

KIC 011812199

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})
011812199-01	OBS	6090.01	37.320318	135.427053	4162.3	7.228	188.8	180.2	0.94	5910	11.20	19.80
011812199-02	OBS	No	37.320267	139.662246	3646.0	10.524	180.1	187.0	0.94	5910	10.31	19.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011812199-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_OFFSET
011812199-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET

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.

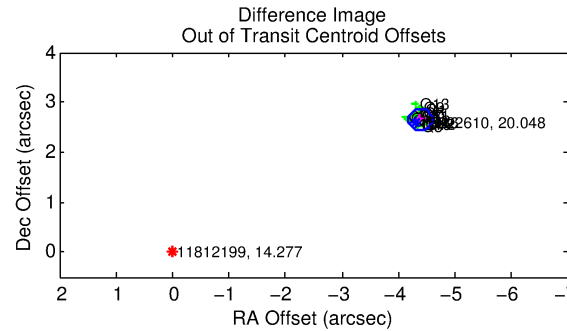
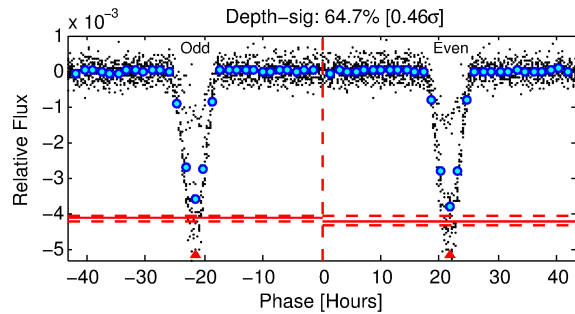
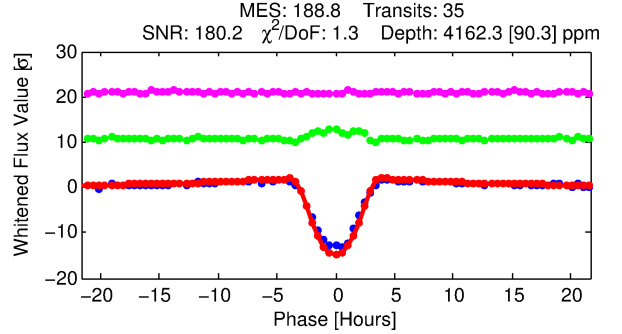
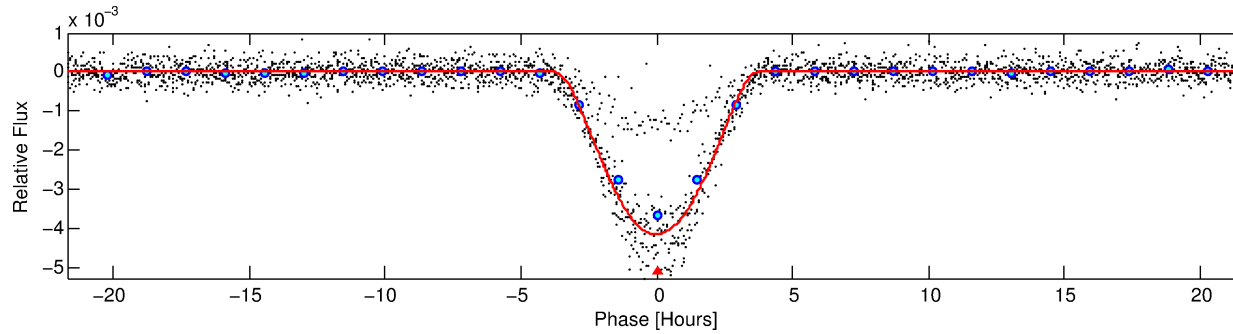
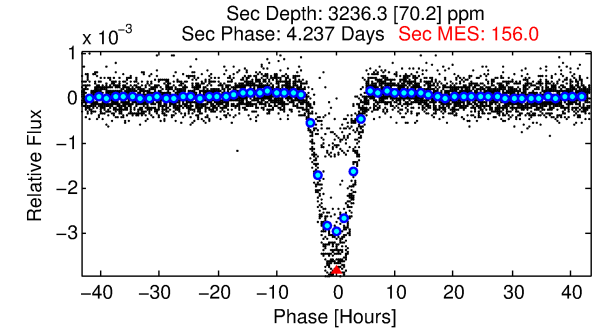
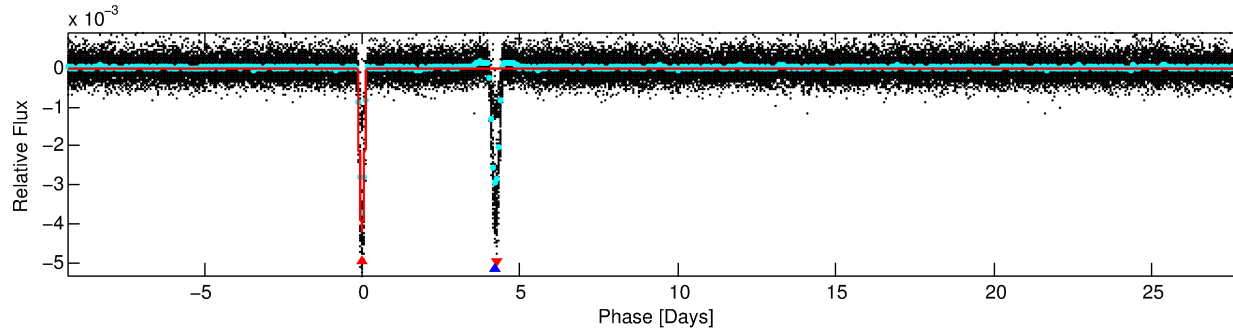
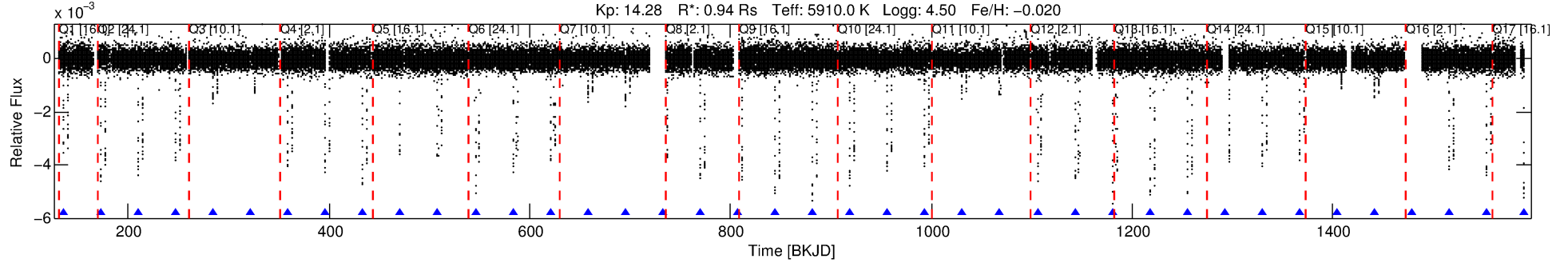
Ephemeris Match Information For 011812199-01

No Significant Match Found

DV One-Page Summary

KIC: 11812199 Candidate: 1 of 2 Period: 37.320 d
KOI: K06090.01 Corr: 0.993

Kp: 14.28 R*: 0.94 Rs Teff: 5910.0 K Logg: 4.50 Fe/H: -0.020



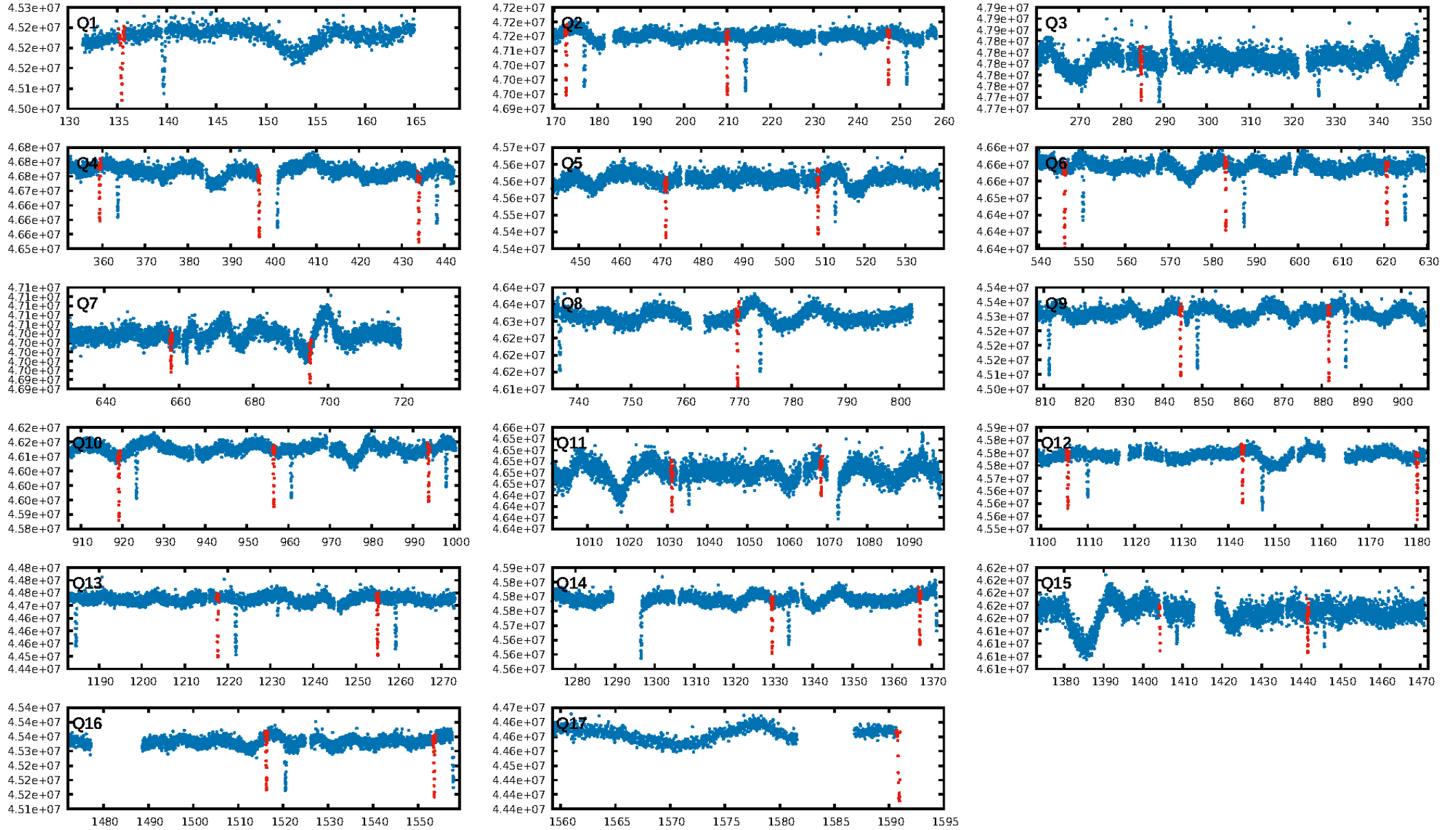
DV Fit Results:

Period = 37.32032 [0.00004] d
Epoch = 135.4271 [0.0009] BKJD
Rp/R* = 0.1092 [0.0268]
a/R* = 18.99 [0.88]
b = 1.00 [0.04]
Seff = 19.80 [8.28]
Teq = 538 [56] K
Rp = 11.20 [4.48] Re
a = 0.2208 [0.0597] AU
Ag = 692.61 [438.81] [1.58σ]
Teff = 4267 [541] K [6.85σ]

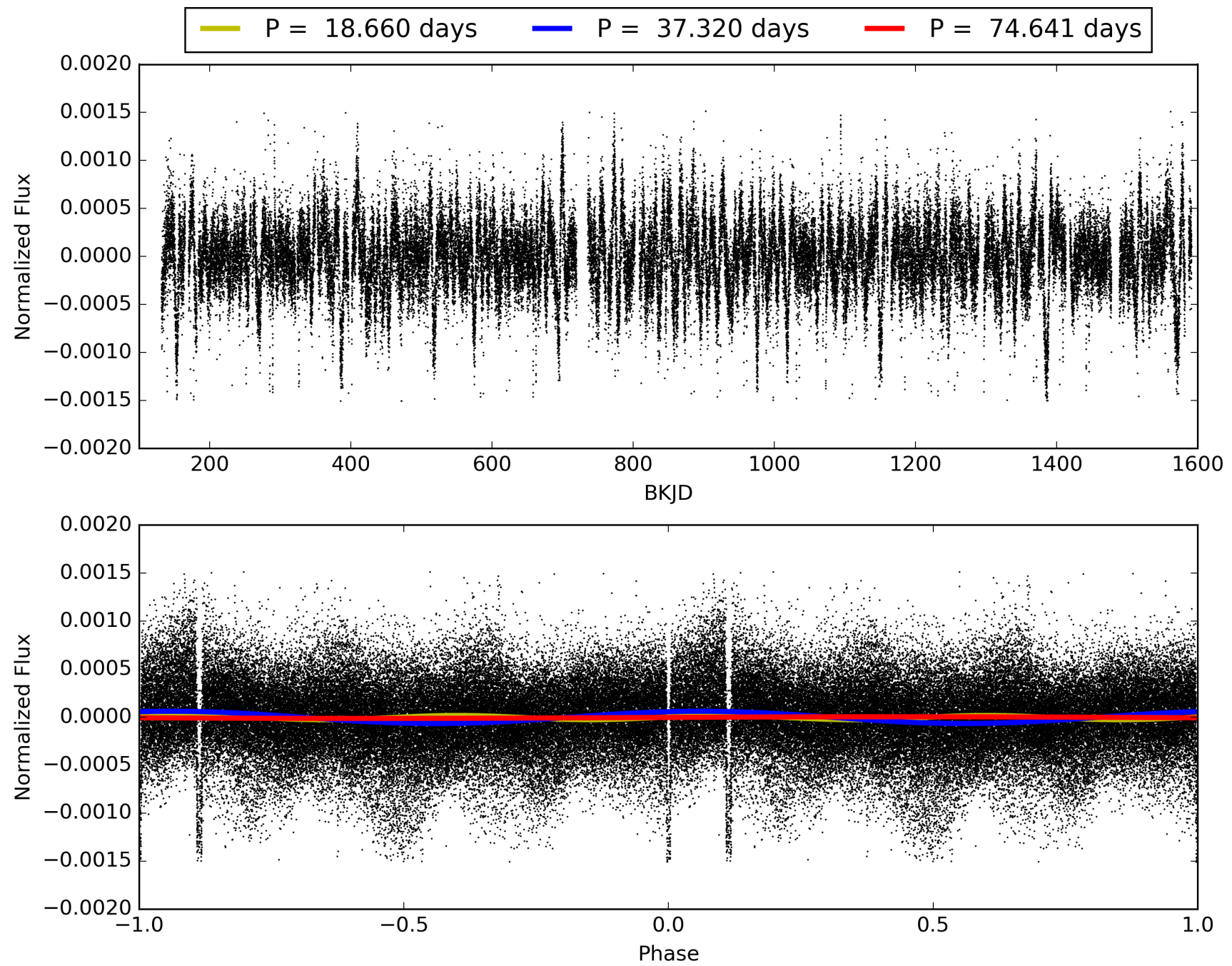
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 47.4%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [33/33]
GhostDiagnostic-chr: 1.143
Centroid-sig: 0.0%
Centroid-so: 5.834 arcsec [99.77σ]
OotOffset-rm: 5.123 arcsec [71.92σ]
KicOffset-rm: 5.045 arcsec [69.40σ]
OotOffset-st: 4/4/4 [16]
KicOffset-st: 4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 011812199-01, PDC Light Curves

