

KIC 008804455

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})
008804455-01	OBS	2159.02	2.392636	133.784057	106.4	1.380	20.1	23.7	1.09	5716	1.34	956.41
008804455-02	OBS	2159.01	7.596668	131.954160	120.9	3.745	18.5	20.0	1.09	5716	1.43	204.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008804455-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_OFFSET
008804455-02	OBS	PC	0.90	0	0	0	0	NO_COMMENT

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 008804455-01

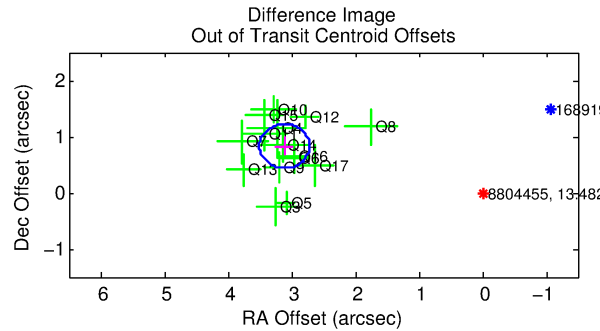
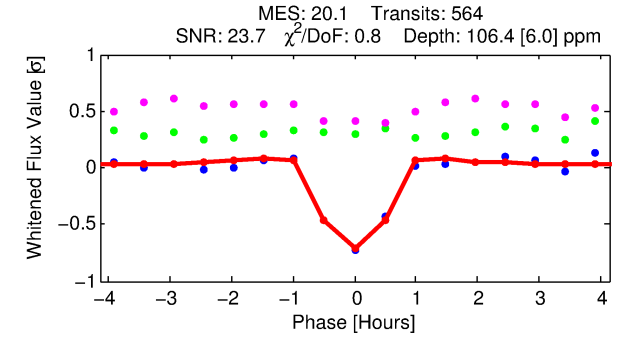
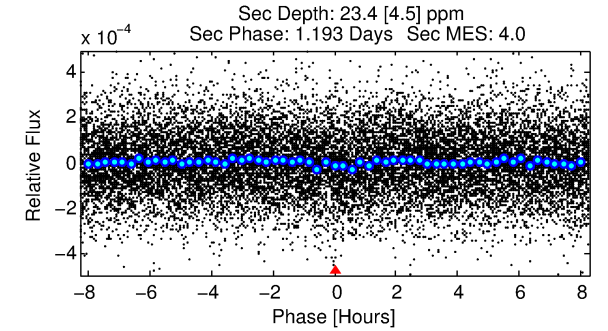
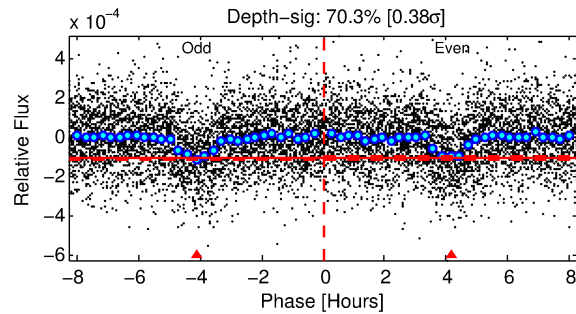
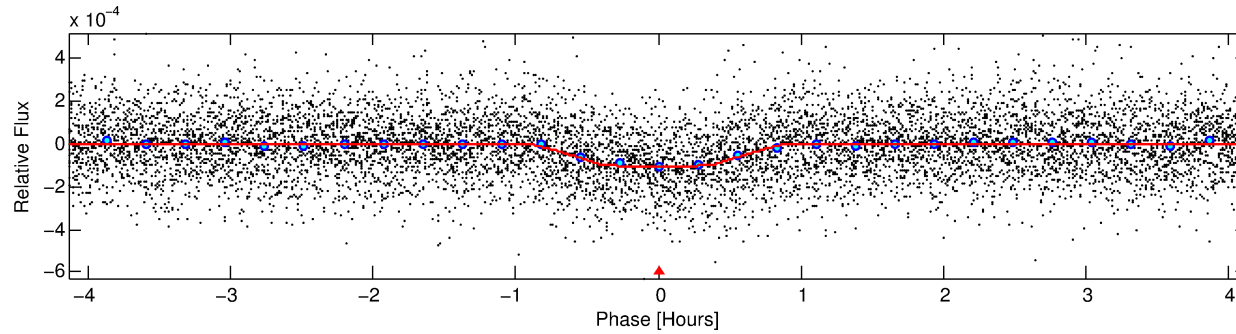
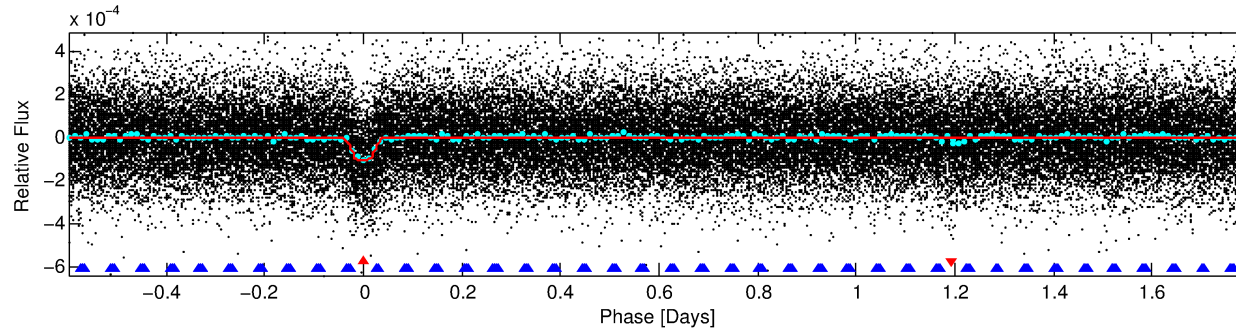
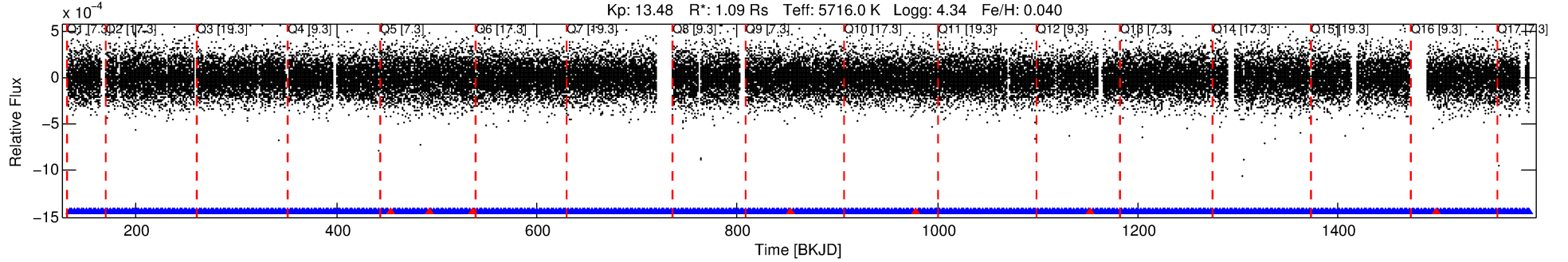
No Significant Match Found

DV One-Page Summary

KIC: 8804455 Candidate: 1 of 2 Period: 2.393 d

KOI: K02159.02 Corr: 0.967

Kp: 13.48 R*: 1.09 Rs Teff: 5716.0 K Logg: 4.34 Fe/H: 0.040



DV Fit Results:

Period = 2.39264 [0.00001] d
Epoch = 133.7841 [0.0009] BKJD
Rp/R* = 0.0113 [0.0034]
a/R* = 6.21 [8.60]
b = 0.90 [0.31]
Seff = 956.41 [208.33]
Teq = 1418 [77] K
Rp = 1.35 [0.45] Re
a = 0.0345 [0.0046] AU
Ag = 8.46 [5.63] [1.33σ]
Teffp = 3739 [597] K [3.85σ]

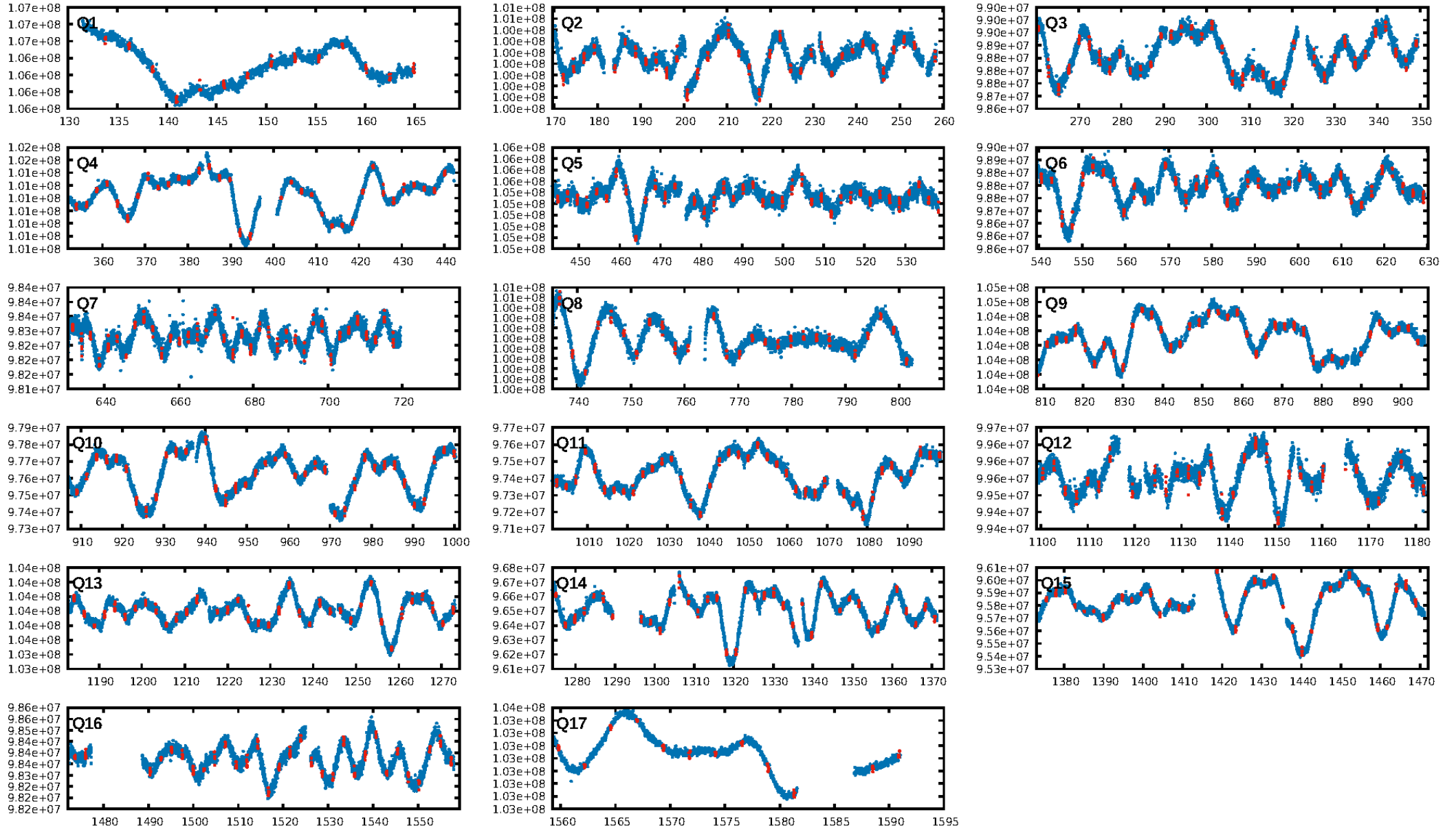
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [31.29σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.35e-86
RollingBand-fgt: 0.99 [531/538]
GhostDiagnostic-chr: 2.64
Centroid-sig: 0.0%
Centroid-so: 3.085 arcsec [7.95σ]
OotOffset-rm: 3.223 arcsec [24.55σ]
KicOffset-rm: 3.189 arcsec [22.92σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [17/17]

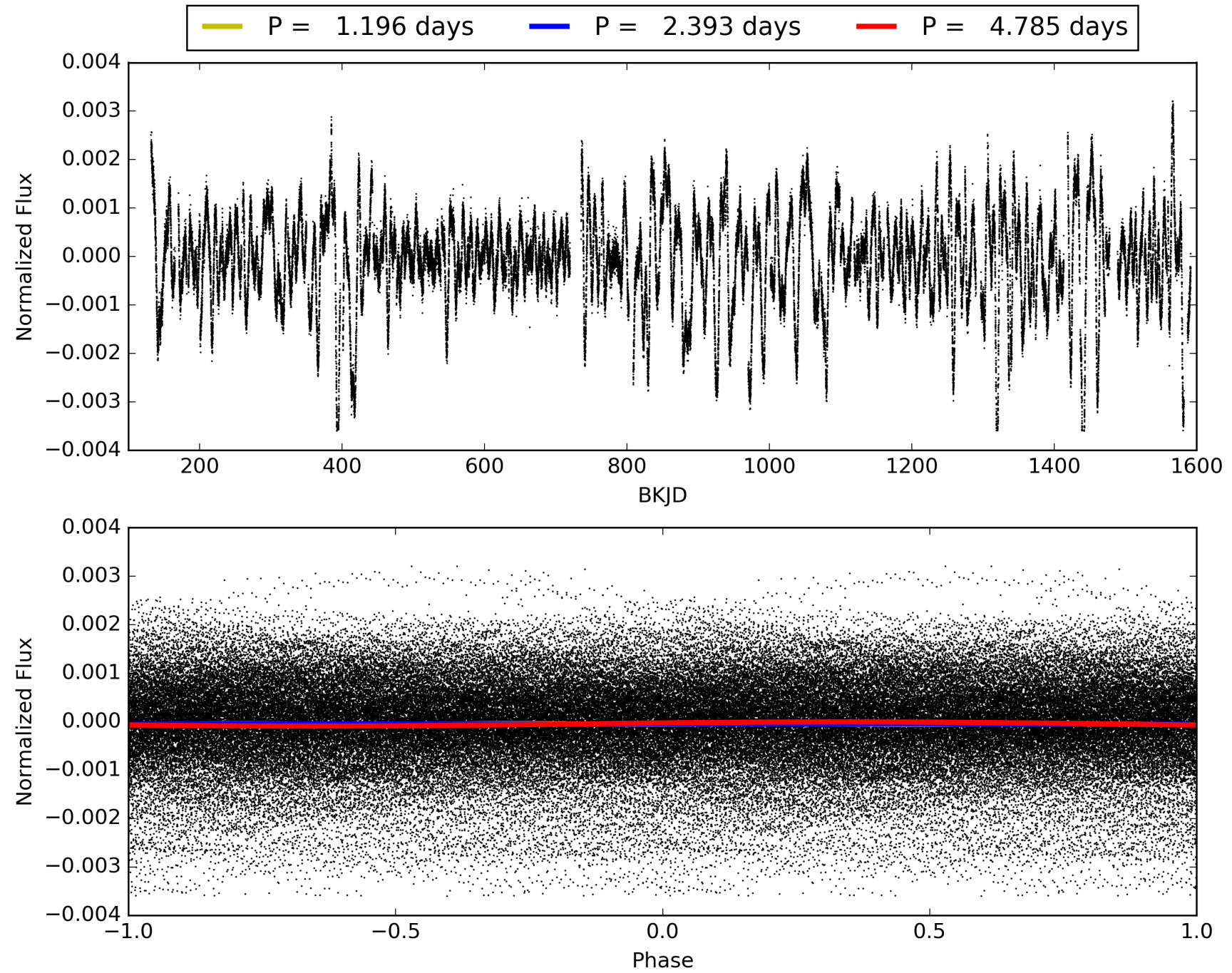
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:56:02 Z

