

KIC 007802136

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})
007802136-01	OBS	1449.01	10.980245	137.137654	49697.2	3.773	2461.3	2132.8	0.90	5952	21.98	107.79
007802136-02	OBS	No	10.980241	142.019278	775.4	3.776	32.0	35.1	0.90	5952	4.43	107.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007802136-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
007802136-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

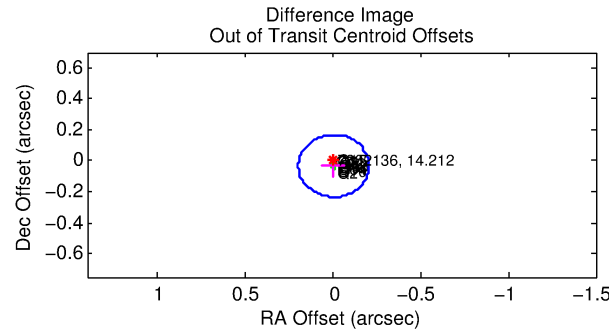
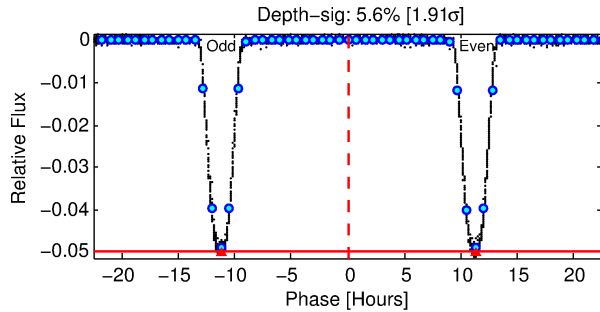
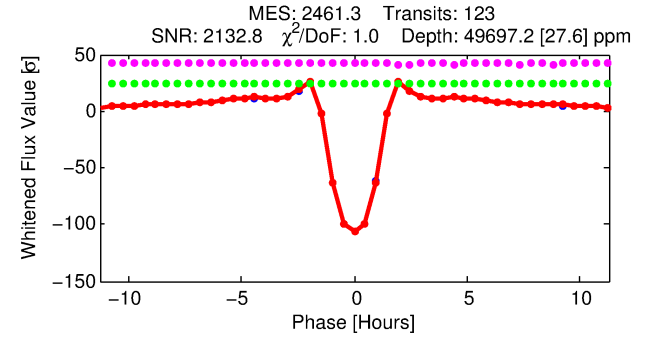
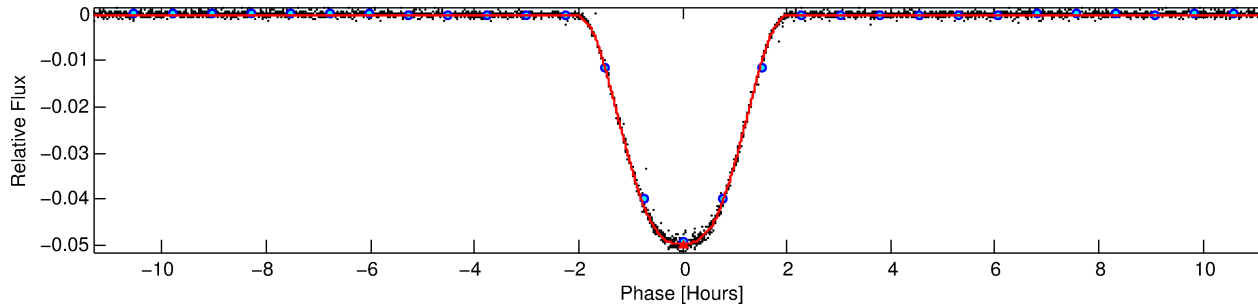
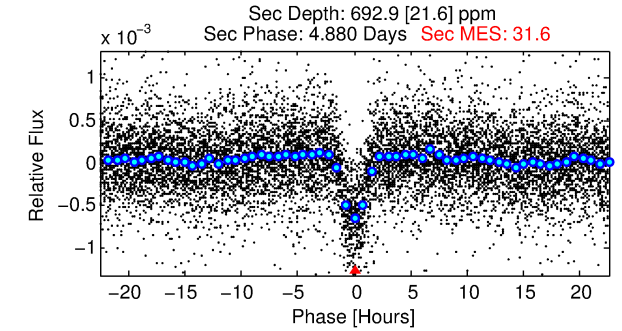
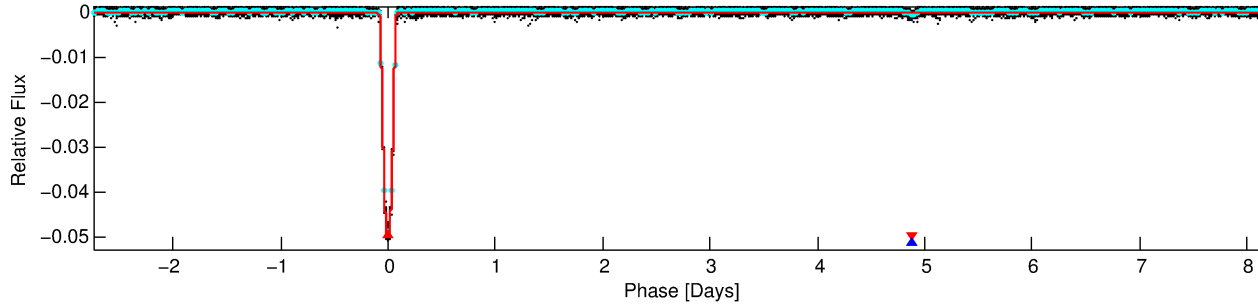
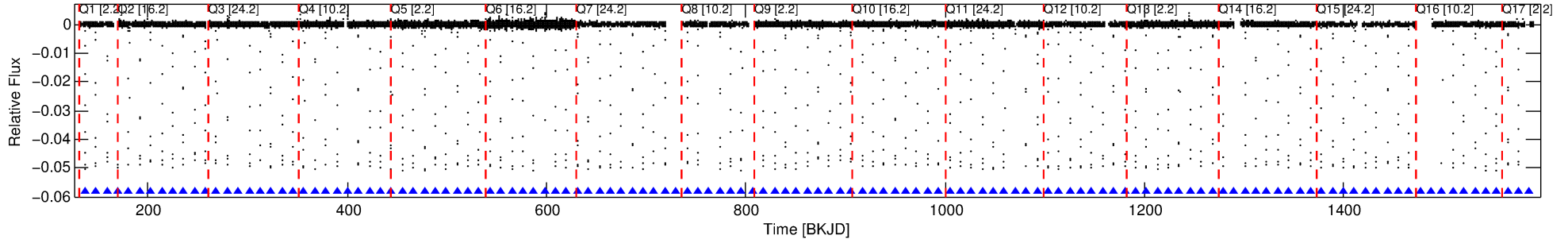
Ephemeris Match Information For 007802136-01

No Significant Match Found

DV One-Page Summary

KIC: 7802136 Candidate: 1 of 2 Period: 10.980 d
KOI: K01449.01 Corr: 0.975

Kp: 14.21 R*: 0.90 Rs Teff: 5952.0 K Logg: 4.46 Fe/H: -0.520



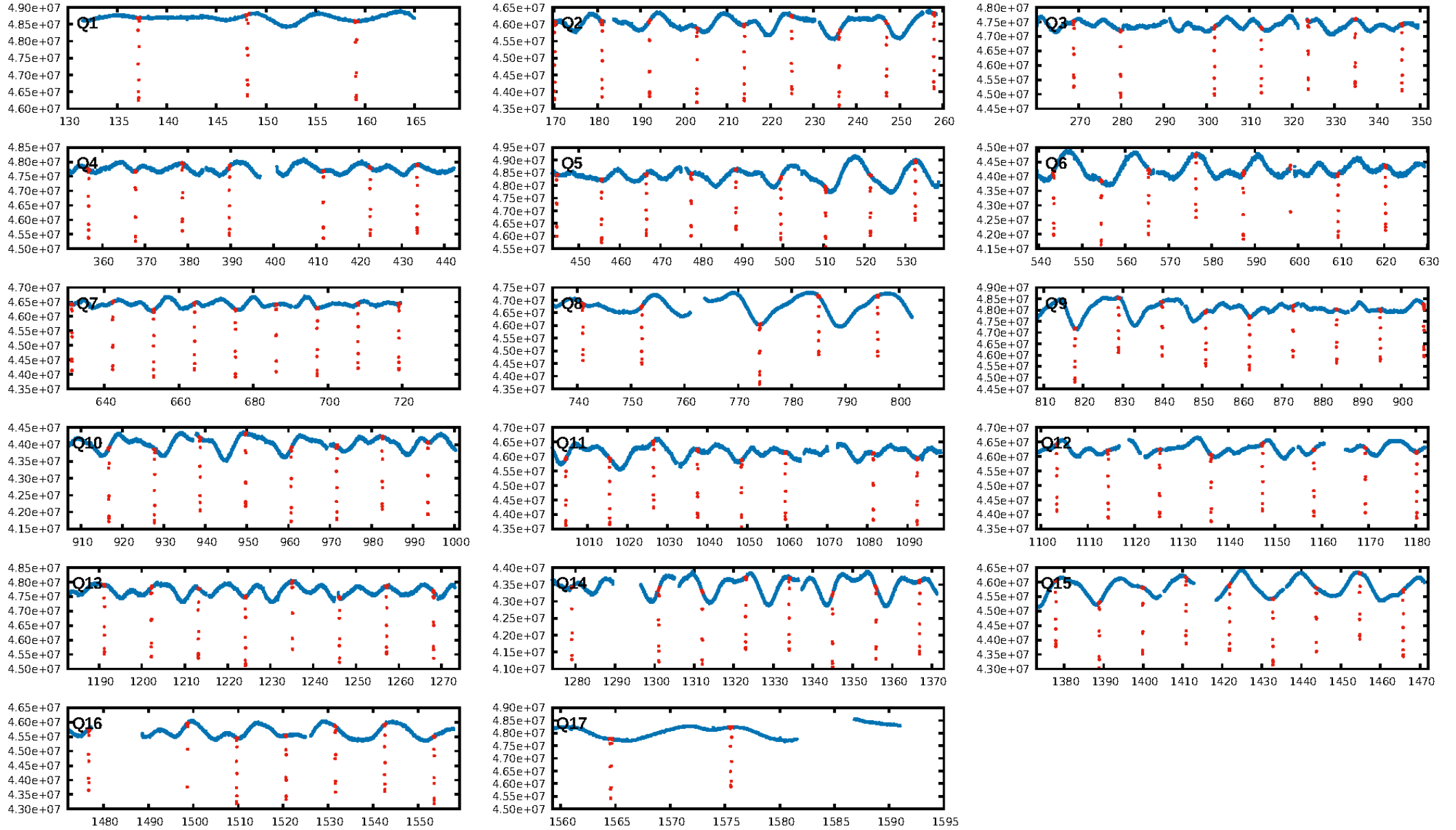
DV Fit Results:

Period = 10.98025 [0.00000] d
Epoch = 137.1377 [0.0000] BKJD
Rp/R* = 0.2245 [0.0001]
a/R* = 21.62 [0.01]
b = 0.75 [0.00]
Seff = 107.79 [37.46]
Teq = 822 [71] K
Rp = 21.98 [5.83] Re
a = 0.0916 [0.0206] AU
Ag = 6.62 [2.20] [2.56σ]
Teffp = 2038 [57] K [13.34σ]

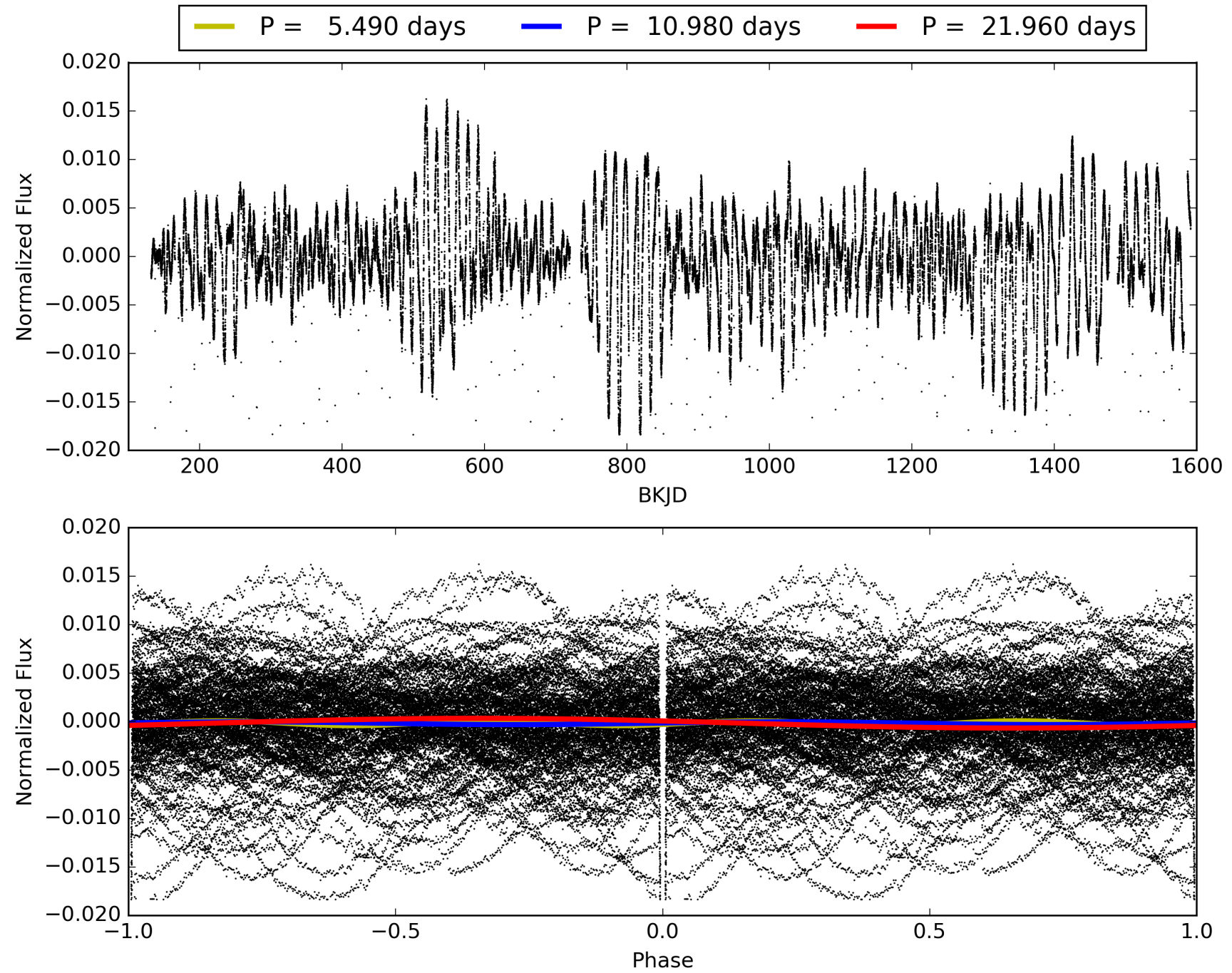
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [118/118]
GhostDiagnostic-chr: 3.952
Centroid-sig: N/A
Centroid-so: 0.236 arcsec [68.16σ]
OotOffset-rm: 0.033 arcsec [0.50σ]
KicOffset-rm: 0.184 arcsec [2.70σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007802136-01, PDC Light Curves

