

KIC 006666233

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})
006666233-01	OBS	2306.01	1.024813	131.725453	287.6	1.136	17.2	29.0	0.56	3862	1.16	233.14
006666233-02	OBS	No	1.024819	132.237228	306.2	1.032	26.1	31.7	0.56	3862	1.05	233.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006666233-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
006666233-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

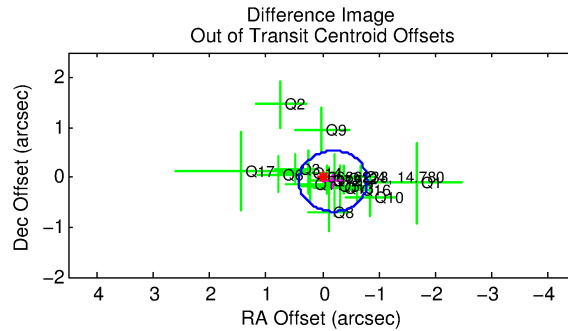
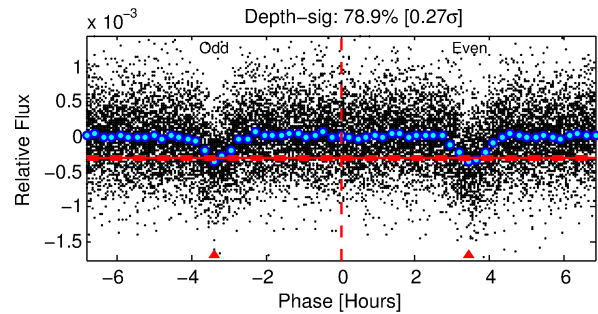
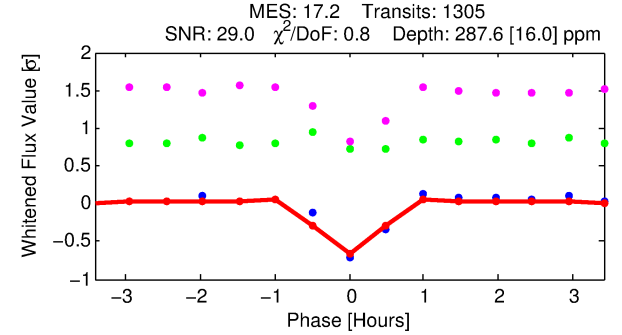
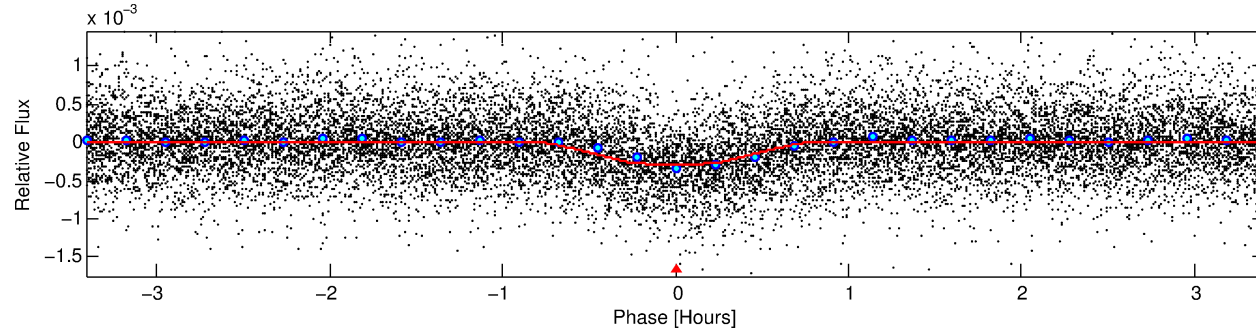
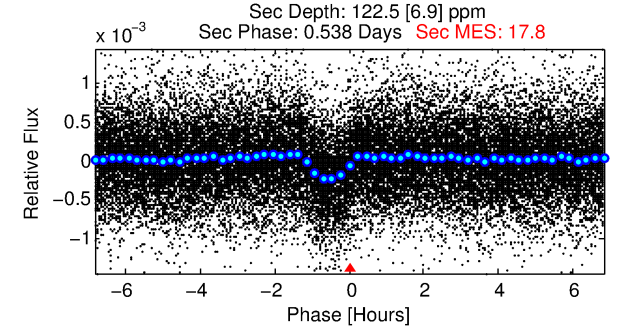
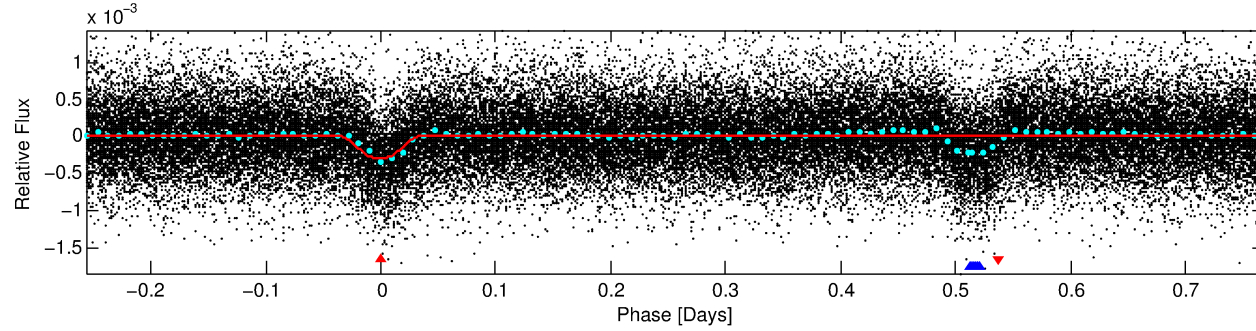
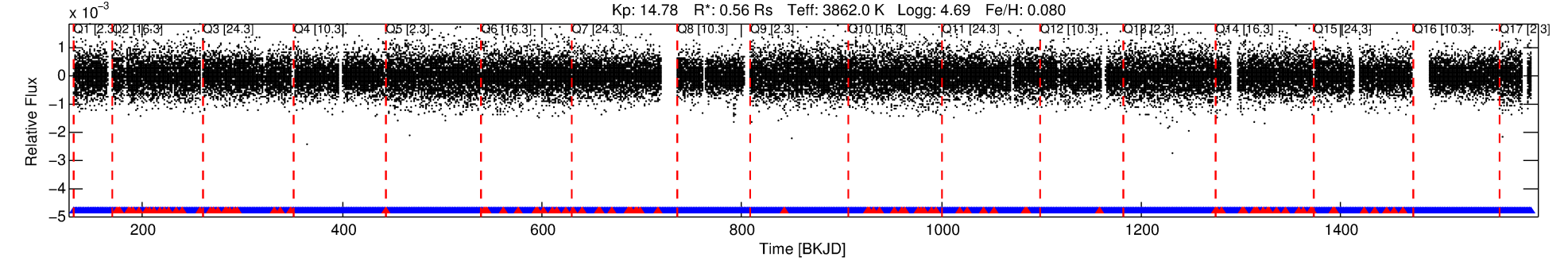
Ephemeris Match Information For 006666233-01

No Significant Match Found

DV One-Page Summary

KIC: 6666233 Candidate: 1 of 2 Period: 1.025 d
KOI: K02306 Corr: No Ephemeris Match

Kp: 14.78 R*: 0.56 Rs Teff: 3862.0 K Logg: 4.69 Fe/H: 0.080



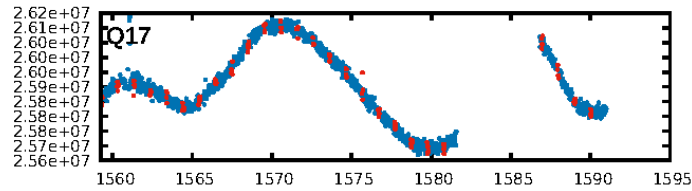
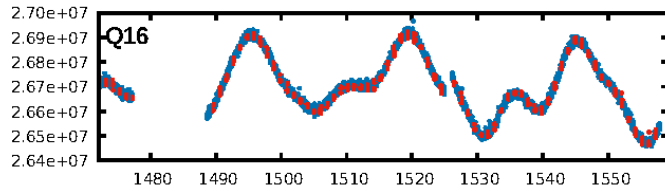
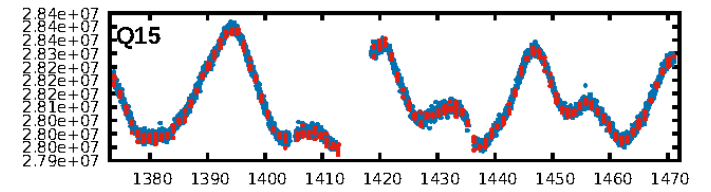
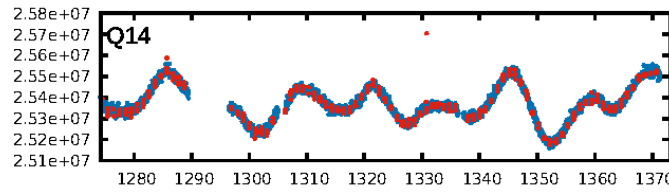
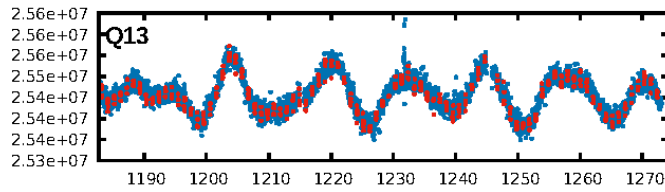
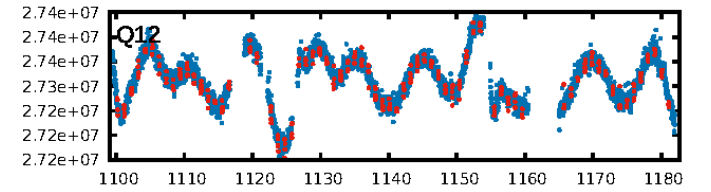
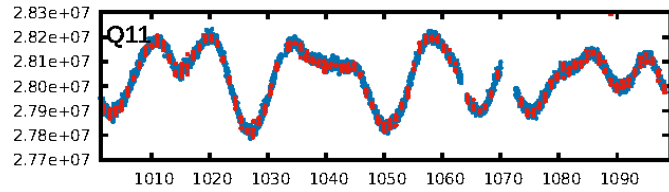
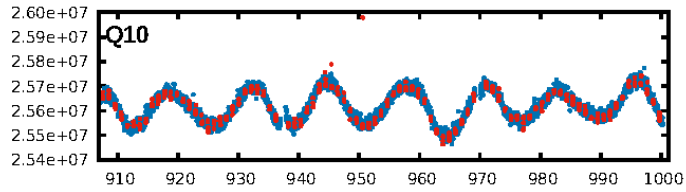
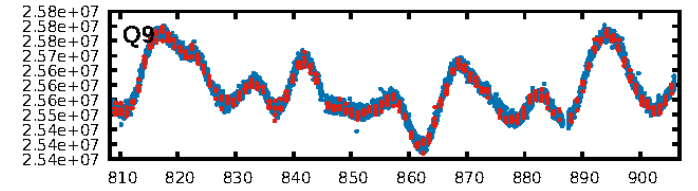
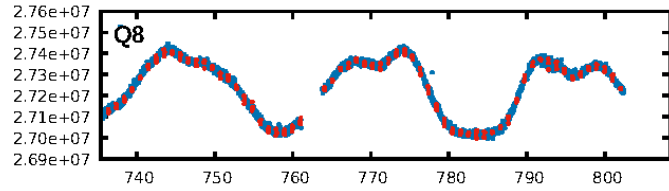
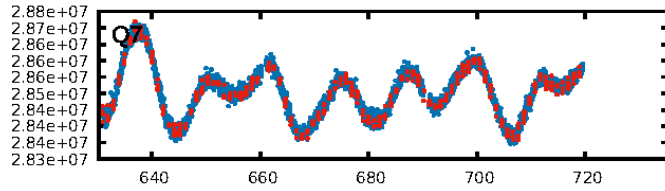
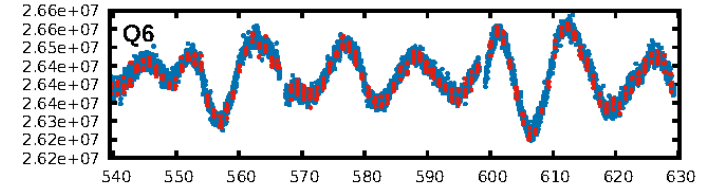
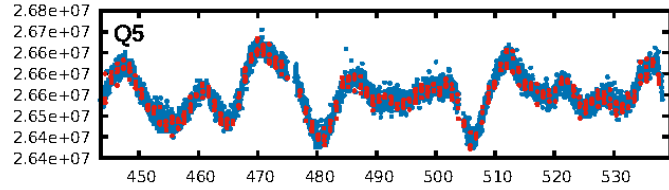
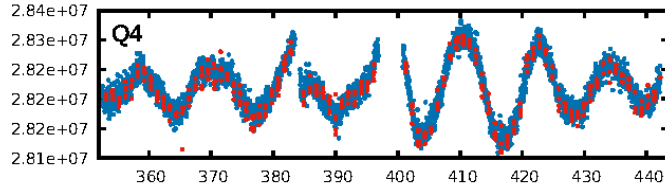
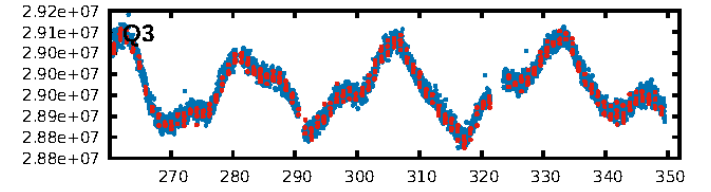
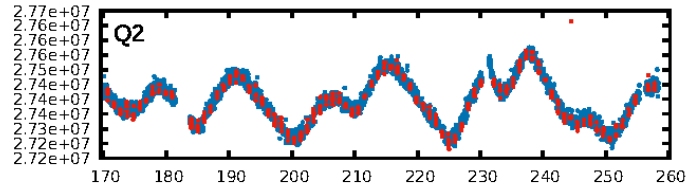
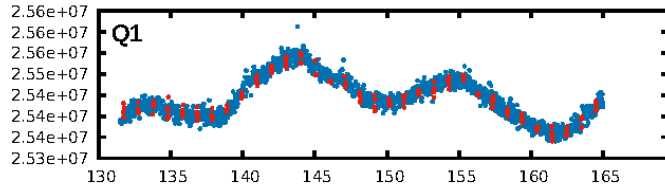
DV Fit Results:

Period = 1.02481 [0.00000] d
Epoch = 131.7255 [0.0006] BKJD
Rp/R* = 0.0188 [0.0061]
a/R* = 3.42 [4.22]
b = 0.90 [0.29]
Seff = 233.14 [27.56]
Teq = 996 [29] K
Rp = 1.16 [0.38] Re
a = 0.0165 [0.0009] AU
Ag = 13.62 [8.93] [1.41σ]
Teffp = 2960 [486] K [4.03σ]

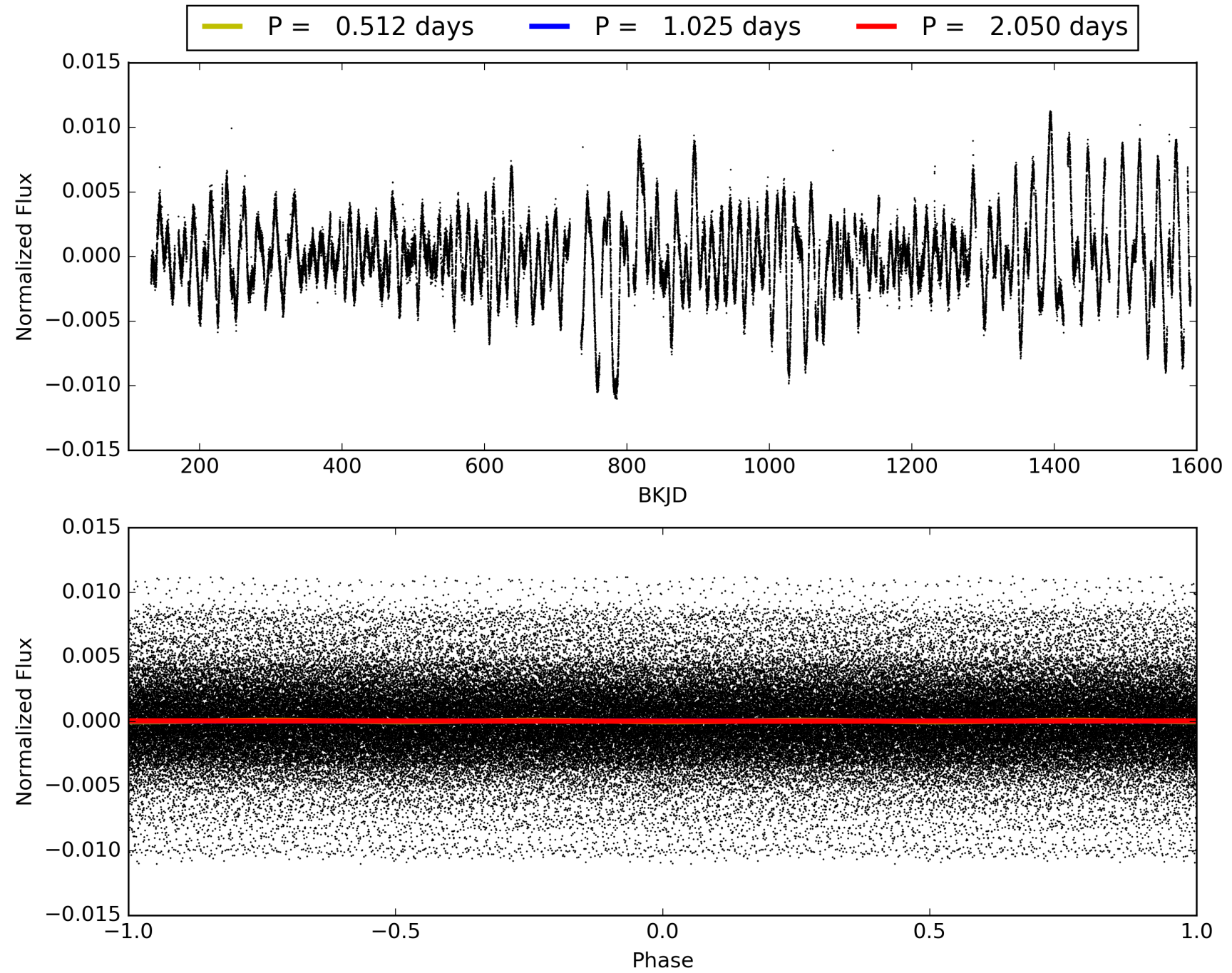
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.46e-68
RollingBand-fgt: 0.92 [1147/1246]
GhostDiagnostic-chr: 2.783
Centroid-sig: 0.9%
Centroid-so: 0.234 arcsec [0.59σ]
OotOffset-rm: 0.203 arcsec [1.00σ]
KicOffset-rm: 0.253 arcsec [1.47σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.82 [14/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 006666233-01, PDC Light Curves