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

TCE 008804455-01, PDC Light Curves

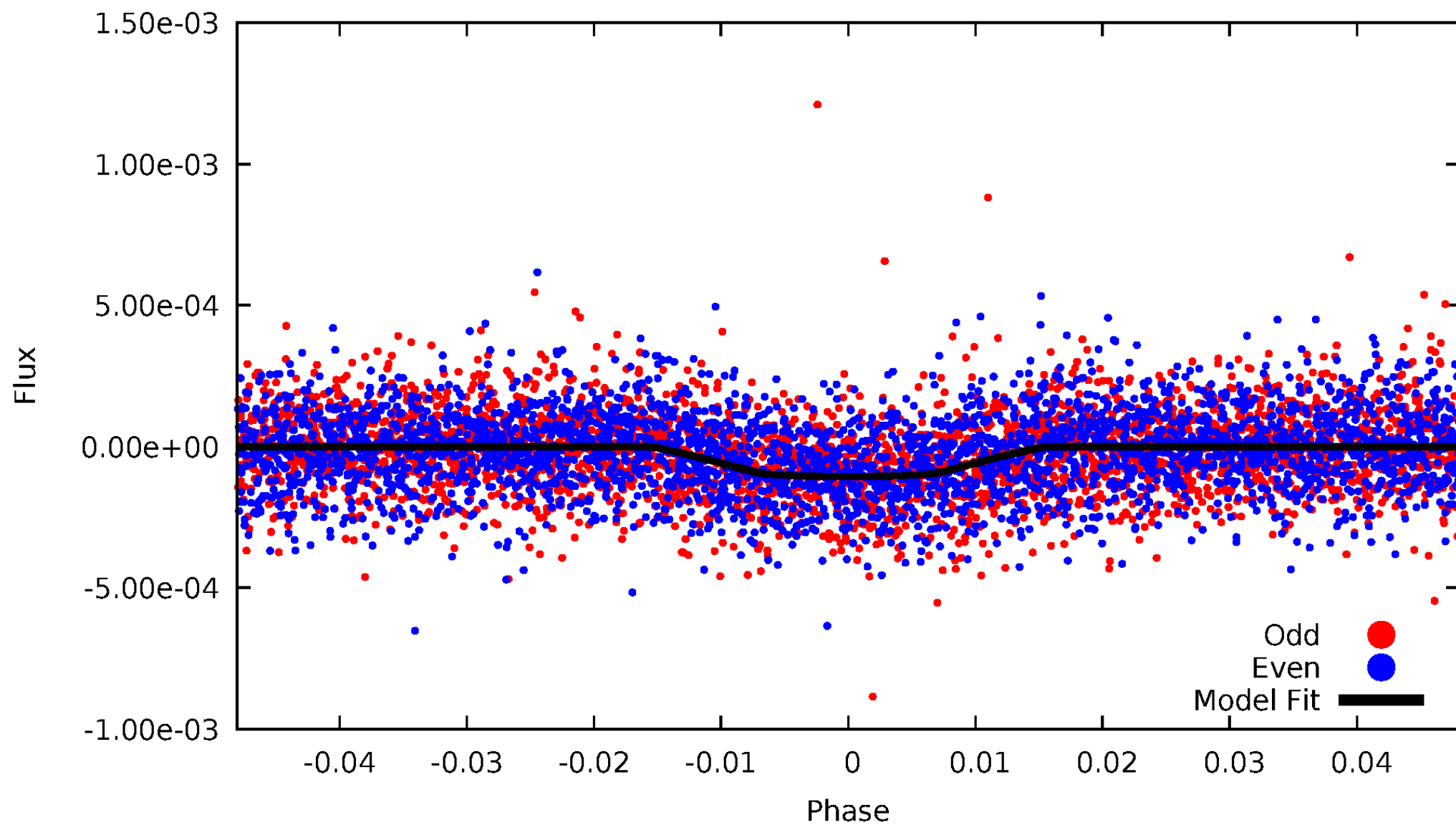


TCE 008804455-01



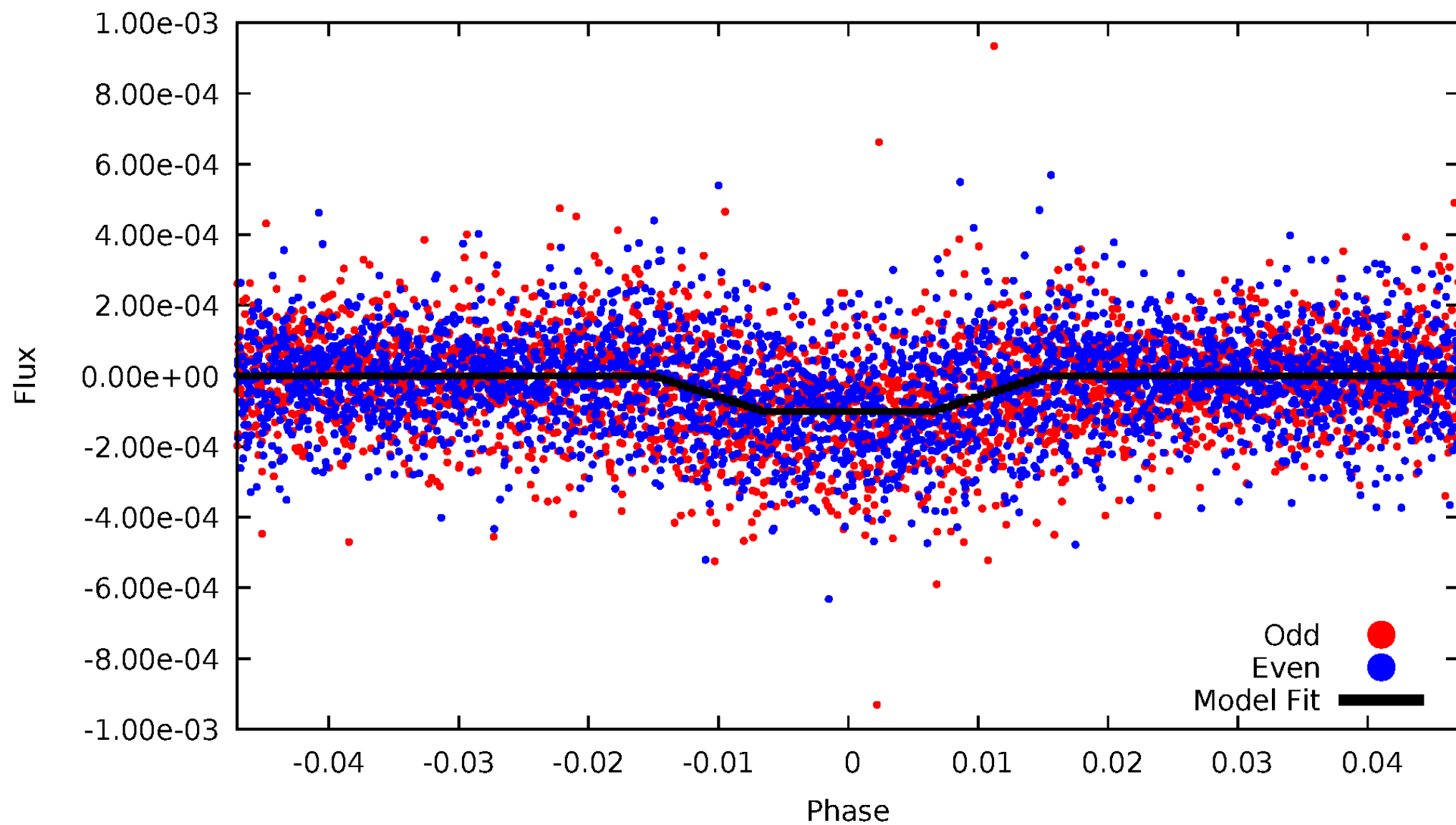
DV Odd/Even

TCE 008804455-01



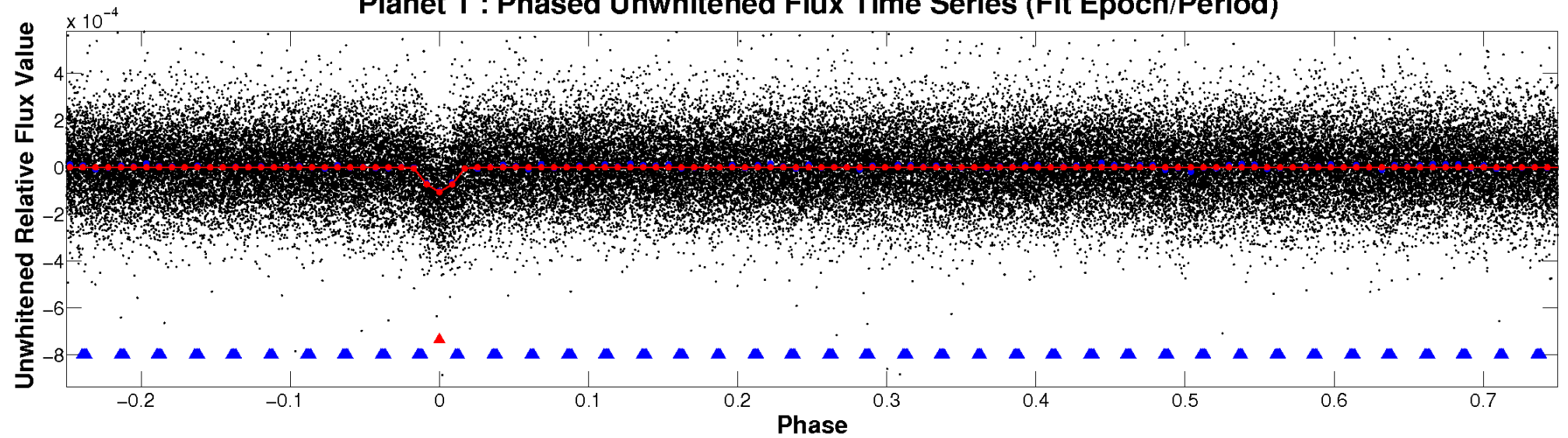
ALT Odd/Even

TCE 008804455-01

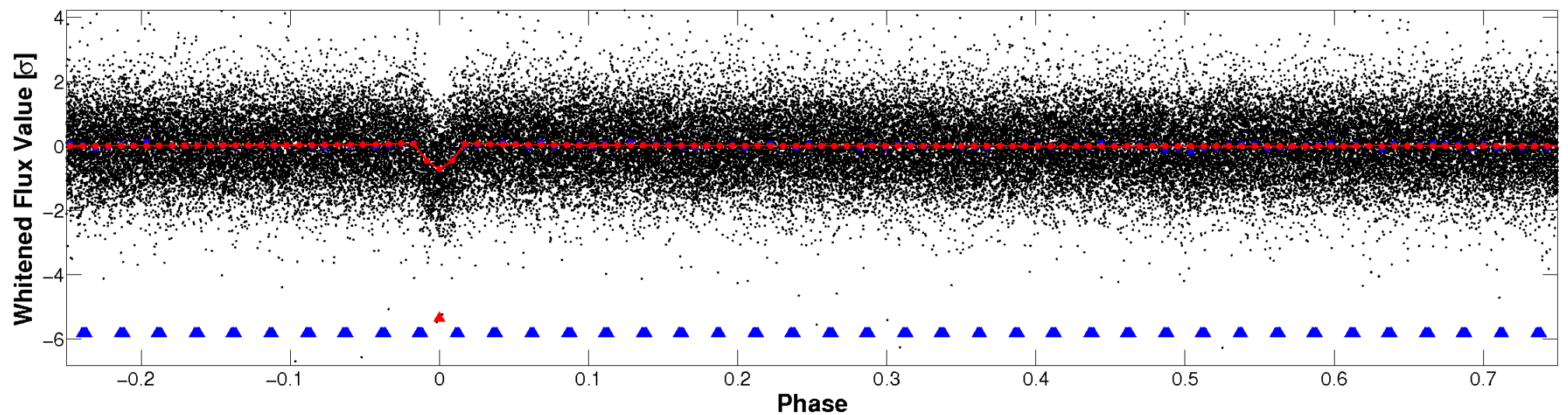


Non-Whitened Vs. Whitened Light Curve

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

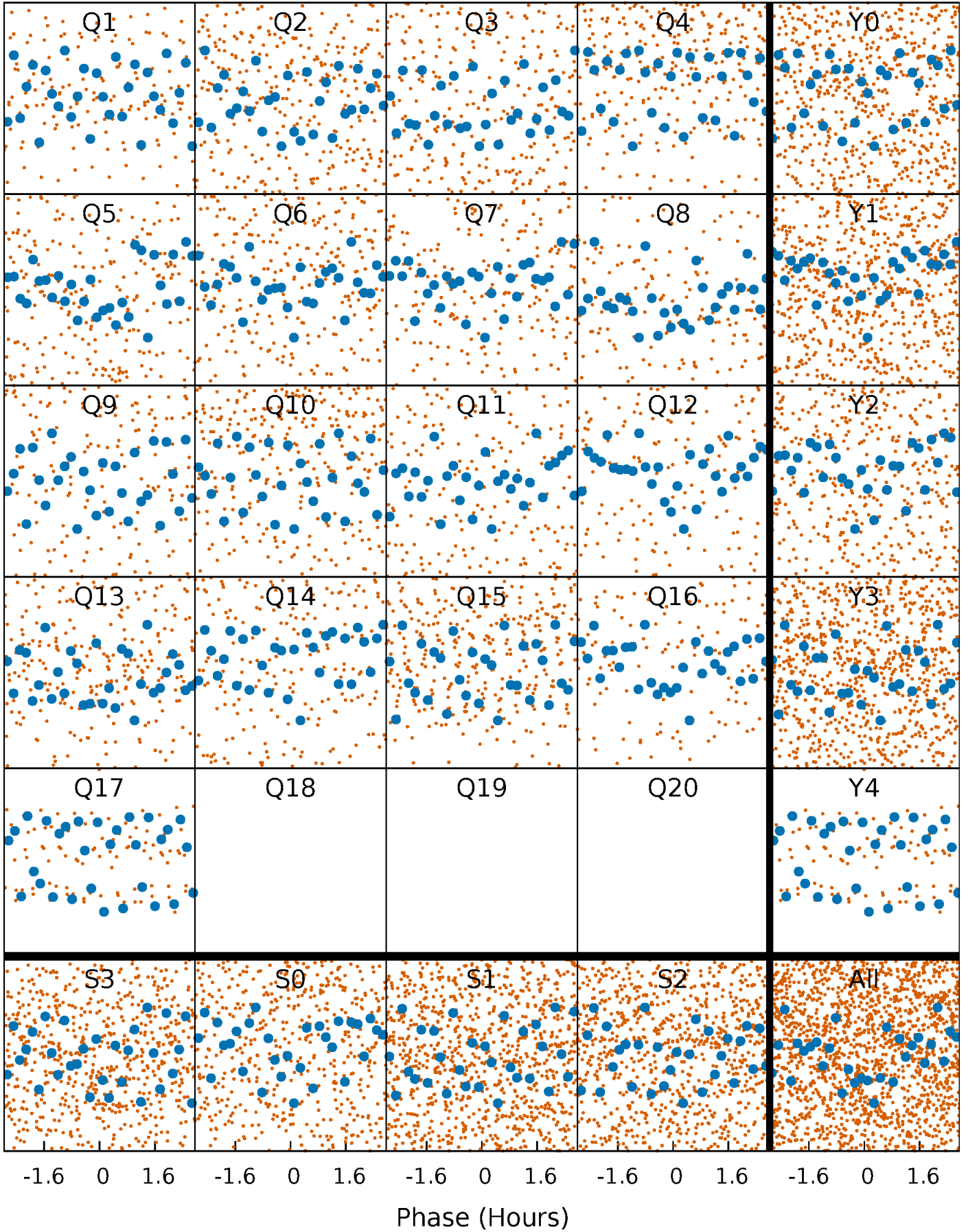


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



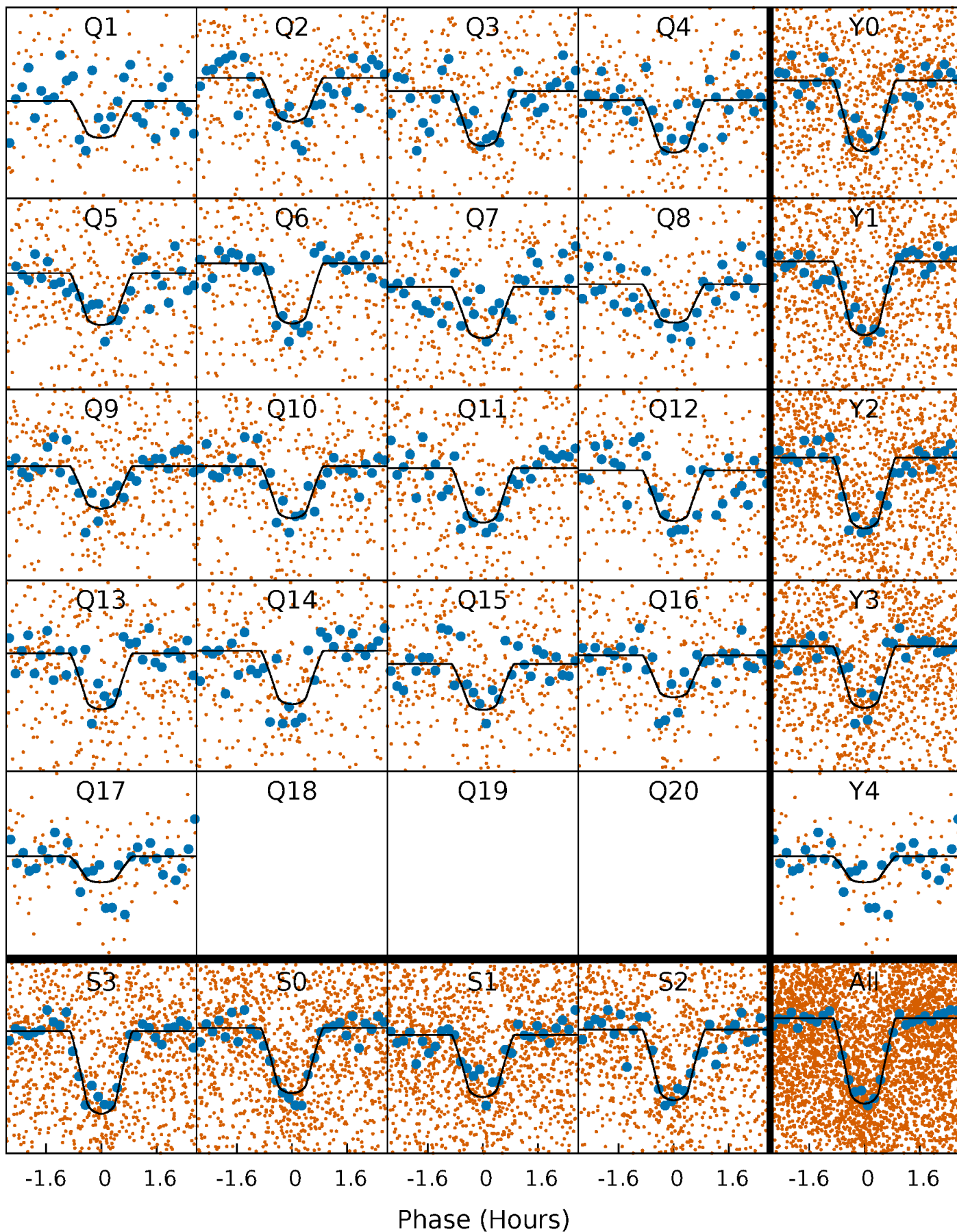
PDC Quarter-Phased Transit Curves

TCE 008804455-01 P= 2.392636 Days $T_0=133.784057$ (BKJD)



