

KIC 004276114

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})
004276114-01	OBS	5054.01	3.722405	133.568194	55250.5	2.550	1534.0	1337.4	0.80	5747	26.81	324.53
004276114-02	OBS	No	3.722403	131.707639	4437.4	2.409	128.3	132.2	0.80	5747	7.81	324.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004276114-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
004276114-02	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 004276114-01

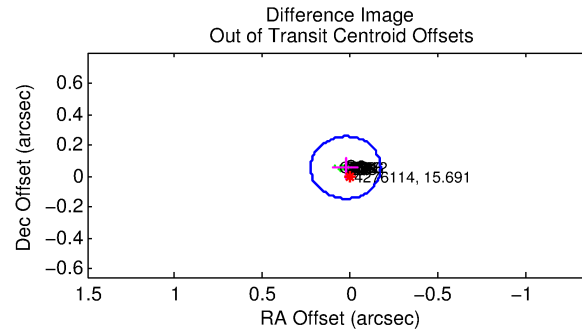
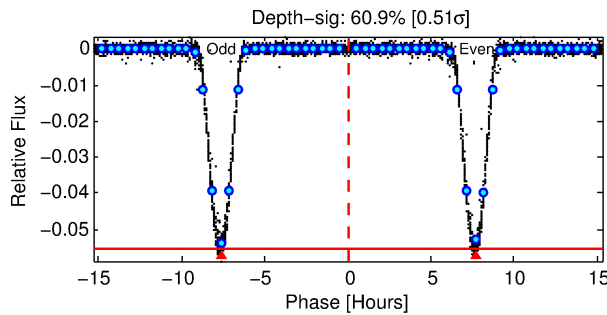
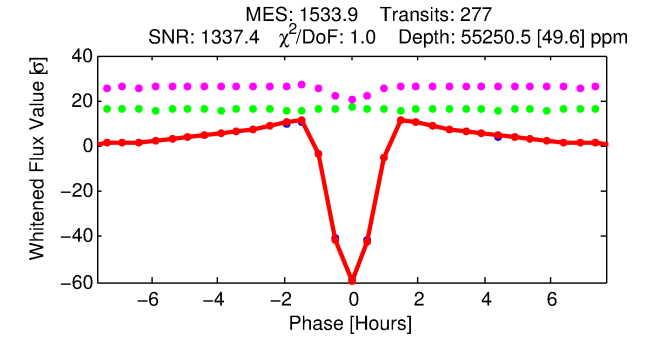
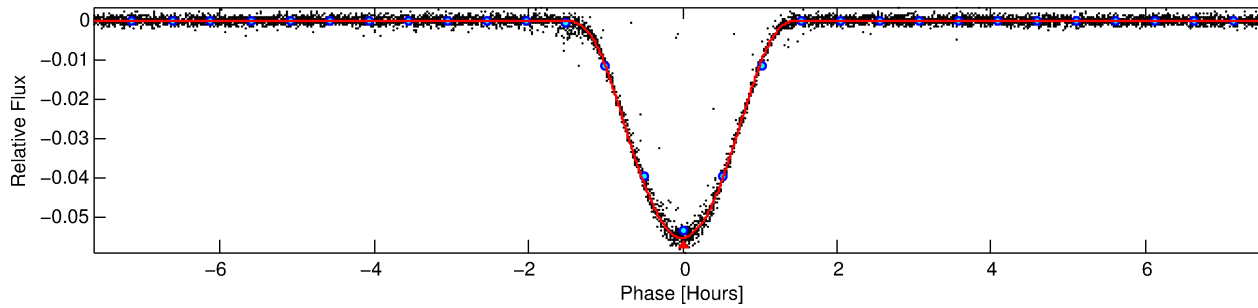
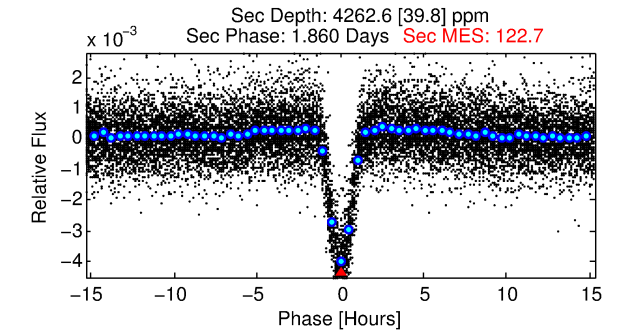
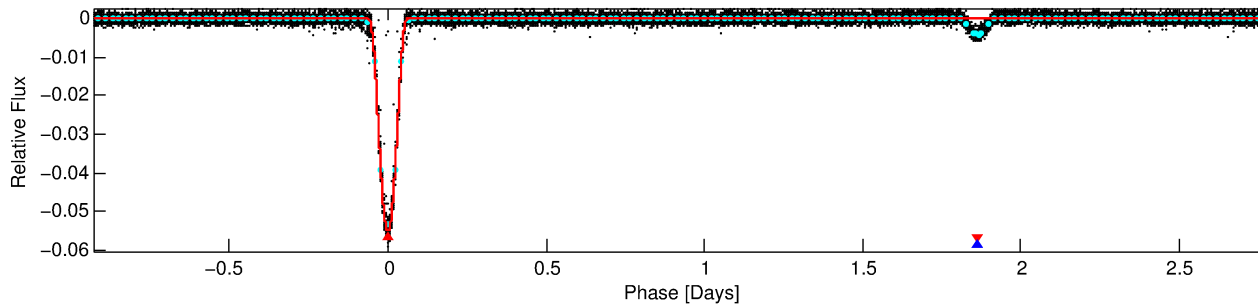
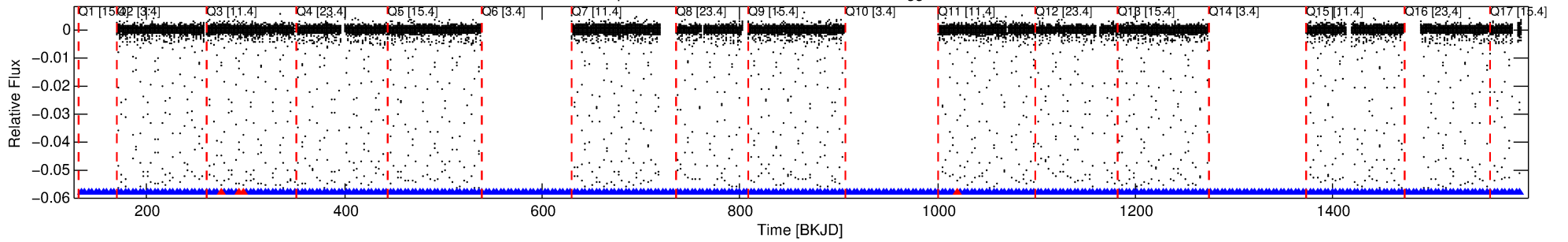
No Significant Match Found

DV One-Page Summary

KIC: 4276114 Candidate: 1 of 2 Period: 3.722 d

KOI: K05054.01 Corr: 1.000

Kp: 15.69 R*: 0.80 Rs Teff: 5747.0 K Logg: 4.54 Fe/H: -0.520



DV Fit Results:

Period = 3.72240 [0.00000] d
Epoch = 133.5682 [0.0000] BKJD
Rp/R* = 0.3075 [0.0095]
a/R* = 10.57 [0.03]
b = 0.91 [0.02]
Seff = 324.53 [97.80]
Teq = 1082 [82] K
Rp = 26.81 [6.46] Re
a = 0.0438 [0.0086] AU
Ag = 6.27 [1.78] [2.97σ]
Teffp = 2648 [90] K [12.91σ]

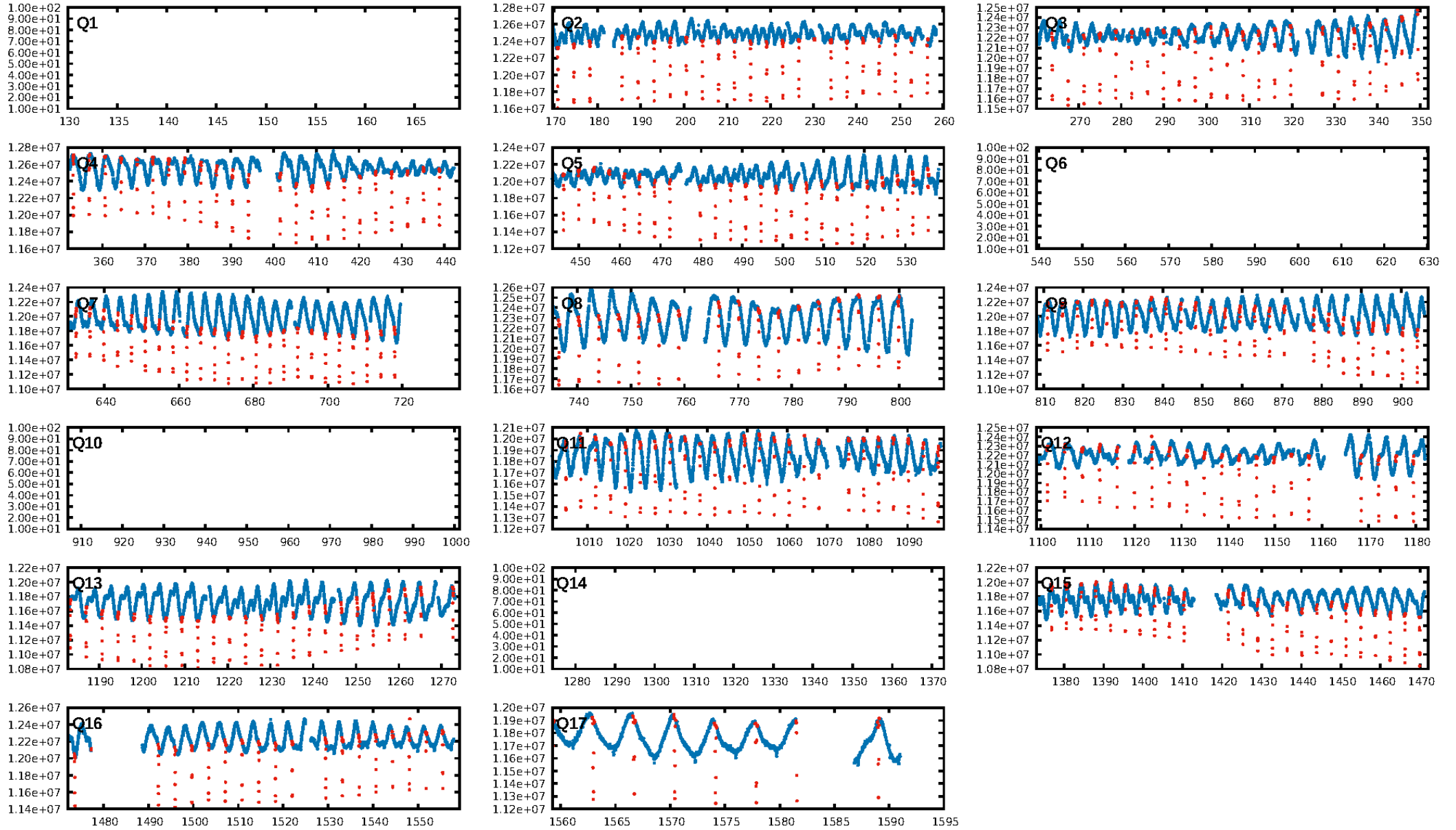
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.99 [265/269]
GhostDiagnostic-chr: 2.252
Centroid-sig: 0.0%
Centroid-so: 0.133 arcsec [16.31σ]
OotOffset-rm: 0.062 arcsec [0.93σ]
KicOffset-rm: 0.059 arcsec [0.87σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [13/13]

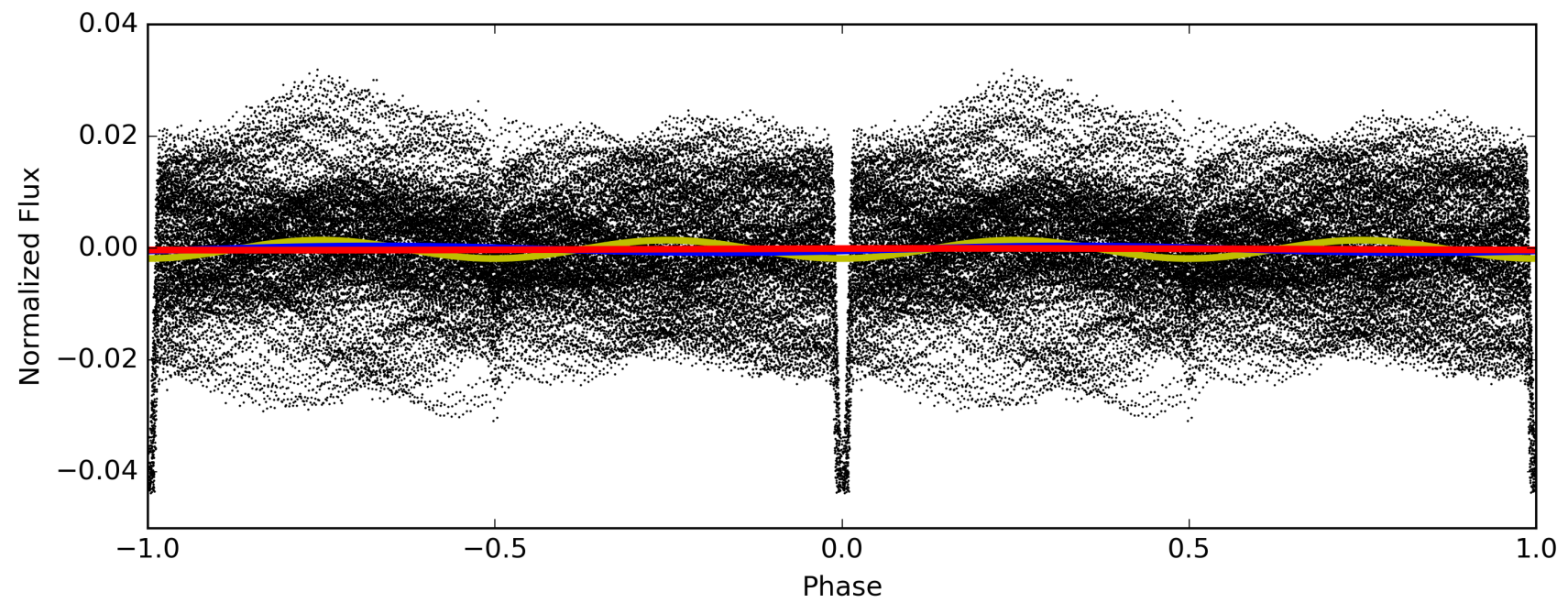
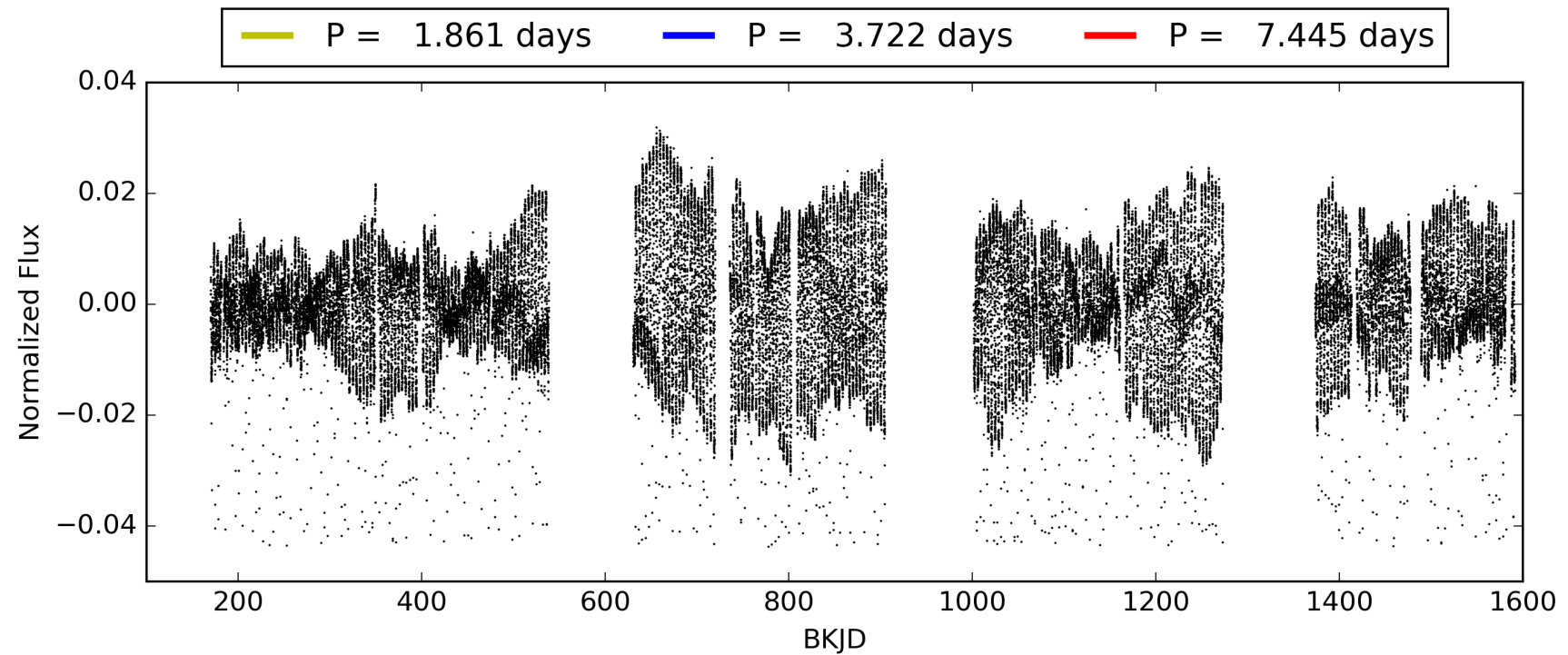
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:11:39 Z

