

KIC 008233804

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})
008233804-01	OBS	No	1.327245	132.112022	0.7	1.125	17.2	0.1	1.58	11174	0.15	37559.12
008233804-02	OBS	No	1.326985	132.156349	41.8	6.290	16.6	5.9	1.58	11174	1.19	37568.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008233804-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT
008233804-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—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.

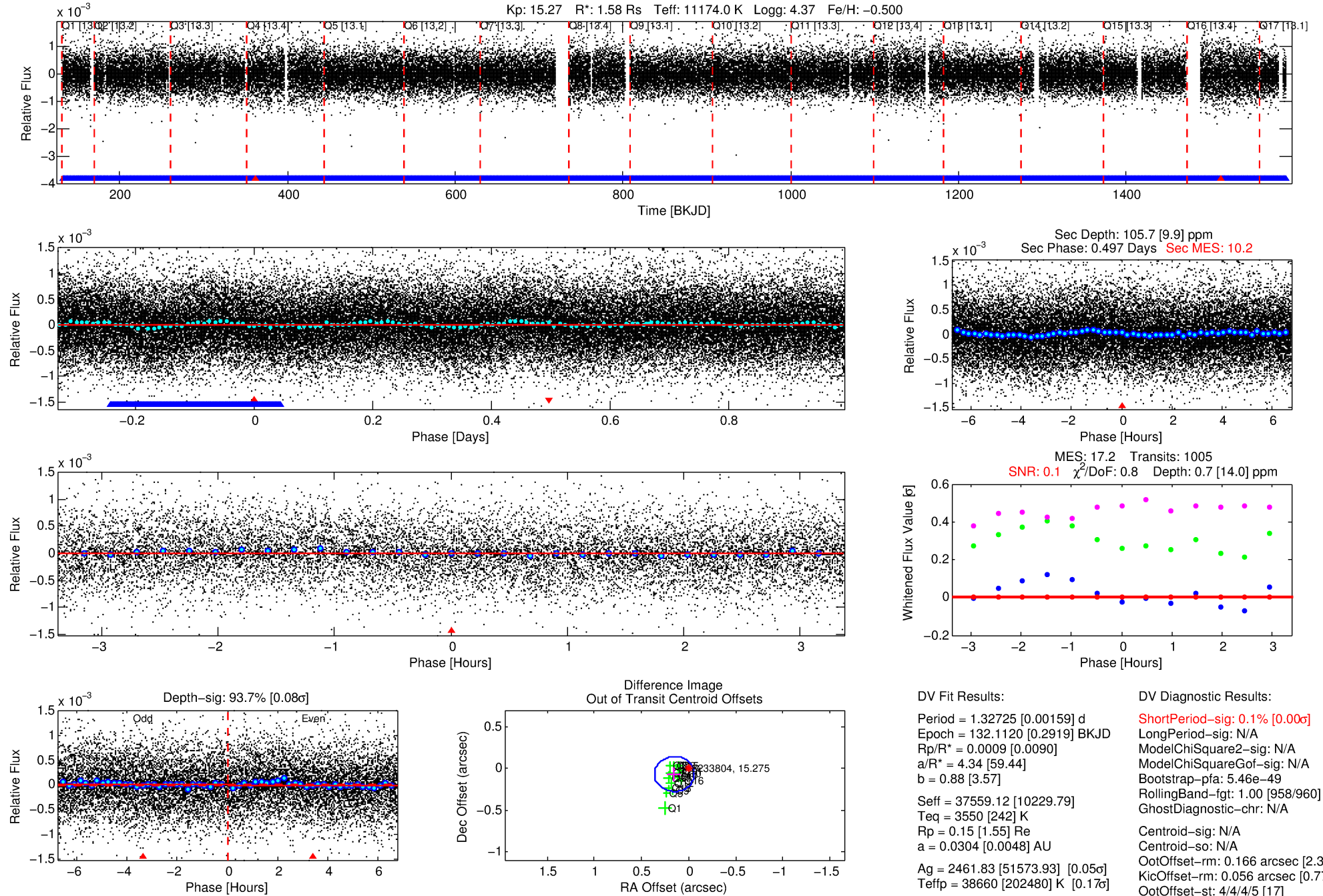
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008233804-01

No Significant Match Found

DV One-Page Summary

KIC: 8233804 Candidate: 1 of 2 Period: 1.327 d



DV Fit Results:

Period = 1.32725 [0.00159] d
Epoch = 132.1120 [0.2919] BKJD
Rp/R* = 0.0009 [0.0090]
a/R* = 4.34 [59.44]
b = 0.88 [3.57]
Seff = 37559.12 [10229.79]
Teq = 3550 [242] K
Rp = 0.15 [1.55] Re
a = 0.0304 [0.0048] AU
Ag = 2461.83 [51573.93] [0.05 σ]
Teffp = 38660 [202480] K [0.17 σ]

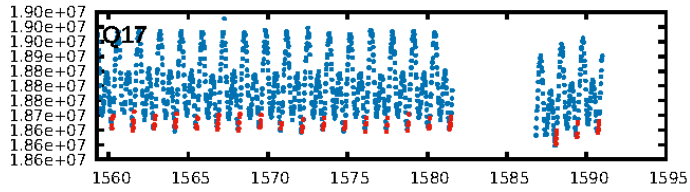
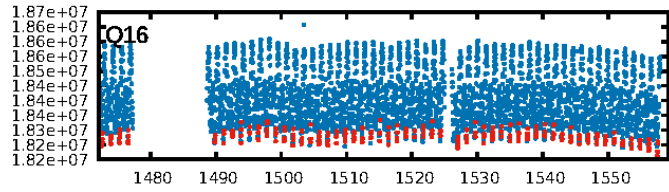
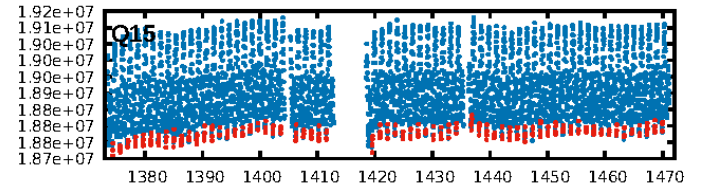
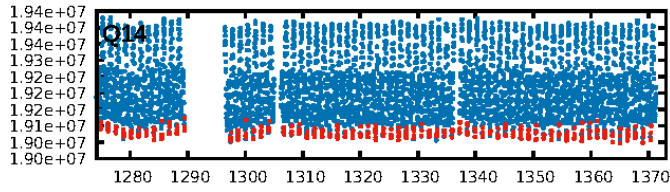
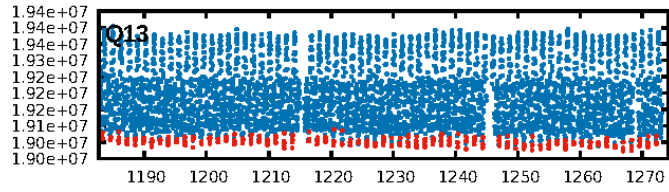
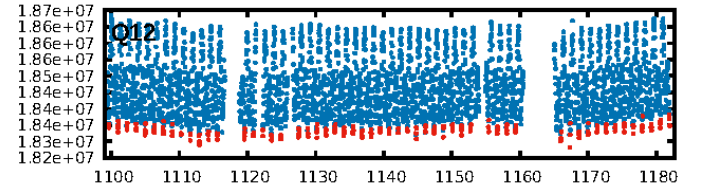
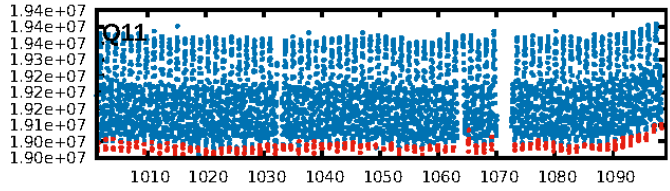
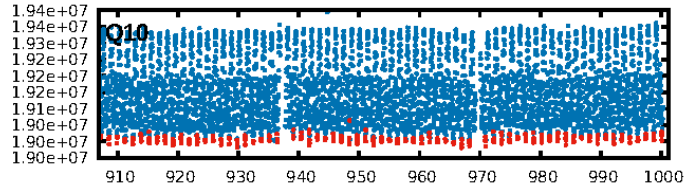
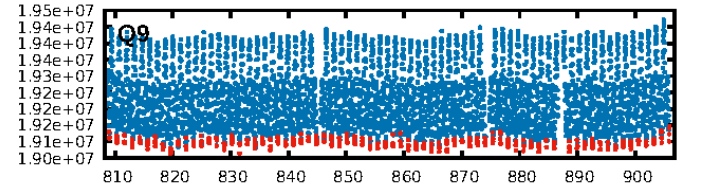
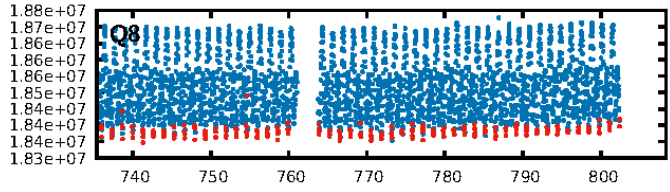
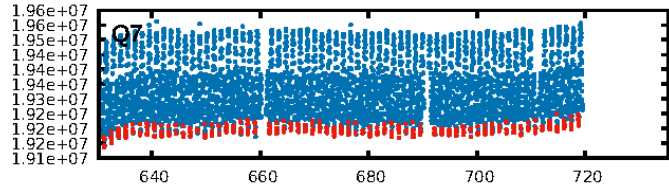
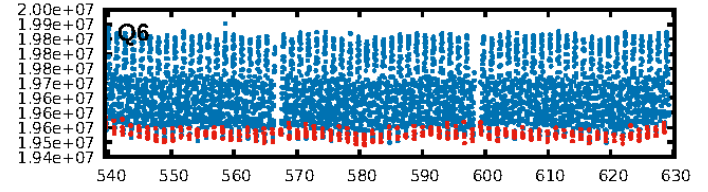
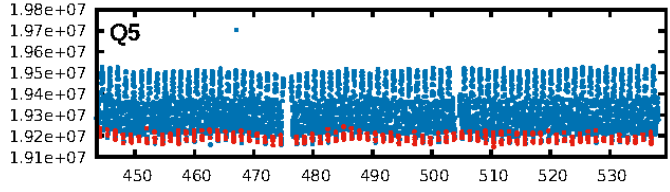
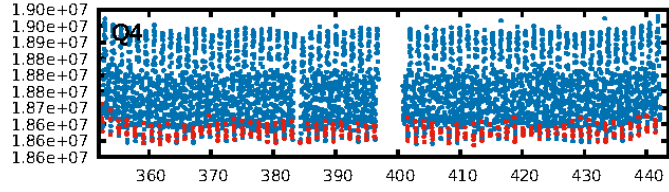
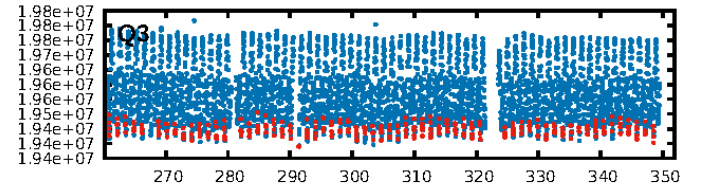
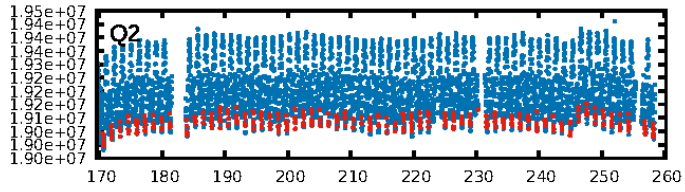
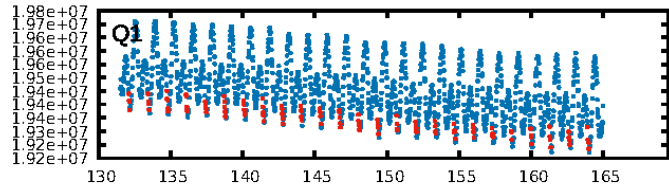
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.46e-49
RollingBand-fgt: 1.00 [958/960]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.166 arcsec [2.37 σ]
KicOffset-rm: 0.056 arcsec [0.77 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

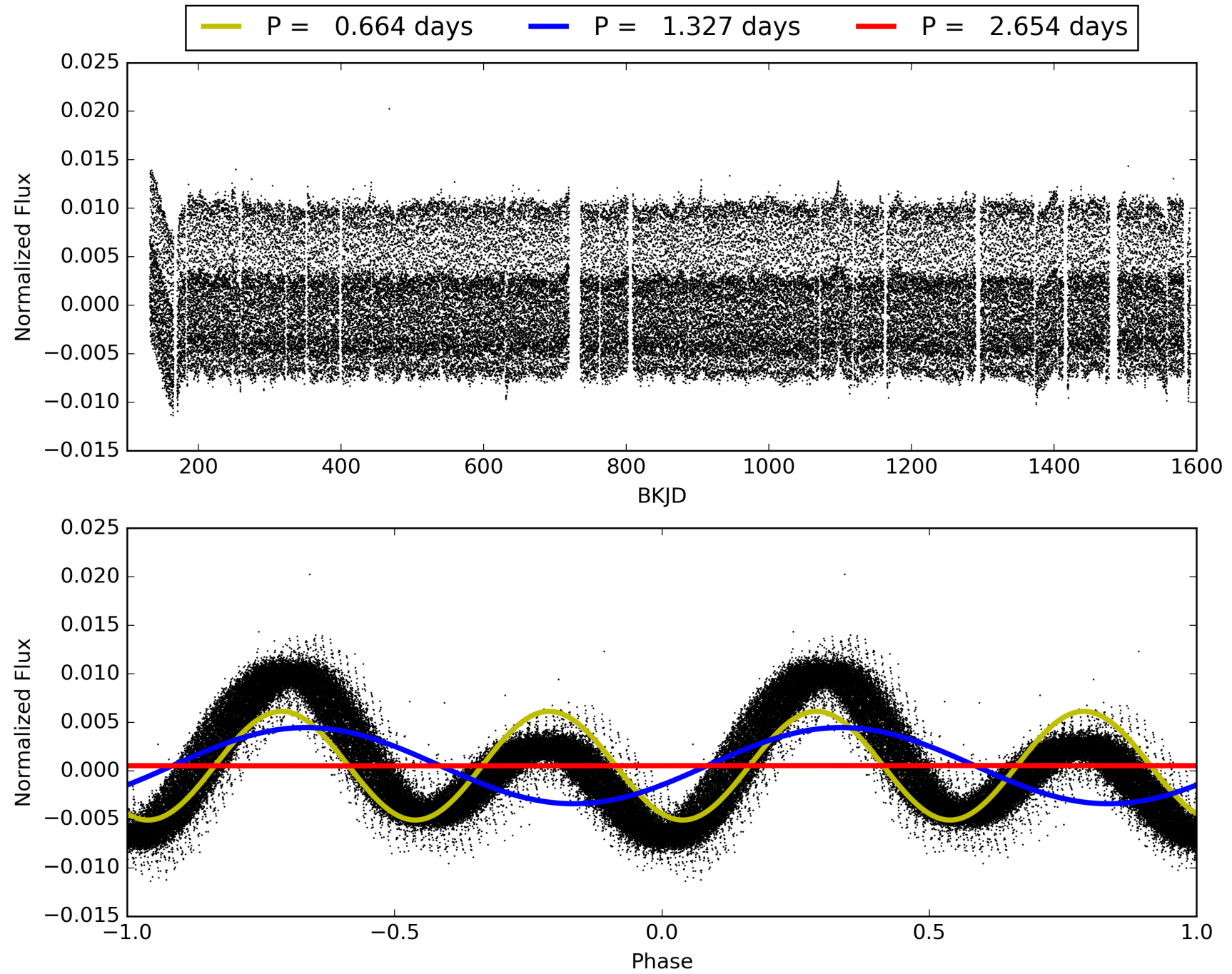
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:15:53 Z

