

KIC 003247268

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})
003247268-01	OBS	1089.01	86.678587	175.597180	8226.7	10.163	229.1	226.5	1.08	5822	9.88	8.43
003247268-02	OBS	1089.02	12.218277	140.321246	1823.6	2.741	81.5	81.8	1.08	5822	5.18	114.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003247268-01	OBS	PC	0.93	0	0	0	0	NO_COMMENT
003247268-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

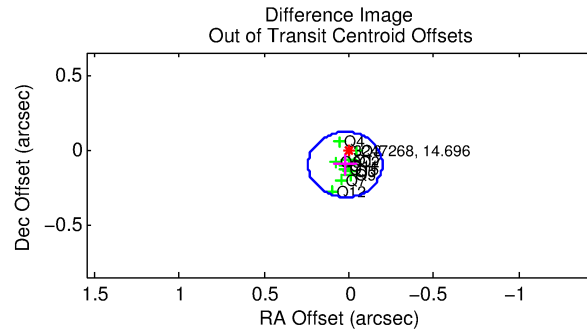
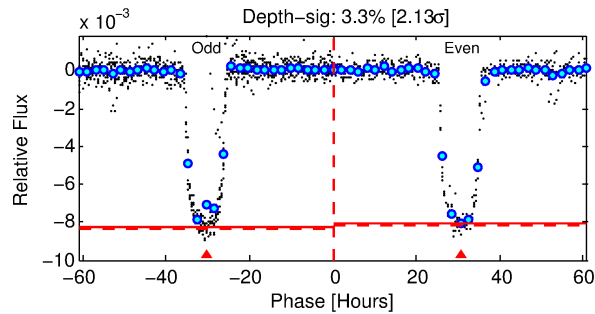
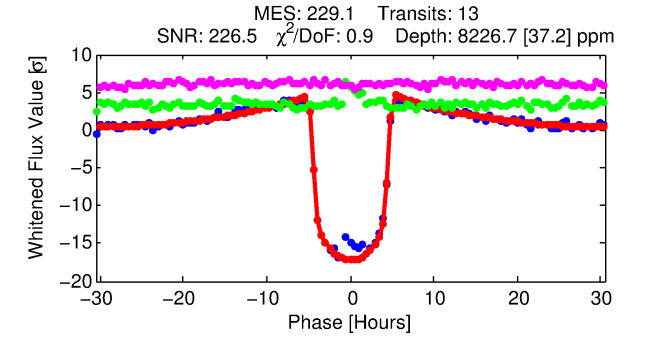
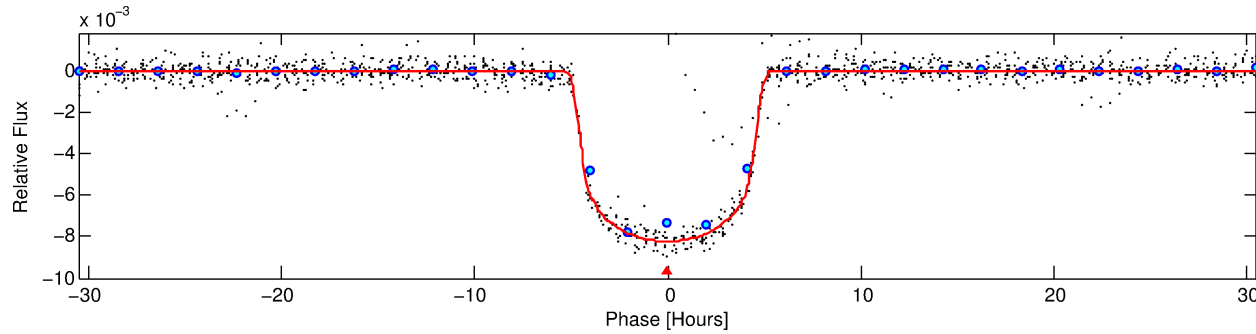
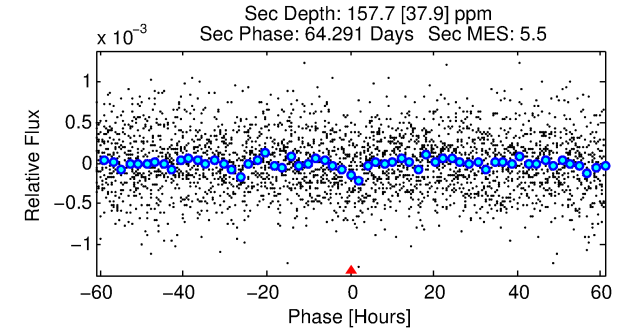
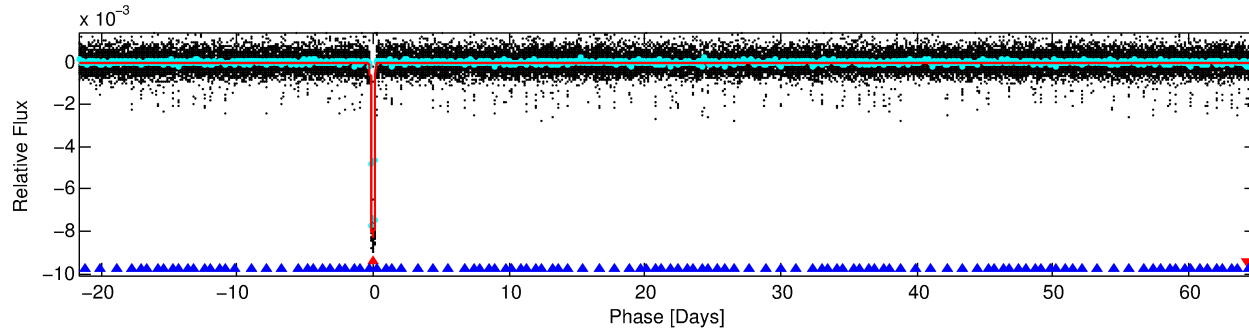
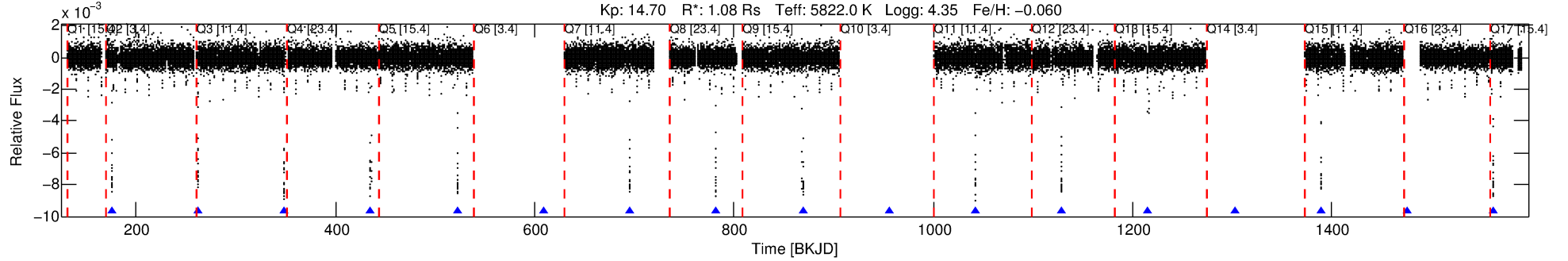
Ephemeris Match Information For 003247268-01

No Significant Match Found

DV One-Page Summary

KIC: 3247268 Candidate: 1 of 2 Period: 86.679 d
KOI: K01089.01 Name: Kepler-418b Corr: 0.999

Kp: 14.70 R*: 1.08 Rs Teff: 5822.0 K Logg: 4.35 Fe/H: -0.060



DV Fit Results:

Period = 86.67859 [0.00008] d
Epoch = 175.5972 [0.0007] BKJD
Rp/R* = 0.0838 [0.0007]
a/R* = 66.31 [2.34]
b = 0.37 [0.08]
Seff = 8.43 [1.84]
Teq = 434 [24] K
Rp = 9.88 [1.48] Re
a = 0.3777 [0.0504] AU
Ag = 126.75 [39.91] [3.15σ]
Teffp = 2254 [143] K [12.56σ]

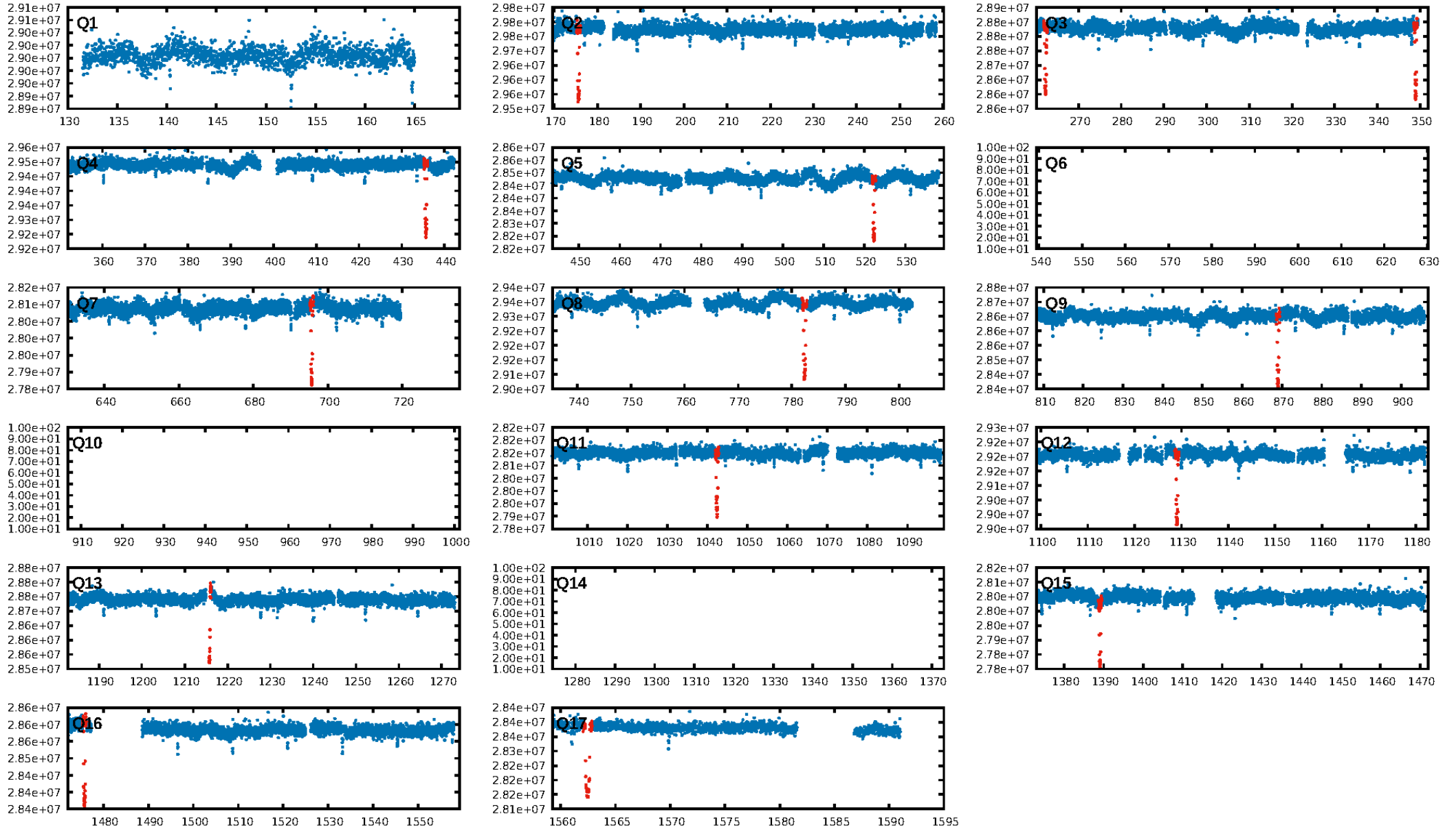
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [169.77σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 25.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 3.257
Centroid-sig: 0.0%
Centroid-so: 0.340 arcsec [7.48σ]
OotOffset-rm: 0.102 arcsec [1.40σ]
KicOffset-rm: 0.036 arcsec [0.48σ]
OotOffset-st: 1/4/3/3 [11]
KicOffset-st: 1/4/3/3 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 0.91 [10/11]

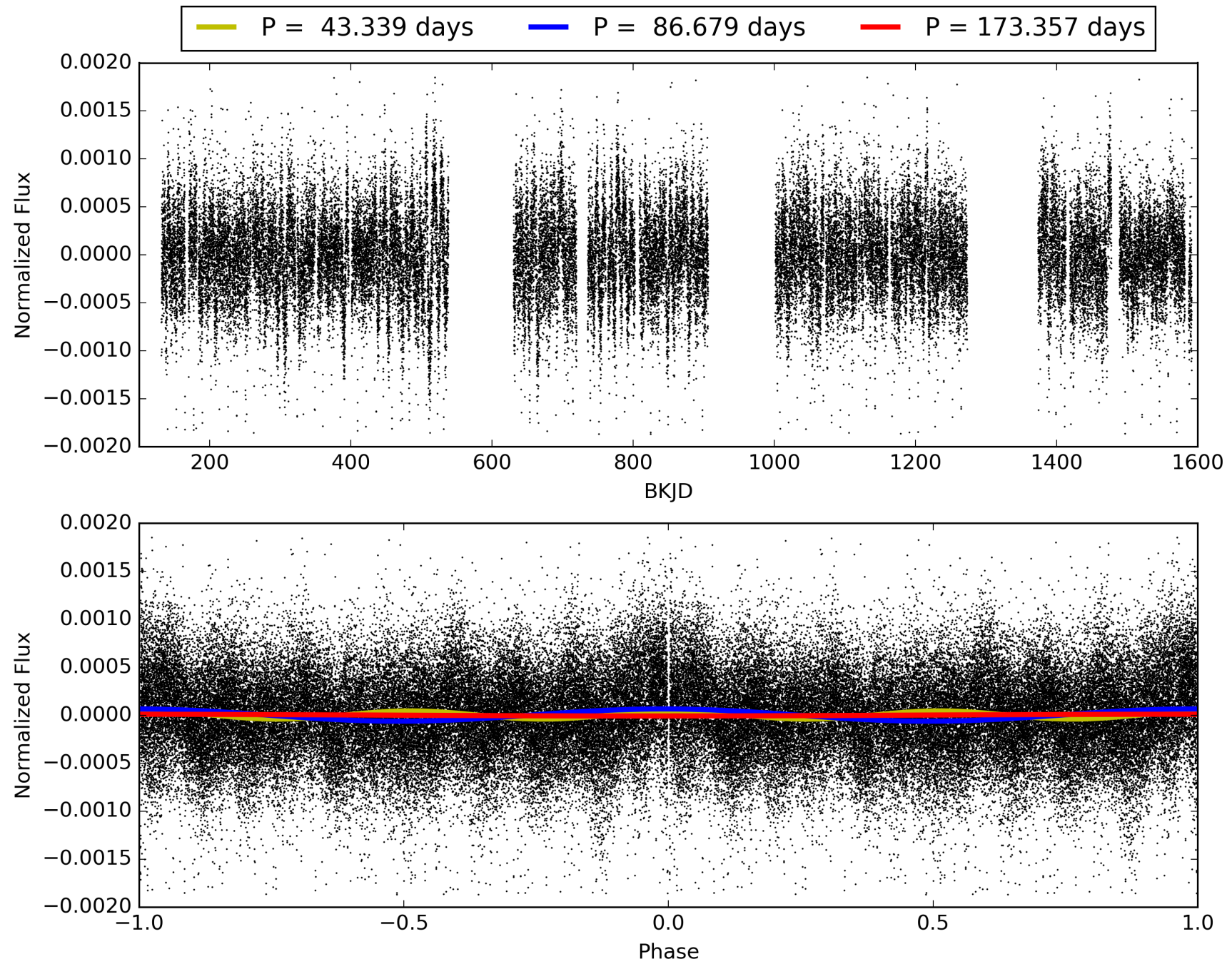
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:54:14 Z

