

KIC 011408935

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})
011408935-01	OBS	6086.01	15.995095	147.305364	44586.2	8.458	1800.4	1595.6	0.81	5899	17.15	49.34
011408935-02	OBS	No	15.995081	136.665712	1607.2	7.005	62.9	67.1	0.81	5899	3.69	49.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011408935-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
011408935-02	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 011408935-01

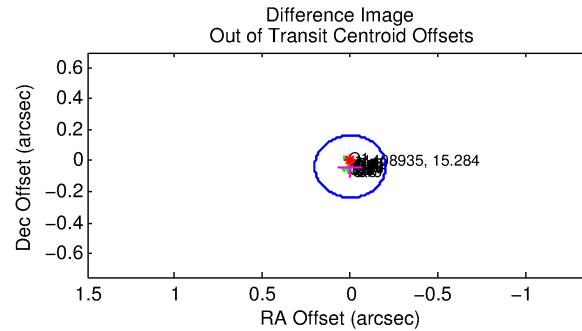
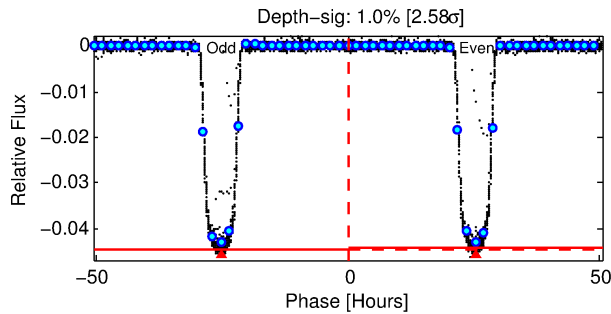
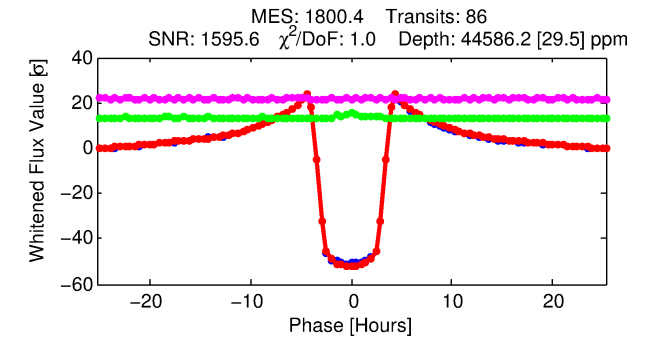
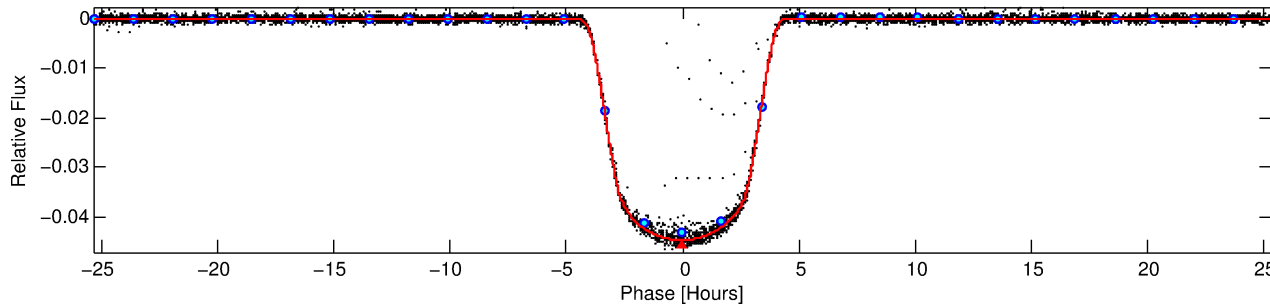
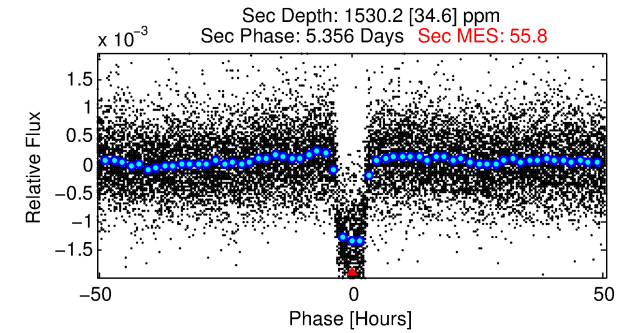
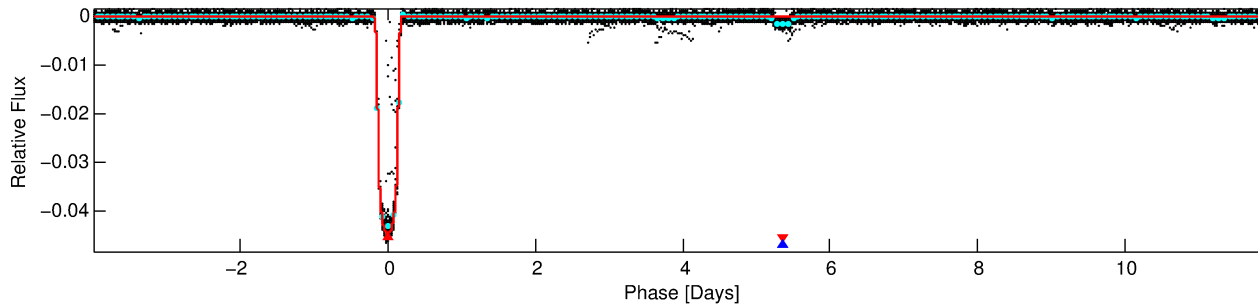
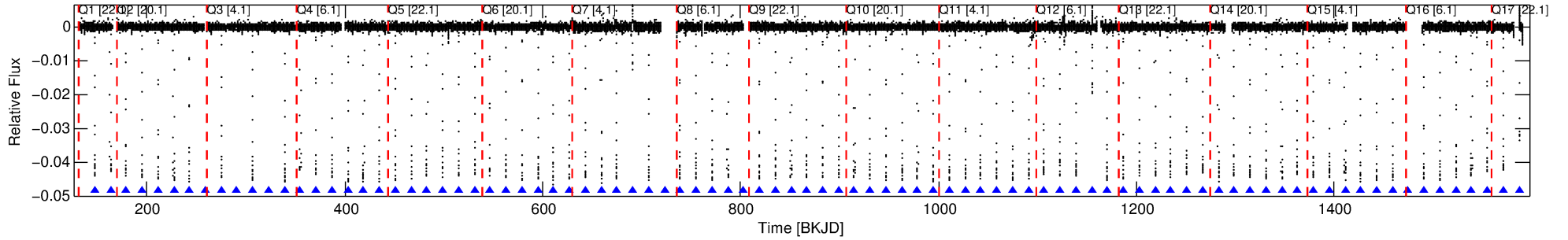
No Significant Match Found

DV One-Page Summary

KIC: 11408935 Candidate: 1 of 2 Period: 15.995 d

KOI: K06086.01 Corr: 1.000

Kp: 15.28 R*: 0.81 Rs Teff: 5899.0 K Logg: 4.57 Fe/H: -0.460



DV Fit Results:

Period = 15.99510 [0.00000] d
Epoch = 147.3054 [0.0001] BKJD
Rp/R* = 0.1953 [0.0001]
a/R* = 16.76 [0.03]
b = 0.29 [0.01]
Seff = 49.34 [18.24]
Teq = 676 [62] K
Rp = 17.15 [4.65] Re
a = 0.1194 [0.0280] AU
Ag = 40.77 [14.28] [2.78σ]
Teffp = 2640 [81] K [19.26σ]

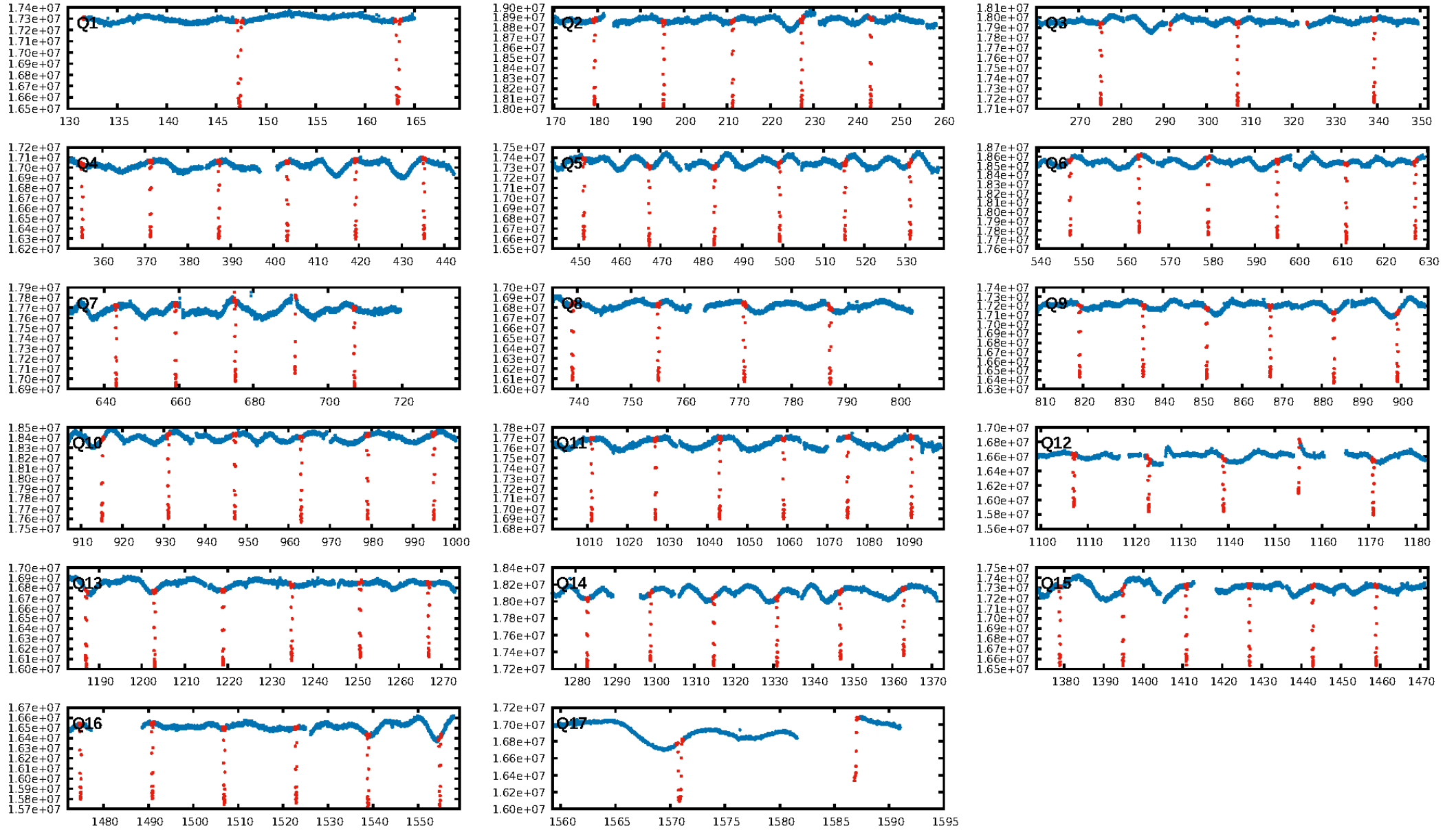
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [82/82]
GhostDiagnostic-chr: 3.061
Centroid-sig: 0.0%
Centroid-so: 0.370 arcsec [79.17σ]
OotOffset-rm: 0.037 arcsec [0.56σ]
KicOffset-rm: 0.198 arcsec [2.94σ]
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]

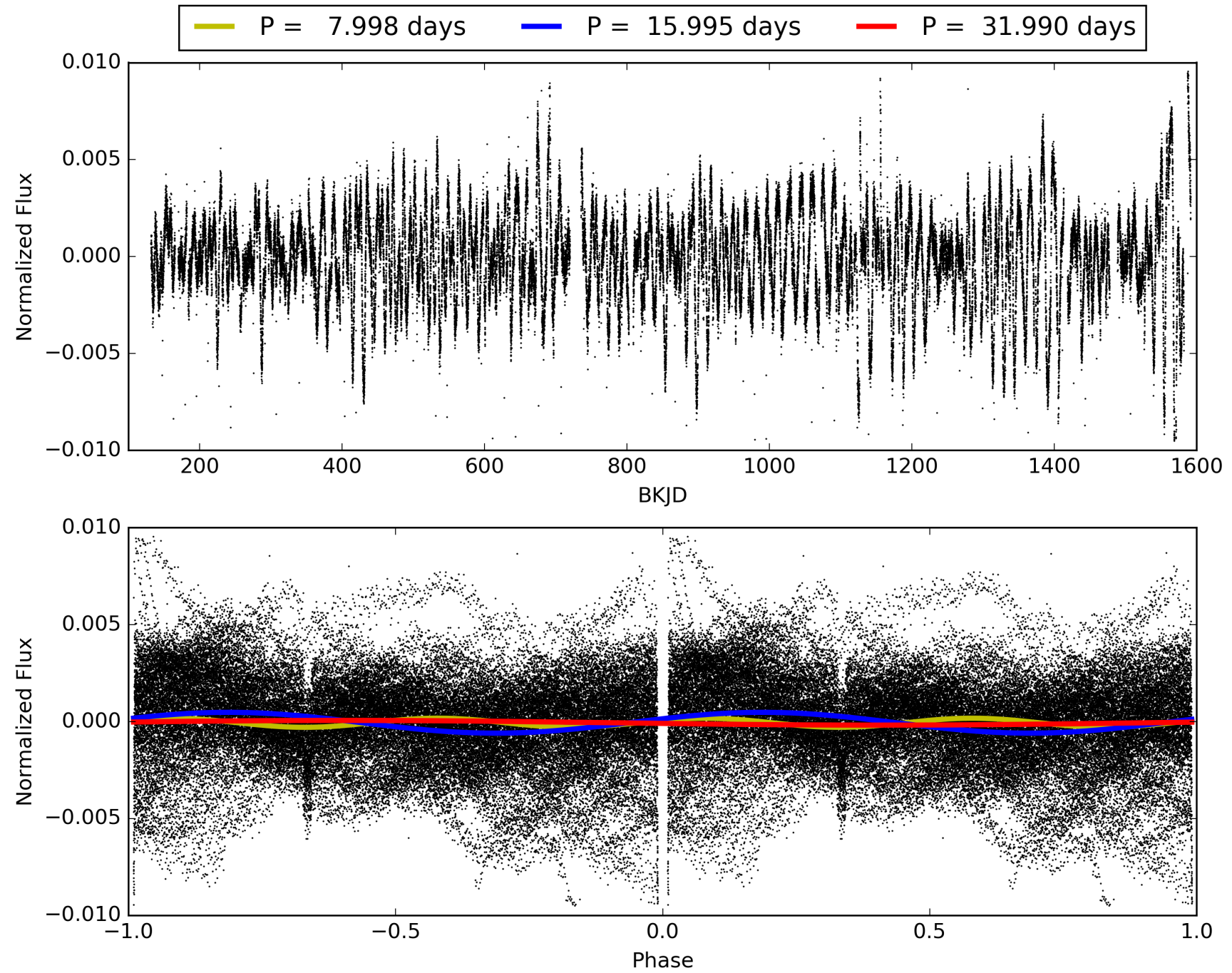
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:57:11 Z

