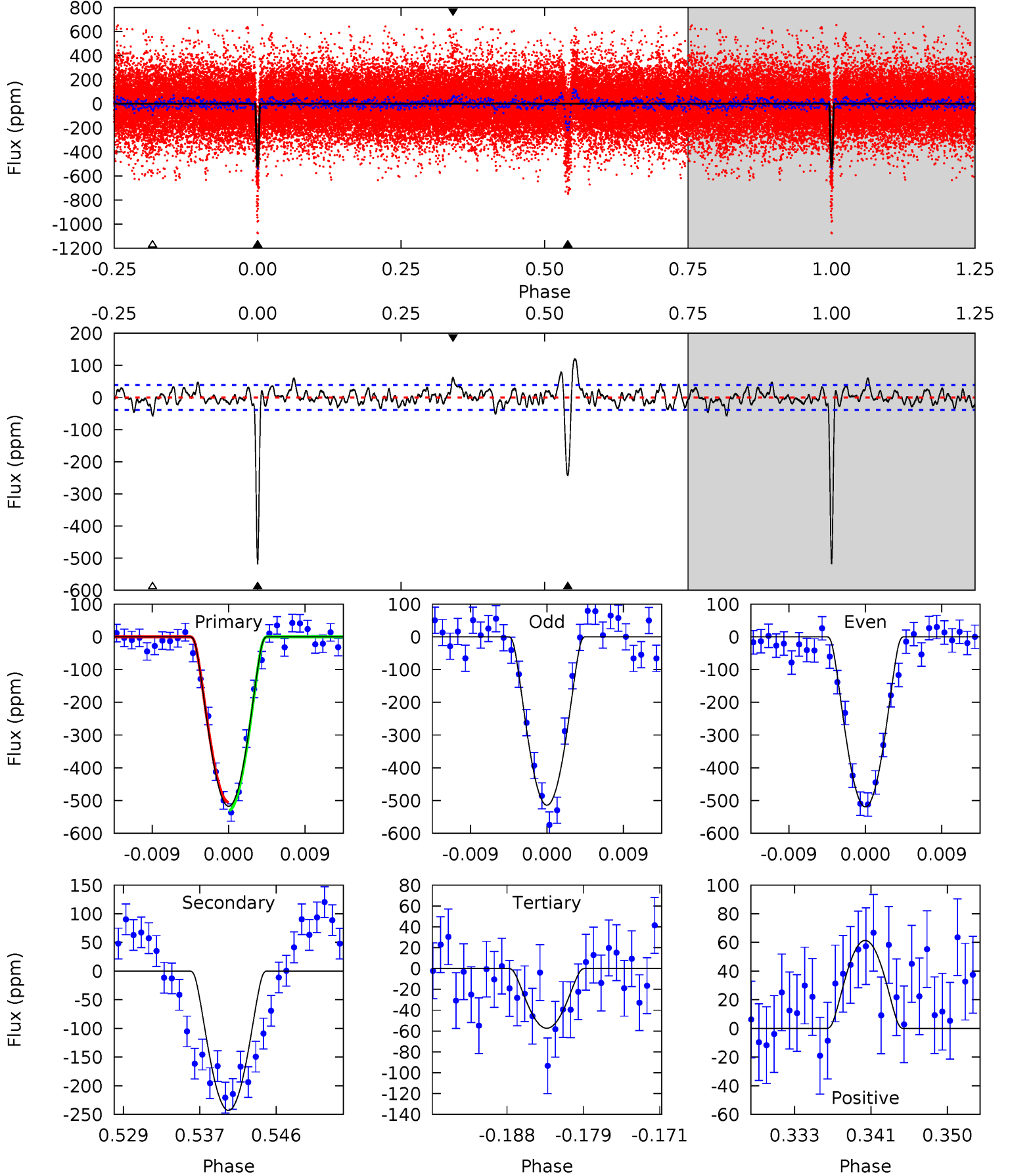
TCE 004847843-01 P= 30.960392 Days $T_0=139.431488$ (BKJD)



DV Model-Shift Uniqueness Test

004847843-01, P = 30.960467 Days, E = 108.469218 Days

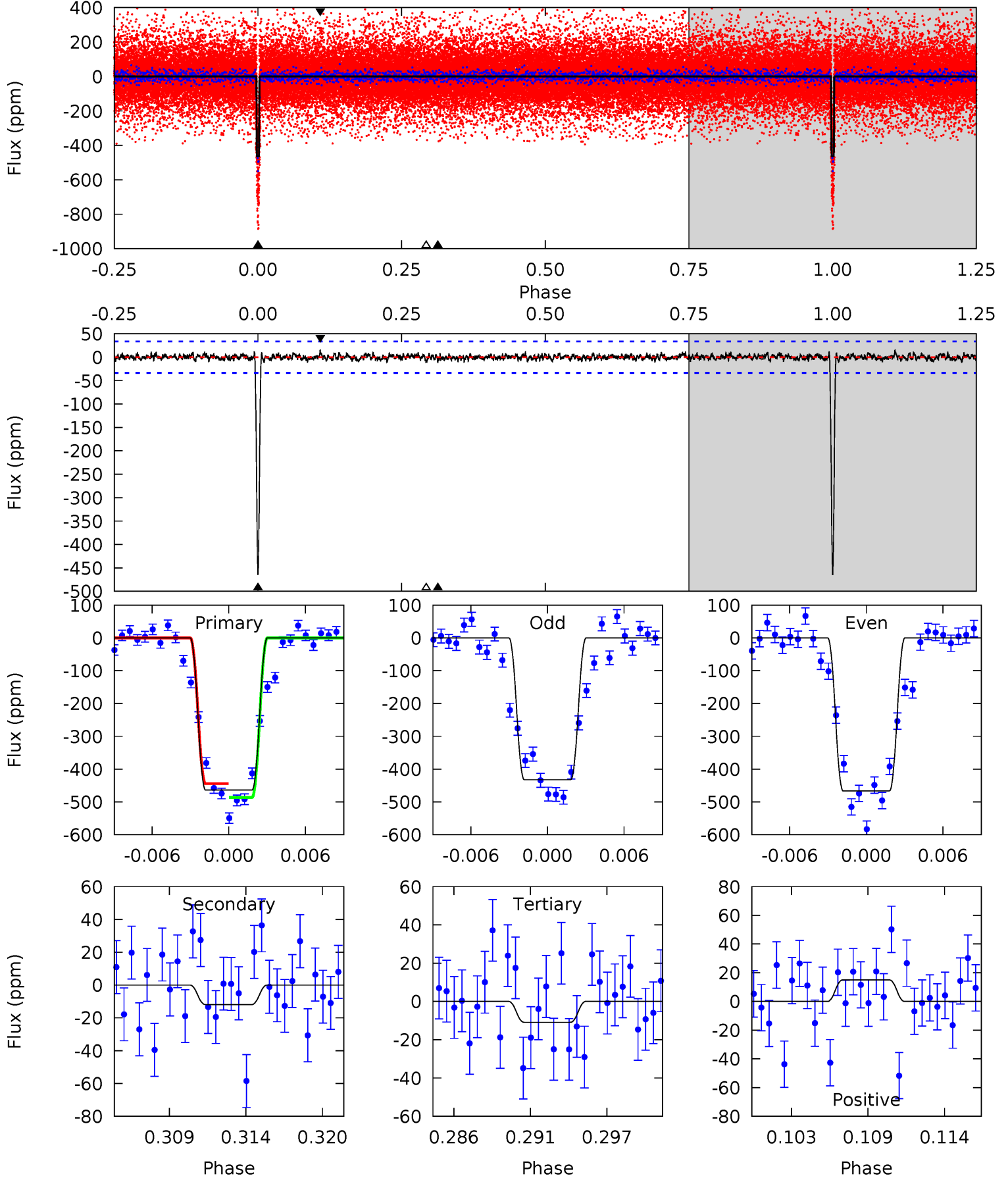
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
67.2	31.6	7.45	7.98	5.06	2.63	2.83	59.8	59.2	24.1	23.6	0.33	1.06	0.19	1.60



Alt Model-Shift Uniqueness Test

004847843-01, P = 30.960392 Days, E = 108.471096 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
71.1	1.82	1.67	2.30	5.13	2.76	0.57	69.4	68.8	0.16	-0.48	2.51	0.98	0.03	3.21



Stellar Parameters For KIC 004847843

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5367^{+92}_{-322}	$3.216^{+1.472}_{-0.368}$	$-1.600^{+0.300}_{-0.250}$	$3.558^{+2.054}_{-2.824}$	$0.758^{+0.193}_{-0.193}$	$0.024^{+5.253}_{-0.012}$
	+2%/-6%	+46%/-11%	+19%/-16%	+58%/-79%	+25%/-25%	+22165%/-53%
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 004847843-01 / KOI 3505.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-243 ± 8	$14.37^{+16.48}_{-9.21}$	1422^{+264}_{-329}	3538^{+1550}_{-540}	19^{+143}_{-15}
Alt.	-12 ± 7	$11.24^{+14.64}_{-7.88}$	1411^{+259}_{-378}	2334^{+948}_{-4315}	$1.347^{+13.930}_{-1.168}$

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

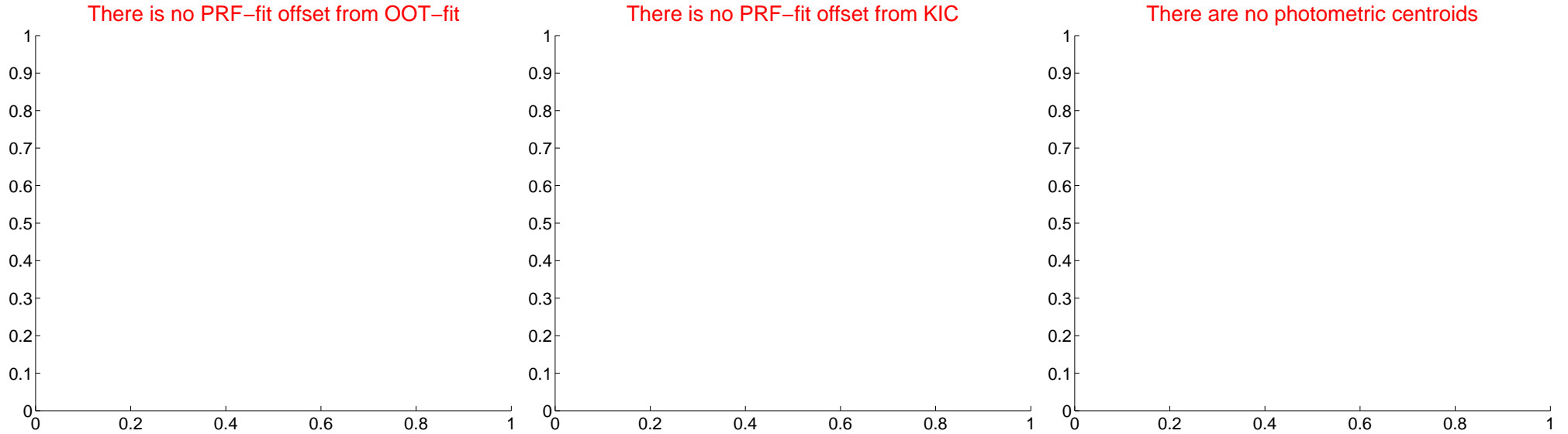
DV Centroid Data

Supplemental centroid analysis for 004847843-01. Kepler magnitude: 13.40. Transit SNR 28.84

There are 0 quarters with good PRF difference image offsets

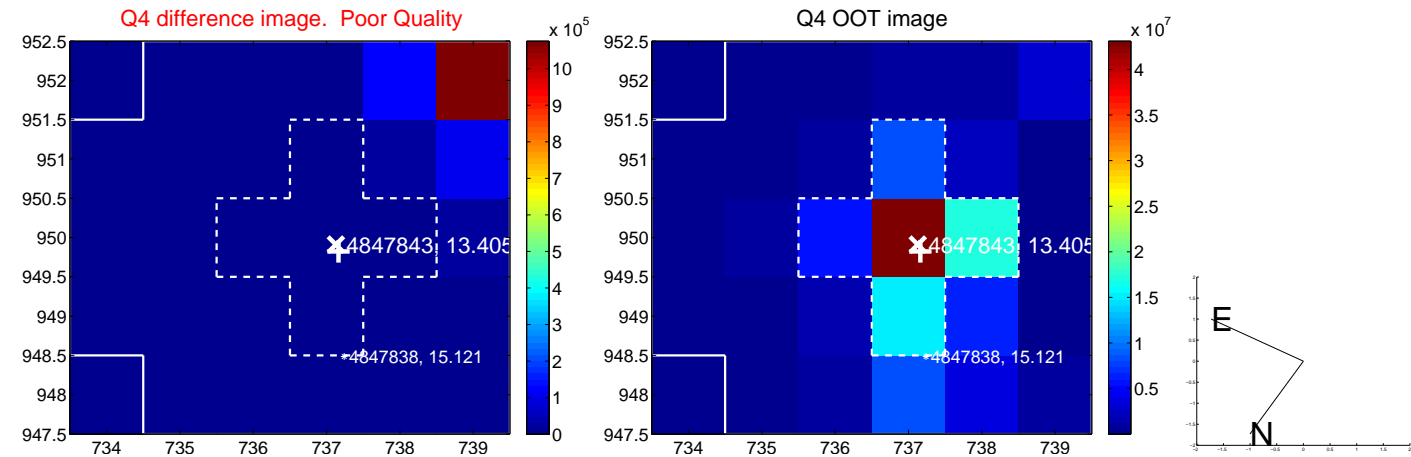
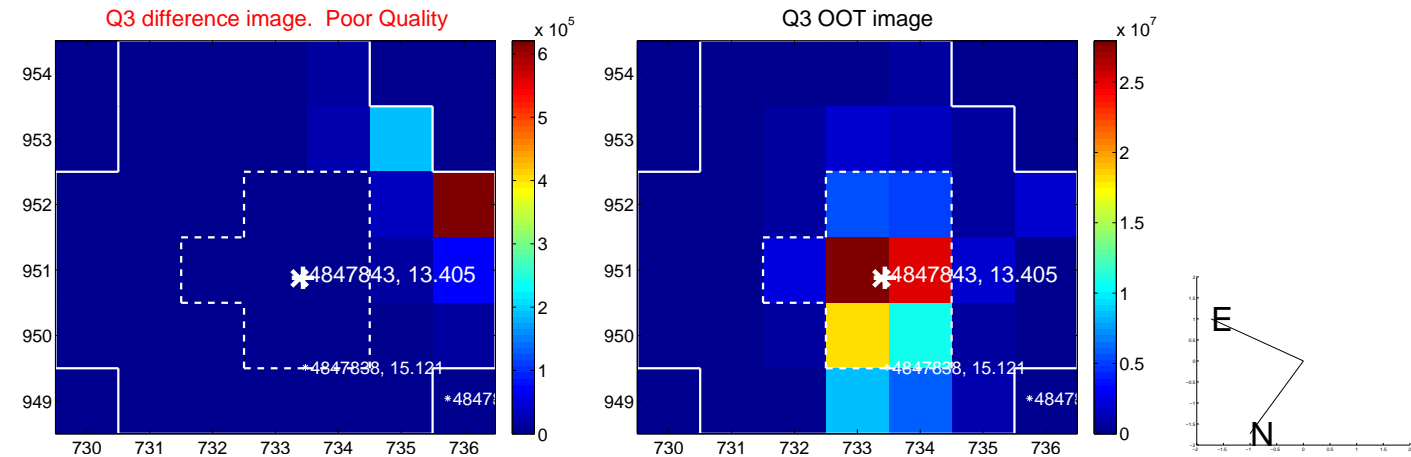
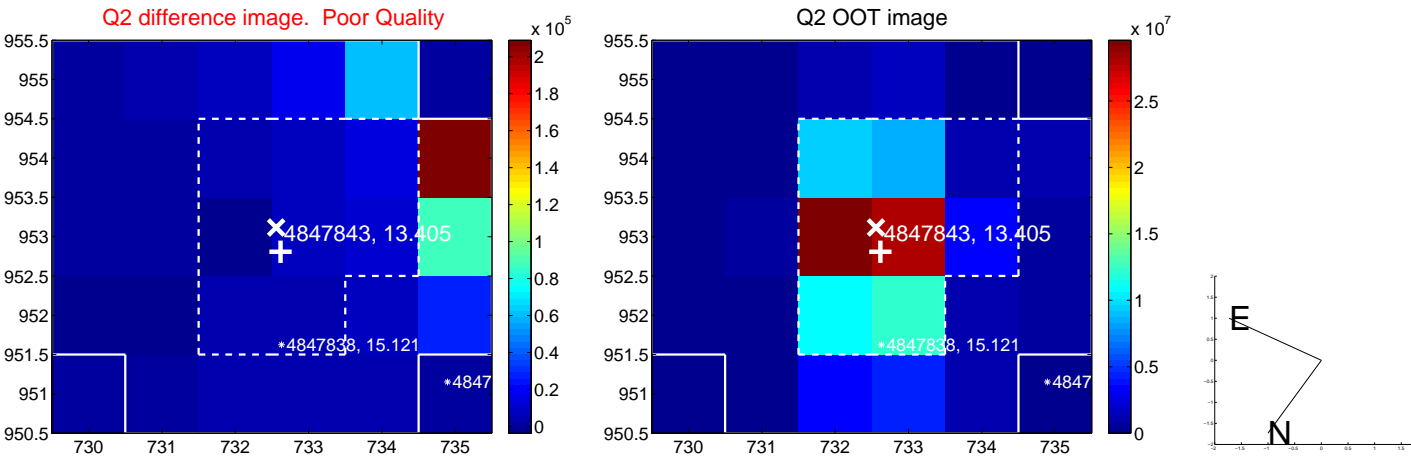
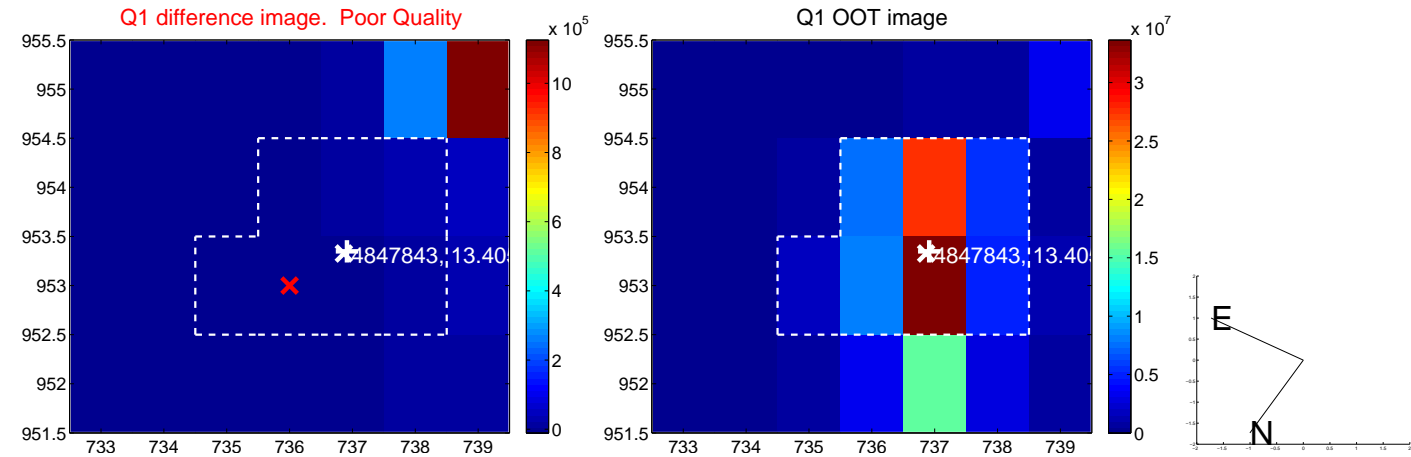
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—