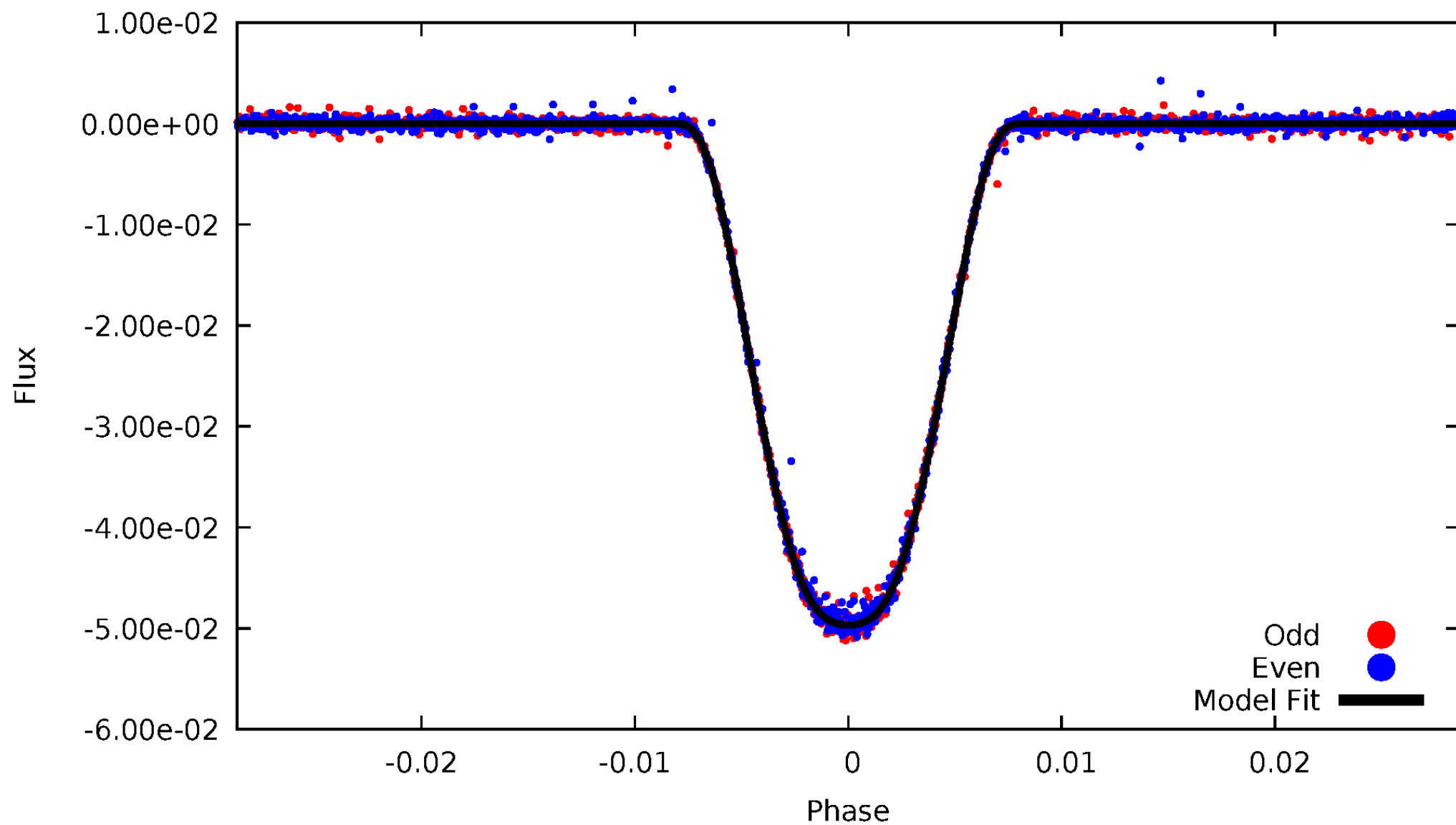


TCE 007802136-01



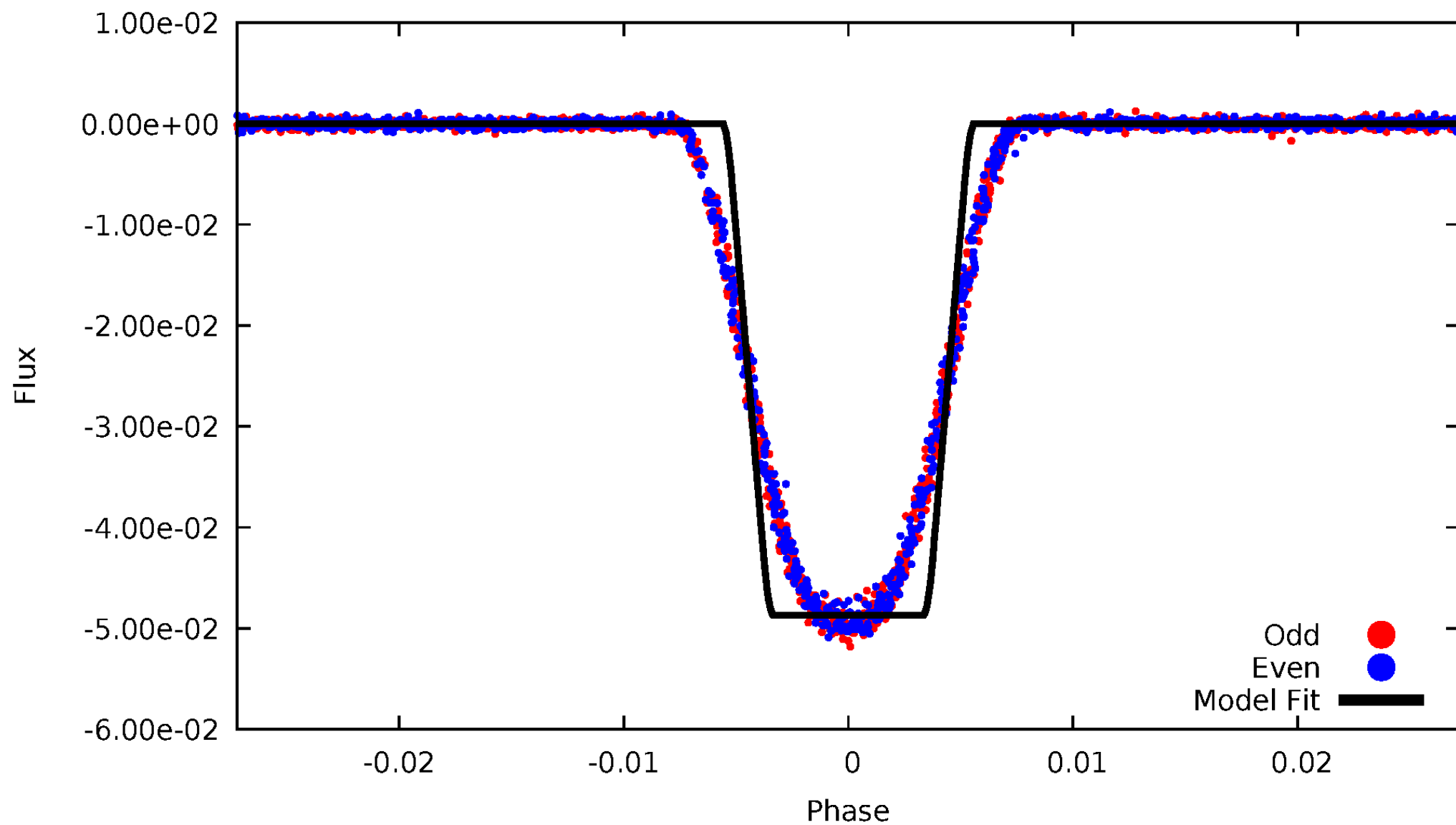
DV Odd/Even

TCE 007802136-01



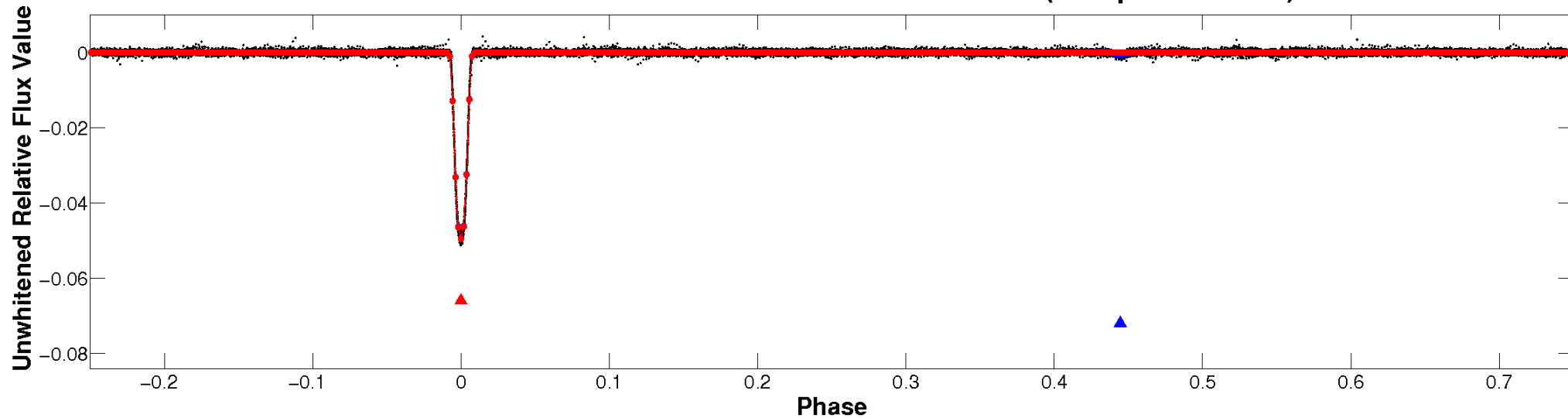
ALT Odd/Even

TCE 007802136-01

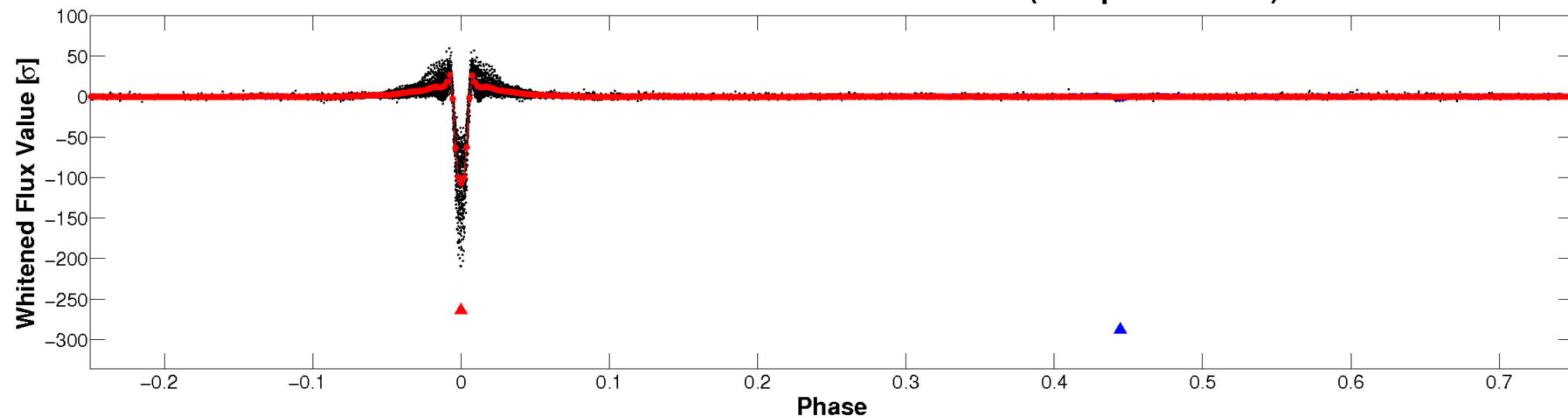


Non-Whitened Vs. Whitened Light Curve

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

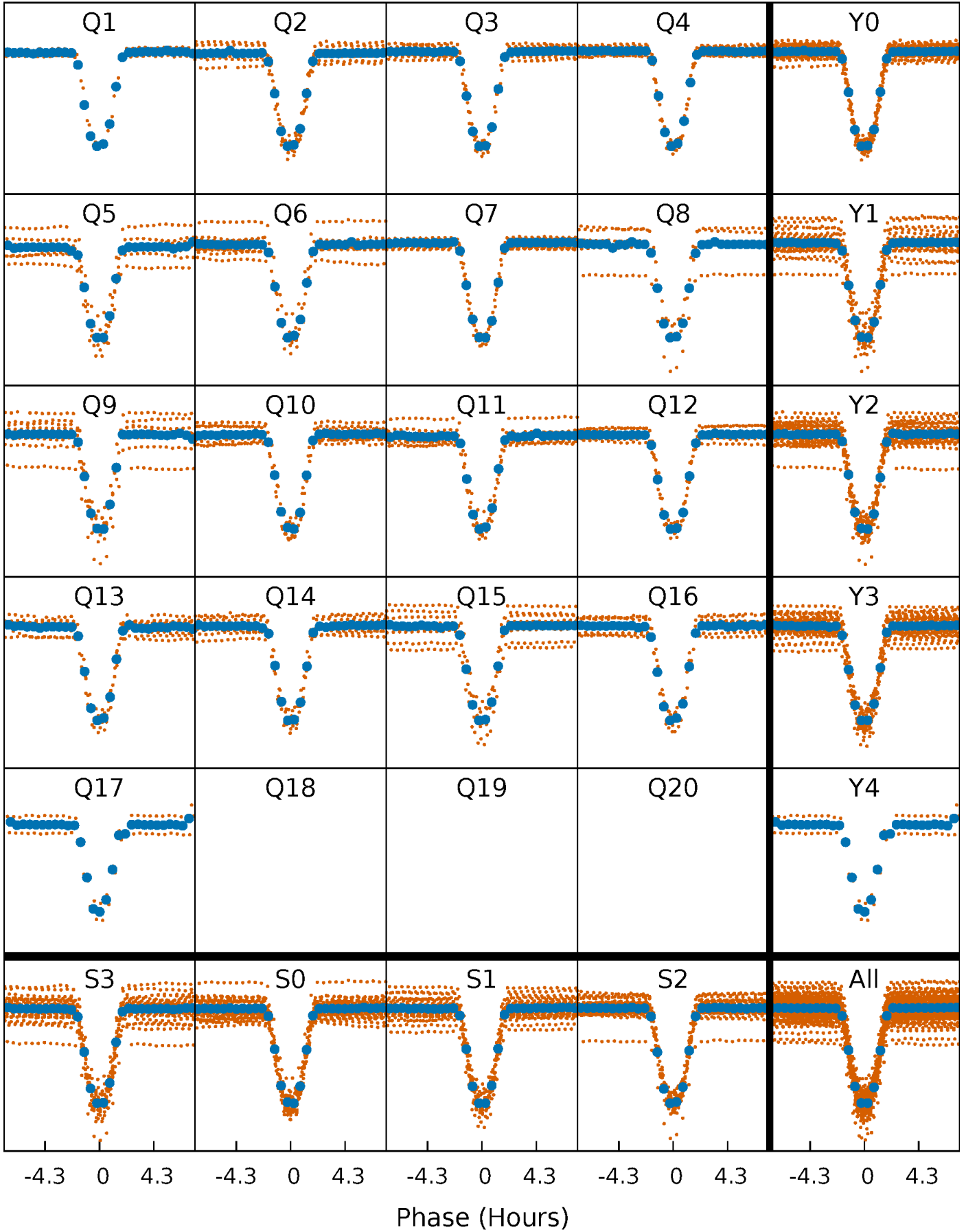


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



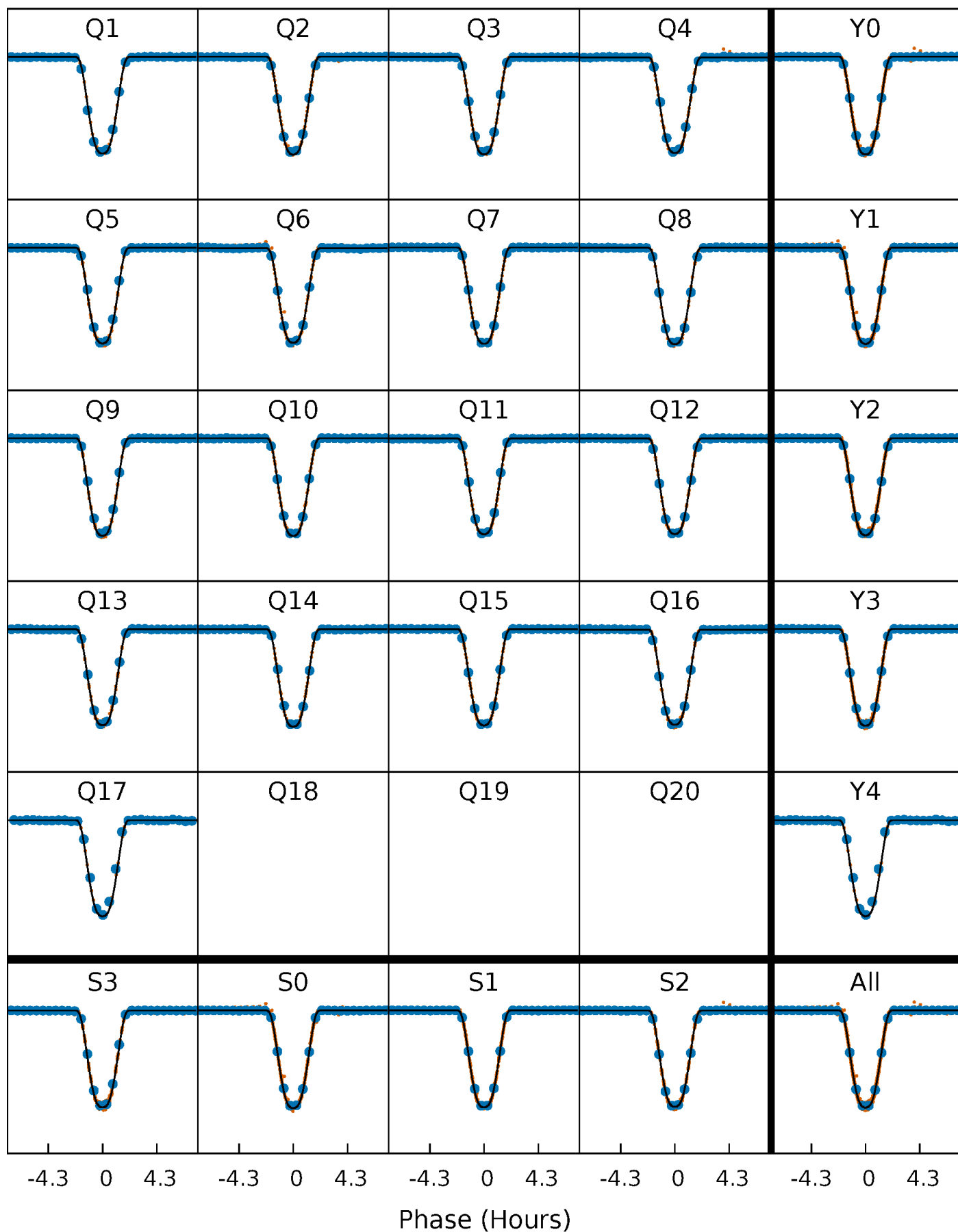
PDC Quarter-Phased Transit Curves

TCE 007802136-01 P= 10.980245 Days $T_0=137.137654$ (BKJD)



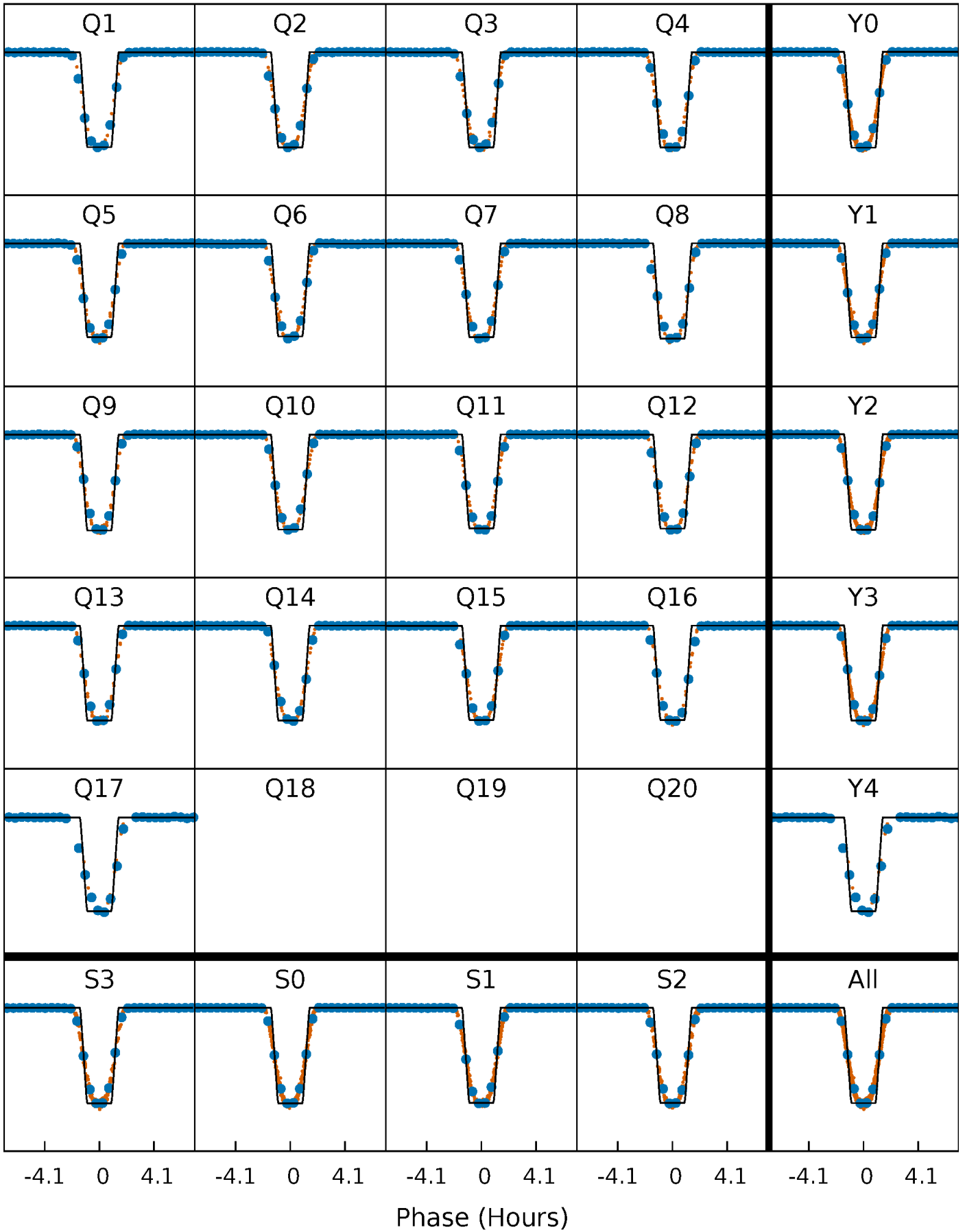
DV Quarter-Phased Transit Curves

TCE 007802136-01 P= 10.980245 Days $T_0=137.137654$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

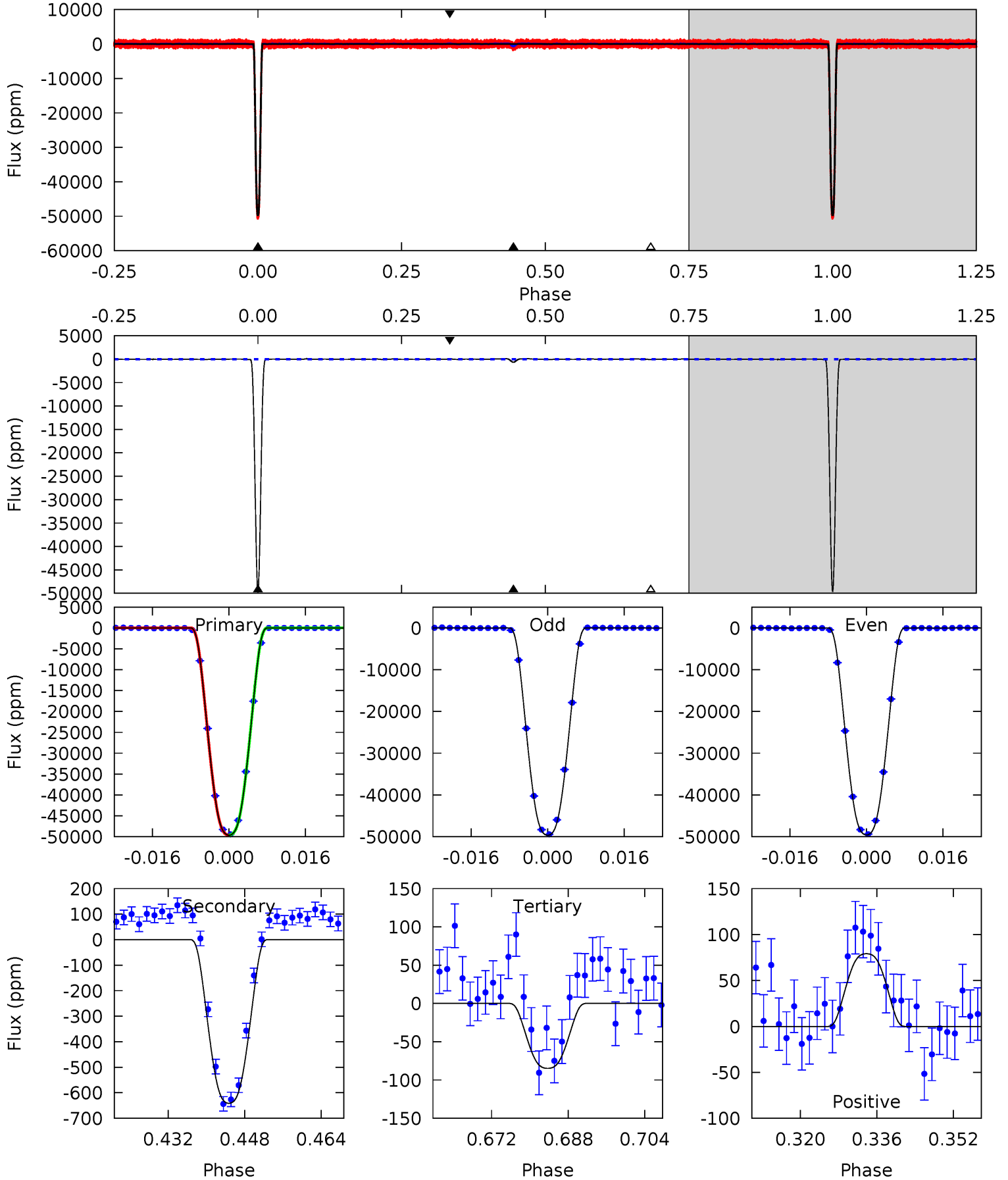
TCE 007802136-01 P= 10.980201 Days $T_0=137.140784$ (BKJD)



