

KIC 004833050

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})
004833050-01	OBS	No	1.191861	132.076322	156.5	3.500	8.9	-1.0	2.53	6684	3.19	18325.19
004833050-02	OBS	No	1.191750	131.646596	25.4	3.875	10.7	11.3	2.53	6684	1.41	18327.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004833050-01	OBS	FP	0.00	1	0	1	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_NOFITS—HALO_GHOST
004833050-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

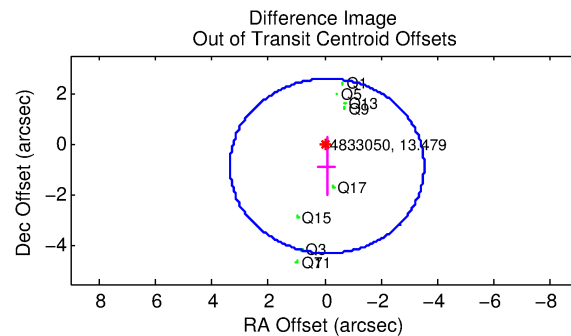
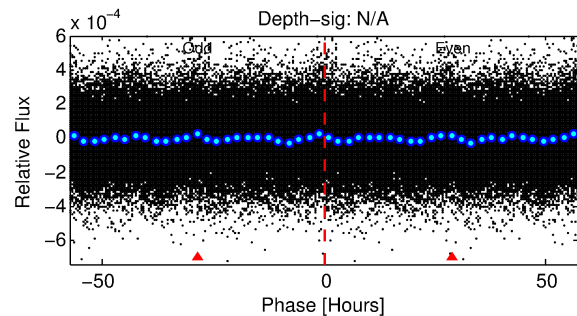
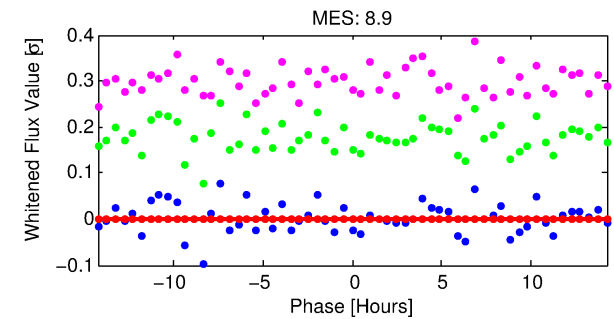
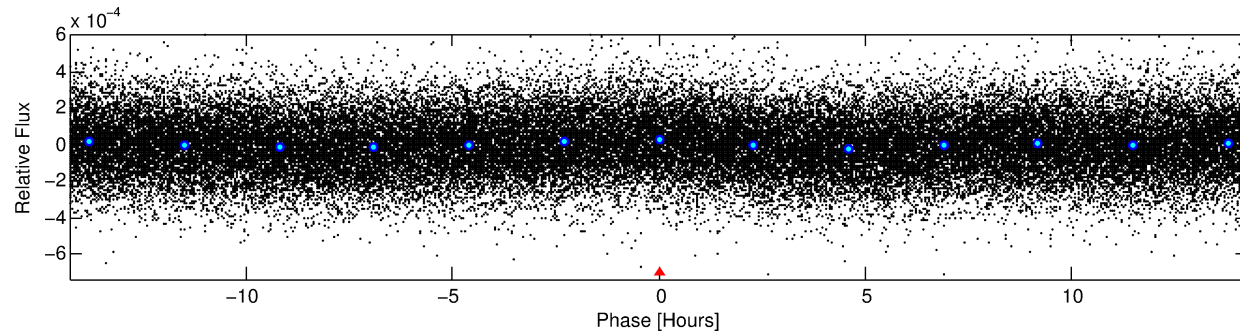
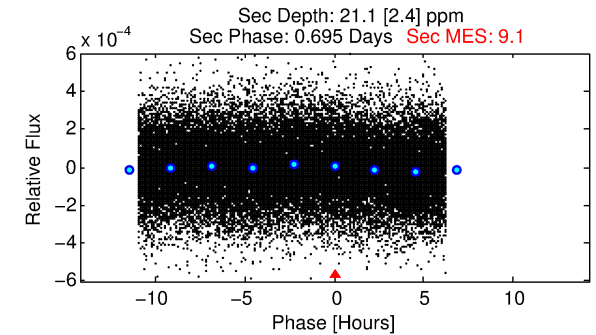
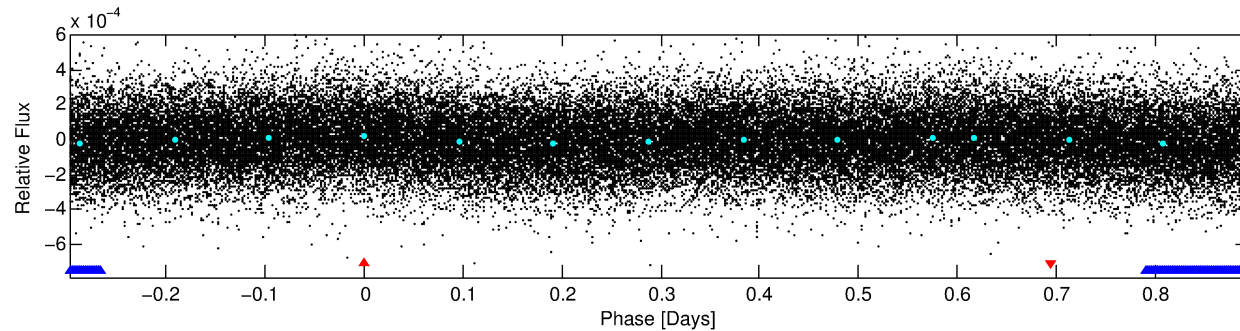
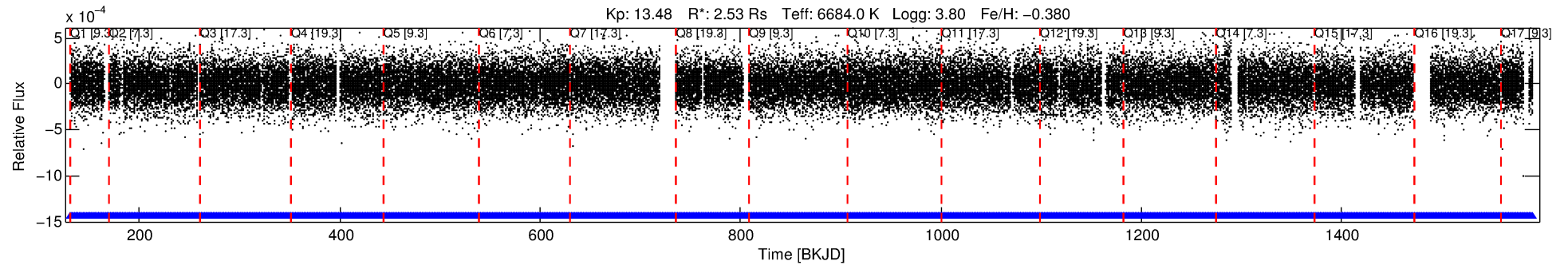
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004833050-01

No Significant Match Found

DV One-Page Summary

KIC: 4833050 Candidate: 1 of 2 Period: 1.192 d



TPS TCE Results:

Period = 1.19186 d
Epoch = 132.0763 BKJD

DV fit results are unavailable

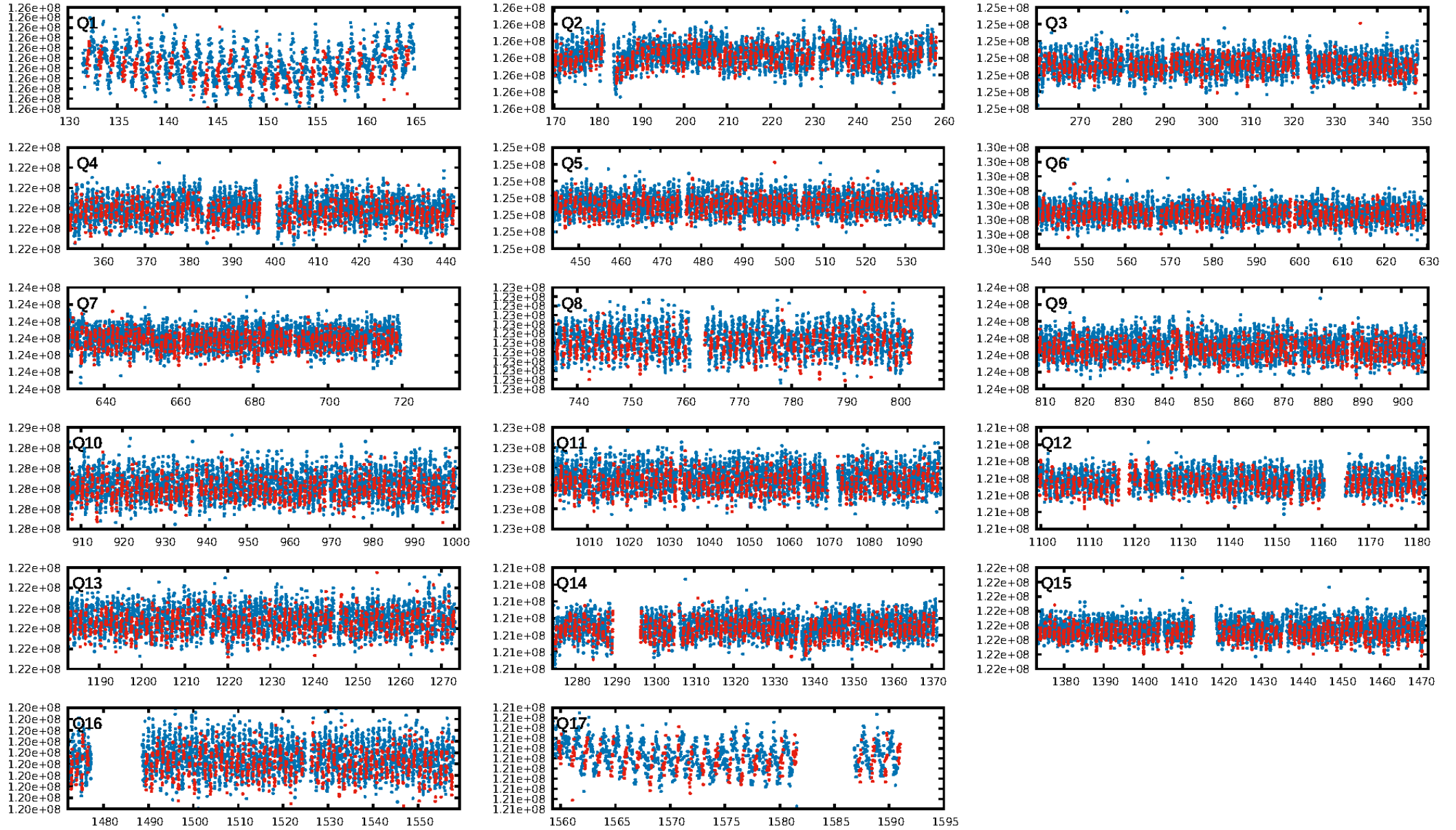
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.68e-15
RollingBand-fgt: 1.00 [1088/1088]
GhostDiagnostic-chr: -0.1978
Centroid-sig: 1.0%
Centroid-so: 0.263 arcsec [3.09 σ]
OotOffset-rm: 0.857 arcsec [0.75 σ]
KicOffset-rm: 0.814 arcsec [0.72 σ]
OotOffset-st: 0/4/0/5 [9]
KicOffset-st: 0/4/0/5 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 0.00 [0/17]

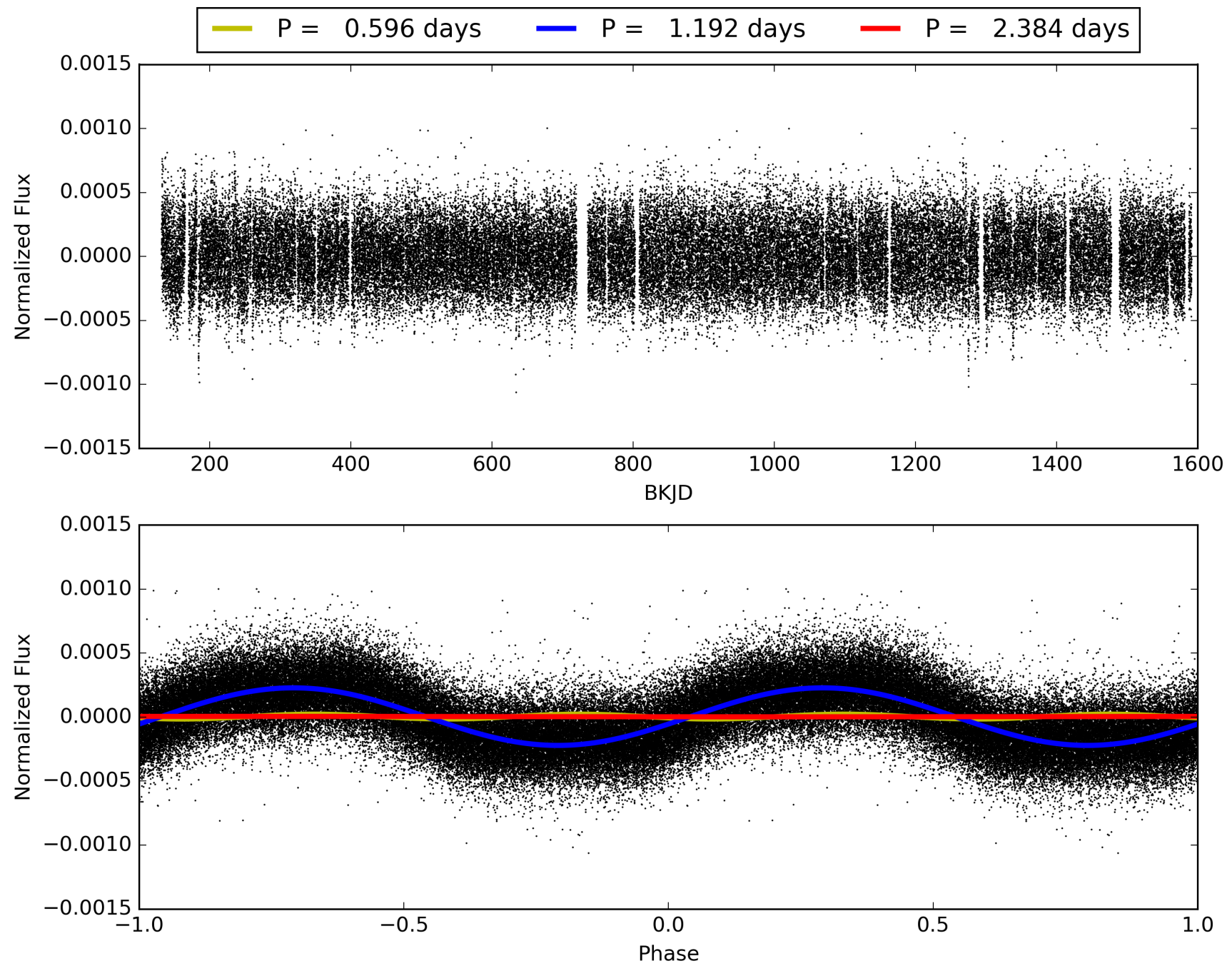
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:47:02 Z