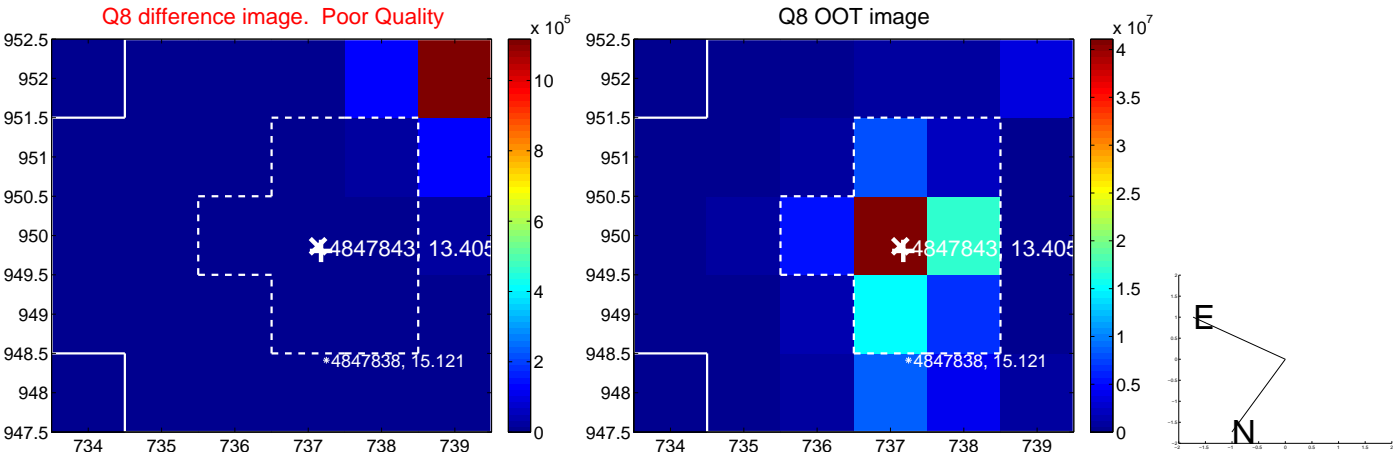
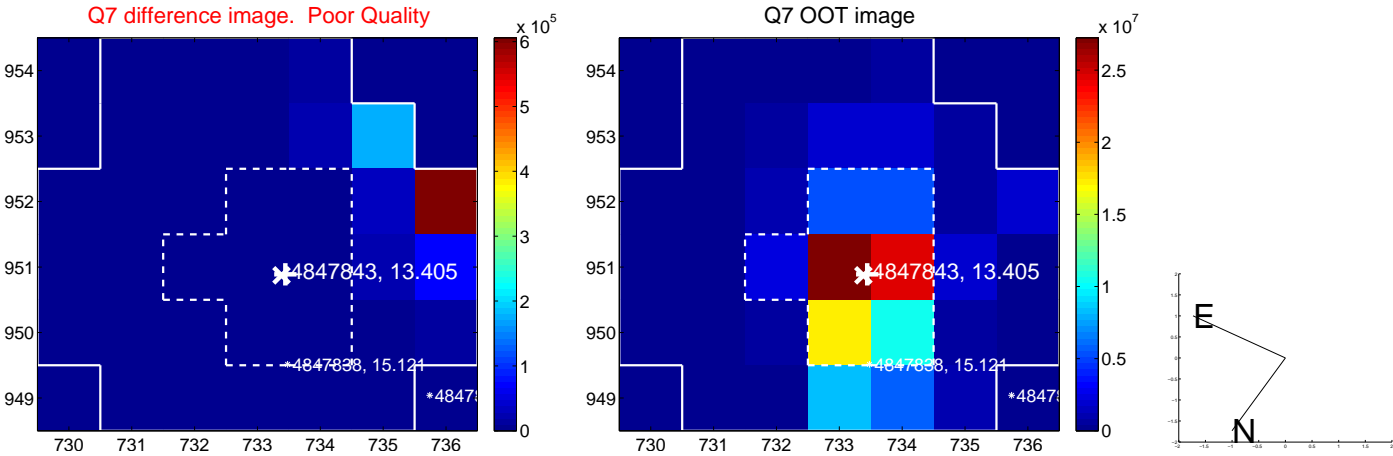
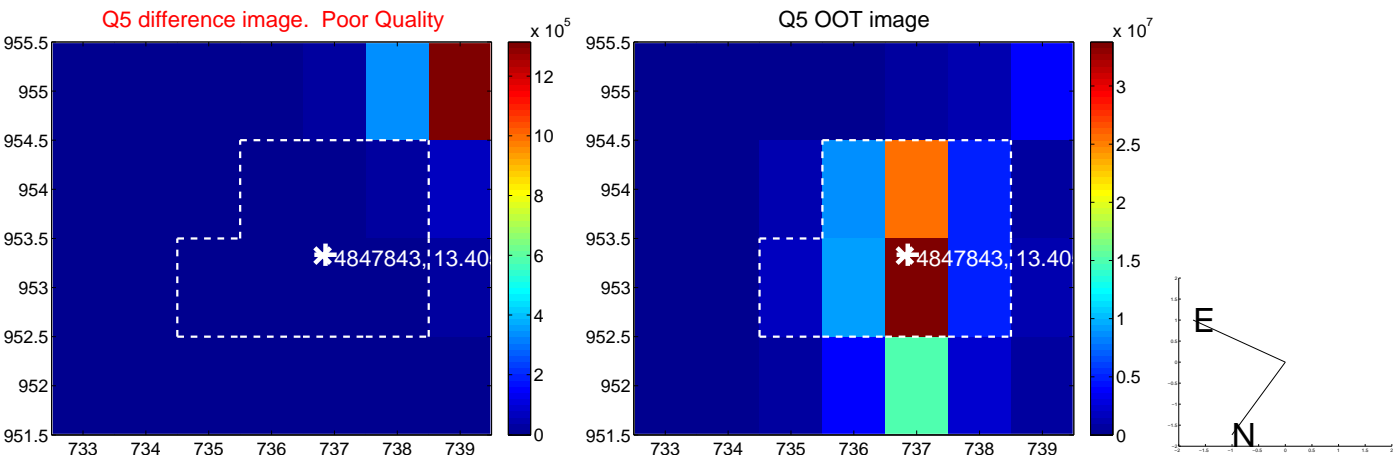


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

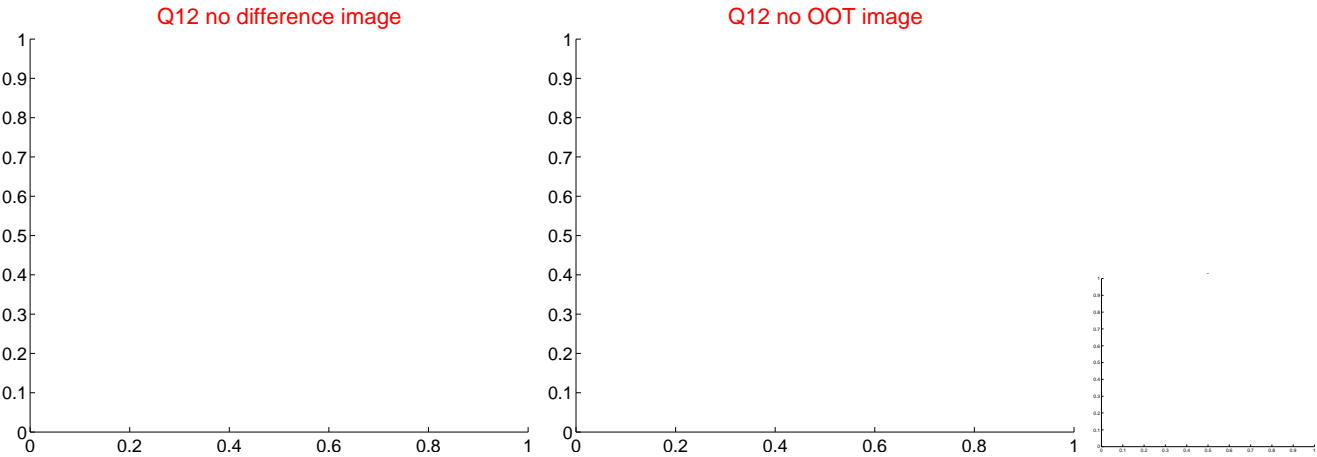
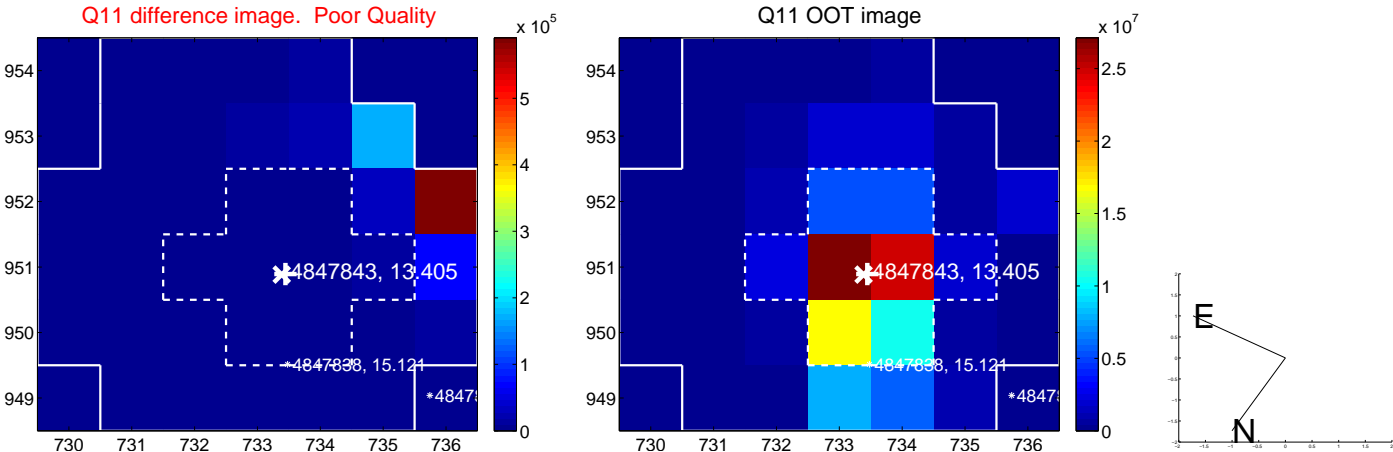
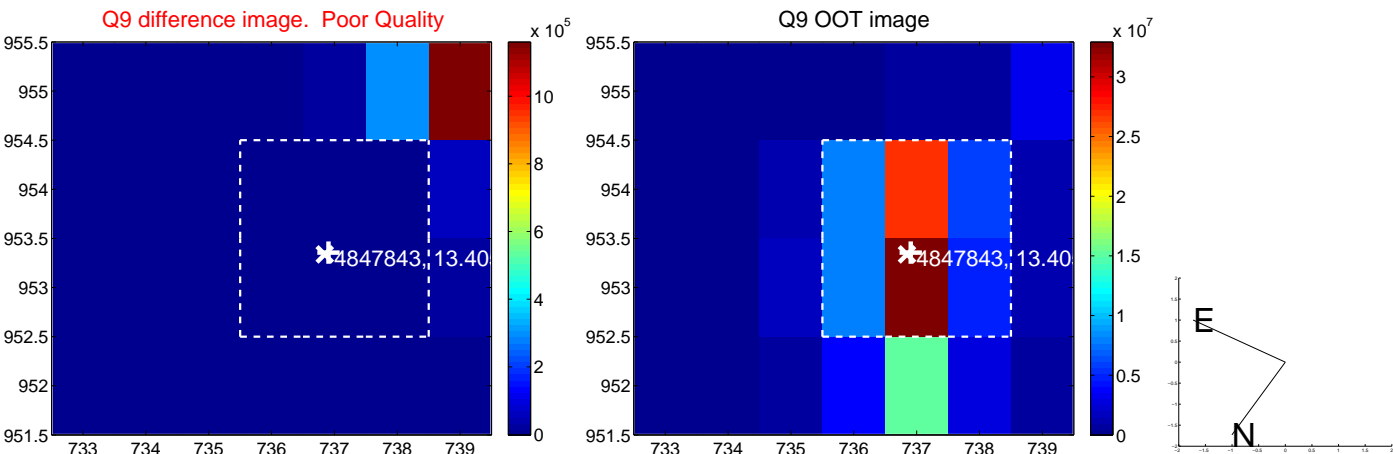
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