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

TCE 008233804-01, PDC Light Curves

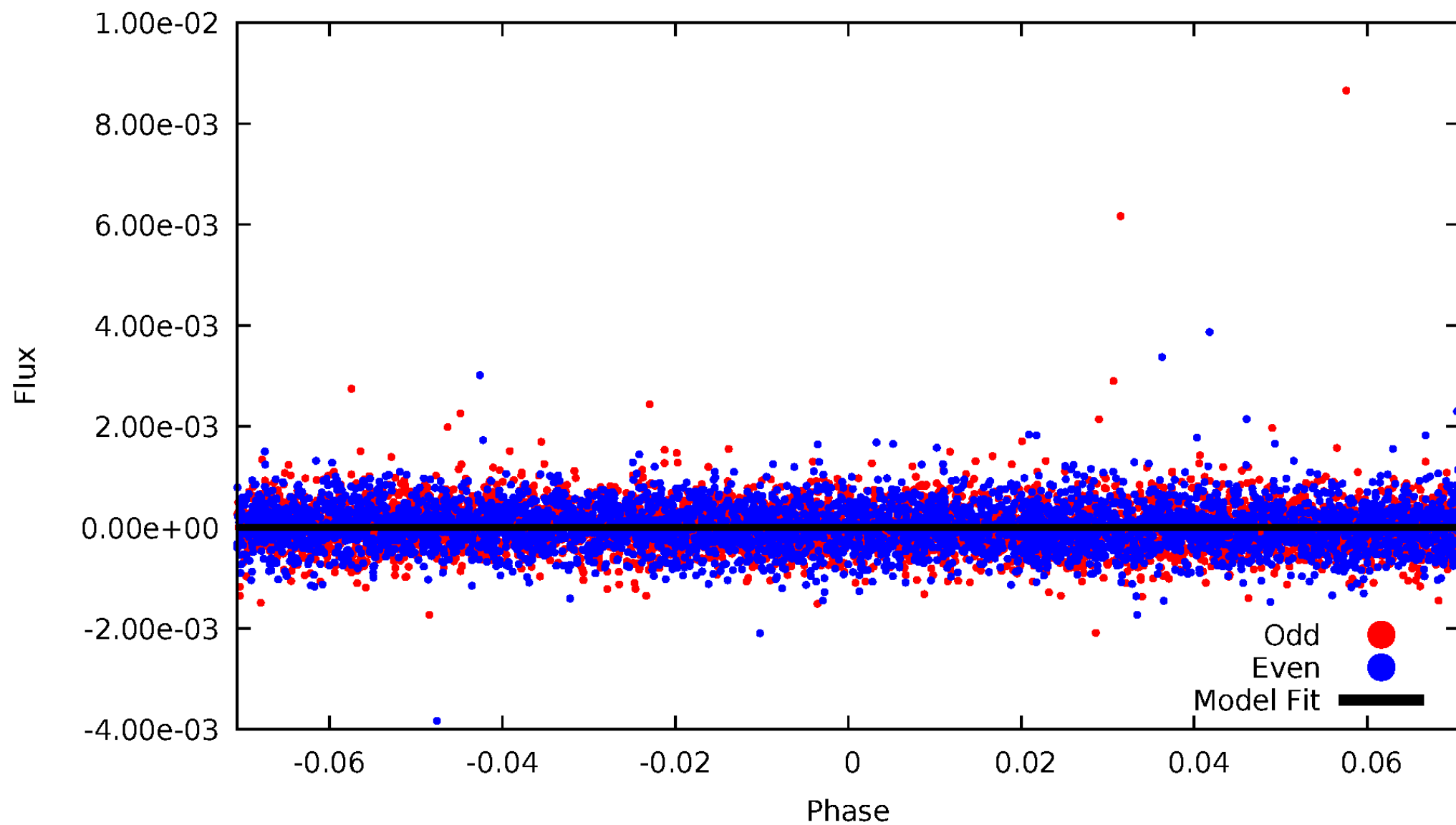


TCE 008233804-01



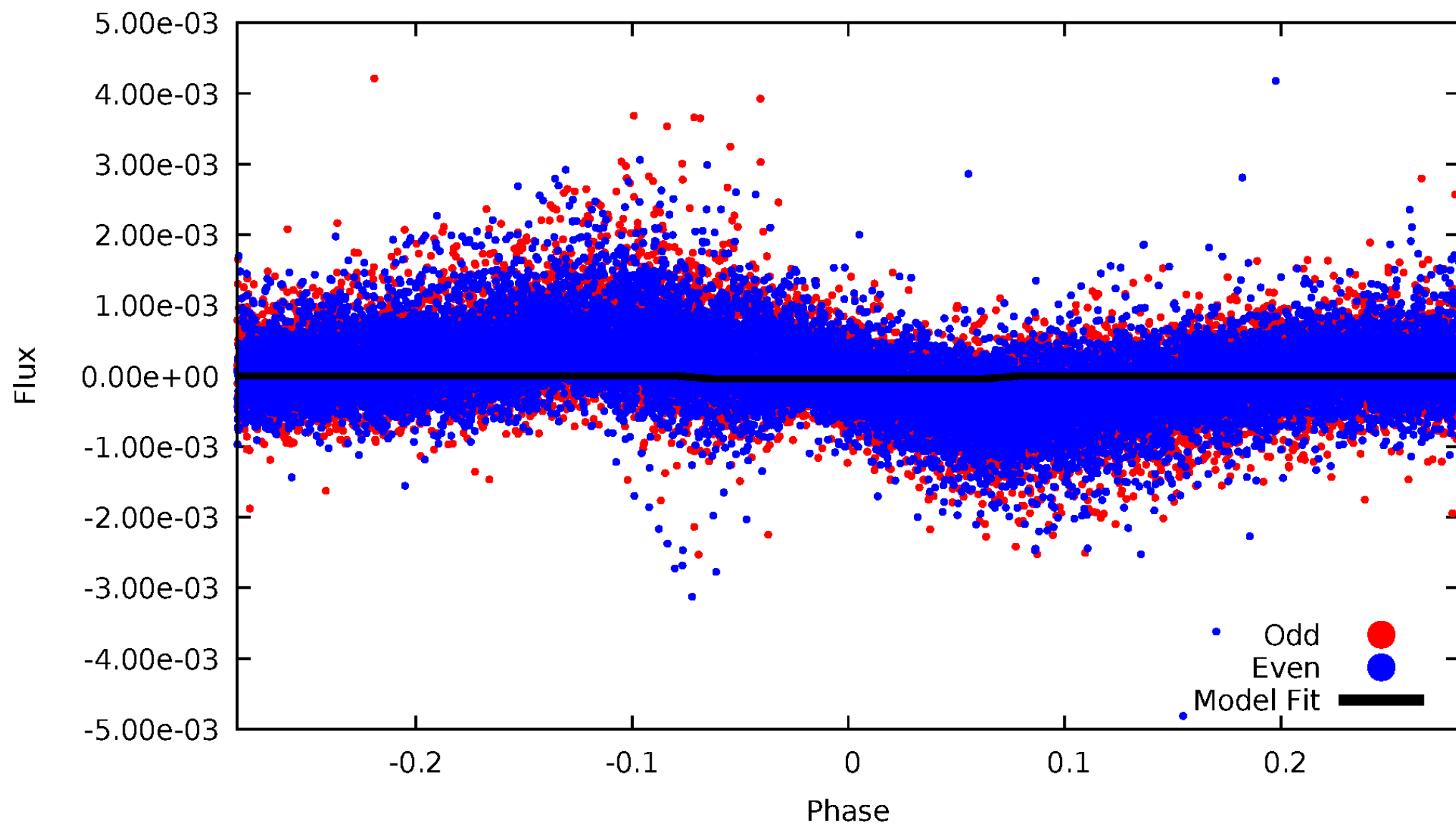
DV Odd/Even

TCE 008233804-01

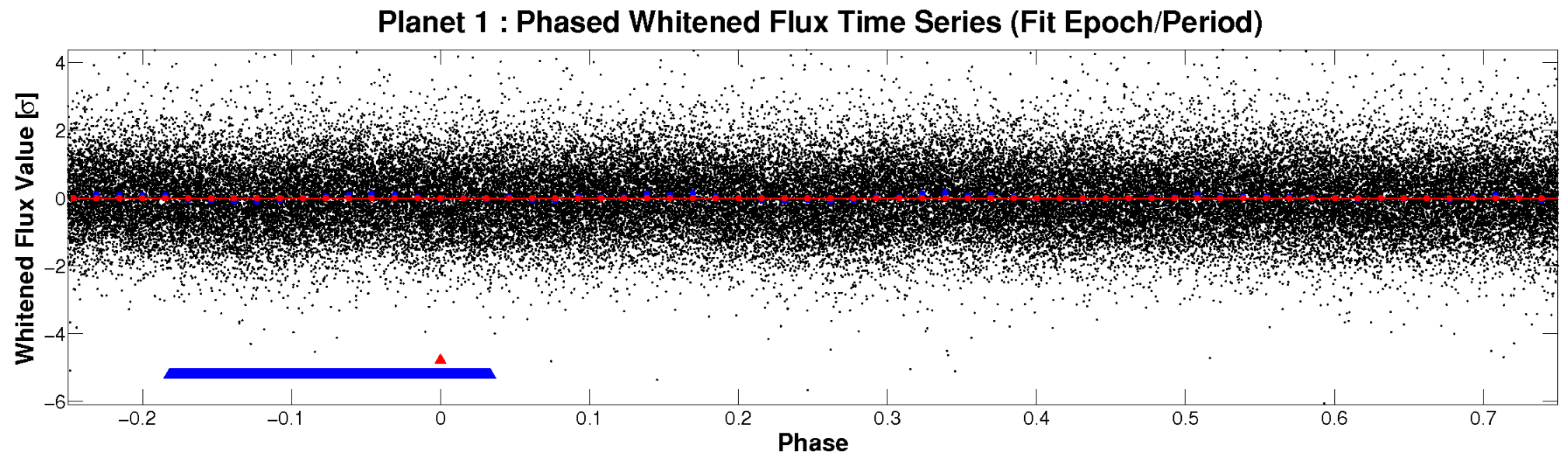
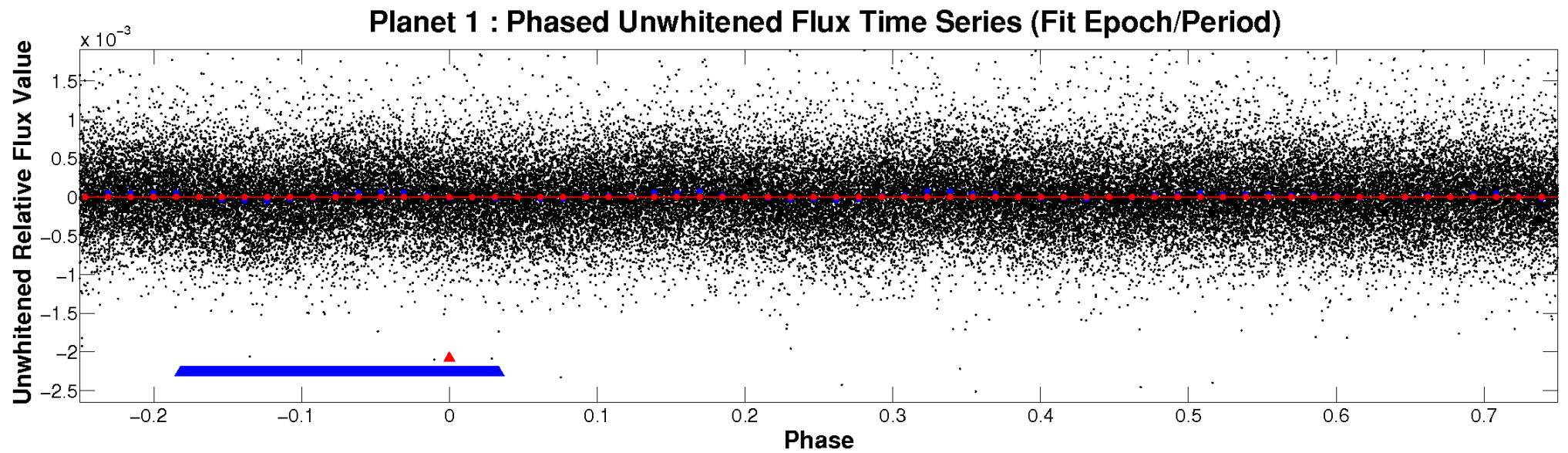


ALT Odd/Even

TCE 008233804-01

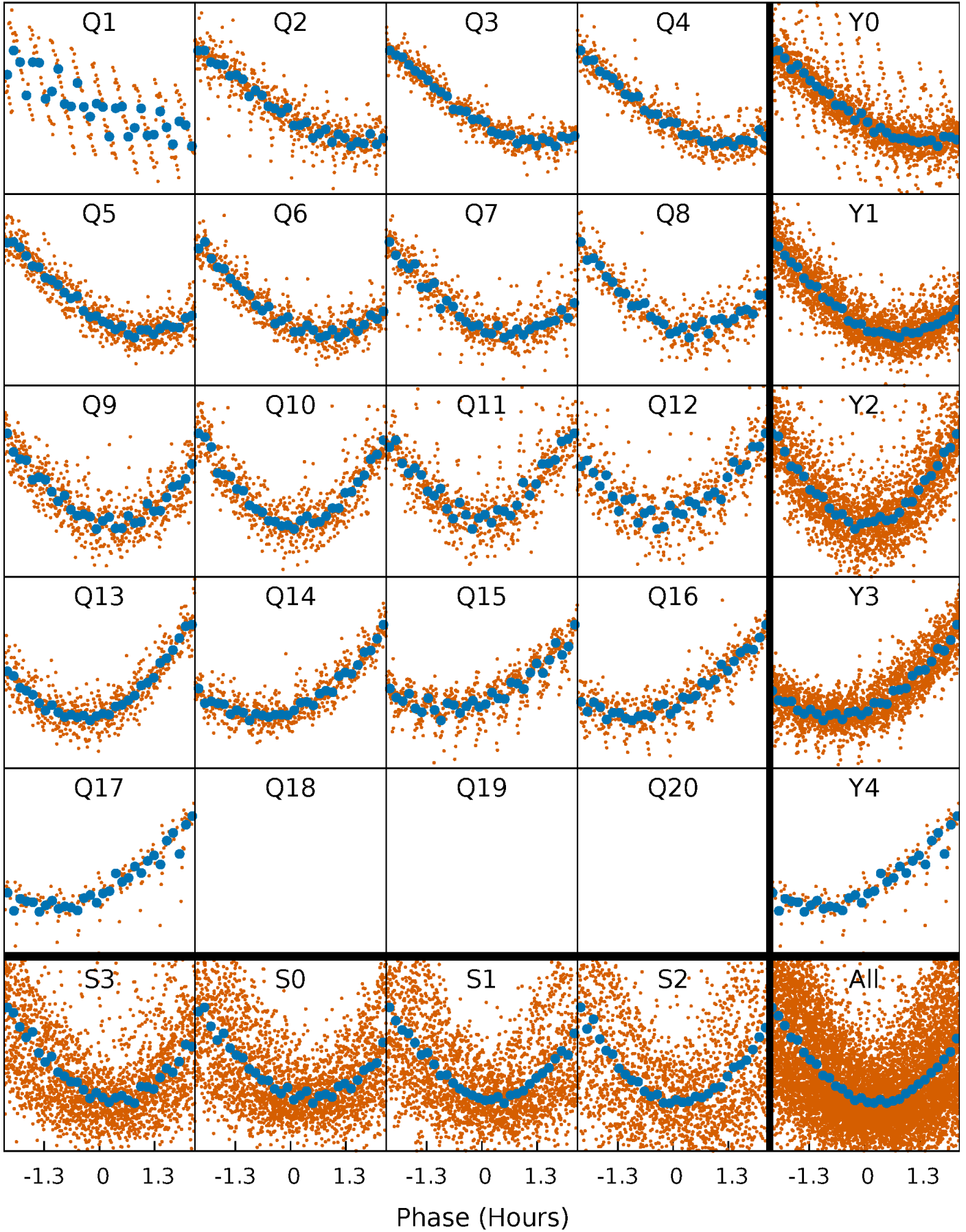


Non-Whitened Vs. Whitened Light Curve



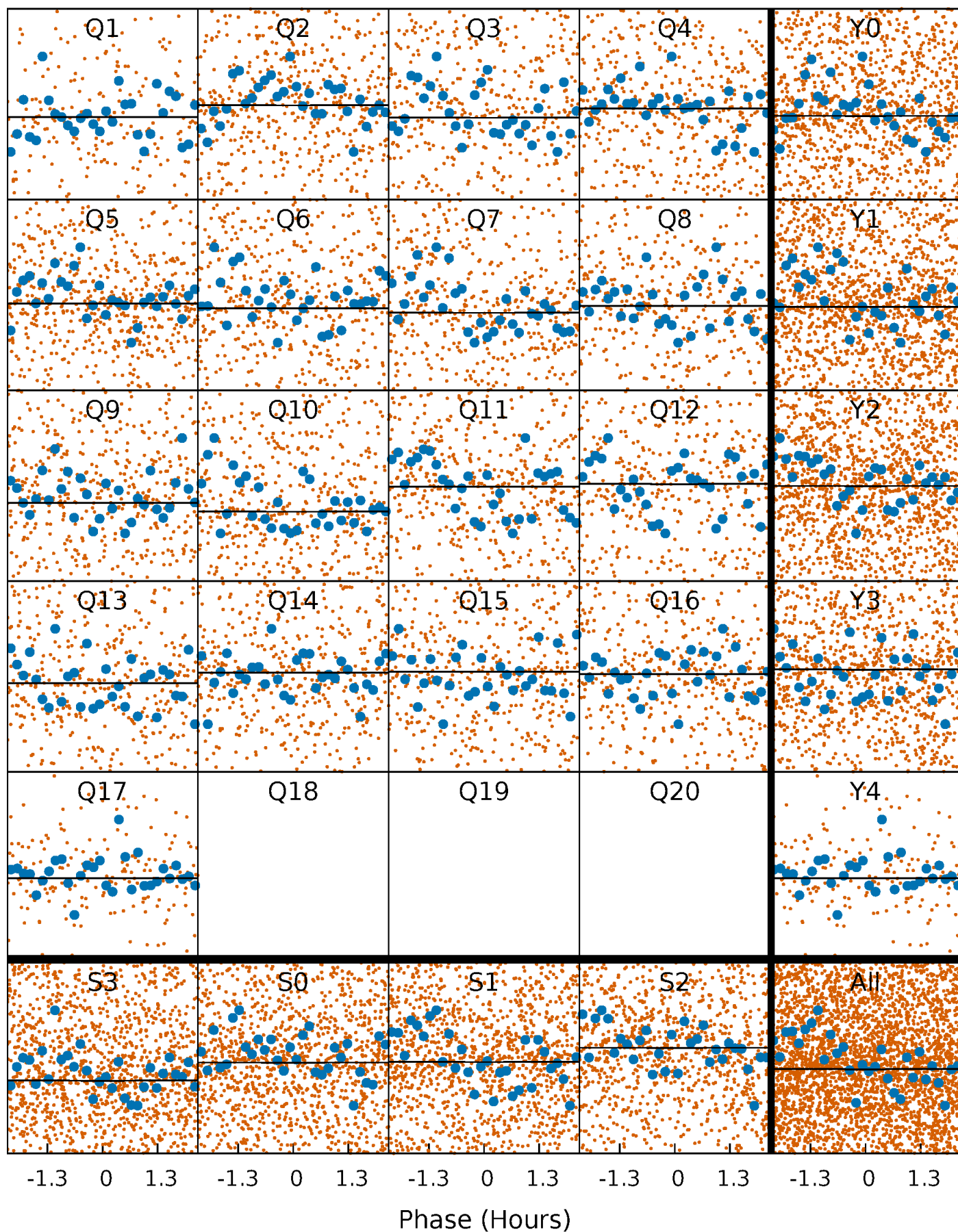
PDC Quarter-Phased Transit Curves

TCE 008233804-01 P= 1.327245 Days $T_0=132.112022$ (BKJD)



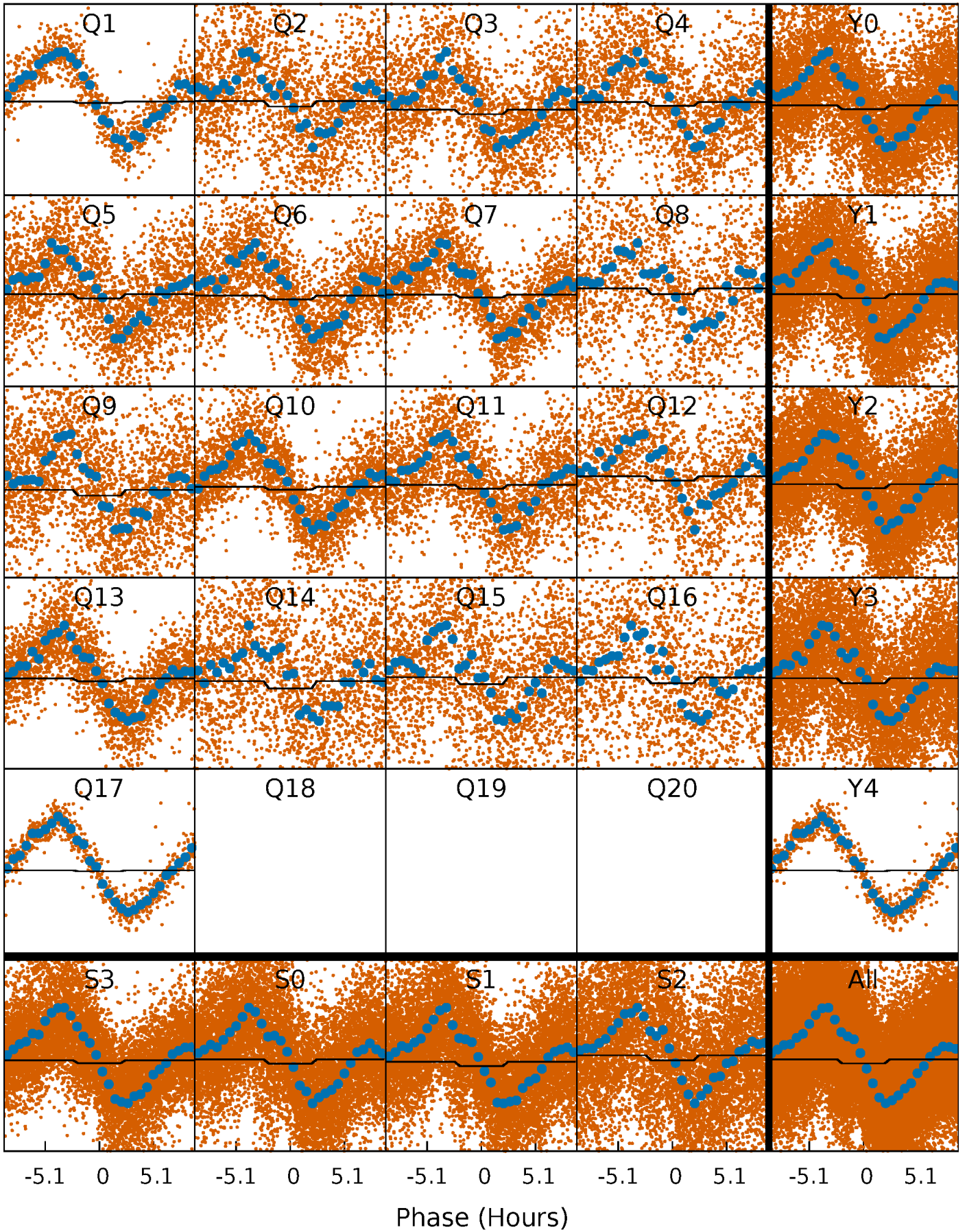
DV Quarter-Phased Transit Curves

TCE 008233804-01 P= 1.327245 Days $T_0=132.112022$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

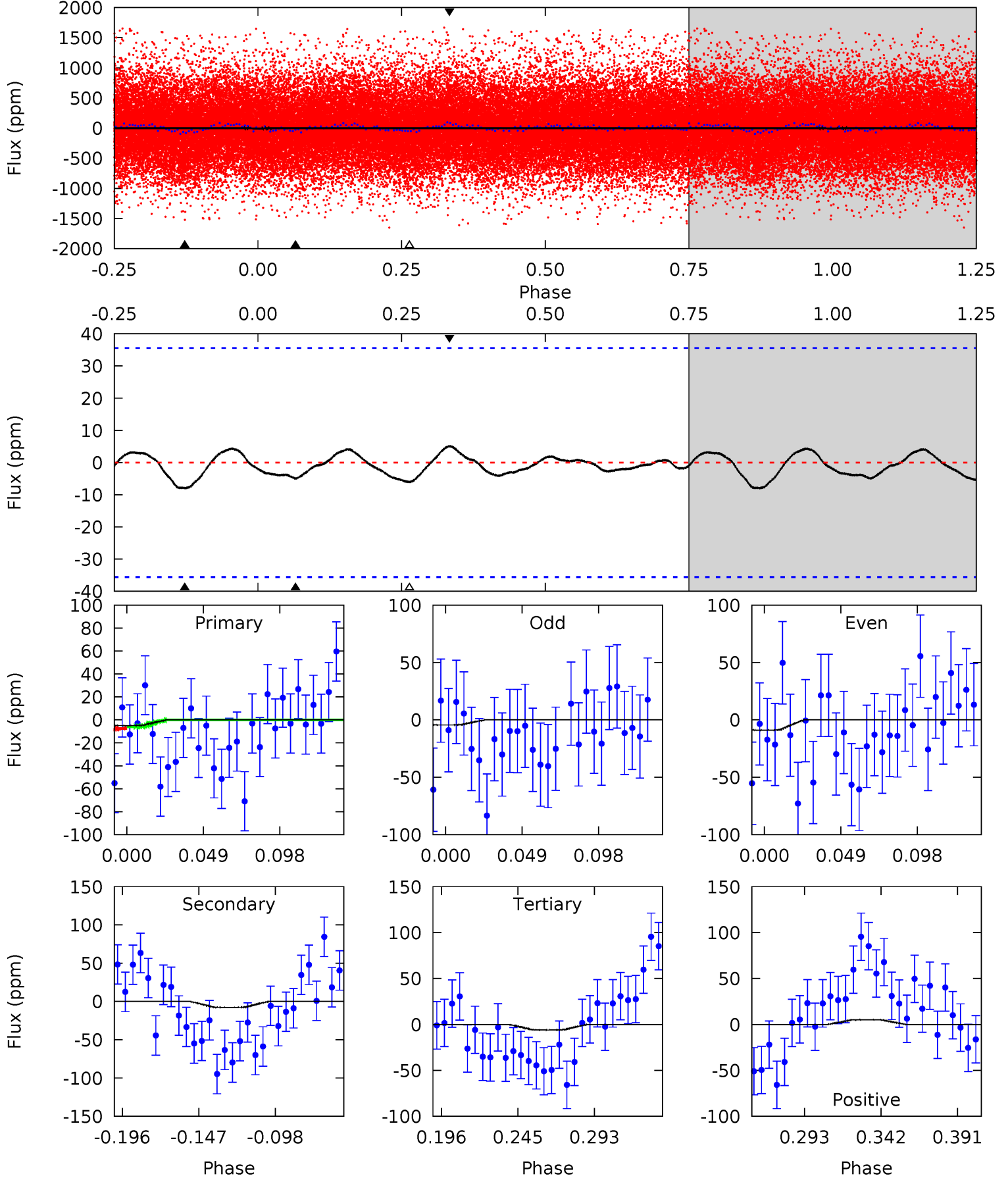
TCE 008233804-01 P= 1.327127 Days $T_0=132.096452$ (BKJD)