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

TCE 004276114-01, PDC Light Curves

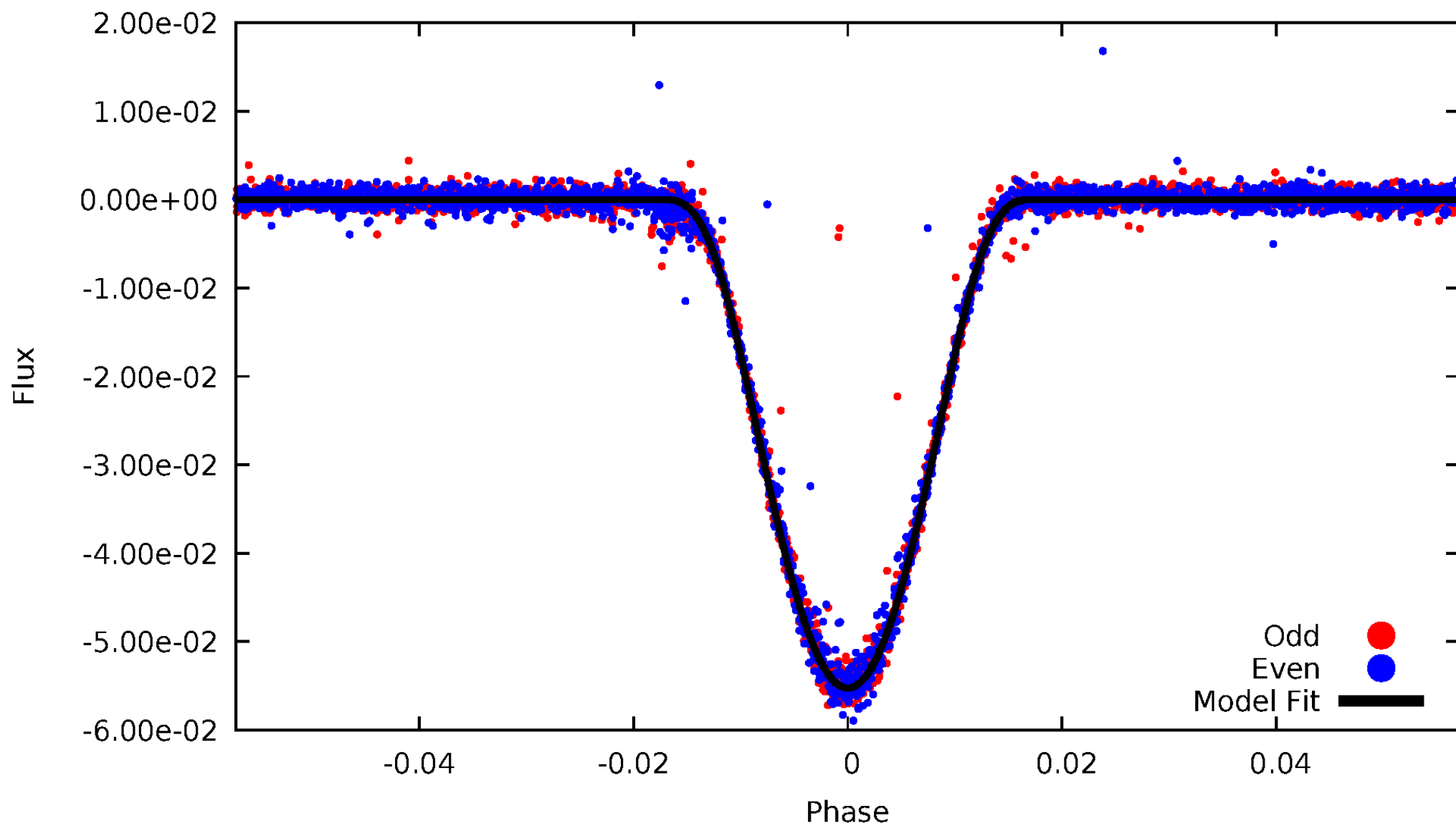


TCE 004276114-01



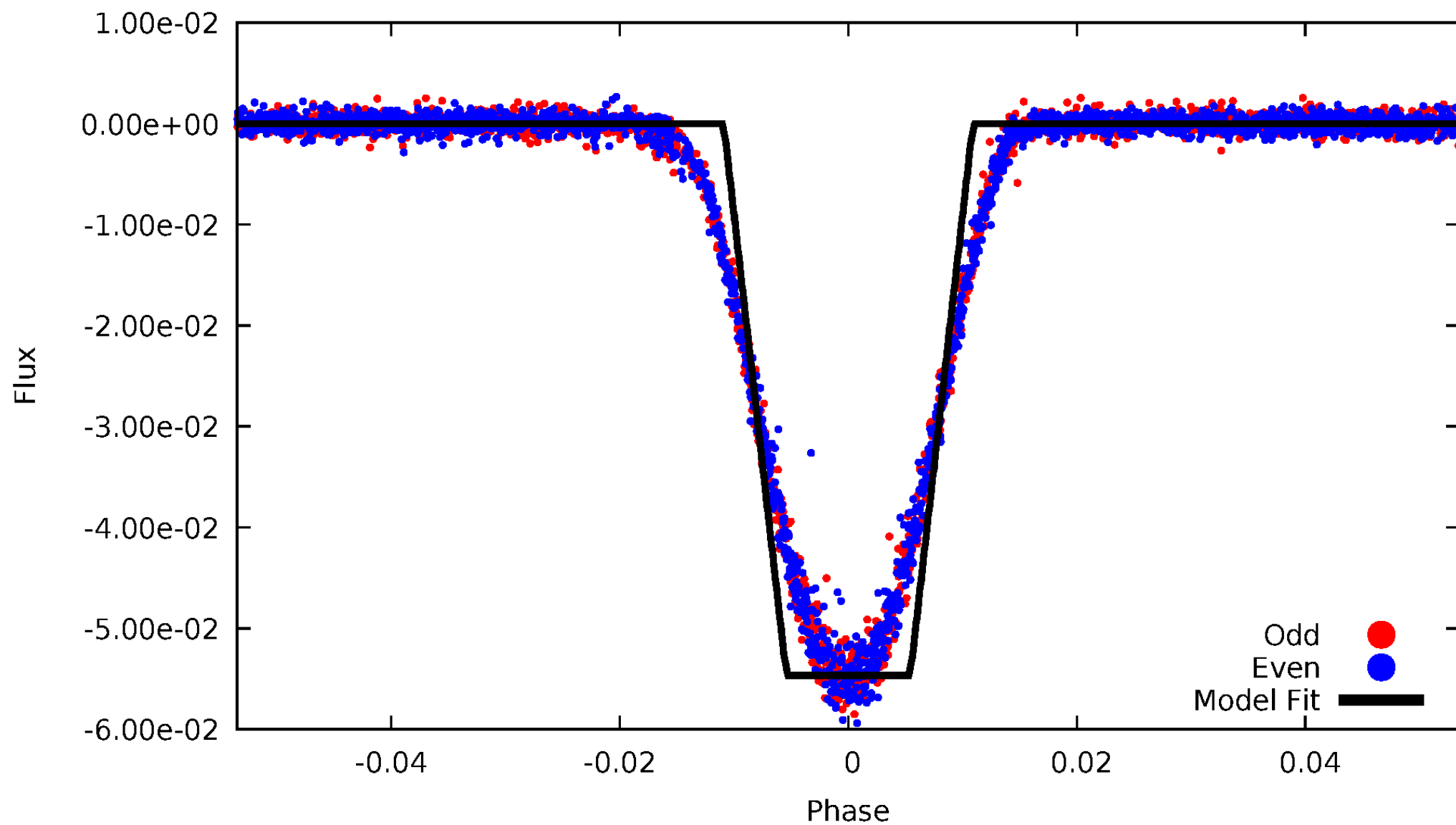
DV Odd/Even

TCE 004276114-01



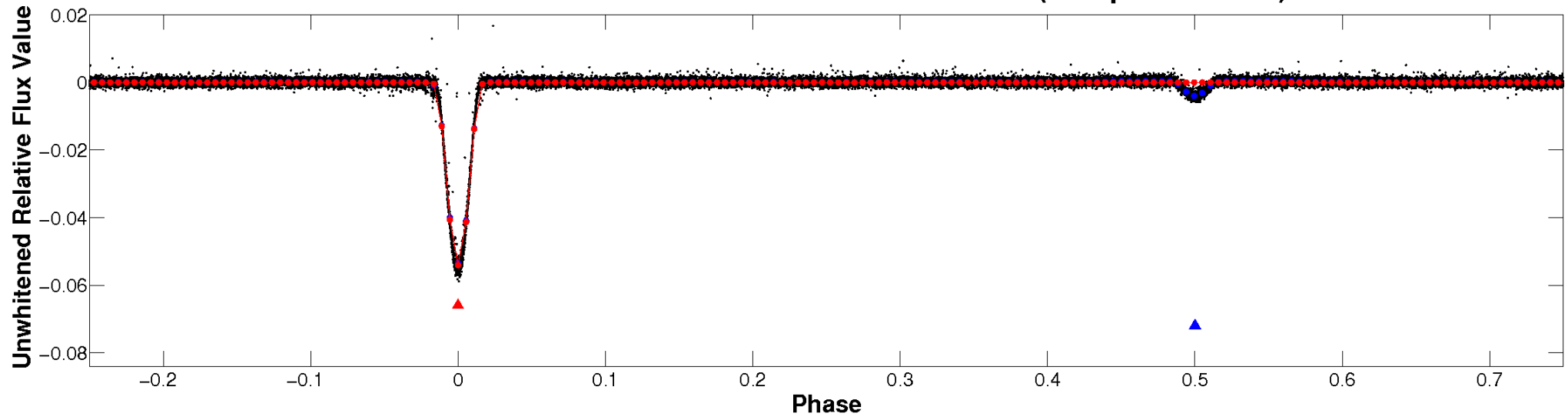
ALT Odd/Even

TCE 004276114-01

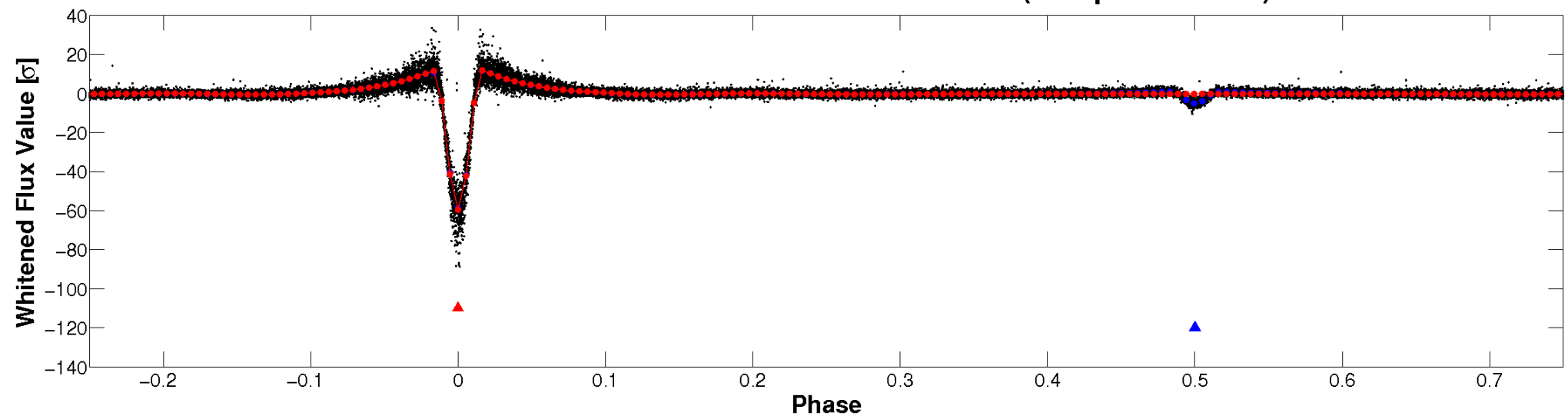


Non-Whitened Vs. Whitened Light Curve

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

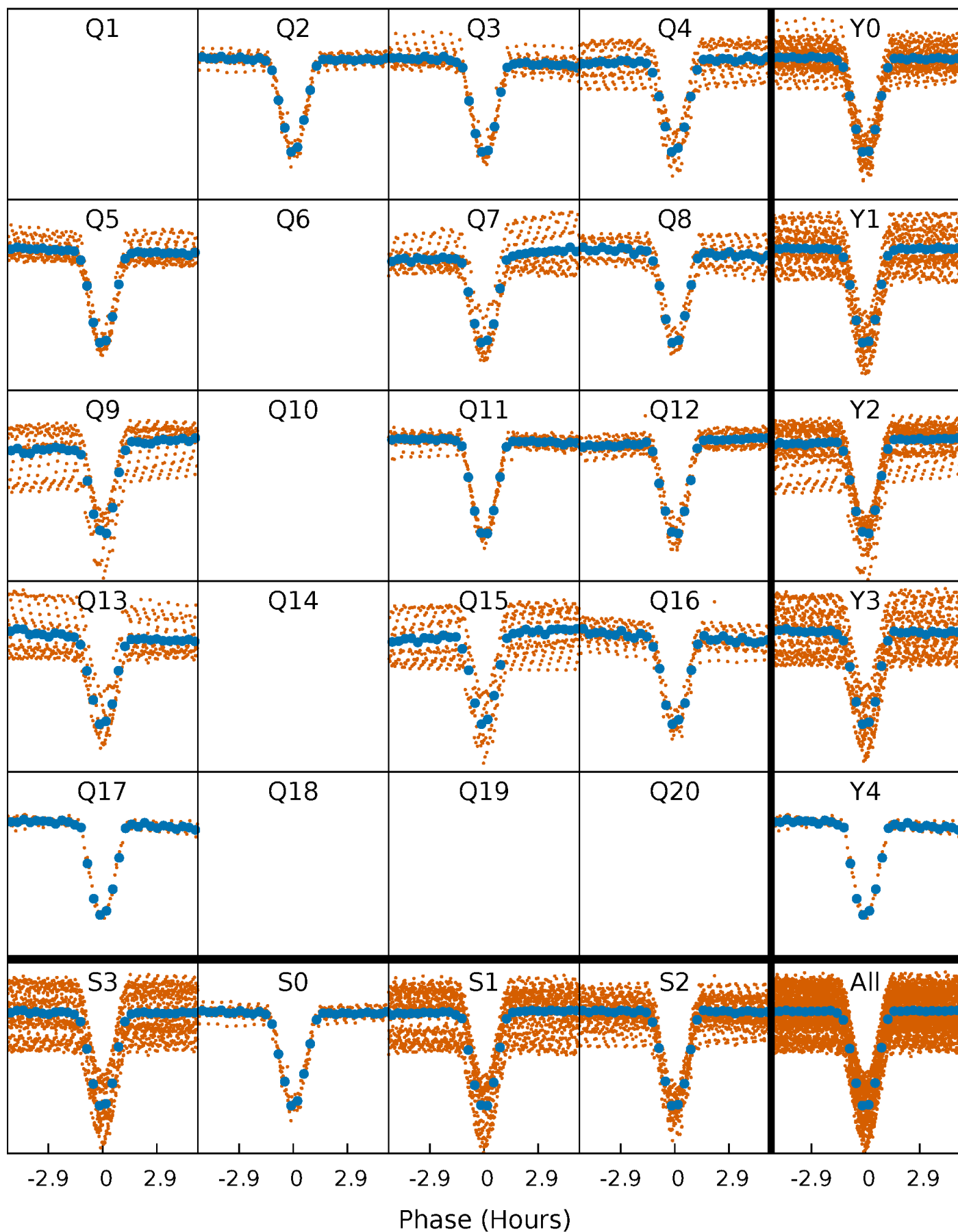


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



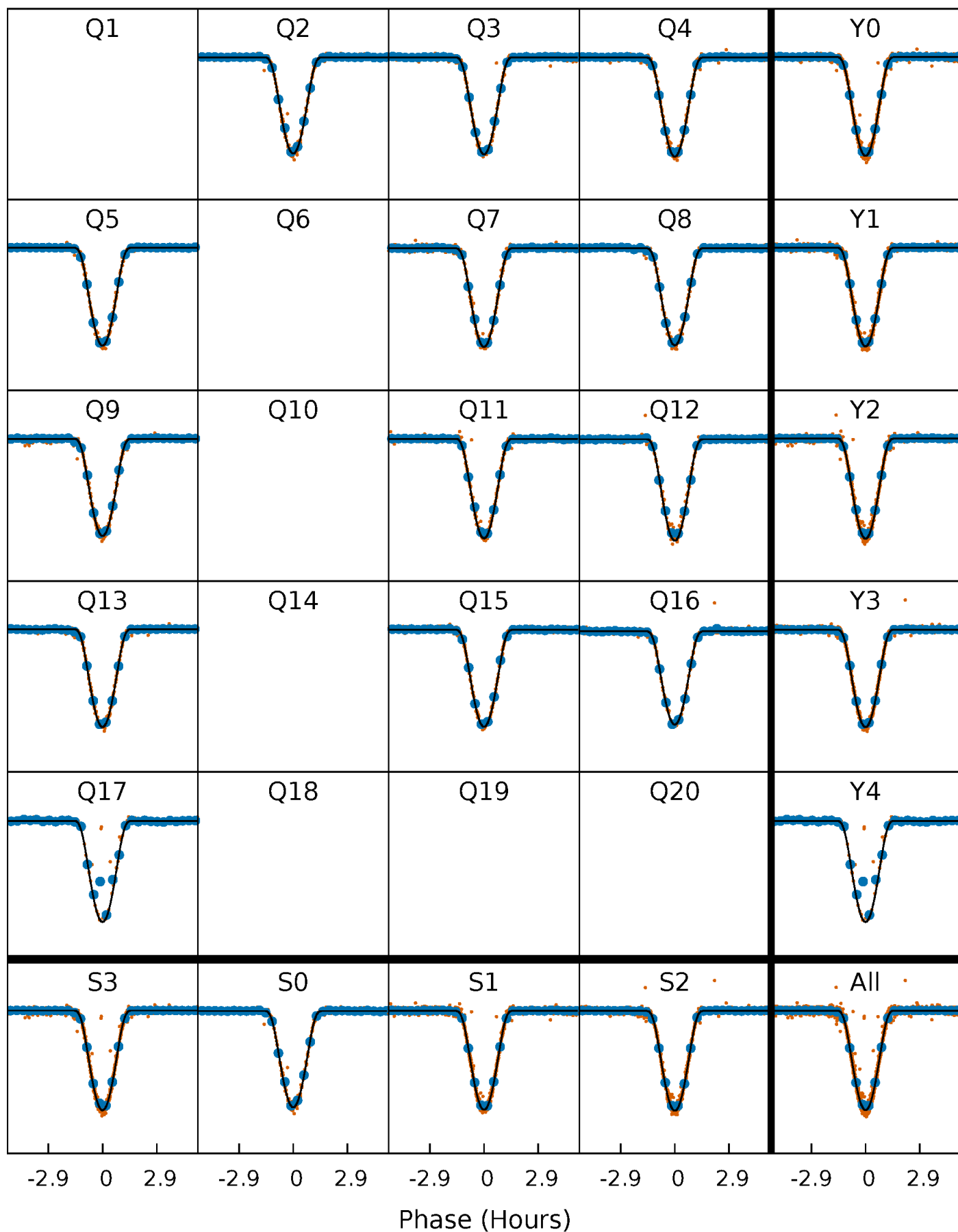
PDC Quarter-Phased Transit Curves

TCE 004276114-01 P= 3.722405 Days $T_0=133.568194$ (BKJD)



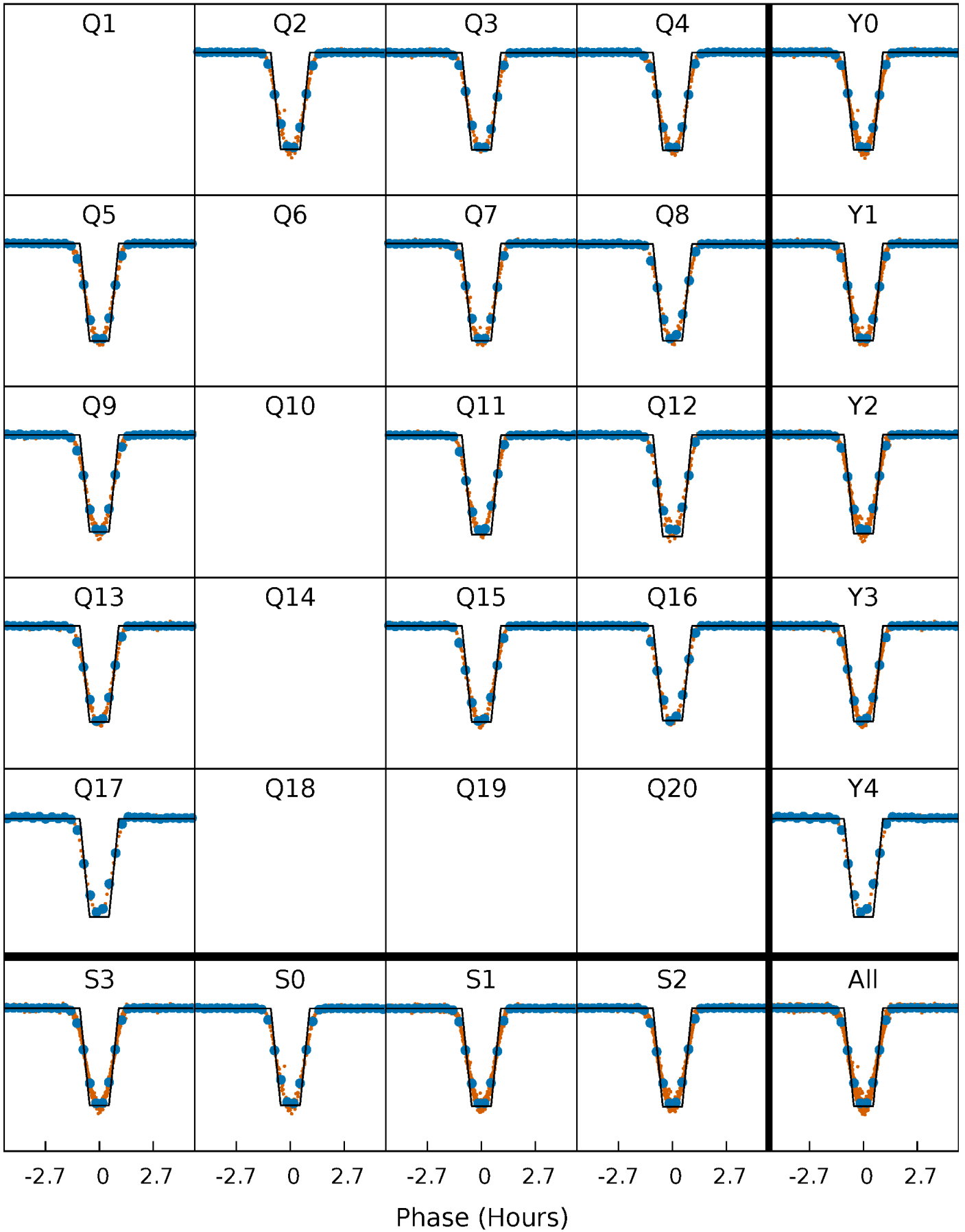
DV Quarter-Phased Transit Curves

TCE 004276114-01 P= 3.722405 Days $T_0=133.568194$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

