

KIC 003631162

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})
003631162-01	OBS	No	1.309842	131.812066	90.0	3.638	20.4	13.0	0.81	5602	0.92	1278.08
003631162-02	OBS	No	211.115697	219.783450	3788.1	3.717	28.7	24.5	0.81	5602	9.27	1.46
003631162-03	OBS	No	150.918595	280.429181	290.4	2.497	32.0	2.3	0.81	5602	1.41	2.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003631162-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
003631162-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003631162-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

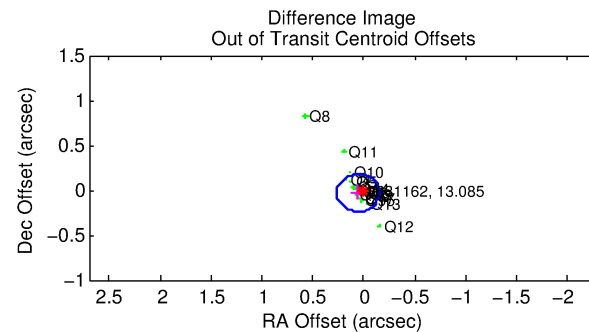
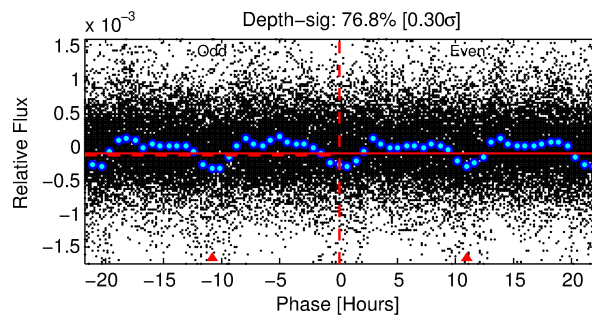
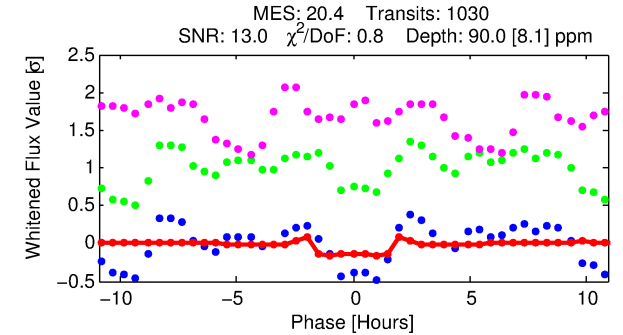
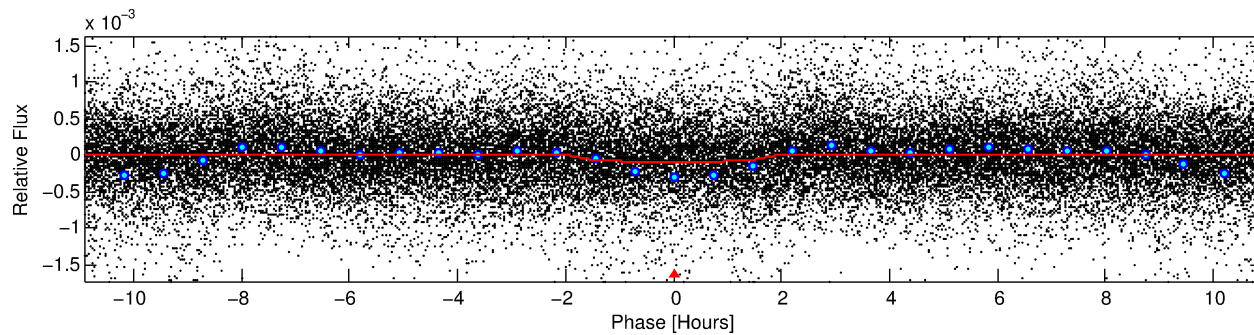
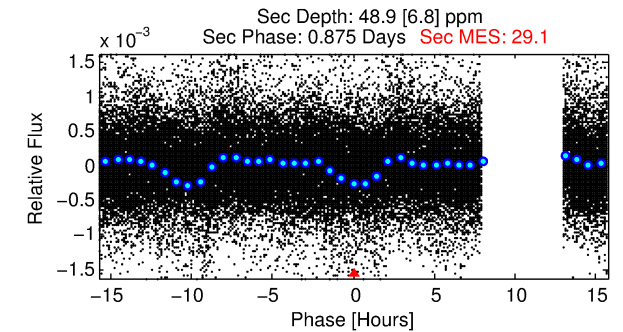
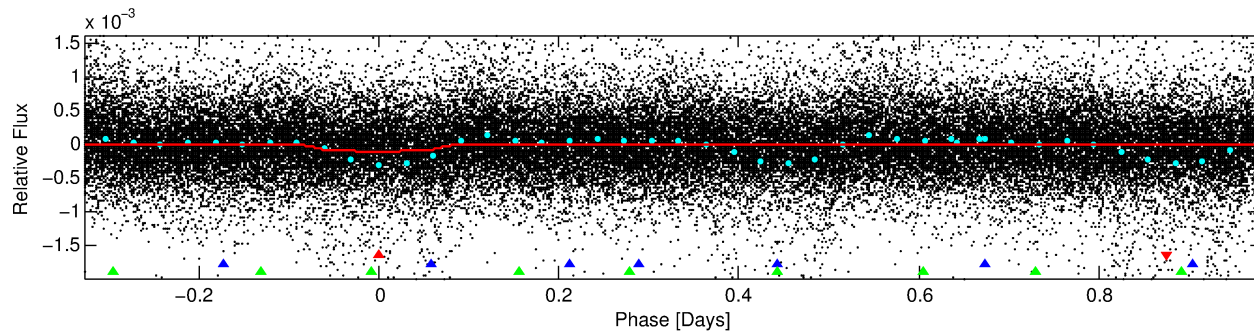
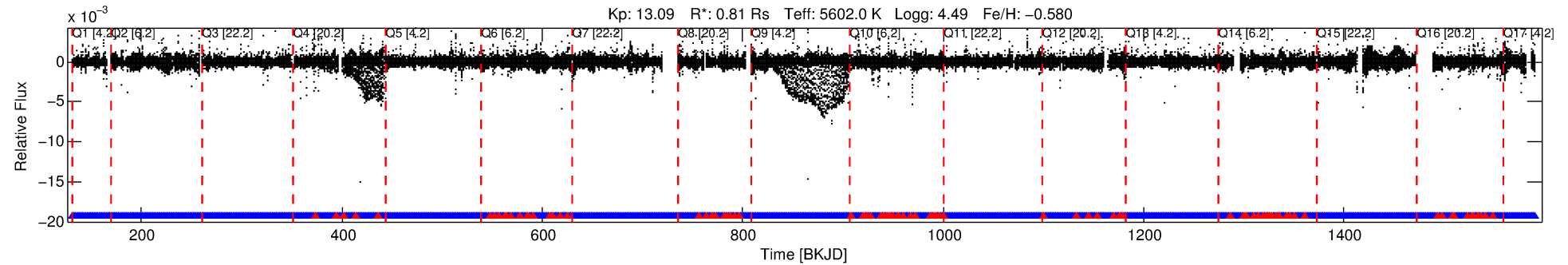
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003631162-01

No Significant Match Found

DV One-Page Summary

KIC: 3631162 Candidate: 1 of 3 Period: 1.310 d



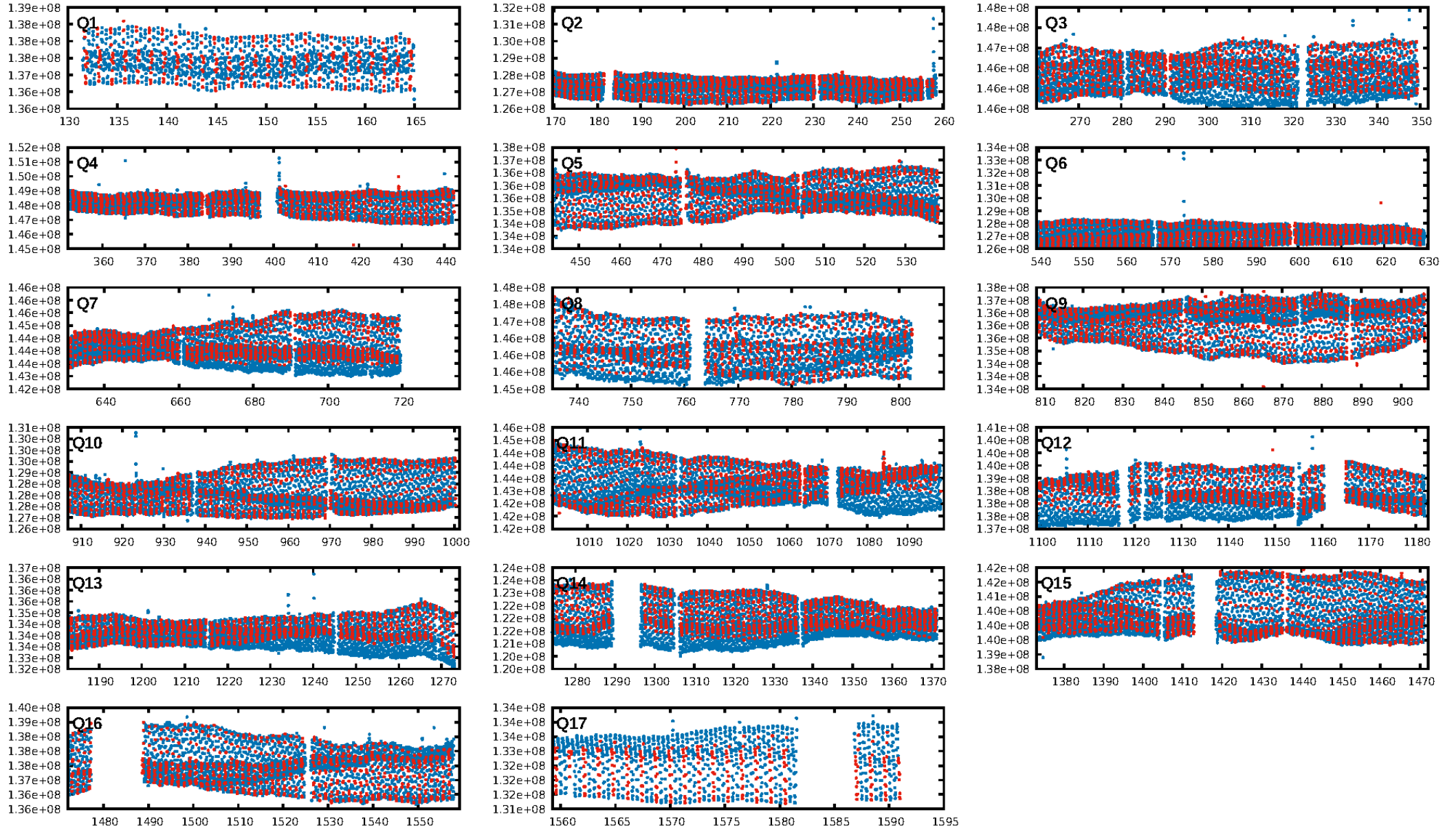
DV Fit Results:

Period = 1.30984 [0.00001] d
Epoch = 131.8121 [0.0015] BKJD
Rp/R* = 0.0104 [0.0017]
a/R* = 1.52 [0.66]
b = 0.91 [0.14]
Seff = 1278.08 [361.56]
Teq = 1525 [108] K
Rp = 0.92 [0.23] Re
a = 0.0212 [0.0035] AU
Ag = 14.36 [6.13] [2.18σ]
Teffp = 4589 [431] K [6.90σ]

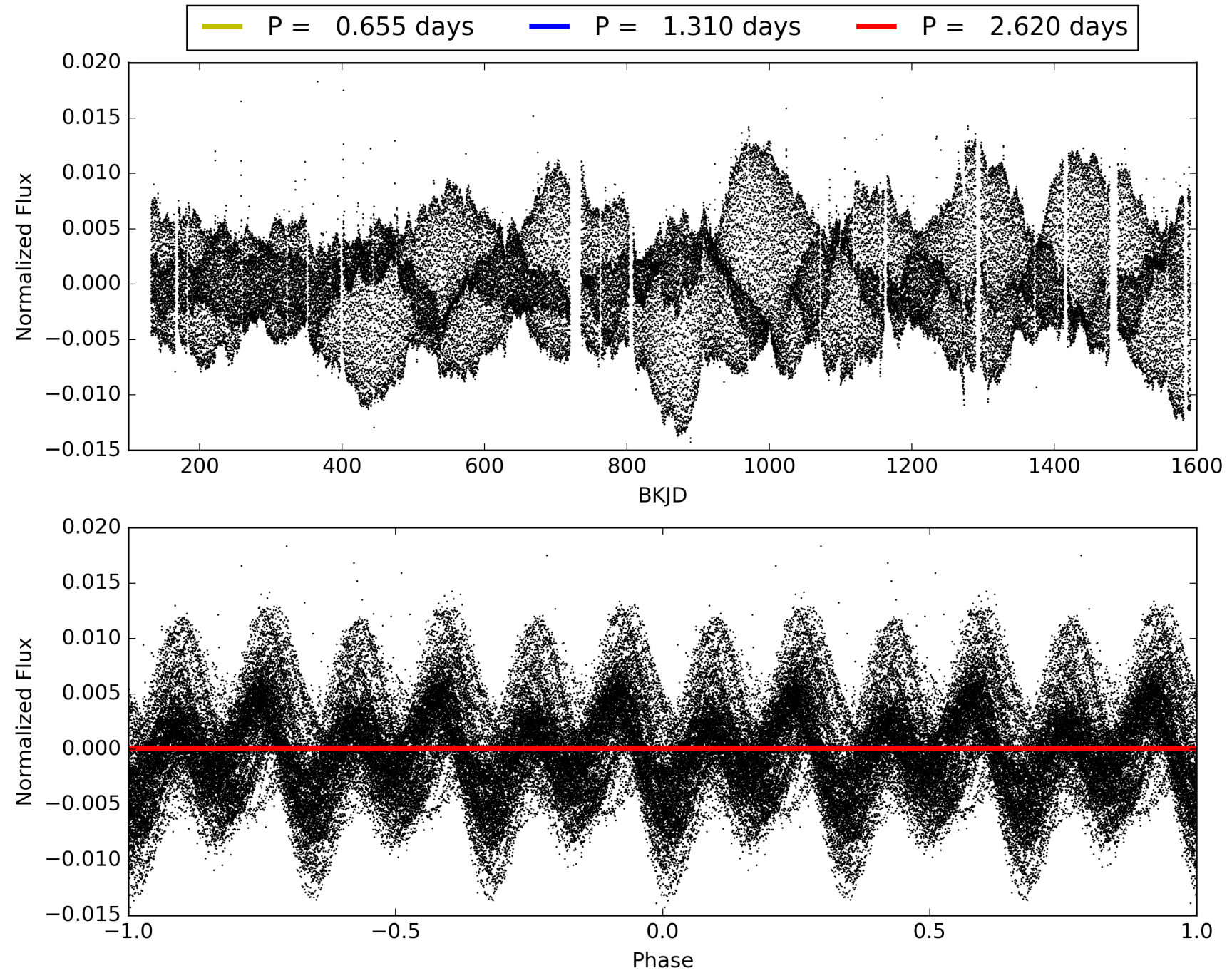
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [813.71σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.91 [896/983]
GhostDiagnostic-chr: 2.457
Centroid-sig: 0.1%
Centroid-so: 0.543 arcsec [1.82σ]
OotOffset-rm: 0.063 arcsec [0.90σ]
KicOffset-rm: 0.202 arcsec [2.21σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.65 [11/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003631162-01, PDC Light Curves