DV Model-Shift Uniqueness Test

008233804-01, P = 1.327245 Days, E = 130.784777 Days

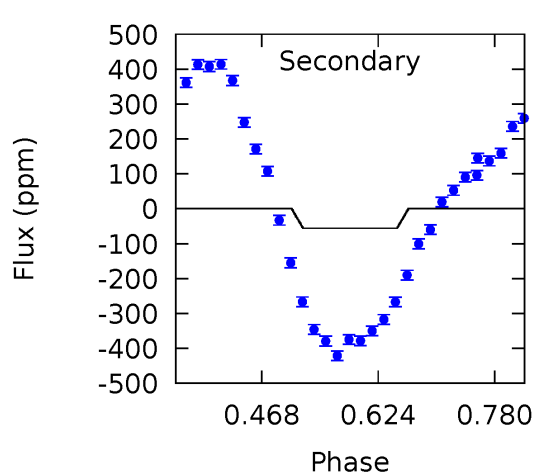
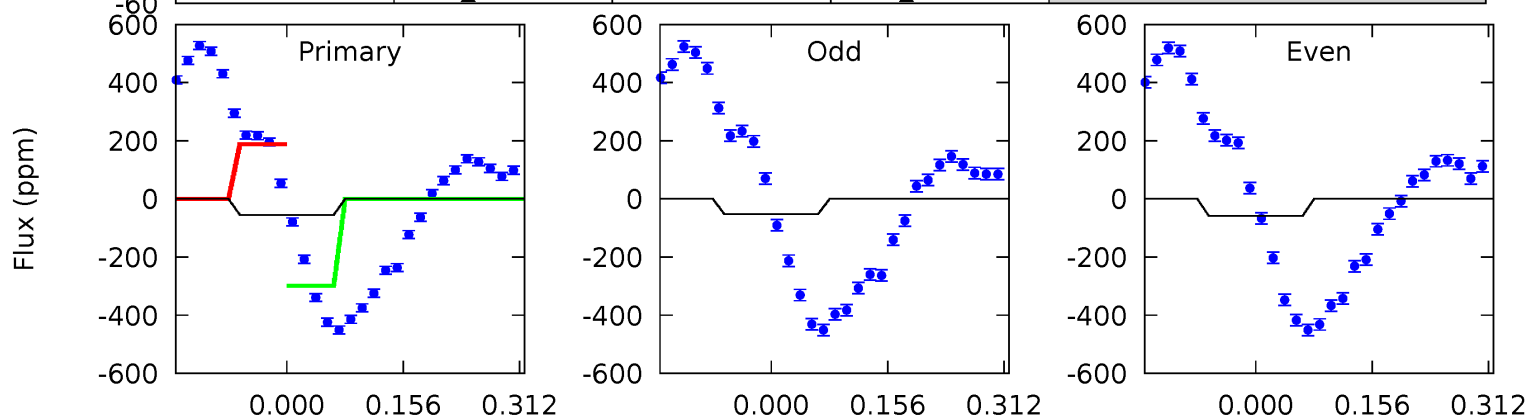
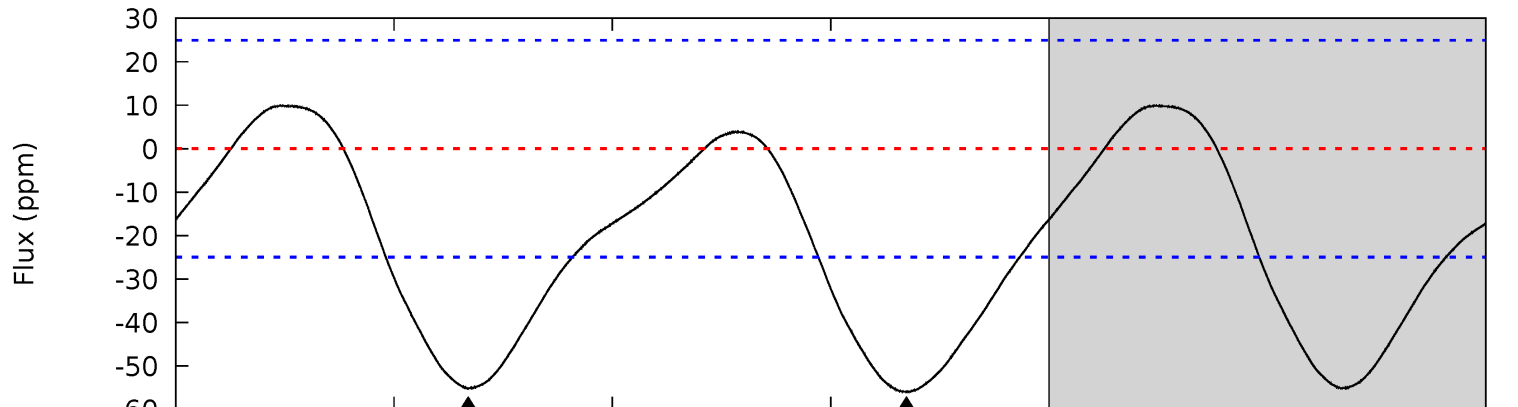
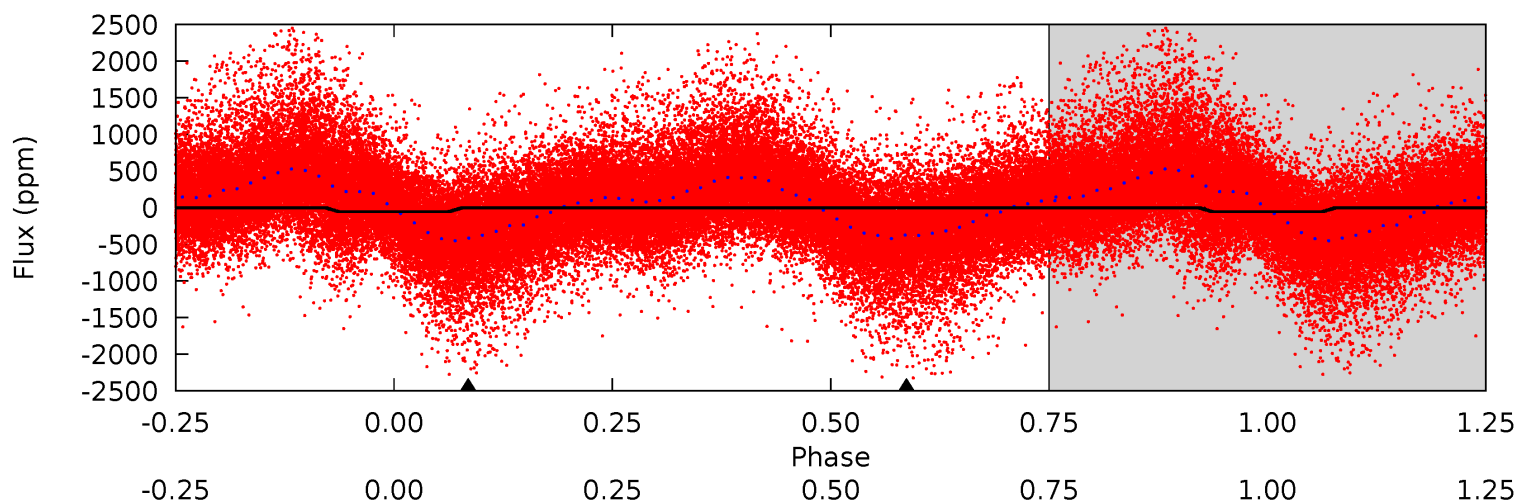
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.66	1.06	0.81	0.68	4.71	1.97	0.35	-0.15	-0.02	0.25	0.38	0.30	0.37	0.39	0.11



Alt Model-Shift Uniqueness Test

008233804-01, P = 1.327127 Days, E = 130.769325 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.87	10.0	0	0	4.47	1.42	1.57	9.87	9.87	10.0	10.0	0.62	1.00	0.15	12.8



Stellar Parameters For KIC 008233804

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	11174^{+342}_{-456}	$4.371^{+0.066}_{-0.114}$	$-0.500^{+0.550}_{-0.200}$	$1.579^{+0.308}_{-0.154}$	$2.135^{+0.181}_{-0.165}$	$0.764^{+0.192}_{-0.276}$
	+3%/-4%	+2%/-3%	+110%/-40%	+20%/-10%	+8%/-8%	+25%/-36%
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 008233804-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8 ± 8	$1.19^{+1.25}_{-0.80}$	4967^{+254}_{-239}	5695^{+7283}_{-9257}	$2.101^{+21.874}_{-1.966}$
Alt.	-56 ± 6	$1.52^{+1.38}_{-0.99}$	4967^{+254}_{-228}	9795^{+19907}_{-3385}	12^{+93}_{-9}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

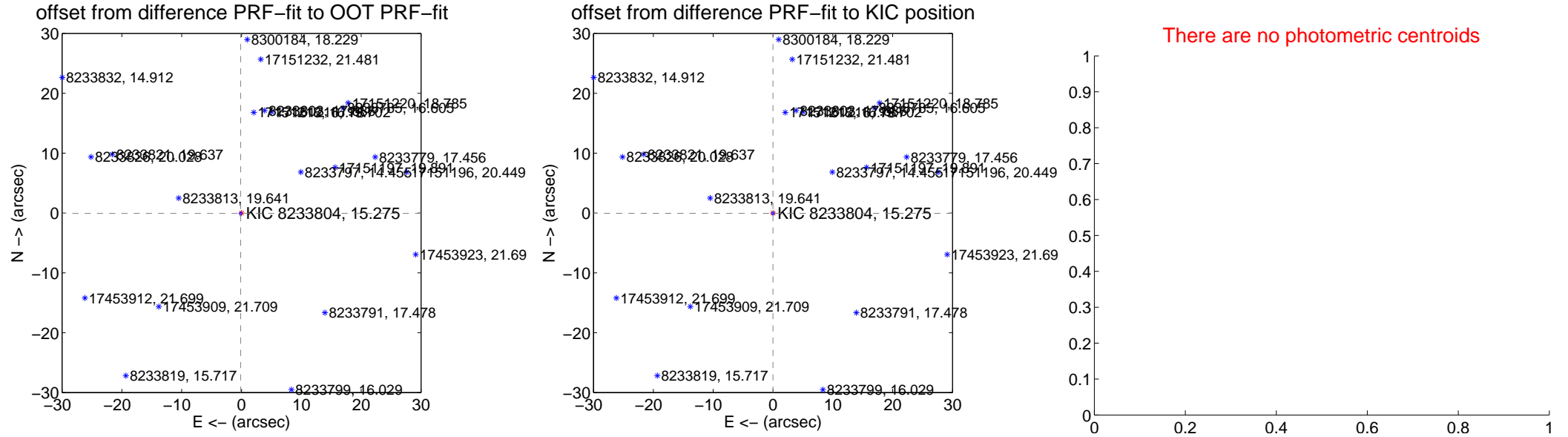
DV Centroid Data

Supplemental centroid analysis for 008233804-01. Kepler magnitude: 15.28. Transit SNR 0.06

There are 17 quarters with good PRF difference image offsets

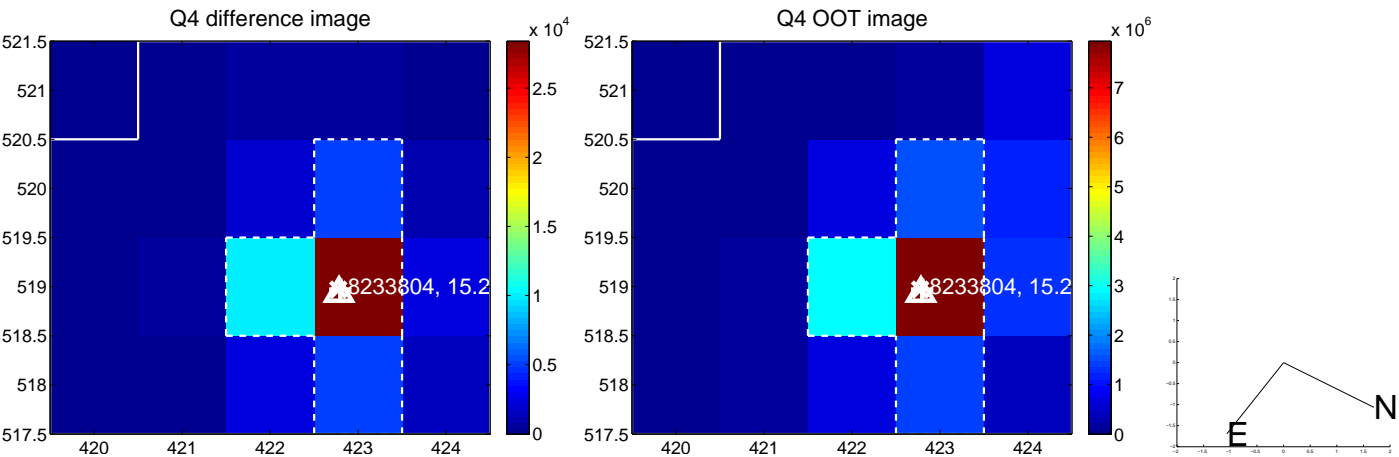
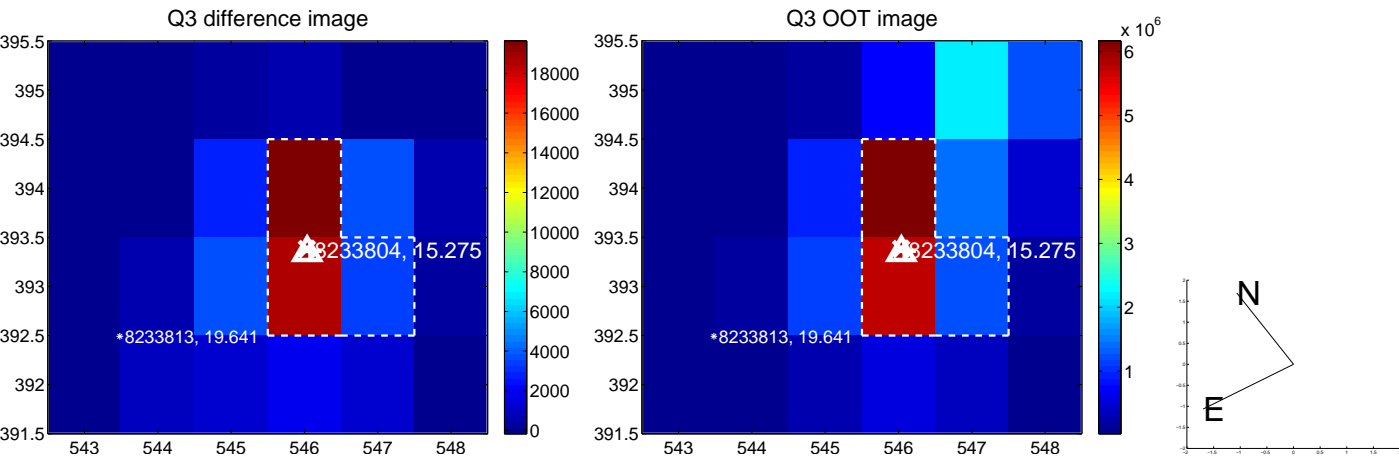
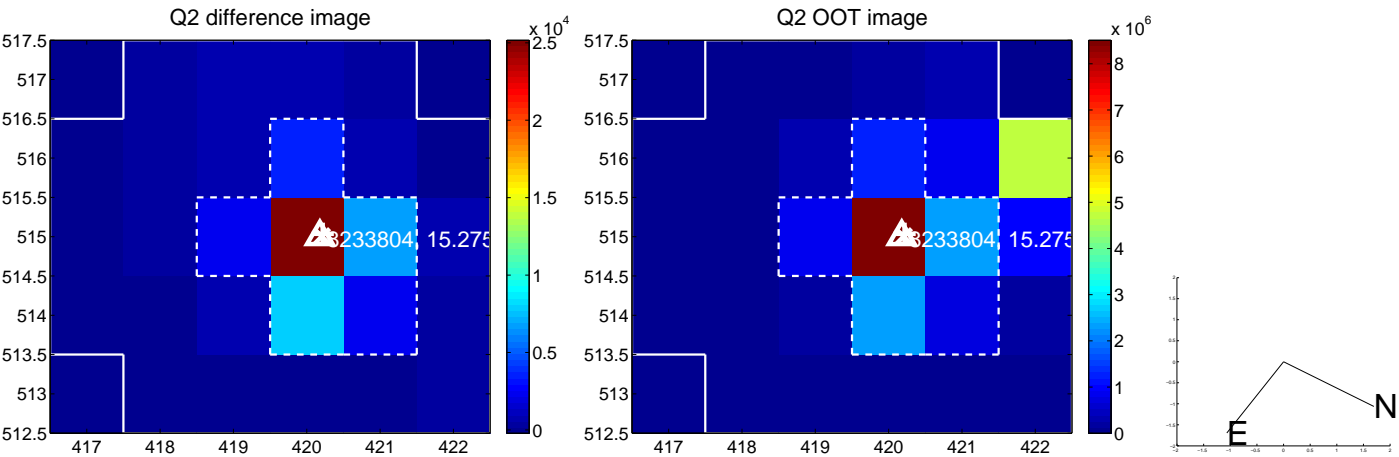
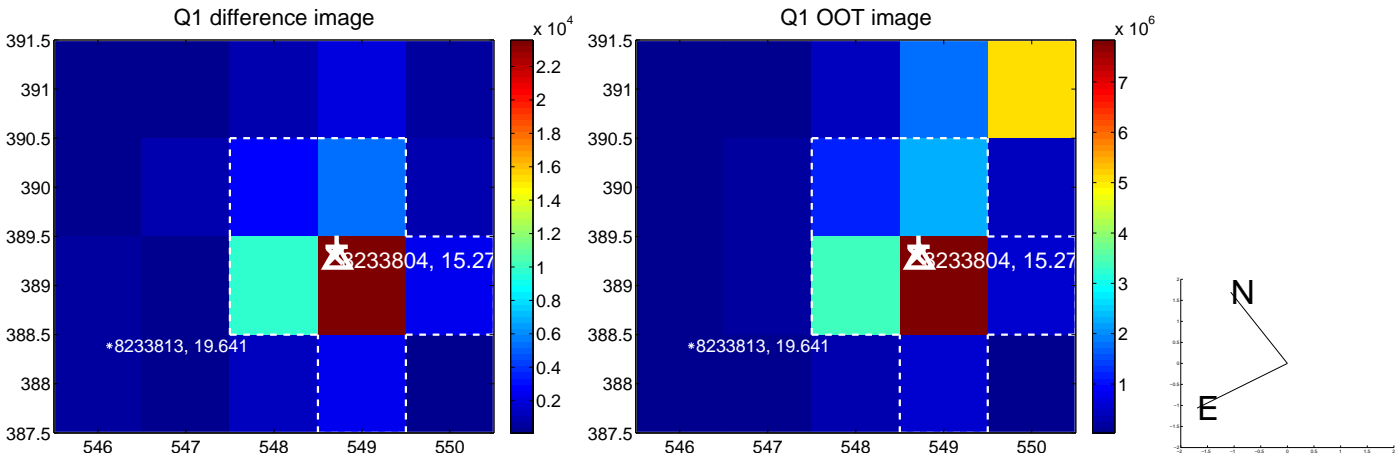
The direct PRF centroid is offset from the target star catalog position by about 0.44 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.166 ± 0.070	2.37	0.152 ± 0.068	-0.068 ± 0.074
PRF-fit source offset from KIC position	0.056 ± 0.073	0.77	0.007 ± 0.068	-0.056 ± 0.073
photometric centroid source offset	—	—	—	—

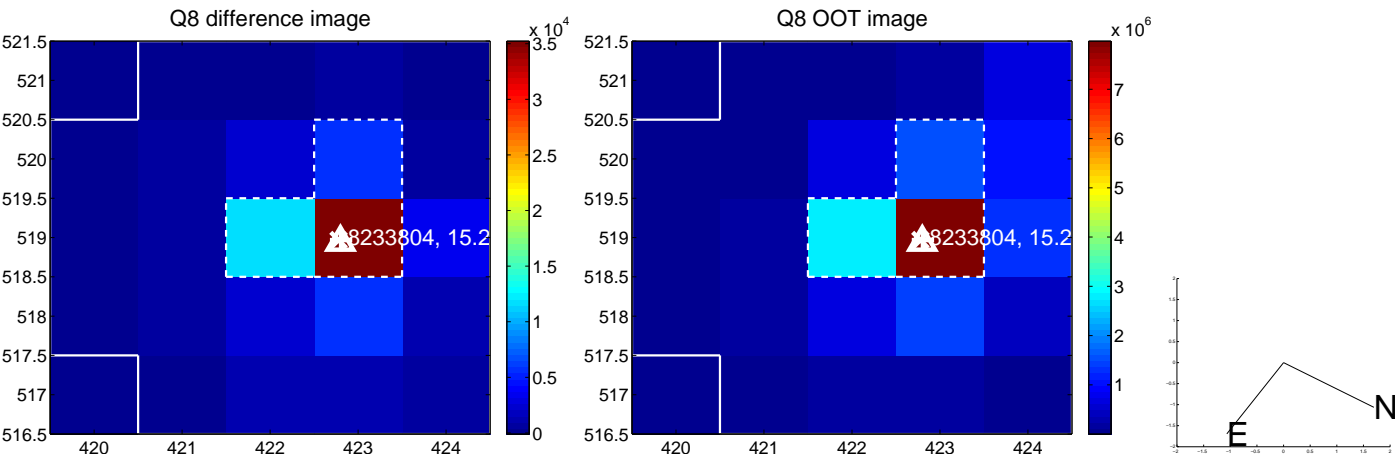
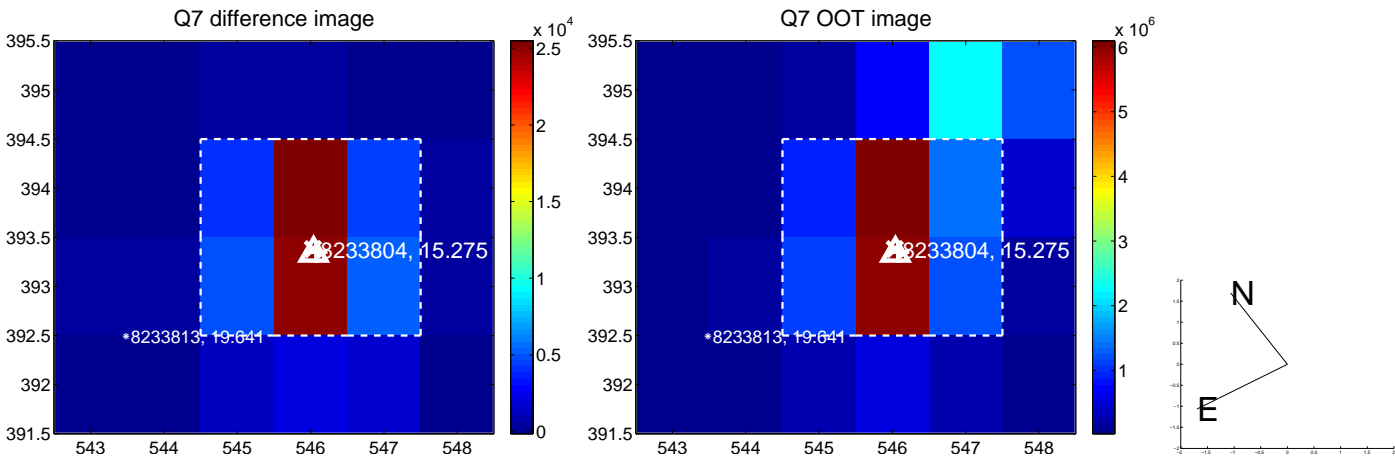
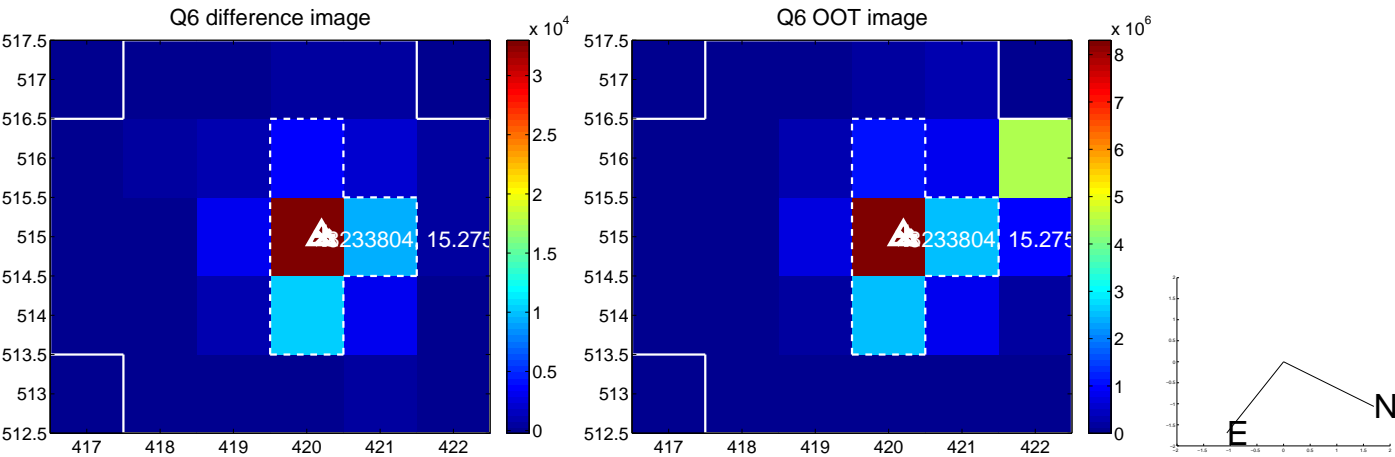
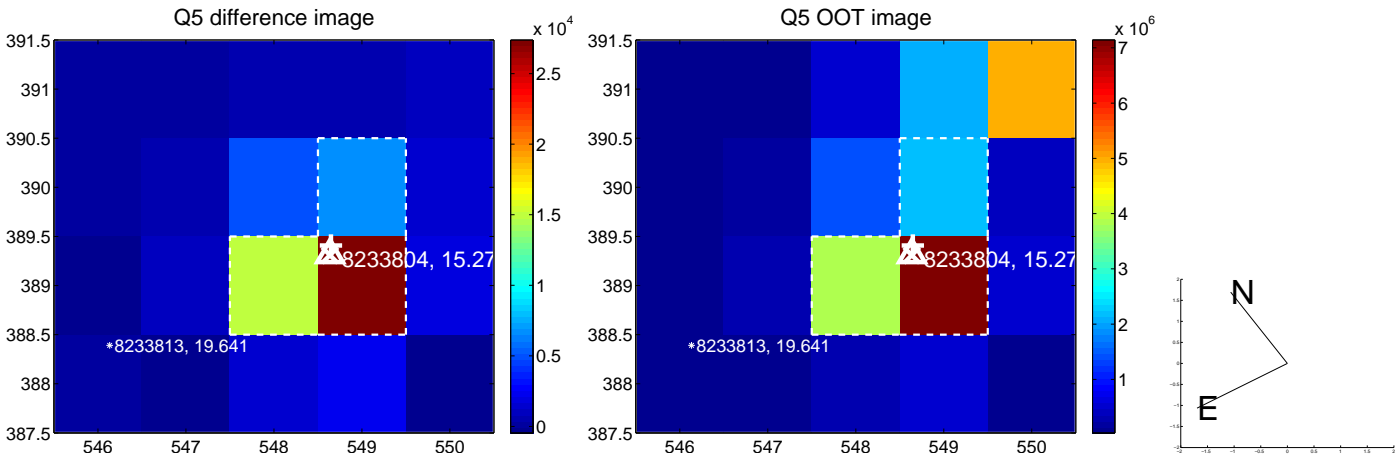


