

KIC 011093335

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})
011093335-01	OBS	No	6.185892	134.637798	44.4	13.206	11.8	9.3	2.34	7217	1.82	2274.92
011093335-02	OBS	No	3.092988	132.941947	32.7	9.778	9.5	10.5	2.34	7217	1.59	5732.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011093335-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
011093335-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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 011093335-01

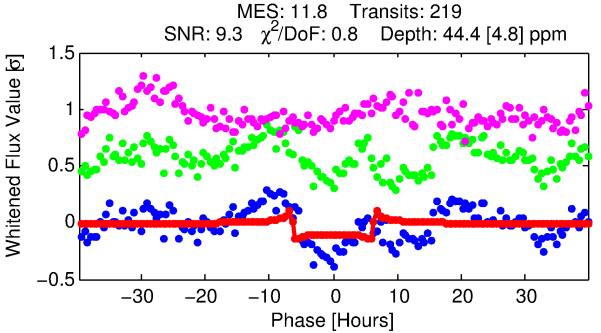
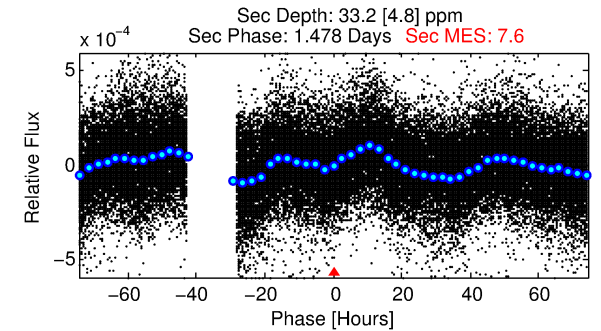
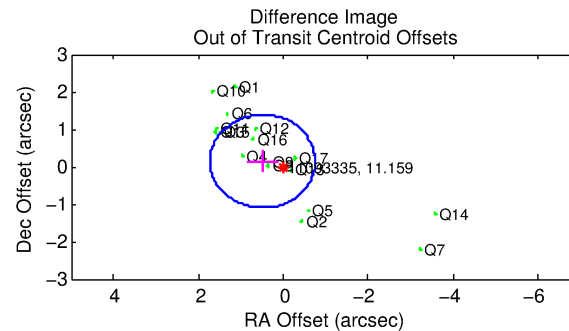
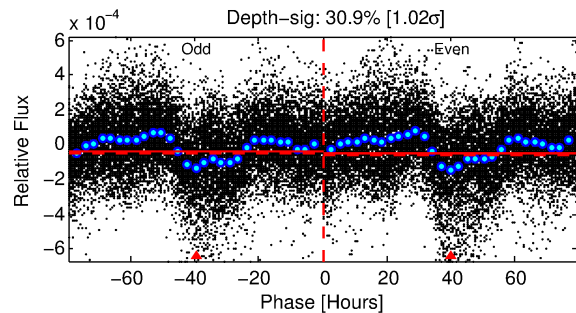
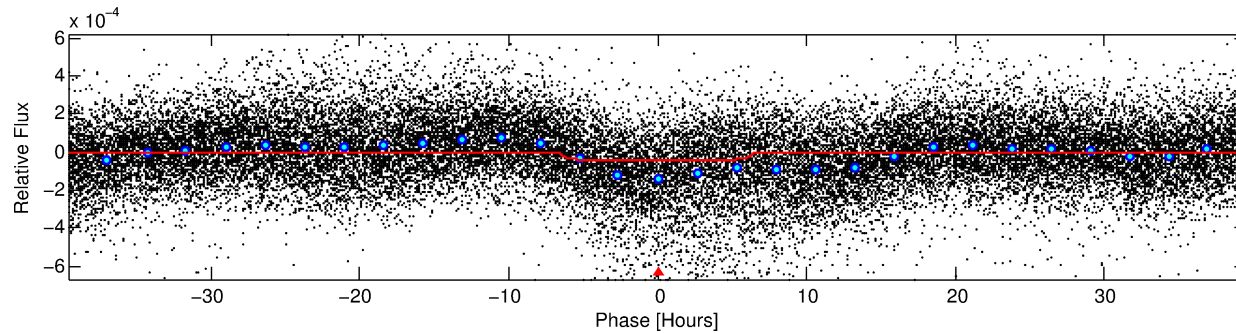
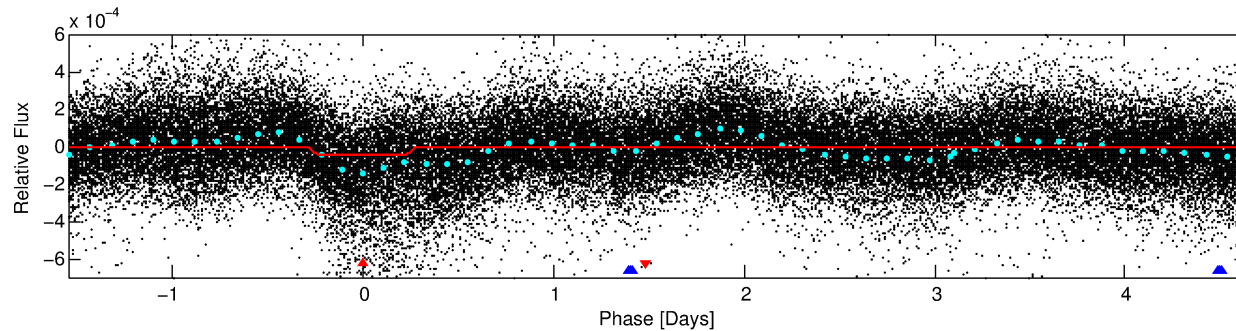
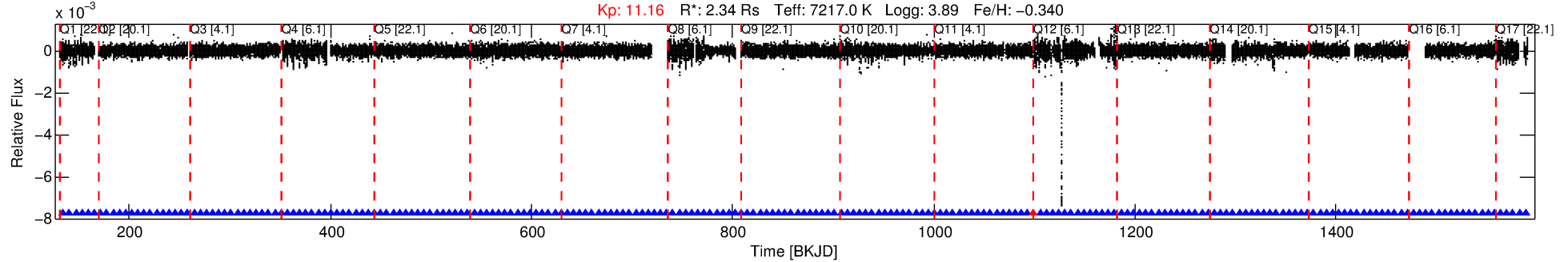
No Significant Match Found

DV One-Page Summary

KIC: 11093335 Candidate: 1 of 2 Period: 6.186 d

KOI: K04621 Corr: No Ephemeris Match

Kp: 11.16 R*: 2.34 Rs Teff: 7217.0 K Logg: 3.89 Fe/H: -0.340



DV Fit Results:

Period = 6.18589 [0.00006] d
Epoch = 134.6378 [0.0066] BKJD
Rp/R* = 0.0071 [0.0006]
a/R* = 1.83 [0.49]
b = 0.91 [0.08]
Seff = 2274.92 [1367.02]
Teq = 1761 [265] K
Rp = 1.82 [0.76] Re
a = 0.0766 [0.0288] AU
Ag = 32.14 [20.09] [1.55σ]
Teffp = 6483 [432] K [9.33σ]

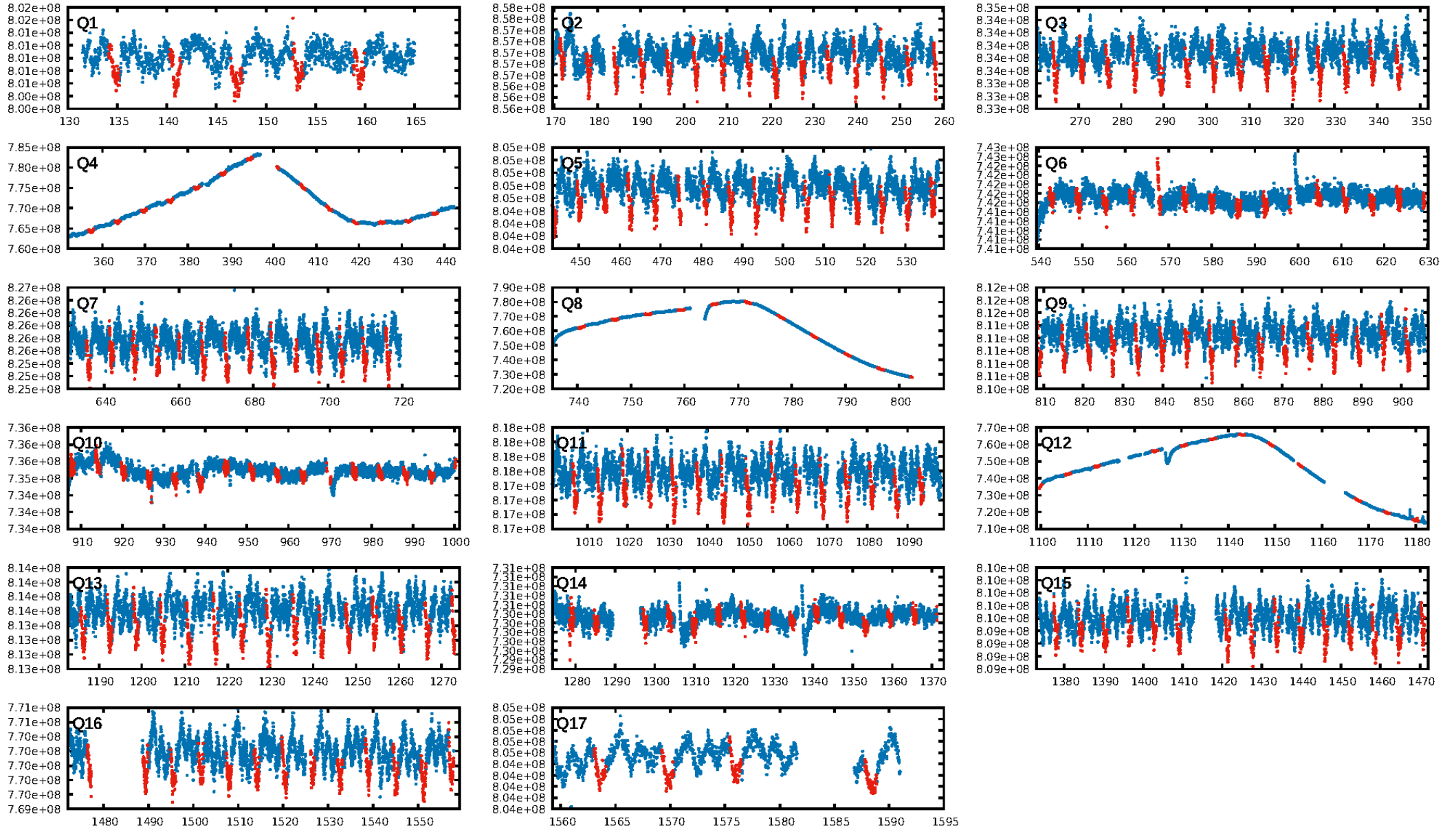
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.52σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.52e-15
RollingBand-fgt: 1.00 [209/210]
GhostDiagnostic-chr: 0.8512
Centroid-sig: 1.1%
Centroid-so: 0.629 arcsec [1.75σ]
OotOffset-rm: 0.507 arcsec [1.22σ]
KicOffset-rm: 0.740 arcsec [1.79σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

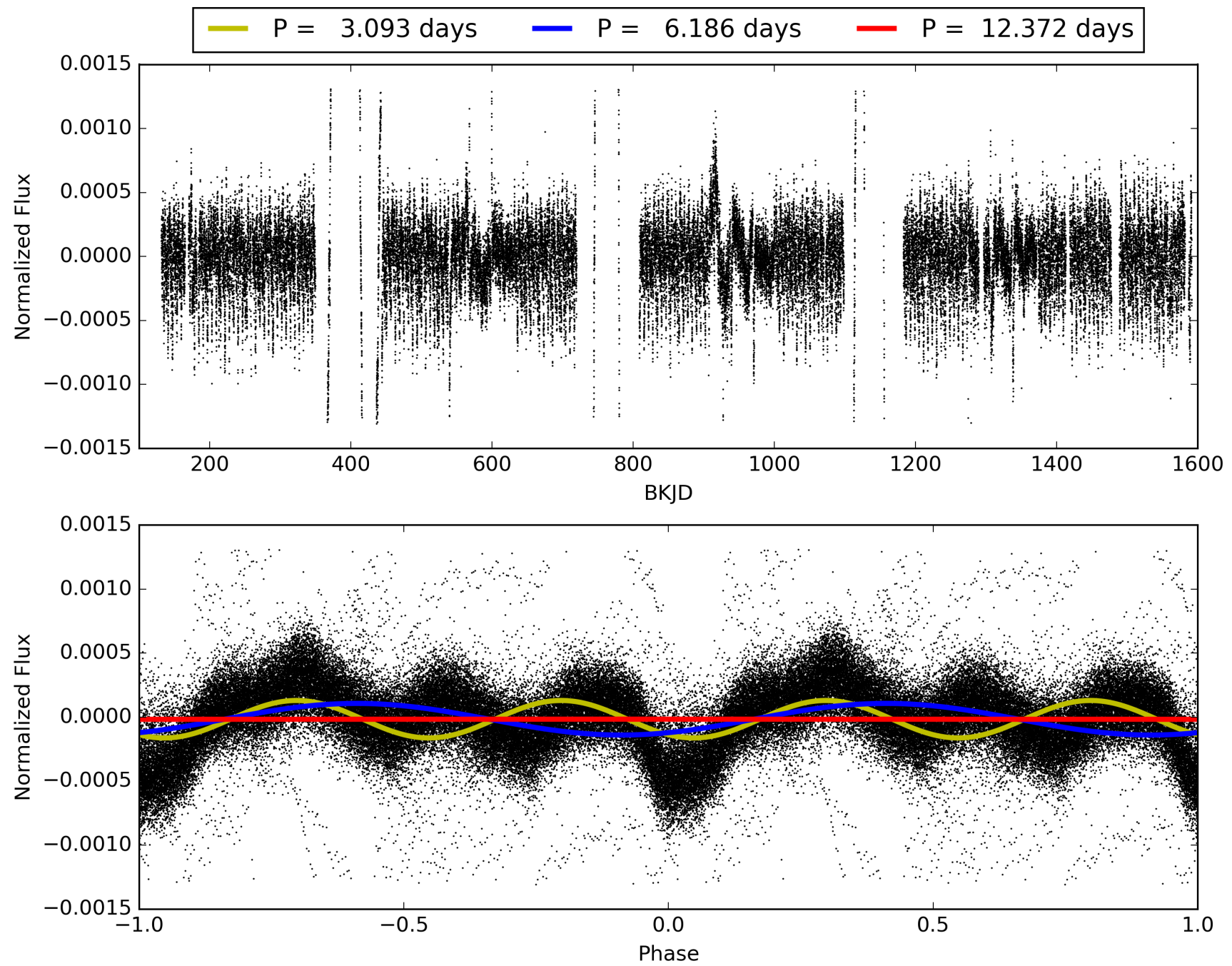
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:57:01 Z

