

KIC 003428468

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})
003428468-01	OBS	3582.01	114.908621	199.450767	195790.3	7.712	1799.3	1413.2	0.74	4412	39.67	1.06
003428468-02	OBS	No	114.908618	208.488614	124758.9	4.189	925.1	763.2	0.74	4412	39.02	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003428468-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
003428468-02	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 003428468-01

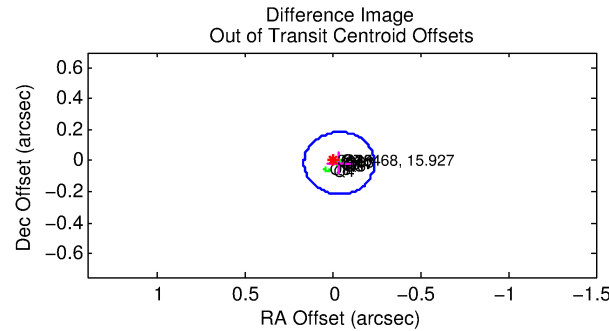
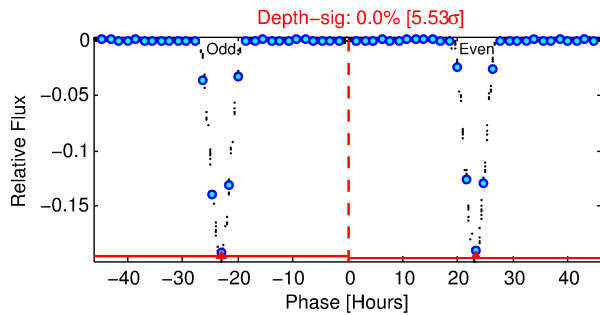
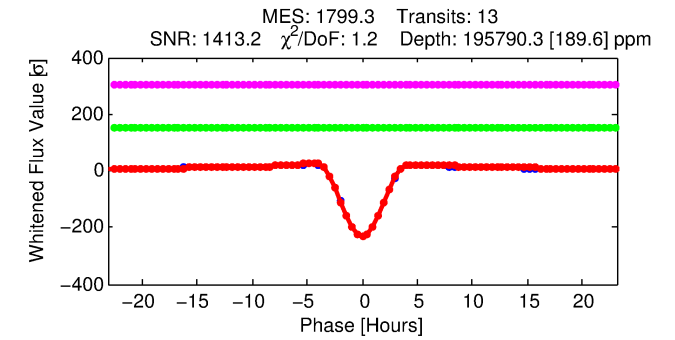
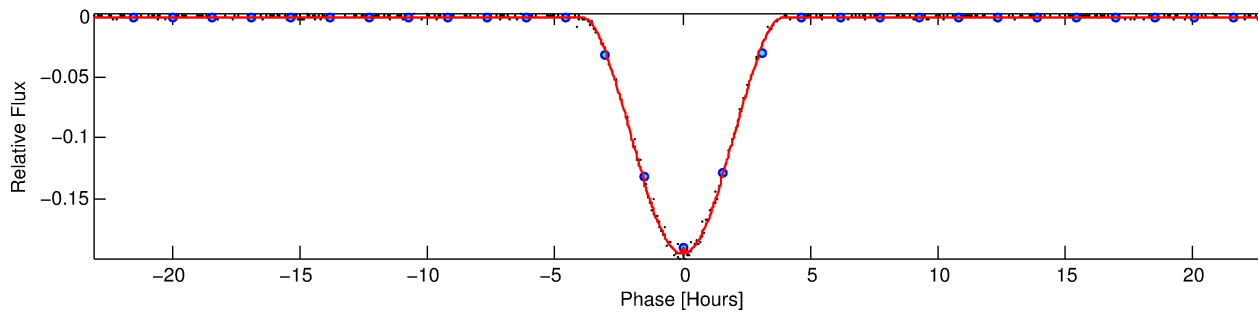
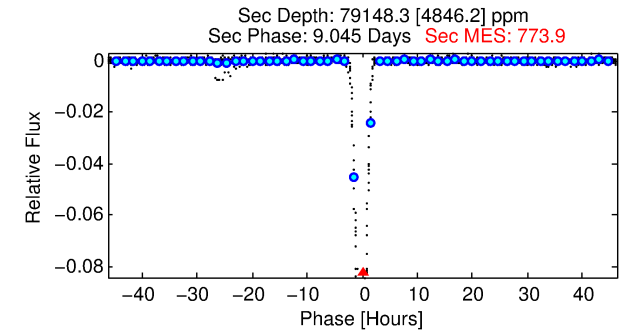
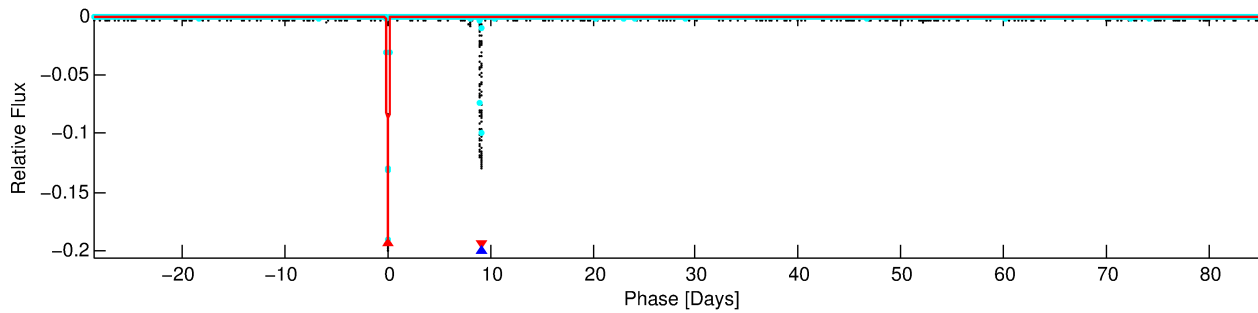
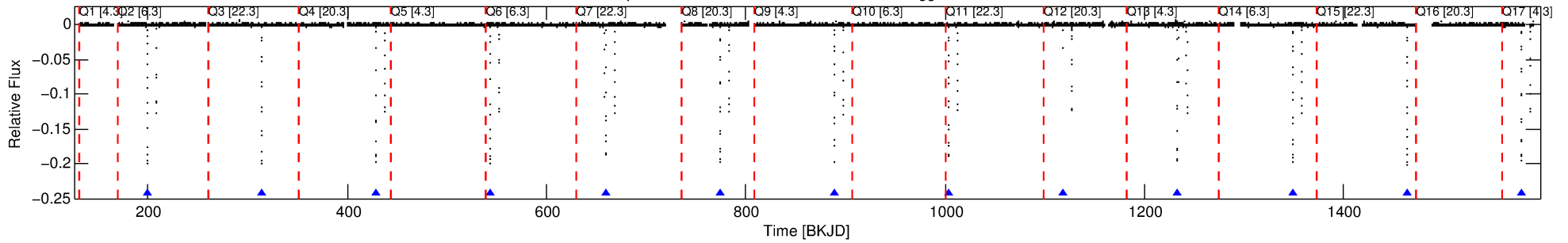
No Significant Match Found

DV One-Page Summary

KIC: 3428468 Candidate: 1 of 2 Period: 114.909 d

KOI: K03582.01 Corr: 0.999

Kp: 15.93 R*: 0.74 Rs Teff: 4412.0 K Logg: 4.57 Fe/H: 0.440



DV Fit Results:

Period = 114.90862 [0.00001] d
Epoch = 199.4508 [0.0001] BKJD
Rp/R* = 0.4933 [0.0215]
a/R* = 148.99 [0.47]
b = 0.72 [0.04]
Seff = 1.06 [0.17]
Teq = 259 [10] K
Rp = 39.67 [3.62] Re
a = 0.4161 [0.0293] AU
Ag = 4791.75 [721.49] [6.64σ]
Teffp = 3332 [133] K [22.96σ]

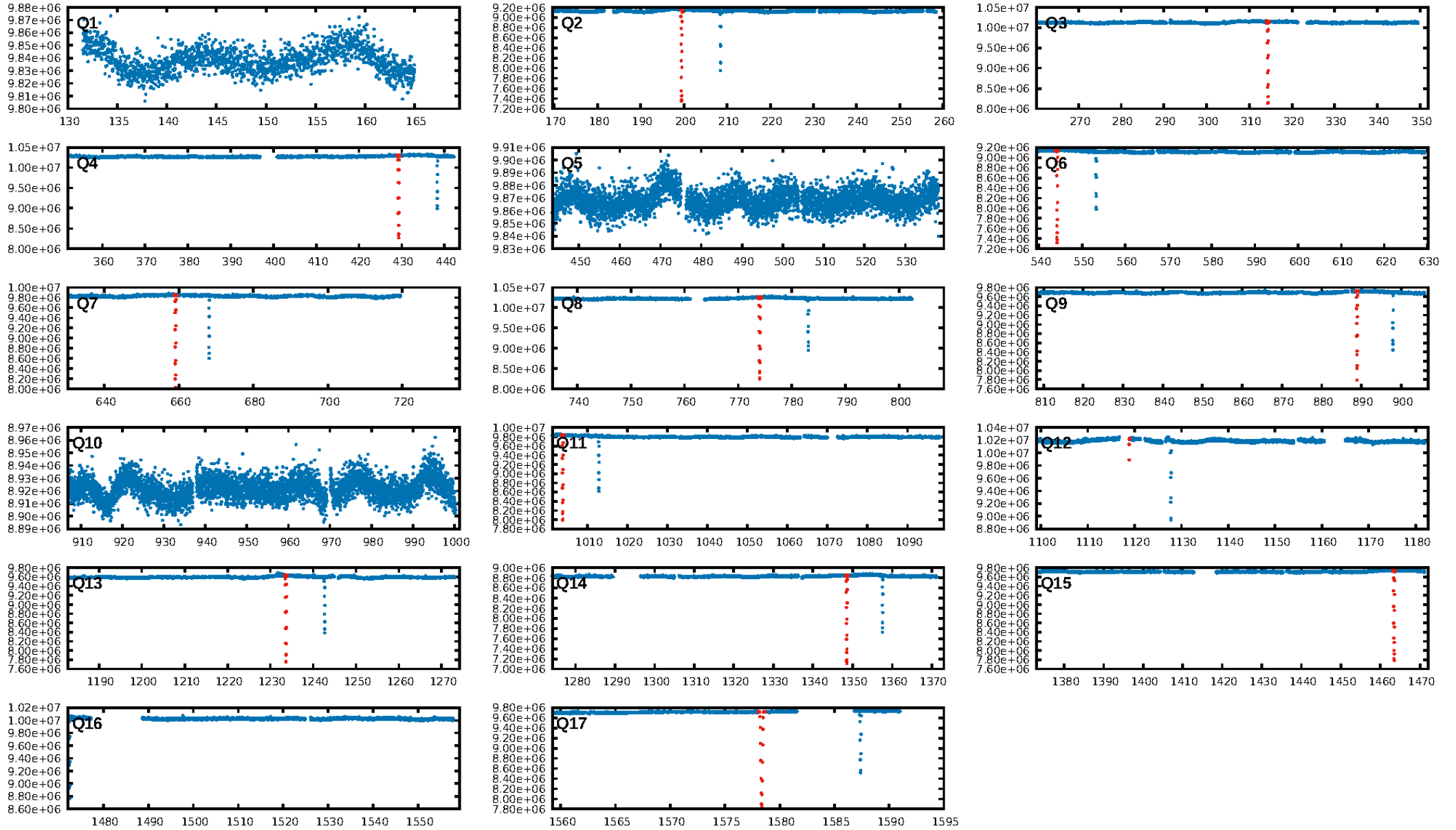
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 97.7%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 3.644
Centroid-sig: 0.0%
Centroid-so: 0.300 arcsec [40.72σ]
OotOffset-rm: 0.040 arcsec [0.59σ]
OotOffset-st: 3/3/2/3 [11]
KicOffset-rm: 0.254 arcsec [3.47σ]
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DiffImageQuality-fgm: 1.00 [11/11]
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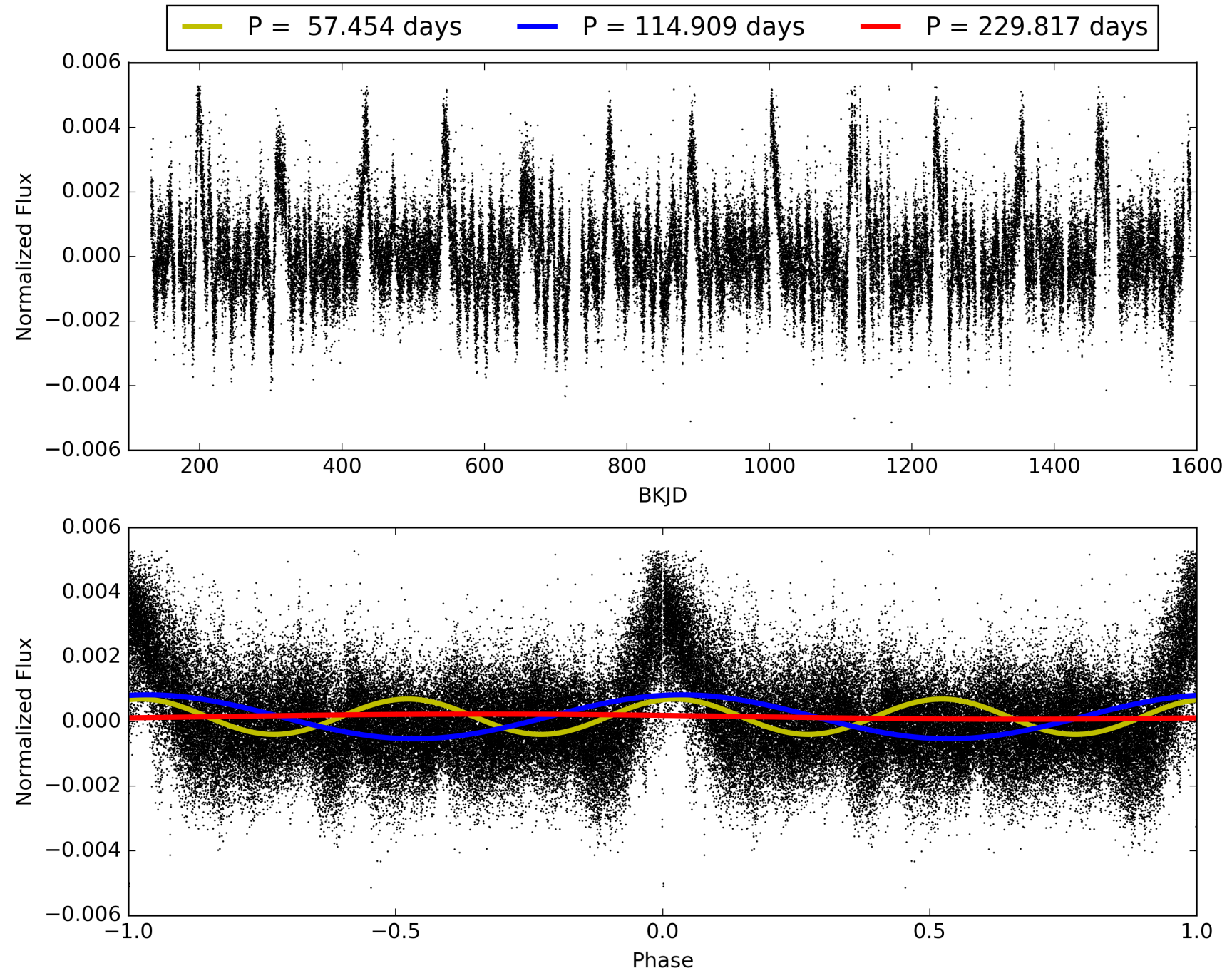
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:28:06 Z

