

KIC 008242681

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})
008242681-01	OBS	1065.01	4.020630	133.638334	20580.9	4.341	1090.1	1077.2	1.03	6210	16.78	545.68
008242681-02	OBS	No	4.020626	131.628719	944.6	4.342	49.2	54.8	1.03	6210	4.02	545.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008242681-01	OBS	FP	0.01	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
008242681-02	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.

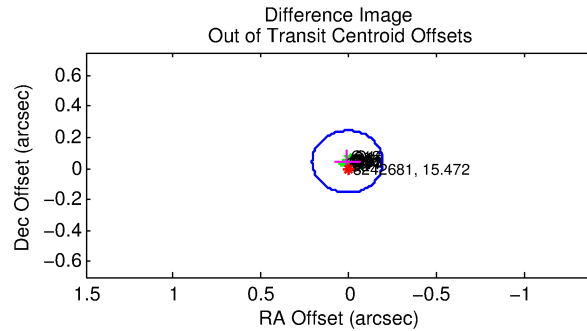
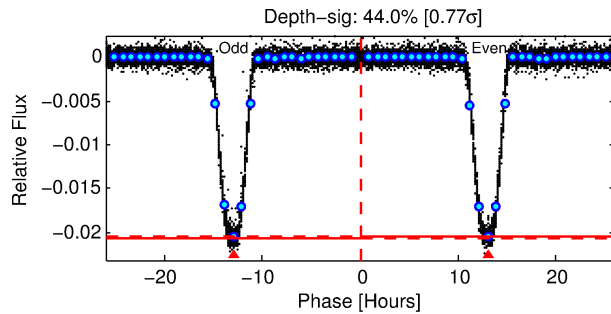
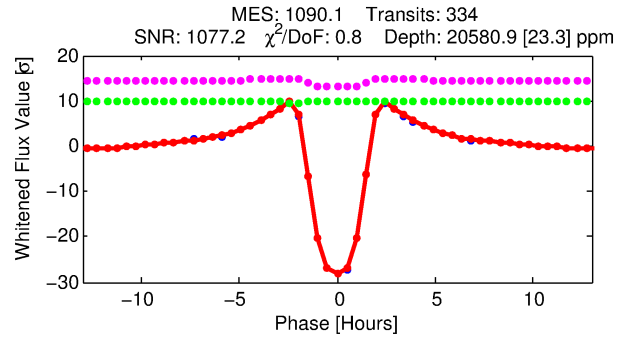
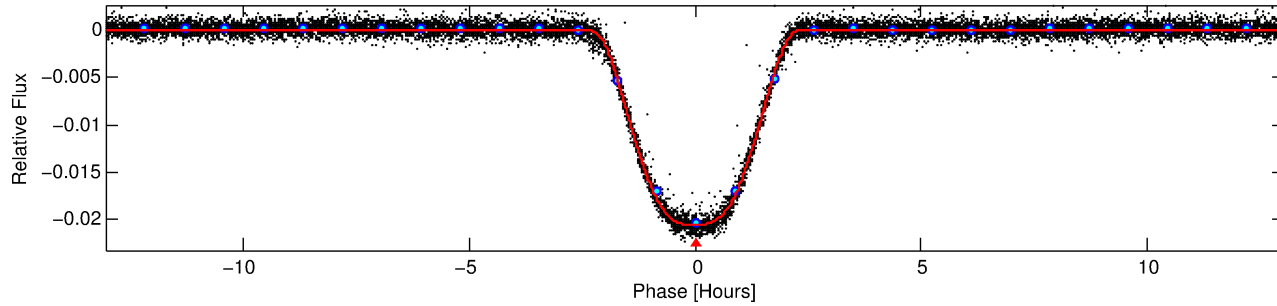
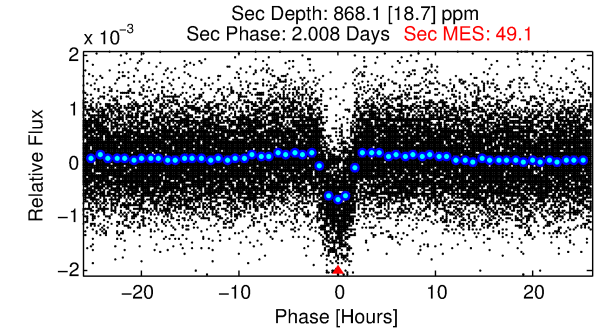
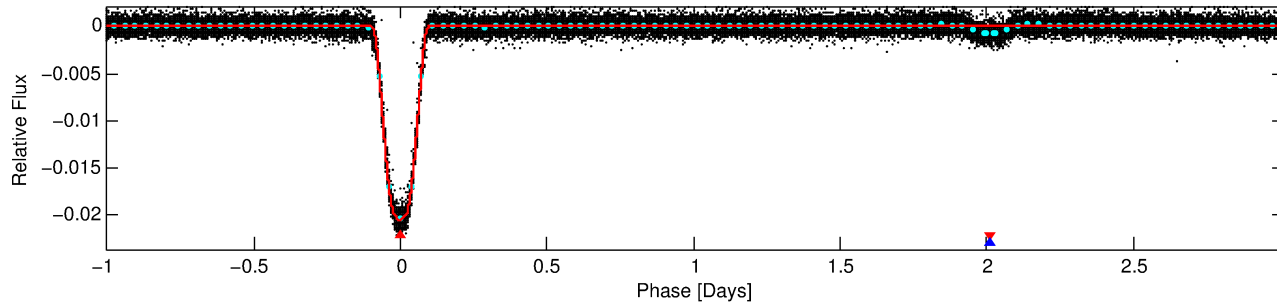
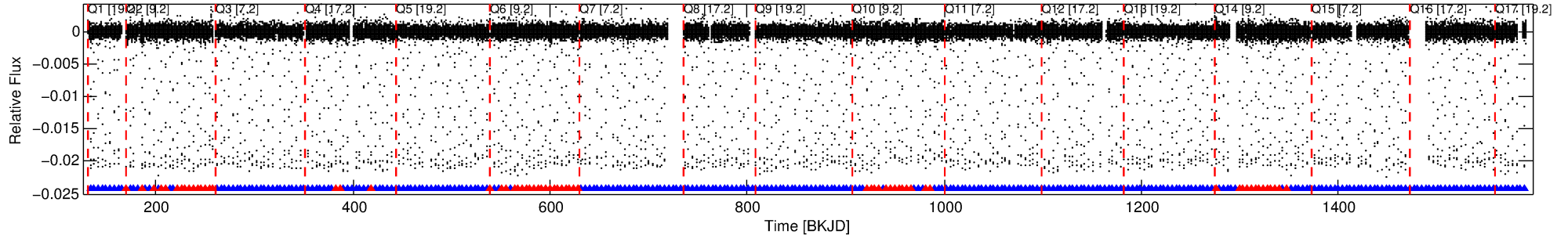
Ephemeris Match Information For 008242681-01

No Significant Match Found

DV One-Page Summary

KIC: 8242681 Candidate: 1 of 2 Period: 4.021 d
KOI: K01065.01 Corr: 0.999

Kp: 15.47 R*: 1.03 Rs Teff: 6210.0 K Logg: 4.45 Fe/H: -0.100



DV Fit Results:

Period = 4.02063 [0.00000] d
Epoch = 133.6383 [0.0001] BKJD
Rp/R* = 0.1489 [0.0001]
a/R* = 5.72 [0.01]
b = 0.83 [0.00]
Seff = 545.68 [242.07]
Teq = 1232 [137] K
Rp = 16.78 [5.67] Re
a = 0.0510 [0.0145] AU
Ag = 4.42 [1.82] [1.88σ]
Teffp = 2763 [116] K [8.53σ]

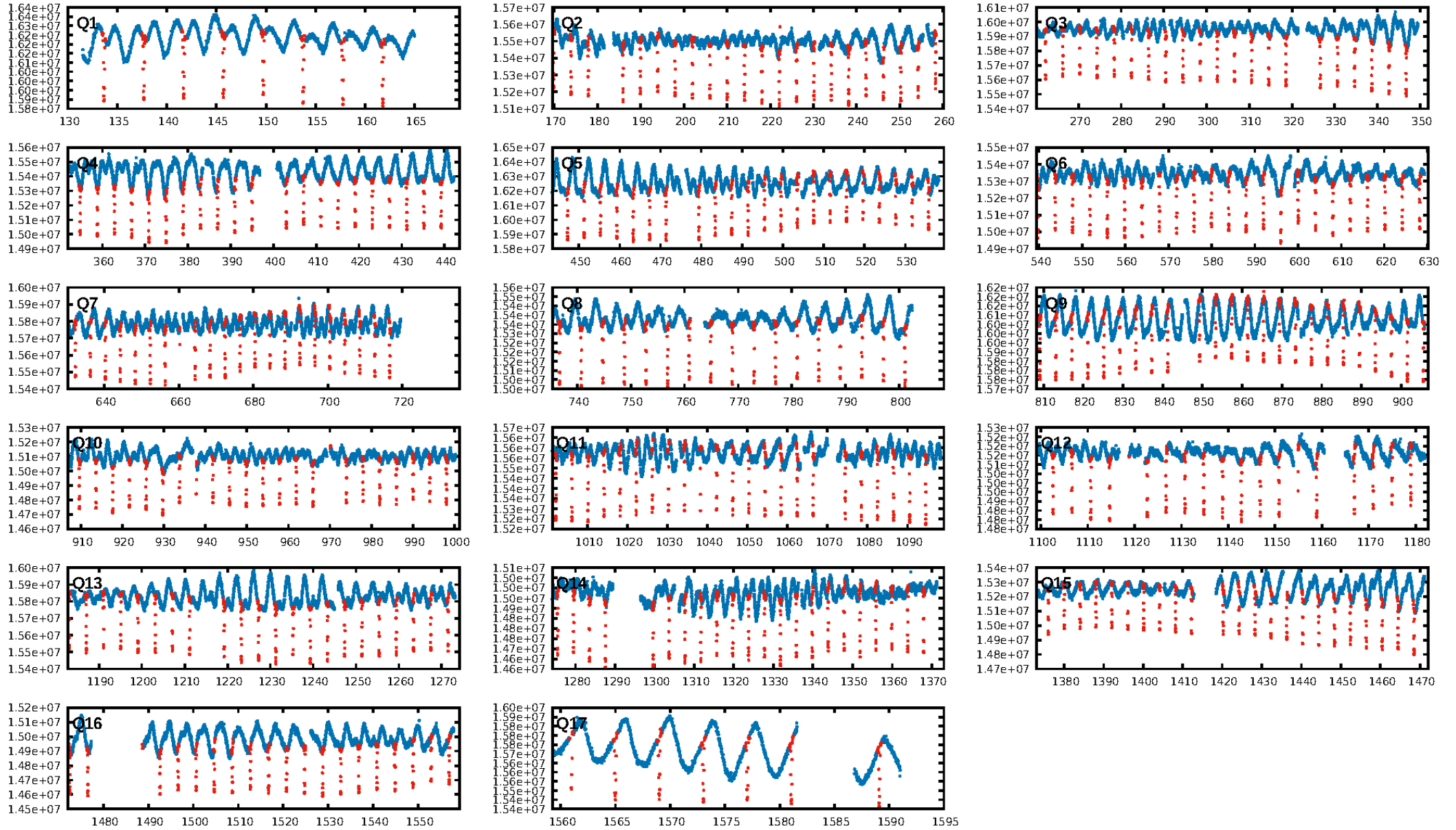
DV Diagnostic Results:

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: 0.80 [255/319]
GhostDiagnostic-chr: 3.605
Centroid-sig: 0.0%
Centroid-so: 0.103 arcsec [9.09σ]
OotOffset-rm: 0.045 arcsec [0.68σ]
KicOffset-rm: 0.076 arcsec [1.12σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

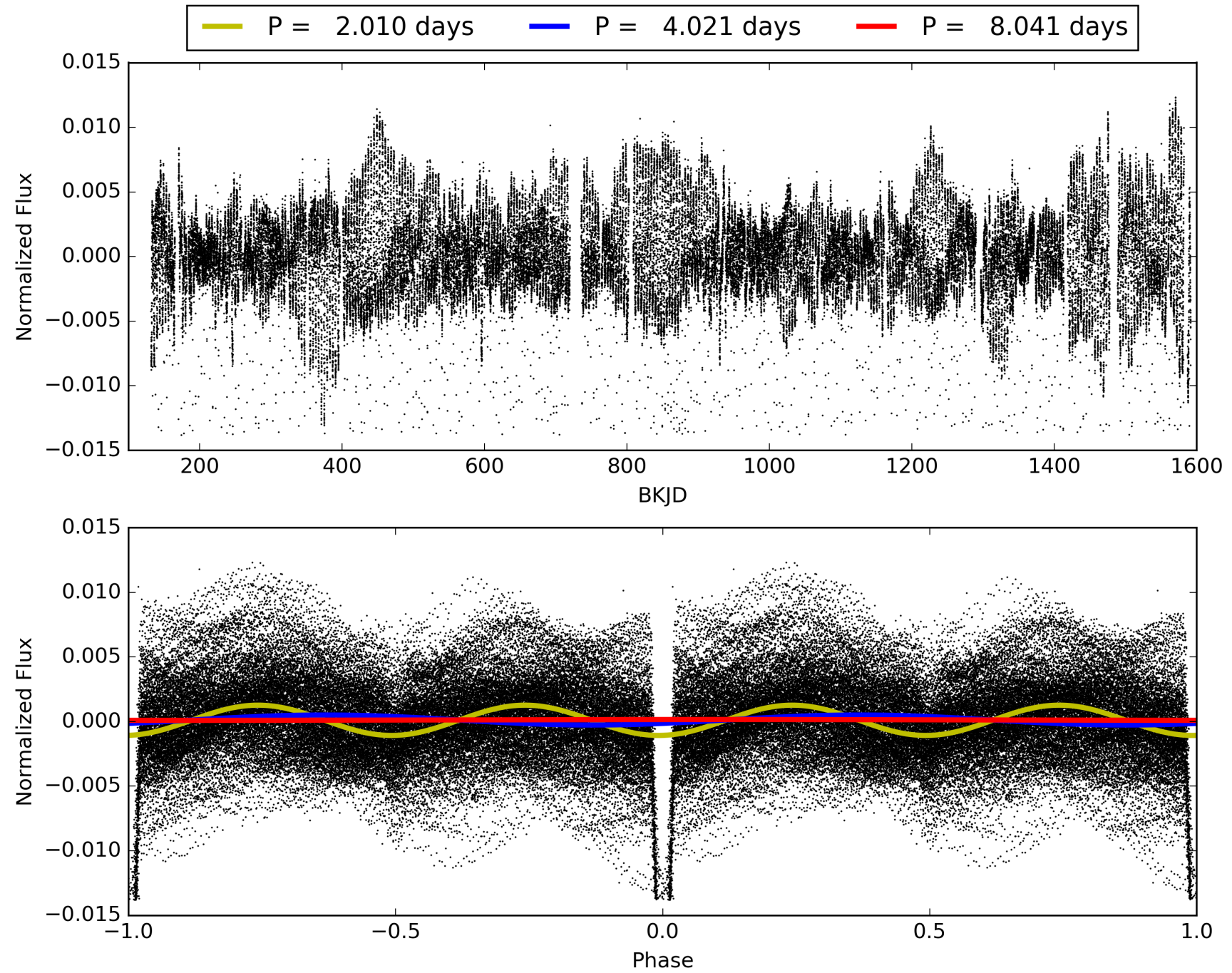
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:09:21 Z

