

KIC 005962716

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})
005962716-01	OBS	6640.01	1.804605	132.392966	131871.7	3.703	7476.9	4998.9	1.51	6271	62.95	3235.99
005962716-02	OBS	No	0.902291	132.396411	8022.6	2.500	1150.3	-1.0	1.51	6271	13.60	8154.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005962716-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005962716-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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.

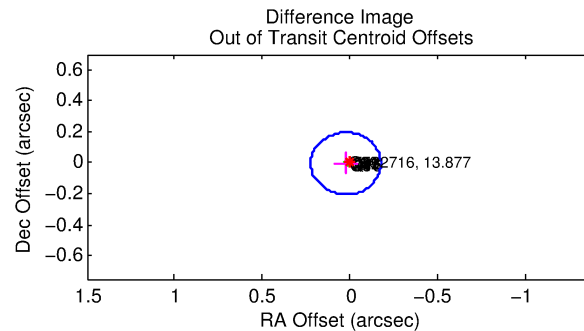
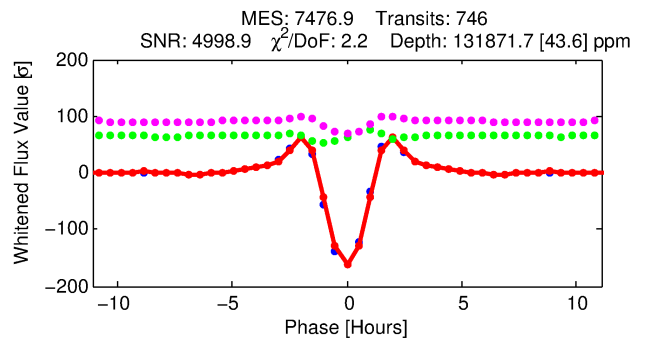
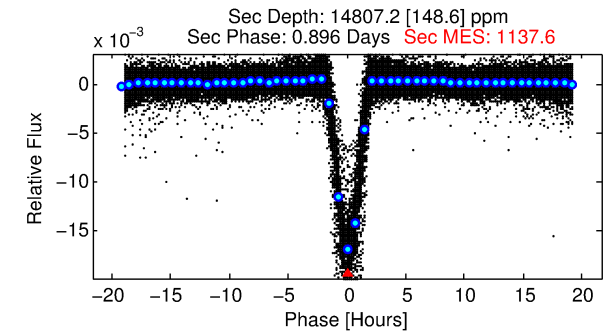
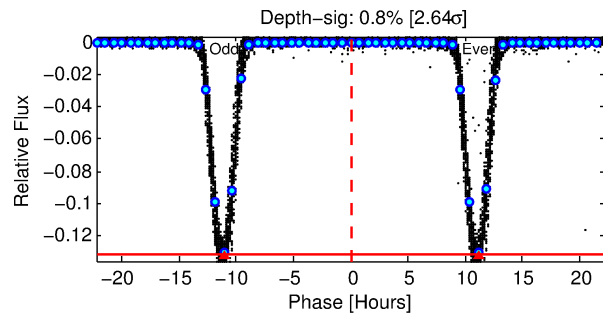
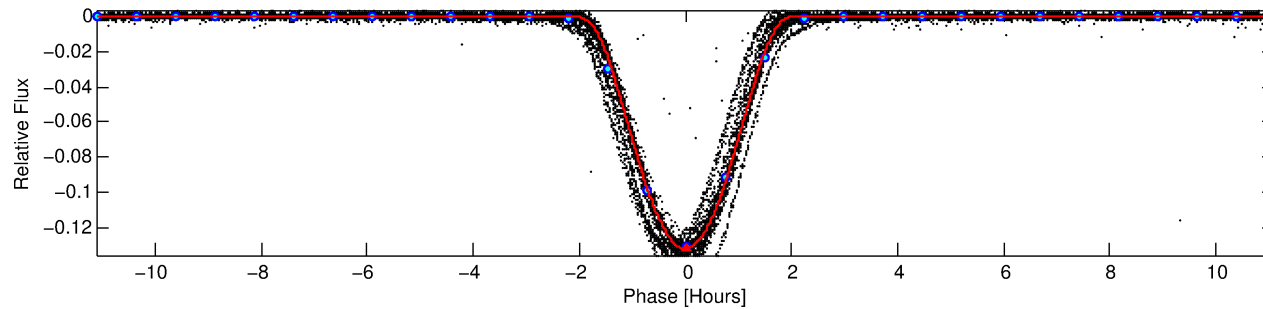
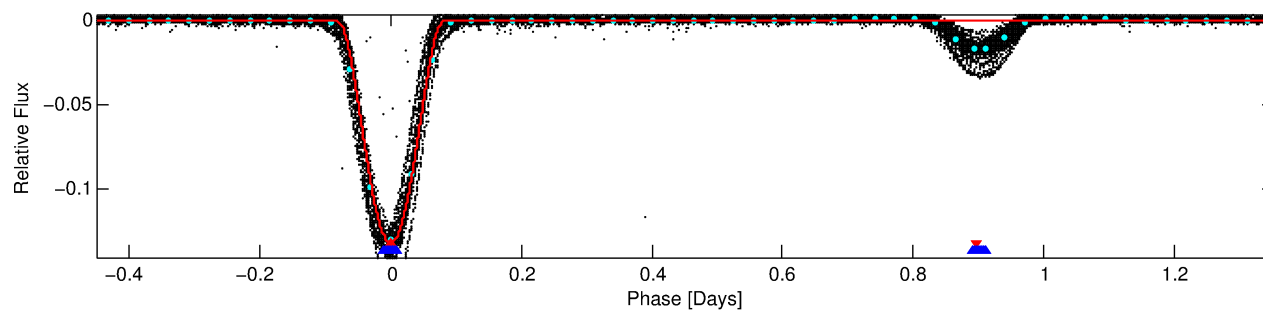
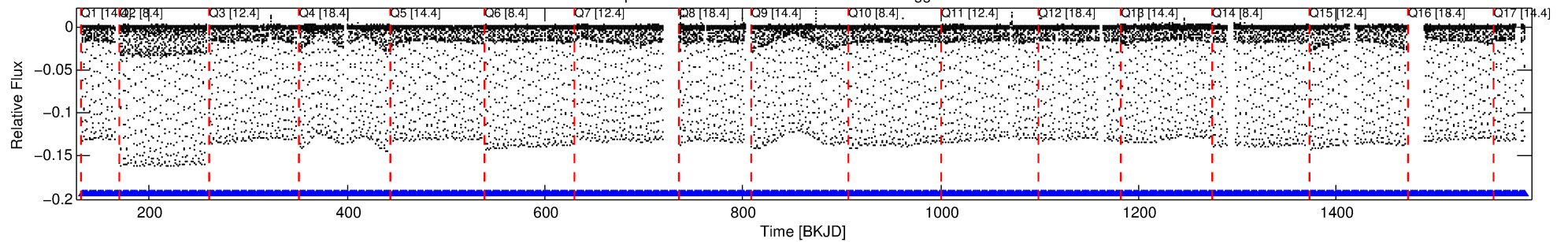
Ephemeris Match Information For 005962716-01

No Significant Match Found

DV One-Page Summary

KIC: 5962716 Candidate: 1 of 2 Period: 1.805 d
KOI: K06640.01 Corr: 0.976

Kp: 13.88 R*: 1.51 Rs Teff: 6271.0 K Logg: 4.18 Fe/H: 0.100



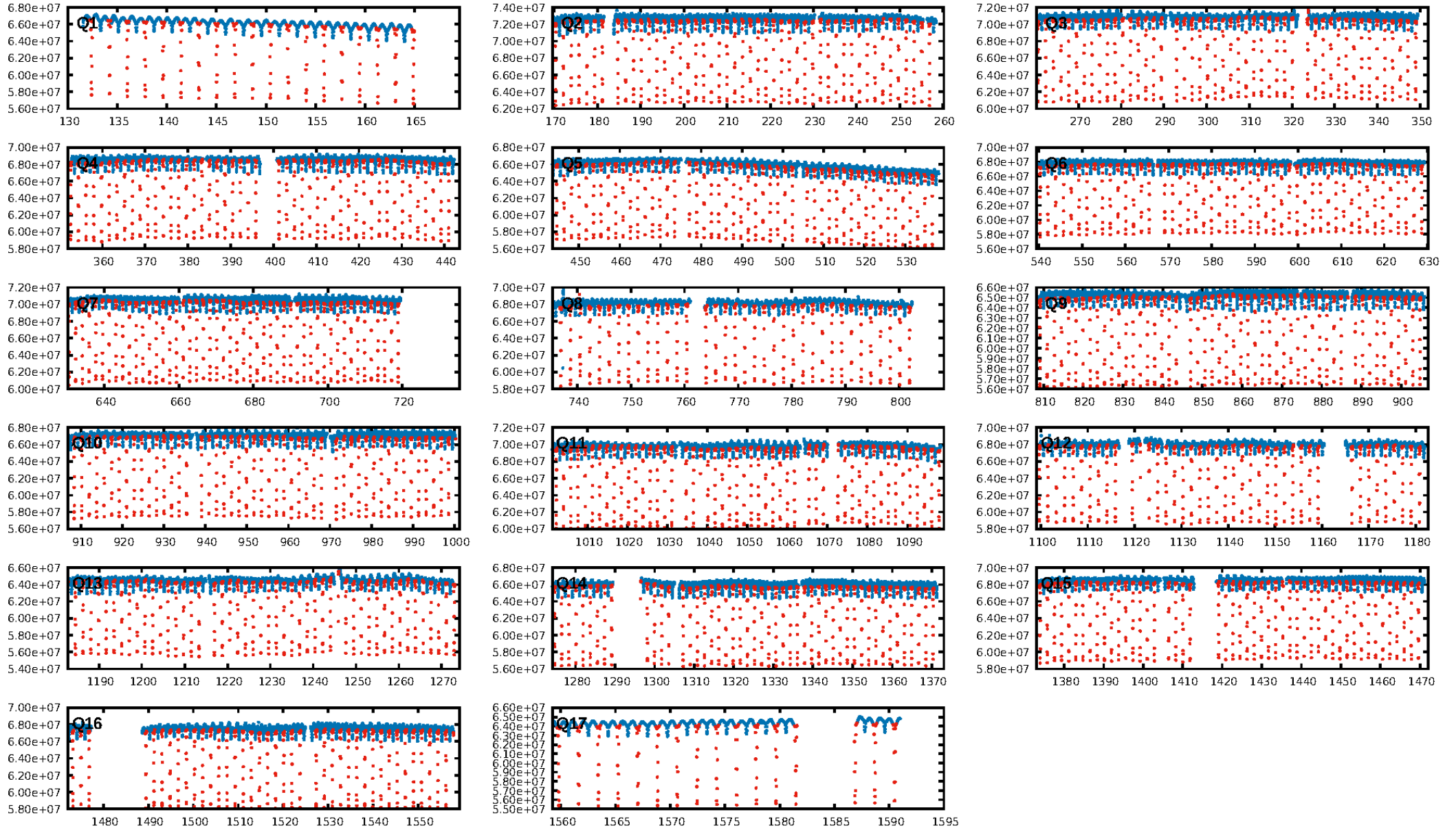
DV Fit Results:

Period = 1.80461 [0.00000] d
Epoch = 132.3930 [0.0000] BKJD
Rp/R* = 0.3808 [0.0005]
a/R* = 4.52 [0.00]
b = 0.71 [0.00]
Seff = 3235.99 [836.40]
Teq = 1923 [124] K
Rp = 62.96 [11.93] Re
a = 0.0313 [0.0052] AU
Ag = 2.02 [0.51] [1.99σ]
Teffp = 3545 [47] K [12.2σ]

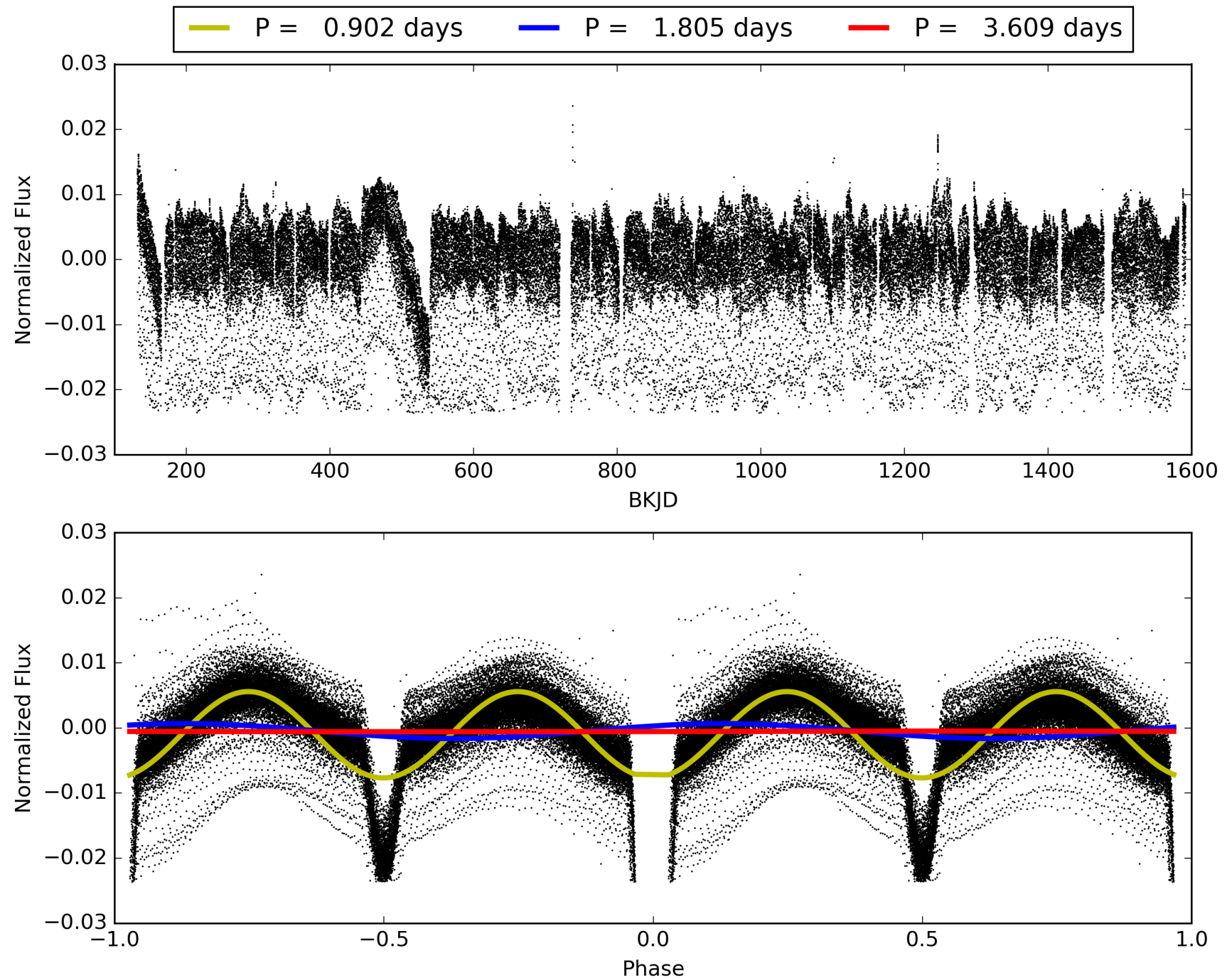
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.85σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [711/711]
GhostDiagnostic-chr: 2.212
Centroid-sig: N/A
Centroid-so: 0.155 arcsec [249.87σ]
OotOffset-rm: 0.025 arcsec [0.37σ]
KicOffset-rm: 0.153 arcsec [2.27σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 005962716-01, PDC Light Curves