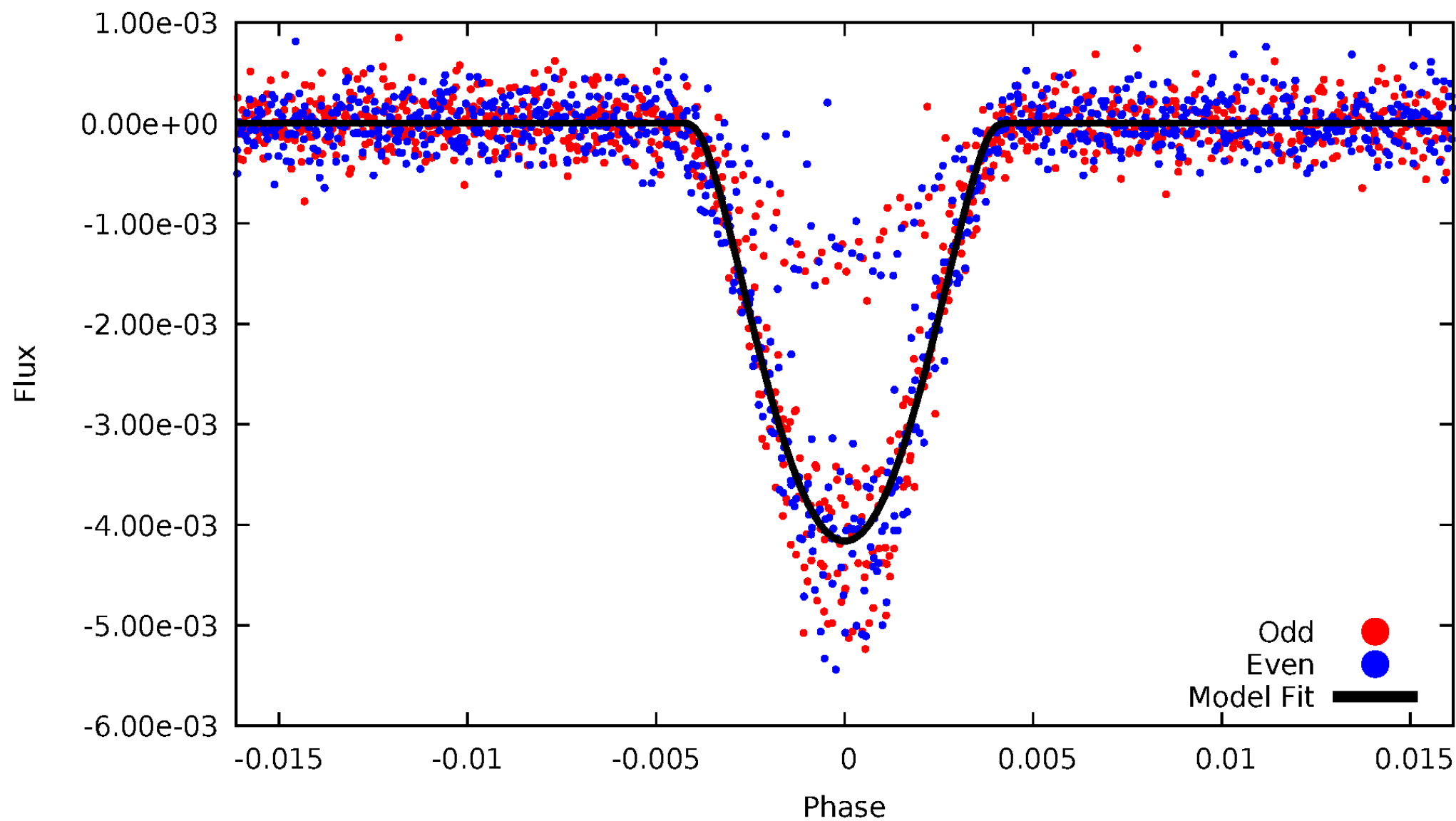


TCE 011812199-01



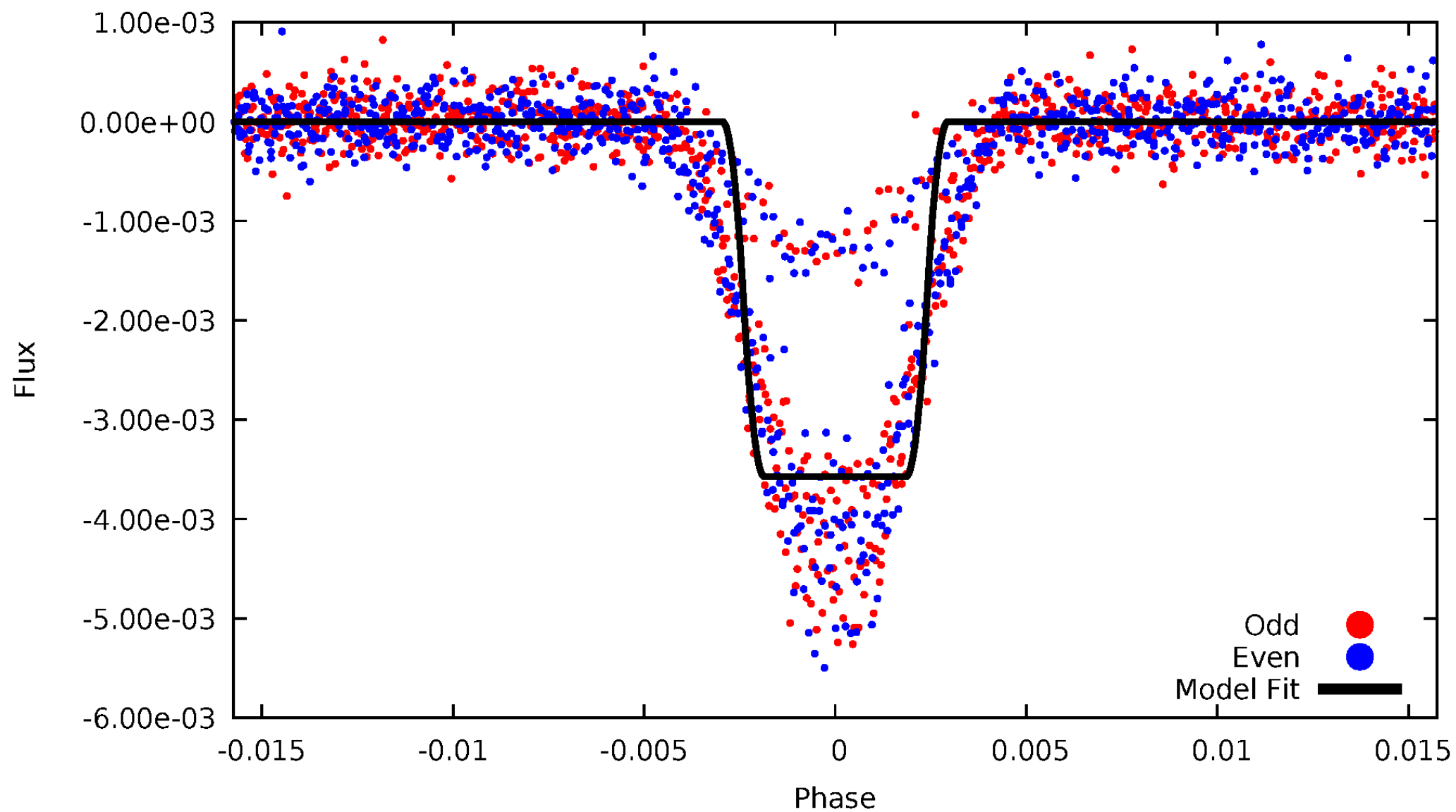
DV Odd/Even

TCE 011812199-01



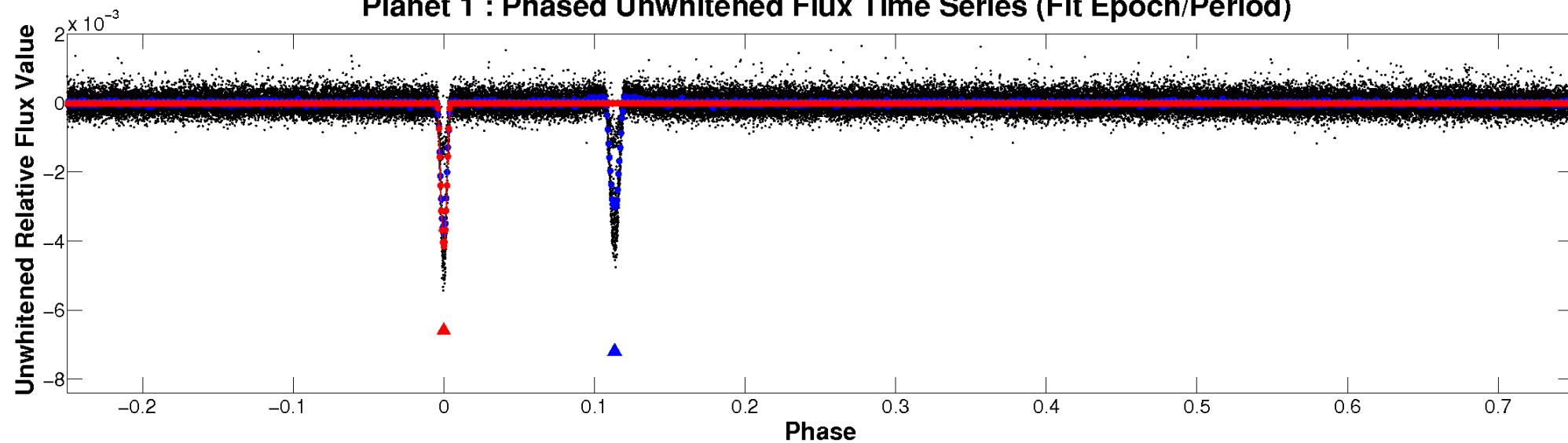
ALT Odd/Even

TCE 011812199-01

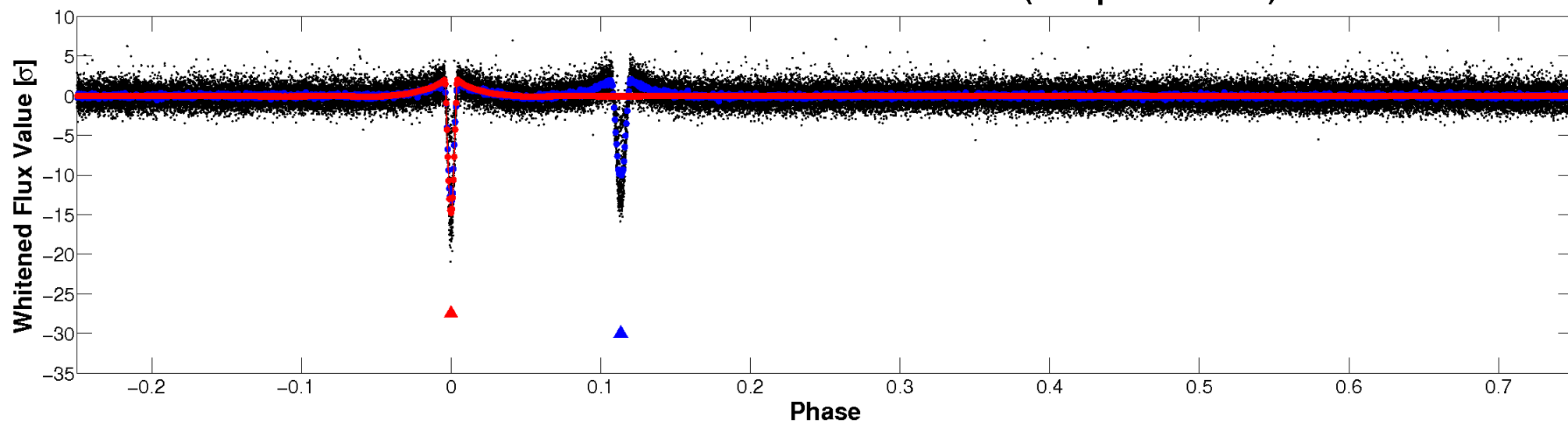


Non-Whitened Vs. Whitened Light Curve

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

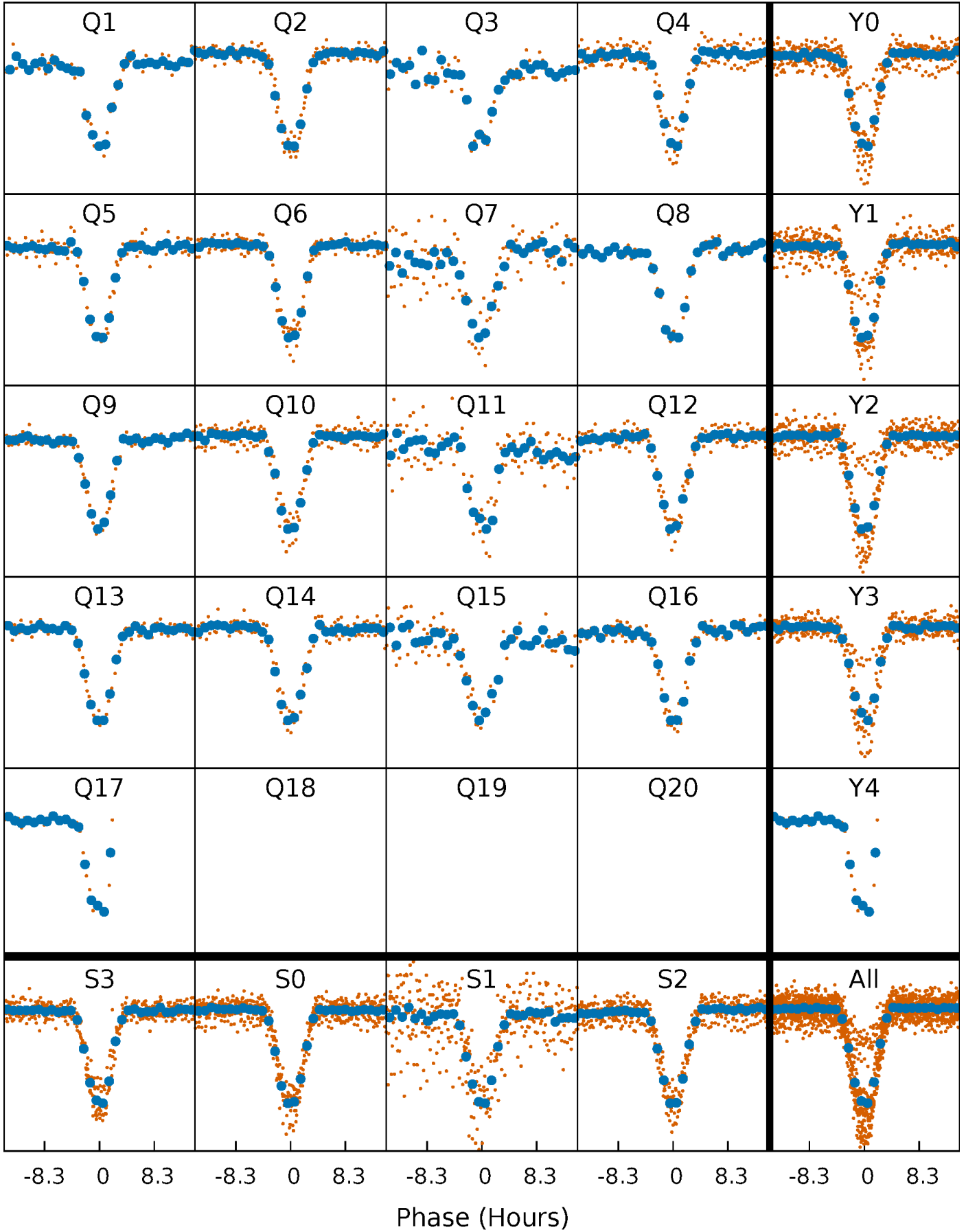


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



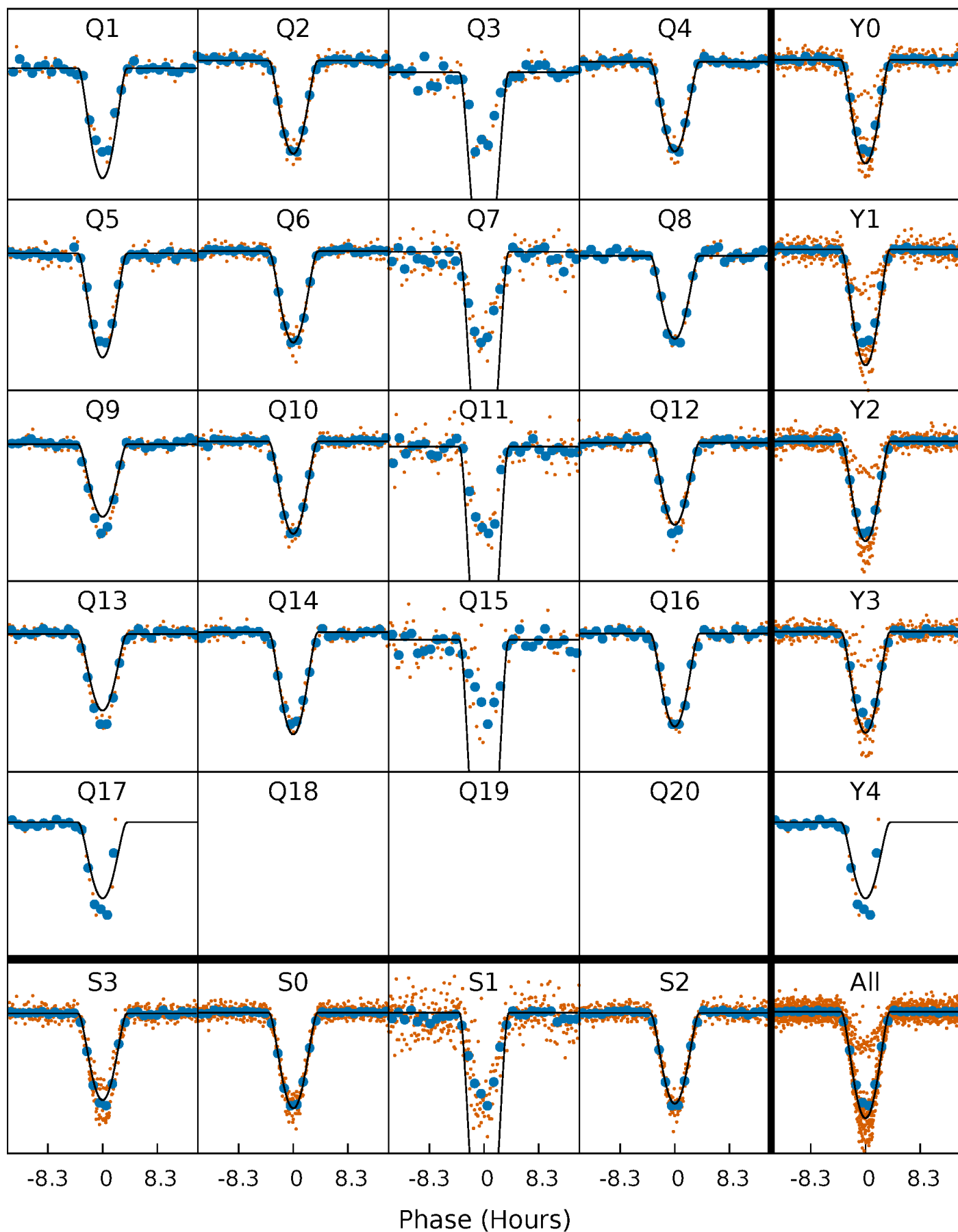
PDC Quarter-Phased Transit Curves

TCE 011812199-01 P= 37.320318 Days $T_0=135.427053$ (BKJD)



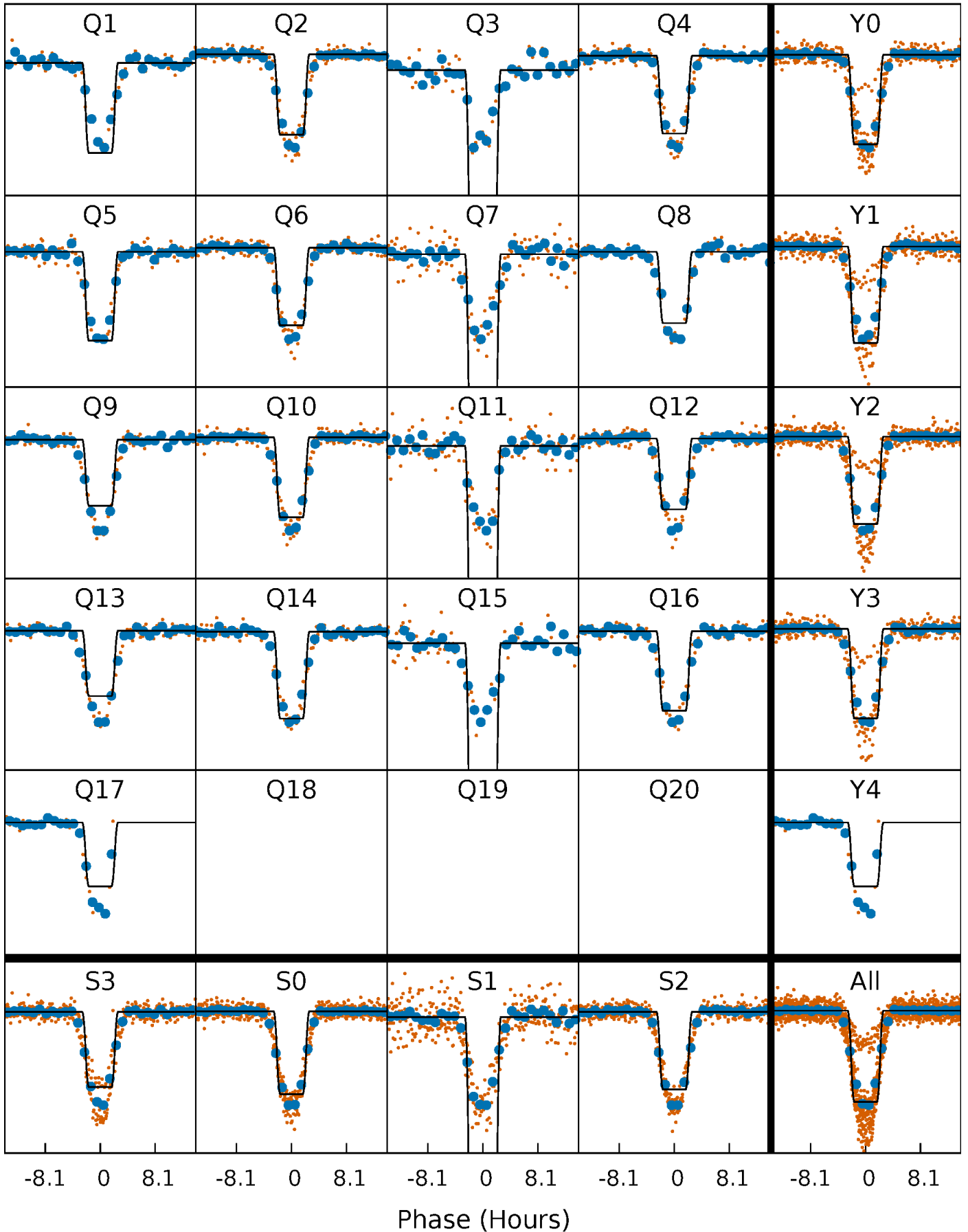
DV Quarter-Phased Transit Curves

TCE 011812199-01 P= 37.320318 Days $T_0=135.427053$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

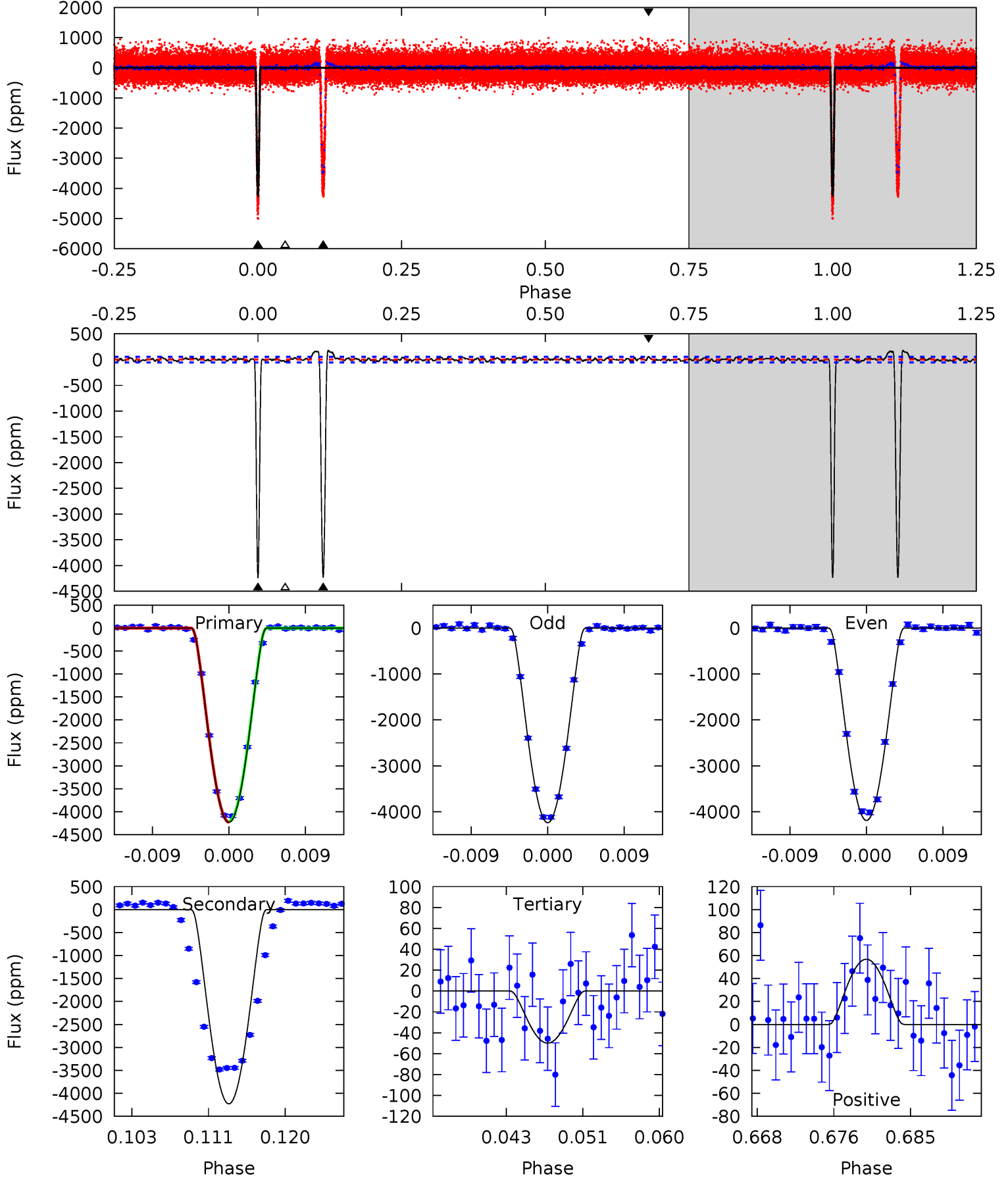
TCE 011812199-01 P= 37.320488 Days $T_0=135.423870$ (BKJD)