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

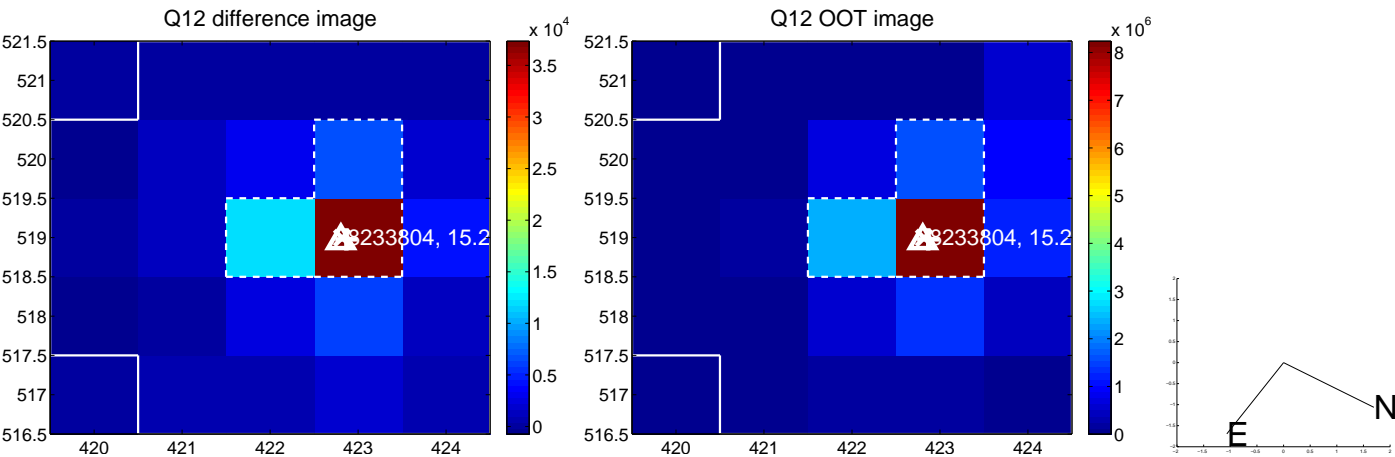
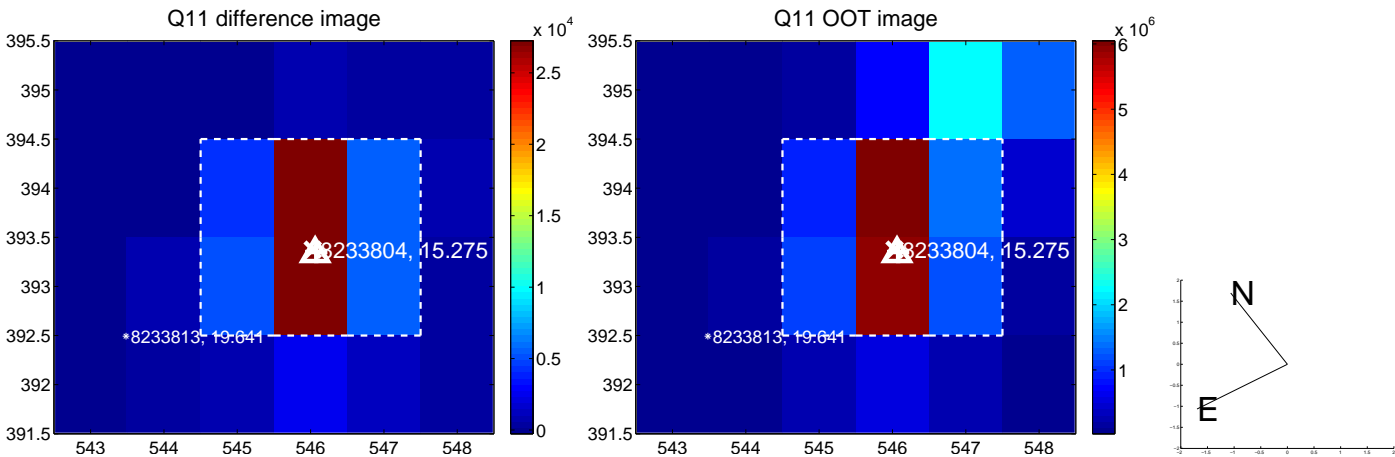
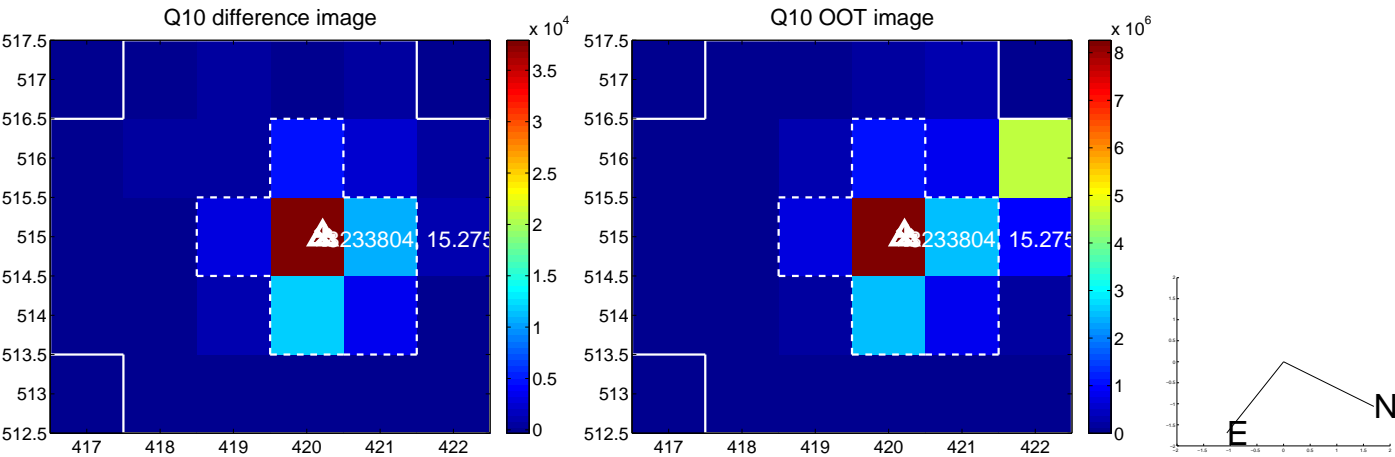
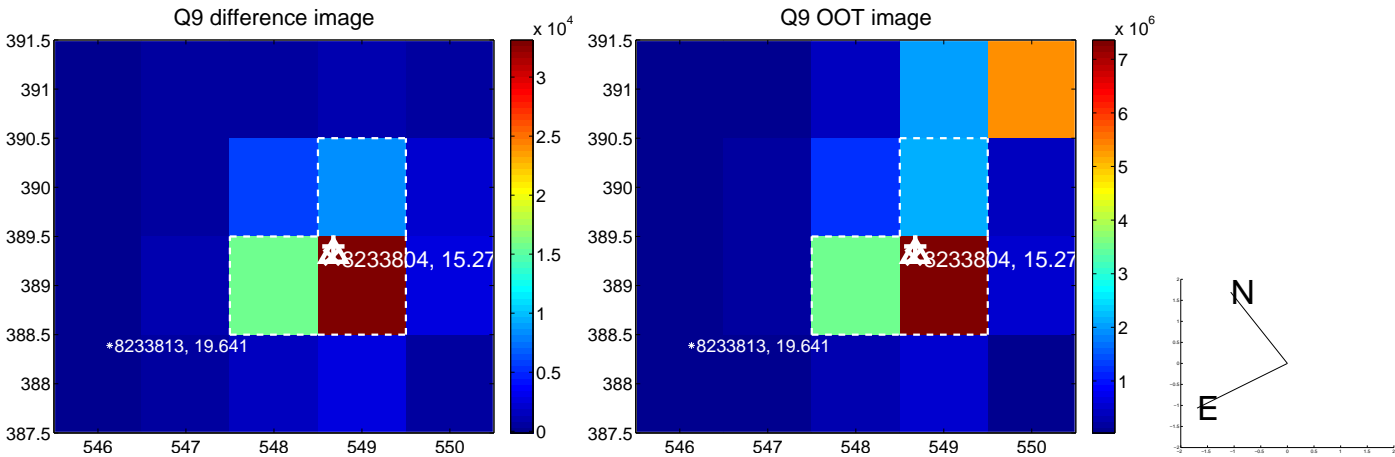
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



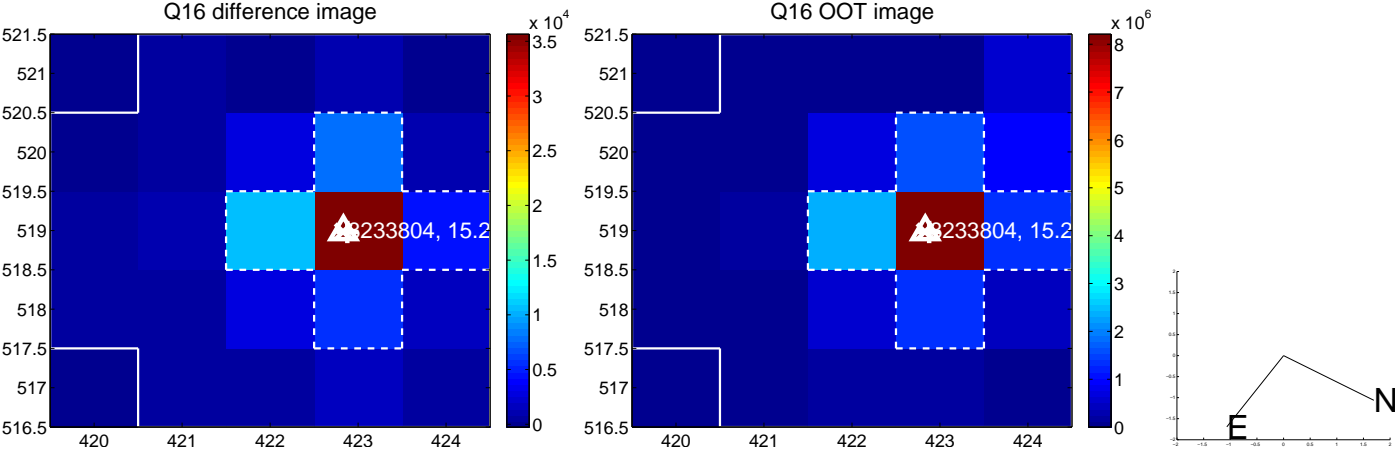
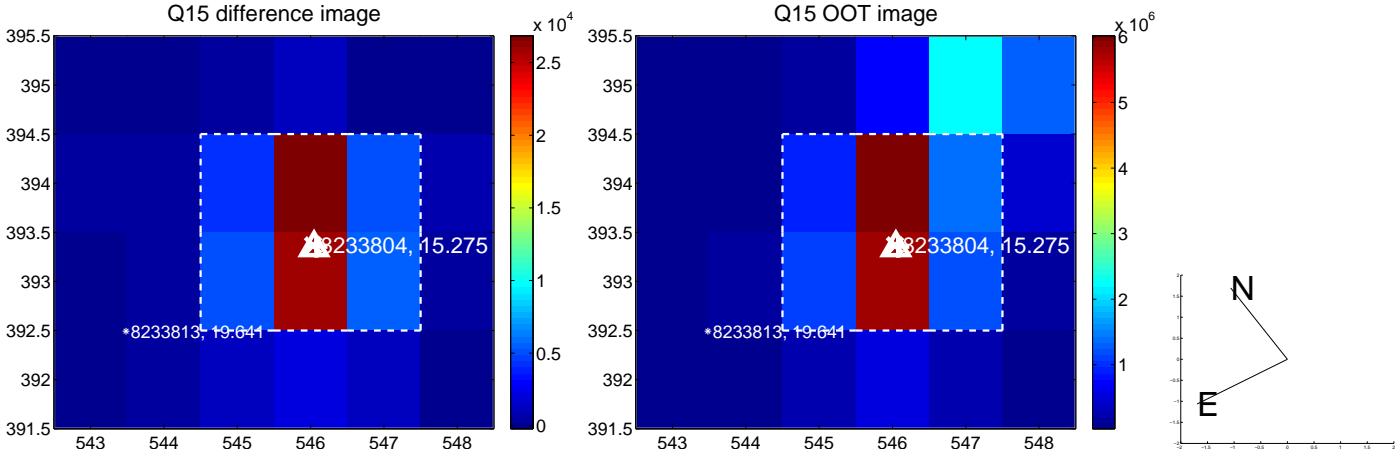
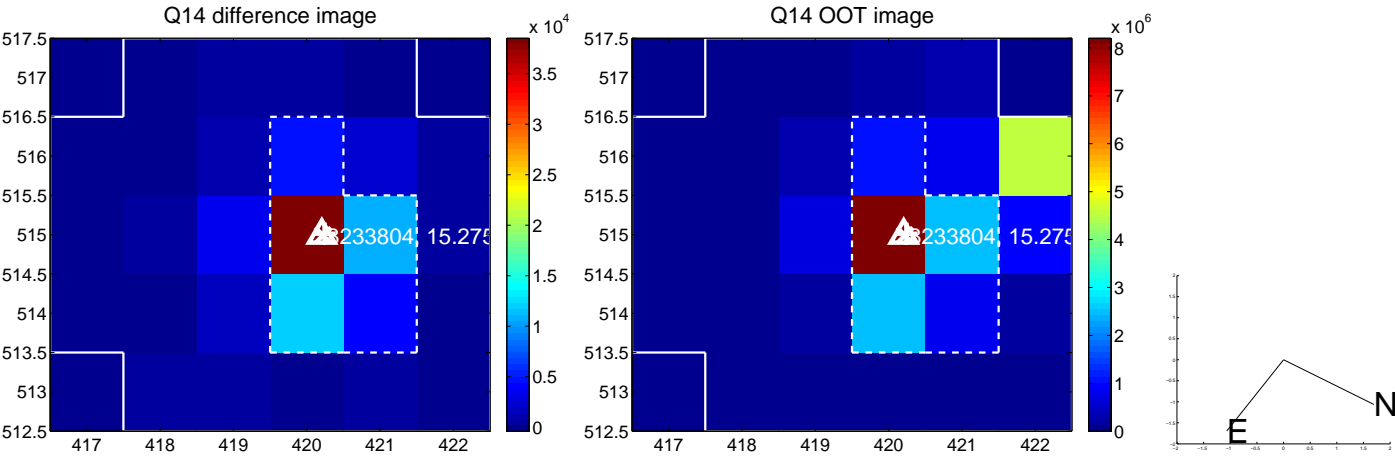
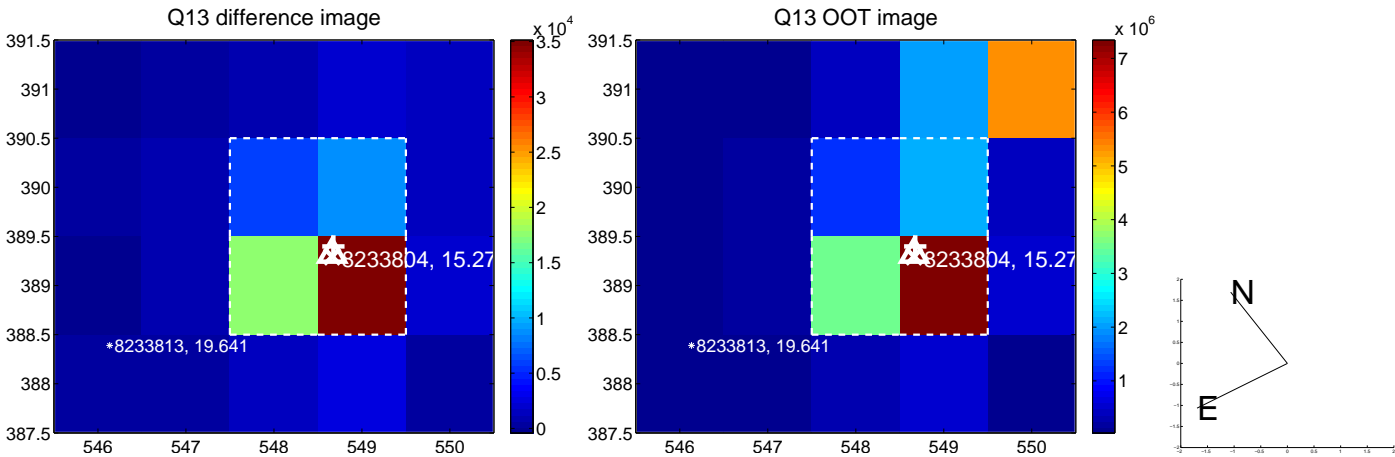
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



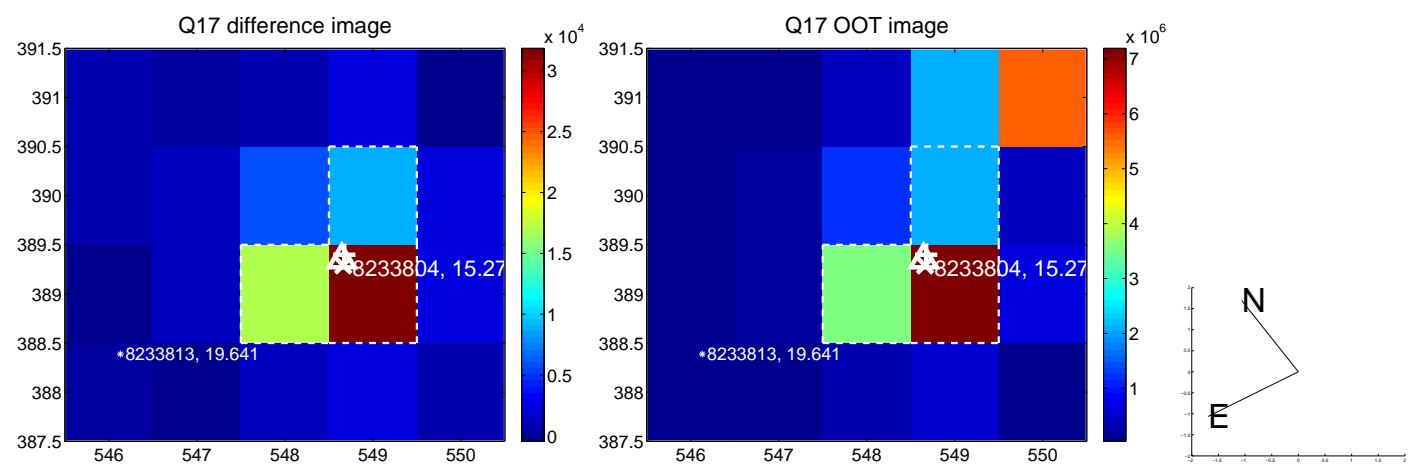
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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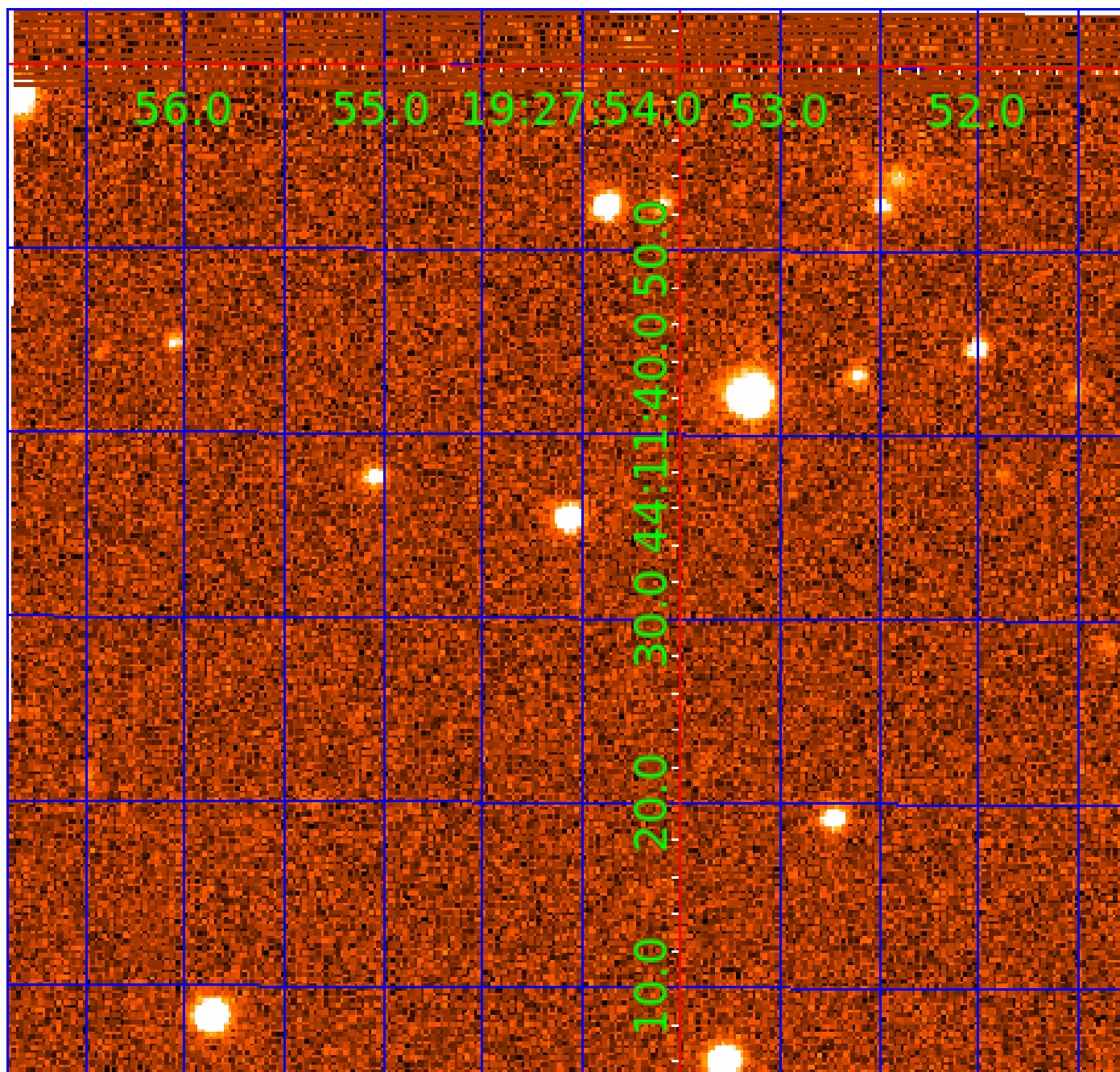
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 008233804

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})
008233804-01	OBS	No	1.327245	132.112022	0.7	1.125	17.2	0.1	1.58	11174	0.15	37559.12
008233804-02	OBS	No	1.326985	132.156349	41.8	6.290	16.6	5.9	1.58	11174	1.19	37568.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008233804-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT
008233804-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—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.

