

KIC 003661344

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})
003661344-01	OBS	No	0.667050	131.809200	119.5	1.330	7.7	7.1	27.17	4226	37.30	0.00
003661344-02	OBS	No	0.667057	132.135762	130.5	1.455	7.4	8.2	27.17	4226	39.65	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003661344-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
003661344-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

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

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

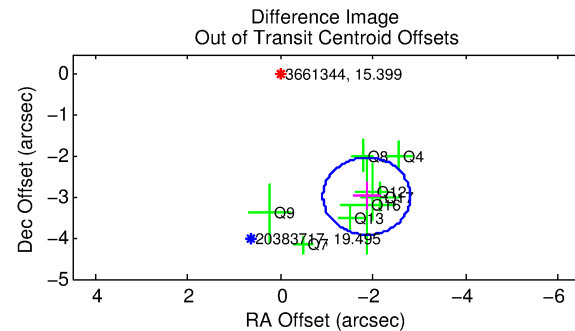
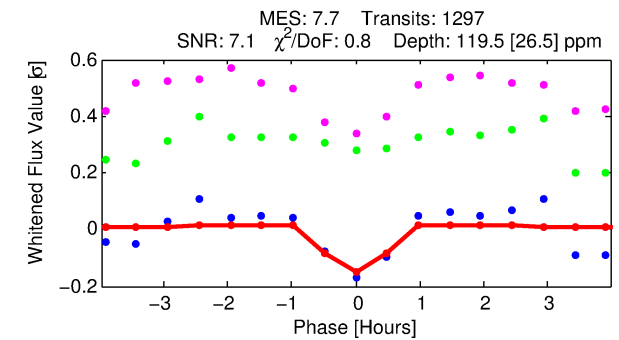
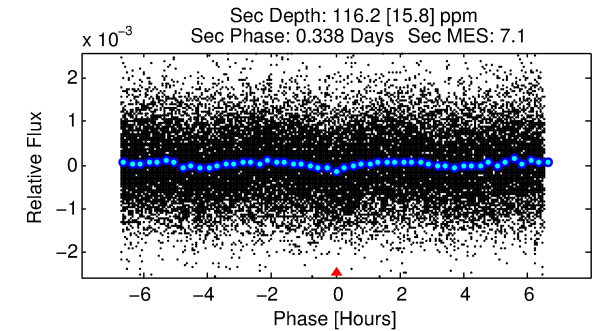
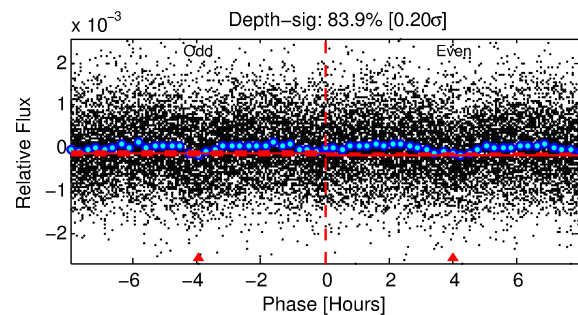
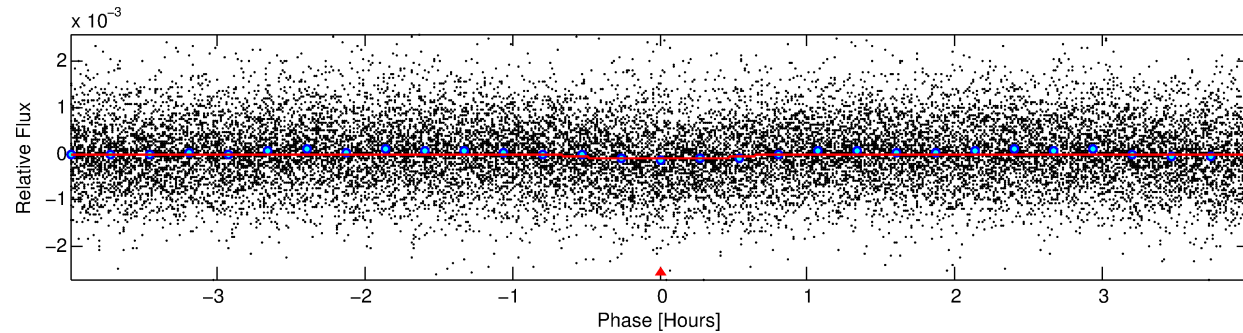
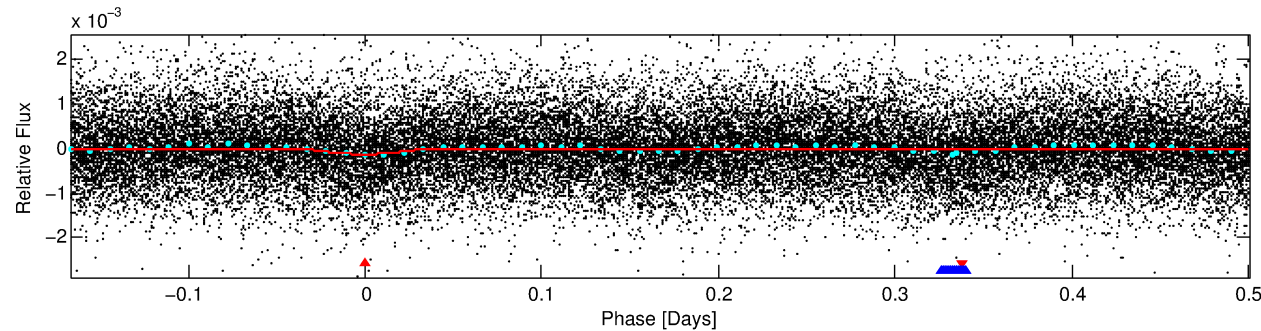
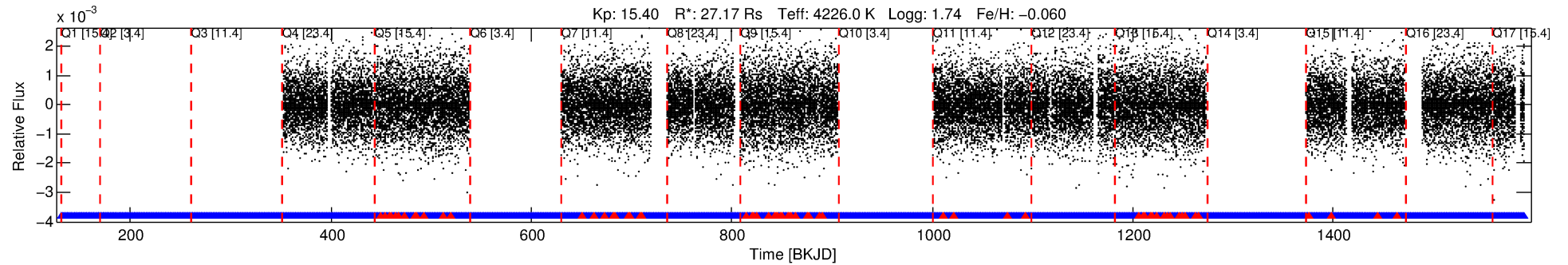
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003661344-01

No Significant Match Found

DV One-Page Summary

KIC: 3661344 Candidate: 1 of 2 Period: 0.667 d



DV Fit Results:

Period = 0.66705 [0.00002] d
Epoch = 131.8092 [0.0026] BKJD
Rp/R* = 0.0126 [0.0174]
a/R* = 2.01 [7.18]
b = 0.90 [1.05]
Seff = N/A
Teq = N/A
Rp = 37.30 [51.88] Re
a = N/A
Ag = N/A
Teff = N/A

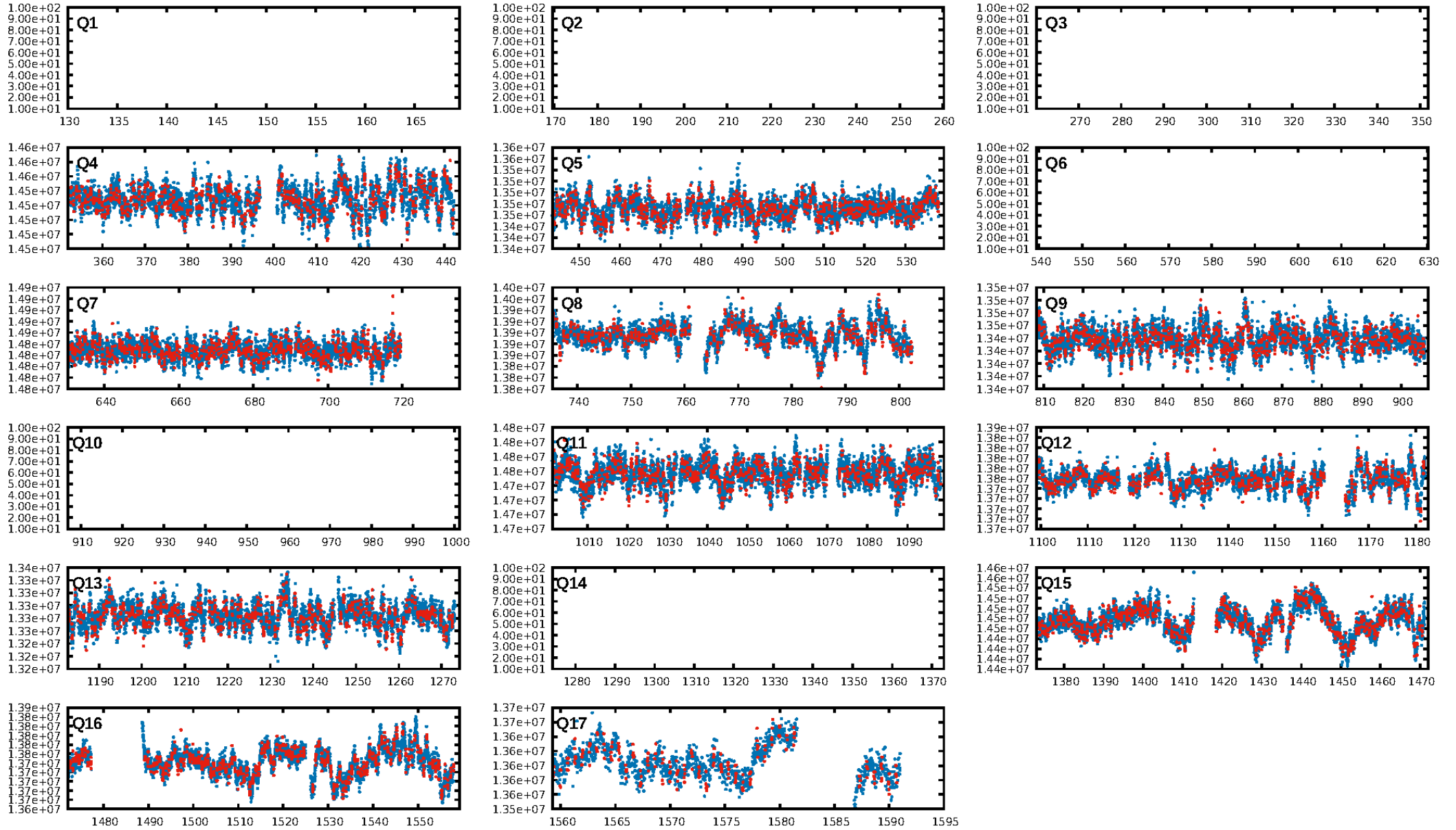
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.25e-13
RollingBand-fgt: 0.95 [1189/1257]
GhostDiagnostic-chr: -0.09246
Centroid-sig: 0.0%
Centroid-so: 2.866 arcsec [5.44 σ]
OotOffset-rm: 3.505 arcsec [11.13 σ]
KicOffset-rm: 5.332 arcsec [17.19 σ]
OotOffset-st: 0/1/4/3 [8]
KicOffset-st: 0/1/4/3 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [11/11]

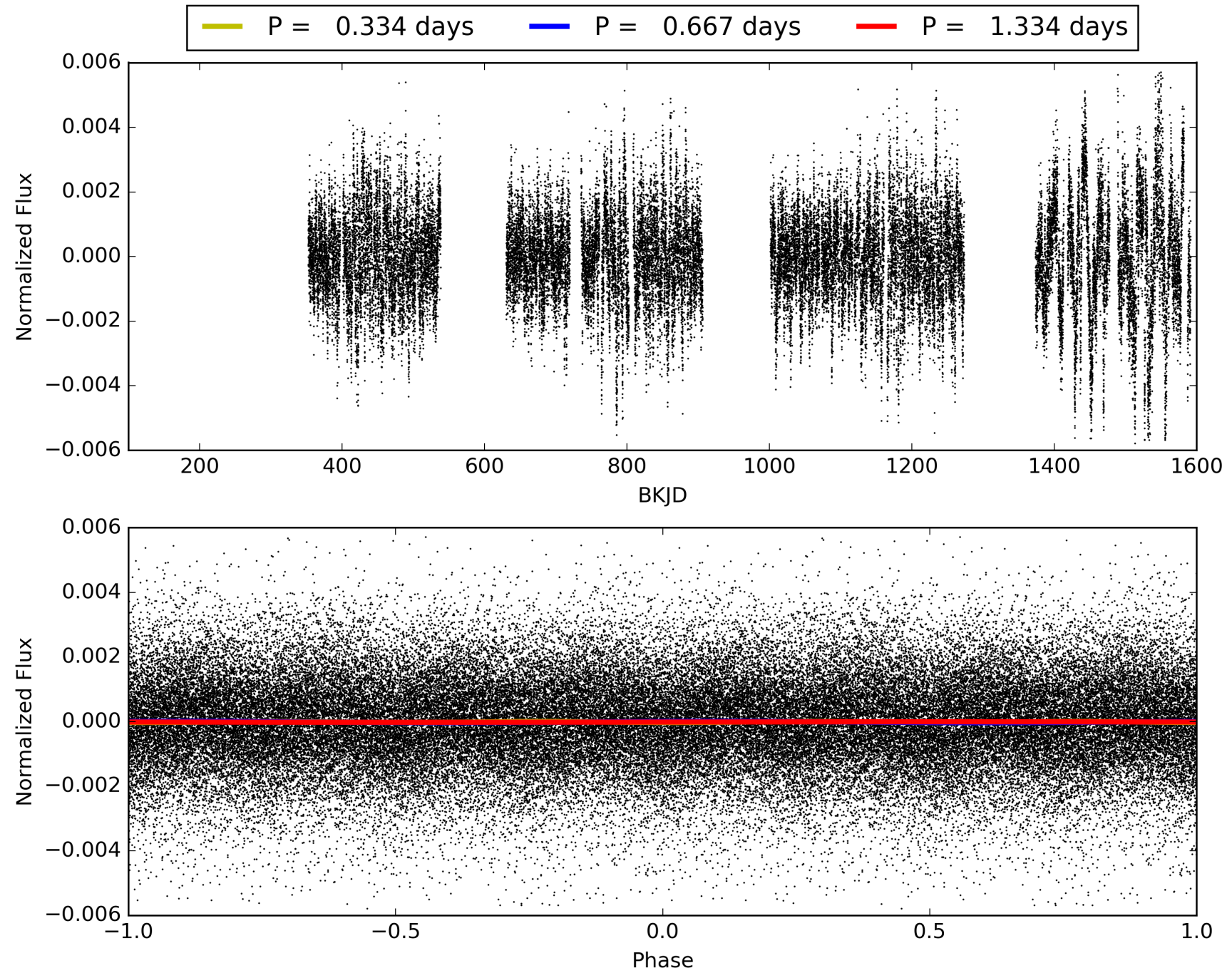
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:21:04 Z

