

KIC 003326428

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})
003326428-01	OBS	No	7.700480	138.611973	285.3	6.197	26.3	29.4	2.48	8590	7.92	3091.20
003326428-02	OBS	No	3.850230	132.574455	165.2	6.456	22.8	25.4	2.48	8590	6.11	7789.37
003326428-03	OBS	No	7.700493	135.082829	155.9	6.170	16.5	18.2	2.48	8590	5.70	3091.19
003326428-04	OBS	No	7.699694	135.279911	0.0	24.717	11.1	0.0	2.48	8590	0.06	3091.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003326428-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
003326428-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
003326428-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003326428-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

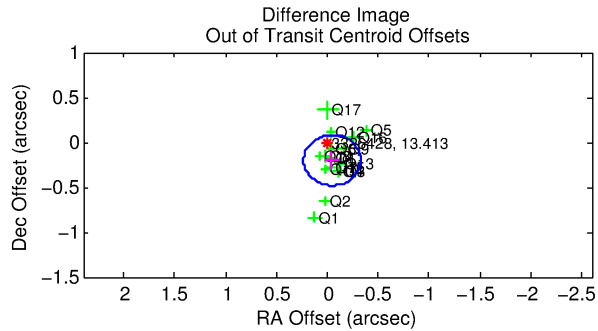
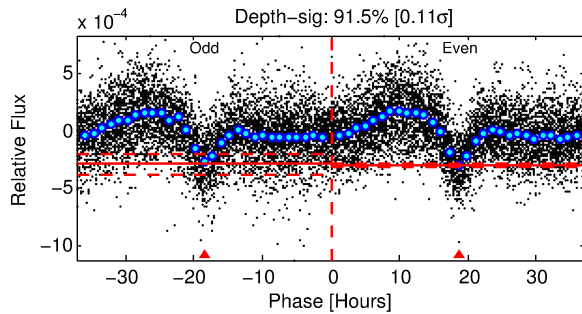
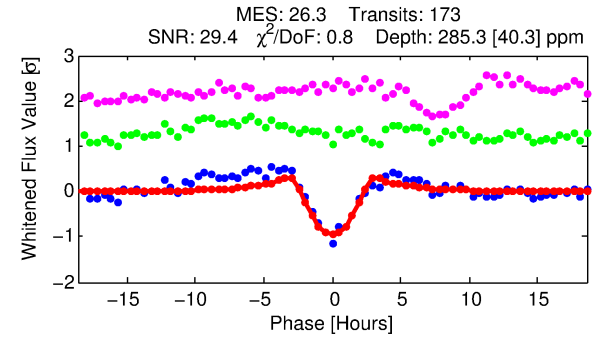
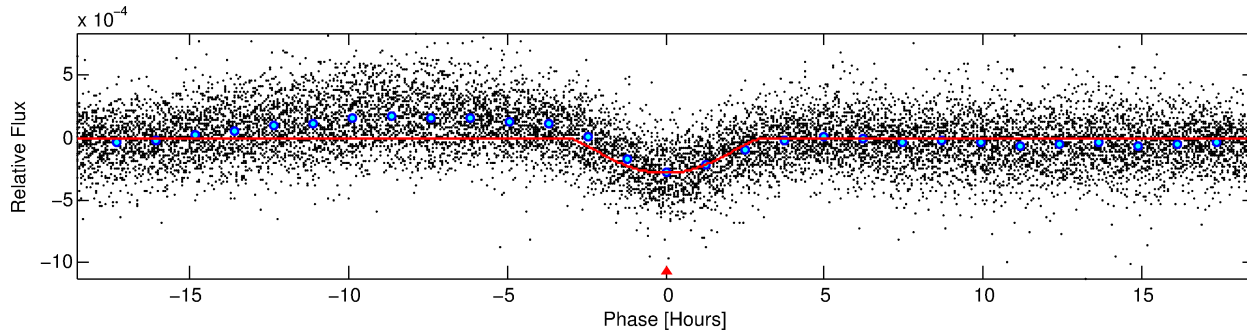
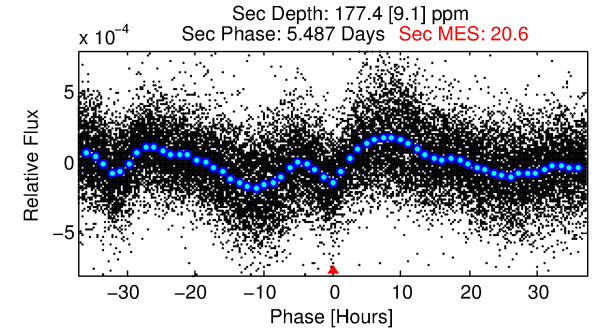
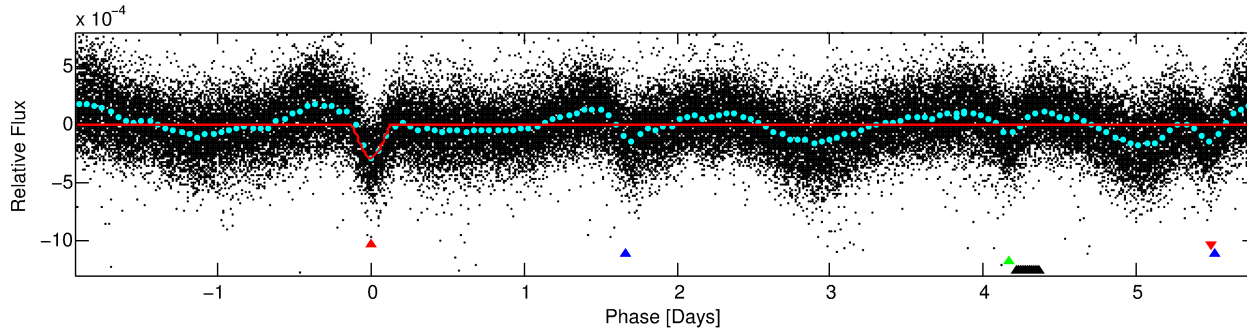
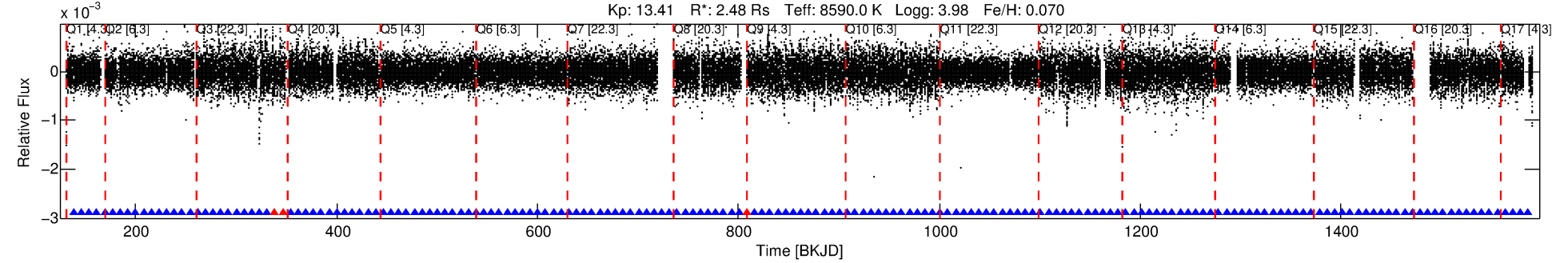
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003326428-01

No Significant Match Found

DV One-Page Summary

KIC: 3326428 Candidate: 1 of 4 Period: 7.700 d



DV Fit Results:

Period = 7.70048 [0.00003] d
Epoch = 138.6120 [0.0037] BKJD
Rp/R* = 0.0293 [0.0206]
a/R* = 2.53 [0.40]
b = 1.00 [0.03]
Seff = 3091.20 [1350.96]
Teq = 1901 [208] K
Rp = 7.92 [6.13] Re
a = 0.0984 [0.0266] AU
Ag = 15.07 [22.07] [0.64σ]
Teffp = 5792 [2060] K [1.88σ]

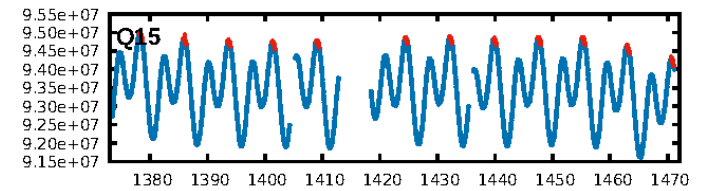
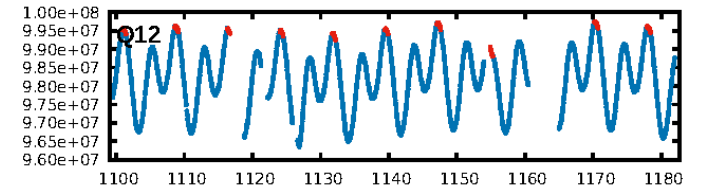
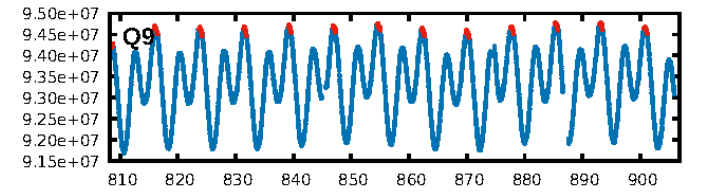
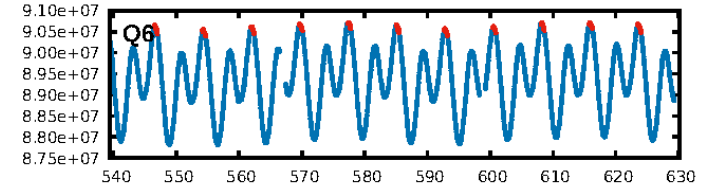
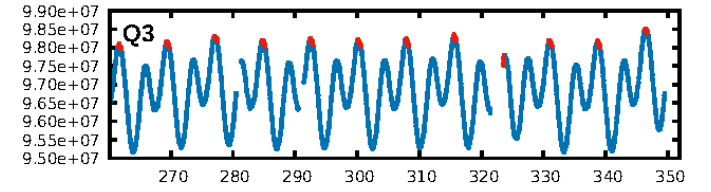
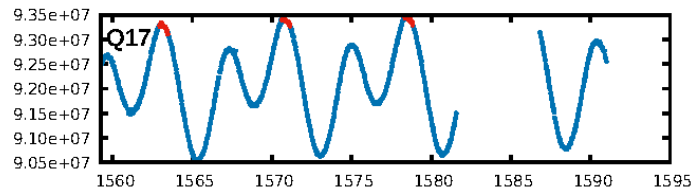
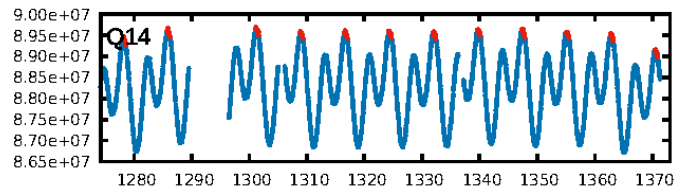
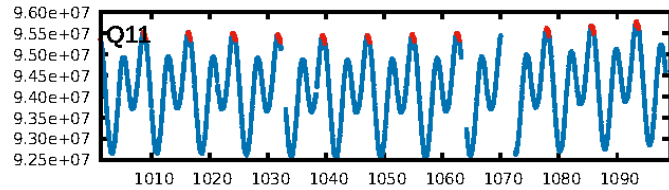
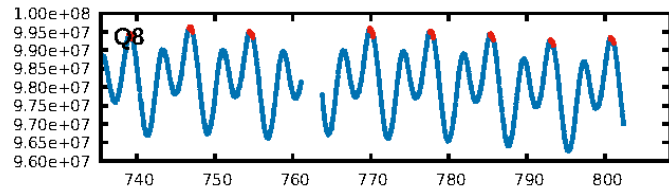
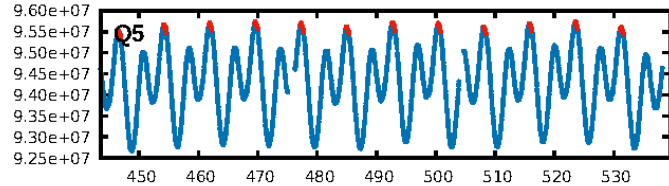
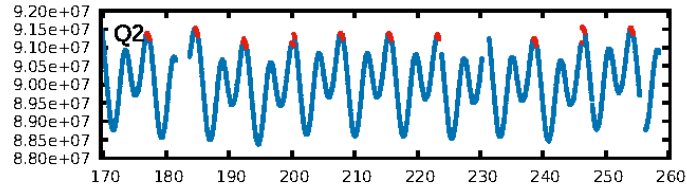
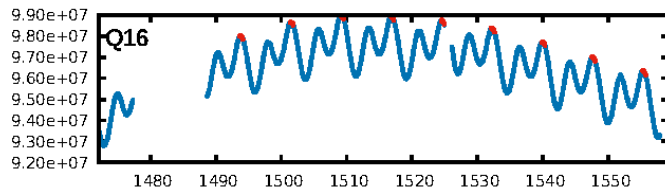
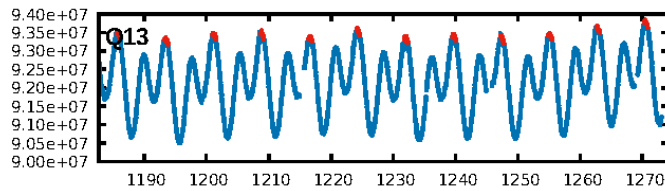
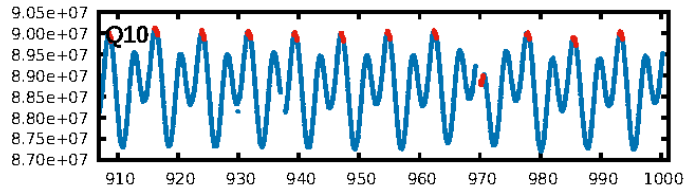
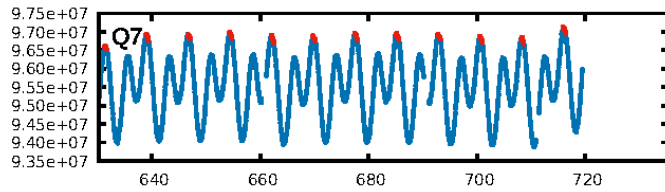
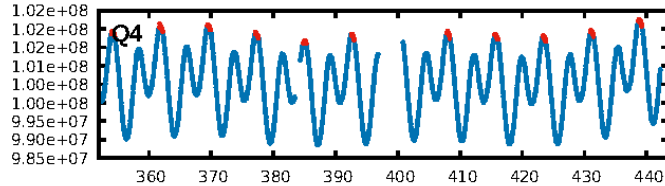
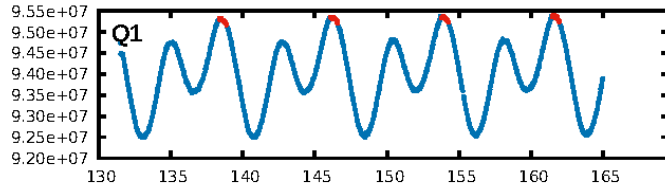
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.51e-131
RollingBand-fgt: 0.98 [163/166]
GhostDiagnostic-chr: 1.337
Centroid-sig: 0.0%
Centroid-so: 0.571 arcsec [2.06σ]
OotOffset-rm: 0.206 arcsec [2.21σ]
KicOffset-rm: 0.250 arcsec [2.69σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

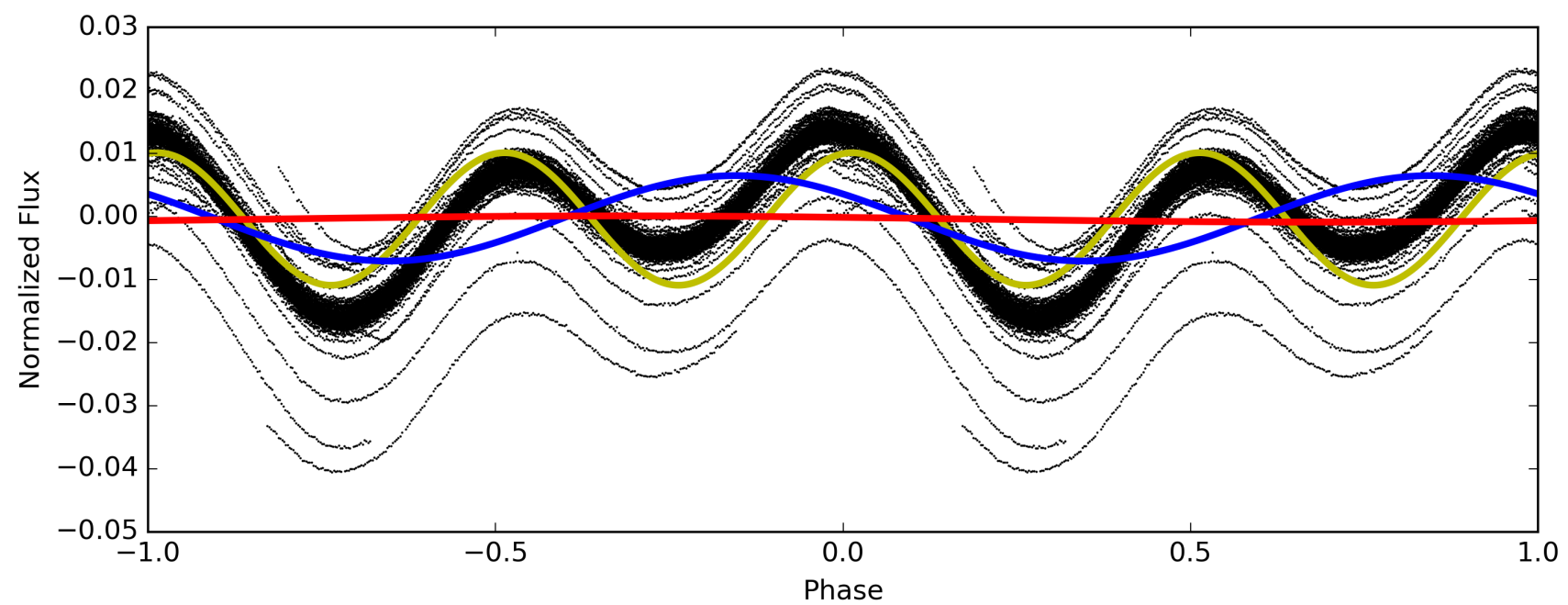
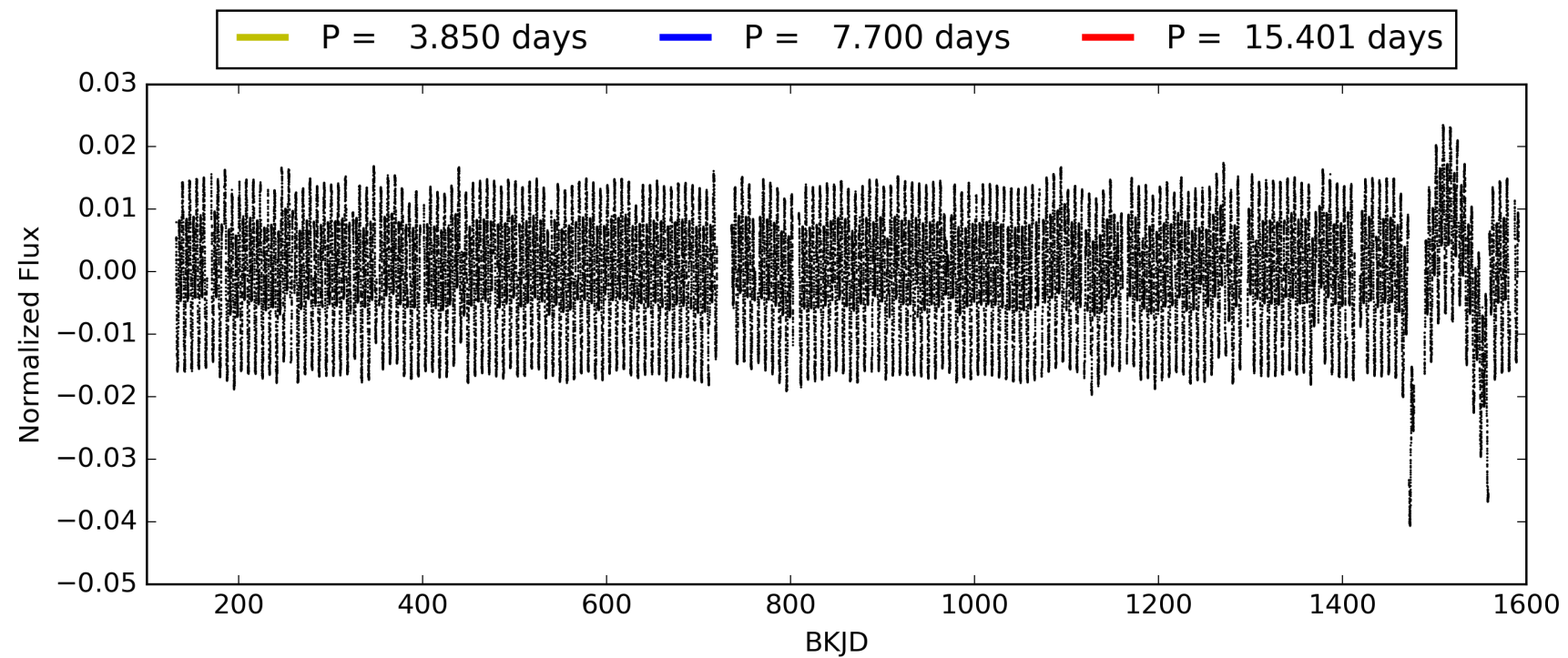
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003326428-01, PDC Light Curves

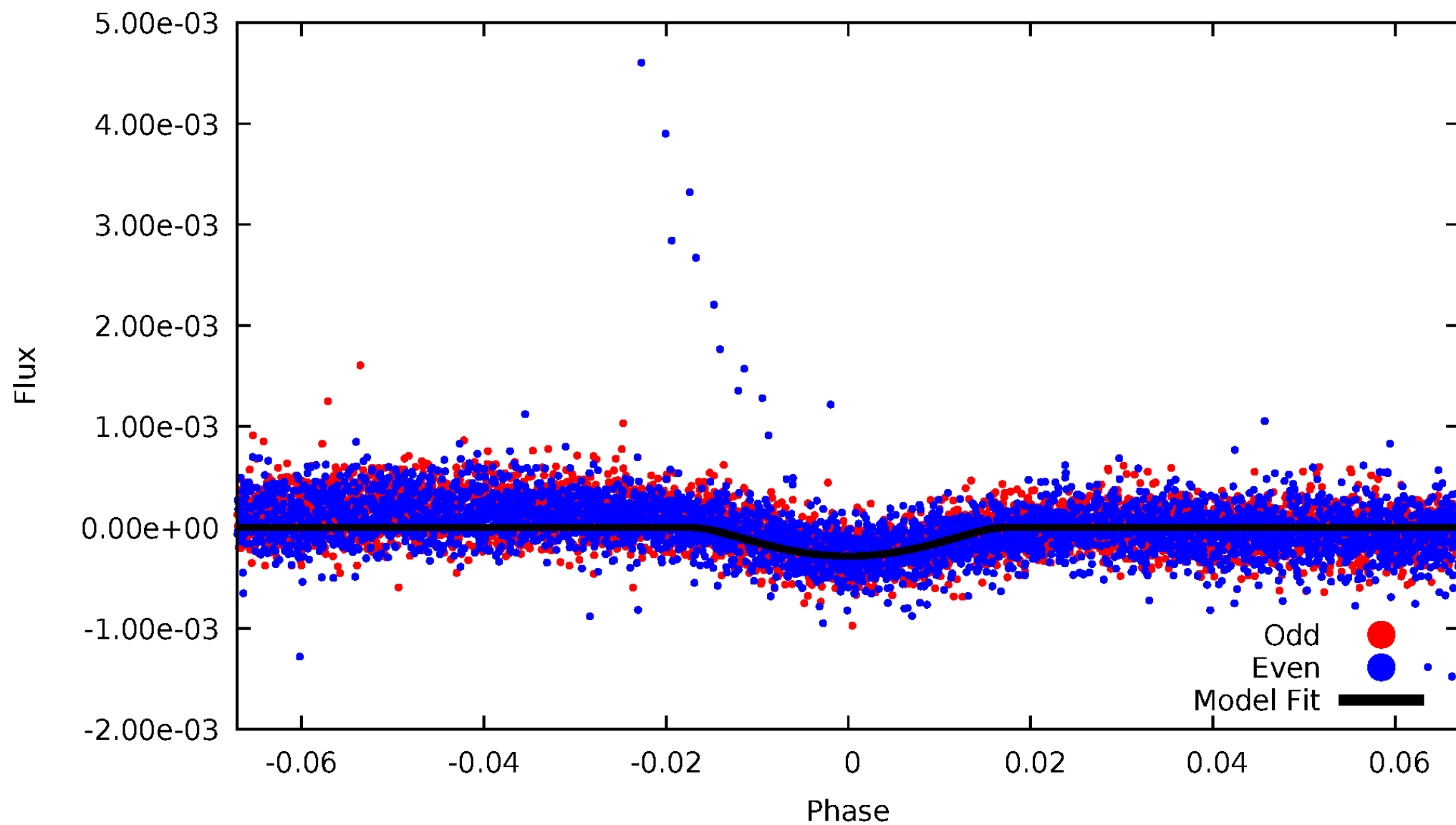


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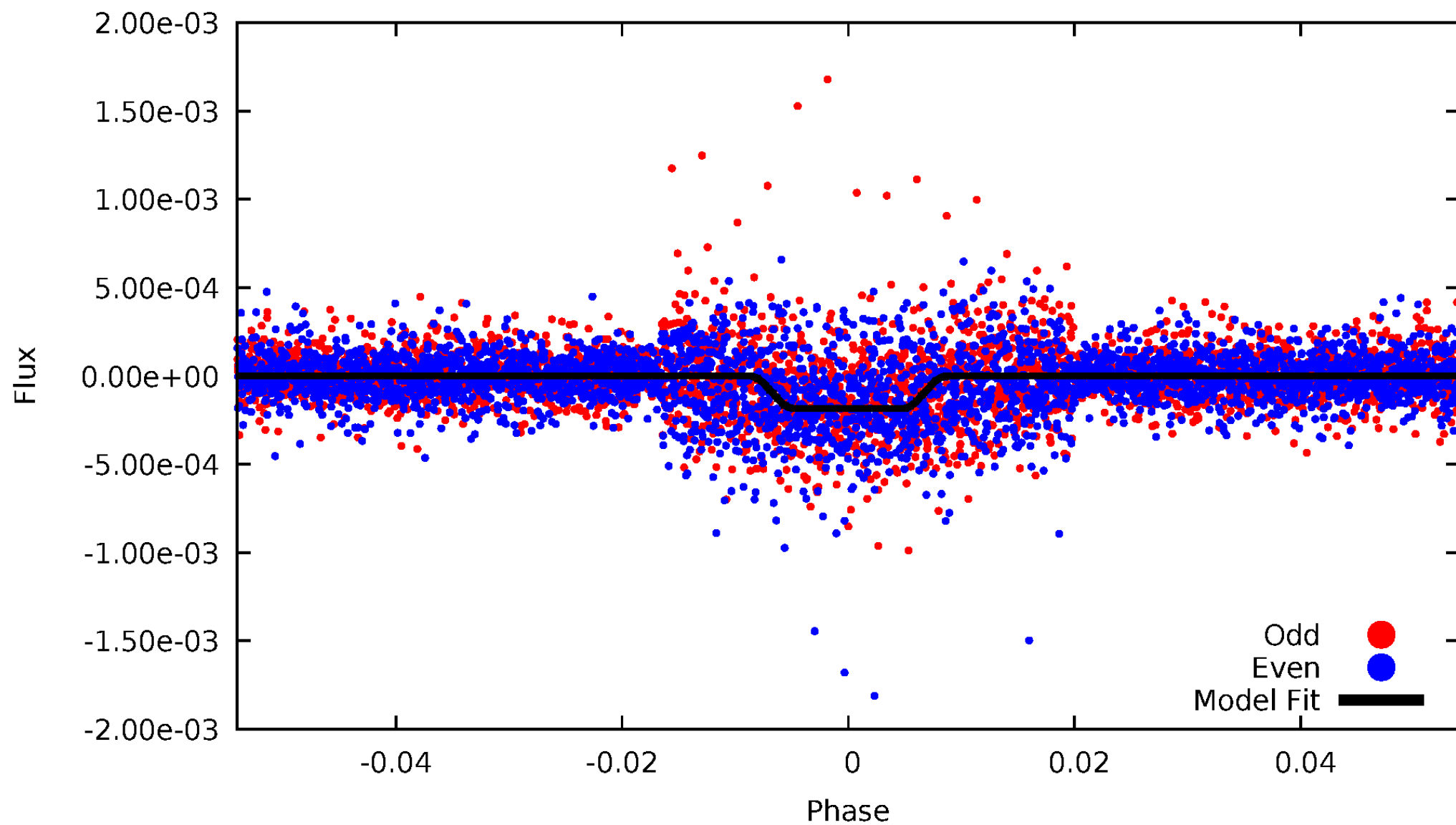
DV Odd/Even

TCE 003326428-01

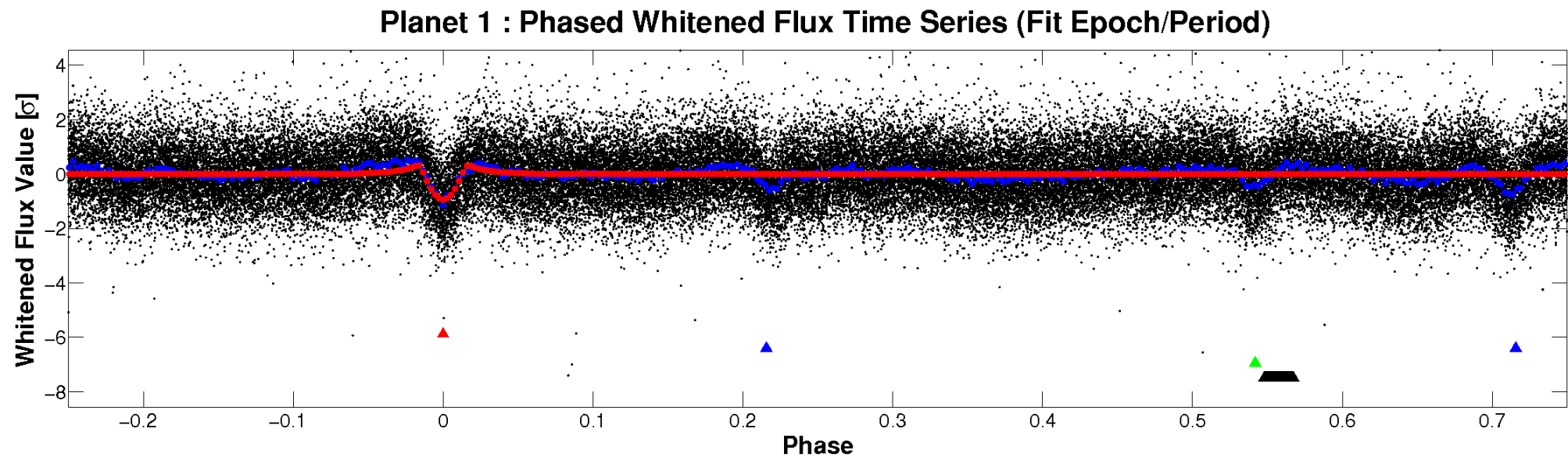
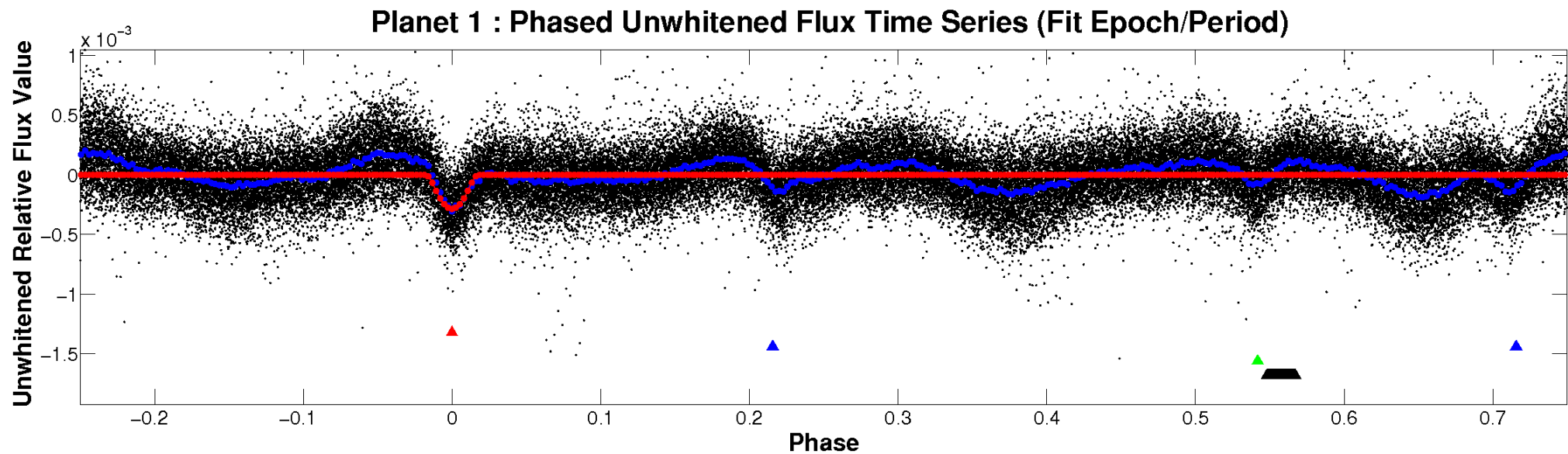


ALT Odd/Even

TCE 003326428-01

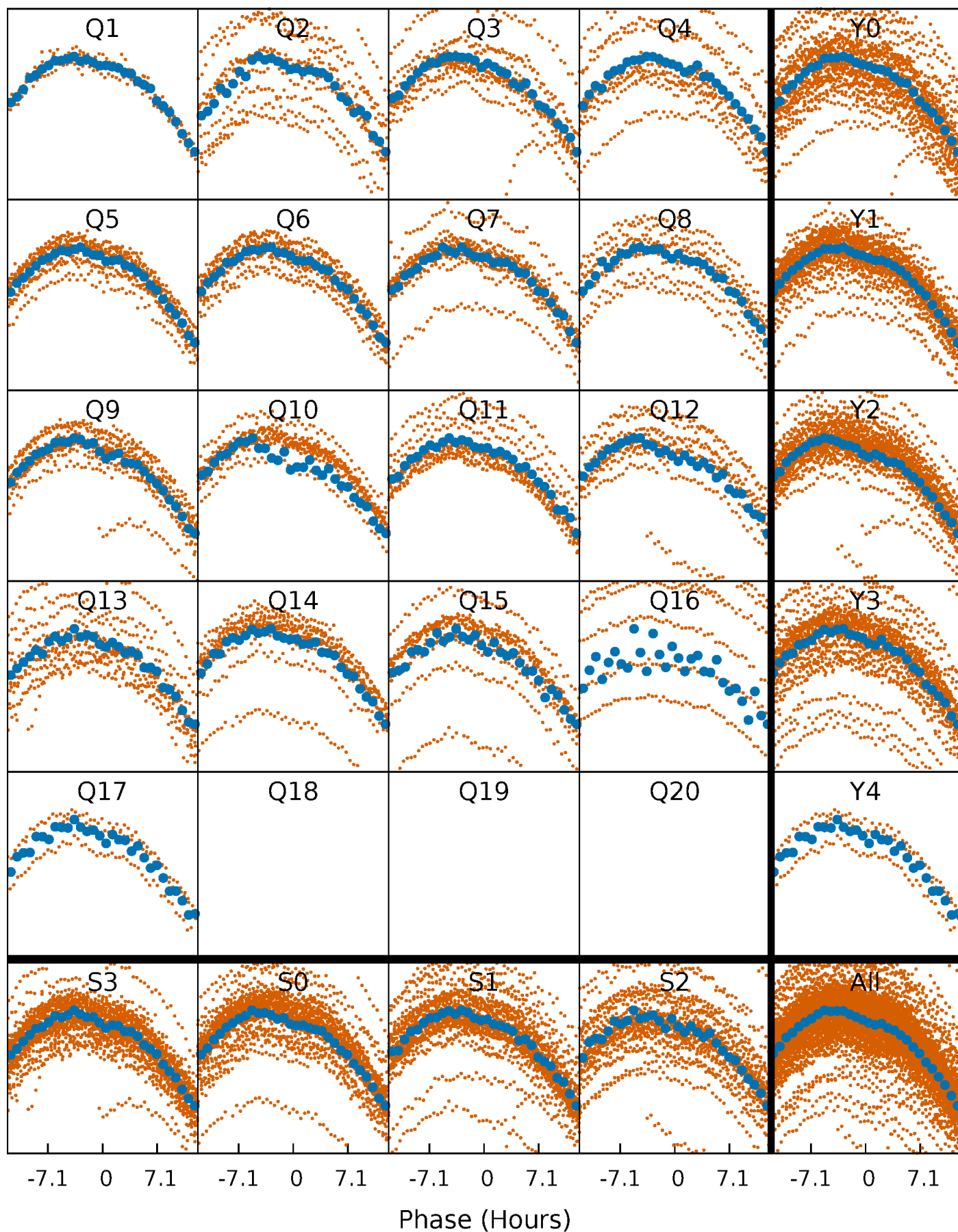


Non-Whitened Vs. Whitened Light Curve



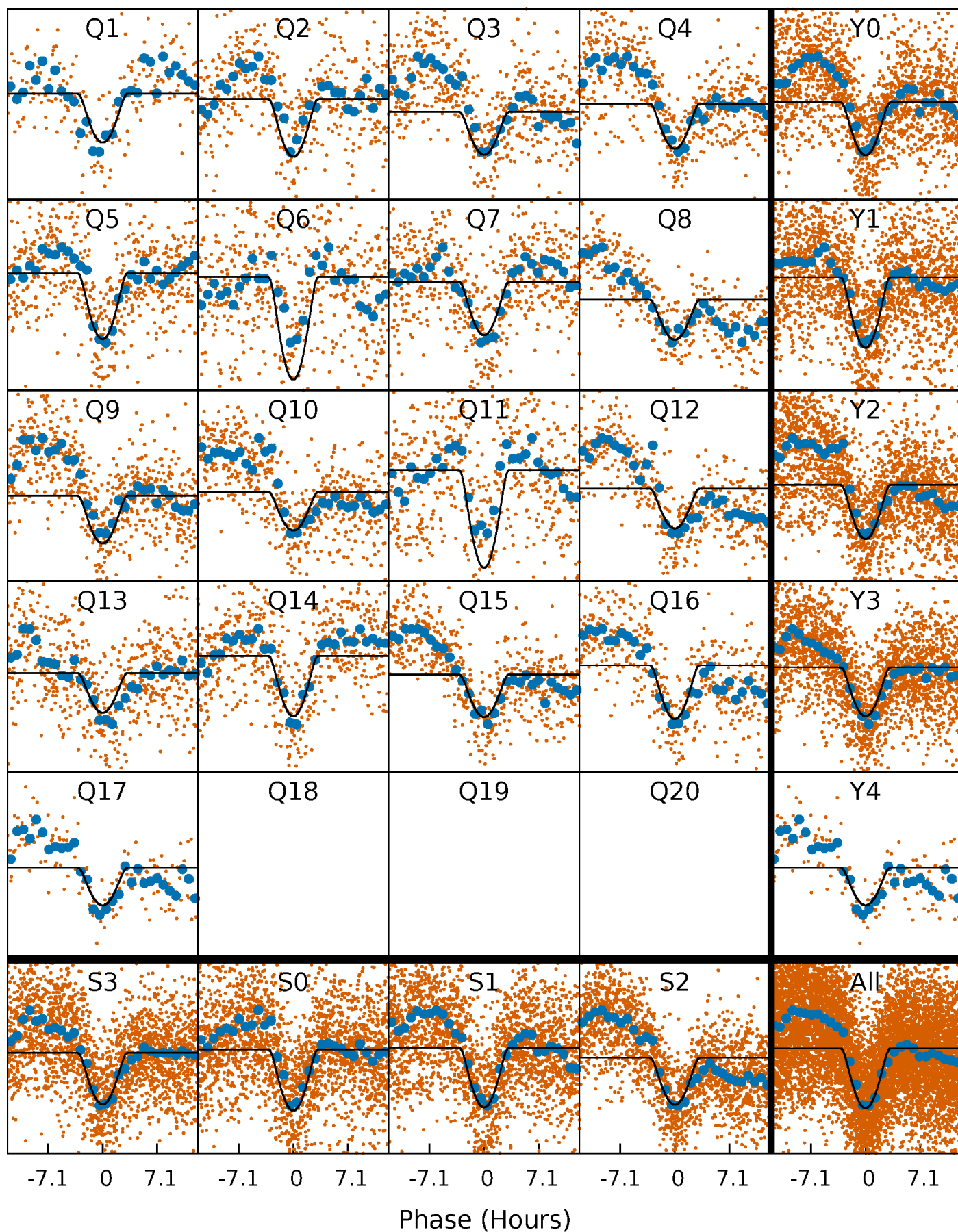
PDC Quarter-Phased Transit Curves

TCE 003326428-01 P= 7.700480 Days $T_0=138.611973$ (BKJD)



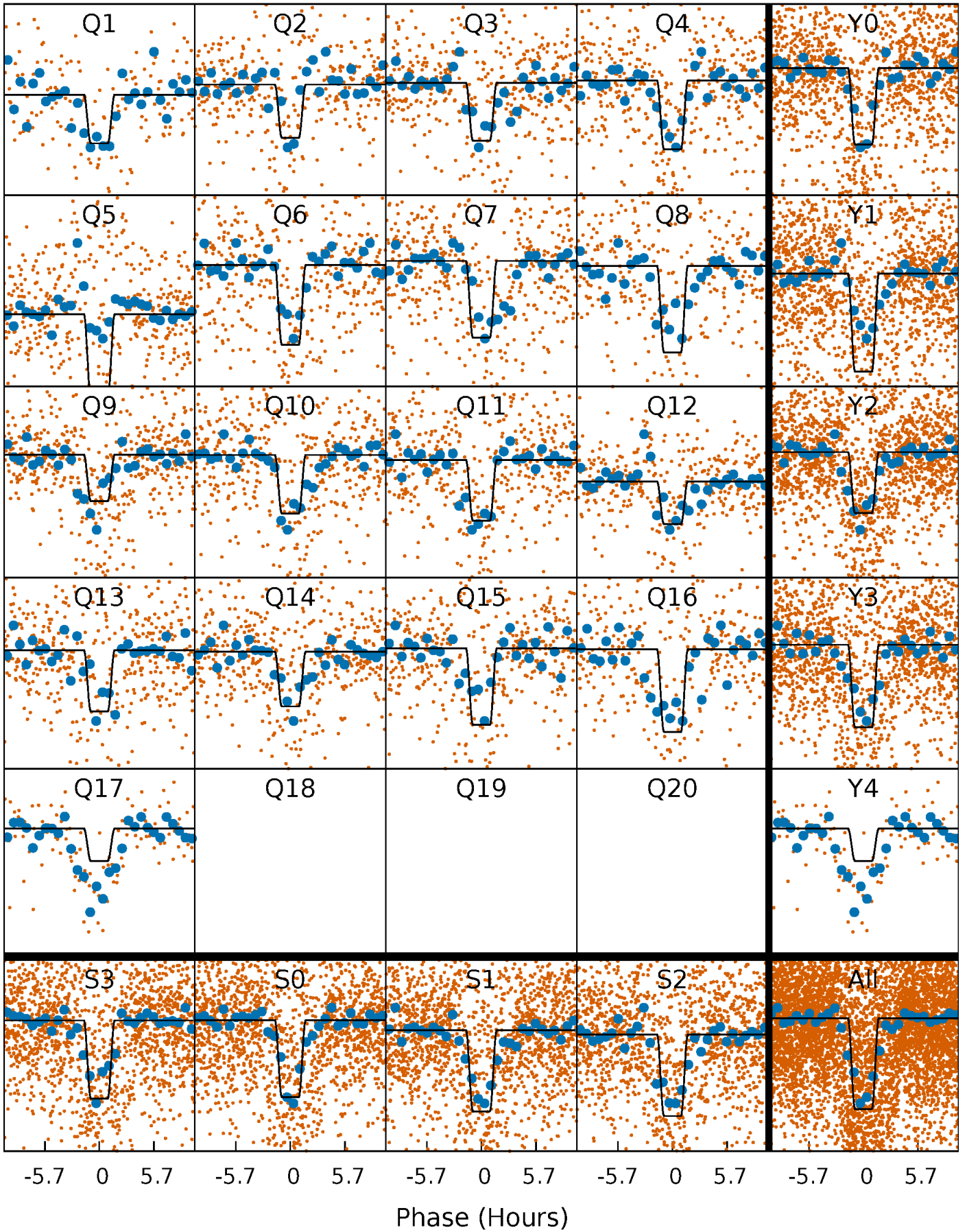
DV Quarter-Phased Transit Curves

TCE 003326428-01 P= 7.700480 Days $T_0=138.611973$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