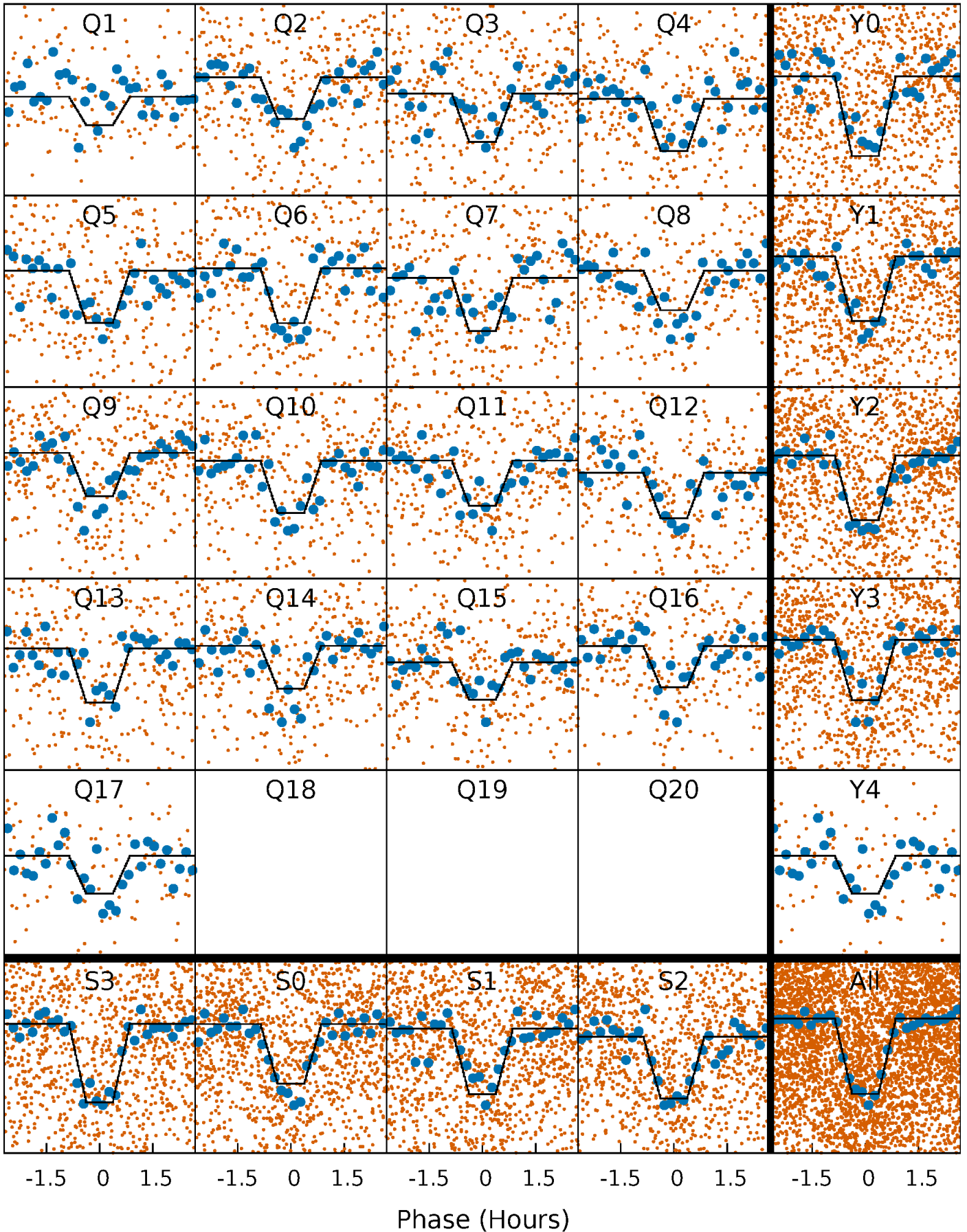
DV Quarter-Phased Transit Curves

TCE 008804455-01 P= 2.392636 Days $T_0=133.784057$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

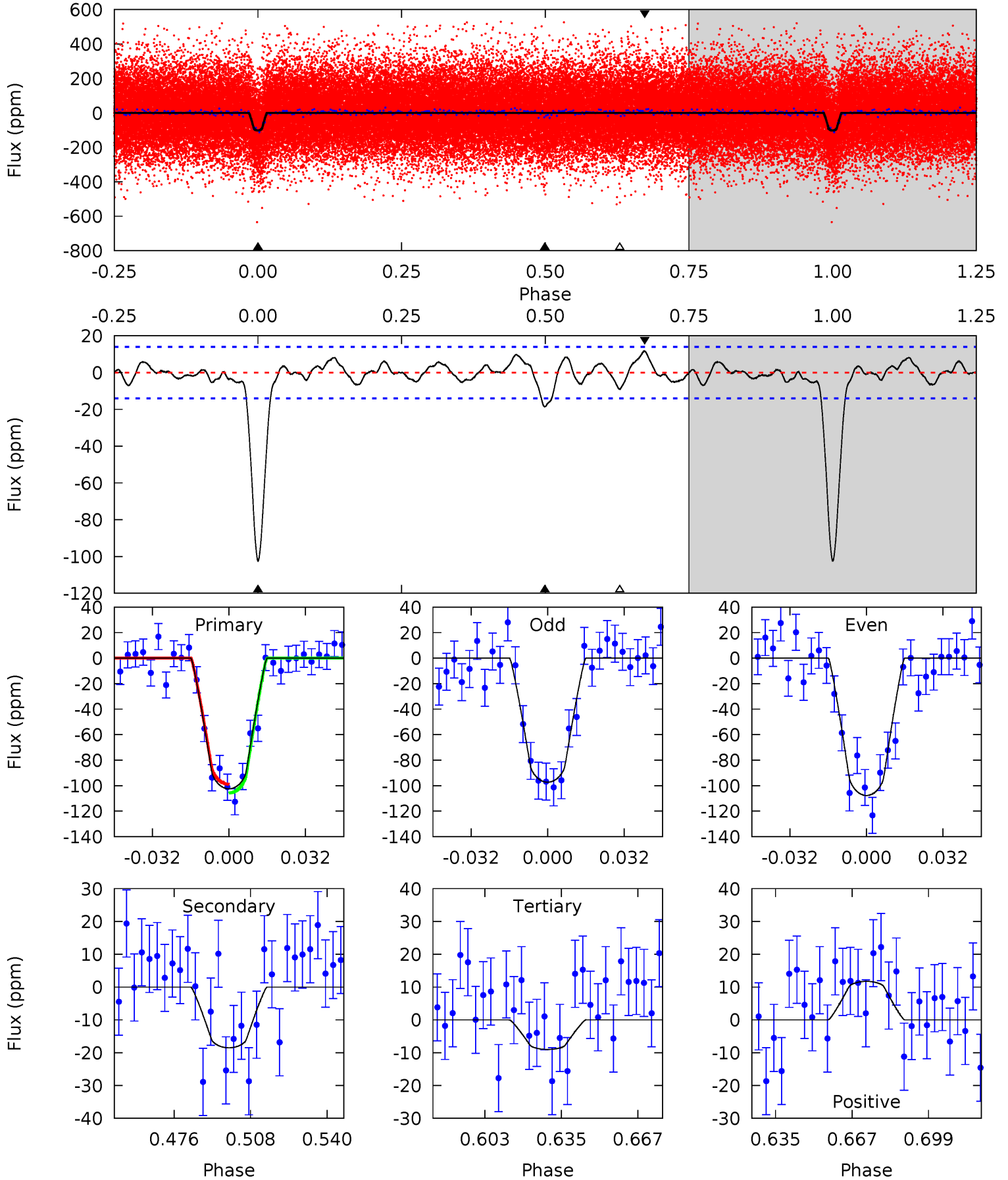
TCE 008804455-01 P= 2.392631 Days $T_0=133.785872$ (BKJD)



DV Model-Shift Uniqueness Test

008804455-01, P = 2.392636 Days, E = 131.391421 Days

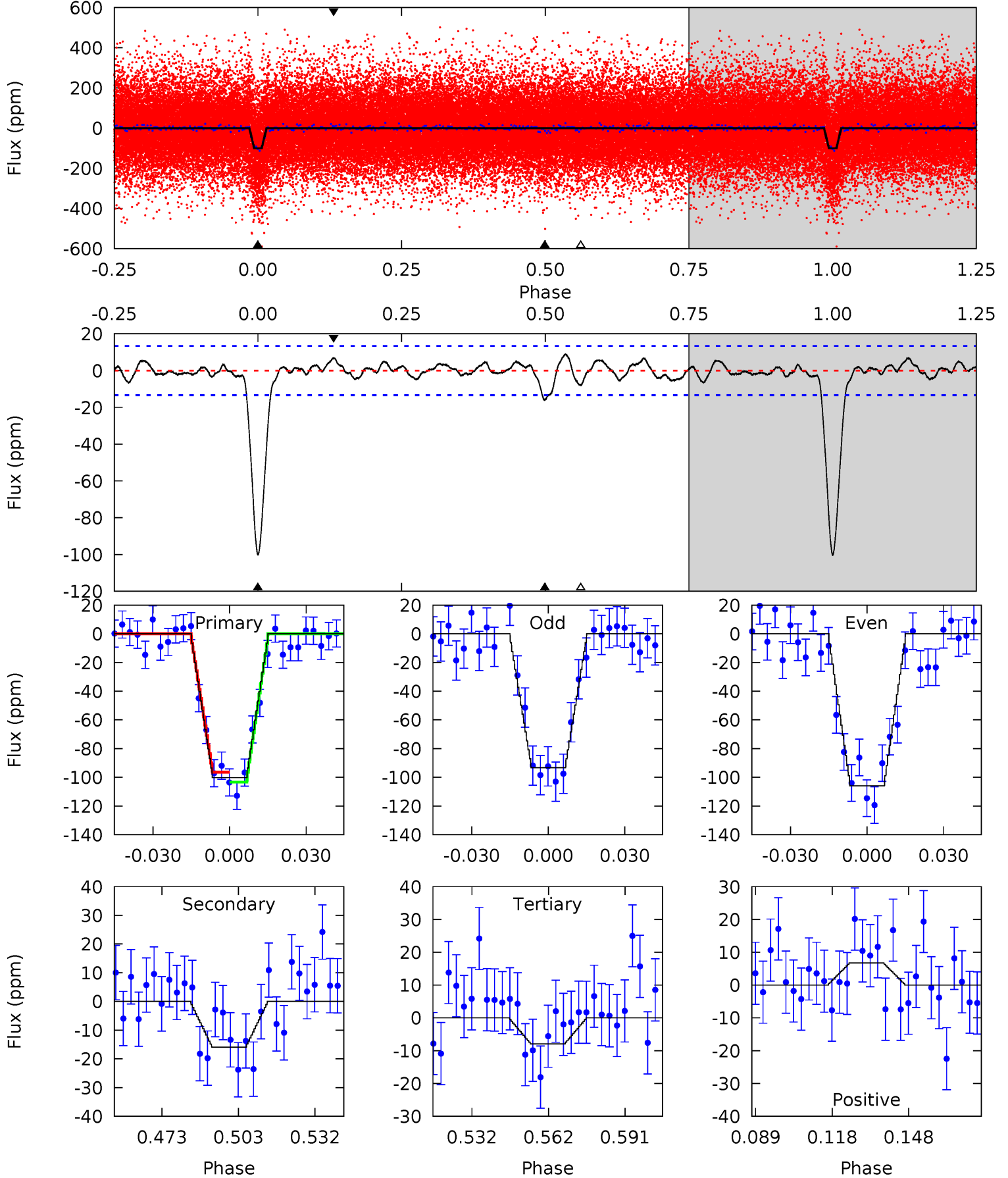
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.1	6.35	3.09	4.02	4.80	2.15	1.38	32.0	31.1	3.26	2.33	1.79	0.99	0.10	1.17



Alt Model-Shift Uniqueness Test

008804455-01, P = 2.392631 Days, E = 131.393241 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.1	5.72	2.87	2.44	4.81	2.18	1.11	33.2	33.6	2.86	3.29	2.29	0.98	0.08	1.24



Stellar Parameters For KIC 008804455

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5716^{+103}_{-114}	$4.343^{+0.115}_{-0.115}$	$0.040^{+0.150}_{-0.150}$	$1.091^{+0.163}_{-0.147}$	$0.955^{+0.078}_{-0.057}$	$1.036^{+0.522}_{-0.349}$
	+2%/-2%	+3%/-3%	+375%/-375%	+15%/-13%	+8%/-6%	+50%/-34%
Source	SPE58	SPE58	SPE58	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008804455-01 / KOI 2159.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-19 ± 3	$1.35^{+0.41}_{-0.40}$	1977^{+86}_{-90}	3842^{+525}_{-340}	$6.634^{+7.015}_{-2.788}$
Alt.	-16 ± 3	$1.17^{+0.45}_{-0.39}$	1977^{+91}_{-85}	3926^{+655}_{-453}	$7.718^{+10.177}_{-4.103}$

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 $A_{obs} \gg 1.0$

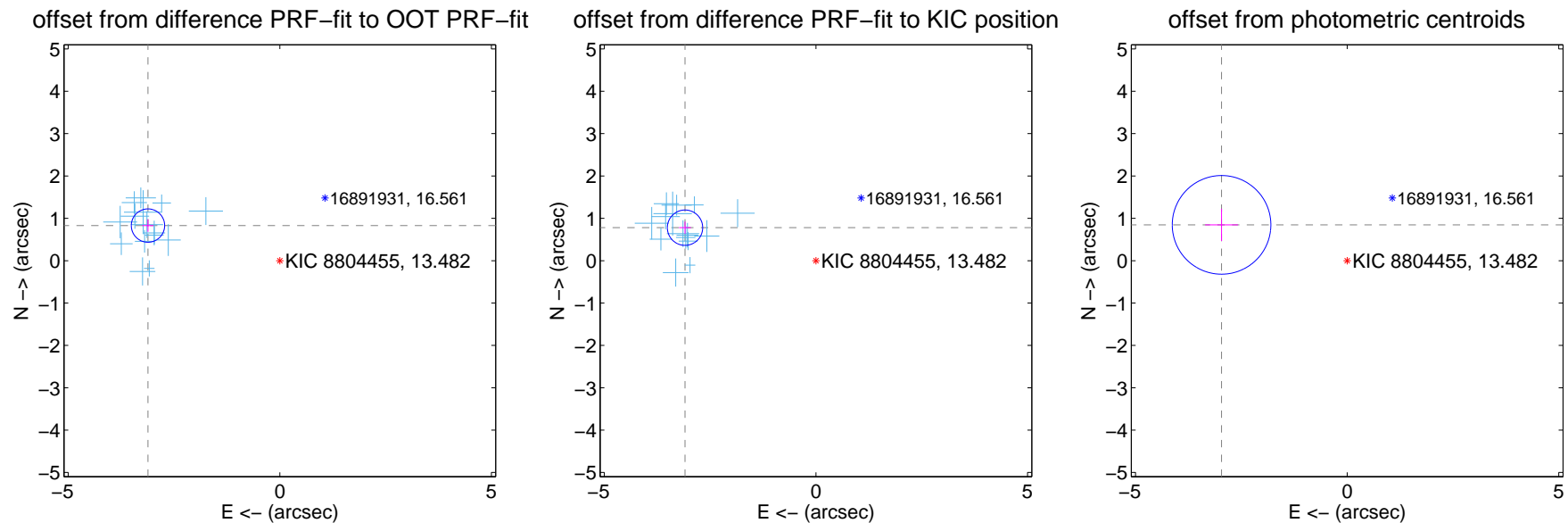
DV Centroid Data

Supplemental centroid analysis for 008804455-01. Kepler magnitude: 13.48. Transit SNR 23.69

There are 15 quarters with good PRF difference image offsets

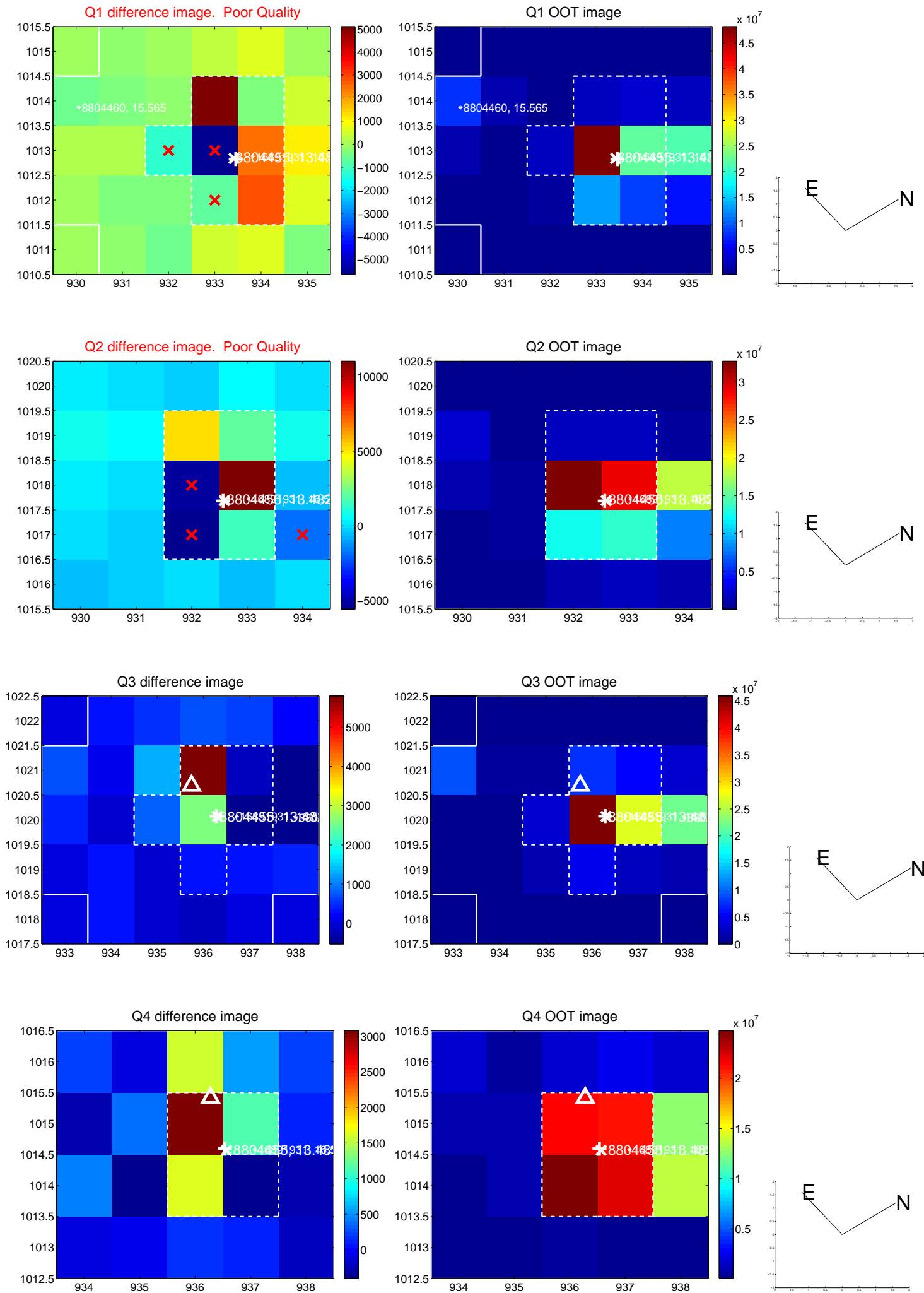
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.223 ± 0.131	24.55	3.114 ± 0.132	0.829 ± 0.148
PRF-fit source offset from KIC position	3.189 ± 0.139	22.92	3.093 ± 0.140	0.780 ± 0.144
photometric centroid source offset	3.08 ± 0.39	7.95	2.97 ± 0.39	0.85 ± 0.38

