

KIC 008028063

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})
008028063-01	OBS	No	2.861839	133.585241	29.5	6.982	8.5	7.4	2.14	7244	1.35	5237.82
008028063-02	OBS	No	2.862265	131.882291	31.0	20.259	11.8	9.7	2.14	7244	1.23	5236.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008028063-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008028063-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD

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

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

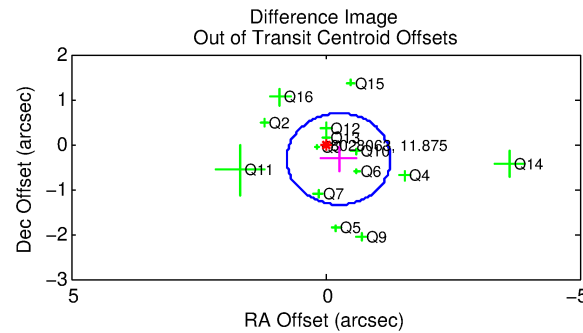
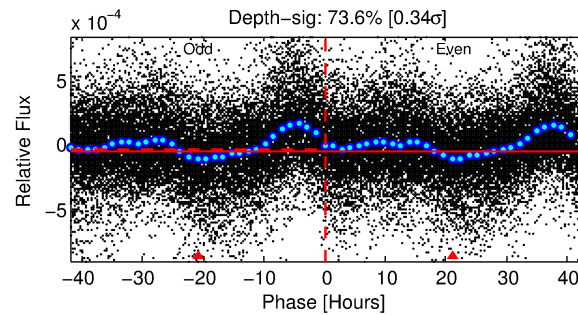
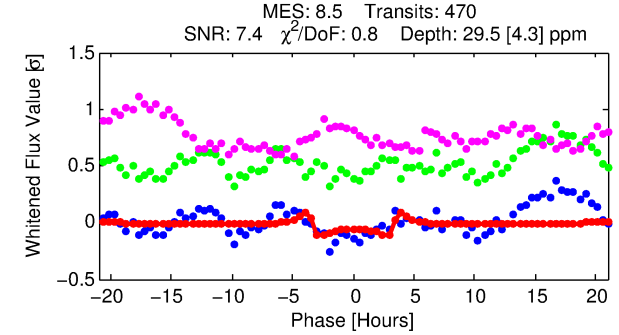
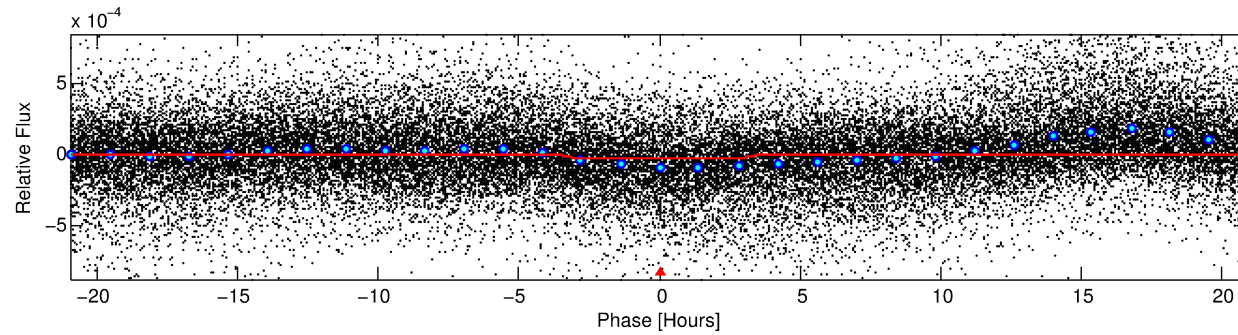
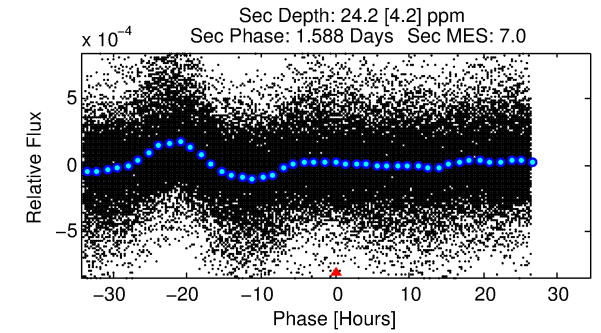
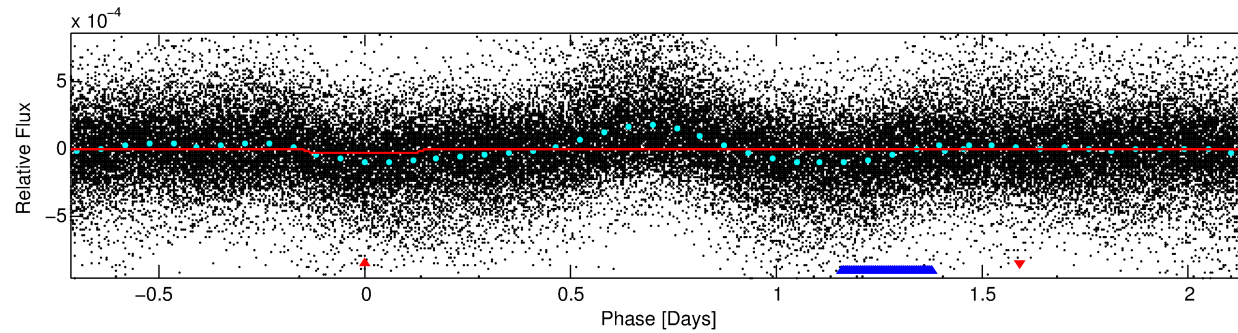
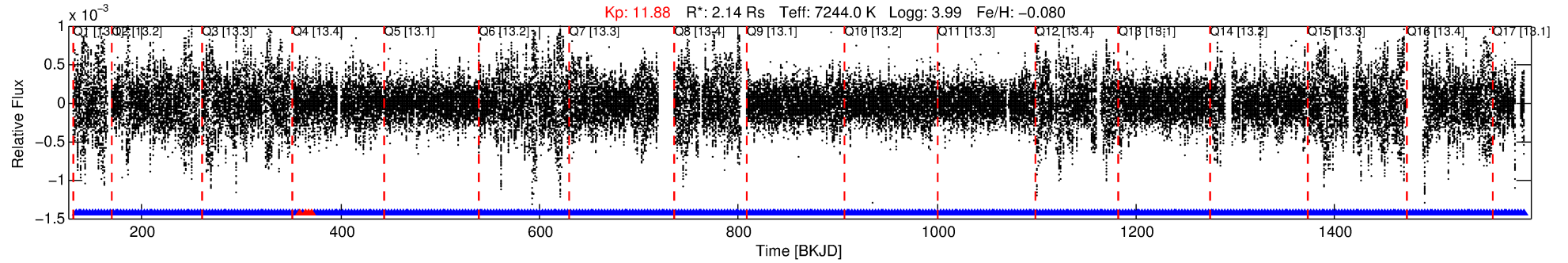
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008028063-01

No Significant Match Found

DV One-Page Summary

KIC: 8028063 Candidate: 1 of 2 Period: 2.862 d



DV Fit Results:

Period = 2.86184 [0.00002] d
Epoch = 133.5852 [0.0034] BKJD
Rp/R* = 0.0058 [0.0008]
a/R* = 1.65 [0.80]
b = 0.91 [0.15]
Seff = 5237.82 [2252.10]
Teff = 2169 [233] K
Rp = 1.35 [0.43] Re
a = 0.0464 [0.0118] AU
Ag = 15.67 [8.18] [1.79σ]
Teffp = 6673 [632] K [6.69σ]

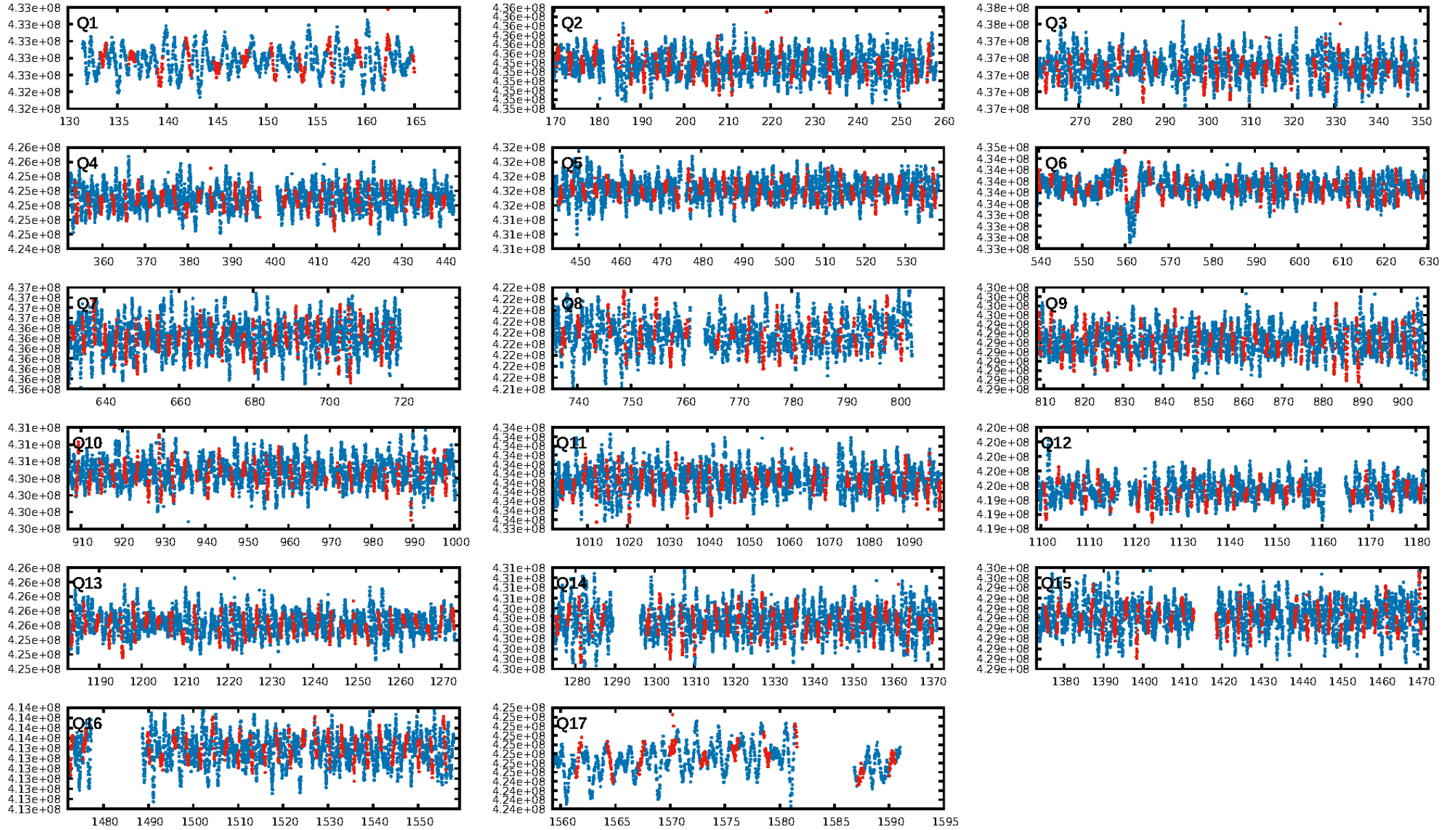
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [444/448]
GhostDiagnostic-chr: 1.71
Centroid-sig: 95.3%
Centroid-so: 0.143 arcsec [0.29σ]
OotOffset-rm: 0.417 arcsec [1.23σ]
KicOffset-rm: 0.478 arcsec [1.54σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 1.00 [17/17]

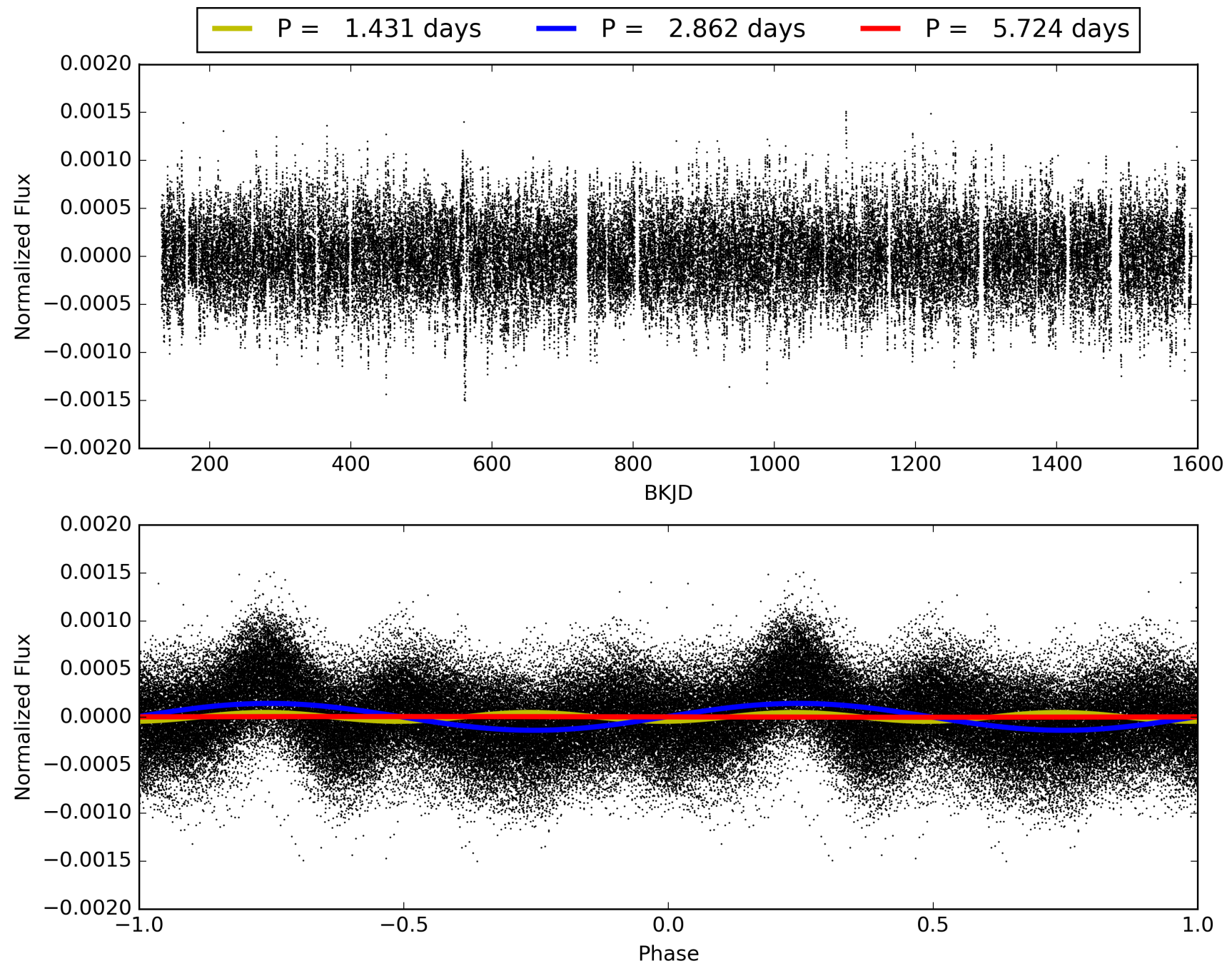
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008028063-01, PDC Light Curves