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

TCE 011408935-01, PDC Light Curves

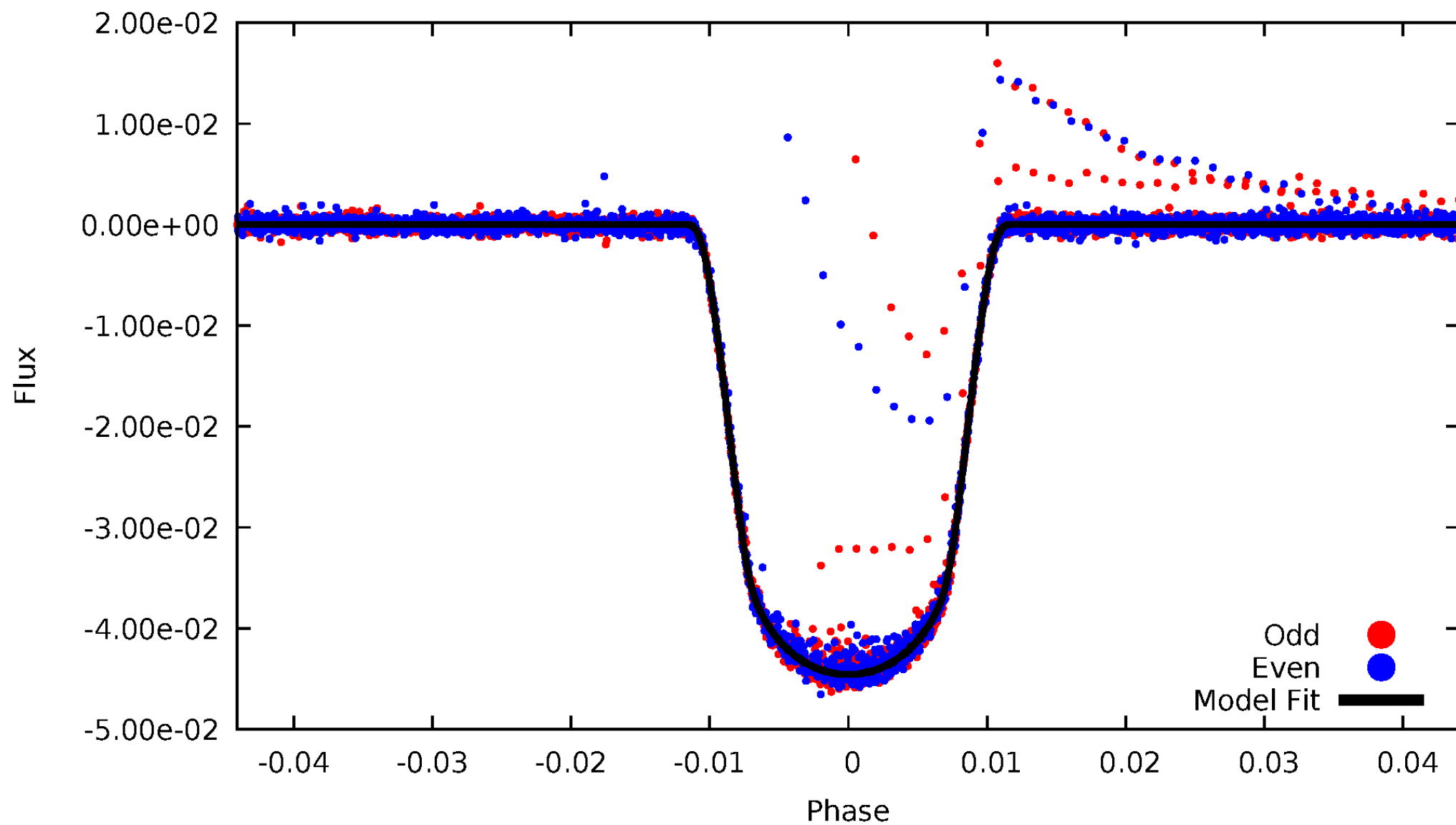


TCE 011408935-01



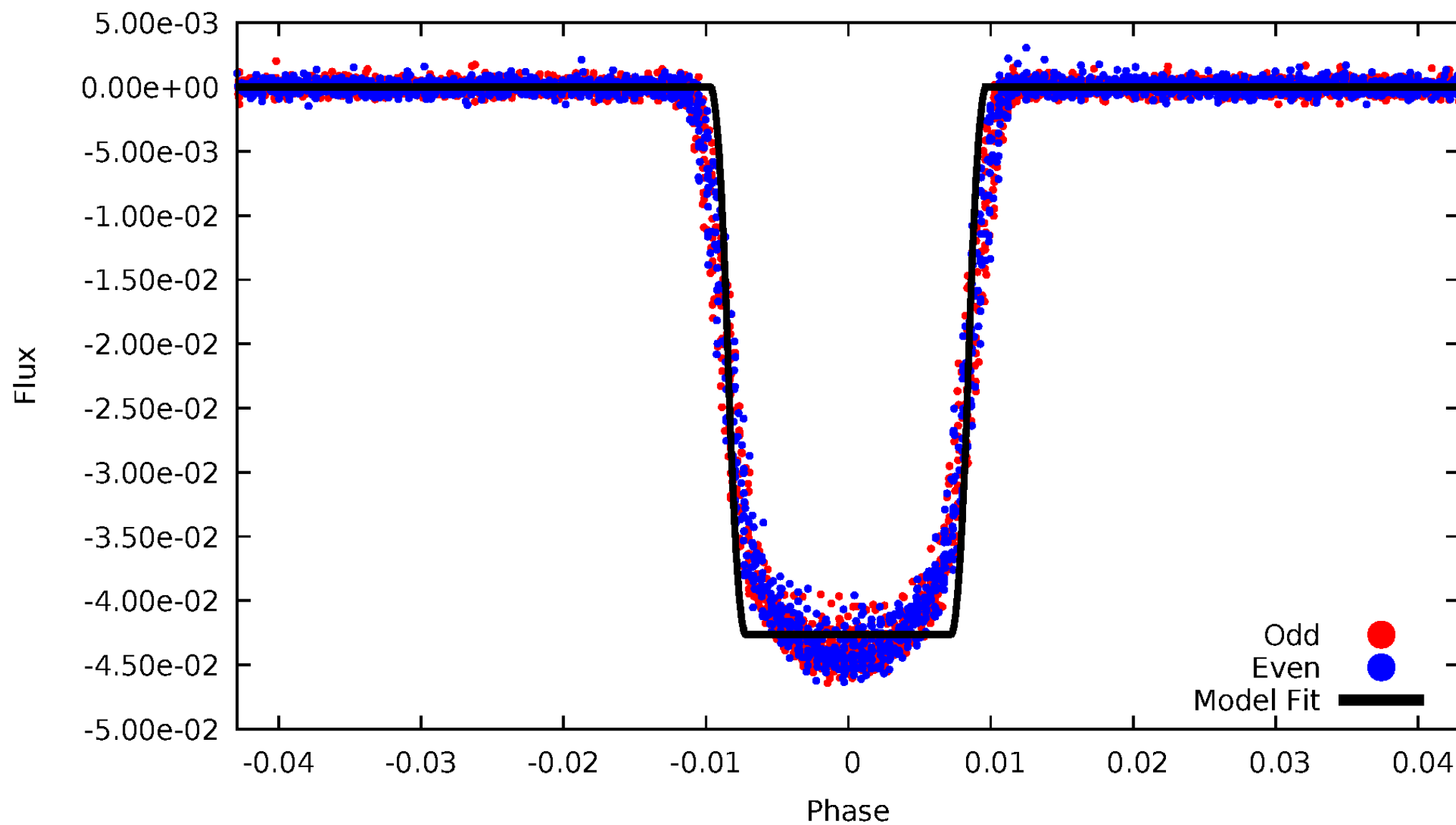
DV Odd/Even

TCE 011408935-01



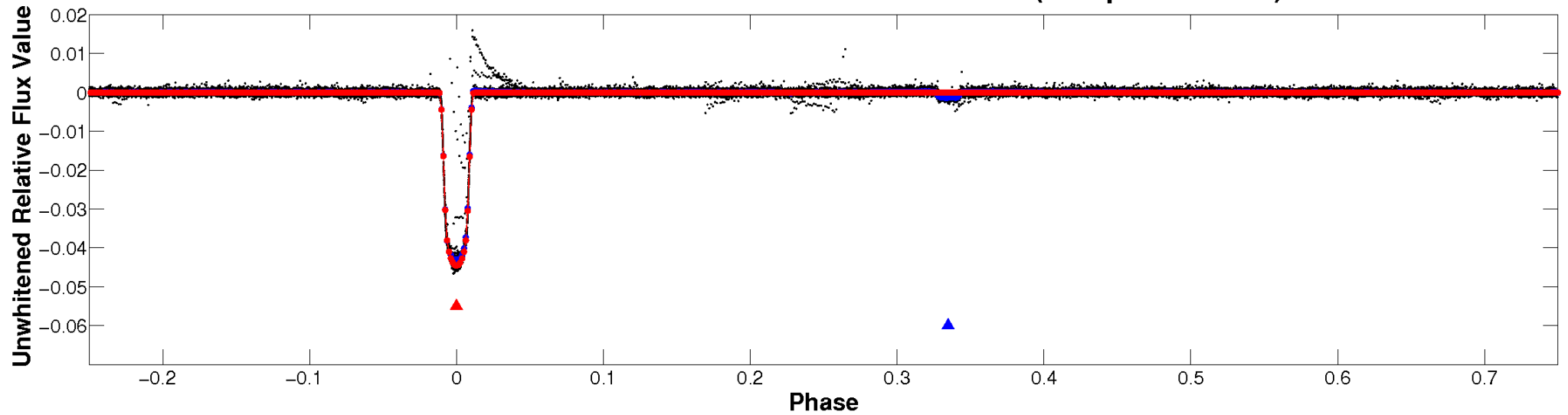
ALT Odd/Even

TCE 011408935-01

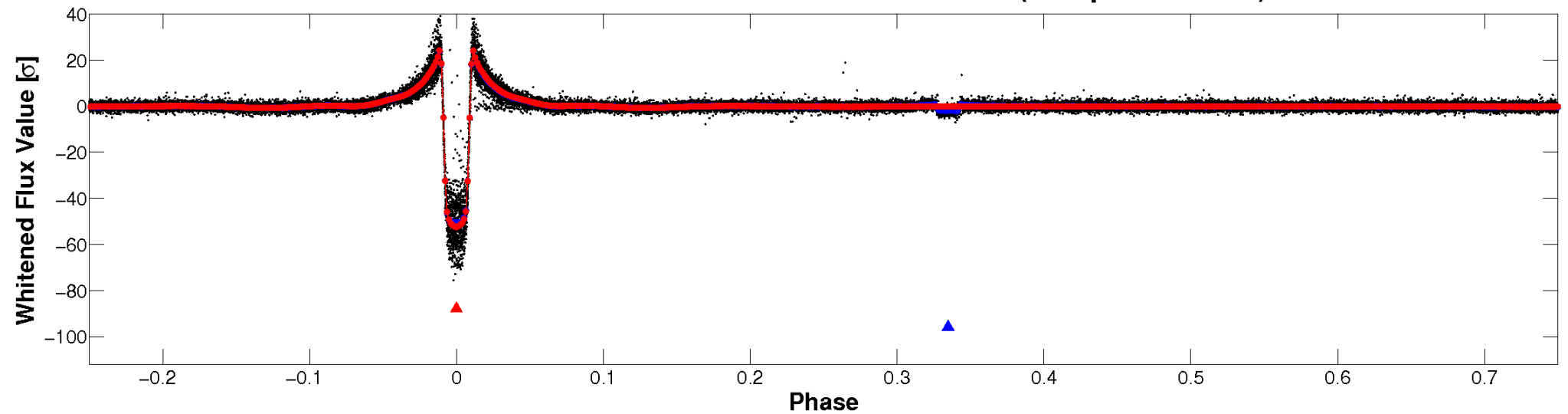


Non-Whitened Vs. Whitened Light Curve

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

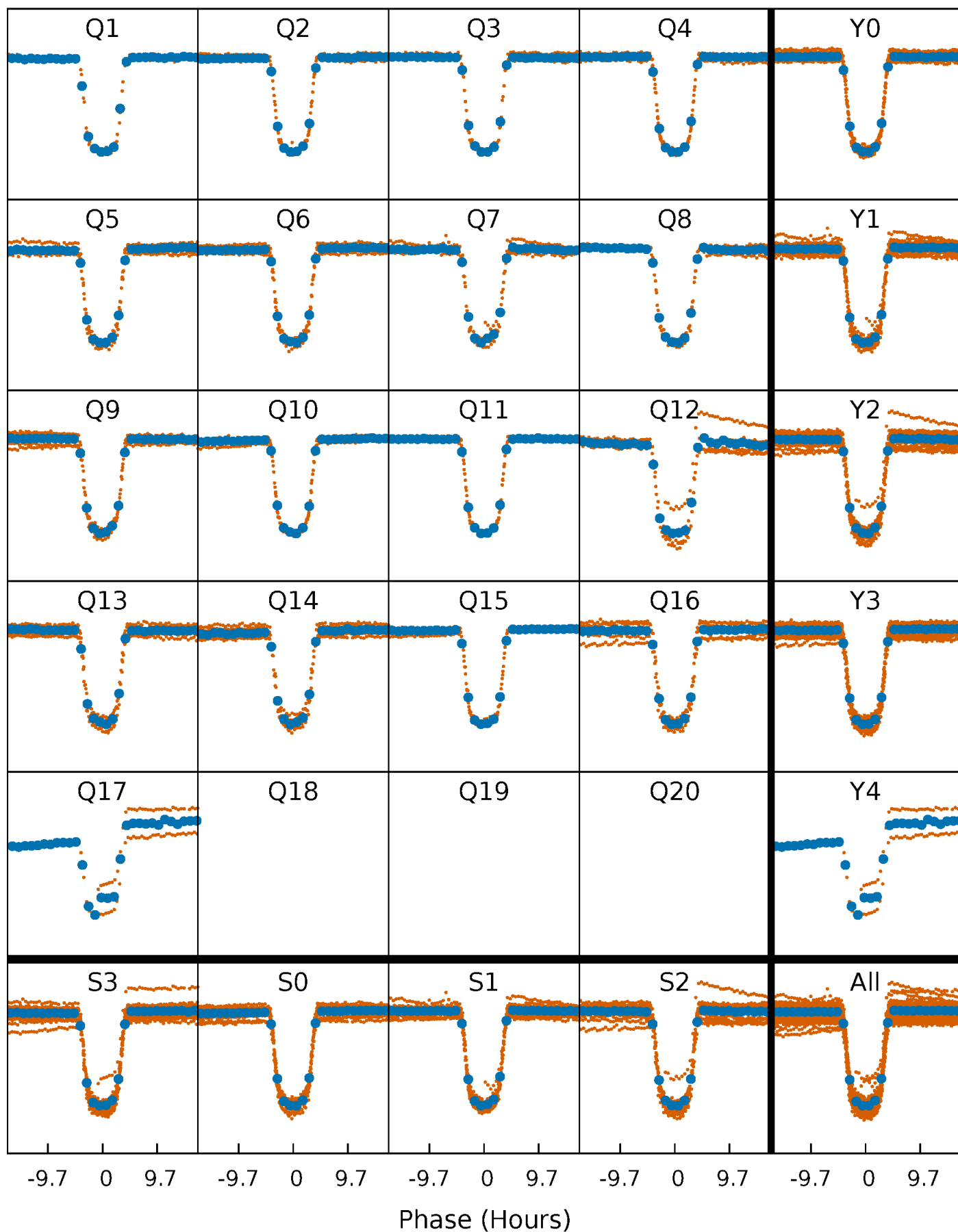


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



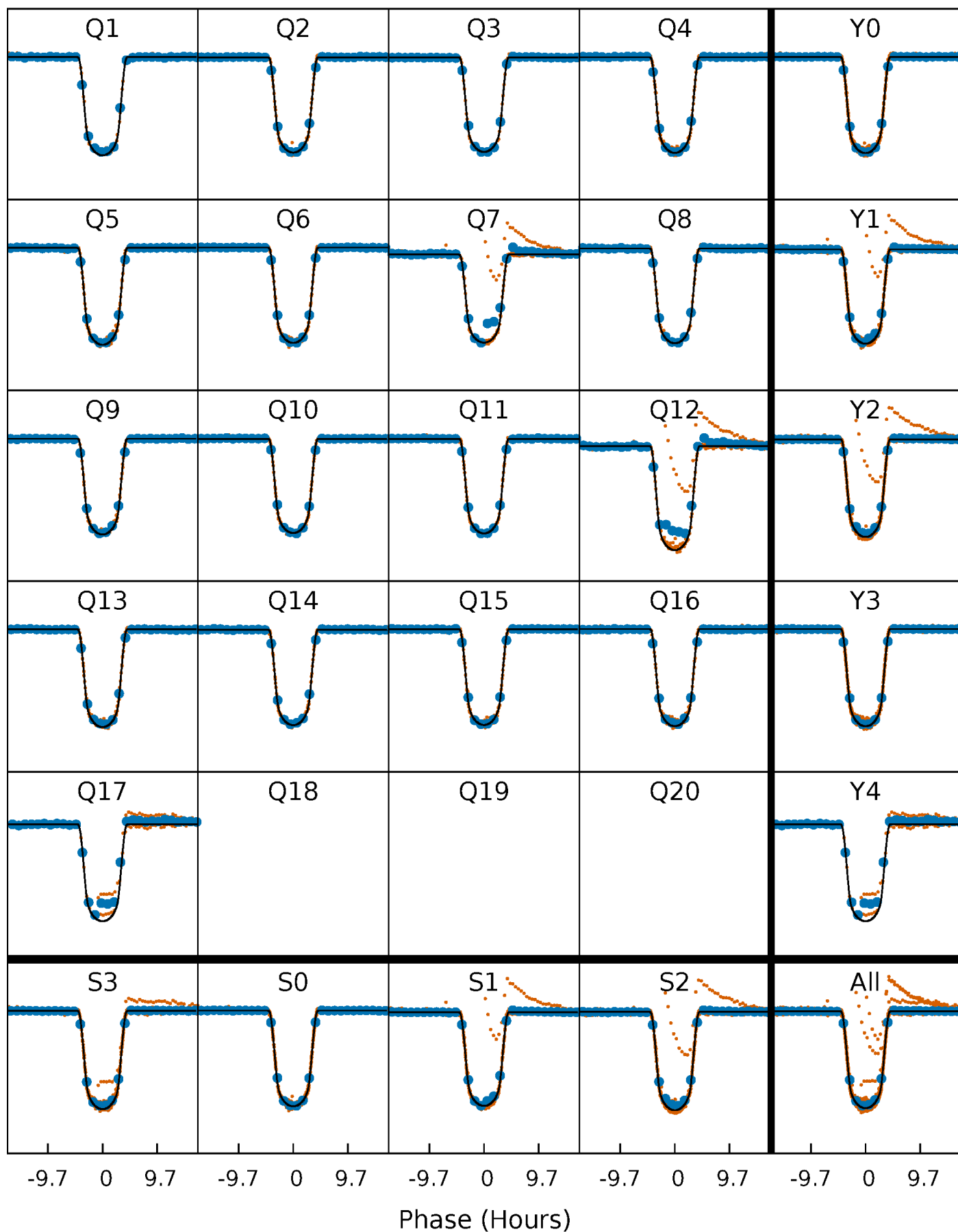
PDC Quarter-Phased Transit Curves

TCE 011408935-01 P= 15.995095 Days $T_0=147.305364$ (BKJD)



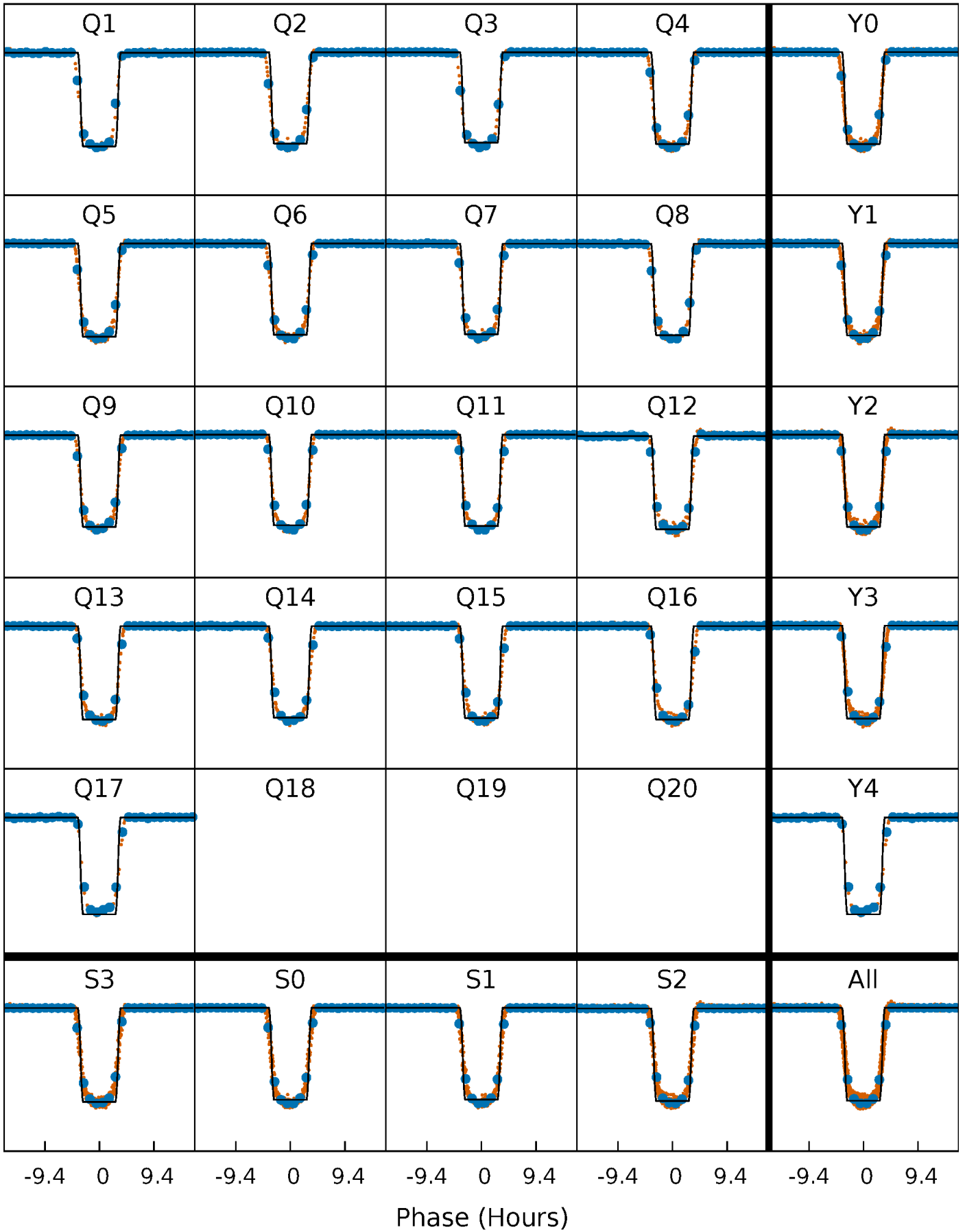
DV Quarter-Phased Transit Curves

TCE 011408935-01 P= 15.995095 Days $T_0=147.305364$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

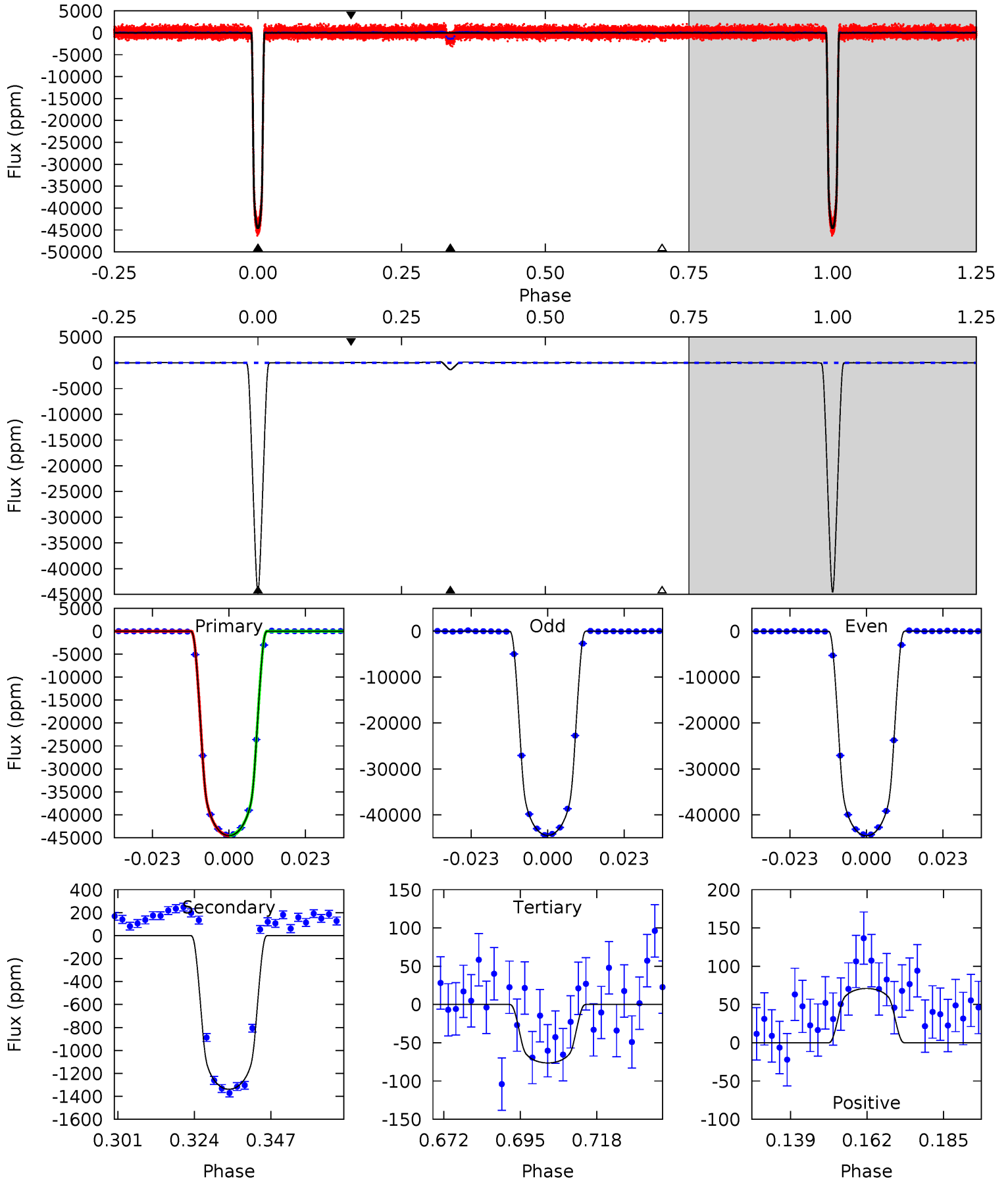
TCE 011408935-01 P= 15.994851 Days $T_0=147.316606$ (BKJD)



DV Model-Shift Uniqueness Test

011408935-01, P = 15.995095 Days, E = 131.310269 Days

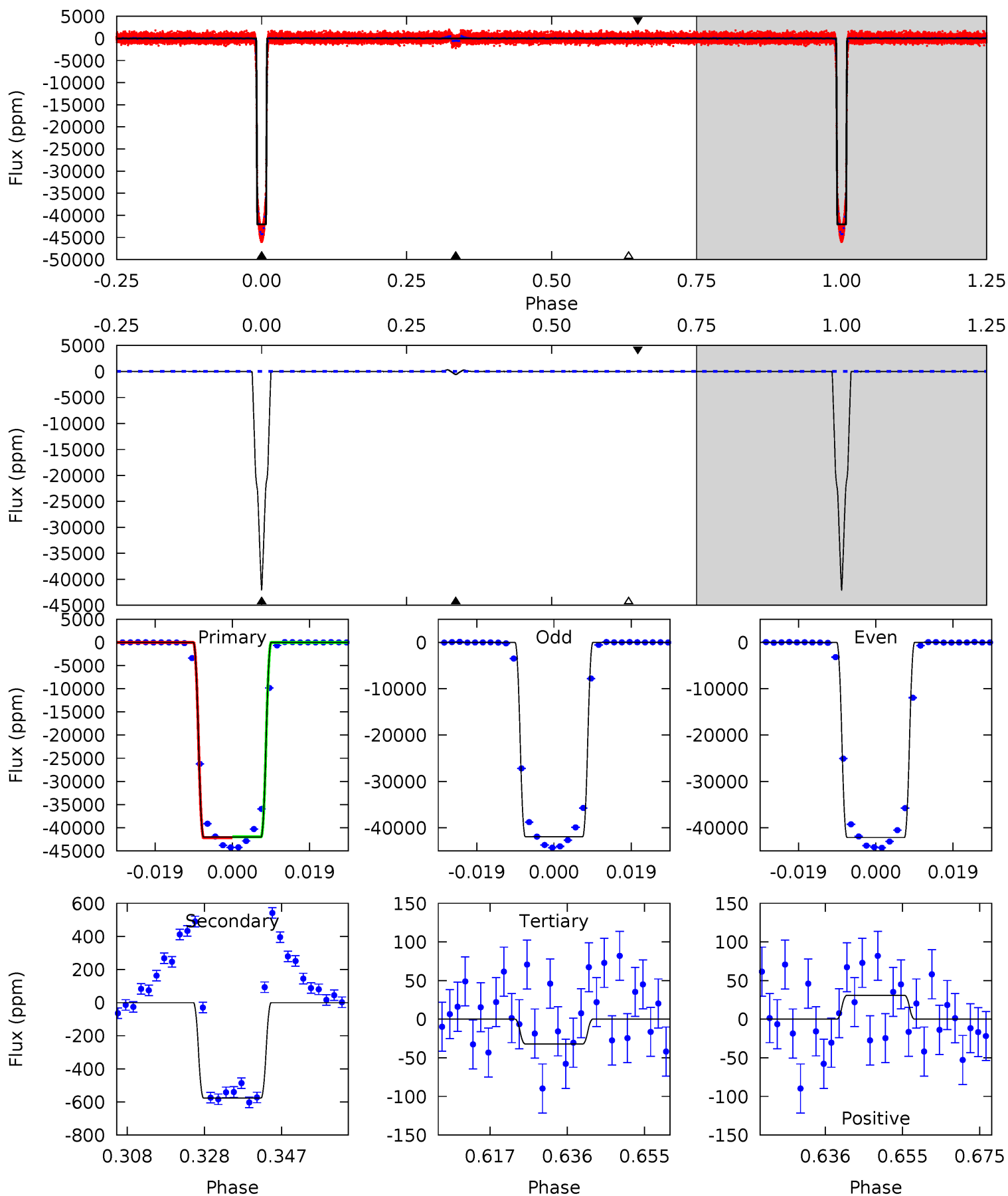
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3488	104.8	5.98	5.56	4.86	2.27	3.13	3482	3482	98.9	99.3	3.58	0.97	0.00	0