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

TCE 008242681-01, PDC Light Curves

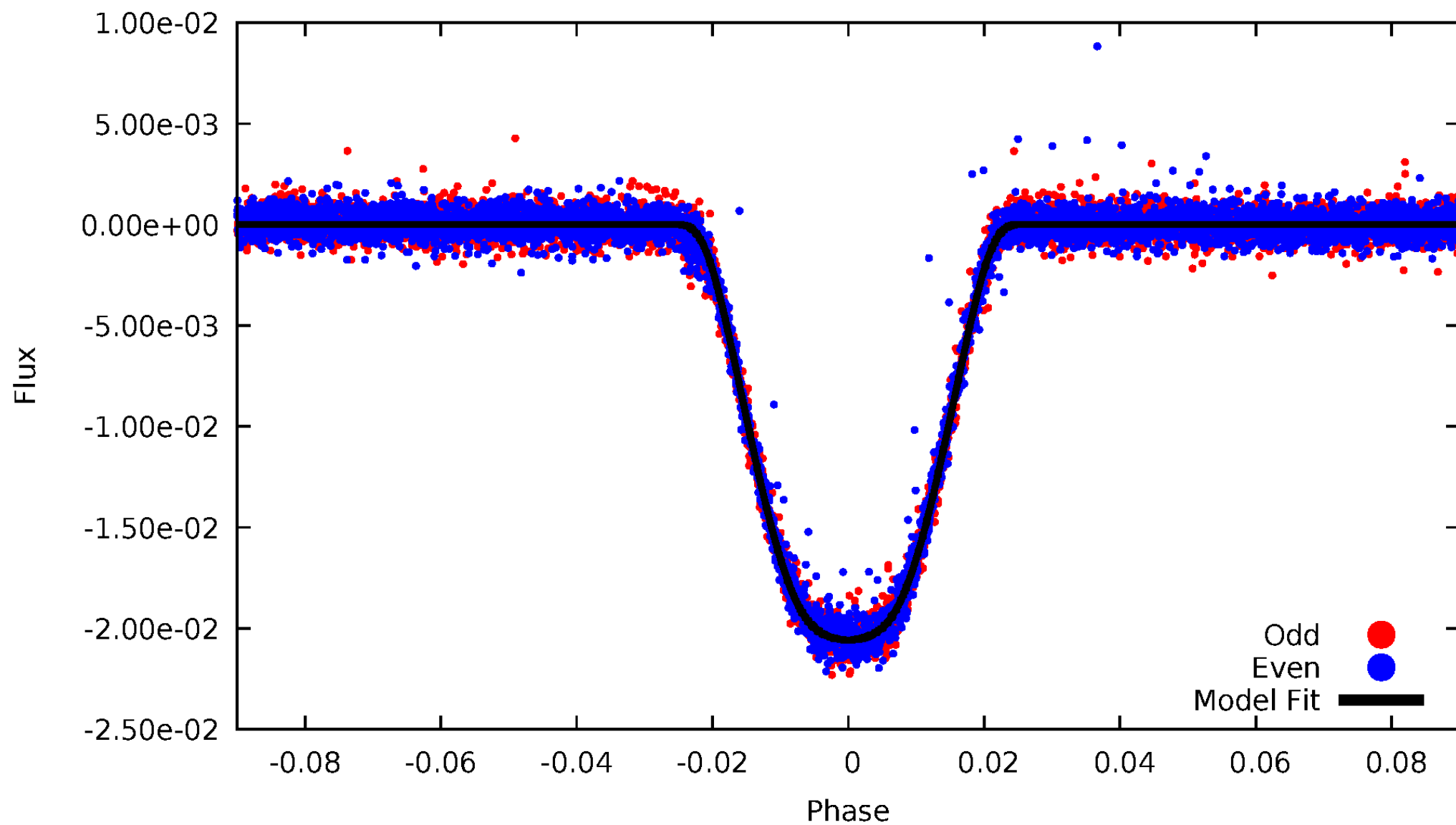


TCE 008242681-01



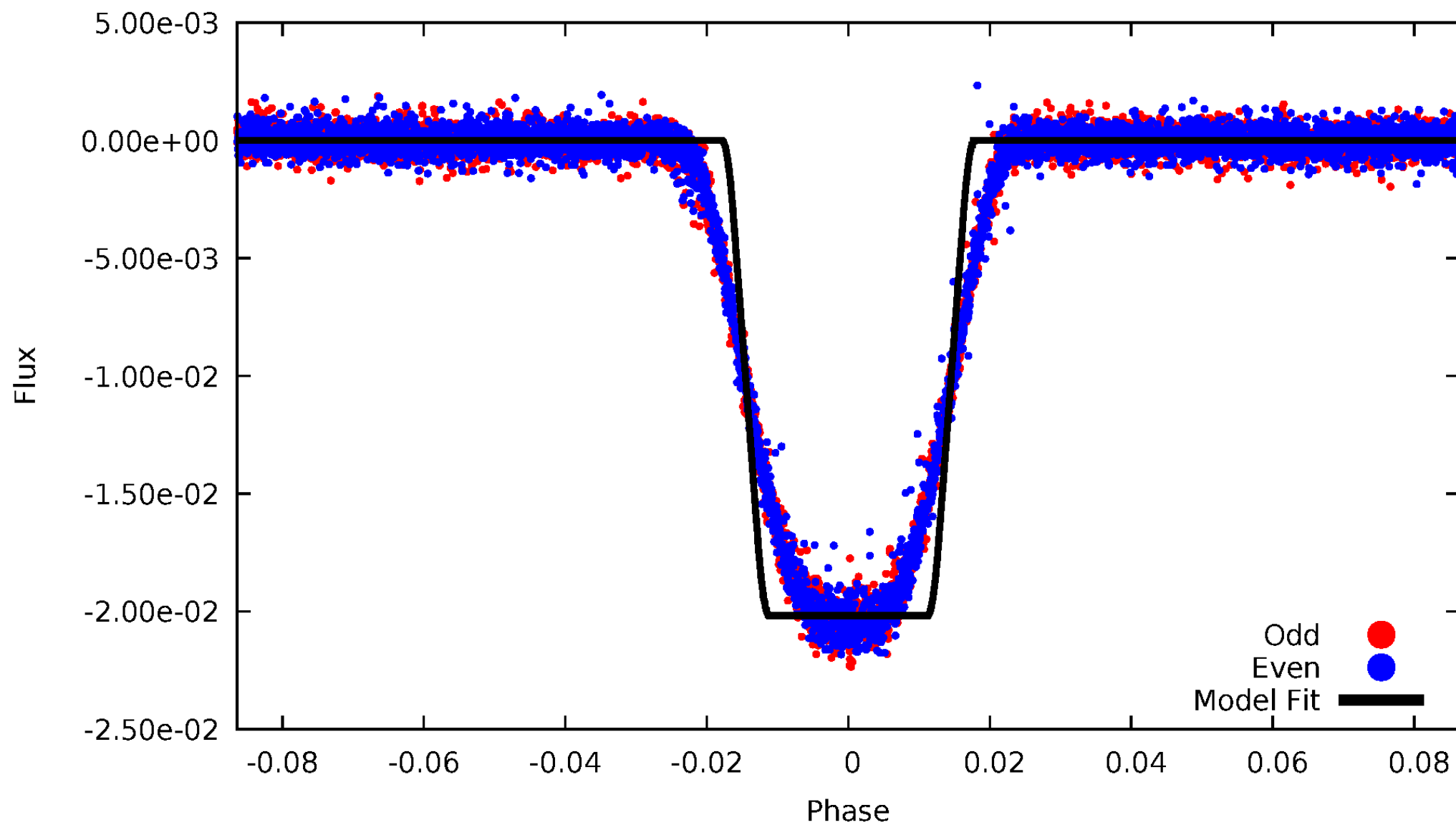
DV Odd/Even

TCE 008242681-01



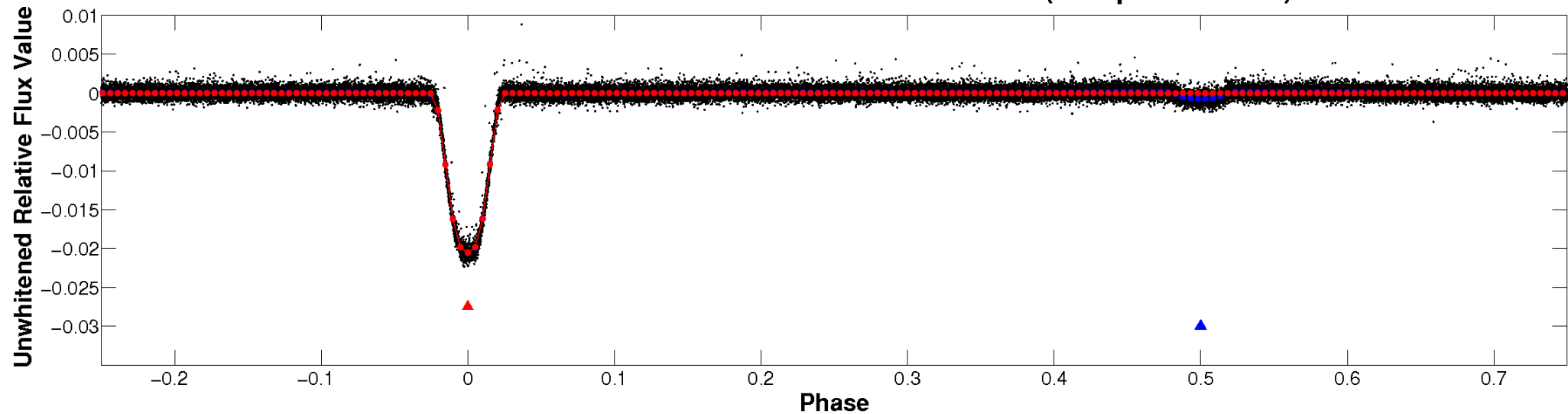
ALT Odd/Even

TCE 008242681-01

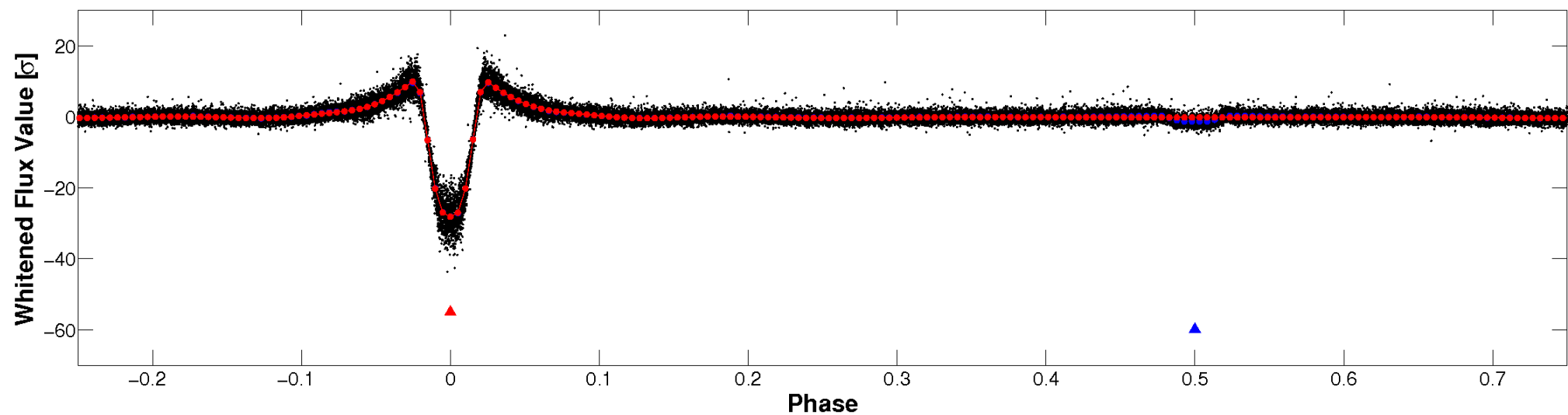


Non-Whitened Vs. Whitened Light Curve

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

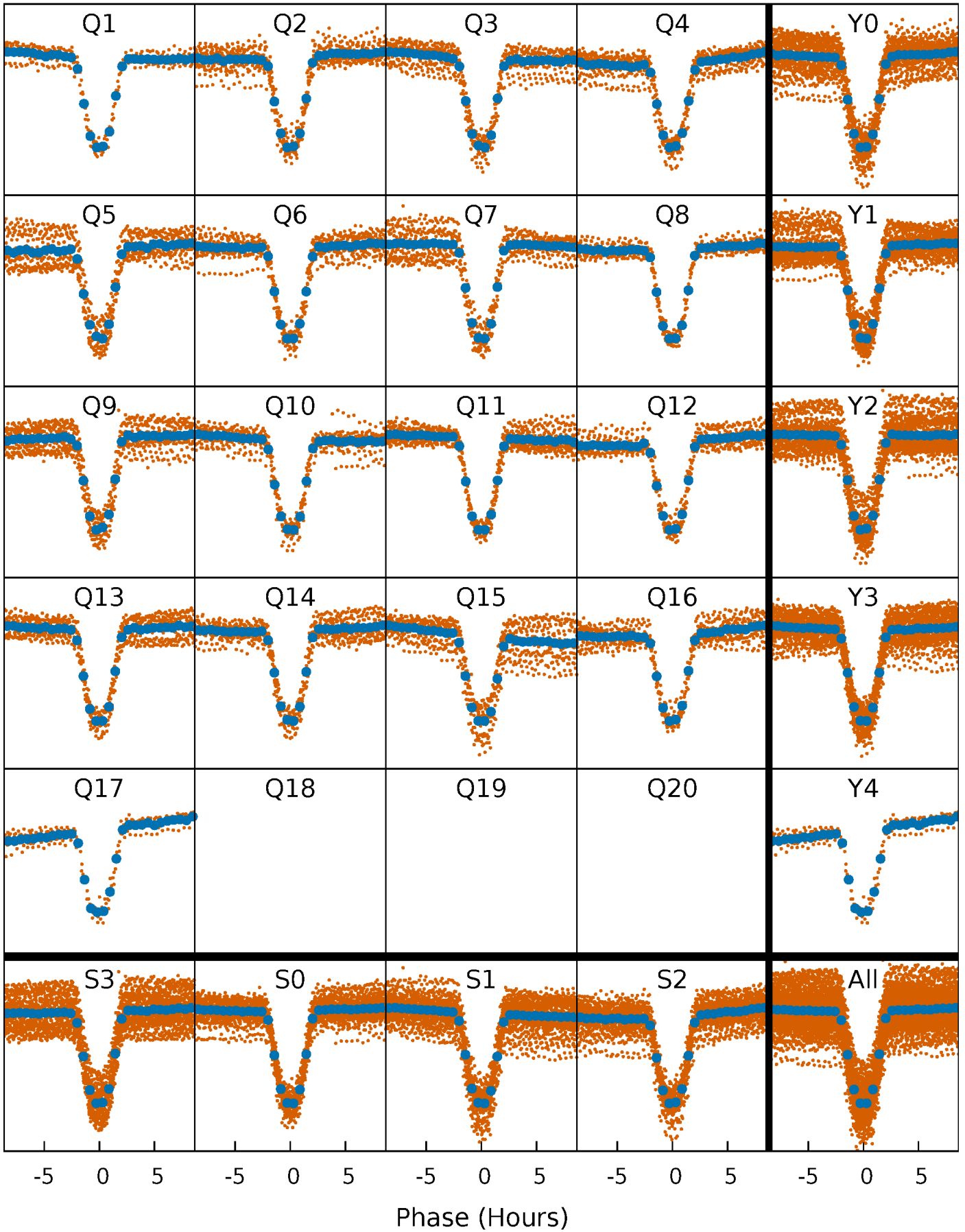


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



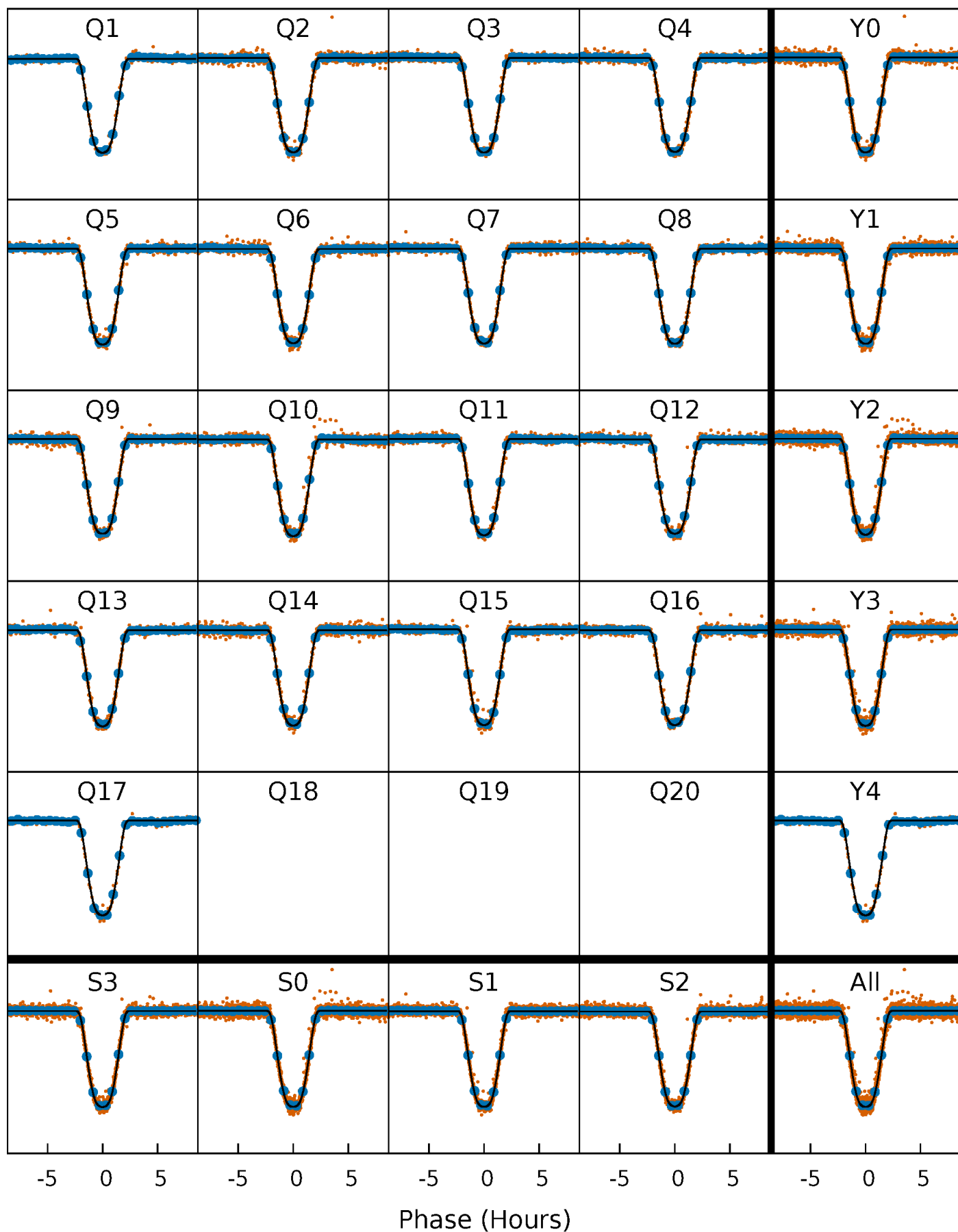
PDC Quarter-Phased Transit Curves

TCE 008242681-01 P= 4.020630 Days $T_0=133.638334$ (BKJD)



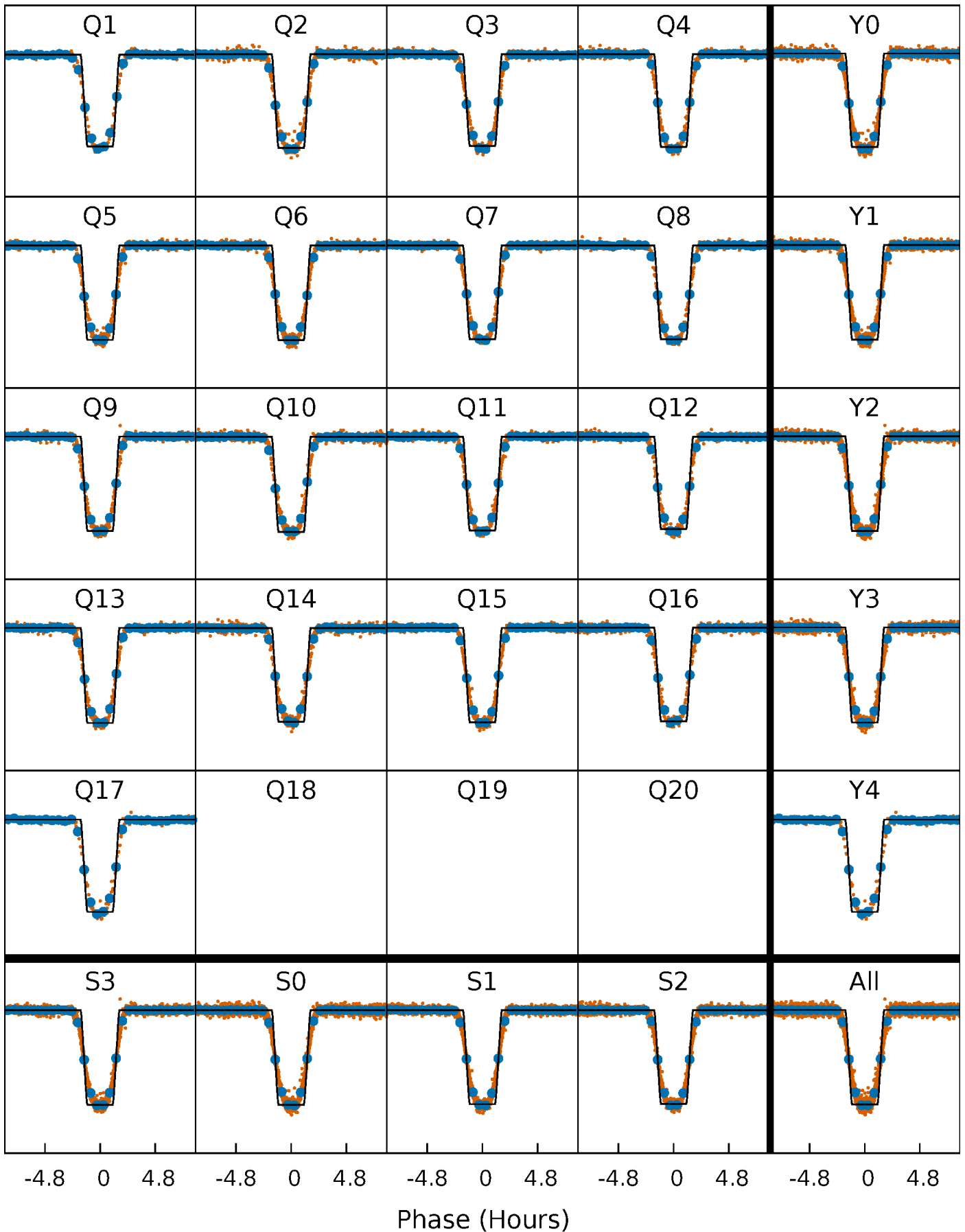
DV Quarter-Phased Transit Curves

TCE 008242681-01 P= 4.020630 Days $T_0=133.638334$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

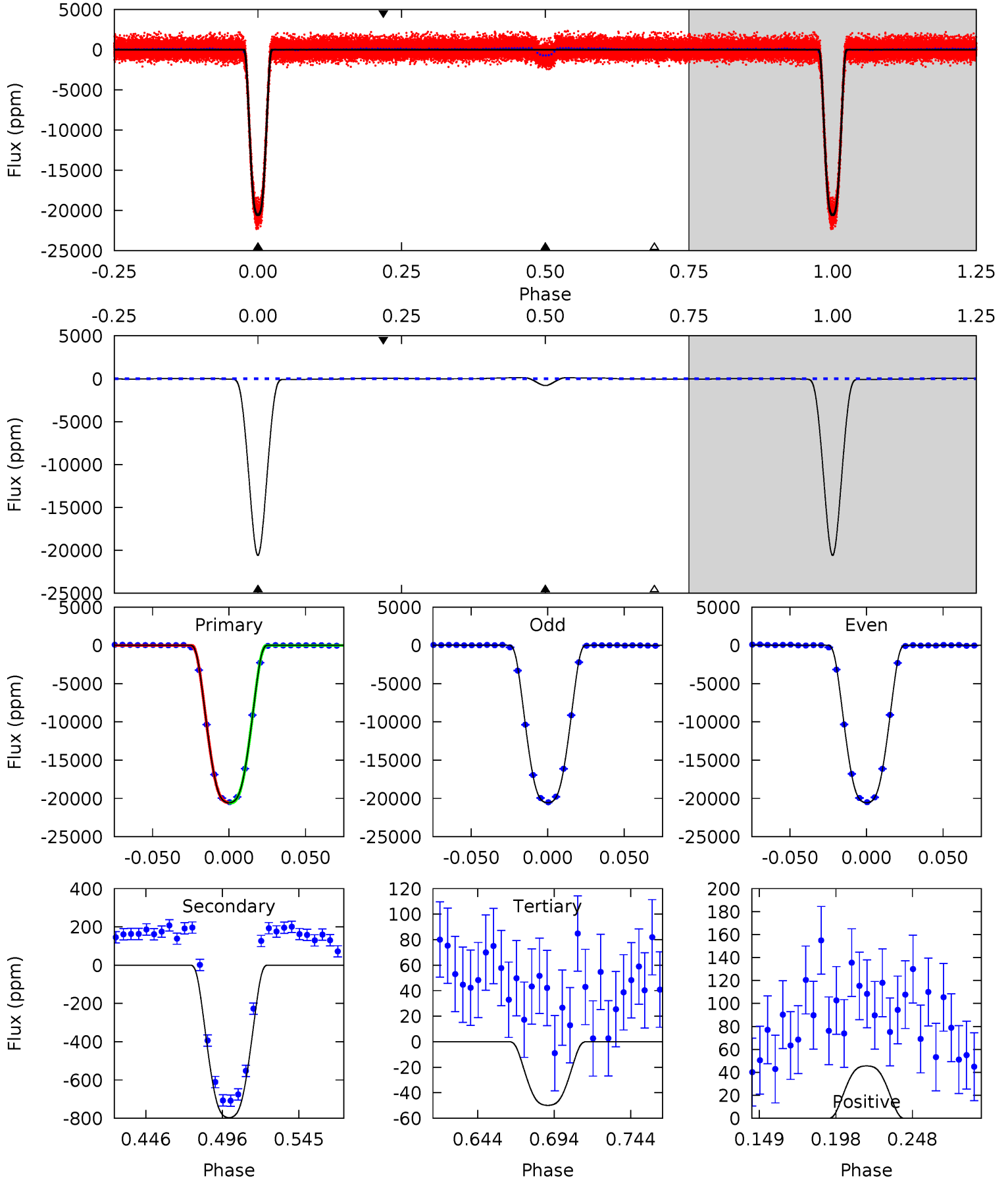
TCE 008242681-01 P= 4.020629 Days $T_0=133.638497$ (BKJD)