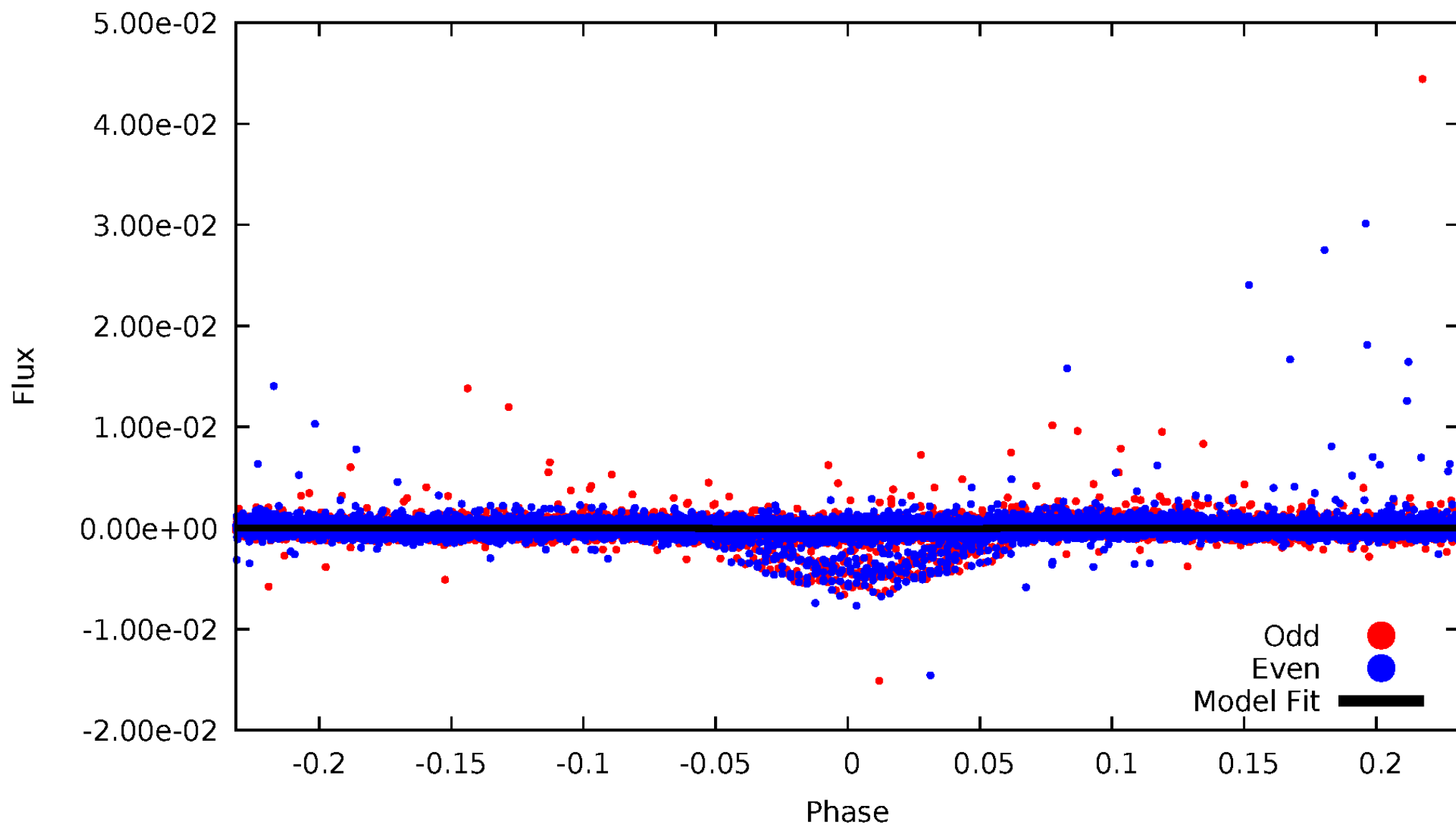


TCE 003631162-01



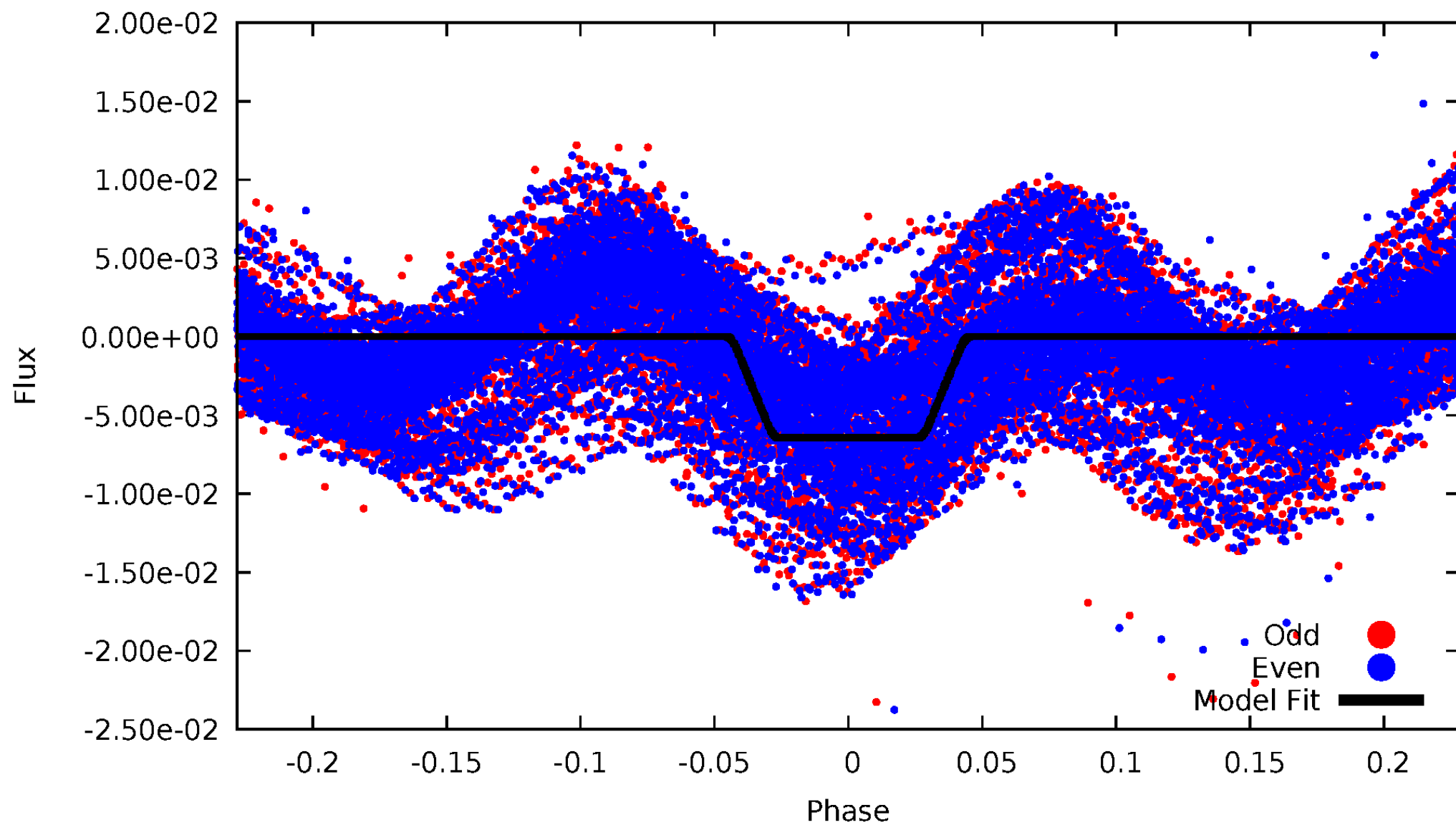
DV Odd/Even

TCE 003631162-01



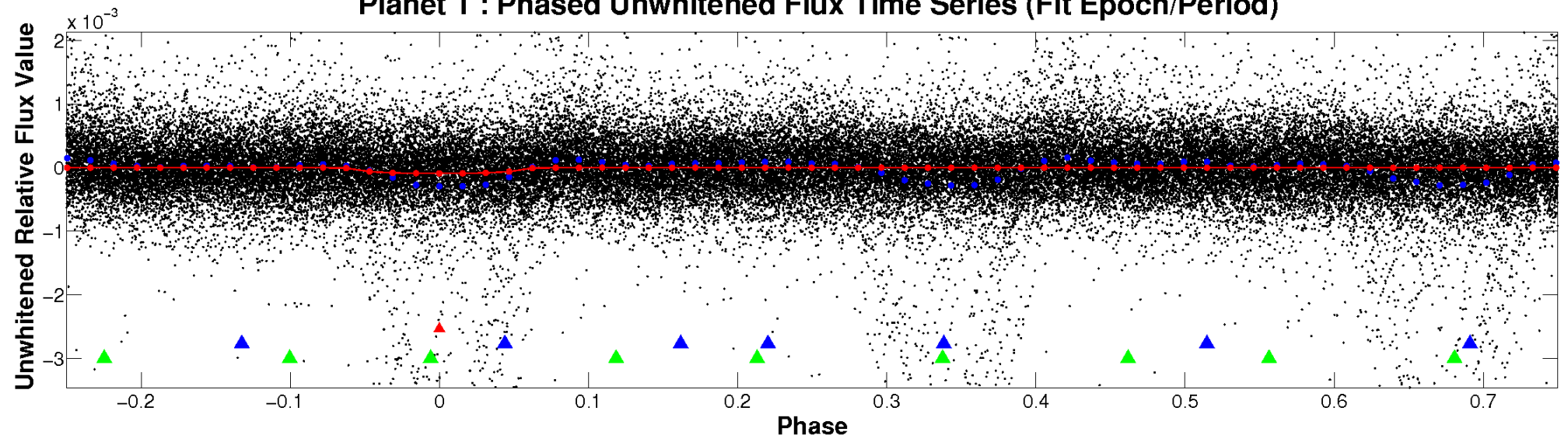
ALT Odd/Even

TCE 003631162-01

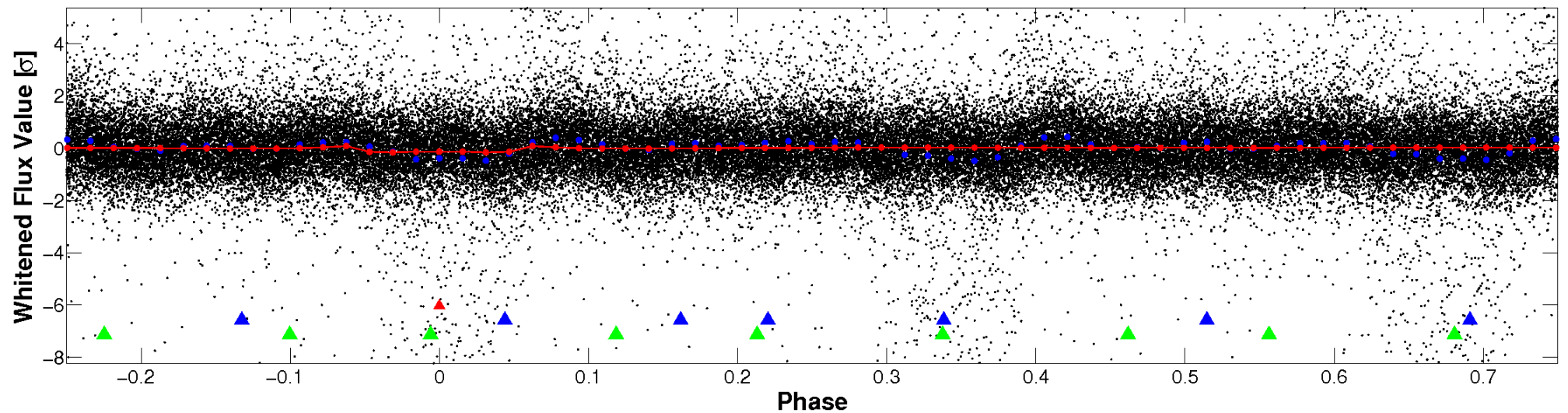


Non-Whitened Vs. Whitened Light Curve

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

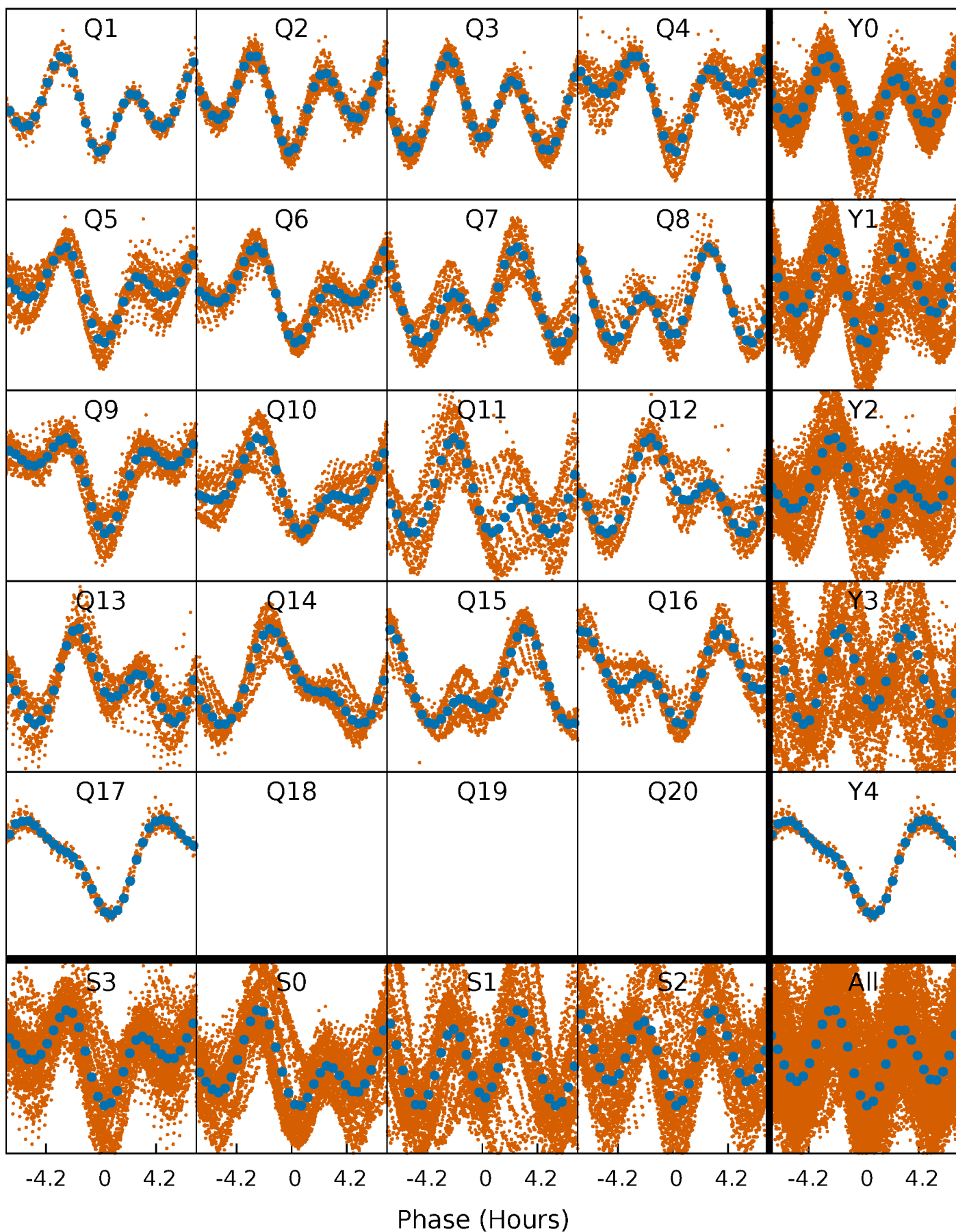


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



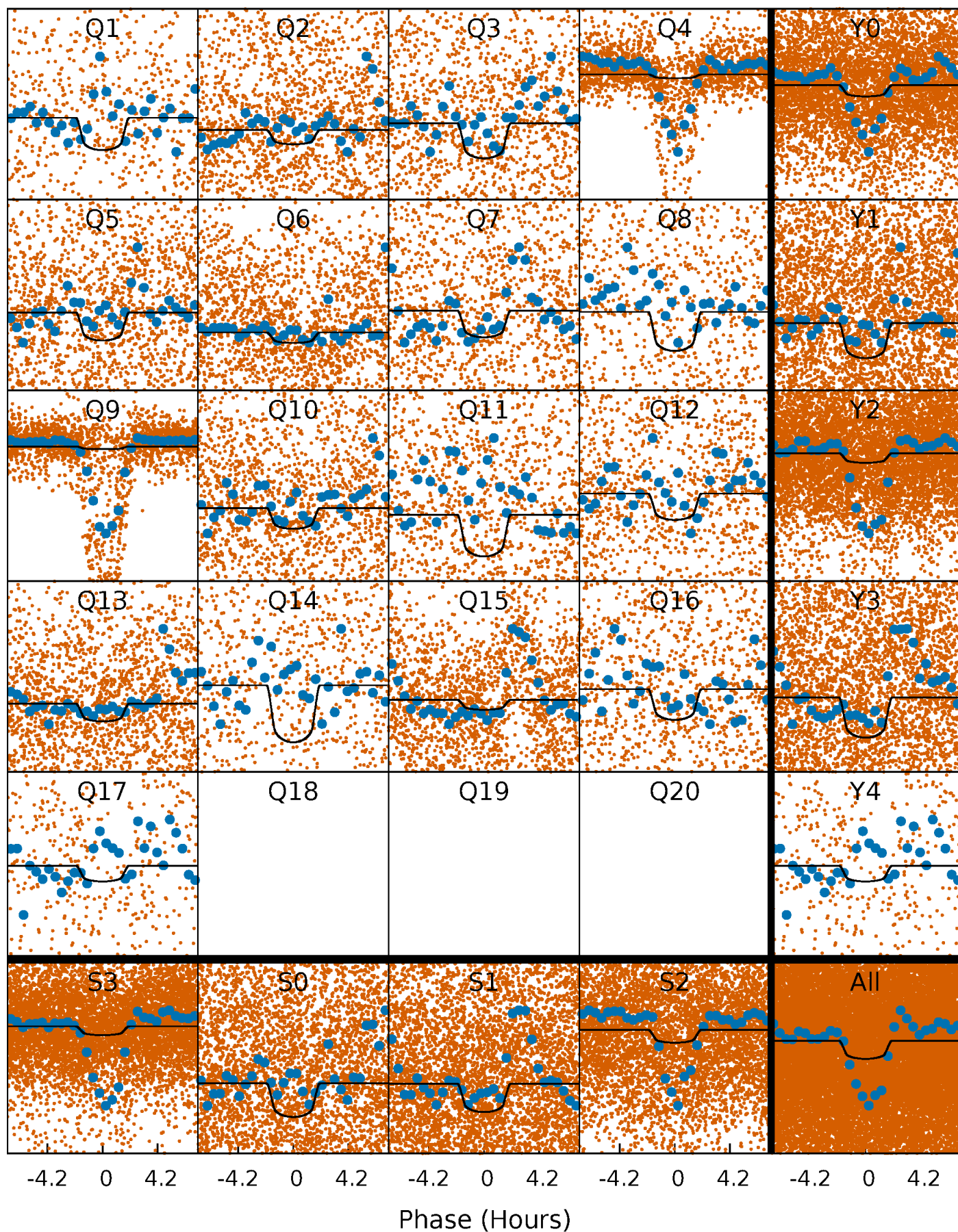
PDC Quarter-Phased Transit Curves

TCE 003631162-01 P= 1.309842 Days $T_0=131.812066$ (BKJD)



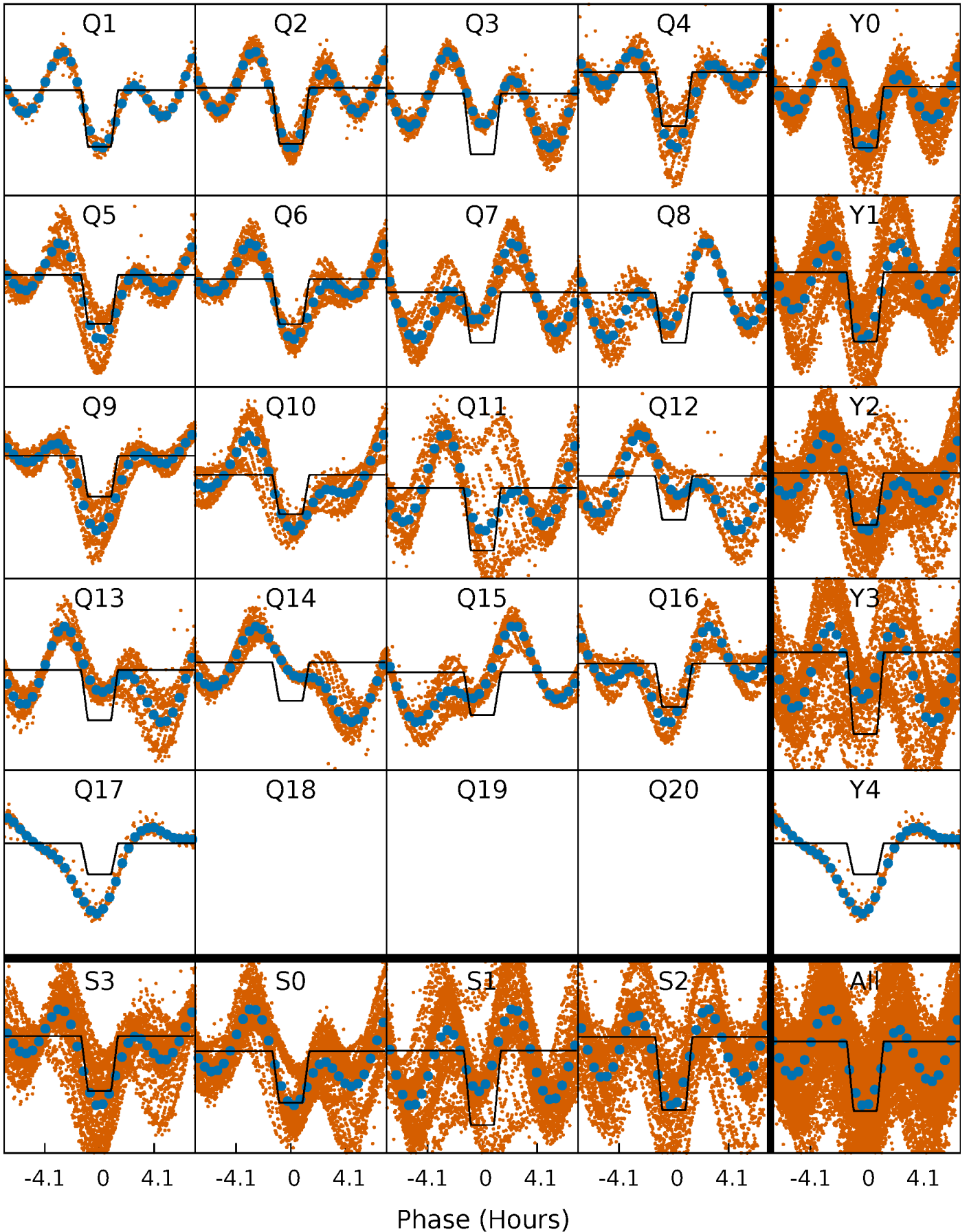
DV Quarter-Phased Transit Curves

TCE 003631162-01 P= 1.309842 Days $T_0=131.812066$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

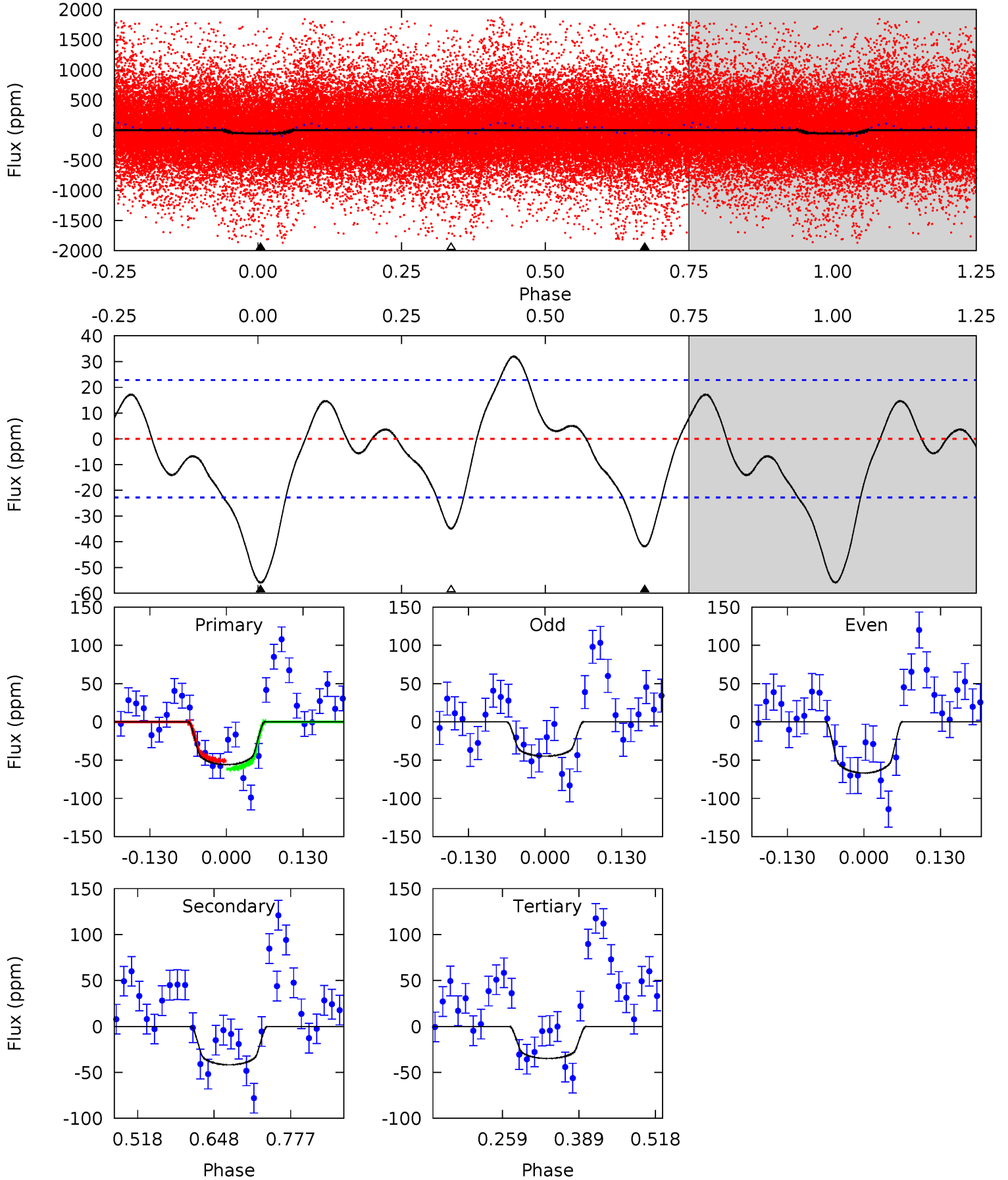
TCE 003631162-01 P= 1.309891 Days $T_0=131.803367$ (BKJD)



DV Model-Shift Uniqueness Test

003631162-01, P = 1.309842 Days, E = 130.502224 Days

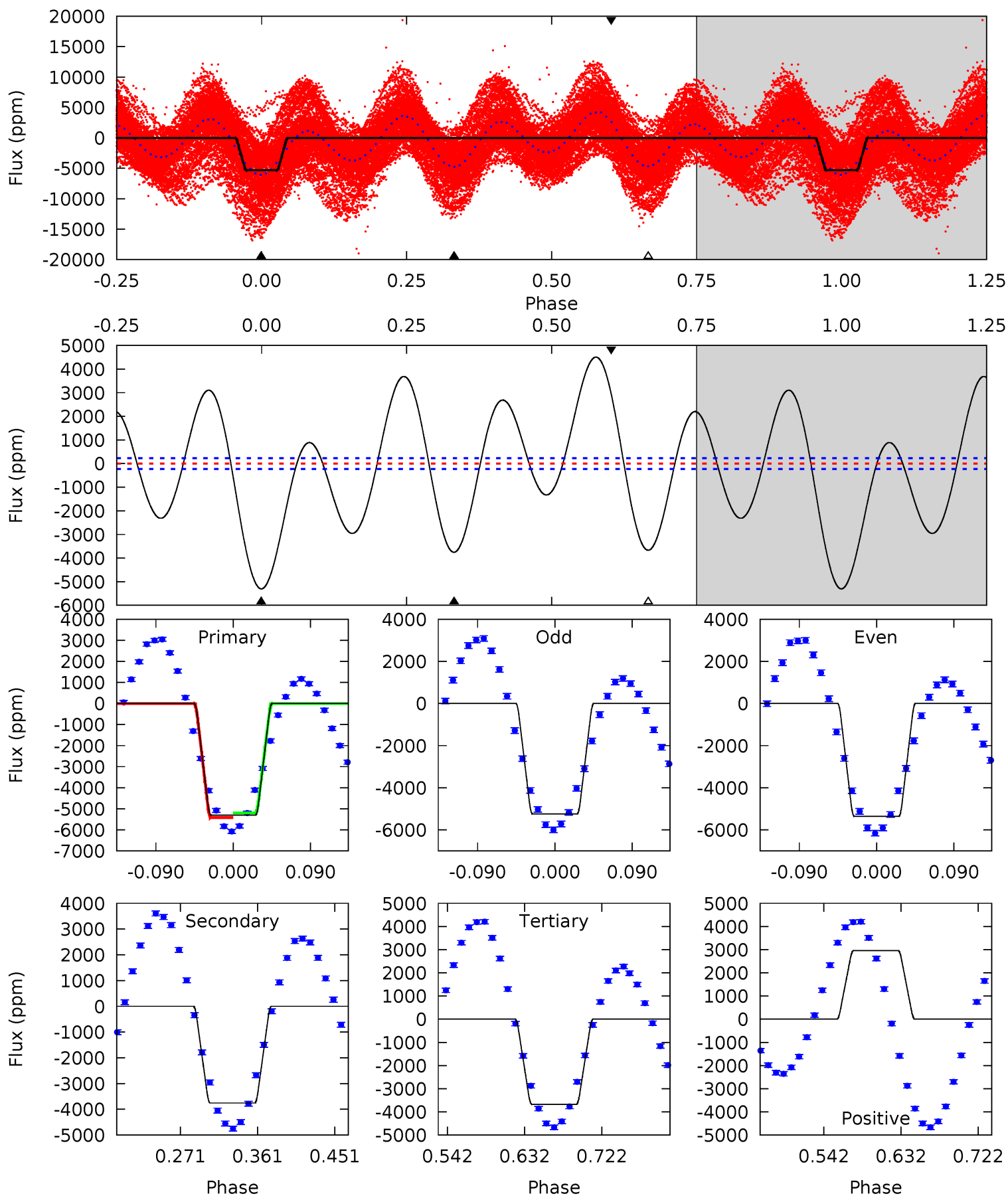
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	8.27	6.91	0	4.51	1.52	3.12	4.15	11.1	1.36	8.27	2.19	4.19	0.36	1.04



Alt Model-Shift Uniqueness Test

003631162-01, P = 1.309891 Days, E = 130.493476 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
107.2	75.9	74.2	59.8	4.59	1.69	43.9	33.0	47.4	1.68	16.1	1.13	1.13	0.46	2.15



Stellar Parameters For KIC 003631162

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5602^{+195}_{-195}	$4.494^{+0.112}_{-0.138}$	$-0.580^{+0.300}_{-0.300}$	$0.807^{+0.152}_{-0.114}$	$0.739^{+0.108}_{-0.046}$	$1.983^{+1.041}_{-0.734}$
	+3%/-3%	+2%/-3%	+52%/-52%	+19%/-14%	+15%/-6%	+52%/-37%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003631162-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-42 ± 5	$0.93^{+0.18}_{-0.17}$	2138^{+125}_{-115}	4558^{+360}_{-310}	12^{+6}_{-4}
Alt.	-3755 ± 49	$7.18^{+0.78}_{-0.66}$	2141^{+129}_{-118}	4963^{+164}_{-171}	18^{+4}_{-3}

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

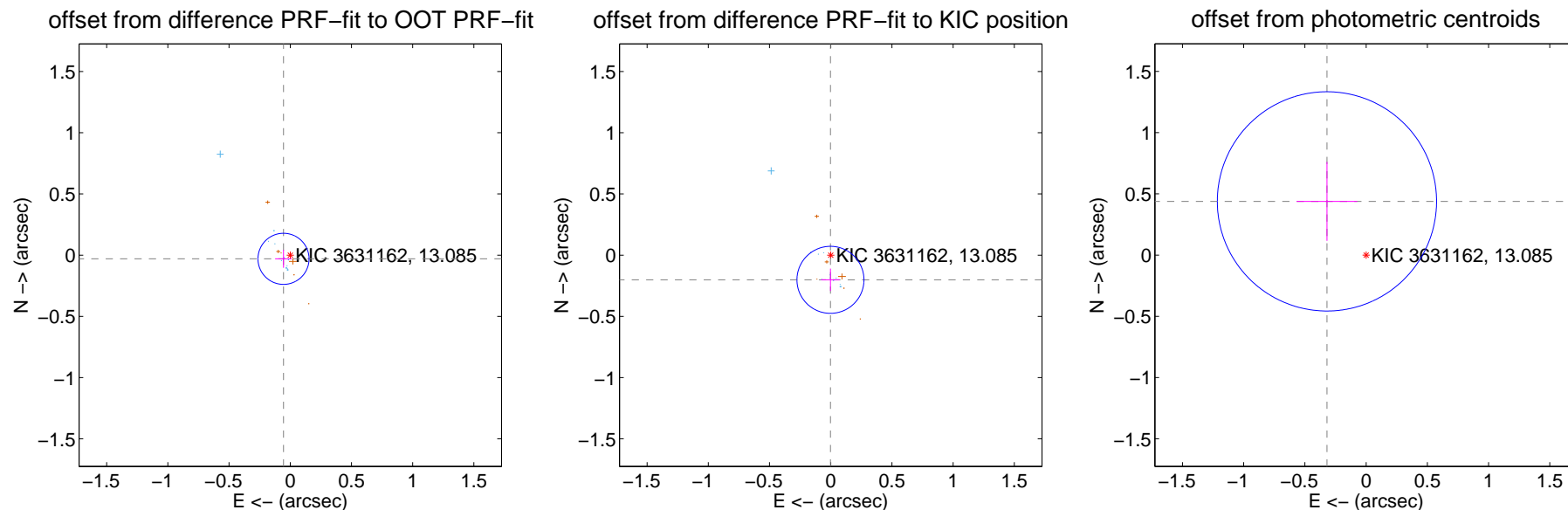
DV Centroid Data

Supplemental centroid analysis for 003631162-01. Kepler magnitude: 13.09. Transit SNR 13.00

There are 11 quarters with good PRF difference image offsets

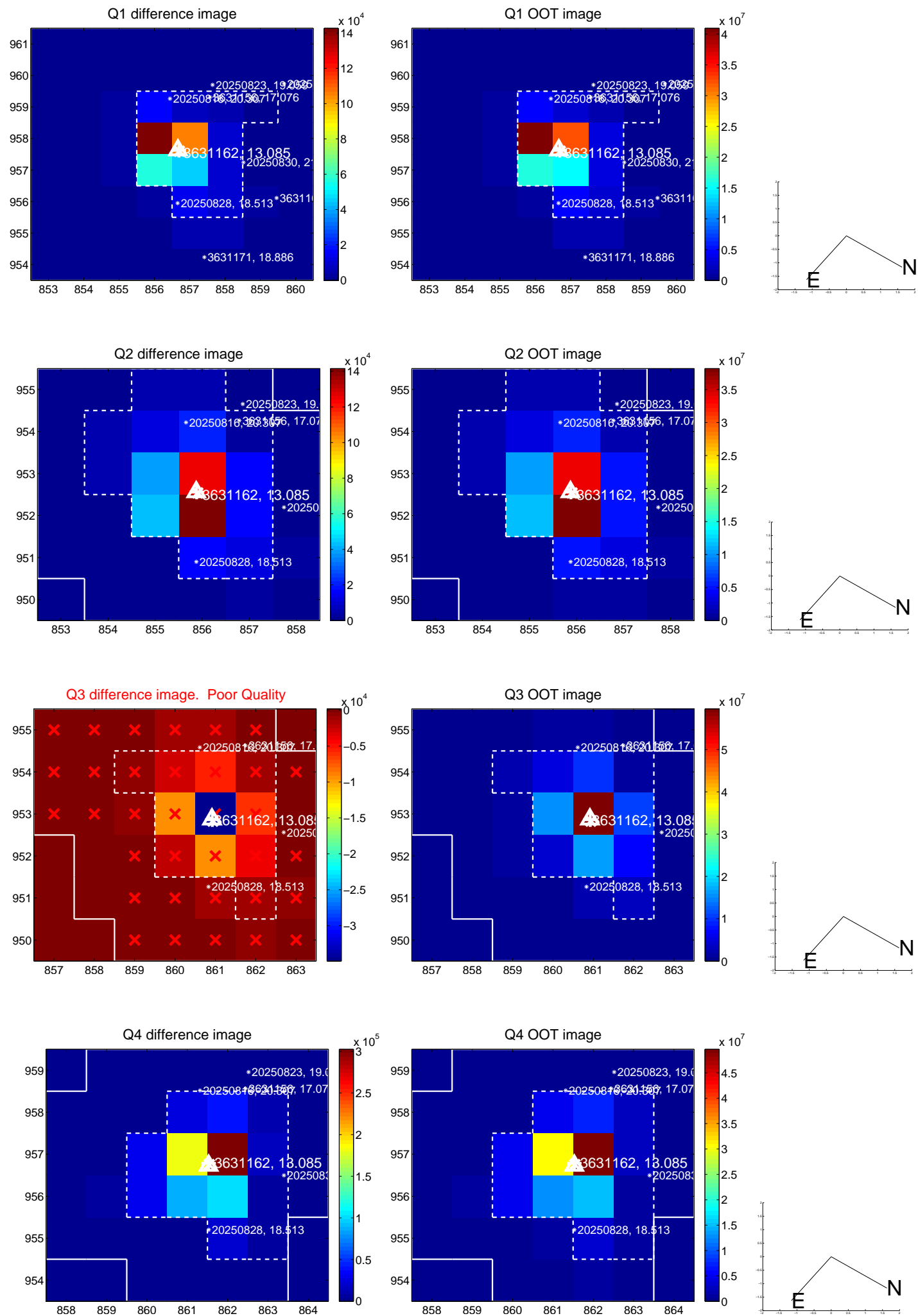
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.063 ± 0.070	0.90	0.055 ± 0.068	-0.030 ± 0.074
PRF-fit source offset from KIC position	0.202 ± 0.091	2.21	0.002 ± 0.076	-0.202 ± 0.091
photometric centroid source offset	0.54 ± 0.30	1.82	0.32 ± 0.25	0.44 ± 0.32