Alt Model-Shift Uniqueness Test

011408935-01, P = 15.994851 Days, E = 131.321755 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2892	39.6	2.21	2.13	4.90	2.34	1.02	2890	2890	37.4	37.5	6.04	1.00	0.01	5.88



Stellar Parameters For KIC 011408935

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5899^{+159}_{-177}	$4.574^{+0.034}_{-0.195}$	$-0.460^{+0.300}_{-0.300}$	$0.805^{+0.218}_{-0.058}$	$0.889^{+0.096}_{-0.096}$	$2.399^{+0.450}_{-1.196}$
	+3%/-3%	+1%/-4%	+65%/-65%	+27%/-7%	+11%/-11%	+19%/-50%
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 011408935-01 / KOI 6086.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1338 ± 13	$17.55^{+2.53}_{-1.09}$	965^{+59}_{-43}	3162^{+50}_{-68}	33^{+4}_{-7}
Alt.	-576 ± 15	$18.75^{+2.74}_{-1.28}$	967^{+63}_{-44}	2761^{+41}_{-48}	13^{+2}_{-3}

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

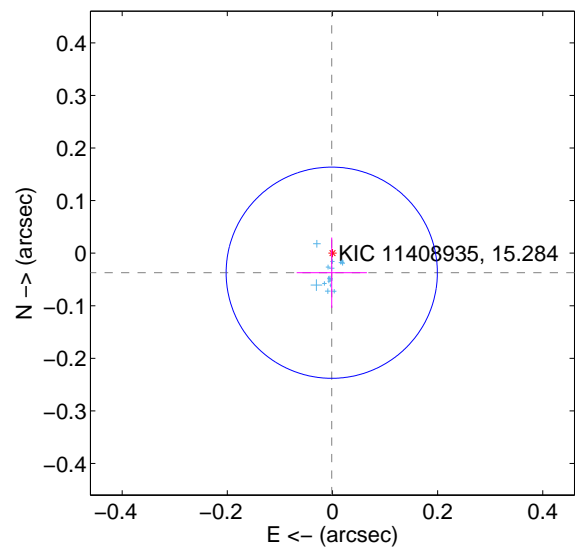
Supplemental centroid analysis for 011408935-01. Kepler magnitude: 15.28. Transit SNR 1595.63

There are 17 quarters with good PRF difference image offsets

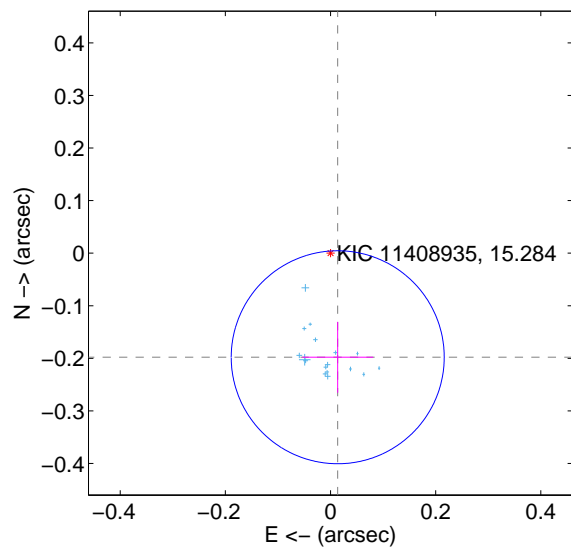
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.037 ± 0.067	0.56	0.001 ± 0.067	-0.037 ± 0.067
PRF-fit source offset from KIC position	0.198 ± 0.068	2.94	-0.014 ± 0.068	-0.198 ± 0.067
photometric centroid source offset	0.37 ± 0.00	79.17	-0.08 ± 0.00	-0.36 ± 0.00

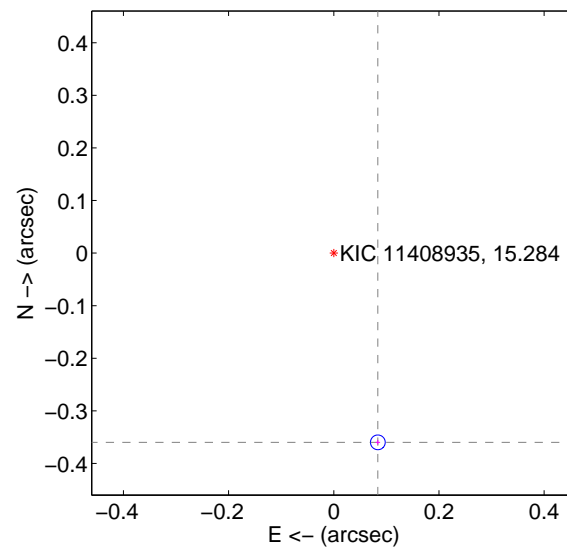
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

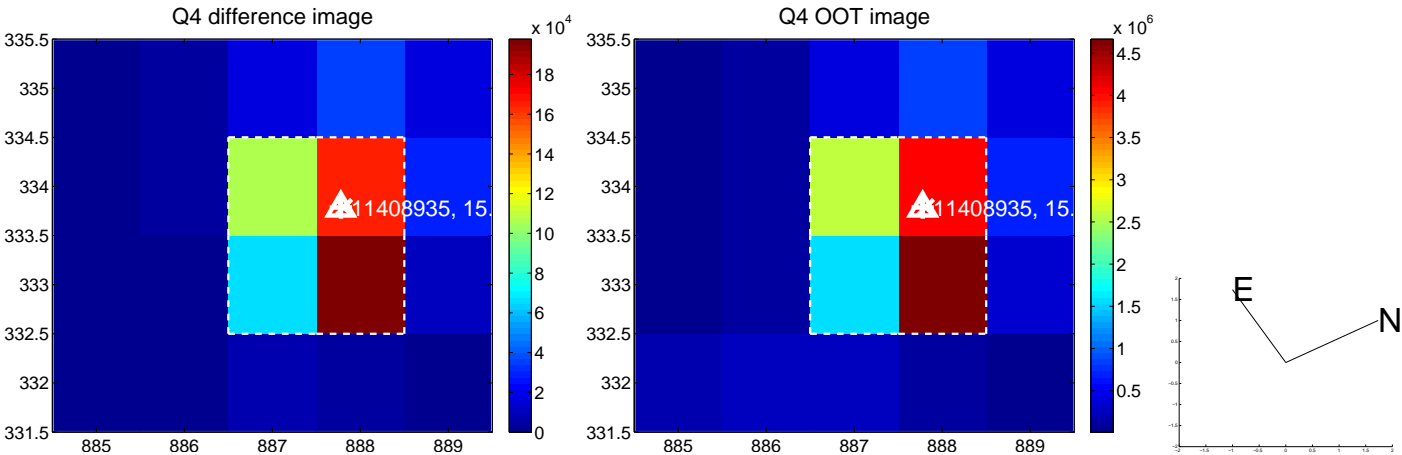
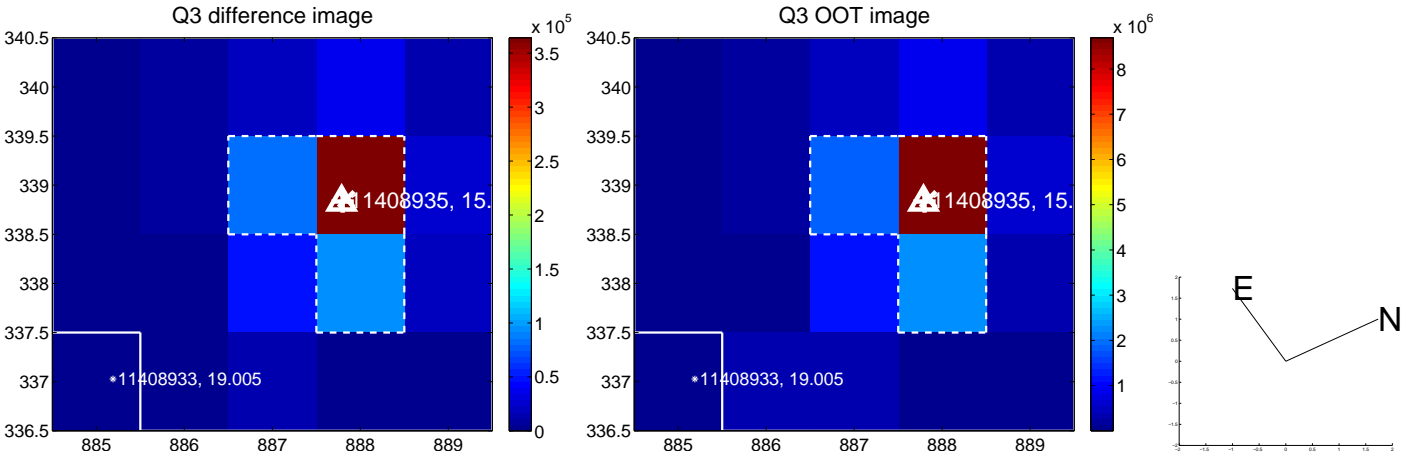
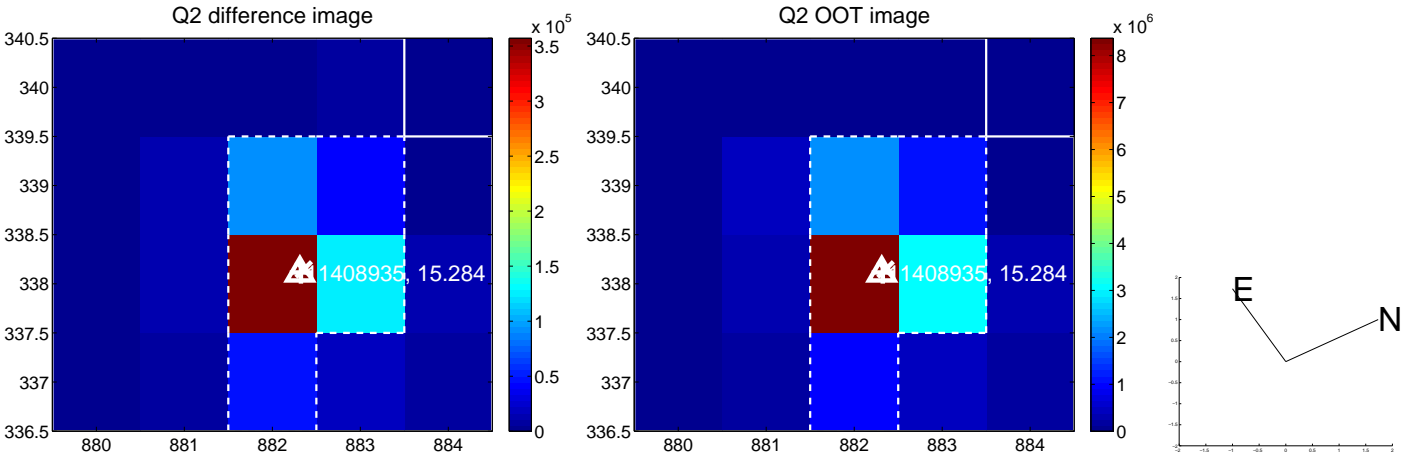
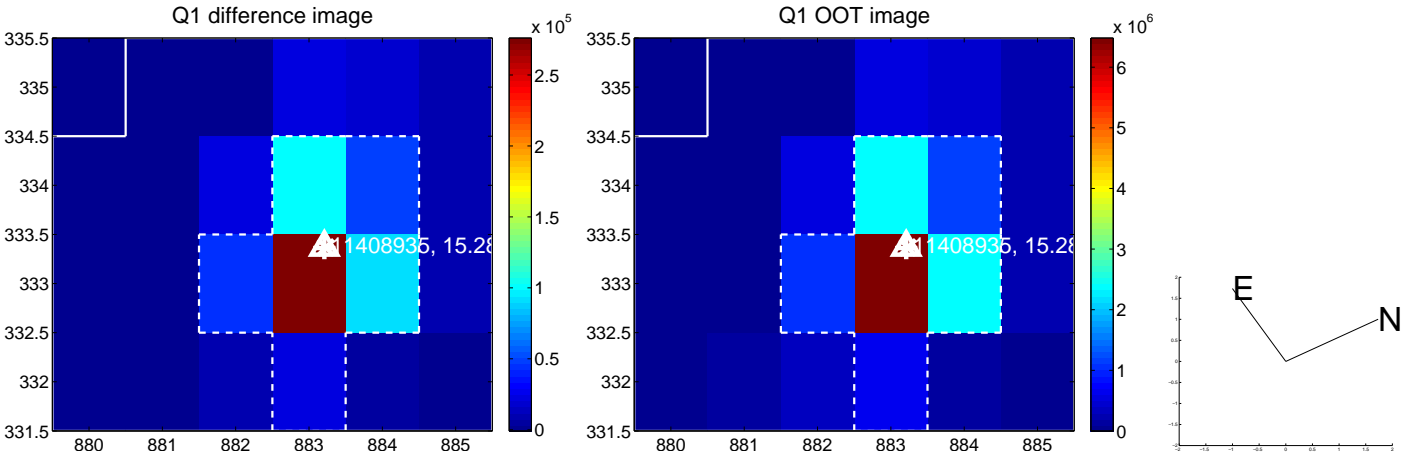


offset from photometric centroids

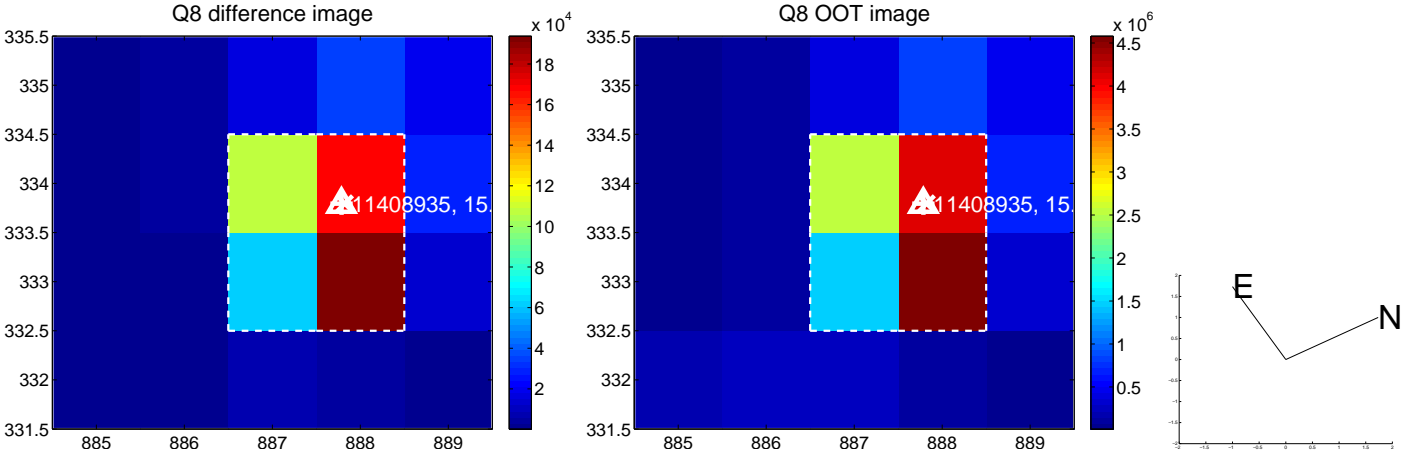
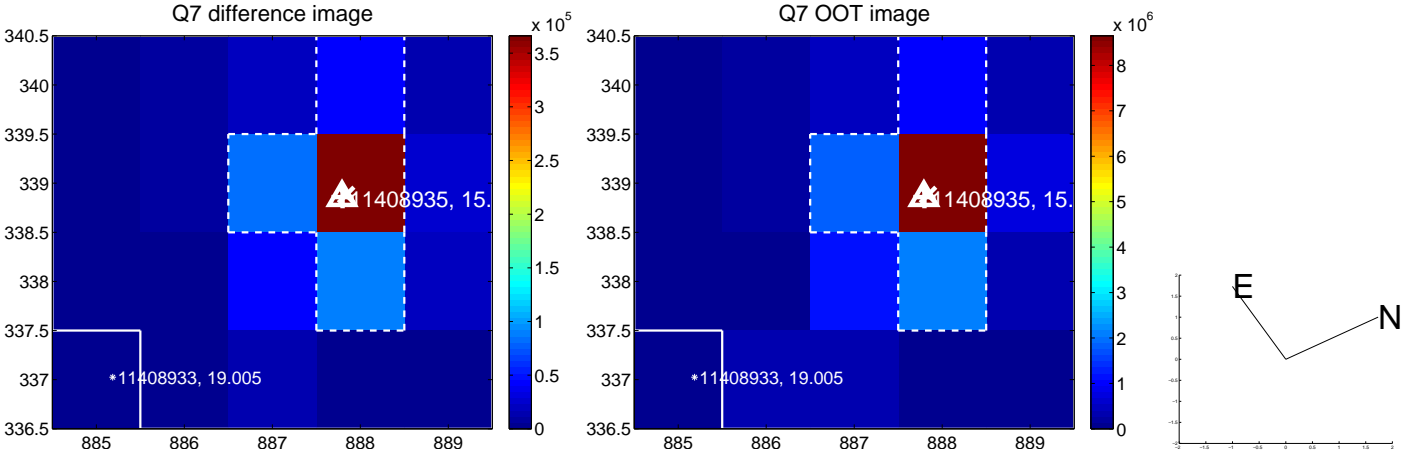
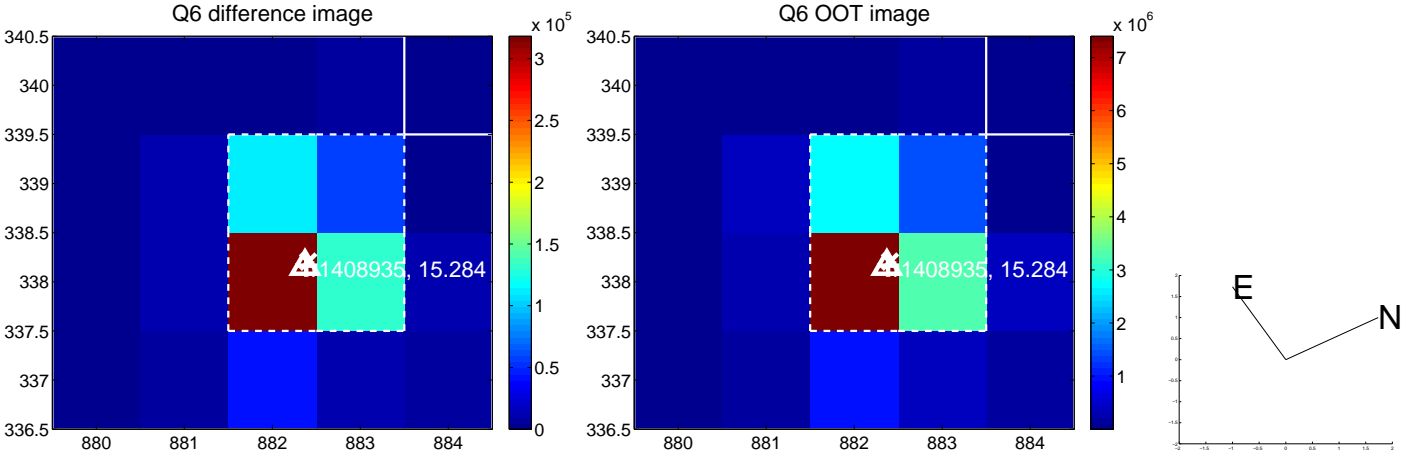
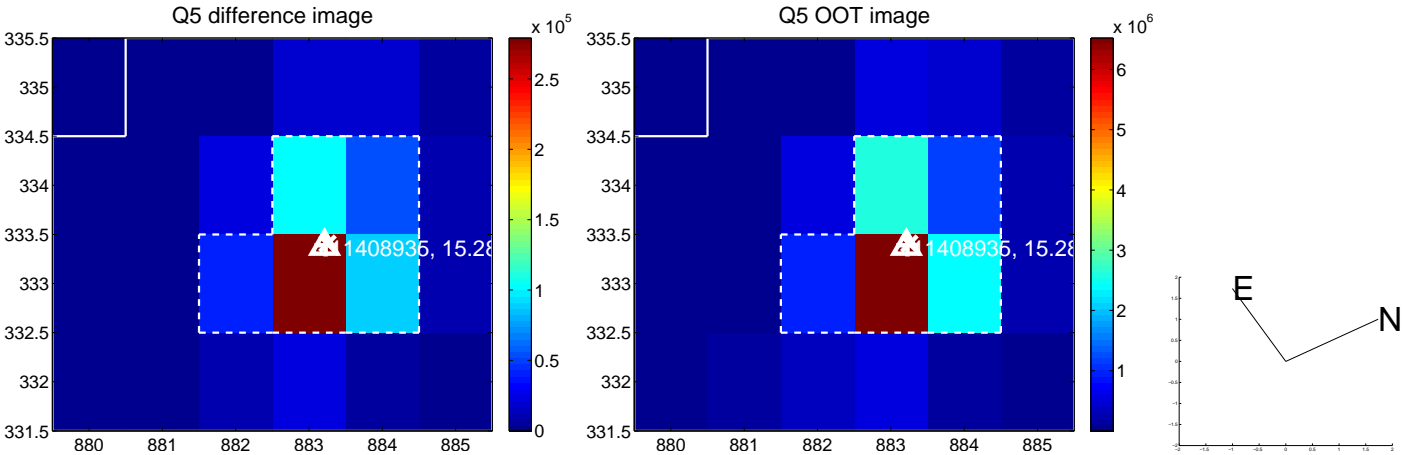