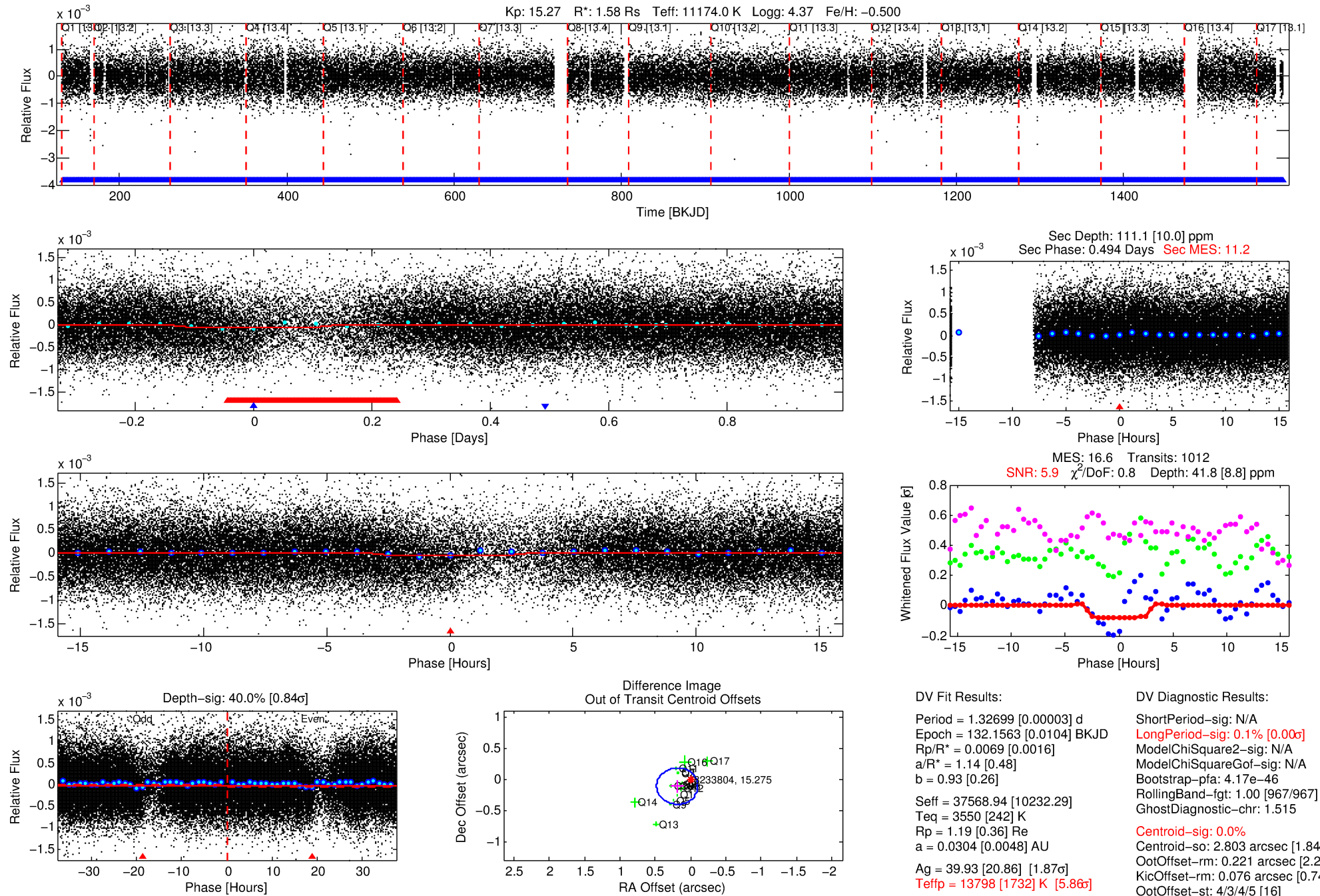
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008233804-02

No Significant Match Found

DV One-Page Summary

KIC: 8233804 Candidate: 2 of 2 Period: 1.327 d



DV Fit Results:

Period = 1.32699 [0.00003] d
Epoch = 132.1563 [0.0104] BKJD
Rp/R* = 0.0069 [0.0016]
a/R* = 1.14 [0.48]
b = 0.93 [0.26]
Seff = 37568.94 [10232.29]
Teq = 3550 [242] K
Rp = 1.19 [0.36] Re
a = 0.0304 [0.0048] AU
Ag = 39.93 [20.86] [1.87 σ]
Teffp = 13798 [1732] K [5.86 σ]

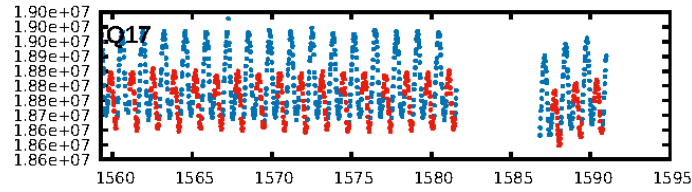
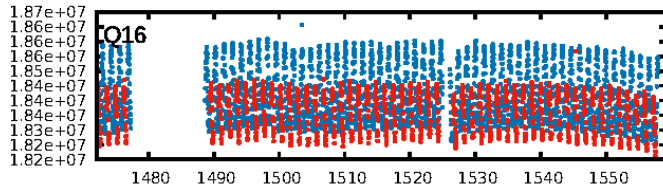
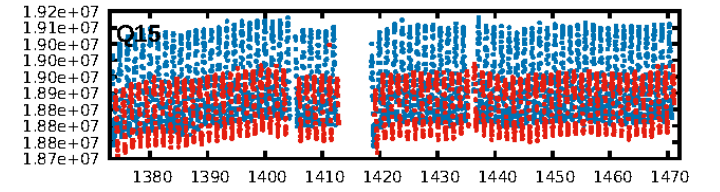
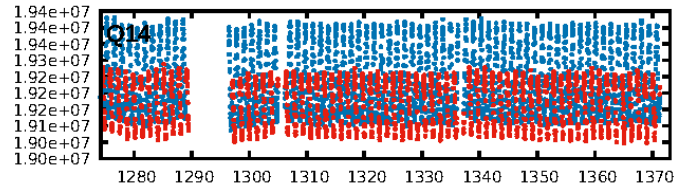
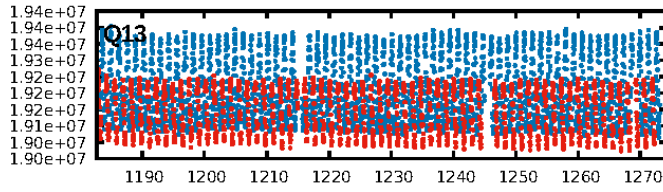
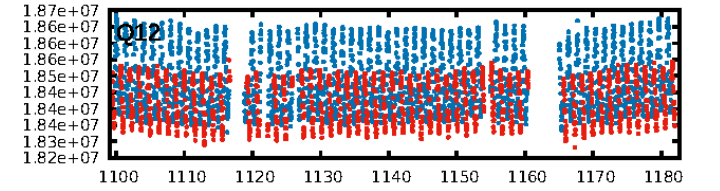
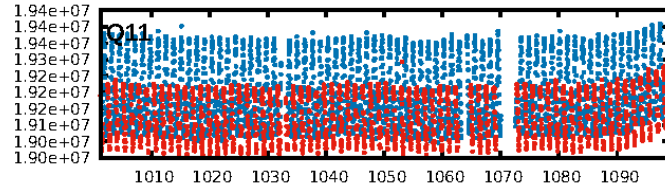
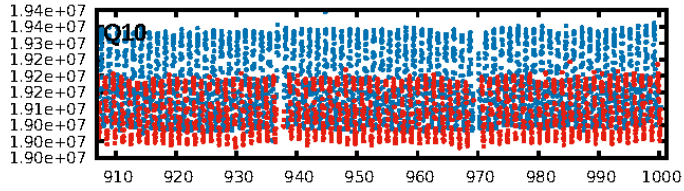
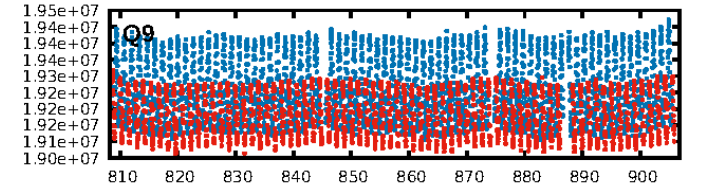
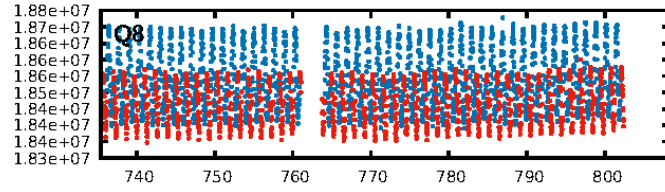
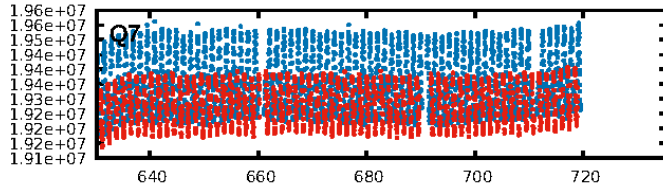
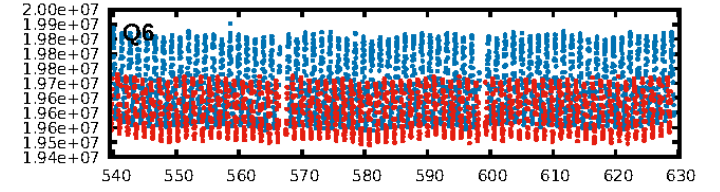
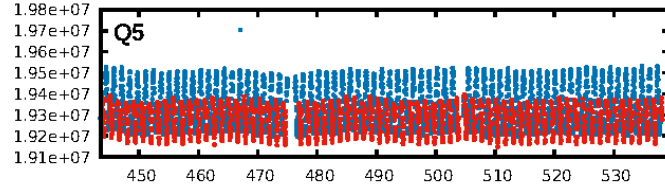
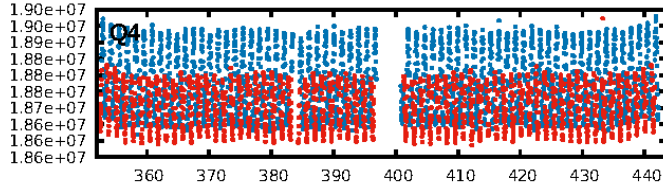
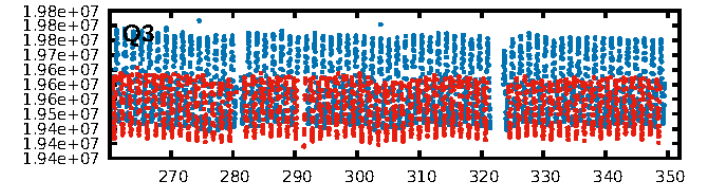
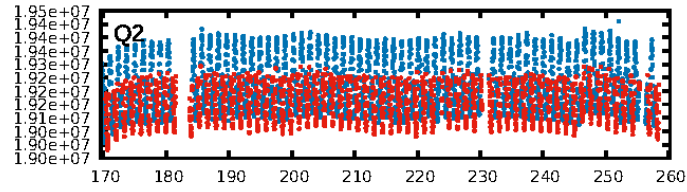
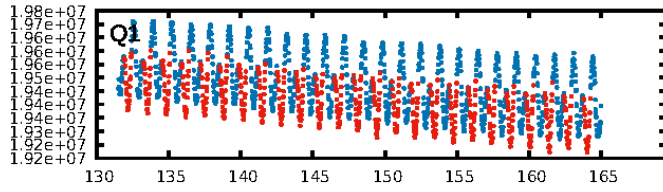
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.17e-46
RollingBand-fgt: 1.00 [967/967]
GhostDiagnostic-chr: 1.515
Centroid-sig: 0.0%
Centroid-so: 2.803 arcsec [1.84 σ]
OotOffset-rm: 0.221 arcsec [2.27 σ]
KicOffset-rm: 0.076 arcsec [0.74 σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 0.00 [0/17]

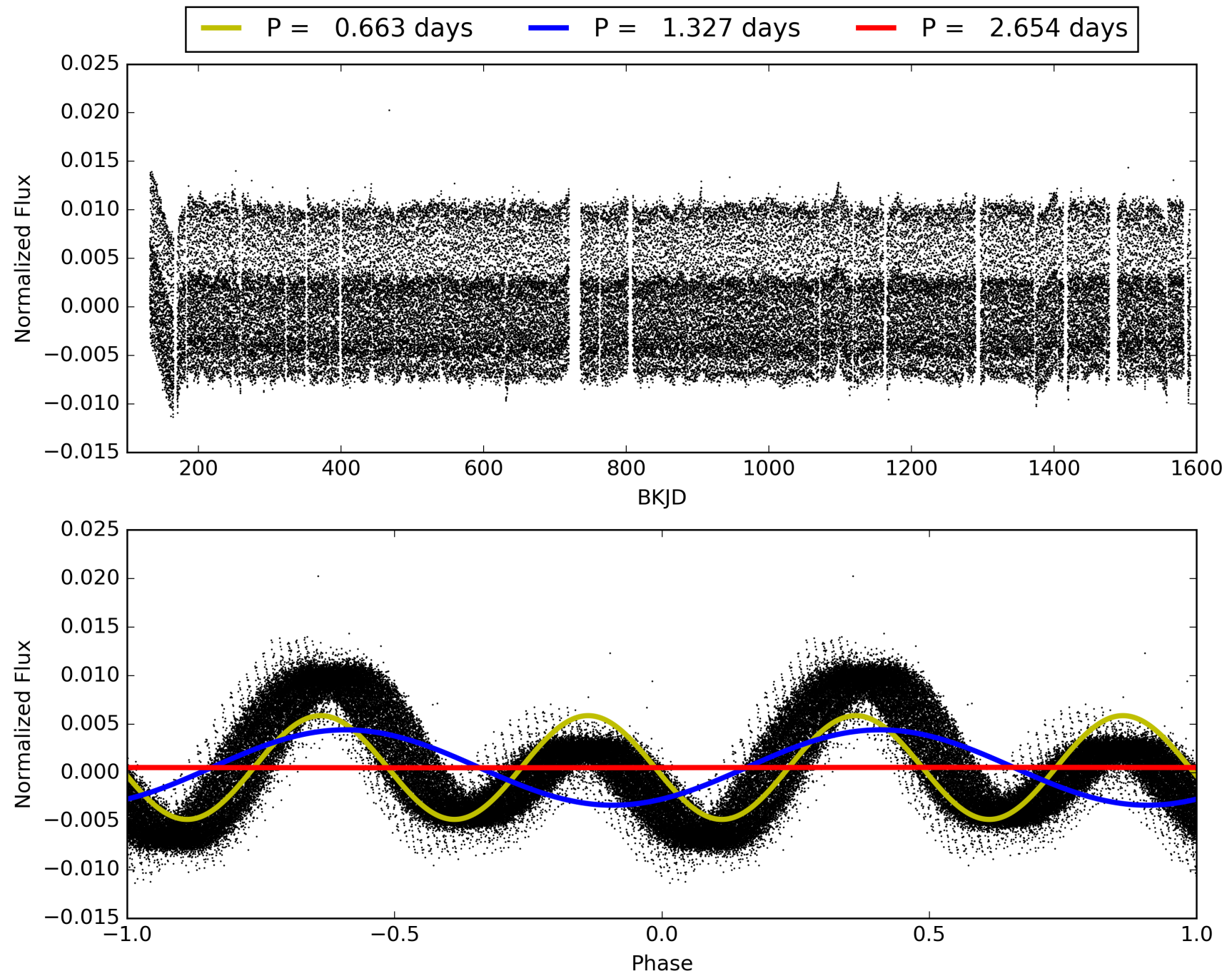
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:16:03 Z

