

KIC 007335972

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})
007335972-02	OBS	4599.01	0.579768	132.084819	219.2	0.599	8.2	17.2	0.85	5561	1.57	3447.24
007335972-03	OBS	No	0.579766	131.794286	179.1	0.680	8.2	15.6	0.85	5561	1.41	3447.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007335972-02	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
007335972-03	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—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.

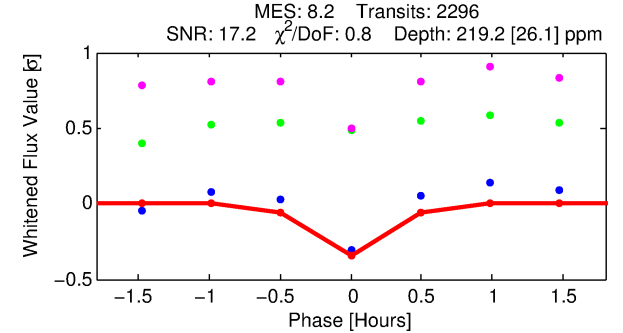
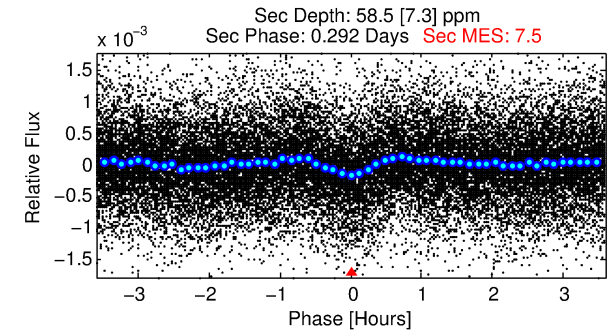
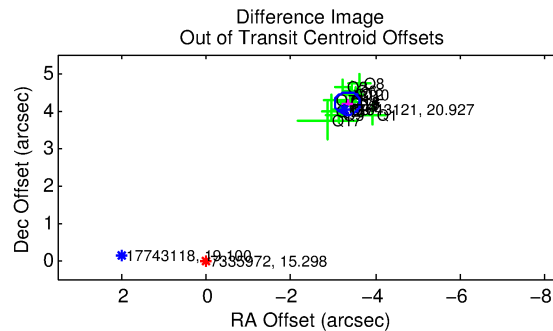
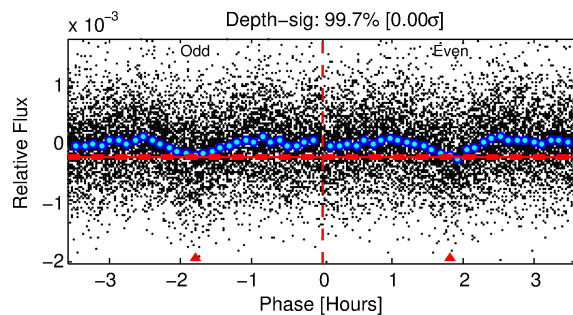
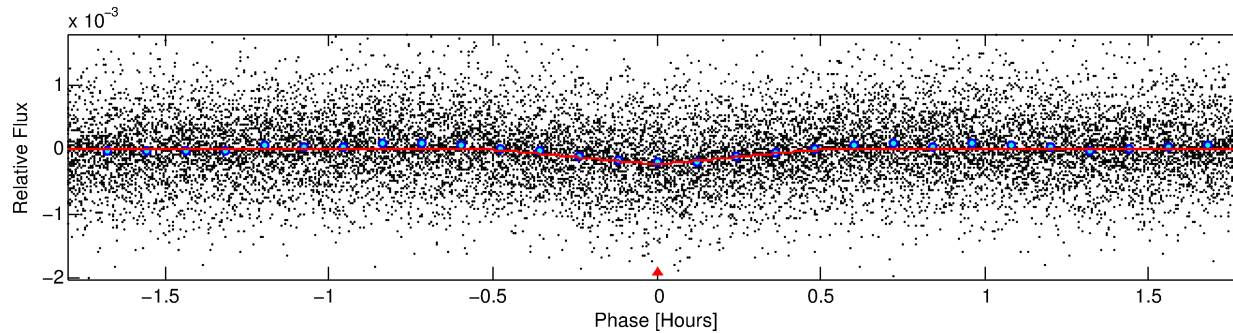
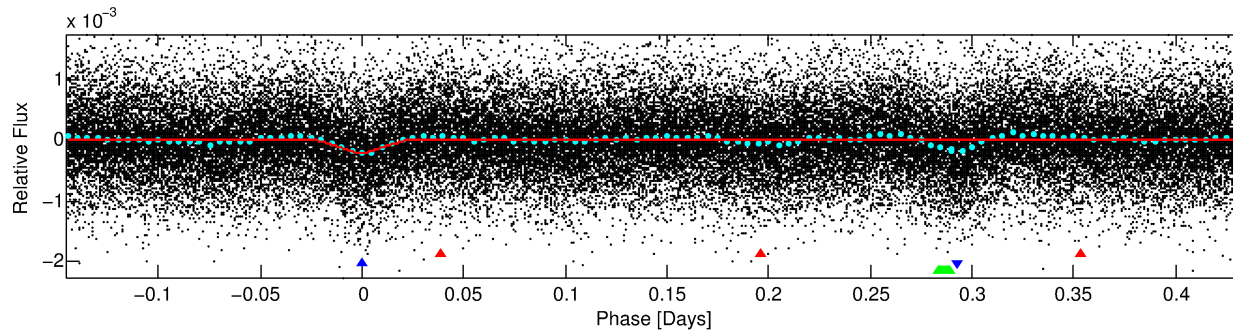
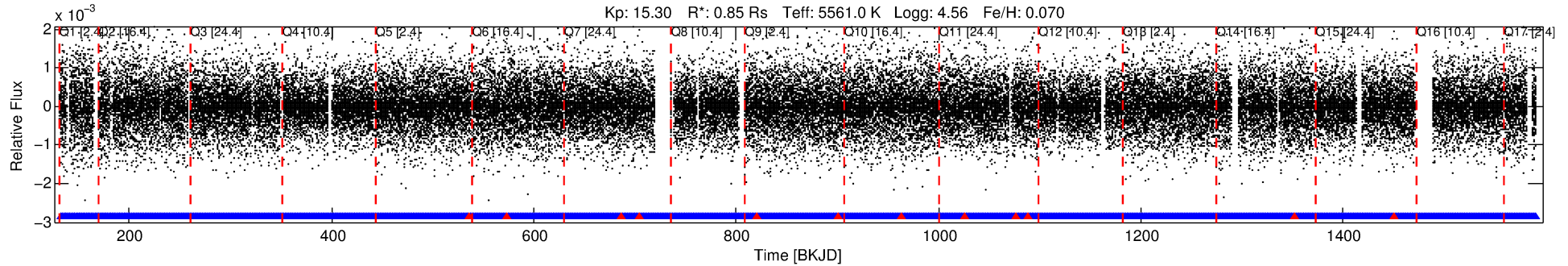
Ephemeris Match Information For 007335972-02

No Significant Match Found

DV One-Page Summary

KIC: 7335972 Candidate: 2 of 3 Period: 0.580 d
KOI: K04599 Corr: No Ephemeris Match

Kp: 15.30 R*: 0.85 Rs Teff: 5561.0 K Logg: 4.56 Fe/H: 0.070



DV Fit Results:

Period = 0.57977 [0.00001] d
Epoch = 132.0848 [0.0007] BKJD
Rp/R* = 0.0169 [0.0046]
a/R* = 3.61 [3.89]
b = 0.90 [0.25]
Seff = 3447.24 [1227.00]
Teq = 1954 [174] K
Rp = 1.57 [0.59] Re
a = 0.0135 [0.0030] AU
Ag = 2.36 [1.54] [0.88σ]
Teff = 3746 [537] K [3.18σ]

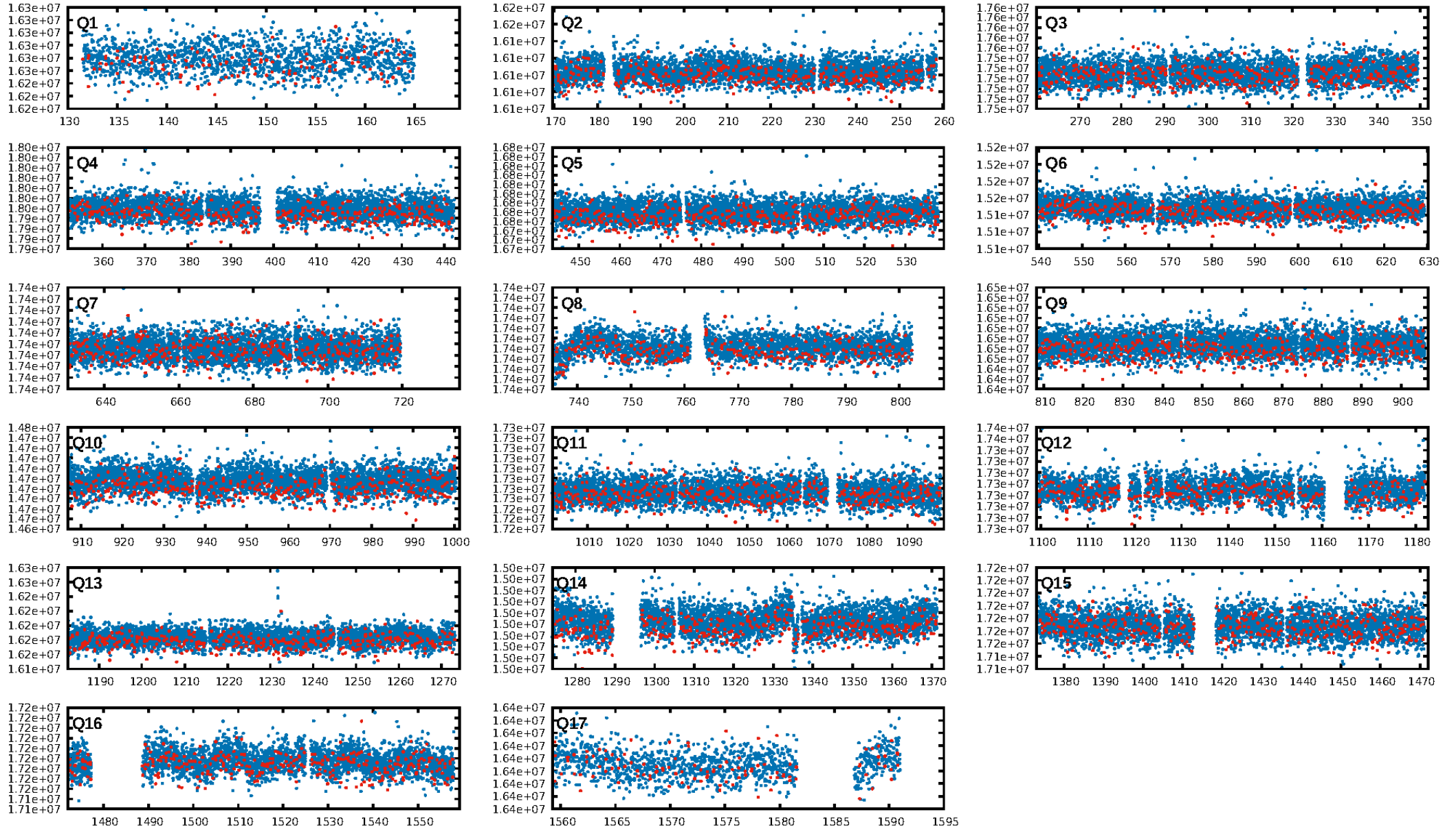
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [673.34σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.41e-24
RollingBand-fgt: 0.99 [2185/2197]
GhostDiagnostic-chr: 0.2741
Centroid-sig: 0.0%
Centroid-so: 6.747 arcsec [8.60σ]
OotOffset-rm: 5.363 arcsec [53.24σ]
KicOffset-rm: 5.237 arcsec [53.62σ]
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]

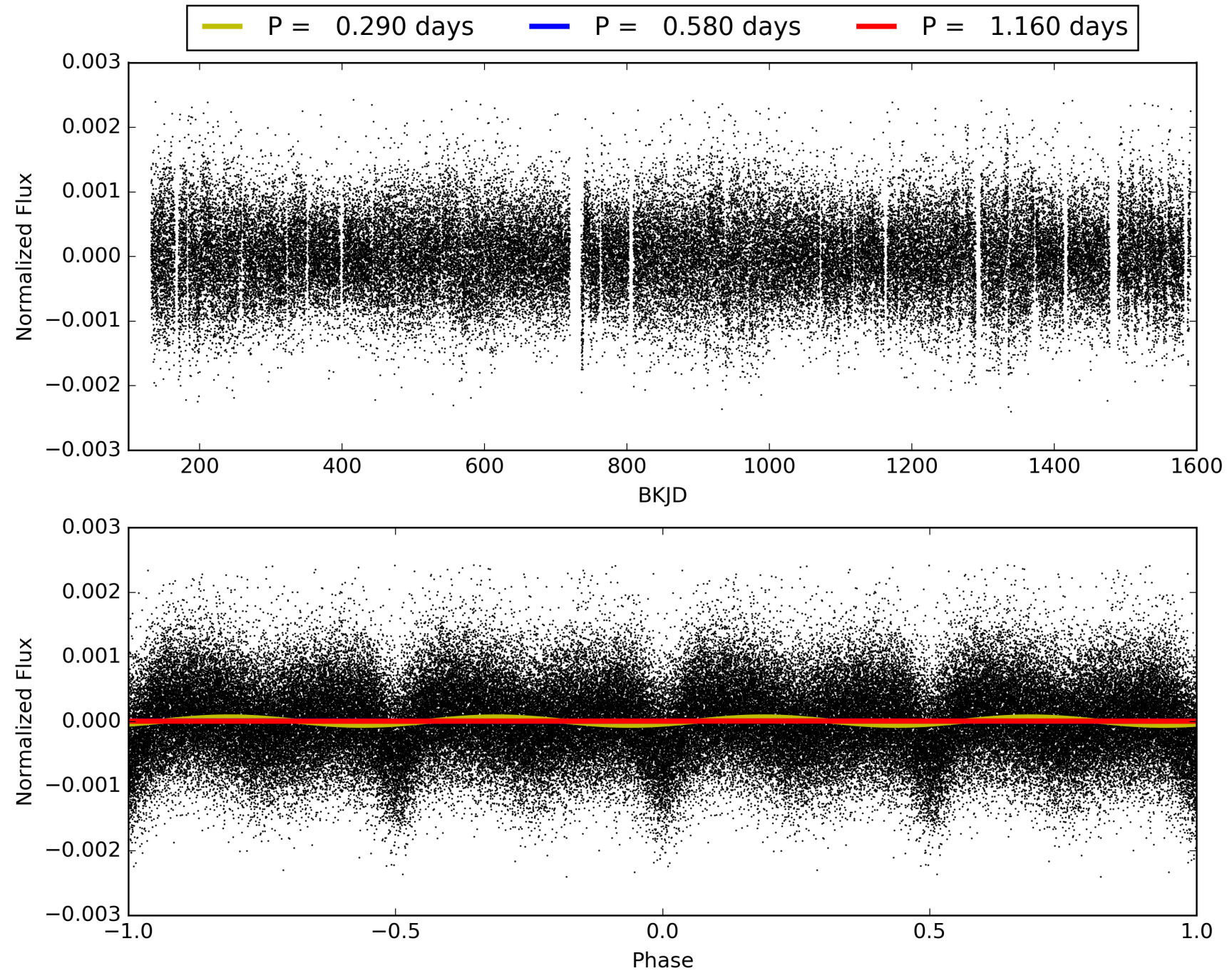
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 04:55:04 Z