DV Model-Shift Uniqueness Test

008242681-01, P = 4.020630 Days, E = 129.617704 Days

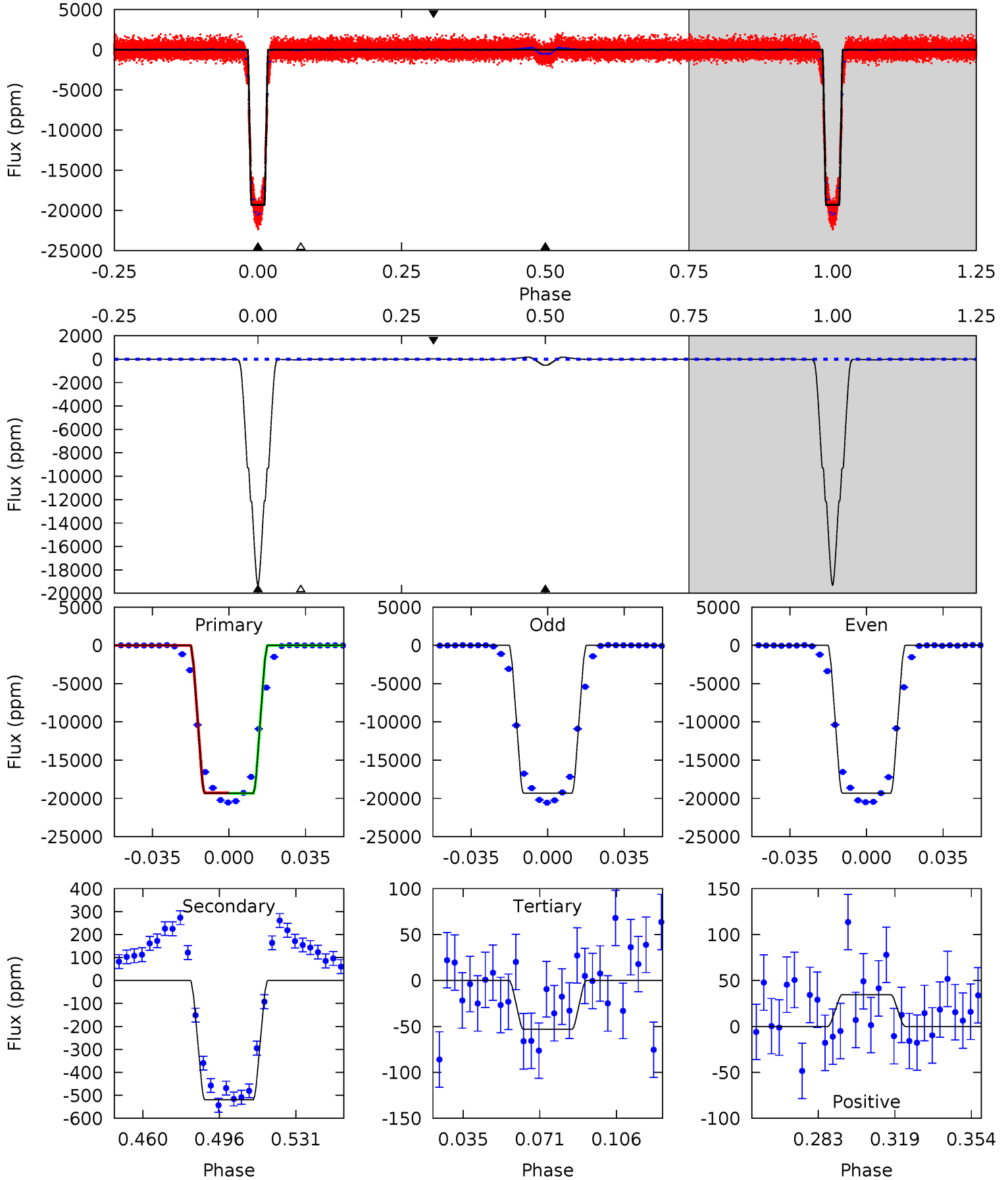
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2122	82.2	5.14	4.71	4.71	1.96	4.71	2117	2117	77.0	77.5	0.26	1.00	0.01	3.62



Alt Model-Shift Uniqueness Test

008242681-01, P = 4.020629 Days, E = 129.617868 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1769	47.6	4.87	3.18	4.78	2.10	2.44	1764	1766	42.7	44.4	0.19	1.00	0.01	3.75



Stellar Parameters For KIC 008242681

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6210^{+172}_{-259}	$4.450^{+0.056}_{-0.224}$	$-0.100^{+0.250}_{-0.300}$	$1.033^{+0.349}_{-0.116}$	$1.093^{+0.153}_{-0.153}$	$1.397^{+0.411}_{-0.750}$
	+3%/-4%	+1%/-5%	+250%/-300%	+34%/-11%	+14%/-14%	+29%/-54%
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 008242681-01 / KOI 1065.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-797 ± 10	$17.27^{+3.15}_{-1.44}$	1755^{+143}_{-92}	3227^{+57}_{-79}	$3.782^{+0.591}_{-0.975}$
Alt.	-519 ± 11	$16.50^{+2.92}_{-1.41}$	1759^{+124}_{-101}	3055^{+53}_{-73}	$2.693^{+0.436}_{-0.694}$

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 $A_{obs} \gg 1.0$

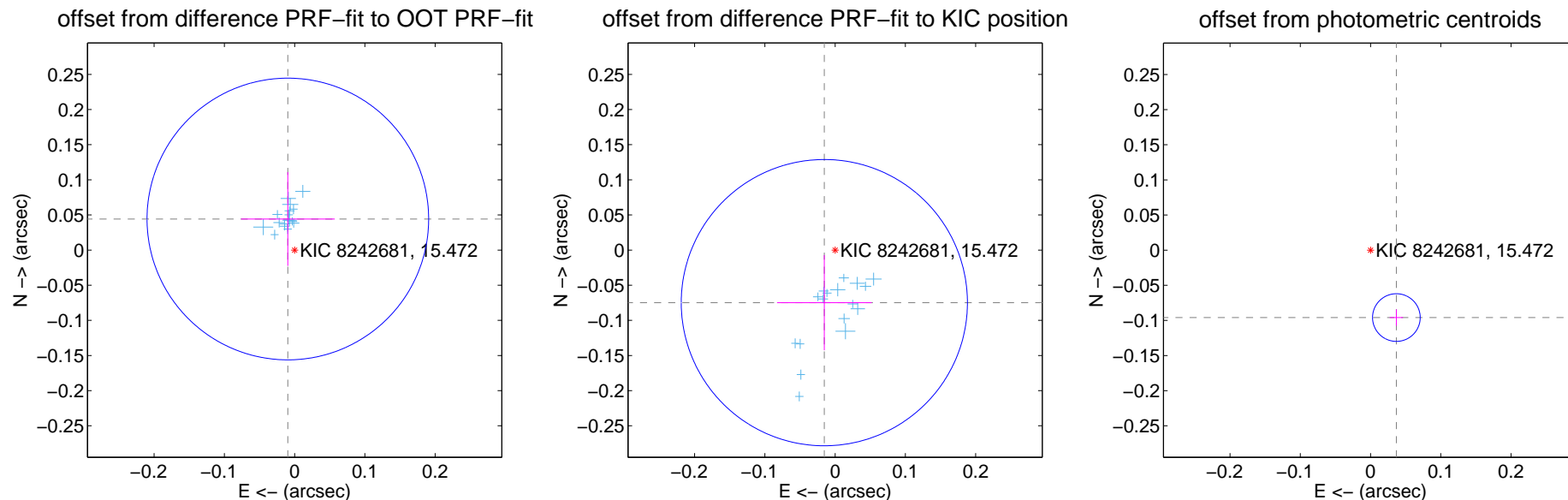
DV Centroid Data

Supplemental centroid analysis for 008242681-01. Kepler magnitude: 15.47. Transit SNR 1077.24

There are 17 quarters with good PRF difference image offsets

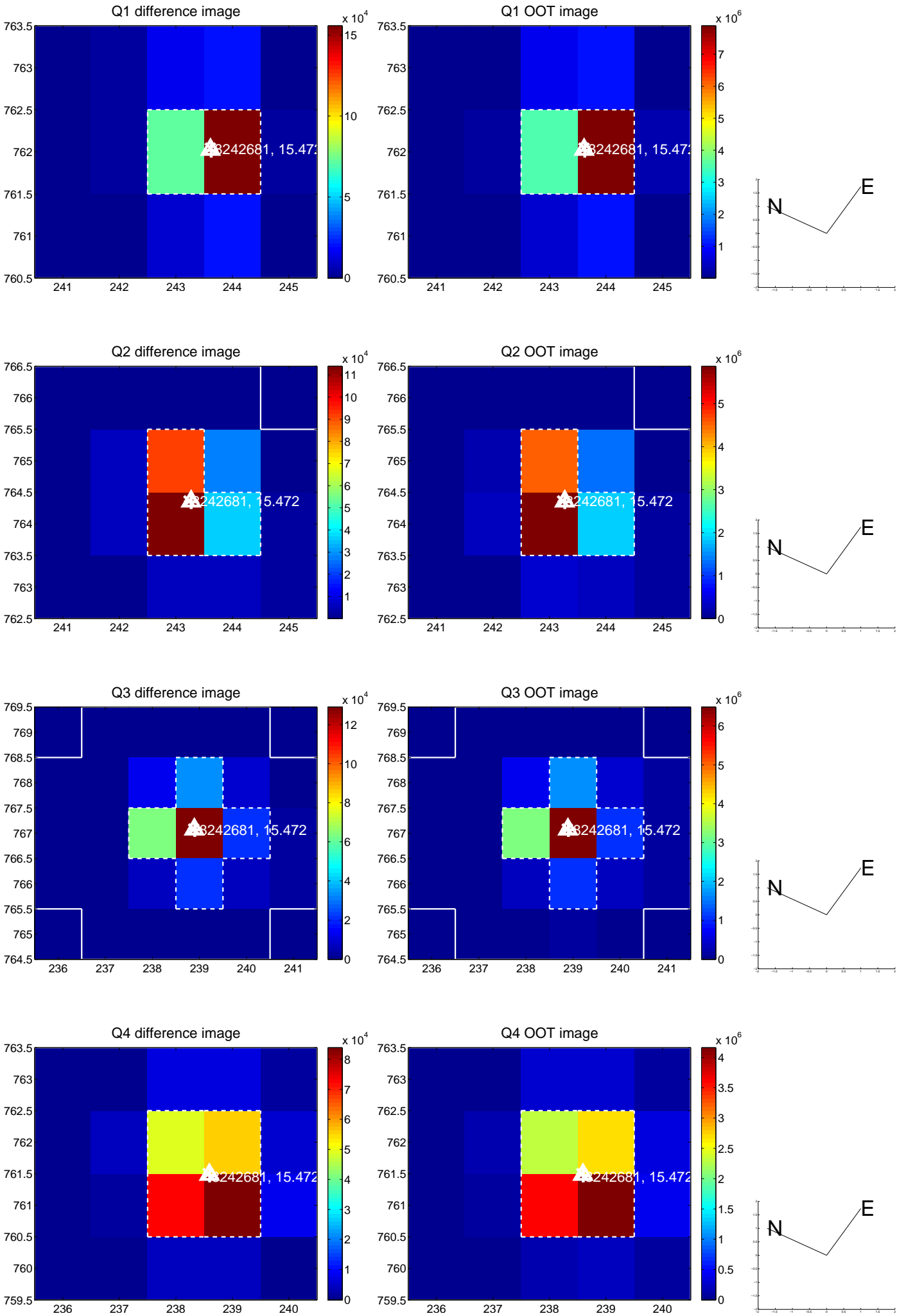
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.045 ± 0.067	0.68	0.010 ± 0.067	0.044 ± 0.067
PRF-fit source offset from KIC position	0.076 ± 0.068	1.12	0.015 ± 0.067	-0.075 ± 0.068
photometric centroid source offset	0.10 ± 0.01	9.09	-0.04 ± 0.01	-0.10 ± 0.01

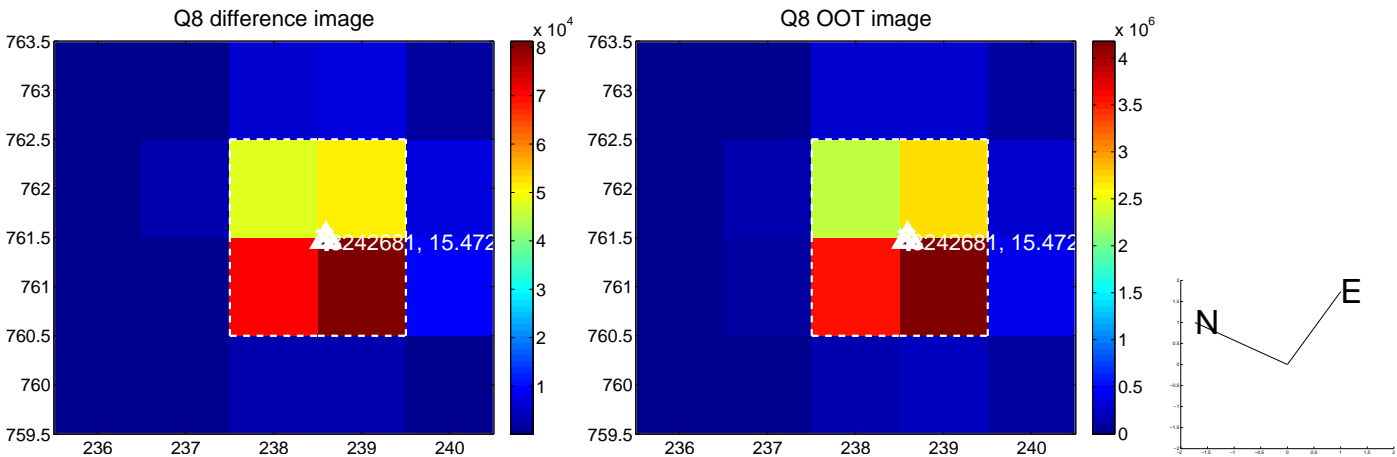
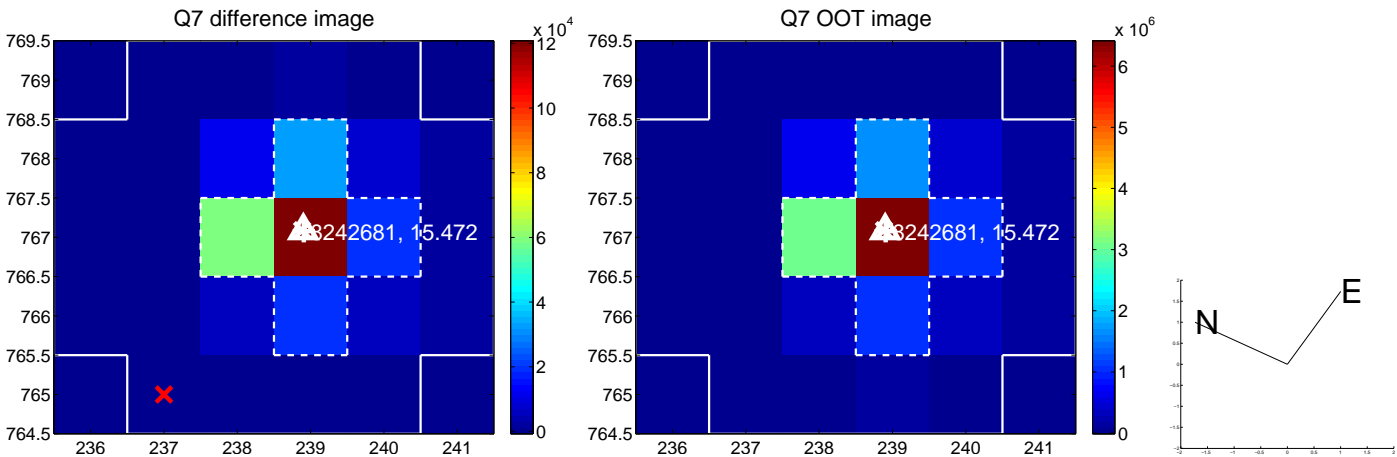
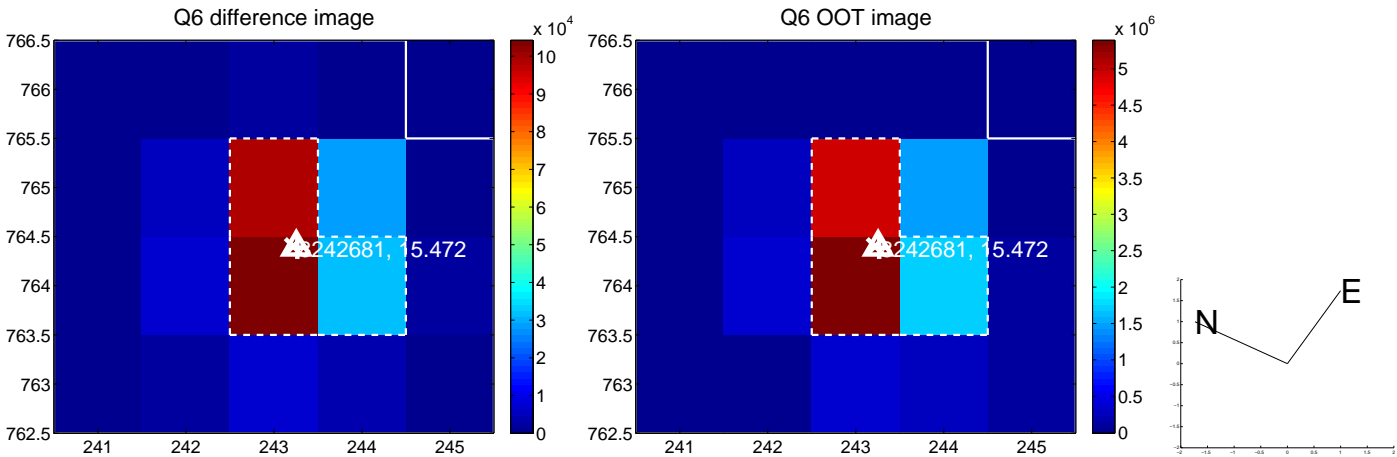
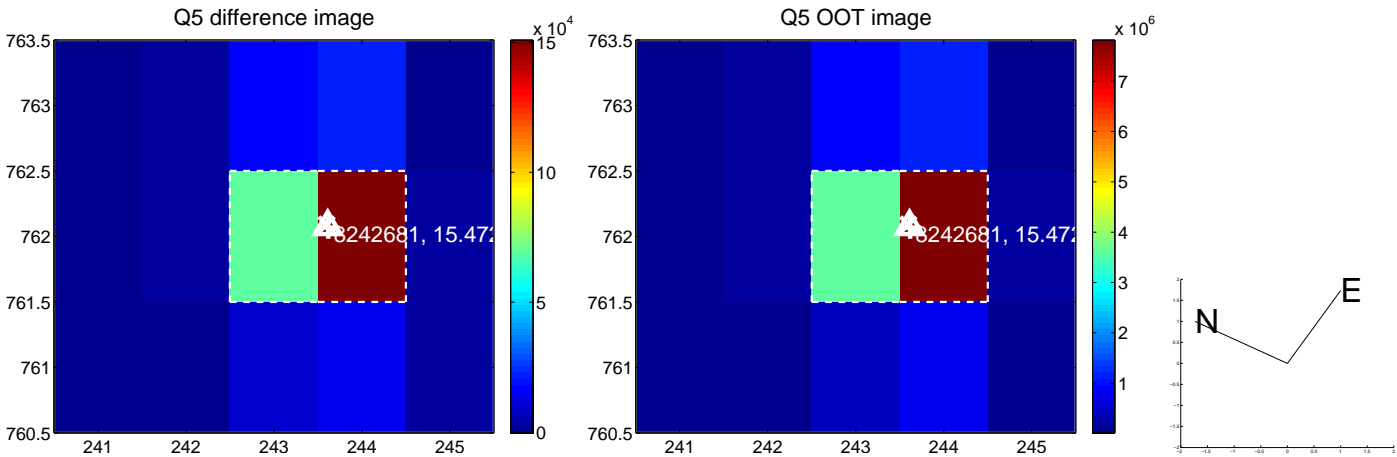