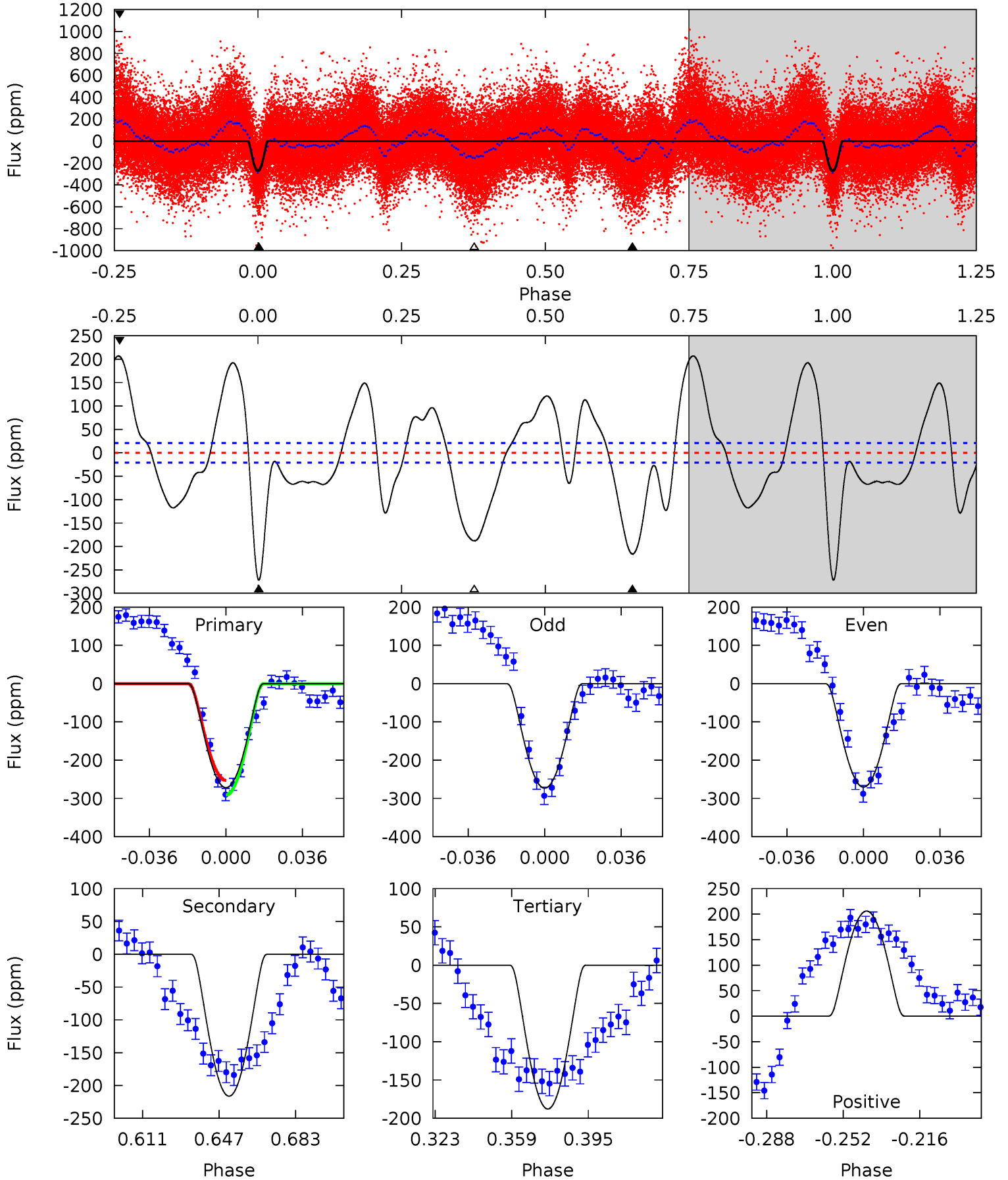
TCE 003326428-01 P= 7.700457 Days $T_0=138.611338$ (BKJD)



DV Model-Shift Uniqueness Test

003326428-01, P = 7.700480 Days, E = 130.911493 Days

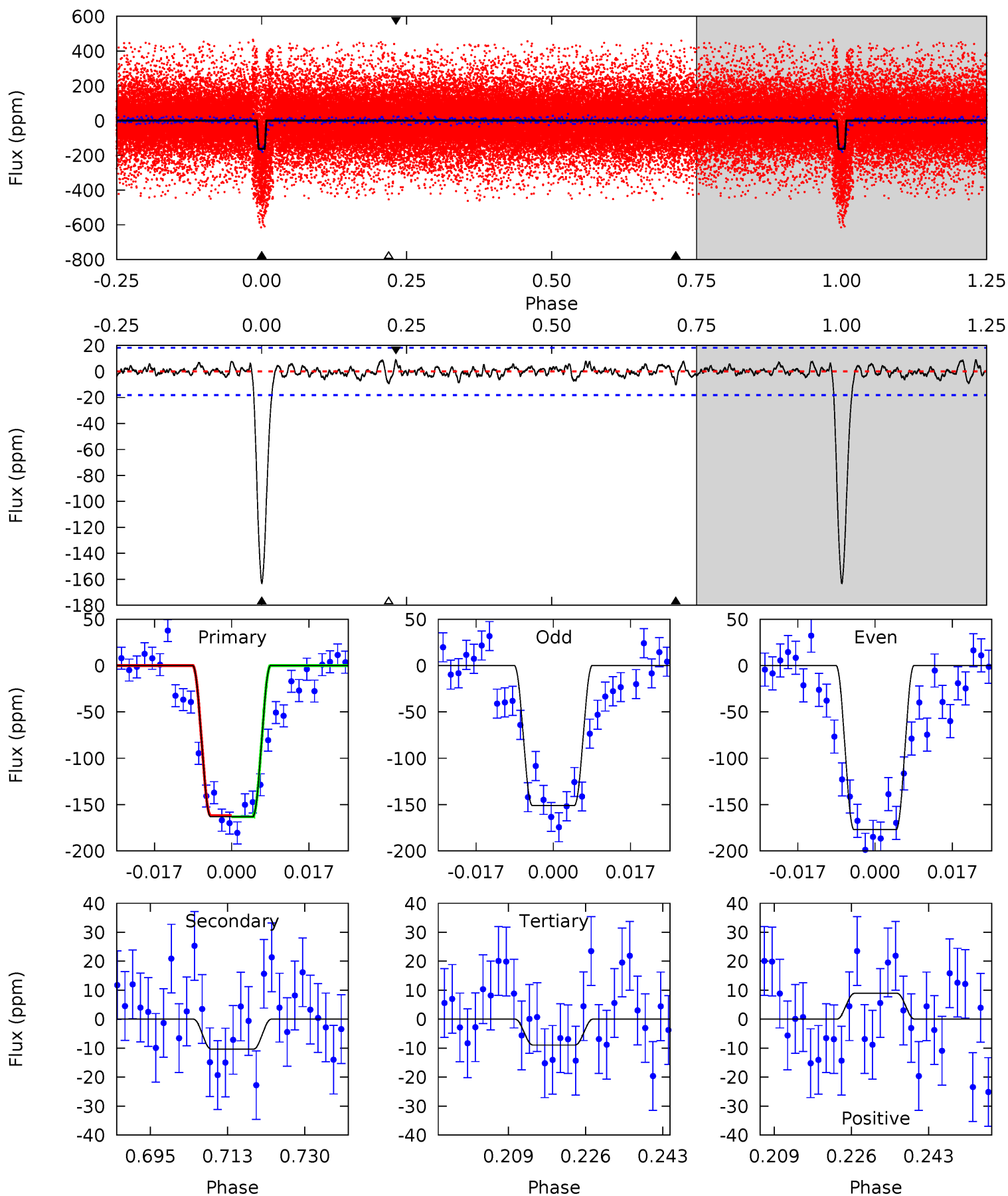
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
61.6	49.0	42.5	46.6	4.78	2.10	21.5	19.0	14.9	6.43	2.33	0.32	0.98	0.43	4.26



Alt Model-Shift Uniqueness Test

003326428-01, P = 7.700457 Days, E = 130.910881 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.0	2.79	2.41	2.41	4.92	2.38	0.81	41.6	41.6	0.38	0.38	3.53	0.90	0.05	0



Stellar Parameters For KIC 003326428

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8590^{+235}_{-404}	$3.981^{+0.216}_{-0.144}$	$0.070^{+0.200}_{-0.550}$	$2.477^{+0.650}_{-0.794}$	$2.139^{+0.314}_{-0.538}$	$0.198^{+0.289}_{-0.083}$
	+3%/-5%	+5%/-4%	+286%/-786%	+26%/-32%	+15%/-25%	+146%/-42%
Source	KIC0	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 003326428-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-216 ± 4	$8.20^{+5.40}_{-4.80}$	2631^{+190}_{-224}	5587^{+3348}_{-1055}	17^{+77}_{-11}
Alt.	-10 ± 4	$5.27^{+4.58}_{-3.48}$	2618^{+185}_{-210}	3532^{+1996}_{-950}	$1.857^{+14.342}_{-1.403}$

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 $A_{obs} \gg 1.0$

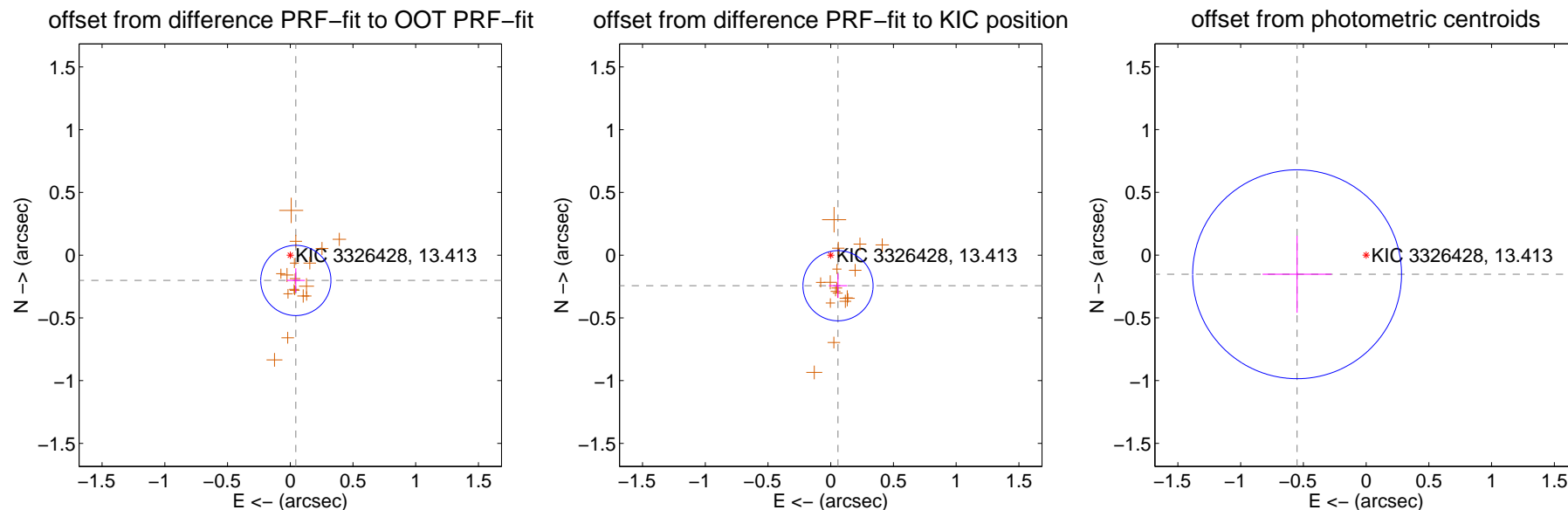
DV Centroid Data

Supplemental centroid analysis for 003326428-01. Kepler magnitude: 13.41. Transit SNR 29.40

There are 0 quarters with good PRF difference image offsets

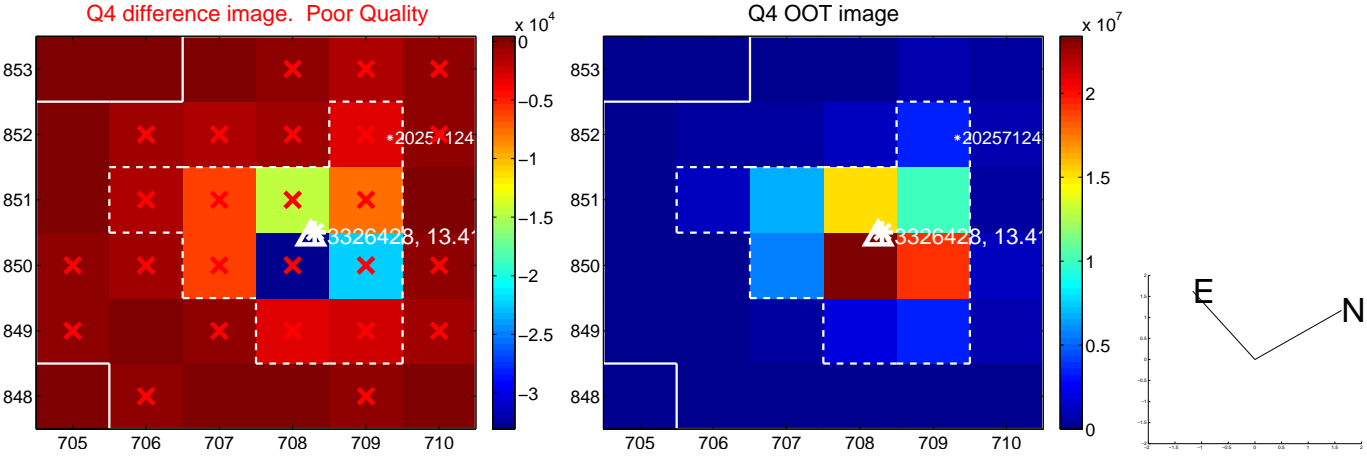
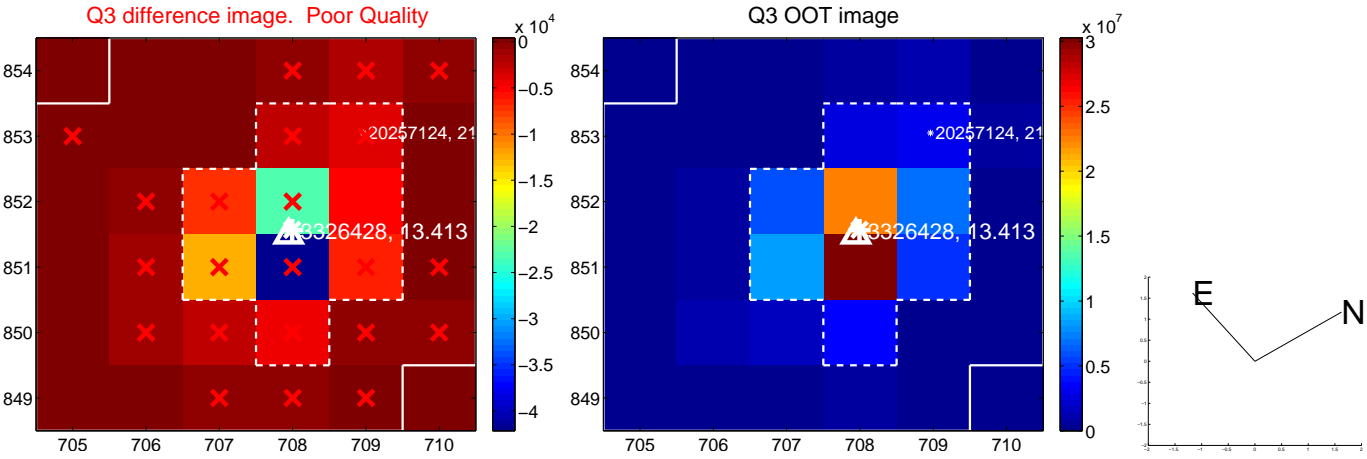
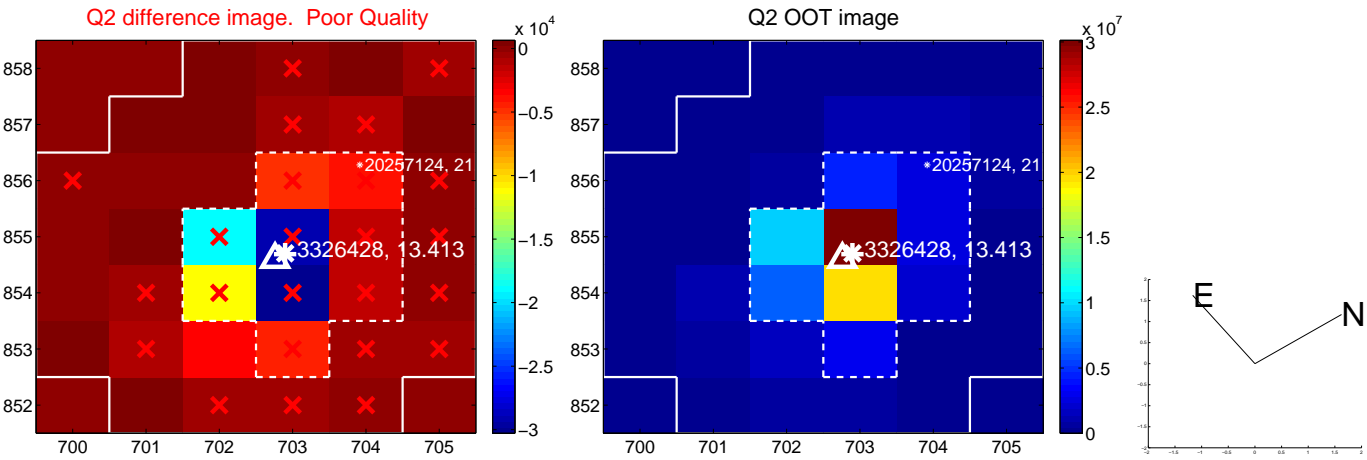
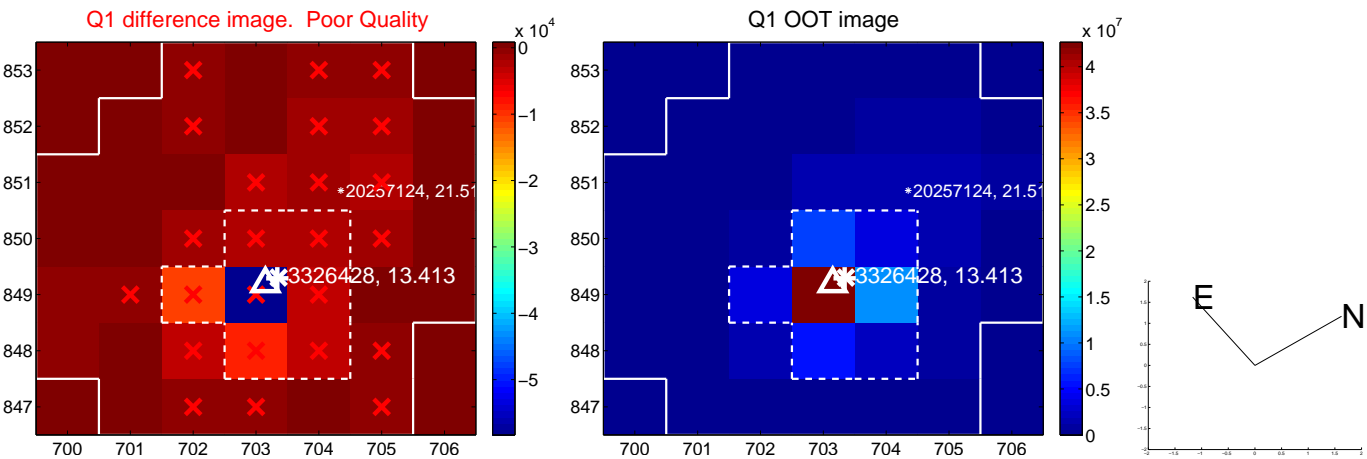
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.206 ± 0.093	2.21	-0.044 ± 0.073	-0.202 ± 0.097
PRF-fit source offset from KIC position	0.250 ± 0.093	2.69	-0.058 ± 0.073	-0.244 ± 0.097
photometric centroid source offset	0.57 ± 0.28	2.06	0.55 ± 0.28	-0.15 ± 0.31

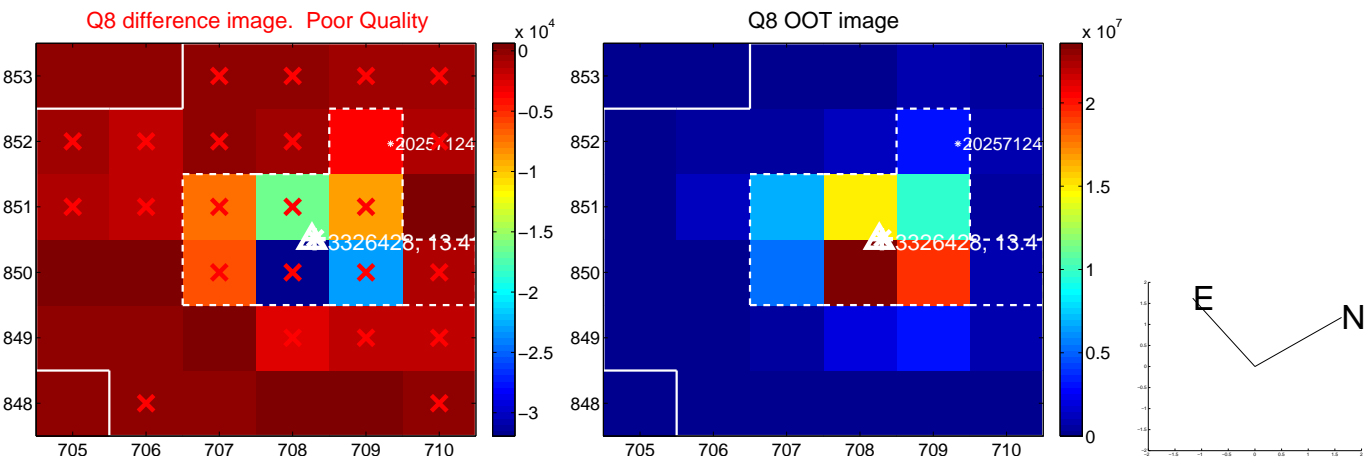
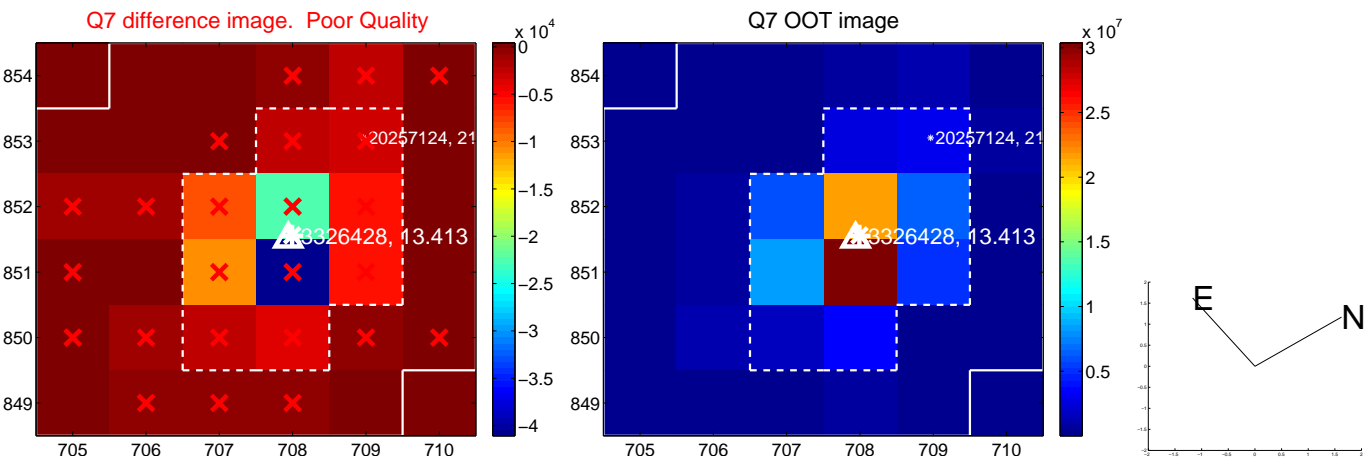
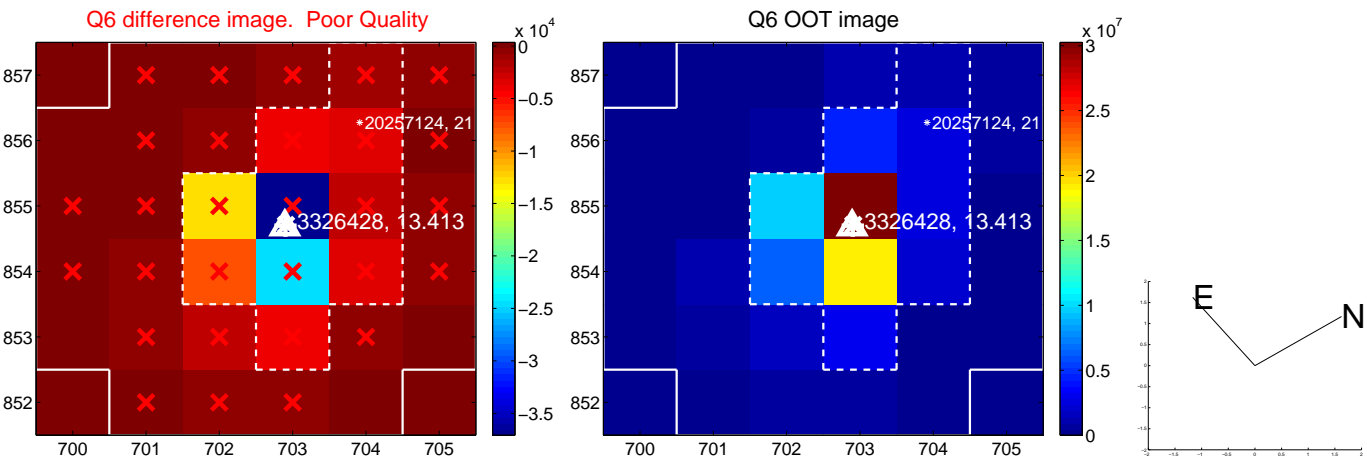
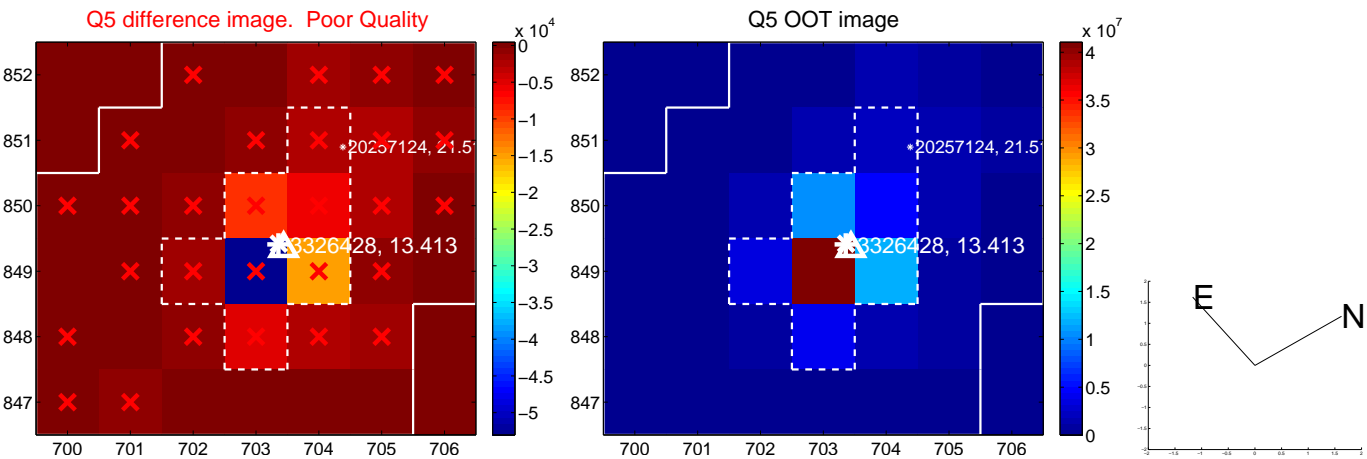


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

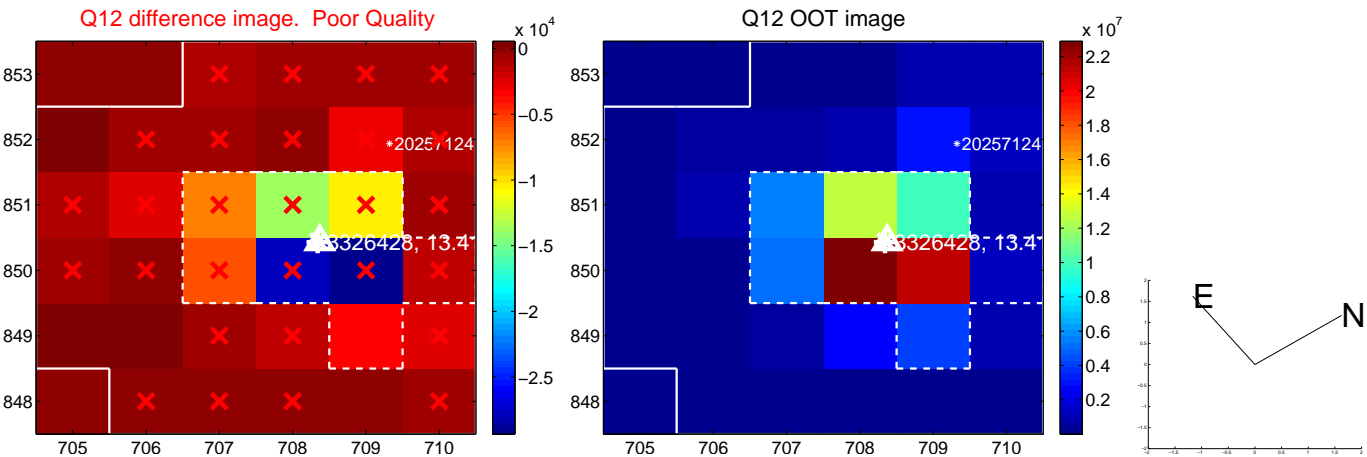
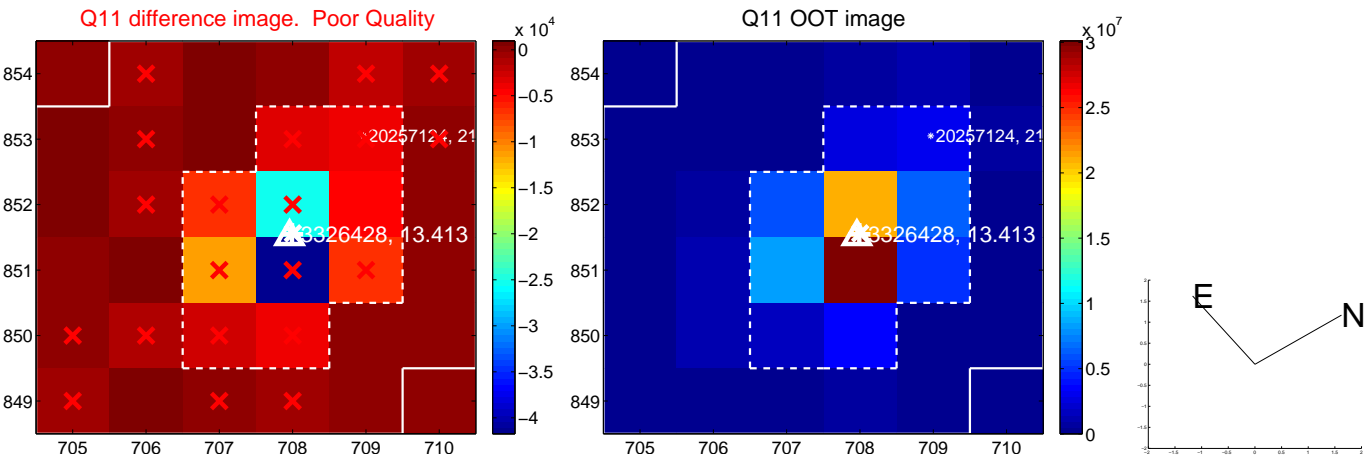
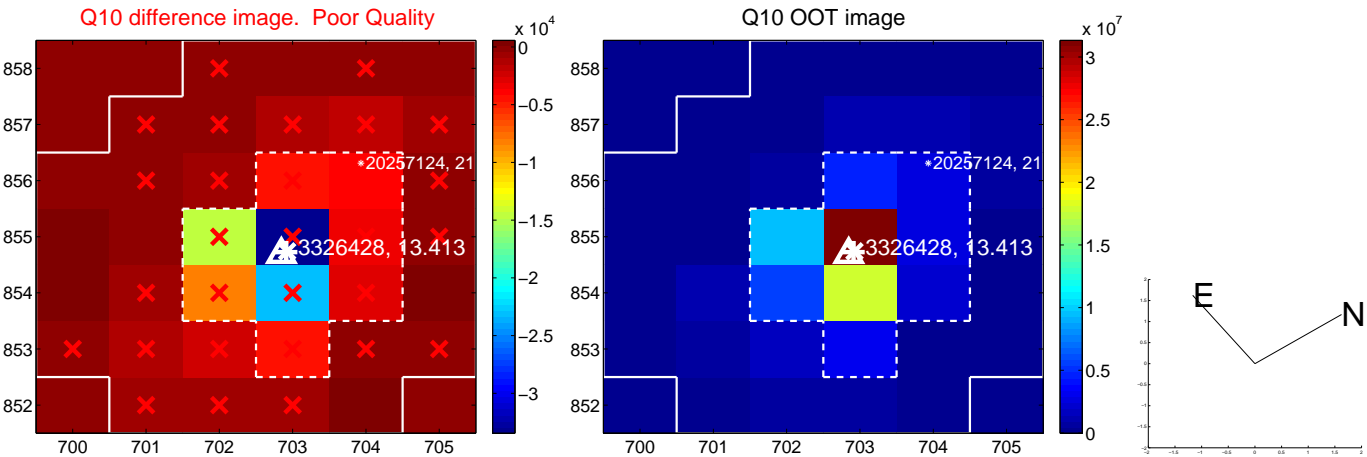
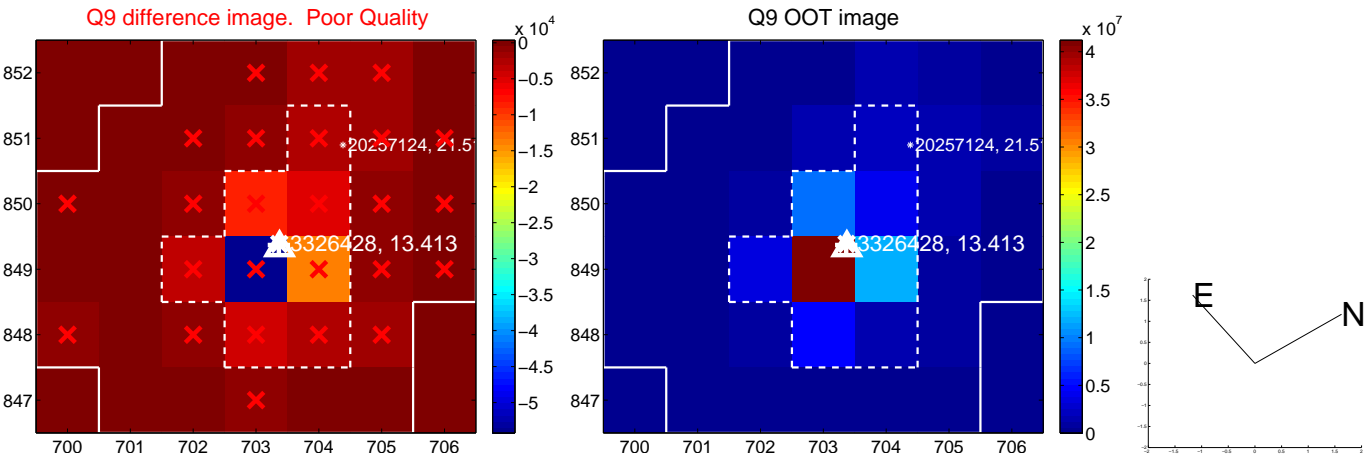
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