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

TCE 007335972-02, PDC Light Curves

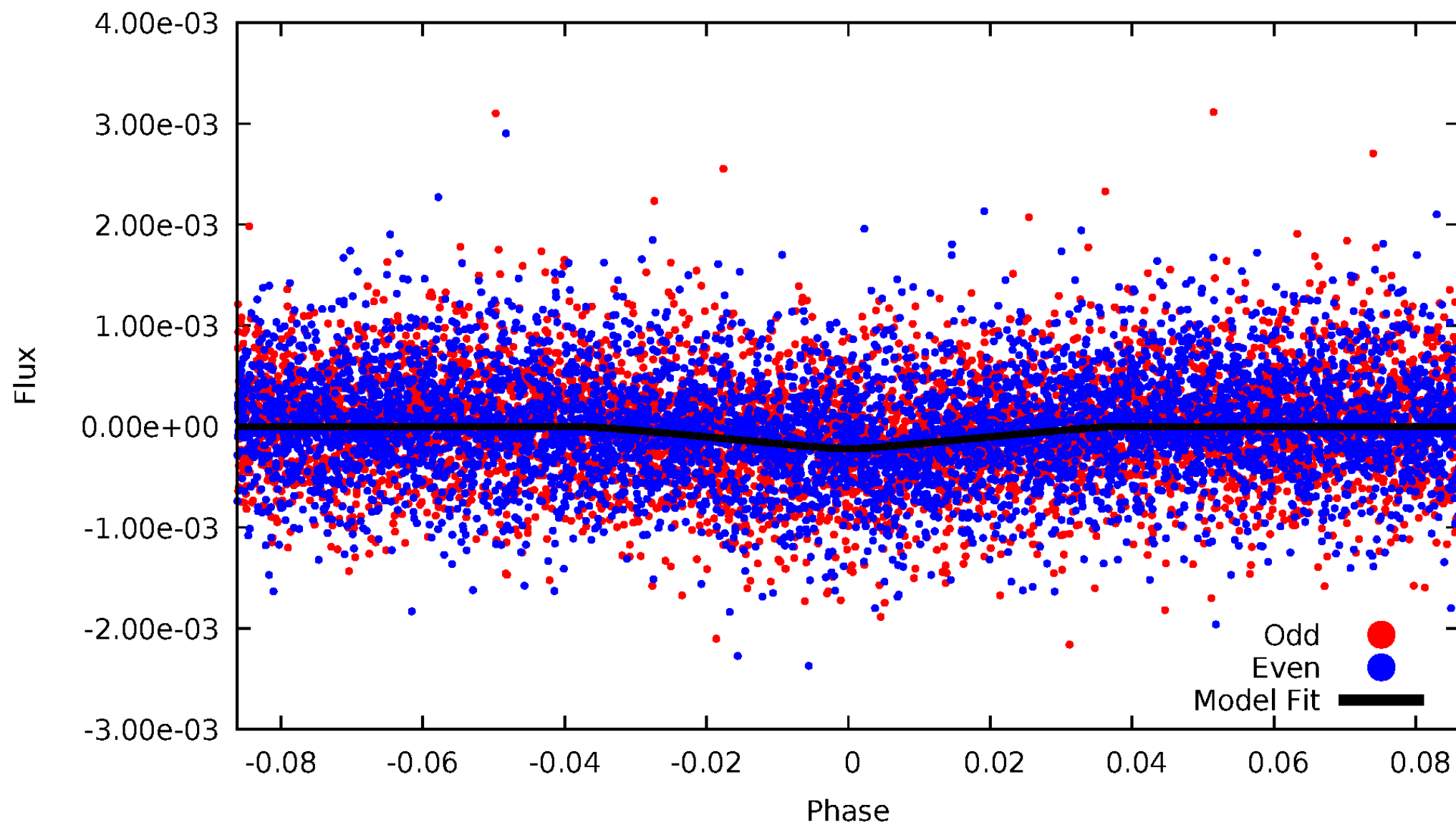


TCE 007335972-02



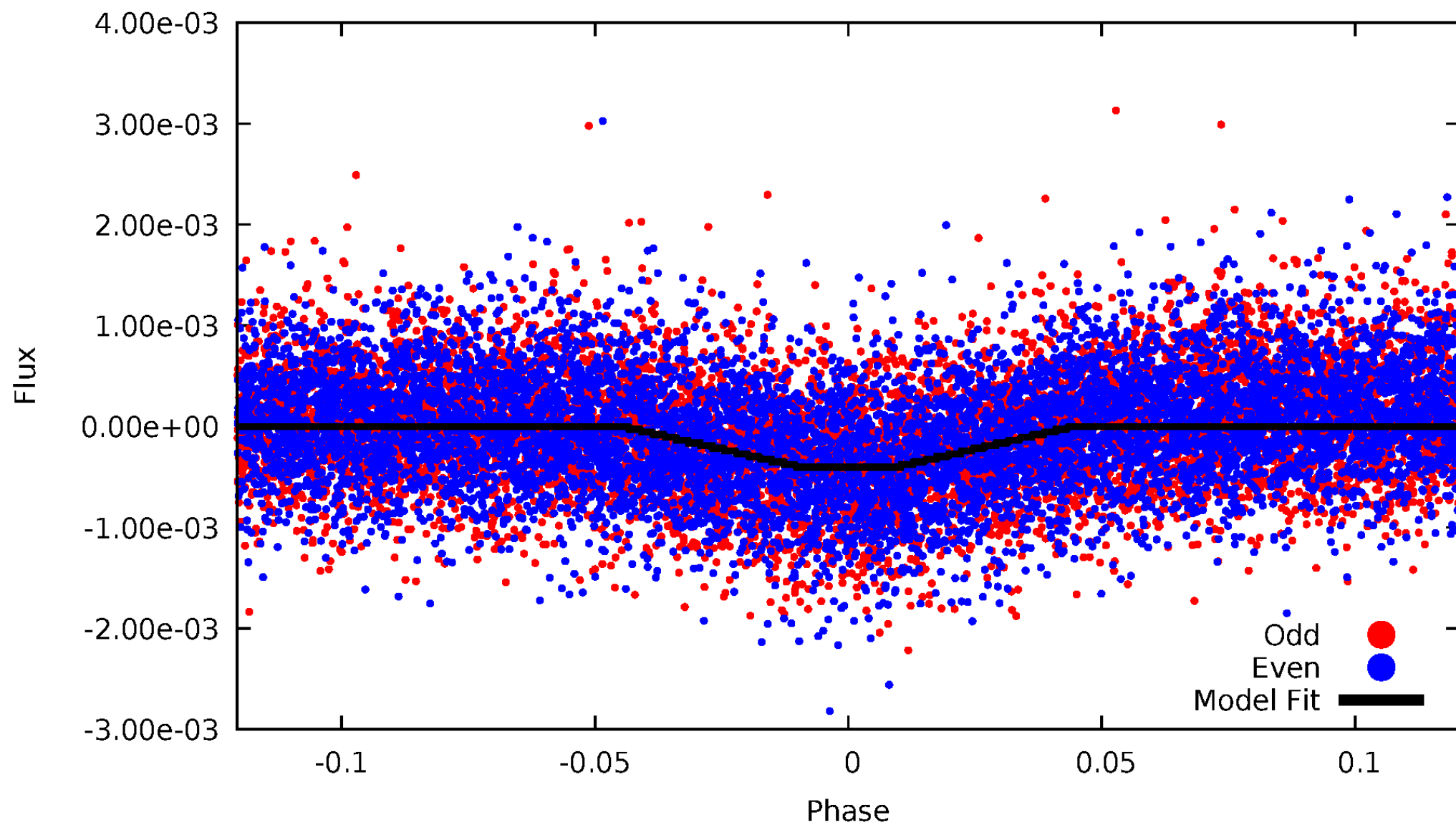
DV Odd/Even

TCE 007335972-02



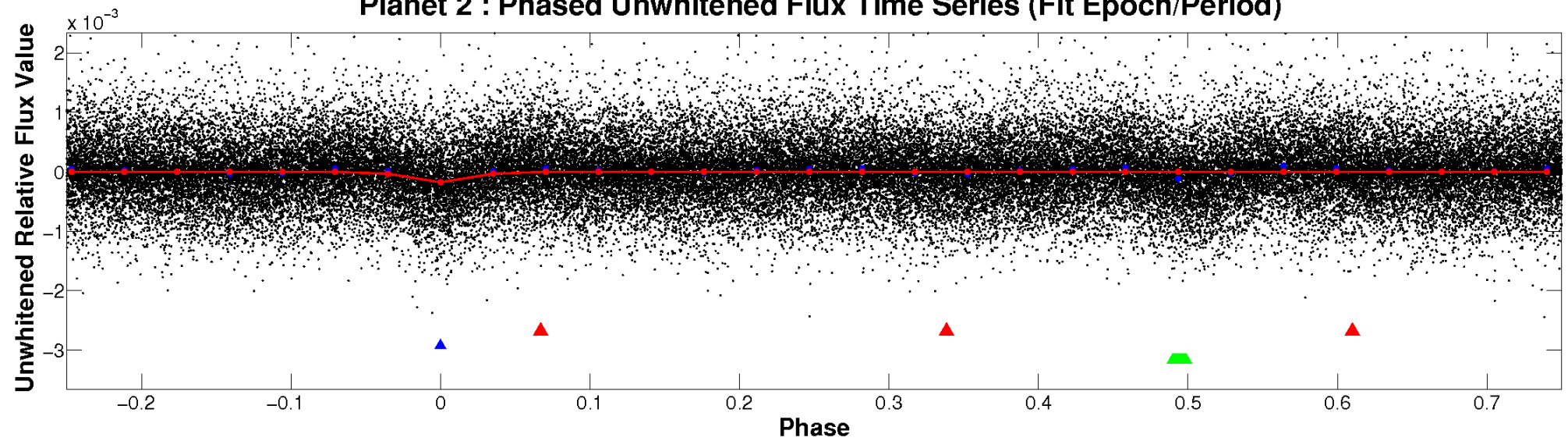
ALT Odd/Even

TCE 007335972-02

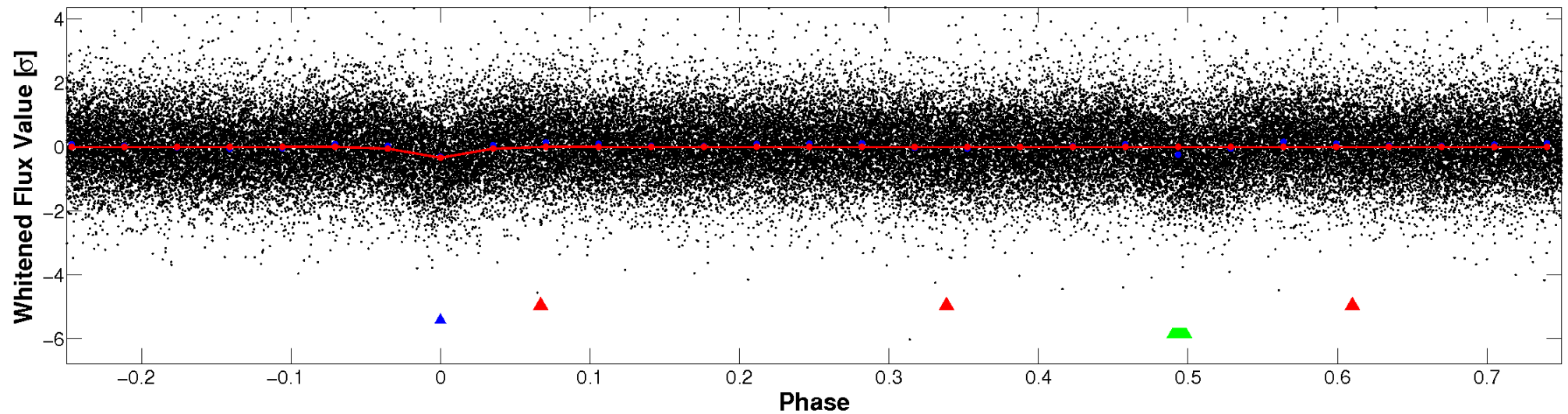


Non-Whitened Vs. Whitened Light Curve

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

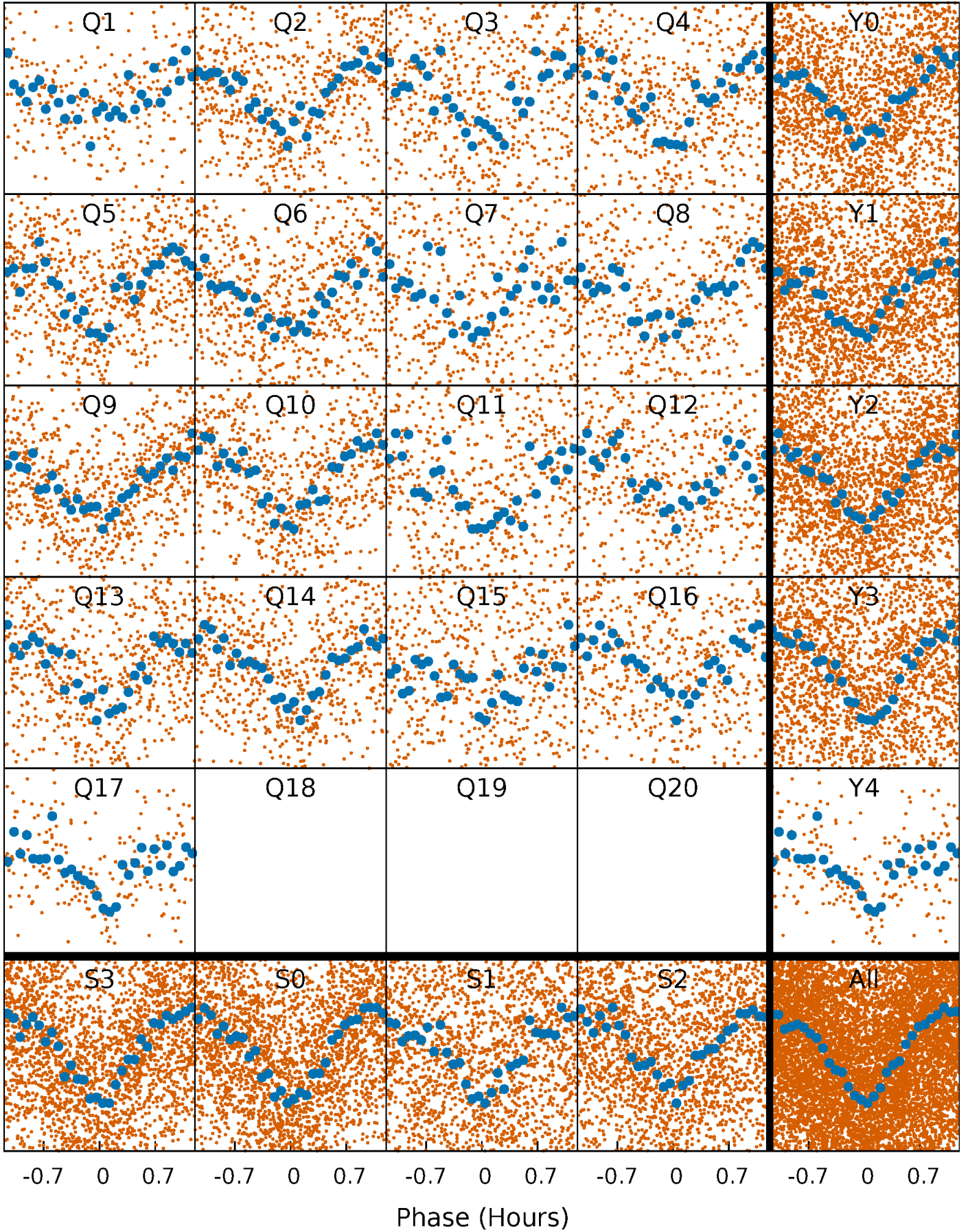


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



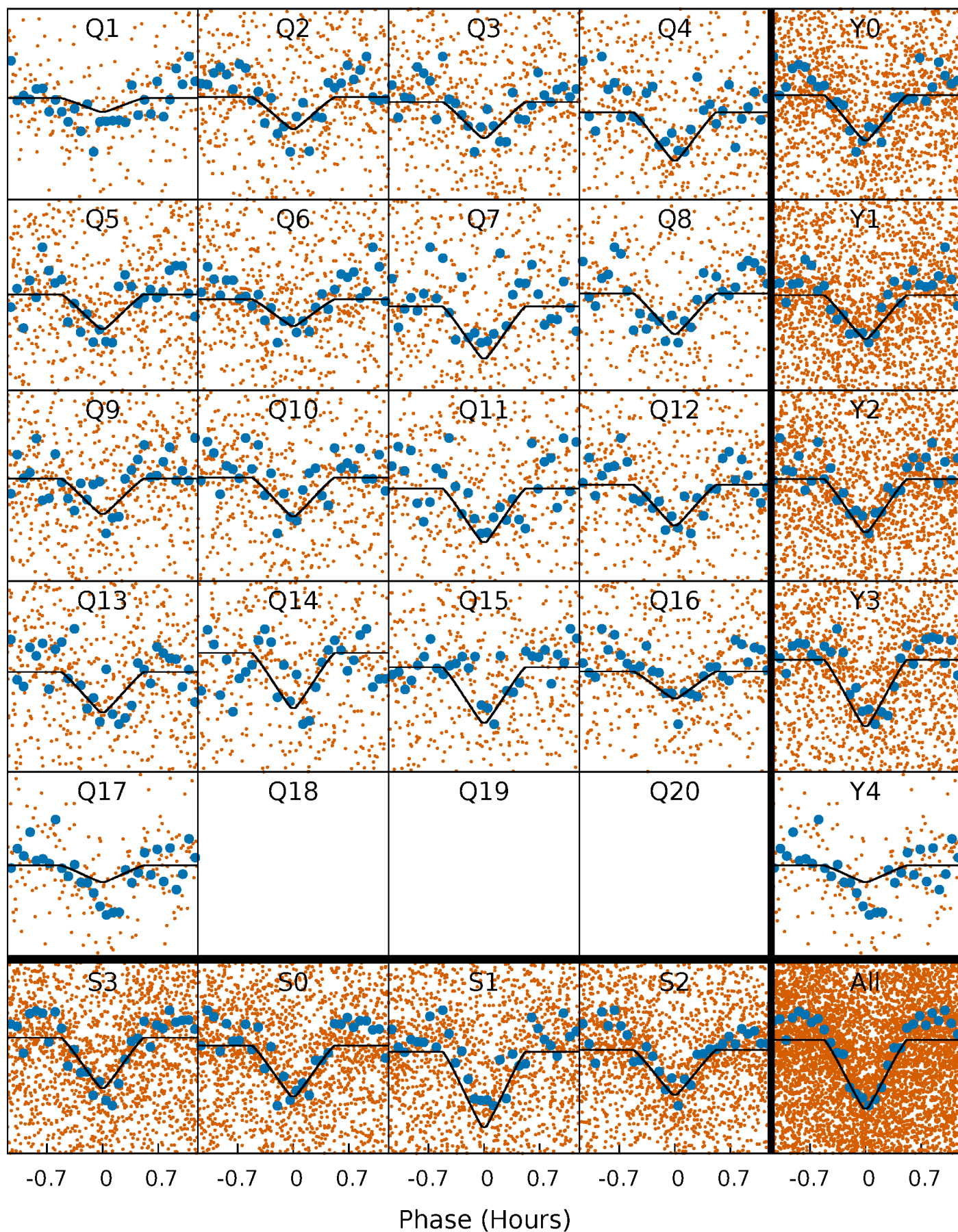
PDC Quarter-Phased Transit Curves

TCE 007335972-02 $P = 0.579768$ Days $T_0 = 132.084819$ (BKJD)



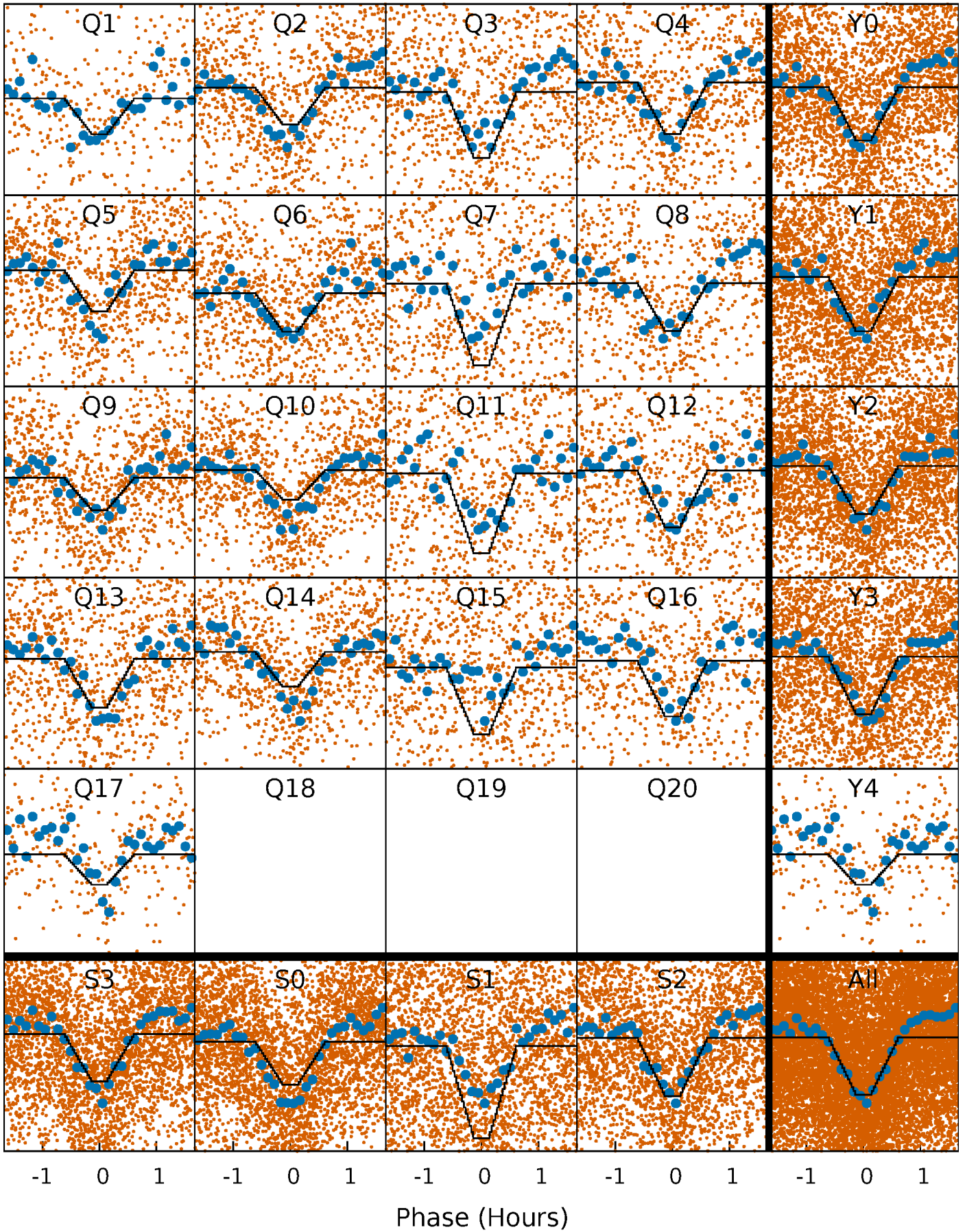
DV Quarter-Phased Transit Curves

TCE 007335972-02 P= 0.579768 Days $T_0=132.084819$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

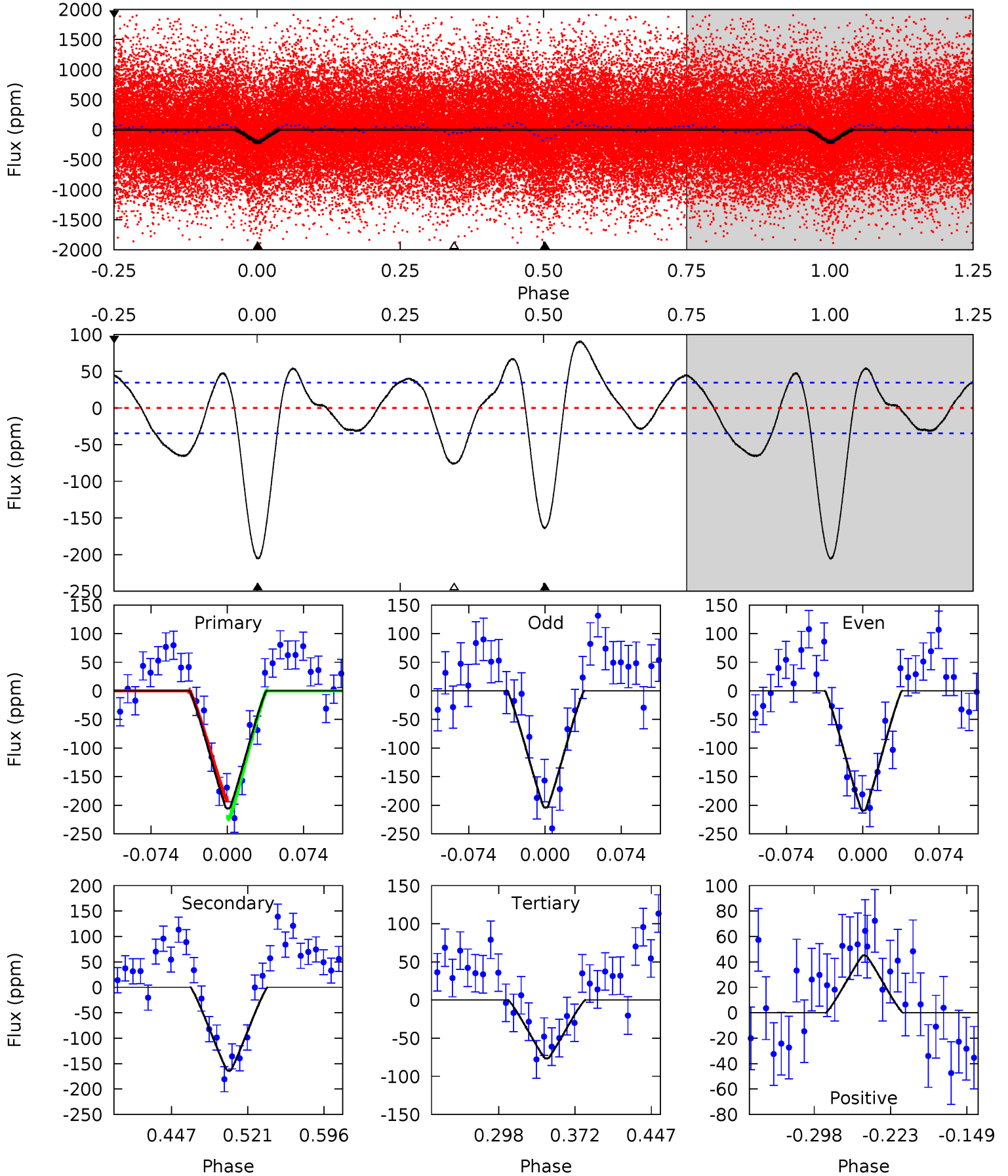
TCE 007335972-02 P= 0.579767 Days $T_0=132.085872$ (BKJD)