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

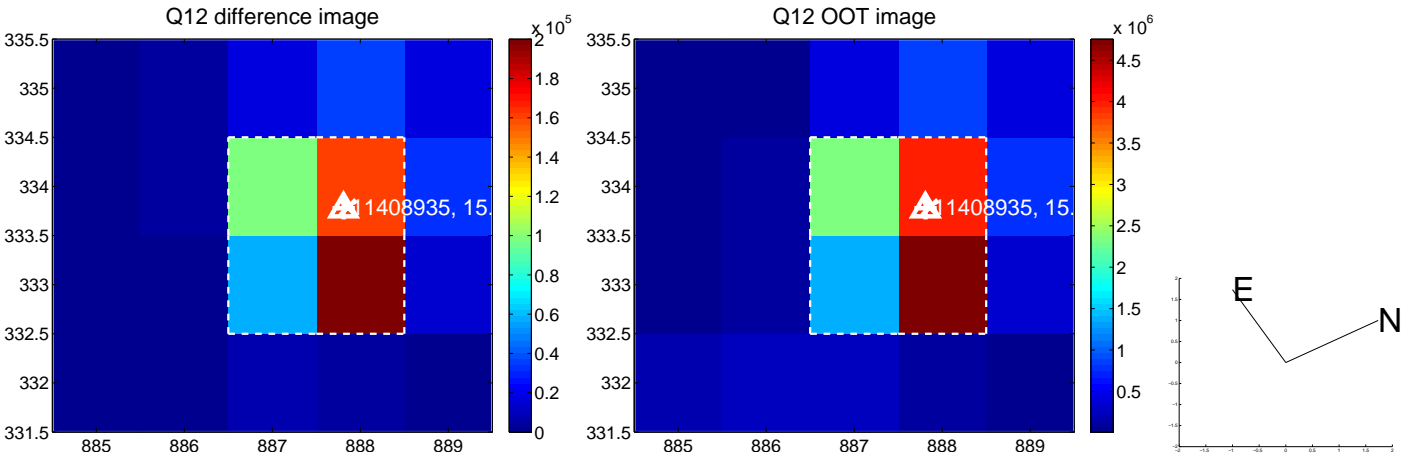
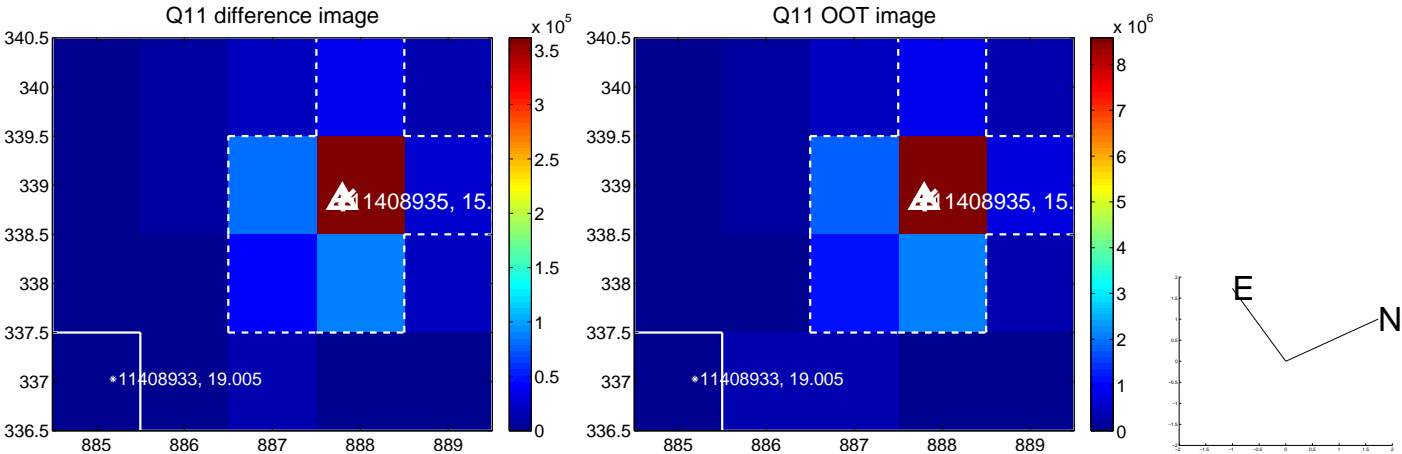
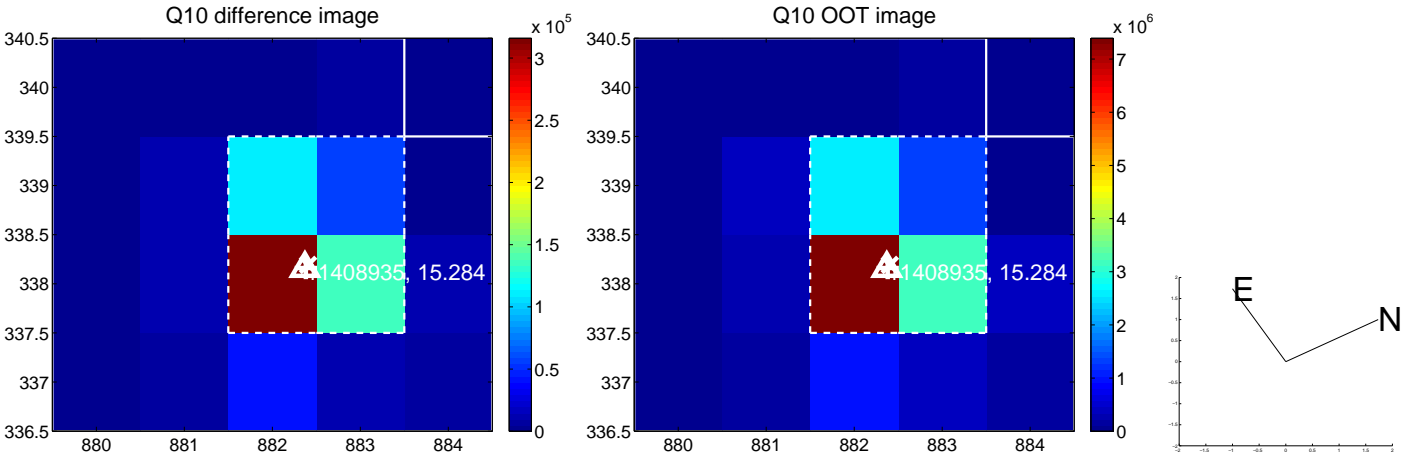
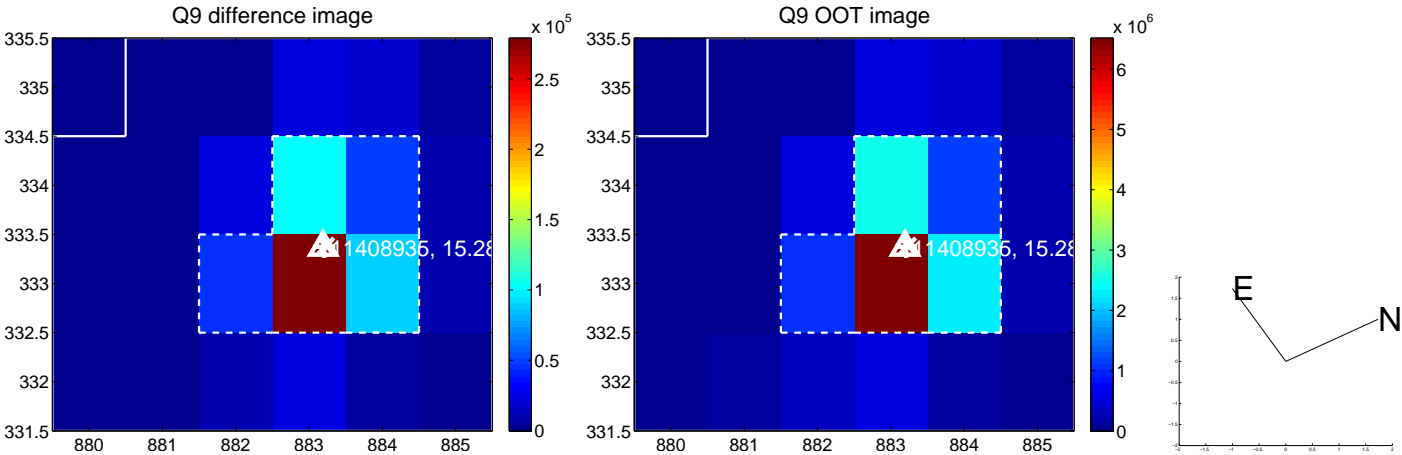
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



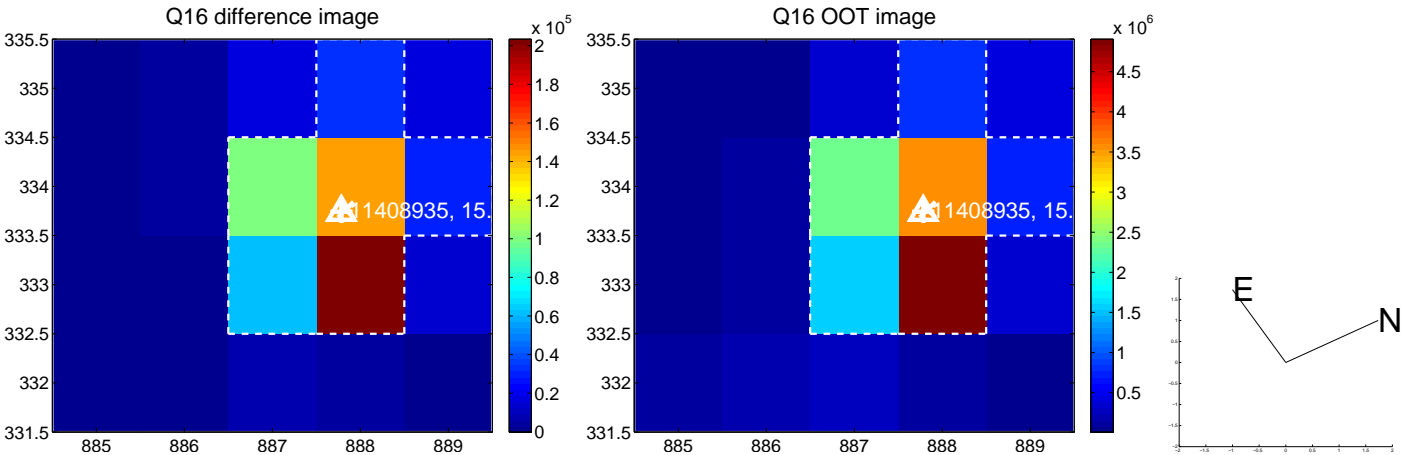
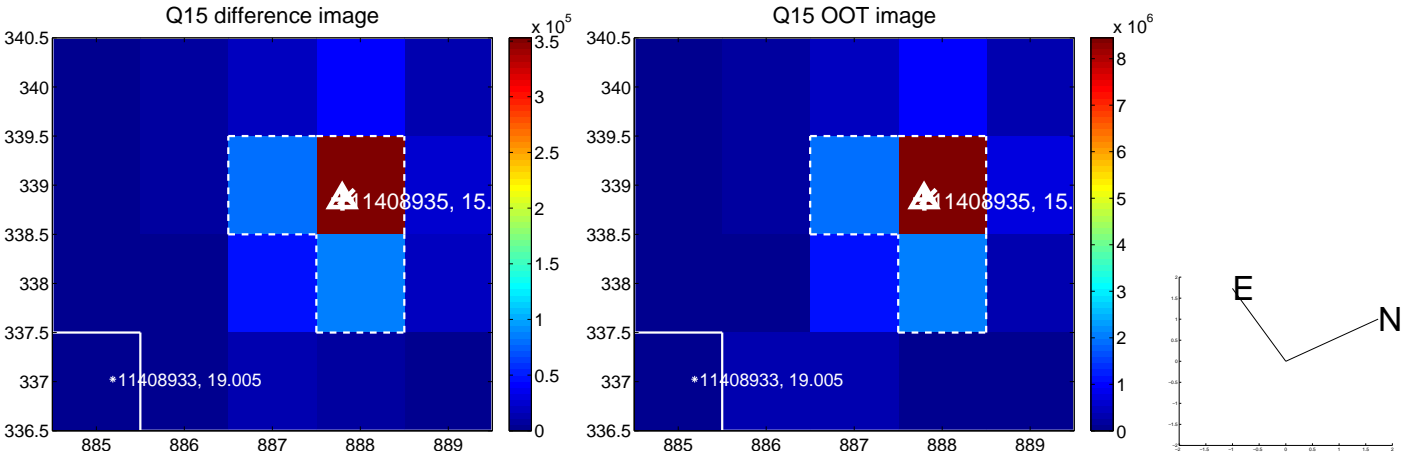
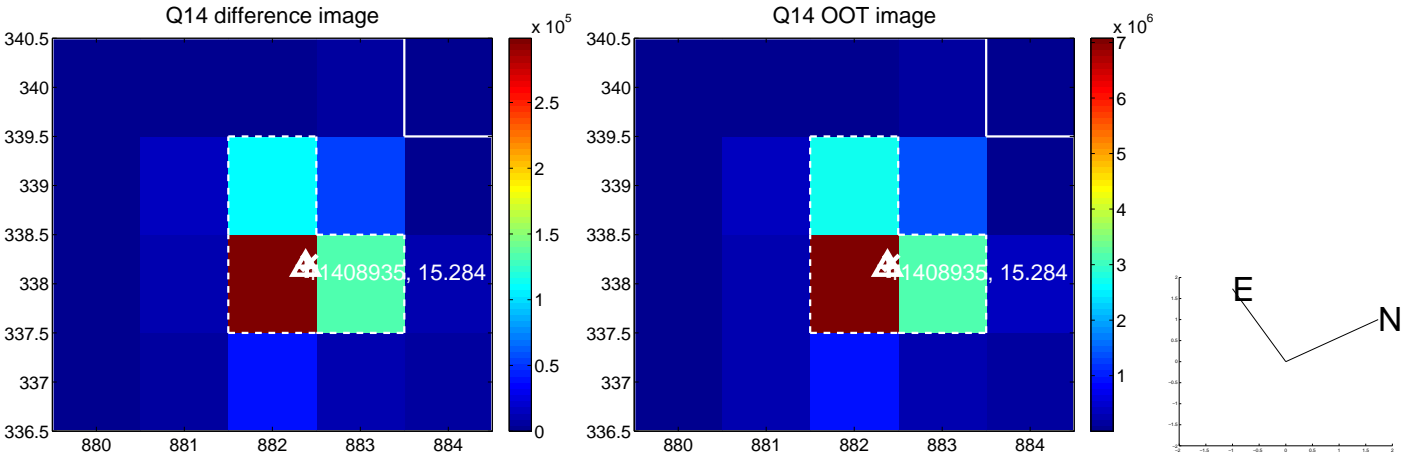
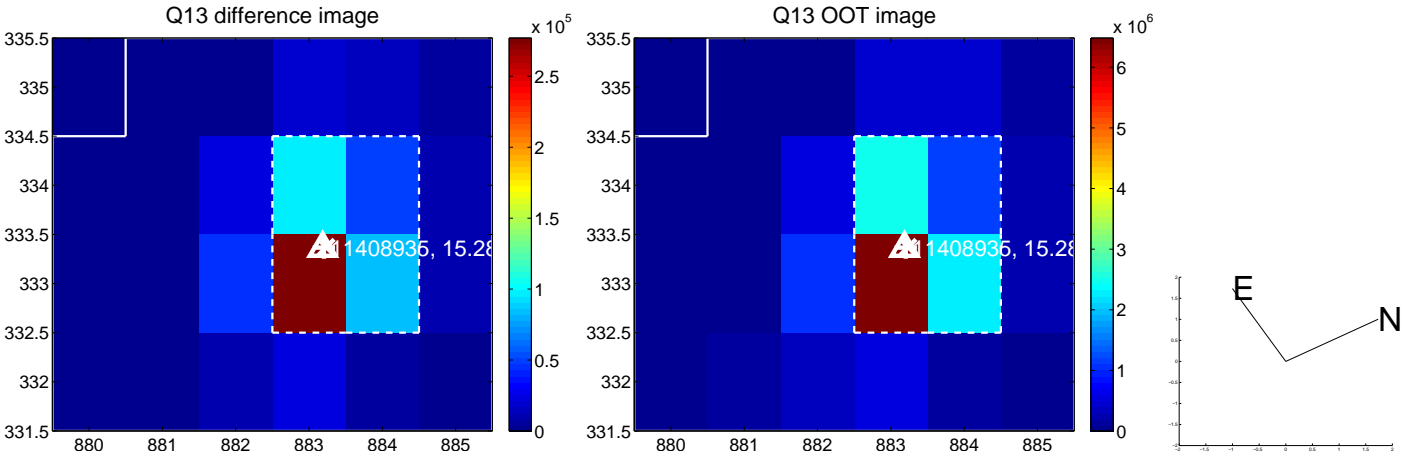
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



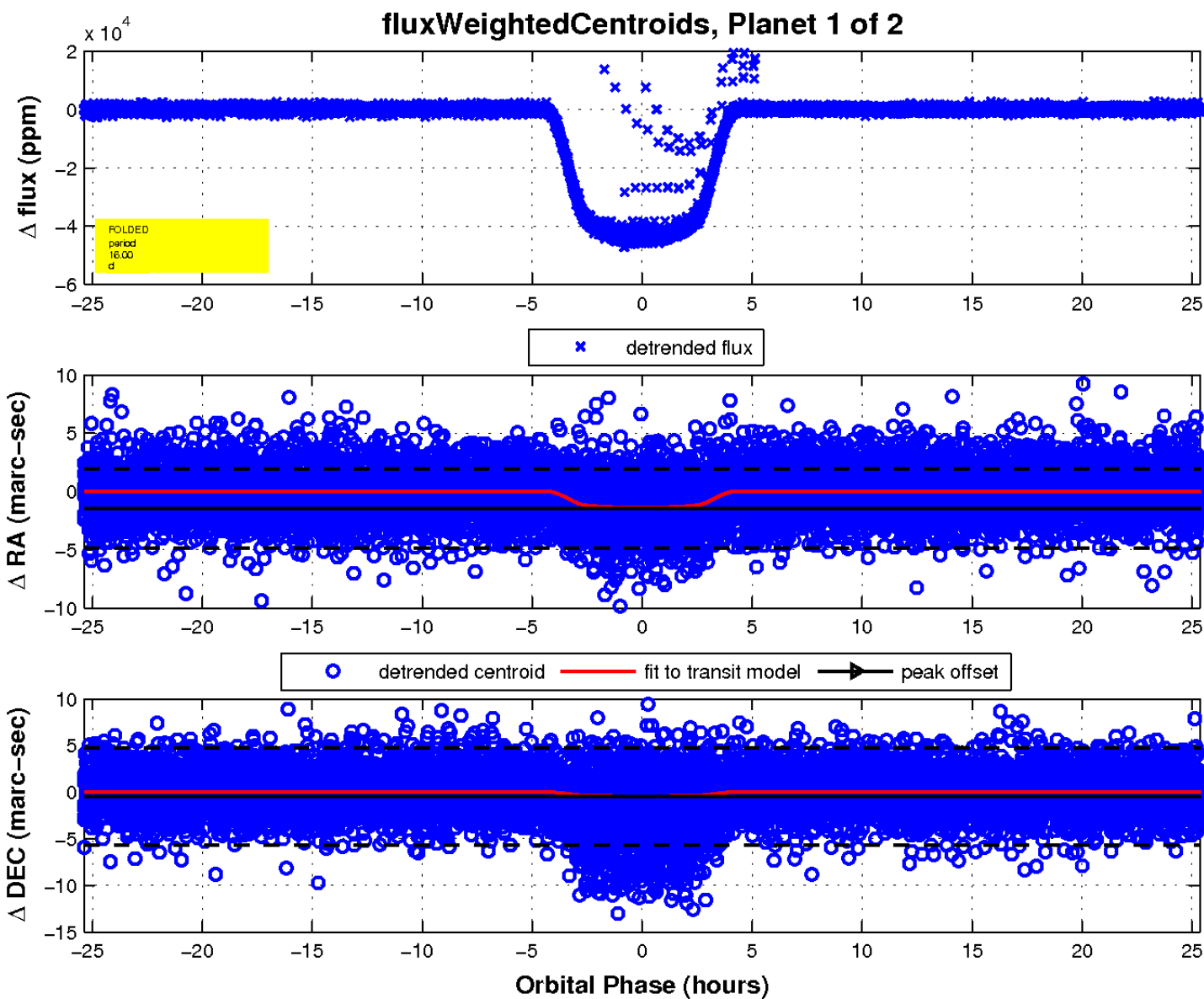
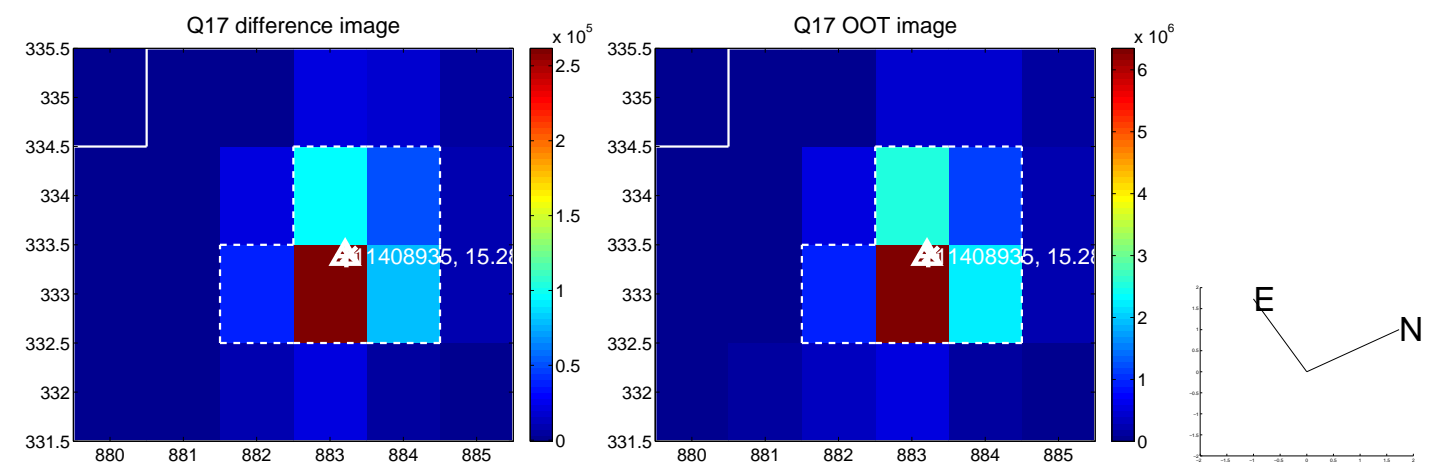
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