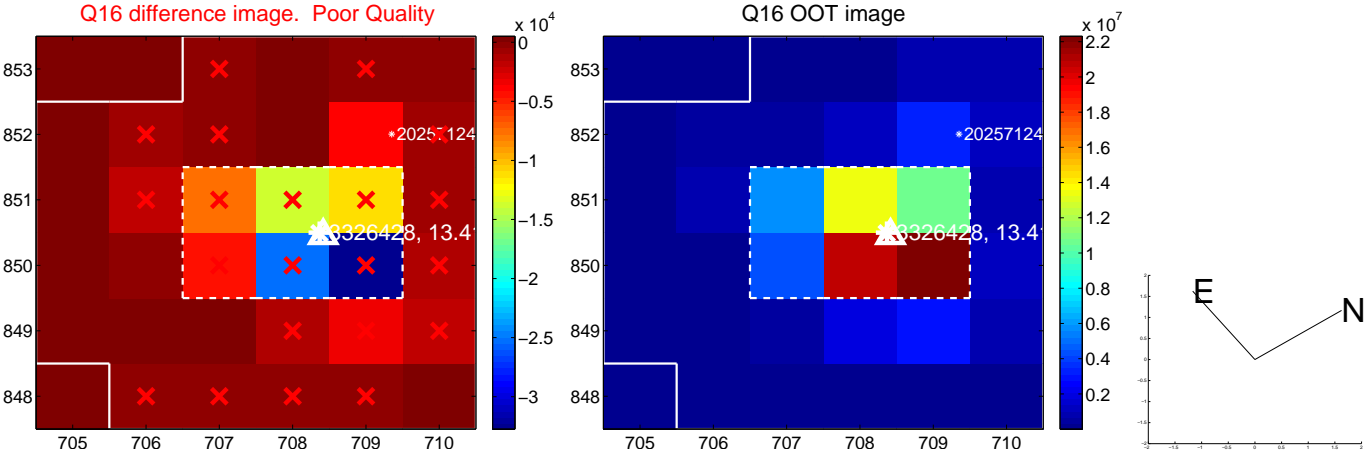
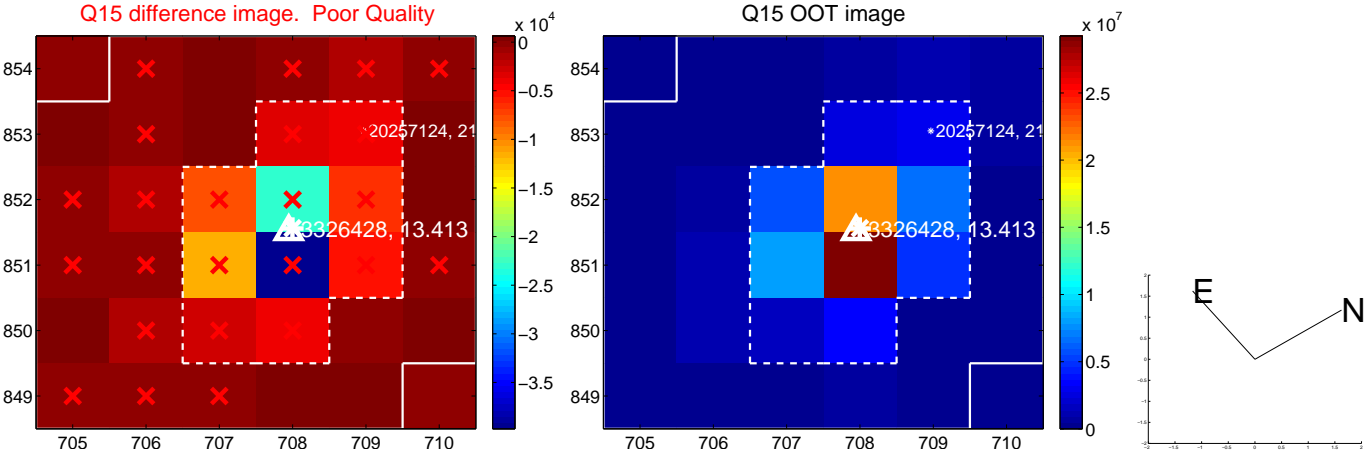
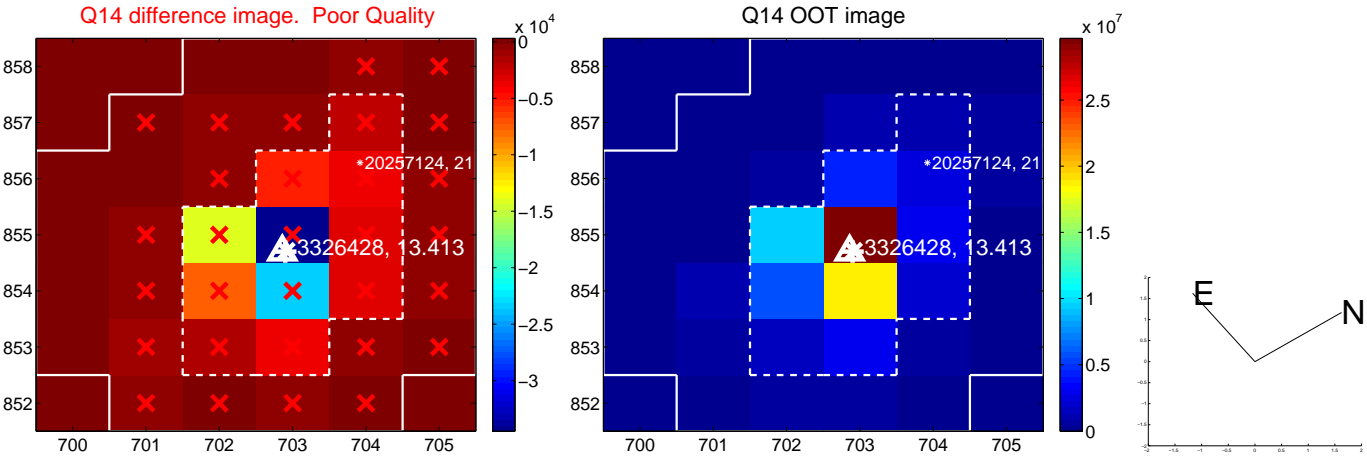
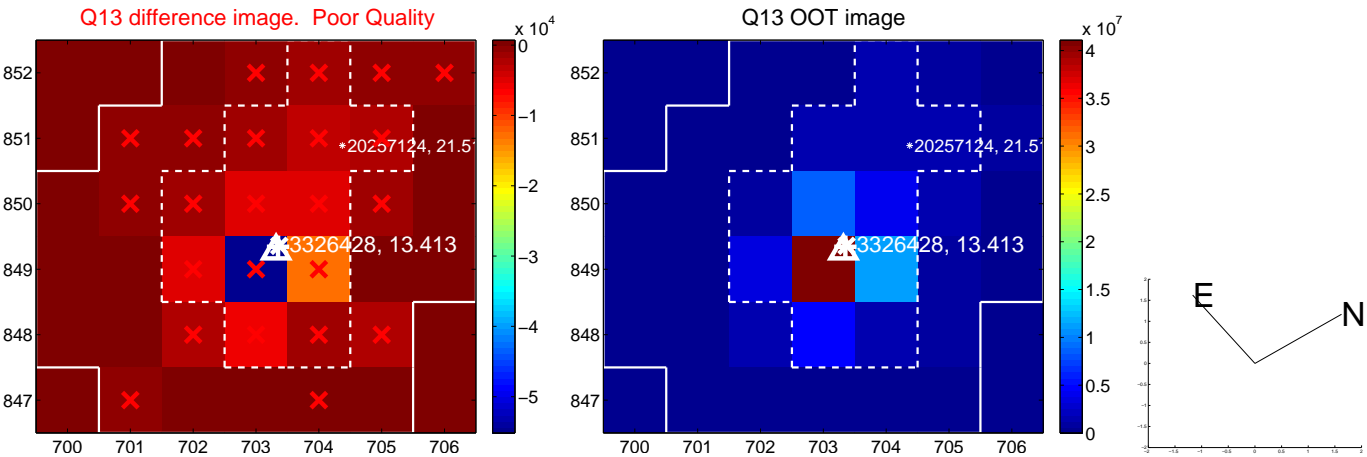
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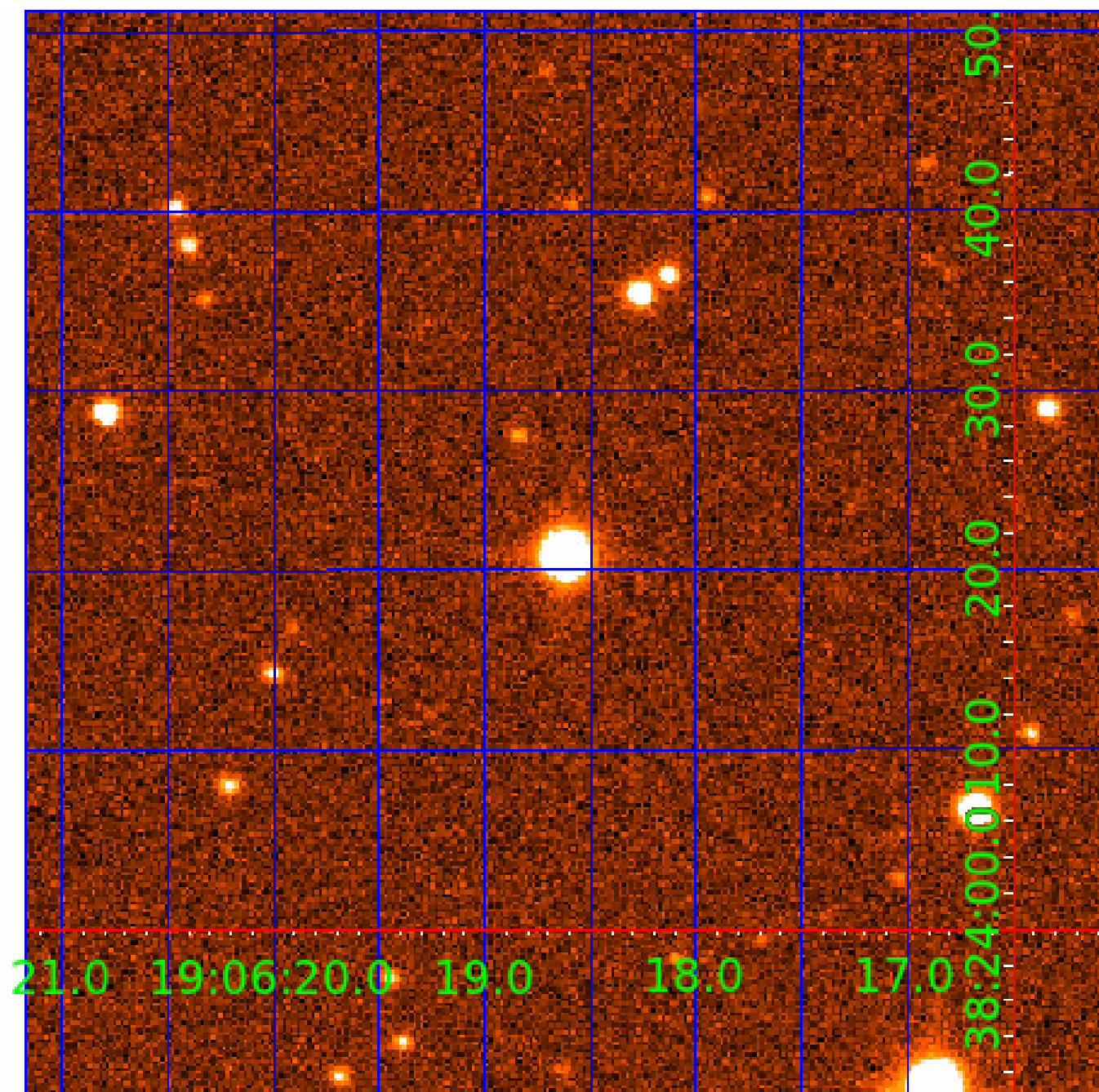


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UKIRT Image

Declination



KIC 003326428

Q1-17 DR25 TCE Parameters

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Robovetter Results

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003326428-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
003326428-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003326428-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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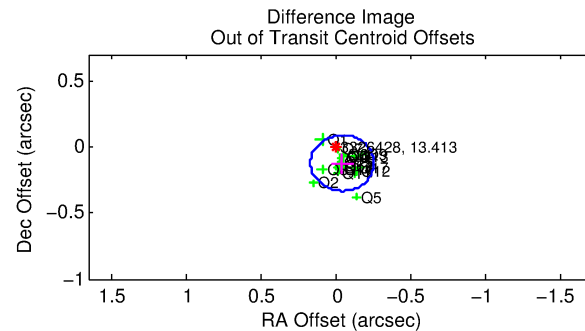
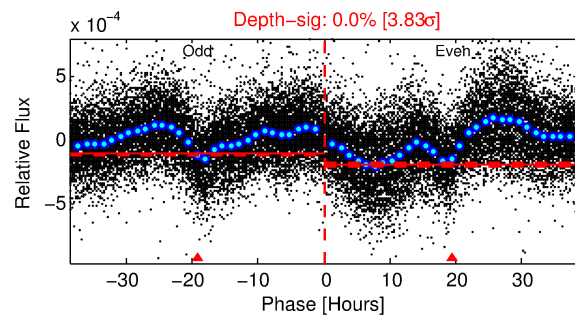
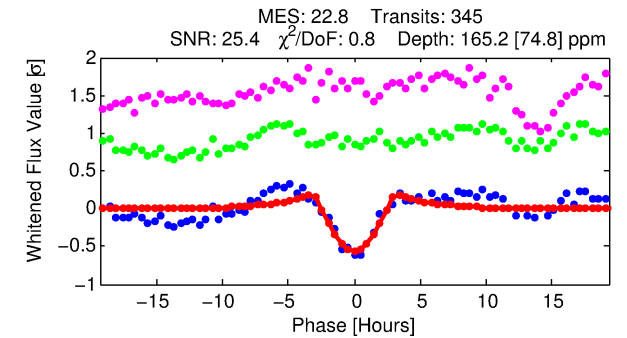
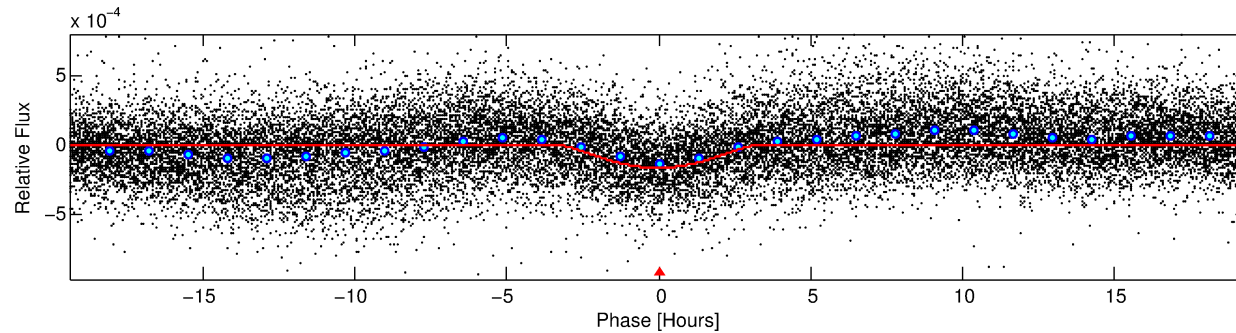
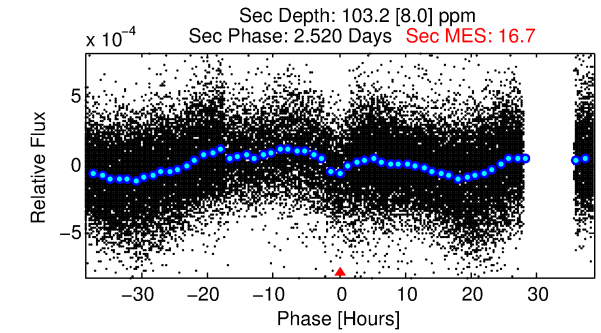
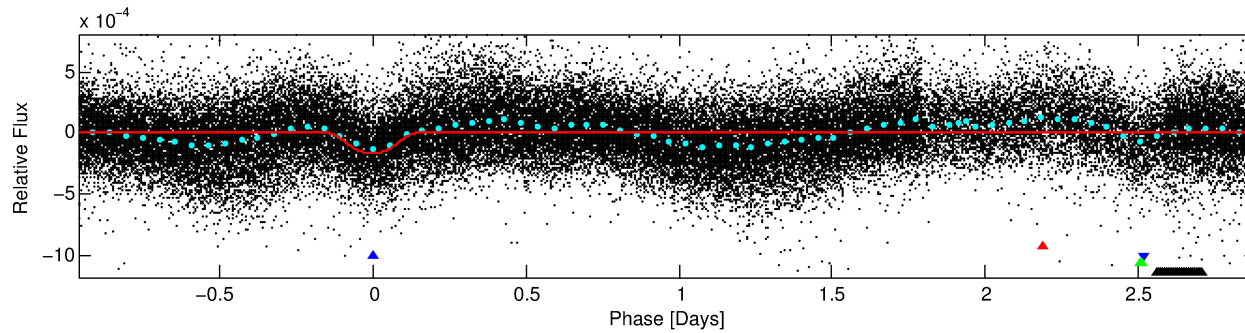
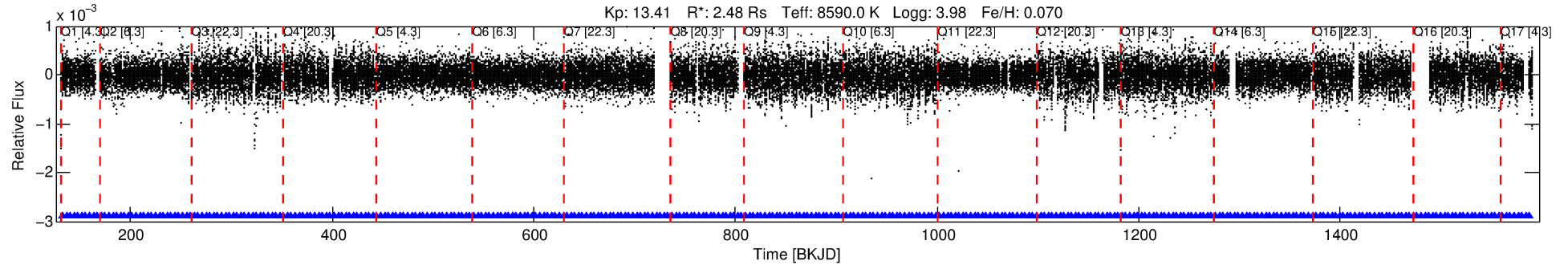
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003326428-02

No Significant Match Found

DV One-Page Summary

KIC: 3326428 Candidate: 2 of 4 Period: 3.850 d



DV Fit Results:

Period = 3.85023 [0.00002] d
Epoch = 132.5745 [0.0042] BKJD
Rp/R* = 0.0226 [0.0193]
a/R* = 1.40 [0.14]
b = 1.00 [0.02]
Seff = 7789.37 [3404.22]
Teq = 2396 [262] K
Rp = 6.11 [5.58] Re
a = 0.0620 [0.0168] AU
Ag = 5.85 [10.29] [0.47σ]
Teffp = 5760 [2483] K [1.35σ]

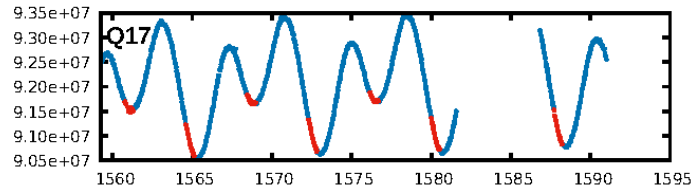
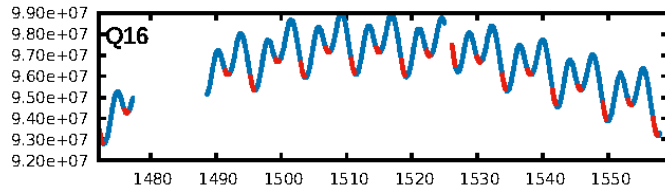
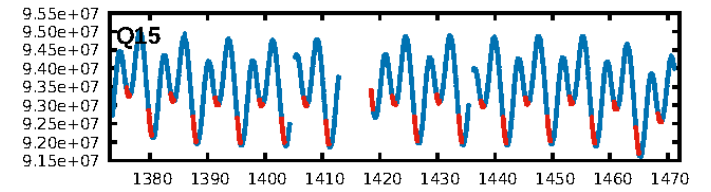
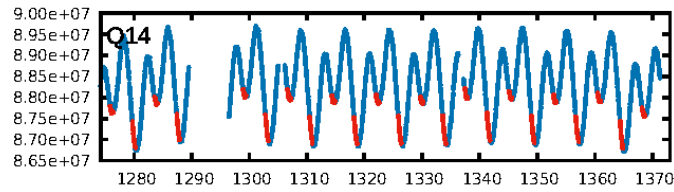
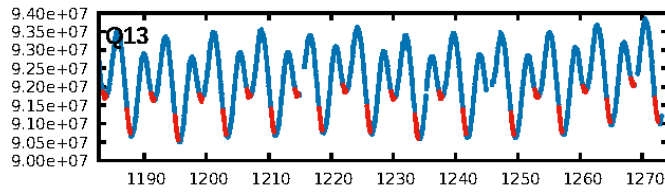
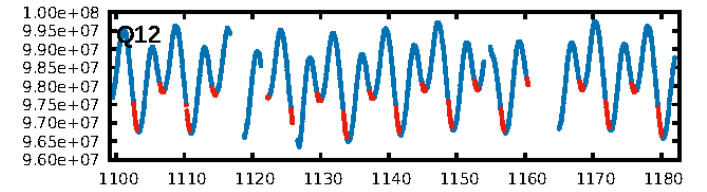
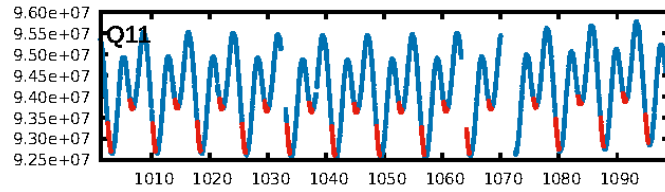
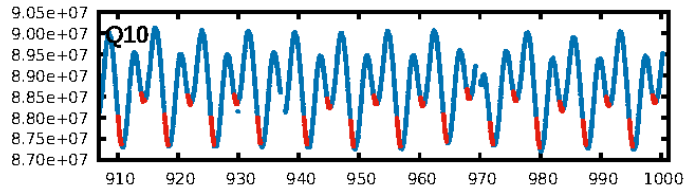
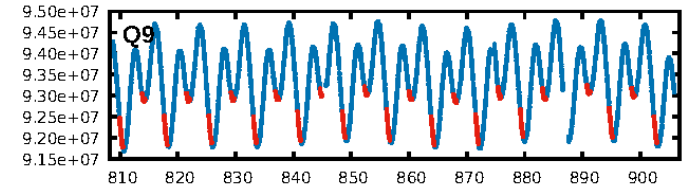
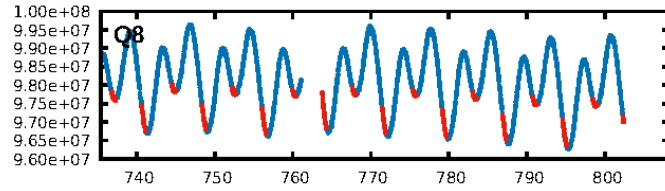
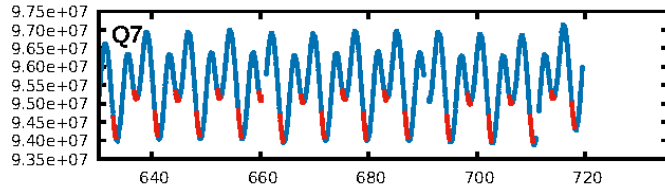
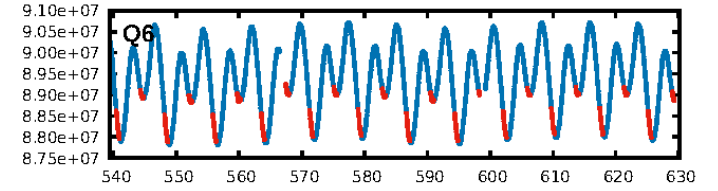
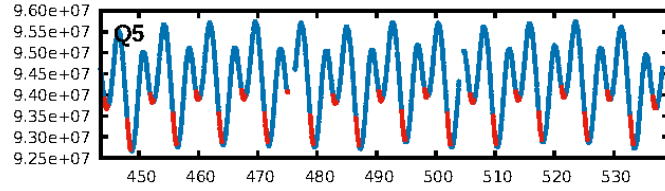
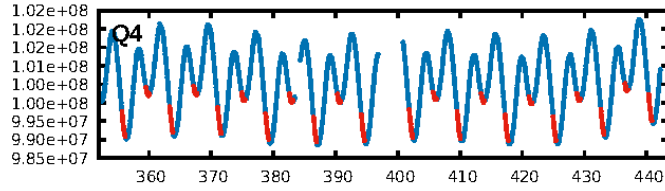
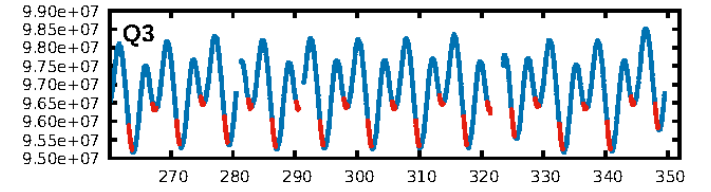
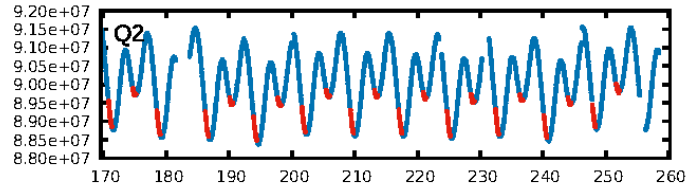
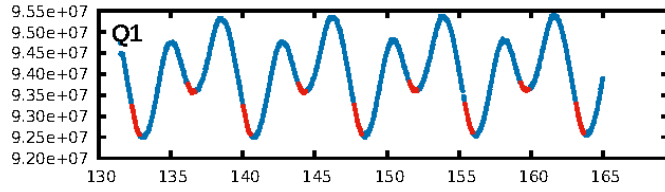
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [3.62σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.27e-96
RollingBand-fgt: 1.00 [329/329]
GhostDiagnostic-chr: 1.325
Centroid-sig: 1.9%
Centroid-so: 0.566 arcsec [1.71σ]
OotOffset-rm: 0.132 arcsec [1.87σ]
KicOffset-rm: 0.175 arcsec [2.47σ]
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]

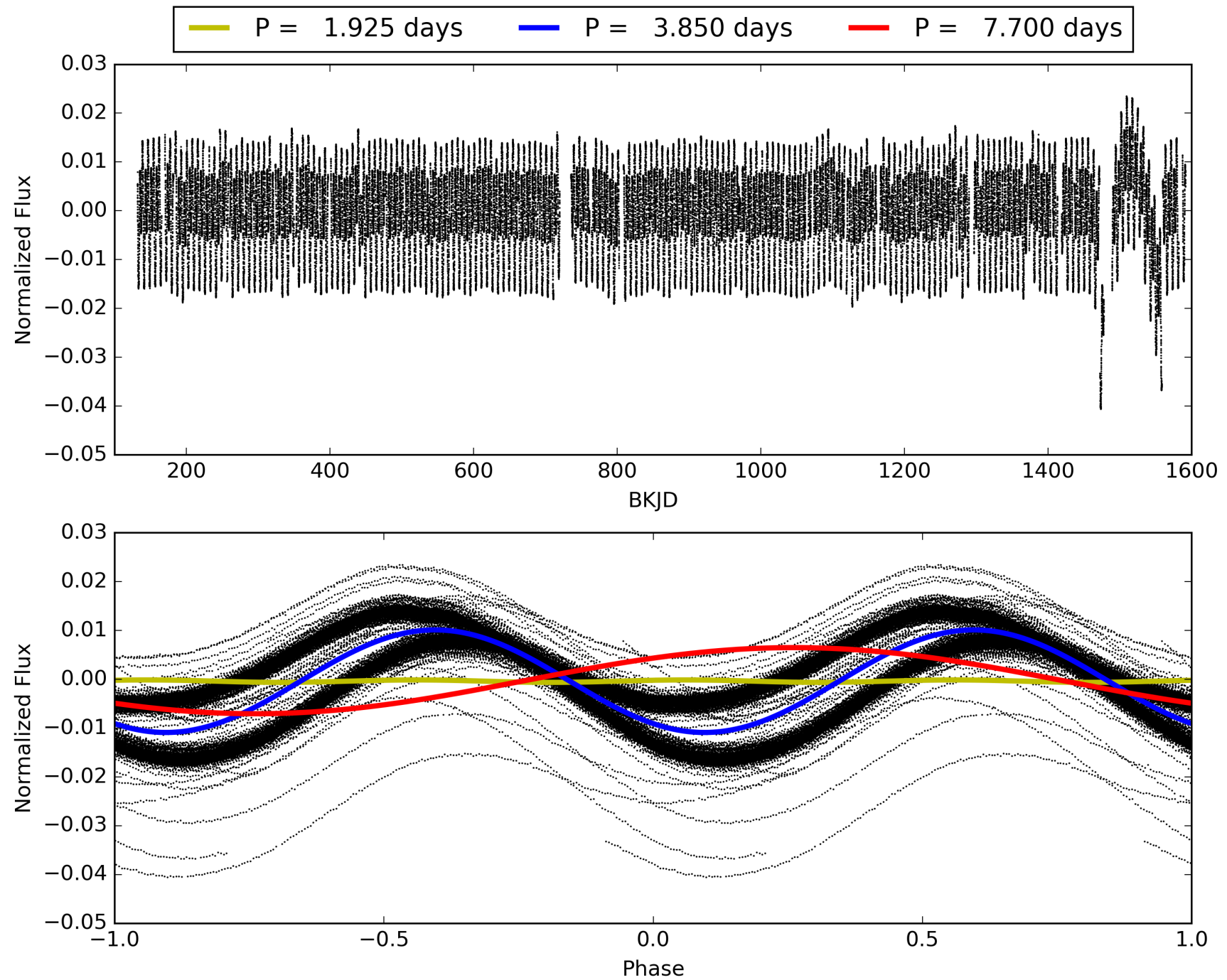
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:36:14 Z

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

TCE 003326428-02, PDC Light Curves

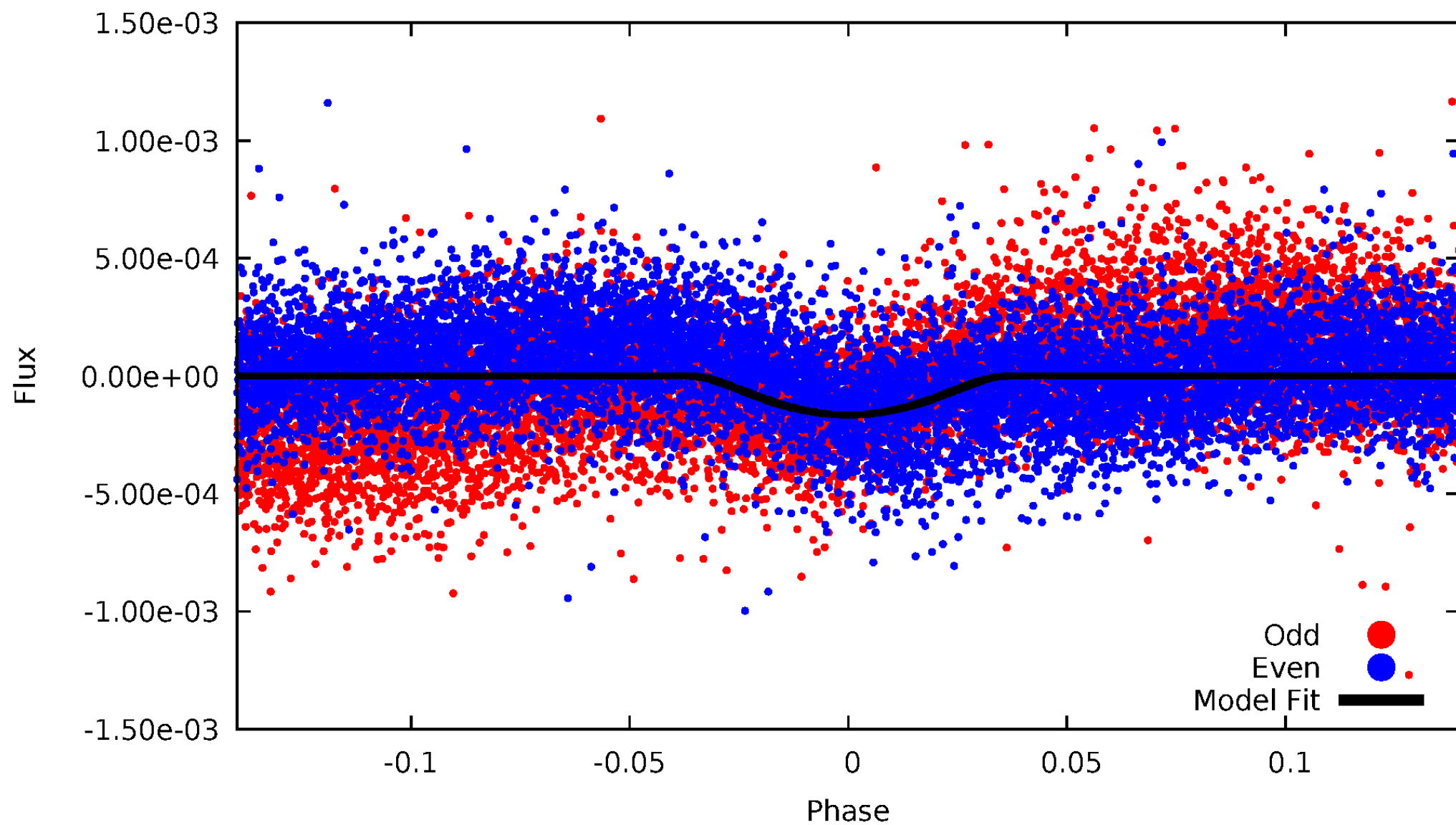


TCE 003326428-02



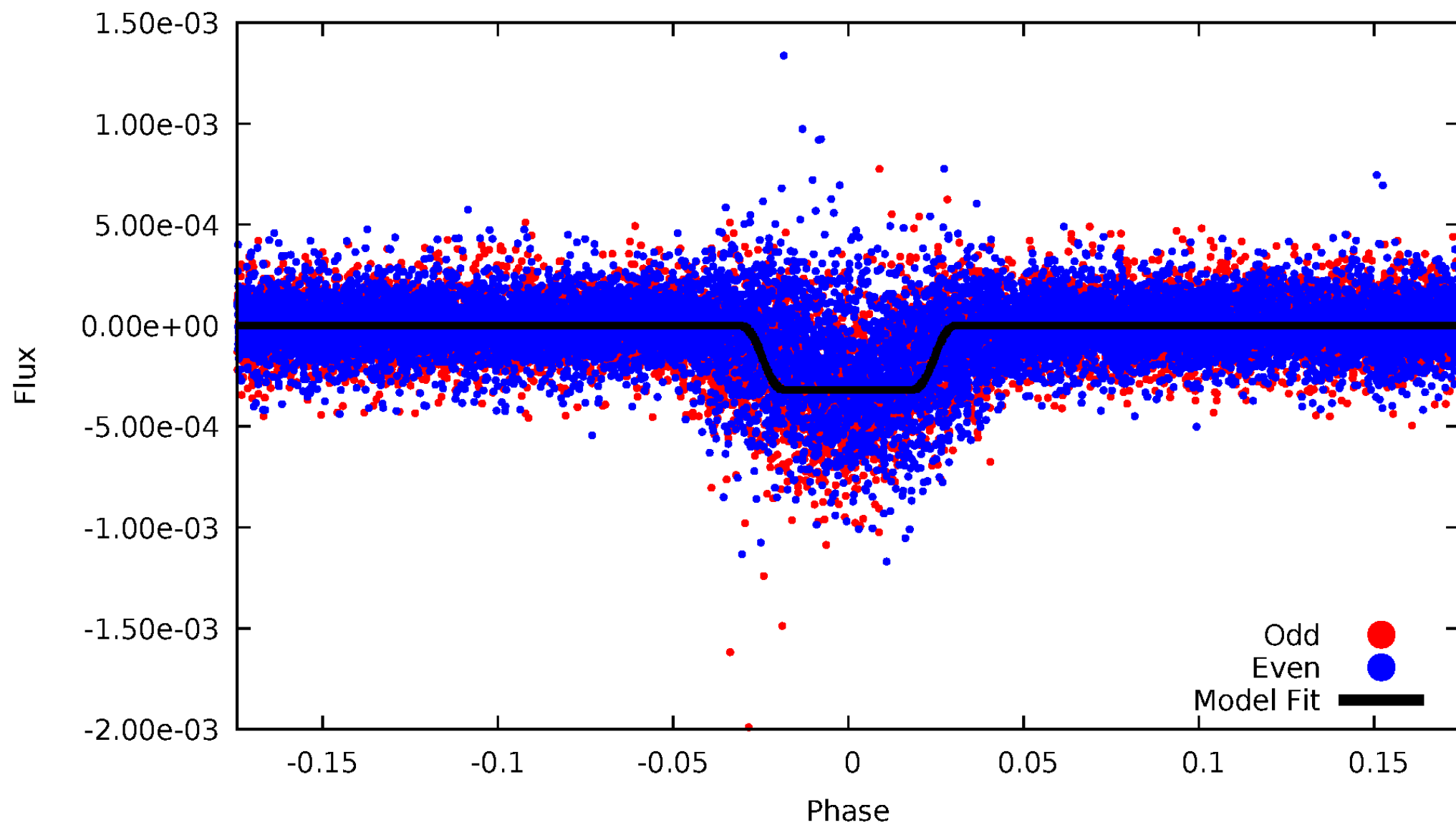
DV Odd/Even

TCE 003326428-02



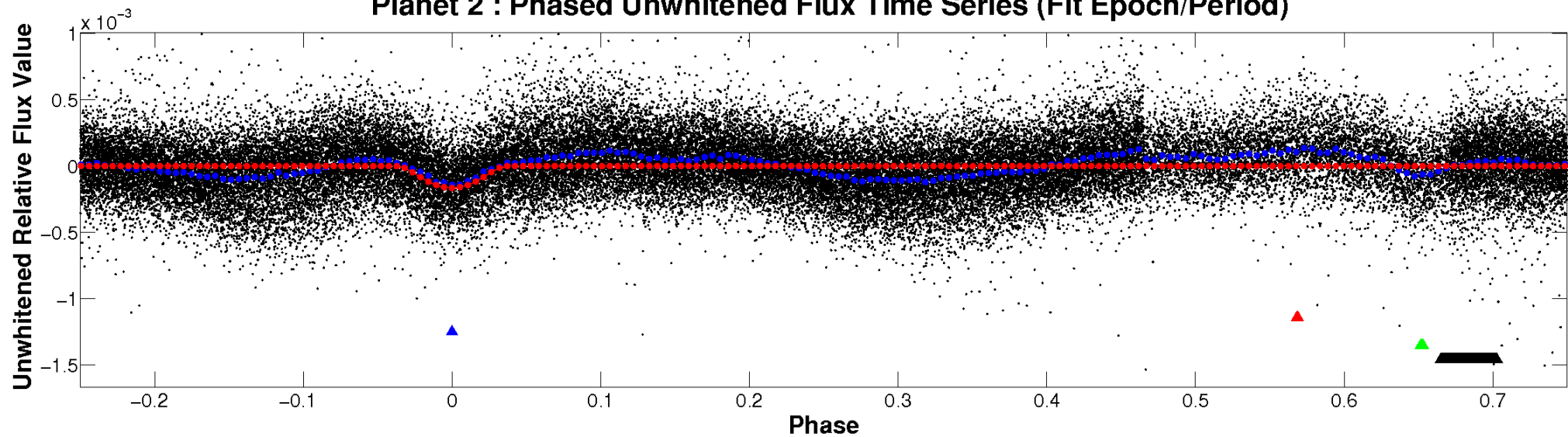
ALT Odd/Even

TCE 003326428-02

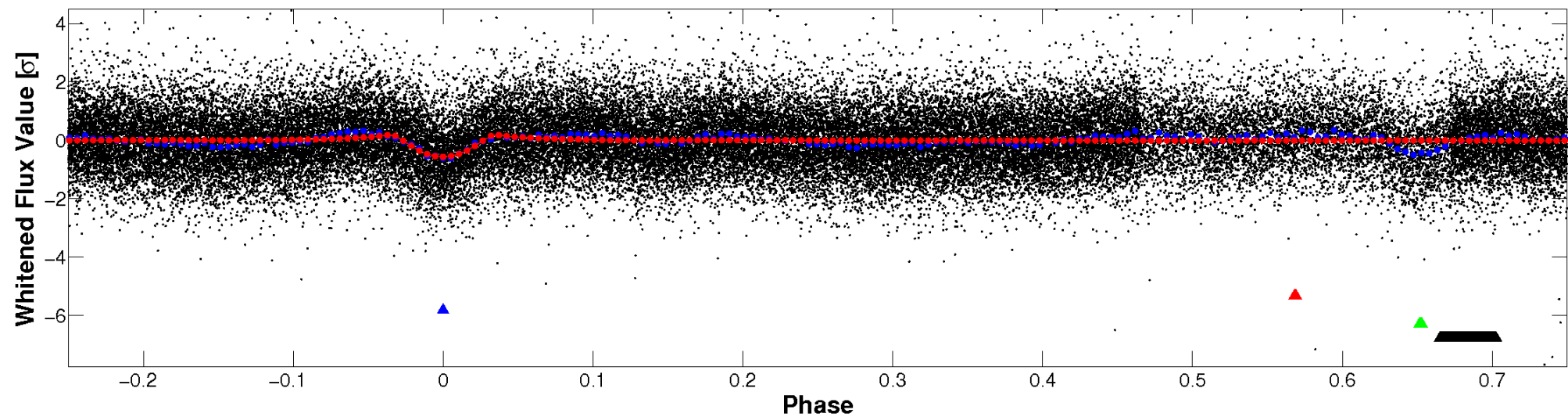


Non-Whitened Vs. Whitened Light Curve

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

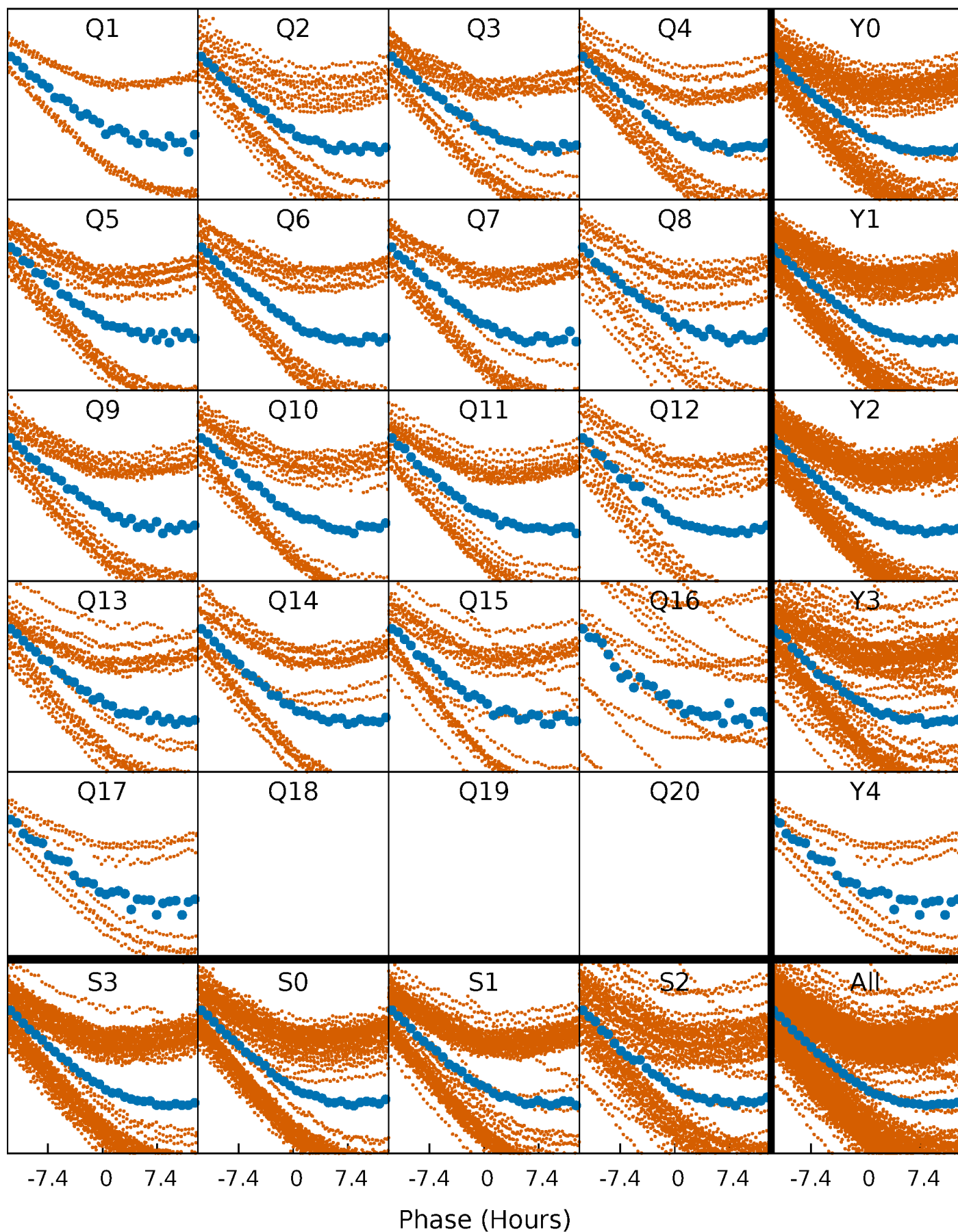


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



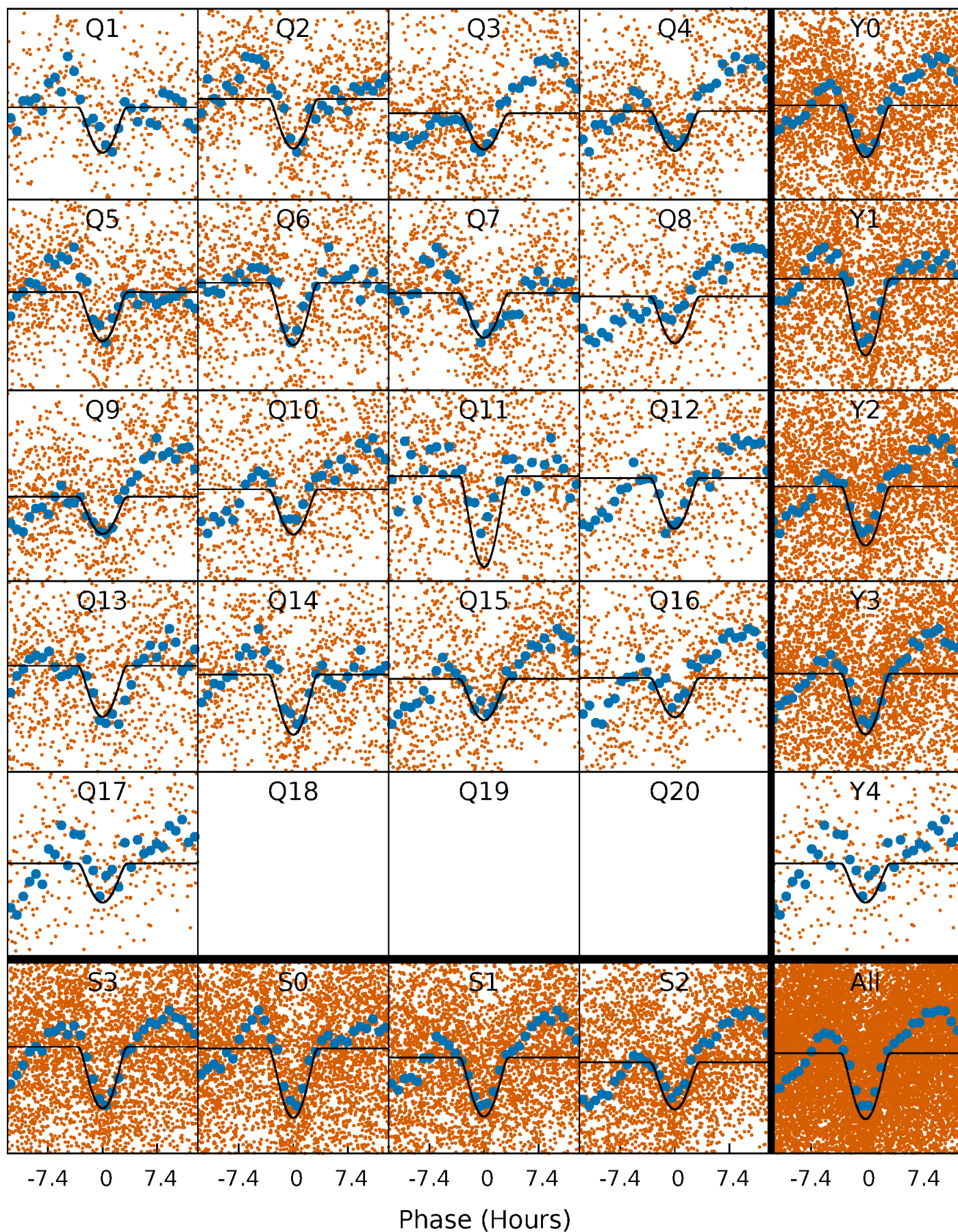
PDC Quarter-Phased Transit Curves

TCE 003326428-02 P= 3.850230 Days $T_0=132.574455$ (BKJD)



