

KIC 004349043

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})
004349043-01	OBS	No	416.904140	359.927795	2267.8	3.893	16.7	8.0	0.74	4575	3.64	0.22
004349043-02	OBS	No	560.130530	431.743759	1954.1	5.468	13.2	6.4	0.74	4575	3.14	0.15
004349043-03	OBS	No	453.625055	181.796037	1722.4	4.181	12.7	5.6	0.74	4575	3.86	0.20
004349043-05	OBS	No	382.184441	242.107053	1891.9	3.000	11.9	-1.0	0.74	4575	3.06	0.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004349043-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004349043-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004349043-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
004349043-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

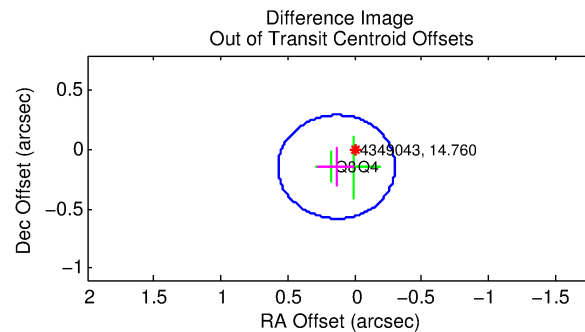
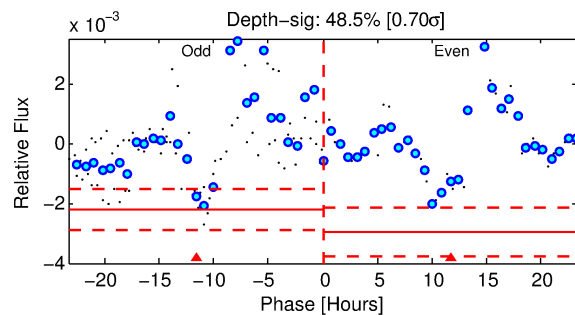
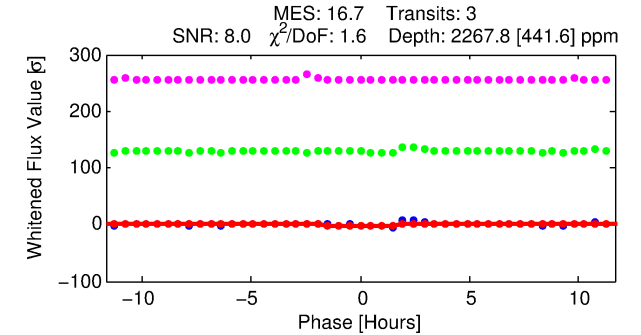
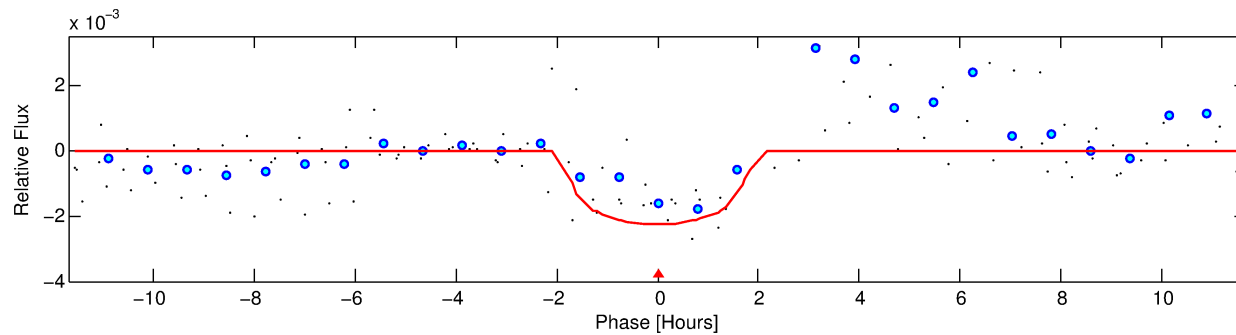
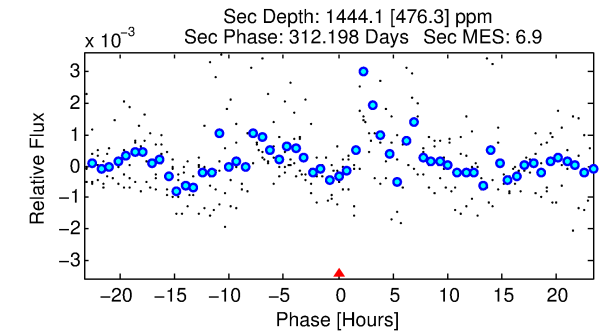
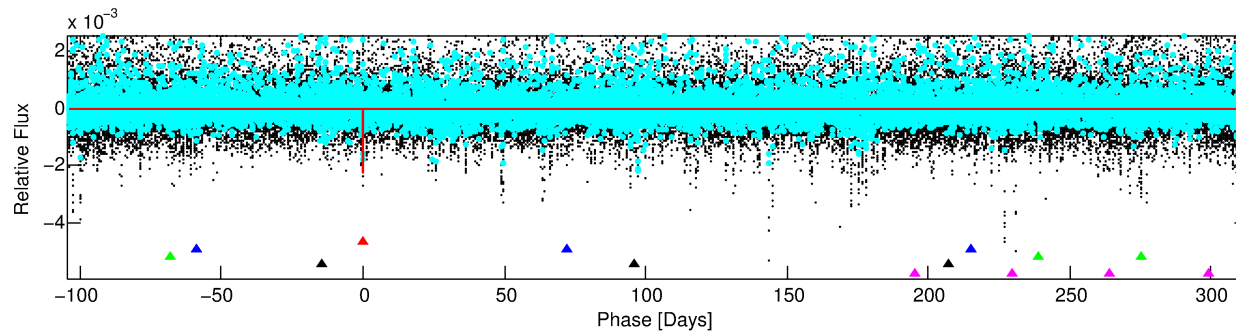
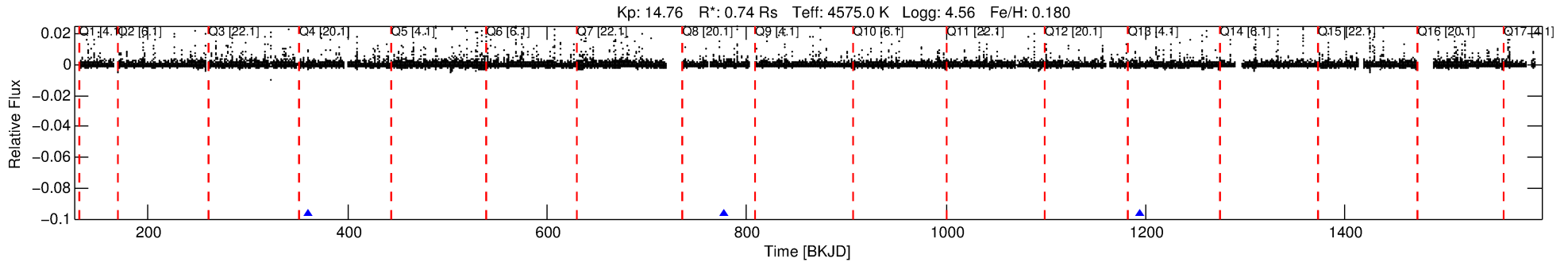
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004349043-01

No Significant Match Found

DV One-Page Summary

KIC: 4349043 Candidate: 1 of 5 Period: 416.904 d



DV Fit Results:

Period = 416.90414 [0.00605] d
Epoch = 359.9278 [0.0071] BKJD
Rp/R* = 0.0453 [0.0525]
a/R* = 684.89 [2365.58]
b = 0.63 [3.45]
Seff = 0.22 [0.04]
Teq = 175 [7] K
Rp = 3.64 [4.23] Re
a = 0.9818 [0.0712] AU
Ag = 57662.16 [135049.52] [0.43 σ]
Teffp = 4190 [2454] K [1.64 σ]

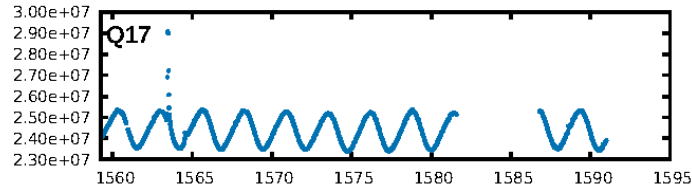
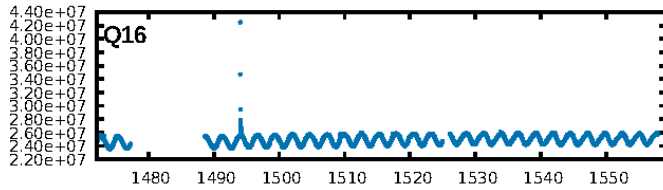
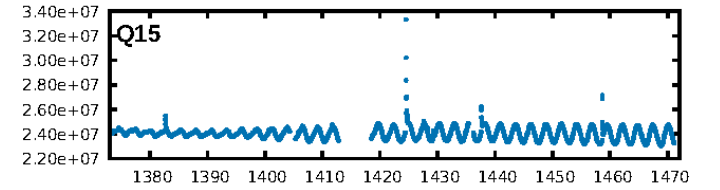
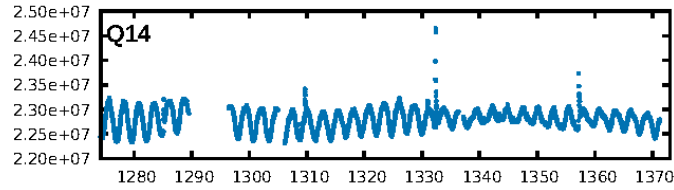
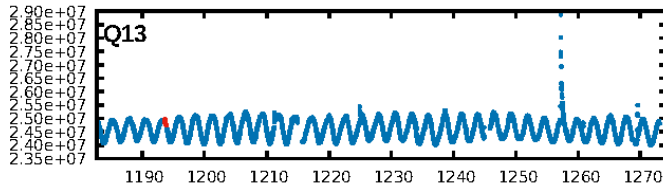
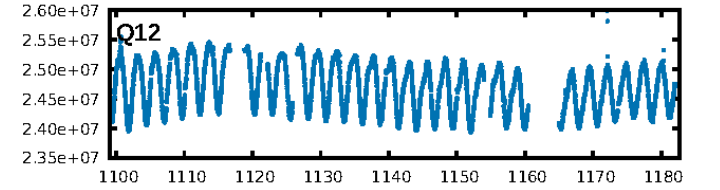
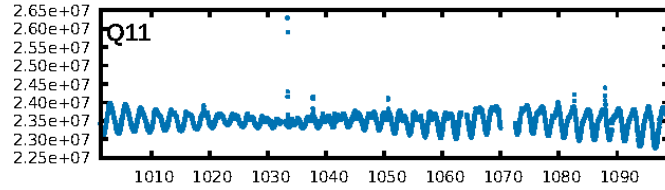
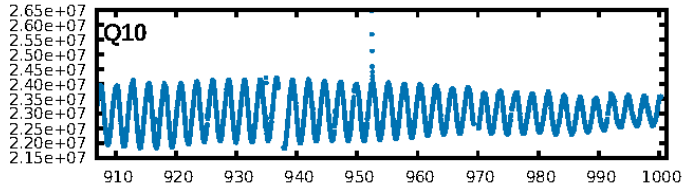
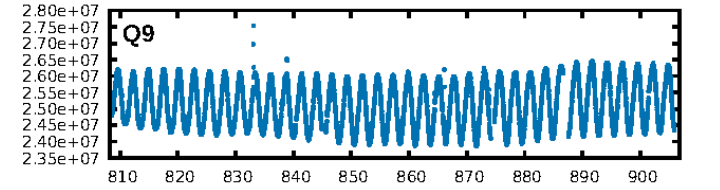
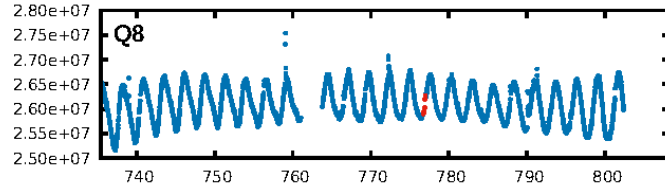
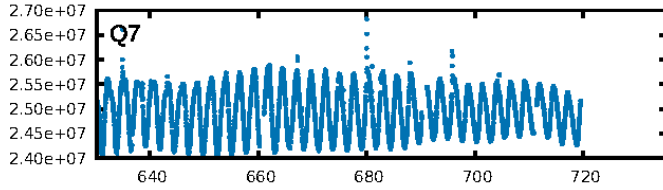
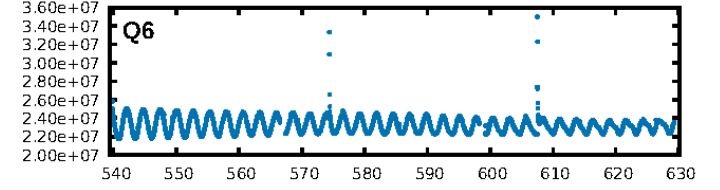
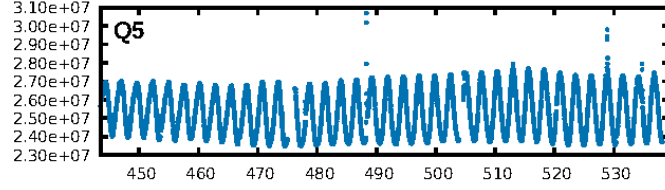
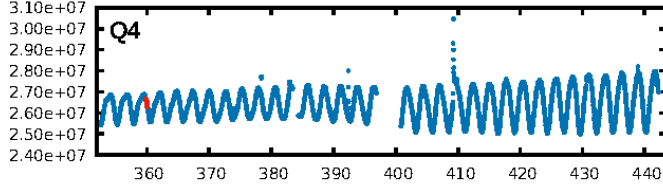
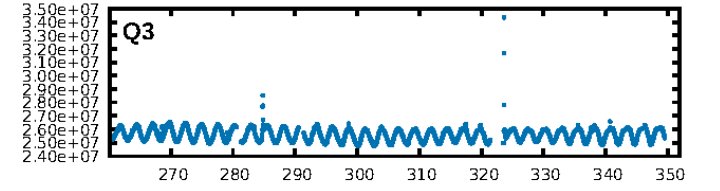
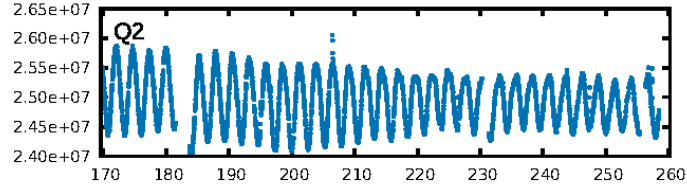
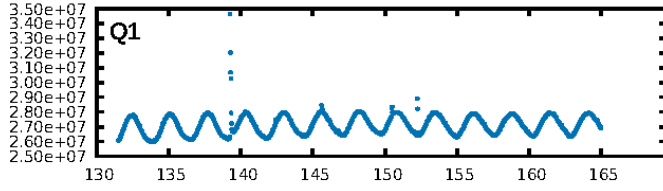
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [169.54 σ]
LongPeriod-sig: 100.0% [154.27 σ]
ModelChiSquare2-sig: 63.0%
ModelChiSquareGof-sig: 77.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.6391
Centroid-sig: 62.4%
Centroid-so: 0.312 arcsec [0.47 σ]
OotOffset-rm: 0.198 arcsec [1.36 σ]
KicOffset-rm: 0.255 arcsec [1.62 σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

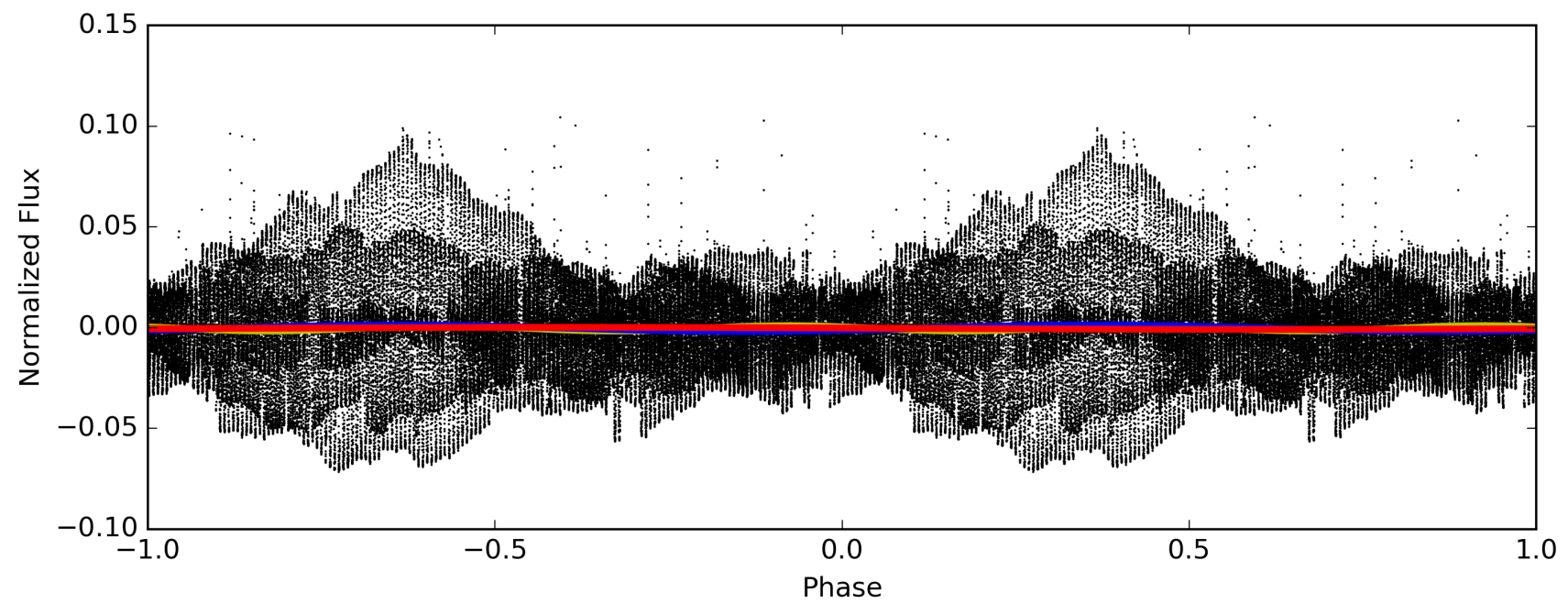
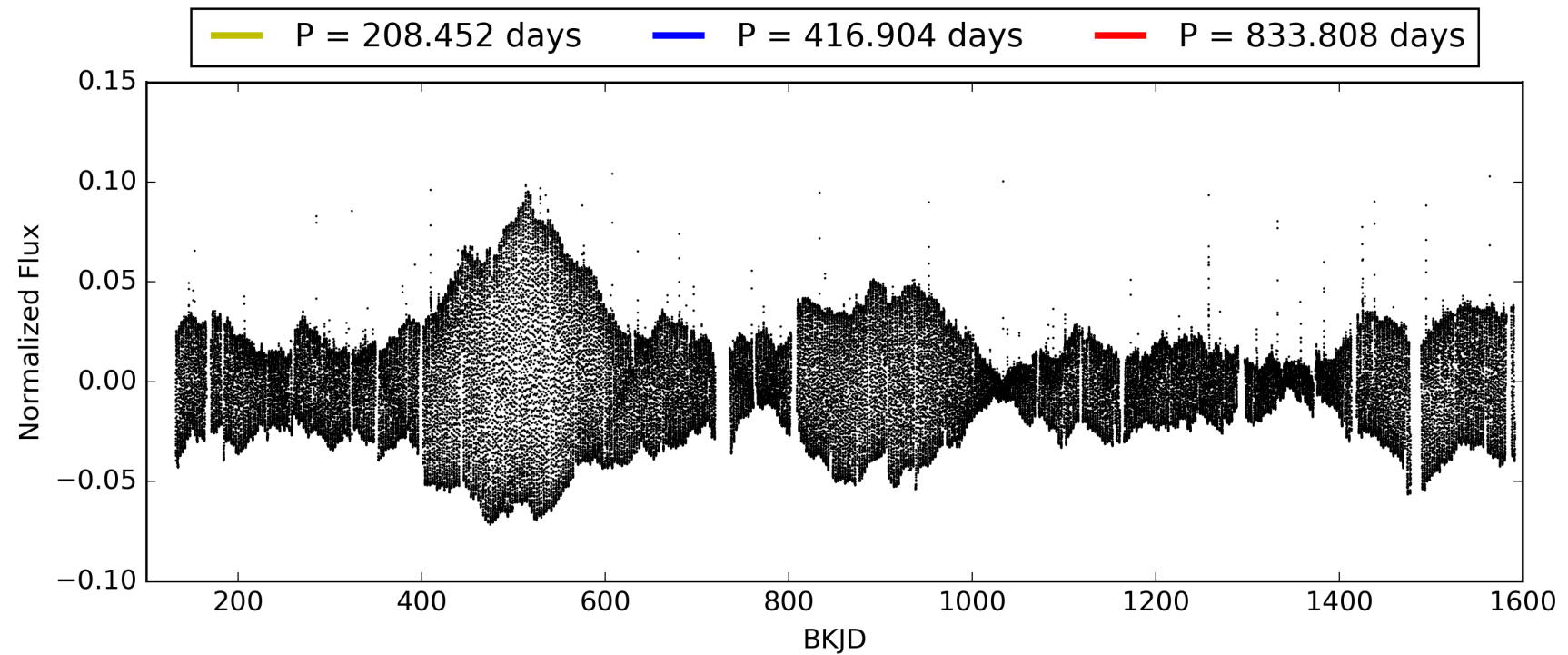
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004349043-01, PDC Light Curves