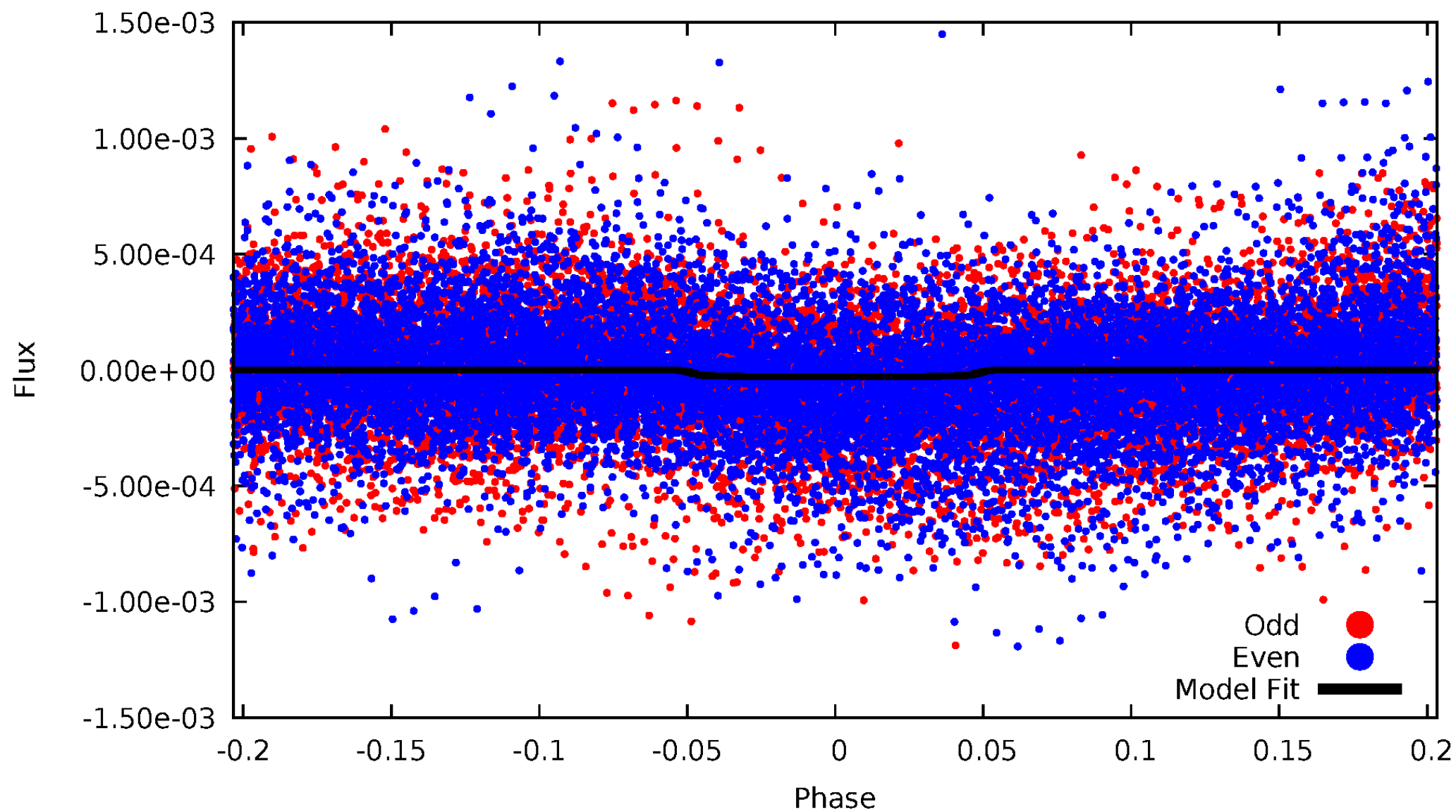


TCE 008028063-01



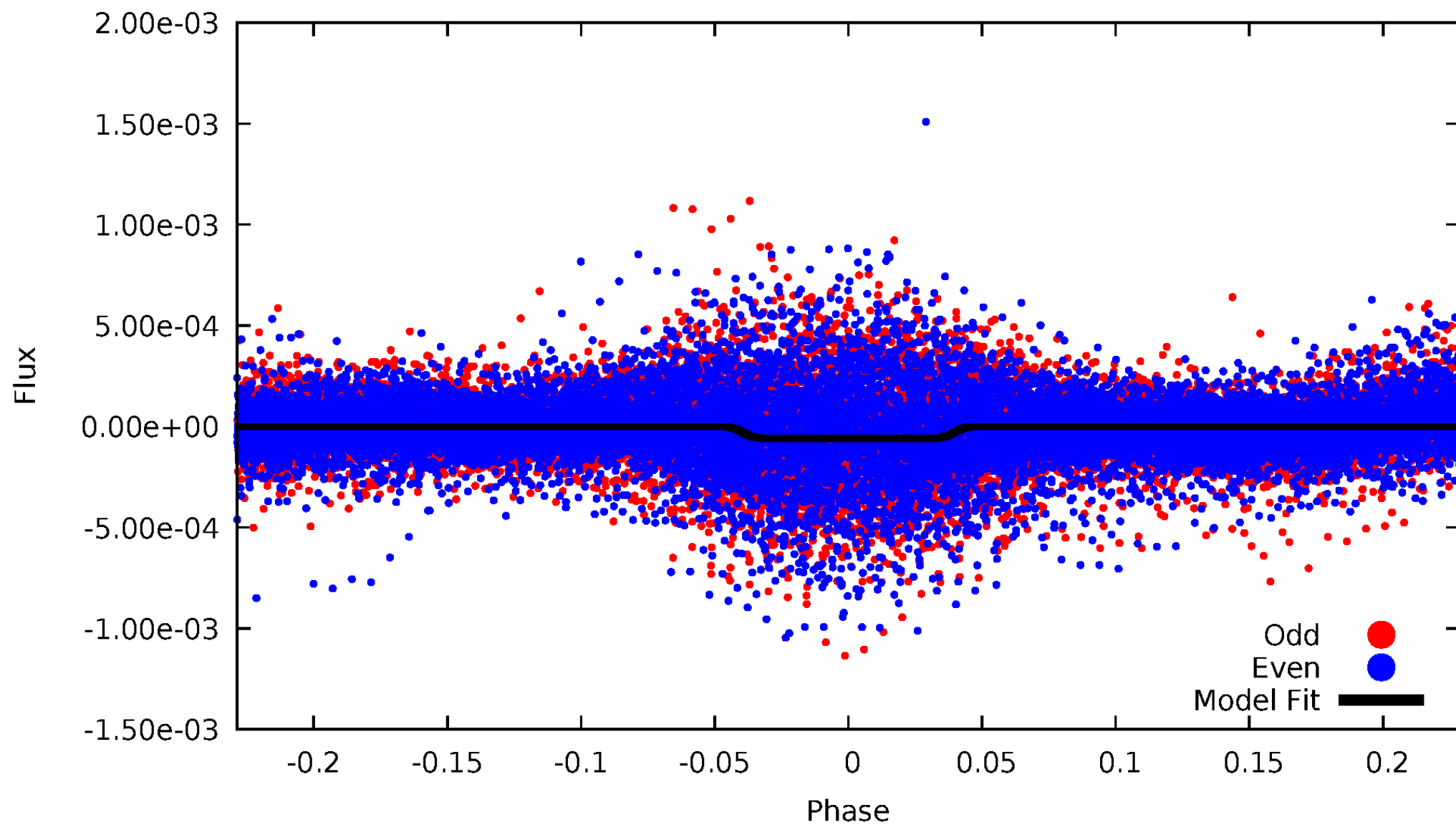
DV Odd/Even

TCE 008028063-01



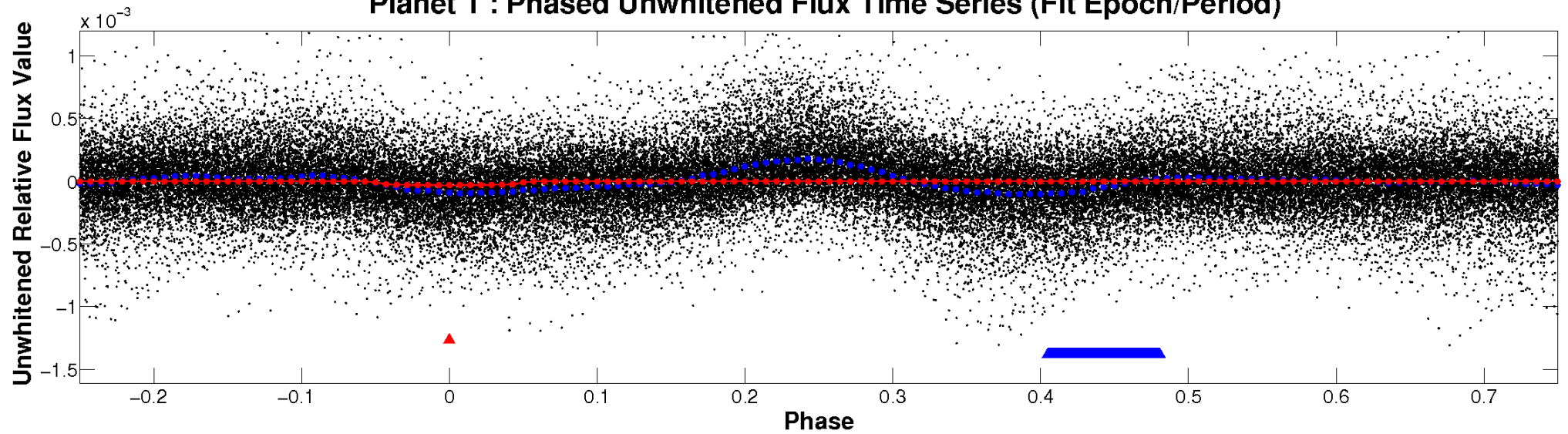
ALT Odd/Even

TCE 008028063-01

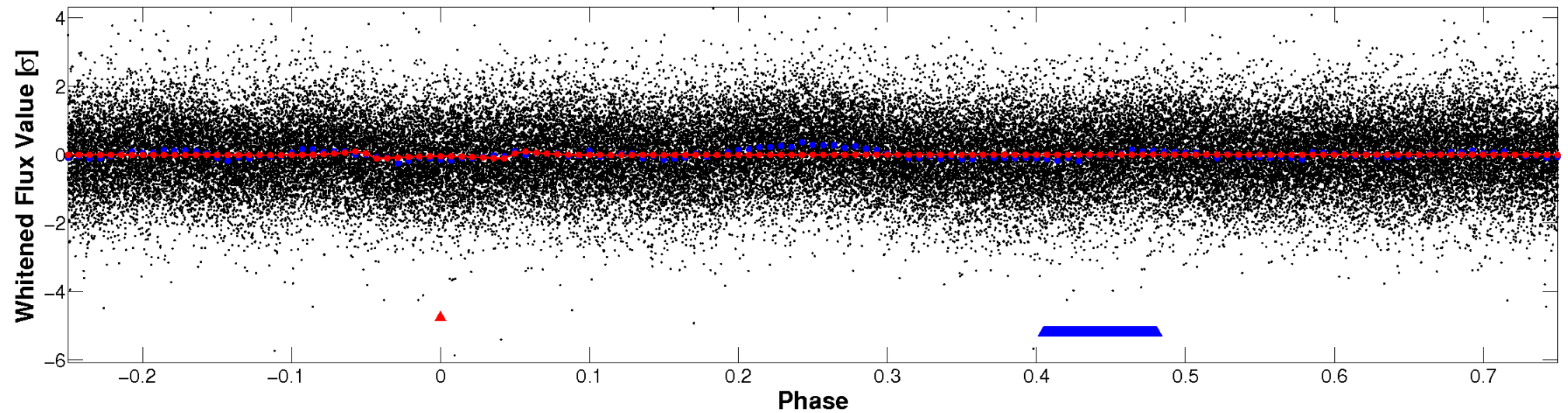


Non-Whitened Vs. Whitened Light Curve

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

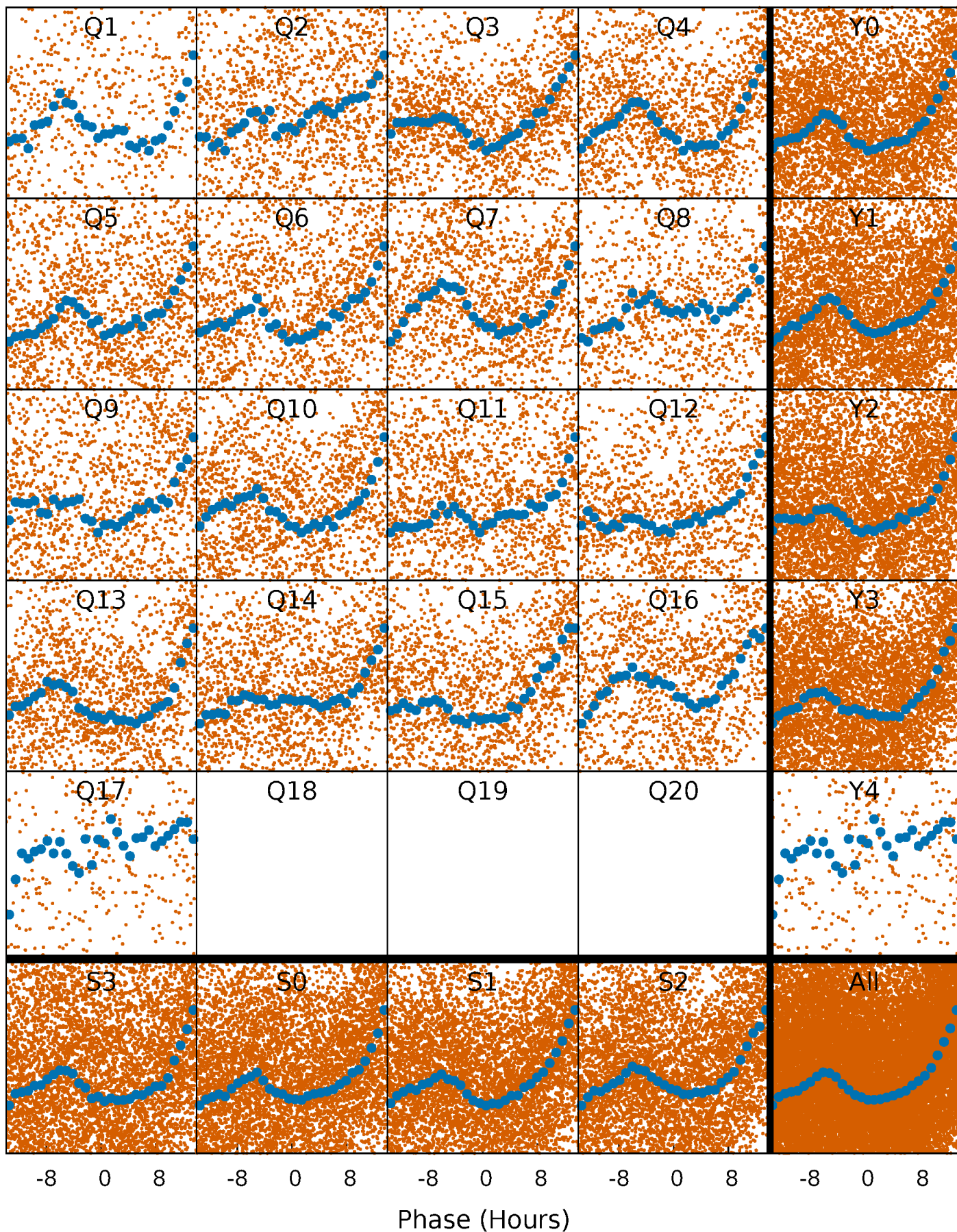


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



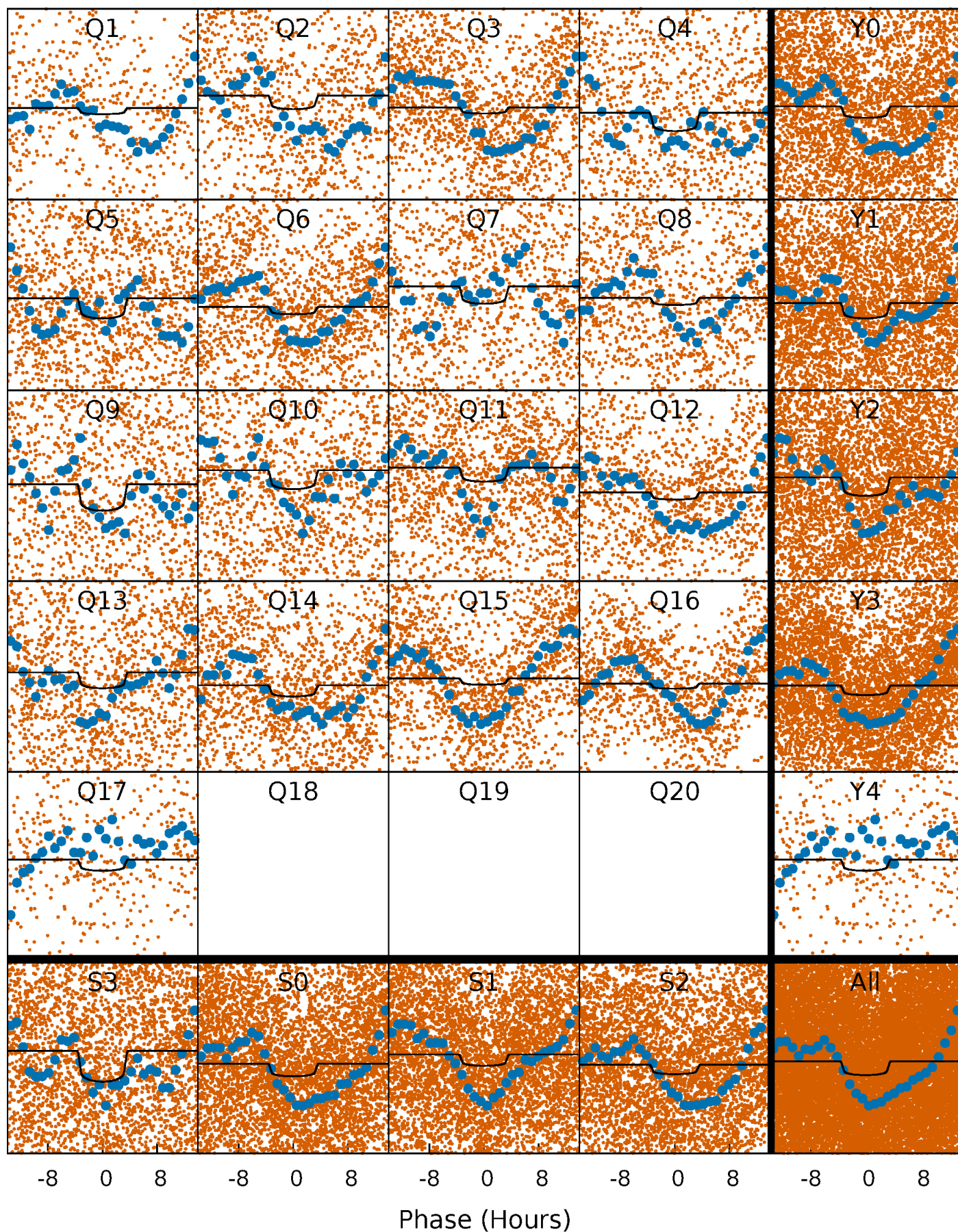
PDC Quarter-Phased Transit Curves

TCE 008028063-01 P= 2.861839 Days $T_0=133.585241$ (BKJD)



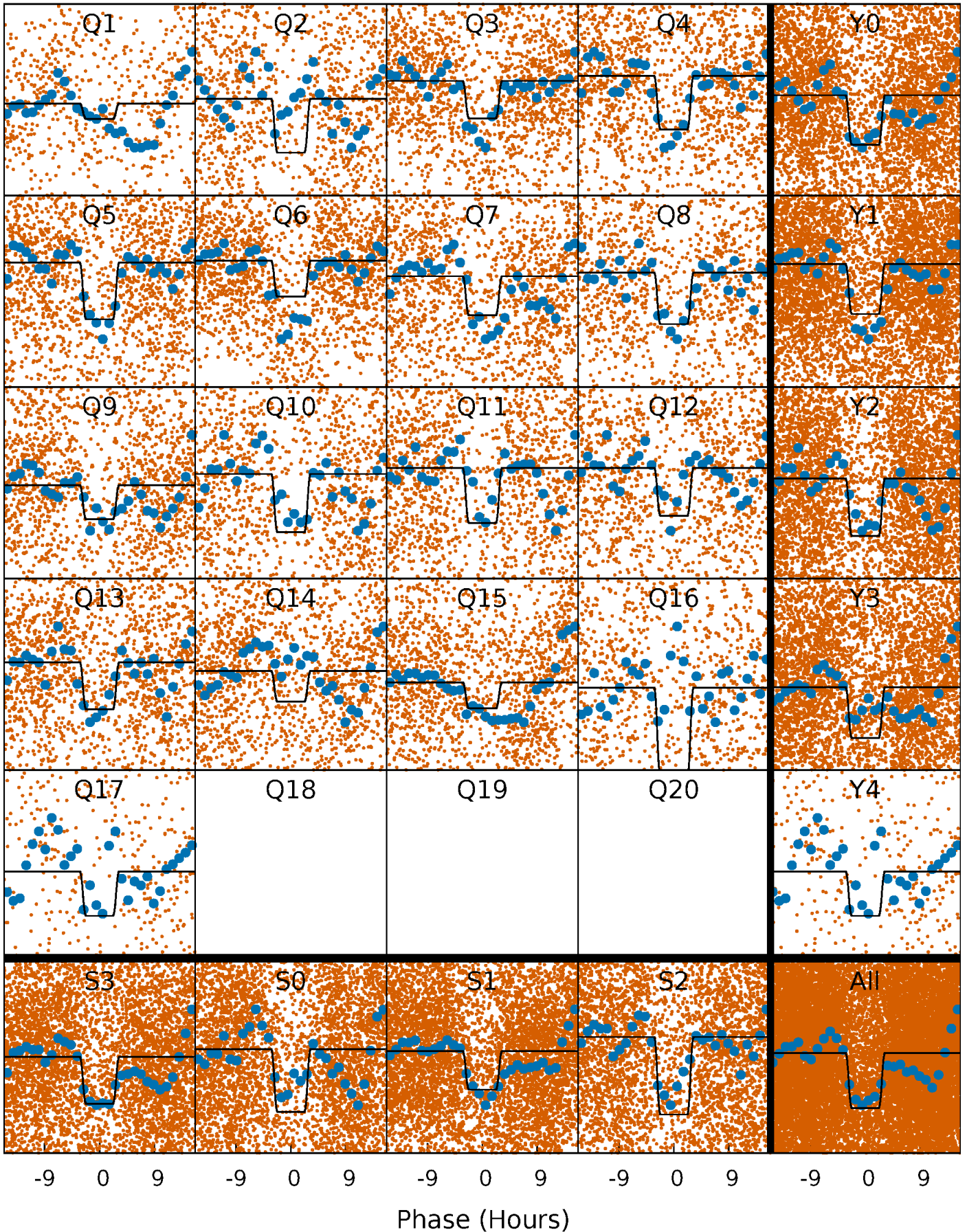
DV Quarter-Phased Transit Curves

TCE 008028063-01 P= 2.861839 Days $T_0=133.585241$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

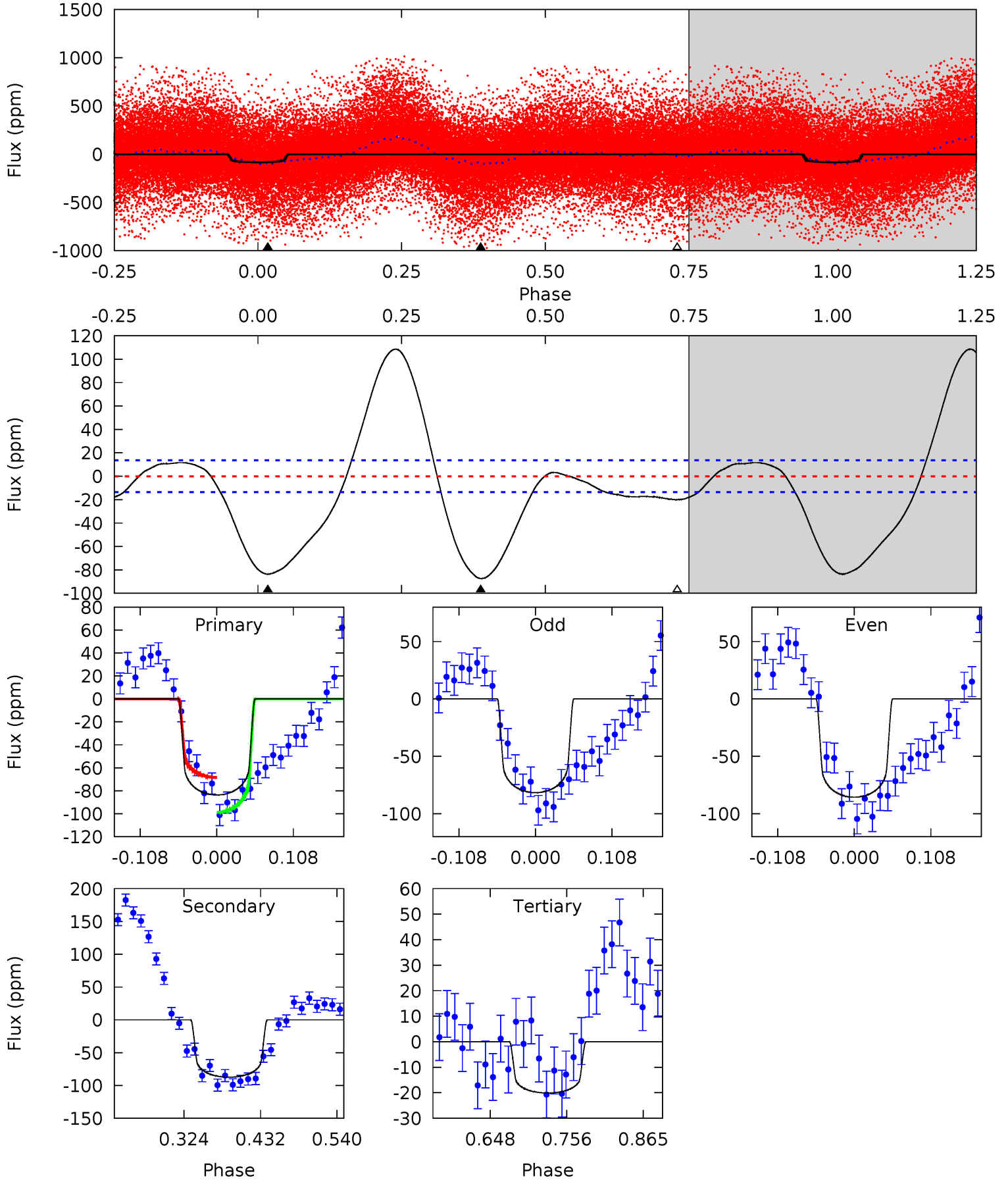
TCE 008028063-01 P= 2.861690 Days $T_0=133.606834$ (BKJD)