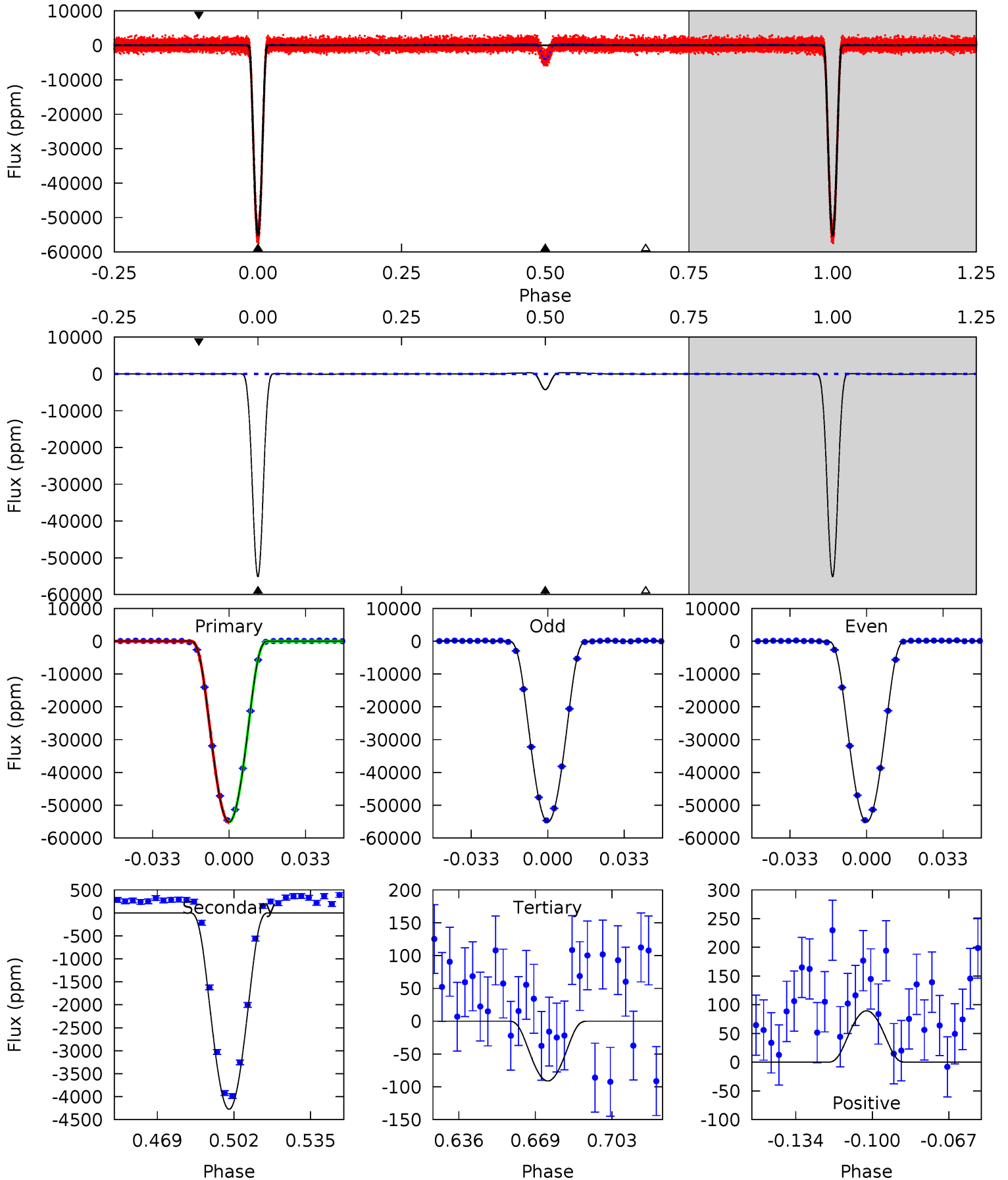
TCE 004276114-01 P= 3.722410 Days $T_0=133.567254$ (BKJD)



DV Model-Shift Uniqueness Test

004276114-01, P = 3.722405 Days, E = 133.568194 Days

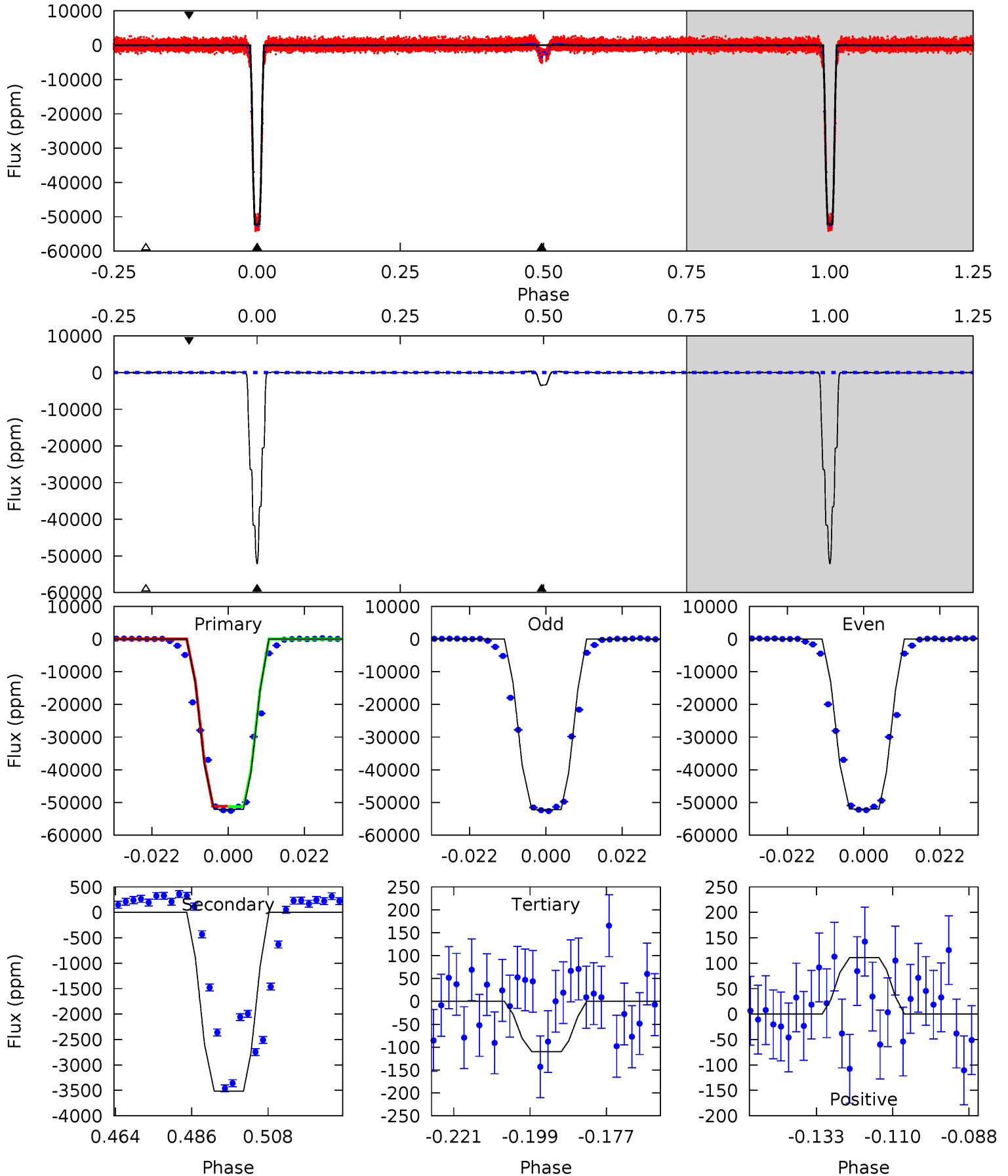
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3067	237.9	5.07	4.98	4.79	2.13	4.76	3062	3062	232.8	232.9	0.13	0.99	0.01	1.09



Alt Model-Shift Uniqueness Test

004276114-01, P = 3.722410 Days, E = 133.567254 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1524	102.7	3.22	3.25	4.87	2.29	1.81	1521	1521	99.5	99.5	2.53	1.00	0.01	0



Stellar Parameters For KIC 004276114

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5747^{+173}_{-173}	$4.542^{+0.063}_{-0.147}$	$-0.520^{+0.300}_{-0.300}$	$0.799^{+0.191}_{-0.082}$	$0.811^{+0.096}_{-0.070}$	$2.236^{+0.622}_{-0.980}$
	+3%/-3%	+1%/-3%	+58%/-58%	+24%/-10%	+12%/-9%	+28%/-44%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004276114-01 / KOI 5054.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4275 ± 18	$27.19^{+3.65}_{-2.08}$	1530^{+91}_{-74}	3212^{+65}_{-69}	$6.102^{+0.958}_{-1.235}$
Alt.	-3513 ± 34	$20.68^{+2.34}_{-1.48}$	1526^{+87}_{-71}	3388^{+81}_{-77}	$8.700^{+1.303}_{-1.538}$

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 $A_{obs} \gg 1.0$

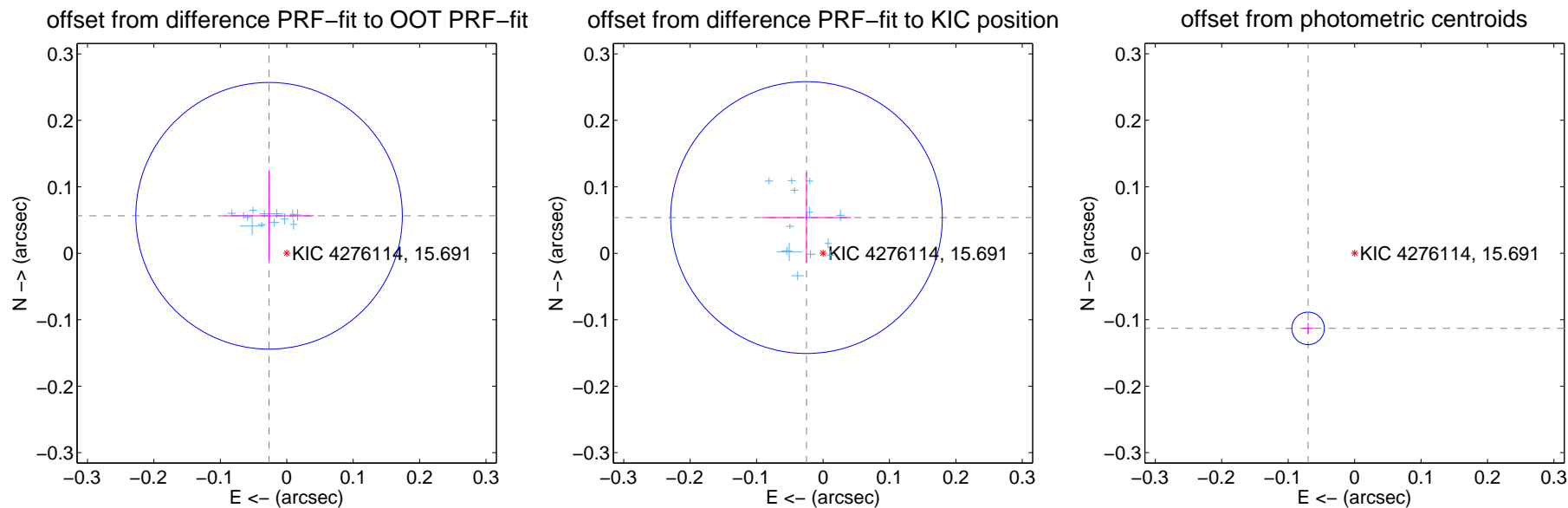
DV Centroid Data

Supplemental centroid analysis for 004276114-01. Kepler magnitude: 15.69. Transit SNR 1337.45

There are 13 quarters with good PRF difference image offsets

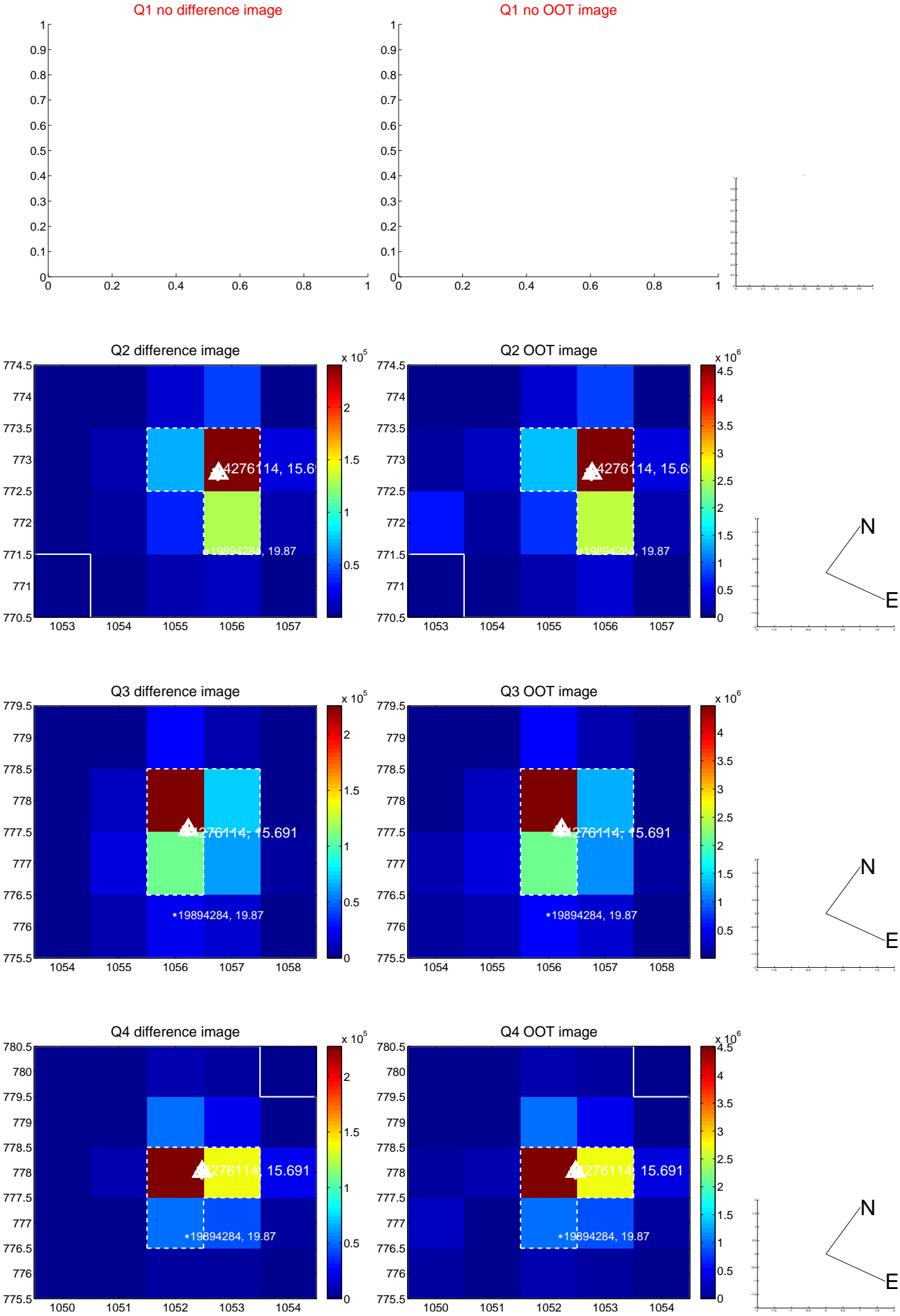
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.062 ± 0.067	0.93	0.027 ± 0.068	0.056 ± 0.067
PRF-fit source offset from KIC position	0.059 ± 0.068	0.87	0.025 ± 0.067	0.054 ± 0.068
photometric centroid source offset	0.13 ± 0.01	16.31	0.07 ± 0.01	-0.11 ± 0.01

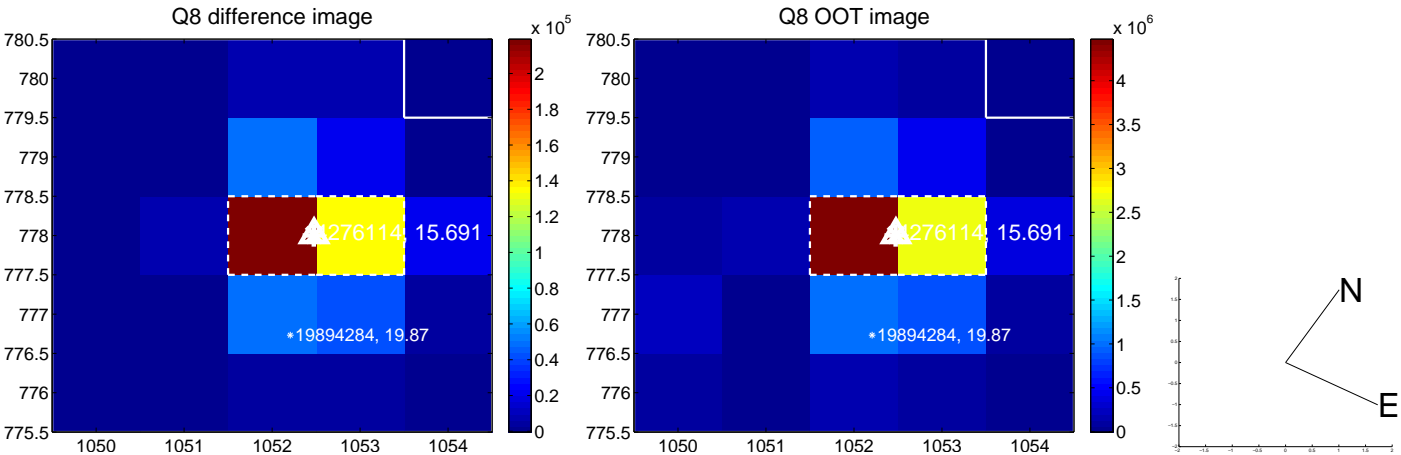
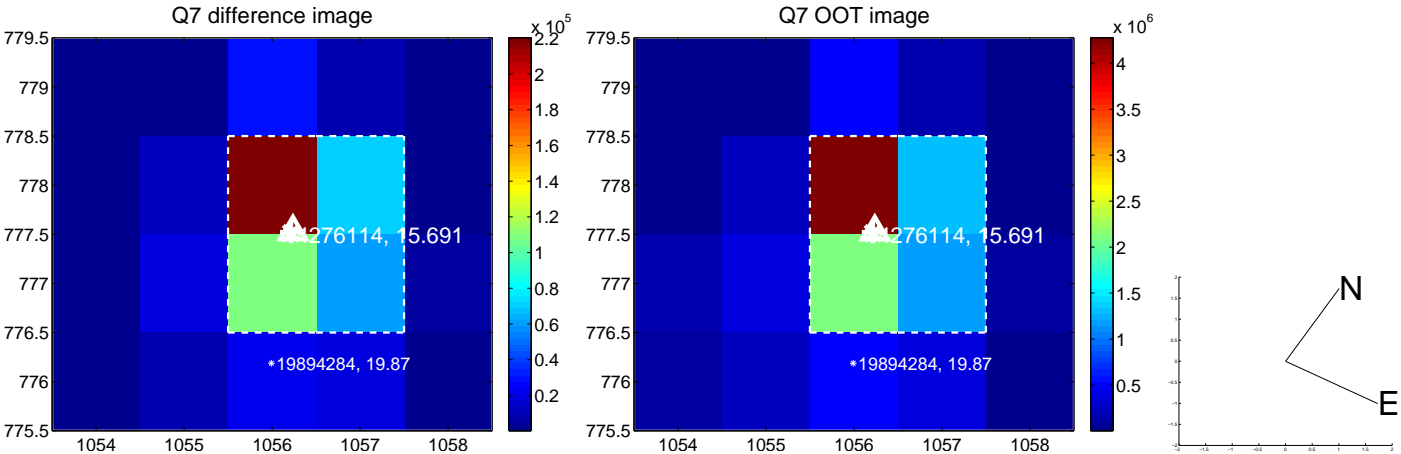
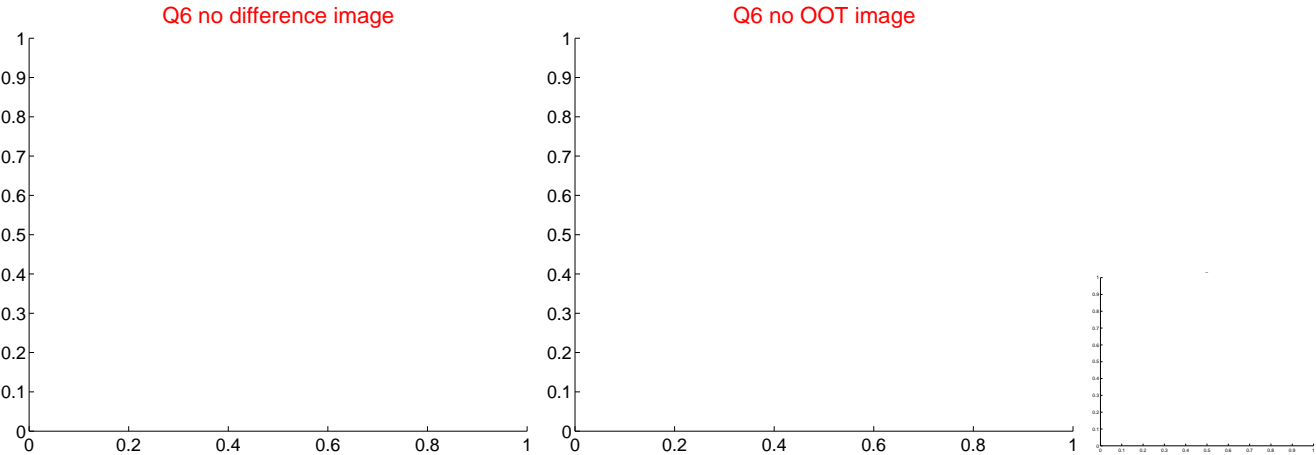
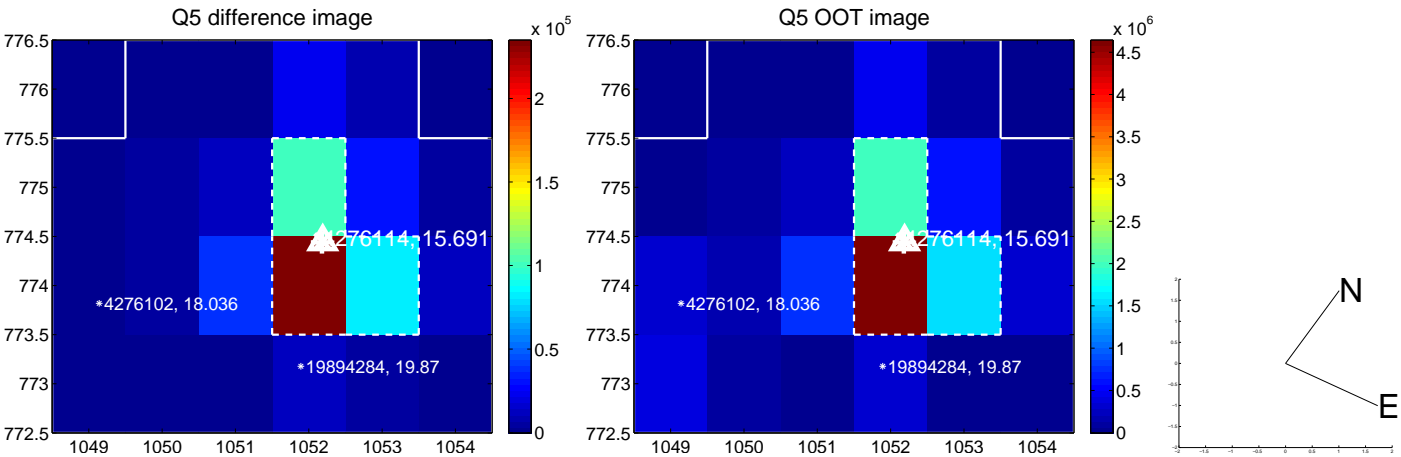