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

TCE 003247268-01, PDC Light Curves

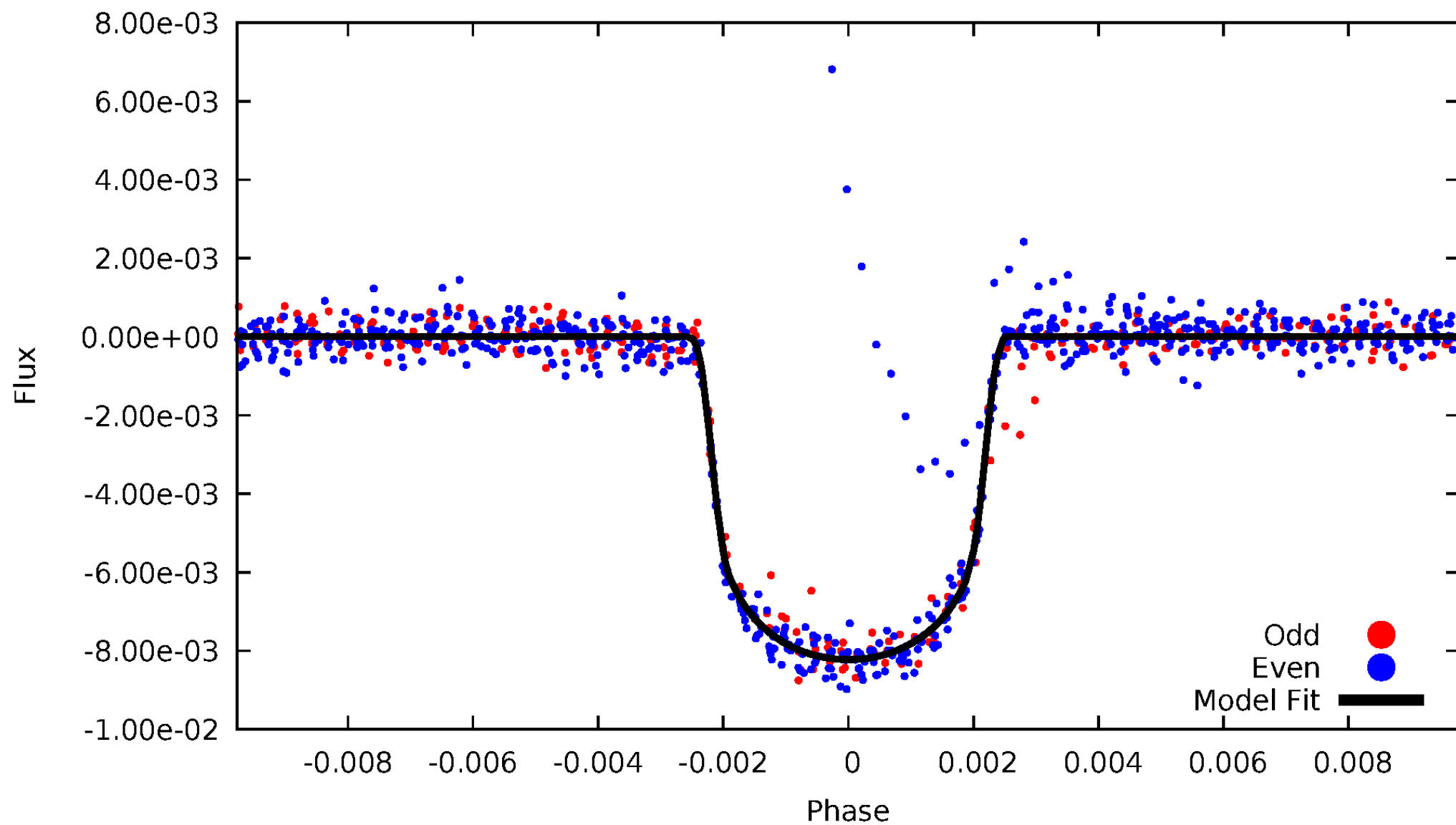


TCE 003247268-01



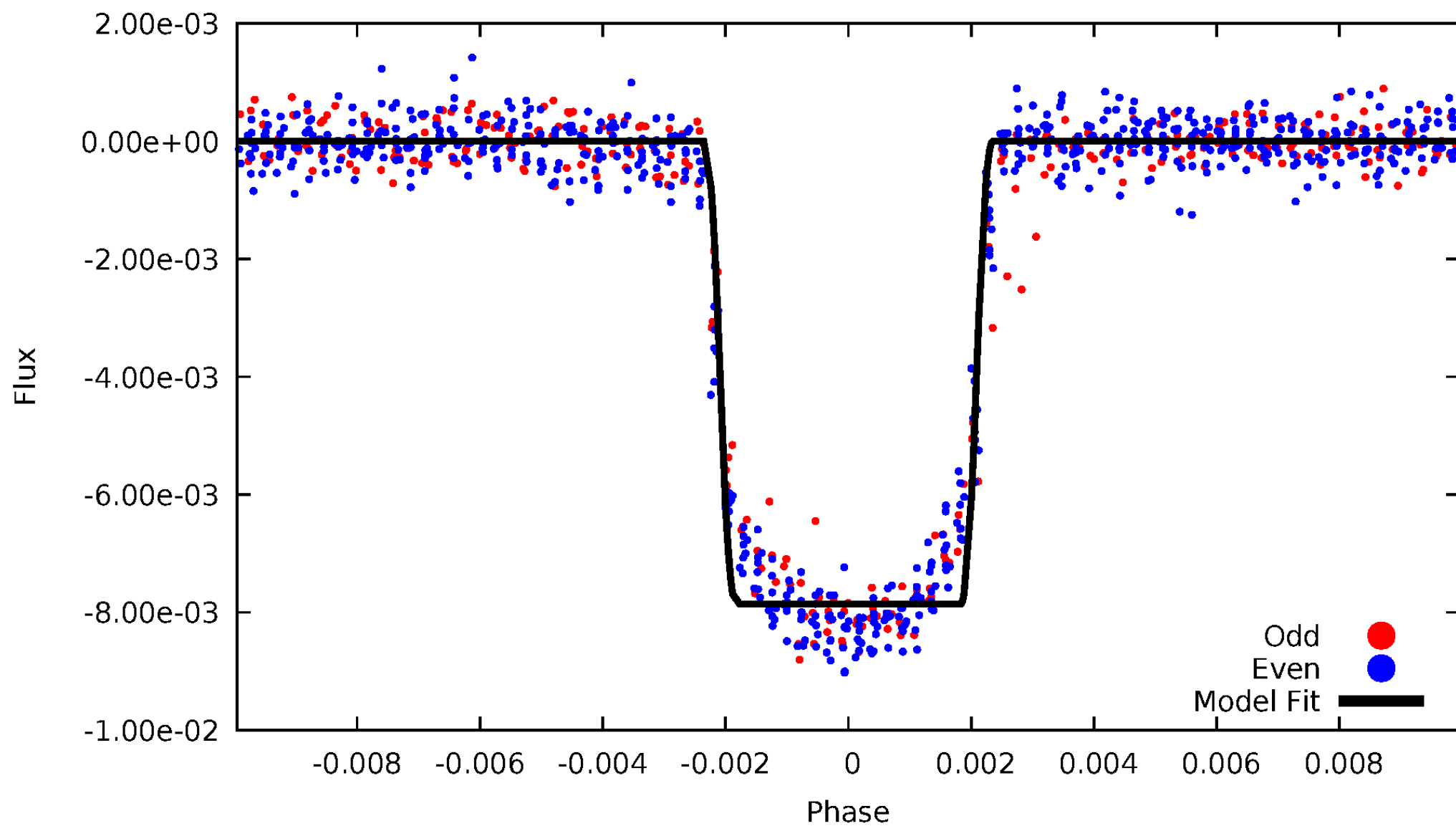
DV Odd/Even

TCE 003247268-01



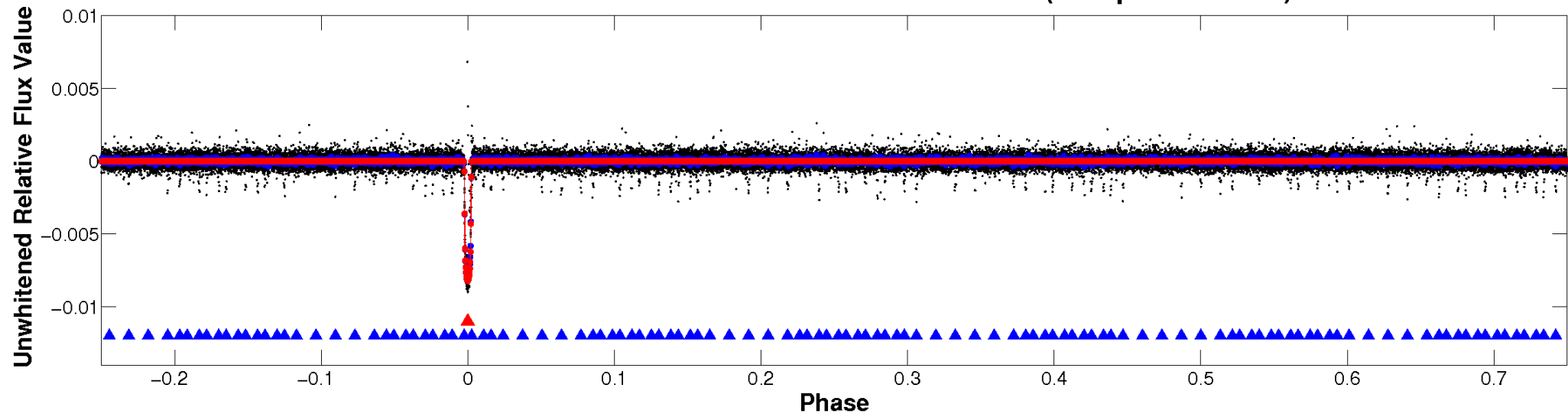
ALT Odd/Even

TCE 003247268-01

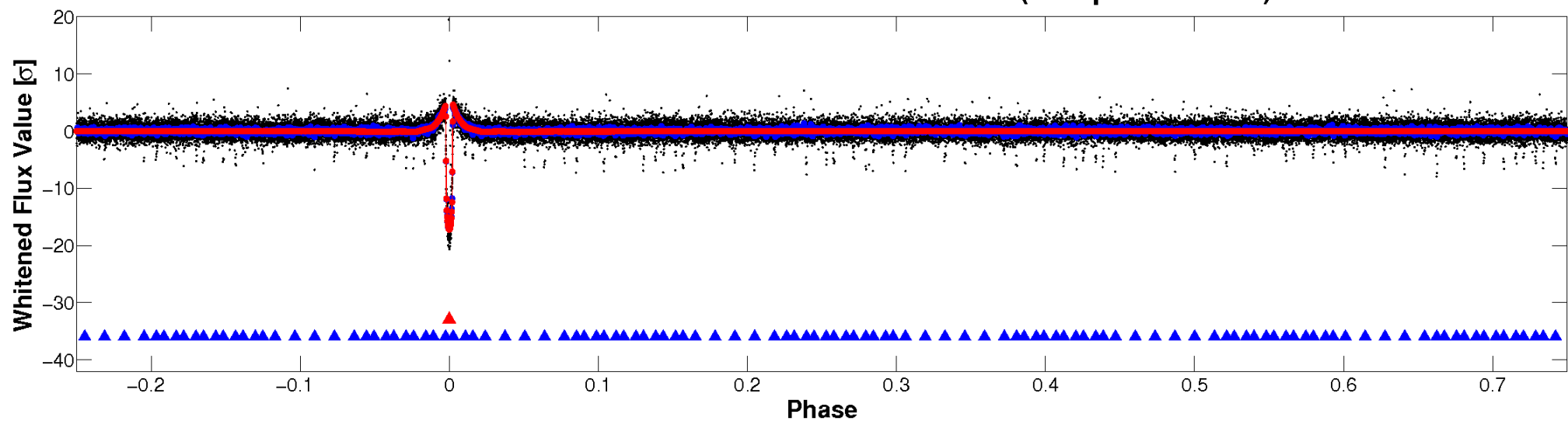


Non-Whitened Vs. Whitened Light Curve

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

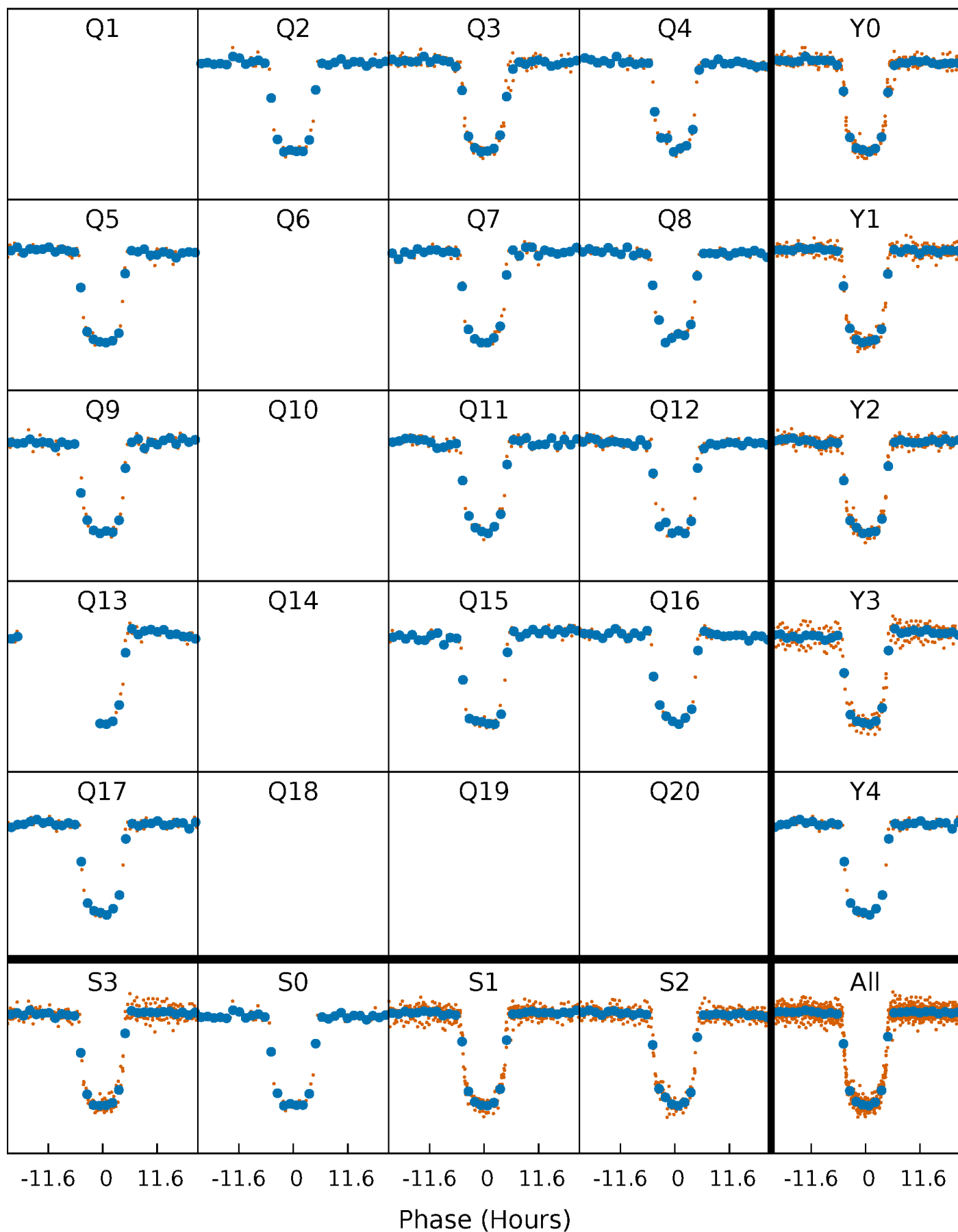


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



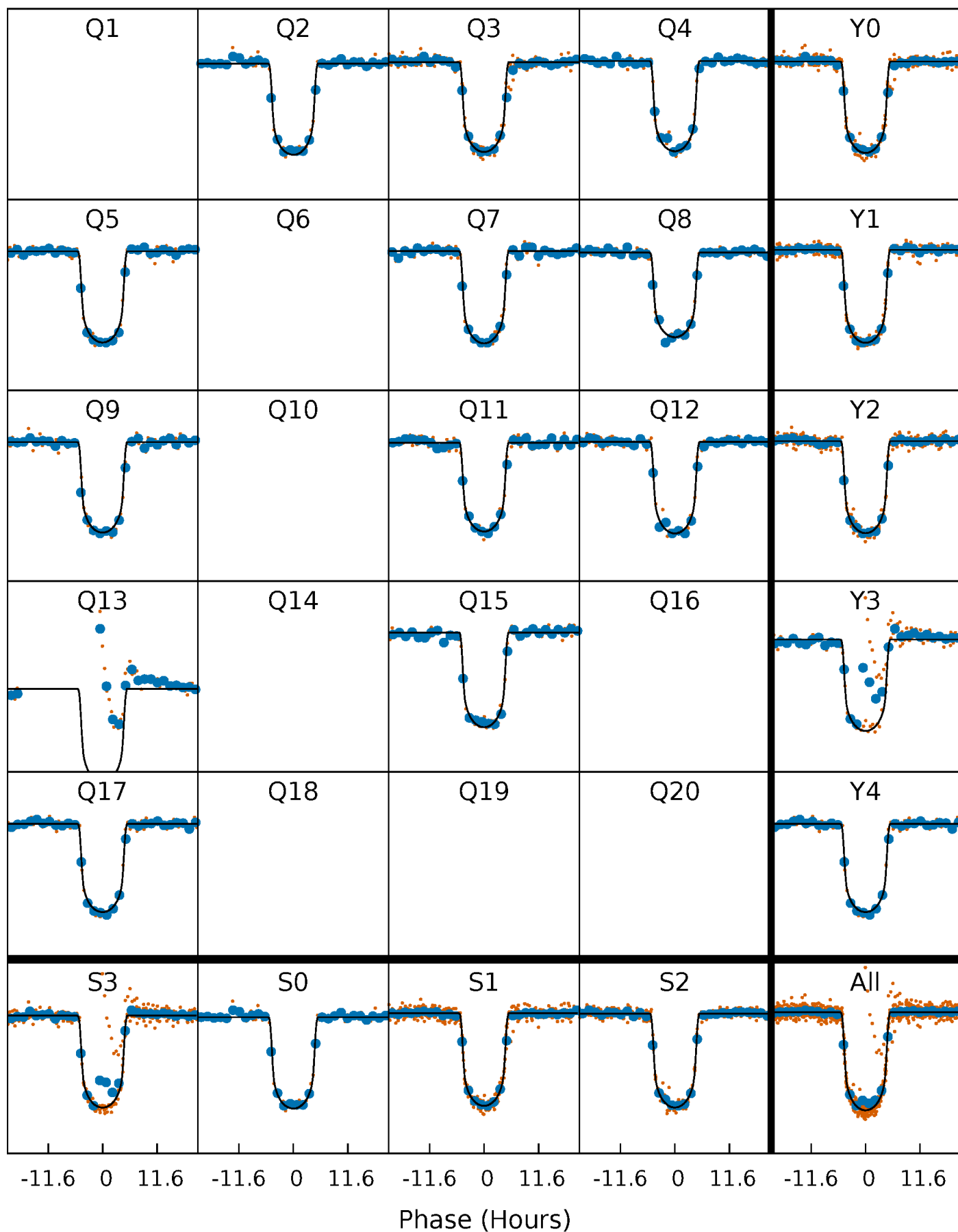
PDC Quarter-Phased Transit Curves

TCE 003247268-01 P= 86.678587 Days $T_0=175.597180$ (BKJD)



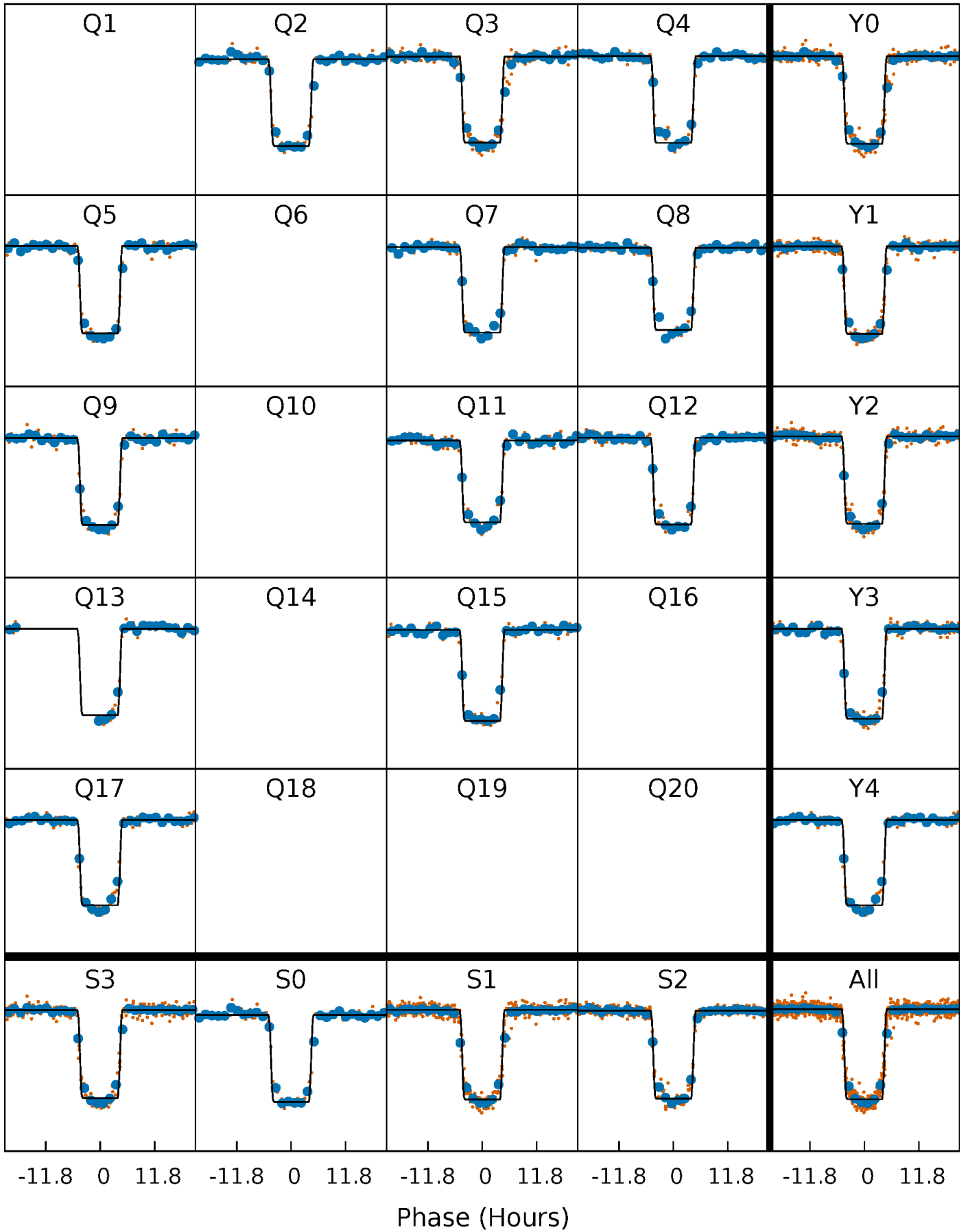
DV Quarter-Phased Transit Curves

TCE 003247268-01 P= 86.678587 Days $T_0=175.597180$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

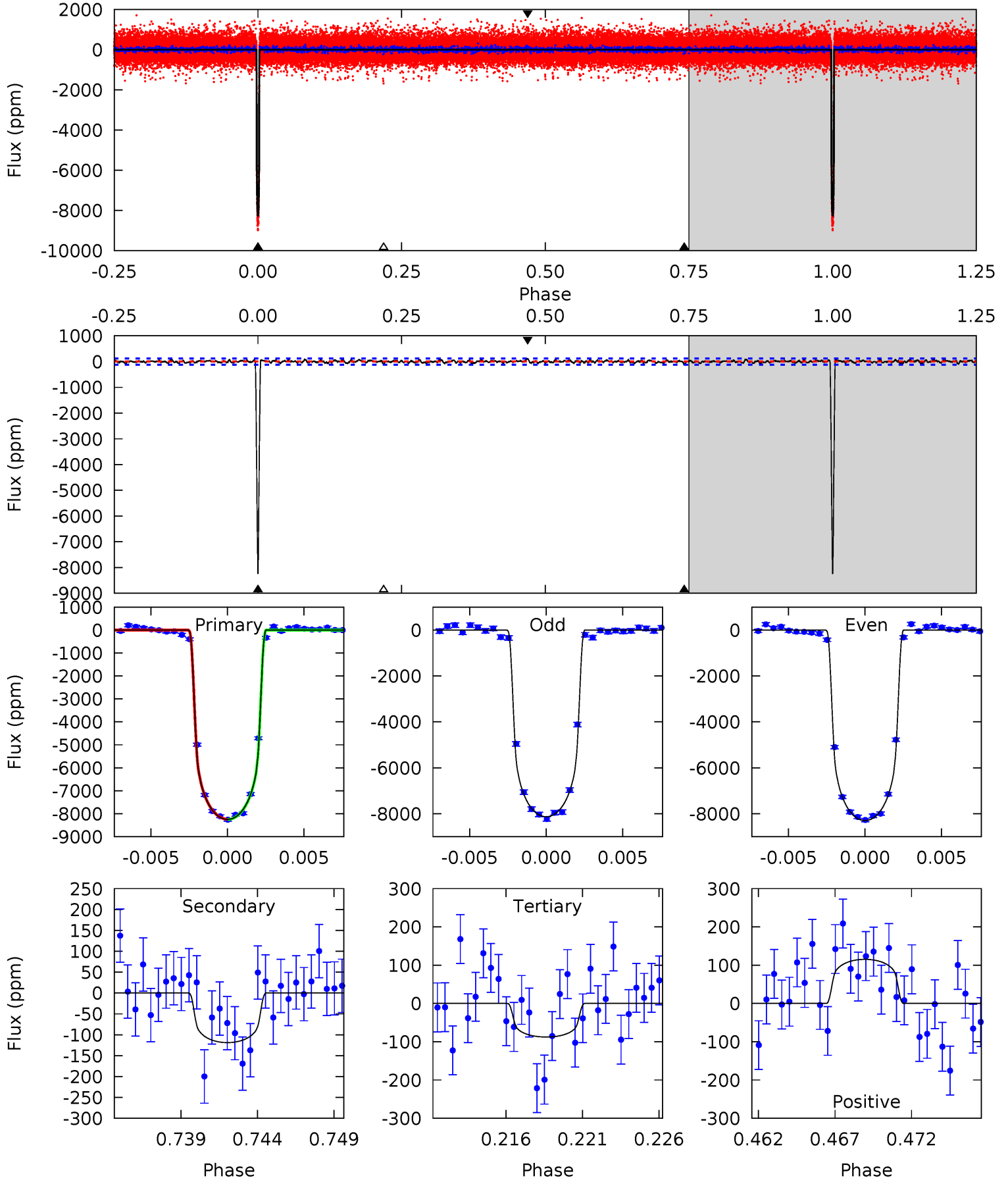
TCE 003247268-01 P= 86.679692 Days $T_0=175.589258$ (BKJD)