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

TCE 003661344-01, PDC Light Curves

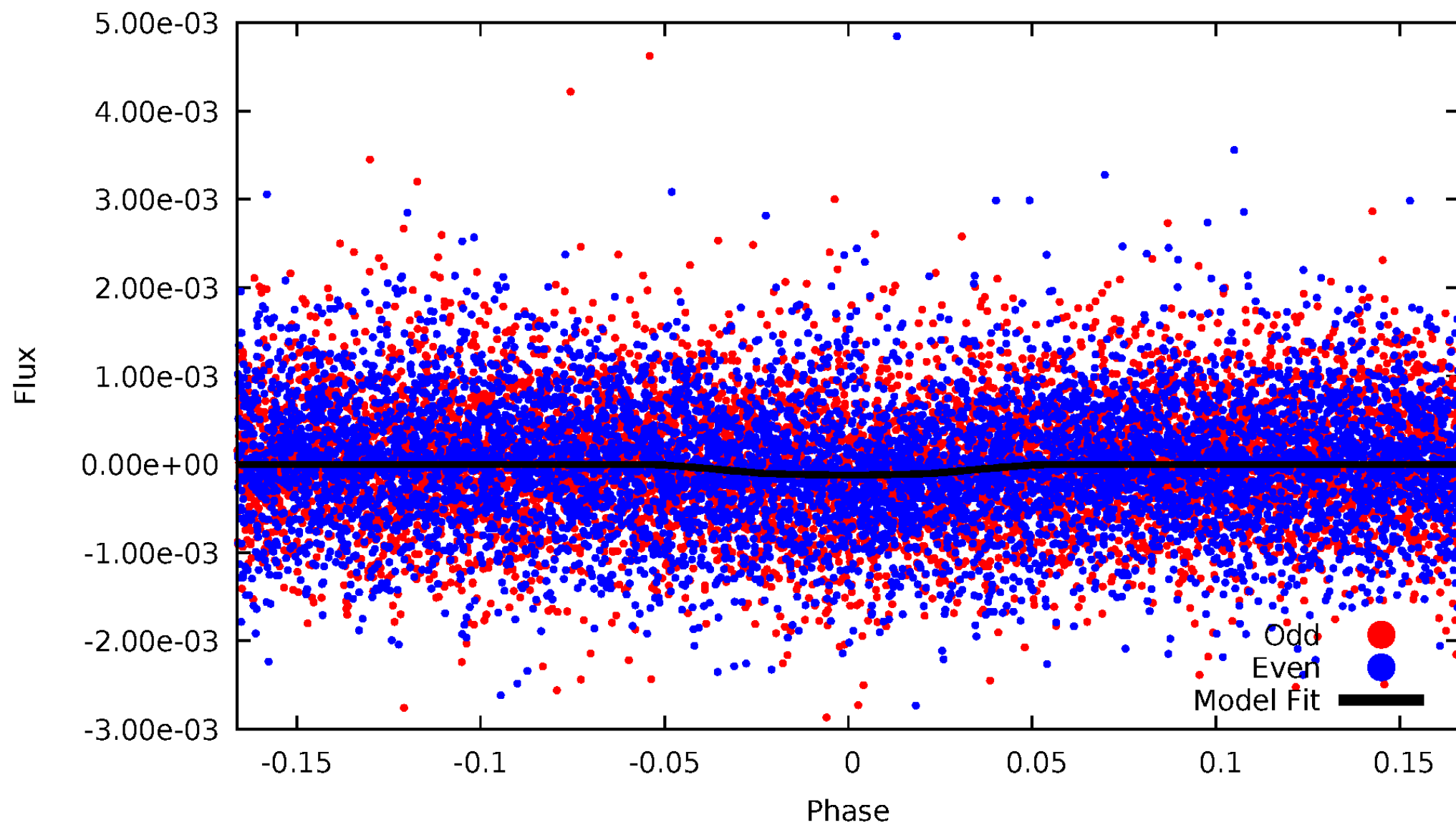


TCE 003661344-01



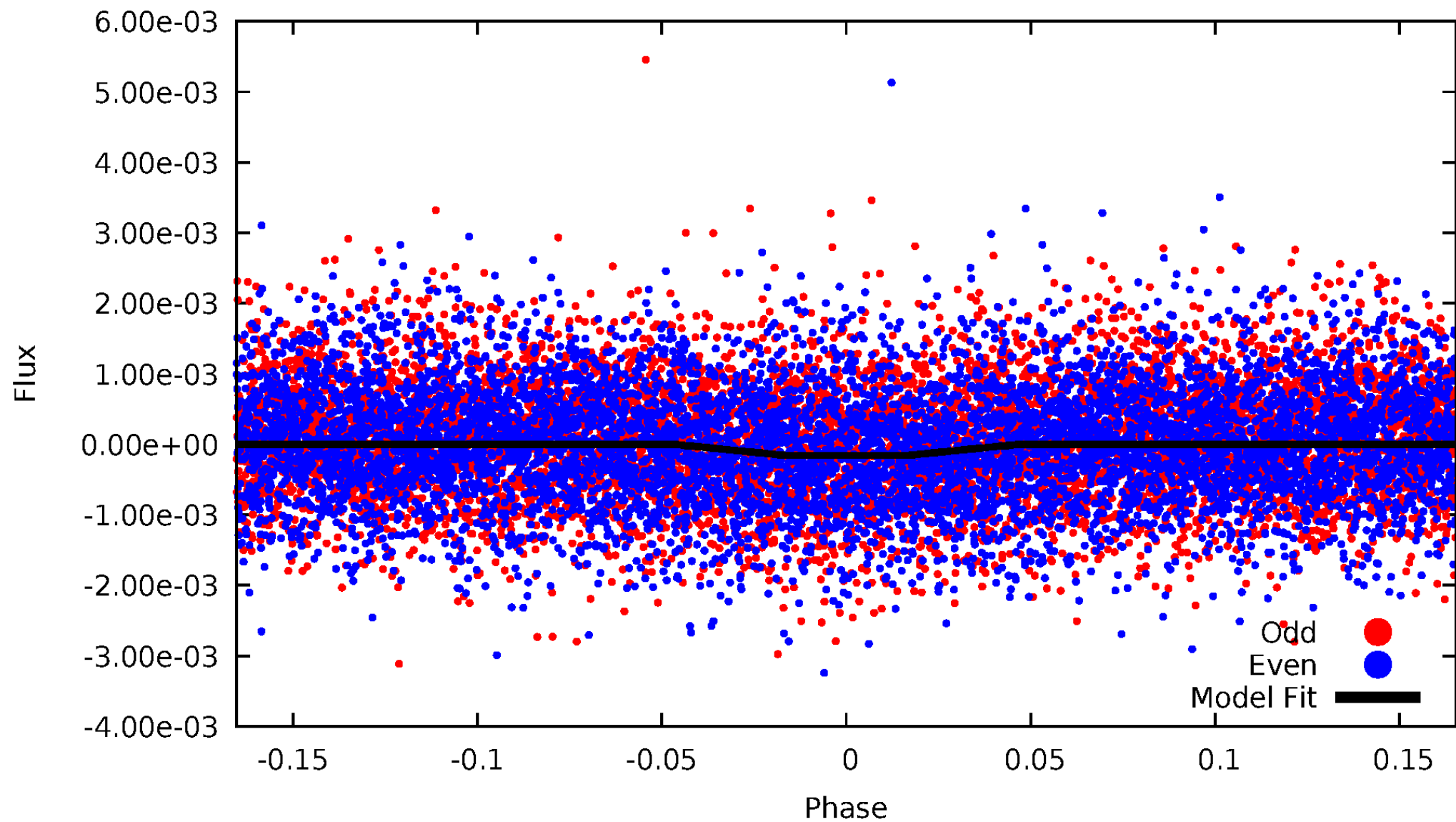
DV Odd/Even

TCE 003661344-01



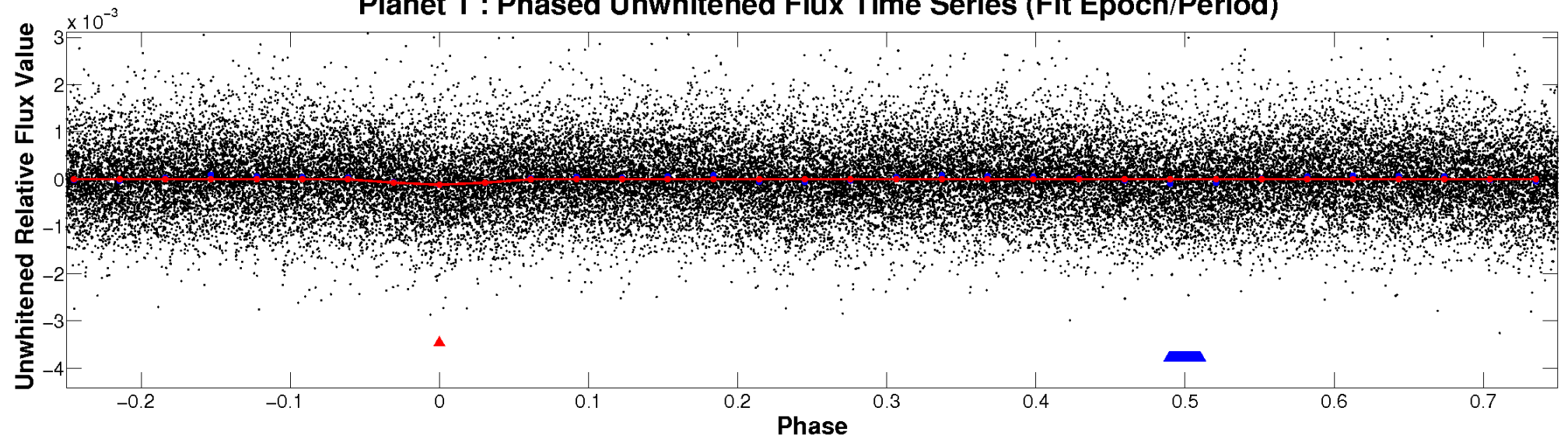
ALT Odd/Even

TCE 003661344-01

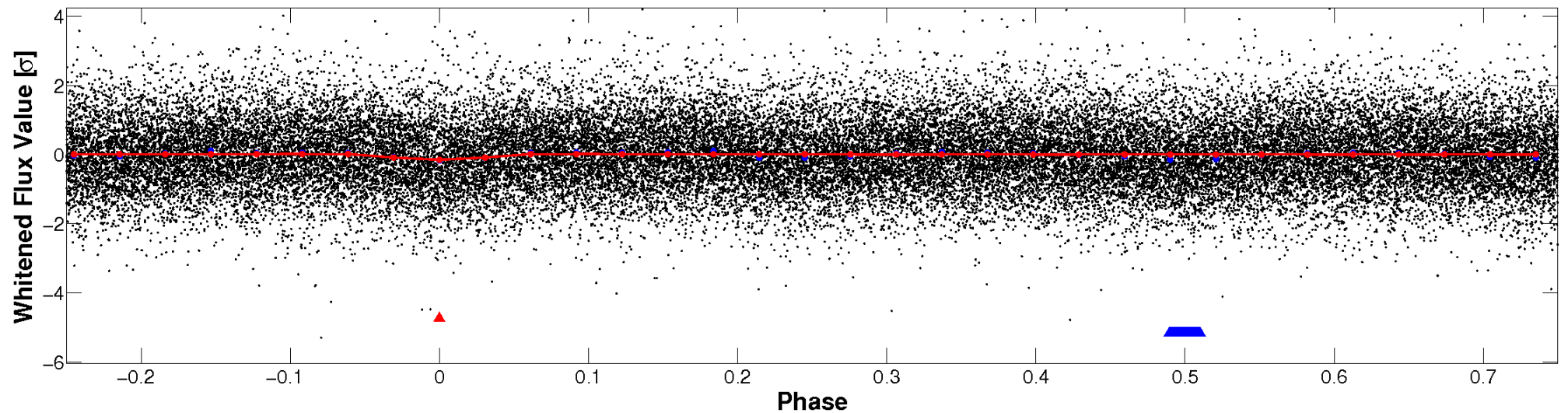


Non-Whitened Vs. Whitened Light Curve

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

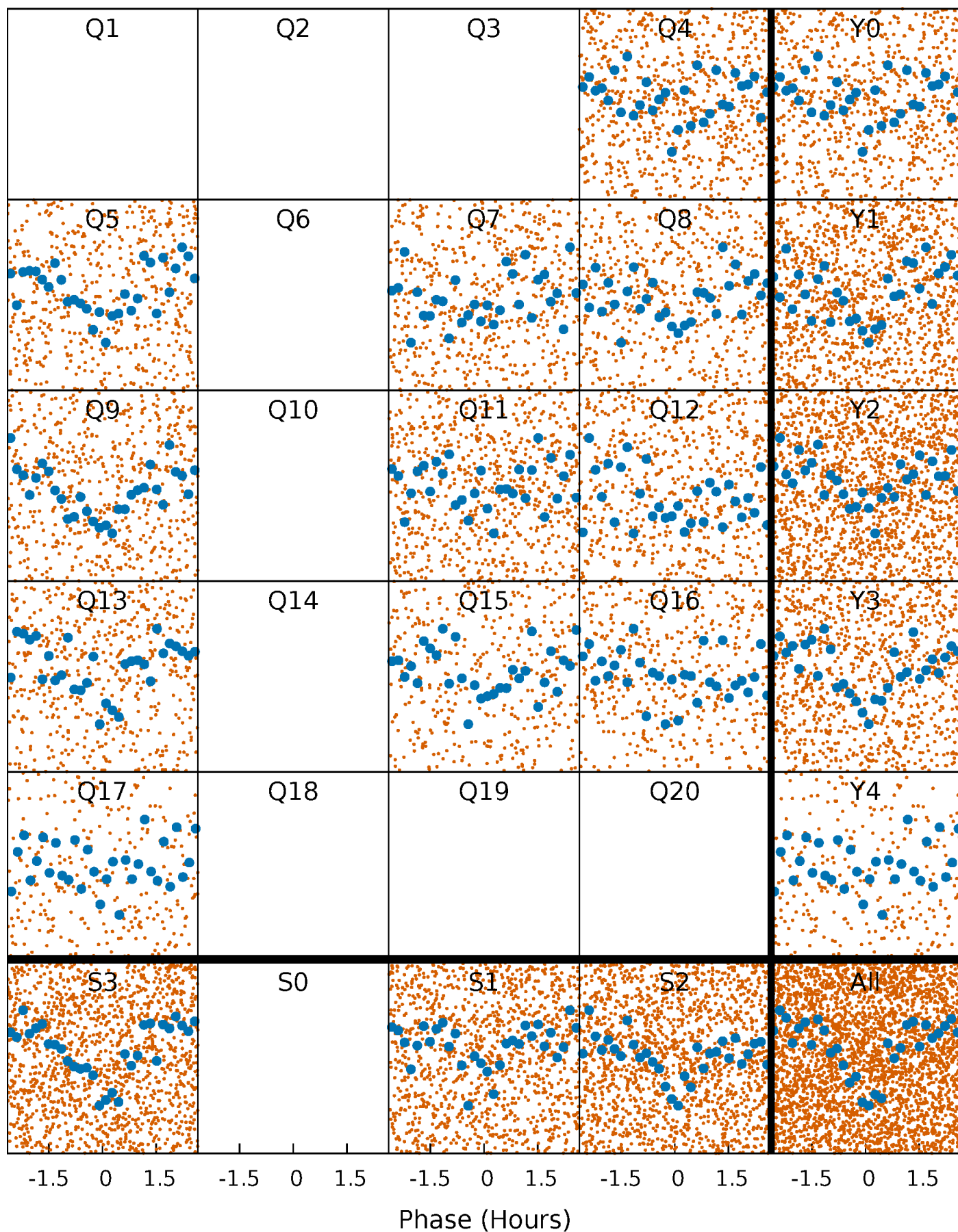


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



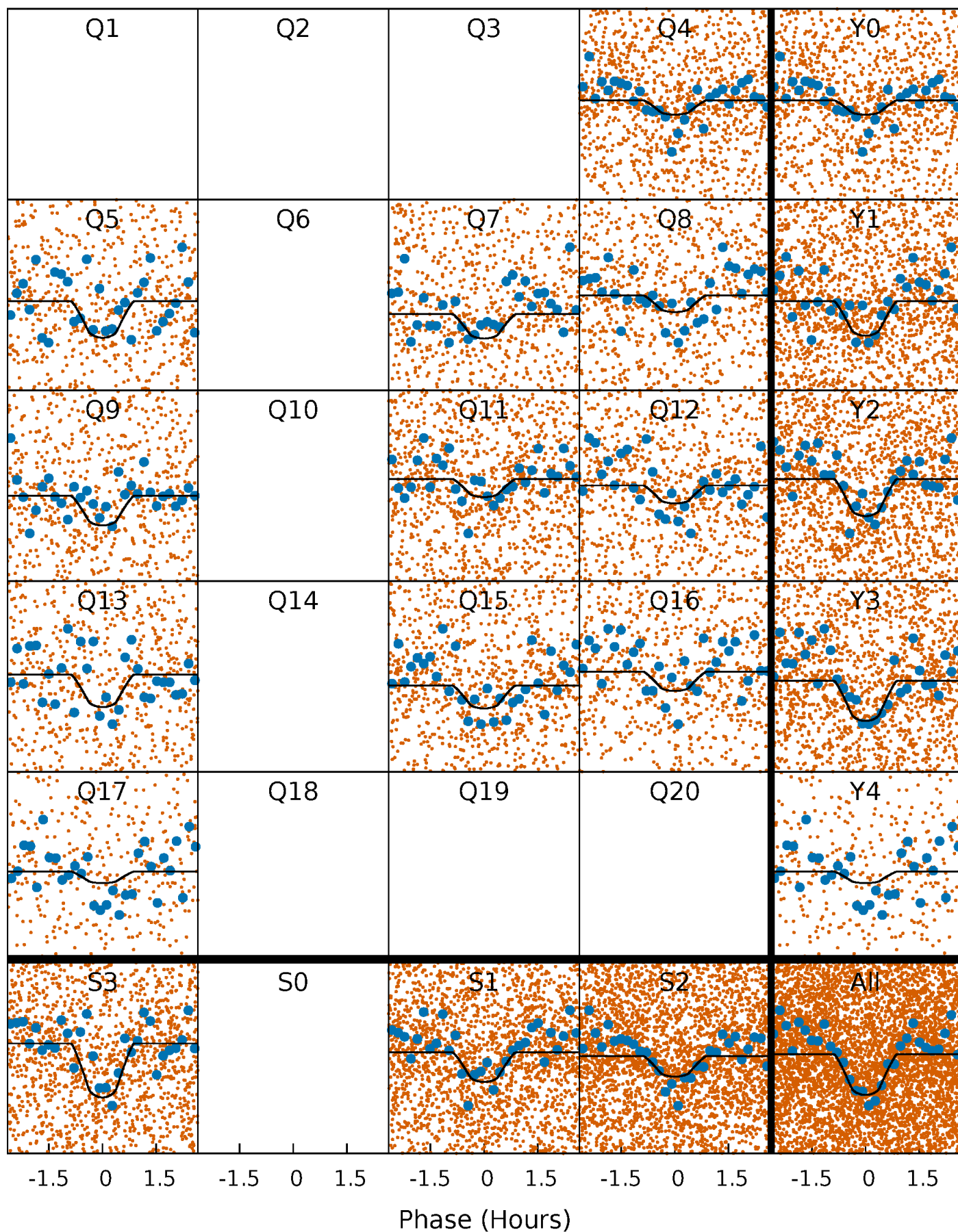
PDC Quarter-Phased Transit Curves

TCE 003661344-01 P= 0.667050 Days $T_0=131.809200$ (BKJD)



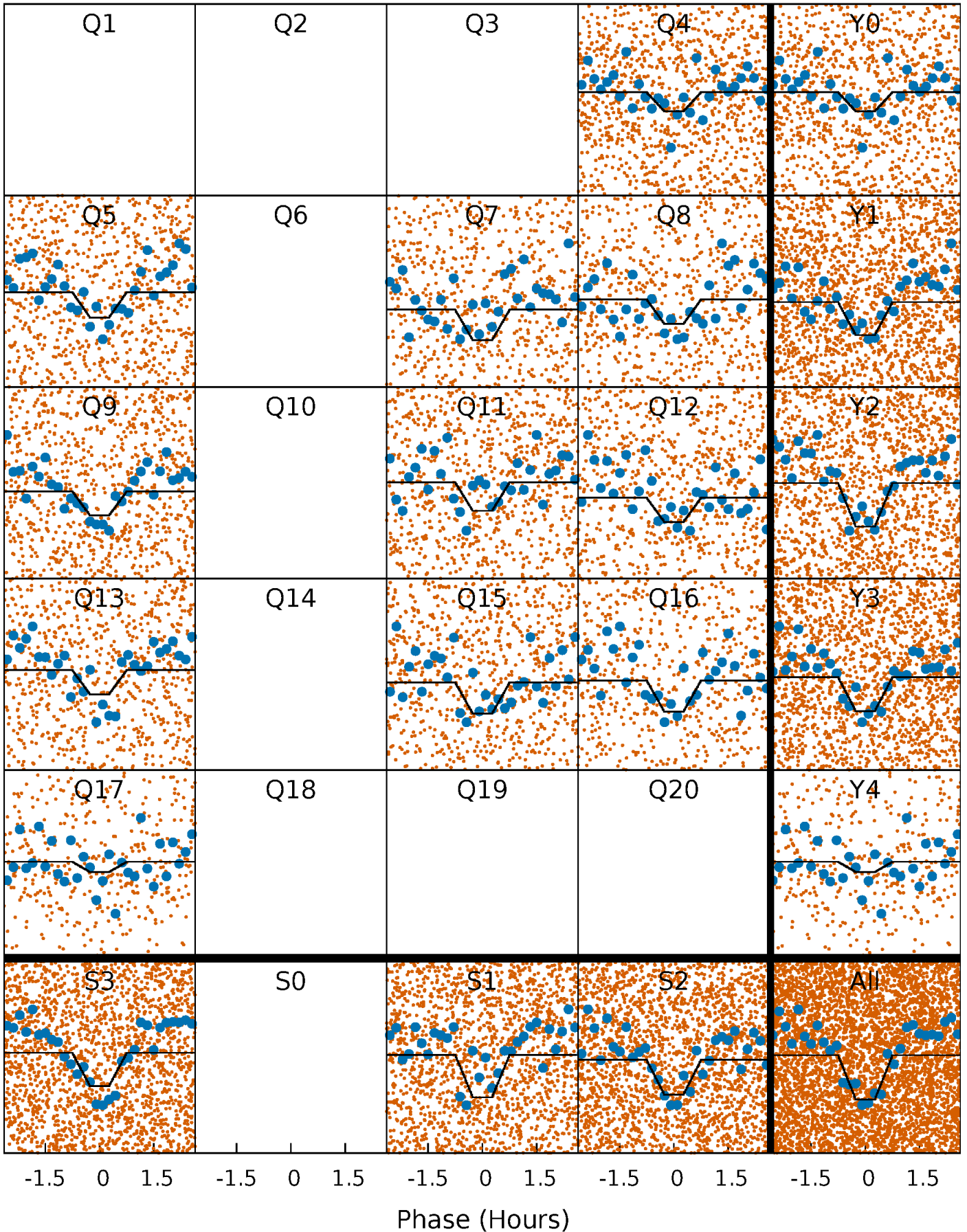
DV Quarter-Phased Transit Curves

TCE 003661344-01 P= 0.667050 Days $T_0=131.809200$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

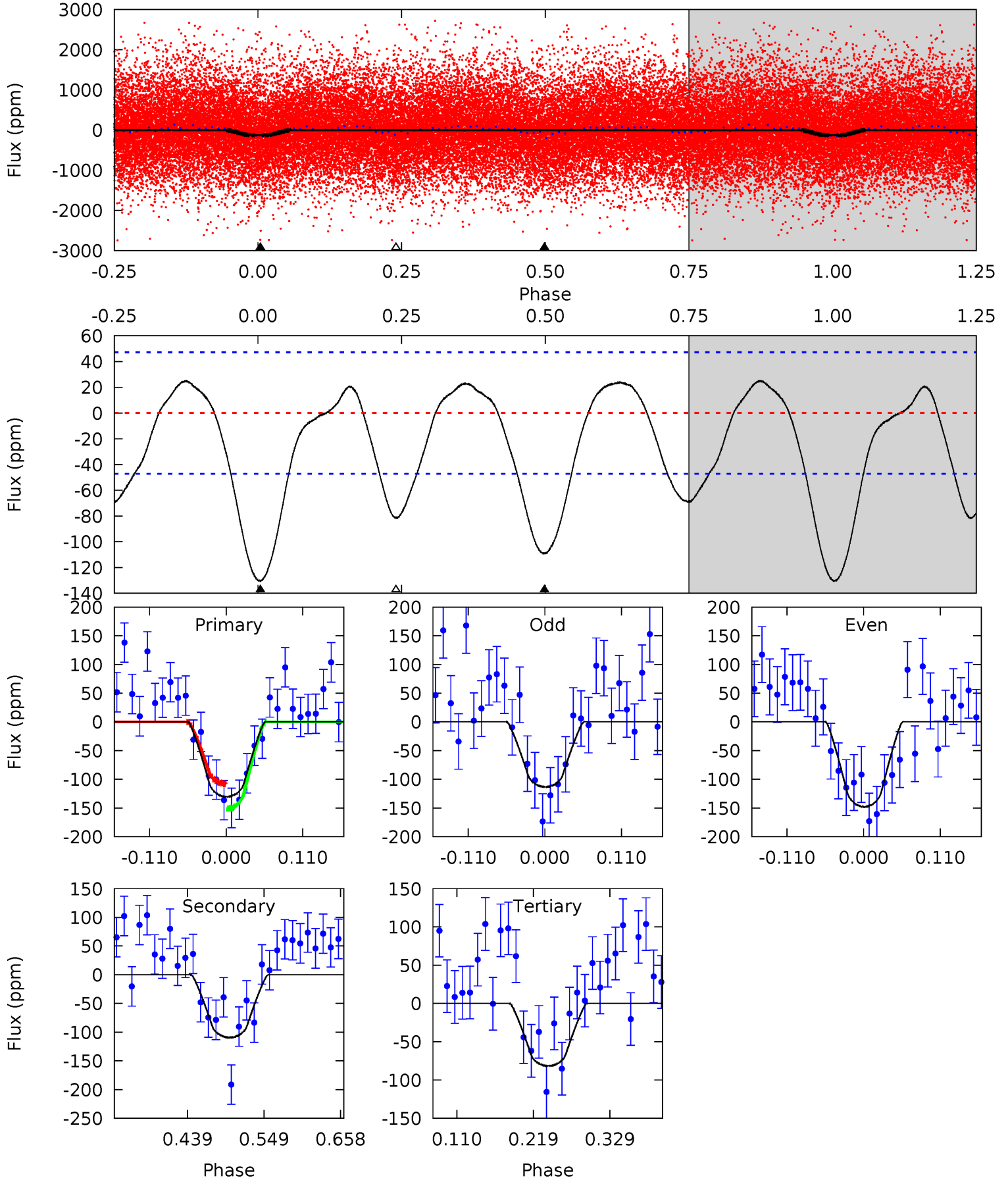
TCE 003661344-01 P= 0.667051 Days $T_0=131.809176$ (BKJD)