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

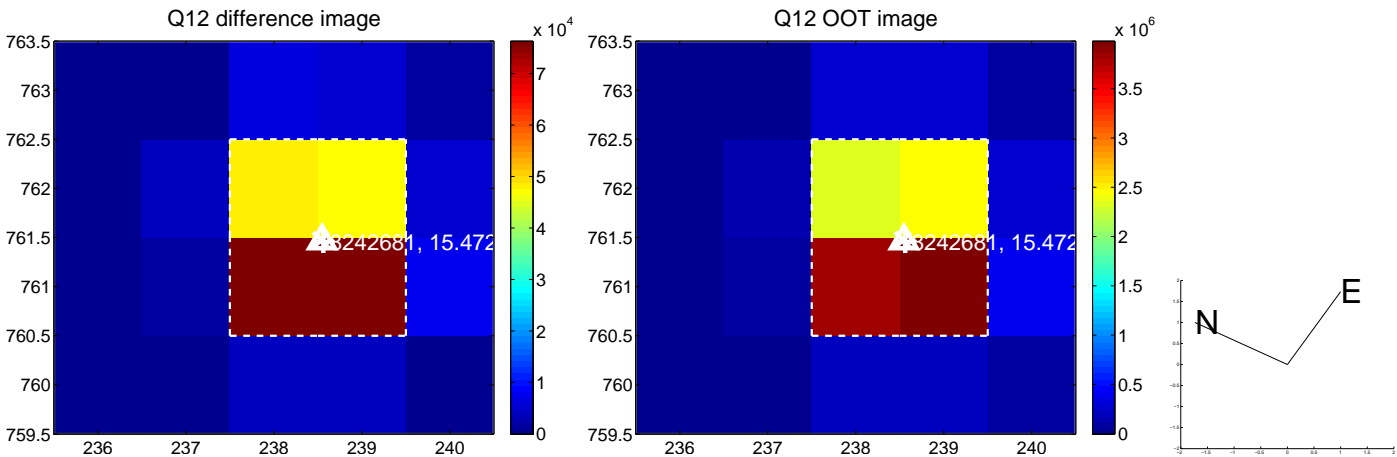
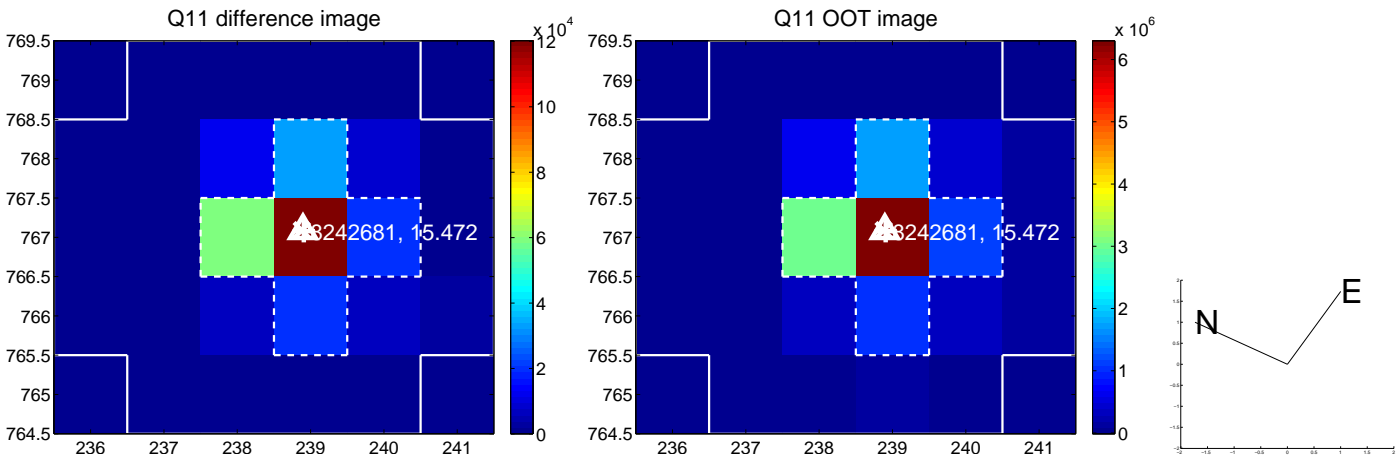
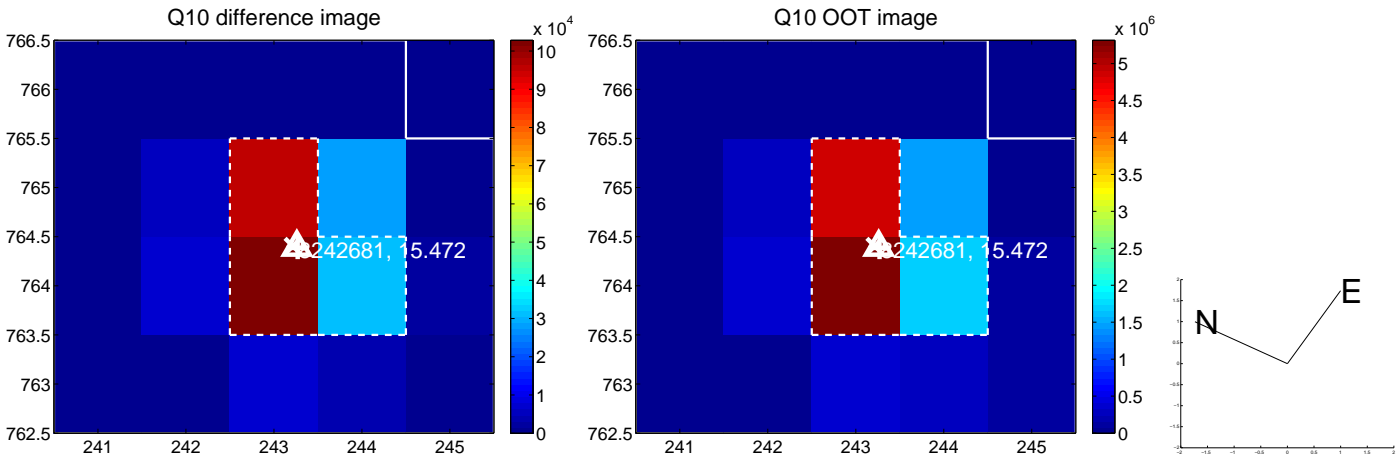
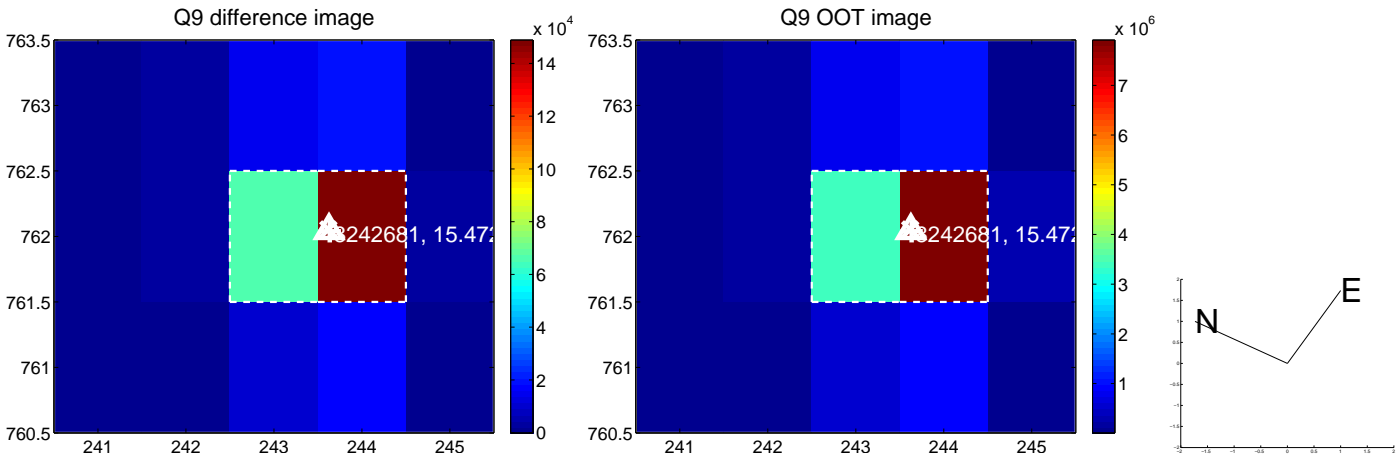
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



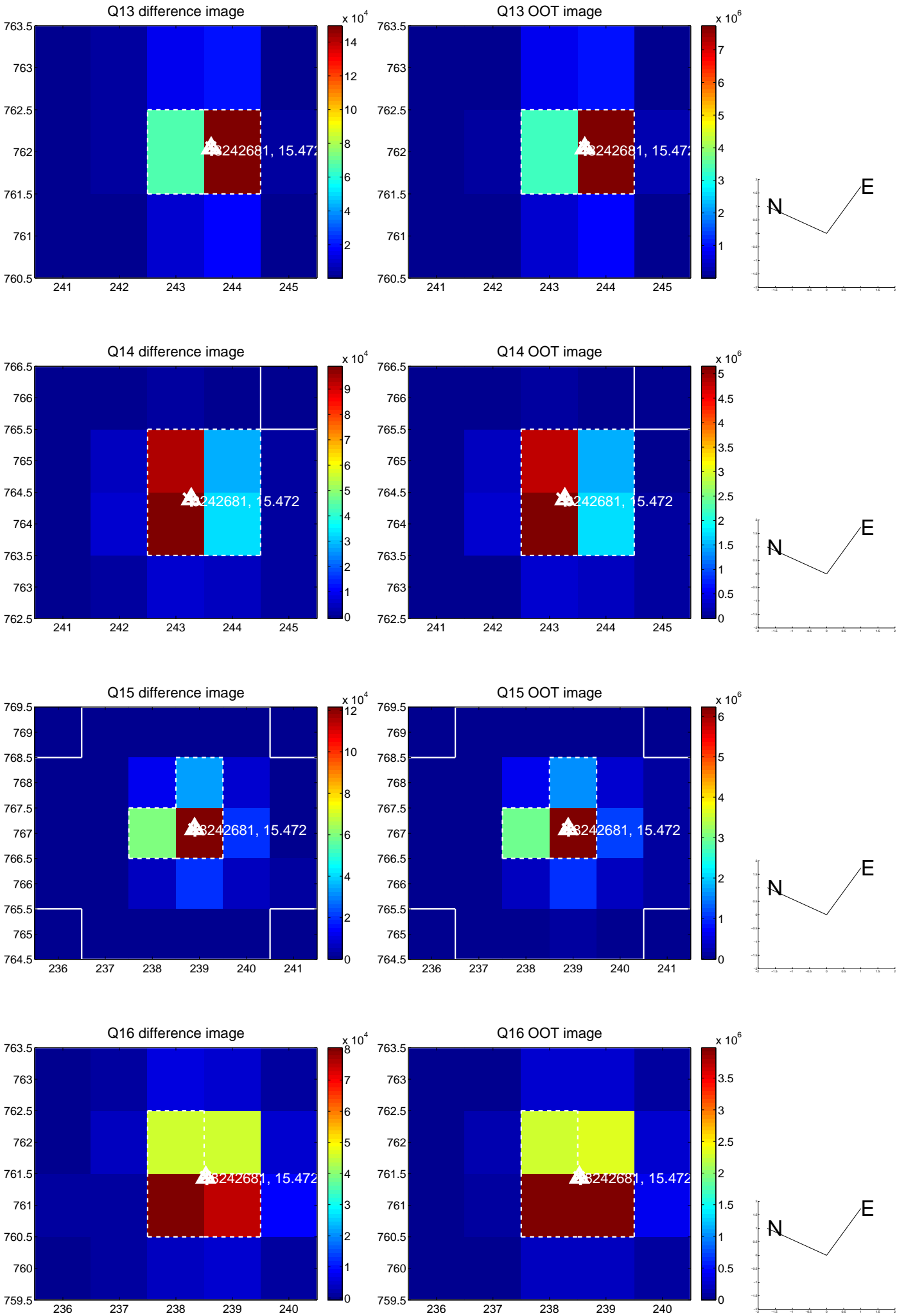
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



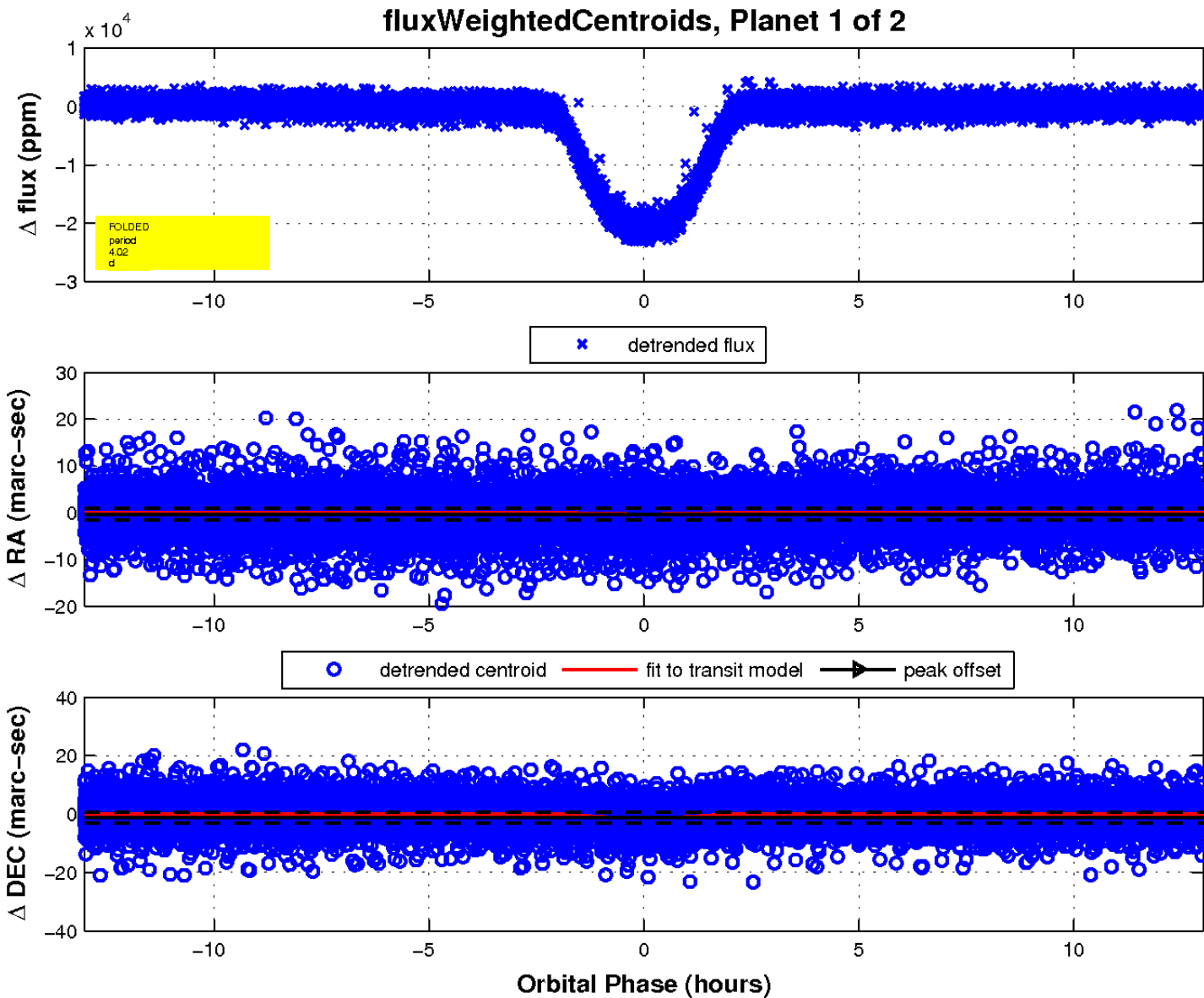
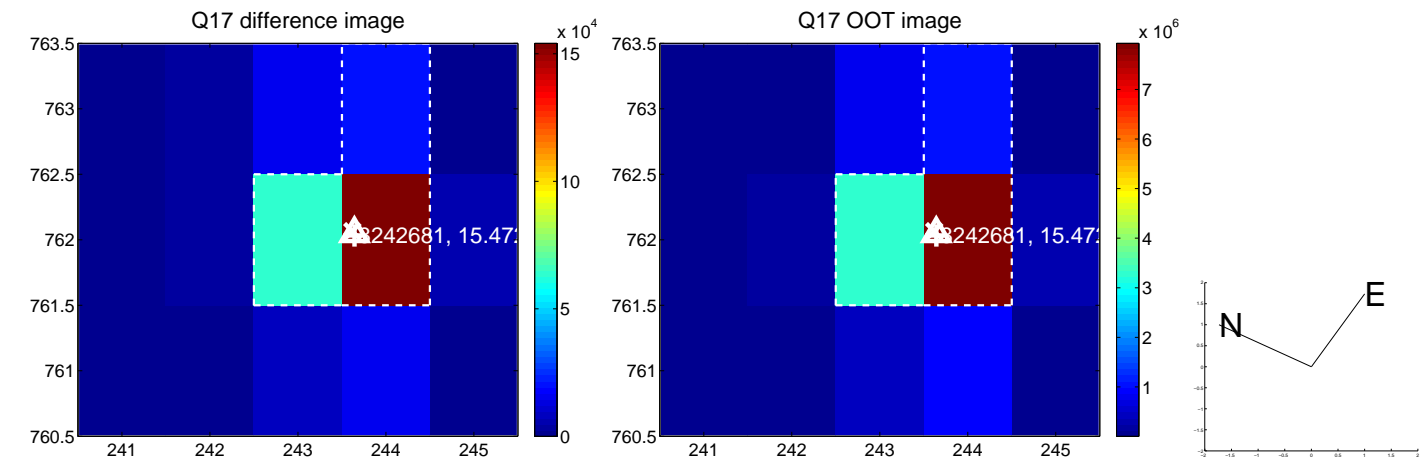
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



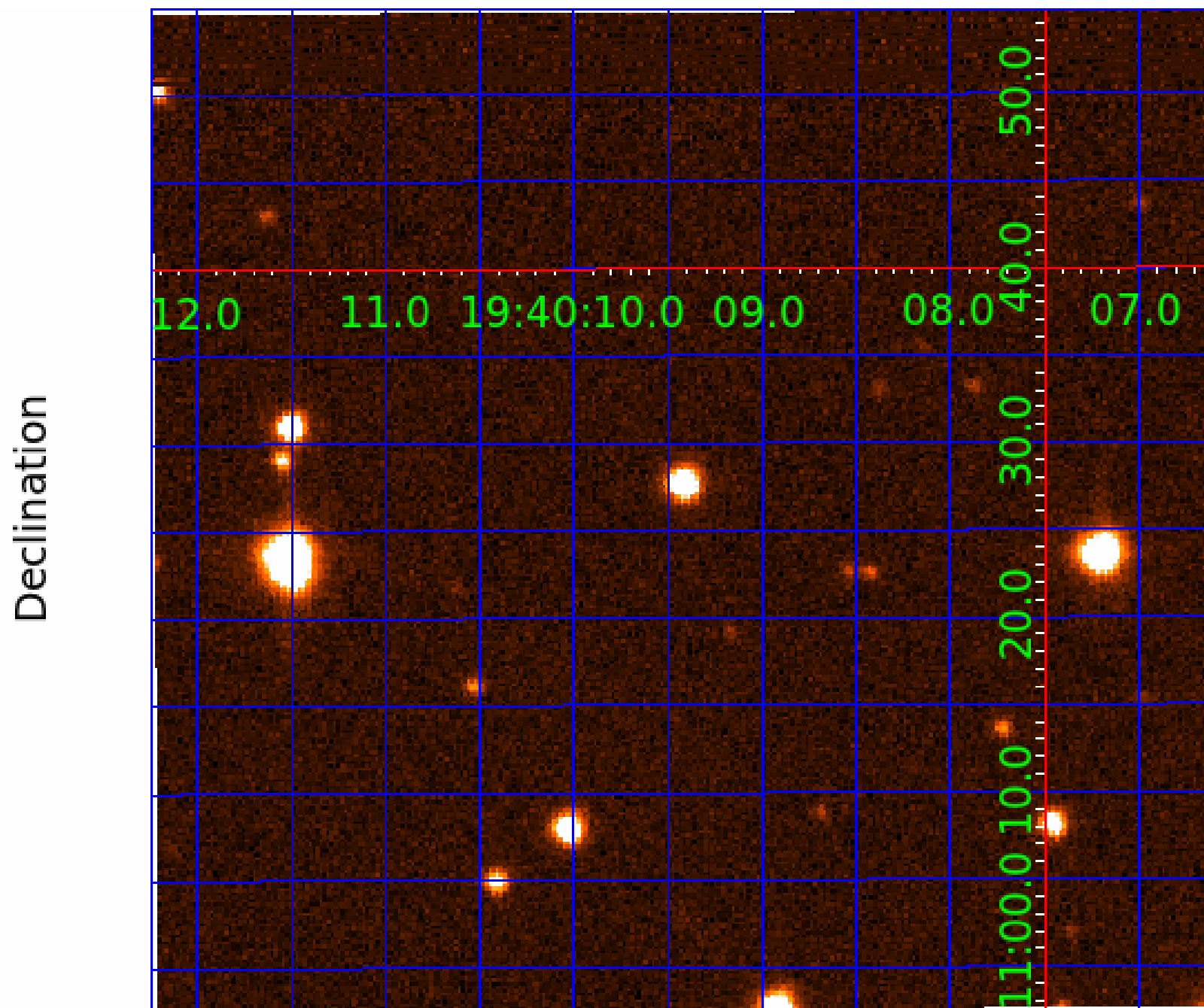
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008242681

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})
008242681-01	OBS	1065.01	4.020630	133.638334	20580.9	4.341	1090.1	1077.2	1.03	6210	16.78	545.68
008242681-02	OBS	No	4.020626	131.628719	944.6	4.342	49.2	54.8	1.03	6210	4.02	545.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008242681-01	OBS	FP	0.01	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
008242681-02	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.