DV Model-Shift Uniqueness Test

007802136-01, P = 10.980245 Days, E = 126.157409 Days

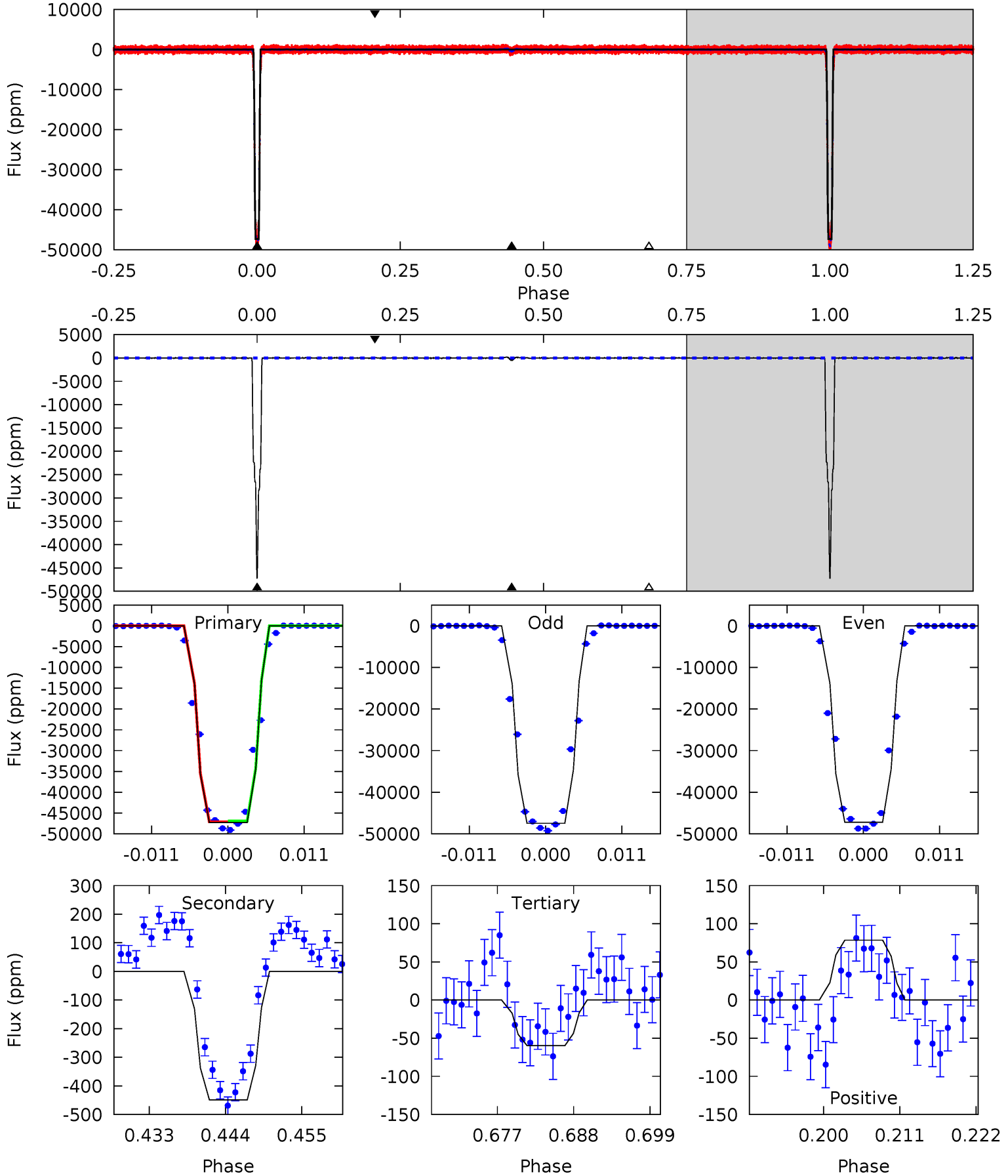
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4514	58.3	7.71	7.20	4.94	2.41	2.76	4506	4506	50.6	51.1	3.29	1.00	0.00	2.48



Alt Model-Shift Uniqueness Test

007802136-01, P = 10.980201 Days, E = 126.160583 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2739	26.0	3.46	4.55	5.01	2.54	1.33	2735	2734	22.5	21.5	7.65	1.00	0.00	0



Stellar Parameters For KIC 007802136

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5952^{+159}_{-159}	$4.462^{+0.098}_{-0.182}$	$-0.520^{+0.300}_{-0.300}$	$0.897^{+0.238}_{-0.119}$	$0.851^{+0.105}_{-0.070}$	$1.659^{+0.666}_{-0.772}$
	+3%/-3%	+2%/-4%	+58%/-58%	+27%/-13%	+12%/-8%	+40%/-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 007802136-01 / KOI 1449.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-641 ± 11	$22.24^{+3.33}_{-1.90}$	1159^{+76}_{-65}	2740^{+42}_{-39}	$5.963^{+1.110}_{-1.281}$
Alt.	-449 ± 17	$21.65^{+3.33}_{-1.45}$	1160^{+74}_{-56}	2623^{+41}_{-41}	$4.355^{+0.685}_{-0.970}$

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 $A_{obs} \gg 1.0$

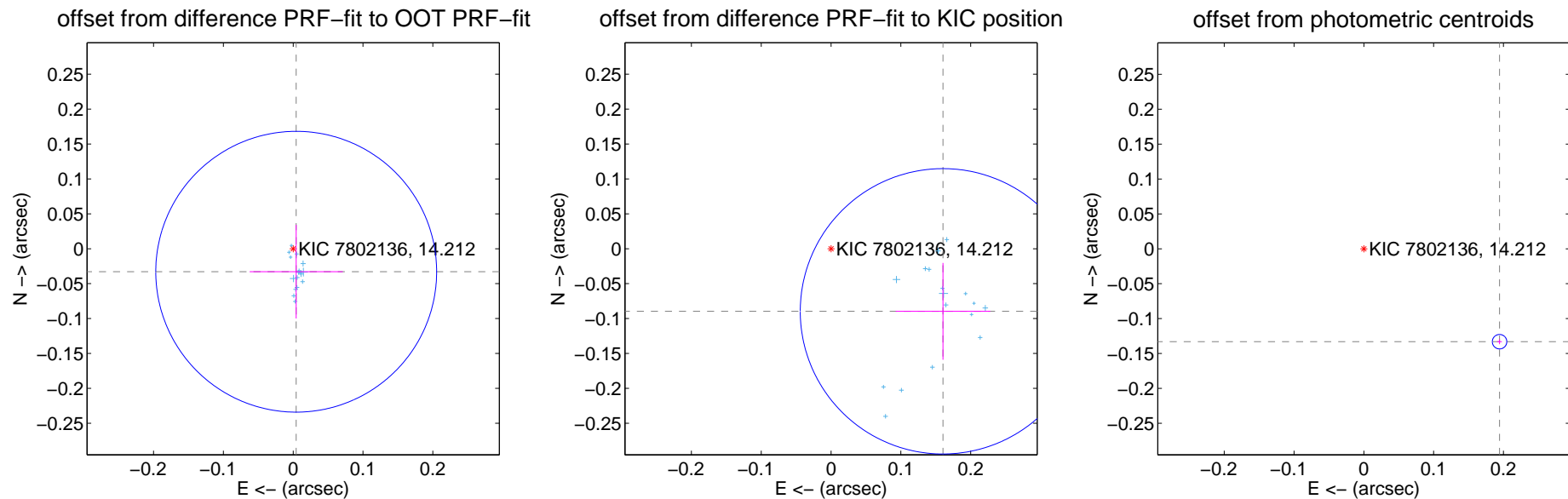
DV Centroid Data

Supplemental centroid analysis for 007802136-01. Kepler magnitude: 14.21. Transit SNR 2132.84

There are 17 quarters with good PRF difference image offsets

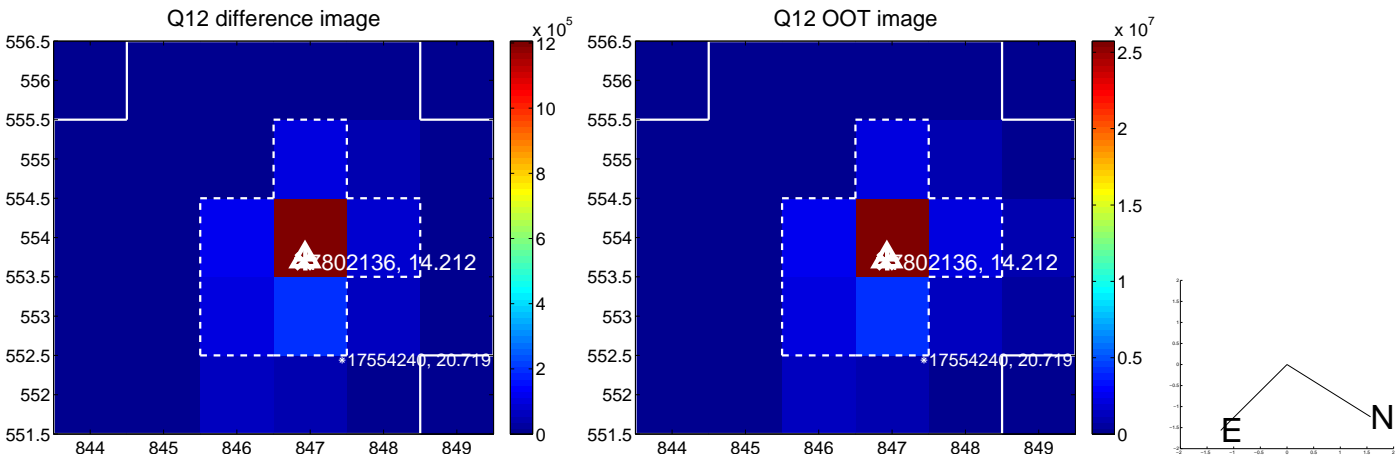
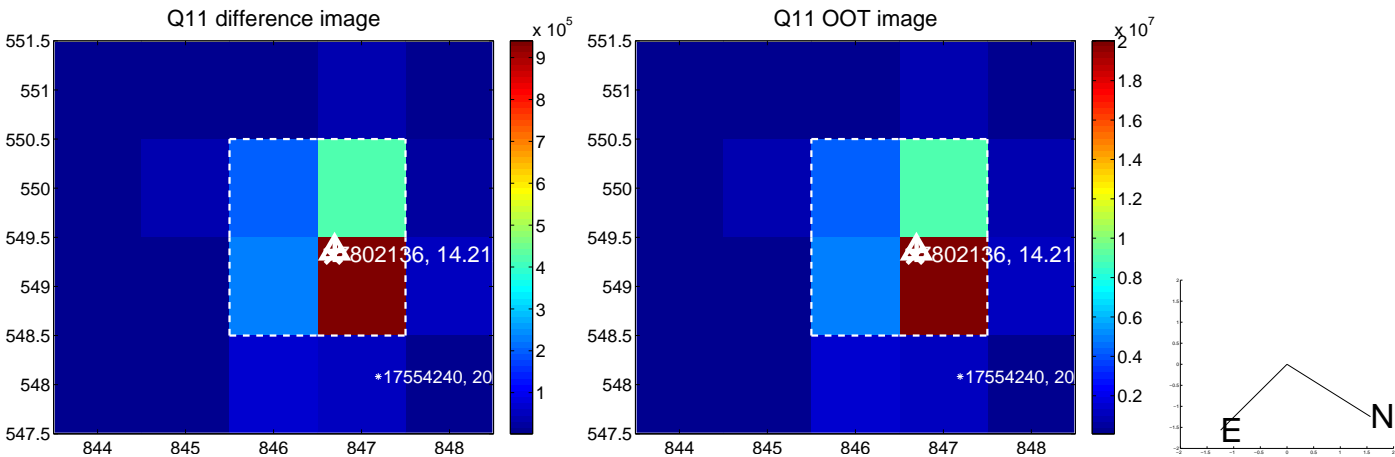
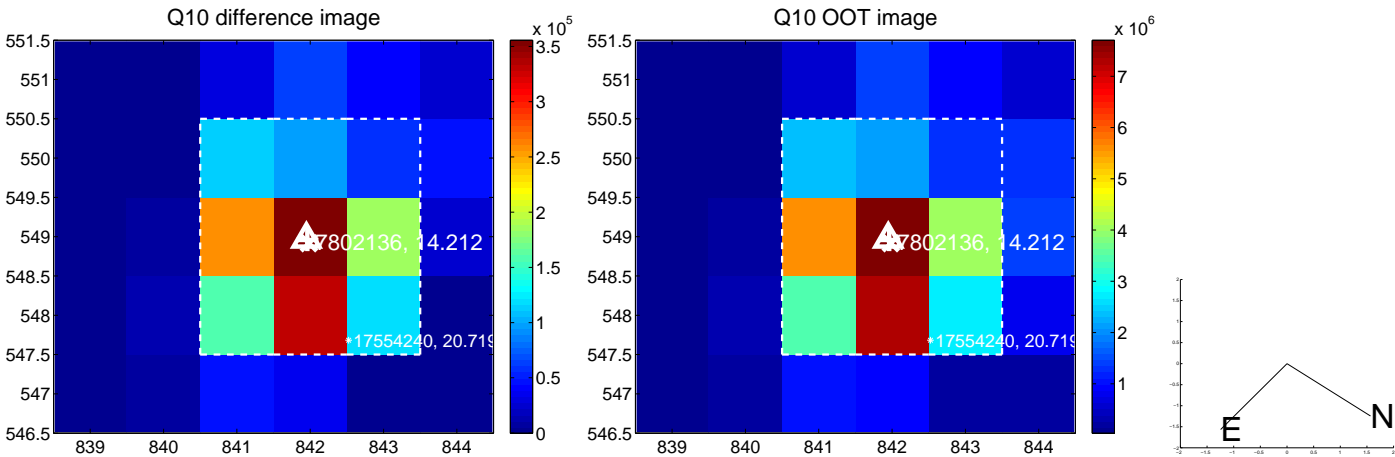
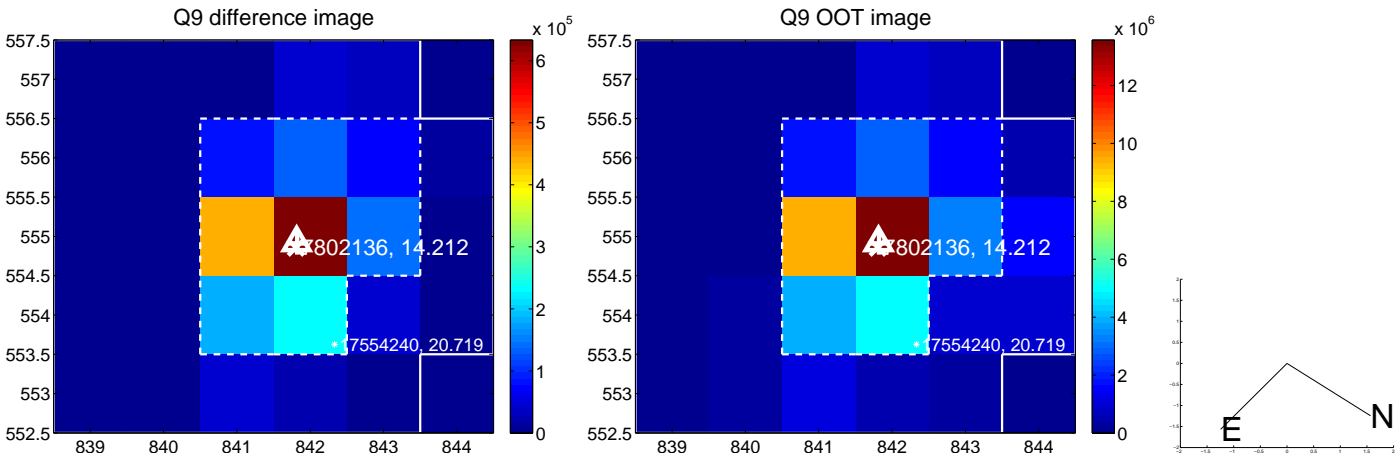
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.033 ± 0.067	0.50	-0.004 ± 0.067	-0.033 ± 0.067
PRF-fit source offset from KIC position	0.184 ± 0.068	2.70	-0.160 ± 0.068	-0.090 ± 0.069
photometric centroid source offset	0.24 ± 0.00	68.16	-0.19 ± 0.00	-0.13 ± 0.00