DV Model-Shift Uniqueness Test

003661344-01, P = 0.667050 Days, E = 131.809200 Days

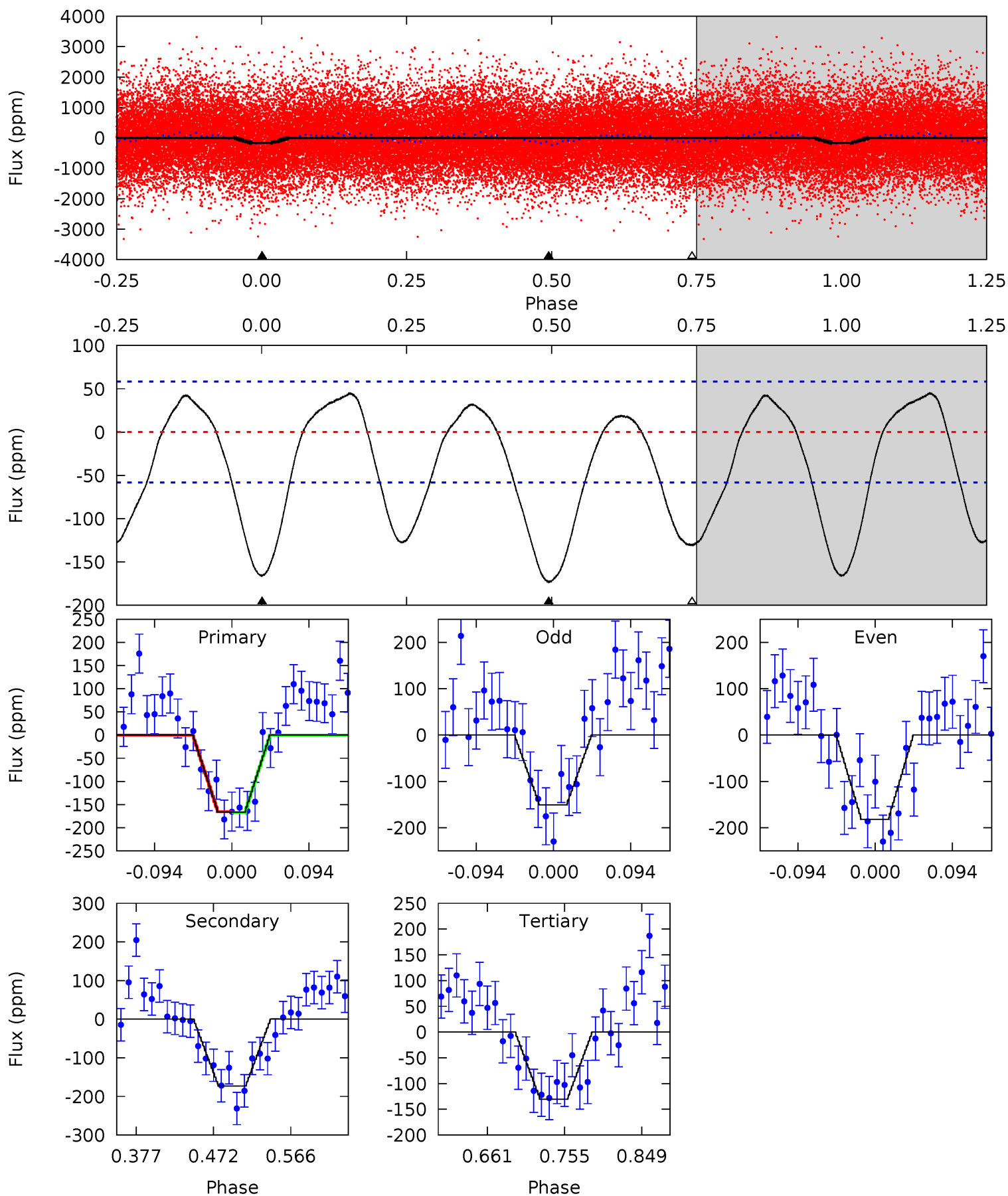
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	10.5	7.85	0	4.55	1.60	3.31	4.71	12.6	2.67	10.5	1.67	0.83	0.16	2.09



Alt Model-Shift Uniqueness Test

003661344-01, P = 0.667051 Days, E = 131.809176 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	13.6	10.3	0	4.58	1.67	4.59	2.79	13.1	3.34	13.6	1.22	0.86	0.21	0.07



Stellar Parameters For KIC 003661344

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4226^{+96}_{-107}	$1.737^{+0.033}_{-0.027}$	$-0.060^{+0.200}_{-0.200}$	$27.168^{+2.880}_{-3.959}$	$1.470^{+0.309}_{-0.412}$	$0.000^{+0.000}_{-0.000}$
	+2%/-3%	+2%/-2%	+333%/-333%	+11%/-15%	+21%/-28%	+21%/-12%
Source	KIC0	AST71	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 003661344-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-109 ± 10	$52.71^{+45.53}_{-33.61}$	10406^{+308}_{-328}	-8103^{+615}_{-434}	$0.006^{+0.044}_{-0.004}$
Alt.	-173 ± 13	$54.13^{+47.37}_{-35.12}$	10414^{+301}_{-337}	-8040^{+670}_{-452}	$0.009^{+0.068}_{-0.007}$

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

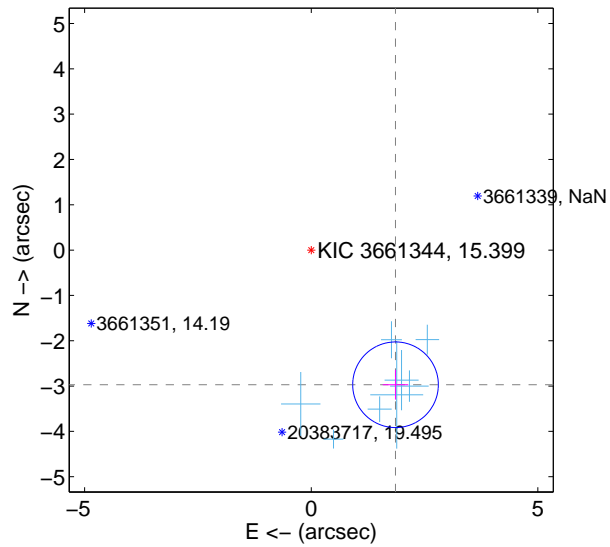
Supplemental centroid analysis for 003661344-01. Kepler magnitude: 15.40. Transit SNR 7.14

There are 8 quarters with good PRF difference image offsets

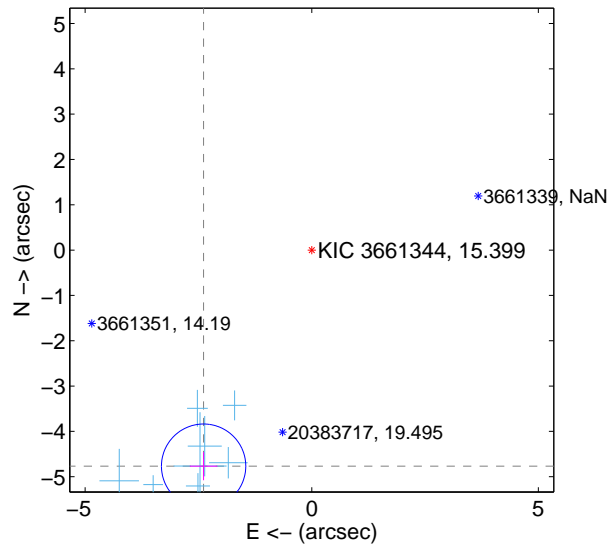
The OOT PRF centroid is offset from the target star catalog position by about 4.35 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.505 ± 0.315	11.13	-1.860 ± 0.282	-2.971 ± 0.327
PRF-fit source offset from KIC position	5.332 ± 0.310	17.19	2.386 ± 0.305	-4.768 ± 0.311
photometric centroid source offset	2.87 ± 0.53	5.44	1.52 ± 0.59	-2.43 ± 0.50

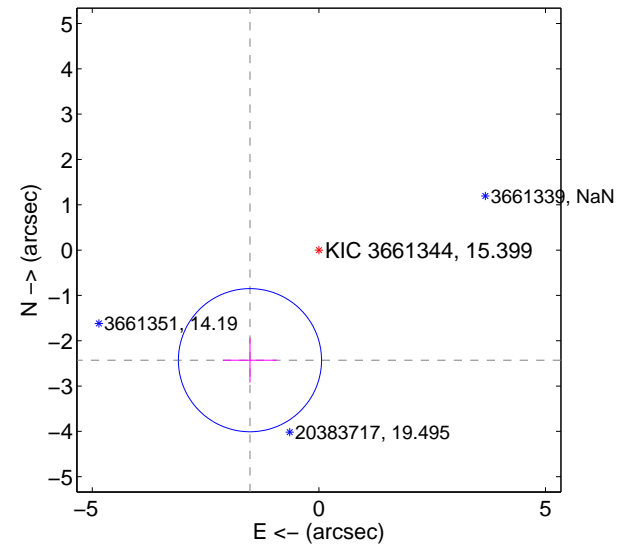
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

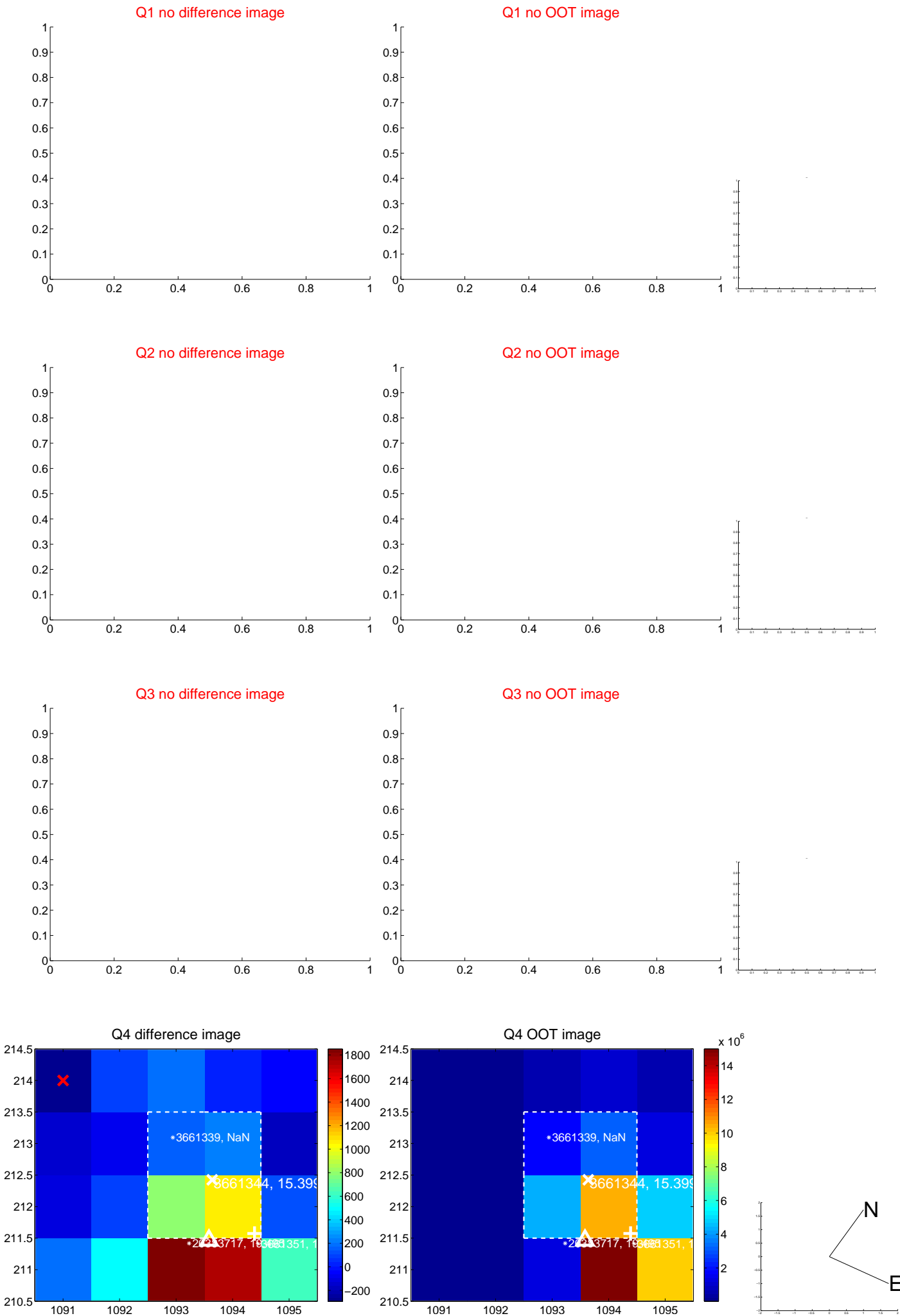


offset from photometric centroids

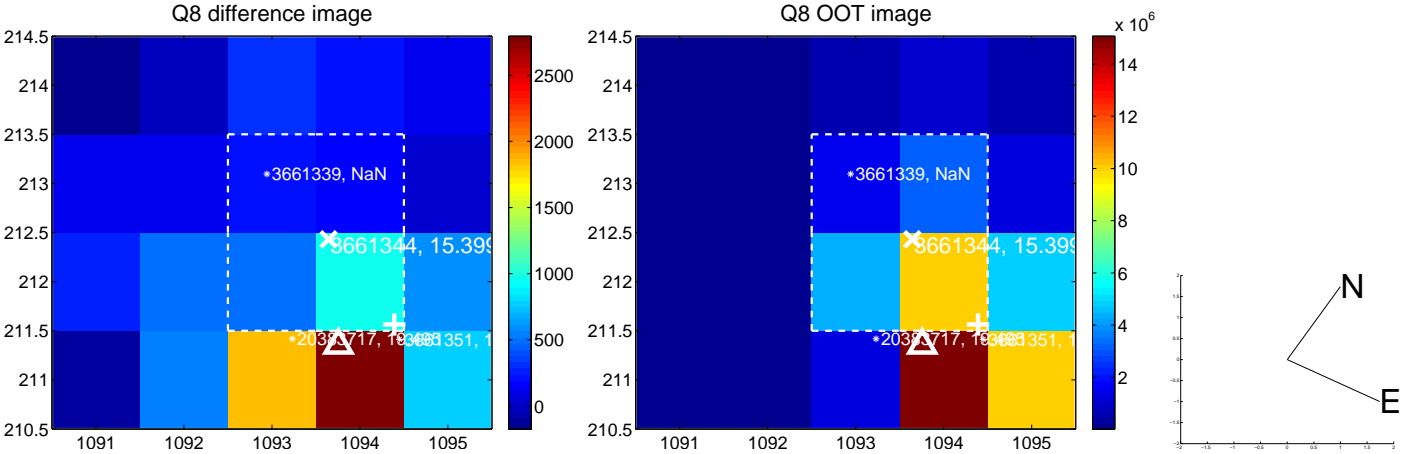
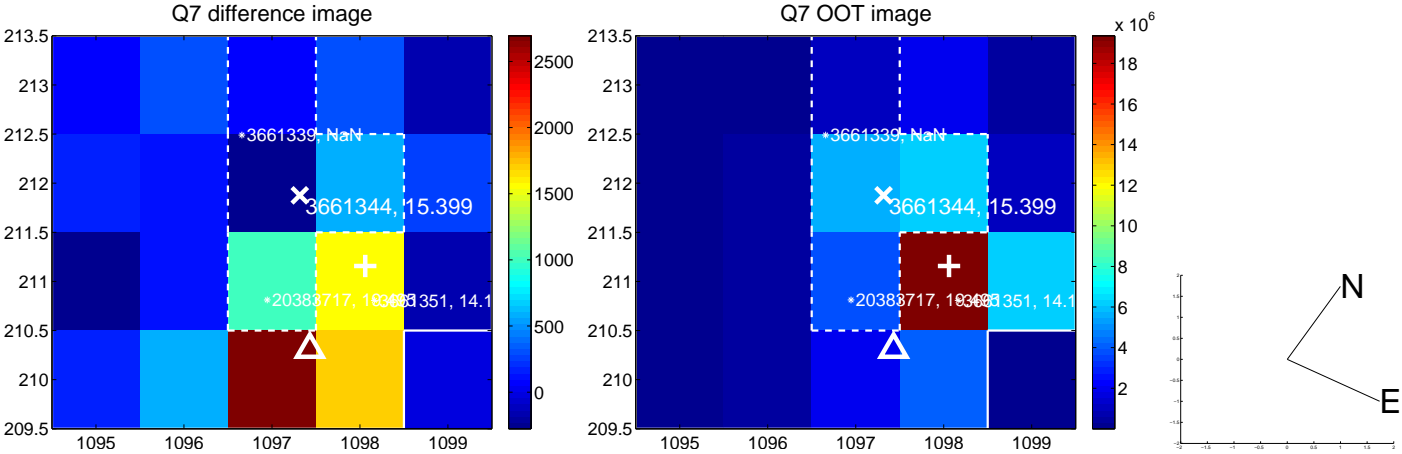
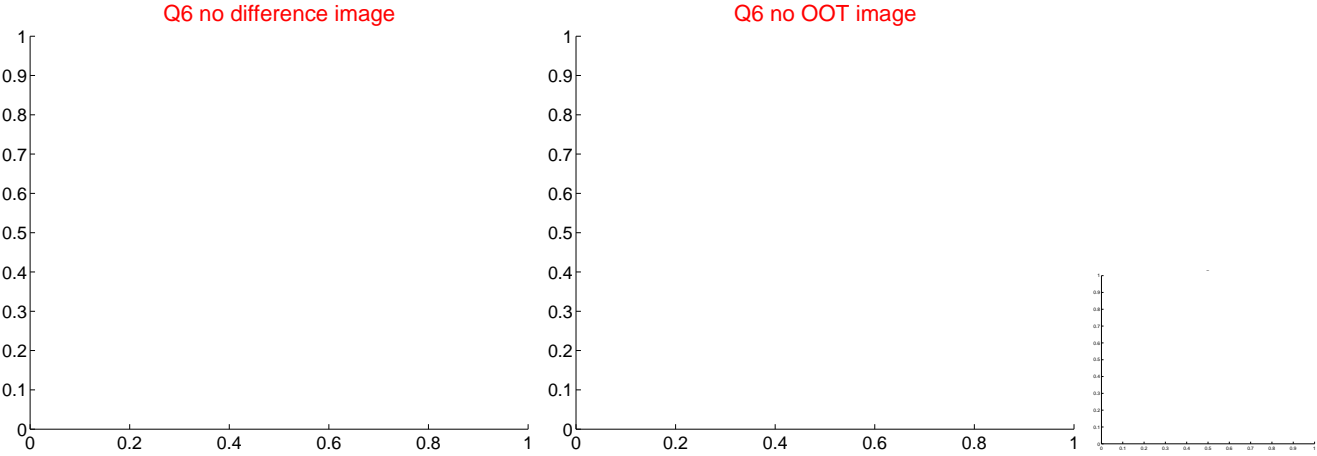
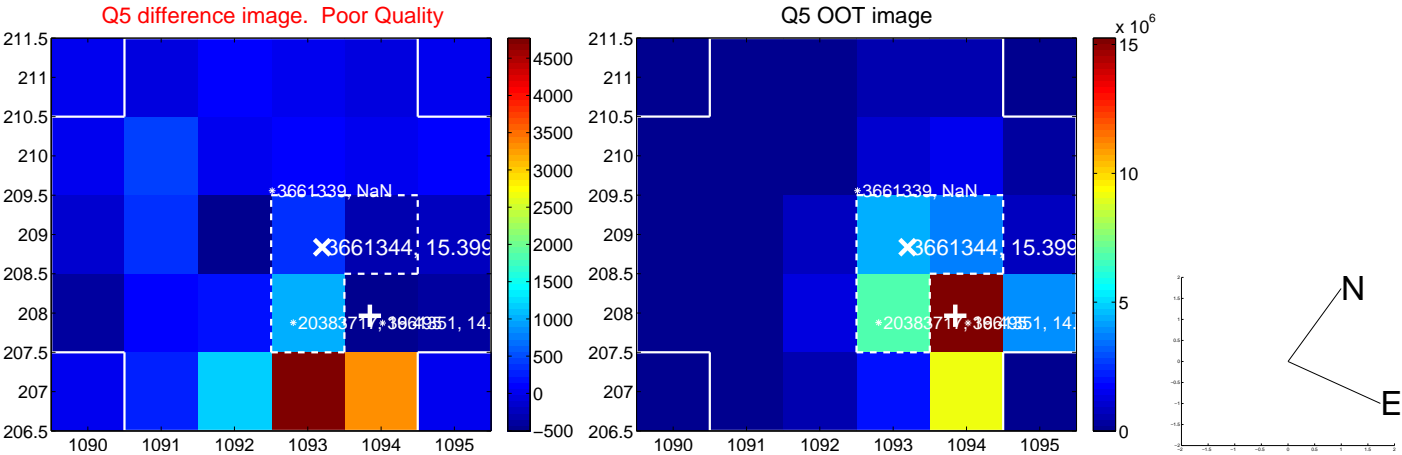