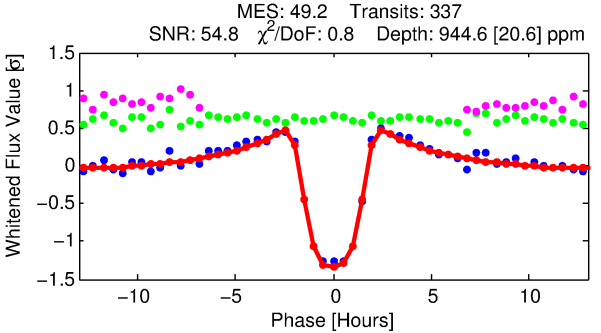
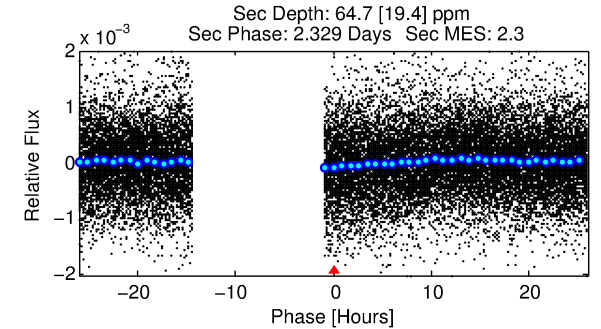
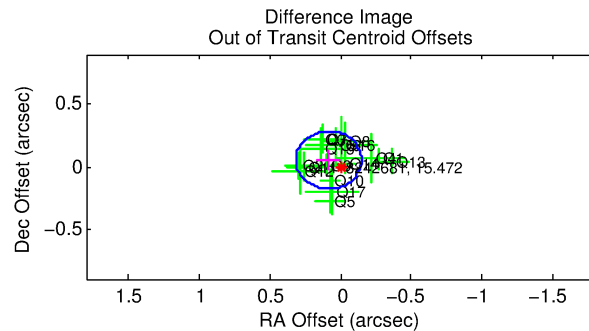
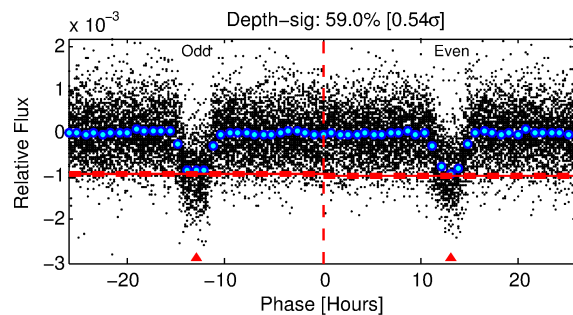
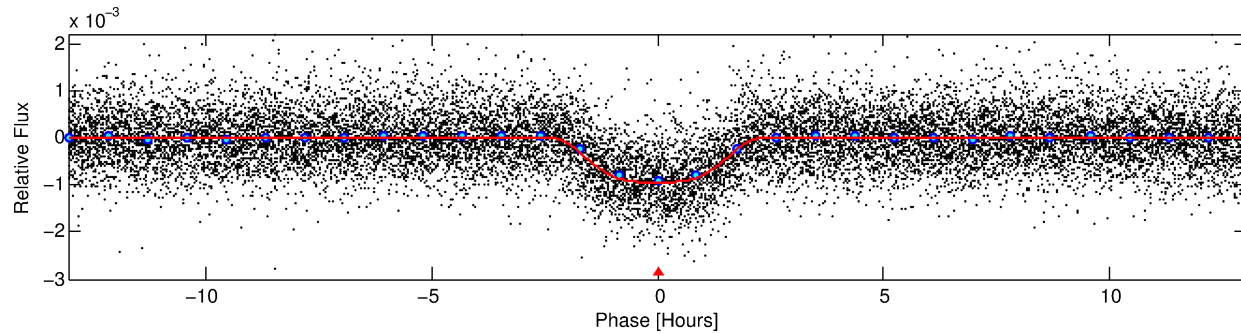
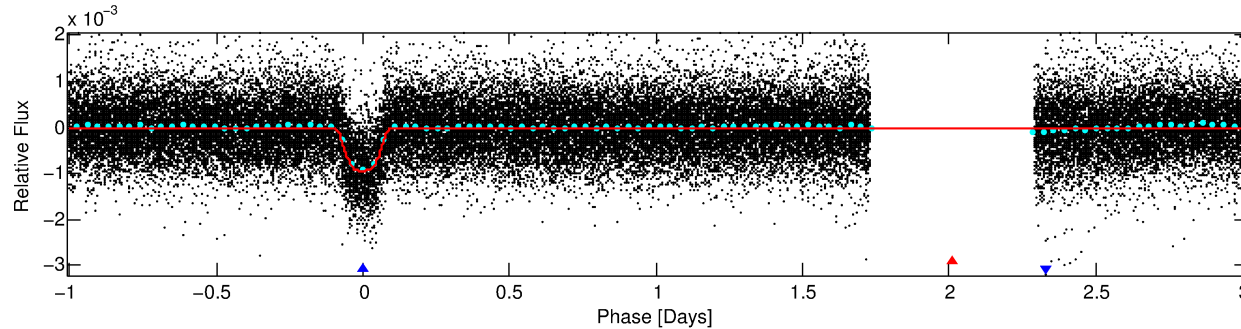
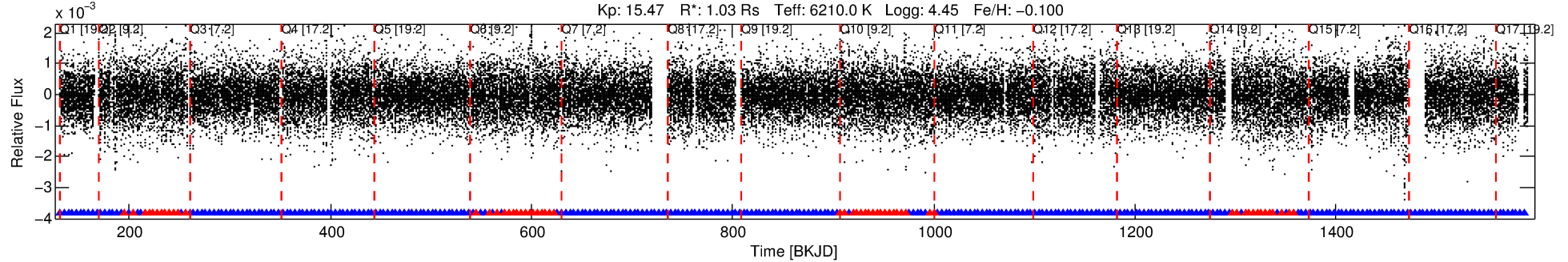
Ephemeris Match Information For 008242681-02

No Significant Match Found

DV One-Page Summary

KIC: 8242681 Candidate: 2 of 2 Period: 4.021 d
KOI: K01065 Corr: No Ephemeris Match

Kp: 15.47 R*: 1.03 Rs Teff: 6210.0 K Logg: 4.45 Fe/H: -0.100



DV Fit Results:

Period = 4.02063 [0.00001] d
Epoch = 131.6287 [0.0013] BKJD
Rp/R* = 0.0356 [0.0006]
a/R* = 2.99 [0.10]
b = 0.96 [0.00]
Seff = 545.68 [242.07]
Teq = 1232 [137] K
Rp = 4.02 [1.36] Re
a = 0.0510 [0.0145] AU
Ag = 5.75 [2.93] [1.62σ]
Teffp = 2950 [254] K [5.95σ]

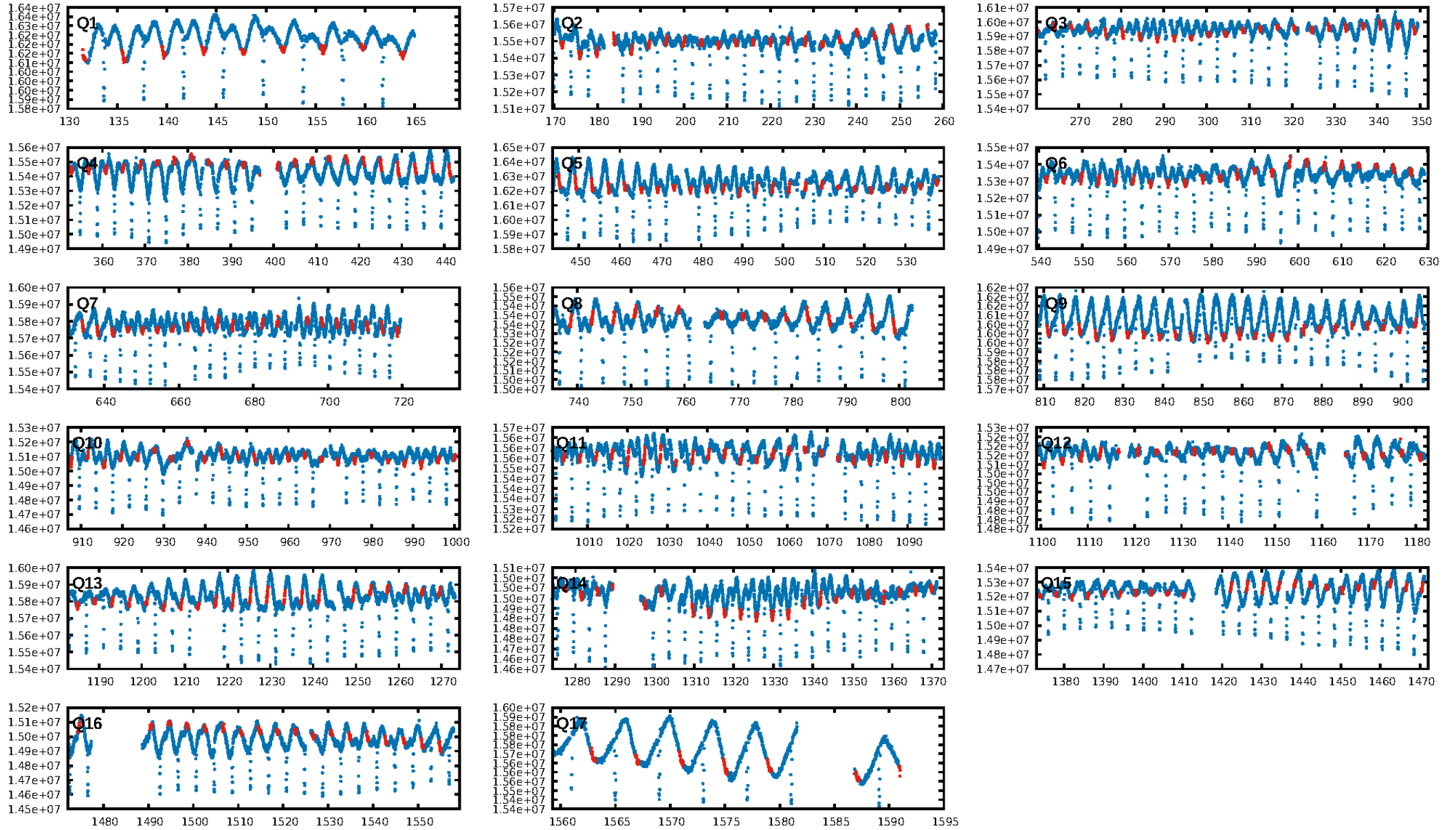
DV Diagnostic Results:

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: 0.82 [263/322]
GhostDiagnostic-chr: 2.375
Centroid-sig: 2.0%
Centroid-so: 0.171 arcsec [0.73σ]
OotOffset-rm: 0.099 arcsec [1.29σ]
KicOffset-rm: 0.117 arcsec [1.45σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

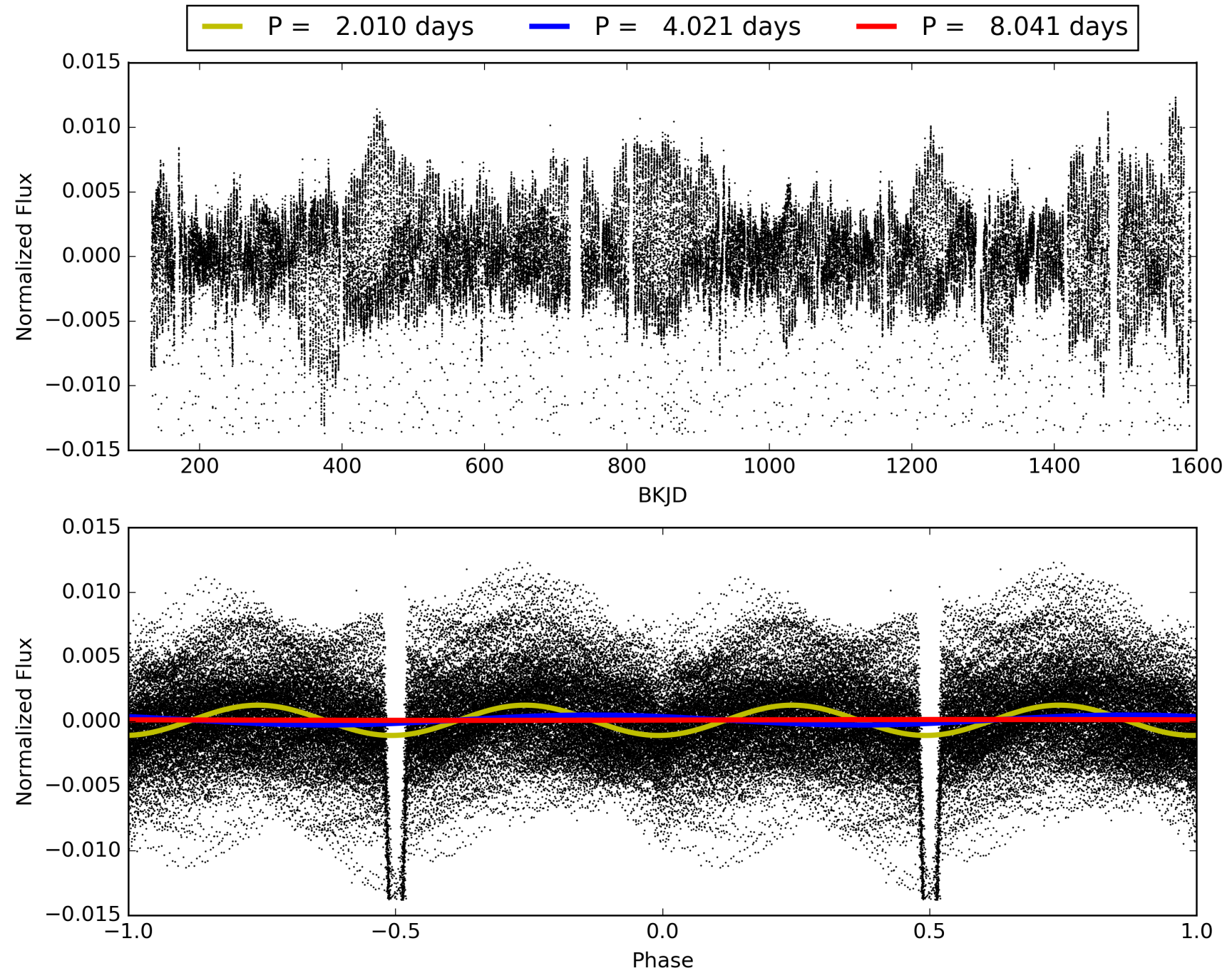
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:09:29 Z