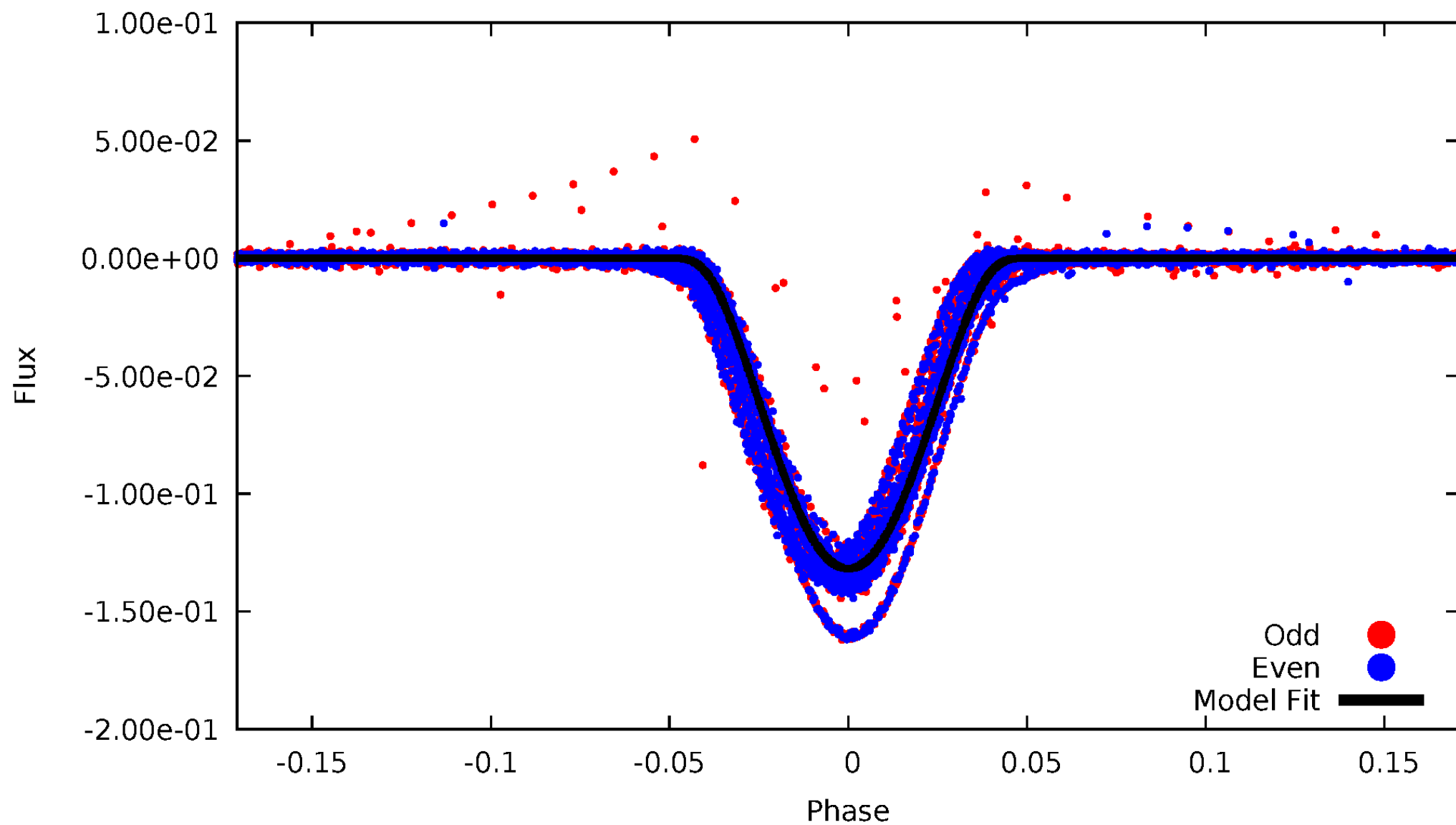


TCE 005962716-01



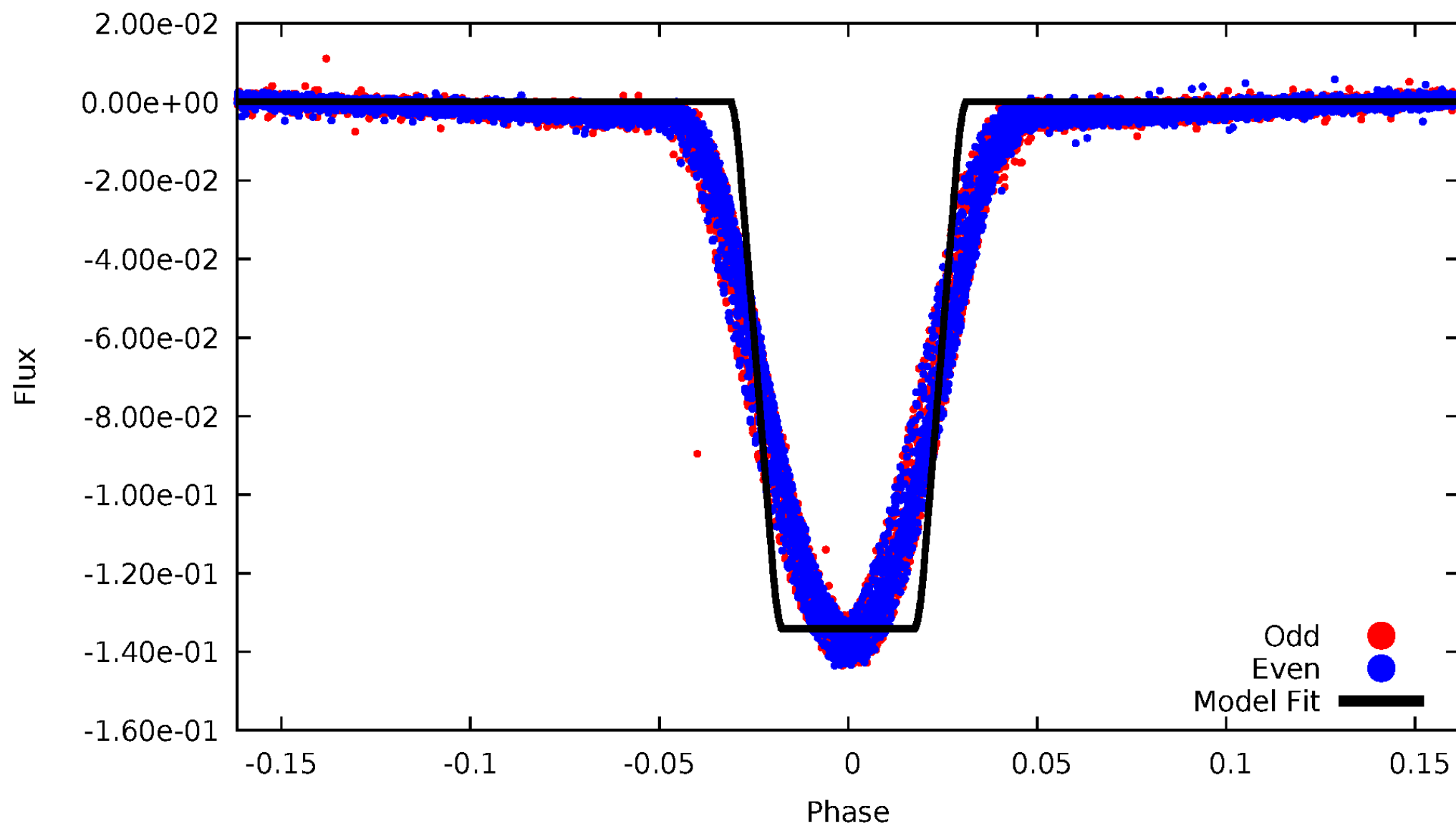
DV Odd/Even

TCE 005962716-01



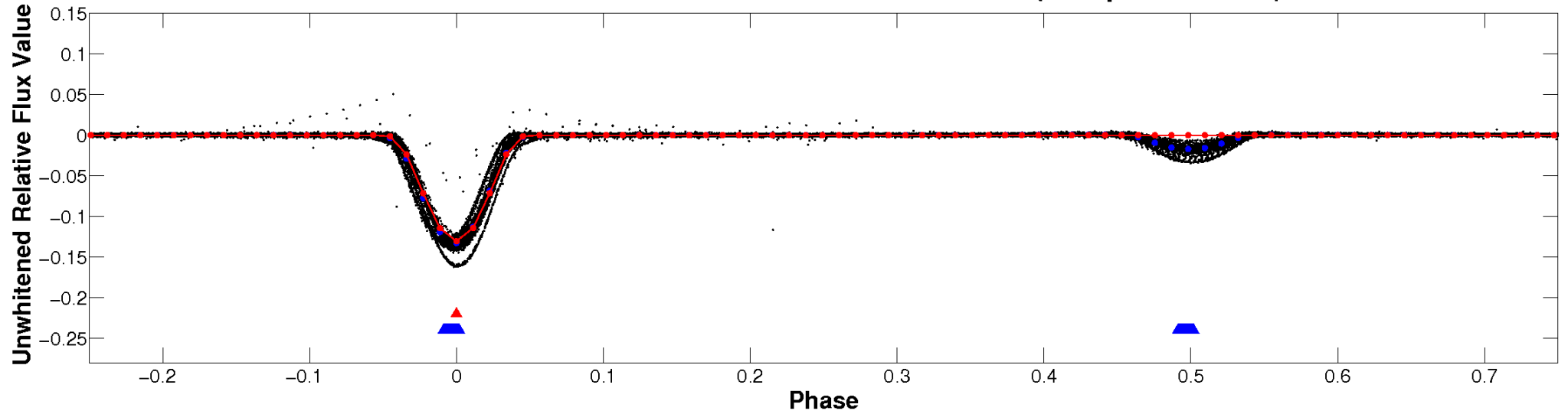
ALT Odd/Even

TCE 005962716-01

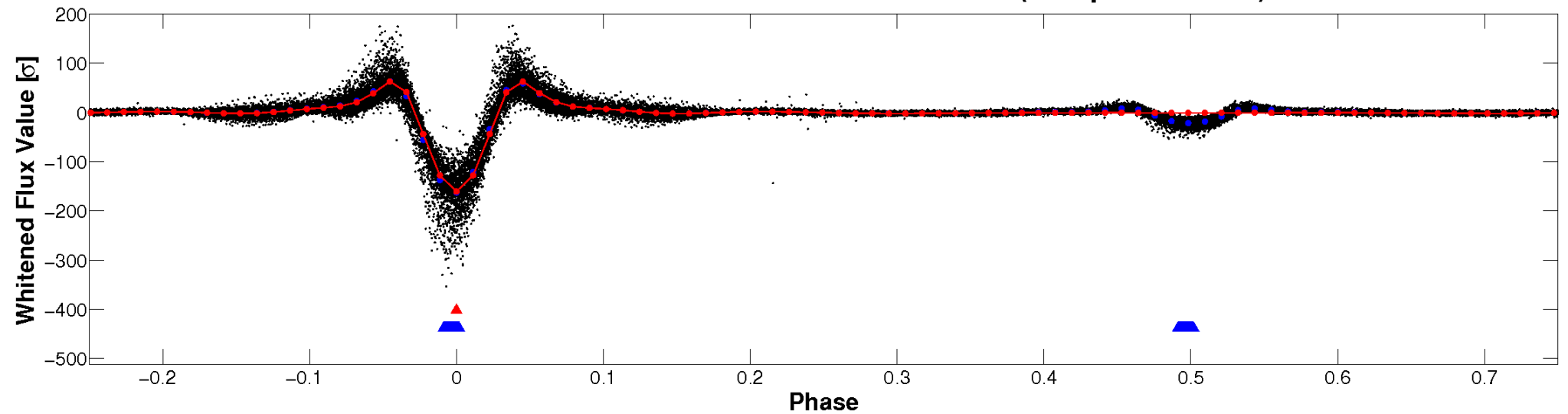


Non-Whitened Vs. Whitened Light Curve

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

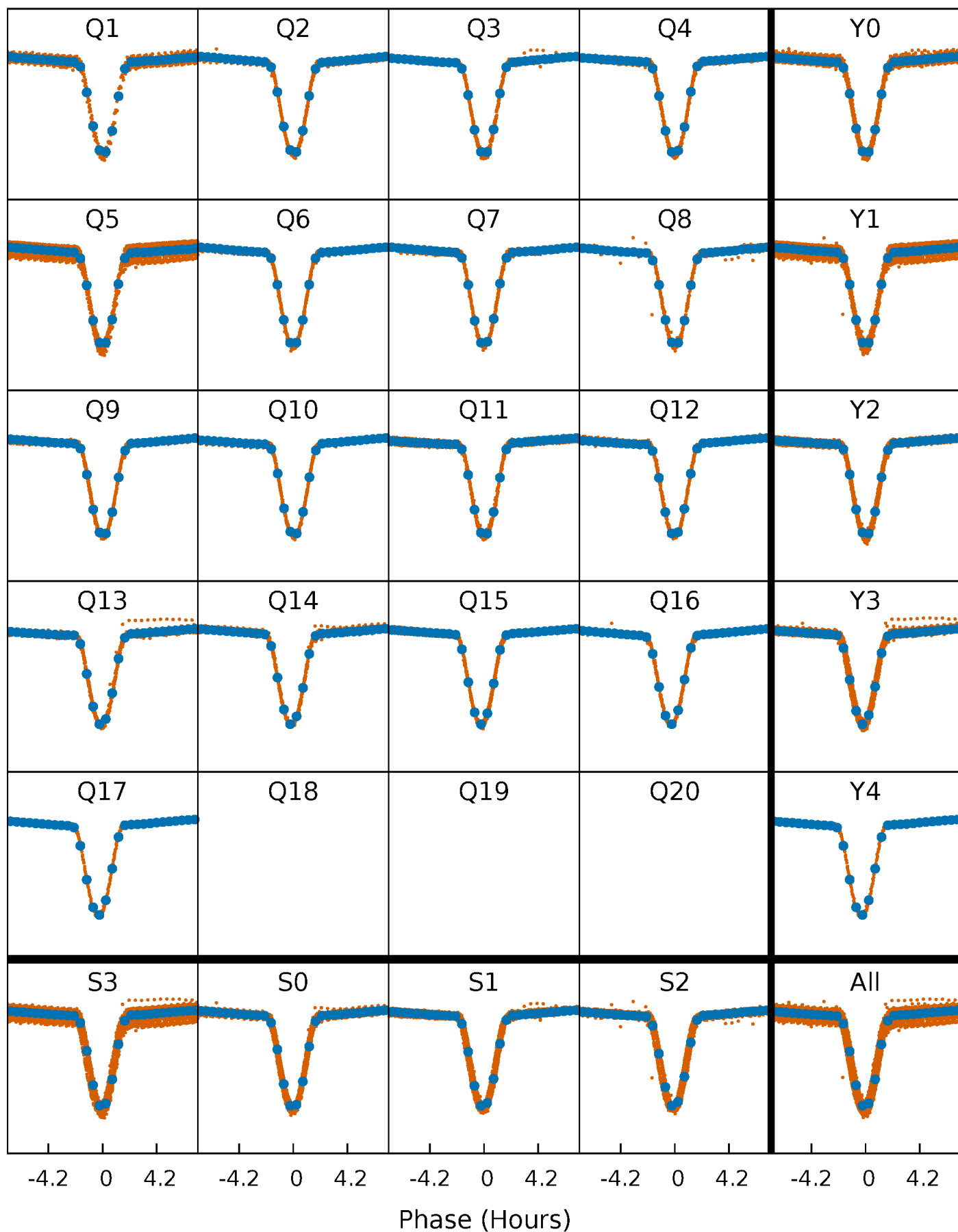


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



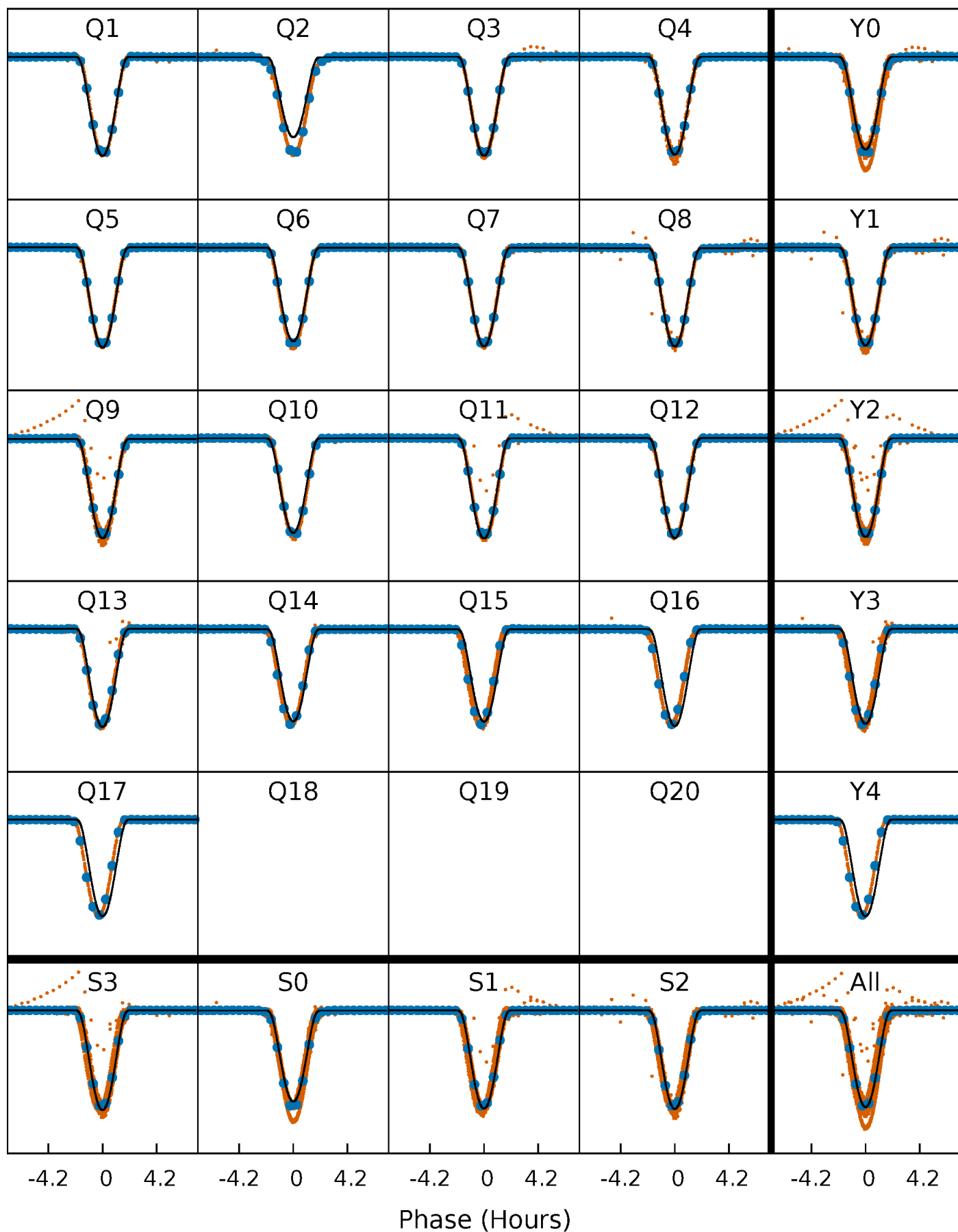
PDC Quarter-Phased Transit Curves

TCE 005962716-01 P= 1.804605 Days $T_0=132.392966$ (BKJD)



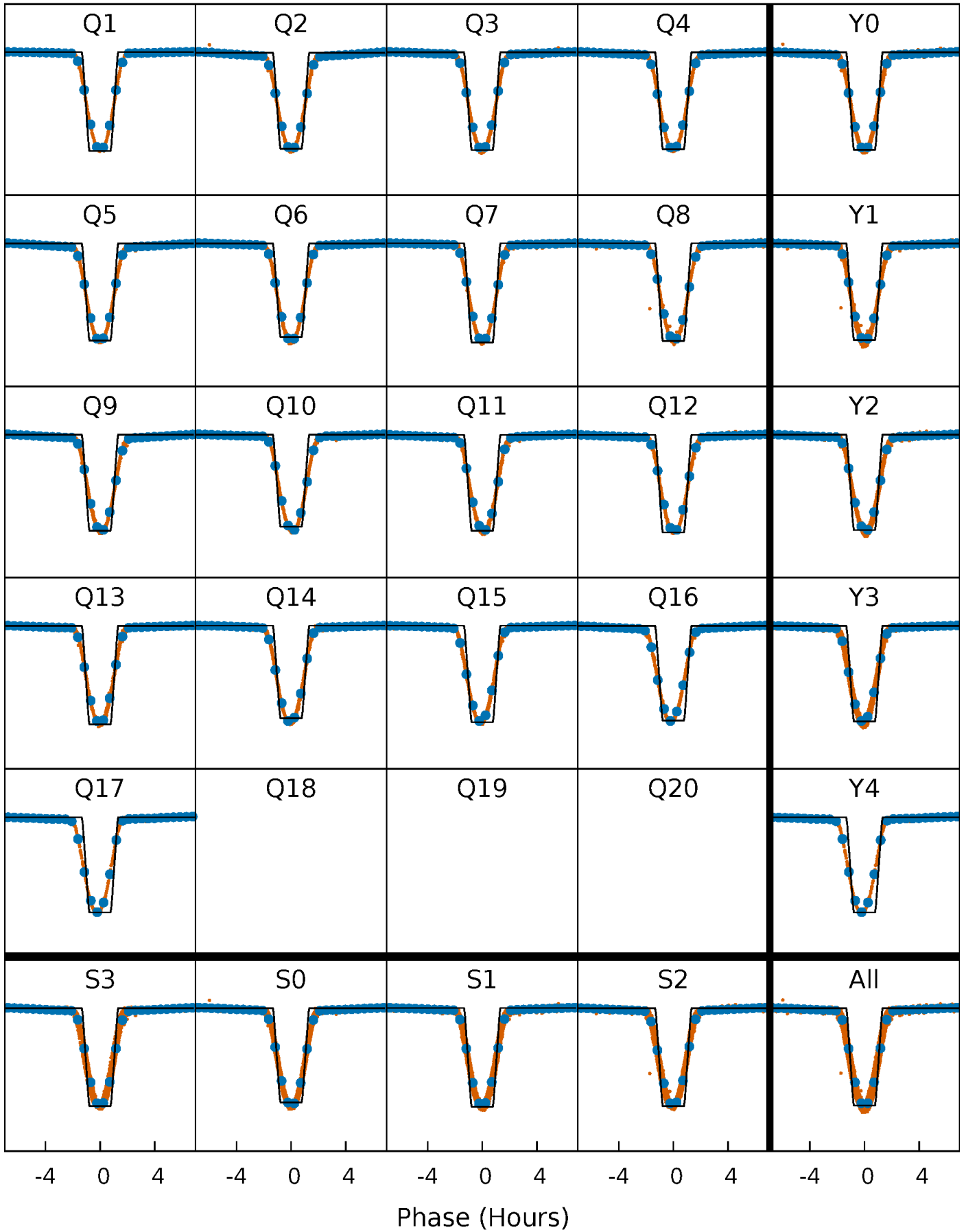
DV Quarter-Phased Transit Curves

TCE 005962716-01 P= 1.804605 Days $T_0=132.392966$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

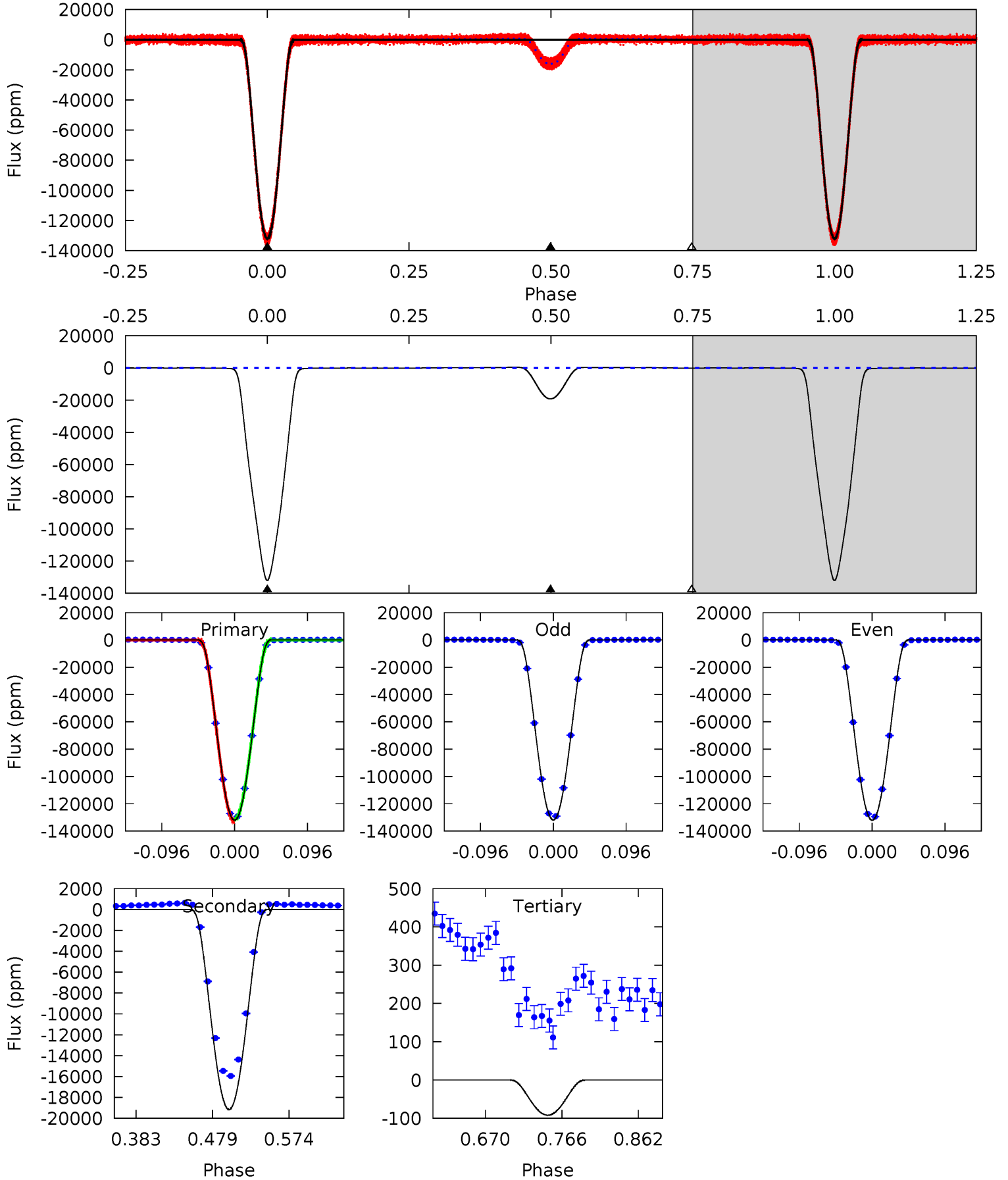
TCE 005962716-01 P= 1.804598 Days $T_0=132.394112$ (BKJD)