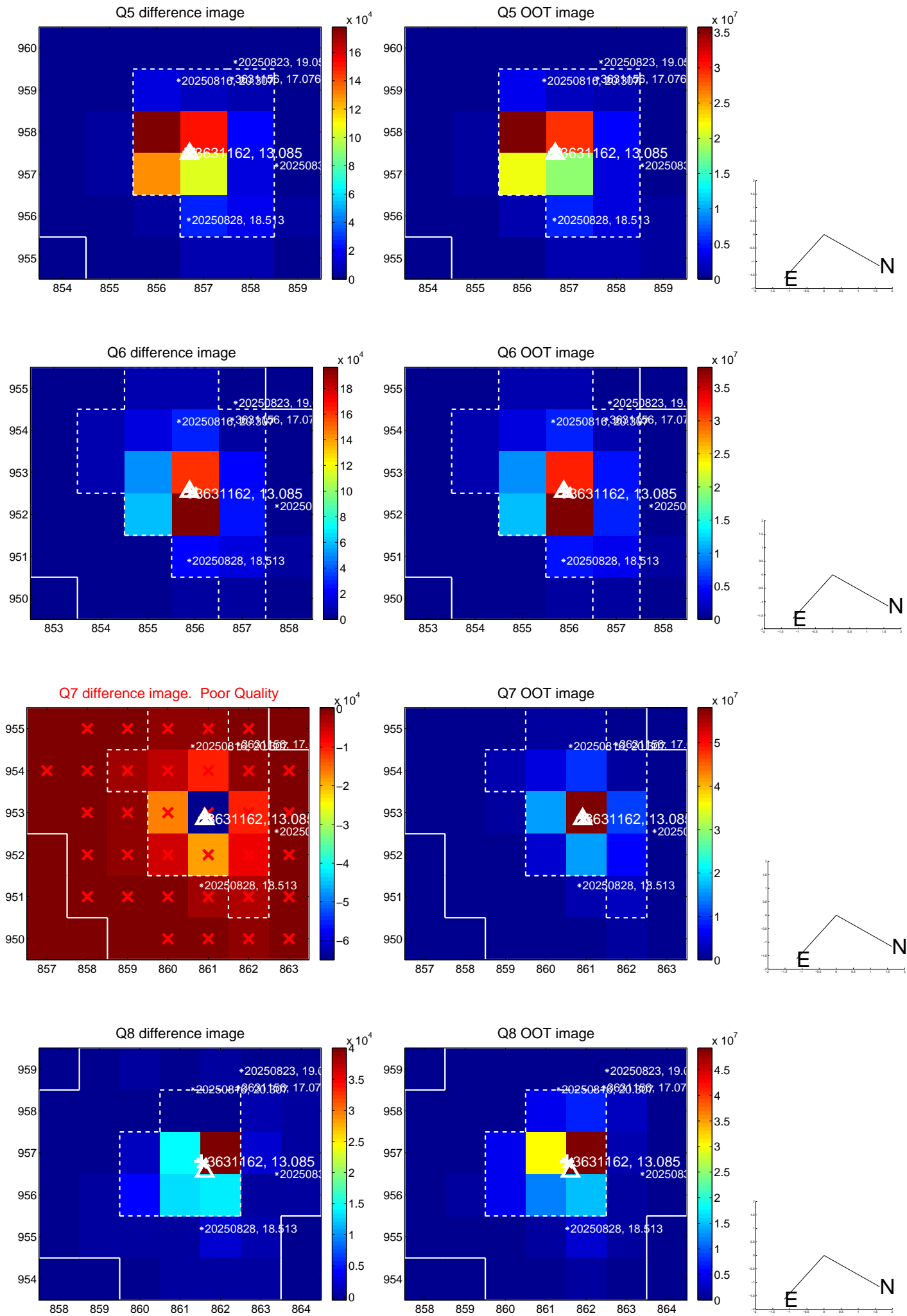


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

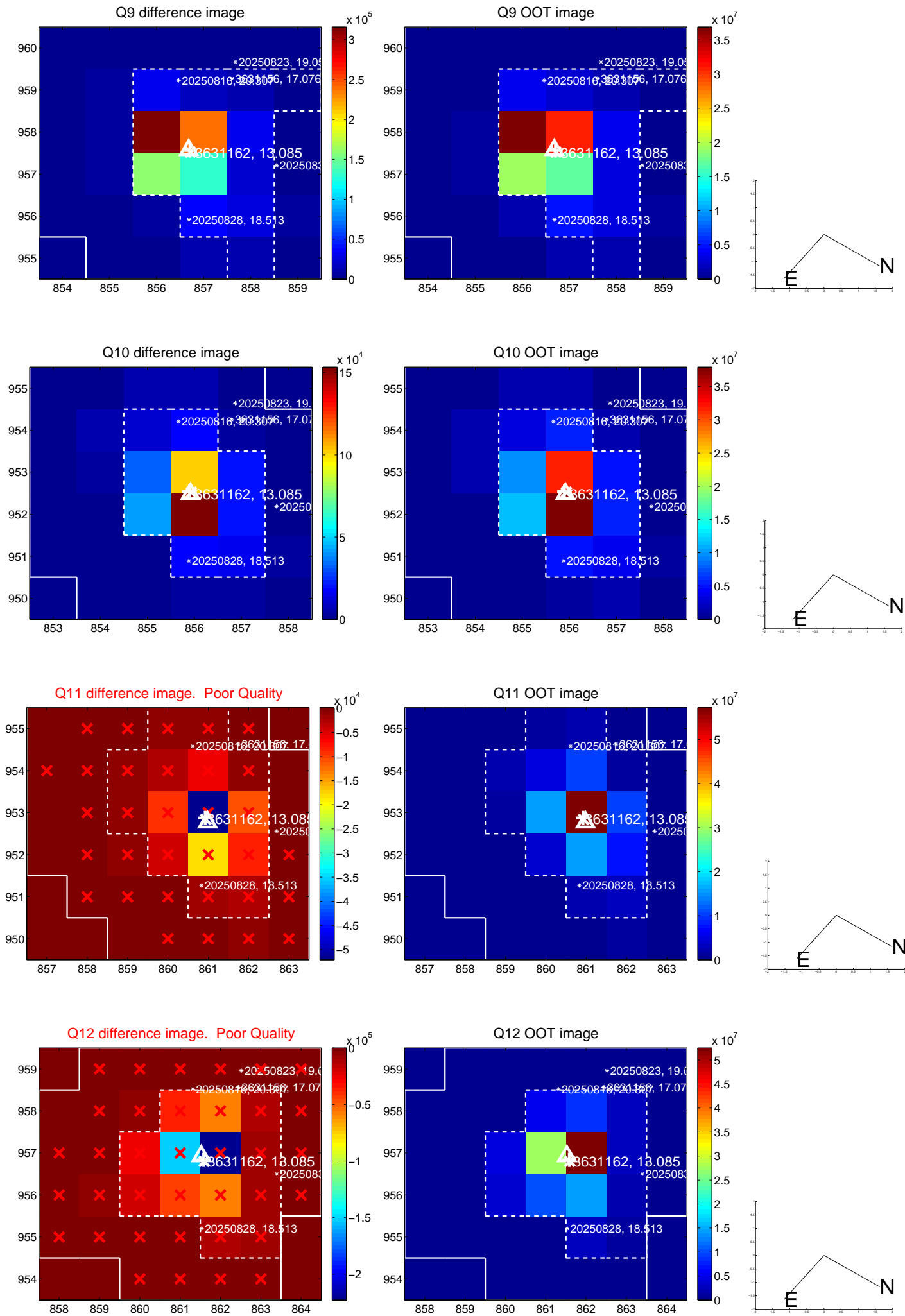
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



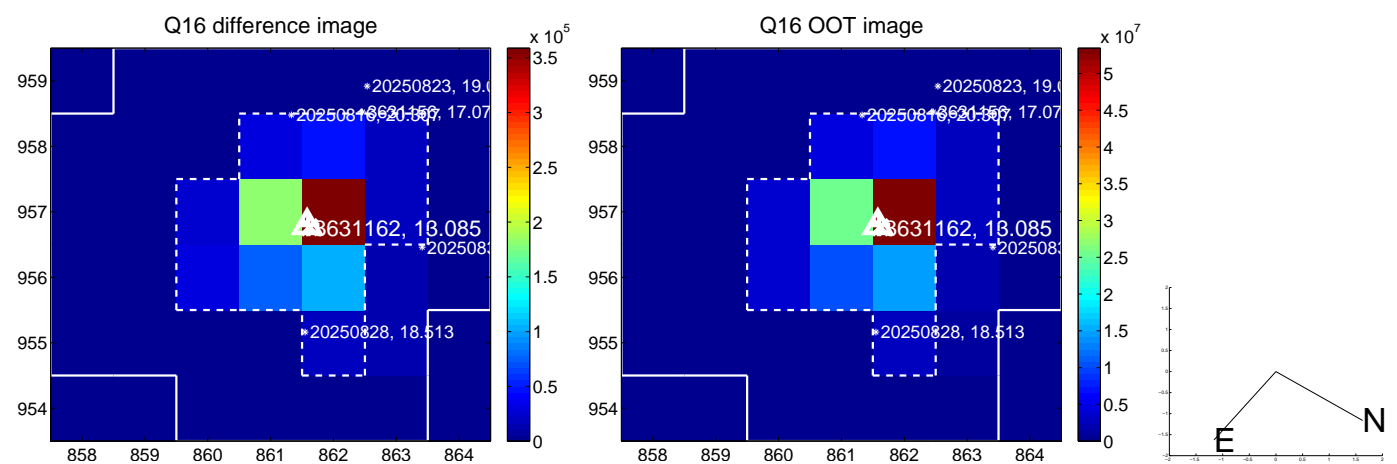
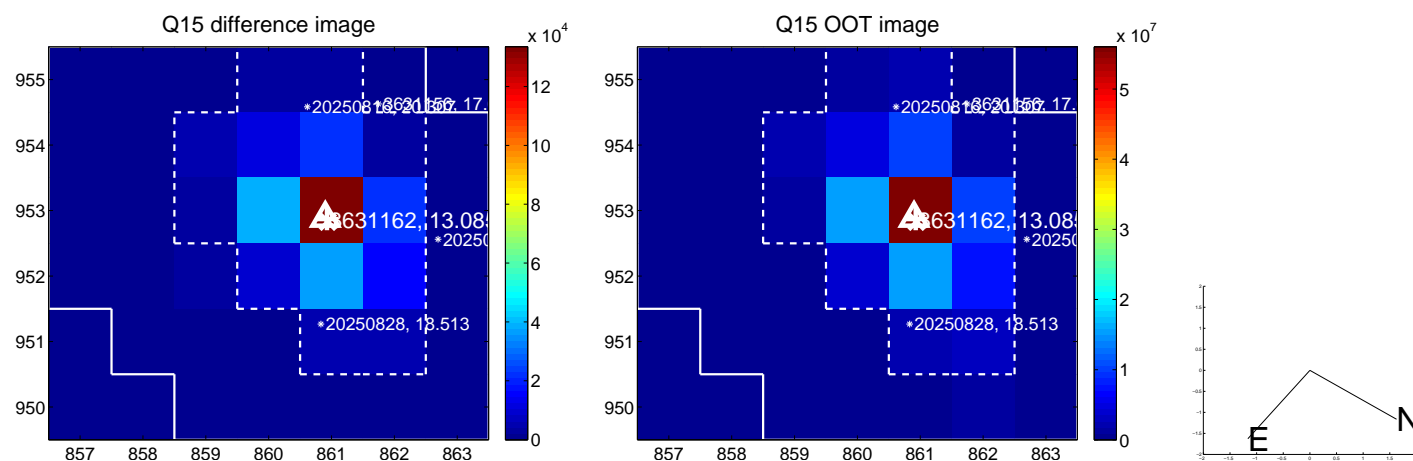
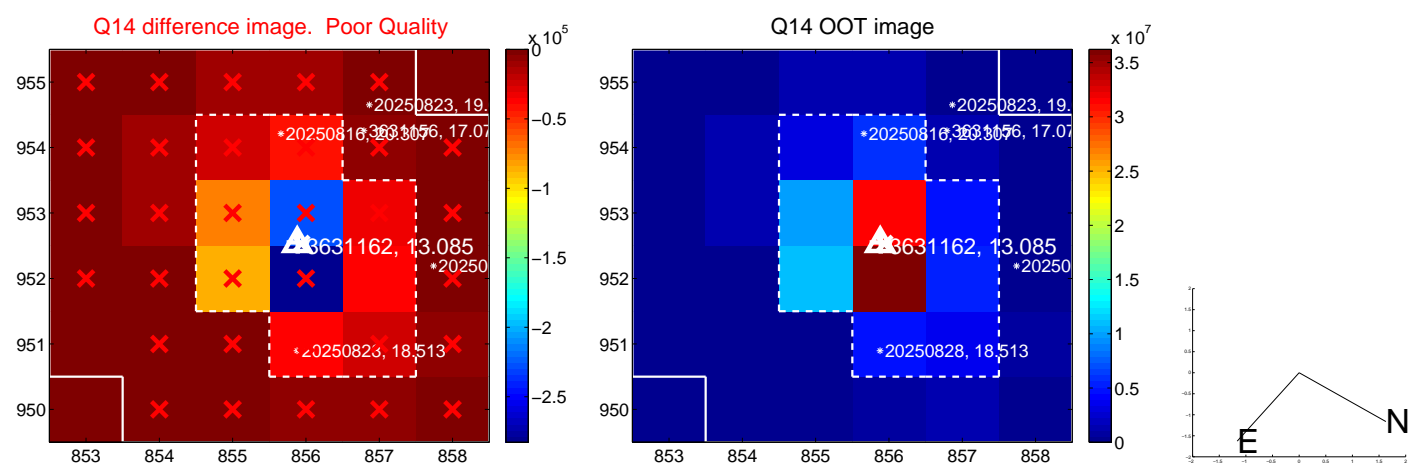
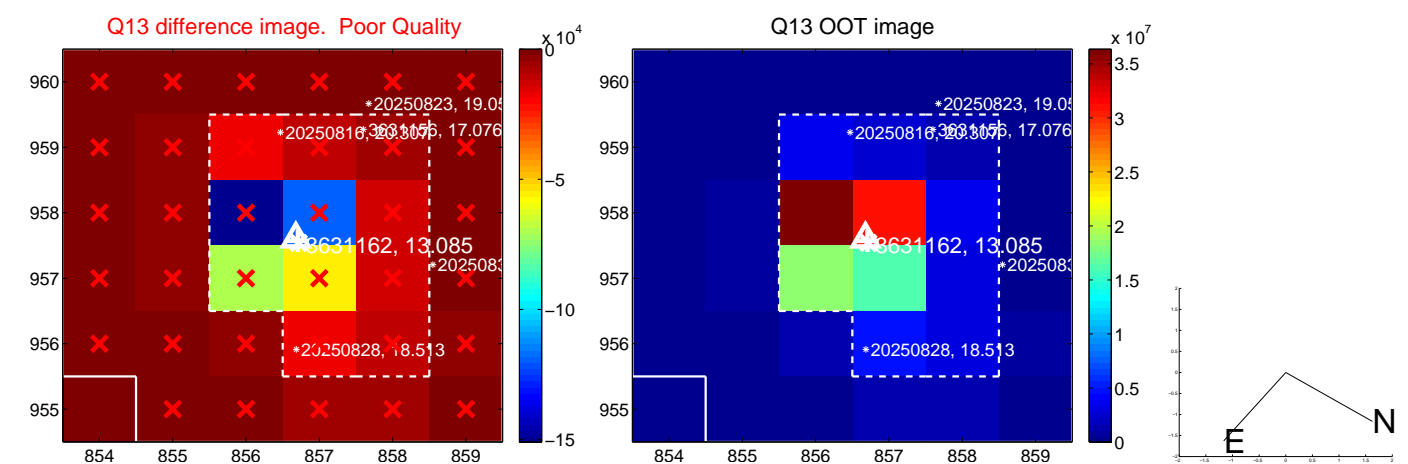
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

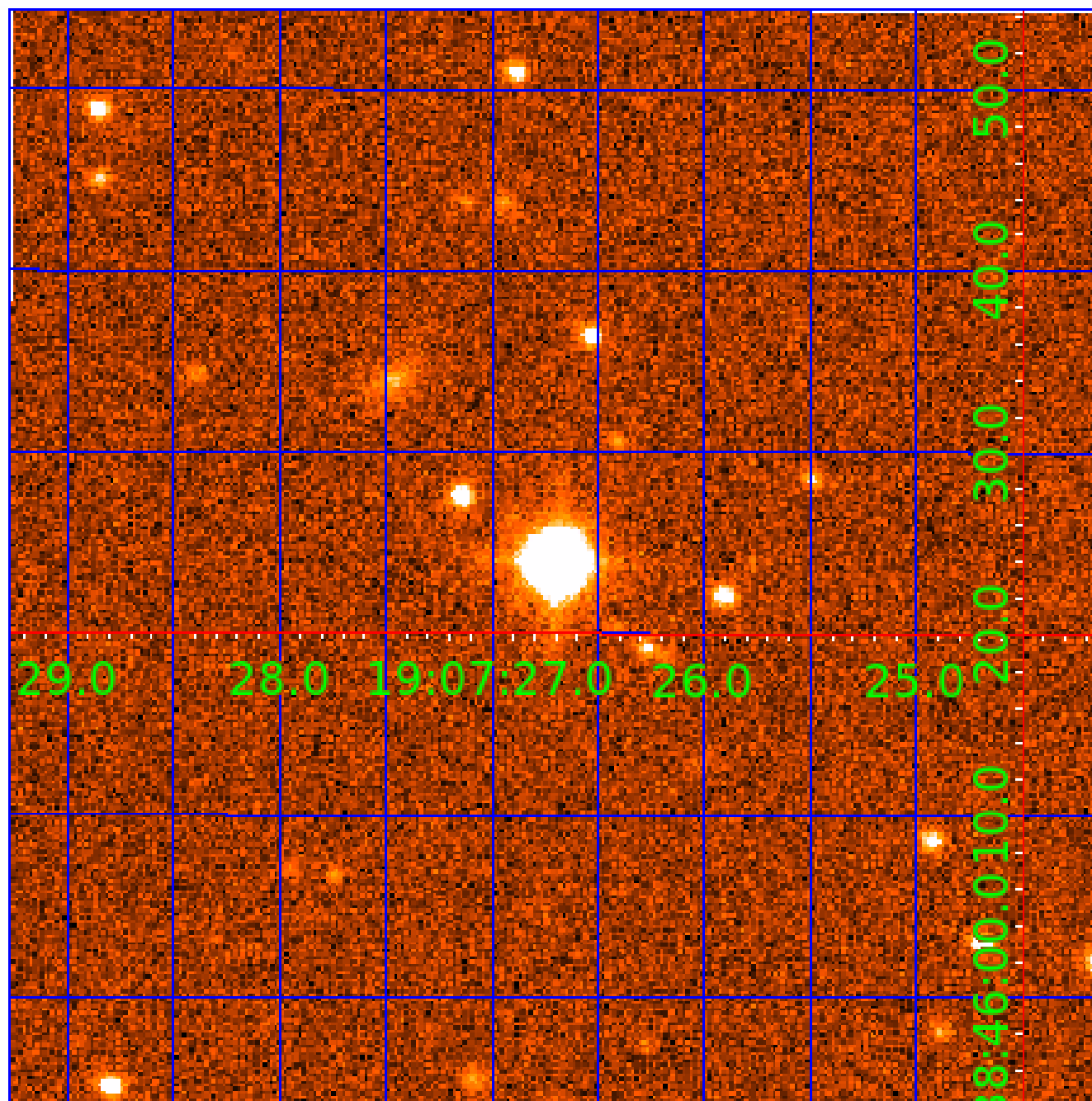


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003631162

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})
003631162-01	OBS	No	1.309842	131.812066	90.0	3.638	20.4	13.0	0.81	5602	0.92	1278.08
003631162-02	OBS	No	211.115697	219.783450	3788.1	3.717	28.7	24.5	0.81	5602	9.27	1.46
003631162-03	OBS	No	150.918595	280.429181	290.4	2.497	32.0	2.3	0.81	5602	1.41	2.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003631162-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
003631162-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003631162-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

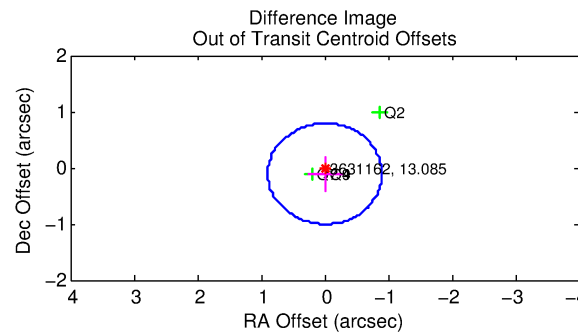
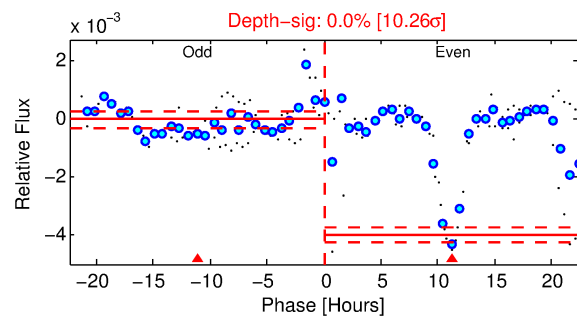
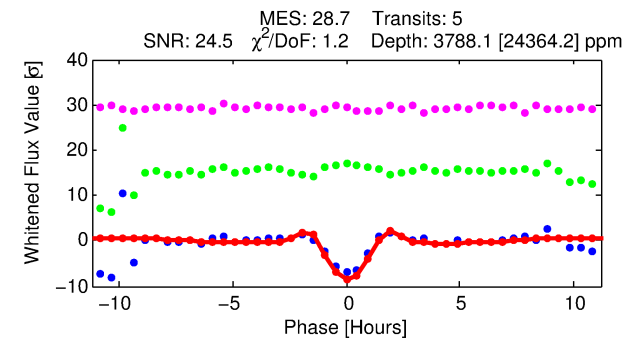
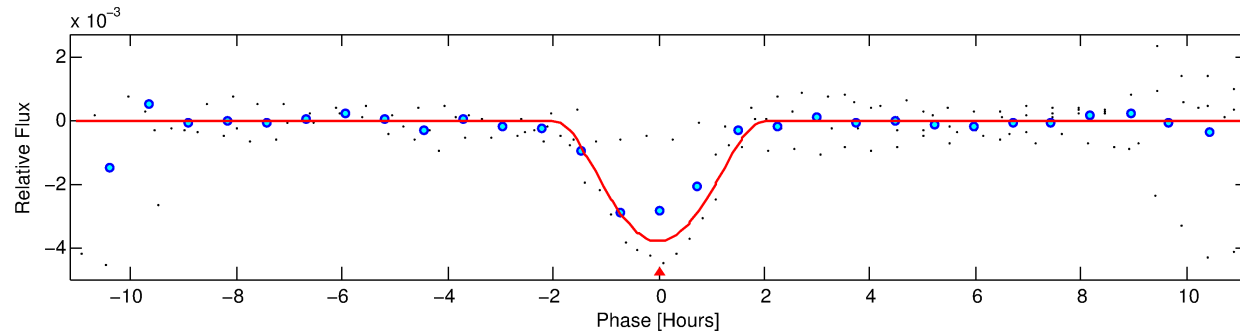
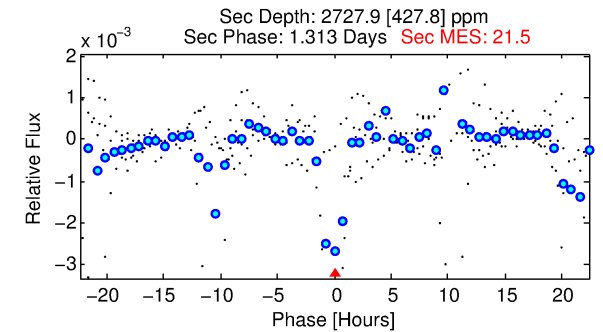
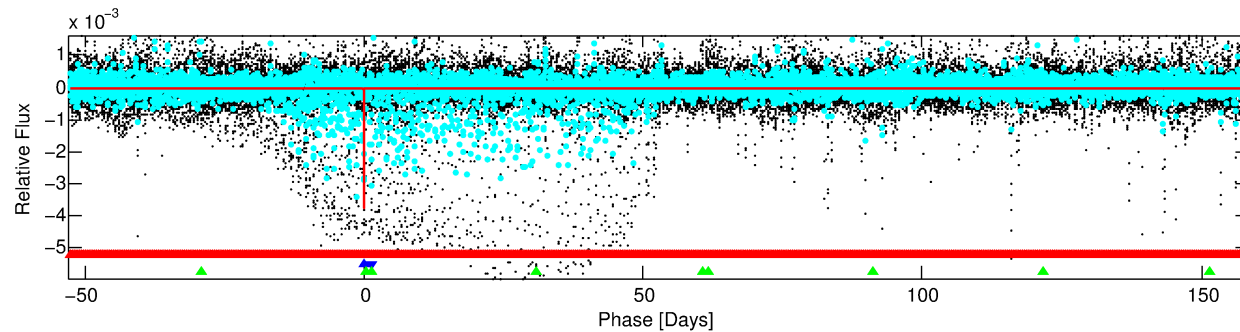
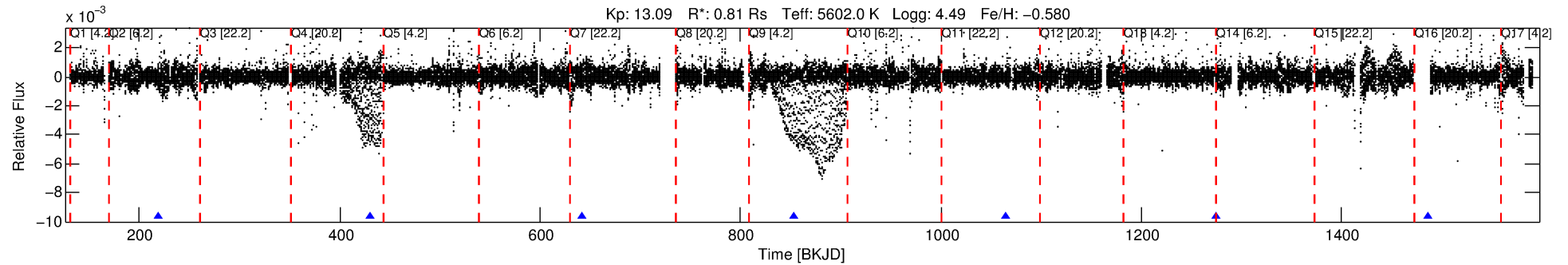
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003631162-02

No Significant Match Found

DV One-Page Summary

KIC: 3631162 Candidate: 2 of 3 Period: 211.116 d



DV Fit Results:

Period = 211.11570 [0.00139] d
Epoch = 219.7834 [0.0030] BKJD
Rp/R* = 0.1052 [0.1254]
a/R* = 204.21 [47.17]
b = 1.00 [0.62]
Seff = 1.46 [0.41]
Teq = 280 [20] K
Rp = 9.26 [11.18] Re
a = 0.6280 [0.1032] AU
Ag = 6895.15 [16553.35] [0.42 σ]
Teffp = 3947 [2360] K [1.55 σ]

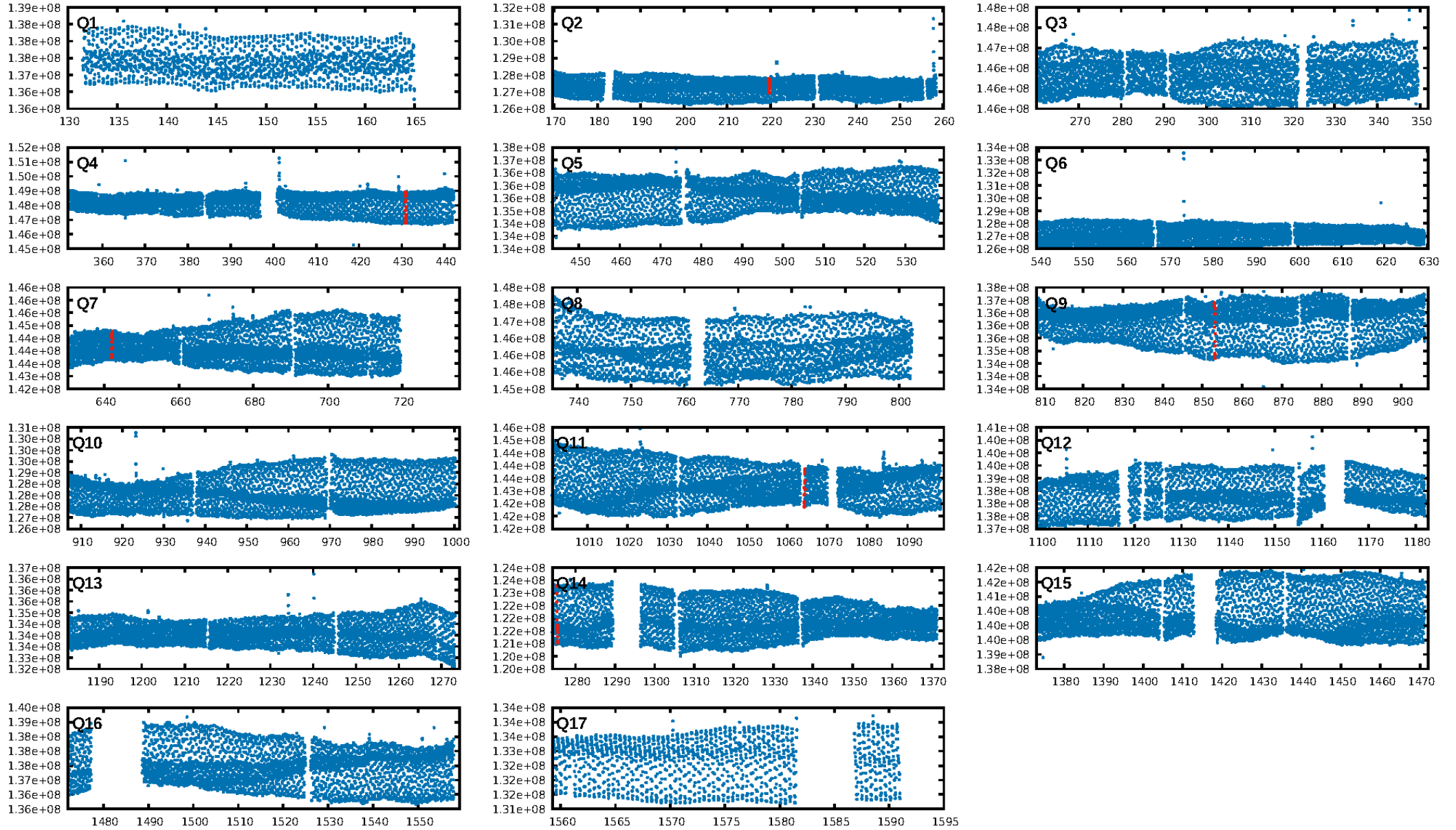
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [322.63 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 94.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 5.759
Centroid-sig: 38.6%
Centroid-so: 0.057 arcsec [0.46 σ]
OotOffset-rm: 0.110 arcsec [0.37 σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-rm: 0.211 arcsec [1.06 σ]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 0.25 [1/4]