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

TCE 004833050-01, PDC Light Curves

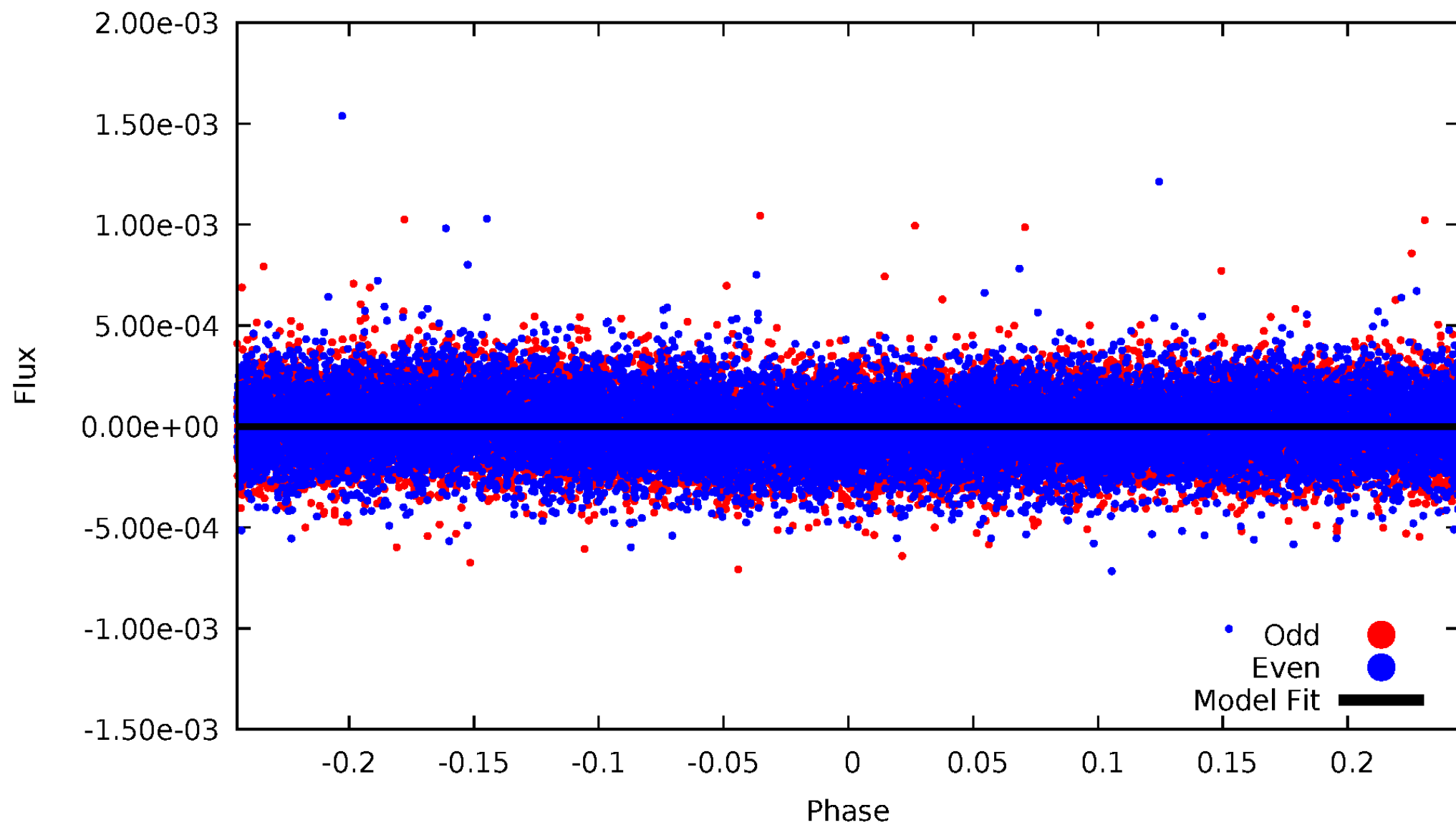


TCE 004833050-01



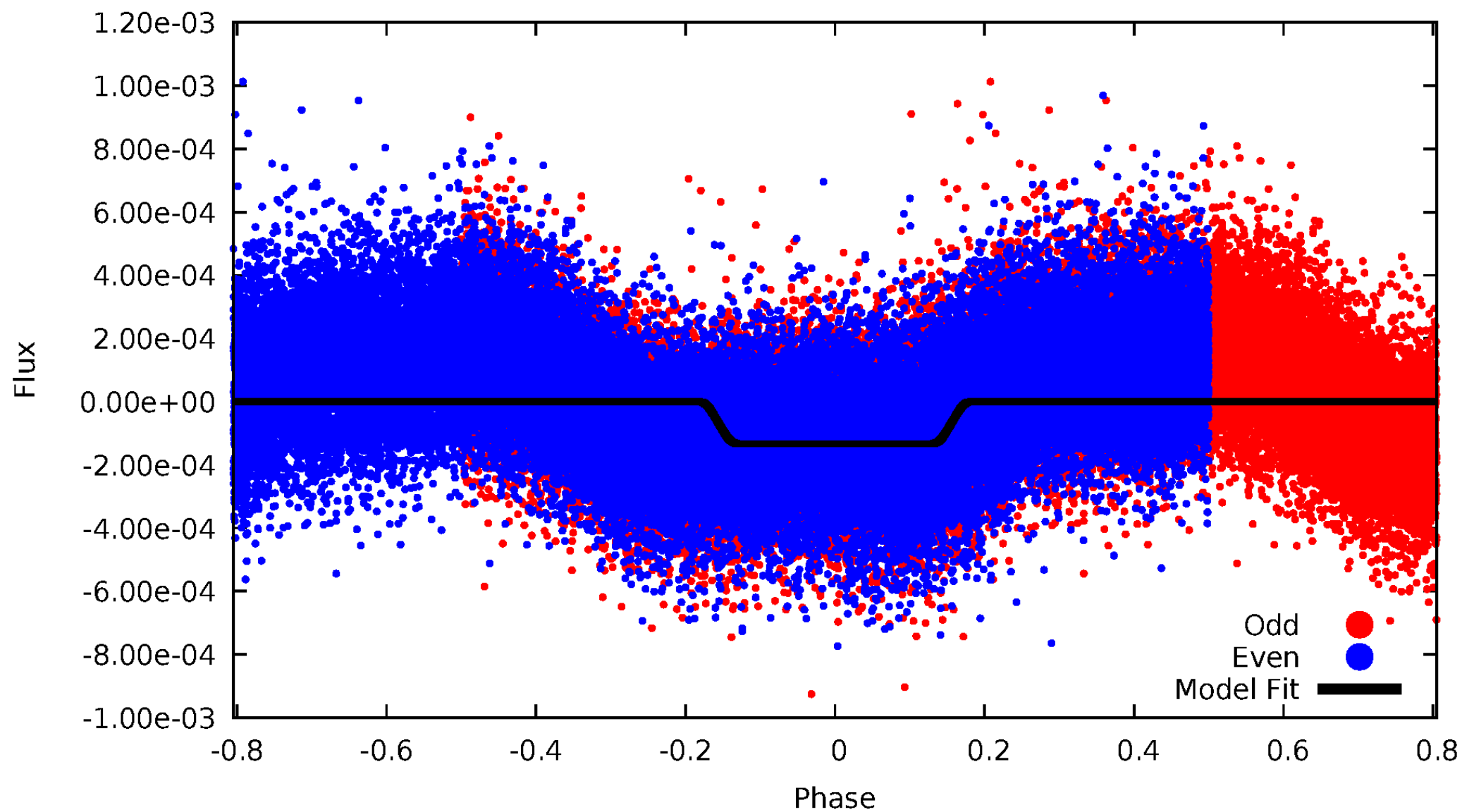
DV Odd/Even

TCE 004833050-01



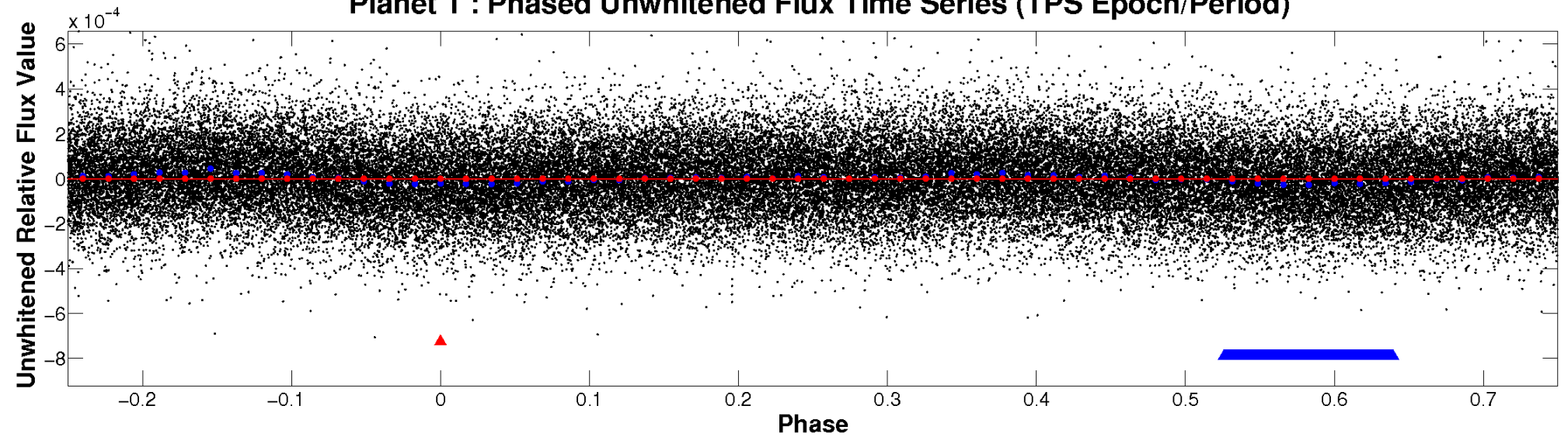
ALT Odd/Even

TCE 004833050-01

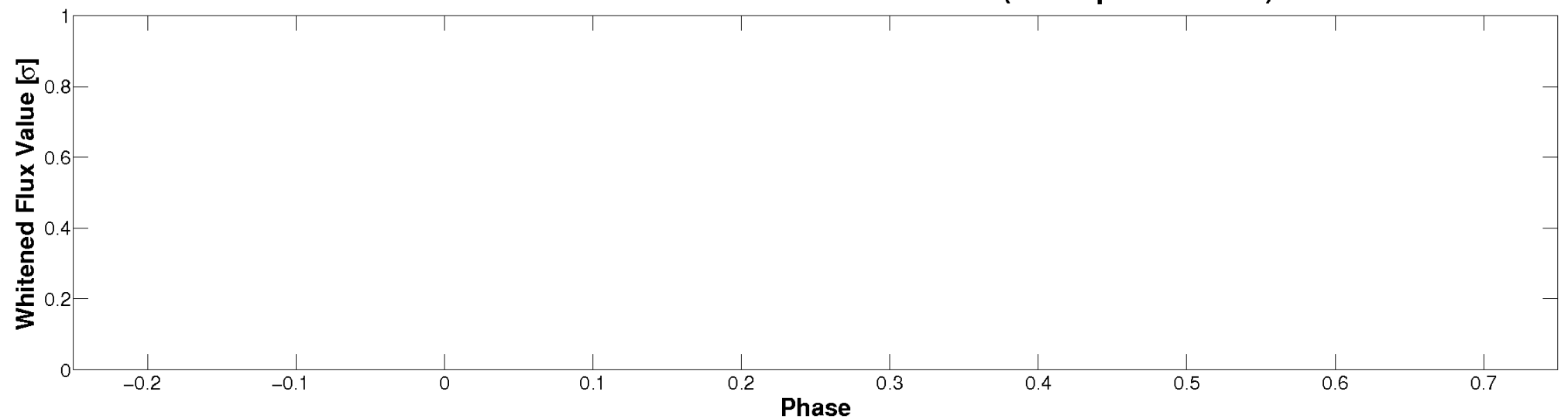


Non-Whitened Vs. Whitened Light Curve

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

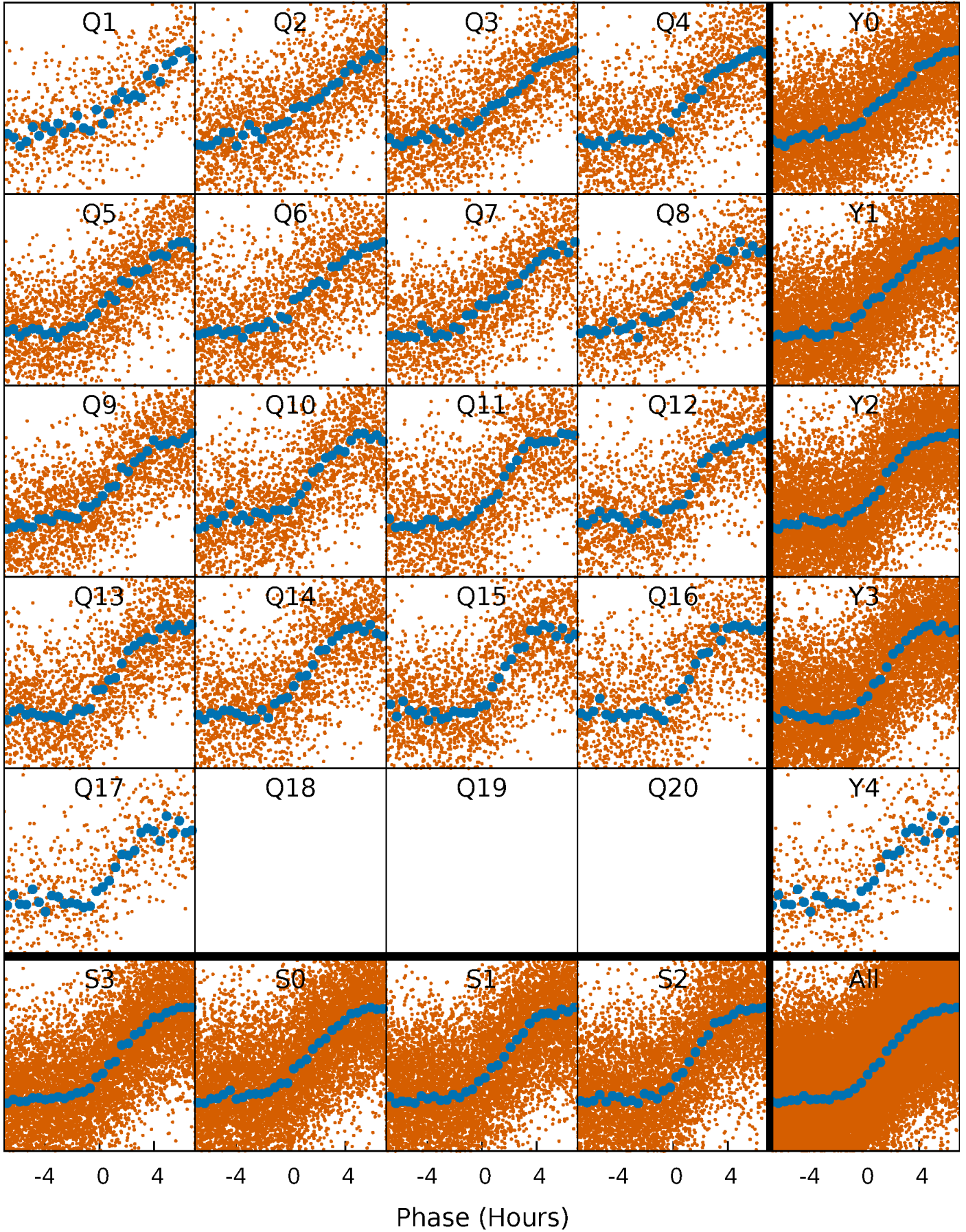


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



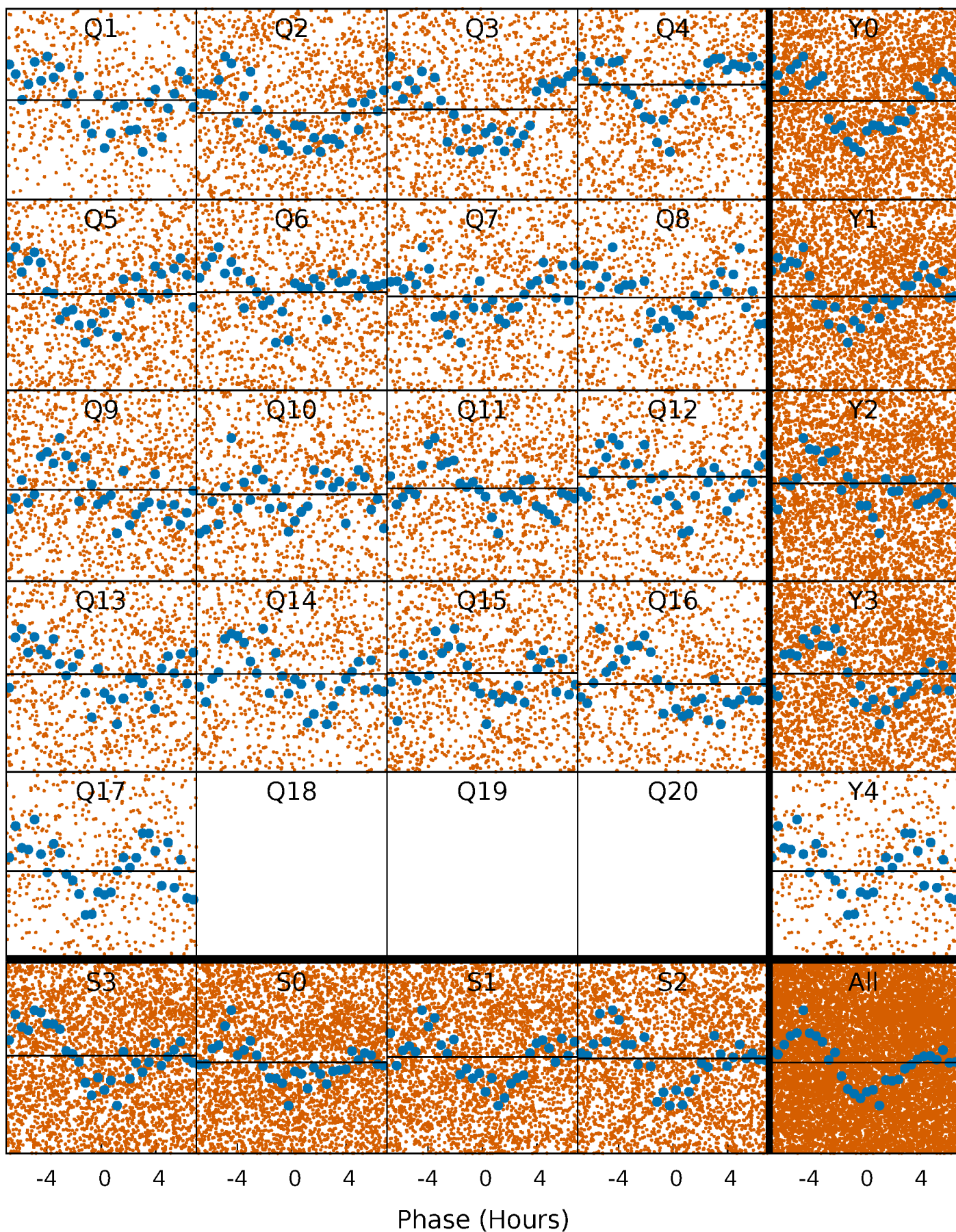
PDC Quarter-Phased Transit Curves

TCE 004833050-01 P= 1.191861 Days $T_0=132.076322$ (BKJD)



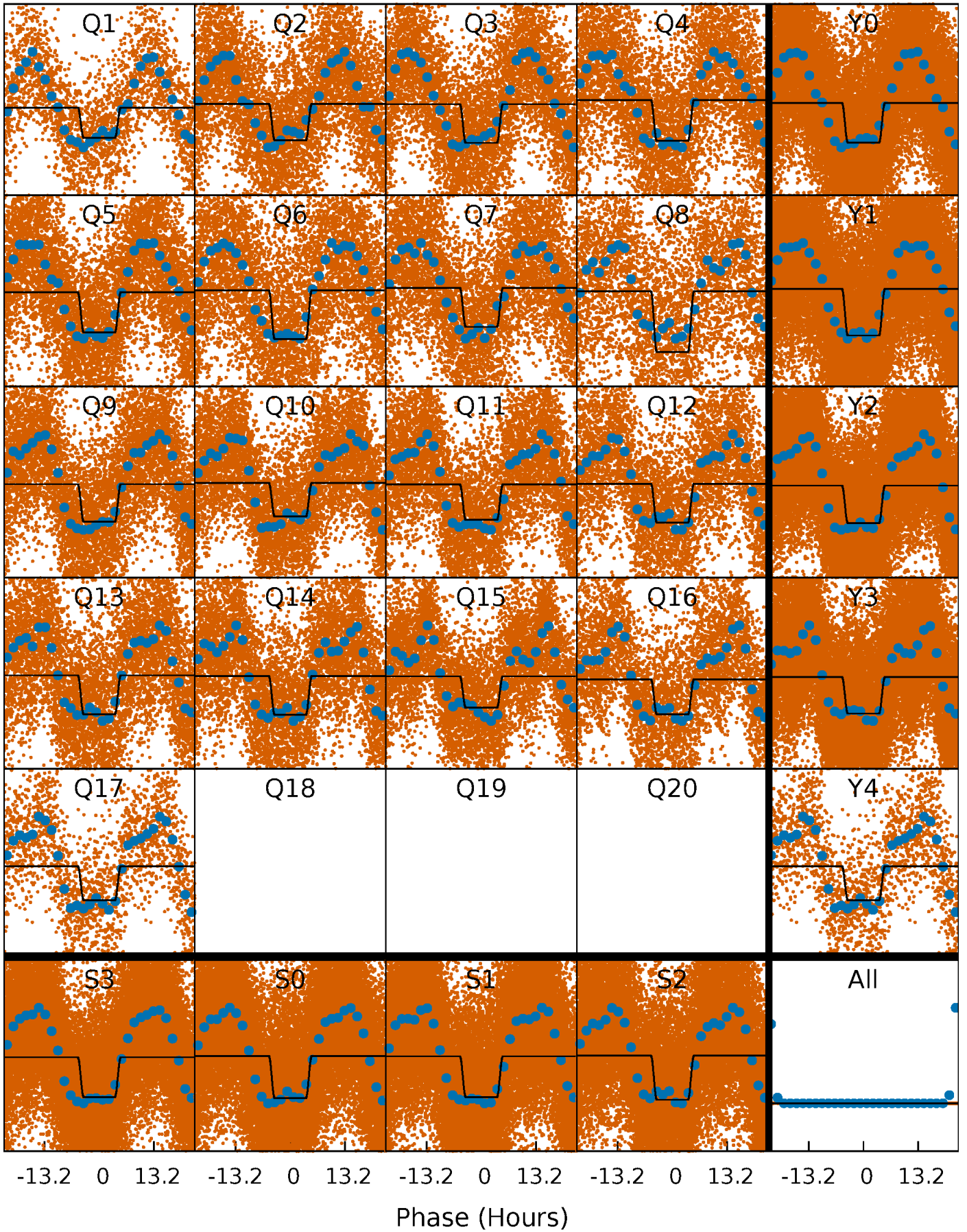
DV Quarter-Phased Transit Curves

TCE 004833050-01 P= 1.191861 Days $T_0=132.076322$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

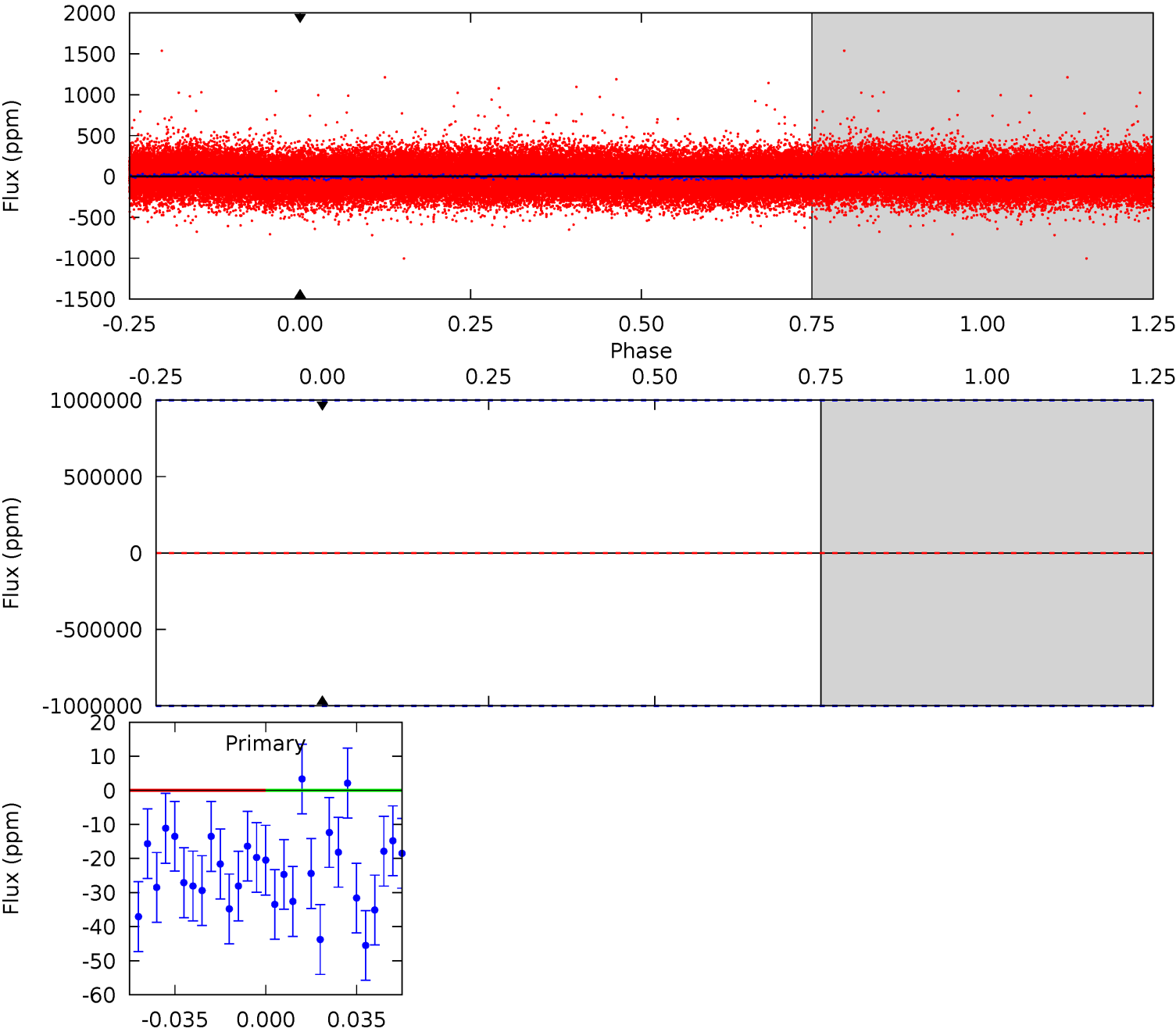
TCE 004833050-01 P= 1.191861 Days $T_0=131.912938$ (BKJD)



DV Model-Shift Uniqueness Test

004833050-01, P = 1.191861 Days, E = 130.884461 Days

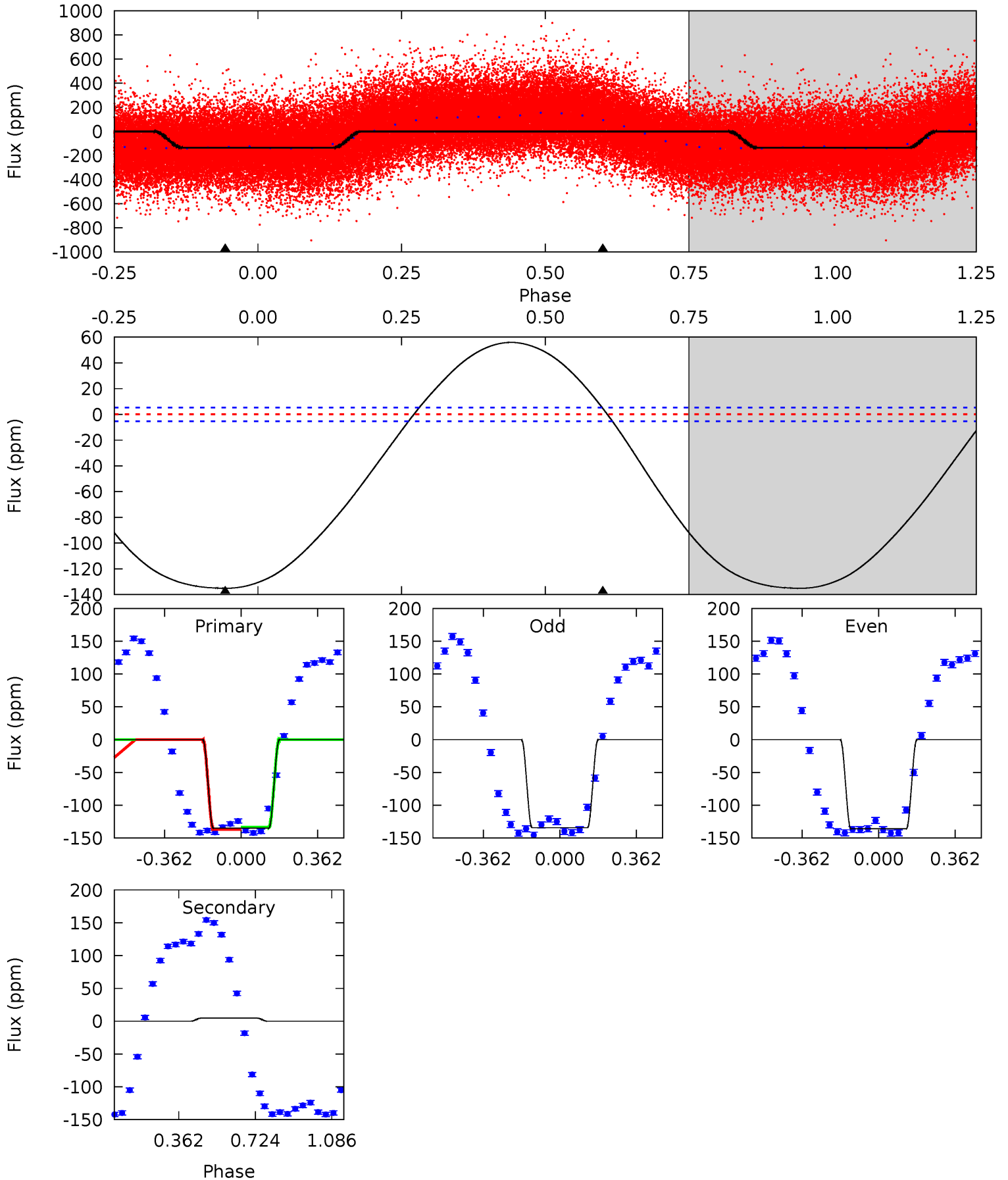
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