DV Model-Shift Uniqueness Test

003247268-01, P = 86.678587 Days, E = 88.918593 Days

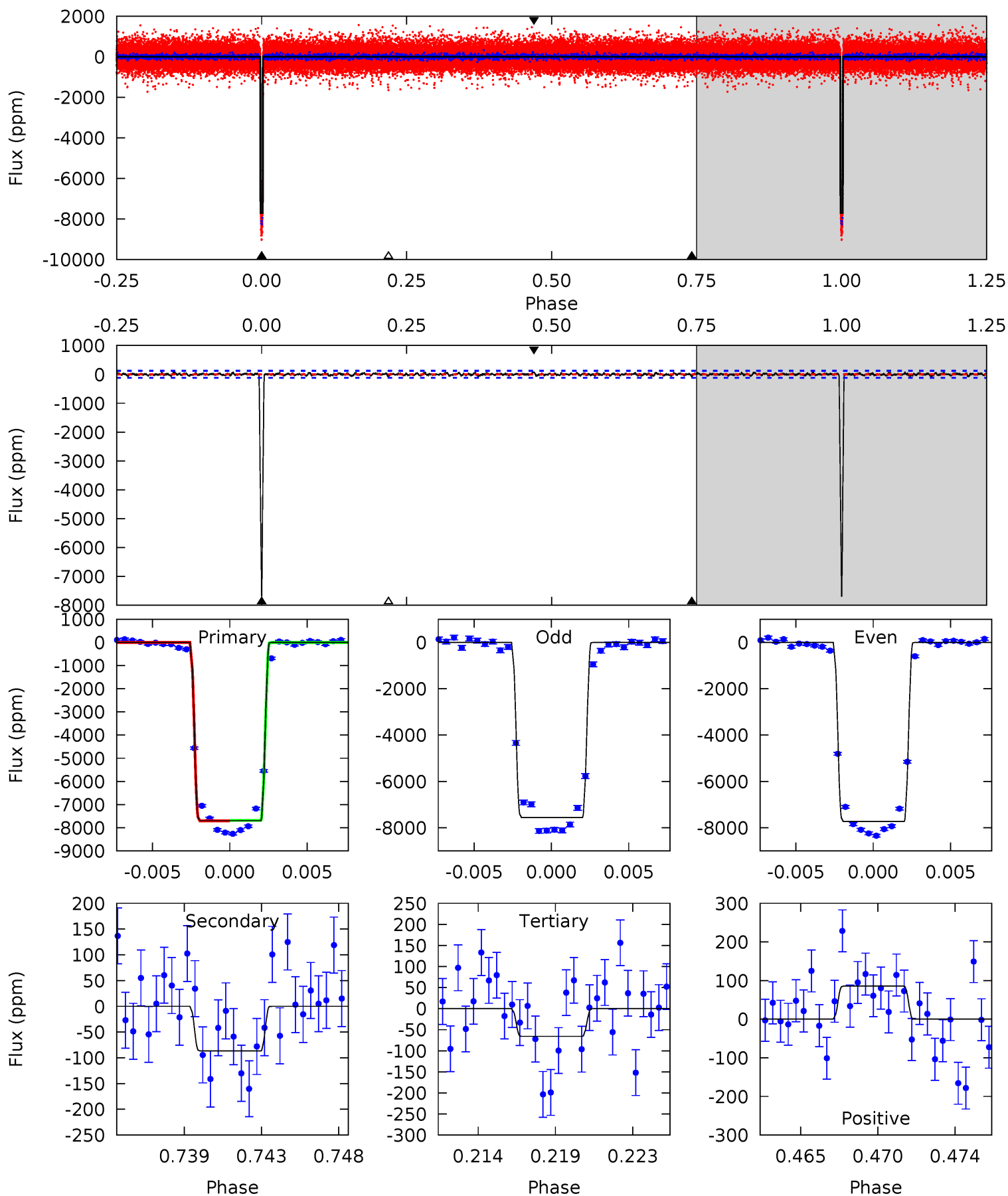
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
352.0	5.07	3.75	4.92	5.16	2.81	1.31	348.3	347.1	1.32	0.15	3.34	0.93	0.01	0.28



Alt Model-Shift Uniqueness Test

003247268-01, P = 86.679692 Days, E = 88.909566 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
327.1	3.69	2.80	3.64	5.17	2.84	0.98	324.3	323.5	0.89	0.05	3.39	1.00	0.01	0.43



Stellar Parameters For KIC 003247268

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5822^{+105}_{-116}	$4.351^{+0.115}_{-0.115}$	$-0.060^{+0.150}_{-0.150}$	$1.081^{+0.162}_{-0.132}$	$0.957^{+0.078}_{-0.056}$	$1.066^{+0.527}_{-0.352}$
	+2%/-2%	+3%/-3%	+250%/-250%	+15%/-12%	+8%/-6%	+49%/-33%
Source	SPE67	SPE67	SPE67	DSEP		

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

Secondary Eclipse Parameters for KIC 003247268-01 / KOI 1089.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-119 ± 23	$9.88^{+0.94}_{-0.76}$	606^{+28}_{-25}	2827^{+76}_{-86}	94^{+26}_{-23}
Alt.	-87 ± 24	$10.50^{+0.98}_{-0.72}$	608^{+30}_{-24}	2678^{+97}_{-101}	62^{+21}_{-19}

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

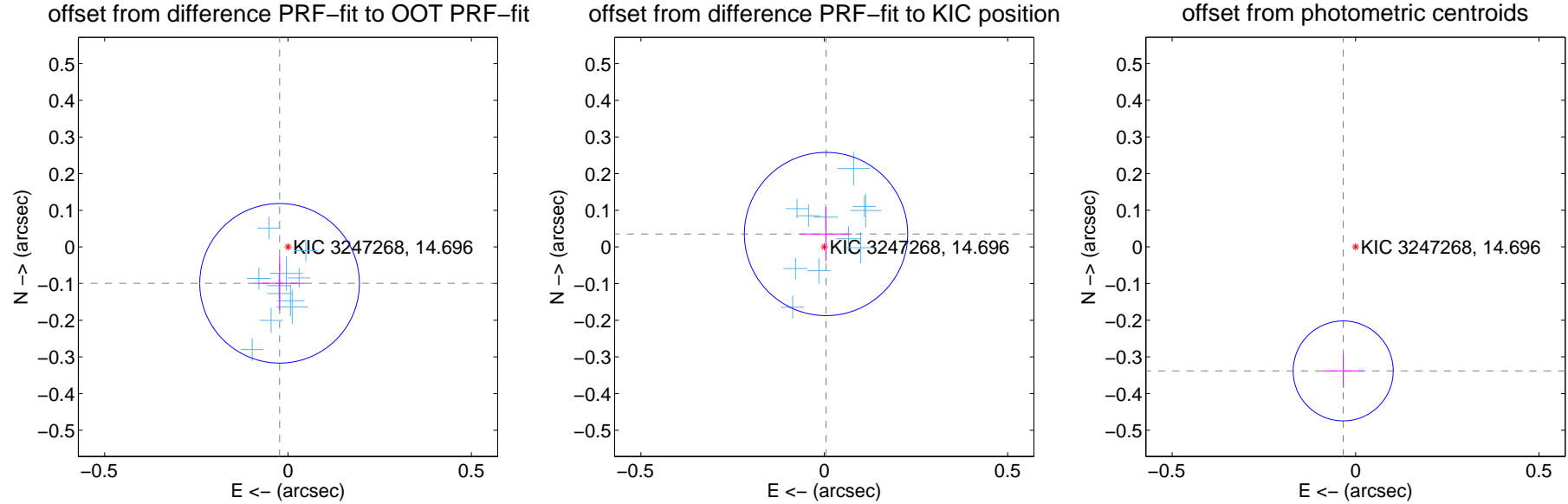
DV Centroid Data

Supplemental centroid analysis for 003247268-01. Kepler magnitude: 14.70. Transit SNR 226.47

There are 11 quarters with good PRF difference image offsets

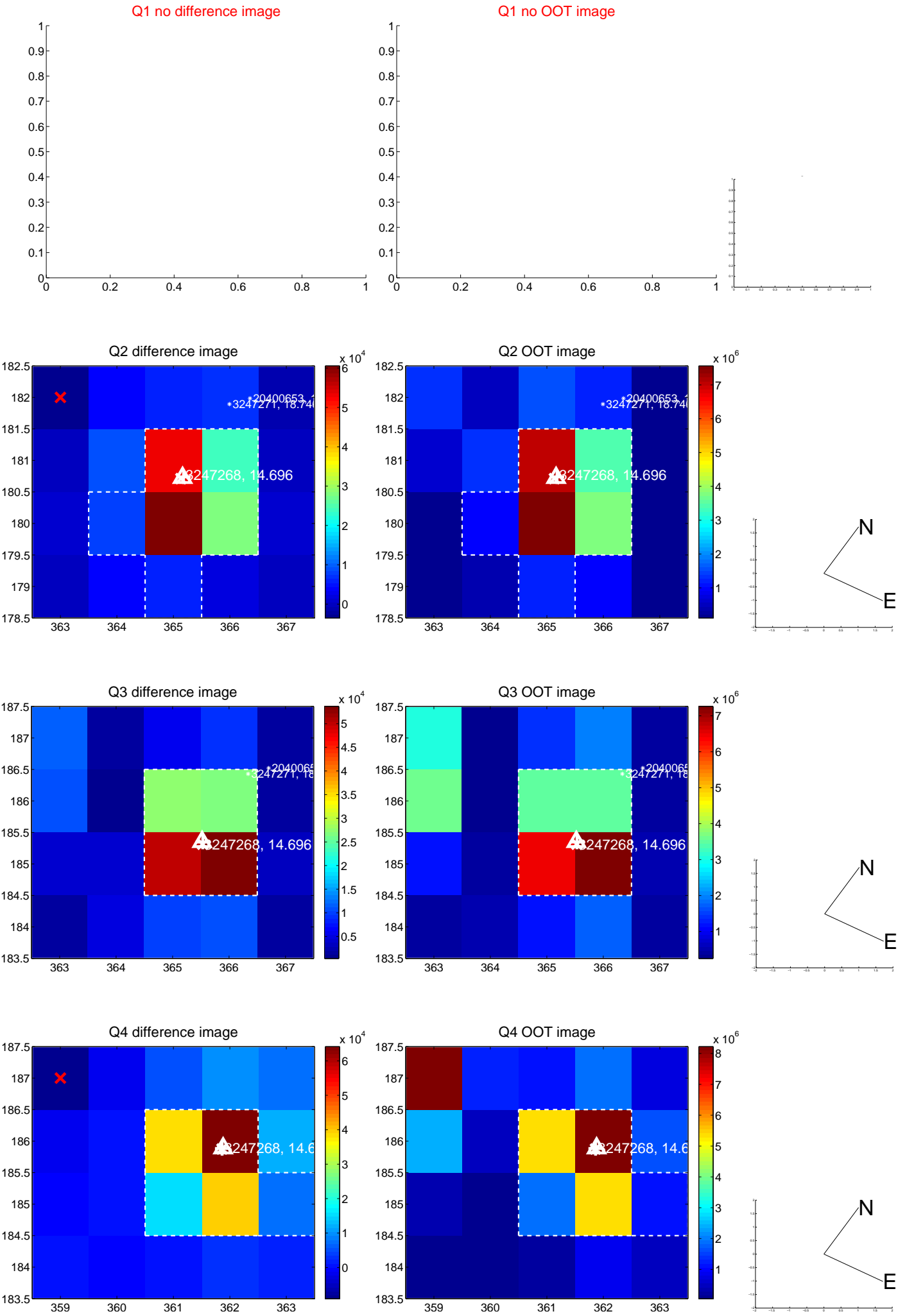
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.102 ± 0.073	1.40	0.023 ± 0.069	-0.099 ± 0.073
PRF-fit source offset from KIC position	0.036 ± 0.074	0.48	-0.005 ± 0.070	0.035 ± 0.074
photometric centroid source offset	0.34 ± 0.05	7.48	0.03 ± 0.06	-0.34 ± 0.05

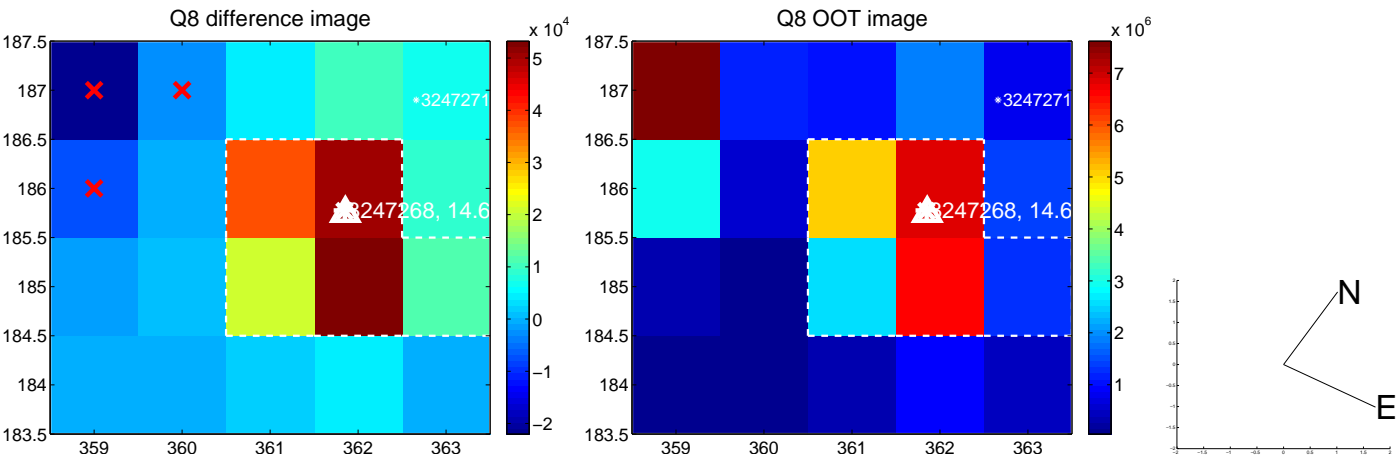
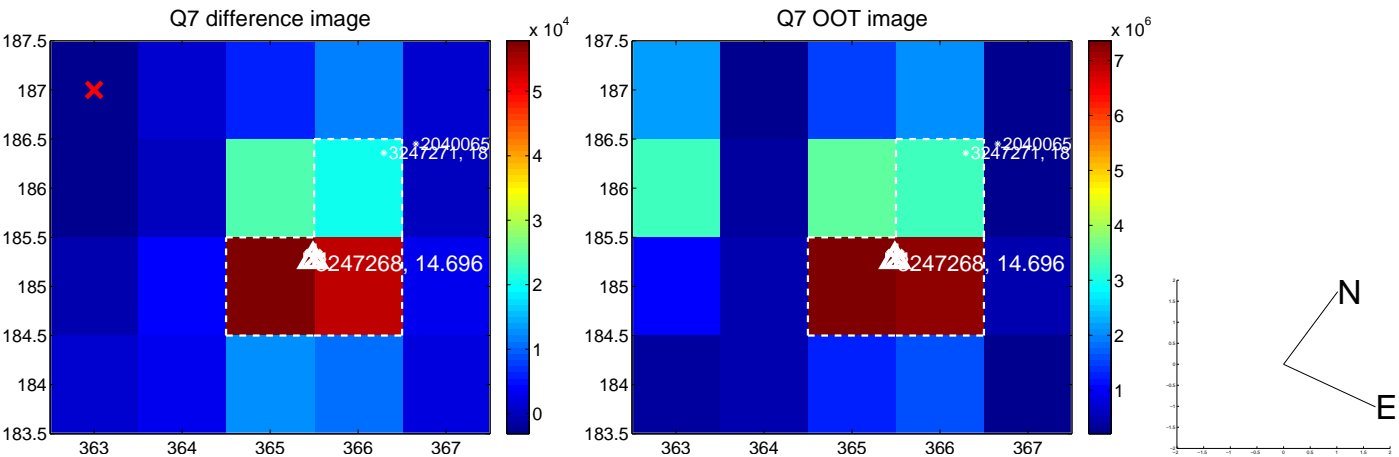
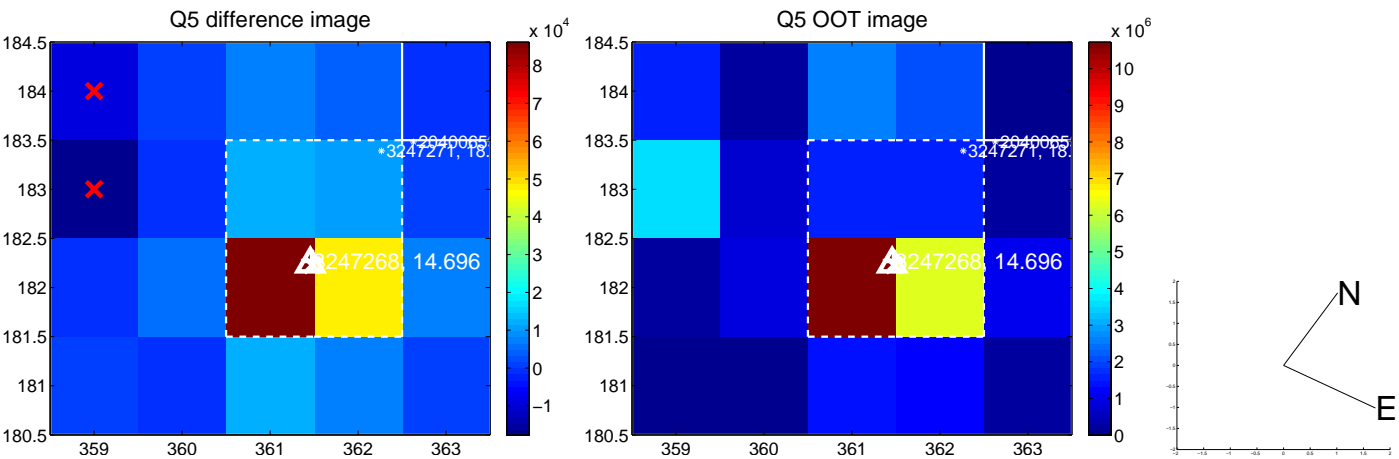