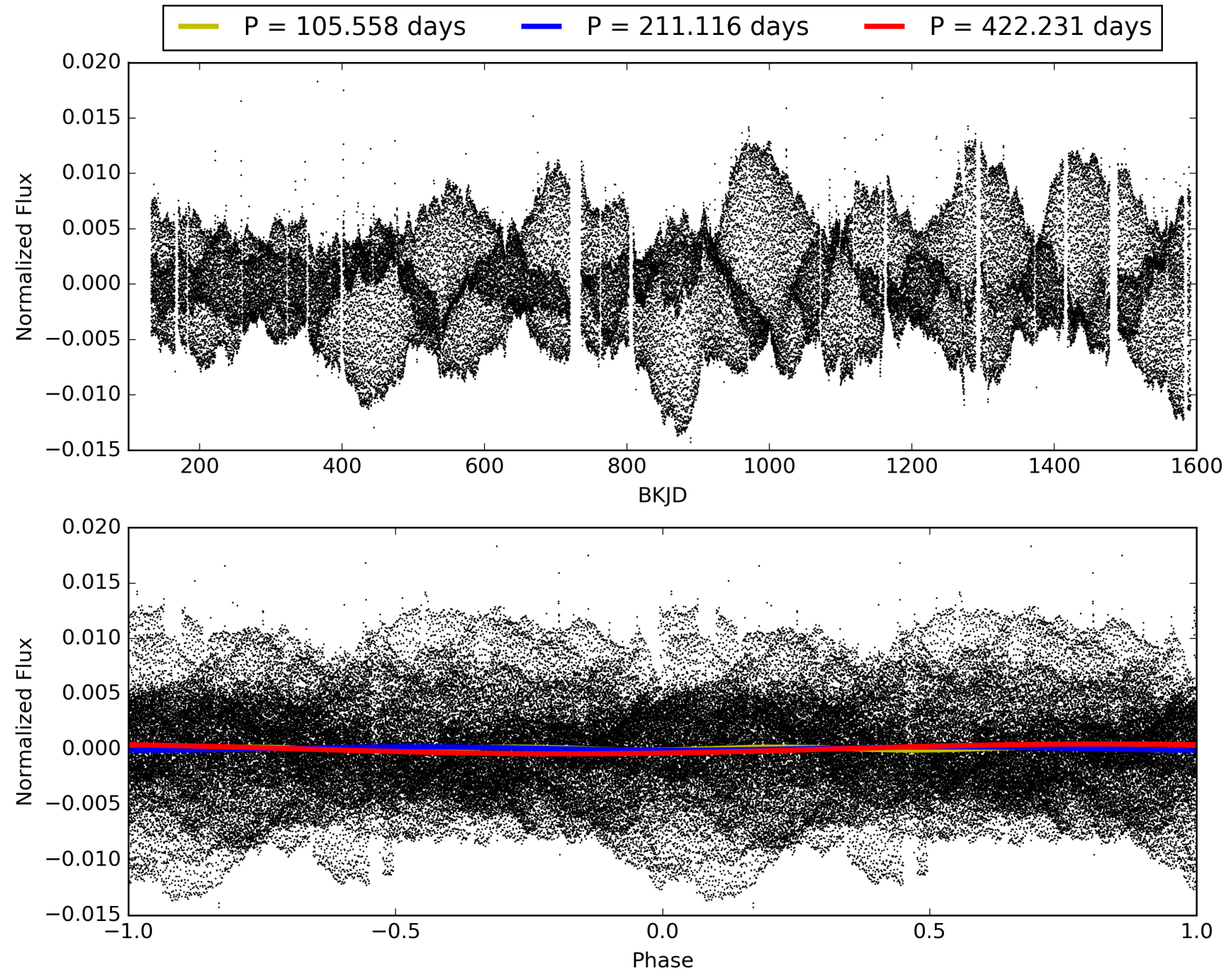
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:17:10 Z

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

TCE 003631162-02, PDC Light Curves

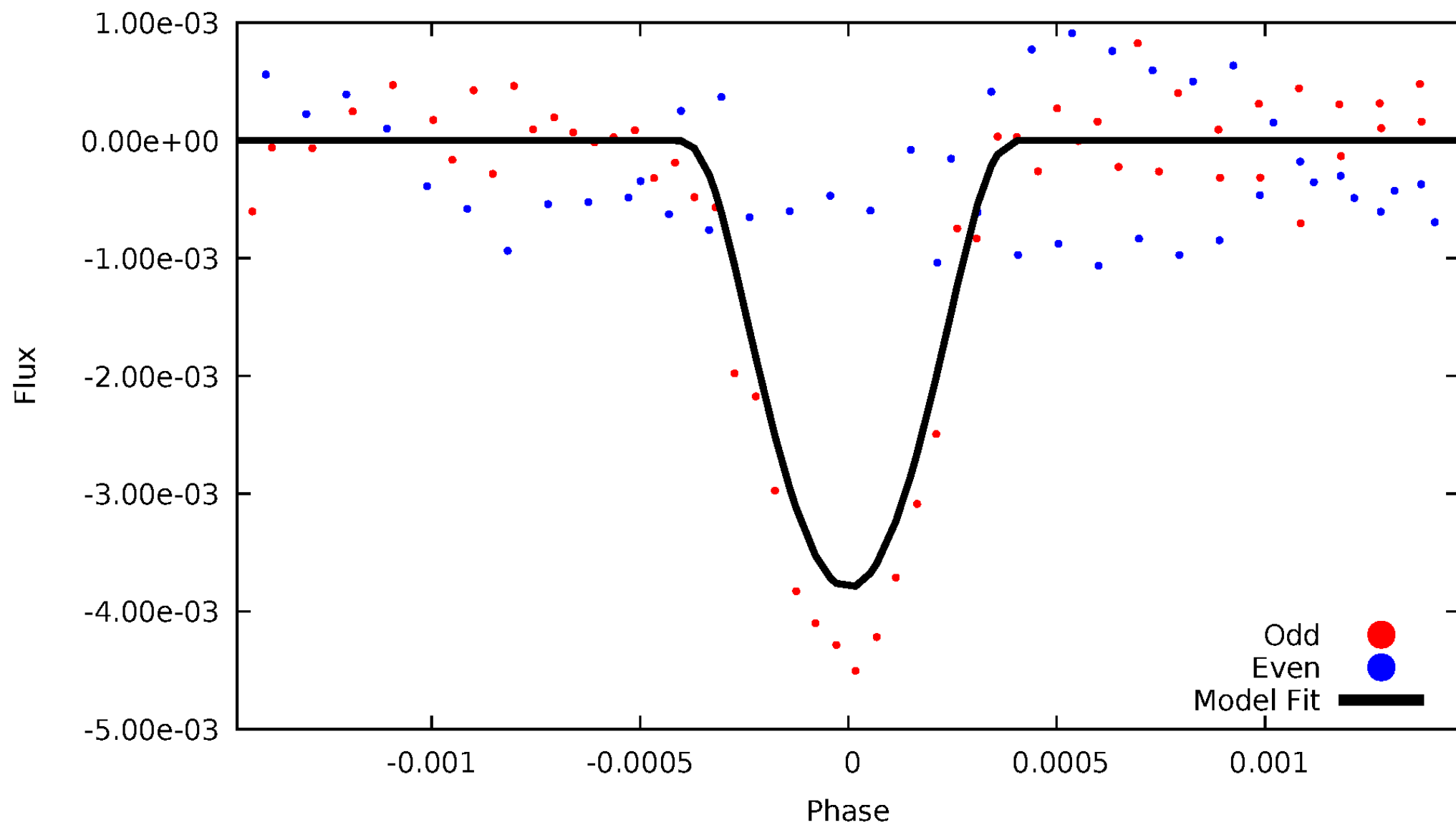


TCE 003631162-02



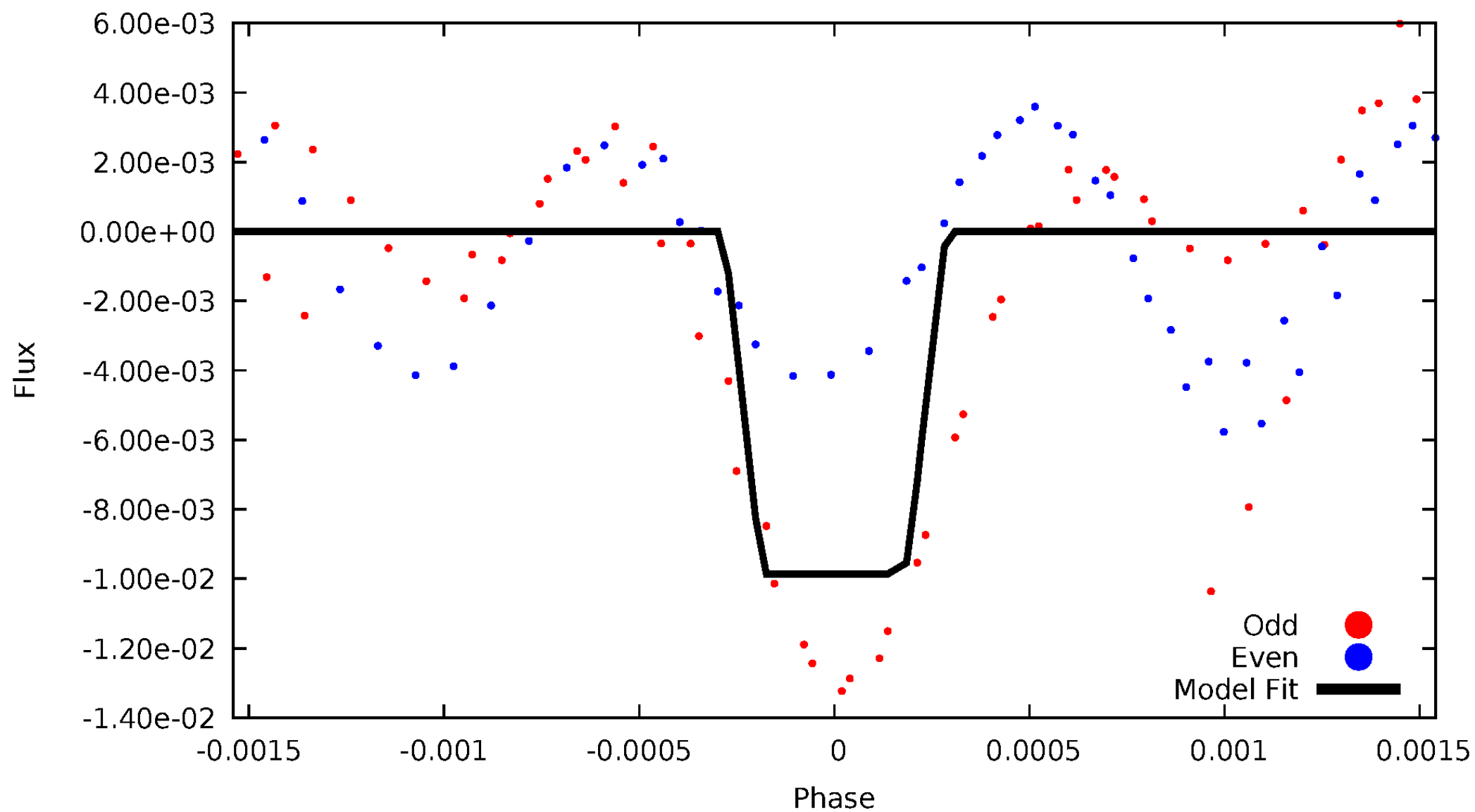
DV Odd/Even

TCE 003631162-02



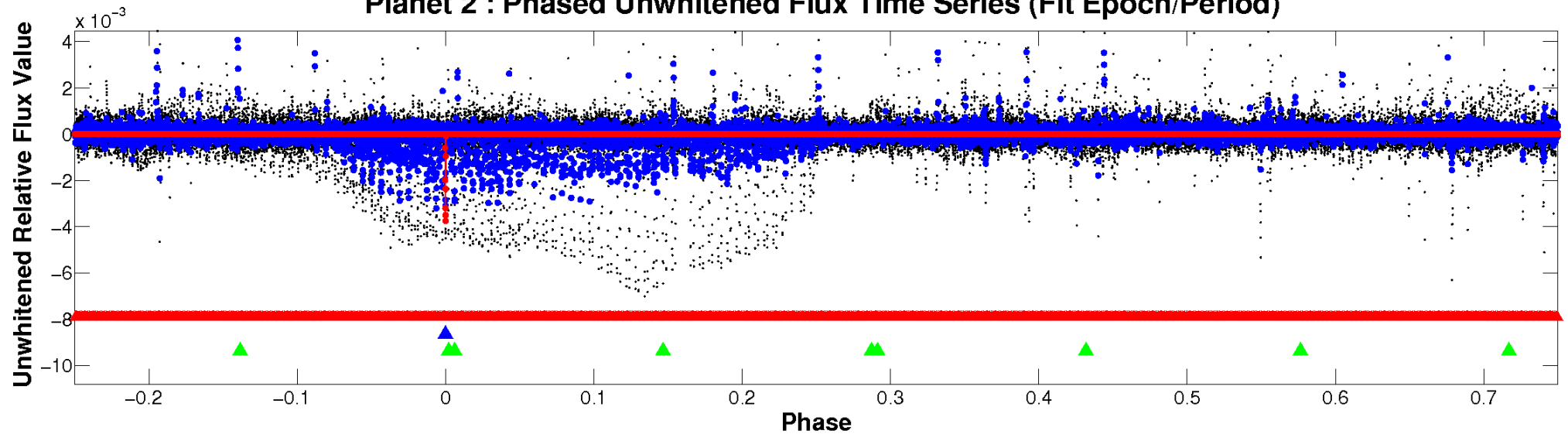
ALT Odd/Even

TCE 003631162-02

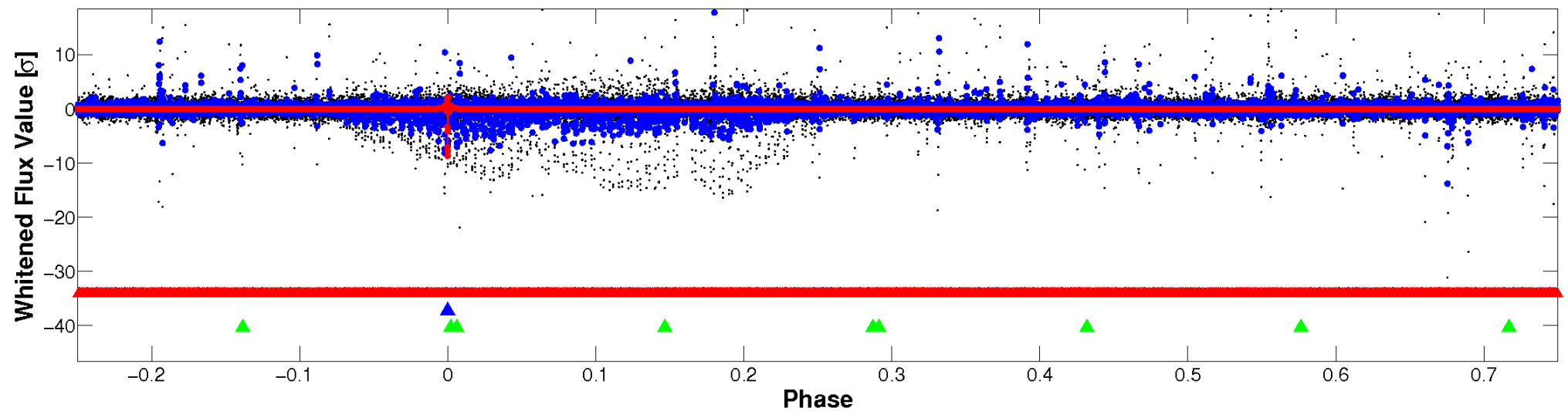


Non-Whitened Vs. Whitened Light Curve

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

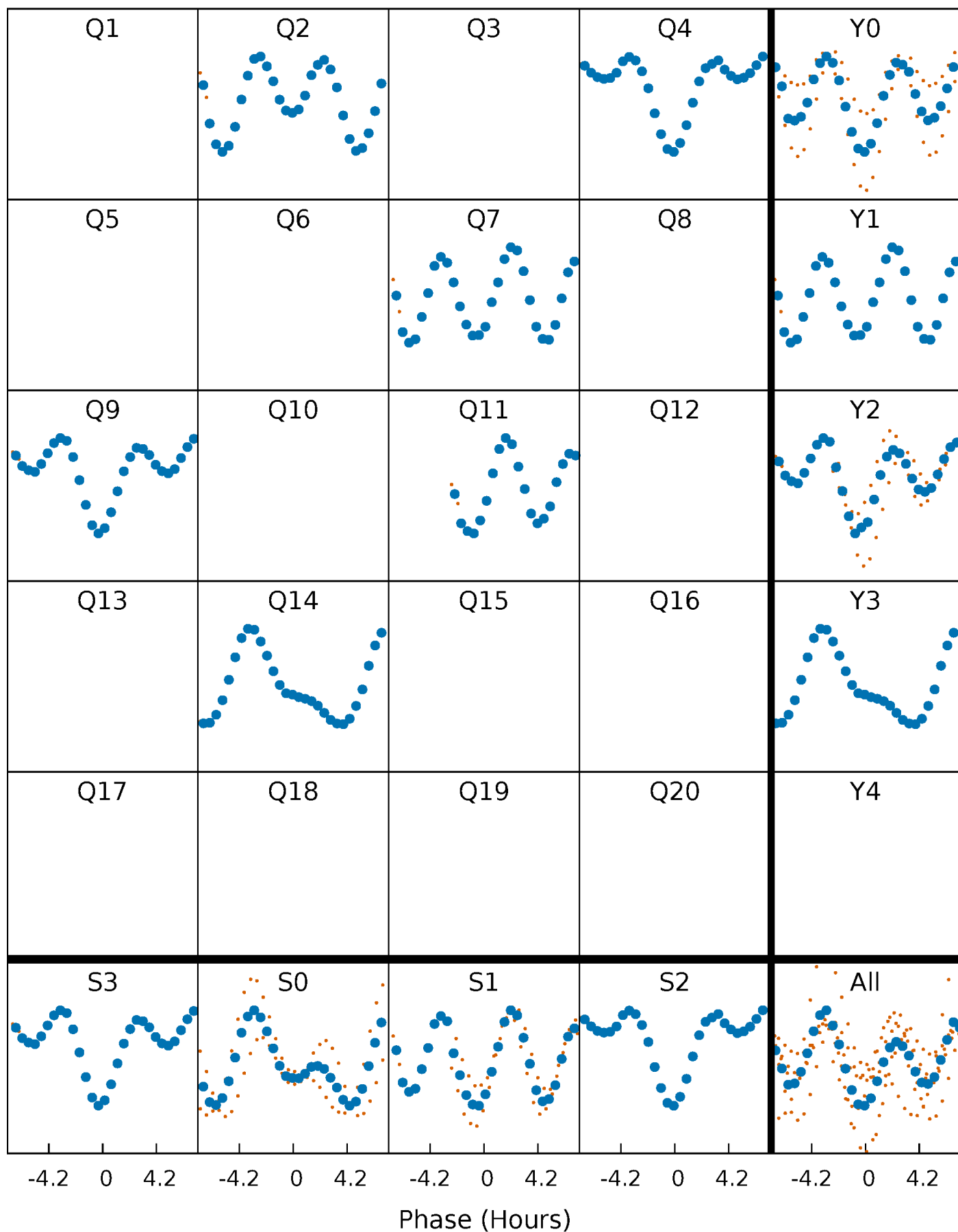


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



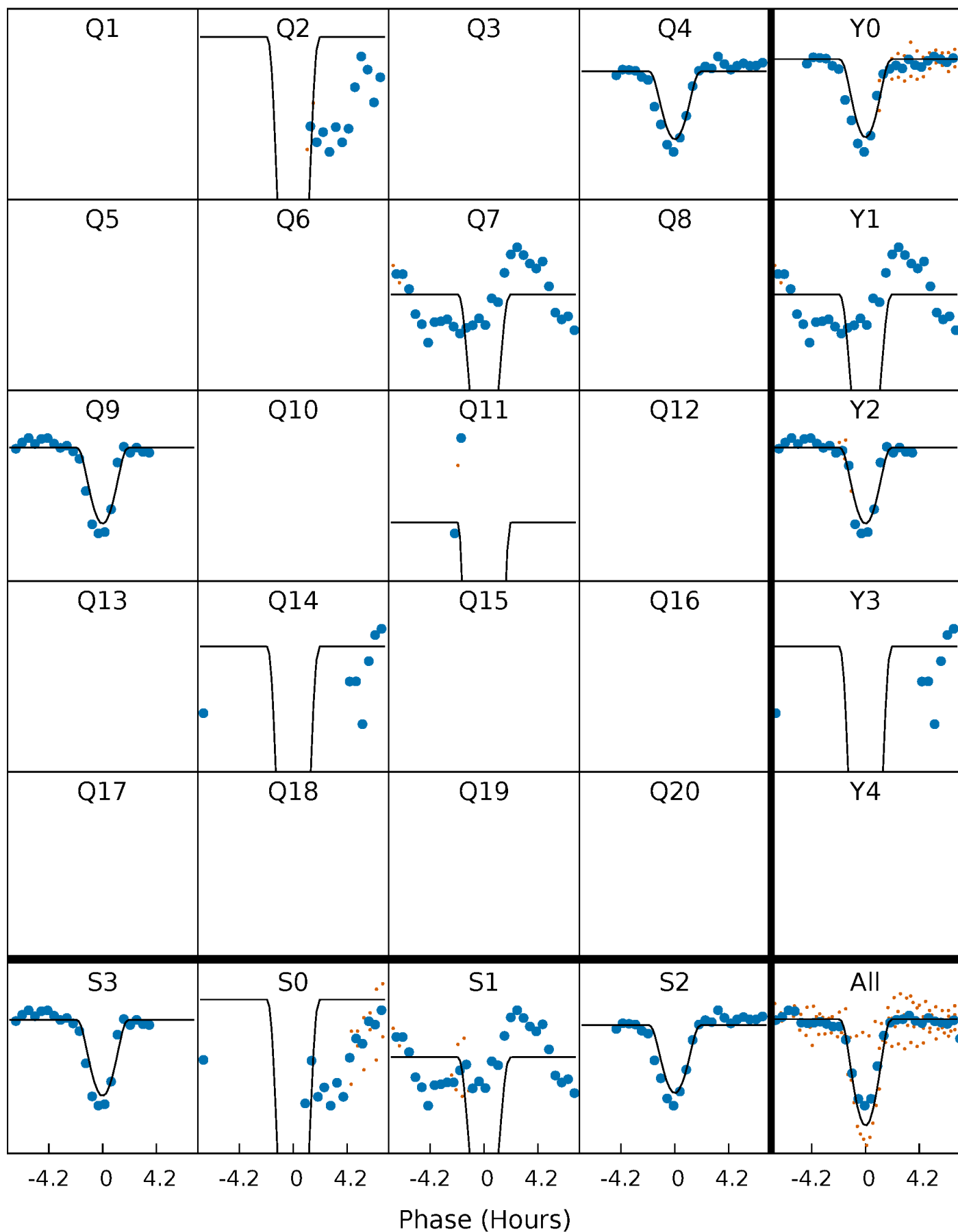
PDC Quarter-Phased Transit Curves

TCE 003631162-02 $P=211.115697$ Days $T_0=219.783450$ (BKJD)



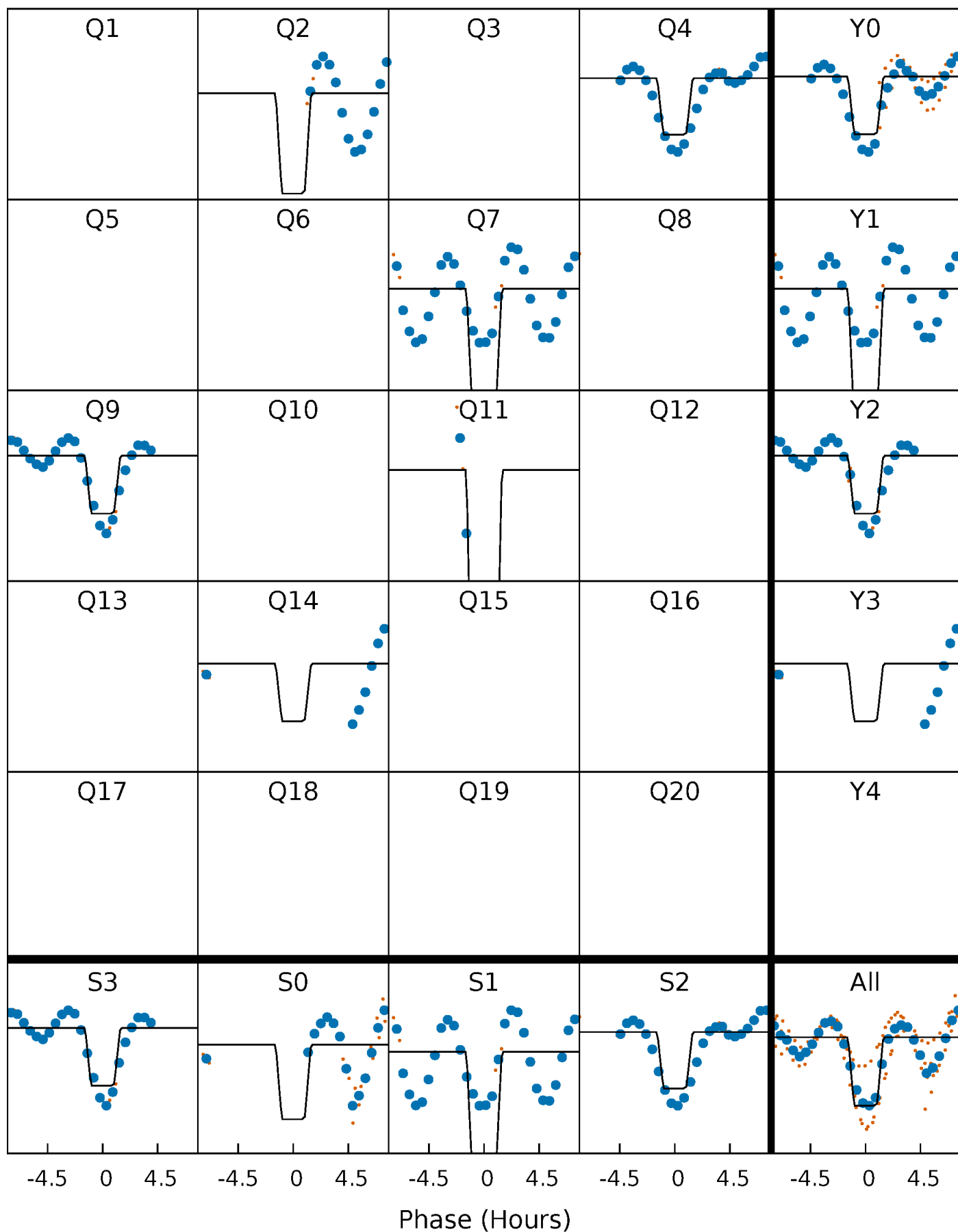
DV Quarter-Phased Transit Curves

TCE 003631162-02 $P=211.115697$ Days $T_0=219.783450$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

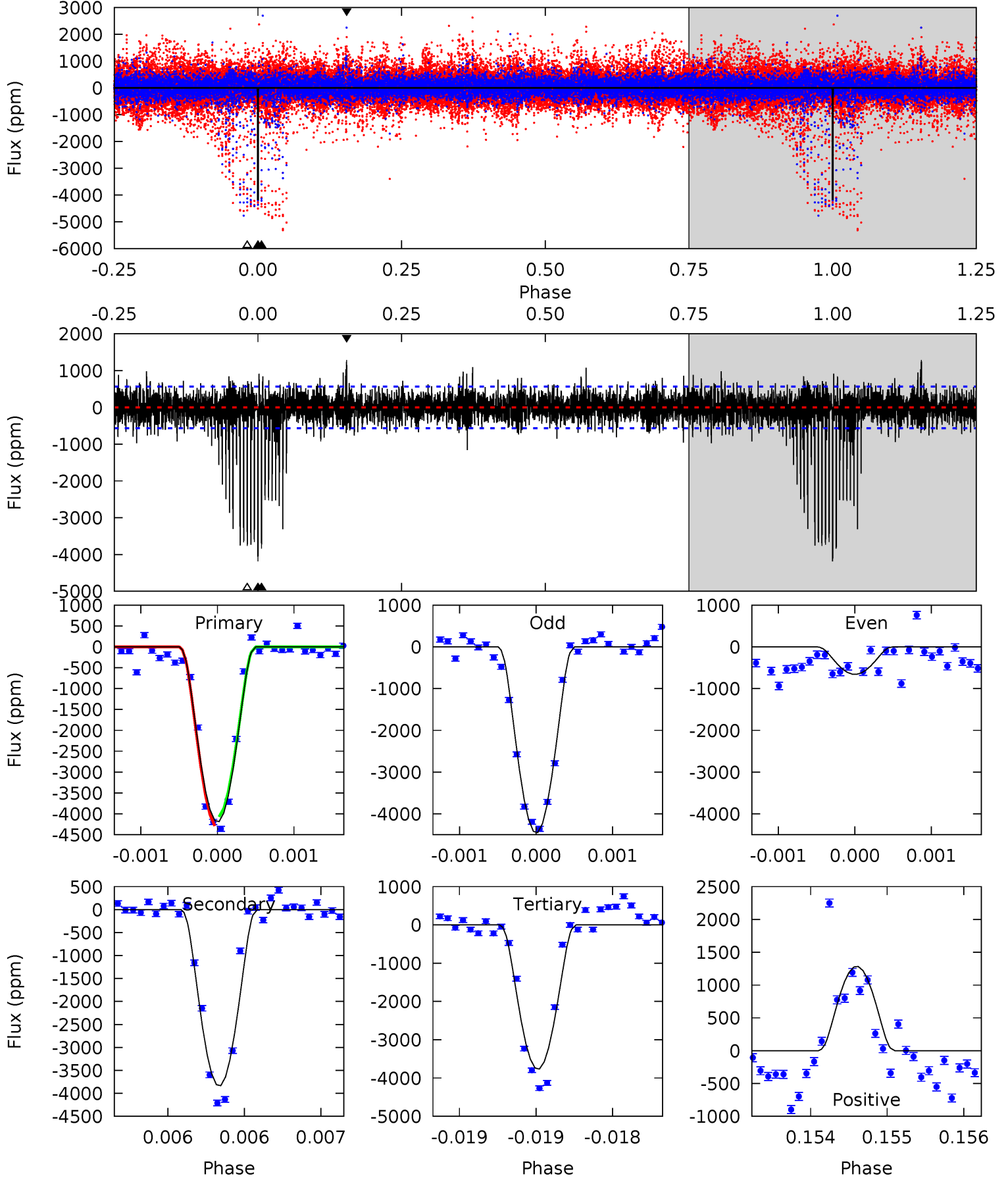
TCE 003631162-02 P=211.113051 Days $T_0=219.781332$ (BKJD)