DV Model-Shift Uniqueness Test

008028063-01, P = 2.861839 Days, E = 130.723402 Days

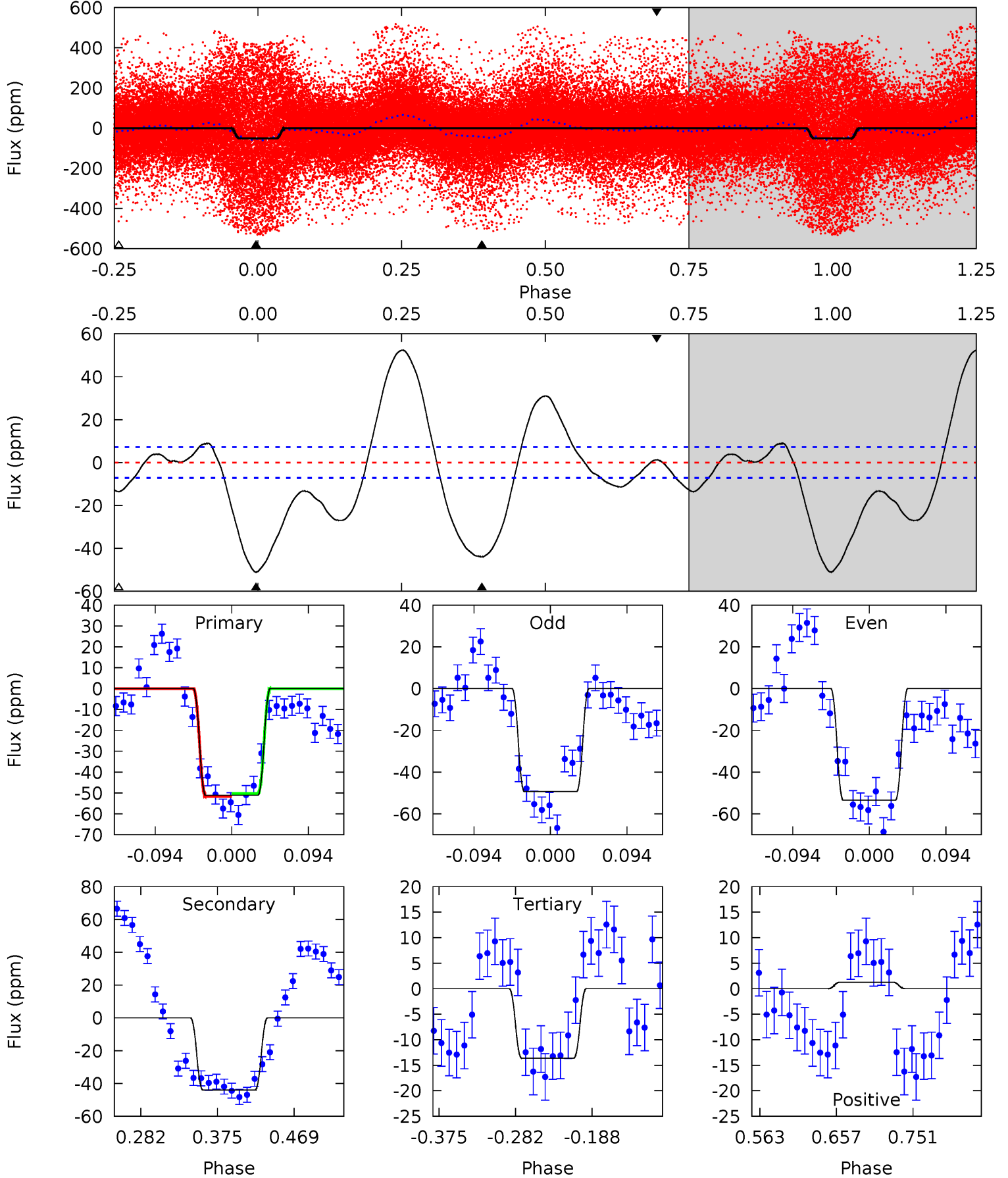
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	29.2	6.71	0	4.55	1.61	12.6	21.2	27.9	22.5	29.2	0.67	1.10	0.55	5.05



Alt Model-Shift Uniqueness Test

008028063-01, P = 2.861690 Days, E = 130.745144 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.5	28.0	8.65	0.82	4.58	1.68	12.7	23.9	31.7	19.3	27.2	1.31	0.97	0.51	0.47



Stellar Parameters For KIC 008028063

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7244^{+226}_{-302}	$3.989^{+0.228}_{-0.152}$	$-0.080^{+0.250}_{-0.350}$	$2.137^{+0.596}_{-0.596}$	$1.621^{+0.200}_{-0.275}$	$0.234^{+0.296}_{-0.106}$
	+3%/-4%	+6%/-4%	+312%/-438%	+28%/-28%	+12%/-17%	+126%/-45%
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 008028063-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-87 ± 3	$1.33^{+0.29}_{-0.27}$	2999^{+228}_{-228}	9736^{+1419}_{-987}	58^{+34}_{-18}
Alt.	-44 ± 2	$1.74^{+0.34}_{-0.33}$	3004^{+234}_{-248}	6641^{+528}_{-440}	17^{+9}_{-5}

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 $A_{obs} \gg 1.0$

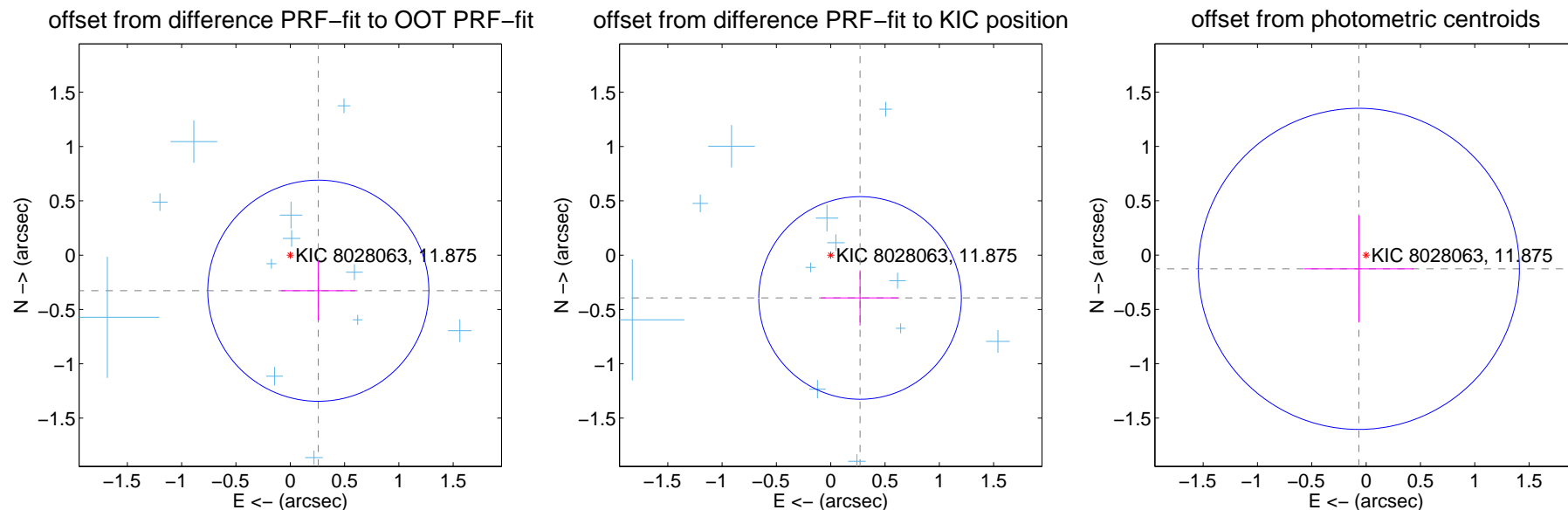
DV Centroid Data

Supplemental centroid analysis for 008028063-01. **Kepler magnitude: 11.88.** Transit SNR 7.39

There are 12 quarters with good PRF difference image offsets

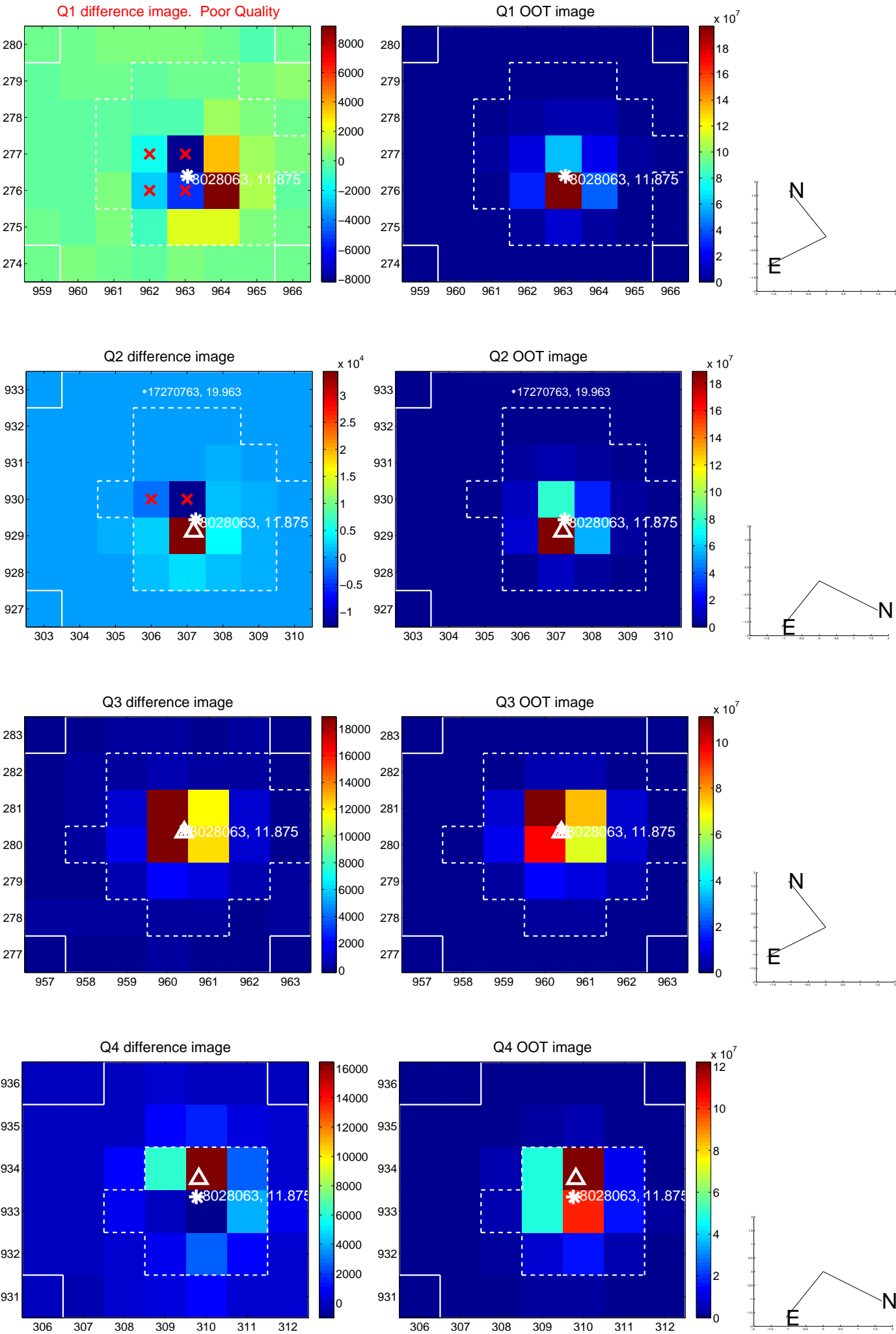
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.417 ± 0.339	1.23	-0.258 ± 0.342	-0.327 ± 0.274
PRF-fit source offset from KIC position	0.478 ± 0.311	1.54	-0.270 ± 0.360	-0.394 ± 0.255
photometric centroid source offset	0.14 ± 0.49	0.29	0.07 ± 0.50	-0.13 ± 0.49

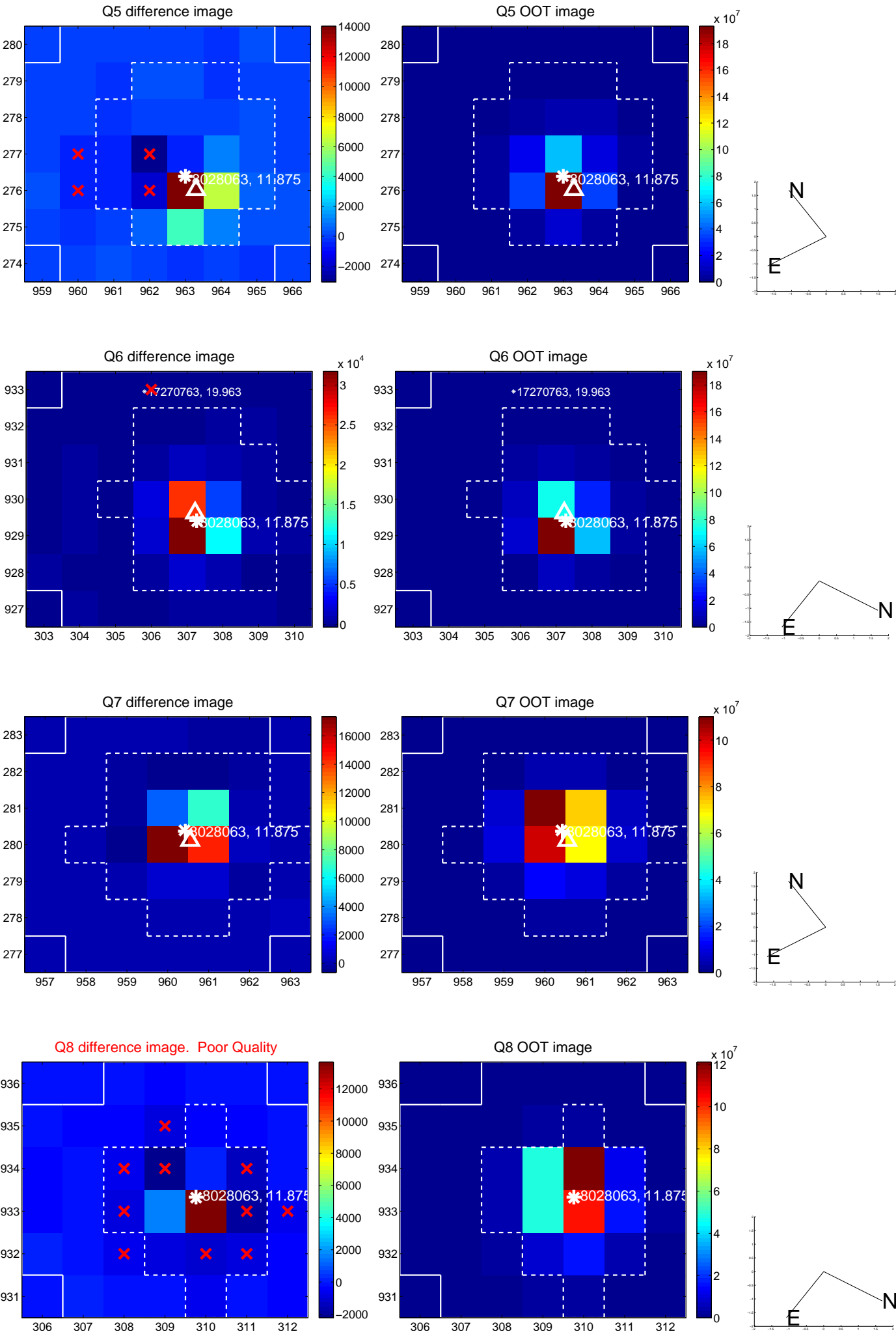


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

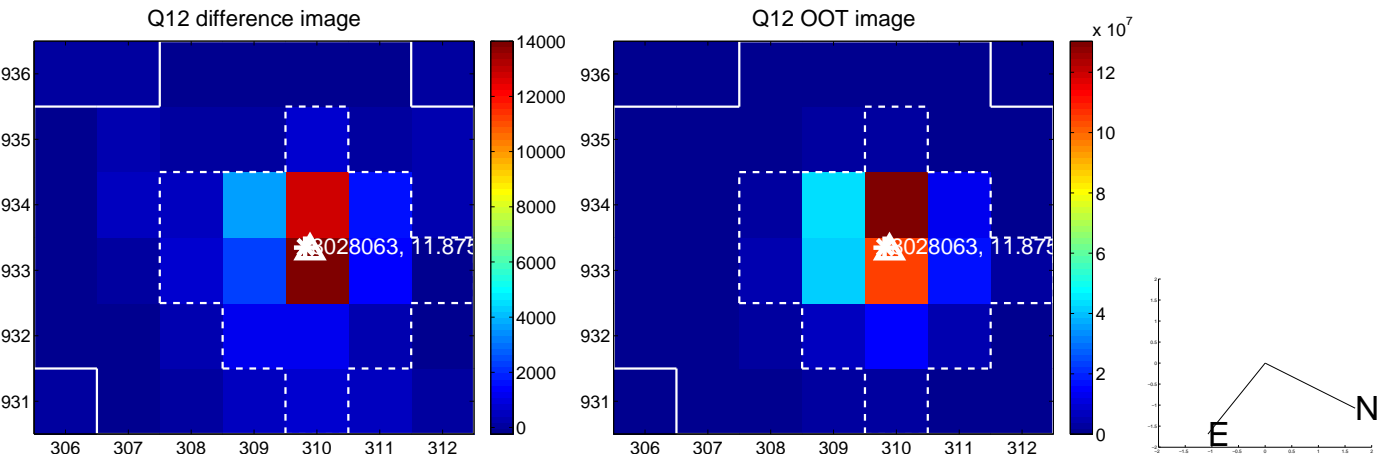
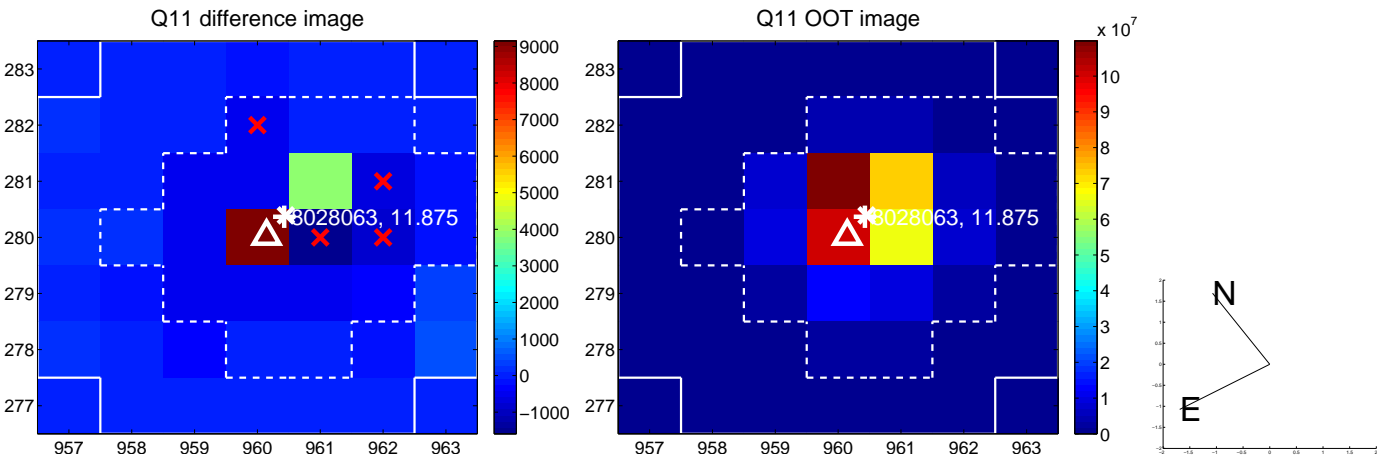
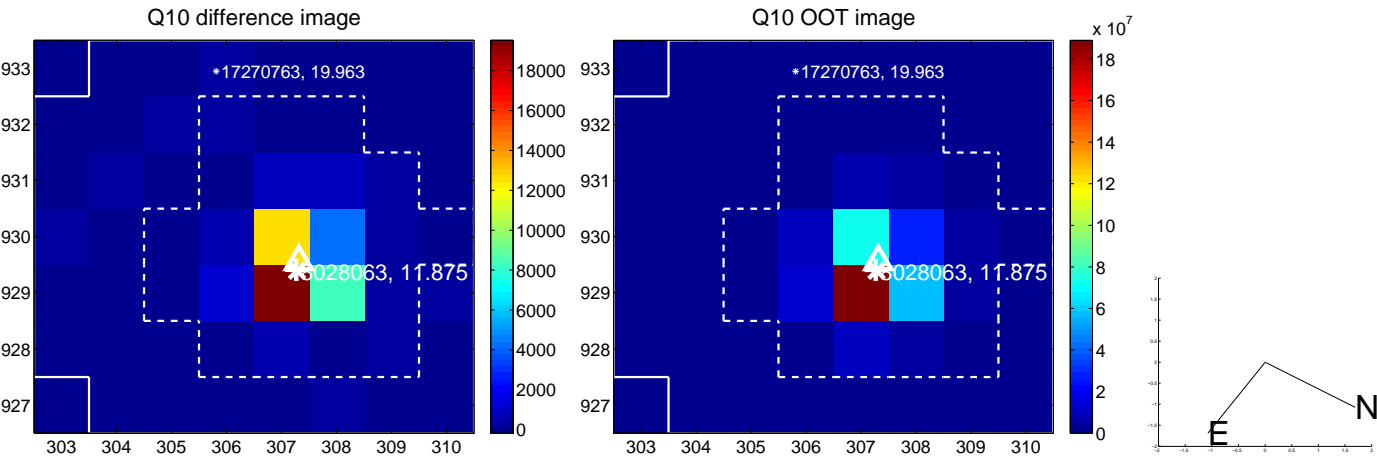
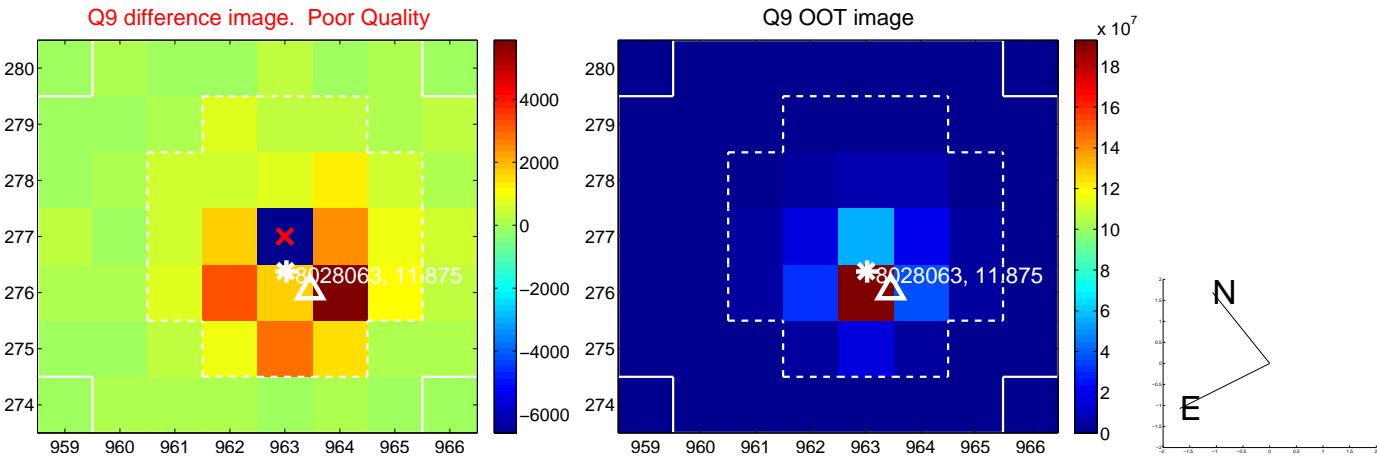
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