DV Model-Shift Uniqueness Test

011812199-01, P = 37.320318 Days, E = 98.106735 Days

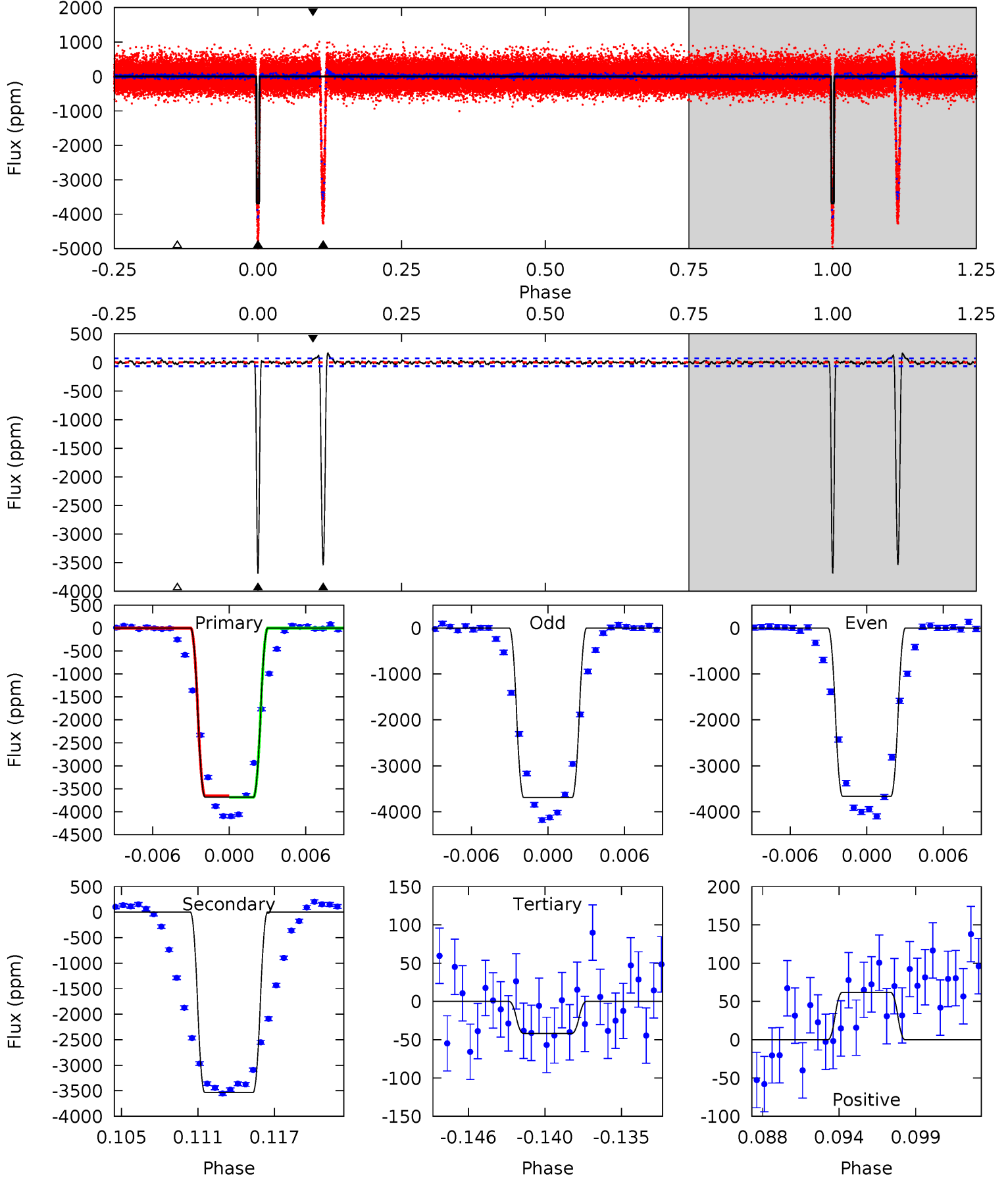
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
388.2	388.0	4.58	5.21	5.06	2.63	2.55	383.7	383.0	383.4	382.8	2.24	0.92	0.04	0.81



Alt Model-Shift Uniqueness Test

011812199-01, P = 37.320488 Days, E = 98.103382 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
273.9	262.8	3.11	4.60	5.13	2.76	1.54	270.8	269.3	259.7	258.2	1.14	0.91	0.04	1.01



Stellar Parameters For KIC 011812199

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5910^{+164}_{-184}	$4.505^{+0.052}_{-0.221}$	$-0.020^{+0.250}_{-0.300}$	$0.940^{+0.297}_{-0.099}$	$1.032^{+0.127}_{-0.140}$	$1.750^{+0.378}_{-0.945}$
	+3%/-3%	+1%/-5%	+1250%/-1500%	+32%/-11%	+12%/-14%	+22%/-54%
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 011812199-01 / KOI 6090.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4229 ± 11	$11.85^{+3.20}_{-2.92}$	768^{+54}_{-38}	4695^{+570}_{-398}	791^{+622}_{-295}
Alt.	-3532 ± 13	$6.30^{+3.38}_{-2.82}$	768^{+57}_{-38}	5888^{+2340}_{-914}	2290^{+5308}_{-1287}

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 $A_{obs} \gg 1.0$

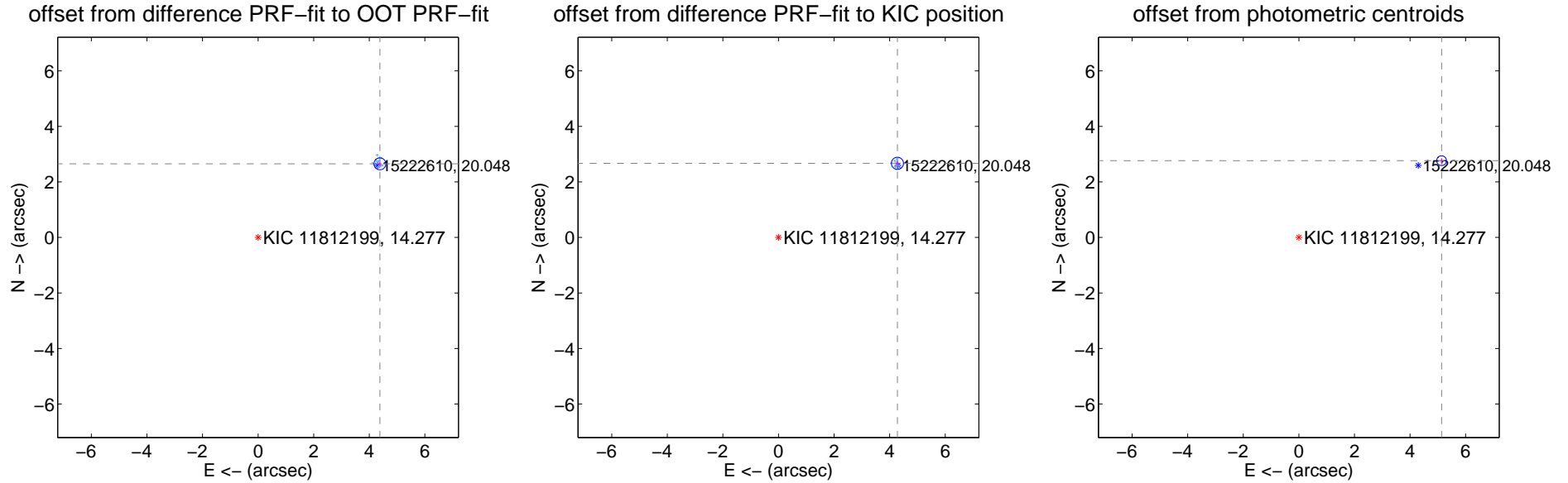
DV Centroid Data

Supplemental centroid analysis for 011812199-01. Kepler magnitude: 14.28. Transit SNR 180.18

There are 16 quarters with good PRF difference image offsets

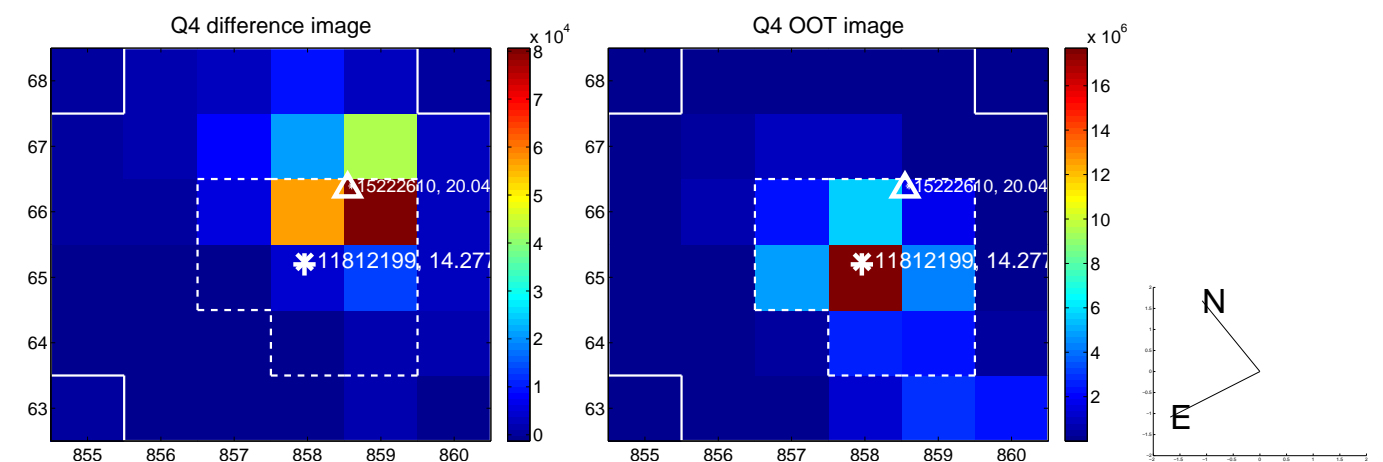
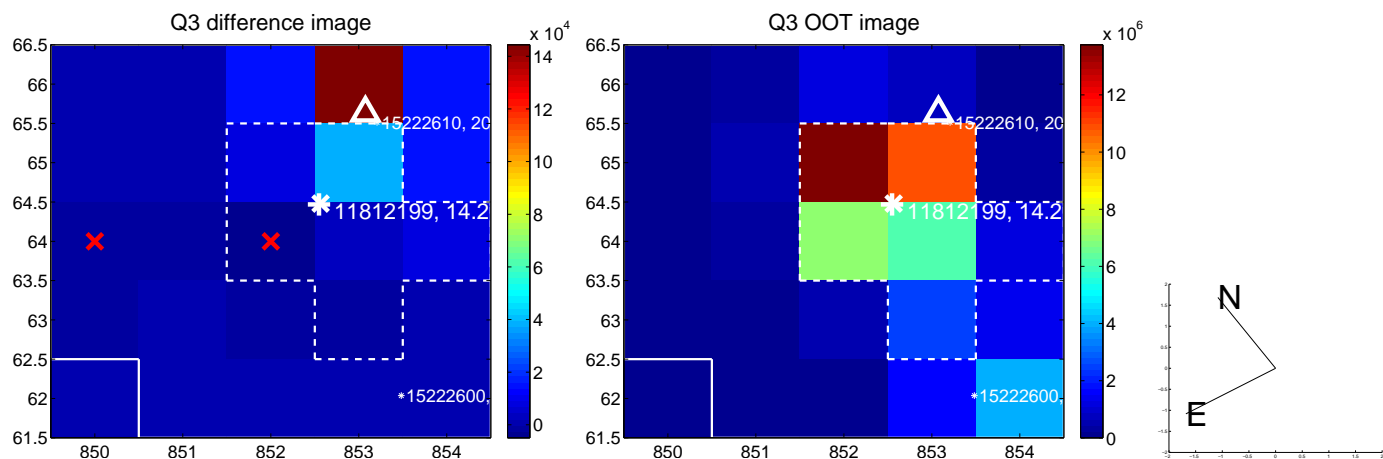
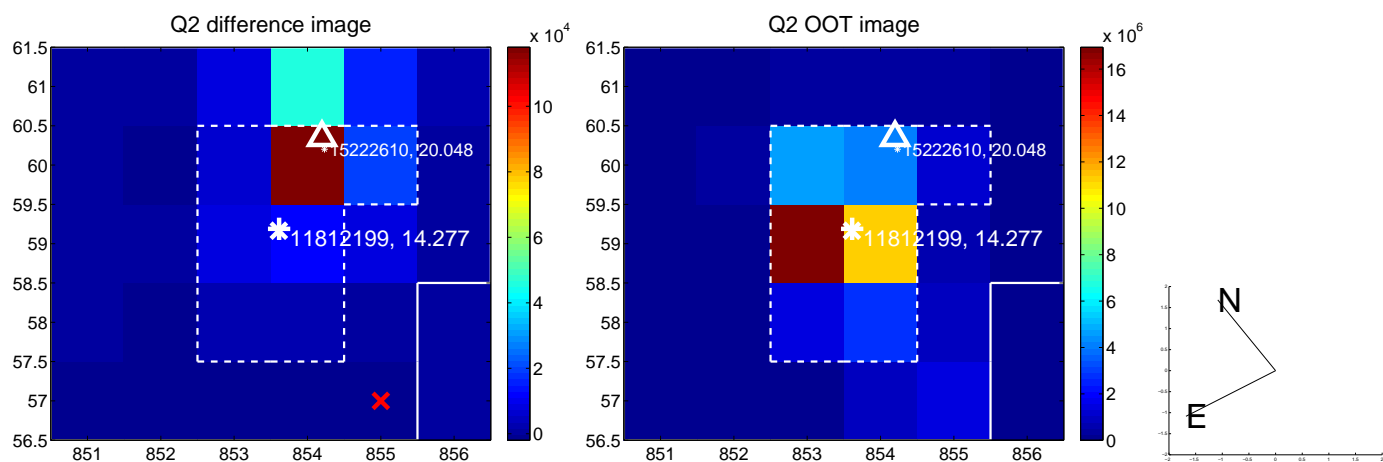
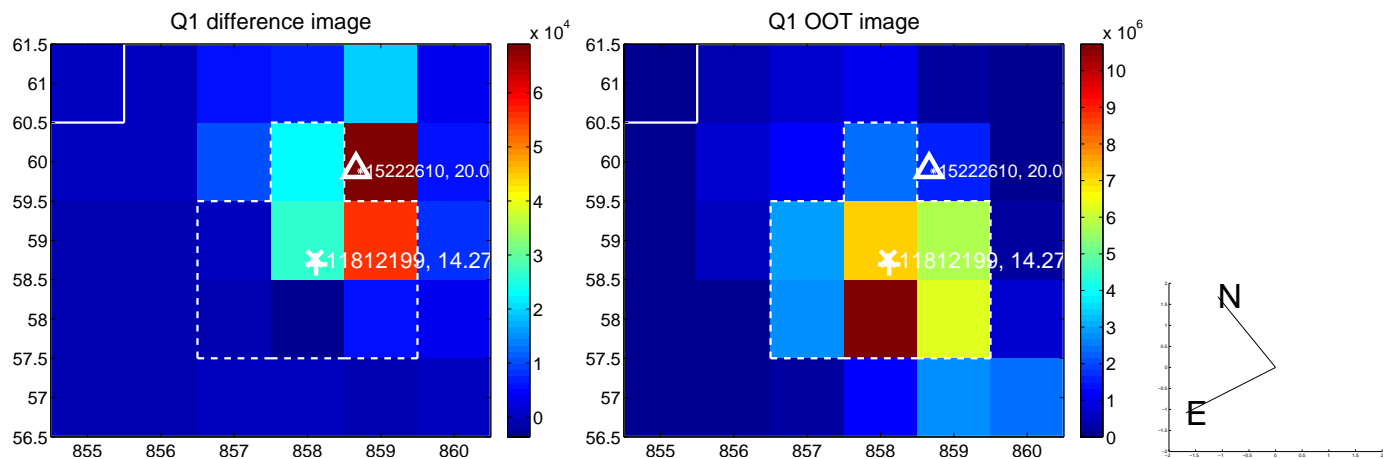
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.123 ± 0.071	71.92	-4.383 ± 0.071	2.652 ± 0.075
PRF-fit source offset from KIC position	5.045 ± 0.073	69.40	-4.280 ± 0.069	2.671 ± 0.081
photometric centroid source offset	5.83 ± 0.06	99.77	-5.14 ± 0.06	2.77 ± 0.06

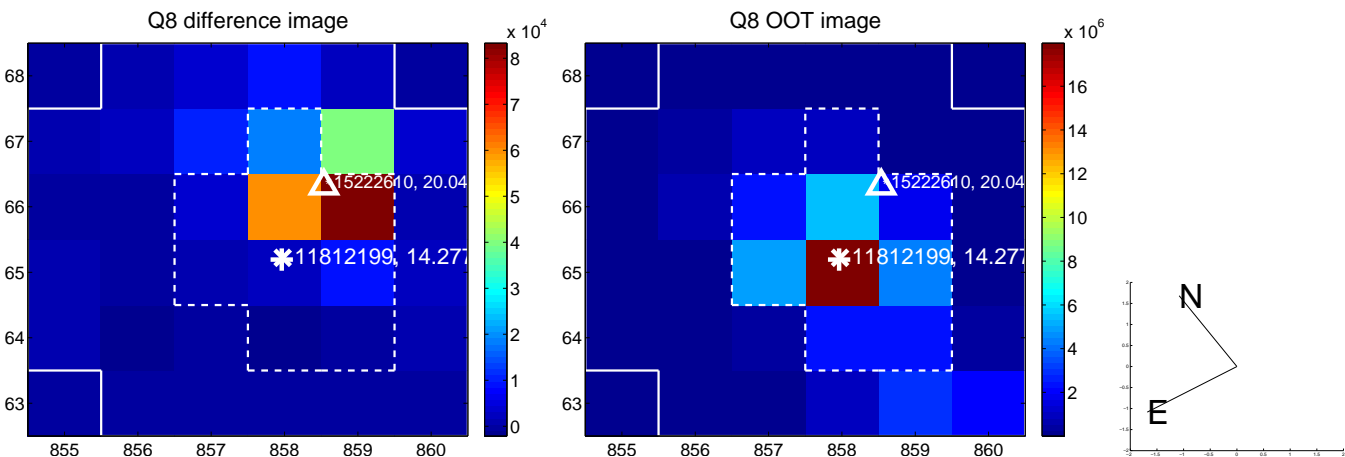
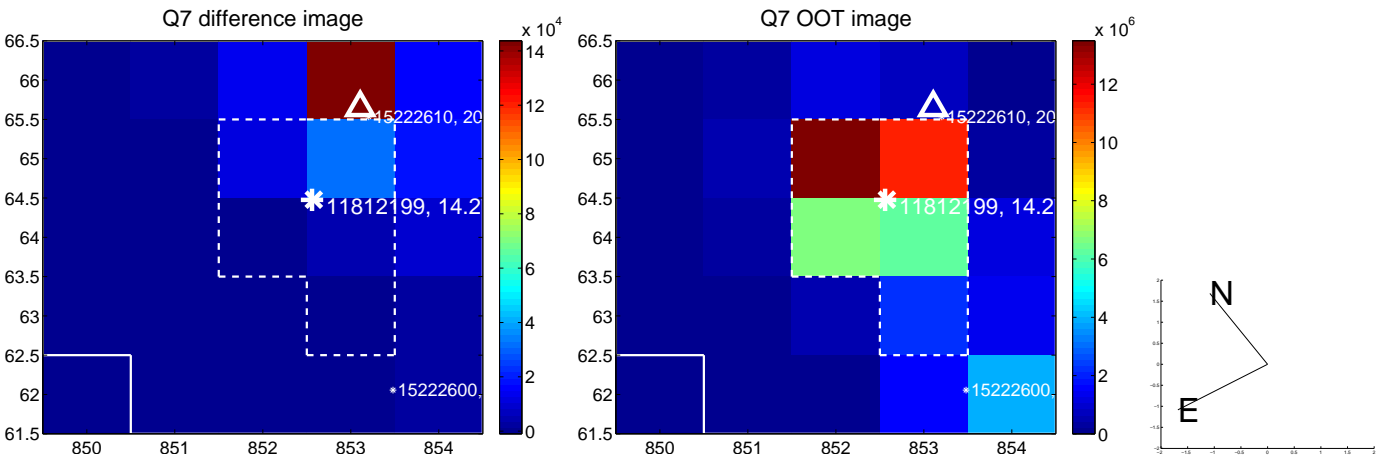
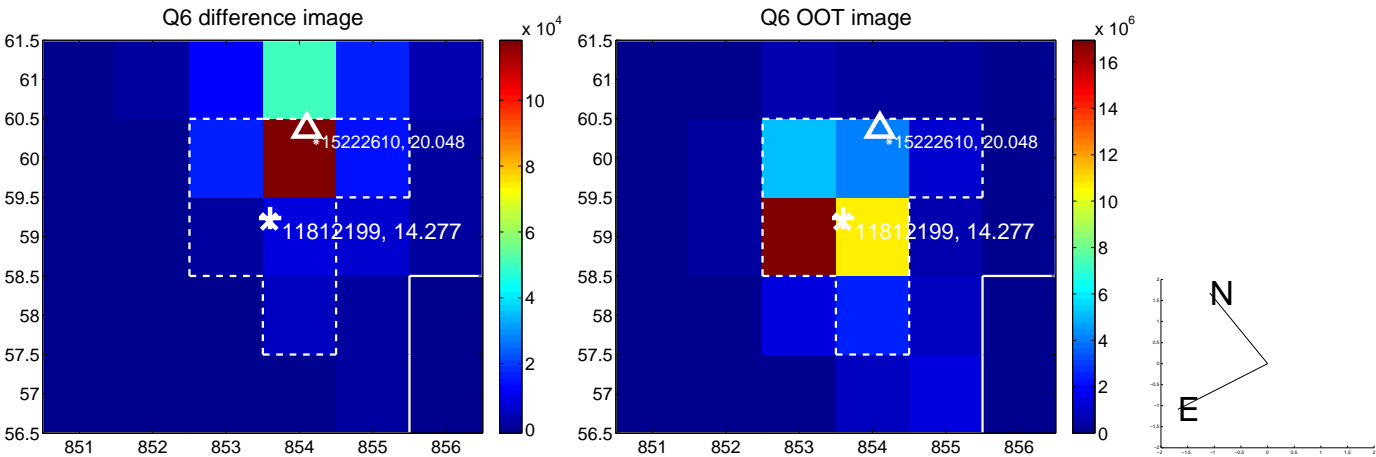
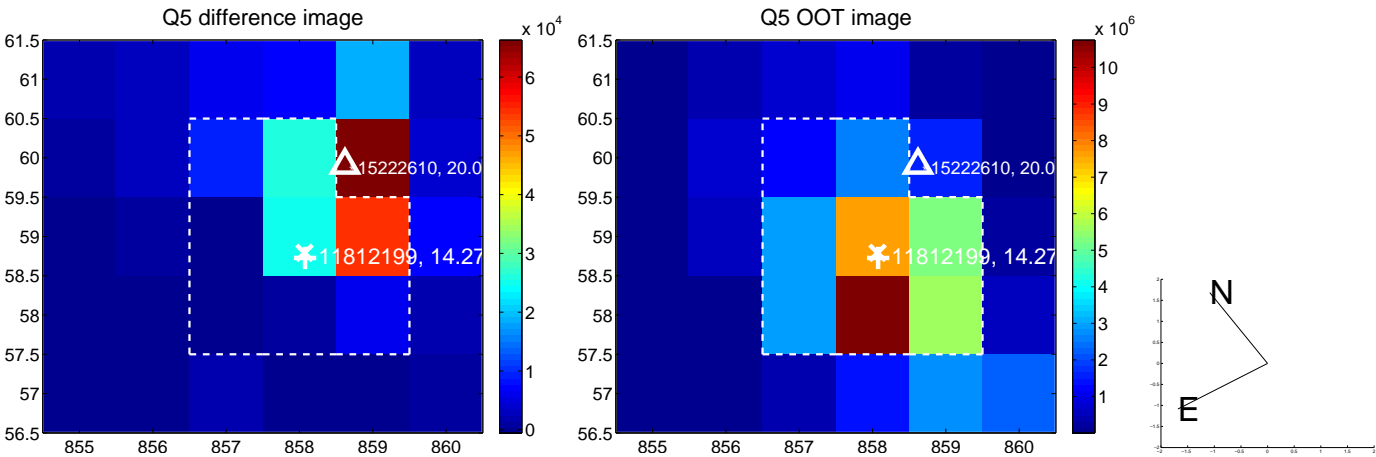