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

TCE 011093335-01, PDC Light Curves

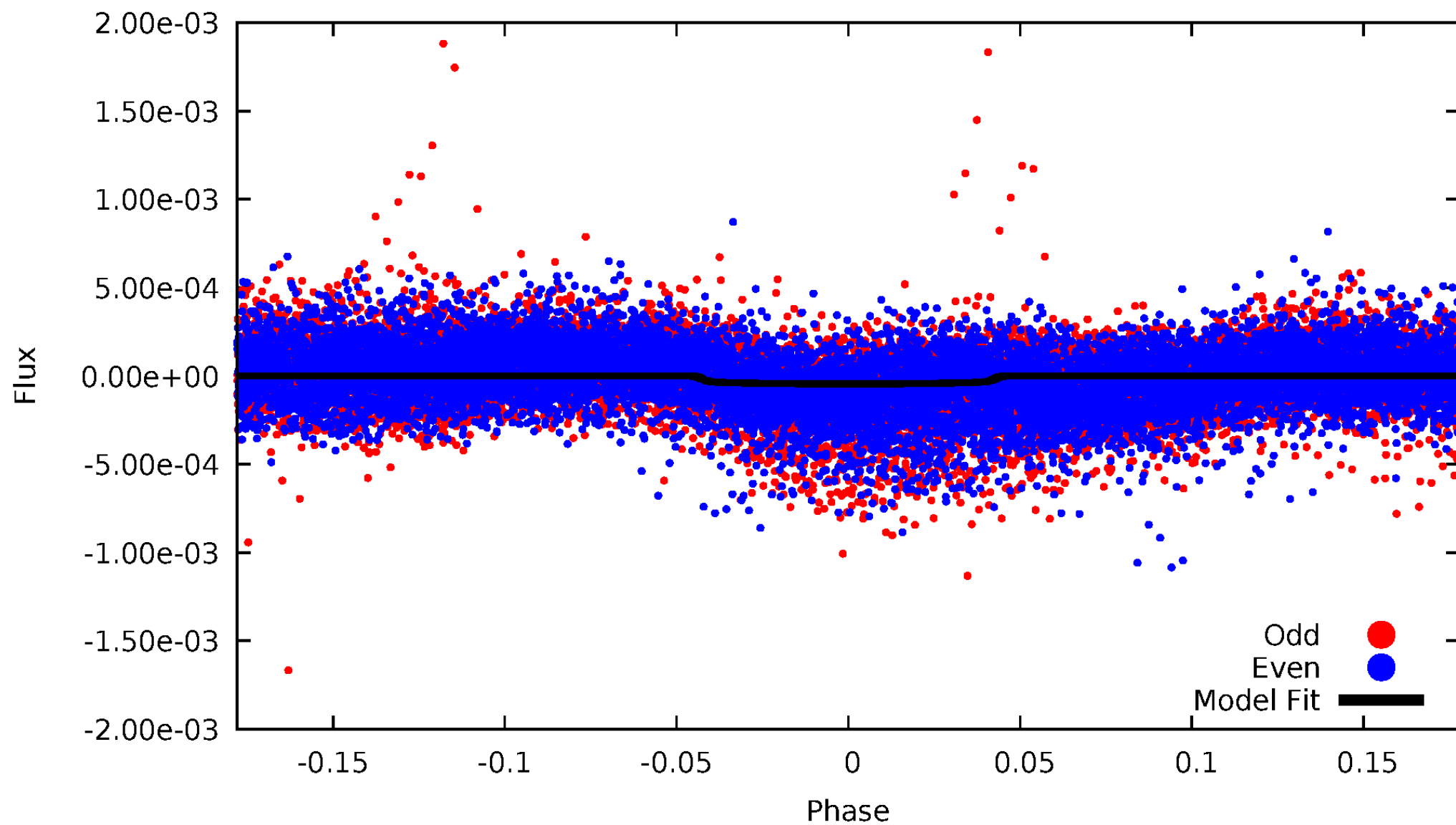


TCE 011093335-01



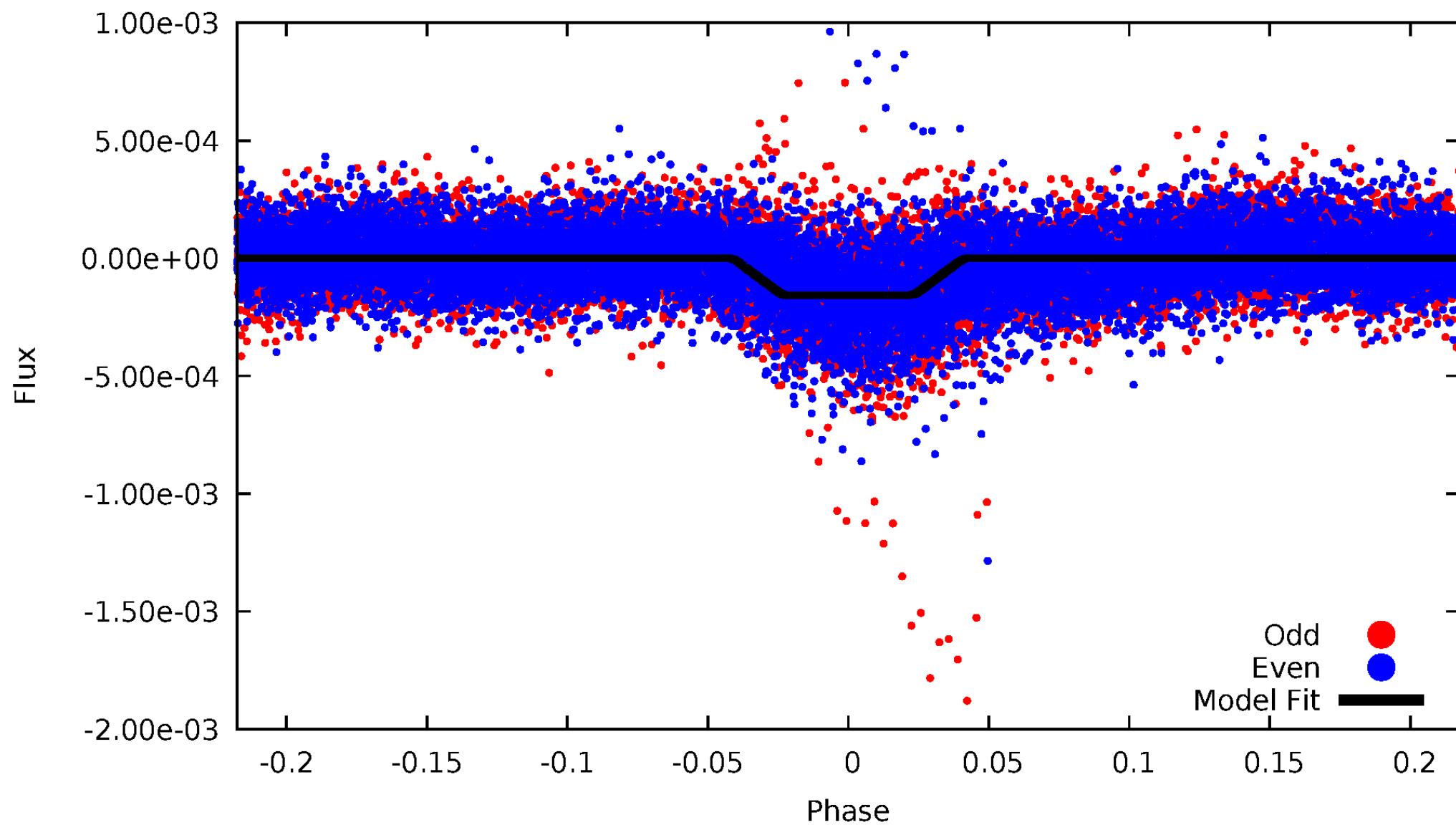
DV Odd/Even

TCE 011093335-01

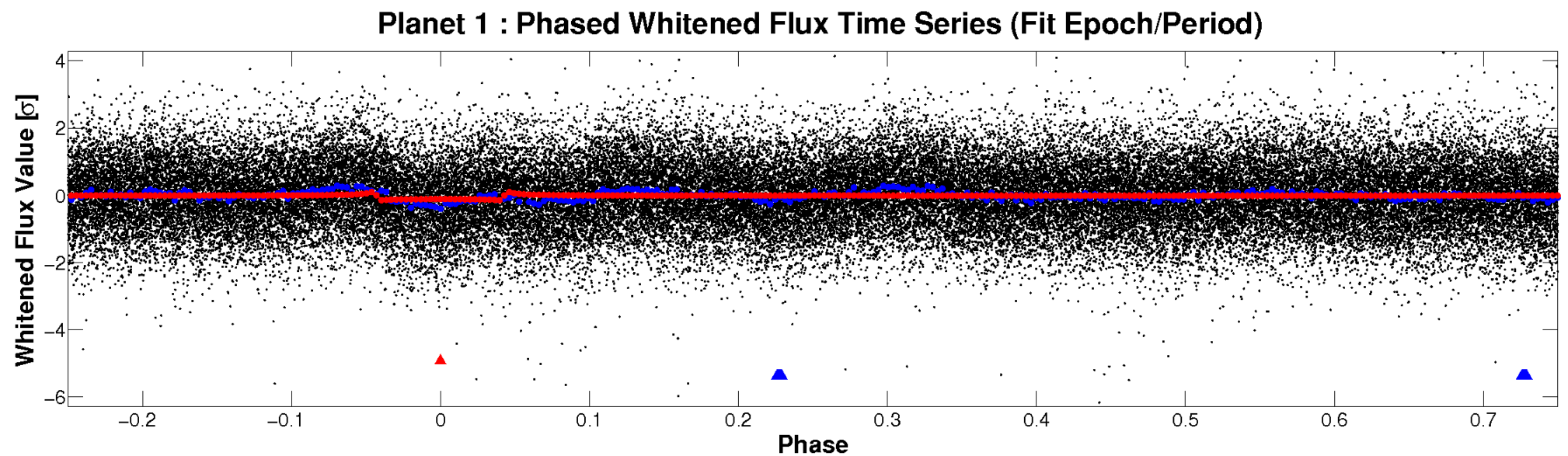
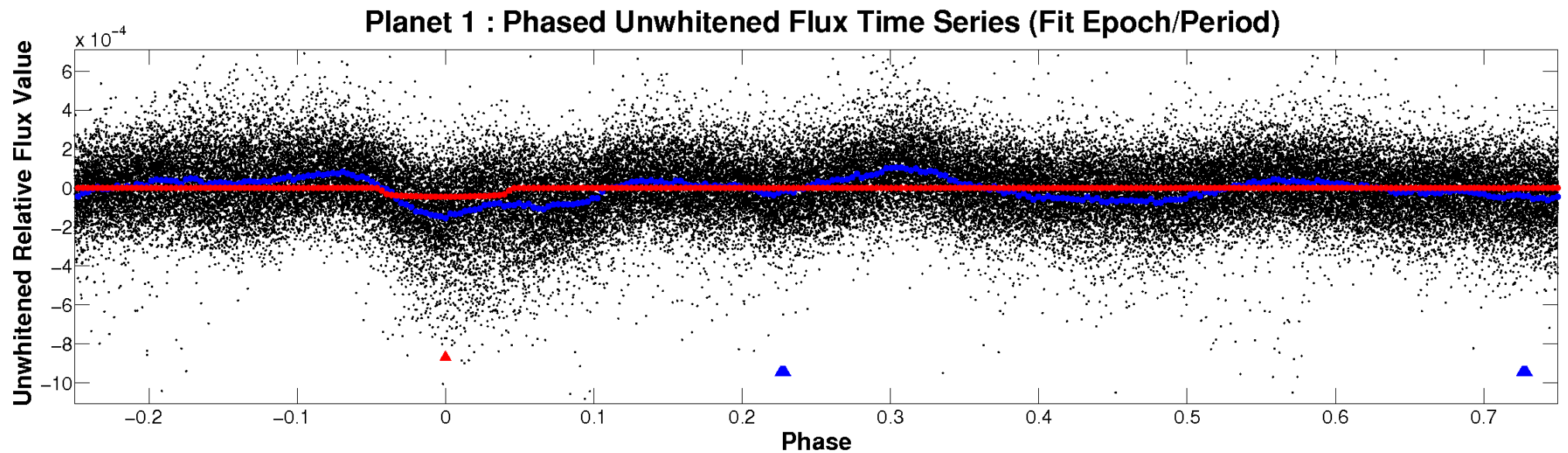


ALT Odd/Even

TCE 011093335-01

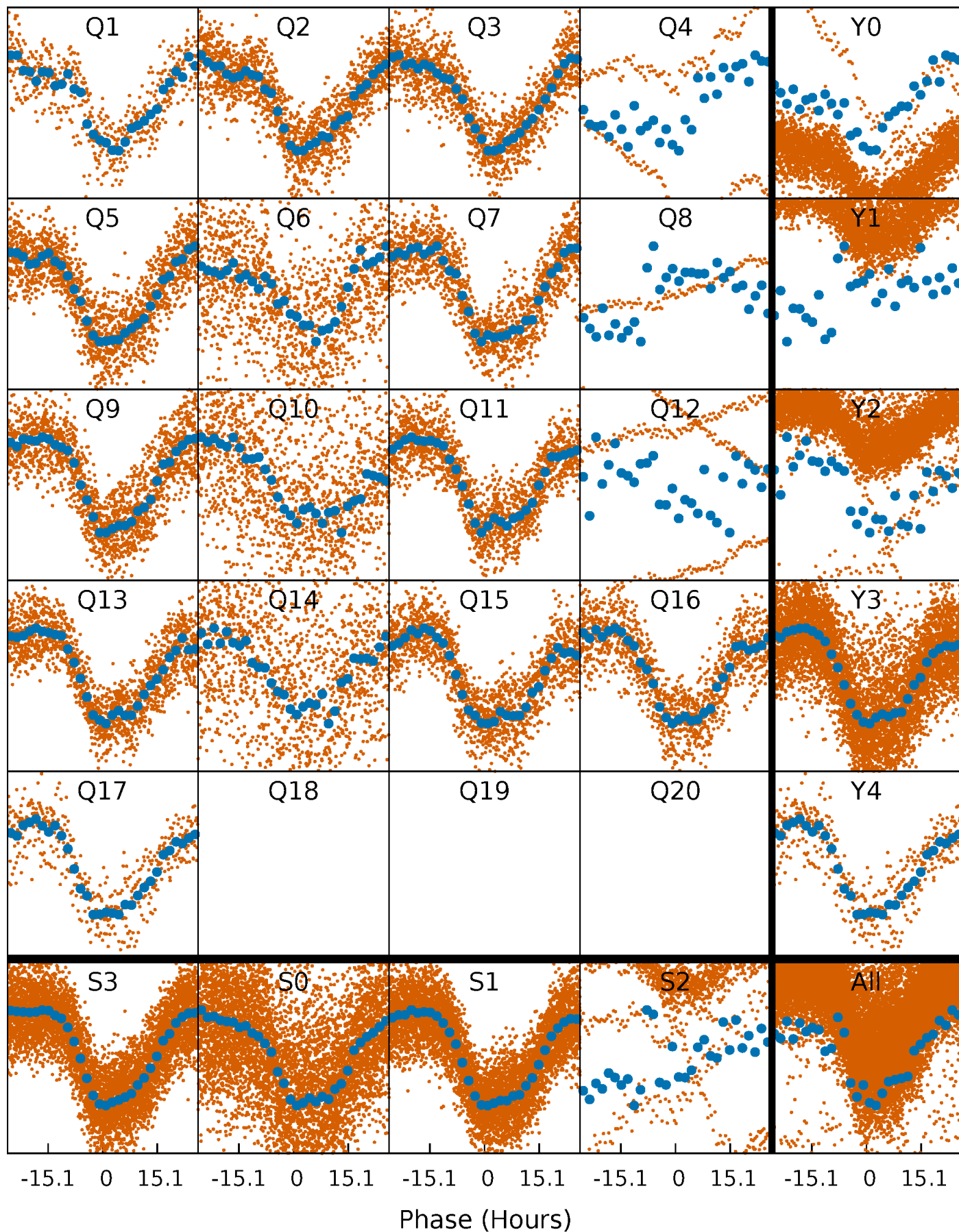


Non-Whitened Vs. Whitened Light Curve



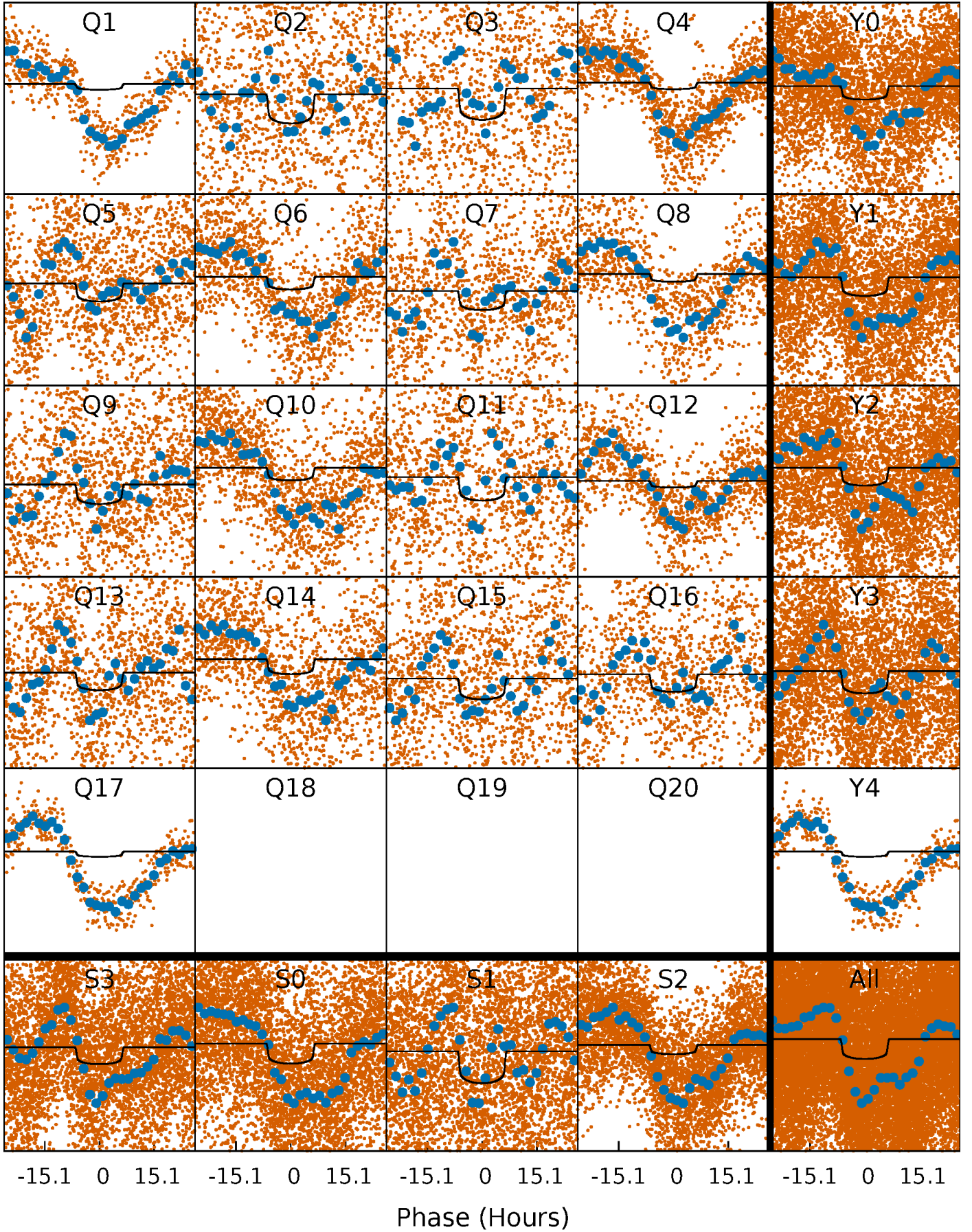
PDC Quarter-Phased Transit Curves

TCE 011093335-01 P= 6.185892 Days $T_0=134.637798$ (BKJD)



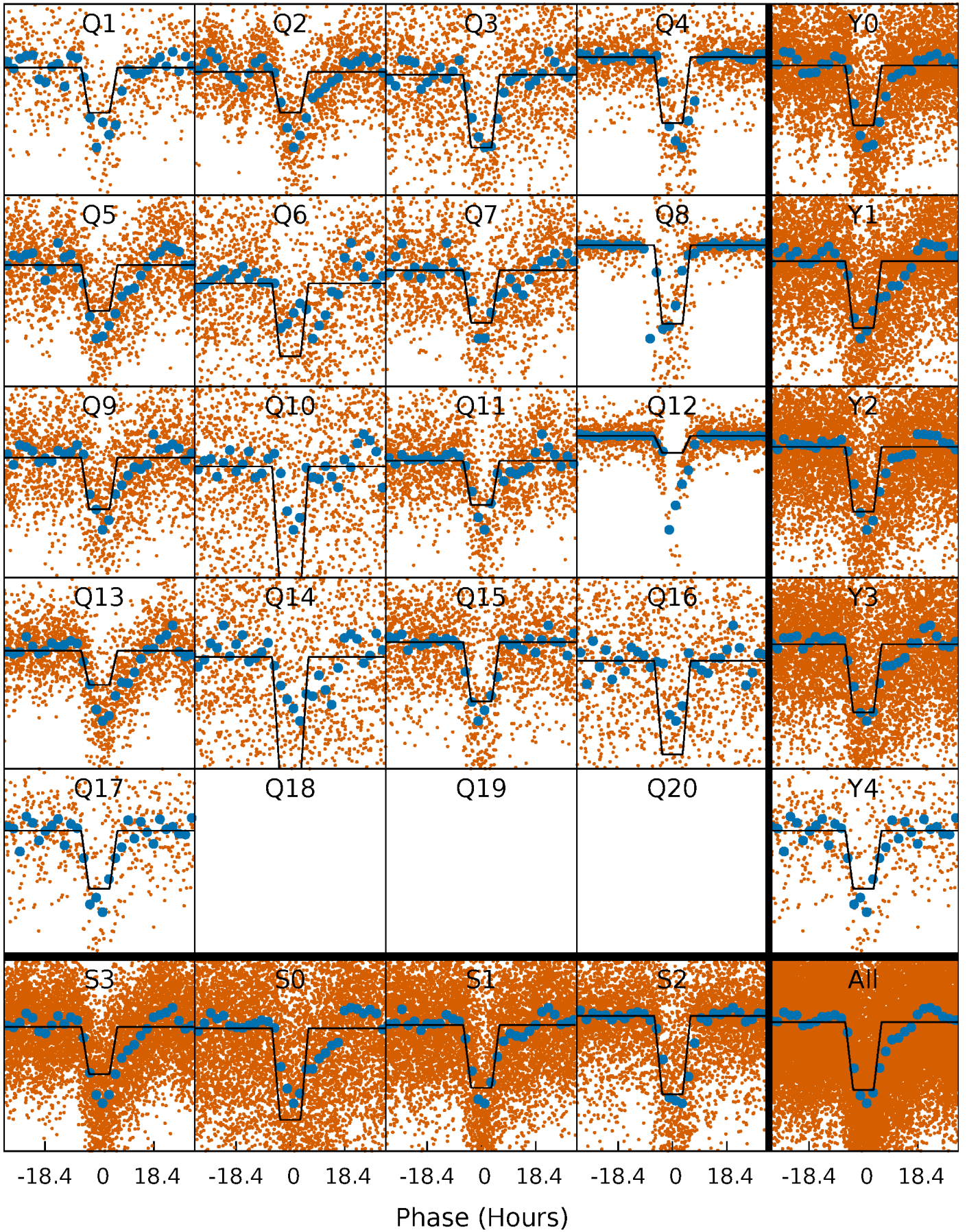
DV Quarter-Phased Transit Curves

TCE 011093335-01 P= 6.185892 Days $T_0=134.637798$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

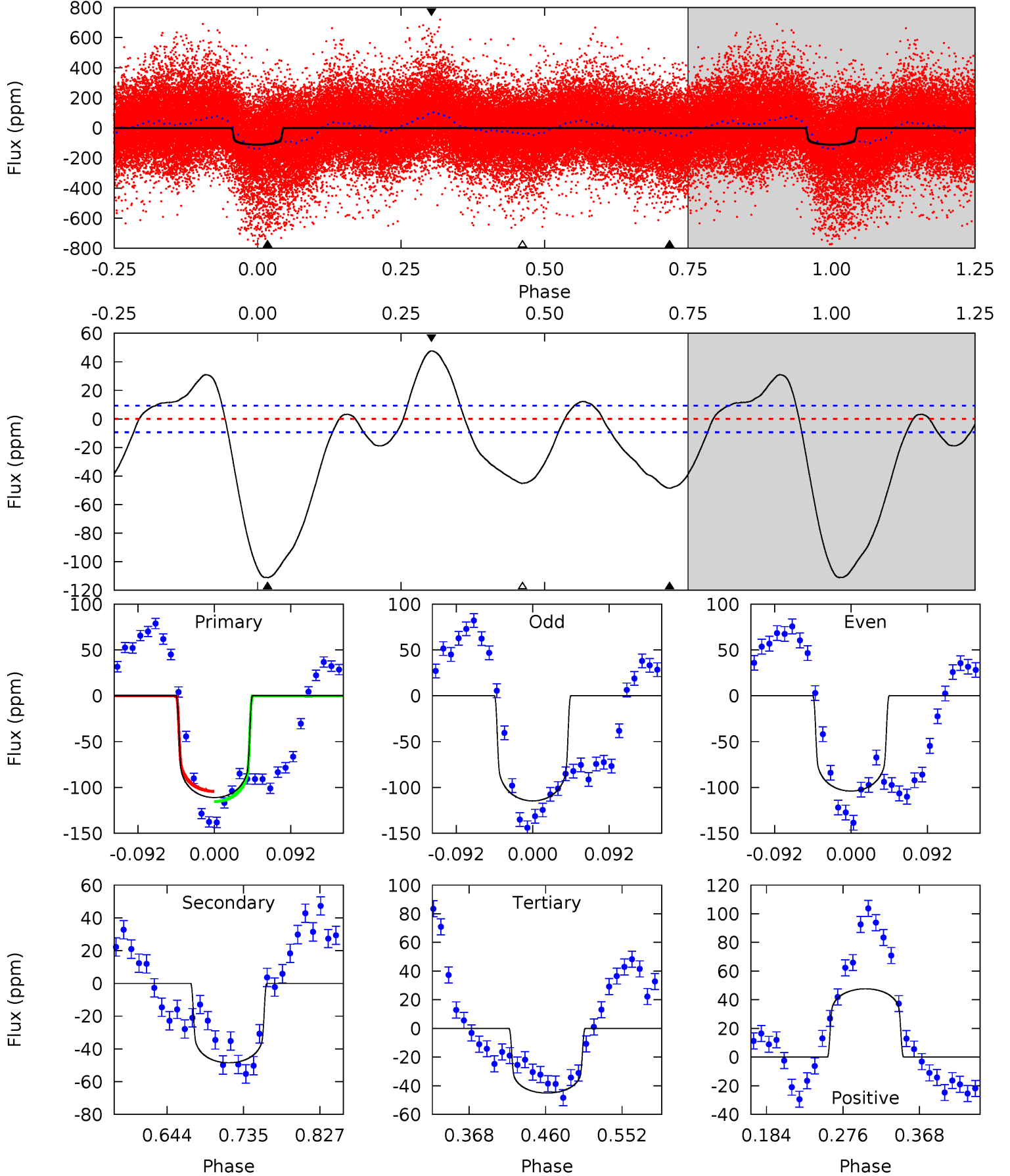
TCE 011093335-01 P= 6.185402 Days $T_0=134.608395$ (BKJD)