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

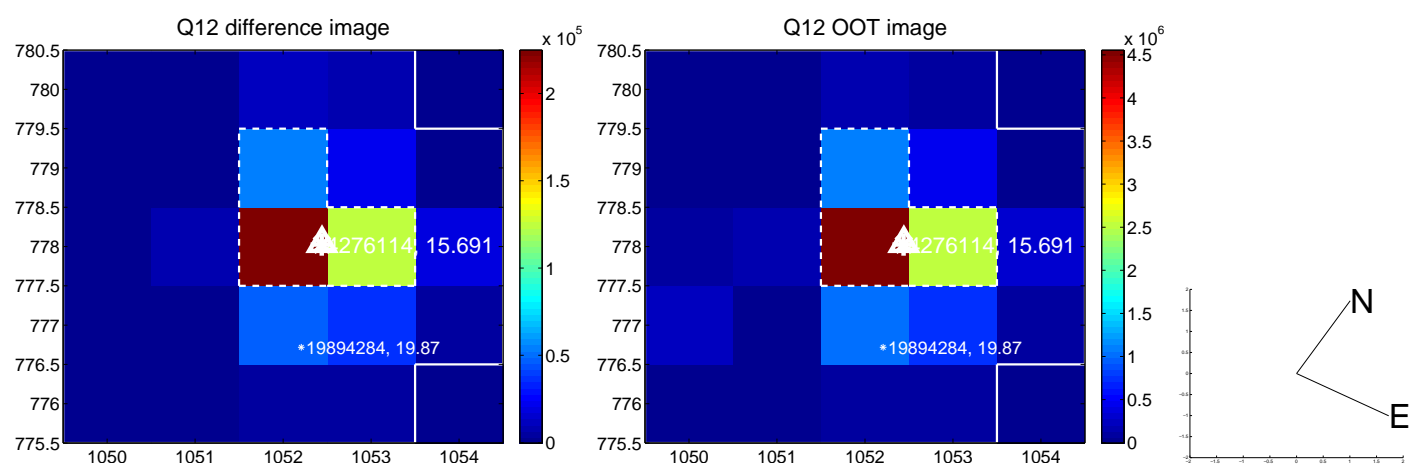
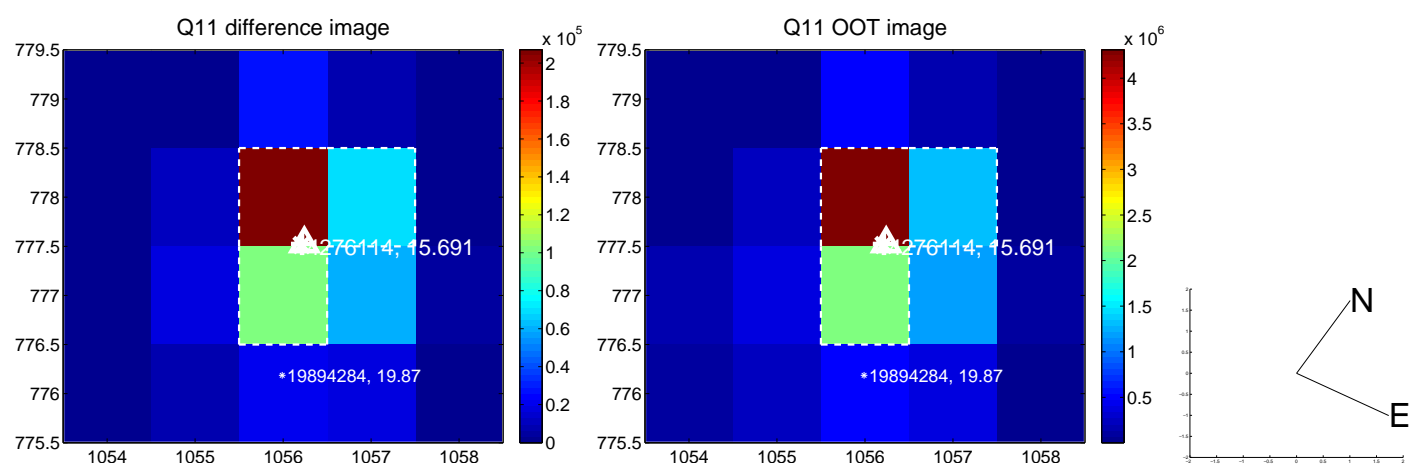
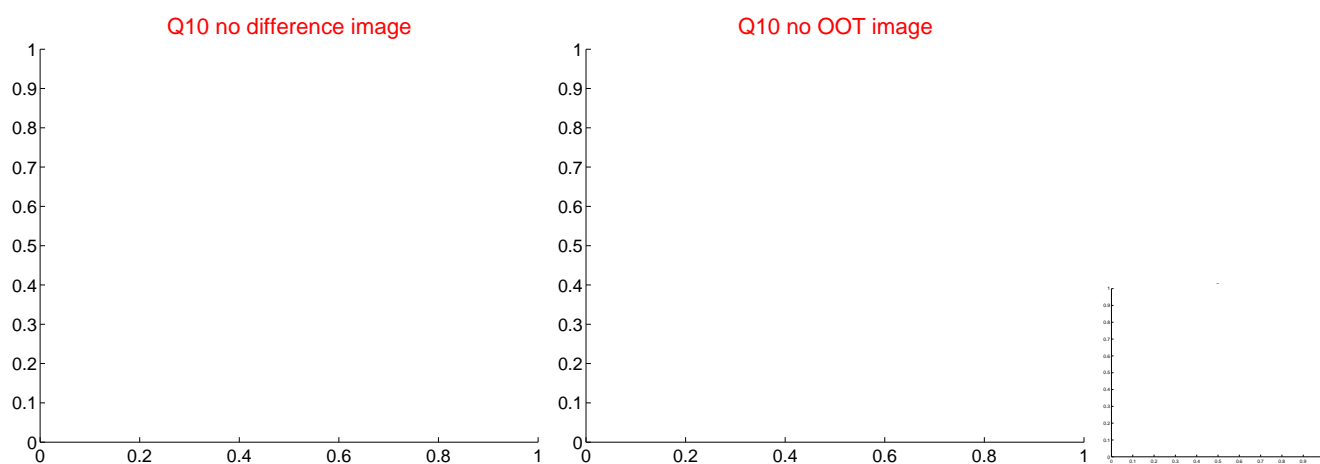
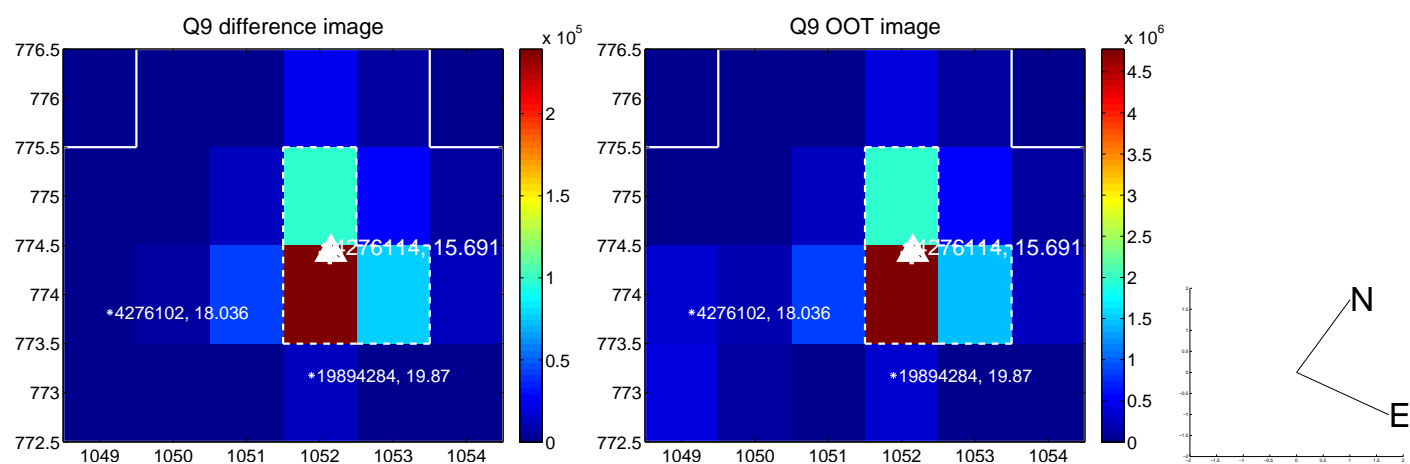
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



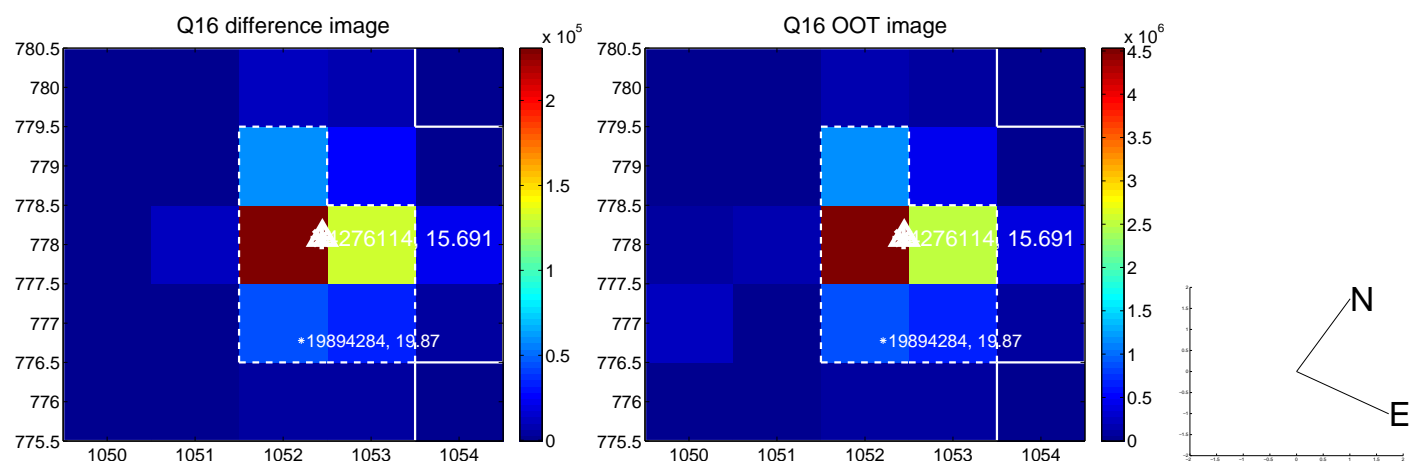
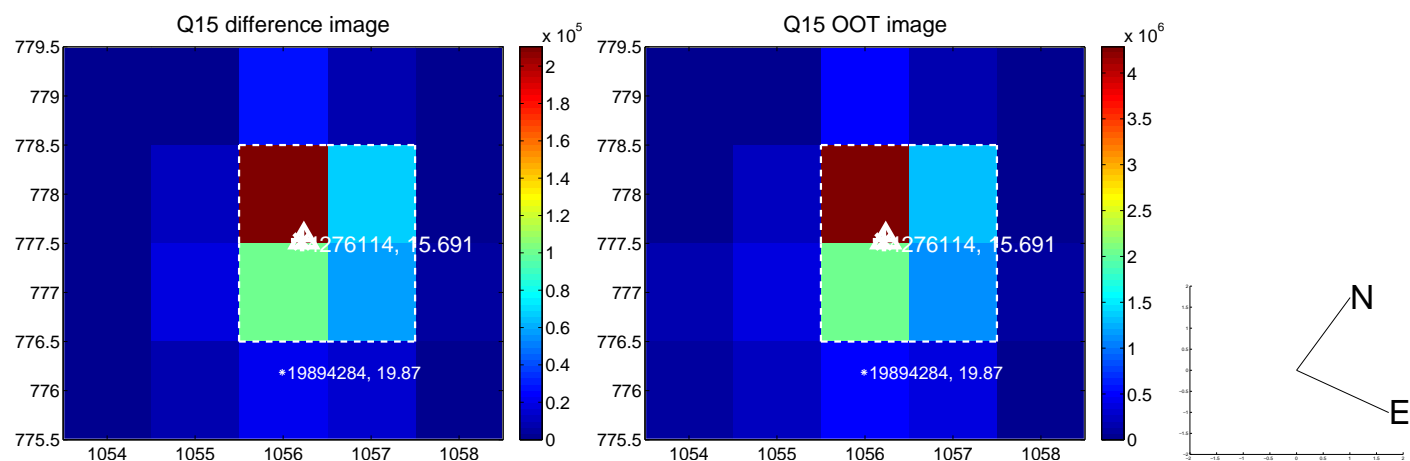
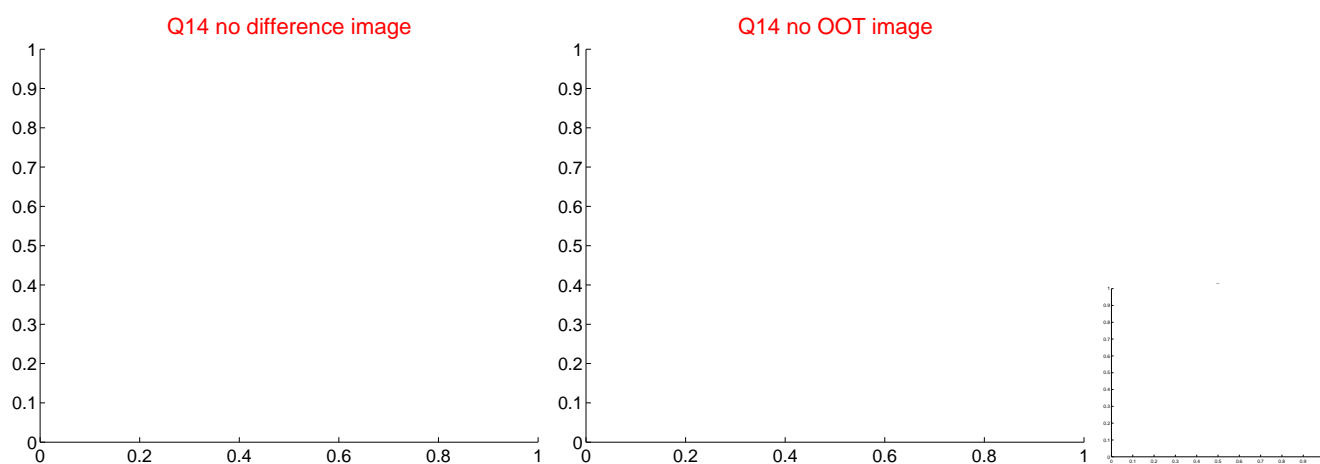
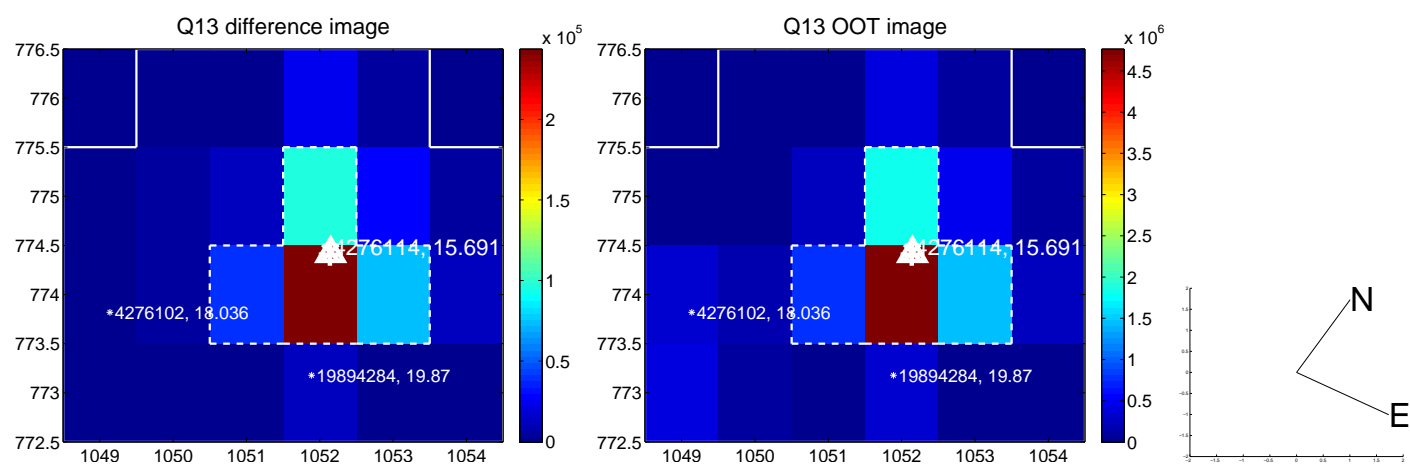
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



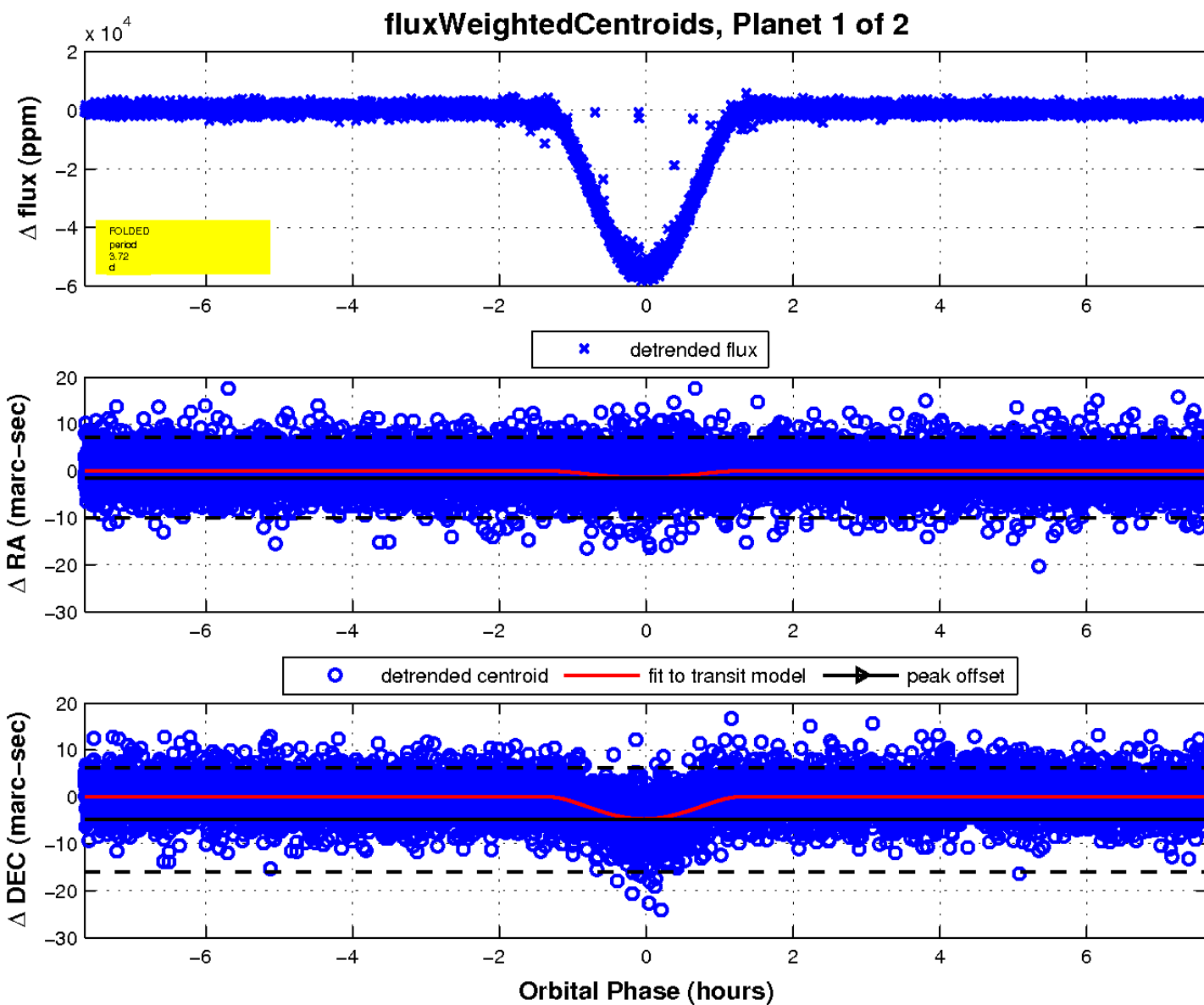
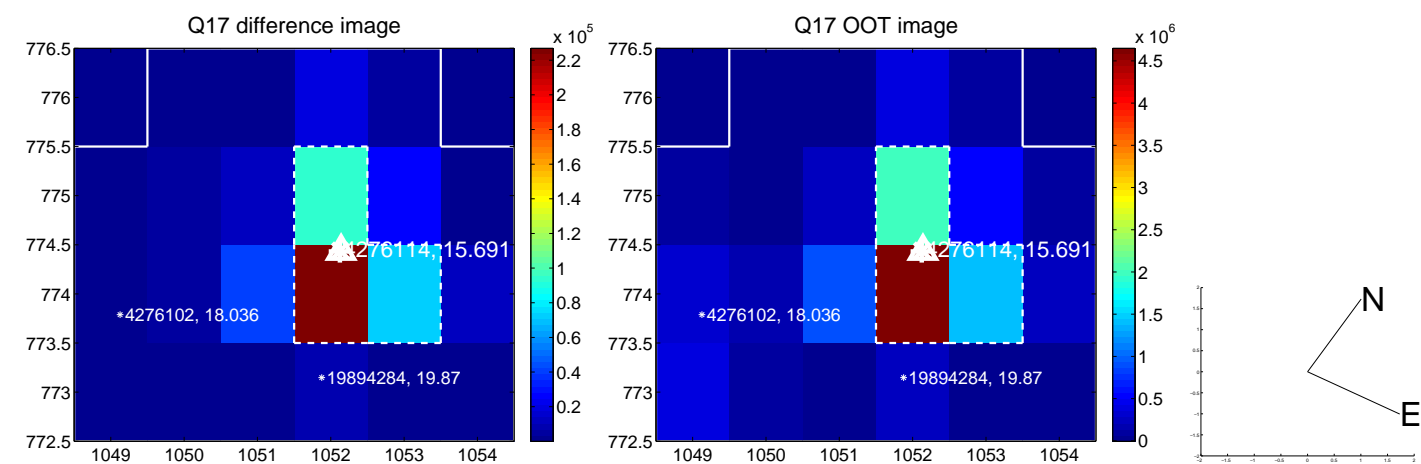
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