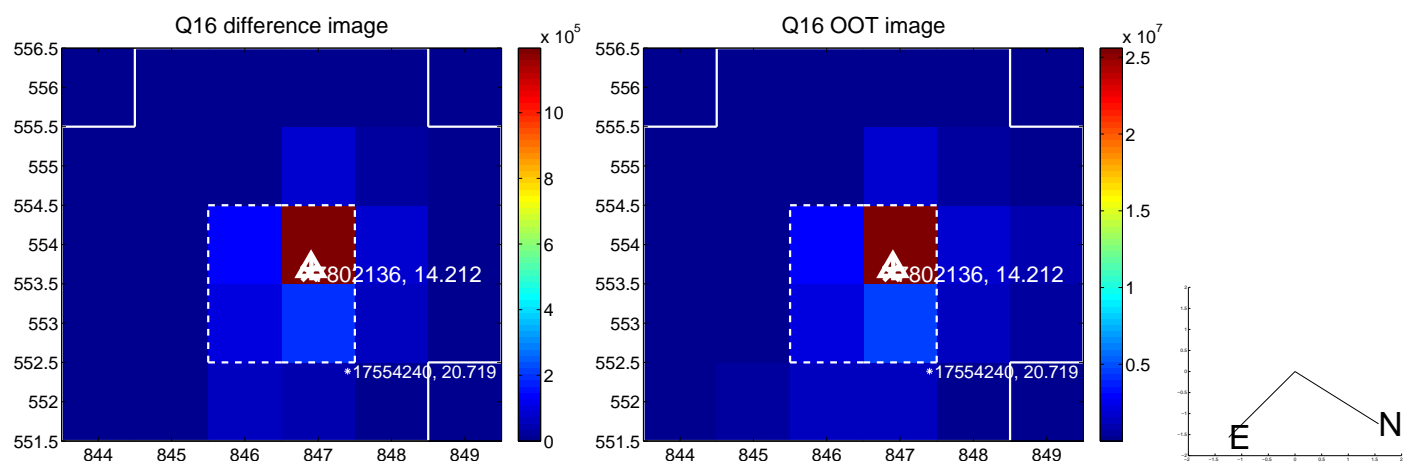
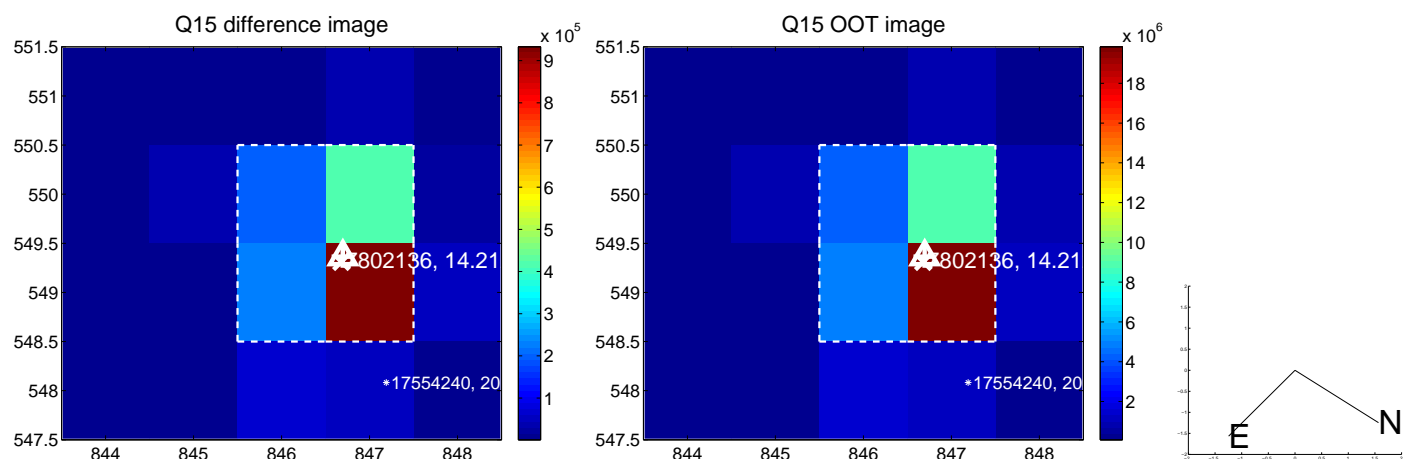
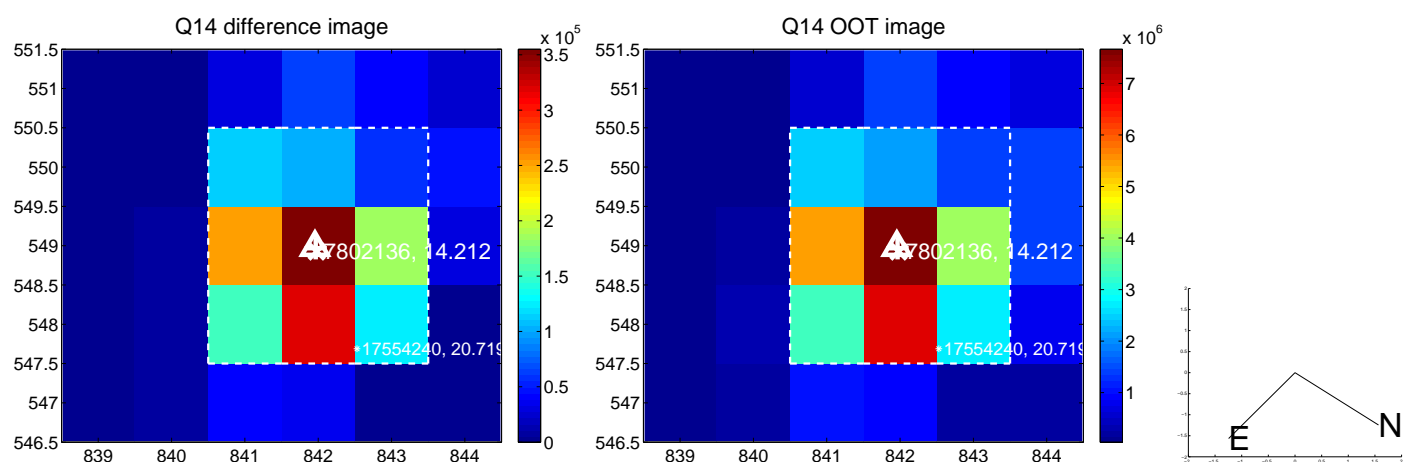
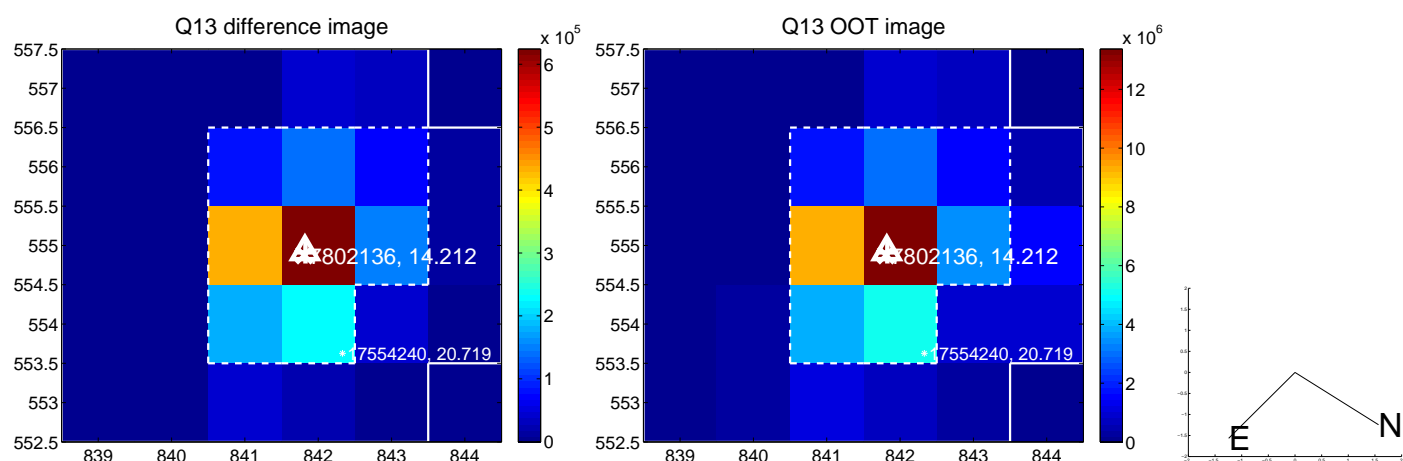


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

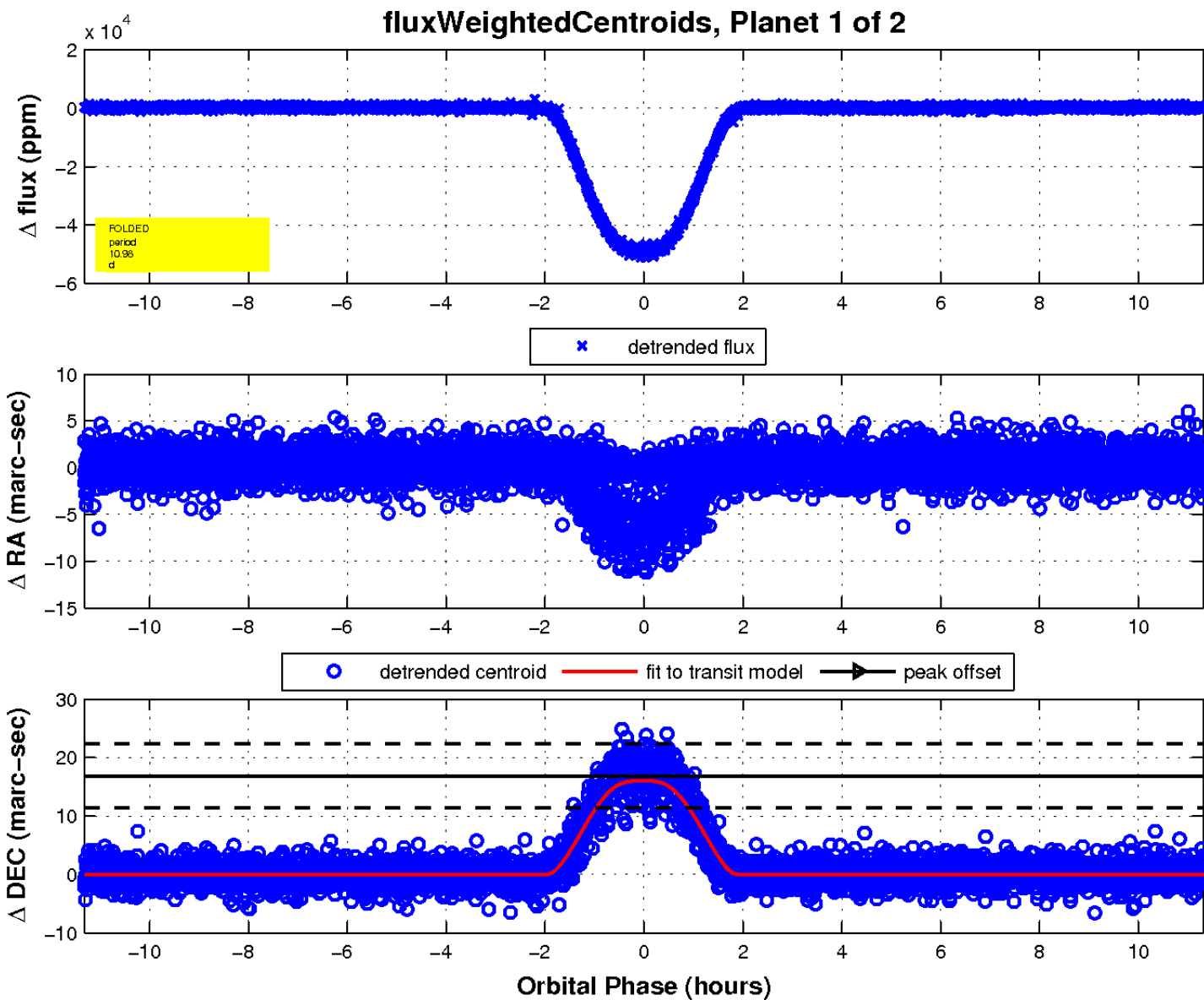
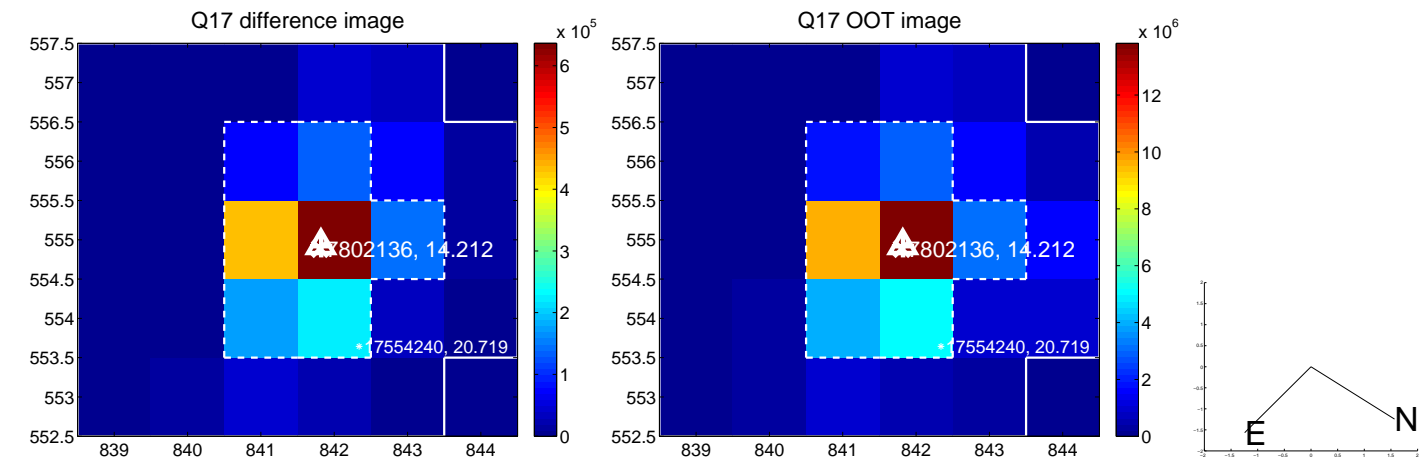
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

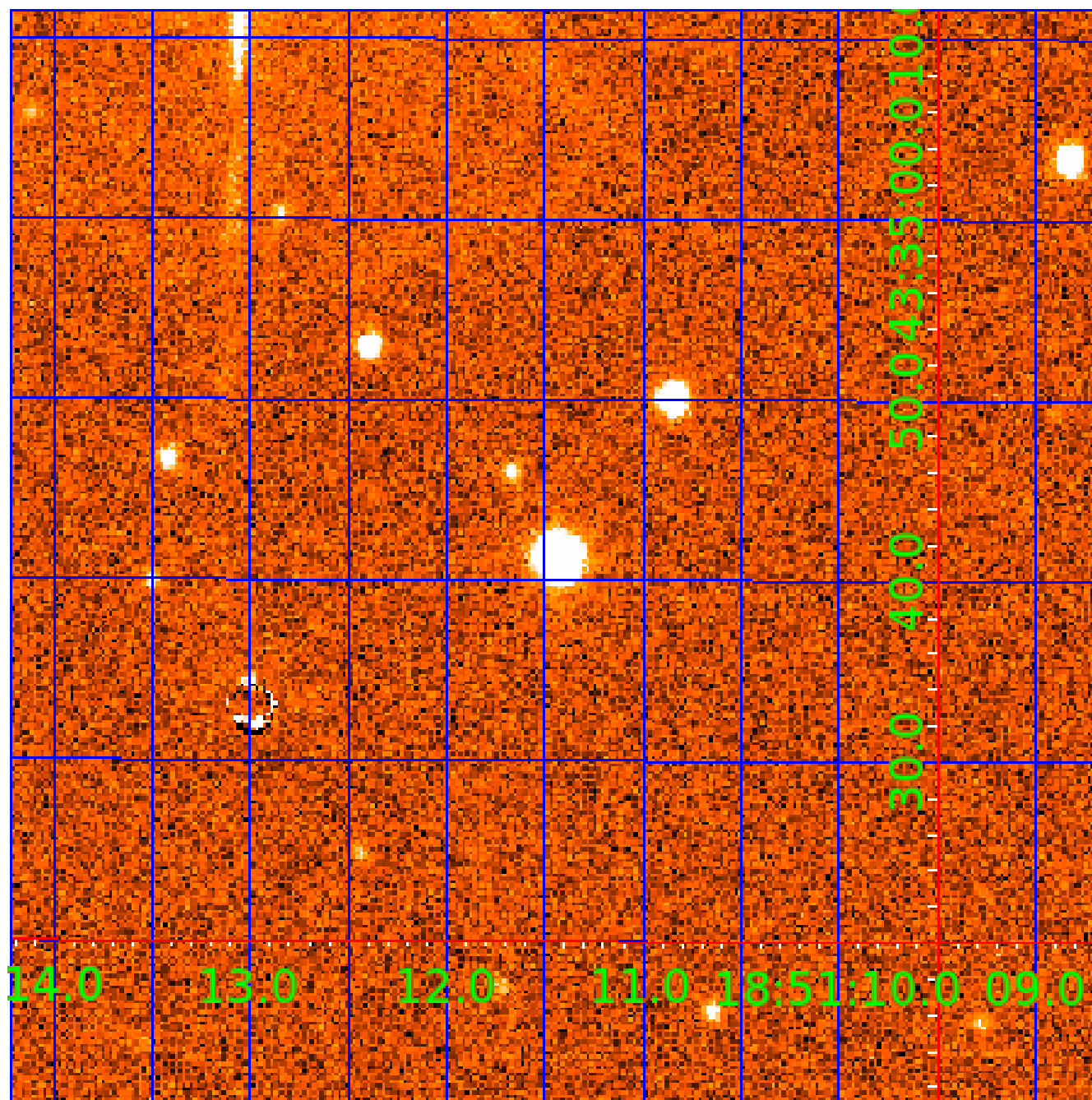


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007802136

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})
007802136-01	OBS	1449.01	10.980245	137.137654	49697.2	3.773	2461.3	2132.8	0.90	5952	21.98	107.79
007802136-02	OBS	No	10.980241	142.019278	775.4	3.776	32.0	35.1	0.90	5952	4.43	107.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007802136-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
007802136-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

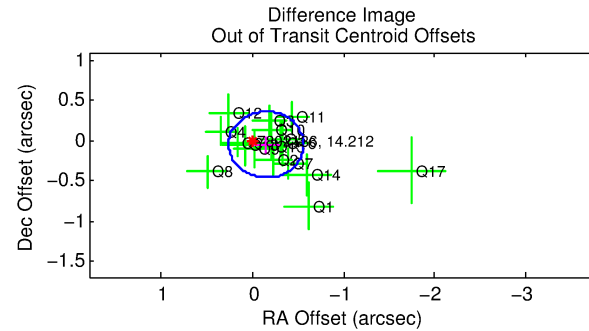
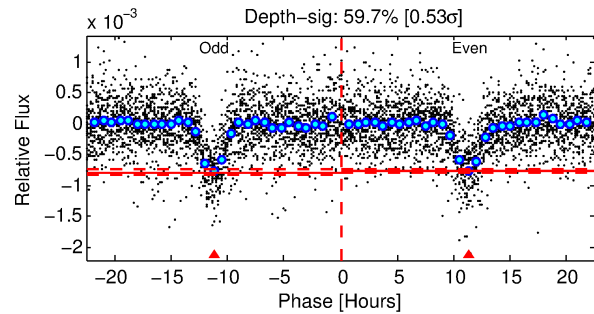
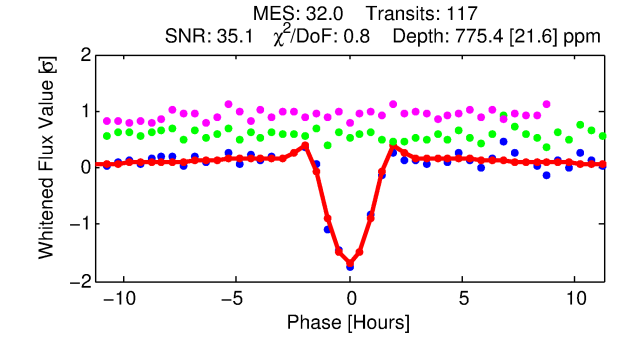
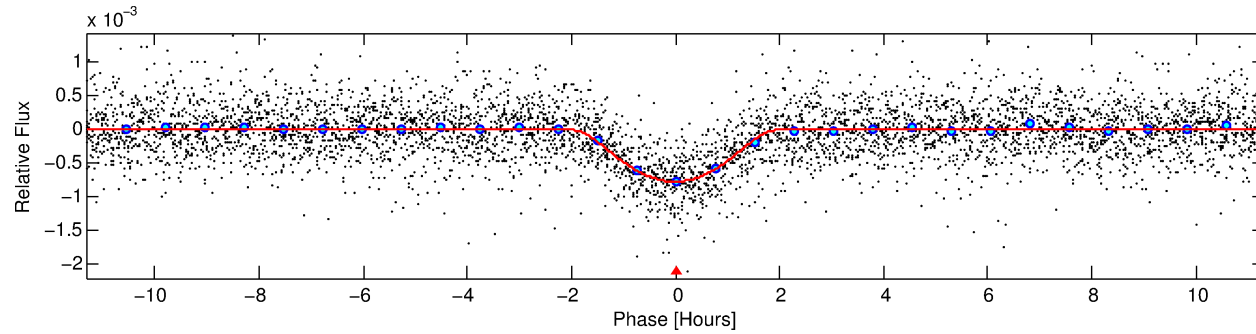
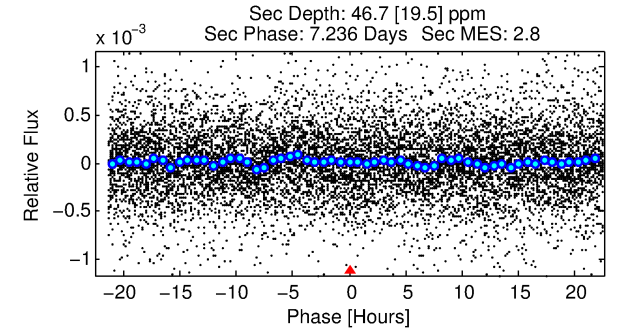
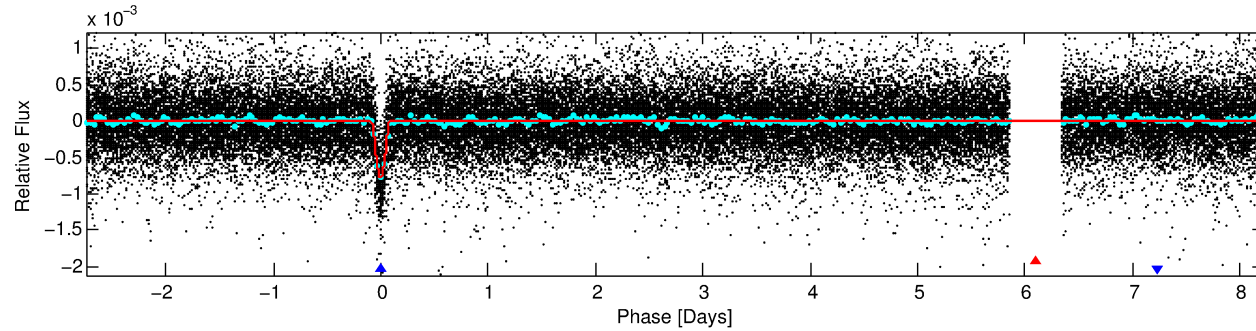
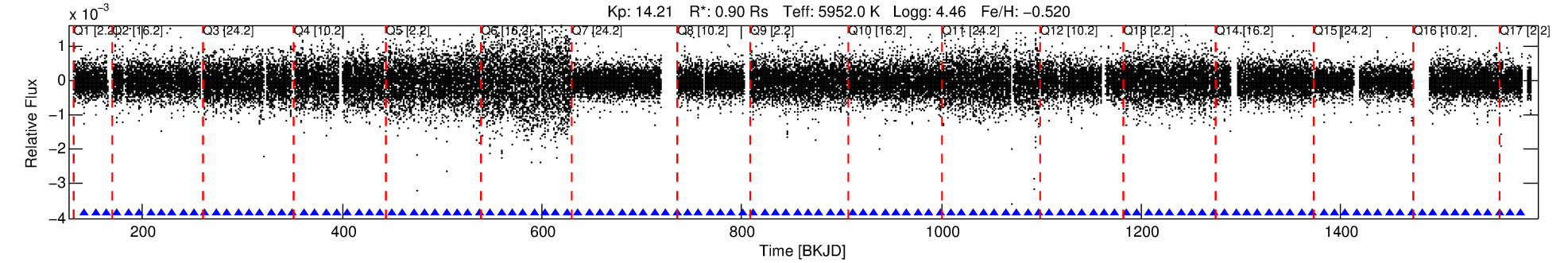
Ephemeris Match Information For 007802136-02