DV Model-Shift Uniqueness Test

011093335-01, P = 6.185892 Days, E = 128.451906 Days

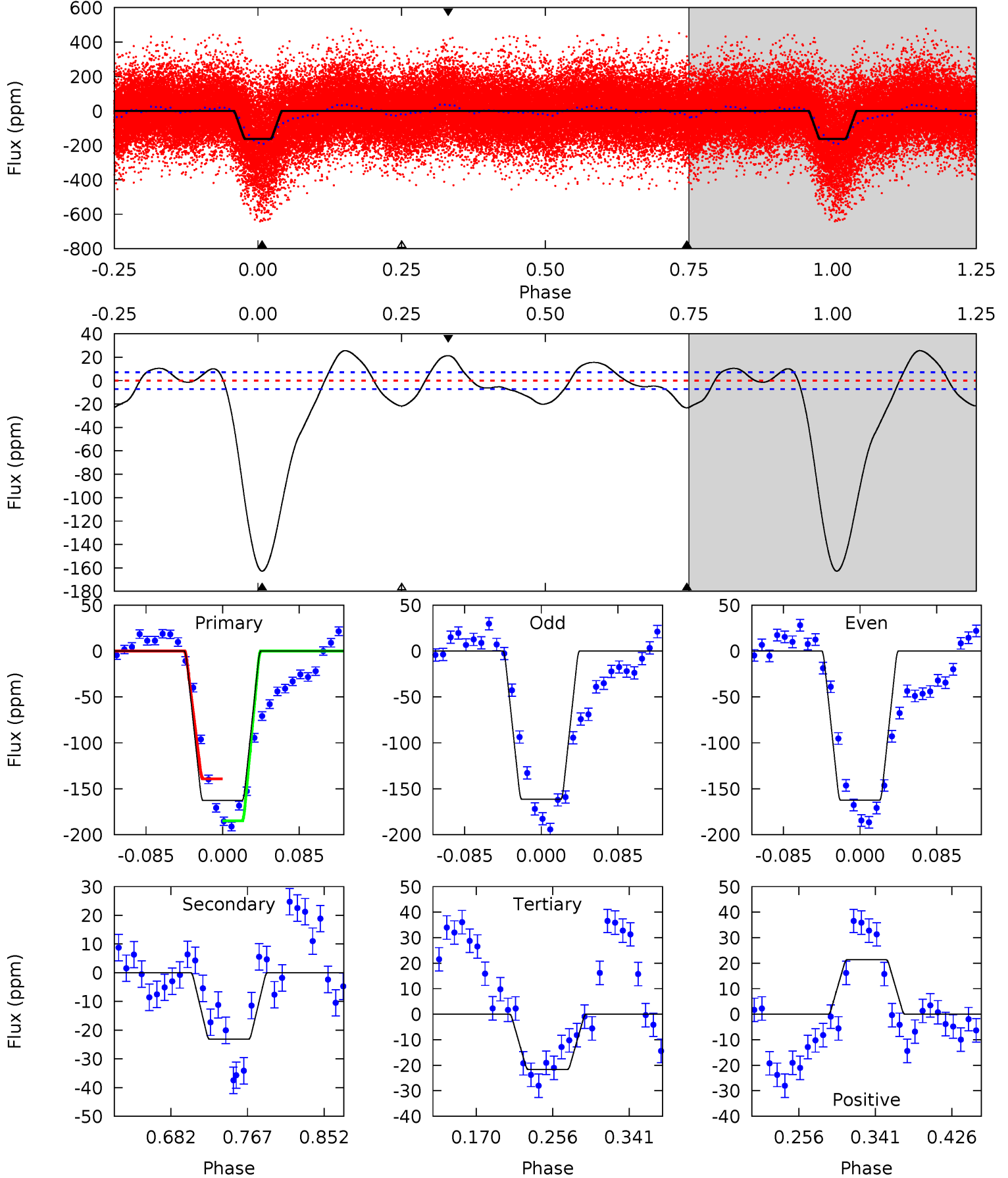
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.6	23.8	22.2	23.4	4.58	1.69	12.0	32.4	31.2	1.67	0.42	2.64	1.52	0.30	2.74



Alt Model-Shift Uniqueness Test

011093335-01, P = 6.185402 Days, E = 128.422993 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
104.5	14.9	13.9	13.7	4.60	1.72	8.29	90.6	90.8	0.96	1.15	0.34	1.01	0.14	14.7



Stellar Parameters For KIC 011093335

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7217^{+194}_{-259}	$3.893^{+0.336}_{-0.120}$	$-0.340^{+0.300}_{-0.300}$	$2.343^{+0.517}_{-0.959}$	$1.562^{+0.200}_{-0.371}$	$0.171^{+0.489}_{-0.061}$
	+3%/-4%	+9%/-3%	+88%/-88%	+22%/-41%	+13%/-24%	+286%/-36%
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 011093335-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-49 ± 2	$1.73^{+0.33}_{-0.37}$	2409^{+157}_{-249}	7089^{+443}_{-414}	52^{+26}_{-15}
Alt.	-23 ± 2	$3.11^{+0.48}_{-0.68}$	2410^{+173}_{-241}	4545^{+150}_{-141}	$7.809^{+4.199}_{-1.930}$

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

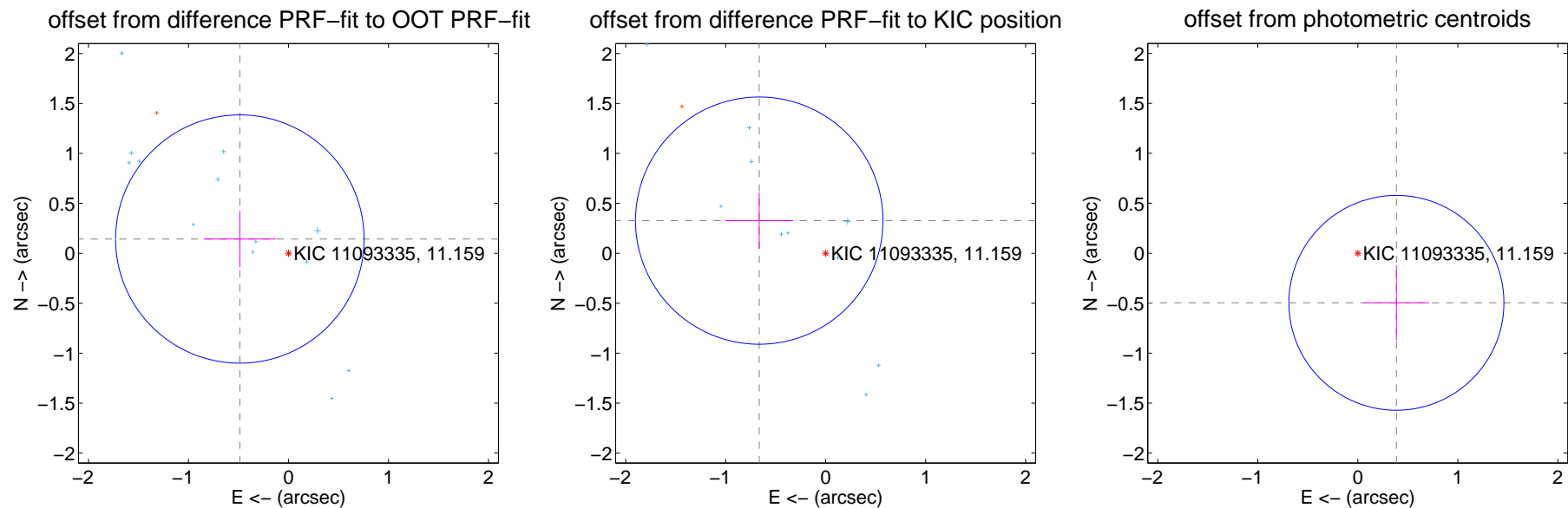
DV Centroid Data

Supplemental centroid analysis for 011093335-01. **Kepler magnitude: 11.16.** Transit SNR 9.33

There are 15 quarters with good PRF difference image offsets

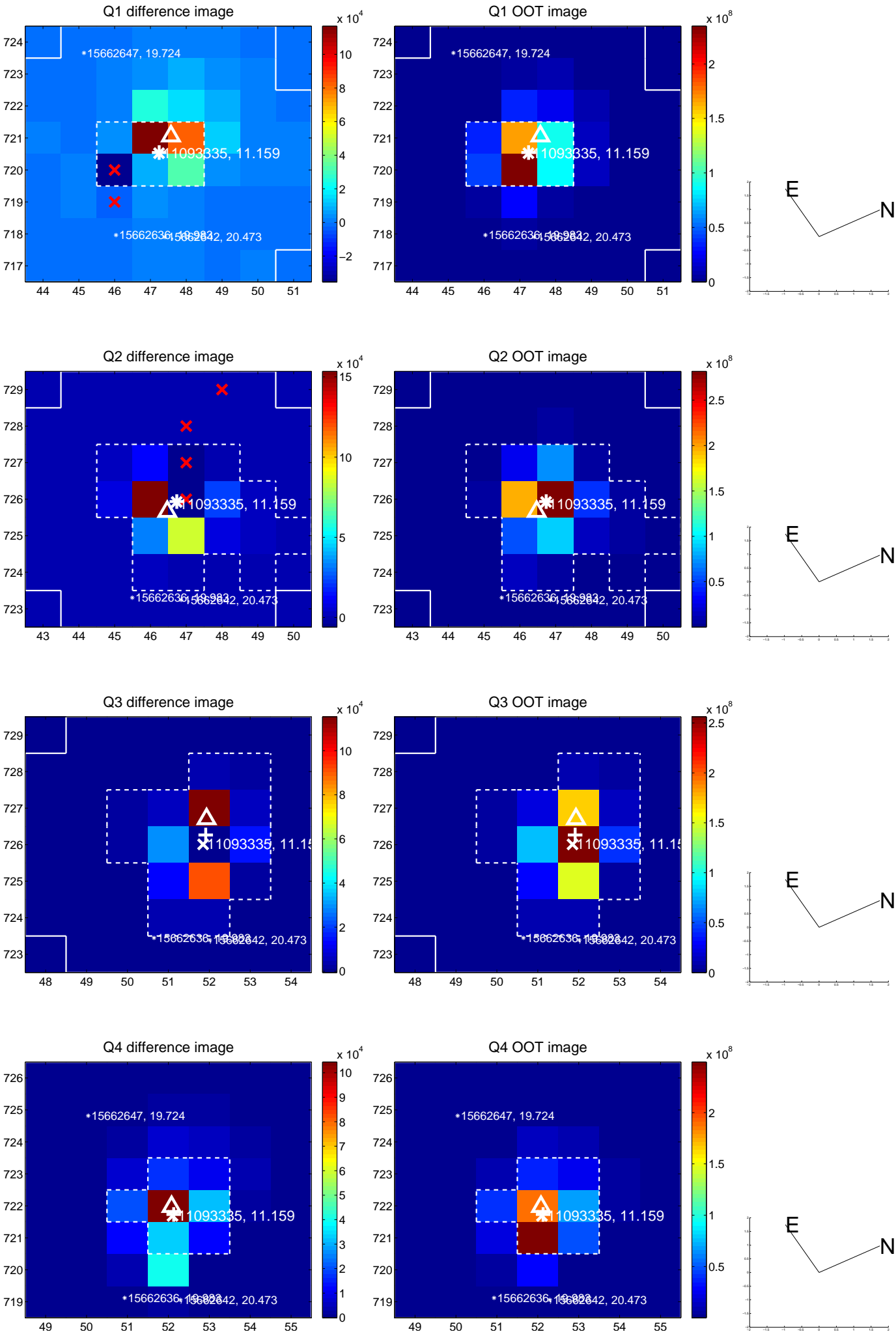
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.507 ± 0.414	1.22	0.487 ± 0.361	0.143 ± 0.282
PRF-fit source offset from KIC position	0.740 ± 0.412	1.79	0.664 ± 0.340	0.327 ± 0.283
photometric centroid source offset	0.63 ± 0.36	1.75	-0.39 ± 0.33	-0.50 ± 0.38

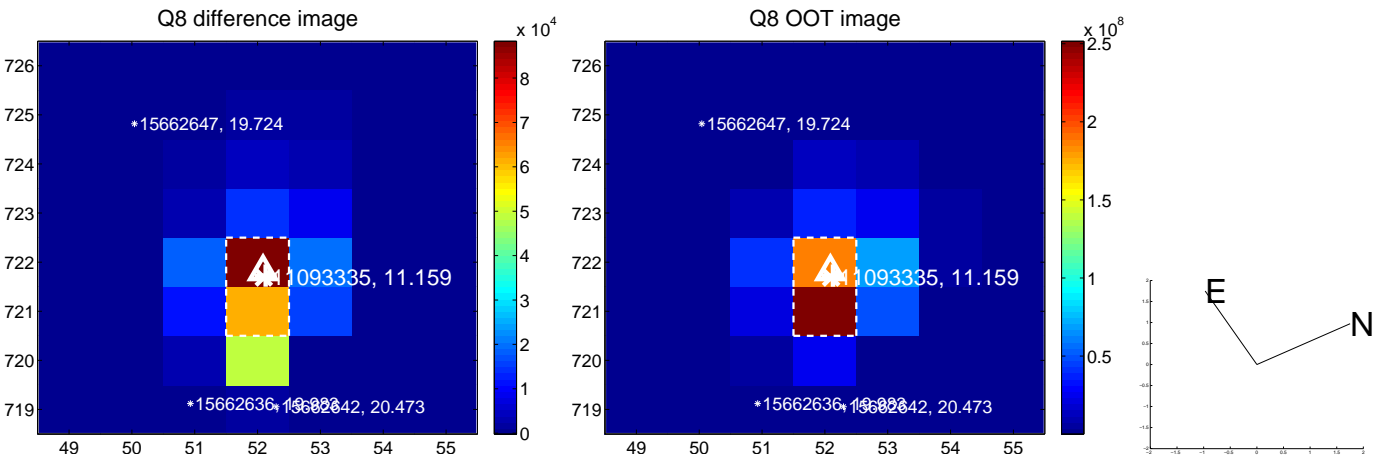
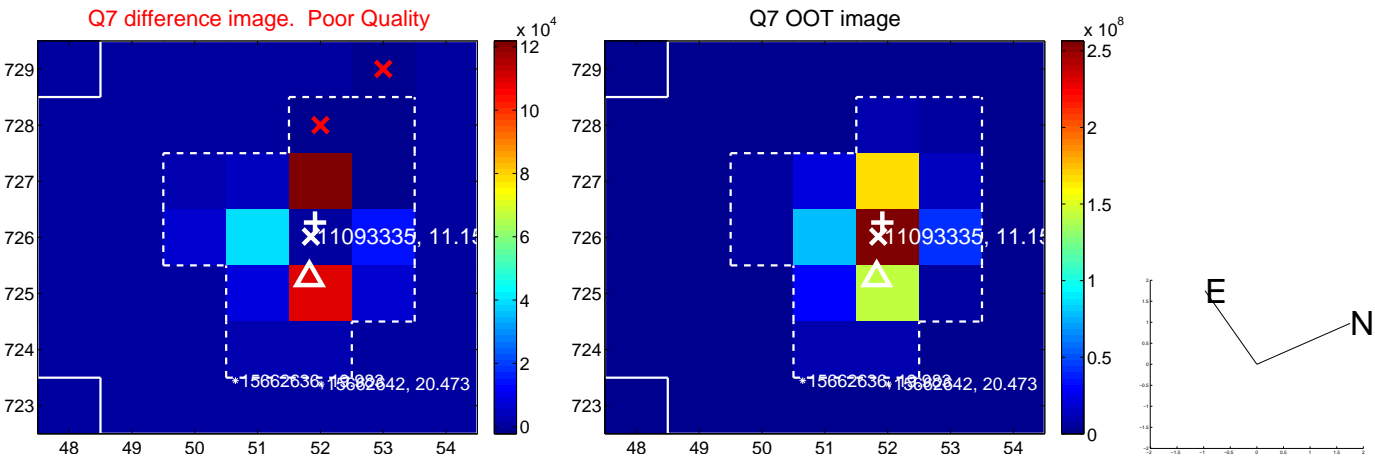
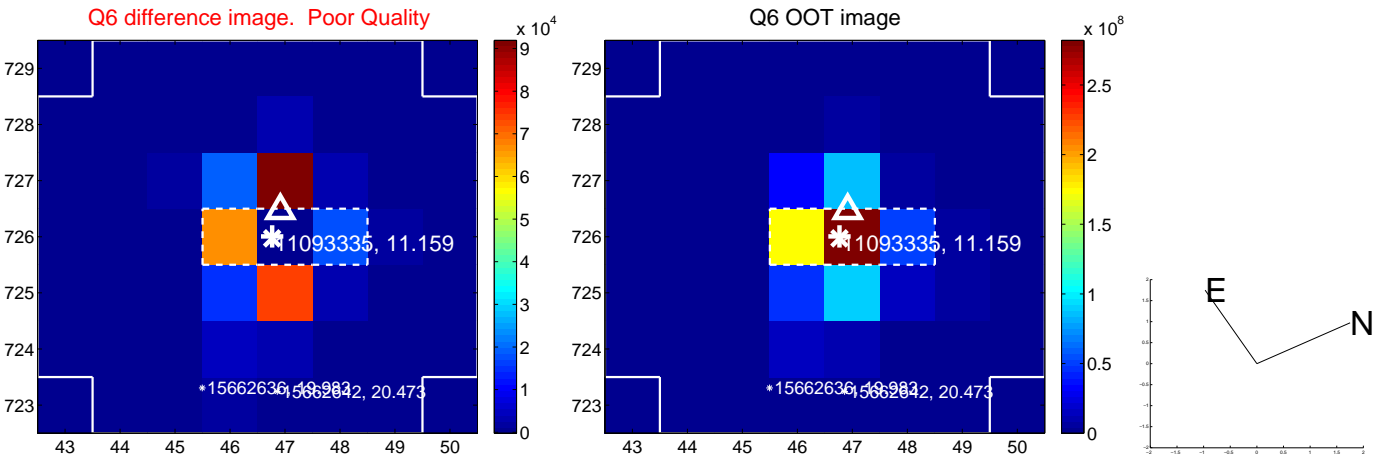
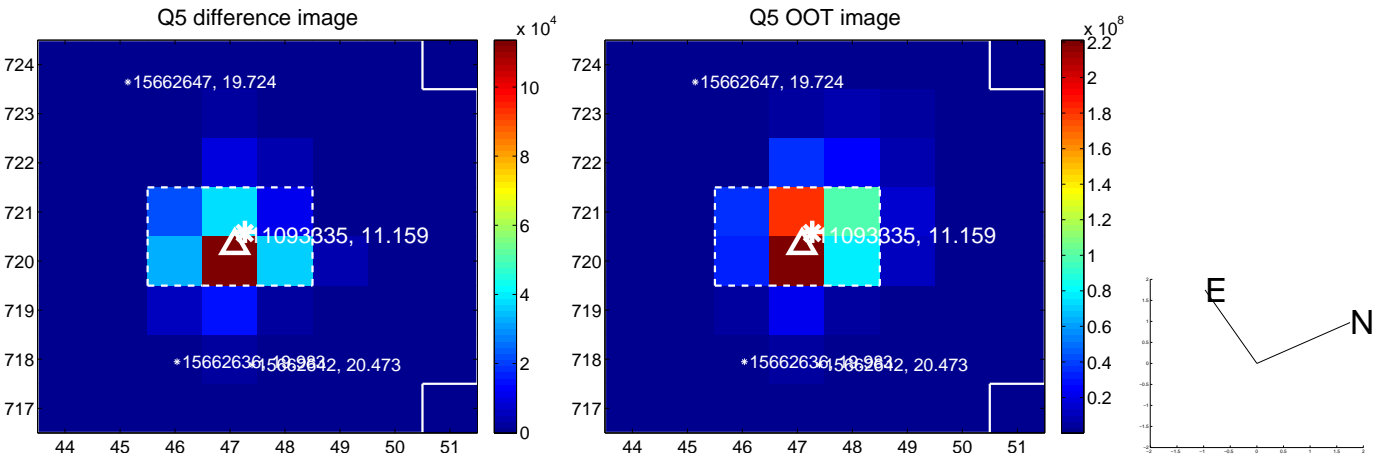