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

TCE 003428468-01, PDC Light Curves

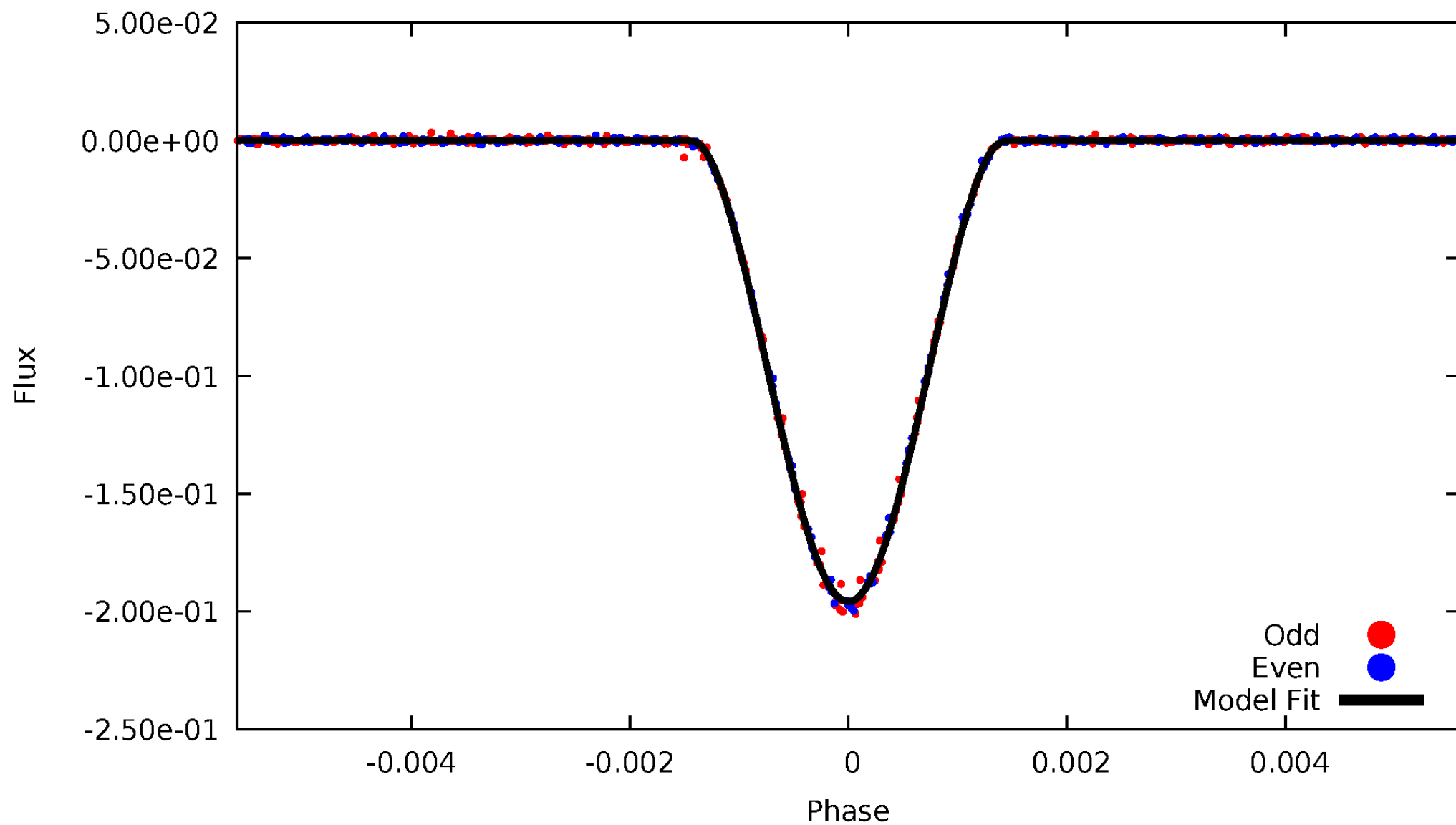


TCE 003428468-01



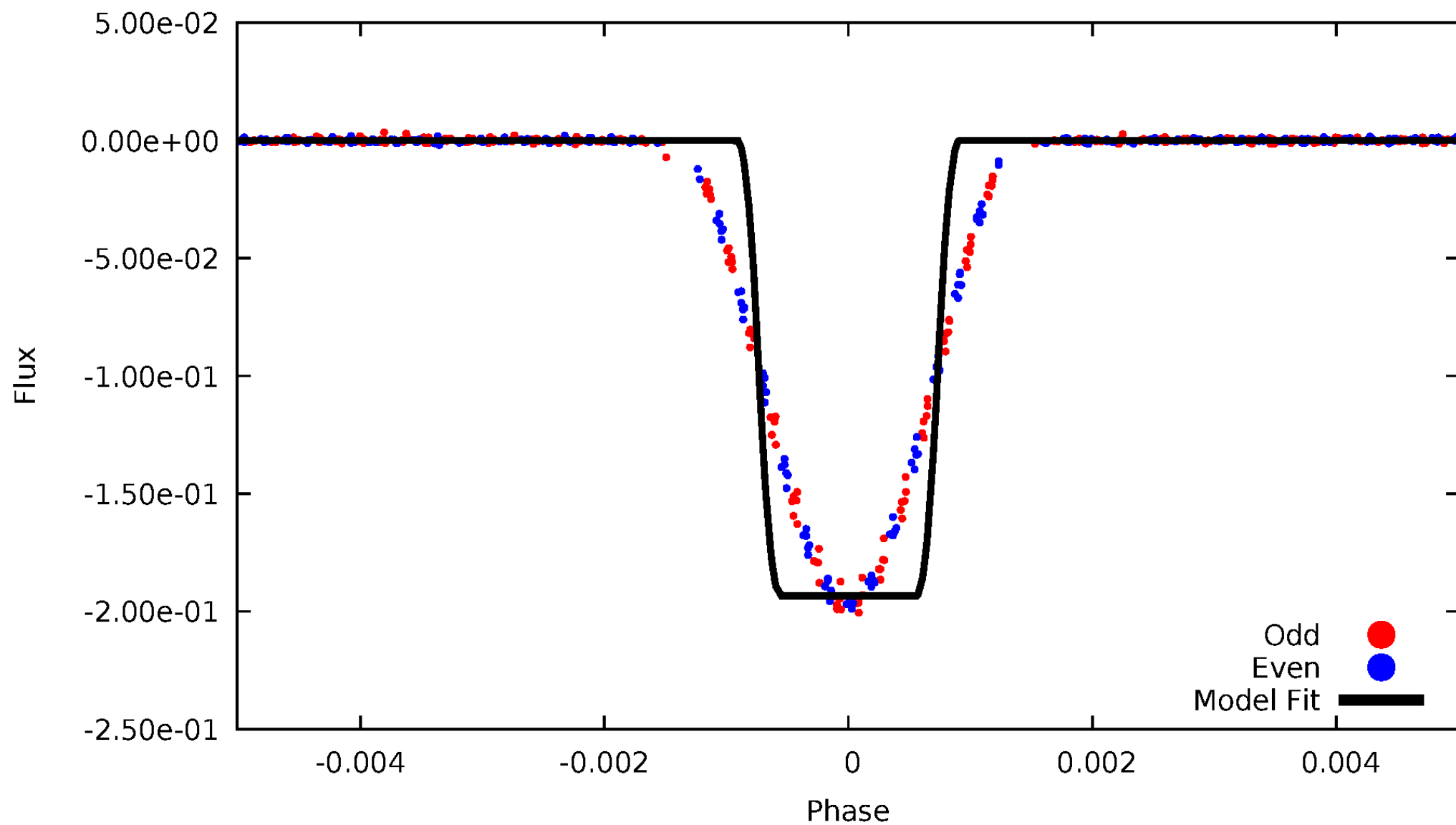
DV Odd/Even

TCE 003428468-01



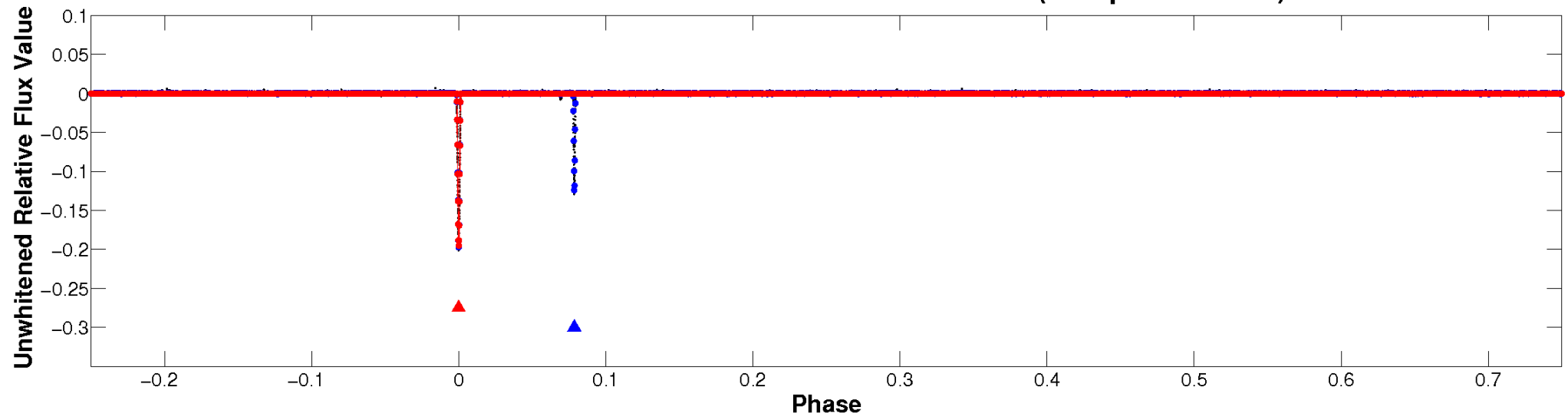
ALT Odd/Even

TCE 003428468-01

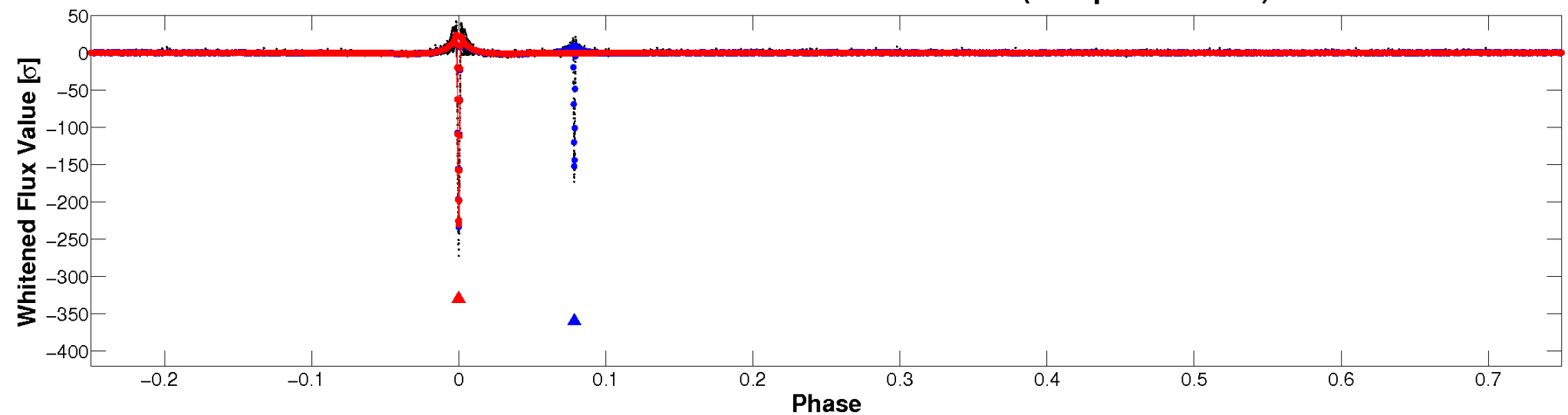


Non-Whitened Vs. Whitened Light Curve

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

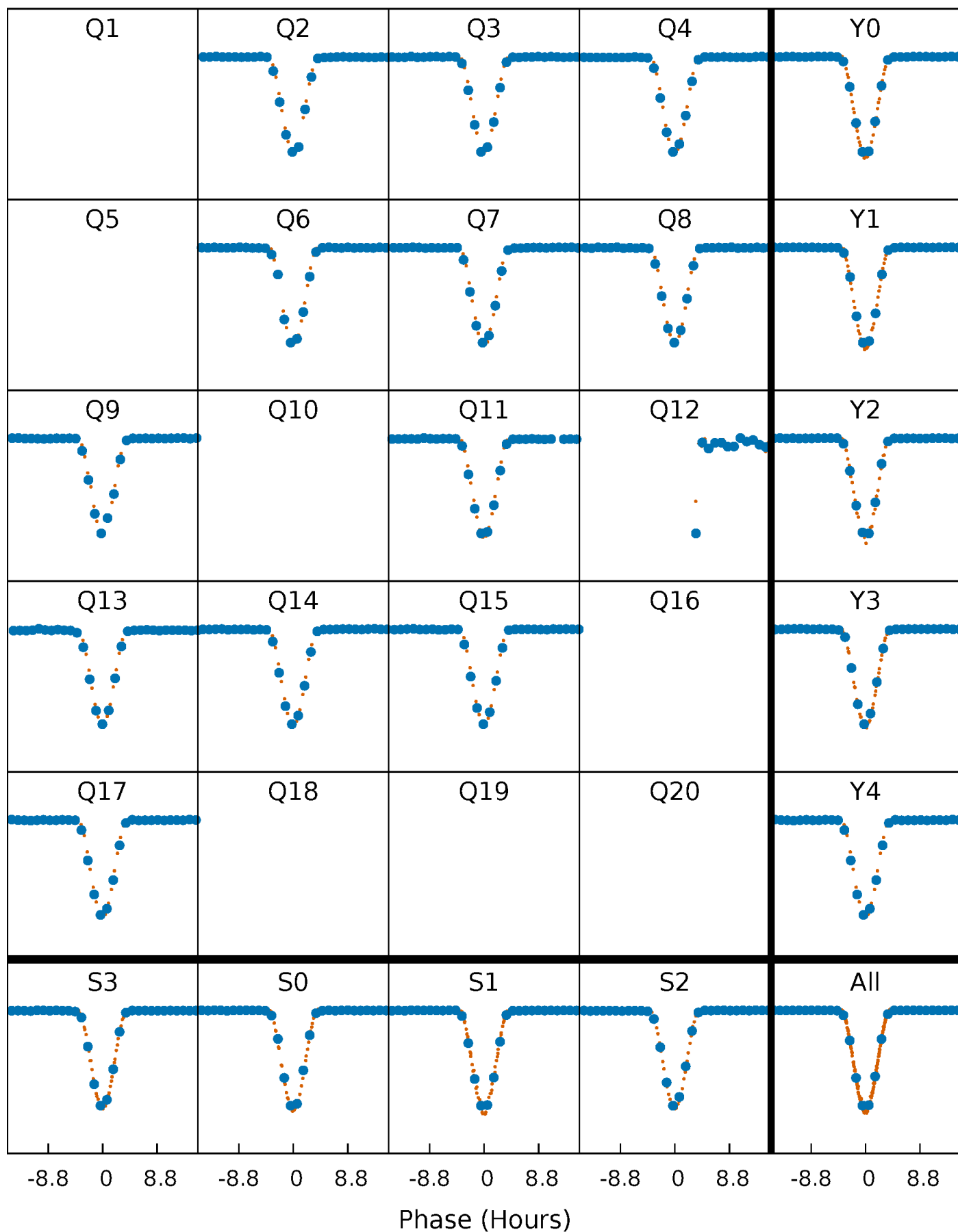


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



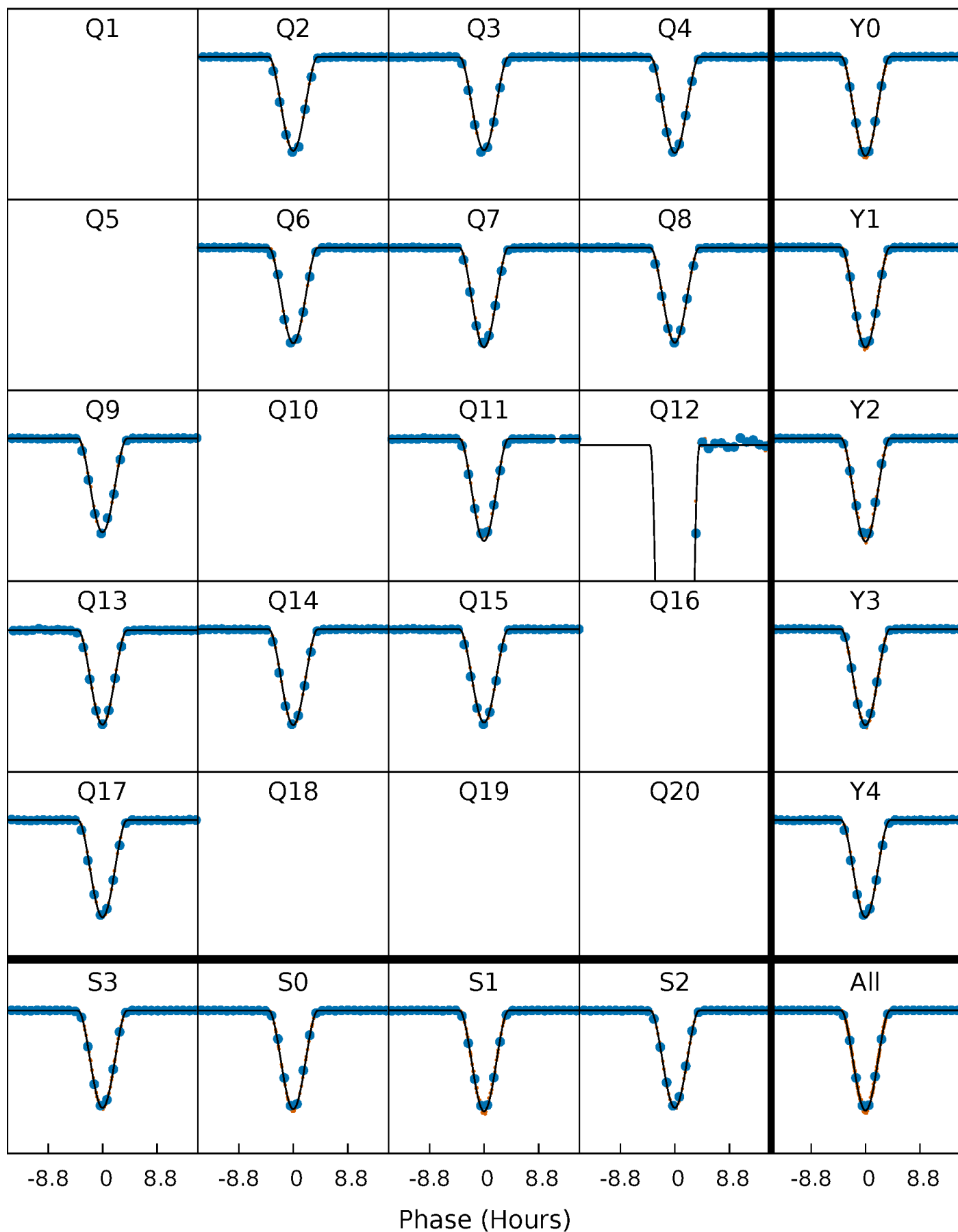
PDC Quarter-Phased Transit Curves

TCE 003428468-01 P=114.908621 Days $T_0=199.450767$ (BKJD)



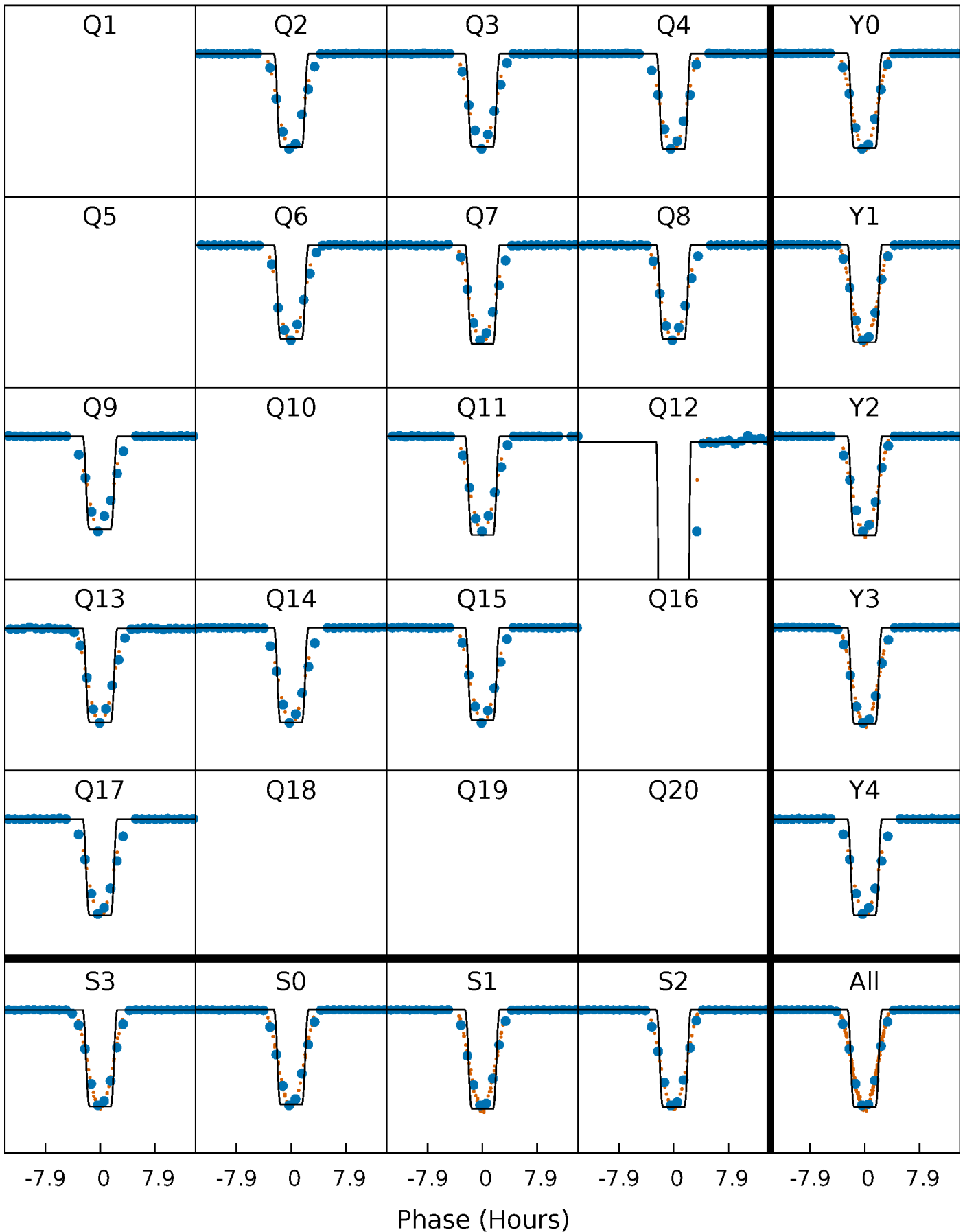
DV Quarter-Phased Transit Curves

TCE 003428468-01 P=114.908621 Days $T_0=199.450767$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

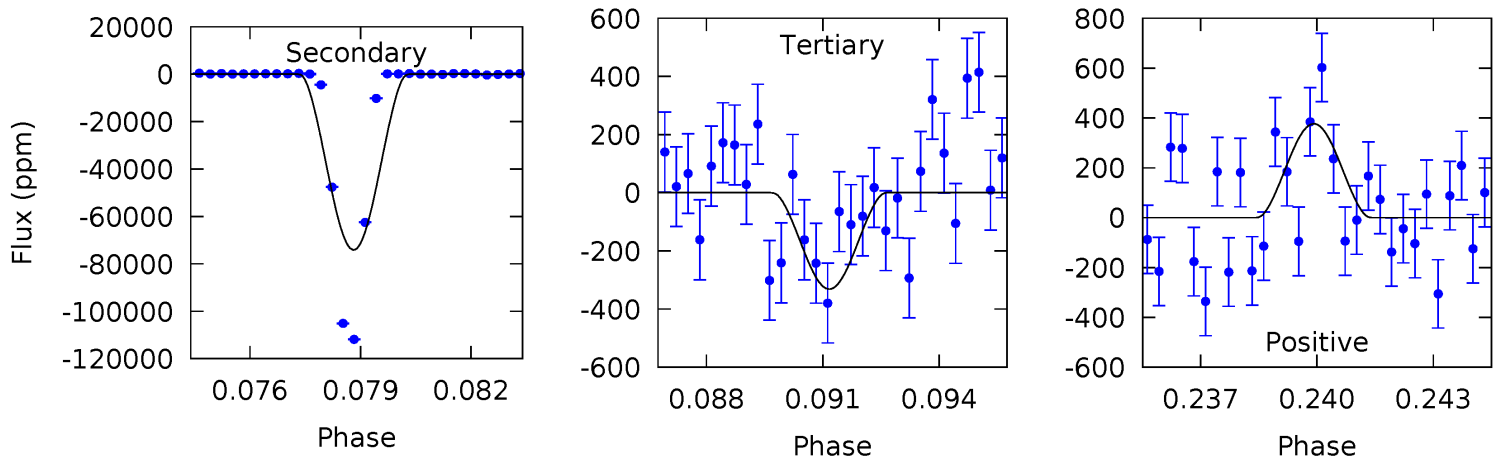
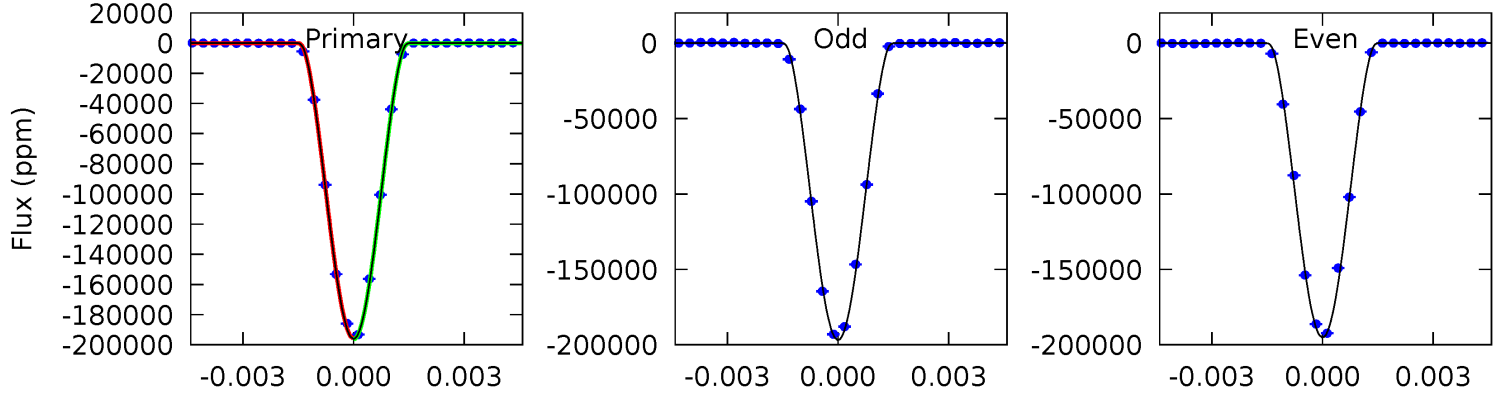
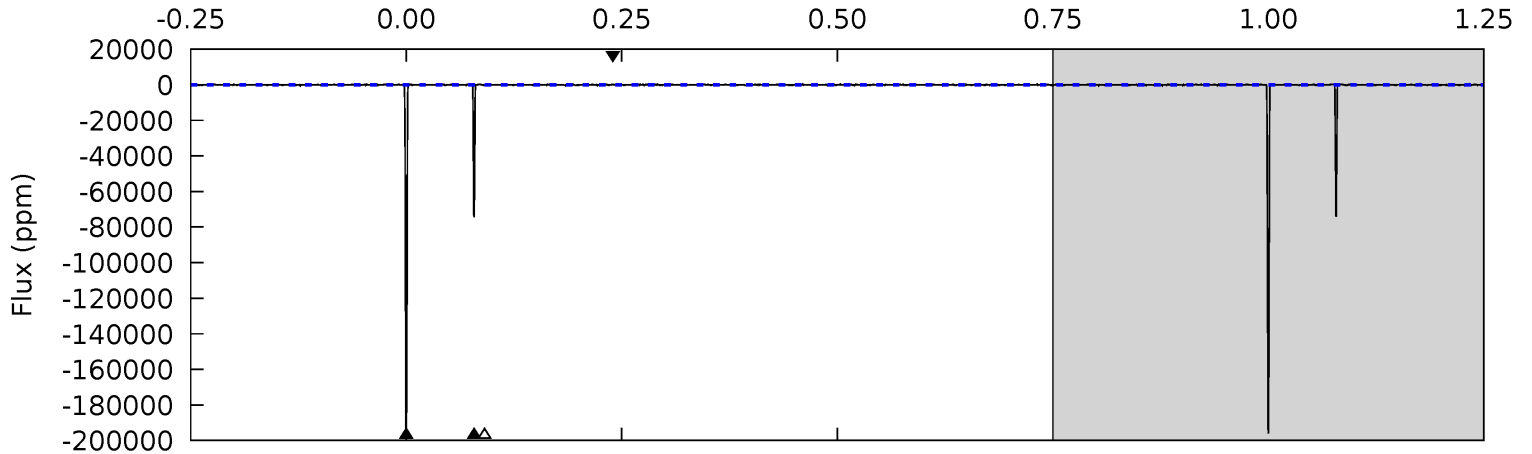
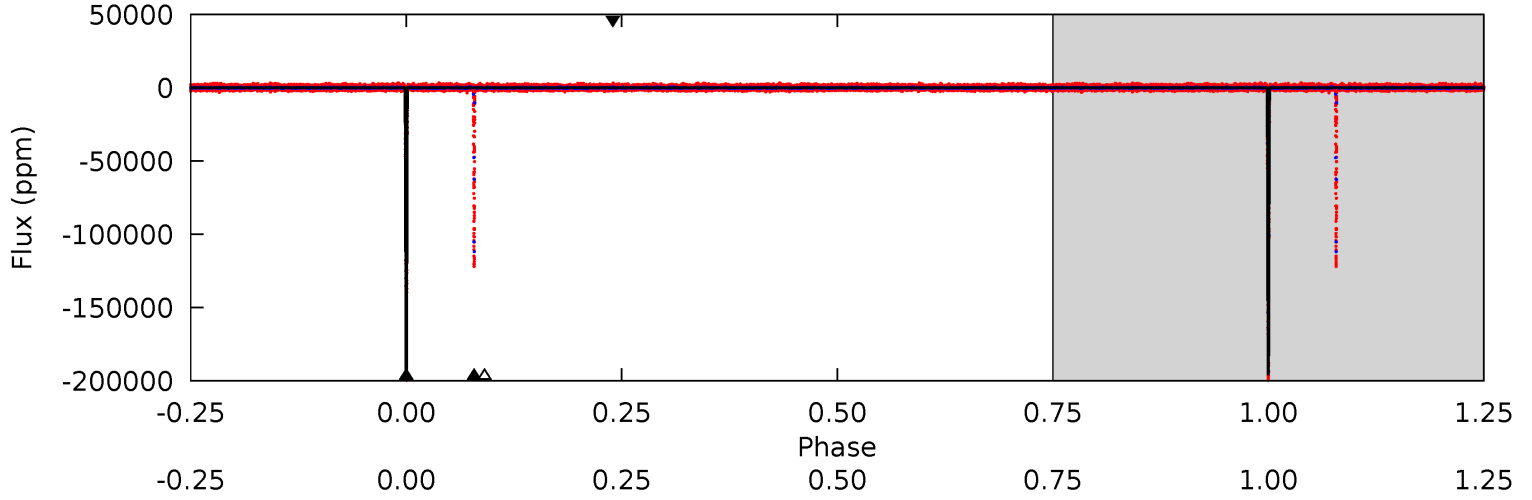
TCE 003428468-01 P=114.908193 Days $T_0=199.453305$ (BKJD)