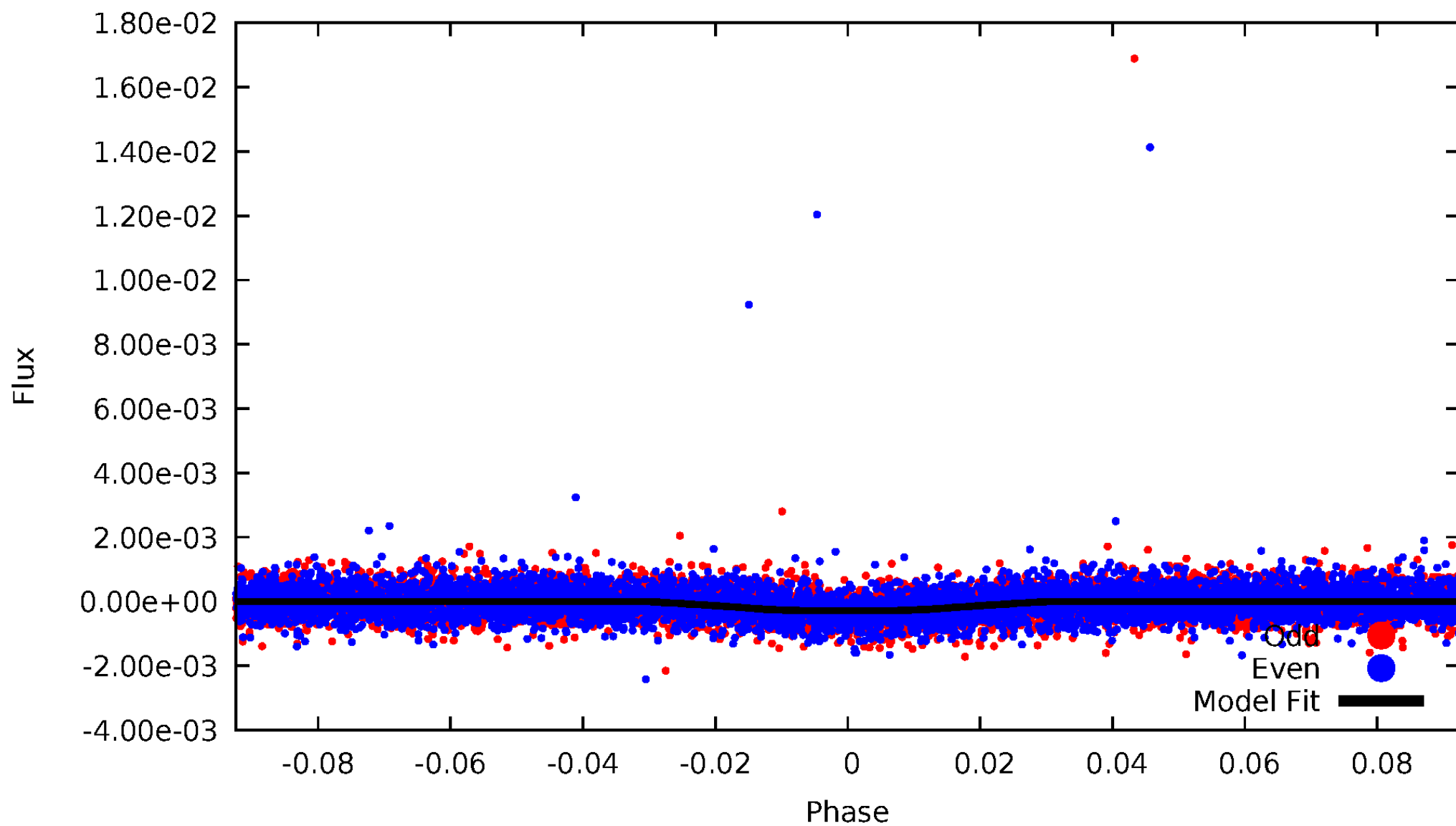


TCE 006666233-01



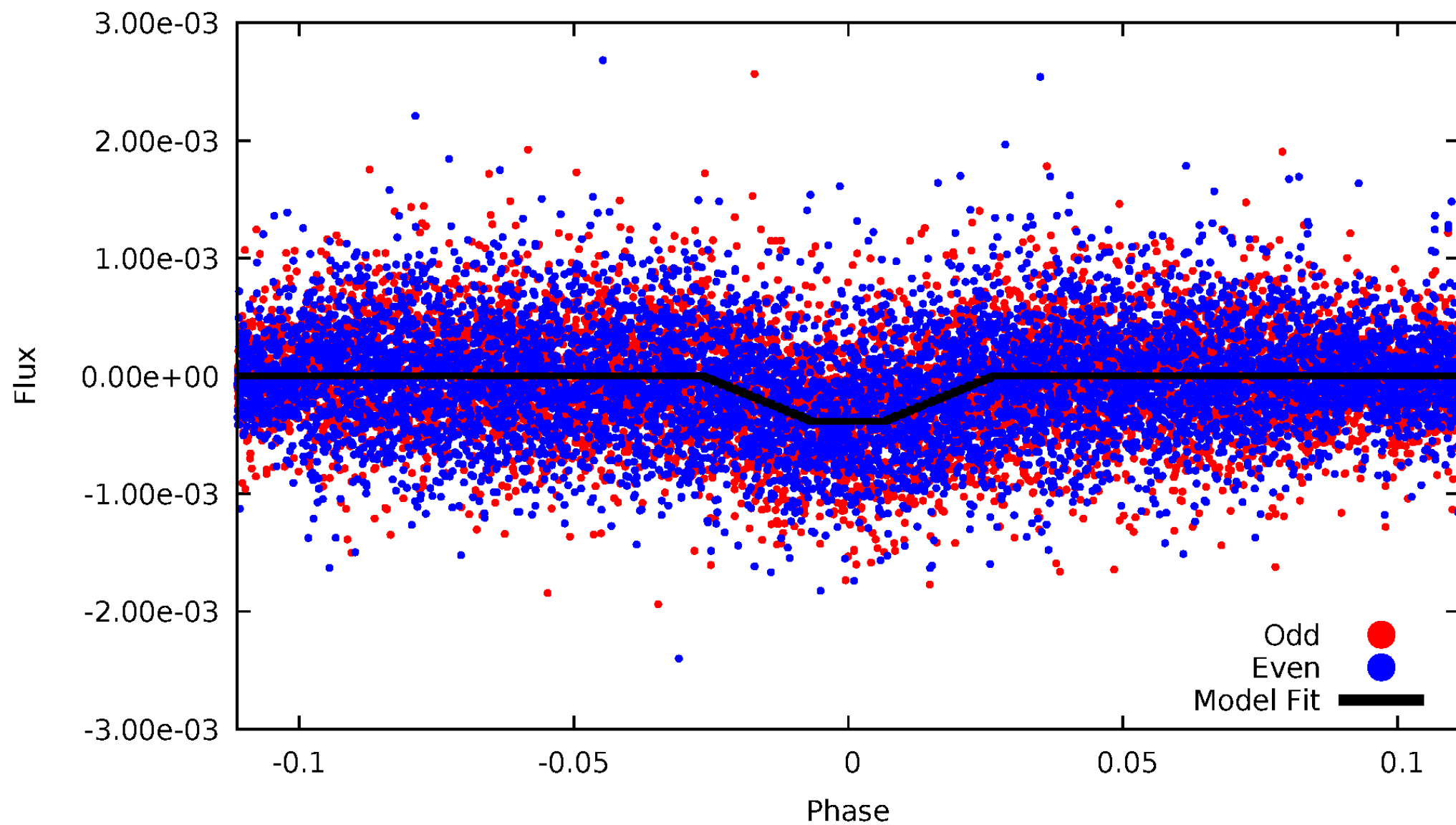
DV Odd/Even

TCE 006666233-01



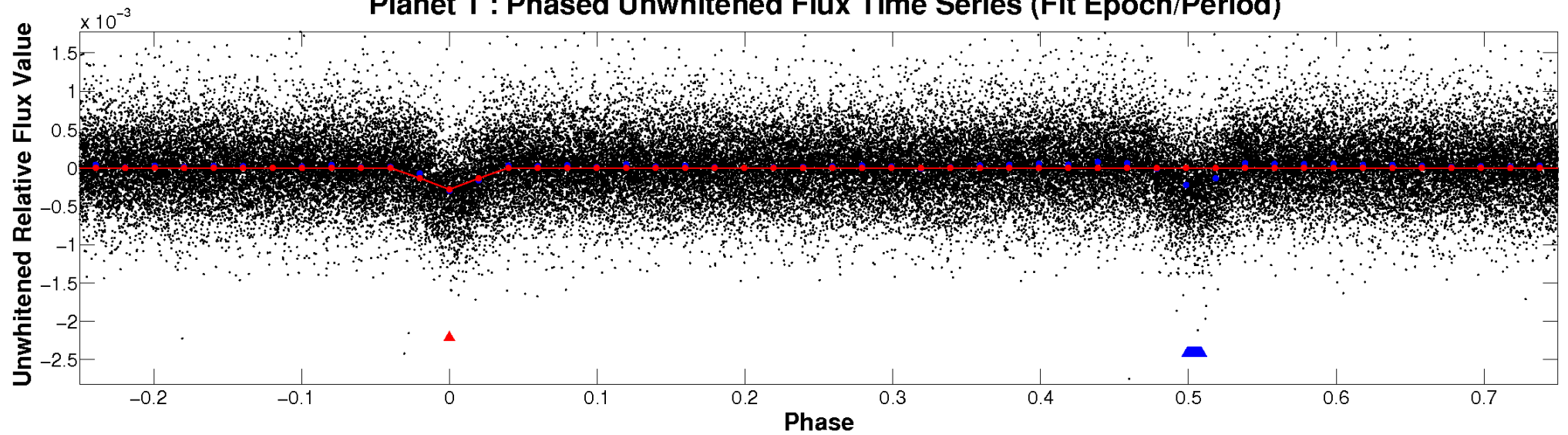
ALT Odd/Even

TCE 006666233-01

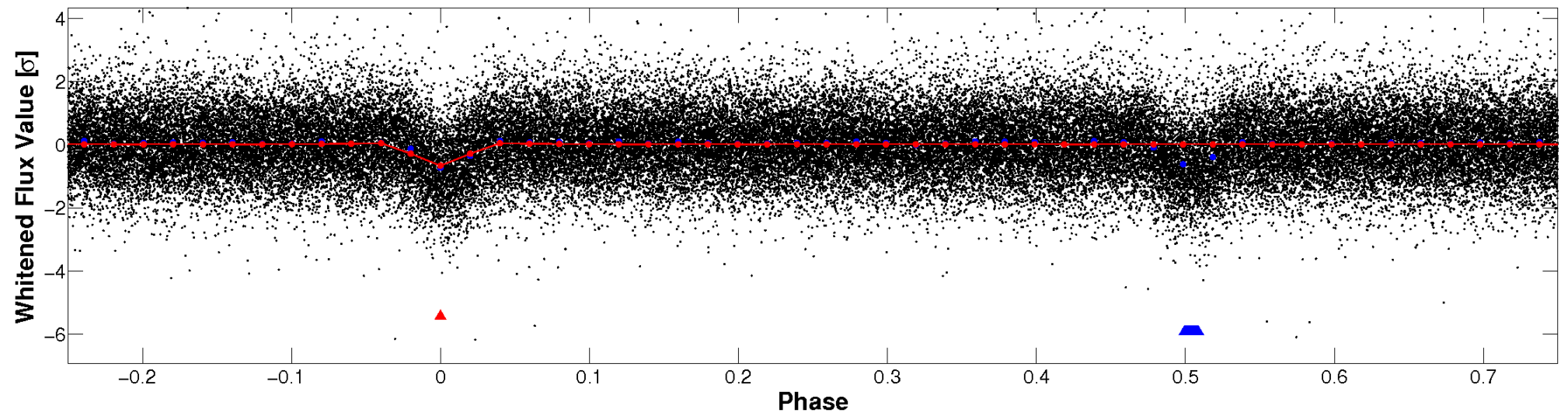


Non-Whitened Vs. Whitened Light Curve

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

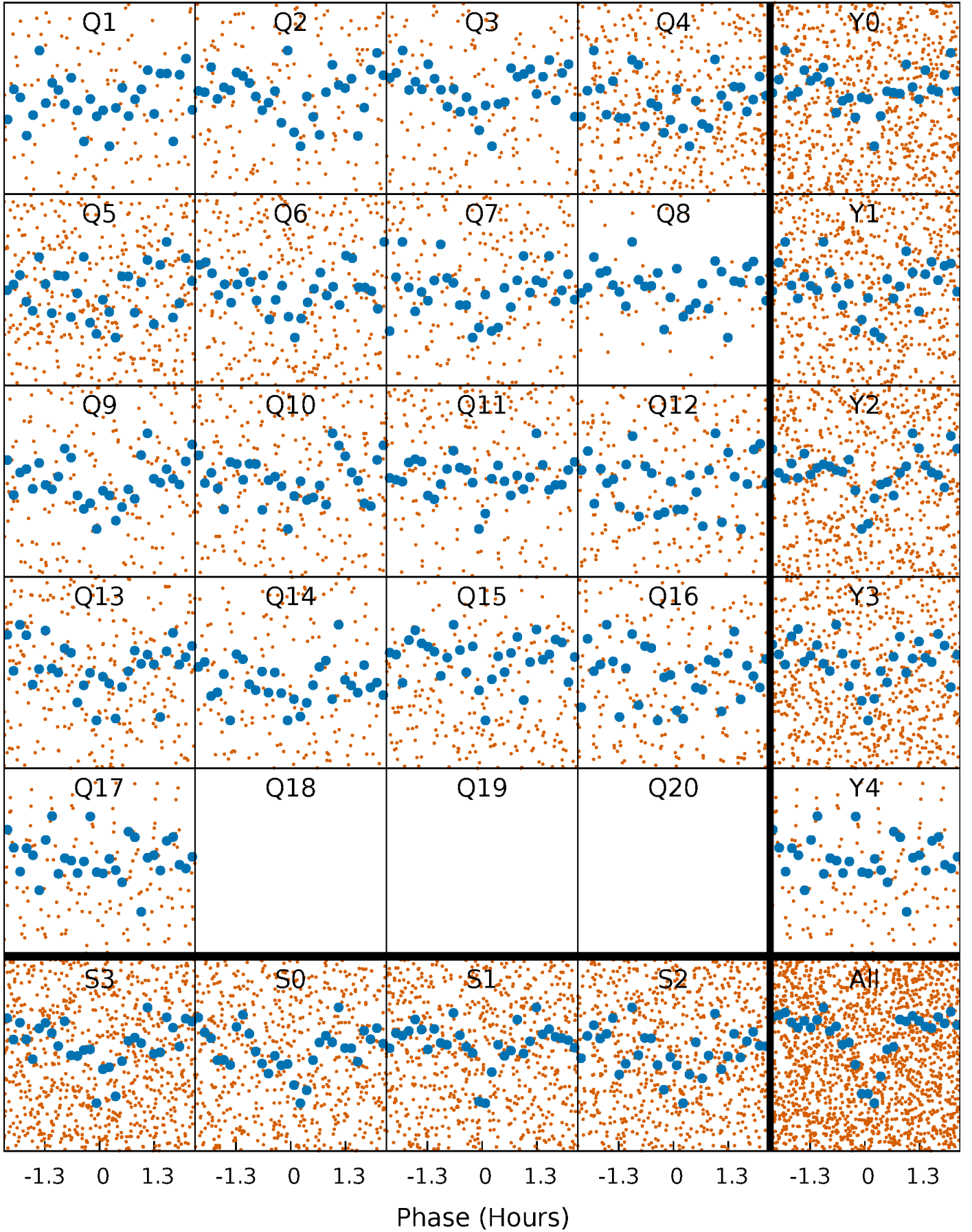


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



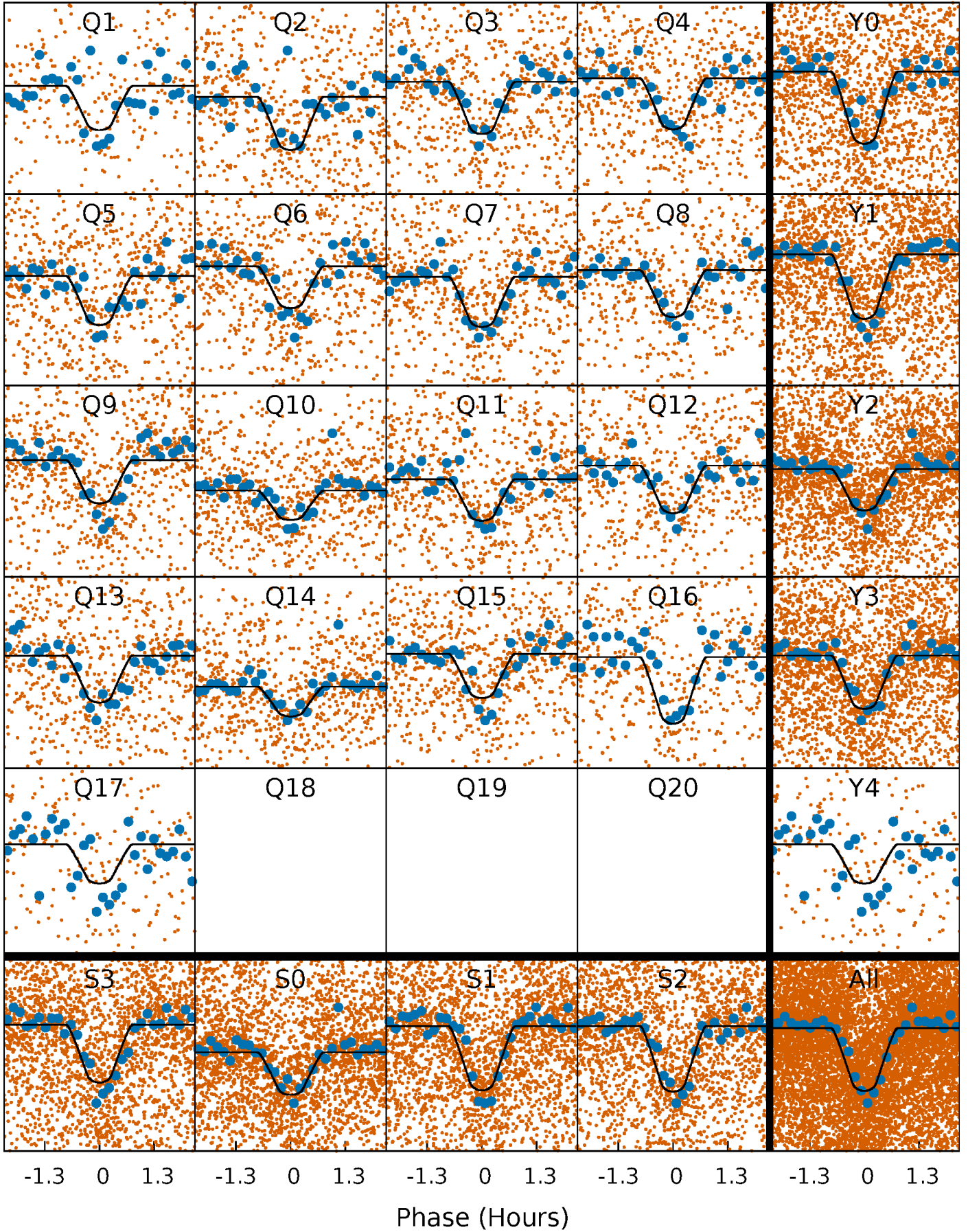
PDC Quarter-Phased Transit Curves

TCE 006666233-01 P= 1.024813 Days $T_0=131.725453$ (BKJD)



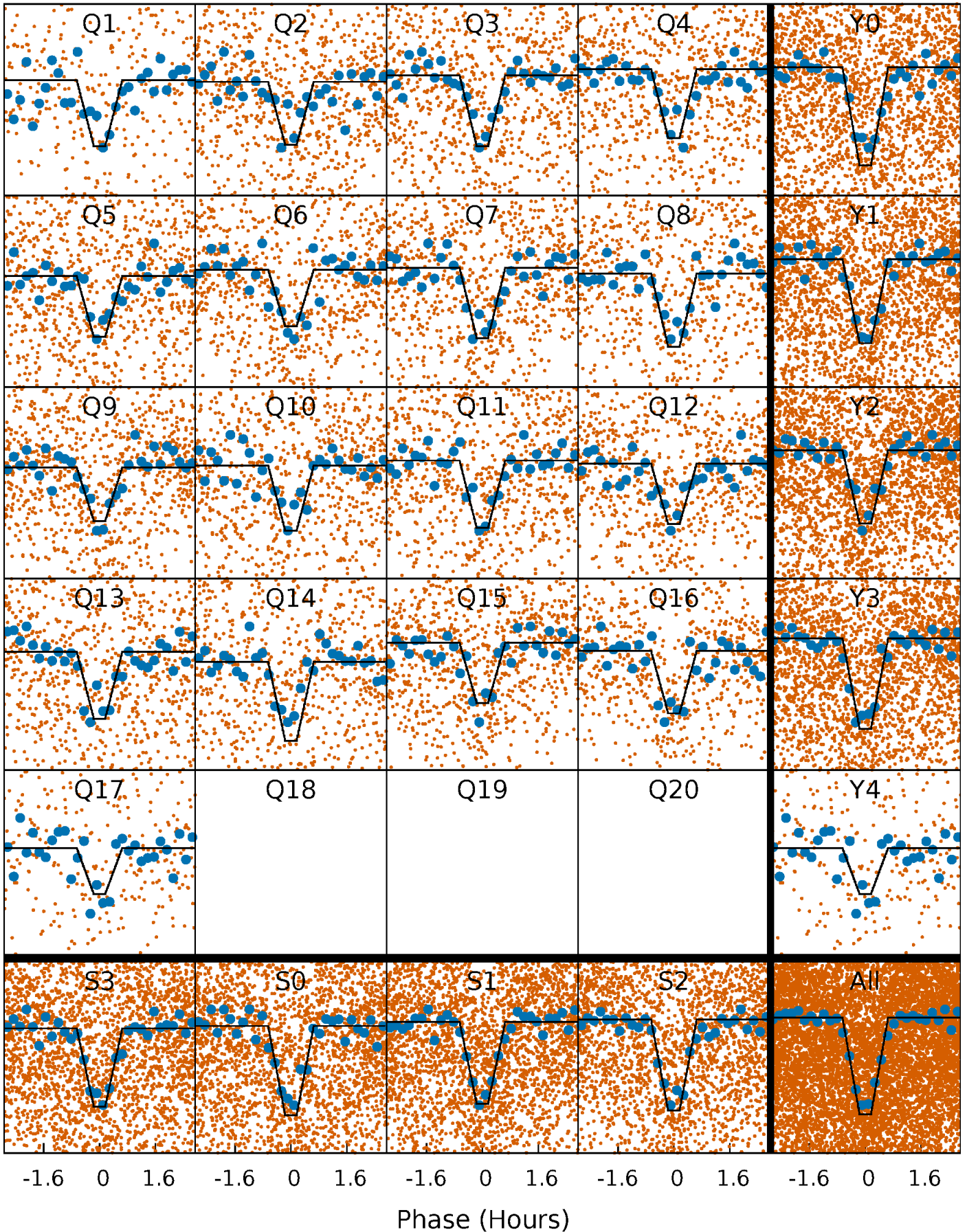
DV Quarter-Phased Transit Curves

TCE 006666233-01 P= 1.024813 Days $T_0=131.725453$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

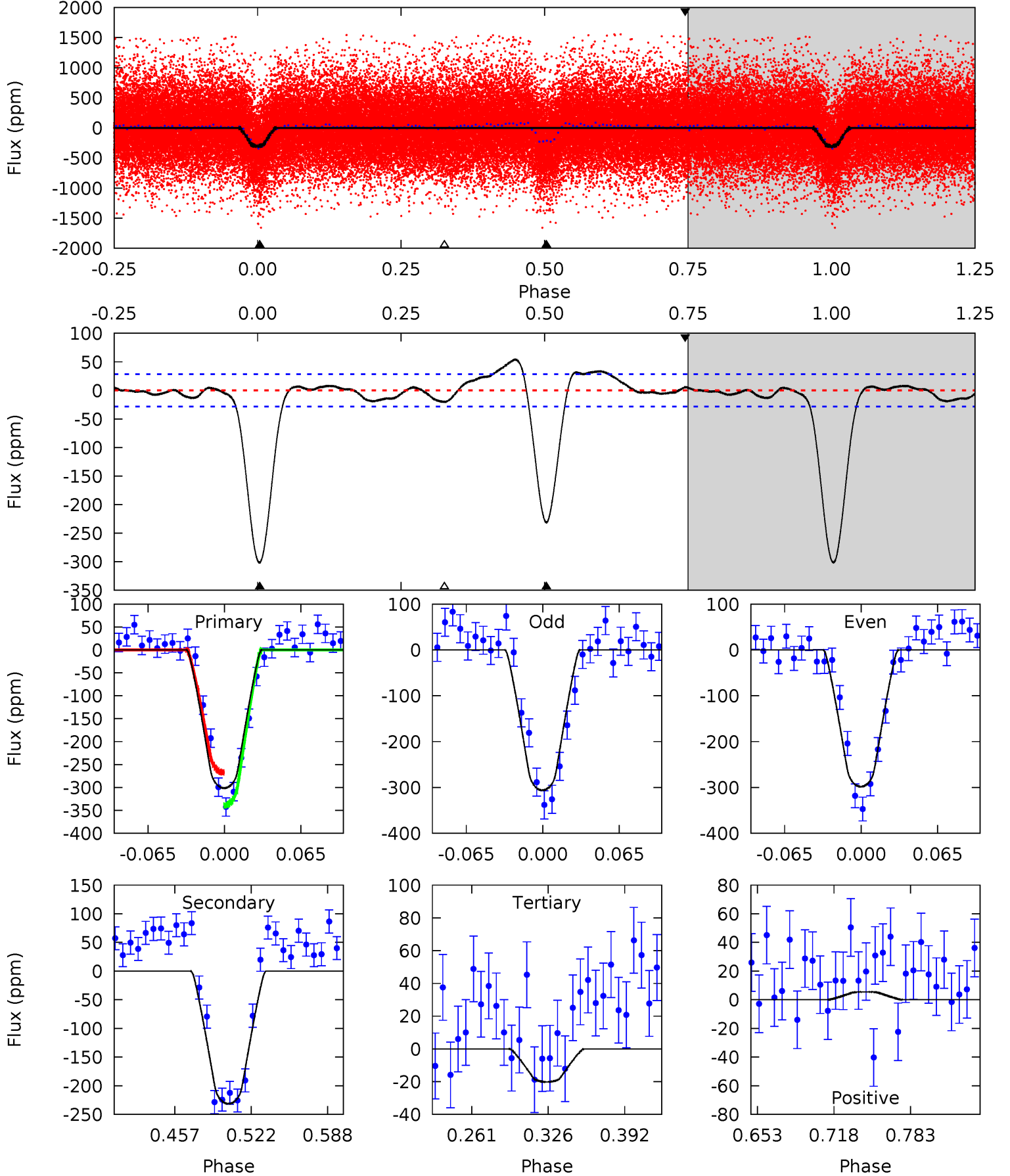
TCE 006666233-01 P= 1.024819 Days $T_0=131.724428$ (BKJD)