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

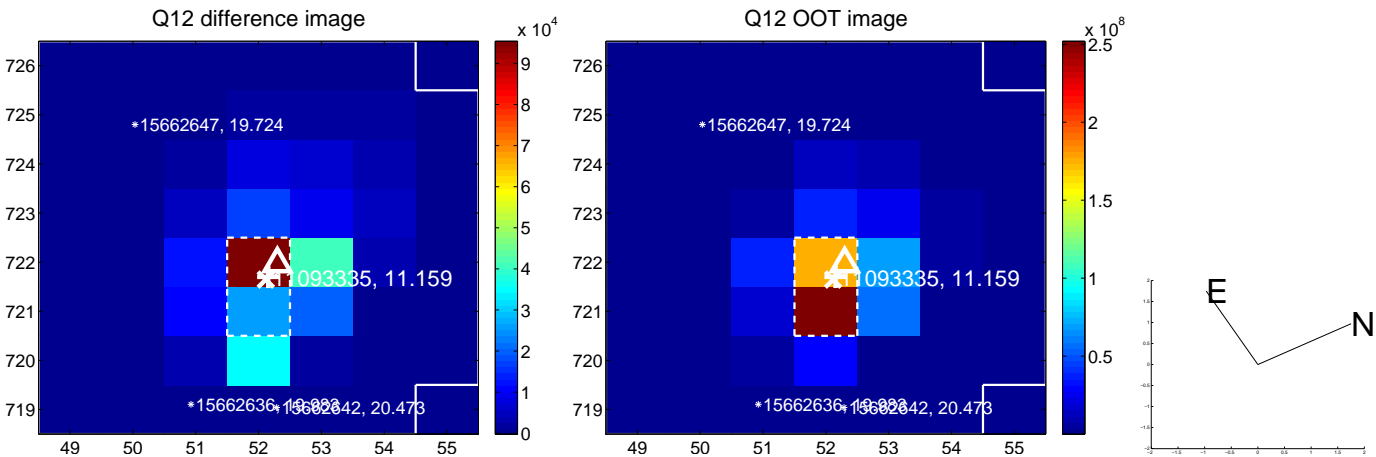
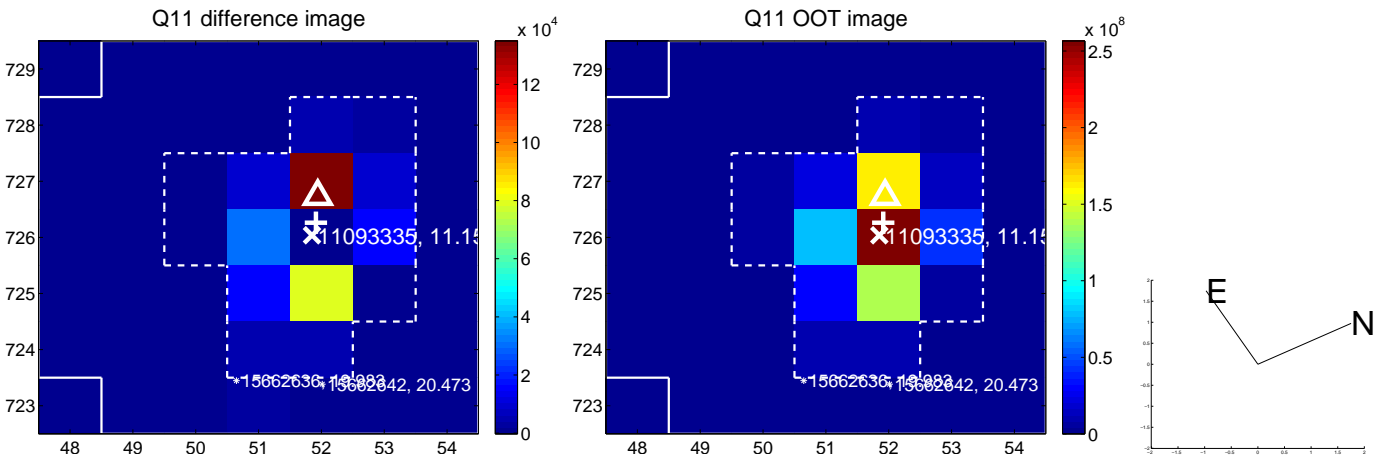
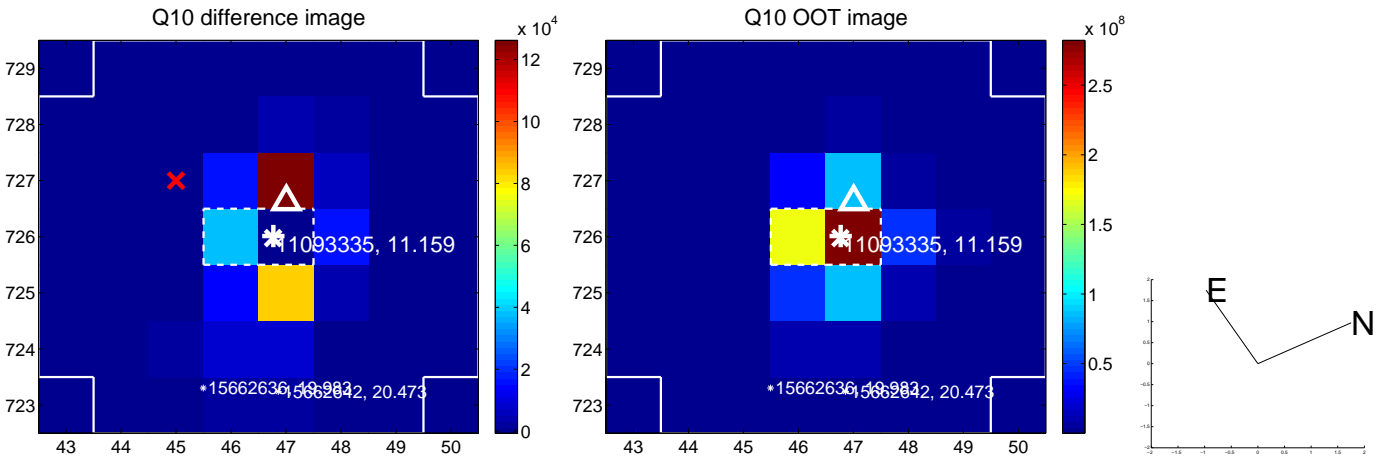
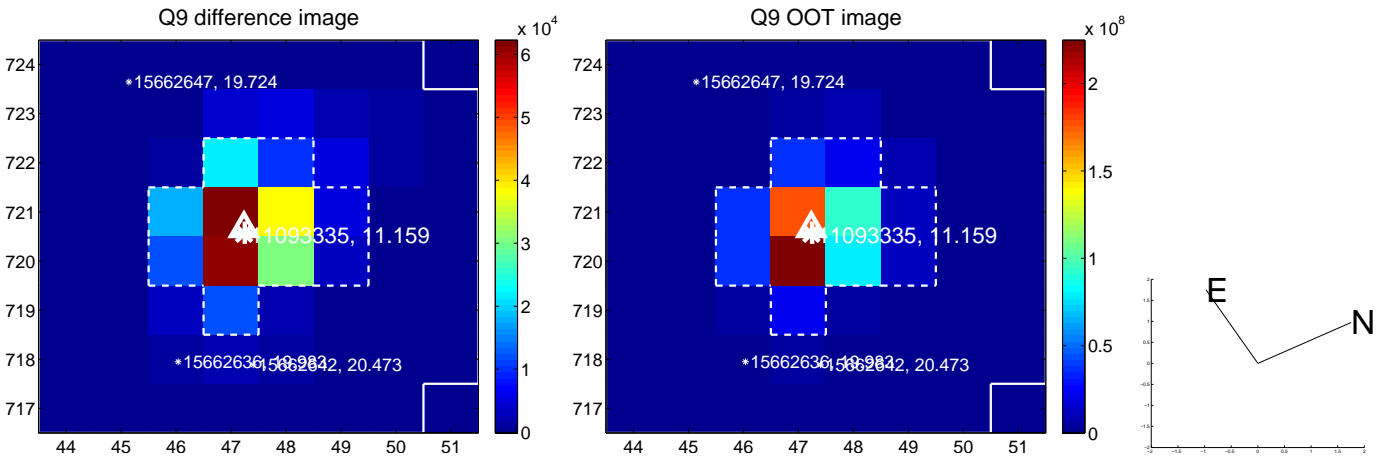
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



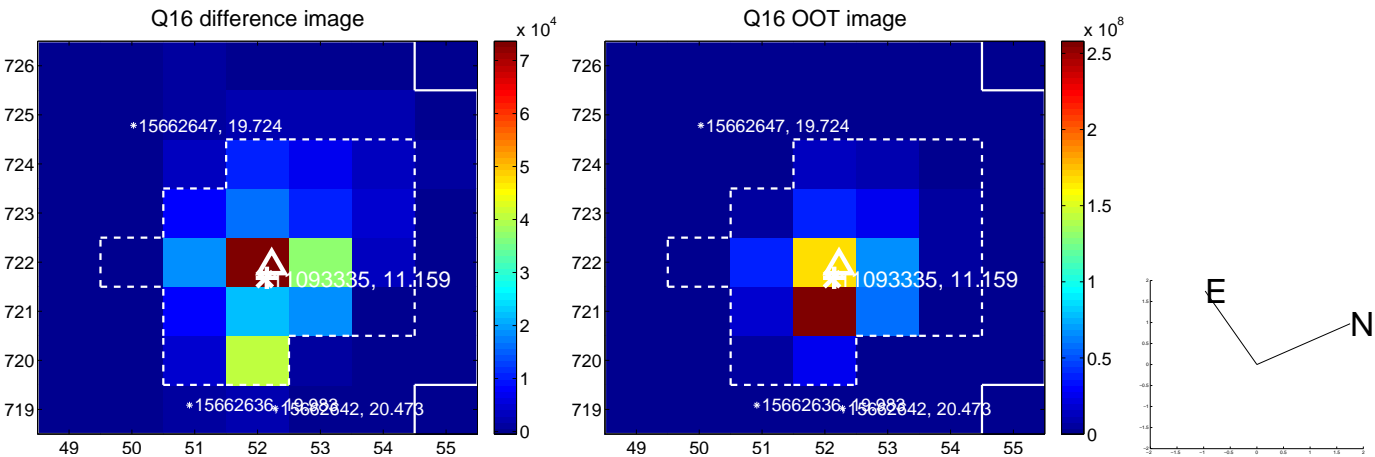
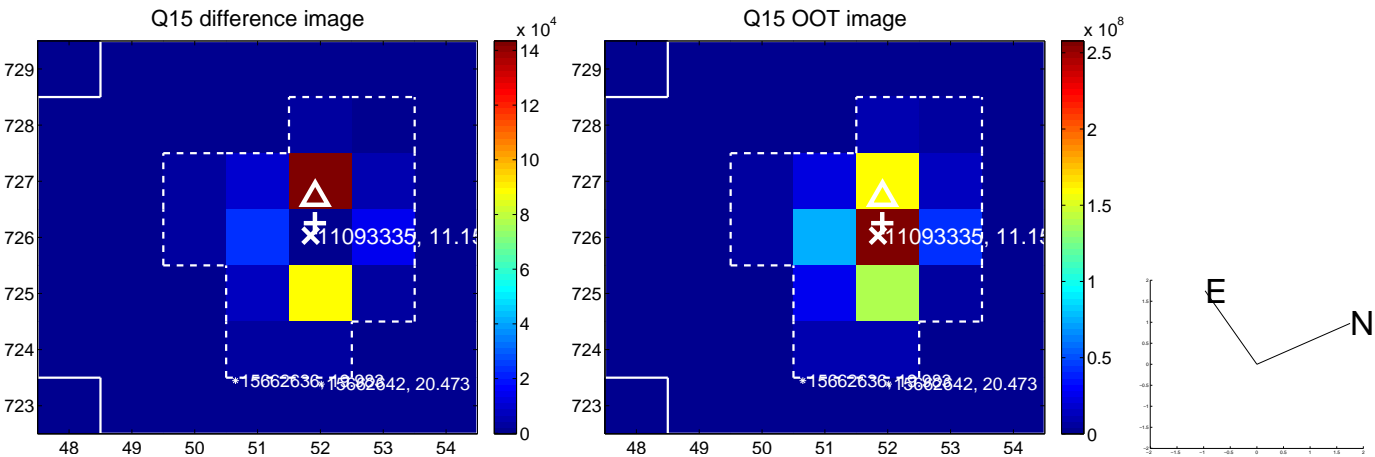
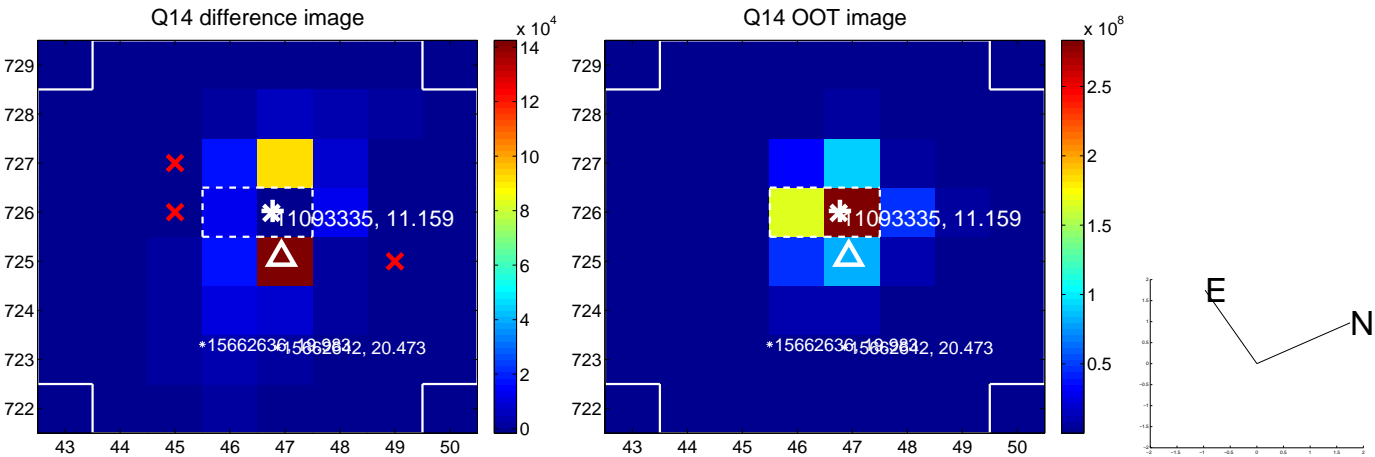
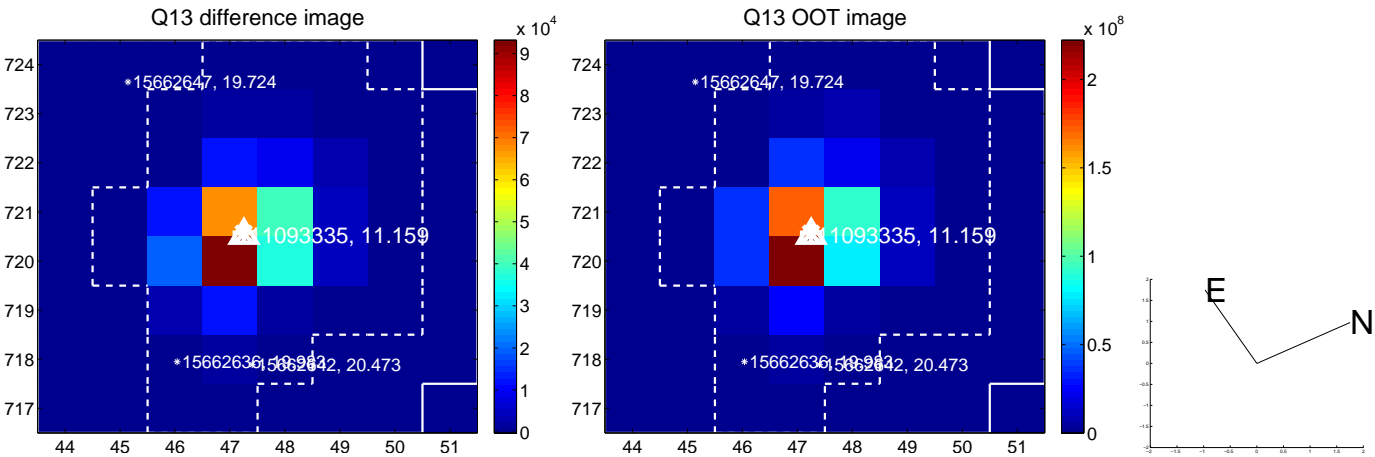
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



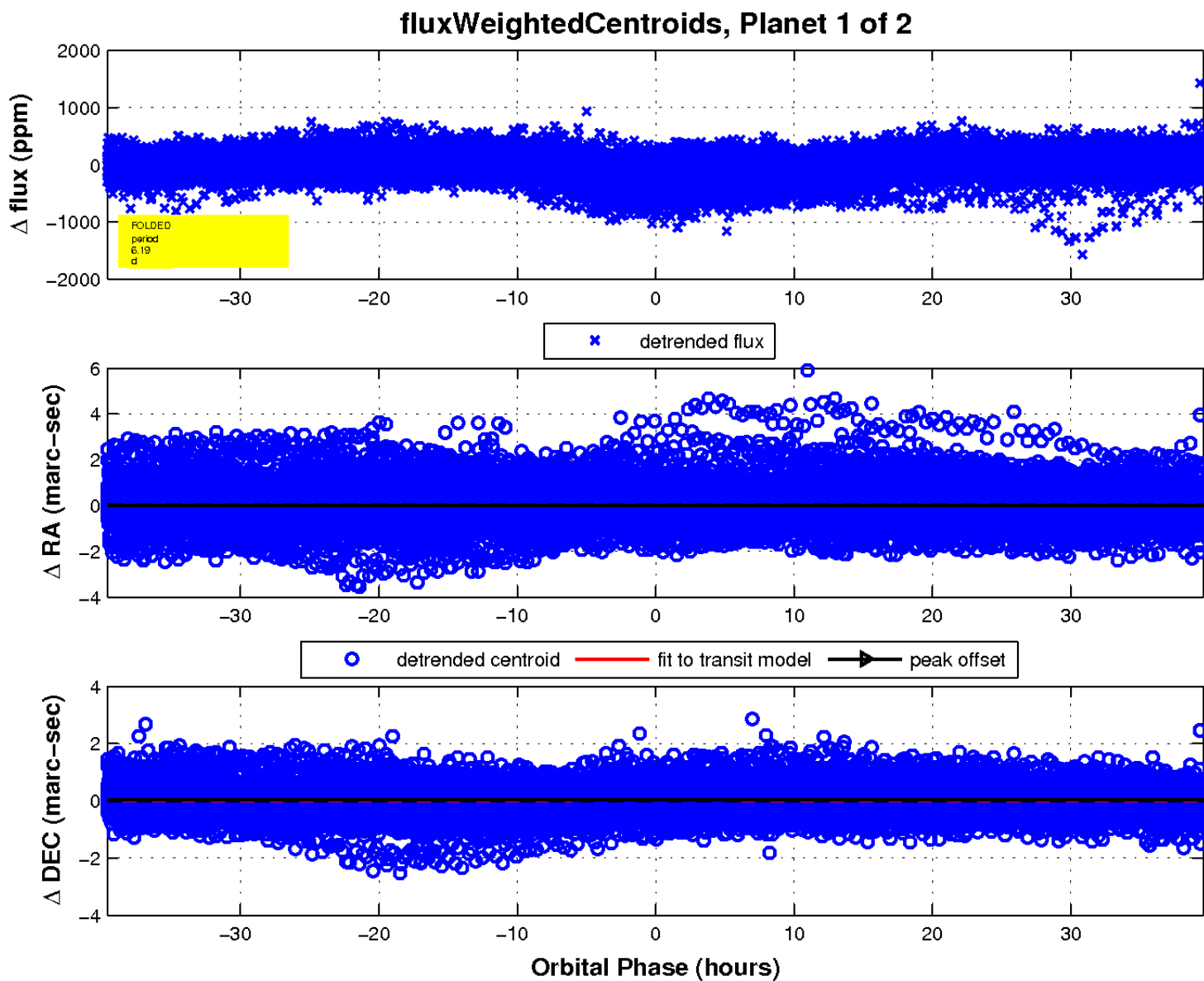
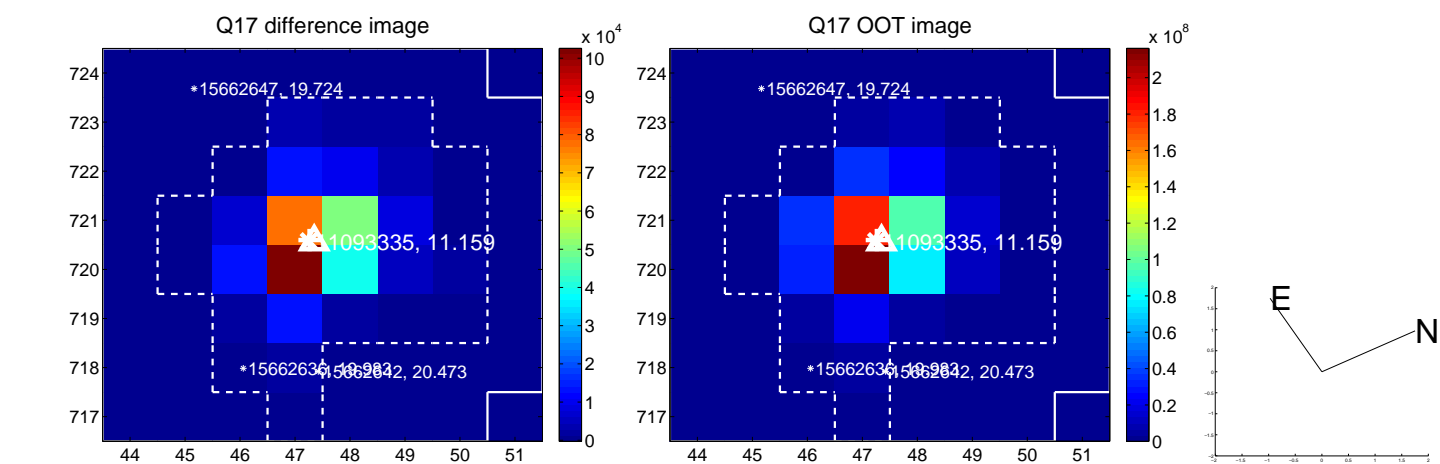
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