DV Model-Shift Uniqueness Test

003428468-01, P = 114.908621 Days, E = 84.542146 Days

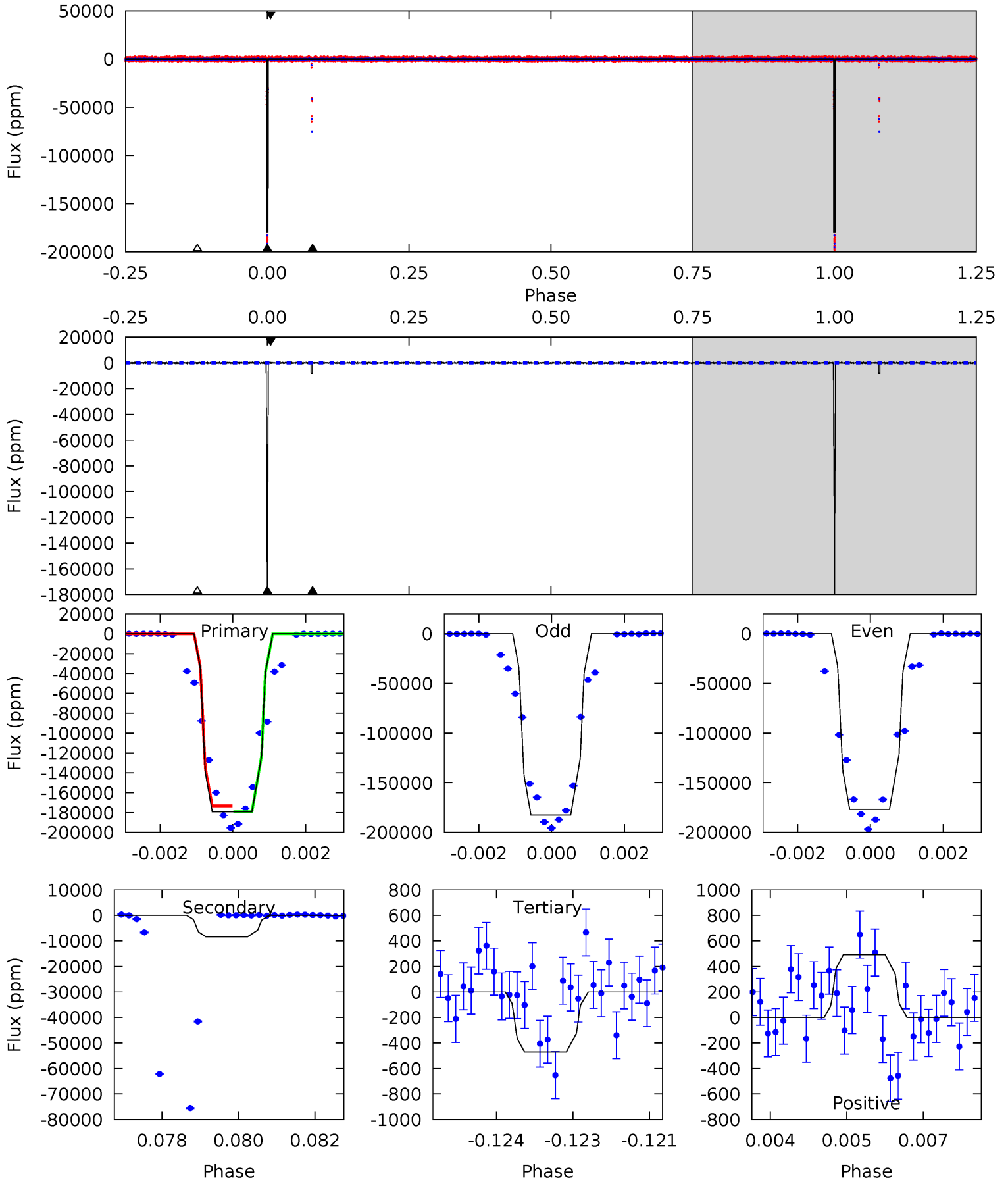
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3391	1282	5.73	6.52	5.26	2.98	1.86	3385	3384	1276	1275	15.2	0.99	0.00	1.44



Alt Model-Shift Uniqueness Test

003428468-01, P = 114.908193 Days, E = 84.545112 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1675	77.8	4.40	4.61	5.35	3.12	2.51	1671	1671	73.4	73.2	24.6	0.99	0.00	20.4



Stellar Parameters For KIC 003428468

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4412^{+132}_{-132}	$4.565^{+0.060}_{-0.016}$	$0.440^{+0.050}_{-0.300}$	$0.737^{+0.021}_{-0.059}$	$0.729^{+0.037}_{-0.041}$	$2.559^{+0.687}_{-0.148}$
	+3%/-3%	+1%/-0%	+11%/-68%	+3%/-8%	+5%/-6%	+27%/-6%
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 003428468-01 / KOI 3582.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-74117 ± 58	$39.31^{+2.25}_{-2.27}$	358^{+13}_{-11}	3623^{+108}_{-103}	4990^{+599}_{-480}
Alt.	-8325 ± 107	$34.99^{+2.26}_{-2.19}$	359^{+12}_{-12}	2702^{+68}_{-66}	657^{+89}_{-70}

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

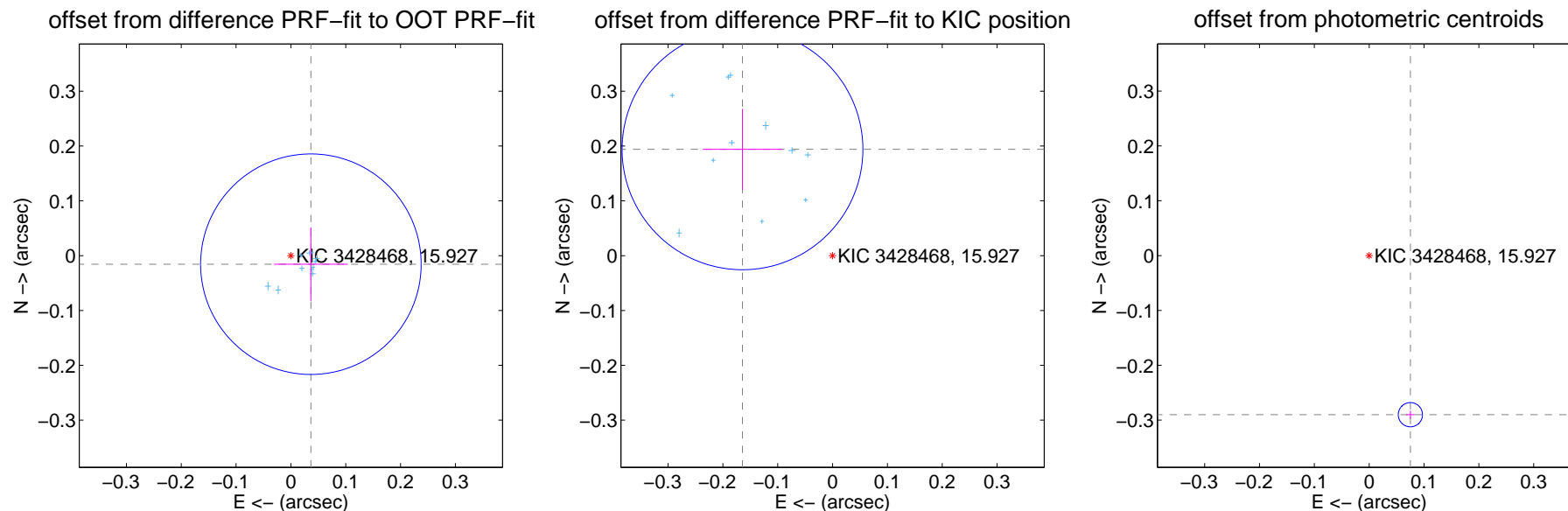
DV Centroid Data

Supplemental centroid analysis for 003428468-01. Kepler magnitude: 15.93. Transit SNR 1413.16

There are 11 quarters with good PRF difference image offsets

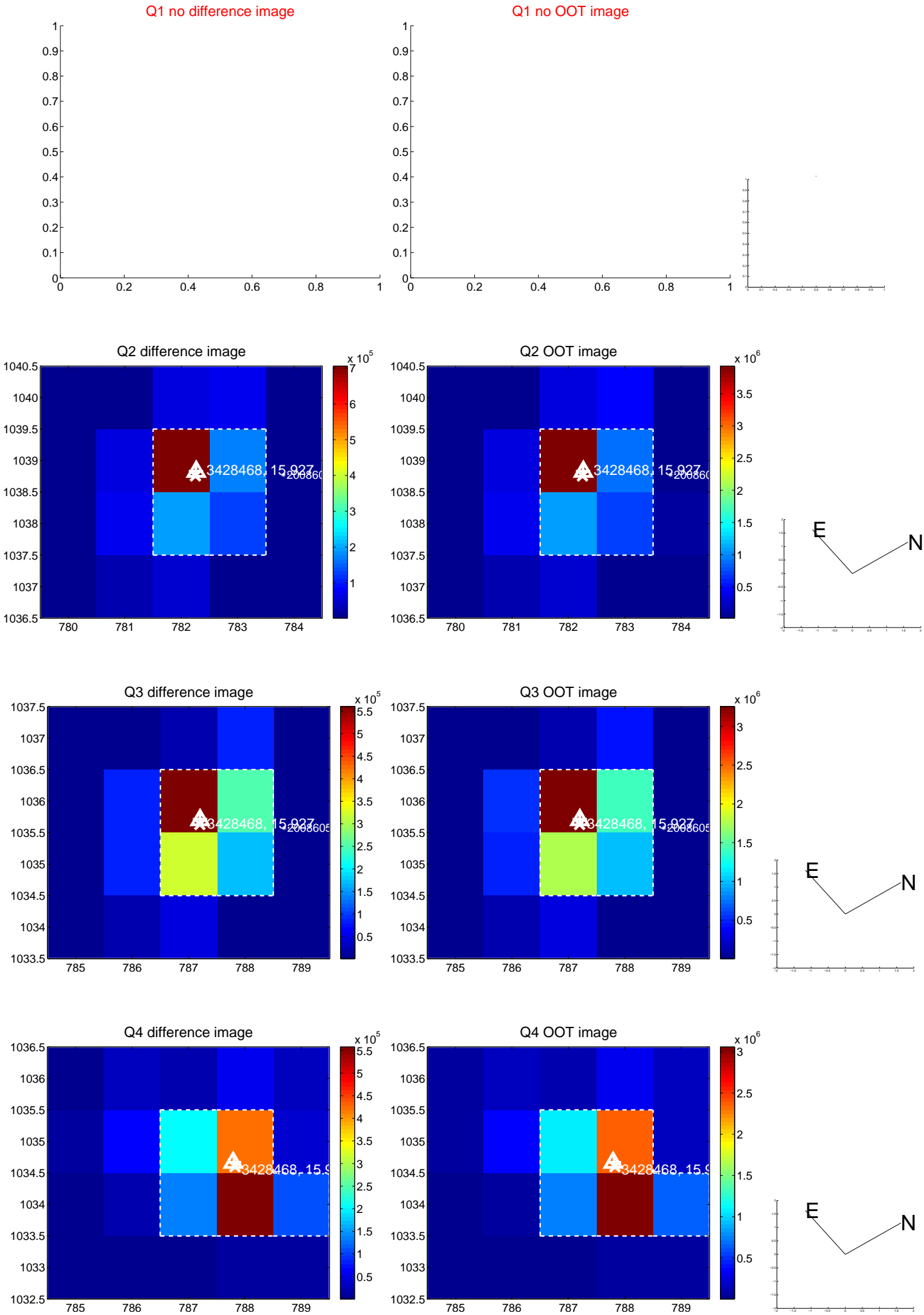
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.040 ± 0.067	0.59	-0.036 ± 0.067	-0.016 ± 0.067
PRF-fit source offset from KIC position	0.254 ± 0.073	3.47	0.164 ± 0.073	0.194 ± 0.074
photometric centroid source offset	0.30 ± 0.01	40.72	-0.08 ± 0.01	-0.29 ± 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.

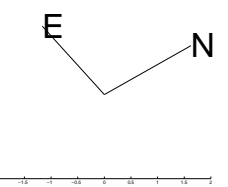
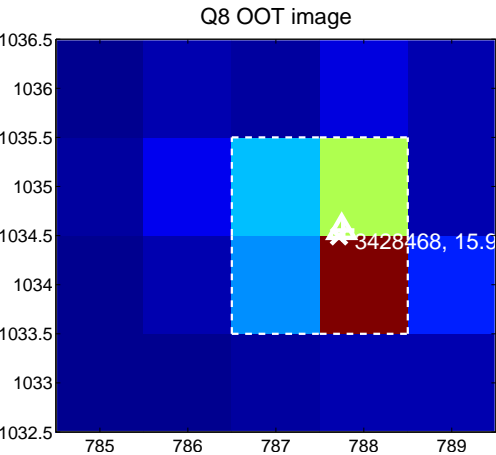
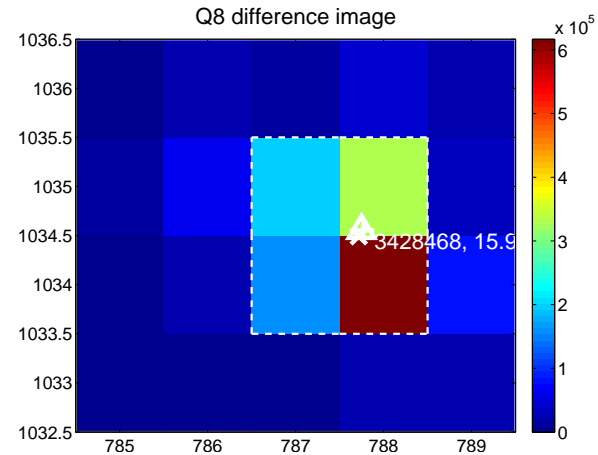
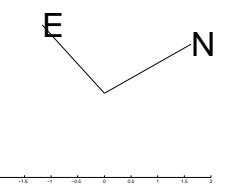
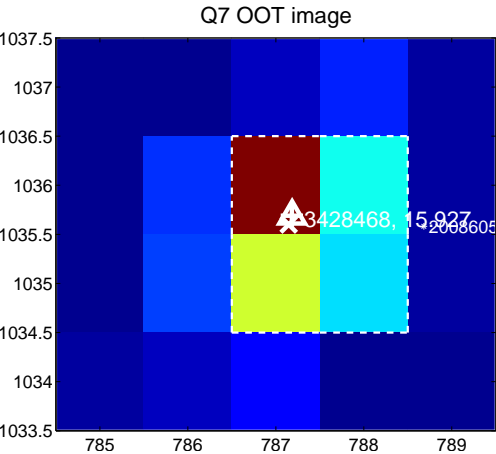
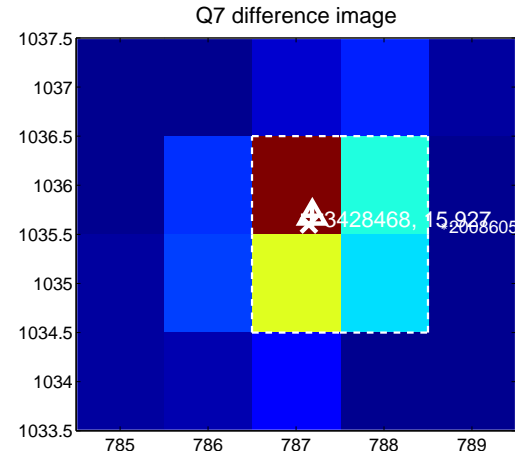
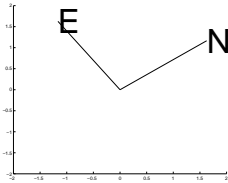
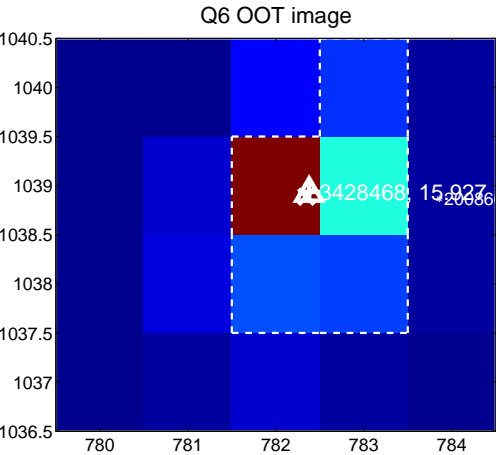
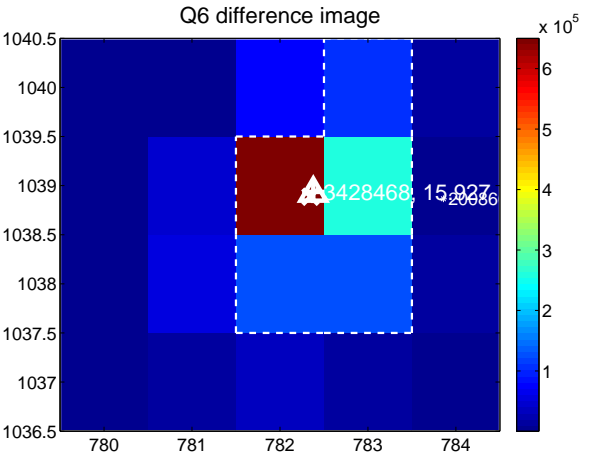