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

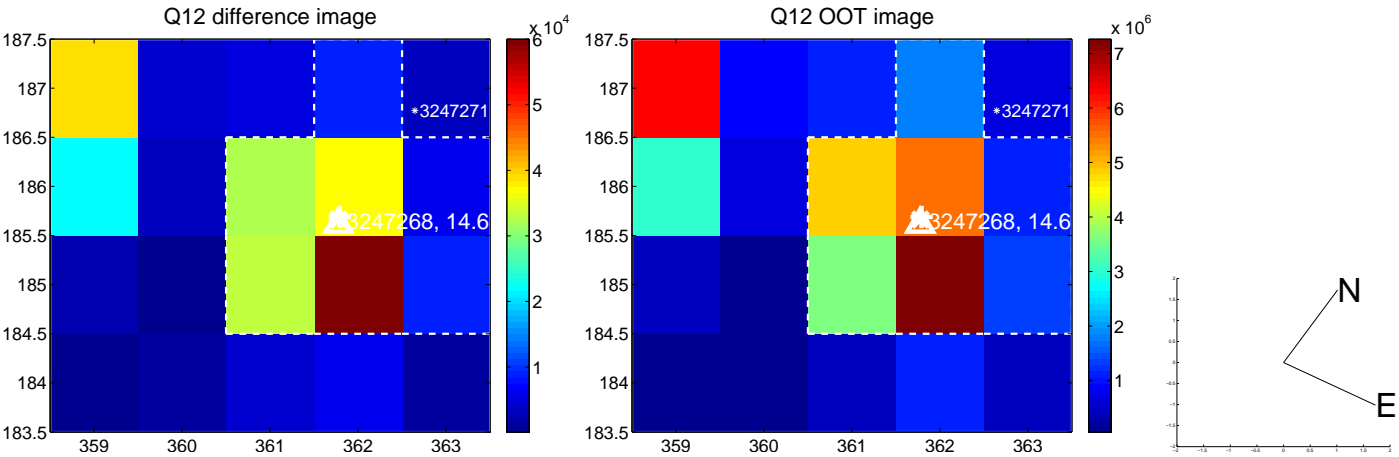
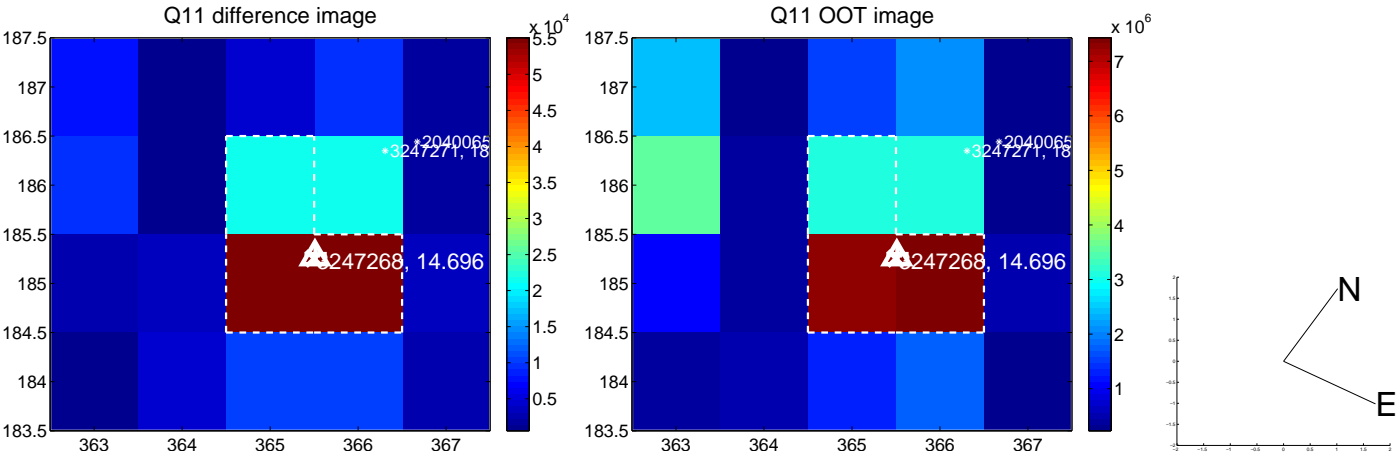
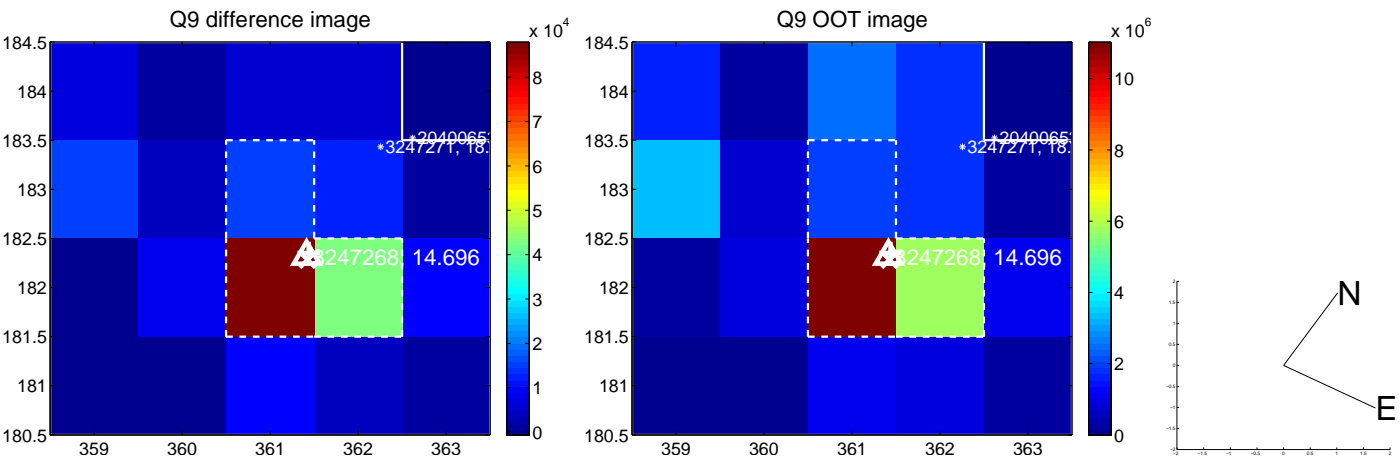
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



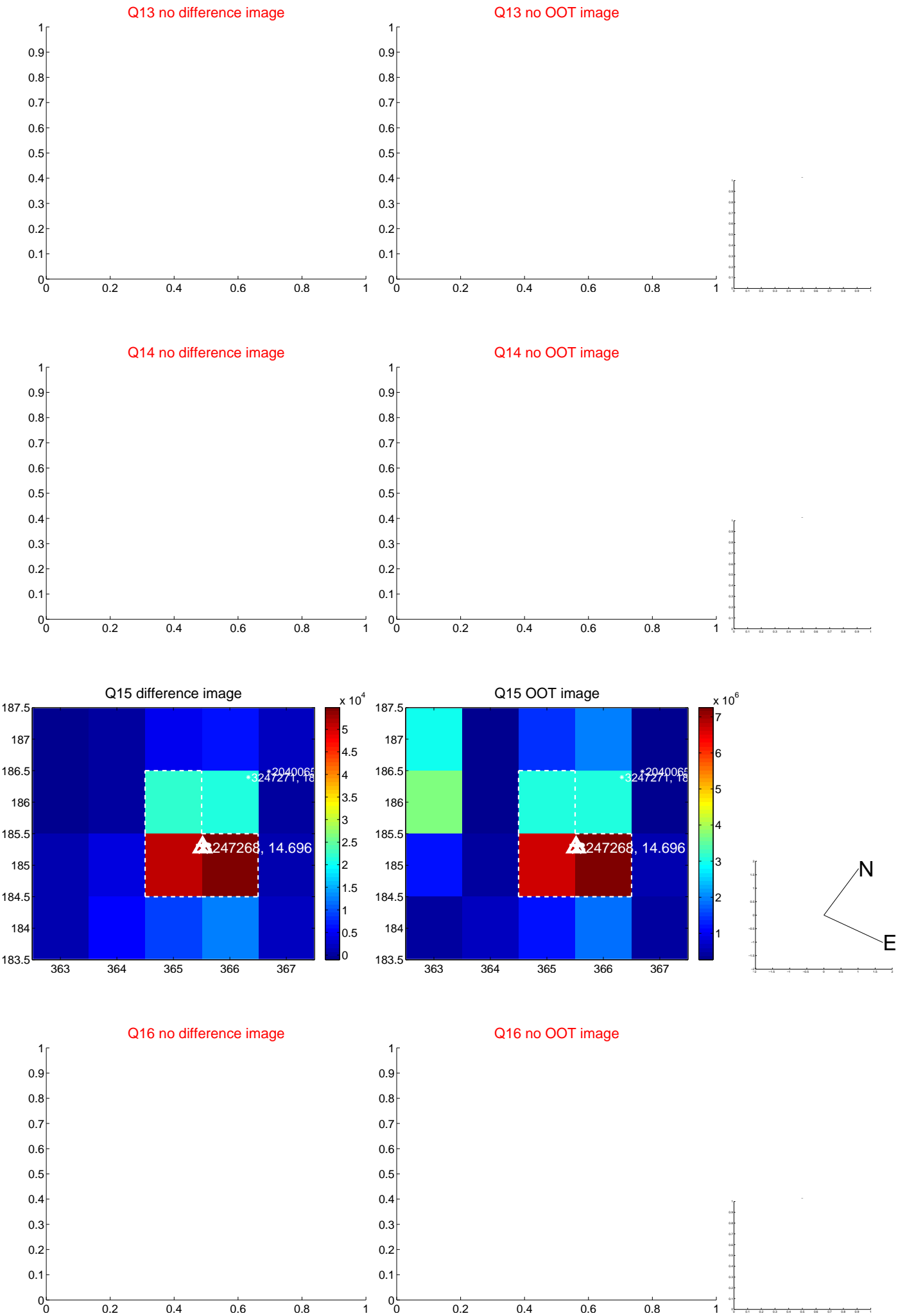
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



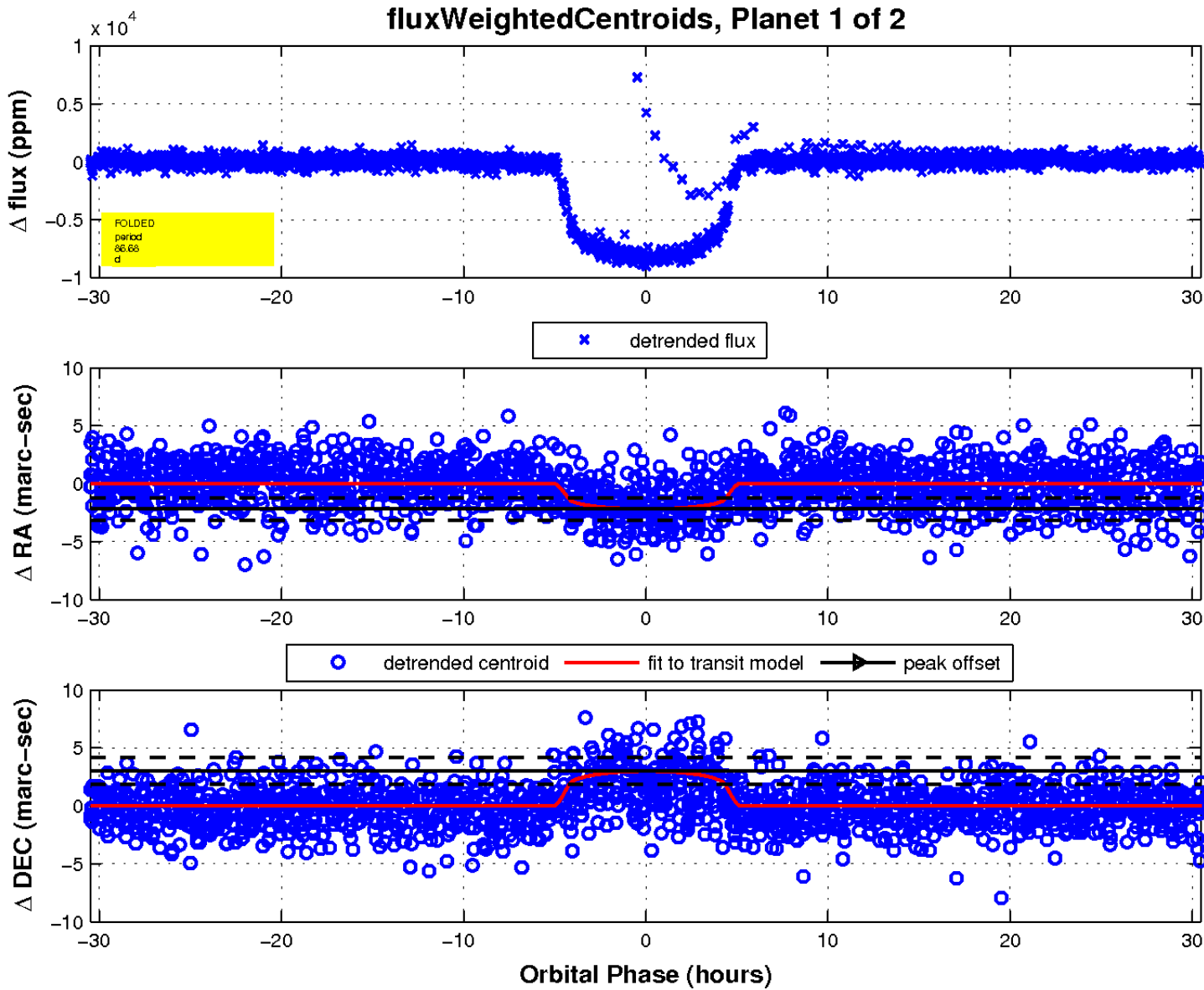
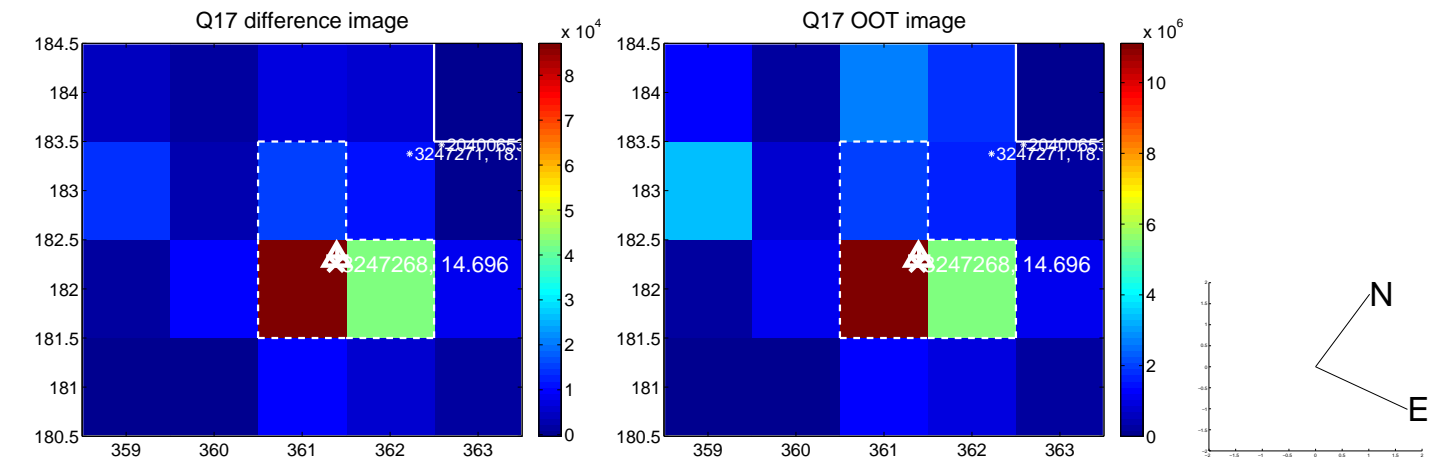
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

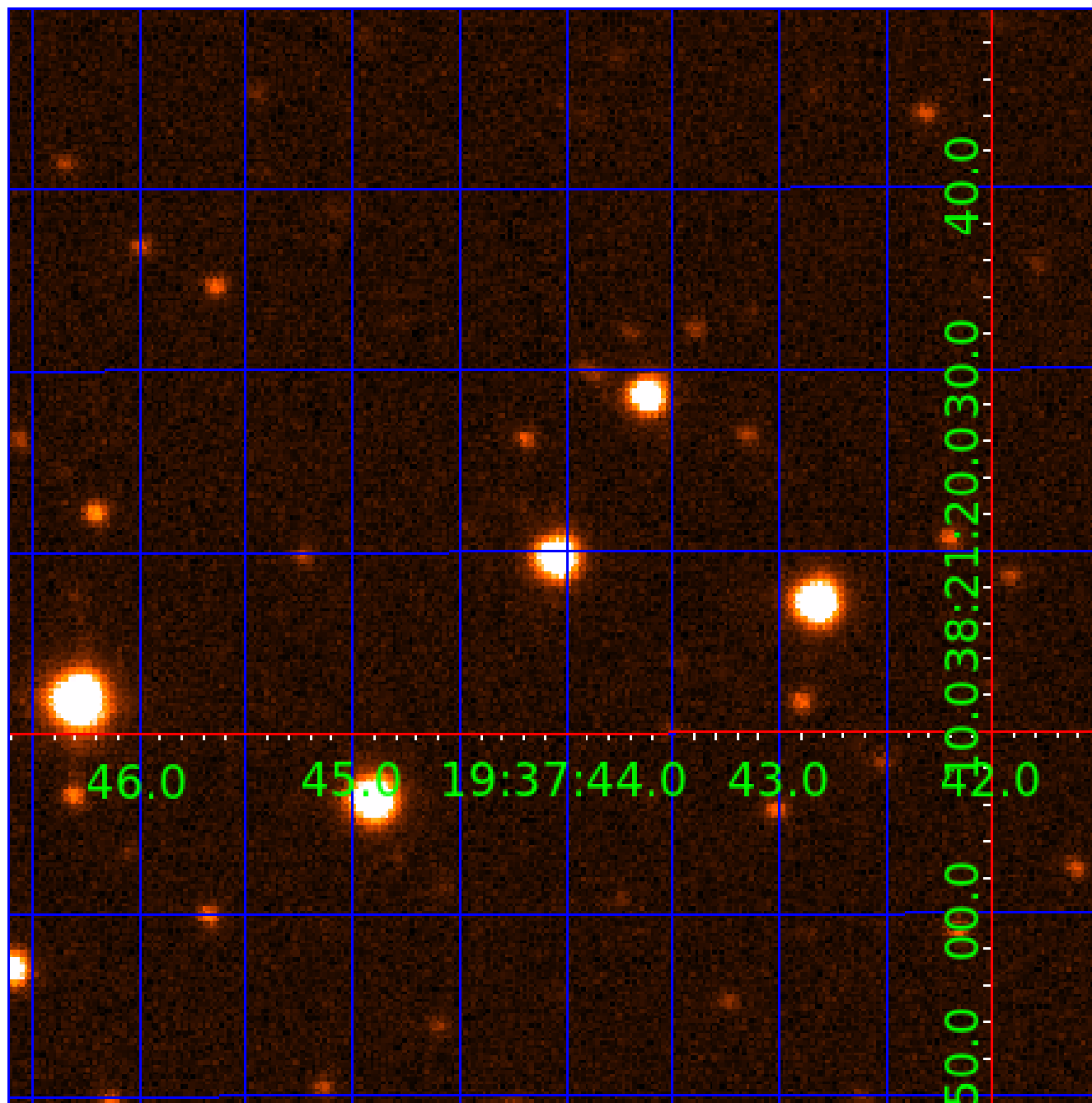


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003247268

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})
003247268-01	OBS	1089.01	86.678587	175.597180	8226.7	10.163	229.1	226.5	1.08	5822	9.88	8.43
003247268-02	OBS	1089.02	12.218277	140.321246	1823.6	2.741	81.5	81.8	1.08	5822	5.18	114.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003247268-01	OBS	PC	0.93	0	0	0	0	NO_COMMENT
003247268-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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 003247268-02