DV Model-Shift Uniqueness Test

003631162-02, P = 211.115697 Days, E = 8.667753 Days

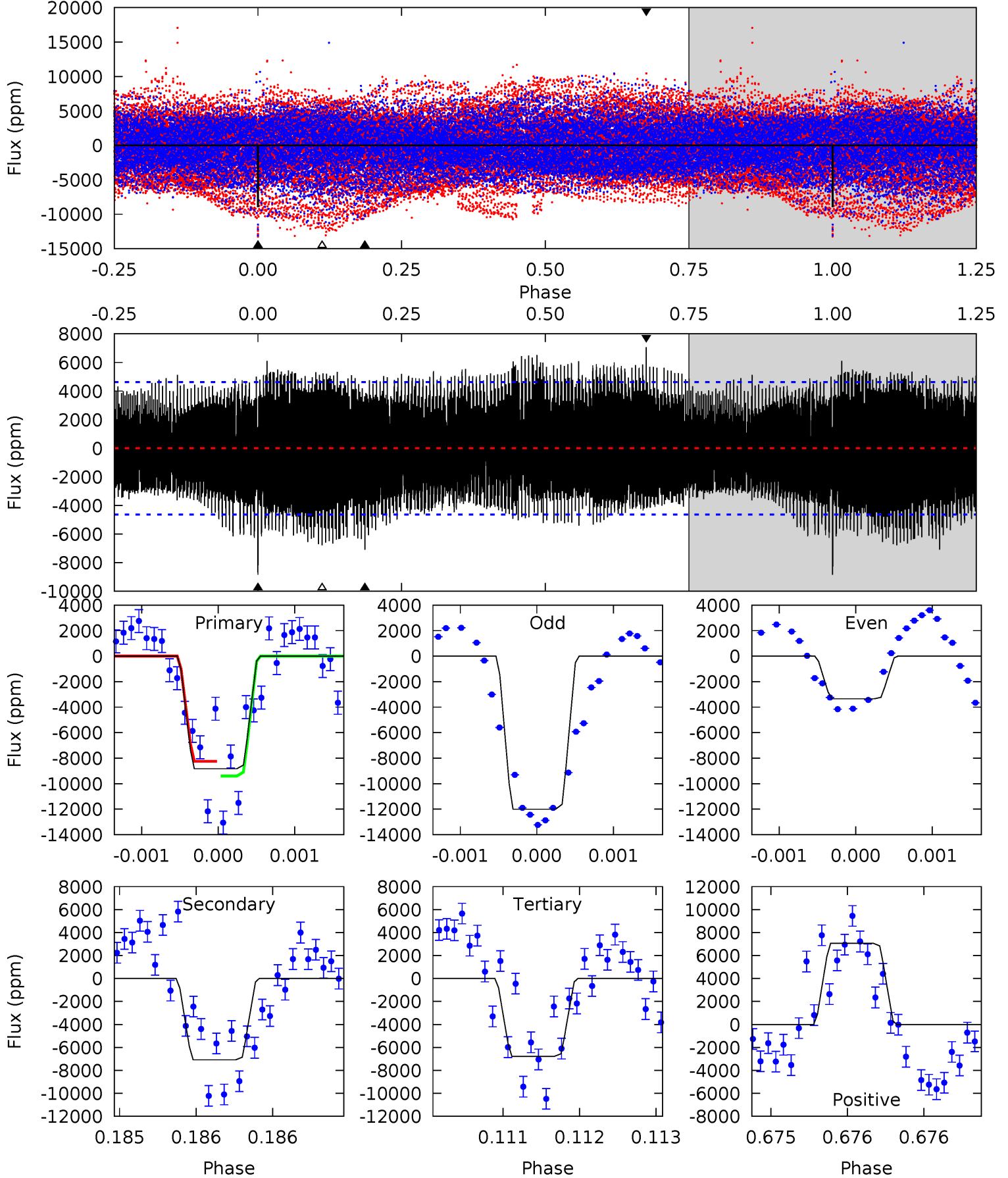
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.5	37.1	36.5	12.4	5.49	3.35	3.29	4.07	28.1	0.68	24.7	15.4	0.86	0.23	1.05



Alt Model-Shift Uniqueness Test

003631162-02, P = 211.113051 Days, E = 8.668281 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	8.50	8.13	8.47	5.55	3.45	2.97	2.46	2.12	0.37	0.02	5.16	0.78	0.44	0.69



Stellar Parameters For KIC 003631162

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5602^{+195}_{-195}	$4.494^{+0.112}_{-0.138}$	$-0.580^{+0.300}_{-0.300}$	$0.807^{+0.152}_{-0.114}$	$0.739^{+0.108}_{-0.046}$	$1.983^{+1.041}_{-0.734}$
	+3%/-3%	+2%/-3%	+52%/-52%	+19%/-14%	+15%/-6%	+52%/-37%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003631162-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3834 ± 103	$11.80^{+10.76}_{-7.65}$	393^{+23}_{-21}	4111^{+2307}_{-766}	6070^{+43192}_{-4405}
Alt.	-7083 ± 834	$11.57^{+9.94}_{-7.21}$	393^{+21}_{-23}	4648^{+2783}_{-956}	11629^{+71817}_{-8251}

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

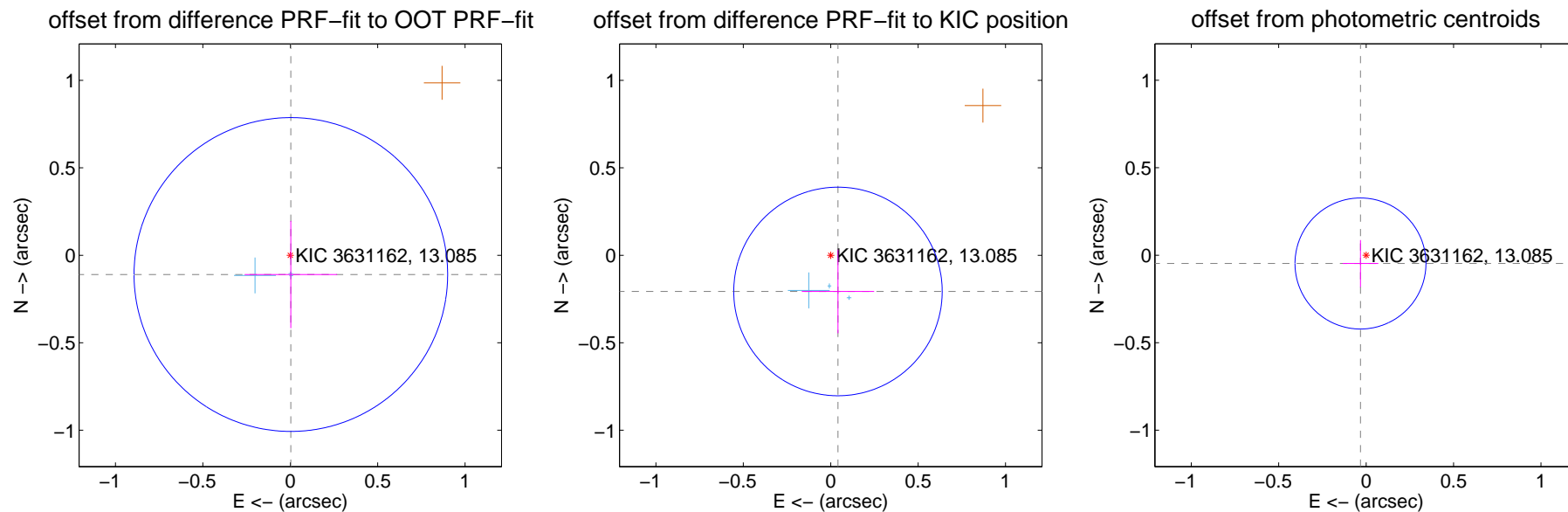
DV Centroid Data

Supplemental centroid analysis for 003631162-02. Kepler magnitude: 13.09. Transit SNR 24.50

There are 3 quarters with good PRF difference image offsets

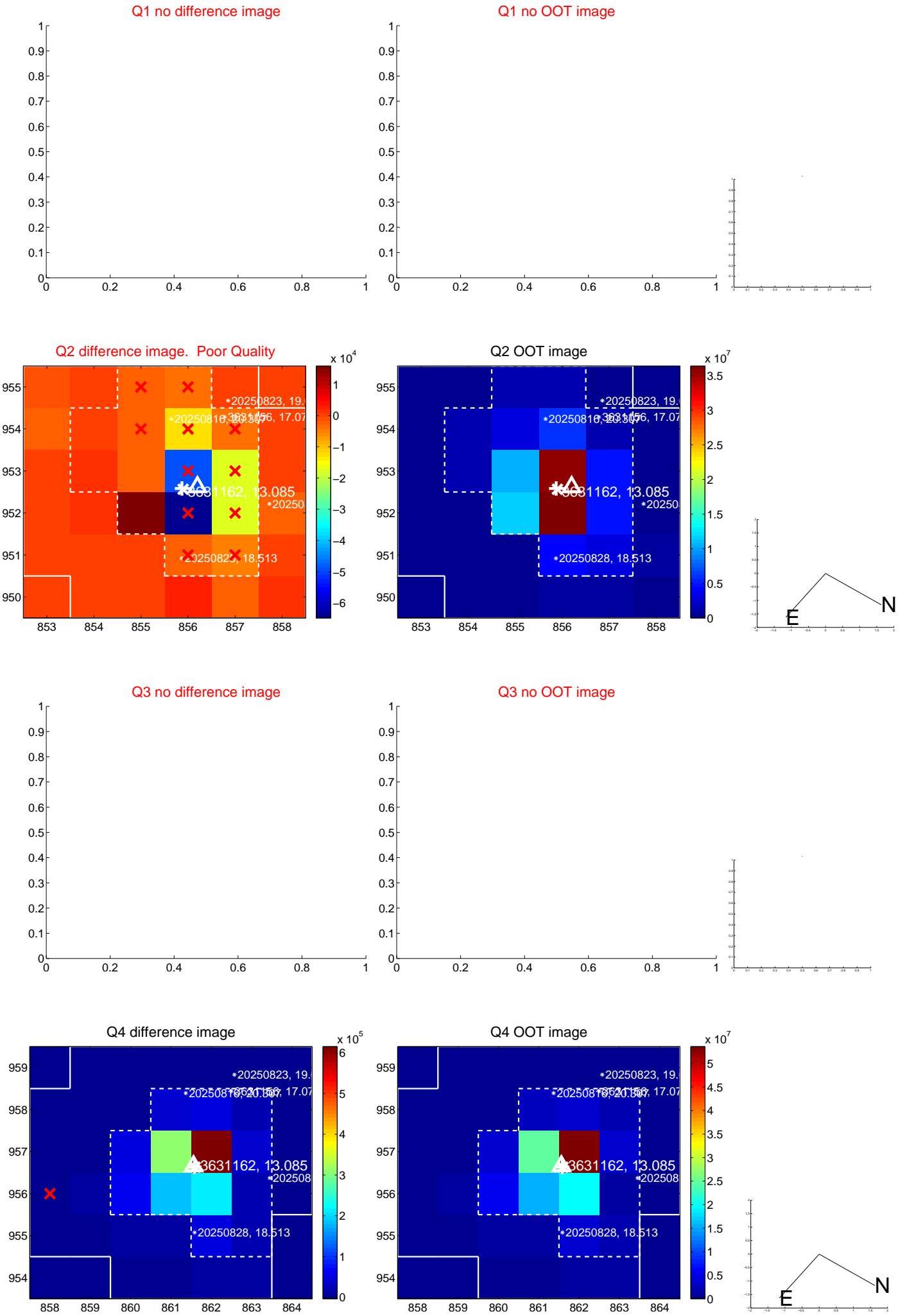
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.110 ± 0.299	0.37	-0.003 ± 0.265	-0.110 ± 0.306
PRF-fit source offset from KIC position	0.211 ± 0.199	1.06	-0.041 ± 0.207	-0.207 ± 0.239
photometric centroid source offset	0.06 ± 0.12	0.46	0.03 ± 0.10	-0.05 ± 0.13

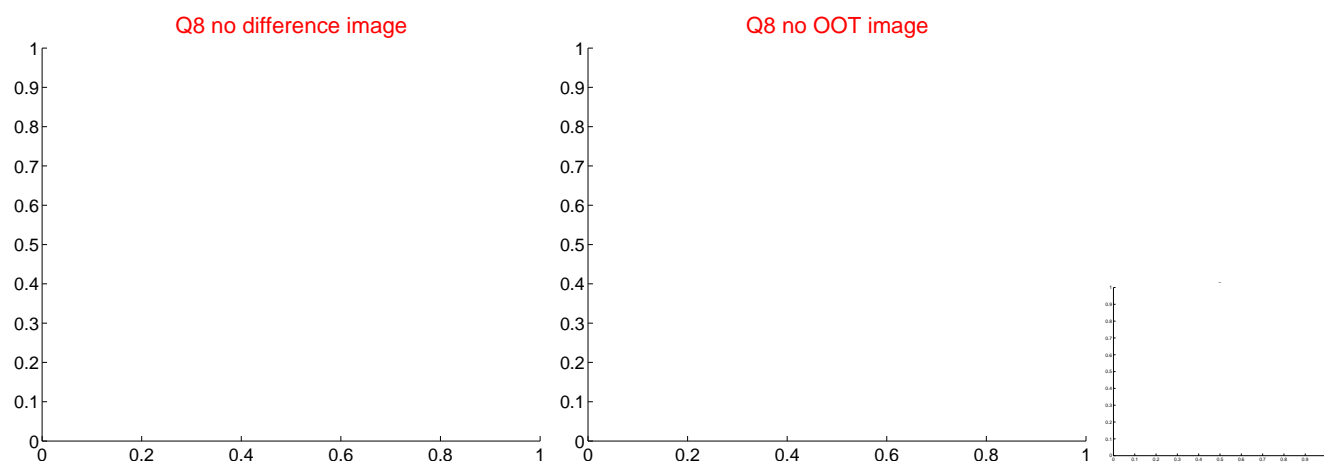
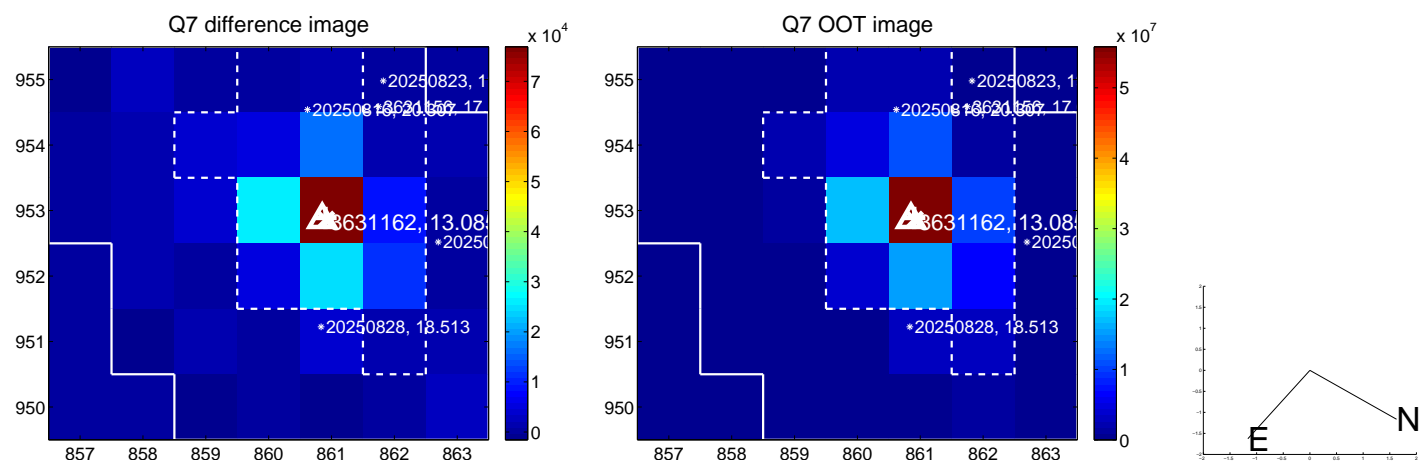
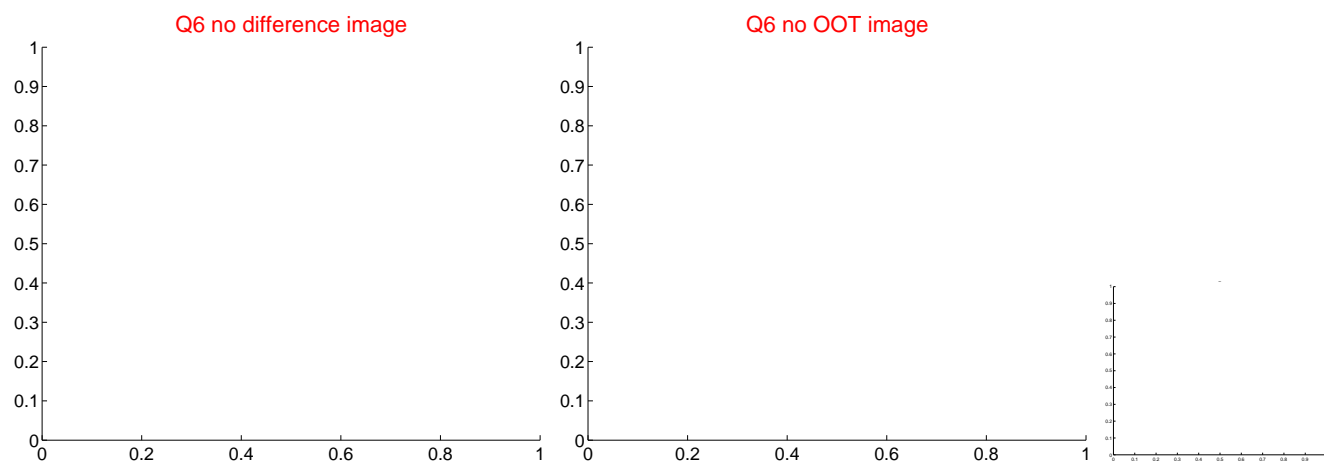
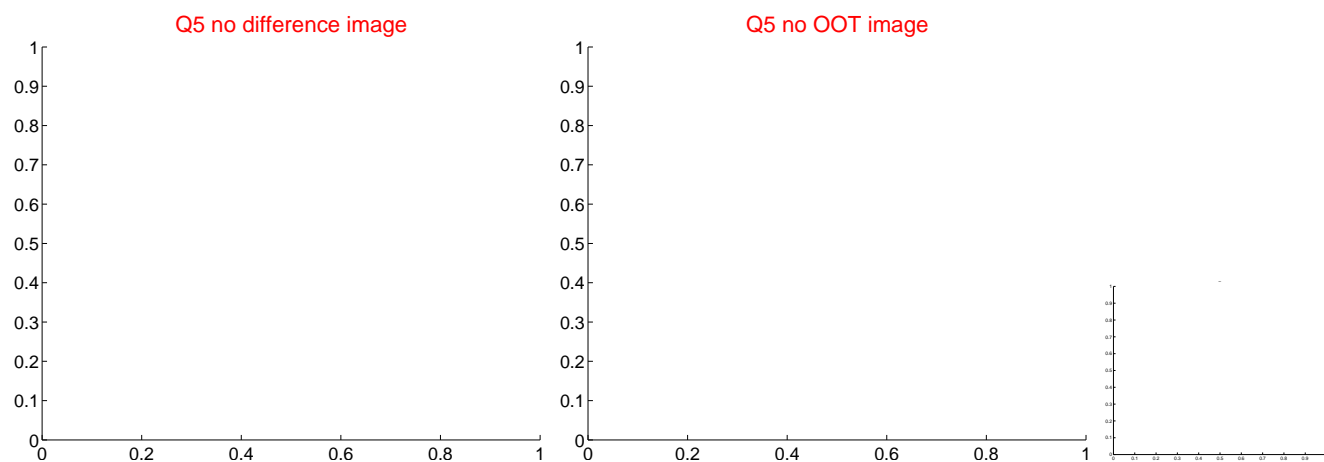


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

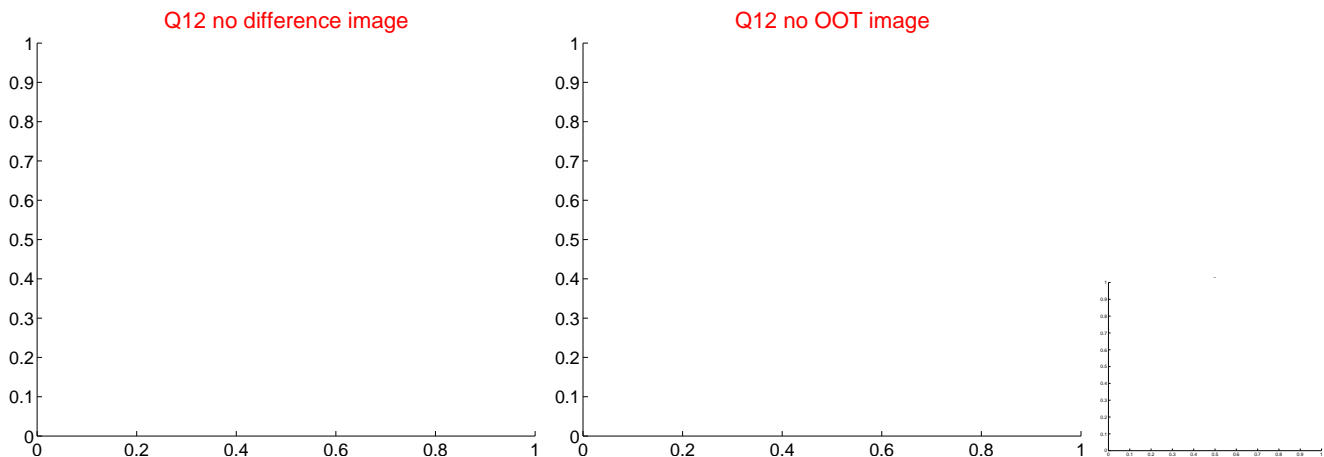
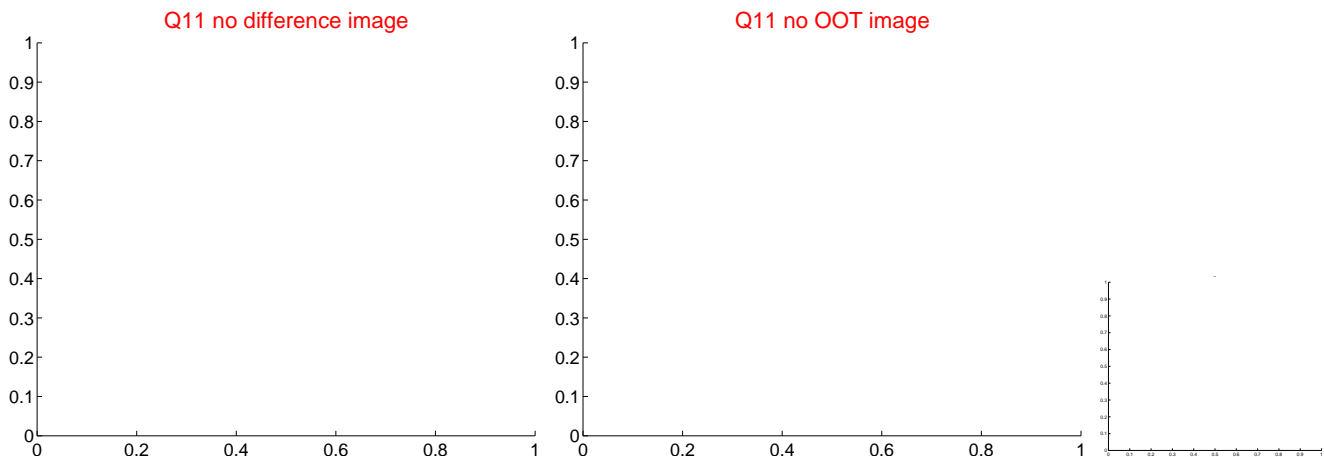
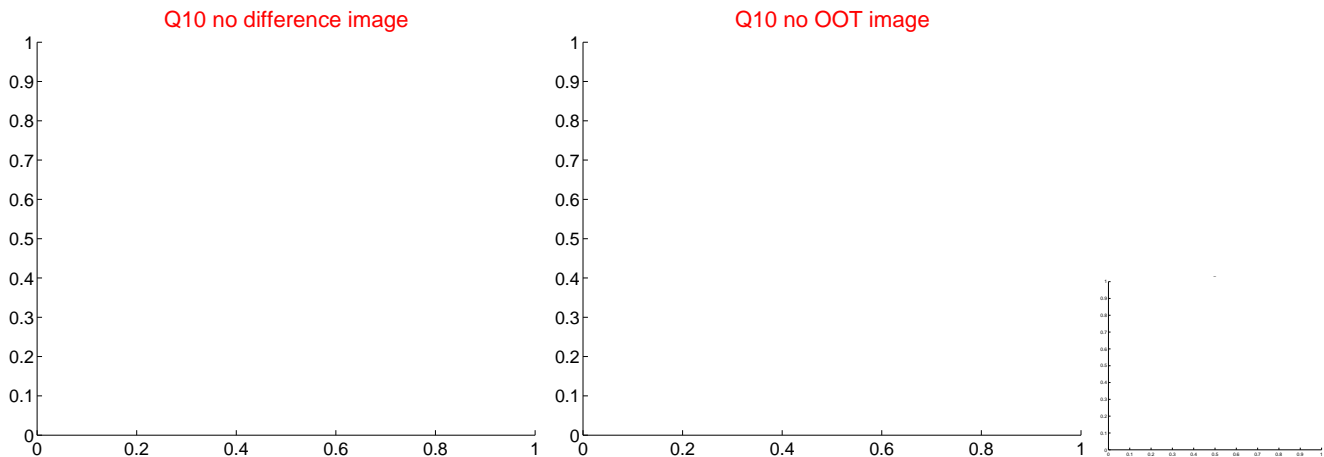
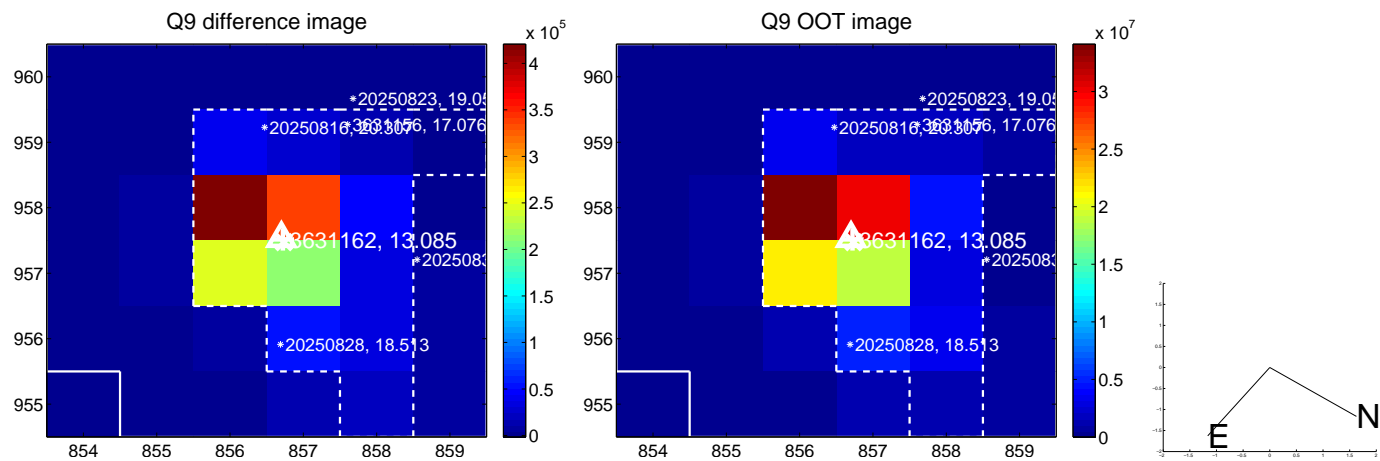
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