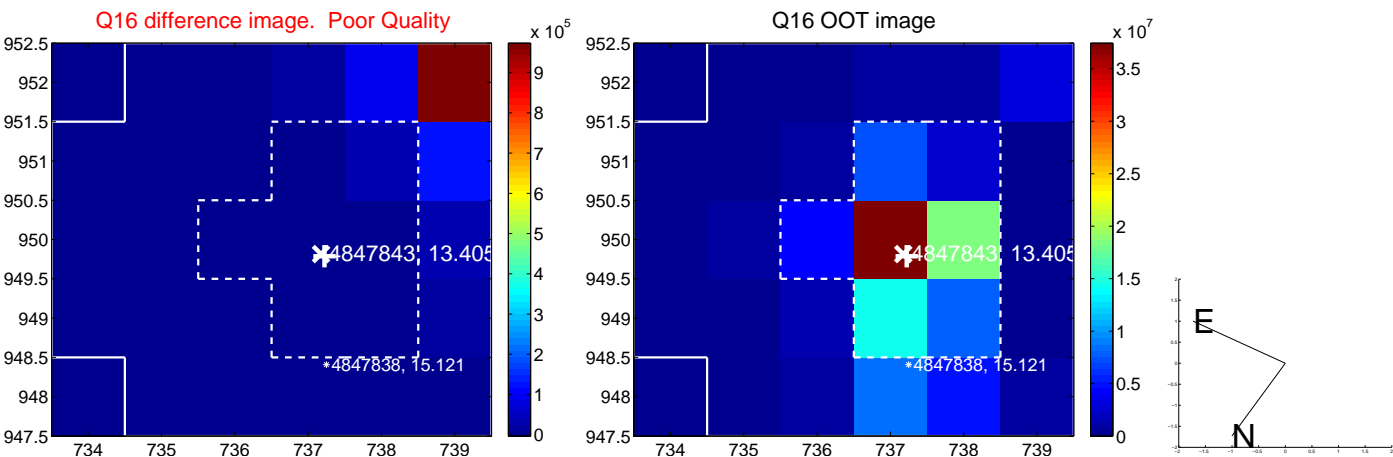
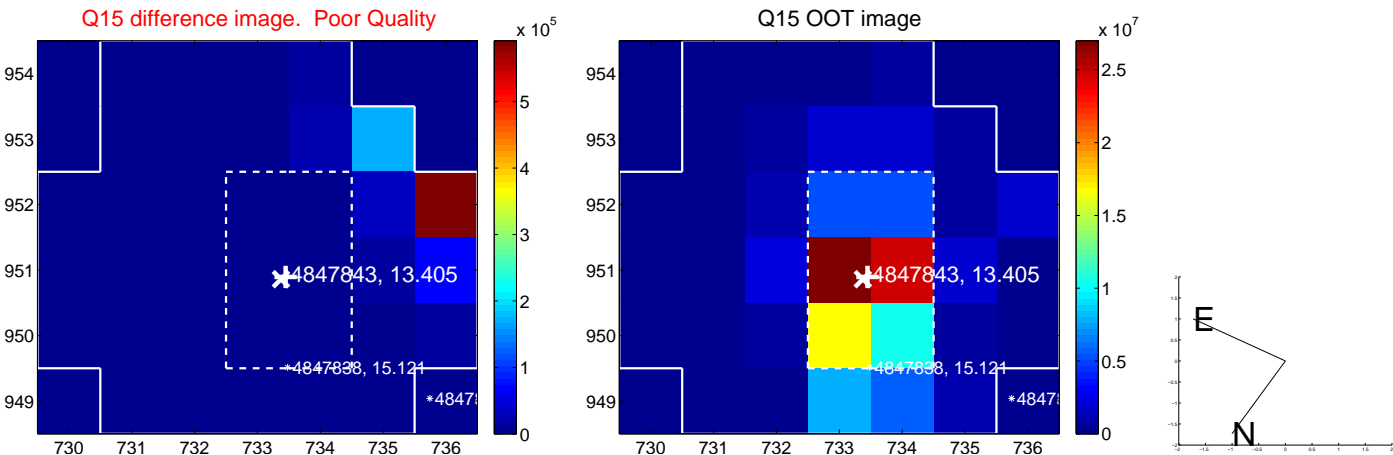
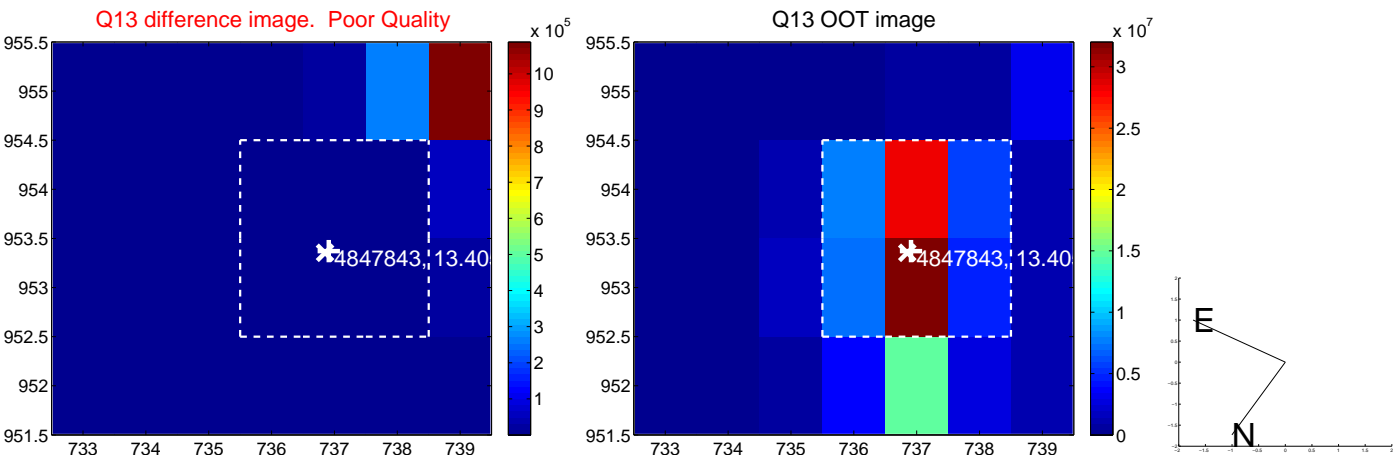
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



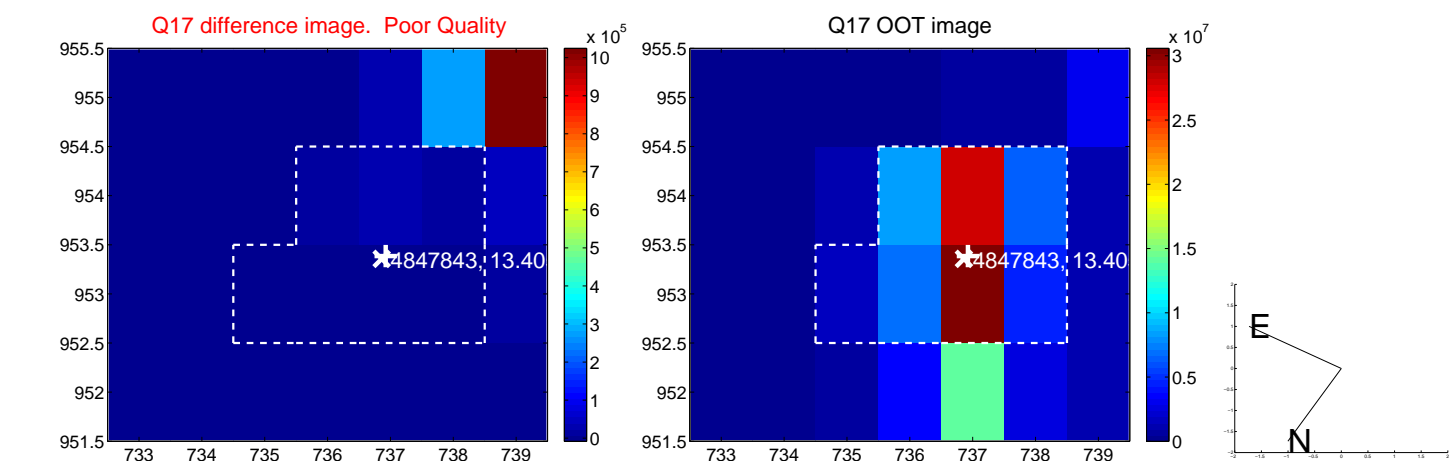
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



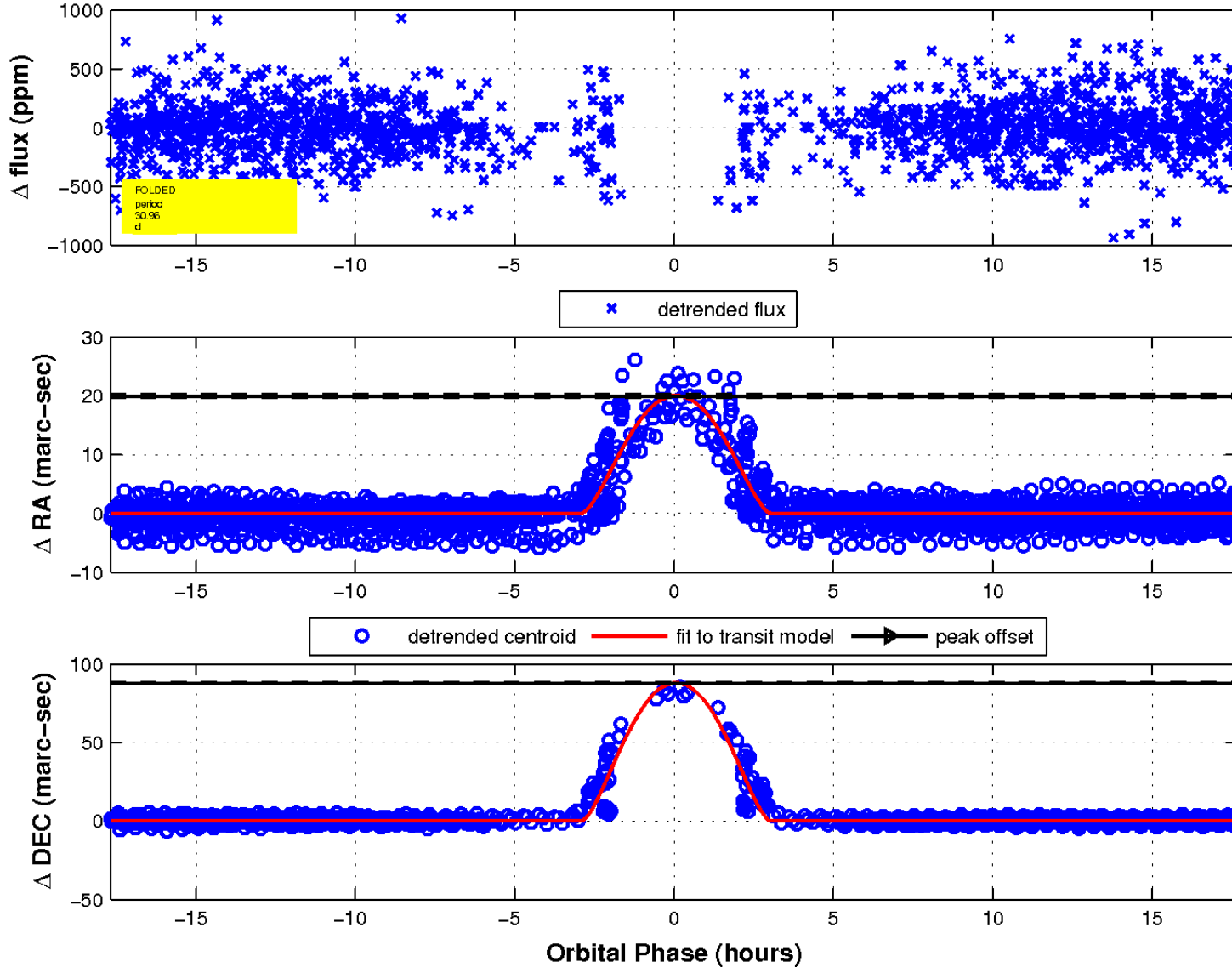
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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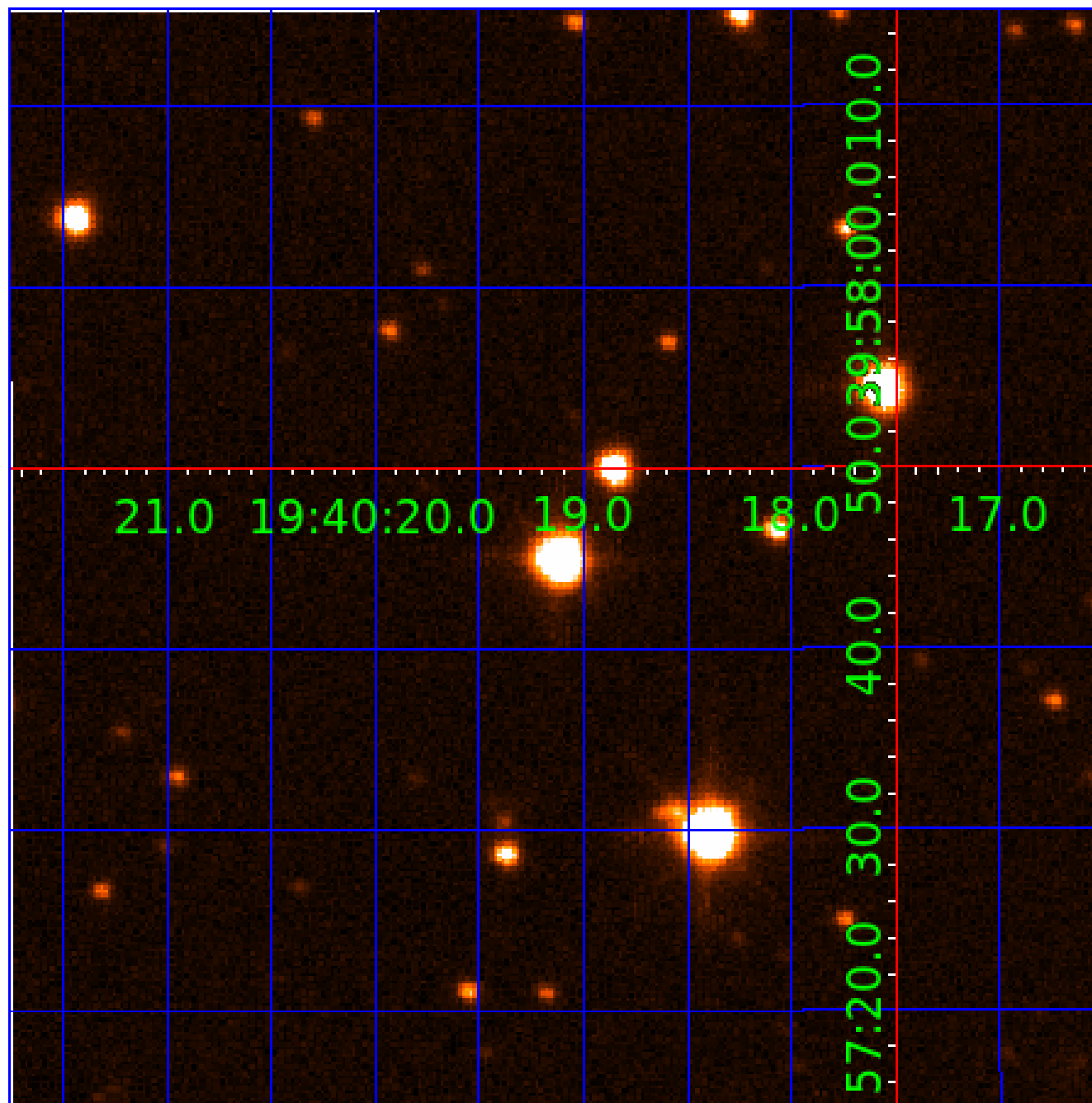


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 004847843

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})
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004847843-02	OBS	No	30.960510	156.149149	405.6	13.660	20.4	21.8	3.56	5367	14.11	303.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004847843-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
004847843-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