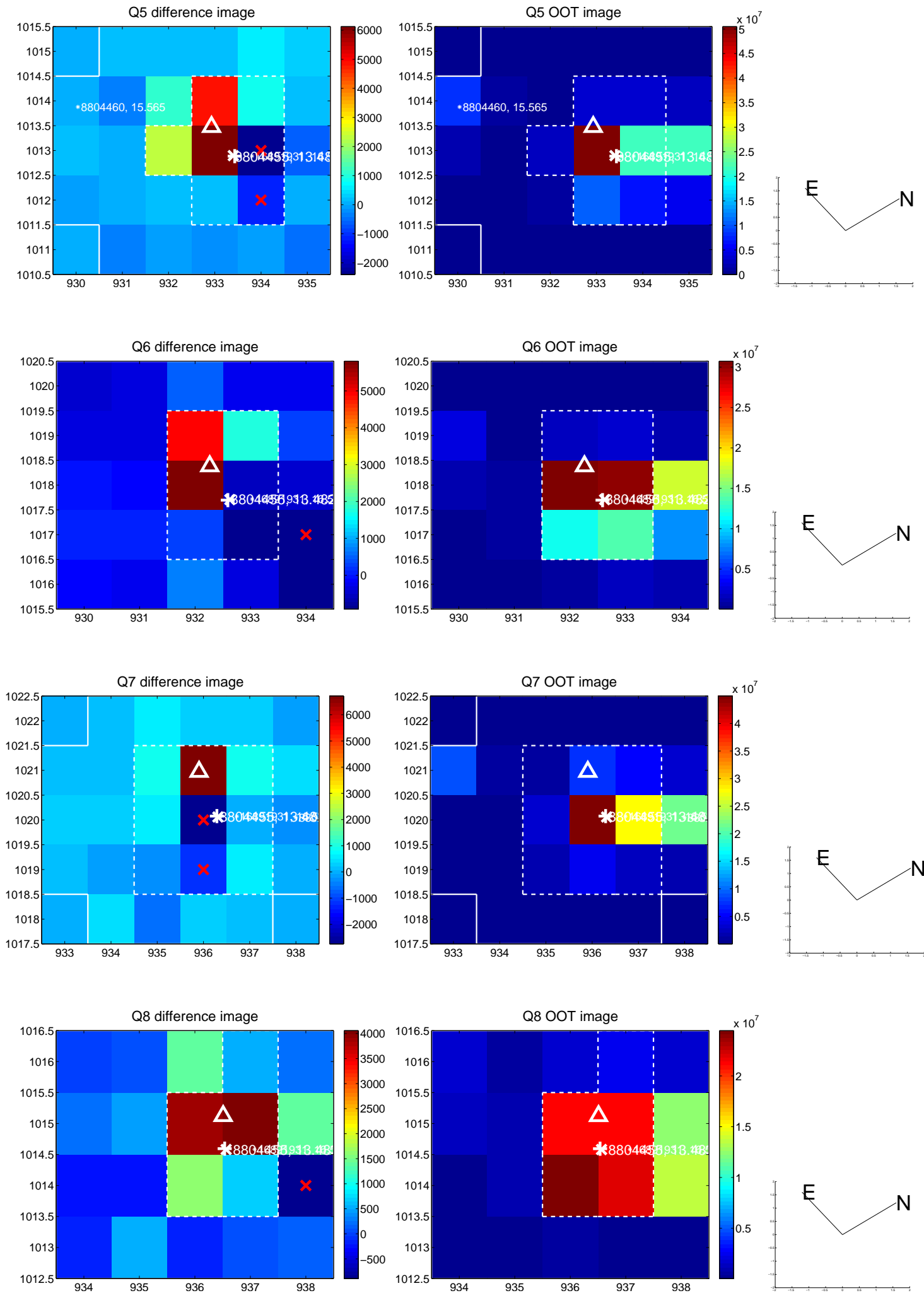


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

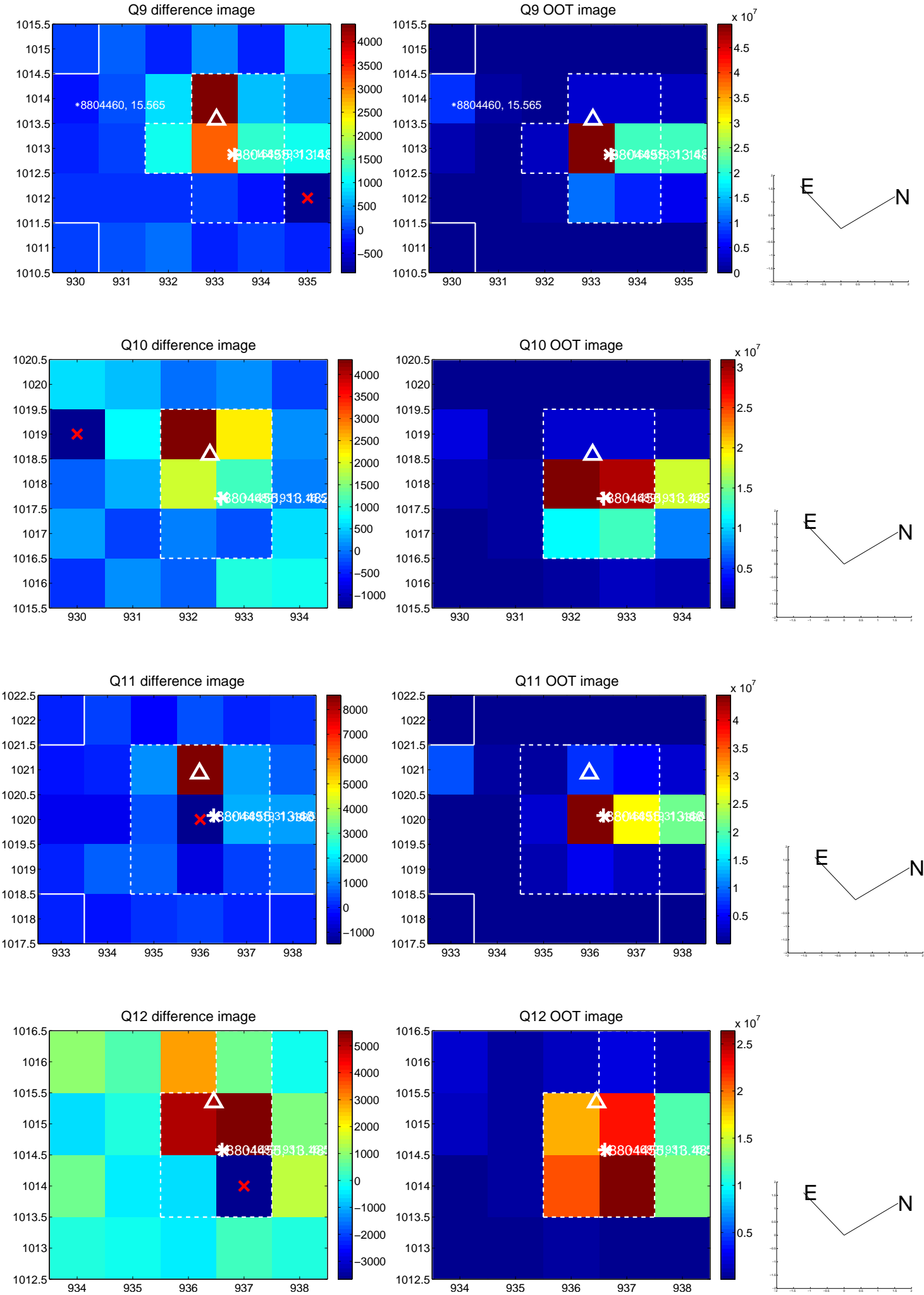
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



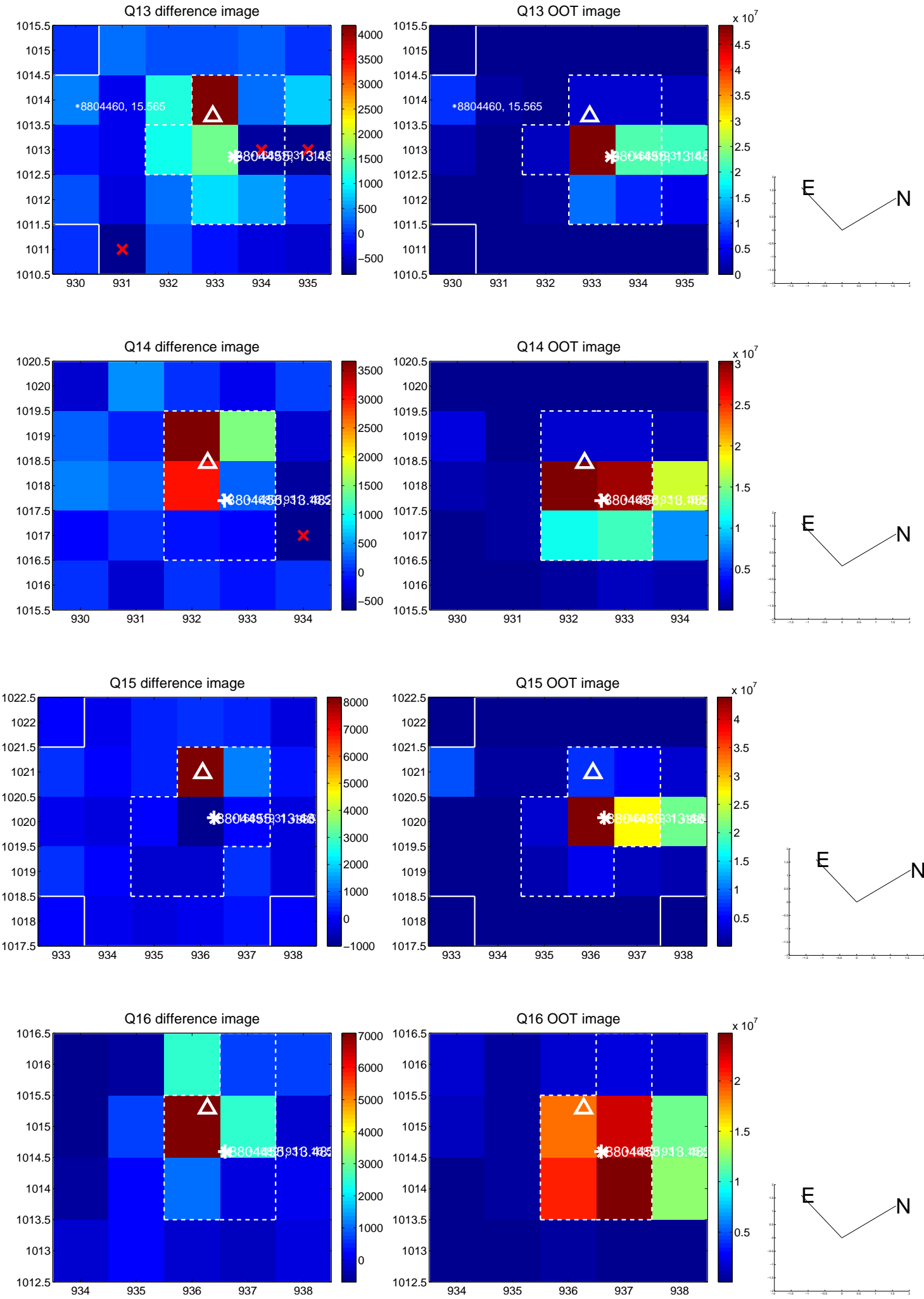
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



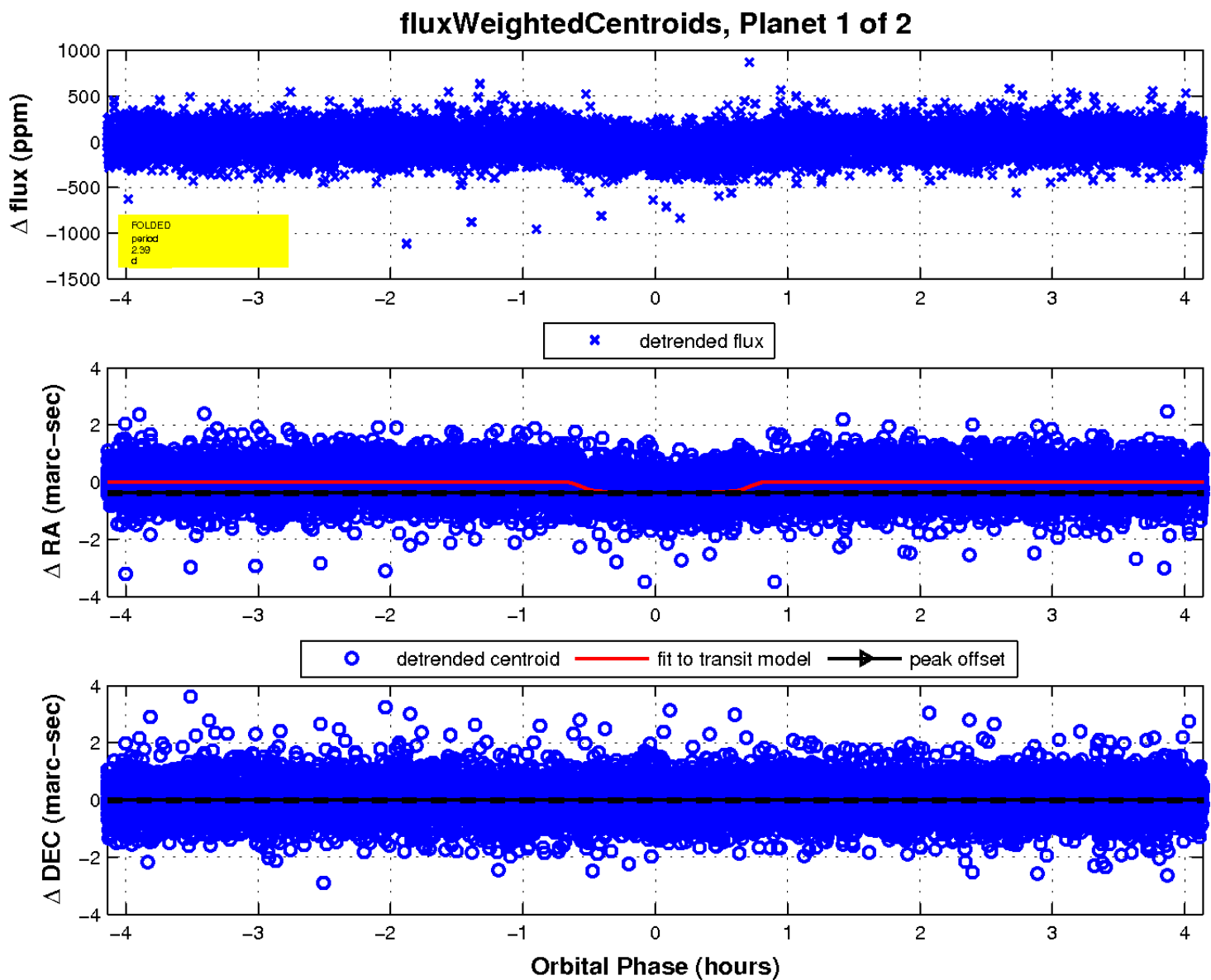
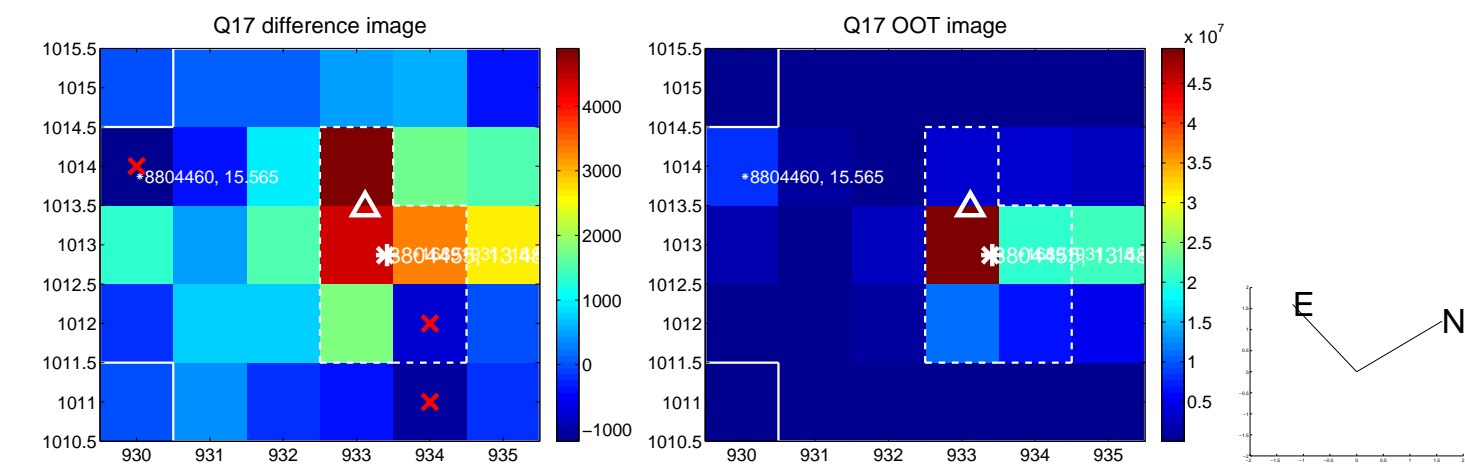
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