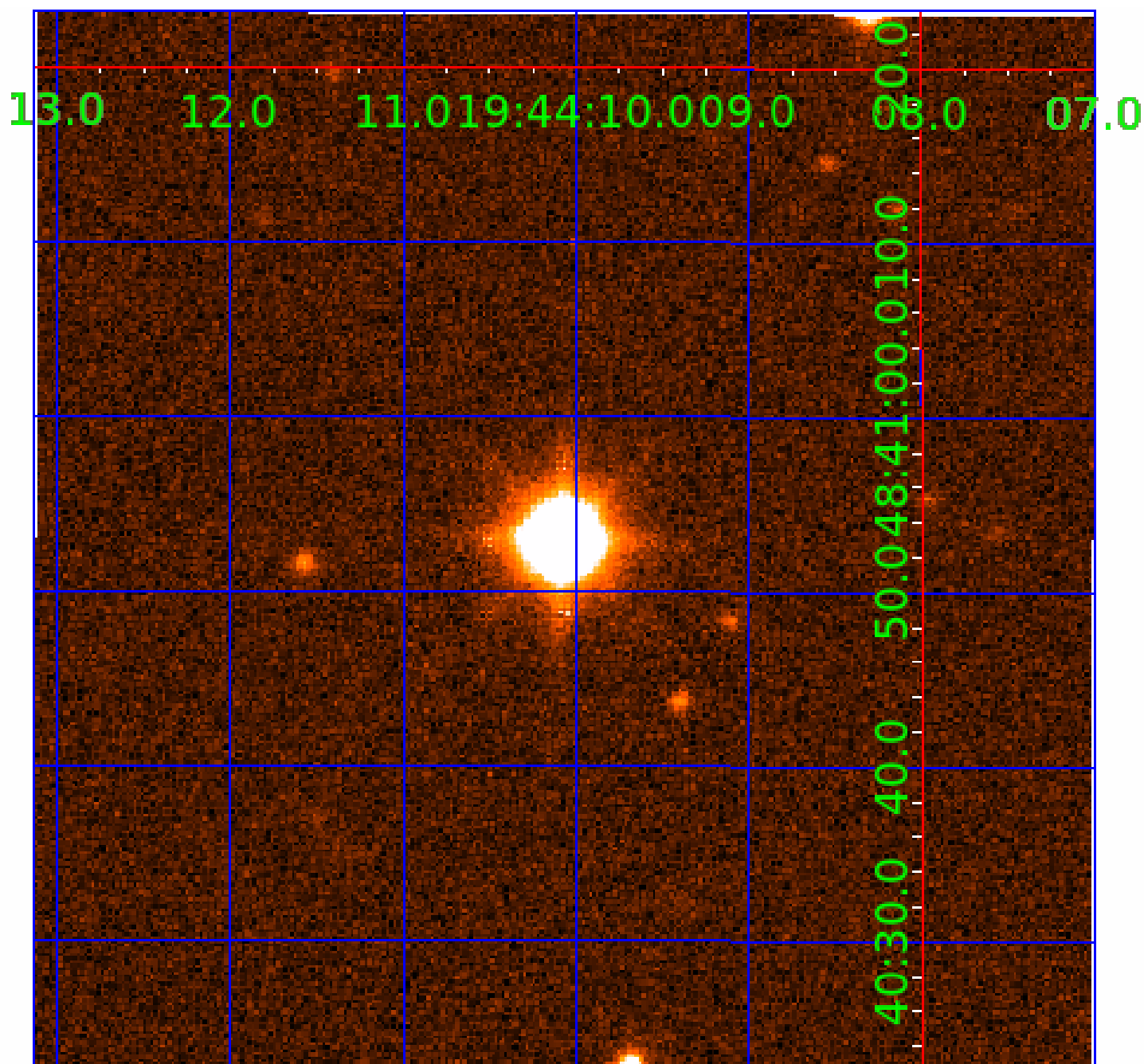


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011093335

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})
011093335-01	OBS	No	6.185892	134.637798	44.4	13.206	11.8	9.3	2.34	7217	1.82	2274.92
011093335-02	OBS	No	3.092988	132.941947	32.7	9.778	9.5	10.5	2.34	7217	1.59	5732.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011093335-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
011093335-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

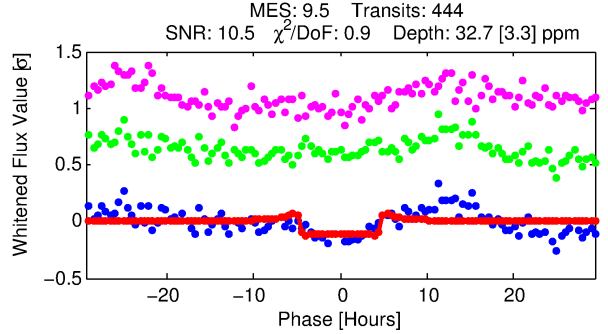
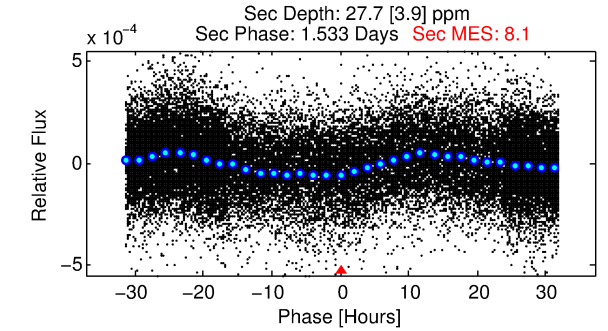
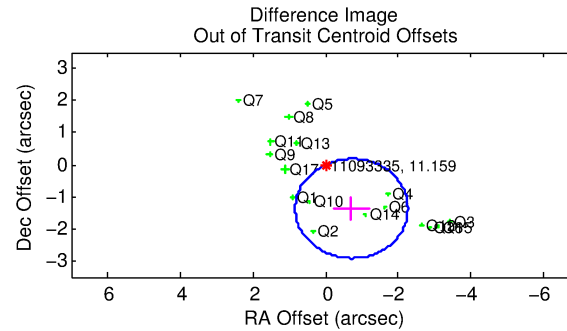
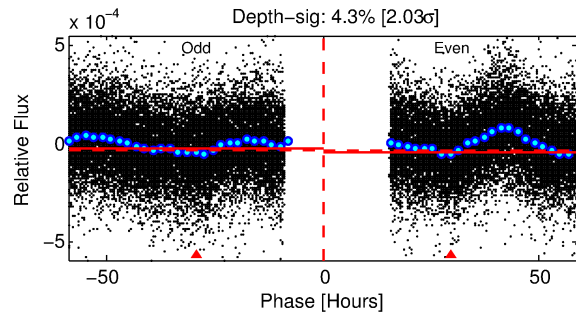
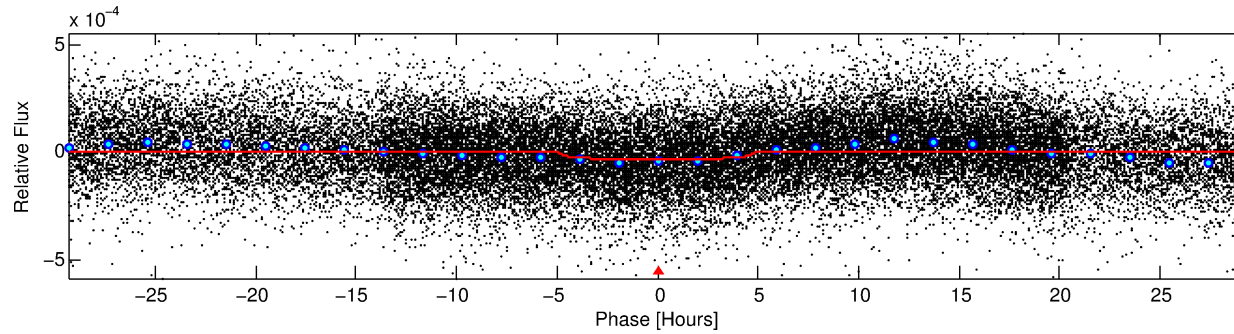
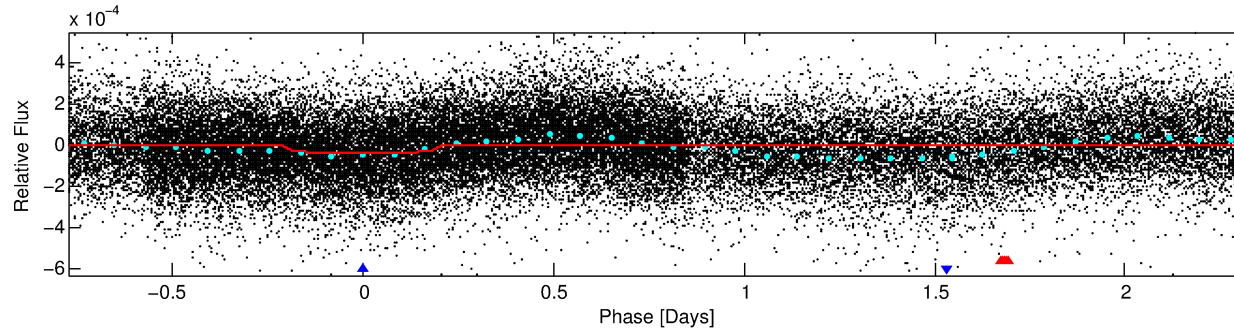
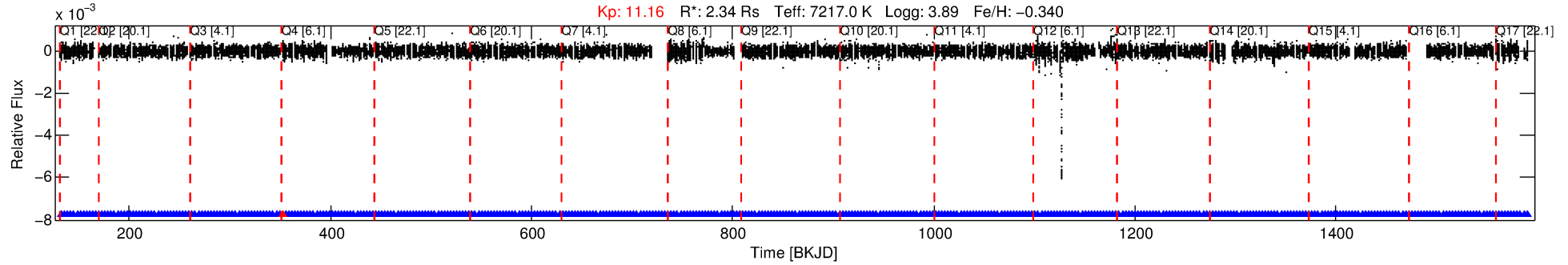
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011093335-02

No Significant Match Found

DV One-Page Summary

KIC: 11093335 Candidate: 2 of 2 Period: 3.093 d
KOI: K04621 Corr: No Ephemeris Match



DV Fit Results:

Period = 3.09299 [0.00003] d
Epoch = 132.9419 [0.0045] BKJD
Rp/R* = 0.0062 [0.0006]
a/R* = 1.36 [0.32]
b = 0.92 [0.08]
Seff = 5732.34 [3444.62]
Teq = 2219 [333] K
Rp = 1.59 [0.67] Re
a = 0.0482 [0.0181] AU
Ag = 14.03 [8.88] [1.47 σ]
Teffp = 6640 [472] K [7.66 σ]

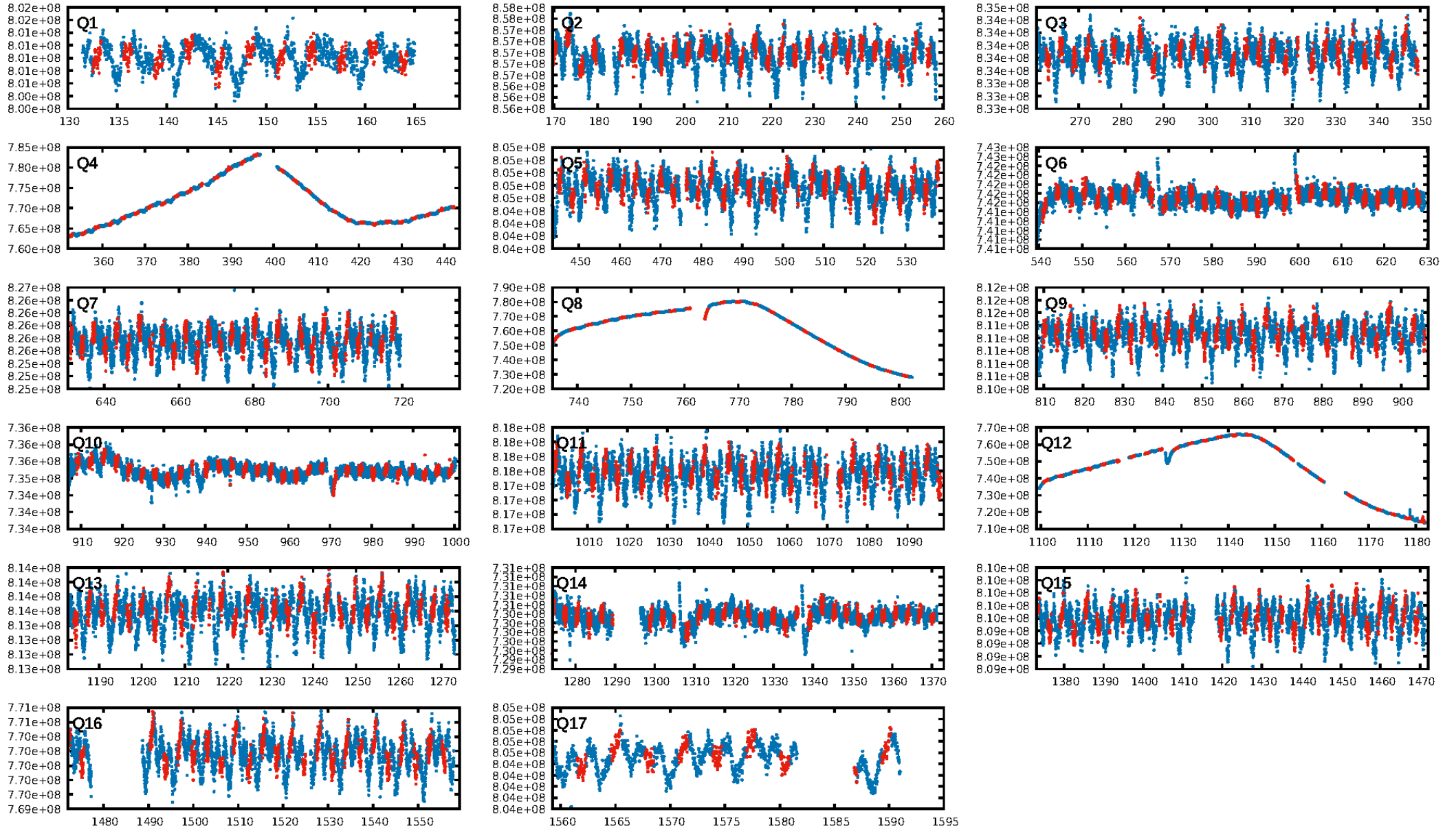
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.52 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.84e-11
RollingBand-fgt: 1.00 [423/424]
GhostDiagnostic-chr: 0.4717
Centroid-sig: 10.8%
Centroid-so: 0.571 arcsec [1.74 σ]
OotOffset-rm: 1.544 arcsec [2.99 σ]
KicOffset-rm: 1.308 arcsec [2.74 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

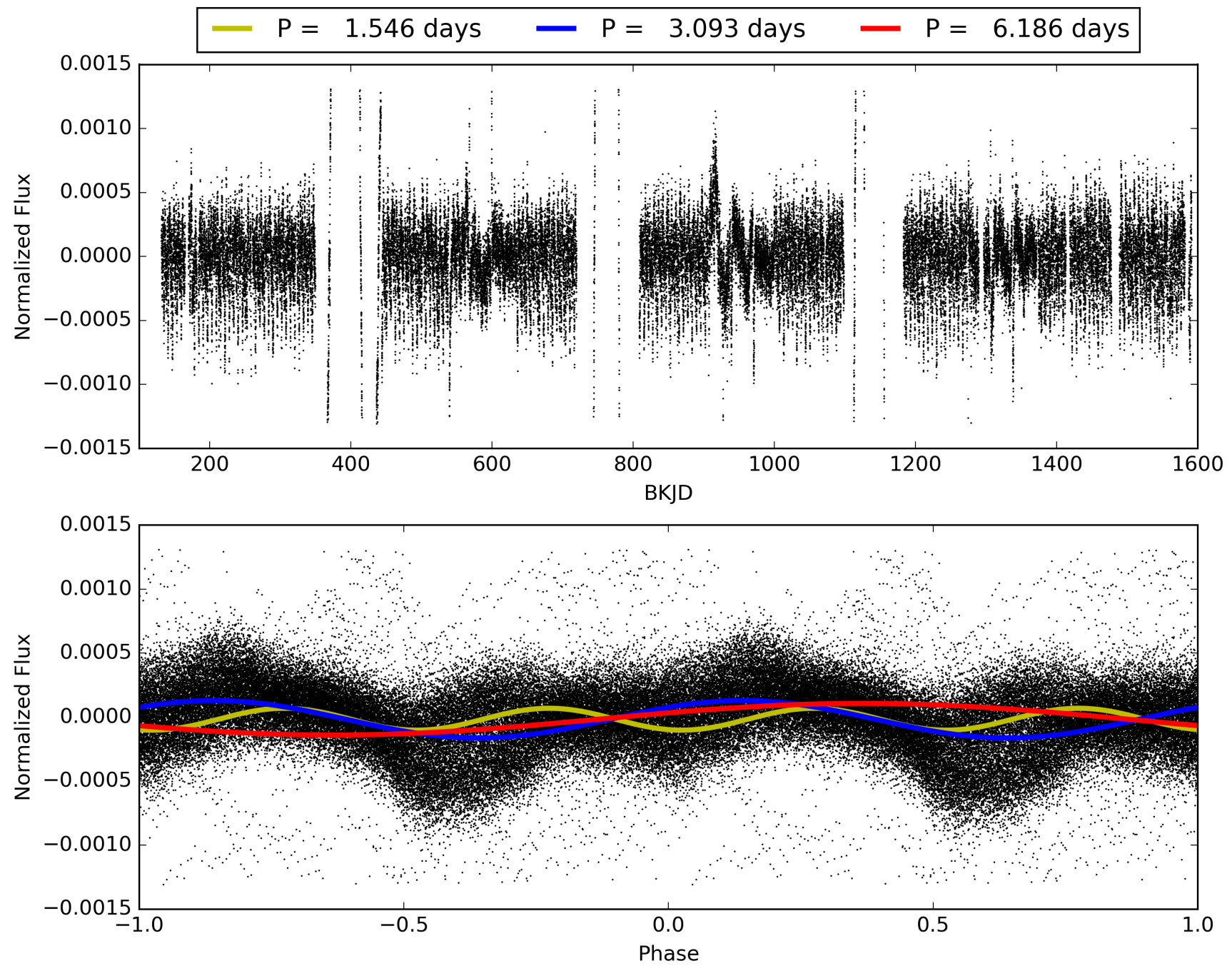
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:57:11 Z