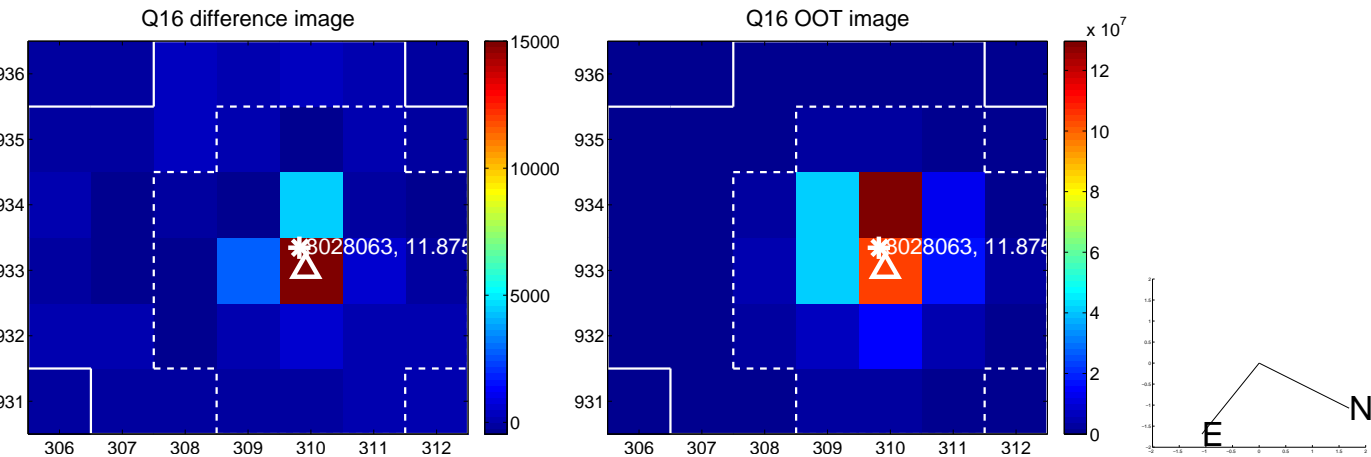
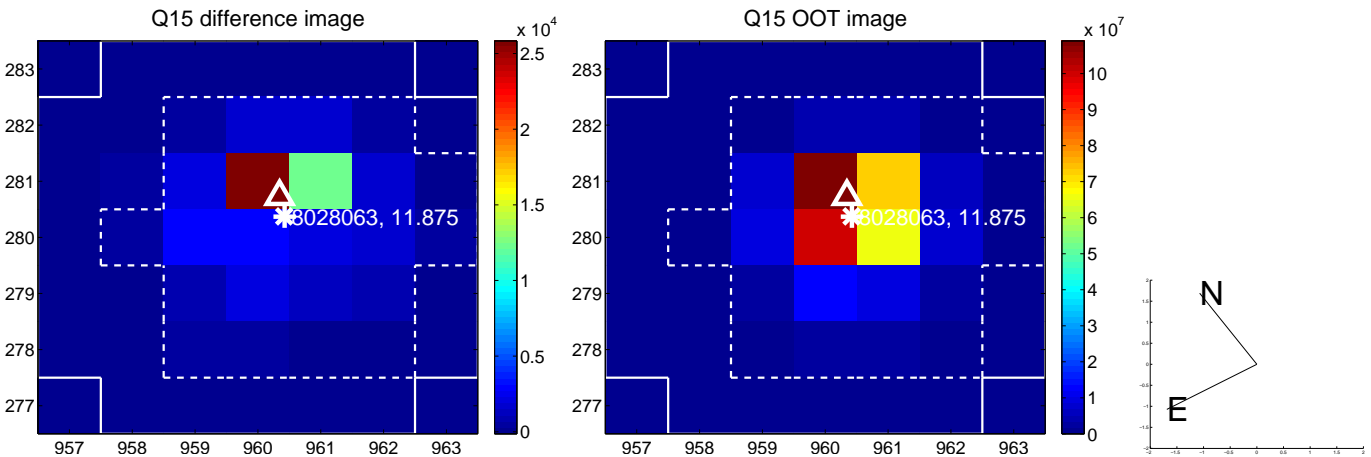
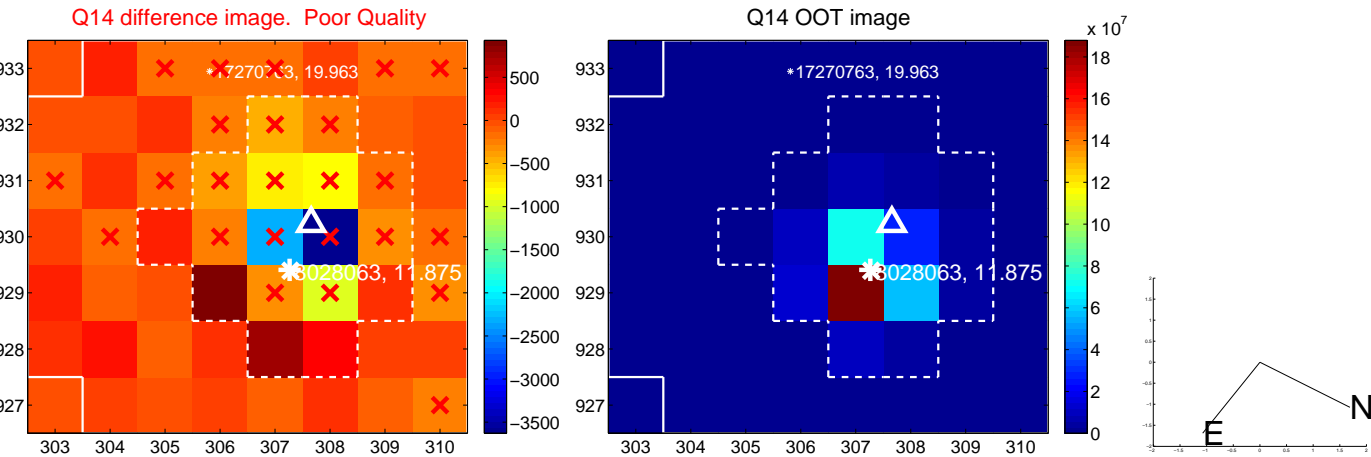
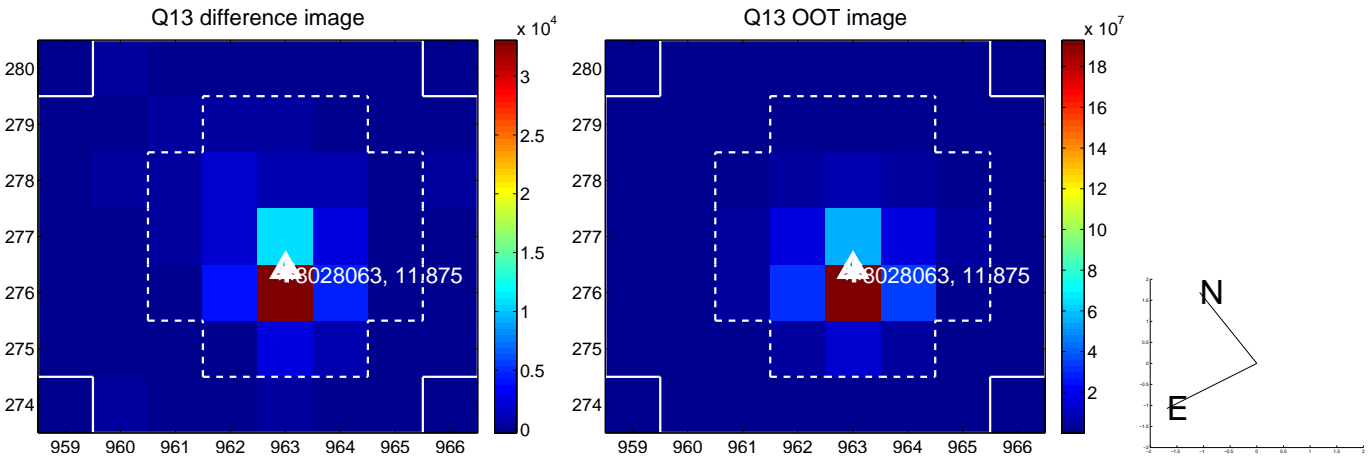
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



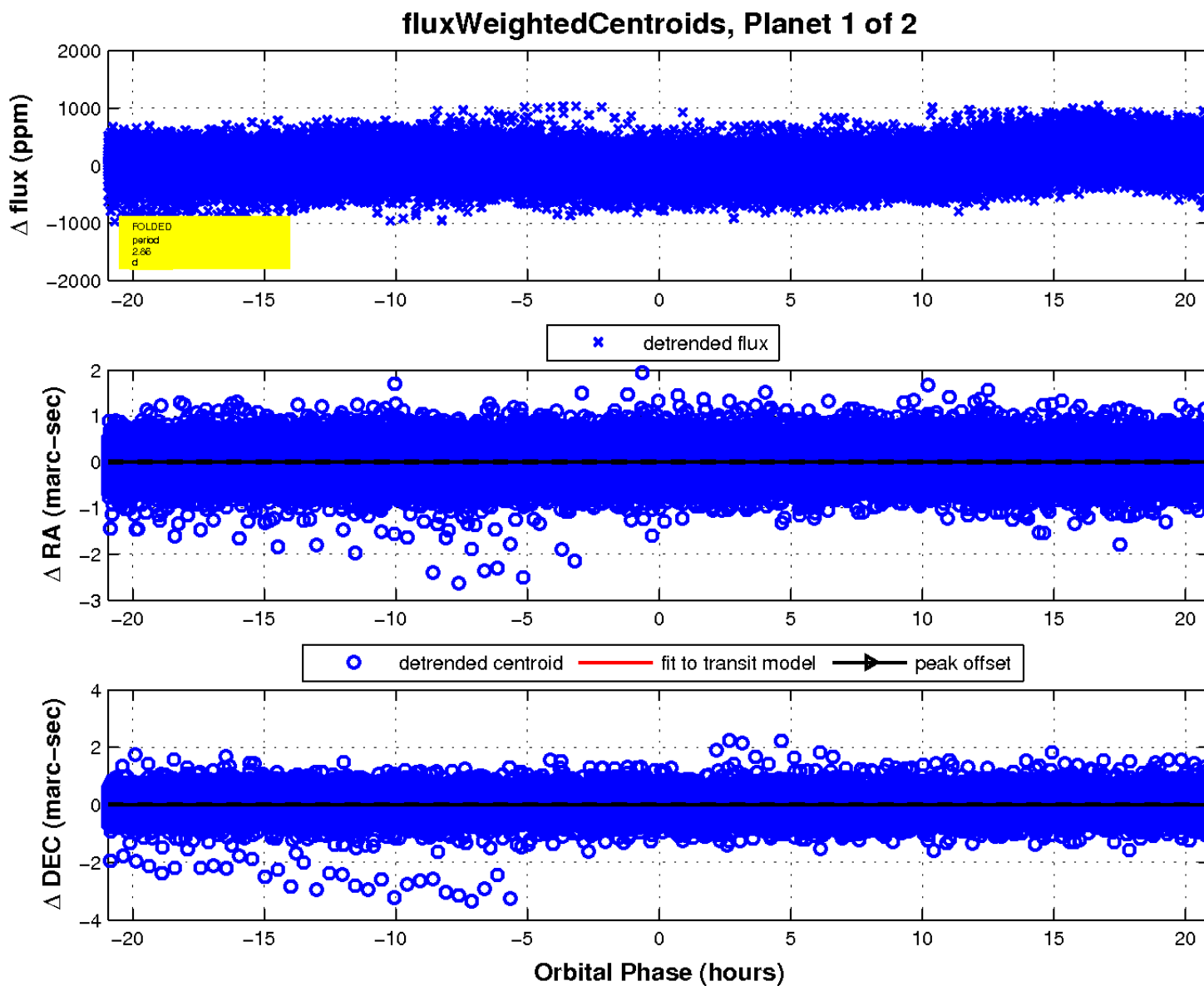
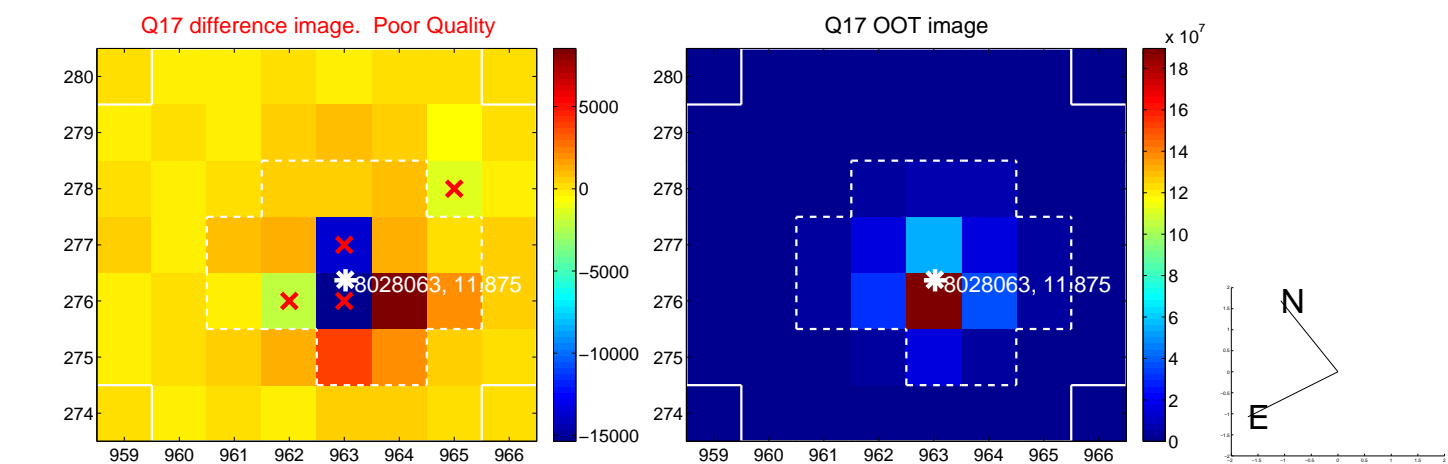
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

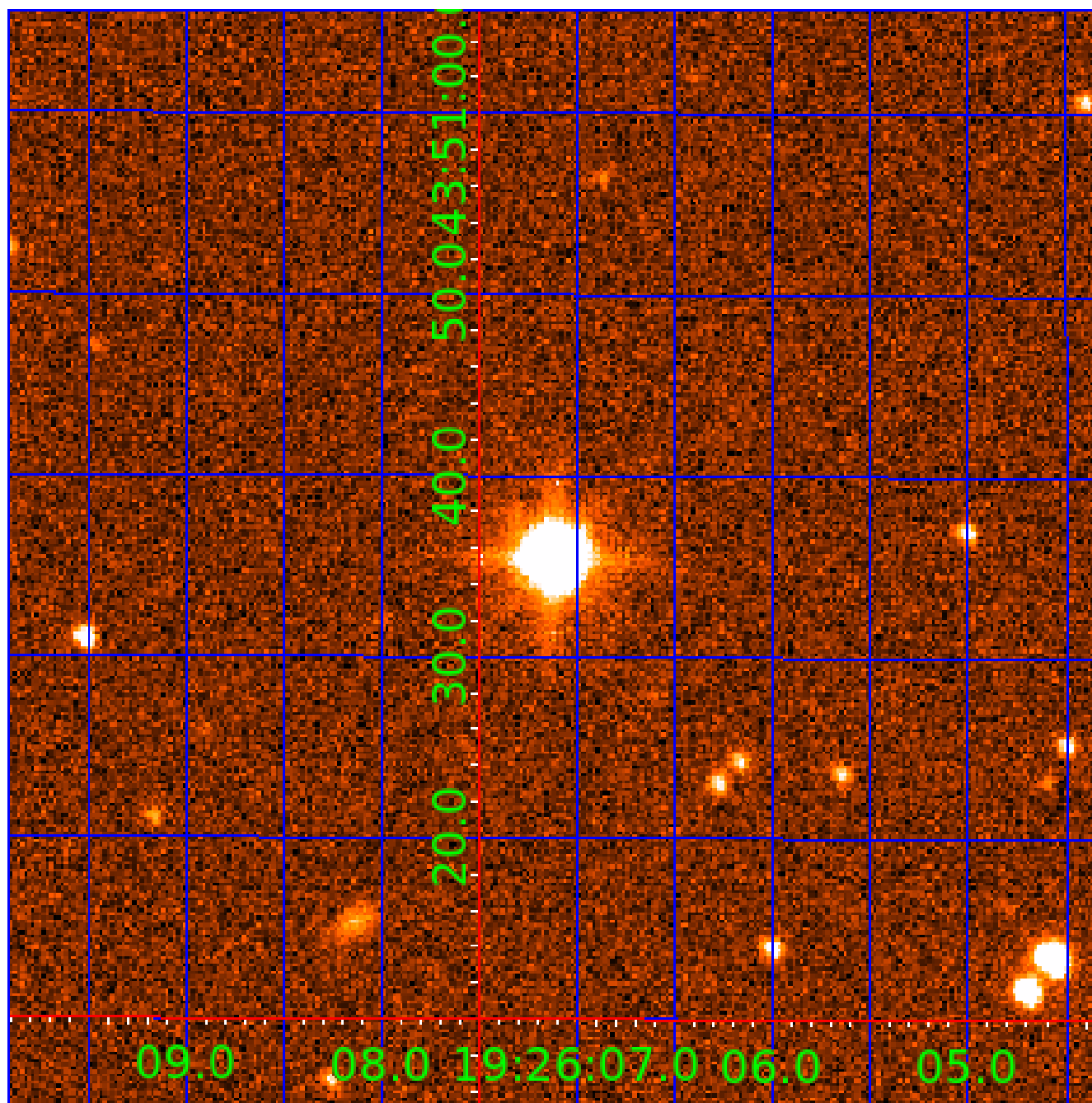


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008028063

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})
008028063-01	OBS	No	2.861839	133.585241	29.5	6.982	8.5	7.4	2.14	7244	1.35	5237.82
008028063-02	OBS	No	2.862265	131.882291	31.0	20.259	11.8	9.7	2.14	7244	1.23	5236.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008028063-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008028063-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD