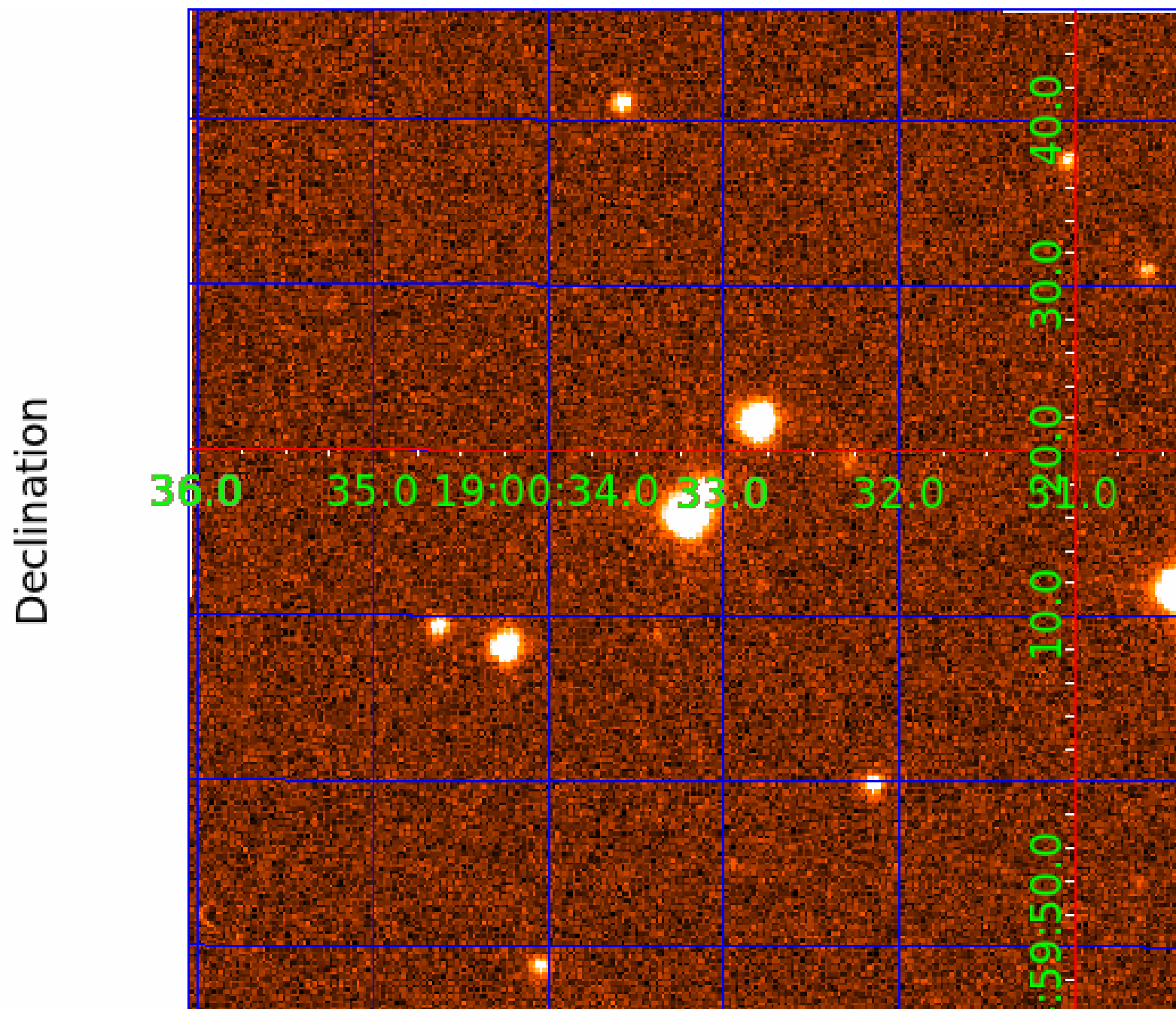
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008804455

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})
008804455-01	OBS	2159.02	2.392636	133.784057	106.4	1.380	20.1	23.7	1.09	5716	1.34	956.41
008804455-02	OBS	2159.01	7.596668	131.954160	120.9	3.745	18.5	20.0	1.09	5716	1.43	204.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008804455-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_OFFSET
008804455-02	OBS	PC	0.90	0	0	0	0	NO_COMMENT

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

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

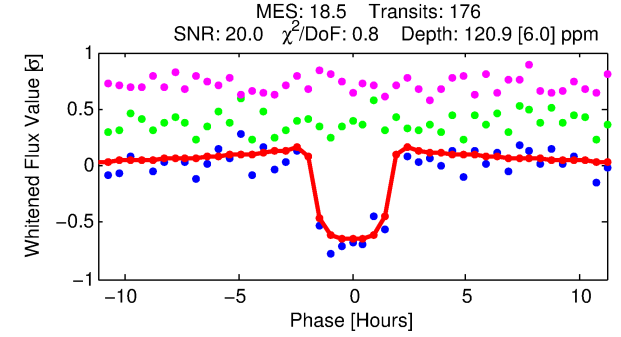
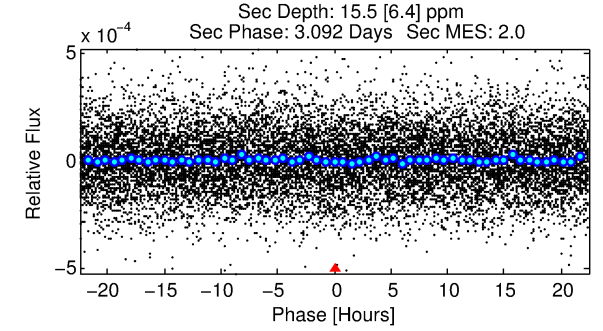
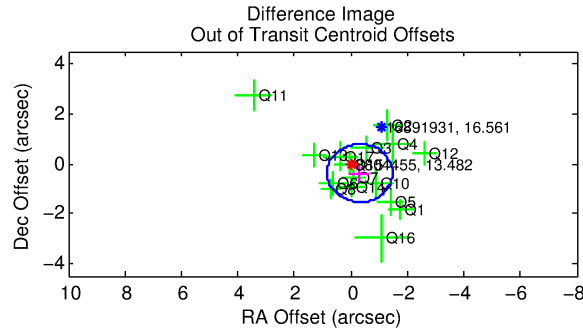
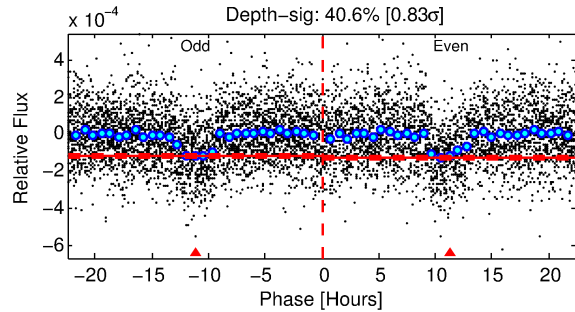
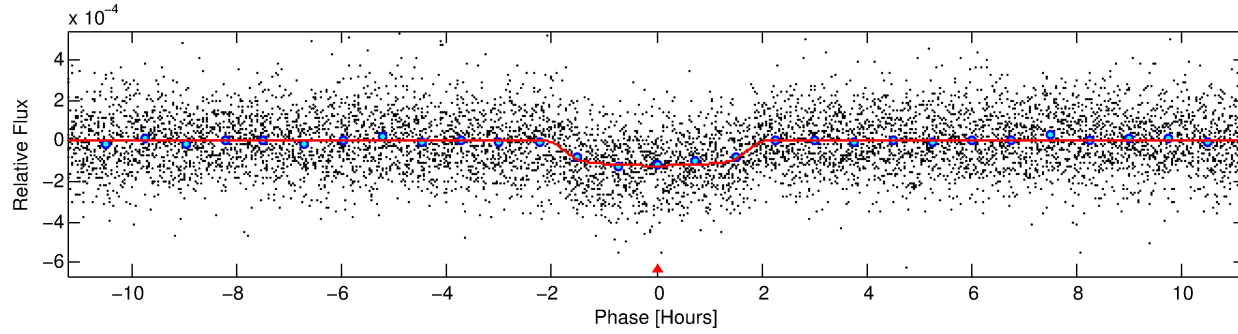
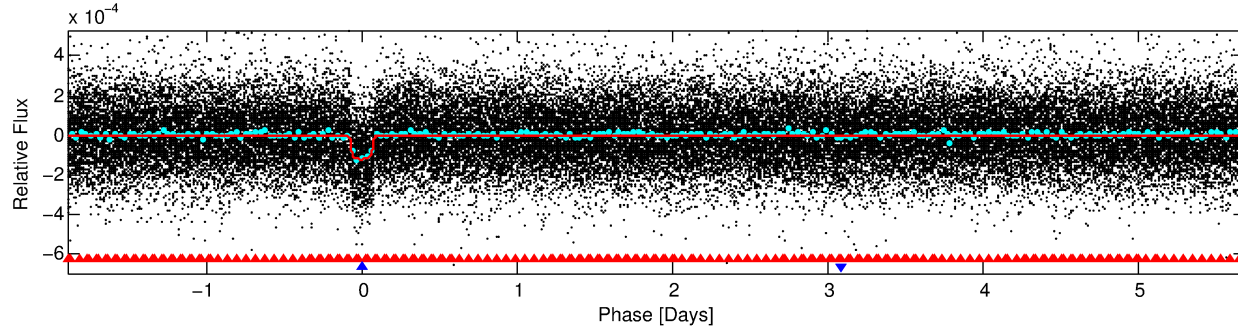
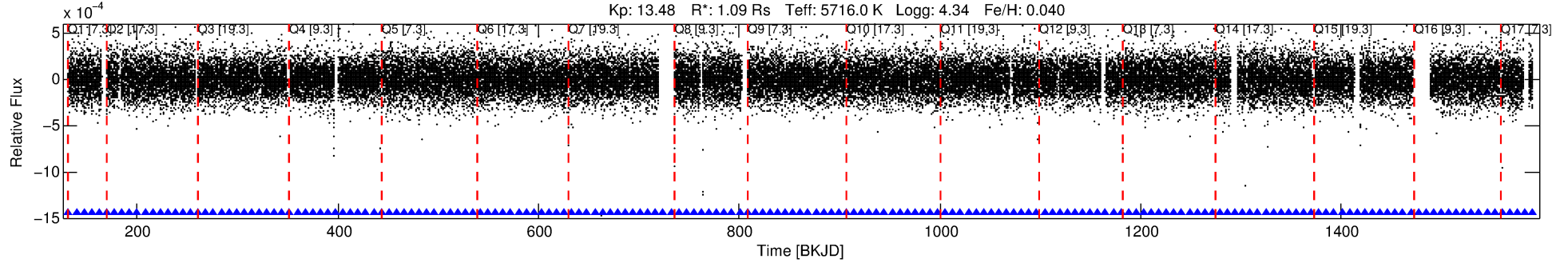
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008804455-02

No Significant Match Found

DV One-Page Summary

KIC: 8804455 Candidate: 2 of 2 Period: 7.597 d
KOI: K02159.01 Corr: 0.979



DV Fit Results:

Period = 7.59667 [0.00003] d
Epoch = 131.9542 [0.0030] BKJD
Rp/R* = 0.0120 [0.0026]
a/R* = 7.24 [7.26]
b = 0.90 [0.22]
Seff = 204.95 [44.64]
Teq = 965 [53] K
Rp = 1.43 [0.38] Re
a = 0.0745 [0.0099] AU
Ag = 23.16 [14.69] [1.51 σ]
Teffp = 3272 [496] K [4.62 σ]

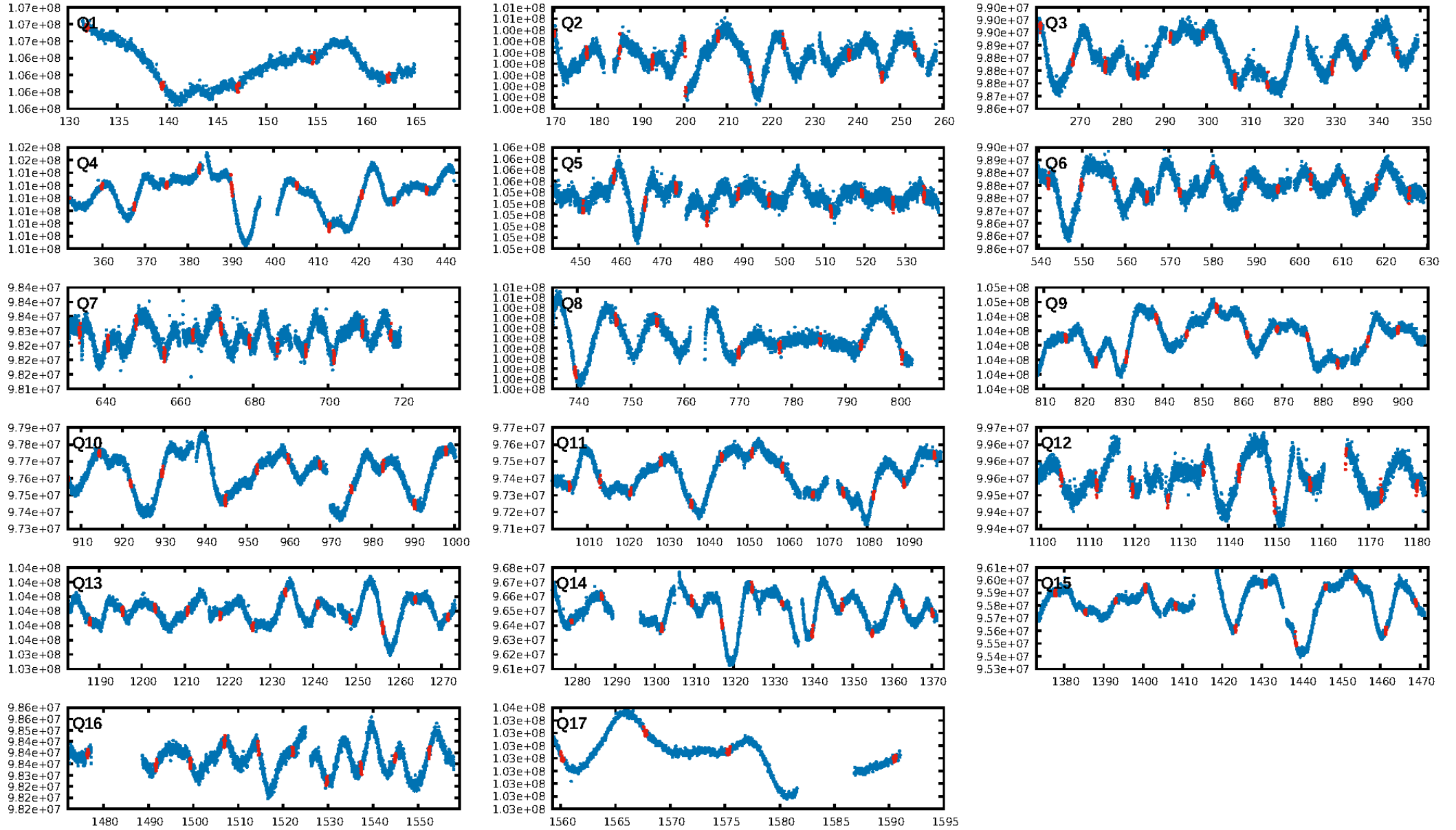
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [31.29 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.45e-69
RollingBand-fgt: 1.00 [167/167]
GhostDiagnostic-chr: 2.254
Centroid-sig: 0.0%
Centroid-so: 1.000 arcsec [2.54 σ]
OotOffset-rm: 0.485 arcsec [1.26 σ]
KicOffset-rm: 0.492 arcsec [1.25 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

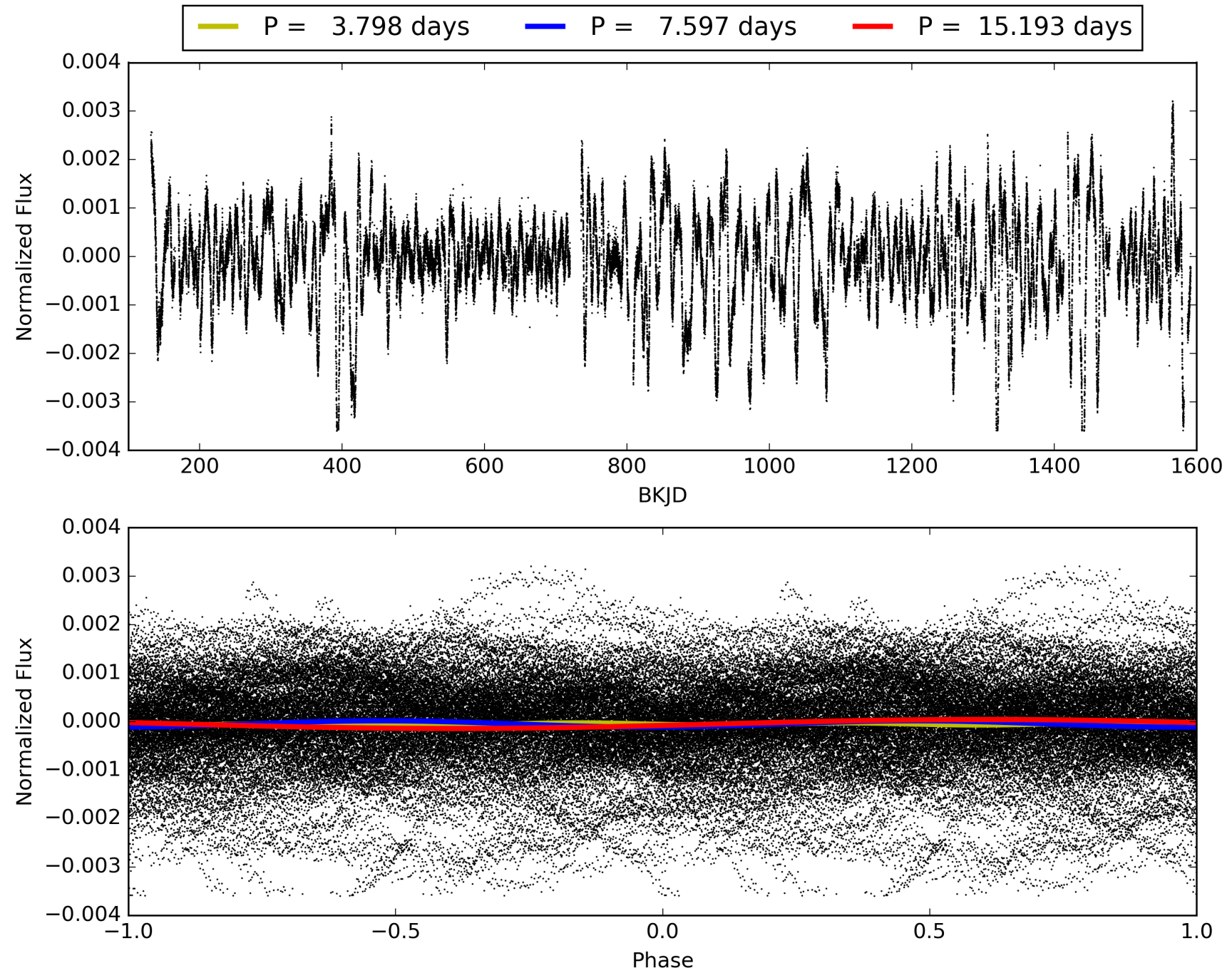
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:56:09 Z