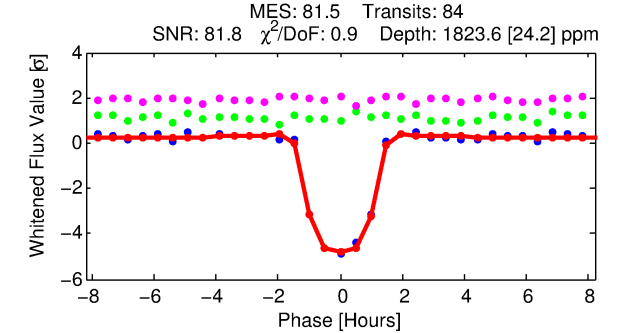
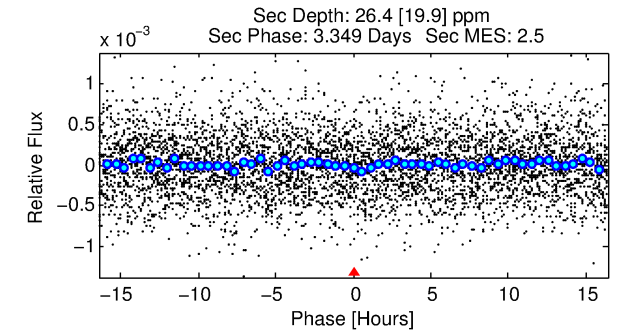
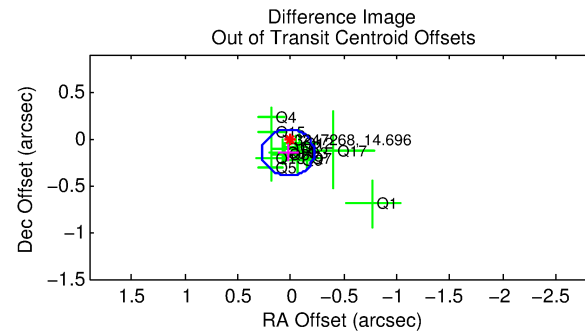
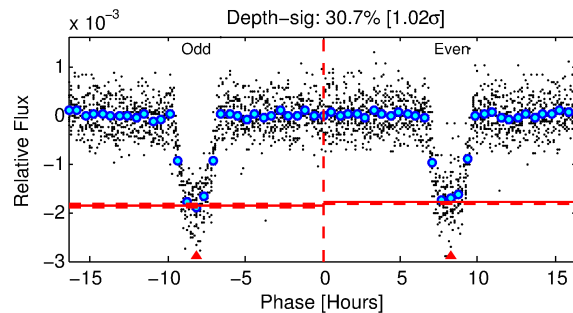
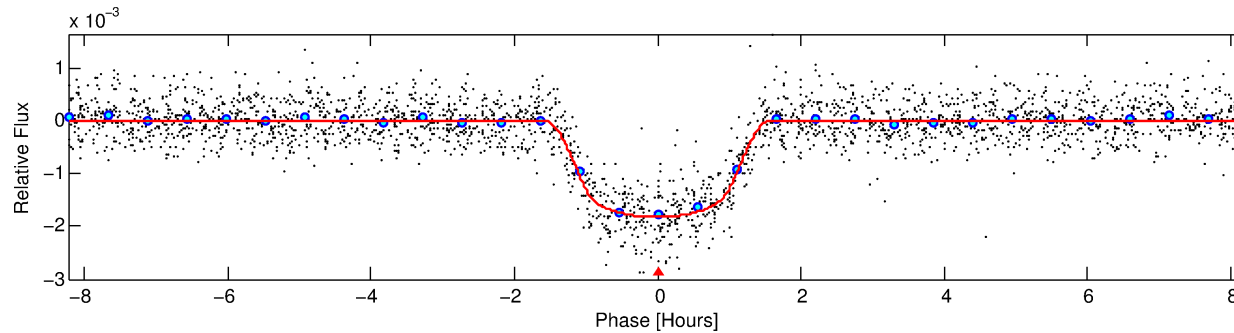
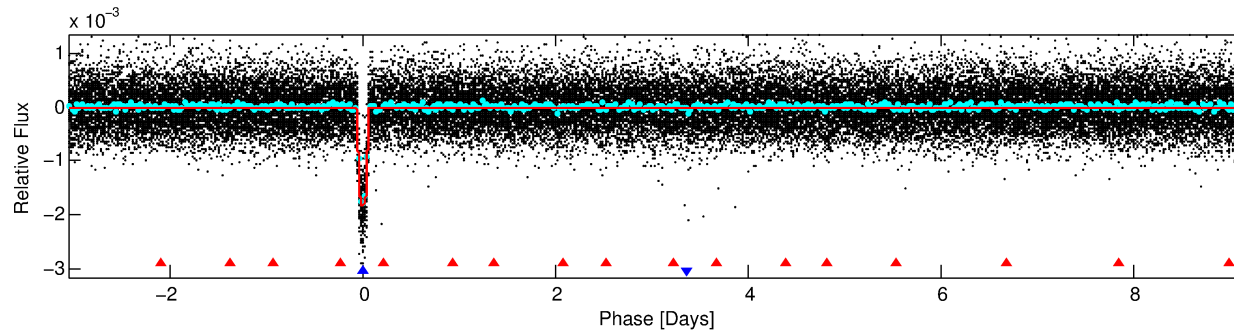
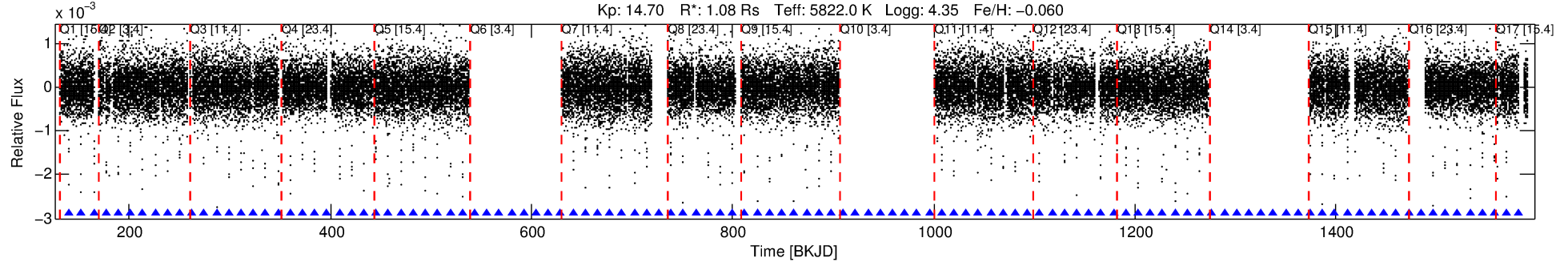
No Significant Match Found

DV One-Page Summary

KIC: 3247268 Candidate: 2 of 2 Period: 12.218 d

KOI: K01089.02 Corr: 0.969

Kp: 14.70 R*: 1.08 Rs Teff: 5822.0 K Logg: 4.35 Fe/H: -0.060



DV Fit Results:

Period = 12.21828 [0.00001] d
Epoch = 140.3212 [0.0007] BKJD
Rp/R* = 0.0439 [0.0020]
a/R* = 22.04 [4.42]
b = 0.82 [0.08]
Seff = 114.92 [25.04]
Teq = 835 [45] K
Rp = 5.18 [0.81] Re
a = 0.1023 [0.0136] AU
Ag = 5.66 [4.45] [1.05σ]
Teffp = 1991 [380] K [3.02σ]

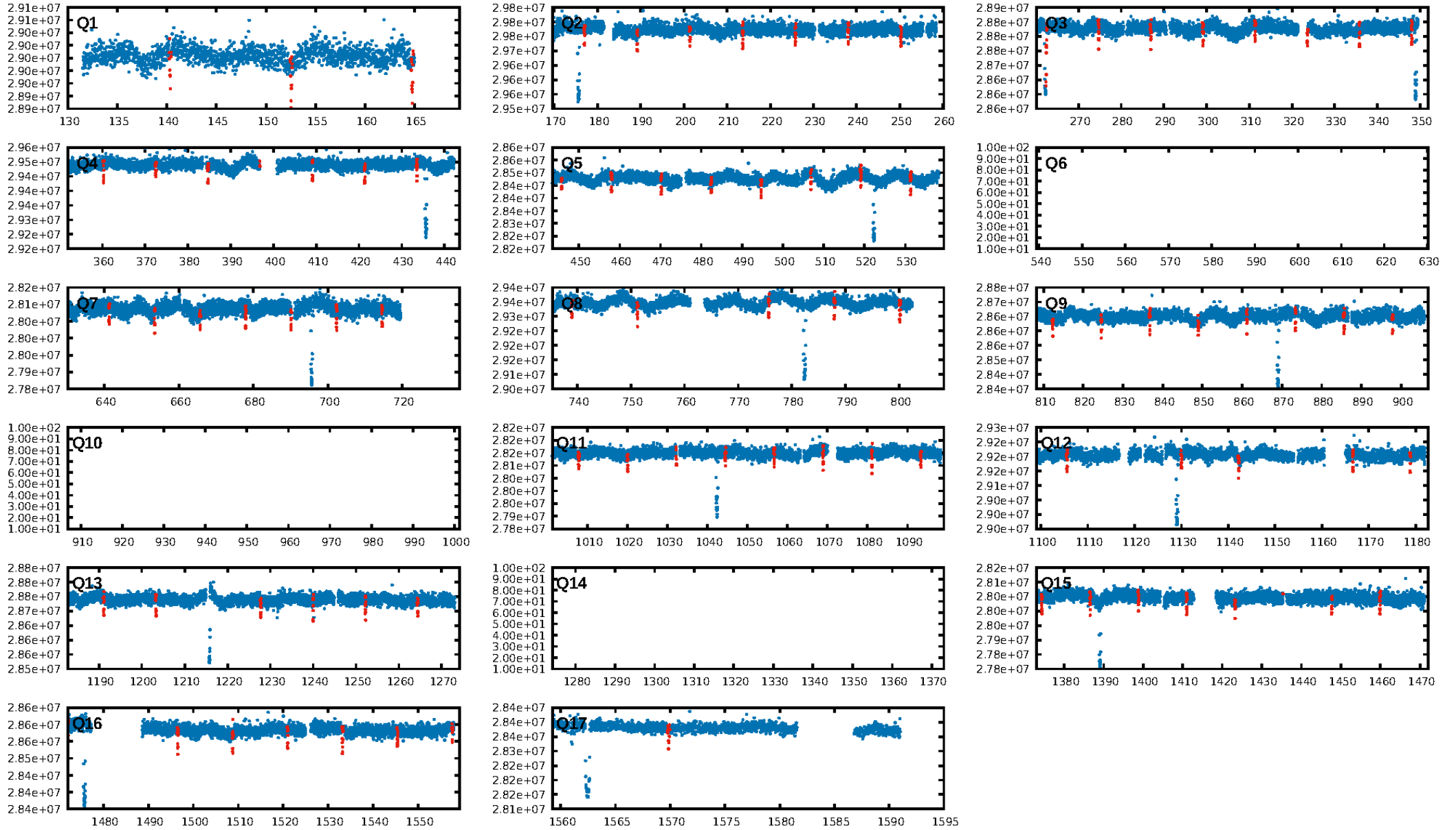
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [169.77σ]
ModelChiSquare2-sig: 84.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [80/80]
GhostDiagnostic-chr: 3.694
Centroid-sig: 0.0%
Centroid-so: 0.471 arcsec [3.12σ]
OotOffset-rm: 0.151 arcsec [1.82σ]
KicOffset-rm: 0.005 arcsec [0.05σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

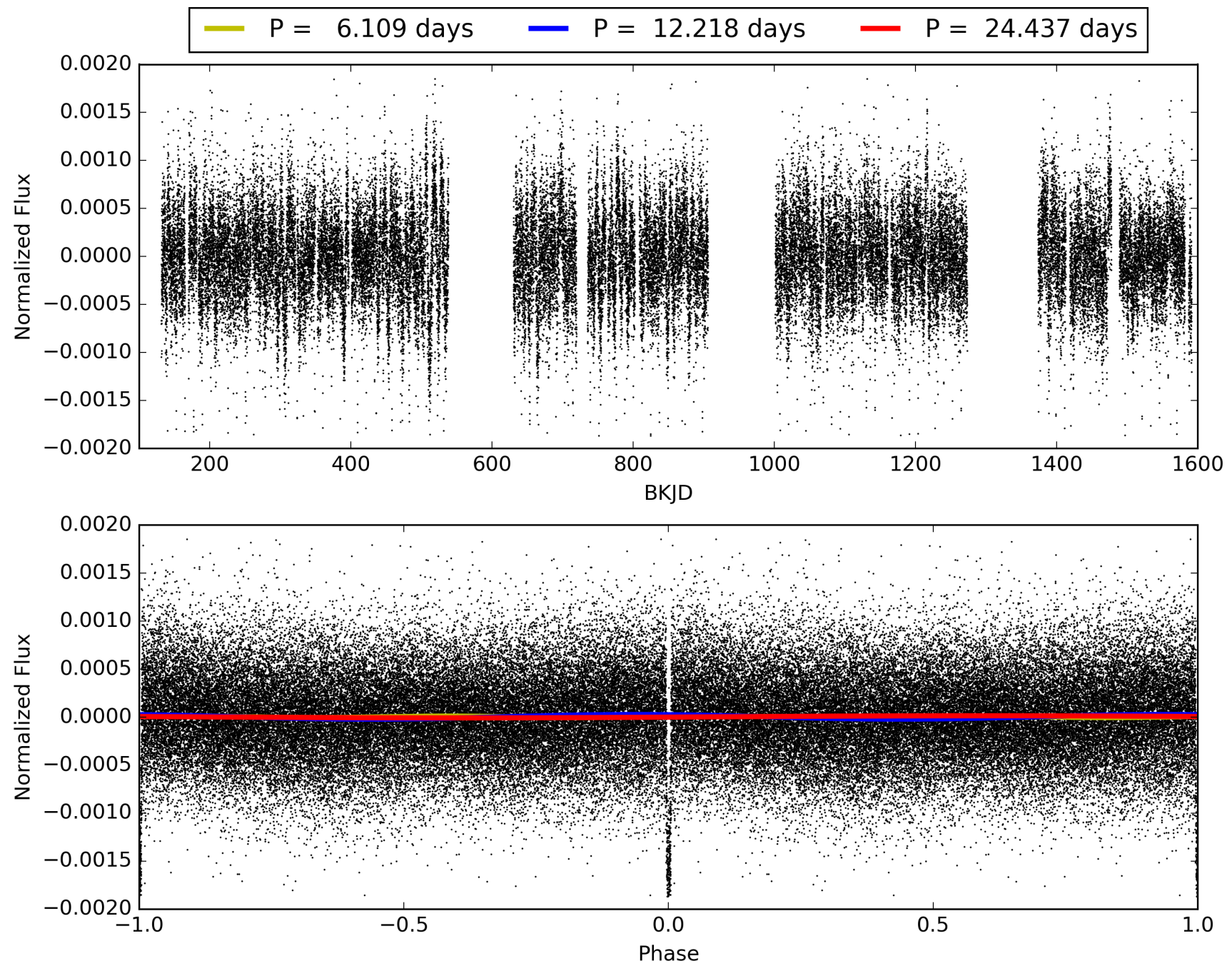
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:54:19 Z