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

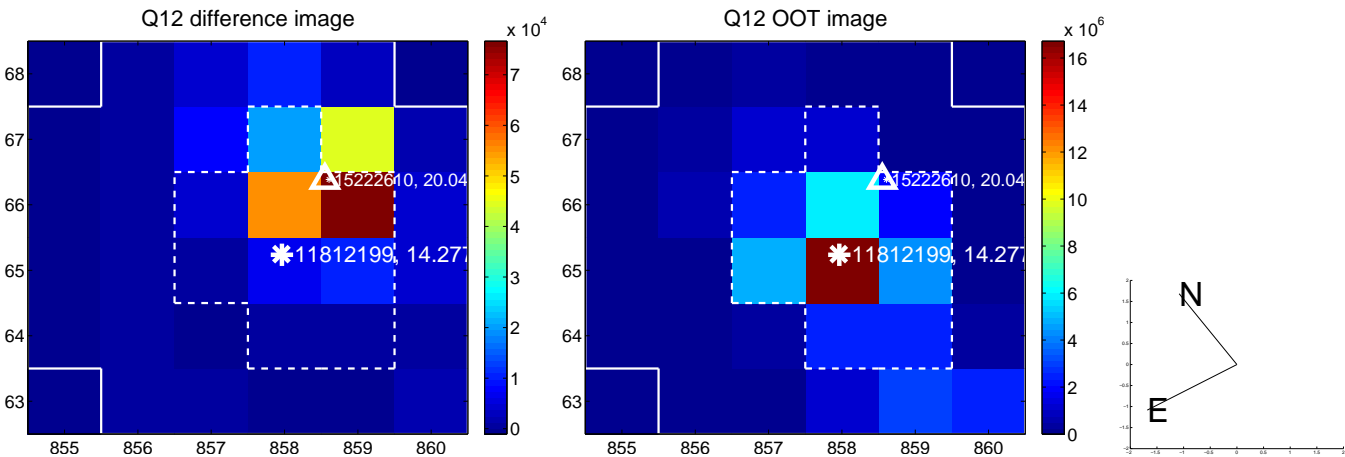
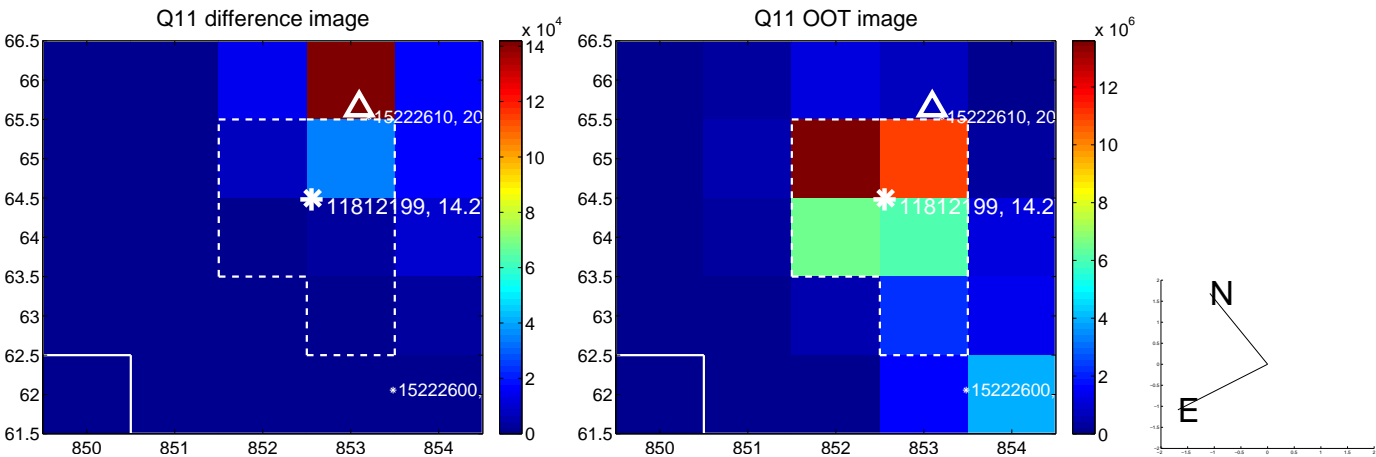
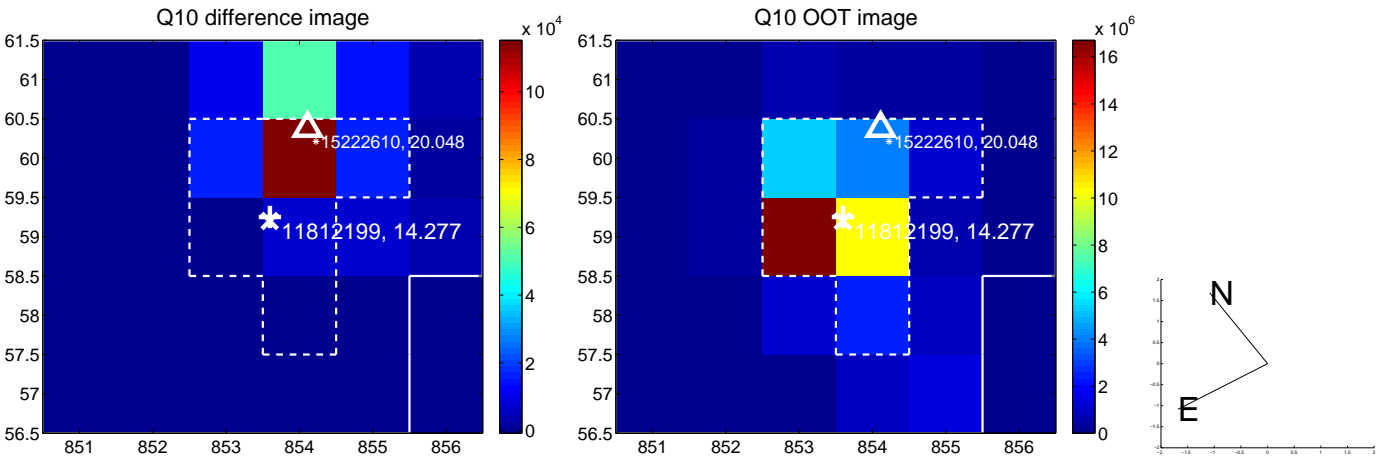
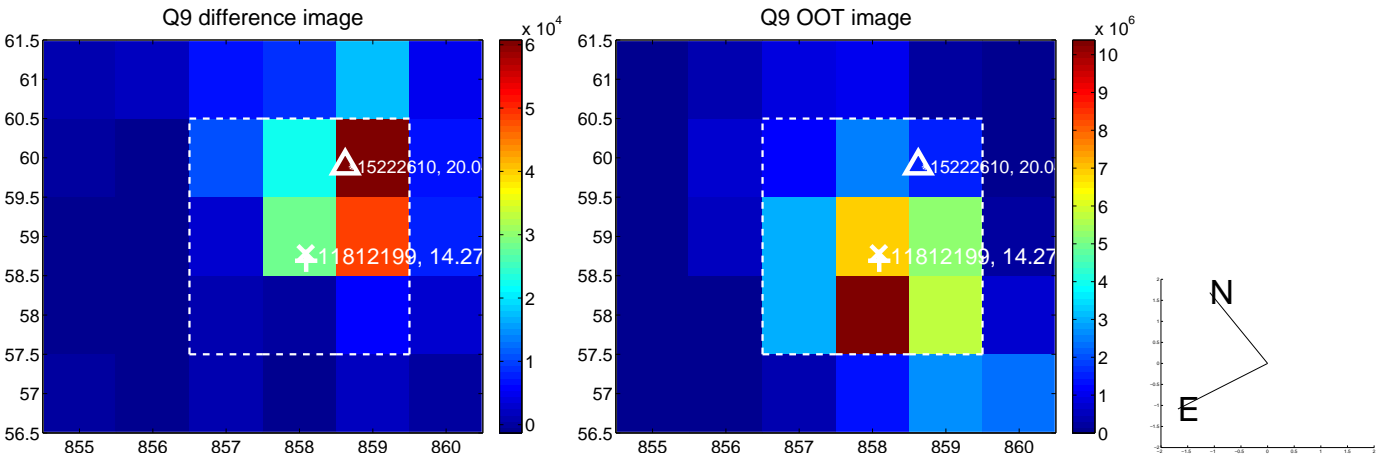
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



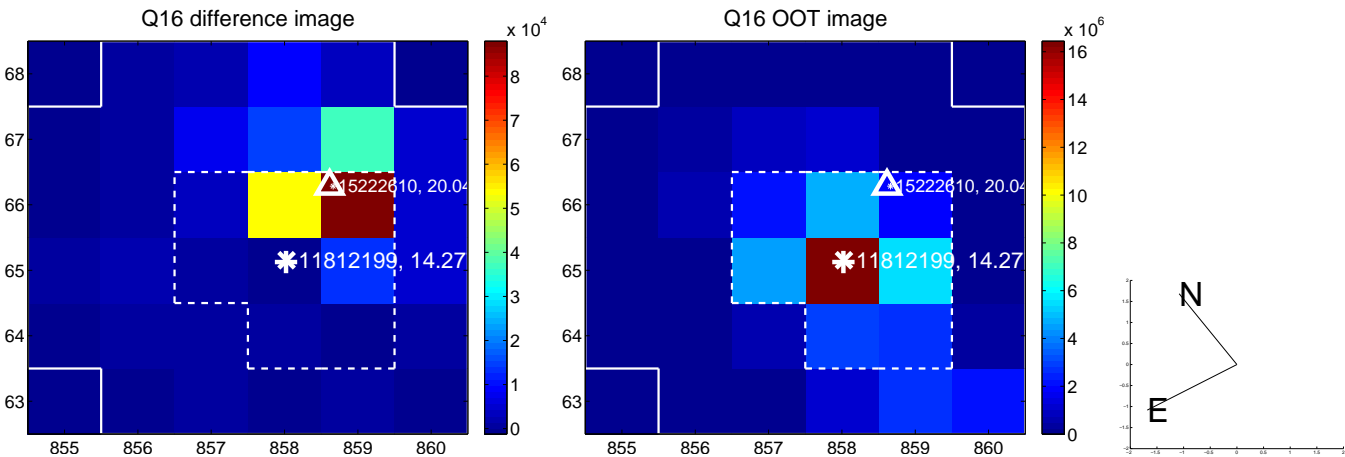
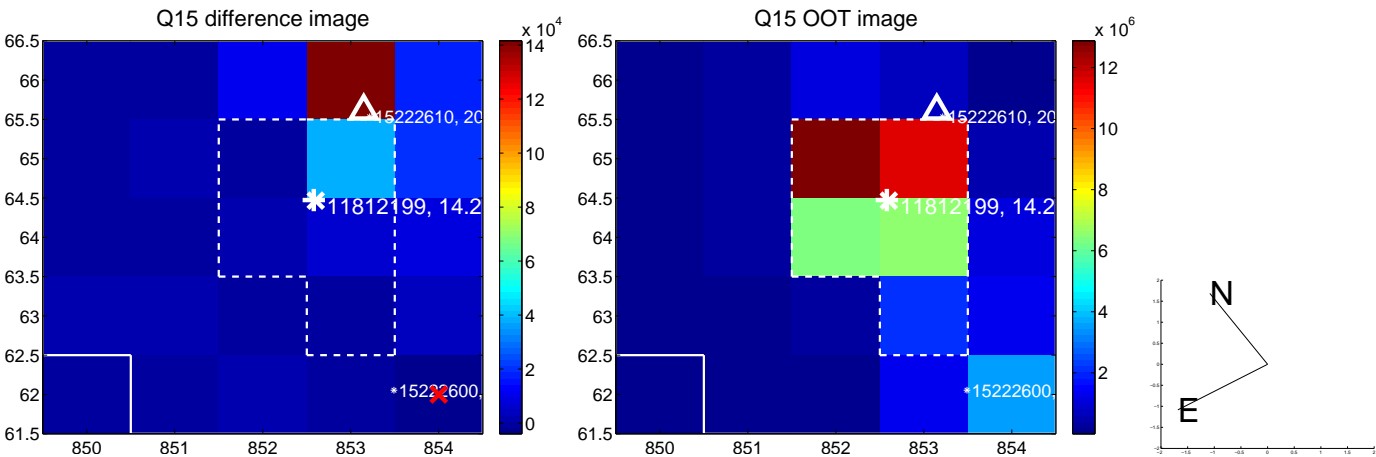
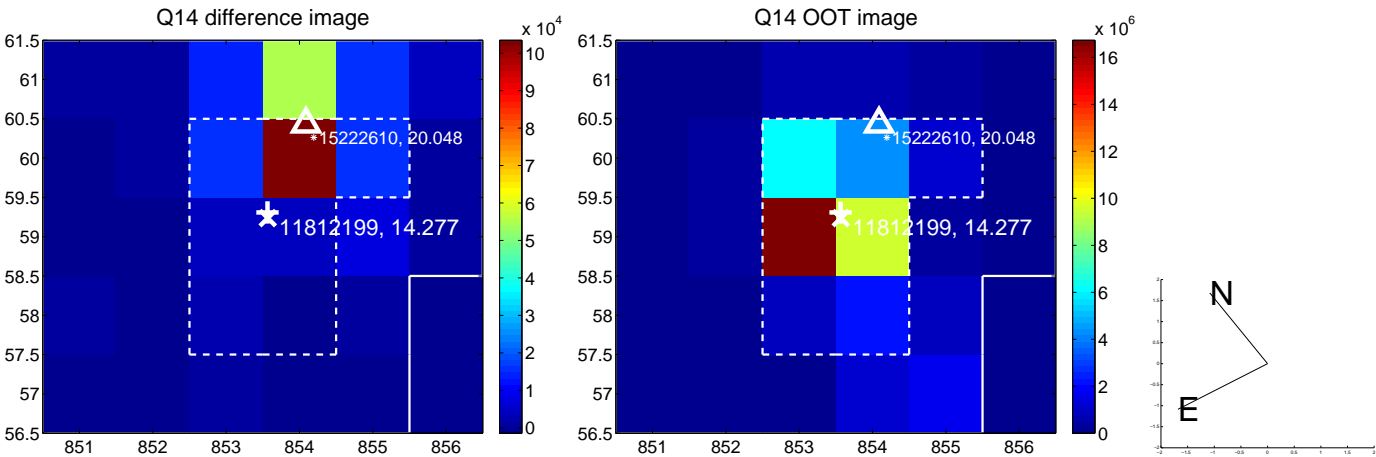
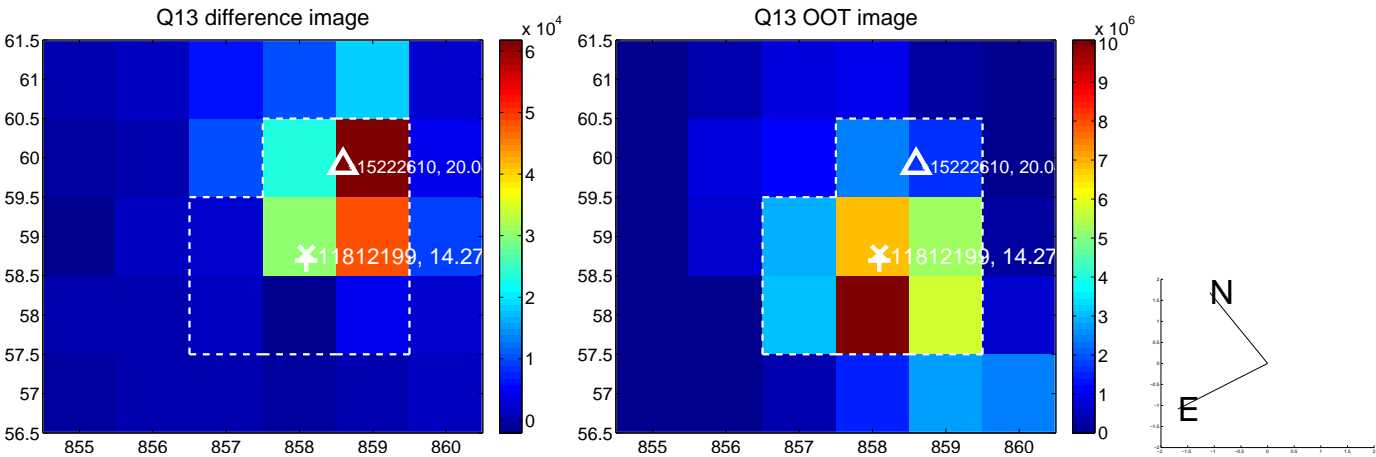
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



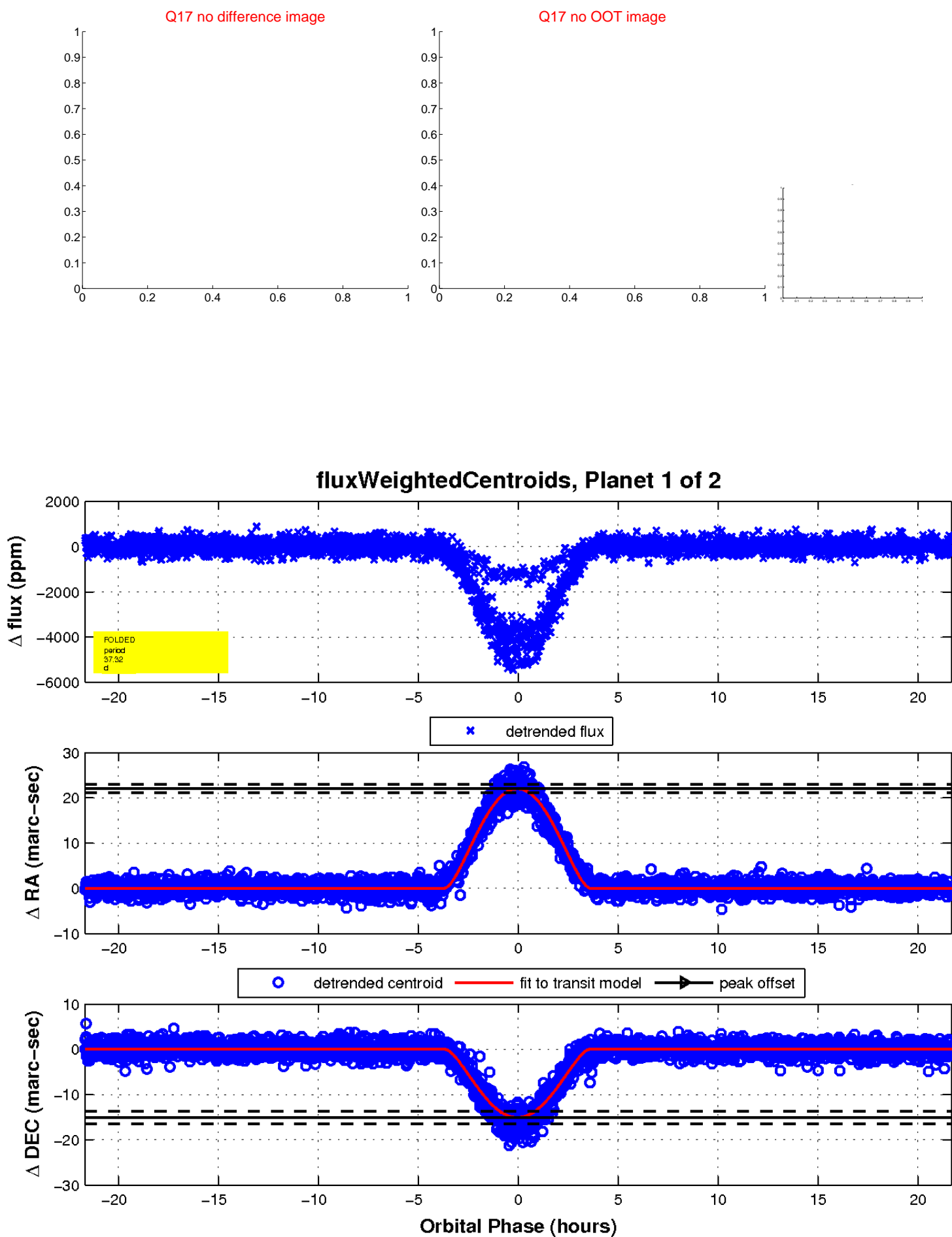
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