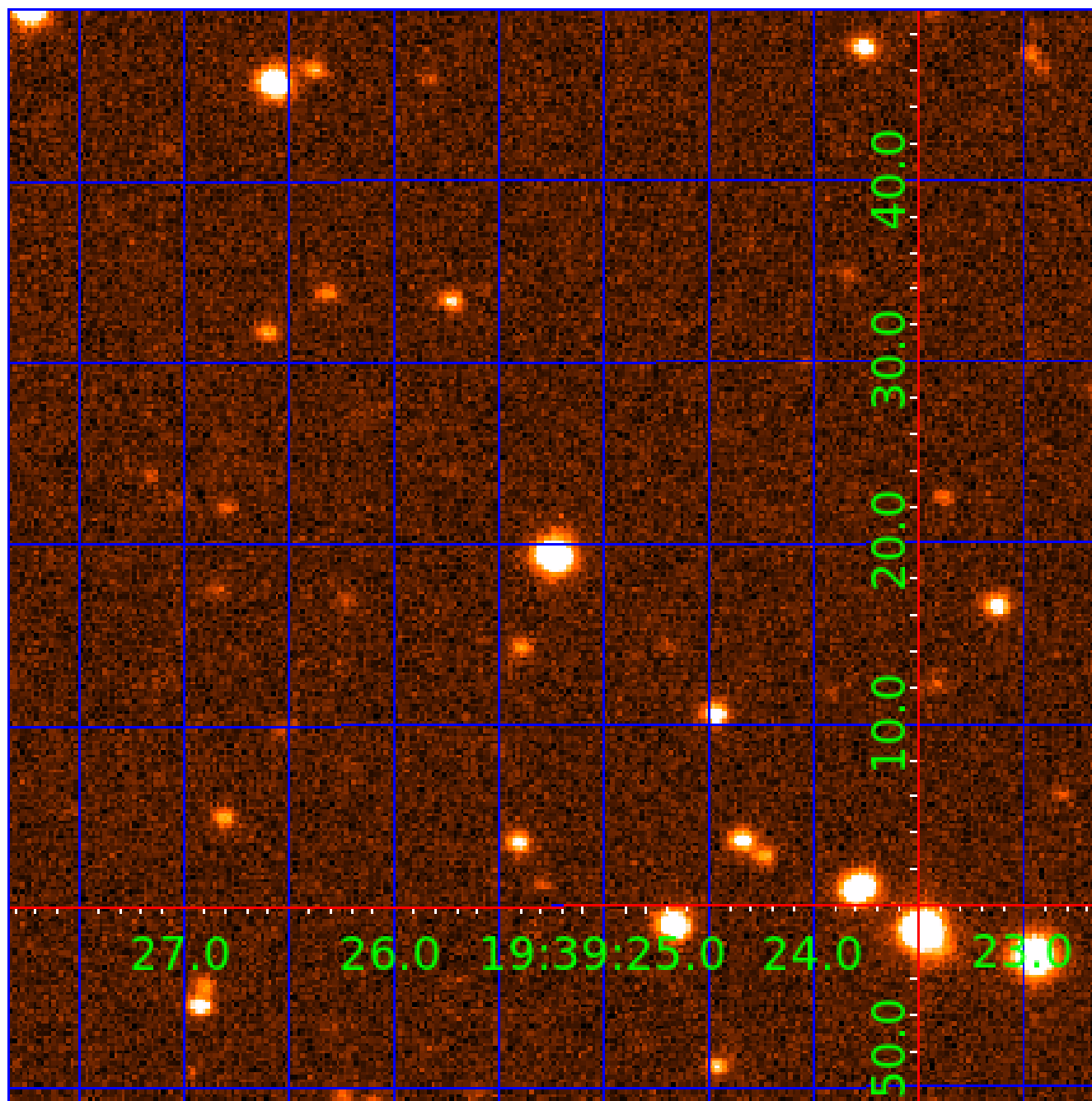


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004276114

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})
004276114-01	OBS	5054.01	3.722405	133.568194	55250.5	2.550	1534.0	1337.4	0.80	5747	26.81	324.53
004276114-02	OBS	No	3.722403	131.707639	4437.4	2.409	128.3	132.2	0.80	5747	7.81	324.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004276114-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
004276114-02	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.

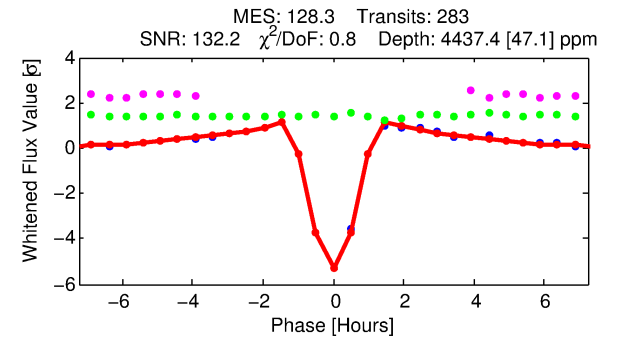
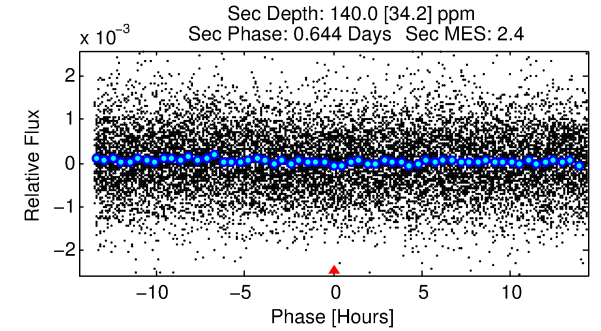
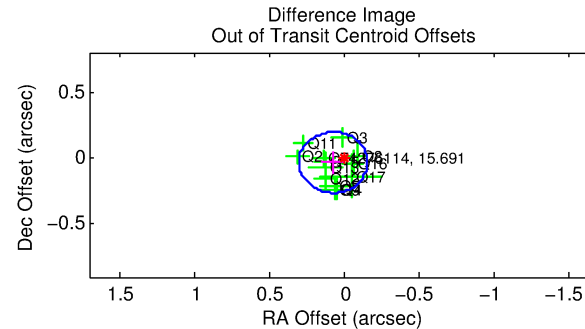
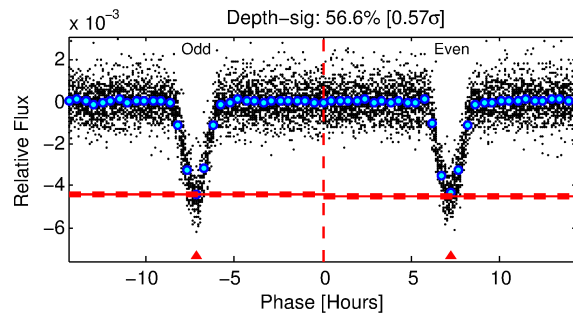
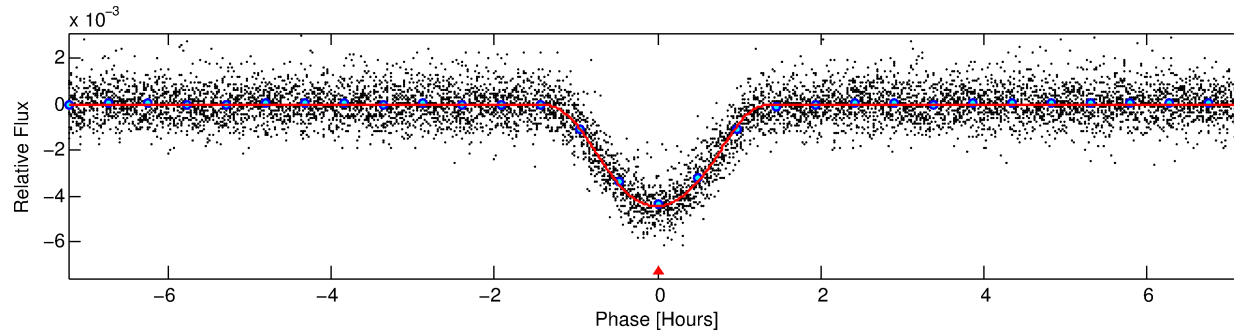
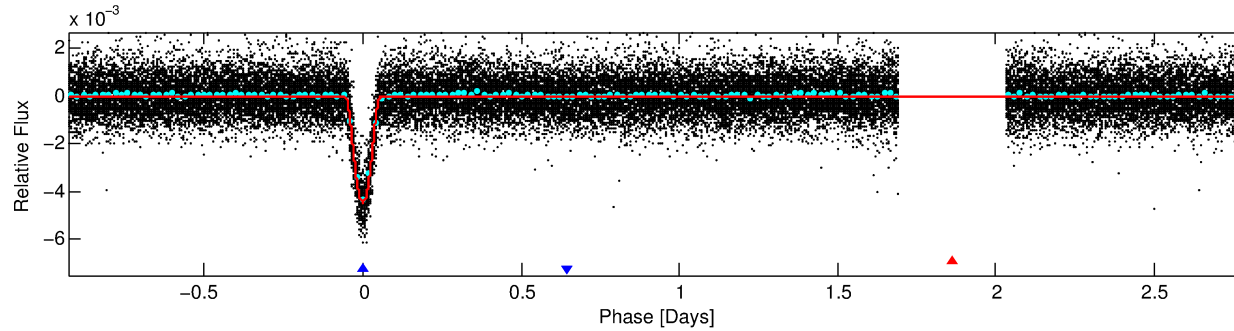
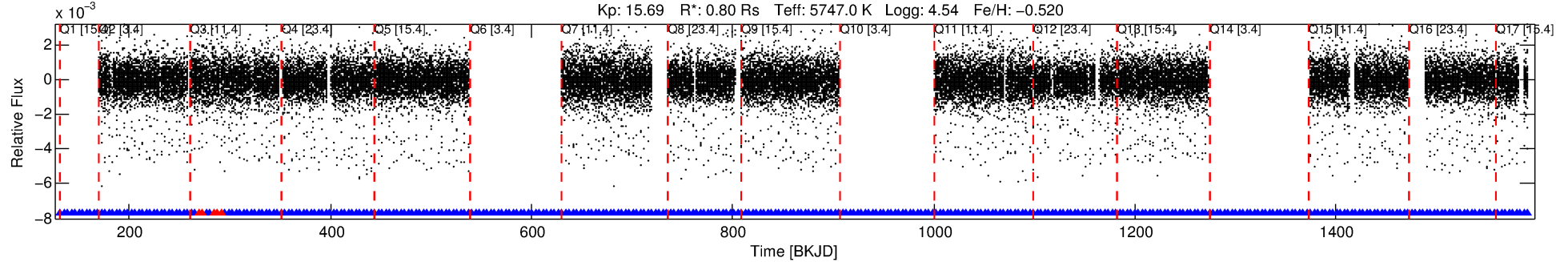
Ephemeris Match Information For 004276114-02

No Significant Match Found

DV One-Page Summary

KIC: 4276114 Candidate: 2 of 2 Period: 3.722 d
KOI: K05054 Corr: No Ephemeris Match

Kp: 15.69 R*: 0.80 Rs Teff: 5747.0 K Logg: 4.54 Fe/H: -0.520



DV Fit Results:

Period = 3.72240 [0.00000] d
Epoch = 131.7076 [0.0003] BKJD
Rp/R* = 0.0895 [0.0119]
a/R* = 6.13 [0.27]
b = 0.96 [0.02]
Seff = 324.53 [97.80]
Teff = 1082 [82] K
Rp = 7.81 [2.14] Re
a = 0.0438 [0.0086] AU
Ag = 2.43 [1.10] [1.29σ]
Teffp = 2089 [199] K [4.68σ]

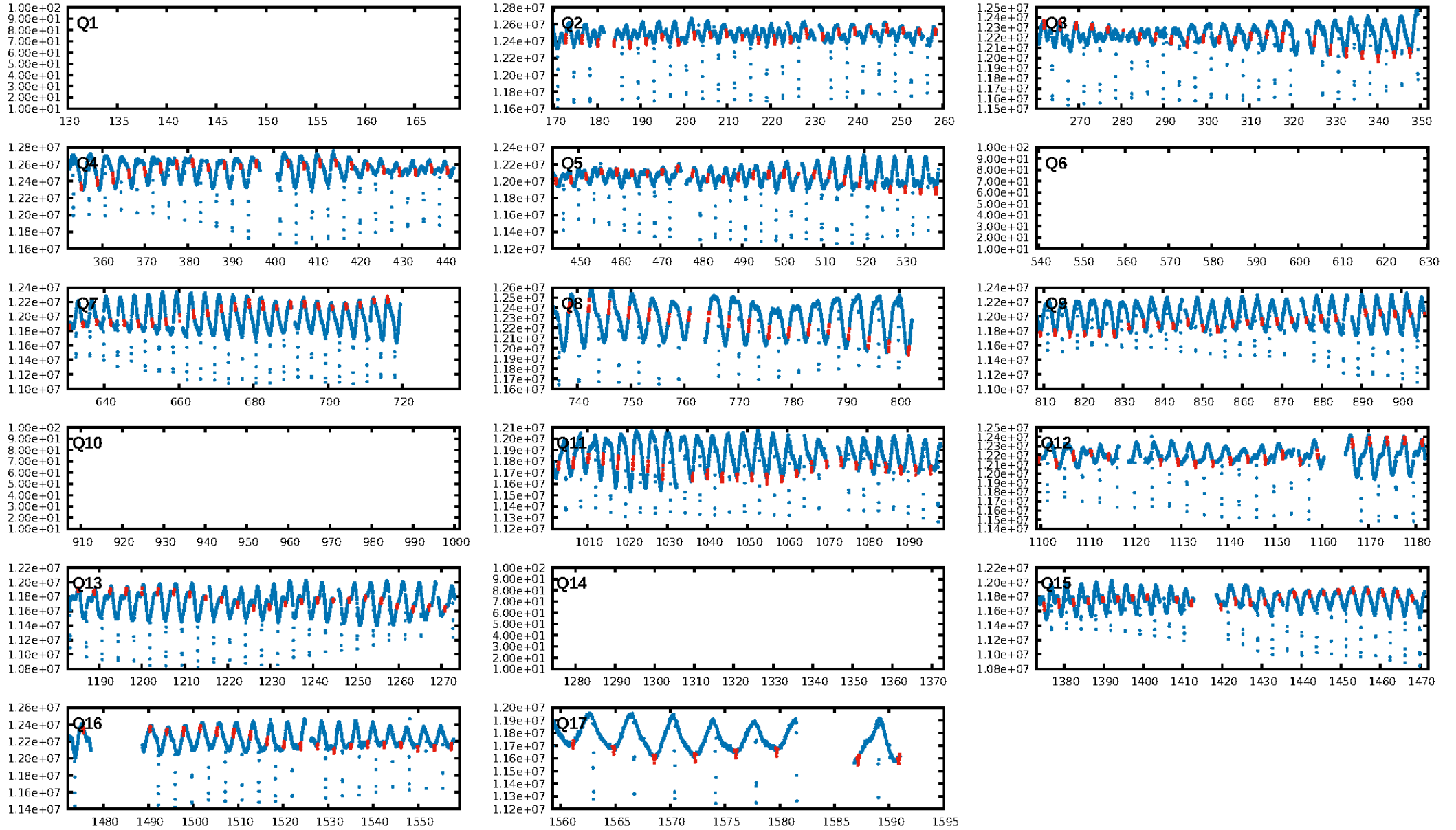
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.98 [270/275]
GhostDiagnostic-chr: 2.461
Centroid-sig: 0.9%
Centroid-so: 0.355 arcsec [3.61σ]
OotOffset-rm: 0.077 arcsec [1.01σ]
KicOffset-rm: 0.066 arcsec [0.84σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [13/13]

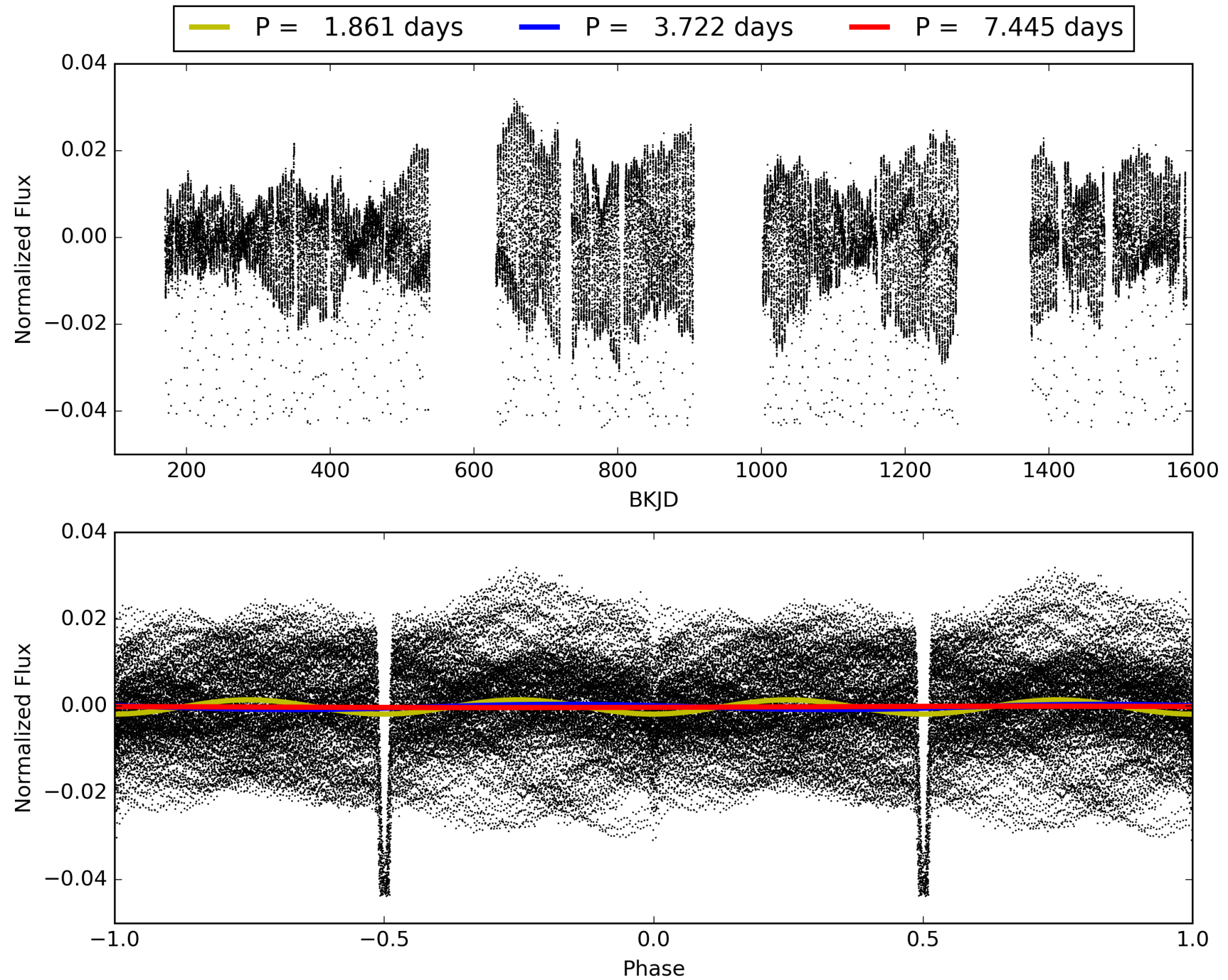
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:11:44 Z