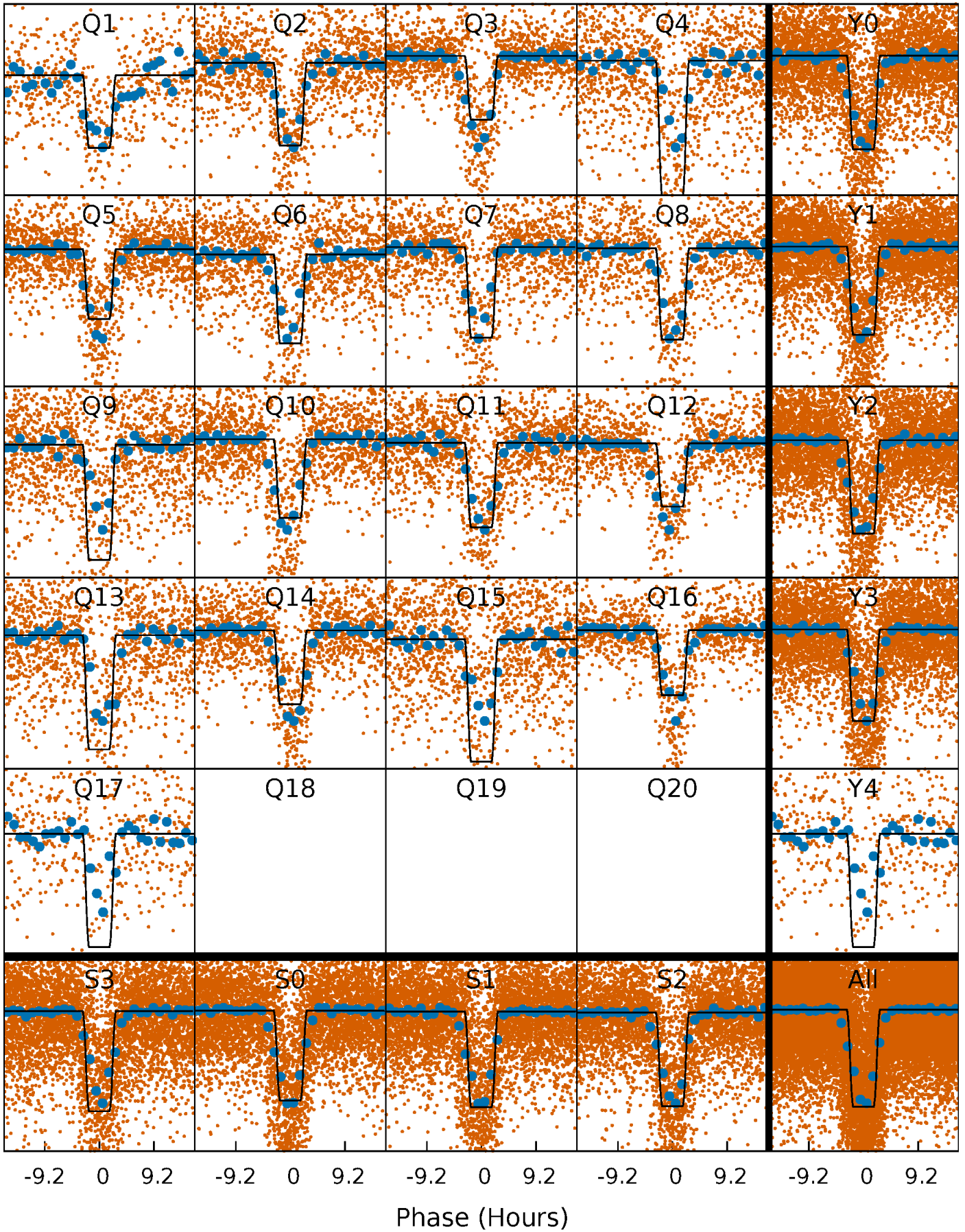
DV Quarter-Phased Transit Curves

TCE 003326428-02 P= 3.850230 Days $T_0=132.574455$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

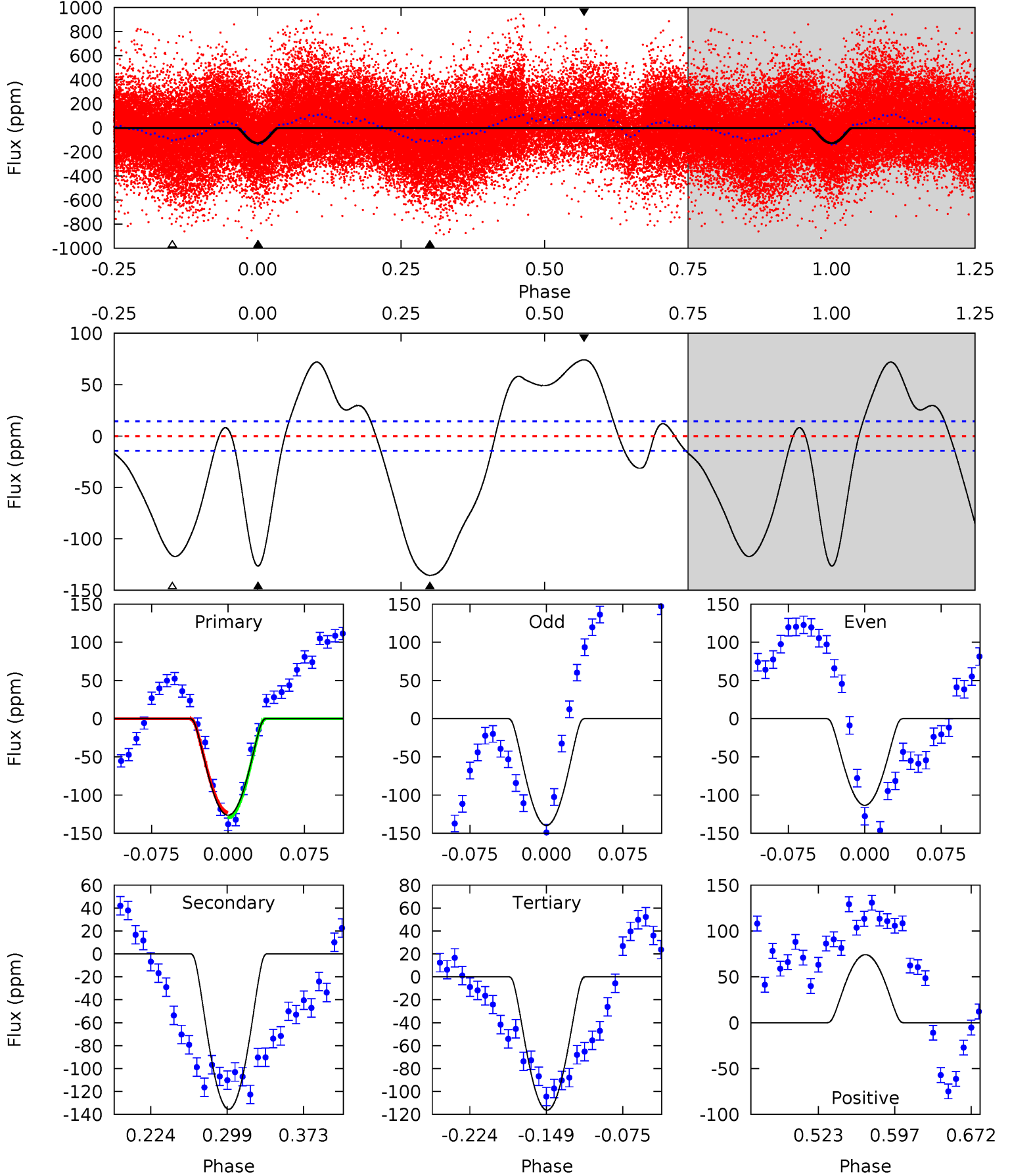
TCE 003326428-02 P= 3.850170 Days $T_0=132.574396$ (BKJD)



DV Model-Shift Uniqueness Test

003326428-02, P = 3.850230 Days, E = 128.724225 Days

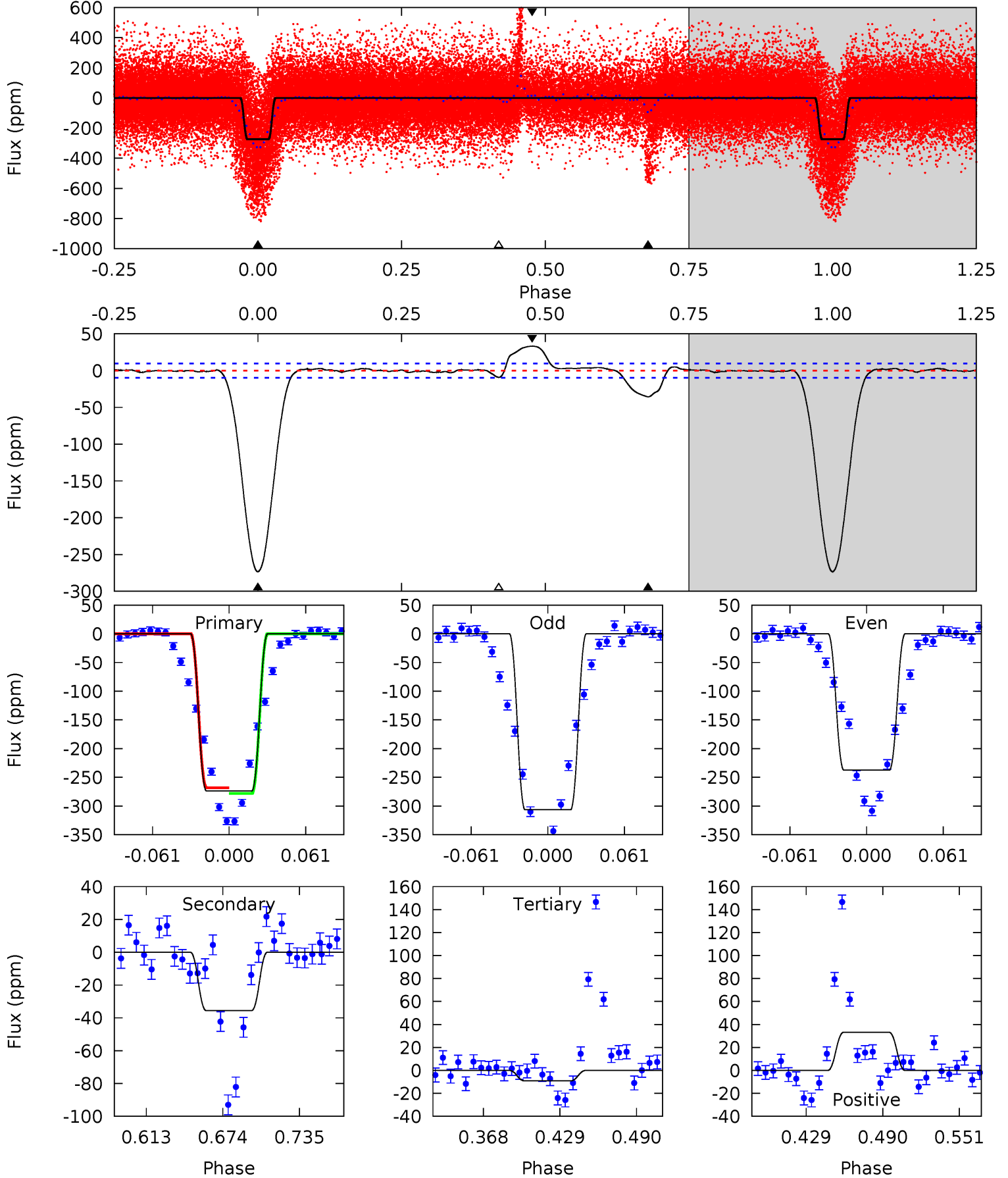
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.7	43.6	37.5	23.9	4.63	1.78	17.6	3.25	16.8	6.16	19.7	4.39	1.01	0.35	1.16



Alt Model-Shift Uniqueness Test

003326428-02, P = 3.850170 Days, E = 128.724226 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
130.0	16.9	4.37	15.7	4.67	1.87	3.37	125.7	114.3	12.5	1.15	16.7	0.98	0.11	2.33



Stellar Parameters For KIC 003326428

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8590^{+235}_{-404}	$3.981^{+0.216}_{-0.144}$	$0.070^{+0.200}_{-0.550}$	$2.477^{+0.650}_{-0.794}$	$2.139^{+0.314}_{-0.538}$	$0.198^{+0.289}_{-0.083}$
	+3%/-5%	+5%/-4%	+286%/-786%	+26%/-32%	+15%/-25%	+146%/-42%
Source	KIC0	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 003326428-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-135 ± 3	$6.32^{+5.18}_{-3.73}$	3314^{+229}_{-269}	5602^{+3575}_{-1225}	$7.115^{+32.447}_{-4.866}$
Alt.	-36 ± 2	$5.69^{+4.47}_{-3.58}$	3298^{+233}_{-254}	4343^{+2752}_{-965}	$2.283^{+14.876}_{-1.563}$

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

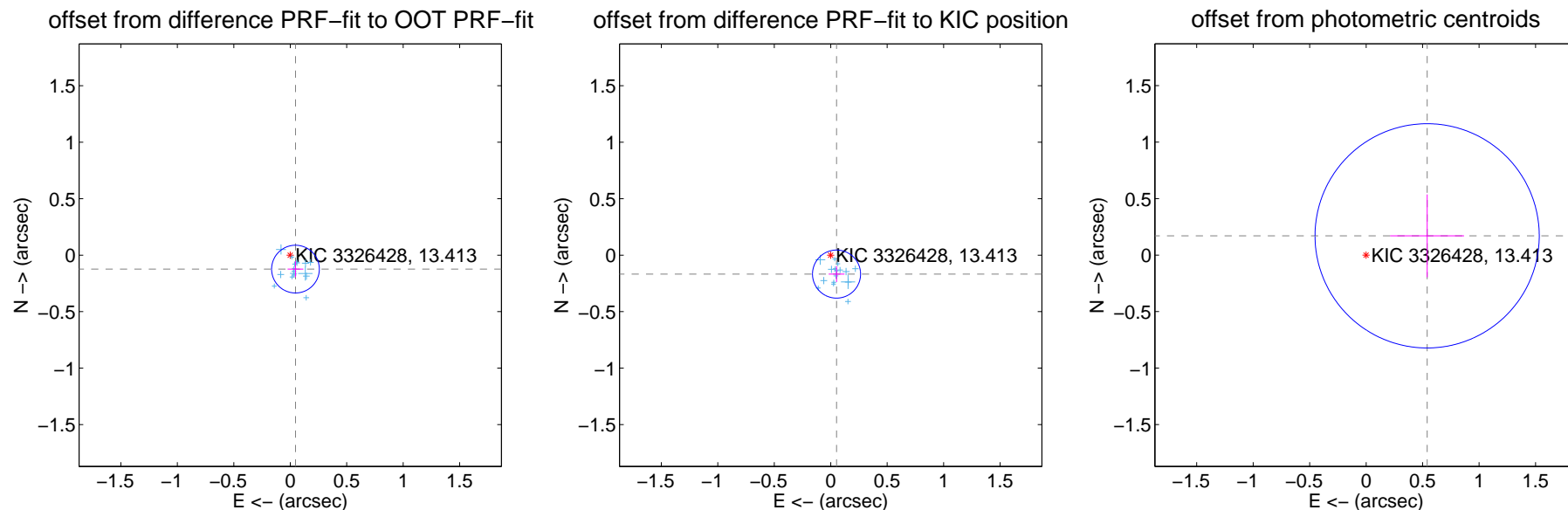
DV Centroid Data

Supplemental centroid analysis for 003326428-02. Kepler magnitude: 13.41. Transit SNR 25.41

There are 17 quarters with good PRF difference image offsets

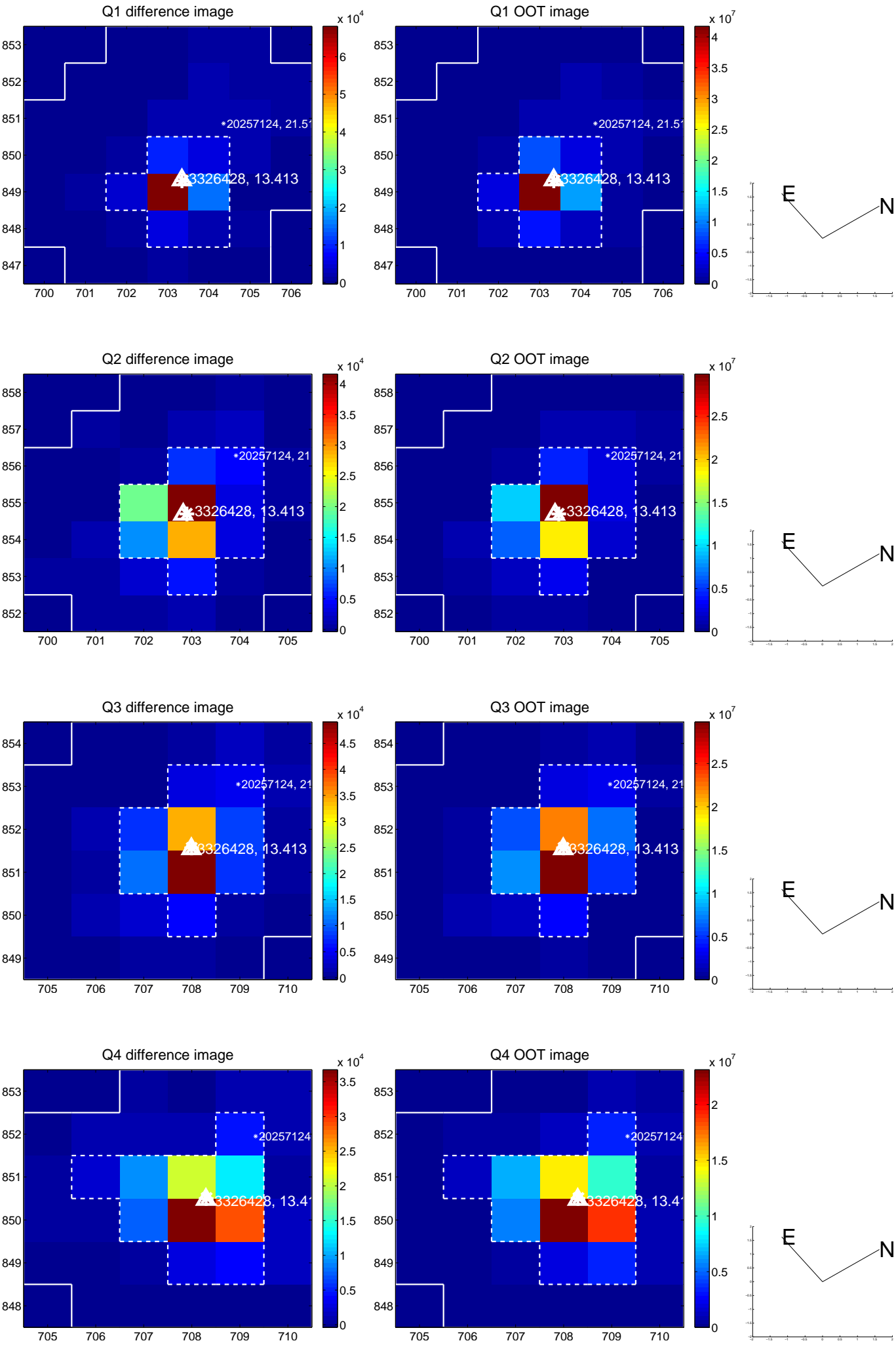
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.132 ± 0.070	1.87	-0.046 ± 0.070	-0.123 ± 0.071
PRF-fit source offset from KIC position	0.175 ± 0.071	2.47	-0.052 ± 0.070	-0.168 ± 0.071
photometric centroid source offset	0.57 ± 0.33	1.71	-0.54 ± 0.33	0.17 ± 0.37

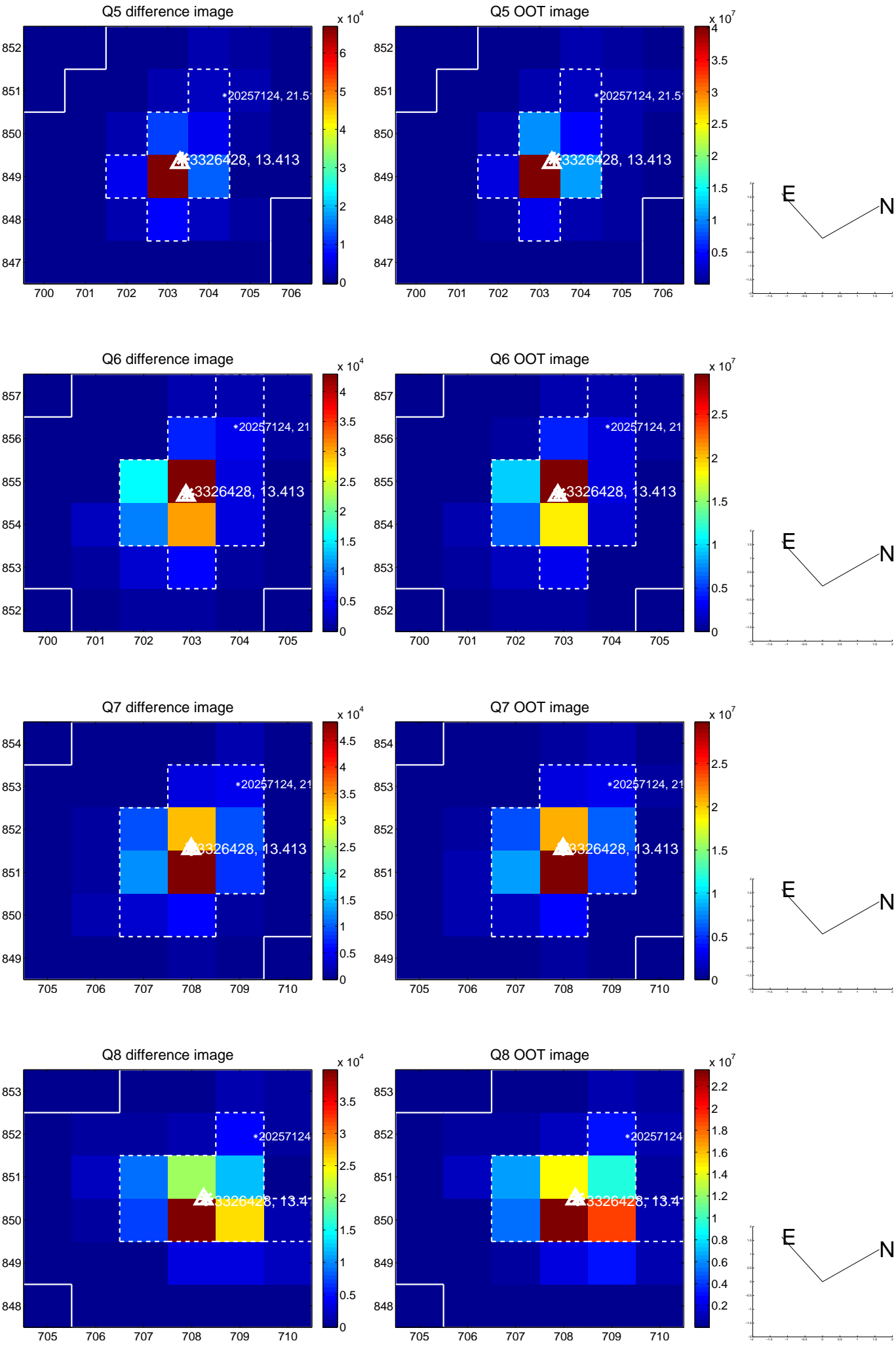


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

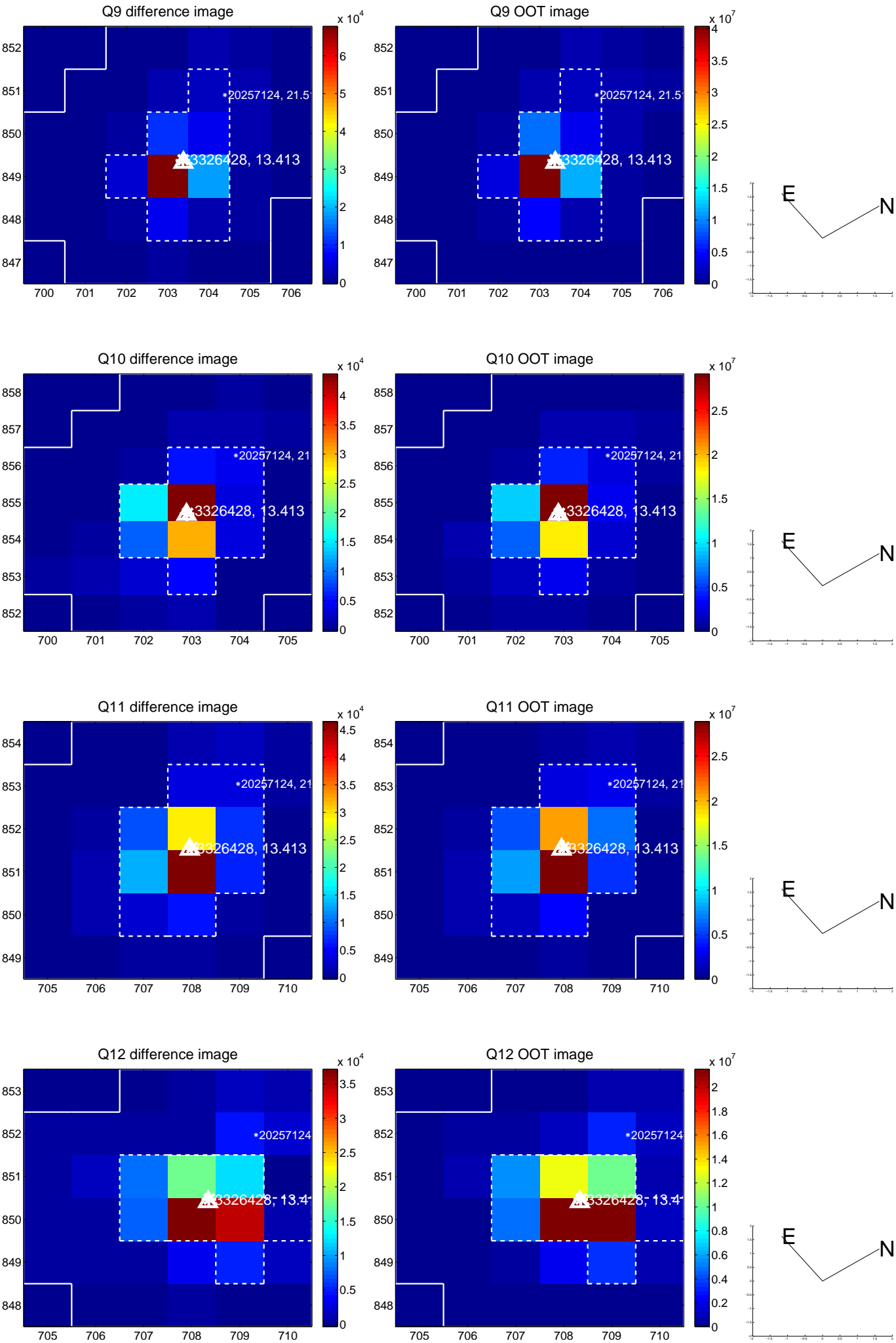
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



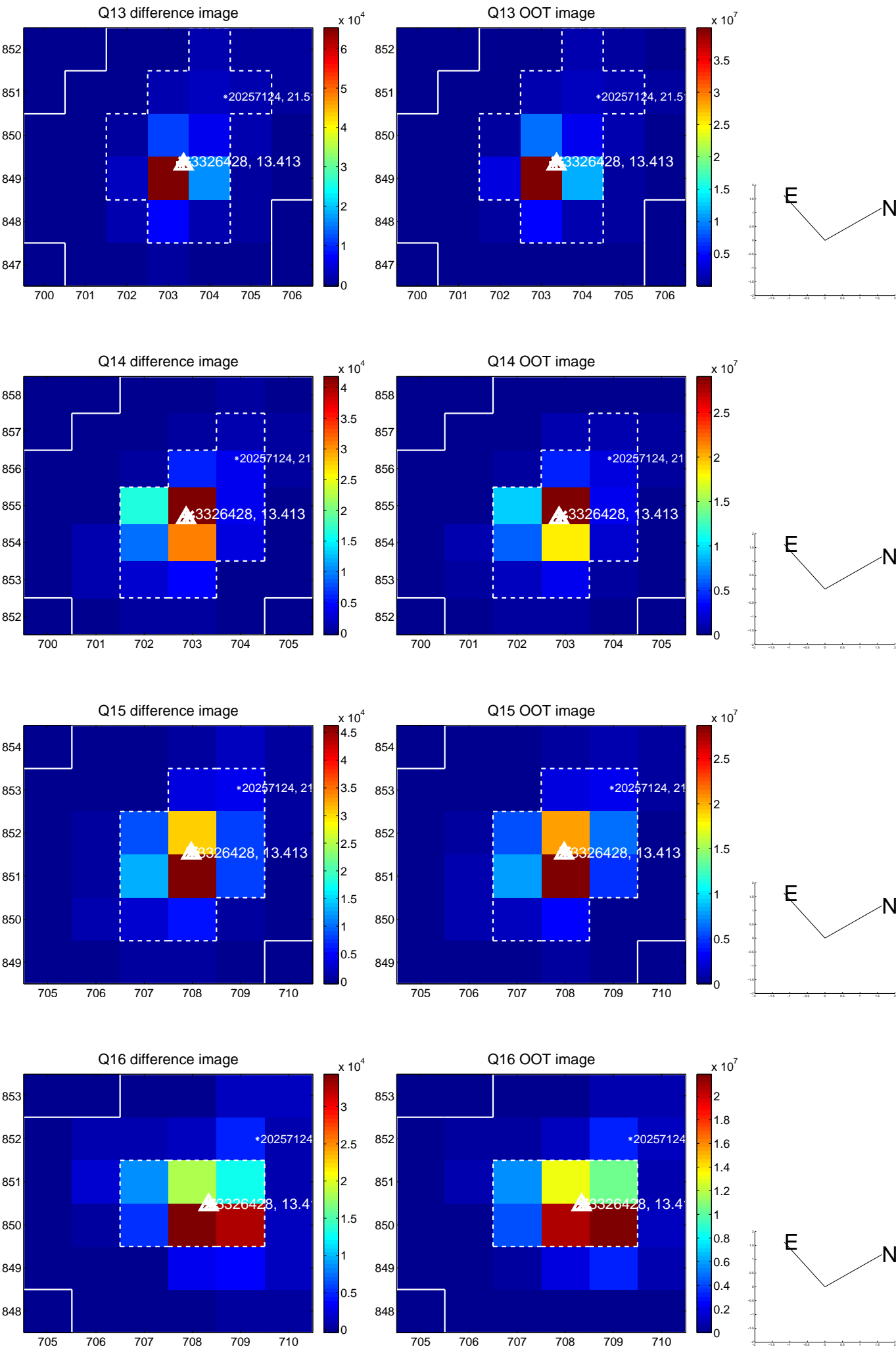
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



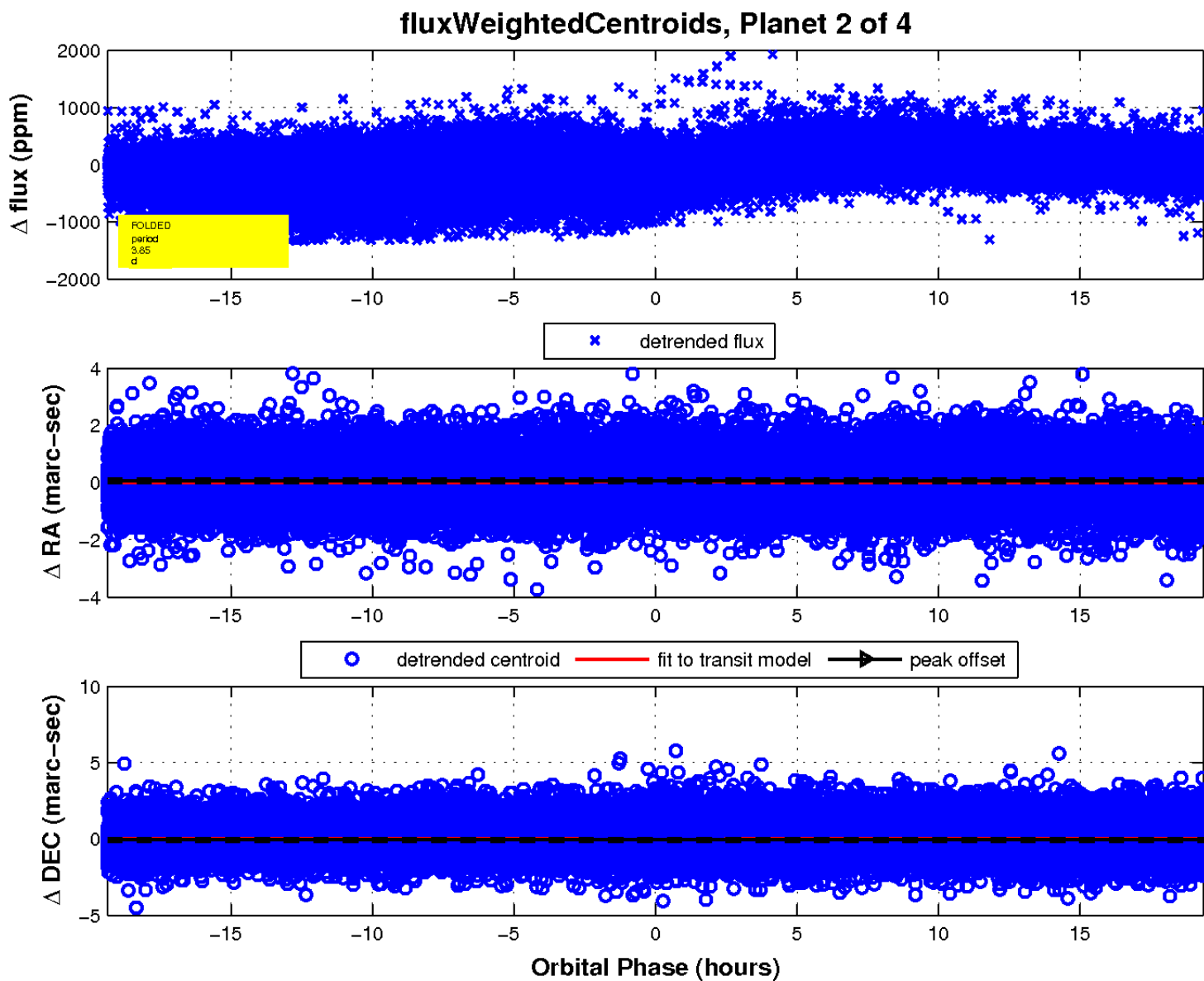
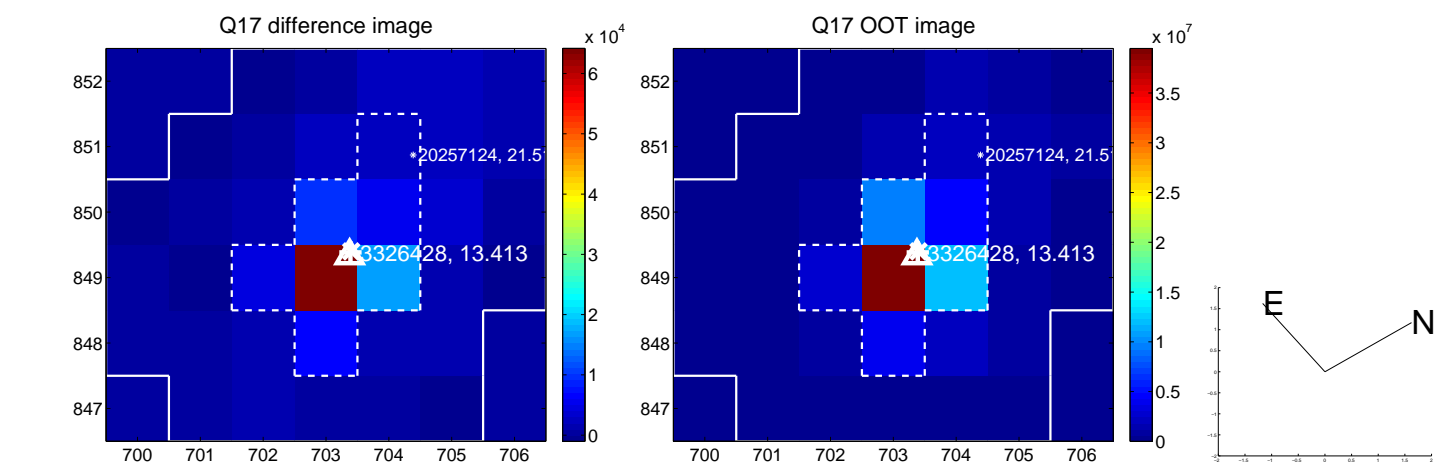
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

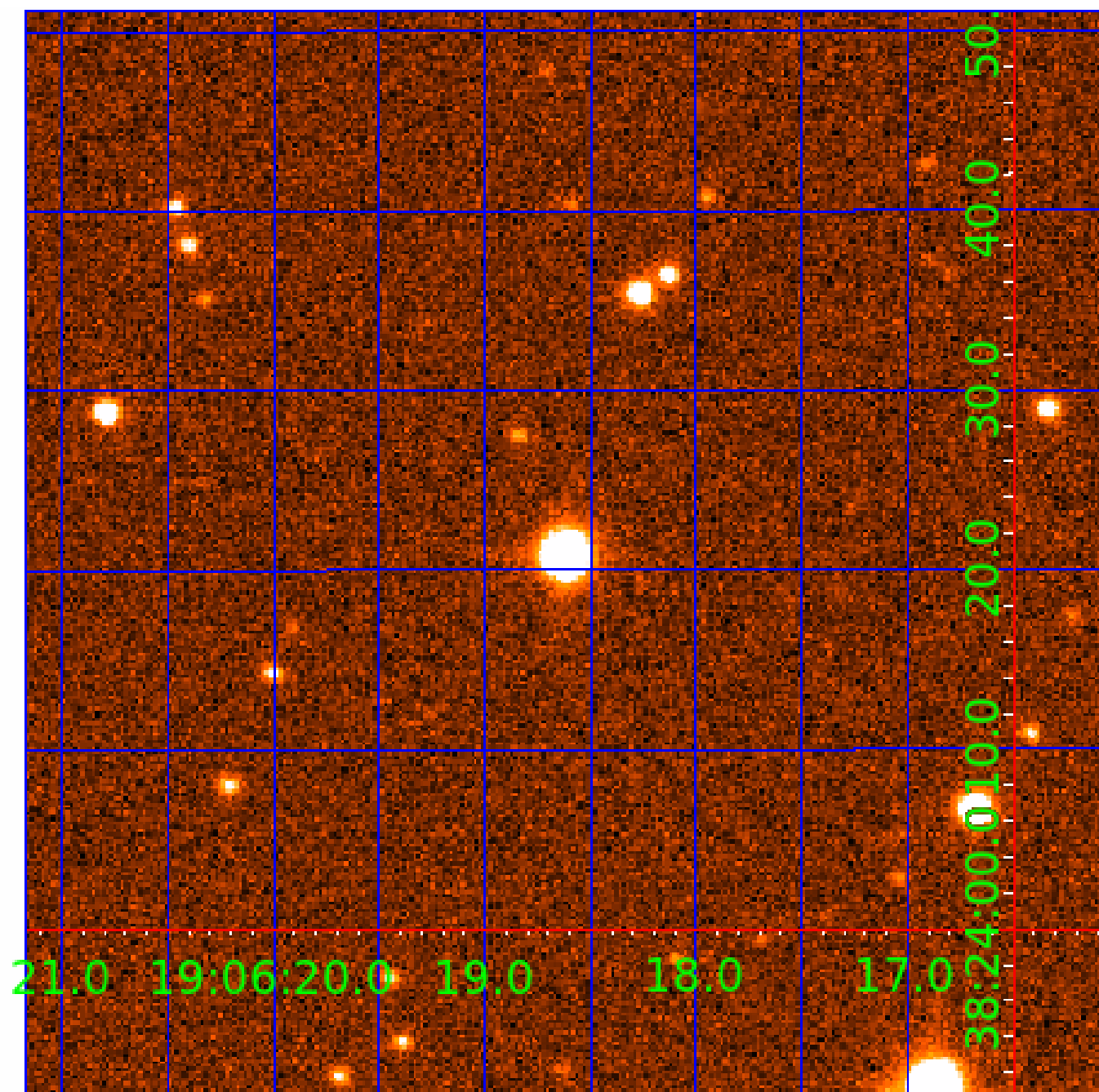


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003326428

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})
003326428-01	OBS	No	7.700480	138.611973	285.3	6.197	26.3	29.4	2.48	8590	7.92	3091.20
003326428-02	OBS	No	3.850230	132.574455	165.2	6.456	22.8	25.4	2.48	8590	6.11	7789.37
003326428-03	OBS	No	7.700493	135.082829	155.9	6.170	16.5	18.2	2.48	8590	5.70	3091.19
003326428-04	OBS	No	7.699694	135.279911	0.0	24.717	11.1	0.0	2.48	8590	0.06	3091.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003326428-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
003326428-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
003326428-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003326428-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