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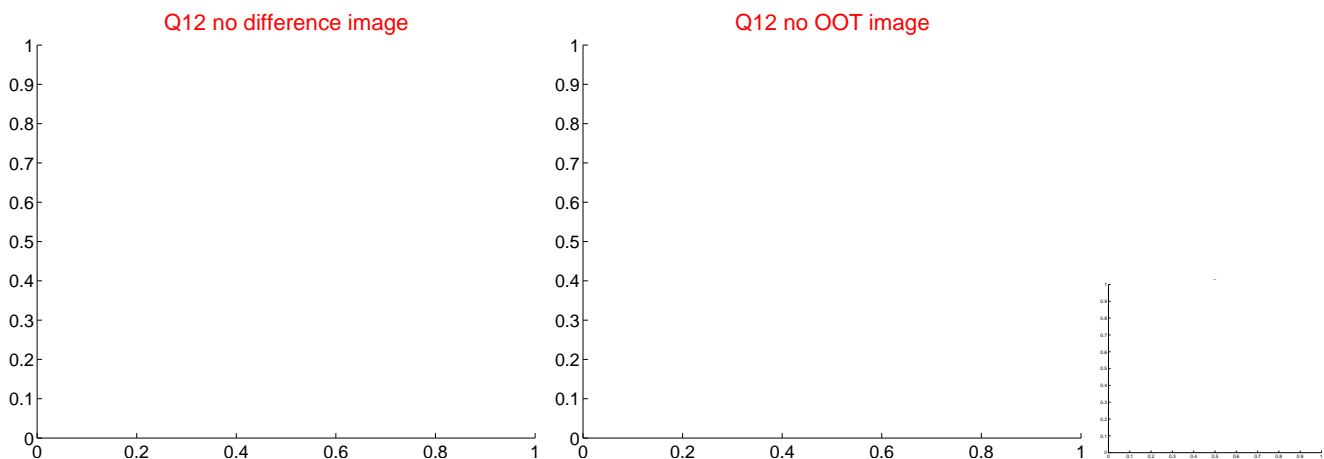
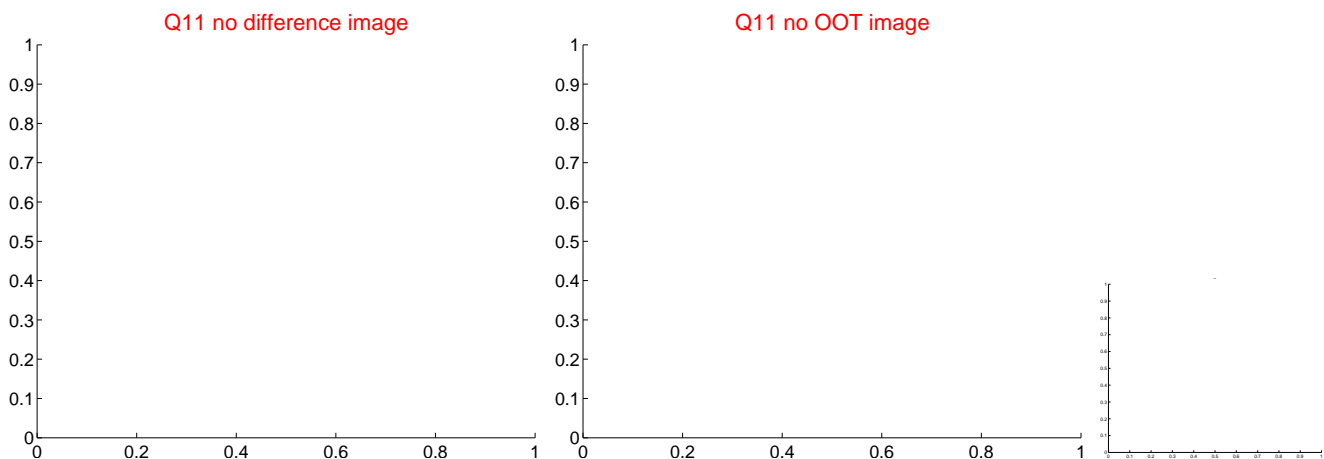
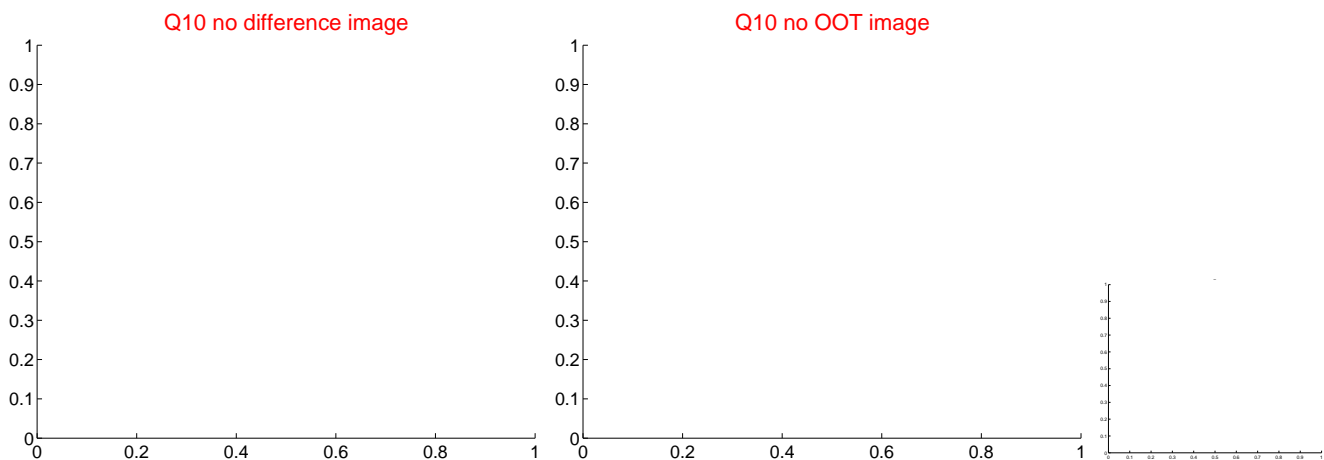
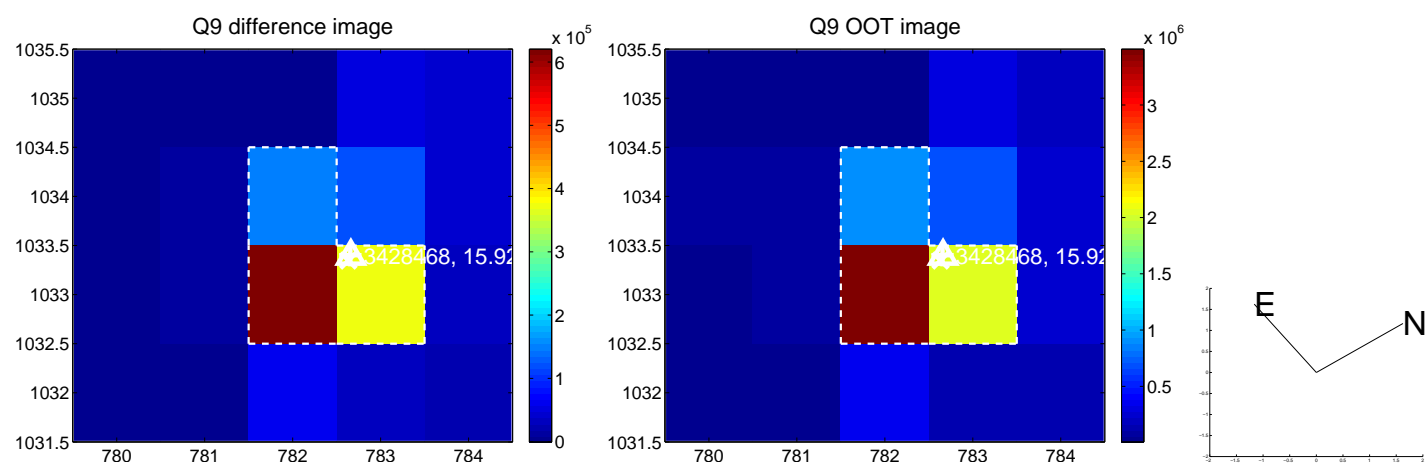
Q5 no difference image



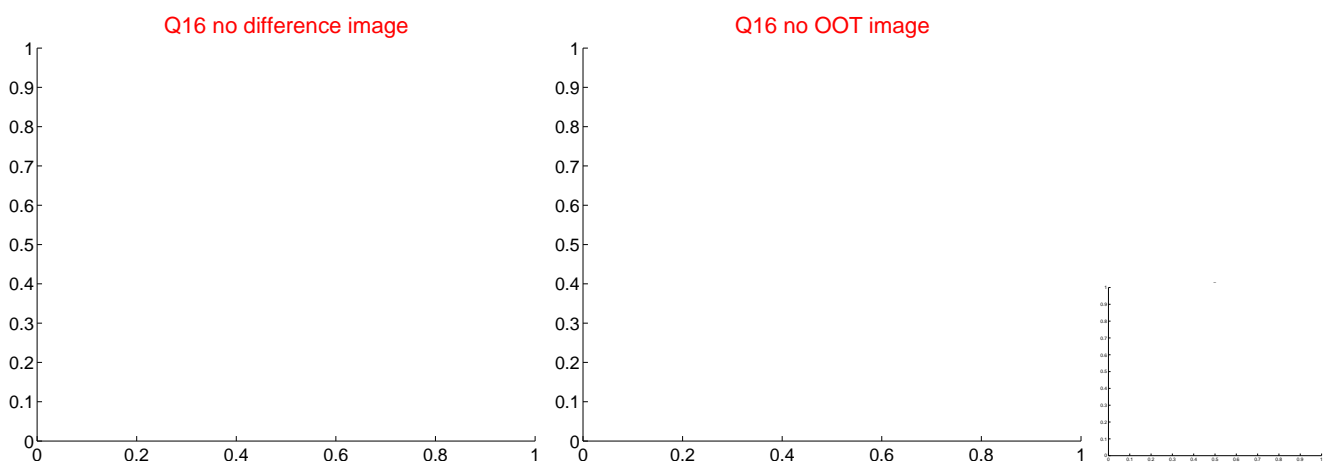
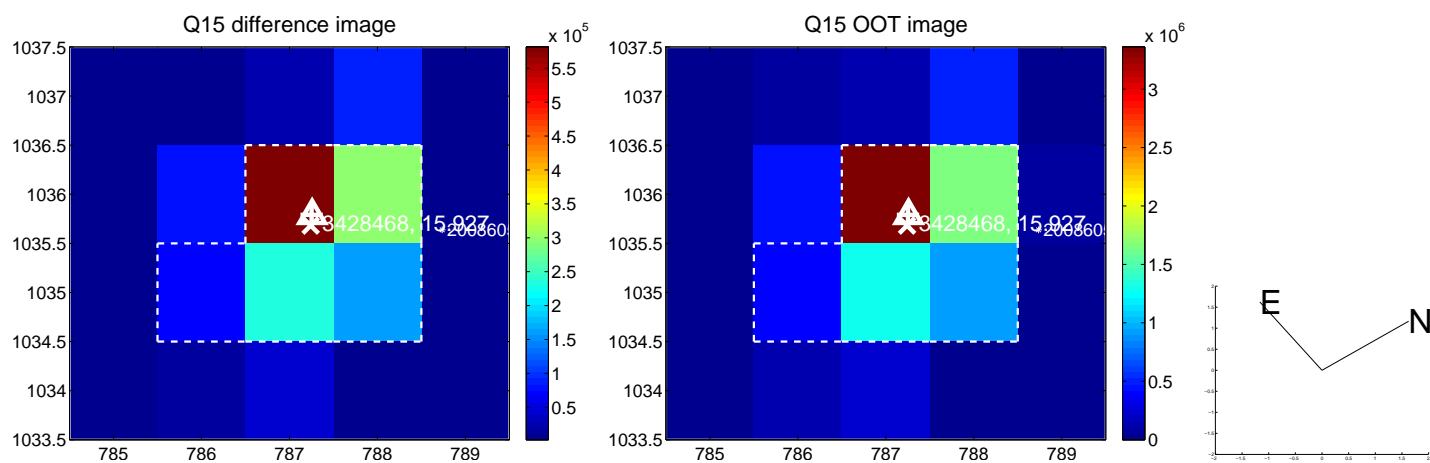
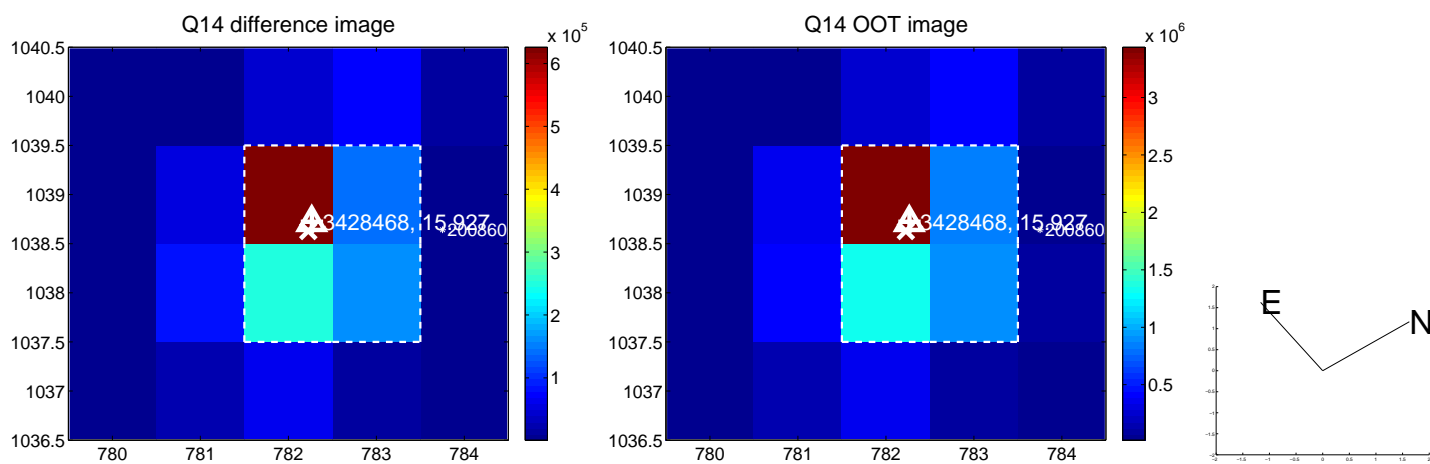
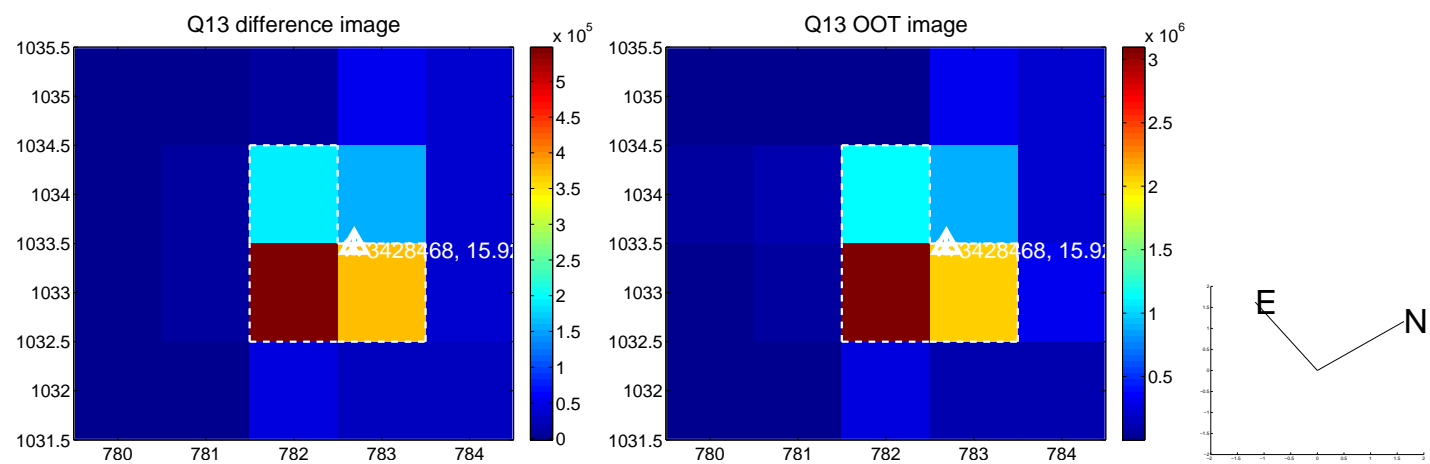
Q5 no OOT image



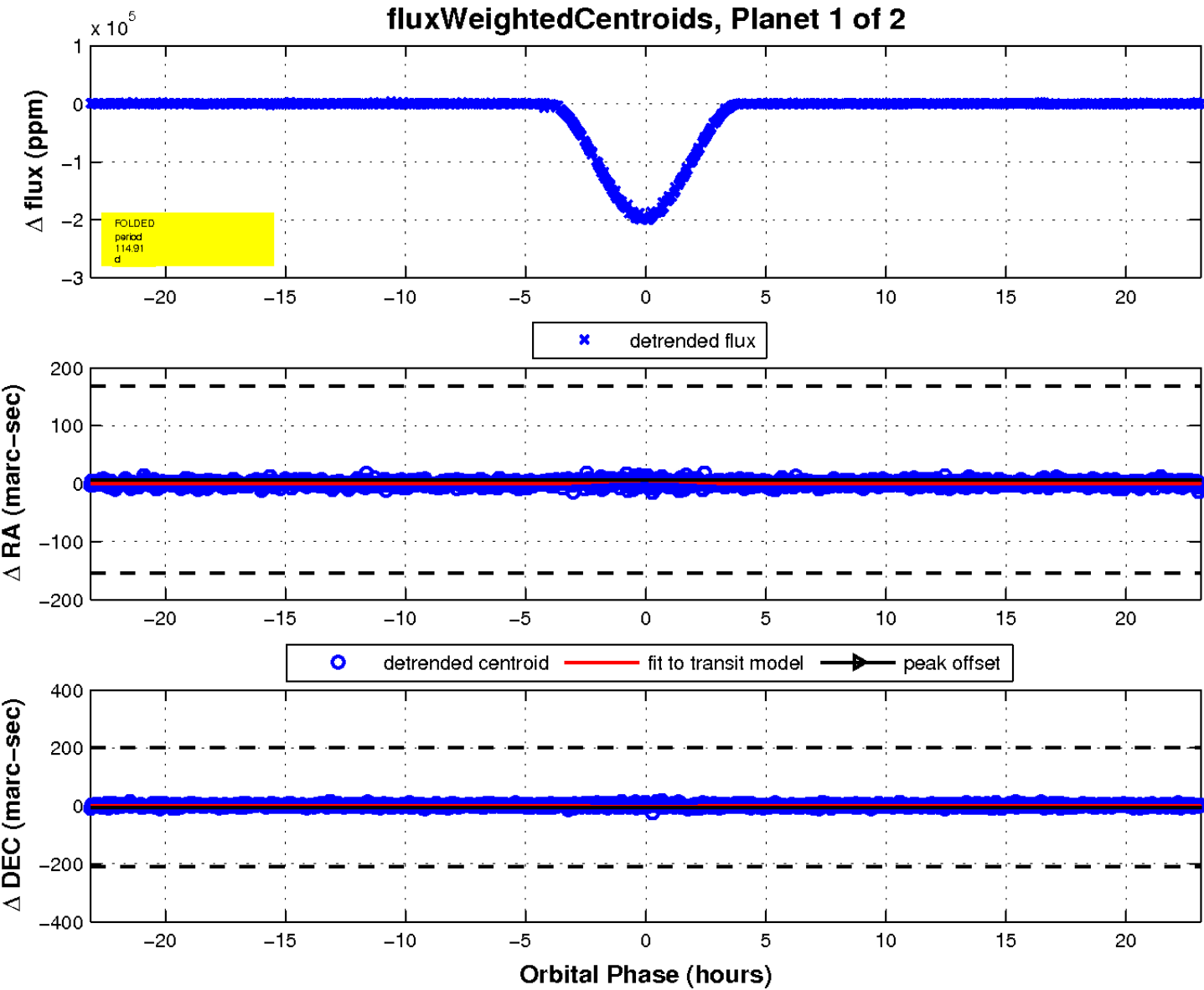
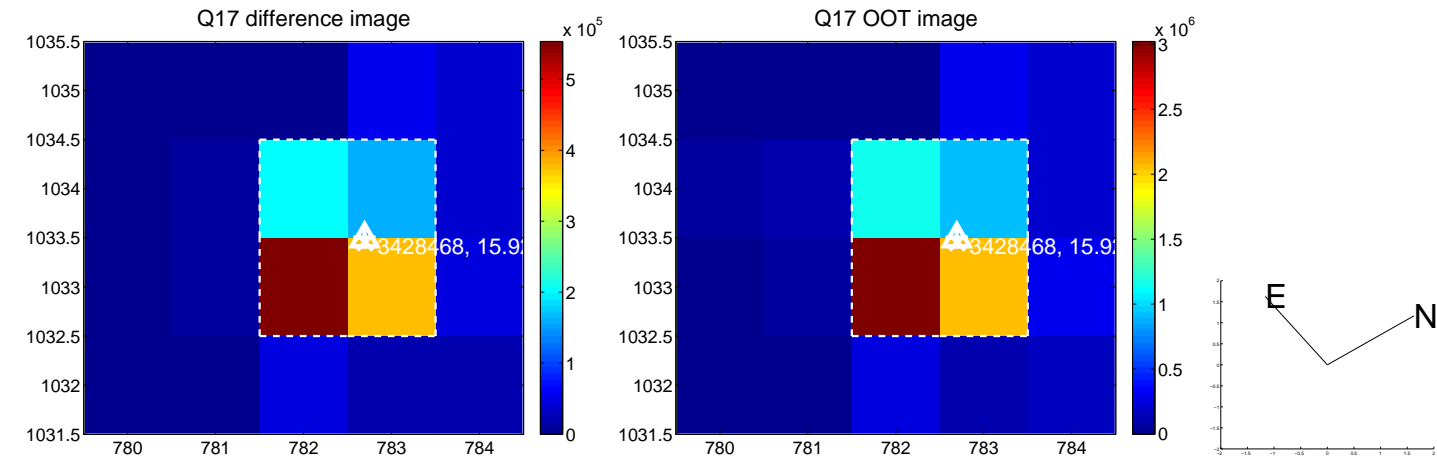
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

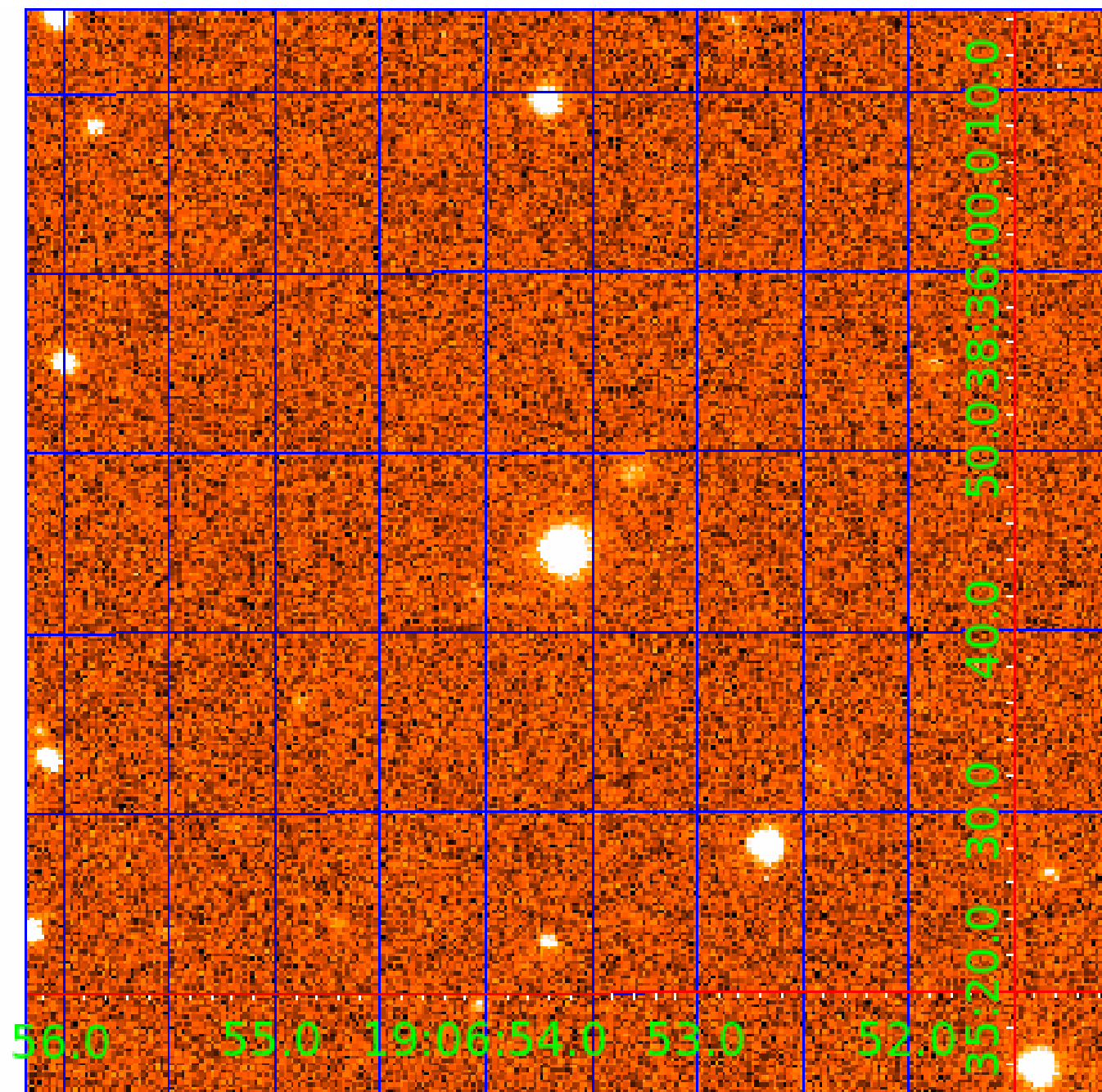


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003428468

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})
003428468-01	OBS	3582.01	114.908621	199.450767	195790.3	7.712	1799.3	1413.2	0.74	4412	39.67	1.06
003428468-02	OBS	No	114.908618	208.488614	124758.9	4.189	925.1	763.2	0.74	4412	39.02	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003428468-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
003428468-02	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.