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 004847843-02

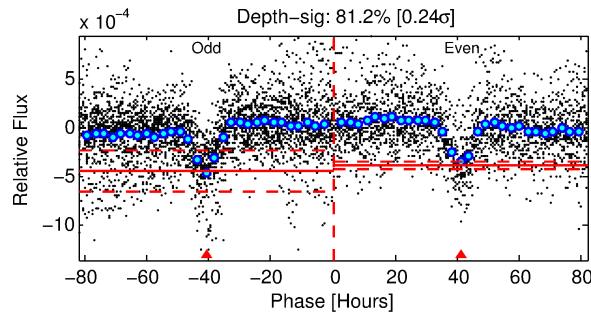
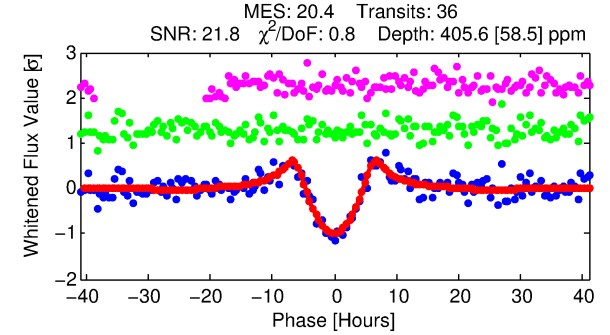
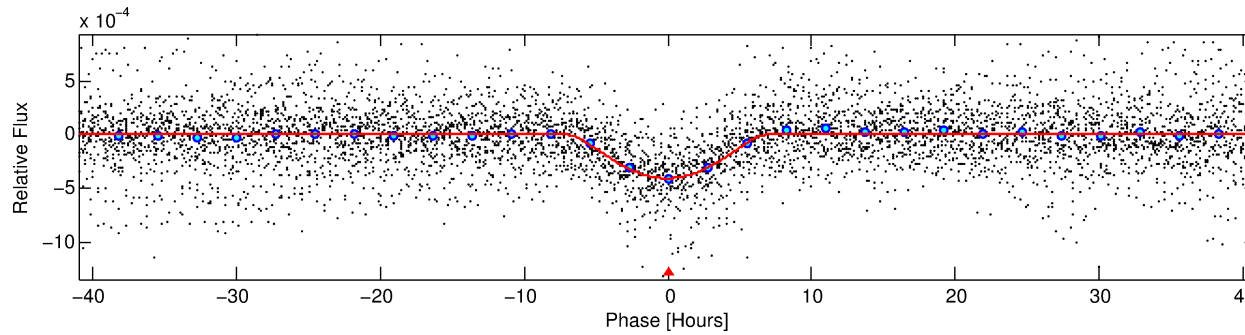
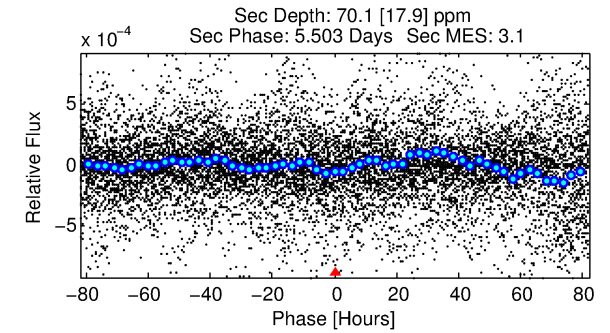
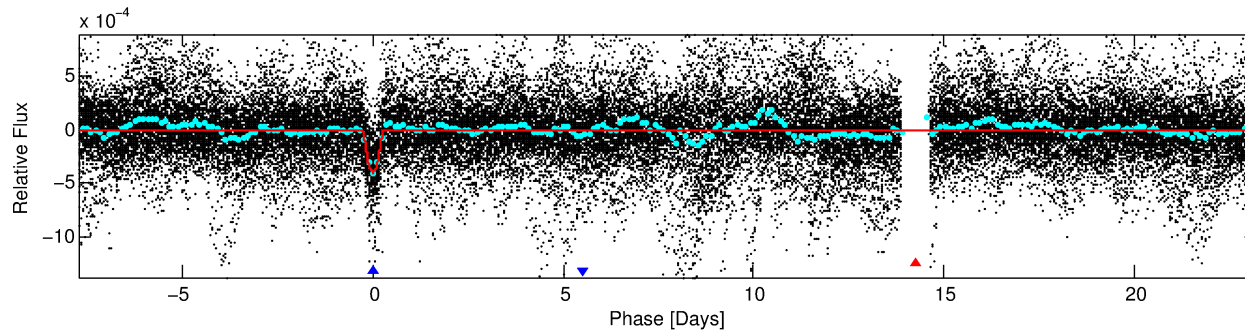
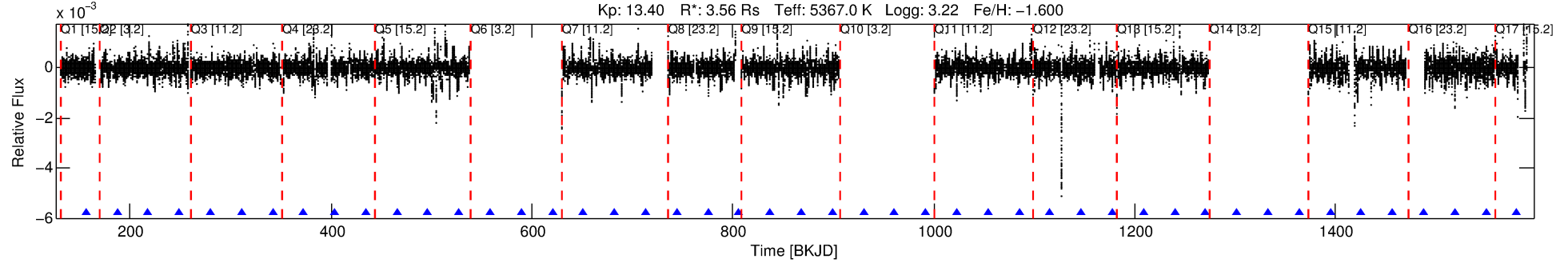
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (")	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004847843-02	4847843	004847832-01	4847832	1:1	17.4	-2	-3	12.45	13.41	850.01	Direct-PRF	0	0.04	0.03

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 4847843 Candidate: 2 of 2 Period: 30.961 d
KOI: K03505.01 Corr: 0.934

Kp: 13.40 R*: 3.56 Rs Teff: 5367.0 K Logg: 3.22 Fe/H: -1.600



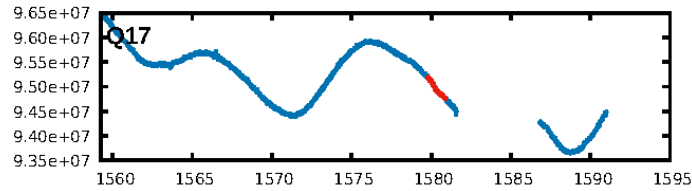
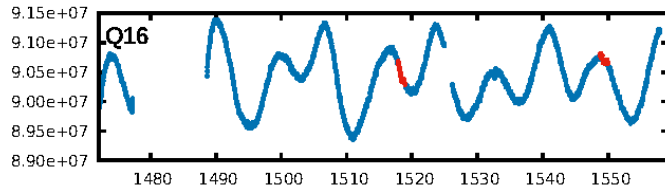
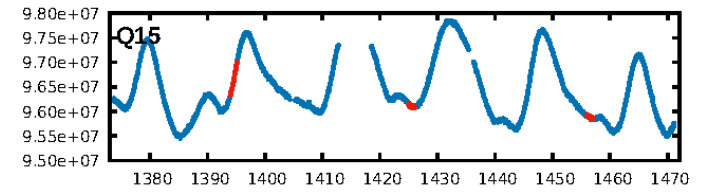
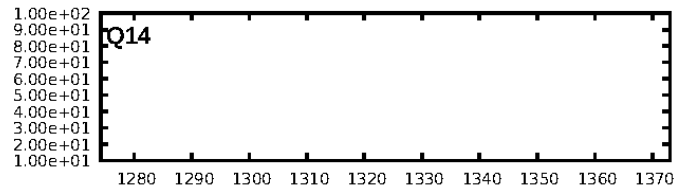
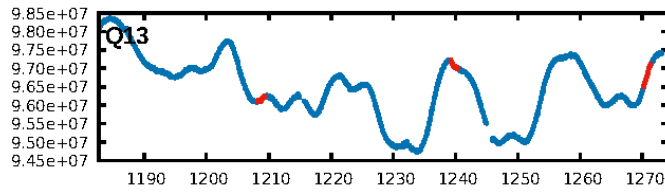
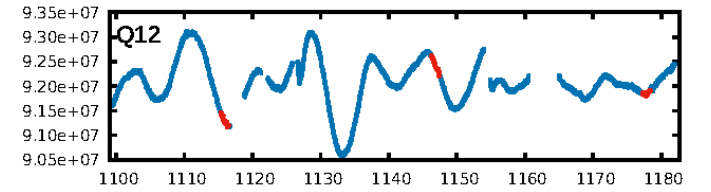
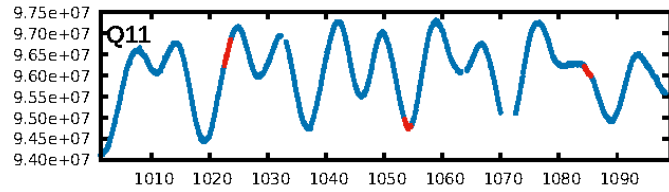
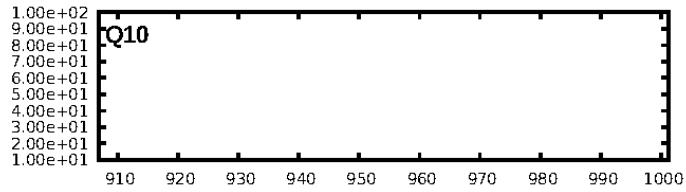
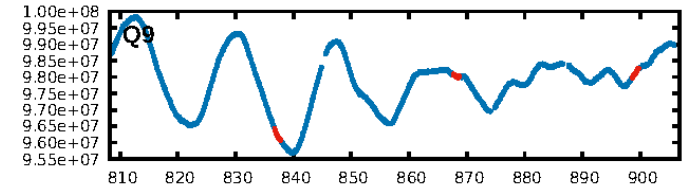
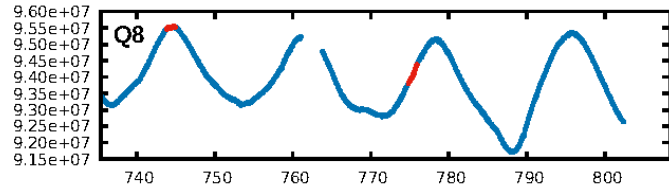
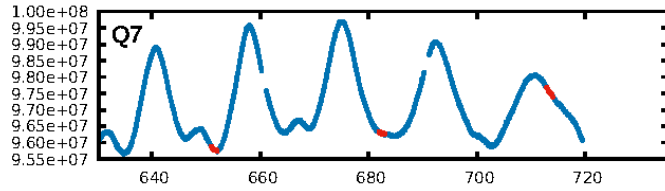
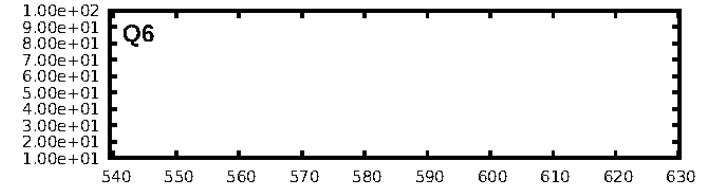
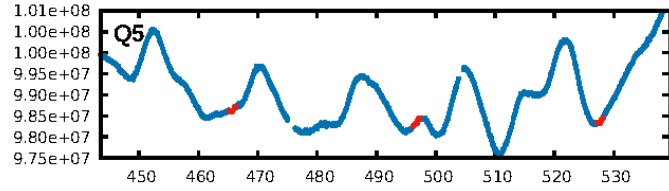
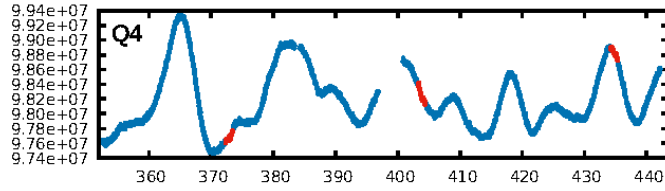
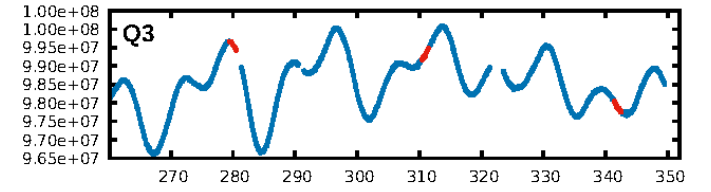
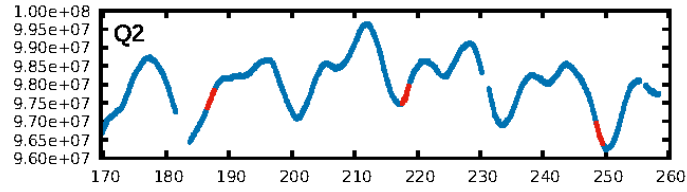
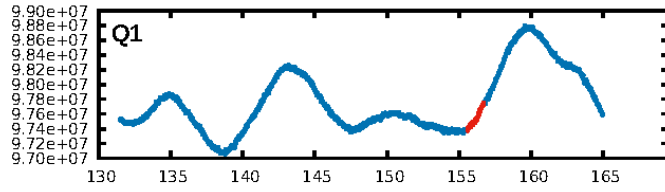
DV Fit Results:

Period = 30.96051 [0.00036] d
Epoch = 156.1491 [0.0086] BKJD
Rp/R* = 0.0363 [0.0275]
a/R* = 4.82 [0.88]
b = 1.00 [0.04]
Seff = 303.54 [708.19]
Teq = 1064 [621] K
Rp = 14.11 [15.47] Re
a = 0.1761 [0.2197] AU
Ag = 6.00 [16.70] [0.30σ]
Teff = 2576 [999] K [1.28σ]

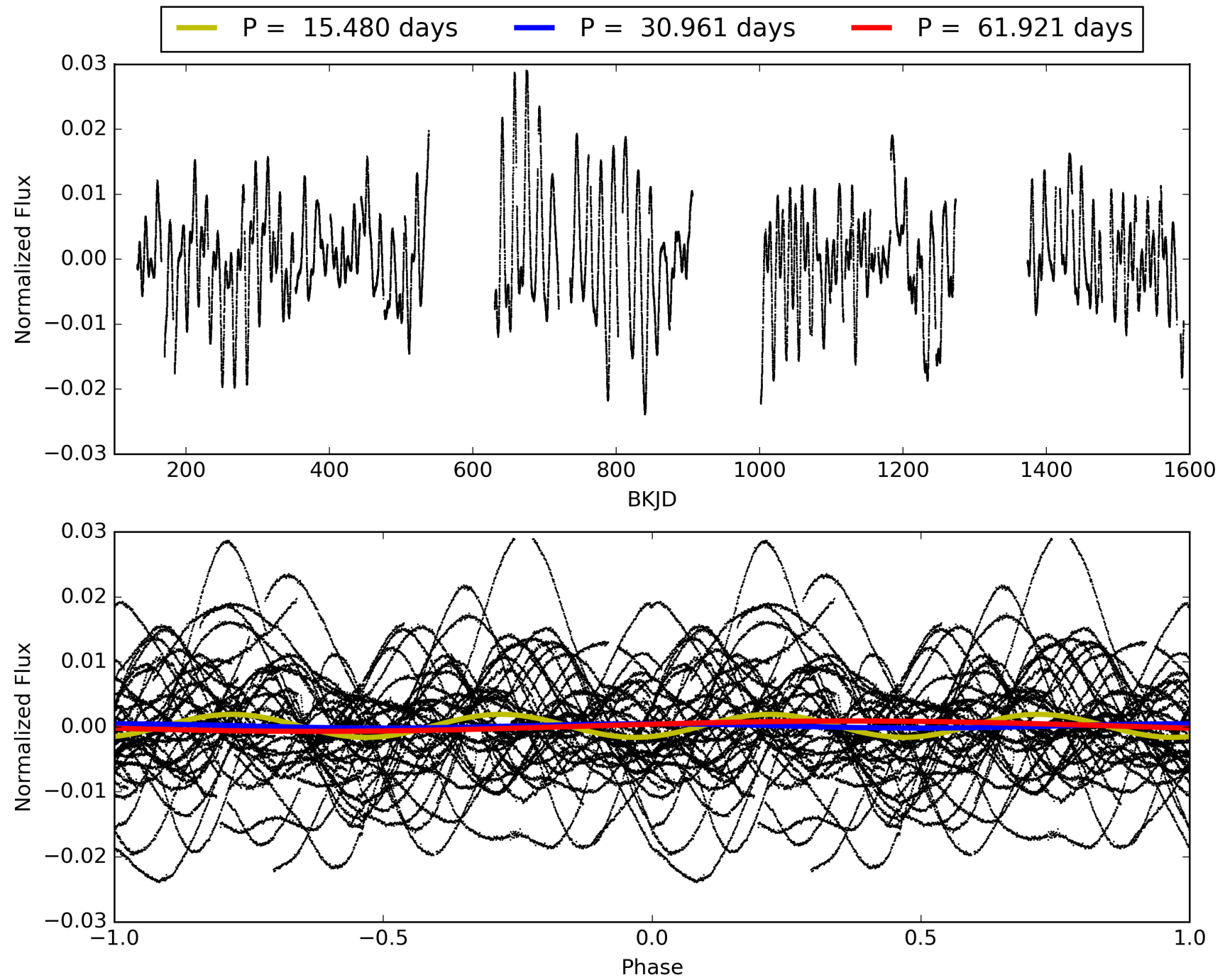
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.5%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 3.62e-71
RollingBand-fgt: 1.00 [34/34]
GhostDiagnostic-chr: -0.1041
Centroid-sig: 0.0%
Centroid-so: 207.424 arcsec [413.96σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [14/14]