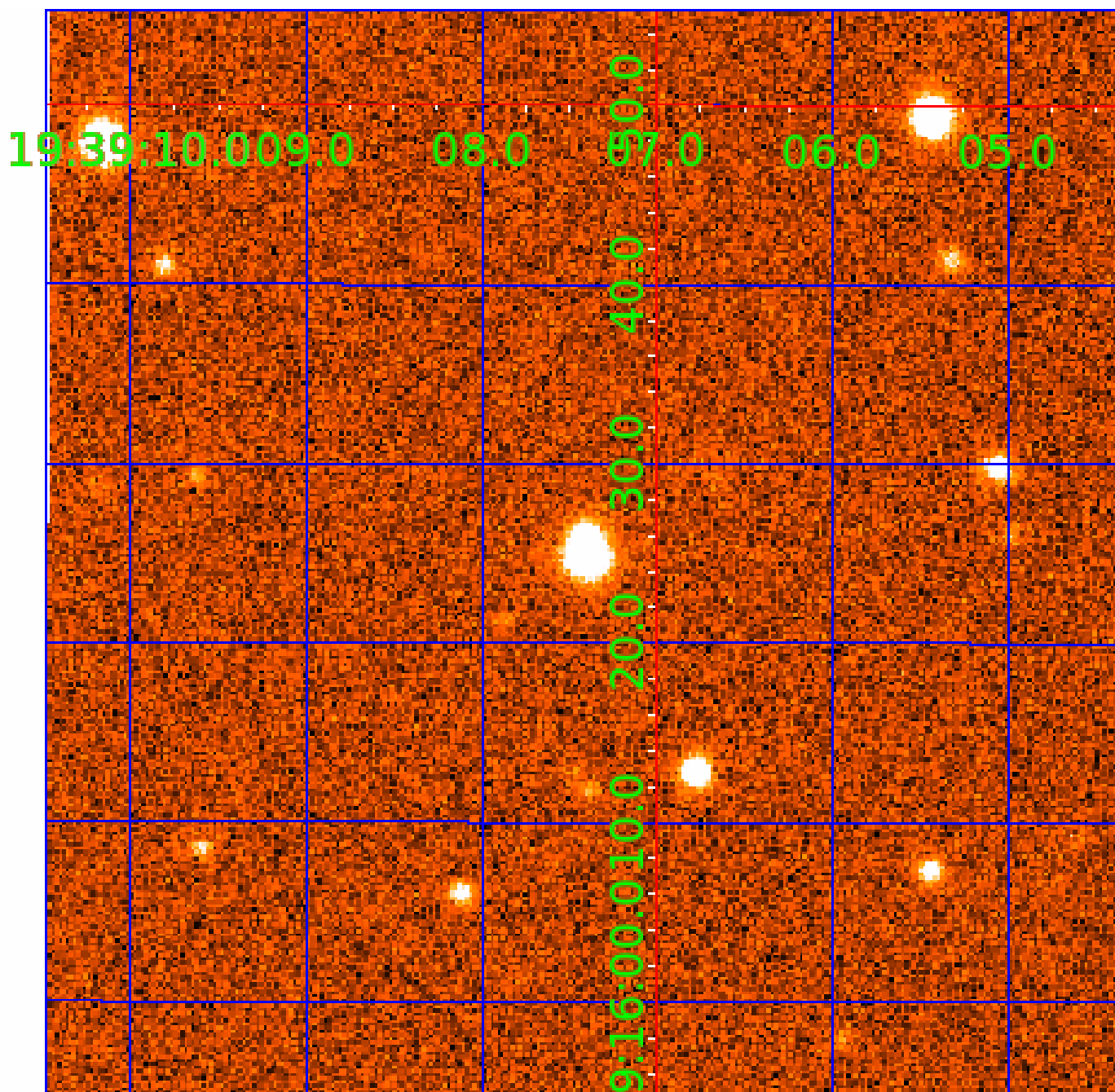


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011408935

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})
011408935-01	OBS	6086.01	15.995095	147.305364	44586.2	8.458	1800.4	1595.6	0.81	5899	17.15	49.34
011408935-02	OBS	No	15.995081	136.665712	1607.2	7.005	62.9	67.1	0.81	5899	3.69	49.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011408935-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
011408935-02	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.

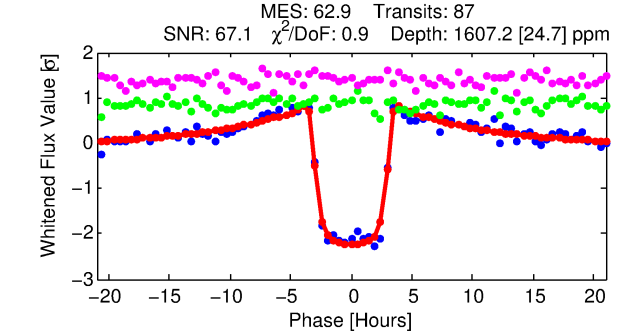
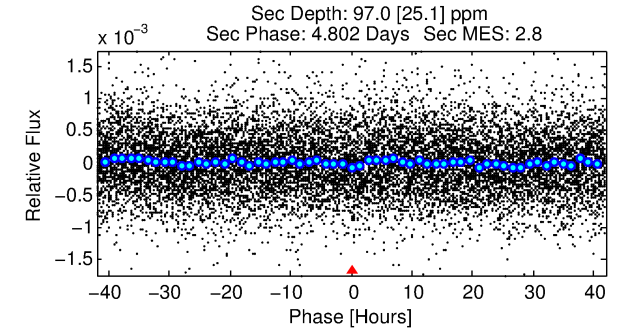
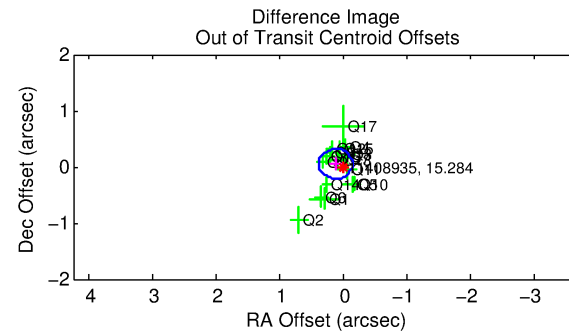
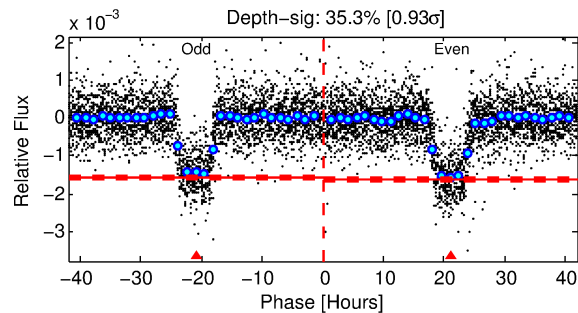
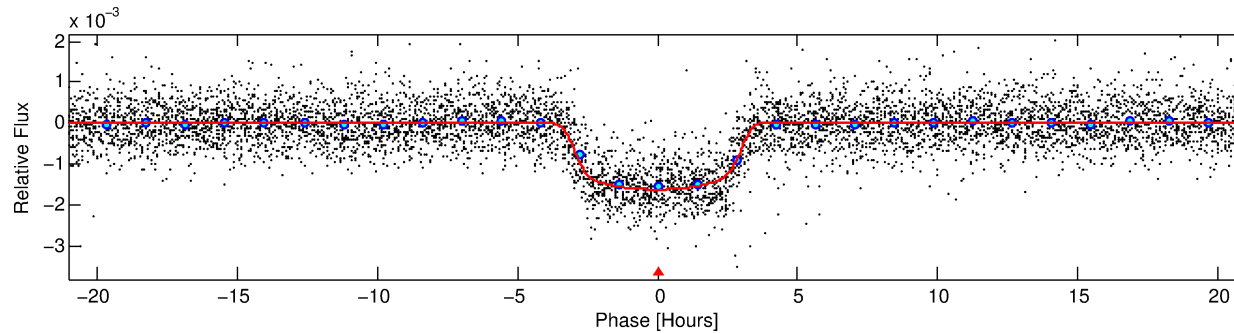
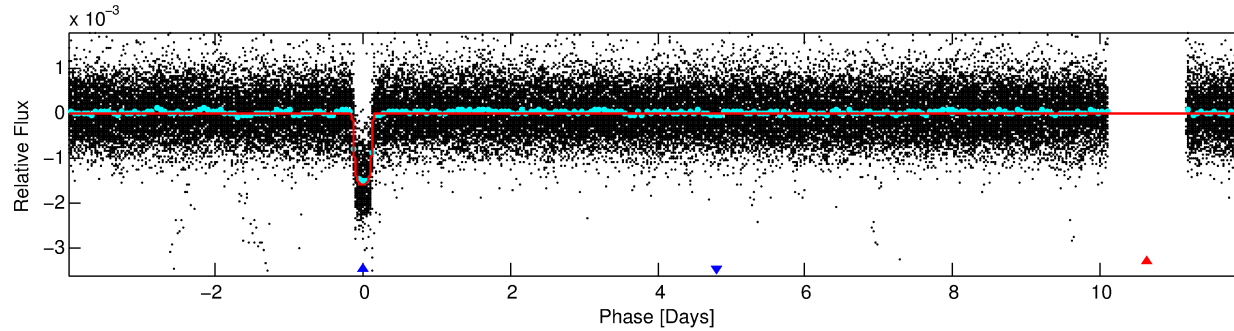
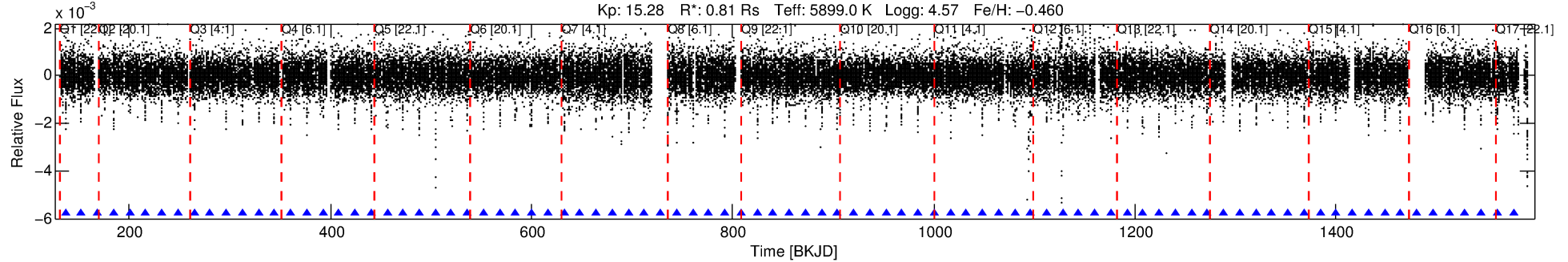
Ephemeris Match Information For 011408935-02

No Significant Match Found

DV One-Page Summary

KIC: 11408935 Candidate: 2 of 2 Period: 15.995 d
KOI: K06086 Corr: No Ephemeris Match

Kp: 15.28 R*: 0.81 Rs Teff: 5899.0 K Logg: 4.57 Fe/H: -0.460



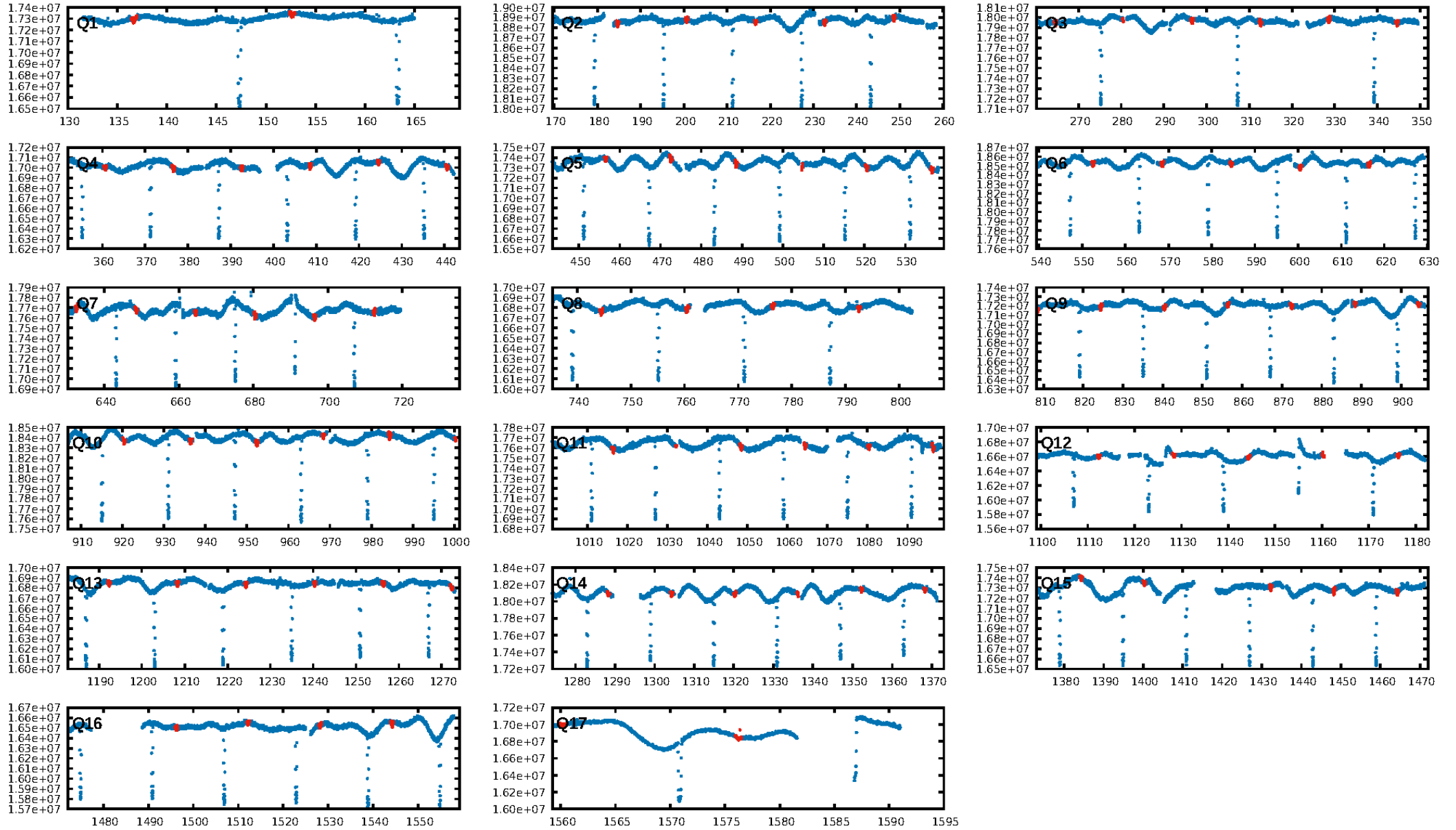
DV Fit Results:

Period = 15.99508 [0.00003] d
Epoch = 136.6657 [0.0017] BKJD
Rp/R* = 0.0421 [0.0006]
a/R* = 10.26 [0.58]
b = 0.86 [0.02]
Seff = 49.34 [18.24]
Teq = 676 [62] K
Rp = 3.69 [1.00] Re
a = 0.1194 [0.0280] AU
Ag = 55.72 [24.28] [2.25σ]
Teff = 2855 [205] K [10.19σ]

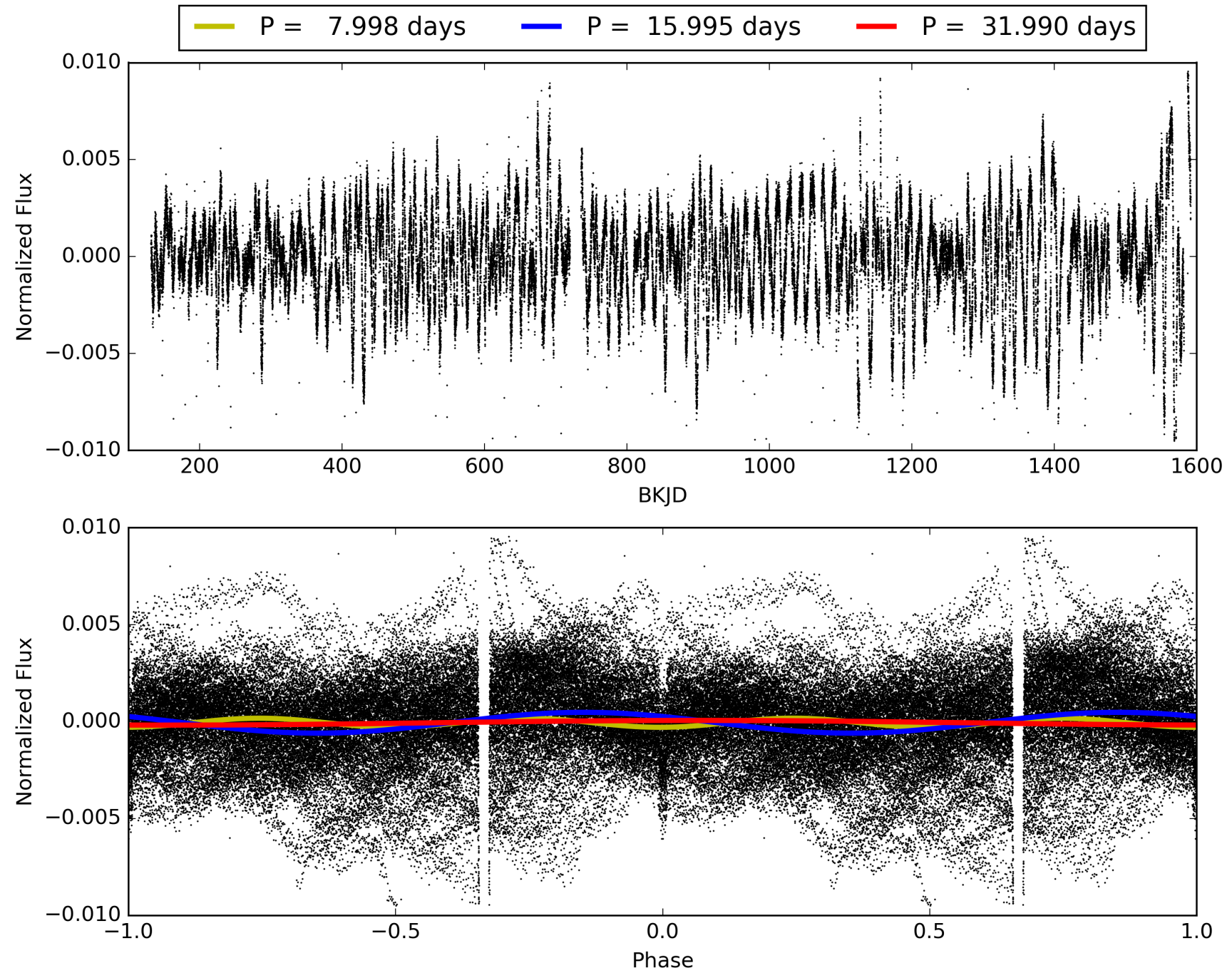
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 37.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [83/83]
GhostDiagnostic-chr: 2.911
Centroid-sig: 0.9%
Centroid-so: 0.197 arcsec [1.47σ]
OotOffset-rm: 0.132 arcsec [1.48σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.177 arcsec [1.70σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 011408935-02, PDC Light Curves