DV Model-Shift Uniqueness Test

007335972-02, P = 0.579768 Days, E = 131.505051 Days

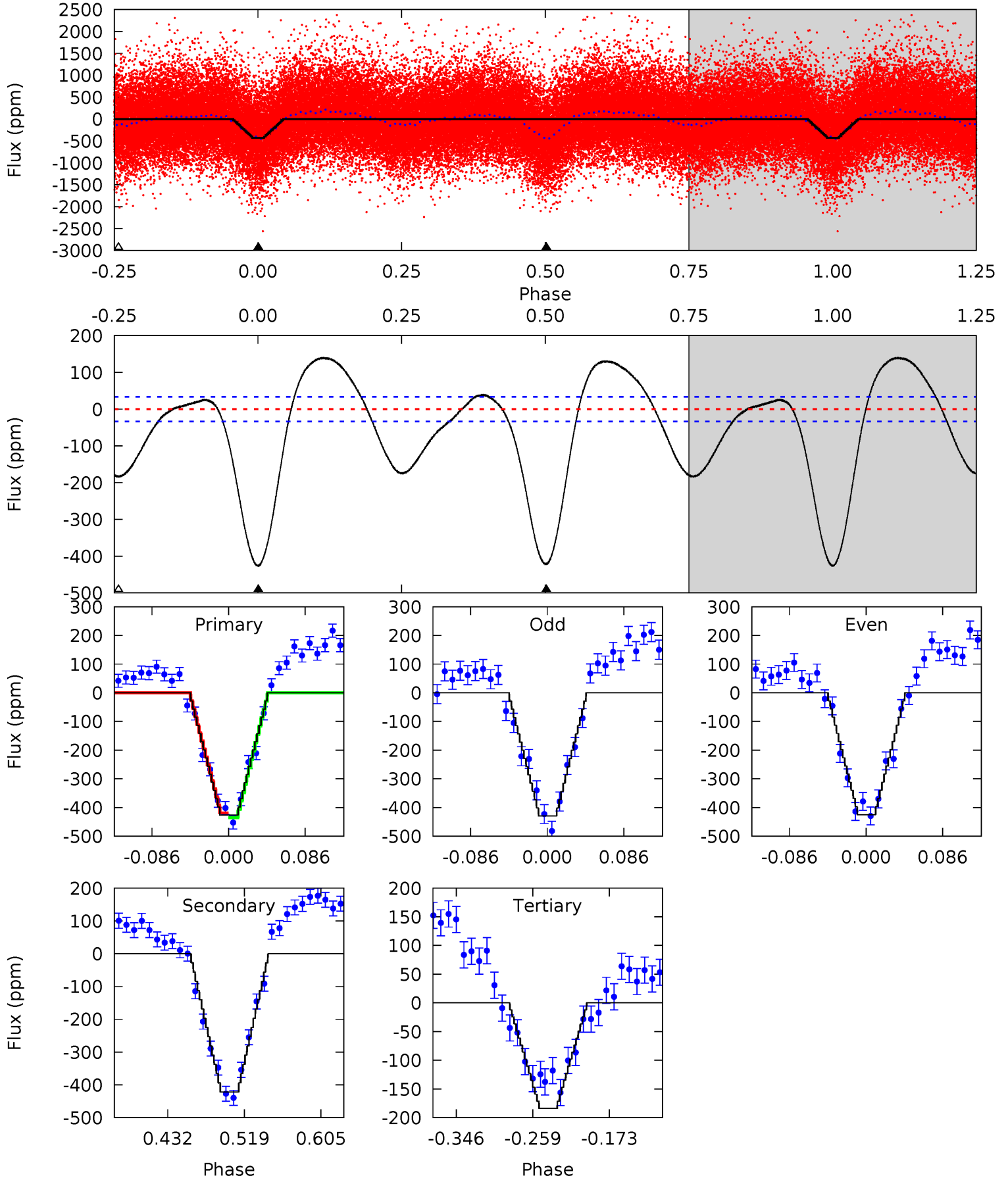
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.5	22.0	10.2	6.04	4.63	1.78	4.63	17.3	21.5	11.7	15.9	0.37	1.02	0.31	2.18



Alt Model-Shift Uniqueness Test

007335972-02, P = 0.579767 Days, E = 131.506105 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.1	57.5	25.1	0	4.60	1.71	13.4	33.1	58.1	32.4	57.5	0.34	1.03	0.25	1.19



Stellar Parameters For KIC 007335972

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5561^{+150}_{-166}	$4.561^{+0.033}_{-0.187}$	$0.070^{+0.250}_{-0.300}$	$0.854^{+0.222}_{-0.074}$	$0.968^{+0.075}_{-0.113}$	$2.192^{+0.386}_{-1.093}$
	+3%/-3%	+1%/-4%	+357%/-429%	+26%/-9%	+8%/-12%	+18%/-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 007335972-02 / KOI 4599.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-164 ± 7	$1.63^{+0.50}_{-0.46}$	2791^{+178}_{-117}	4886^{+812}_{-506}	$6.085^{+5.501}_{-2.530}$
Alt.	-422 ± 7	$1.98^{+0.47}_{-0.51}$	2789^{+178}_{-124}	5581^{+776}_{-538}	11^{+8}_{-4}

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

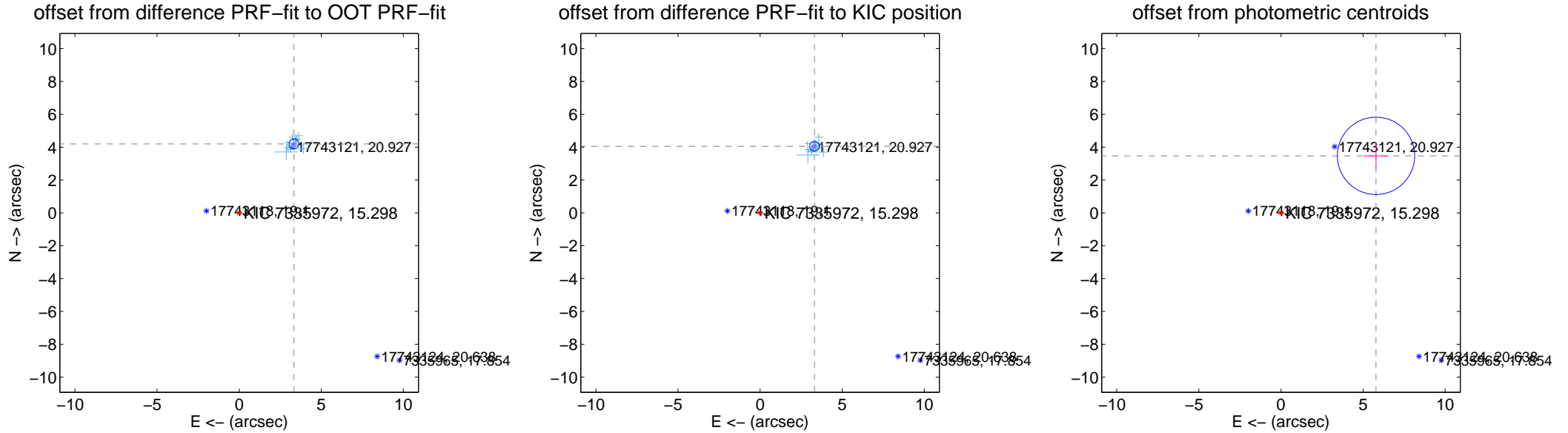
DV Centroid Data

Supplemental centroid analysis for 007335972-02. Kepler magnitude: 15.30. Transit SNR 17.22

There are 17 quarters with good PRF difference image offsets

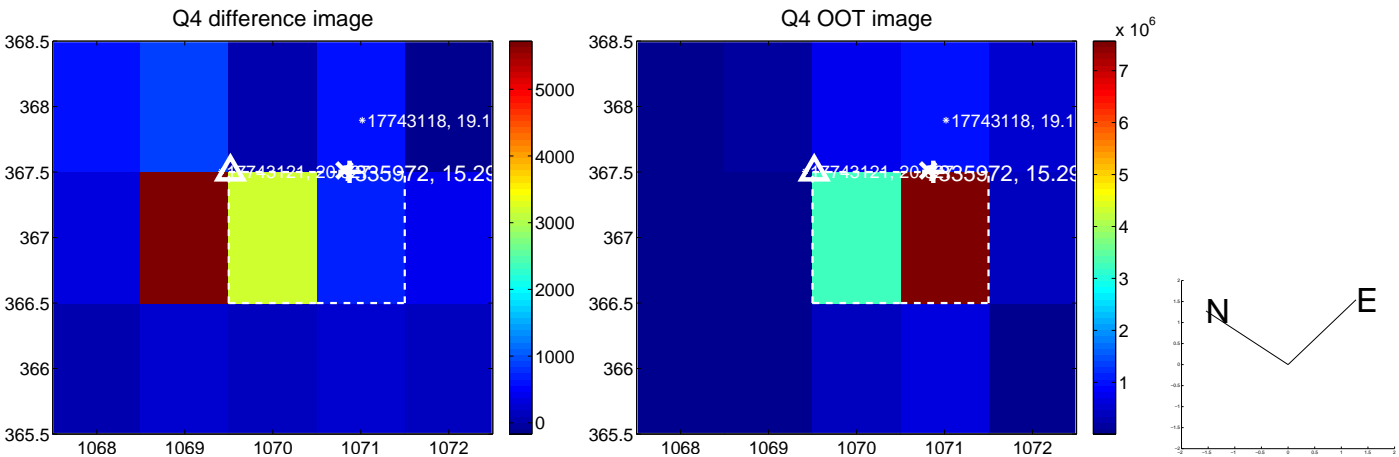
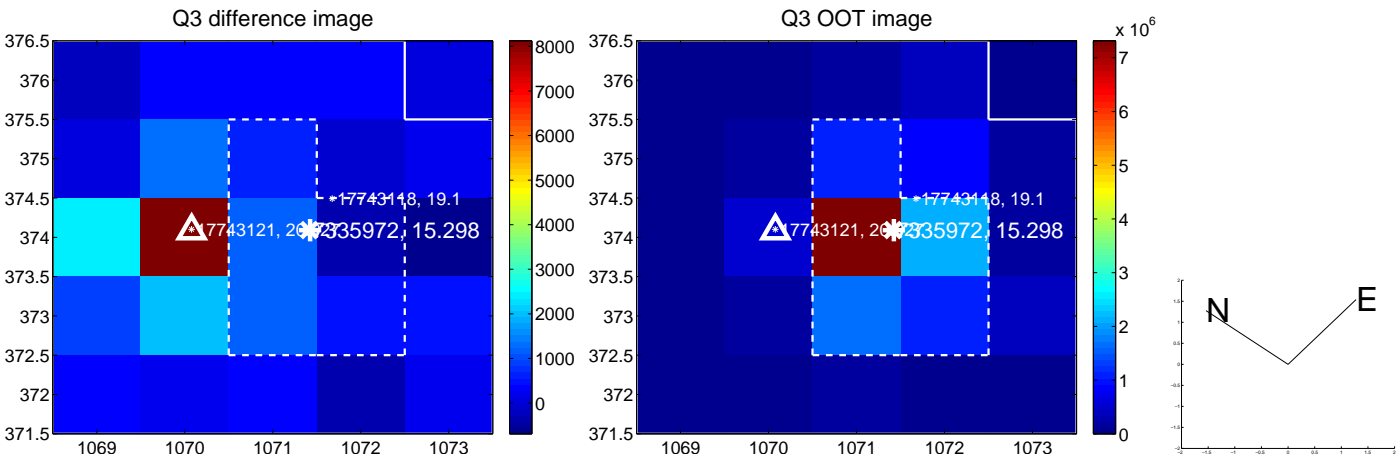
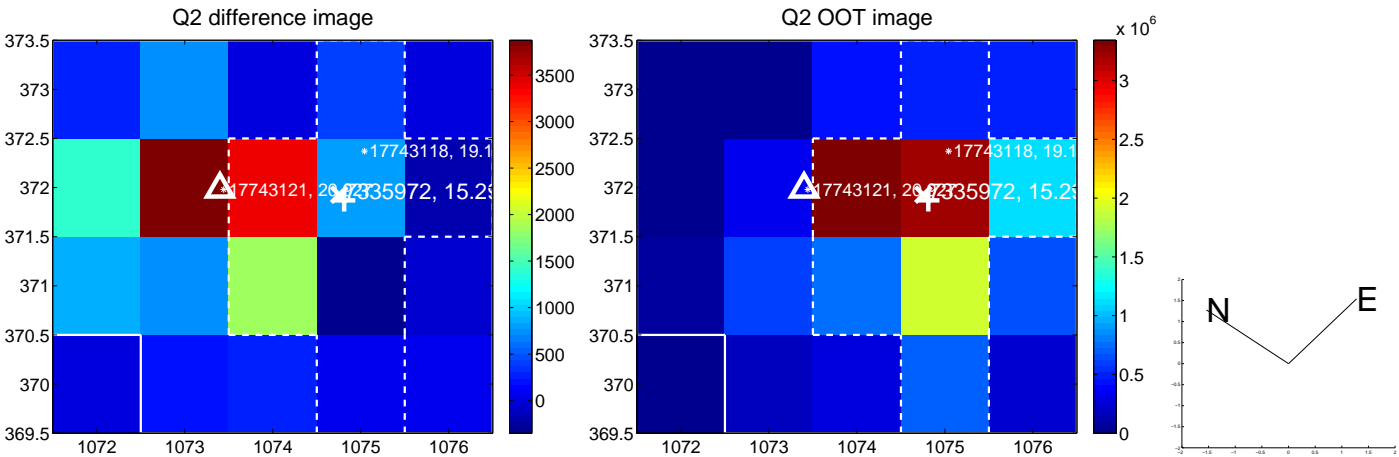
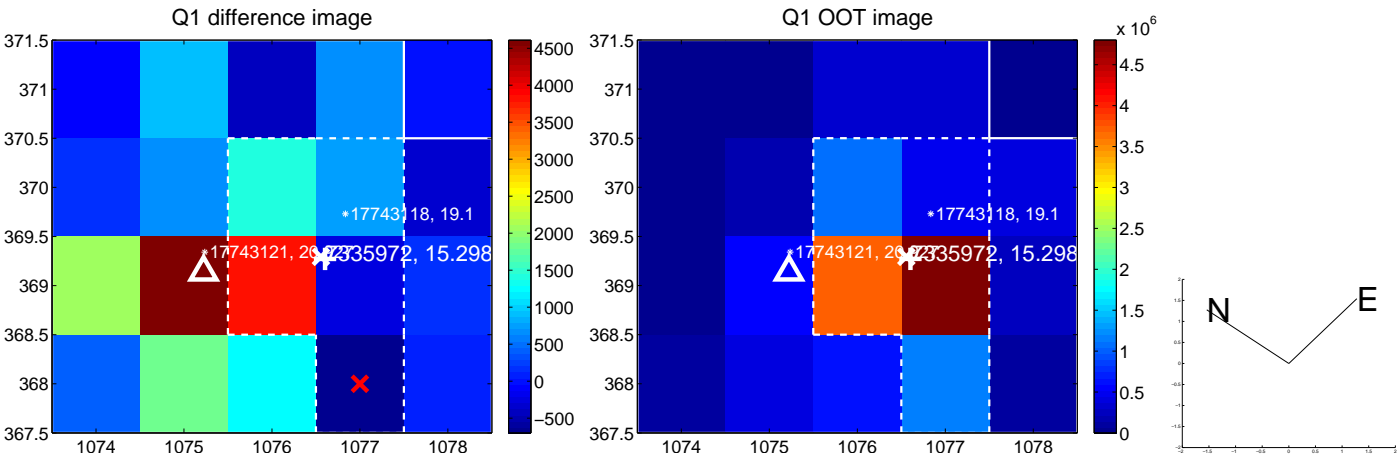
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.363 ± 0.101	53.24	-3.339 ± 0.093	4.197 ± 0.092
PRF-fit source offset from KIC position	5.237 ± 0.098	53.62	-3.317 ± 0.094	4.052 ± 0.094
photometric centroid source offset	6.75 ± 0.78	8.60	-5.79 ± 0.77	3.47 ± 0.81

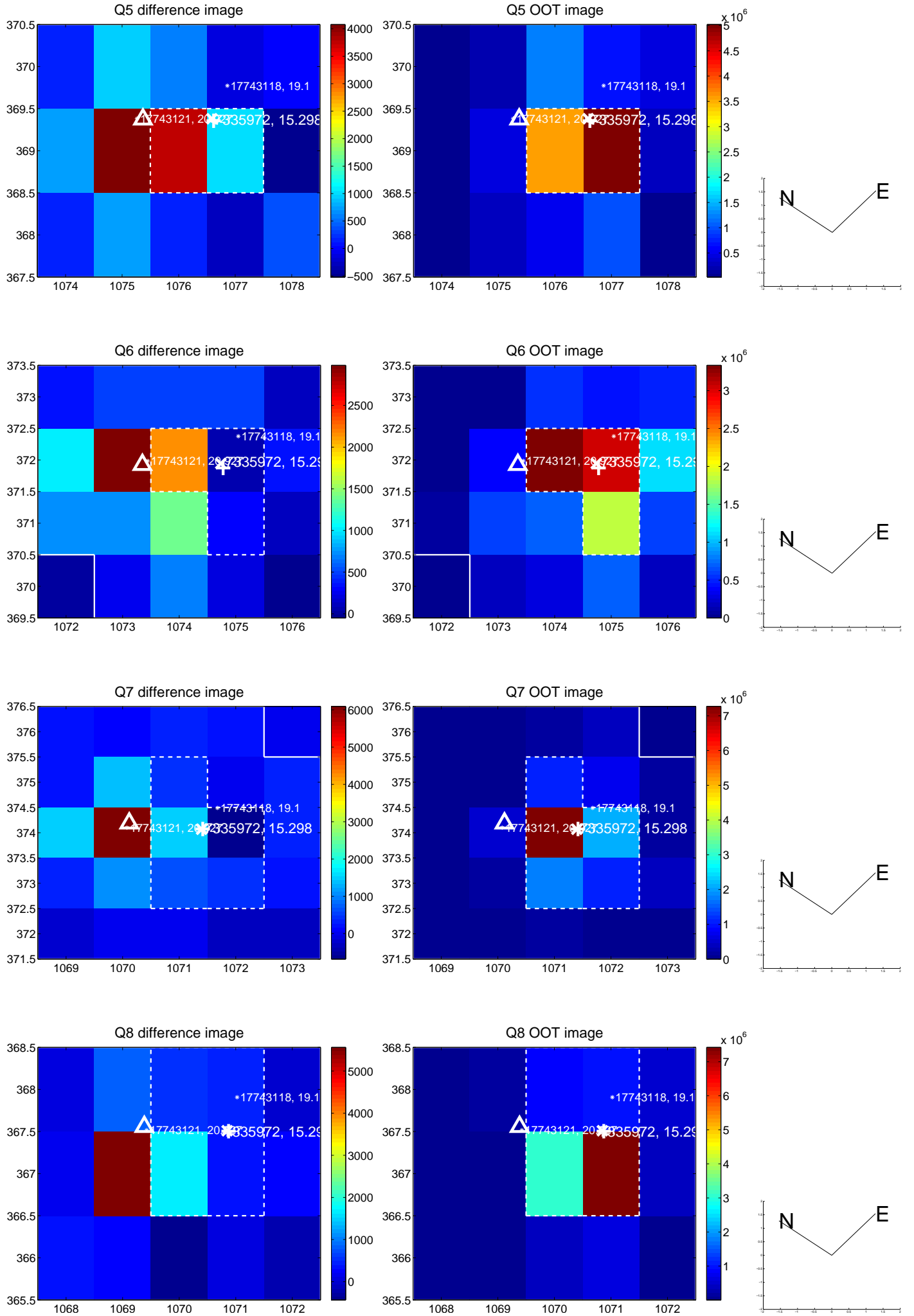


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

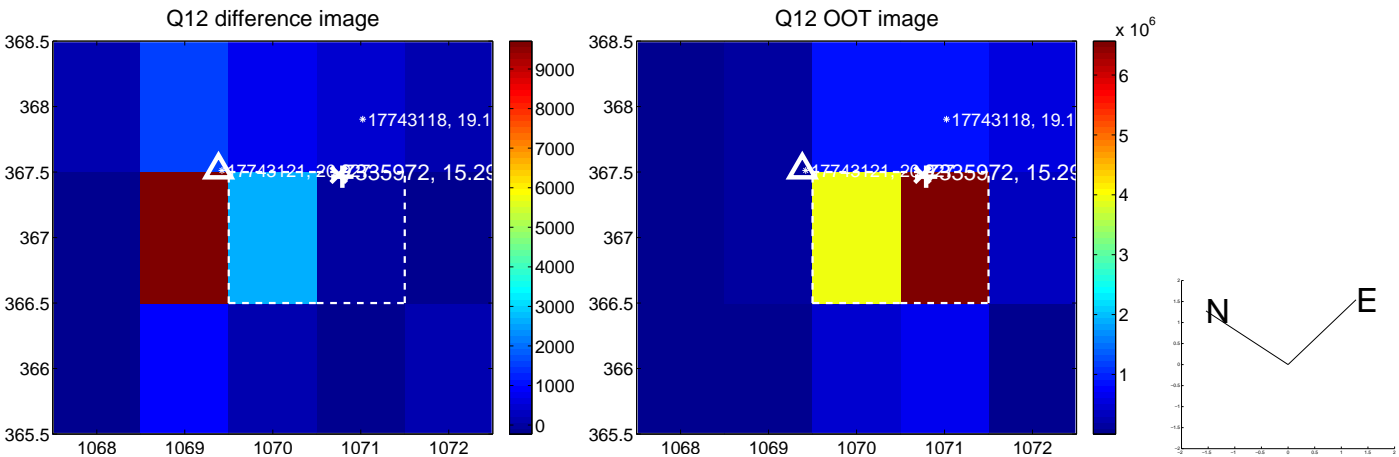
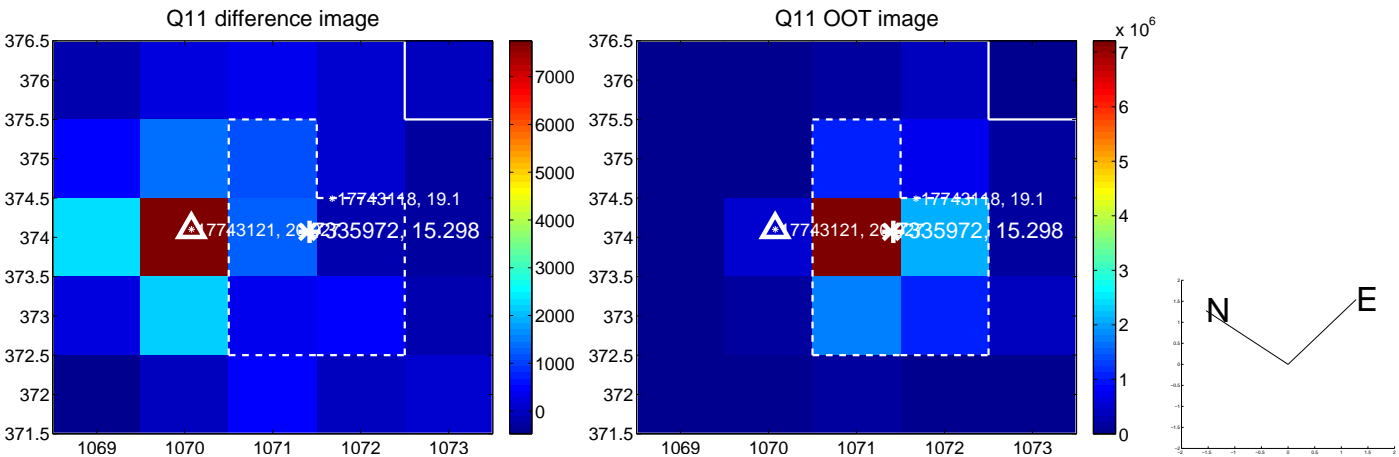
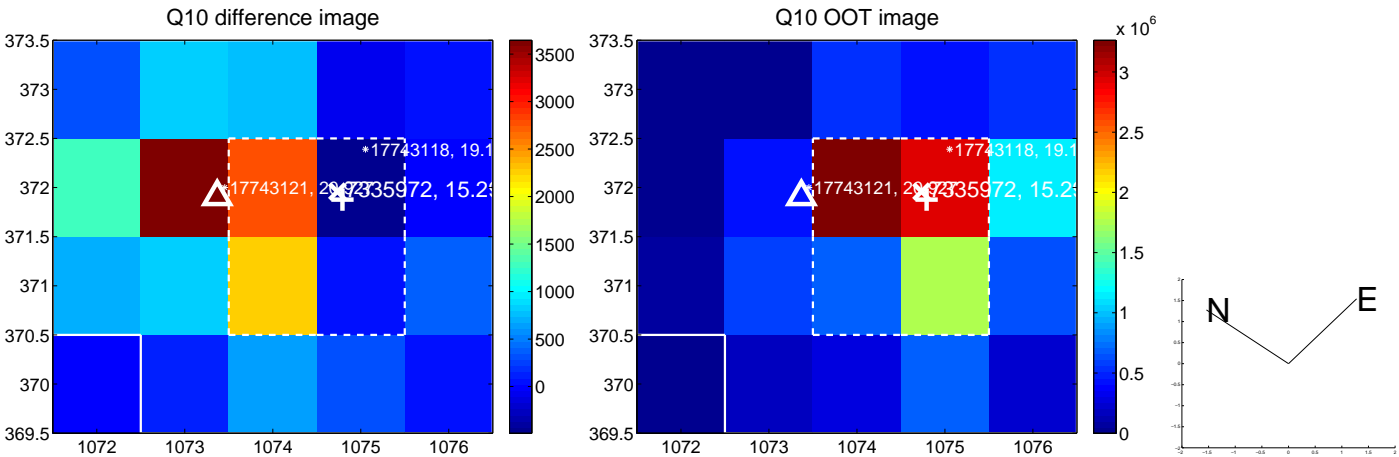
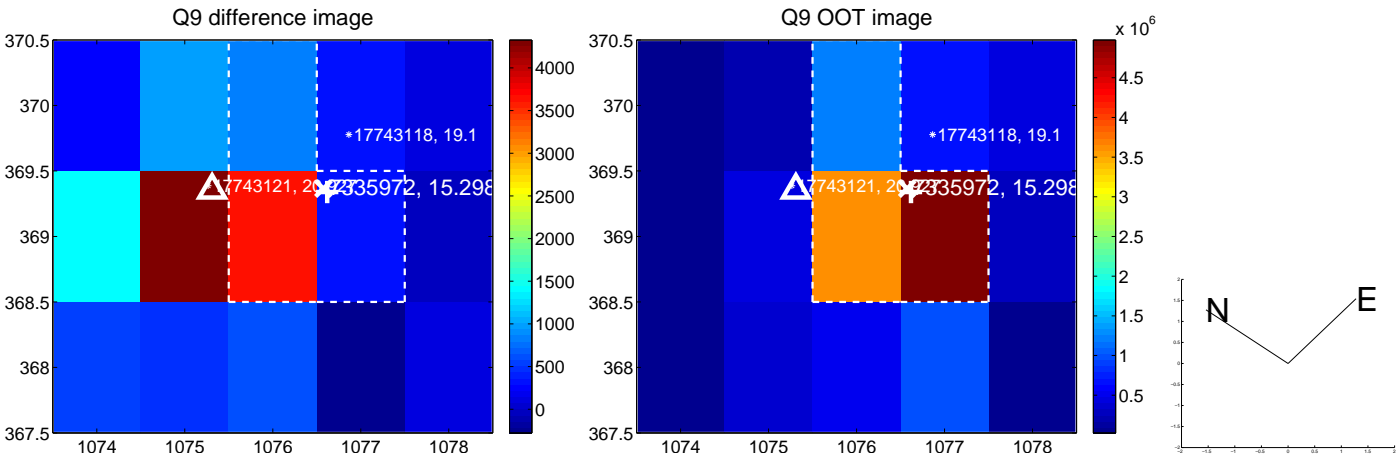
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