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

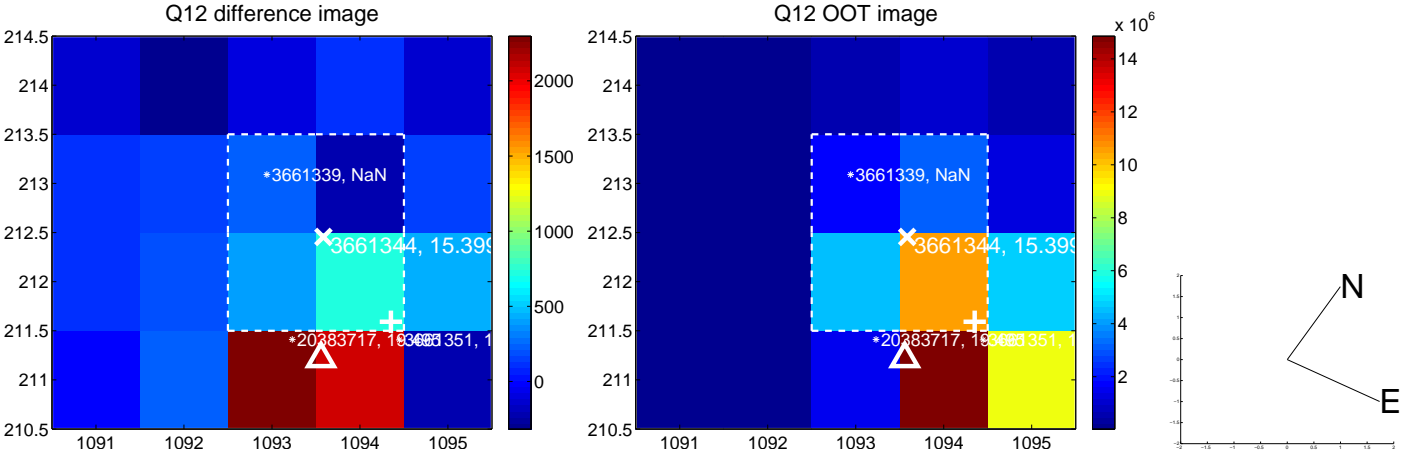
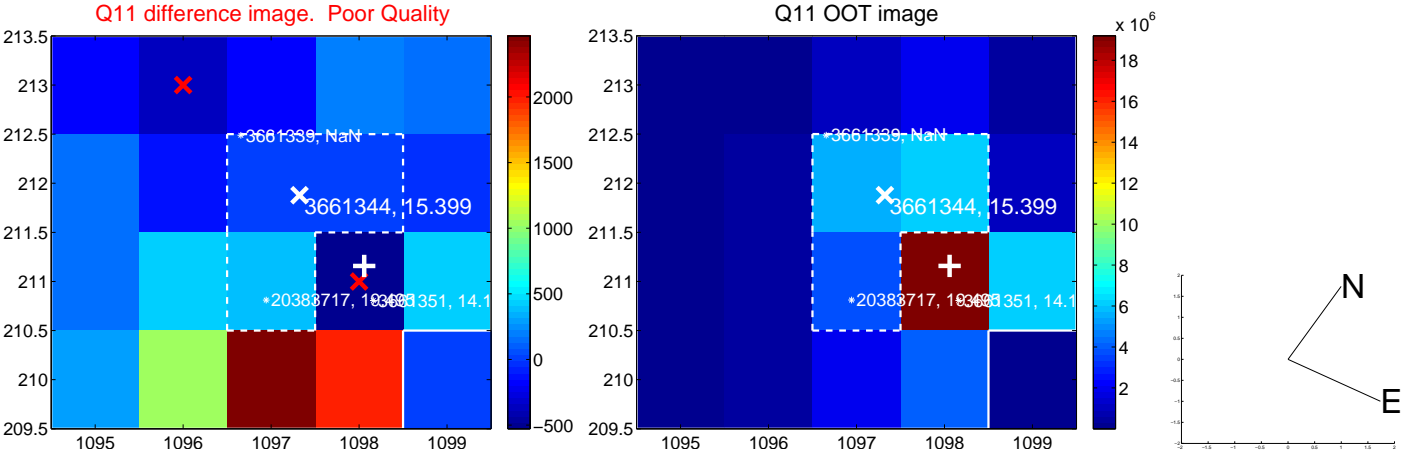
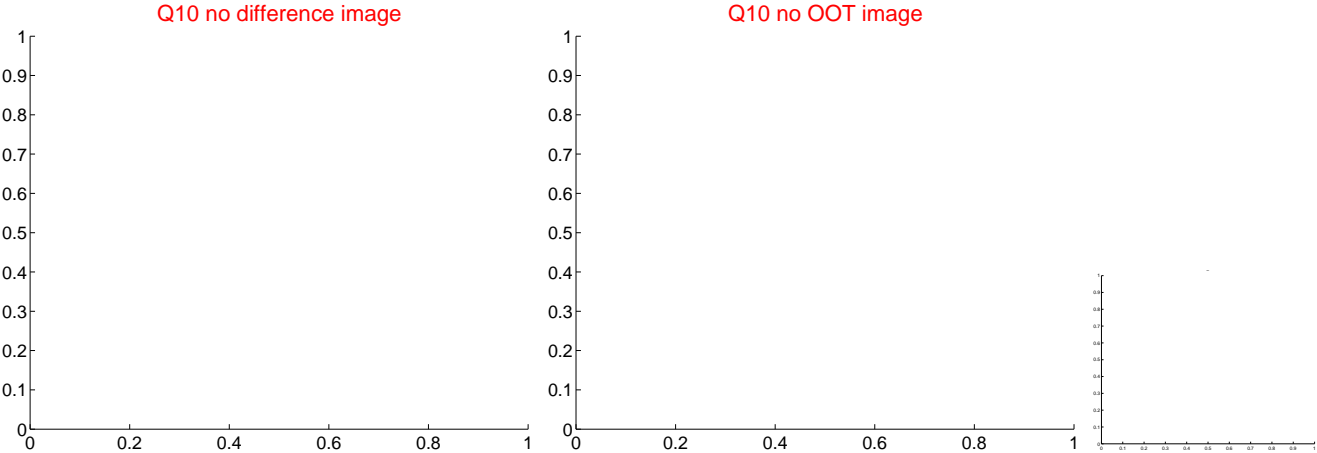
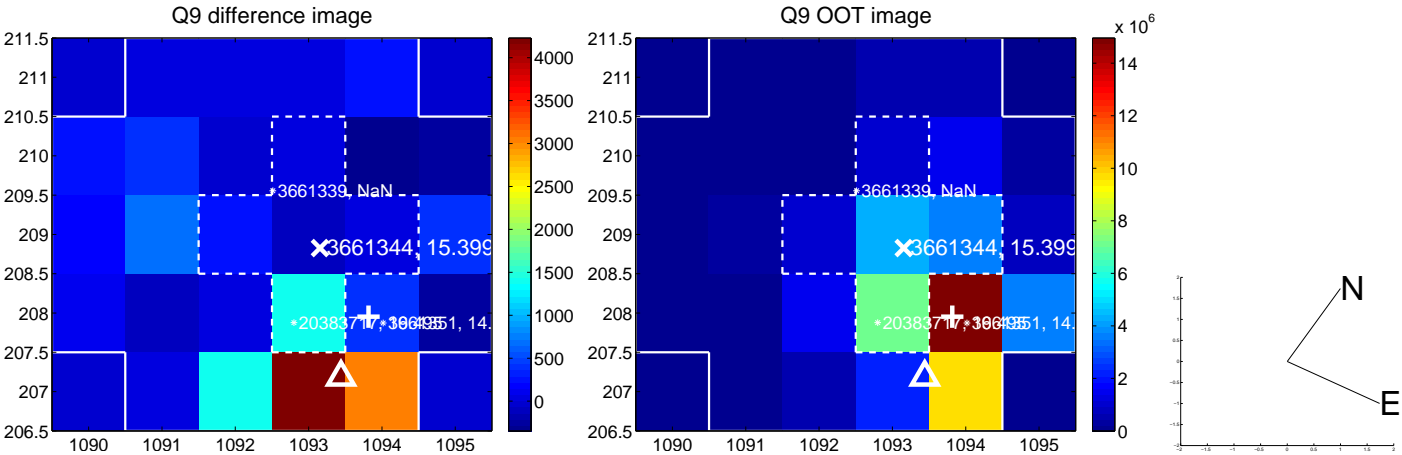
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



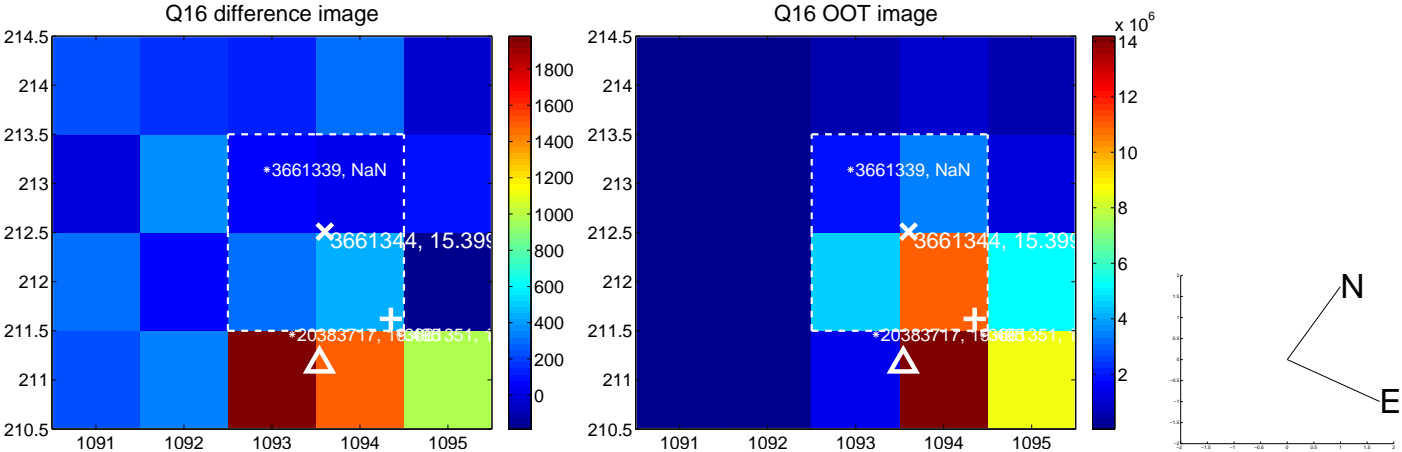
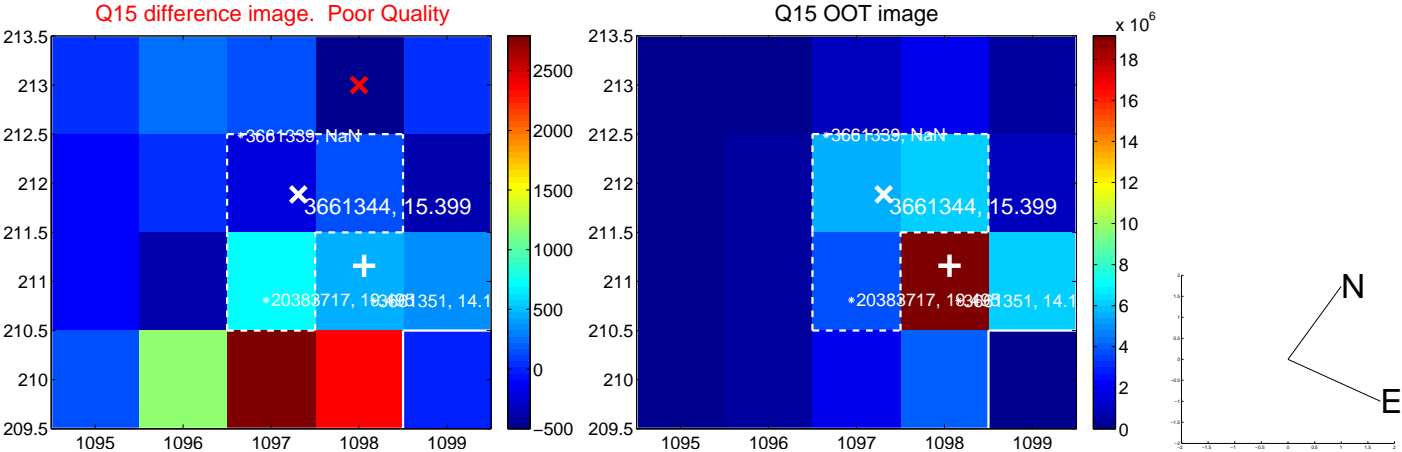
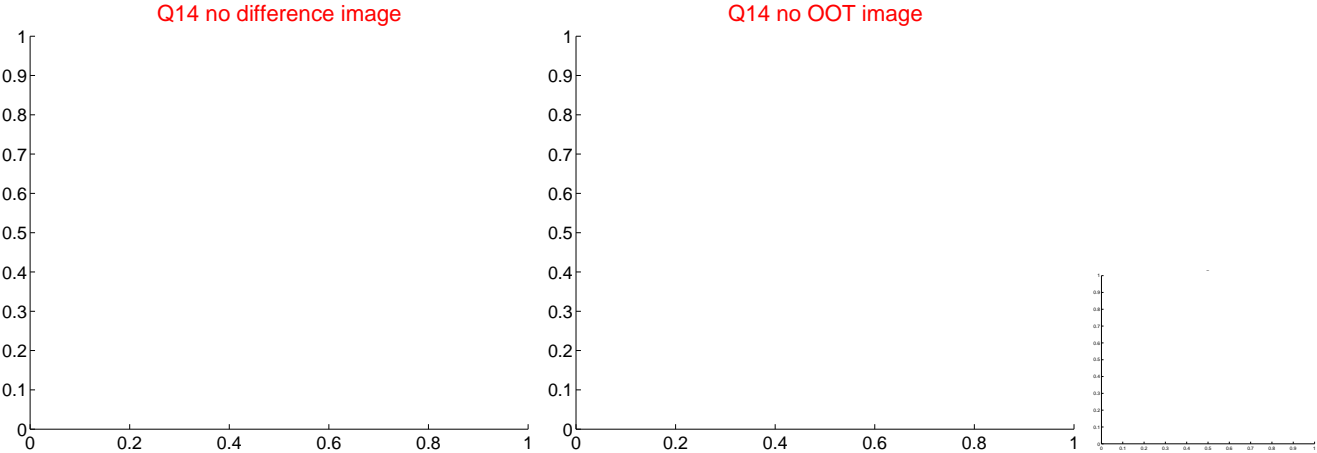
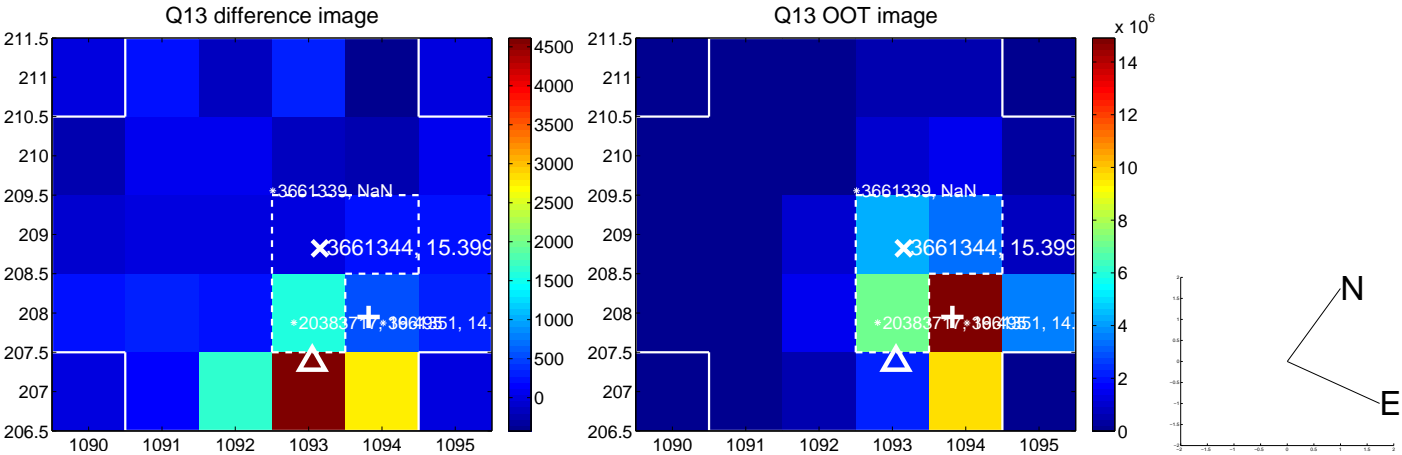
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

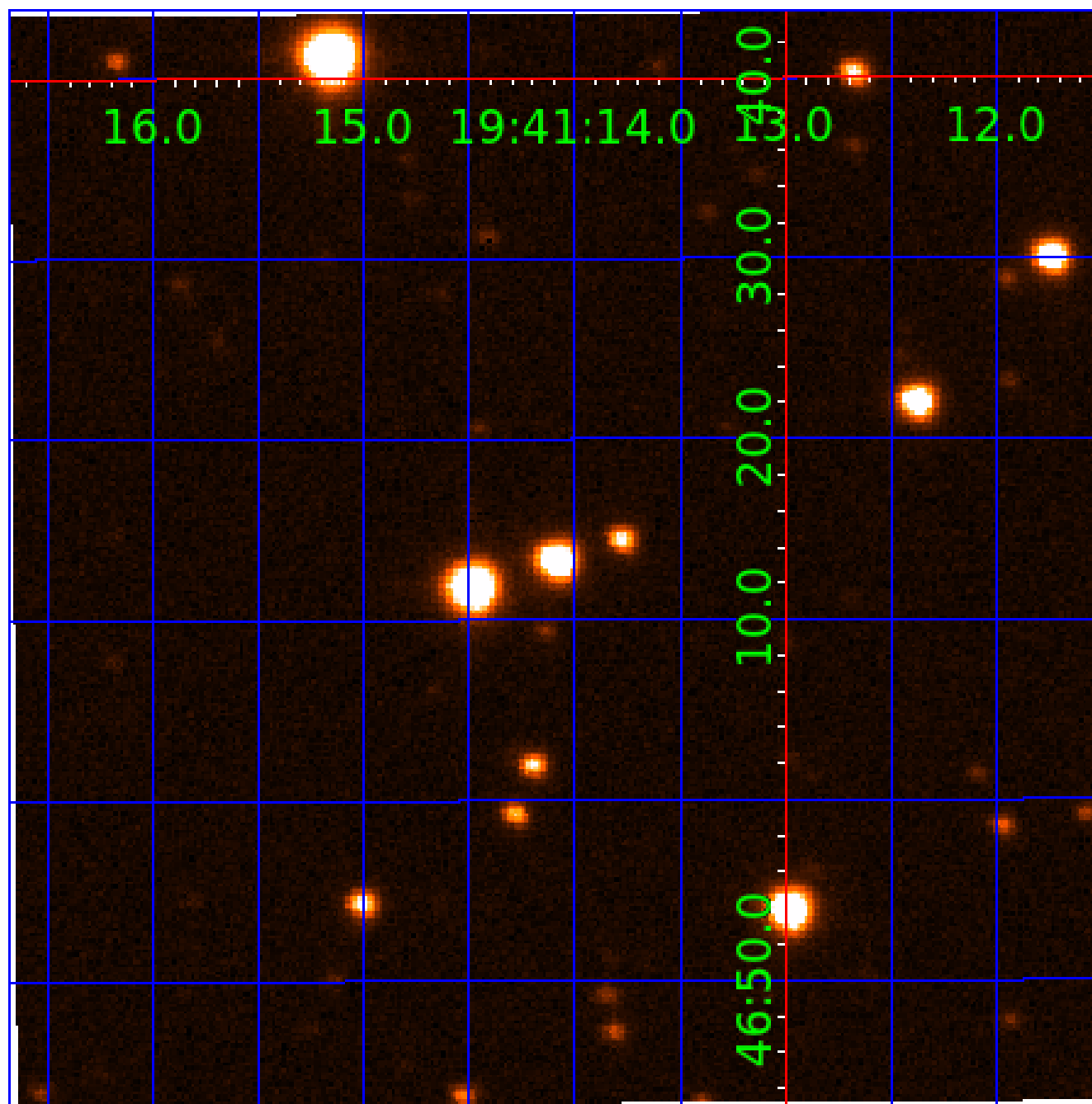


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003661344

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})
003661344-01	OBS	No	0.667050	131.809200	119.5	1.330	7.7	7.1	27.17	4226	37.30	0.00
003661344-02	OBS	No	0.667057	132.135762	130.5	1.455	7.4	8.2	27.17	4226	39.65	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003661344-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
003661344-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