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

TCE 008804455-02, PDC Light Curves

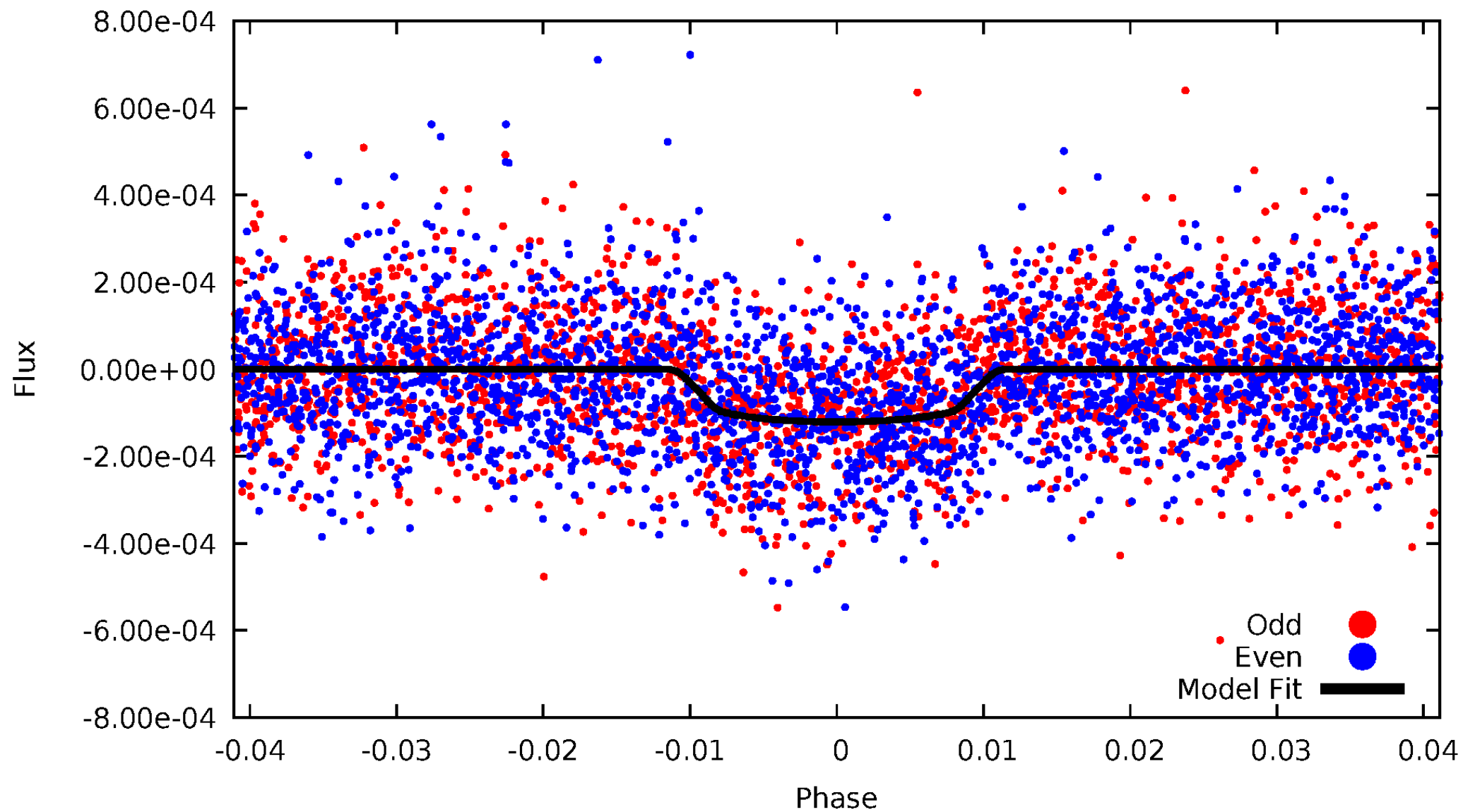


TCE 008804455-02



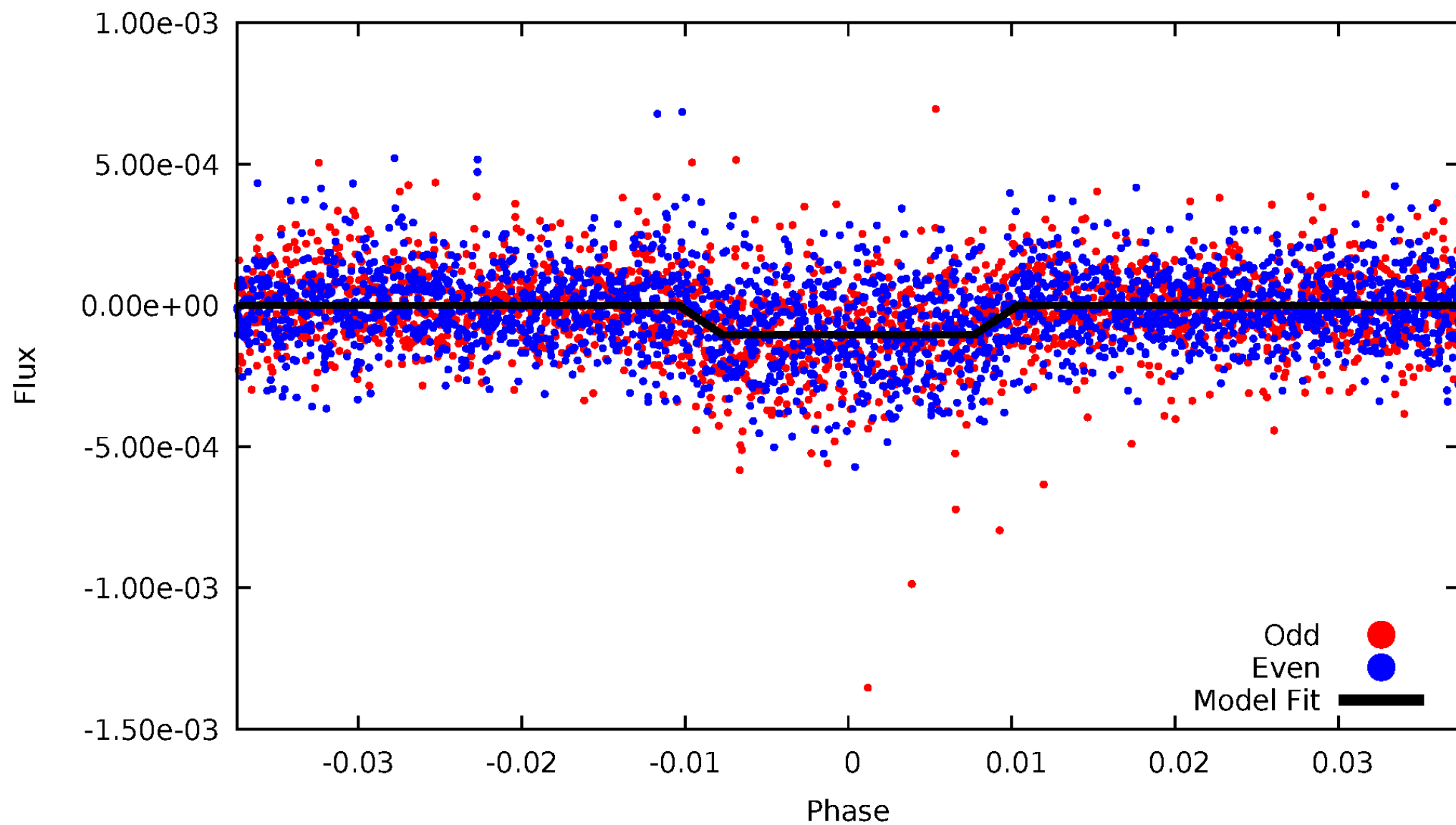
DV Odd/Even

TCE 008804455-02



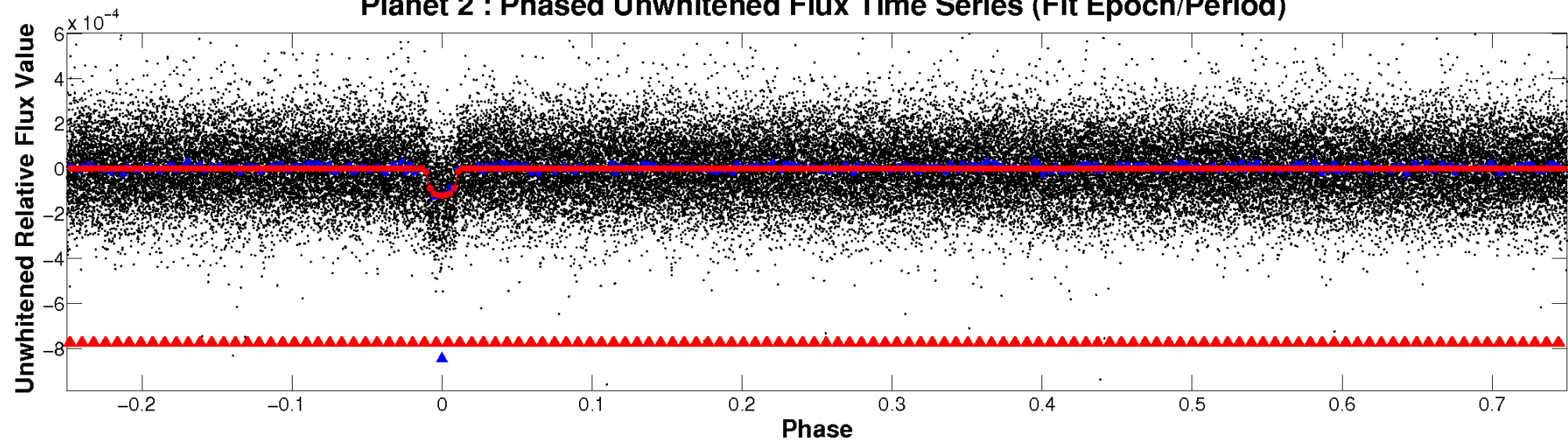
ALT Odd/Even

TCE 008804455-02

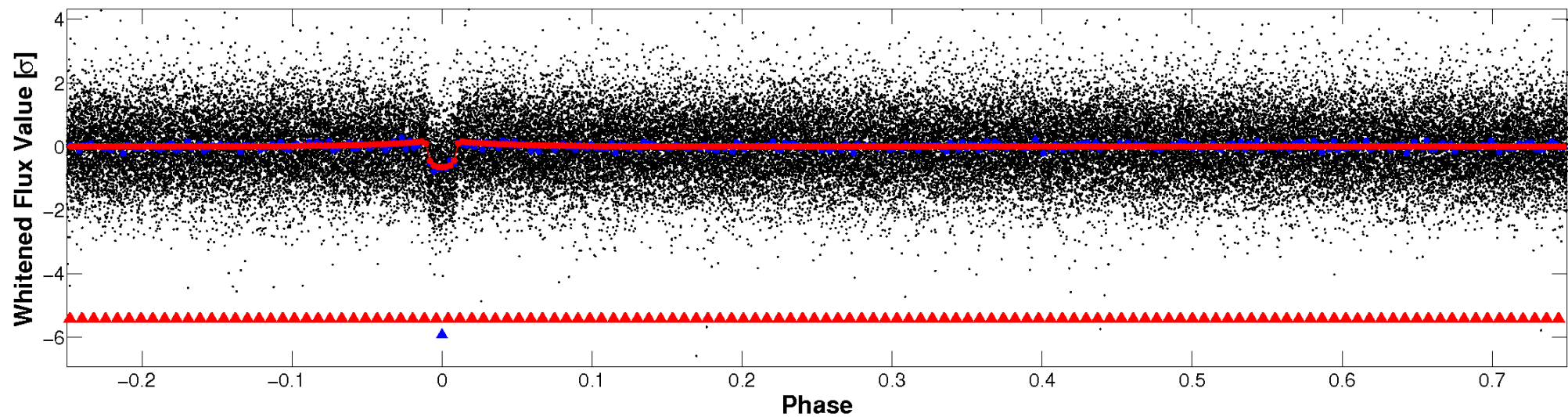


Non-Whitened Vs. Whitened Light Curve

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

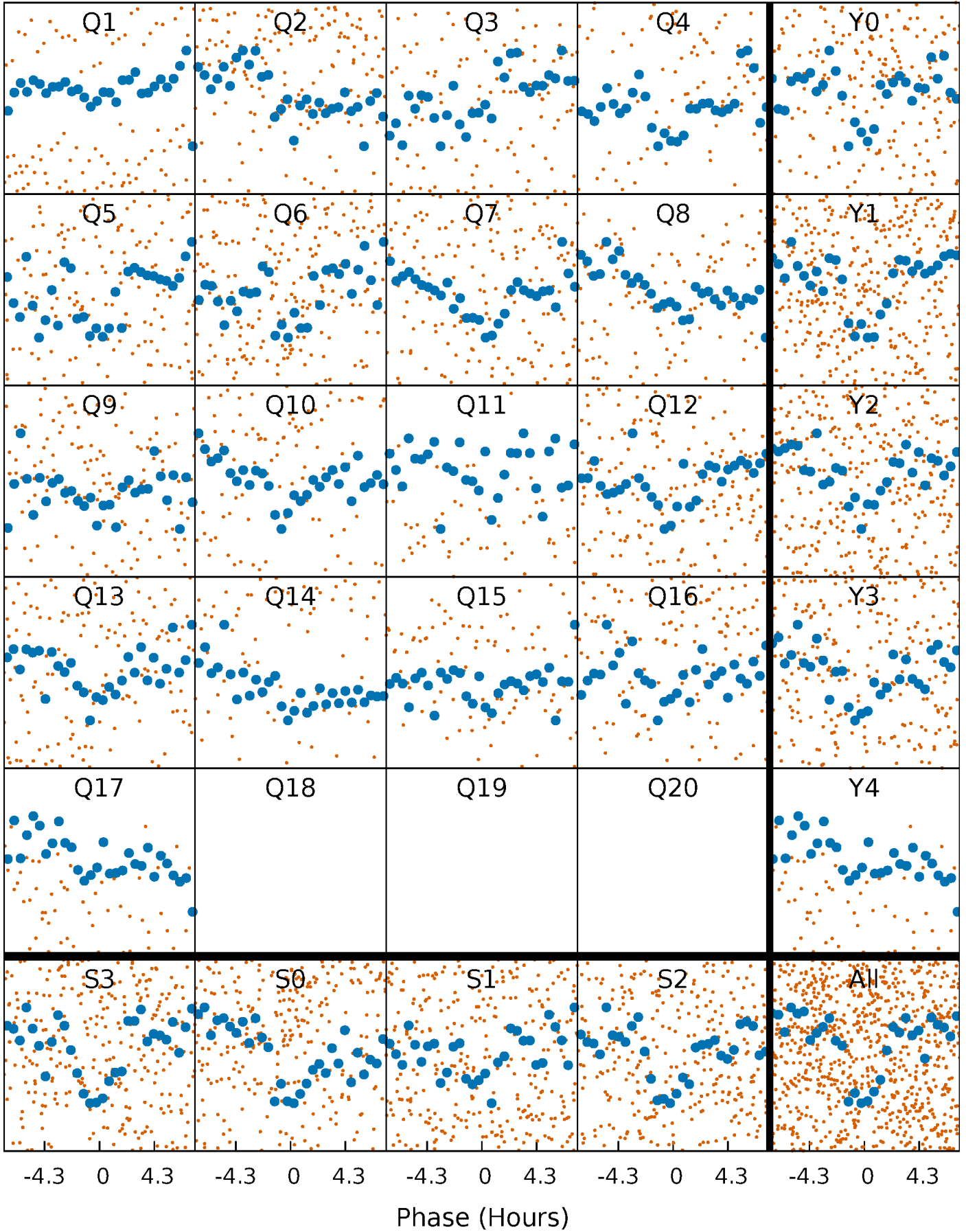


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



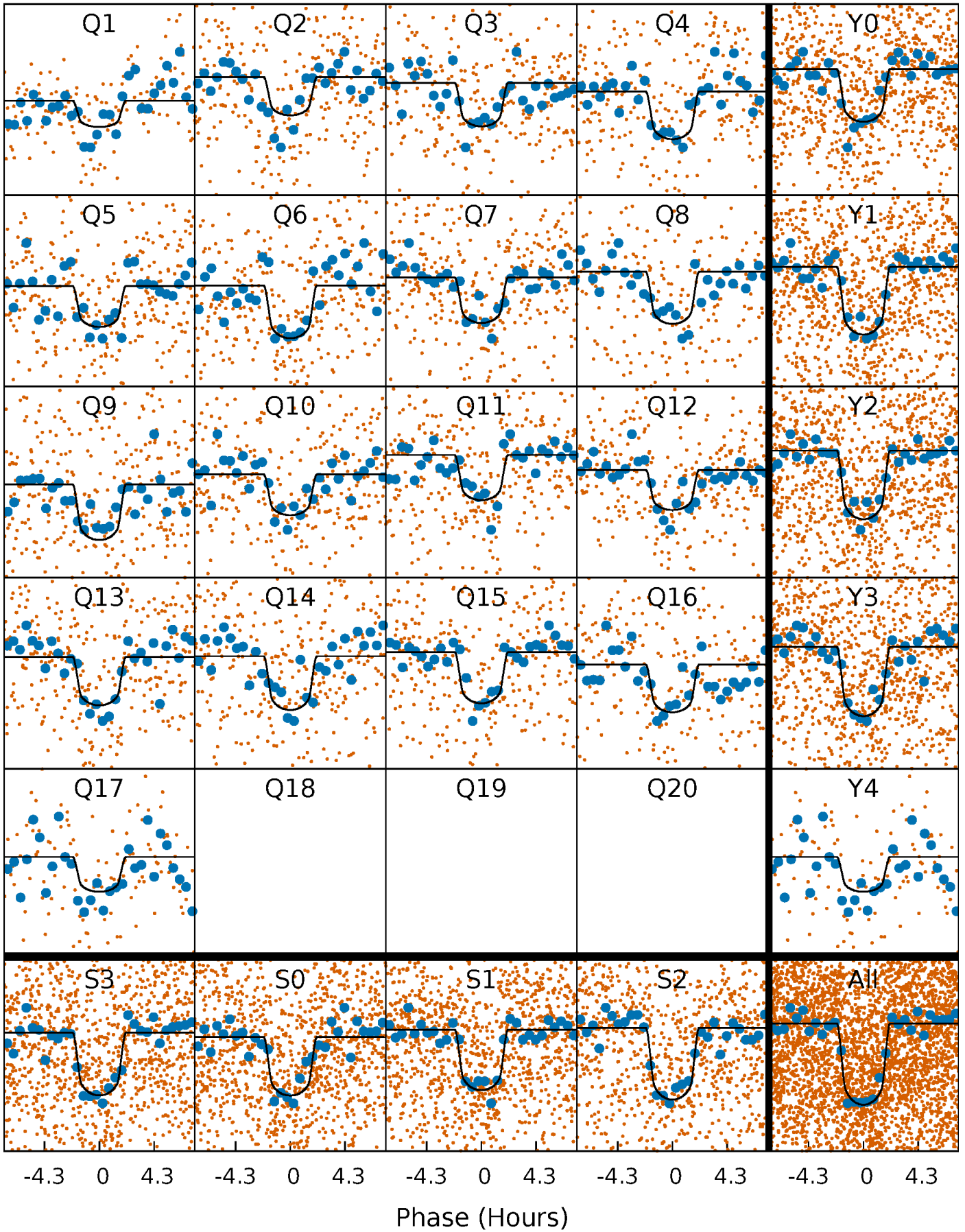
PDC Quarter-Phased Transit Curves

TCE 008804455-02 P= 7.596668 Days $T_0=131.954160$ (BKJD)