004833050-01, P = 1.191861 Days, E = 130.721077 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
109.1	-3.78	0	0	4.29	0.91	13.5	109.1	109.1	-3.78	-3.78	0.73	1.04	0.29	1.35



Stellar Parameters For KIC 004833050

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6684^{+213}_{-237}	$3.798^{+0.472}_{-0.088}$	$-0.380^{+0.300}_{-0.300}$	$2.532^{+0.528}_{-1.321}$	$1.468^{+0.179}_{-0.389}$	$0.127^{+0.650}_{-0.047}$
	+3%/-4%	+12%/-2%	+79%/-79%	+21%/-52%	+12%/-26%	+510%/-37%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004833050-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$17.90^{+20.13}_{-12.24}$	3980^{+309}_{-498}	4138^{+26000}_{-32726}	$0.980^{+195.537}_{-190.937}$
Alt.	5 ± 1	$17.54^{+19.76}_{-12.15}$	3988^{+339}_{-484}	-3741^{+302}_{-237}	$-0.005^{+0.004}_{-0.053}$

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

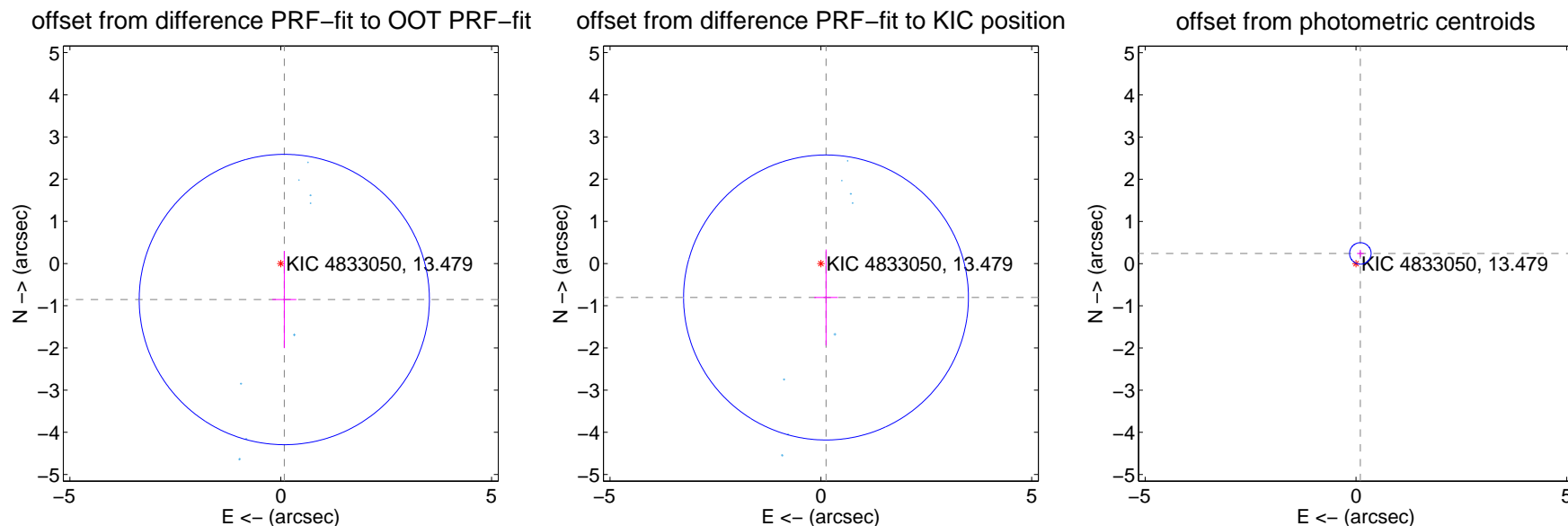
DV Centroid Data

Supplemental centroid analysis for 004833050-01. Kepler magnitude: 13.48. Transit SNR -1.00

There are 9 quarters with good PRF difference image offsets

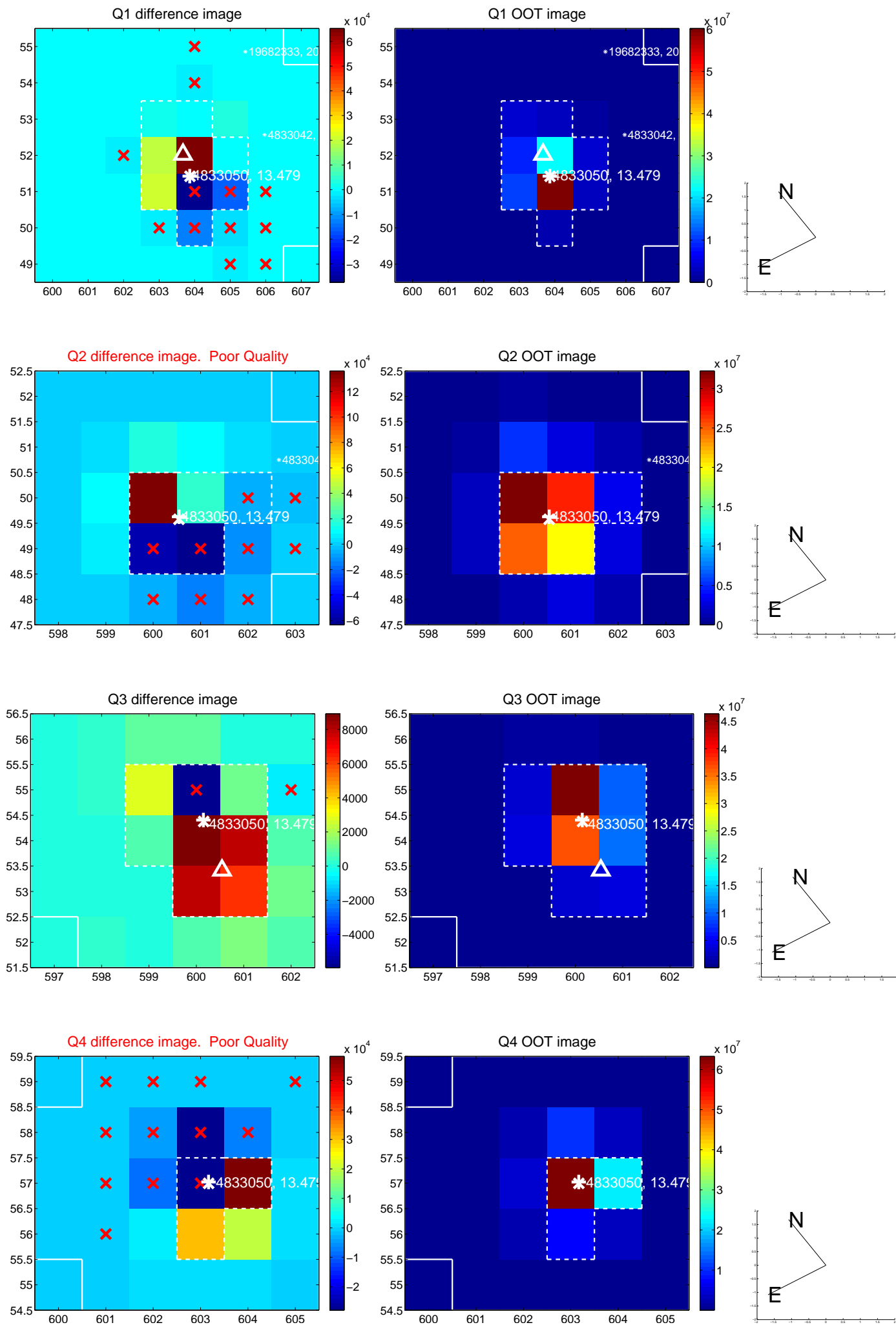
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.857 ± 1.147	0.75	-0.084 ± 0.286	-0.853 ± 1.152
PRF-fit source offset from KIC position	0.814 ± 1.126	0.72	-0.122 ± 0.279	-0.804 ± 1.138
photometric centroid source offset	0.26 ± 0.09	3.09	-0.10 ± 0.08	0.24 ± 0.09

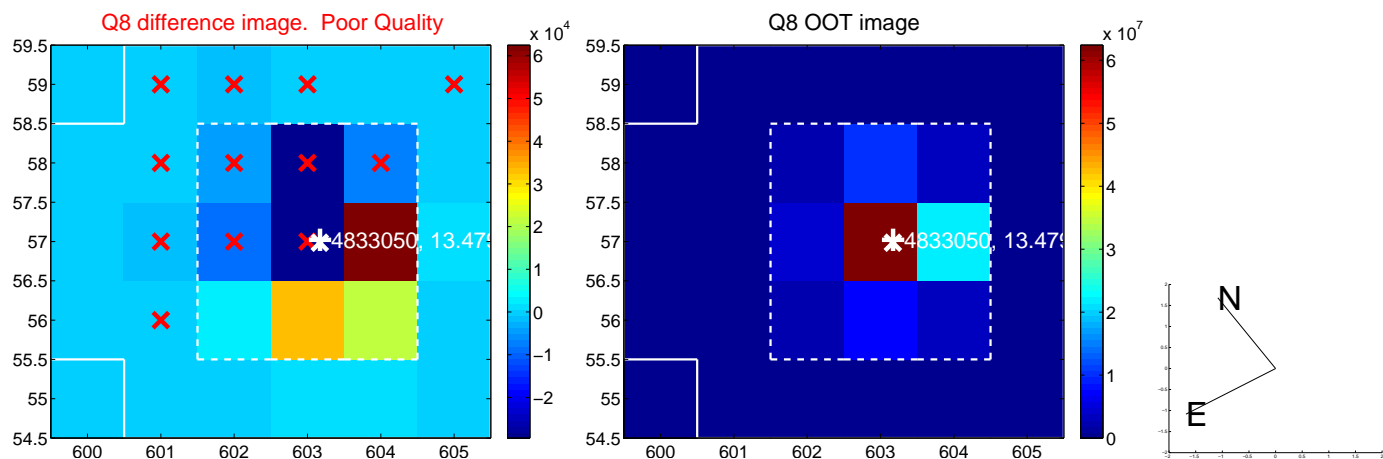
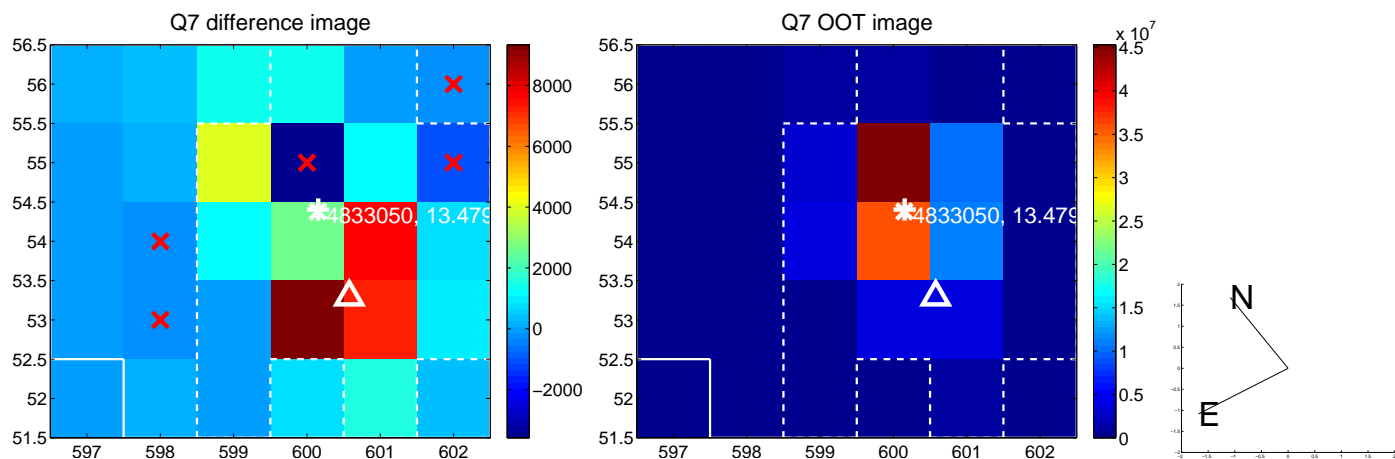
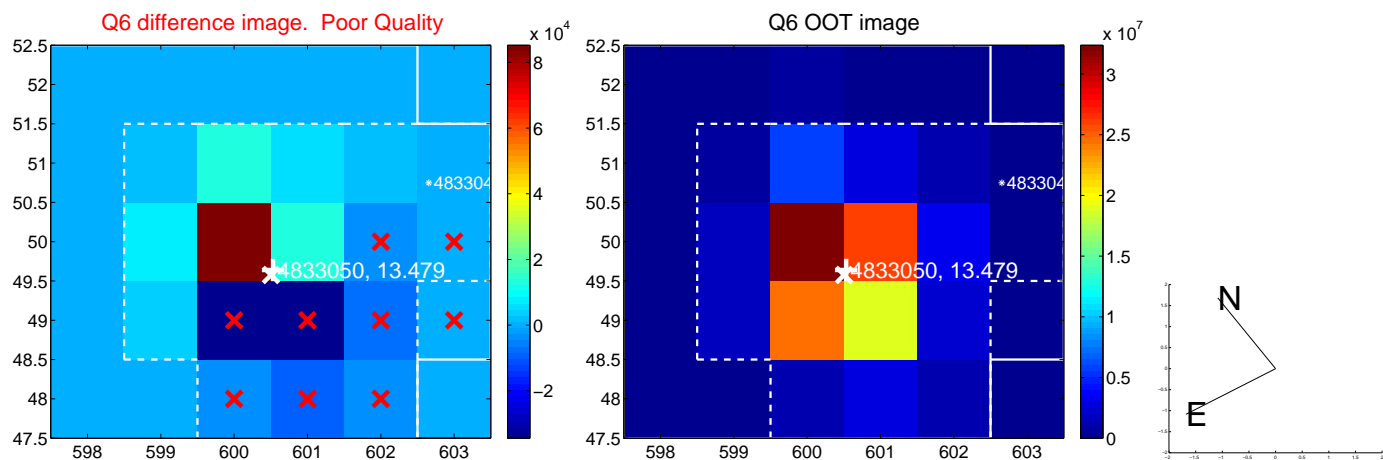
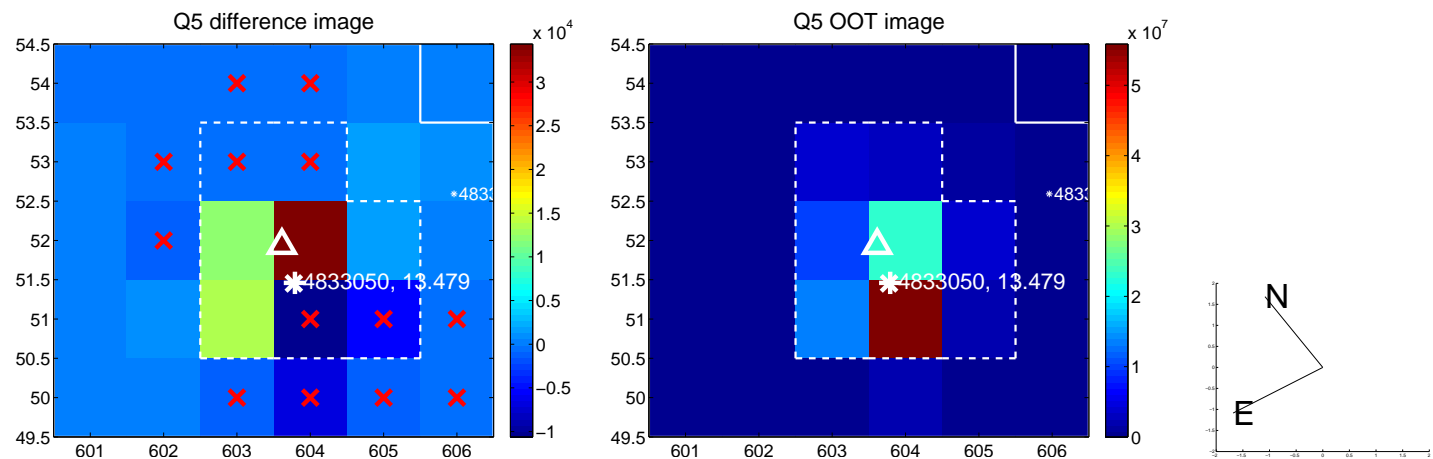


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

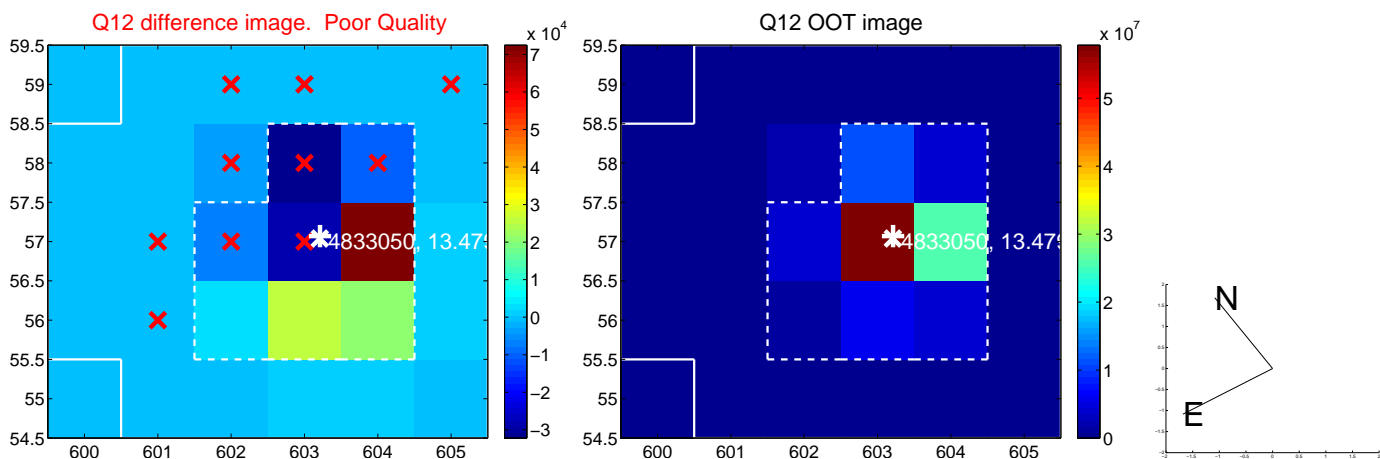
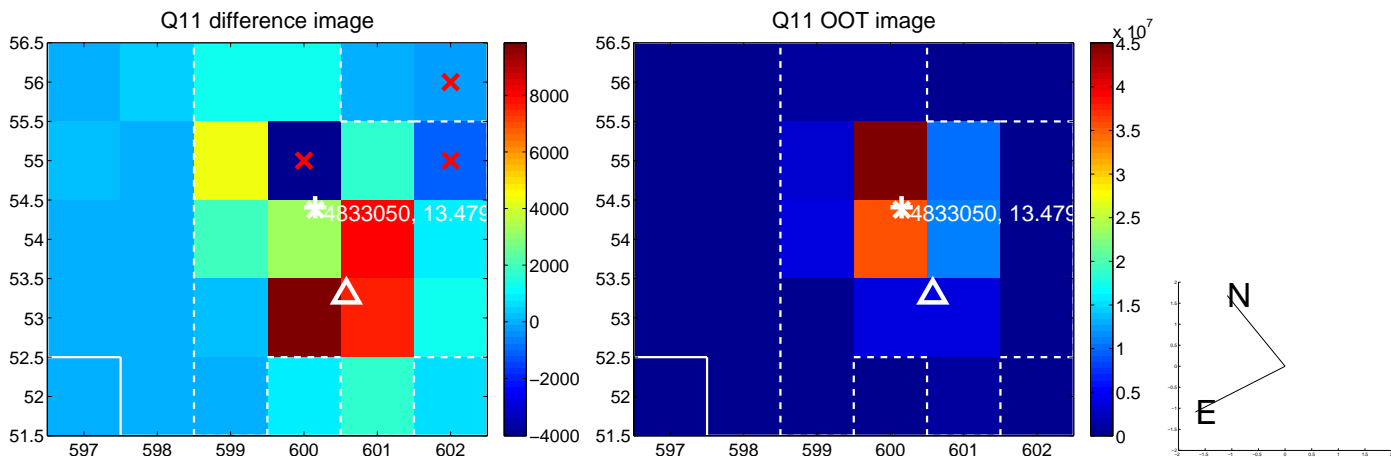
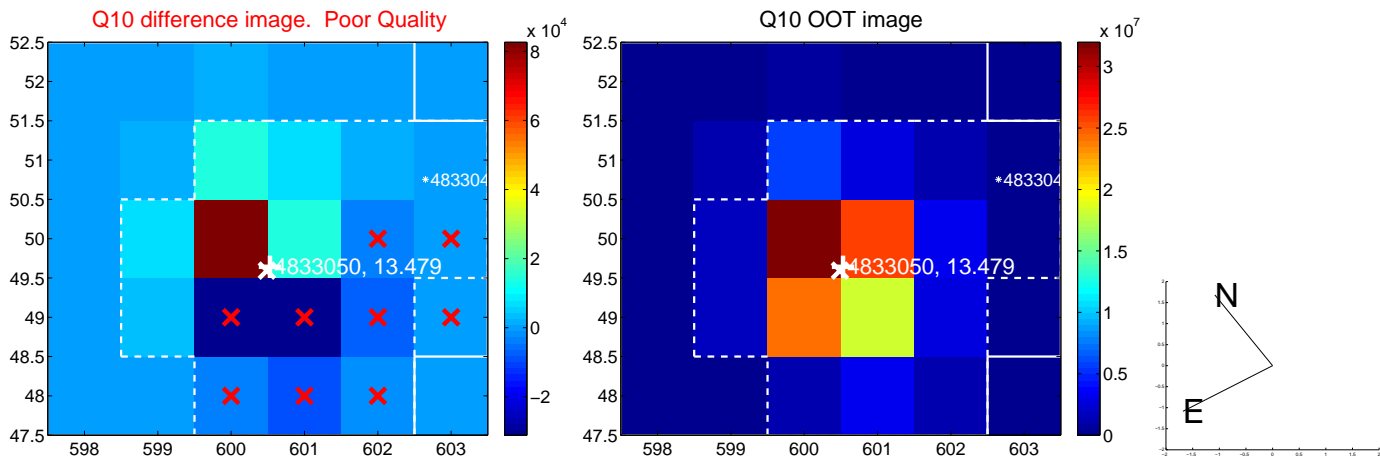
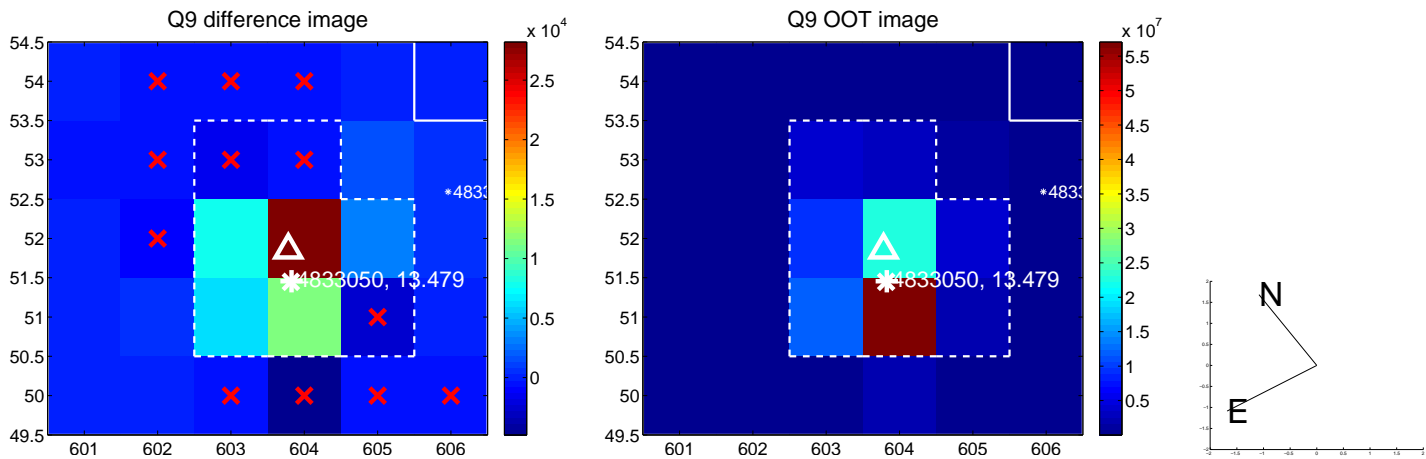
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