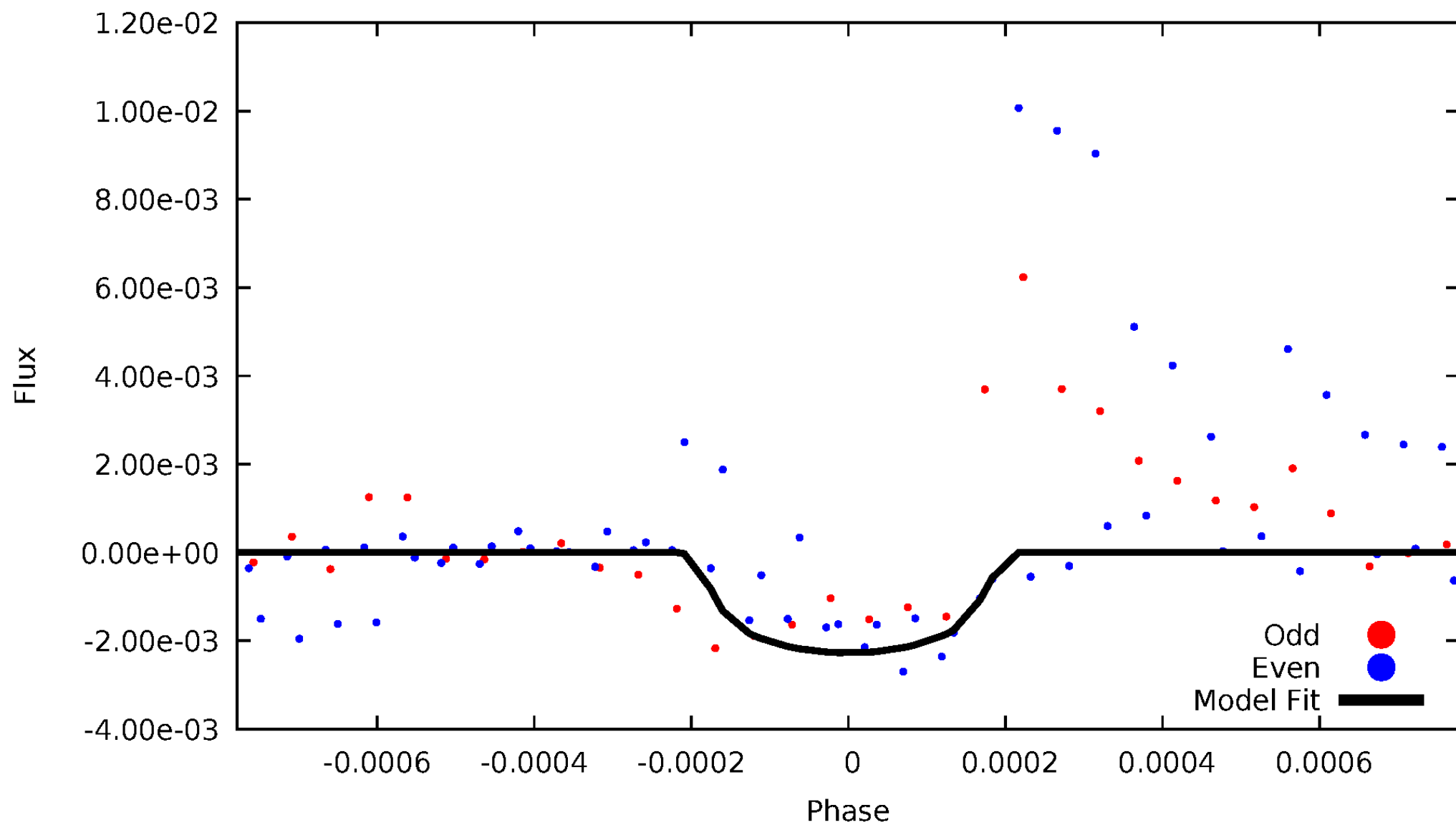


TCE 004349043-01



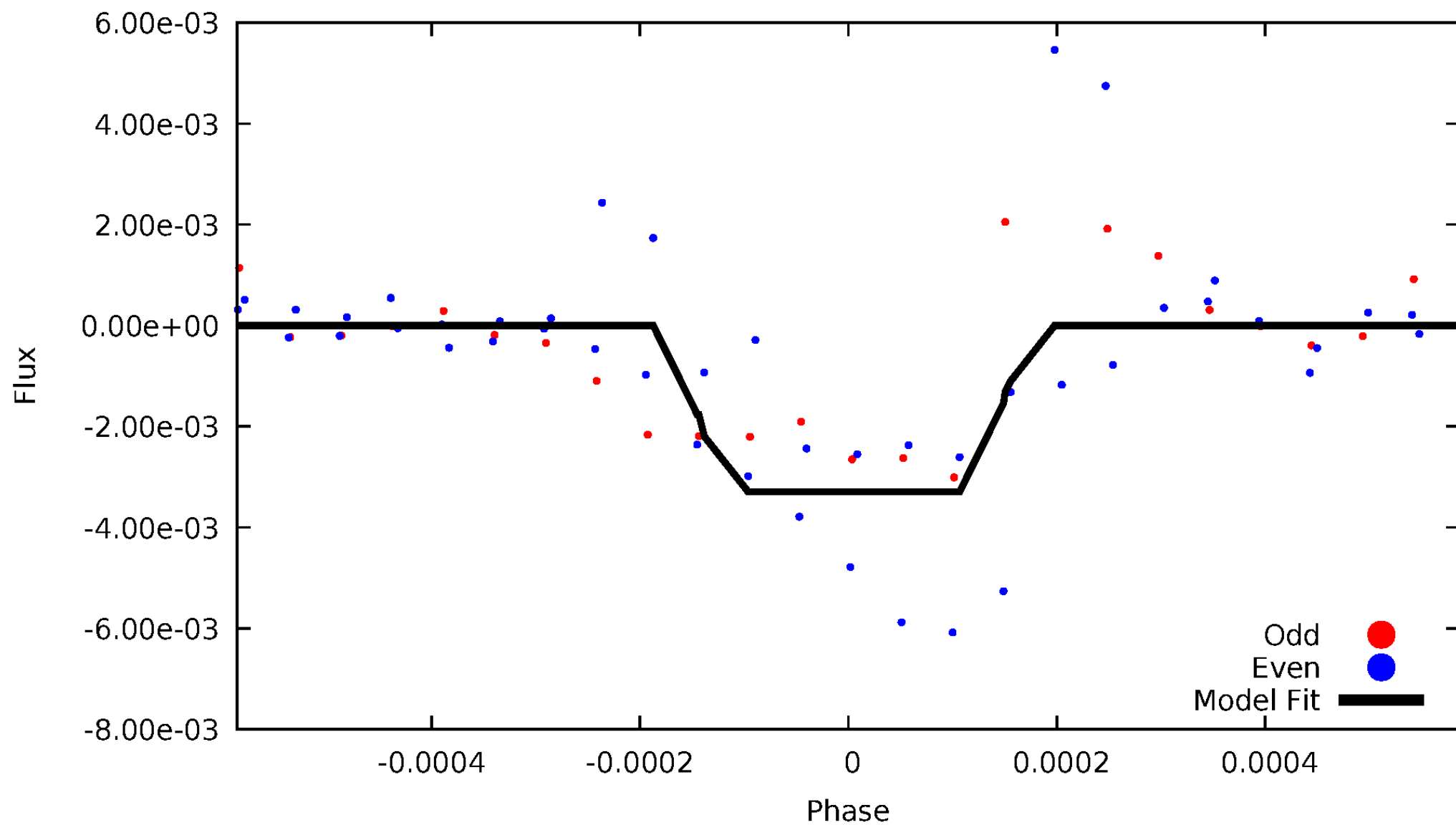
DV Odd/Even

TCE 004349043-01



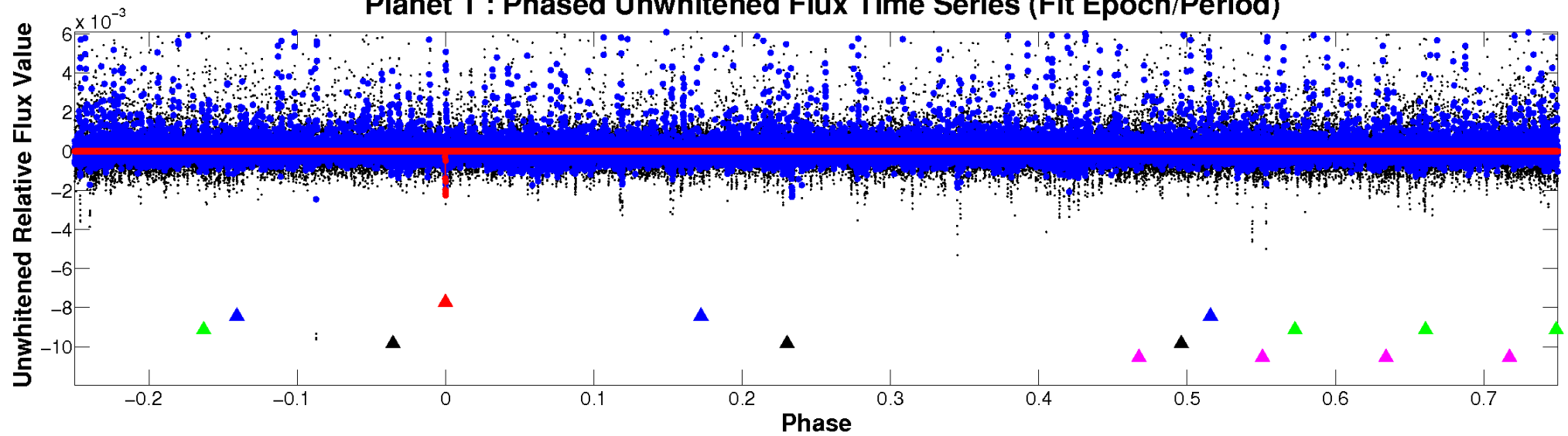
ALT Odd/Even

TCE 004349043-01

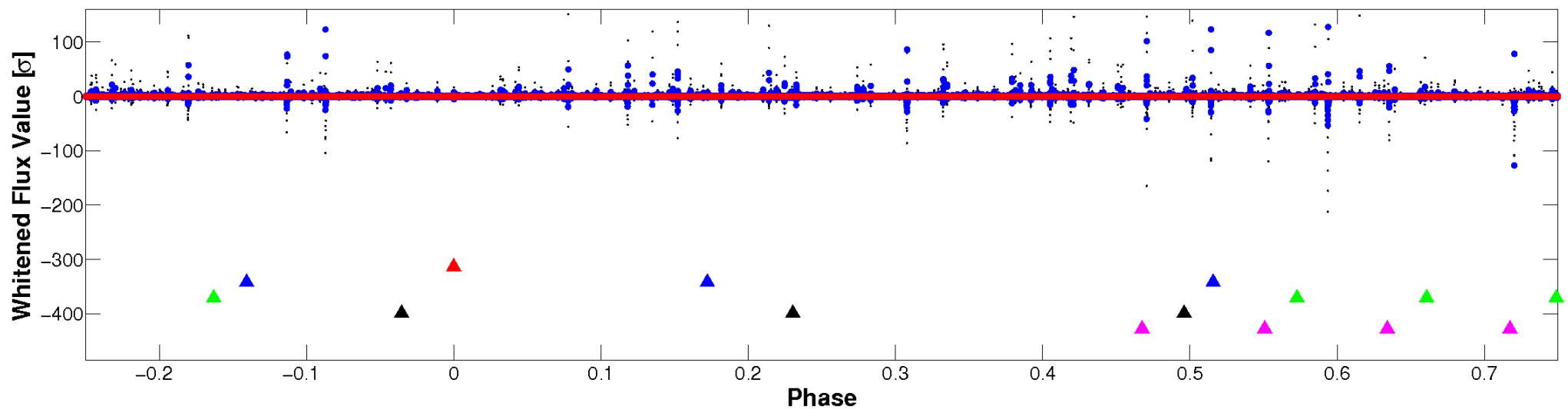


Non-Whitened Vs. Whitened Light Curve

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

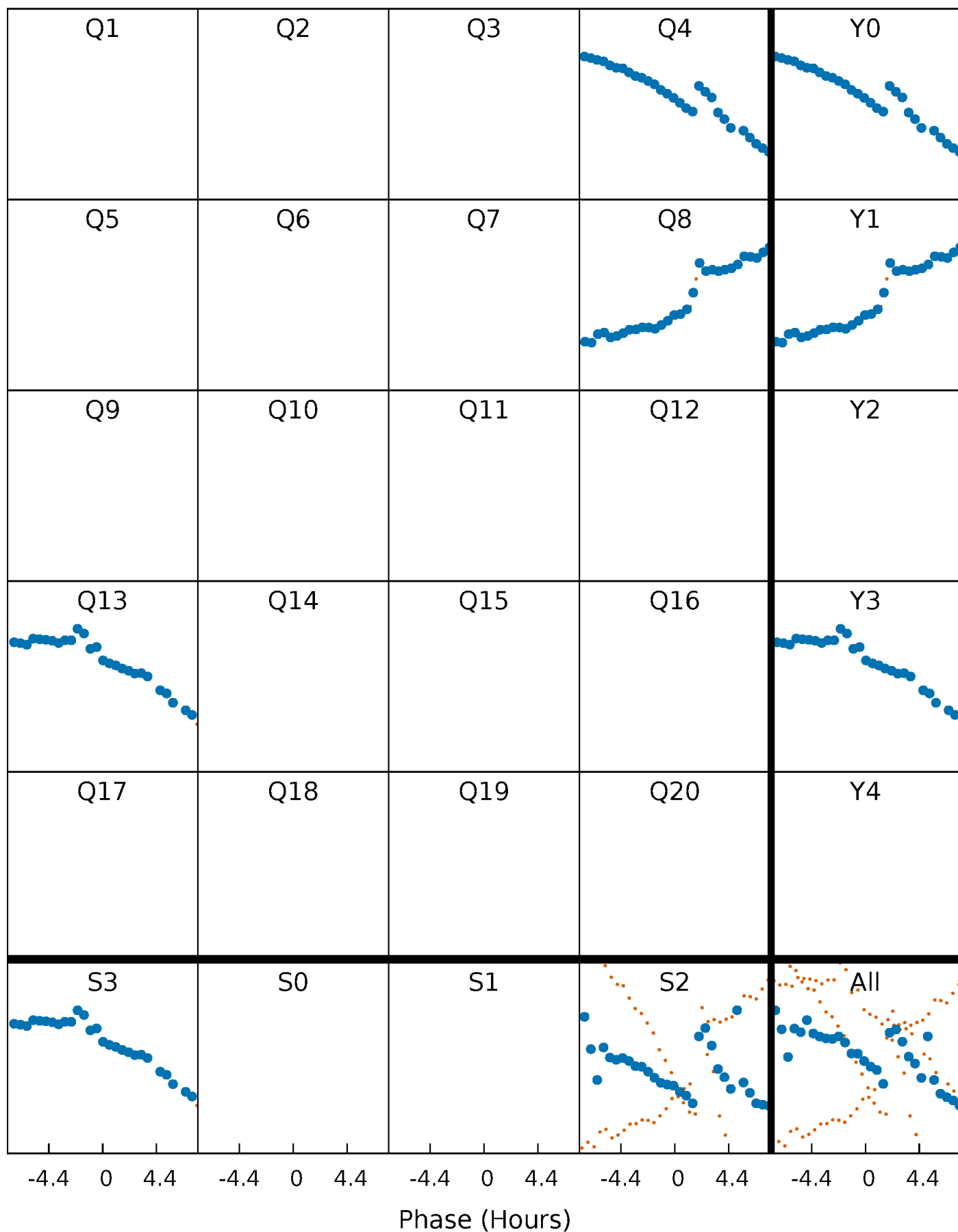


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



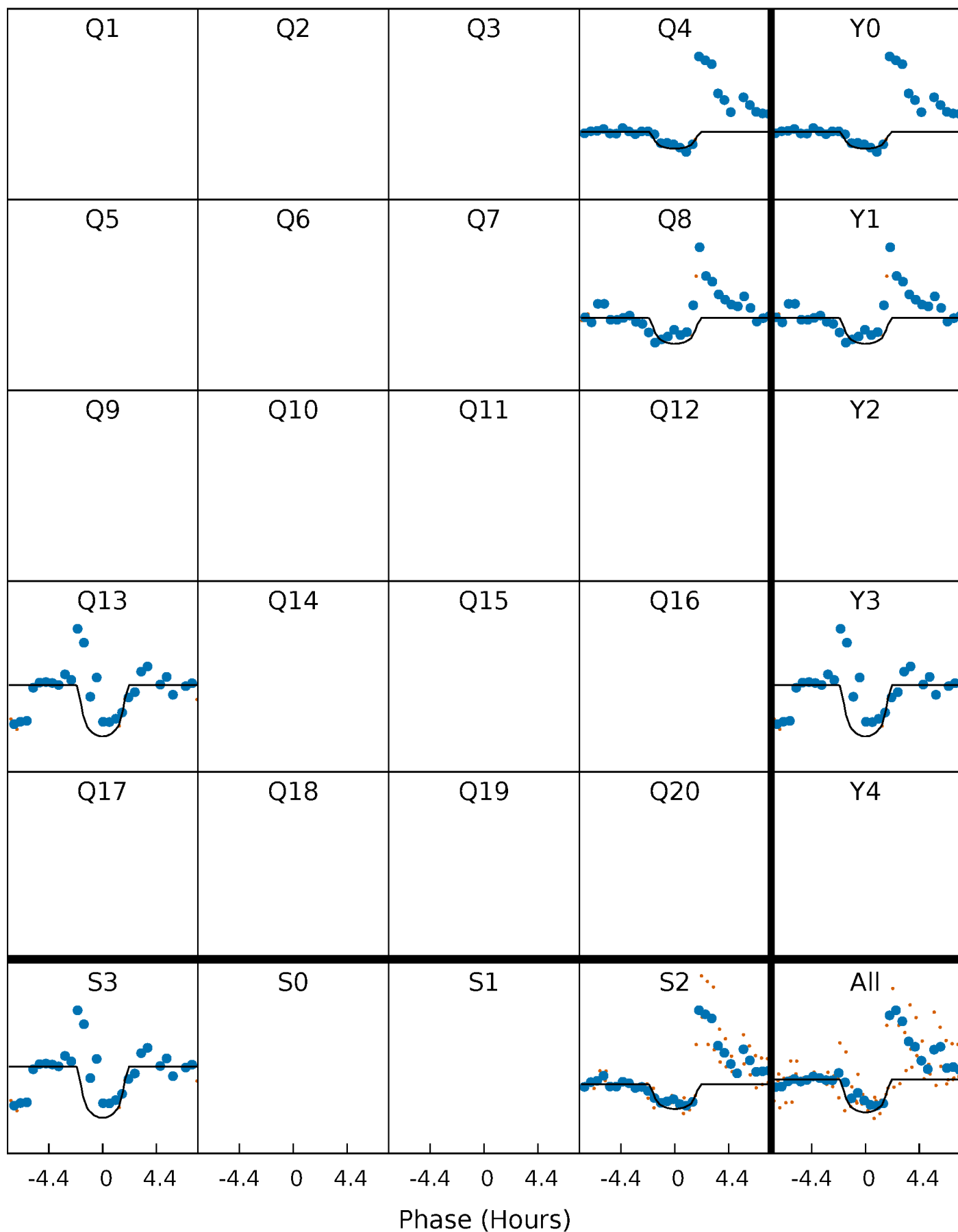
PDC Quarter-Phased Transit Curves

TCE 004349043-01 P=416.904140 Days $T_0=359.927795$ (BKJD)



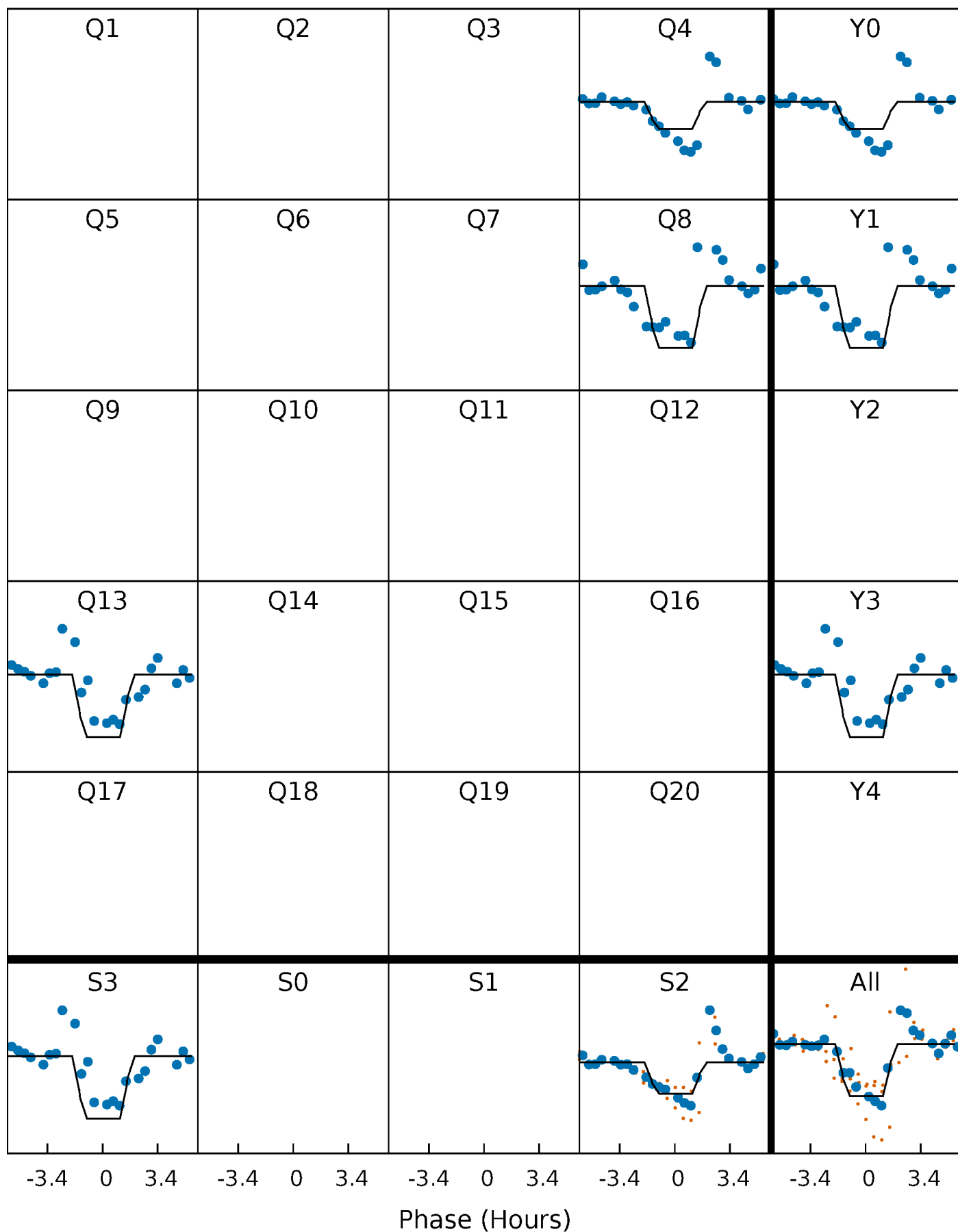
DV Quarter-Phased Transit Curves

TCE 004349043-01 P=416.904140 Days $T_0=359.927795$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

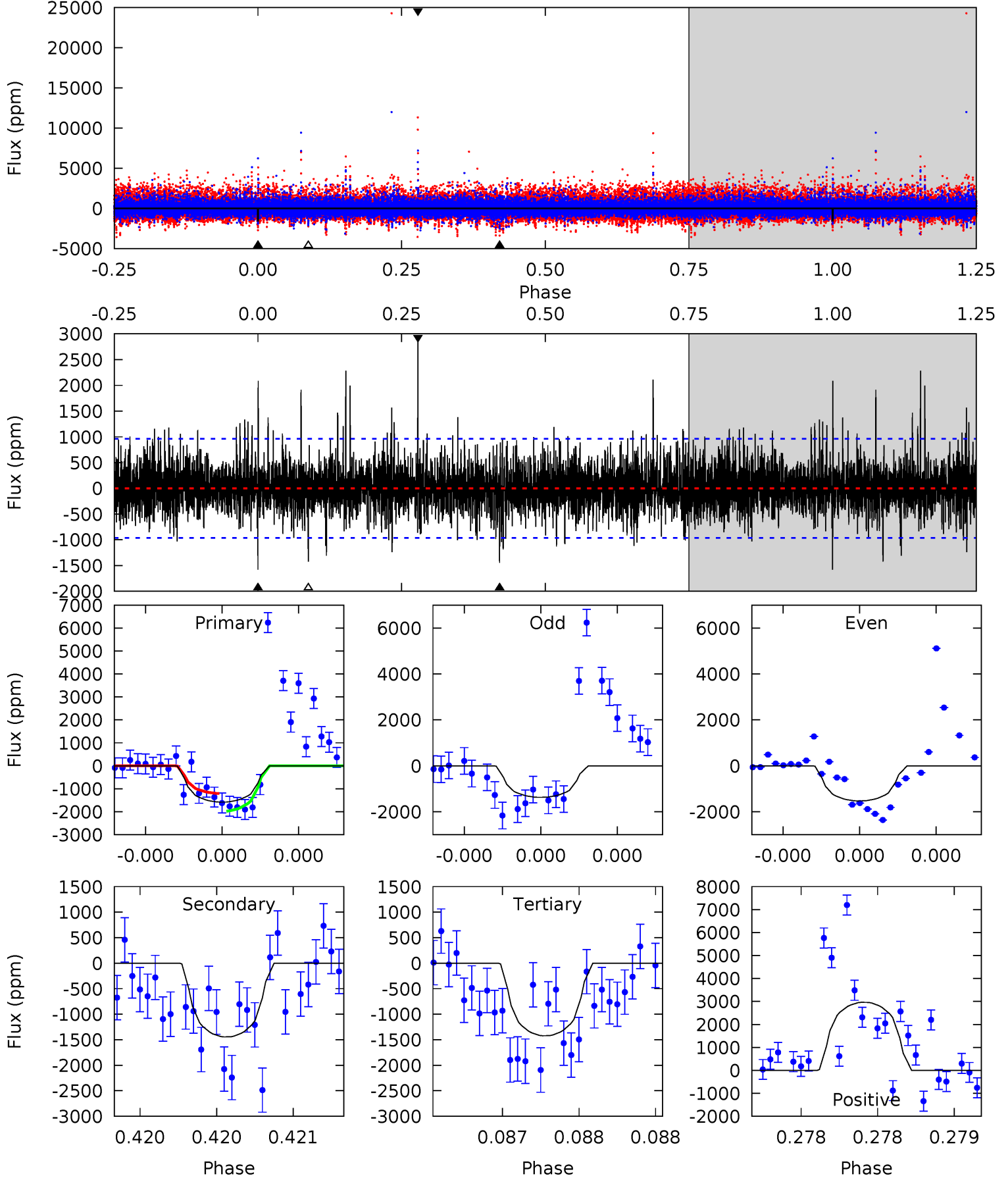
TCE 004349043-01 P=416.905925 Days $T_0=359.935630$ (BKJD)