TCE 004847843-02, PDC Light Curves

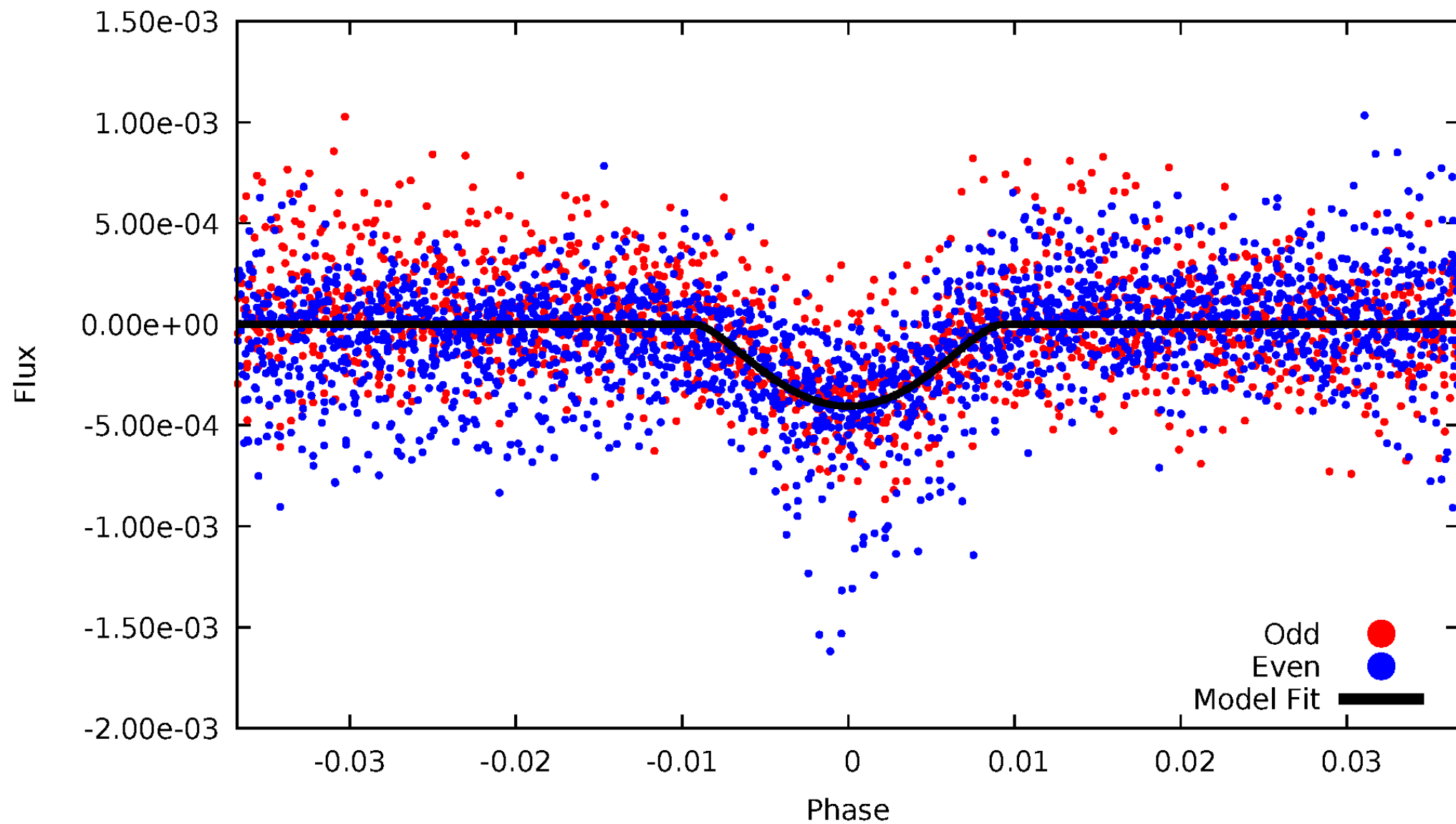


TCE 004847843-02



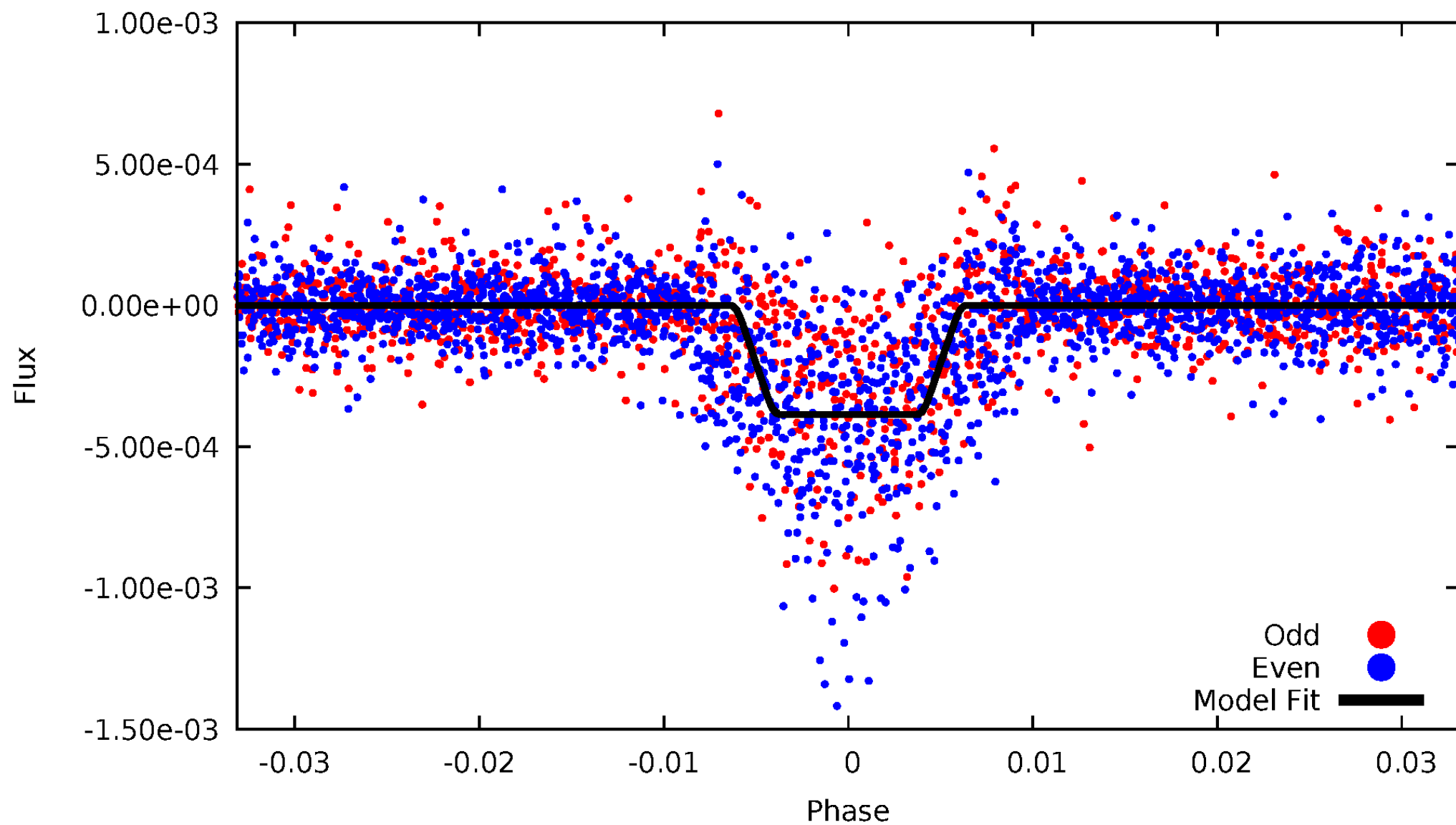
DV Odd/Even

TCE 004847843-02



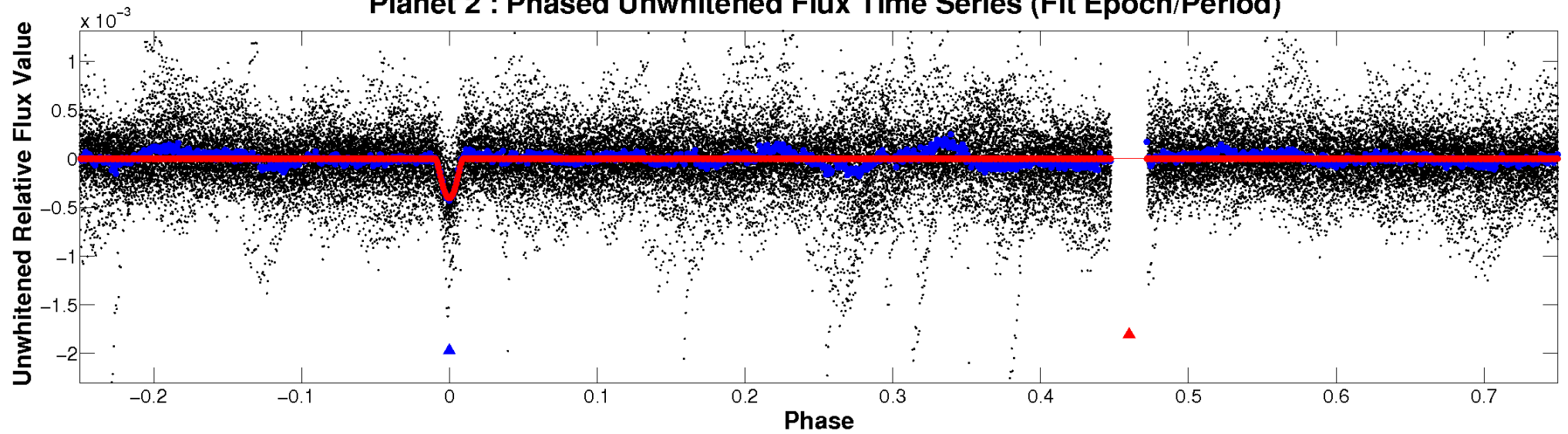
ALT Odd/Even

TCE 004847843-02

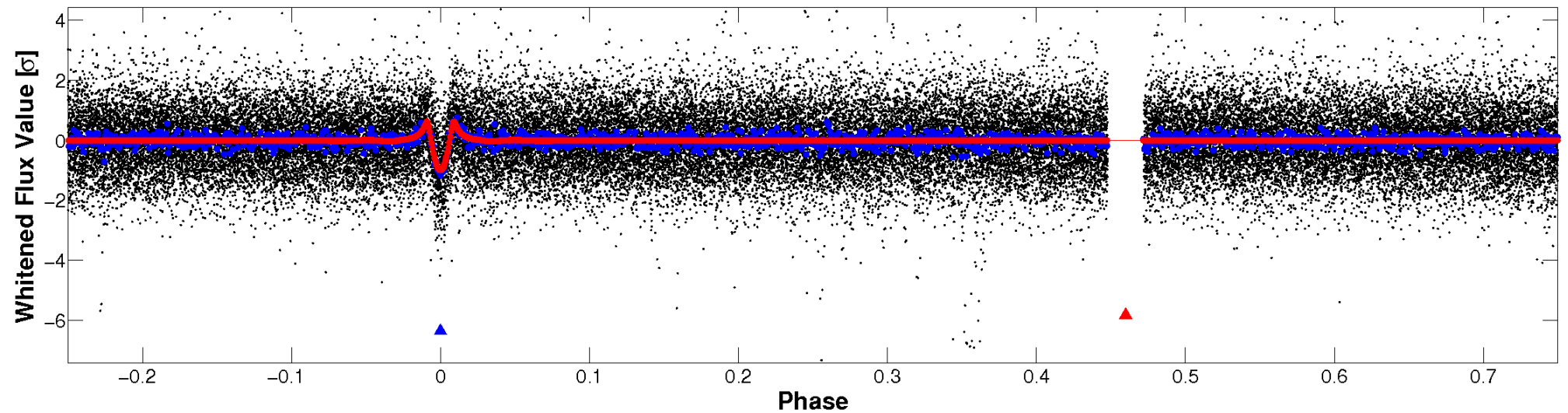


Non-Whitened Vs. Whitened Light Curve

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

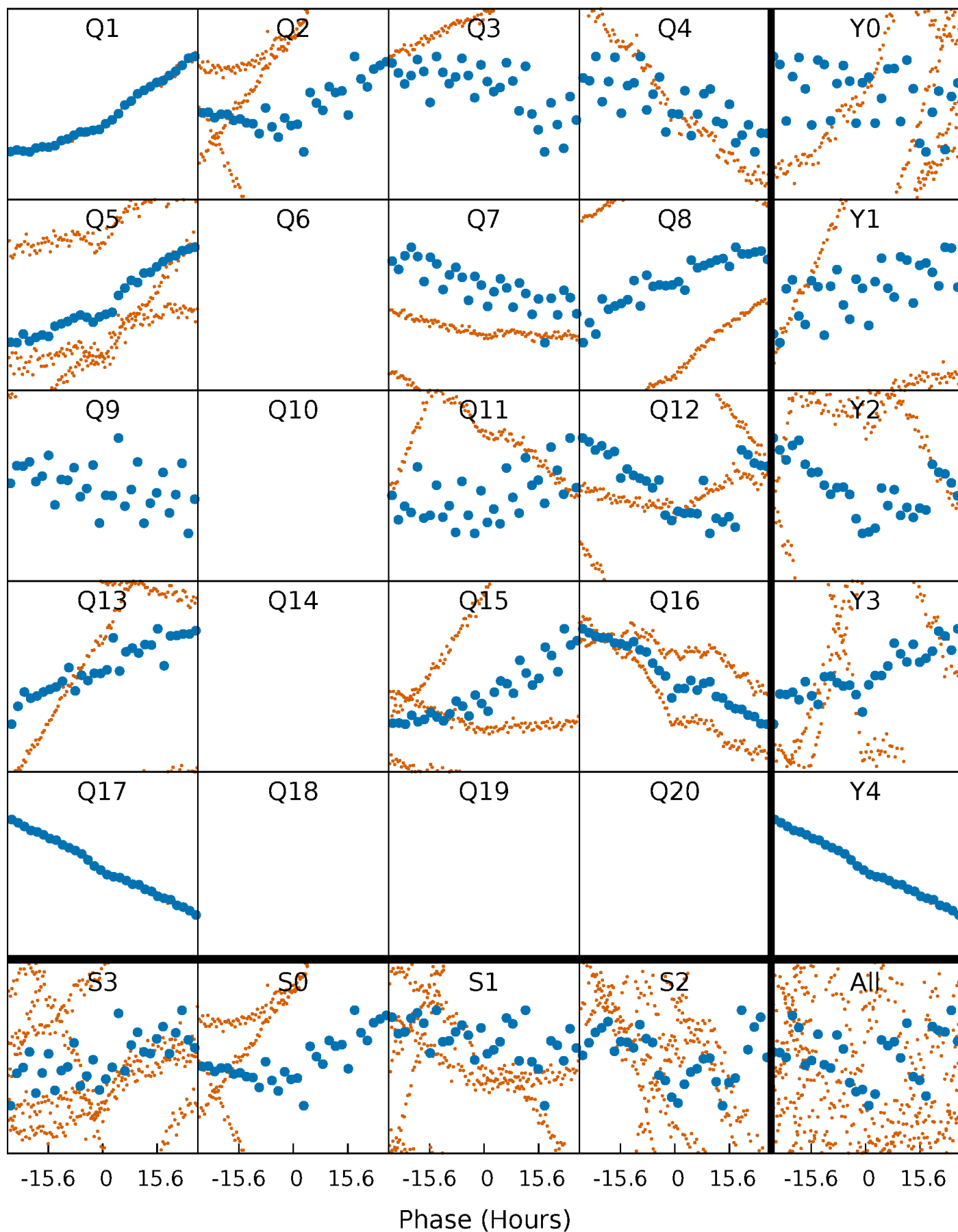


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



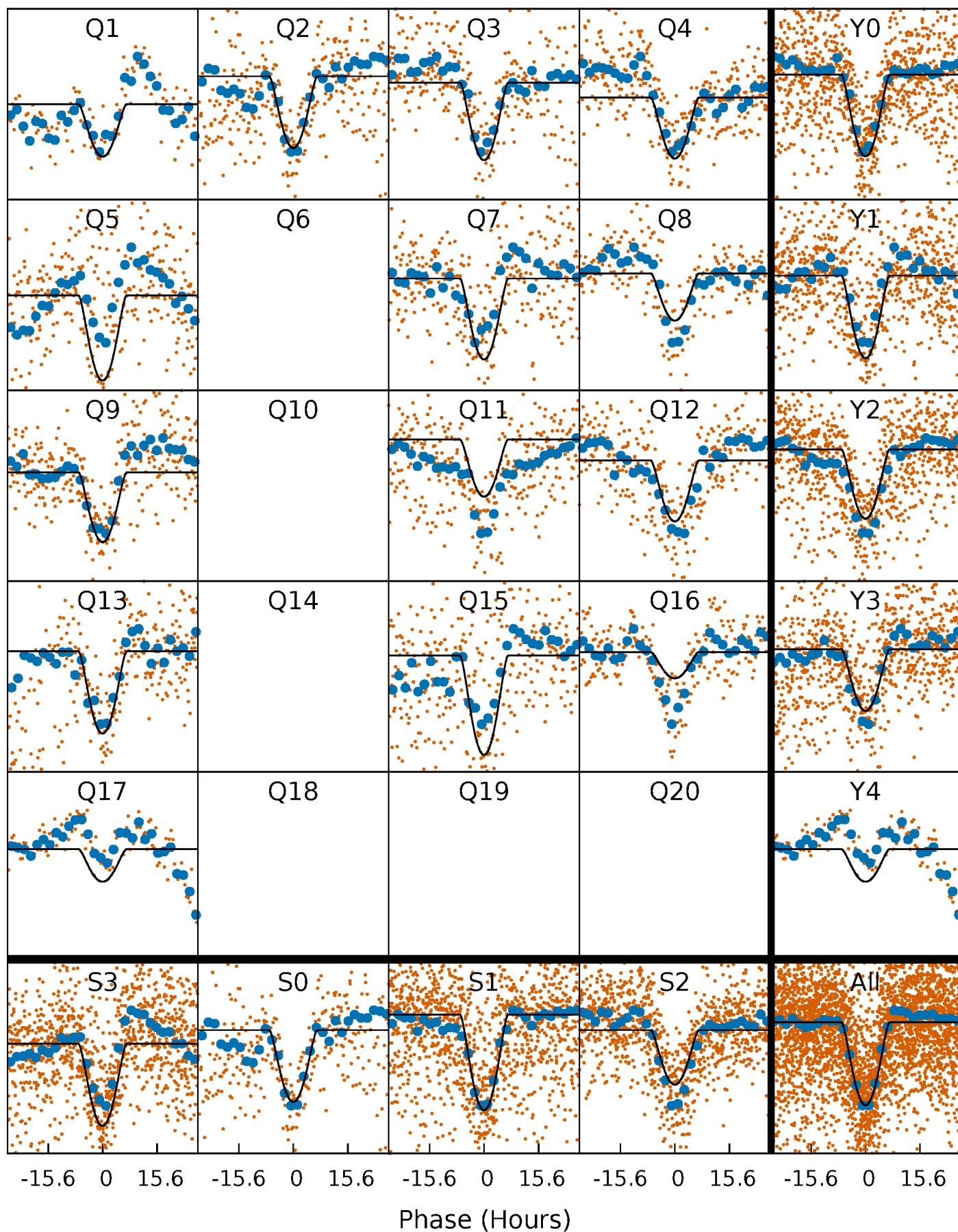
PDC Quarter-Phased Transit Curves

TCE 004847843-02 P= 30.960510 Days $T_0=156.149149$ (BKJD)