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

TCE 003247268-02, PDC Light Curves

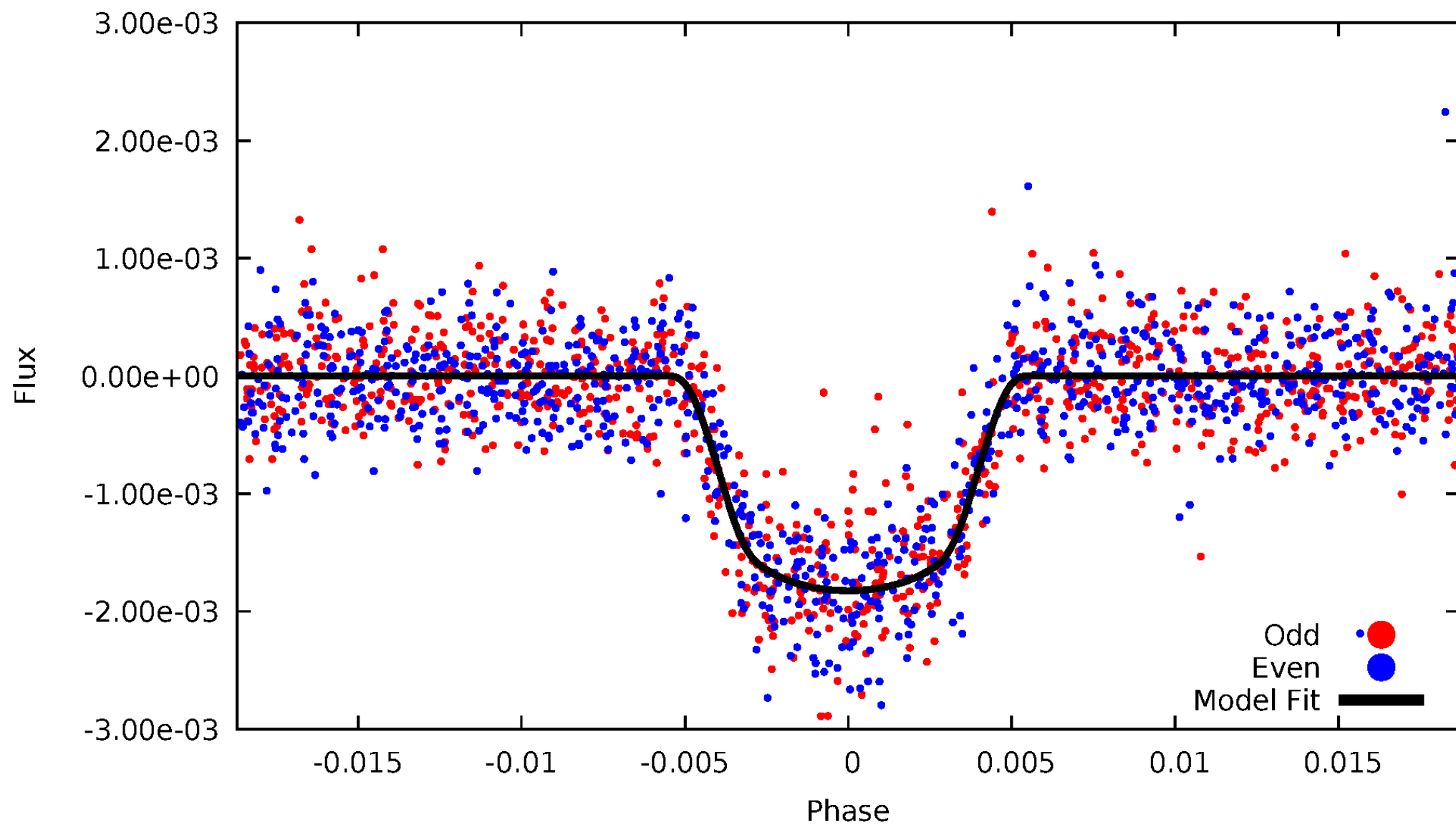


TCE 003247268-02



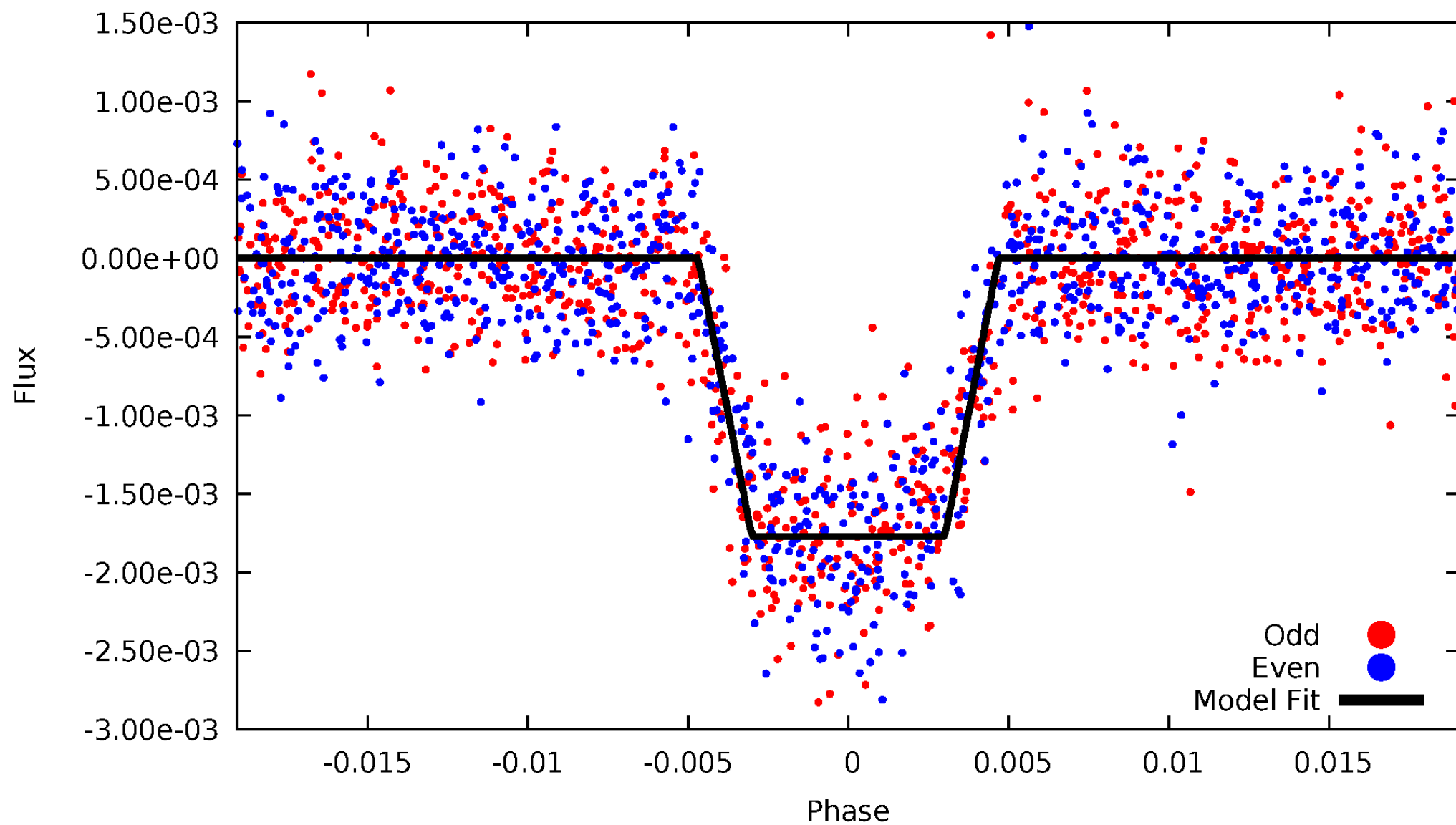
DV Odd/Even

TCE 003247268-02



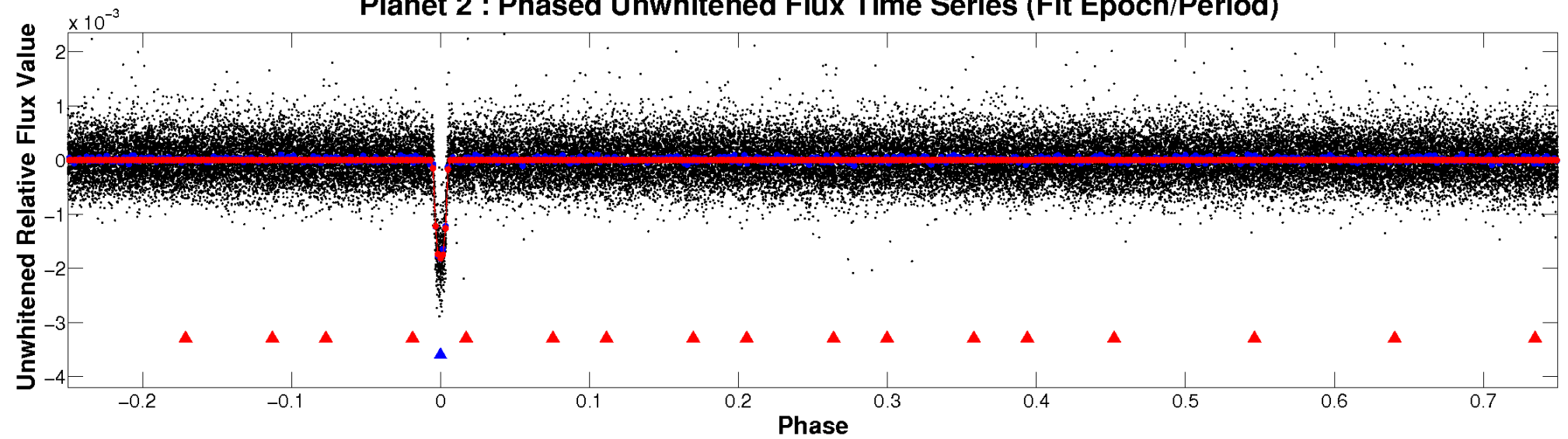
ALT Odd/Even

TCE 003247268-02

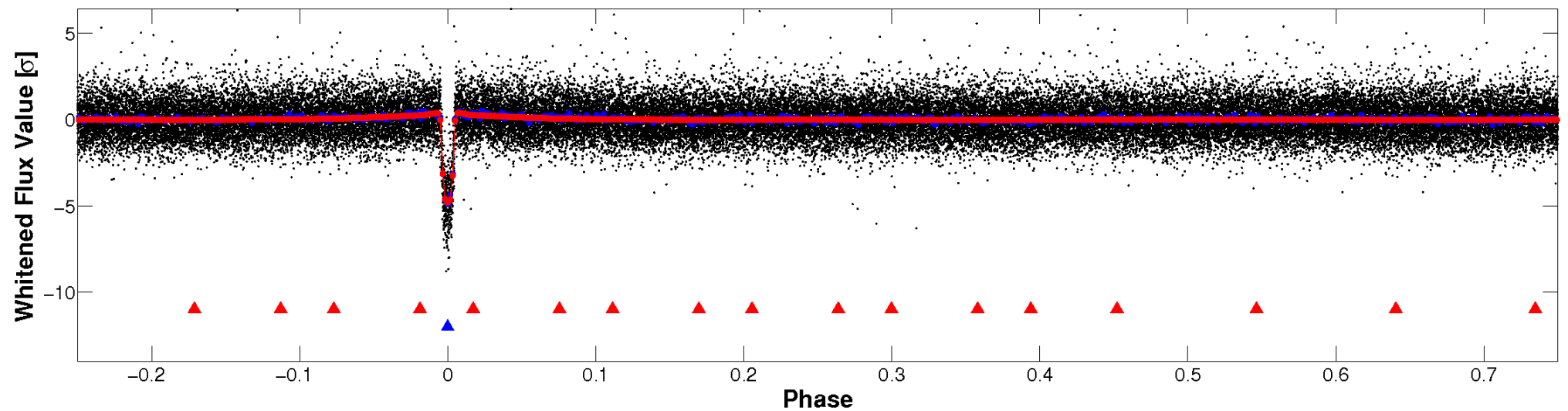


Non-Whitened Vs. Whitened Light Curve

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

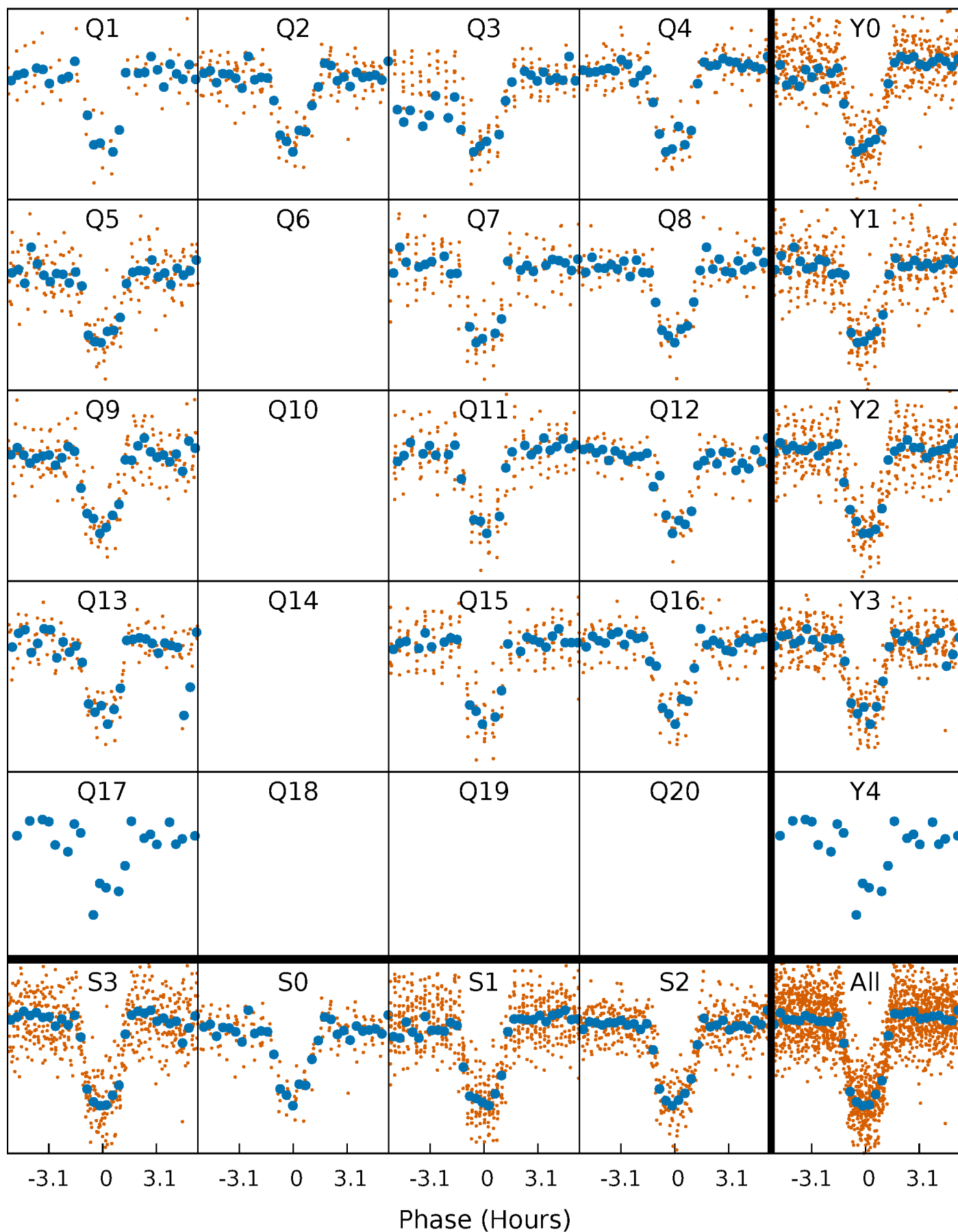


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



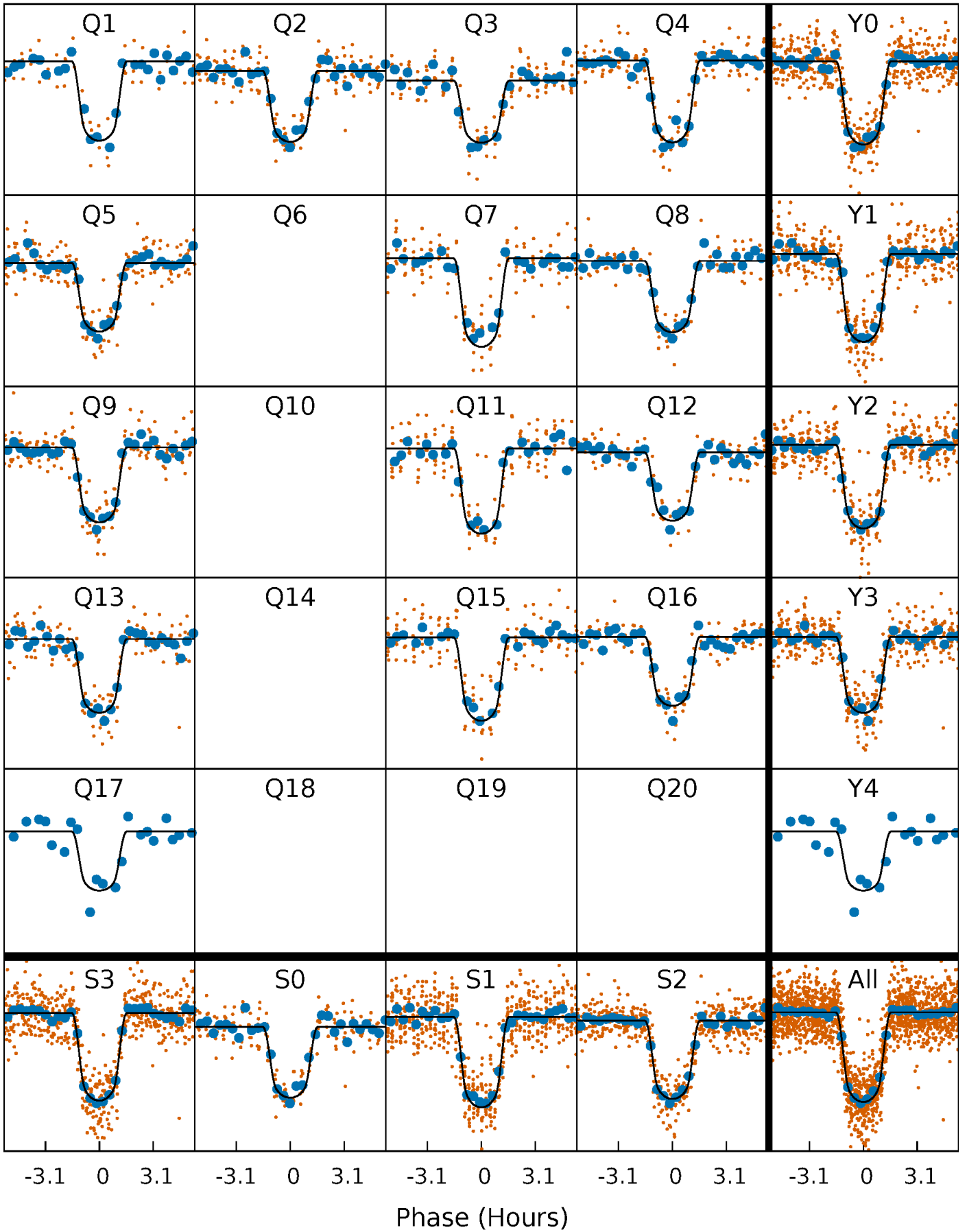
PDC Quarter-Phased Transit Curves

TCE 003247268-02 P= 12.218277 Days $T_0=140.321246$ (BKJD)



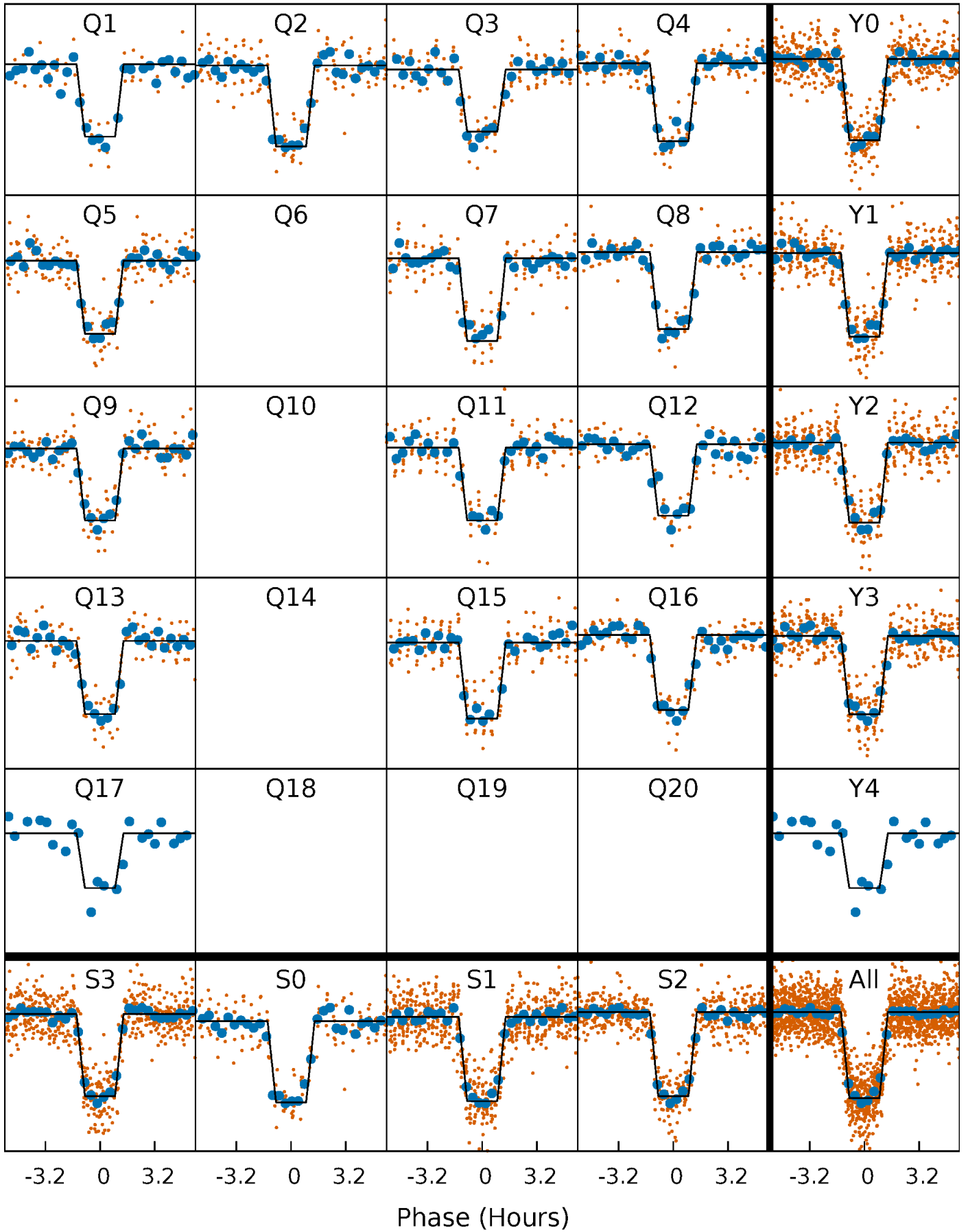
DV Quarter-Phased Transit Curves

TCE 003247268-02 P= 12.218277 Days $T_0=140.321246$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

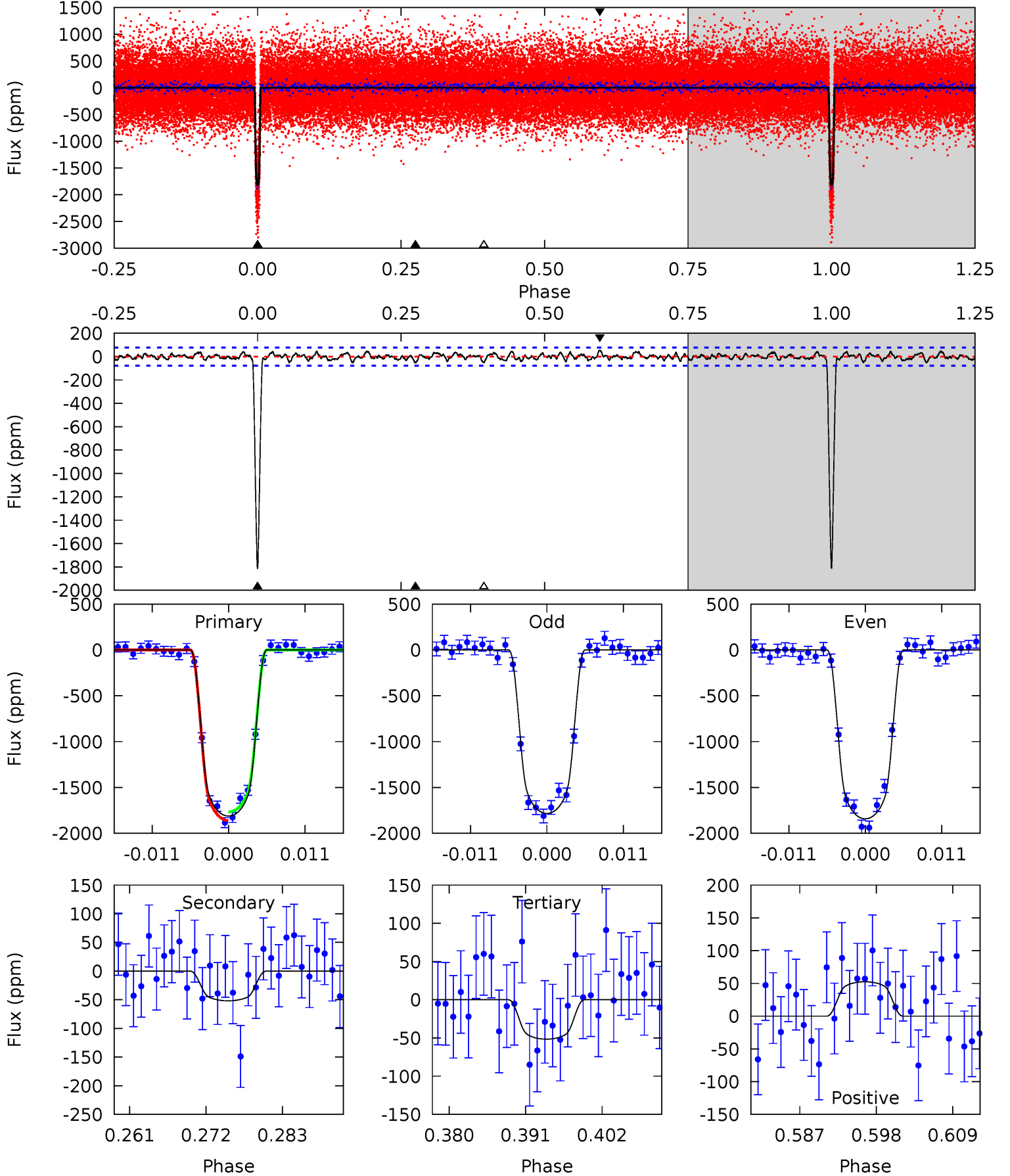
TCE 003247268-02 P= 12.218249 Days $T_0=140.322743$ (BKJD)