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

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

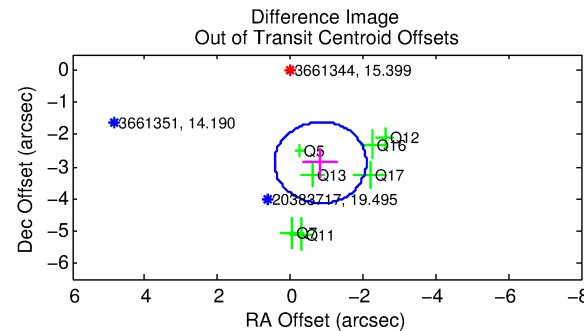
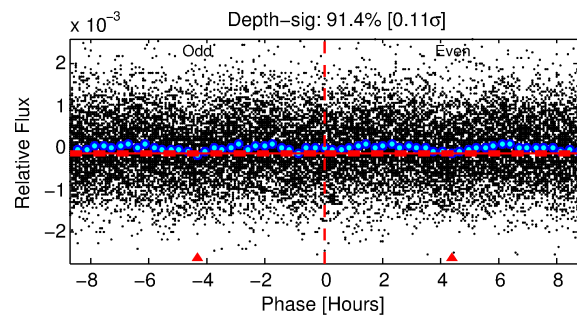
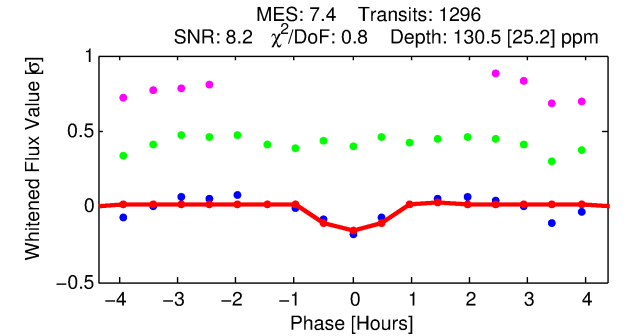
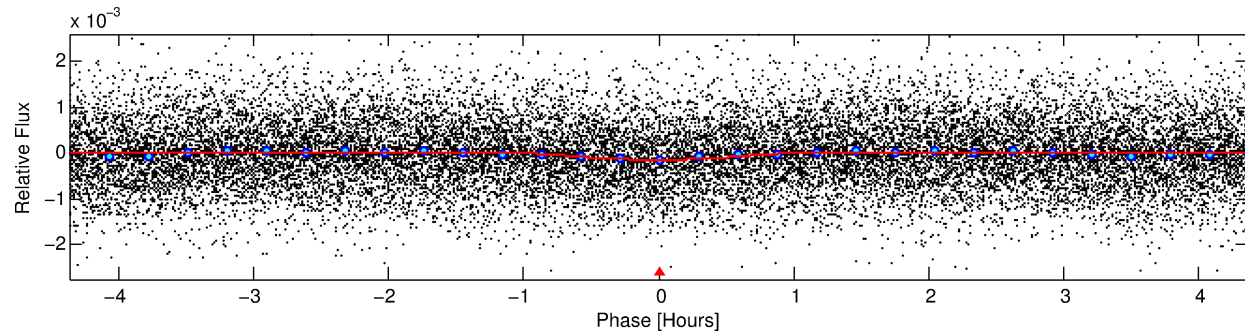
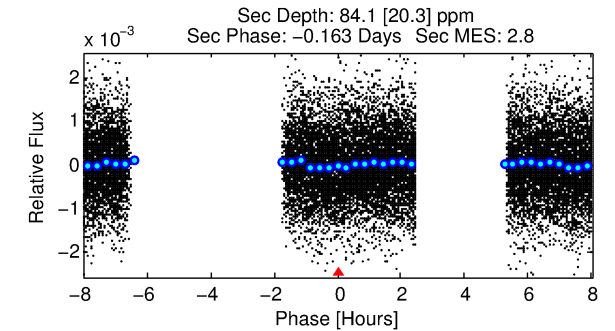
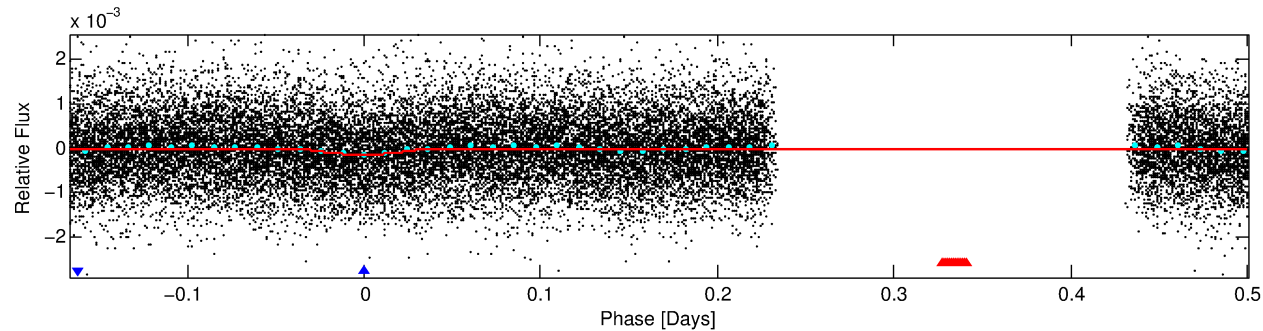
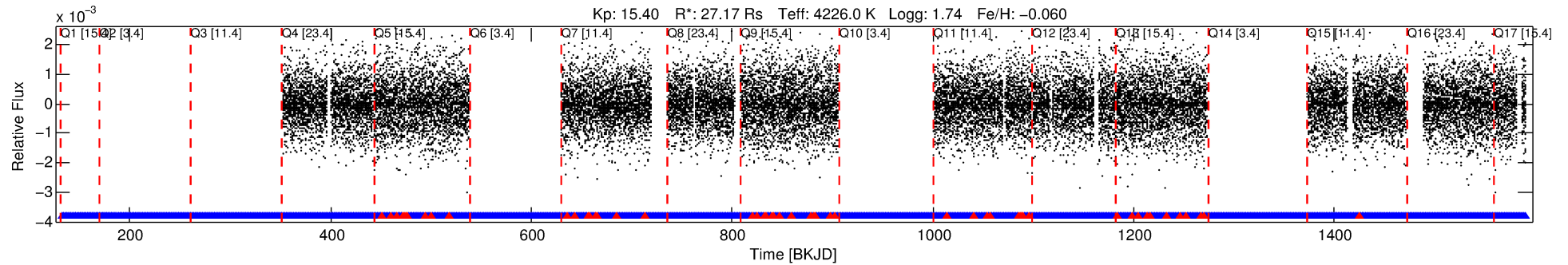
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003661344-02

No Significant Match Found

DV One-Page Summary

KIC: 3661344 Candidate: 2 of 2 Period: 0.667 d



DV Fit Results:

Period = 0.66706 [0.00001] d
Epoch = 132.1358 [0.0024] BKJD
Rp/R* = 0.0134 [0.0196]
a/R* = 1.81 [6.52]
b = 0.91 [0.99]
Seff = N/A
Teq = N/A
Ag = N/A
Teffp = N/A

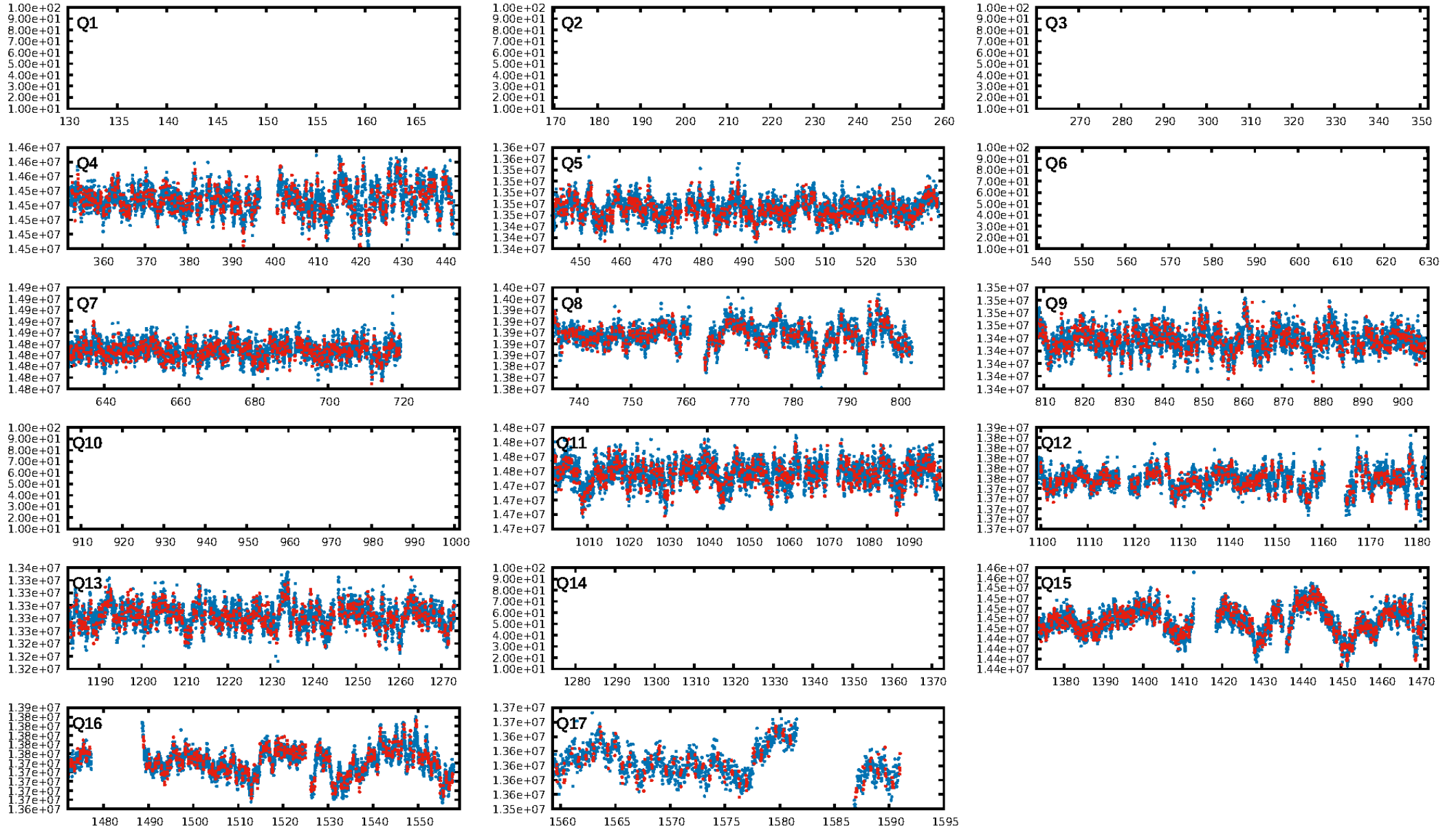
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.84e-12
RollingBand-fgt: 0.96 [1201/1256]
GhostDiagnostic-chr: -0.6574
Centroid-sig: 0.0%
Centroid-so: 3.631 arcsec [7.62σ]
OotOffset-rm: 2.993 arcsec [7.10σ]
KicOffset-rm: 5.493 arcsec [10.59σ]
OotOffset-st: 0/2/2/3 [7]
KicOffset-st: 0/2/2/3 [7]
DiffImageQuality-fgm: 1.00 [7/7]
DiffImageOverlap-fno: 1.00 [11/11]

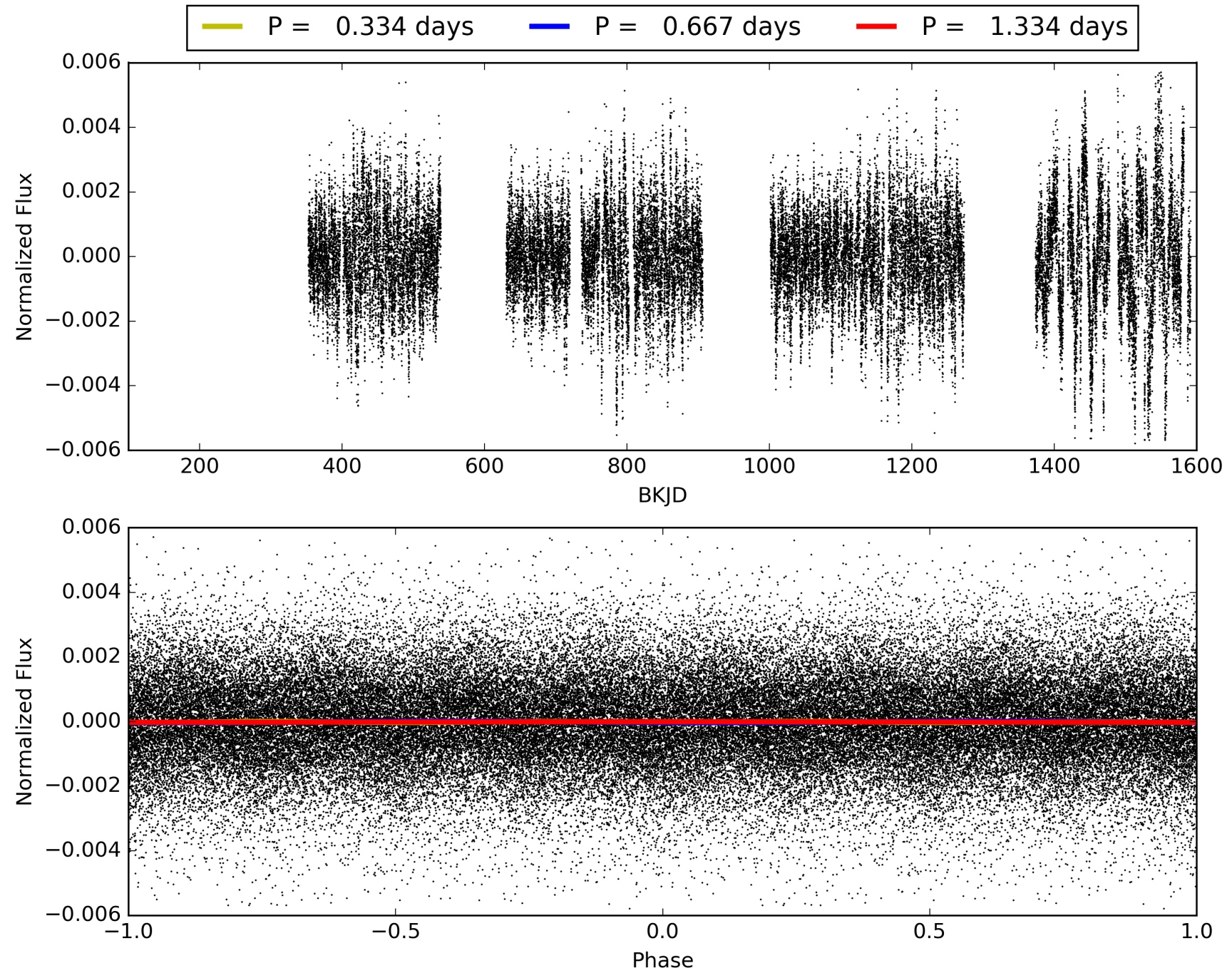
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:21:13 Z