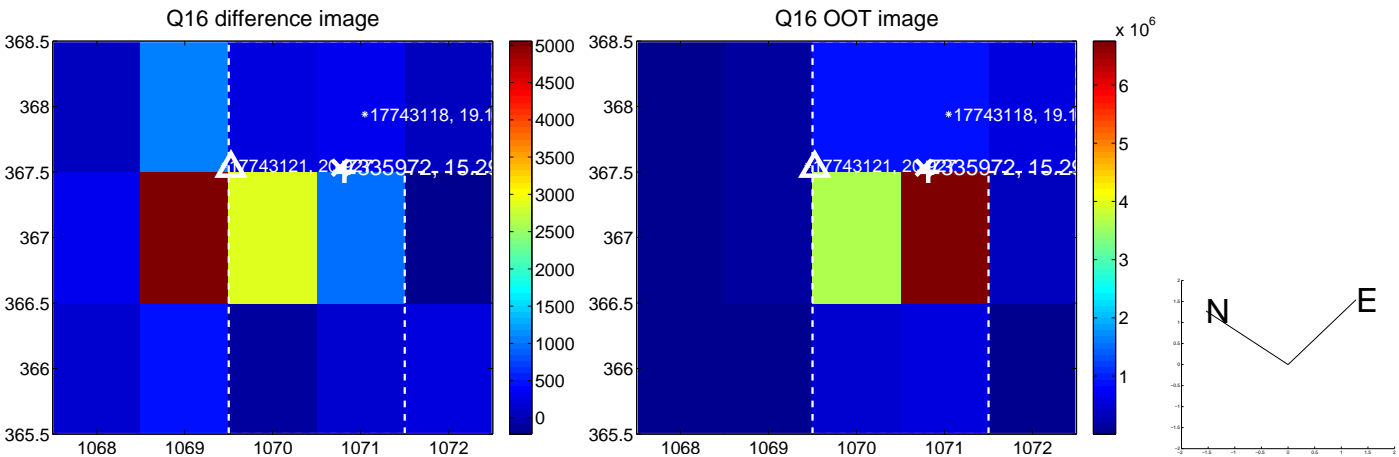
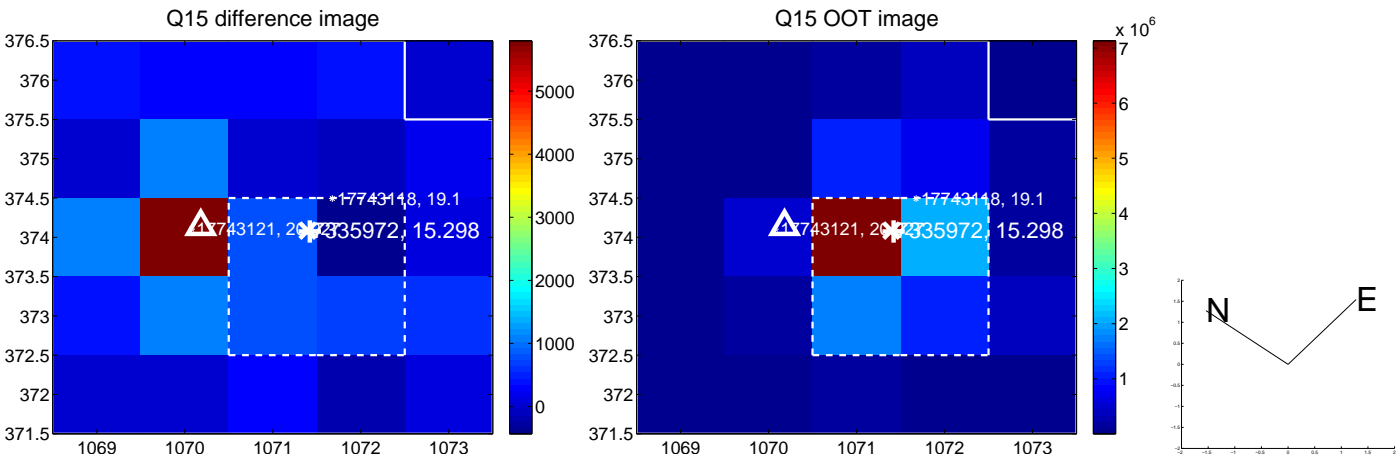
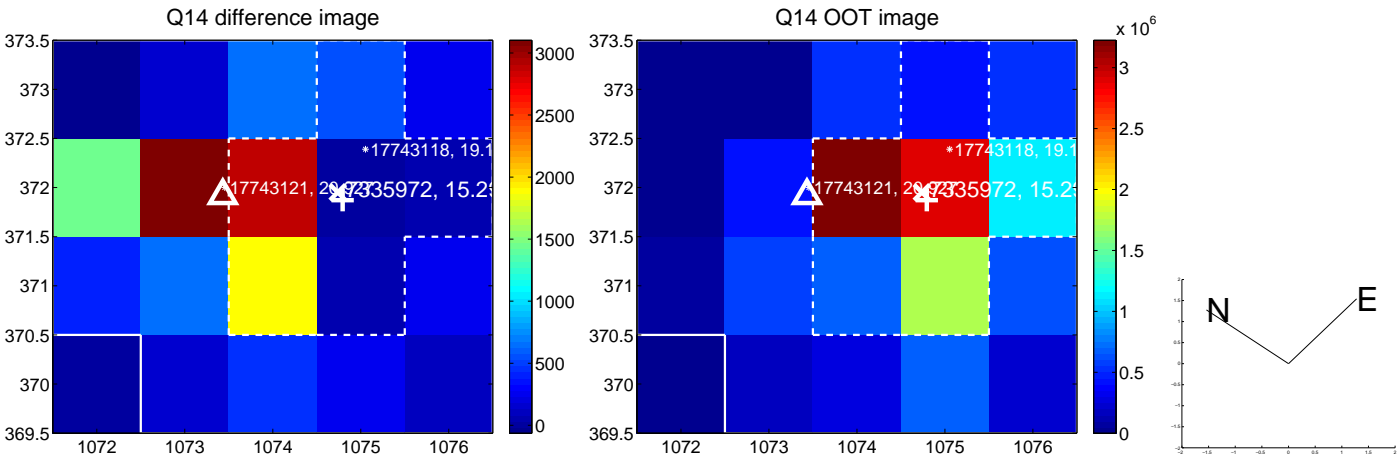
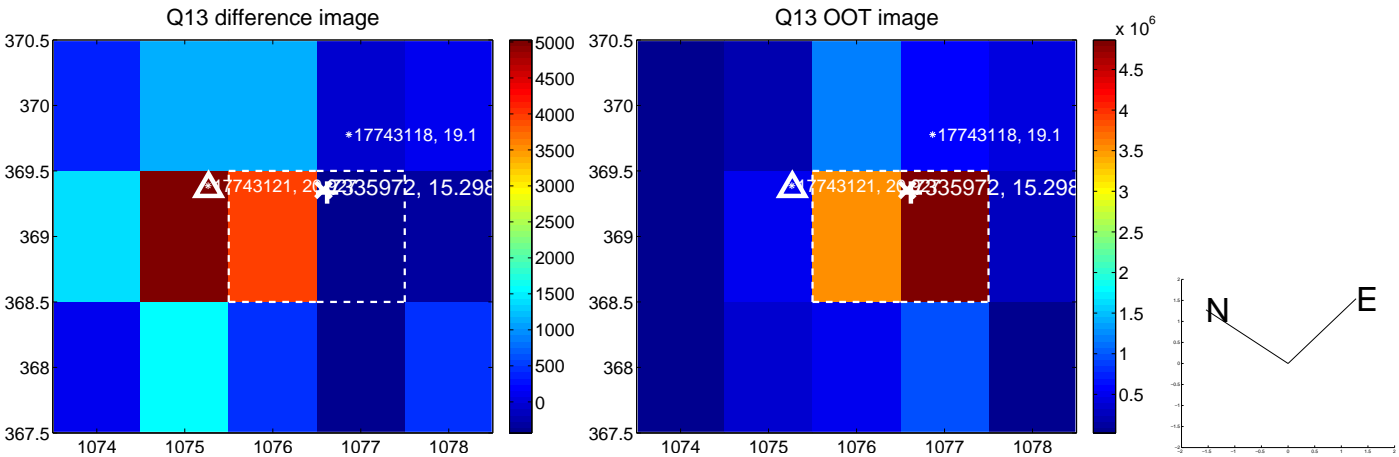
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



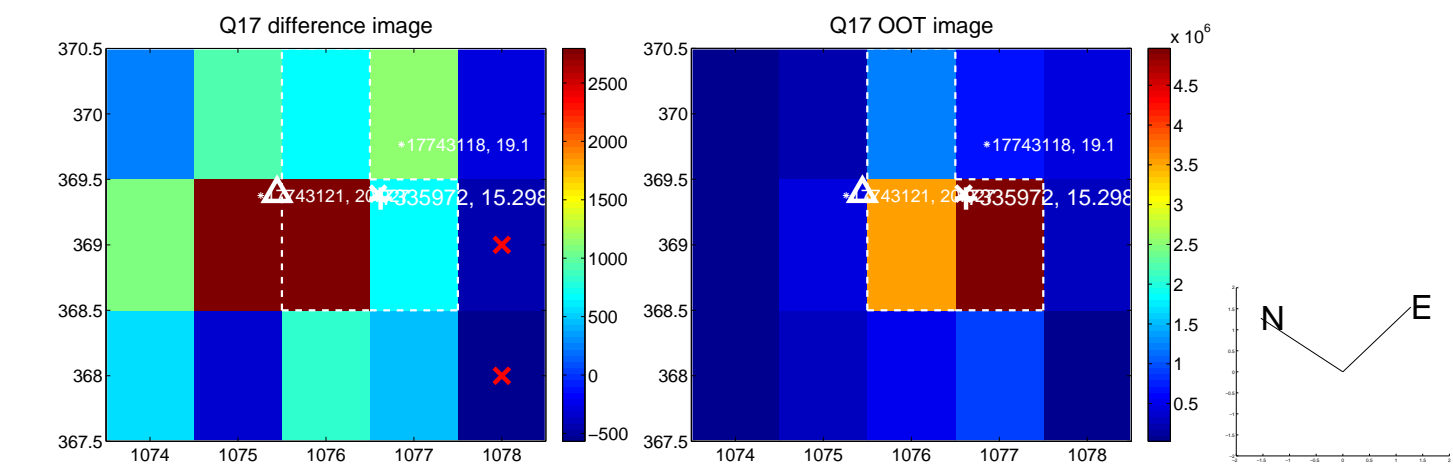
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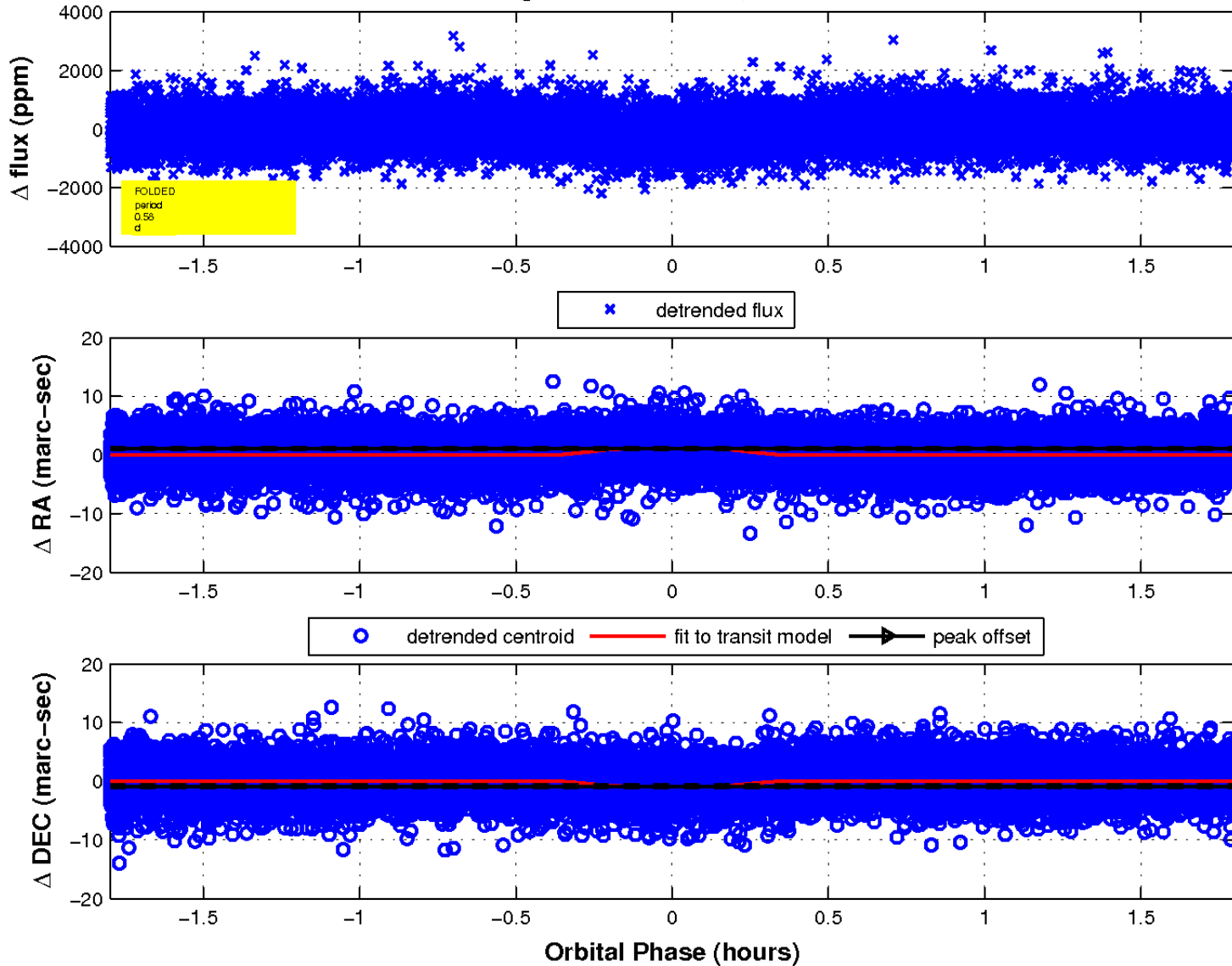
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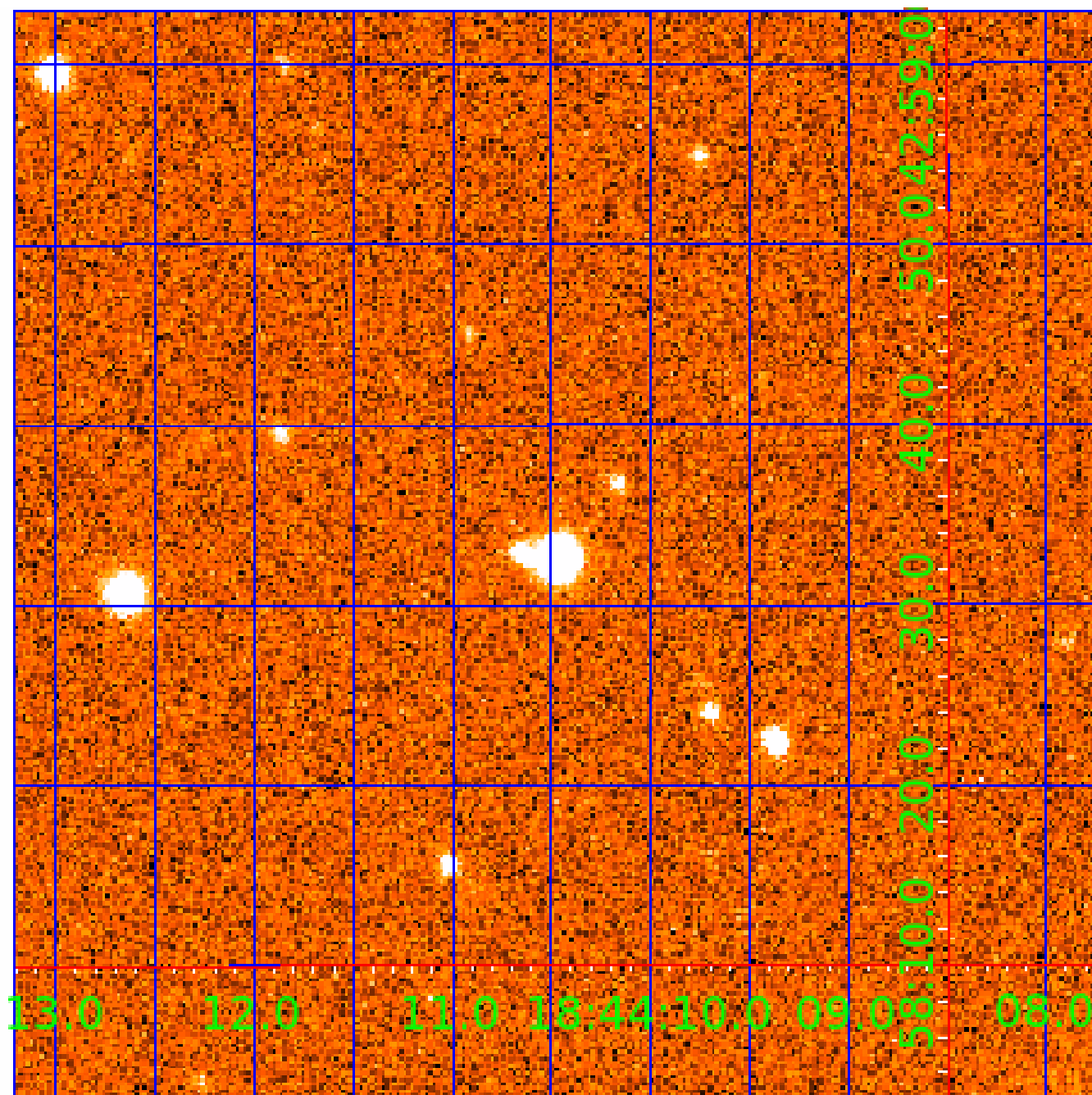


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 007335972

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007335972-02	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
007335972-03	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—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 007335972-03