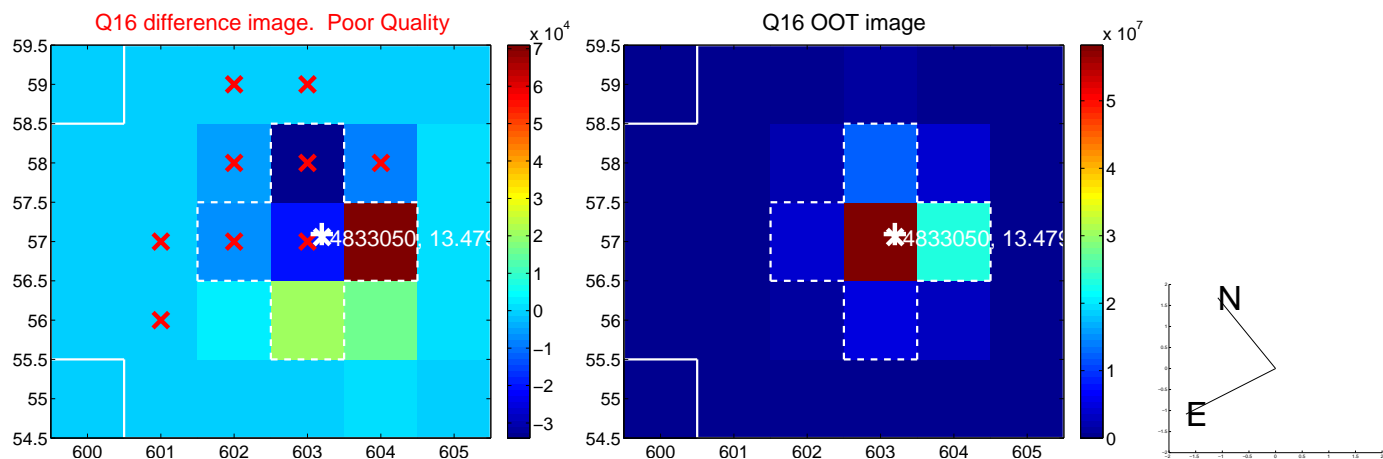
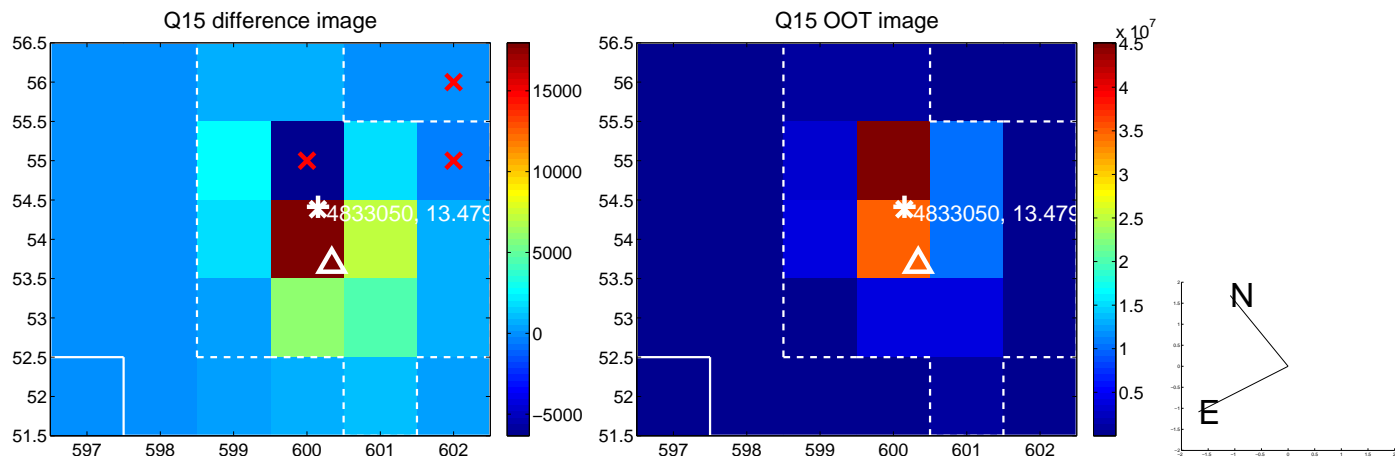
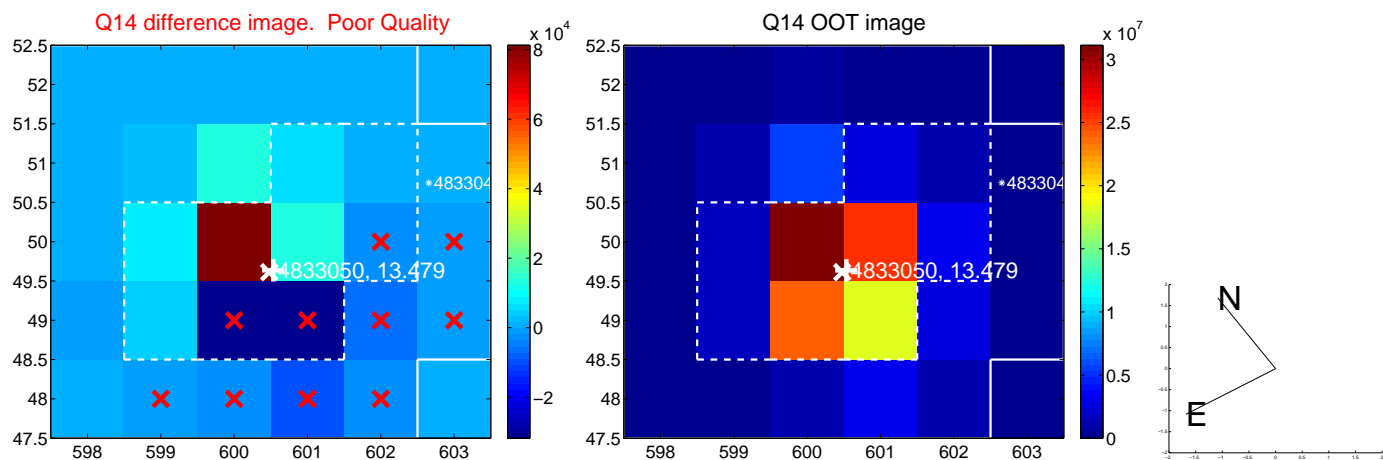
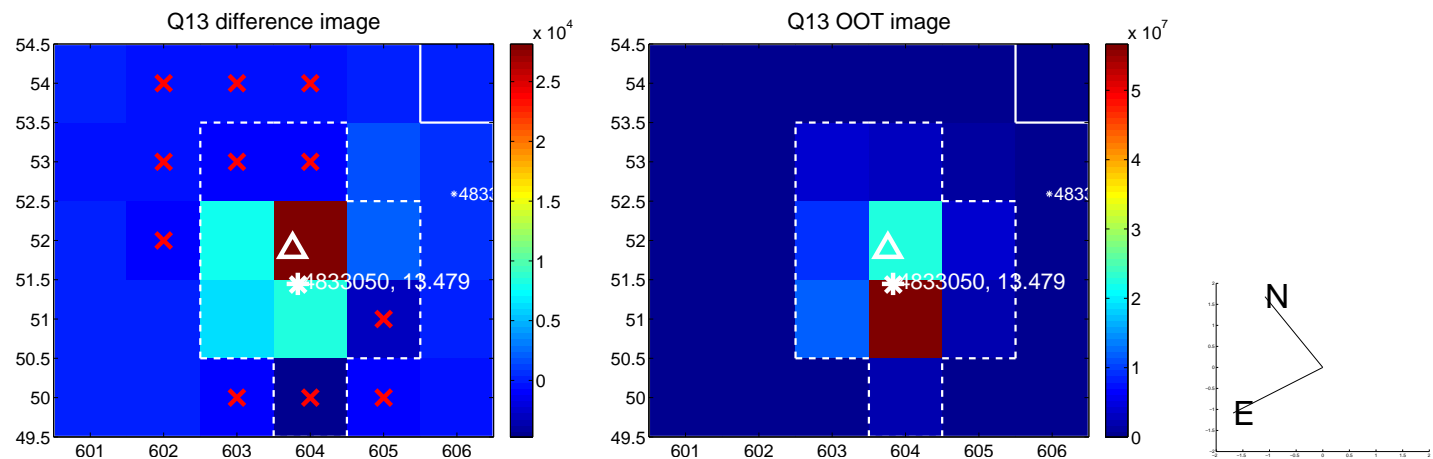
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



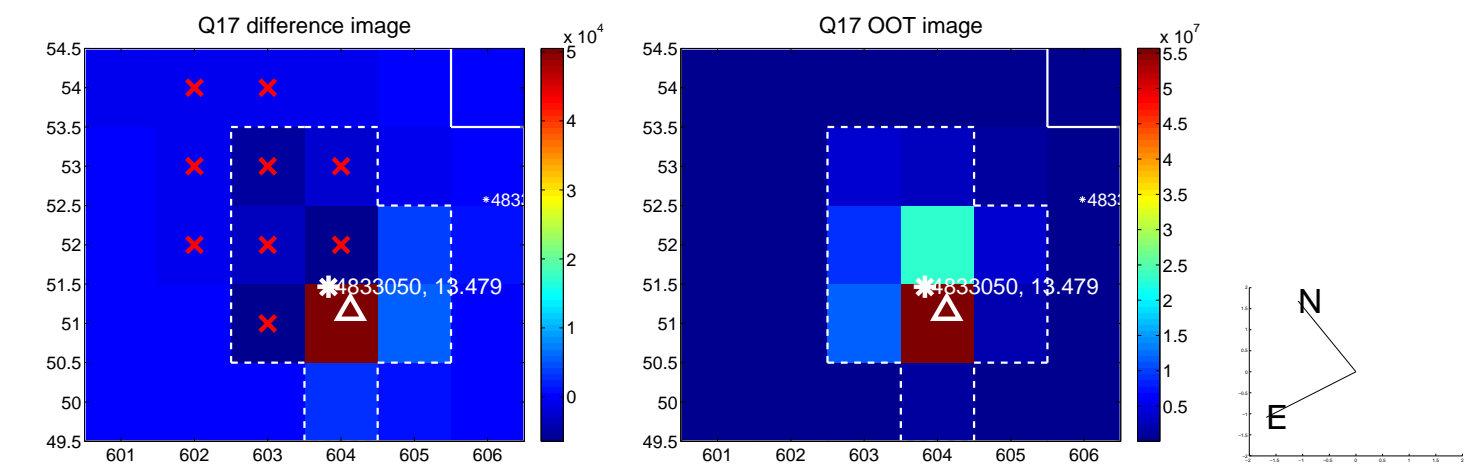
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



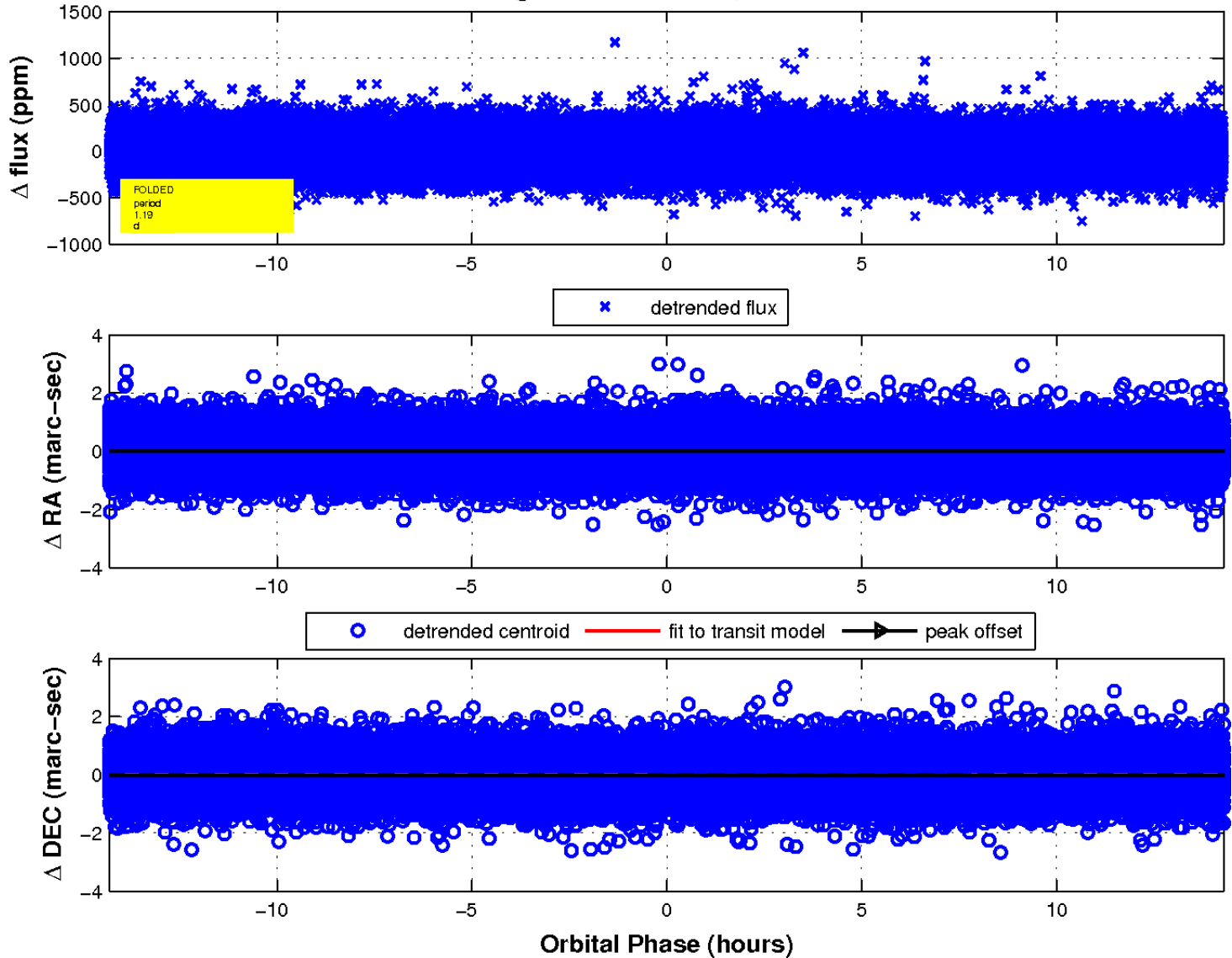
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

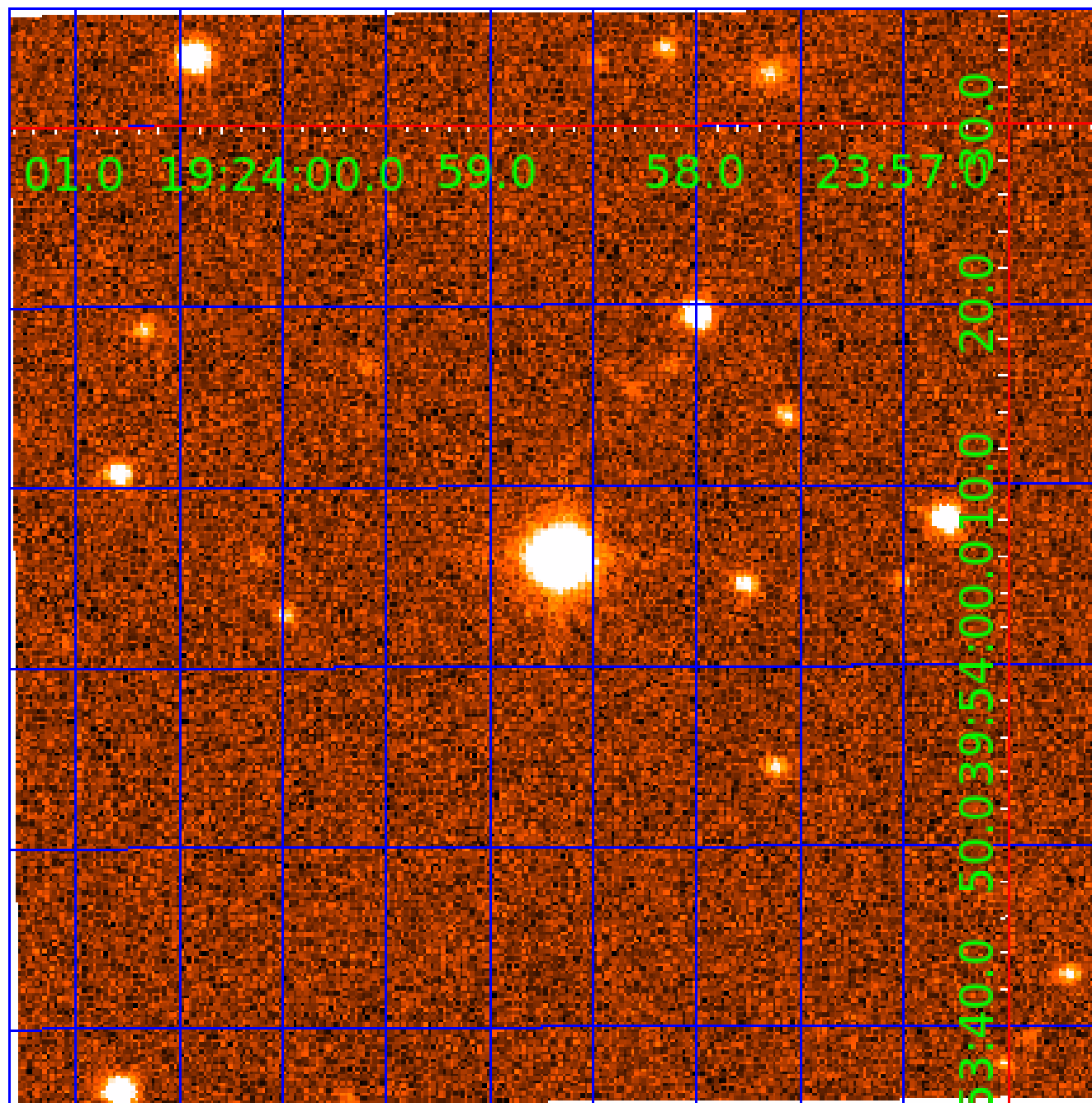


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 004833050

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})
004833050-01	OBS	No	1.191861	132.076322	156.5	3.500	8.9	-1.0	2.53	6684	3.19	18325.19
004833050-02	OBS	No	1.191750	131.646596	25.4	3.875	10.7	11.3	2.53	6684	1.41	18327.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004833050-01	OBS	FP	0.00	1	0	1	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_NOFITS—HALO_GHOST
004833050-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