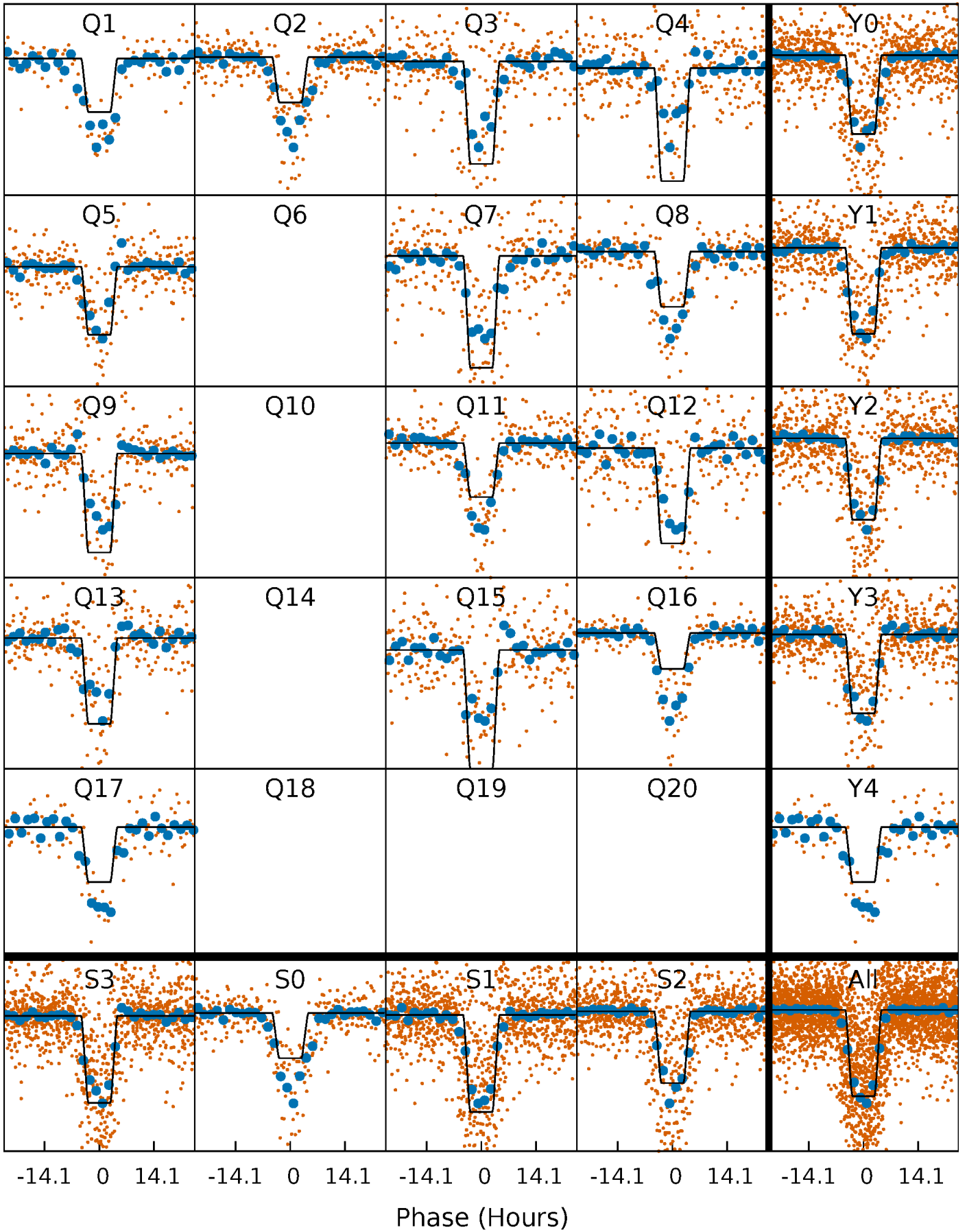
DV Quarter-Phased Transit Curves

TCE 004847843-02 P= 30.960510 Days $T_0=156.149149$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

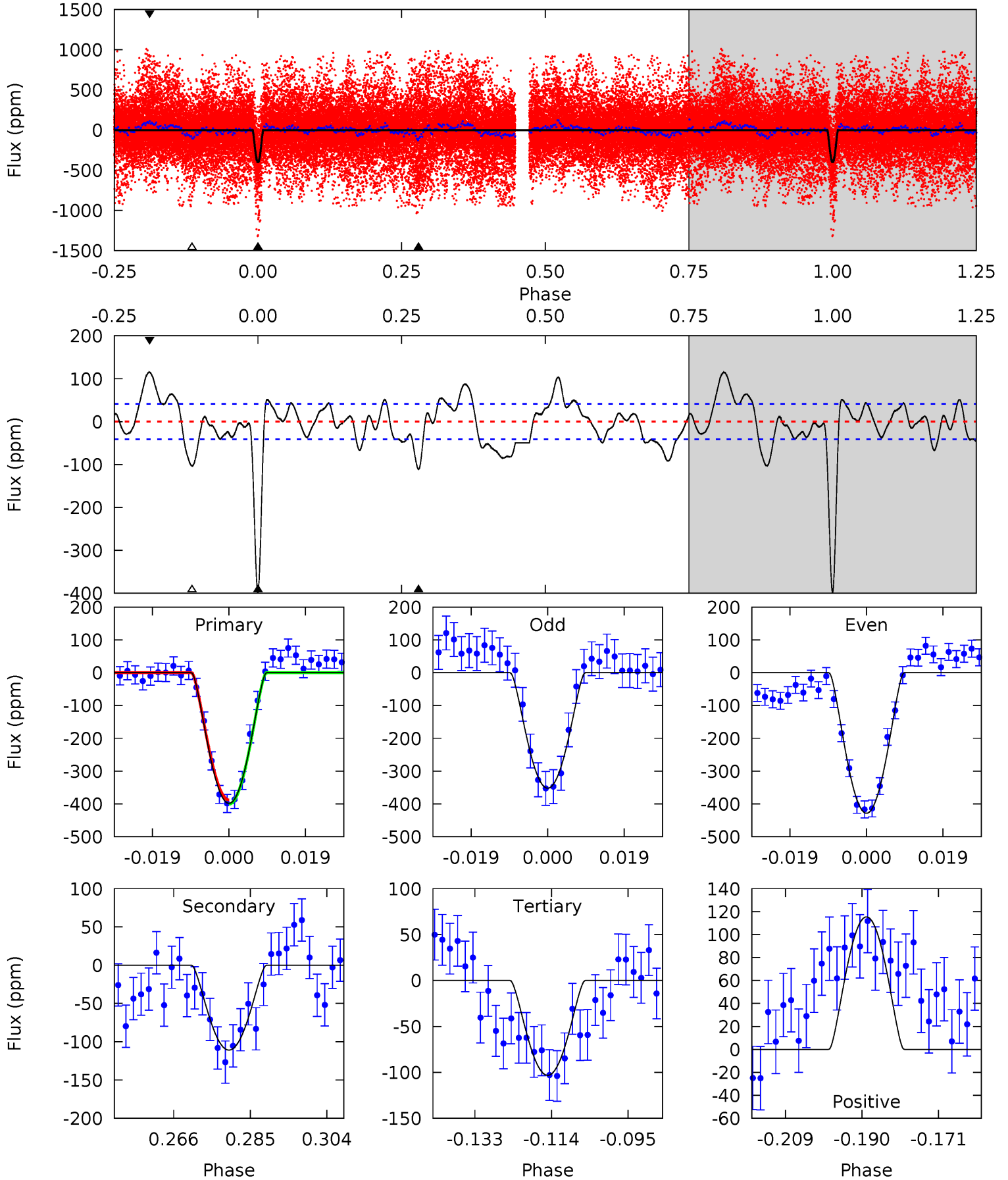
TCE 004847843-02 P= 30.960463 Days $T_0=156.136809$ (BKJD)



DV Model-Shift Uniqueness Test

004847843-02, P = 30.960510 Days, E = 125.188639 Days

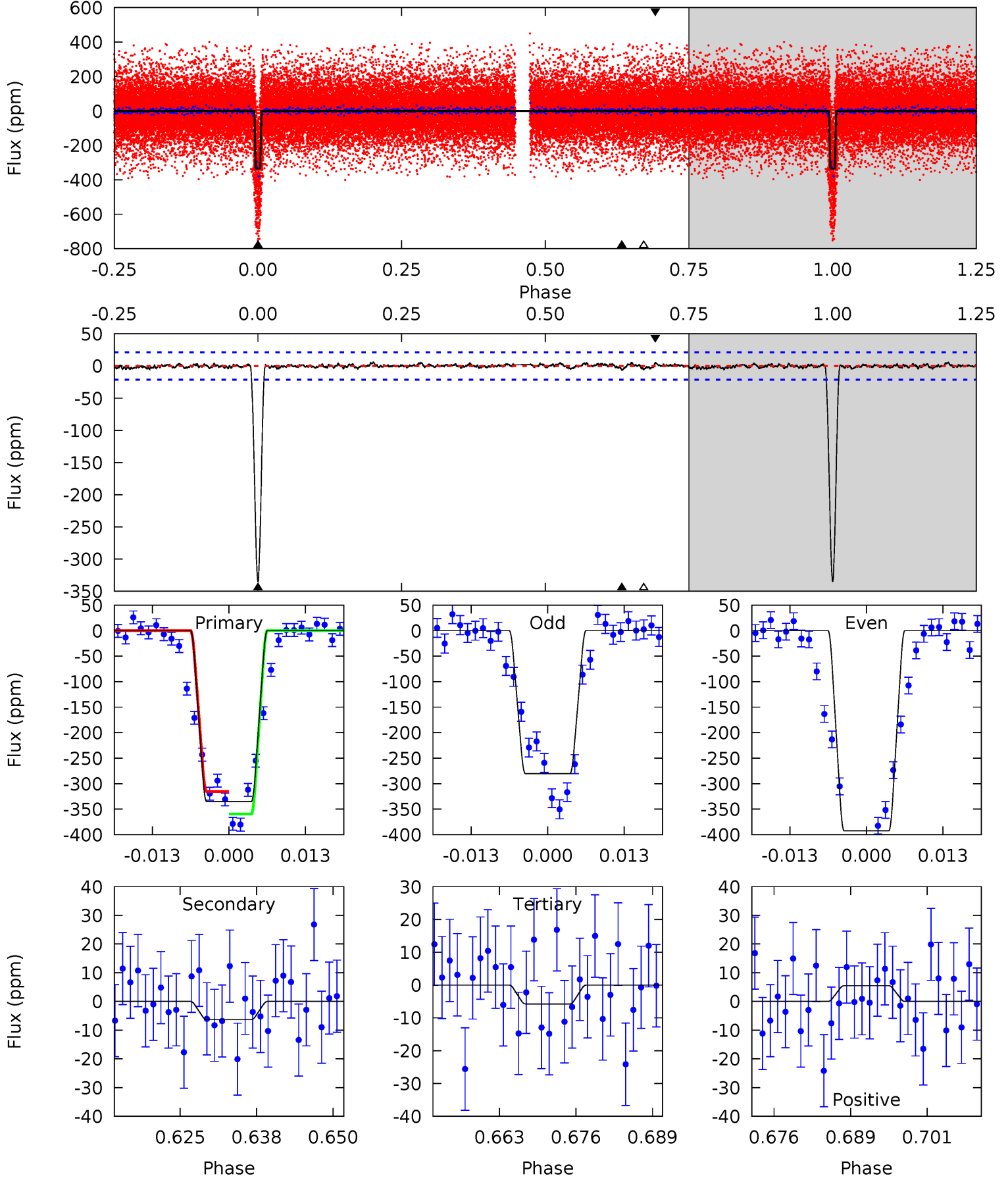
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.3	13.2	12.3	13.7	4.90	2.35	5.40	35.1	33.6	0.91	-0.53	4.47	1.08	0.22	0.74



Alt Model-Shift Uniqueness Test

004847843-02, P = 30.960463 Days, E = 125.176346 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
78.3	1.48	1.34	1.28	4.98	2.49	0.45	77.0	77.0	0.14	0.20	12.9	1.09	0.02	5.13



Stellar Parameters For KIC 004847843

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5367^{+92}_{-322}	$3.216^{+1.472}_{-0.368}$	$-1.600^{+0.300}_{-0.250}$	$3.558^{+2.054}_{-2.824}$	$0.758^{+0.193}_{-0.193}$	$0.024^{+5.253}_{-0.012}$
	+2%/-6%	+46%/-11%	+19%/-16%	+58%/-79%	+25%/-25%	+22165%/-53%
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 004847843-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-111 ± 8	$12.81^{+12.49}_{-8.10}$	1405^{+236}_{-326}	3249^{+1145}_{-489}	12^{+74}_{-9}
Alt.	-6 ± 4	$8.93^{+10.17}_{-6.25}$	1420^{+268}_{-384}	2287^{+887}_{-4323}	$1.108^{+12.205}_{-0.961}$

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

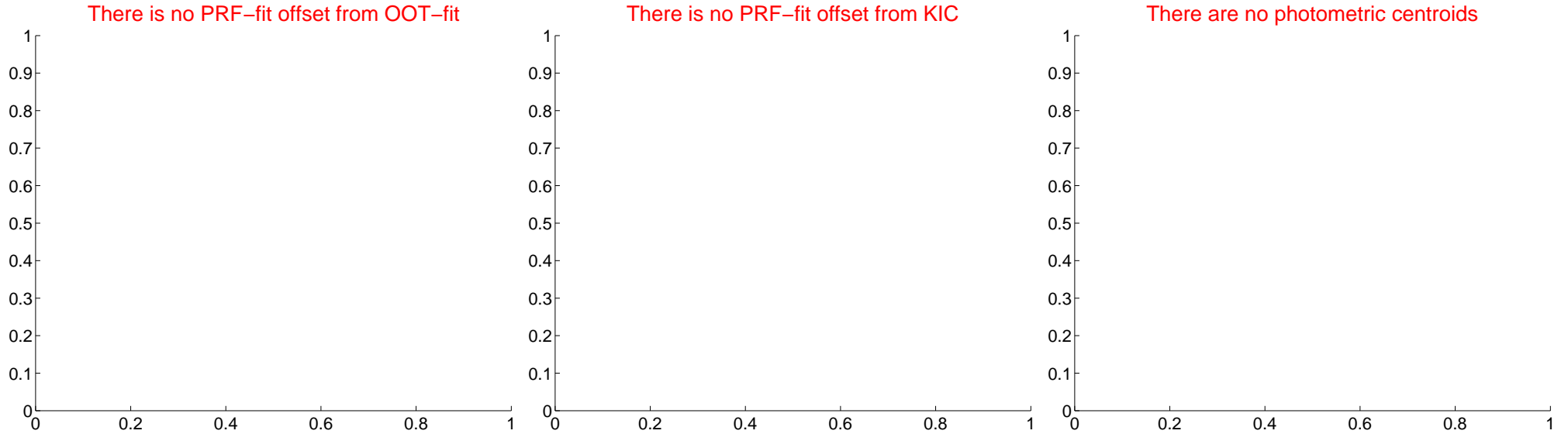
DV Centroid Data

Supplemental centroid analysis for 004847843-02. Kepler magnitude: 13.40. Transit SNR 21.84