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

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

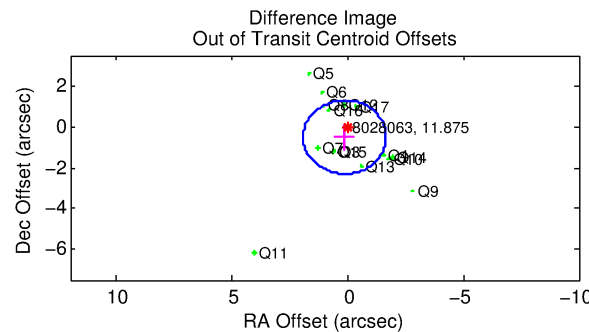
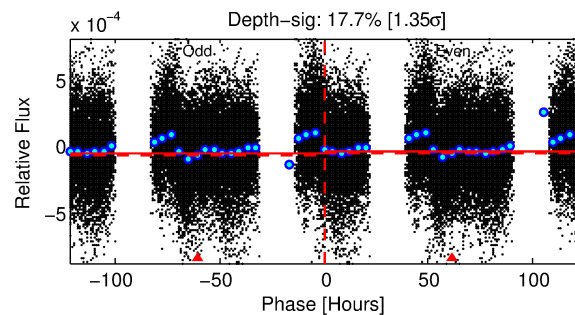
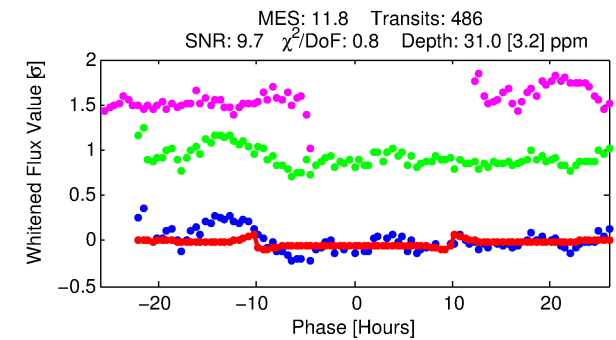
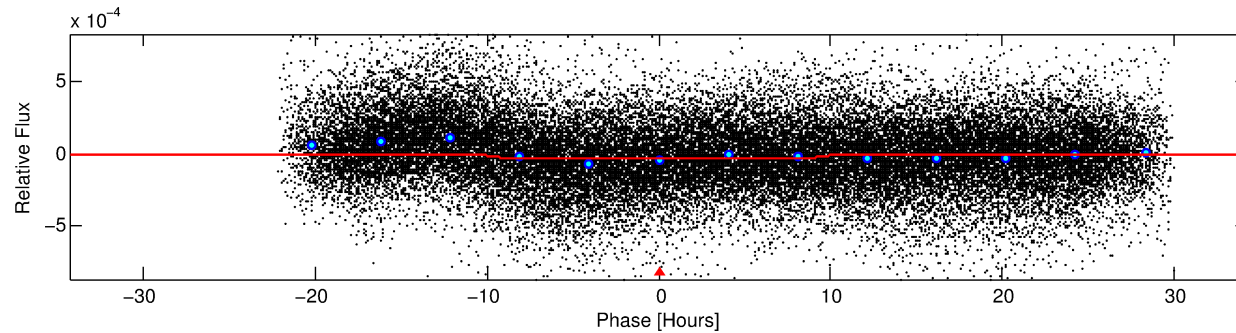
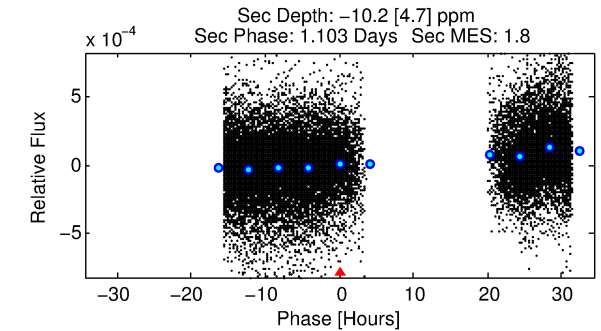
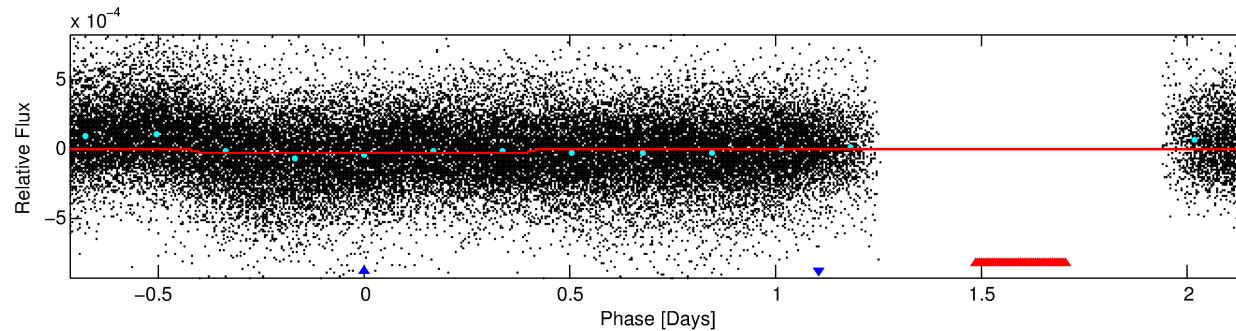
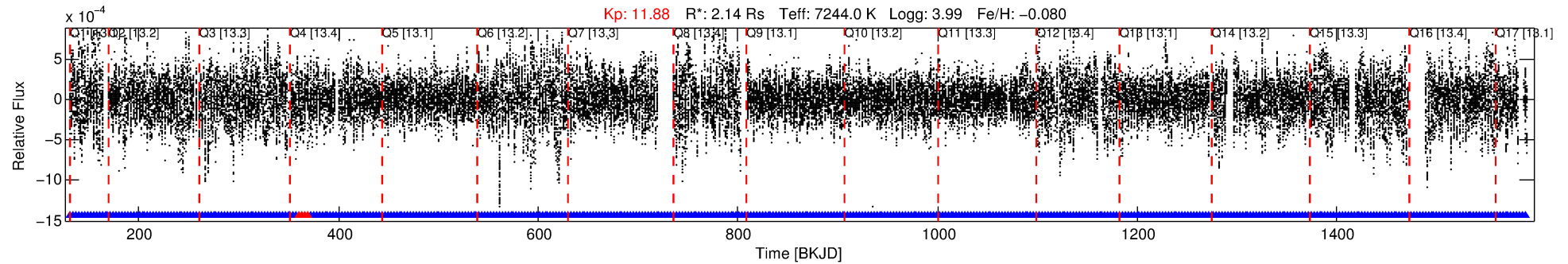
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008028063-02

No Significant Match Found

DV One-Page Summary

KIC: 8028063 Candidate: 2 of 2 Period: 2.862 d



DV Fit Results:

Period = 2.86226 [0.00002] d
Epoch = 131.8823 [0.0042] BKJD
Rp/R* = 0.0053 [0.0016]
a/R* = 1.20 [0.66]
b = 0.50 [2.71]
Seff = 5236.79 [2251.66]
Teq = 2169 [233] K
Rp = 1.23 [0.50] Re
a = 0.0464 [0.0118] AU
Ag = N/A
Teffp = N/A

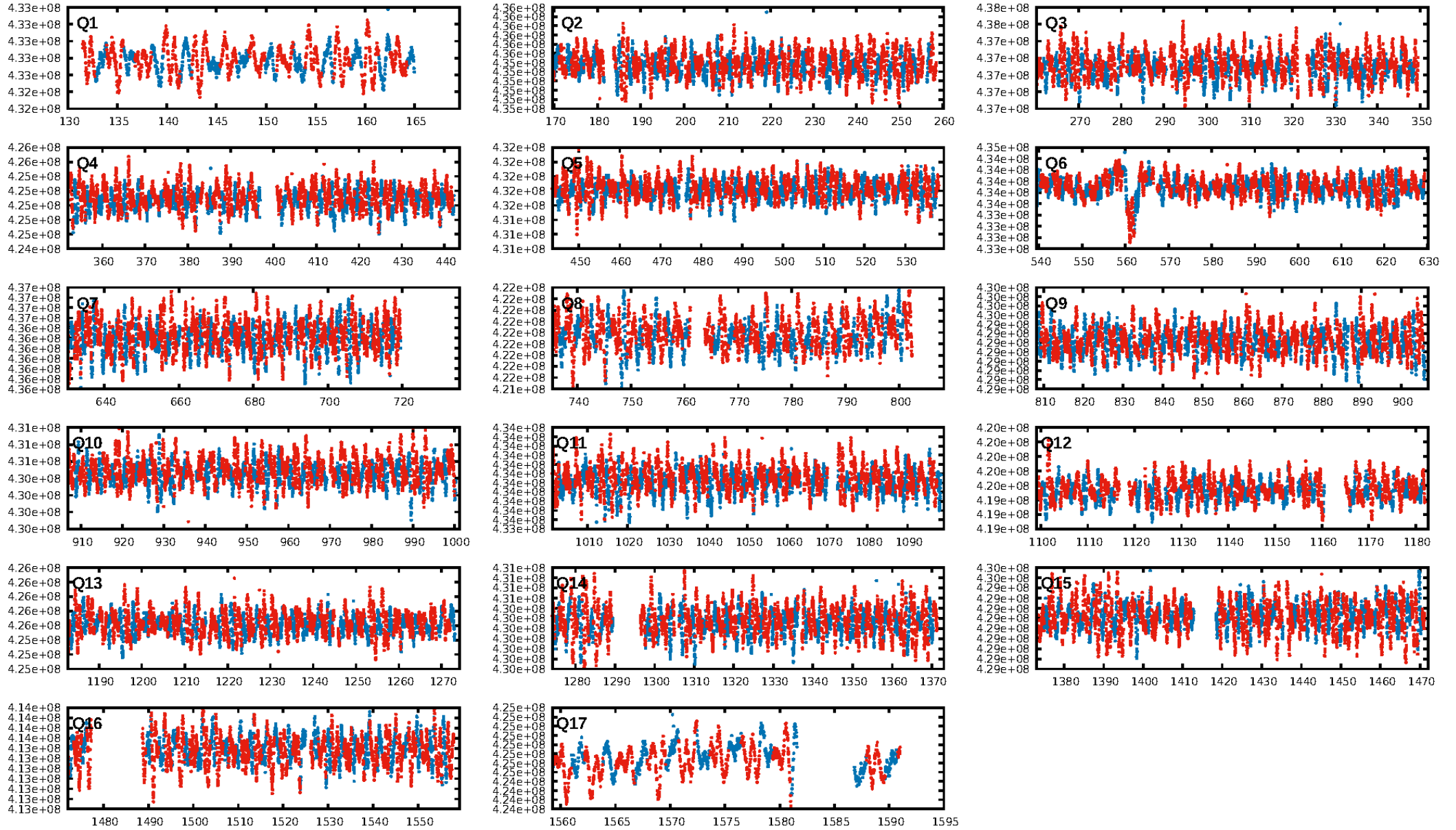
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [461/465]
GhostDiagnostic-chr: 3.485
Centroid-sig: 43.9%
Centroid-so: 0.262 arcsec [0.86σ]
OotOffset-rm: 0.525 arcsec [0.88σ]
KicOffset-rm: 0.591 arcsec [0.98σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.33 [5/15]
DiffImageOverlap-fno: 0.00 [0/17]

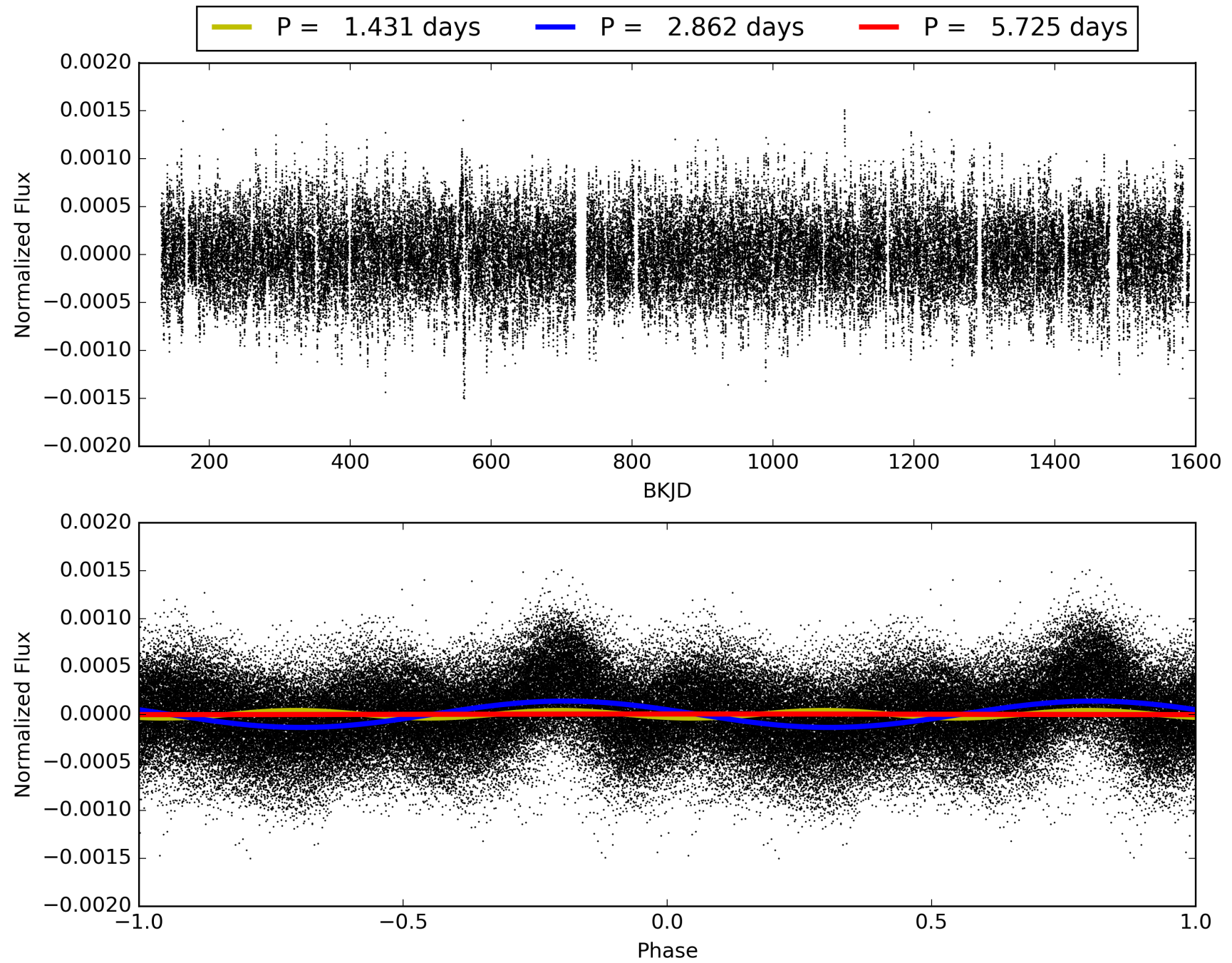
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:50:13 Z