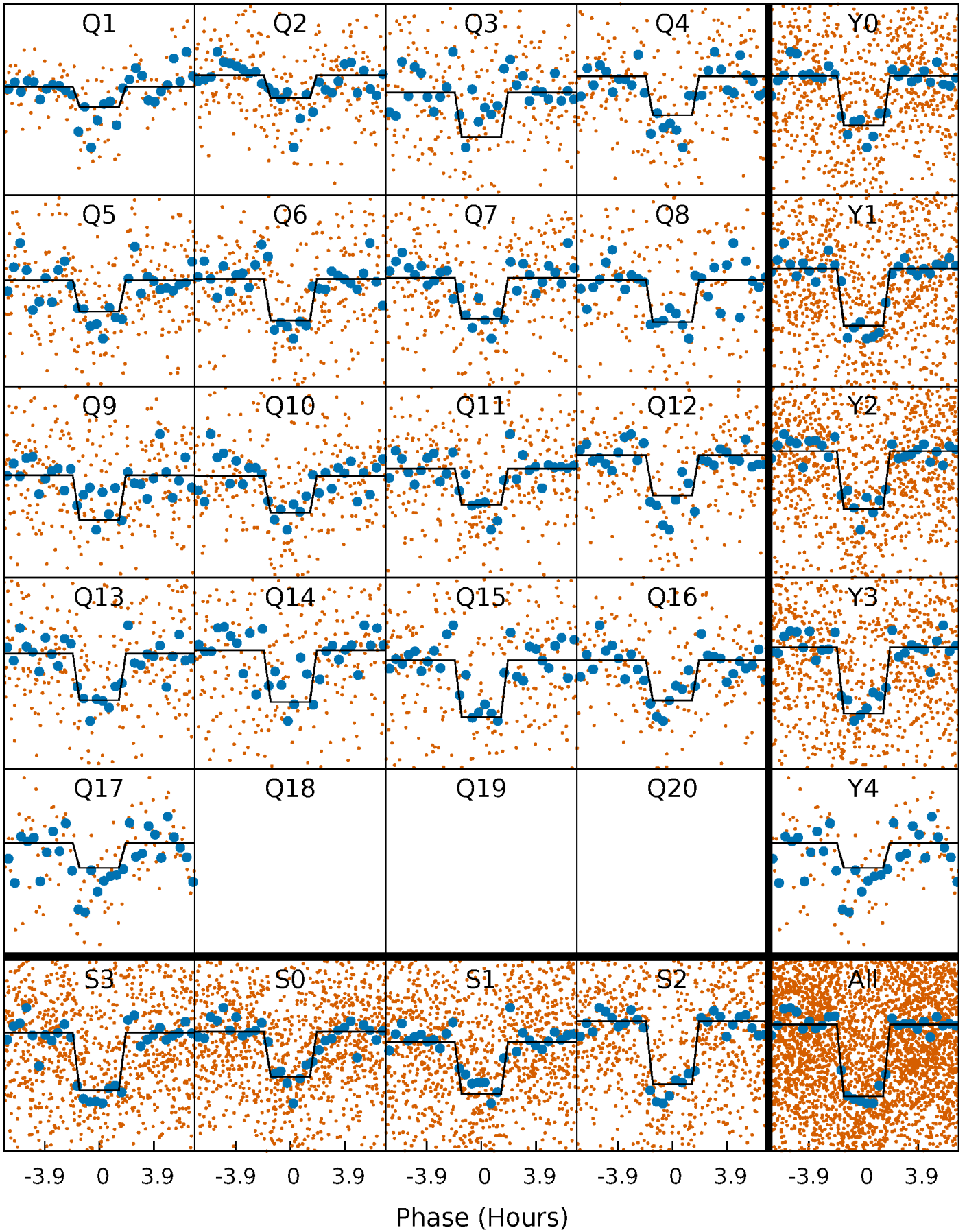
DV Quarter-Phased Transit Curves

TCE 008804455-02 P= 7.596668 Days $T_0=131.954160$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

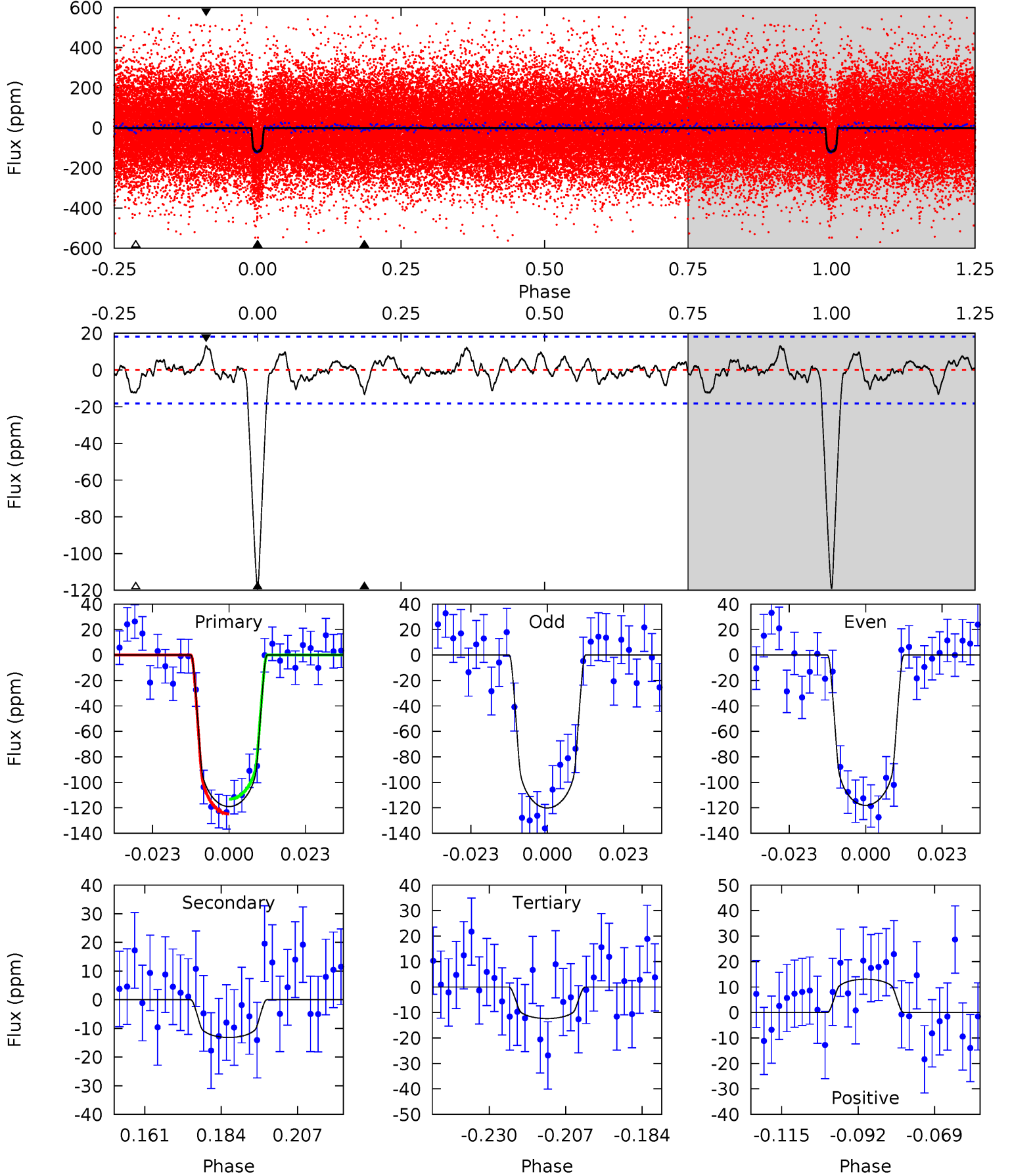
TCE 008804455-02 P= 7.596668 Days $T_0=131.955319$ (BKJD)



DV Model-Shift Uniqueness Test

008804455-02, P = 7.596668 Days, E = 124.357492 Days

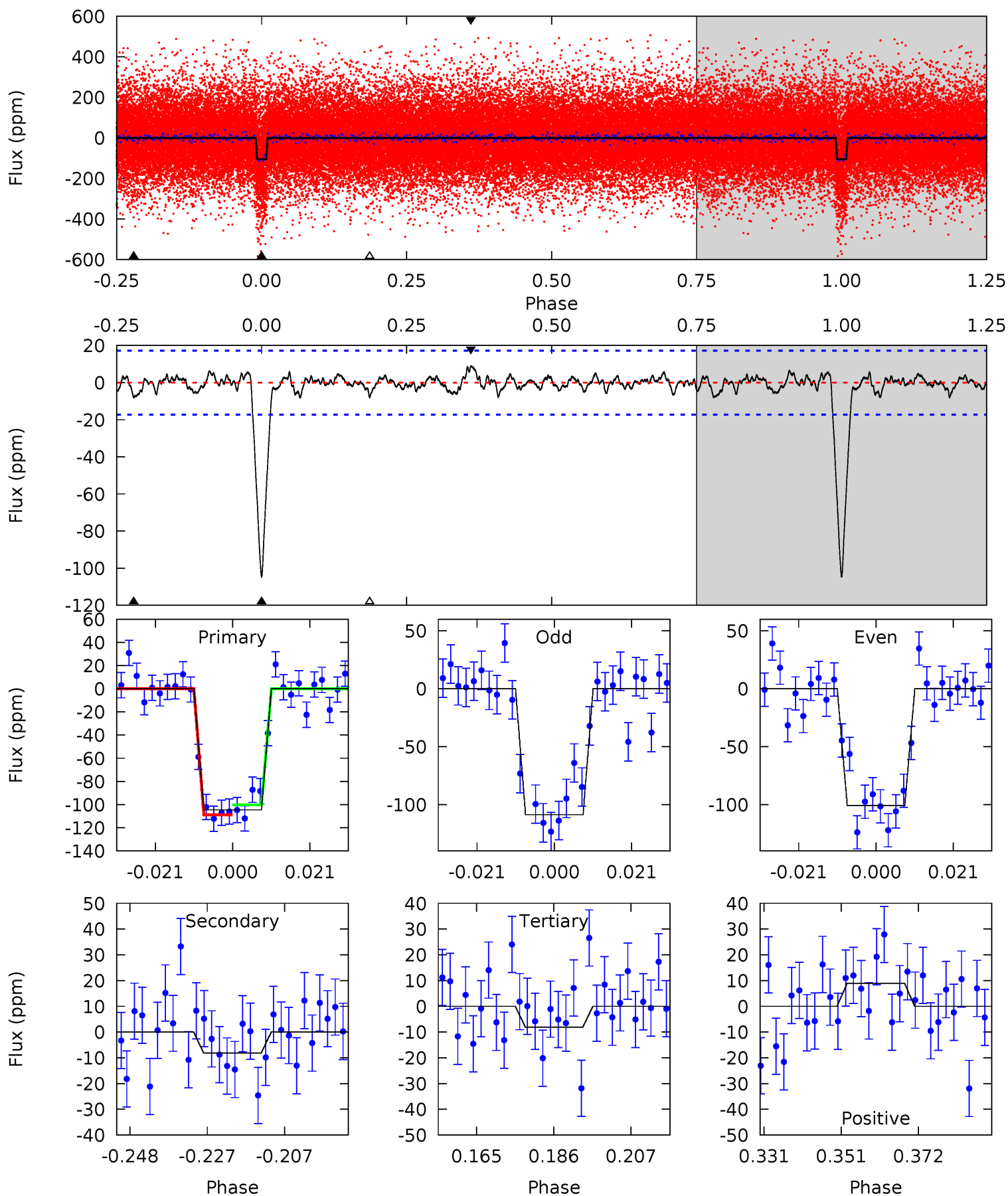
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.8	3.52	3.31	3.49	4.86	2.27	1.18	28.5	28.3	0.21	0.03	0.27	1.03	0.10	1.55



Alt Model-Shift Uniqueness Test

008804455-02, P = 7.596668 Days, E = 124.358651 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.7	2.31	2.29	2.53	4.89	2.31	0.82	27.4	27.2	0.02	-0.21	1.11	1.12	0.08	1.24



Stellar Parameters For KIC 008804455

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5716^{+103}_{-114}	$4.343^{+0.115}_{-0.115}$	$0.040^{+0.150}_{-0.150}$	$1.091^{+0.163}_{-0.147}$	$0.955^{+0.078}_{-0.057}$	$1.036^{+0.522}_{-0.349}$
	+2%/-2%	+3%/-3%	+375%/-375%	+15%/-13%	+8%/-6%	+50%/-34%
Source	SPE58	SPE58	SPE58	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008804455-02 / KOI 2159.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-13 ± 4	$1.43^{+0.35}_{-0.33}$	1348^{+63}_{-63}	3570^{+340}_{-278}	19^{+15}_{-8}
Alt.	-8 ± 4	$1.22^{+0.31}_{-0.33}$	1347^{+61}_{-57}	3478^{+453}_{-356}	17^{+17}_{-9}

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 $A_{obs} \gg 1.0$

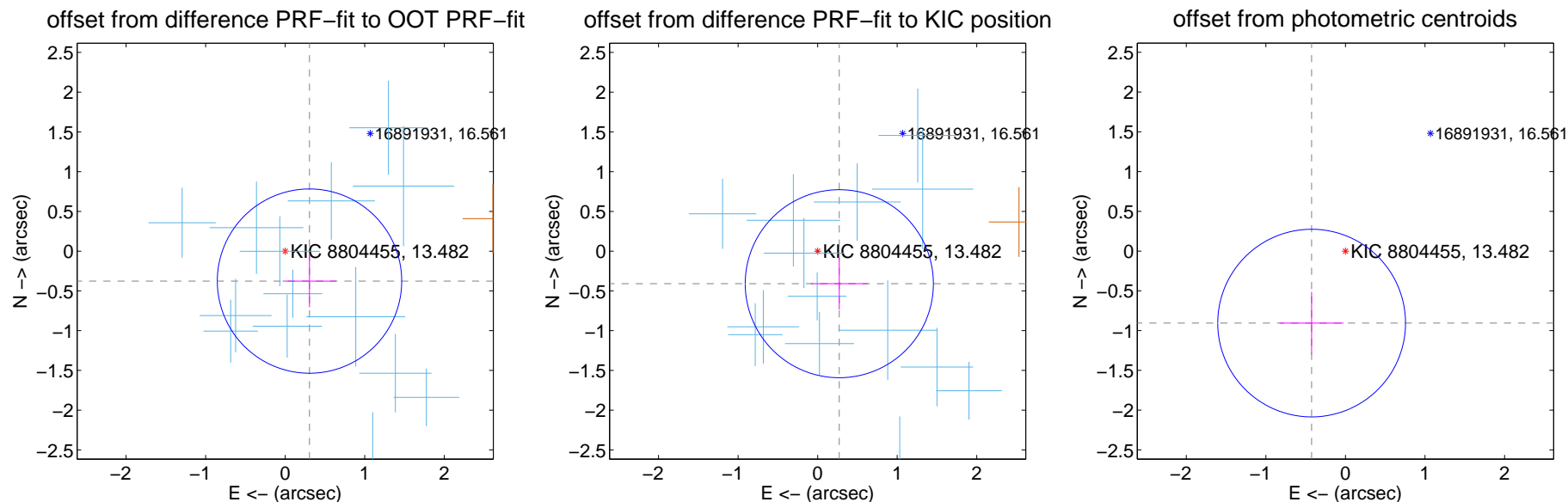
DV Centroid Data

Supplemental centroid analysis for 008804455-02. Kepler magnitude: 13.48. Transit SNR 20.04

There are 14 quarters with good PRF difference image offsets

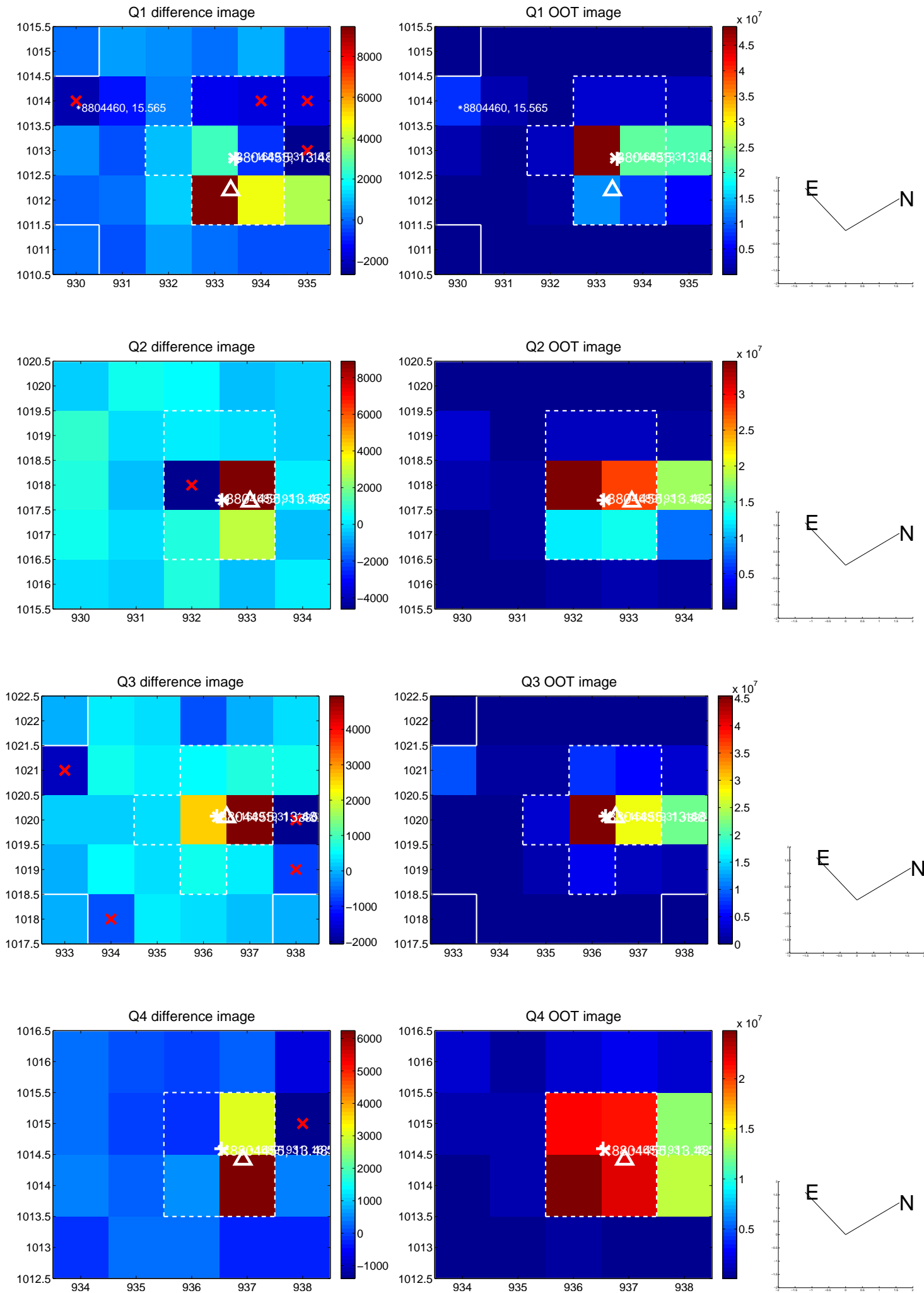
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.485 ± 0.386	1.26	-0.306 ± 0.335	-0.377 ± 0.328
PRF-fit source offset from KIC position	0.492 ± 0.394	1.25	-0.272 ± 0.356	-0.410 ± 0.324
photometric centroid source offset	1.00 ± 0.39	2.54	0.42 ± 0.40	-0.91 ± 0.39