No Significant Match Found

DV One-Page Summary

KIC: 7802136 Candidate: 2 of 2 Period: 10.980 d

KOI: K01449 Corr: No Ephemeris Match



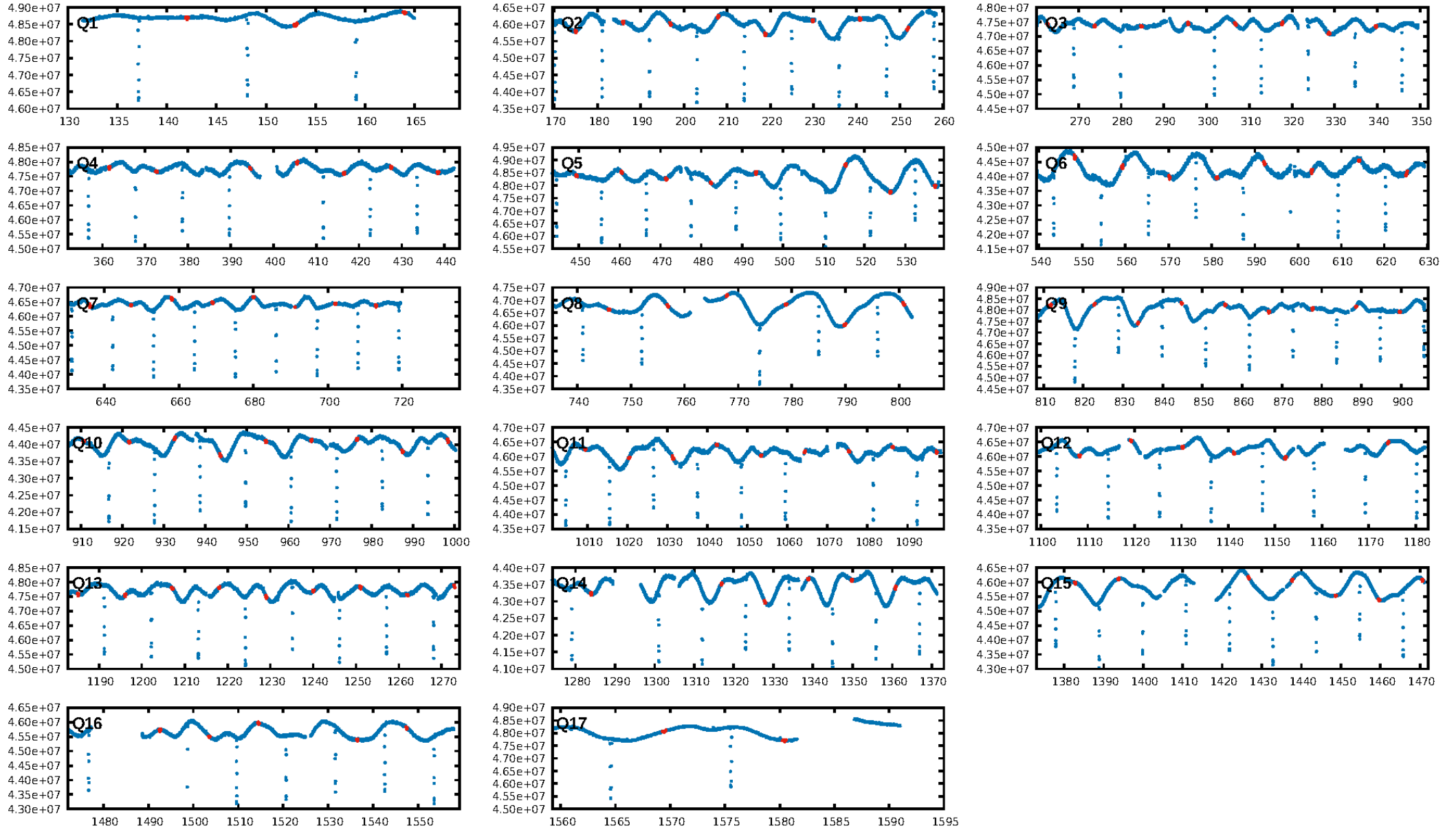
DV Fit Results:

Period = 10.98024 [0.00003] d
Epoch = 142.0193 [0.0021] BKJD
Rp/R* = 0.0452 [0.0244]
a/R* = 7.27 [1.08]
b = 0.99 [0.04]
Seff = 107.79 [37.46]
Teff = 822 [71] K
Rp = 4.43 [2.66] Re
a = 0.0916 [0.0206] AU
Ag = 11.01 [13.25] [0.76σ]
Teffp = 2314 [672] K [2.21σ]

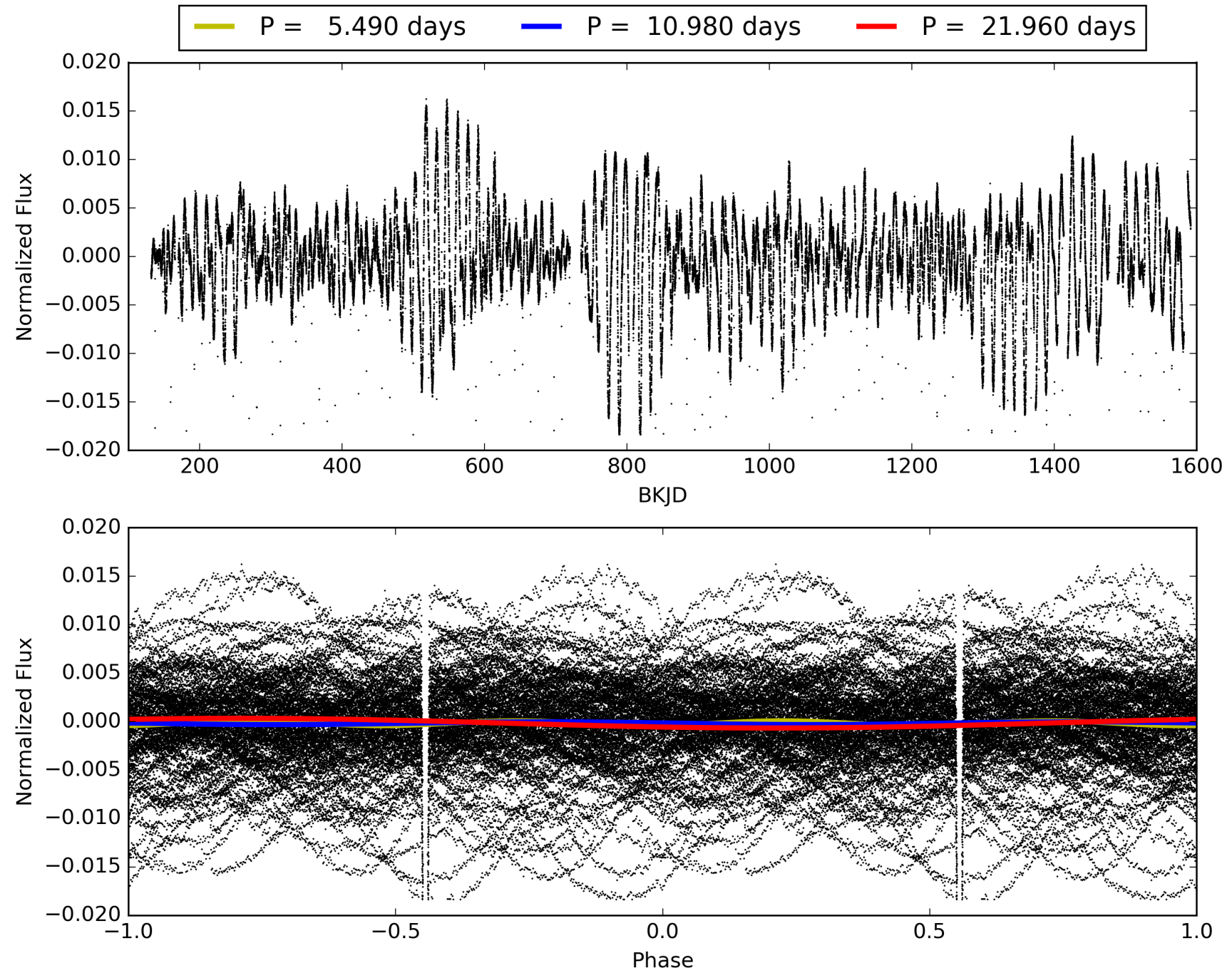
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 99.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.03e-192
RollingBand-fgt: 1.00 [112/112]
GhostDiagnostic-chr: 4.025
Centroid-sig: N/A
Centroid-so: 0.336 arcsec [1.51σ]
OotOffset-rm: 0.156 arcsec [1.13σ]
KicOffset-rm: 0.320 arcsec [2.31σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007802136-02, PDC Light Curves