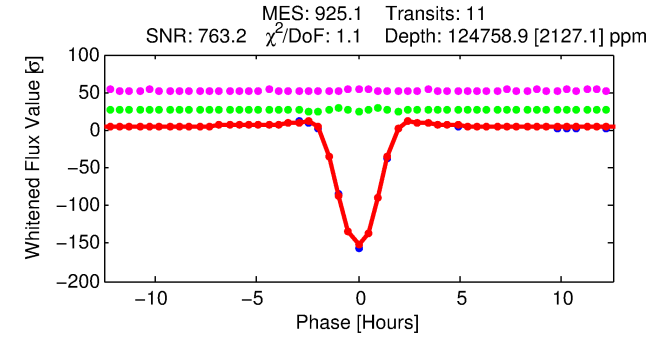
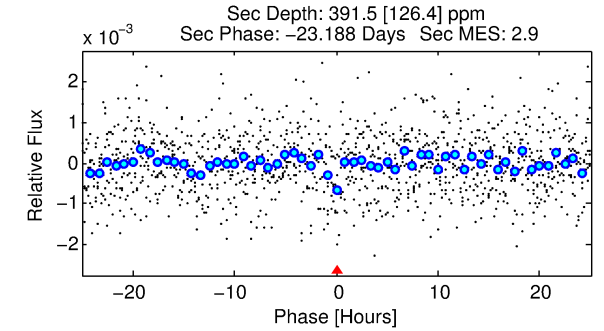
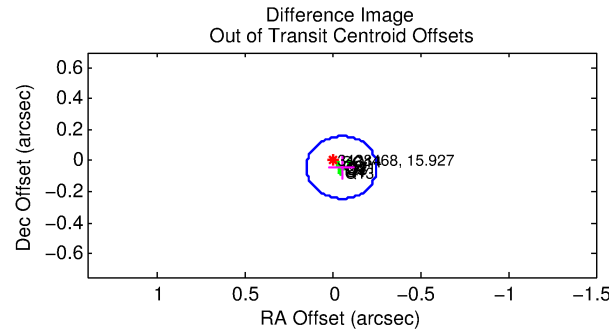
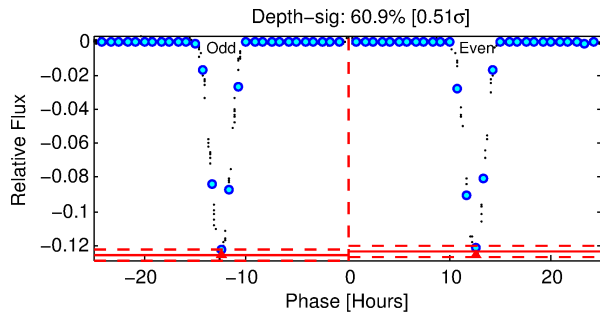
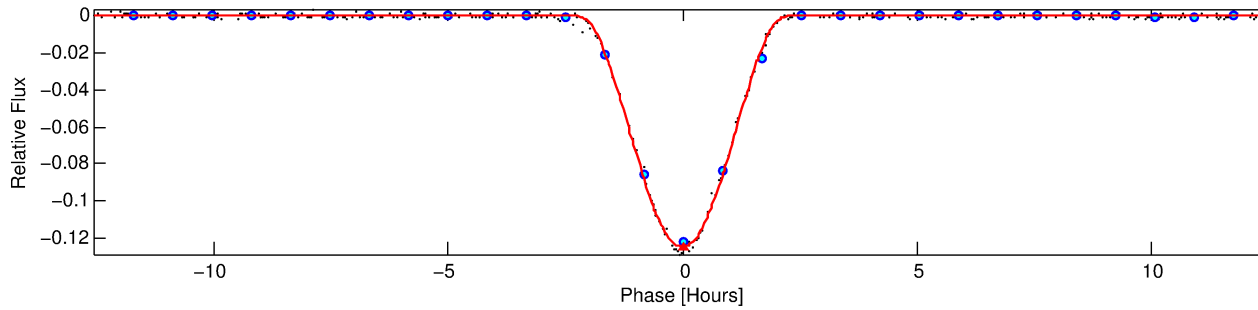
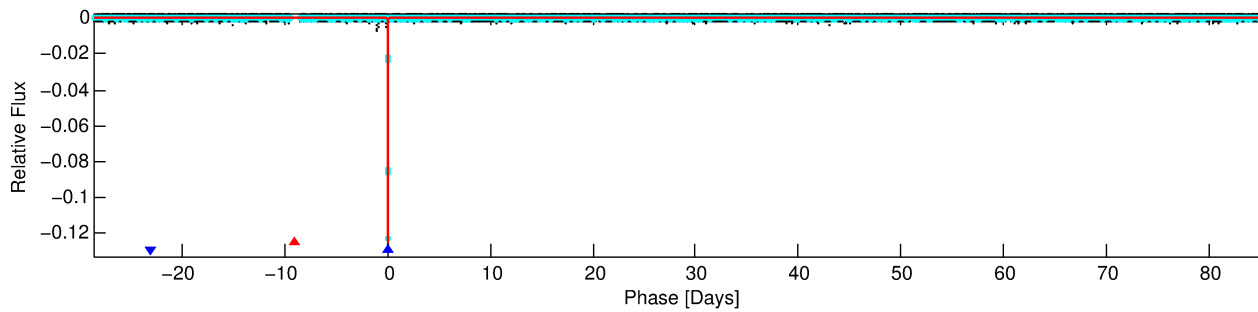
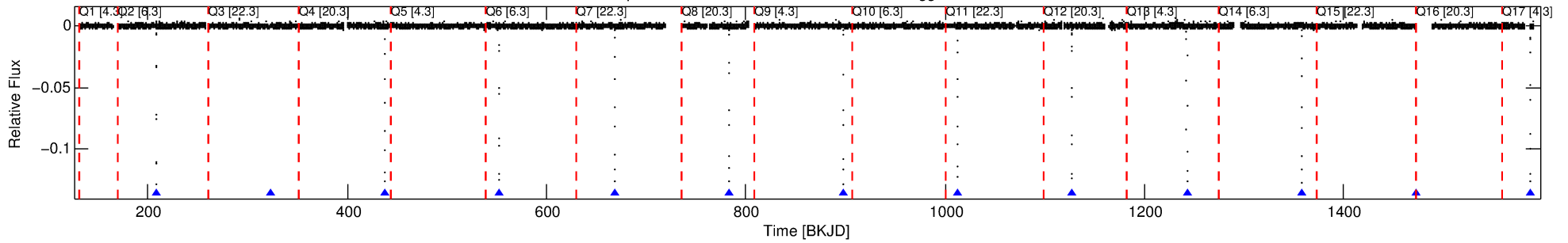
Ephemeris Match Information For 003428468-02

No Significant Match Found

DV One-Page Summary

KIC: 3428468 Candidate: 2 of 2 Period: 114.909 d
KOI: K03582 Corr: No Ephemeris Match

Kp: 15.93 R*: 0.74 Rs Teff: 4412.0 K Logg: 4.57 Fe/H: 0.440



DV Fit Results:

Period = 114.90862 [0.00002] d
Epoch = 208.4886 [0.0001] BKJD
Rp/R* = 0.4852 [0.5513]
a/R* = 247.53 [23.74]
b = 0.90 [0.77]
Seff = 1.06 [0.17]
Teq = 259 [10] K
Rp = 39.03 [44.45] Re
a = 0.4161 [0.0293] AU
Ag = 24.49 [56.27] [0.42σ]
Teffp = 891 [512] K [1.23σ]

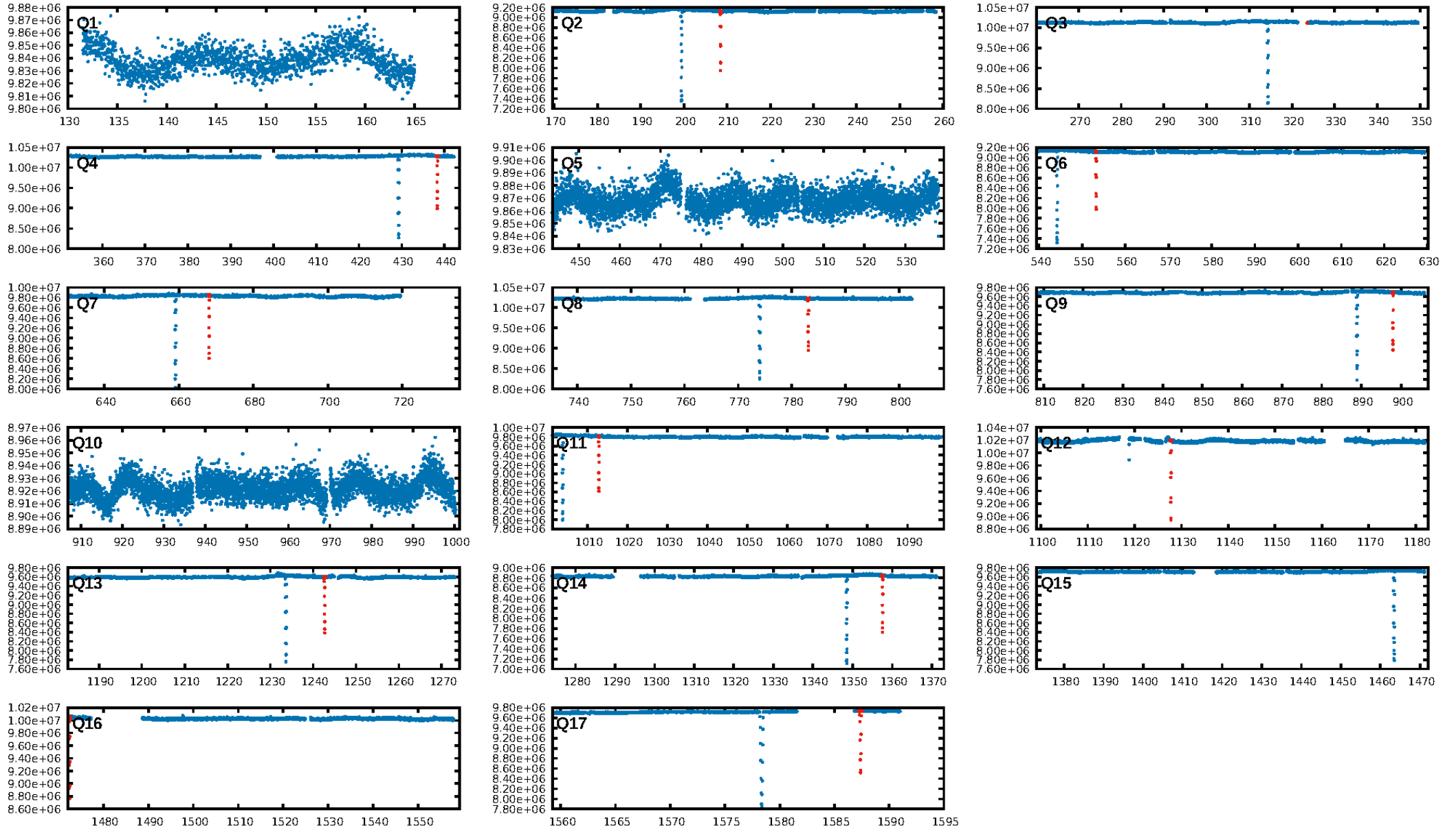
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 92.0%
ModelChiSquareGof-sig: 82.1%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 3.934
Centroid-sig: 0.0%
Centroid-so: 0.354 arcsec [23.24σ]
OotOffset-rm: 0.066 arcsec [0.99σ]
KicOffset-rm: 0.226 arcsec [3.01σ]
OotOffset-st: 3/2/2/2 [9]
KicOffset-st: 3/2/2/2 [9]
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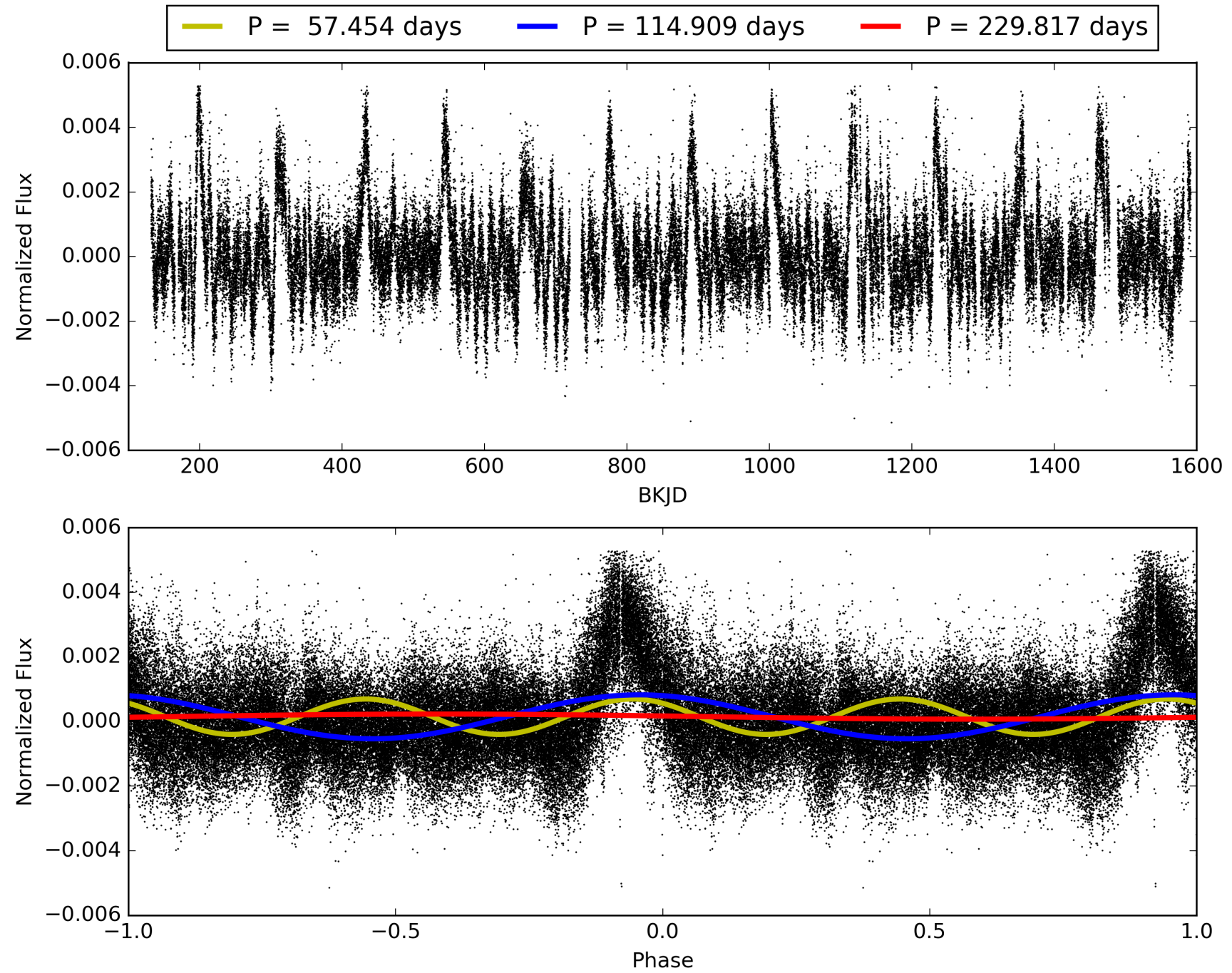
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003428468-02, PDC Light Curves