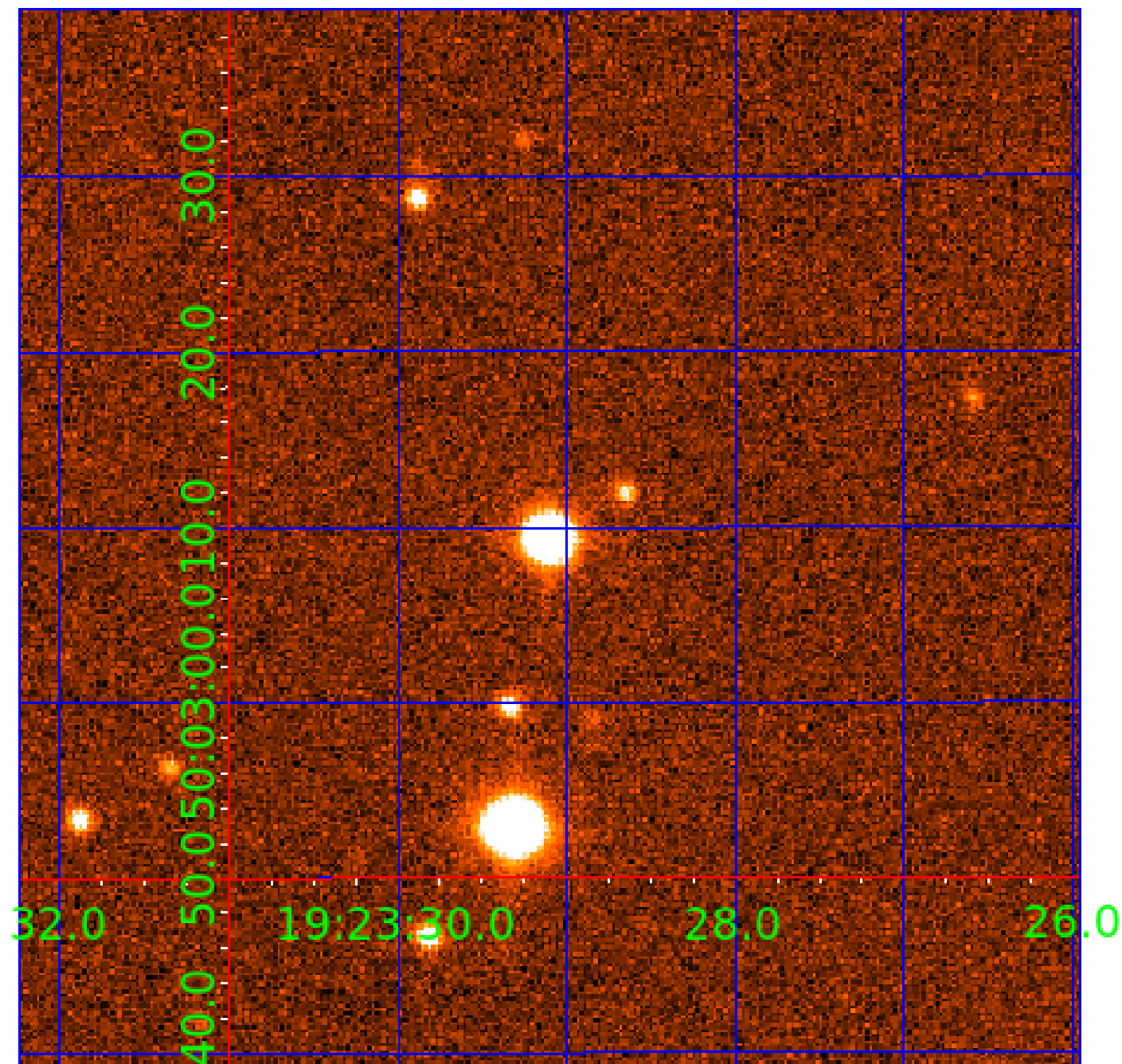


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011812199

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})
011812199-01	OBS	6090.01	37.320318	135.427053	4162.3	7.228	188.8	180.2	0.94	5910	11.20	19.80
011812199-02	OBS	No	37.320267	139.662246	3646.0	10.524	180.1	187.0	0.94	5910	10.31	19.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011812199-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_OFFSET
011812199-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET

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.

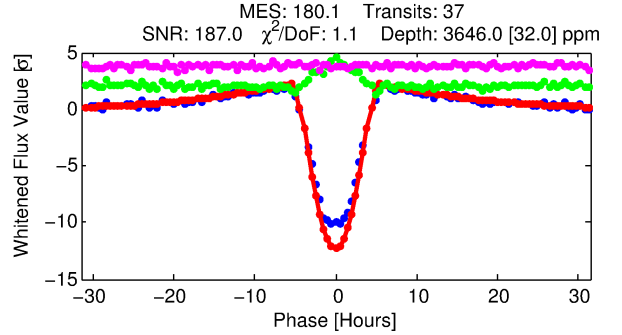
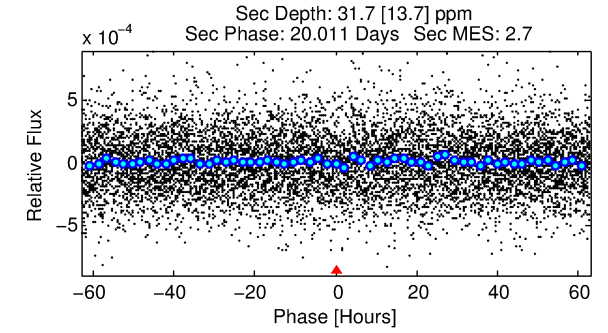
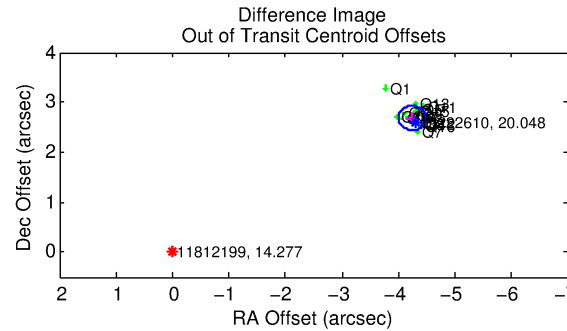
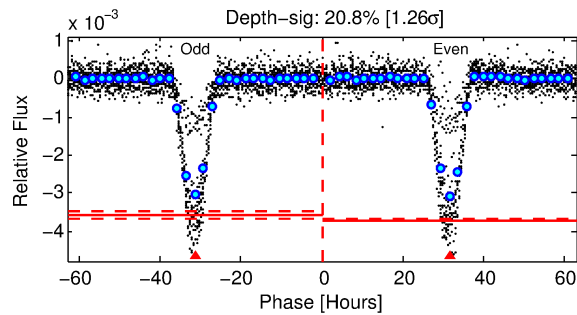
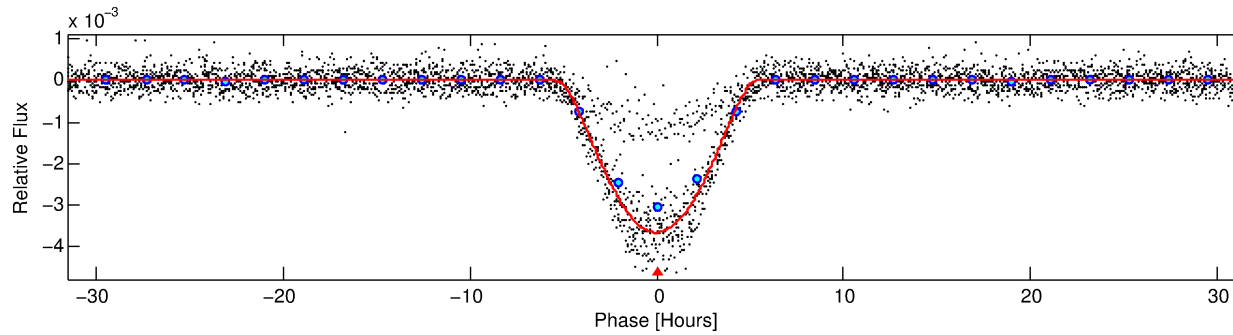
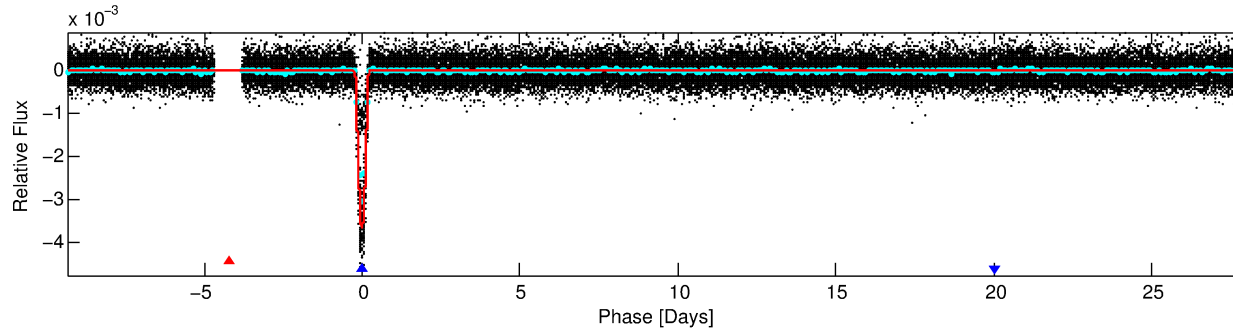
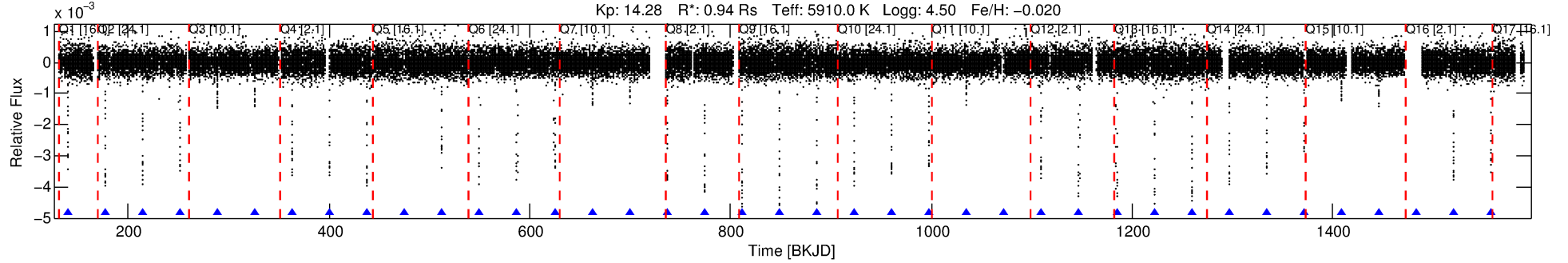
Ephemeris Match Information For 011812199-02

No Significant Match Found

DV One-Page Summary

KIC: 11812199 Candidate: 2 of 2 Period: 37.320 d
KOI: K06090 Corr: No Ephemeris Match

Kp: 14.28 R*: 0.94 Rs Teff: 5910.0 K Logg: 4.50 Fe/H: -0.020



DV Fit Results:

Period = 37.32027 [0.00005] d
Epoch = 139.6622 [0.0012] BKJD
Rp/R* = 0.1005 [0.0191]
a/R* = 12.68 [0.48]
b = 1.00 [0.03]
Seff = 19.80 [8.28]
Teq = 538 [56] K
Rp = 10.31 [3.80] Re
a = 0.2208 [0.0597] AU
Ag = 7.99 [5.60] [1.25σ]
Teff = 1398 [206] K [4.02σ]

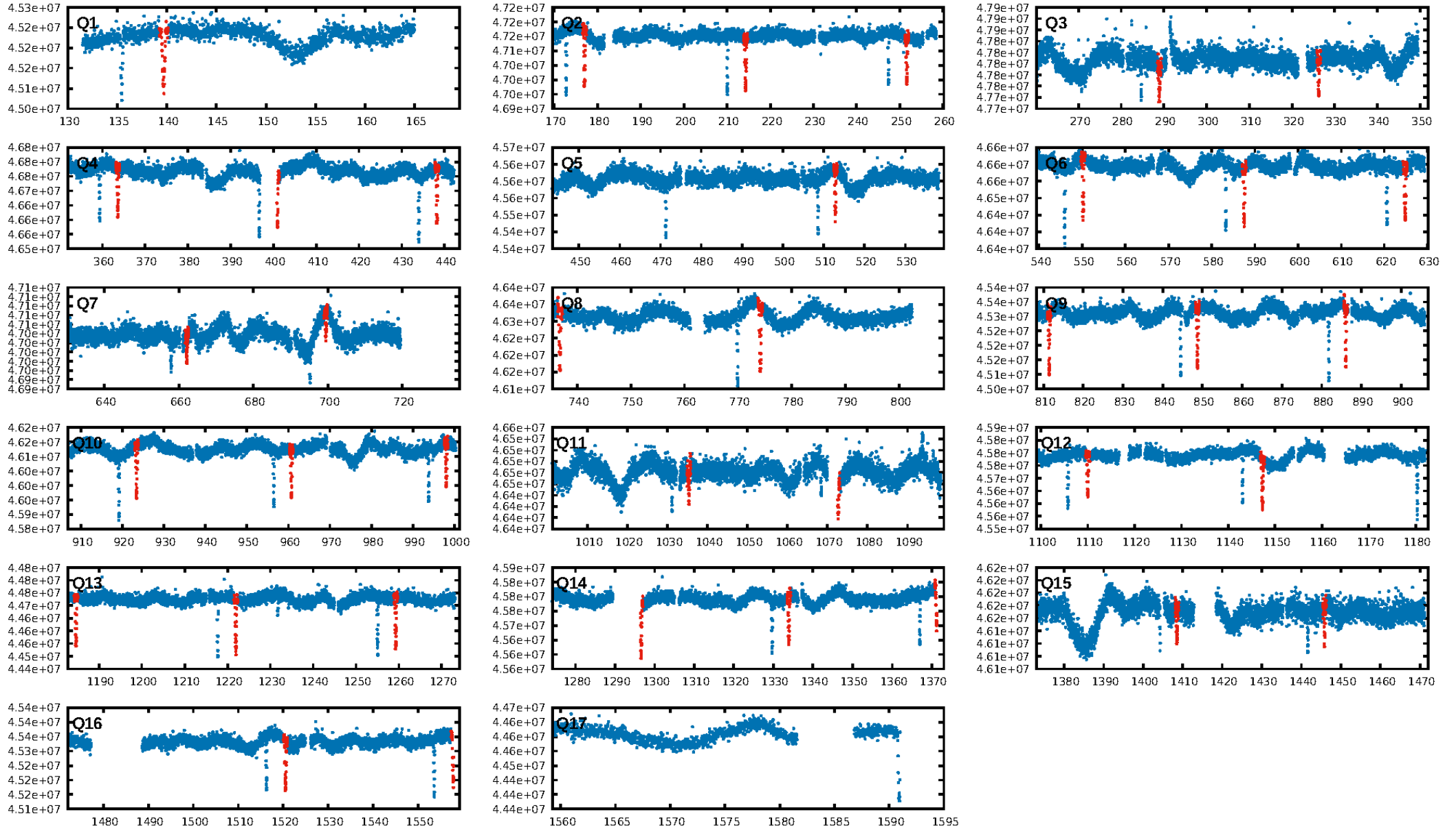
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 92.2%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [36/36]
GhostDiagnostic-chr: 1.135
Centroid-sig: 0.0%
Centroid-so: 5.742 arcsec [104.46σ]
OotOffset-rm: 5.015 arcsec [62.38σ]
KicOffset-rm: 5.037 arcsec [66.77σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

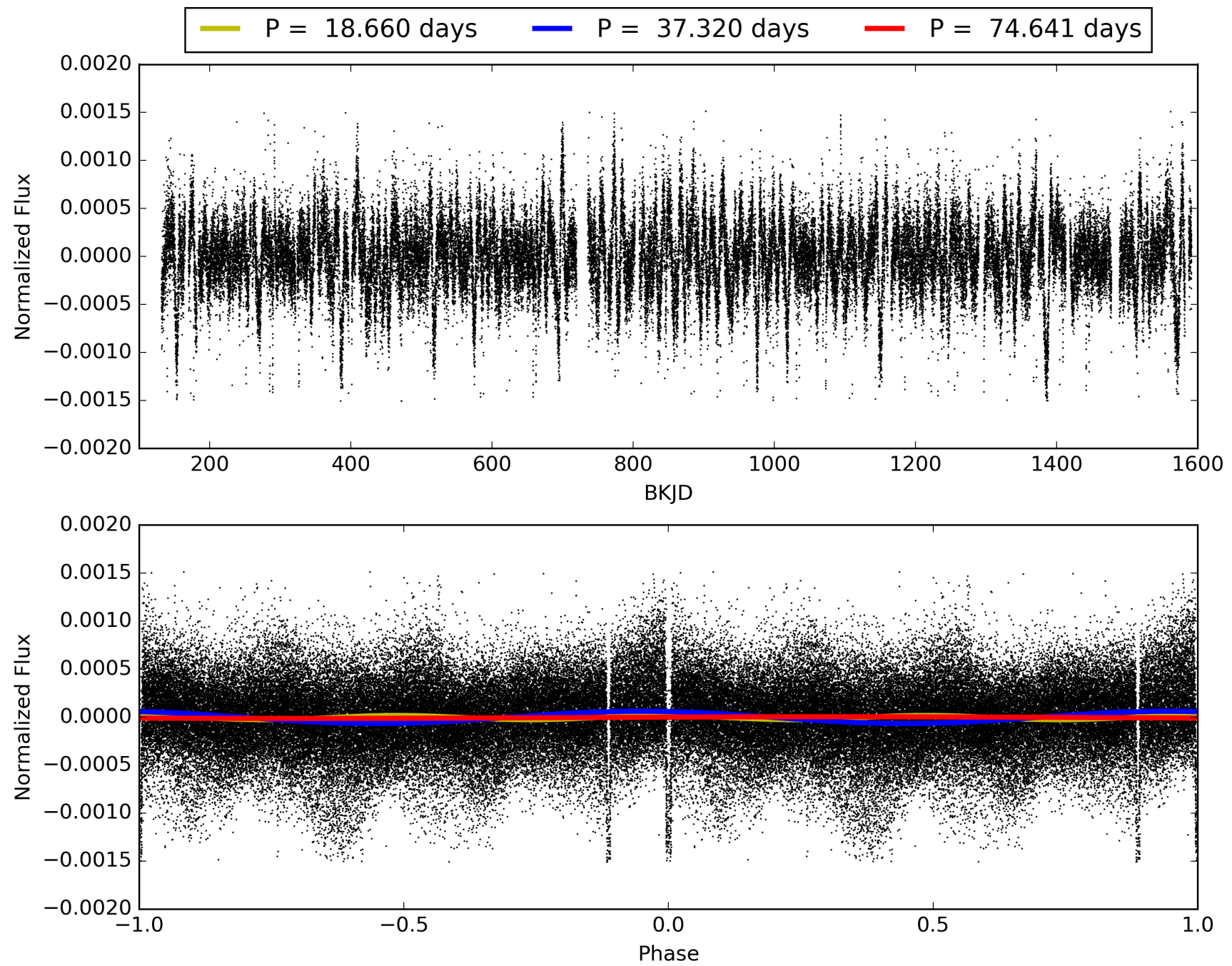
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011812199-02, PDC Light Curves