DV Model-Shift Uniqueness Test

004349043-01, P = 416.904140 Days, E = 359.927795 Days

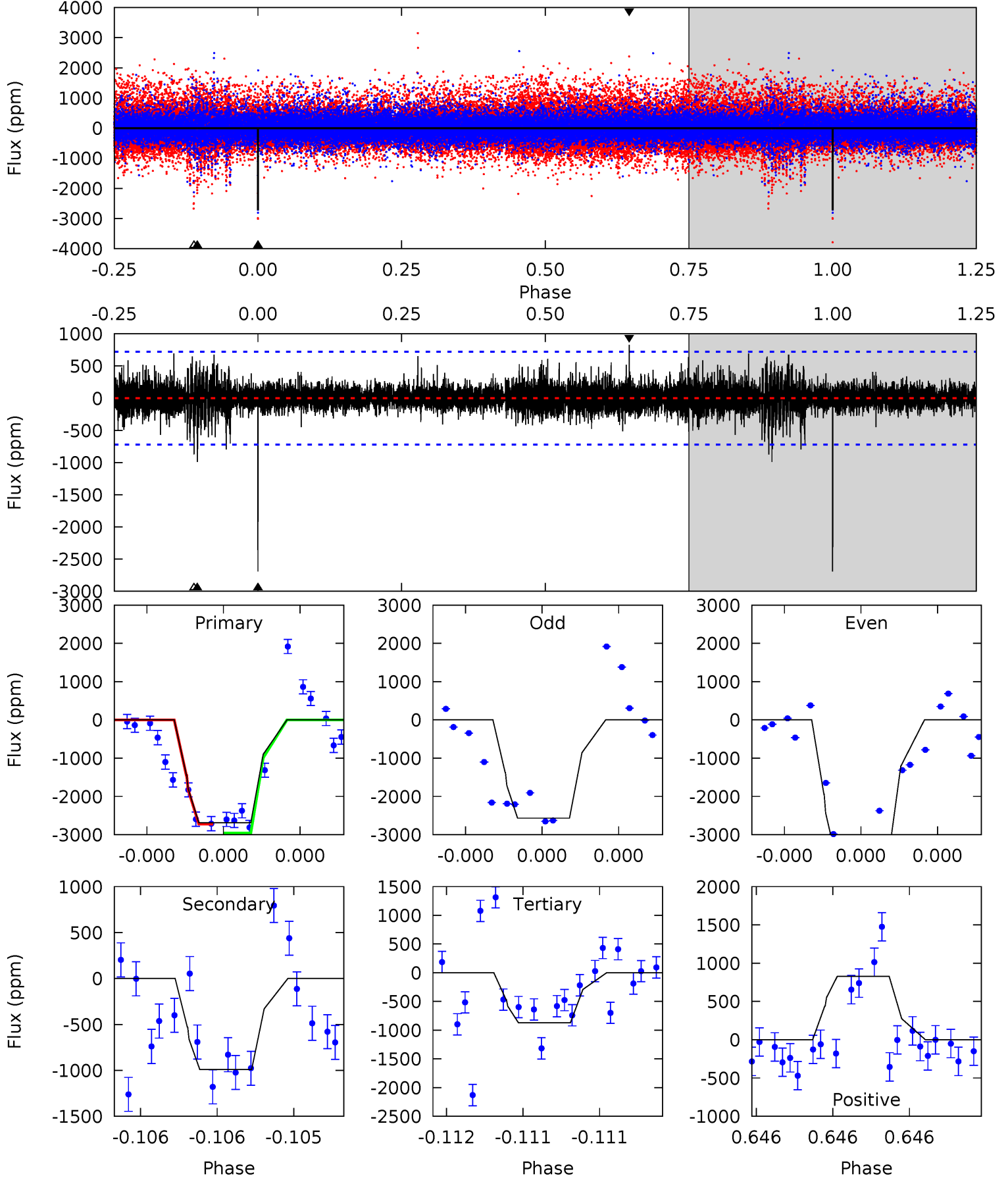
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.24	8.45	8.32	17.3	5.63	3.57	2.01	0.92	-8.10	0.13	-8.89	0.17	1.07	0.65	2.26



Alt Model-Shift Uniqueness Test

004349043-01, P = 416.905925 Days, E = 359.935630 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.1	7.77	6.85	6.49	5.66	3.62	1.04	14.3	14.6	0.93	1.28	3.38	1.33	0.23	0.97



Stellar Parameters For KIC 004349043

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4575^{+138}_{-124}	$4.564^{+0.060}_{-0.020}$	$0.180^{+0.200}_{-0.300}$	$0.737^{+0.031}_{-0.062}$	$0.726^{+0.057}_{-0.051}$	$2.553^{+0.599}_{-0.237}$
	+3%/-3%	+1%/-0%	+111%/-167%	+4%/-8%	+8%/-7%	+23%/-9%
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 004349043-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1445 ± 171	$4.35^{+3.75}_{-2.67}$	243^{+8}_{-8}	4010^{+1871}_{-745}	$41464^{+235428}_{-29505}$
Alt.	-990 ± 127	$5.36^{+3.80}_{-3.13}$	243^{+8}_{-8}	3525^{+1337}_{-553}	18821^{+91581}_{-12604}

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

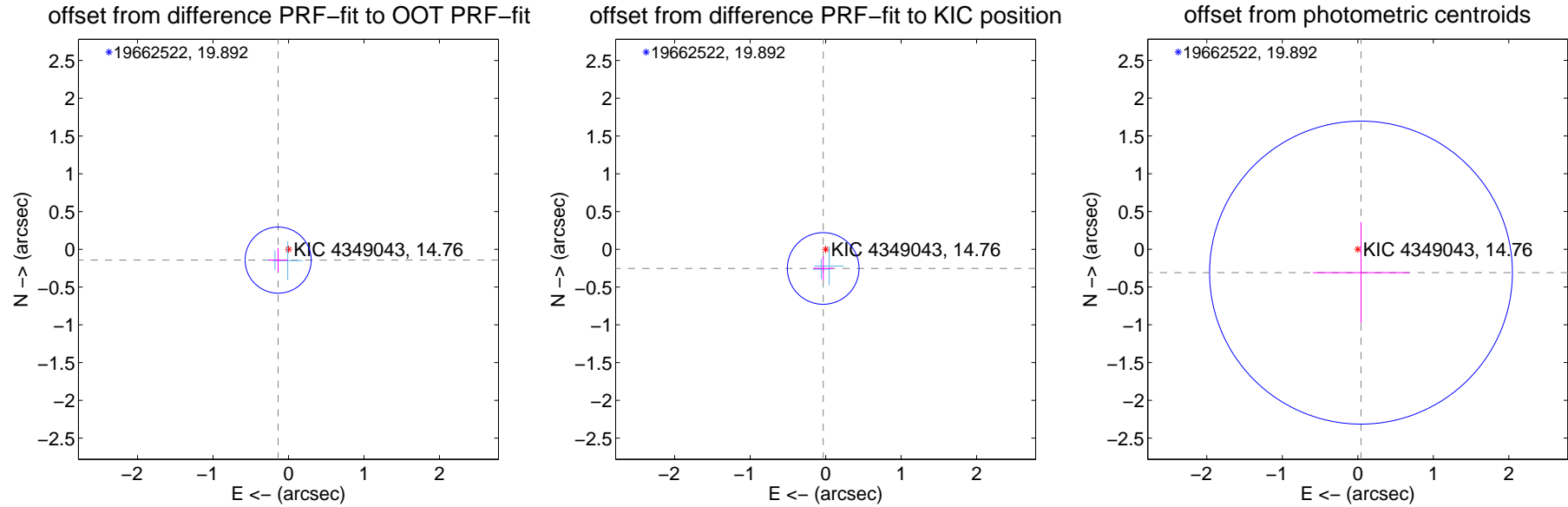
DV Centroid Data

Supplemental centroid analysis for 004349043-01. Kepler magnitude: 14.76. Transit SNR 8.02

There are 2 quarters with good PRF difference image offsets

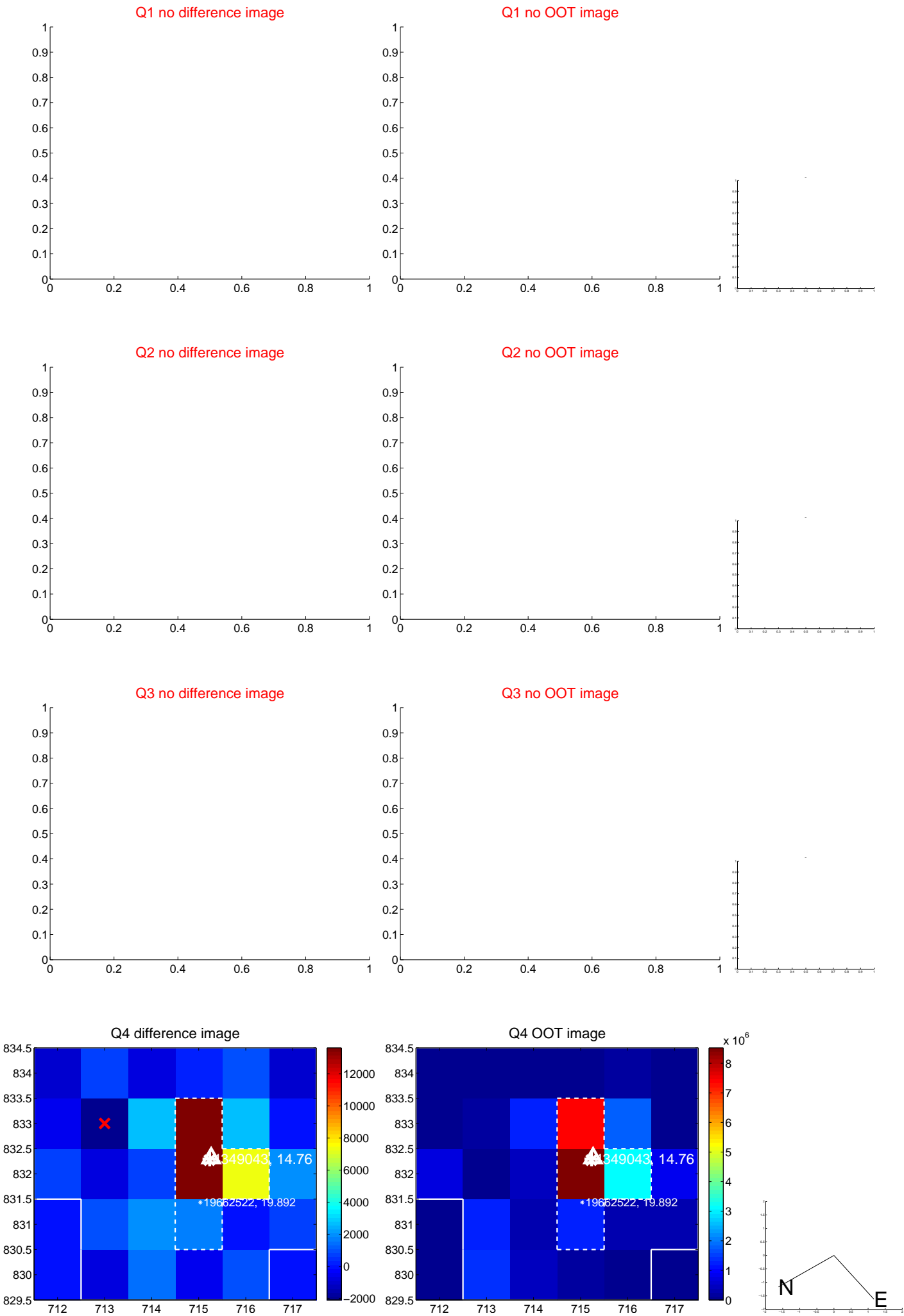
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.198 ± 0.146	1.36	0.137 ± 0.131	-0.143 ± 0.159
PRF-fit source offset from KIC position	0.255 ± 0.158	1.62	0.033 ± 0.131	-0.253 ± 0.159
photometric centroid source offset	0.31 ± 0.67	0.47	-0.04 ± 0.64	-0.31 ± 0.67

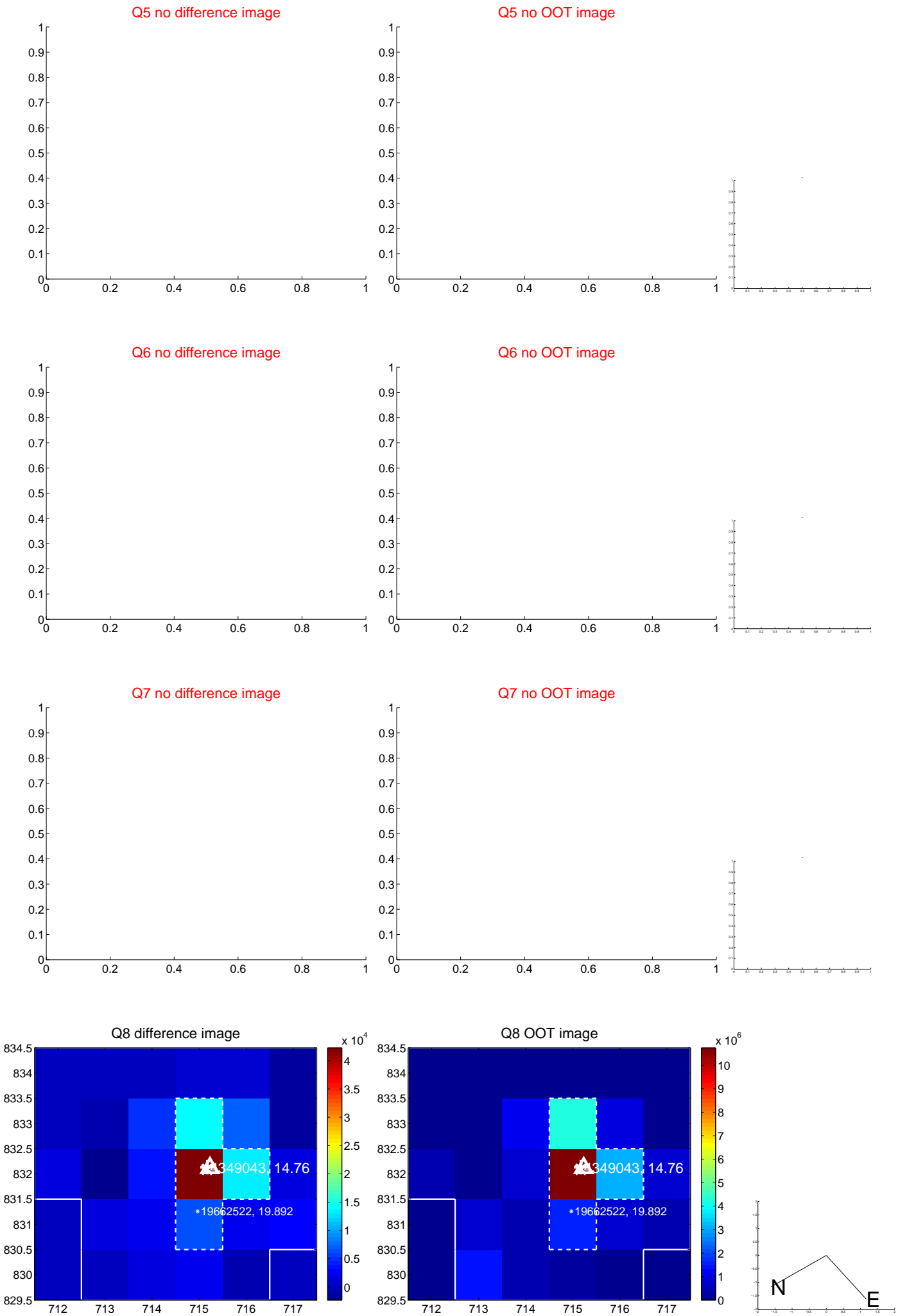


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



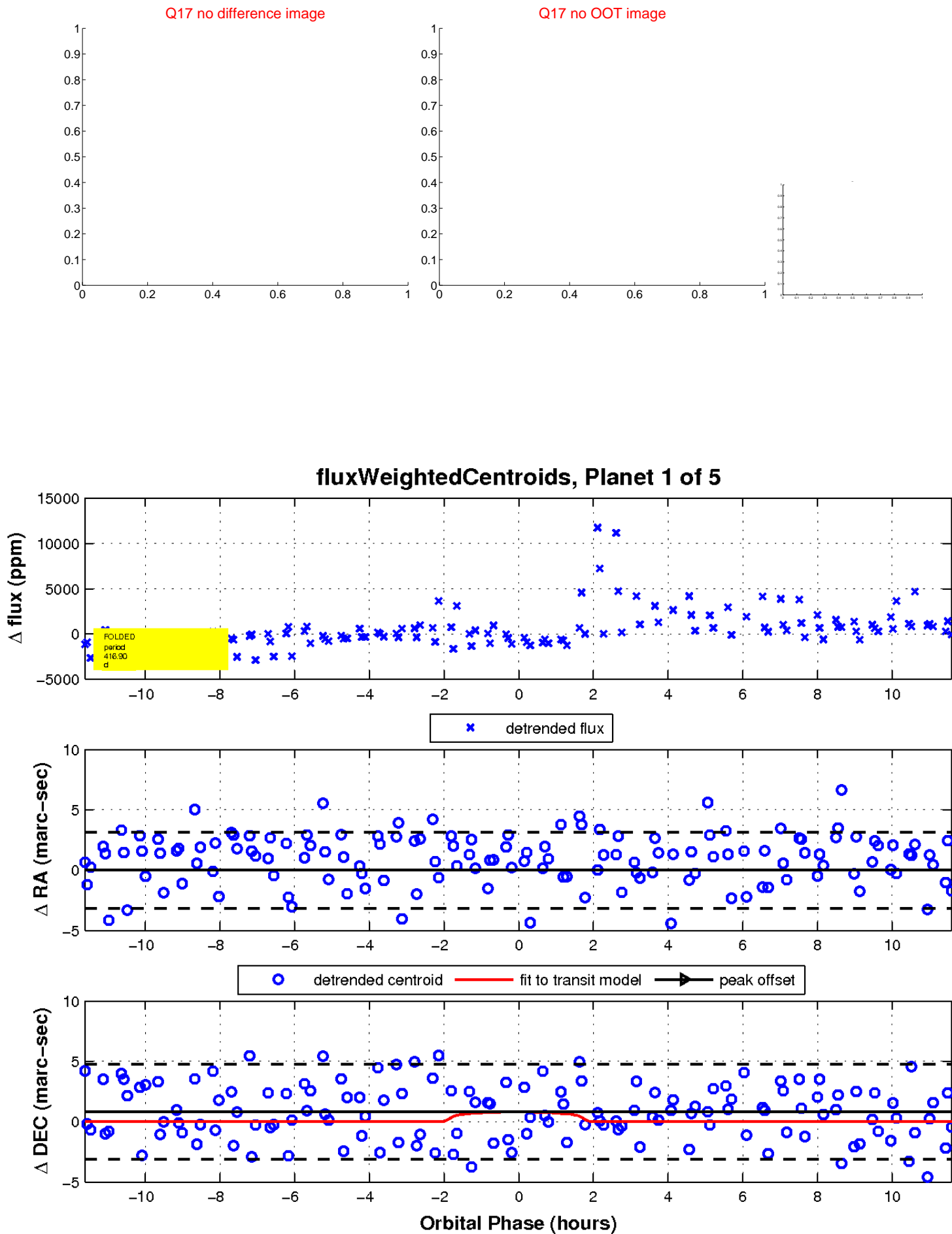
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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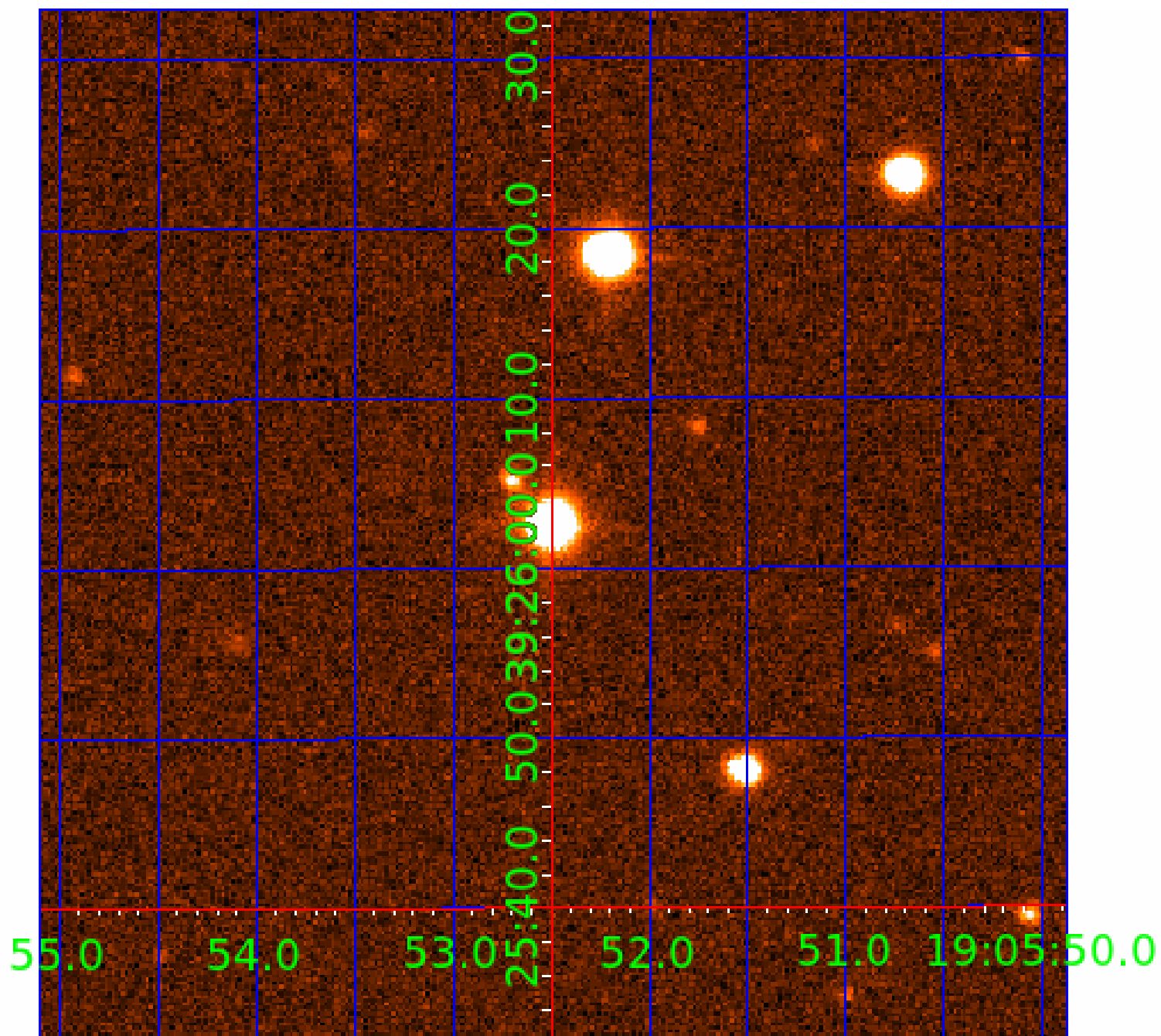


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004349043

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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004349043-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
004349043-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