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

TCE 008233804-02, PDC Light Curves

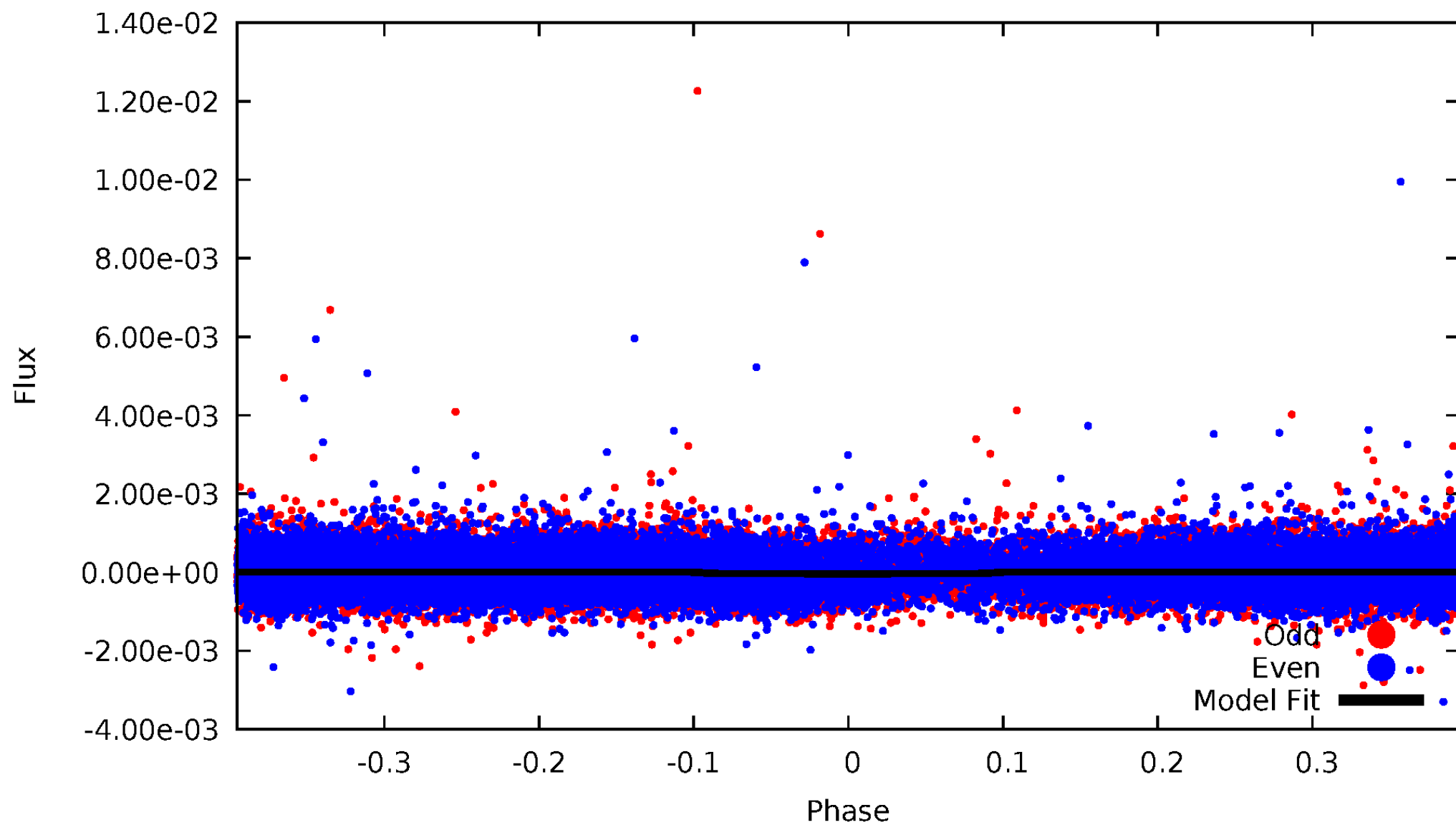


TCE 008233804-02



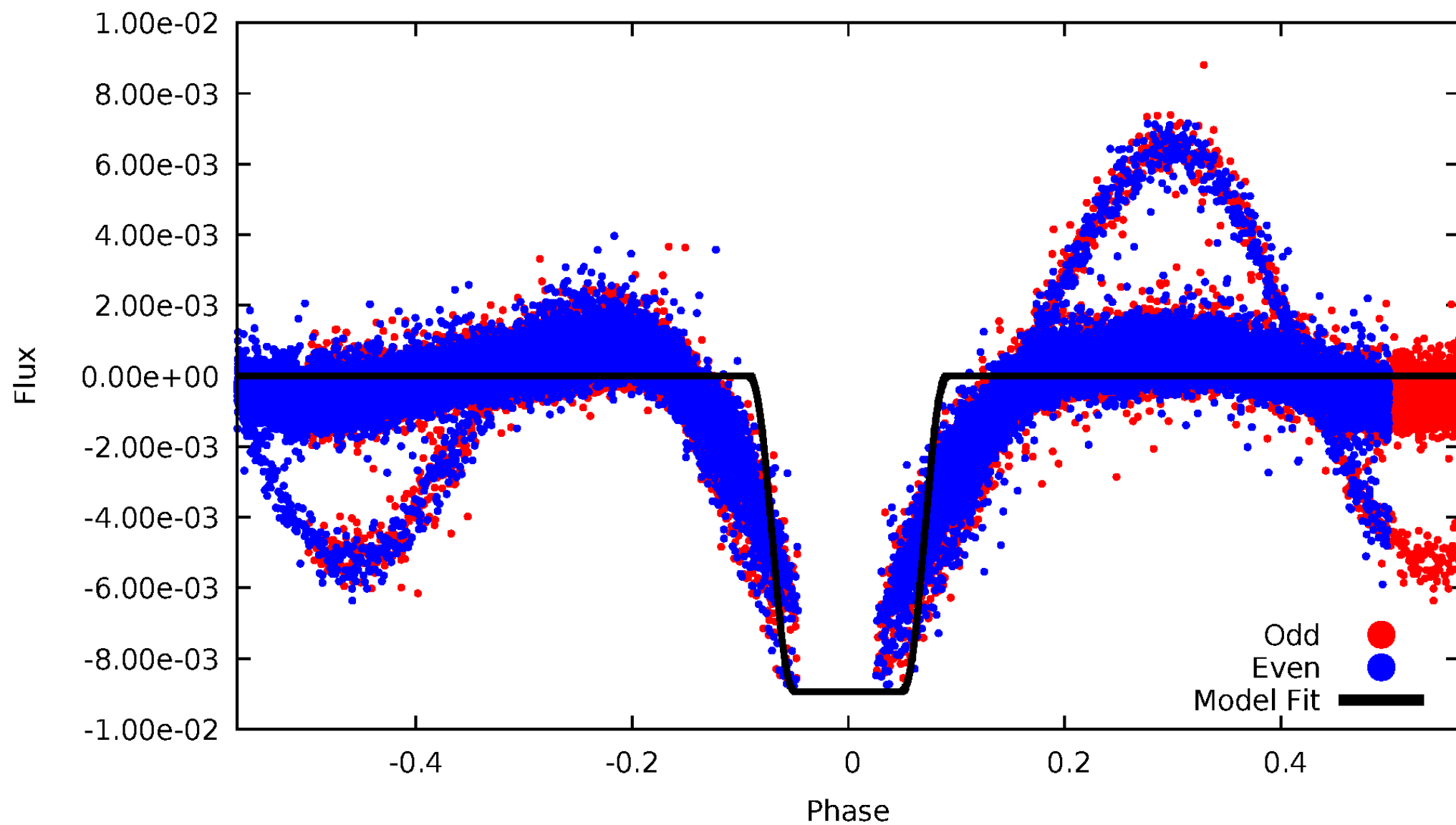
DV Odd/Even

TCE 008233804-02



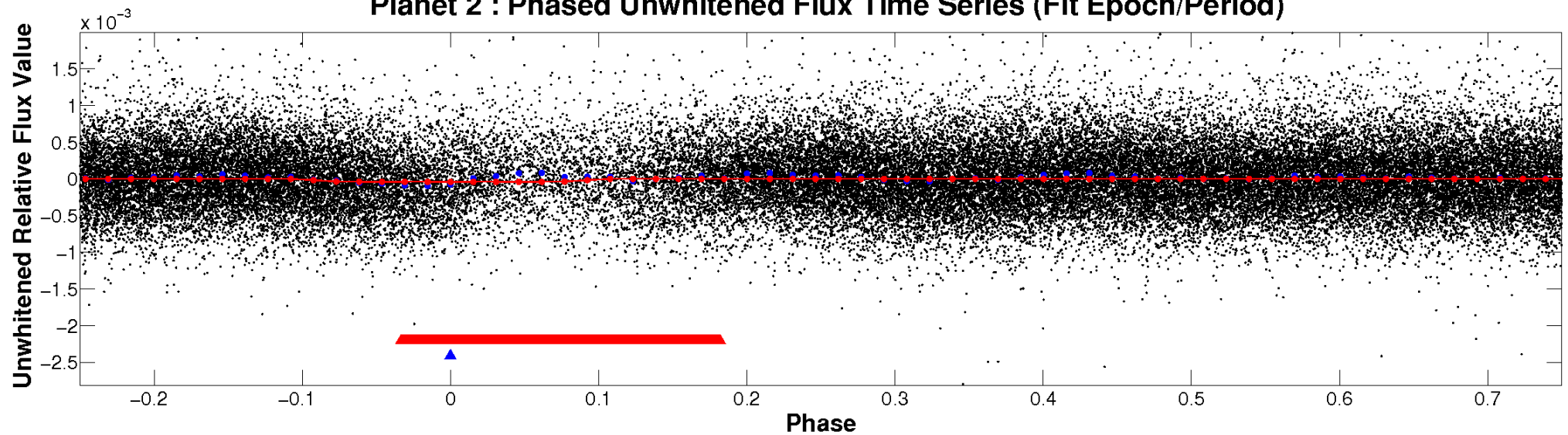
ALT Odd/Even

TCE 008233804-02

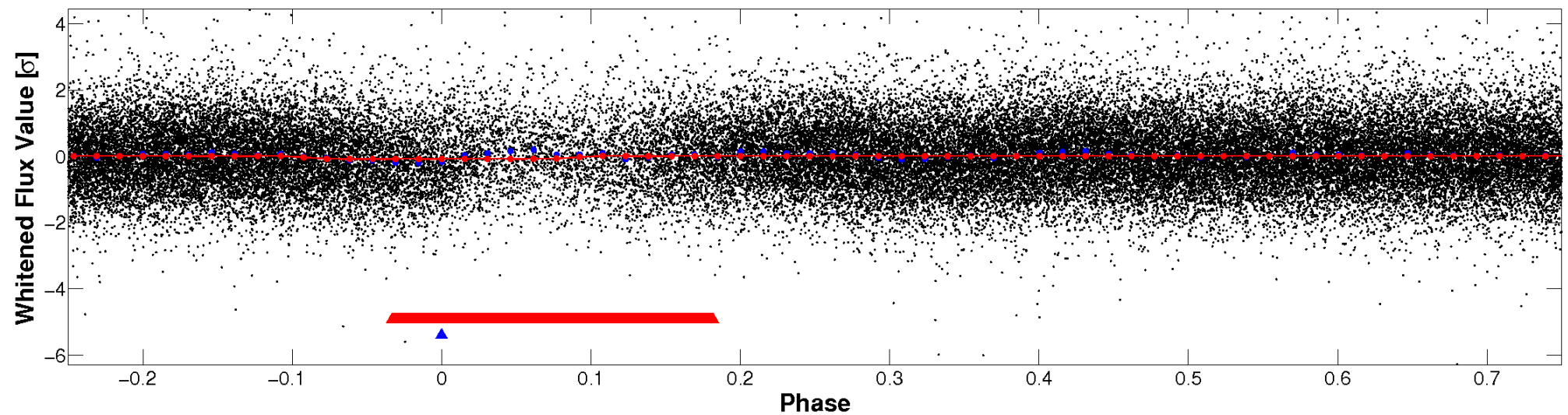


Non-Whitened Vs. Whitened Light Curve

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

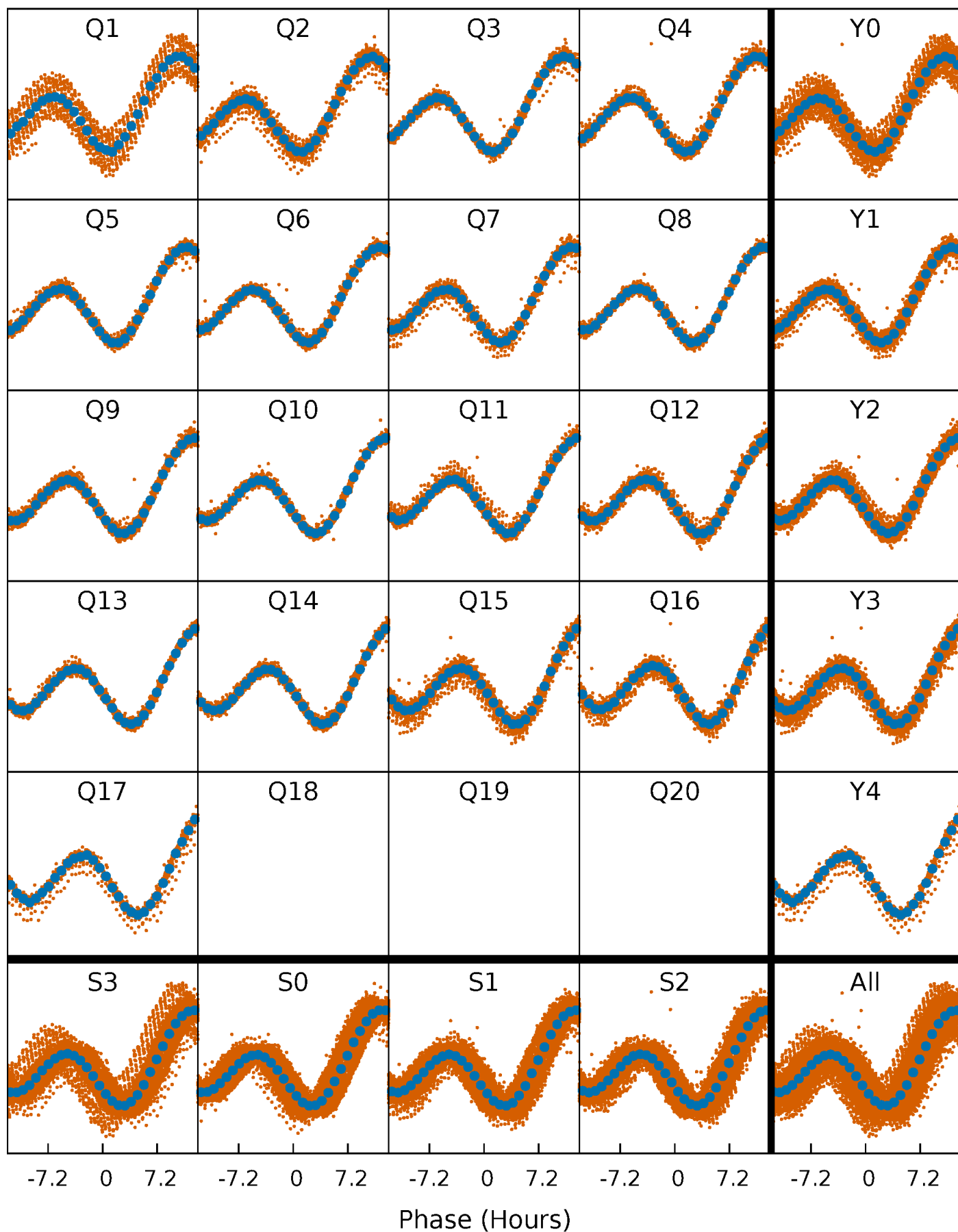


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



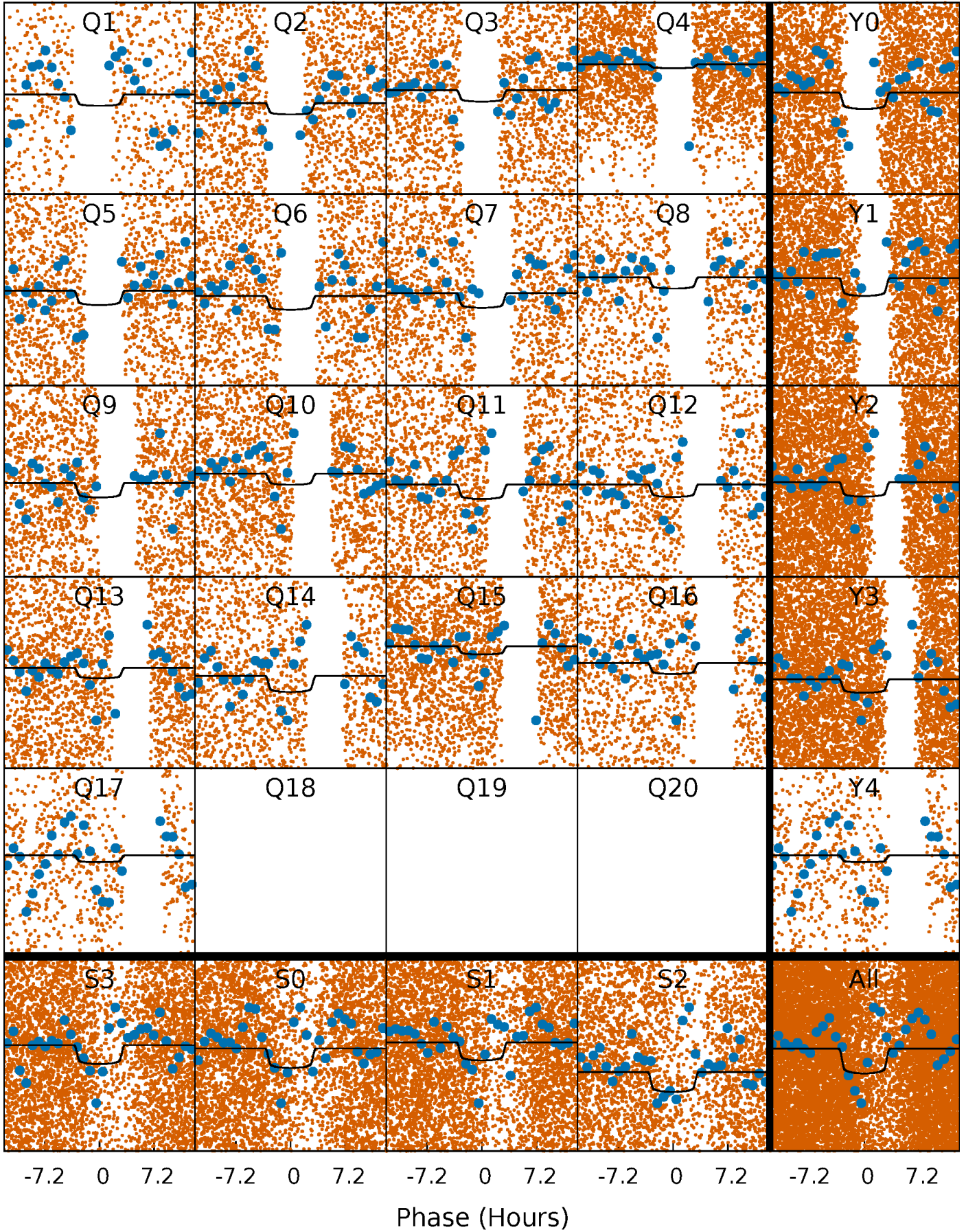
PDC Quarter-Phased Transit Curves

TCE 008233804-02 P= 1.326985 Days $T_0=132.156349$ (BKJD)



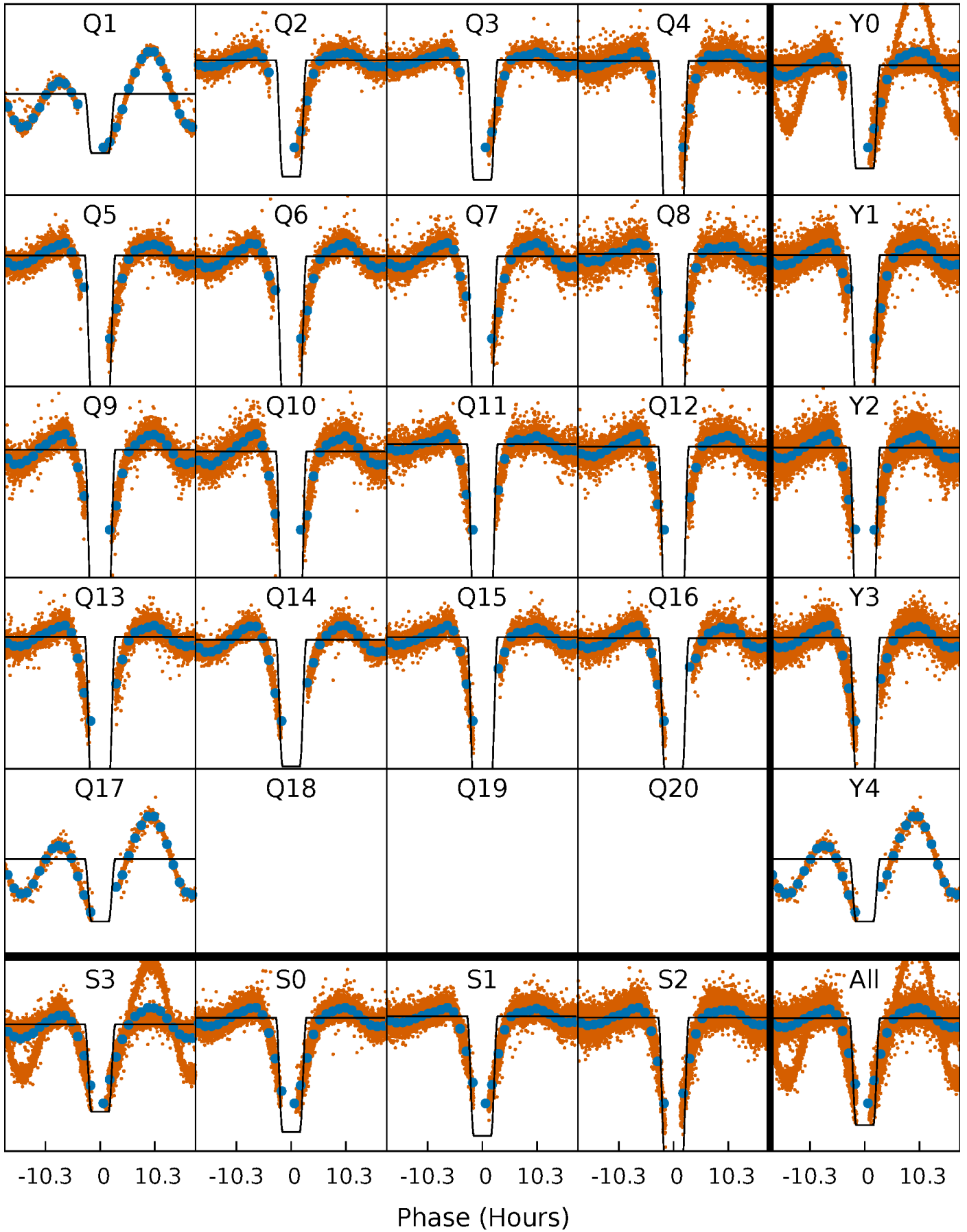
DV Quarter-Phased Transit Curves

TCE 008233804-02 P= 1.326985 Days $T_0=132.156349$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

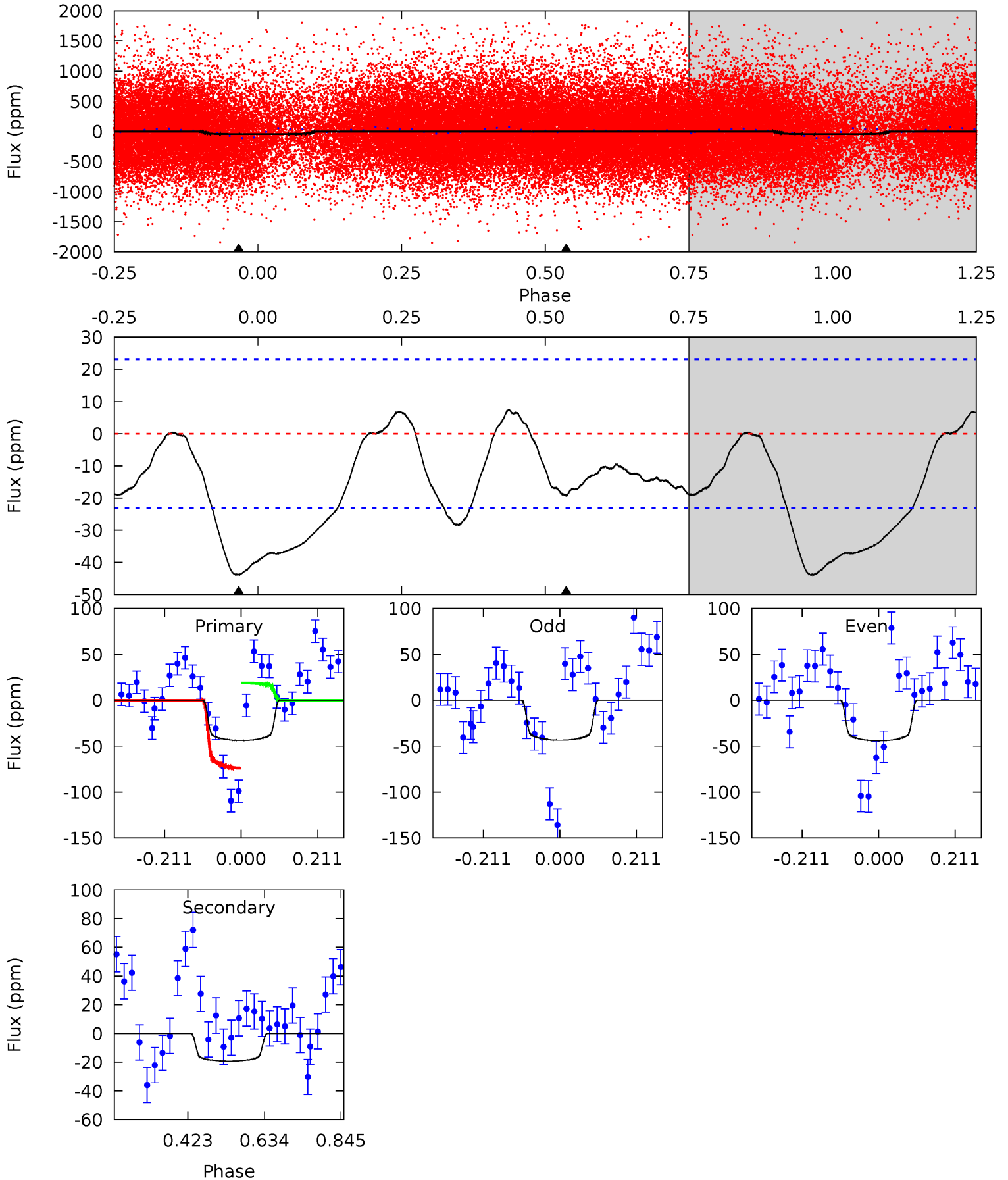
TCE 008233804-02 P= 1.327138 Days $T_0=132.183948$ (BKJD)