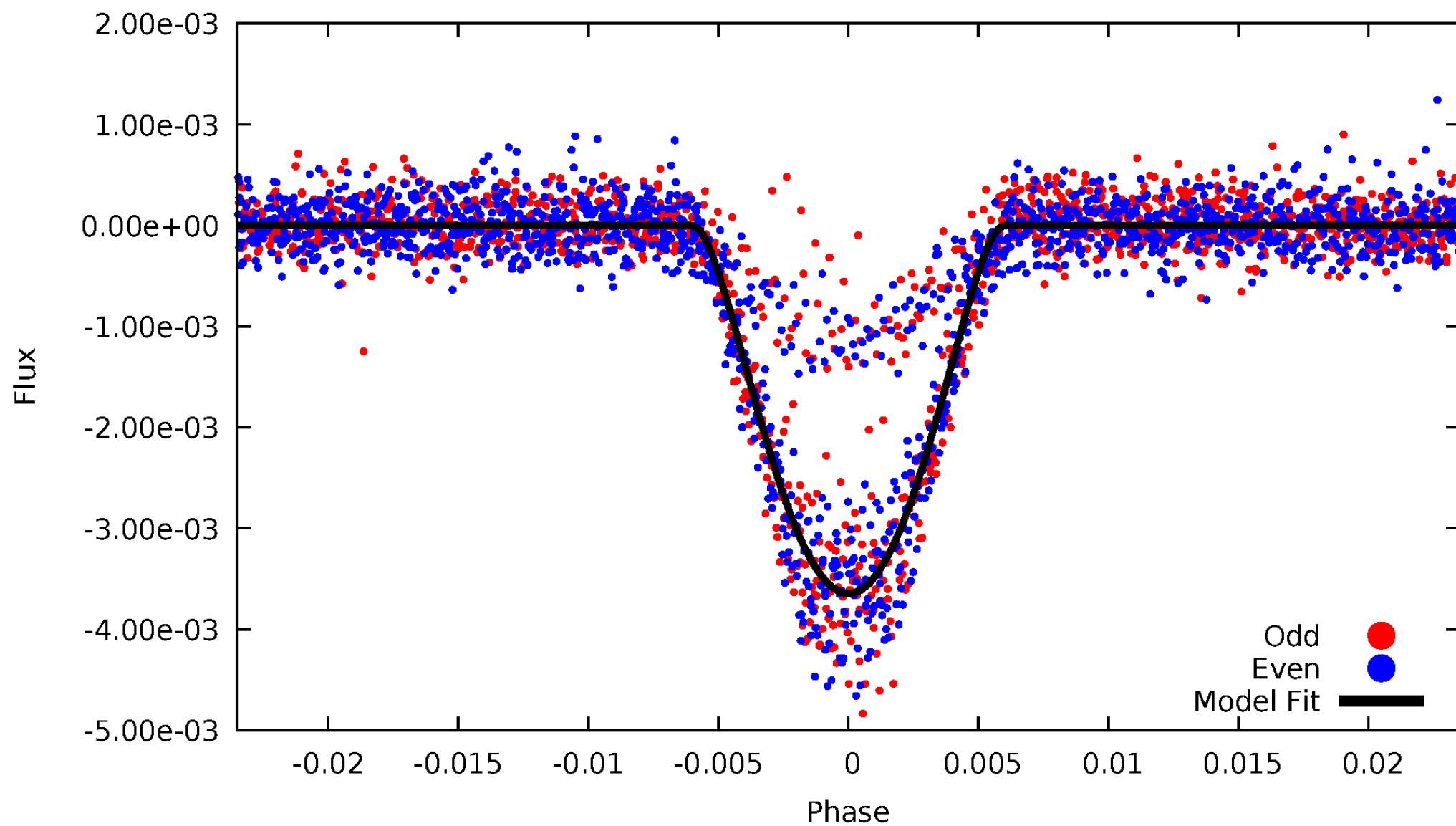


TCE 011812199-02



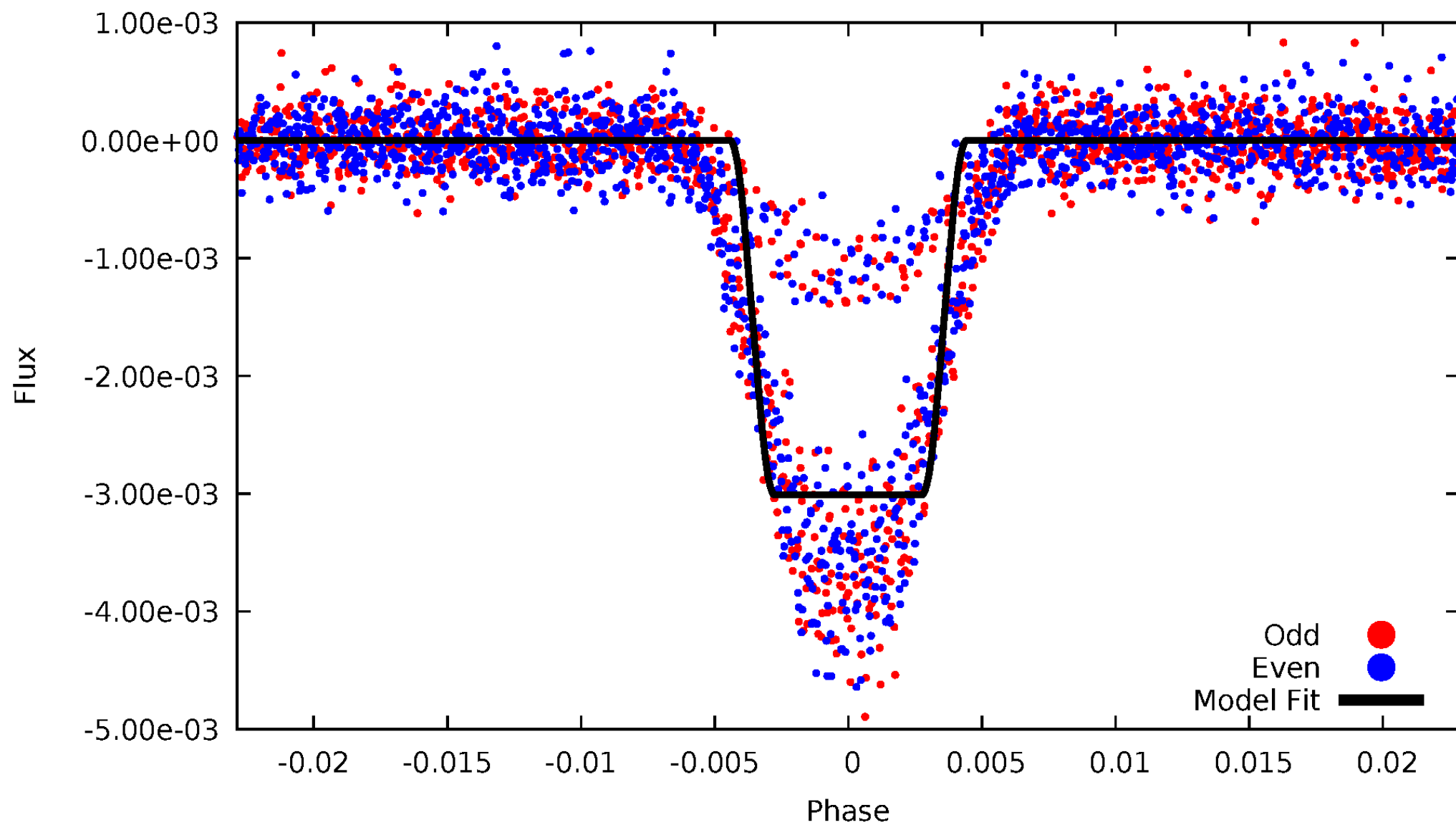
DV Odd/Even

TCE 011812199-02



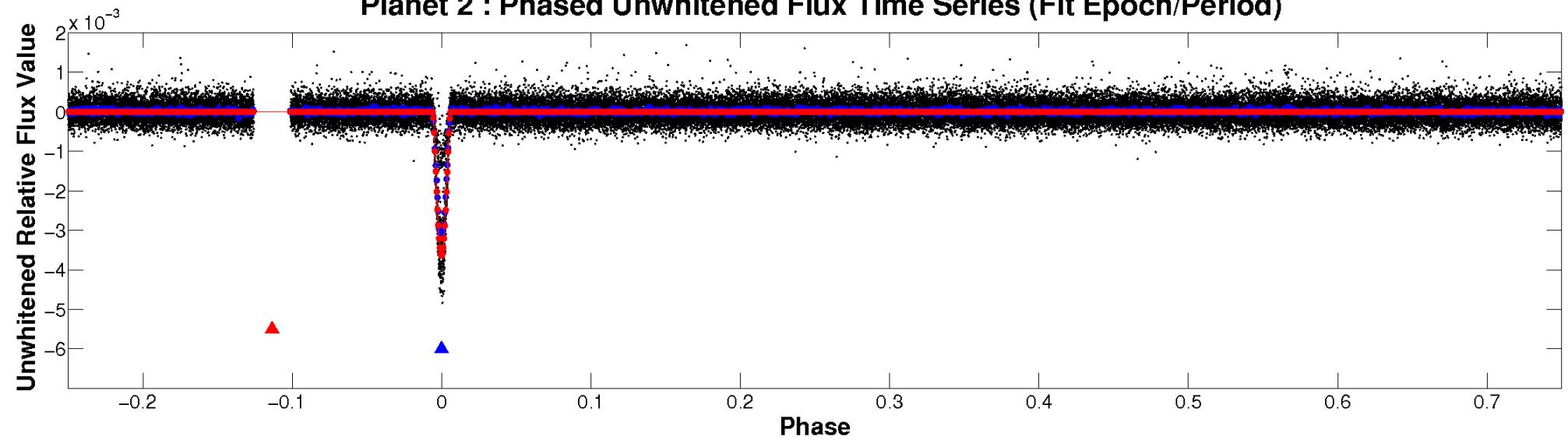
ALT Odd/Even

TCE 011812199-02

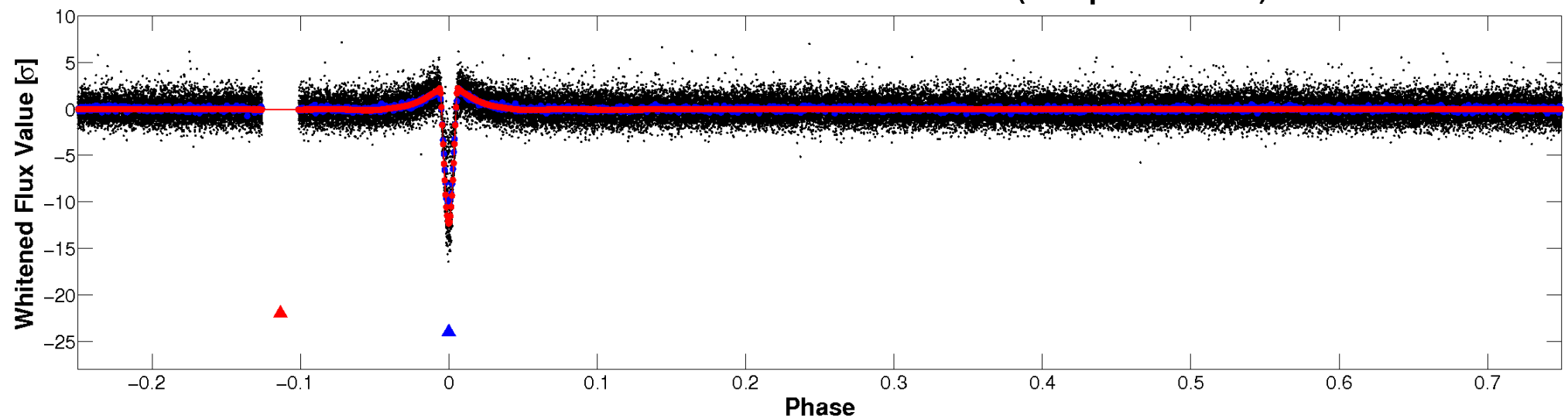


Non-Whitened Vs. Whitened Light Curve

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

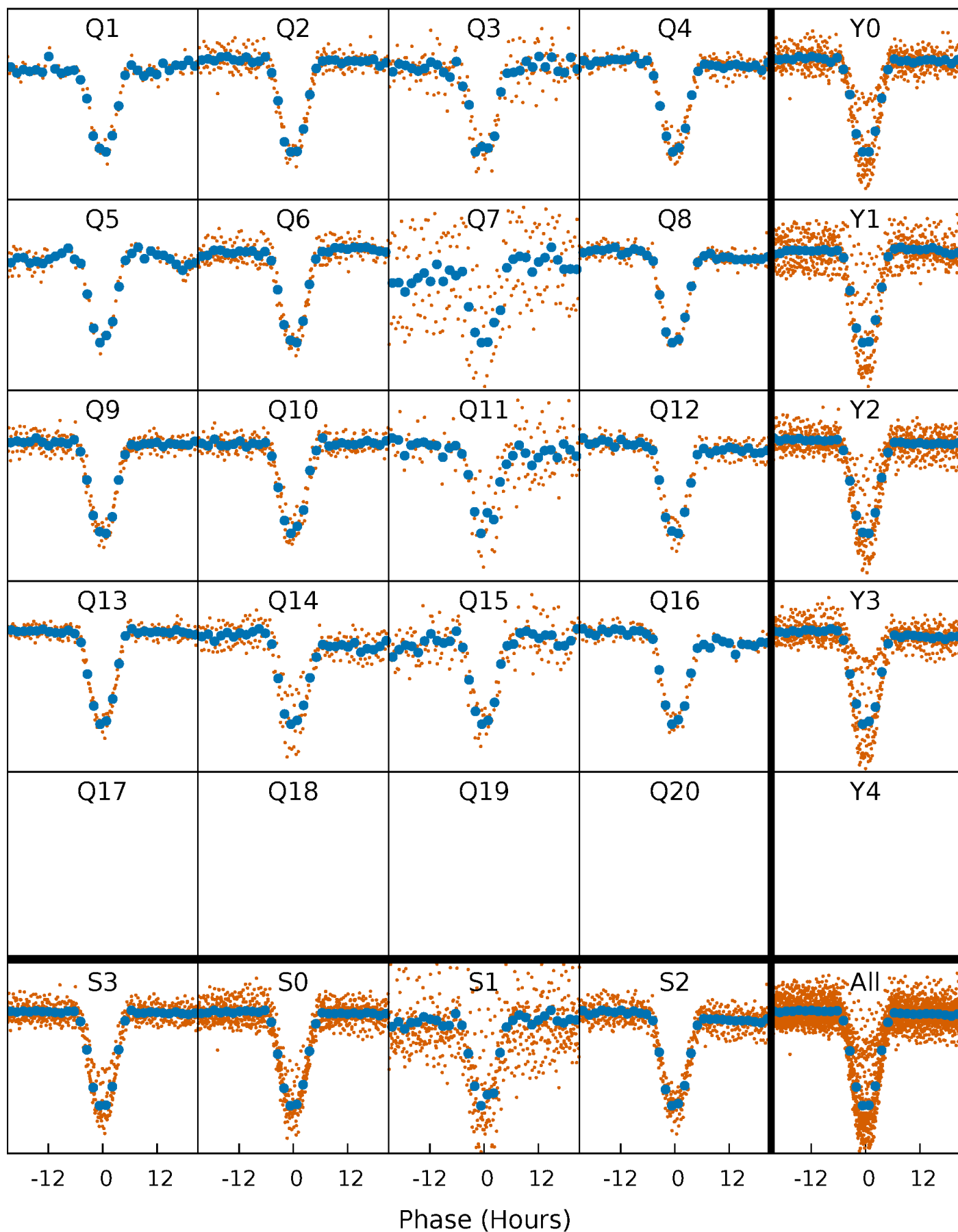


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



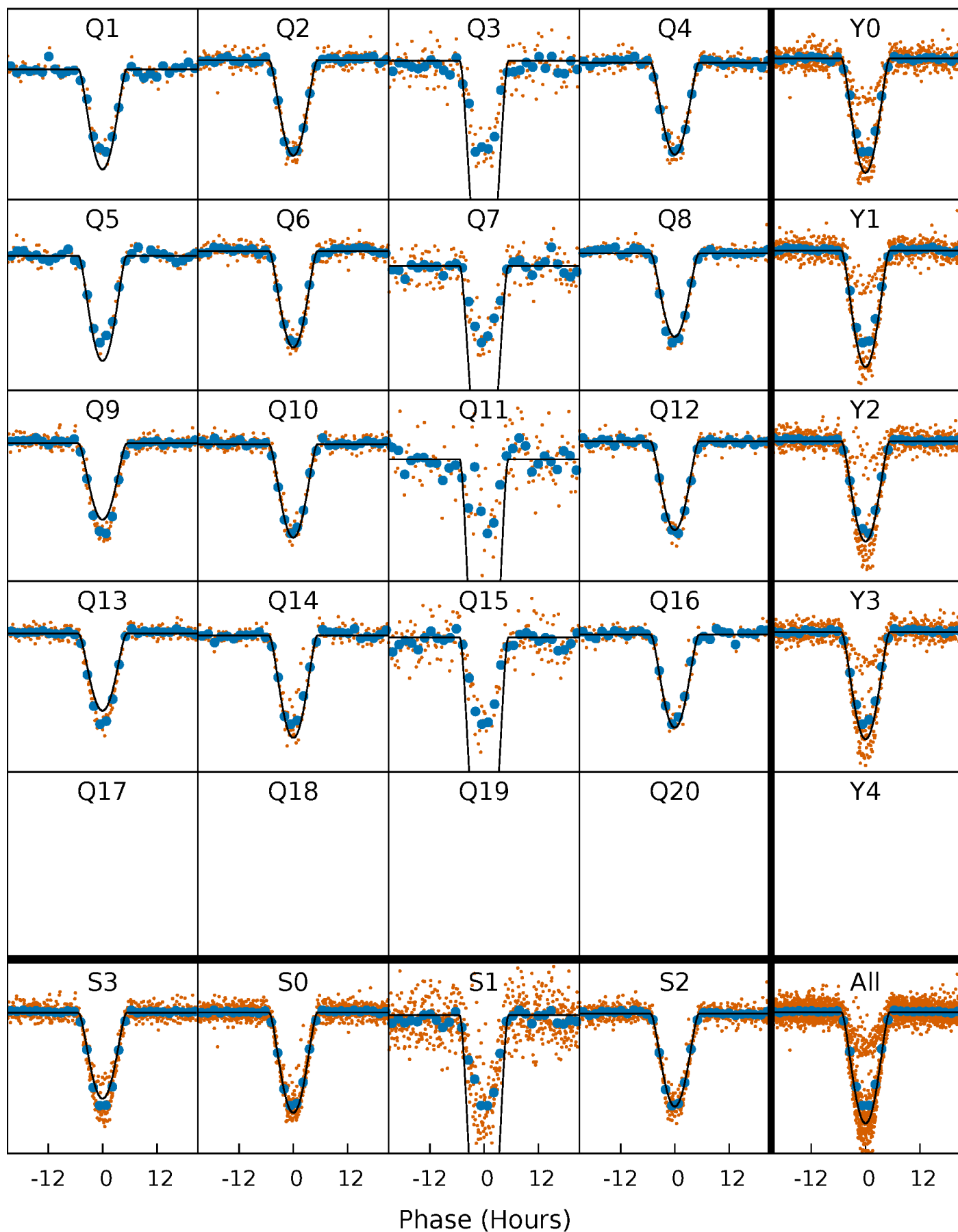
PDC Quarter-Phased Transit Curves

TCE 011812199-02 P= 37.320267 Days $T_0=139.662246$ (BKJD)



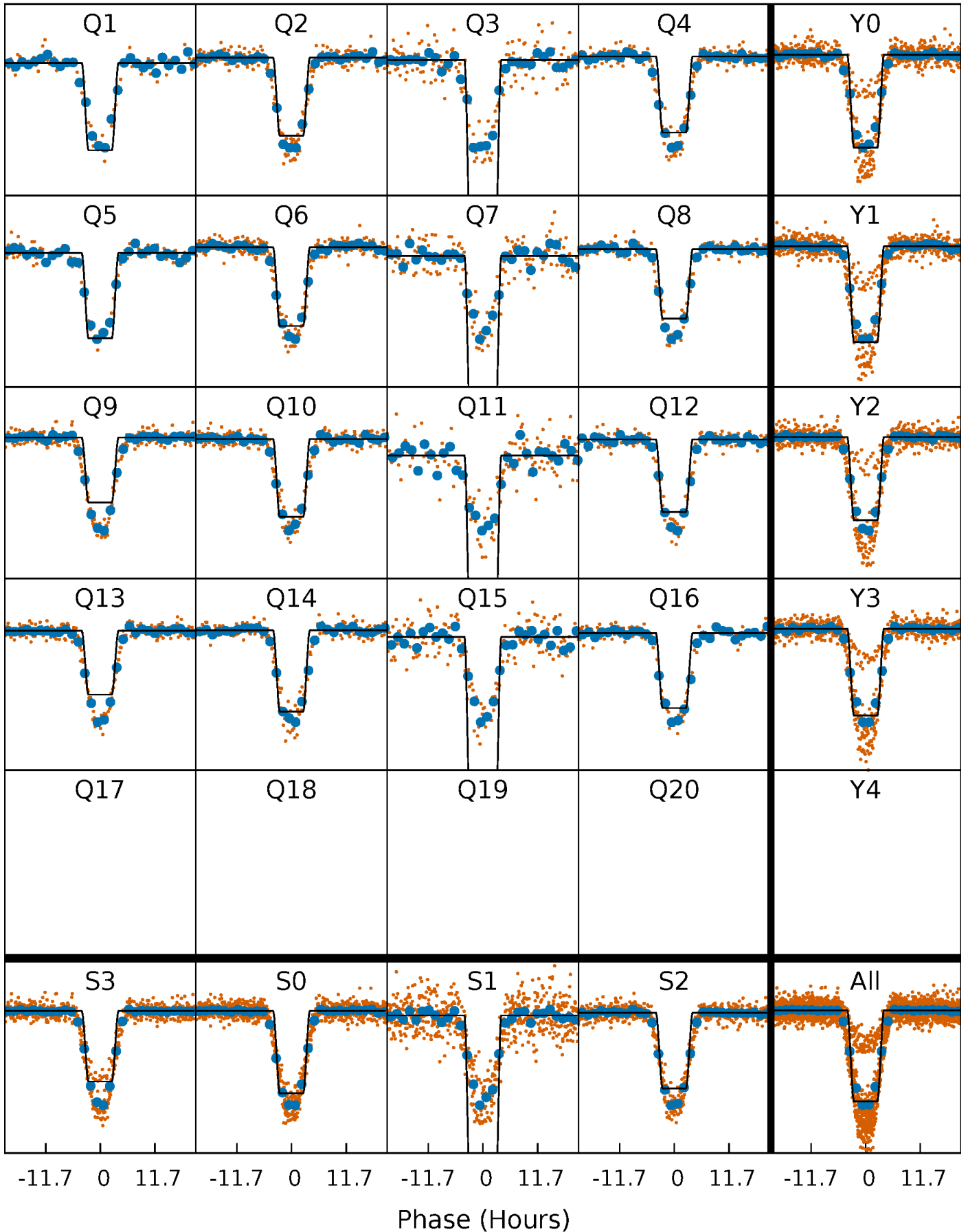
DV Quarter-Phased Transit Curves

TCE 011812199-02 P= 37.320267 Days $T_0=139.662246$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