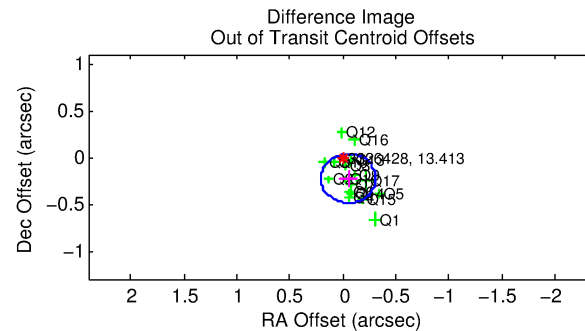
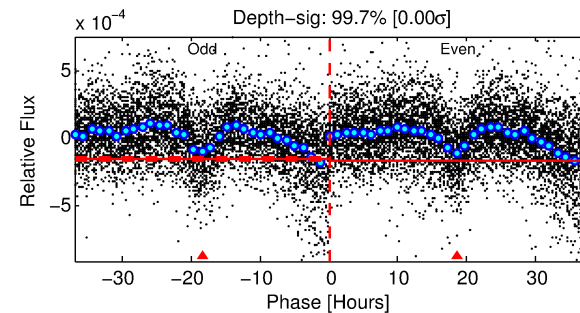
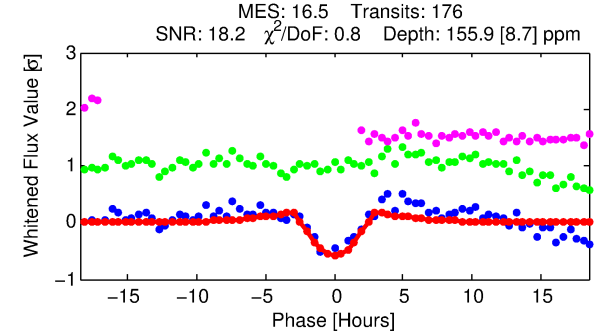
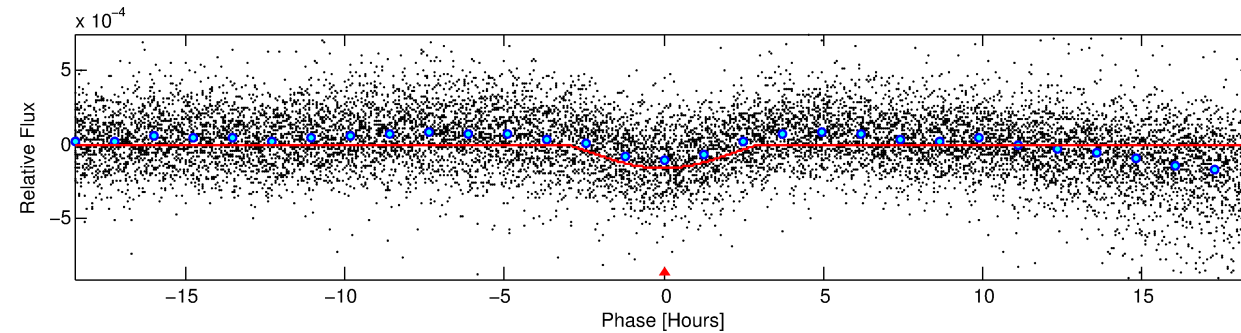
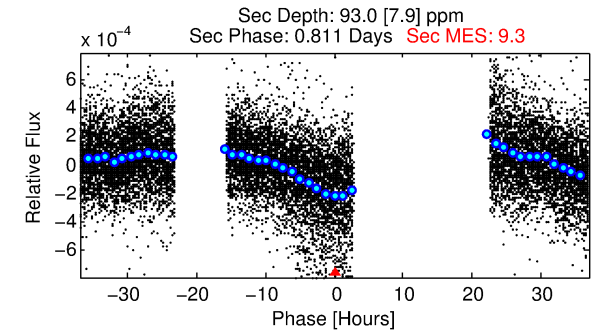
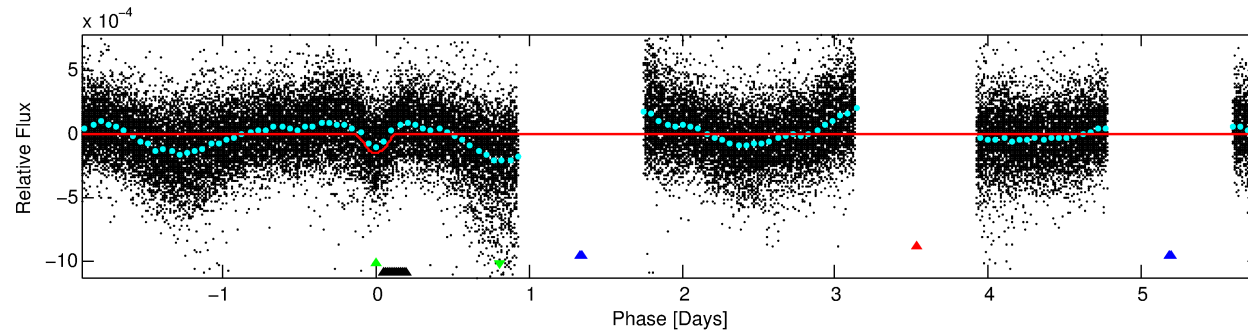
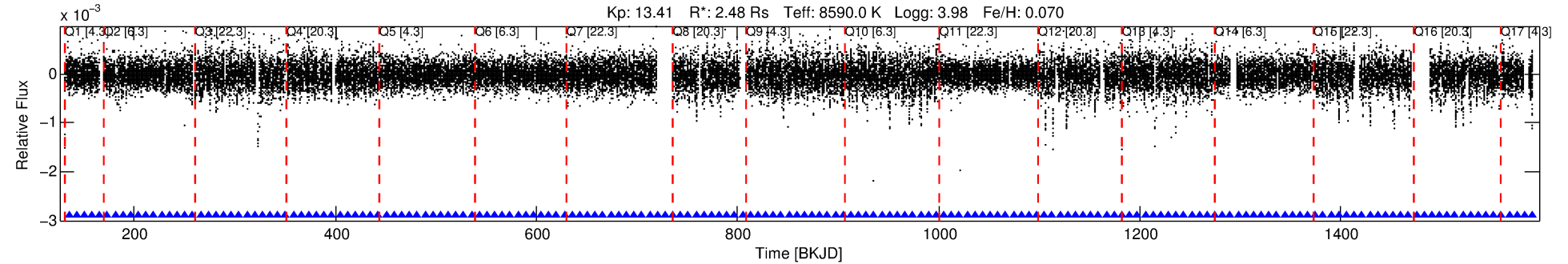
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003326428-03

No Significant Match Found

DV One-Page Summary

KIC: 3326428 Candidate: 3 of 4 Period: 7.700 d



DV Fit Results:

Period = 7.70049 [0.00006] d
Epoch = 135.0828 [0.0061] BKJD
Rp/R* = 0.0211 [0.0221]
a/R* = 2.27 [0.55]
b = 1.00 [0.03]
Seff = 3091.19 [1350.96]
Teq = 1901 [208] K
Rp = 5.70 [6.26] Re
a = 0.0984 [0.0266] AU
Ag = 15.23 [32.54] [0.44σ]
Teffp = 5807 [3062] K [1.27σ]

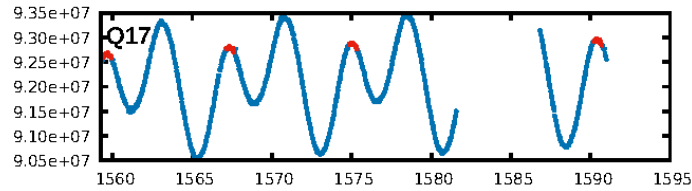
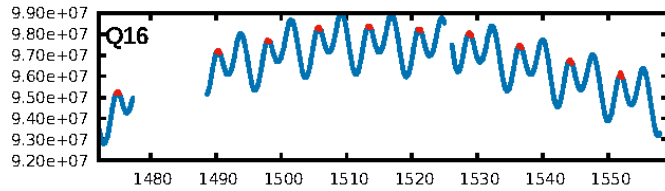
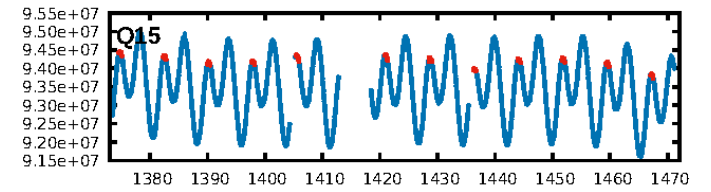
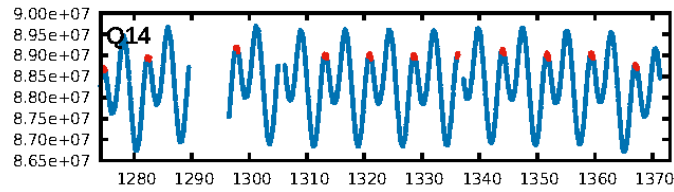
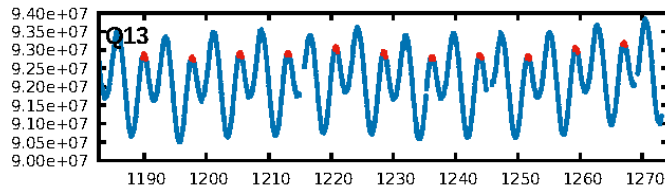
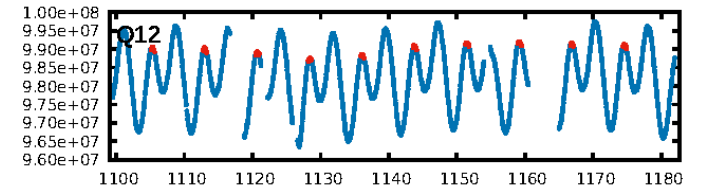
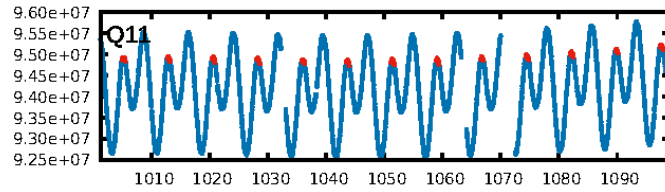
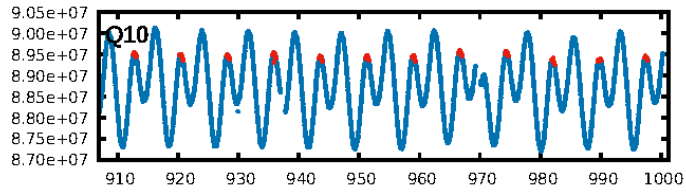
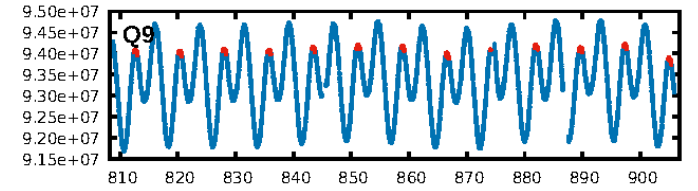
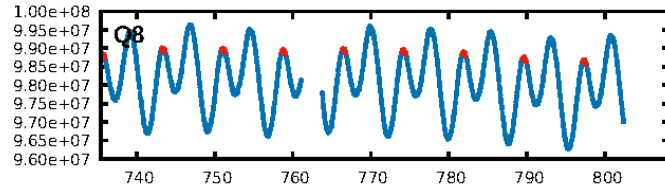
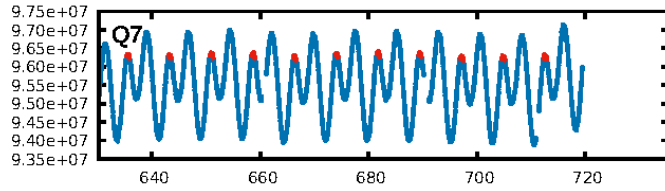
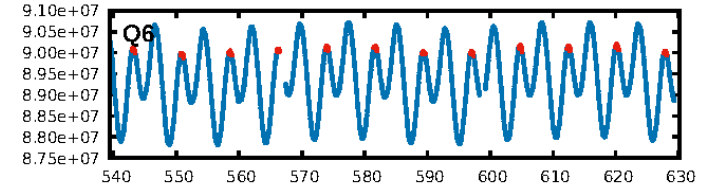
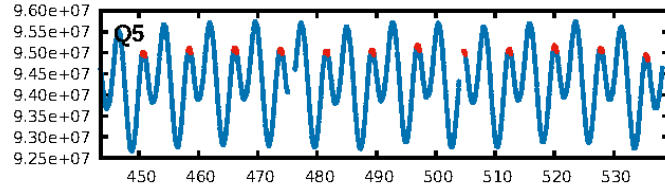
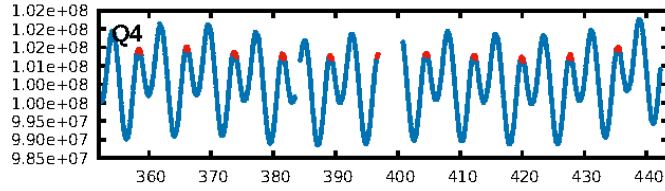
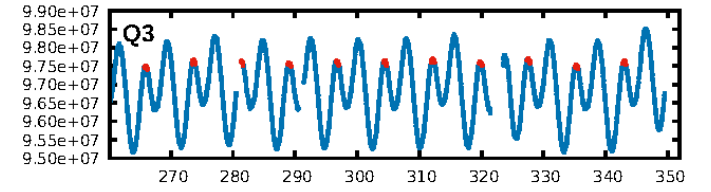
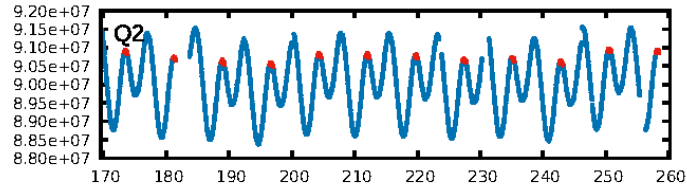
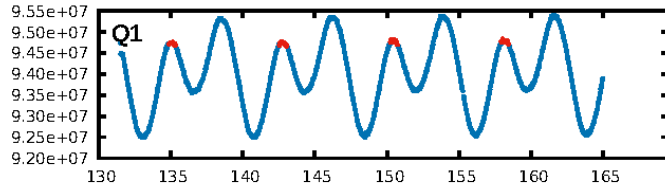
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.46e-46
RollingBand-fgt: 1.00 [168/168]
GhostDiagnostic-chr: -1.832
Centroid-sig: 37.9%
Centroid-so: 0.177 arcsec [0.35σ]
OotOffset-rm: 0.233 arcsec [2.67σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.271 arcsec [2.91σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.00 [0/17]

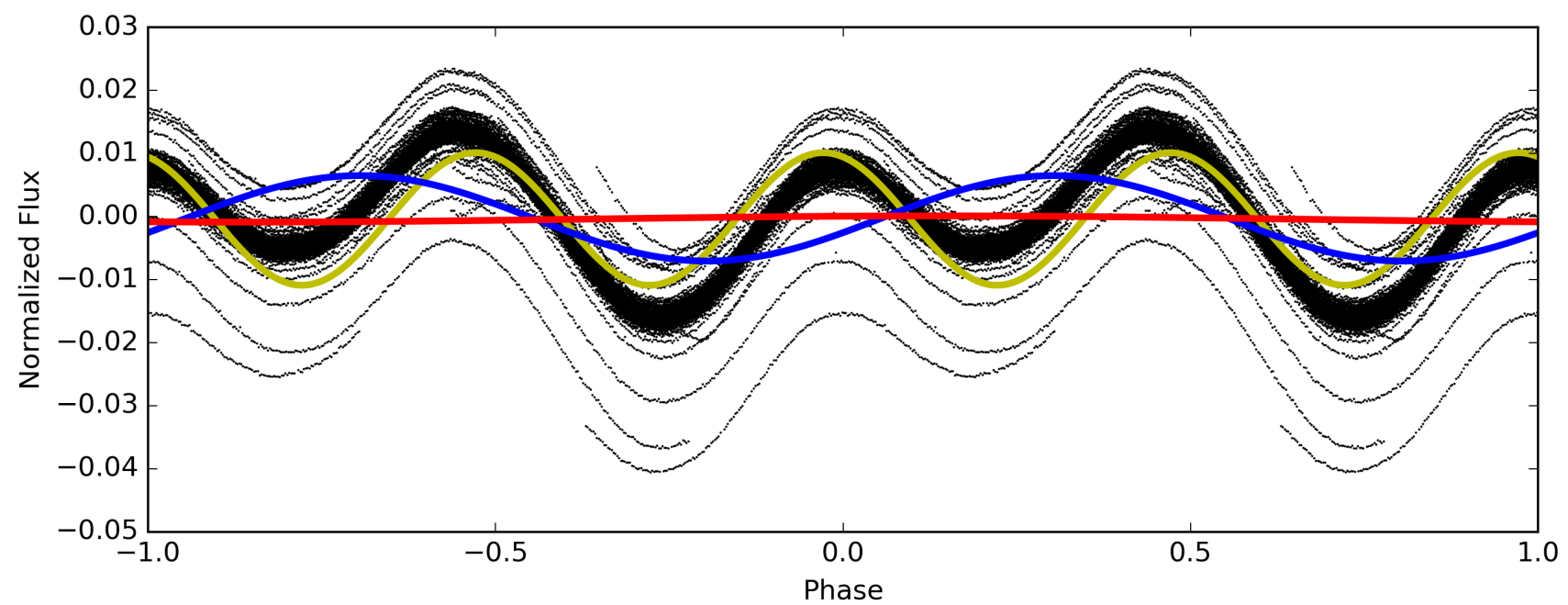
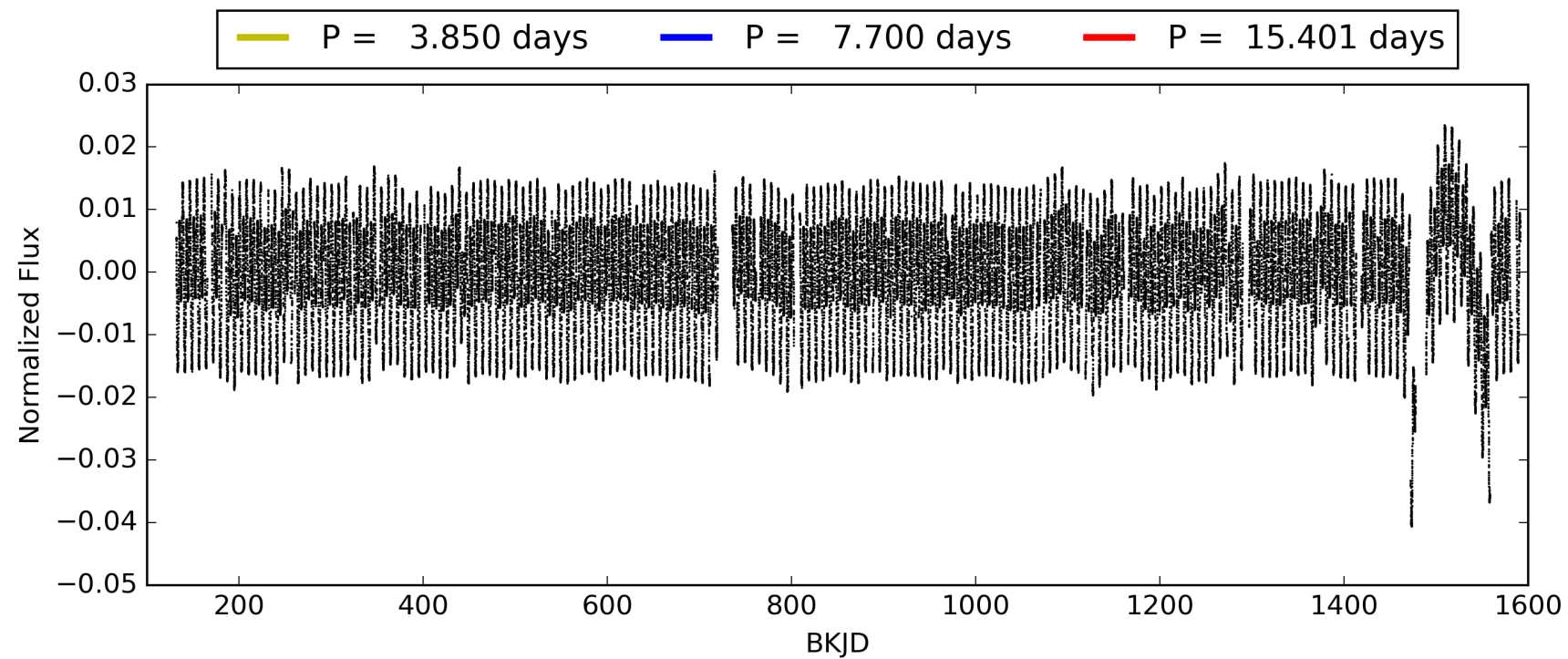
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:36:22 Z

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

TCE 003326428-03, PDC Light Curves

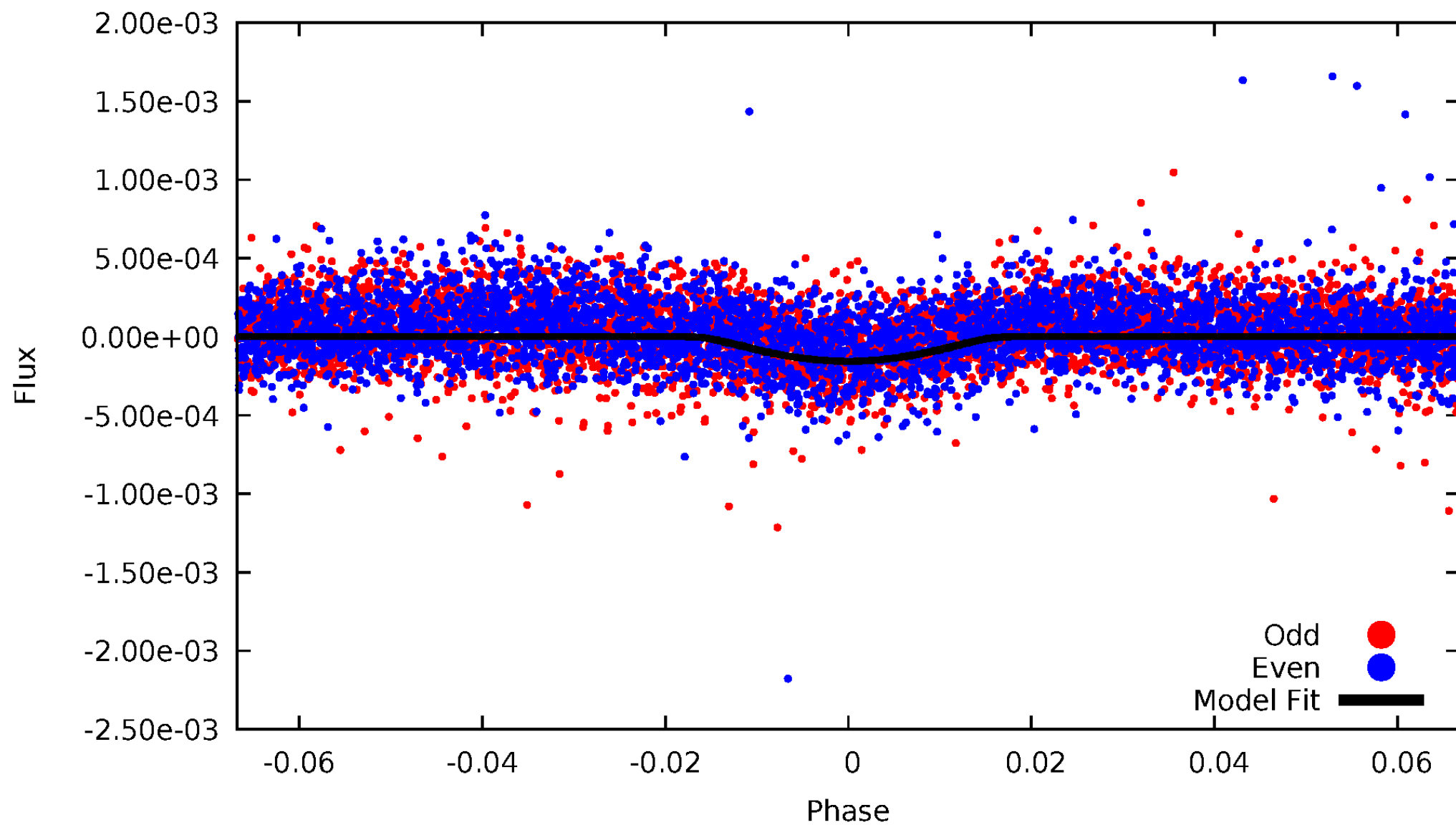


TCE 003326428-03



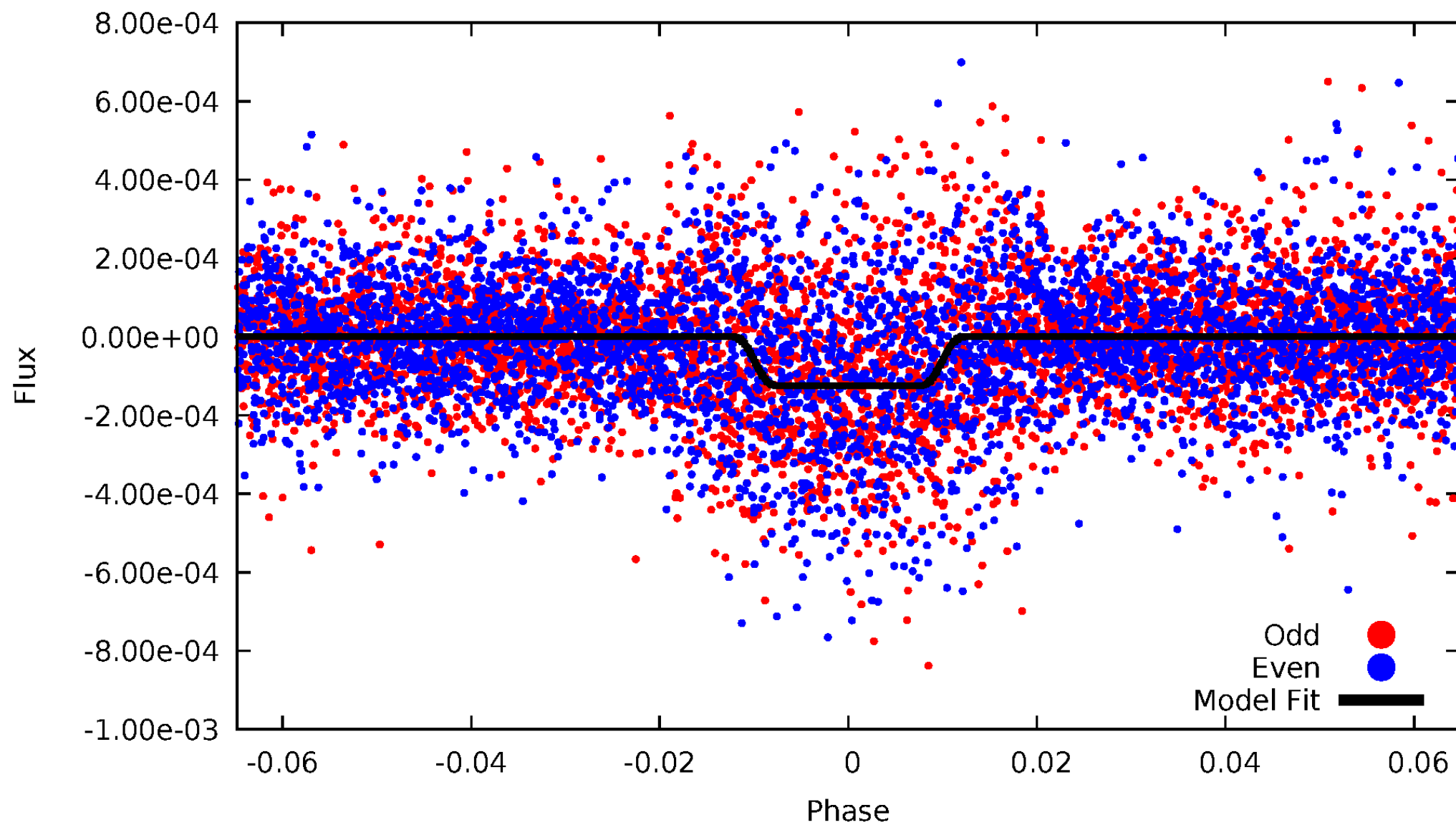
DV Odd/Even

TCE 003326428-03



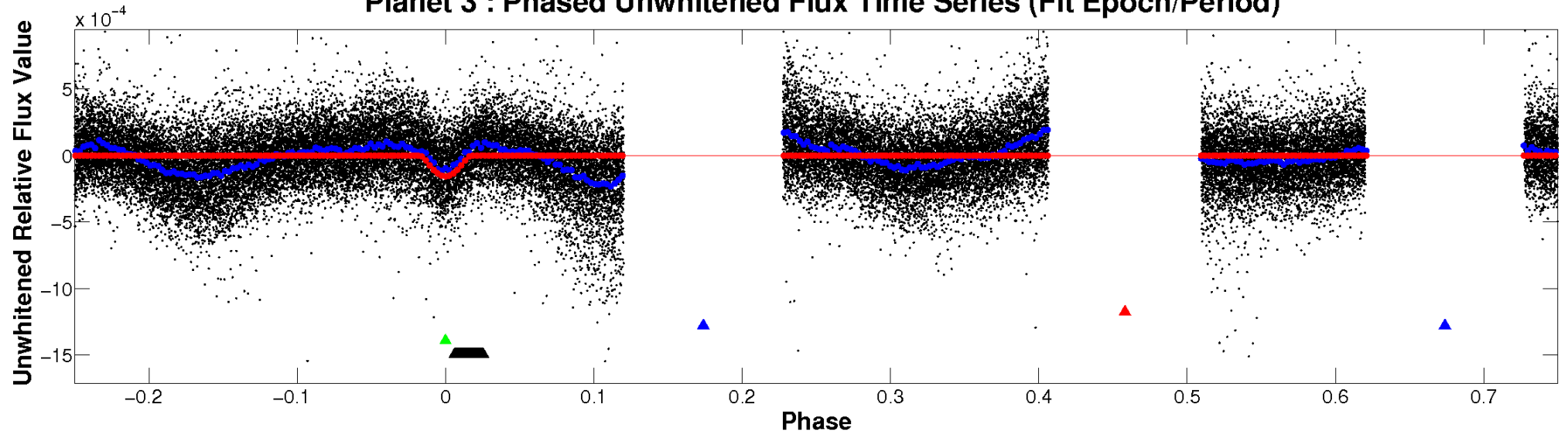
ALT Odd/Even

TCE 003326428-03

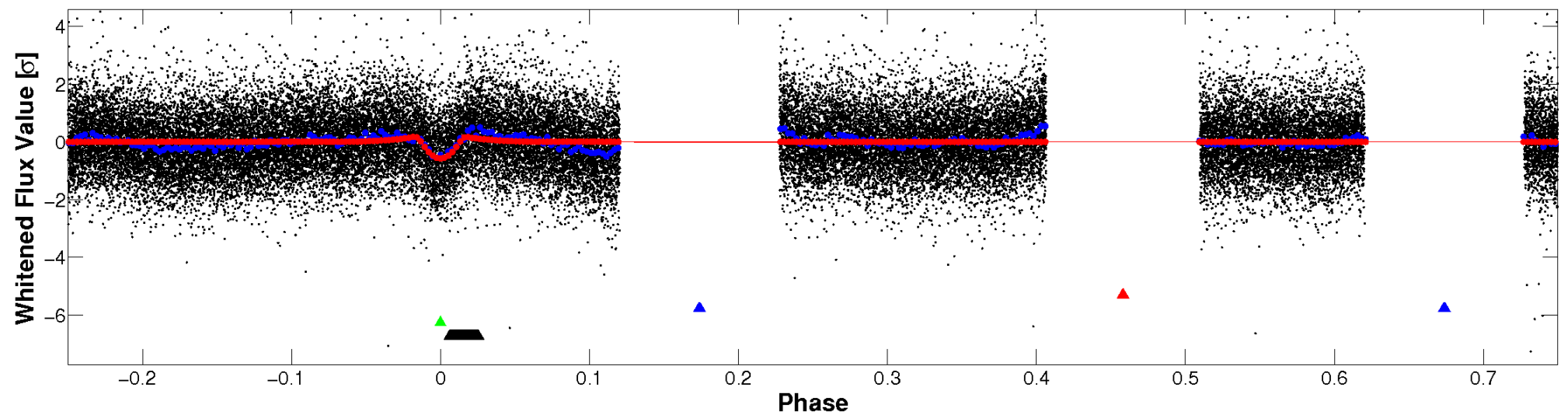


Non-Whitened Vs. Whitened Light Curve

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

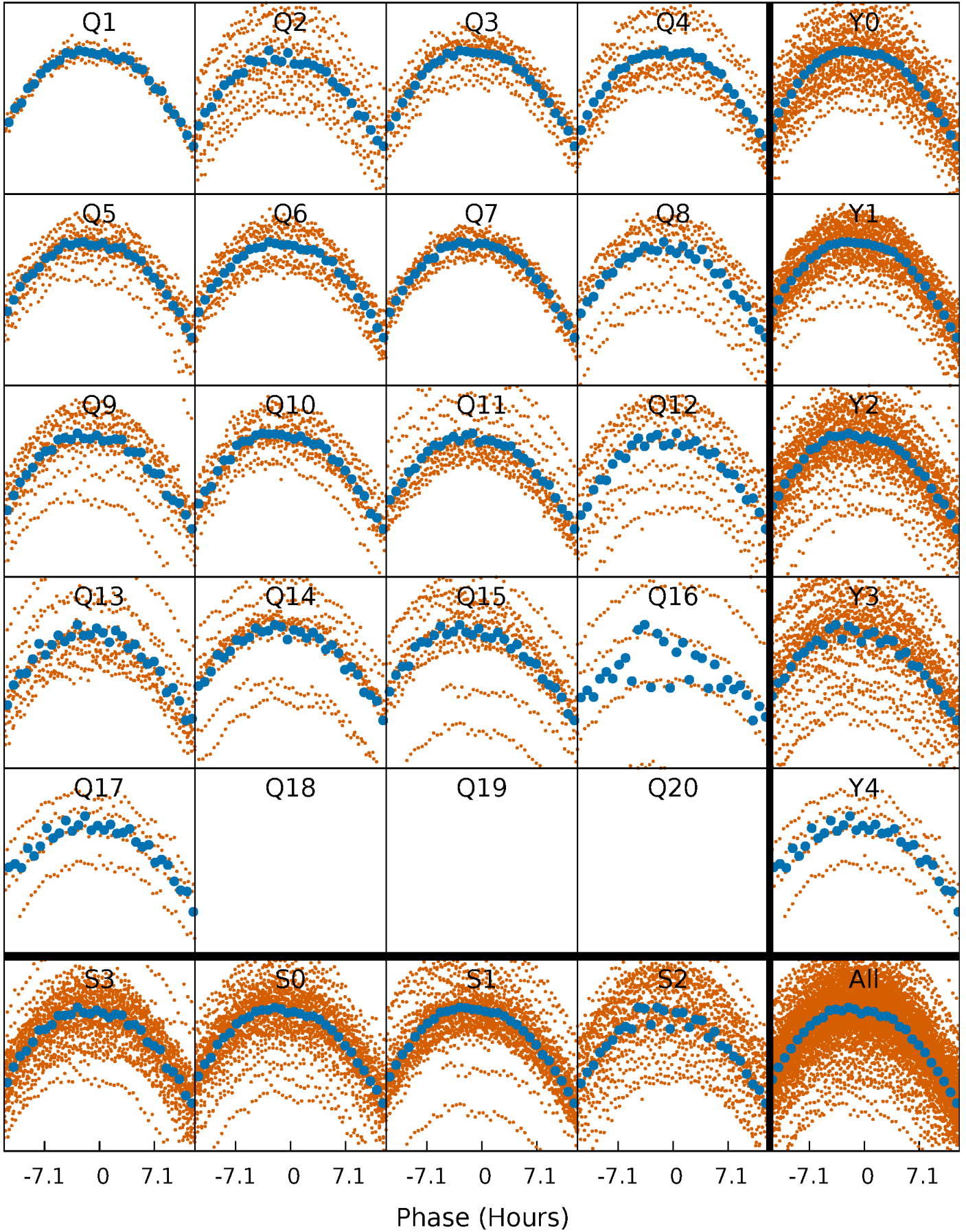


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



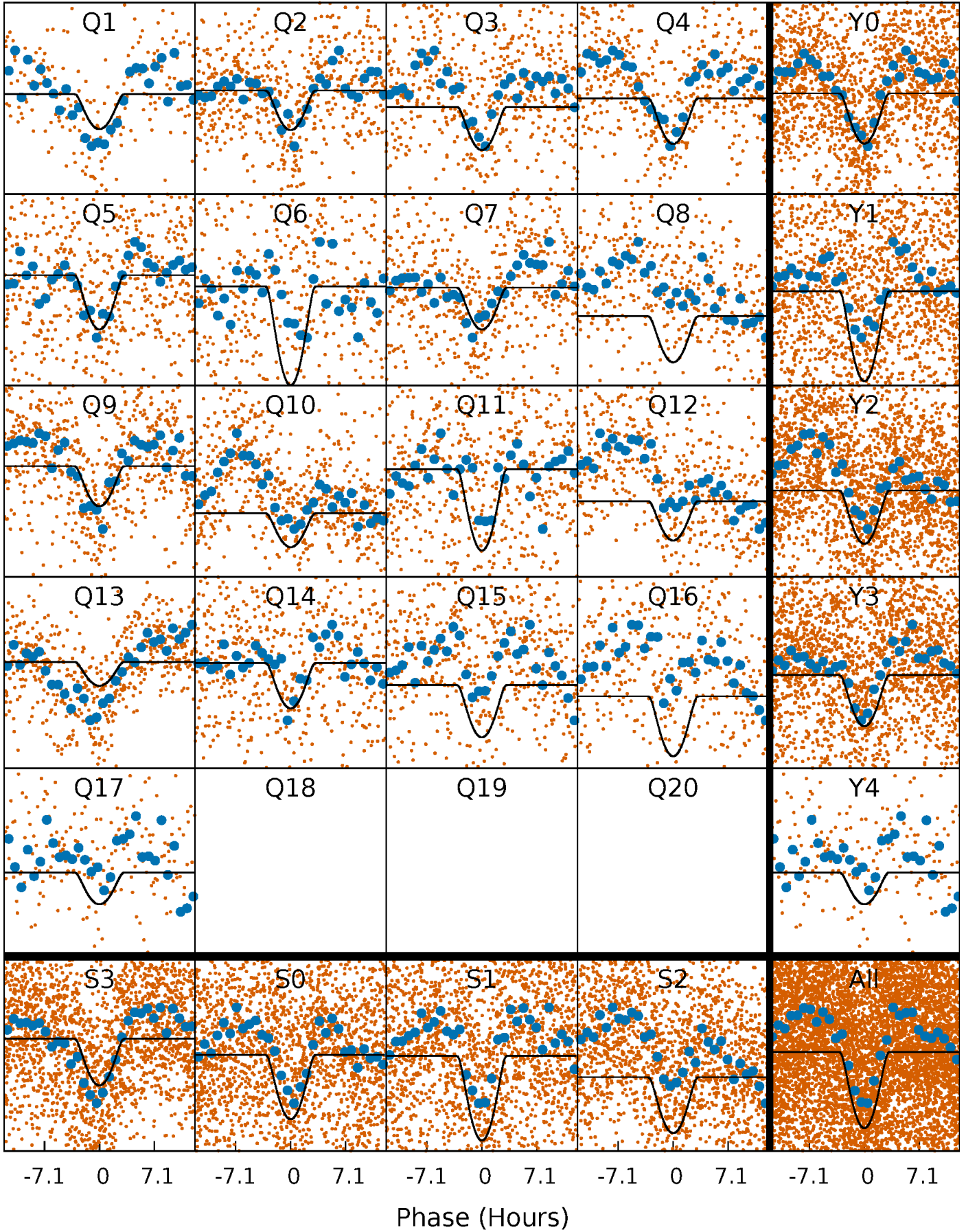
PDC Quarter-Phased Transit Curves

TCE 003326428-03 P= 7.700493 Days $T_0=135.082830$ (BKJD)



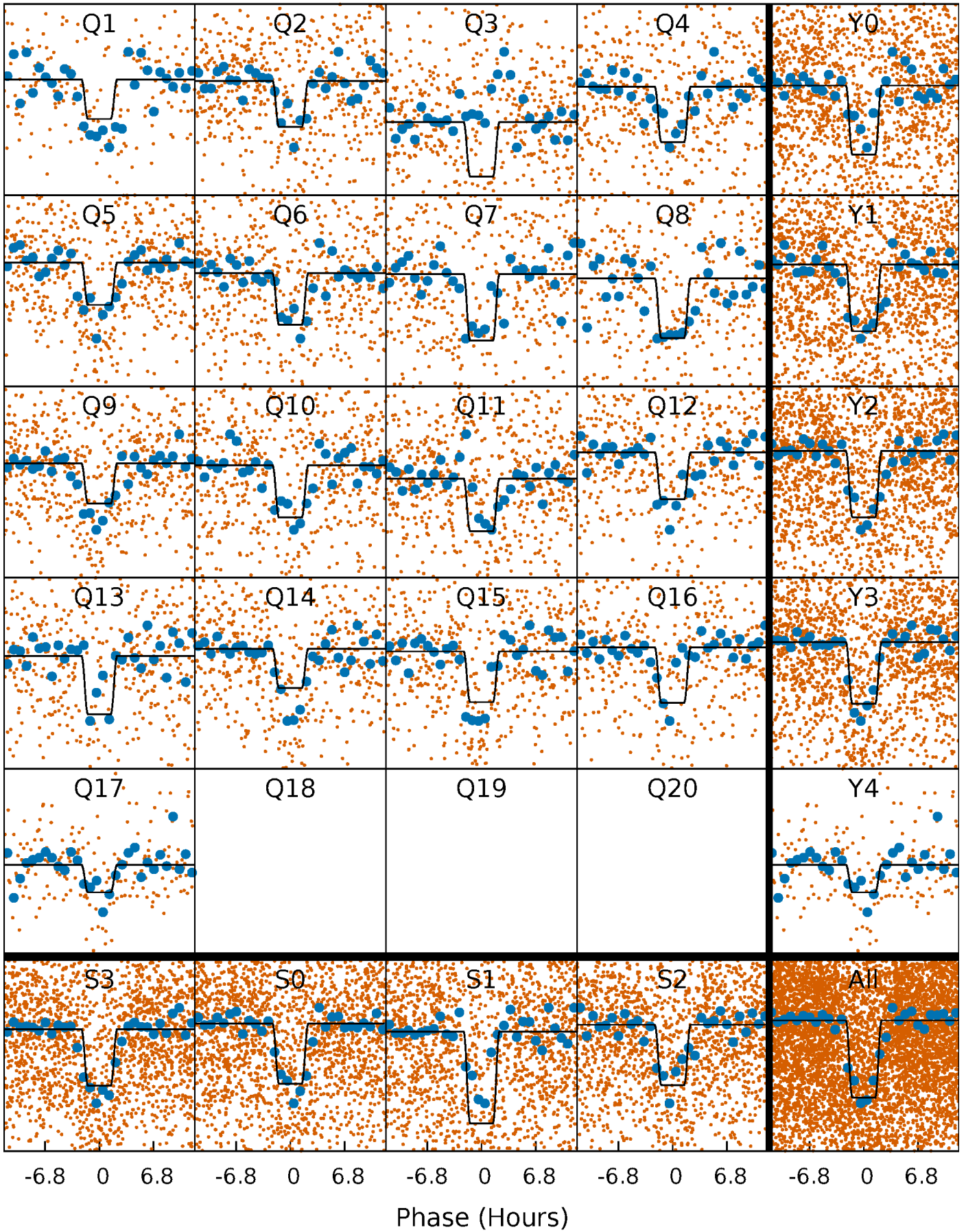
DV Quarter-Phased Transit Curves

TCE 003326428-03 P= 7.700493 Days $T_0=135.082830$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