DV Model-Shift Uniqueness Test

006666233-01, P = 1.024813 Days, E = 130.700640 Days

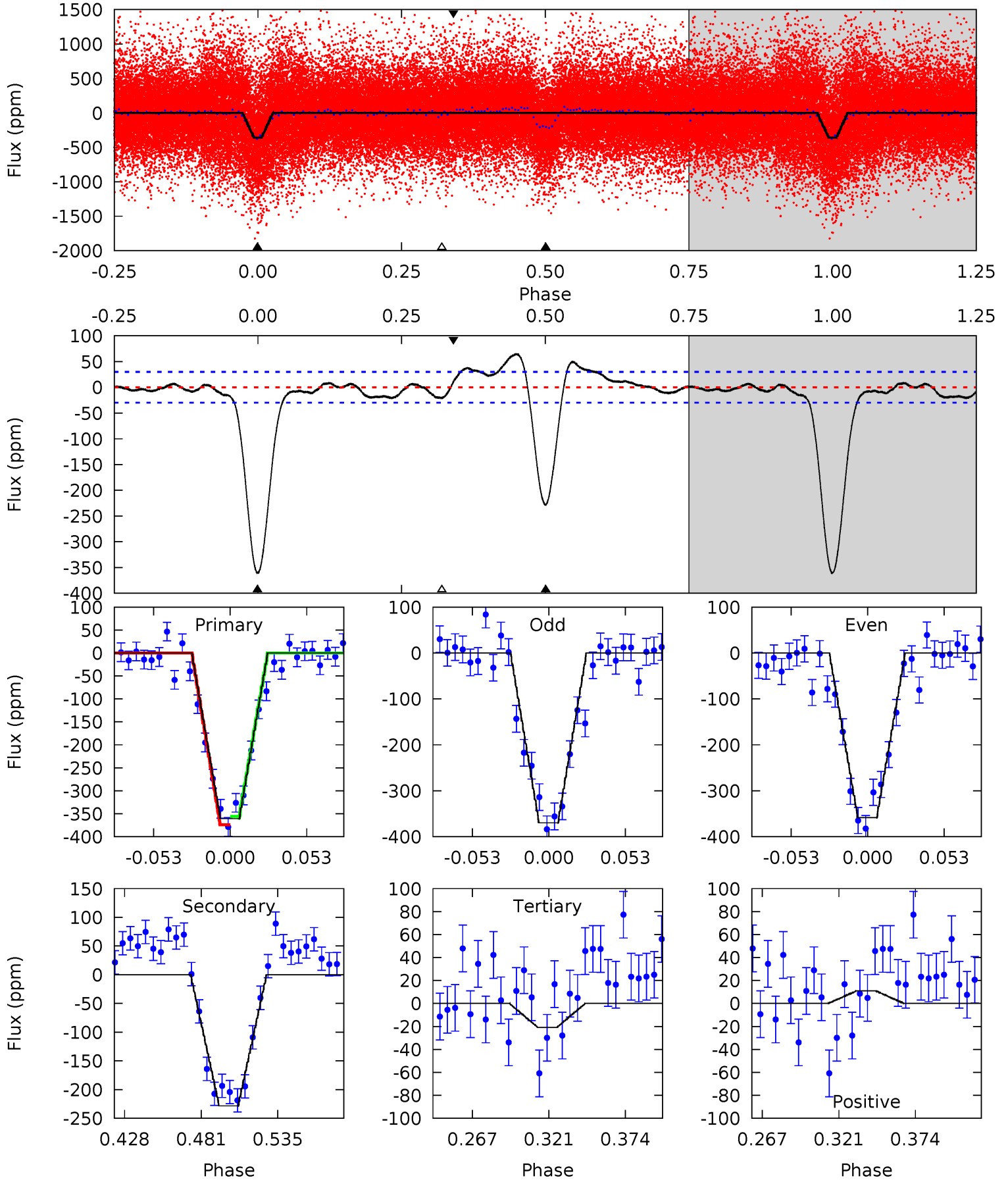
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.4	37.9	3.31	0.91	4.65	1.84	2.35	46.1	48.5	34.6	37.0	0.65	0.97	0.15	5.93



Alt Model-Shift Uniqueness Test

006666233-01, P = 1.024819 Days, E = 130.699609 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
56.9	36.0	3.30	1.74	4.69	1.93	2.73	53.6	55.1	32.7	34.2	0.88	0.92	0.15	1.44



Stellar Parameters For KIC 006666233

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3862^{+77}_{-84}	$4.690^{+0.042}_{-0.018}$	$0.080^{+0.150}_{-0.150}$	$0.563^{+0.026}_{-0.040}$	$0.566^{+0.035}_{-0.035}$	$4.466^{+0.783}_{-0.346}$
	+2%/-2%	+1%/-0%	+188%/-188%	+5%/-7%	+6%/-6%	+18%/-8%
Source	SPE70	SPE60	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 006666233-01 / KOI 2306.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-231 ± 6	$1.17^{+0.41}_{-0.37}$	1384^{+34}_{-35}	3558^{+500}_{-312}	25^{+30}_{-11}
Alt.	-228 ± 6	$1.18^{+0.40}_{-0.39}$	1385^{+34}_{-34}	3547^{+545}_{-312}	25^{+30}_{-11}

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 $A_{obs} \gg 1.0$

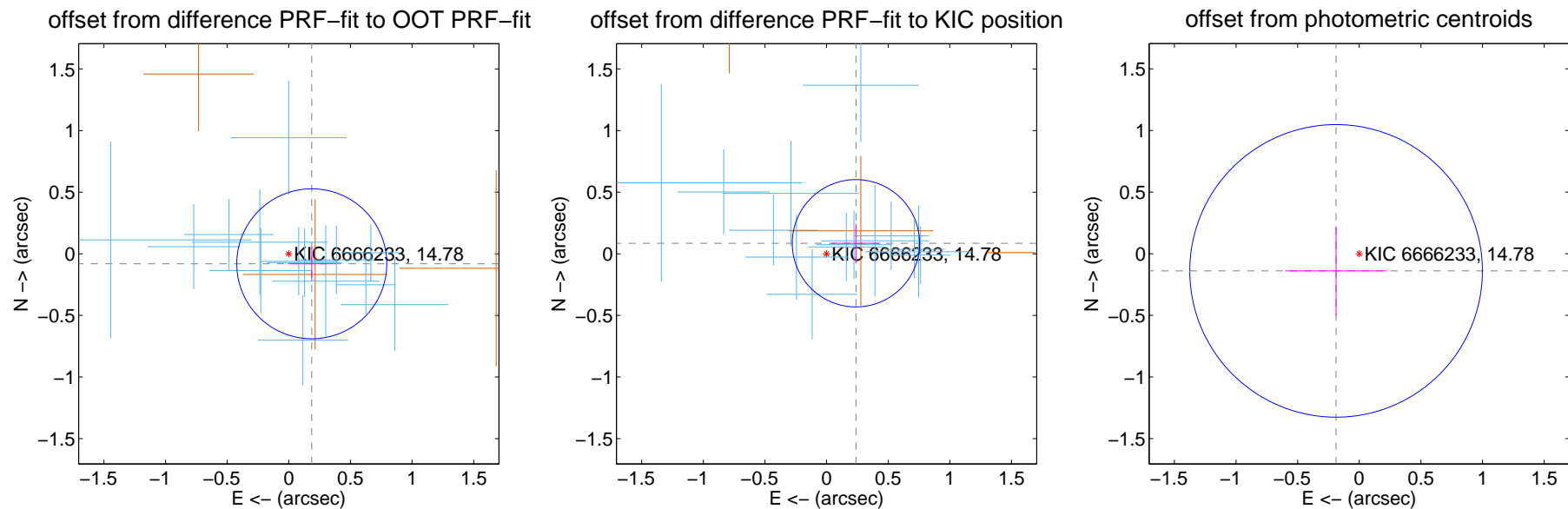
DV Centroid Data

Supplemental centroid analysis for 006666233-01. Kepler magnitude: 14.78. Transit SNR 29.02

There are 14 quarters with good PRF difference image offsets

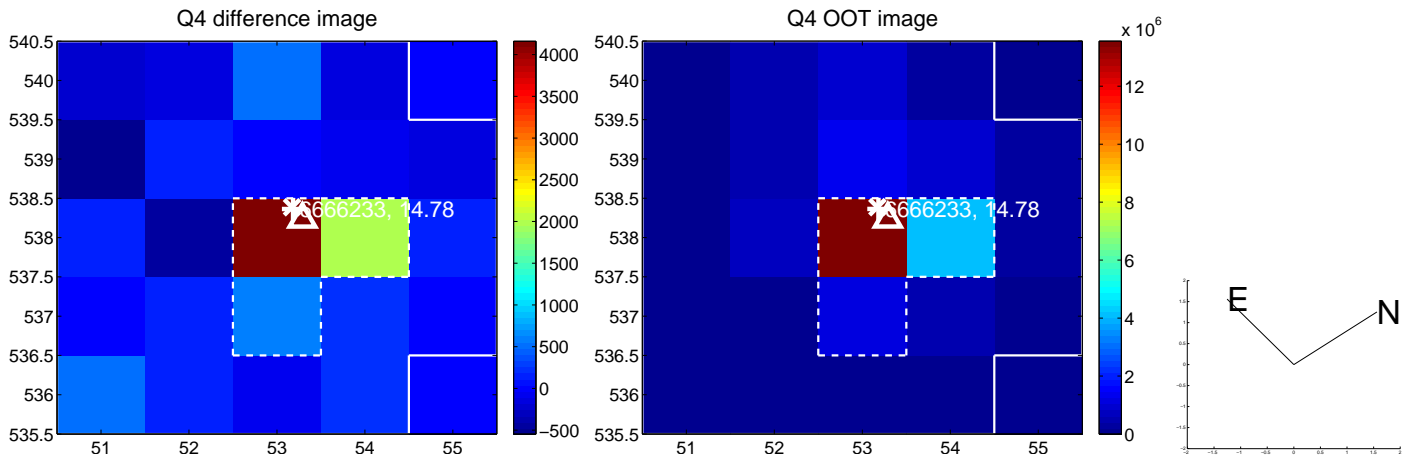
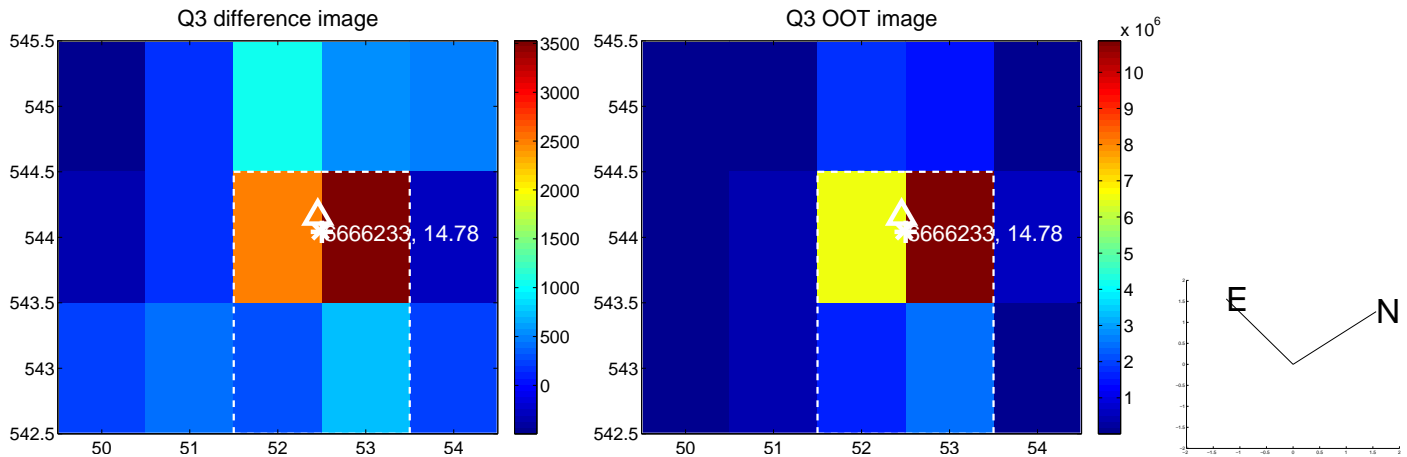
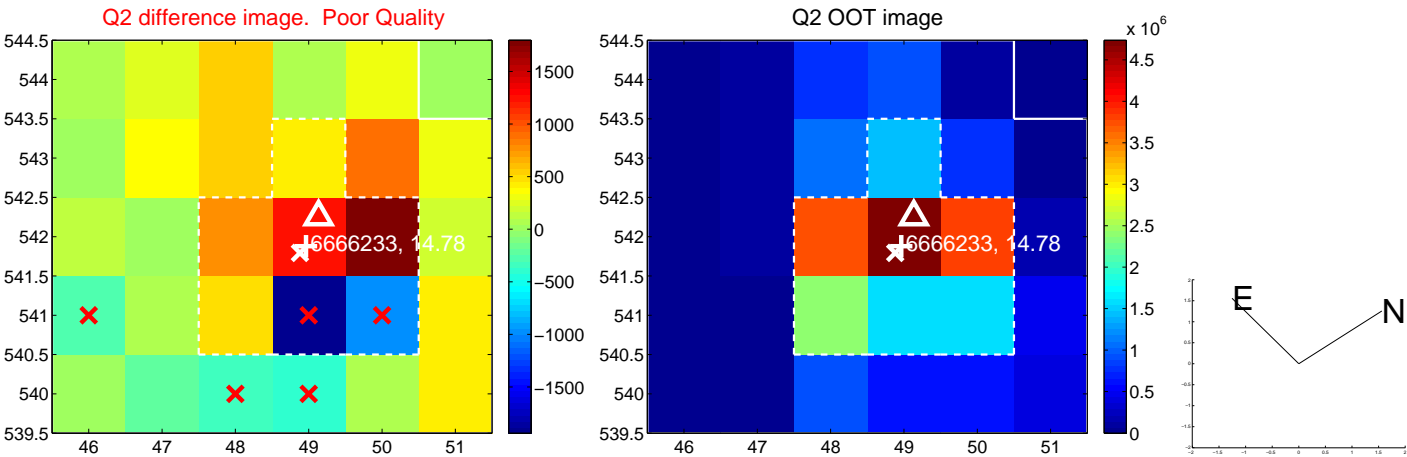
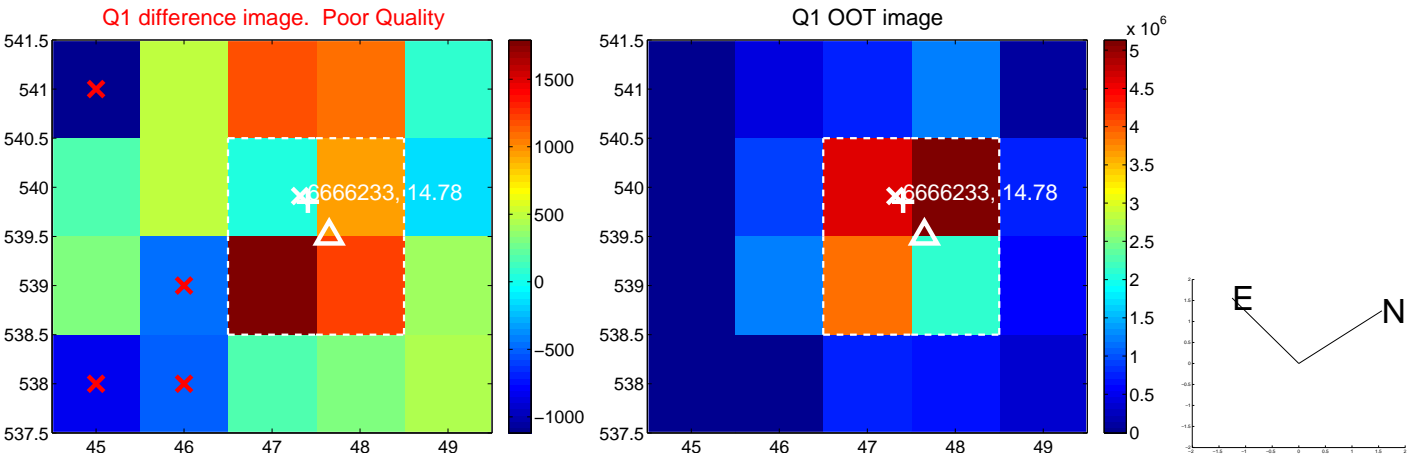
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.203 ± 0.203	1.00	-0.186 ± 0.193	-0.081 ± 0.139
PRF-fit source offset from KIC position	0.253 ± 0.172	1.47	-0.238 ± 0.199	0.085 ± 0.159
photometric centroid source offset	0.23 ± 0.40	0.59	0.19 ± 0.41	-0.14 ± 0.36

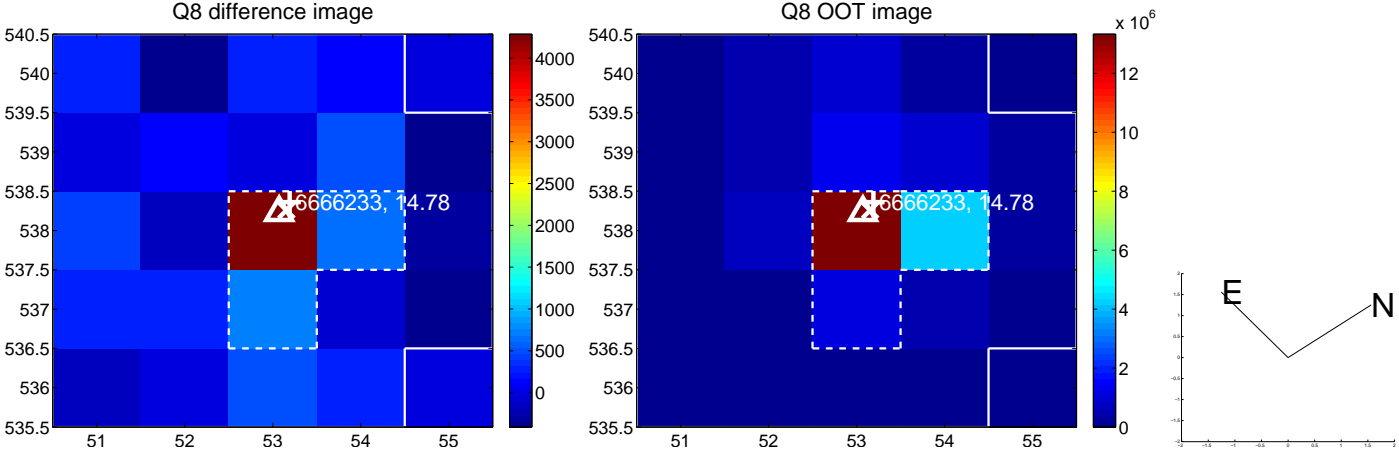
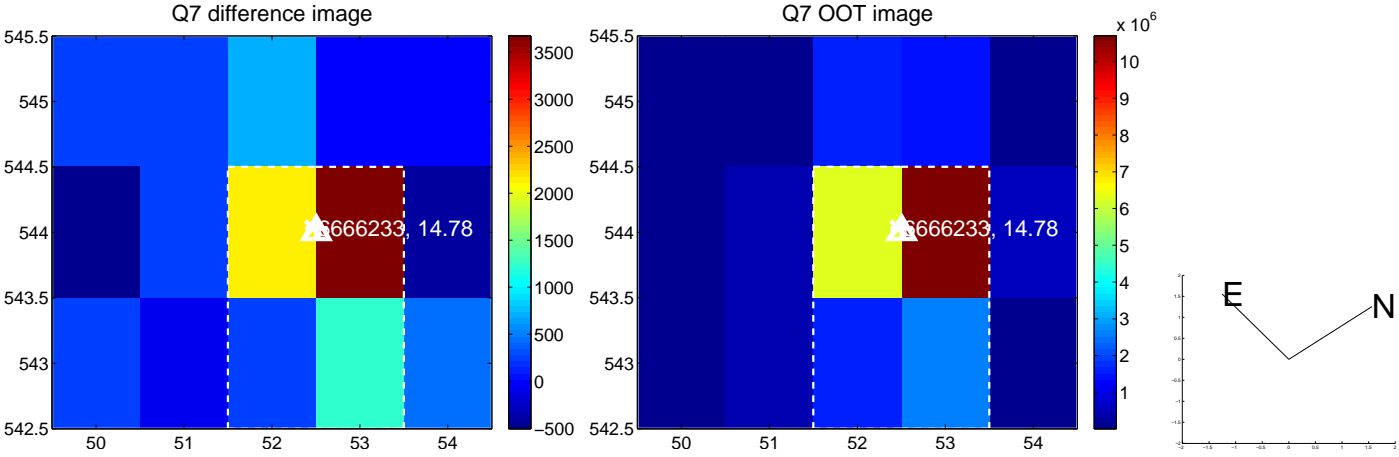
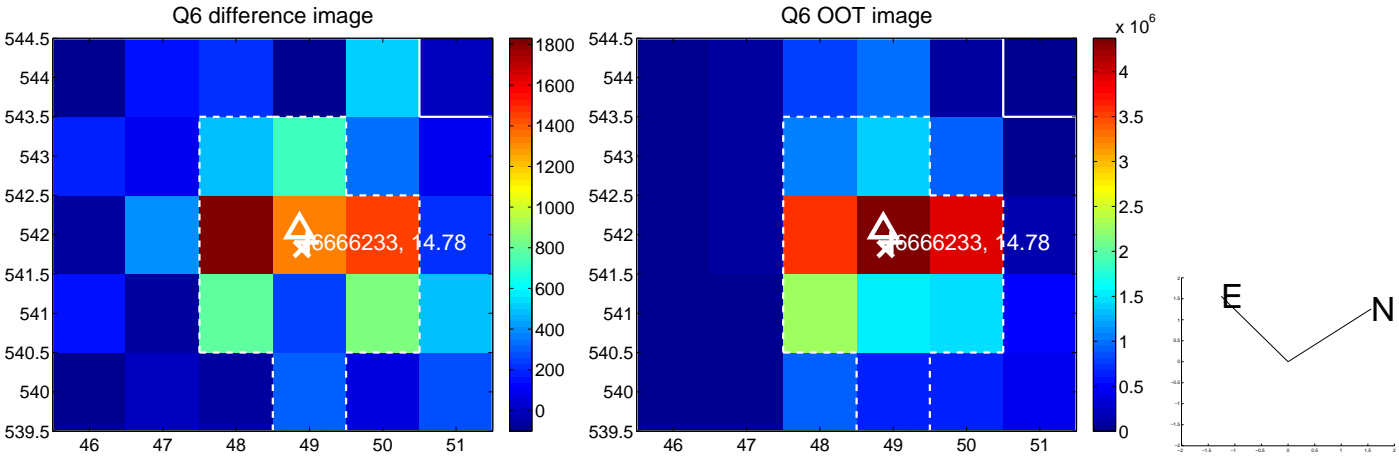
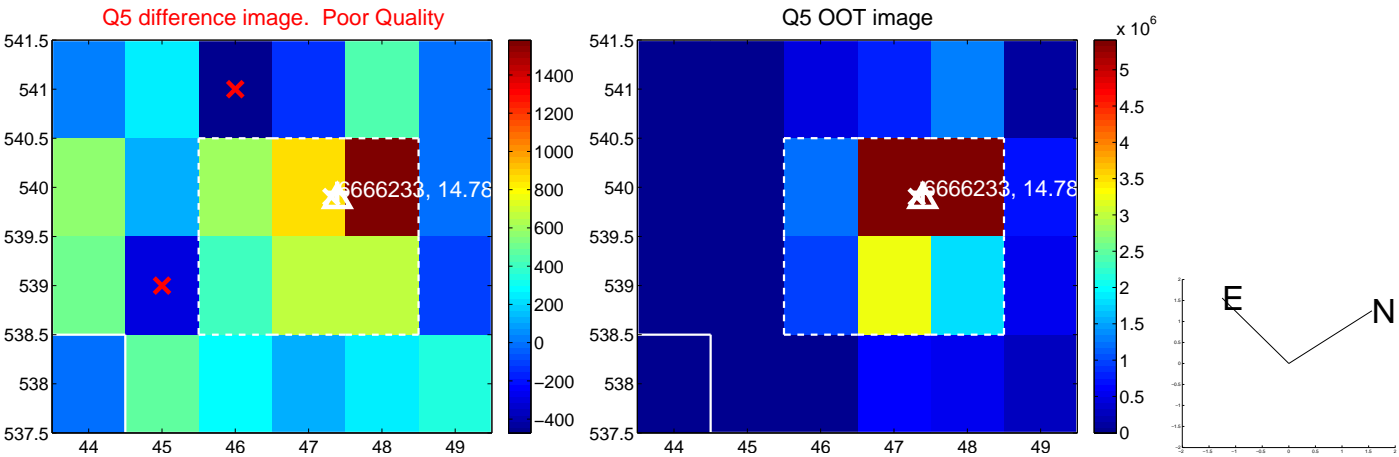