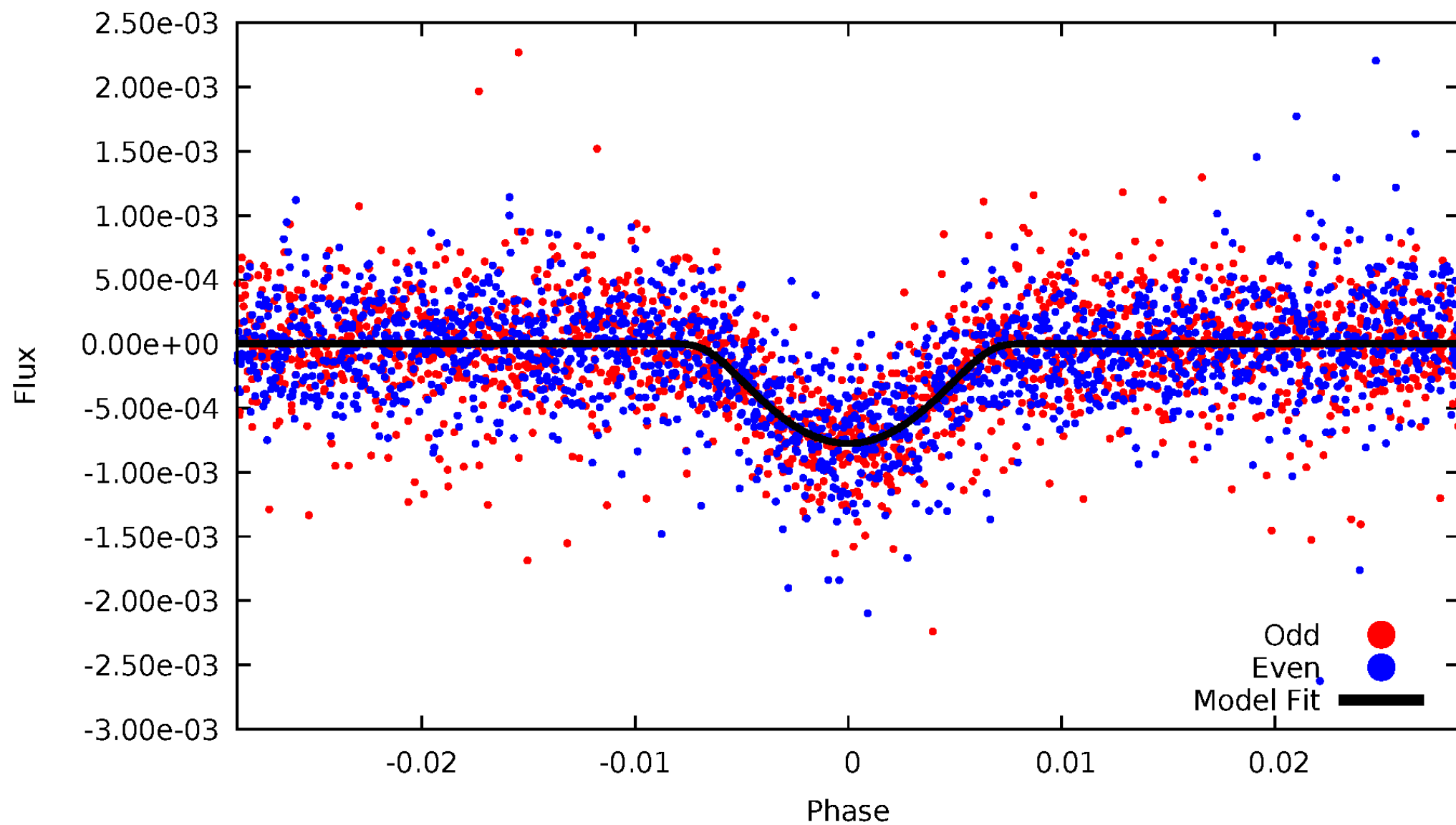


TCE 007802136-02



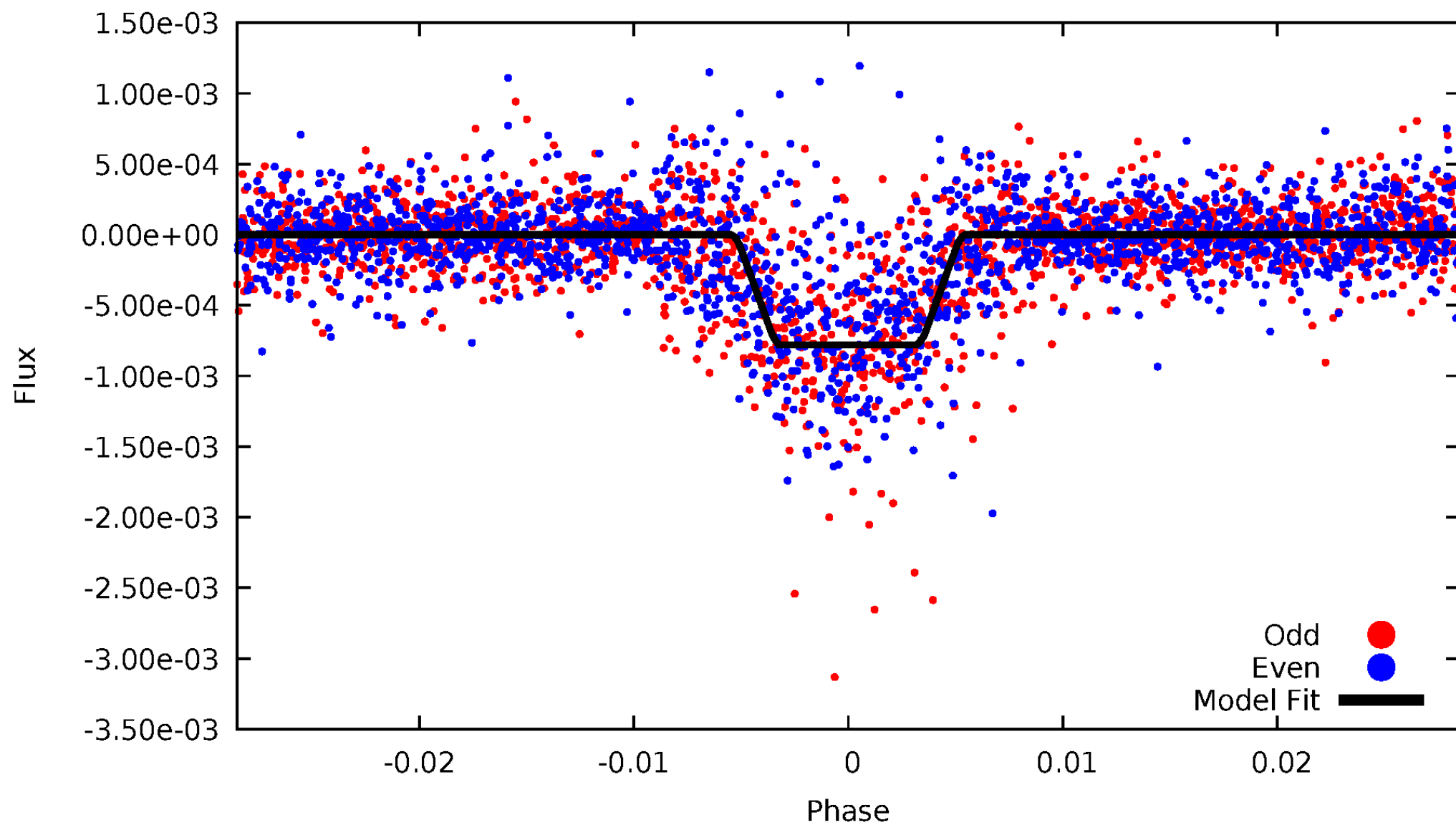
DV Odd/Even

TCE 007802136-02



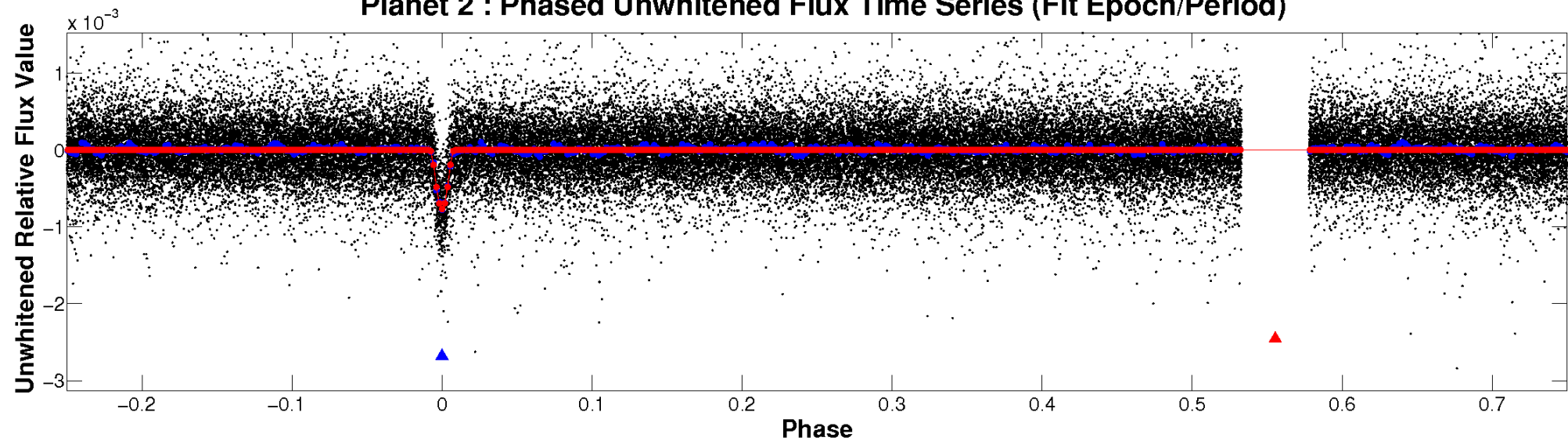
ALT Odd/Even

TCE 007802136-02

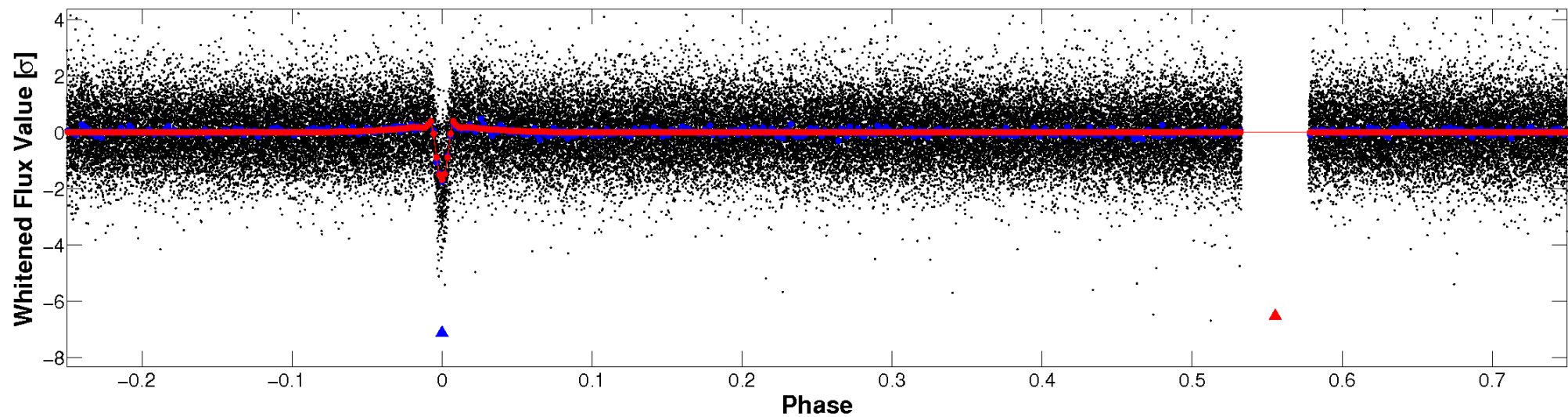


Non-Whitened Vs. Whitened Light Curve

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

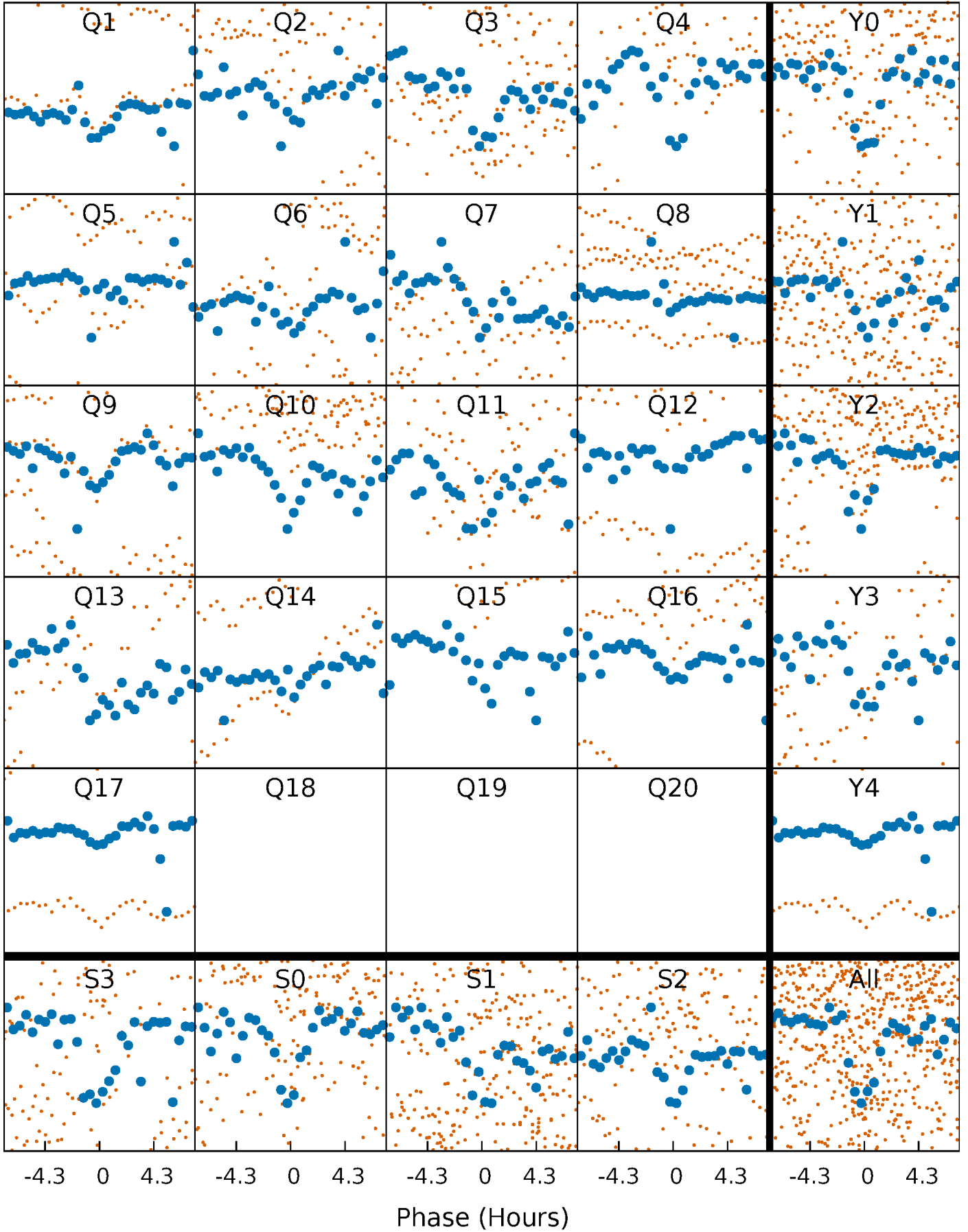


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



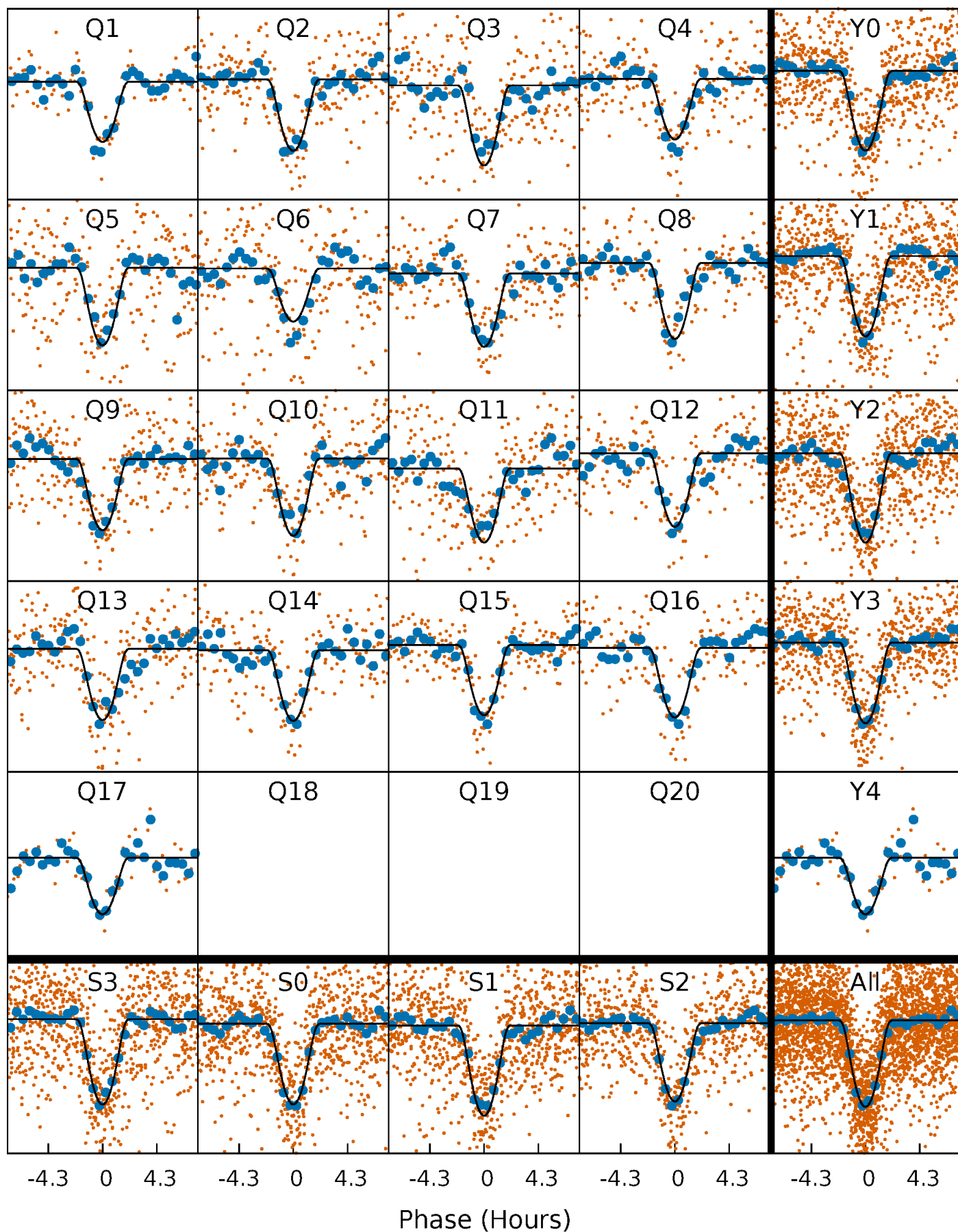
PDC Quarter-Phased Transit Curves

TCE 007802136-02 P= 10.980241 Days $T_0=142.019278$ (BKJD)



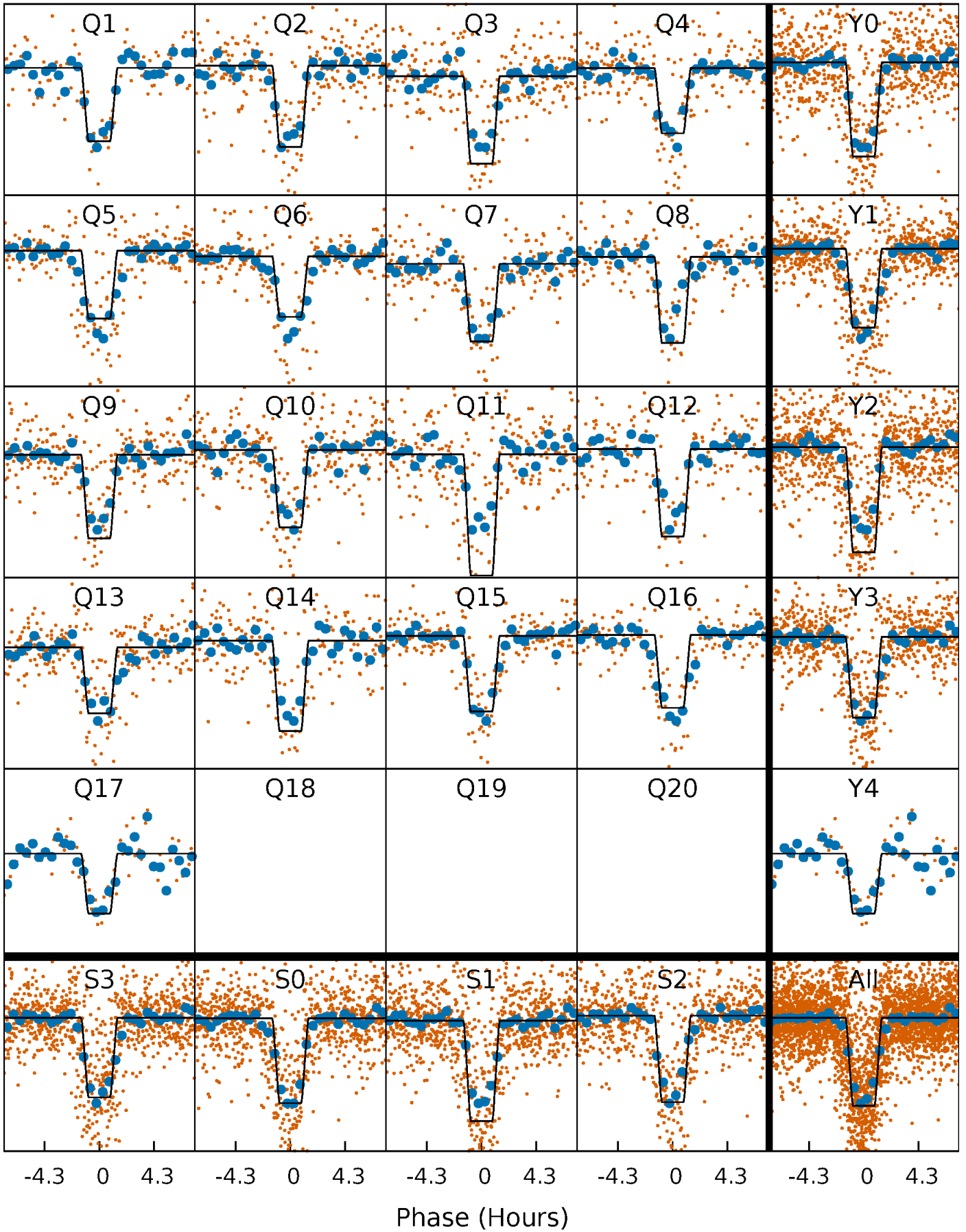
DV Quarter-Phased Transit Curves

TCE 007802136-02 P= 10.980241 Days $T_0=142.019278$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

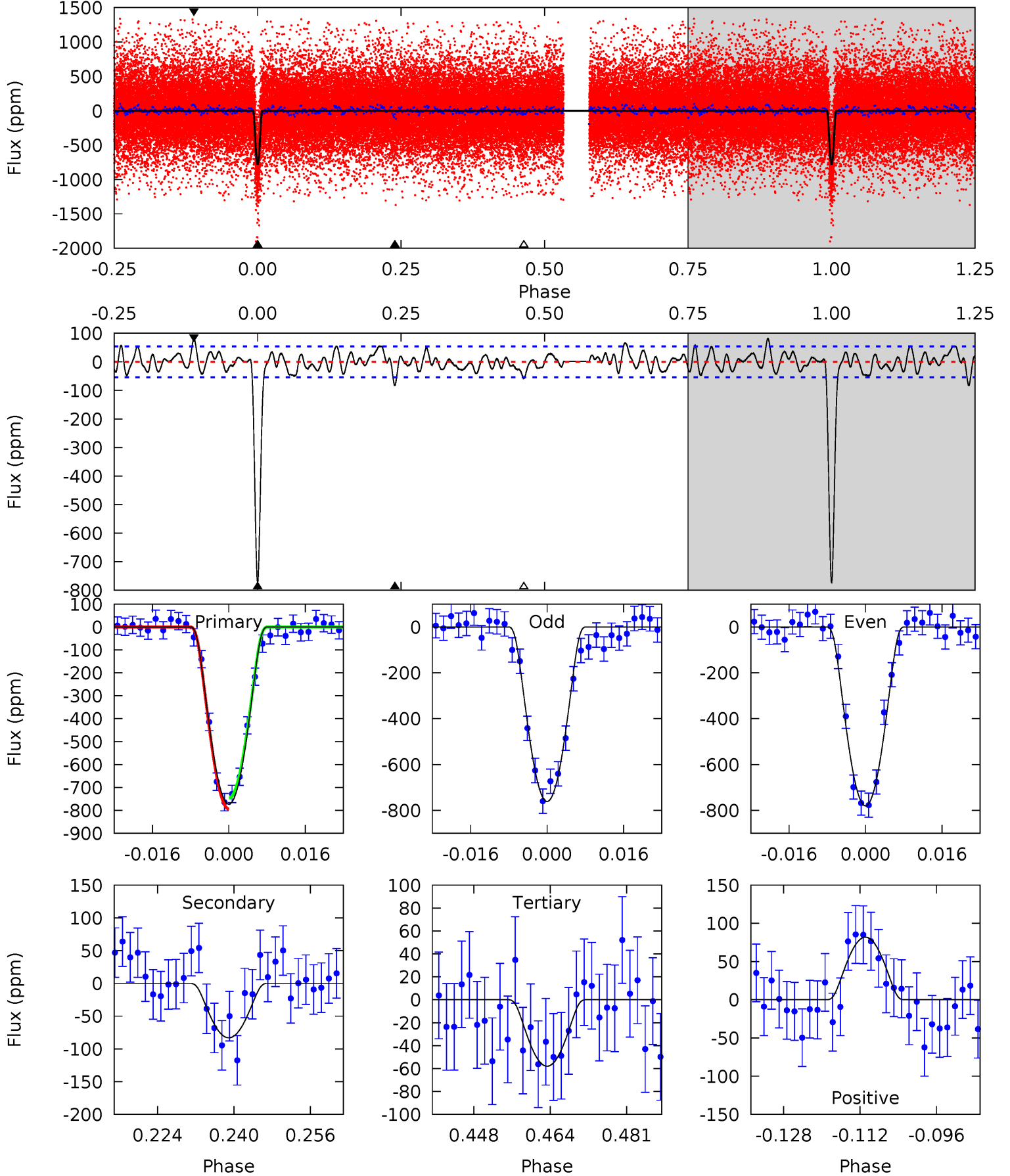
TCE 007802136-02 P= 10.980224 Days $T_0=142.020168$ (BKJD)



DV Model-Shift Uniqueness Test

007802136-02, P = 10.980241 Days, E = 131.039037 Days

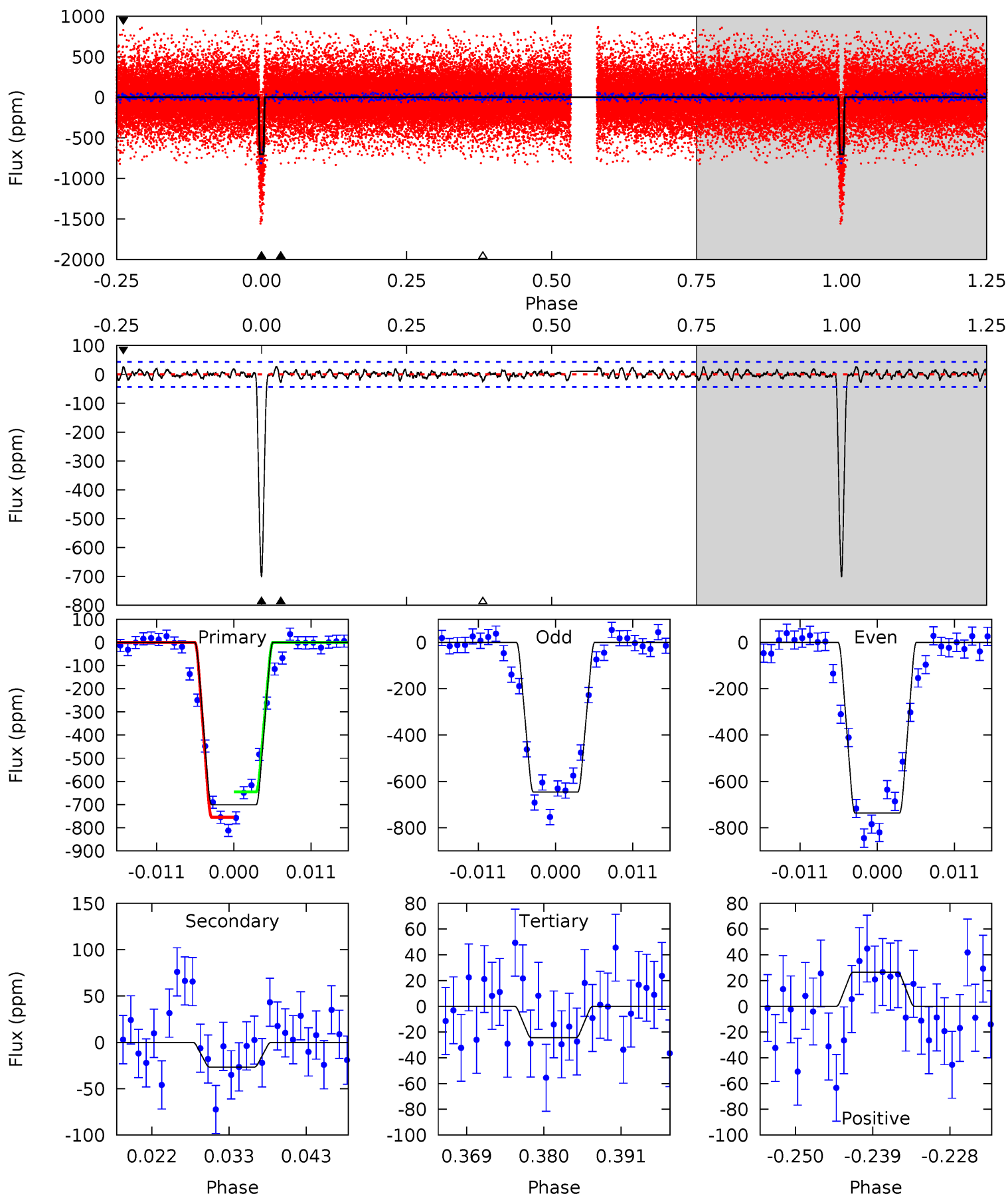
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
70.8	7.60	5.31	7.49	4.94	2.41	2.26	65.5	63.3	2.30	0.11	0.88	1.04	0.10	2.18



Alt Model-Shift Uniqueness Test

007802136-02, P = 10.980224 Days, E = 131.039944 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
81.2	3.09	2.83	3.06	5.01	2.55	1.00	78.3	78.1	0.26	0.04	5.26	0.97	0.04	6.33



Stellar Parameters For KIC 007802136

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5952^{+159}_{-159}	$4.462^{+0.098}_{-0.182}$	$-0.520^{+0.300}_{-0.300}$	$0.897^{+0.238}_{-0.119}$	$0.851^{+0.105}_{-0.070}$	$1.659^{+0.666}_{-0.772}$
	+3%/-3%	+2%/-4%	+58%/-58%	+27%/-13%	+12%/-8%	+40%/-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 007802136-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-83 ± 11	$4.58^{+2.63}_{-2.37}$	1161^{+78}_{-63}	3242^{+874}_{-407}	18^{+59}_{-11}
Alt.	-27 ± 9	$3.25^{+2.43}_{-1.78}$	1157^{+78}_{-57}	3026^{+869}_{-465}	12^{+45}_{-8}