There are 0 quarters with good PRF difference image offsets

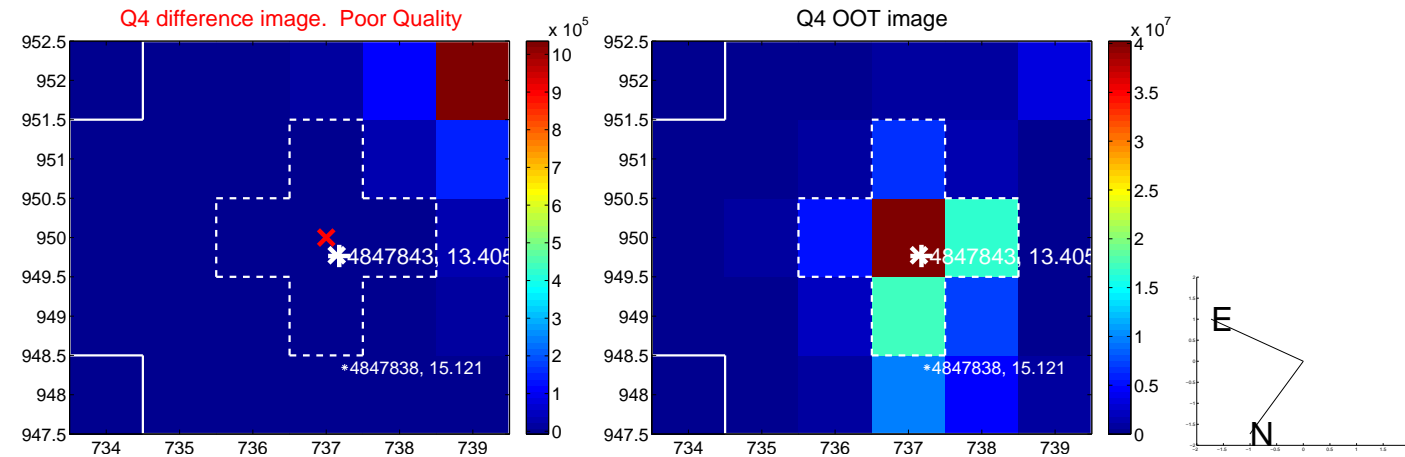
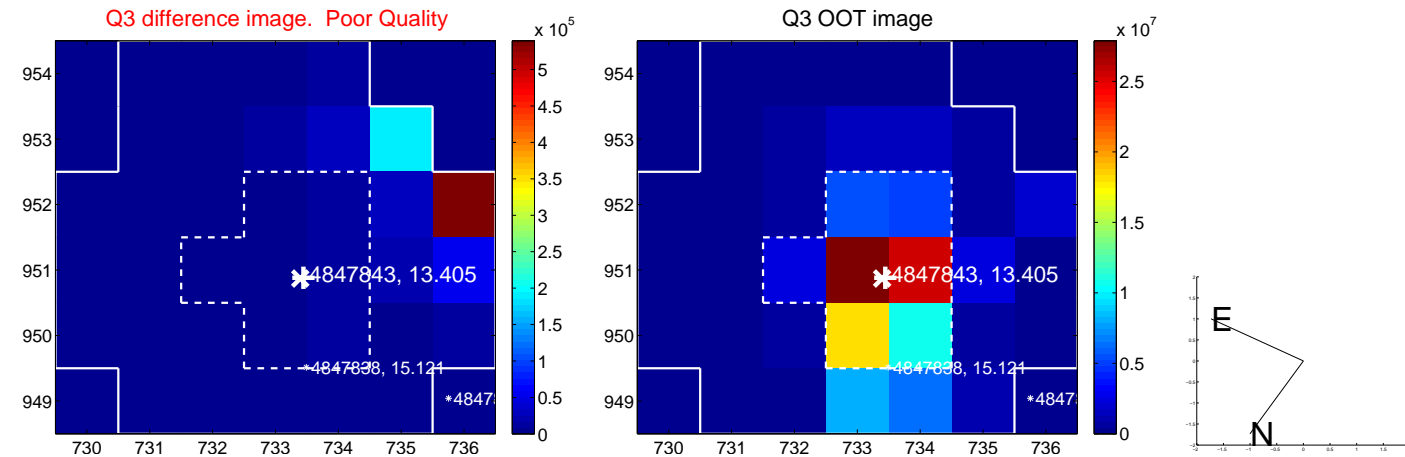
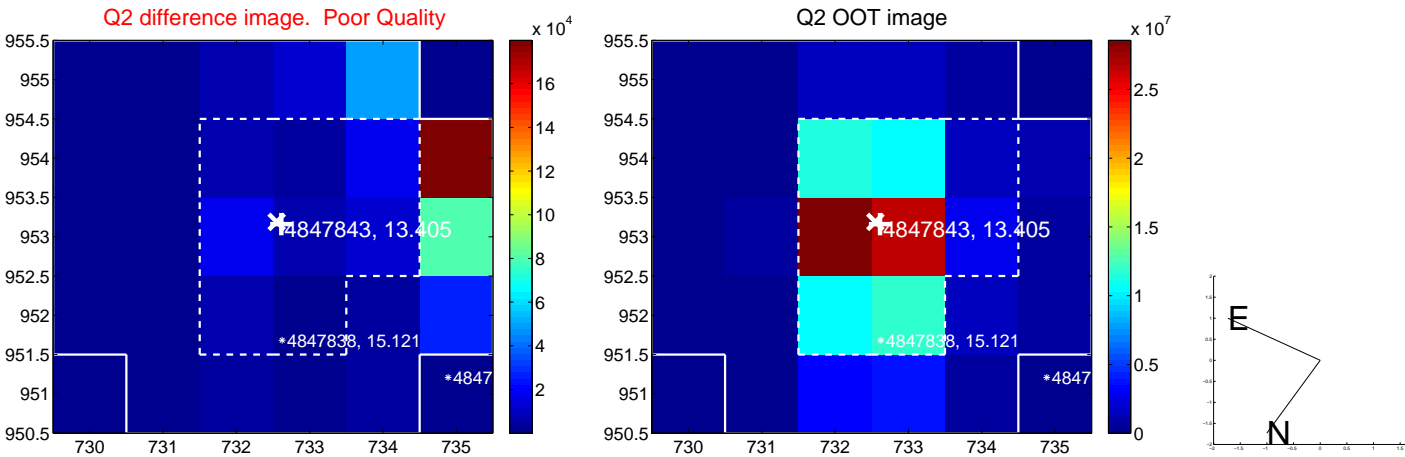
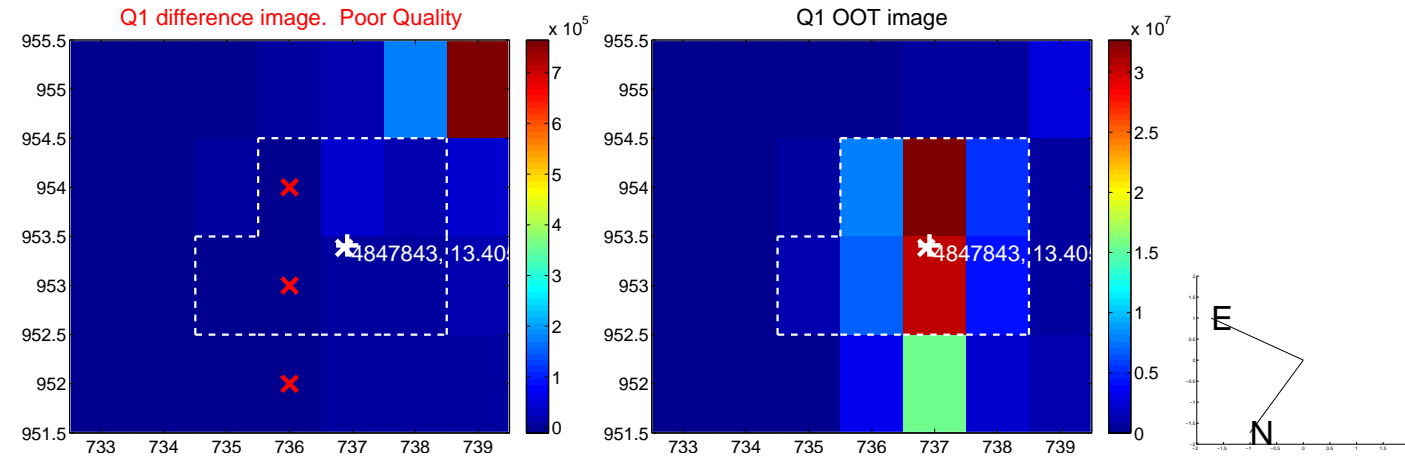
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—

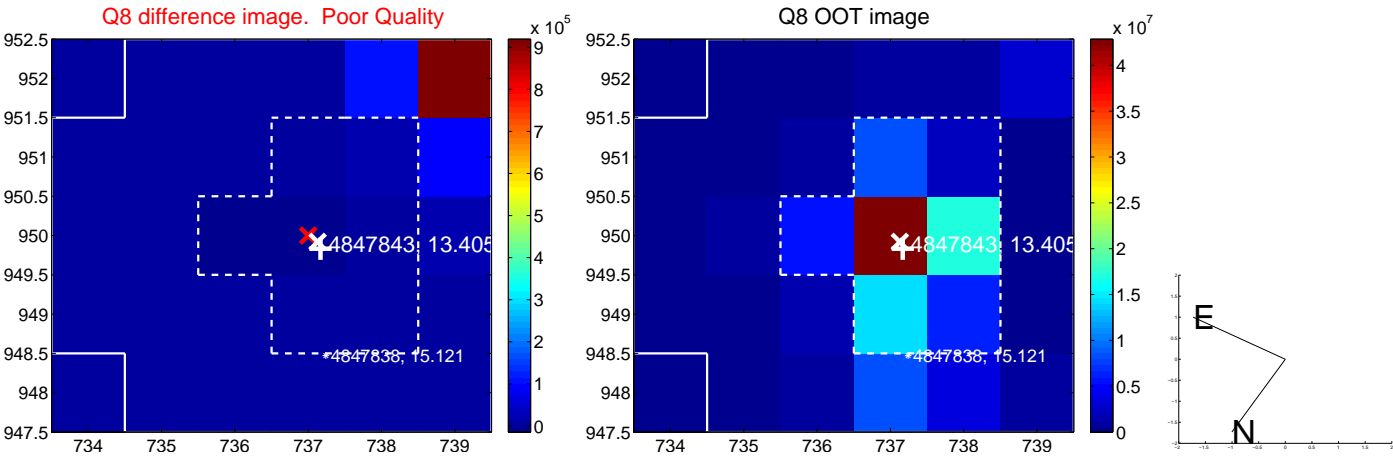
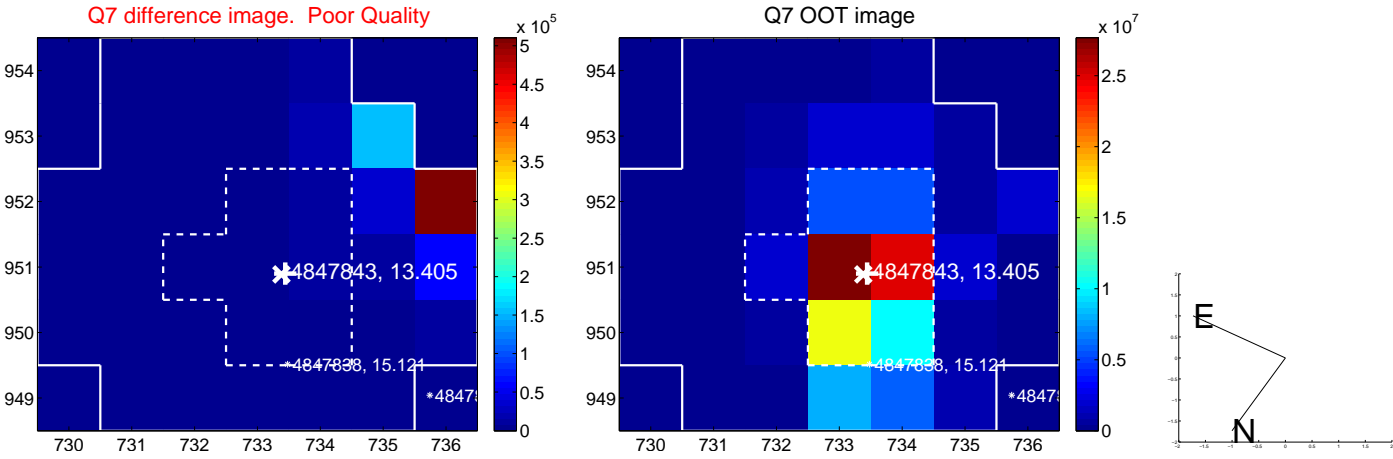
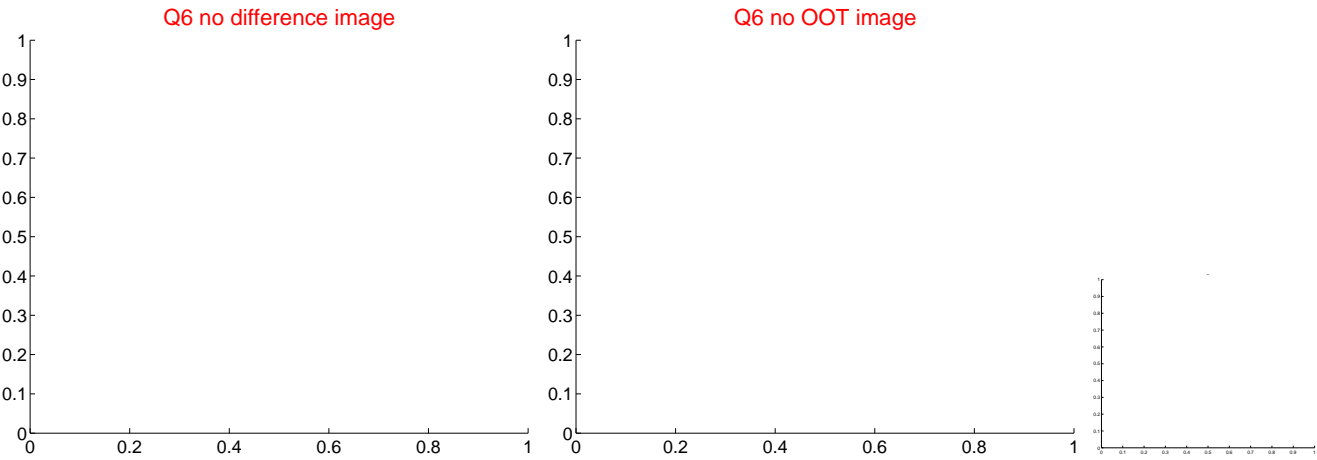
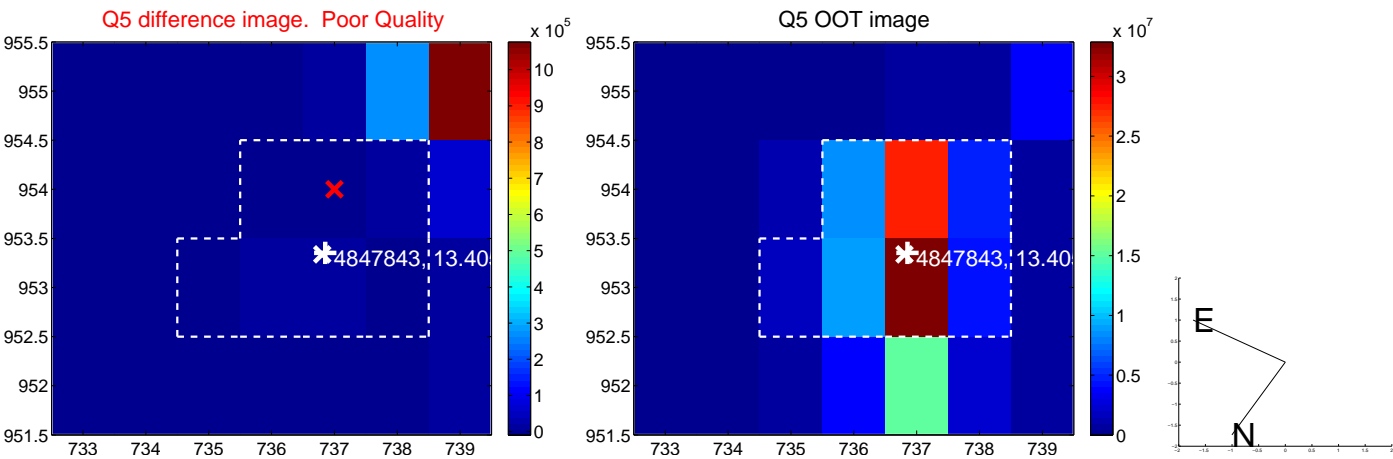