DV Model-Shift Uniqueness Test

003247268-02, P = 12.218277 Days, E = 128.102969 Days

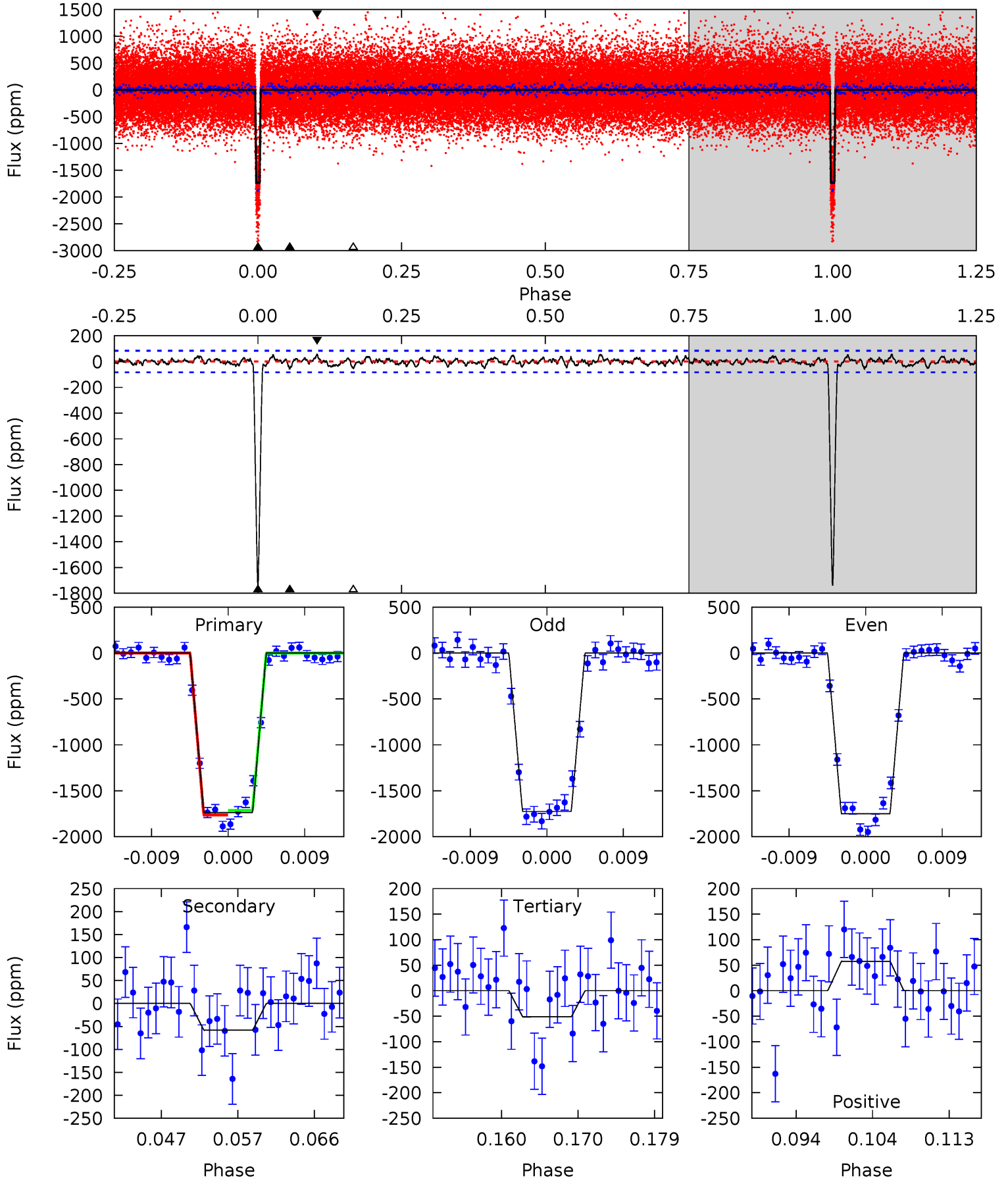
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
116.5	3.33	3.31	3.37	5.01	2.55	1.20	113.2	113.1	0.01	-0.04	1.87	1.00	0.03	3.03



Alt Model-Shift Uniqueness Test

003247268-02, $P = 12.218249$ Days, $E = 128.104494$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
104.3	3.49	3.06	3.44	5.04	2.60	1.11	101.2	100.8	0.43	0.05	0.77	0.99	0.03	1.53



Stellar Parameters For KIC 003247268

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5822^{+105}_{-116}	$4.351^{+0.115}_{-0.115}$	$-0.060^{+0.150}_{-0.150}$	$1.081^{+0.162}_{-0.132}$	$0.957^{+0.078}_{-0.056}$	$1.066^{+0.527}_{-0.352}$
	+2%/-2%	+3%/-3%	+250%/-250%	+15%/-12%	+8%/-6%	+49%/-33%
Source	SPE67	SPE67	SPE67	DSEP		

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

Secondary Eclipse Parameters for KIC 003247268-02 / KOI 1089.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-52 ± 16	$5.20^{+0.52}_{-0.45}$	1166^{+56}_{-47}	3010^{+123}_{-168}	11^{+4}_{-3}
Alt.	-58 ± 17	$4.99^{+0.47}_{-0.45}$	1167^{+53}_{-45}	3104^{+126}_{-169}	13^{+5}_{-4}

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 $A_{obs} \gg 1.0$

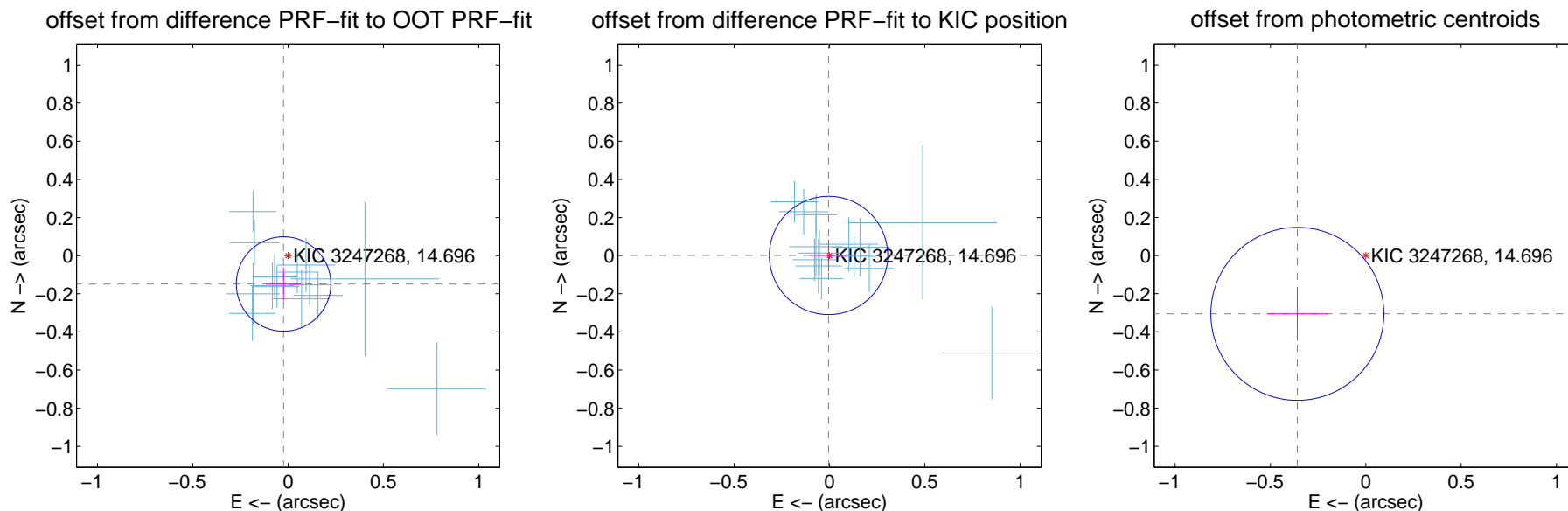
DV Centroid Data

Supplemental centroid analysis for 003247268-02. Kepler magnitude: 14.70. Transit SNR 81.80

There are 14 quarters with good PRF difference image offsets

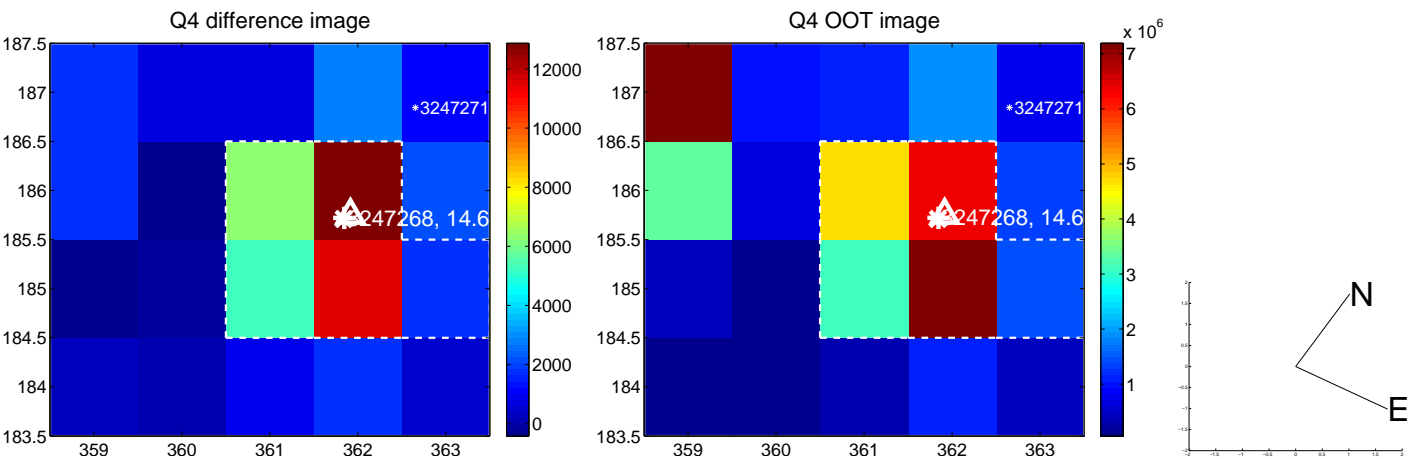
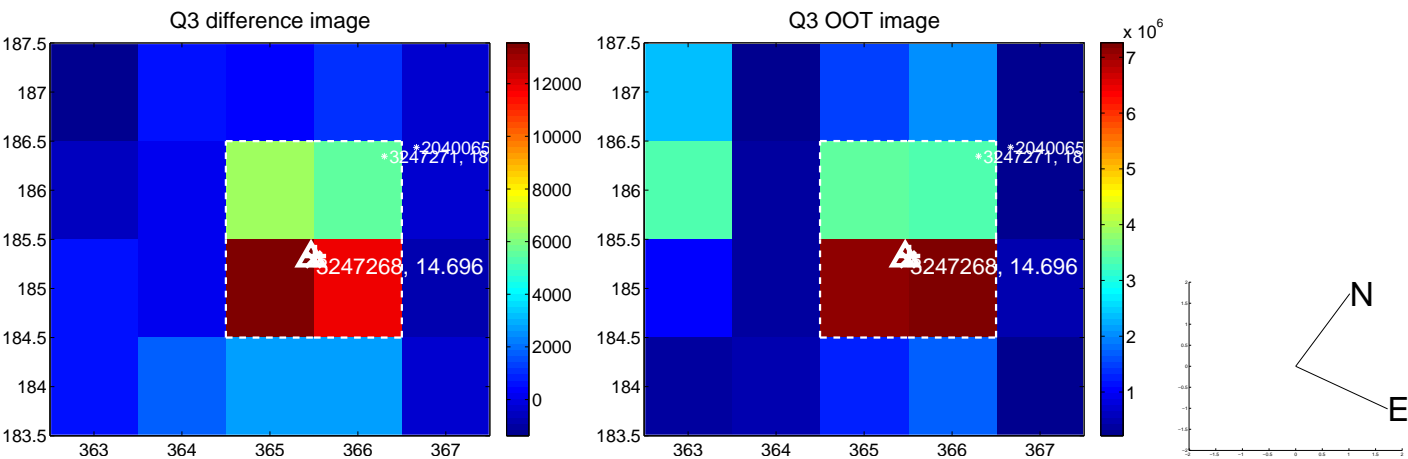
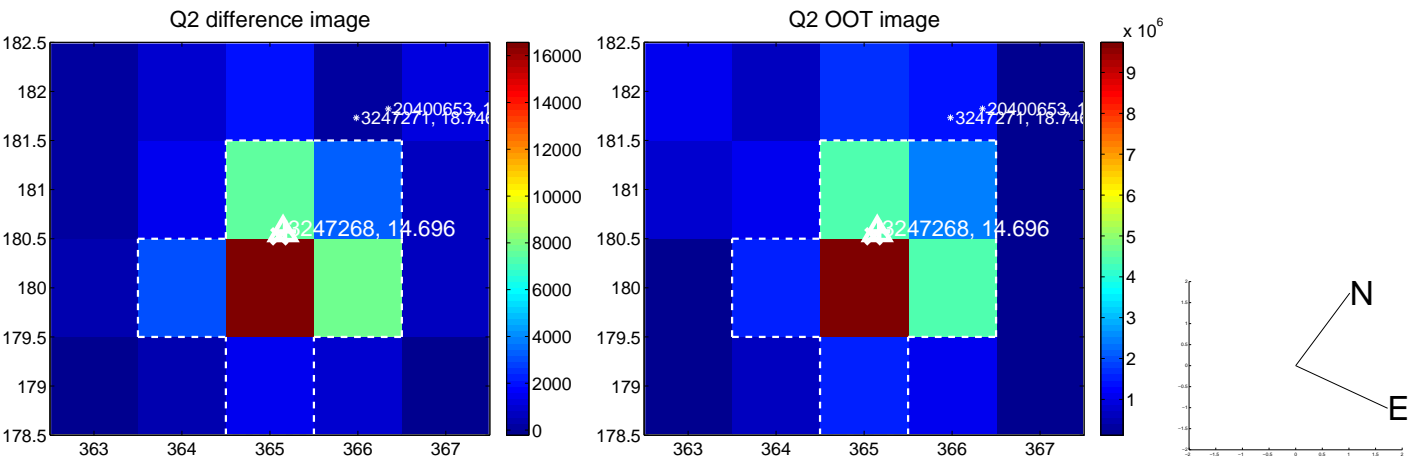
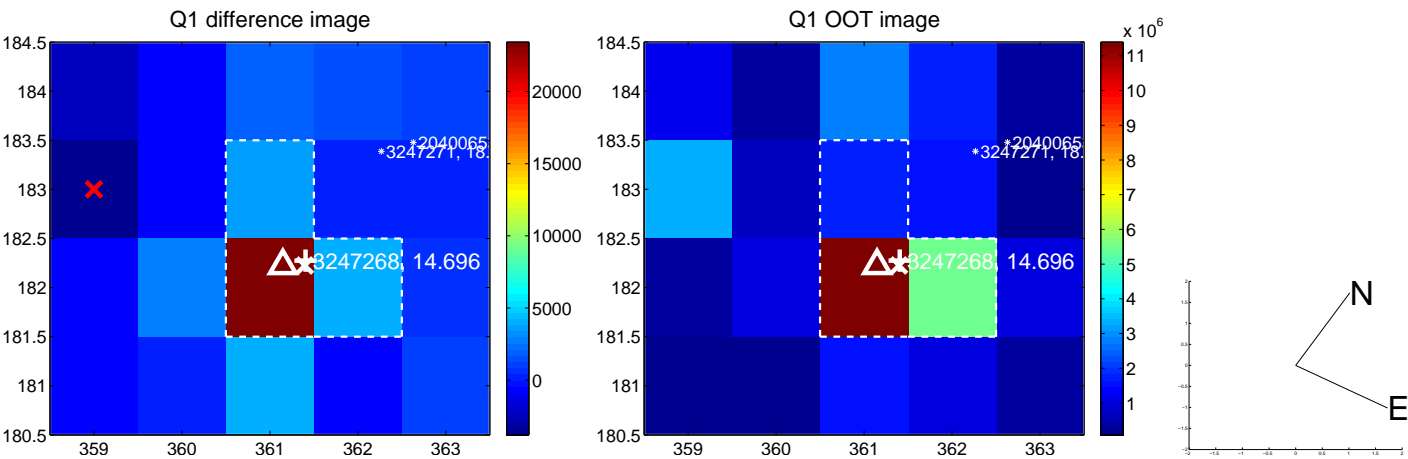
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.151 ± 0.083	1.82	0.024 ± 0.092	-0.149 ± 0.087
PRF-fit source offset from KIC position	0.005 ± 0.103	0.05	0.005 ± 0.099	0.001 ± 0.083
photometric centroid source offset	0.47 ± 0.15	3.12	0.36 ± 0.16	-0.31 ± 0.14

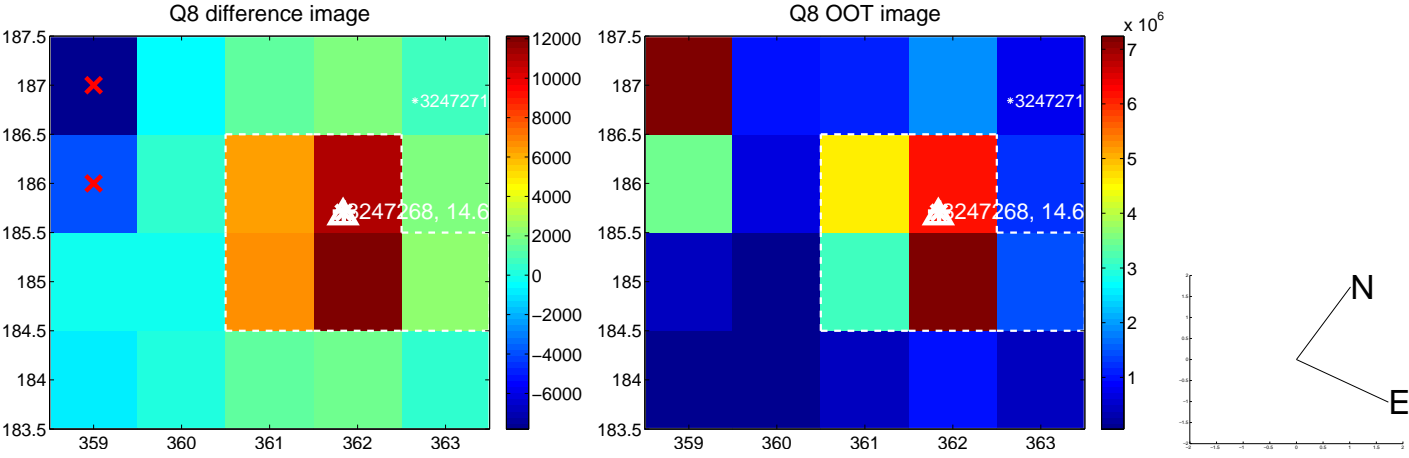
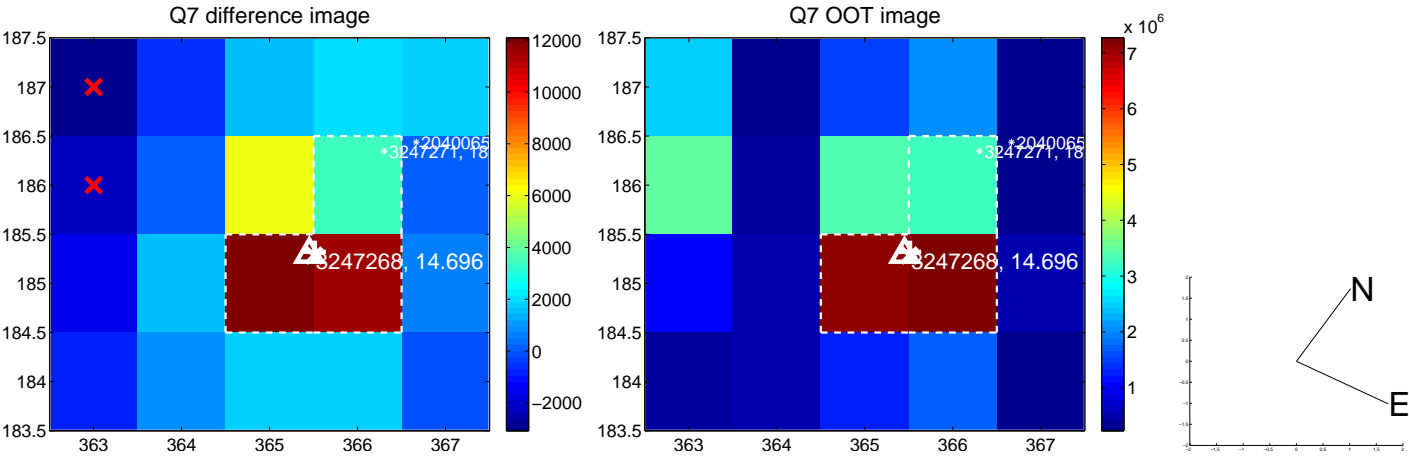
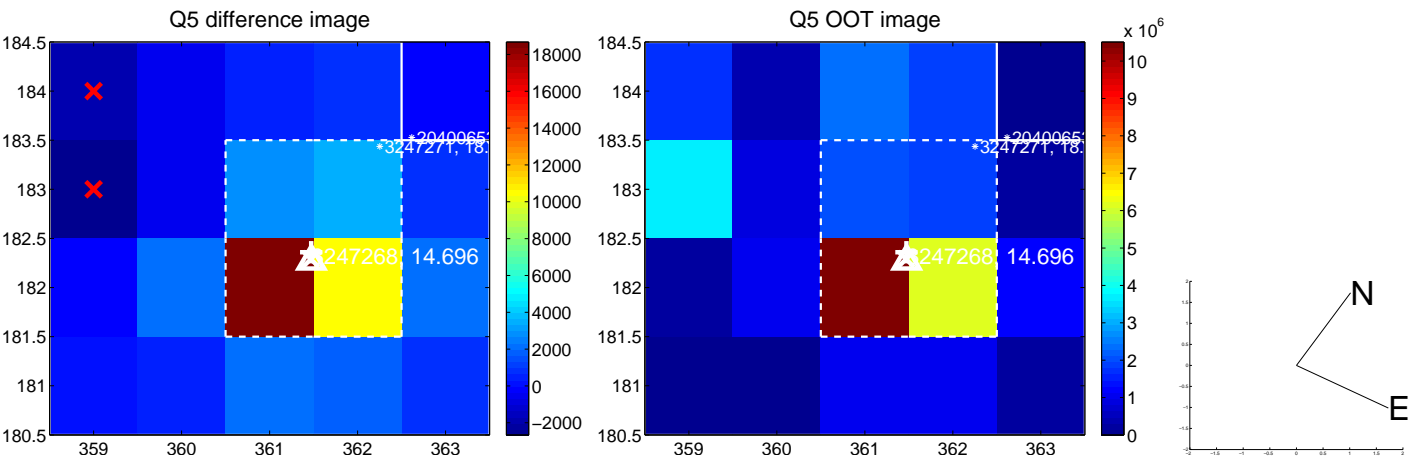