DV Model-Shift Uniqueness Test

005962716-01, P = 1.804605 Days, E = 130.588361 Days

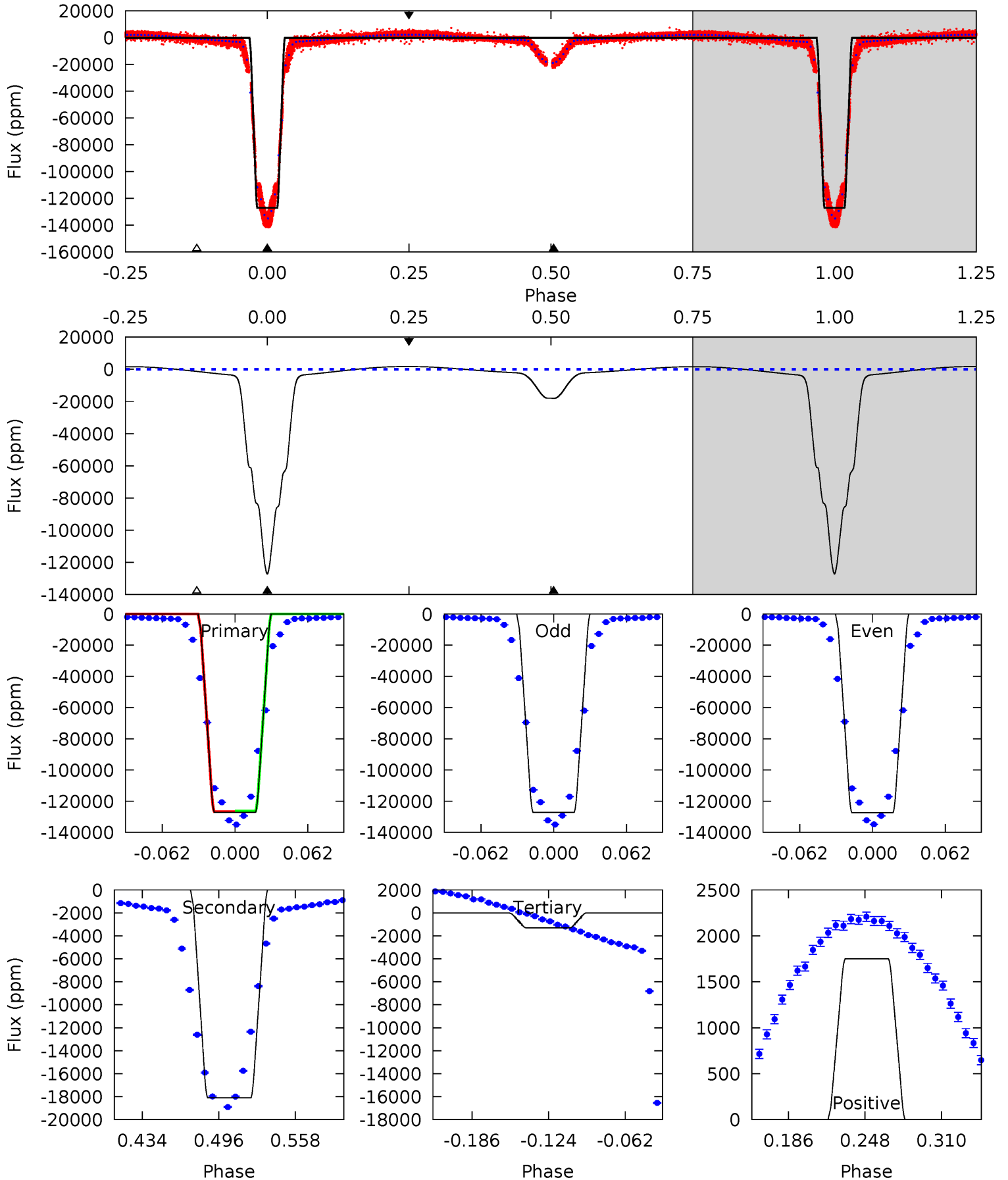
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9597	1393	6.67	0	4.57	1.67	7.93	9590	9597	1387	1393	7.83	1.01	0.00	62.1



Alt Model-Shift Uniqueness Test

005962716-01, P = 1.804598 Days, E = 130.589514 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3738	532.5	38.5	51.4	4.66	1.87	44.0	3700	3687	494.0	481.0	3.33	1.00	0.01	5.38



Stellar Parameters For KIC 005962716

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6271^{+75}_{-81}	$4.178^{+0.143}_{-0.117}$	$0.100^{+0.150}_{-0.150}$	$1.515^{+0.287}_{-0.258}$	$1.261^{+0.094}_{-0.117}$	$0.511^{+0.354}_{-0.178}$
	+1%/-1%	+3%/-3%	+150%/-150%	+19%/-17%	+7%/-9%	+69%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005962716-01 / KOI 6640.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-19166 ± 14	$62.29^{+7.13}_{-5.78}$	2673^{+144}_{-123}	4006^{+39}_{-42}	$2.706^{+0.545}_{-0.488}$
Alt.	-18105 ± 34	$60.00^{+6.07}_{-5.76}$	2678^{+124}_{-137}	4020^{+37}_{-39}	$2.756^{+0.567}_{-0.457}$

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 $A_{obs} \gg 1.0$

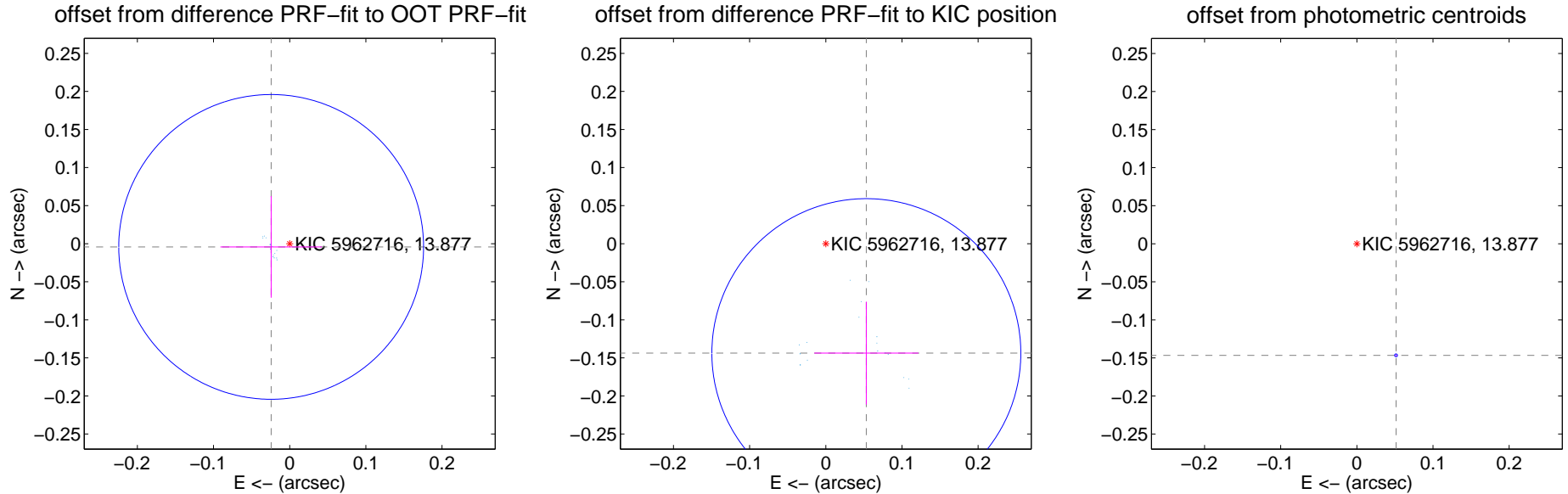
DV Centroid Data

Supplemental centroid analysis for 005962716-01. Kepler magnitude: 13.88. Transit SNR 4998.94

There are 17 quarters with good PRF difference image offsets

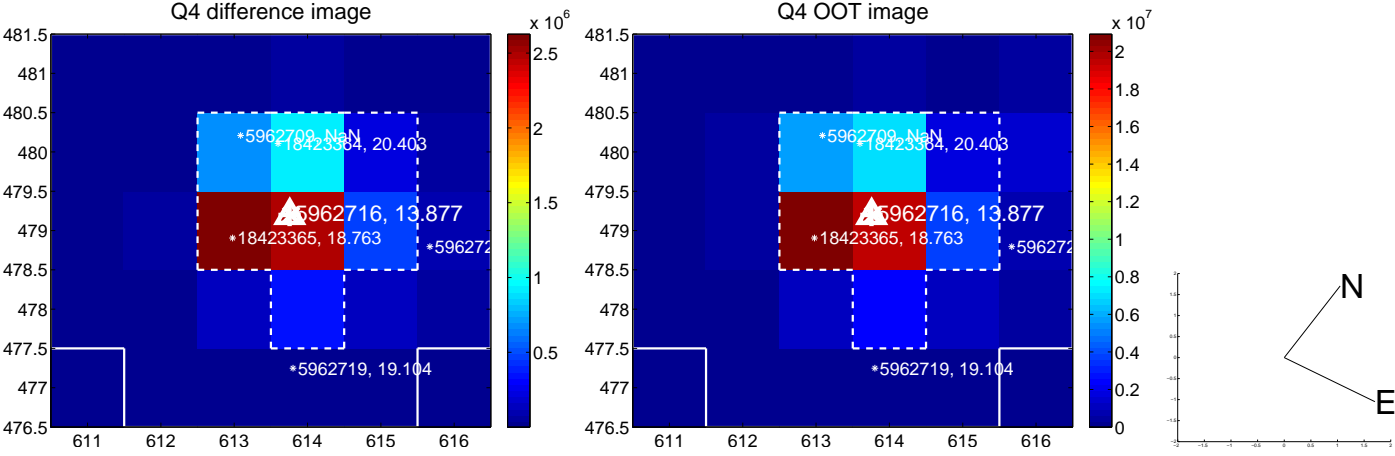
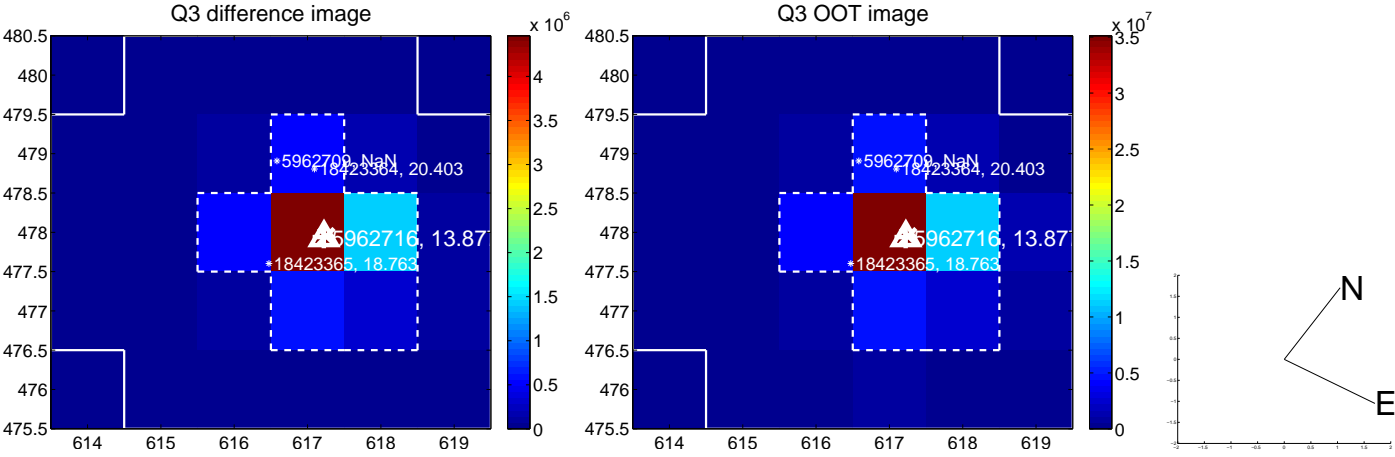
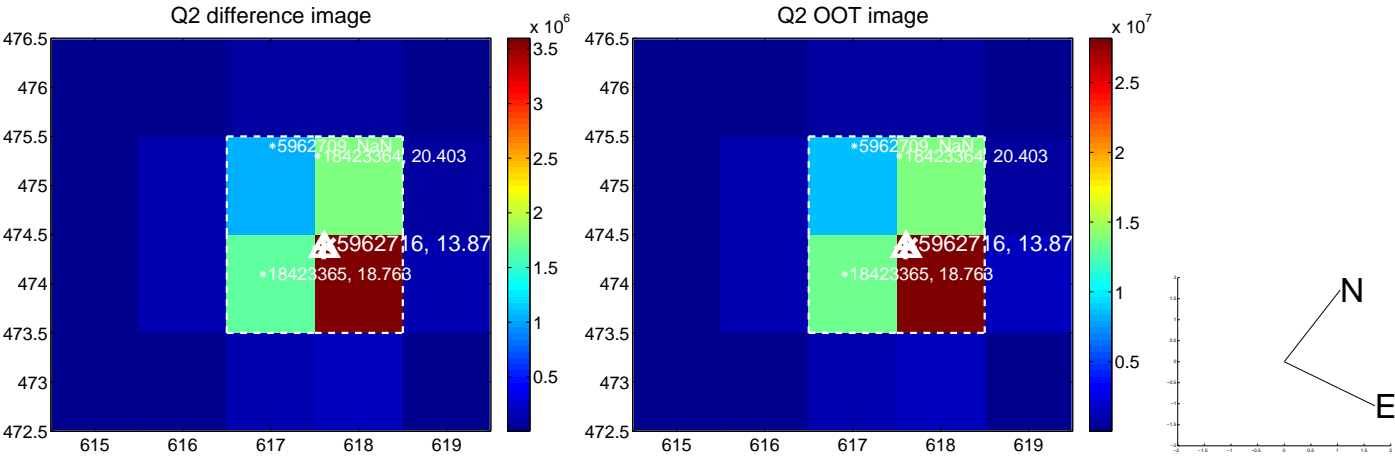
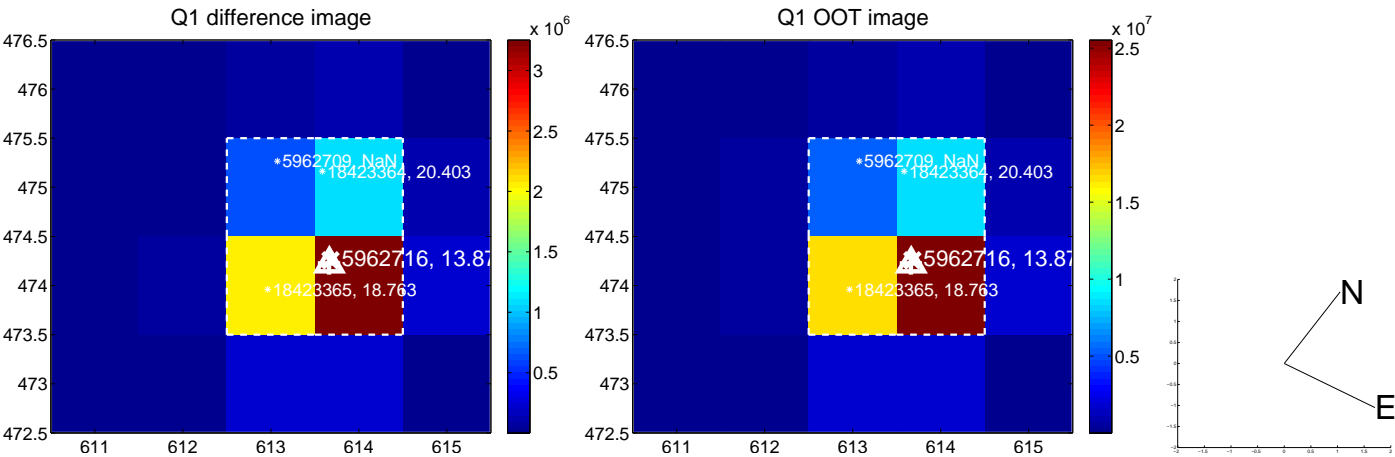
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.025 ± 0.067	0.37	0.024 ± 0.067	-0.004 ± 0.067
PRF-fit source offset from KIC position	0.153 ± 0.068	2.27	-0.053 ± 0.068	-0.144 ± 0.068
photometric centroid source offset	0.16 ± 0.00	249.87	-0.05 ± 0.00	-0.15 ± 0.00

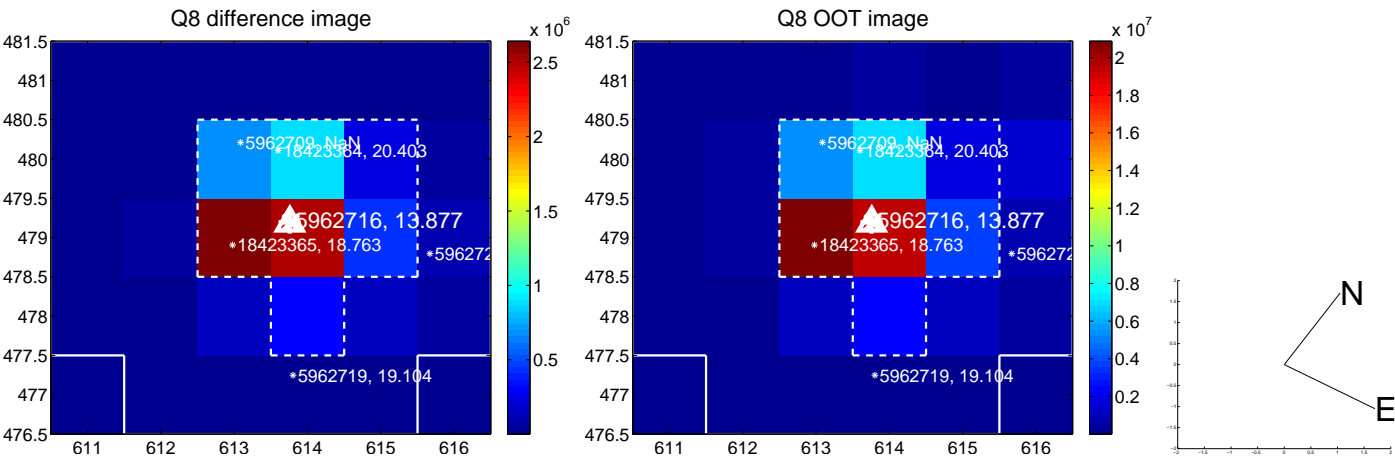
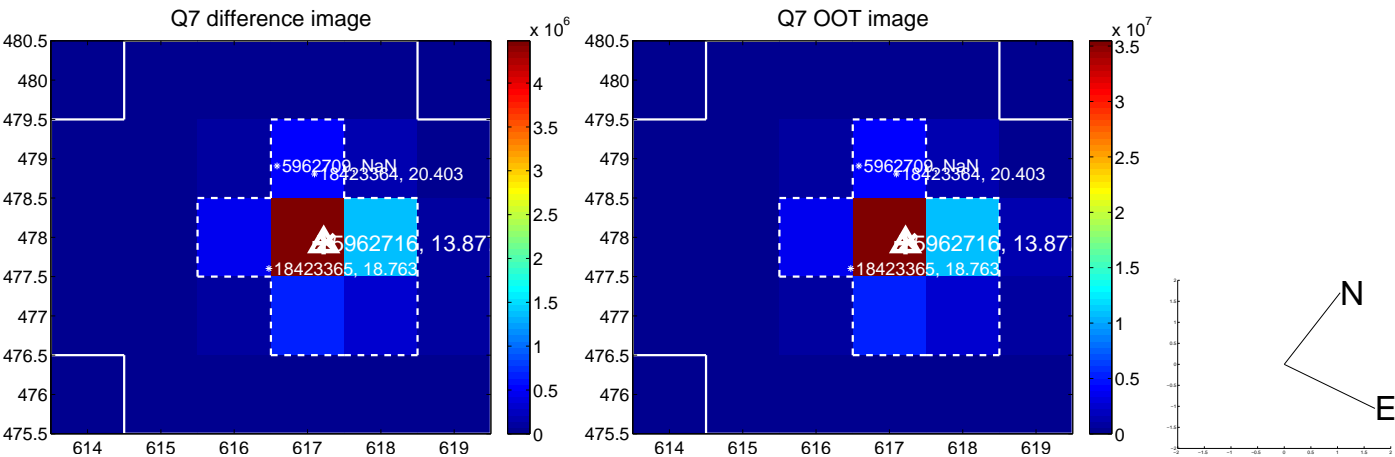
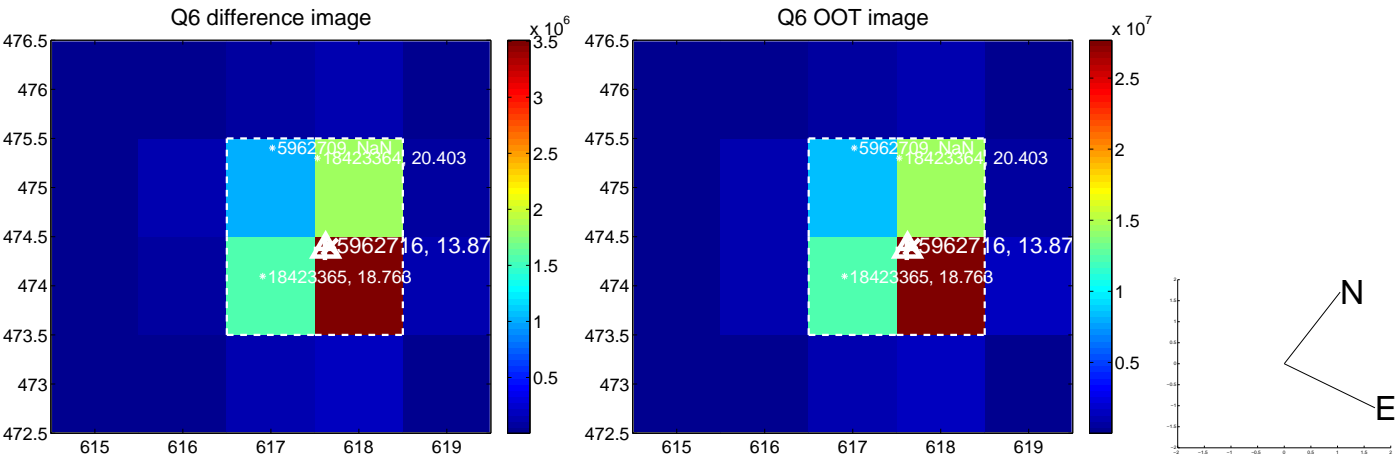
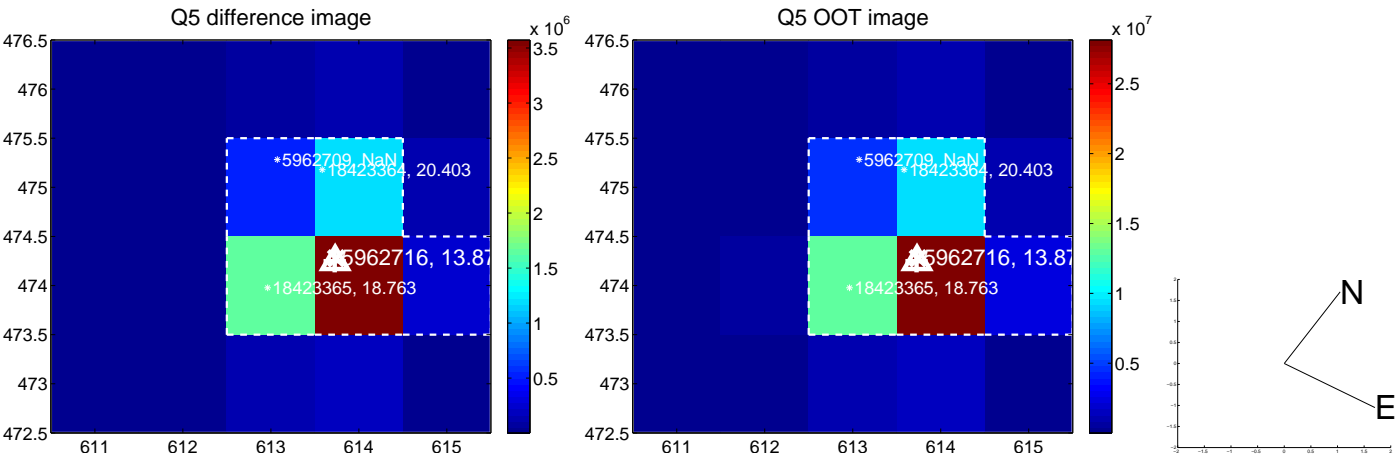