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

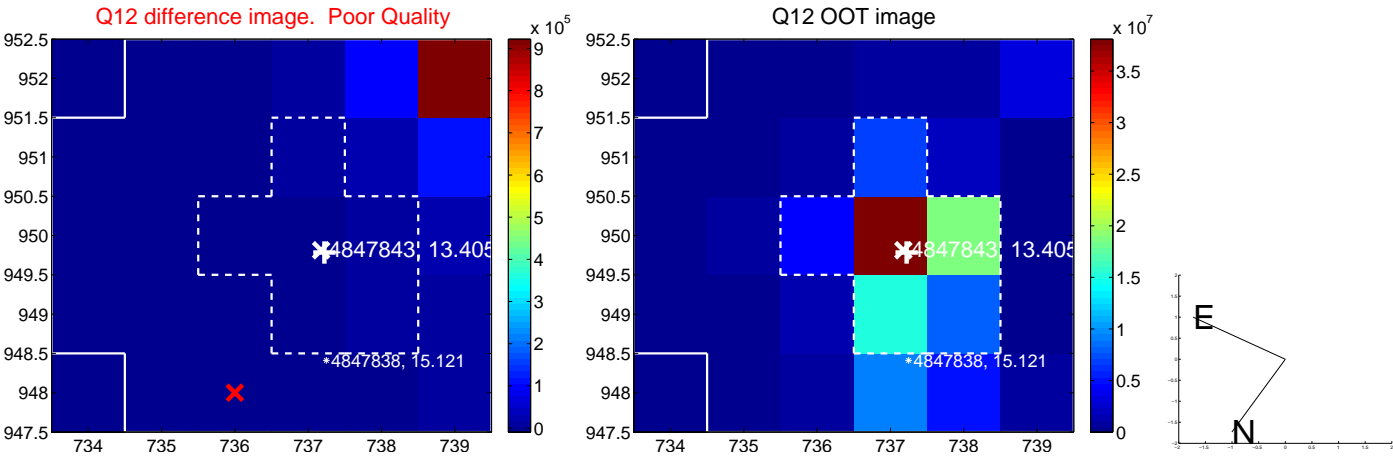
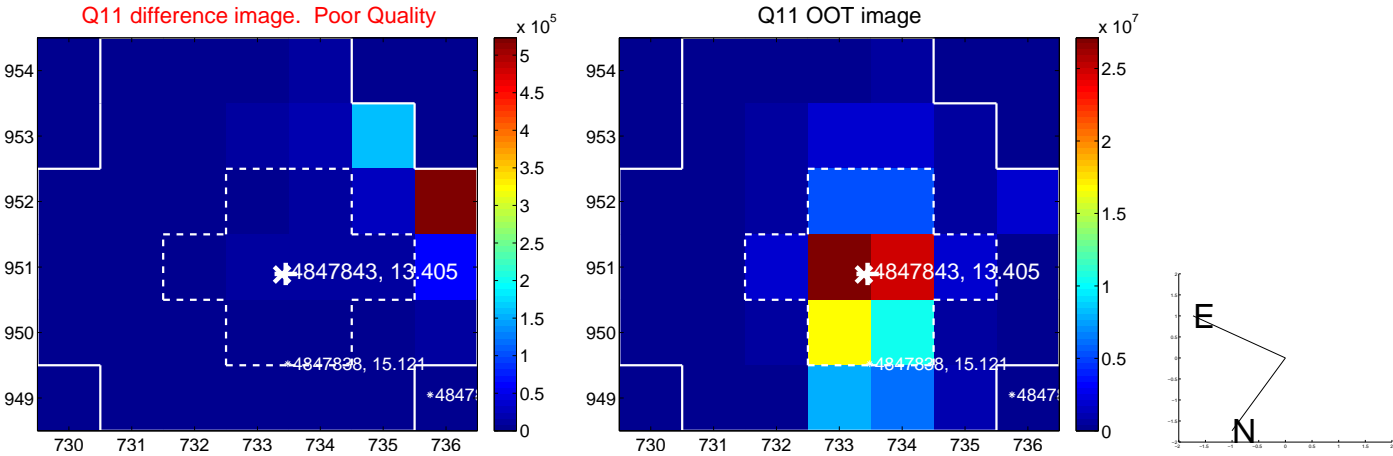
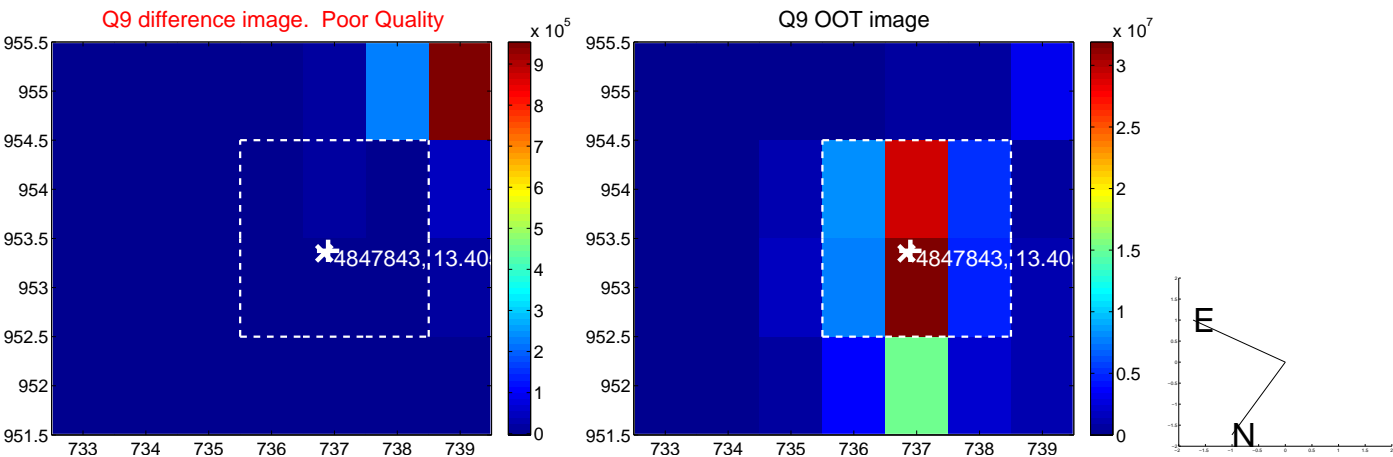
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



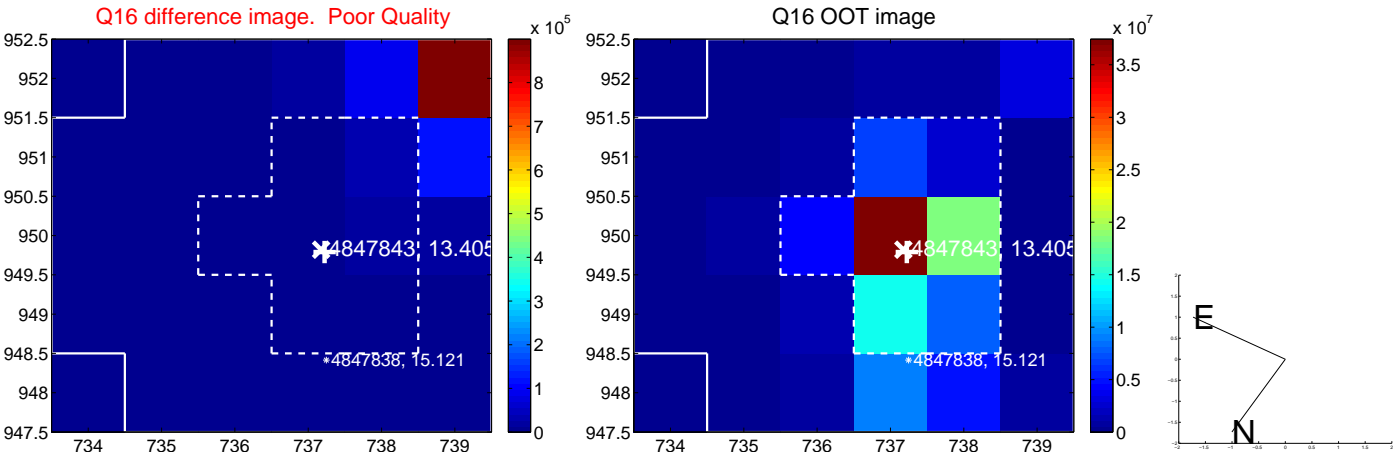
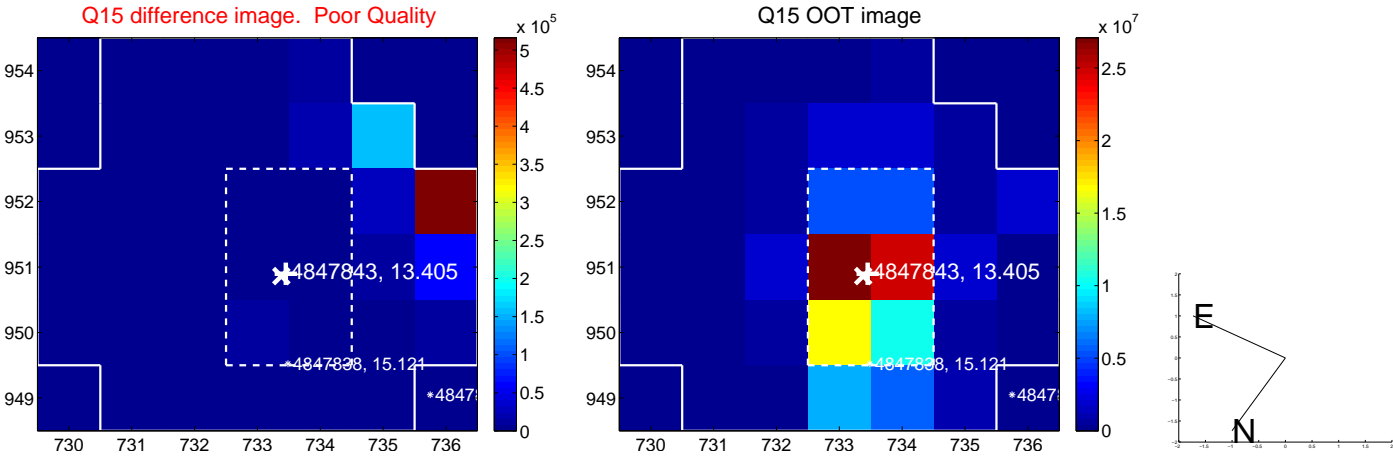
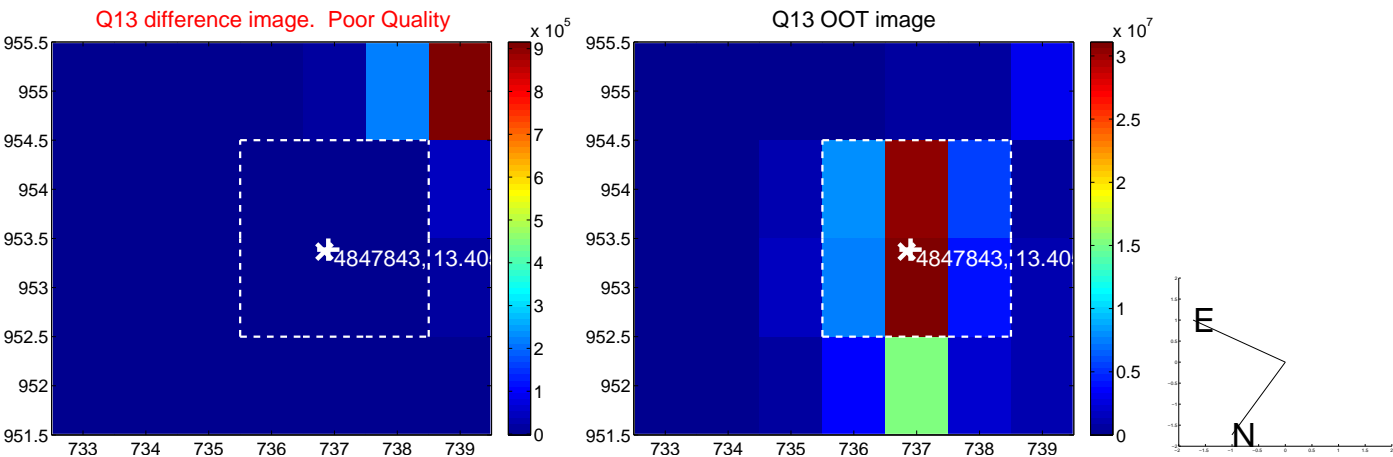
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



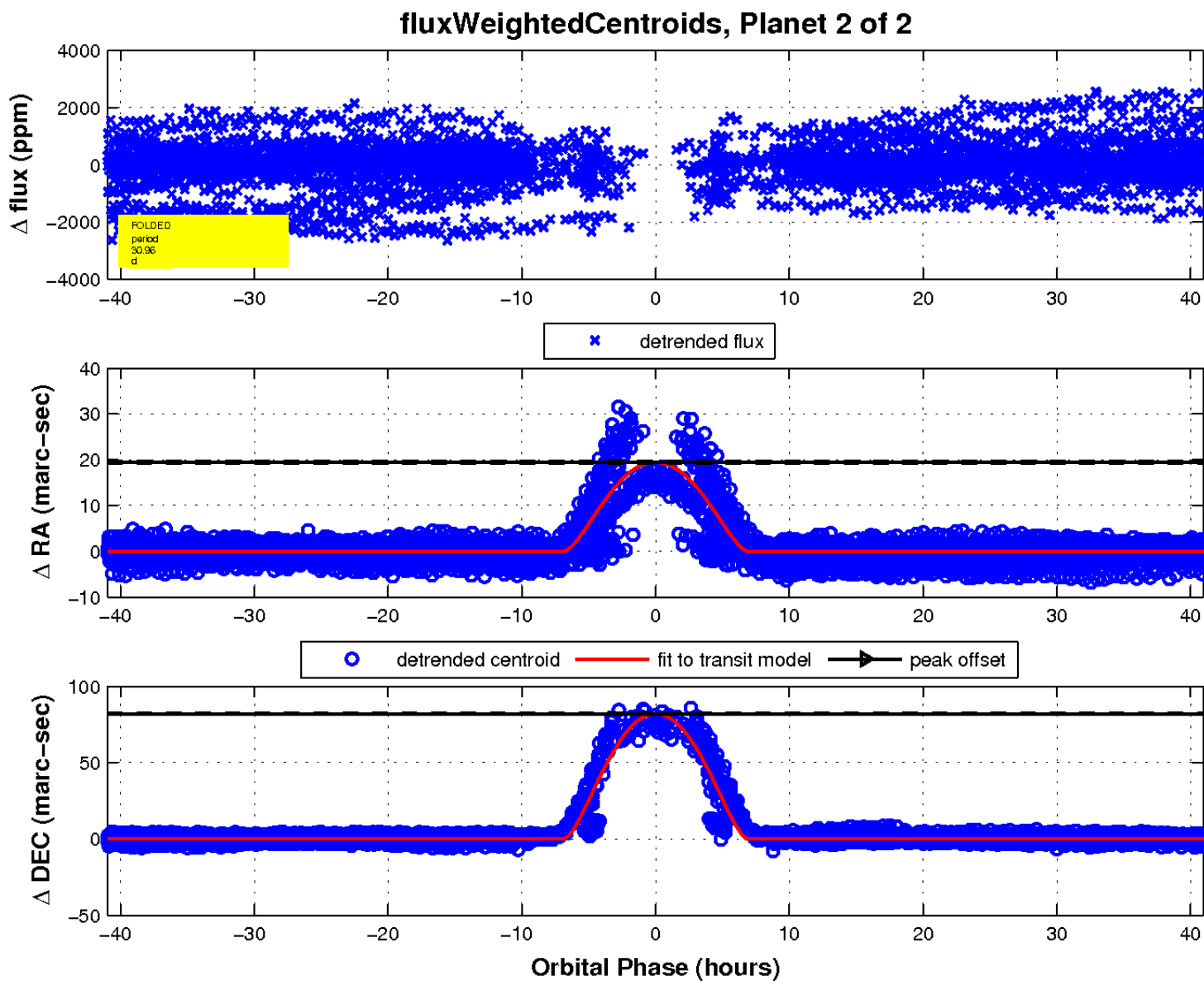
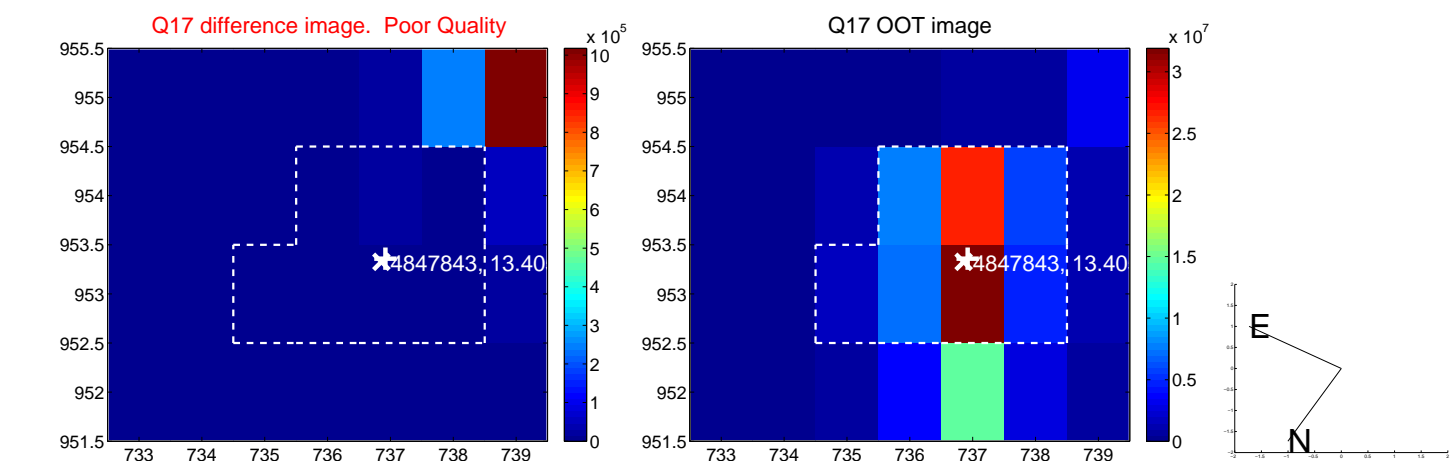
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