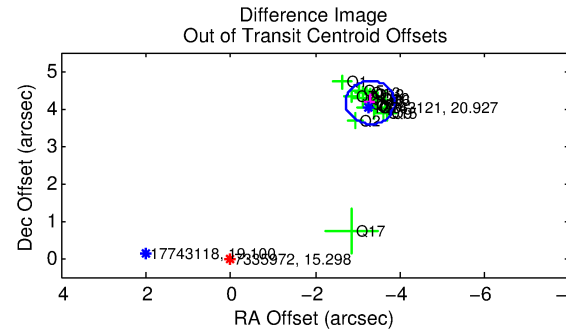
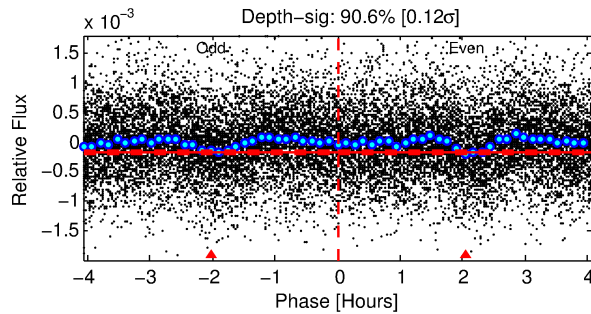
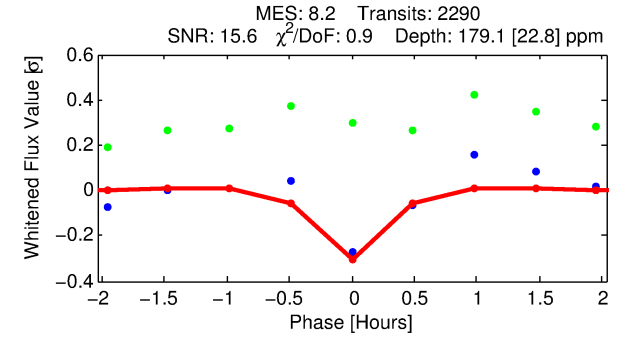
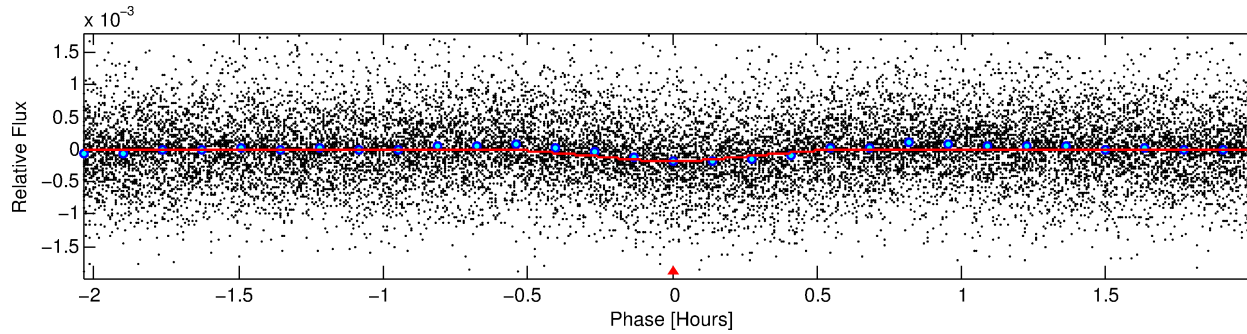
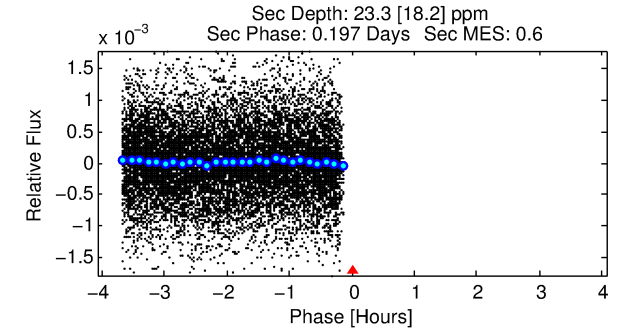
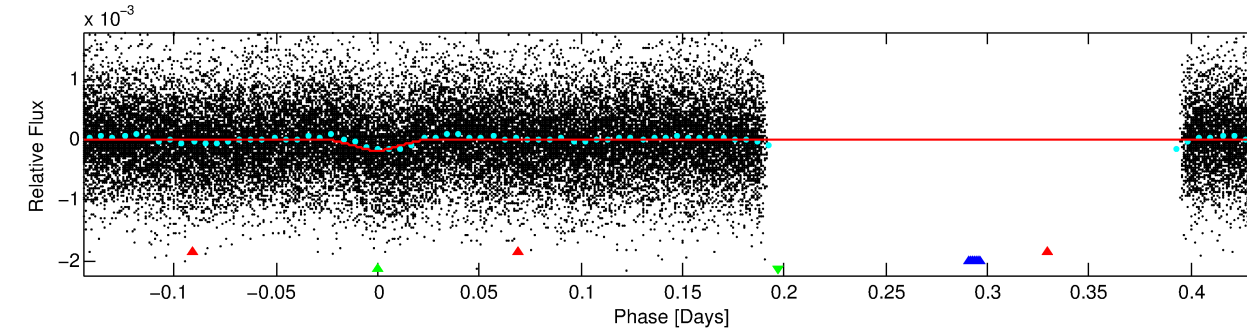
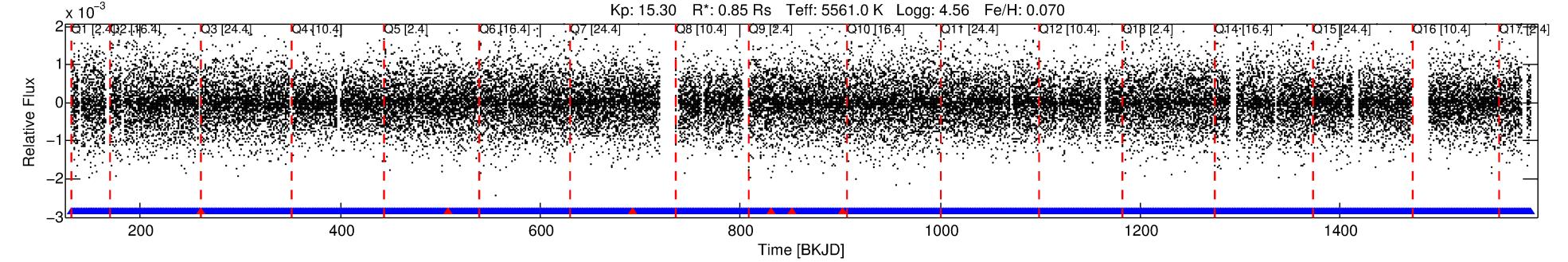
No Significant Match Found

DV One-Page Summary

KIC: 7335972 Candidate: 3 of 3 Period: 0.580 d

KOI: K04599 Corr: No Ephemeris Match

Kp: 15.30 R*: 0.85 Rs Teff: 5561.0 K Logg: 4.56 Fe/H: 0.070



DV Fit Results:

Period = 0.57977 [0.00001] d
Epoch = 131.7943 [0.0009] BKJD
Rp/R* = 0.0151 [0.0052]
a/R* = 3.17 [4.30]
b = 0.90 [0.32]
Seff = 3447.26 [1227.01]
Teff = 1954 [174] K
Rp = 1.41 [0.61] Re
a = 0.0135 [0.0030] AU
Ag = 1.17 [1.28] [0.13σ]
Teffp = 3143 [824] K [1.41σ]

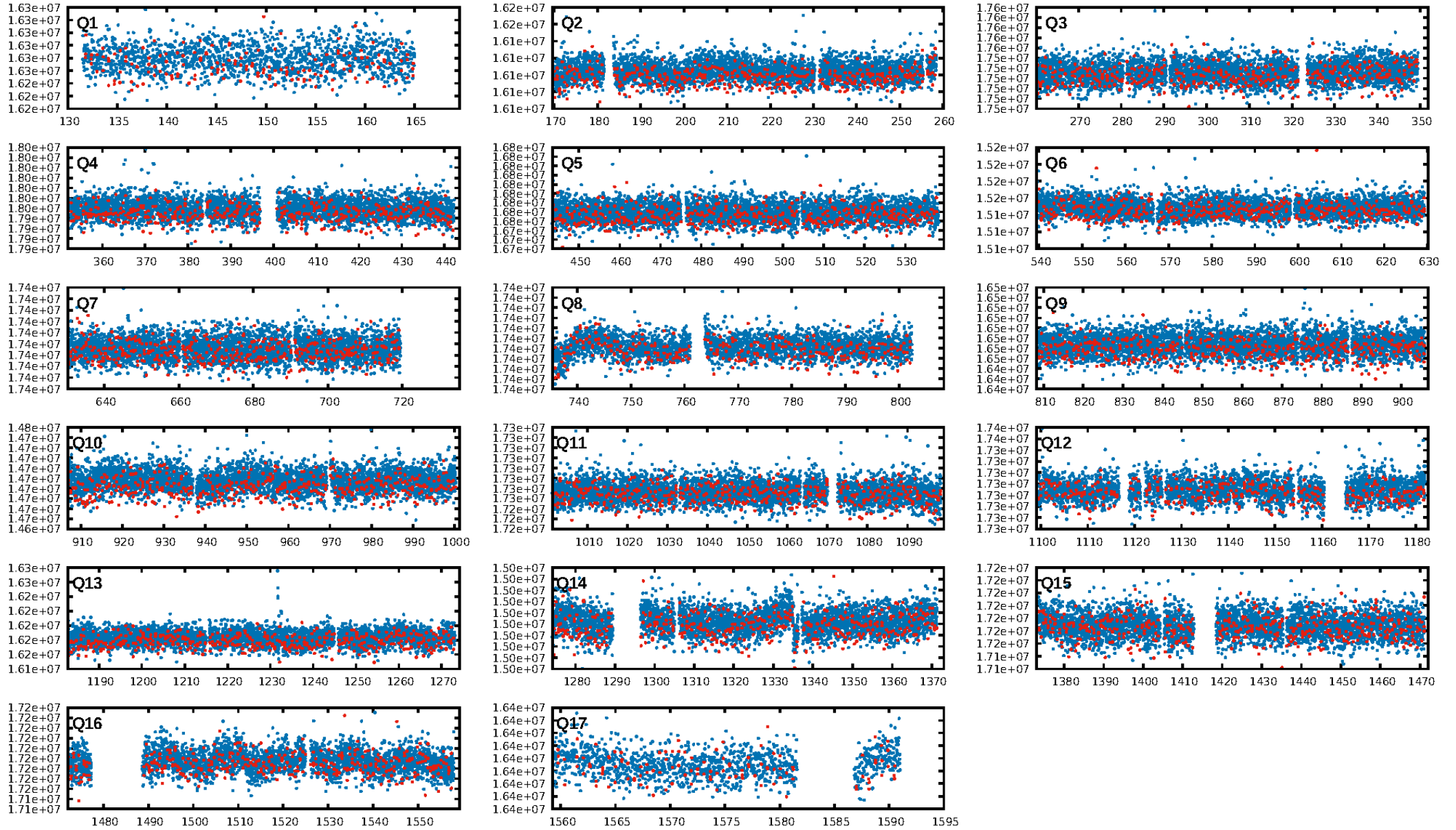
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.53e-24
RollingBand-fgt: 1.00 [2186/2192]
GhostDiagnostic-chr: 0.5066
Centroid-sig: 0.0%
Centroid-so: 5.981 arcsec [6.70σ]
OotOffset-rm: 5.305 arcsec [27.68σ]
KicOffset-rm: 5.174 arcsec [29.27σ]
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]

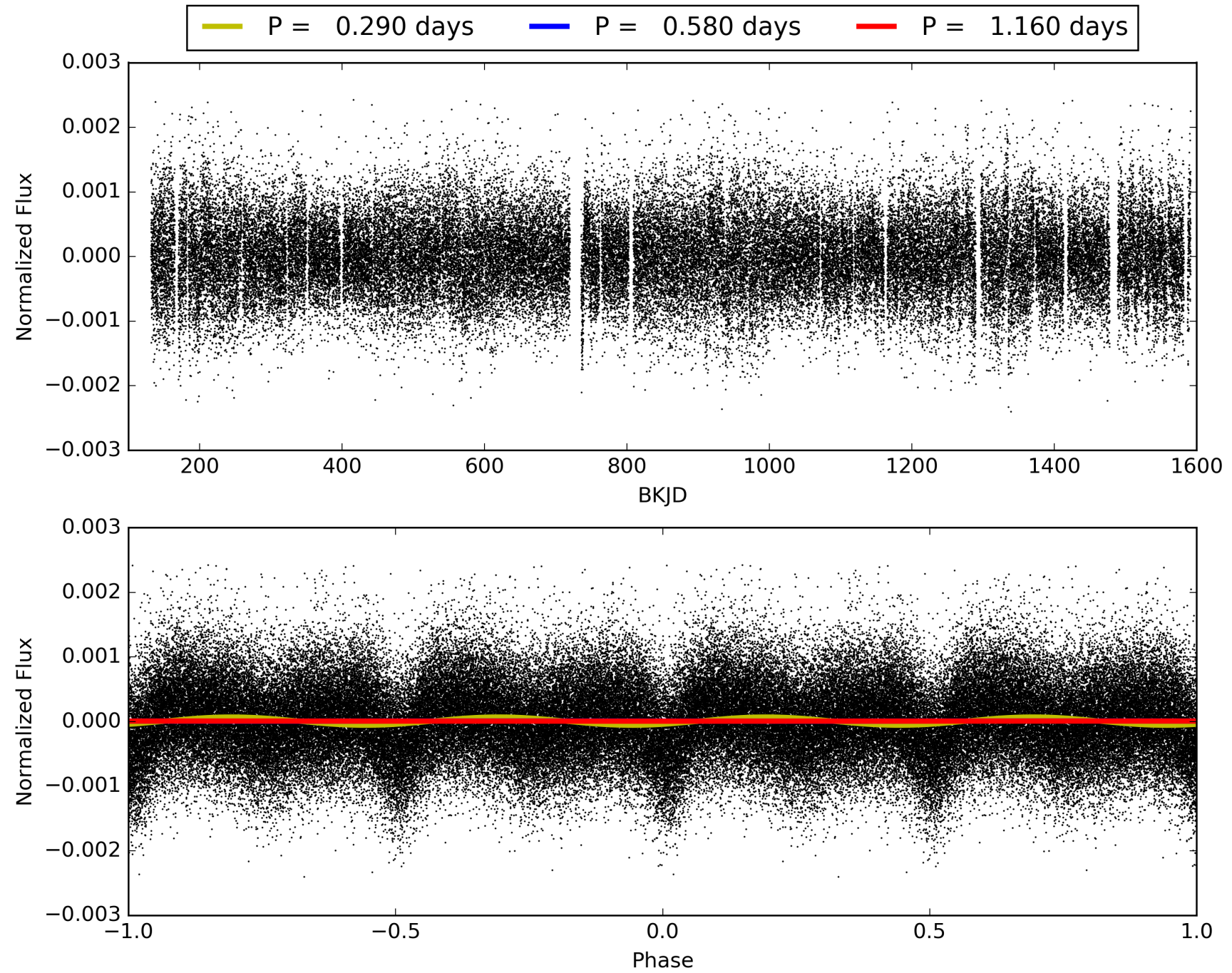
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007335972-03, PDC Light Curves