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

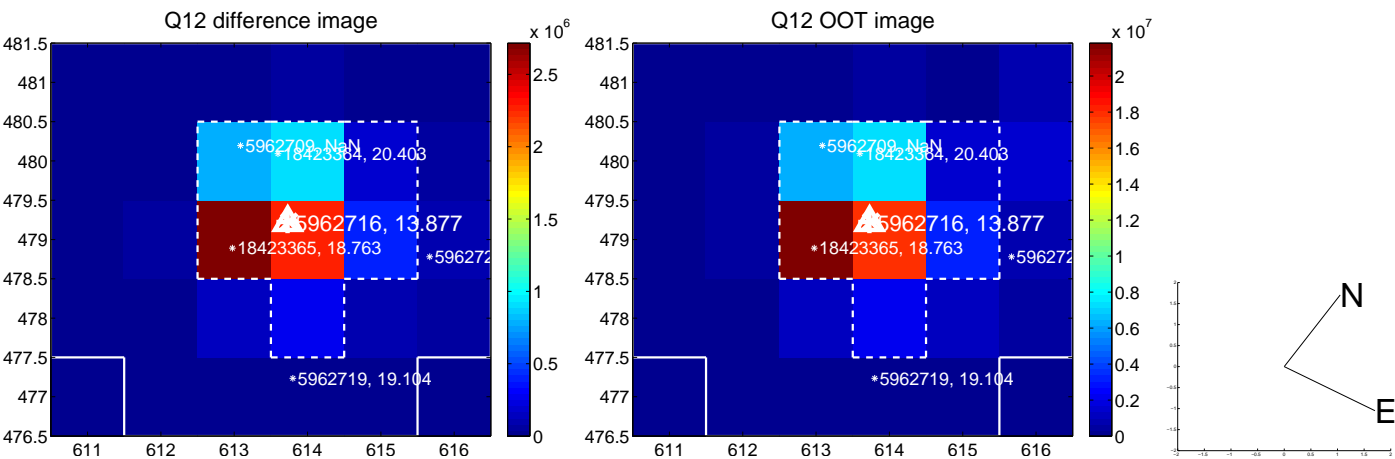
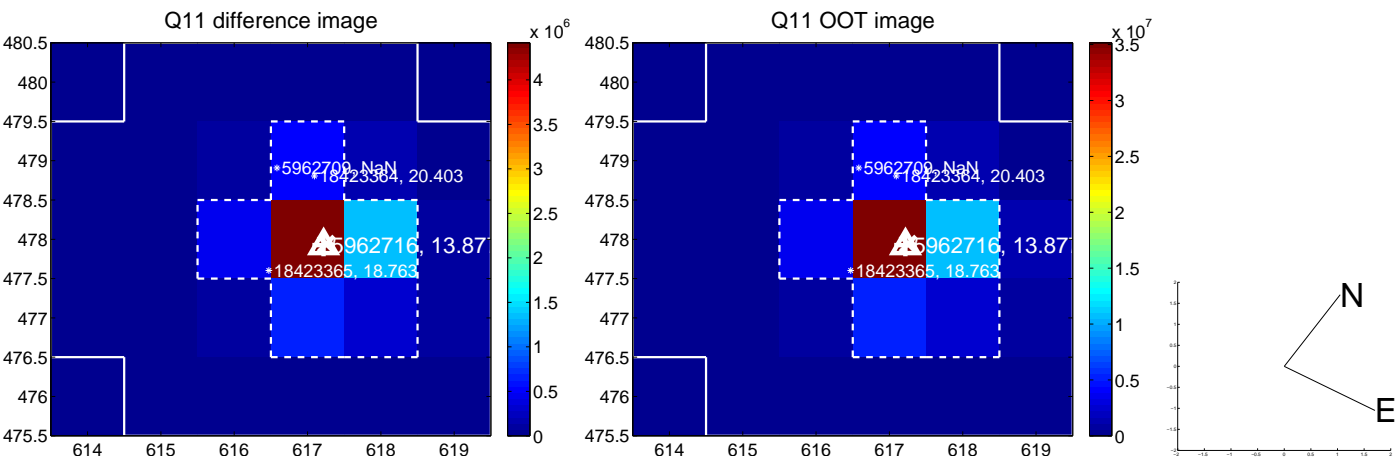
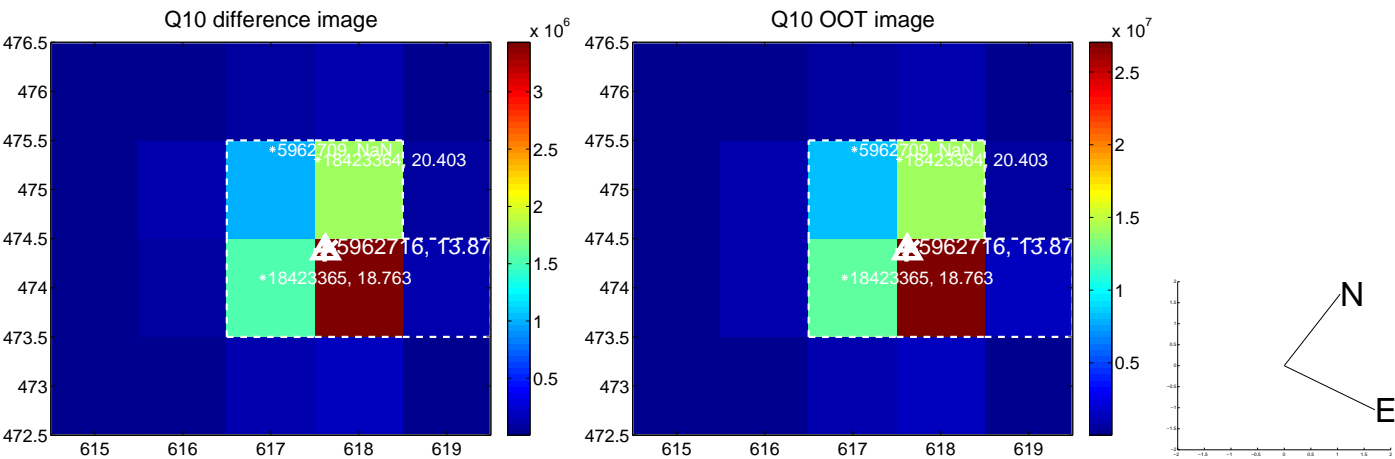
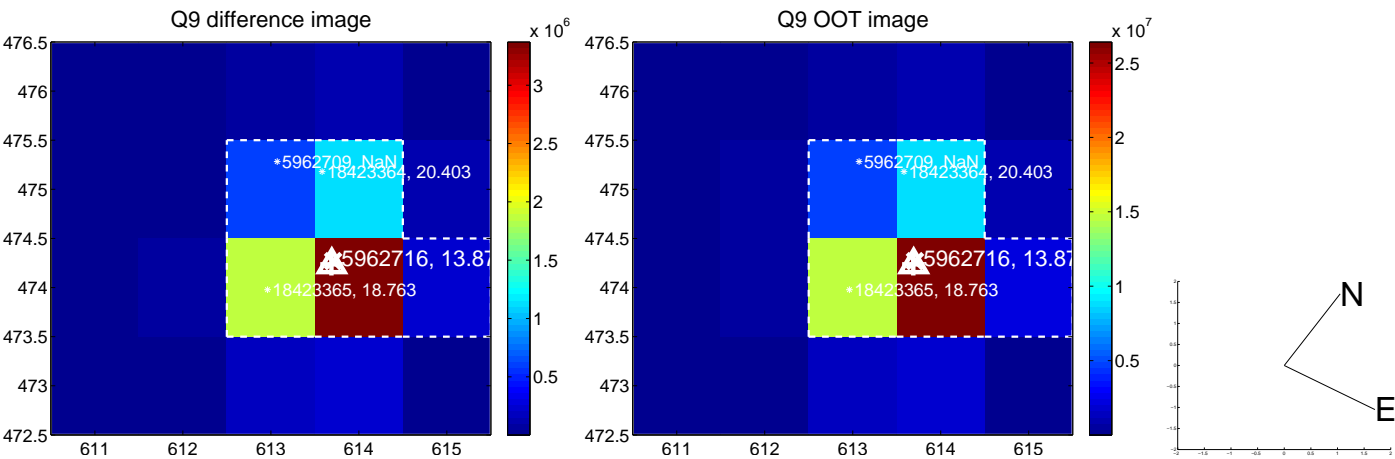
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



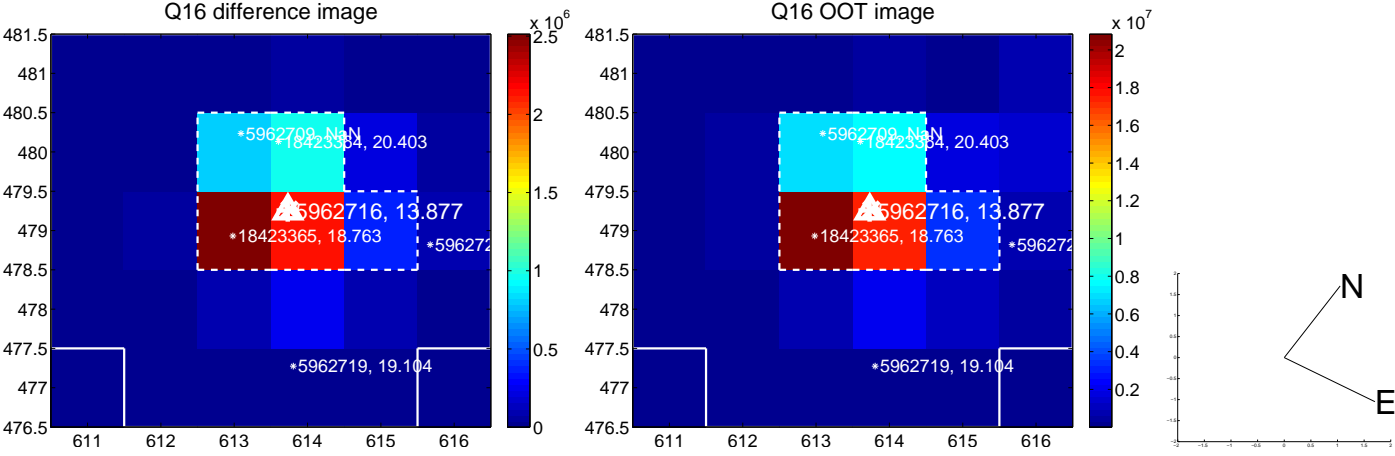
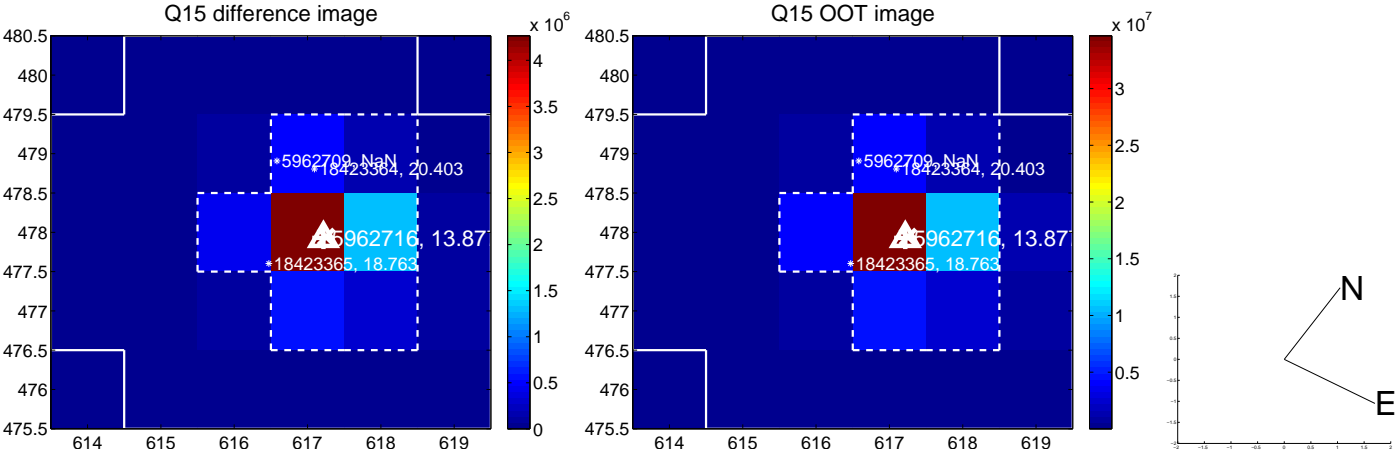
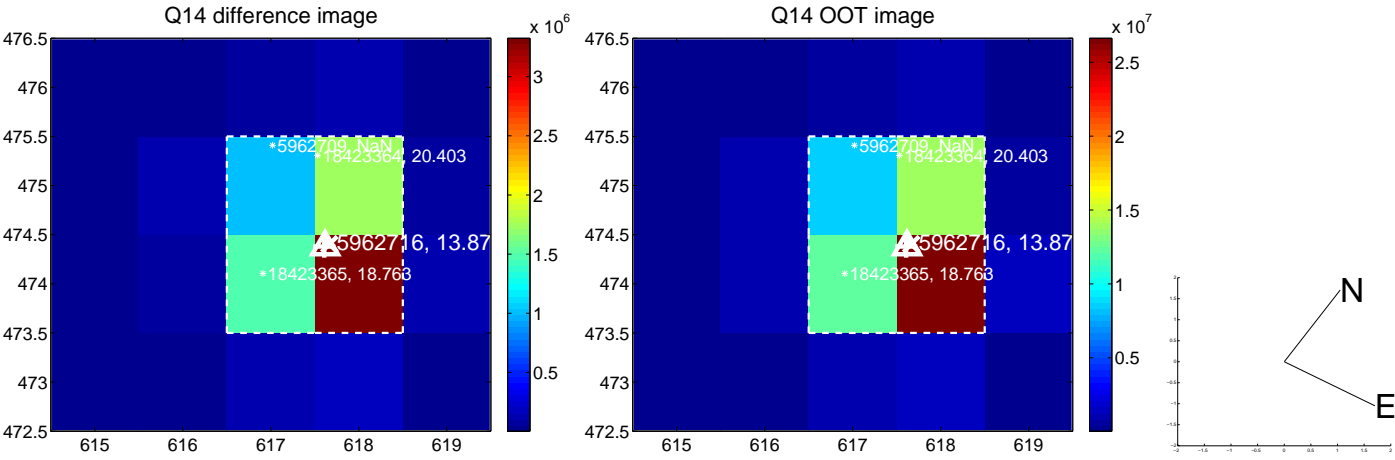
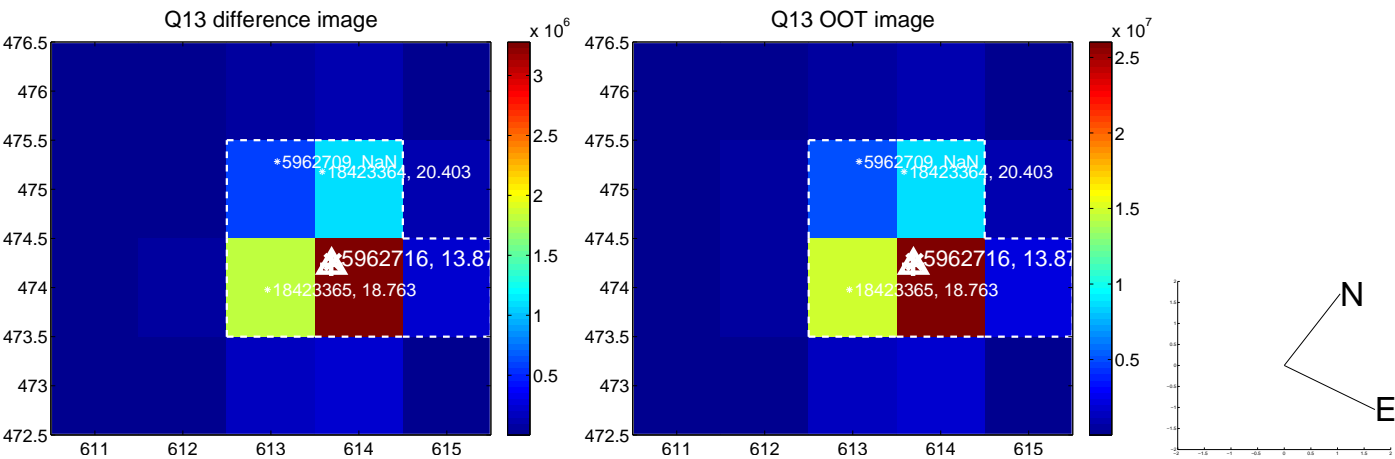
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



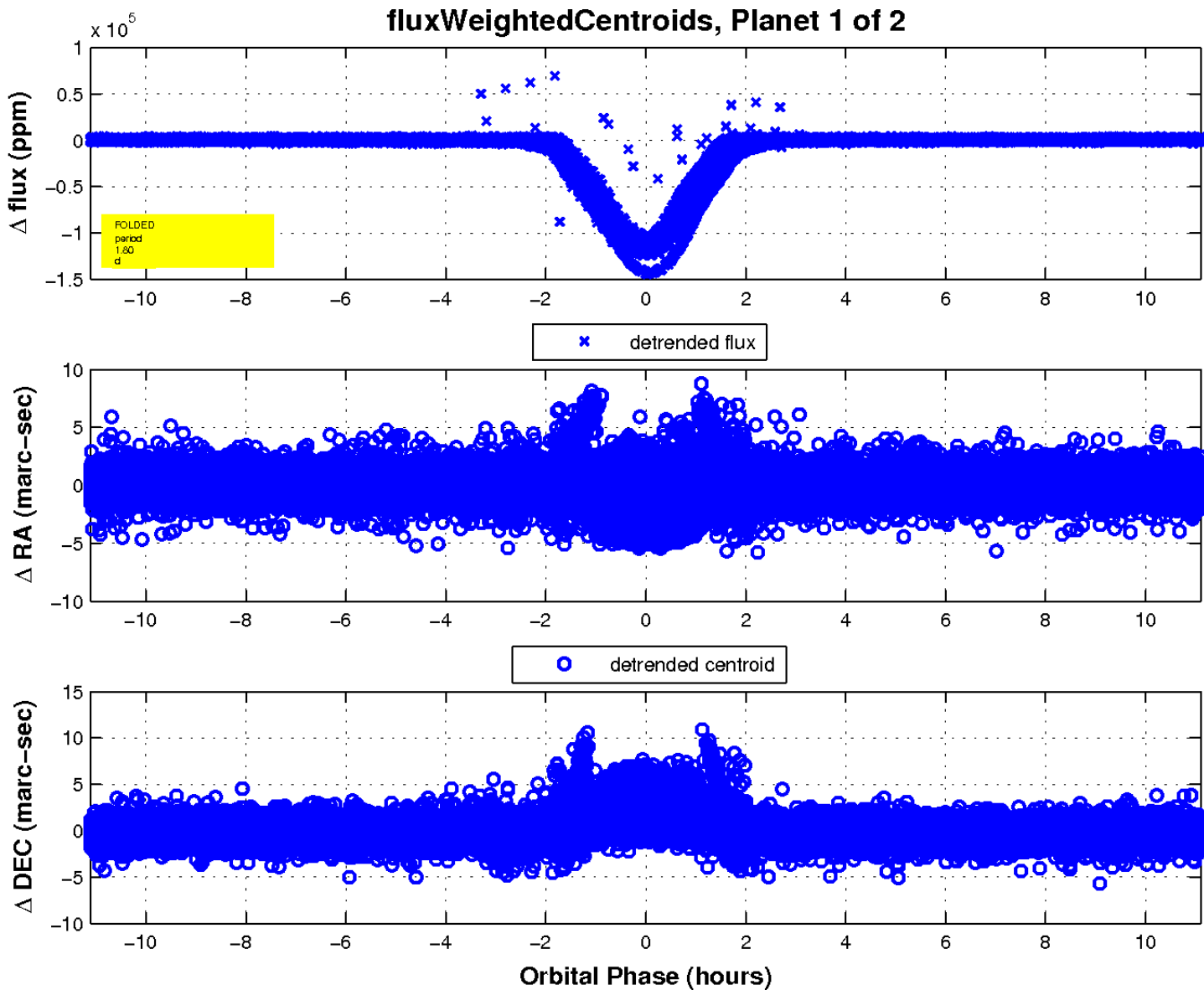
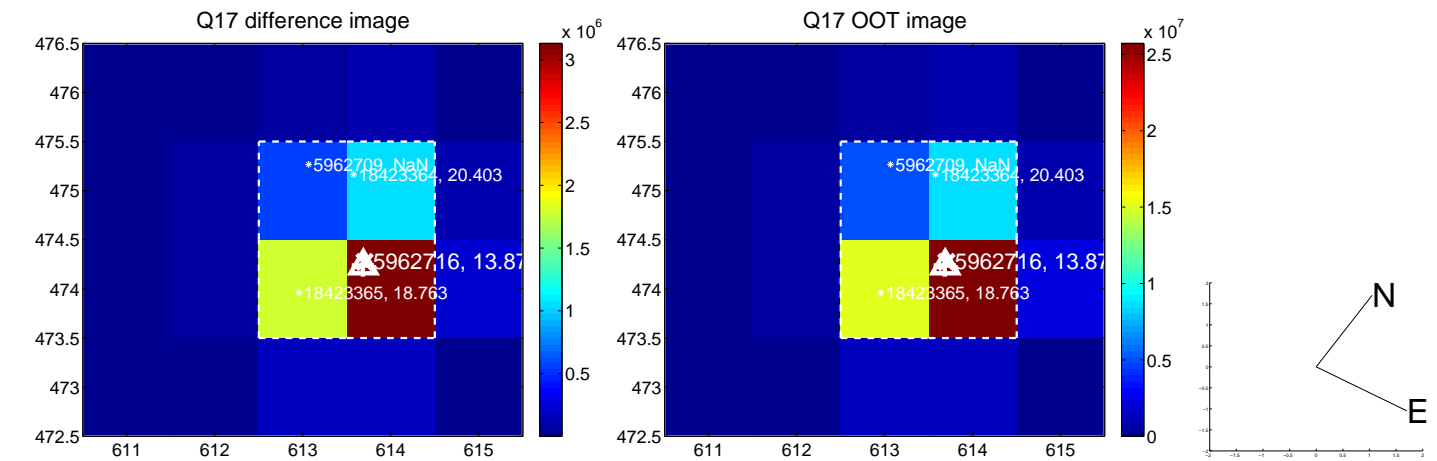
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