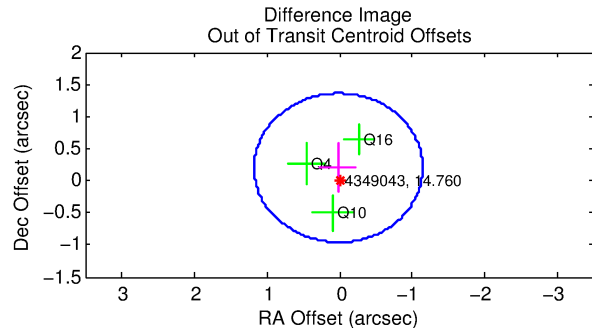
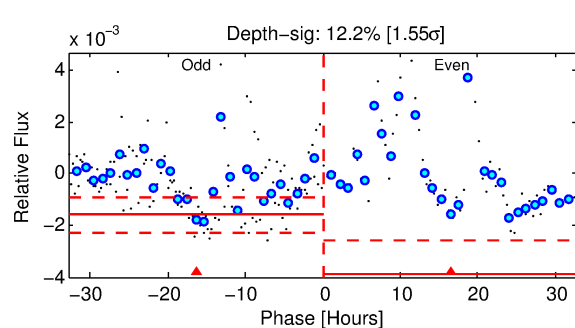
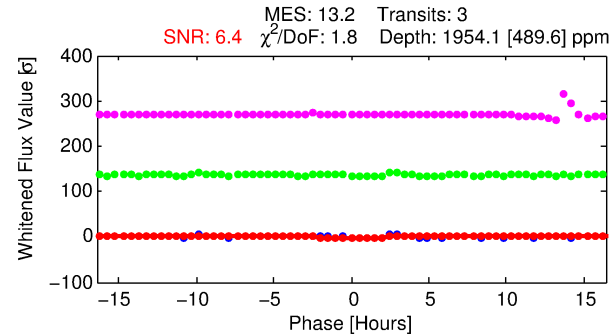
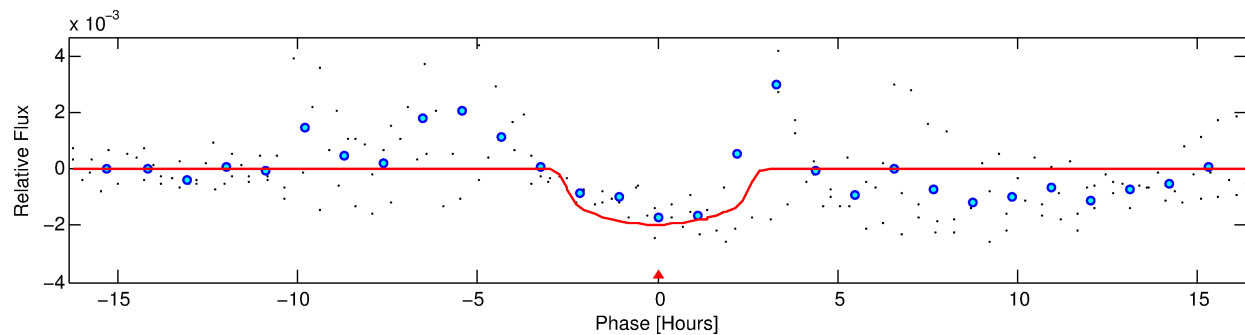
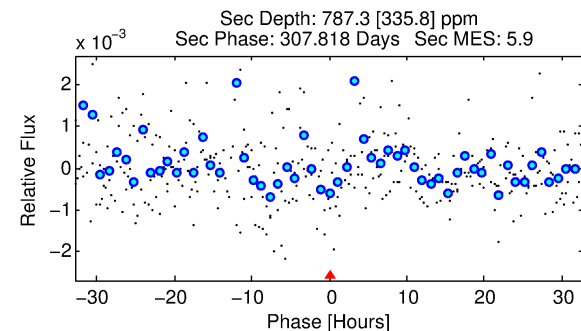
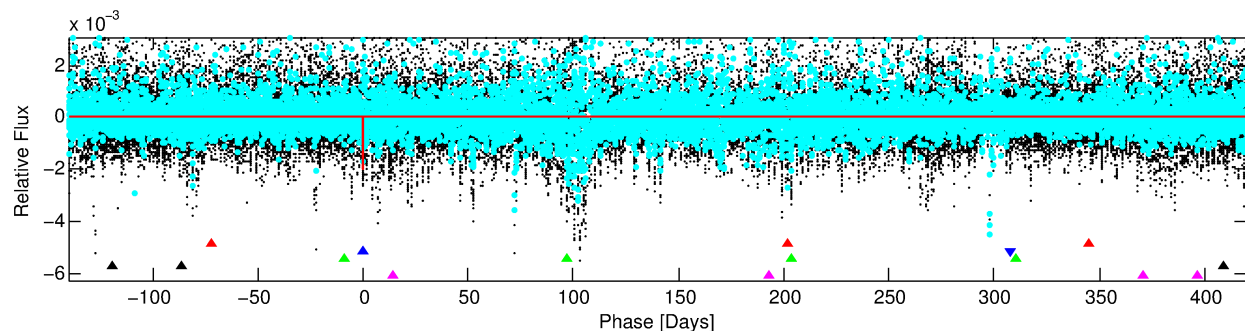
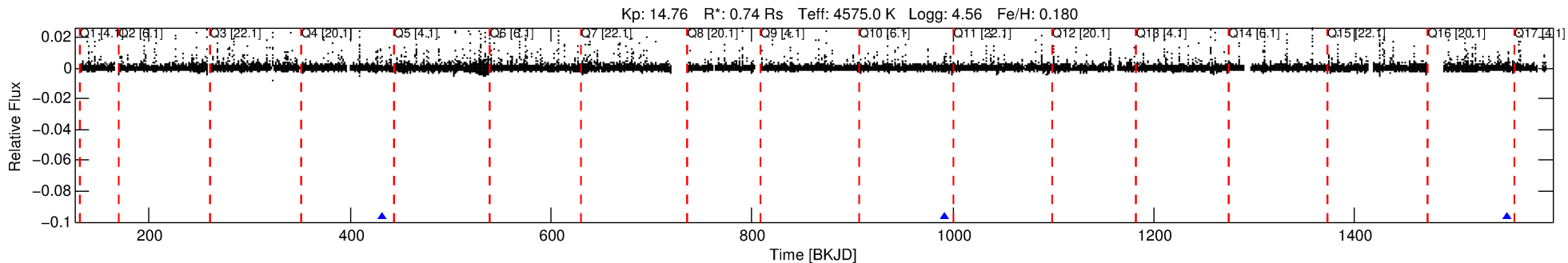
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004349043-02

No Significant Match Found

DV One-Page Summary

KIC: 4349043 Candidate: 2 of 5 Period: 560.131 d



DV Fit Results:

Period = 560.13053 [0.00924] d
Epoch = 431.7438 [0.0114] BKJD
Rp/R* = 0.0390 [0.0671]
a/R* = 791.01 [3918.51]
b = 0.24 [19.87]
Seff = 0.15 [0.02]
Teq = 158 [6] K
Rp = 3.14 [5.40] Re
a = 1.1955 [0.0868] AU
Ag = 62890.74 [217994.88] [0.29 σ]
Teffp = 3880 [3363] K [1.11 σ]

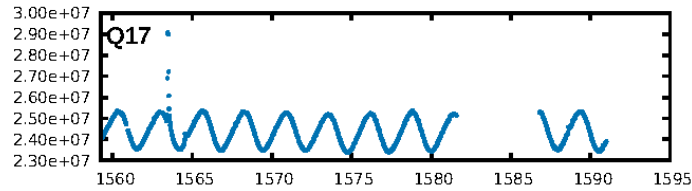
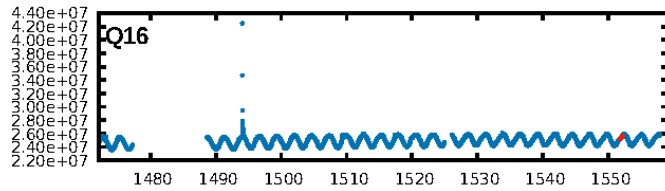
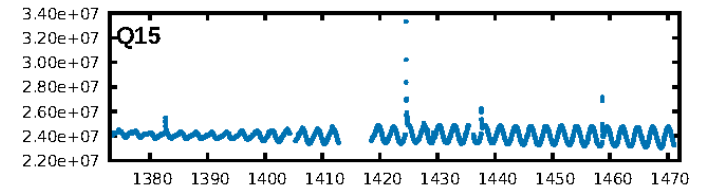
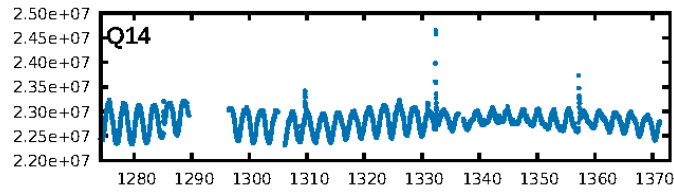
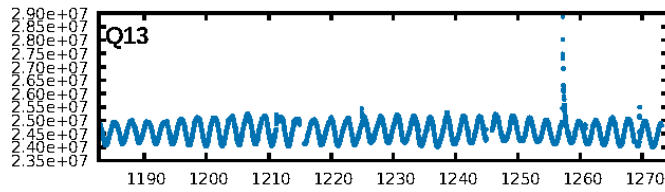
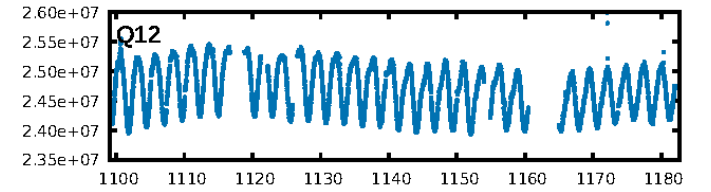
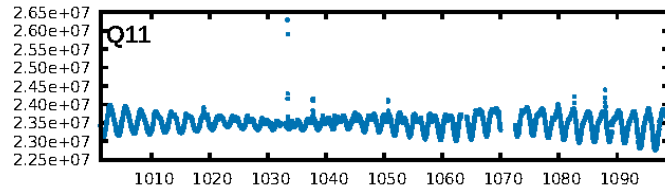
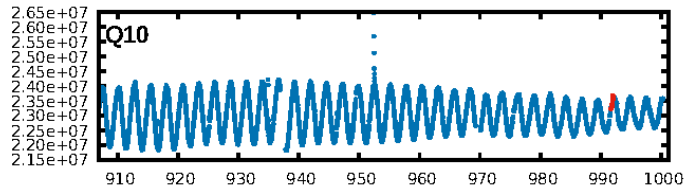
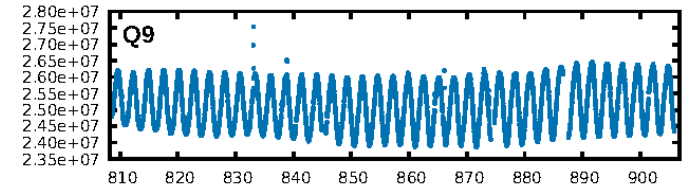
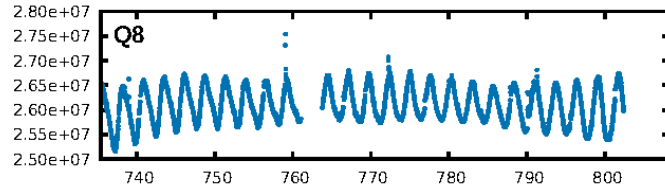
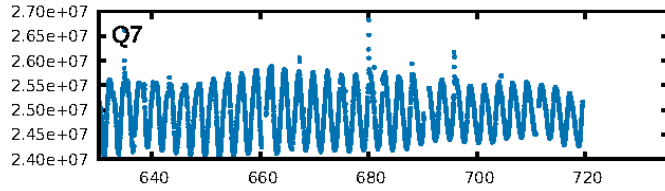
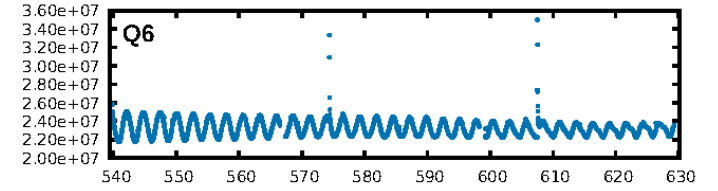
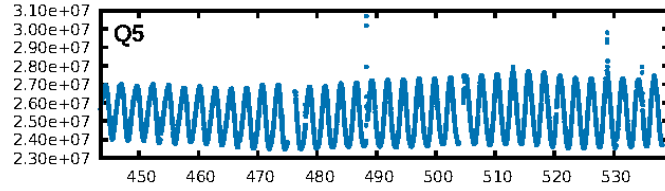
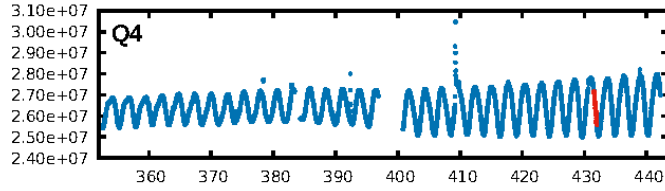
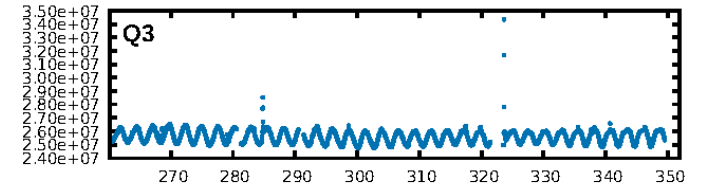
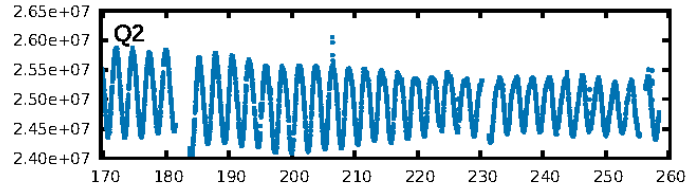
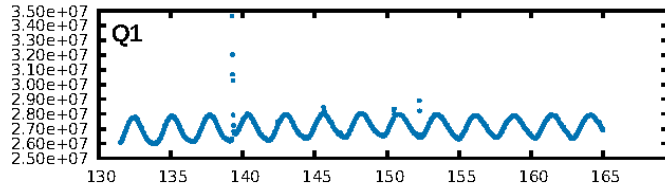
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [127.53 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.8%
ModelChiSquareGof-sig: 83.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -14.32
Centroid-sig: 69.9%
Centroid-so: 0.399 arcsec [0.49 σ]
OotOffset-rm: 0.201 arcsec [0.52 σ]
KicOffset-rm: 0.090 arcsec [0.27 σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

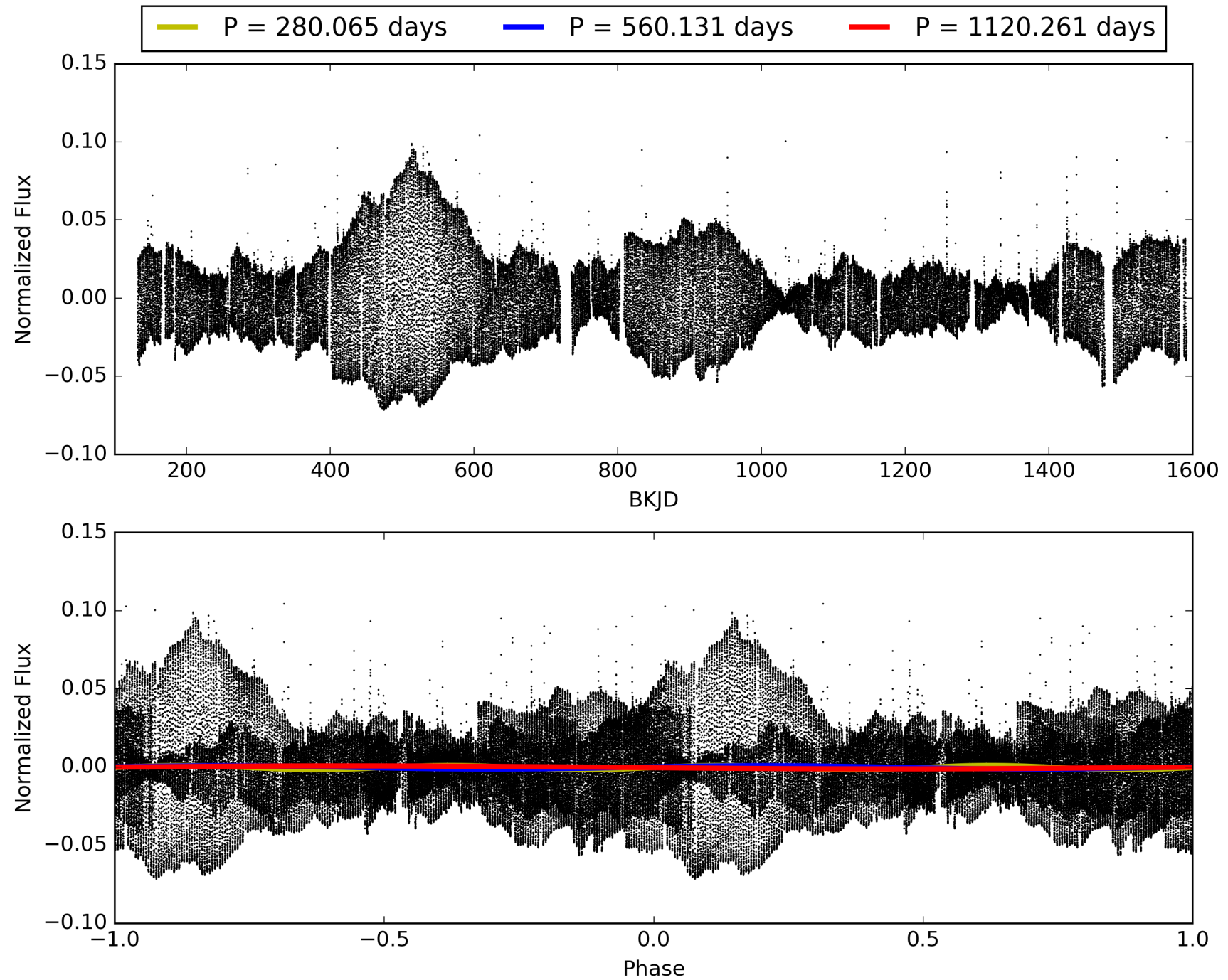
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:26:43 Z