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TCE 004276114-02, PDC Light Curves

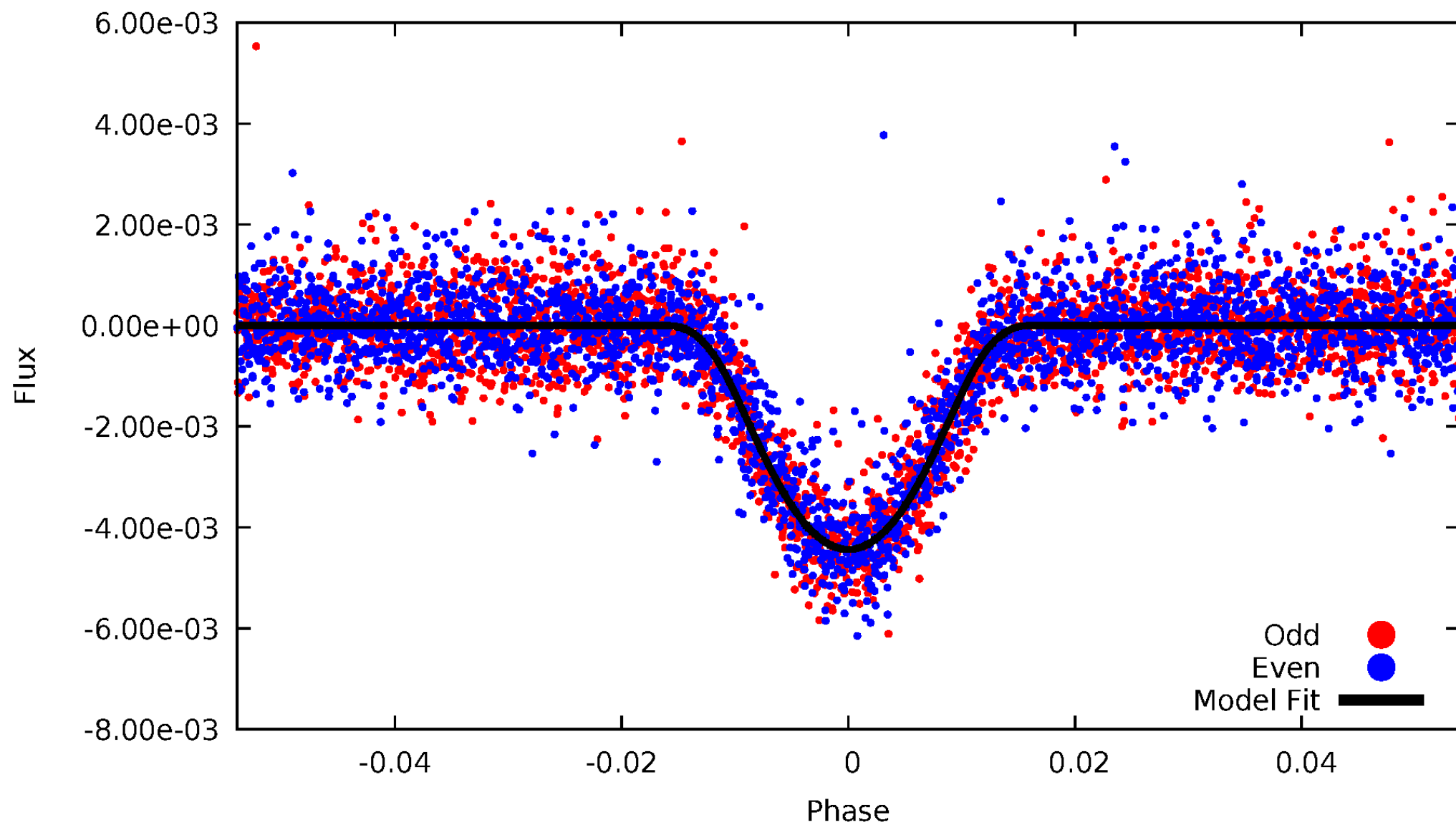


TCE 004276114-02



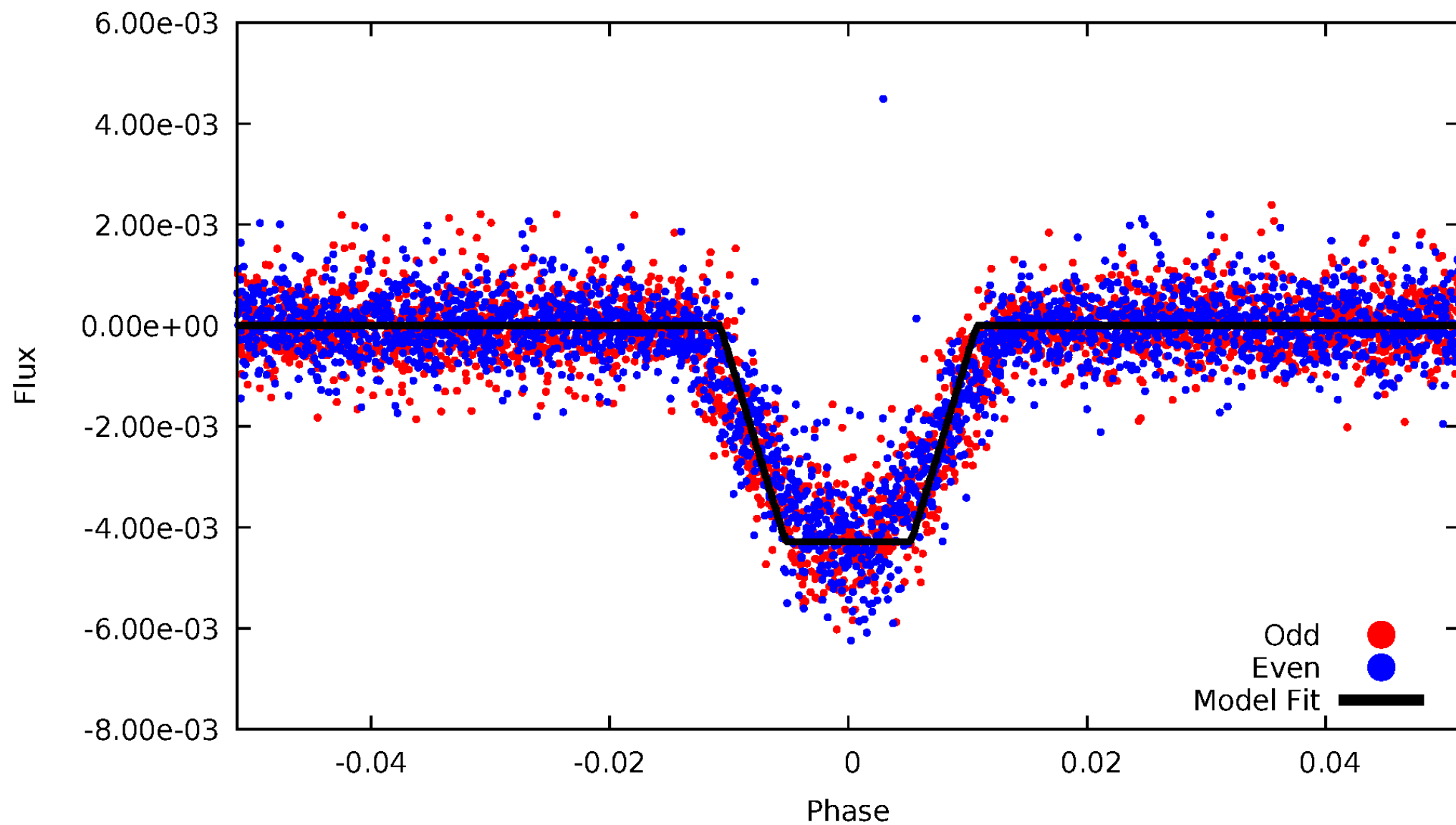
DV Odd/Even

TCE 004276114-02



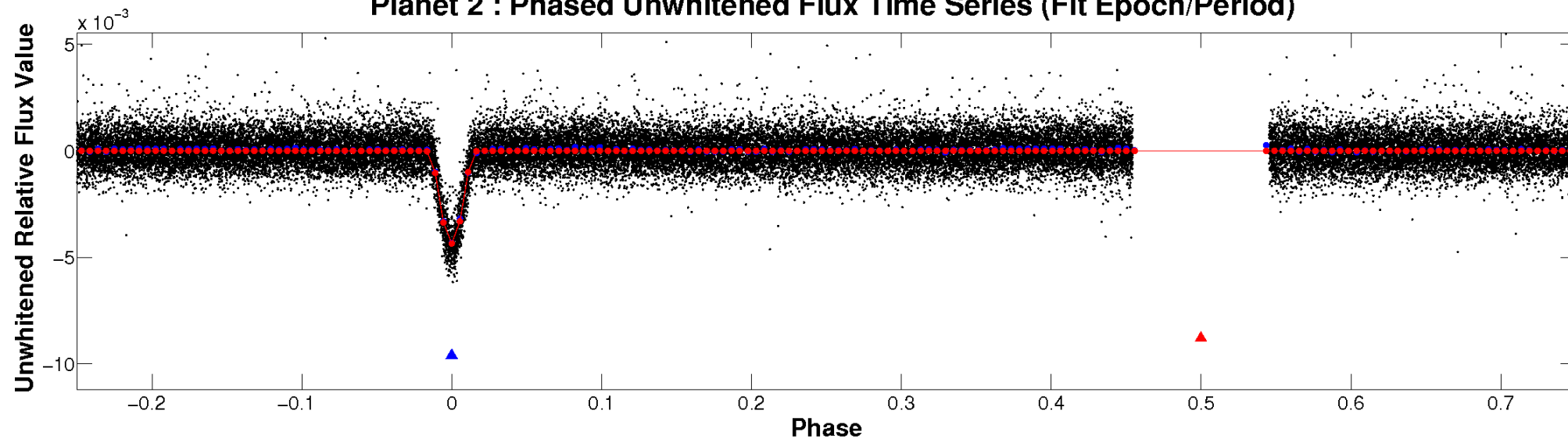
ALT Odd/Even

TCE 004276114-02

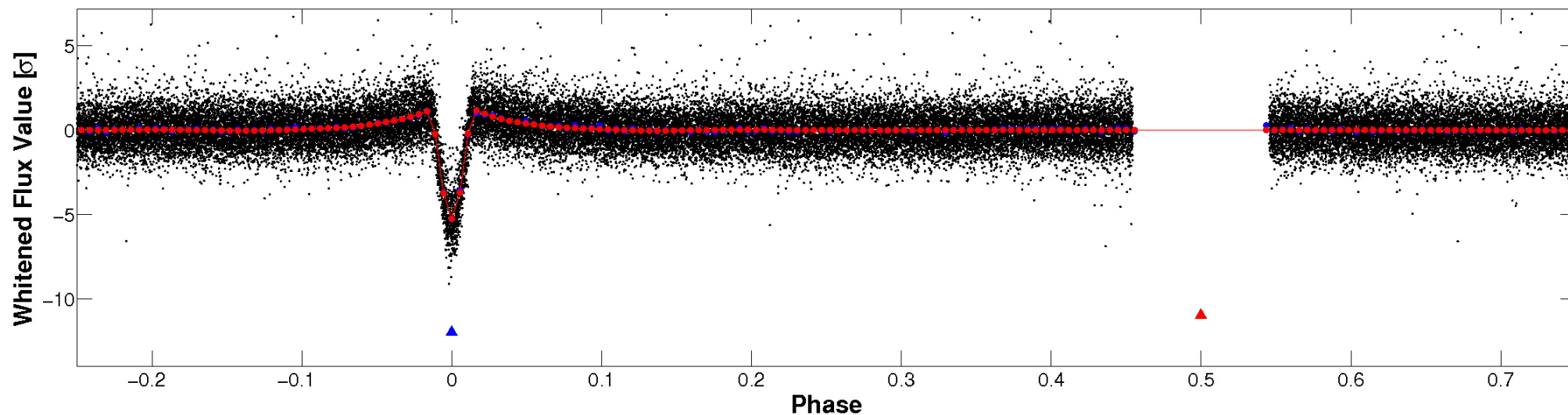


Non-Whitened Vs. Whitened Light Curve

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

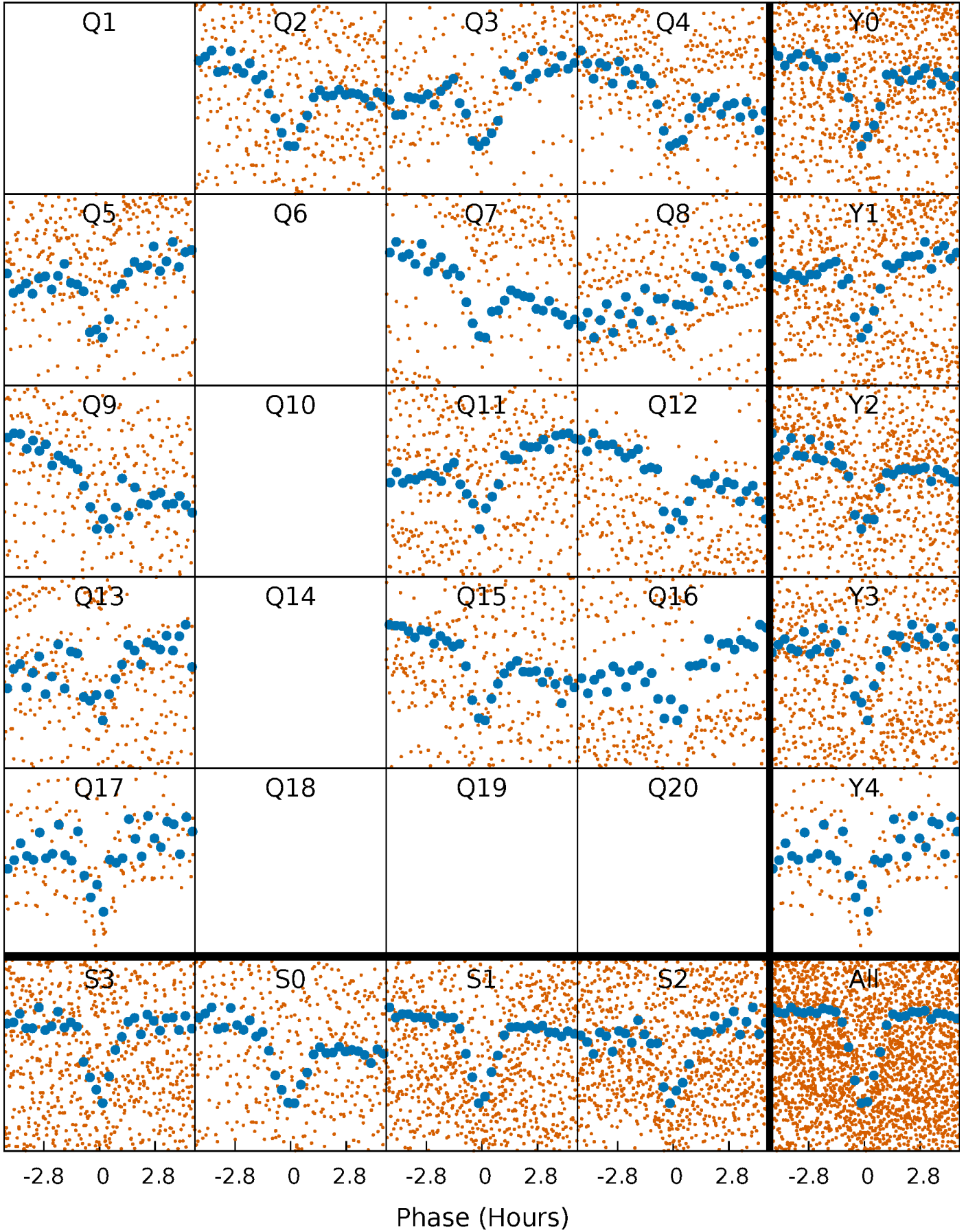


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



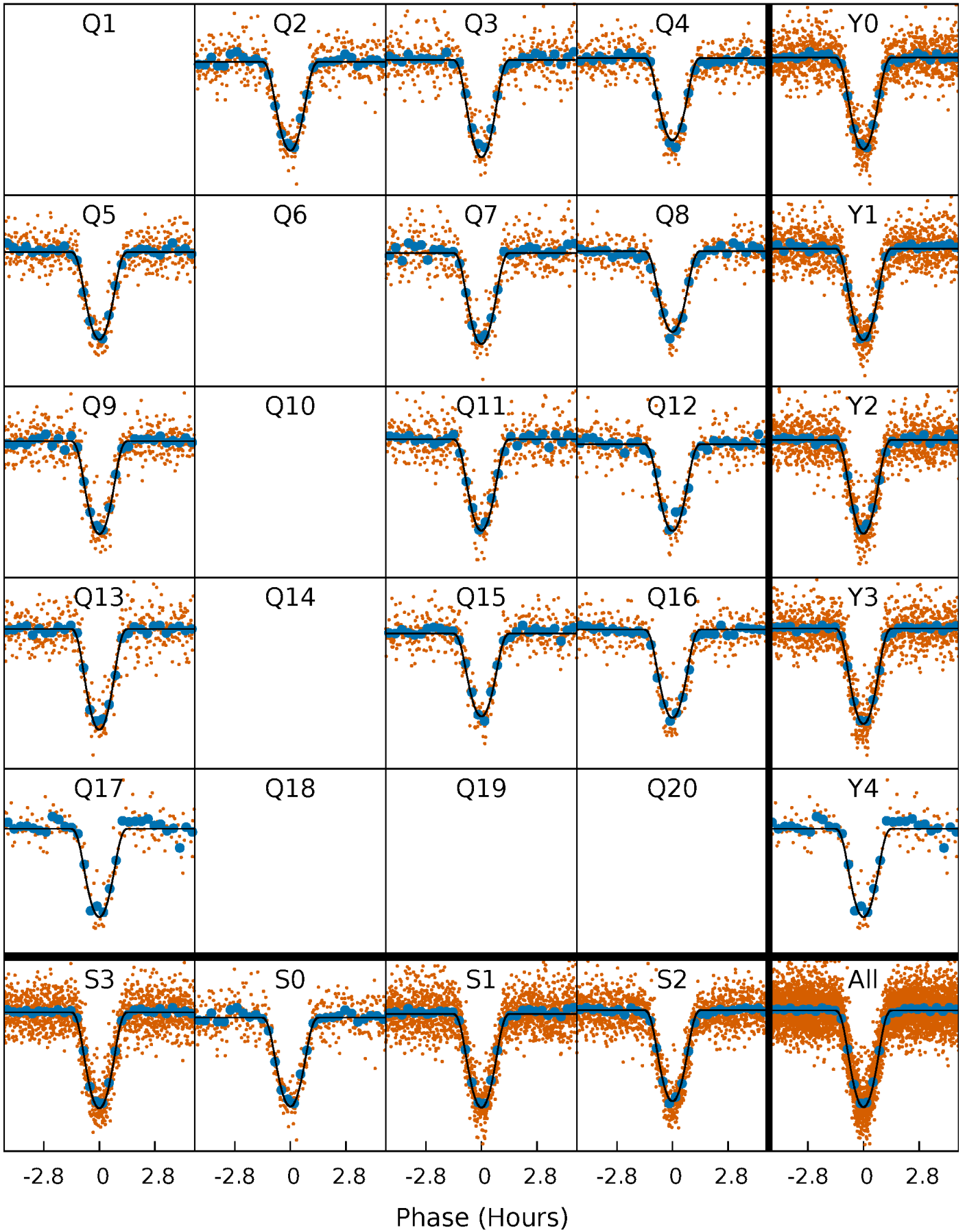
PDC Quarter-Phased Transit Curves

TCE 004276114-02 P= 3.722403 Days $T_0=131.707639$ (BKJD)