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

TCE 003661344-02, PDC Light Curves

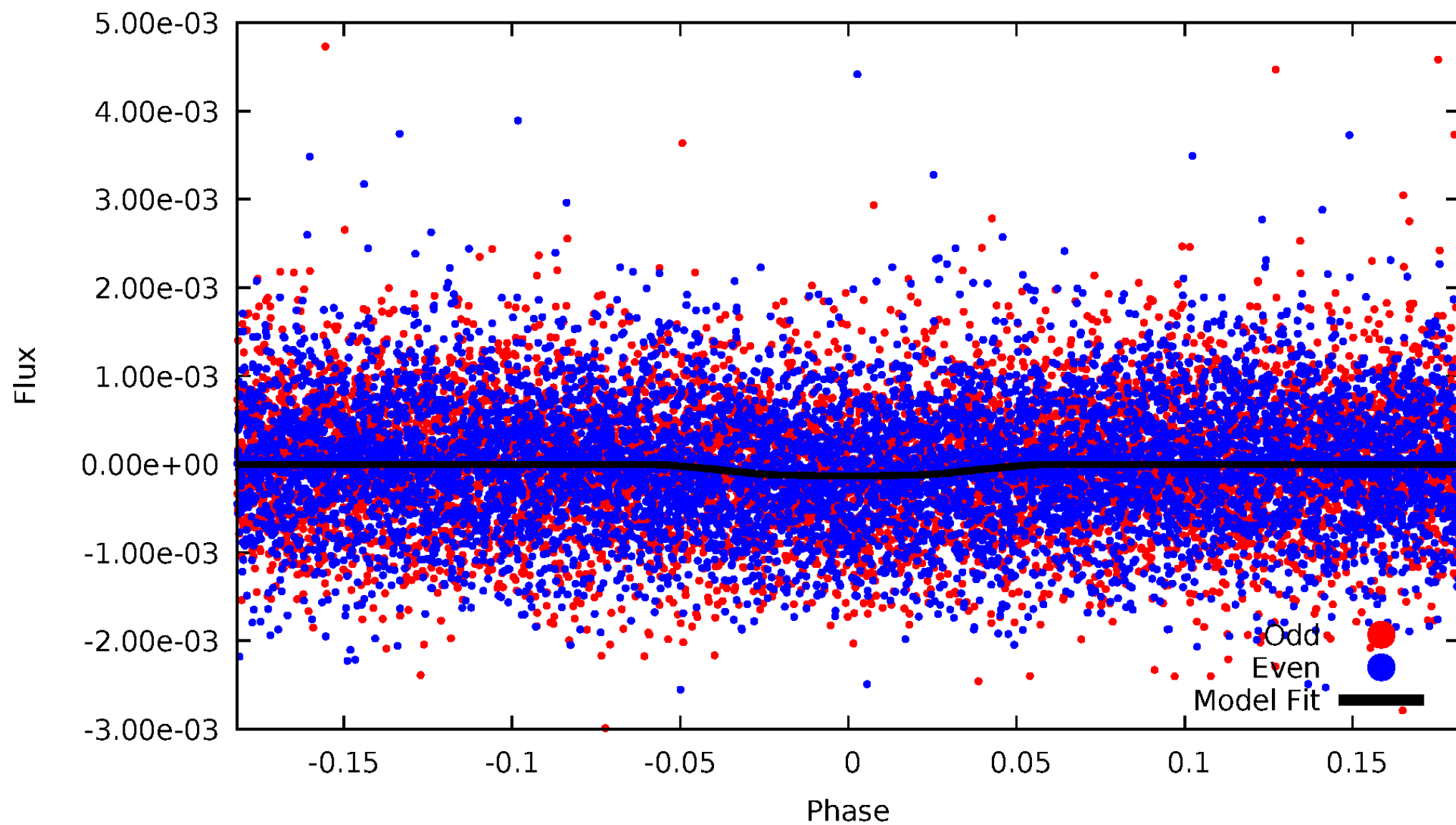


TCE 003661344-02



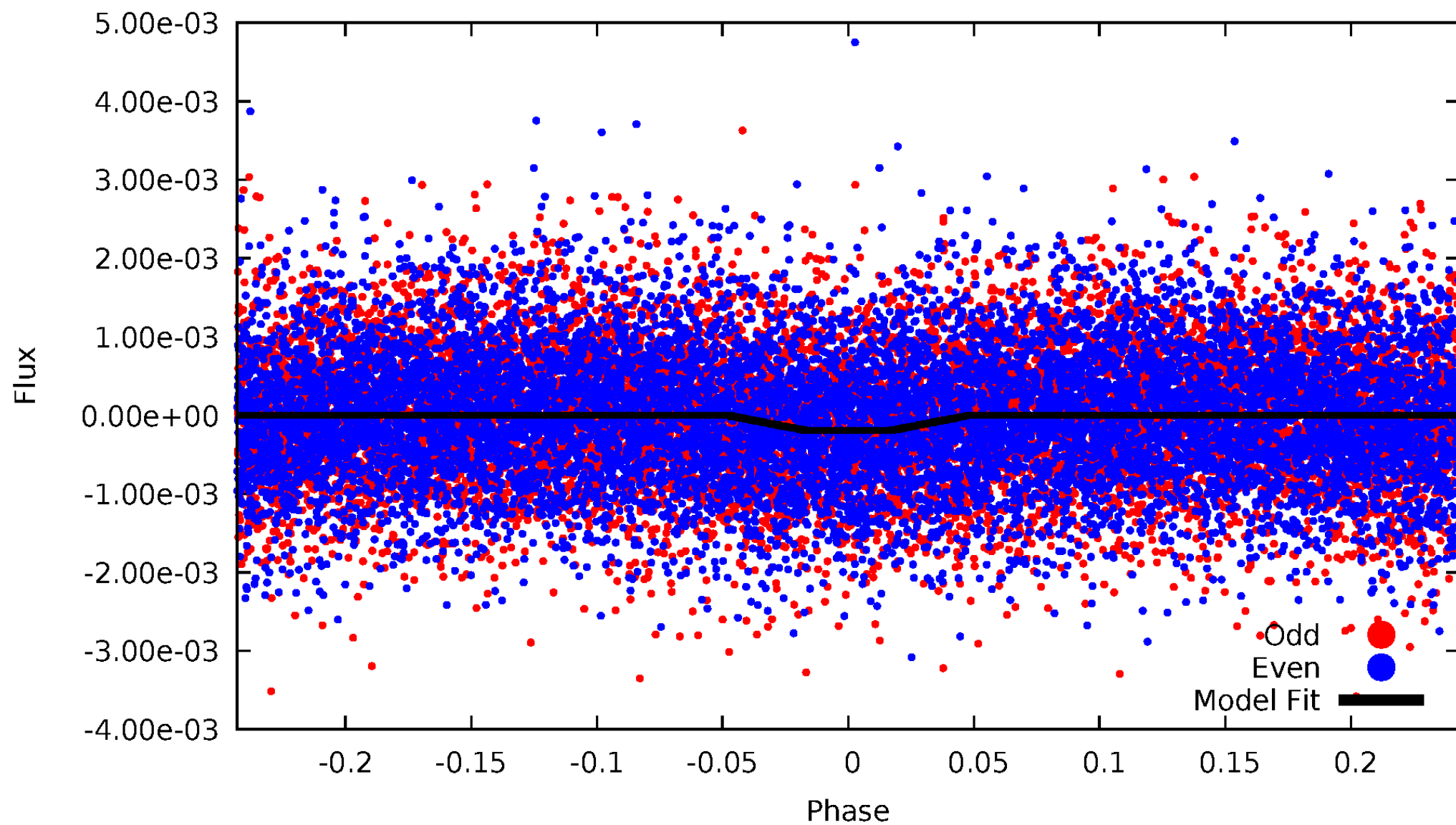
DV Odd/Even

TCE 003661344-02



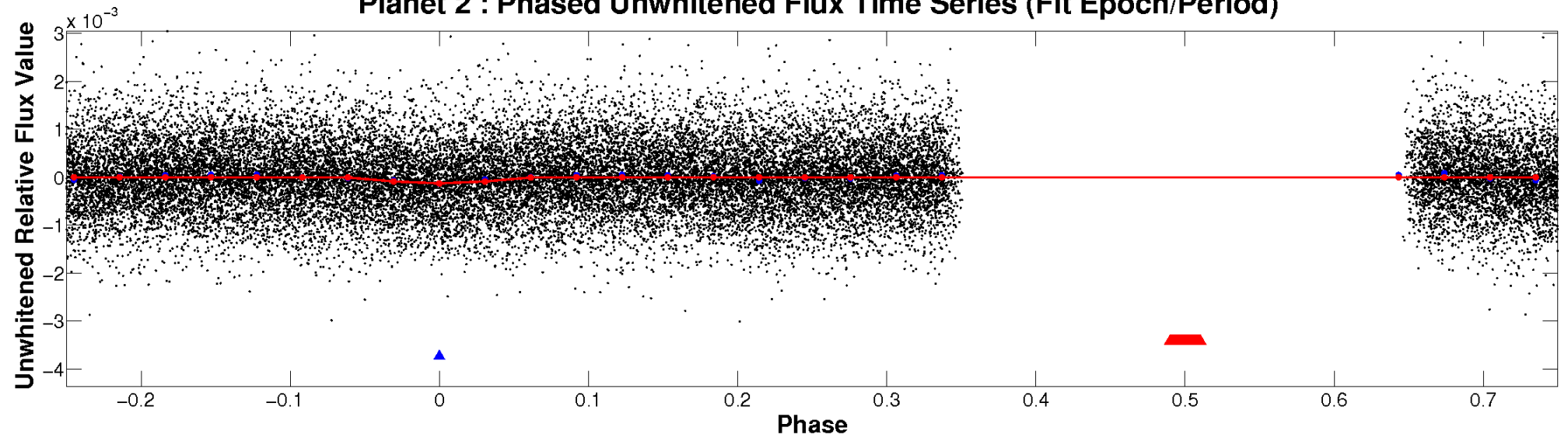
ALT Odd/Even

TCE 003661344-02

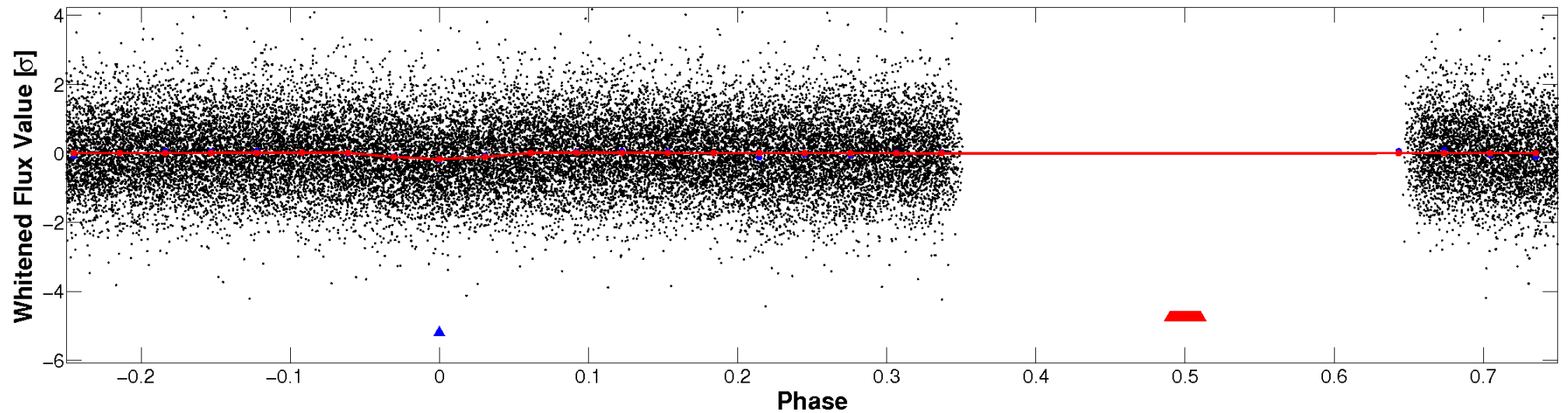


Non-Whitened Vs. Whitened Light Curve

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

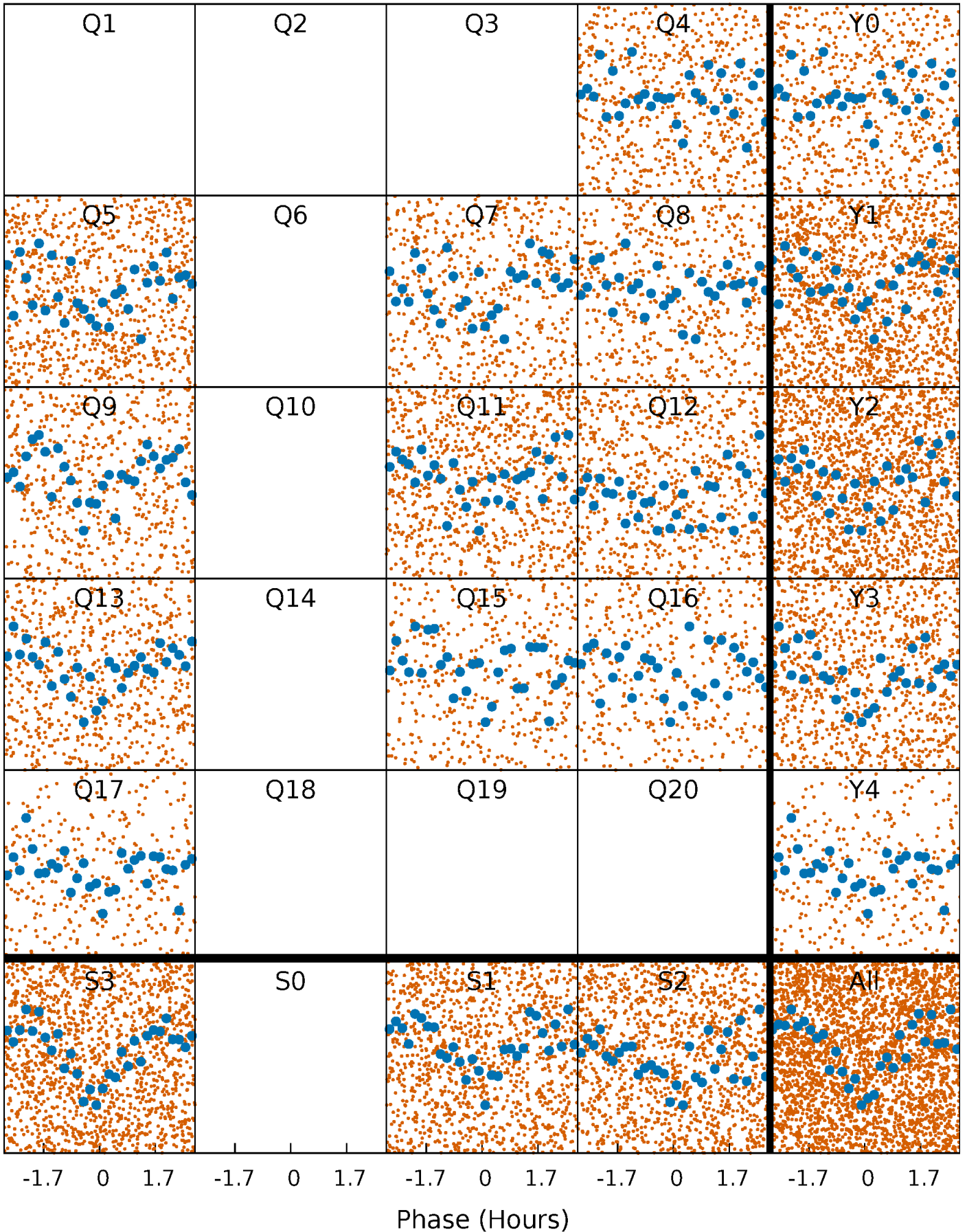


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



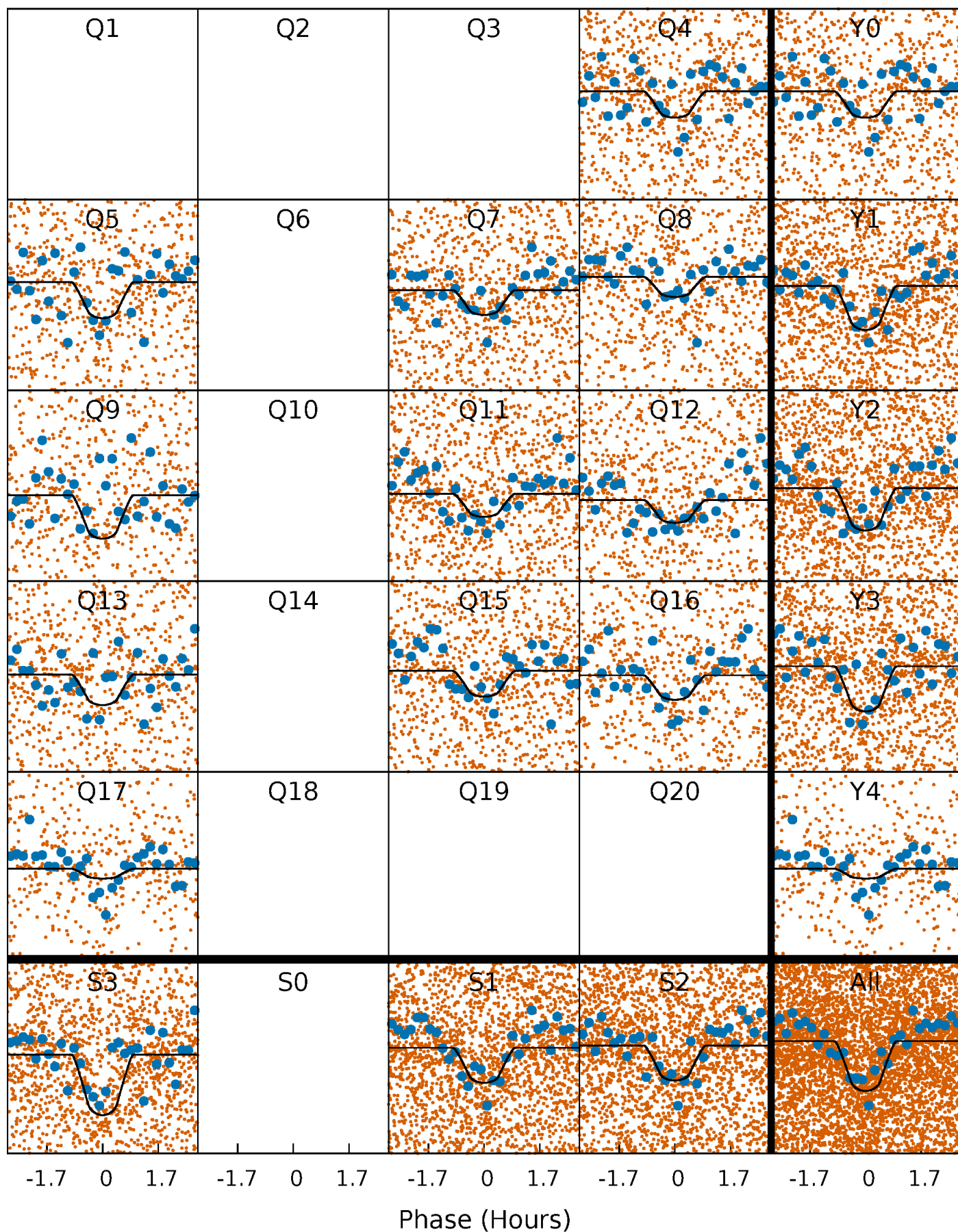
PDC Quarter-Phased Transit Curves

TCE 003661344-02 P= 0.667057 Days $T_0=132.135762$ (BKJD)



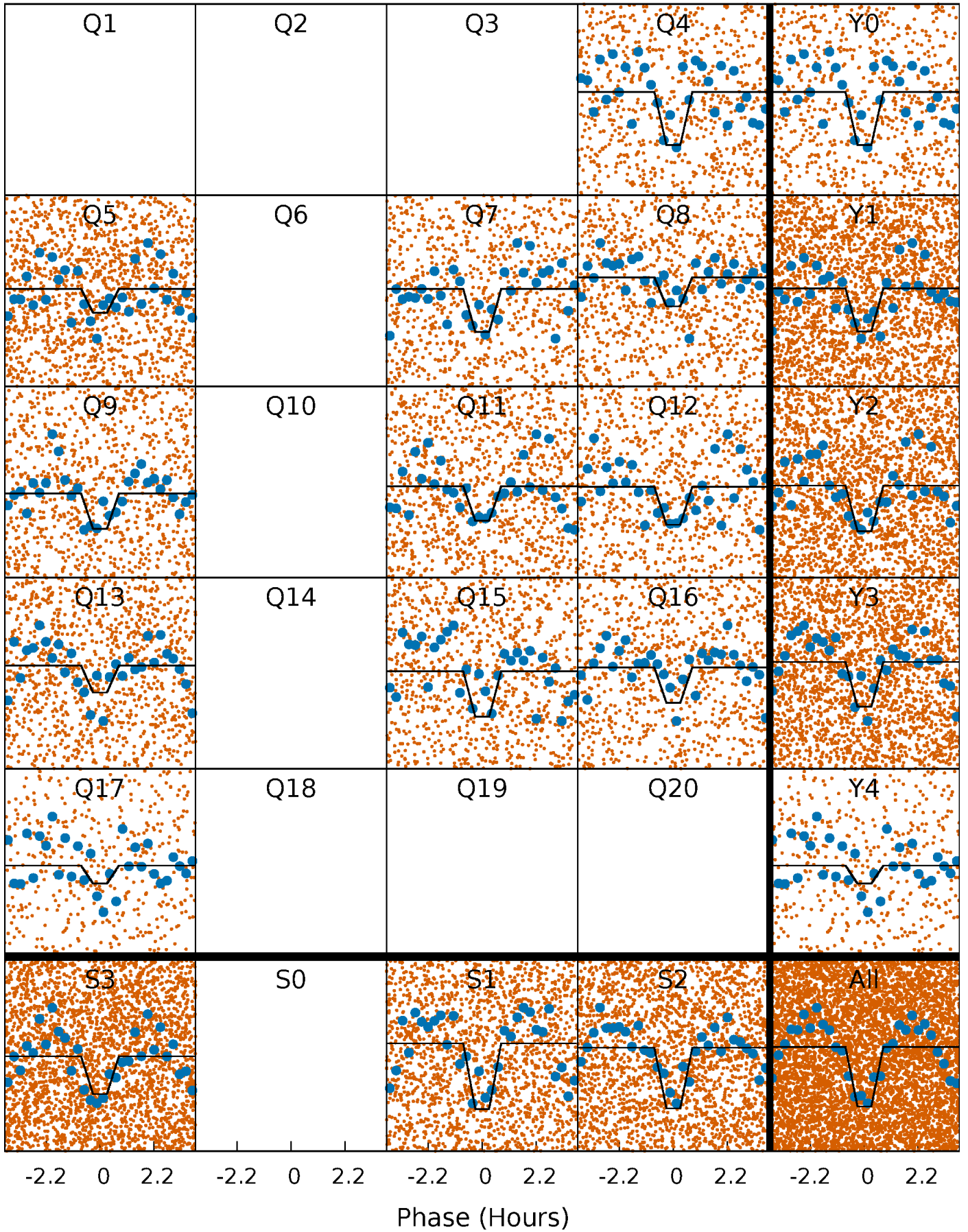
DV Quarter-Phased Transit Curves

TCE 003661344-02 P= 0.667057 Days $T_0=132.135762$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

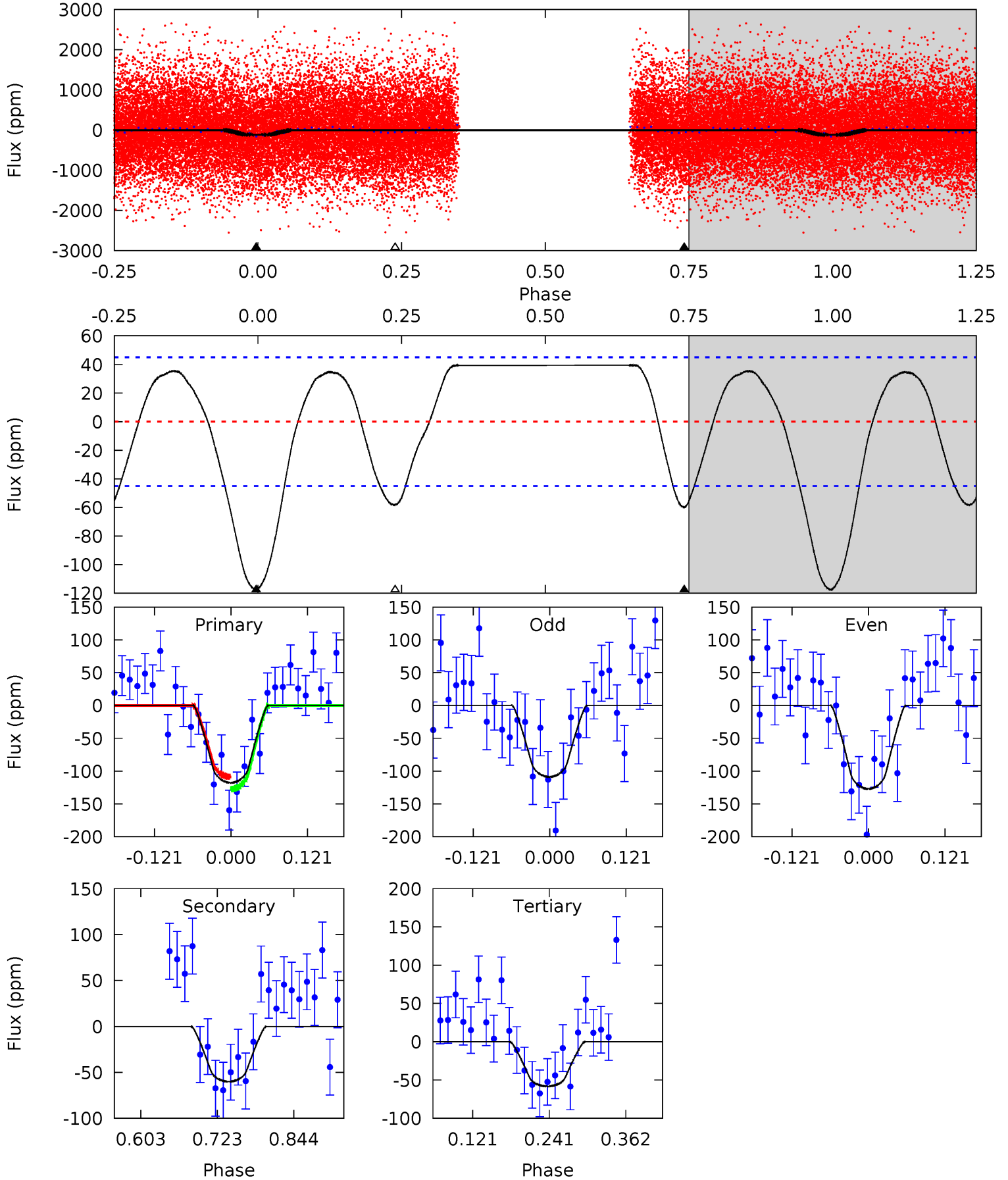
TCE 003661344-02 P= 0.667051 Days $T_0=132.142301$ (BKJD)