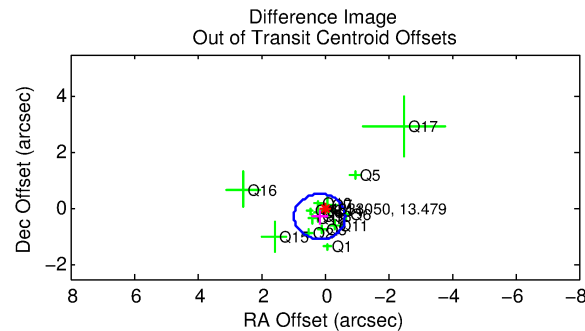
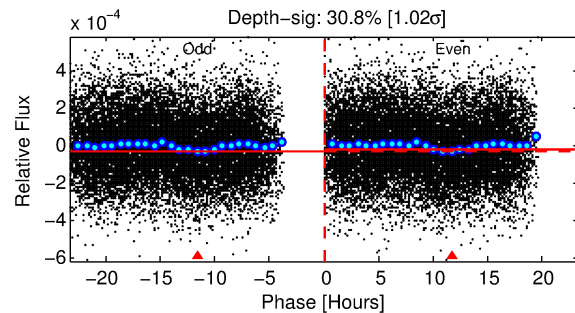
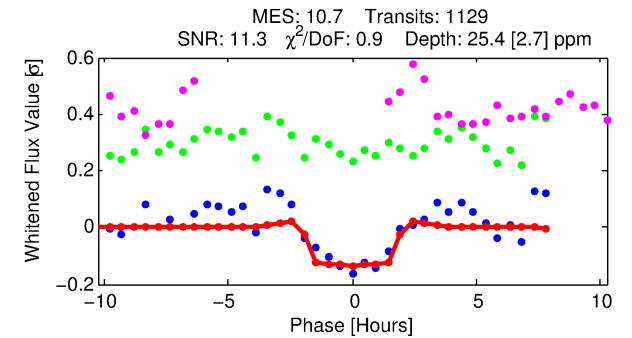
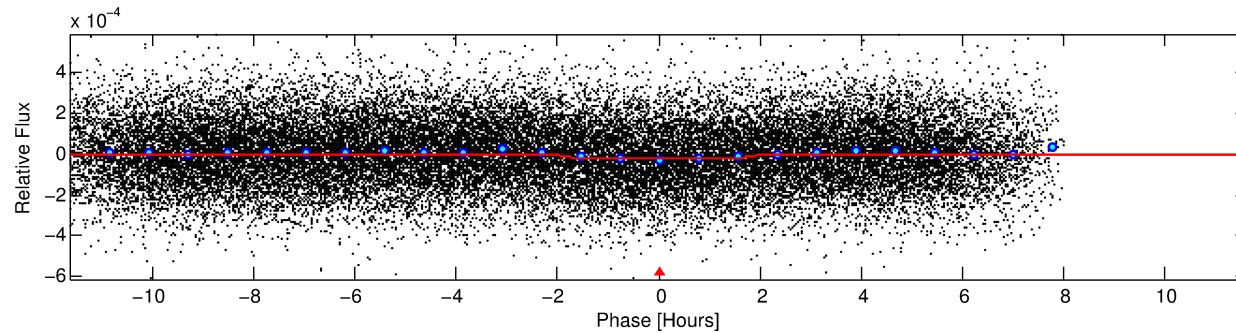
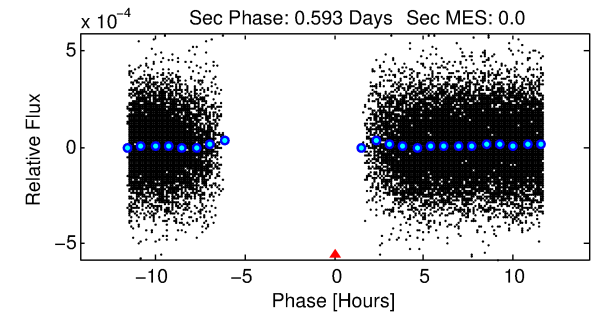
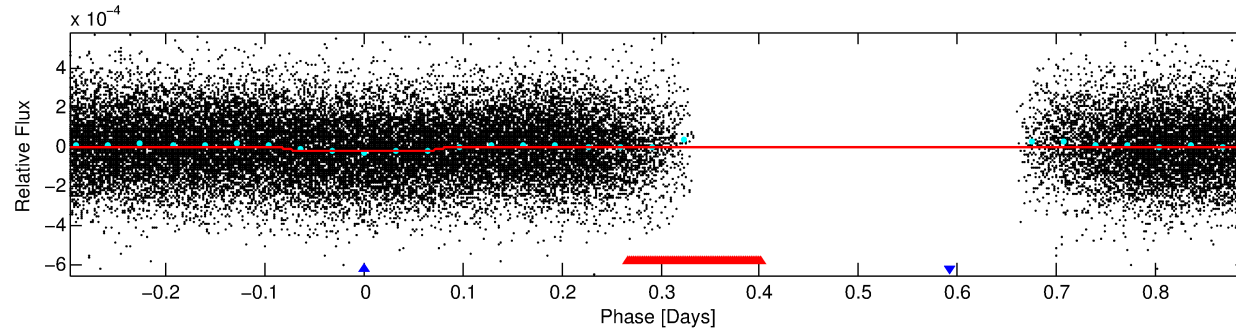
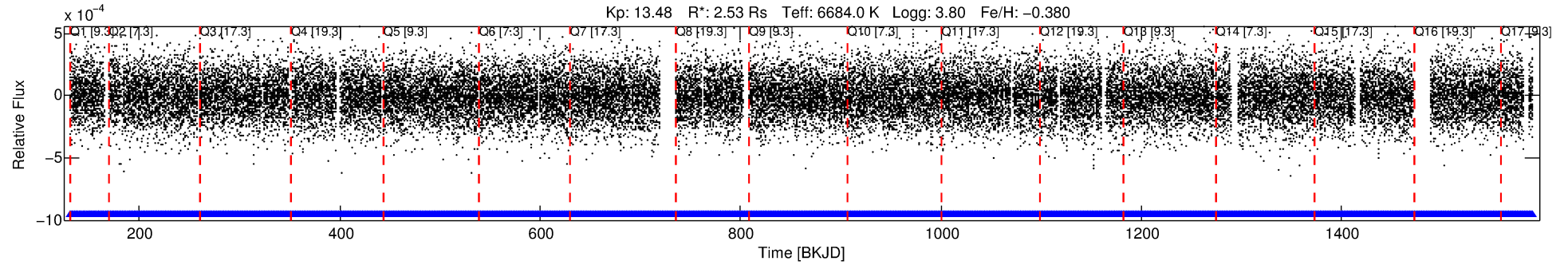
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004833050-02

No Significant Match Found

DV One-Page Summary

KIC: 4833050 Candidate: 2 of 2 Period: 1.192 d



DV Fit Results:

Period = 1.19175 [0.00001] d
Epoch = 131.6466 [0.0035] BKJD
Rp/R* = 0.0051 [0.0015]
a/R* = 1.66 [1.80]
b = 0.81 [0.74]
Seff = 18327.46 [14957.49]
Teq = 2967 [605] K
Rp = 1.41 [0.84] Re
a = 0.0250 [0.0126] AU
Ag = N/A
Teffp = N/A

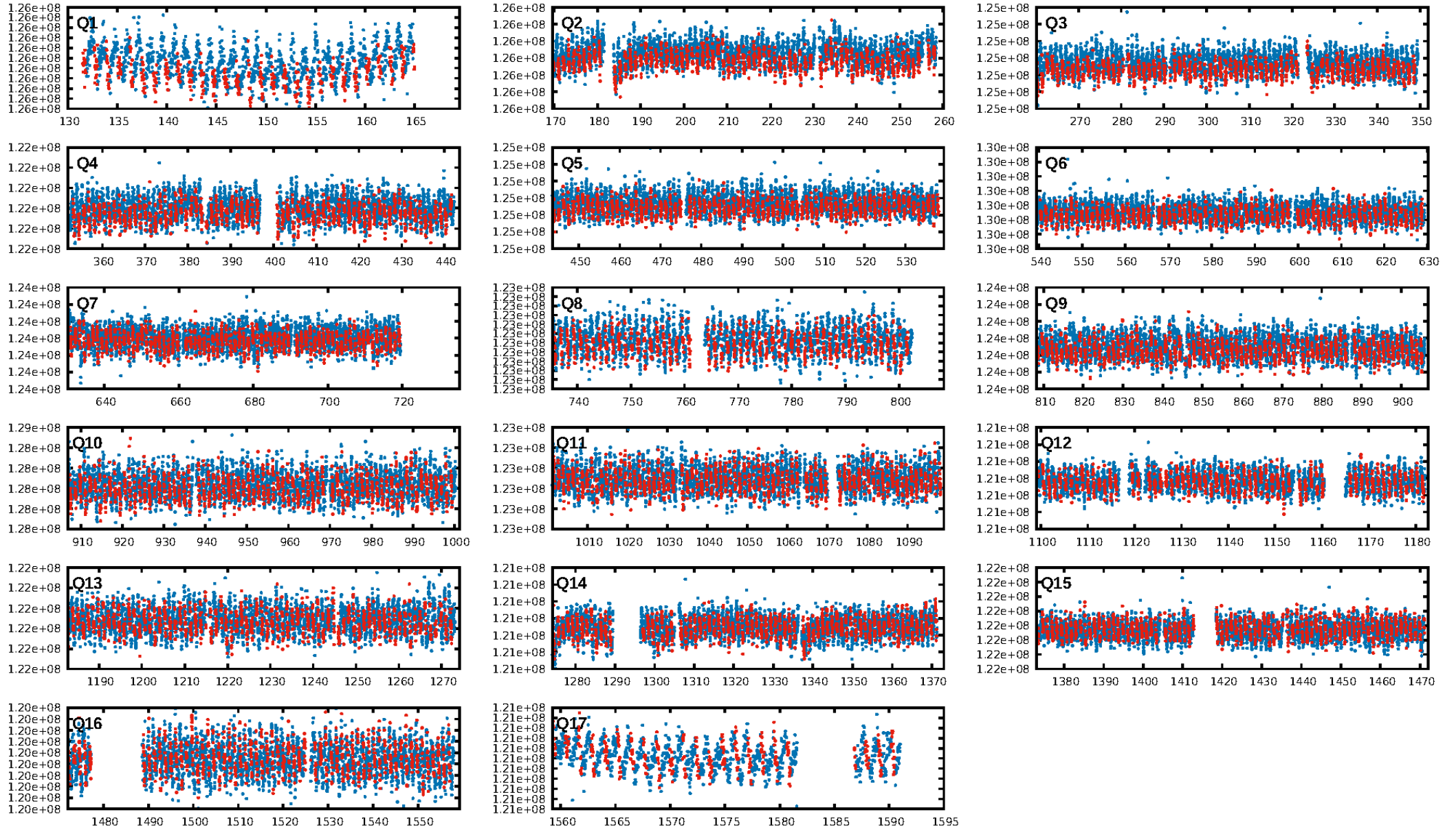
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.91e-19
RollingBand-fgt: 1.00 [1077/1077]
GhostDiagnostic-chr: 0.9953
Centroid-sig: 1.3%
Centroid-so: 1.235 arcsec [1.76σ]
OotOffset-rm: 0.320 arcsec [1.19σ]
KicOffset-rm: 0.195 arcsec [0.71σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 0.00 [0/17]

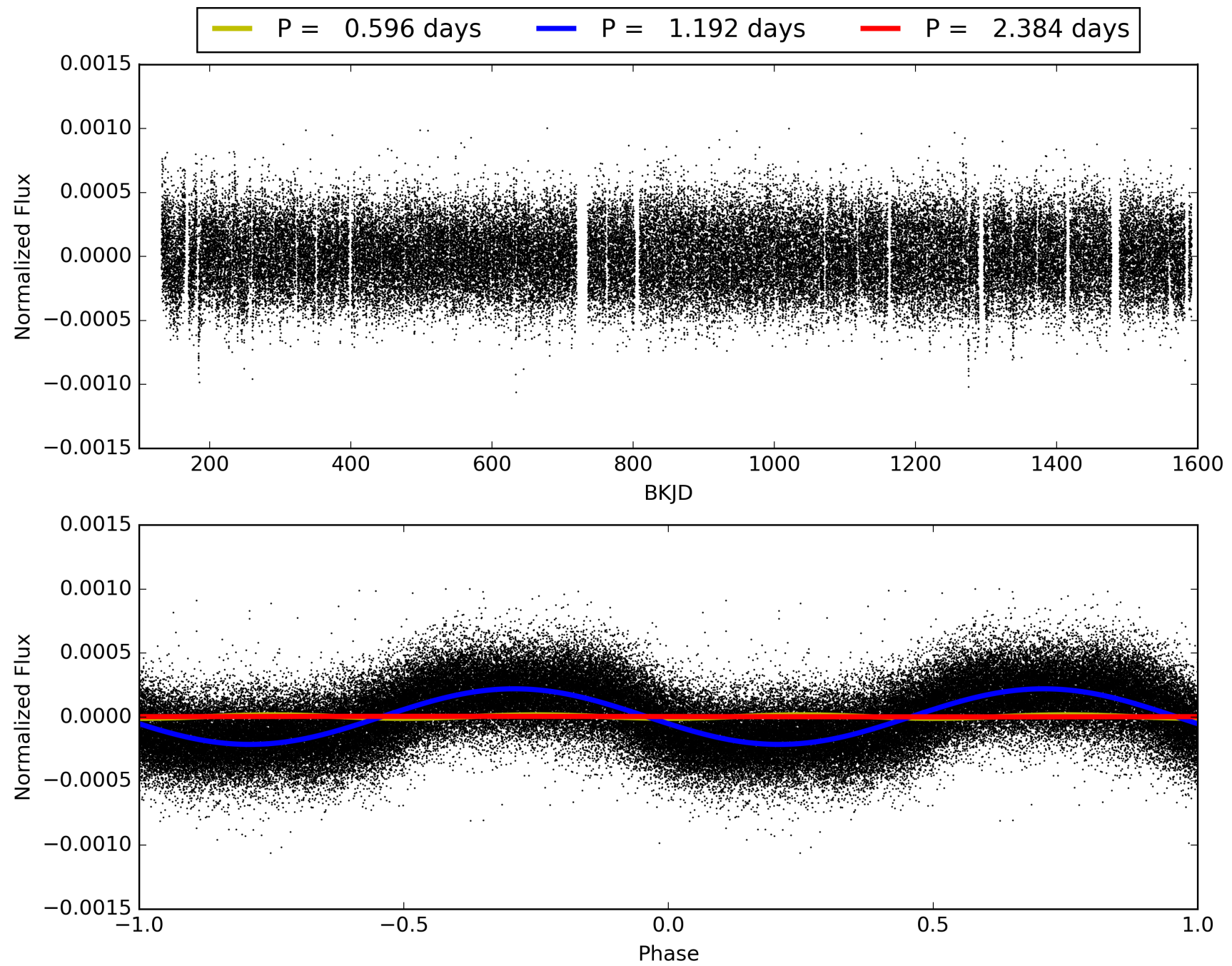
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:47:15 Z