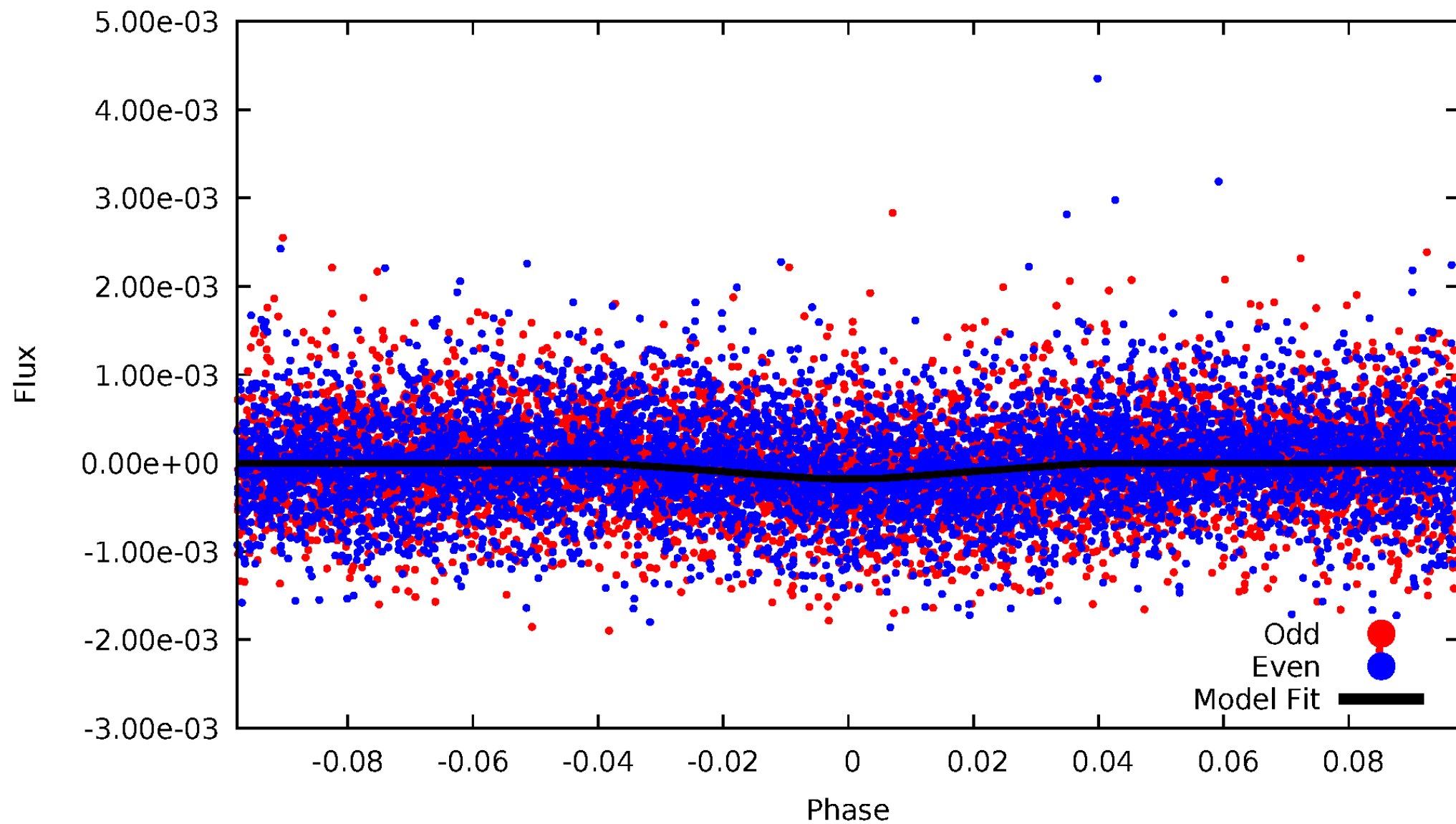


TCE 007335972-03



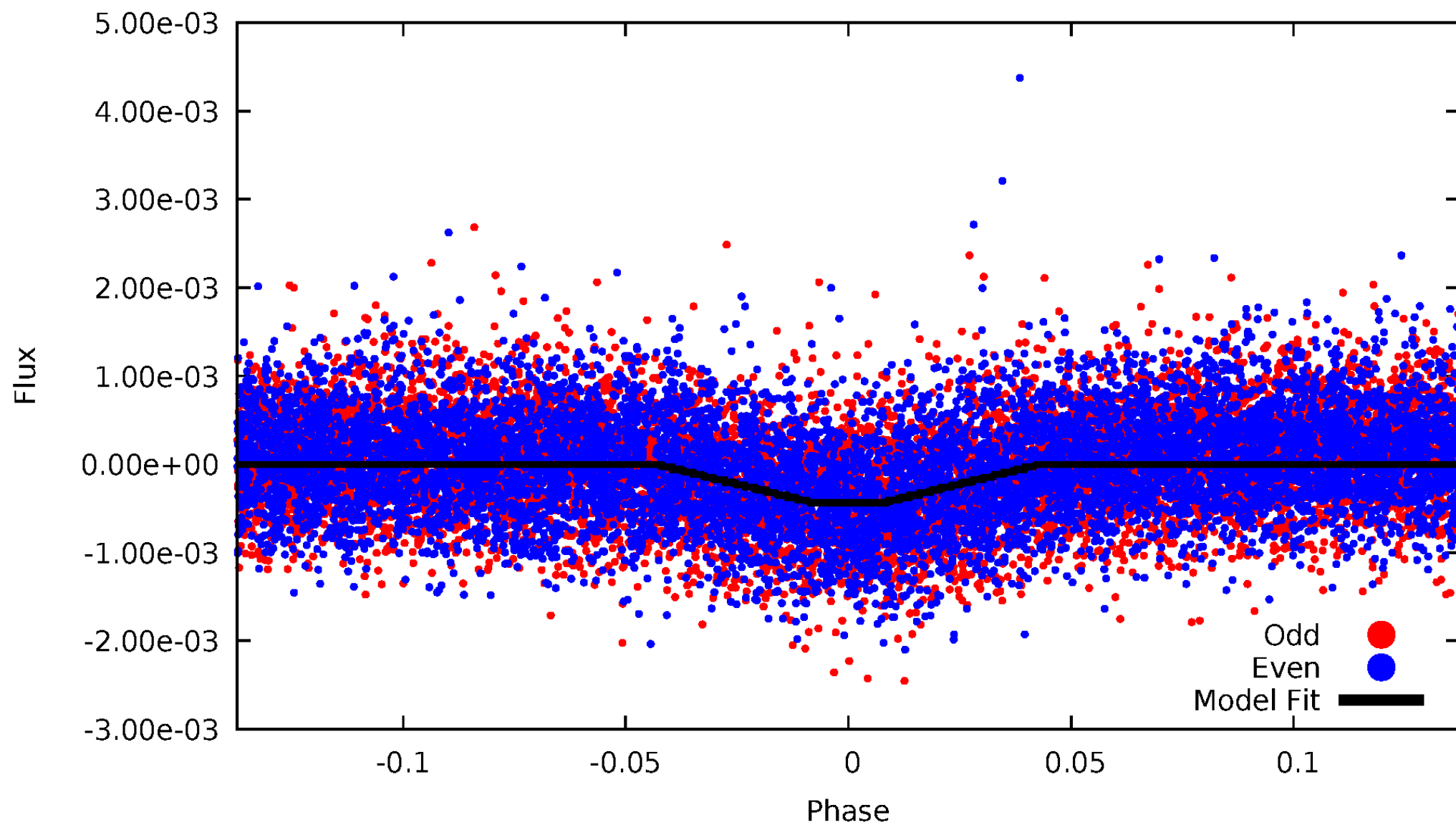
DV Odd/Even

TCE 007335972-03



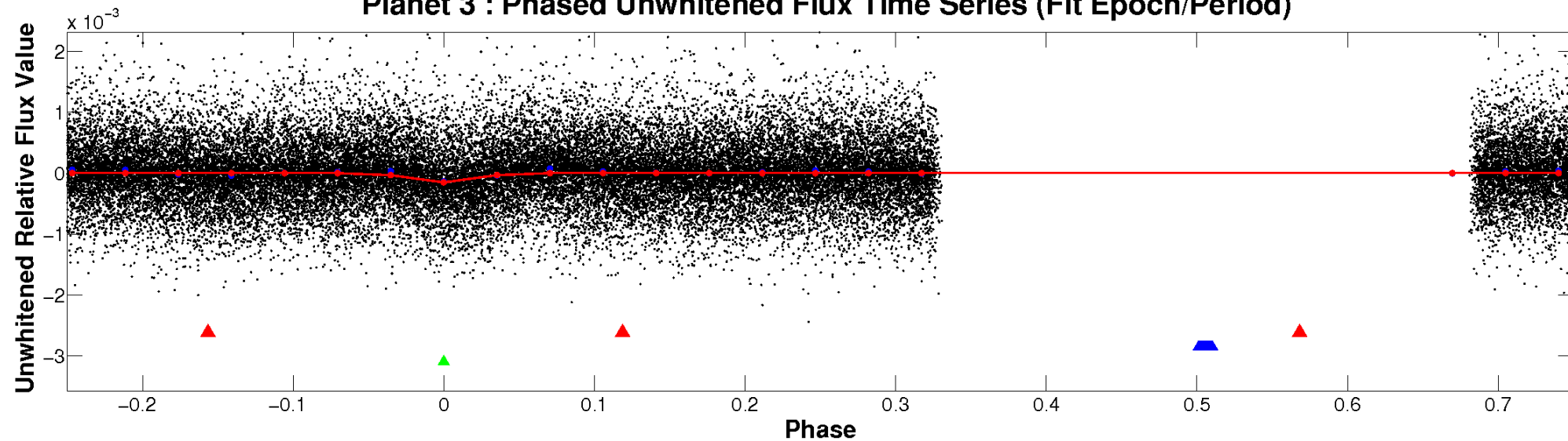
ALT Odd/Even

TCE 007335972-03

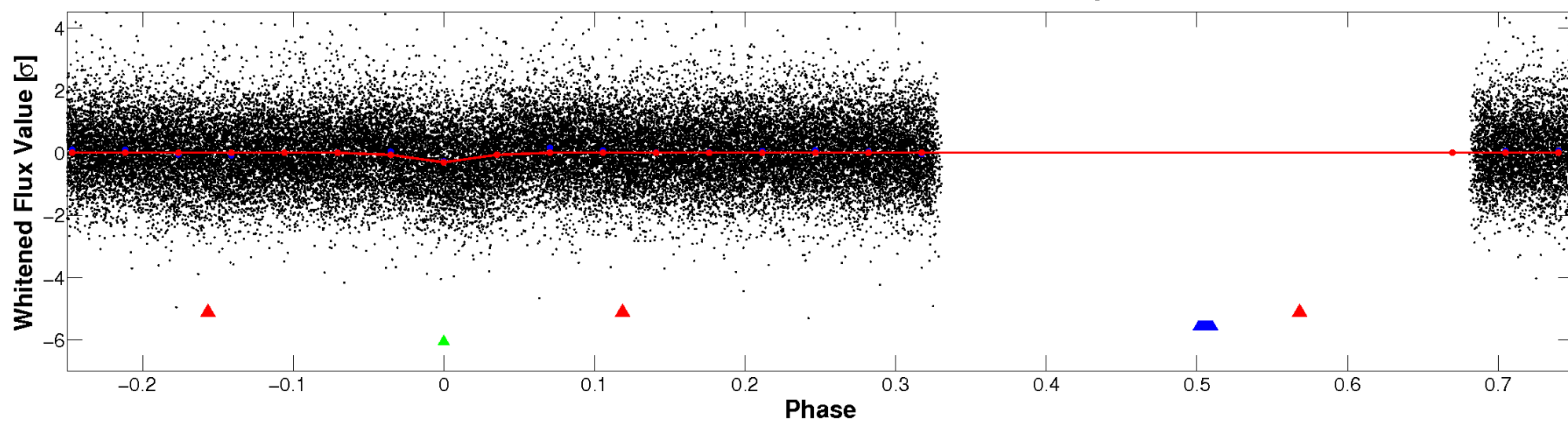


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

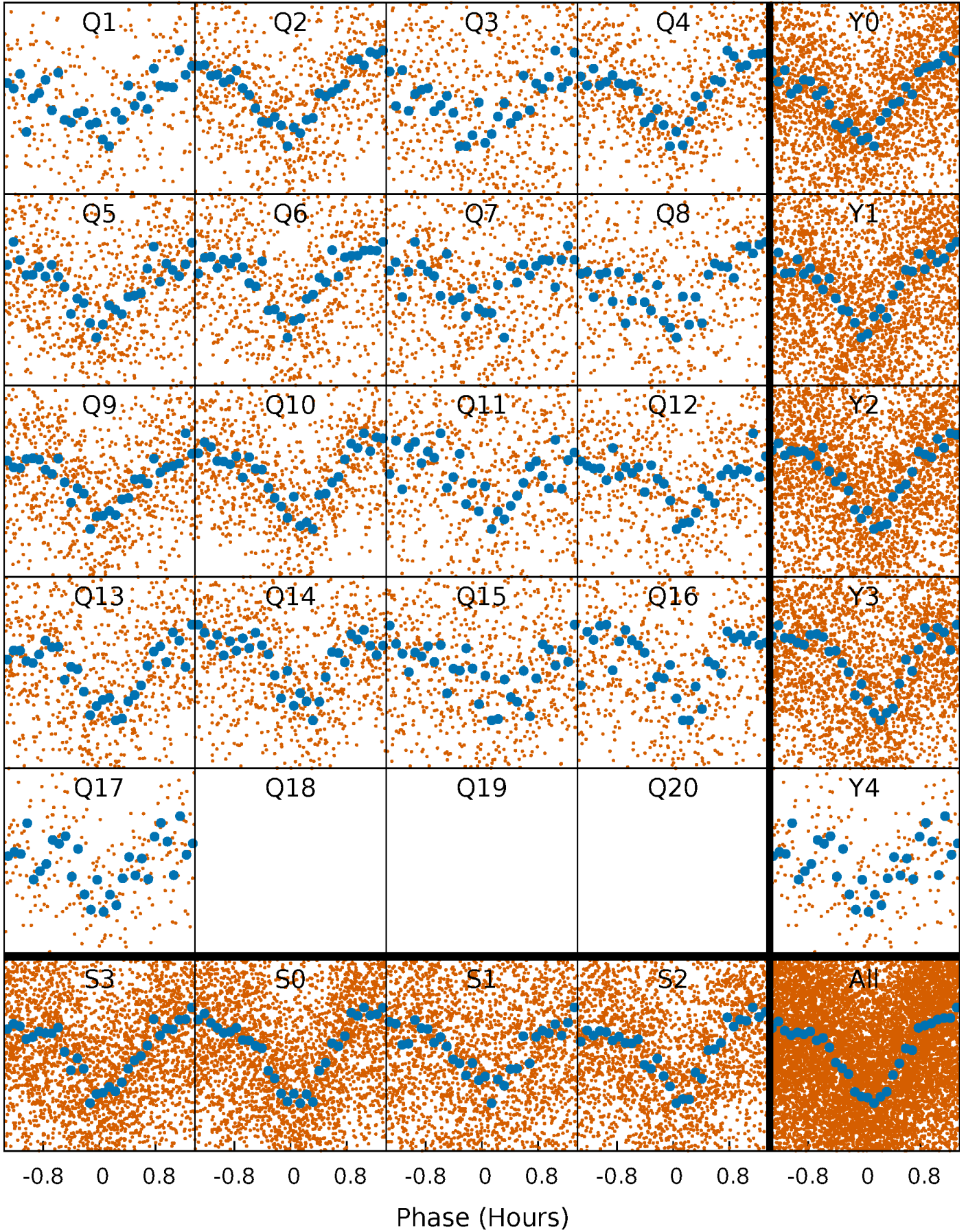


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



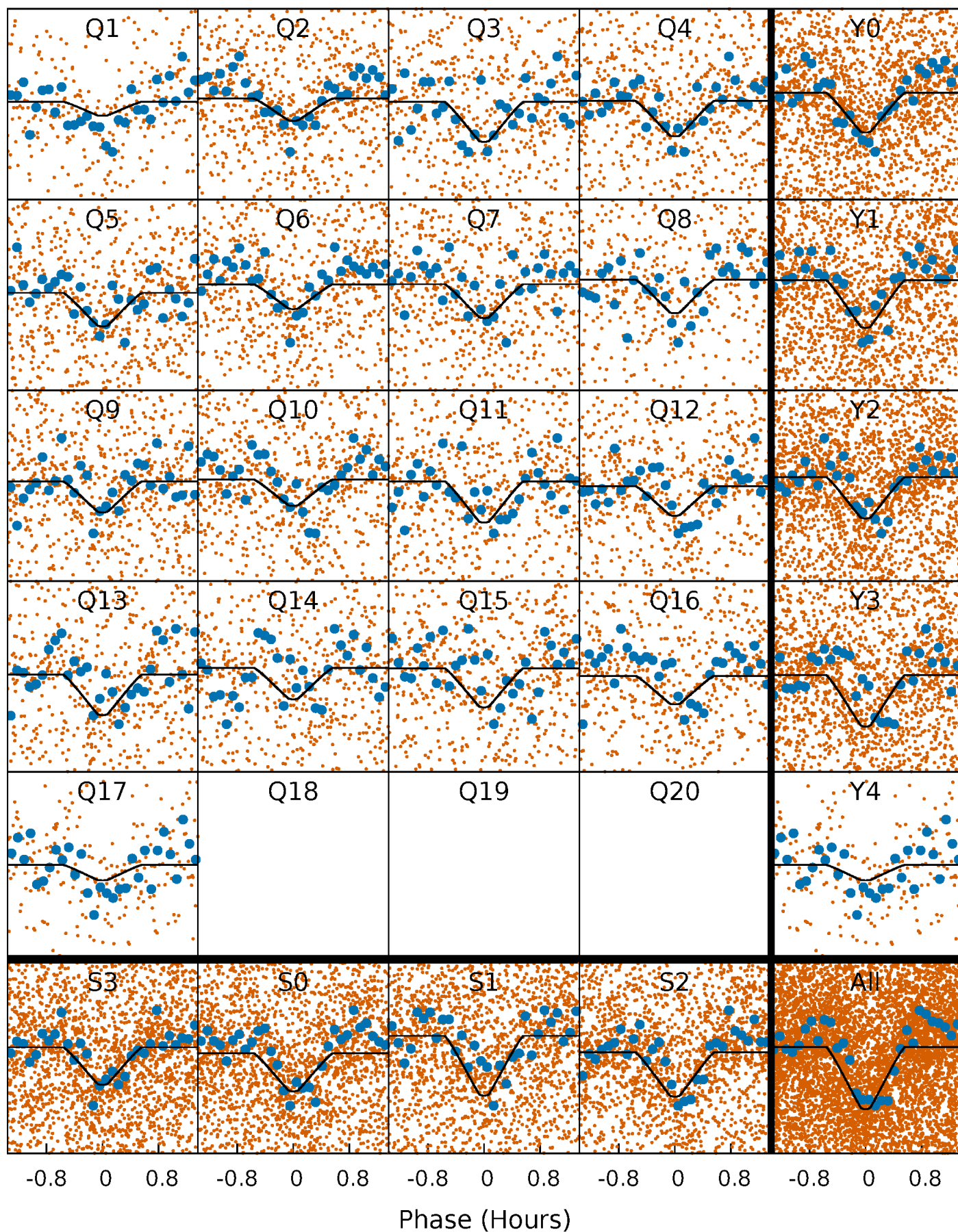
PDC Quarter-Phased Transit Curves

TCE 007335972-03 P= 0.579766 Days $T_0=131.794286$ (BKJD)



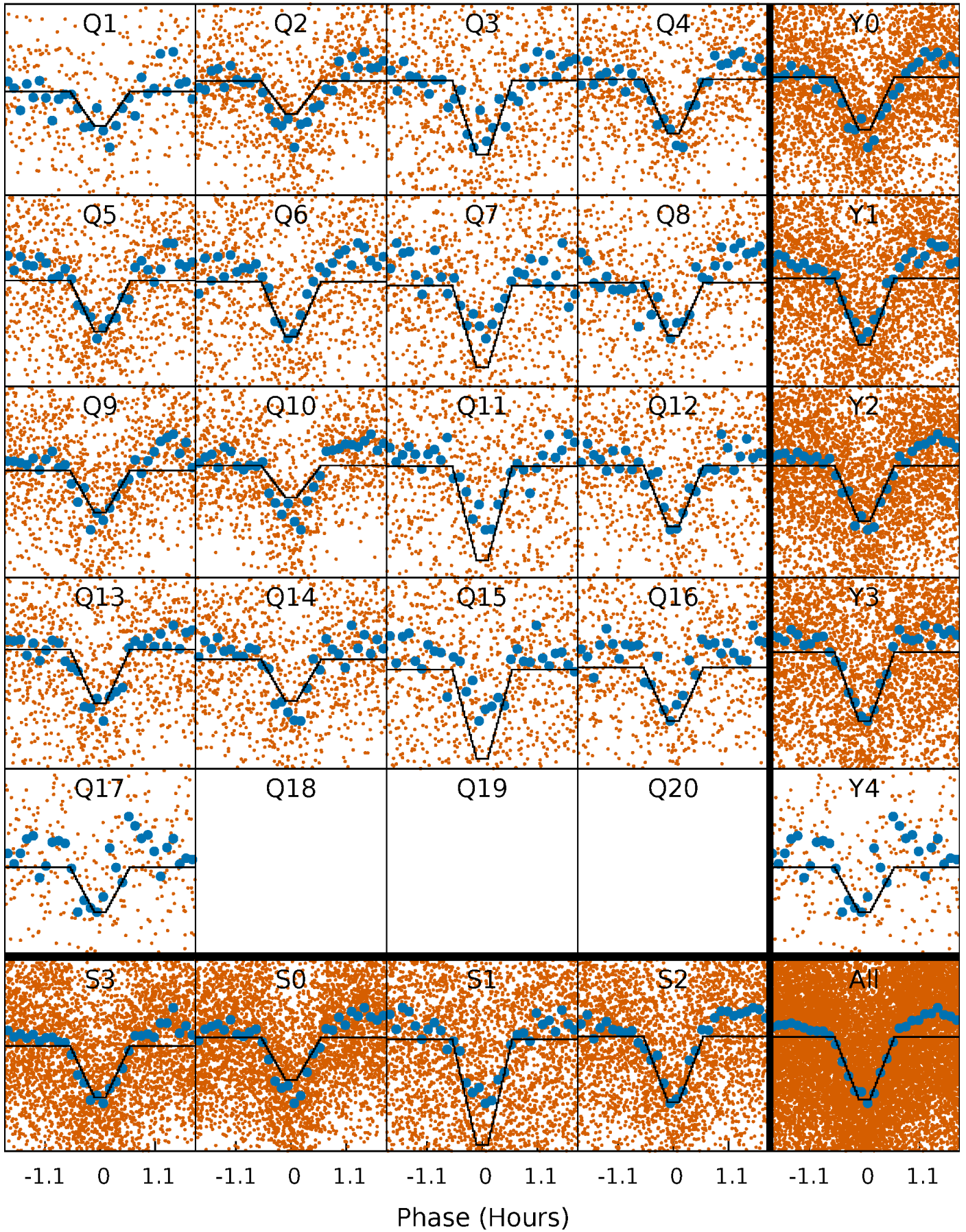
DV Quarter-Phased Transit Curves

TCE 007335972-03 P= 0.579766 Days $T_0=131.794286$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

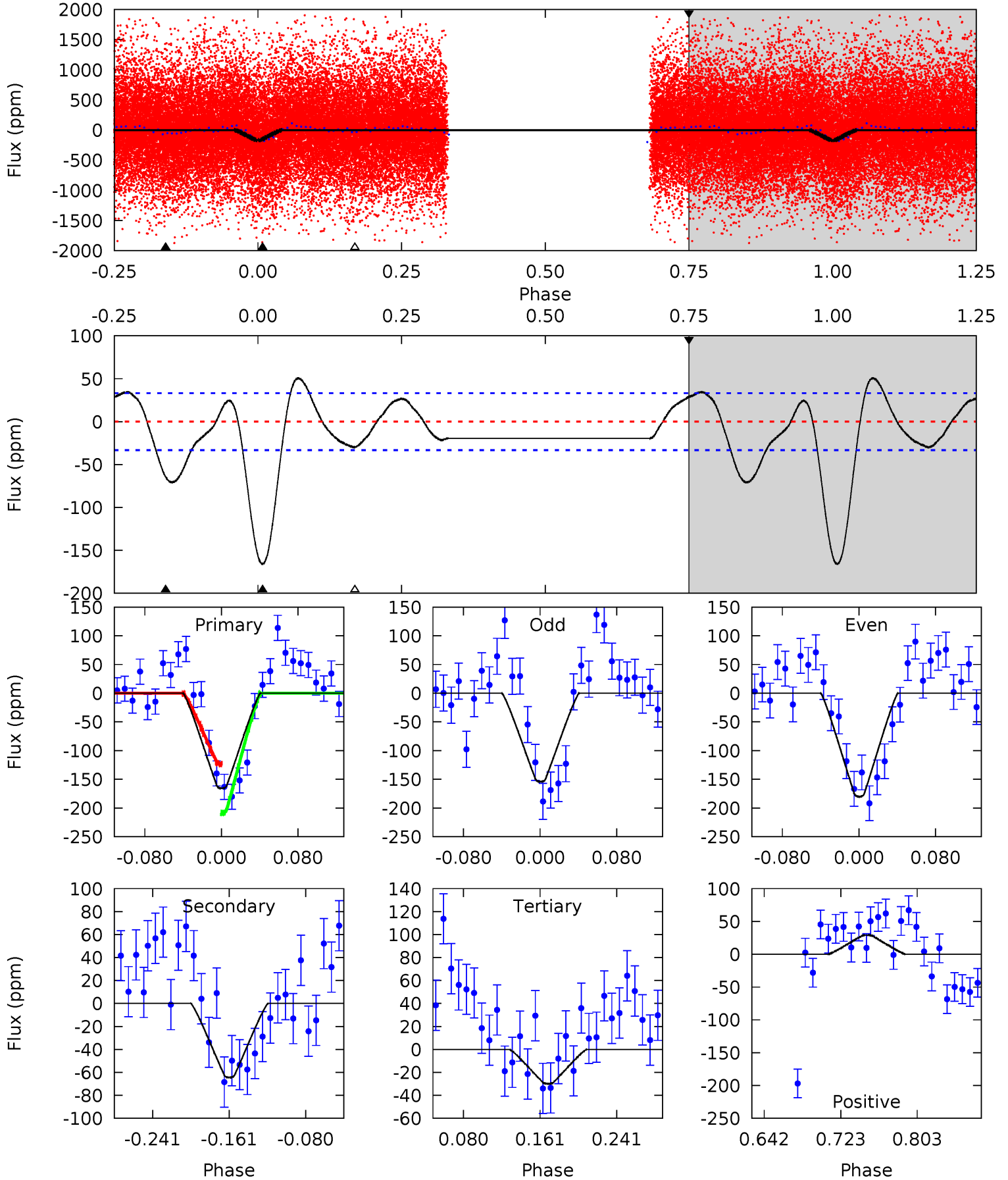
TCE 007335972-03 P= 0.579772 Days $T_0=131.790114$ (BKJD)



DV Model-Shift Uniqueness Test

007335972-03, P = 0.579766 Days, E = 131.214520 Days

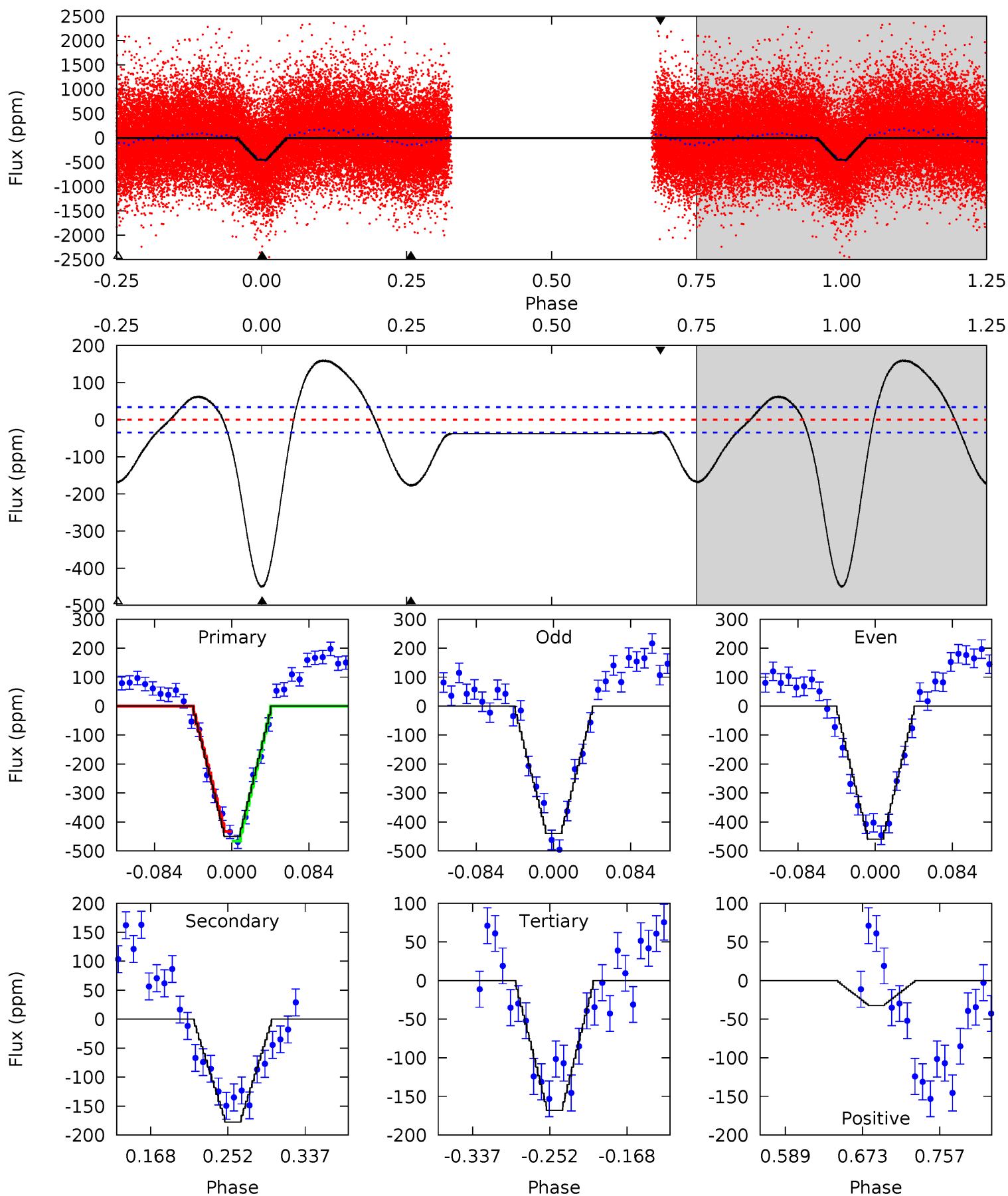
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.0	8.95	4.14	4.02	4.61	1.75	2.62	18.9	19.0	4.81	4.93	1.81	0.88	0.23	5.94