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

TCE 004349043-02, PDC Light Curves

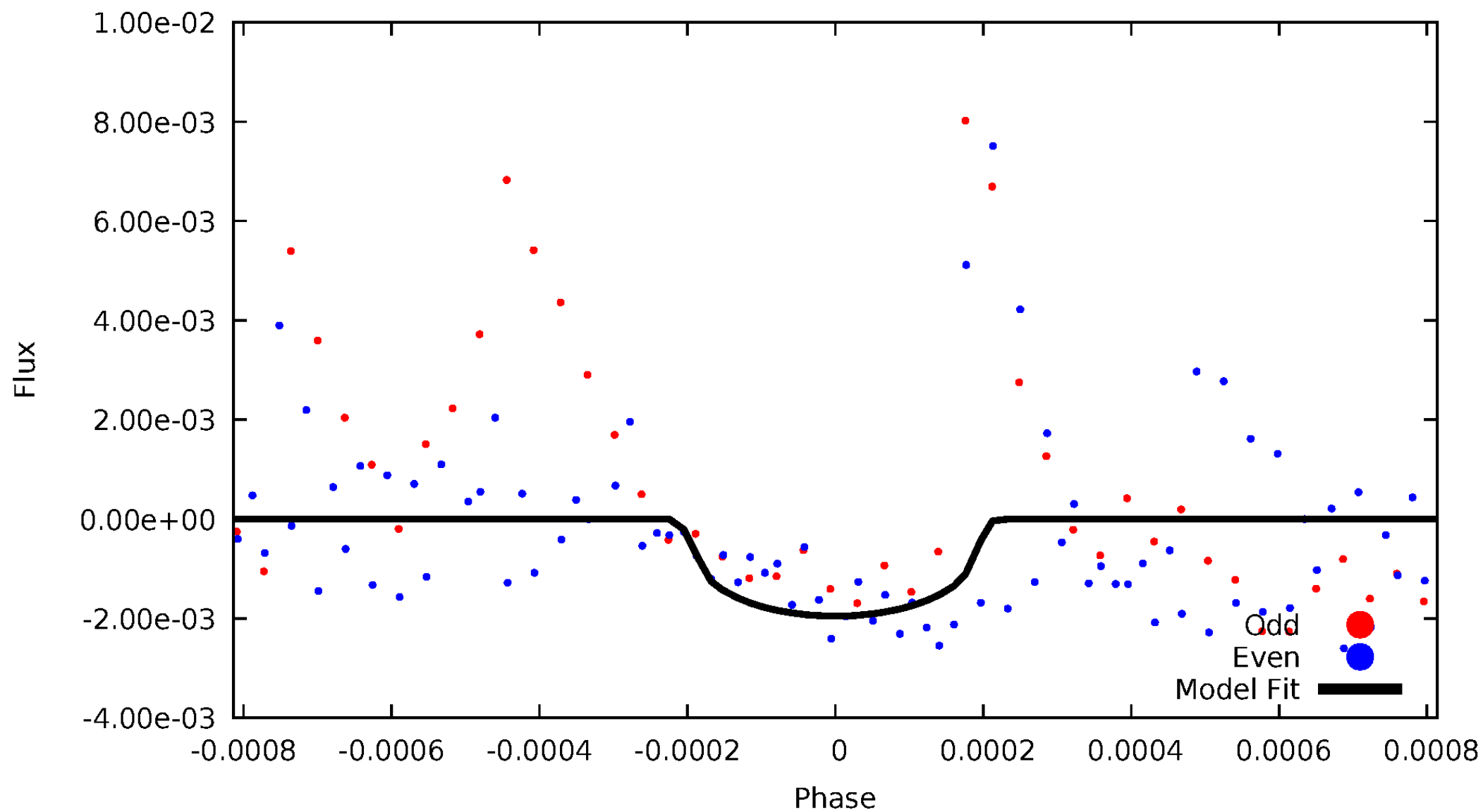


TCE 004349043-02



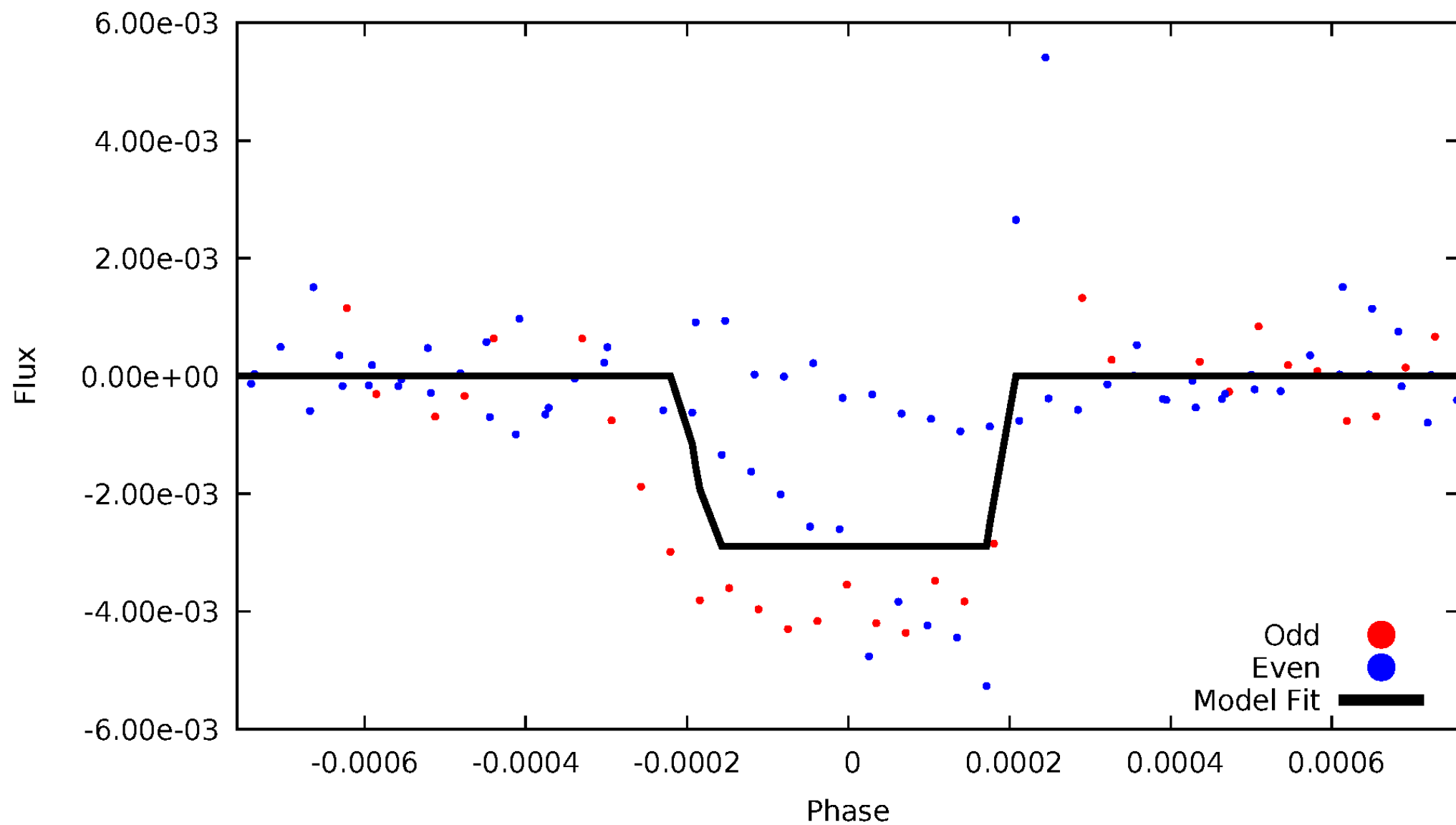
DV Odd/Even

TCE 004349043-02



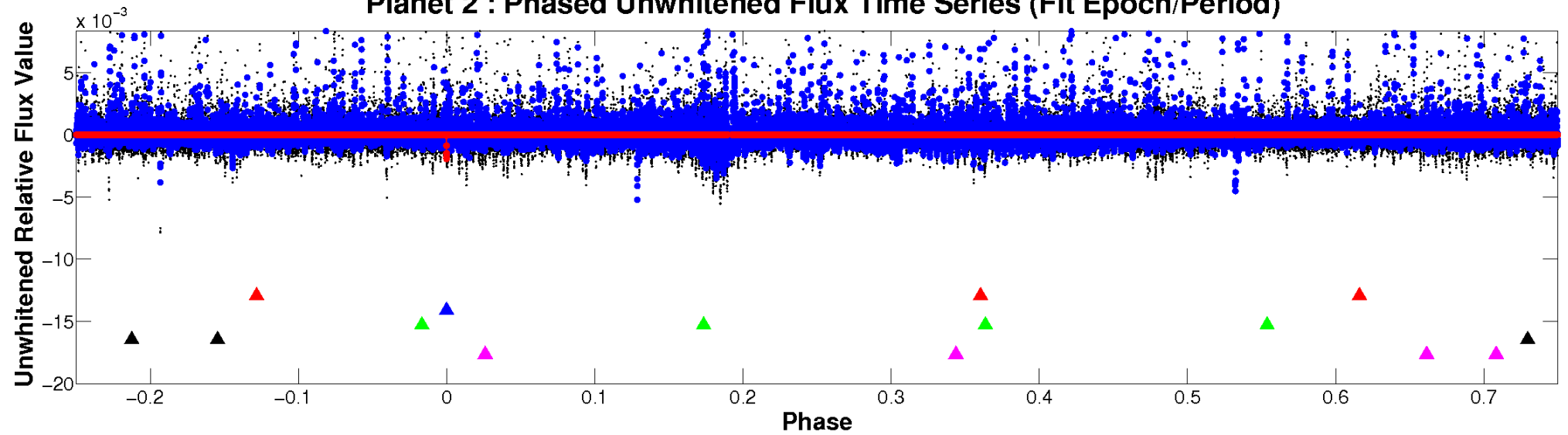
ALT Odd/Even

TCE 004349043-02

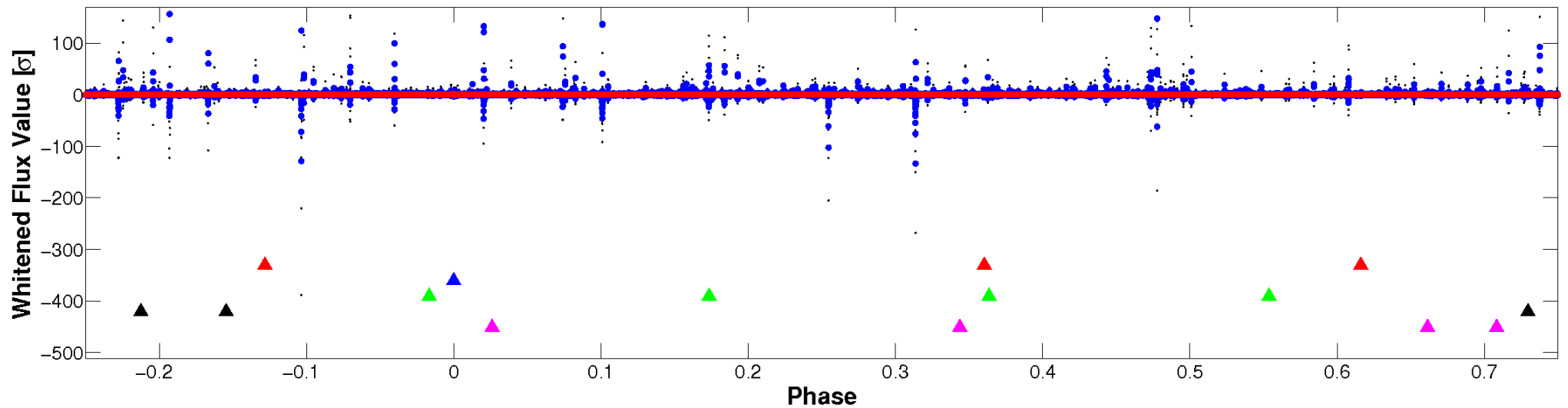


Non-Whitened Vs. Whitened Light Curve

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

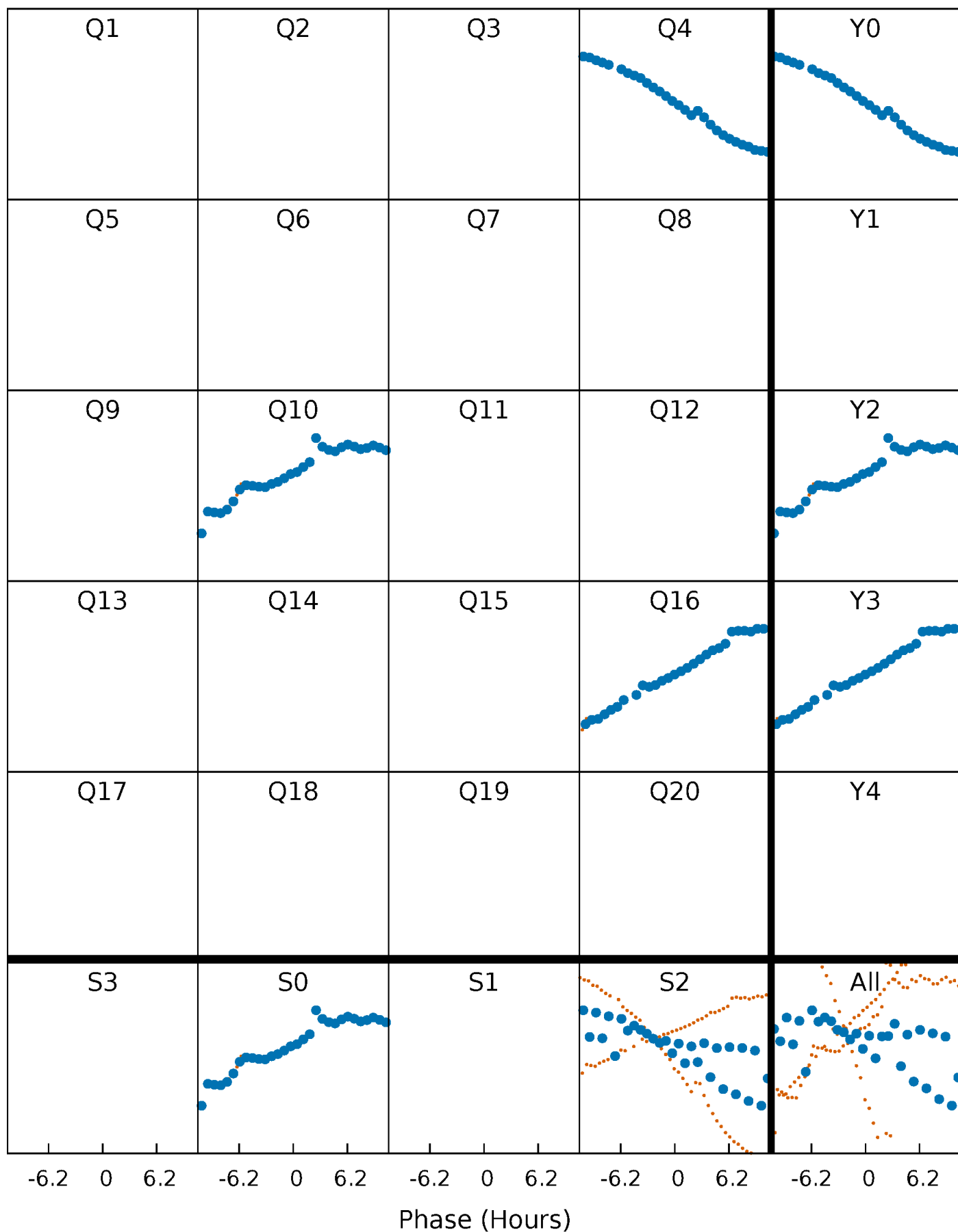


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



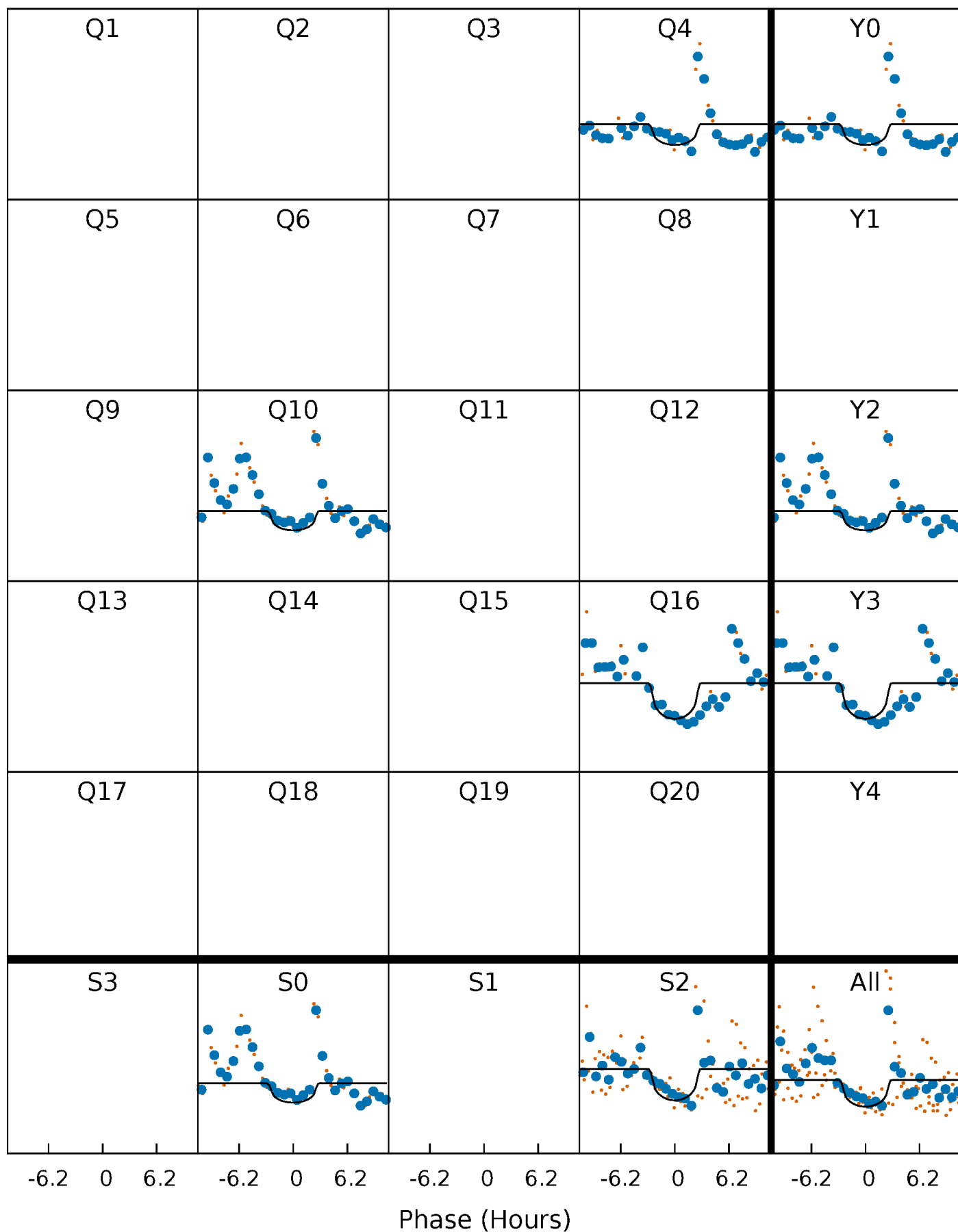
PDC Quarter-Phased Transit Curves

TCE 004349043-02 P=560.130530 Days $T_0=431.743759$ (BKJD)



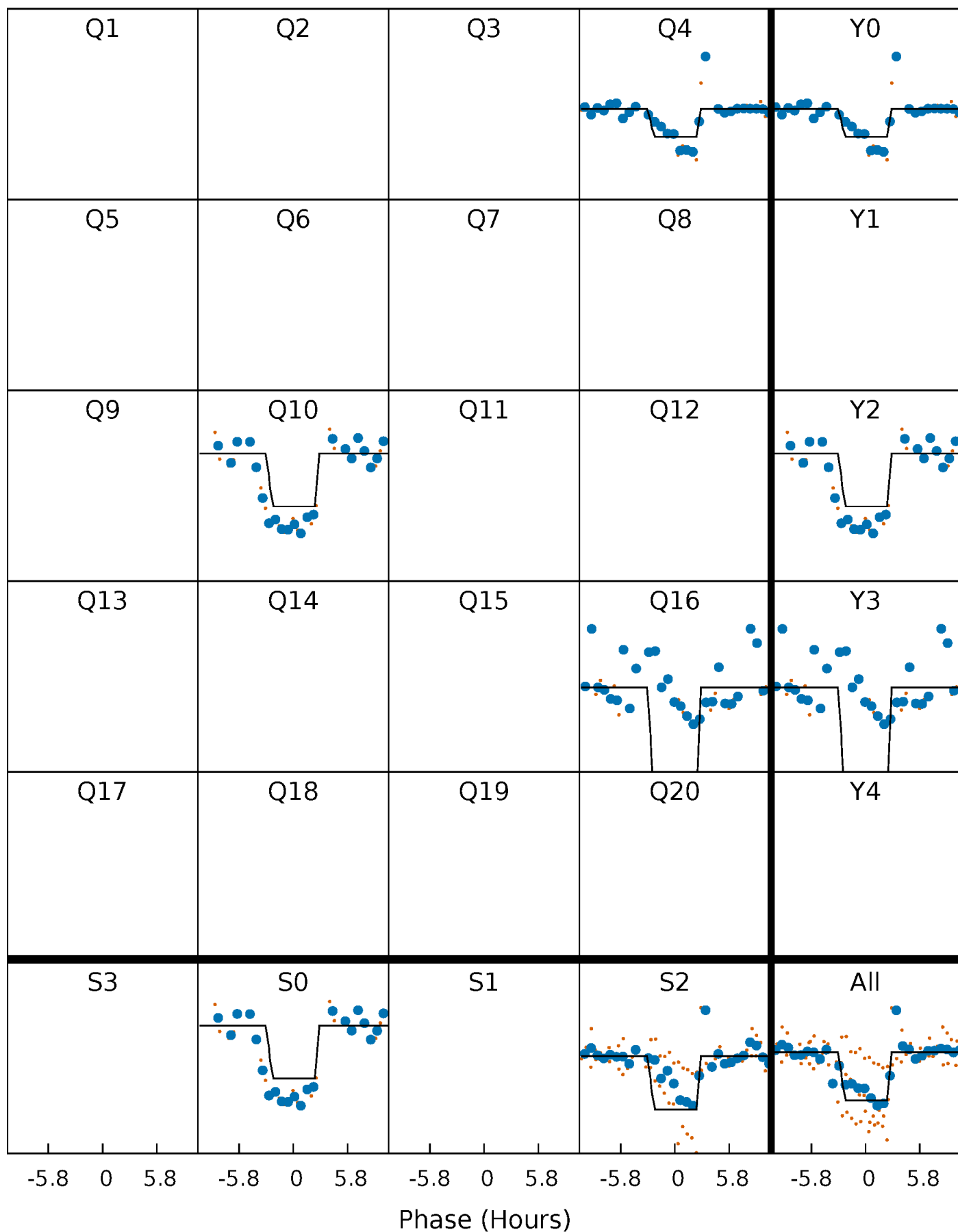
DV Quarter-Phased Transit Curves

TCE 004349043-02 P=560.130530 Days $T_0=431.743759$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

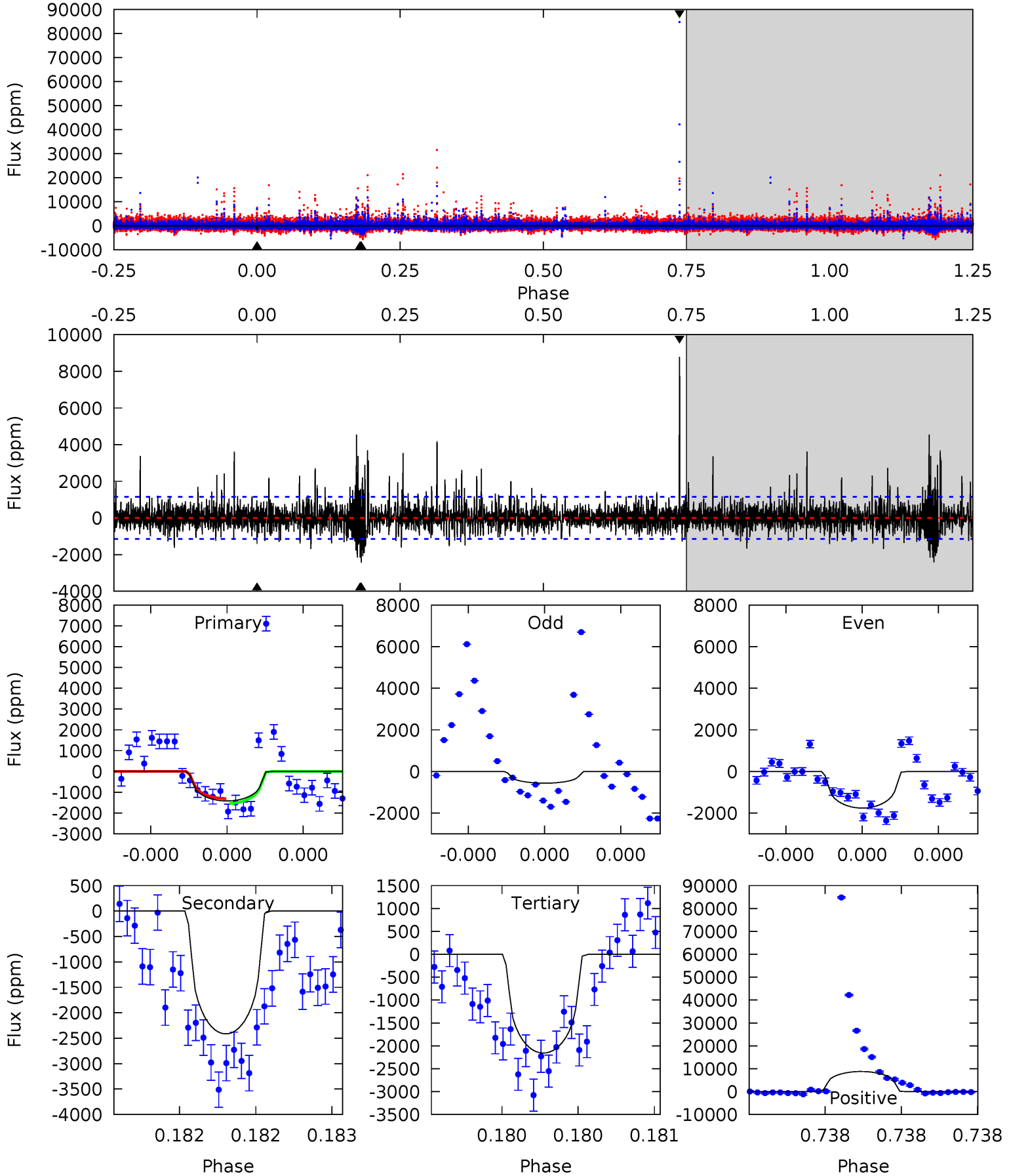
TCE 004349043-02 P=560.124747 Days $T_0=431.726407$ (BKJD)



DV Model-Shift Uniqueness Test

004349043-02, P = 560.130530 Days, E = 431.743759 Days

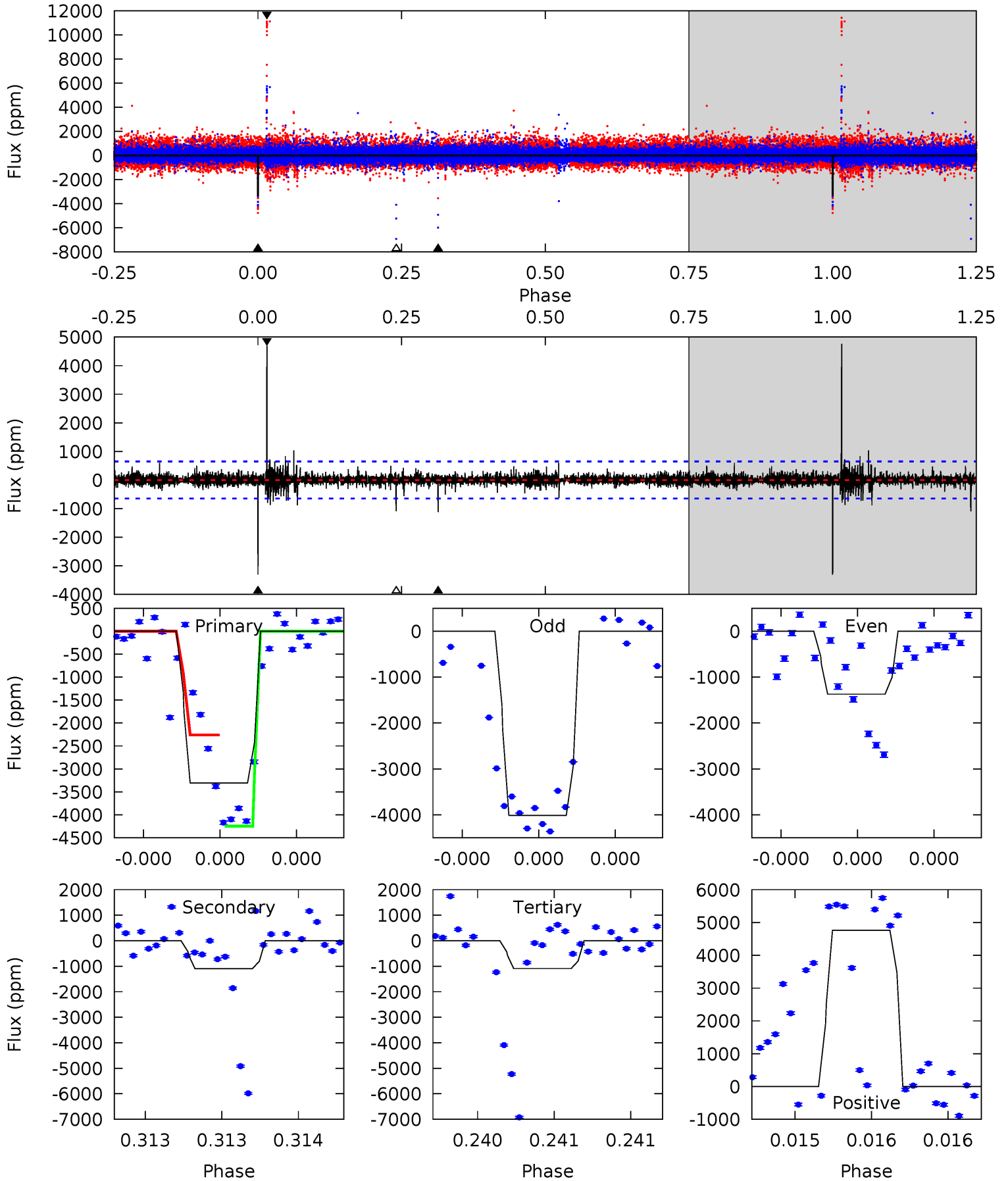
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.90	11.7	10.5	42.7	5.60	3.53	2.59	-3.59	-35.8	1.25	-31.0	1.11	1.13	0.78	0.56



Alt Model-Shift Uniqueness Test

004349043-02, P = 560.124747 Days, E = 431.726407 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.7	9.48	9.47	41.3	5.61	3.54	1.20	19.2	-12.6	0.01	-31.8	13.5	0.77	0.59	8.23



Stellar Parameters For KIC 004349043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4575^{+138}_{-124}	$4.564^{+0.060}_{-0.020}$	$0.180^{+0.200}_{-0.300}$	$0.737^{+0.031}_{-0.062}$	$0.726^{+0.057}_{-0.051}$	$2.553^{+0.599}_{-0.237}$
	+3%/-3%	+1%/-0%	+111%/-167%	+4%/-8%	+8%/-7%	+23%/-9%
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 004349043-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2414 ± 206	$4.84^{+4.41}_{-2.86}$	220^{+7}_{-7}	4210^{+2035}_{-839}	$82079^{+398154}_{-60452}$
Alt.	-1093 ± 115	$6.13^{+4.72}_{-4.01}$	220^{+7}_{-7}	3423^{+1534}_{-533}	$23311^{+163029}_{-15991}$