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

TCE 004833050-02, PDC Light Curves

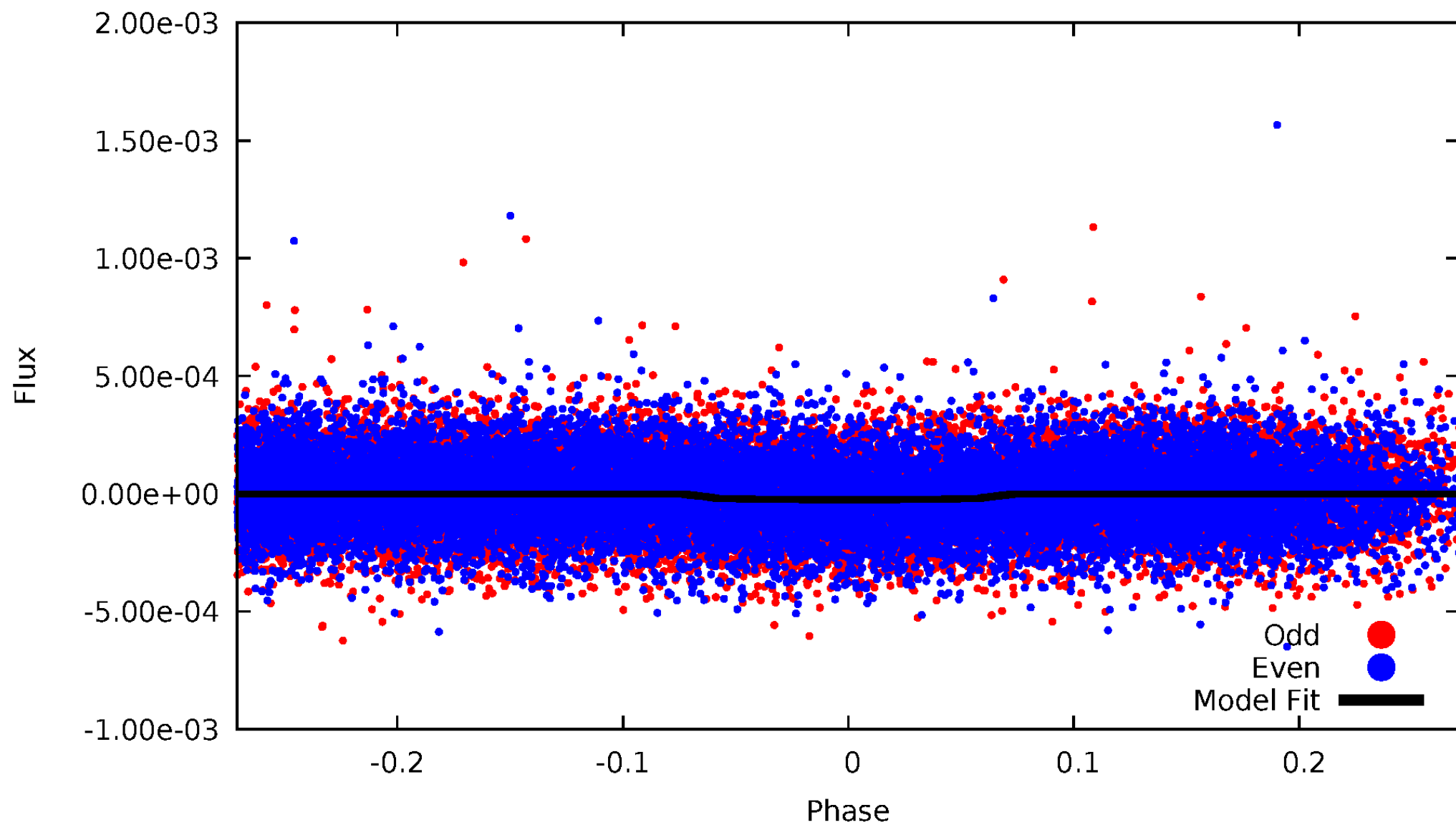


TCE 004833050-02



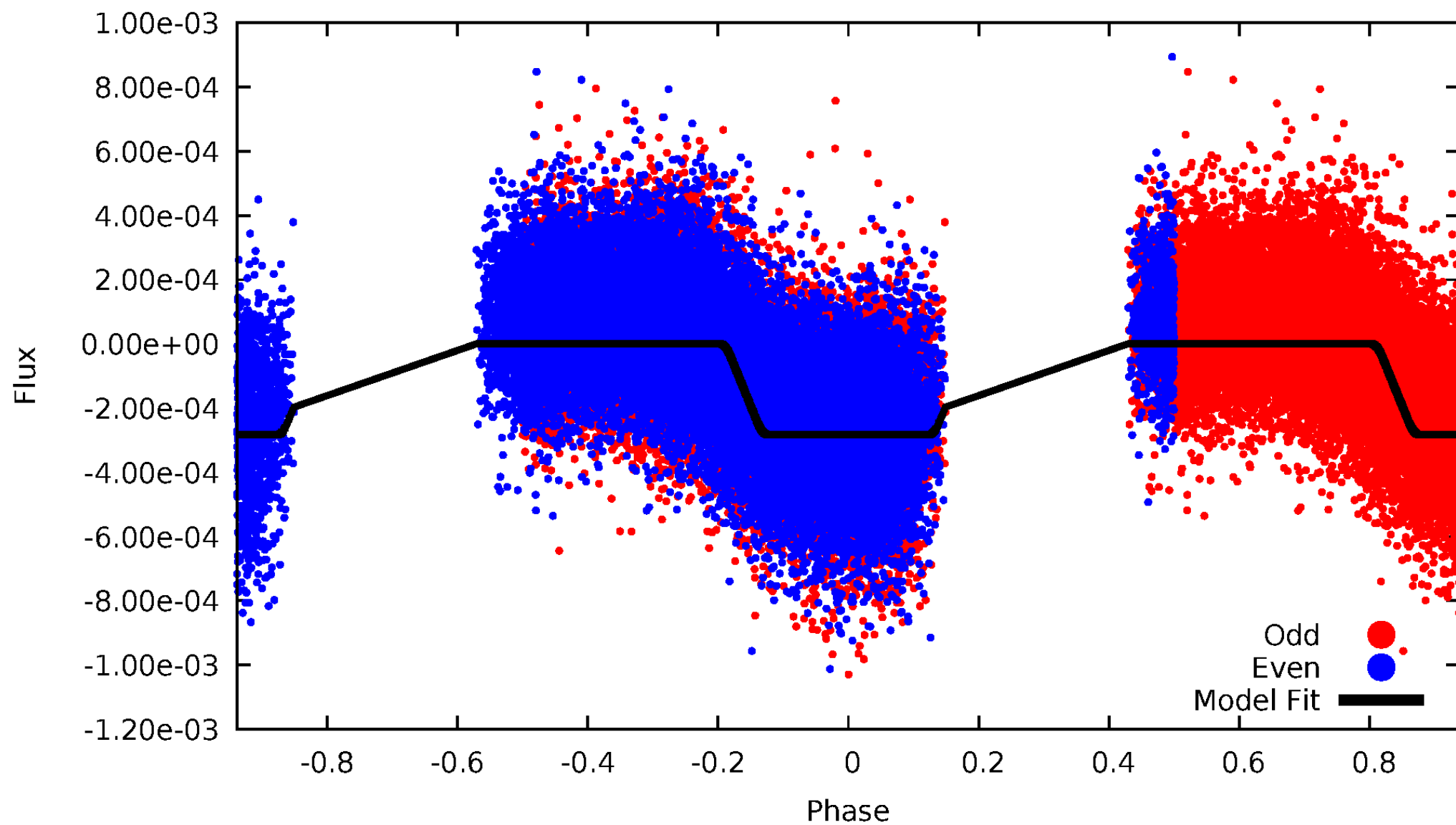
DV Odd/Even

TCE 004833050-02



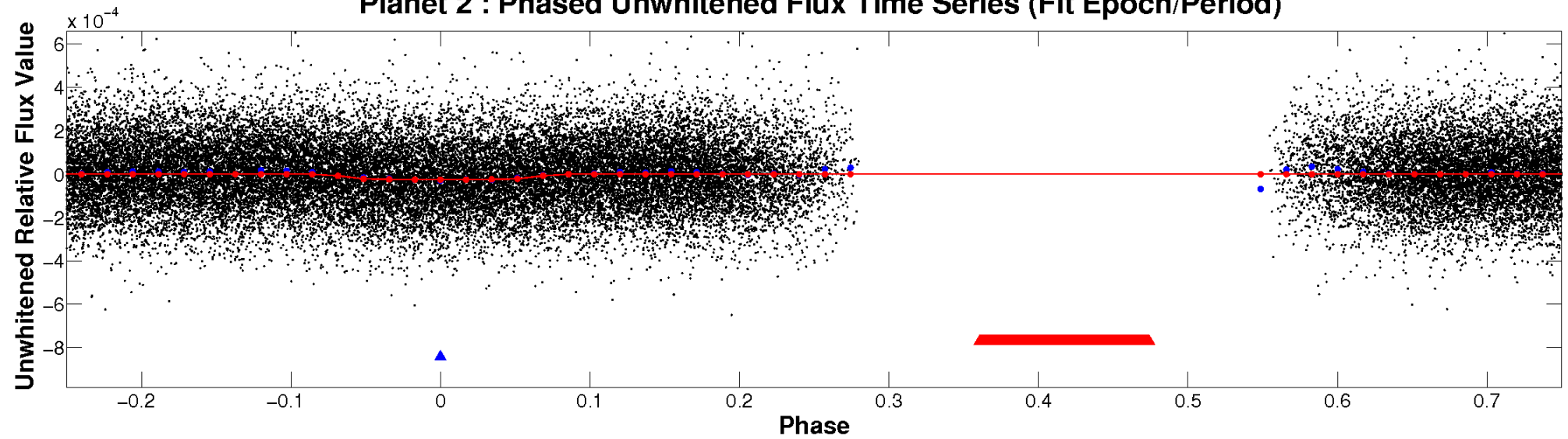
ALT Odd/Even

TCE 004833050-02

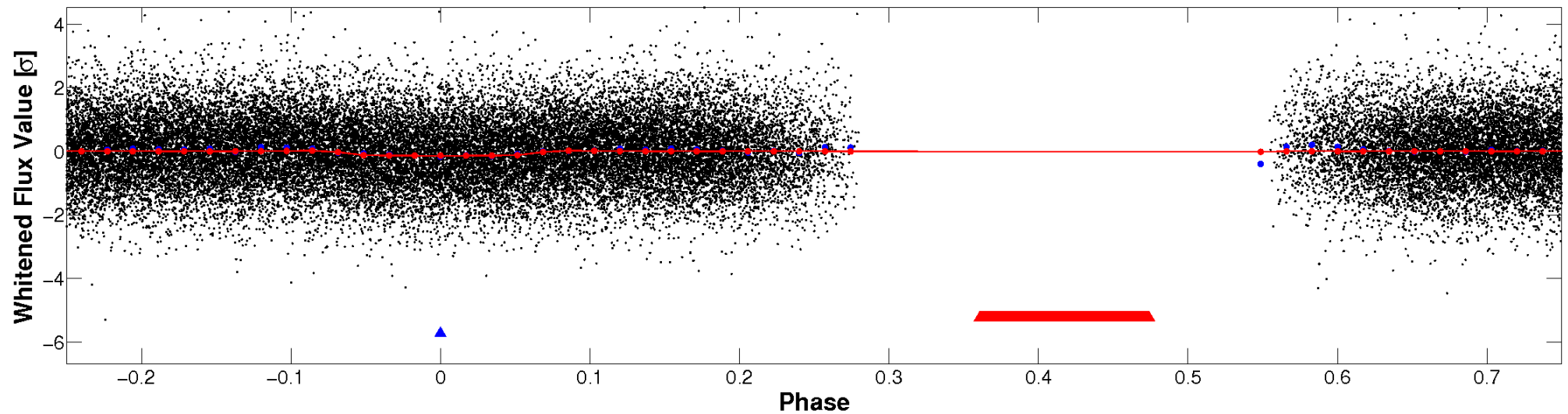


Non-Whitened Vs. Whitened Light Curve

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

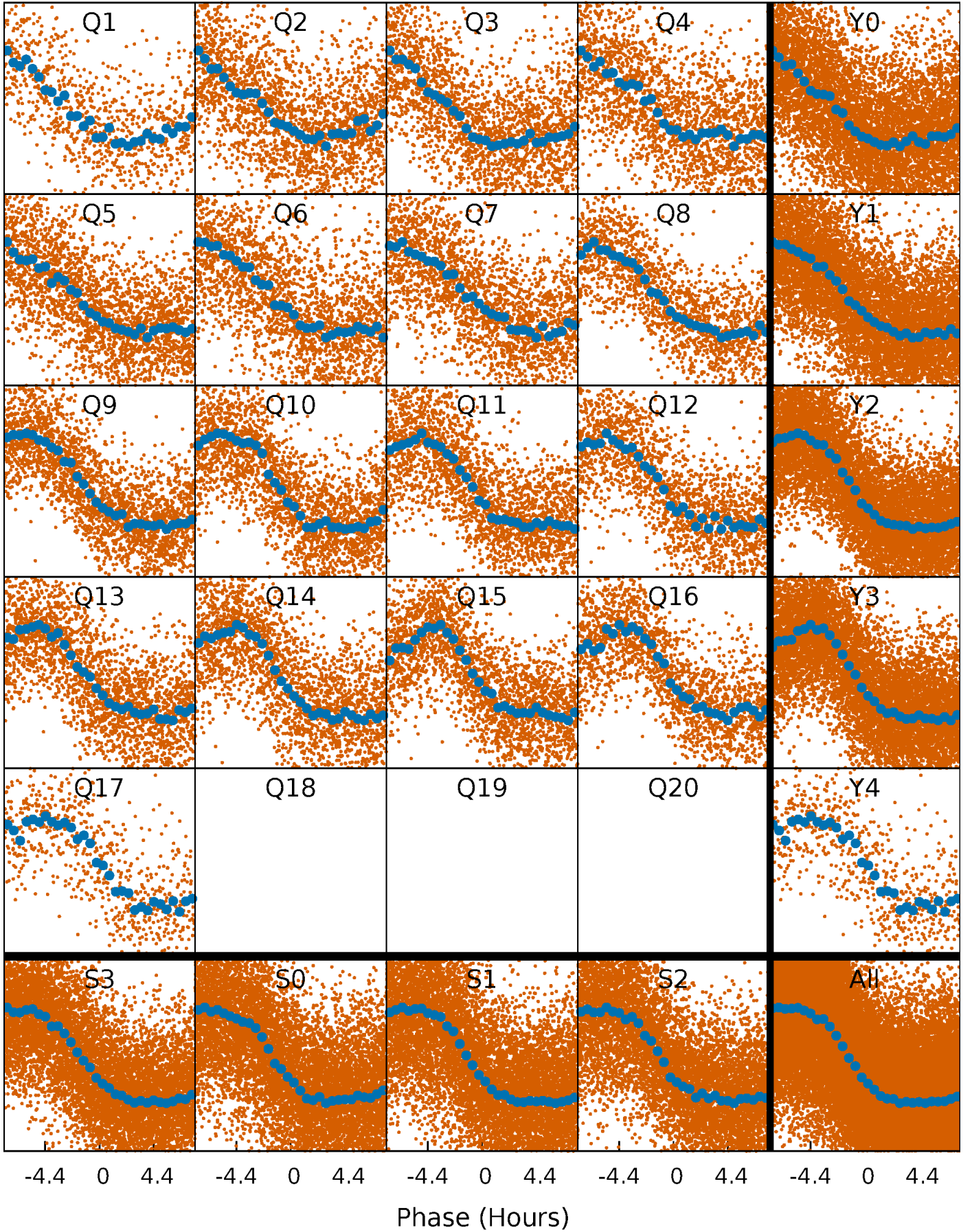


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



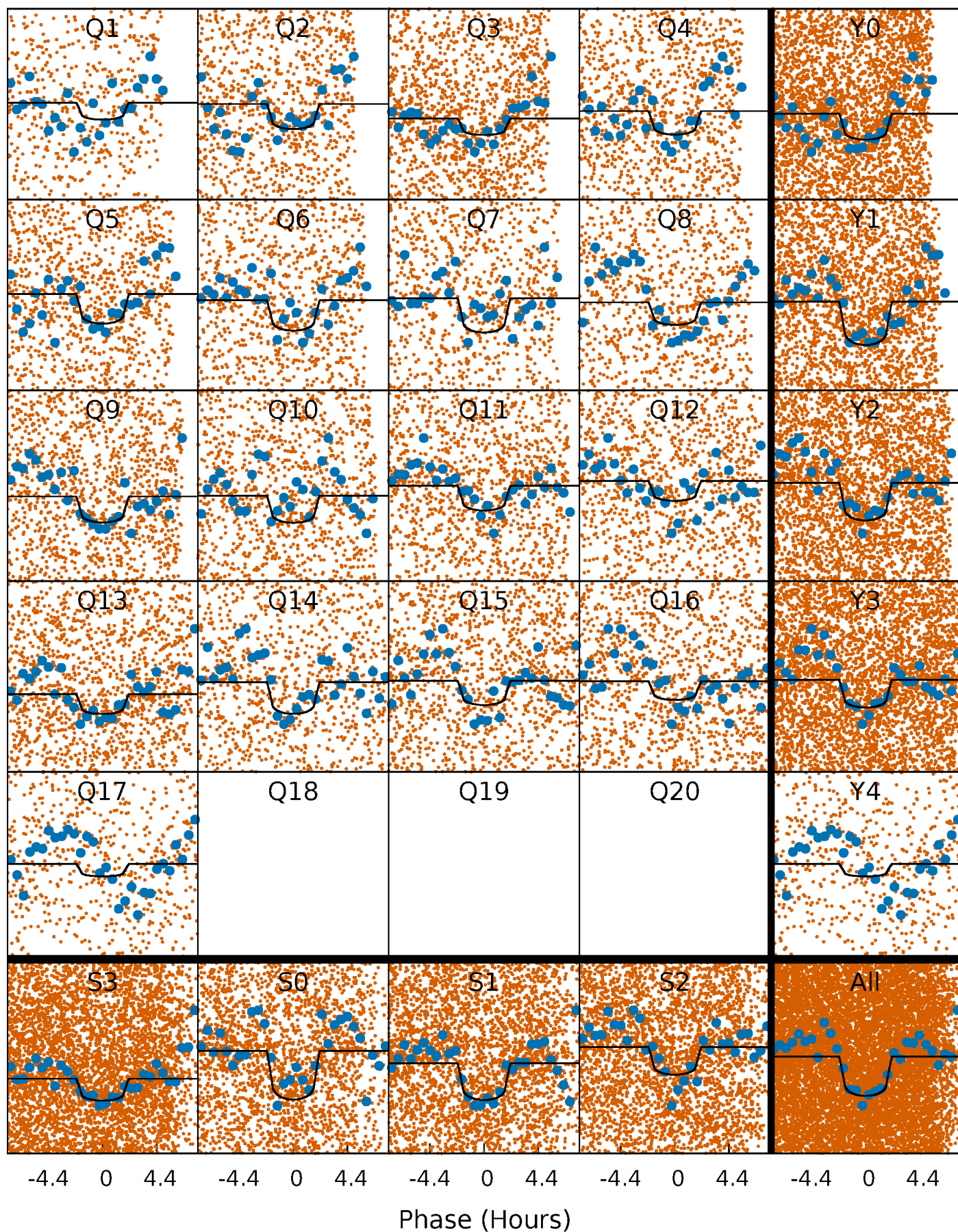
PDC Quarter-Phased Transit Curves

TCE 004833050-02 P= 1.191750 Days $T_0=131.646596$ (BKJD)



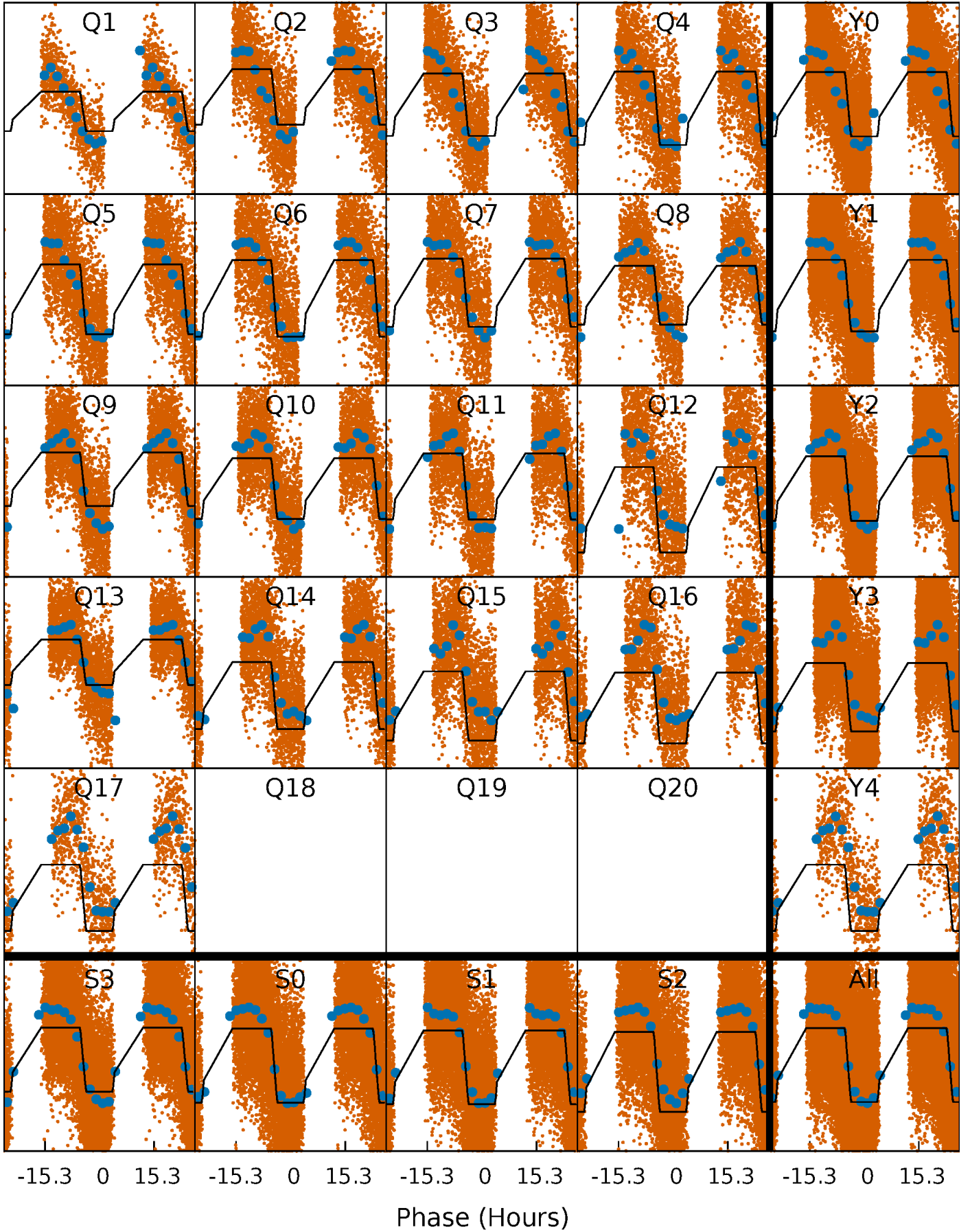
DV Quarter-Phased Transit Curves

TCE 004833050-02 P= 1.191750 Days $T_0=131.646596$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

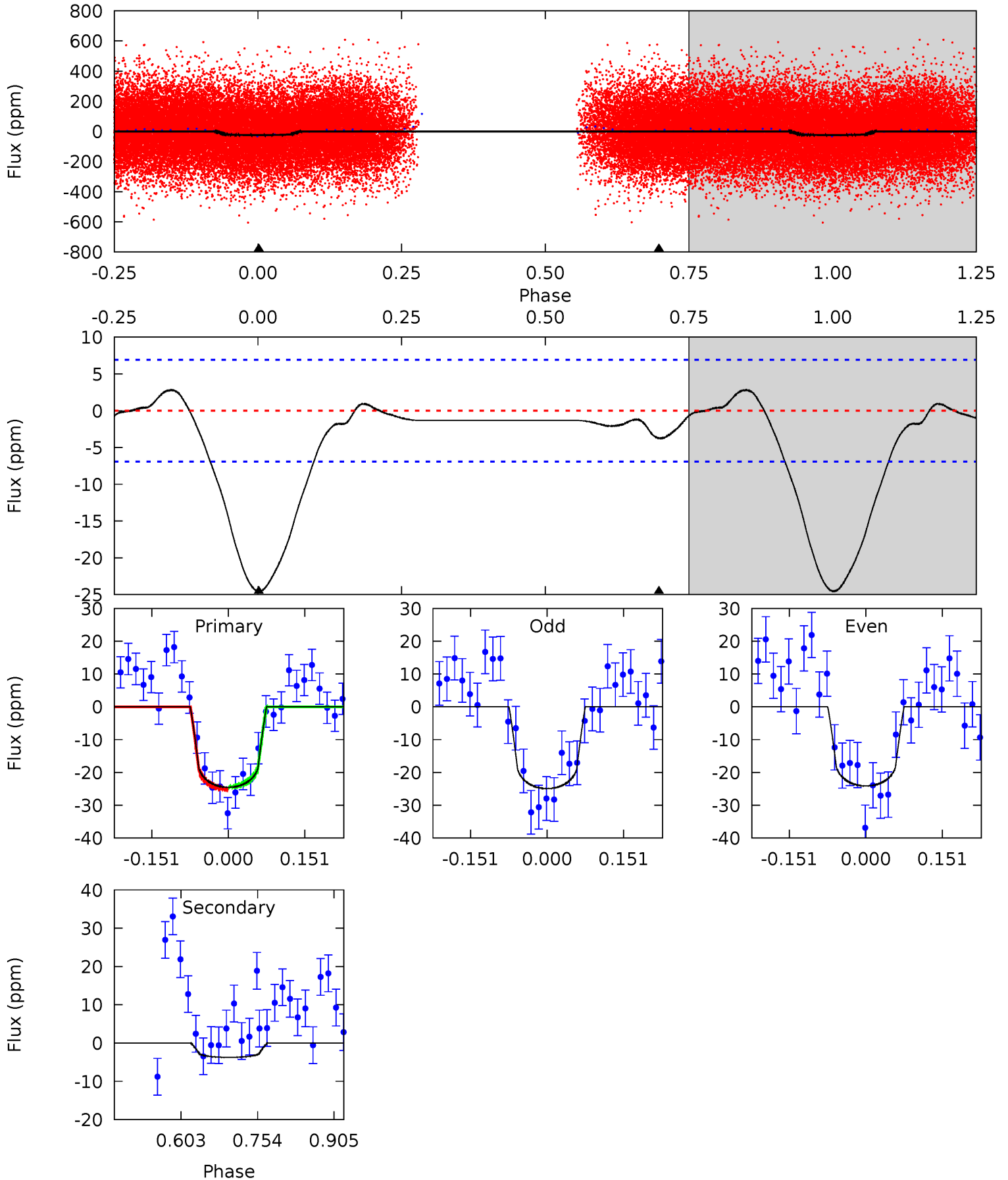
TCE 004833050-02 P= 1.191755 Days $T_0=131.796035$ (BKJD)



DV Model-Shift Uniqueness Test

004833050-02, P = 1.191750 Days, E = 130.454846 Days

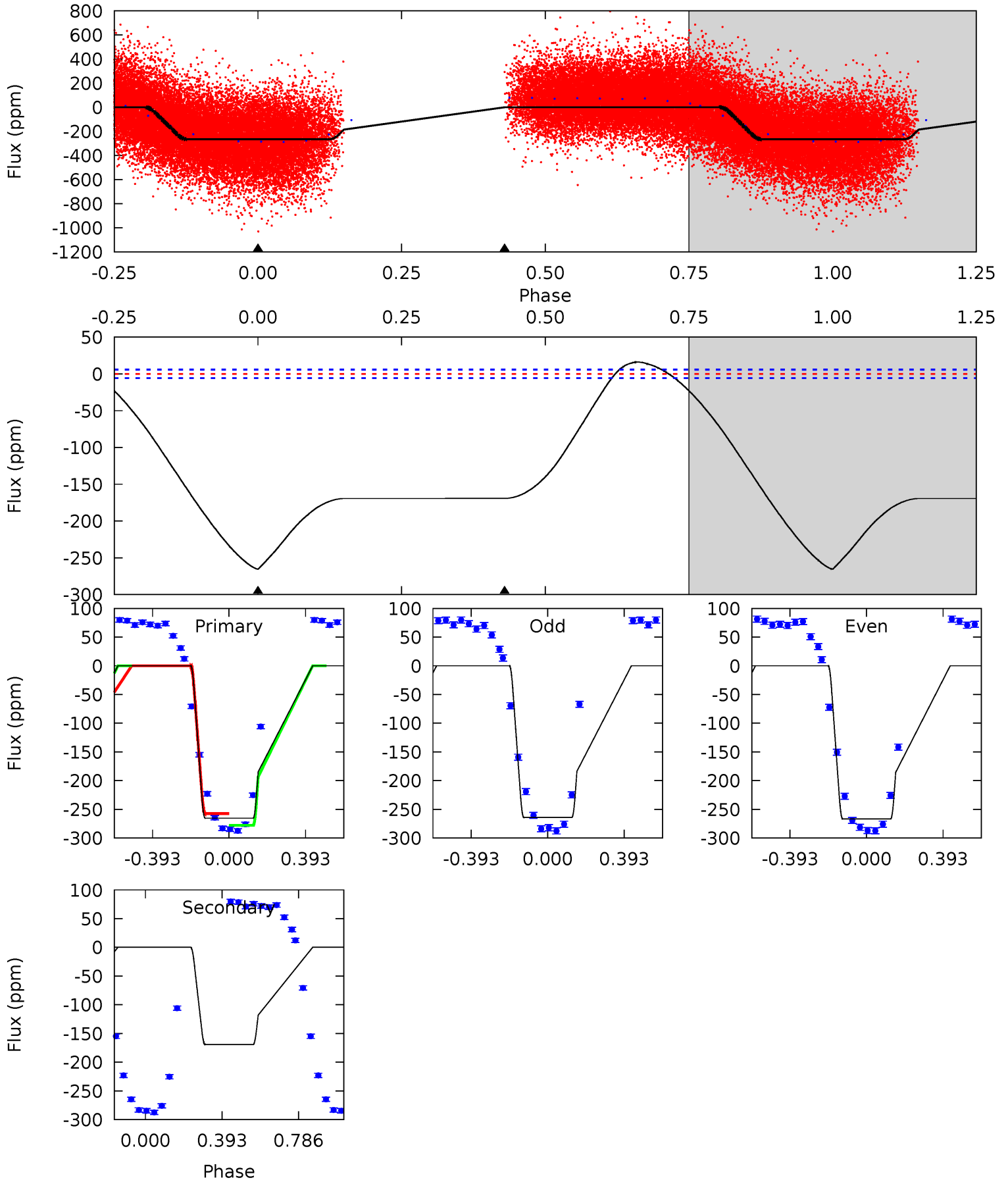
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	2.42	0	0	4.48	1.44	0.59	15.9	15.9	2.42	2.42	0.26	0.94	0.10	0.22