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

TCE 011093335-02, PDC Light Curves

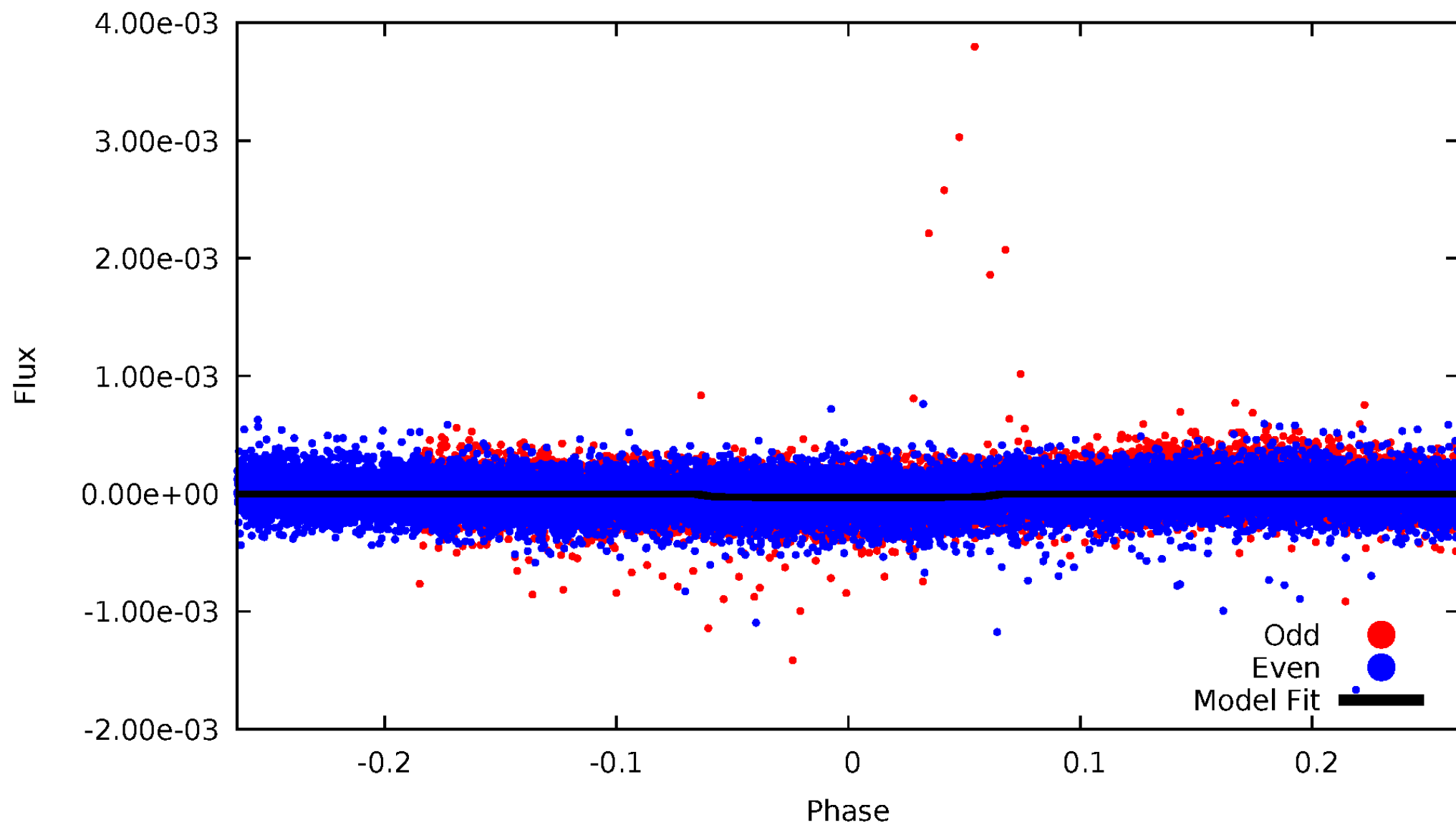


TCE 011093335-02



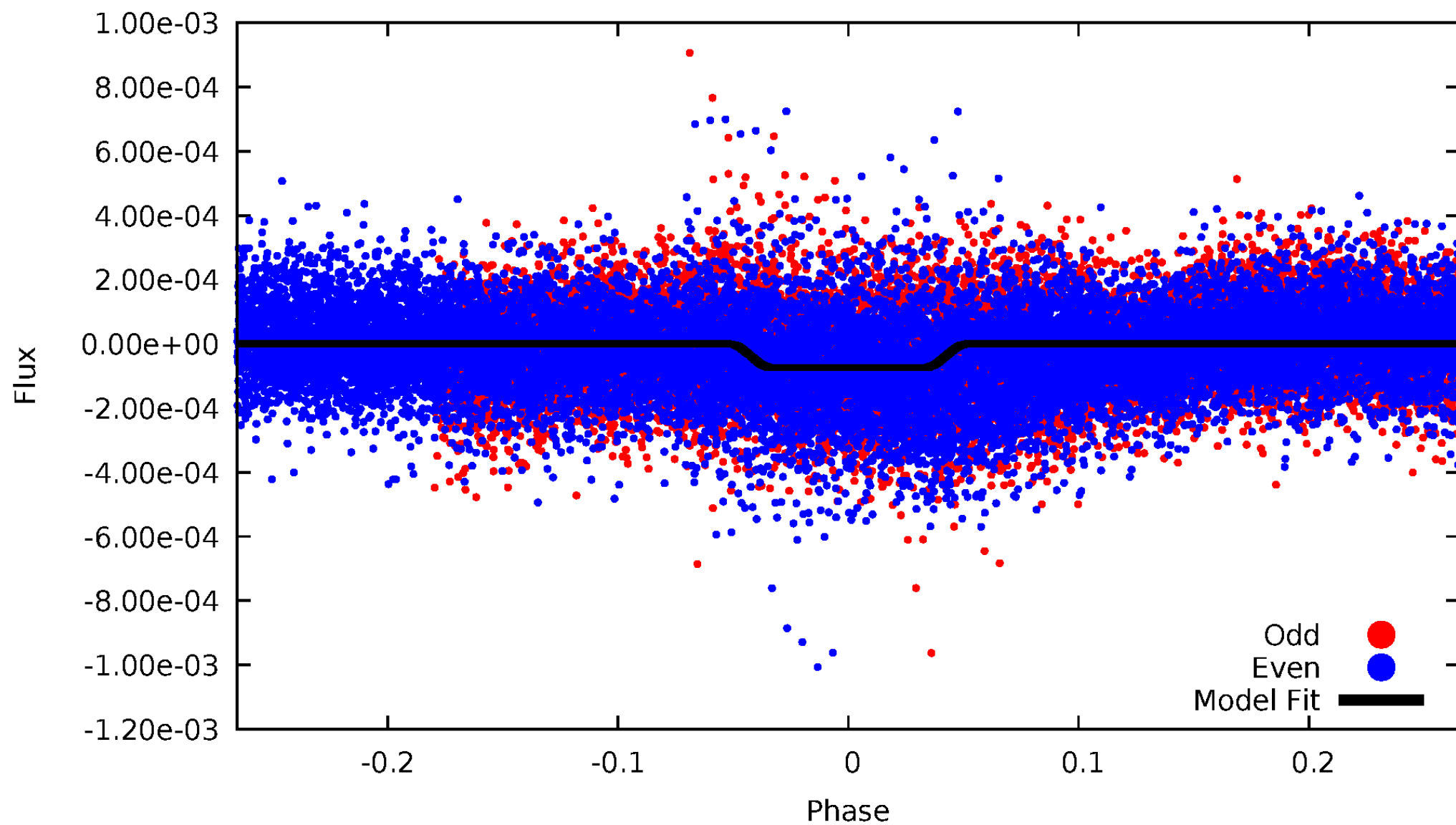
DV Odd/Even

TCE 011093335-02



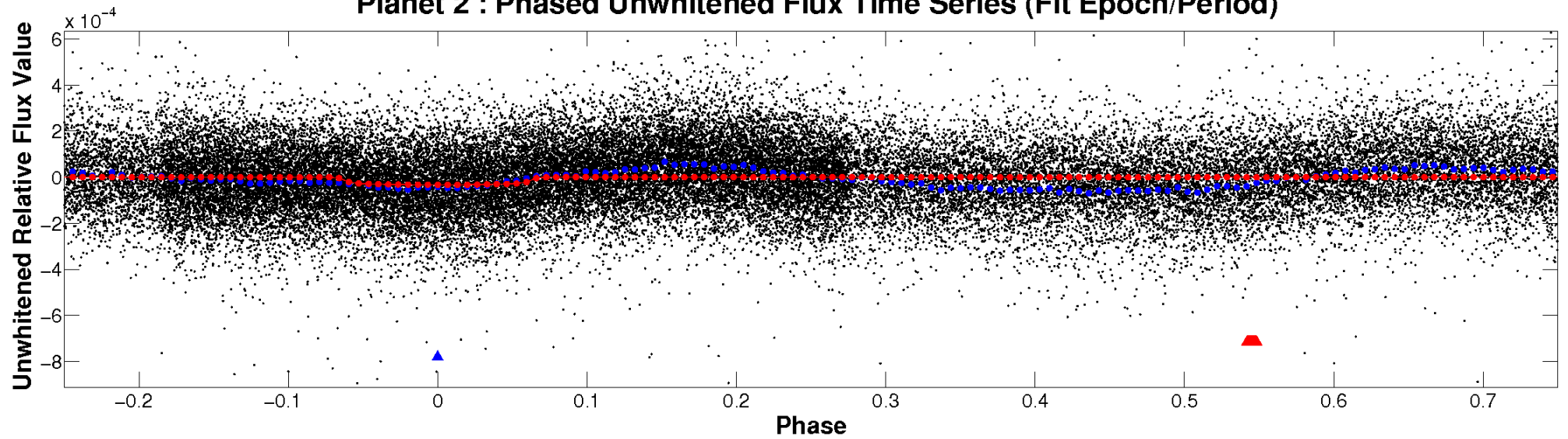
ALT Odd/Even

TCE 011093335-02

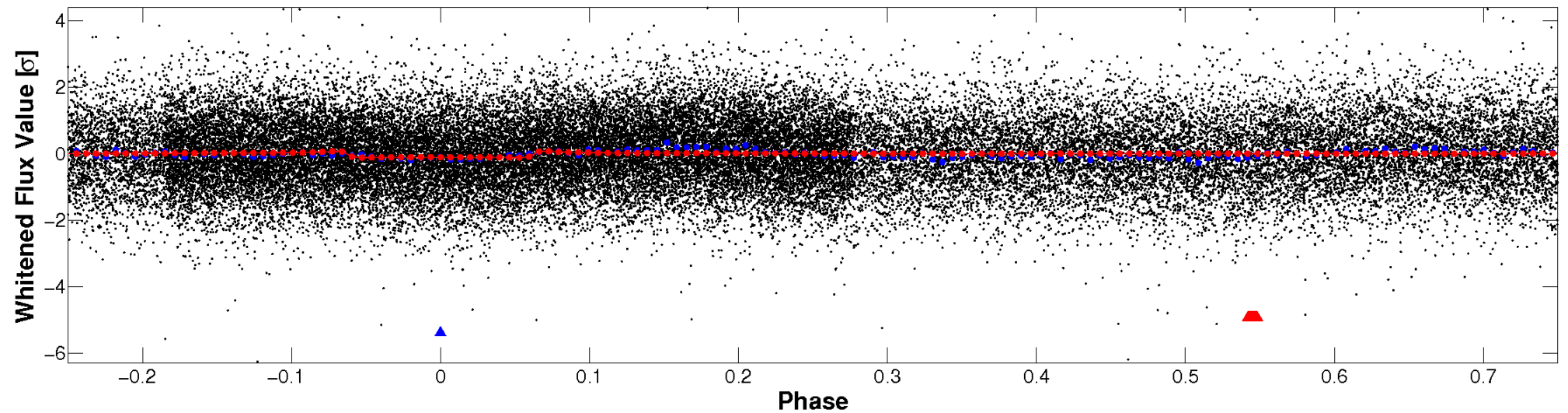


Non-Whitened Vs. Whitened Light Curve

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

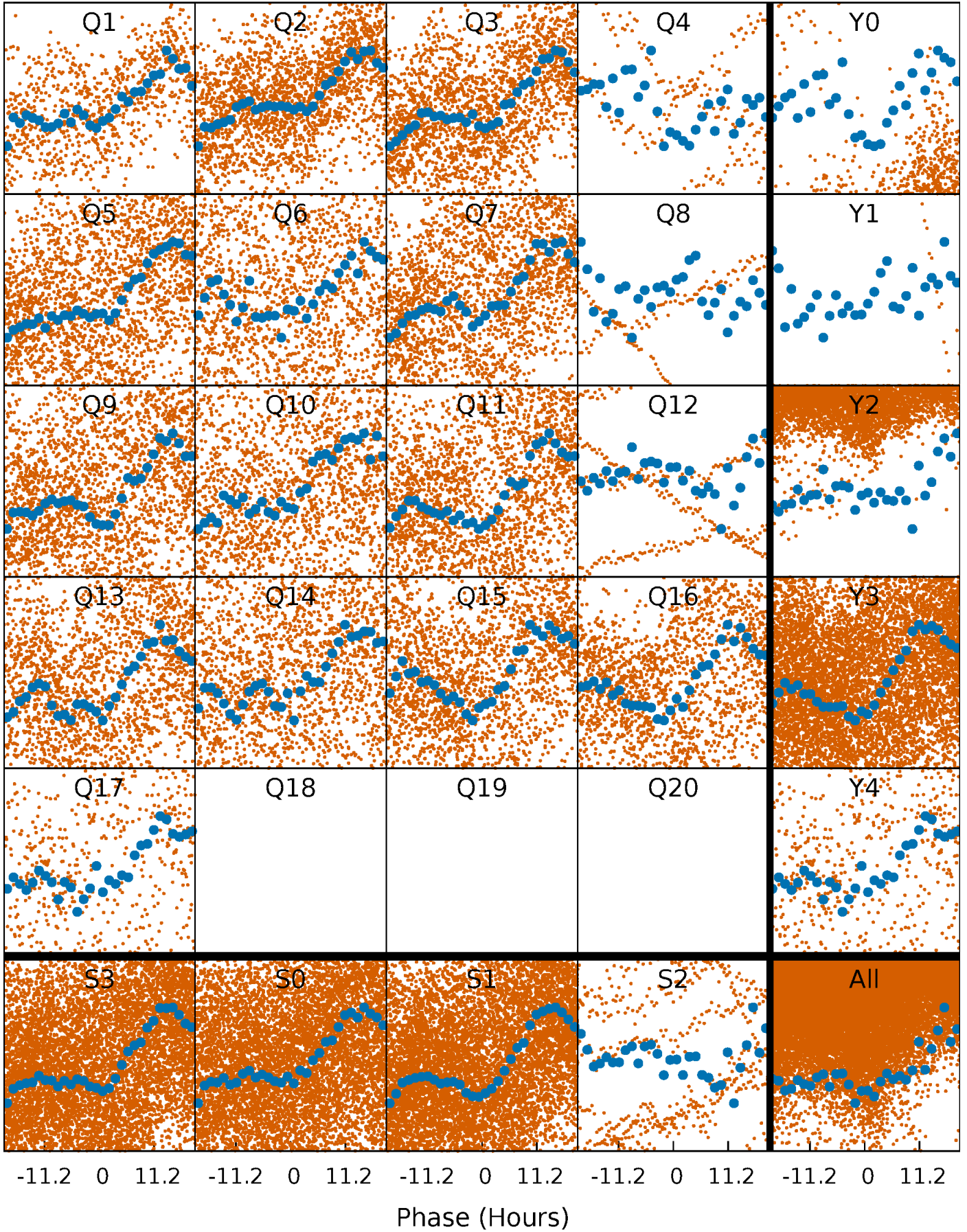


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



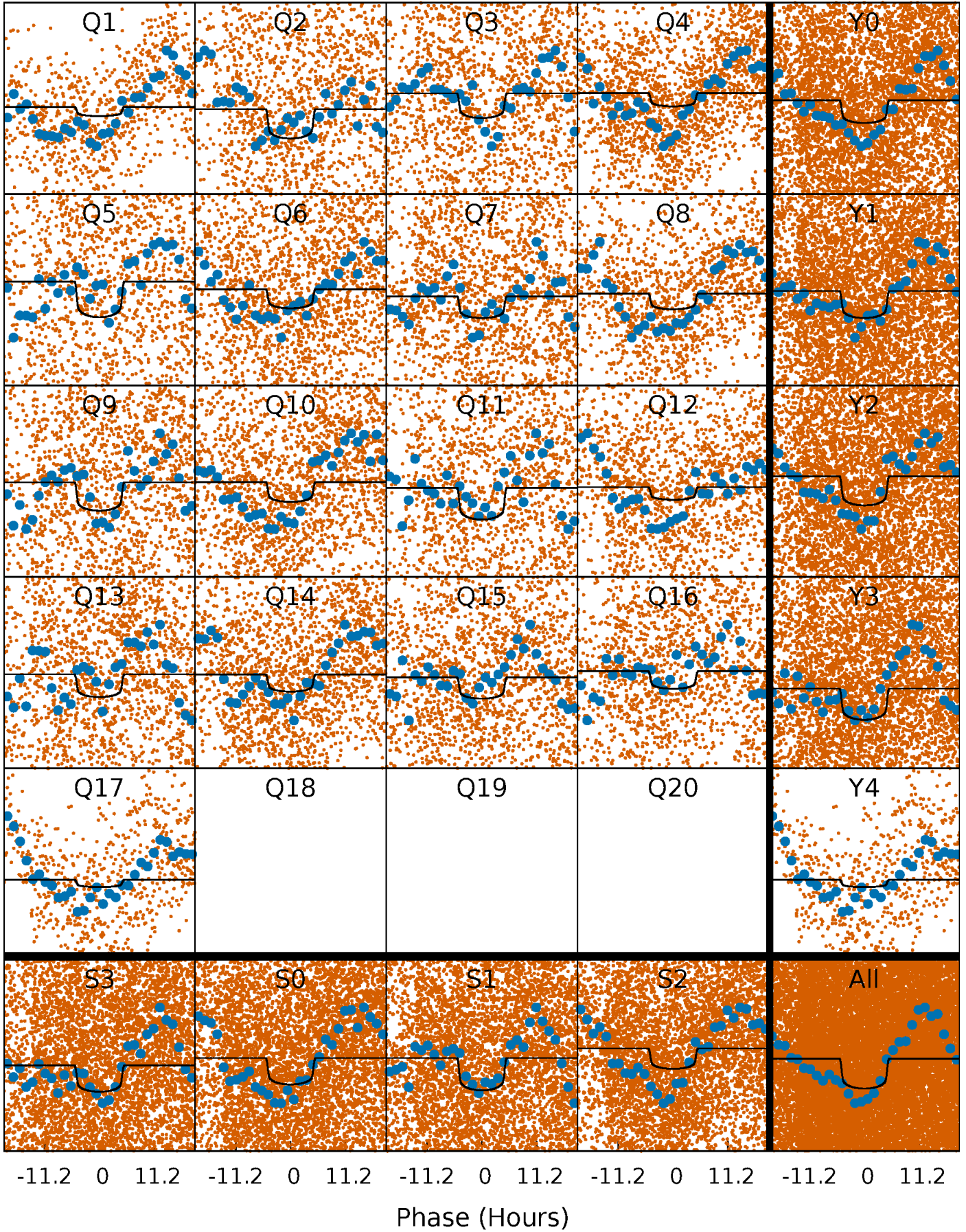
PDC Quarter-Phased Transit Curves

TCE 011093335-02 P= 3.092988 Days $T_0=132.941947$ (BKJD)