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 $A_{obs} \gg 1.0$

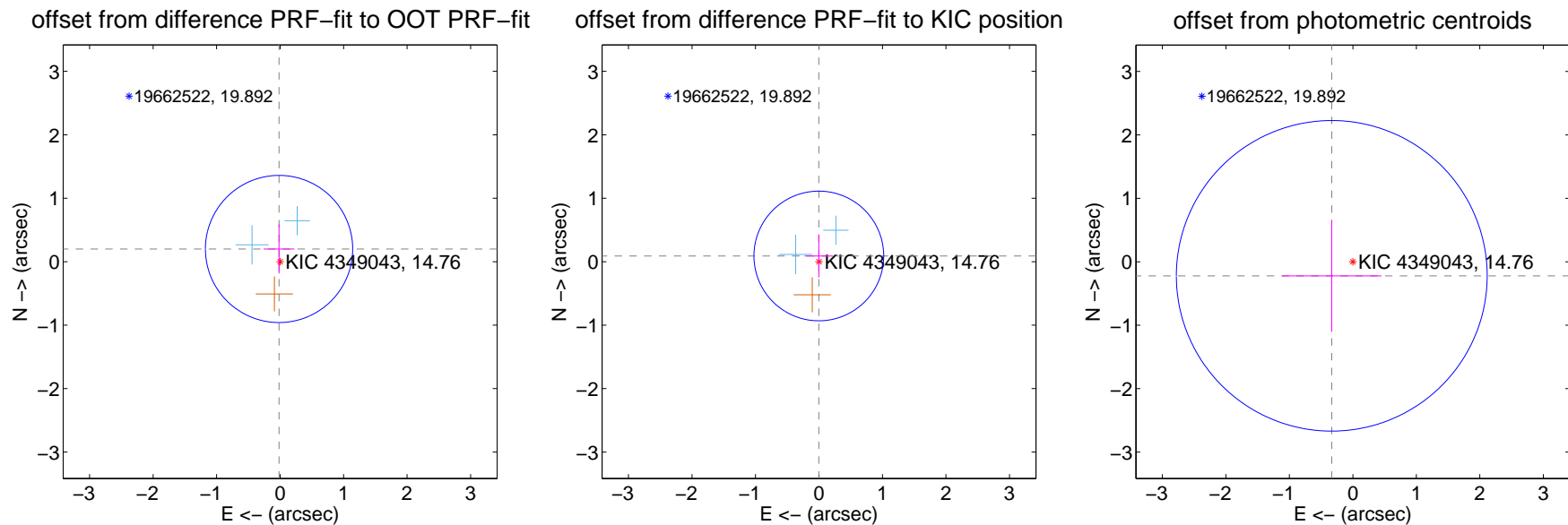
DV Centroid Data

Supplemental centroid analysis for 004349043-02. Kepler magnitude: 14.76. Transit SNR 6.38

There are 2 quarters with good PRF difference image offsets

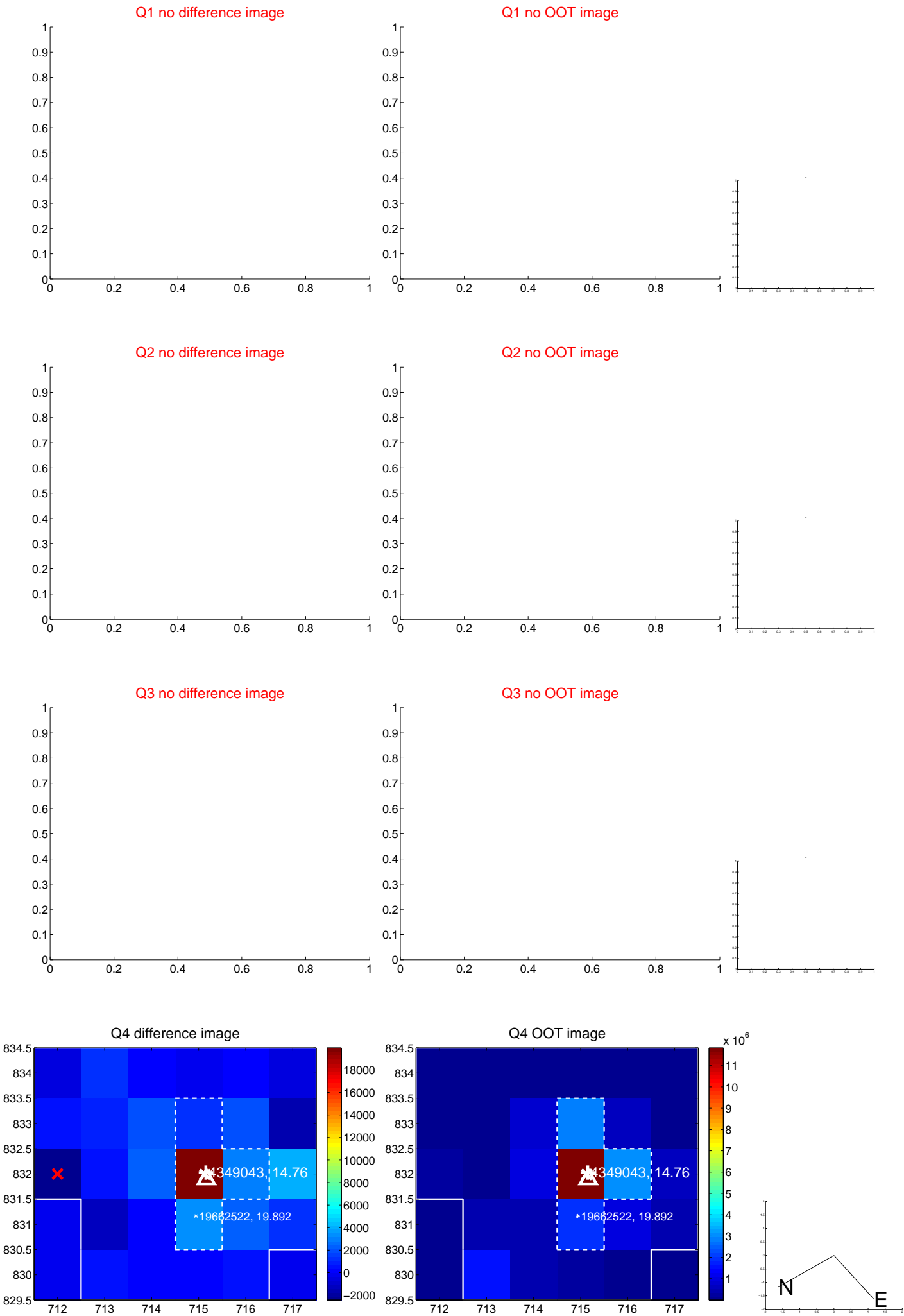
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.201 ± 0.387	0.52	0.017 ± 0.242	0.200 ± 0.387
PRF-fit source offset from KIC position	0.090 ± 0.341	0.27	0.003 ± 0.223	0.090 ± 0.341
photometric centroid source offset	0.40 ± 0.82	0.49	0.33 ± 0.78	-0.22 ± 0.88



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.

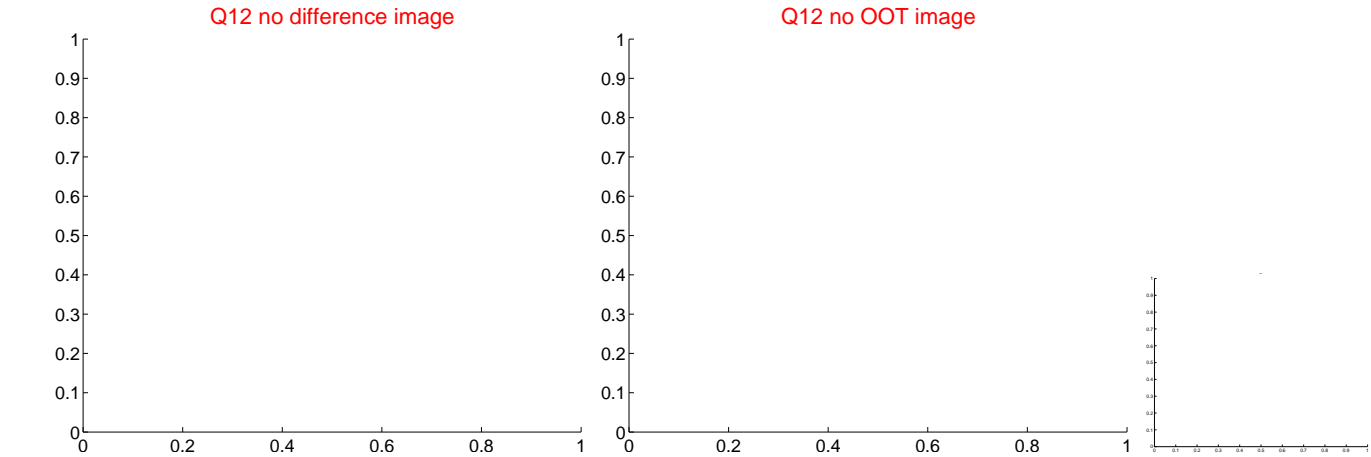
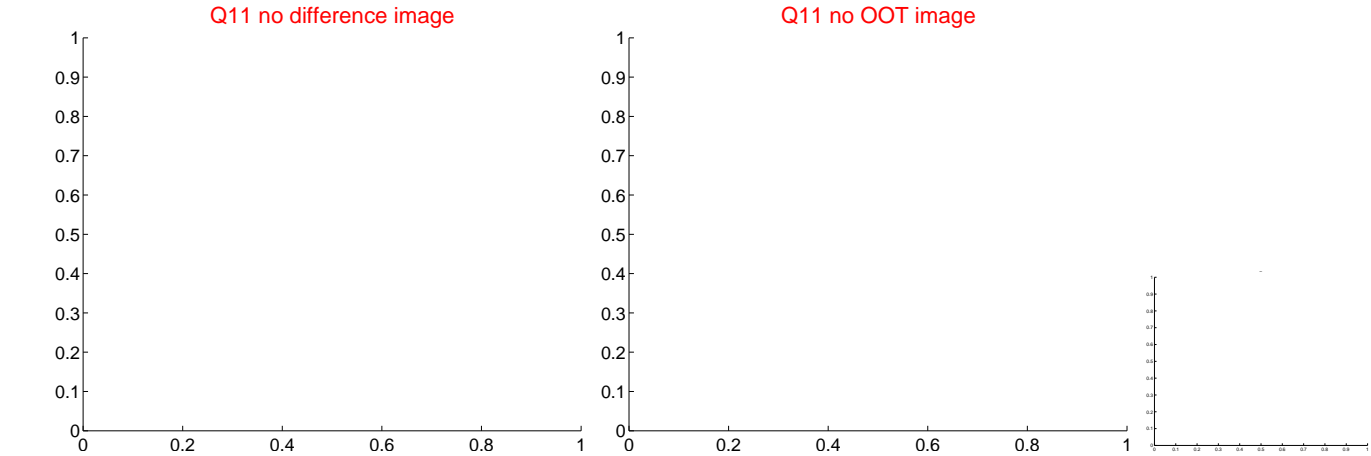
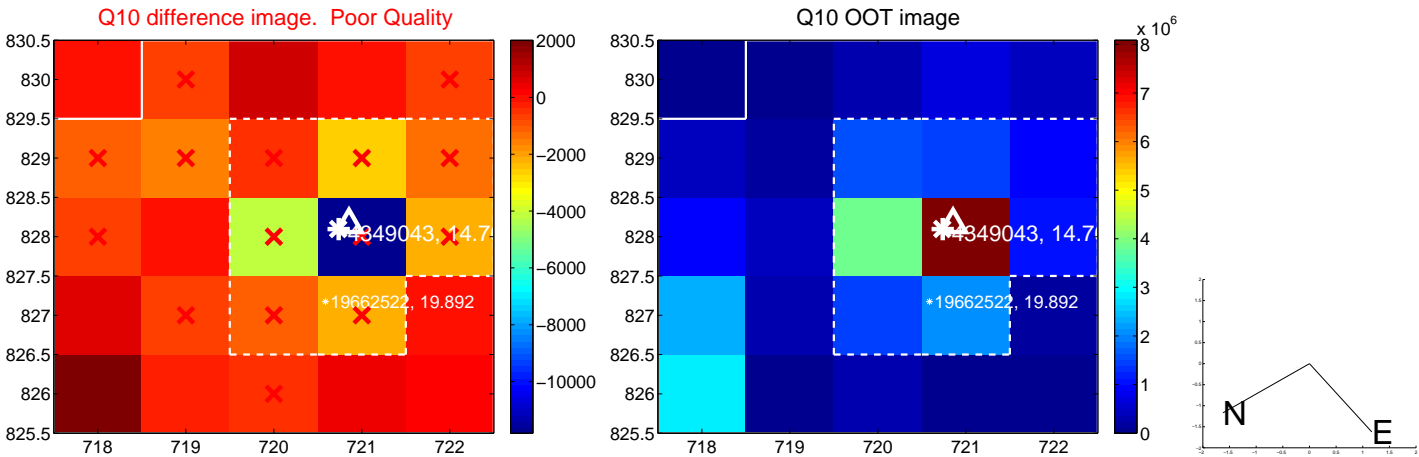
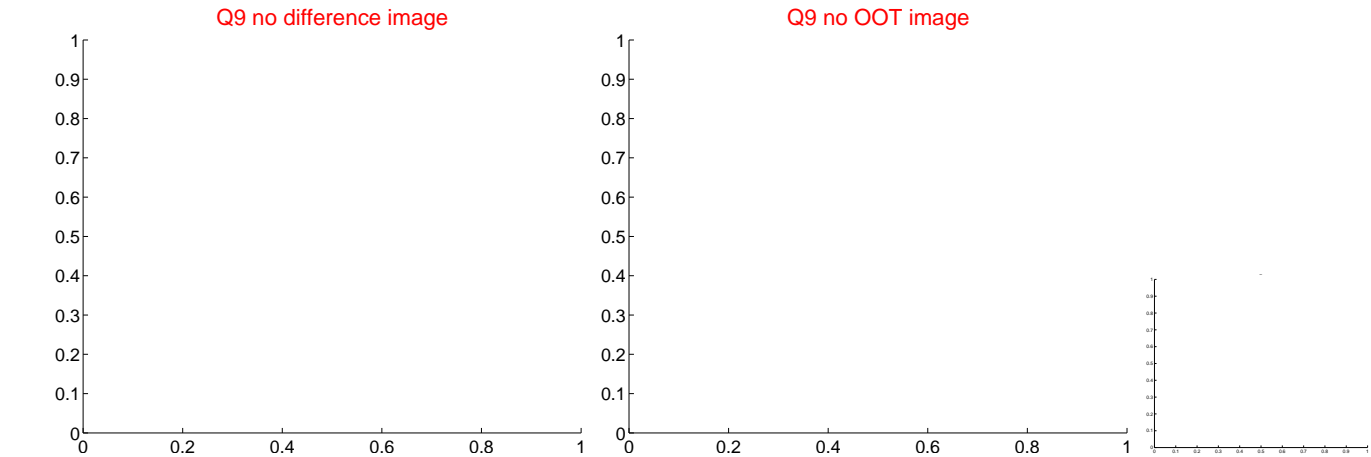
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



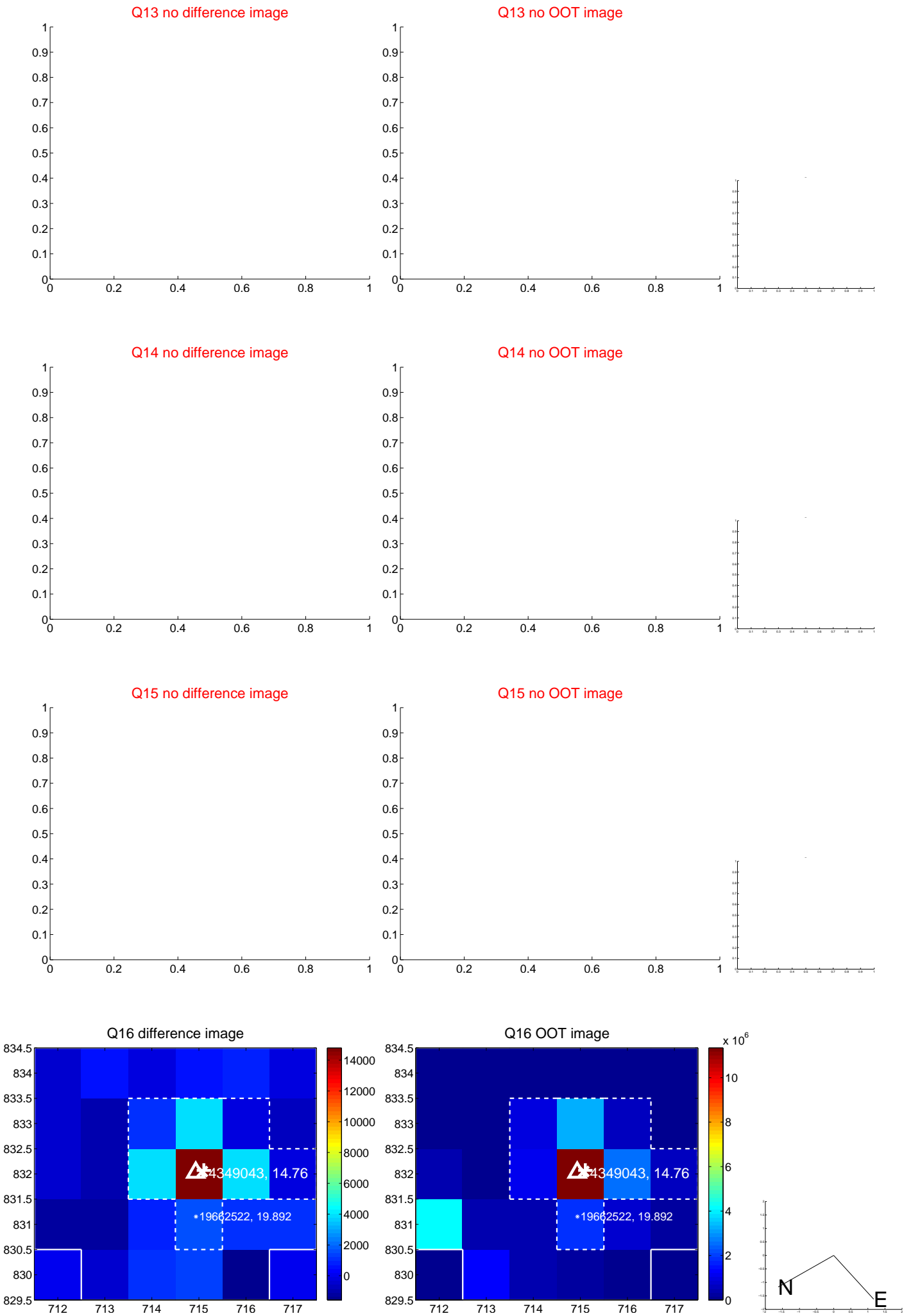
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



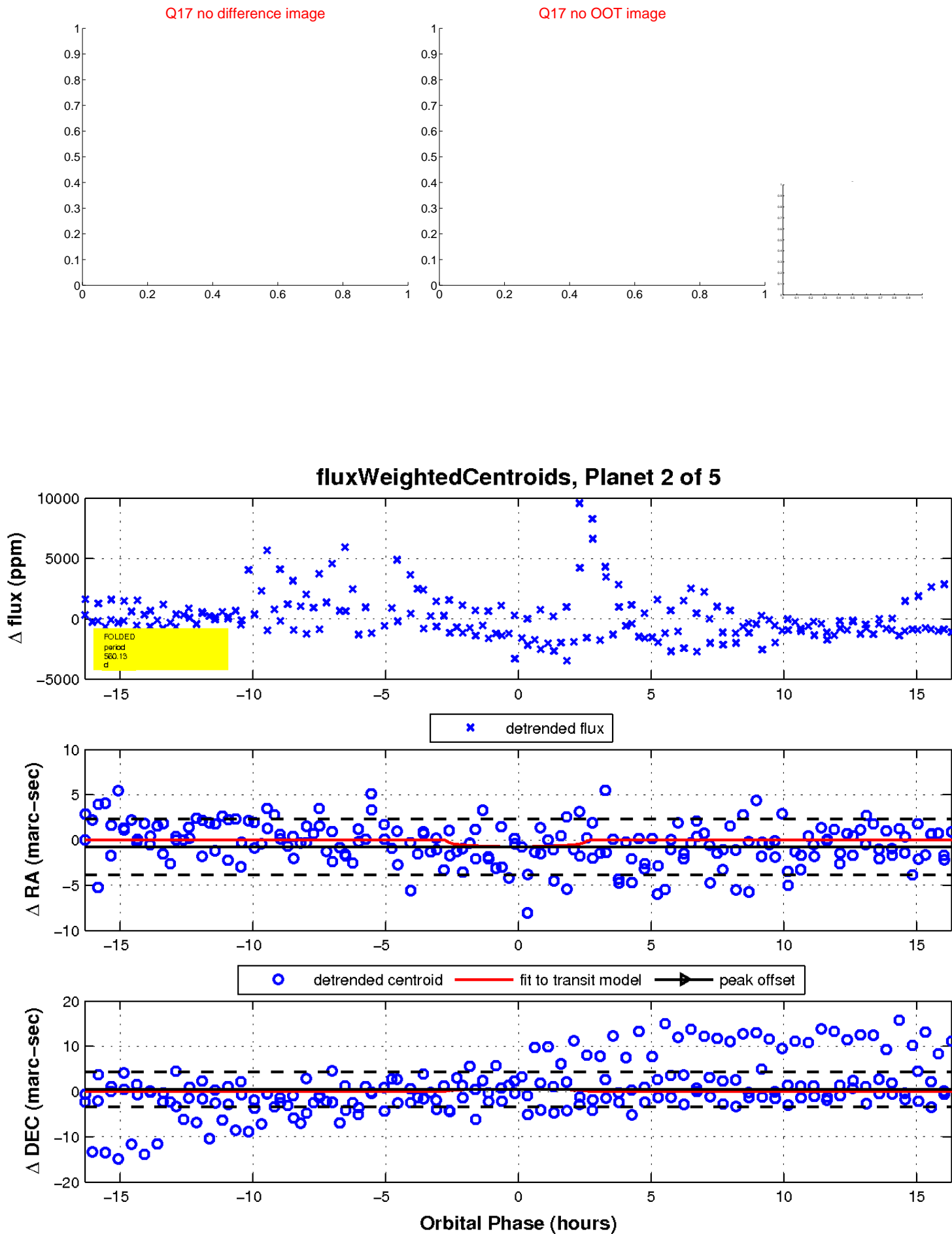
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

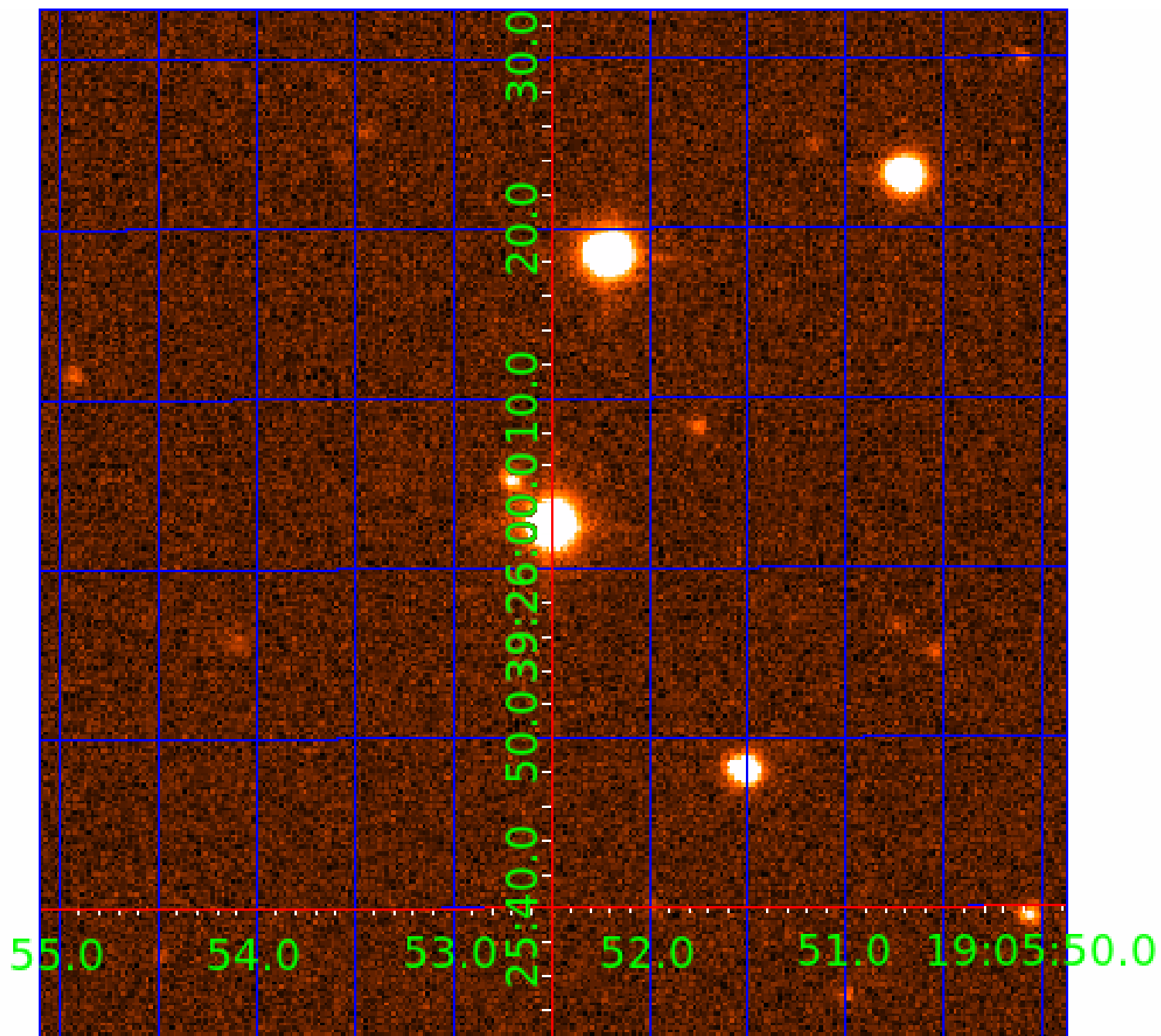


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004349043

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})
004349043-01	OBS	No	416.904140	359.927795	2267.8	3.893	16.7	8.0	0.74	4575	3.64	0.22
004349043-02	OBS	No	560.130530	431.743759	1954.1	5.468	13.2	6.4	0.74	4575	3.14	0.15
004349043-03	OBS	No	453.625055	181.796037	1722.4	4.181	12.7	5.6	0.74	4575	3.86	0.20
004349043-05	OBS	No	382.184441	242.107053	1891.9	3.000	11.9	-1.0	0.74	4575	3.06	0.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004349043-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004349043-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
004349043-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— INCONSISTENT_TRANS
004349043-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