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

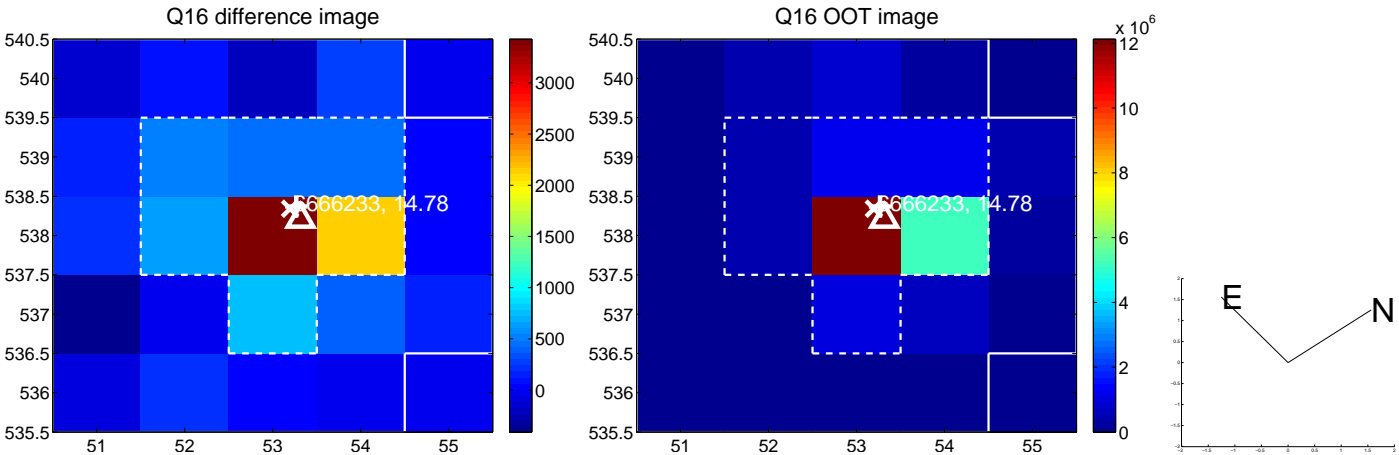
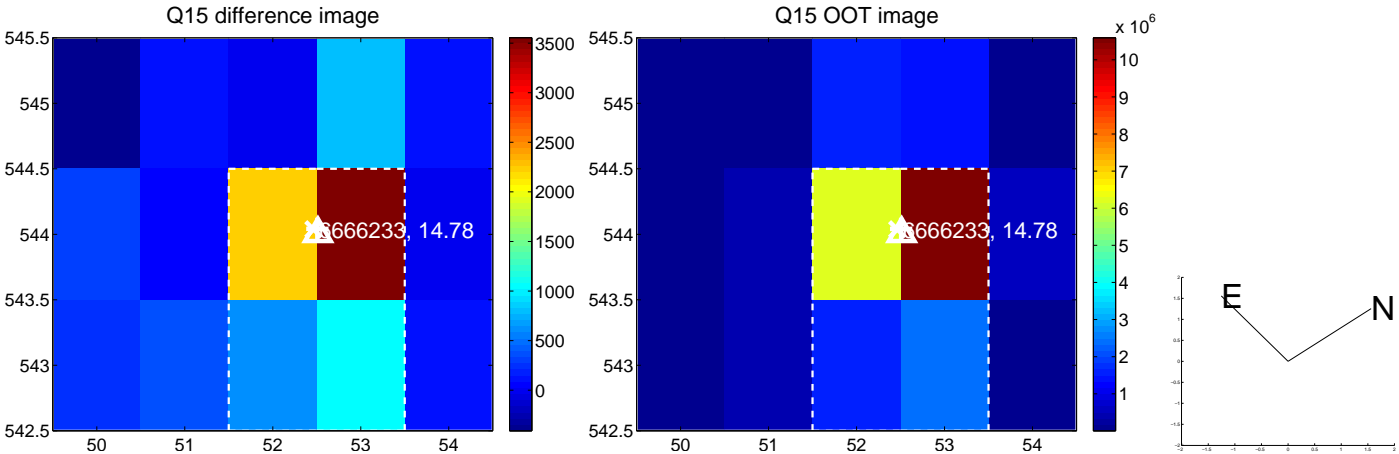
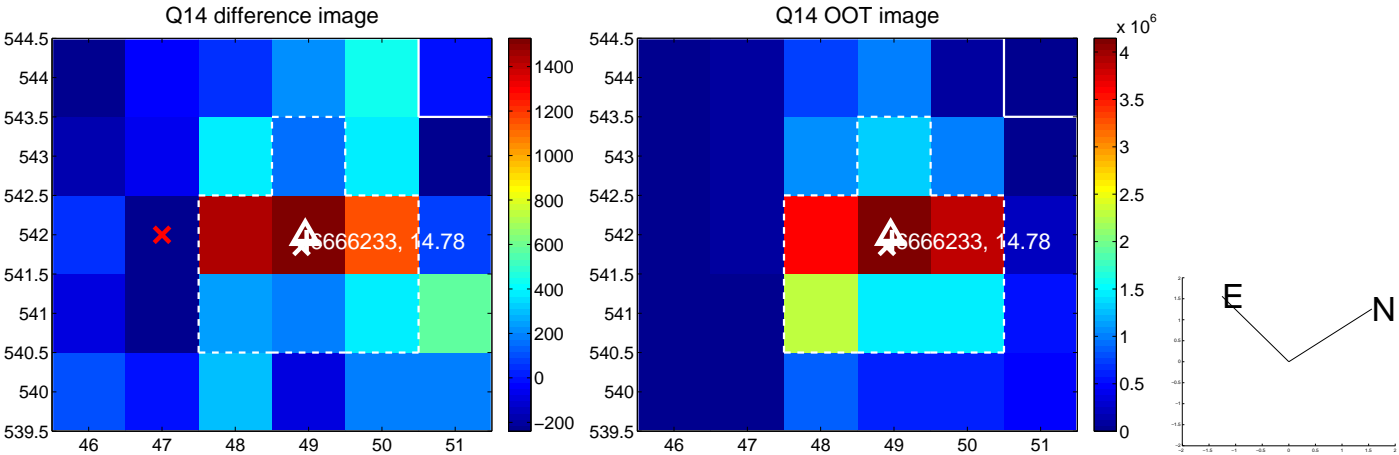
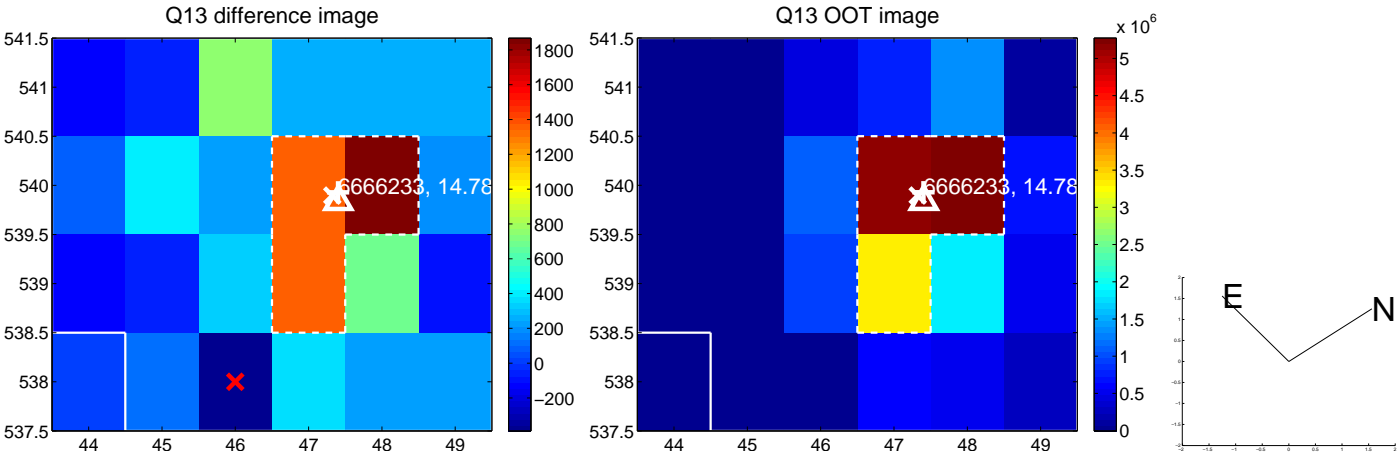
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



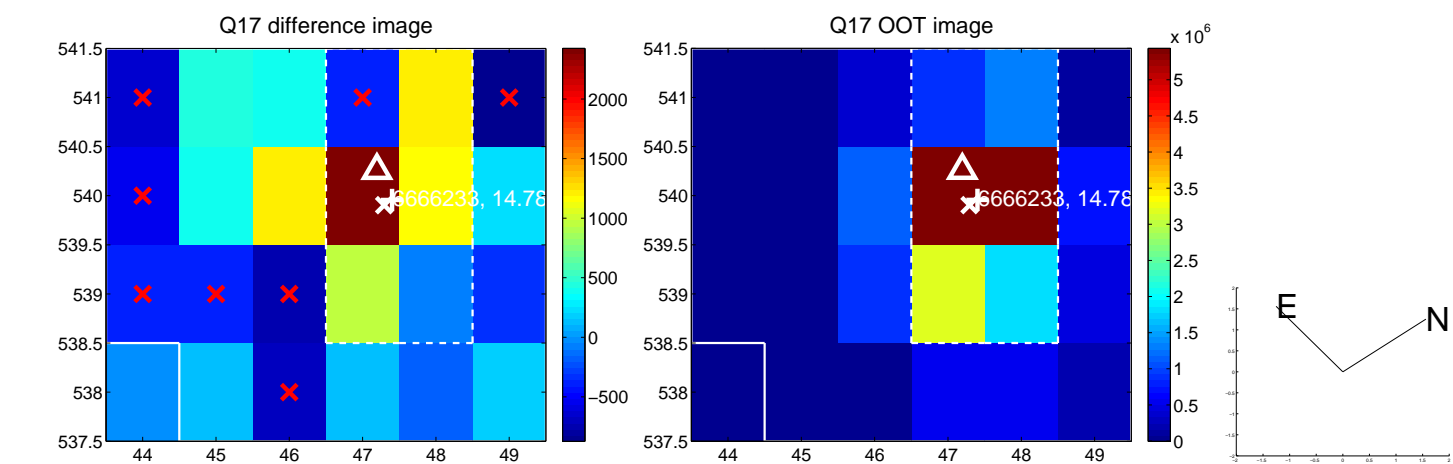
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



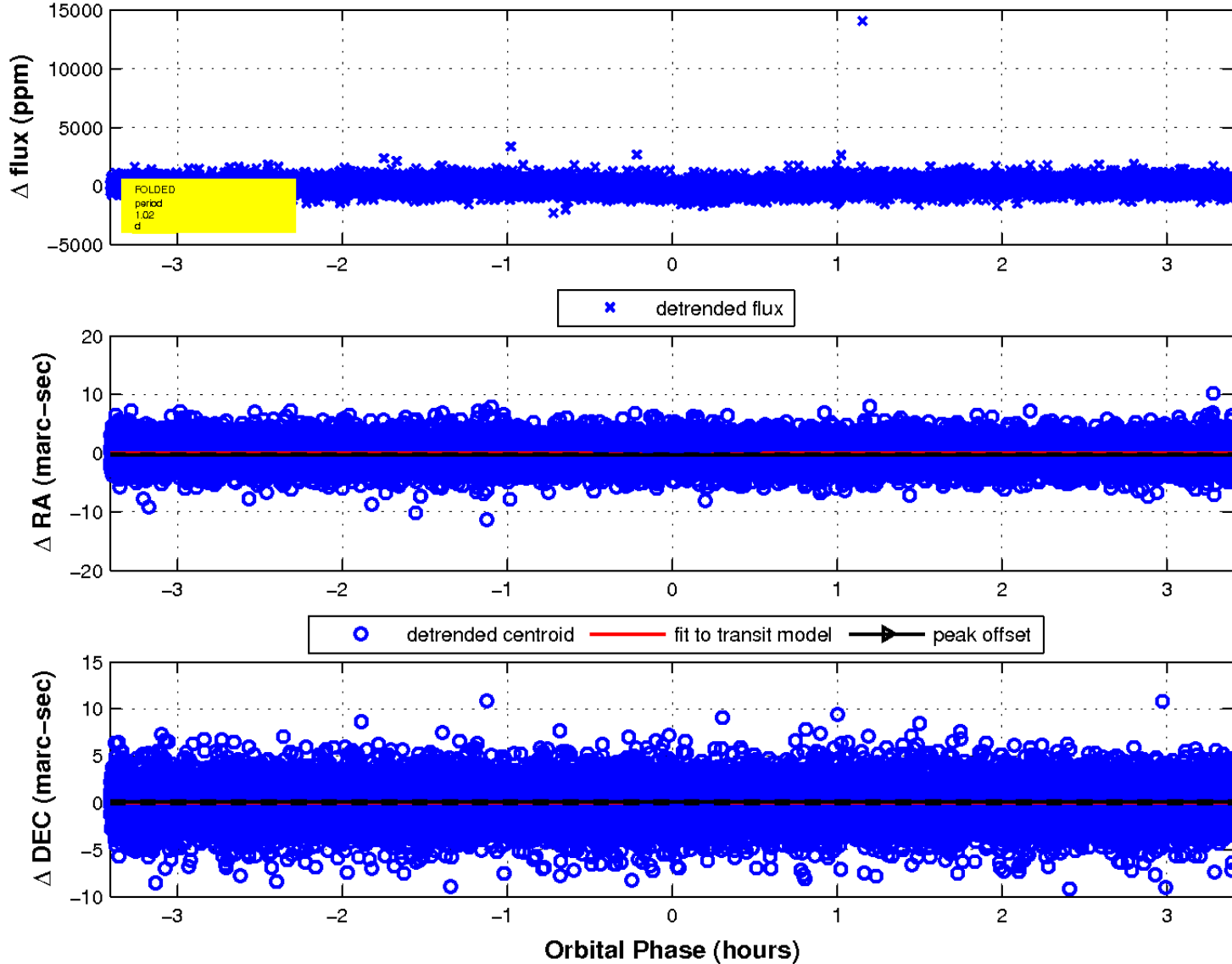
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

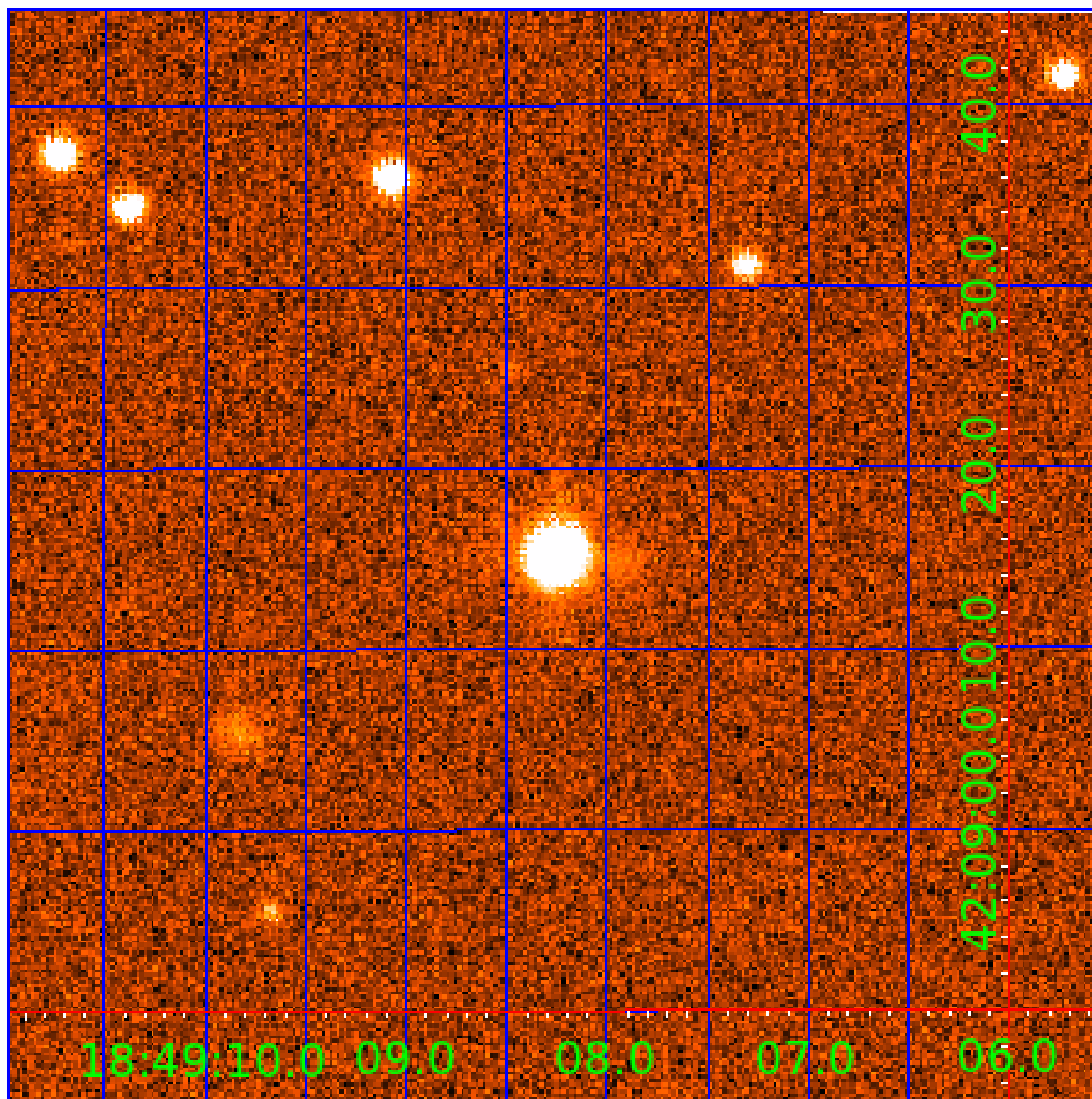


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 006666233

Q1-17 DR25 TCE Parameters

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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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006666233-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