DV Model-Shift Uniqueness Test

008233804-02, P = 1.326985 Days, E = 130.829364 Days

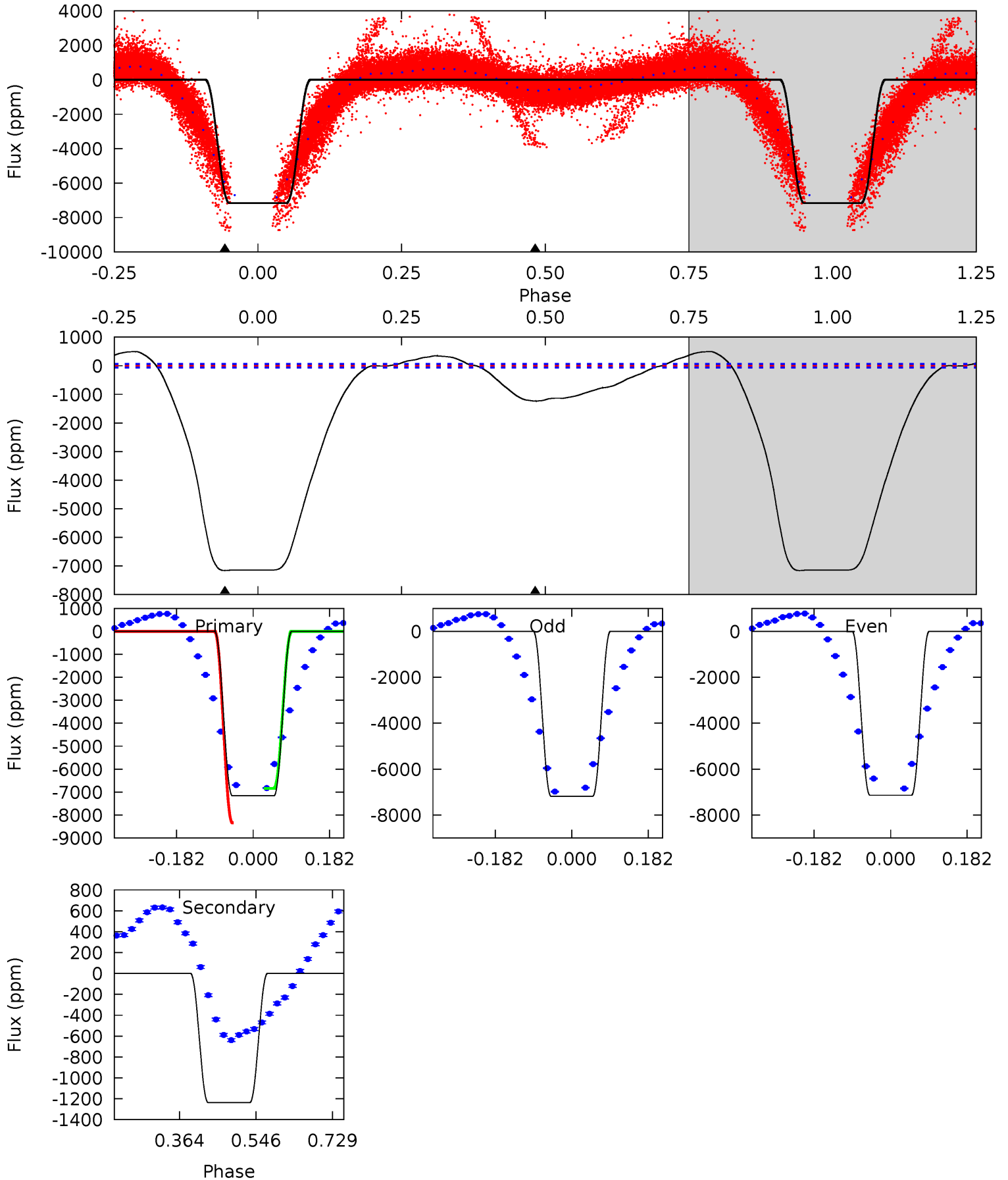
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.35	3.66	0	0	4.41	1.25	1.85	8.35	8.35	3.66	3.66	0.06	1.09	0.14	4.80



Alt Model-Shift Uniqueness Test

008233804-02, P = 1.327138 Days, E = 130.856810 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
492.5	85.1	0	0	4.44	1.33	35.4	492.5	492.5	85.1	85.1	1.56	1.53	0.06	49.3



Stellar Parameters For KIC 008233804

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	11174^{+342}_{-456}	$4.371^{+0.066}_{-0.114}$	$-0.500^{+0.550}_{-0.200}$	$1.579^{+0.308}_{-0.154}$	$2.135^{+0.181}_{-0.165}$	$0.764^{+0.192}_{-0.276}$
	+3%/-4%	+2%/-3%	+110%/-40%	+20%/-10%	+8%/-8%	+25%/-36%
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 008233804-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-19 ± 5	$1.20^{+0.30}_{-0.27}$	4969^{+251}_{-242}	7936^{+1575}_{-1190}	$6.615^{+4.853}_{-2.808}$
Alt.	-1237 ± 15	$16.41^{+1.52}_{-0.99}$	4979^{+278}_{-247}	5830^{+133}_{-170}	$2.326^{+0.287}_{-0.318}$

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

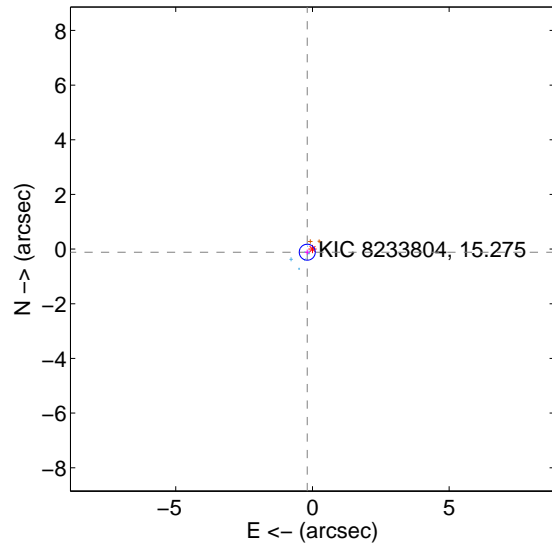
Supplemental centroid analysis for 008233804-02. Kepler magnitude: 15.28. Transit SNR 5.94

There are 14 quarters with good PRF difference image offsets

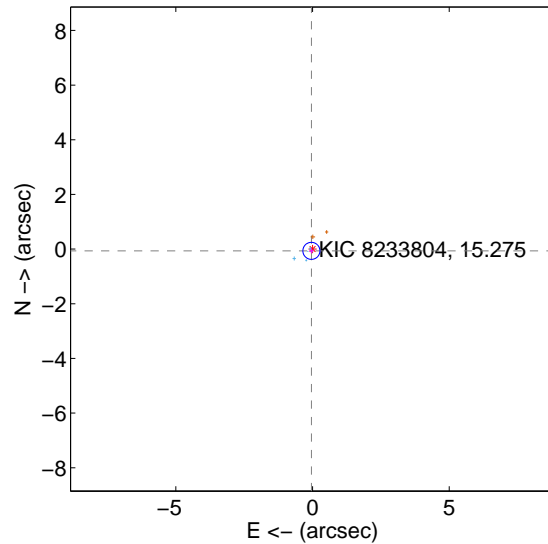
The direct PRF centroid is offset from the target star catalog position by about 0.44 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.221 ± 0.097	2.27	0.190 ± 0.084	-0.114 ± 0.093
PRF-fit source offset from KIC position	0.076 ± 0.104	0.74	0.041 ± 0.087	-0.064 ± 0.092
photometric centroid source offset	2.80 ± 1.53	1.84	1.95 ± 1.68	-2.02 ± 1.37

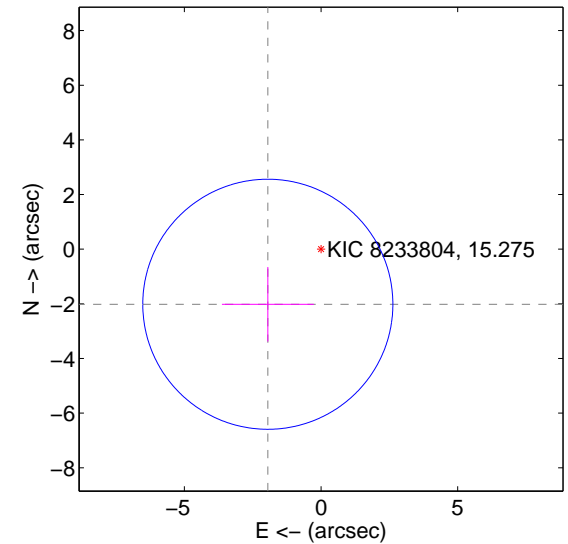
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

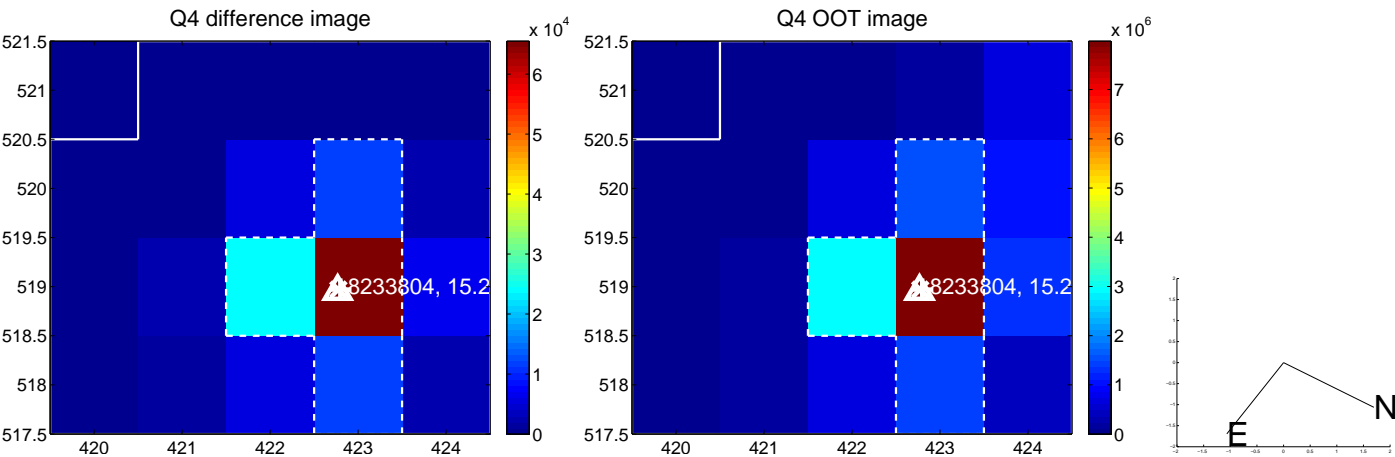
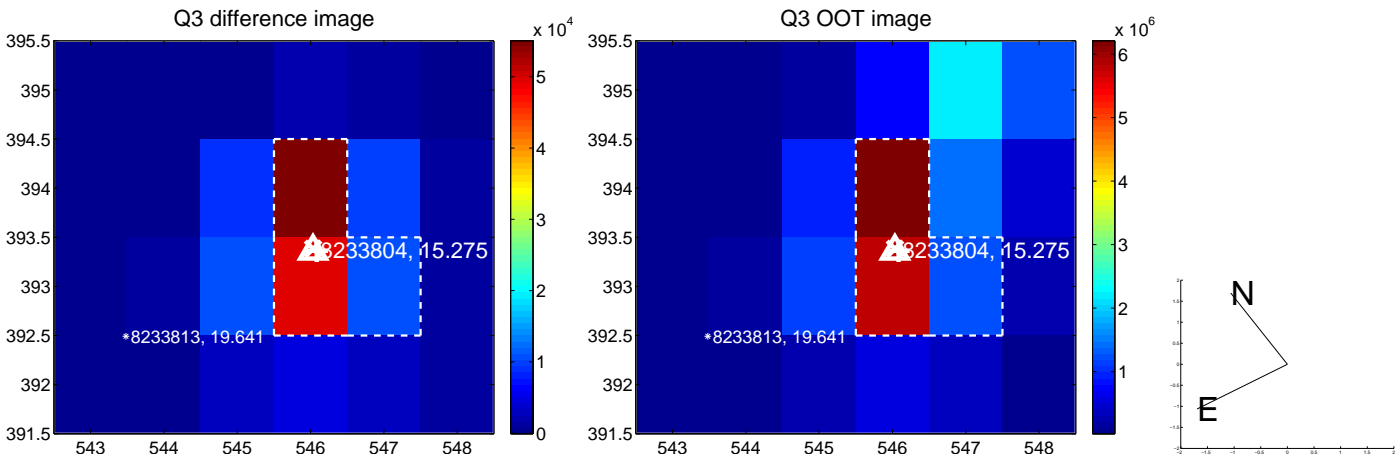
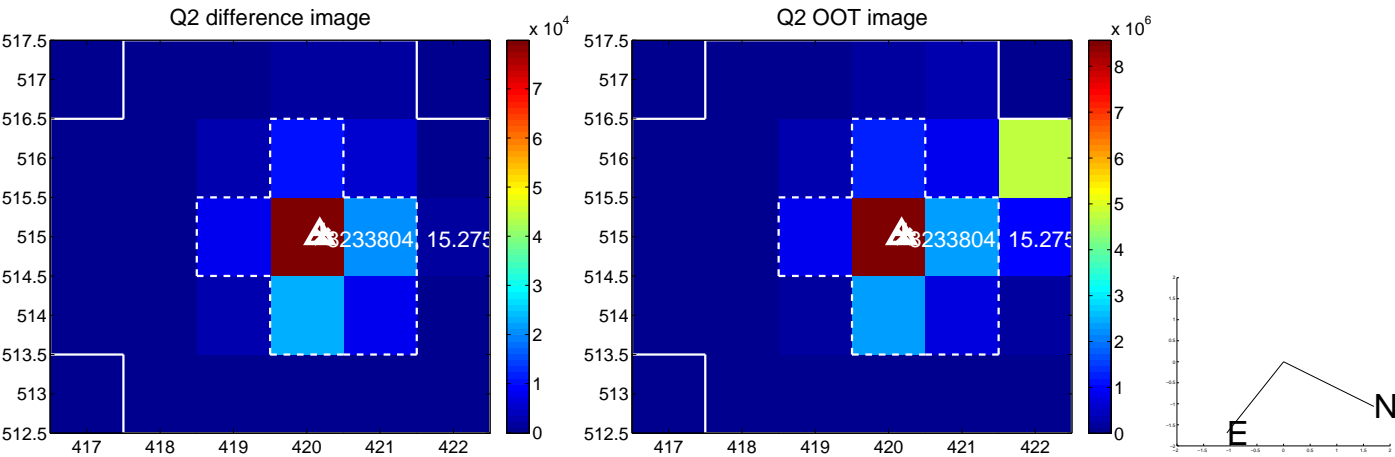
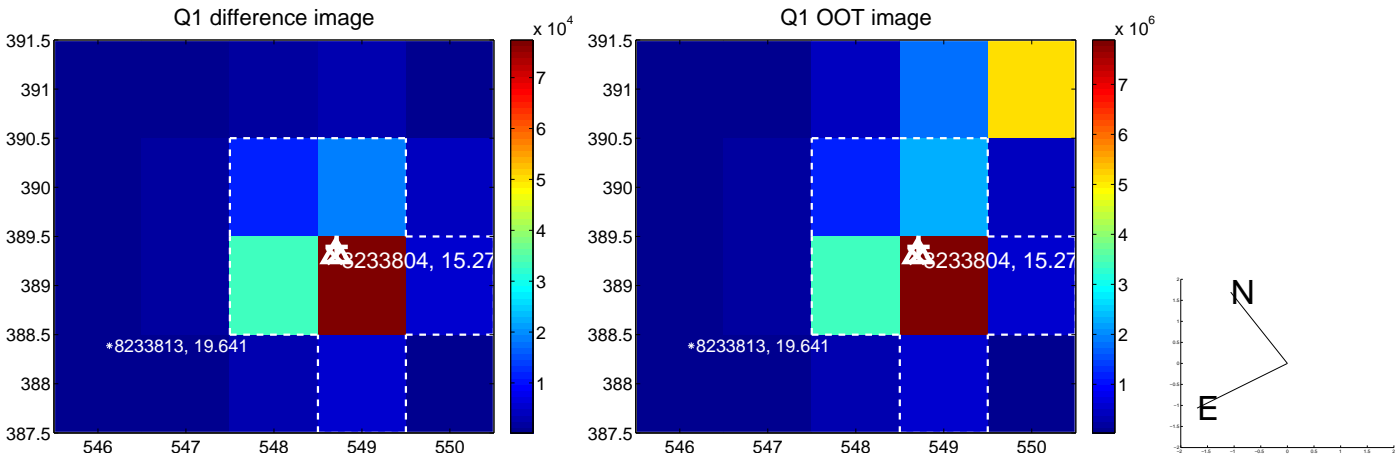


offset from photometric centroids

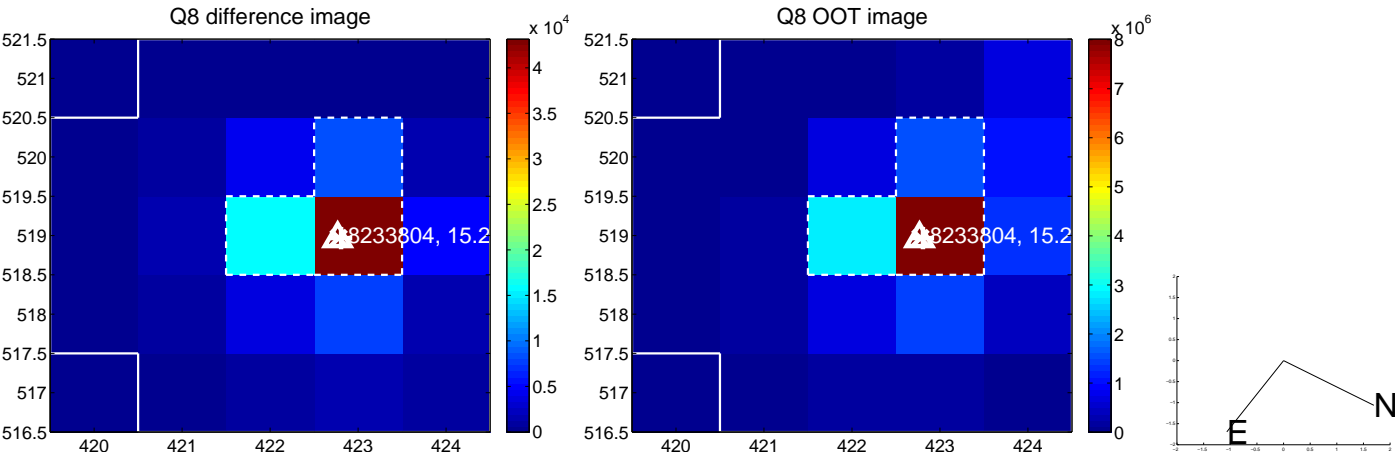
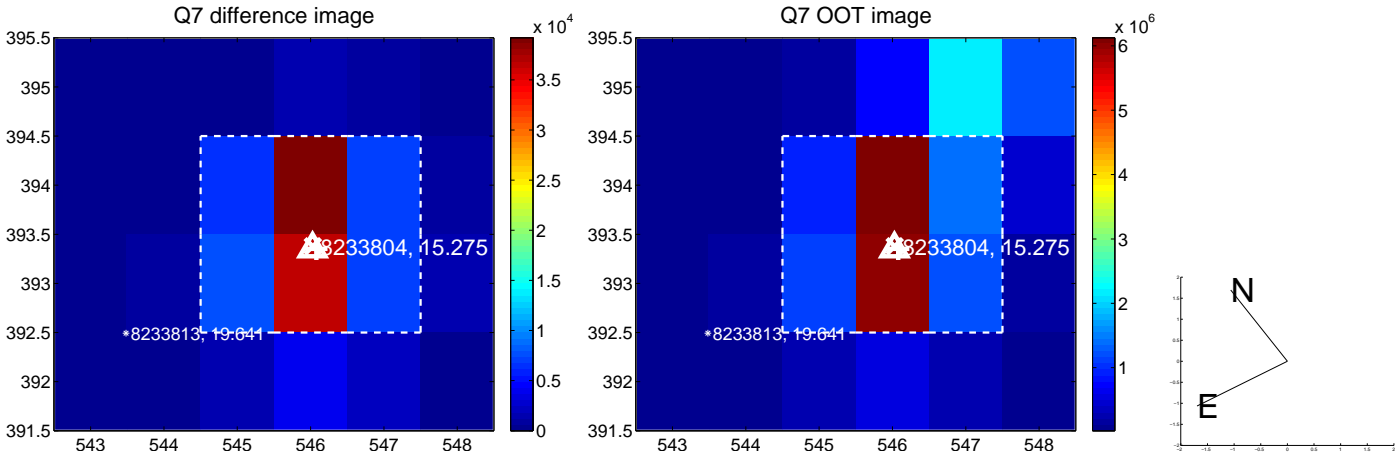
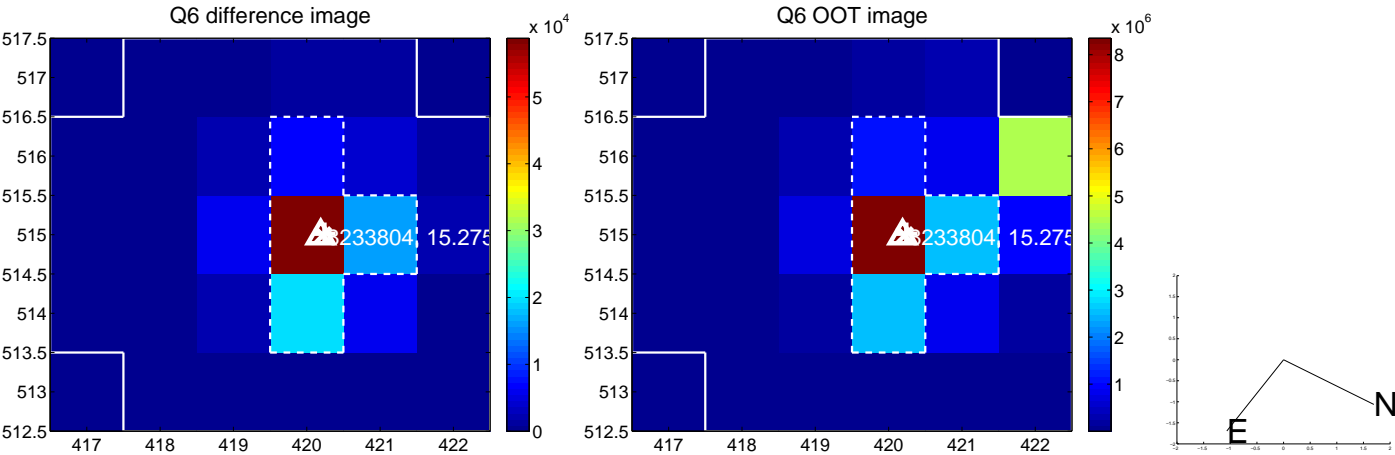
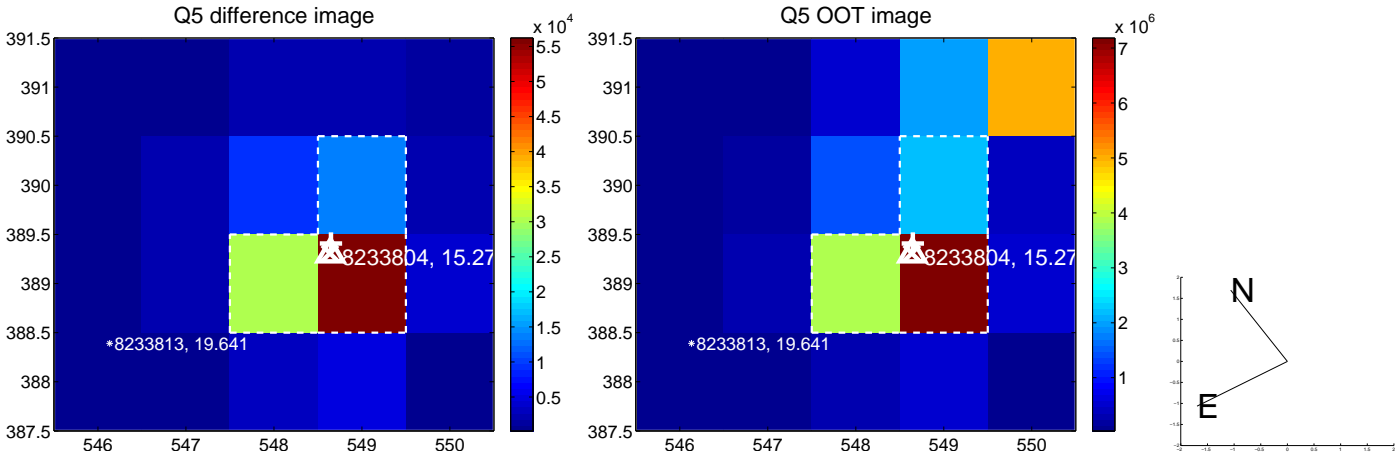