DV Model-Shift Uniqueness Test

003661344-02, P = 0.667057 Days, E = 132.135762 Days

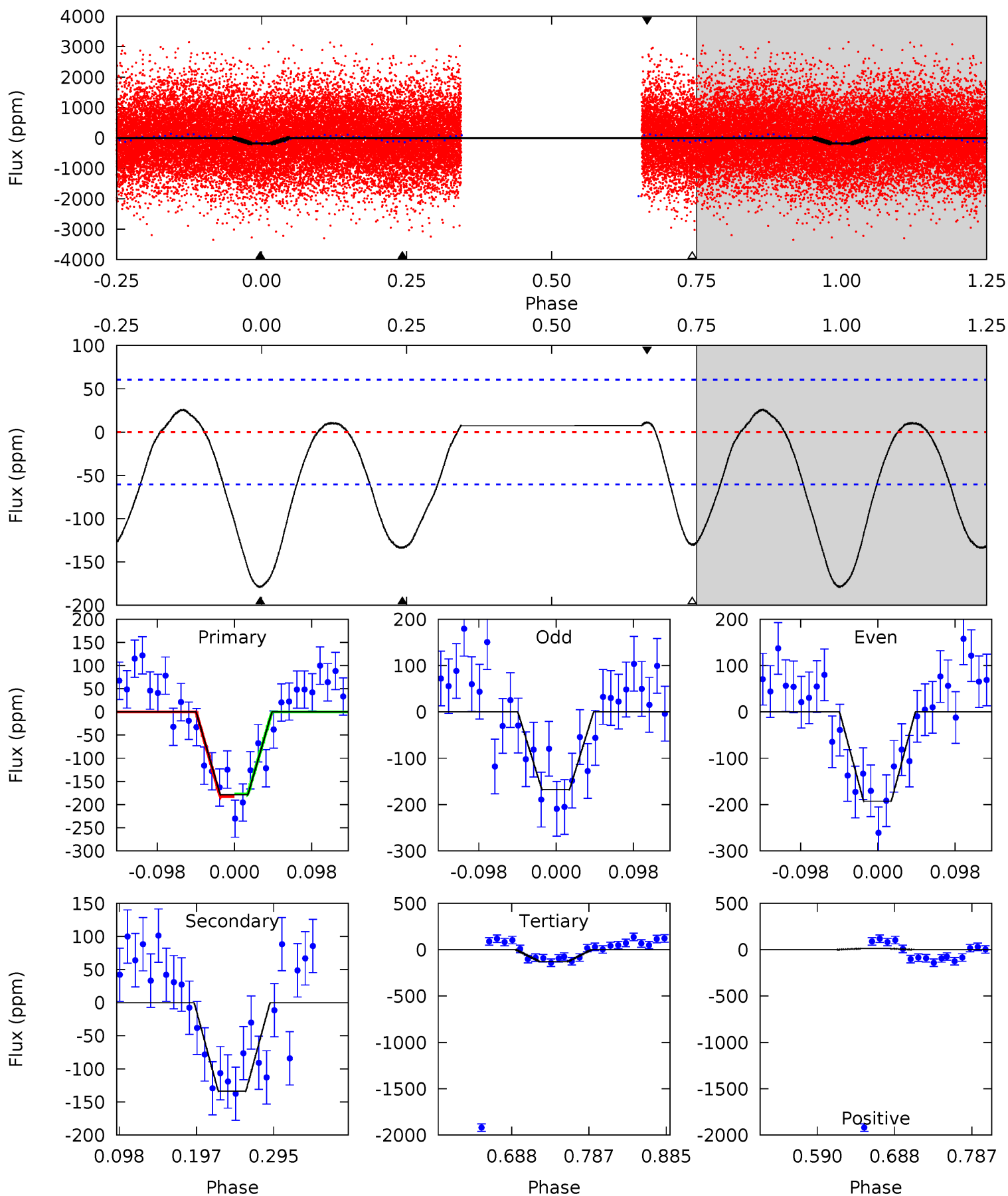
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	6.04	5.86	0	4.53	1.55	3.37	5.98	11.8	0.18	6.04	0.92	0.84	0.25	0.93



Alt Model-Shift Uniqueness Test

003661344-02, P = 0.667051 Days, E = 132.142301 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	10.1	9.84	0.87	4.57	1.65	3.91	3.69	12.7	0.28	9.25	0.95	0.95	0.13	0.22



Stellar Parameters For KIC 003661344

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4226^{+96}_{-107}	$1.737^{+0.033}_{-0.027}$	$-0.060^{+0.200}_{-0.200}$	$27.168^{+2.880}_{-3.959}$	$1.470^{+0.309}_{-0.412}$	$0.000^{+0.000}_{-0.000}$
	+2%/-3%	+2%/-2%	+333%/-333%	+11%/-15%	+21%/-28%	+21%/-12%
Source	KIC0	AST71	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 003661344-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-60 ± 10	$60.13^{+48.72}_{-38.73}$	10409^{+291}_{-322}	-8157^{+462}_{-421}	$0.003^{+0.019}_{-0.002}$
Alt.	-134 ± 13	$61.73^{+50.45}_{-41.80}$	10418^{+283}_{-330}	-8107^{+656}_{-427}	$0.006^{+0.046}_{-0.004}$

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 $A_{obs} \gg 1.0$

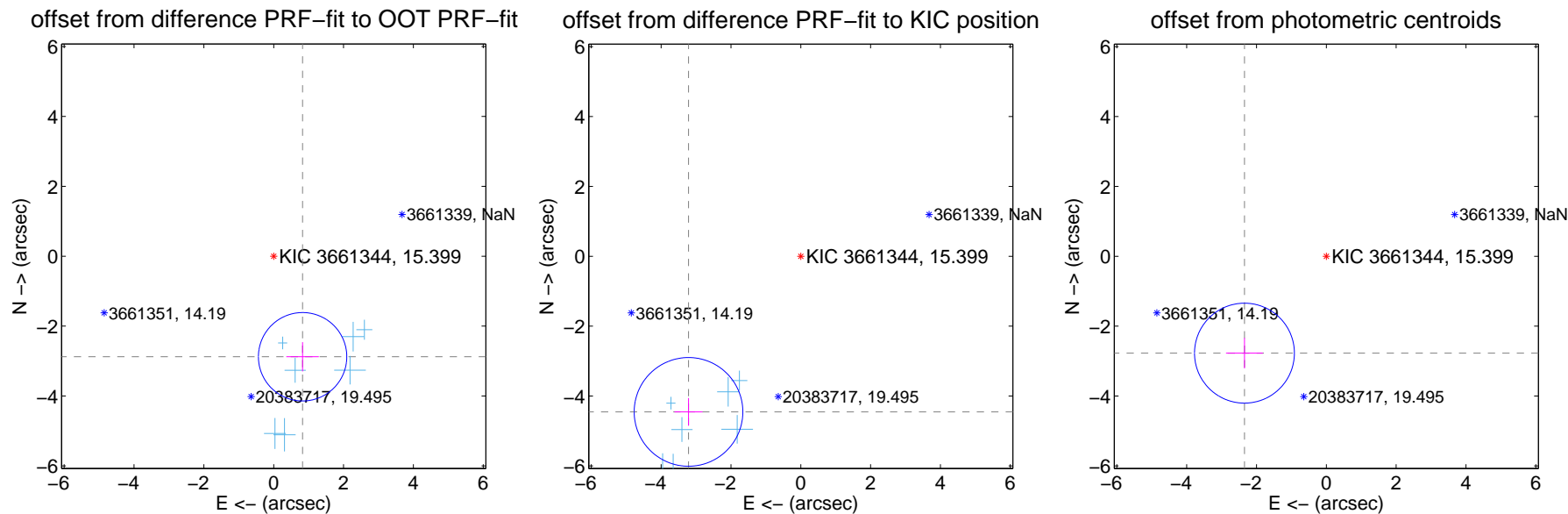
DV Centroid Data

Supplemental centroid analysis for 003661344-02. Kepler magnitude: 15.40. Transit SNR 8.16

There are 7 quarters with good PRF difference image offsets

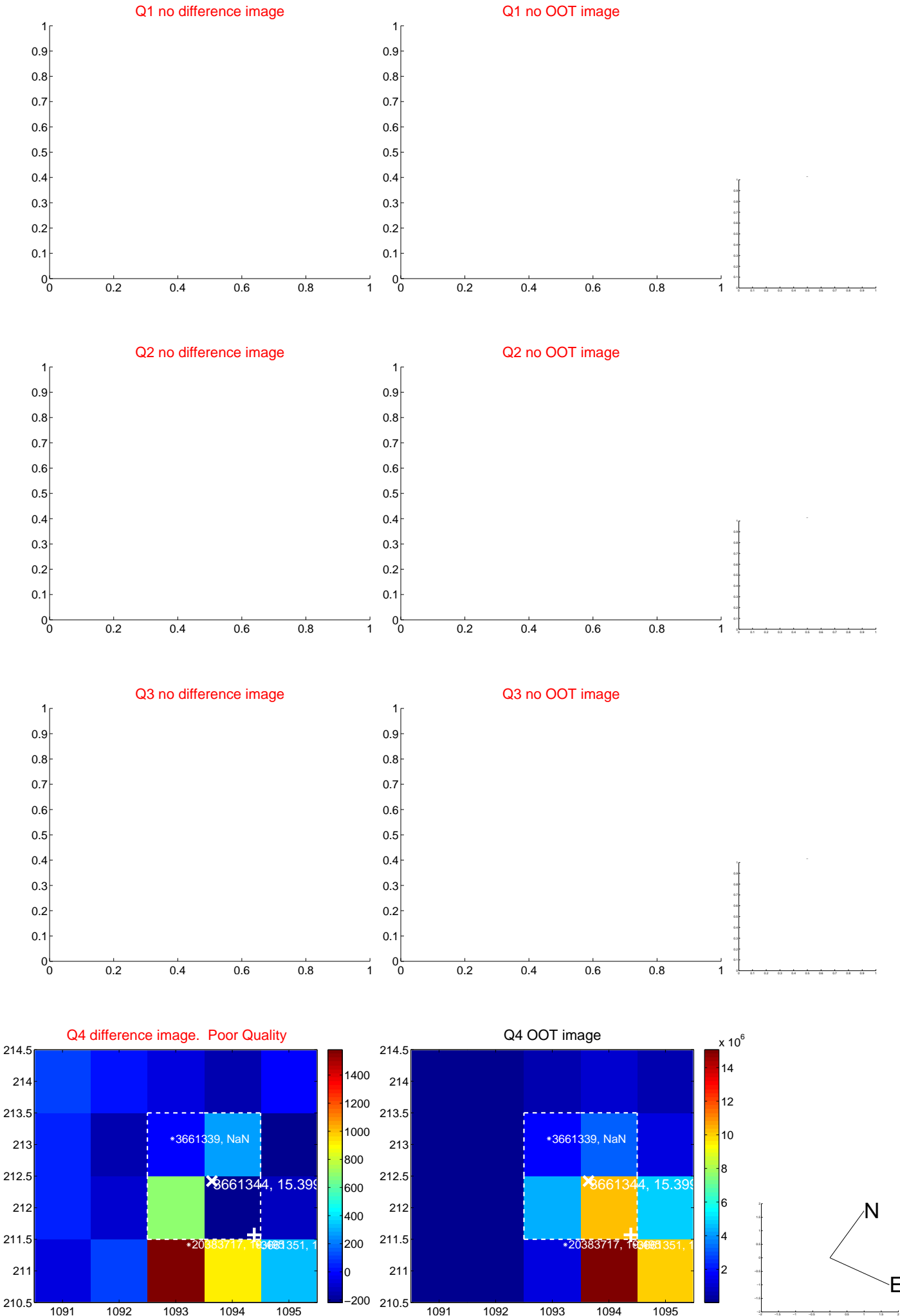
The OOT PRF centroid is offset from the target star catalog position by about 4.35 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.993 ± 0.422	7.10	-0.827 ± 0.465	-2.877 ± 0.418
PRF-fit source offset from KIC position	5.493 ± 0.519	10.59	3.216 ± 0.401	-4.453 ± 0.397
photometric centroid source offset	3.63 ± 0.48	7.62	2.34 ± 0.53	-2.77 ± 0.44

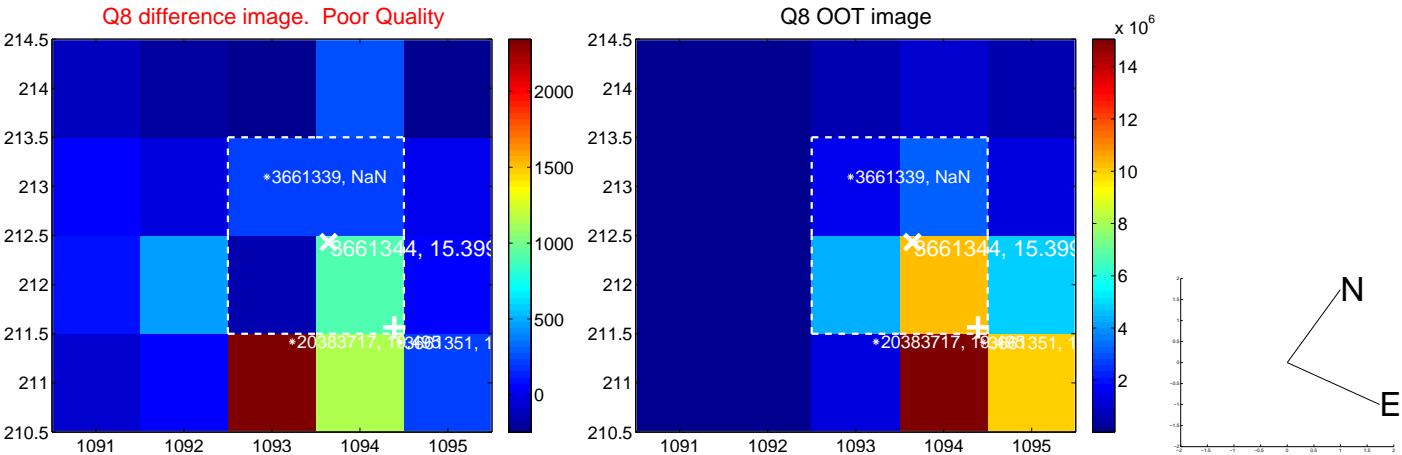
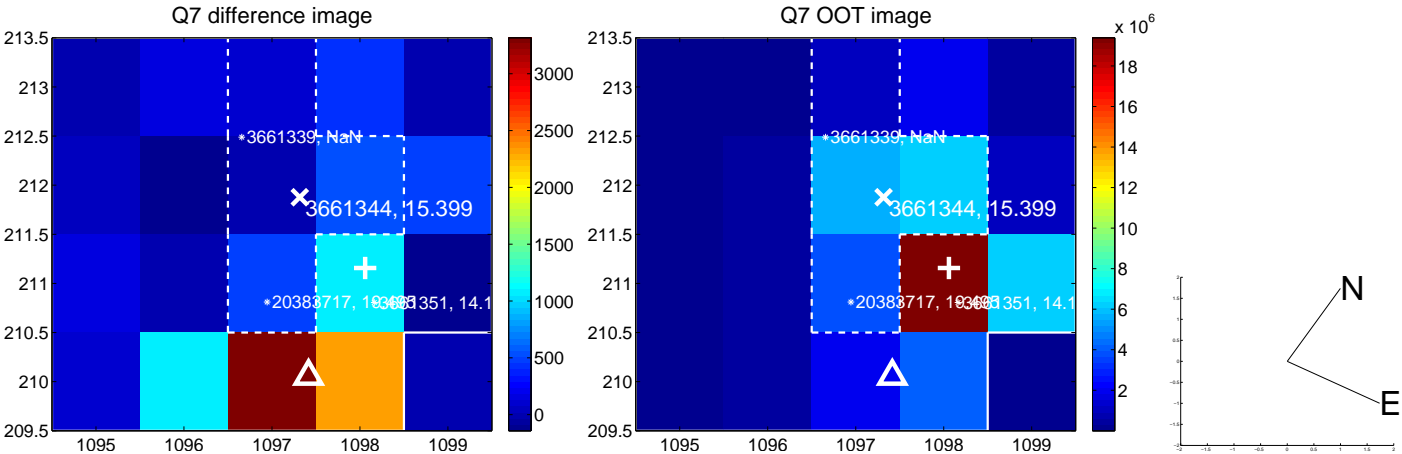
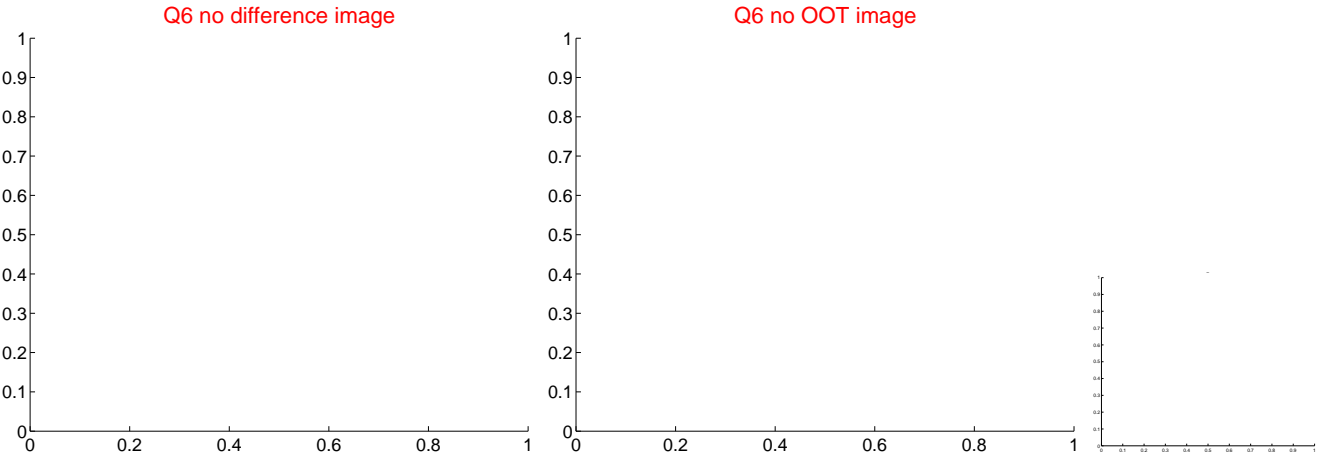
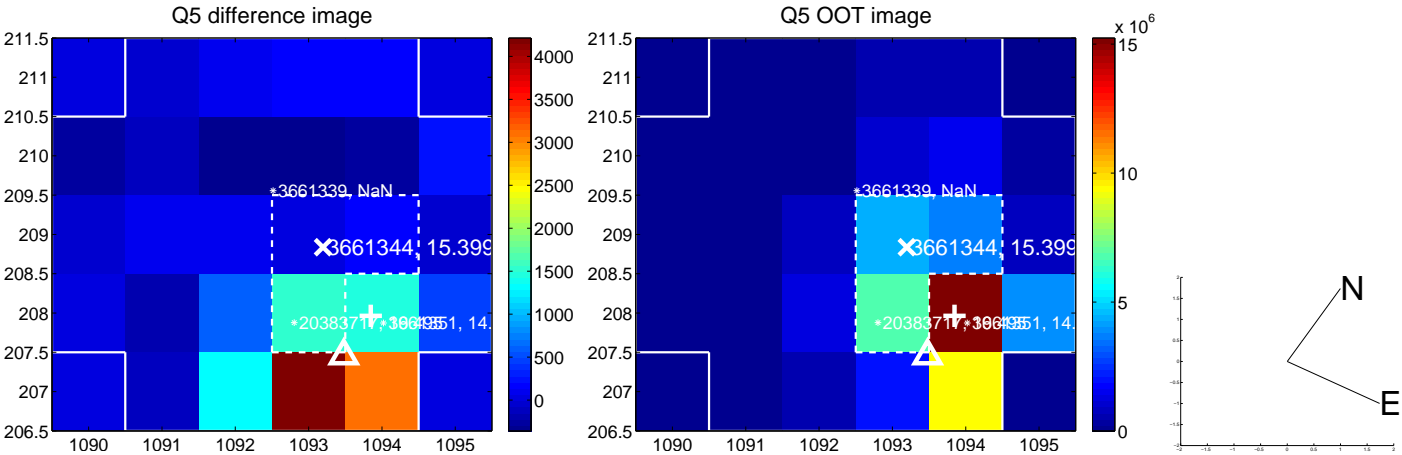