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

TCE 008028063-02, PDC Light Curves

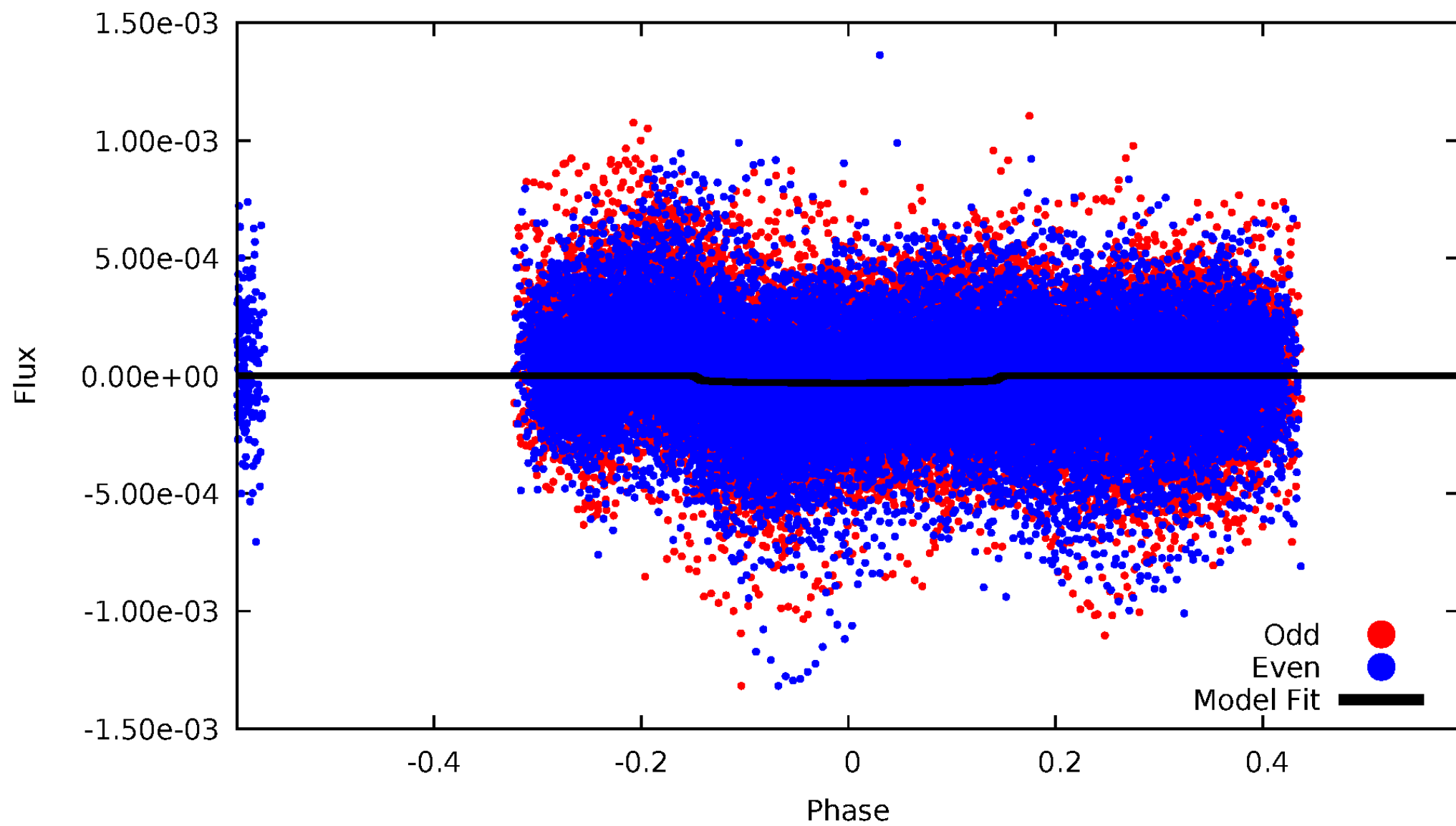


TCE 008028063-02



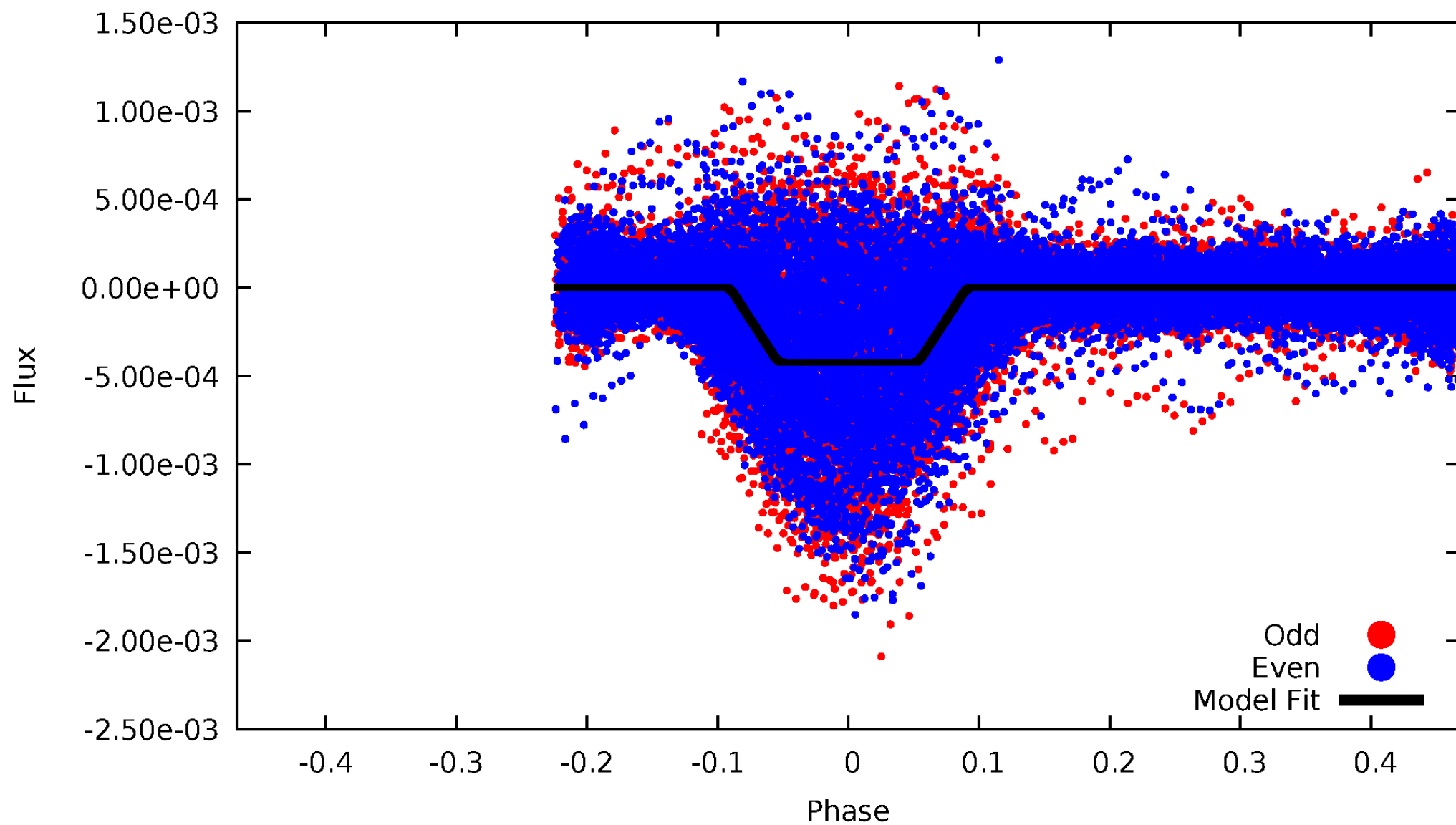
DV Odd/Even

TCE 008028063-02



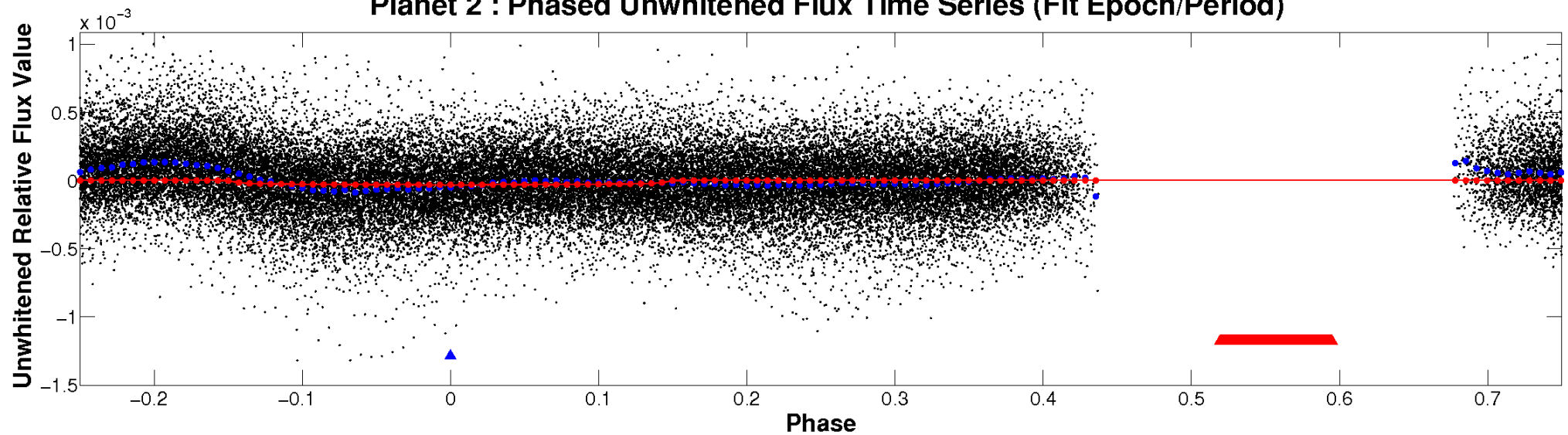
ALT Odd/Even

TCE 008028063-02

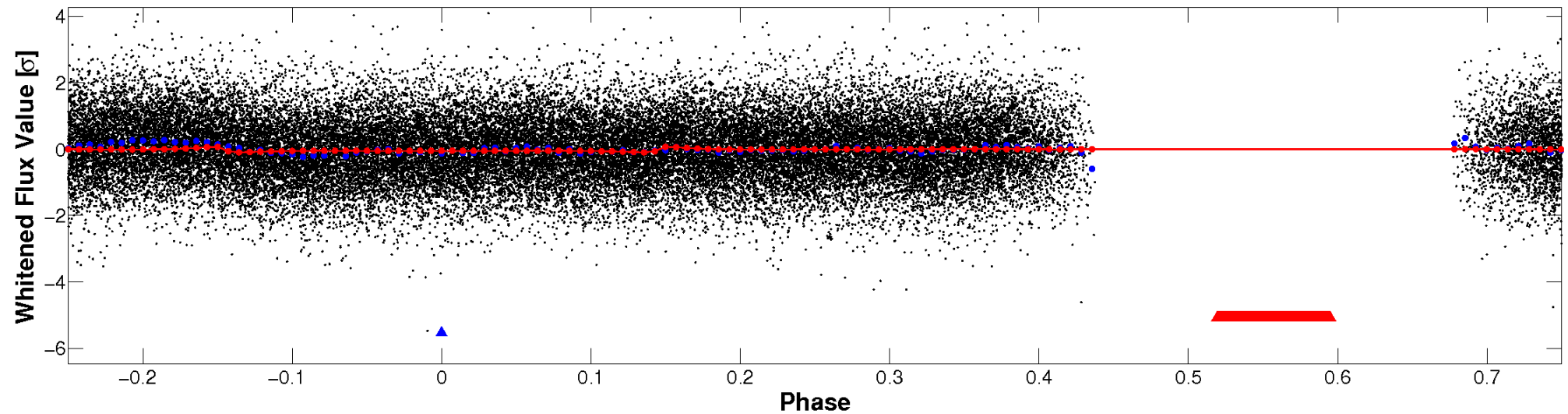


Non-Whitened Vs. Whitened Light Curve

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

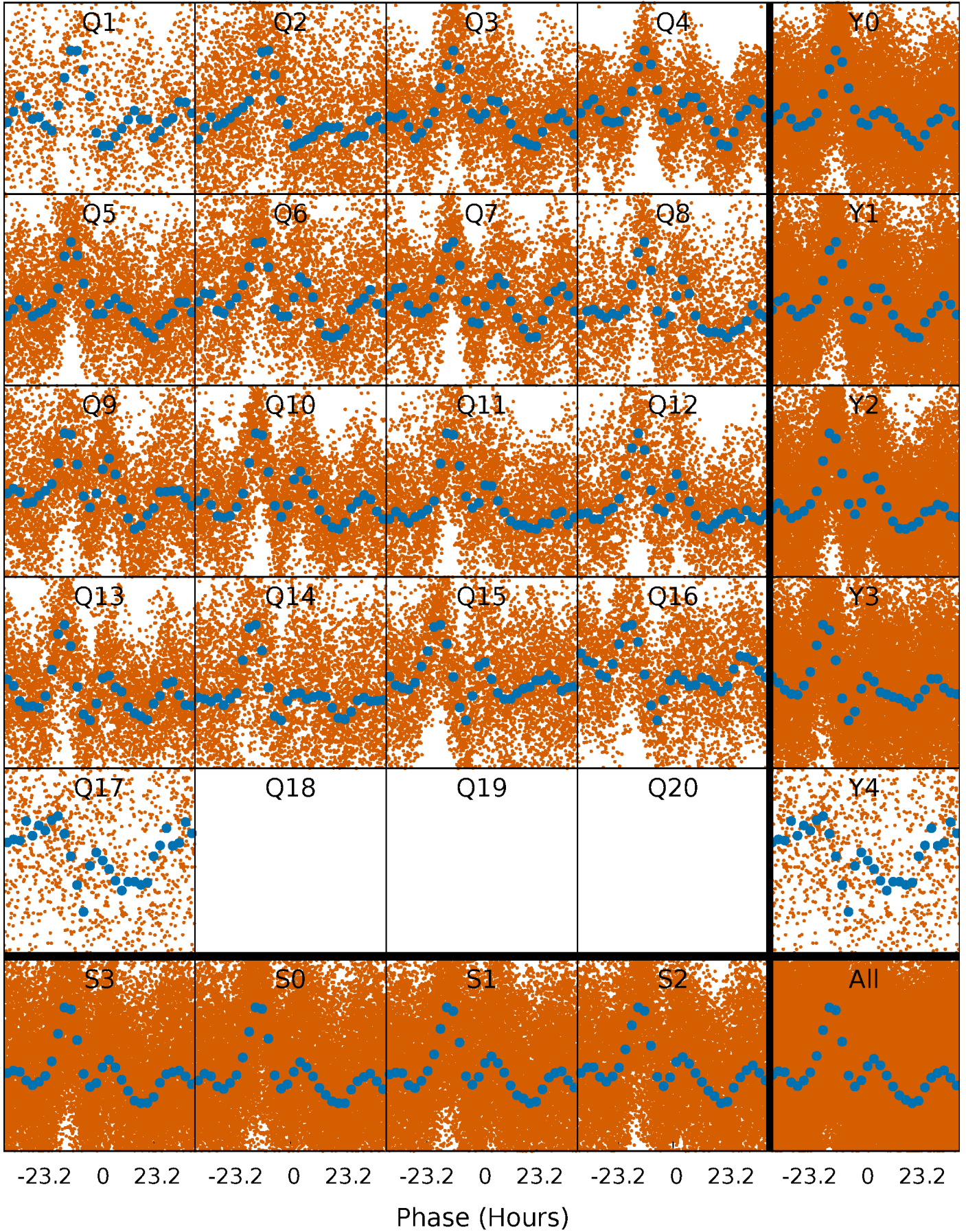


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



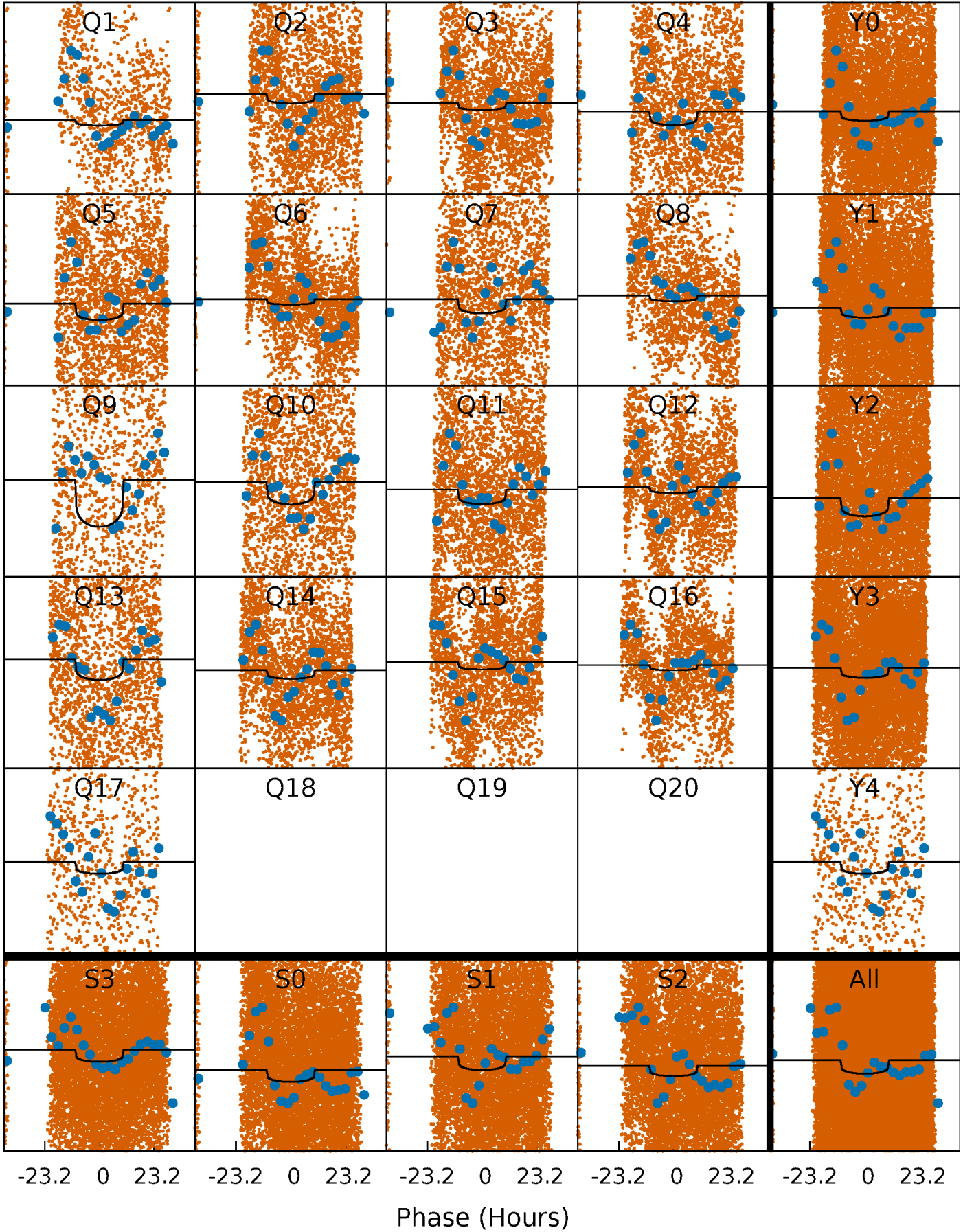
PDC Quarter-Phased Transit Curves

TCE 008028063-02 P= 2.862265 Days $T_0=131.882291$ (BKJD)



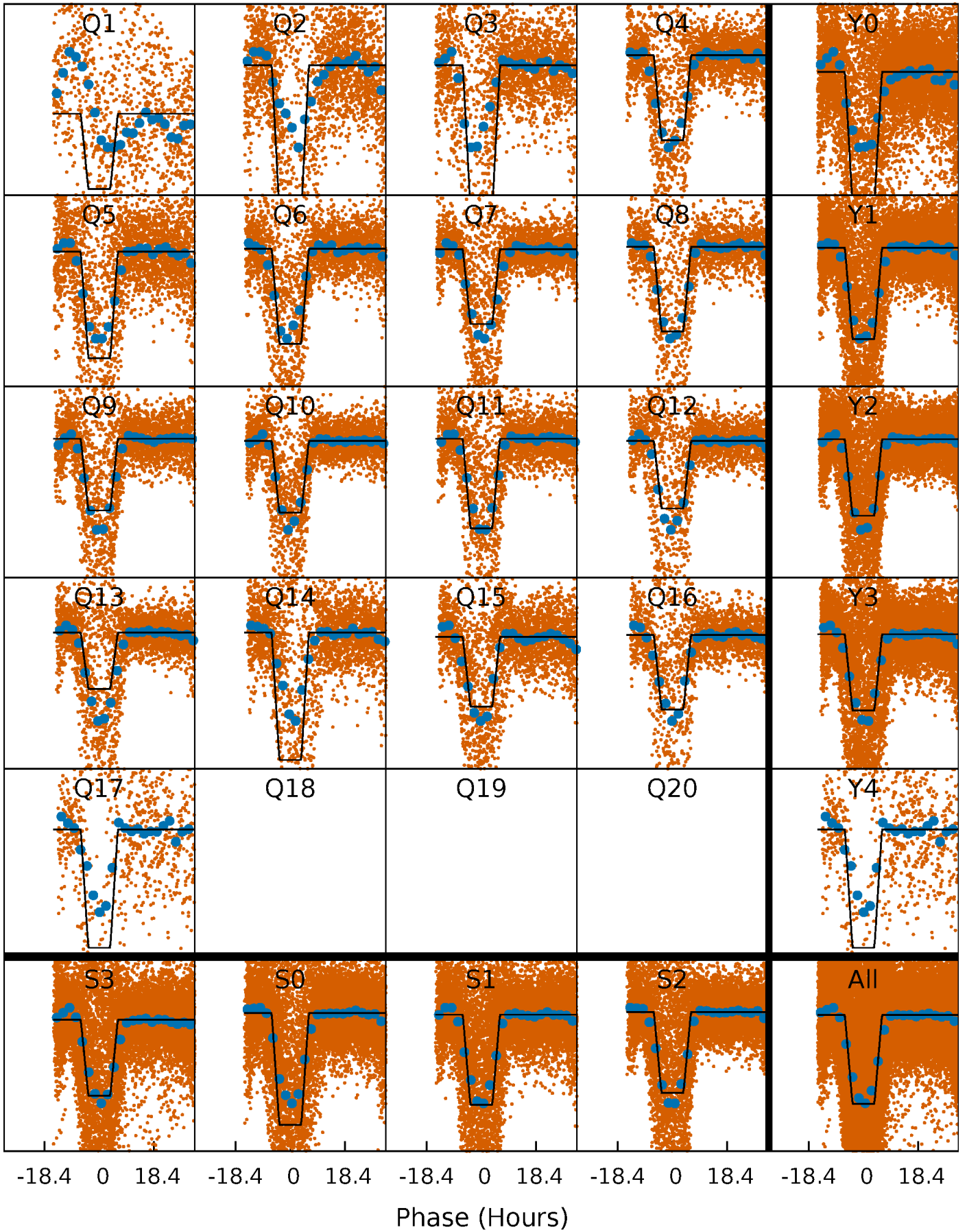
DV Quarter-Phased Transit Curves

TCE 008028063-02 P= 2.862265 Days $T_0=131.882291$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

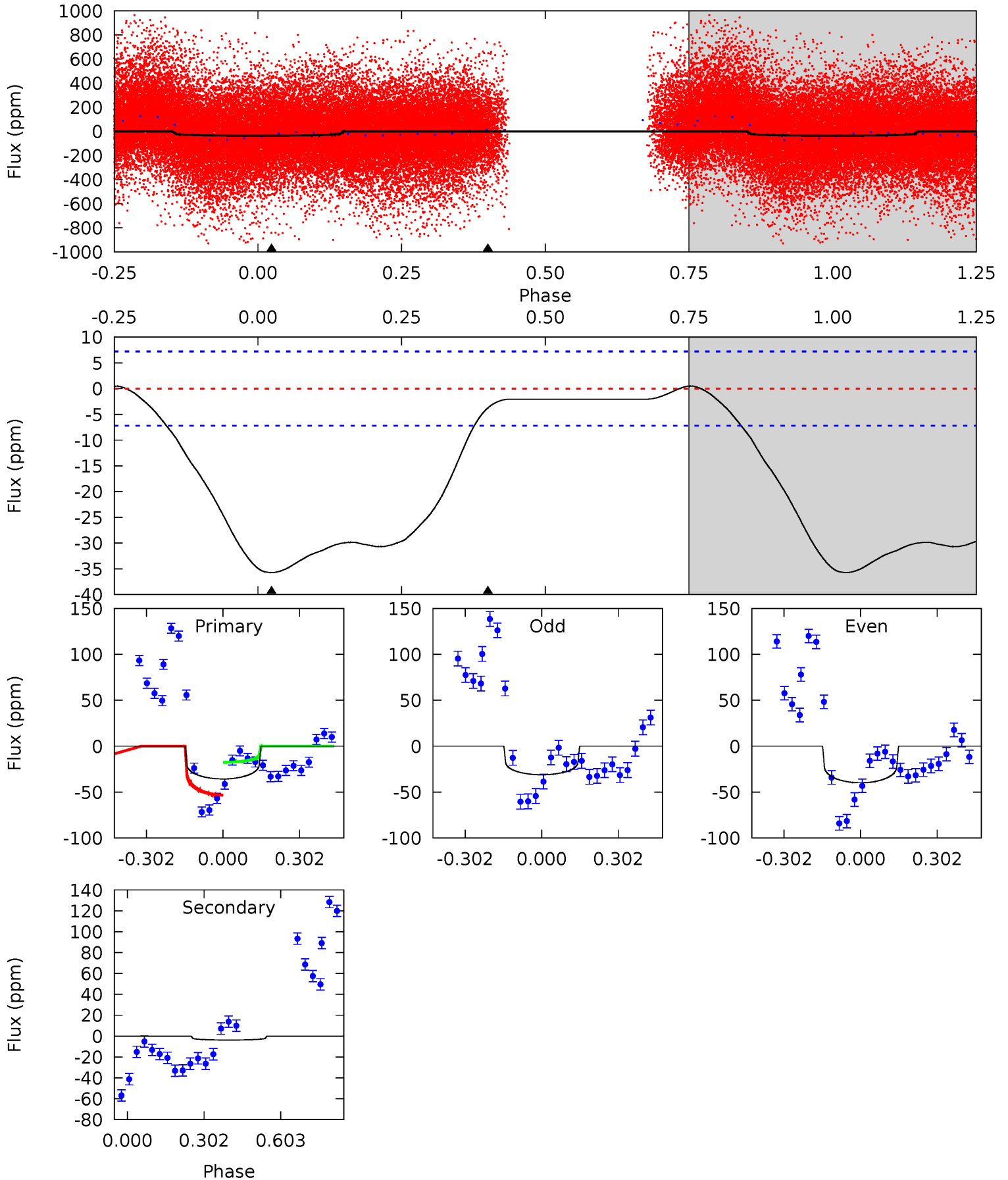
TCE 008028063-02 P= 2.861714 Days $T_0=131.816817$ (BKJD)