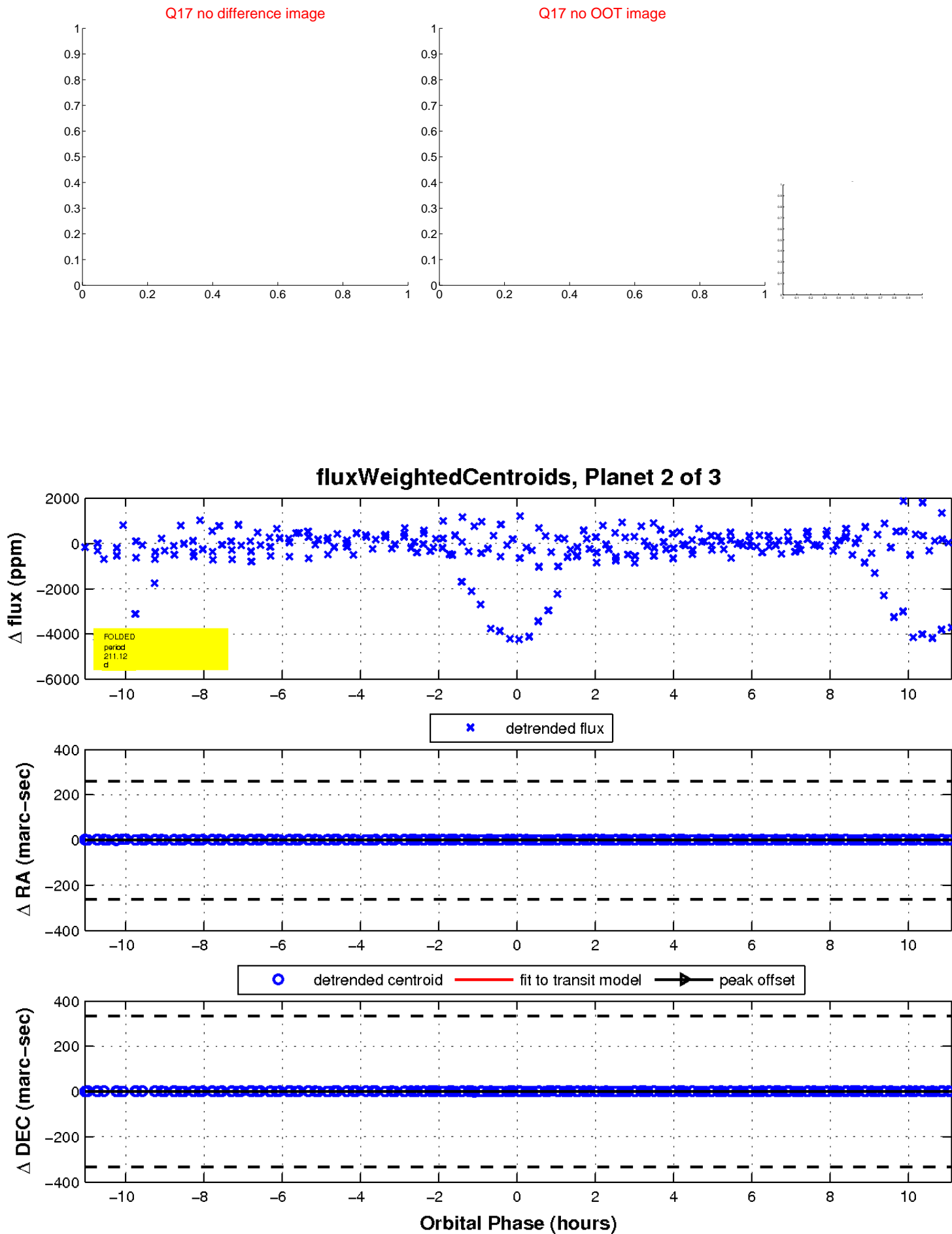
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

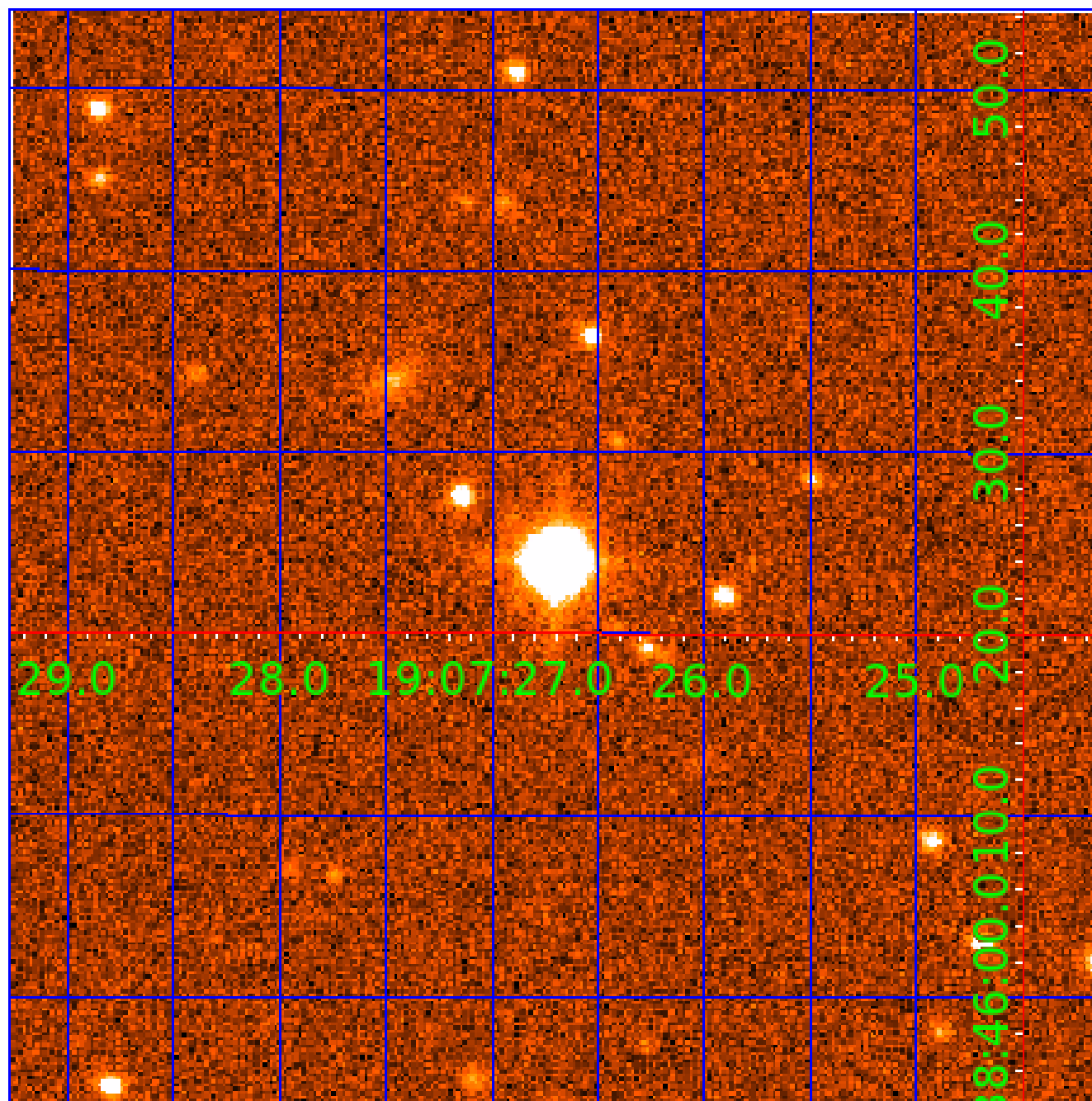


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003631162

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})
003631162-01	OBS	No	1.309842	131.812066	90.0	3.638	20.4	13.0	0.81	5602	0.92	1278.08
003631162-02	OBS	No	211.115697	219.783450	3788.1	3.717	28.7	24.5	0.81	5602	9.27	1.46
003631162-03	OBS	No	150.918595	280.429181	290.4	2.497	32.0	2.3	0.81	5602	1.41	2.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003631162-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
003631162-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003631162-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

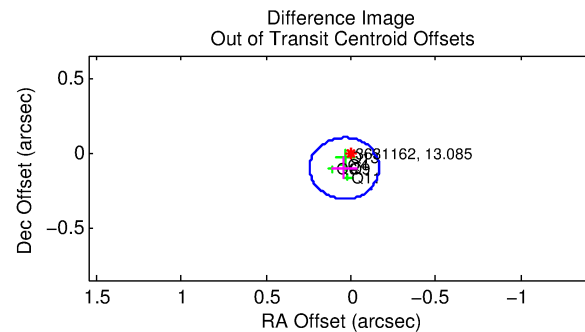
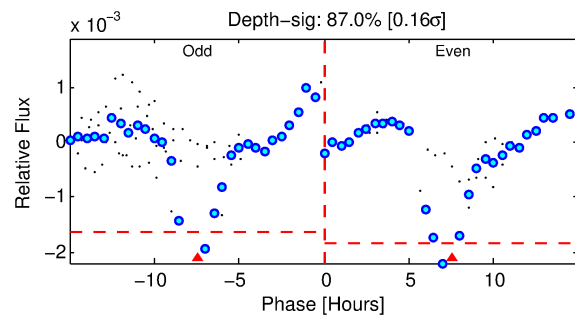
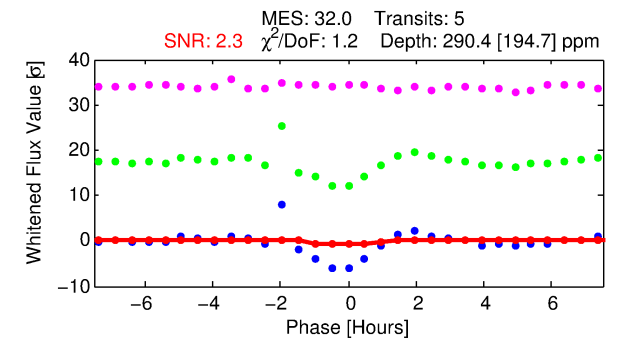
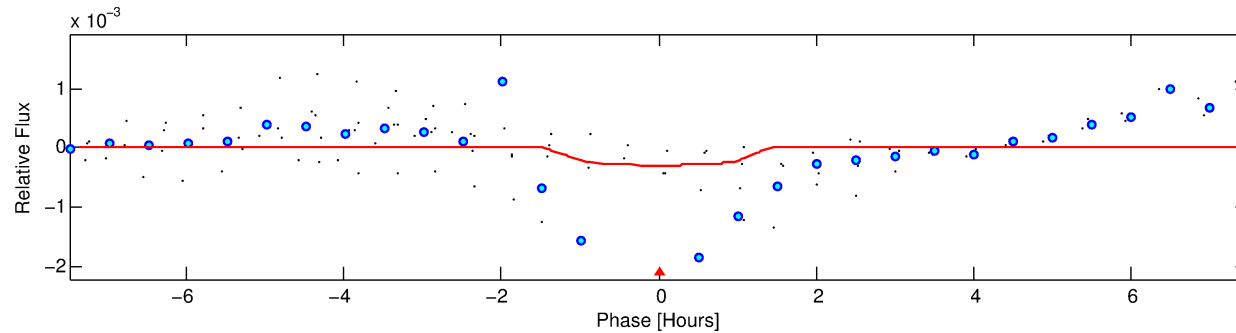
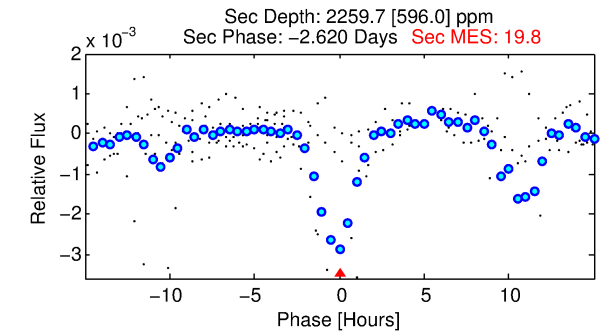
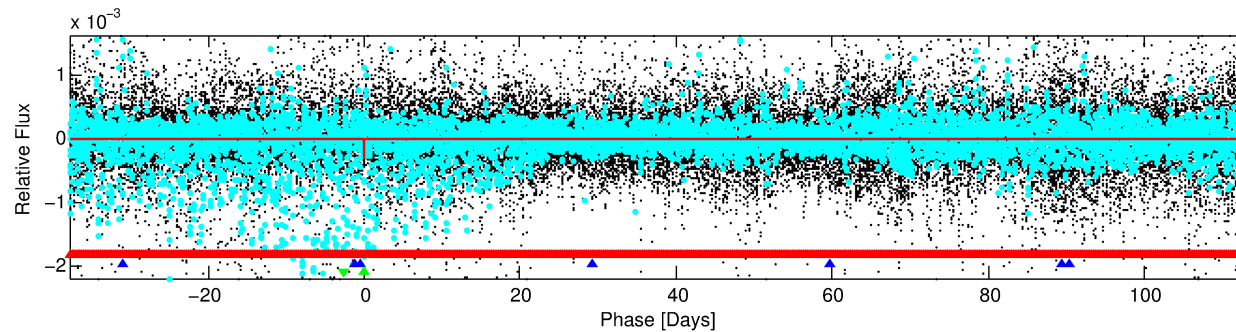
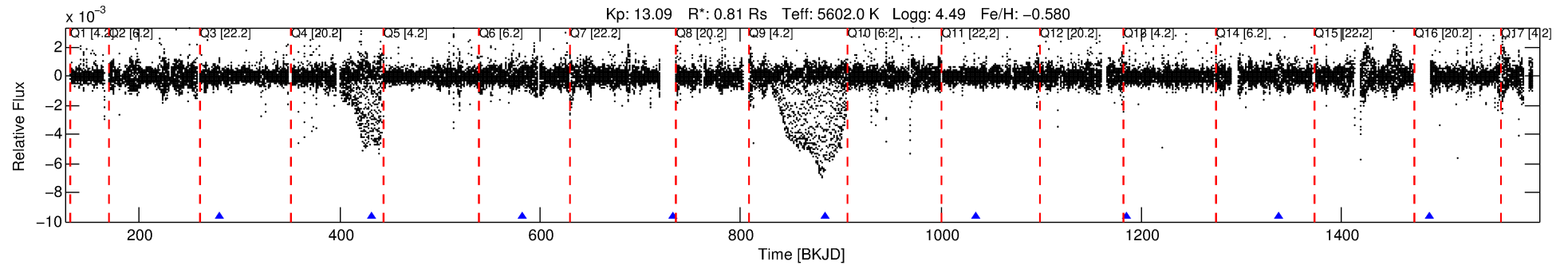
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003631162-03

No Significant Match Found

DV One-Page Summary

KIC: 3631162 Candidate: 3 of 3 Period: 150.919 d



DV Fit Results:

Period = 150.91859 [0.00561] d
Epoch = 280.4292 [0.0242] BKJD
Rp/R* = 0.0160 [0.0915]
a/R* = 410.11 [10619.46]
b = 0.49 [40.11]
Seff = 2.28 [0.64]
Teq = 313 [22] K
Rp = 1.41 [8.06] Re
a = 0.5021 [0.0825] AU
Ag = 157919.88 [1806822.35] [0.09]
Teffp = 9657 [27618] K [0.34 σ]

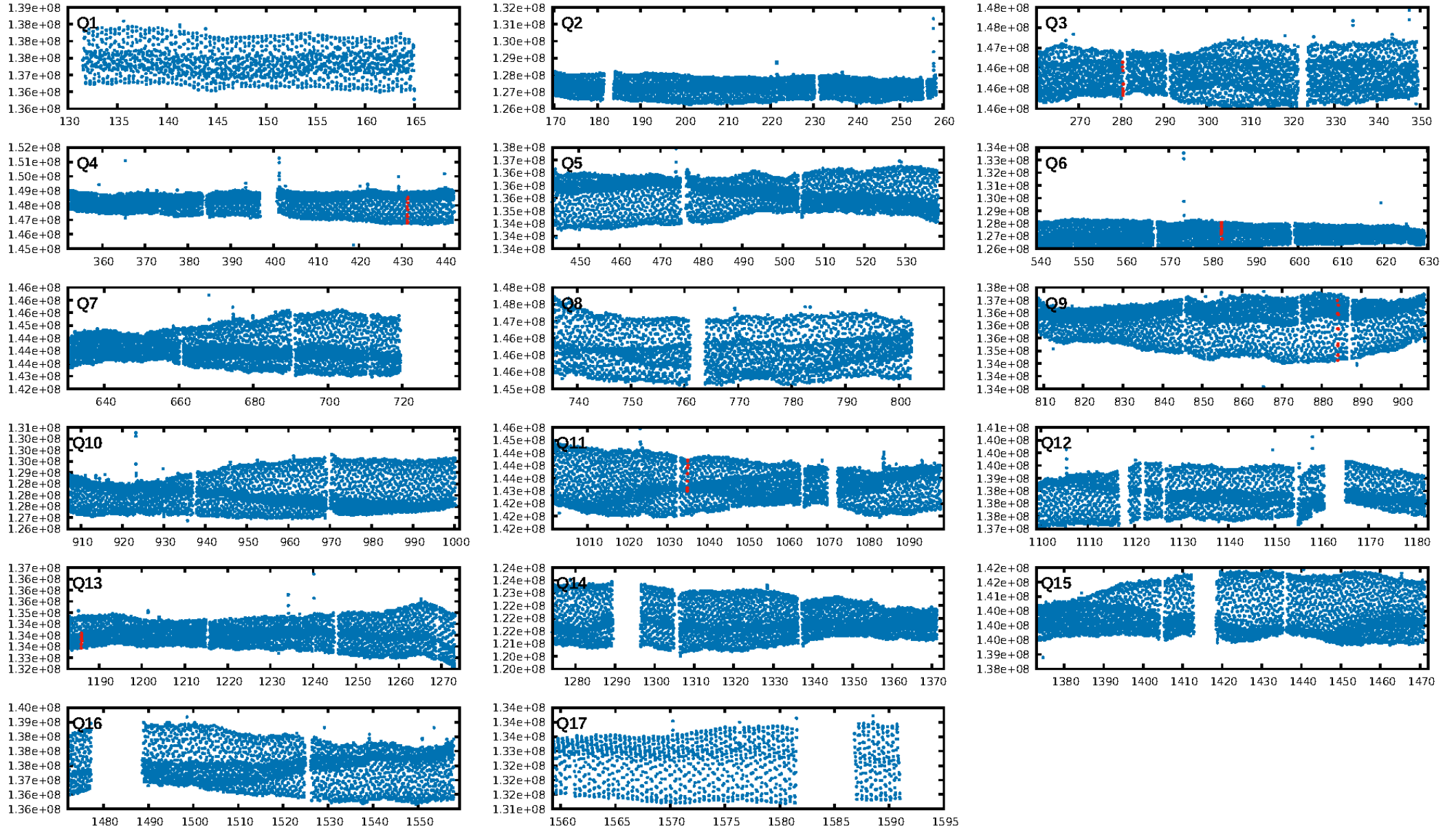
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [813.71 σ]
LongPeriod-sig: 100.0% [322.63 σ]
ModelChiSquare2-sig: 10.4%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.7324
Centroid-sig: 46.6%
Centroid-so: 1.239 arcsec [0.96 σ]
OotOffset-rm: 0.112 arcsec [1.64 σ]
OotOffset-st: 1/1/1/2 [5]
KicOffset-rm: 0.218 arcsec [2.96 σ]
KicOffset-st: 1/1/1/2 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.60 [3/5]

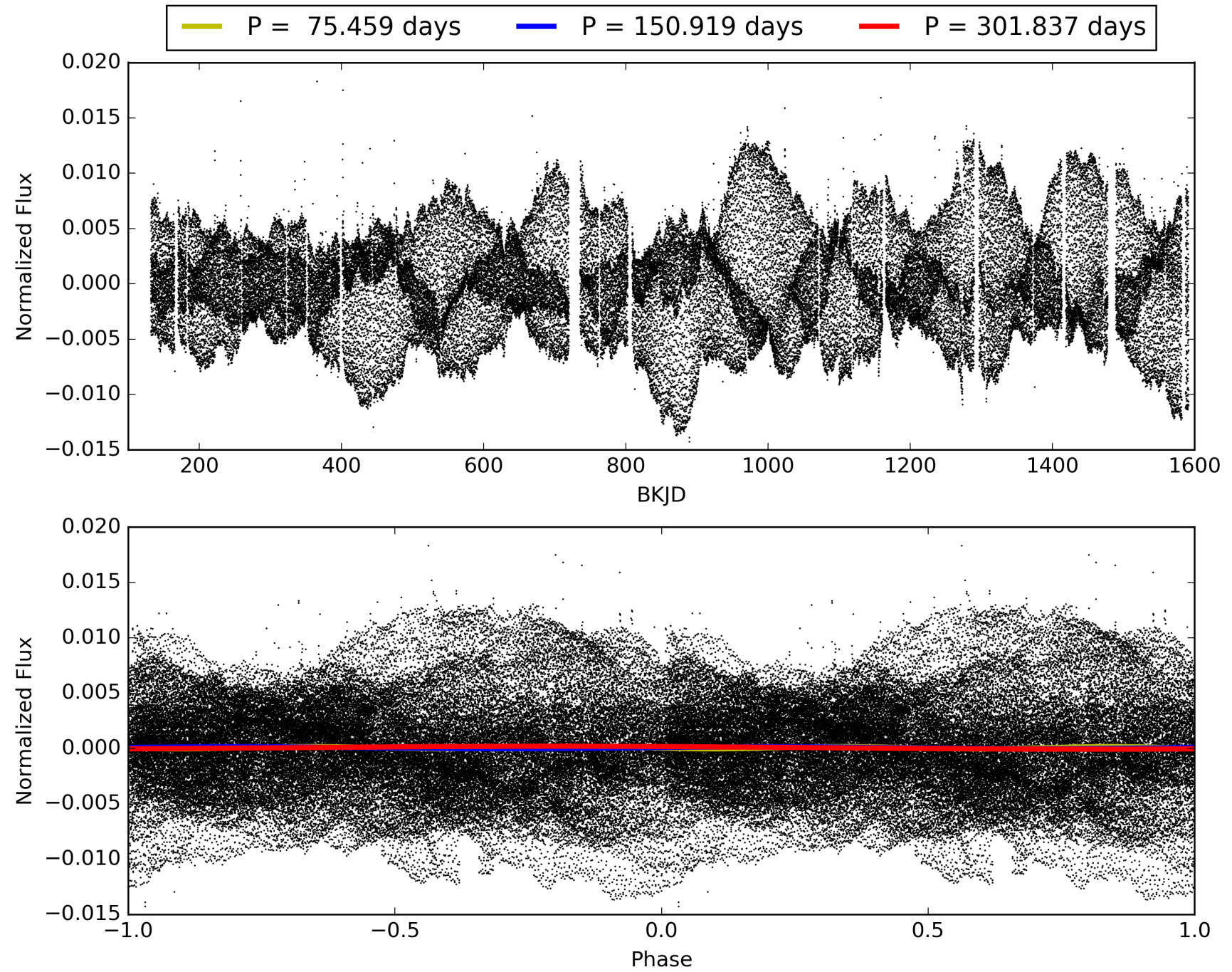
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:17:19 Z