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

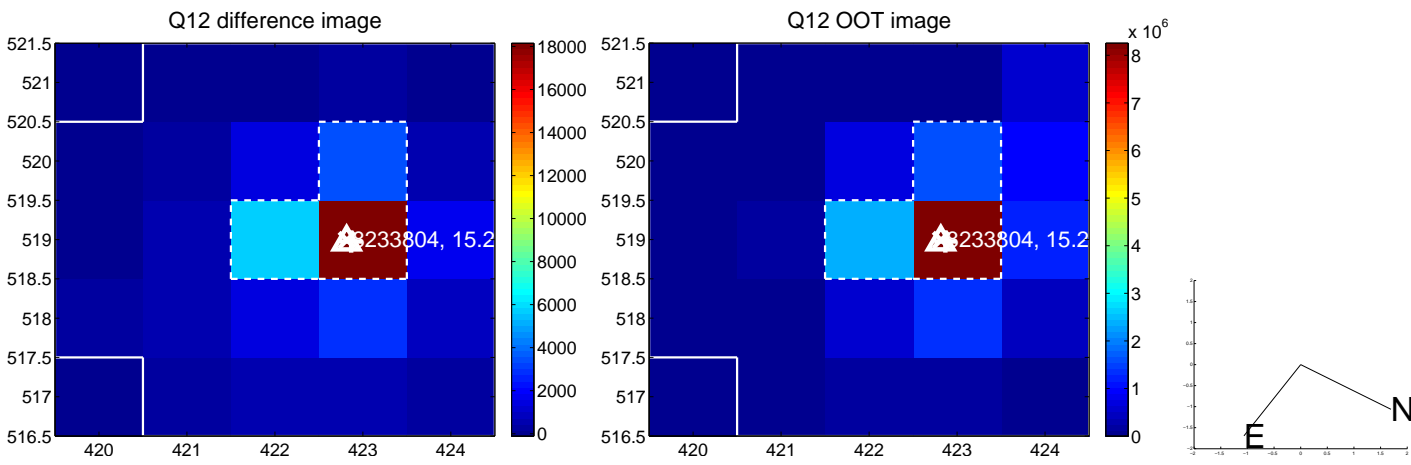
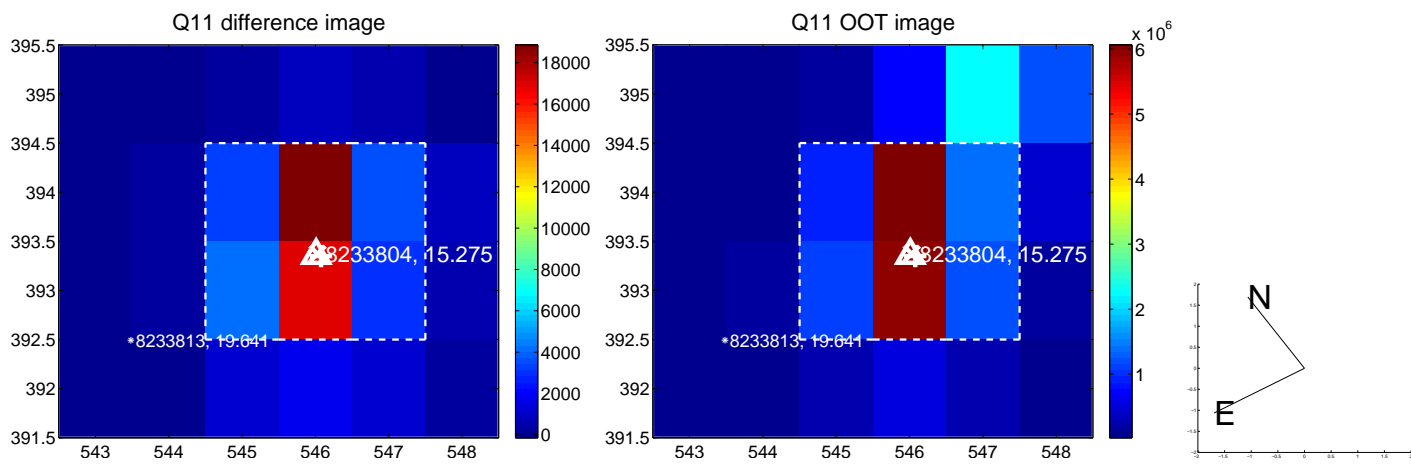
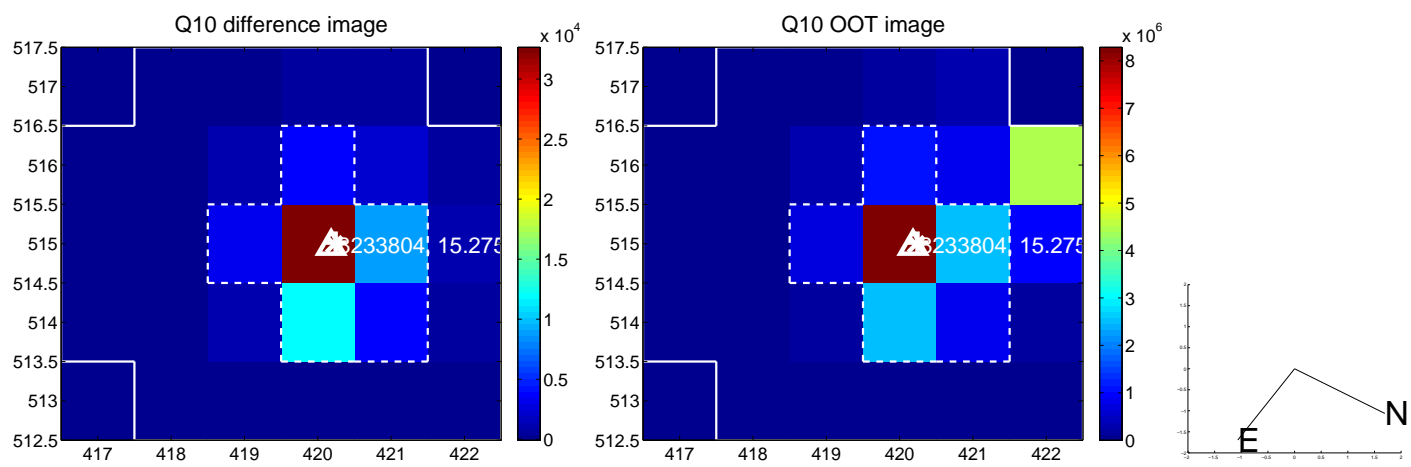
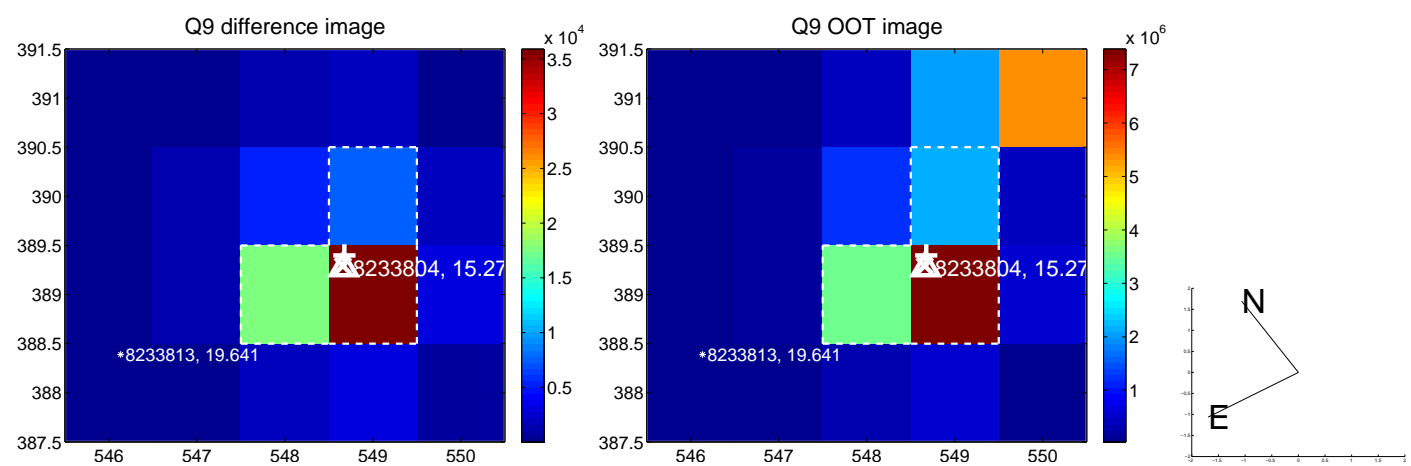
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



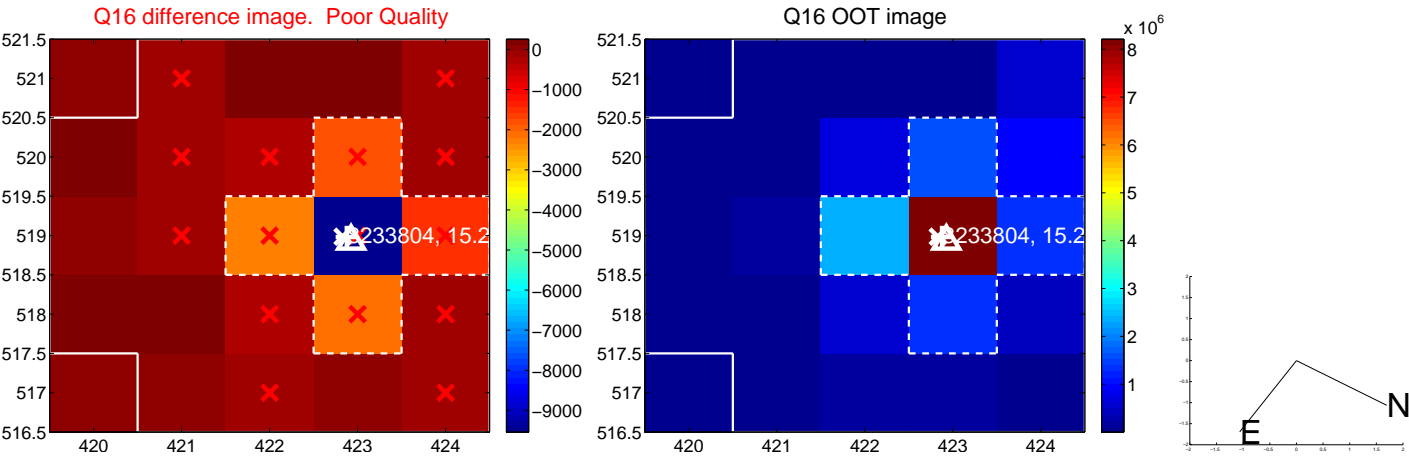
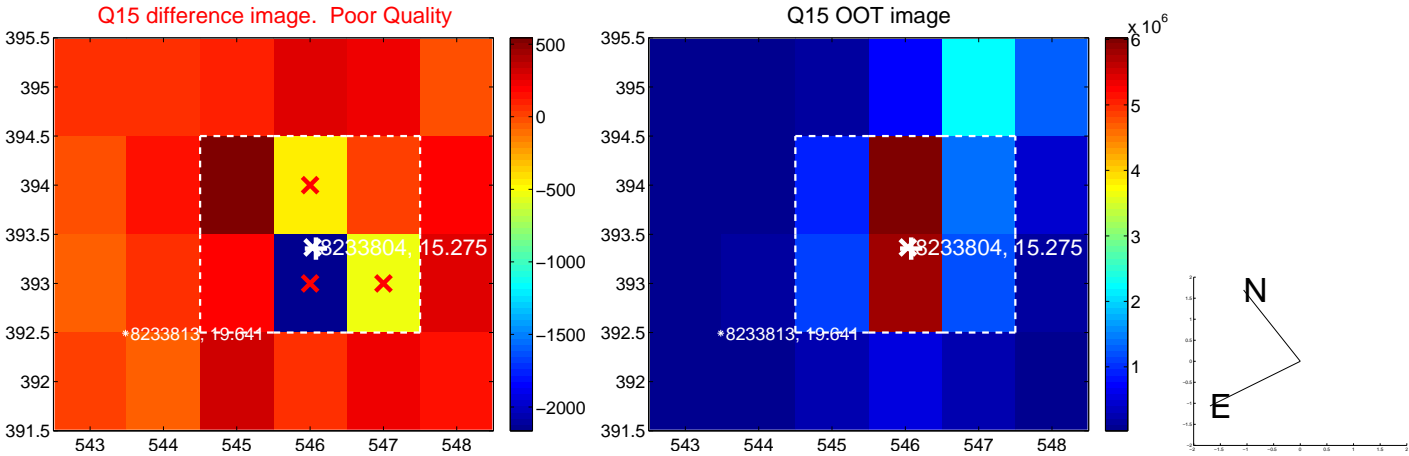
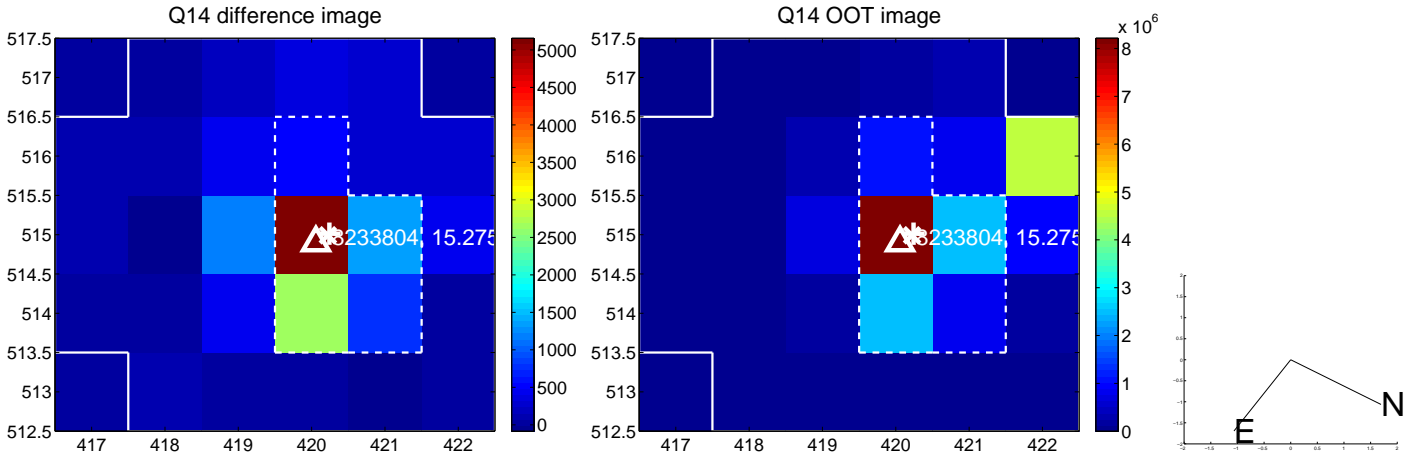
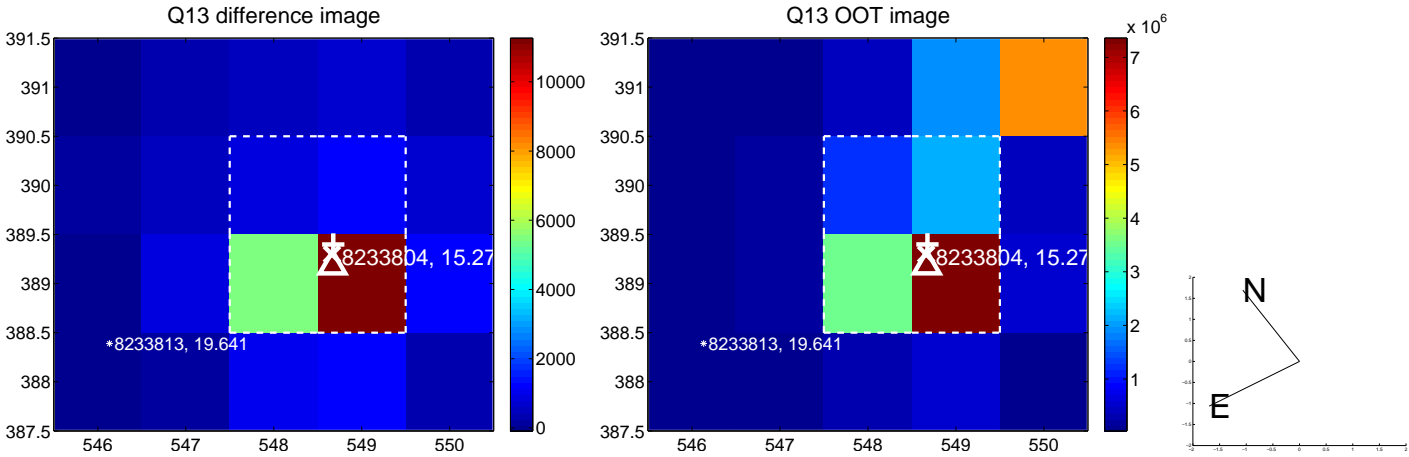
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



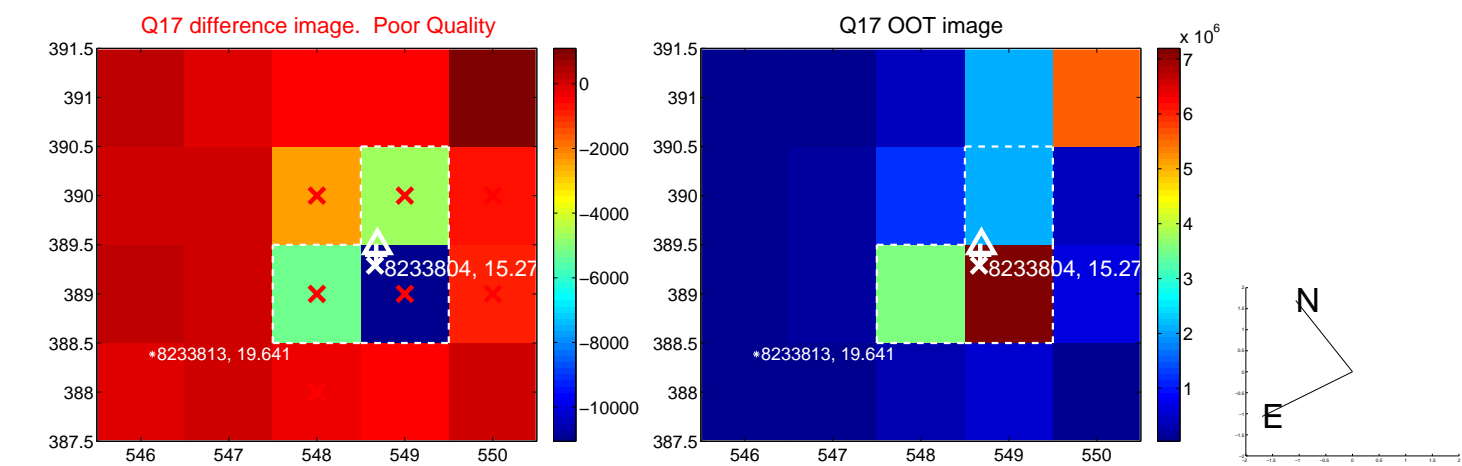
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



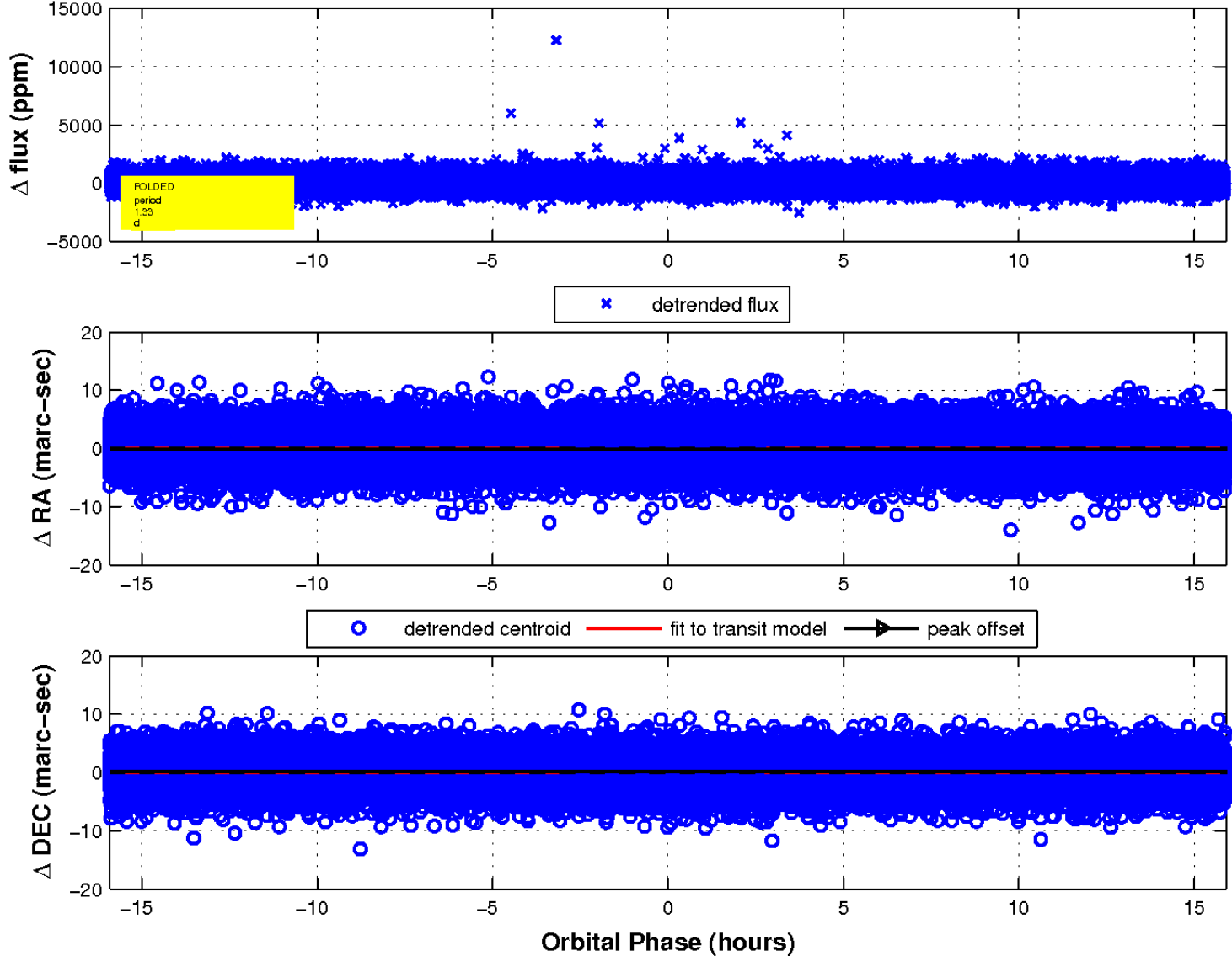
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