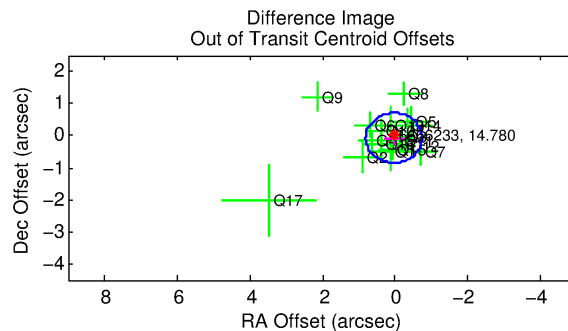
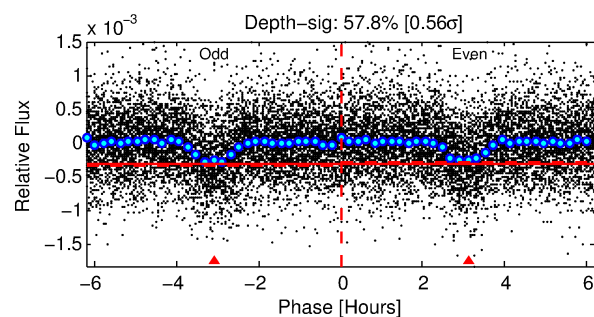
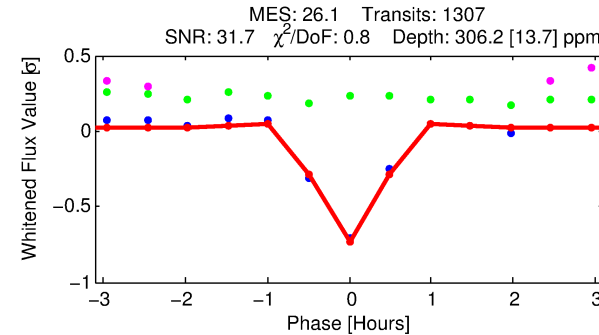
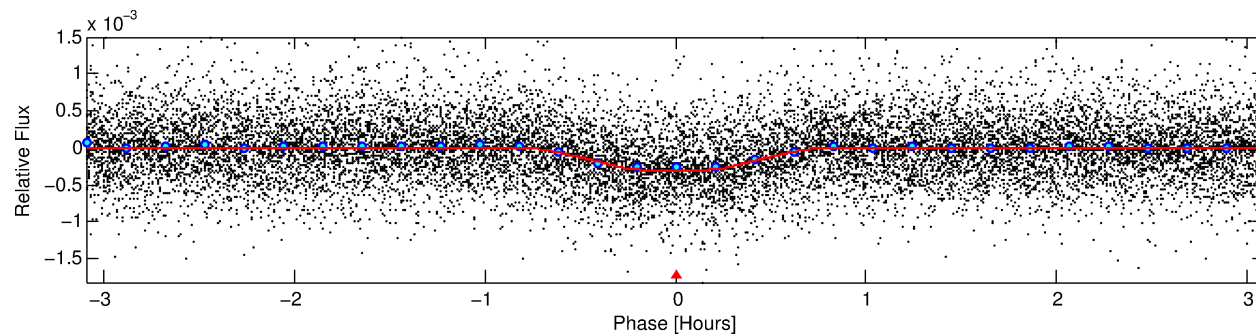
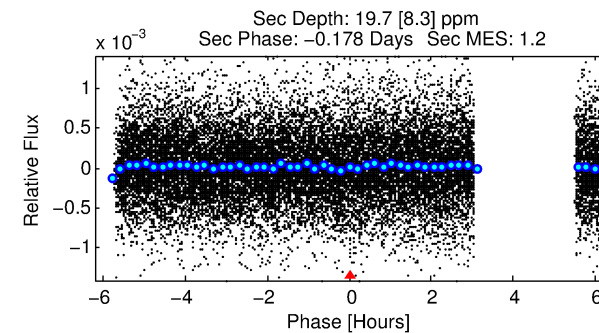
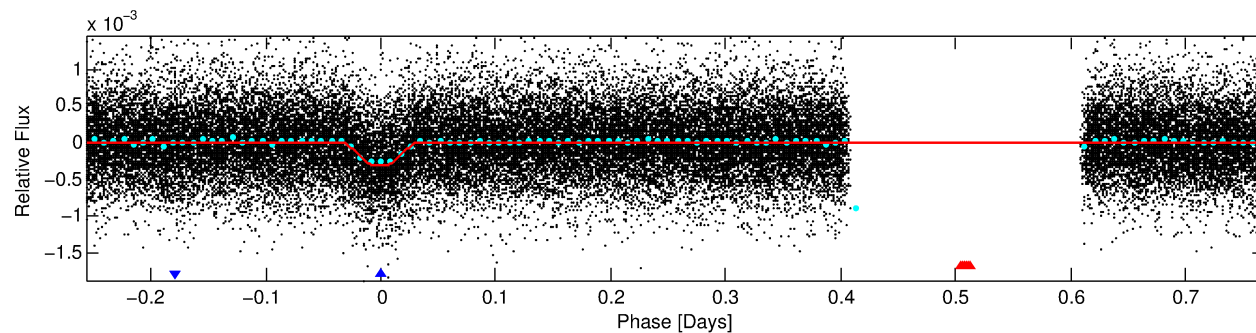
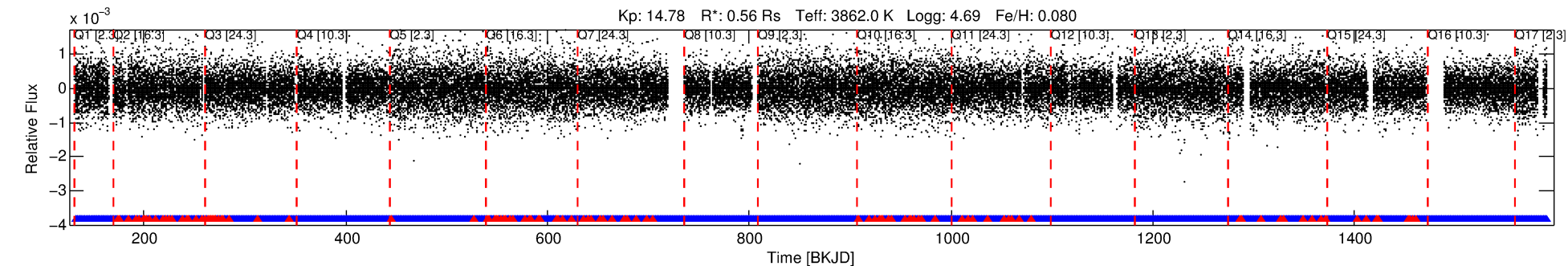
Ephemeris Match Information For 006666233-02

No Significant Match Found

DV One-Page Summary

KIC: 6666233 Candidate: 2 of 2 Period: 1.025 d
KOI: K02306 Corr: No Ephemeris Match

Kp: 14.78 R*: 0.56 Rs Teff: 3862.0 K Logg: 4.69 Fe/H: 0.080



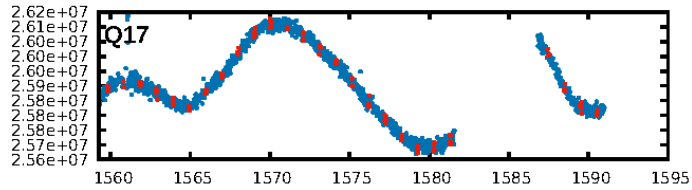
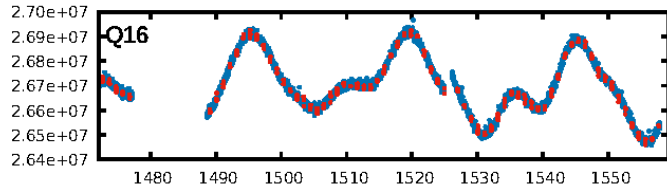
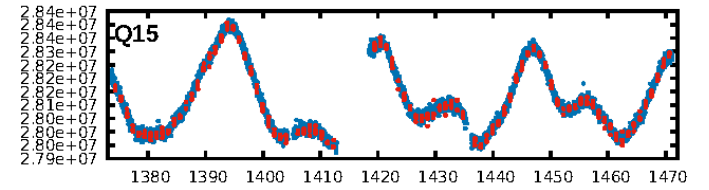
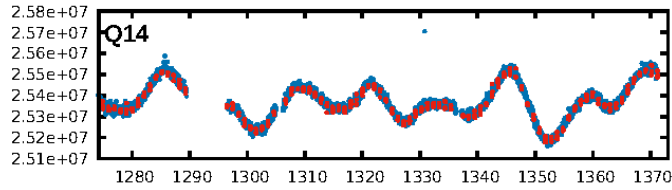
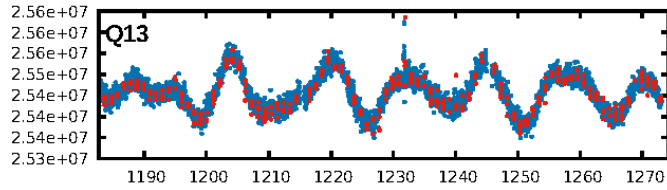
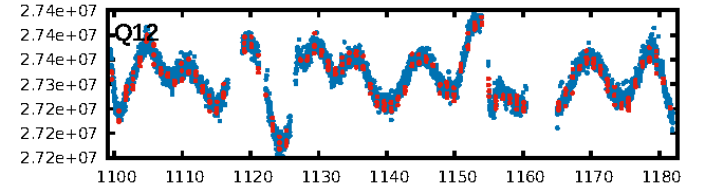
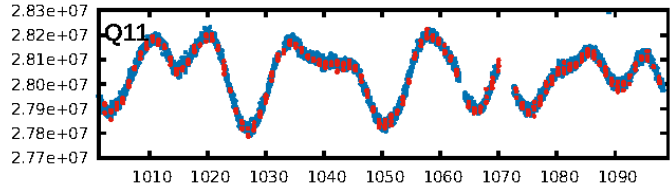
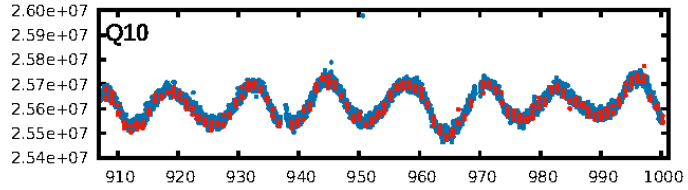
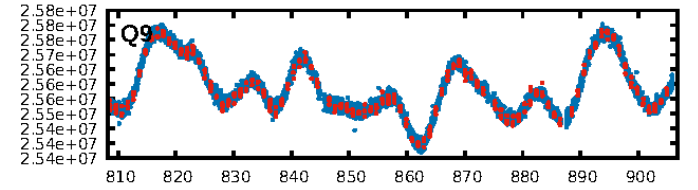
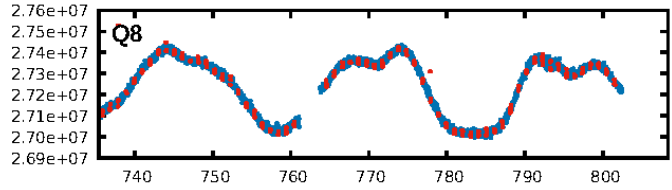
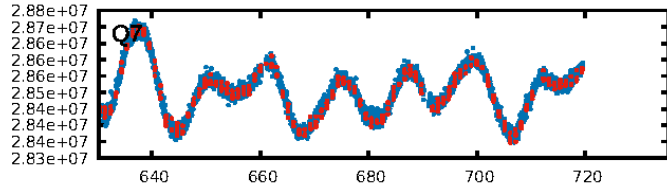
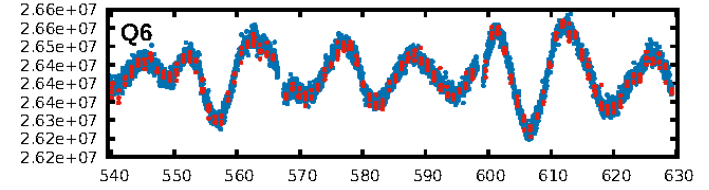
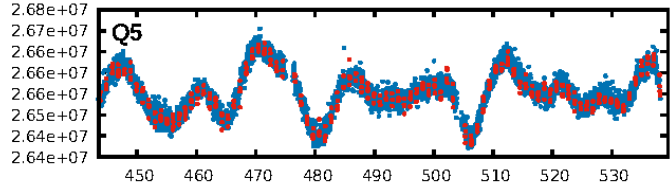
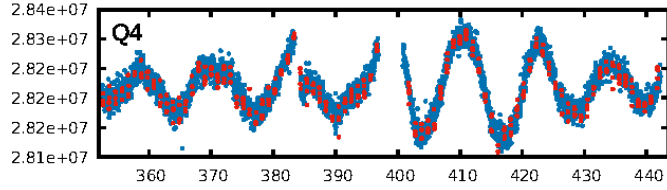
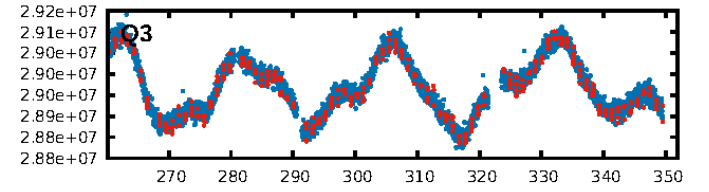
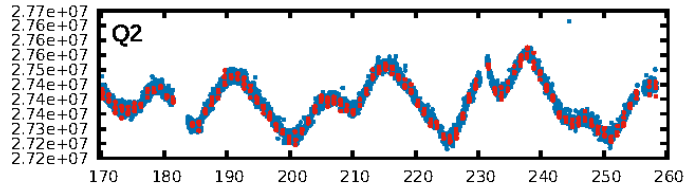
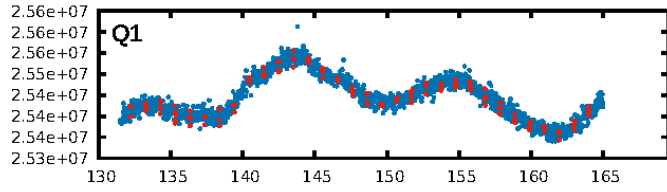
DV Fit Results:

Period = 1.02482 [0.00000] d
Epoch = 132.2372 [0.0005] BKJD
Rp/R* = 0.0172 [0.0044]
a/R* = 5.79 [5.64]
b = 0.68 [0.80]
Seff = 233.14 [27.56]
Teff = 996 [29] K
Rp = 1.05 [0.28] Re
a = 0.0165 [0.0009] AU
Ag = 2.64 [1.77] [0.93σ]
Teffp = 1964 [329] K [2.93σ]

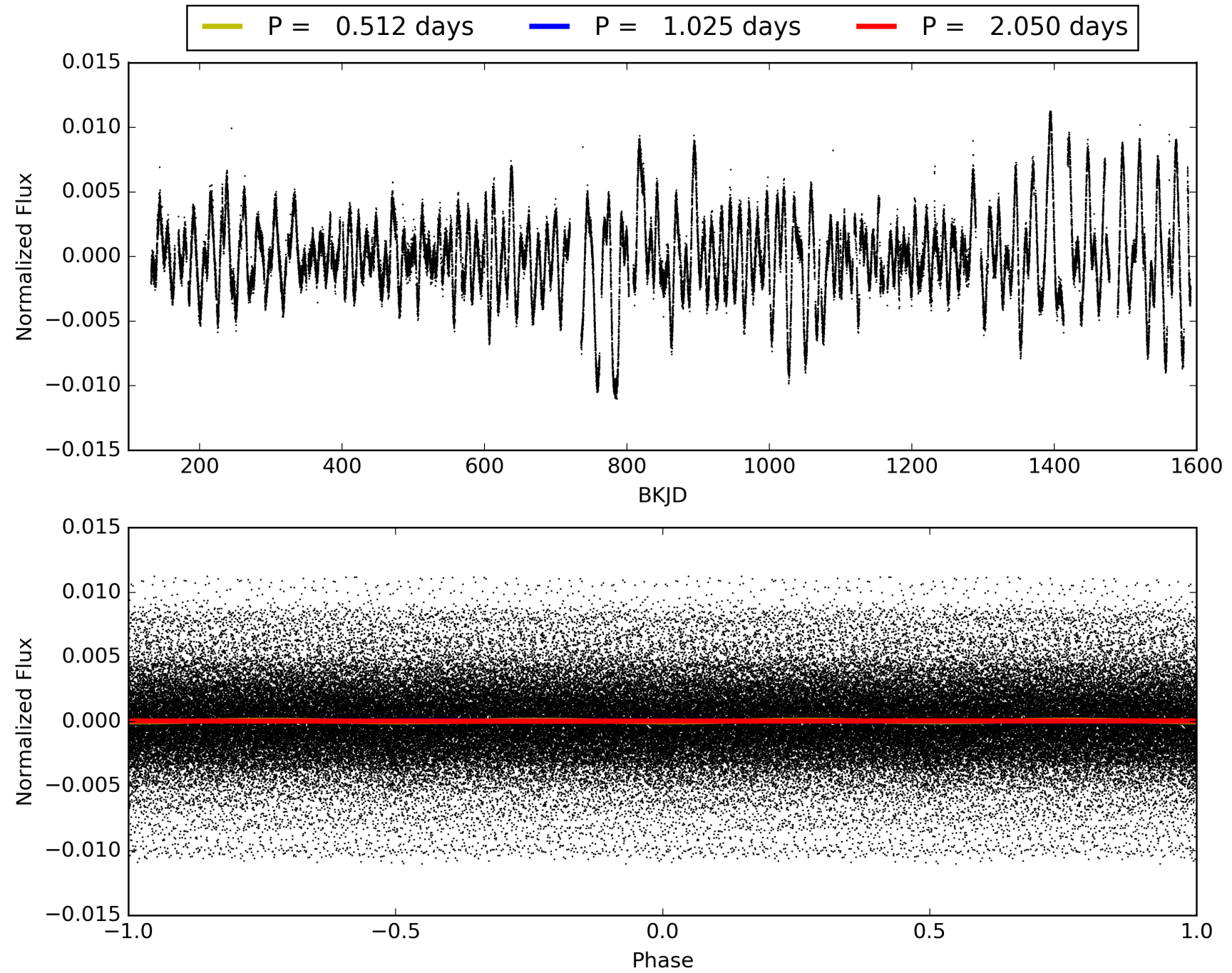
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.27e-148
RollingBand-fgt: 0.91 [1137/1249]
GhostDiagnostic-chr: 1.88
Centroid-sig: 31.1%
Centroid-so: 0.610 arcsec [1.57σ]
OotOffset-rm: 0.083 arcsec [0.32σ]
KicOffset-rm: 0.167 arcsec [0.96σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 006666233-02, PDC Light Curves