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

TCE 003631162-03, PDC Light Curves

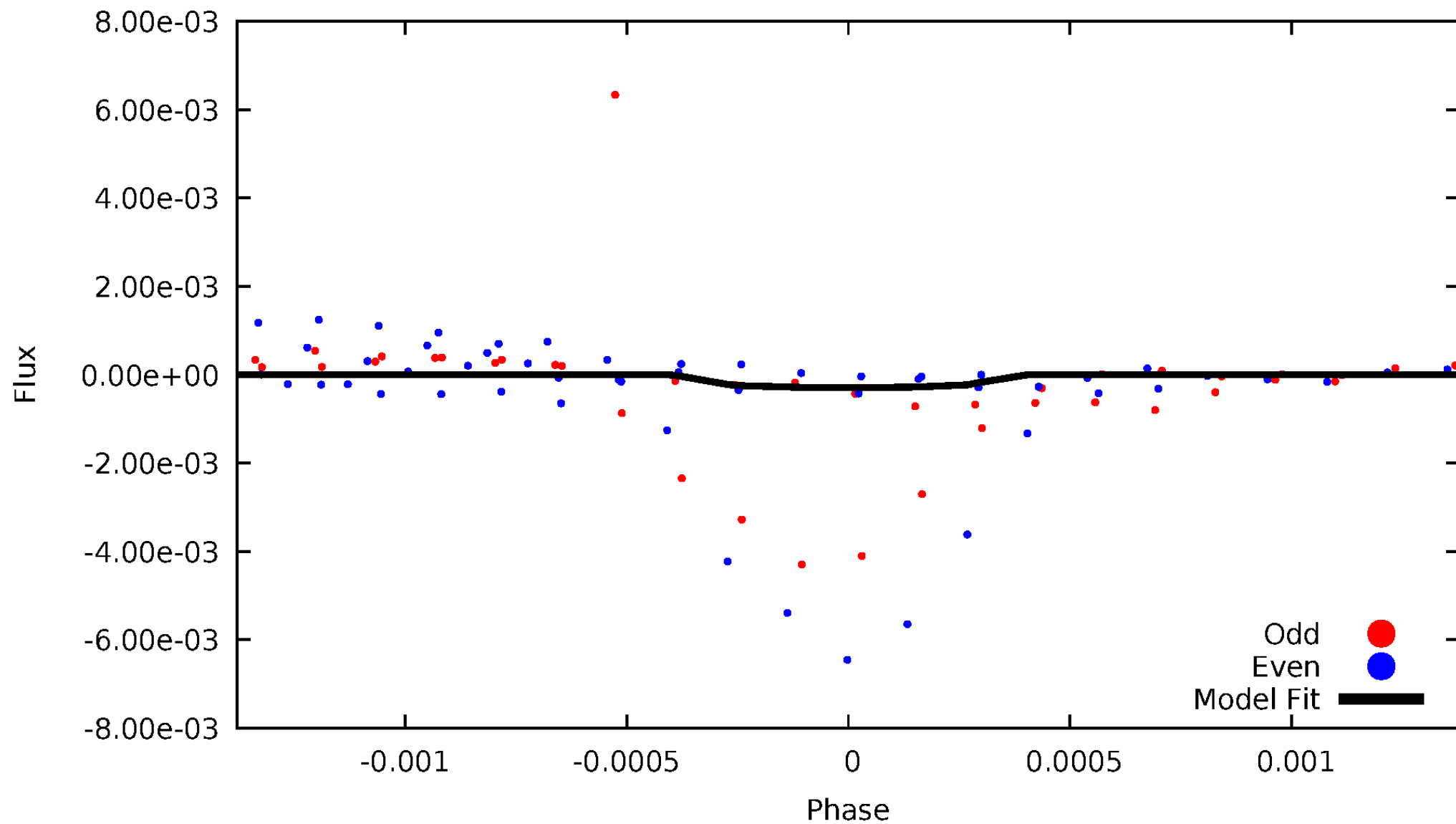


TCE 003631162-03



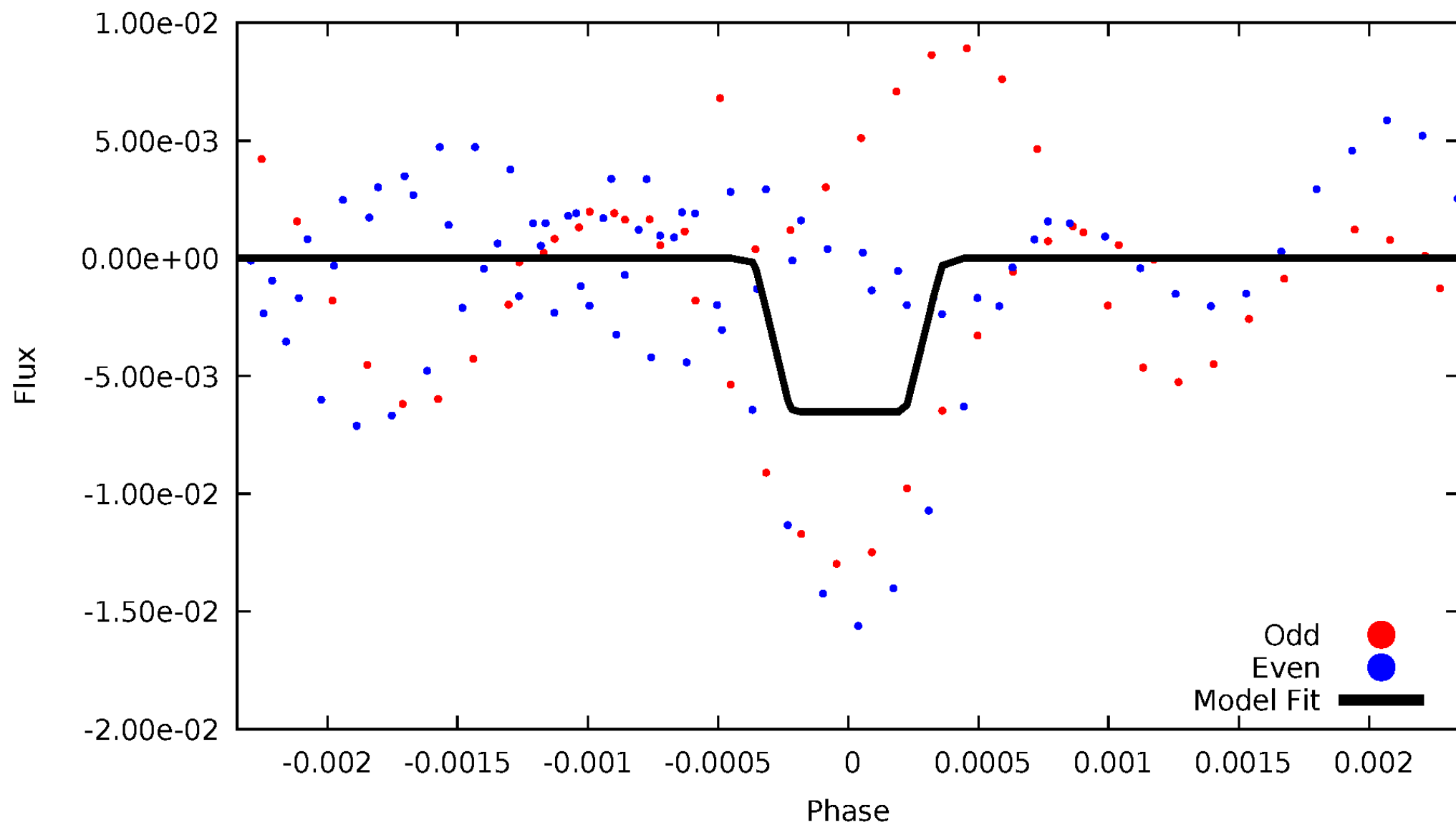
DV Odd/Even

TCE 003631162-03



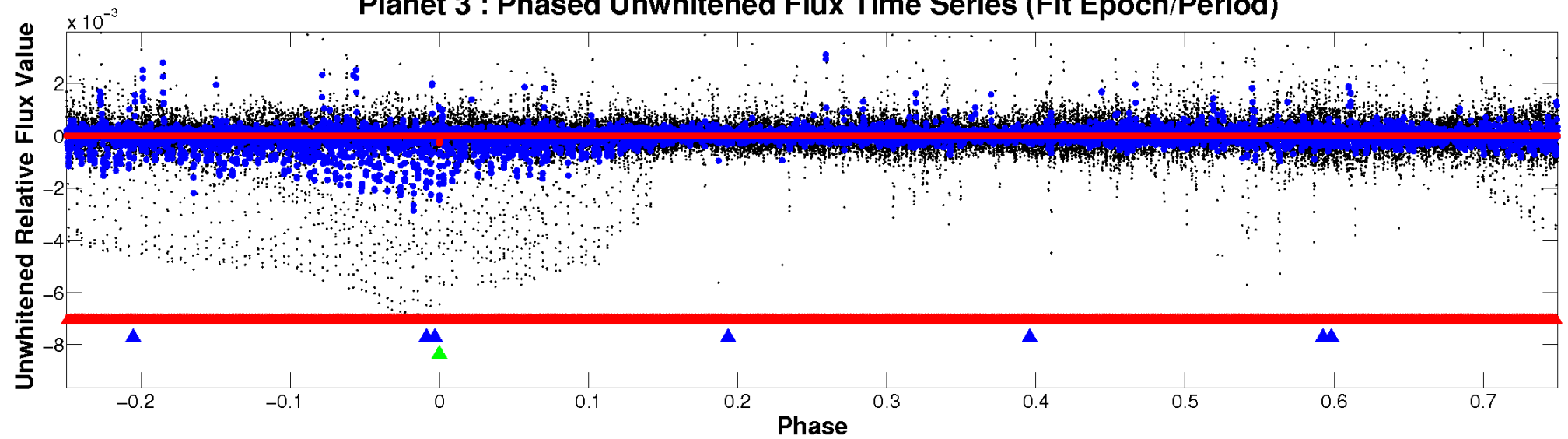
ALT Odd/Even

TCE 003631162-03

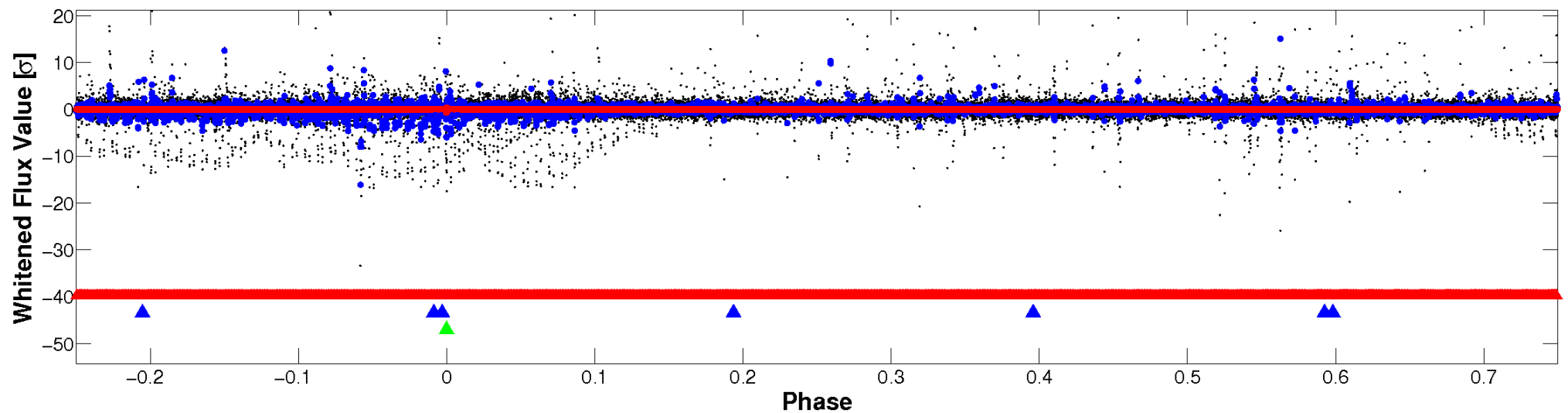


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

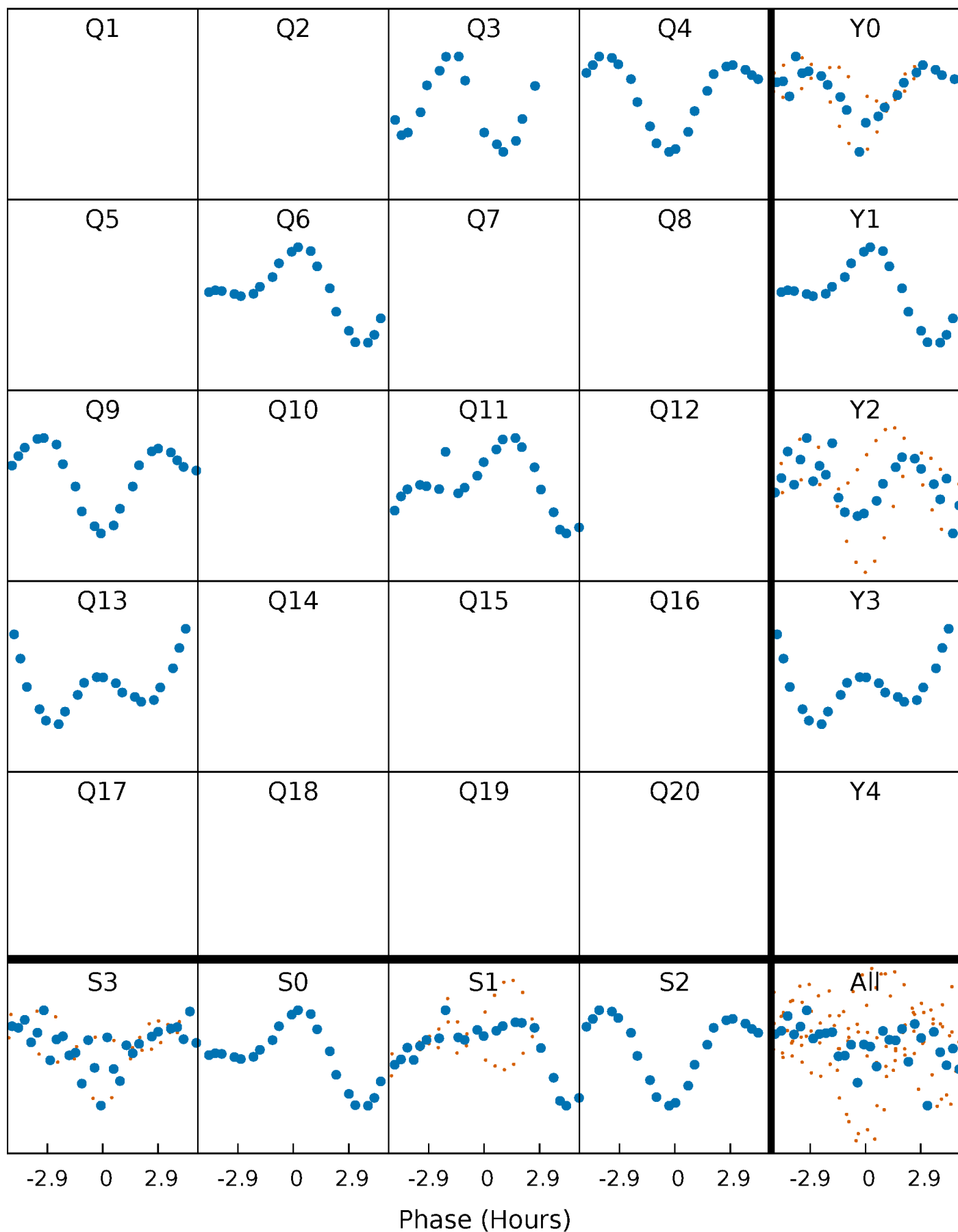


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



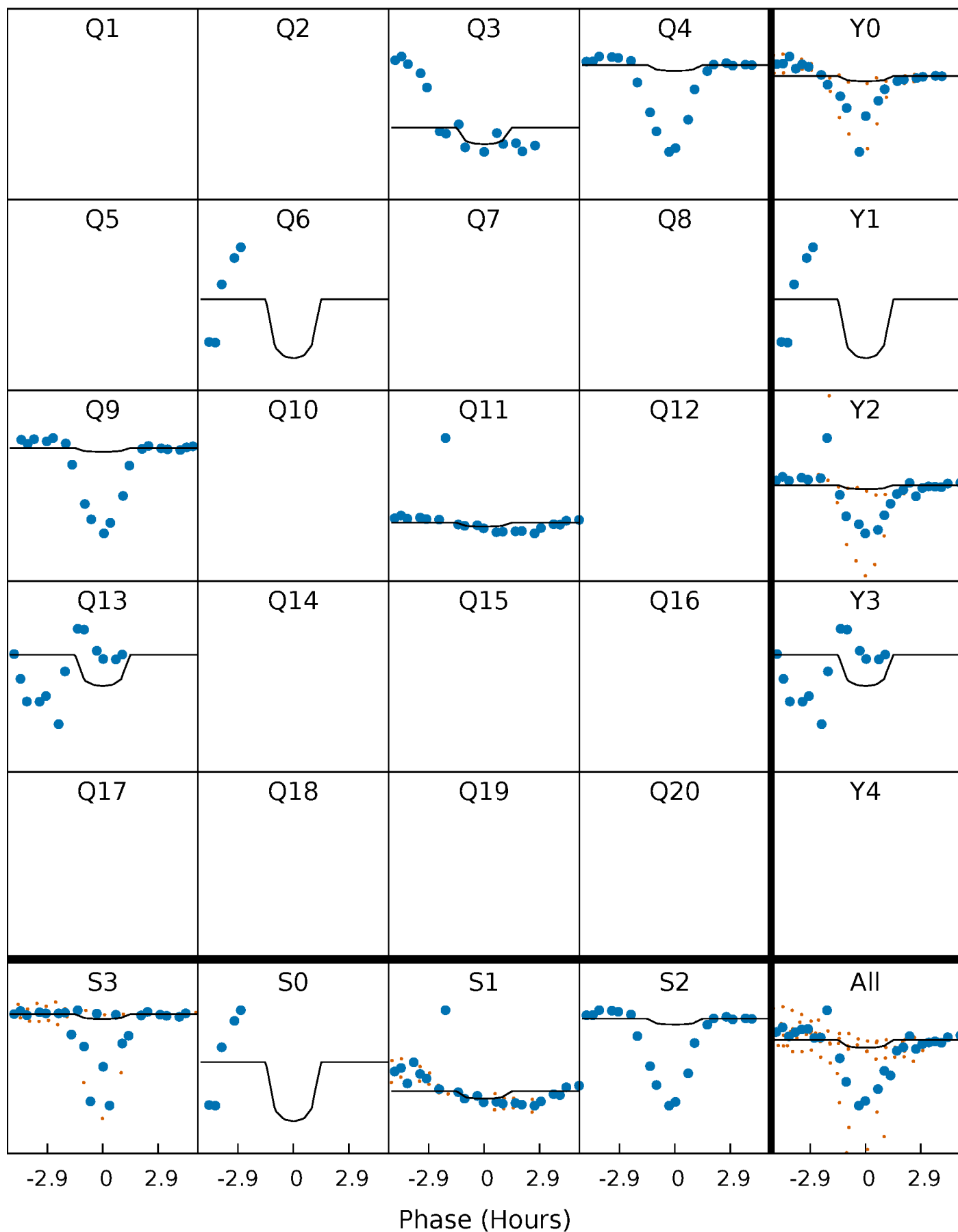
PDC Quarter-Phased Transit Curves

TCE 003631162-03 $P=150.918595$ Days $T_0=280.429181$ (BKJD)



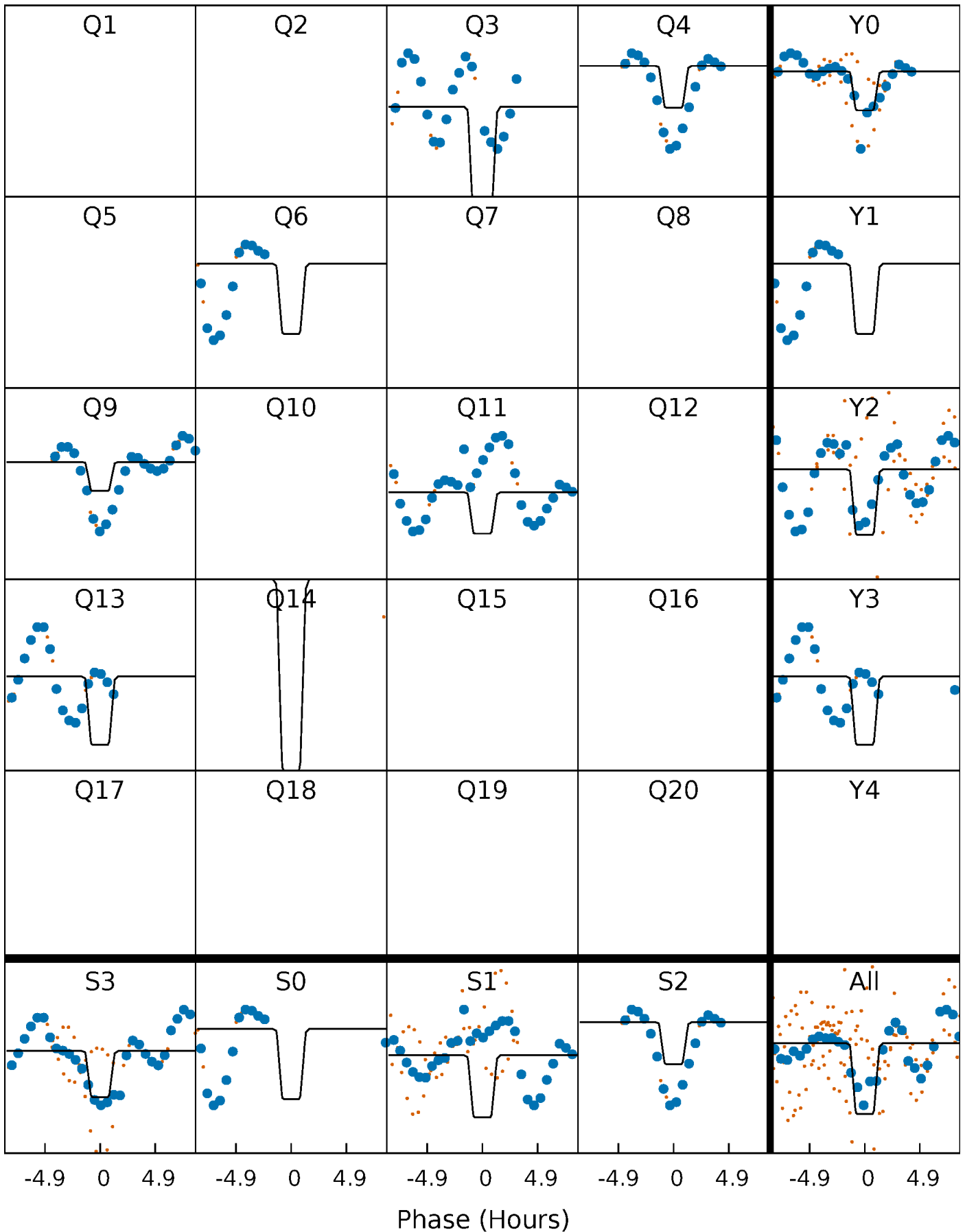
DV Quarter-Phased Transit Curves

TCE 003631162-03 $P=150.918595$ Days $T_0=280.429181$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

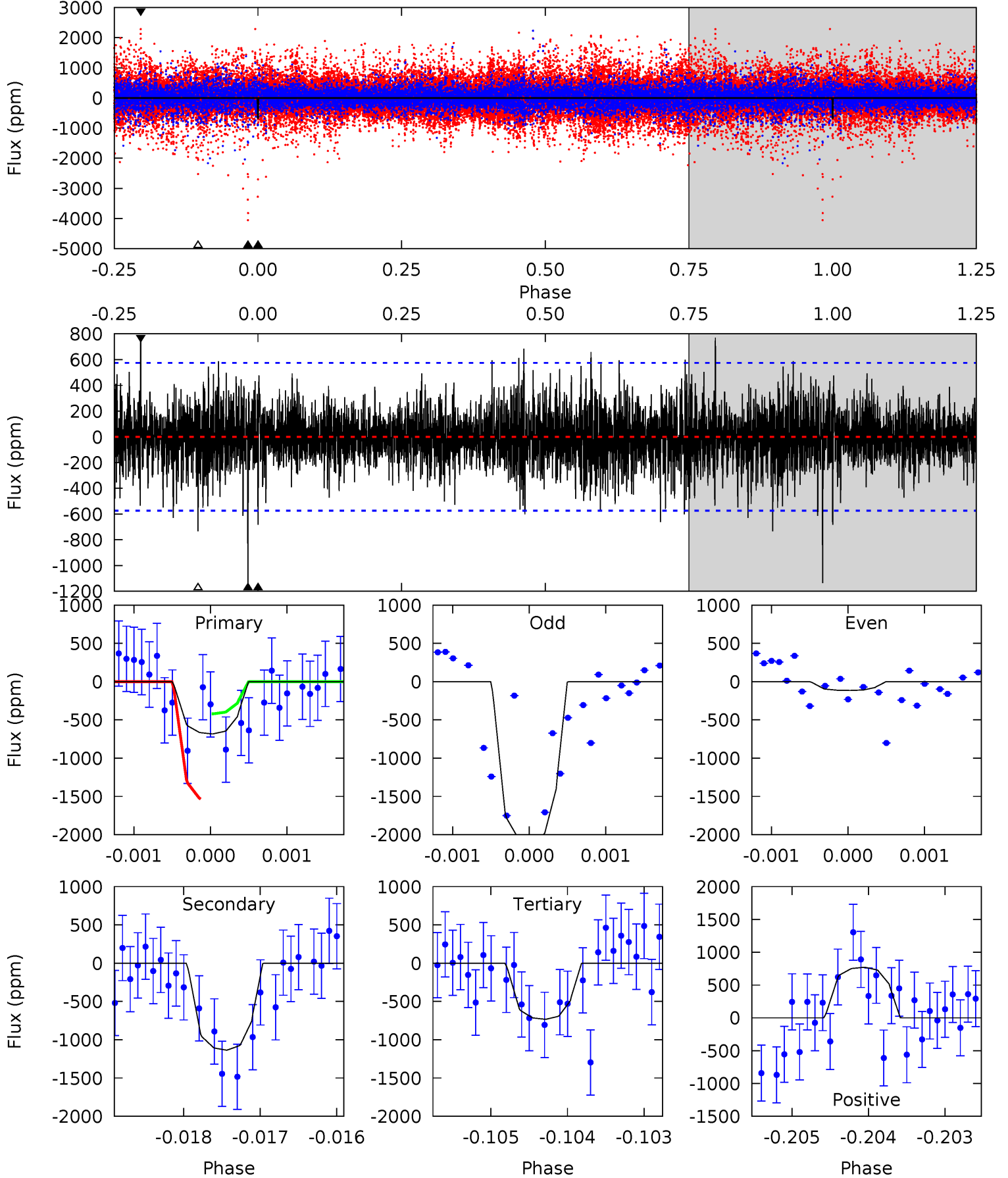
TCE 003631162-03 P=150.919584 Days $T_0=280.419161$ (BKJD)



DV Model-Shift Uniqueness Test

003631162-03, P = 150.918595 Days, E = 129.510586 Days

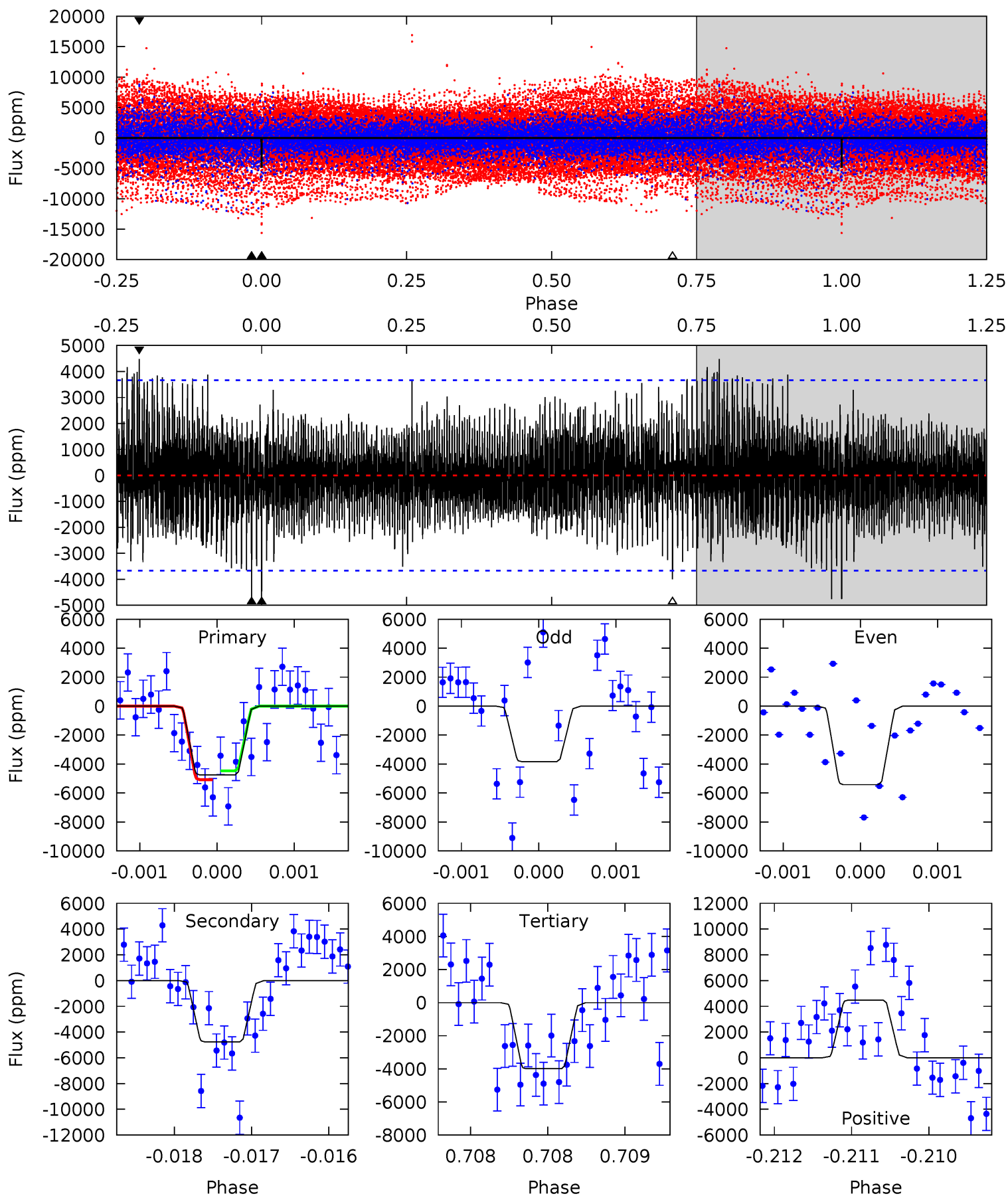
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.52	10.8	7.00	7.36	5.49	3.35	1.63	-0.47	-0.84	3.85	3.48	9.56	4.21	0.40	0



Alt Model-Shift Uniqueness Test

003631162-03, P = 150.919584 Days, E = 129.499577 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.12	7.12	5.98	6.70	5.49	3.35	1.73	1.14	0.41	1.14	0.42	1.17	16.6	0.48	0.46



Stellar Parameters For KIC 003631162

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5602^{+195}_{-195}	$4.494^{+0.112}_{-0.138}$	$-0.580^{+0.300}_{-0.300}$	$0.807^{+0.152}_{-0.114}$	$0.739^{+0.108}_{-0.046}$	$1.983^{+1.041}_{-0.734}$
	+3%/-3%	+2%/-3%	+52%/-52%	+19%/-14%	+15%/-6%	+52%/-37%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003631162-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1135 ± 105	$6.08^{+6.08}_{-4.39}$	440^{+25}_{-24}	4211^{+3248}_{-896}	4288^{+51913}_{-3206}
Alt.	-4757 ± 668	$8.59^{+7.96}_{-5.40}$	440^{+25}_{-25}	4820^{+3062}_{-997}	9016^{+57305}_{-6515}

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 $A_{obs} \gg 1.0$

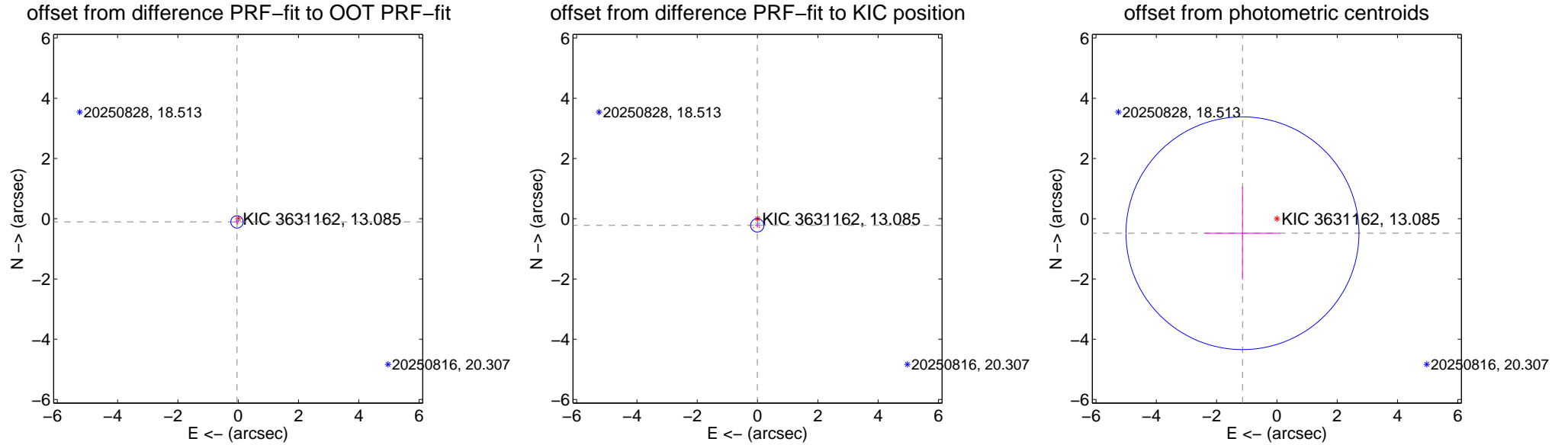
DV Centroid Data

Supplemental centroid analysis for 003631162-03. Kepler magnitude: 13.09. Transit SNR 2.28