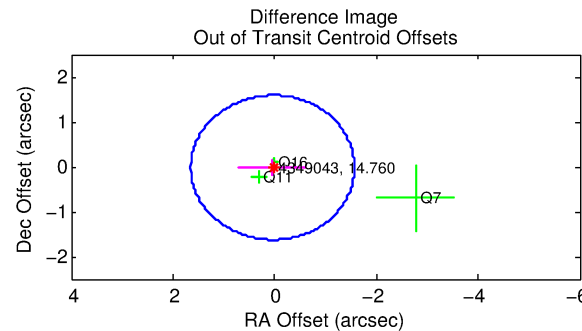
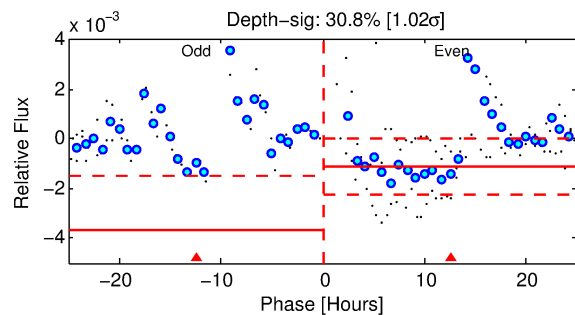
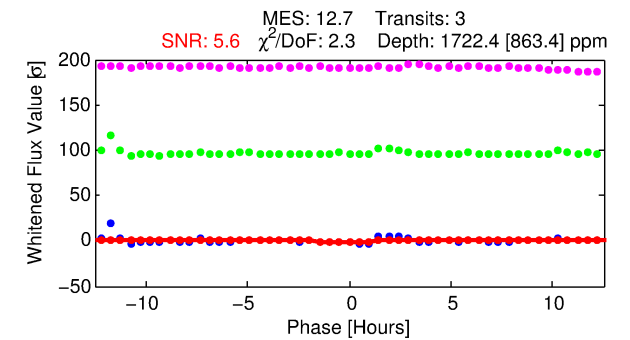
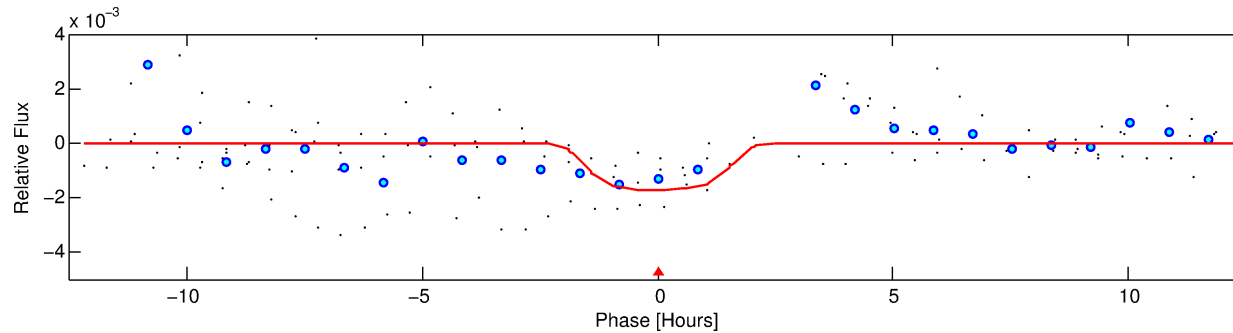
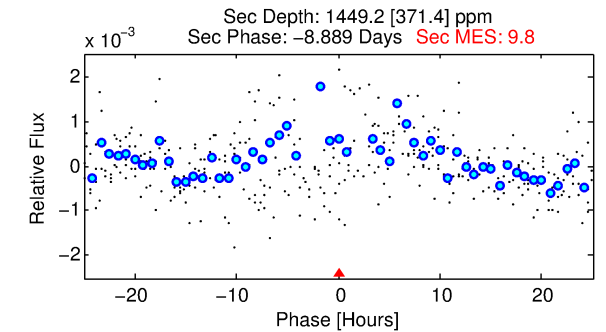
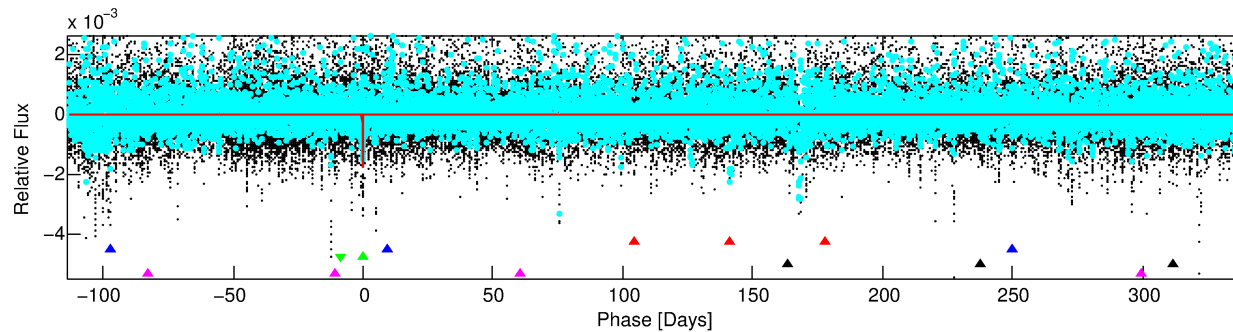
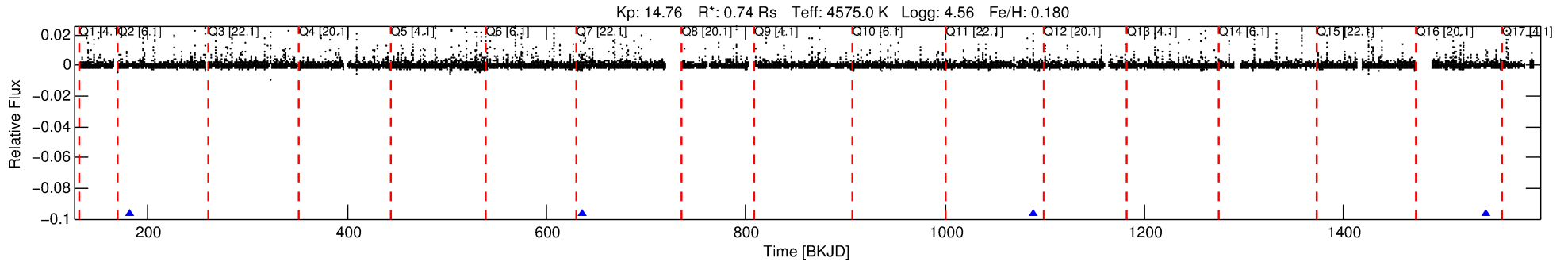
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004349043-03

No Significant Match Found

DV One-Page Summary

KIC: 4349043 Candidate: 3 of 5 Period: 453.625 d



DV Fit Results:

Period = 453.62505 [0.01626] d
Epoch = 181.7960 [0.0377] BKJD
Rp/R* = 0.0480 [0.0178]
a/R* = 426.67 [336.20]
b = 0.91 [0.15]
Seff = 0.20 [0.03]
Teq = 170 [7] K
Rp = 3.86 [1.47] Re
a = 1.0387 [0.0754] AU
Ag = 57807.83 [45824.84] [1.26σ]
Teffp = 4076 [810] K [4.82σ]

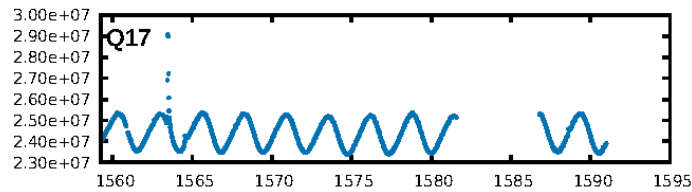
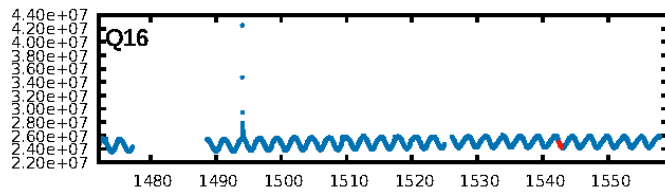
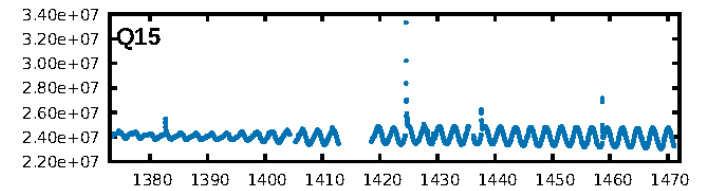
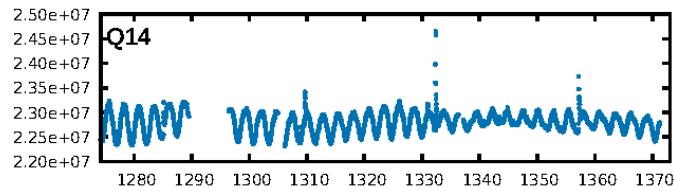
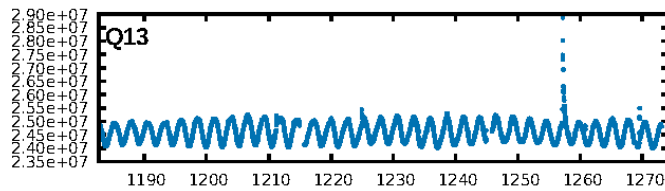
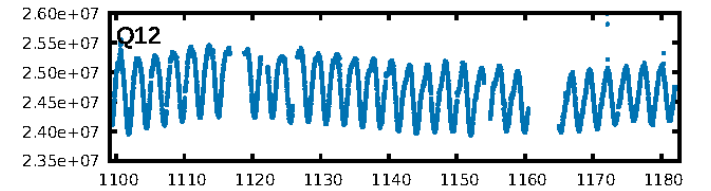
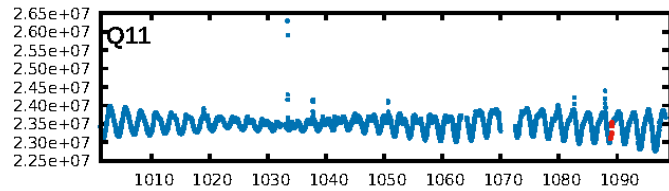
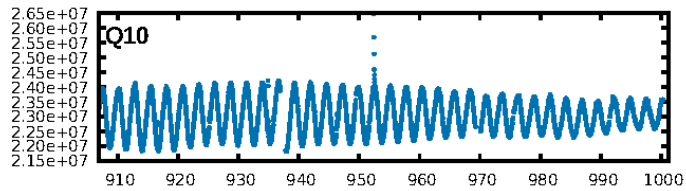
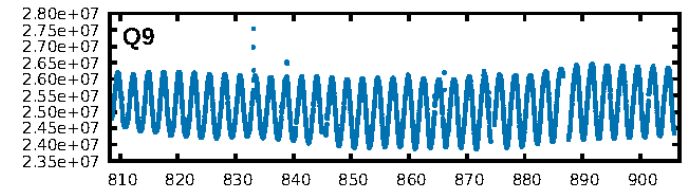
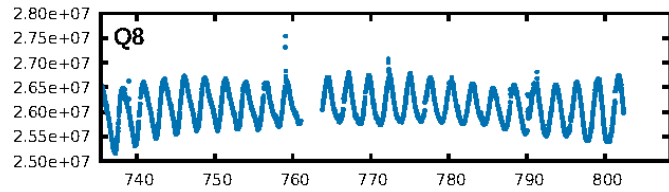
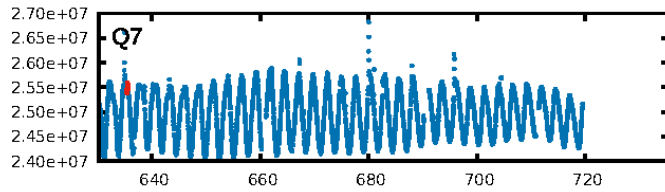
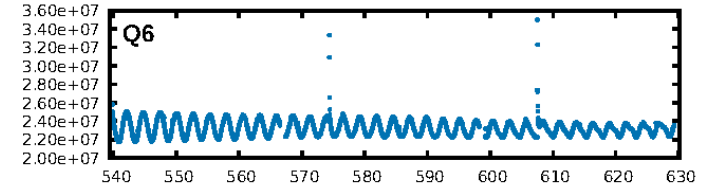
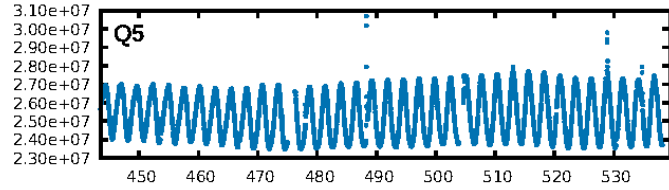
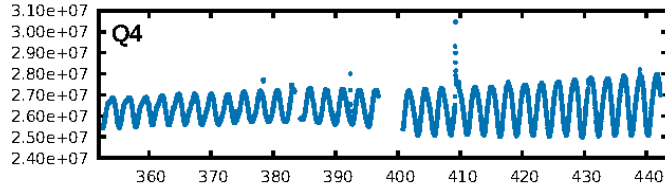
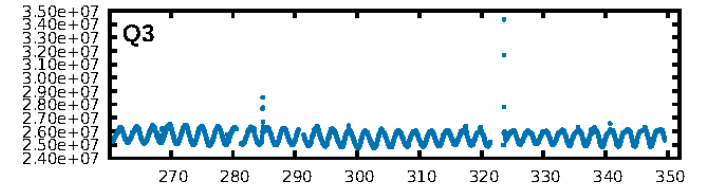
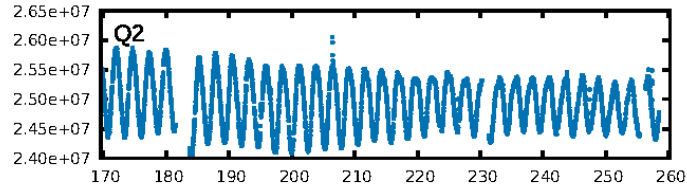
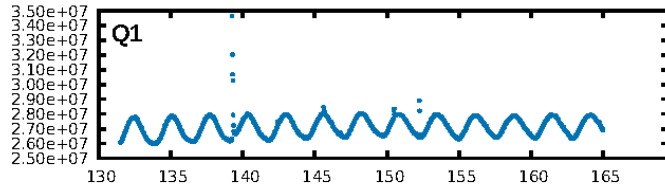
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [154.27σ]
LongPeriod-sig: 100.0% [356.72σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 18.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.189
Centroid-sig: 82.6%
Centroid-so: 0.443 arcsec [0.42σ]
OotOffset-rm: 0.045 arcsec [0.08σ]
OotOffset-st: 0/2/1/0 [3]
KicOffset-rm: 0.185 arcsec [0.71σ]
KicOffset-st: 0/2/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

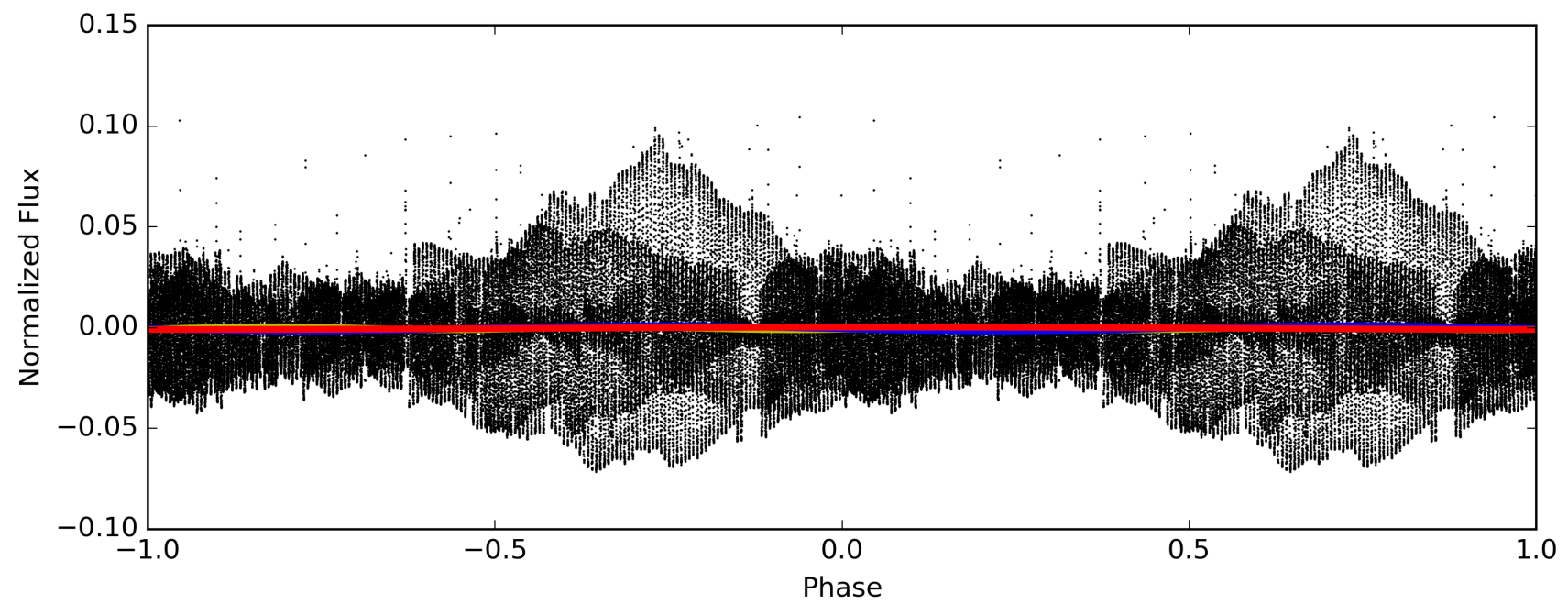
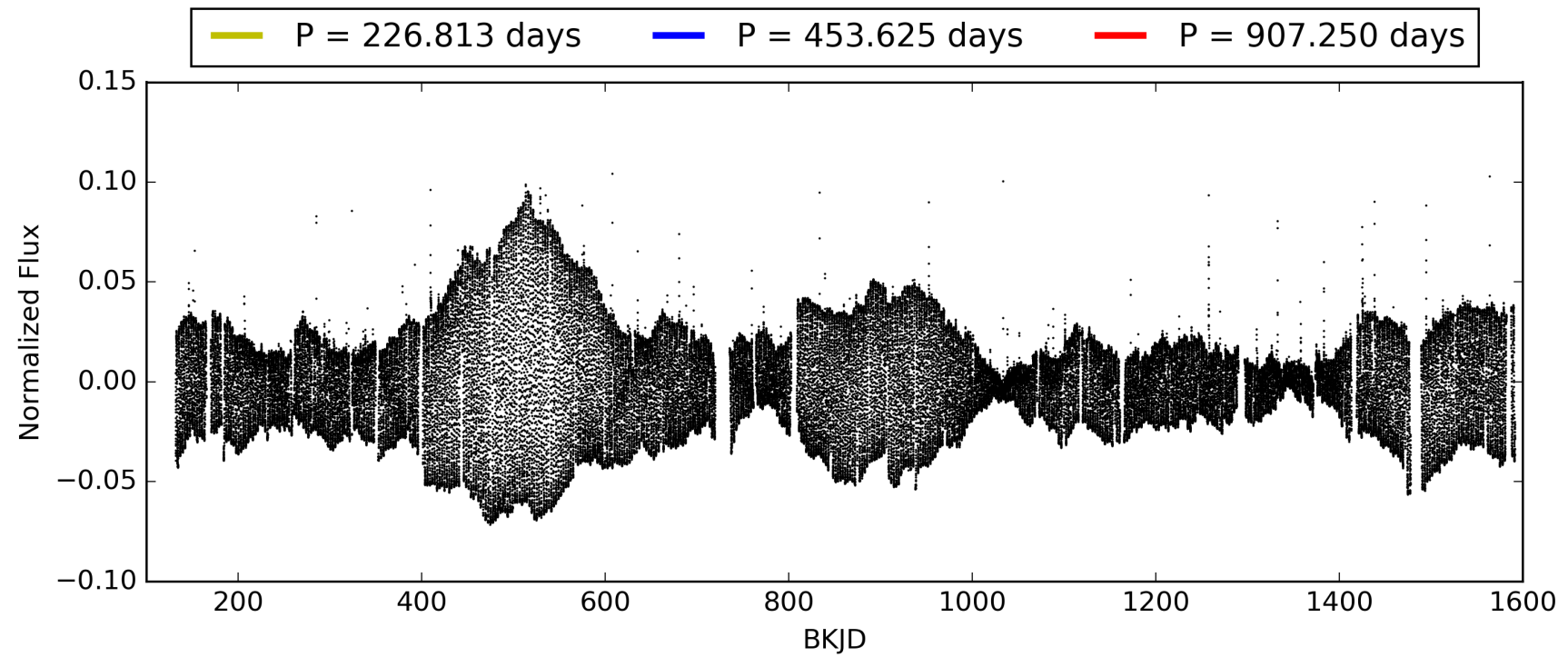
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:26:59 Z