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

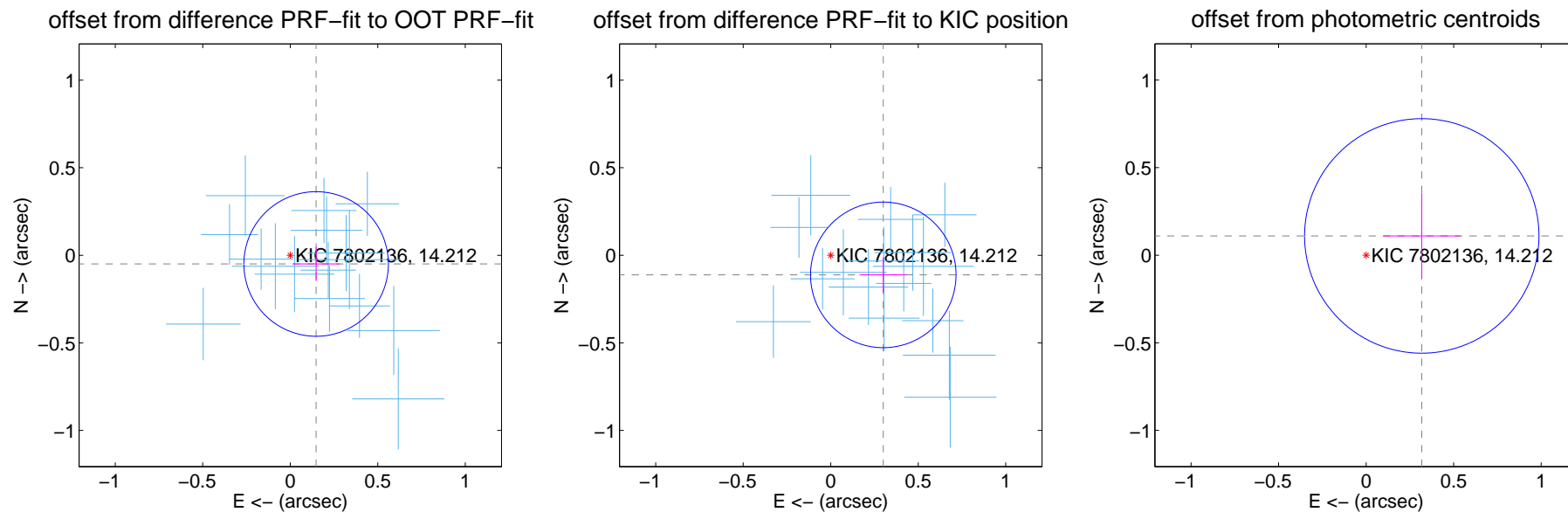
DV Centroid Data

Supplemental centroid analysis for 007802136-02. Kepler magnitude: 14.21. Transit SNR 35.14

There are 17 quarters with good PRF difference image offsets

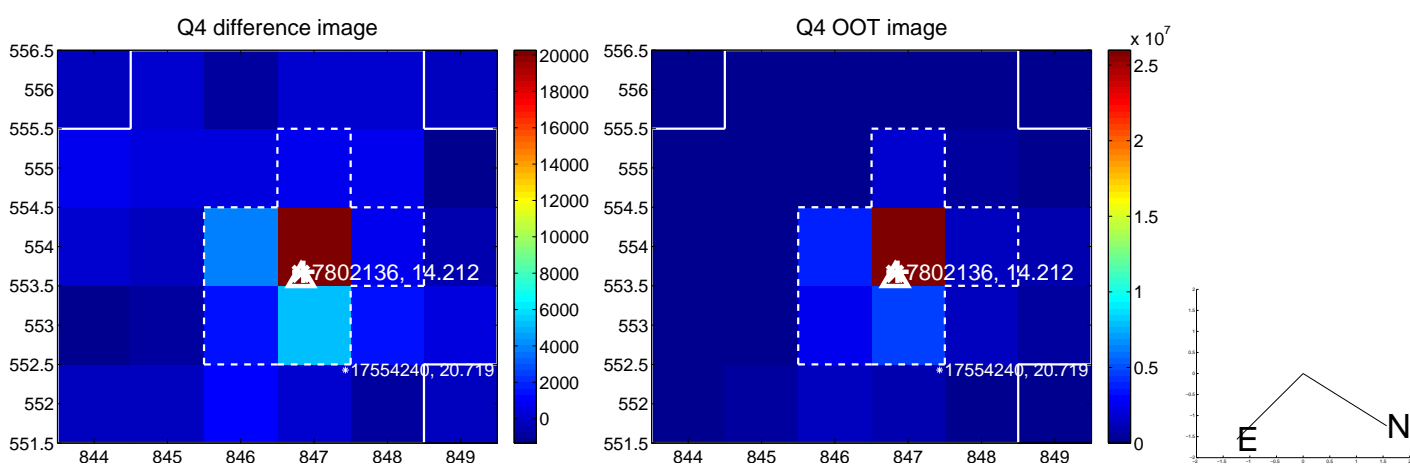
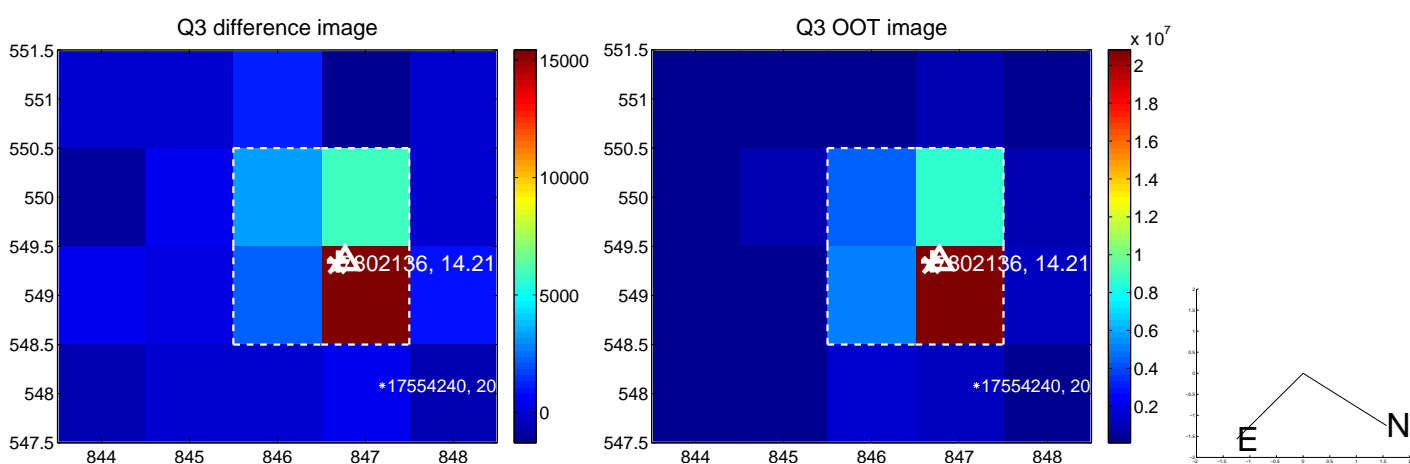
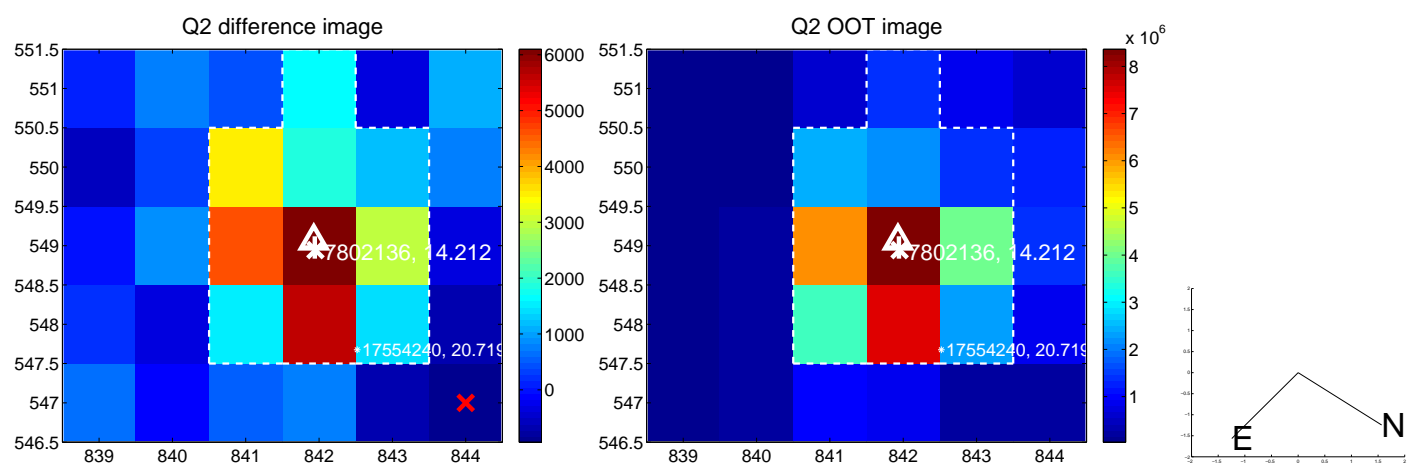
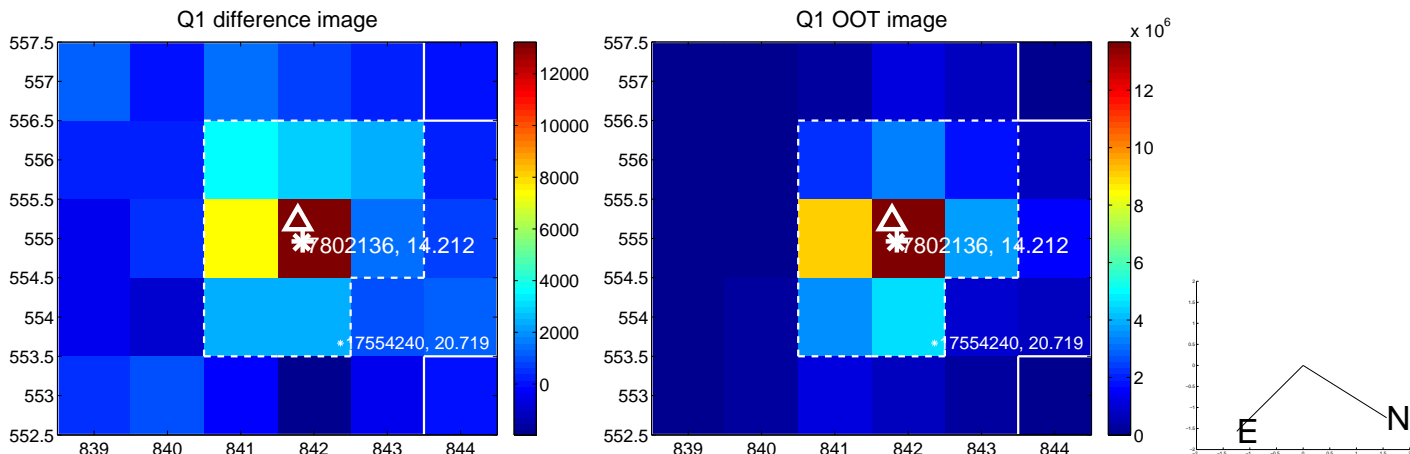
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.156 ± 0.138	1.13	-0.148 ± 0.134	-0.050 ± 0.098
PRF-fit source offset from KIC position	0.320 ± 0.139	2.31	-0.300 ± 0.135	-0.112 ± 0.100
photometric centroid source offset	0.34 ± 0.22	1.51	-0.32 ± 0.22	0.11 ± 0.24

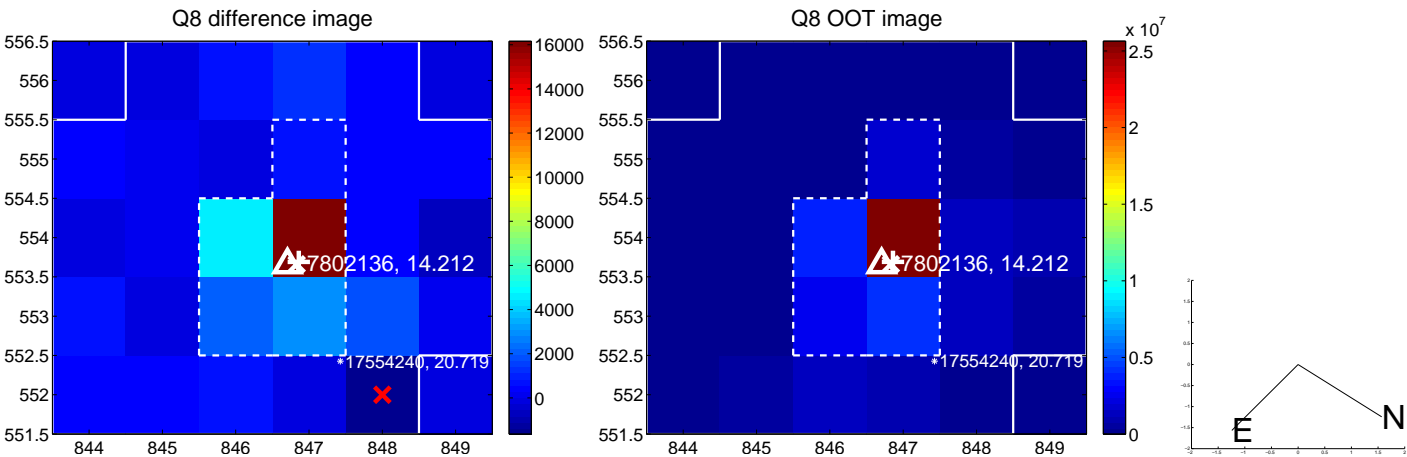
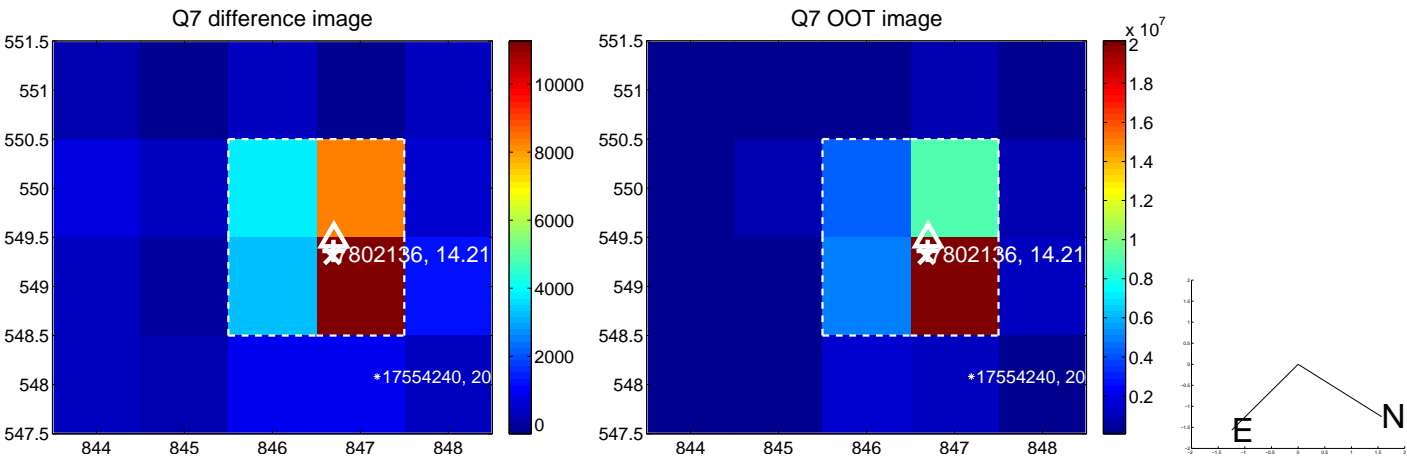
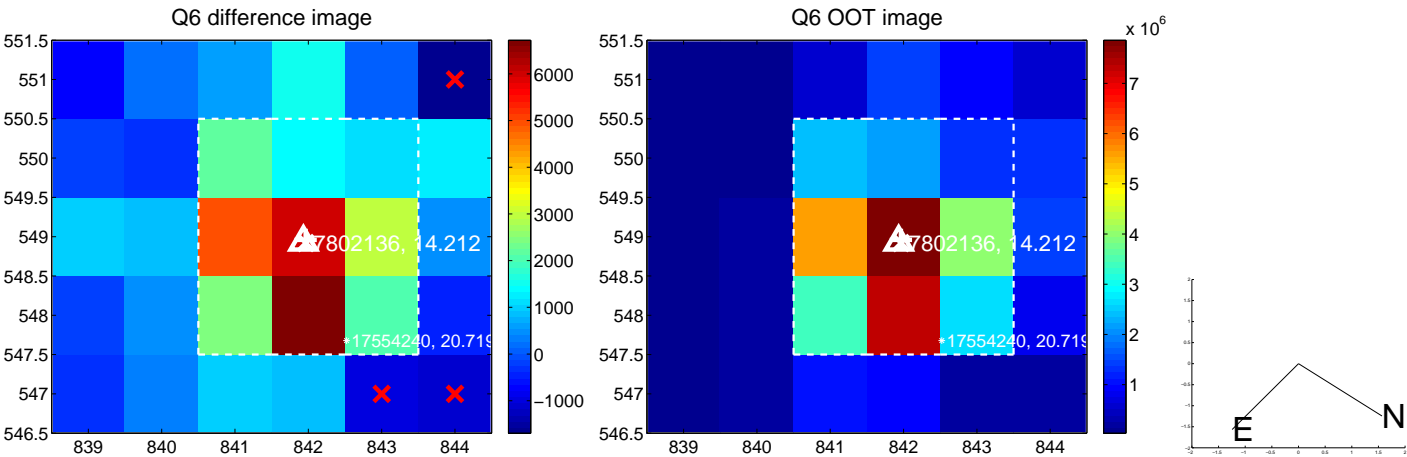
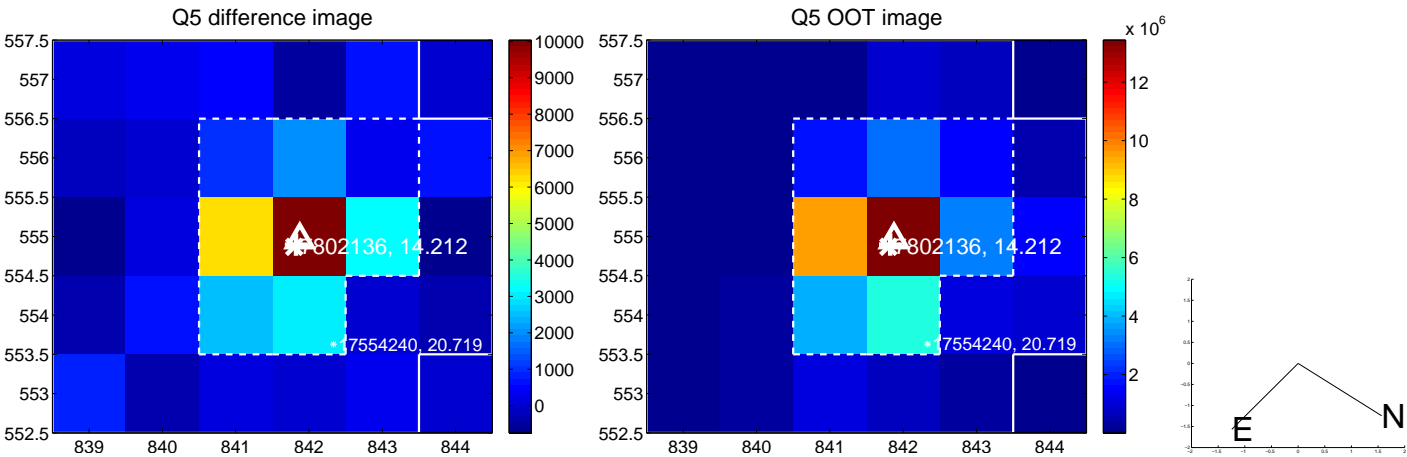