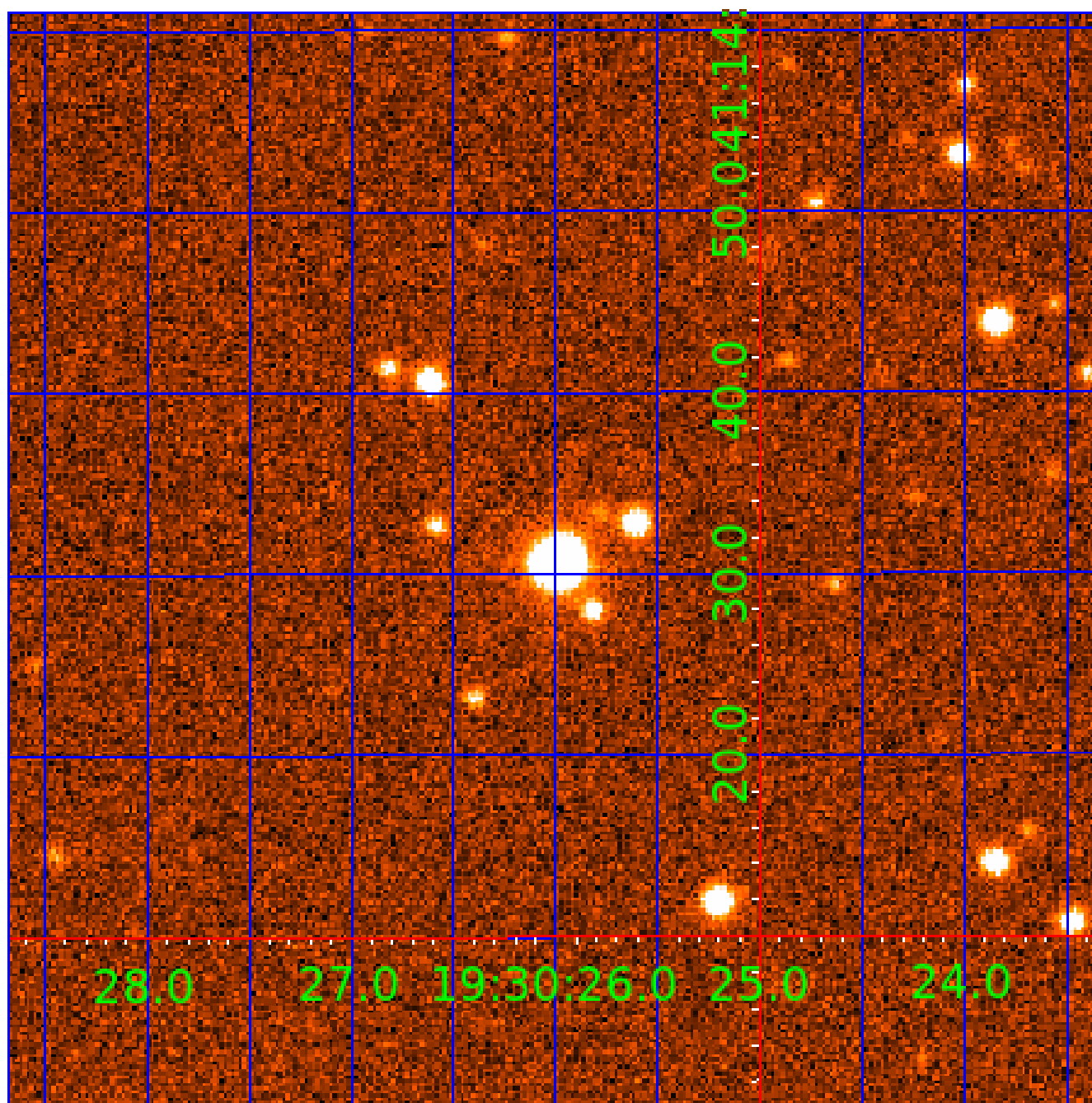


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005962716

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})
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005962716-02	OBS	No	0.902291	132.396411	8022.6	2.500	1150.3	-1.0	1.51	6271	13.60	8154.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005962716-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005962716-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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.

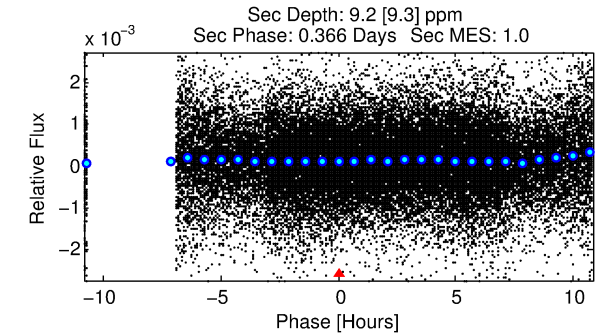
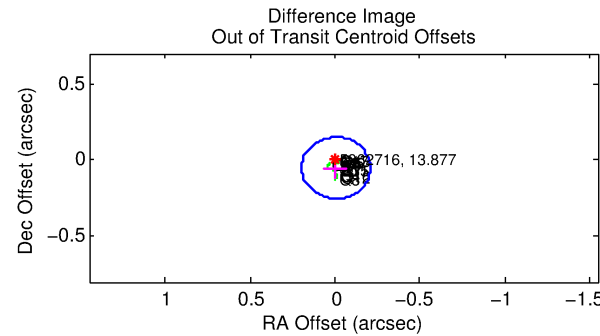
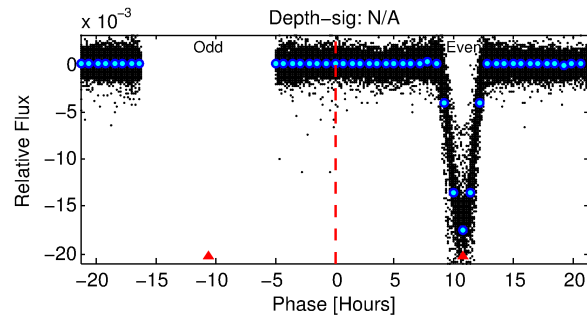
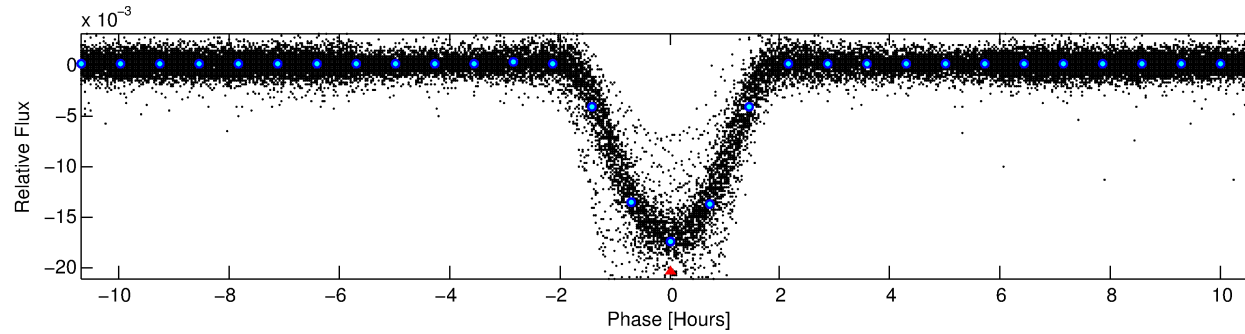
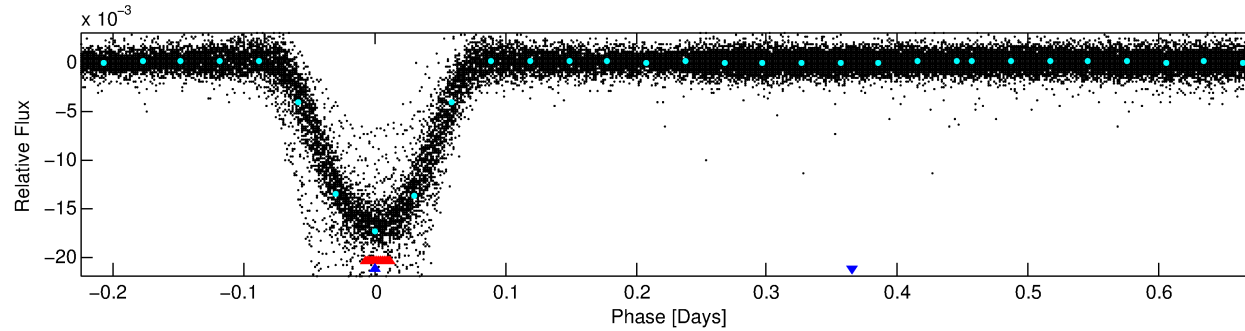
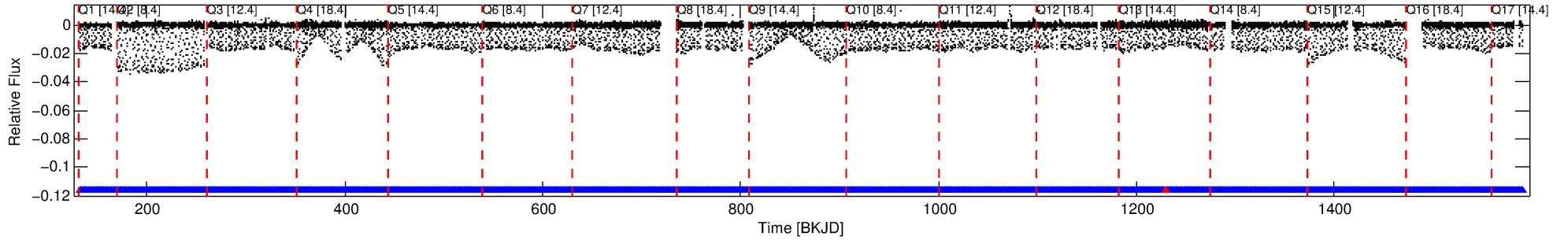
Ephemeris Match Information For 005962716-02

No Significant Match Found

DV One-Page Summary

KIC: 5962716 Candidate: 2 of 2 Period: 0.902 d
KOI: K06640 Corr: No Ephemeris Match

Kp: 13.88 R*: 1.51 Rs Teff: 6271.0 K Logg: 4.18 Fe/H: 0.100



TPS TCE Results:

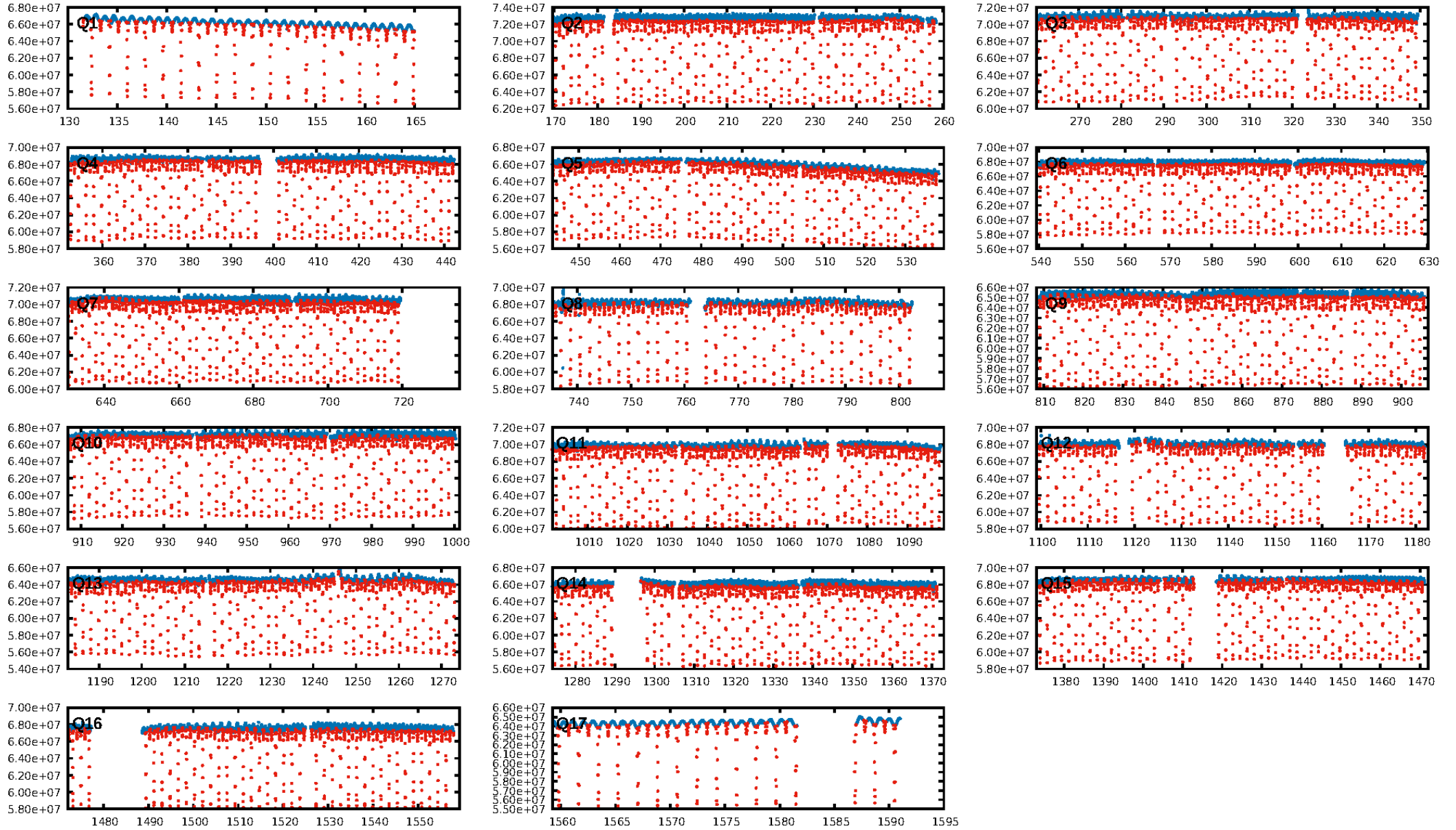
Period = 0.90229 d
Epoch = 132.3964 BKJD

DV fit results are unavailable

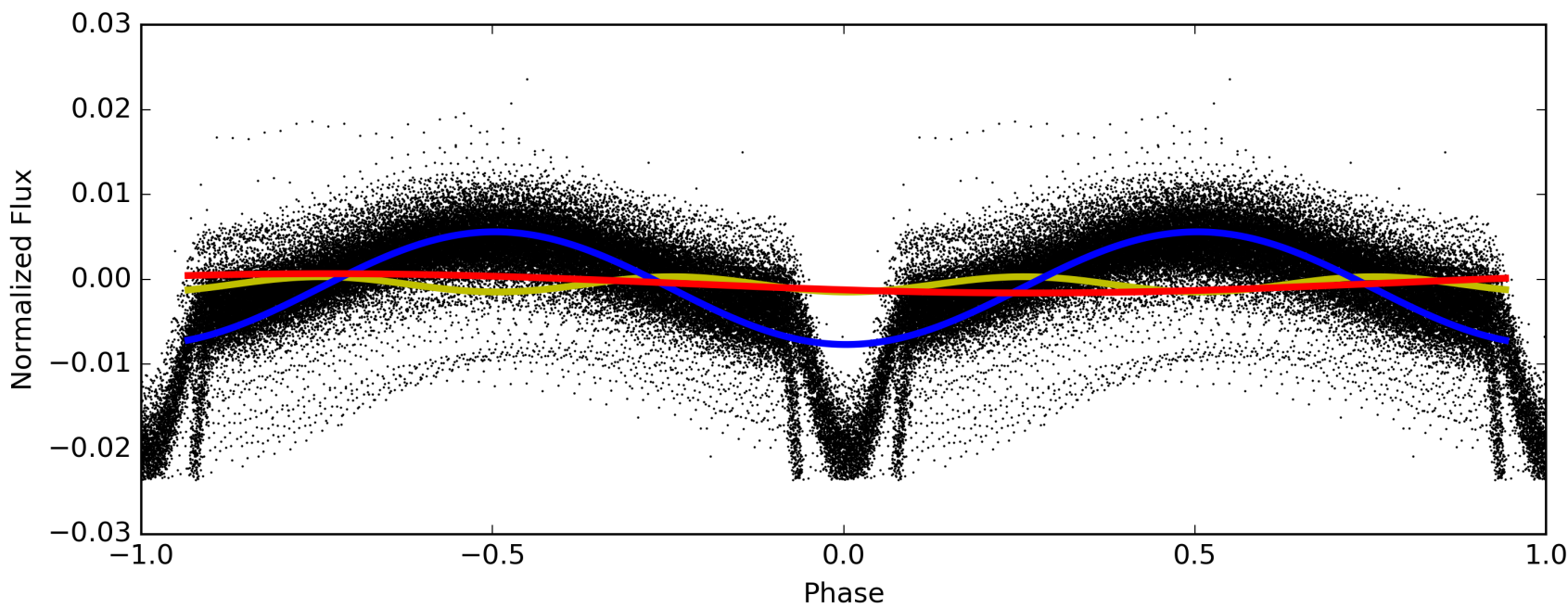
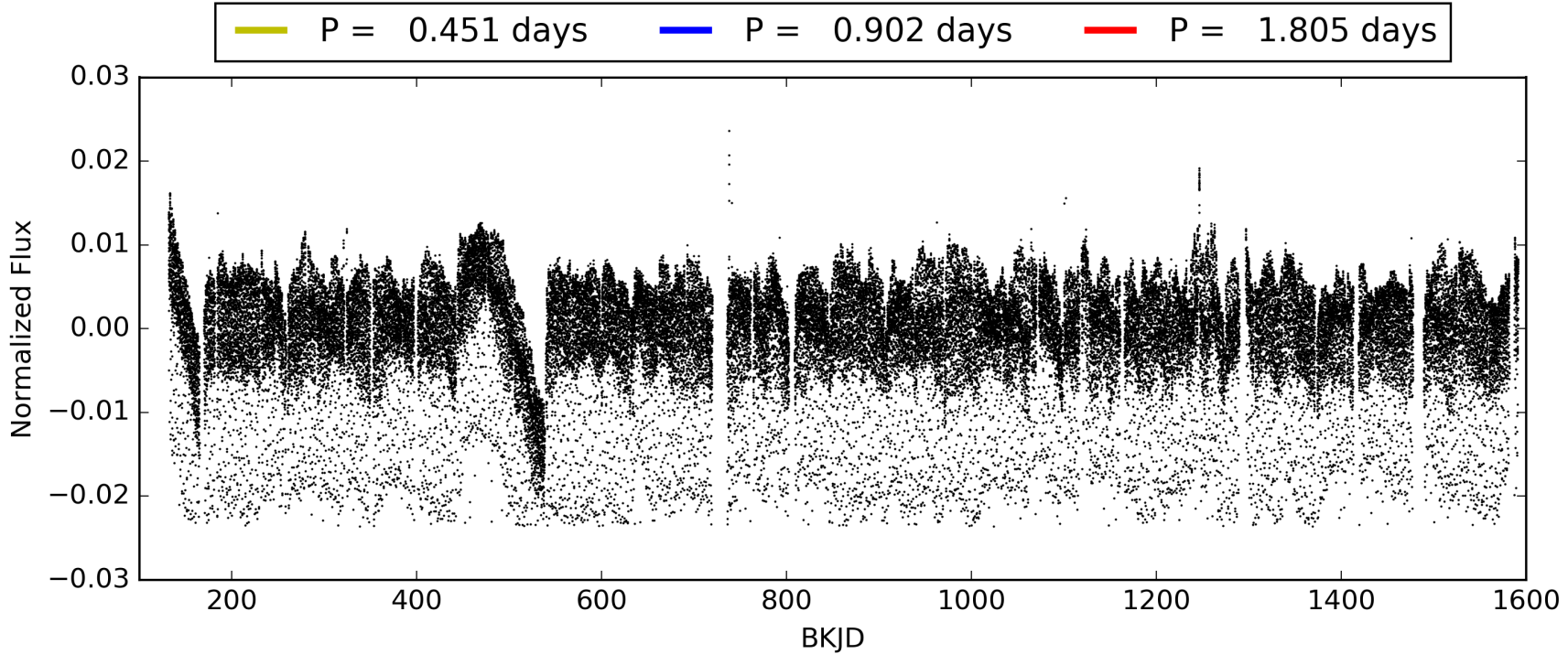
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.85σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [711/712]
GhostDiagnostic-chr: 1.651
Centroid-sig: N/A
Centroid-so: 0.150 arcsec [59.74σ]
OotOffset-rm: 0.052 arcsec [0.77σ]
KicOffset-rm: 0.196 arcsec [2.92σ]
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]