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

TCE 008242681-02, PDC Light Curves

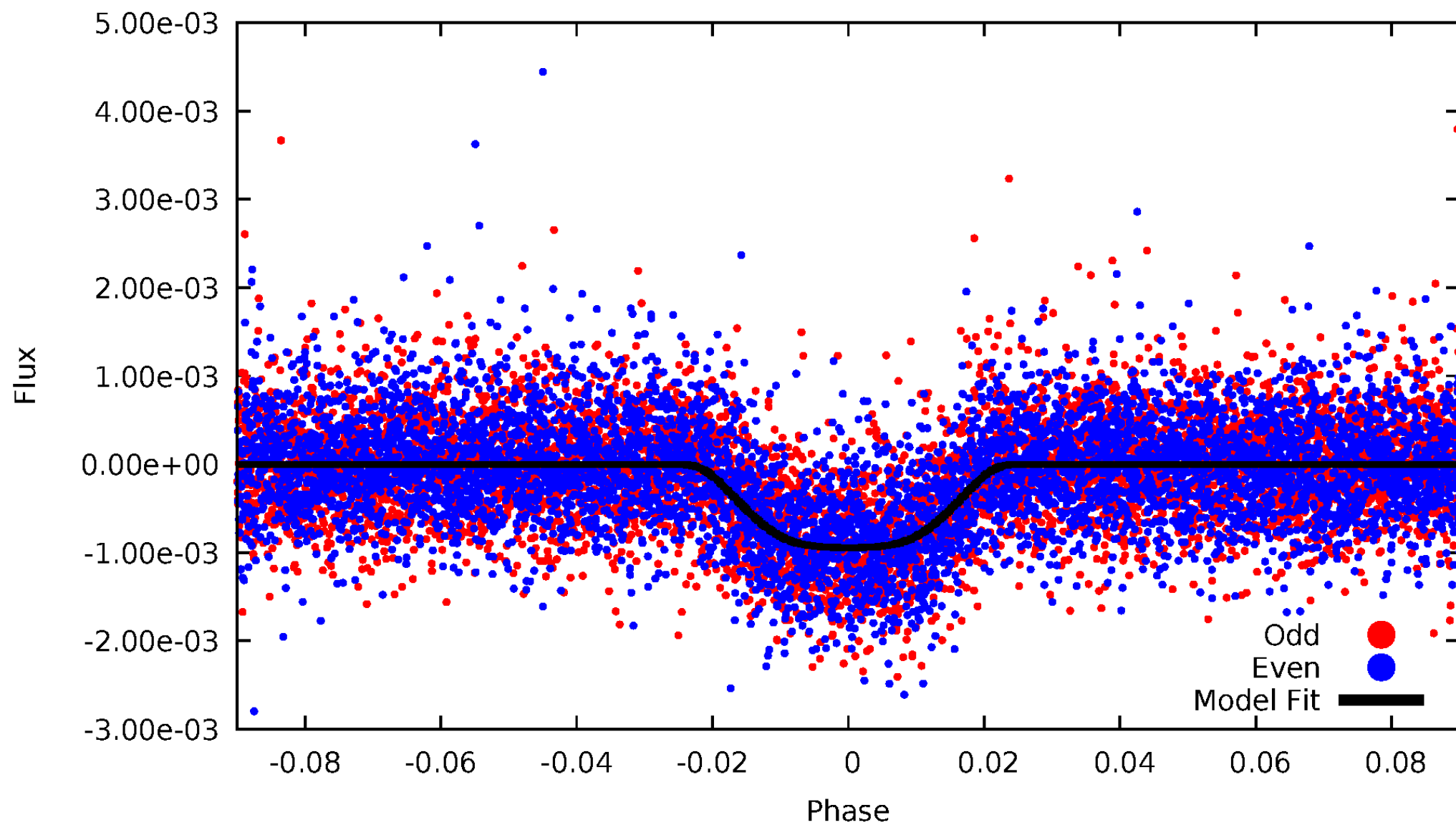


TCE 008242681-02



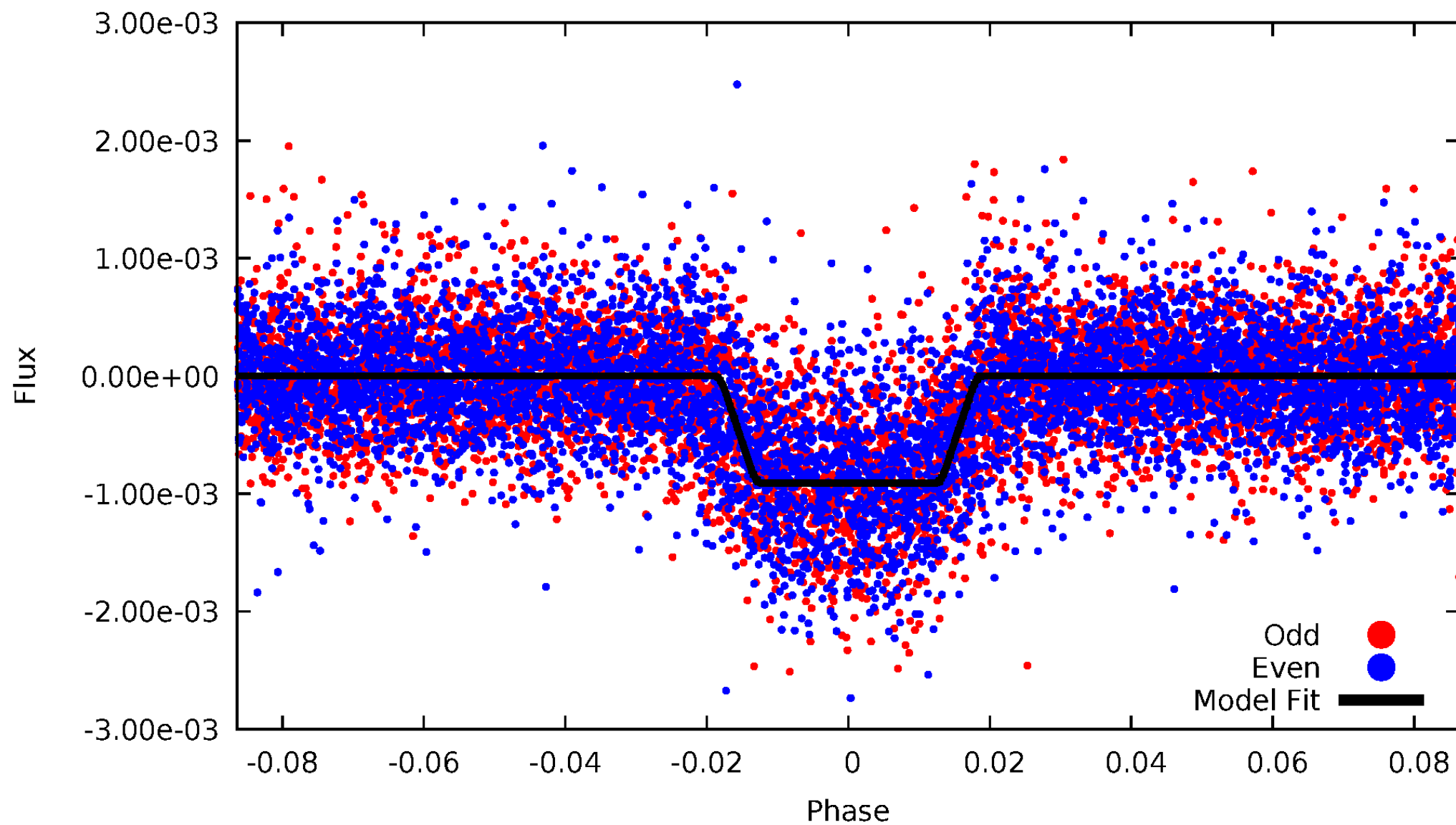
DV Odd/Even

TCE 008242681-02



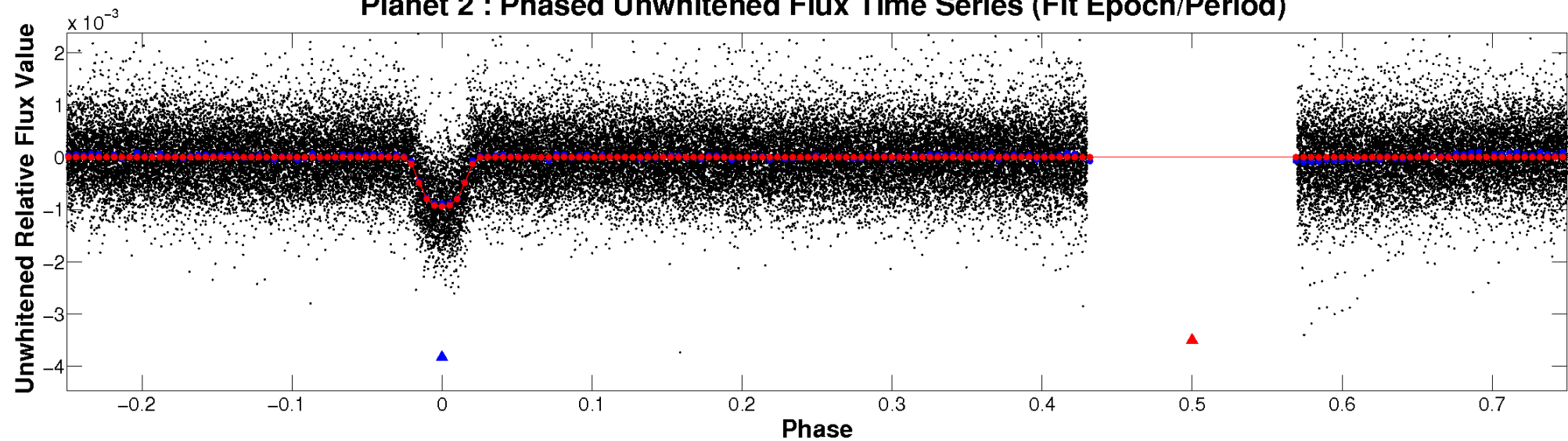
ALT Odd/Even

TCE 008242681-02

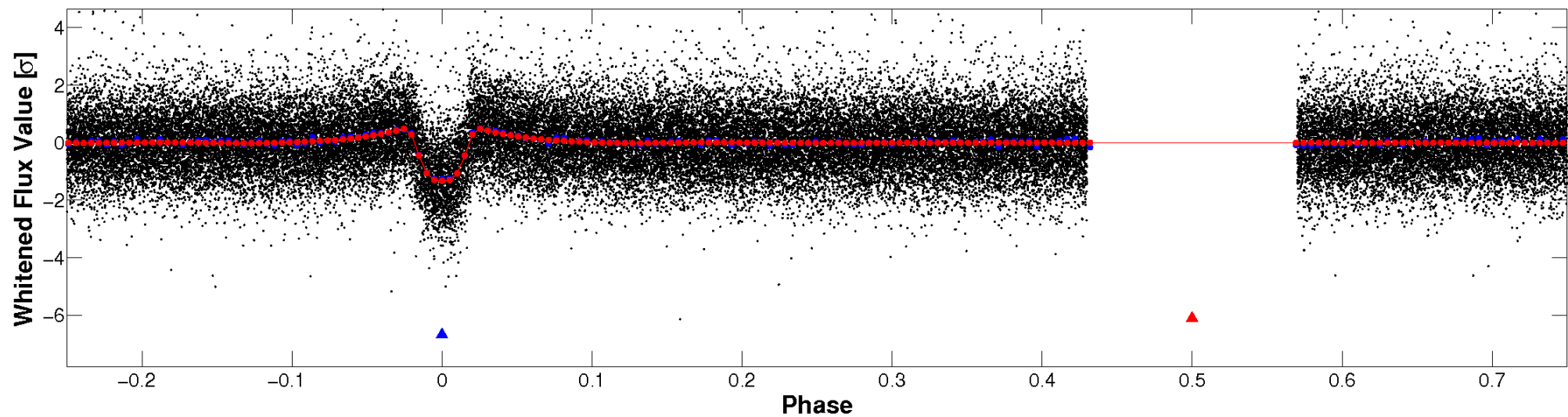


Non-Whitened Vs. Whitened Light Curve

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

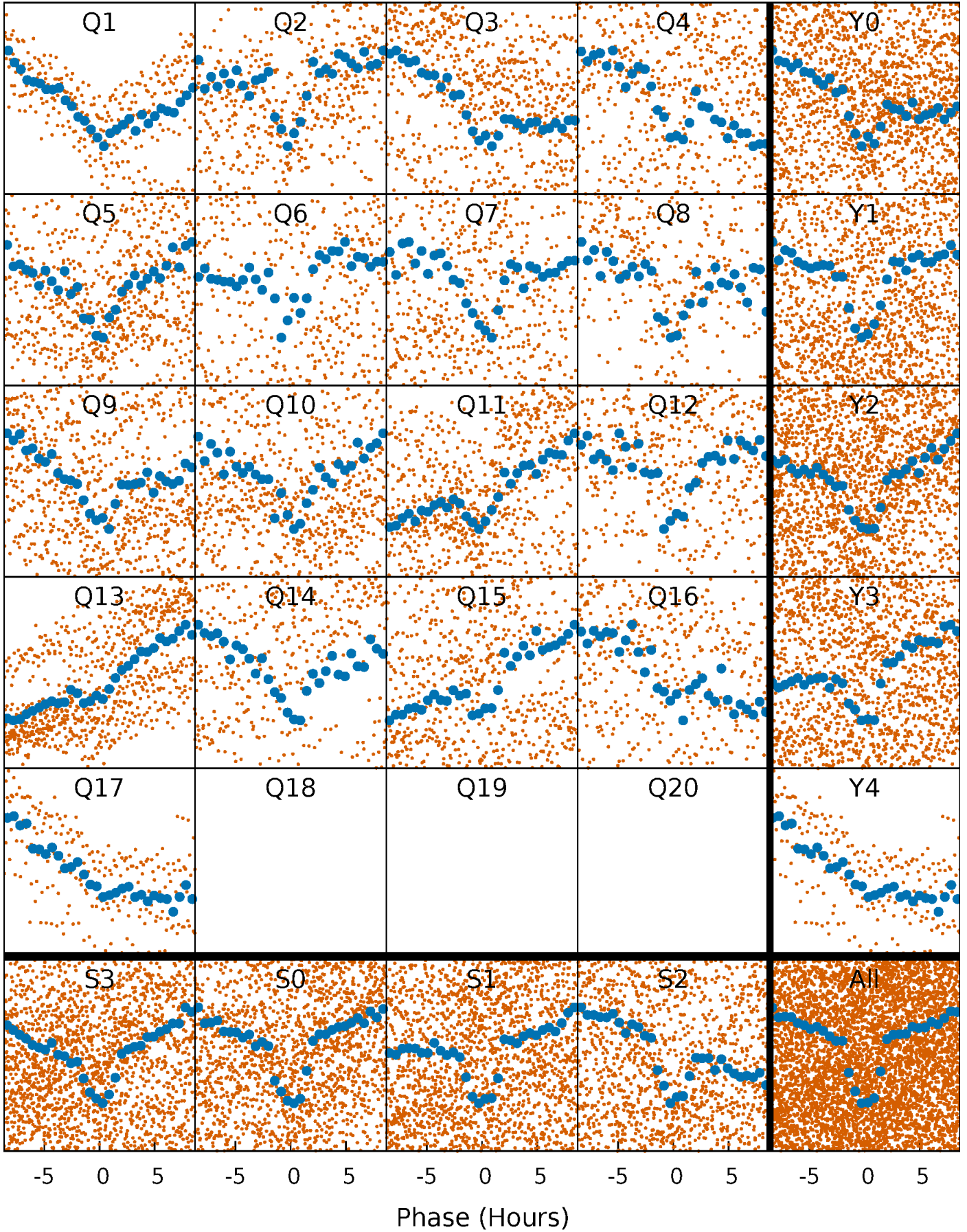


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



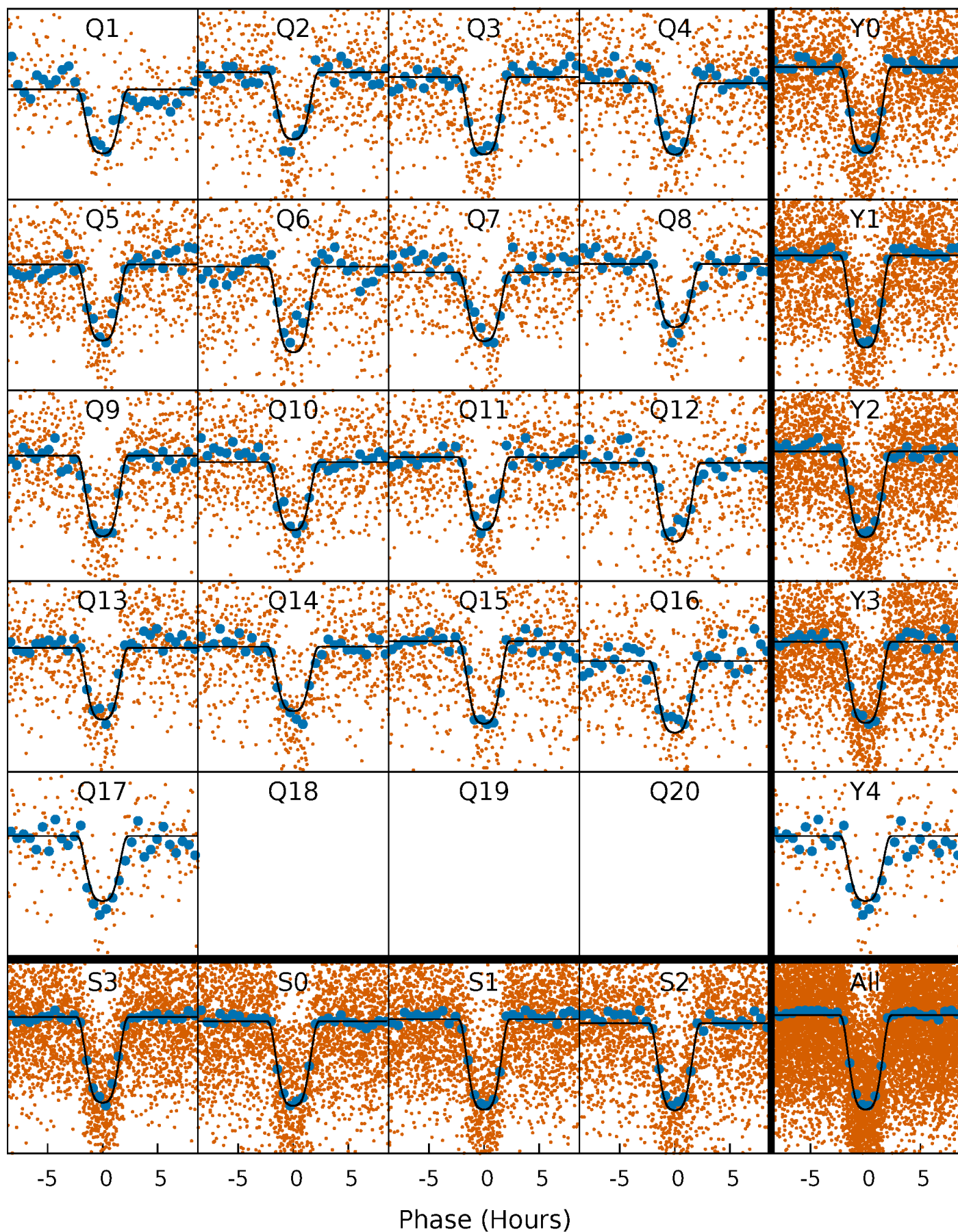
PDC Quarter-Phased Transit Curves

TCE 008242681-02 P= 4.020626 Days $T_0=131.628719$ (BKJD)



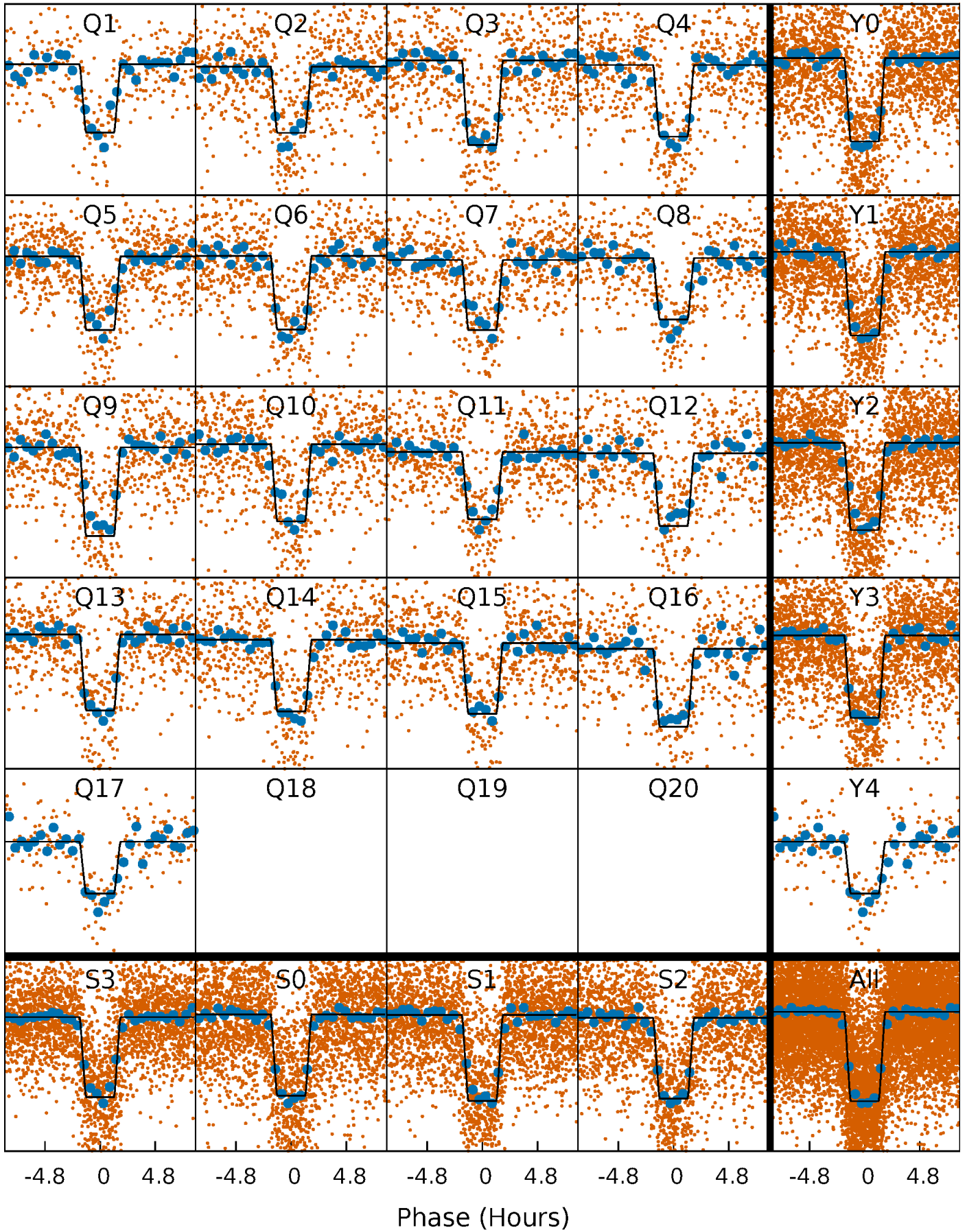
DV Quarter-Phased Transit Curves

TCE 008242681-02 P= 4.020626 Days $T_0=131.628719$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

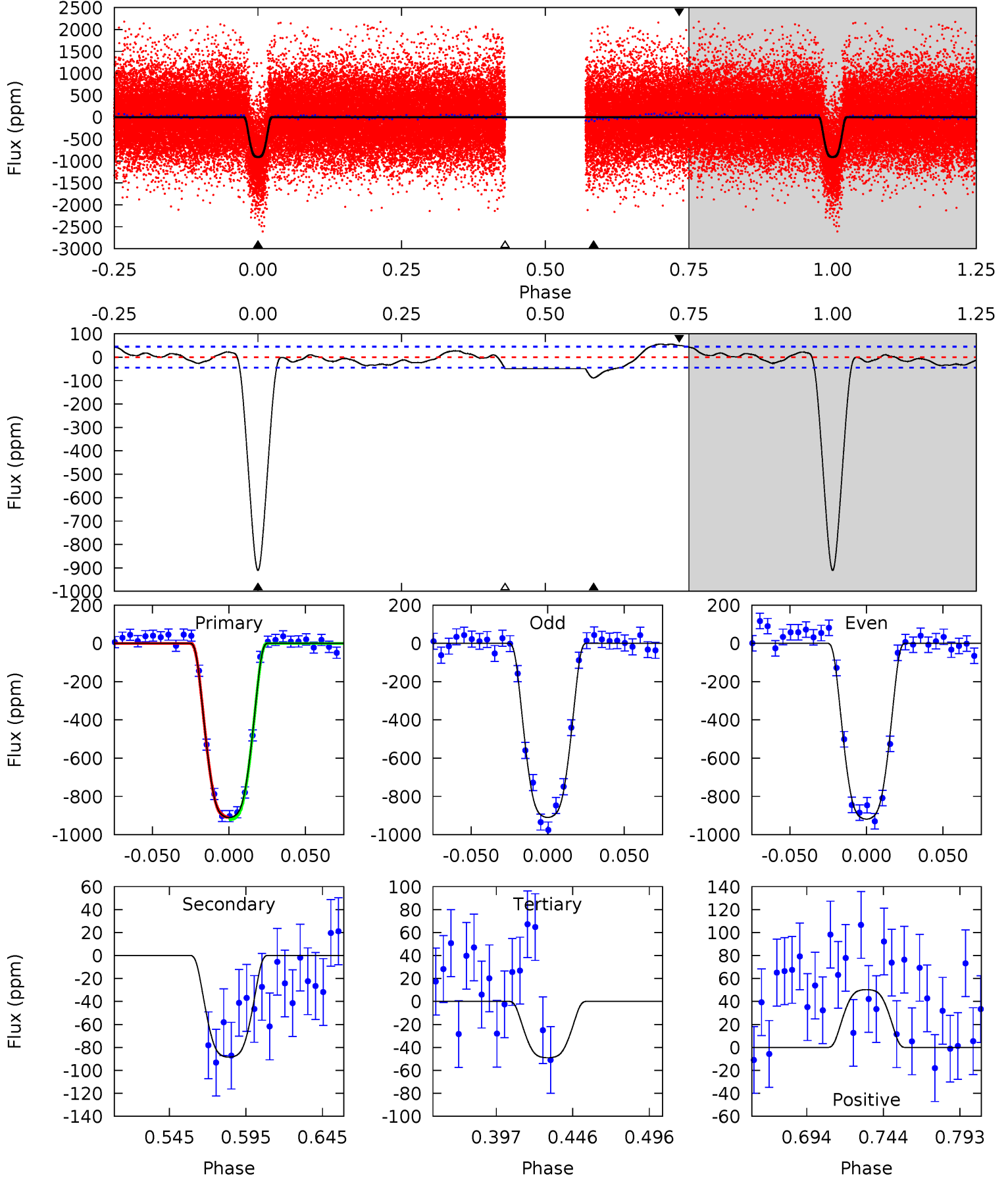
TCE 008242681-02 P= 4.020619 Days $T_0=131.629970$ (BKJD)



DV Model-Shift Uniqueness Test

008242681-02, P = 4.020626 Days, E = 127.608093 Days

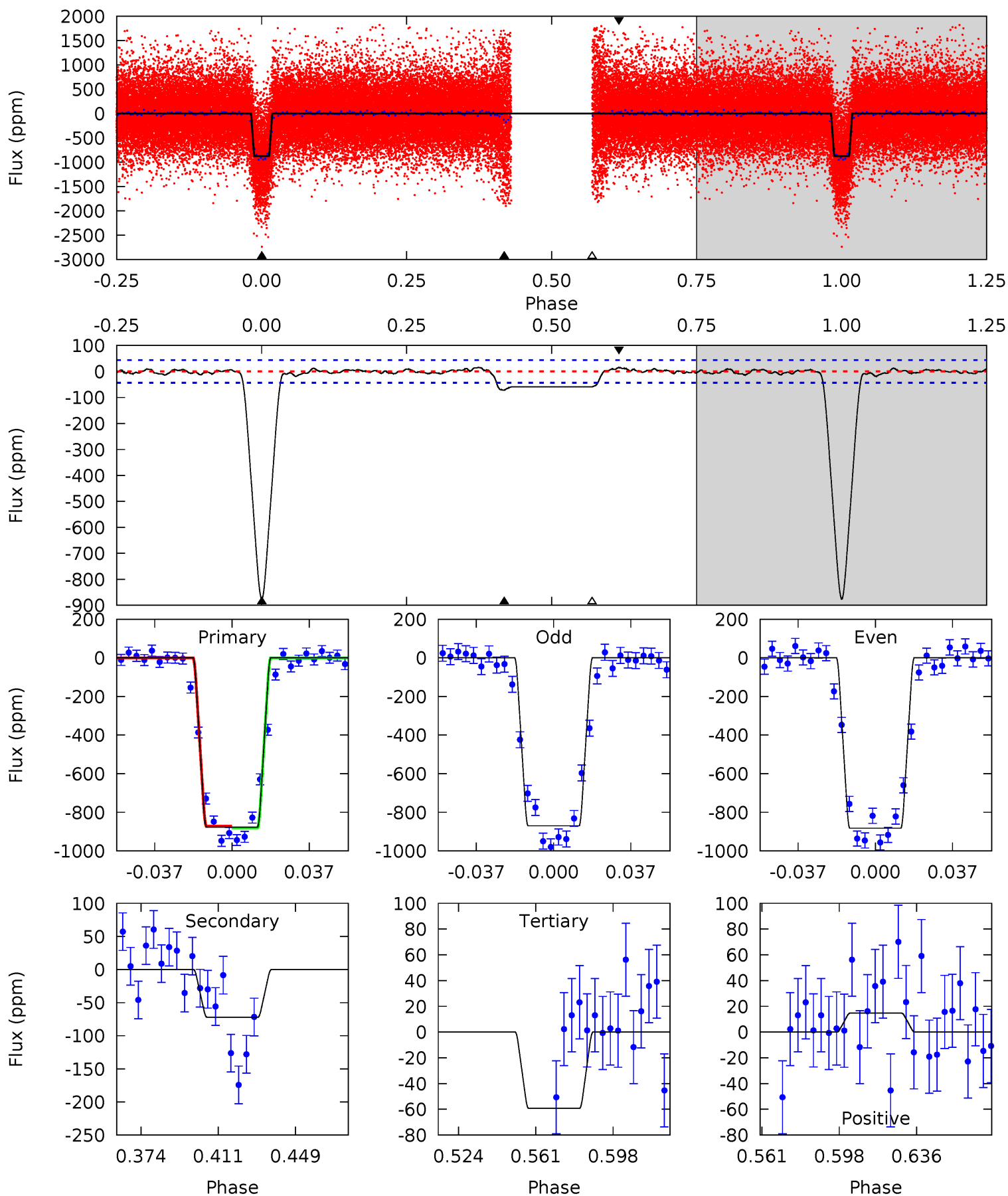
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
95.6	9.30	5.15	5.29	4.71	1.96	2.56	90.5	90.3	4.15	4.01	0.47	0.93	0.06	0.67