Alt Model-Shift Uniqueness Test

007335972-03, P = 0.579772 Days, E = 131.210342 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.6	23.9	22.7	-4.35	4.60	1.73	14.1	38.0	65.0	1.26	28.3	1.30	1.02	0.26	2.23



Stellar Parameters For KIC 007335972

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5561^{+150}_{-166}	$4.561^{+0.033}_{-0.187}$	$0.070^{+0.250}_{-0.300}$	$0.854^{+0.222}_{-0.074}$	$0.968^{+0.075}_{-0.113}$	$2.192^{+0.386}_{-1.093}$
	+3%/-3%	+1%/-4%	+357%/-429%	+26%/-9%	+8%/-12%	+18%/-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 007335972-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-65 ± 7	$1.49^{+0.55}_{-0.52}$	2787^{+178}_{-120}	4160^{+875}_{-488}	$2.766^{+4.023}_{-1.265}$
Alt.	-177 ± 7	$2.04^{+0.58}_{-0.50}$	2794^{+163}_{-120}	4507^{+613}_{-395}	$4.087^{+3.245}_{-1.564}$

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

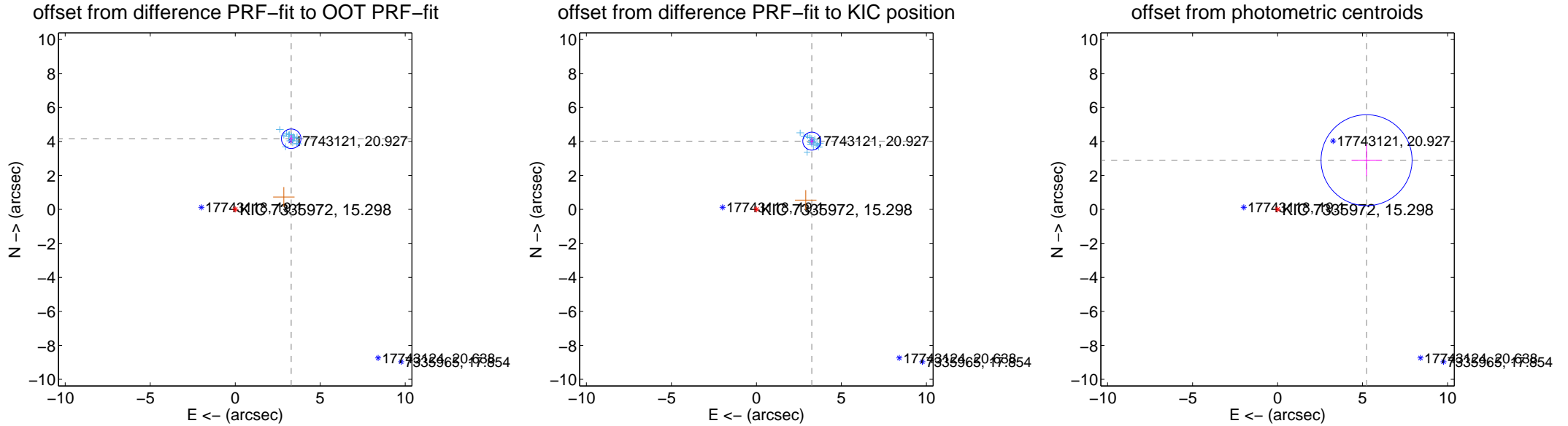
DV Centroid Data

Supplemental centroid analysis for 007335972-03. Kepler magnitude: 15.30. Transit SNR 15.59

There are 16 quarters with good PRF difference image offsets

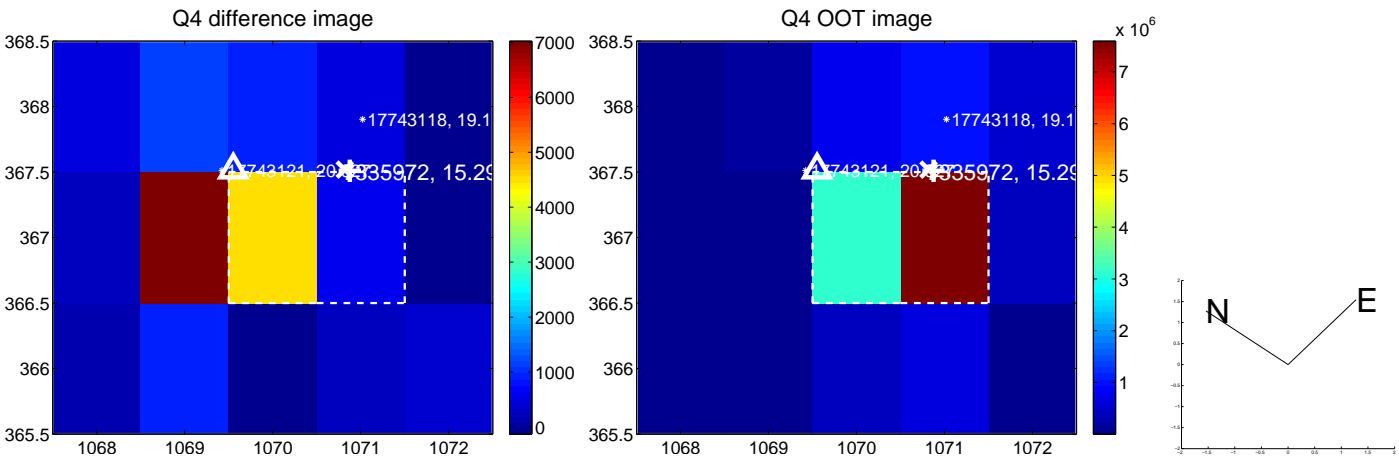
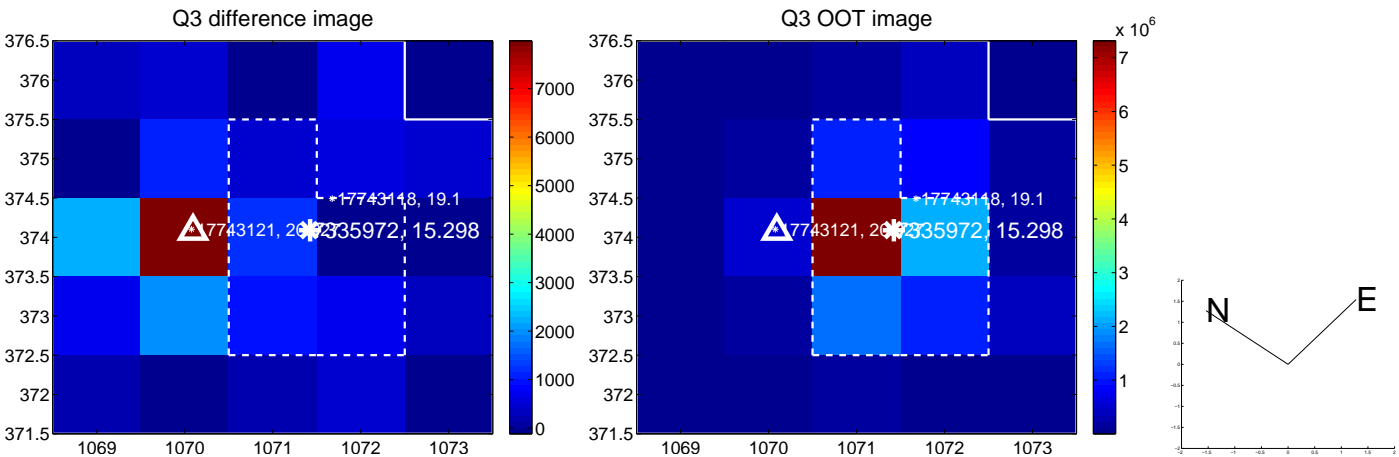
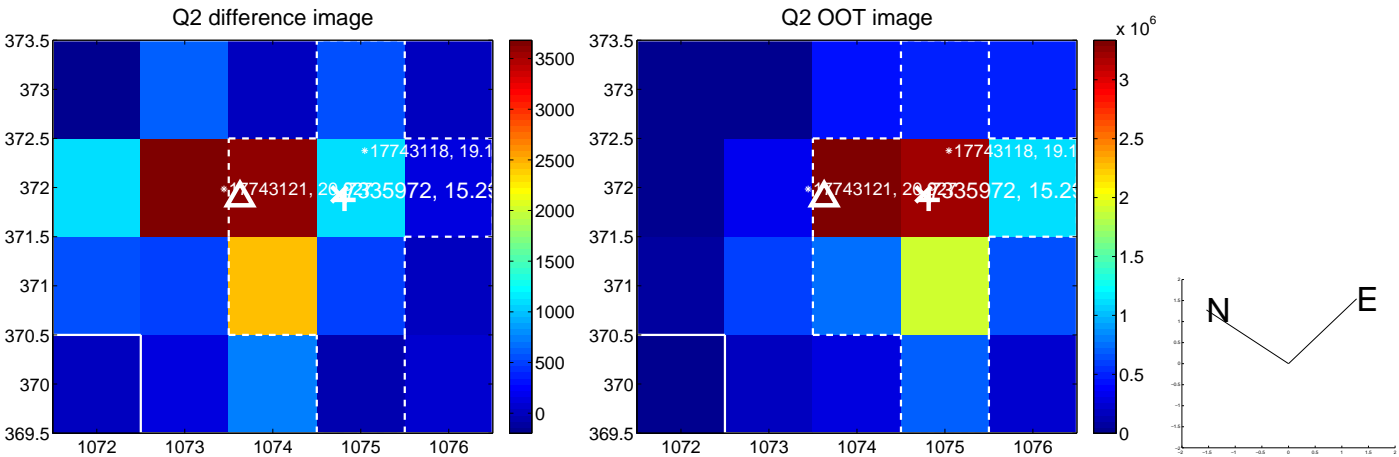
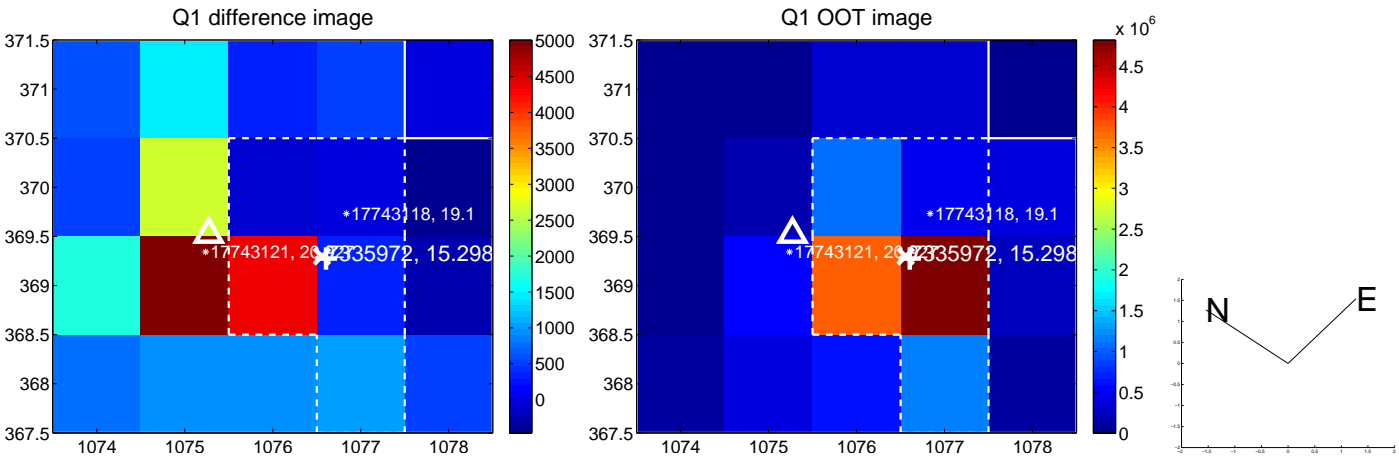
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.305 ± 0.192	27.68	-3.293 ± 0.104	4.160 ± 0.222
PRF-fit source offset from KIC position	5.174 ± 0.177	29.27	-3.258 ± 0.101	4.020 ± 0.211
photometric centroid source offset	5.98 ± 0.89	6.70	-5.23 ± 0.88	2.90 ± 0.93

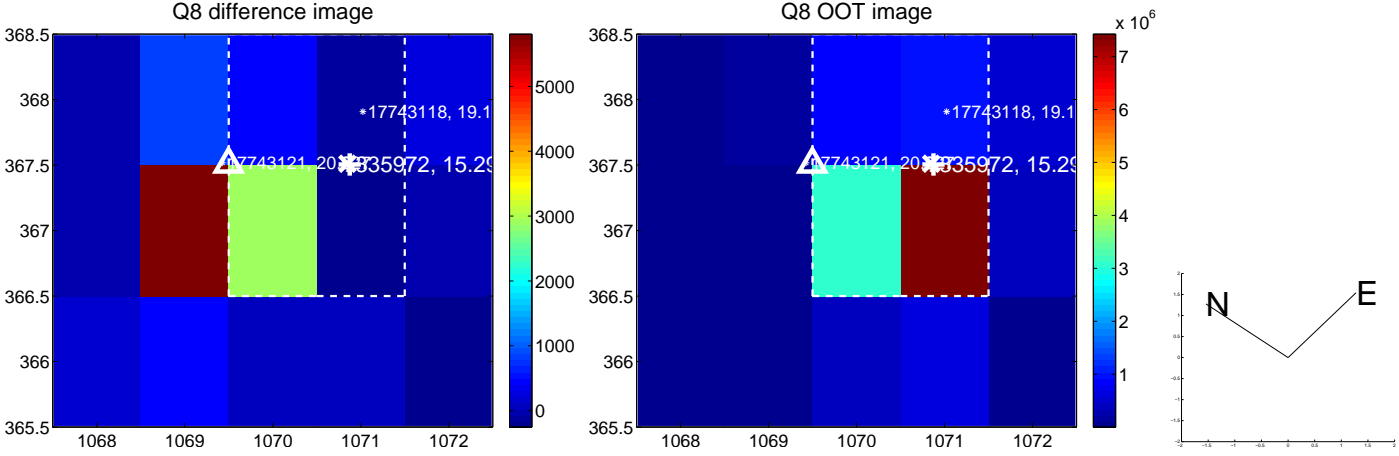
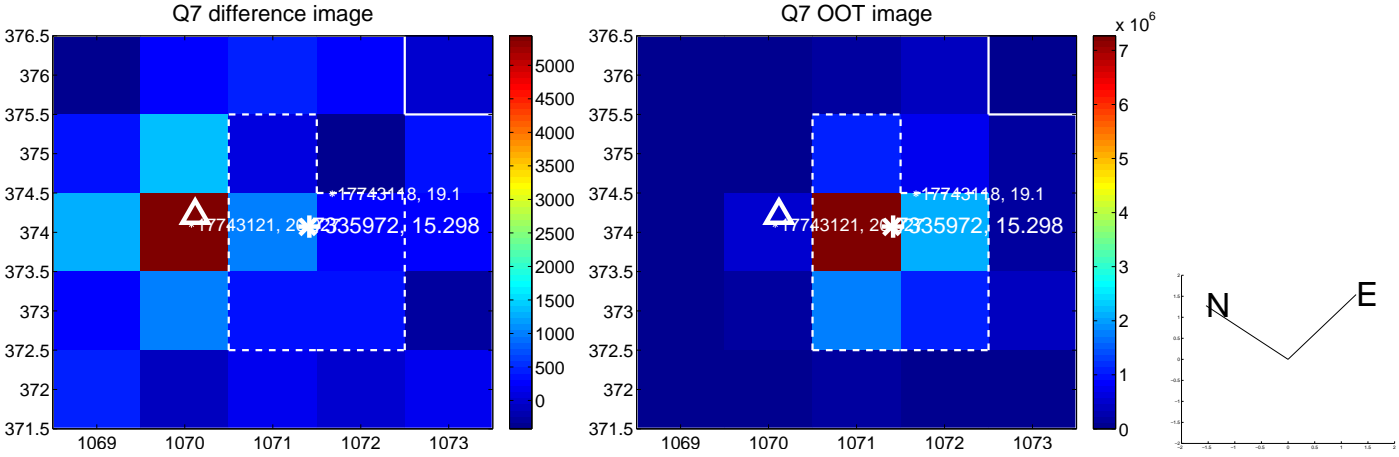
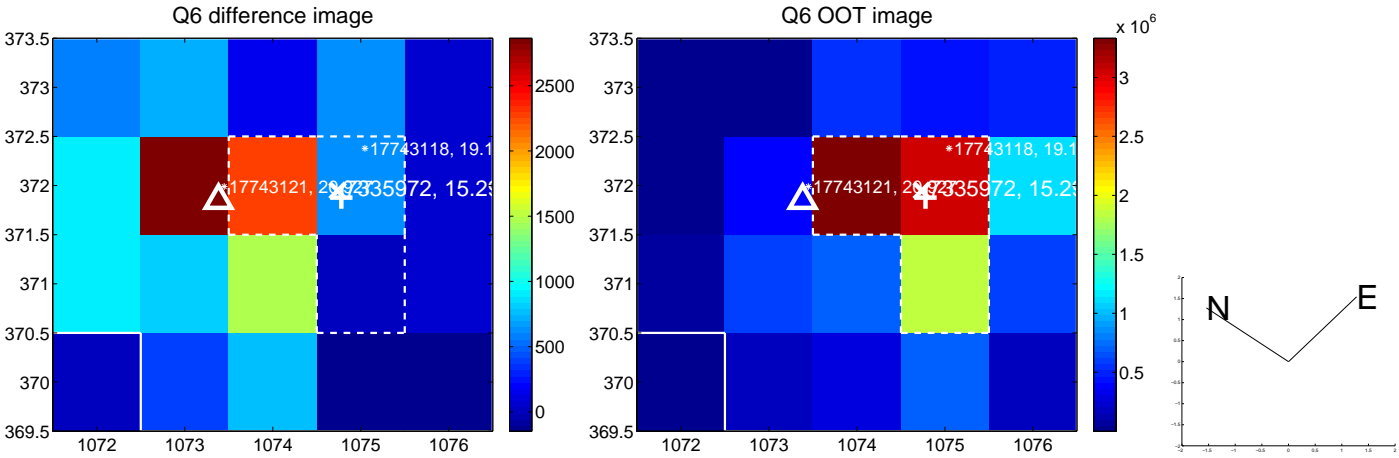
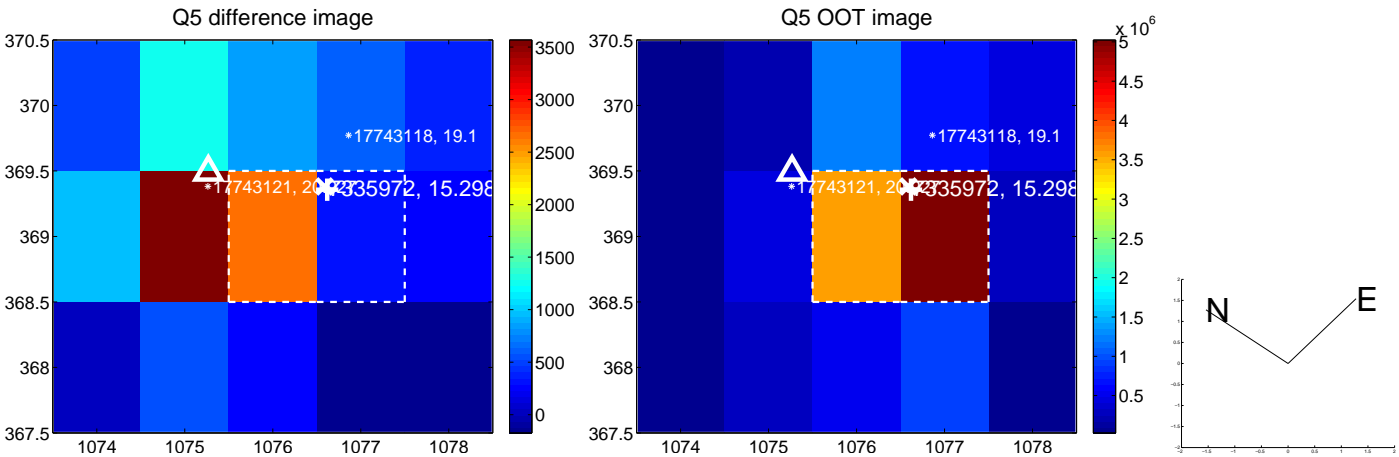