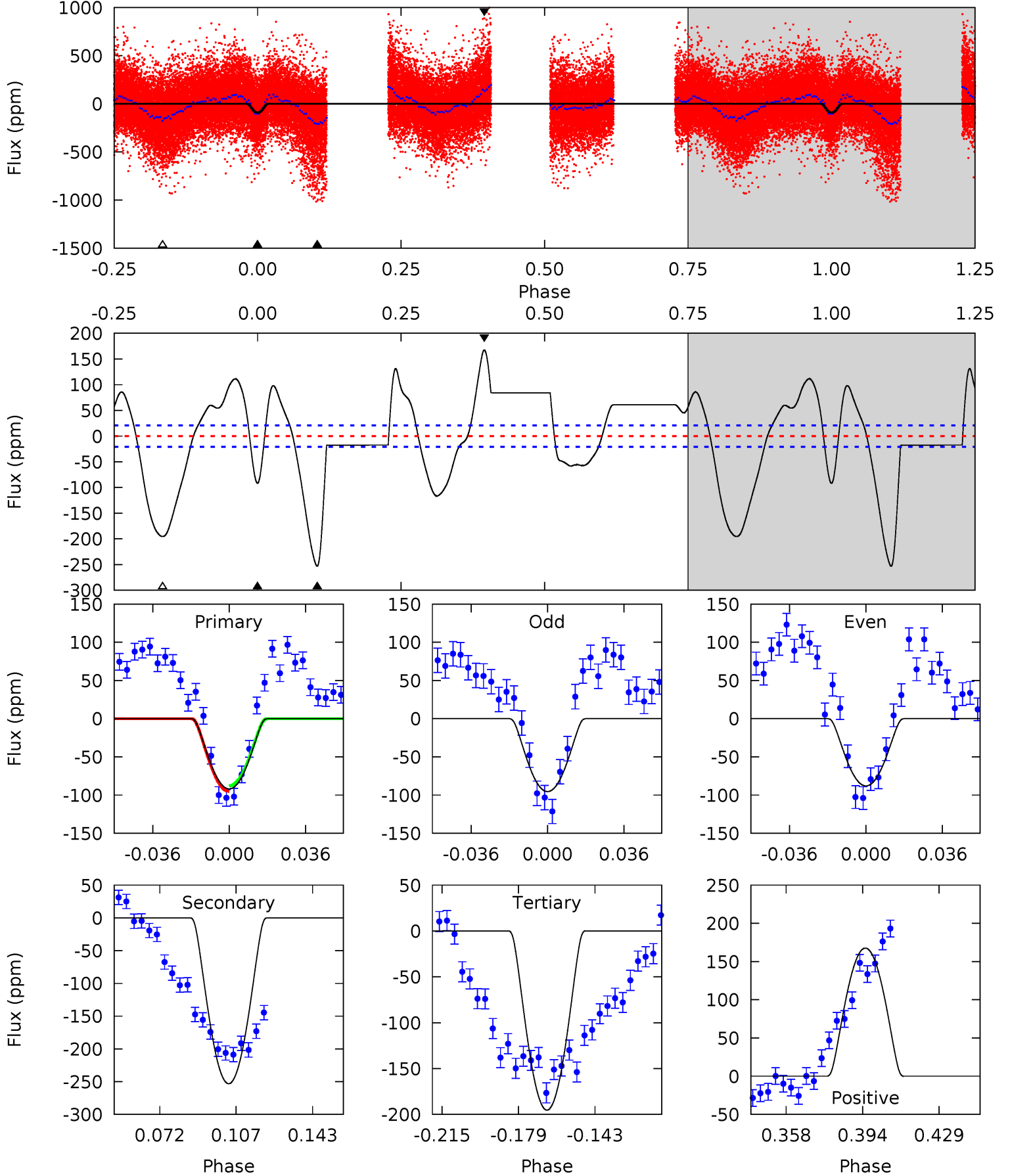
TCE 003326428-03 P= 7.700559 Days $T_0=135.081786$ (BKJD)



DV Model-Shift Uniqueness Test

003326428-03, P = 7.700493 Days, E = 127.382337 Days

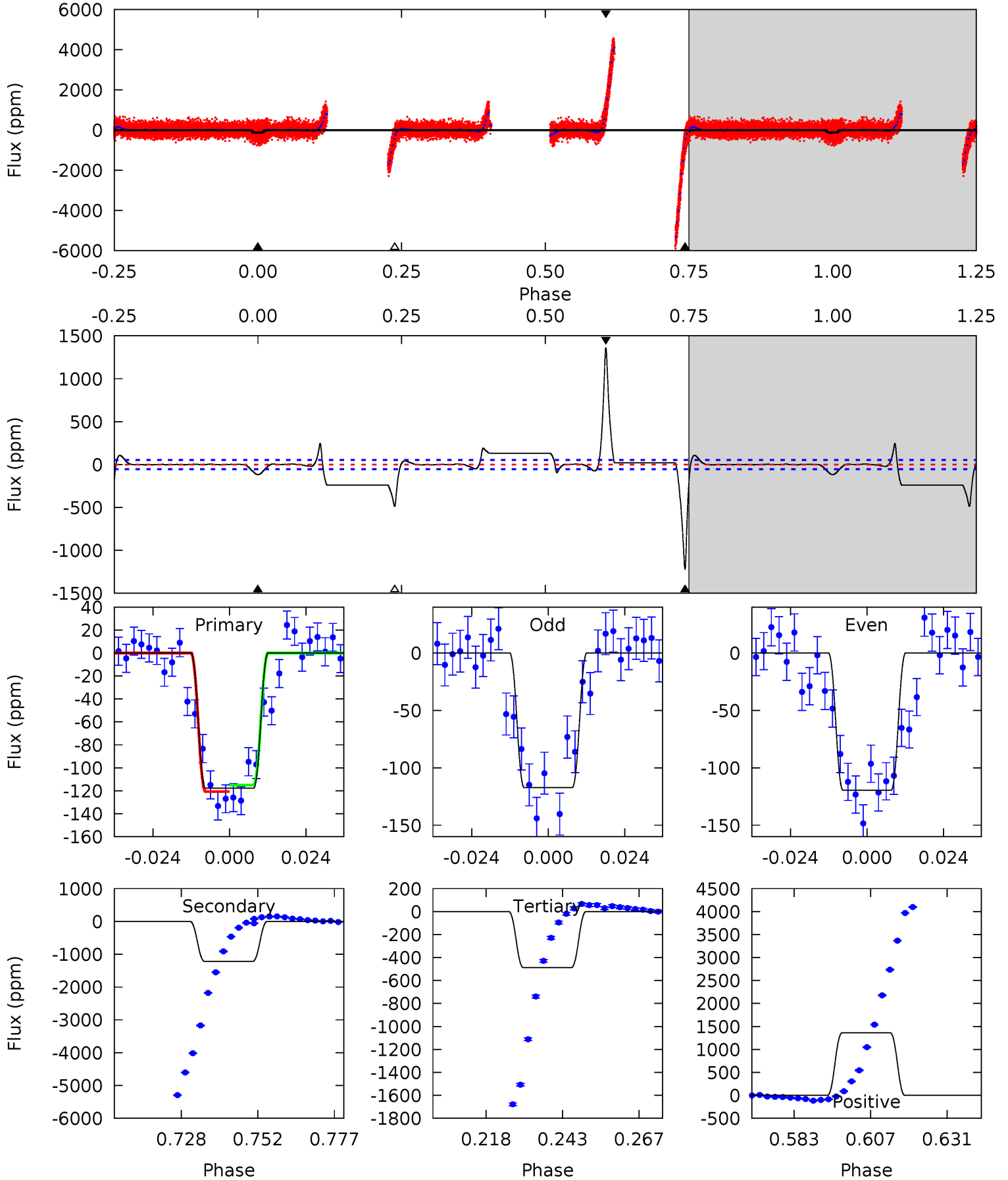
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.1	58.2	44.9	38.5	4.78	2.10	19.5	-23.8	-17.4	13.3	19.7	0.86	1.03	0.40	0.84



Alt Model-Shift Uniqueness Test

003326428-03, P = 7.700559 Days, E = 127.381227 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	109.3	43.7	122.0	4.85	2.25	14.1	-33.2	-111.5	65.5	-12.8	0.11	0.92	0.53	0.26



Stellar Parameters For KIC 003326428

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8590^{+235}_{-404}	$3.981^{+0.216}_{-0.144}$	$0.070^{+0.200}_{-0.550}$	$2.477^{+0.650}_{-0.794}$	$2.139^{+0.314}_{-0.538}$	$0.198^{+0.289}_{-0.083}$
	+3%/-5%	+5%/-4%	+286%/-786%	+26%/-32%	+15%/-25%	+146%/-42%
Source	KIC0	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 003326428-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-253 ± 4	$6.81^{+5.79}_{-4.28}$	2629^{+176}_{-211}	6365^{+5994}_{-1480}	29^{+182}_{-20}
Alt.	-1218 ± 11	$5.06^{+5.39}_{-3.39}$	2621^{+204}_{-205}	13180^{+38364}_{-5167}	246^{+2121}_{-183}

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 $A_{obs} \gg 1.0$

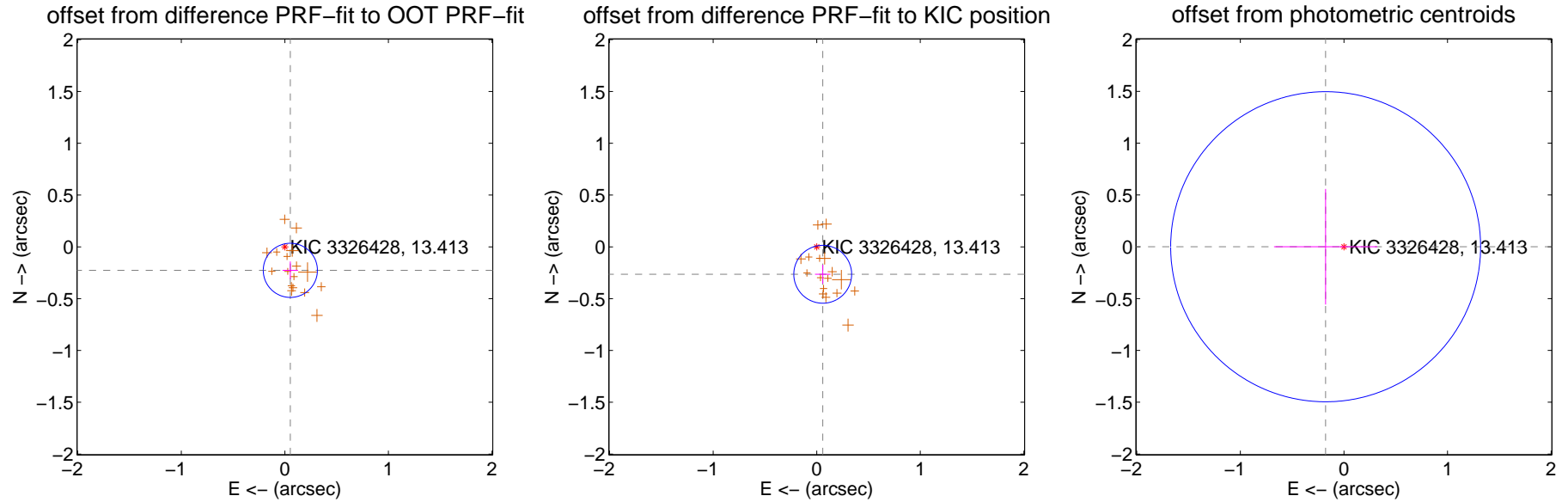
DV Centroid Data

Supplemental centroid analysis for 003326428-03. Kepler magnitude: 13.41. Transit SNR 18.16

There are 0 quarters with good PRF difference image offsets

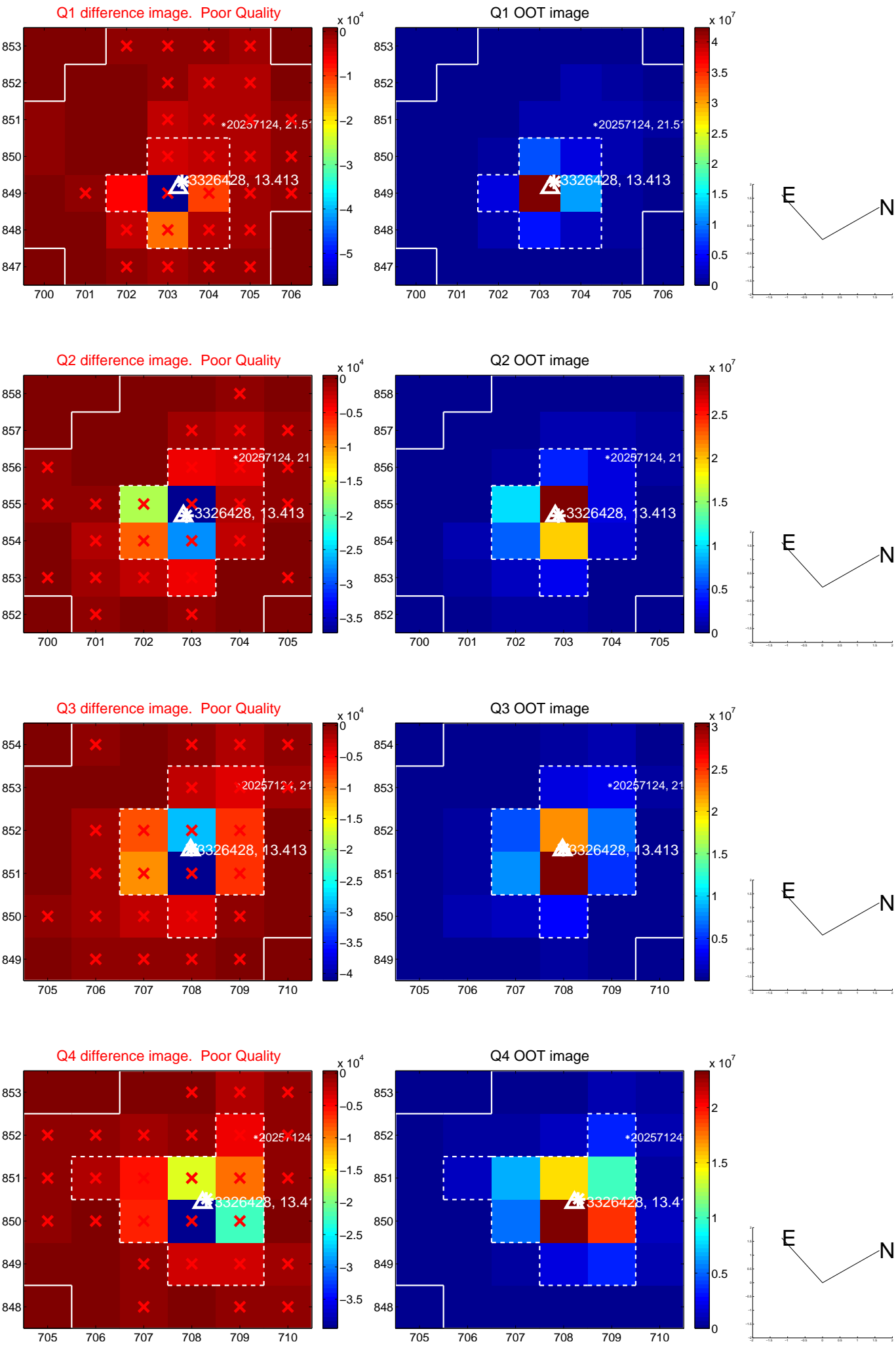
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.233 ± 0.087	2.67	-0.053 ± 0.075	-0.227 ± 0.085
PRF-fit source offset from KIC position	0.271 ± 0.093	2.91	-0.058 ± 0.074	-0.265 ± 0.091
photometric centroid source offset	0.18 ± 0.50	0.35	0.18 ± 0.50	0.00 ± 0.56

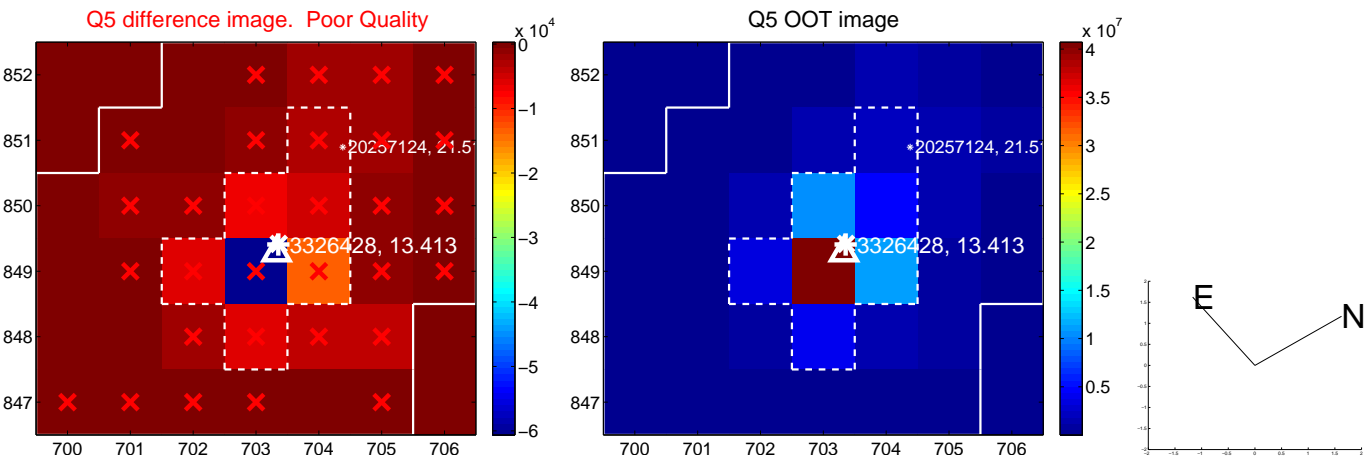


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

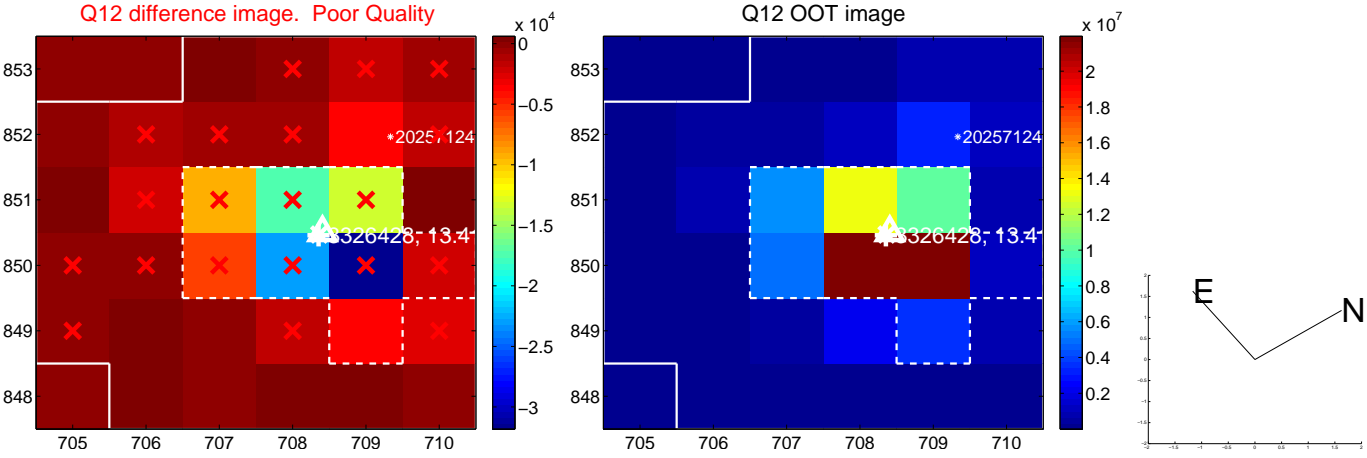
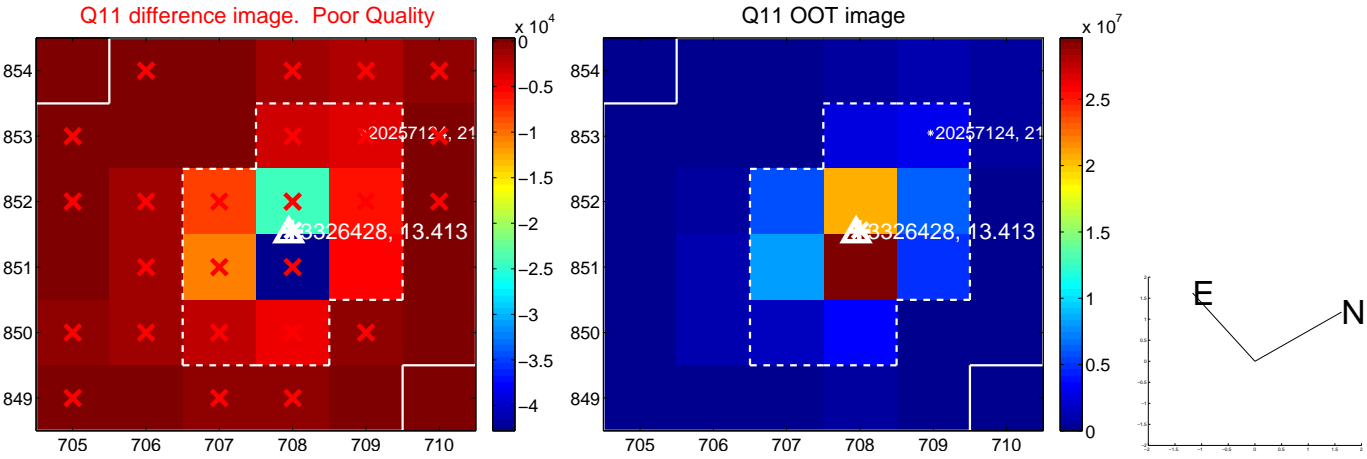
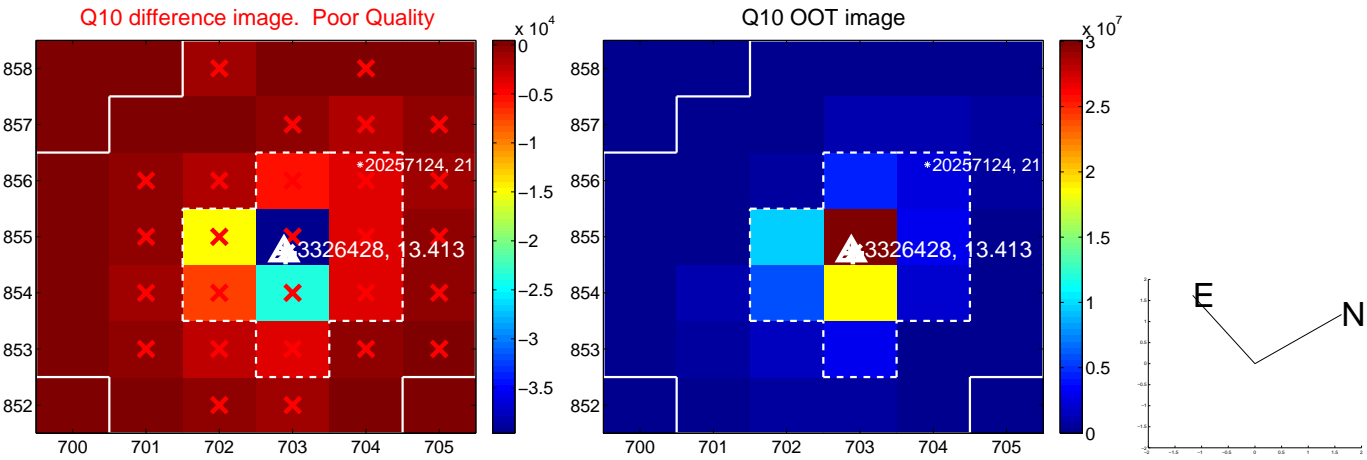
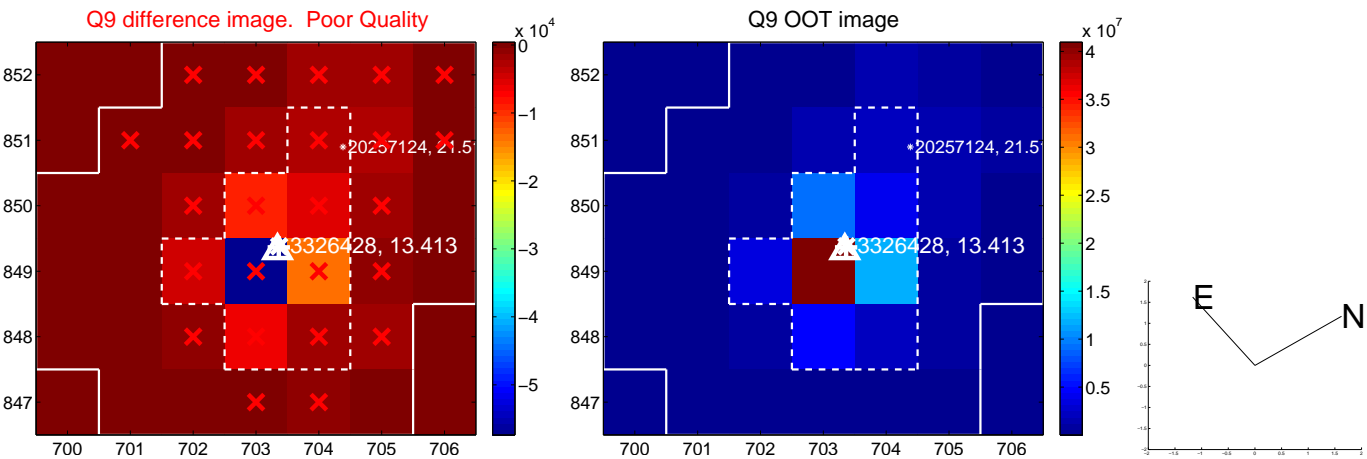
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



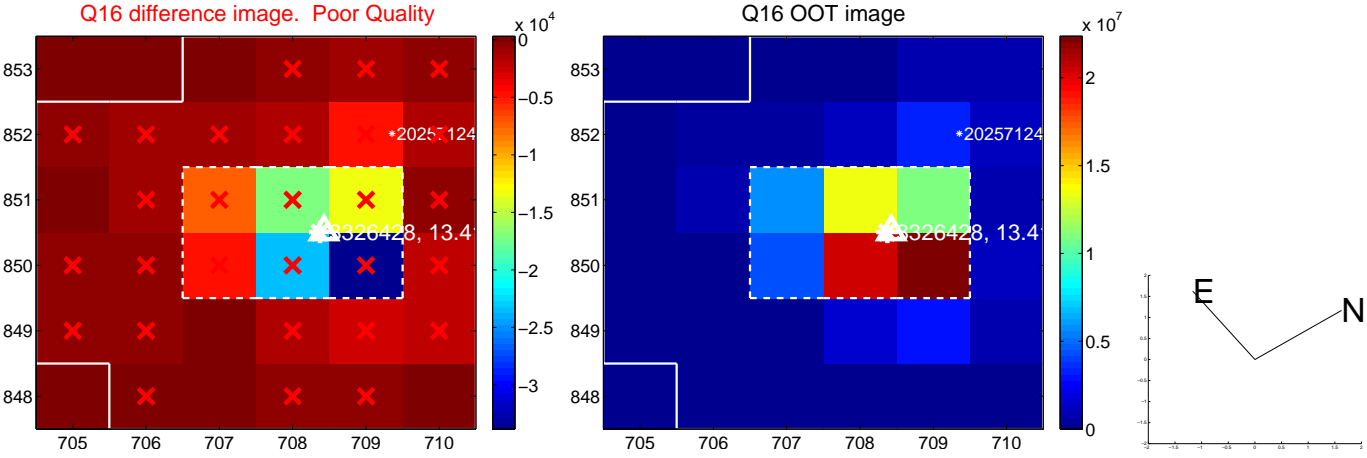
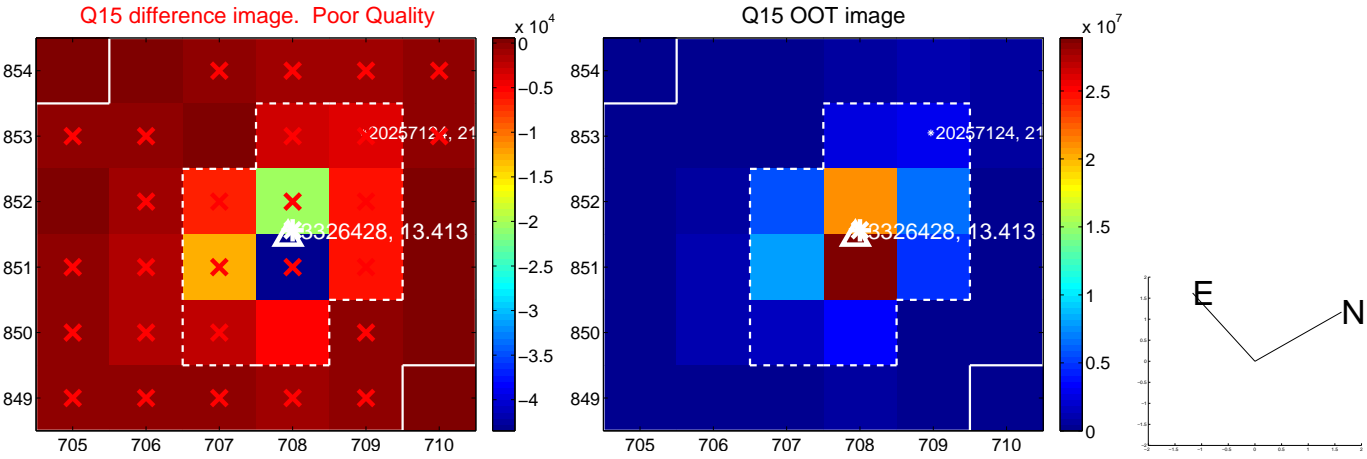
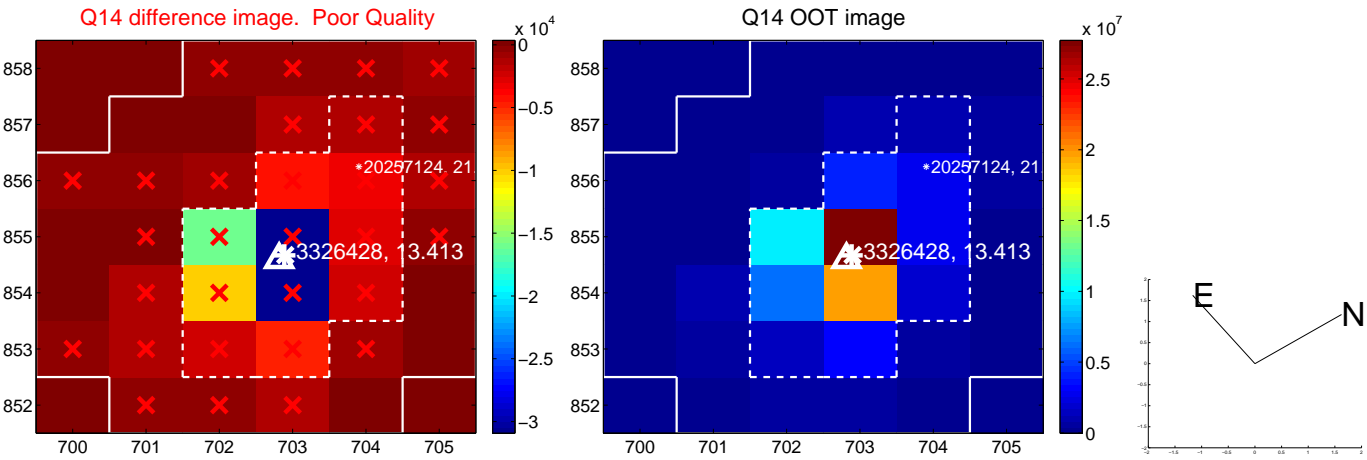
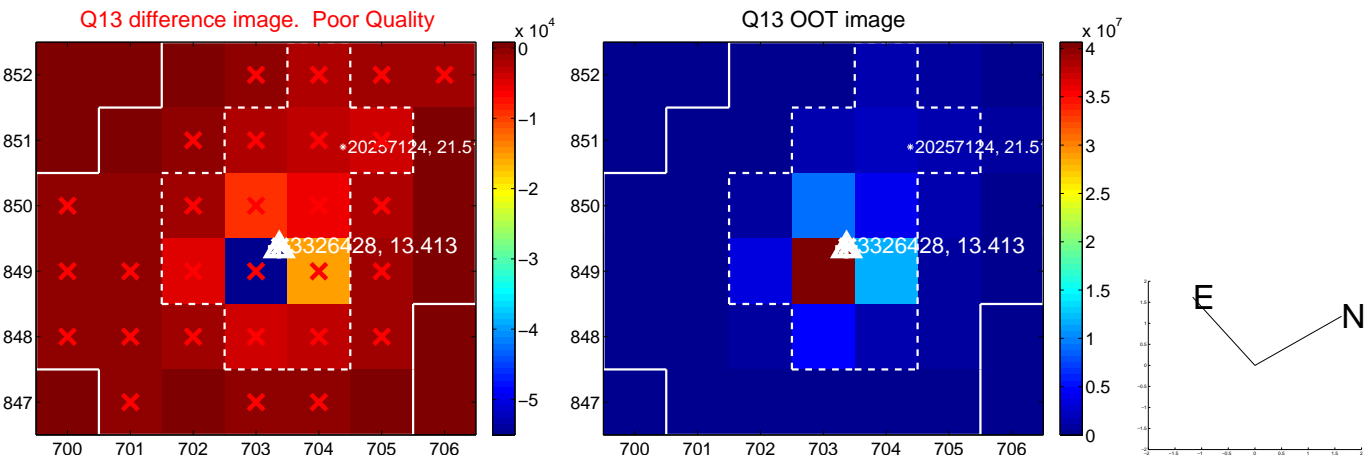
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



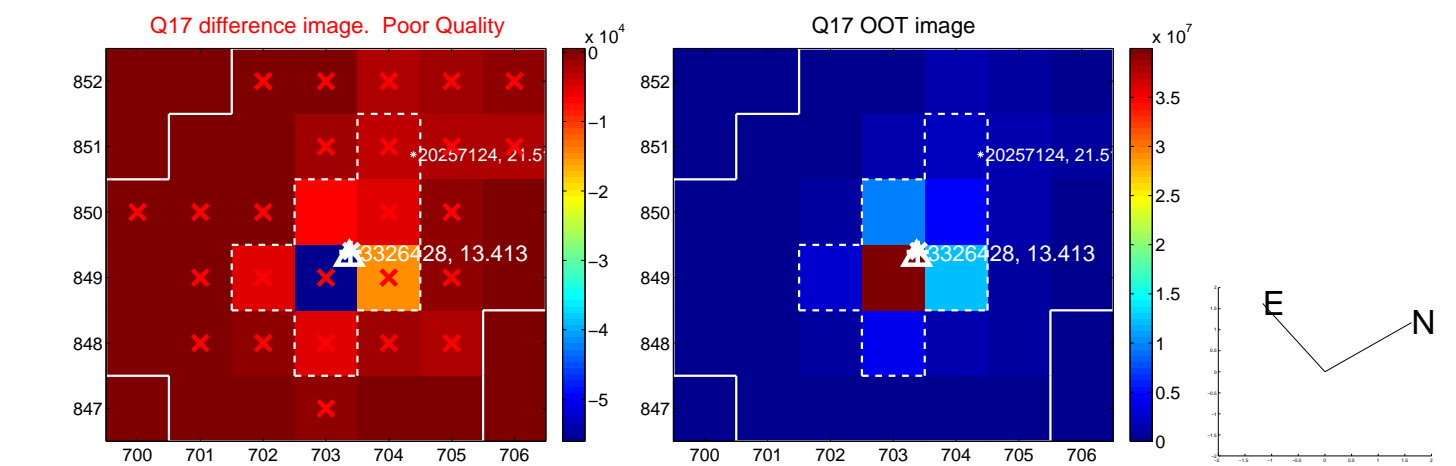
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



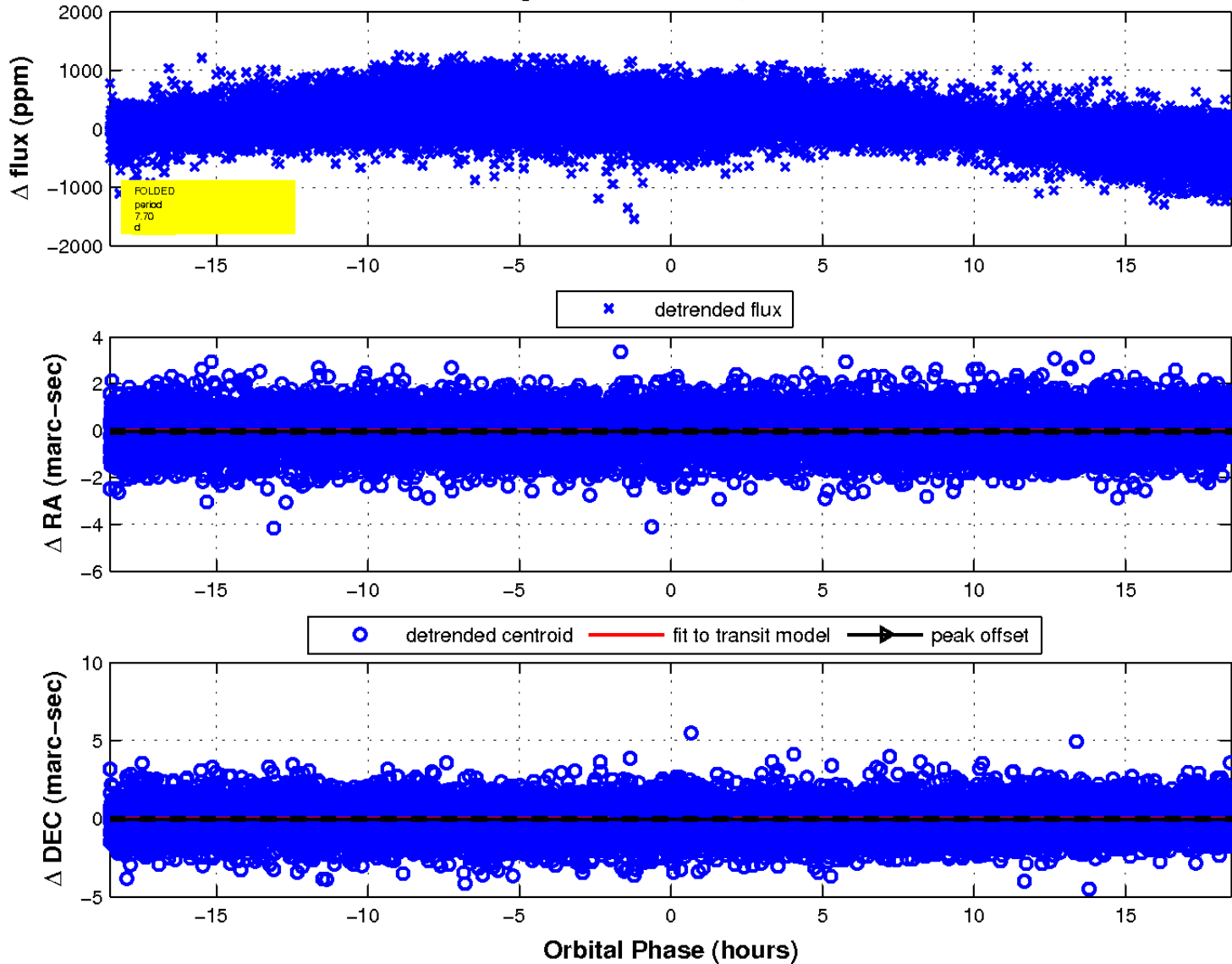
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

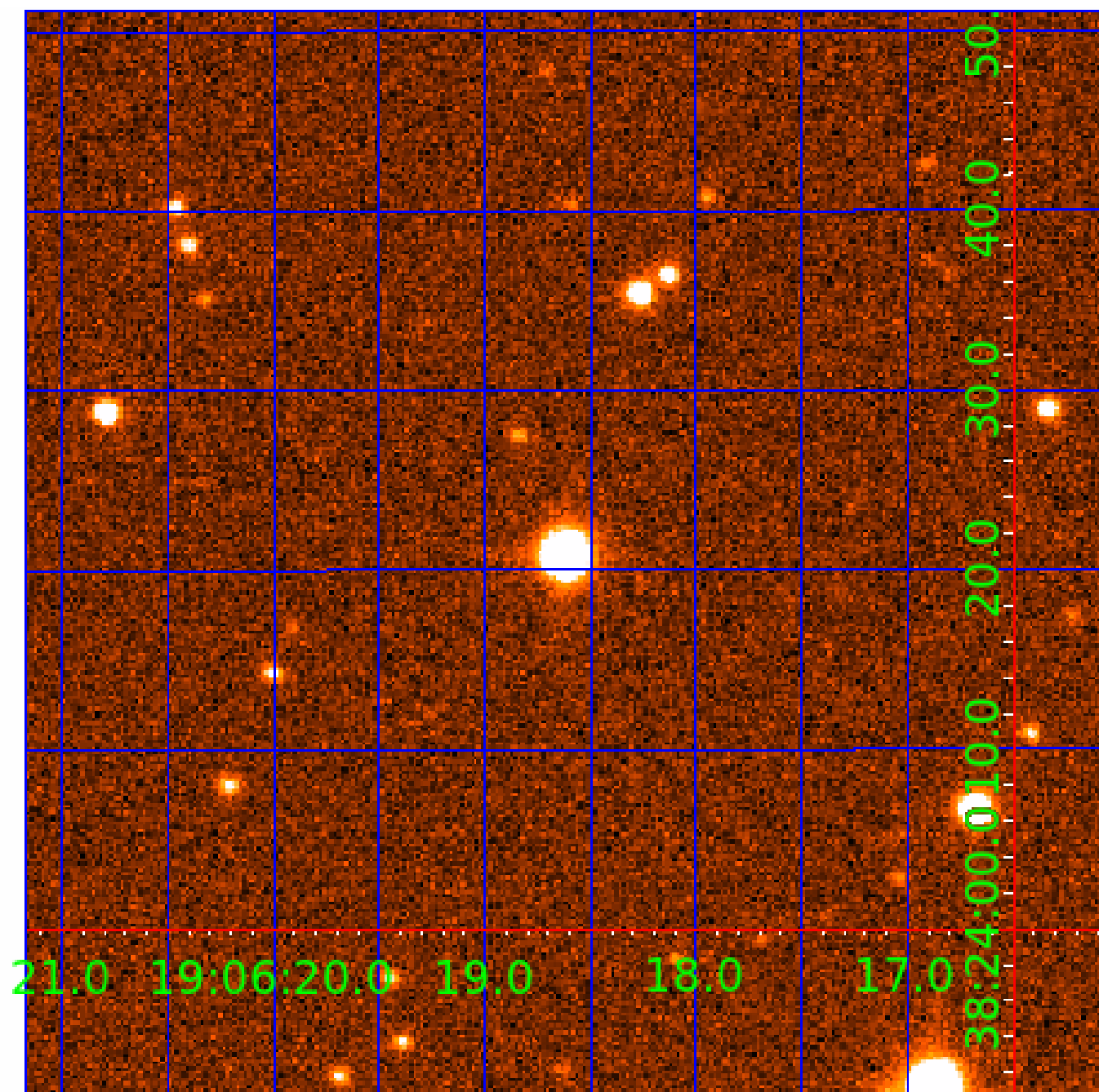


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 003326428

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})
003326428-01	OBS	No	7.700480	138.611973	285.3	6.197	26.3	29.4	2.48	8590	7.92	3091.20
003326428-02	OBS	No	3.850230	132.574455	165.2	6.456	22.8	25.4	2.48	8590	6.11	7789.37
003326428-03	OBS	No	7.700493	135.082829	155.9	6.170	16.5	18.2	2.48	8590	5.70	3091.19
003326428-04	OBS	No	7.699694	135.279911	0.0	24.717	11.1	0.0	2.48	8590	0.06	3091.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003326428-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
003326428-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
003326428-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003326428-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