DV Model-Shift Uniqueness Test

008028063-02, P = 2.862265 Days, E = 129.020026 Days

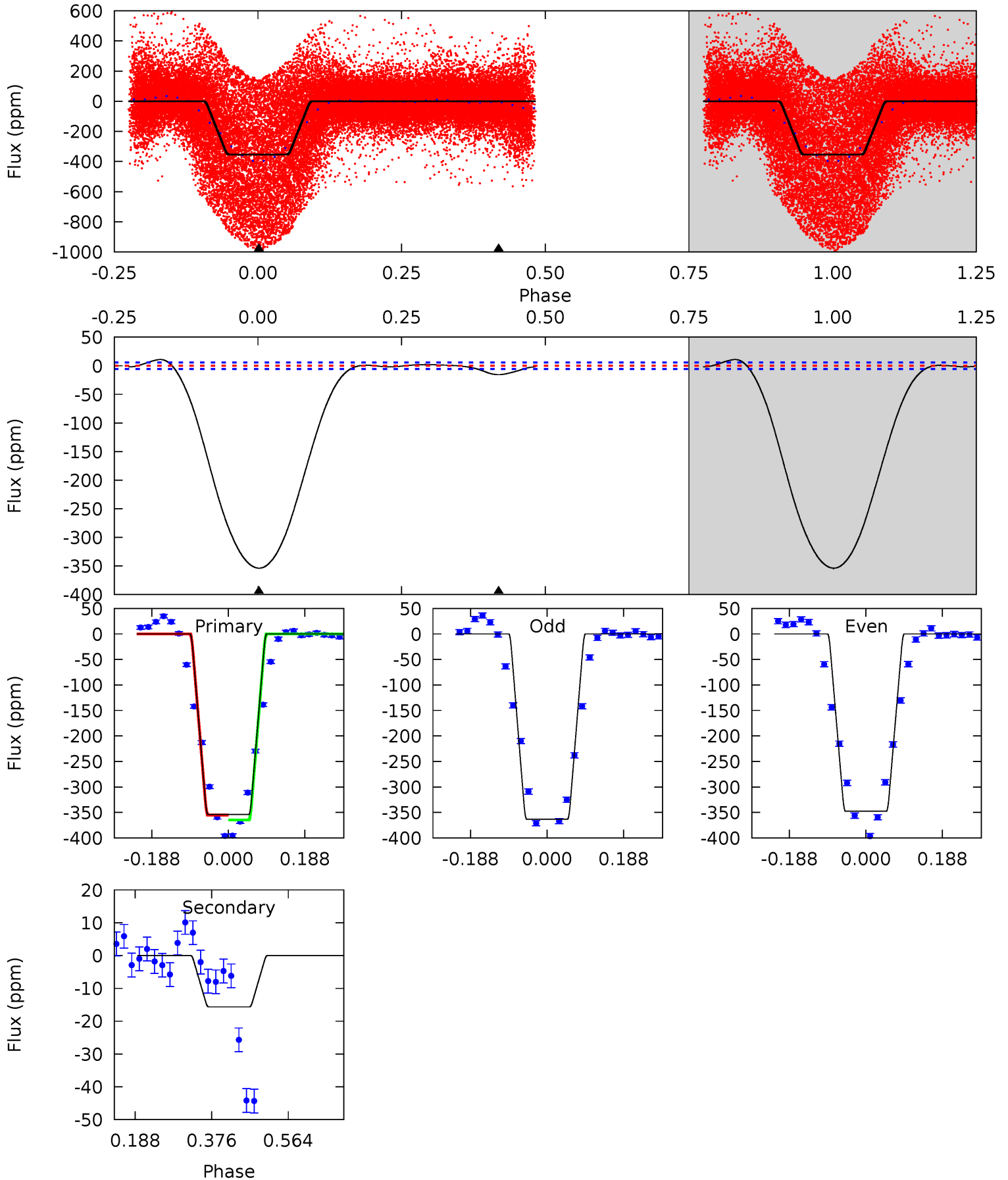
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.5	2.26	0	0	4.33	1.03	0.39	21.5	21.5	2.26	2.26	2.62	1.27	0.01	11.2



Alt Model-Shift Uniqueness Test

008028063-02, P = 2.861714 Days, E = 128.955103 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
280.2	12.4	0	0	4.43	1.32	1.98	280.2	280.2	12.4	12.4	6.04	1.01	0.03	1.74



Stellar Parameters For KIC 008028063

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7244^{+226}_{-302}	$3.989^{+0.228}_{-0.152}$	$-0.080^{+0.250}_{-0.350}$	$2.137^{+0.596}_{-0.596}$	$1.621^{+0.200}_{-0.275}$	$0.234^{+0.296}_{-0.106}$
	+3%/-4%	+6%/-4%	+312%/-438%	+28%/-28%	+12%/-17%	+126%/-45%
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 008028063-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4 ± 2	$1.21^{+0.43}_{-0.39}$	3001^{+241}_{-239}	4411^{+882}_{-682}	$2.908^{+4.784}_{-1.635}$
Alt.	-16 ± 1	$4.70^{+0.76}_{-0.75}$	3003^{+223}_{-232}	3333^{+187}_{-185}	$0.827^{+0.338}_{-0.216}$

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

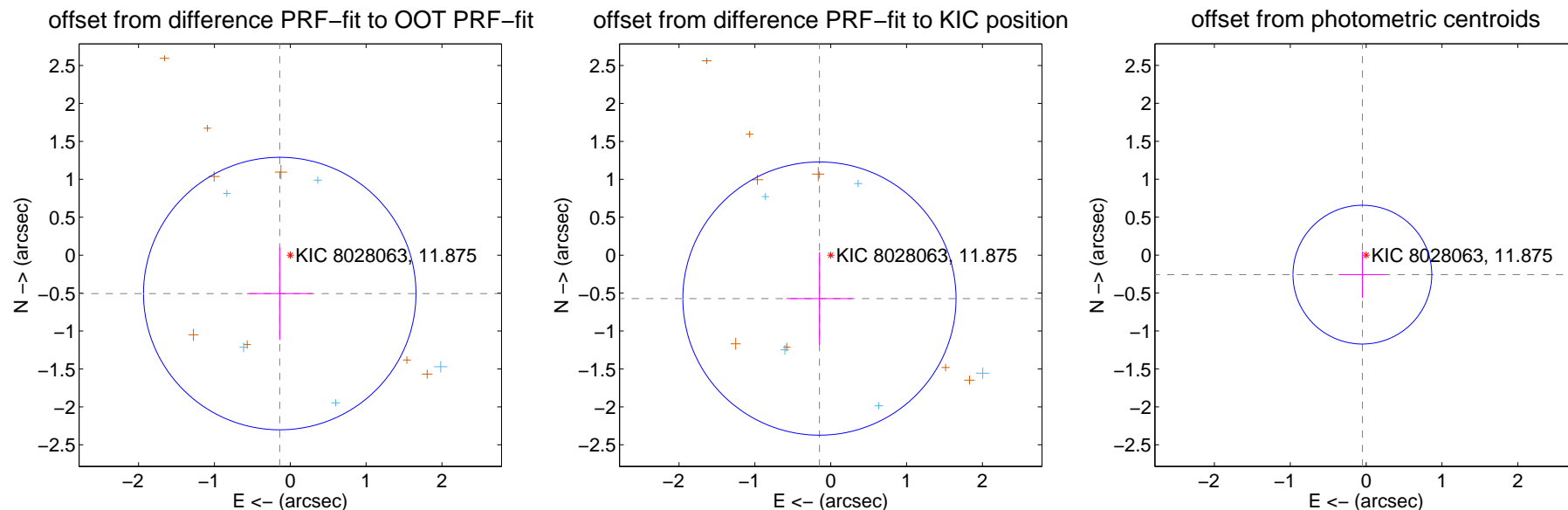
DV Centroid Data

Supplemental centroid analysis for 008028063-02. **Kepler magnitude: 11.88.** Transit SNR 9.67

There are 5 quarters with good PRF difference image offsets

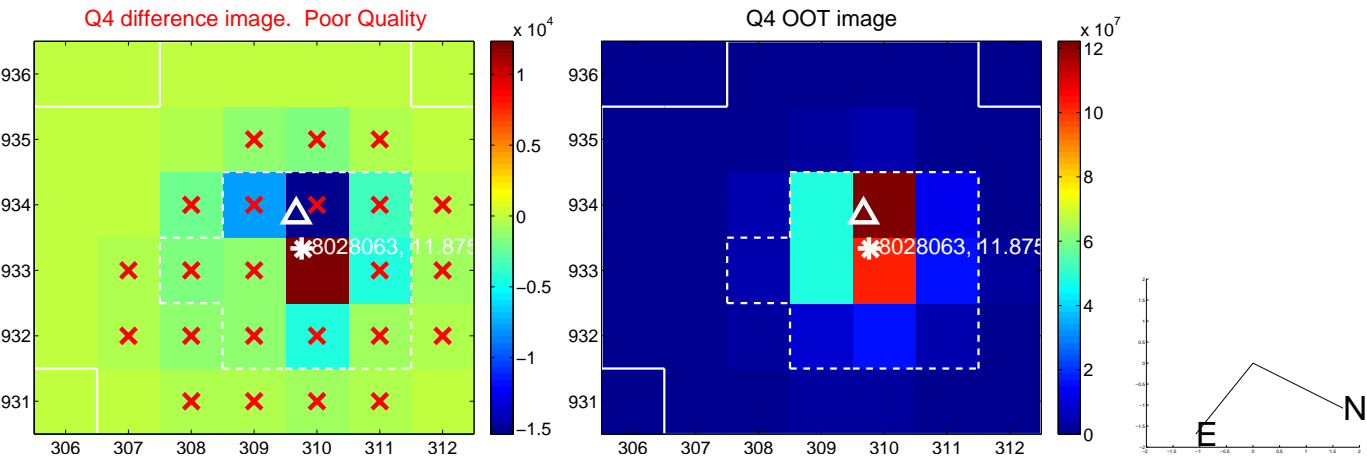
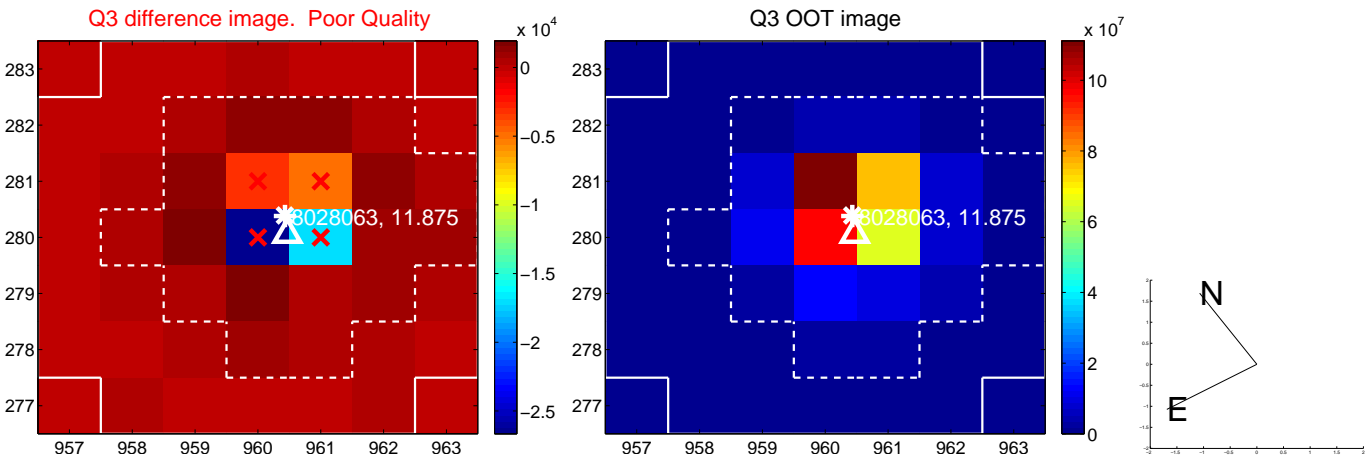
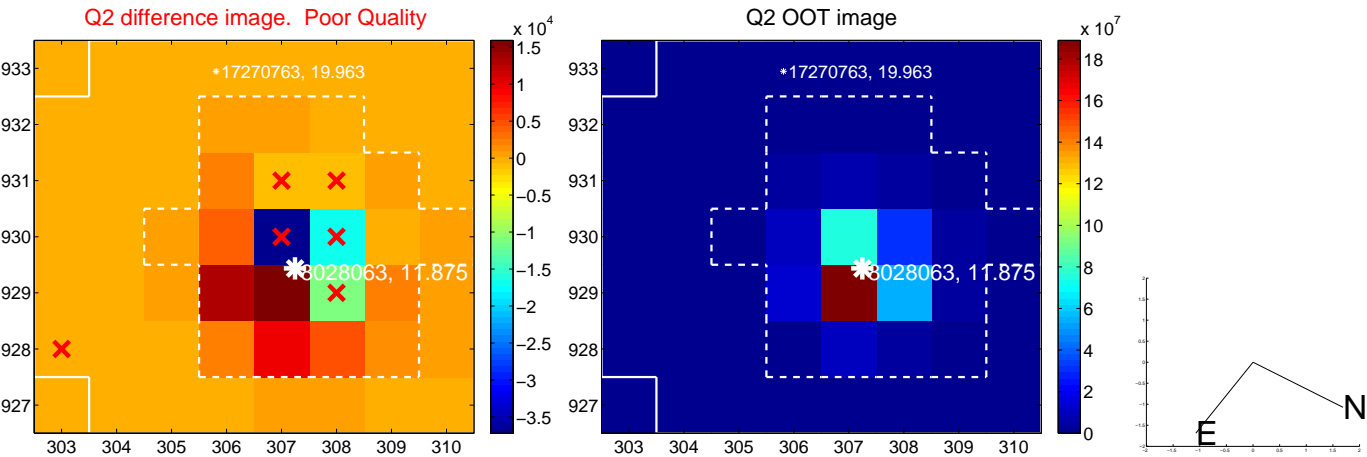
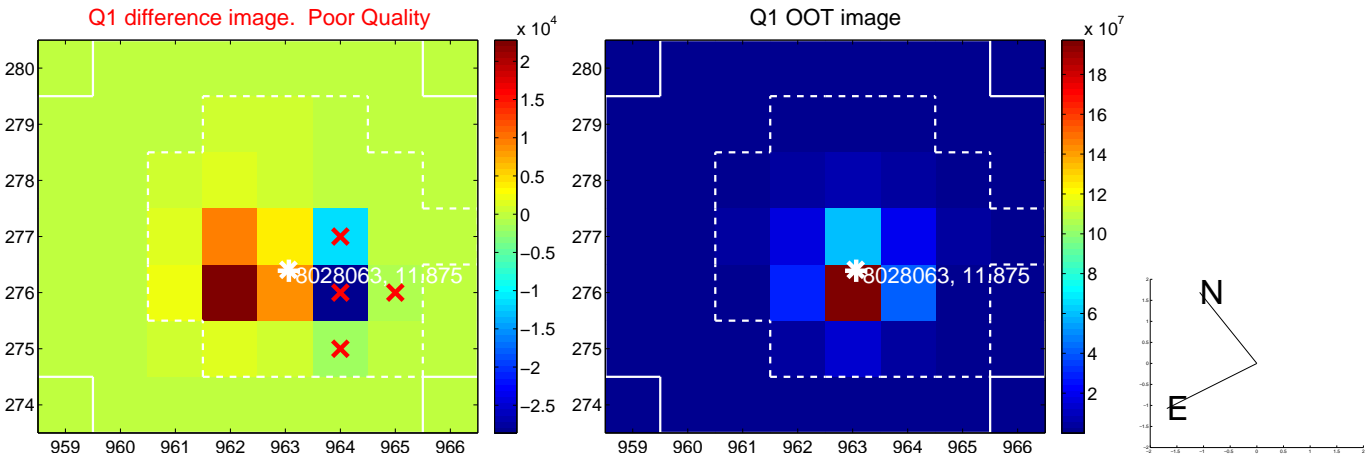
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.525 ± 0.599	0.88	0.139 ± 0.432	-0.506 ± 0.609
PRF-fit source offset from KIC position	0.591 ± 0.600	0.98	0.149 ± 0.434	-0.572 ± 0.610
photometric centroid source offset	0.26 ± 0.30	0.86	0.05 ± 0.31	-0.26 ± 0.30

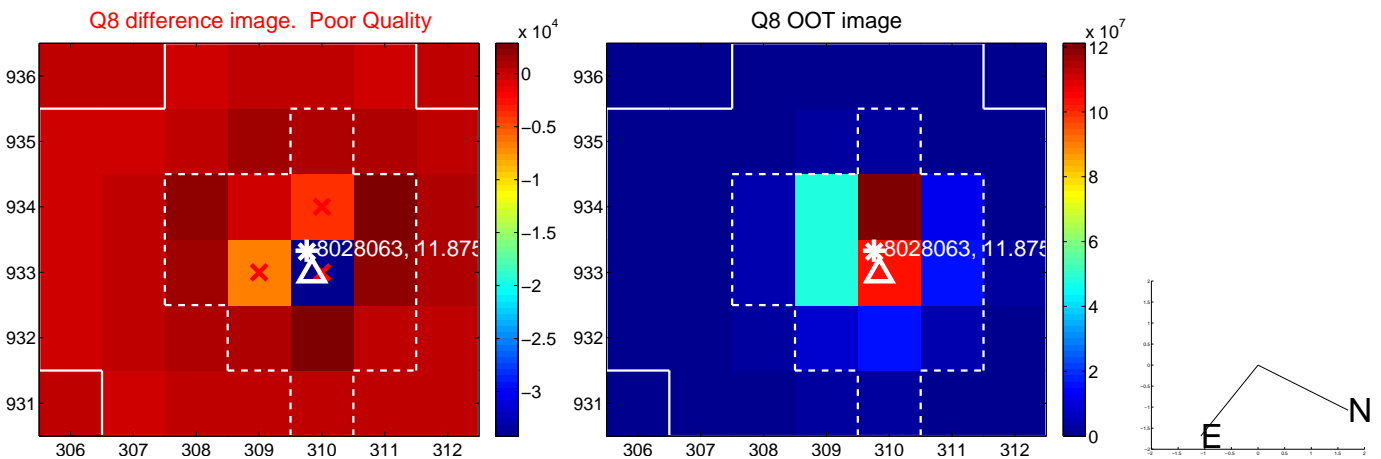
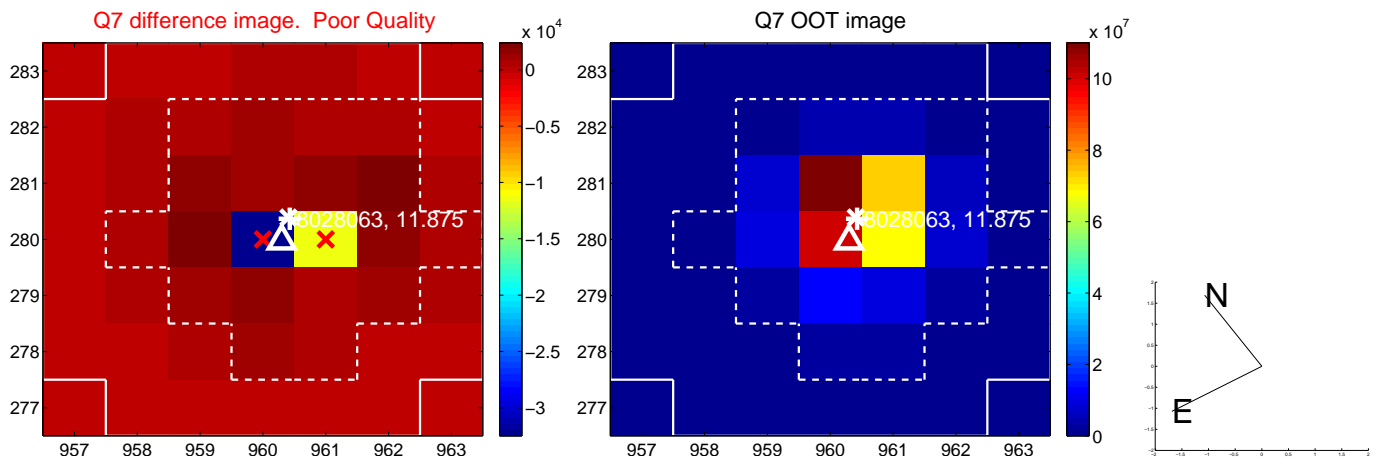
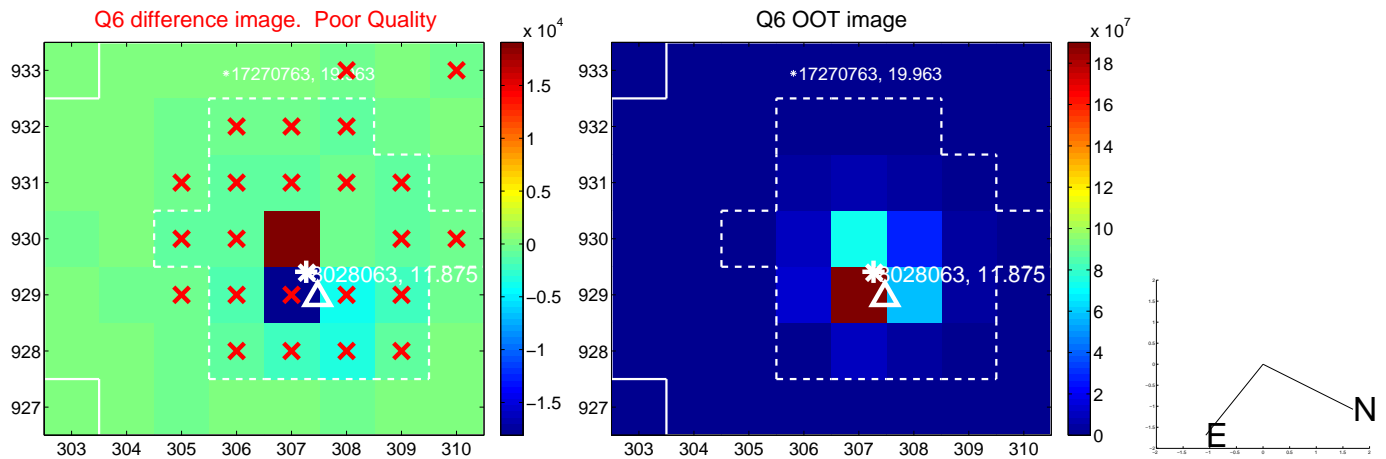
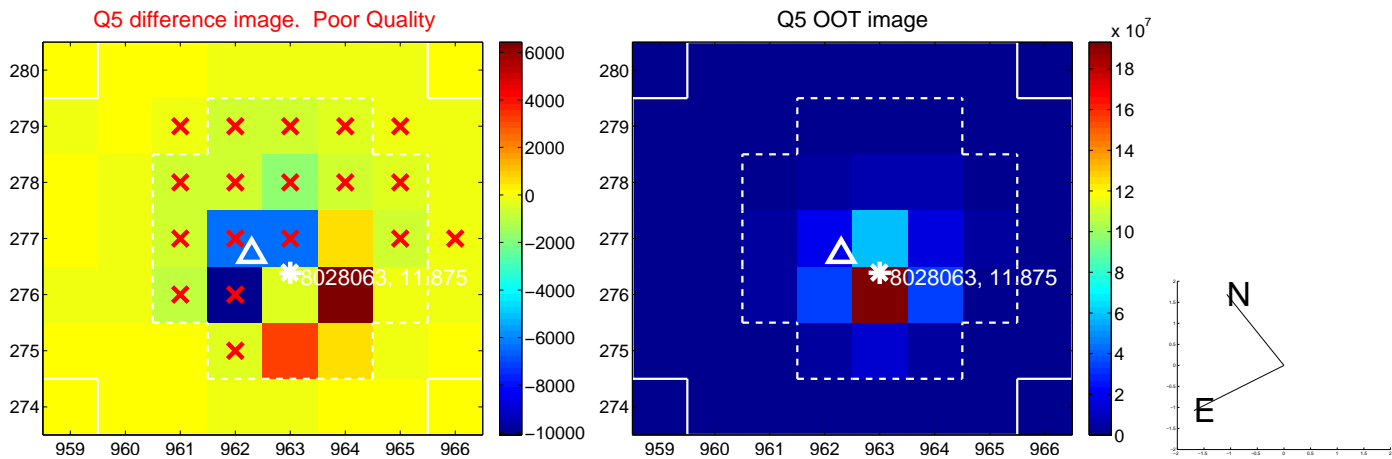