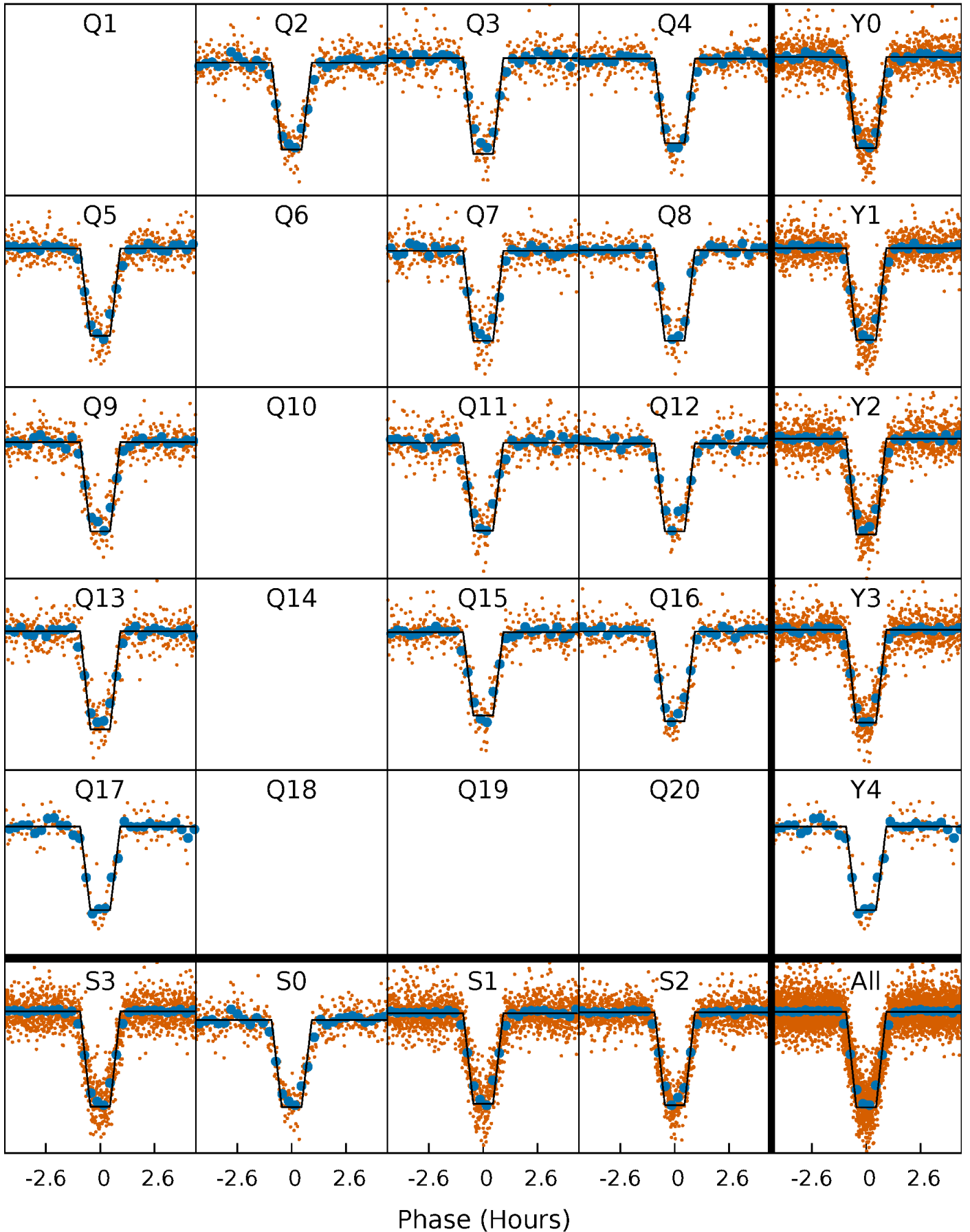
DV Quarter-Phased Transit Curves

TCE 004276114-02 $P = 3.722403$ Days $T_0 = 131.707639$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

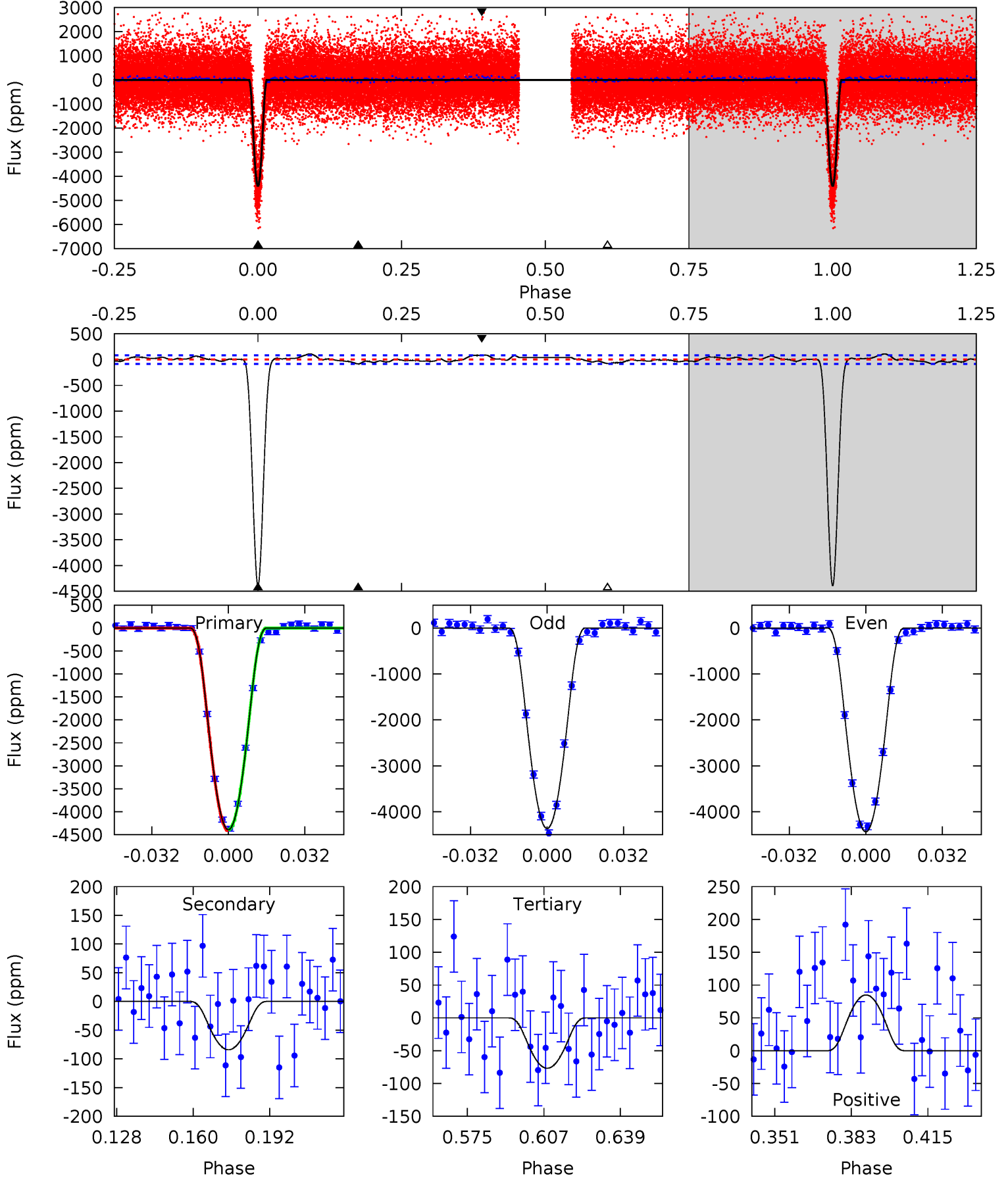
TCE 004276114-02 P= 3.722413 Days $T_0=131.705780$ (BKJD)



DV Model-Shift Uniqueness Test

004276114-02, P = 3.722403 Days, E = 131.707639 Days

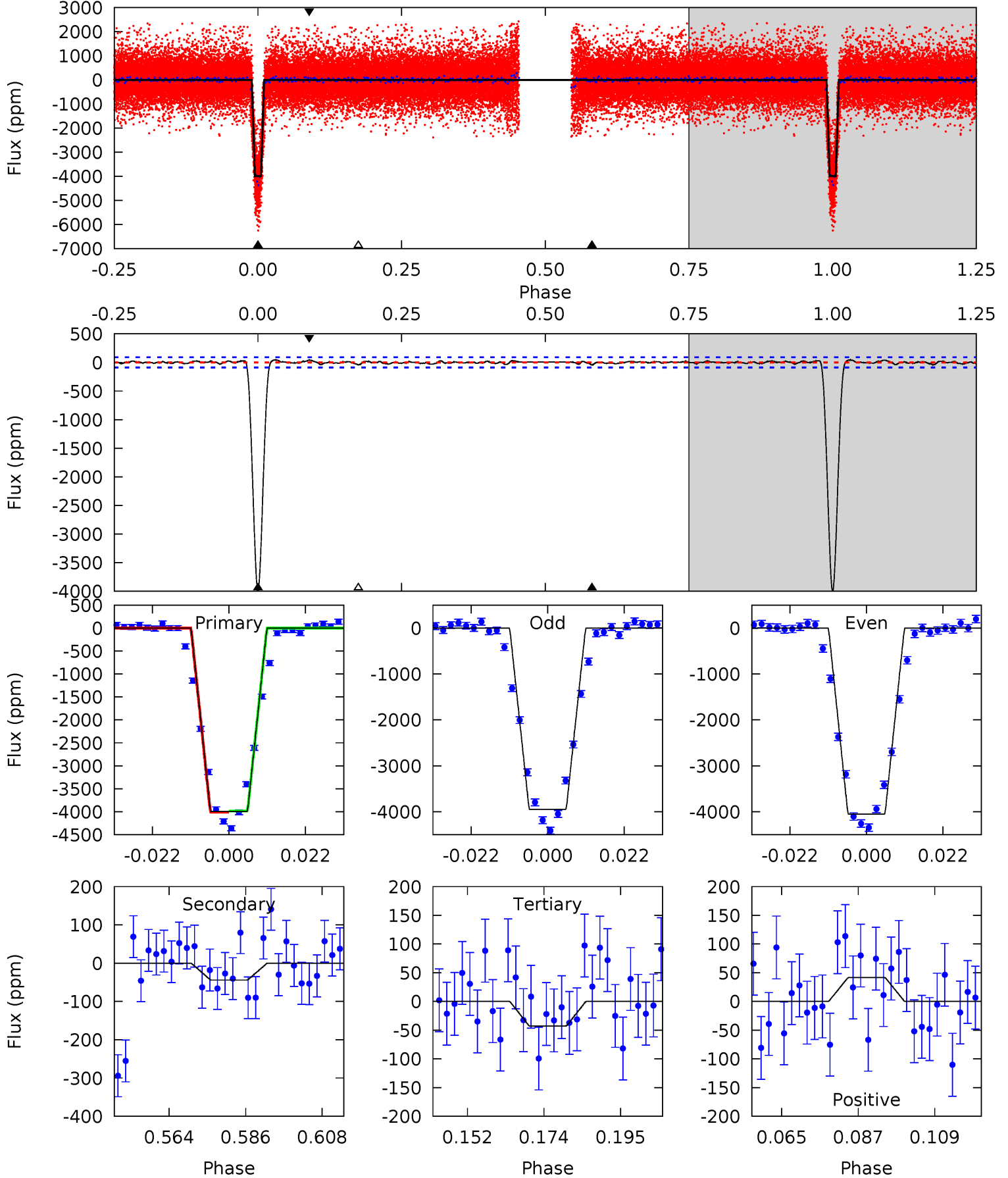
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
249.6	4.78	4.36	4.83	4.80	2.15	2.14	245.2	244.7	0.42	-0.04	2.04	0.99	0.02	0.62



Alt Model-Shift Uniqueness Test

004276114-02, P = 3.722413 Days, E = 131.705780 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
218.6	2.41	2.35	2.28	4.88	2.30	0.82	216.2	216.3	0.06	0.13	2.79	1.01	0.01	0.66



Stellar Parameters For KIC 004276114

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5747^{+173}_{-173}	$4.542^{+0.063}_{-0.147}$	$-0.520^{+0.300}_{-0.300}$	$0.799^{+0.191}_{-0.082}$	$0.811^{+0.096}_{-0.070}$	$2.236^{+0.622}_{-0.980}$
	+3%/-3%	+1%/-3%	+58%/-58%	+24%/-10%	+12%/-9%	+28%/-44%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004276114-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-84 ± 18	$8.04^{+1.31}_{-1.20}$	1530^{+90}_{-70}	2555^{+155}_{-137}	$1.370^{+0.618}_{-0.436}$
Alt.	-44 ± 18	$5.82^{+1.27}_{-1.09}$	1530^{+88}_{-70}	2557^{+221}_{-260}	$1.353^{+0.995}_{-0.637}$

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

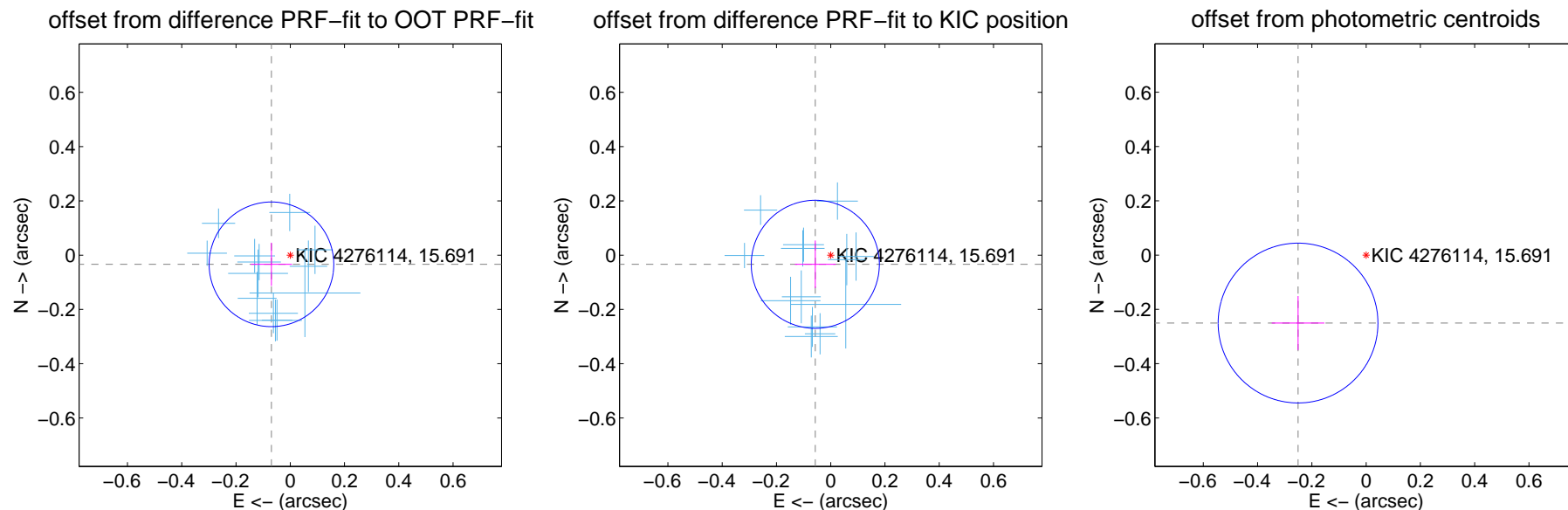
DV Centroid Data

Supplemental centroid analysis for 004276114-02. Kepler magnitude: 15.69. Transit SNR 132.21

There are 13 quarters with good PRF difference image offsets

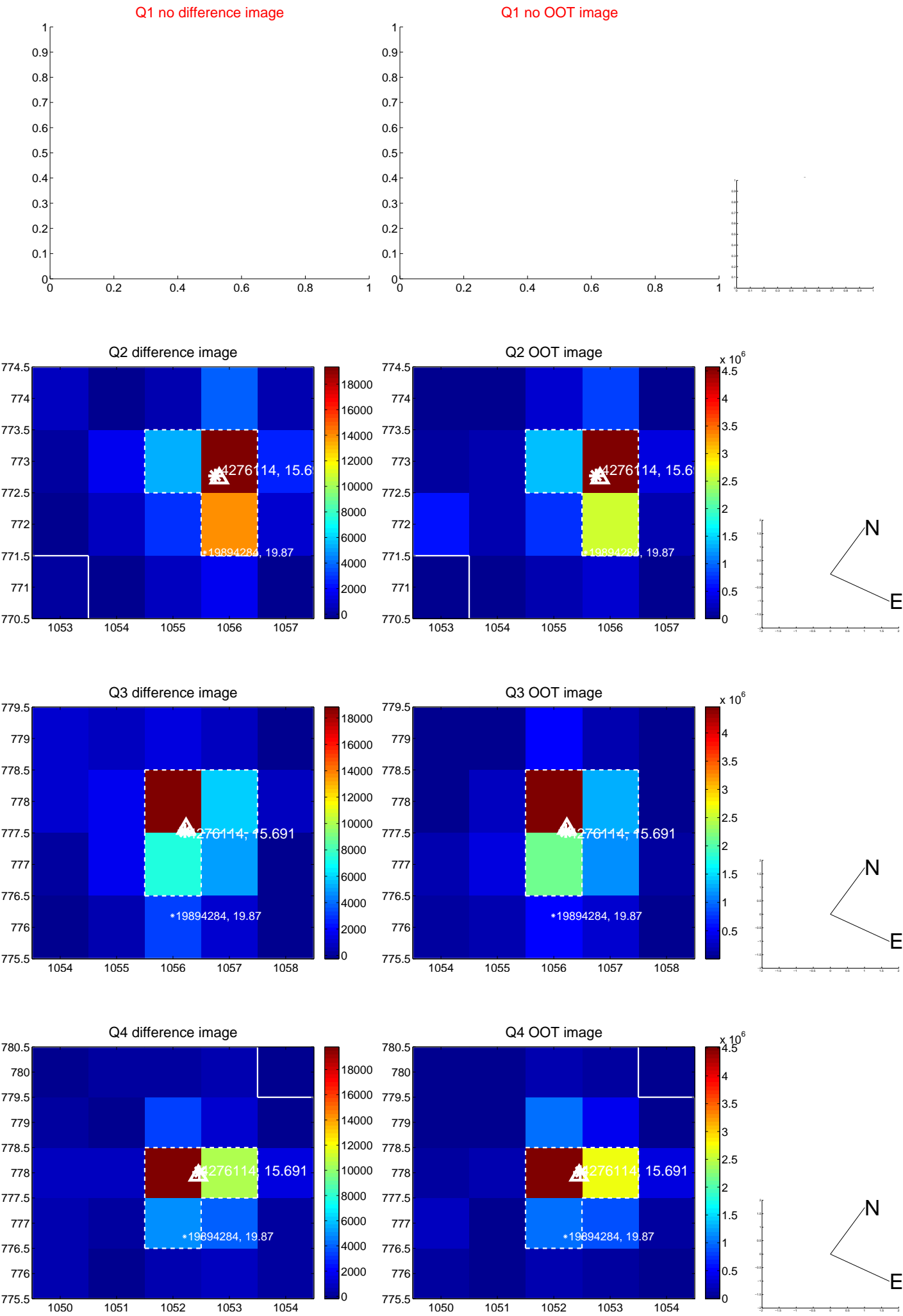
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.077 ± 0.077	1.01	0.069 ± 0.076	-0.034 ± 0.080
PRF-fit source offset from KIC position	0.066 ± 0.079	0.84	0.057 ± 0.075	-0.034 ± 0.088
photometric centroid source offset	0.35 ± 0.10	3.61	0.25 ± 0.10	-0.25 ± 0.10