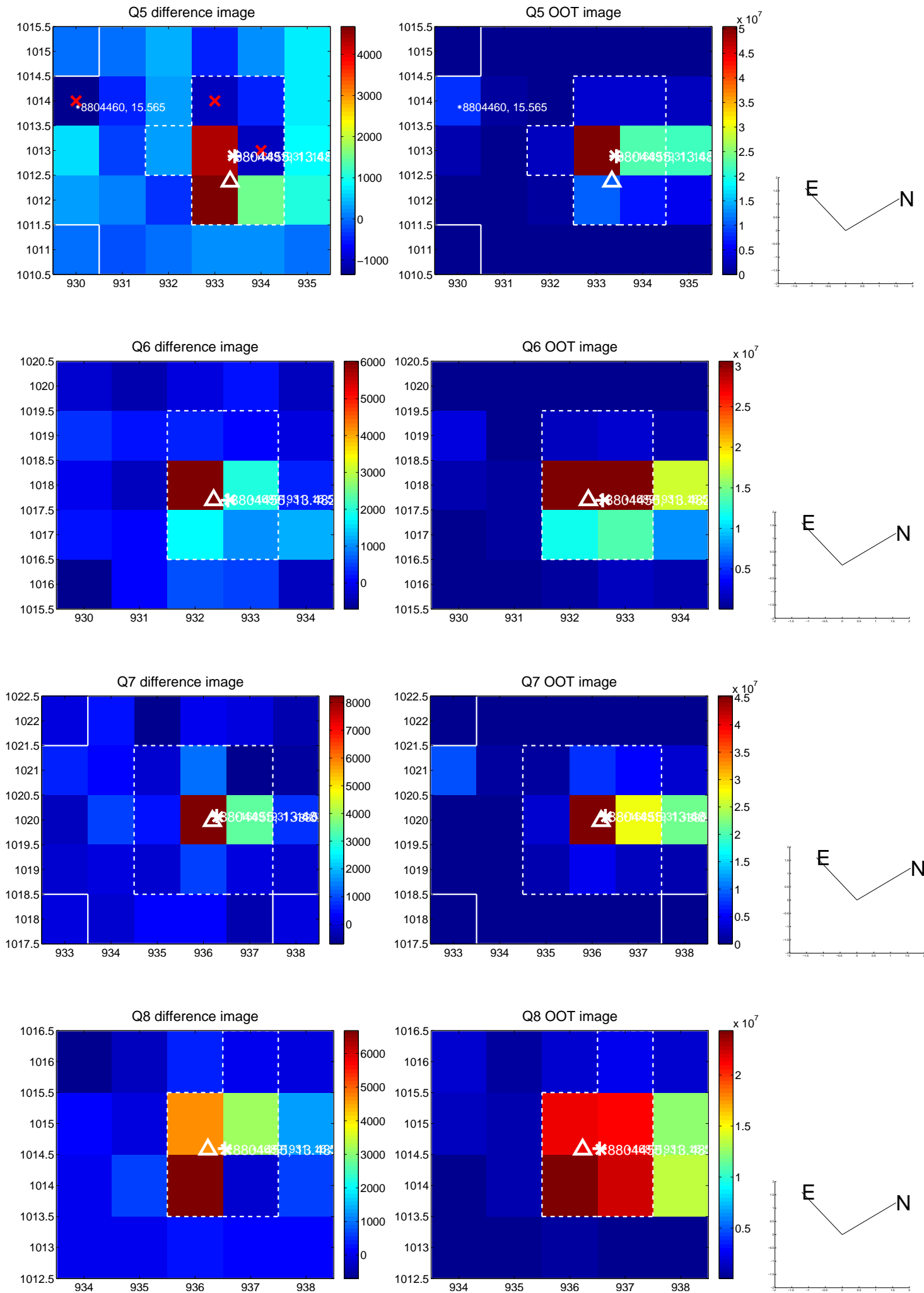


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

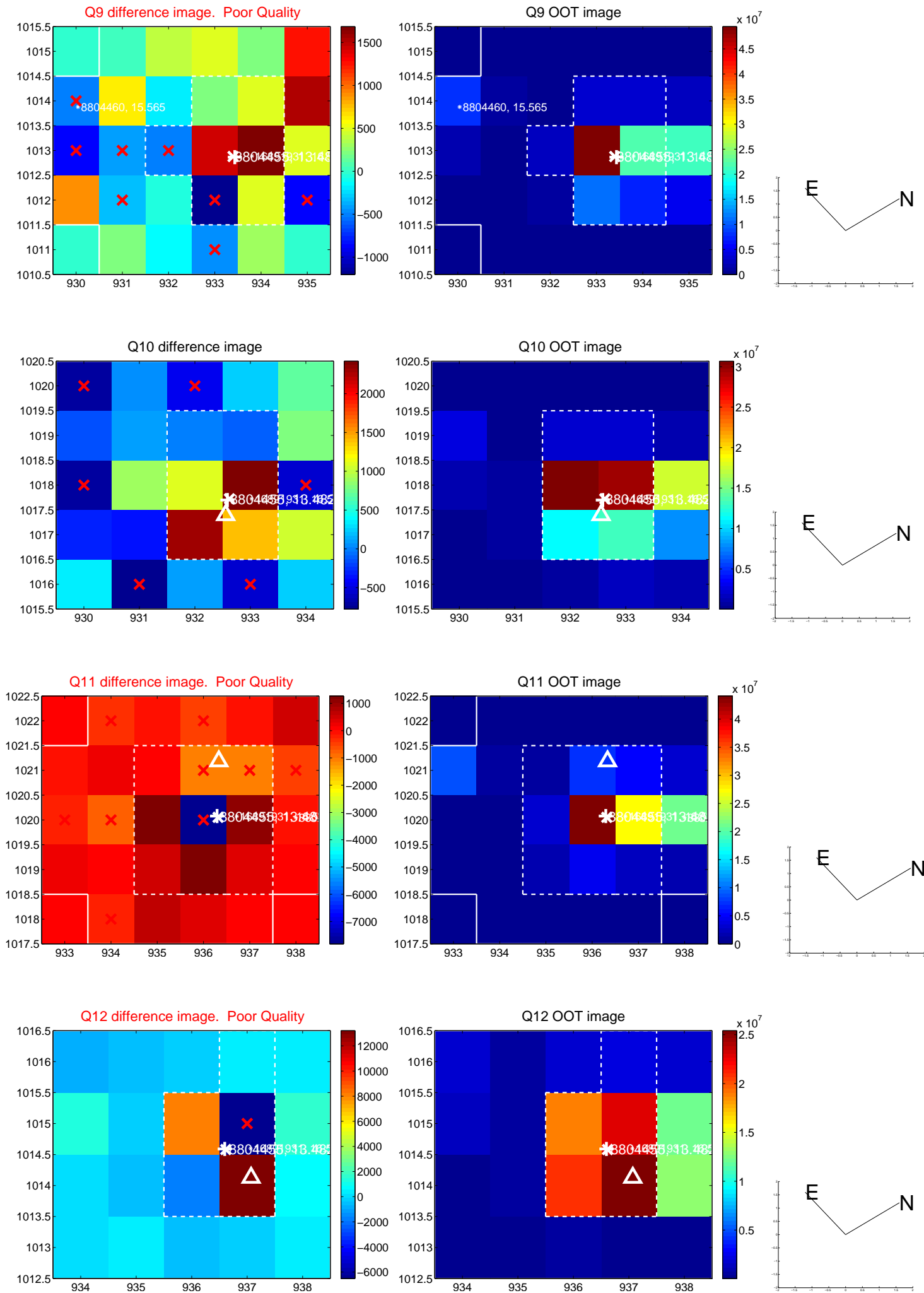
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



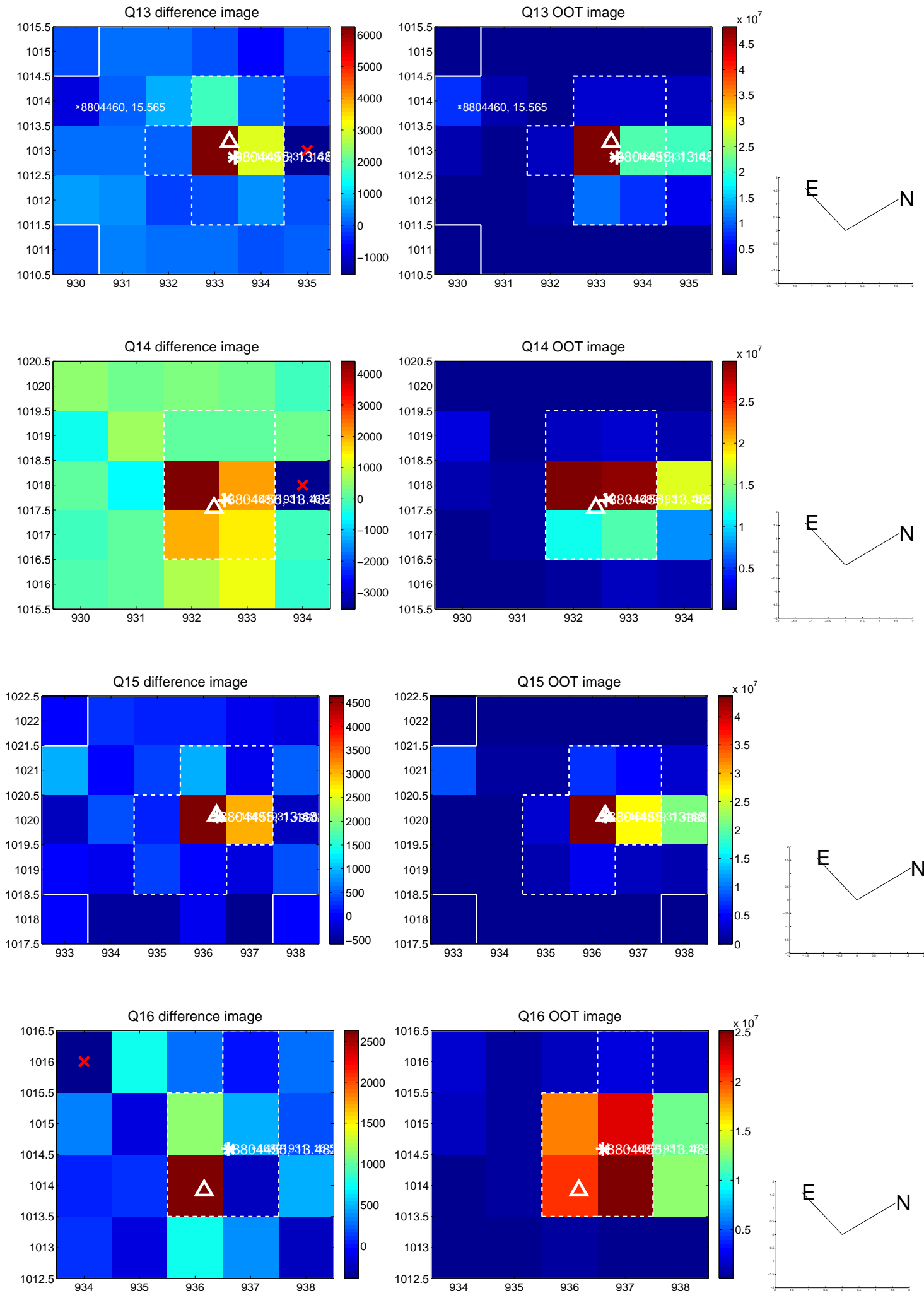
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



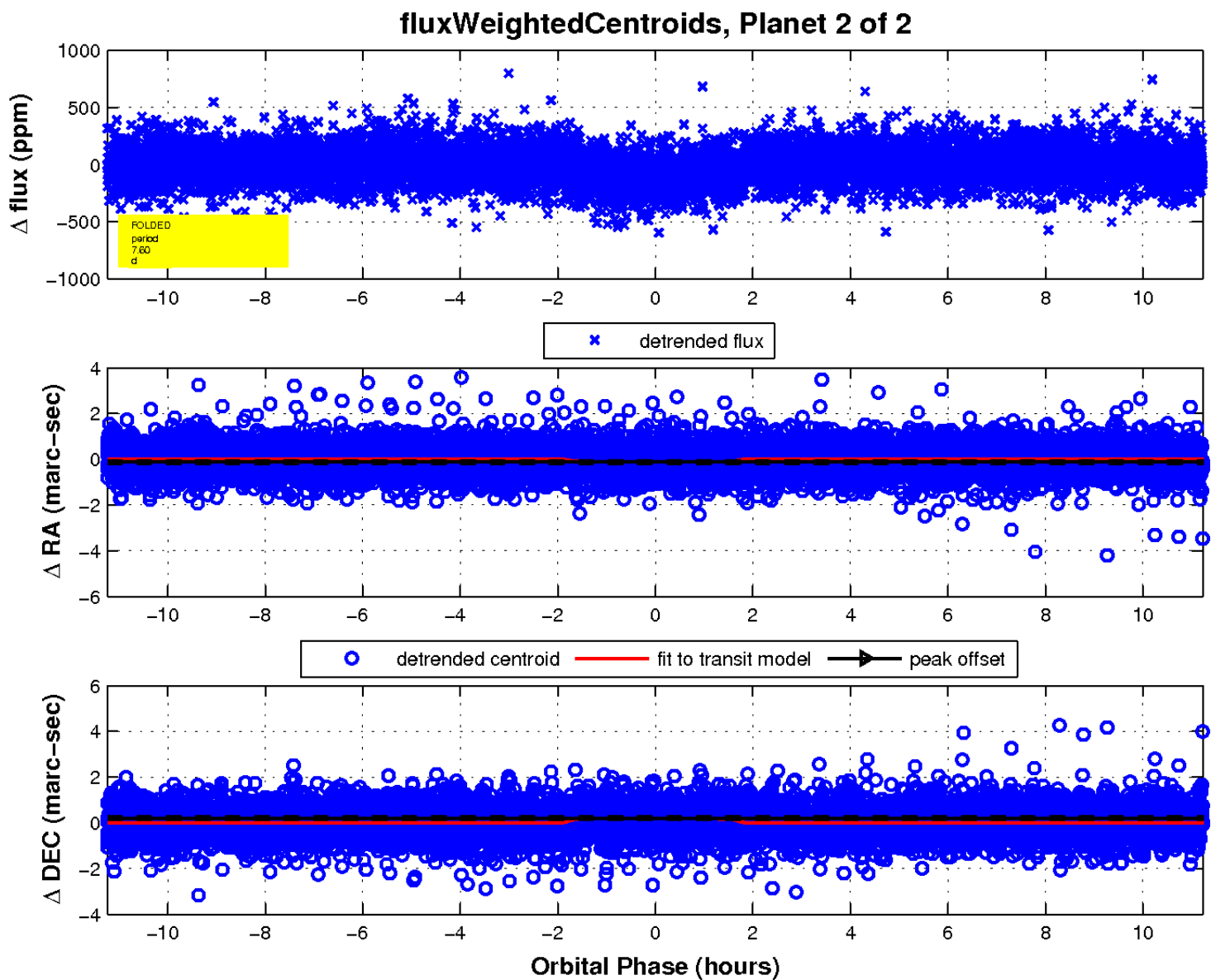
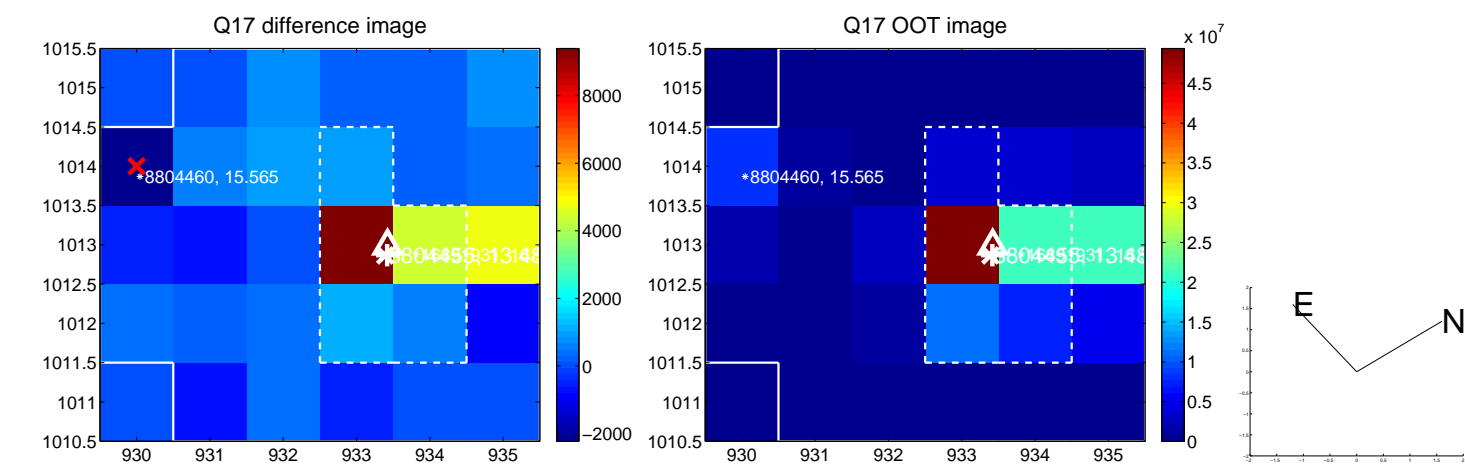
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