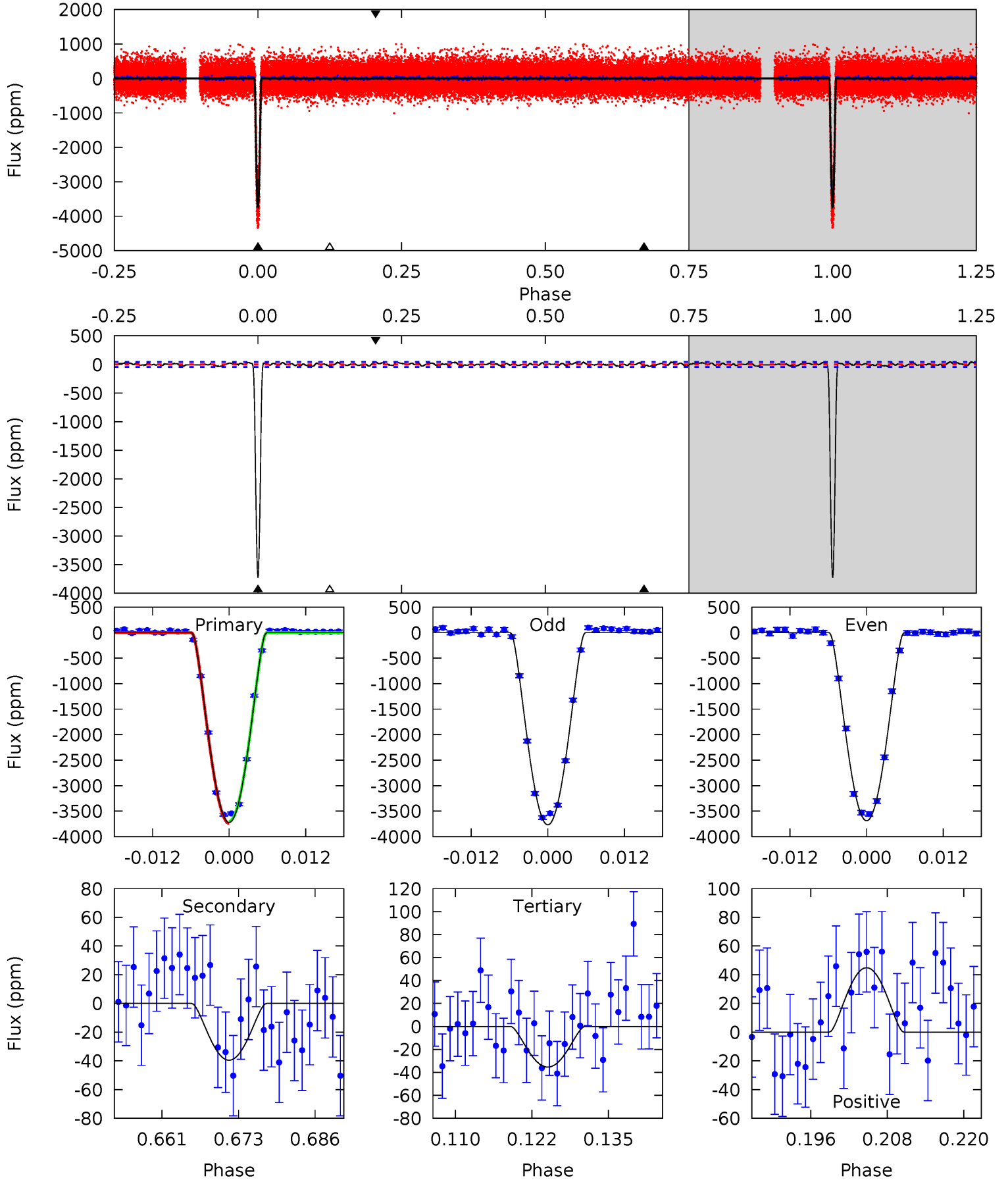
TCE 011812199-02 P= 37.320039 Days $T_0=139.666125$ (BKJD)



DV Model-Shift Uniqueness Test

011812199-02, P = 37.320267 Days, E = 102.341979 Days

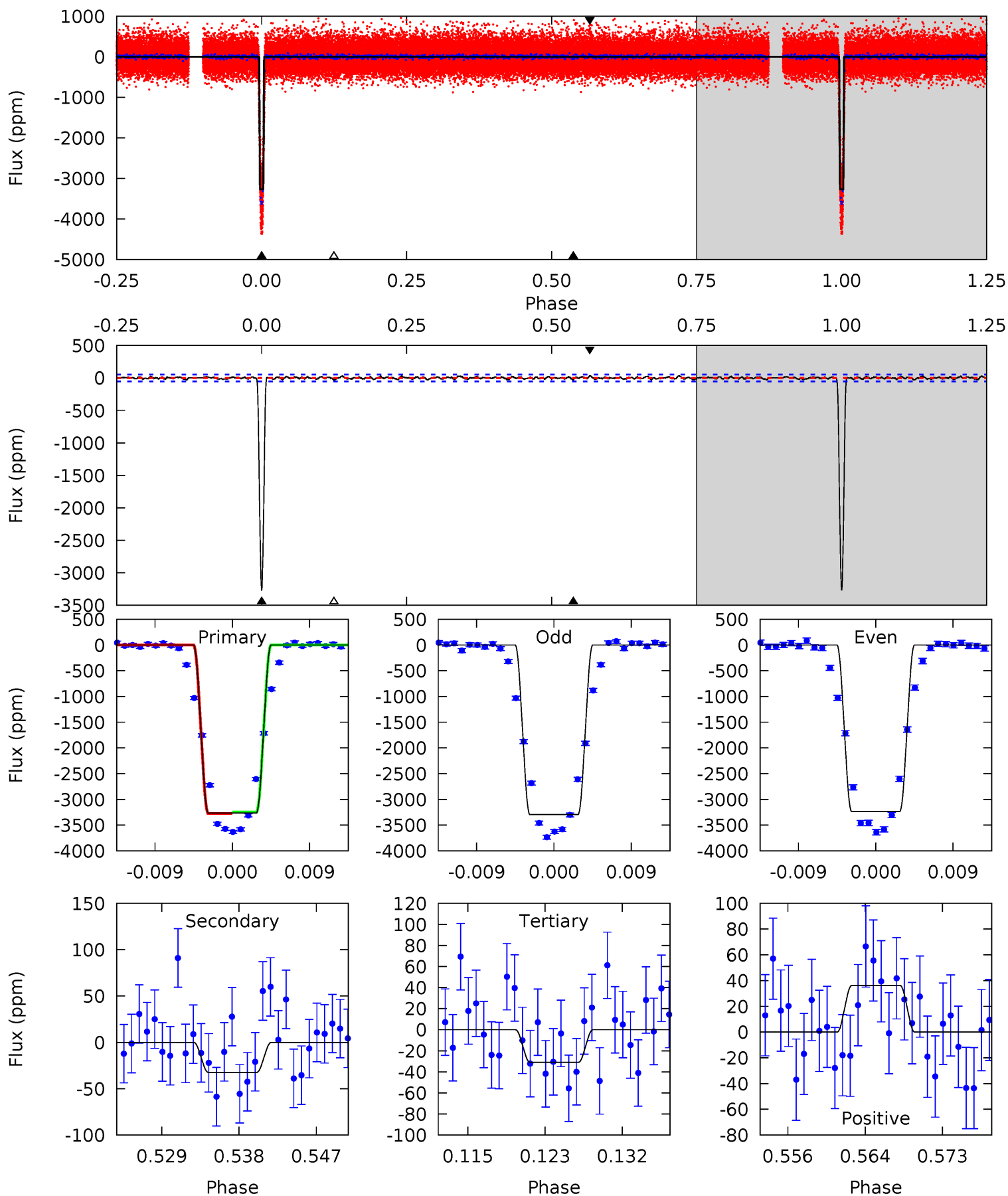
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
413.5	4.40	3.94	4.99	4.99	2.51	1.76	409.6	408.5	0.46	-0.59	4.42	0.87	0.01	2.14



Alt Model-Shift Uniqueness Test

011812199-02, P = 37.320039 Days, E = 102.346086 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
308.6	3.07	2.94	3.42	5.05	2.62	1.10	305.6	305.1	0.14	-0.35	2.90	0.89	0.01	1.25



Stellar Parameters For KIC 011812199

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5910^{+164}_{-184}	$4.505^{+0.052}_{-0.221}$	$-0.020^{+0.250}_{-0.300}$	$0.940^{+0.297}_{-0.099}$	$1.032^{+0.127}_{-0.140}$	$1.750^{+0.378}_{-0.945}$
	+3%/-3%	+1%/-5%	+1250%/-1500%	+32%/-11%	+12%/-14%	+22%/-54%
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 011812199-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-40 ± 9	$10.65^{+2.75}_{-2.29}$	767^{+56}_{-34}	2368^{+152}_{-126}	$8.824^{+6.311}_{-3.372}$
Alt.	-32 ± 11	$5.96^{+2.22}_{-2.19}$	769^{+54}_{-36}	2673^{+348}_{-241}	23^{+35}_{-13}

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 $A_{obs} \gg 1.0$

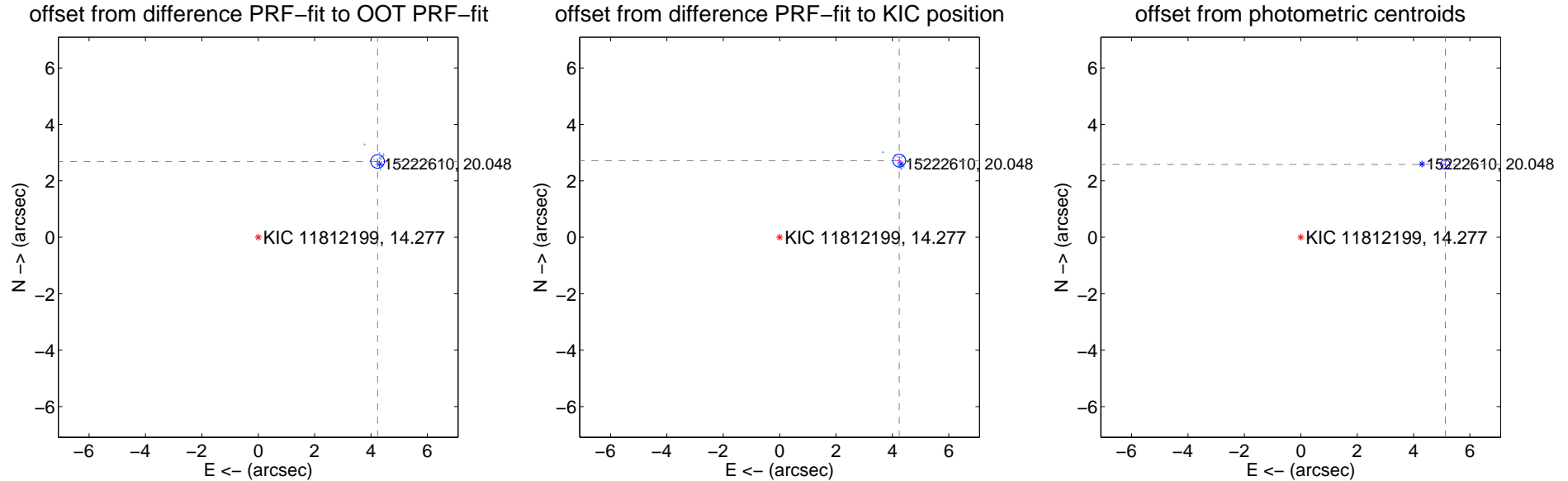
DV Centroid Data

Supplemental centroid analysis for 011812199-02. Kepler magnitude: 14.28. Transit SNR 186.96

There are 16 quarters with good PRF difference image offsets

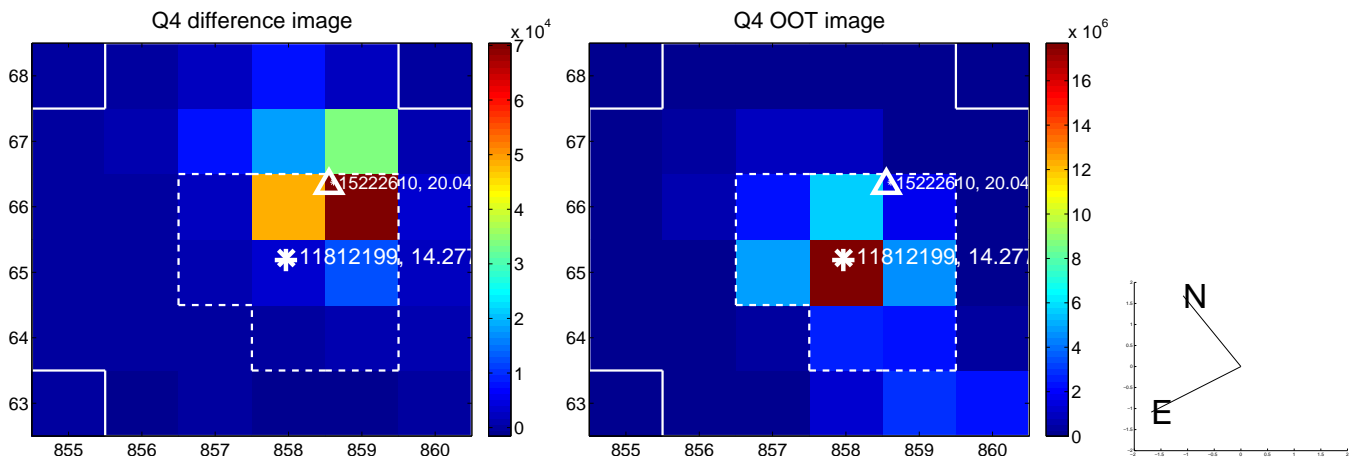
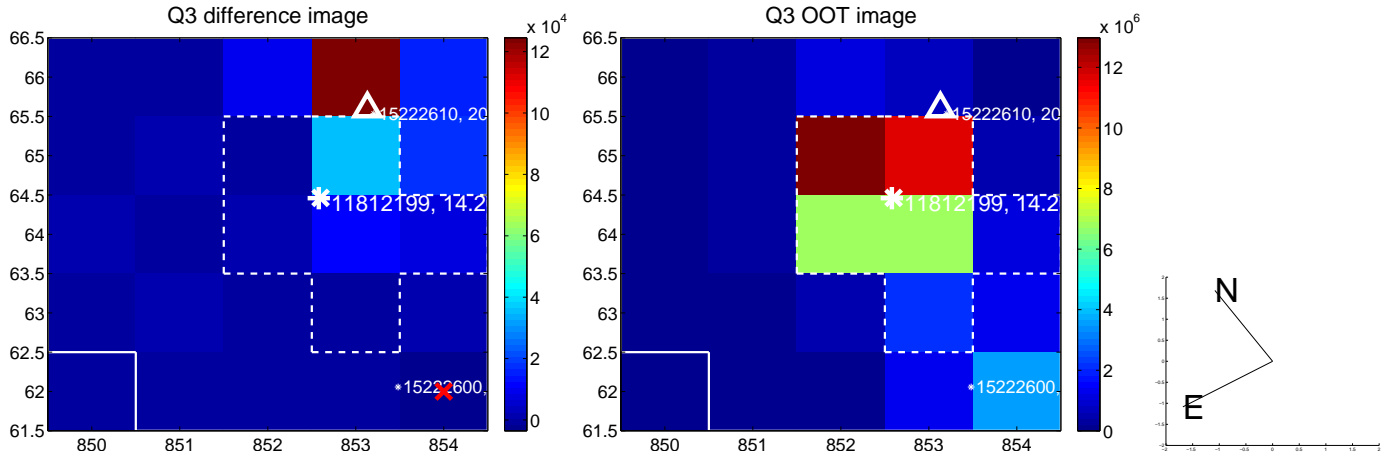
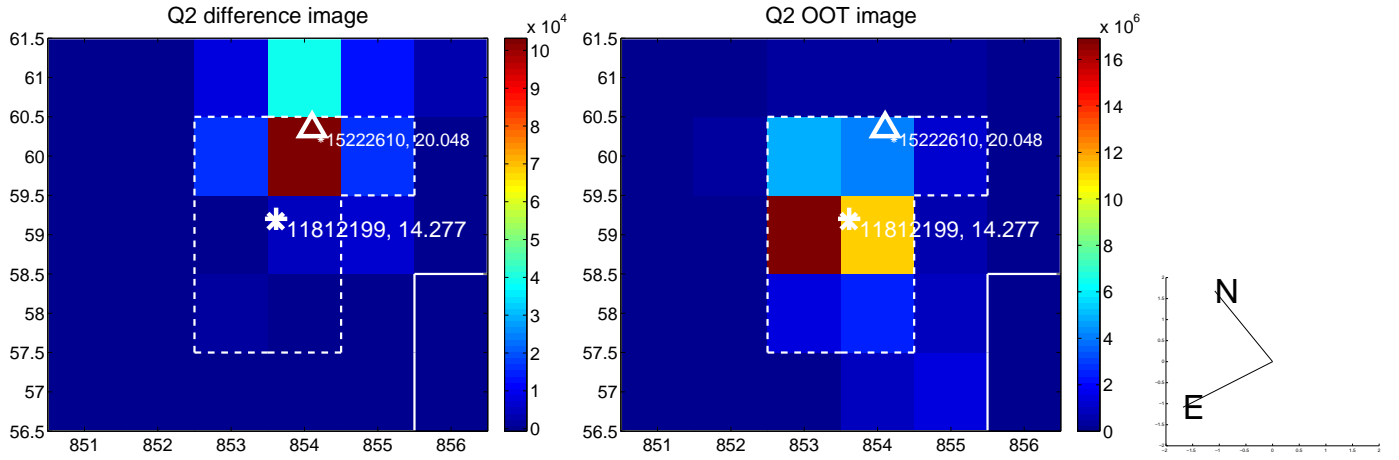
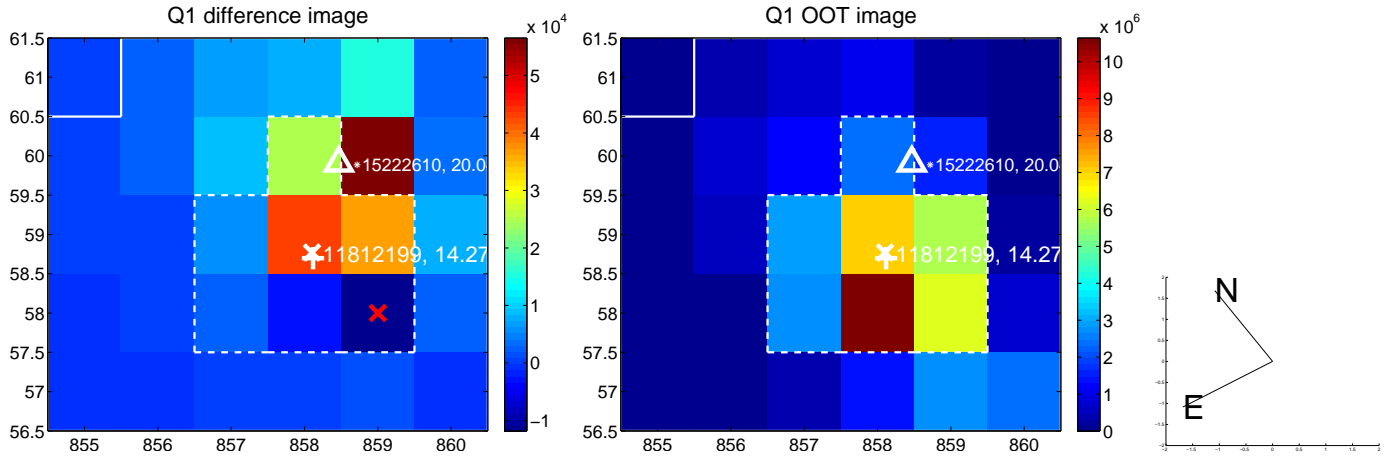
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.015 ± 0.080	62.38	-4.234 ± 0.081	2.687 ± 0.078
PRF-fit source offset from KIC position	5.037 ± 0.075	66.77	-4.241 ± 0.072	2.717 ± 0.084
photometric centroid source offset	5.74 ± 0.05	104.46	-5.13 ± 0.05	2.58 ± 0.06