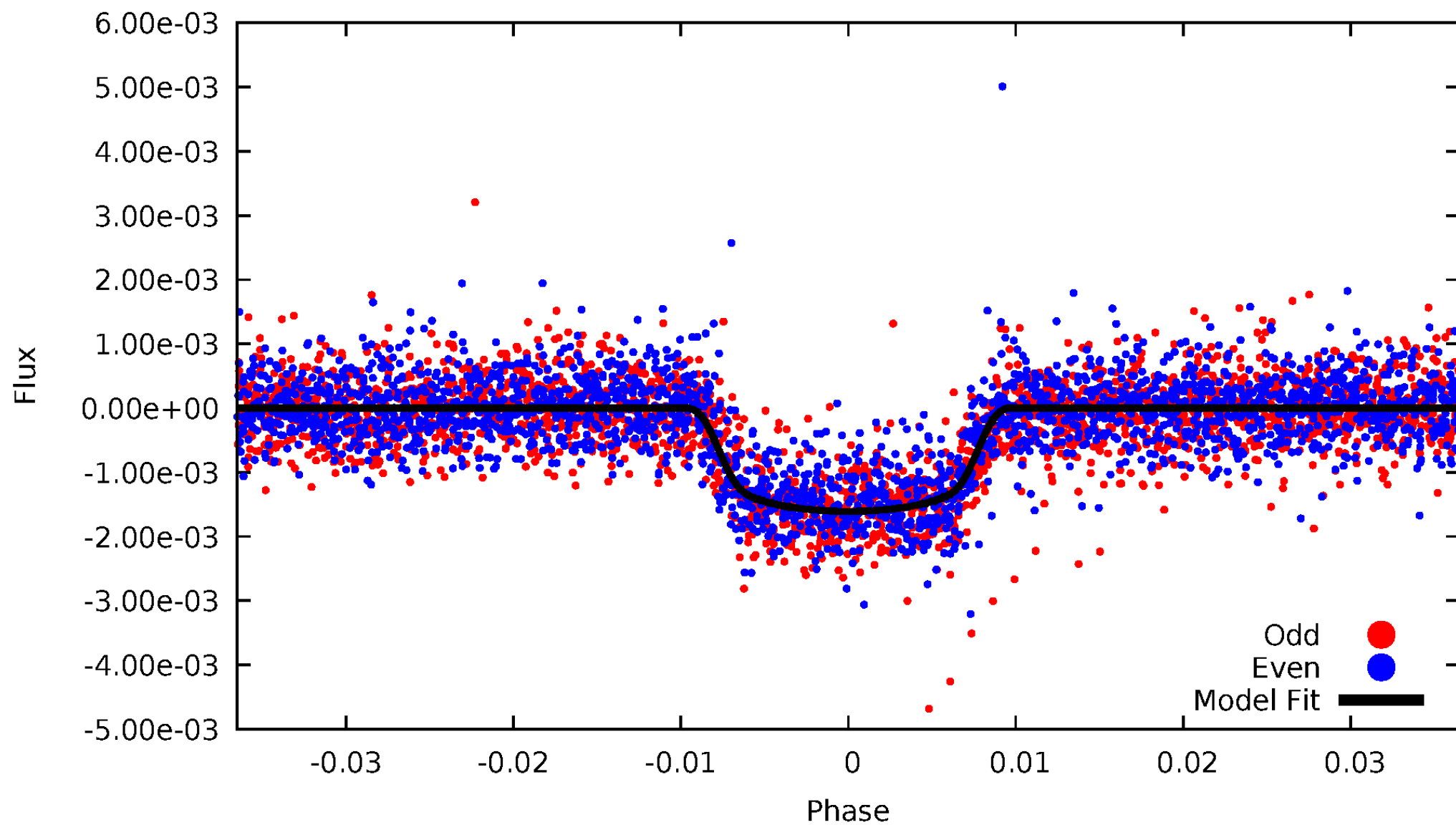


TCE 011408935-02



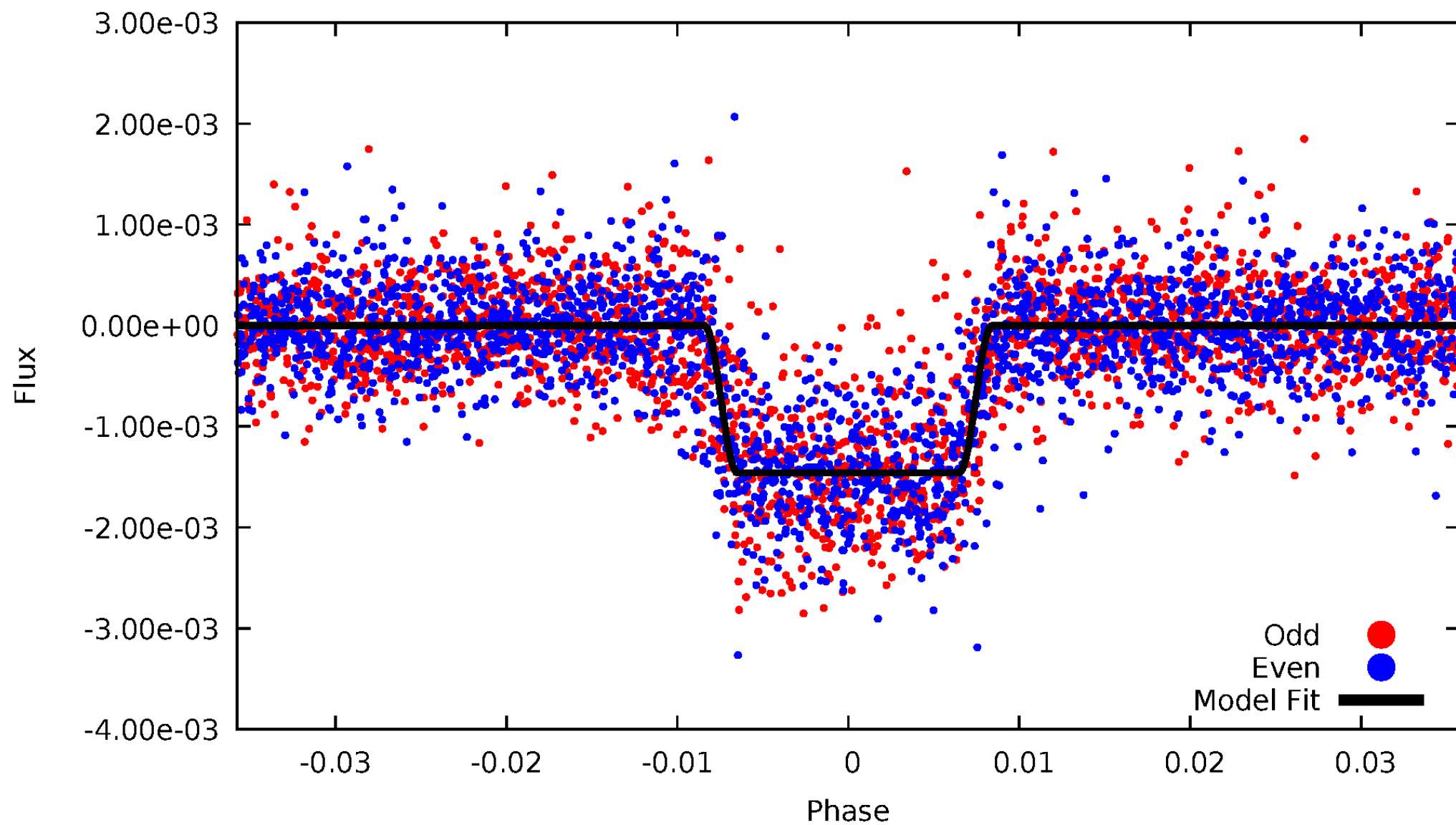
DV Odd/Even

TCE 011408935-02



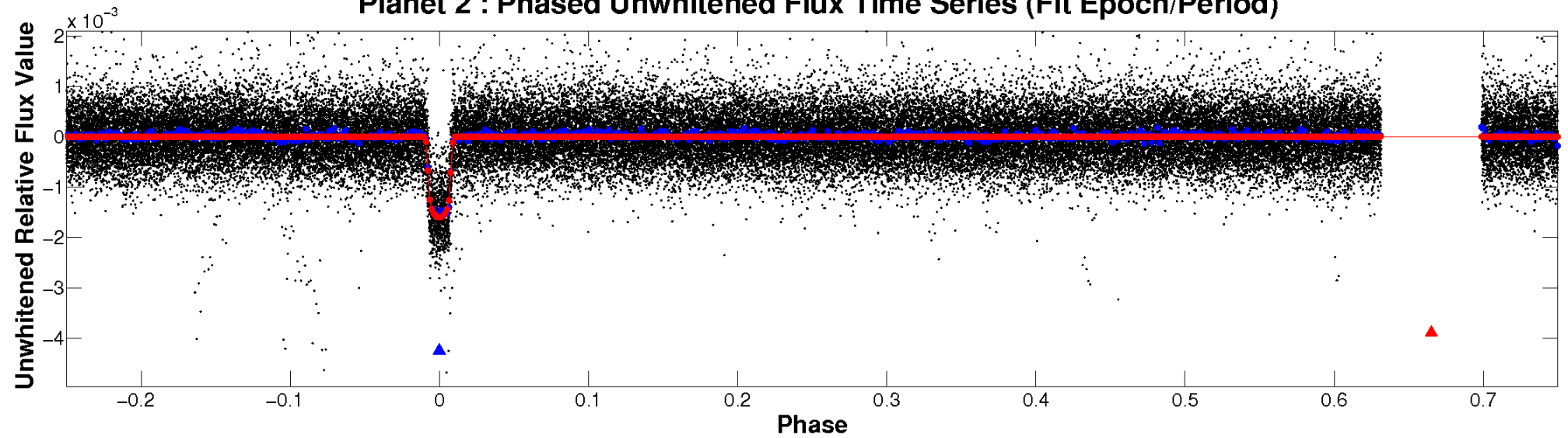
ALT Odd/Even

TCE 011408935-02

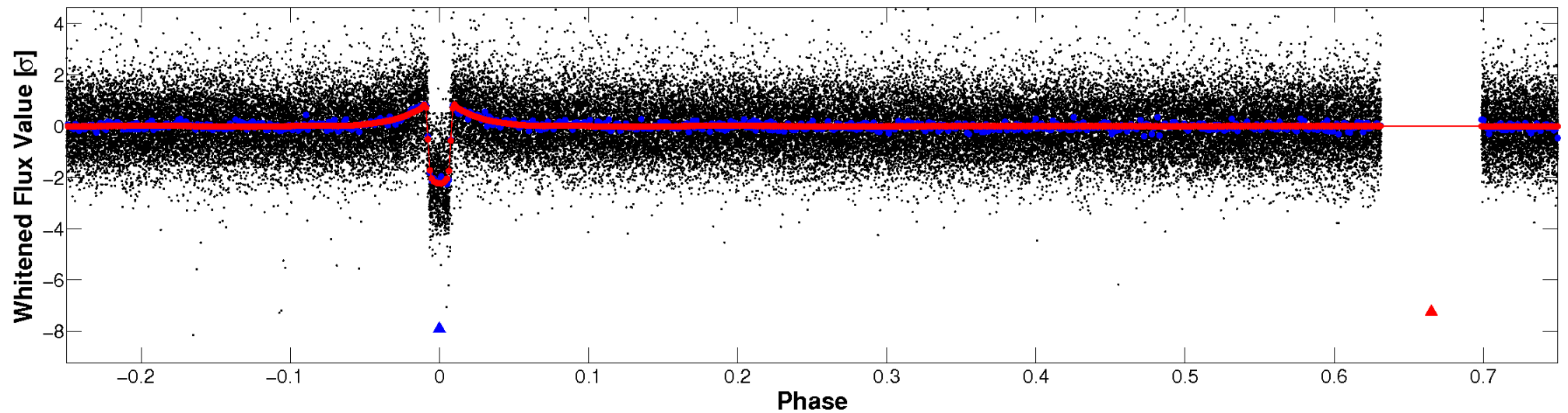


Non-Whitened Vs. Whitened Light Curve

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

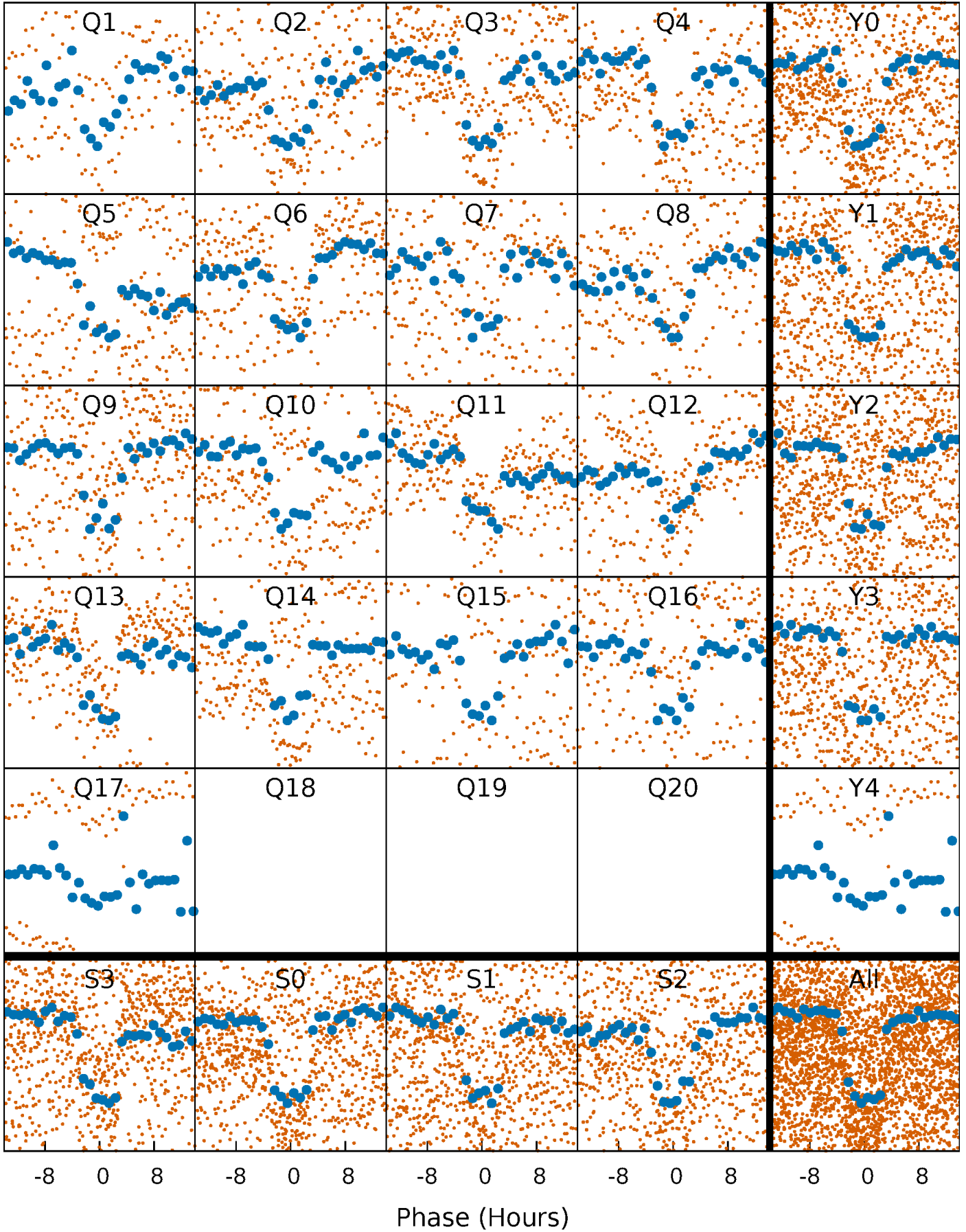


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



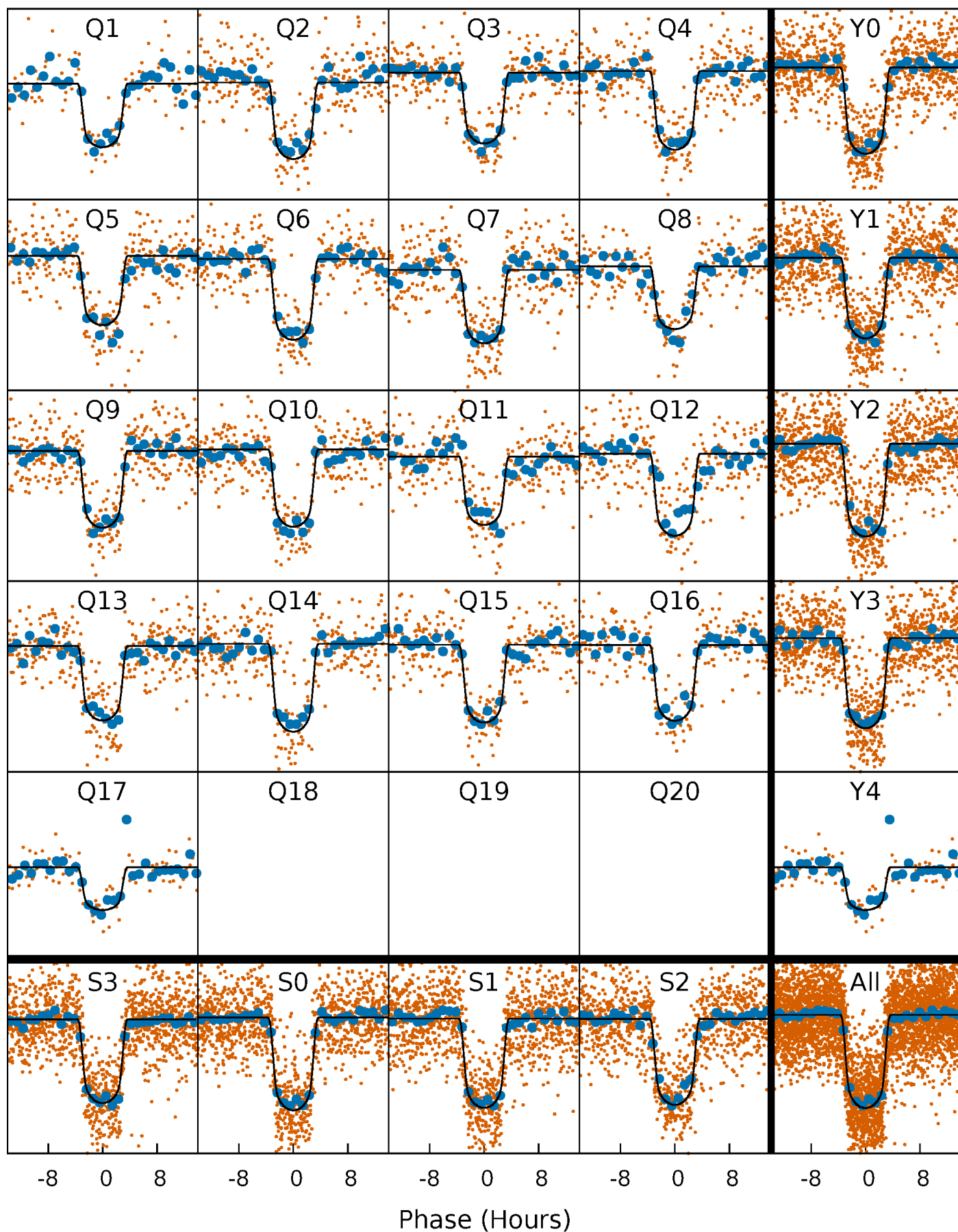
PDC Quarter-Phased Transit Curves

TCE 011408935-02 P= 15.995081 Days $T_0=136.665712$ (BKJD)



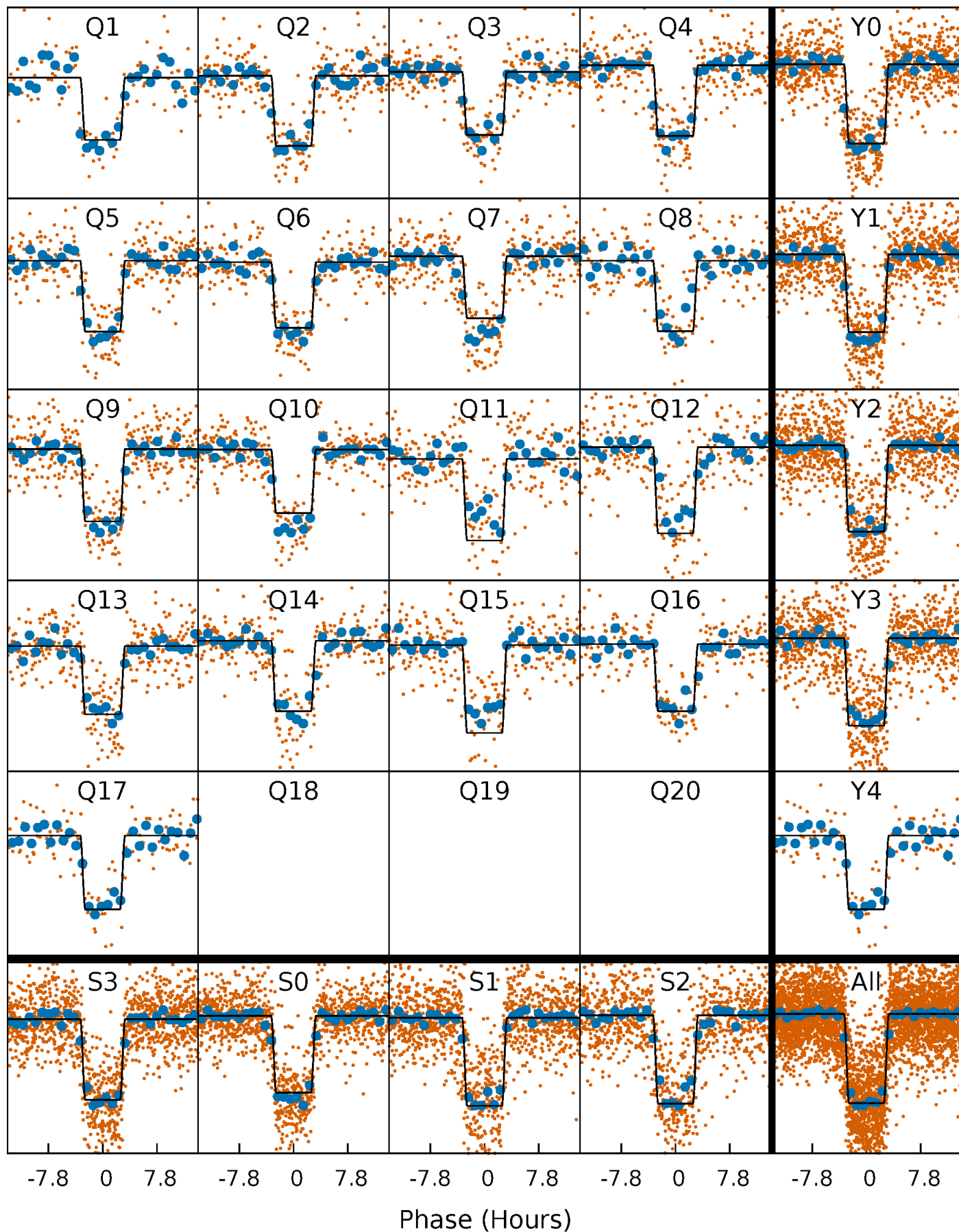
DV Quarter-Phased Transit Curves

TCE 011408935-02 P= 15.995081 Days $T_0=136.665712$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