Alt Model-Shift Uniqueness Test

008242681-02, P = 4.020619 Days, E = 127.609351 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
95.9	7.89	6.48	1.62	4.77	2.08	0.95	89.4	94.3	1.40	6.26	0.68	1.01	0.02	0.48



Stellar Parameters For KIC 008242681

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6210^{+172}_{-259}	$4.450^{+0.056}_{-0.224}$	$-0.100^{+0.250}_{-0.300}$	$1.033^{+0.349}_{-0.116}$	$1.093^{+0.153}_{-0.153}$	$1.397^{+0.411}_{-0.750}$
	+3%/-4%	+1%/-5%	+250%/-300%	+34%/-11%	+14%/-14%	+29%/-54%
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 008242681-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-89 ± 10	$4.11^{+0.74}_{-0.35}$	1754^{+131}_{-95}	3590^{+101}_{-113}	$7.105^{+1.591}_{-1.821}$
Alt.	-72 ± 9	$3.47^{+0.68}_{-0.27}$	1763^{+137}_{-100}	3679^{+113}_{-125}	$7.989^{+2.025}_{-2.022}$

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

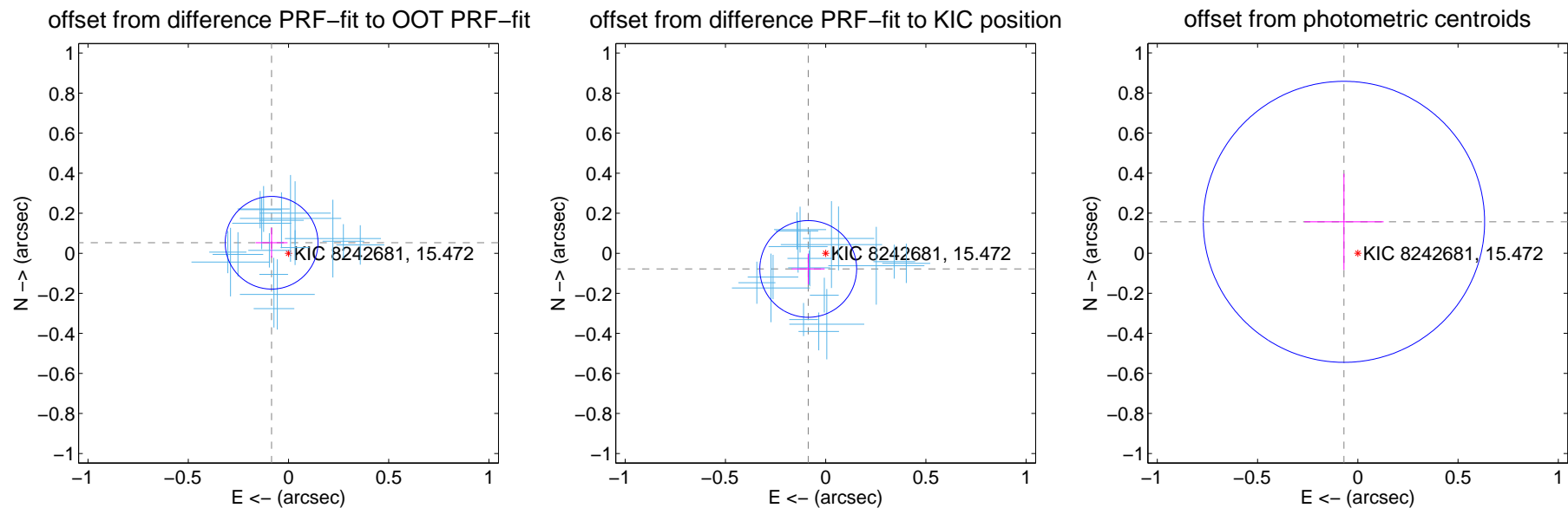
DV Centroid Data

Supplemental centroid analysis for 008242681-02. Kepler magnitude: 15.47. Transit SNR 54.76

There are 17 quarters with good PRF difference image offsets

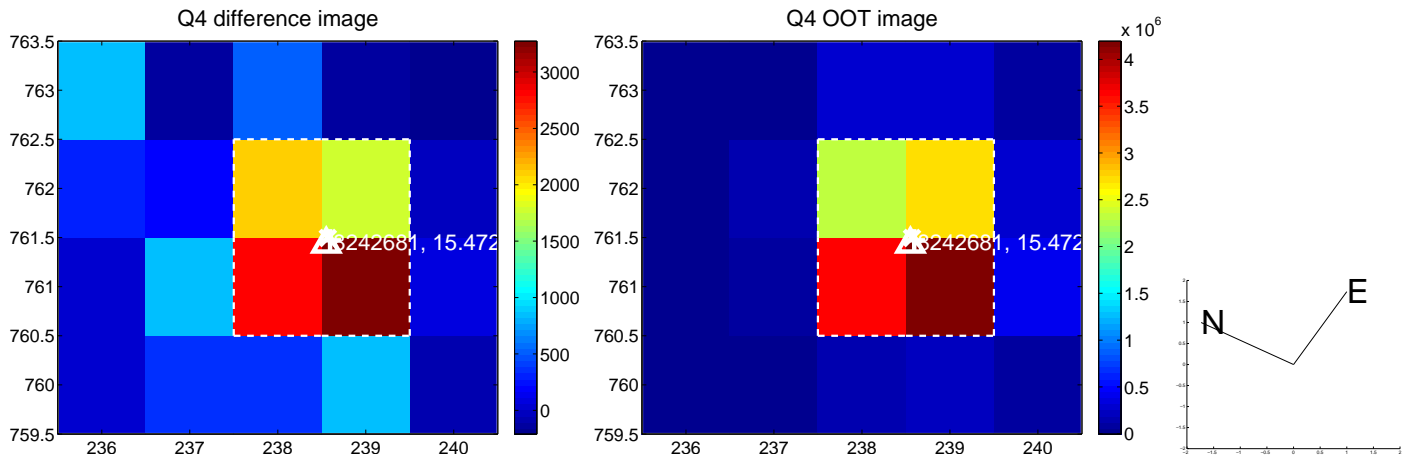
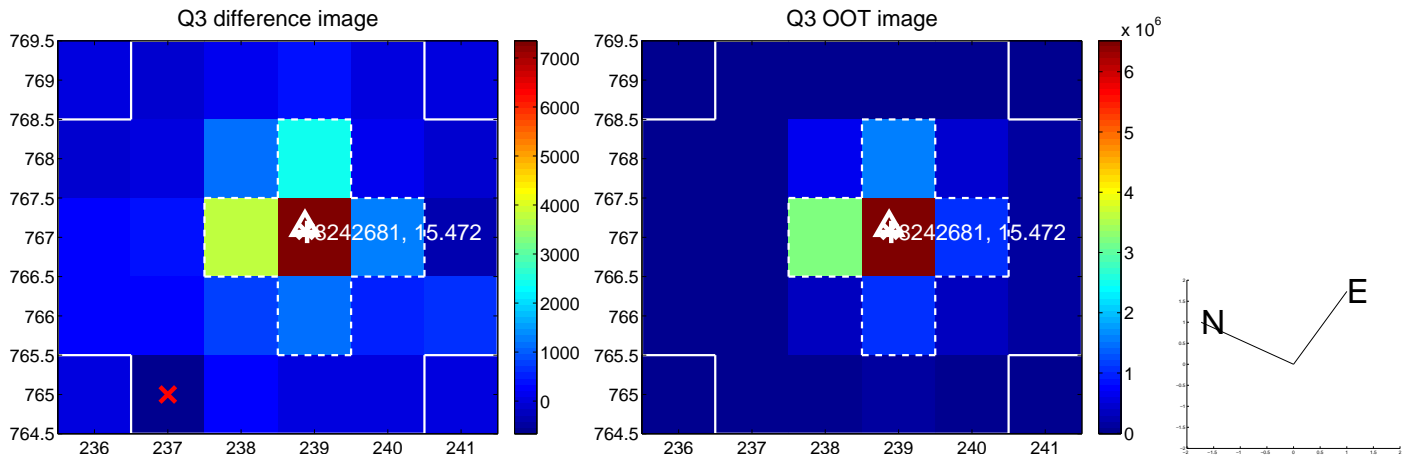
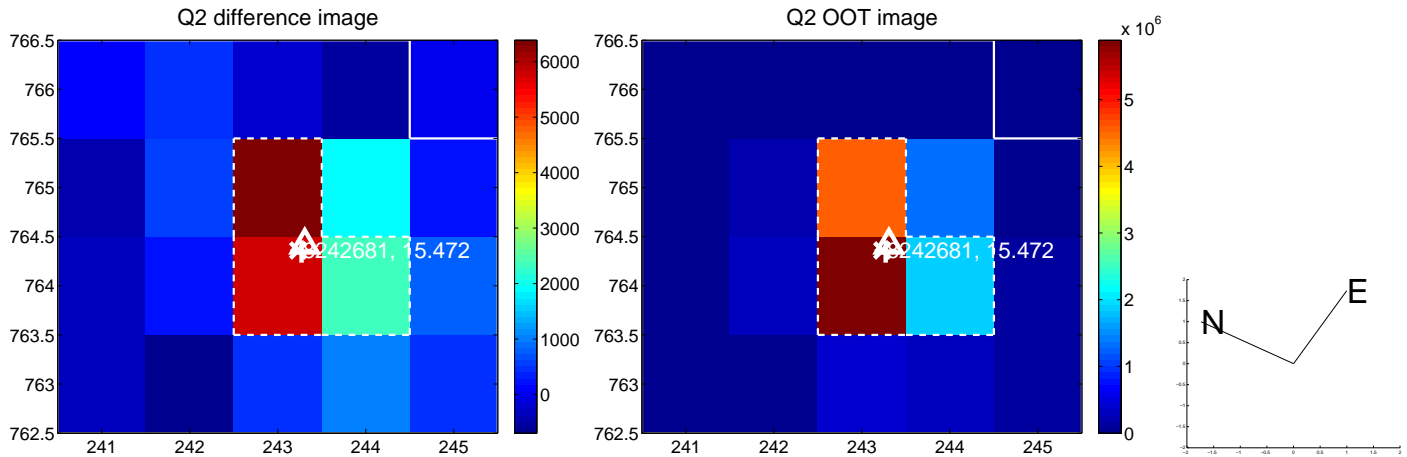
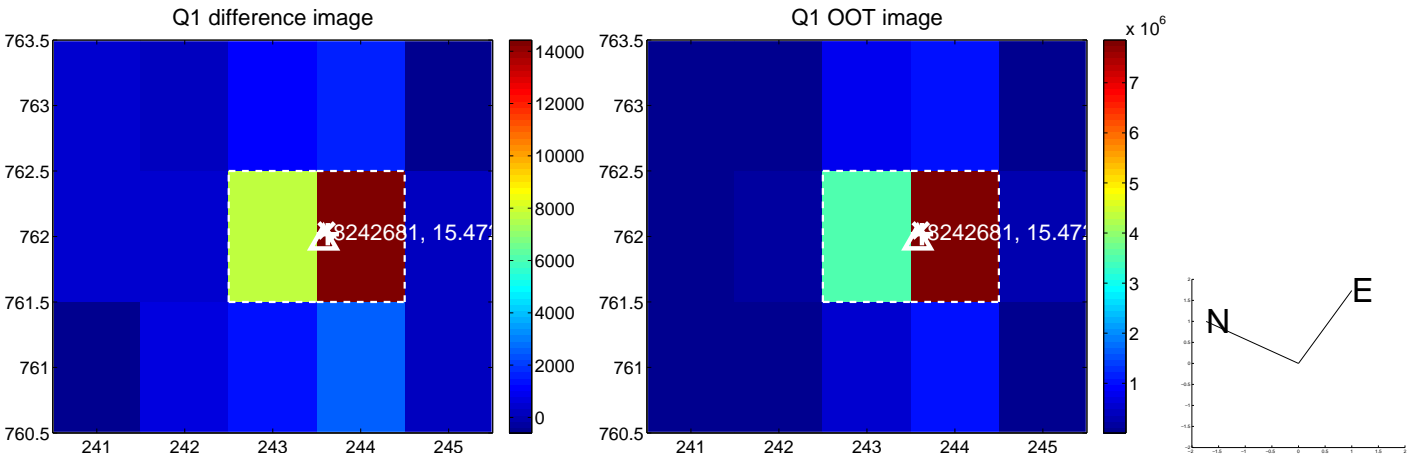
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.099 ± 0.077	1.29	0.084 ± 0.079	0.053 ± 0.074
PRF-fit source offset from KIC position	0.117 ± 0.081	1.45	0.087 ± 0.082	-0.078 ± 0.077
photometric centroid source offset	0.17 ± 0.23	0.73	0.07 ± 0.20	0.16 ± 0.24

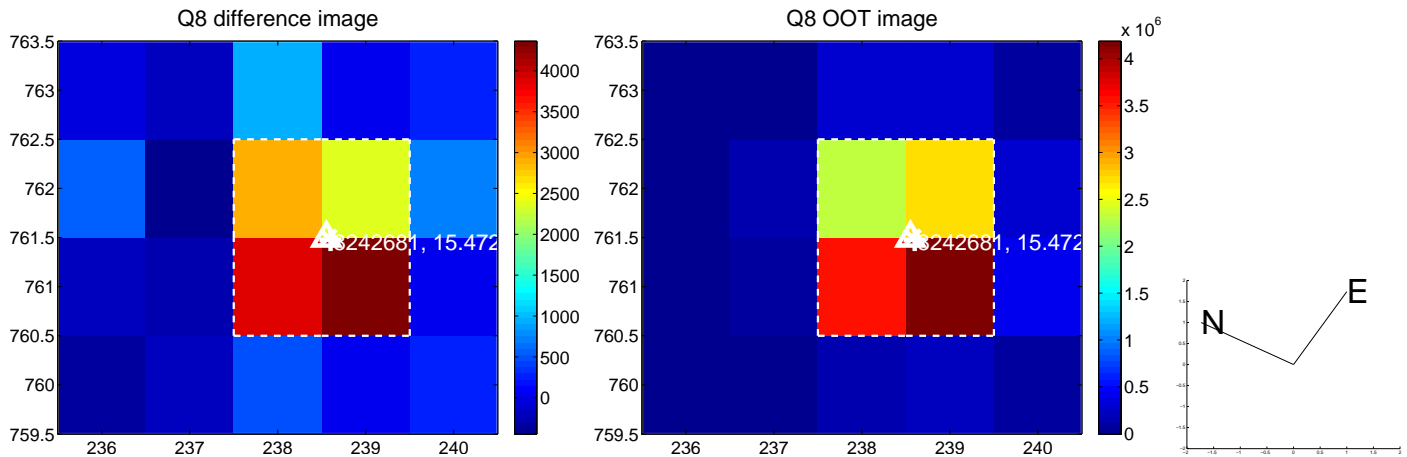
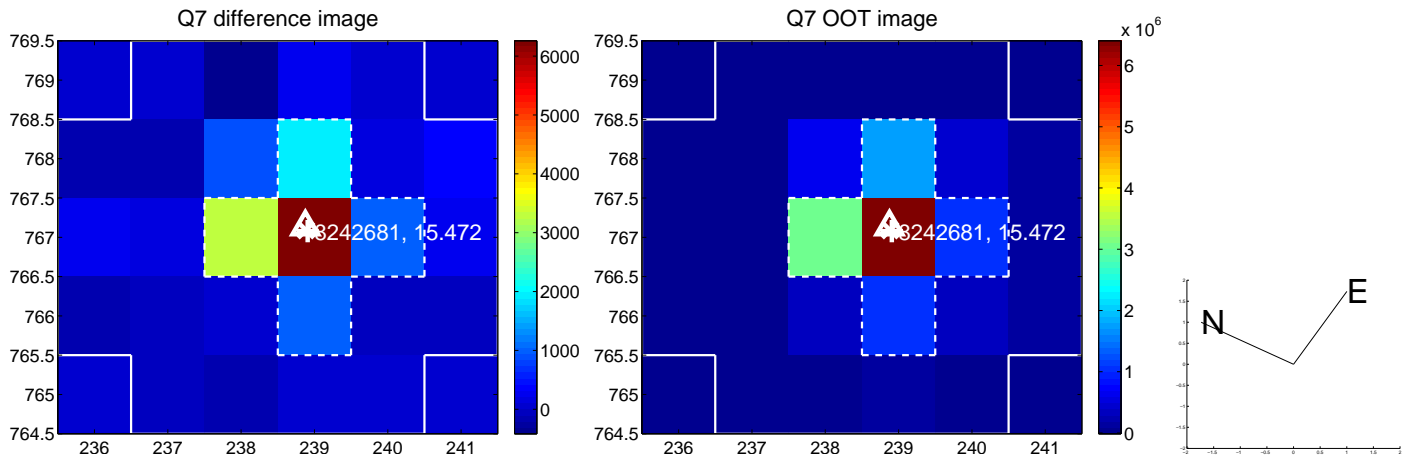
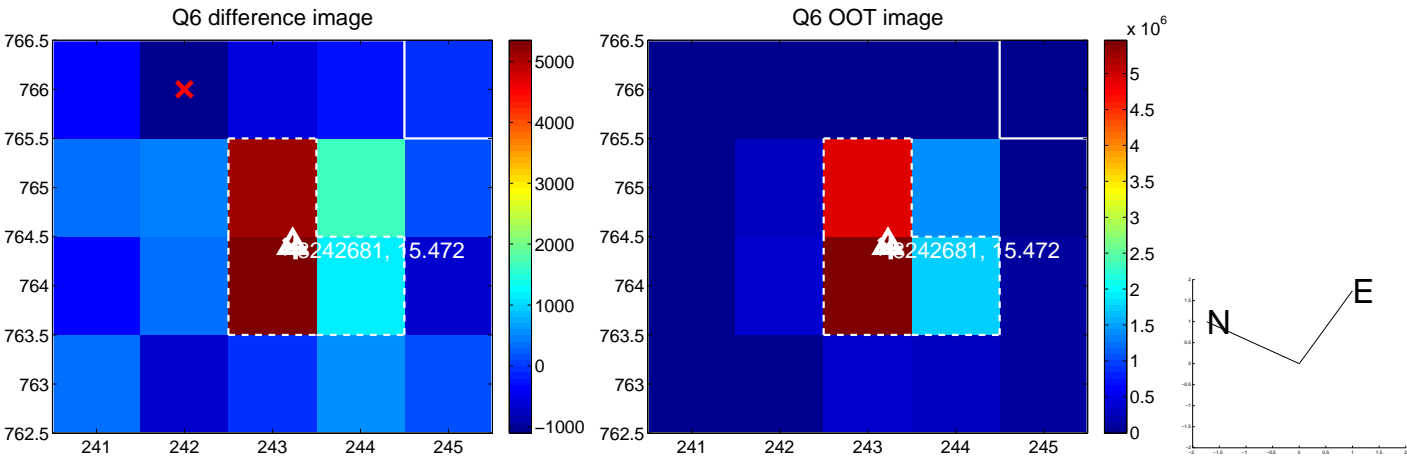
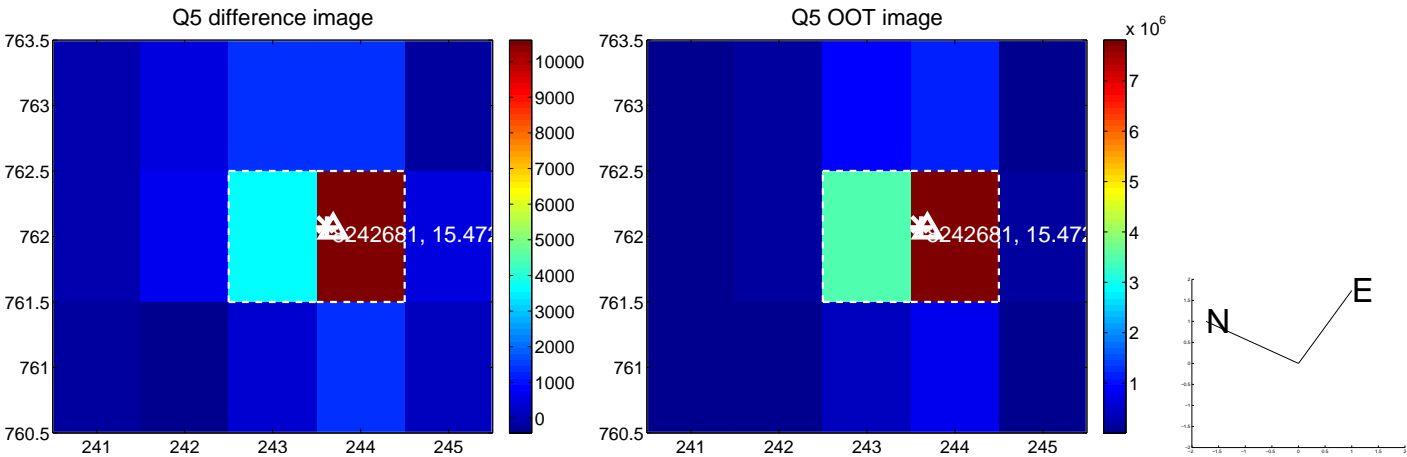