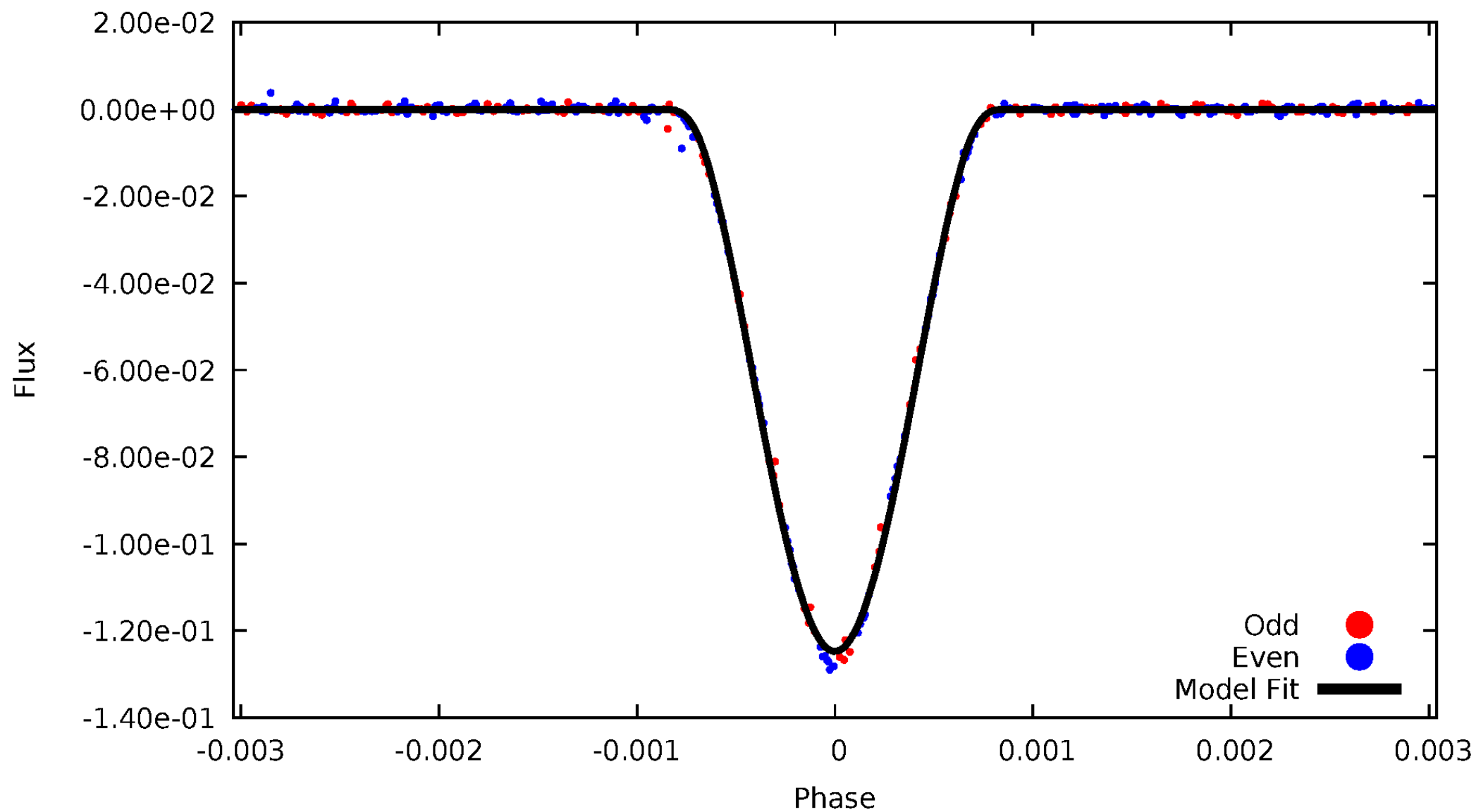


TCE 003428468-02



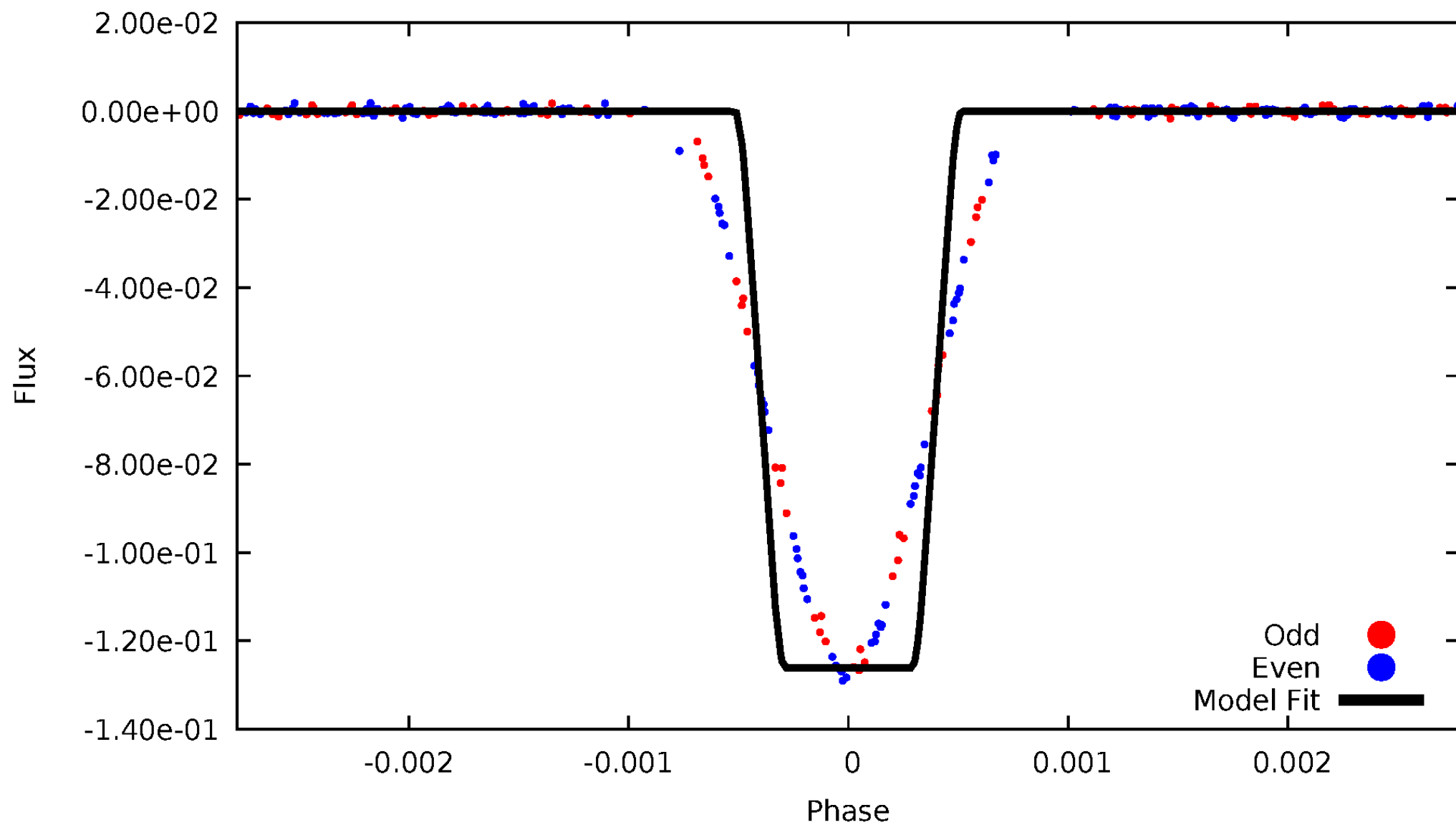
DV Odd/Even

TCE 003428468-02



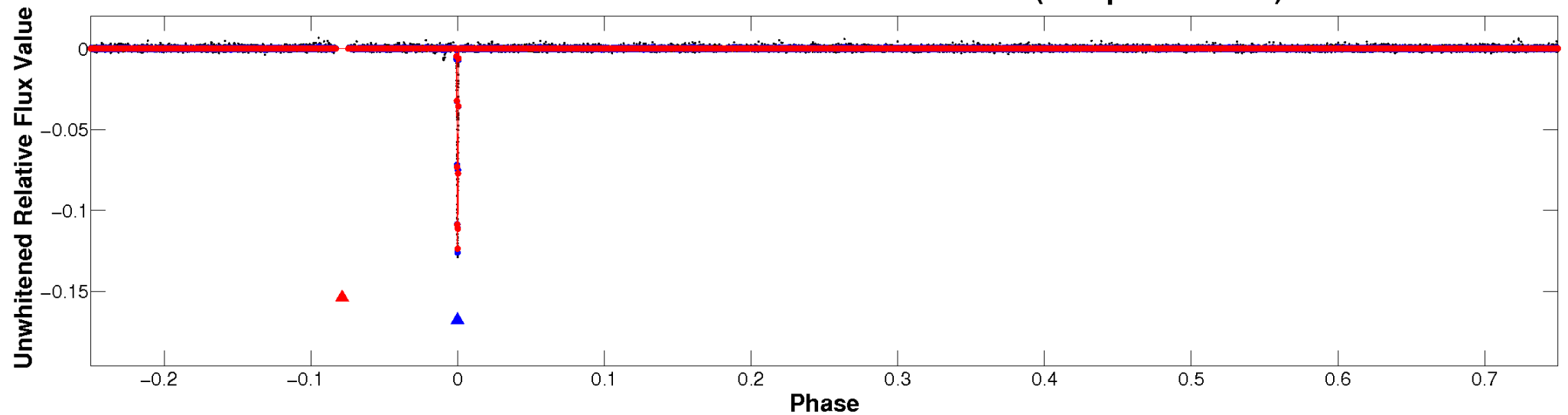
ALT Odd/Even

TCE 003428468-02

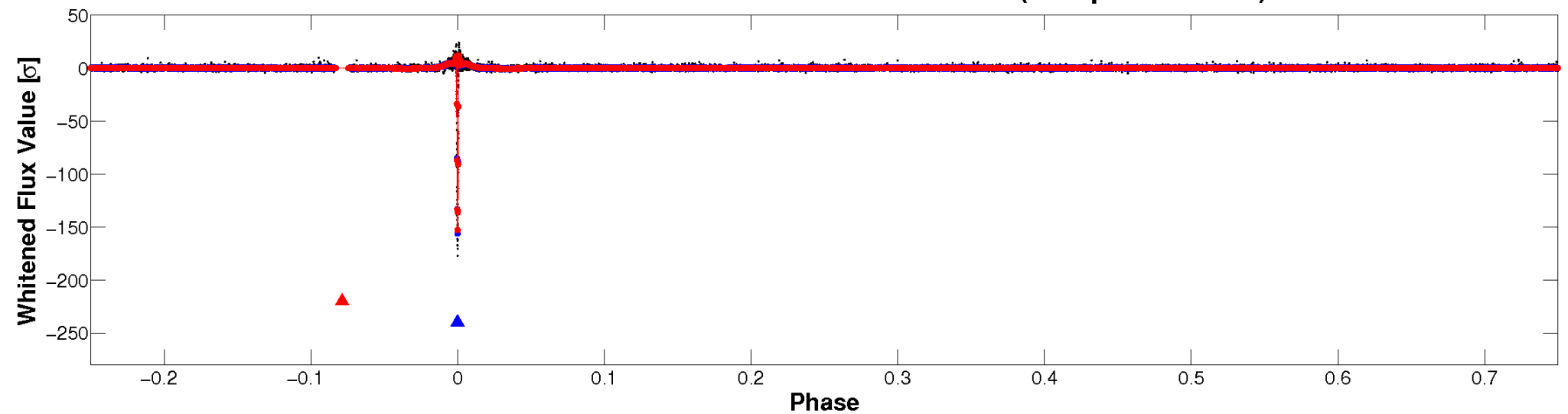


Non-Whitened Vs. Whitened Light Curve

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

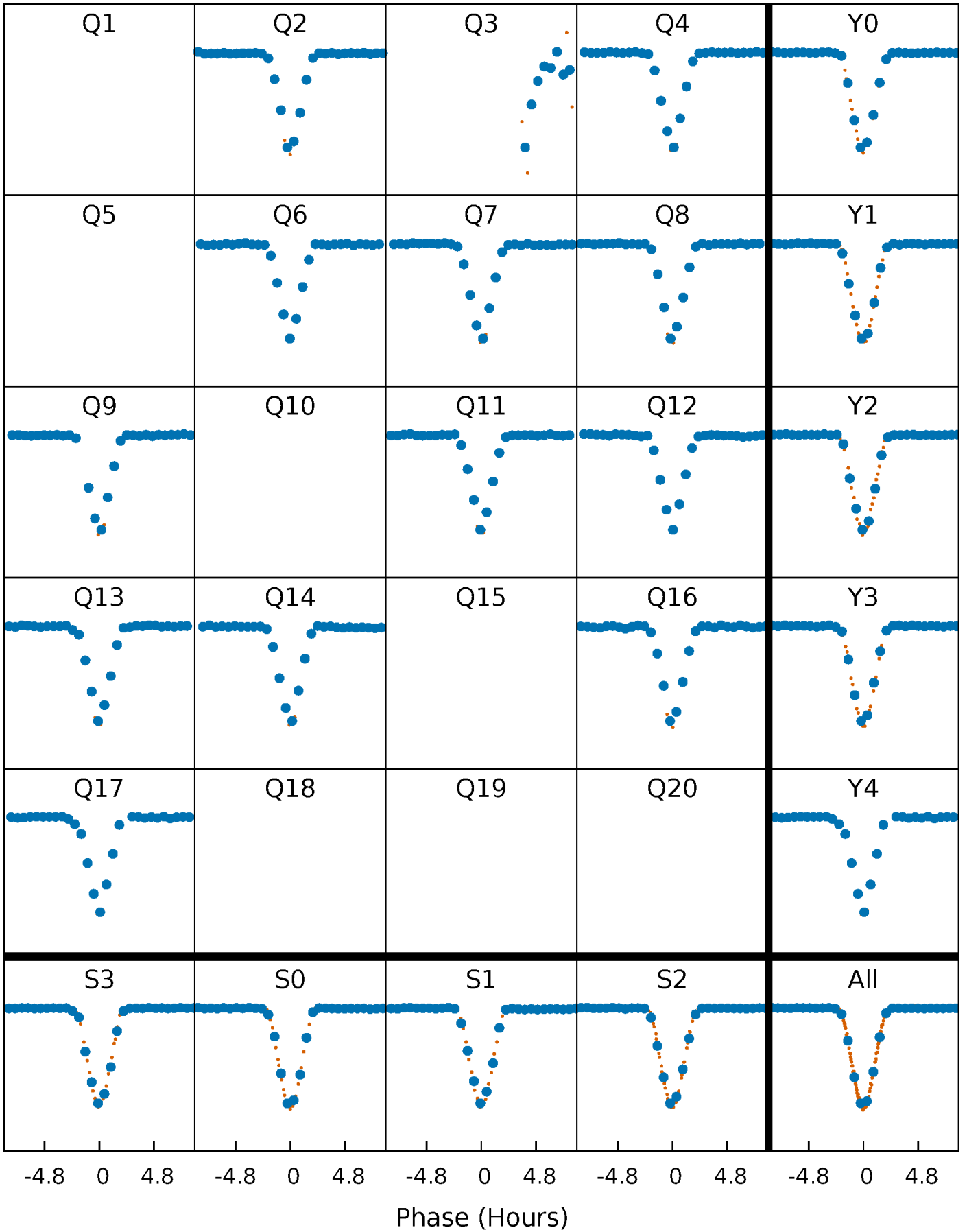


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



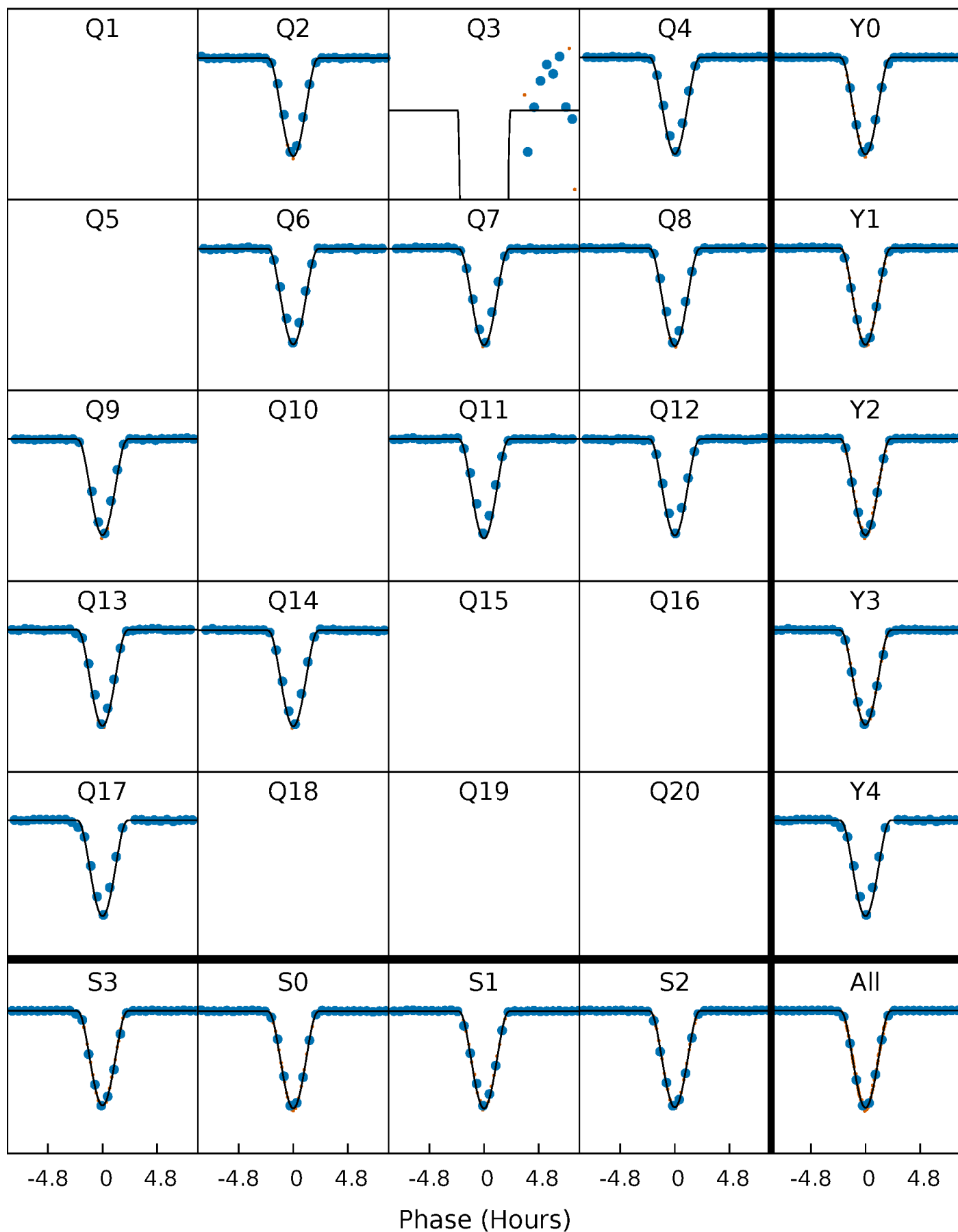
PDC Quarter-Phased Transit Curves

TCE 003428468-02 P=114.908618 Days $T_0=208.488614$ (BKJD)



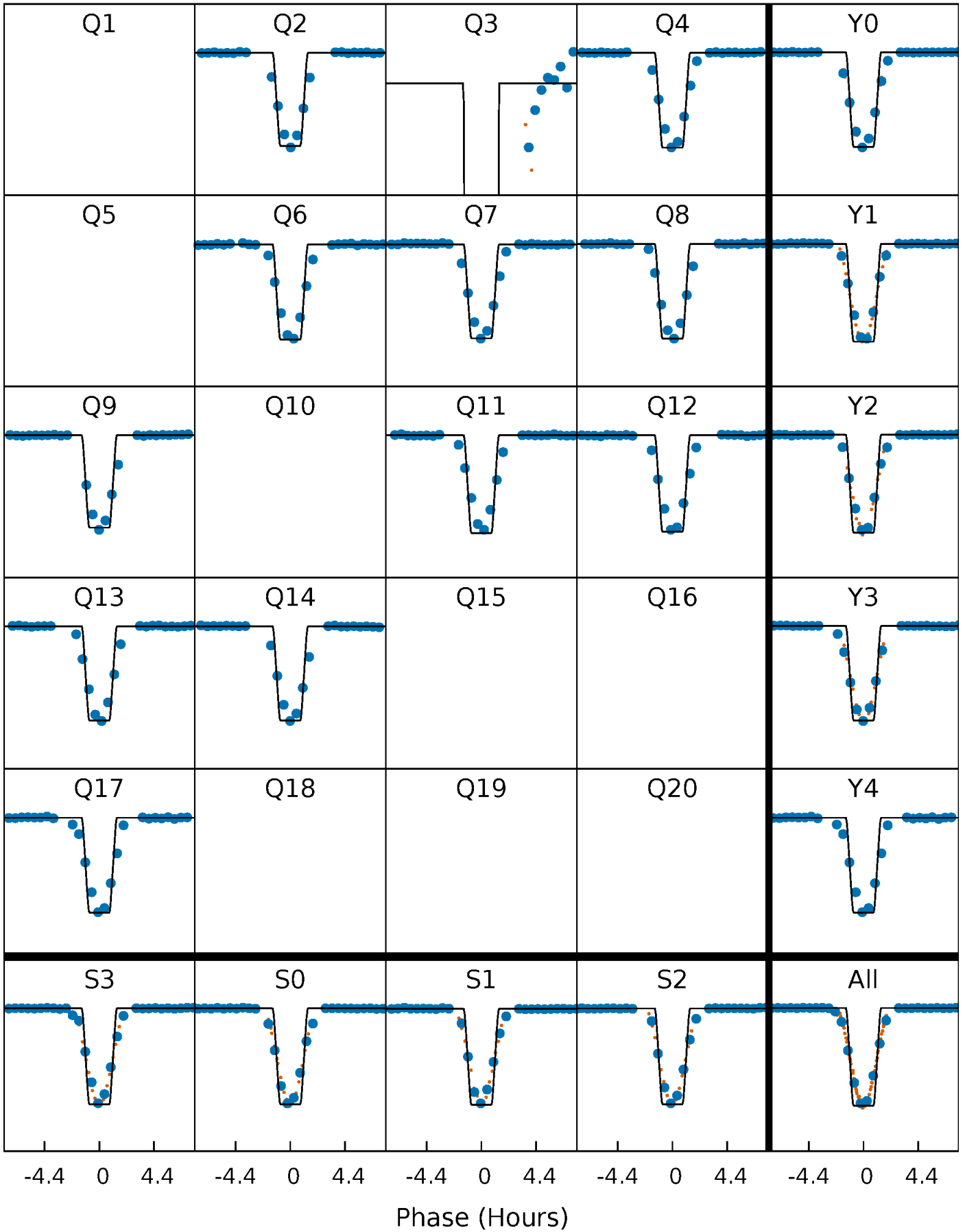
DV Quarter-Phased Transit Curves

TCE 003428468-02 P=114.908618 Days $T_0=208.488614$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

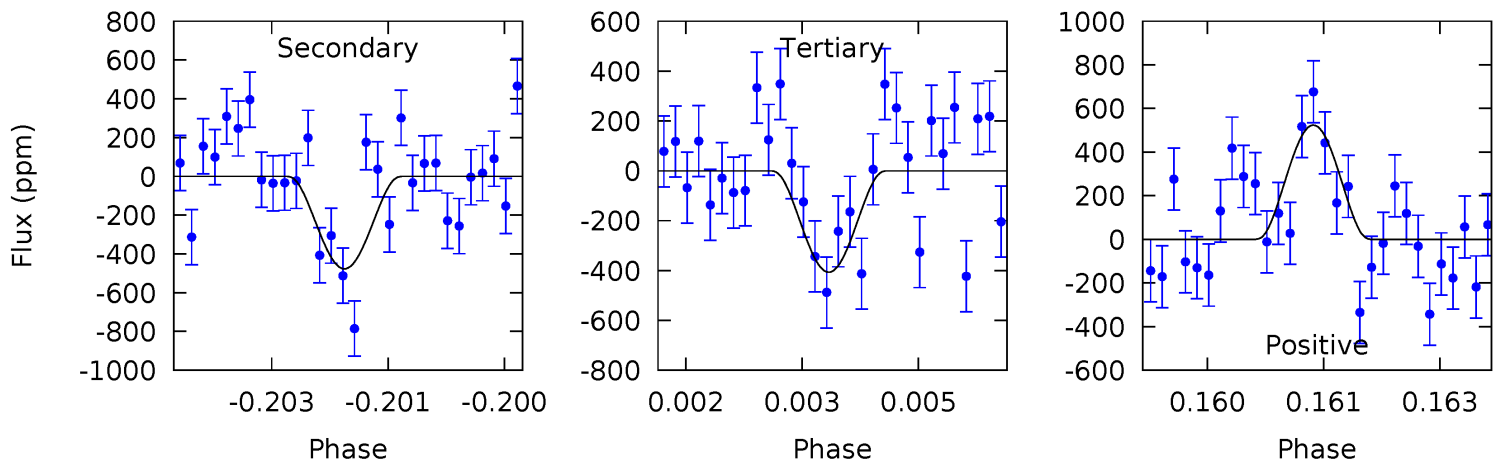
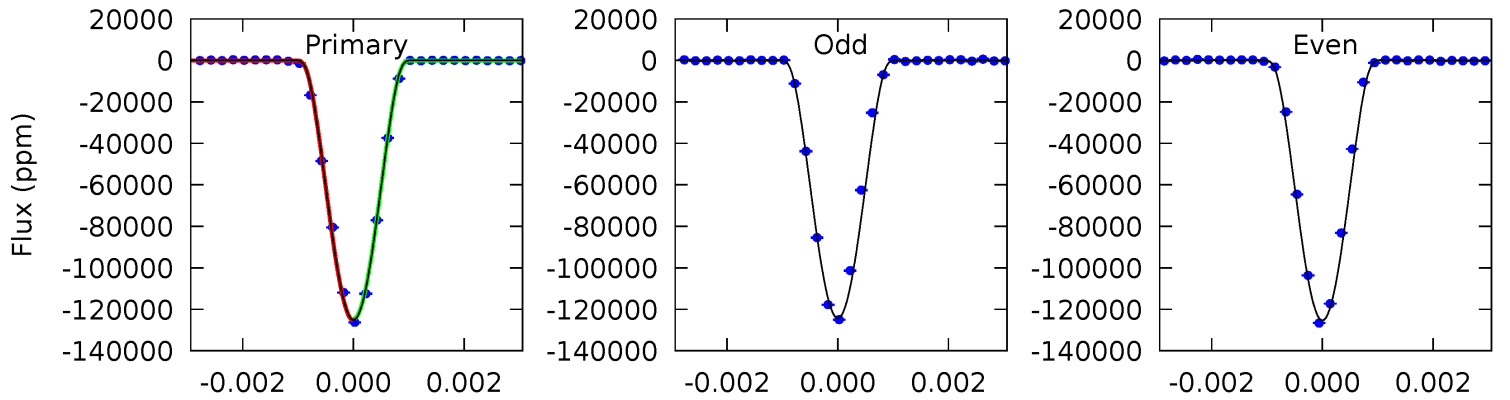
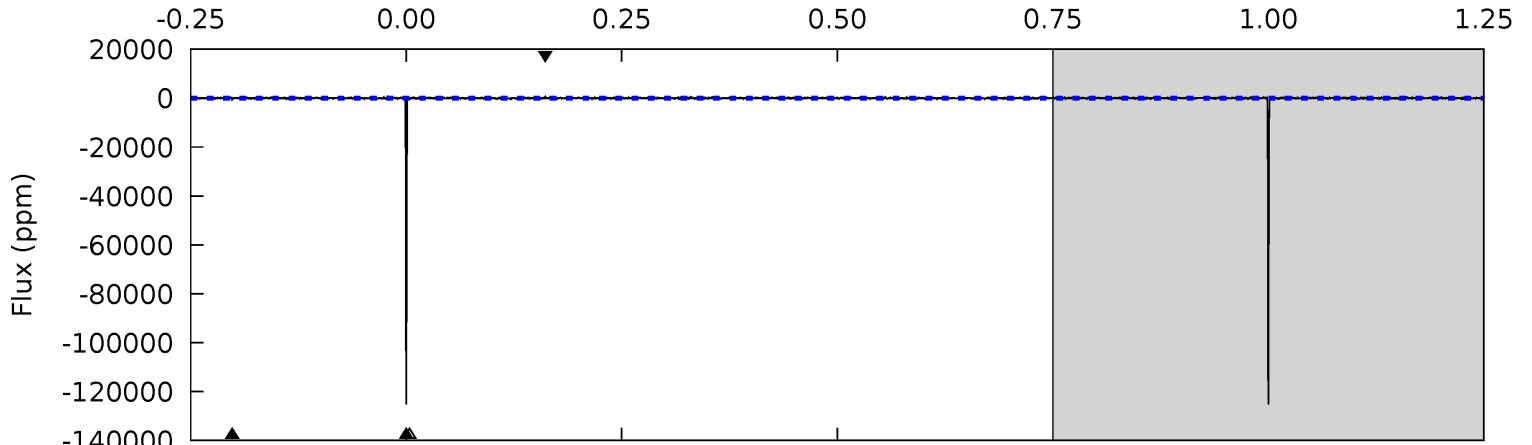
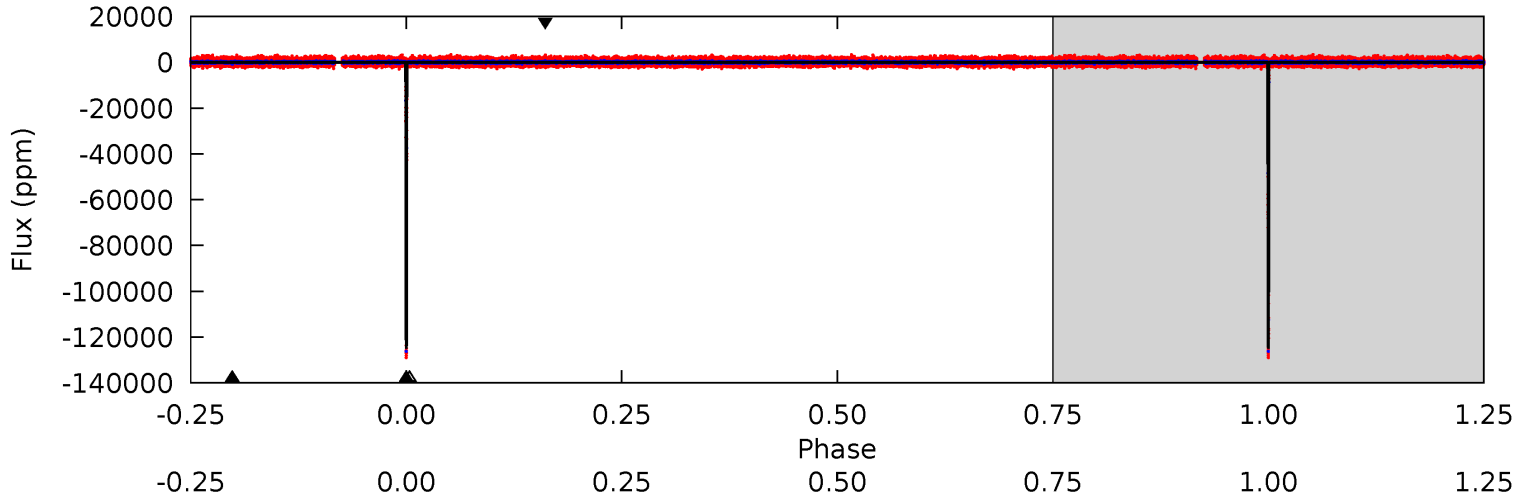
TCE 003428468-02 P=114.908540 Days $T_0=208.489006$ (BKJD)