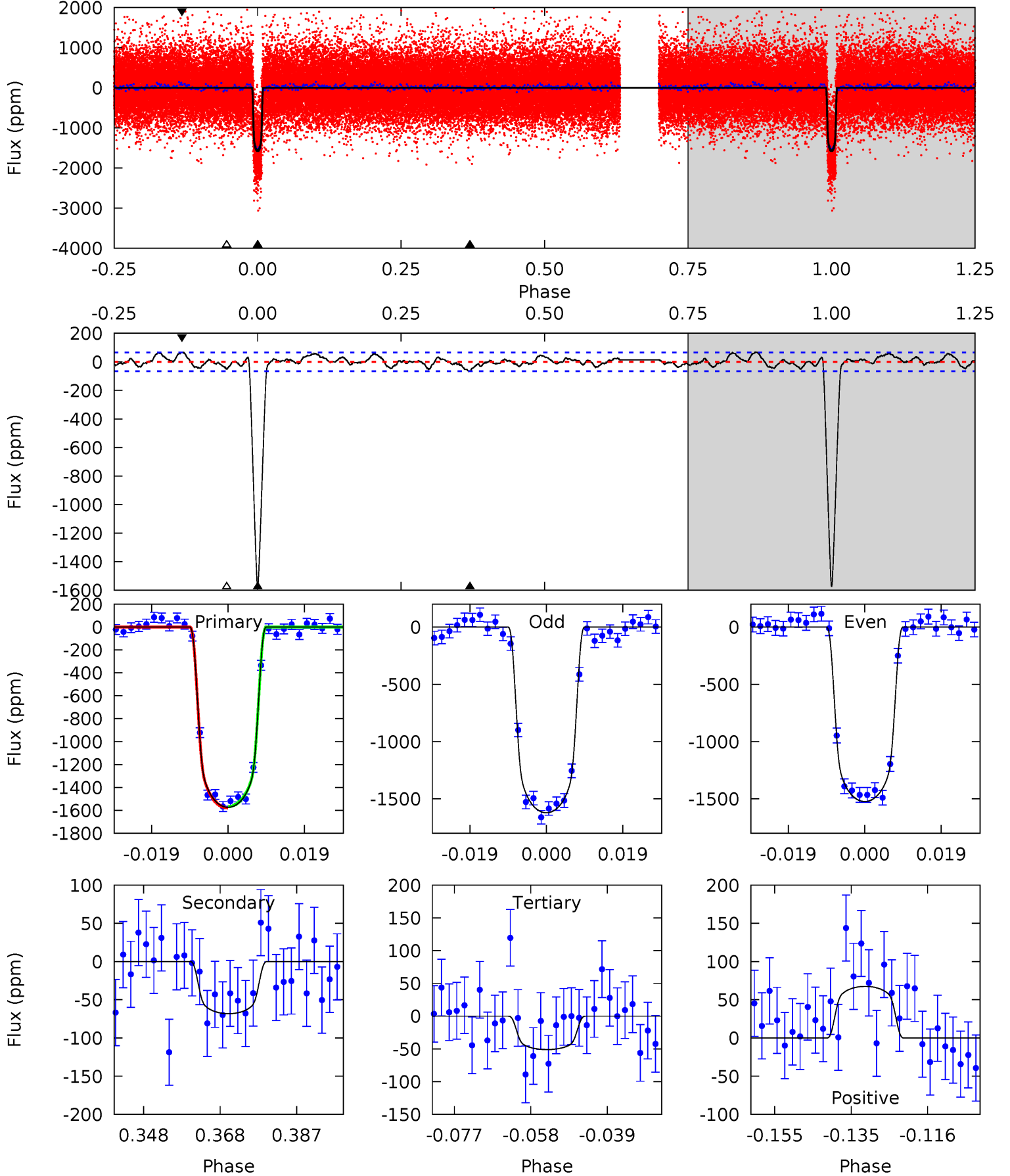
TCE 011408935-02 P= 15.994768 Days $T_0=136.680554$ (BKJD)



DV Model-Shift Uniqueness Test

011408935-02, $P = 15.995081$ Days, $E = 120.670631$ Days

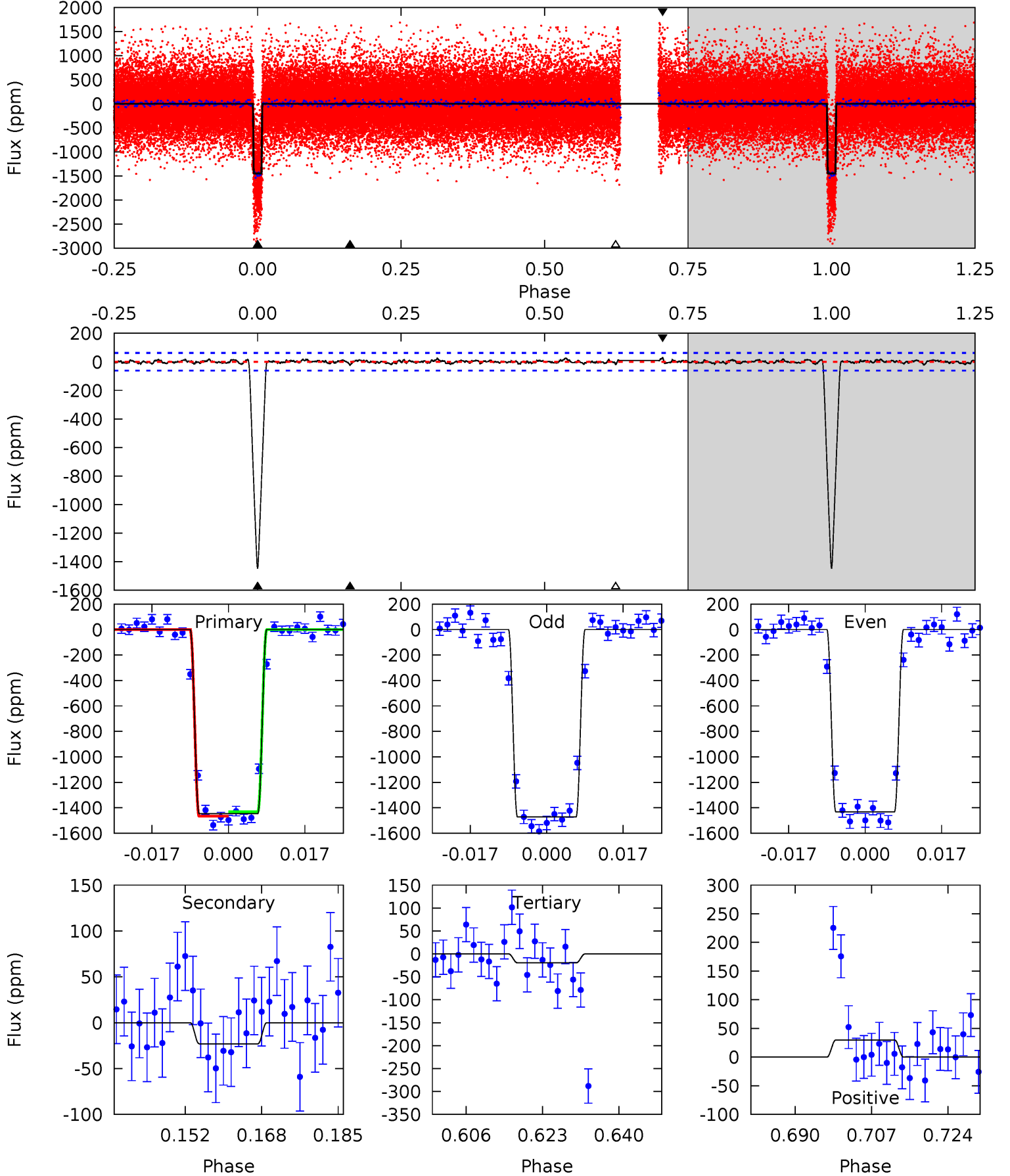
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
118.5	5.14	3.84	5.08	4.90	2.34	1.79	114.6	113.4	1.30	0.06	3.71	0.97	0.04	0.46



Alt Model-Shift Uniqueness Test

011408935-02, $P = 15.994768$ Days, $E = 120.685786$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
115.2	1.83	1.56	2.37	4.93	2.39	0.60	113.6	112.8	0.28	-0.54	1.57	0.96	0.02	1.37



Stellar Parameters For KIC 011408935

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5899^{+159}_{-177}	$4.574^{+0.034}_{-0.195}$	$-0.460^{+0.300}_{-0.300}$	$0.805^{+0.218}_{-0.058}$	$0.889^{+0.096}_{-0.096}$	$2.399^{+0.450}_{-1.196}$
	+3%/-3%	+1%/-4%	+65%/-65%	+27%/-7%	+11%/-11%	+19%/-50%
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 011408935-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-68 ± 13	$3.79^{+0.56}_{-0.25}$	962^{+59}_{-38}	3186^{+114}_{-106}	35^{+9}_{-10}
Alt.	-23 ± 13	$3.43^{+0.51}_{-0.22}$	966^{+60}_{-44}	2821^{+168}_{-285}	14^{+8}_{-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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

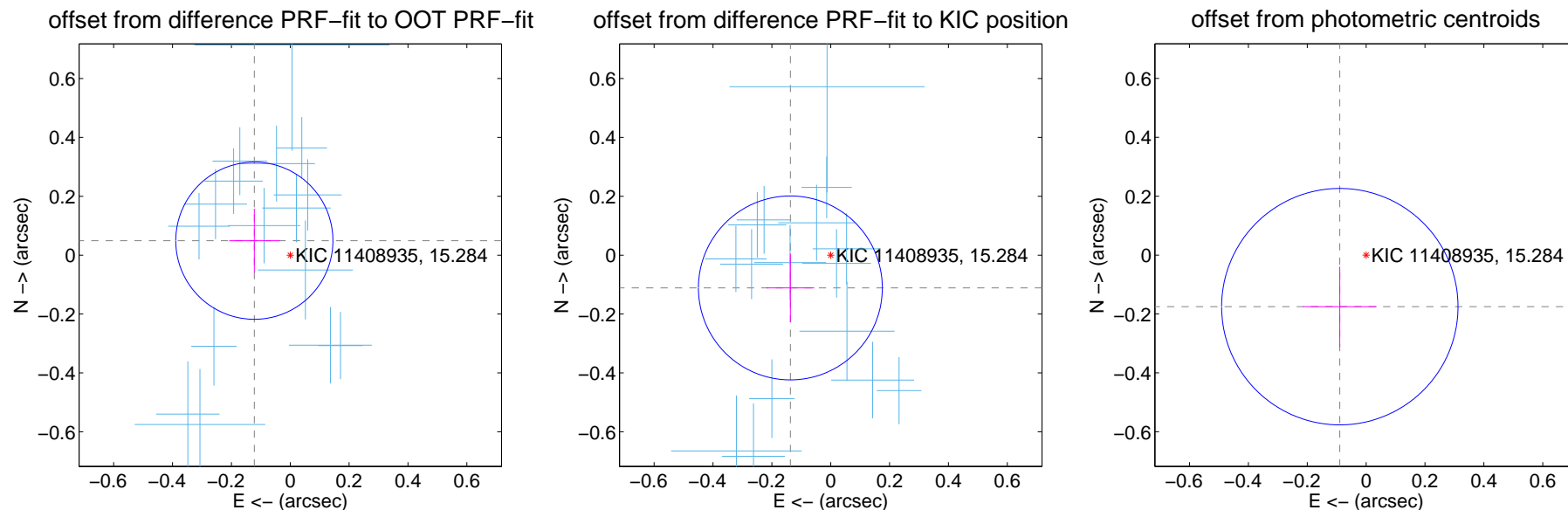
DV Centroid Data

Supplemental centroid analysis for 011408935-02. Kepler magnitude: 15.28. Transit SNR 67.10

There are 17 quarters with good PRF difference image offsets

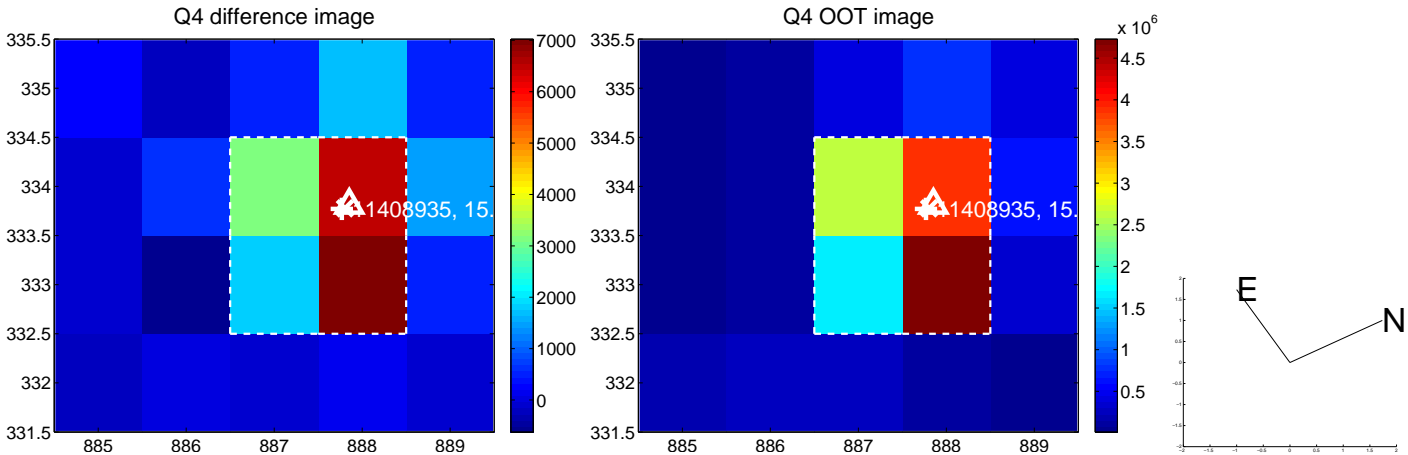
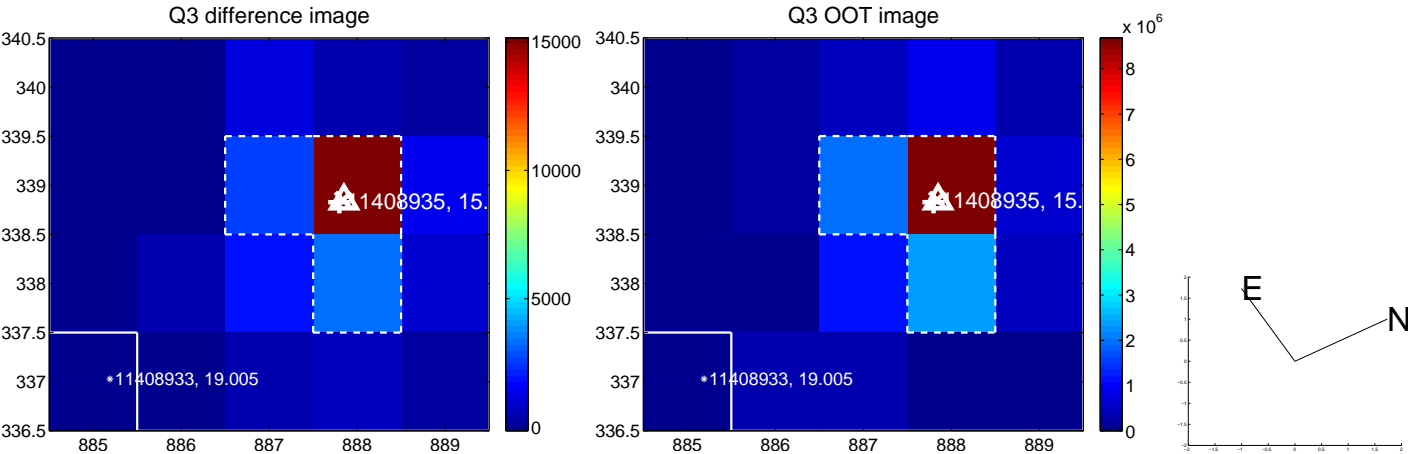
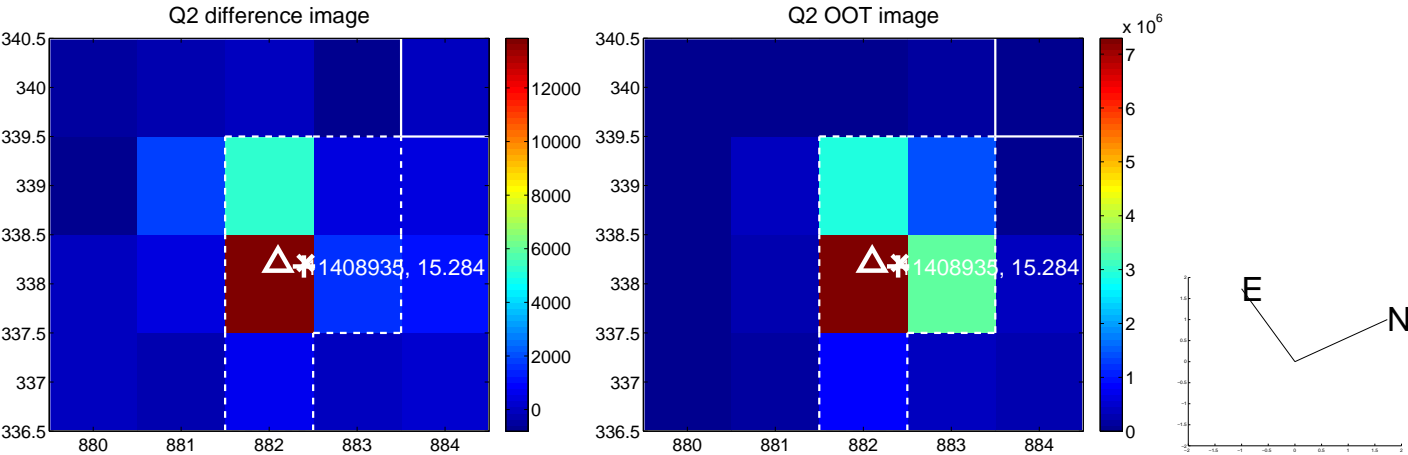
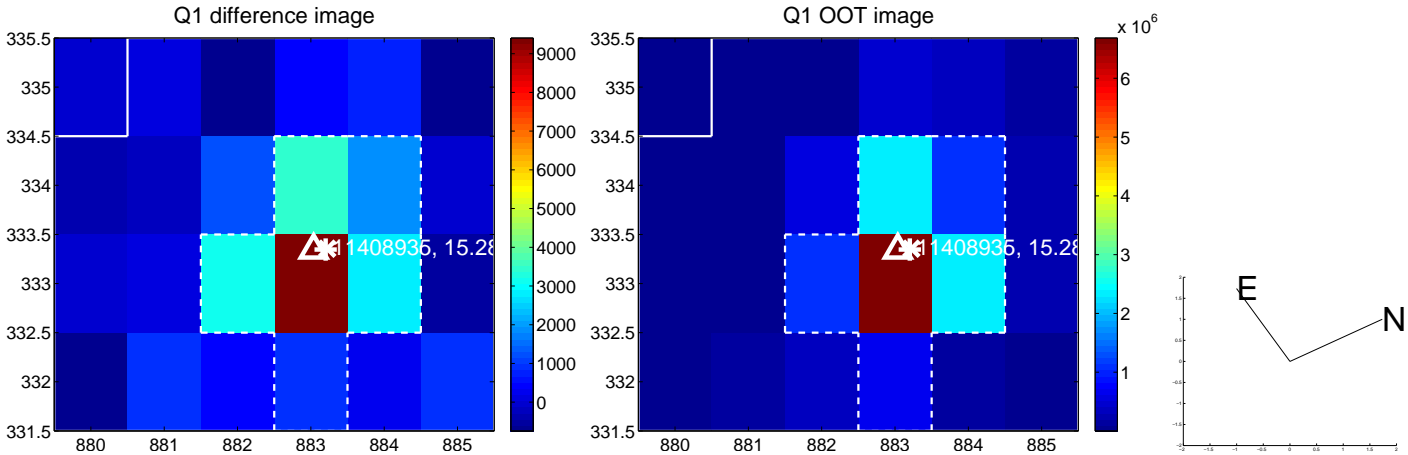
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.132 ± 0.089	1.48	0.122 ± 0.085	0.049 ± 0.109
PRF-fit source offset from KIC position	0.177 ± 0.104	1.70	0.137 ± 0.081	-0.111 ± 0.116
photometric centroid source offset	0.20 ± 0.13	1.47	0.09 ± 0.12	-0.18 ± 0.14