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

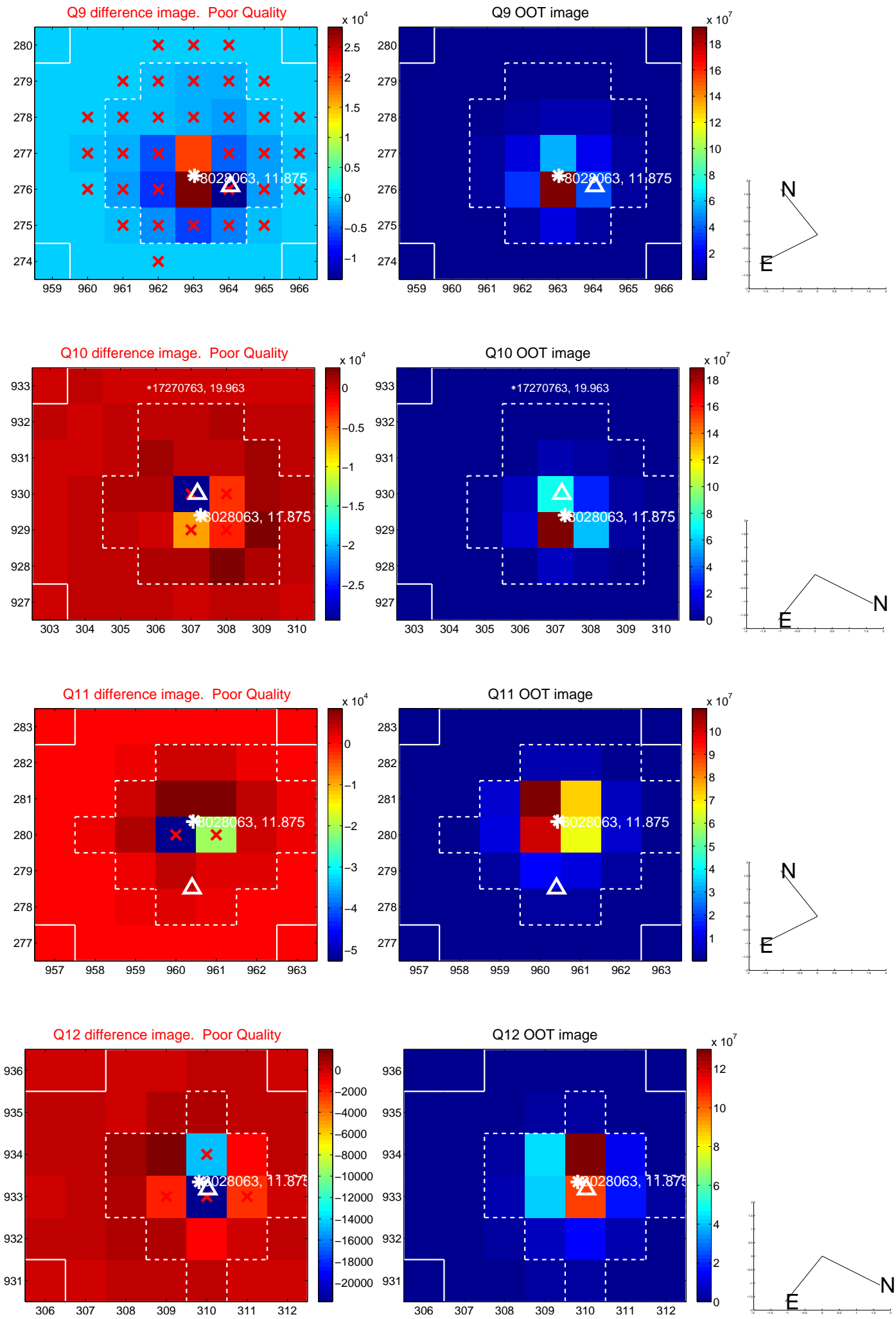
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



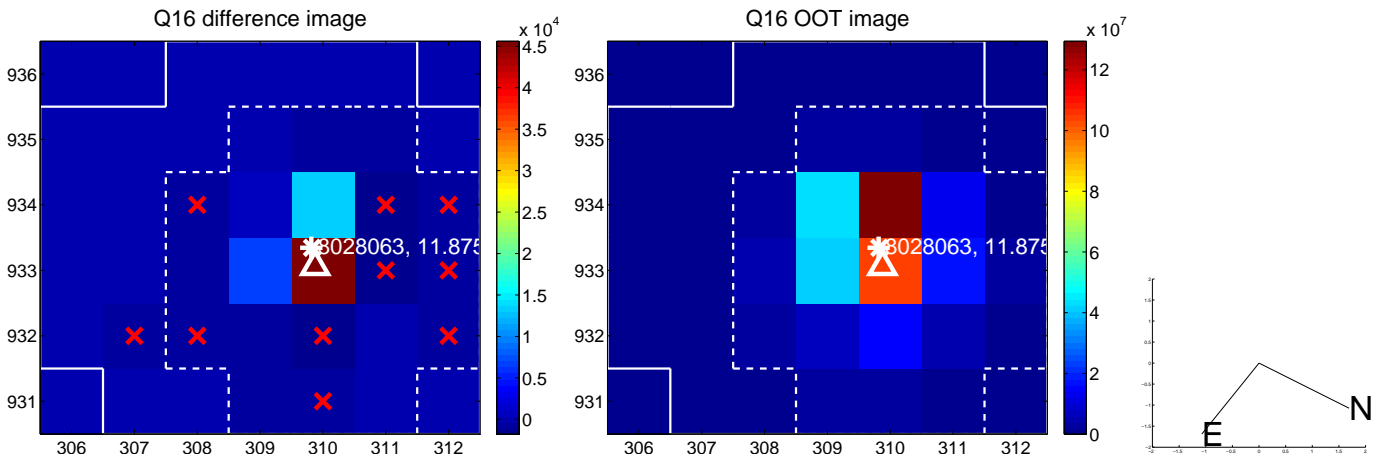
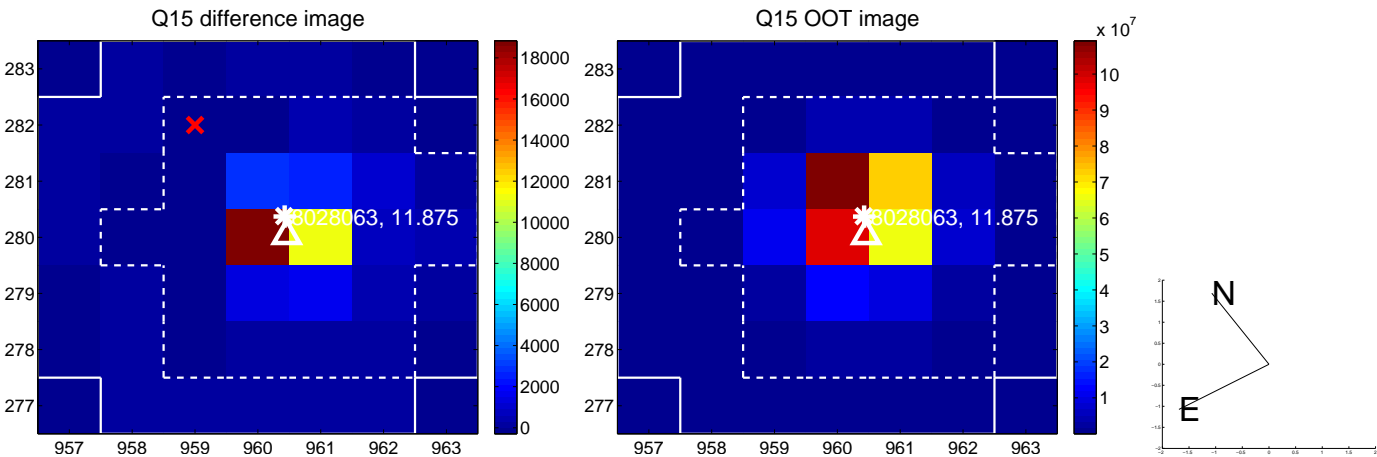
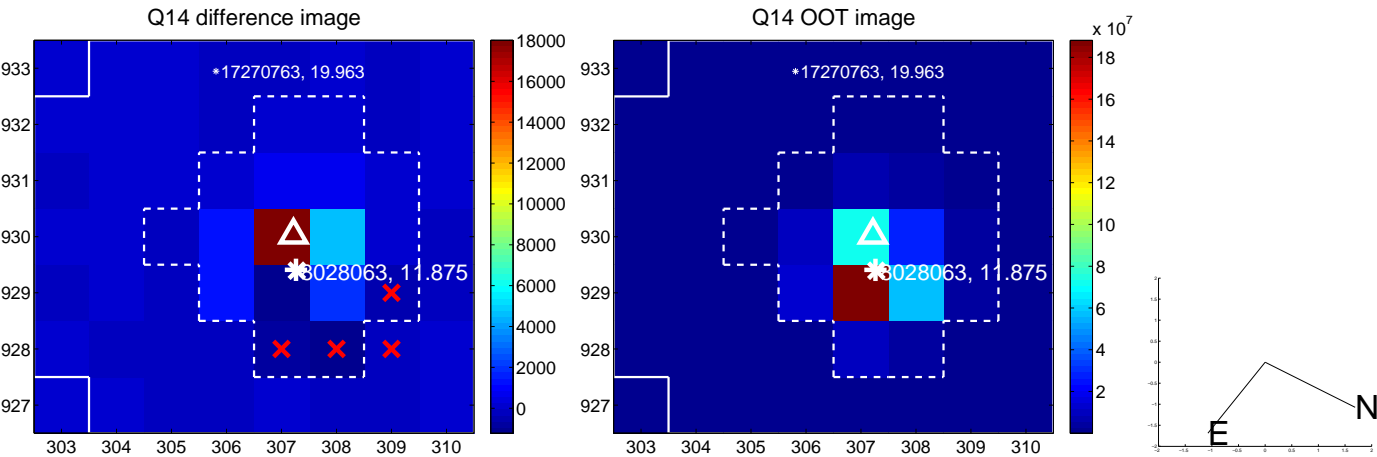
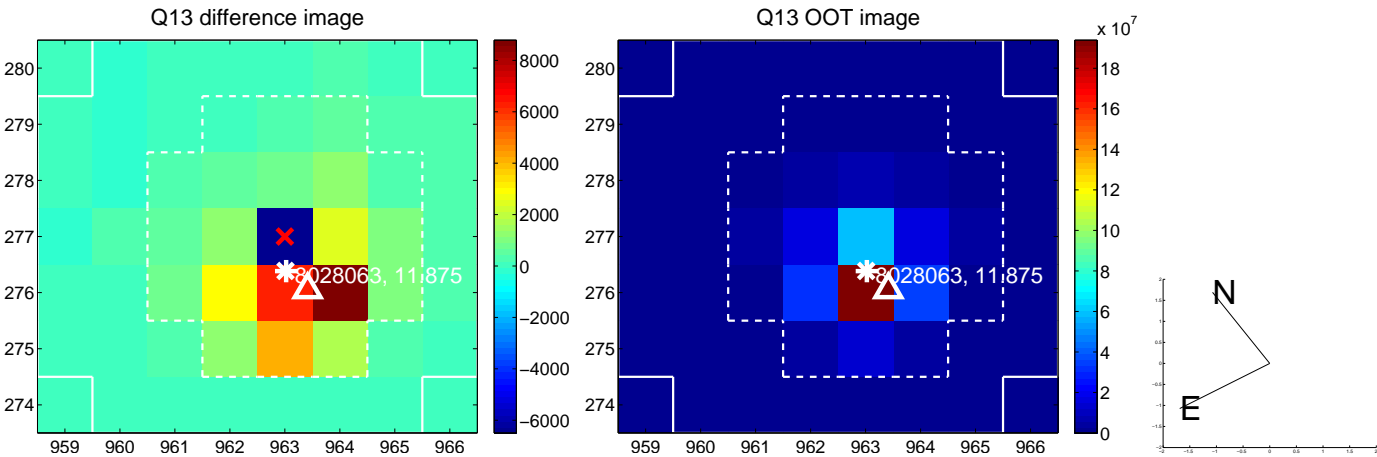
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



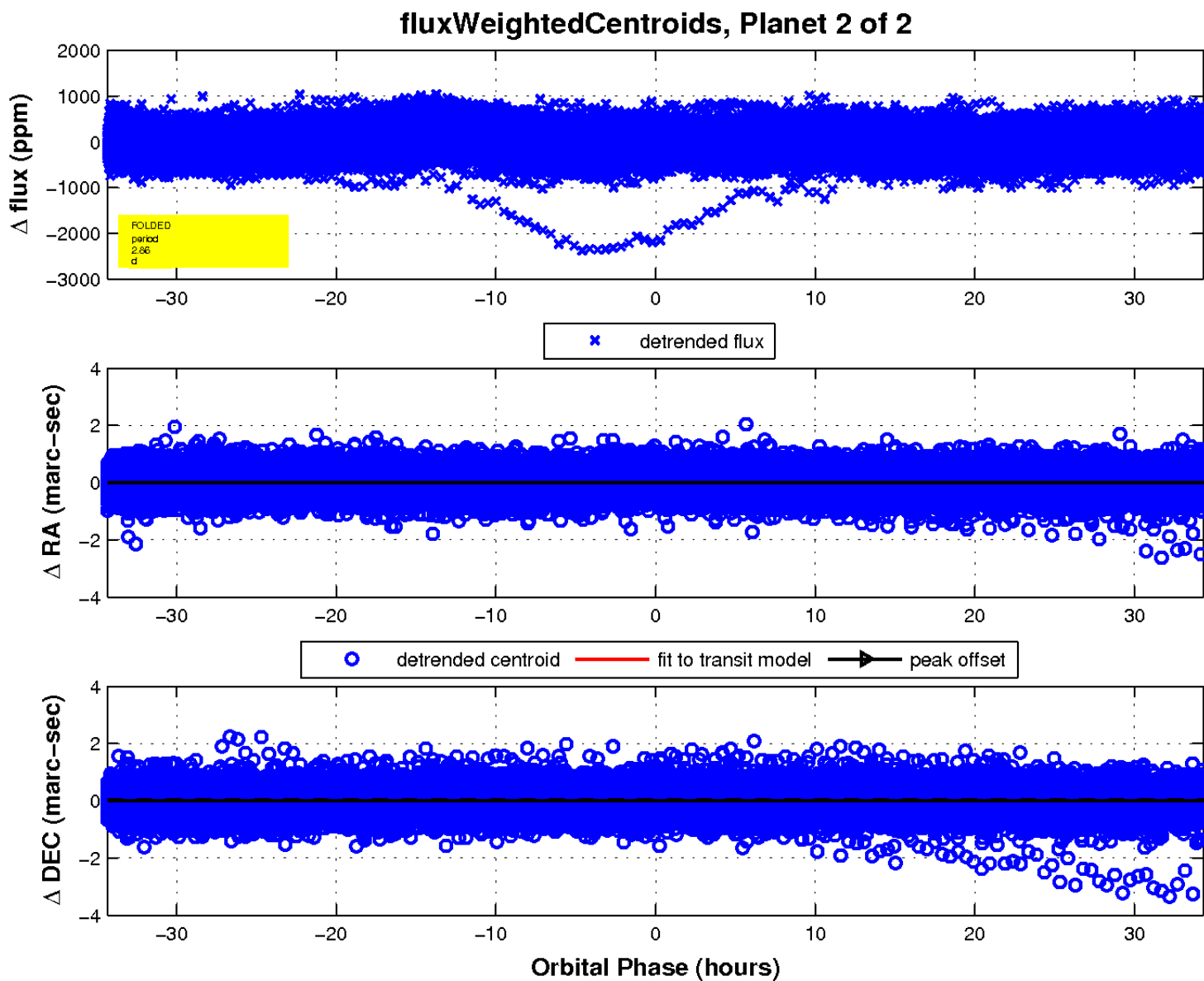
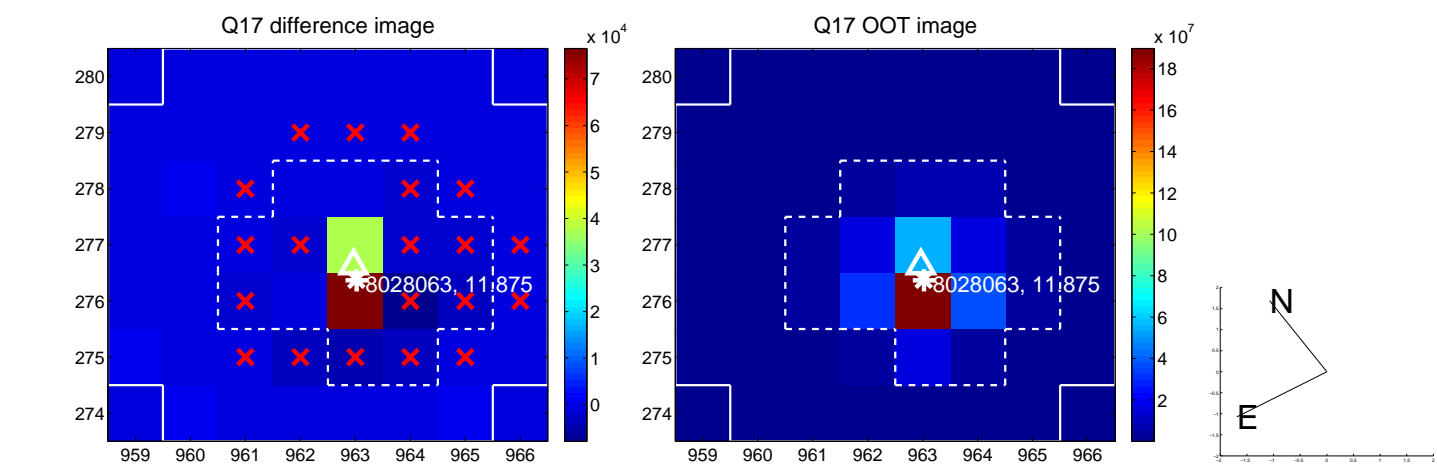
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