DV Model-Shift Uniqueness Test

003428468-02, P = 114.908618 Days, E = 93.579996 Days

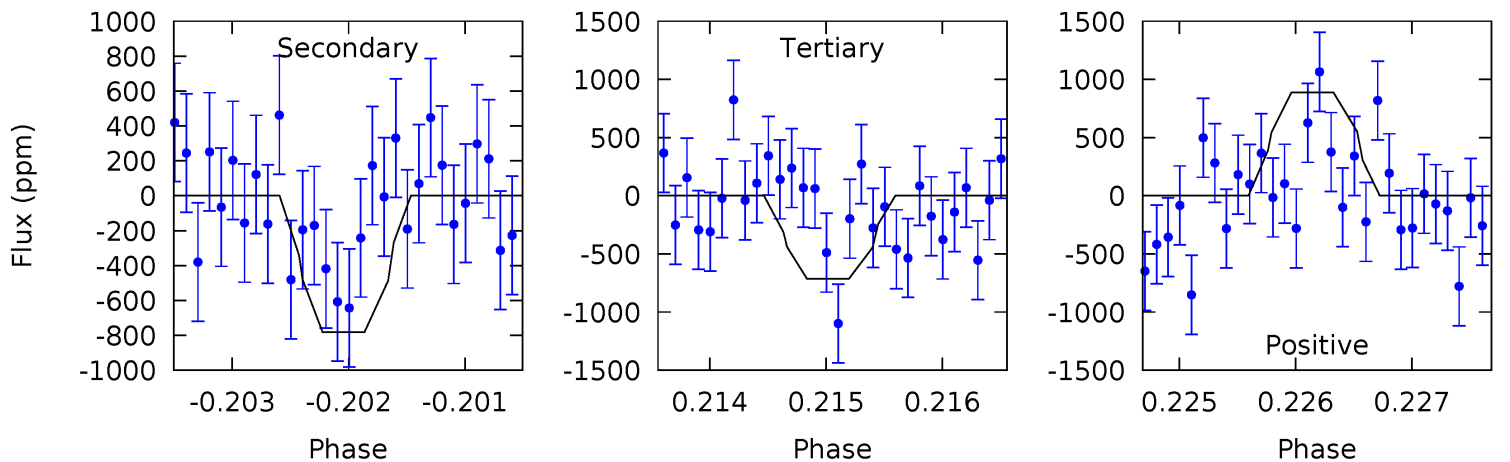
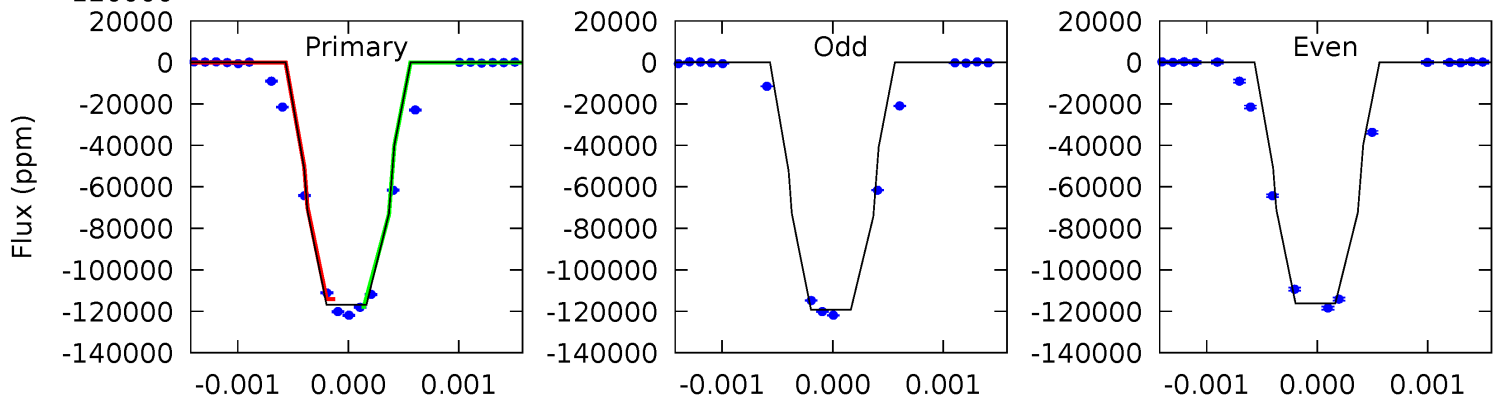
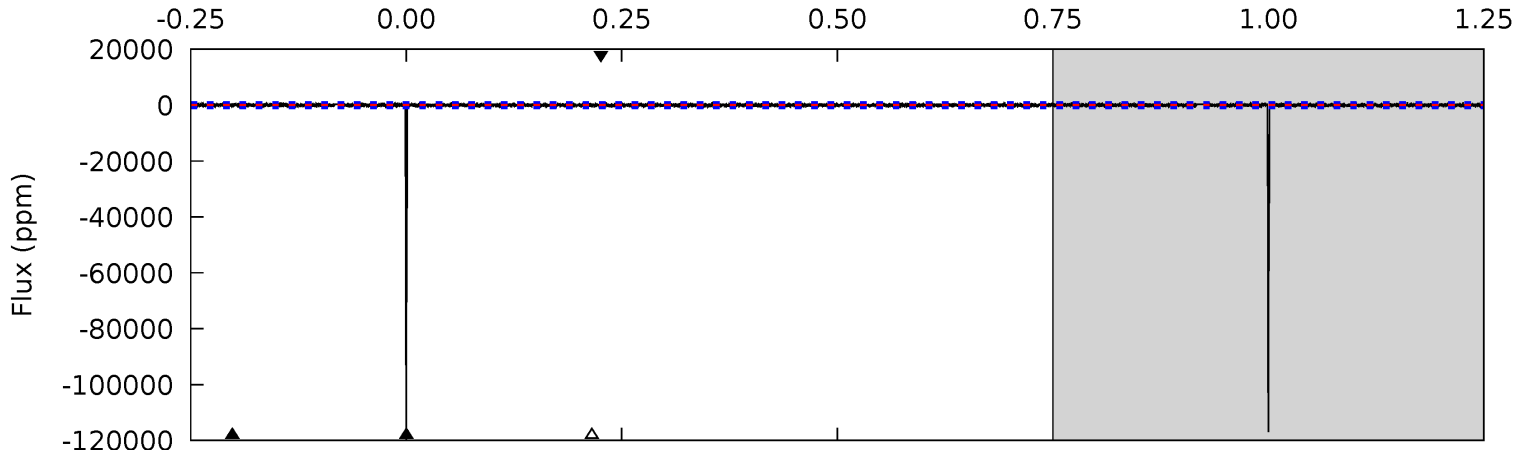
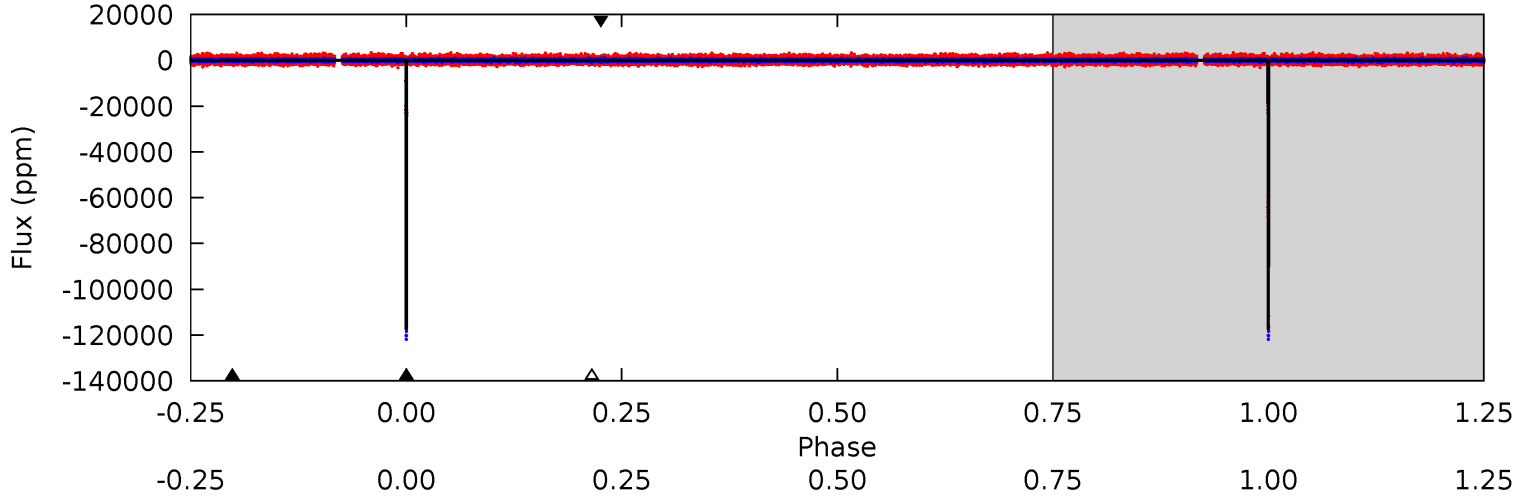
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1631	6.22	5.30	6.83	5.36	3.14	1.62	1625	1624	0.91	-0.61	6.58	1.00	0.00	5.54



Alt Model-Shift Uniqueness Test

003428468-02, P = 114.908540 Days, E = 93.580466 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
687.7	4.60	4.20	5.22	5.45	3.28	1.27	683.5	682.4	0.40	-0.62	8.21	1.00	0.01	0



Stellar Parameters For KIC 003428468

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4412^{+132}_{-132}	$4.565^{+0.060}_{-0.016}$	$0.440^{+0.050}_{-0.300}$	$0.737^{+0.021}_{-0.059}$	$0.729^{+0.037}_{-0.041}$	$2.559^{+0.687}_{-0.148}$
	+3%/-3%	+1%/-0%	+11%/-68%	+3%/-8%	+5%/-6%	+27%/-6%
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 003428468-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-477 ± 77	$48.44^{+39.07}_{-32.18}$	359^{+11}_{-13}	1832^{+458}_{-199}	20^{+144}_{-14}
Alt.	-781 ± 170	$38.16^{+37.64}_{-23.26}$	359^{+11}_{-12}	2014^{+493}_{-255}	50^{+342}_{-38}

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

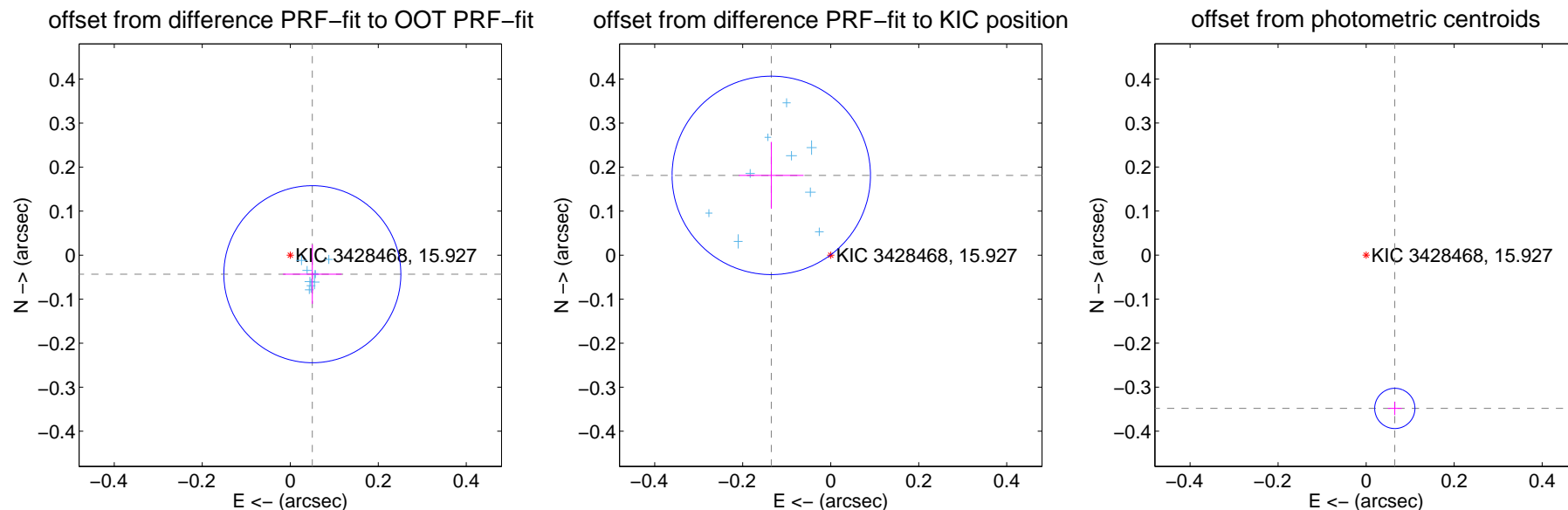
DV Centroid Data

Supplemental centroid analysis for 003428468-02. Kepler magnitude: 15.93. Transit SNR 763.23

There are 9 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.066 ± 0.067	0.99	-0.050 ± 0.067	-0.043 ± 0.067
PRF-fit source offset from KIC position	0.226 ± 0.075	3.01	0.135 ± 0.074	0.181 ± 0.076
photometric centroid source offset	0.35 ± 0.02	23.24	-0.07 ± 0.02	-0.35 ± 0.02



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.

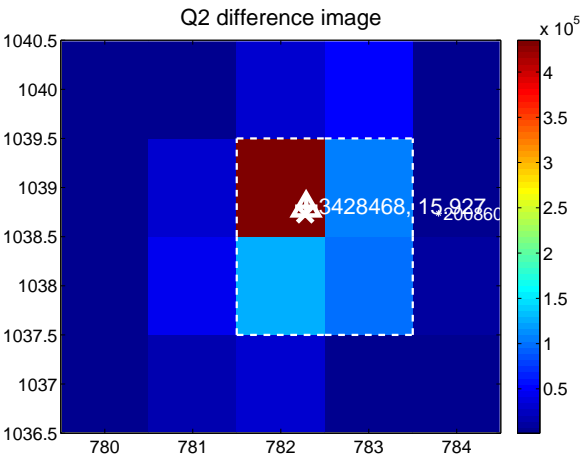
Q1 no difference image



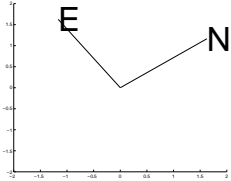
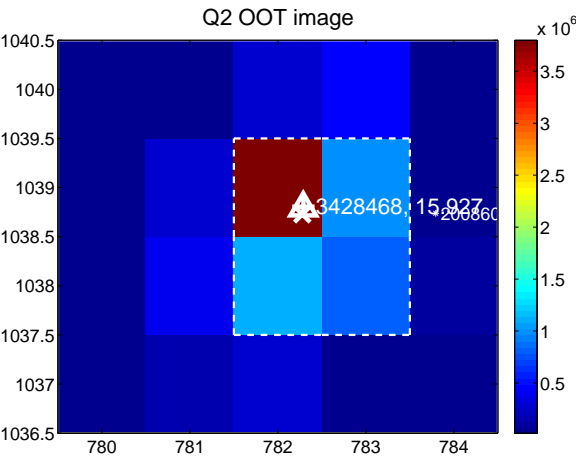
Q1 no OOT image



Q2 difference image



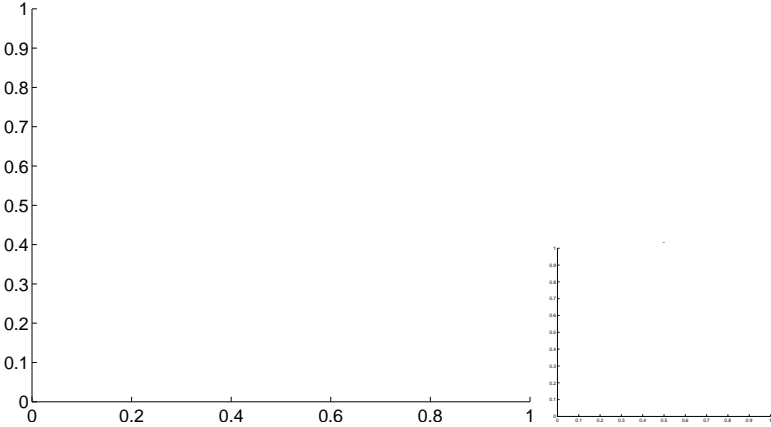
Q2 OOT image



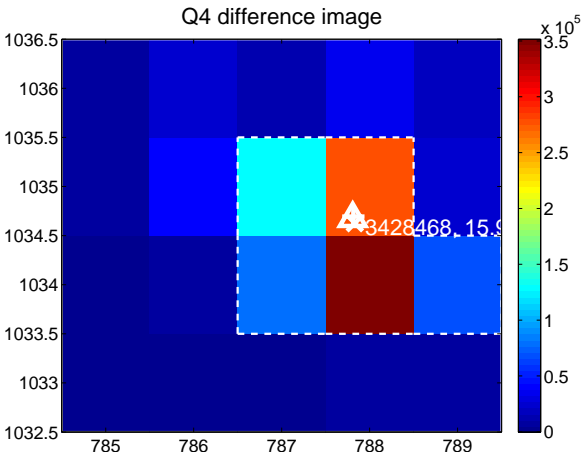
Q3 no difference image



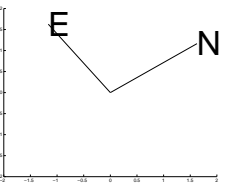
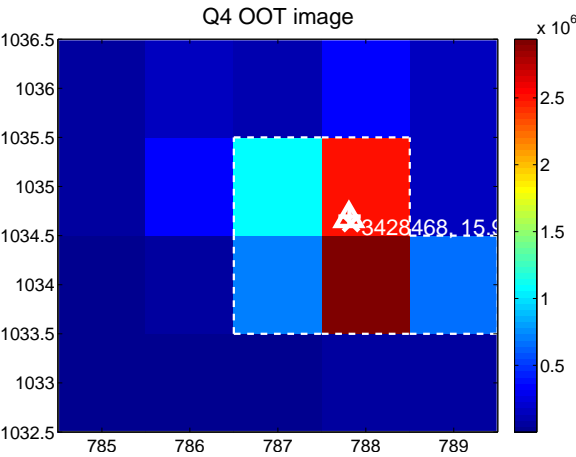
Q3 no OOT image