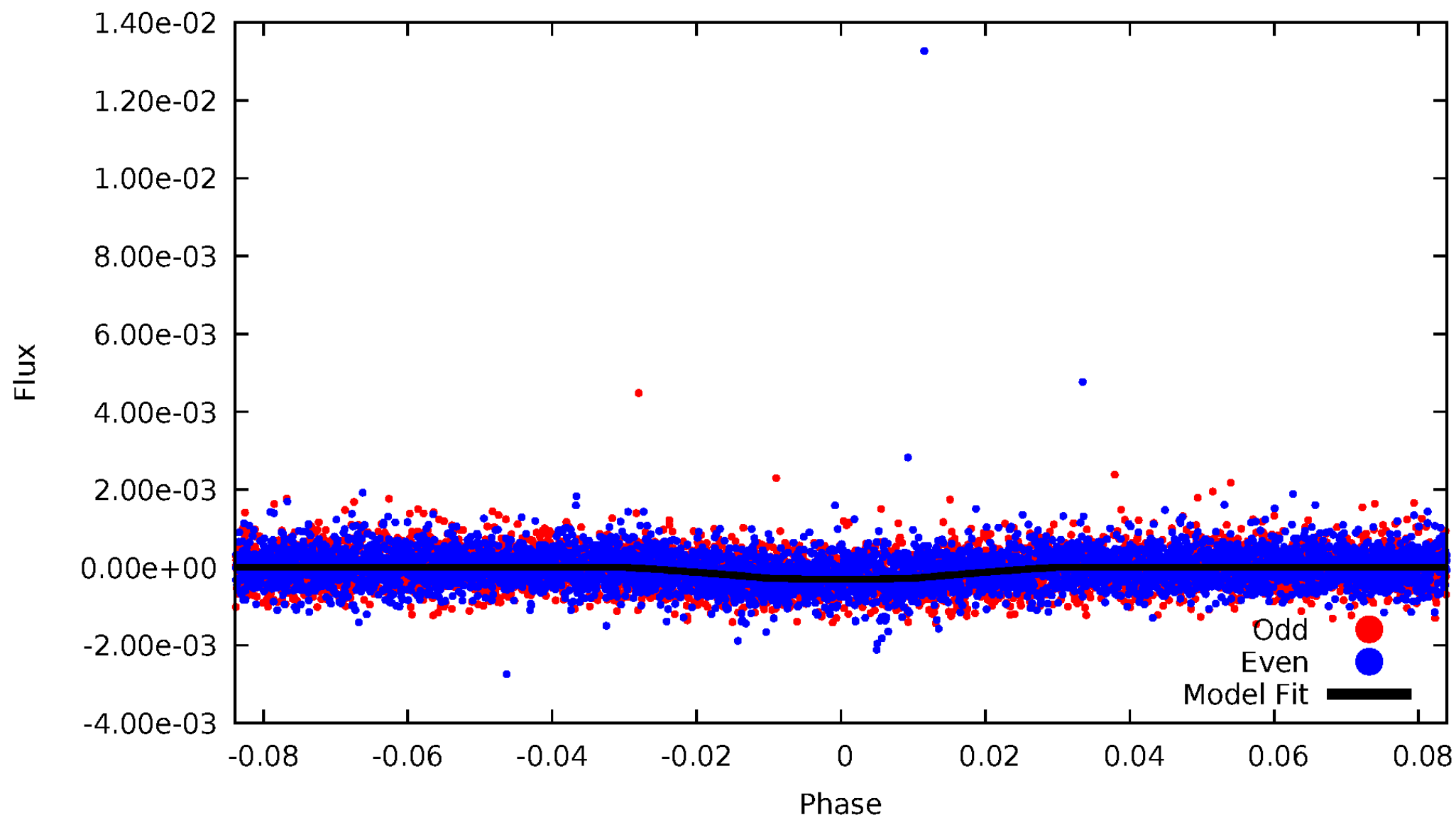


TCE 006666233-02



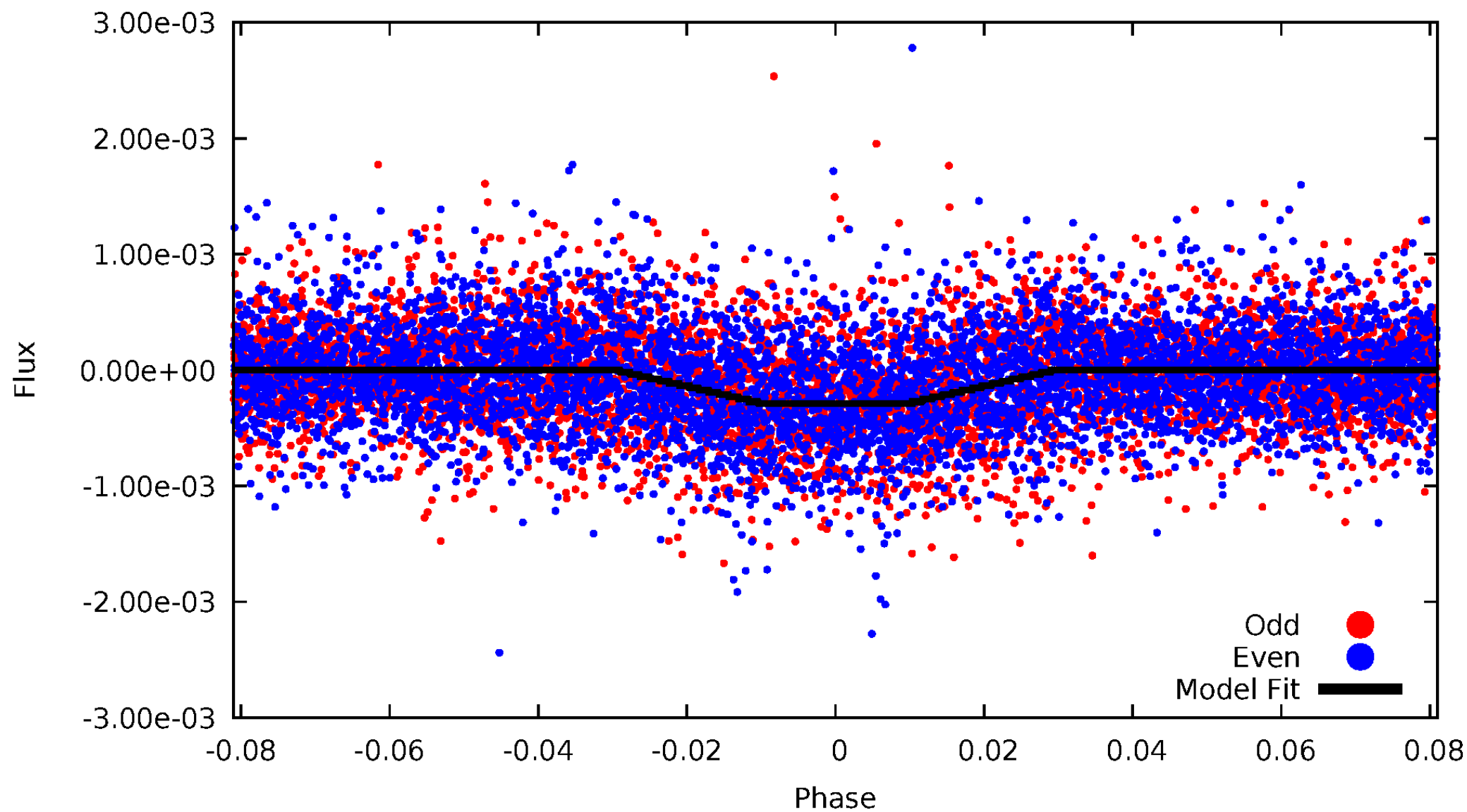
DV Odd/Even

TCE 006666233-02



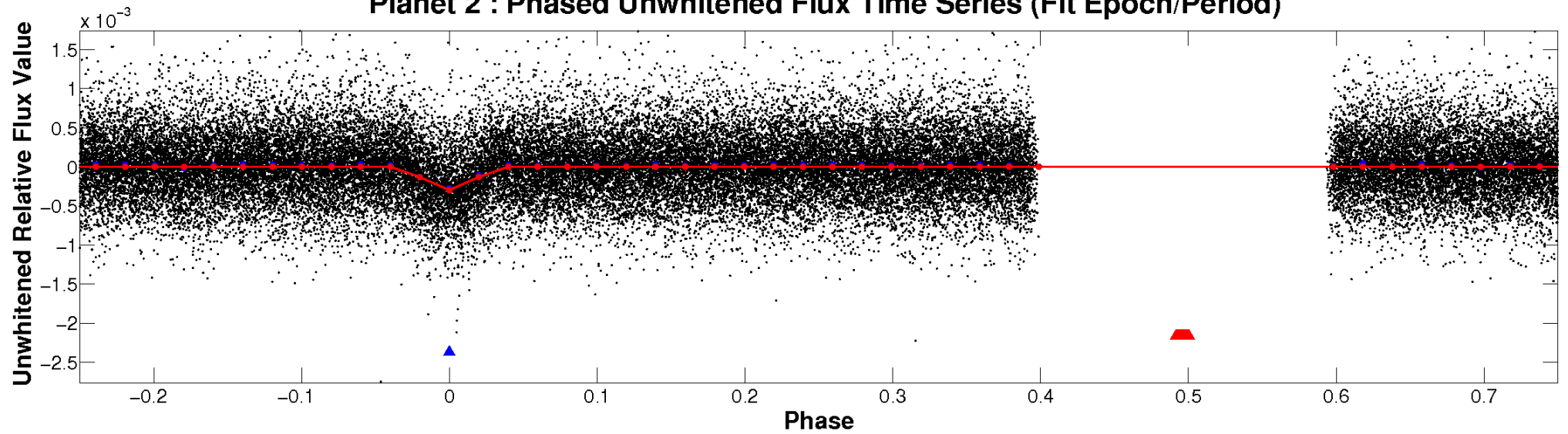
ALT Odd/Even

TCE 006666233-02

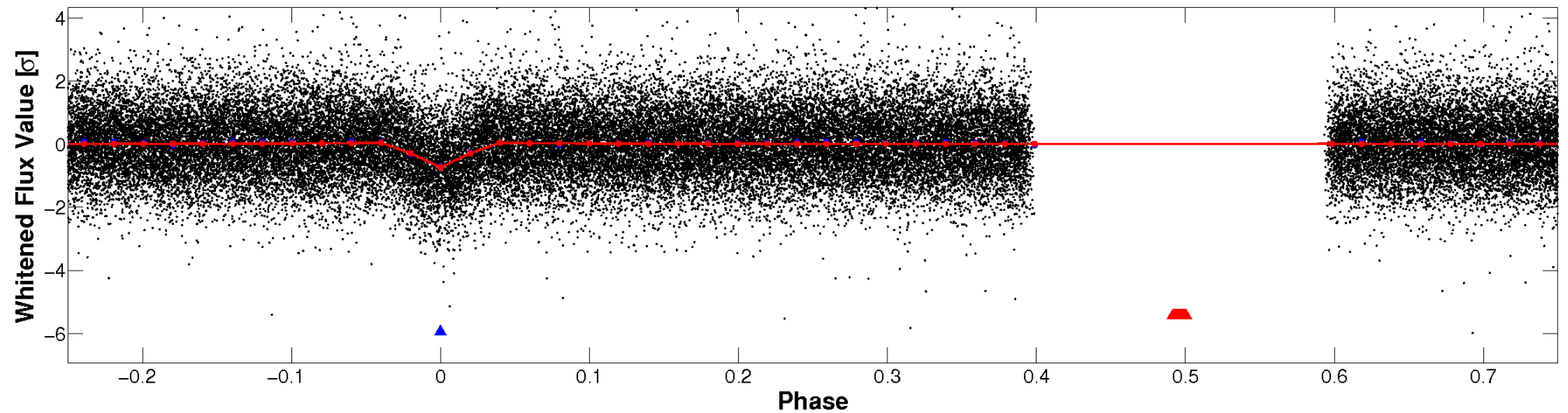


Non-Whitened Vs. Whitened Light Curve

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

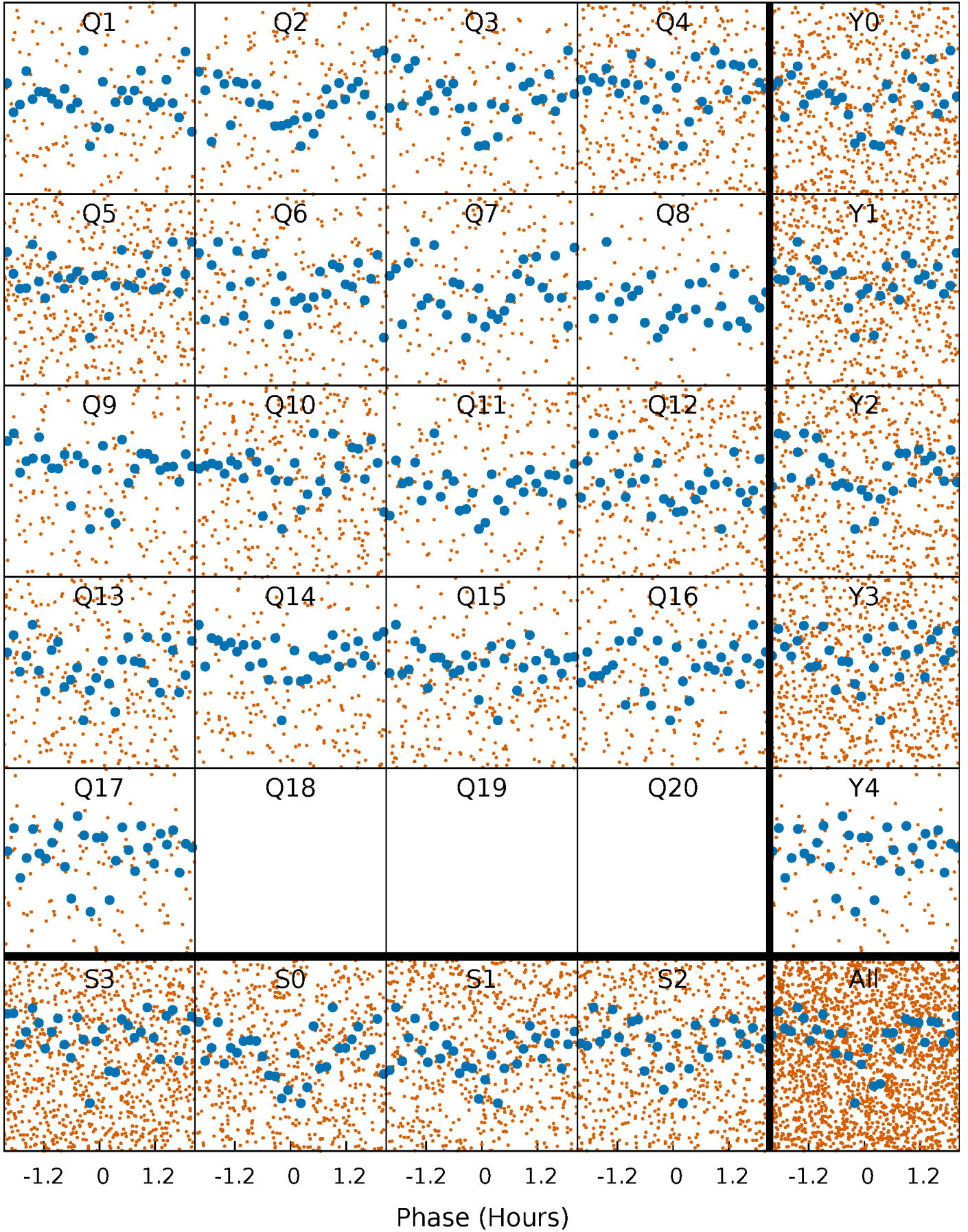


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



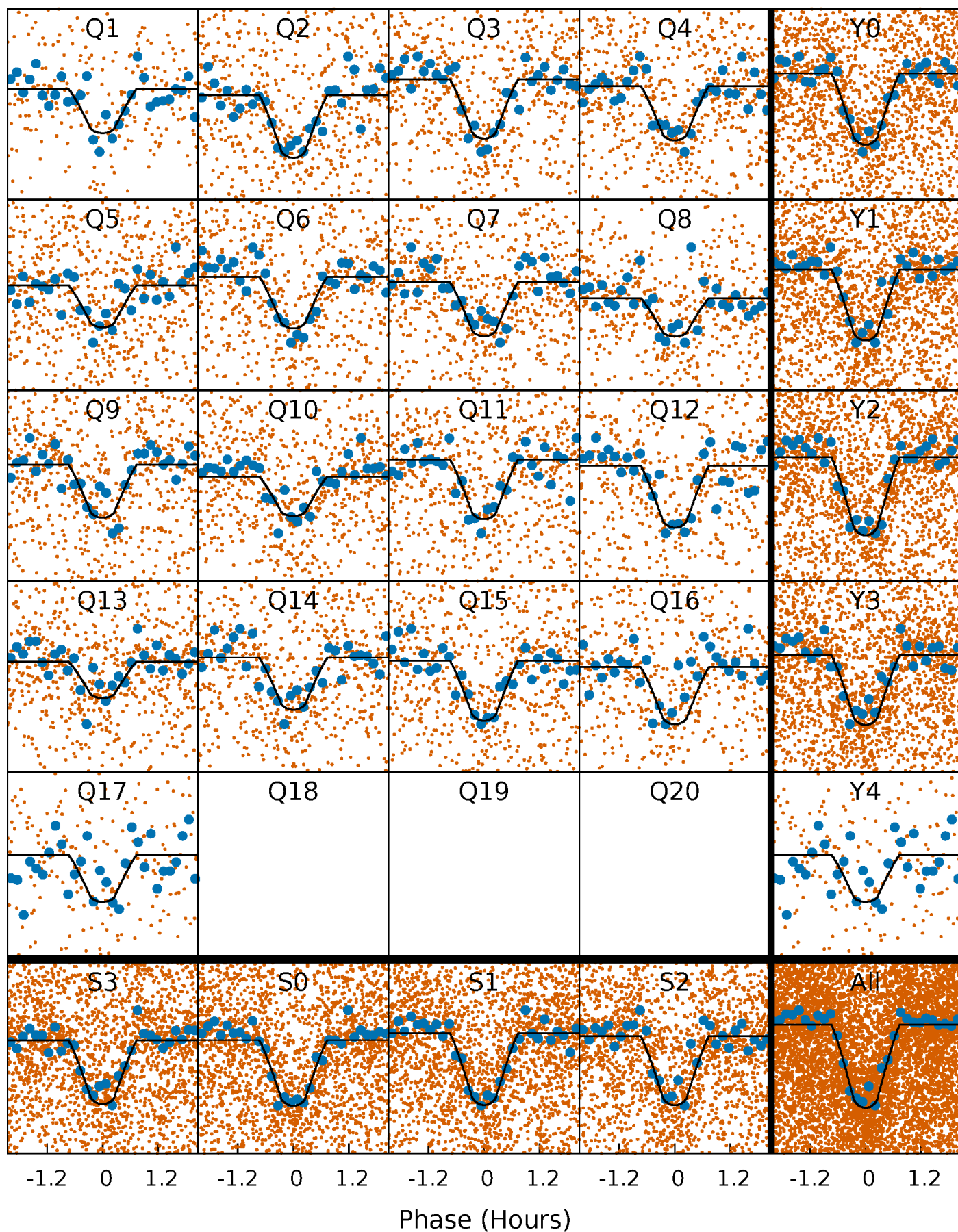
PDC Quarter-Phased Transit Curves

TCE 006666233-02 P= 1.024819 Days $T_0=132.237228$ (BKJD)



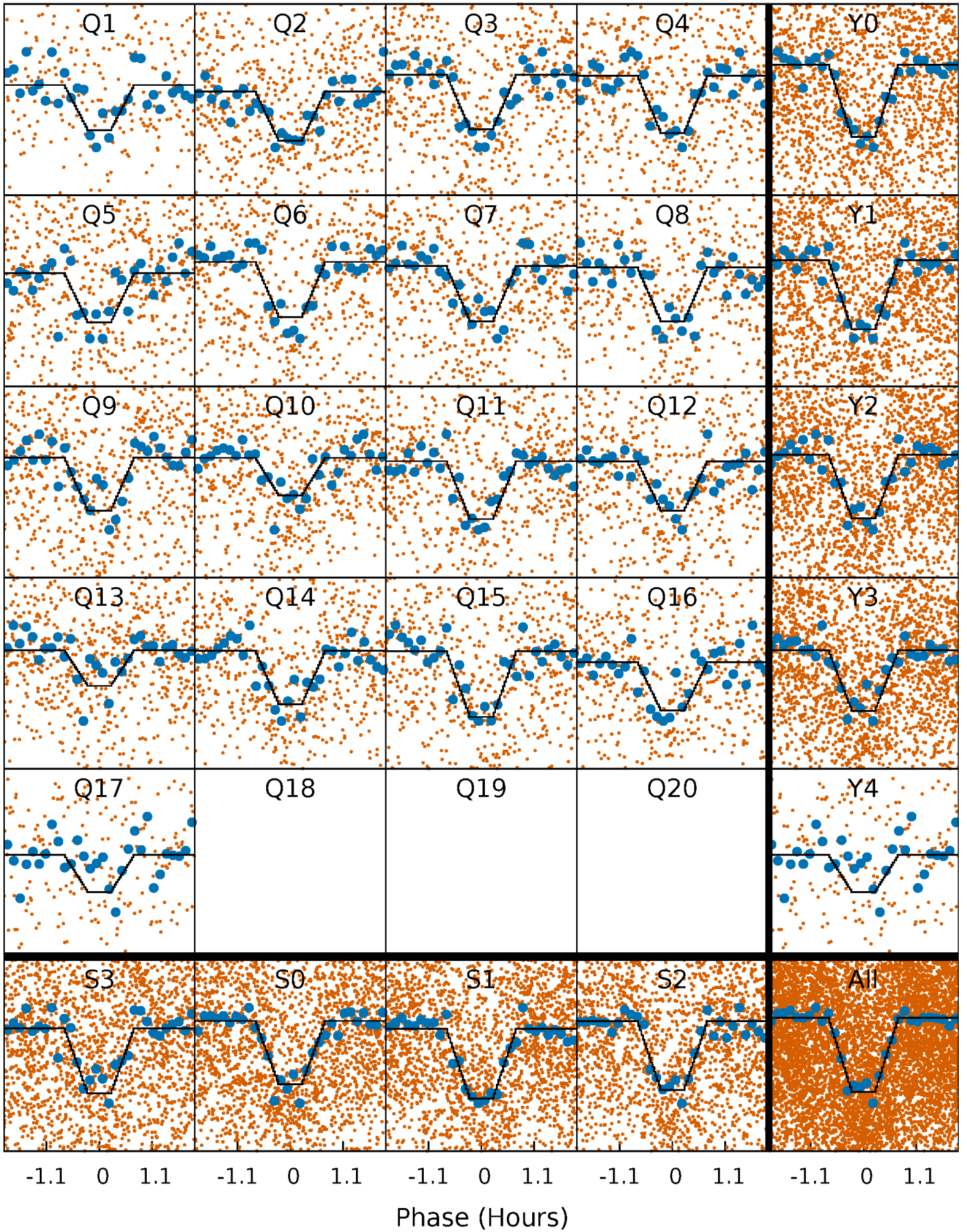
DV Quarter-Phased Transit Curves

TCE 006666233-02 P= 1.024819 Days $T_0=132.237228$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

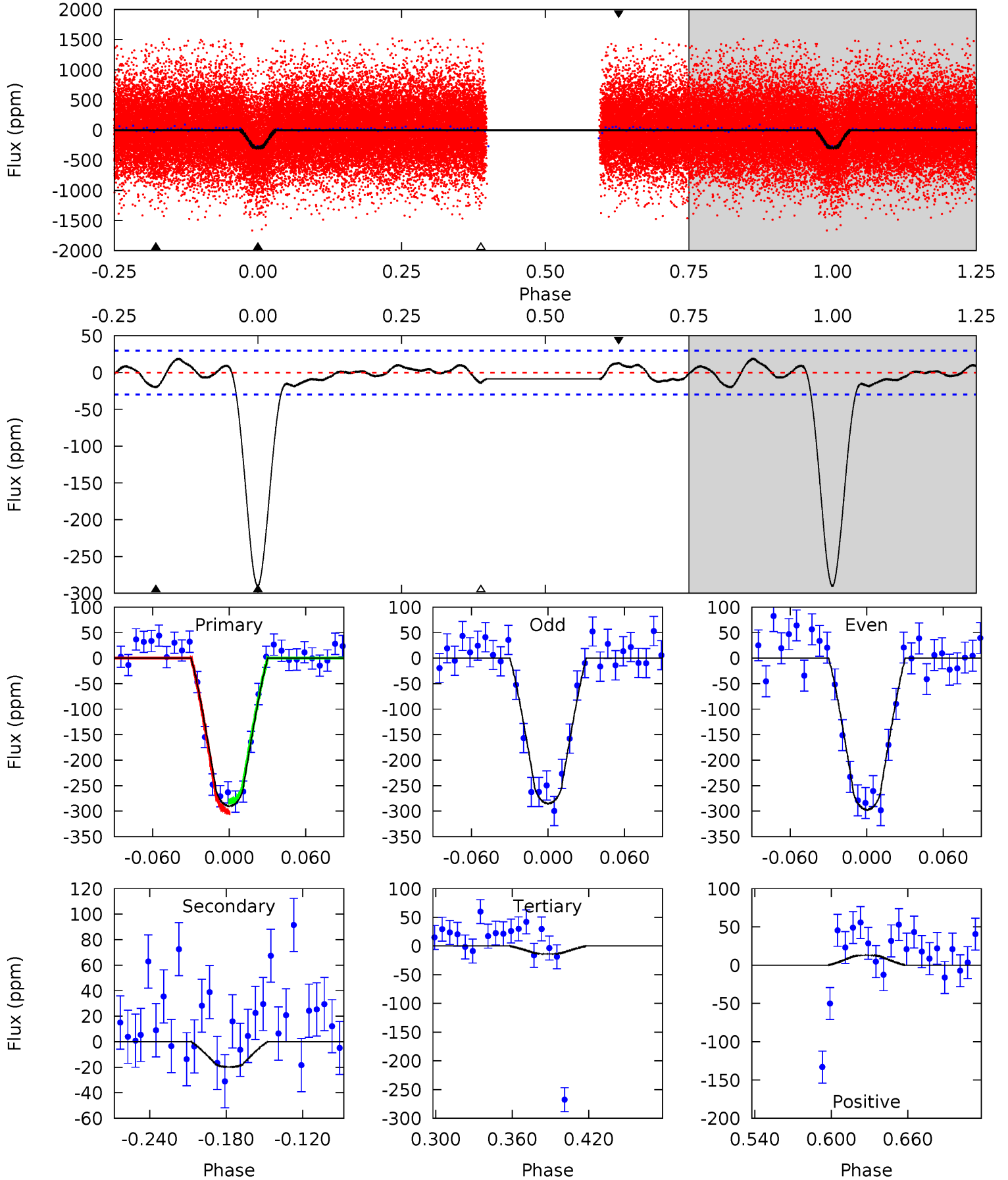
TCE 006666233-02 P= 1.024818 Days $T_0=132.237790$ (BKJD)