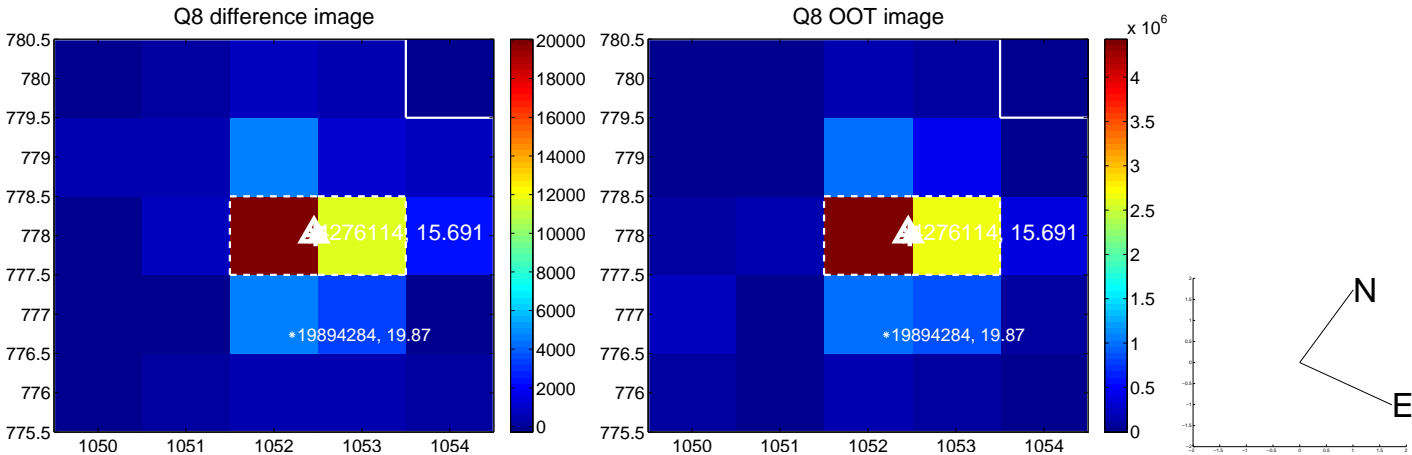
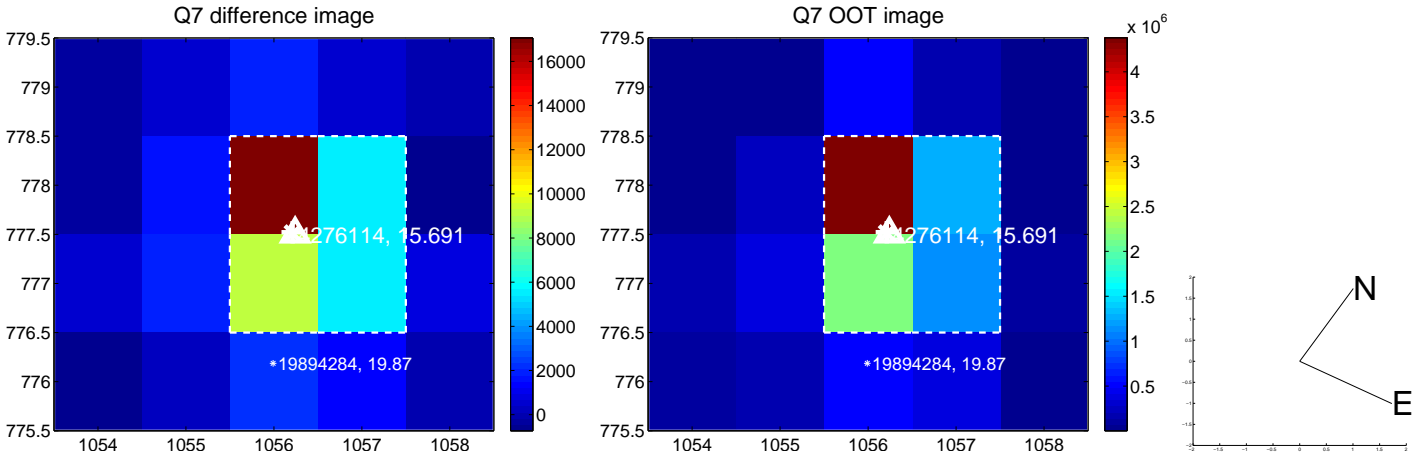
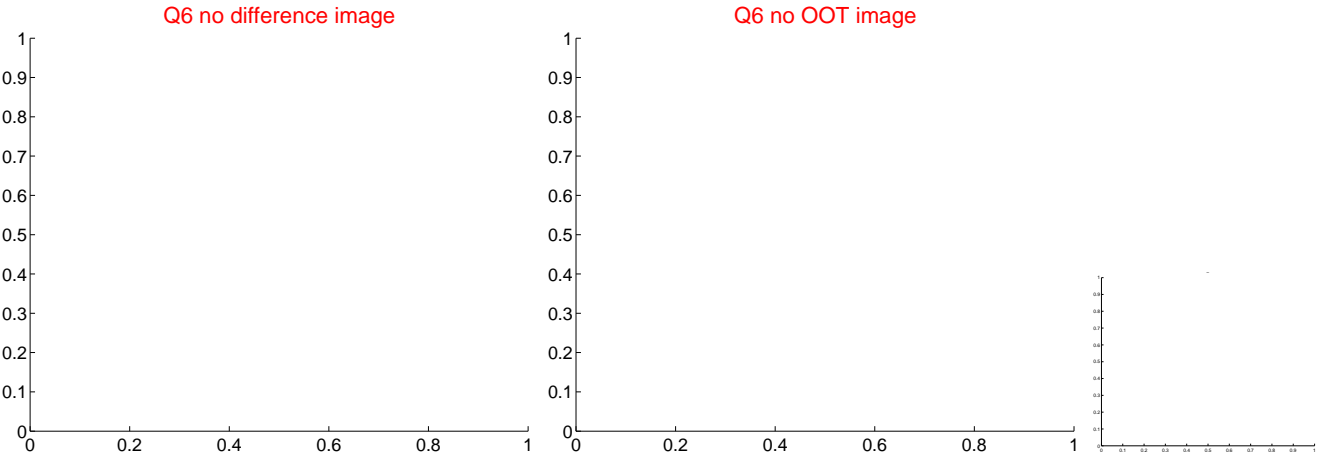
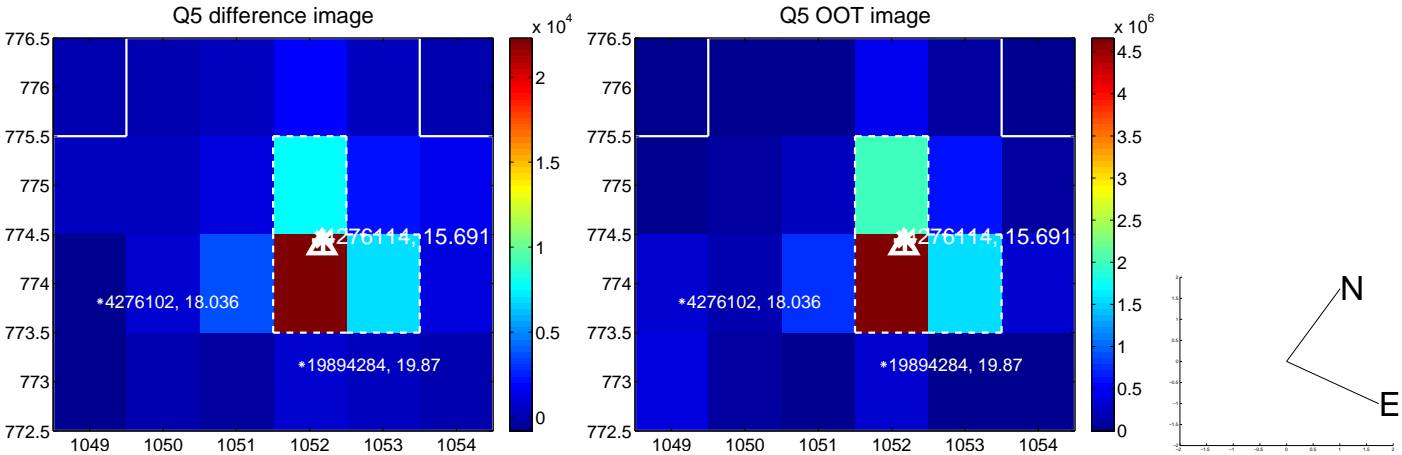


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

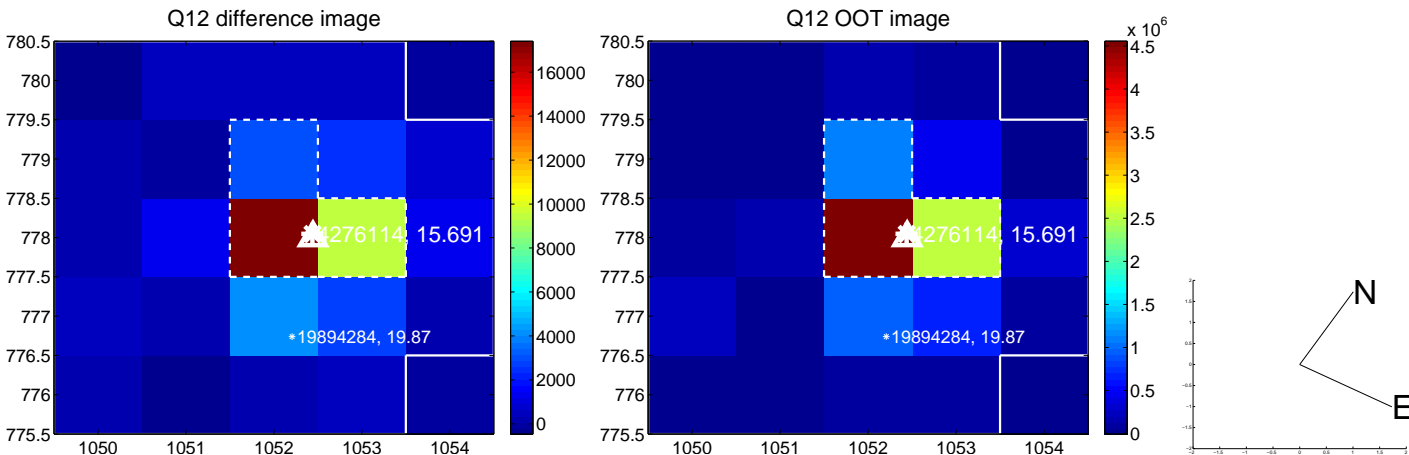
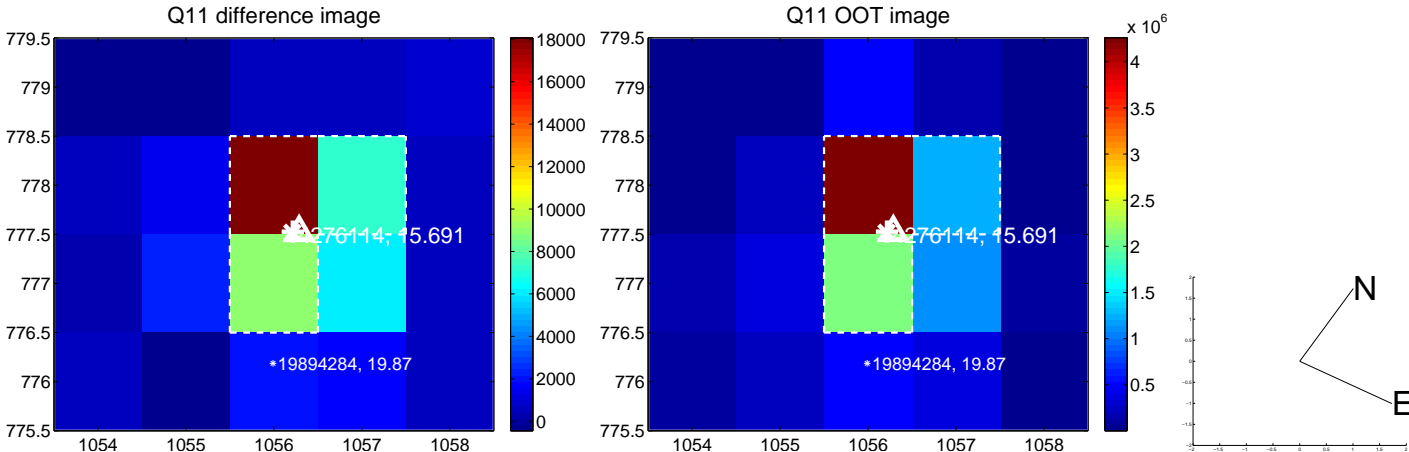
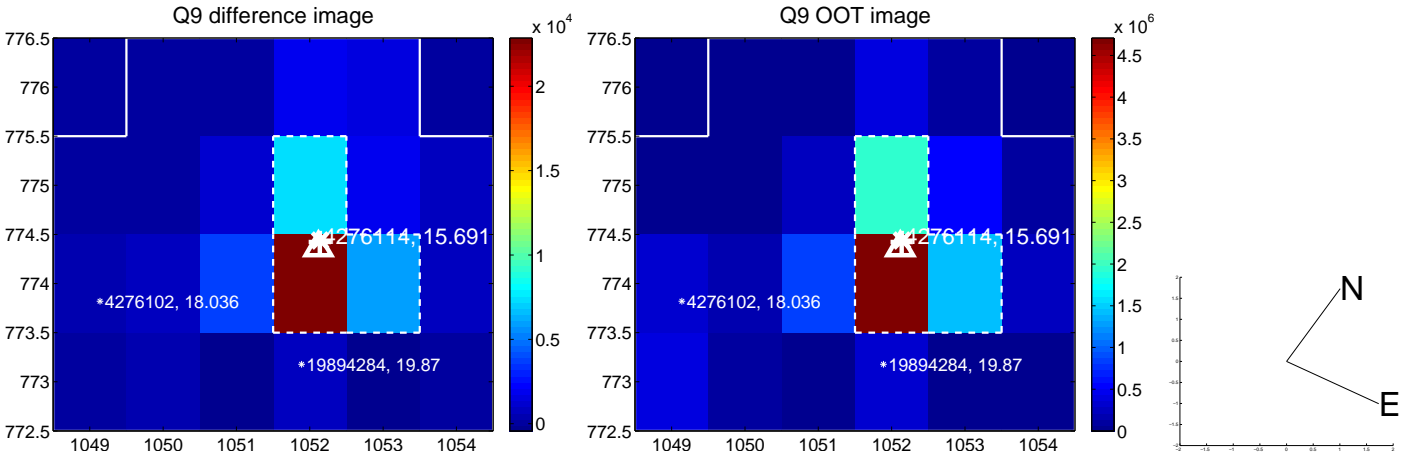
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



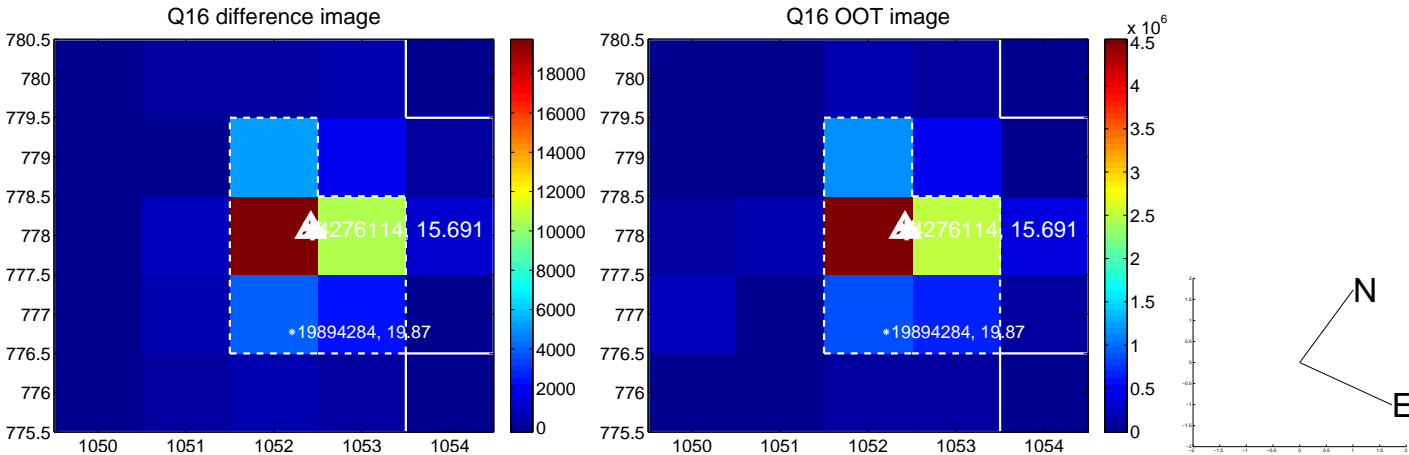
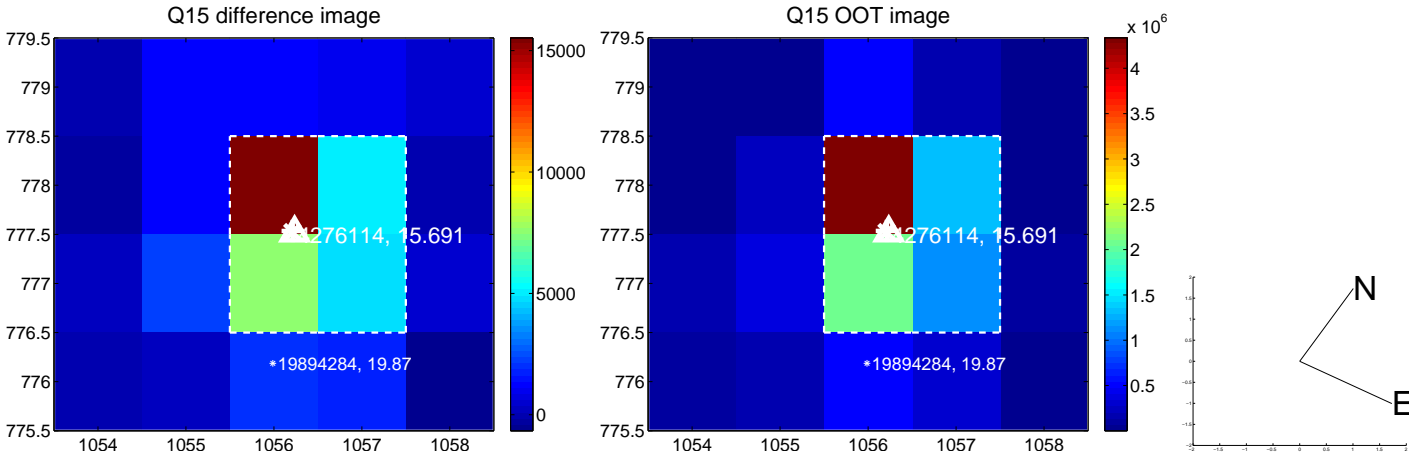
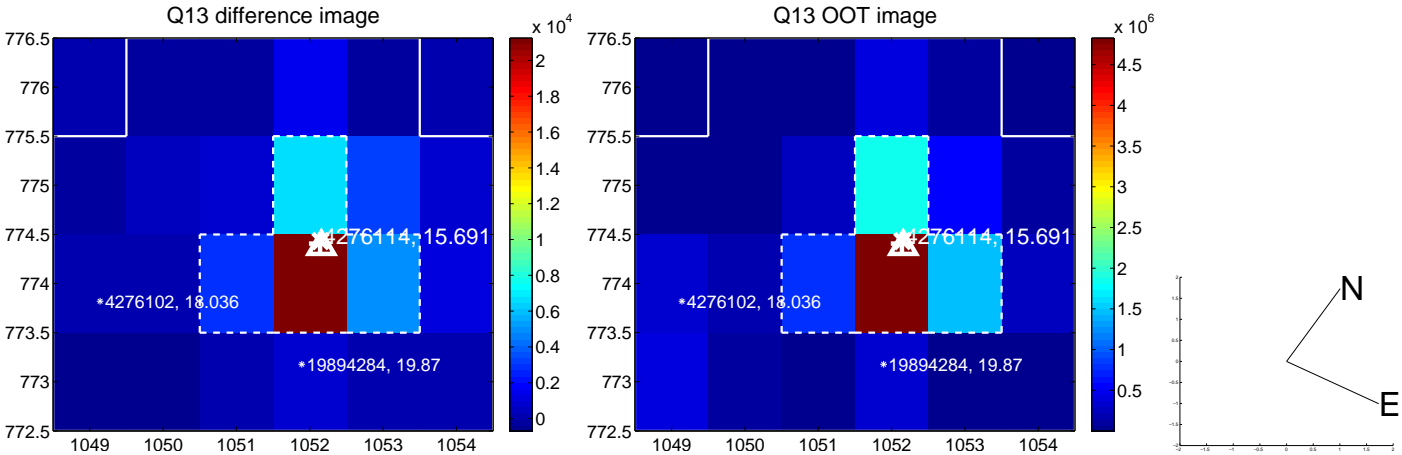
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



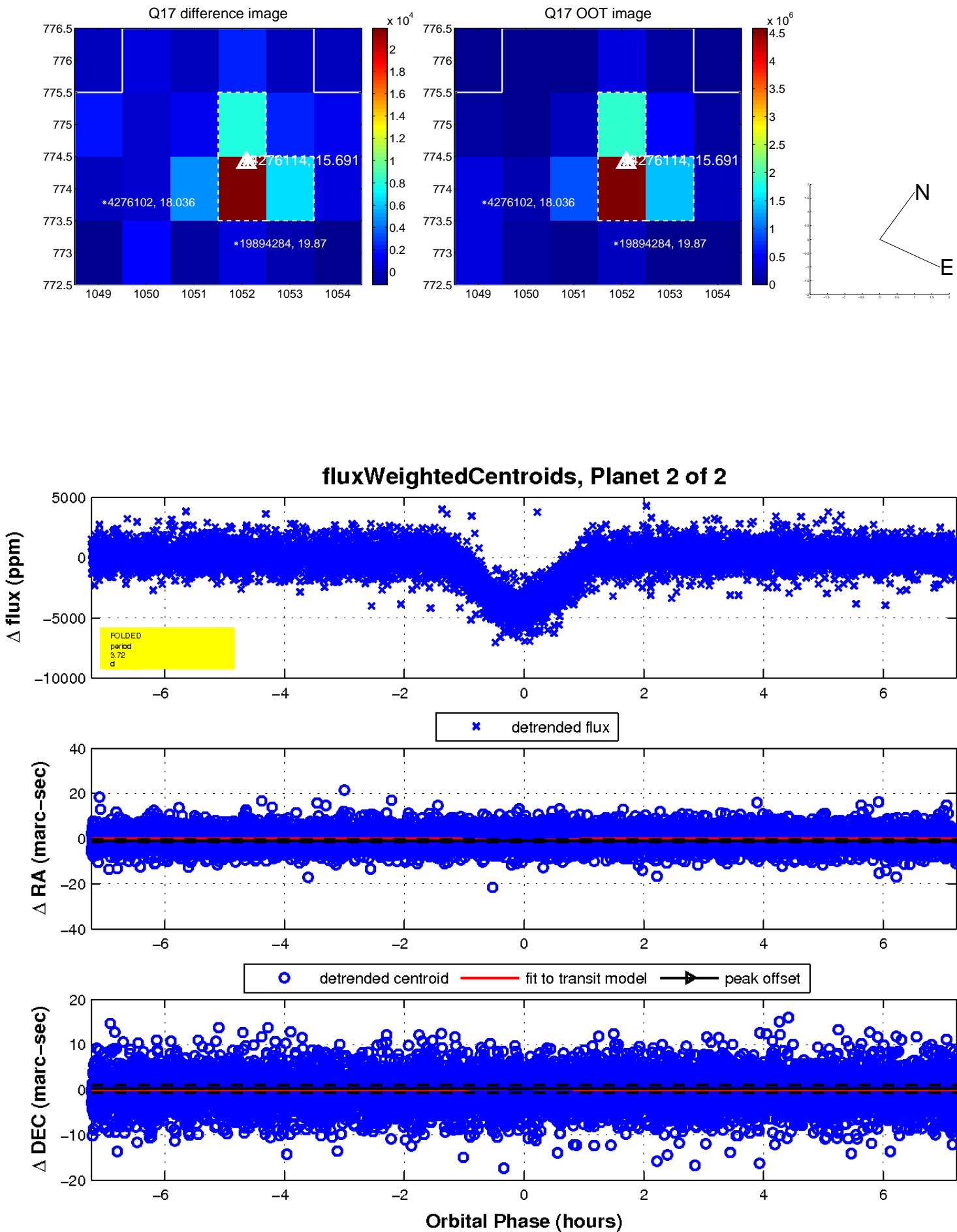
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