Q4 difference image



Q4 OOT image

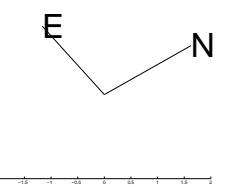
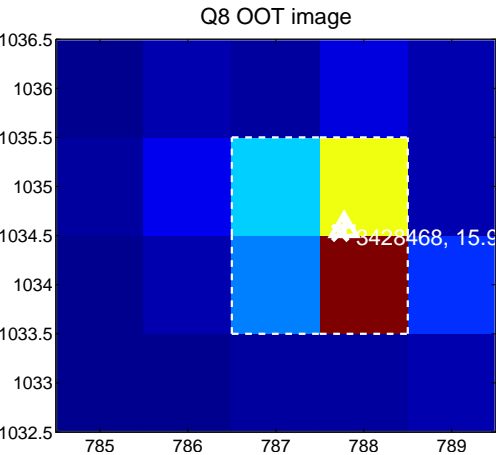
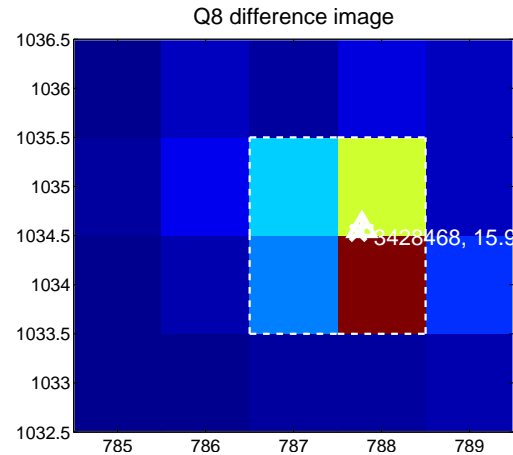
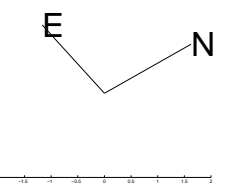
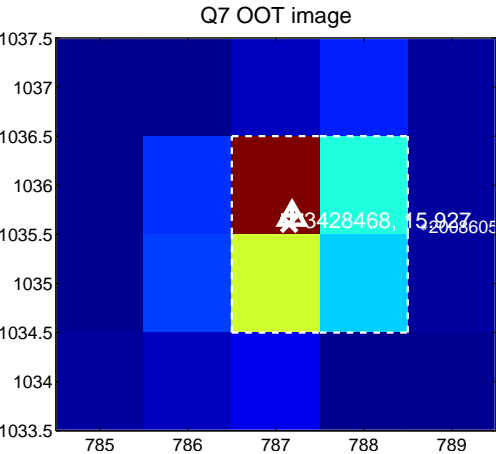
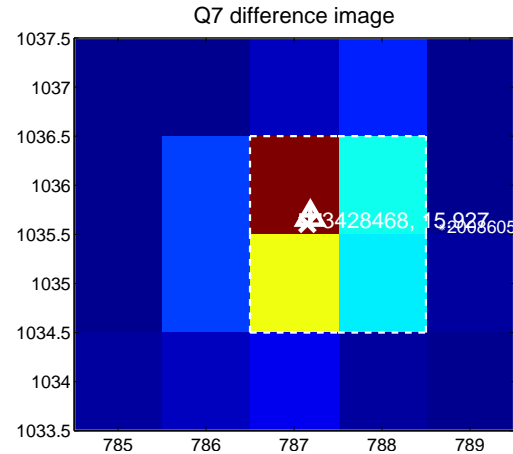
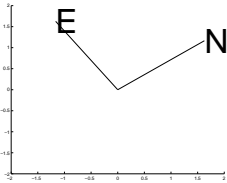
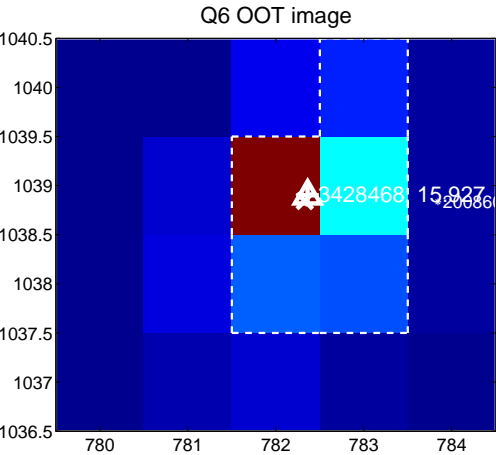
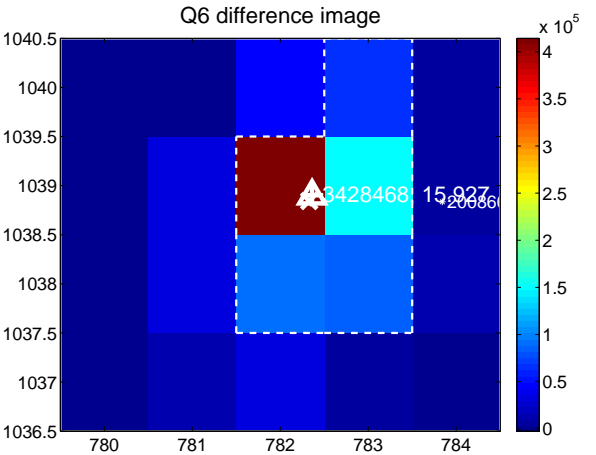


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

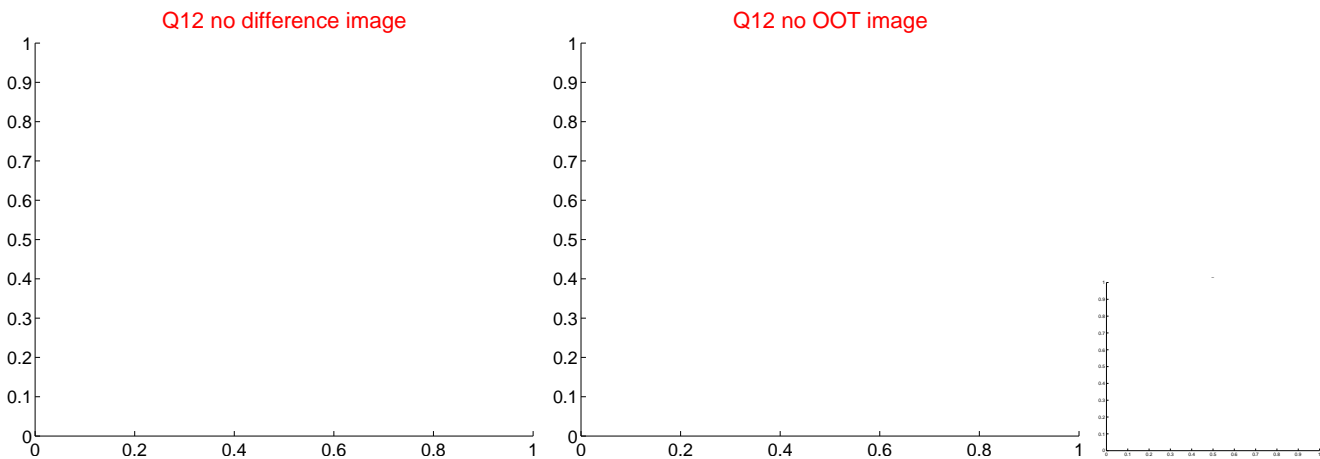
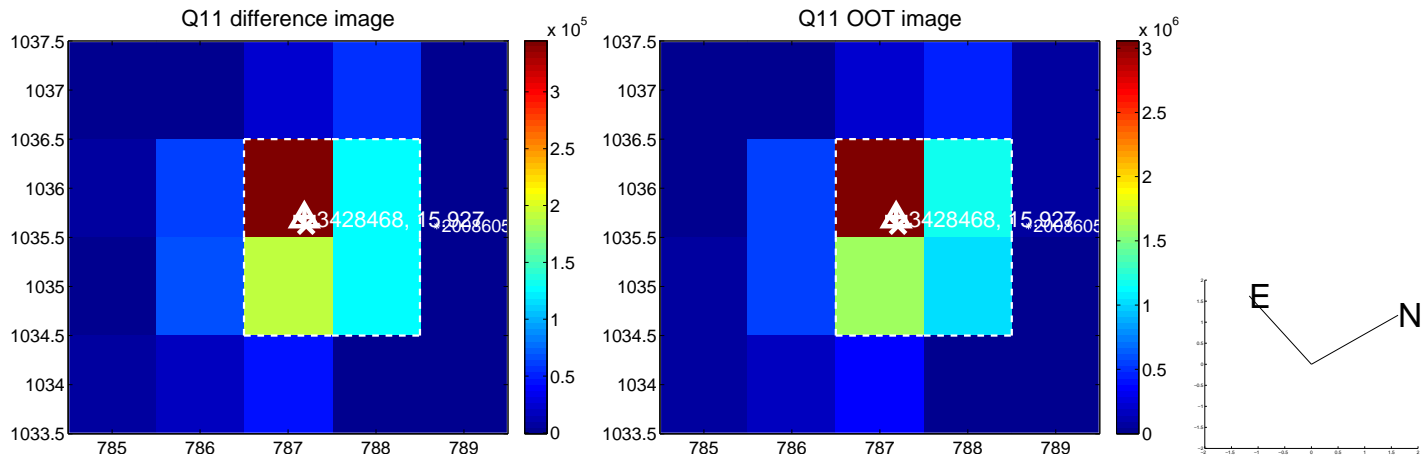
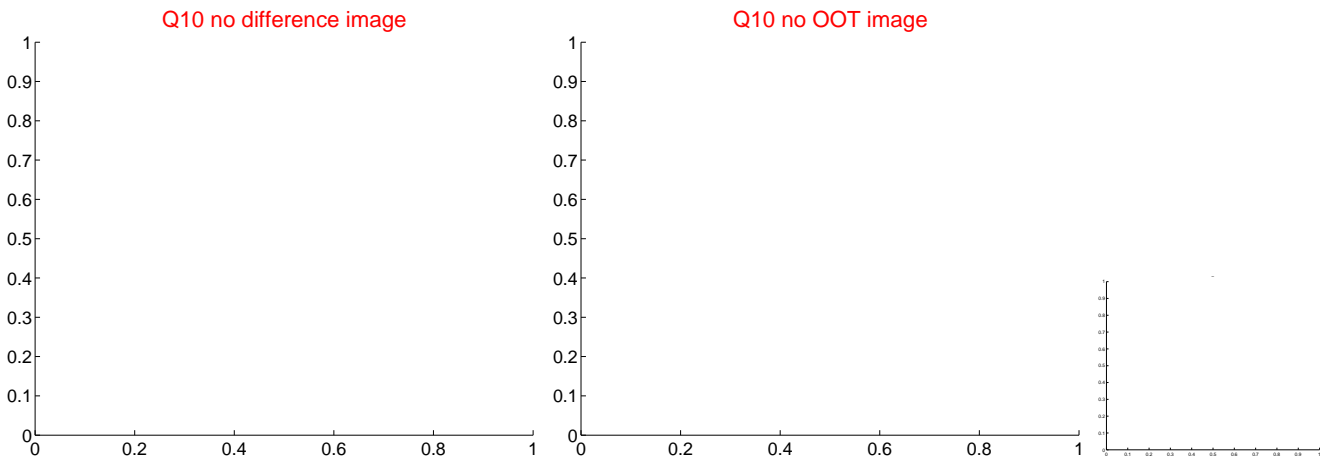
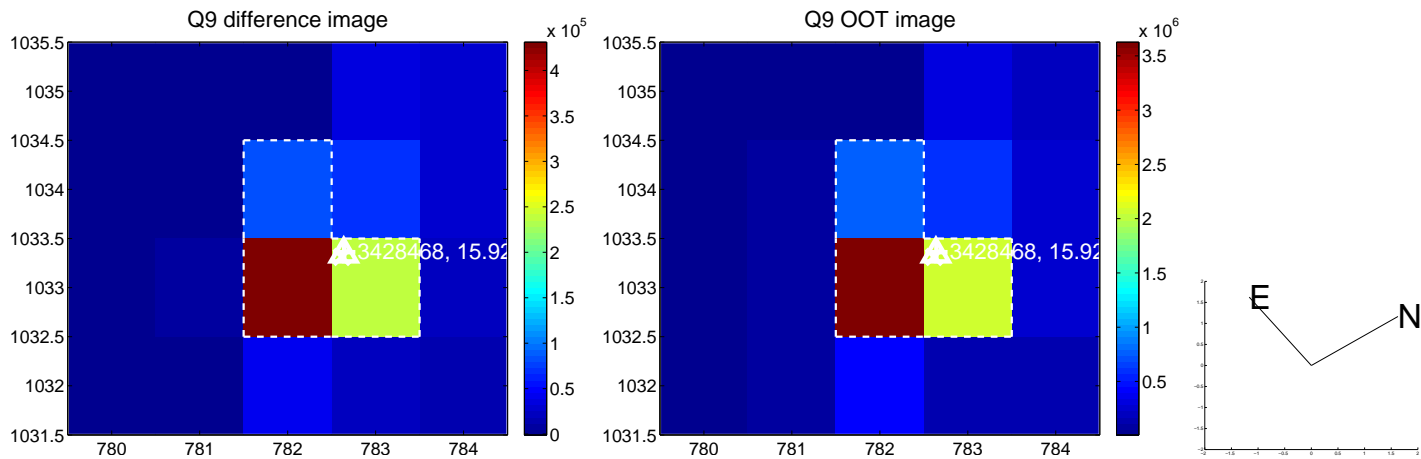
Q5 no difference image



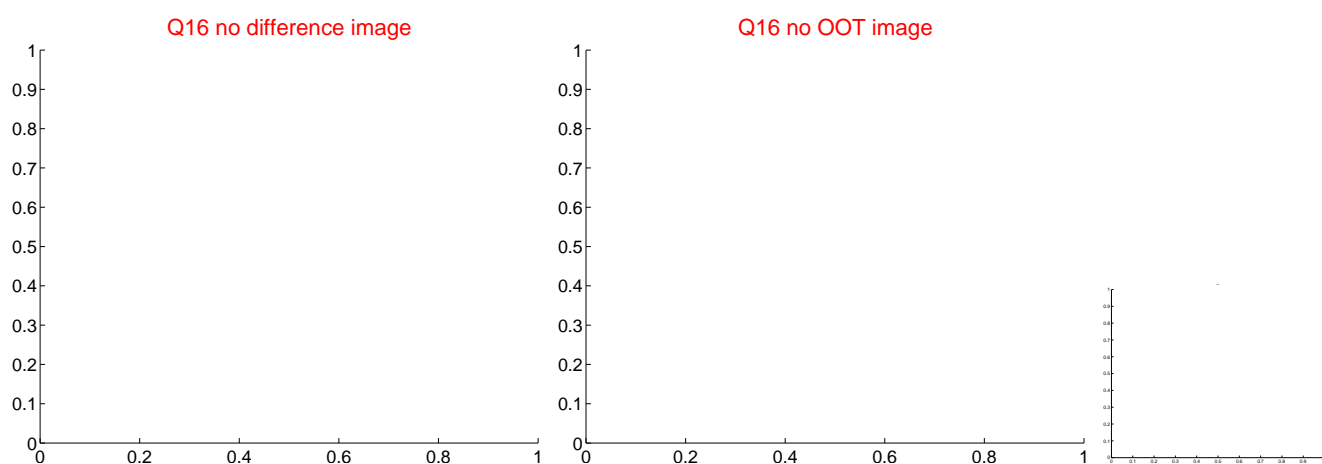
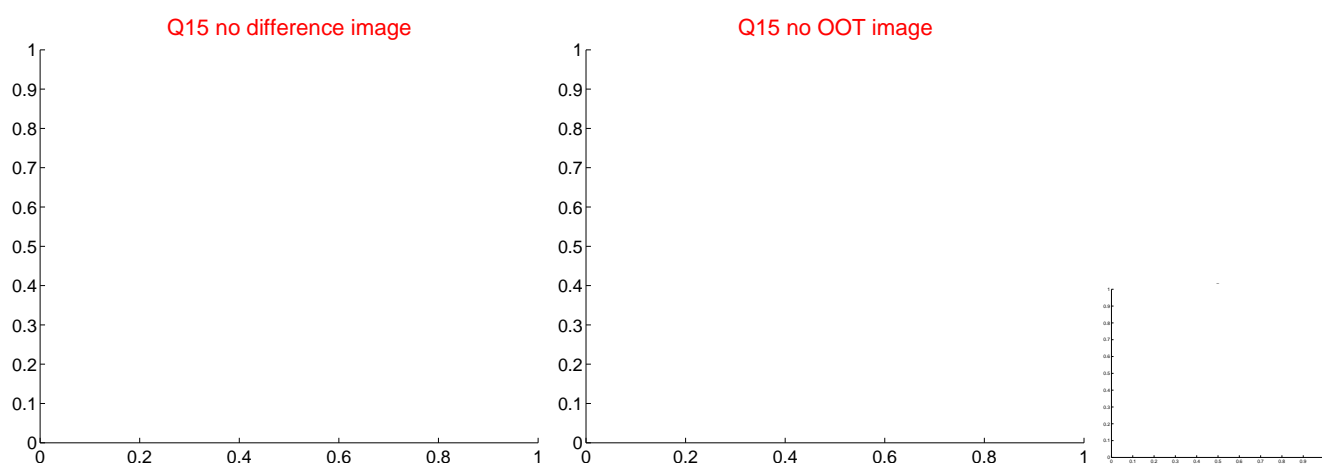
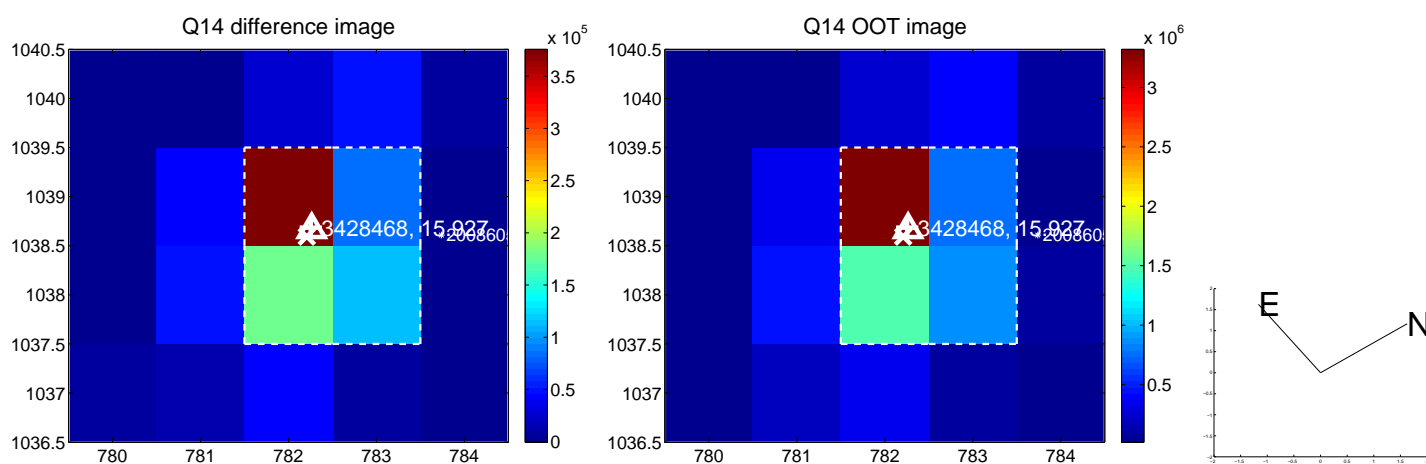
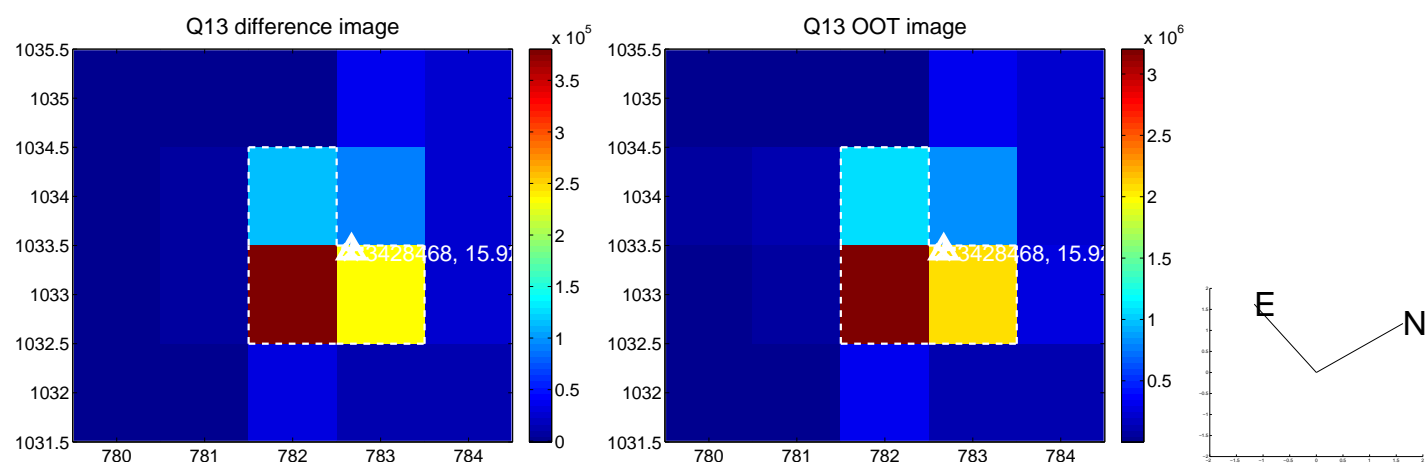
Q5 no OOT image



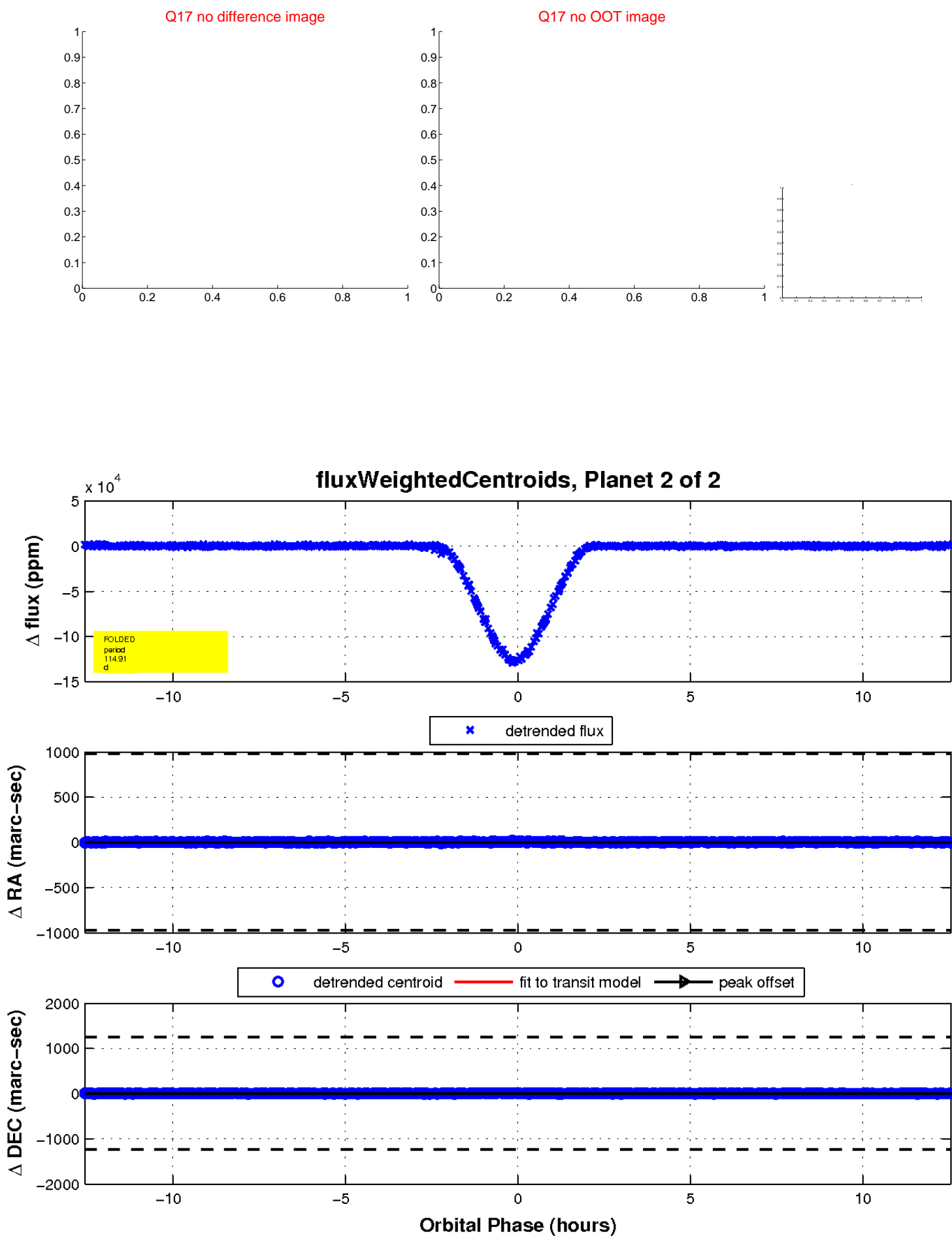
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