There are 3 quarters with good PRF difference image offsets

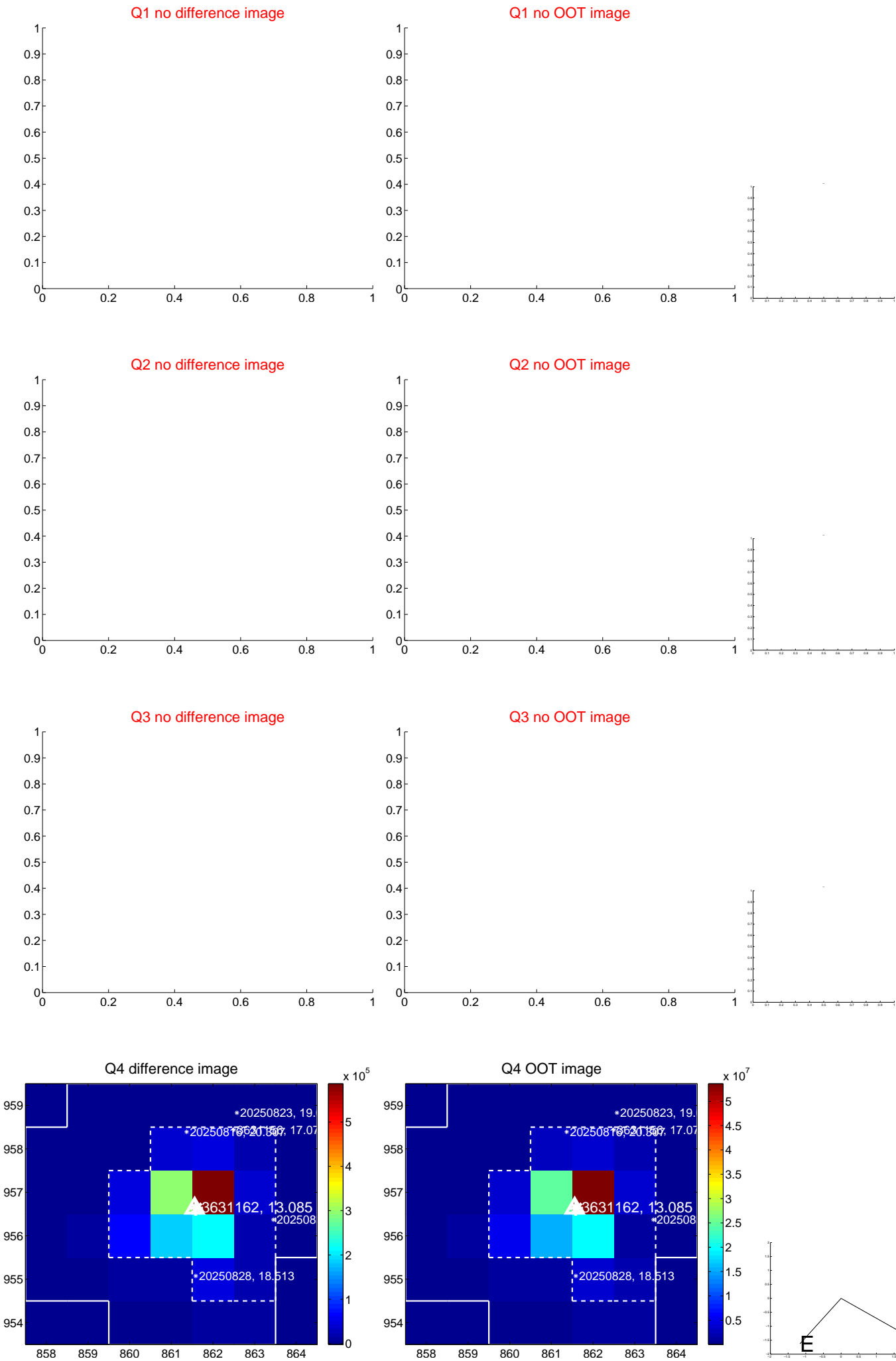
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.112 ± 0.068	1.64	0.040 ± 0.068	-0.104 ± 0.068
PRF-fit source offset from KIC position	0.218 ± 0.074	2.96	0.008 ± 0.084	-0.218 ± 0.074
photometric centroid source offset	1.24 ± 1.29	0.96	1.14 ± 1.24	-0.48 ± 1.54

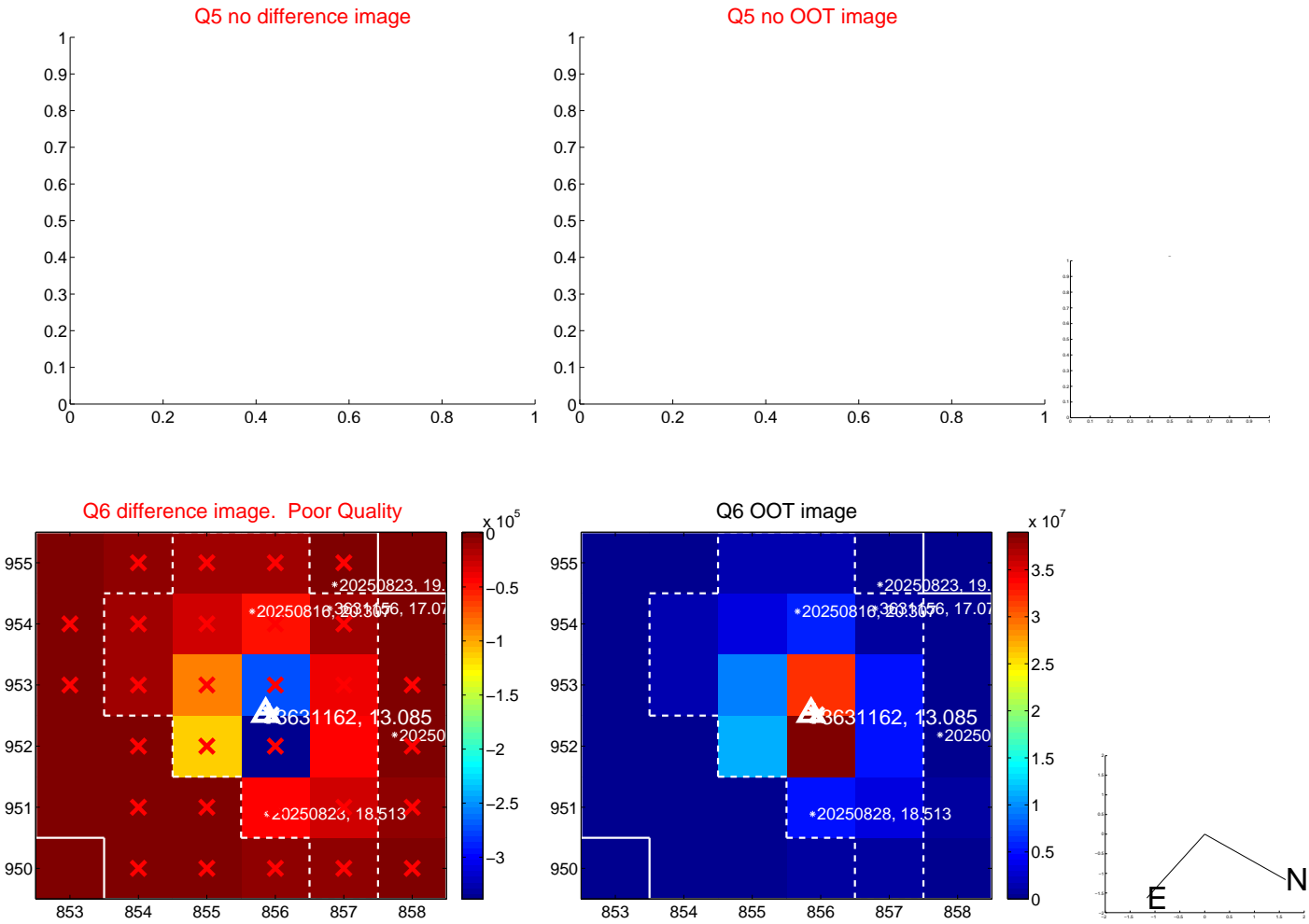


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

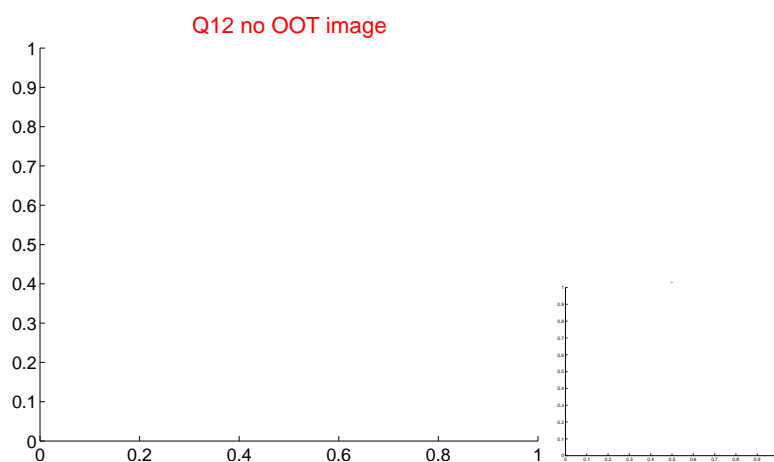
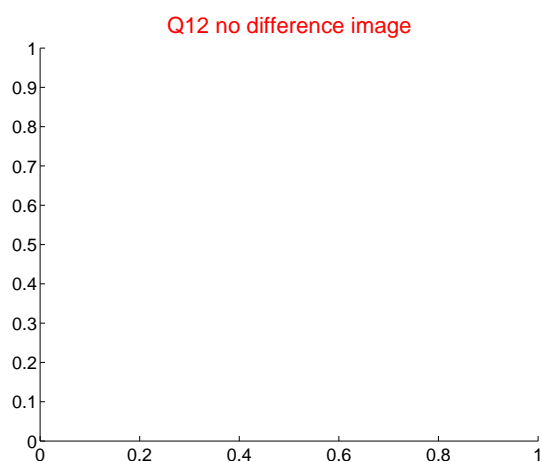
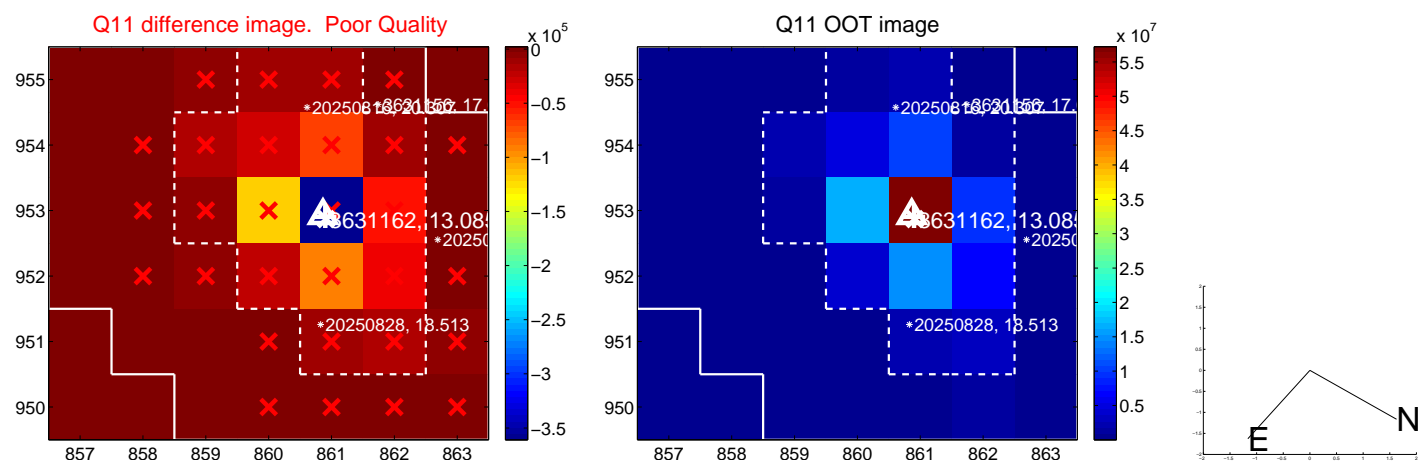
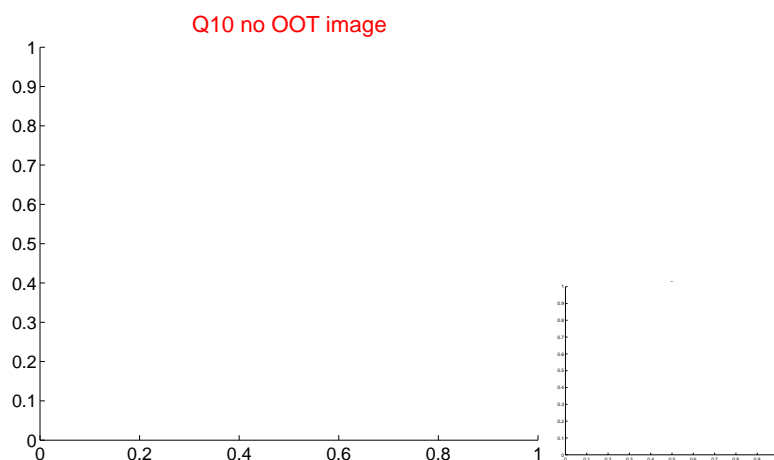
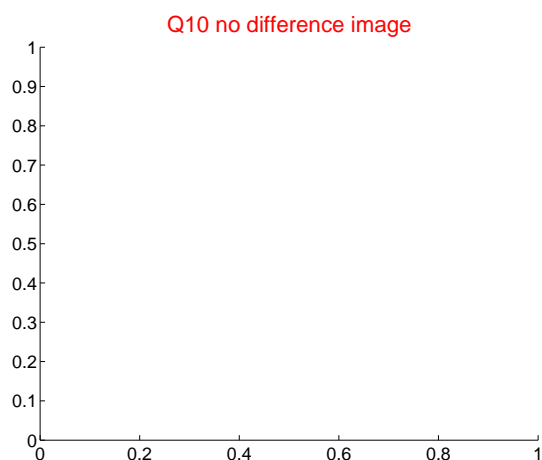
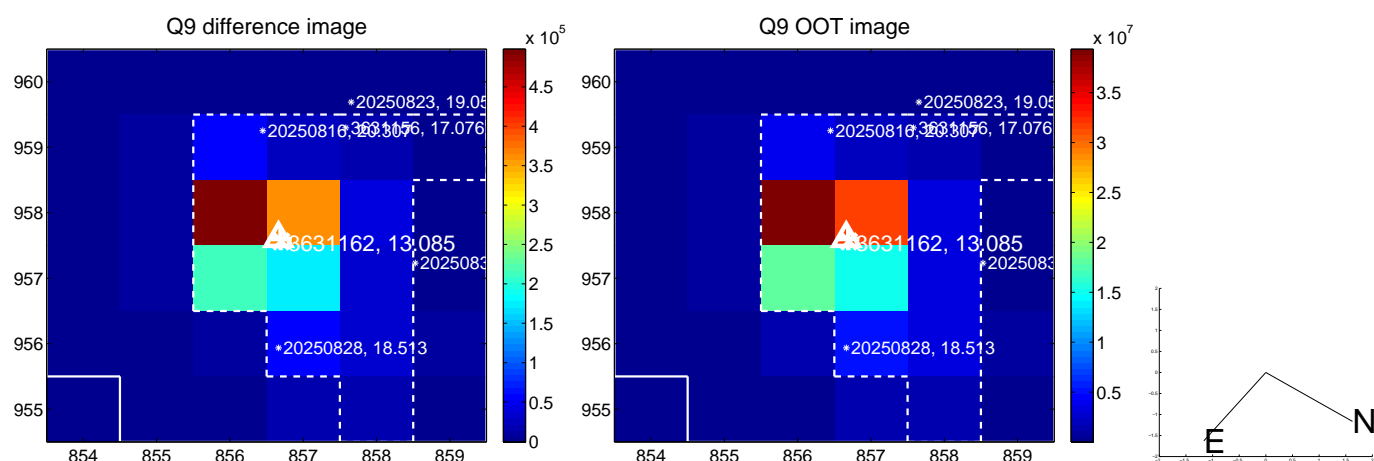
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



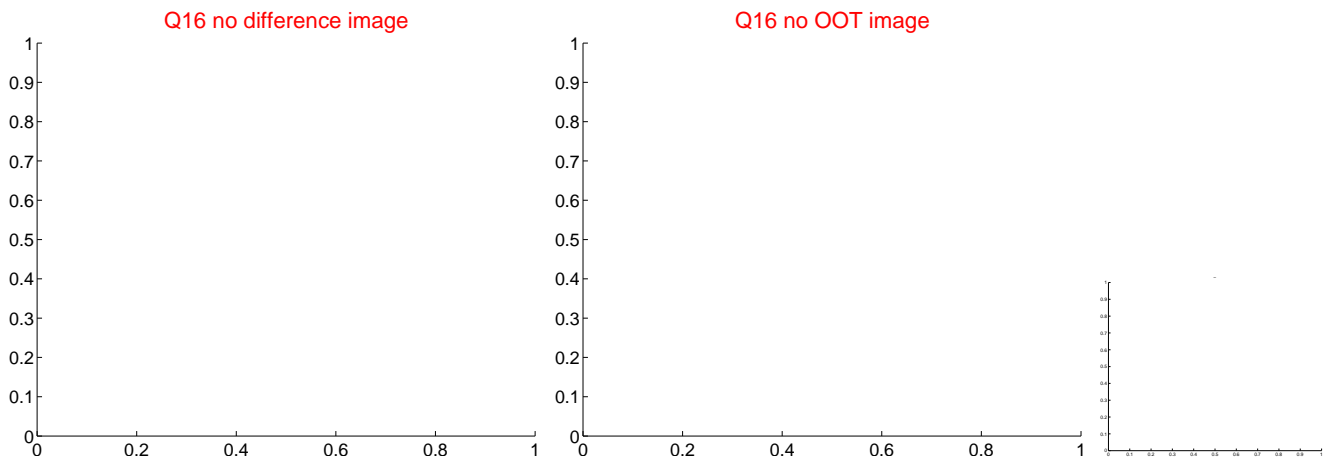
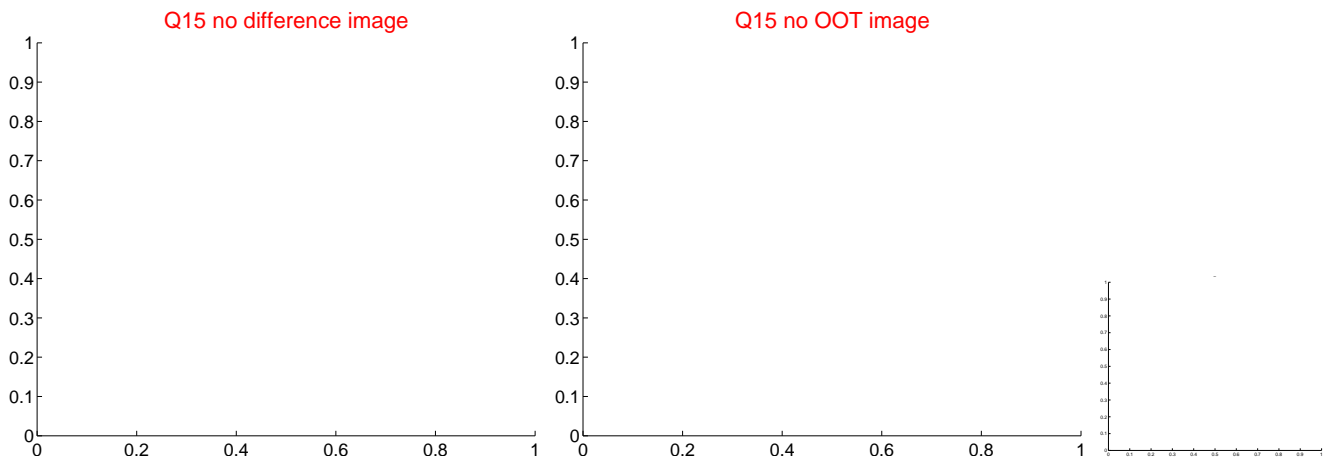
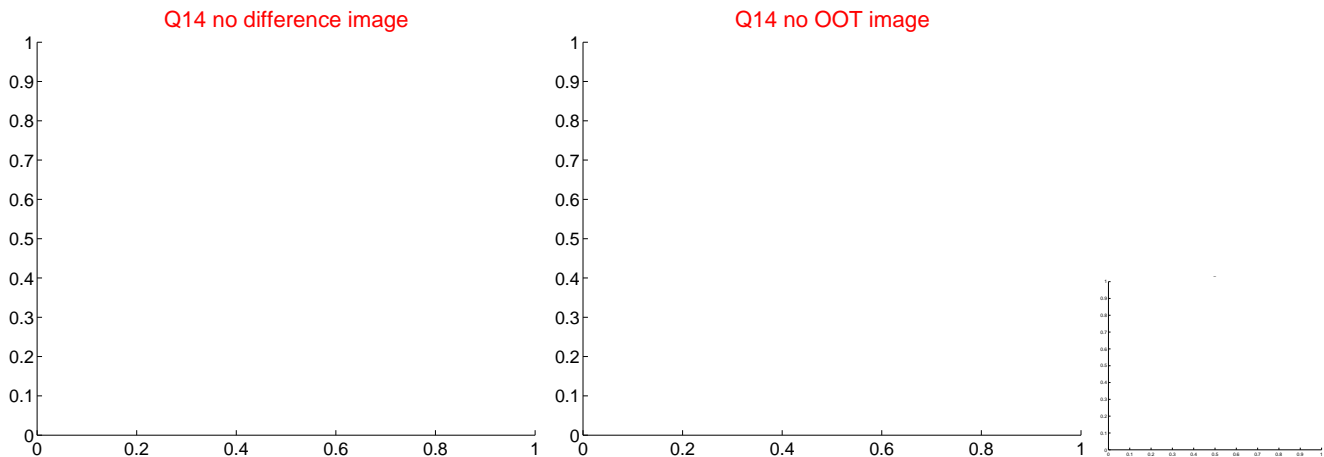
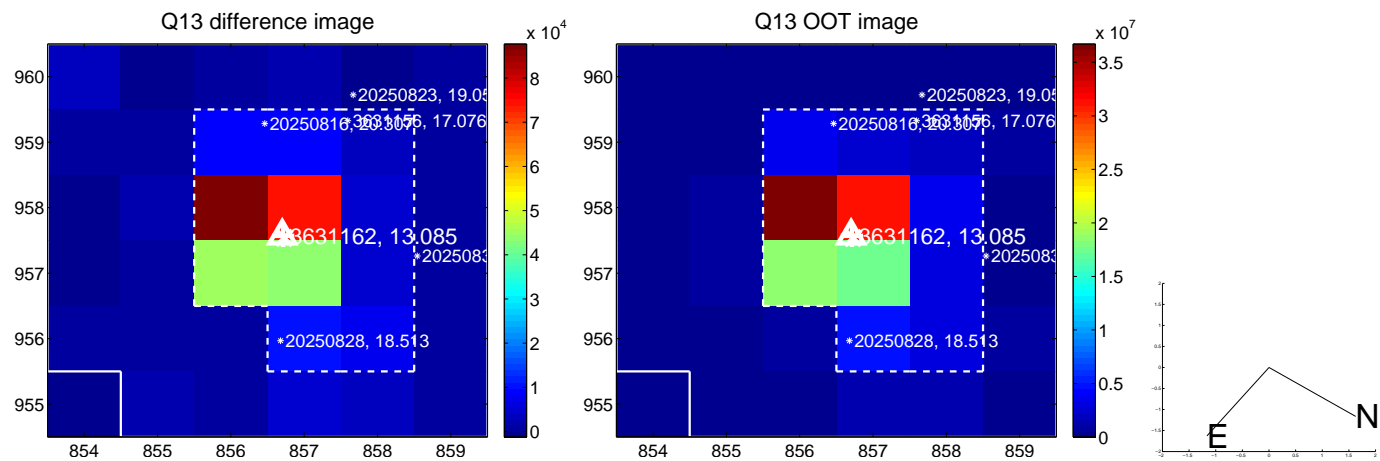
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



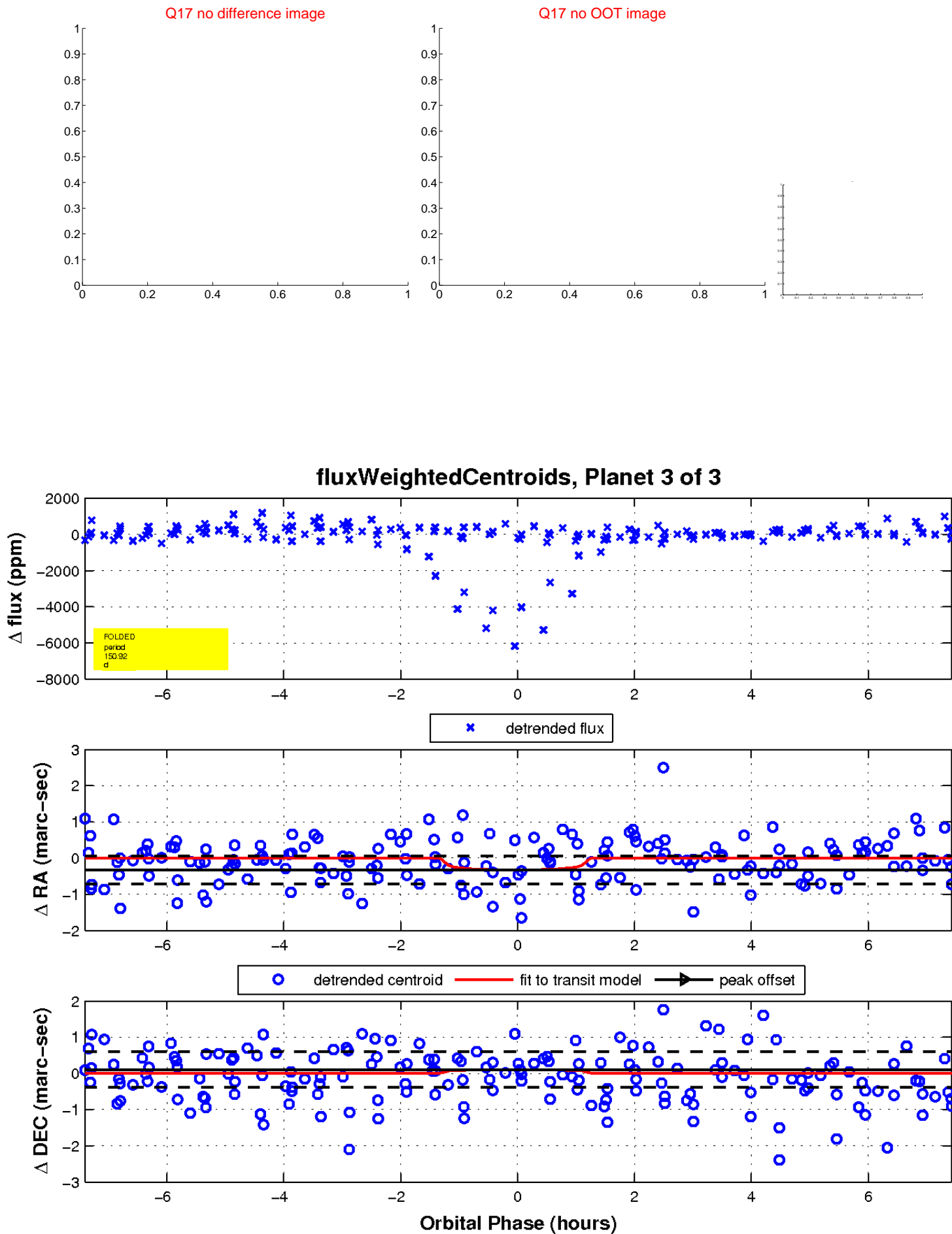
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