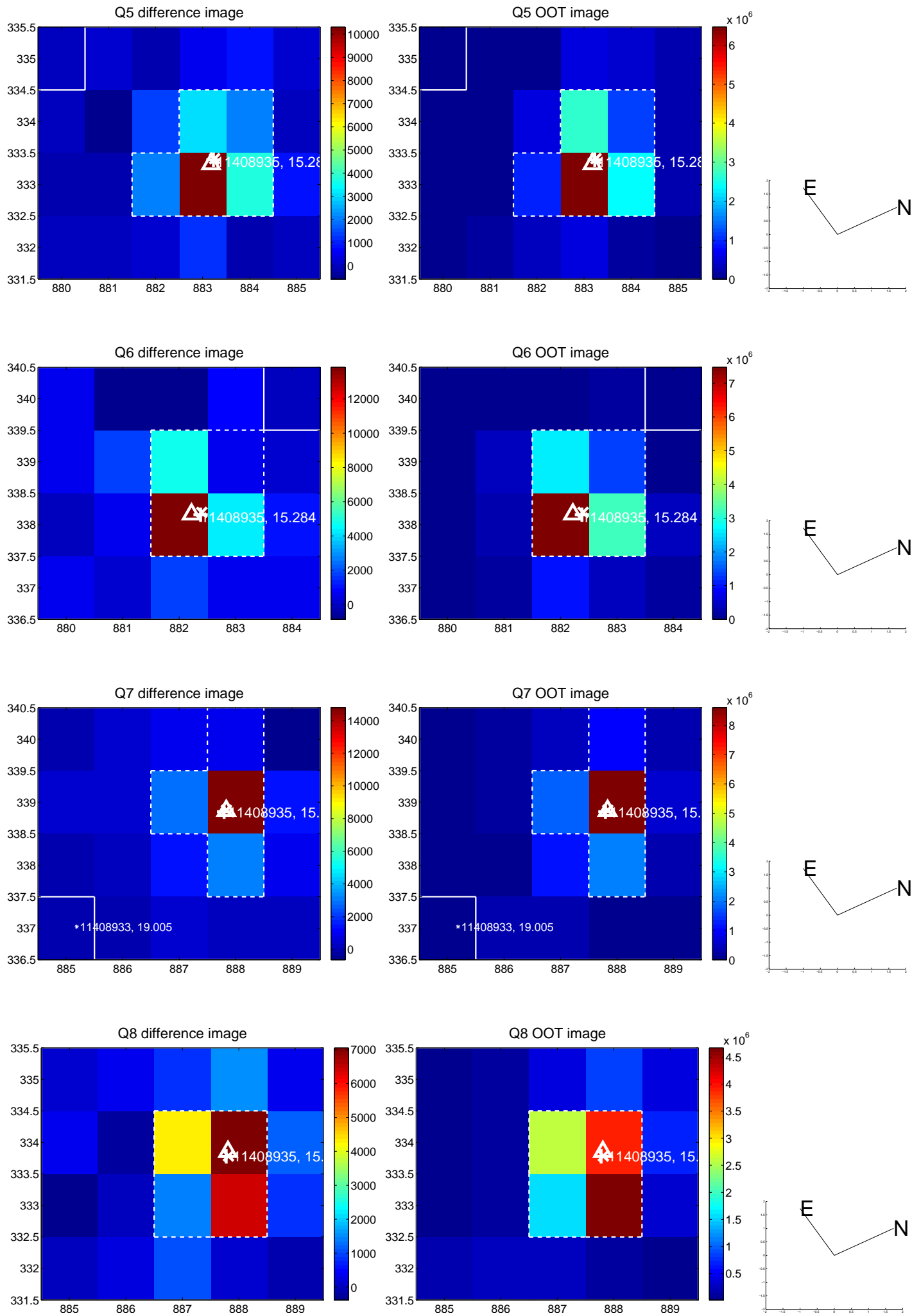


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

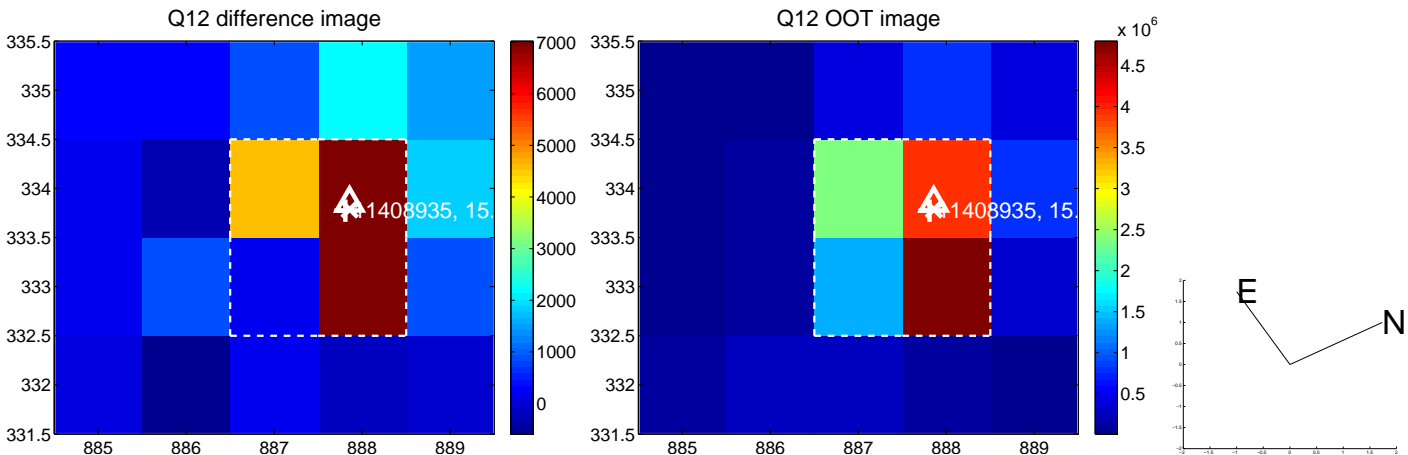
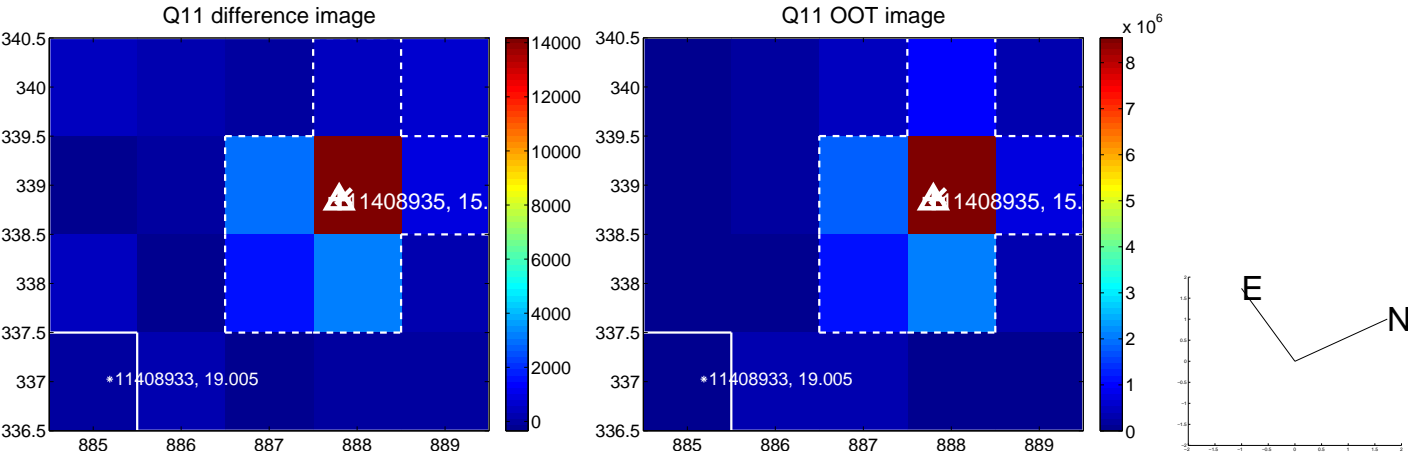
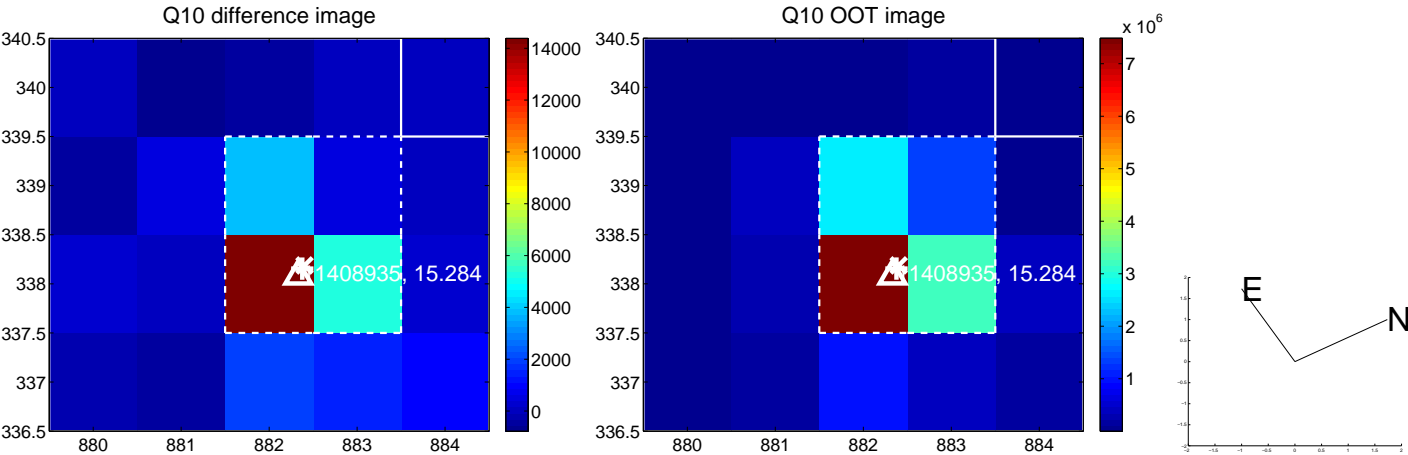
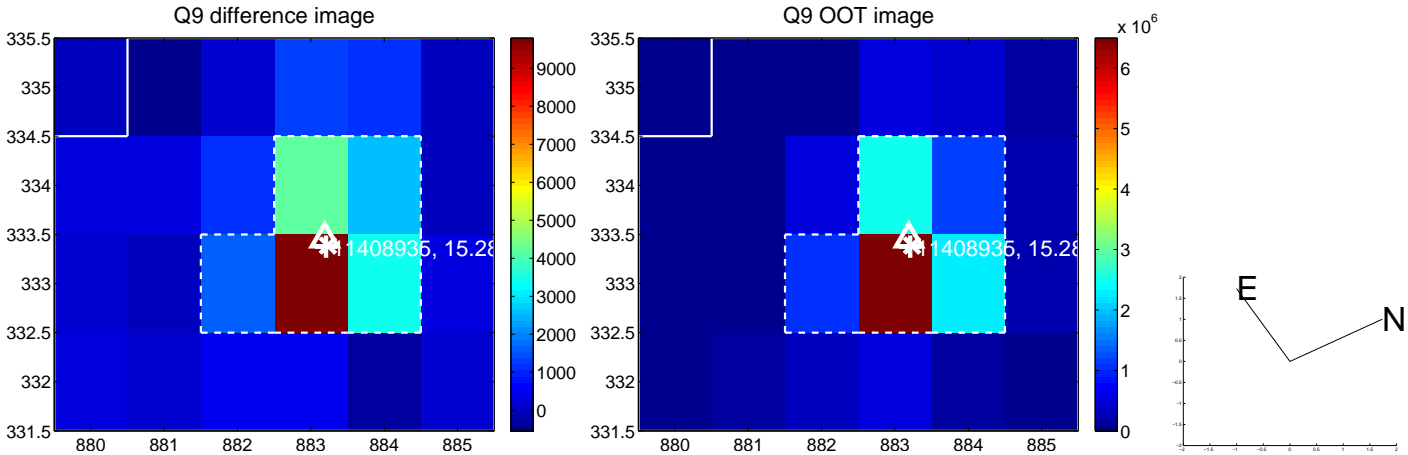
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



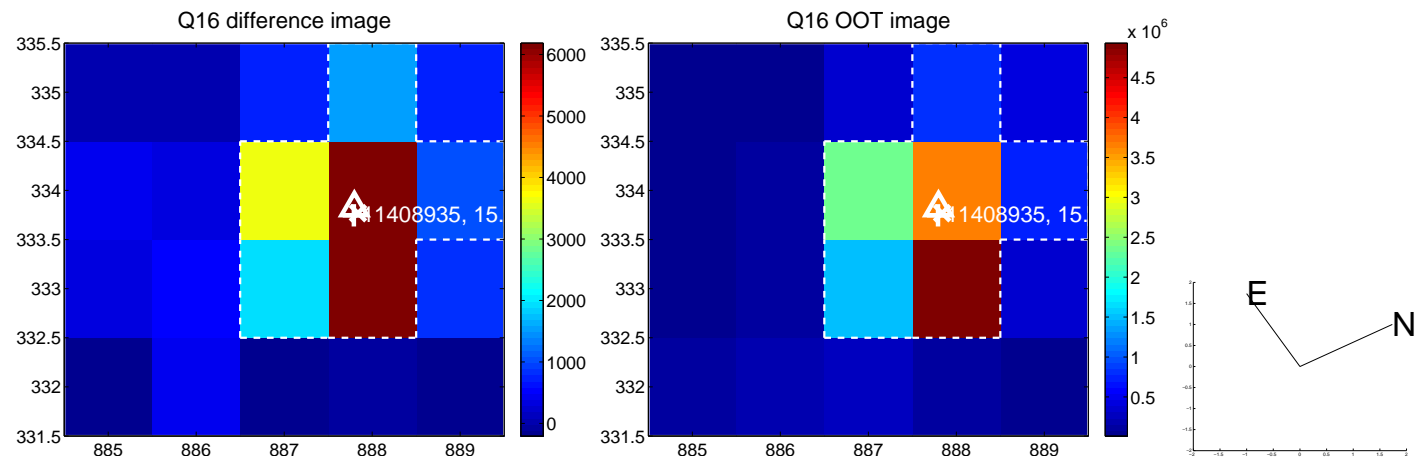
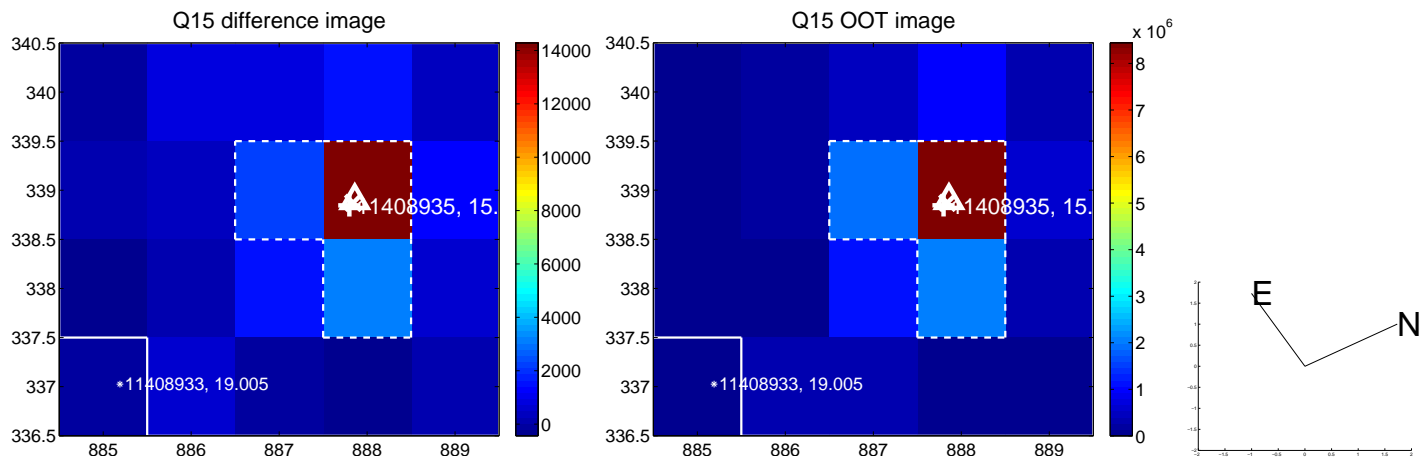
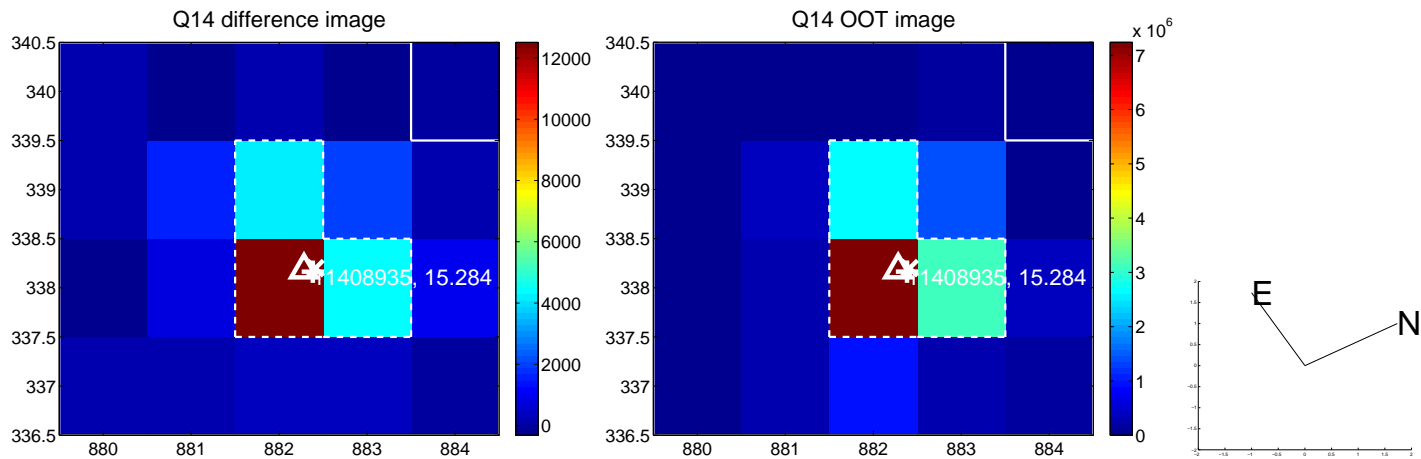
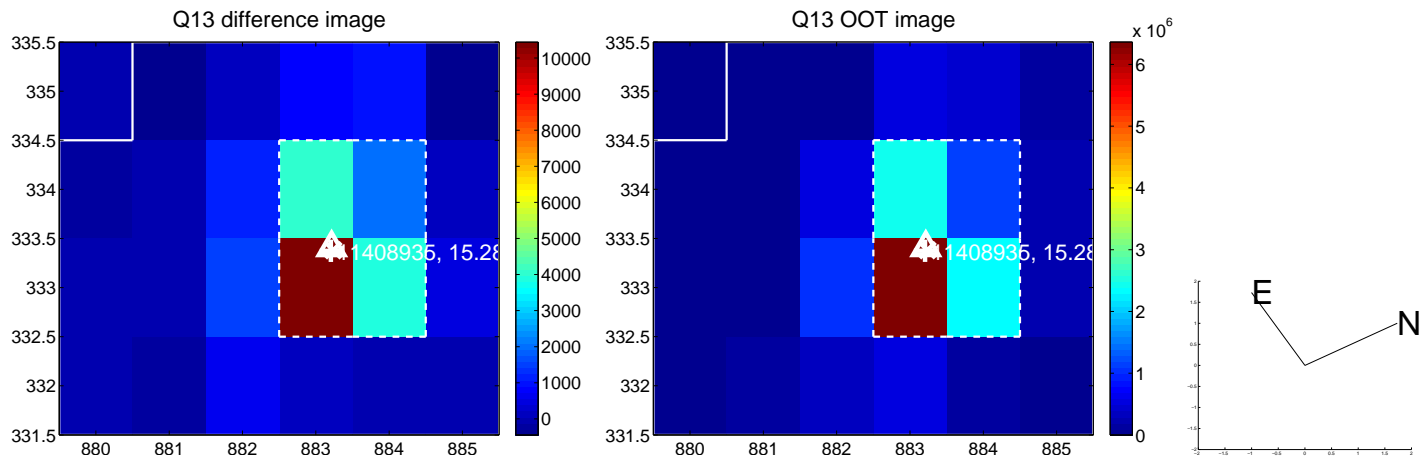
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



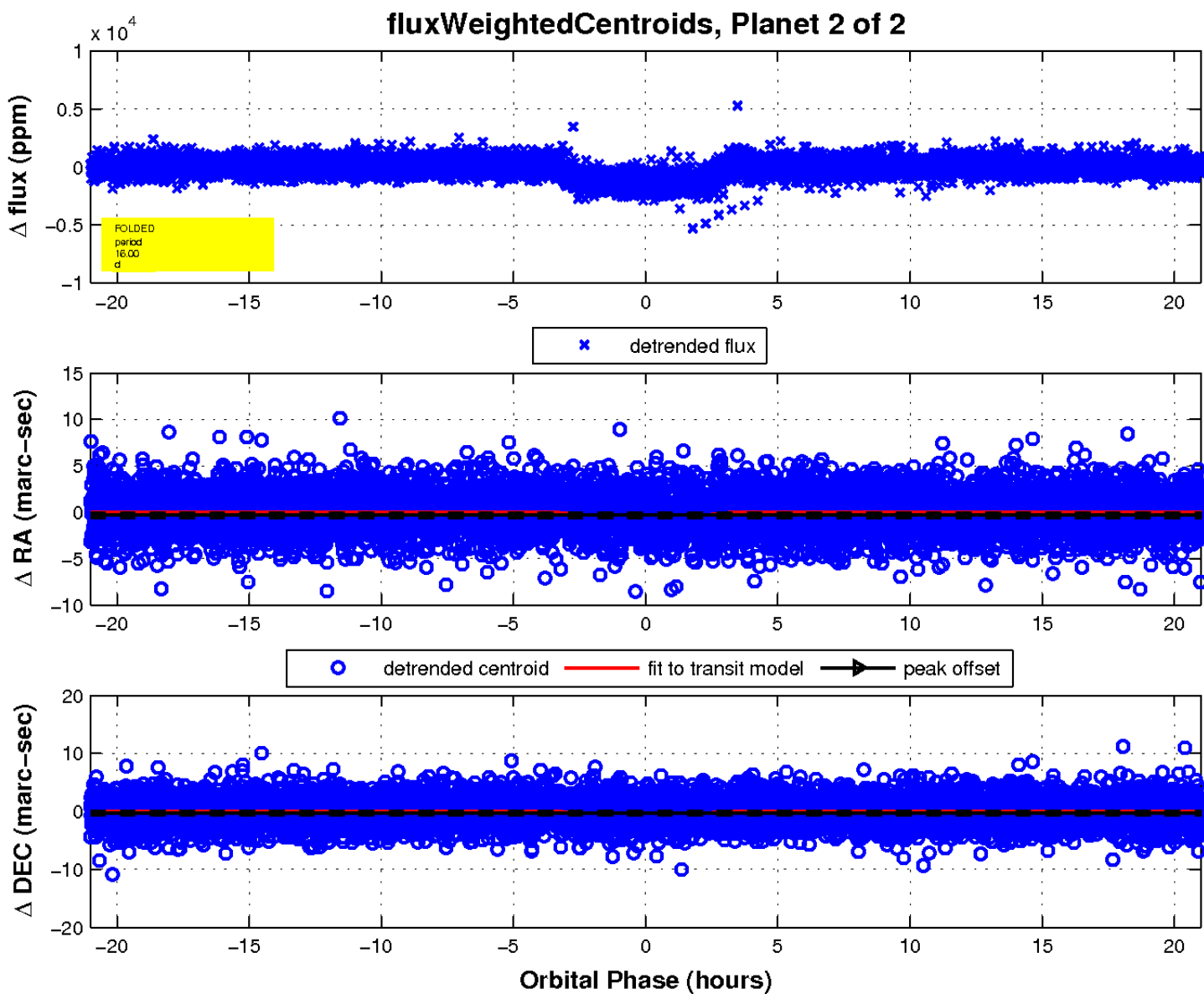
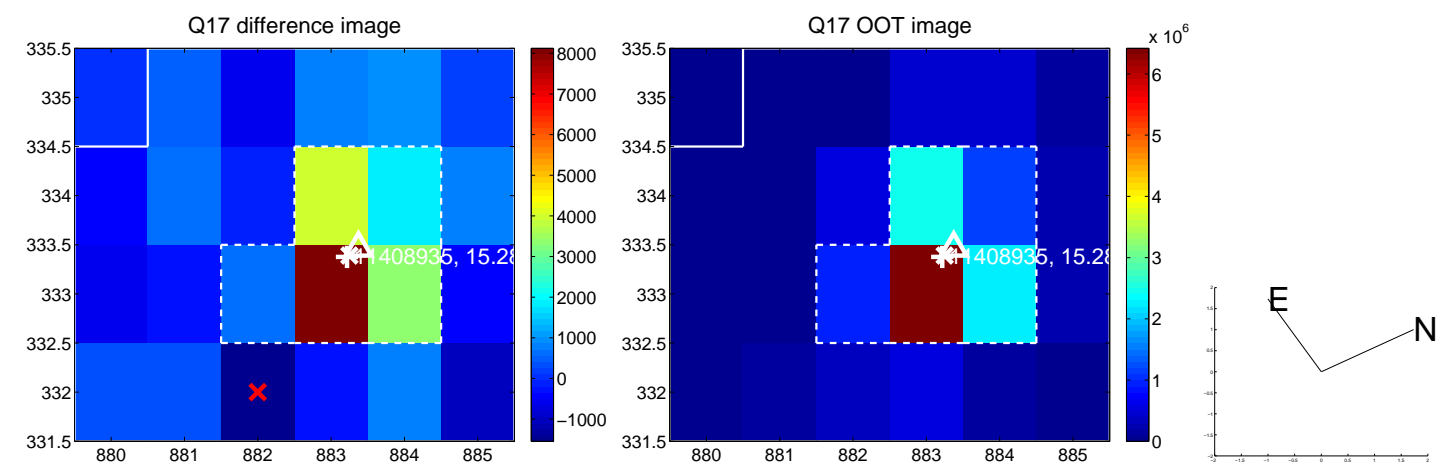
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