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

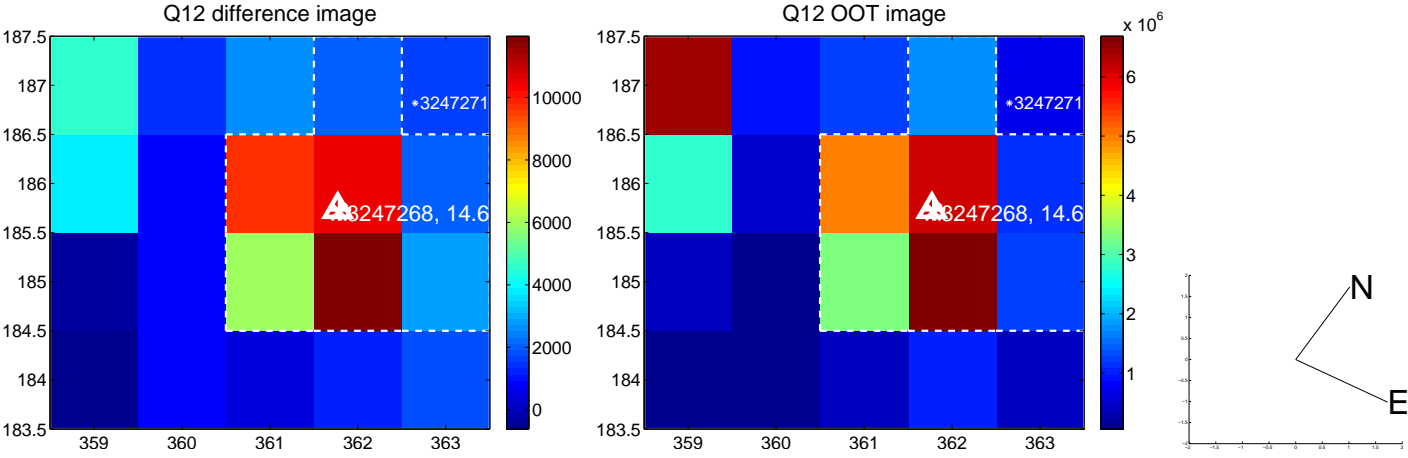
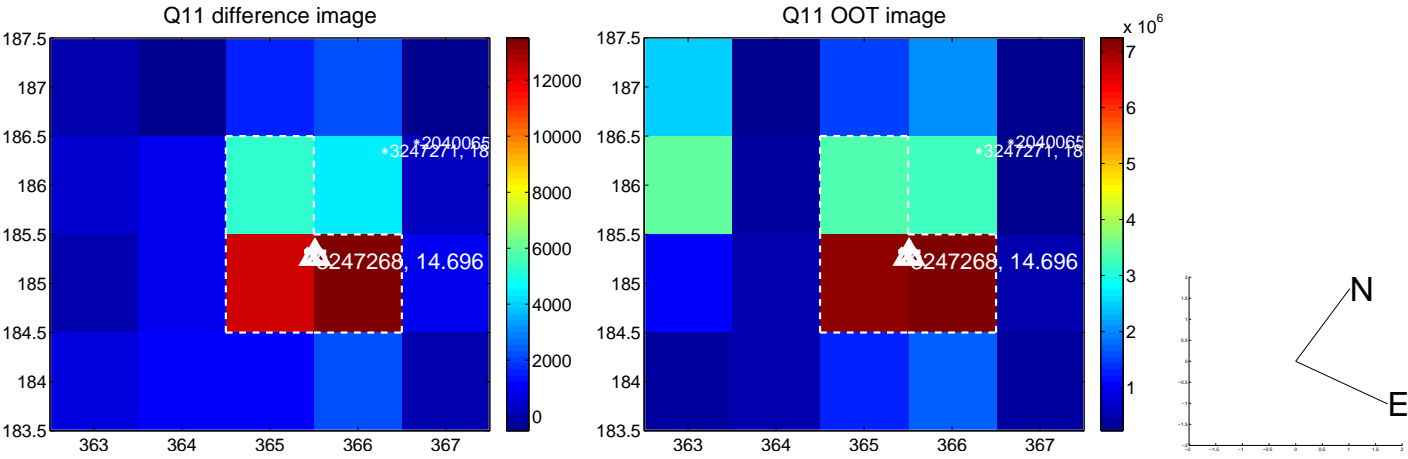
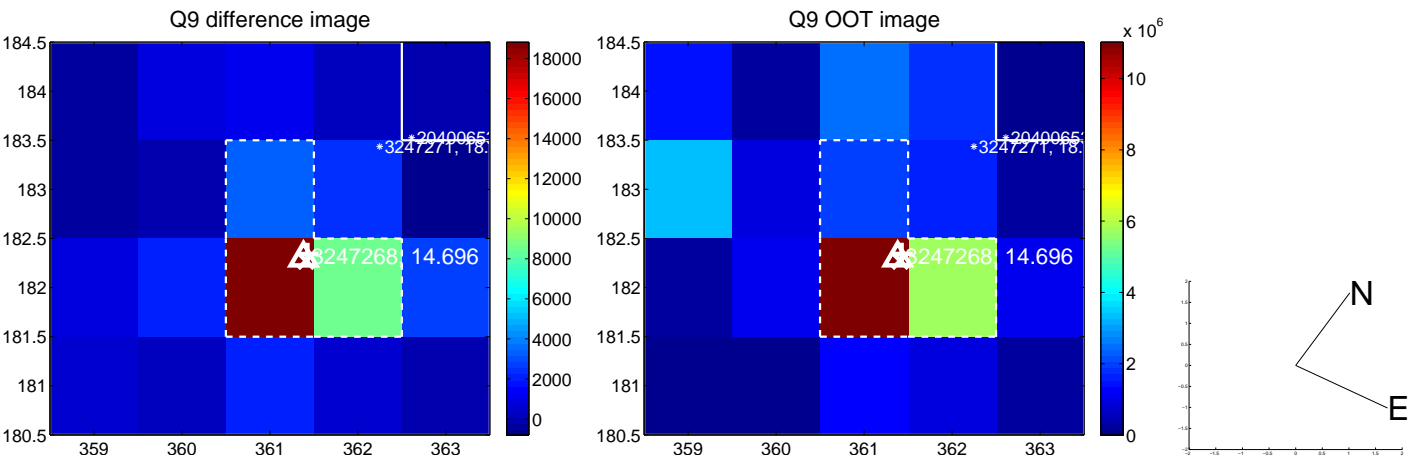
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



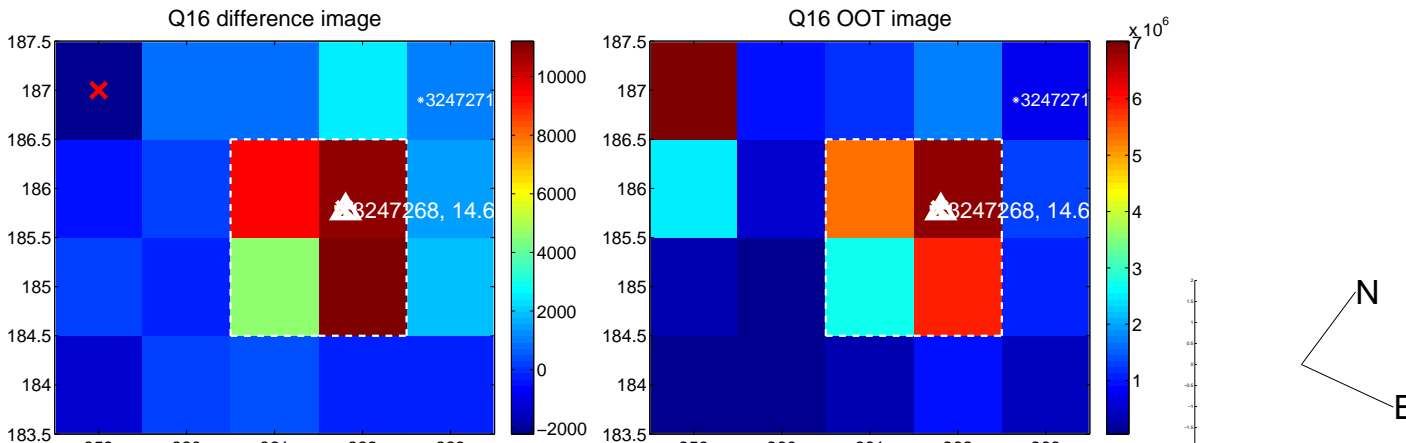
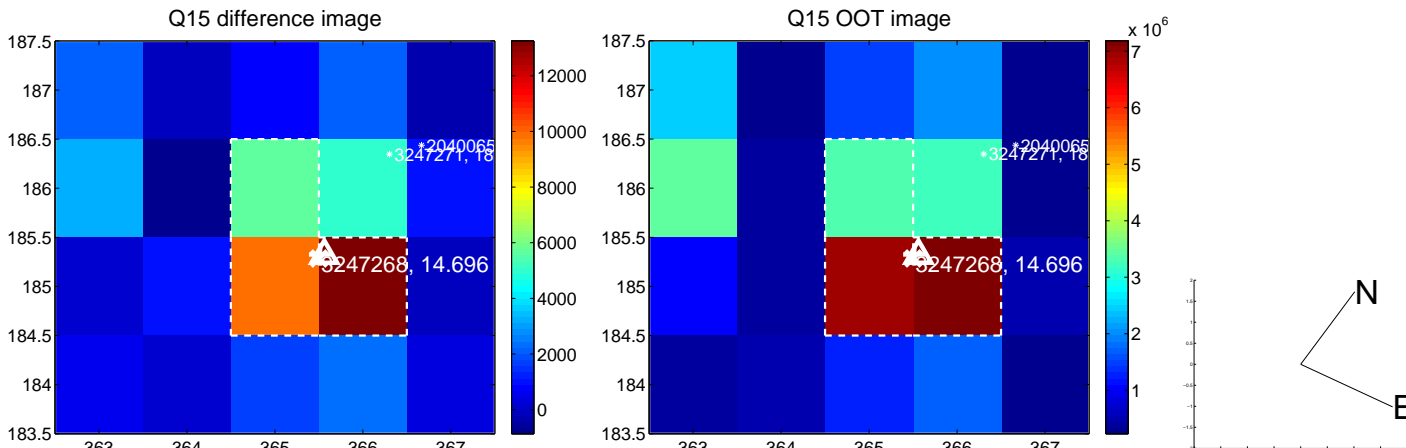
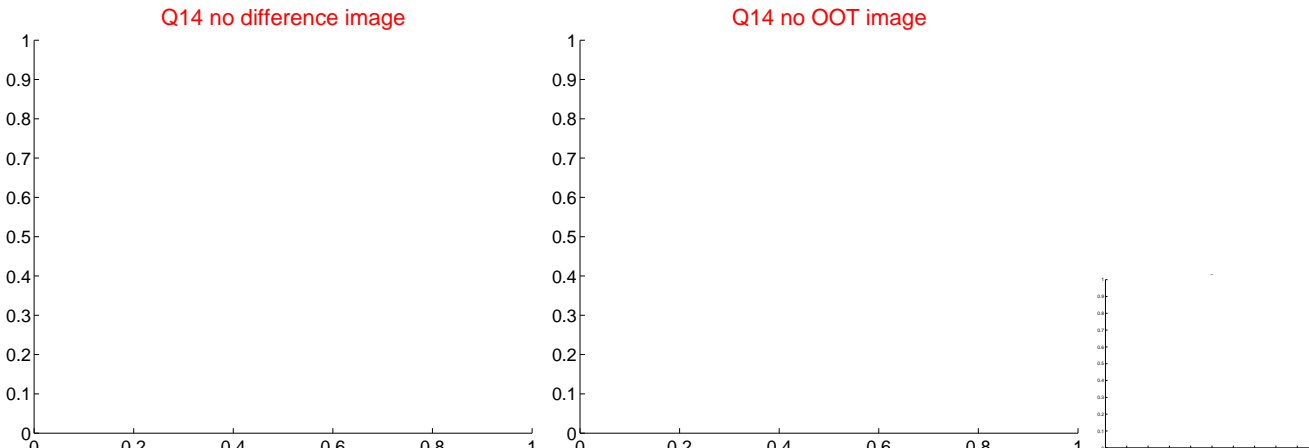
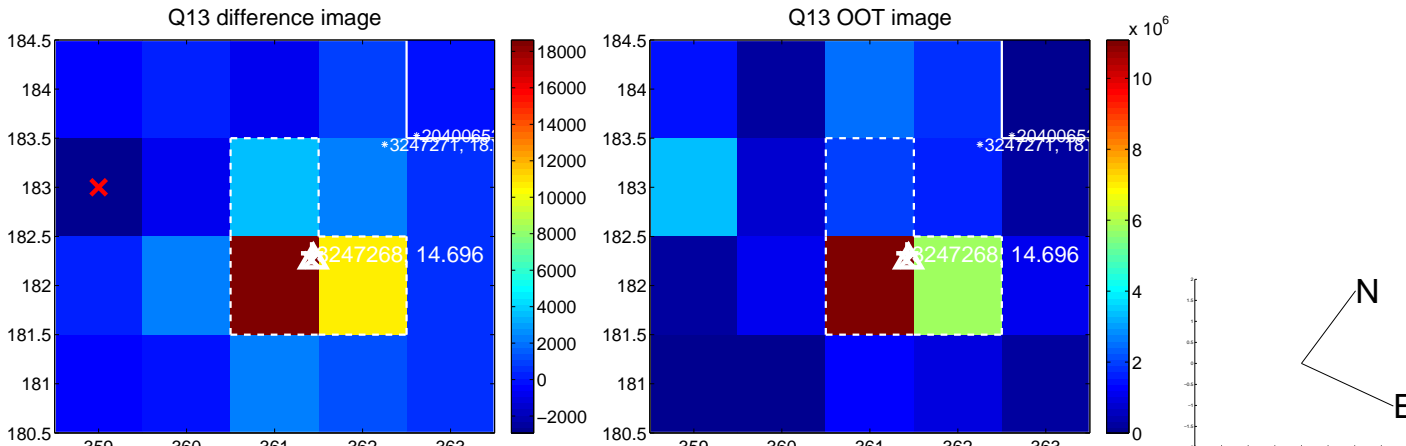
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



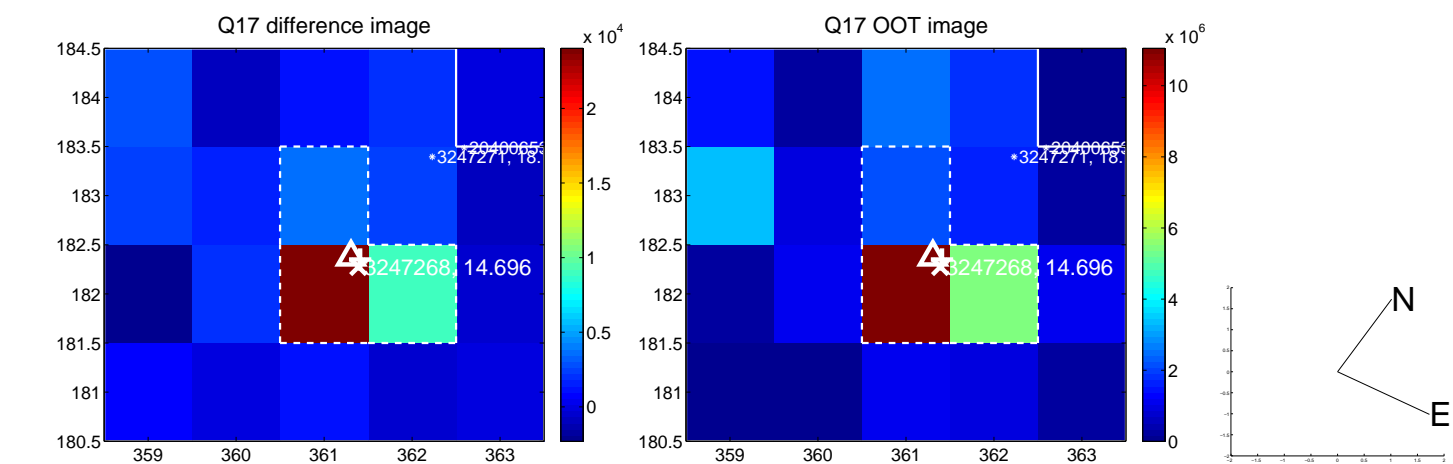
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



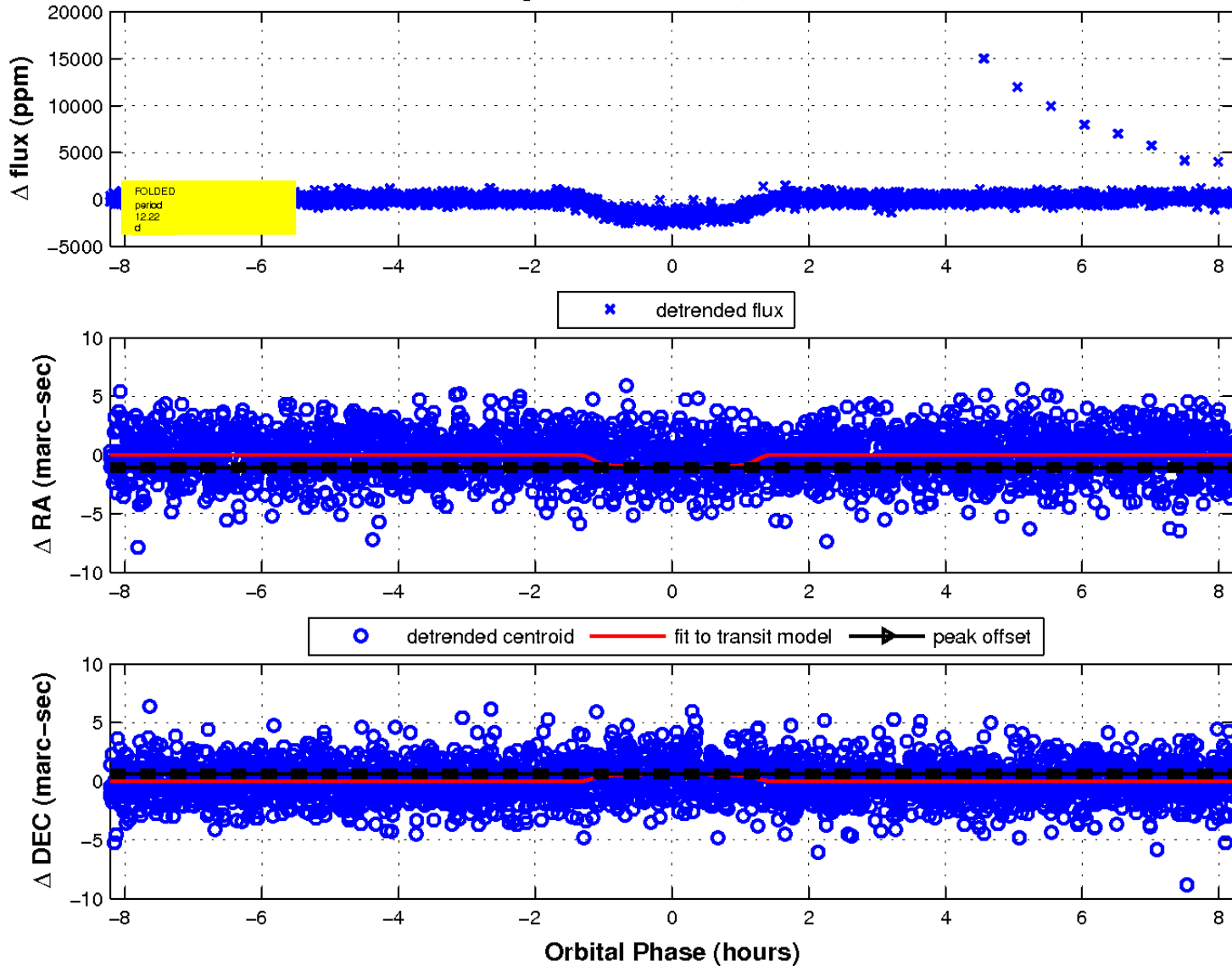
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