DV Model-Shift Uniqueness Test

006666233-02, P = 1.024819 Days, E = 131.212409 Days

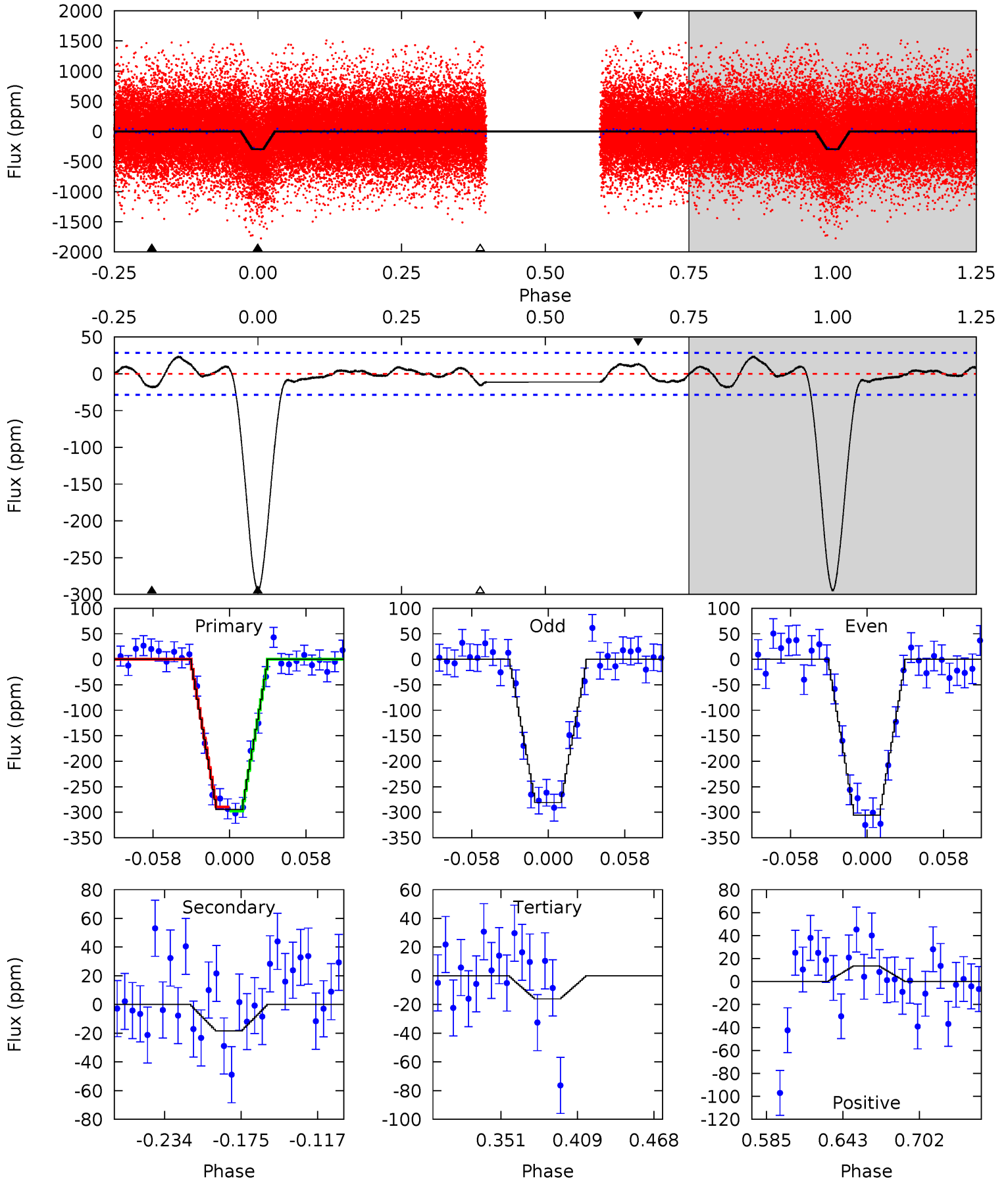
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.7	3.13	2.18	2.05	4.67	1.88	1.17	43.5	43.6	0.95	1.08	0.96	0.96	0.06	1.64



Alt Model-Shift Uniqueness Test

006666233-02, P = 1.024818 Days, E = 131.212972 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.3	3.02	2.63	2.23	4.68	1.89	1.14	45.7	46.1	0.39	0.79	2.04	0.96	0.07	0.65



Stellar Parameters For KIC 006666233

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3862^{+77}_{-84}	$4.690^{+0.042}_{-0.018}$	$0.080^{+0.150}_{-0.150}$	$0.563^{+0.026}_{-0.040}$	$0.566^{+0.035}_{-0.035}$	$4.466^{+0.783}_{-0.346}$
	+2%/-2%	+1%/-0%	+188%/-188%	+5%/-7%	+6%/-6%	+18%/-8%
Source	SPE70	SPE60	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 006666233-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-20 ± 6	$1.05^{+0.27}_{-0.29}$	1387^{+33}_{-34}	2564^{+241}_{-207}	$2.700^{+2.414}_{-1.205}$
Alt.	-18 ± 6	$1.05^{+0.26}_{-0.26}$	1386^{+32}_{-35}	2532^{+221}_{-199}	$2.505^{+2.092}_{-1.116}$

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

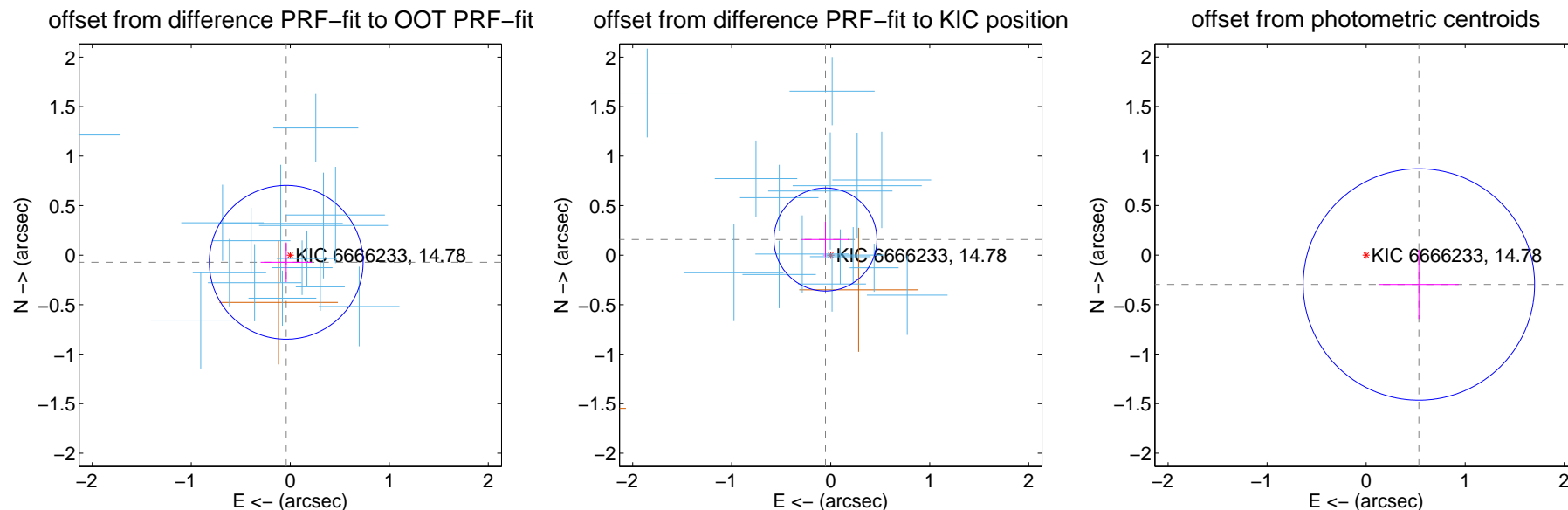
DV Centroid Data

Supplemental centroid analysis for 006666233-02. Kepler magnitude: 14.78. Transit SNR 31.69

There are 15 quarters with good PRF difference image offsets

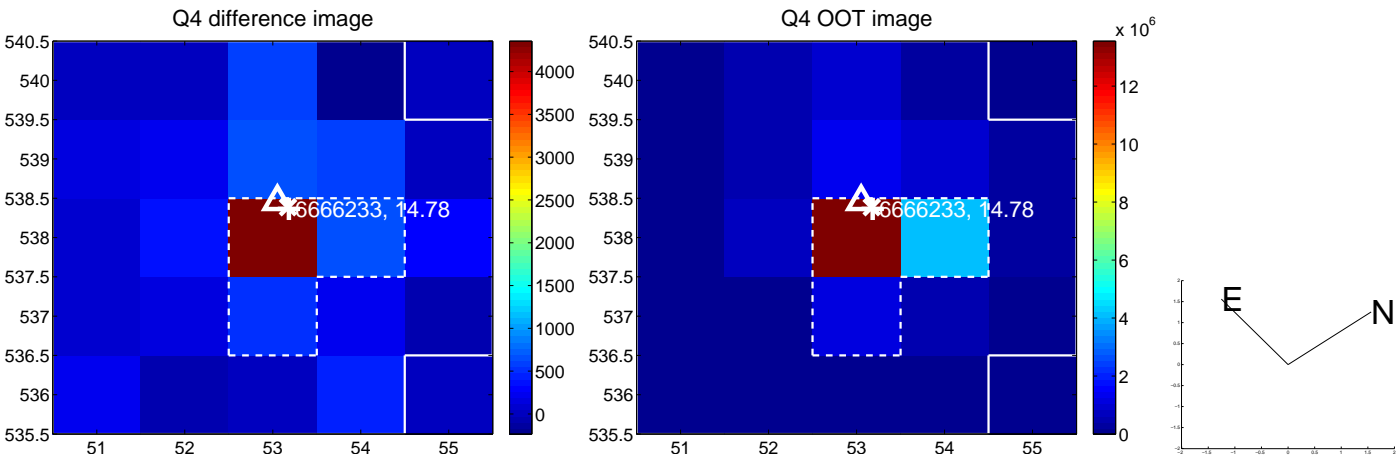
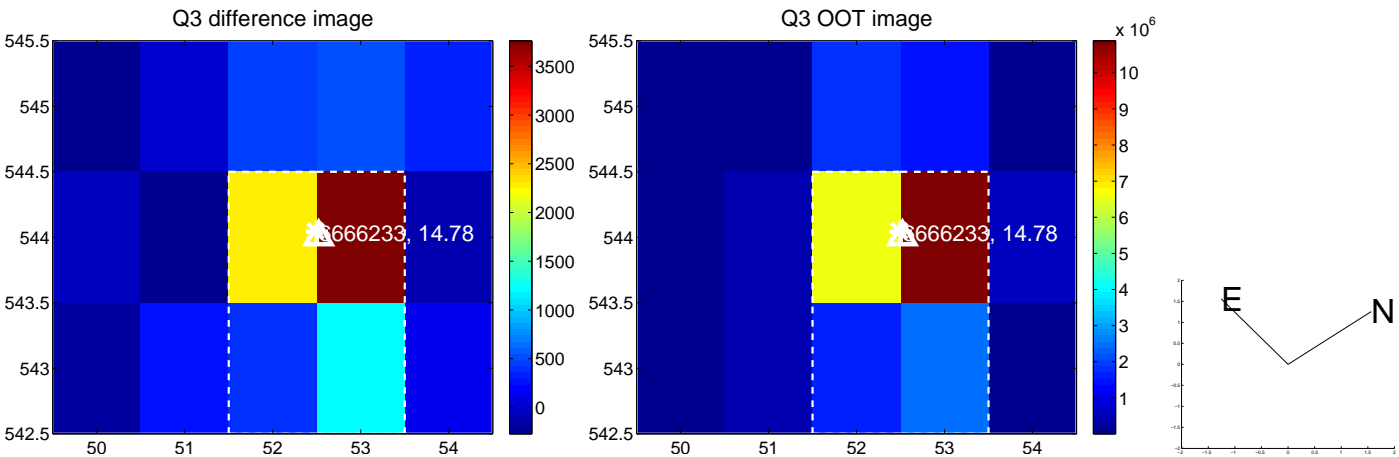
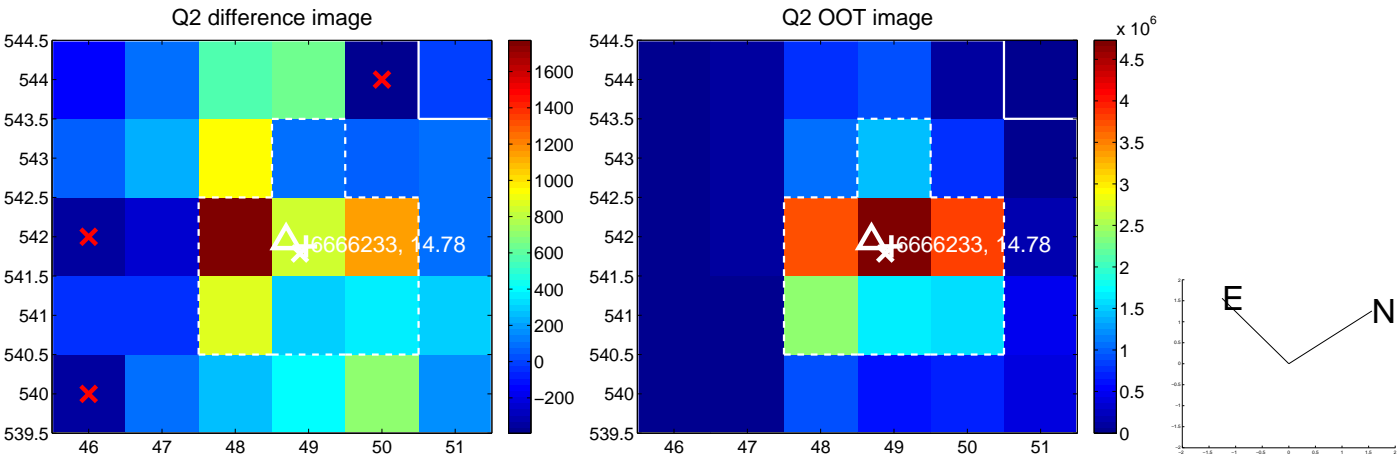
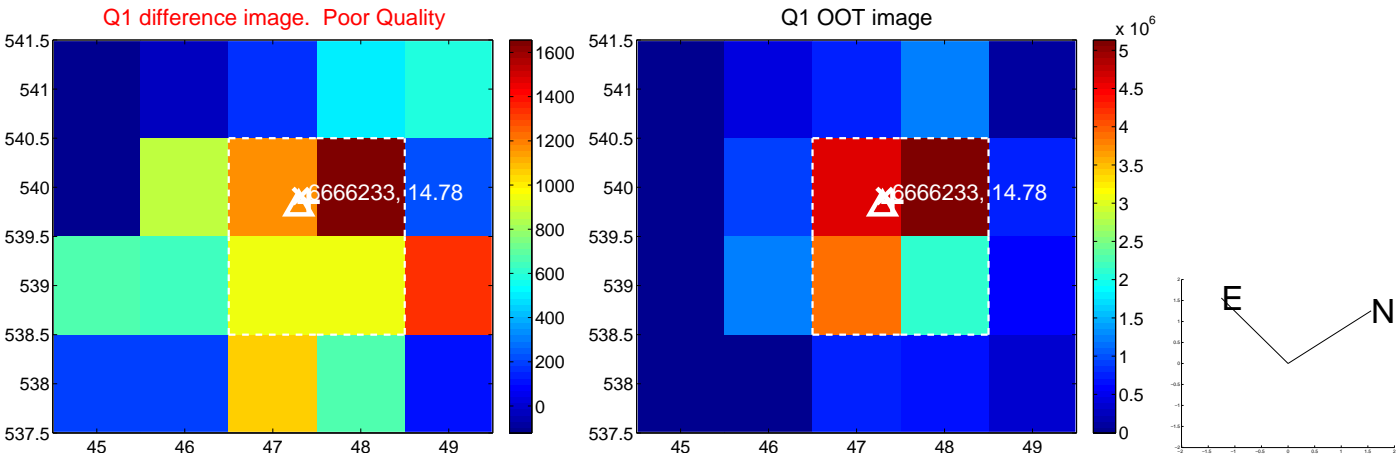
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.083 ± 0.259	0.32	0.041 ± 0.259	-0.072 ± 0.201
PRF-fit source offset from KIC position	0.167 ± 0.173	0.96	0.053 ± 0.243	0.158 ± 0.180
photometric centroid source offset	0.61 ± 0.39	1.57	-0.53 ± 0.40	-0.30 ± 0.35

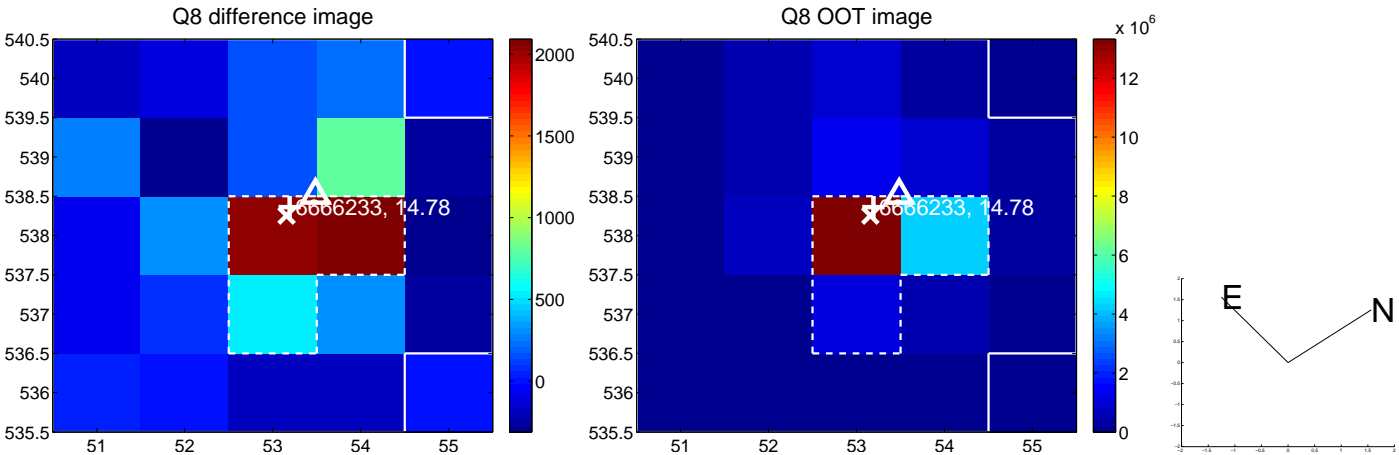
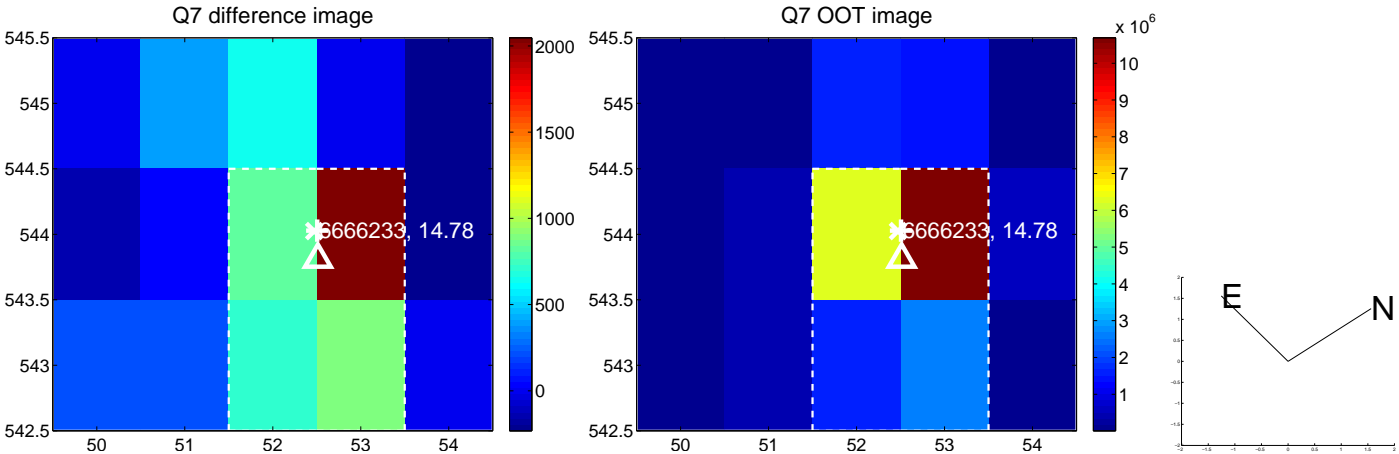
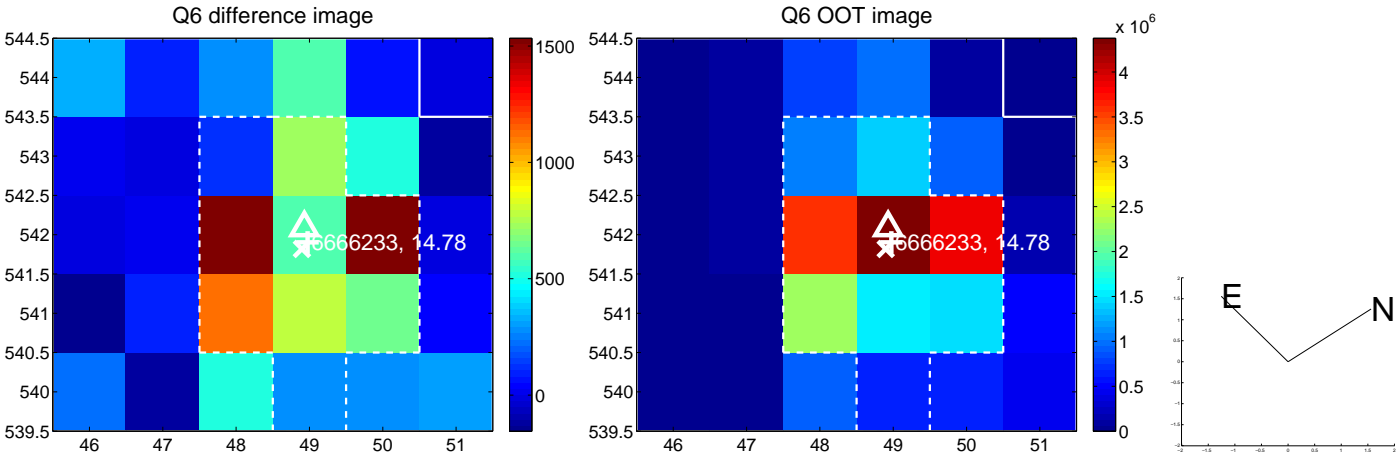
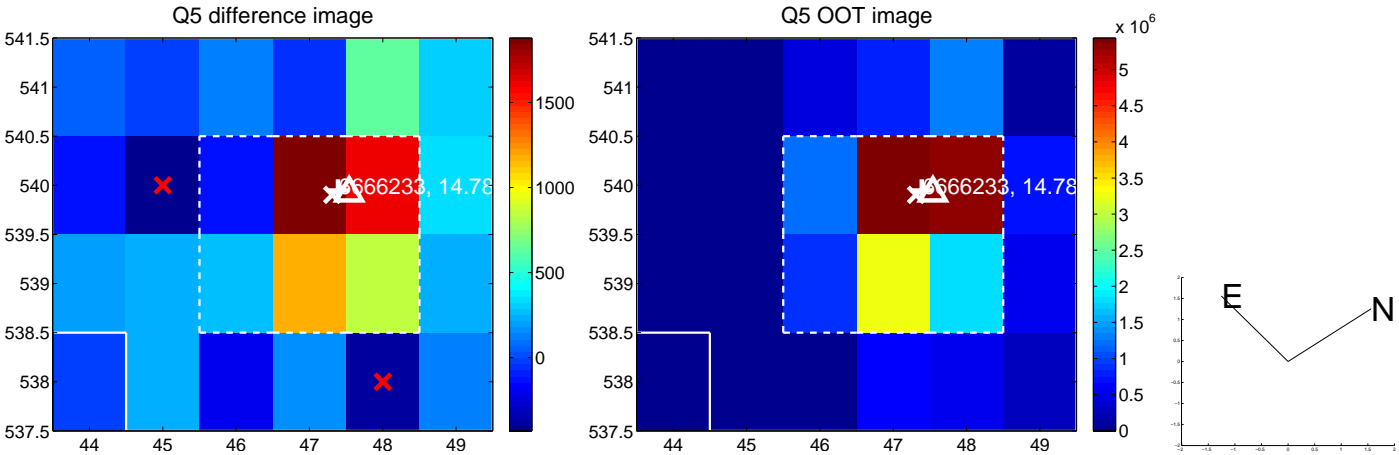