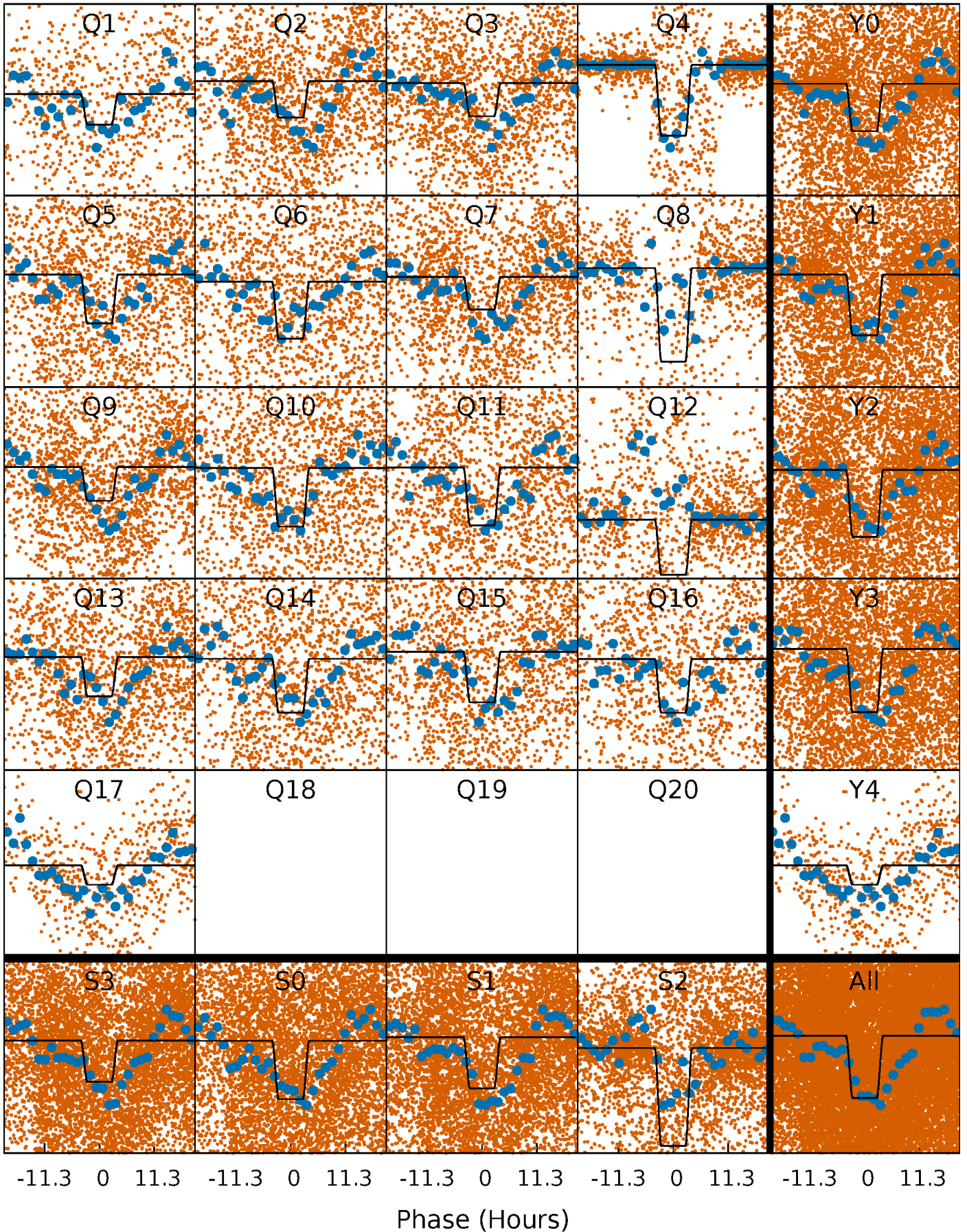
DV Quarter-Phased Transit Curves

TCE 011093335-02 P= 3.092988 Days $T_0=132.941947$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

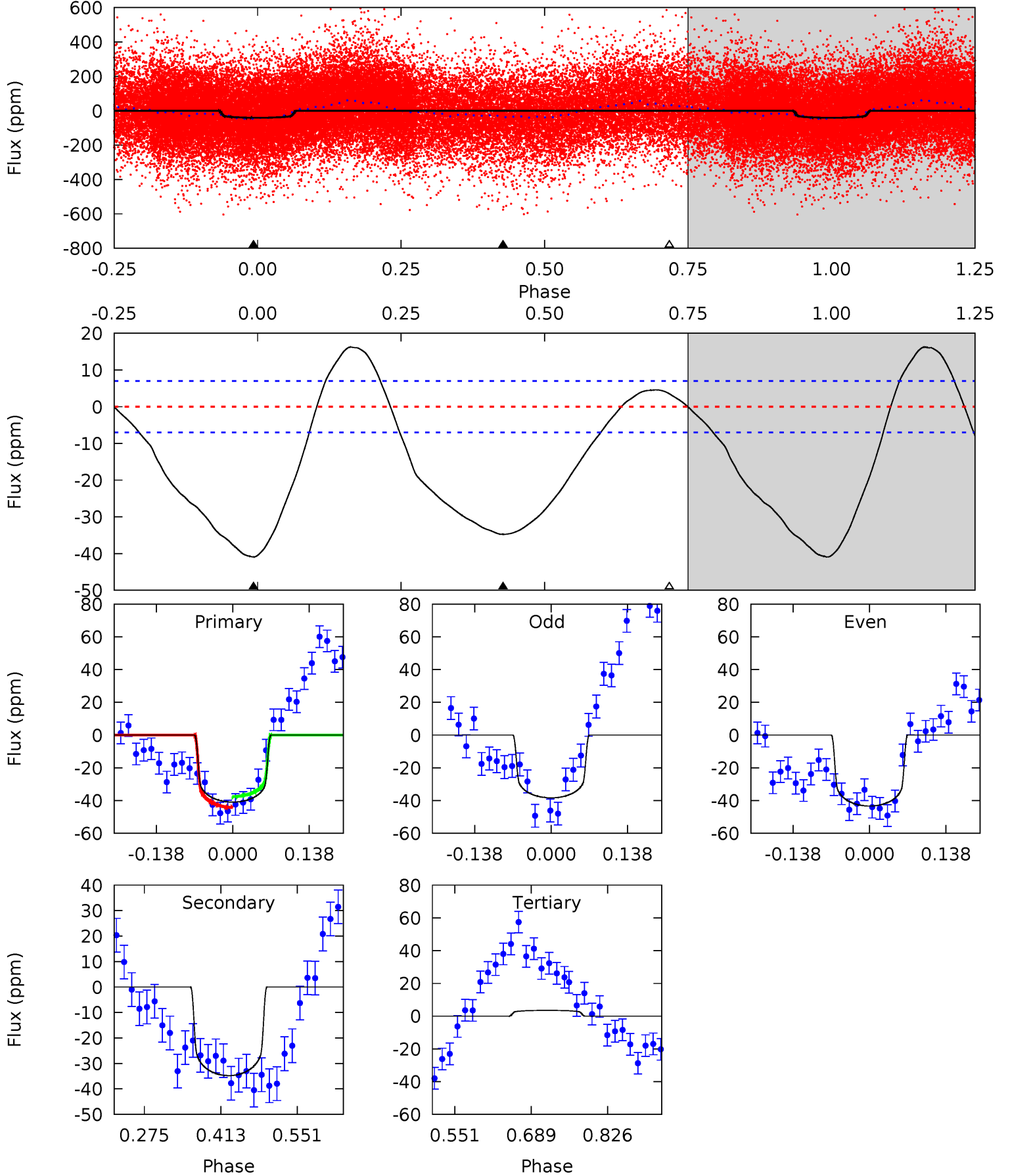
TCE 011093335-02 P= 3.092816 Days $T_0=132.942116$ (BKJD)



DV Model-Shift Uniqueness Test

011093335-02, P = 3.092988 Days, E = 129.848959 Days

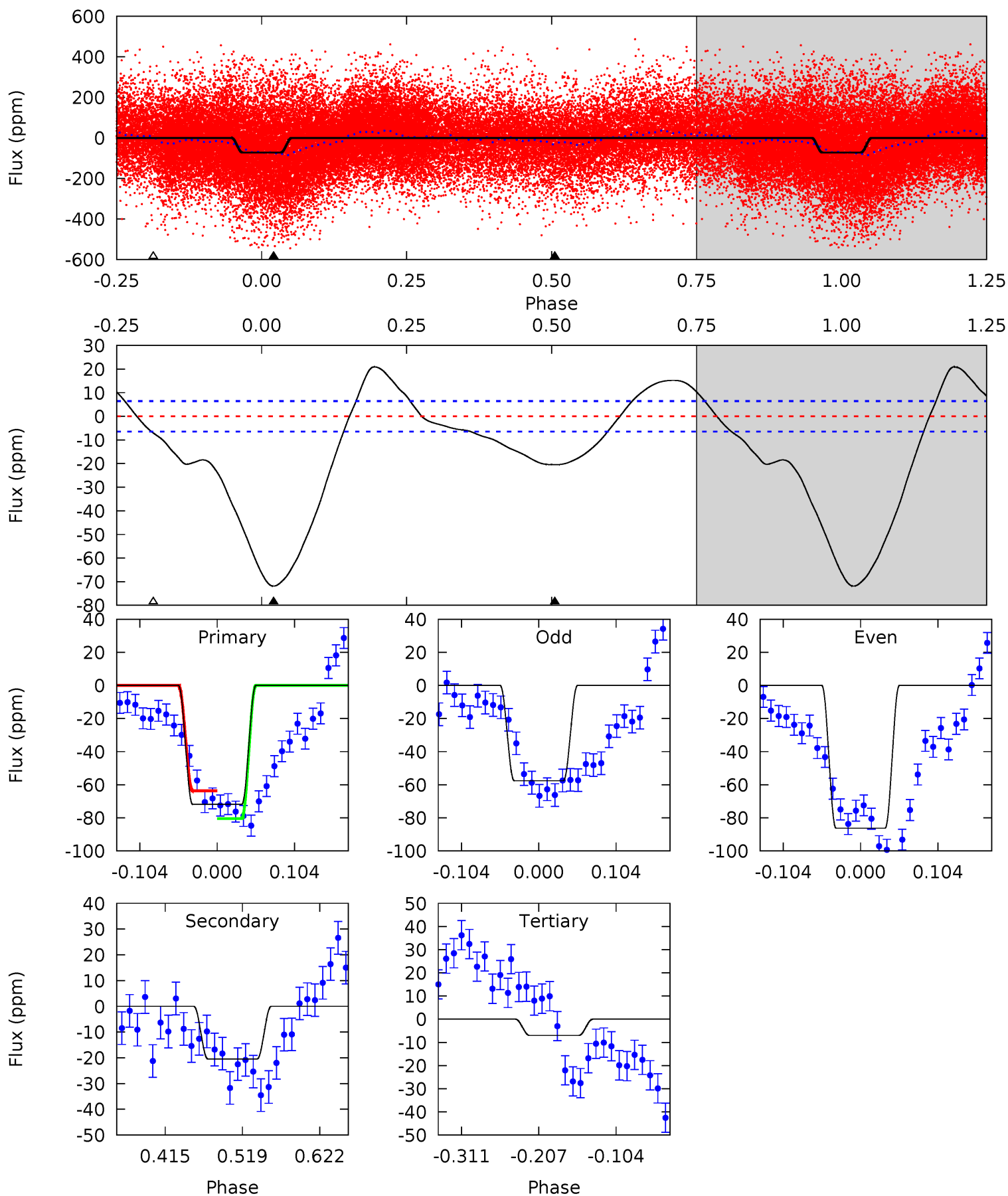
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.3	22.4	-2.27	0	4.50	1.48	7.21	28.6	26.3	24.6	22.4	1.58	1.24	0.28	2.14



Alt Model-Shift Uniqueness Test

011093335-02, P = 3.092816 Days, E = 129.849300 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.9	14.5	4.98	0	4.56	1.63	8.99	45.9	50.9	9.52	14.5	10.1	1.00	0.23	5.92



Stellar Parameters For KIC 011093335

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7217^{+194}_{-259}	$3.893^{+0.336}_{-0.120}$	$-0.340^{+0.300}_{-0.300}$	$2.343^{+0.517}_{-0.959}$	$1.562^{+0.200}_{-0.371}$	$0.171^{+0.489}_{-0.061}$
	+3%/-4%	+9%/-3%	+88%/-88%	+22%/-41%	+13%/-24%	+286%/-36%
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 011093335-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-35 ± 2	$1.52^{+0.30}_{-0.34}$	3038^{+213}_{-284}	6955^{+474}_{-404}	19^{+11}_{-5}
Alt.	-20 ± 1	$2.09^{+0.38}_{-0.43}$	3012^{+230}_{-287}	5155^{+237}_{-230}	$5.992^{+3.182}_{-1.626}$

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

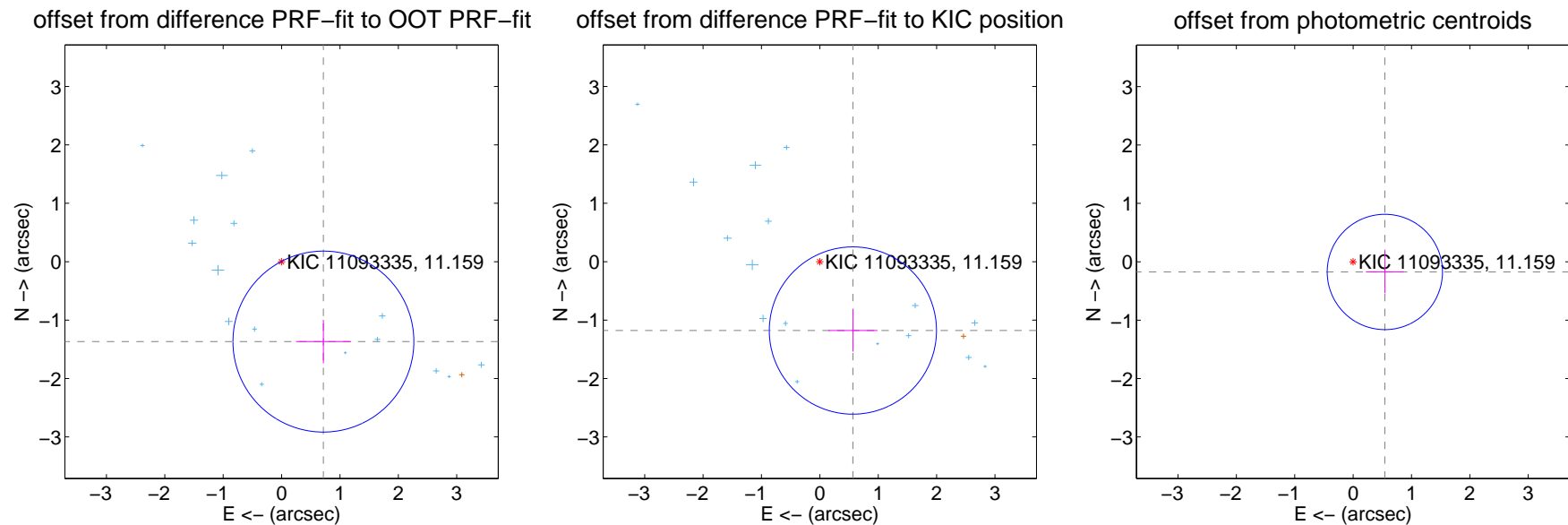
DV Centroid Data

Supplemental centroid analysis for 011093335-02. **Kepler magnitude: 11.16.** Transit SNR 10.52

There are 16 quarters with good PRF difference image offsets

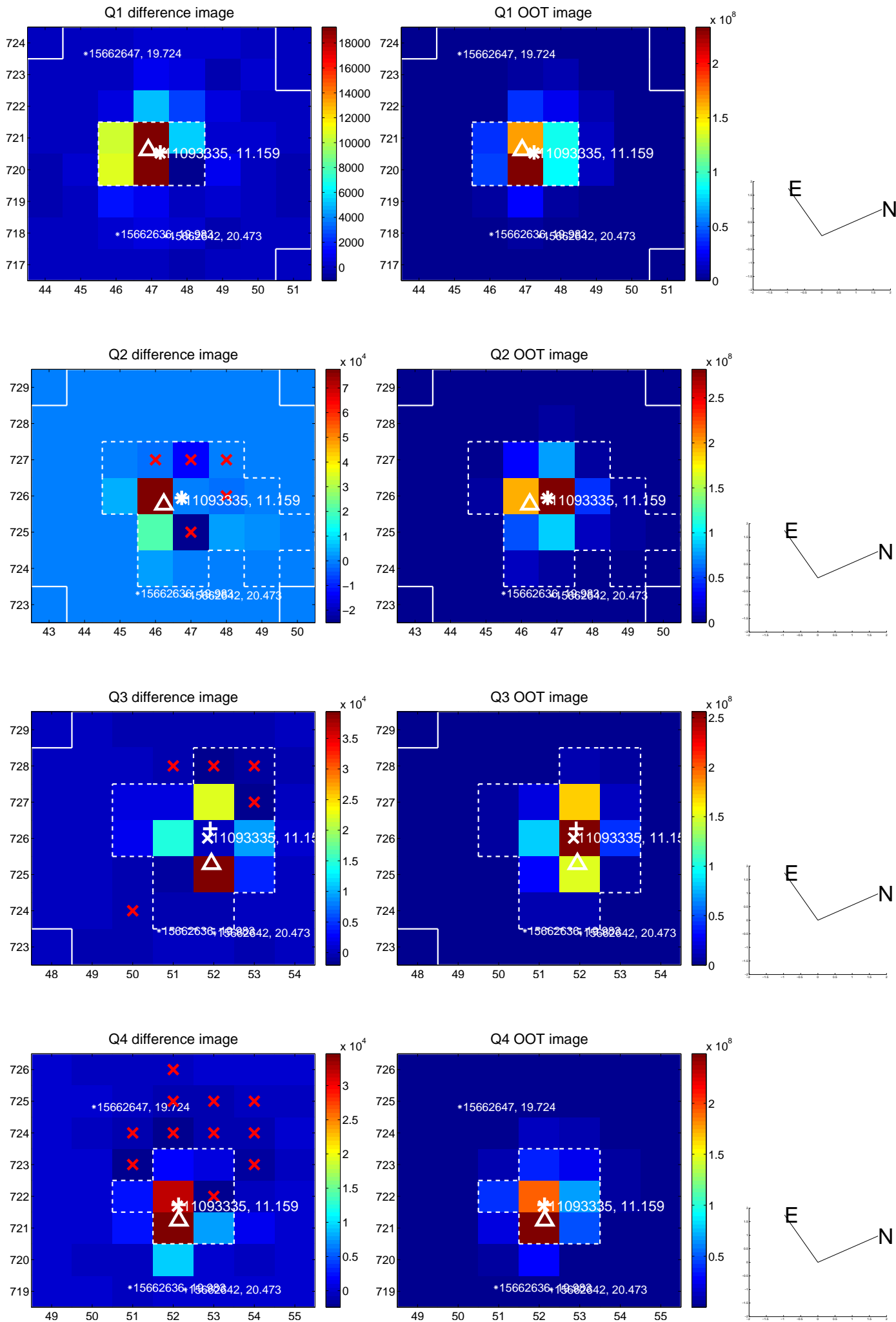
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.544 ± 0.517	2.99	-0.717 ± 0.470	-1.368 ± 0.373
PRF-fit source offset from KIC position	1.308 ± 0.477	2.74	-0.566 ± 0.420	-1.179 ± 0.361
photometric centroid source offset	0.57 ± 0.33	1.74	-0.54 ± 0.33	-0.17 ± 0.36