TCE 005962716-02, PDC Light Curves

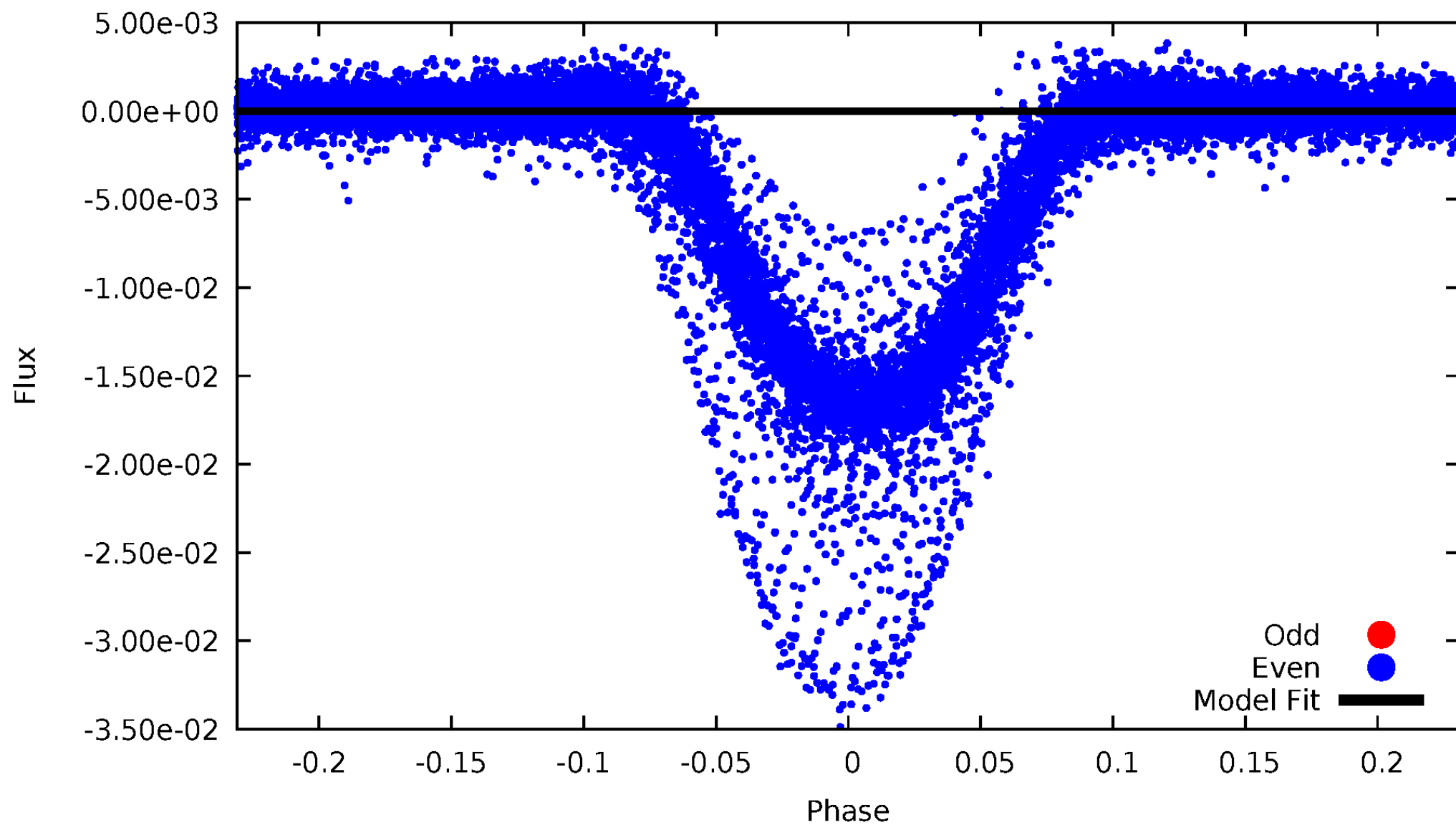


TCE 005962716-02



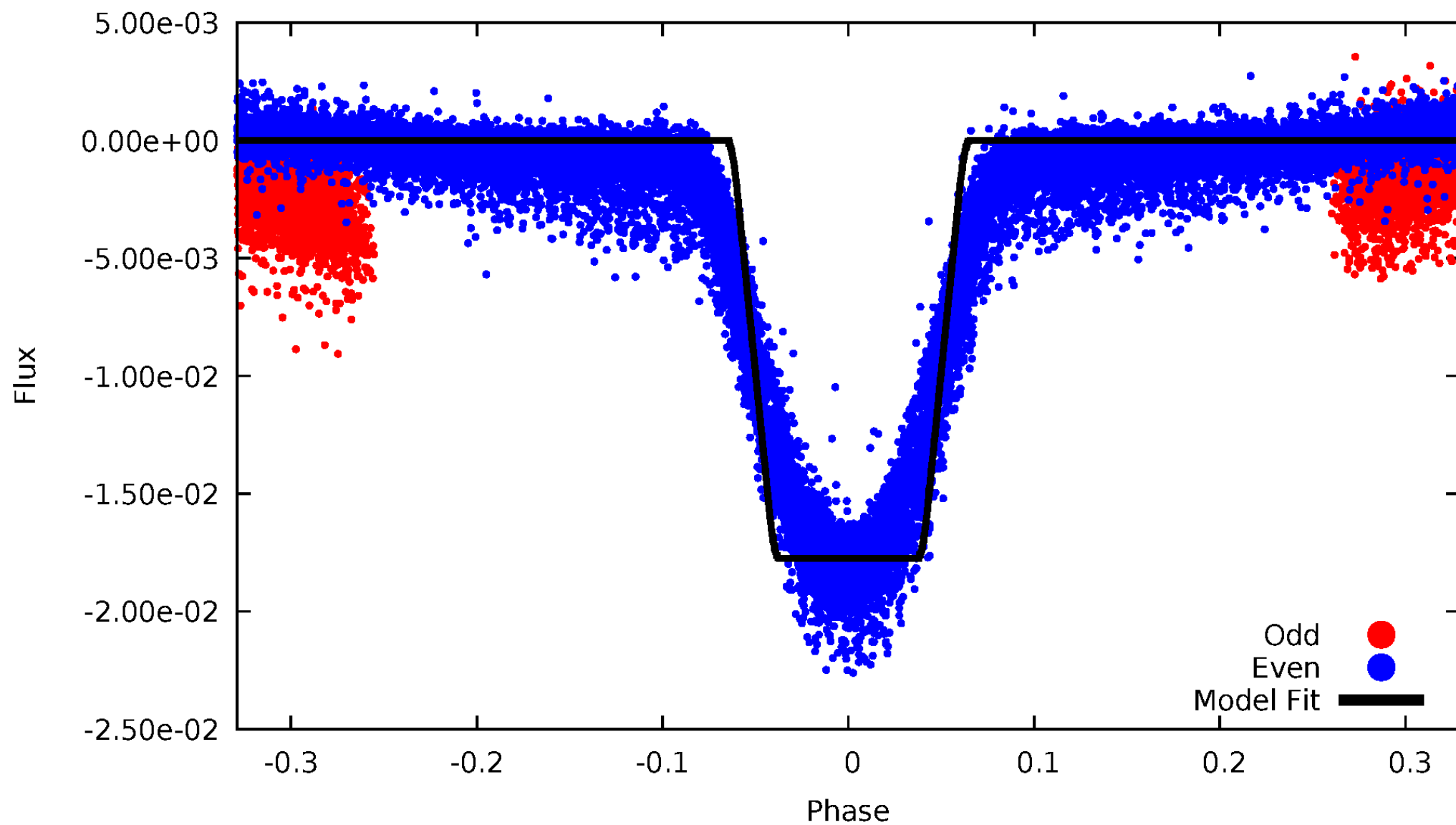
DV Odd/Even

TCE 005962716-02



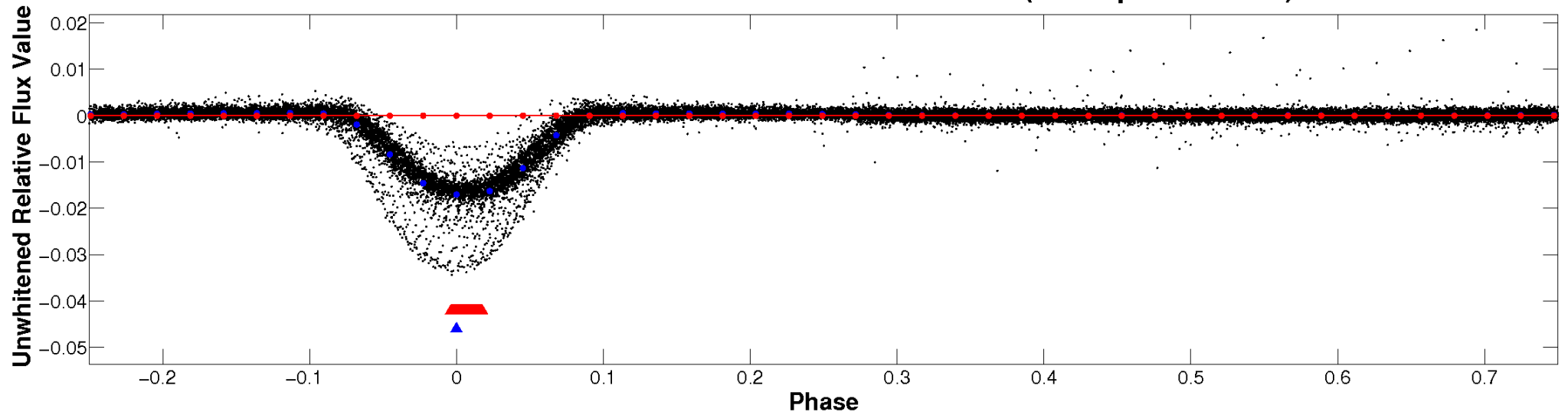
ALT Odd/Even

TCE 005962716-02



Non-Whitened Vs. Whitened Light Curve

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

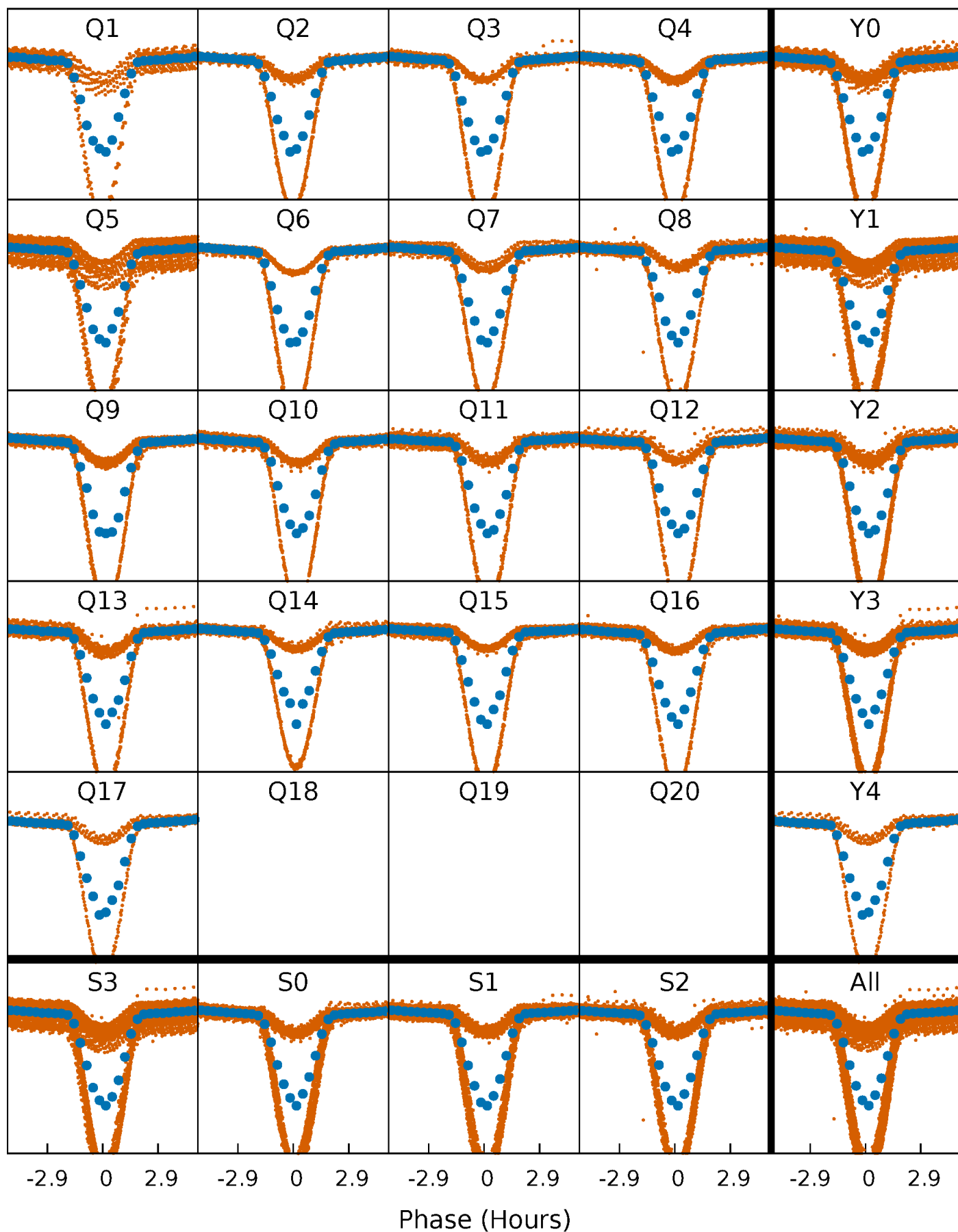


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



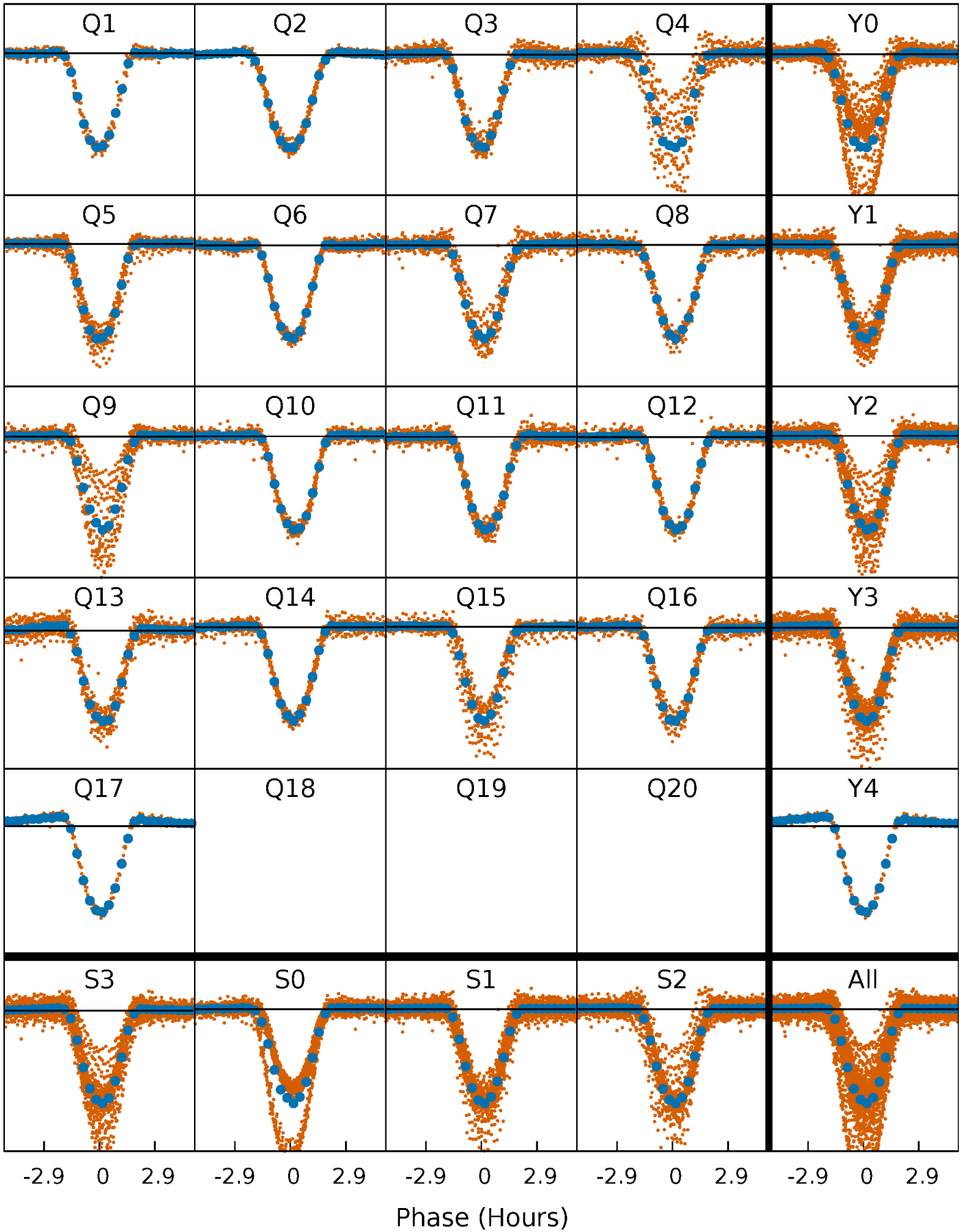
PDC Quarter-Phased Transit Curves

TCE 005962716-02 P= 0.902291 Days $T_0=132.396411$ (BKJD)



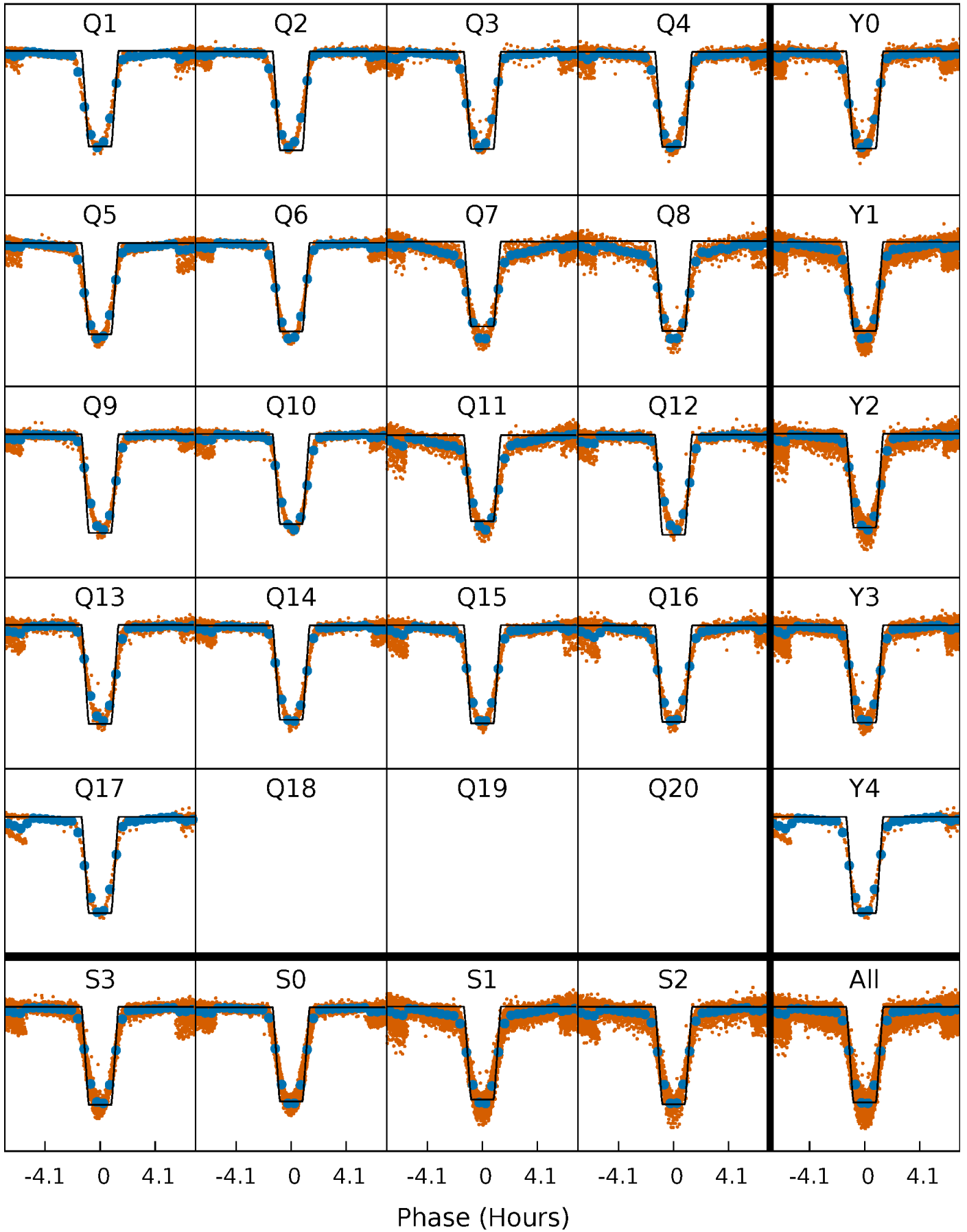
DV Quarter-Phased Transit Curves

TCE 005962716-02 P= 0.902291 Days $T_0=132.396411$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