Alt Model-Shift Uniqueness Test

004833050-02, P = 1.191755 Days, E = 130.604280 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
199.7	127.4	0	0	4.27	0.85	7.24	199.7	199.7	127.4	127.4	1.00	1.03	0.06	7.04



Stellar Parameters For KIC 004833050

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6684^{+213}_{-237}	$3.798^{+0.472}_{-0.088}$	$-0.380^{+0.300}_{-0.300}$	$2.532^{+0.528}_{-1.321}$	$1.468^{+0.179}_{-0.389}$	$0.127^{+0.650}_{-0.047}$
	+3%/-4%	+12%/-2%	+79%/-79%	+21%/-52%	+12%/-26%	+510%/-37%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004833050-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4 ± 2	$1.21^{+0.52}_{-0.41}$	3970^{+336}_{-500}	3963^{+922}_{-1213}	$0.826^{+1.157}_{-0.482}$
Alt.	-169 ± 1	$4.22^{+0.89}_{-1.16}$	3952^{+345}_{-536}	5738^{+356}_{-315}	$3.268^{+2.636}_{-0.961}$

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 $A_{obs} \gg 1.0$

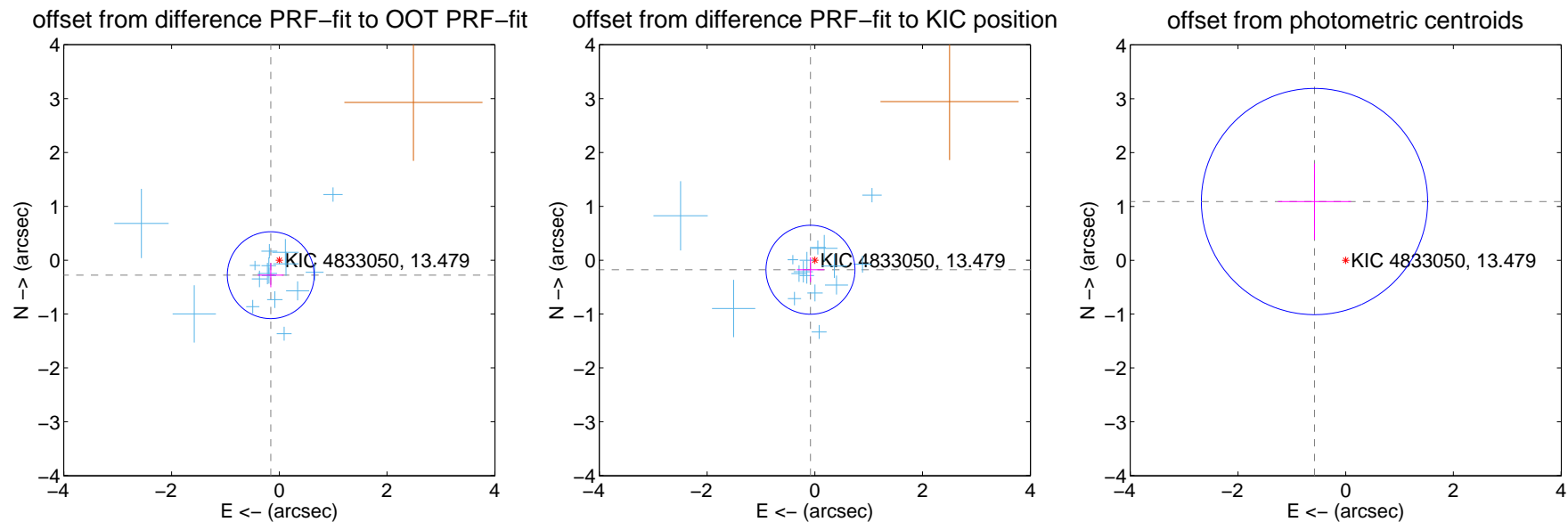
DV Centroid Data

Supplemental centroid analysis for 004833050-02. Kepler magnitude: 13.48. Transit SNR 11.32

There are 16 quarters with good PRF difference image offsets

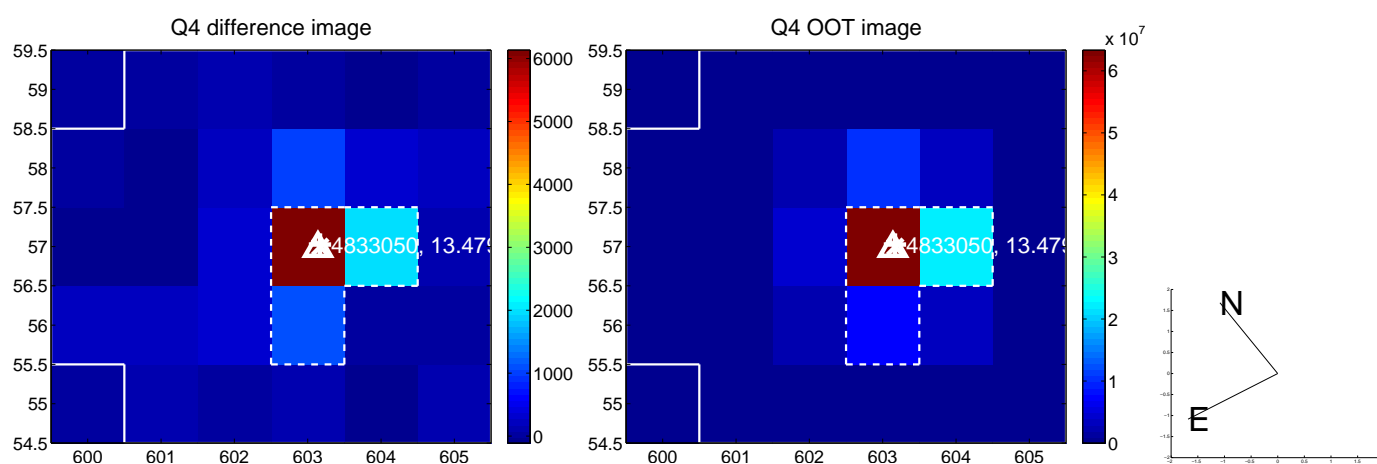
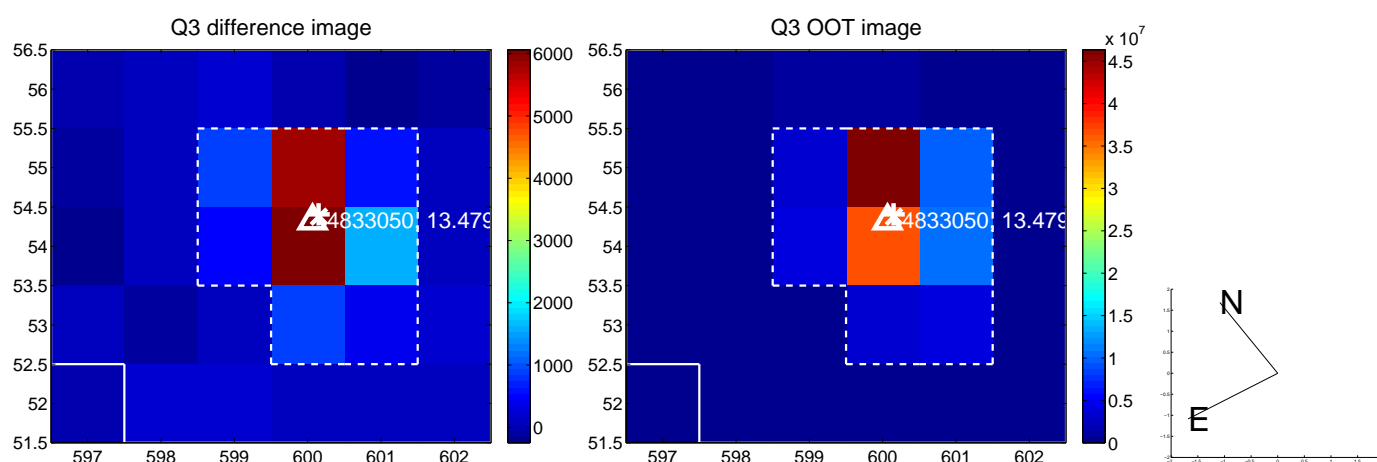
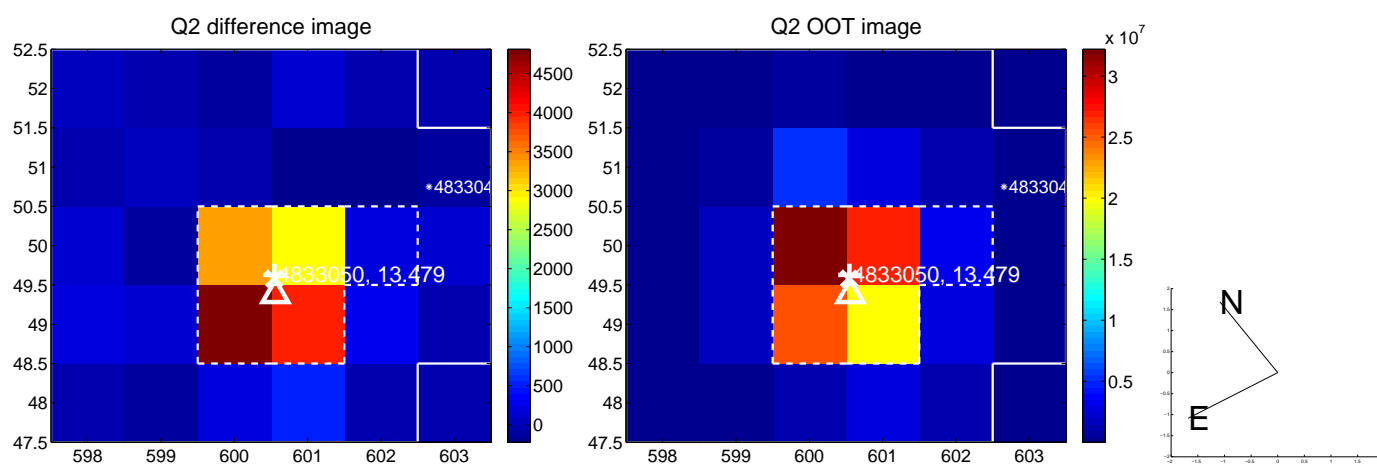
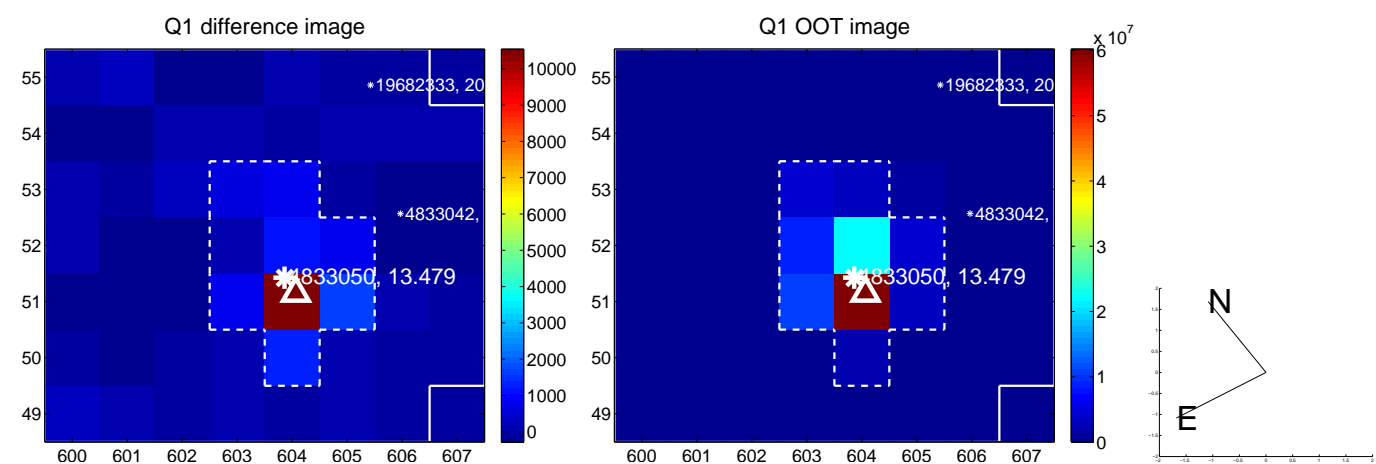
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.320 ± 0.269	1.19	0.159 ± 0.240	-0.278 ± 0.224
PRF-fit source offset from KIC position	0.195 ± 0.275	0.71	0.081 ± 0.254	-0.177 ± 0.230
photometric centroid source offset	1.24 ± 0.70	1.76	0.58 ± 0.68	1.09 ± 0.71

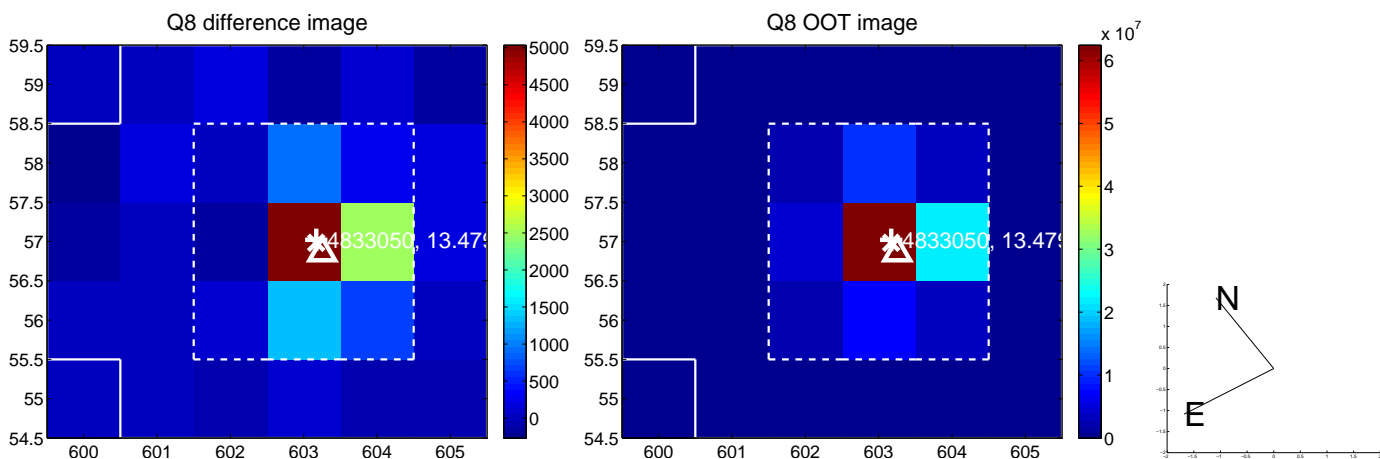
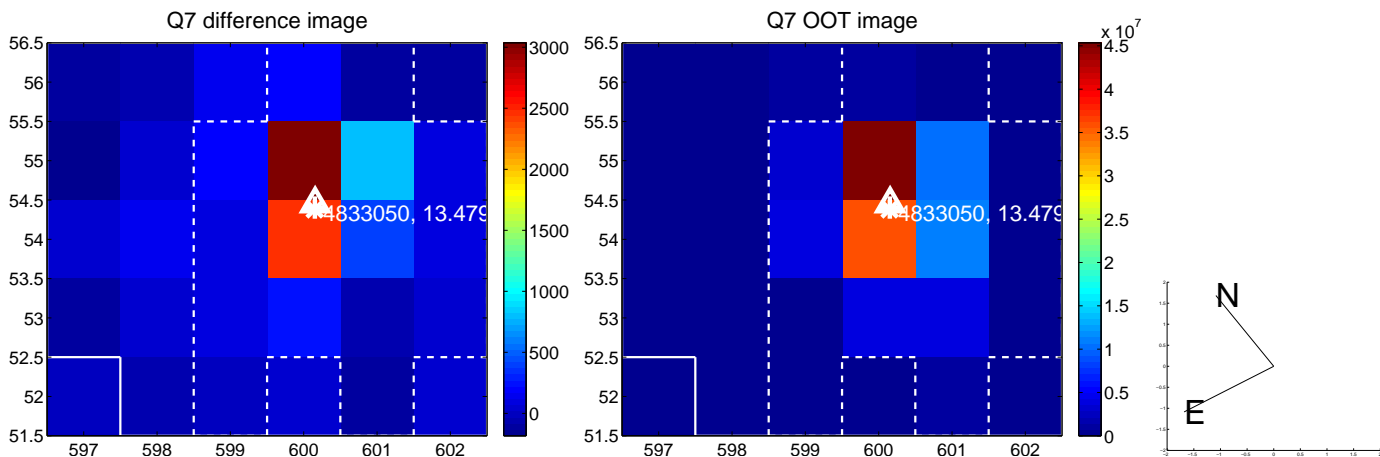
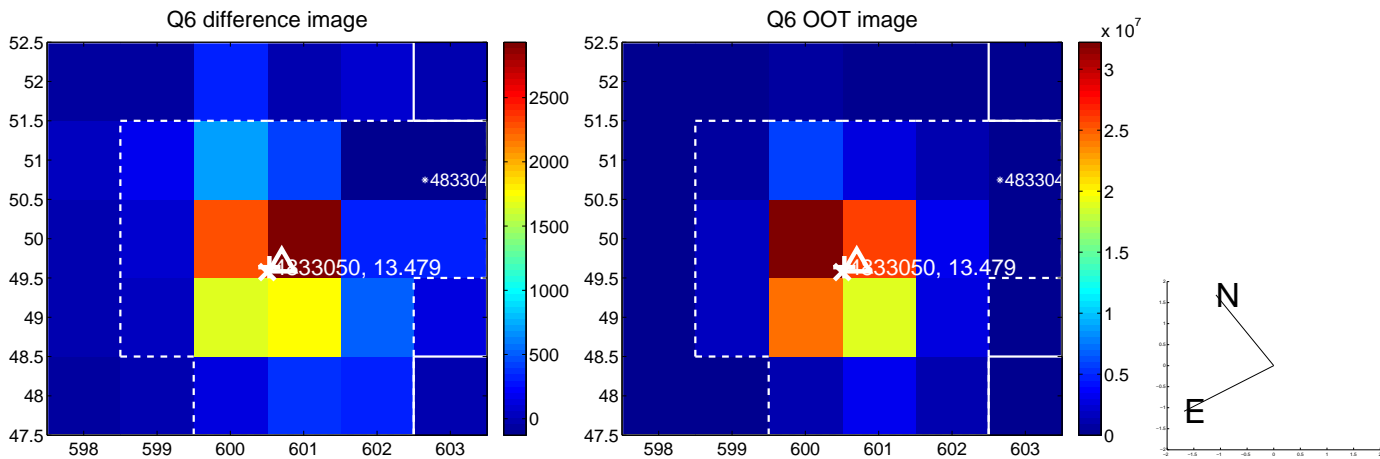
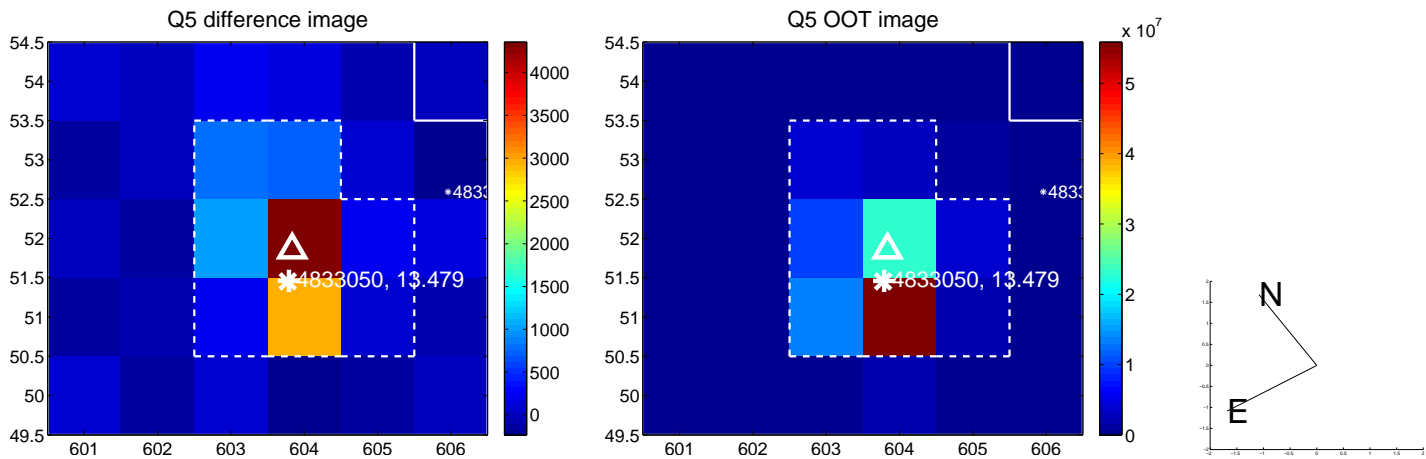