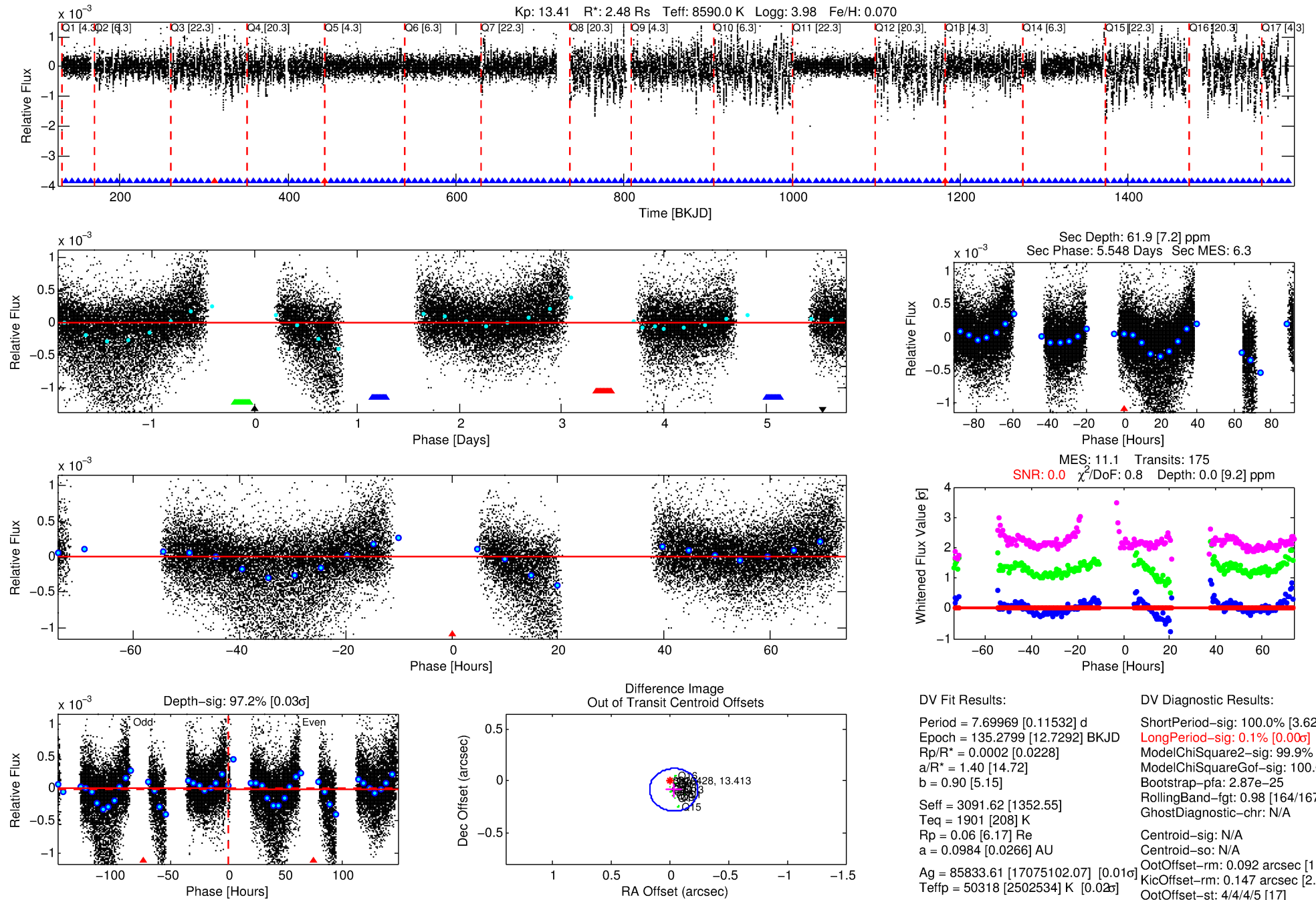
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003326428-04

No Significant Match Found

DV One-Page Summary

KIC: 3326428 Candidate: 4 of 4 Period: 7.700 d



DV Fit Results:

Period = 7.69969 [0.11532] d
Epoch = 135.2799 [12.7292] BKJD
Rp/R* = 0.0002 [0.0228]
a/R* = 1.40 [14.72]
b = 0.90 [5.15]
Seff = 3091.62 [1352.55]
Teff = 1901 [208] K
Rp = 0.06 [6.17] Re
a = 0.0984 [0.0266] AU
Ag = 85833.61 [17075102.07] [0.01 σ]
Teffp = 50318 [2502534] K [0.02 σ]

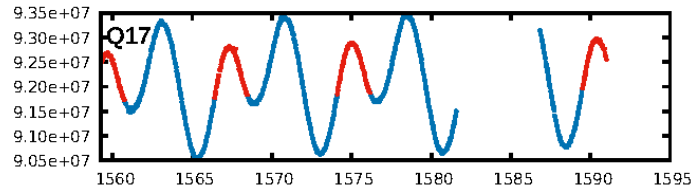
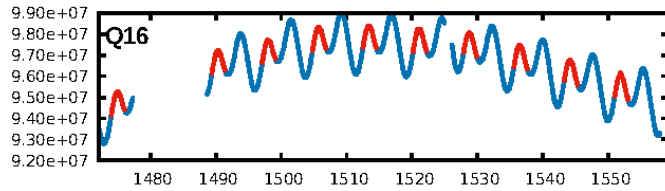
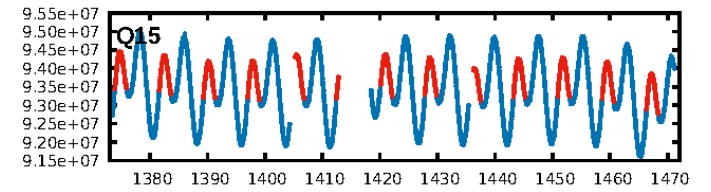
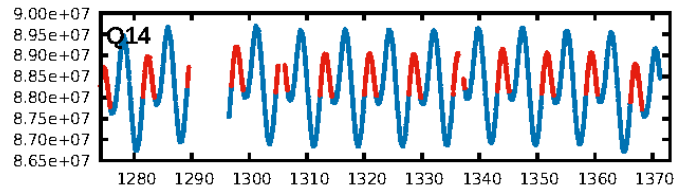
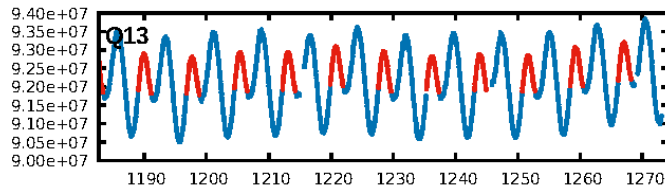
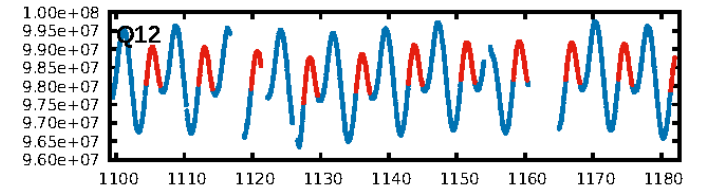
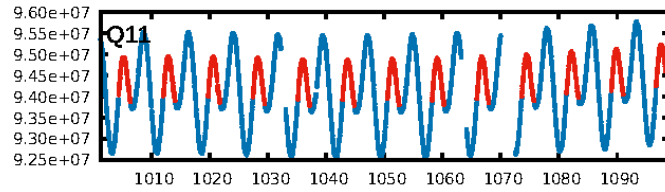
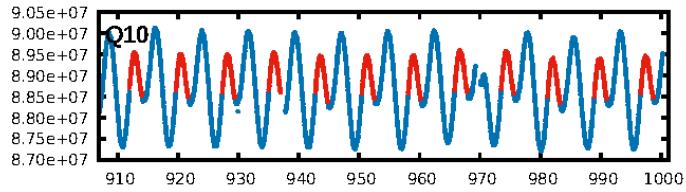
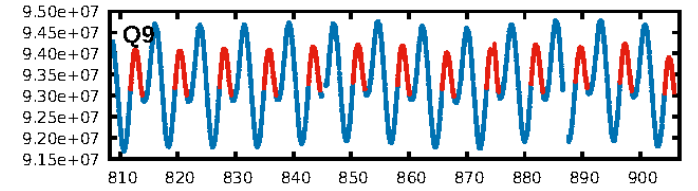
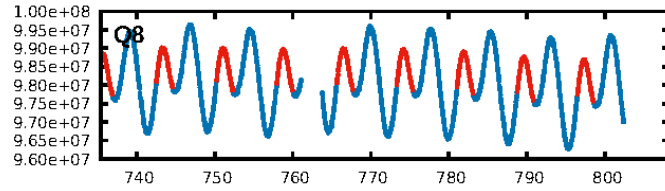
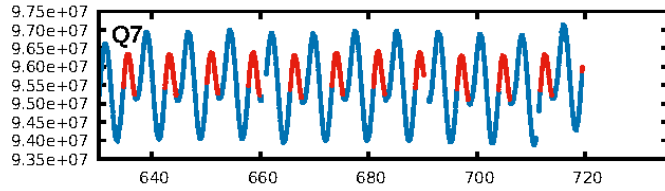
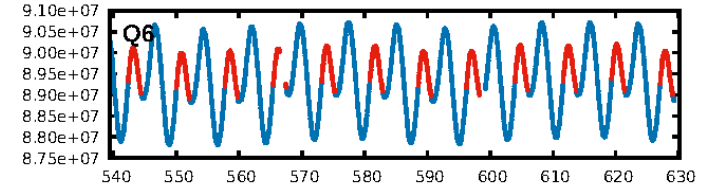
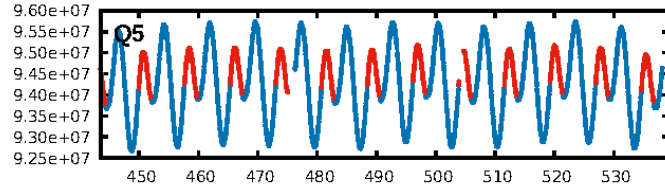
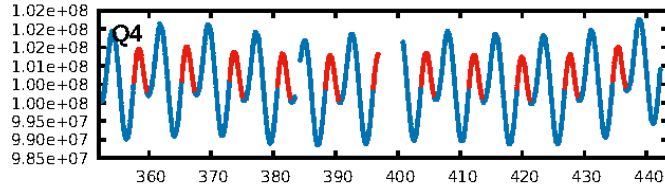
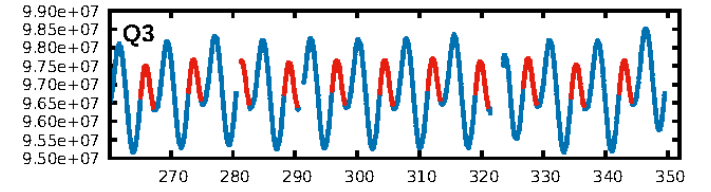
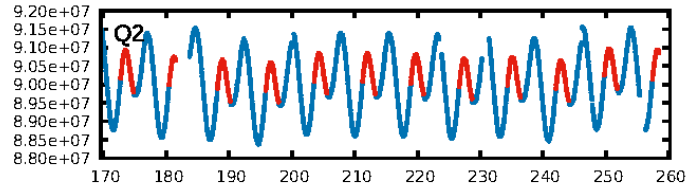
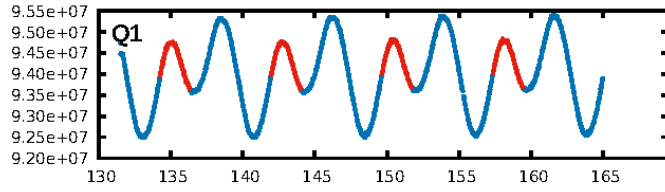
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.62 σ]
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.87e-25
RollingBand-fgt: 0.98 [164/167]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.092 arcsec [1.34 σ]
KicOffset-rm: 0.147 arcsec [2.11 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.00 [0/17]

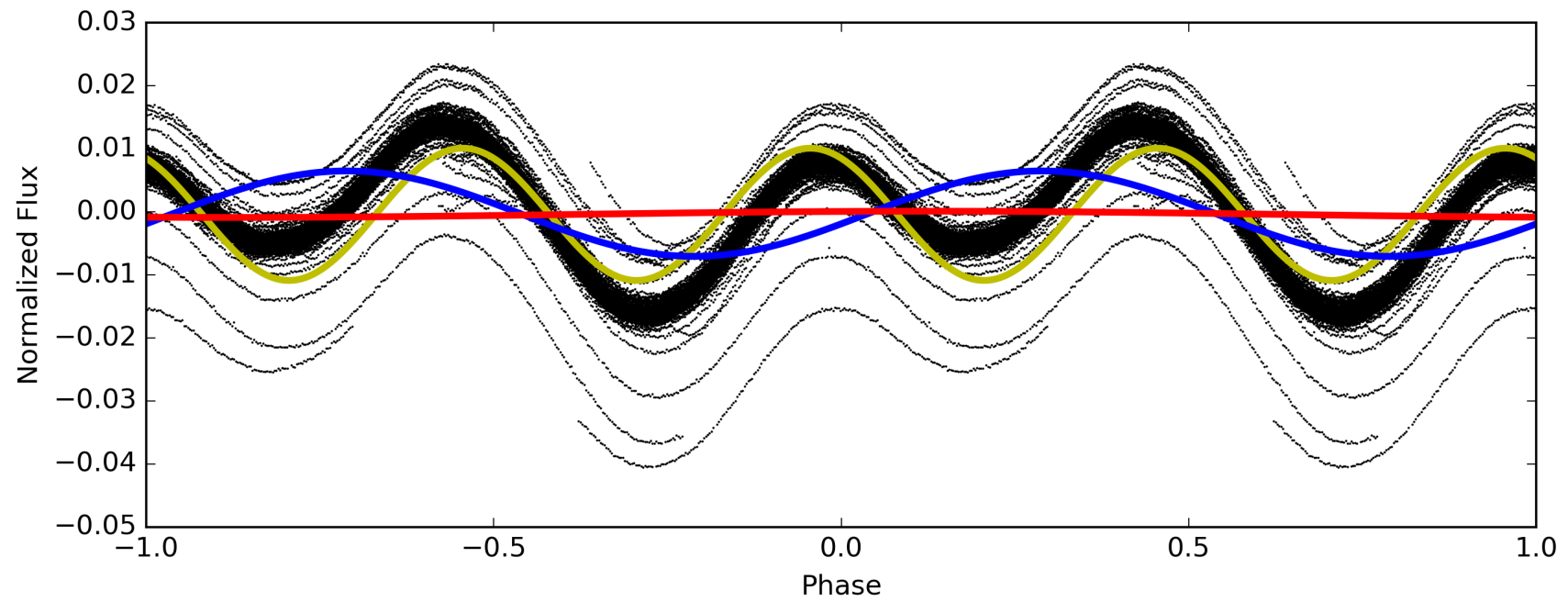
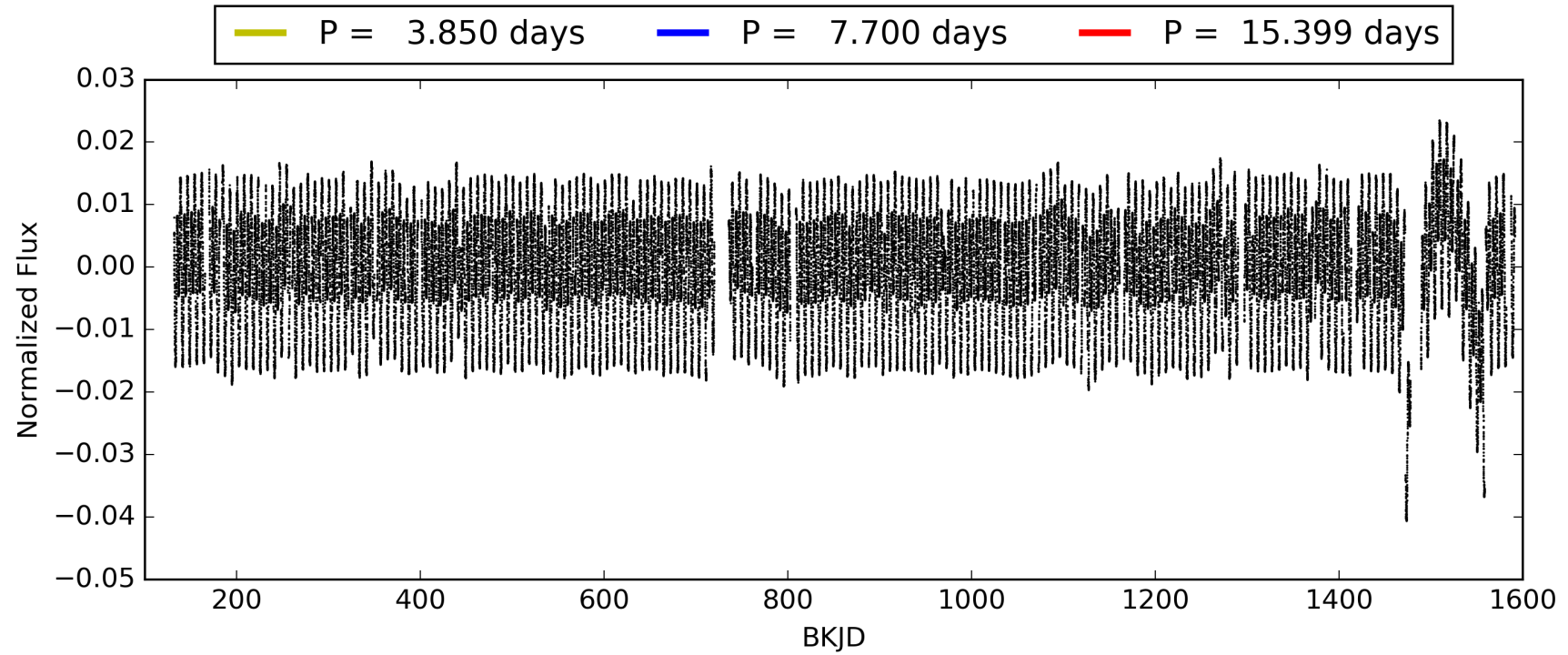
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:36:30 Z

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

TCE 003326428-04, PDC Light Curves

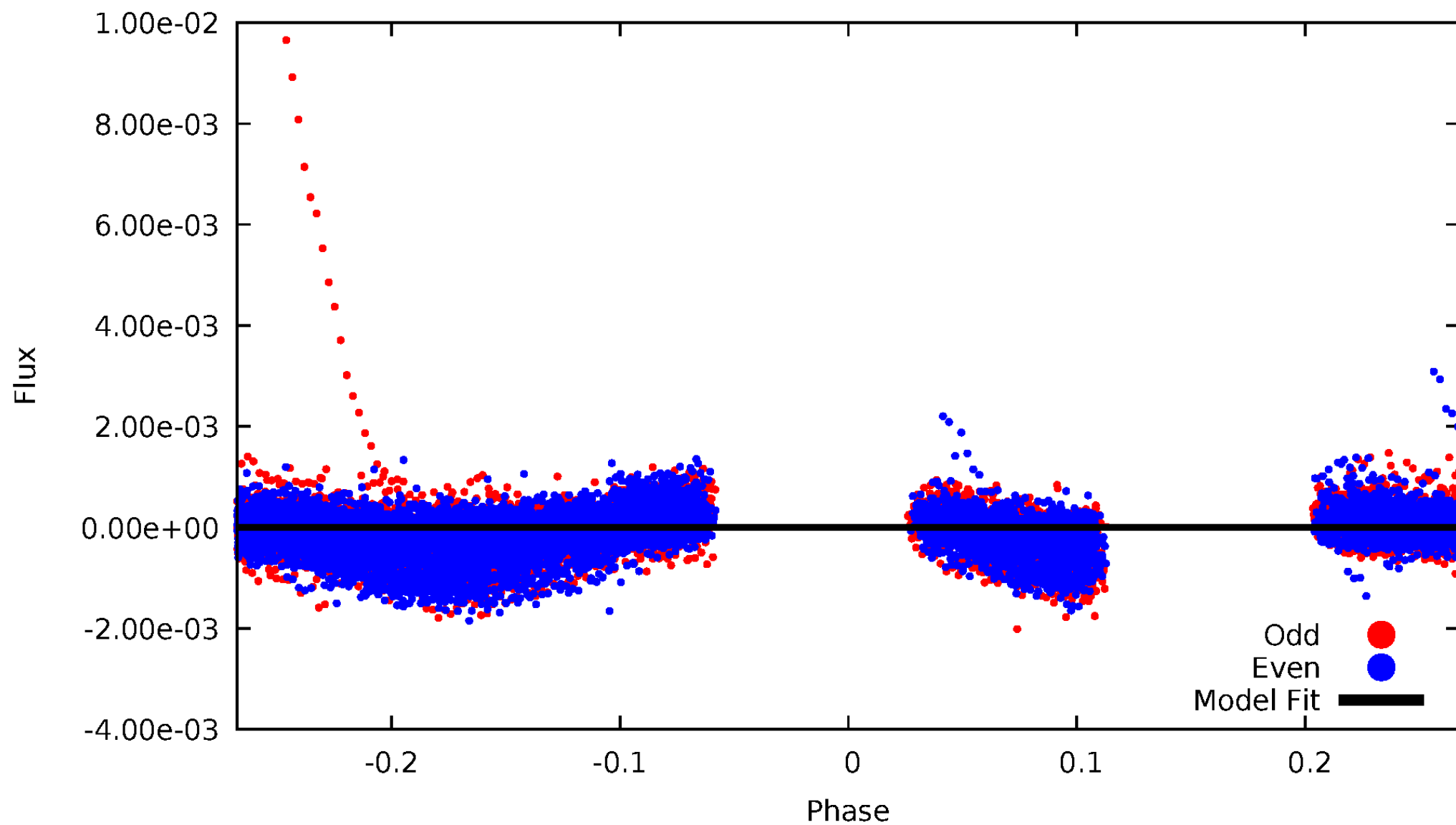


TCE 003326428-04



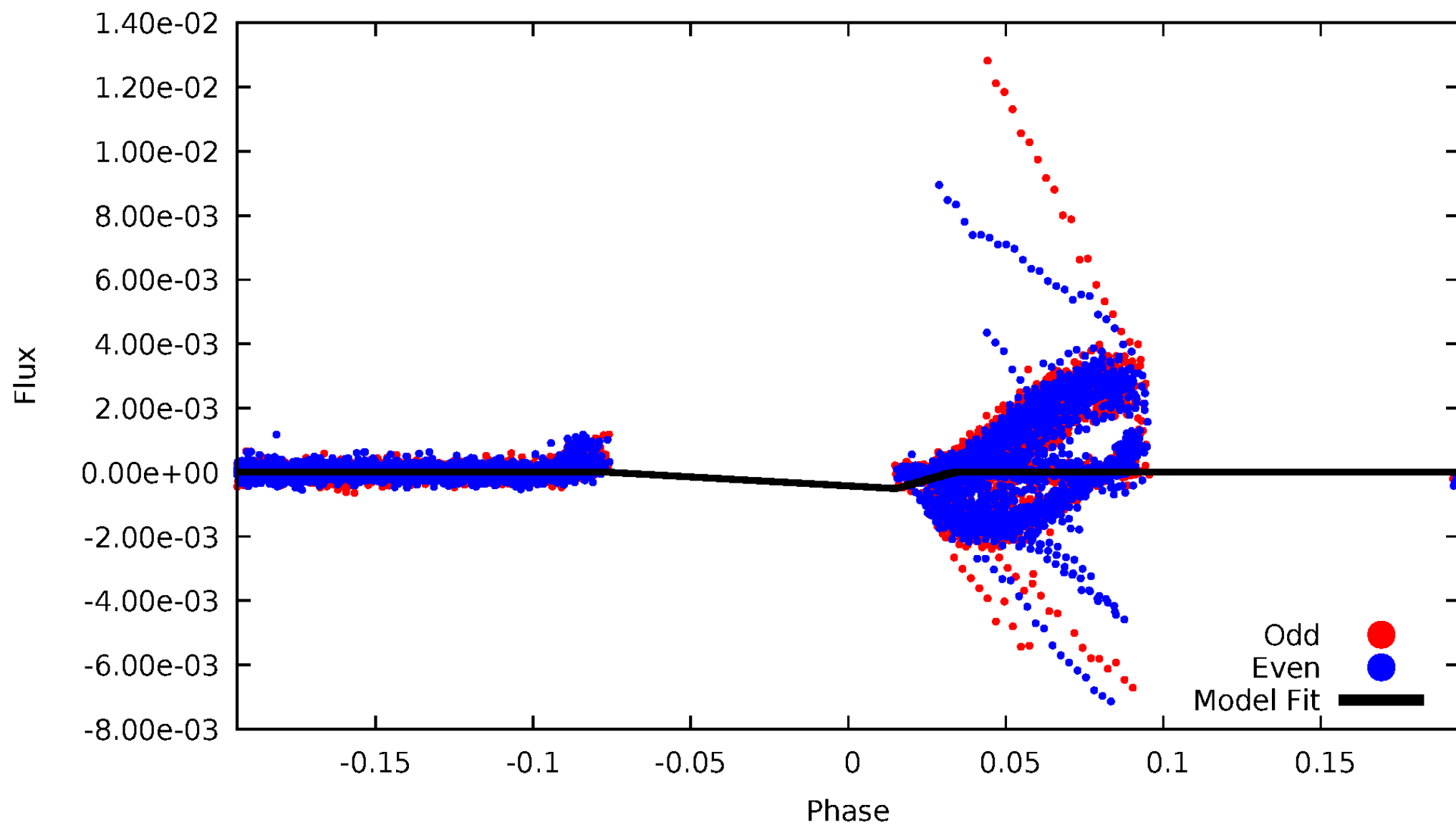
DV Odd/Even

TCE 003326428-04



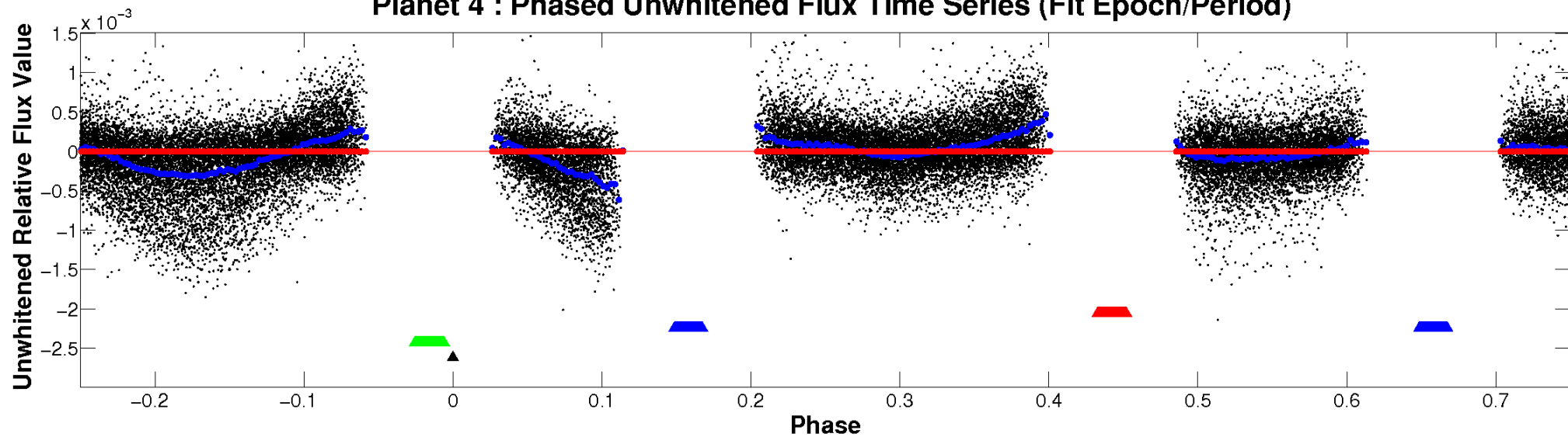
ALT Odd/Even

TCE 003326428-04

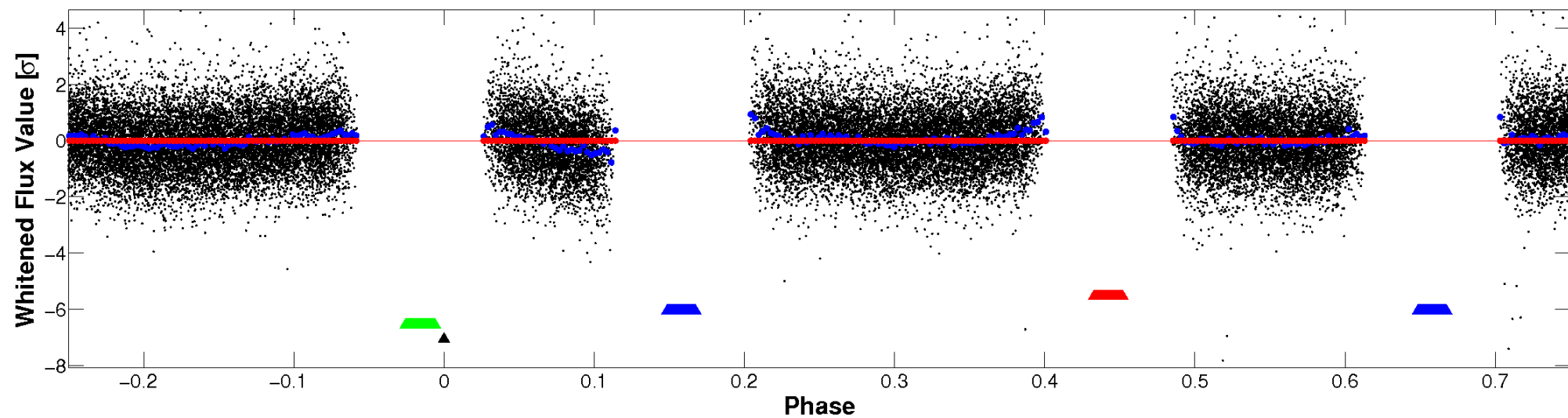


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

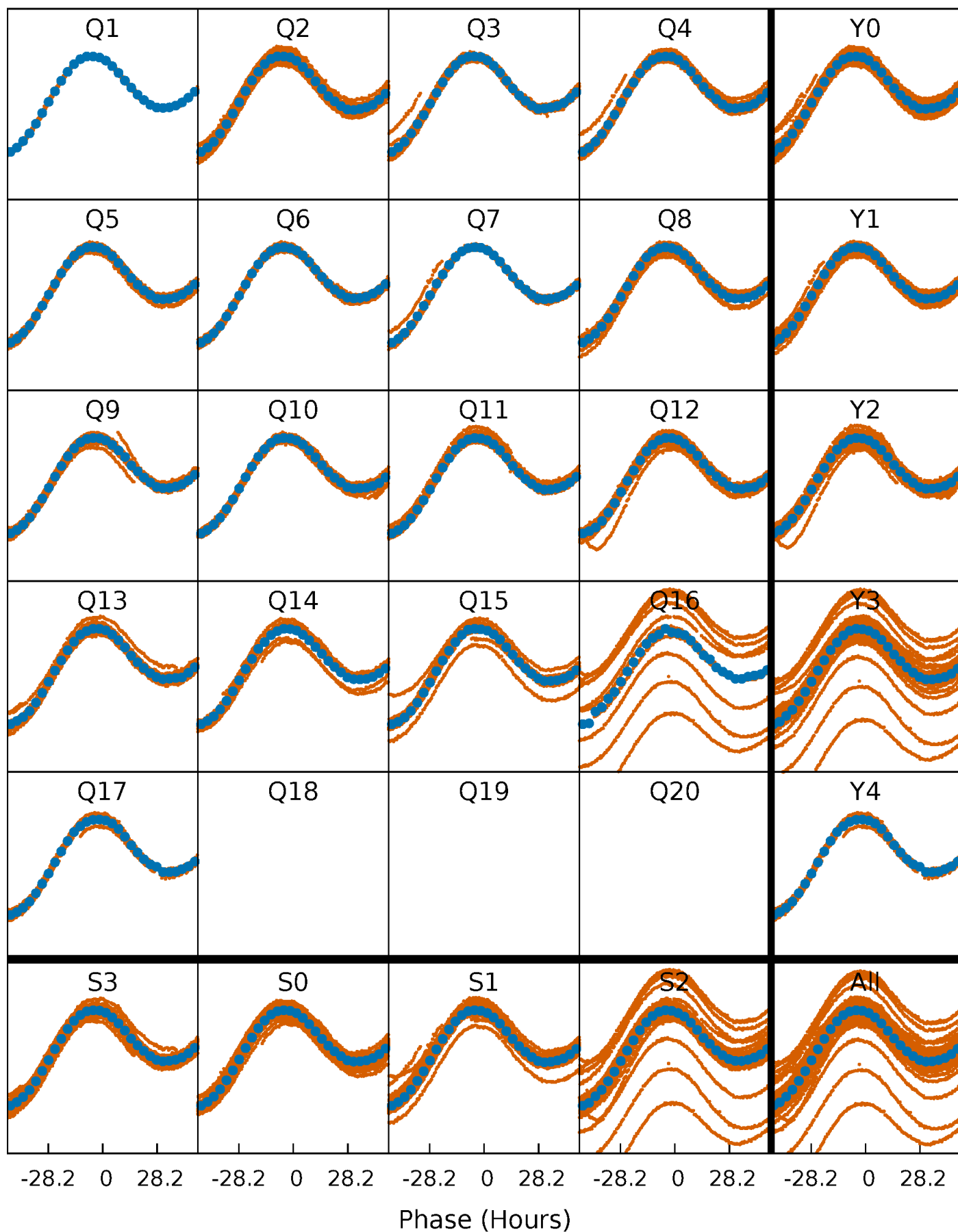


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



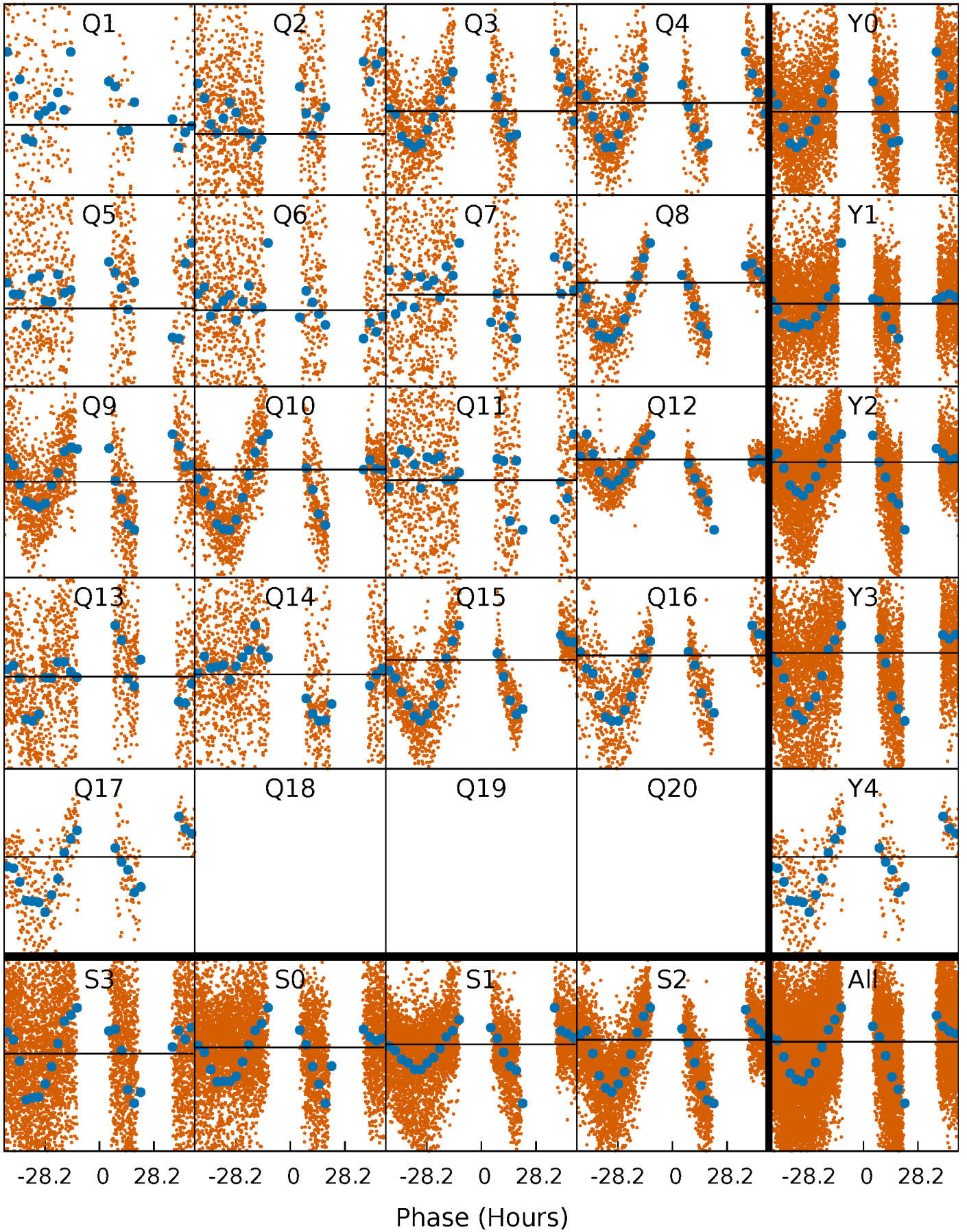
PDC Quarter-Phased Transit Curves

TCE 003326428-04 P= 7.699694 Days $T_0=135.279911$ (BKJD)



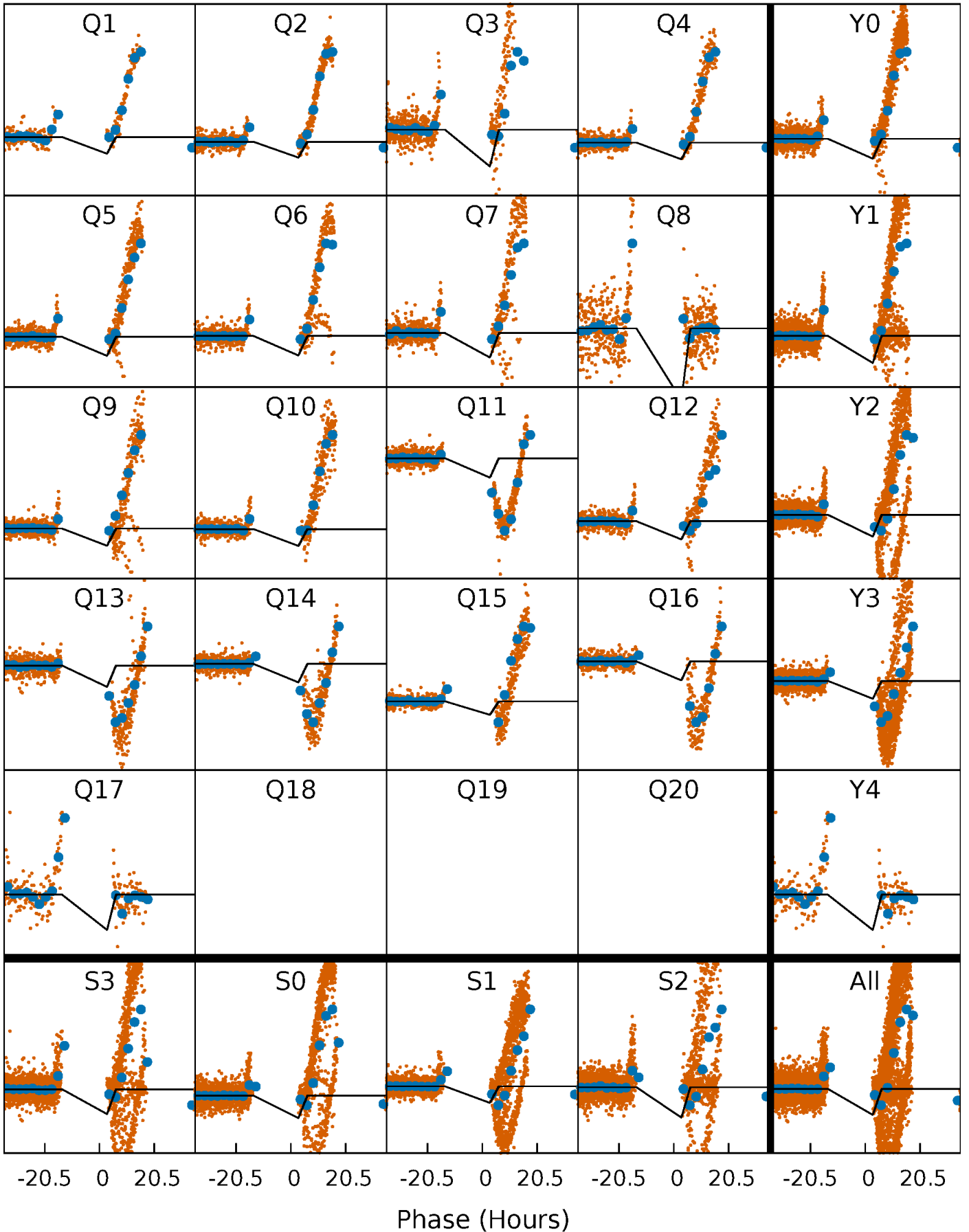
DV Quarter-Phased Transit Curves

TCE 003326428-04 P= 7.699694 Days $T_0=135.279911$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

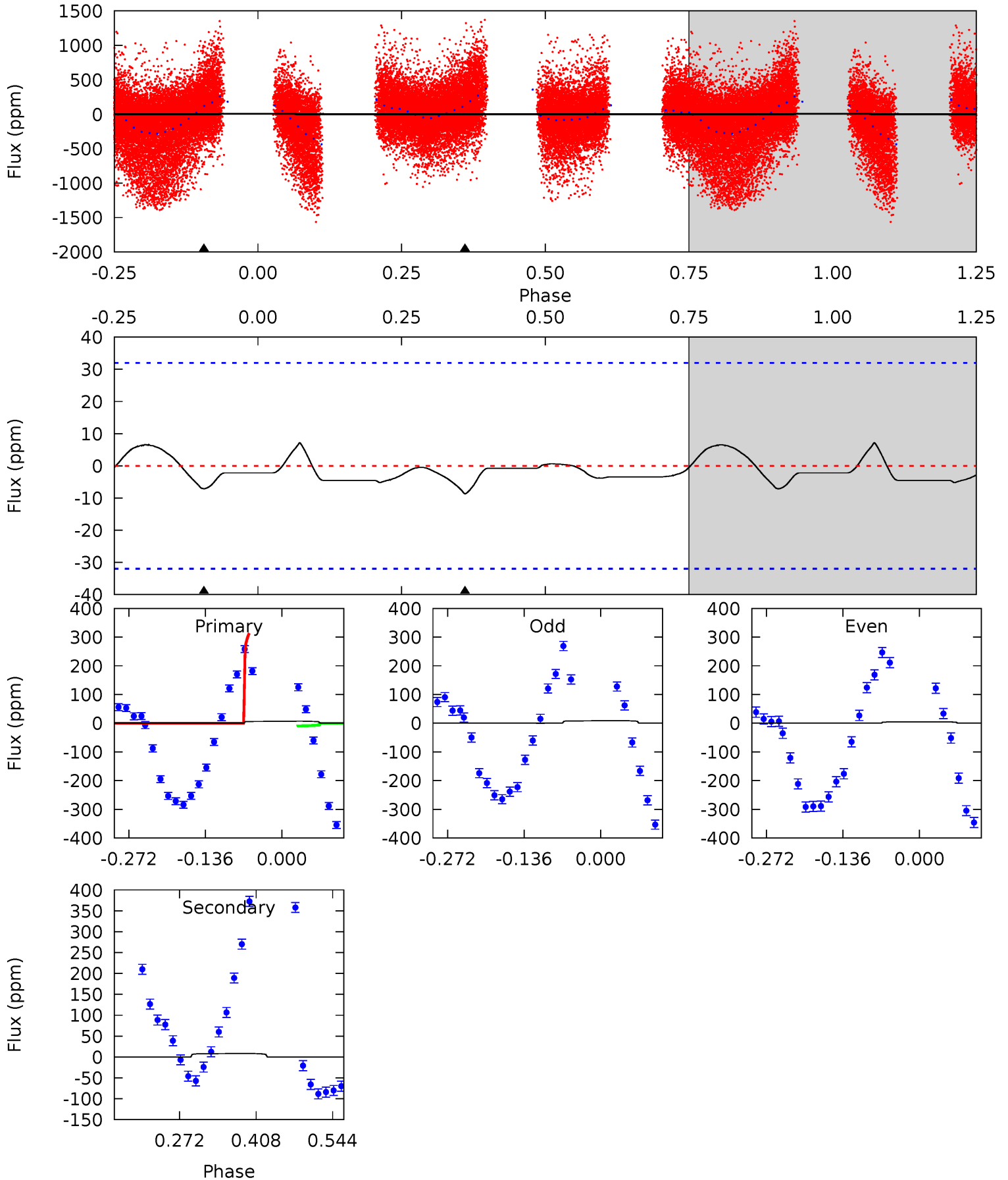
TCE 003326428-04 P= 7.699965 Days $T_0=135.366268$ (BKJD)