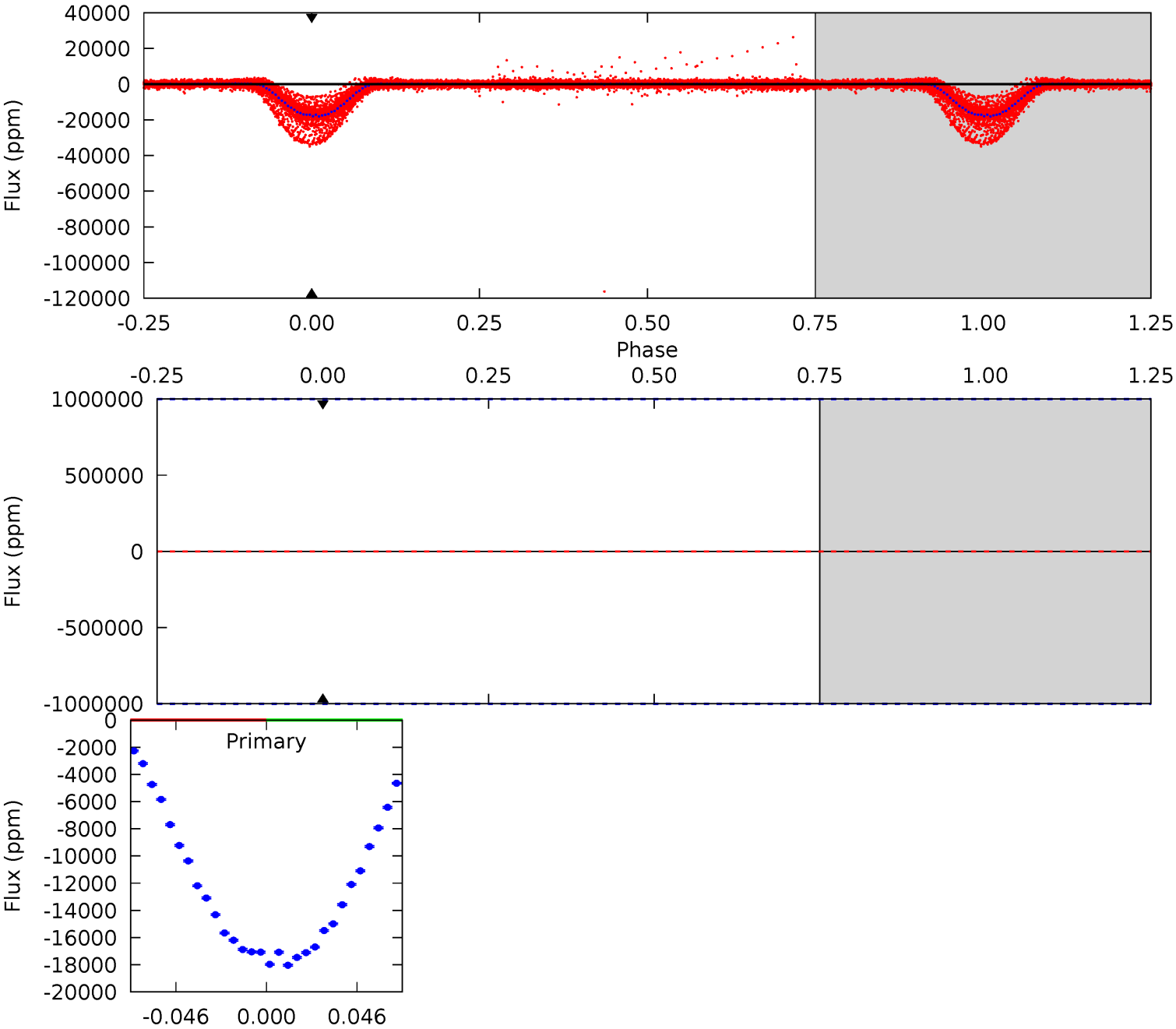
TCE 005962716-02 P= 0.902291 Days $T_0=132.400600$ (BKJD)



DV Model-Shift Uniqueness Test

005962716-02, P = 0.902291 Days, E = 131.494120 Days

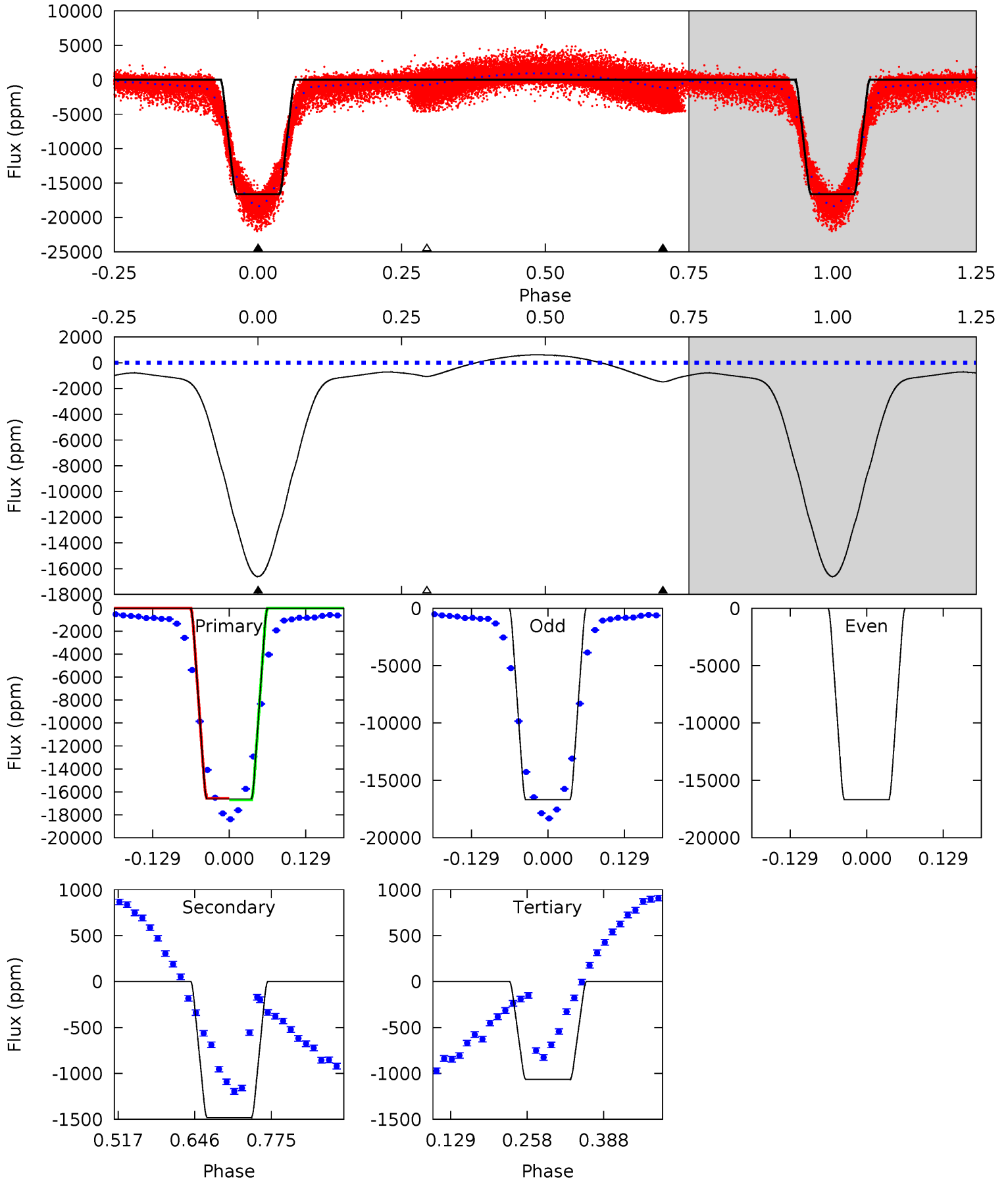
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005962716-02, P = 0.902291 Days, E = 131.498309 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
921.0	82.1	59.1	0	4.51	1.52	36.8	861.9	921.0	23.0	82.1	0	1.01	0.04	3.26



Stellar Parameters For KIC 005962716

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6271^{+75}_{-81}	$4.178^{+0.143}_{-0.117}$	$0.100^{+0.150}_{-0.150}$	$1.515^{+0.287}_{-0.258}$	$1.261^{+0.094}_{-0.117}$	$0.511^{+0.354}_{-0.178}$
	+1%/-1%	+3%/-3%	+150%/-150%	+19%/-17%	+7%/-9%	+69%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005962716-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$17.31^{+14.97}_{-11.30}$	3366^{+166}_{-148}	-3966^{+19547}_{-13269}	$-0.499^{+109.718}_{-125.925}$
Alt.	-1481 ± 18	$23.19^{+16.68}_{-13.31}$	3362^{+167}_{-155}	3282^{+1643}_{-6092}	$0.580^{+2.660}_{-0.381}$

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

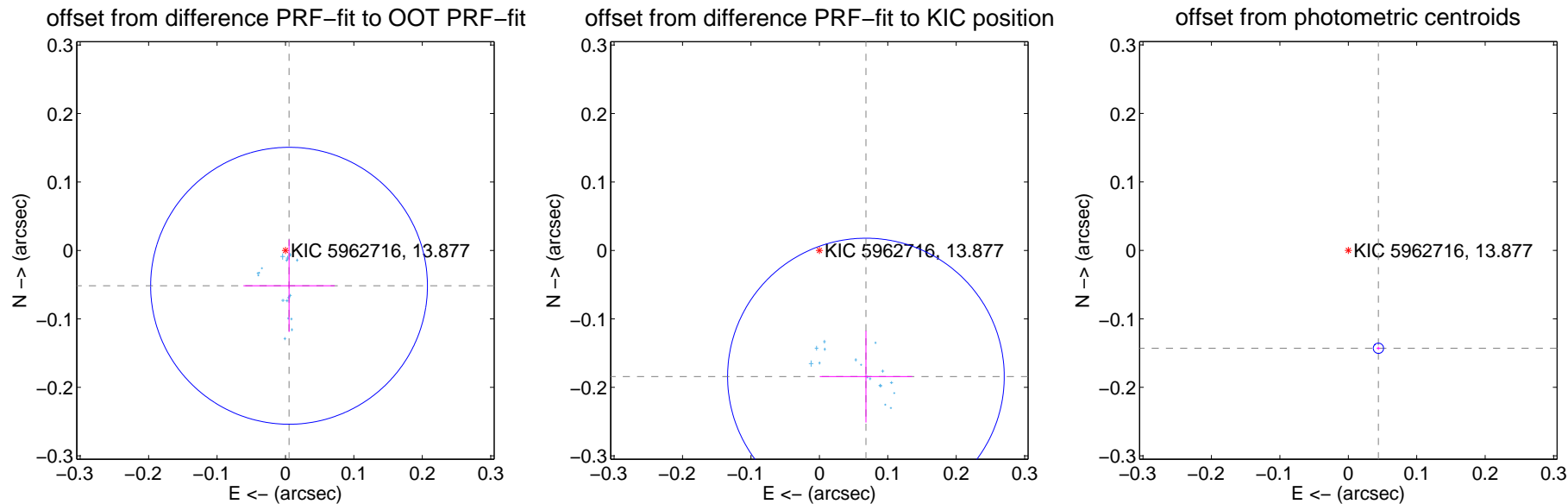
DV Centroid Data

Supplemental centroid analysis for 005962716-02. Kepler magnitude: 13.88. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

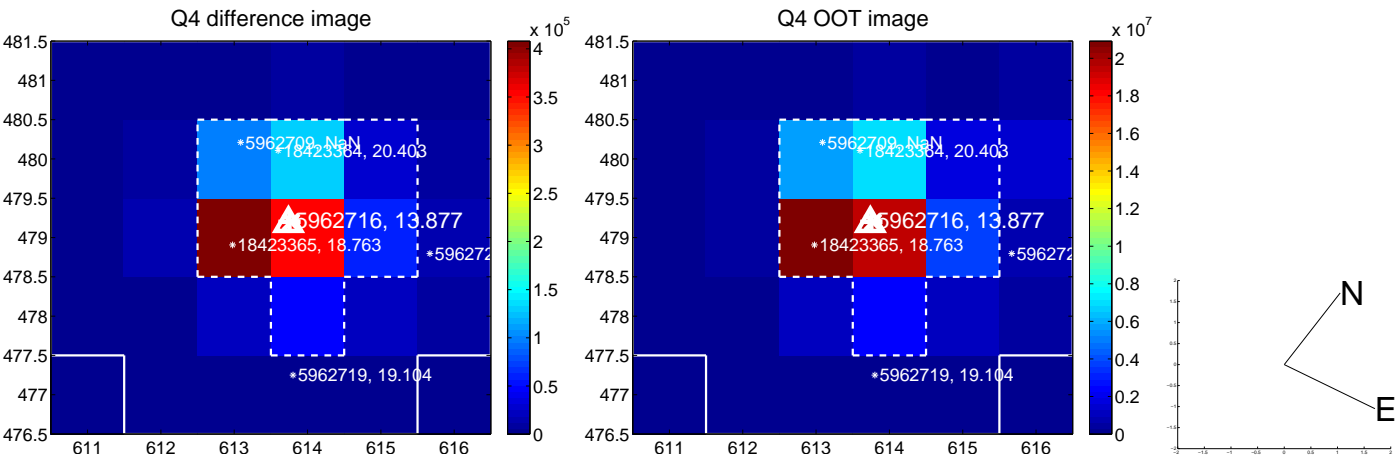
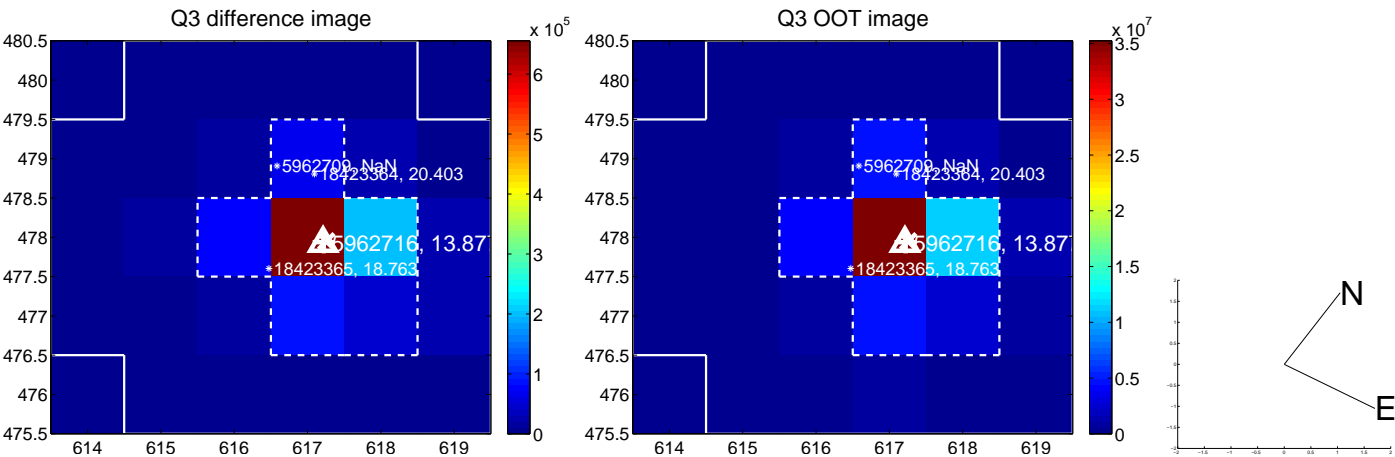
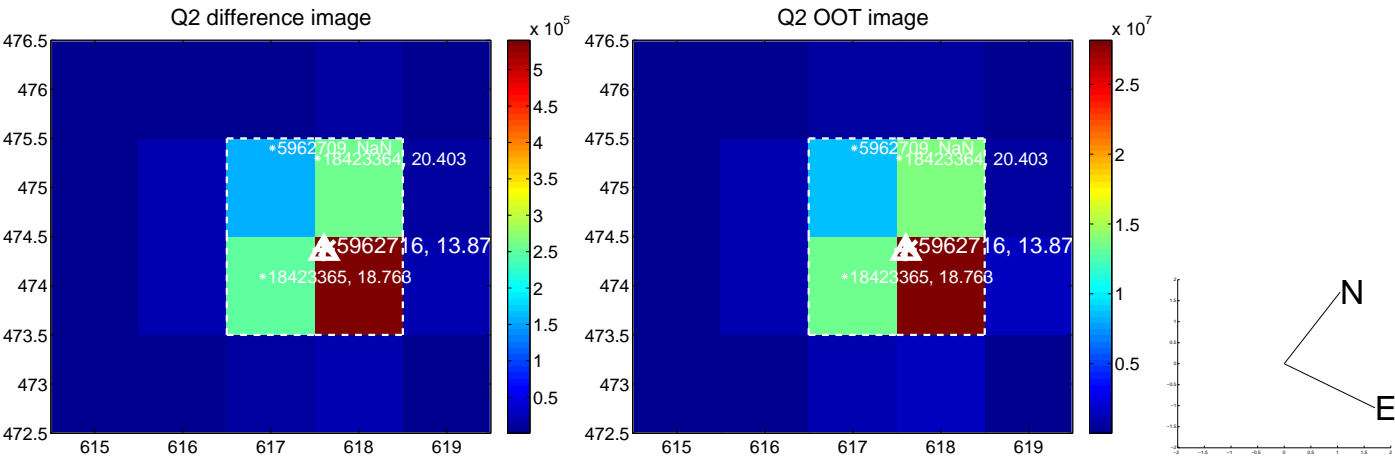
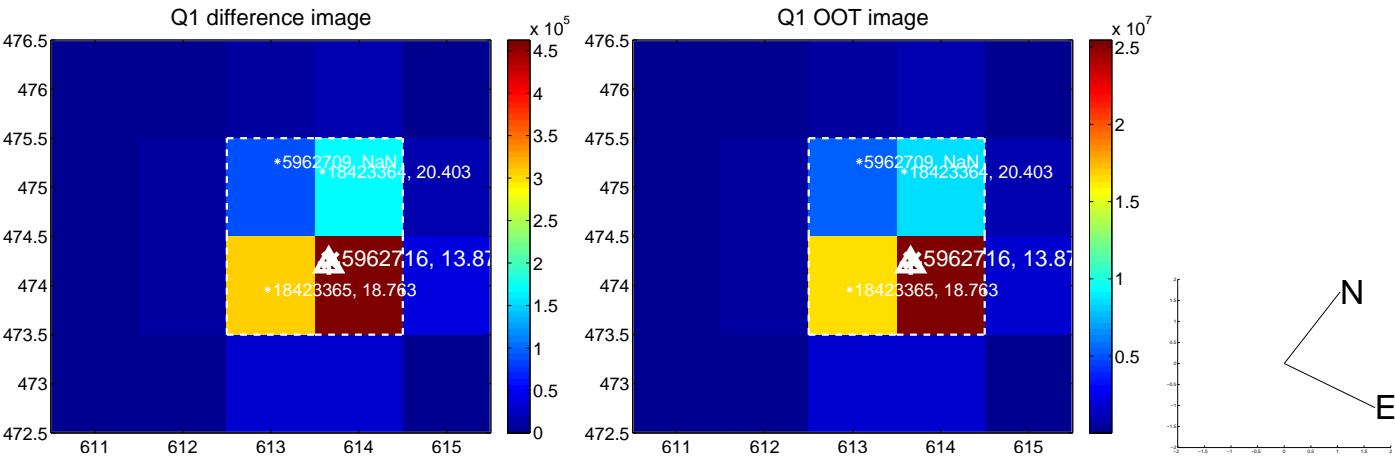
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.052 ± 0.067	0.77	-0.005 ± 0.067	-0.052 ± 0.067
PRF-fit source offset from KIC position	0.196 ± 0.067	2.92	-0.068 ± 0.068	-0.184 ± 0.067
photometric centroid source offset	0.15 ± 0.00	59.74	-0.04 ± 0.00	-0.14 ± 0.00