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

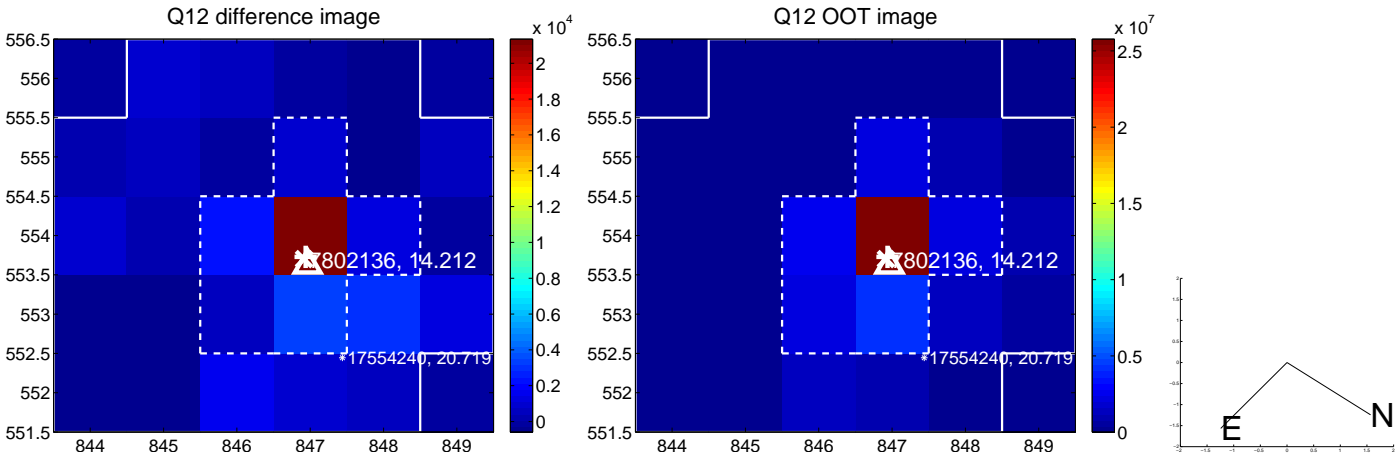
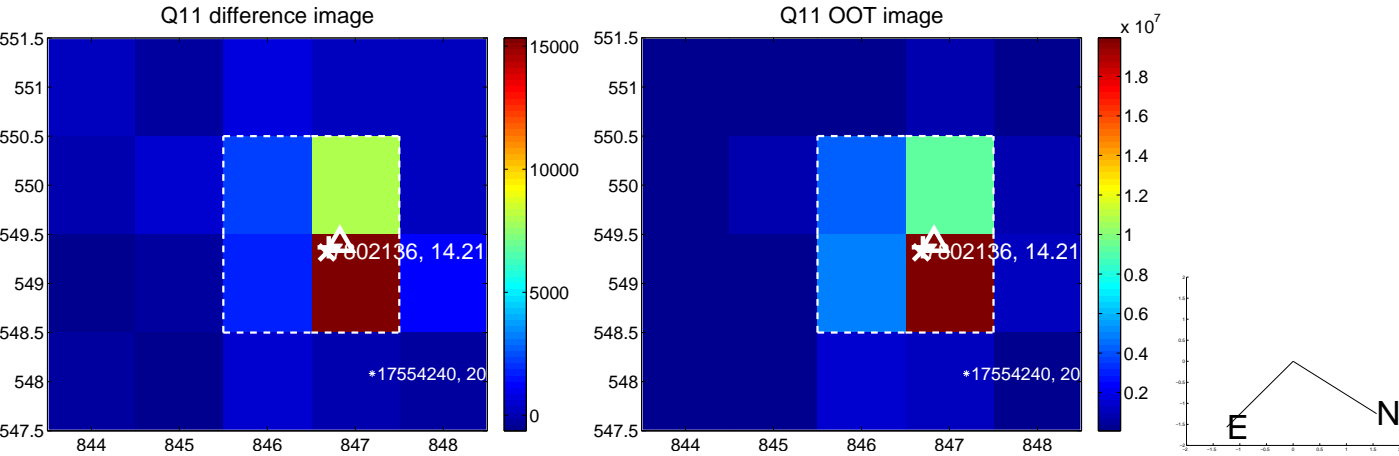
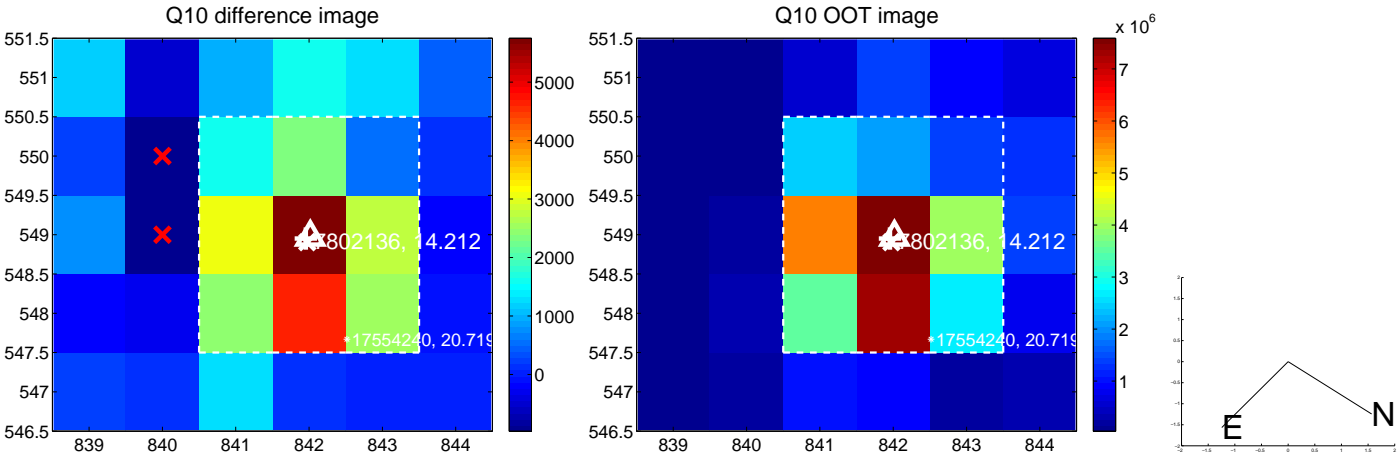
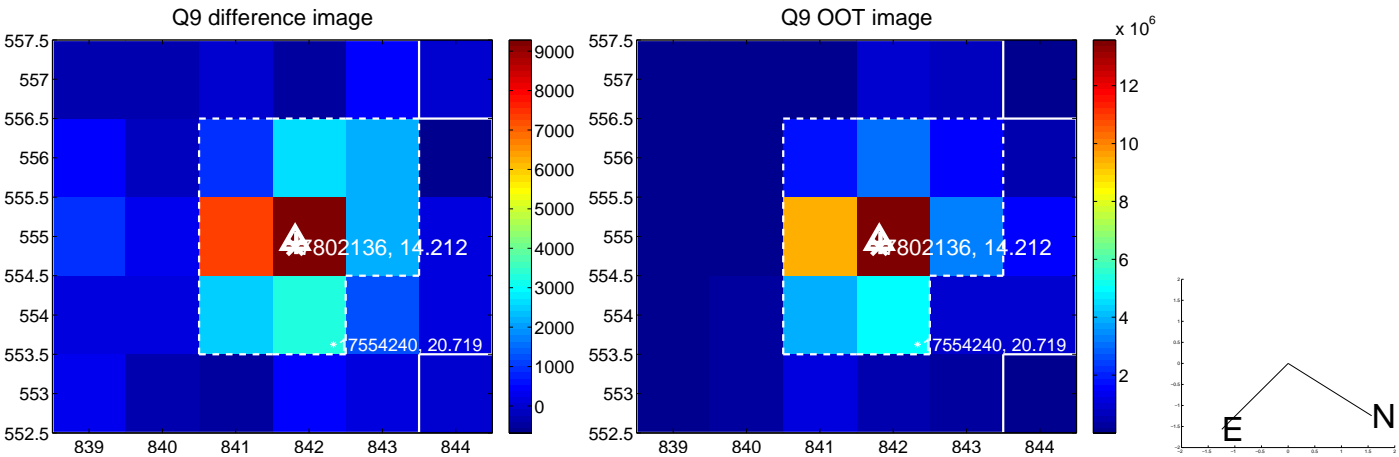
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



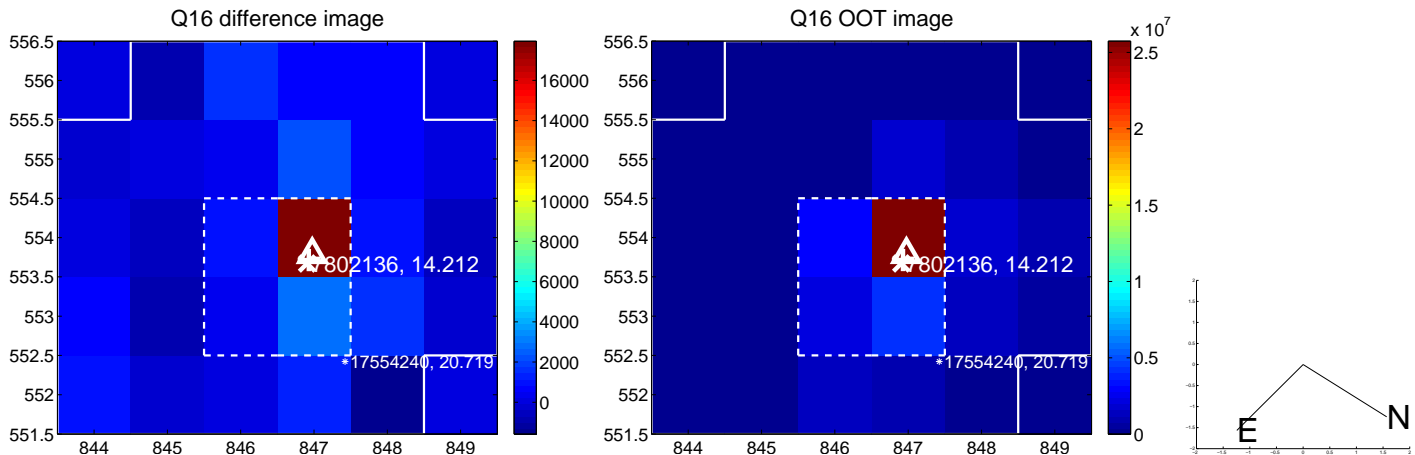
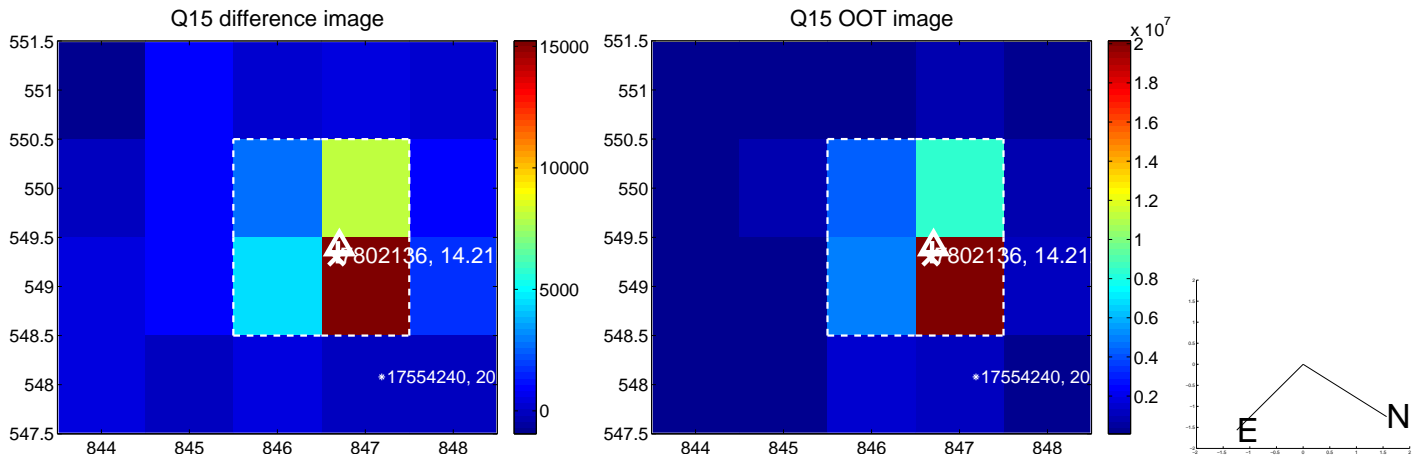
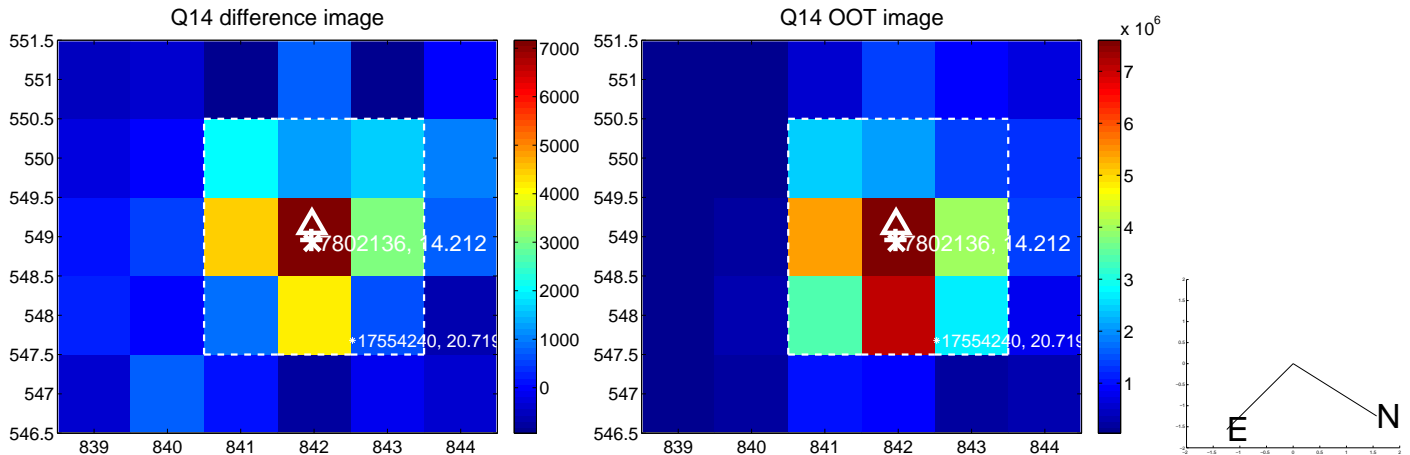
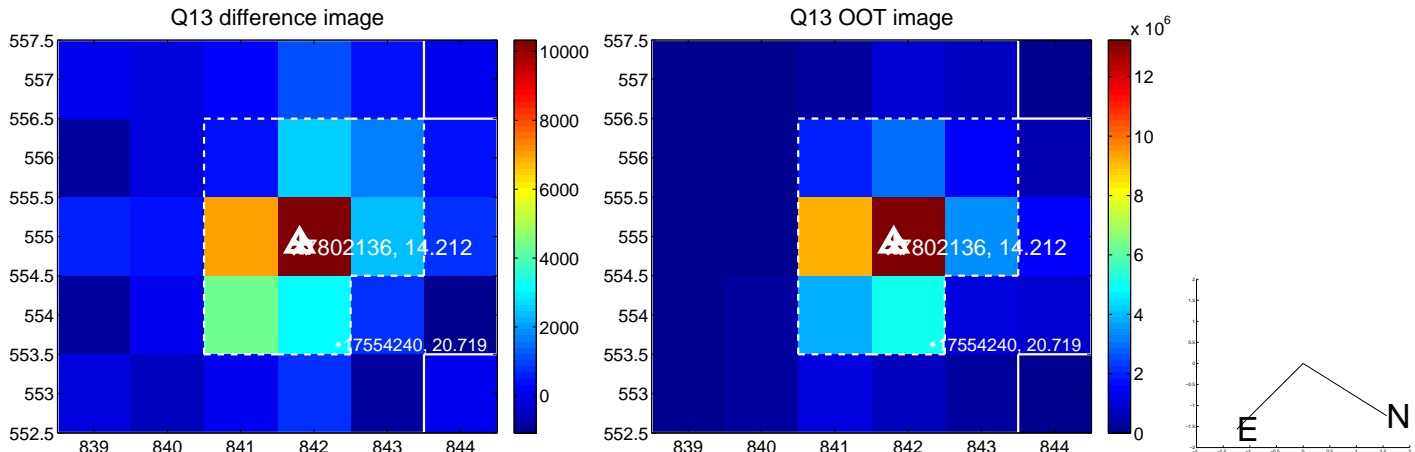
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



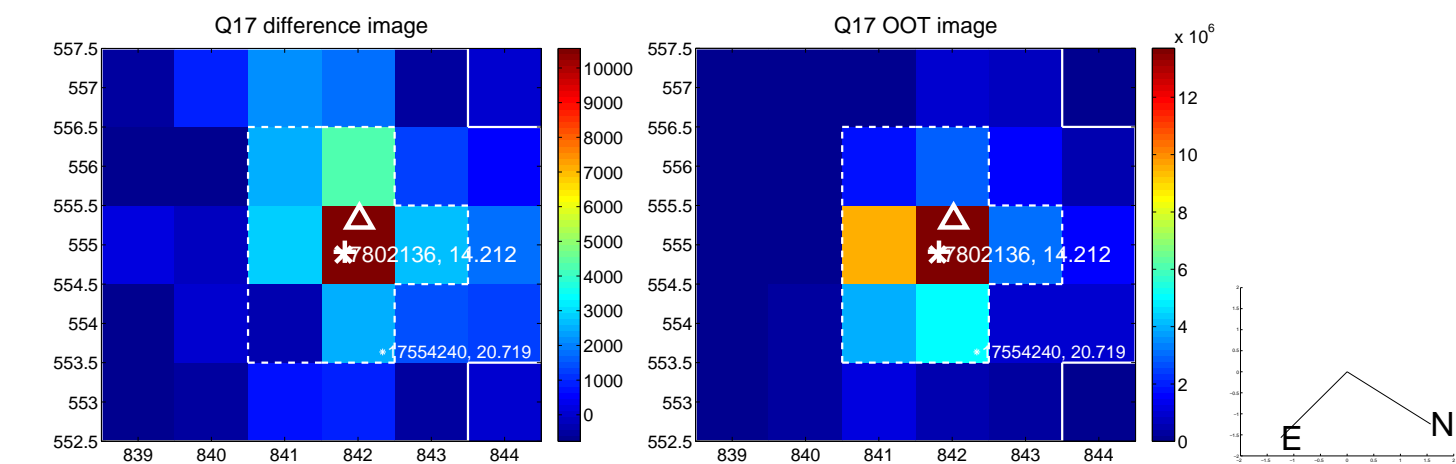
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



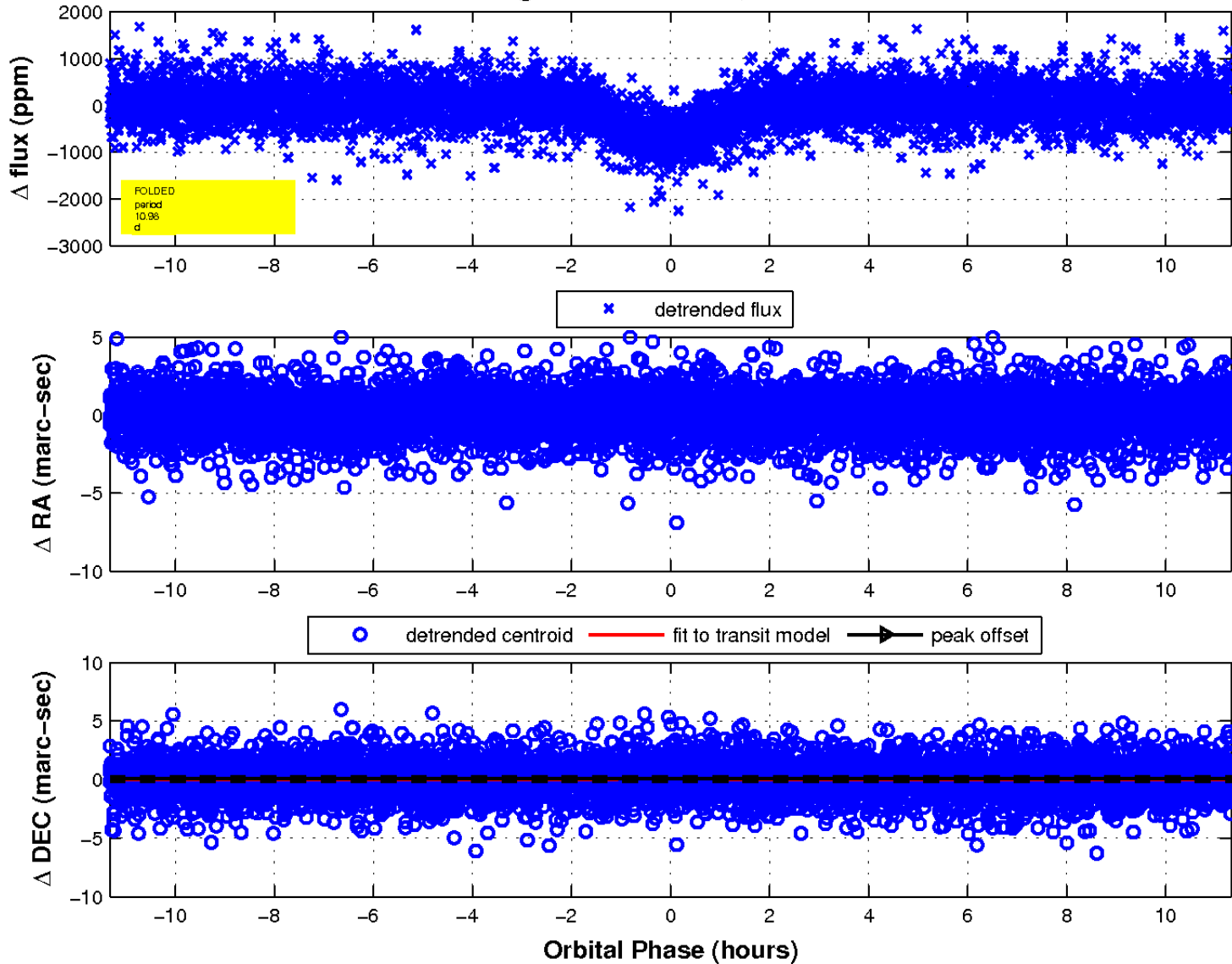
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