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

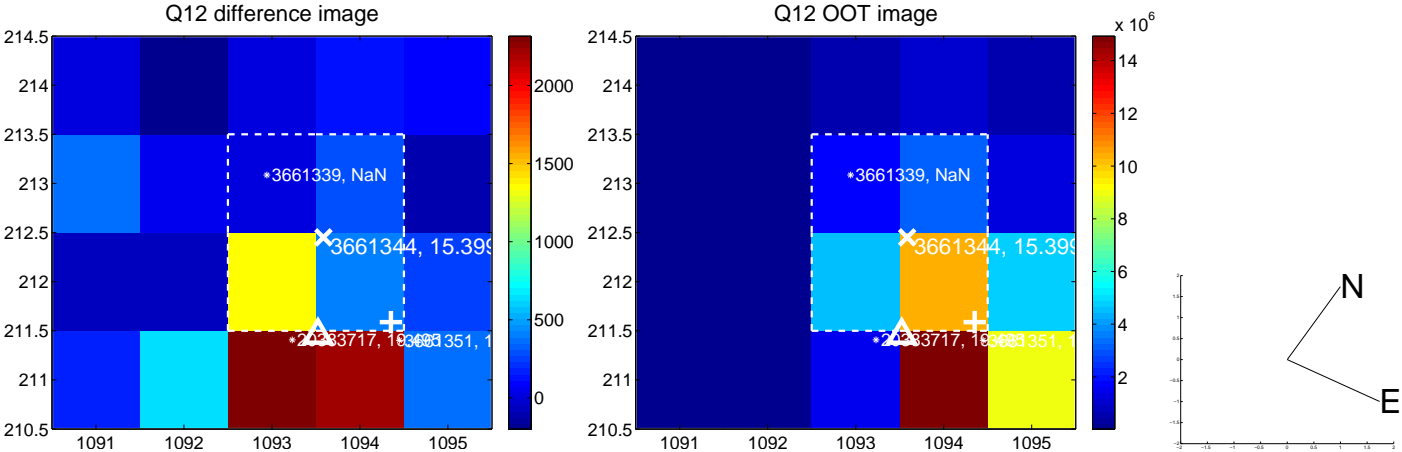
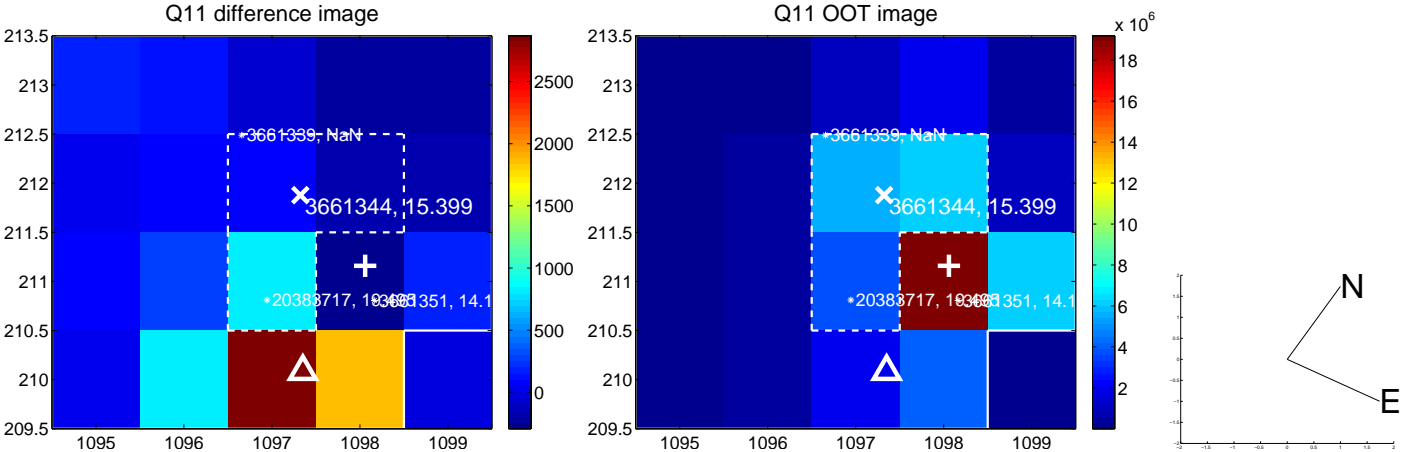
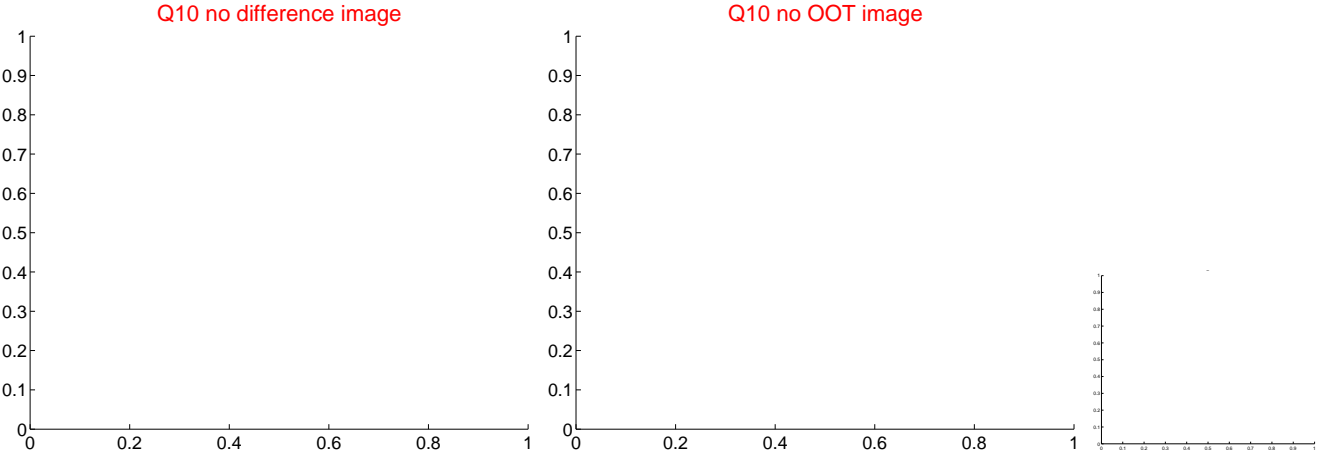
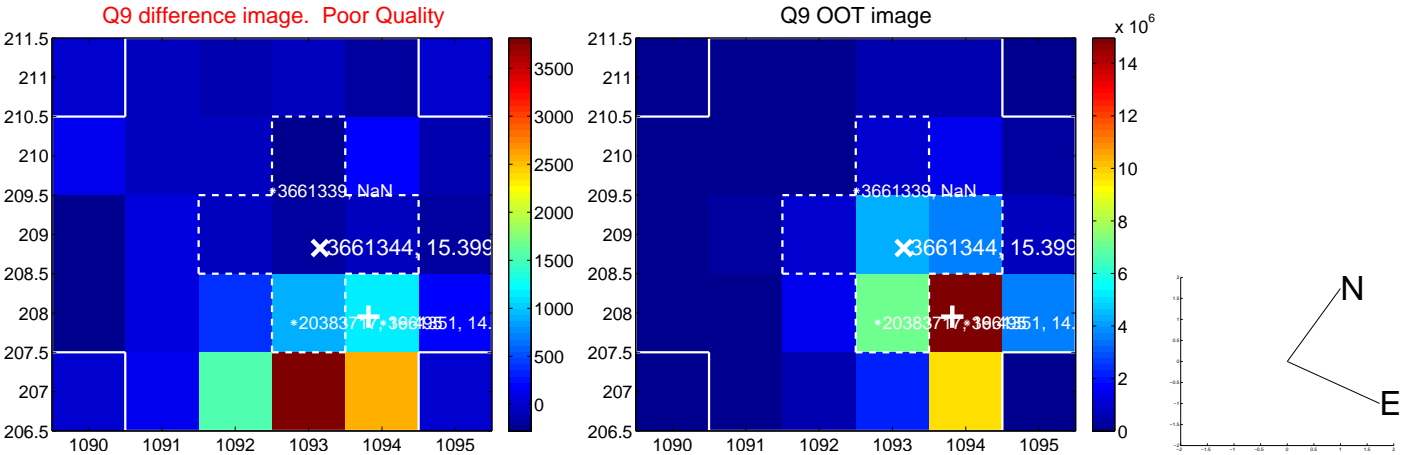
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



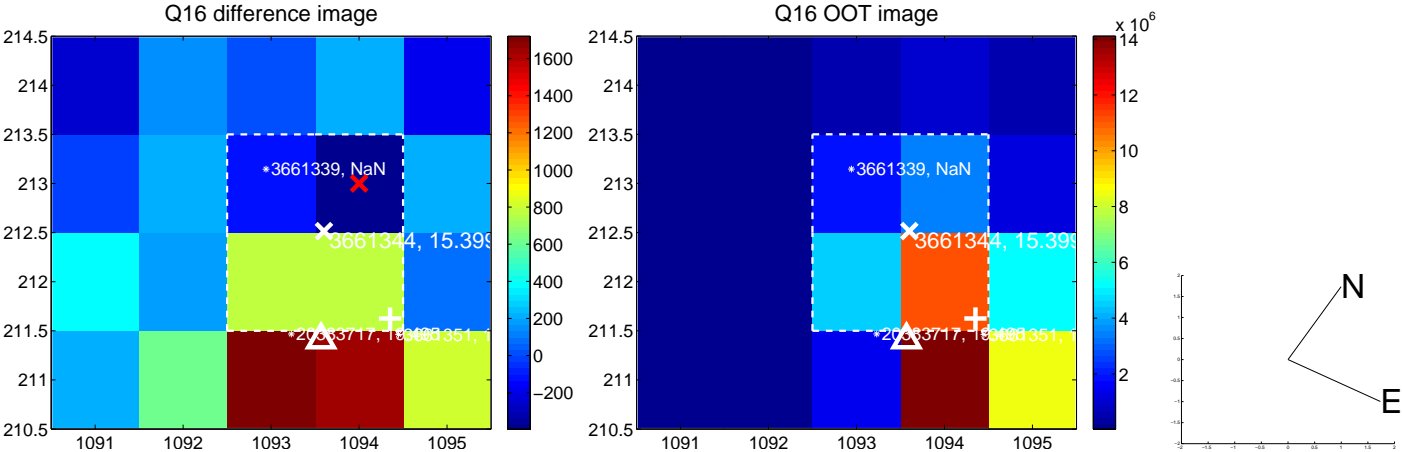
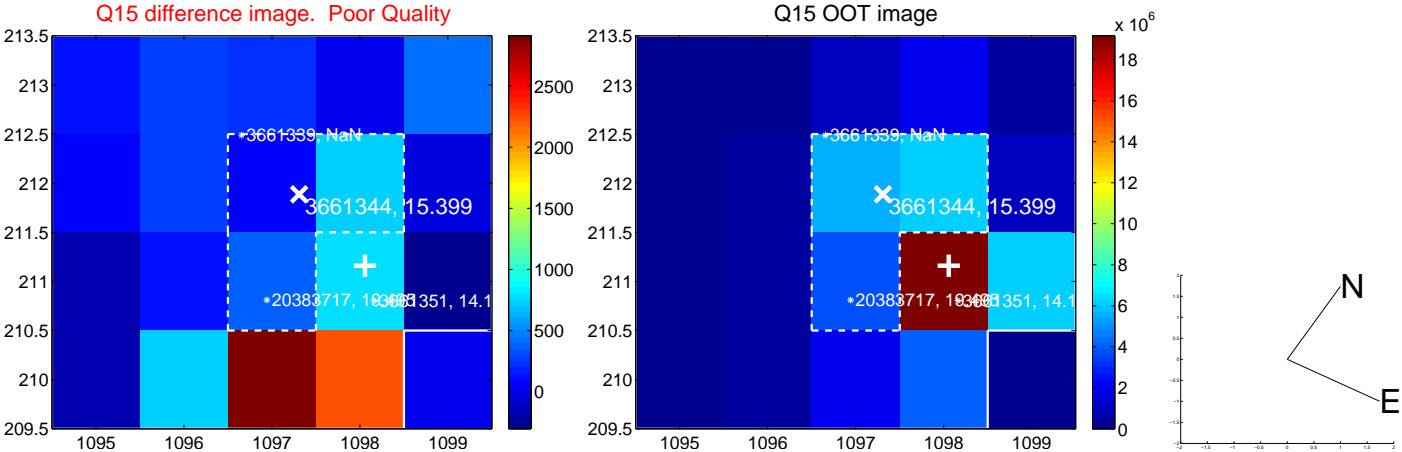
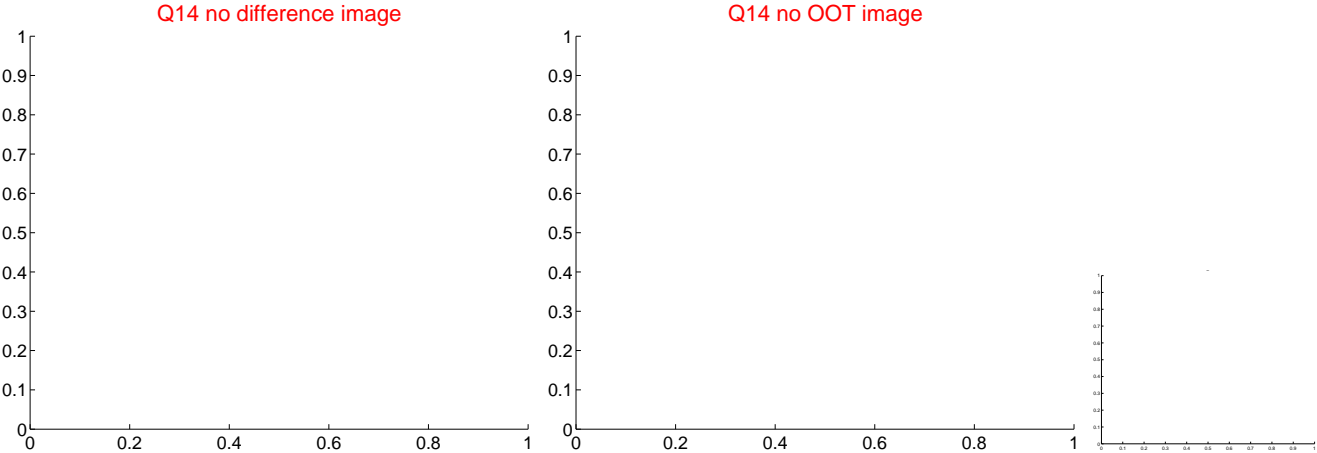
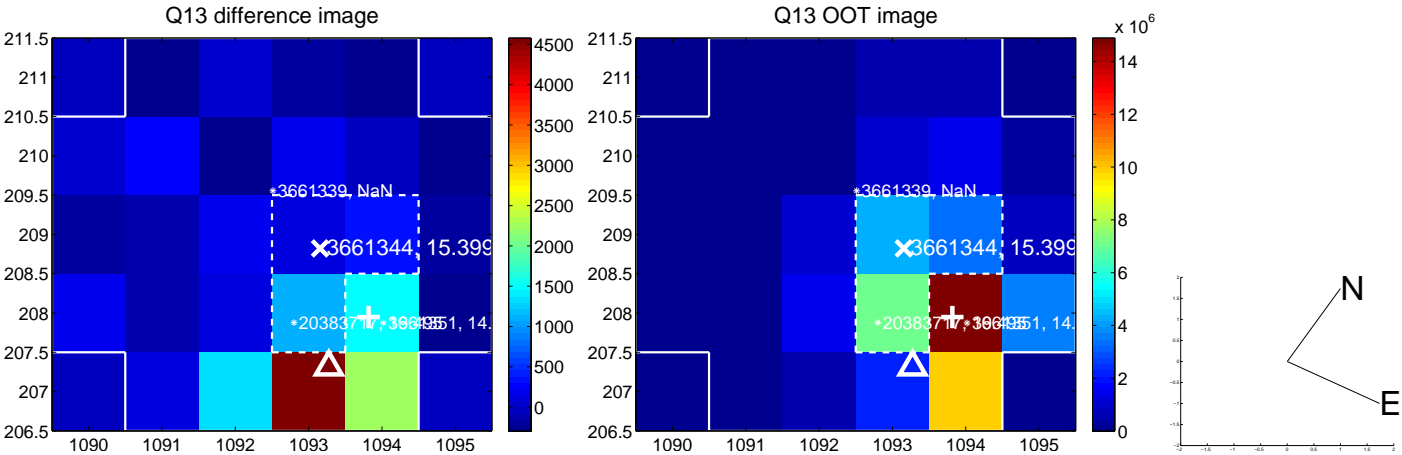
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



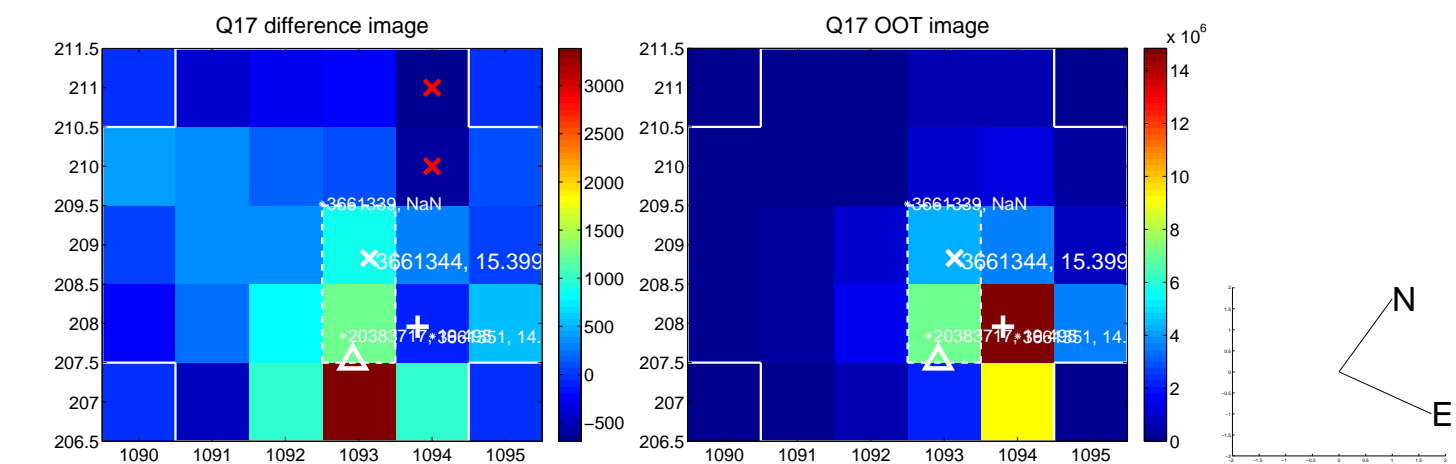
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



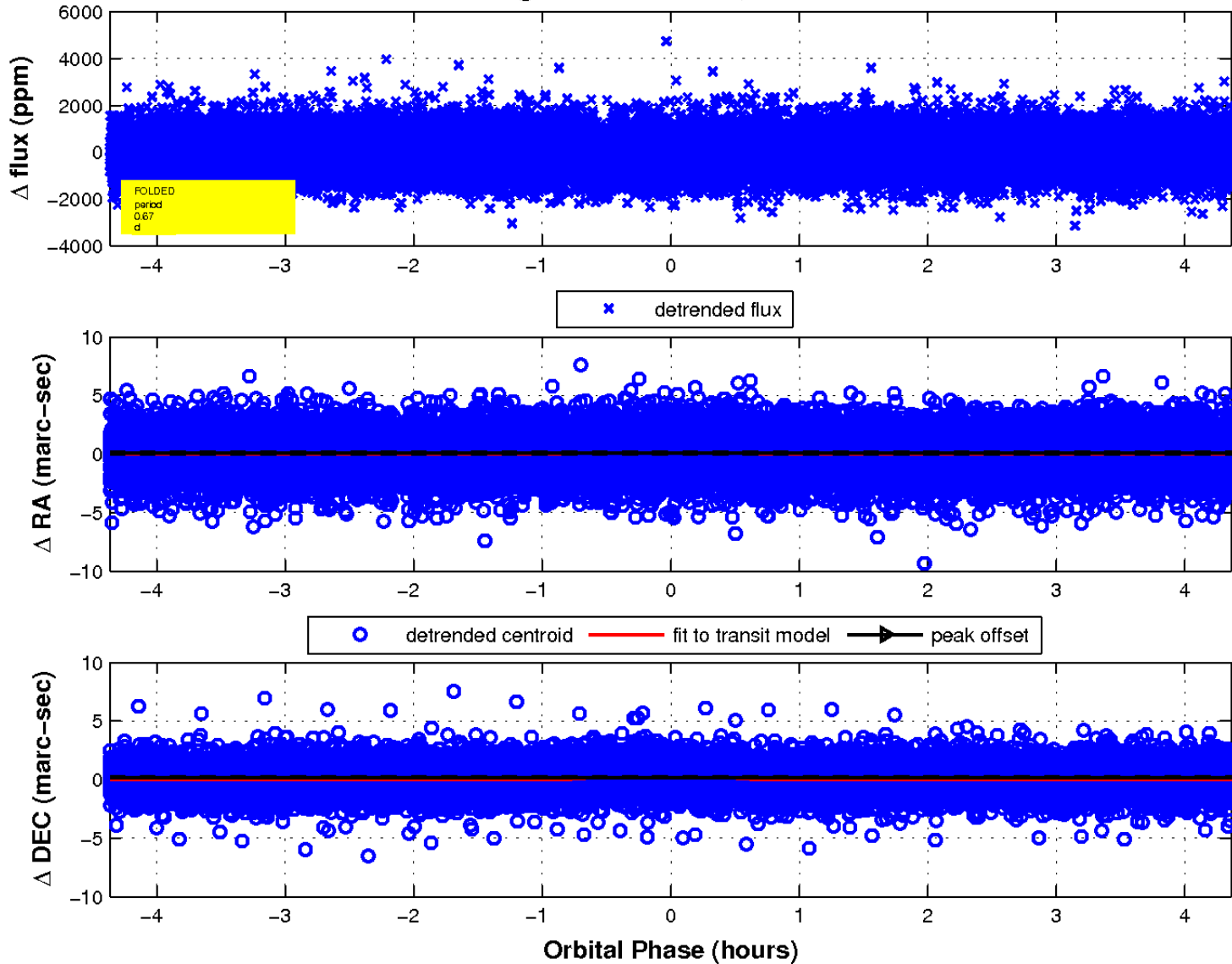
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