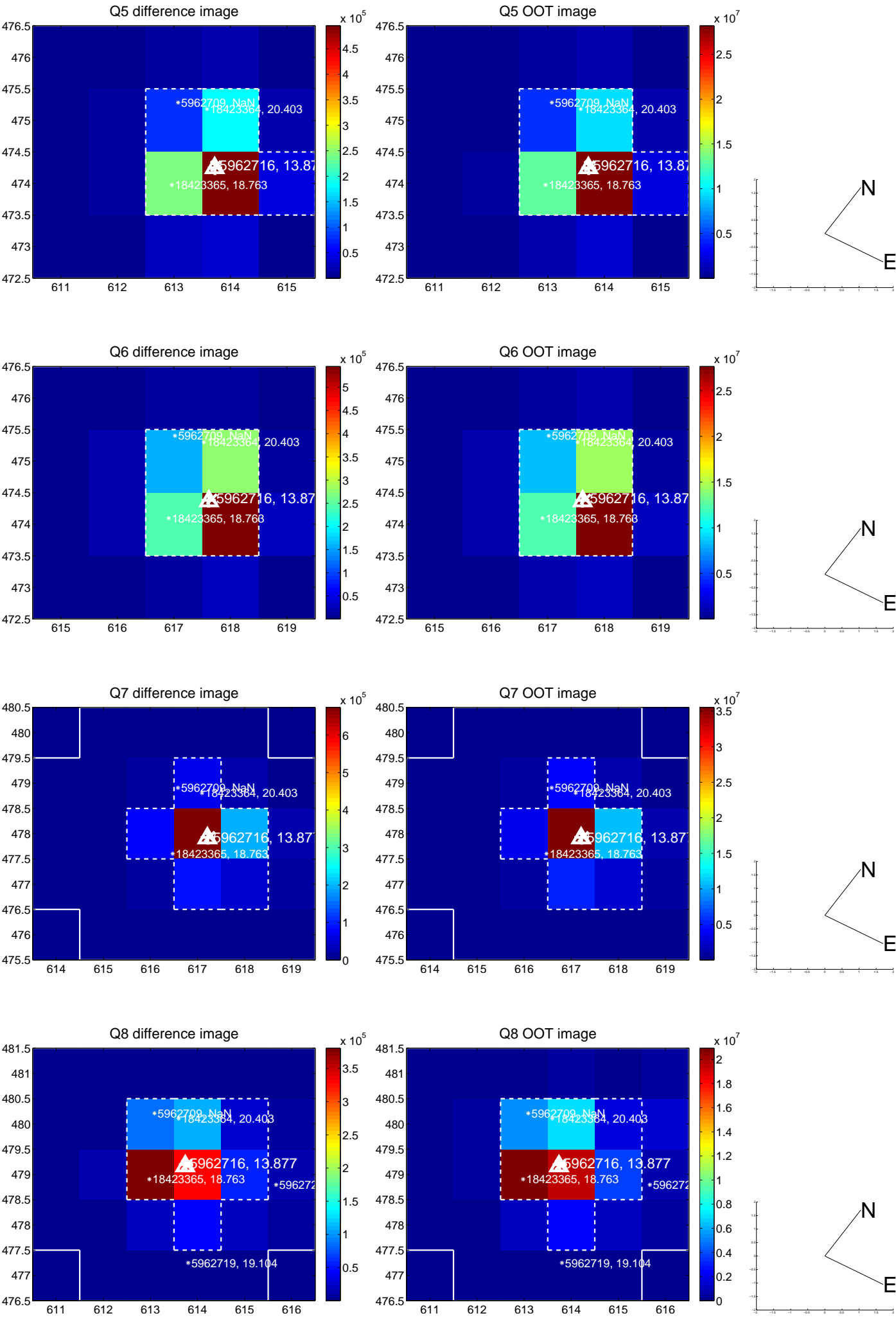


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

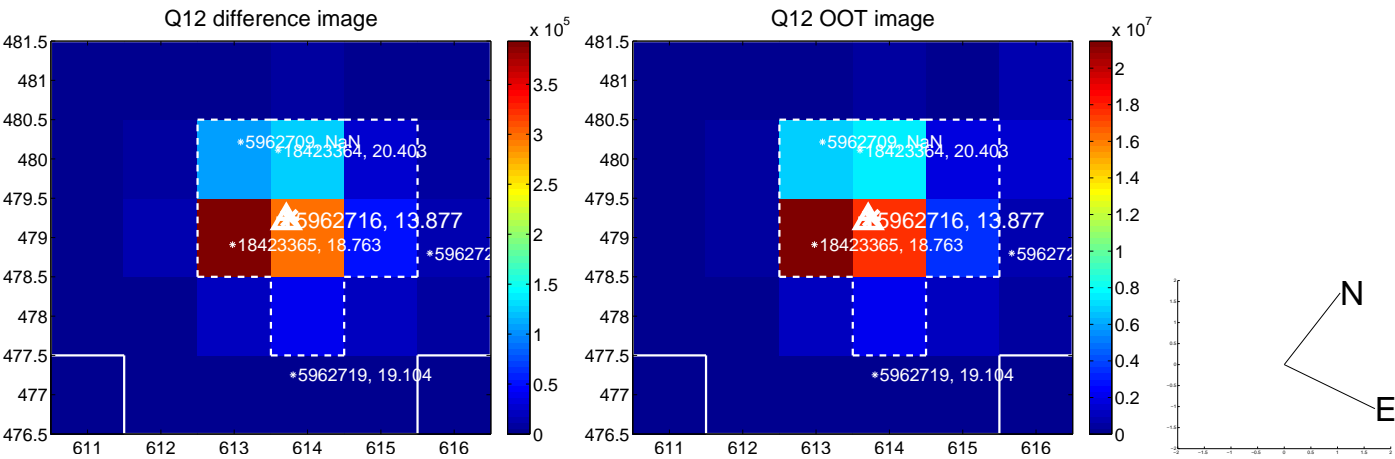
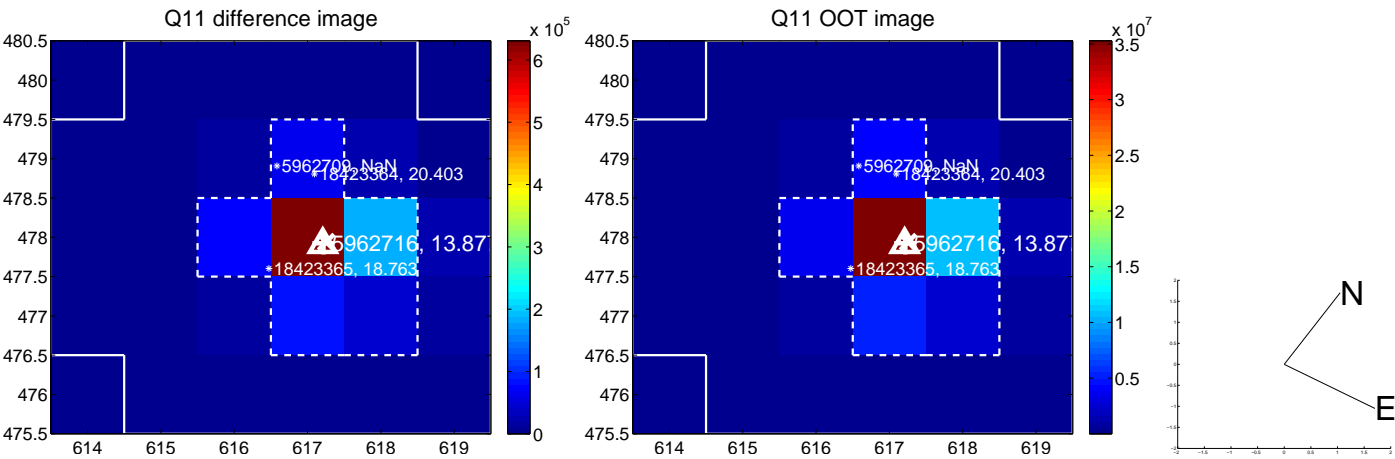
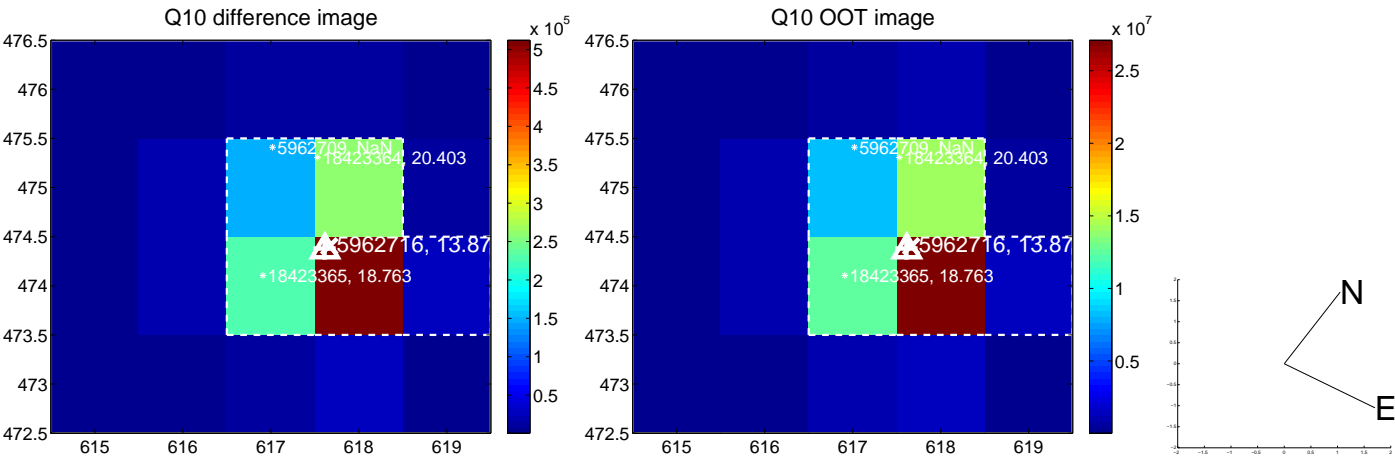
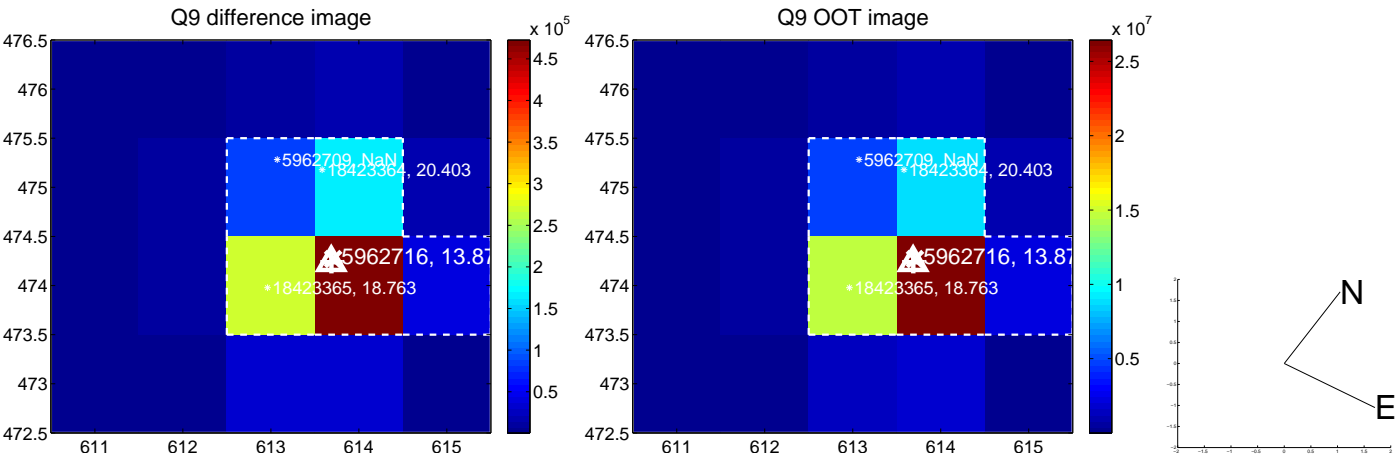
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



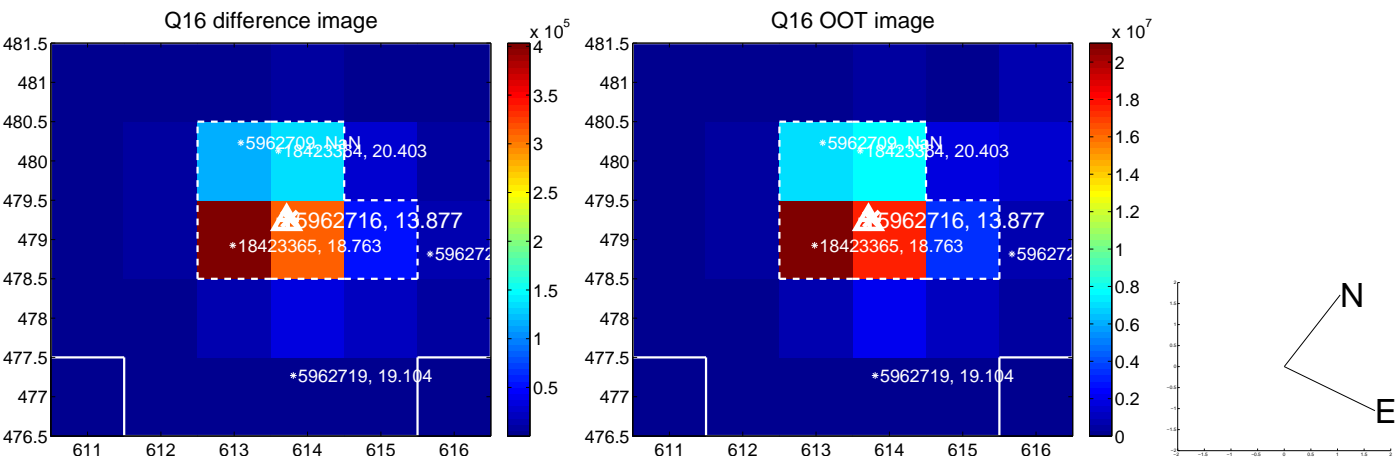
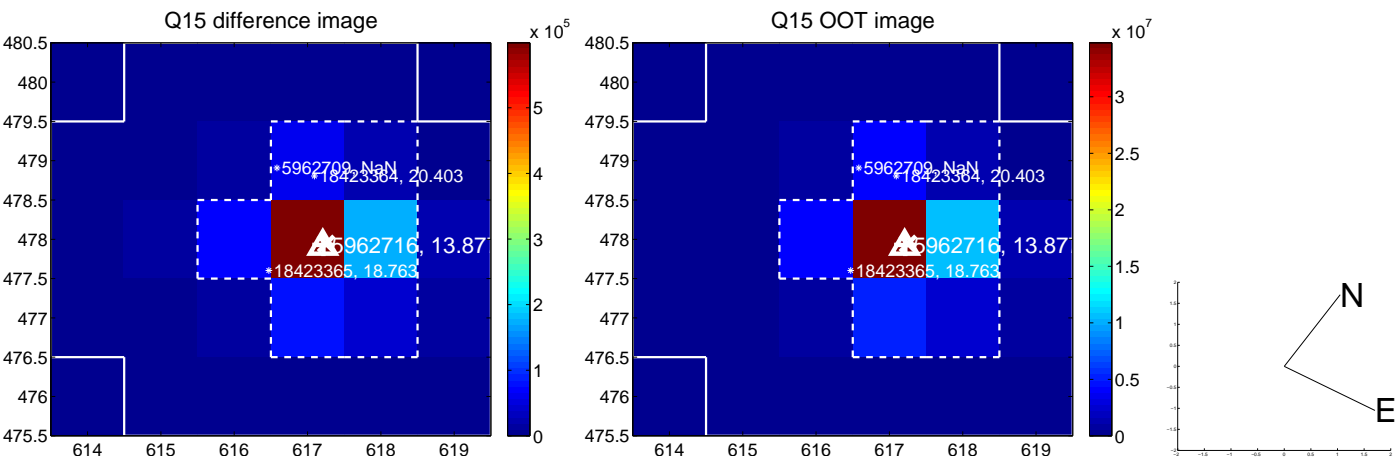
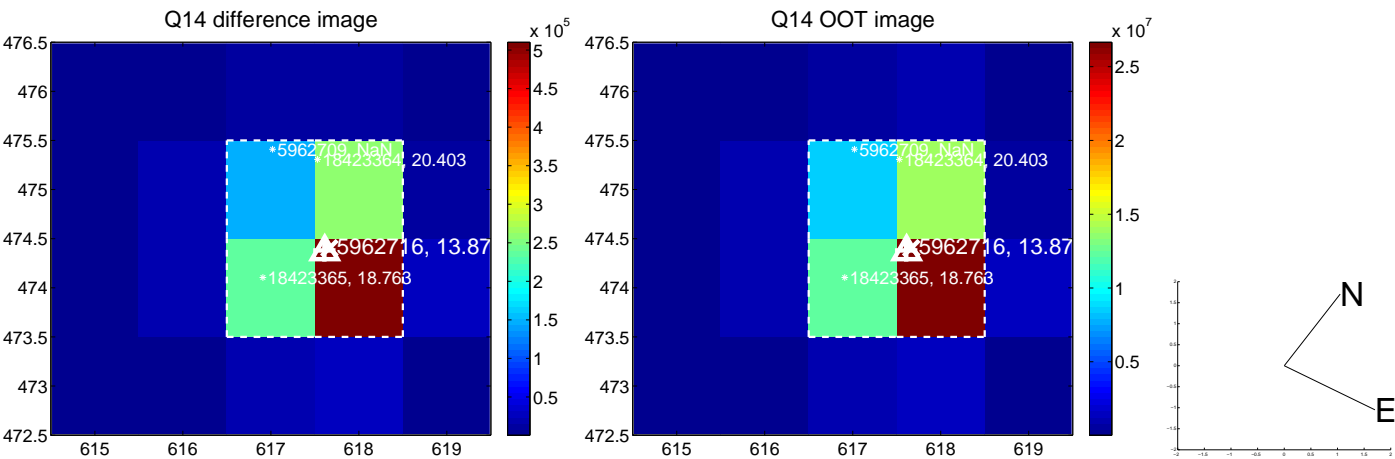
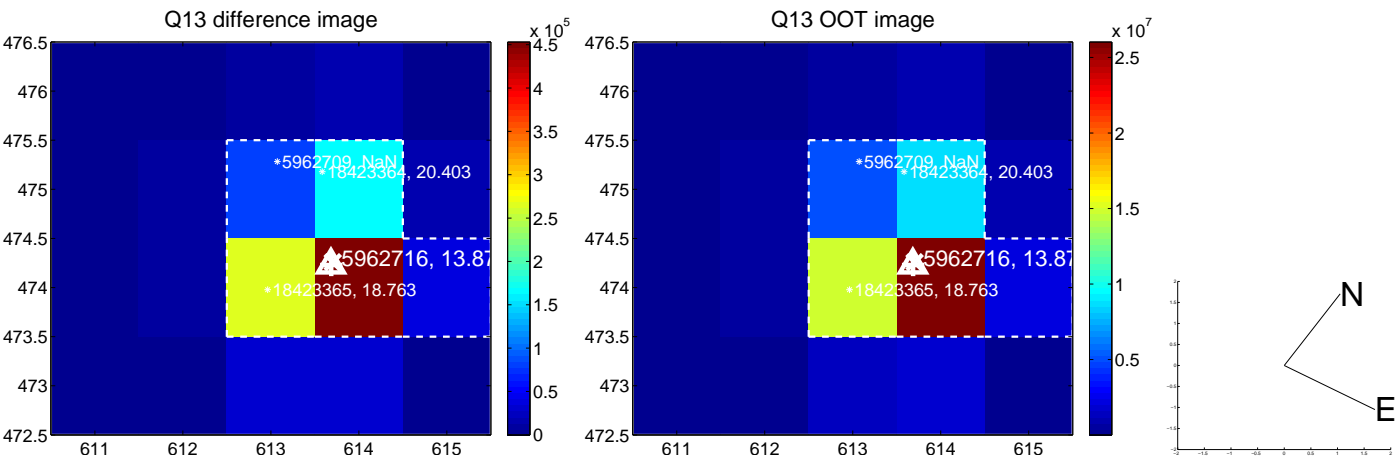
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



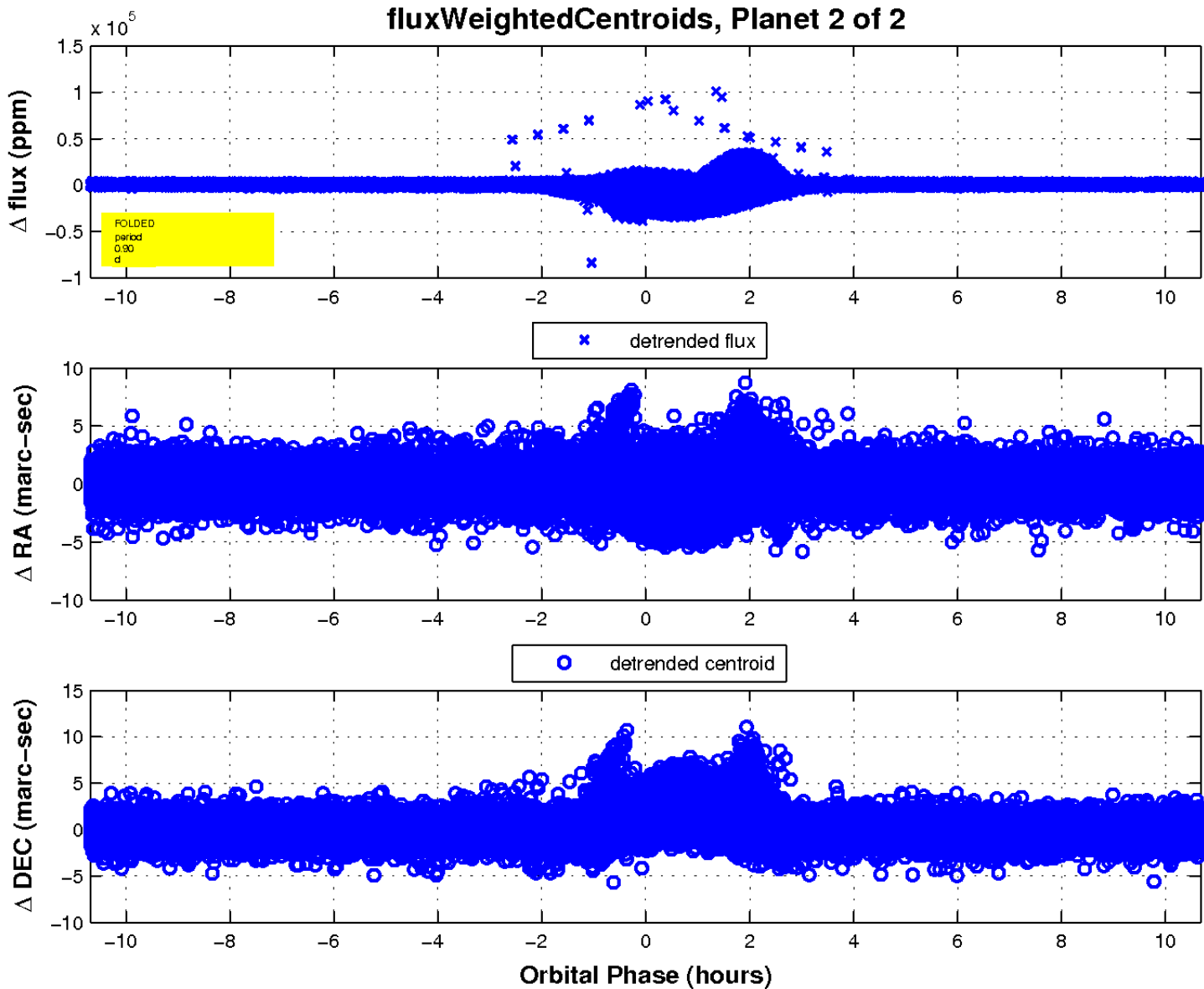
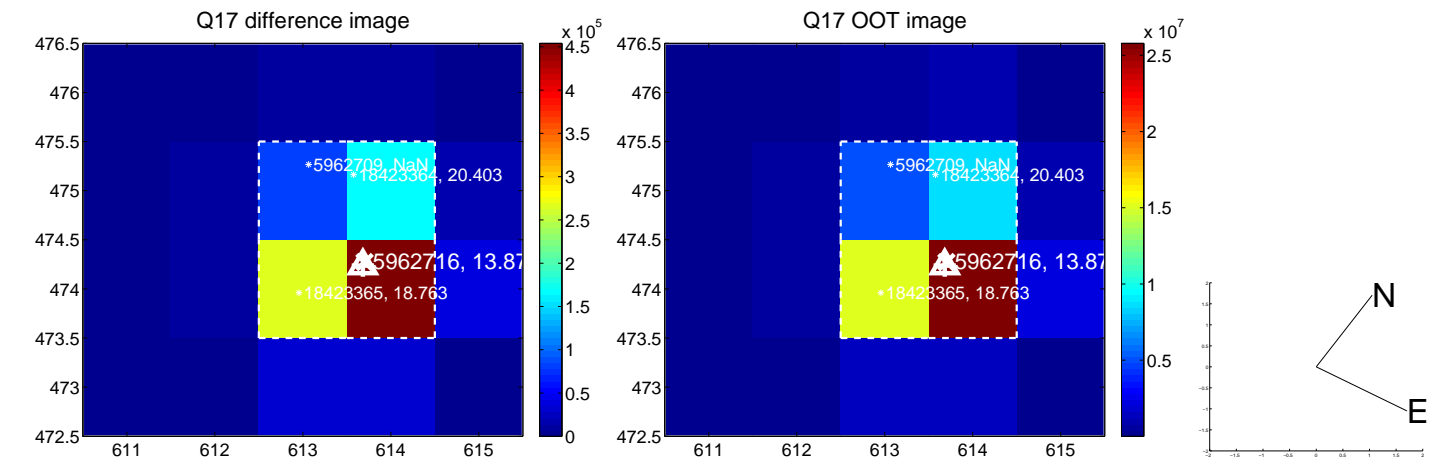
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