DV Model-Shift Uniqueness Test

003326428-04, P = 7.699694 Days, E = 127.580217 Days

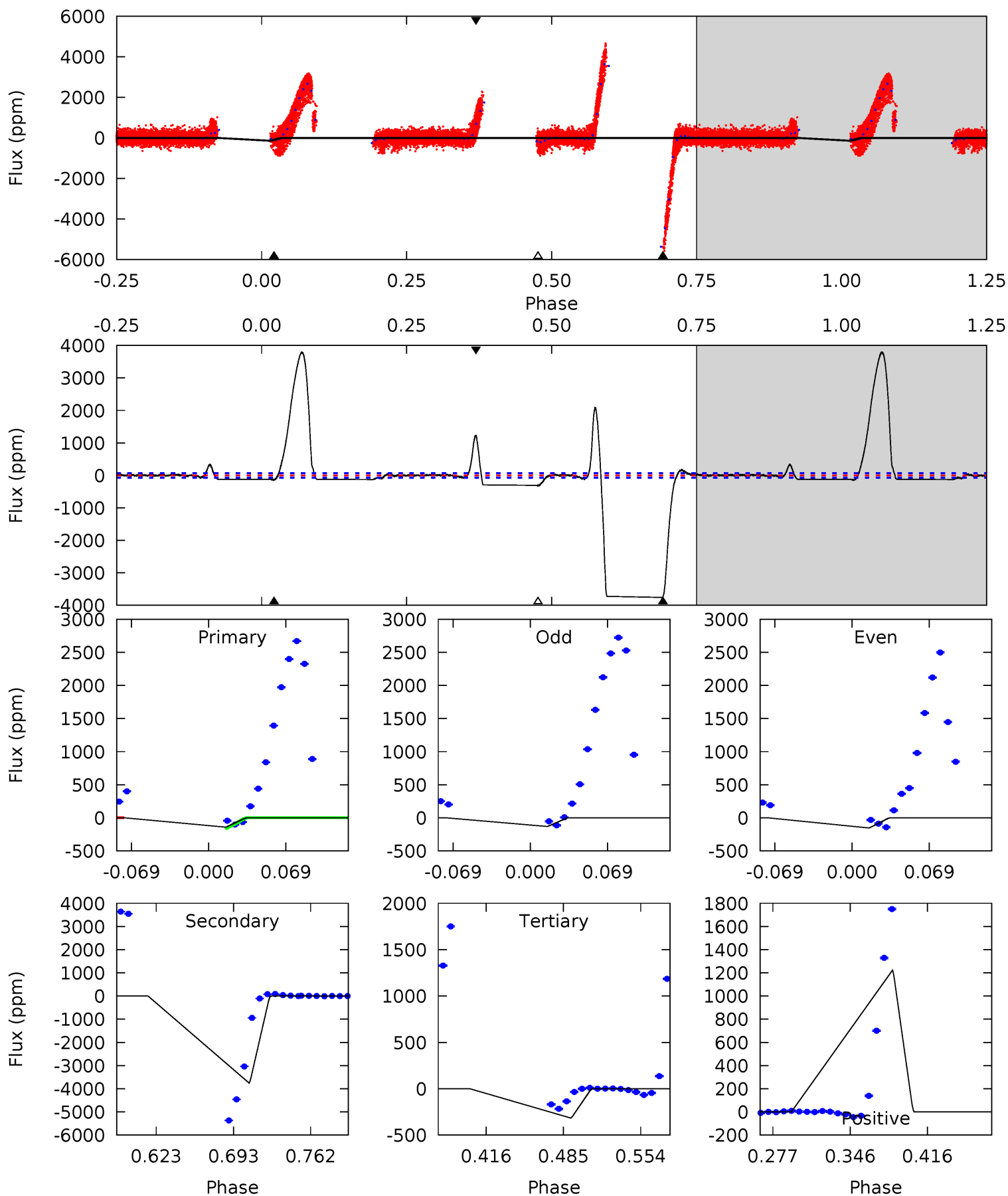
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.01	1.22	0	0	4.50	1.49	0.41	1.01	1.01	1.22	1.22	0.31	0.55	0.45	11.5



Alt Model-Shift Uniqueness Test

003326428-04, P = 7.699965 Days, E = 127.666303 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.59	255.8	21.5	83.2	4.64	1.82	21.8	-11.9	-73.6	234.3	172.6	0.78	4.92	0.50	0



Stellar Parameters For KIC 003326428

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8590^{+235}_{-404}	$3.981^{+0.216}_{-0.144}$	$0.070^{+0.200}_{-0.550}$	$2.477^{+0.650}_{-0.794}$	$2.139^{+0.314}_{-0.538}$	$0.198^{+0.289}_{-0.083}$
	+3%/-5%	+5%/-4%	+286%/-786%	+26%/-32%	+15%/-25%	+146%/-42%
Source	KIC0	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 003326428-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-9 ± 7	$3.95^{+4.66}_{-2.78}$	2628^{+196}_{-212}	3640^{+2809}_{-6135}	$2.119^{+25.736}_{-1.919}$
Alt.	-3759 ± 15	$7.41^{+5.67}_{-4.33}$	2617^{+209}_{-209}	15661^{+28412}_{-5708}	371^{+1591}_{-256}

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

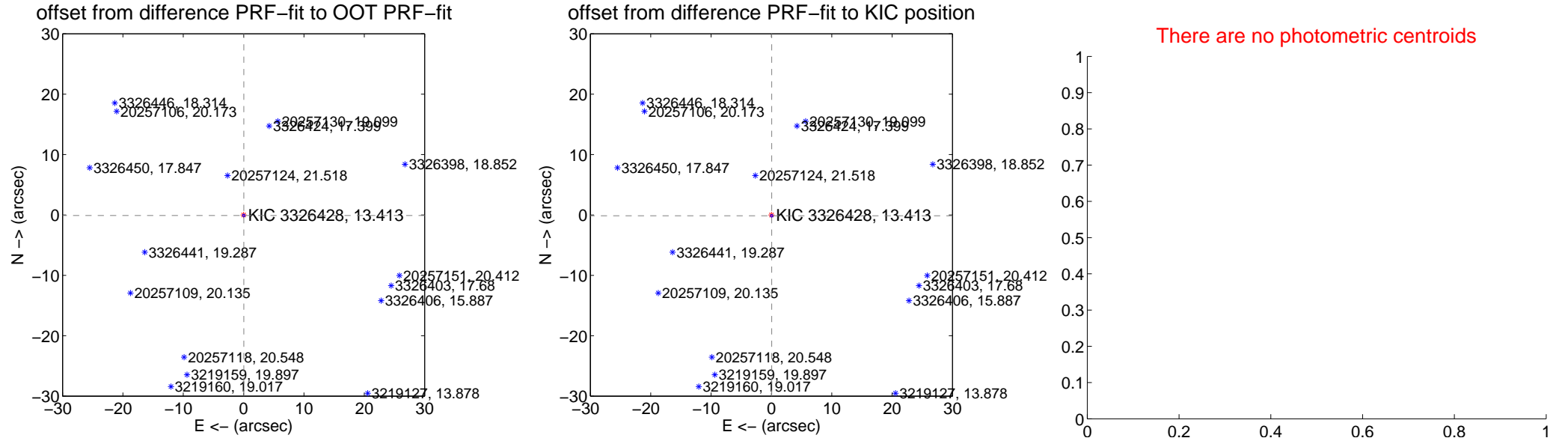
DV Centroid Data

Supplemental centroid analysis for 003326428-04. Kepler magnitude: 13.41. Transit SNR 0.01

There are 0 quarters with good PRF difference image offsets

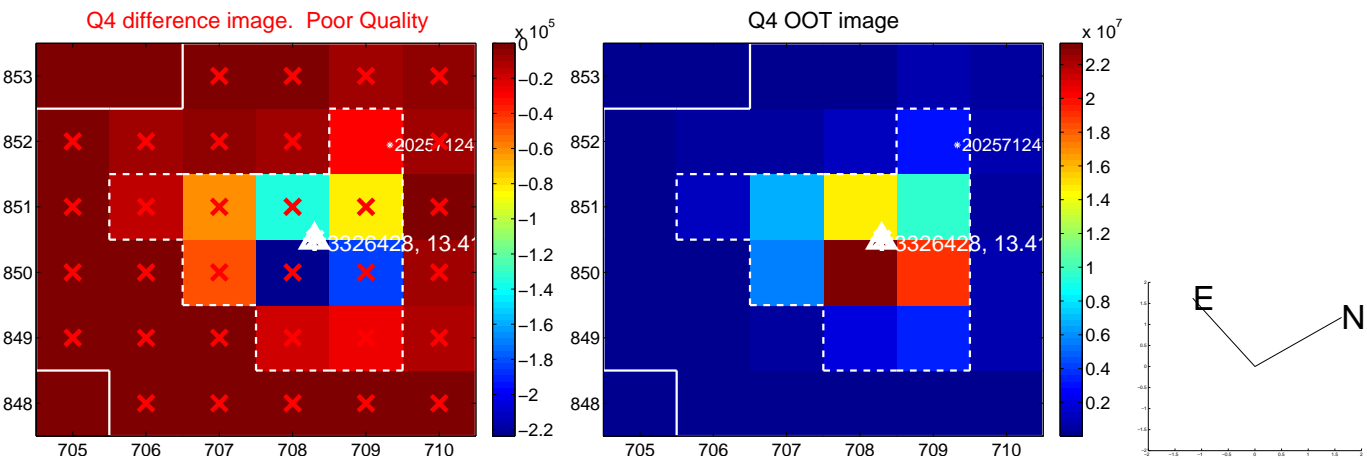
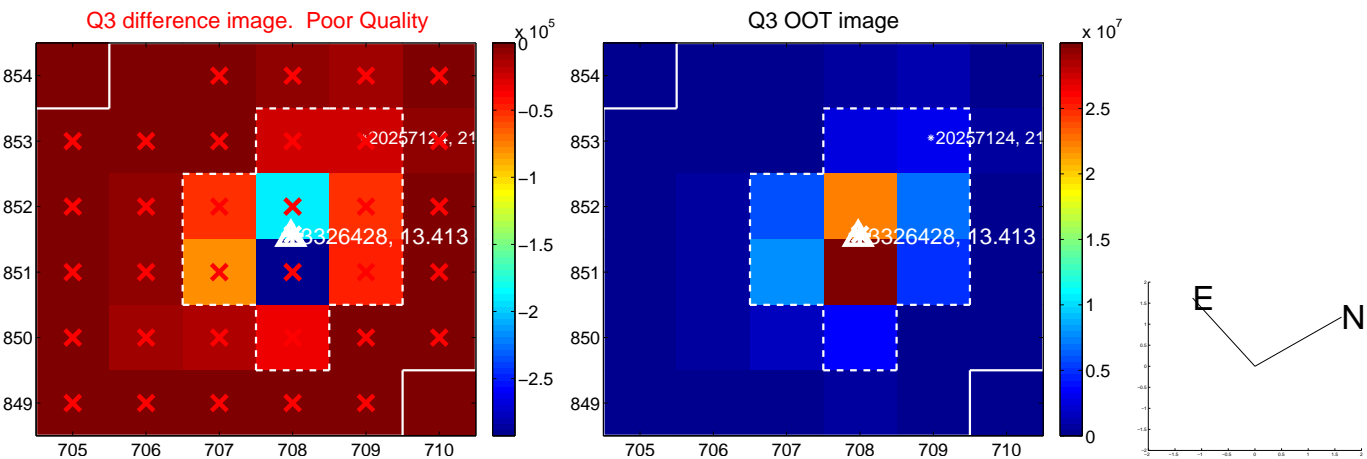
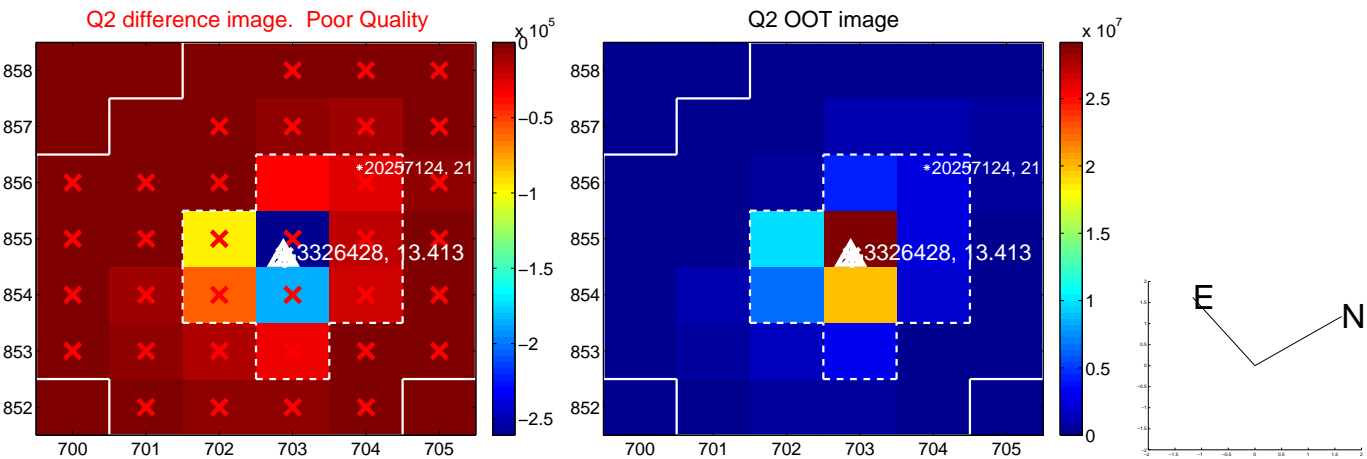
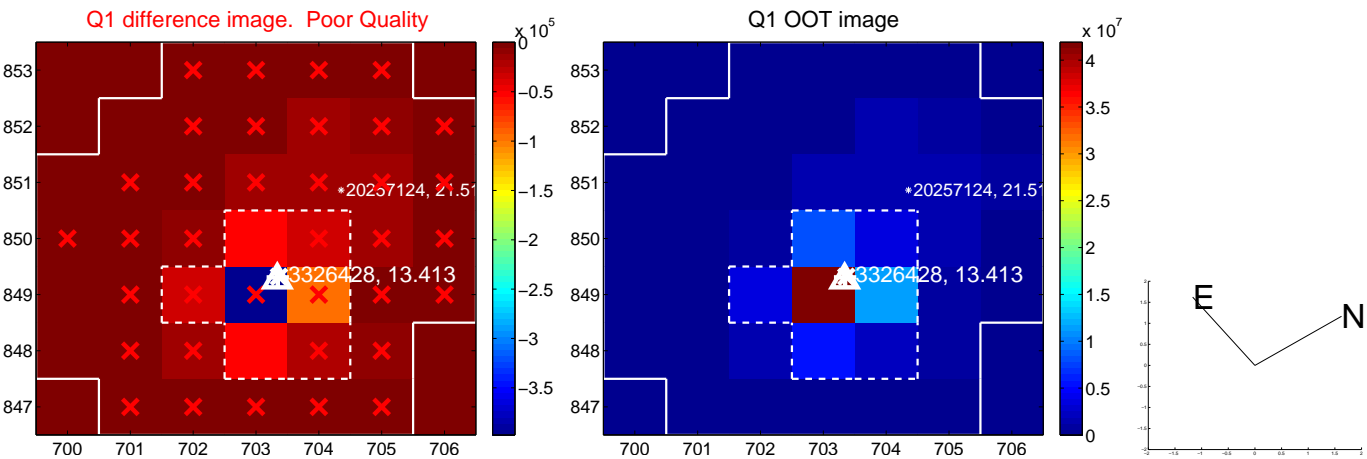
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.092 ± 0.069	1.34	-0.034 ± 0.067	-0.085 ± 0.069
PRF-fit source offset from KIC position	0.147 ± 0.070	2.11	-0.044 ± 0.067	-0.140 ± 0.070
photometric centroid source offset	—	—	—	—

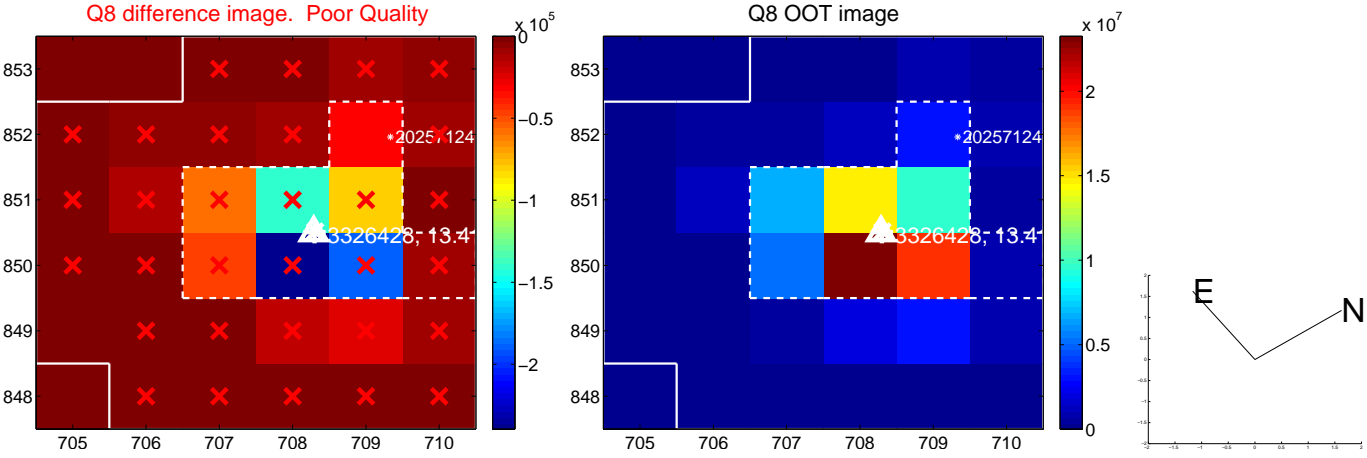
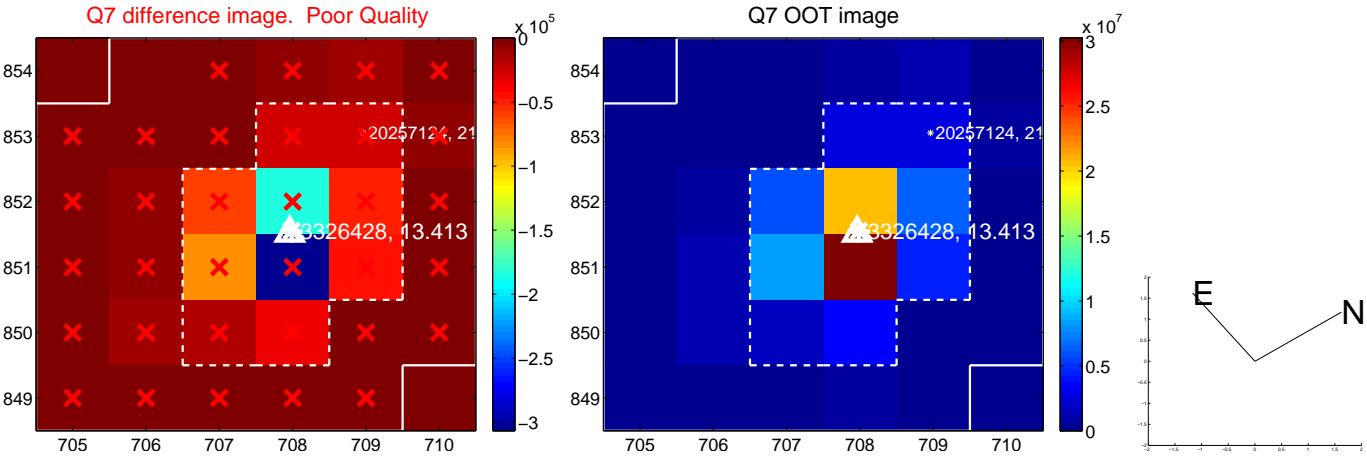
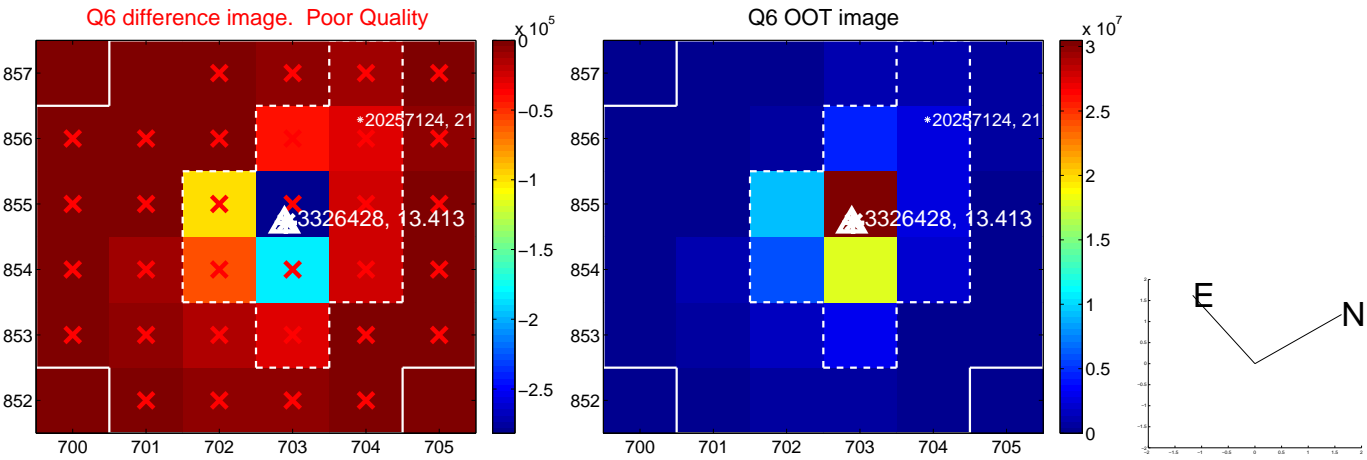
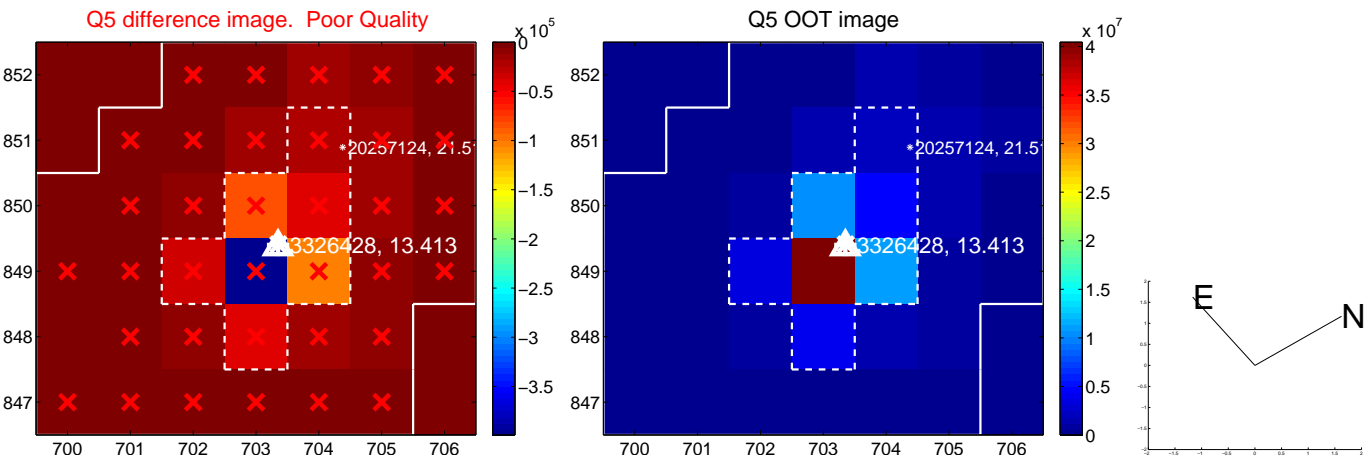


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

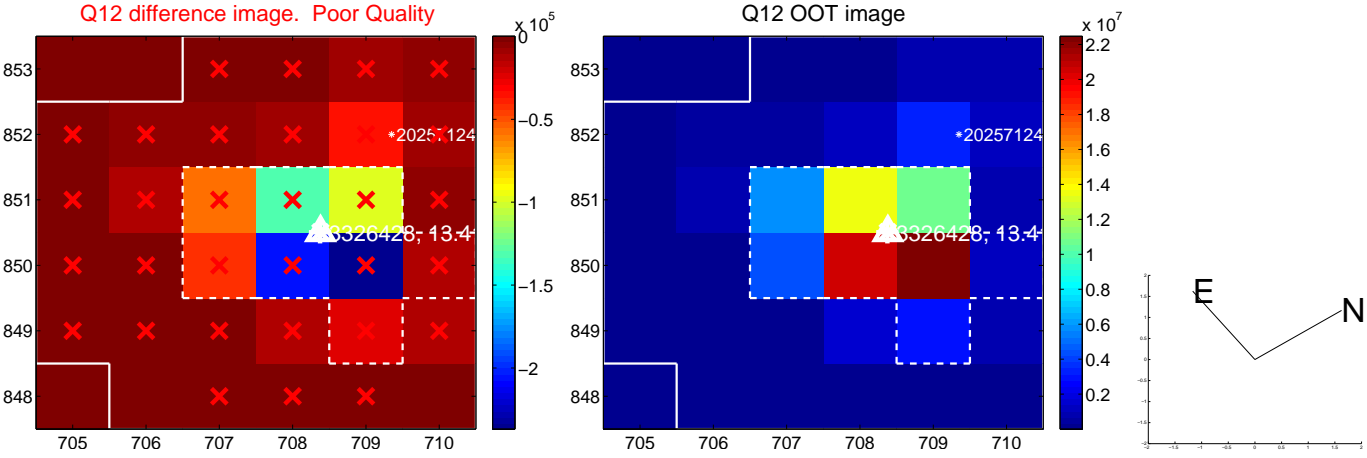
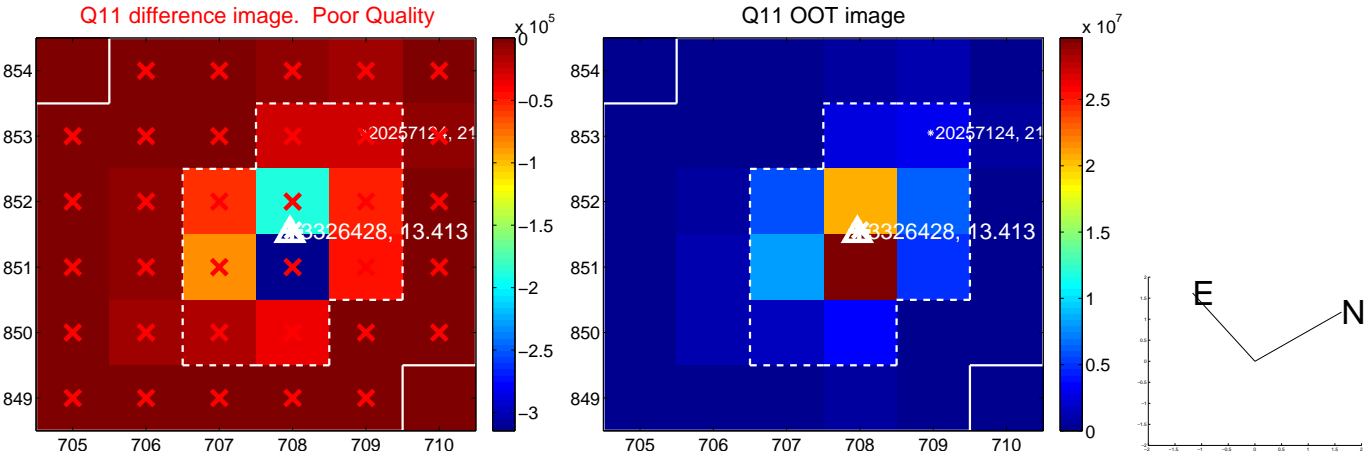
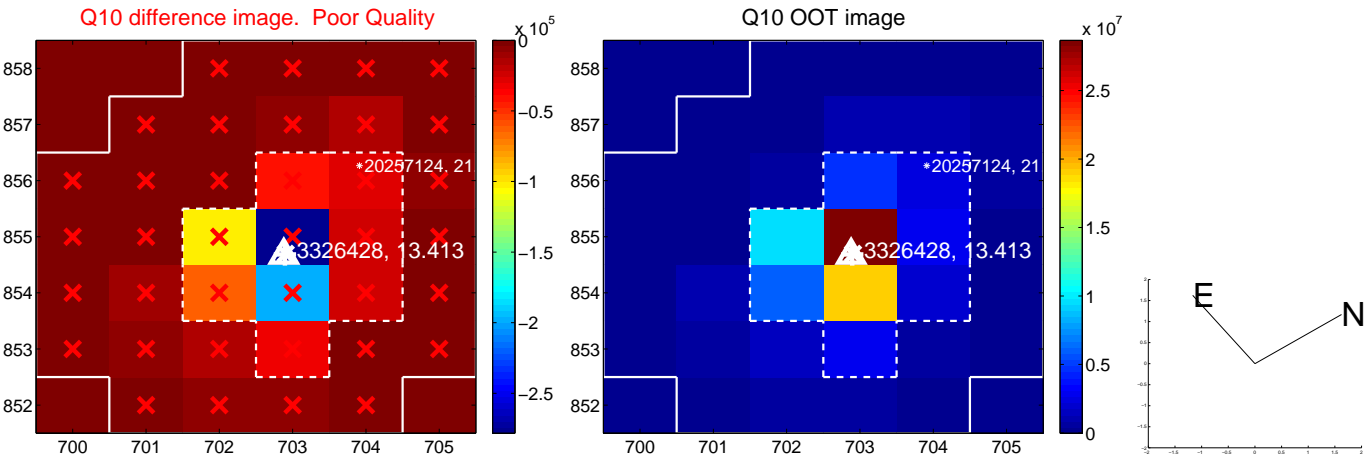
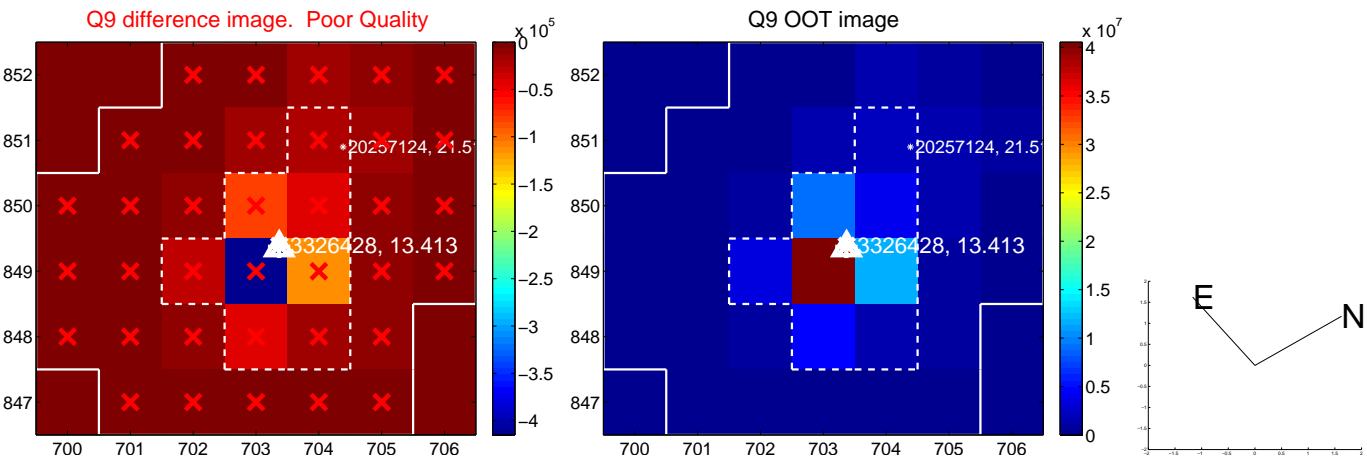
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



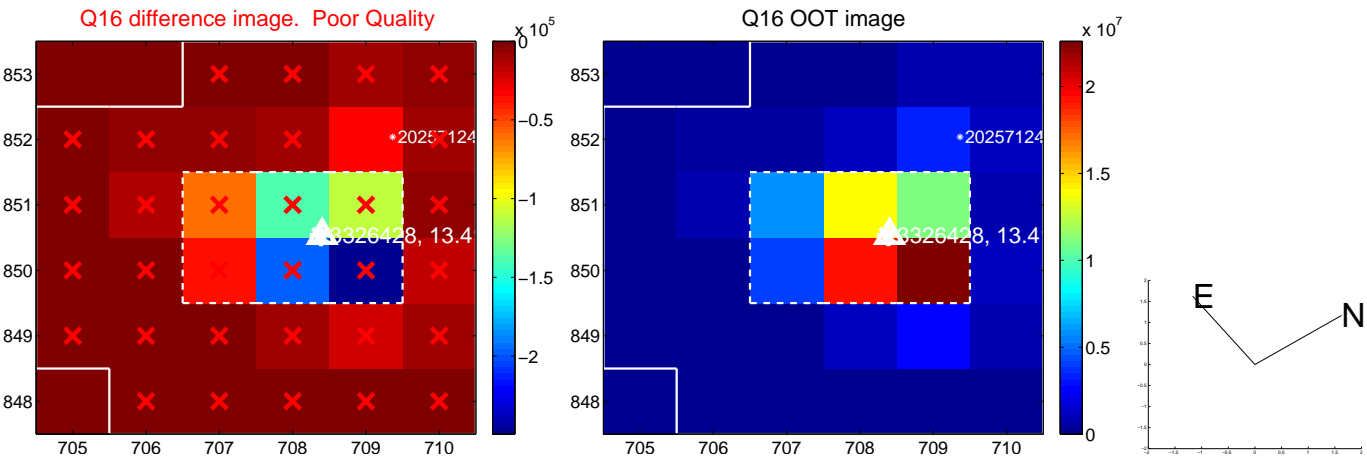
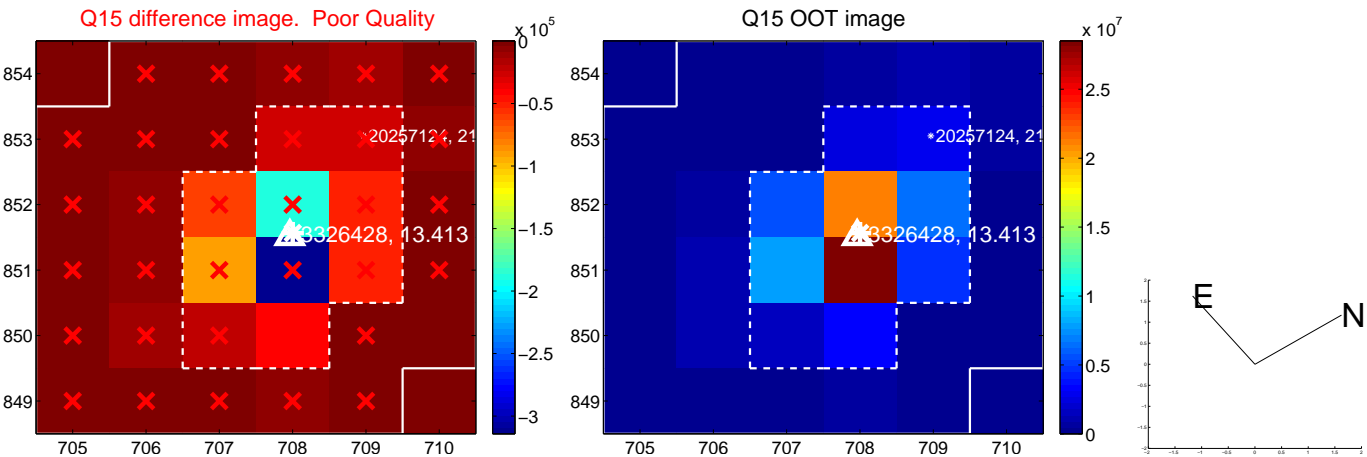
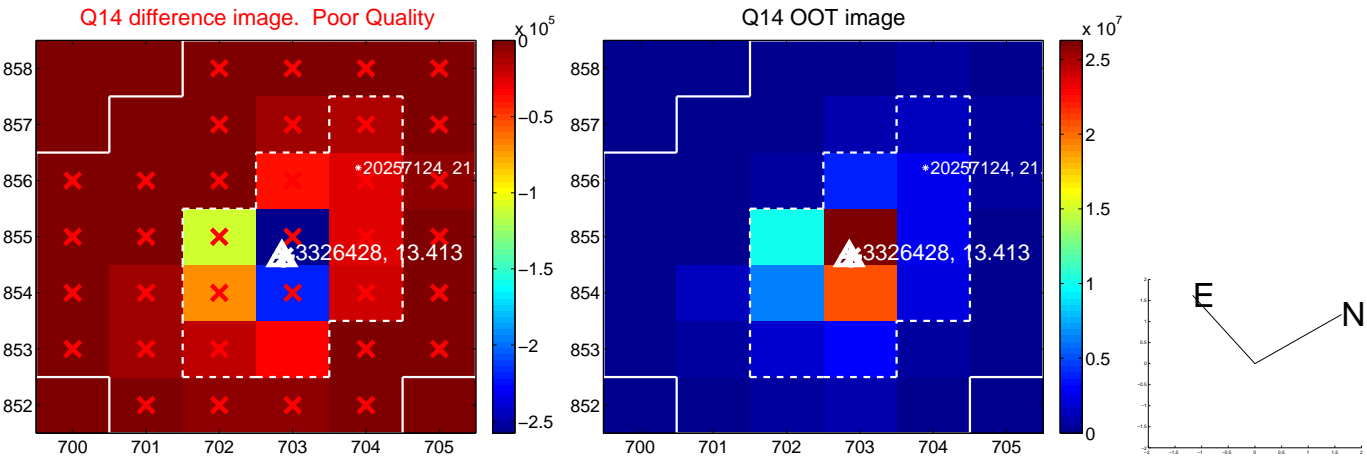
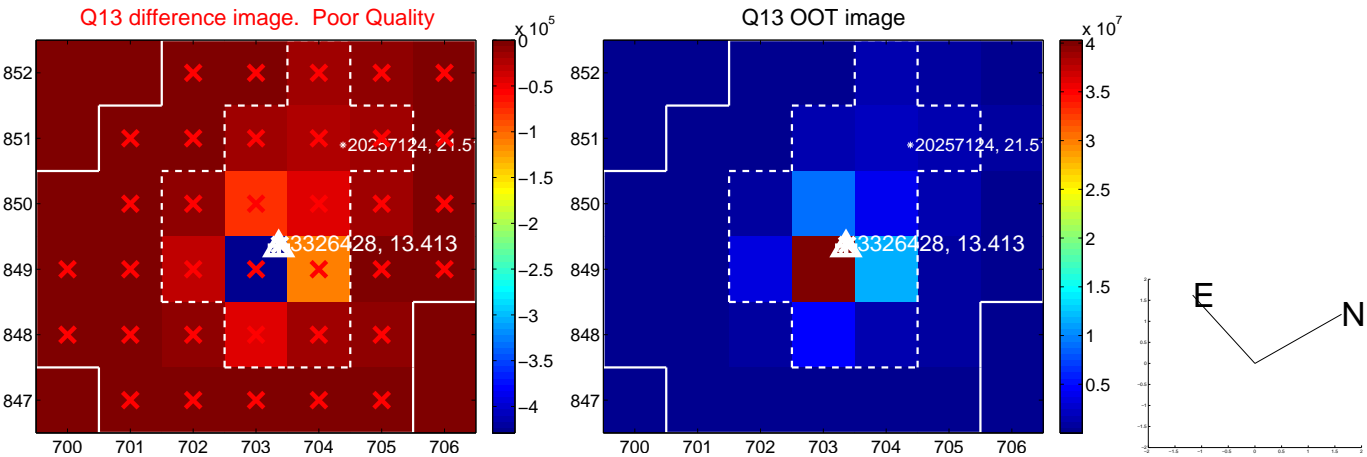
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



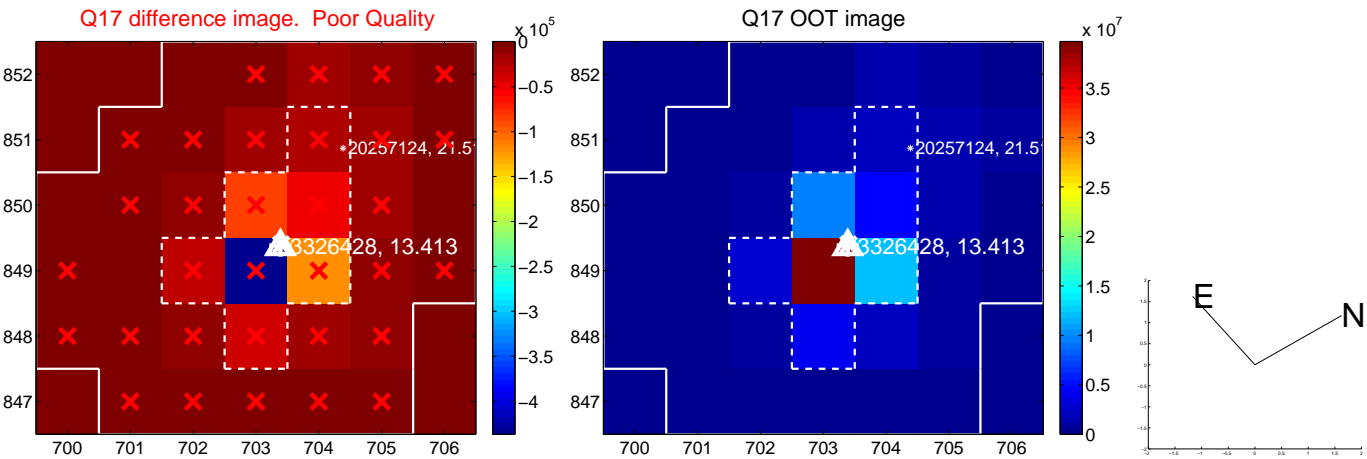
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