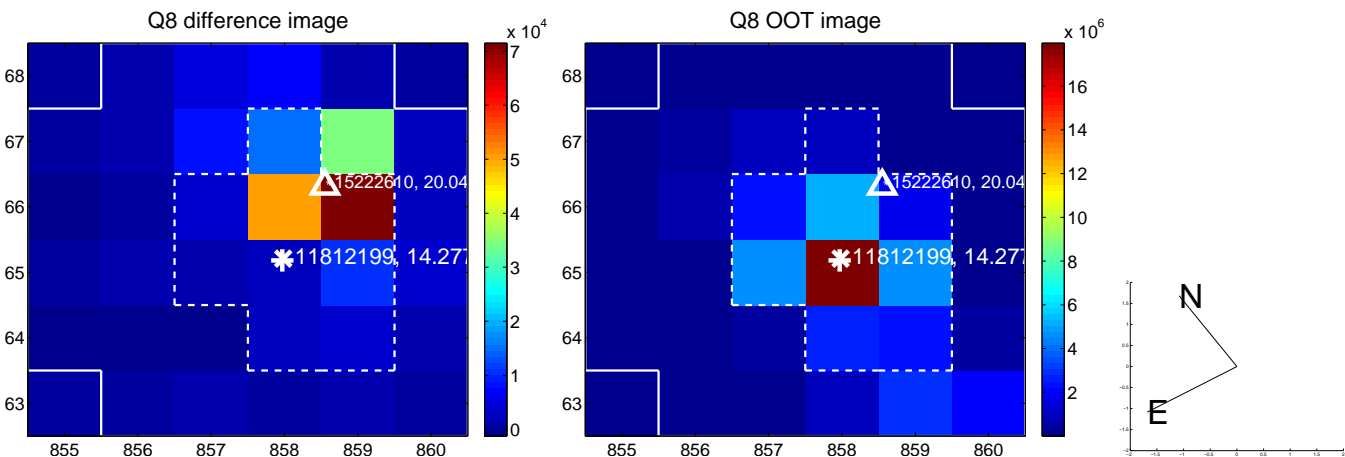
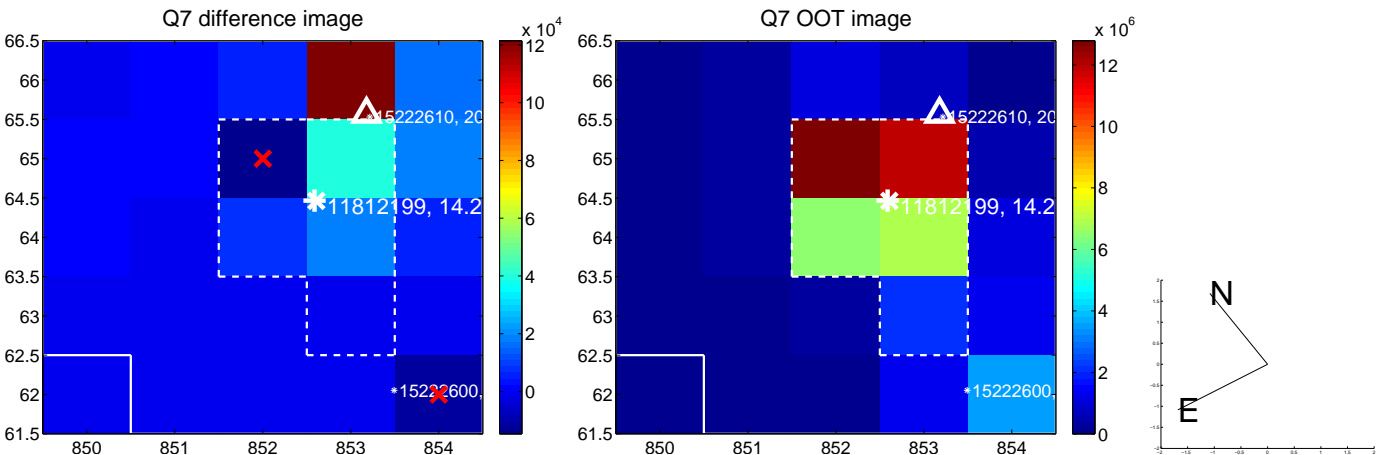
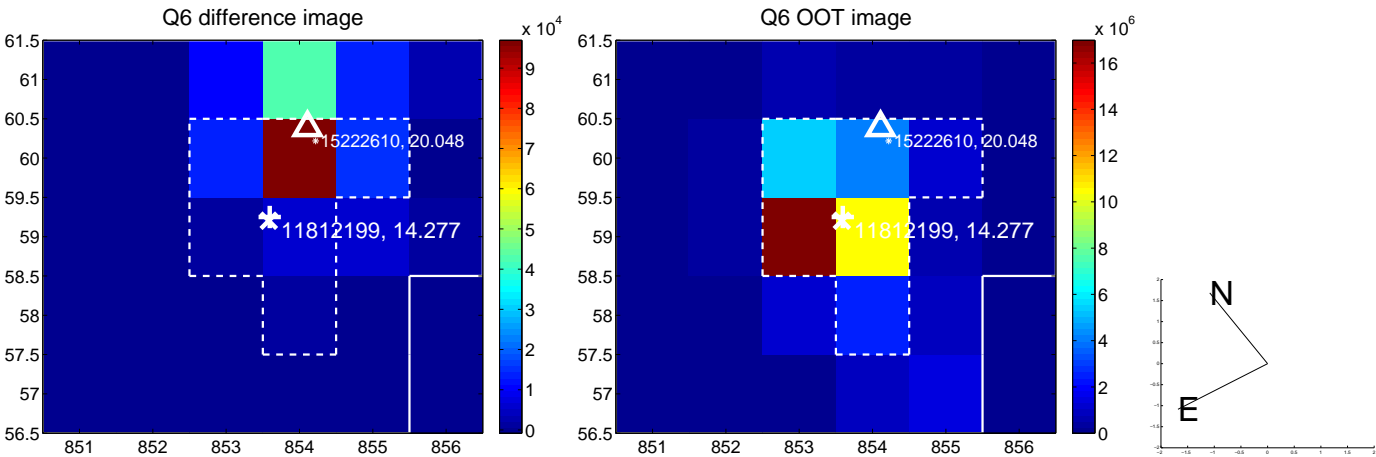
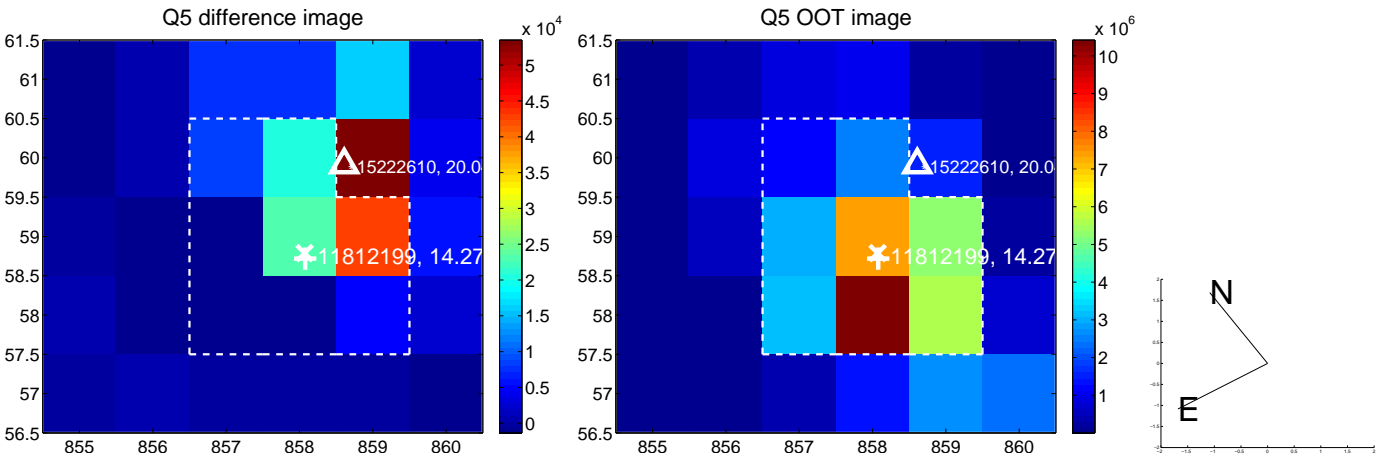


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

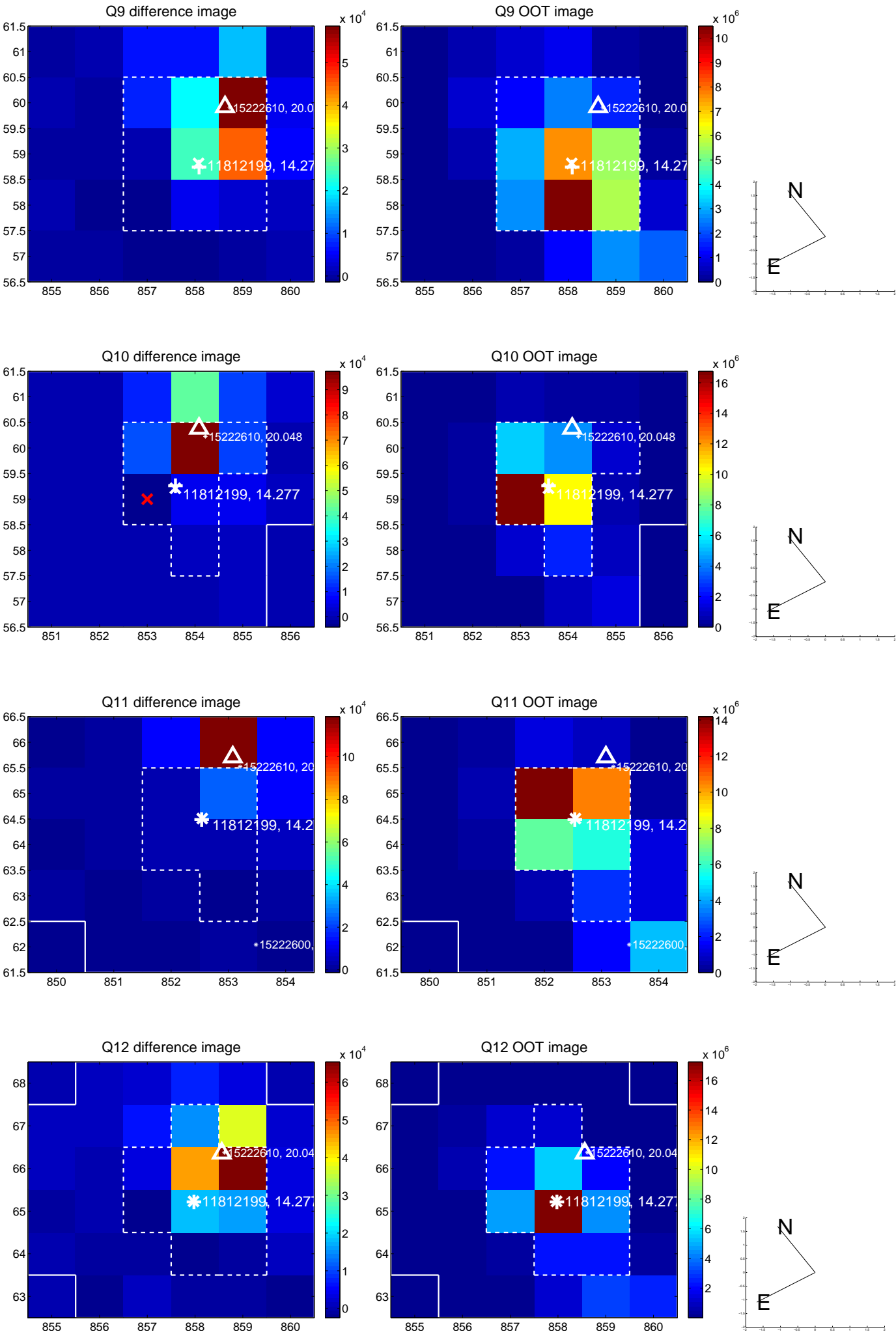
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



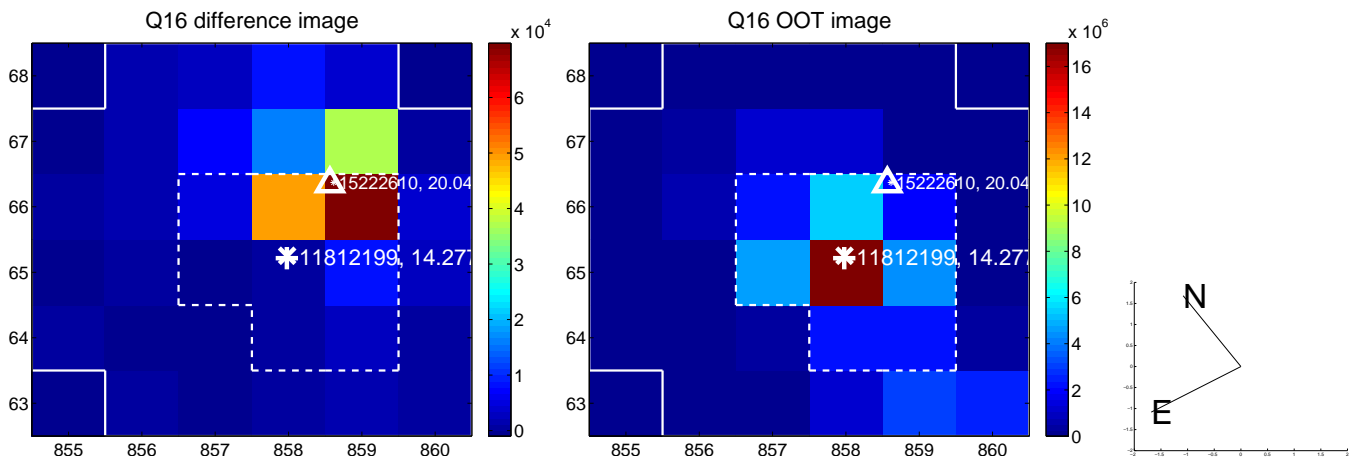
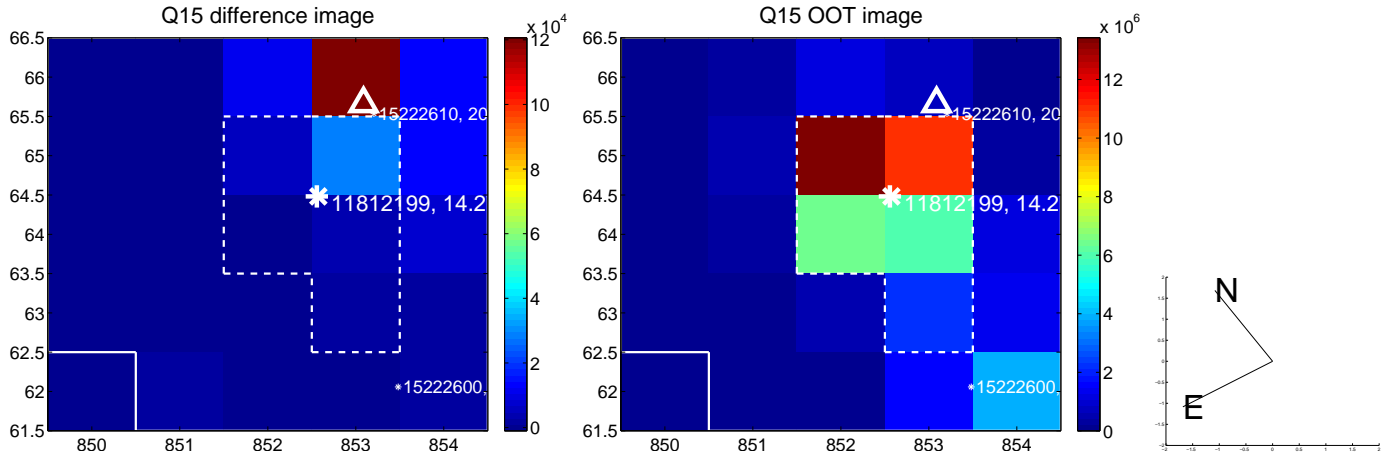
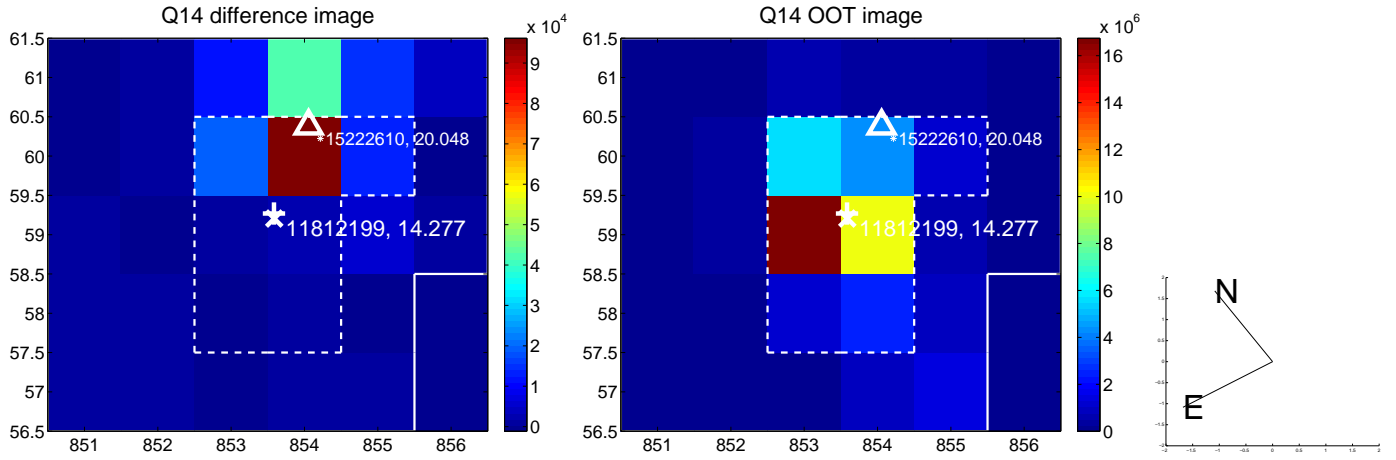
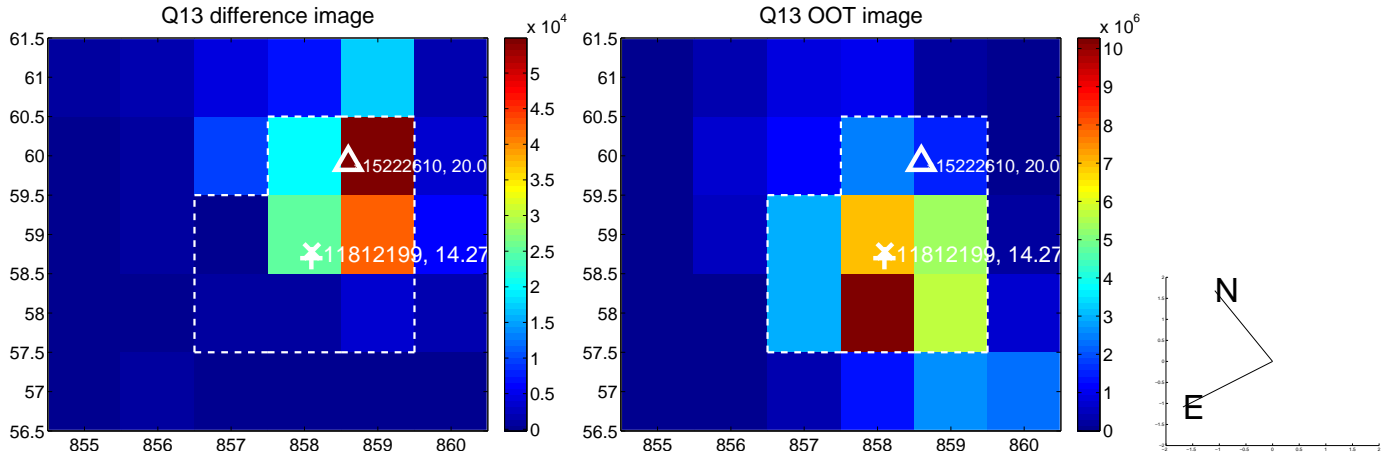
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



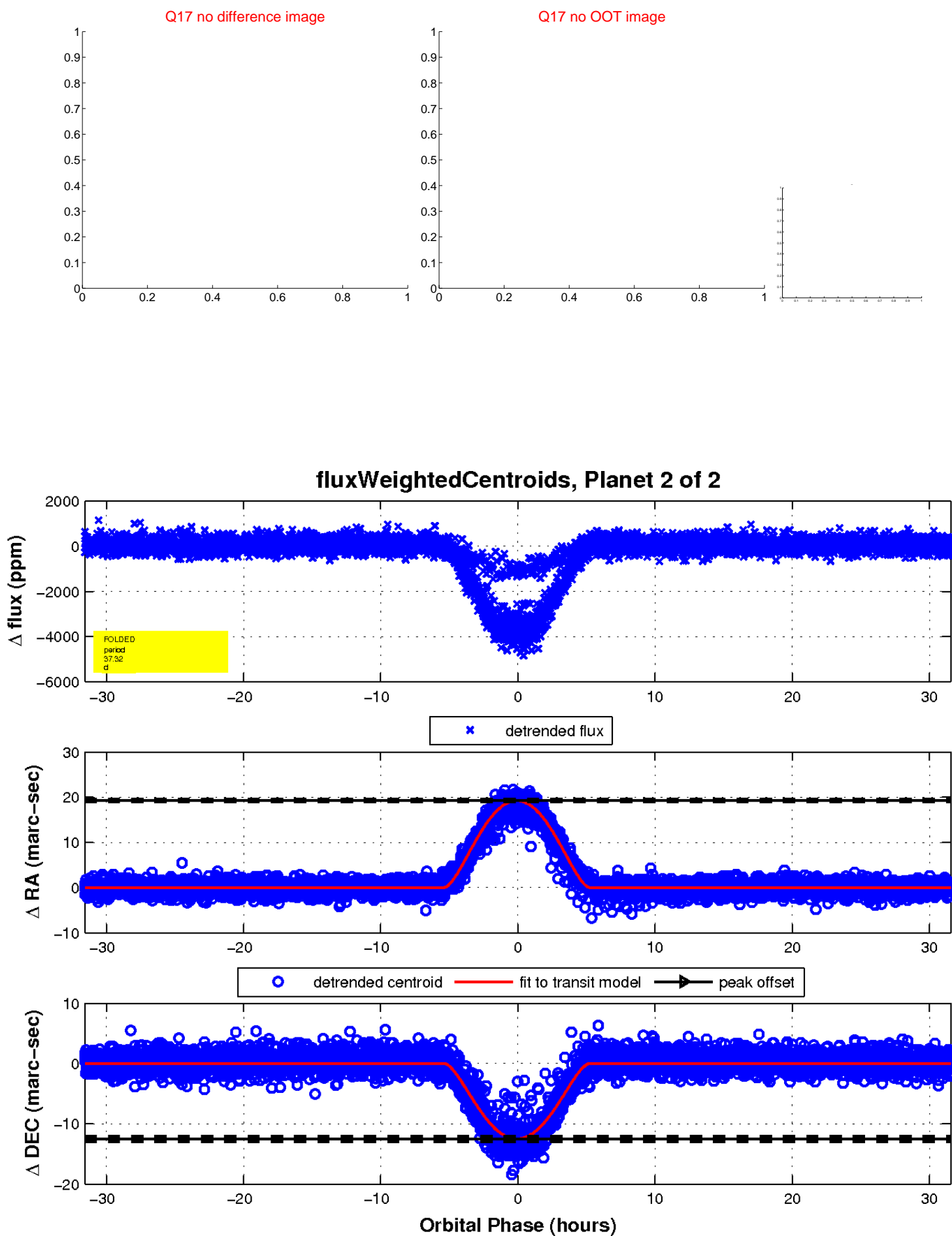
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