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

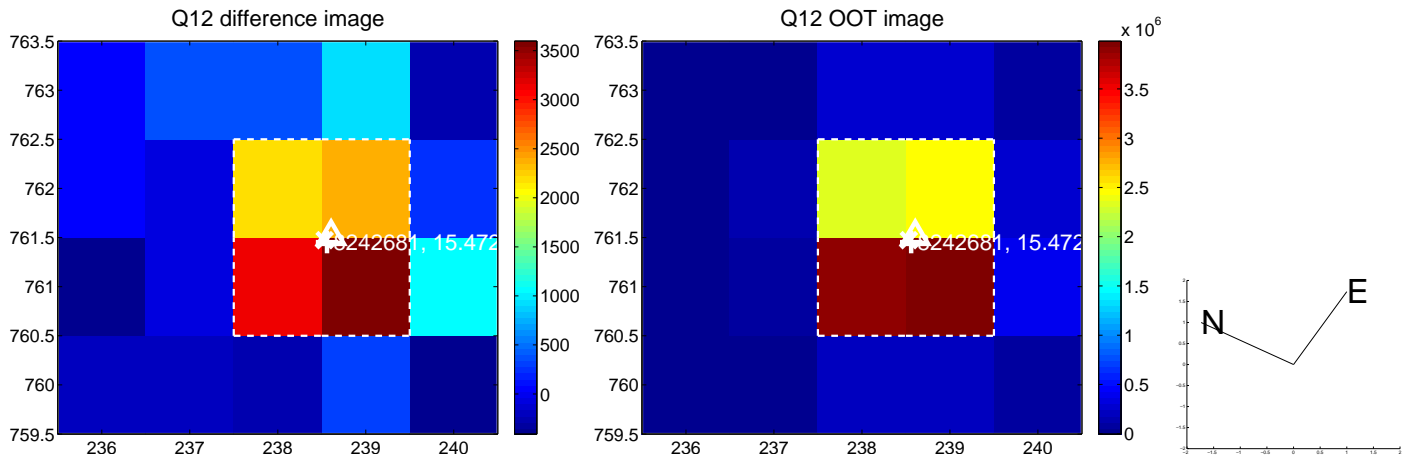
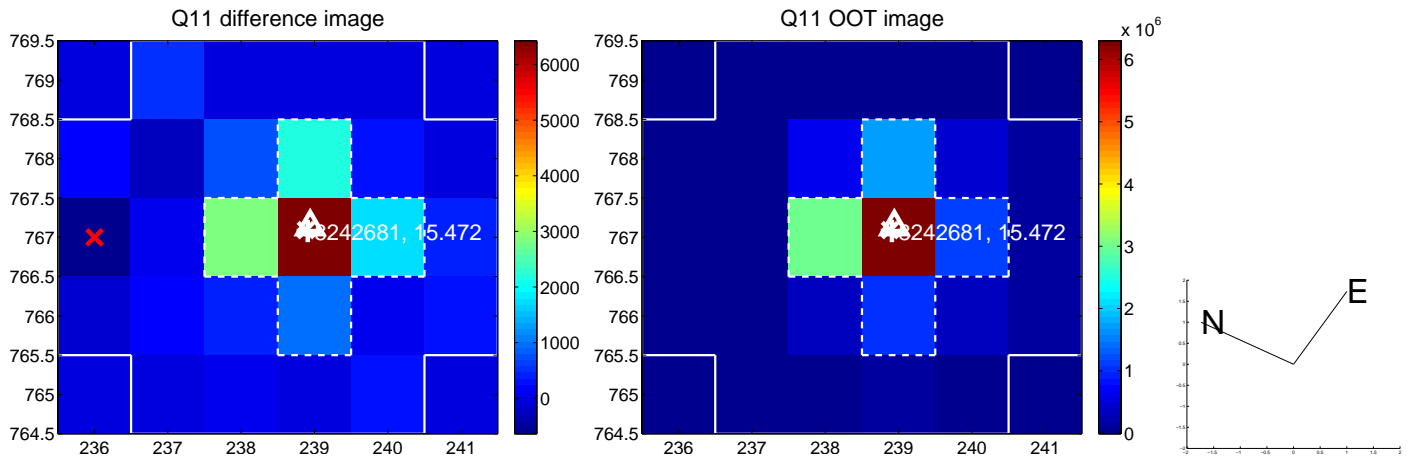
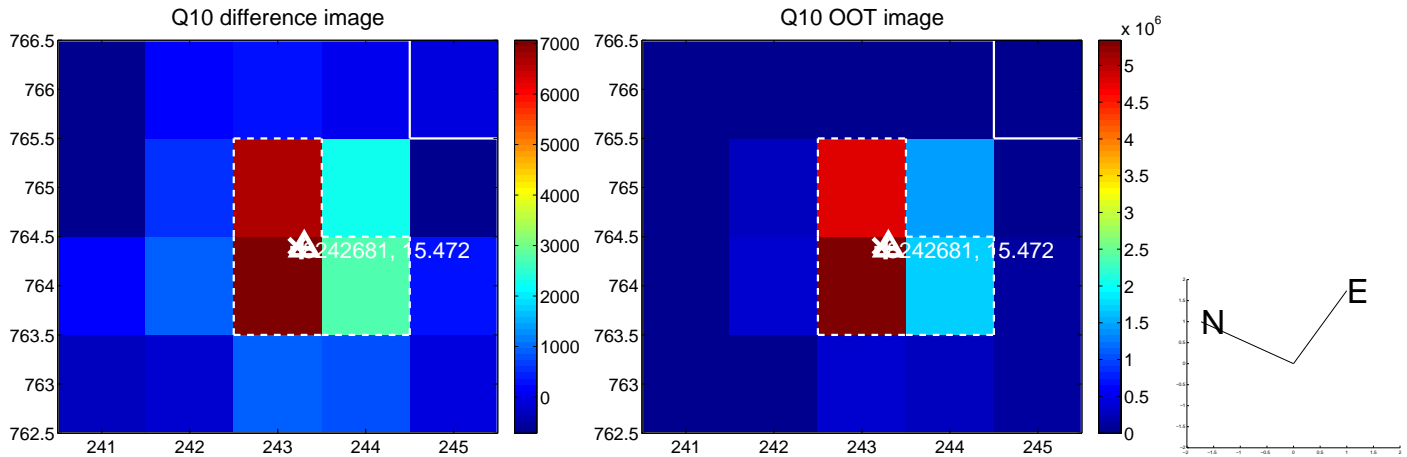
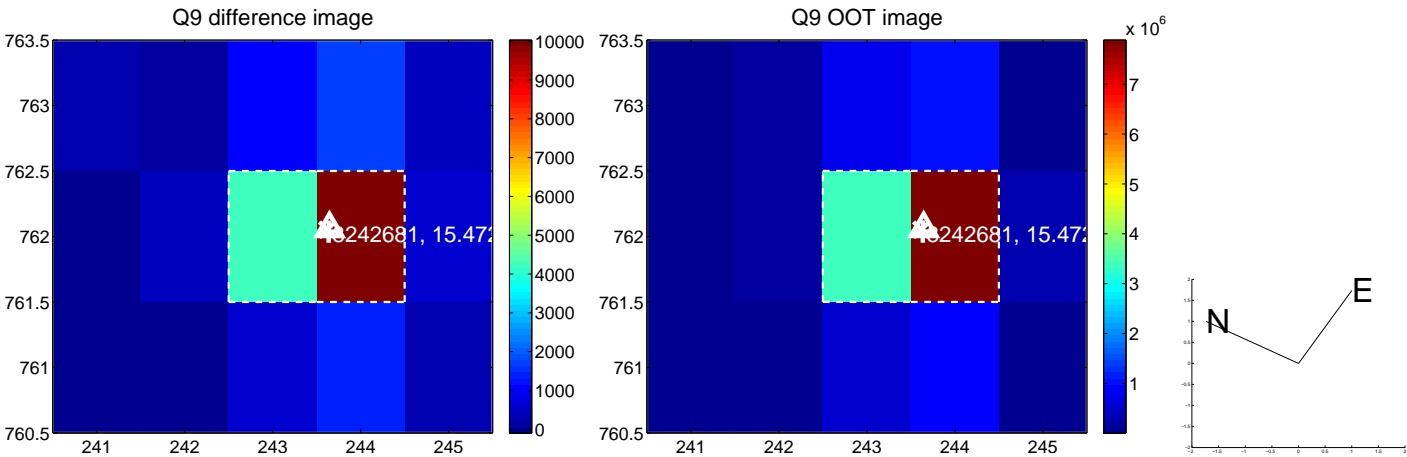
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



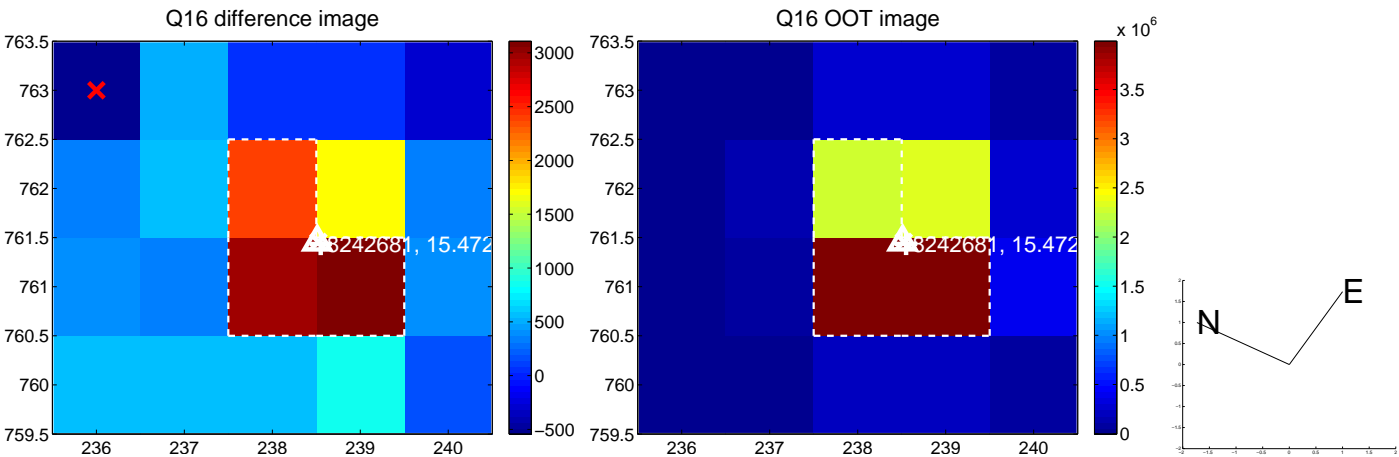
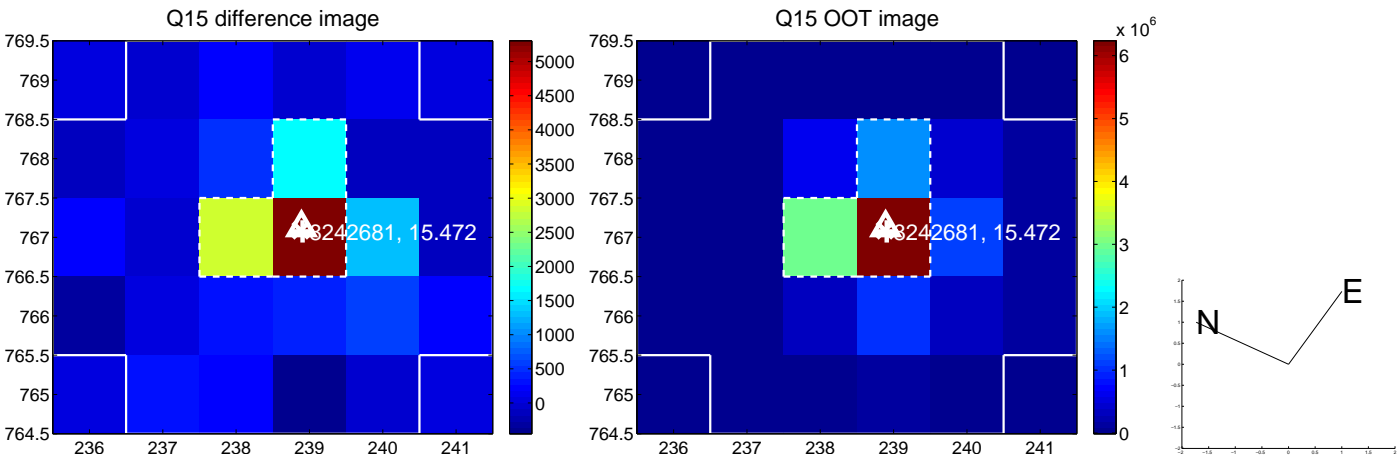
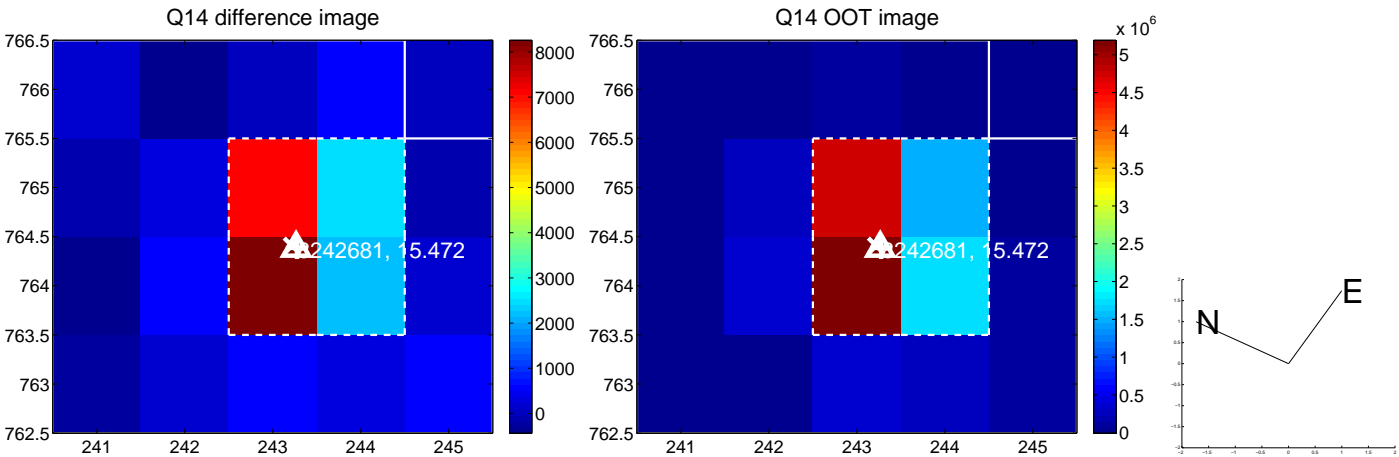
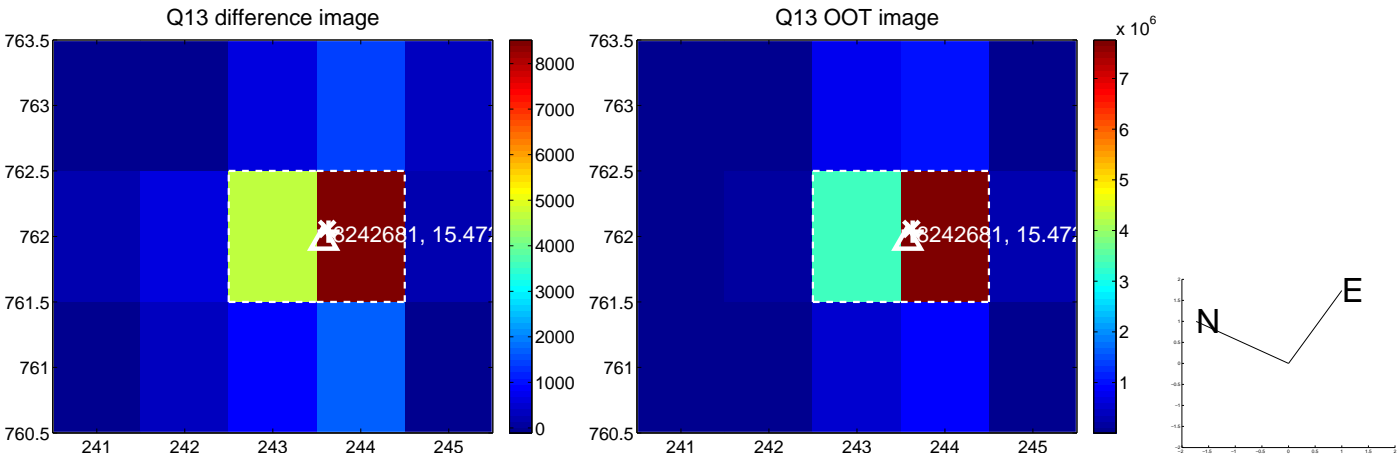
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



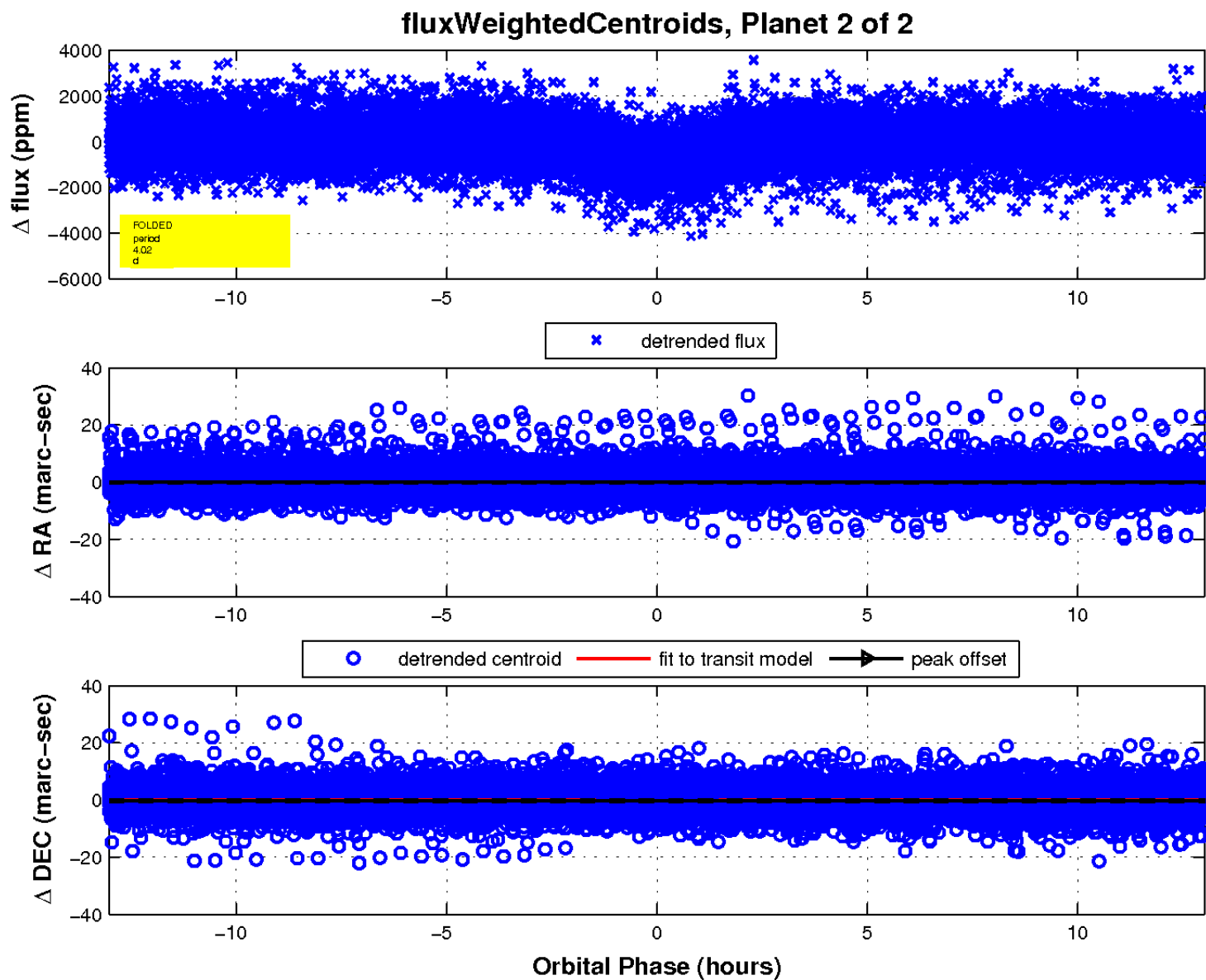
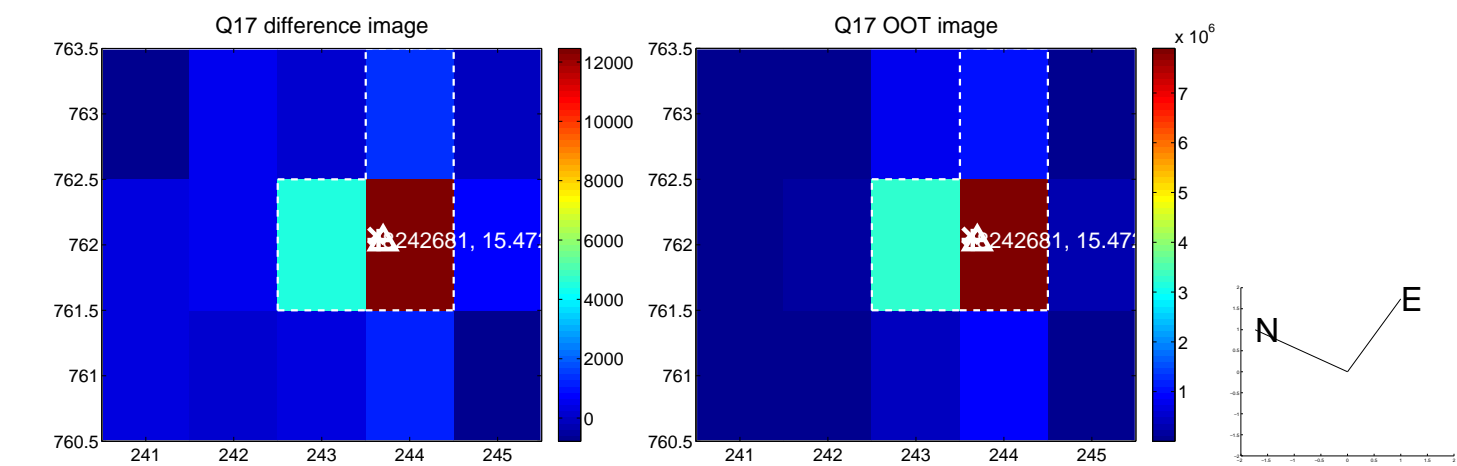
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