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

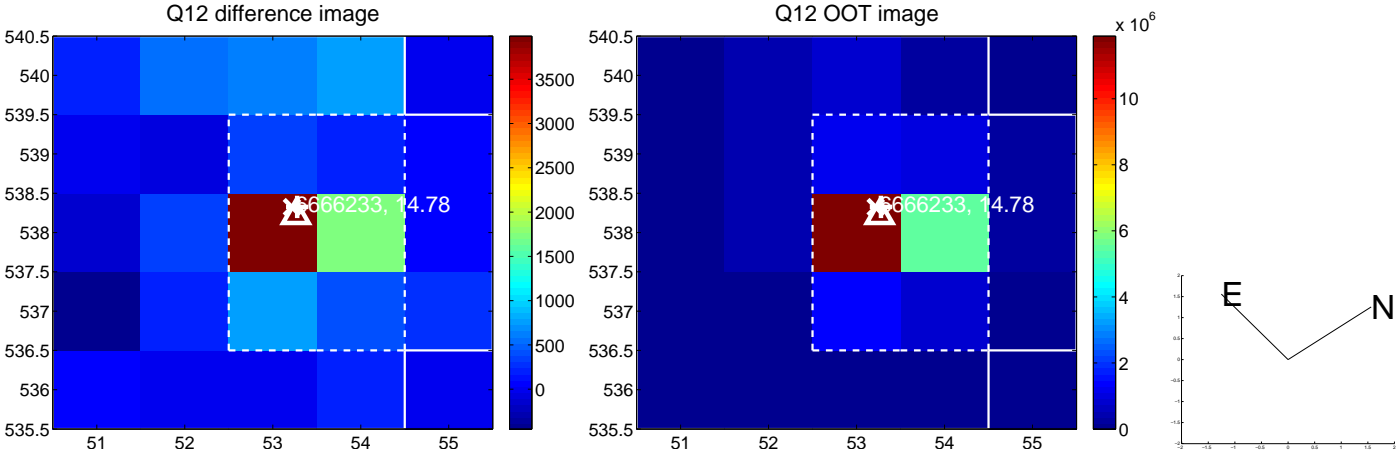
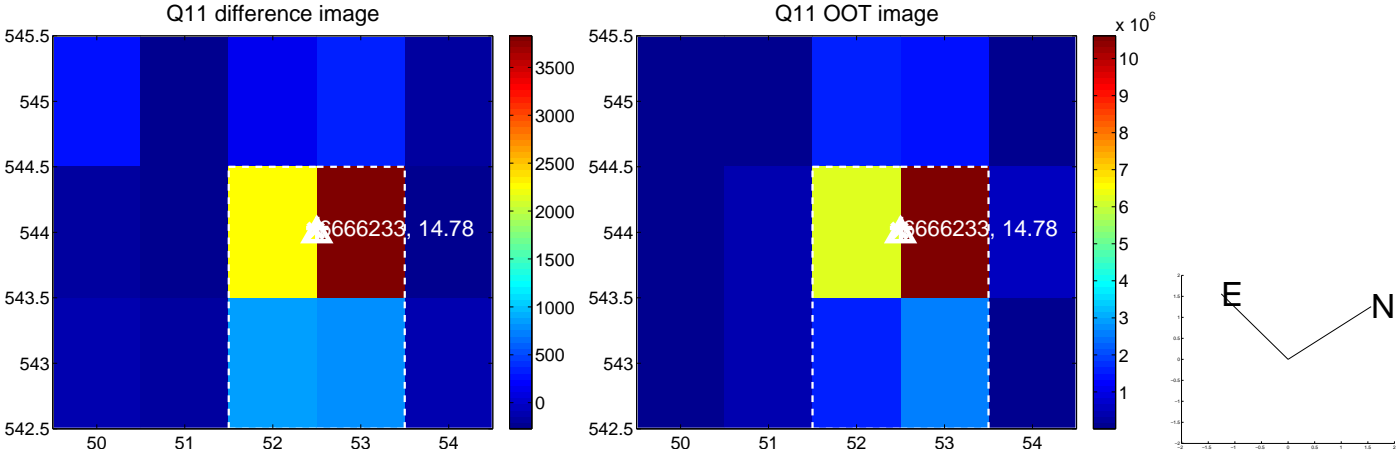
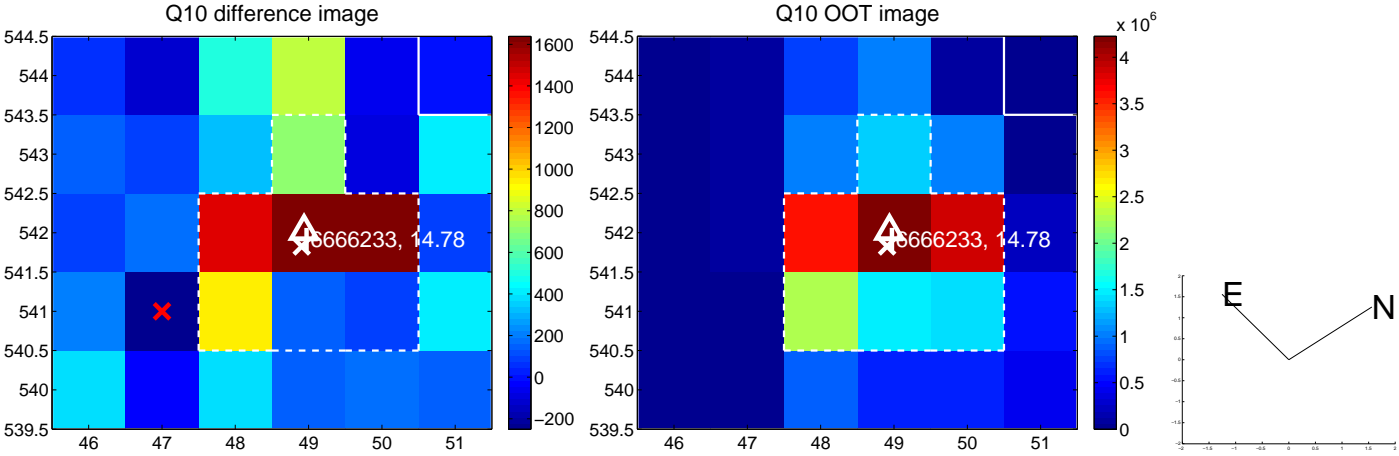
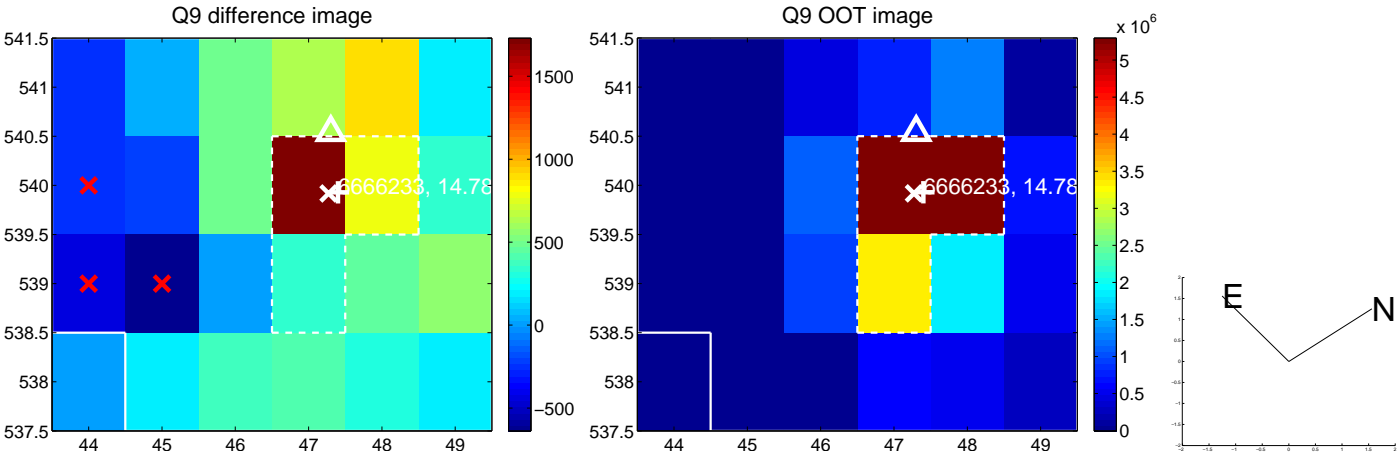
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



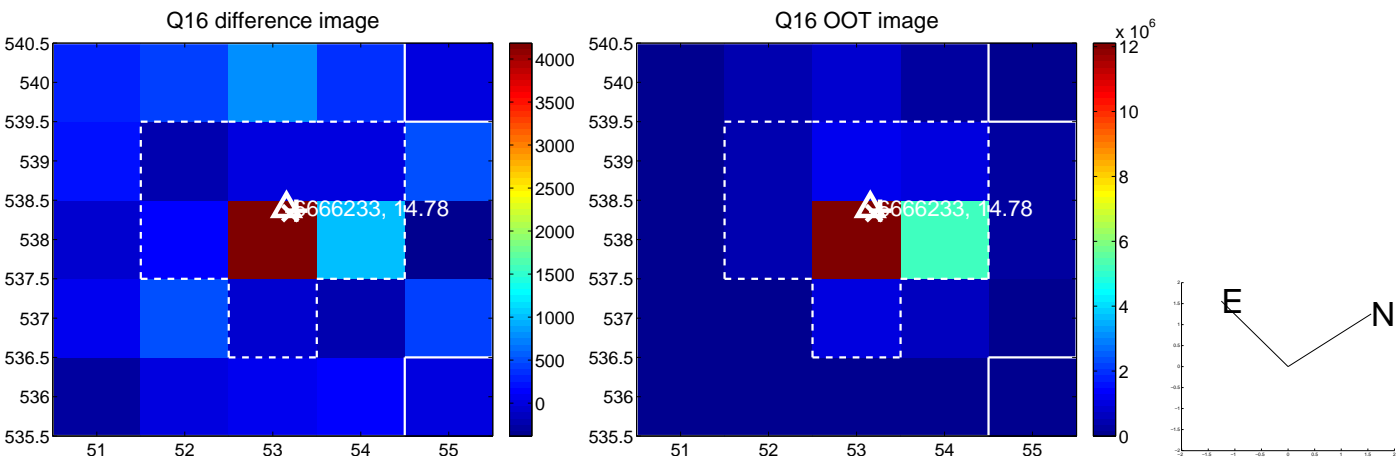
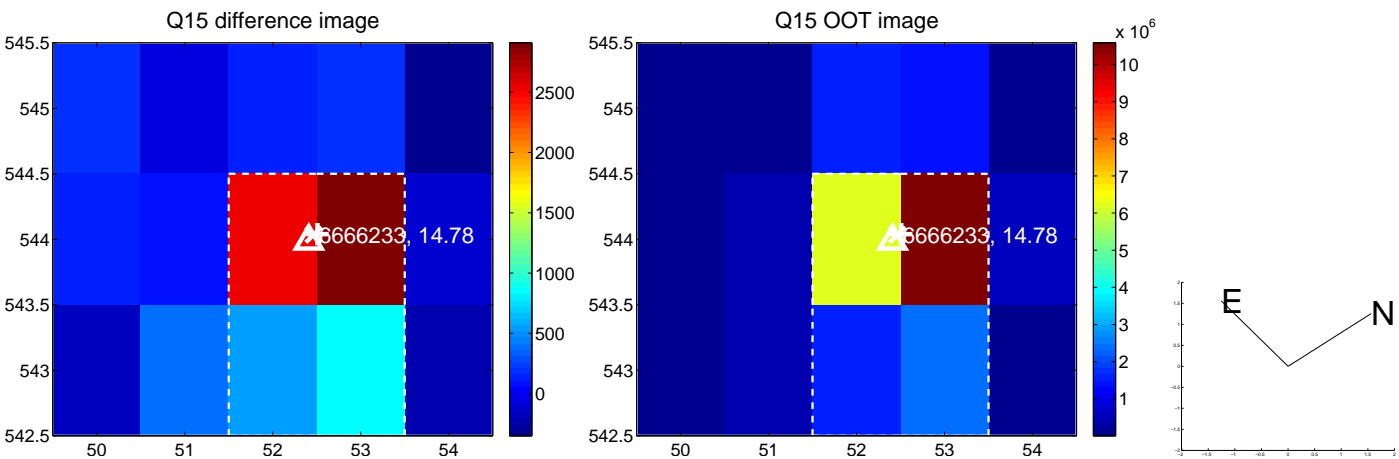
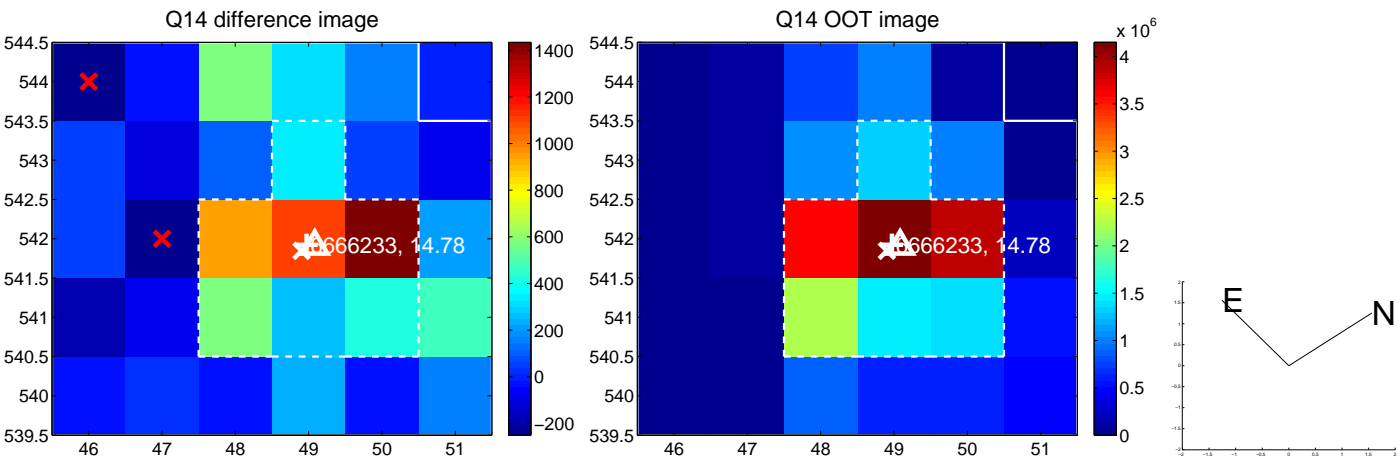
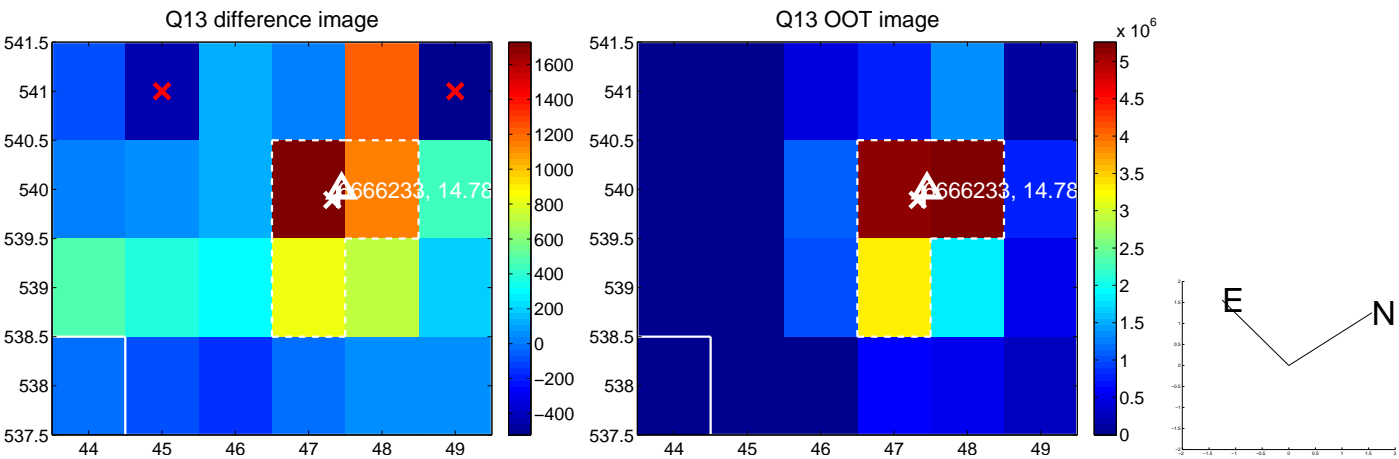
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



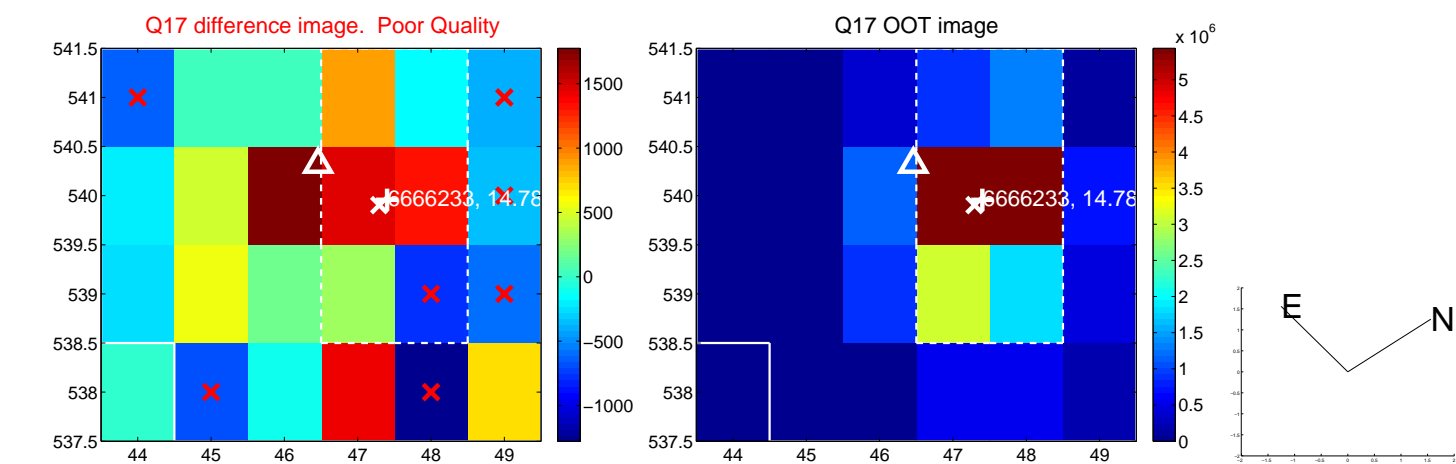
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



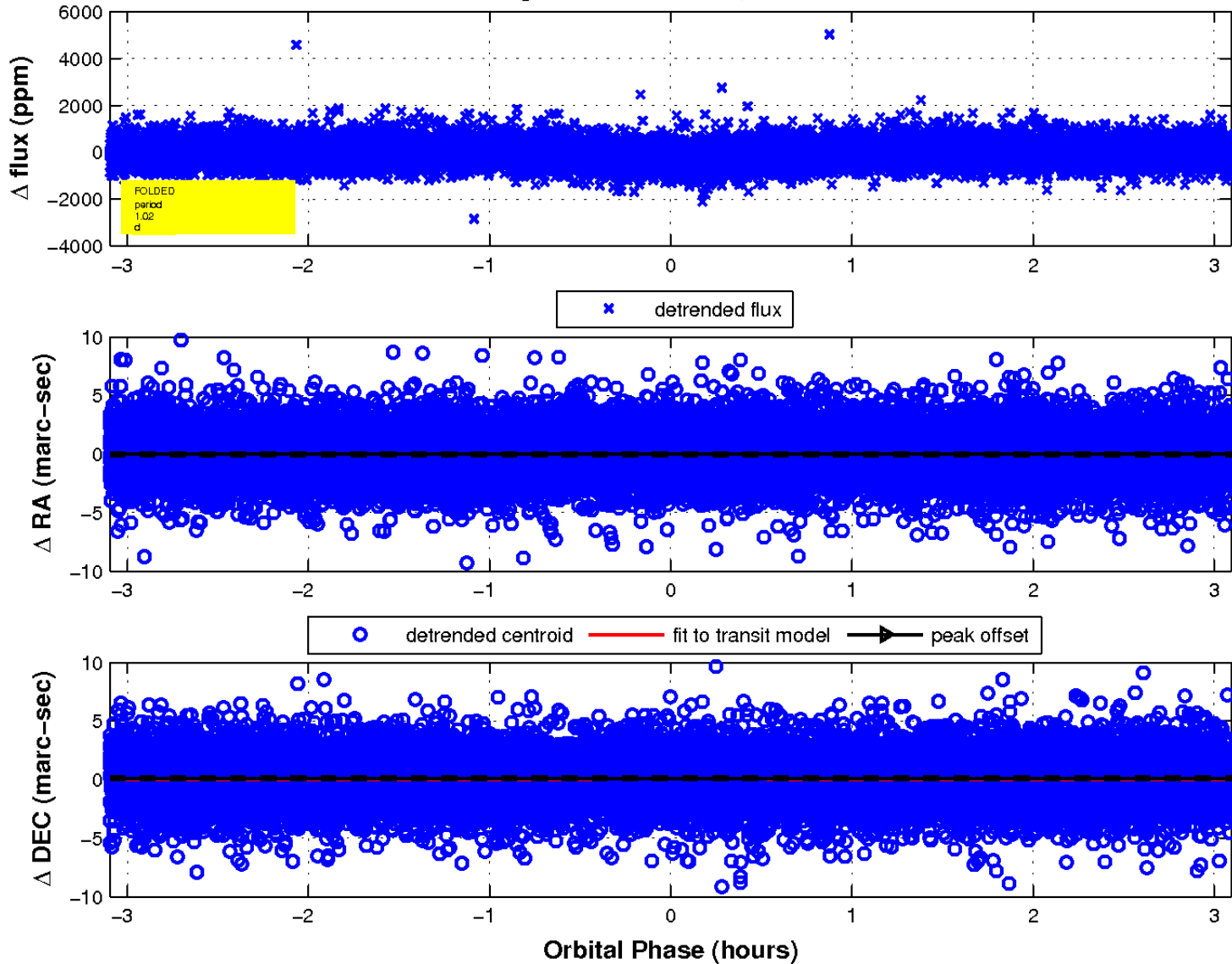
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