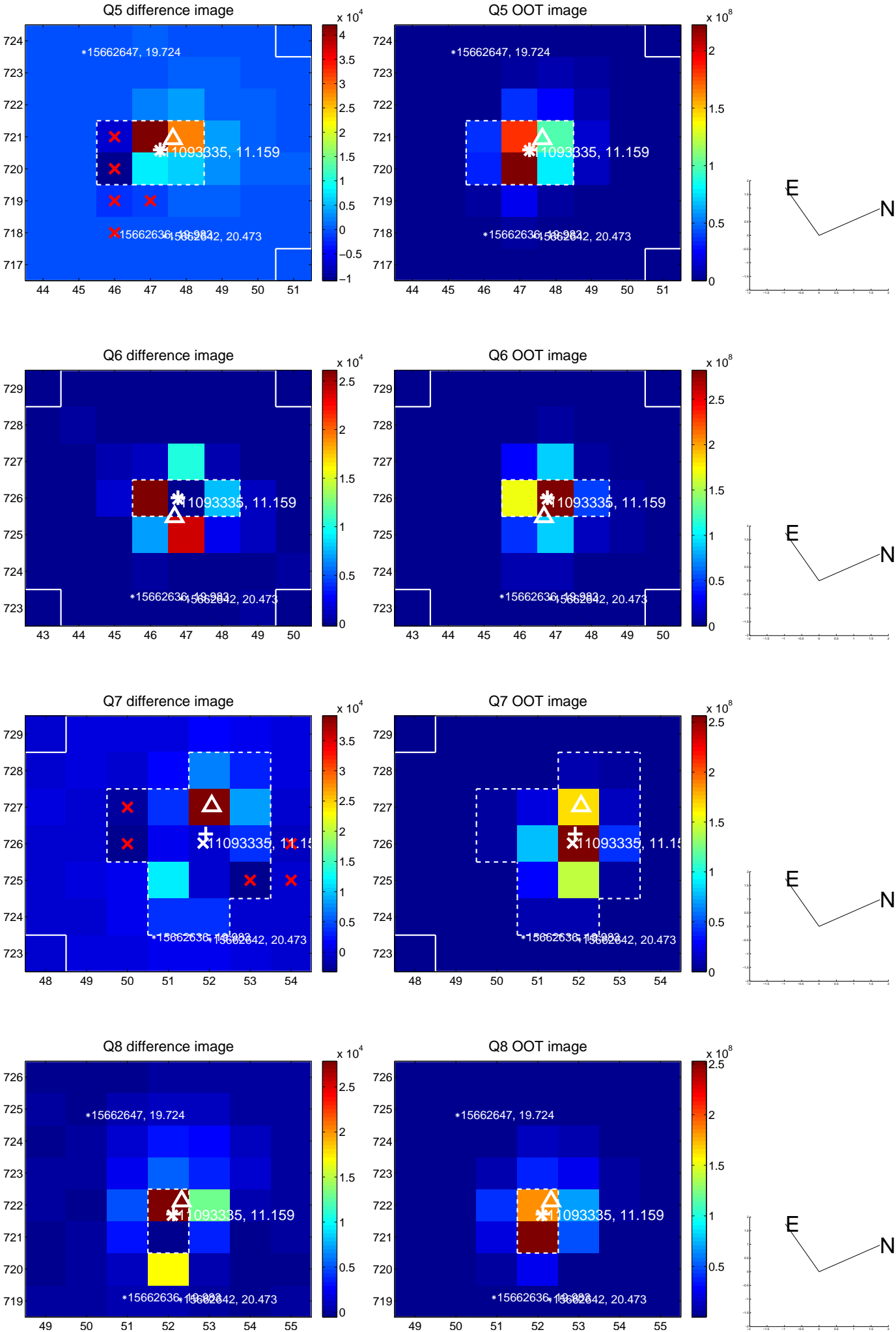


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

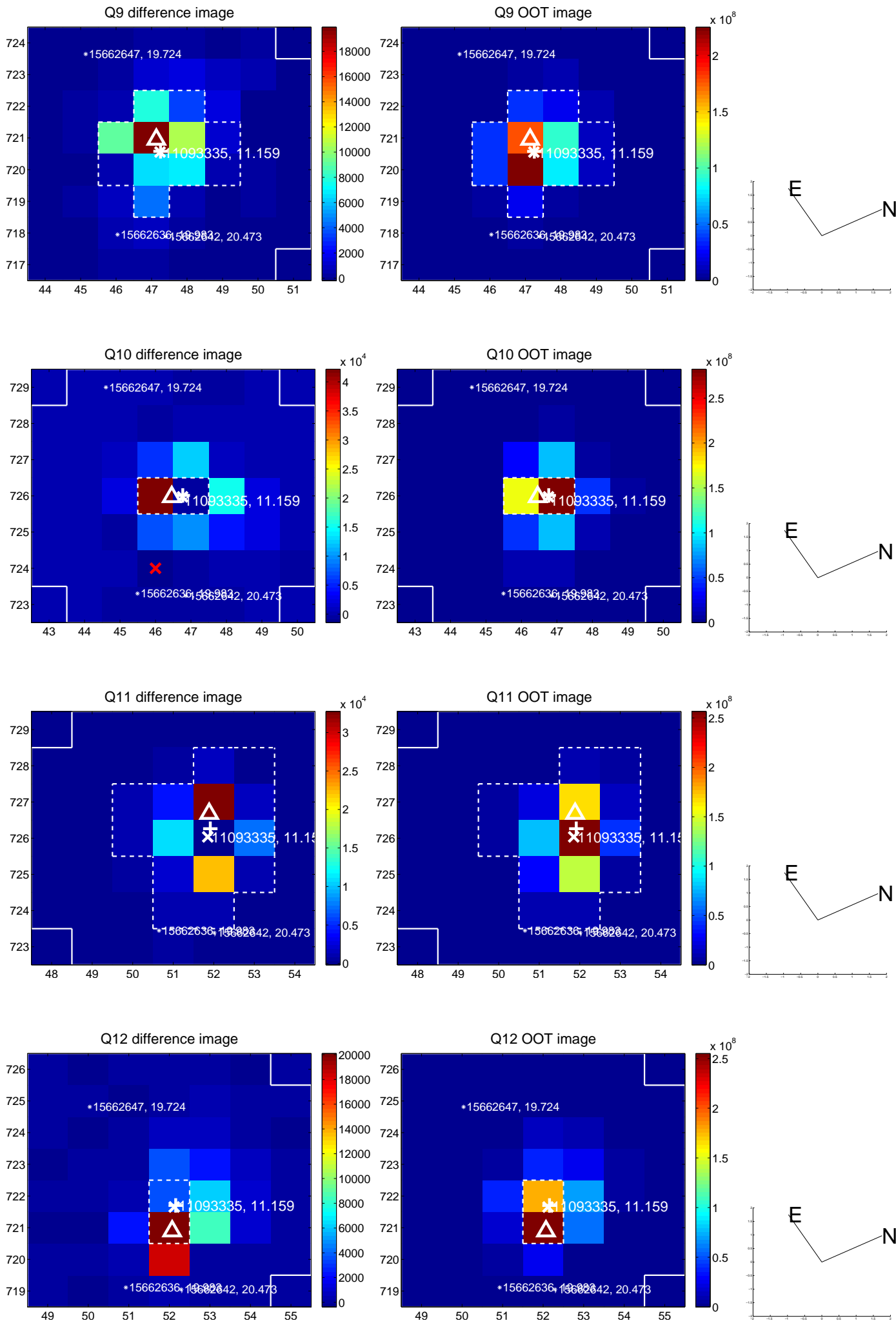
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



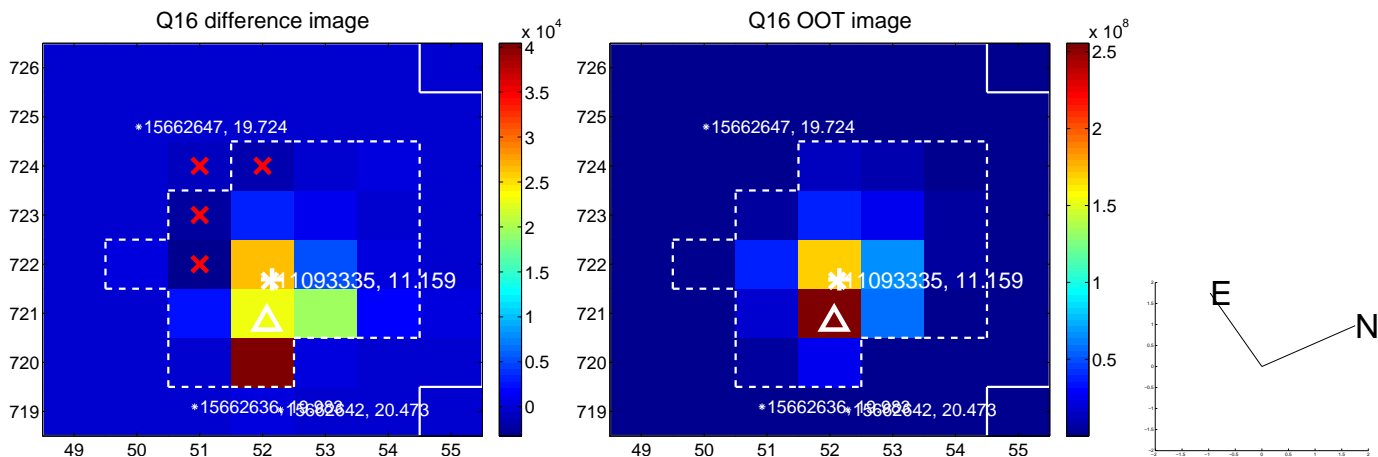
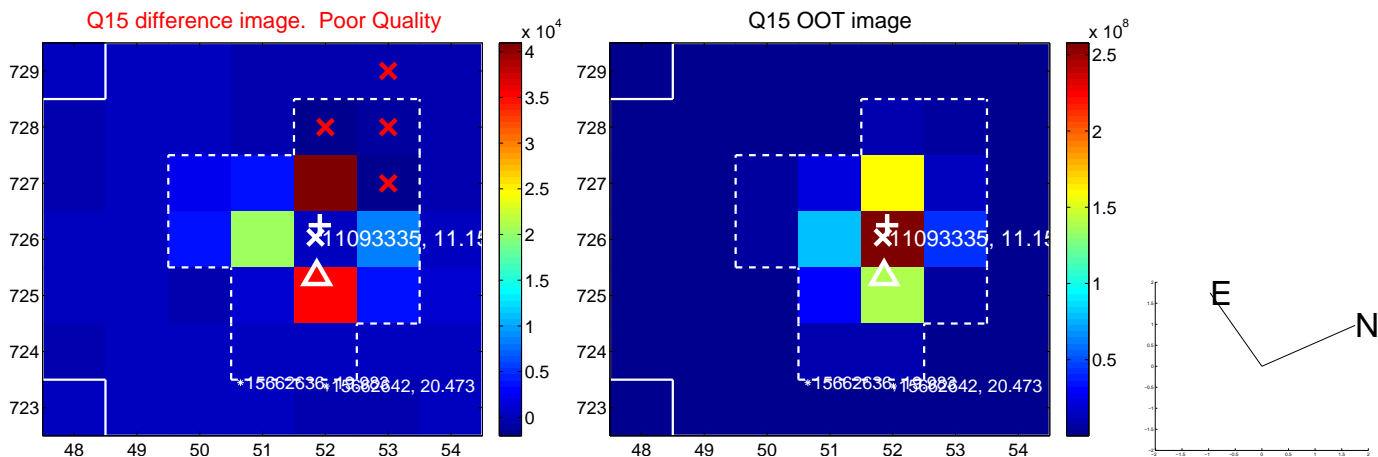
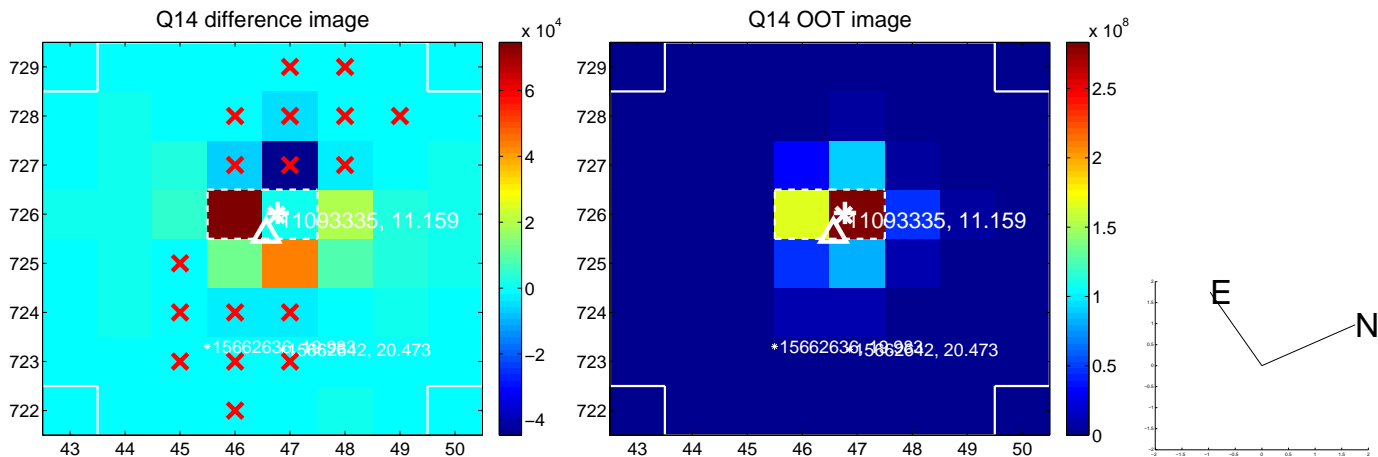
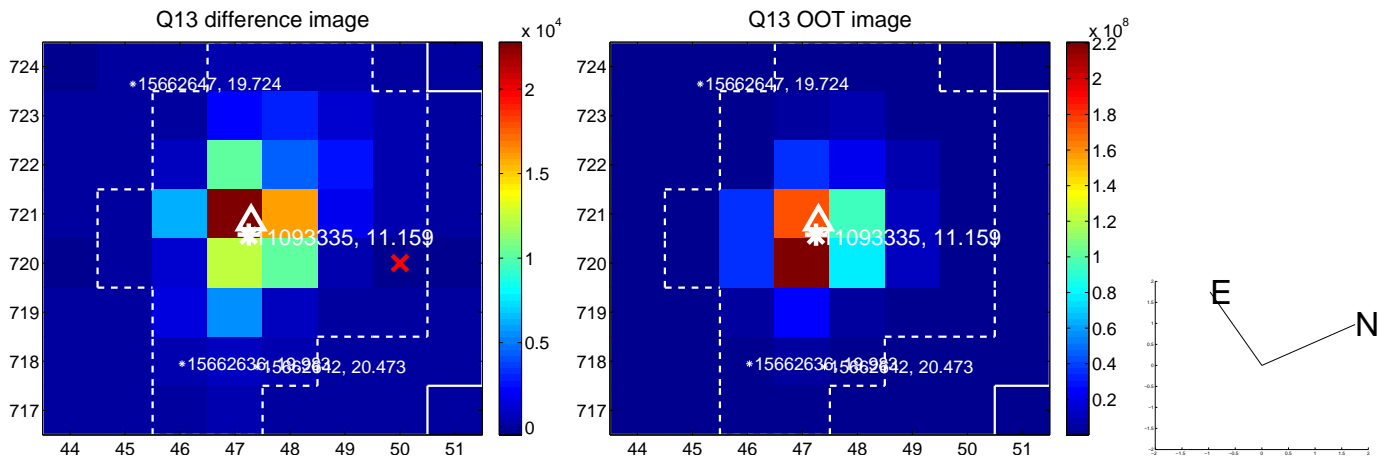
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



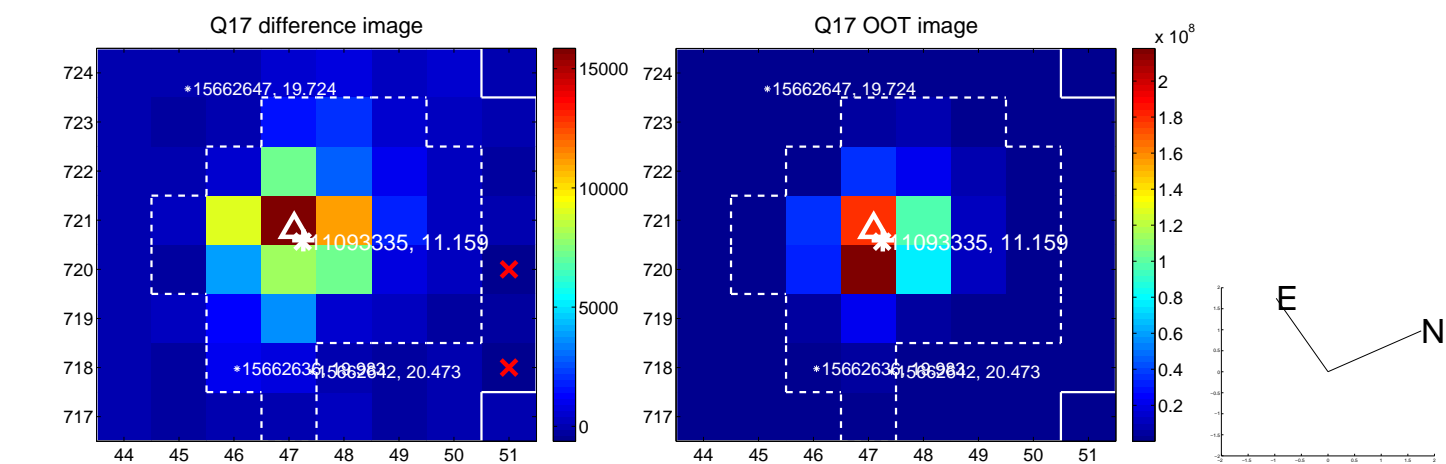
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



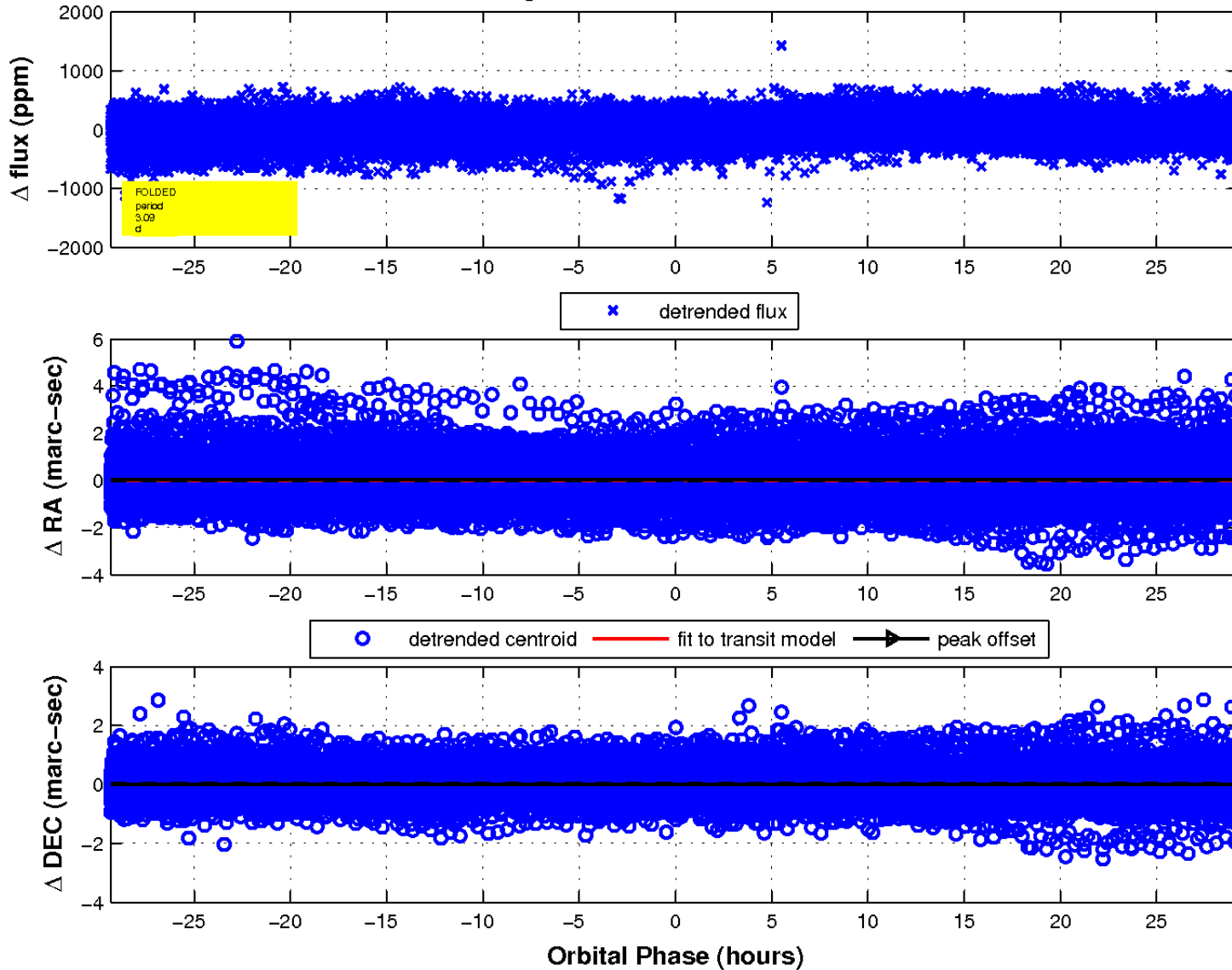
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