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

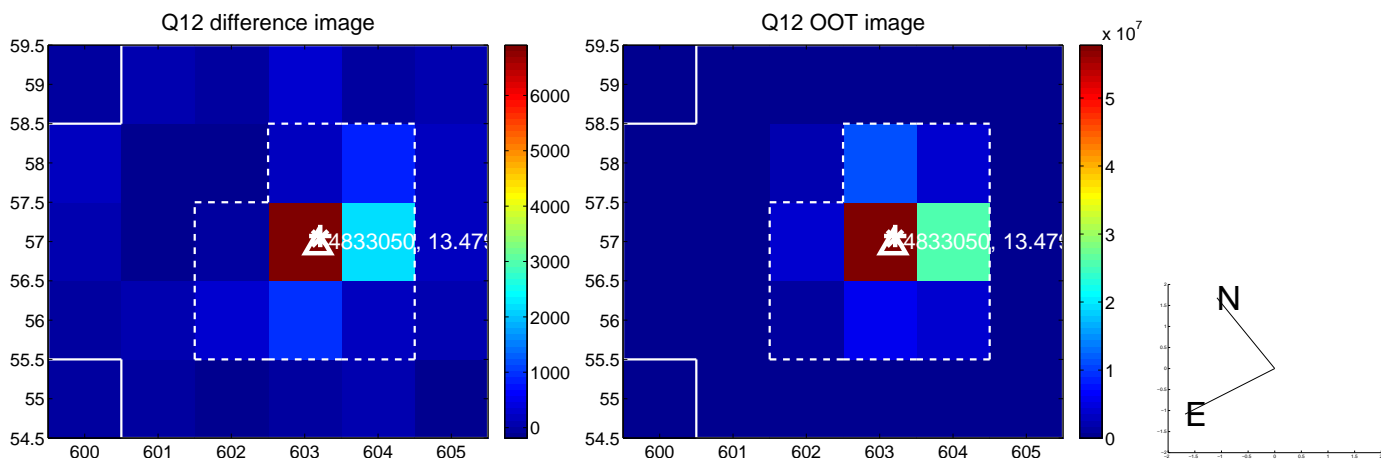
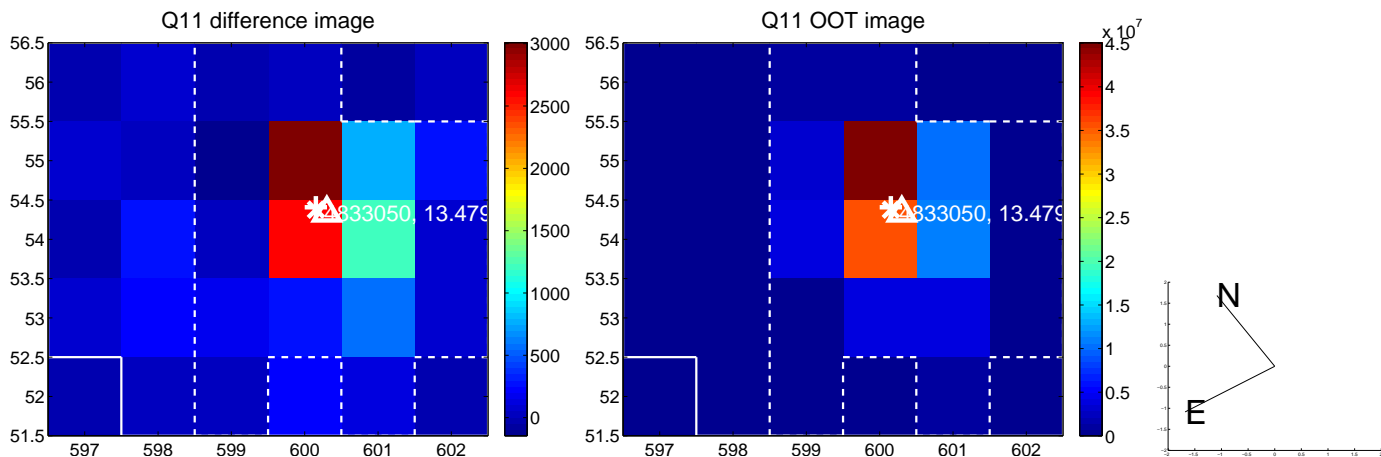
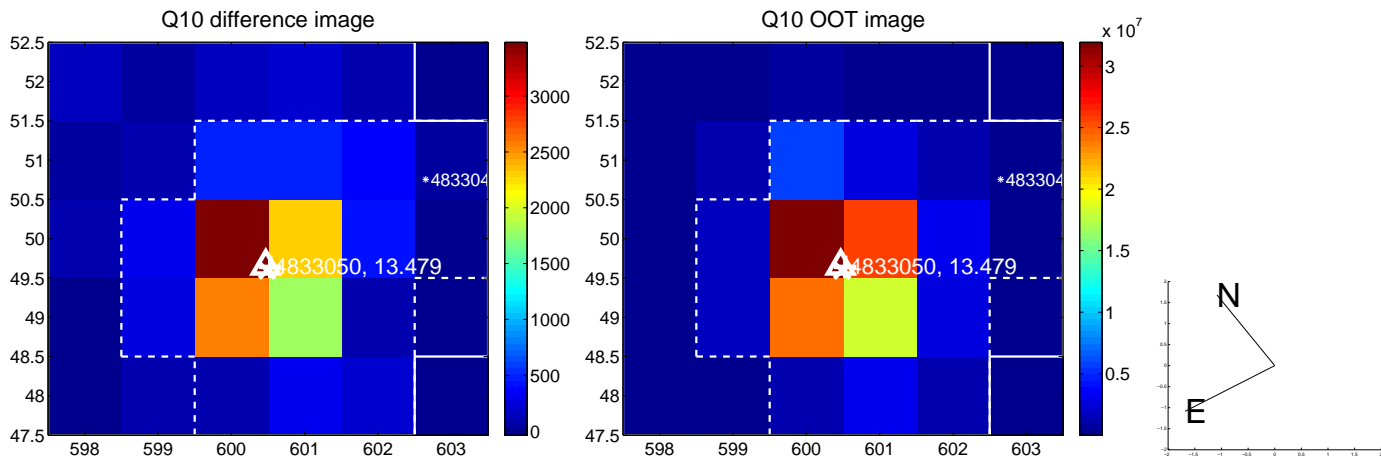
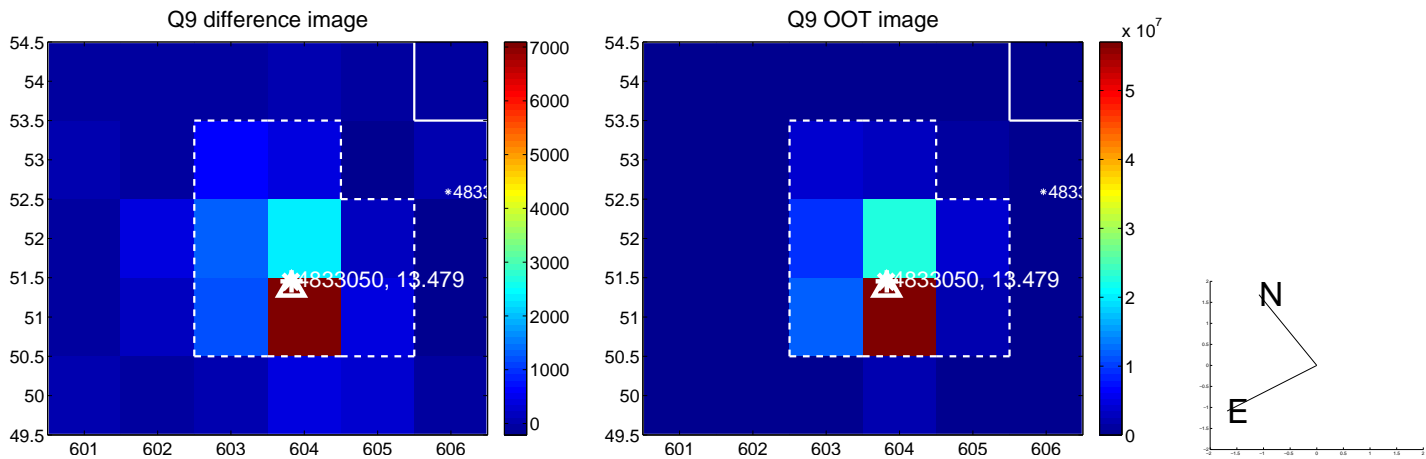
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



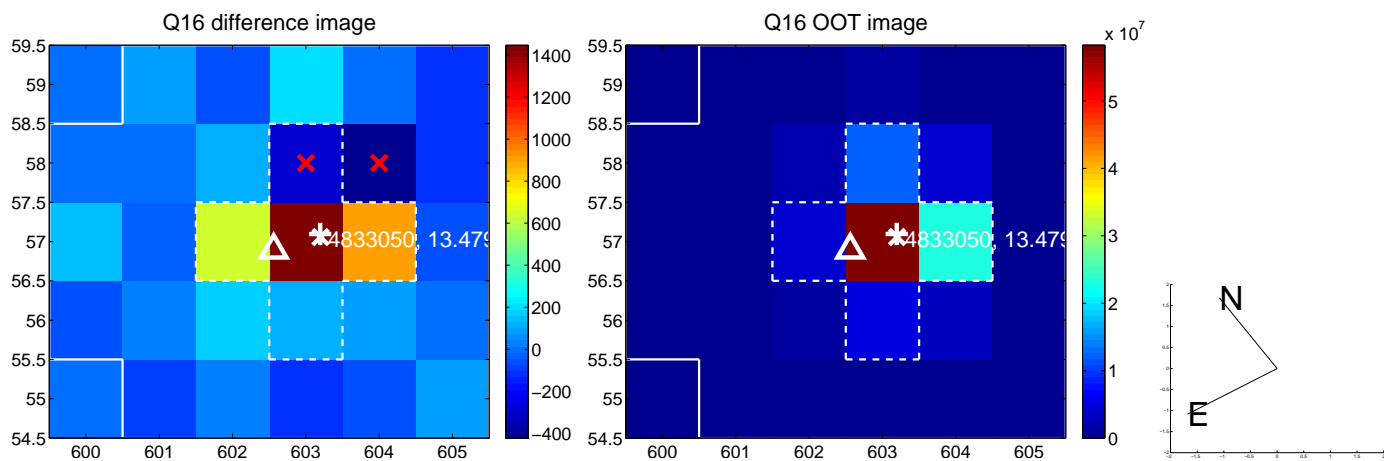
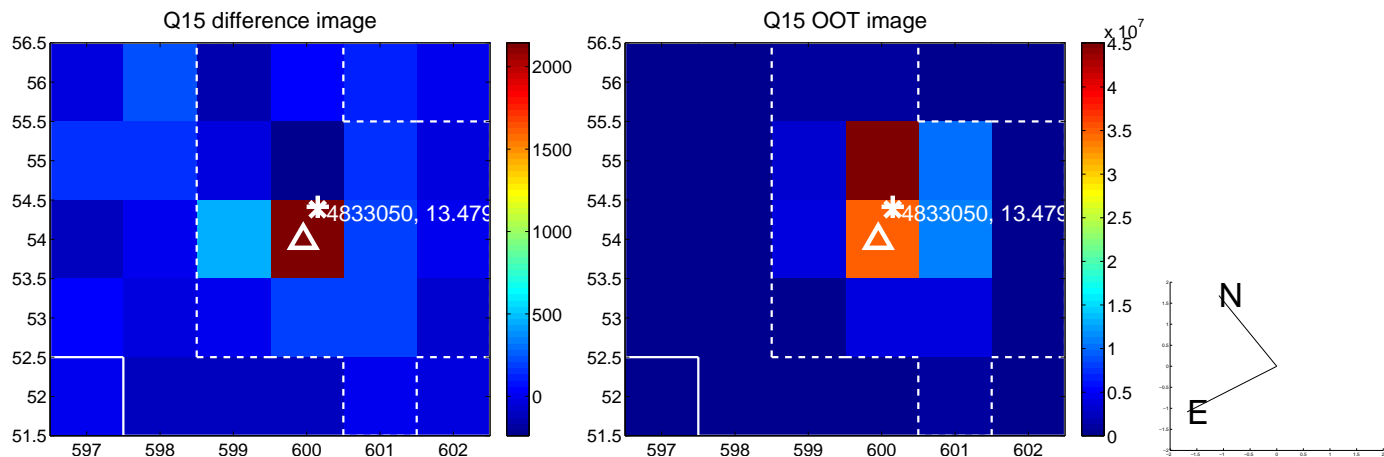
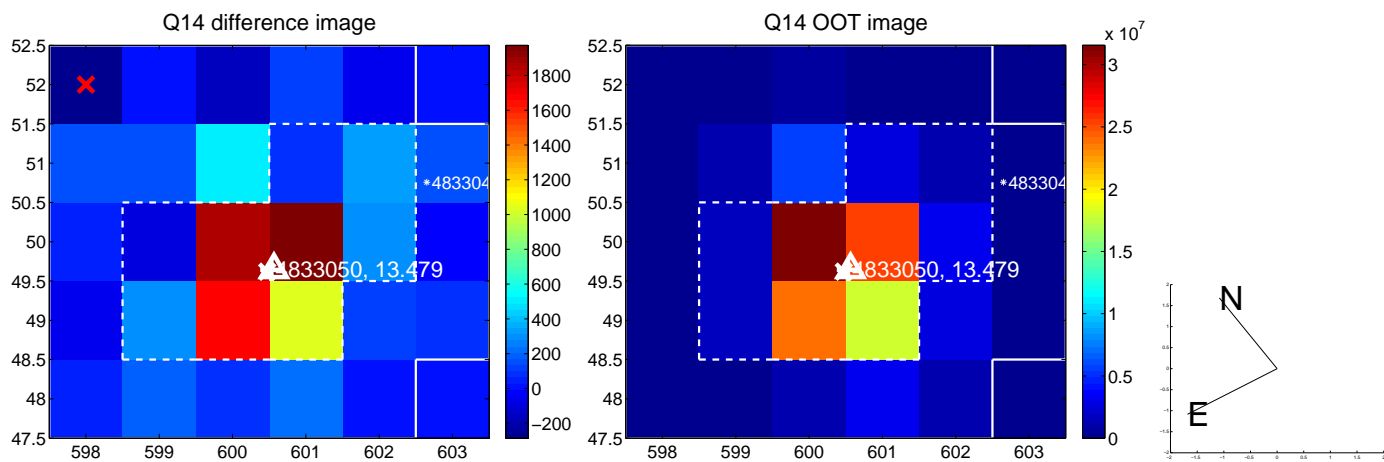
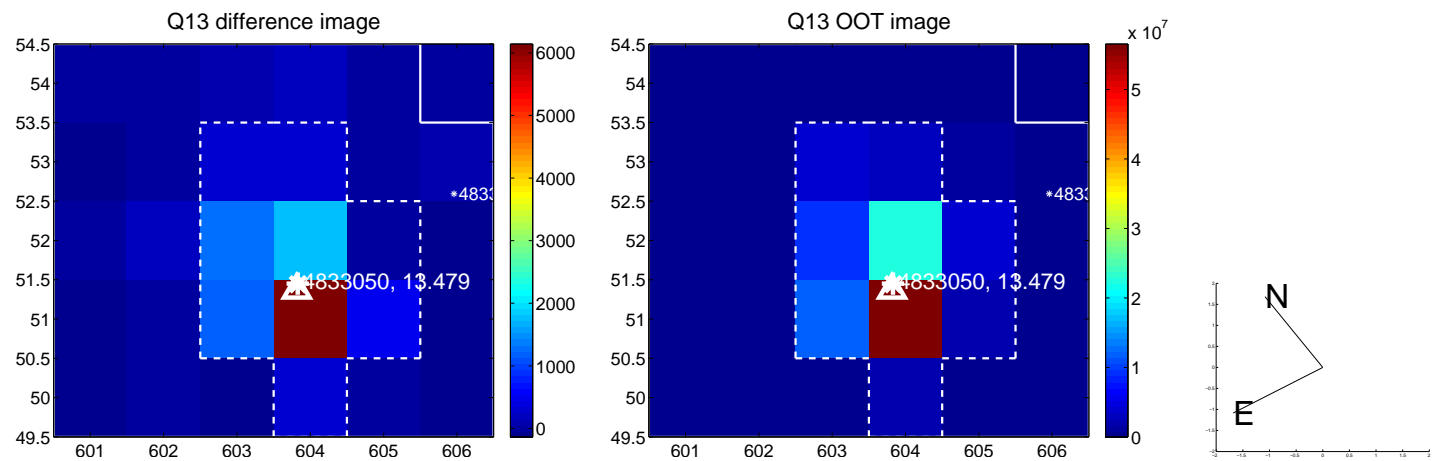
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



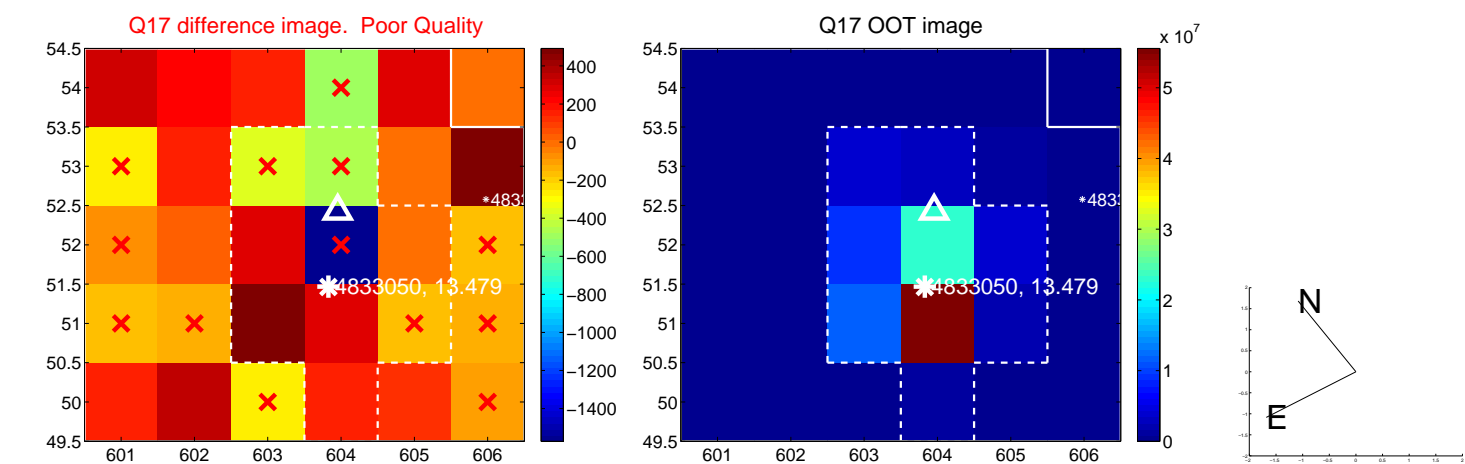
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



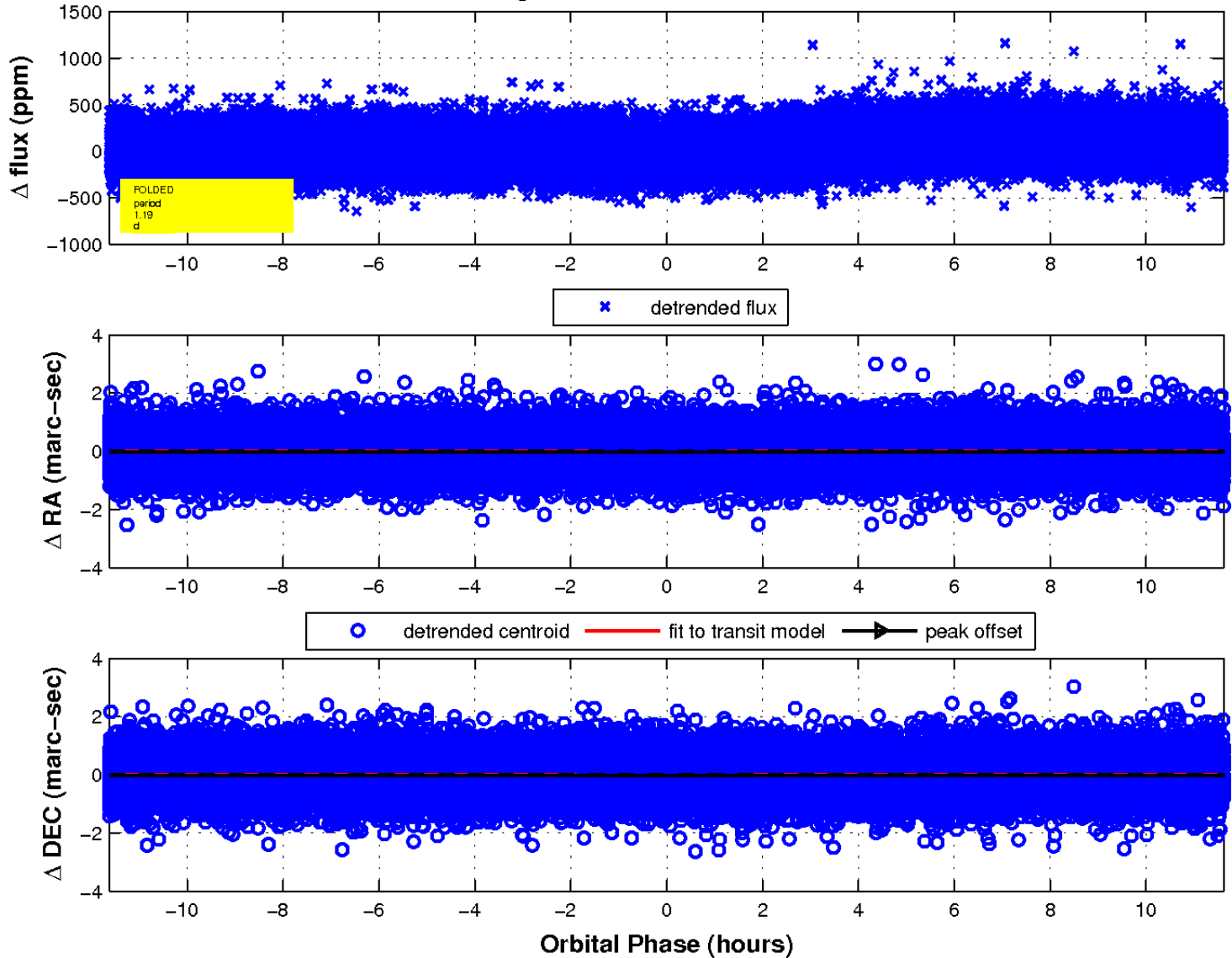
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