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

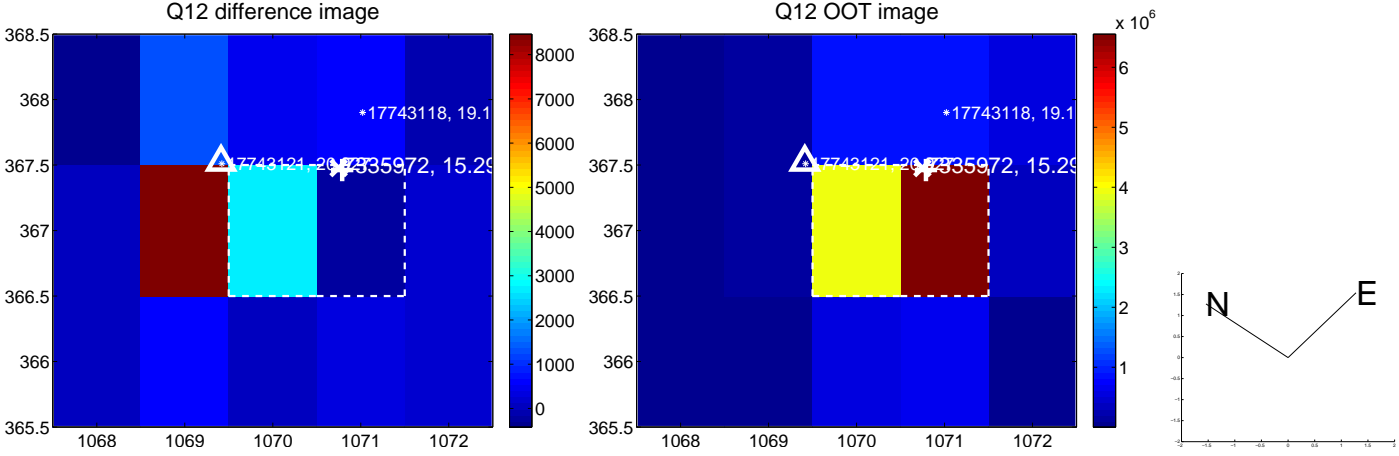
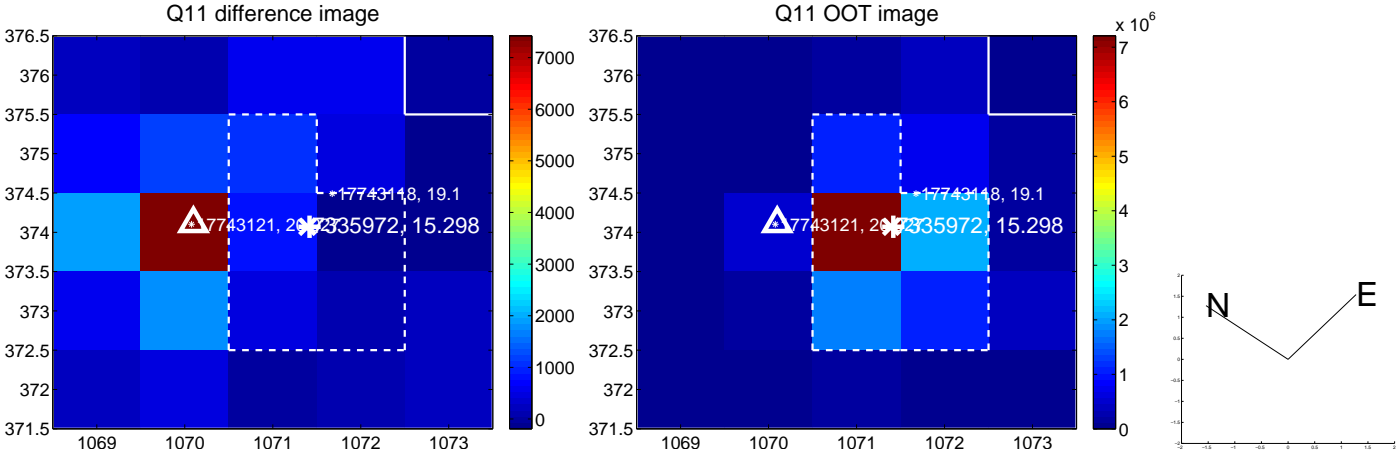
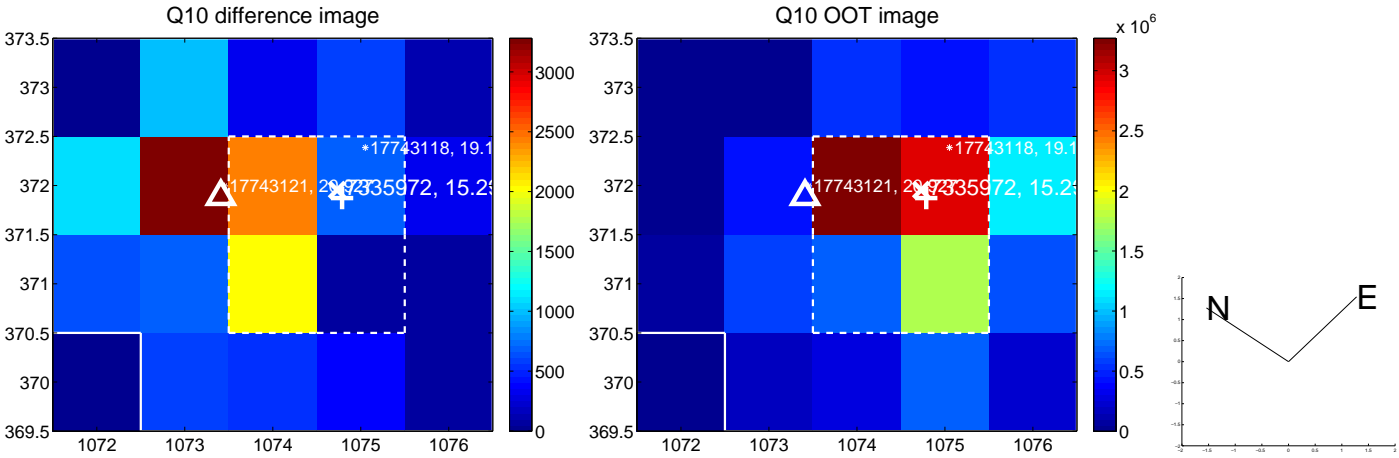
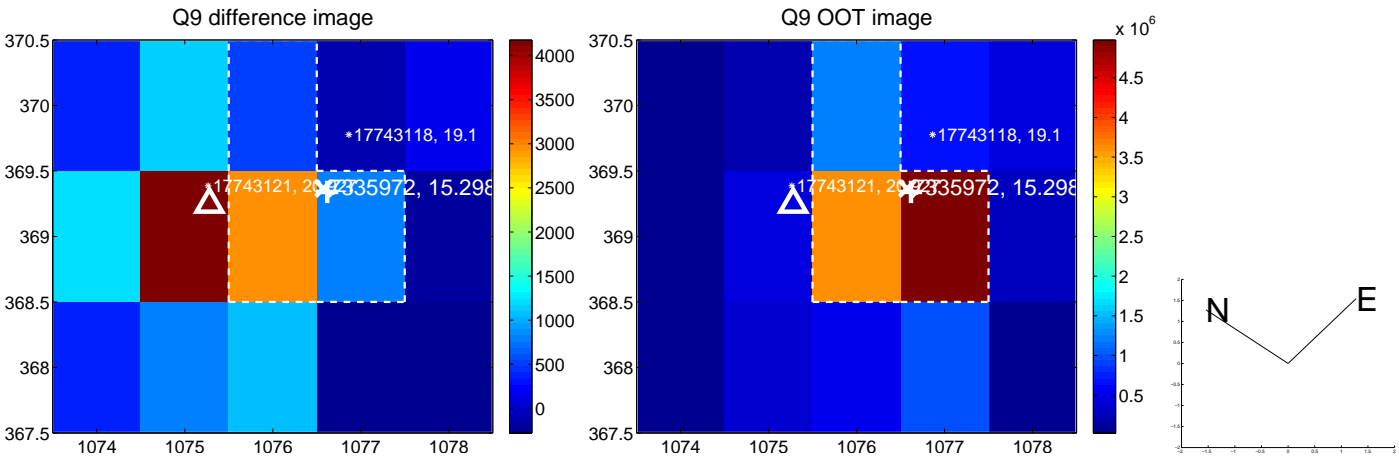
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



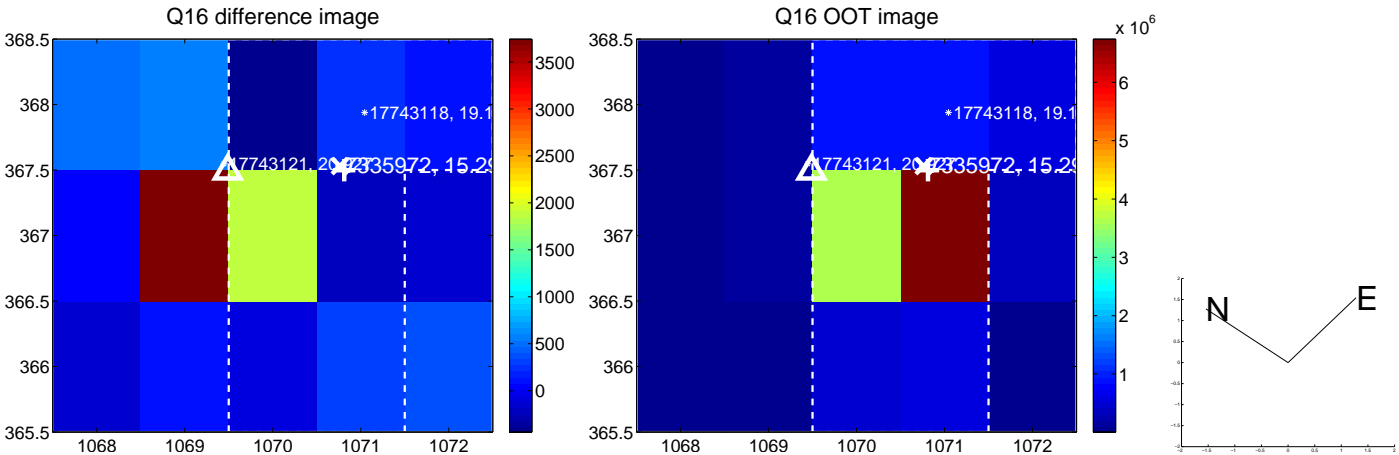
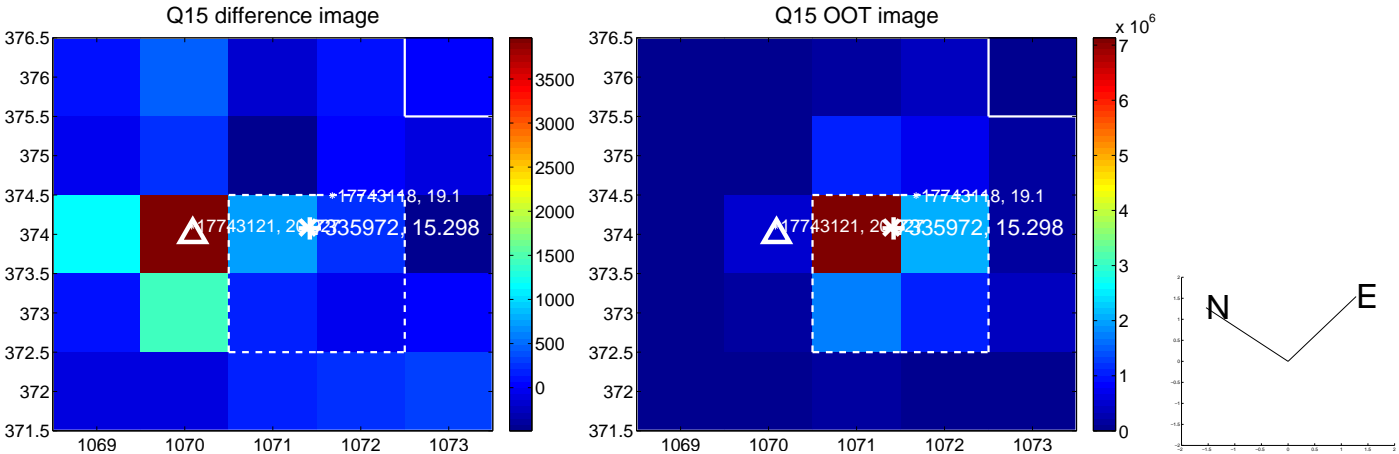
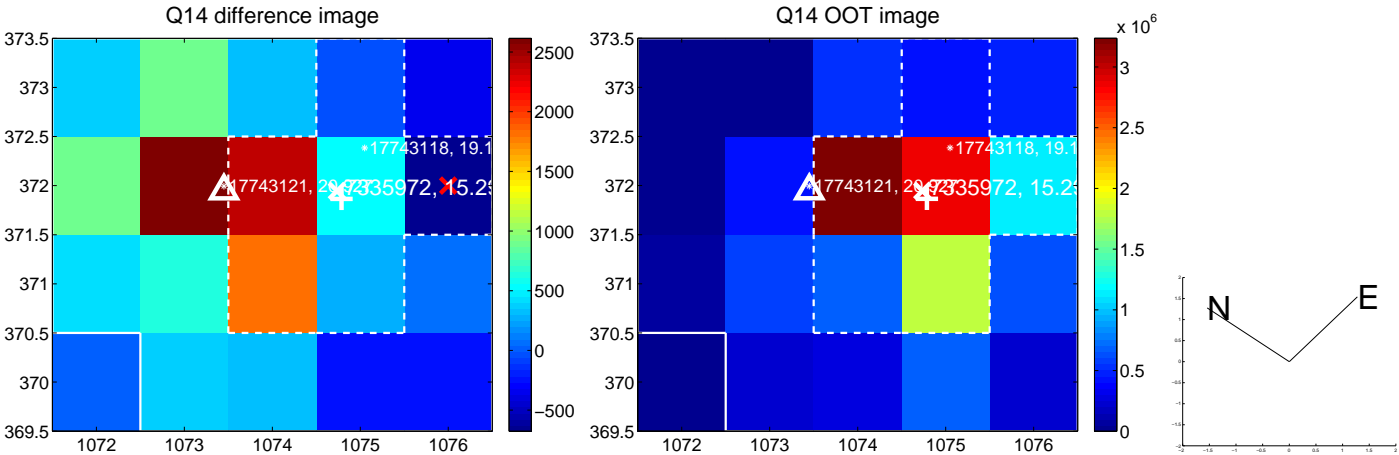
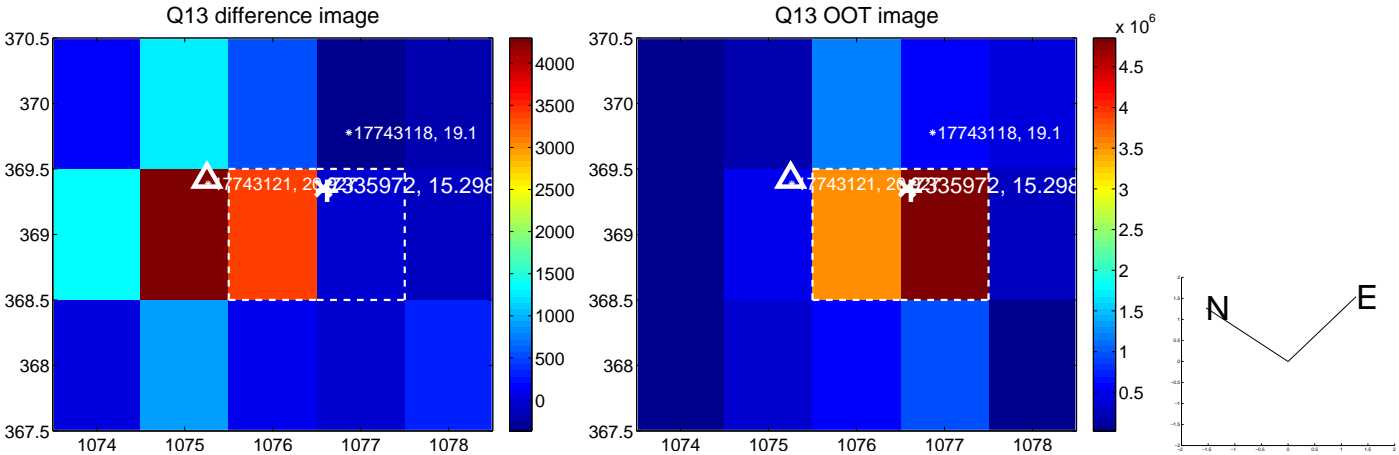
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



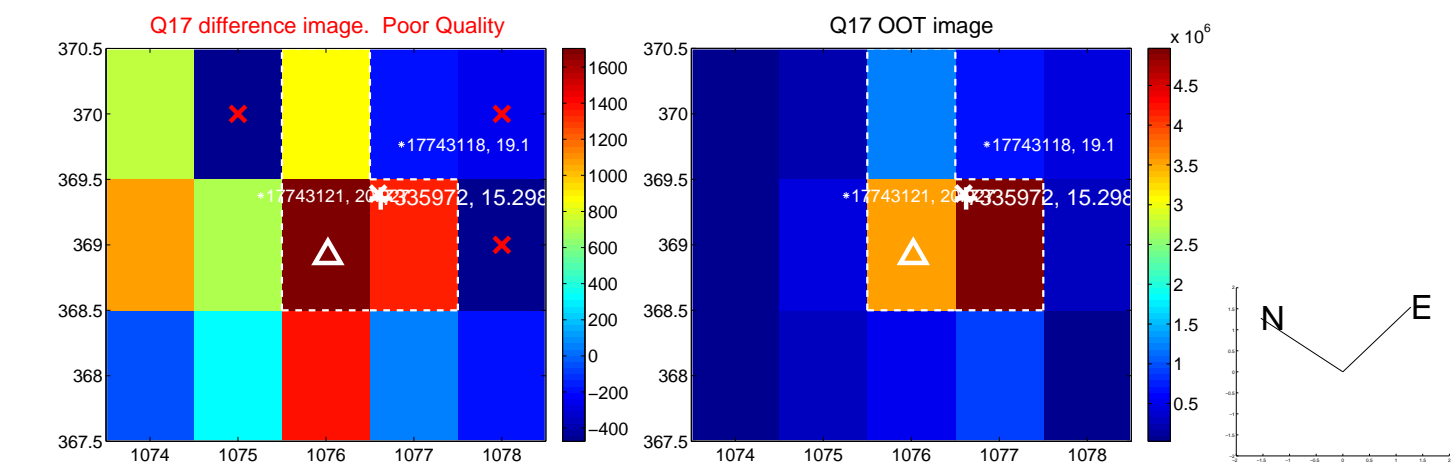
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



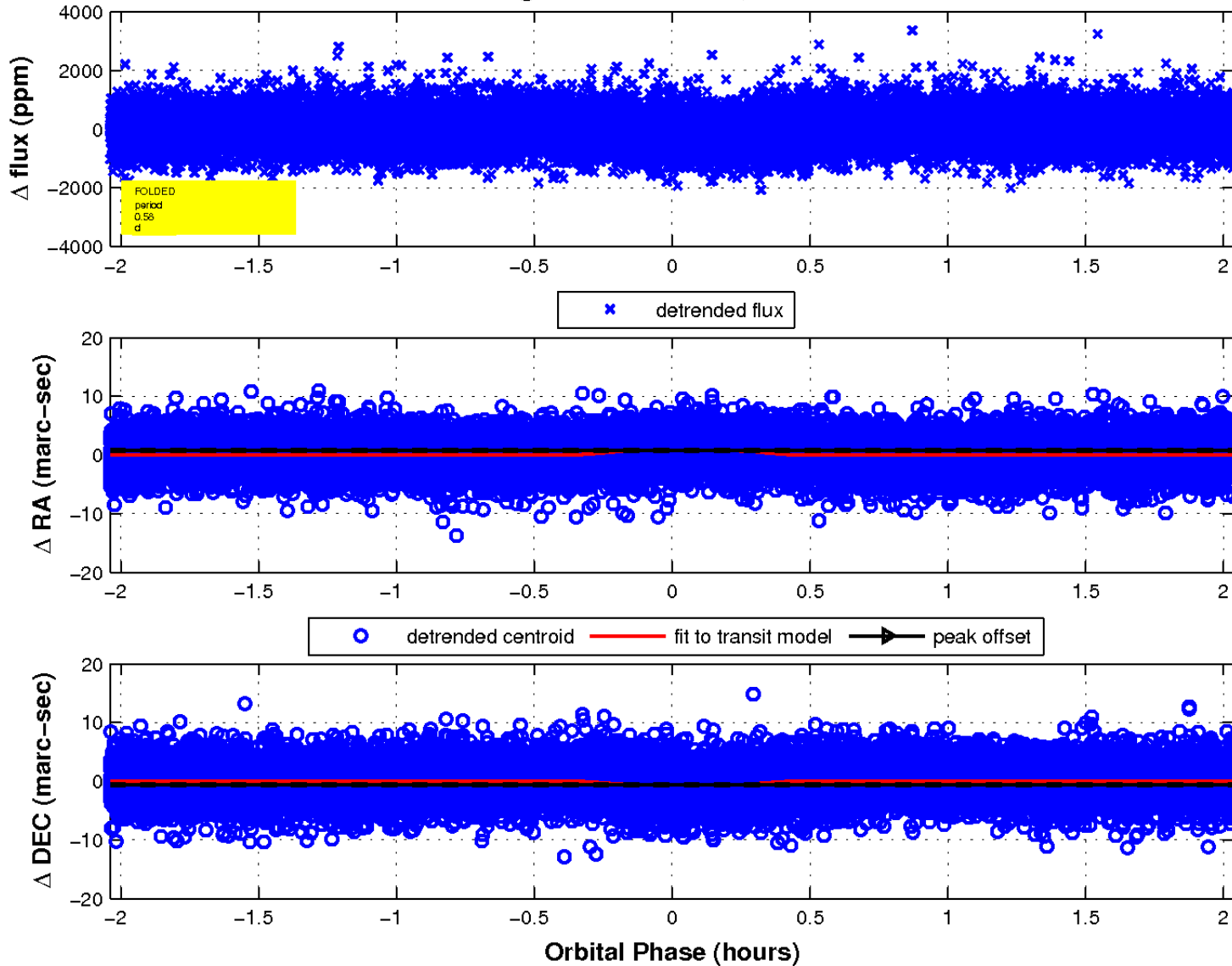
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