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

TCE 004349043-03, PDC Light Curves

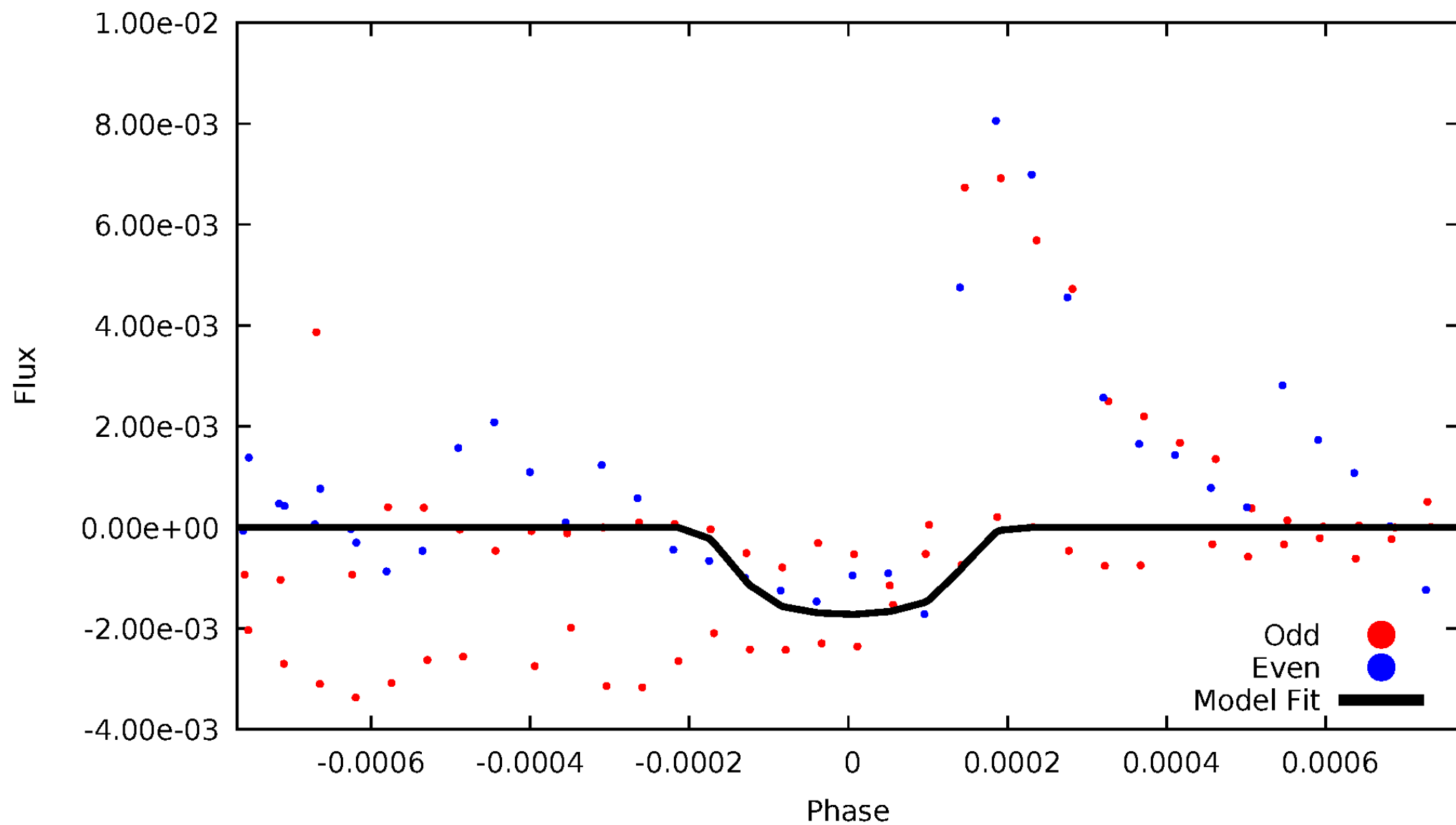


TCE 004349043-03



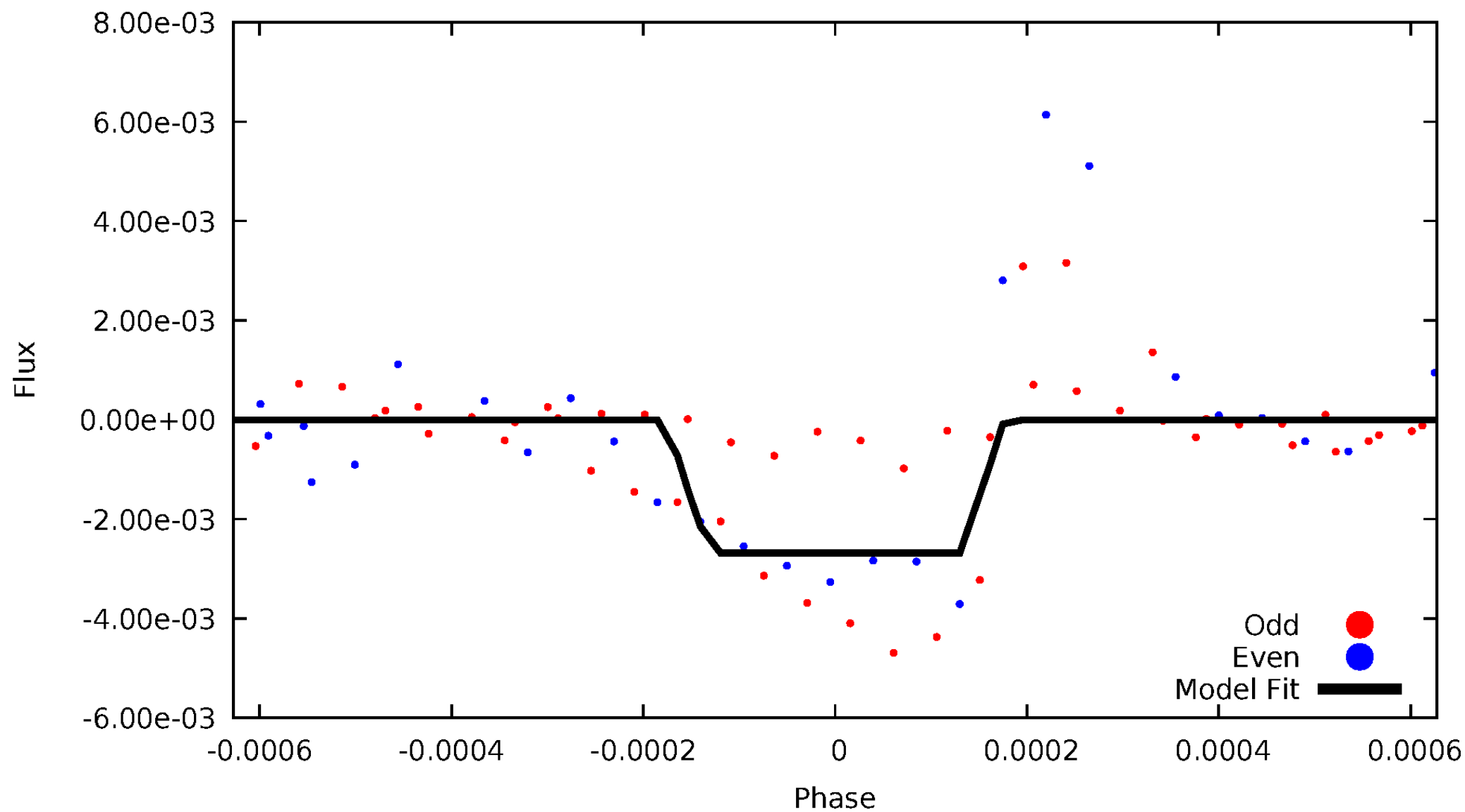
DV Odd/Even

TCE 004349043-03



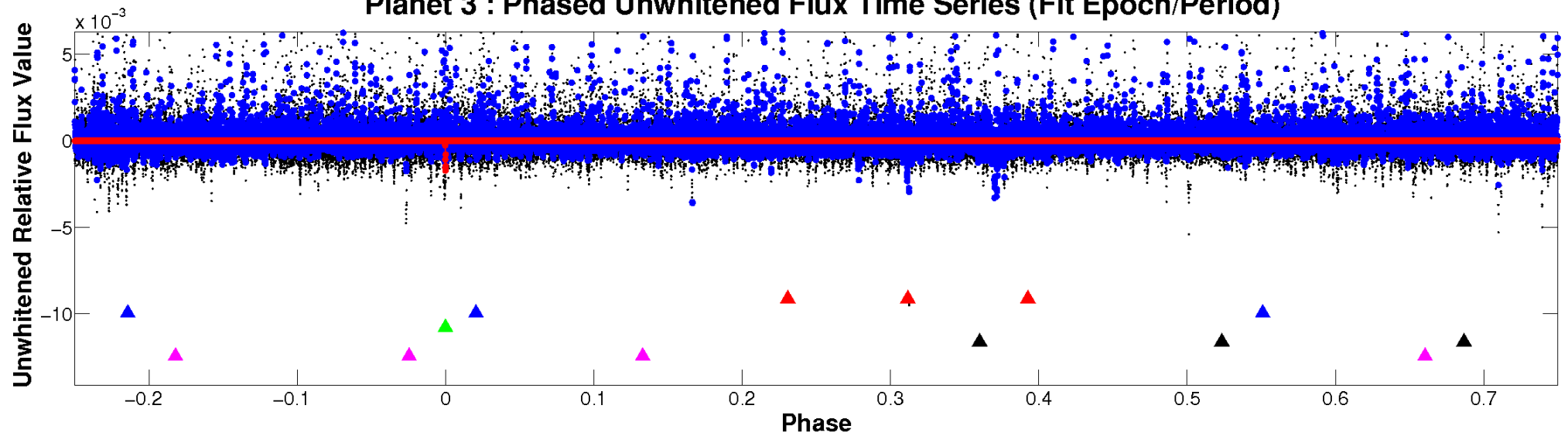
ALT Odd/Even

TCE 004349043-03

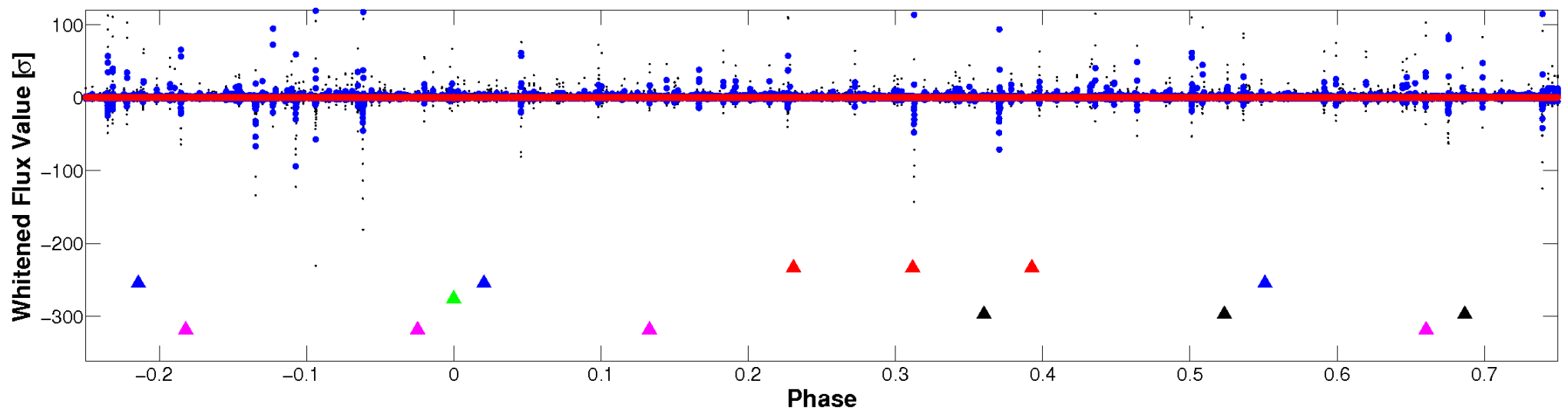


Non-Whitened Vs. Whitened Light Curve

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

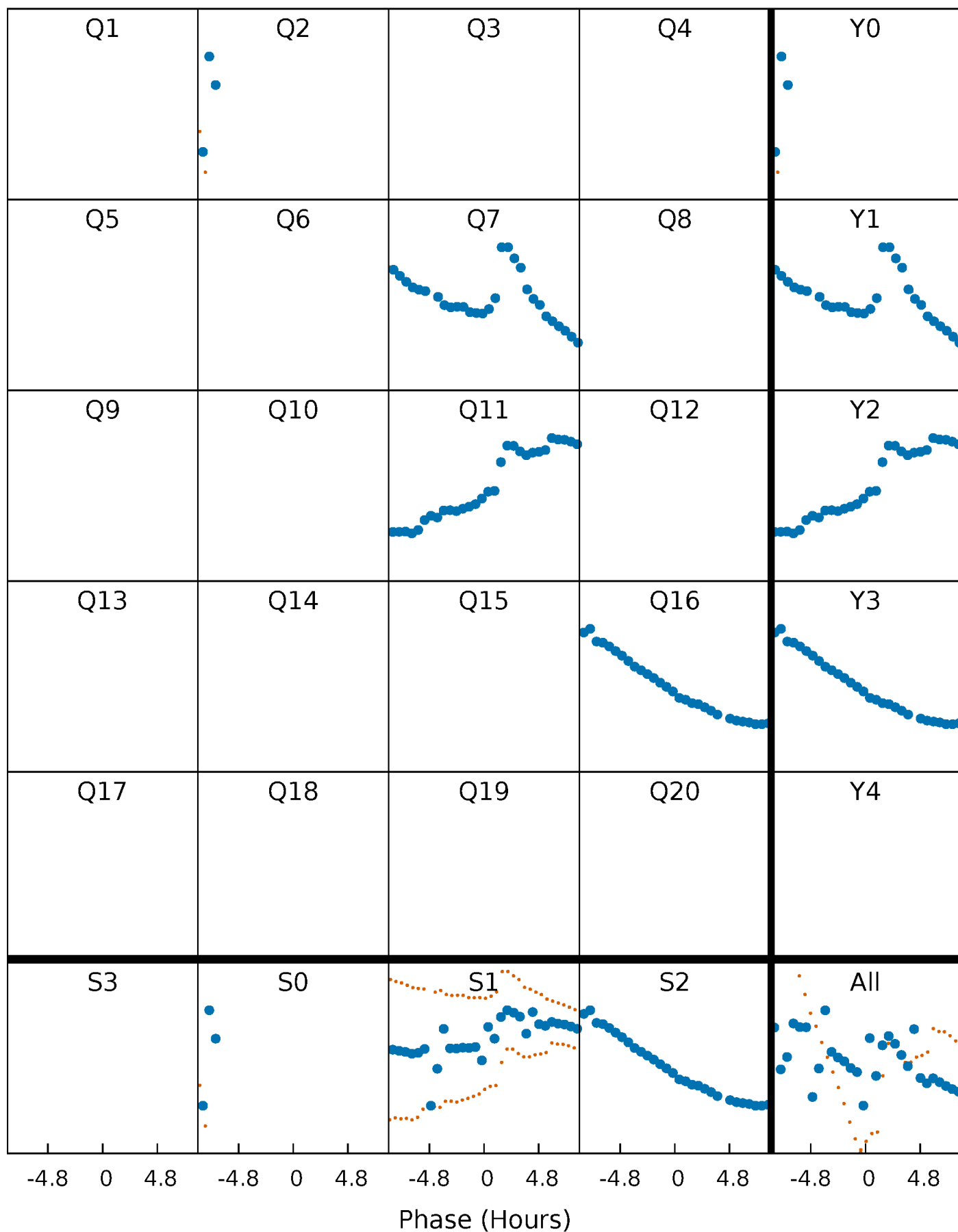


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



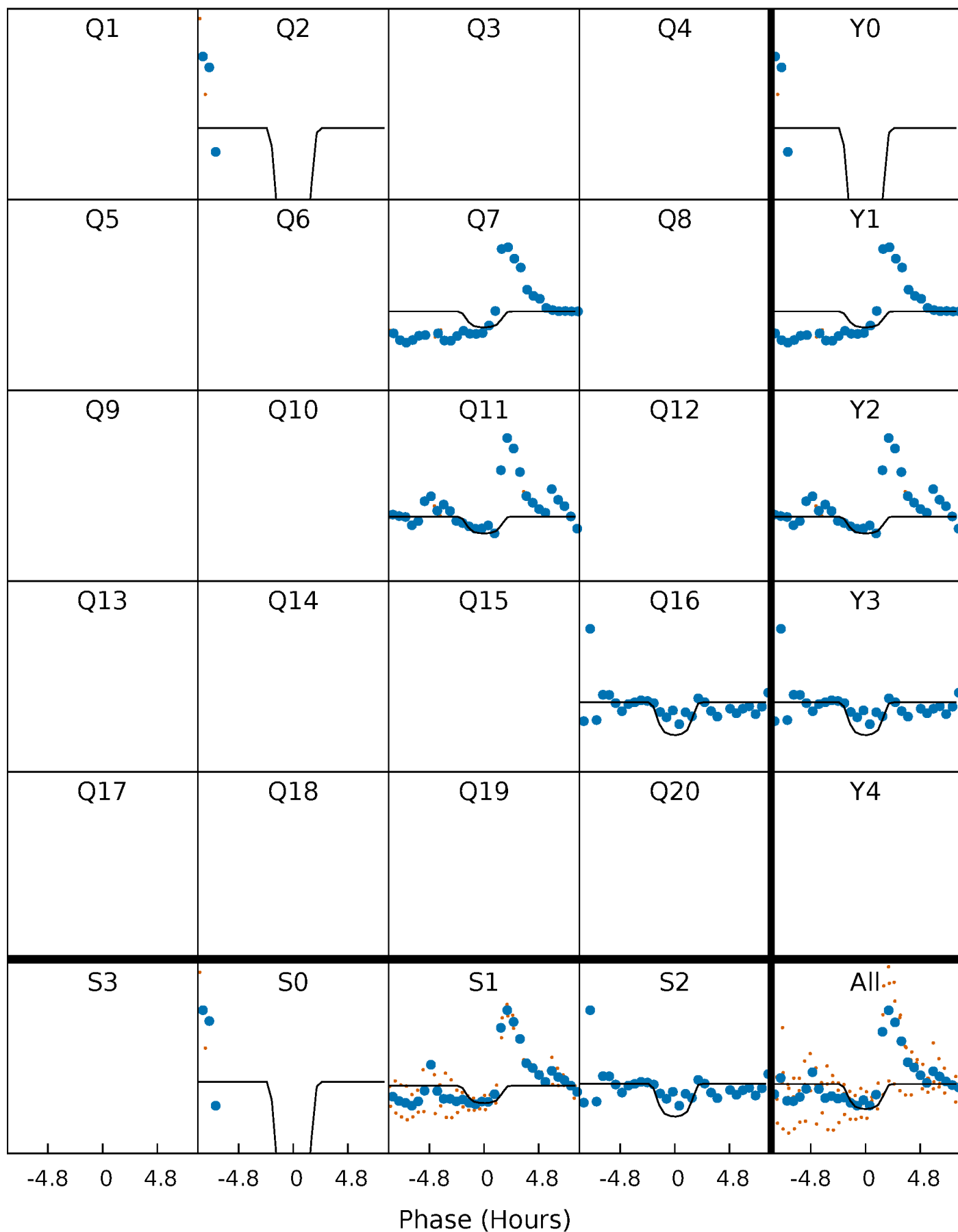
PDC Quarter-Phased Transit Curves

TCE 004349043-03 $P=453.625055$ Days $T_0=181.796037$ (BKJD)



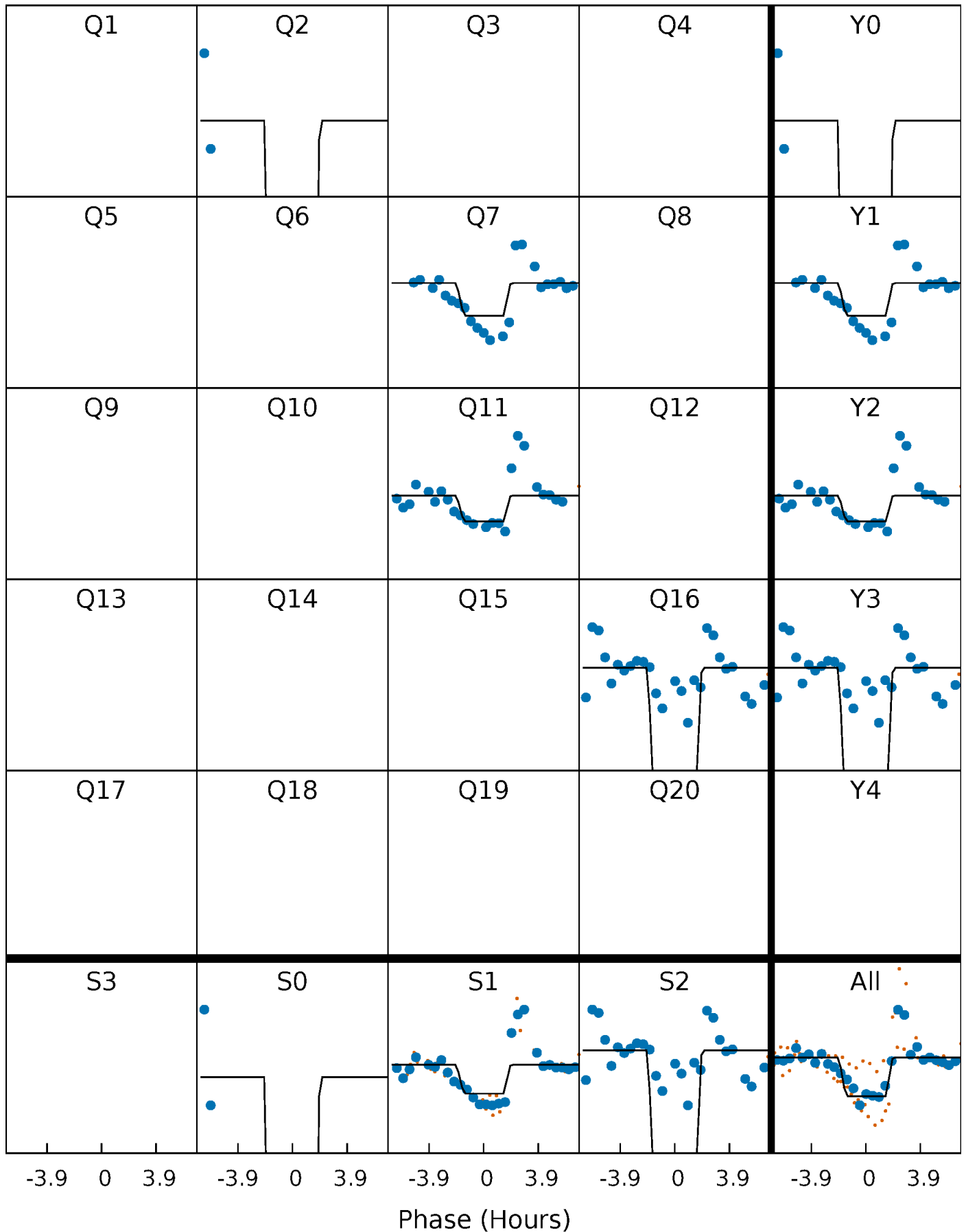
DV Quarter-Phased Transit Curves

TCE 004349043-03 P=453.625055 Days $T_0=181.796037$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

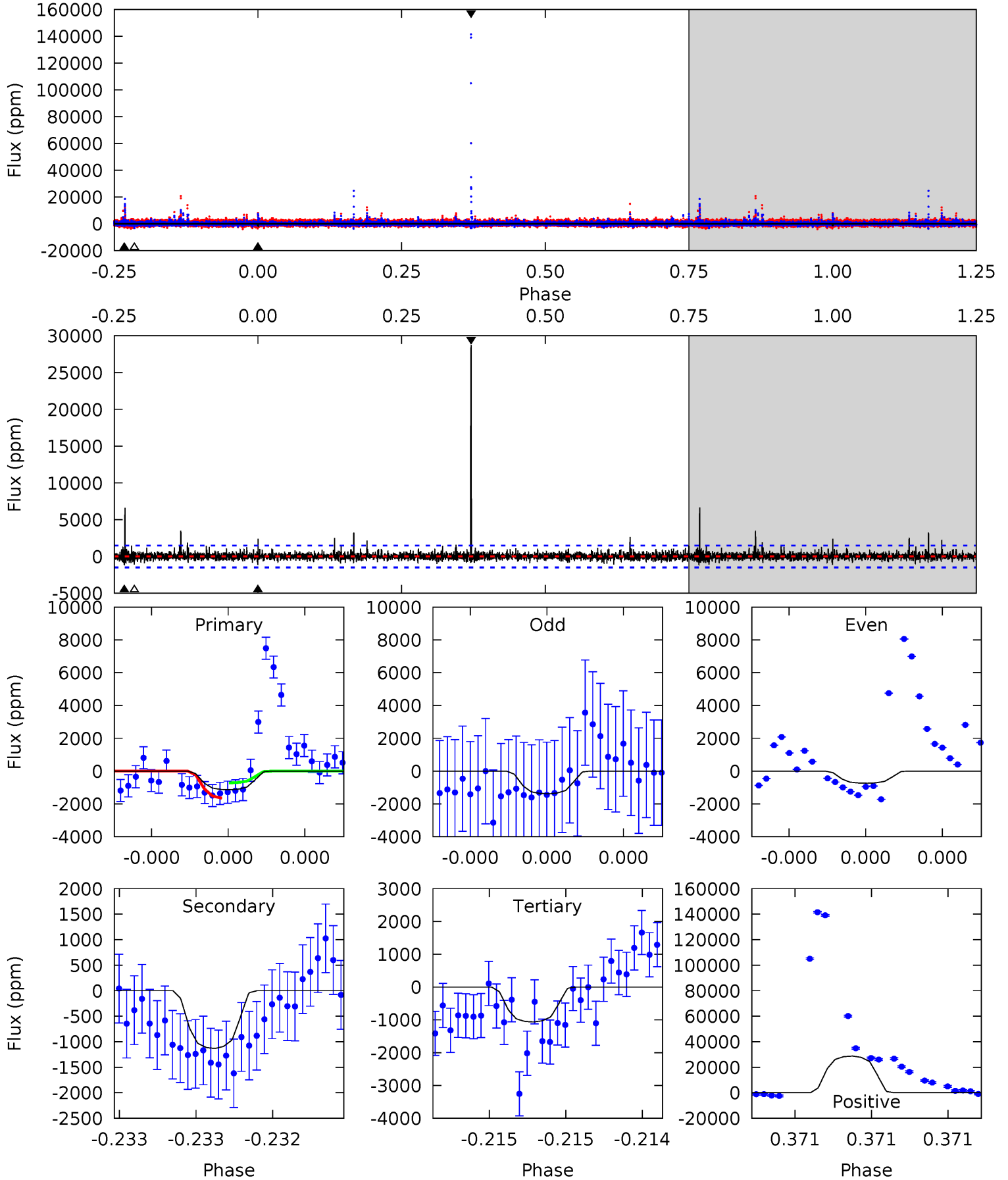
TCE 004349043-03 P=453.631843 Days $T_0=181.766802$ (BKJD)



DV Model-Shift Uniqueness Test

004349043-03, P = 453.625055 Days, E = 181.796037 Days

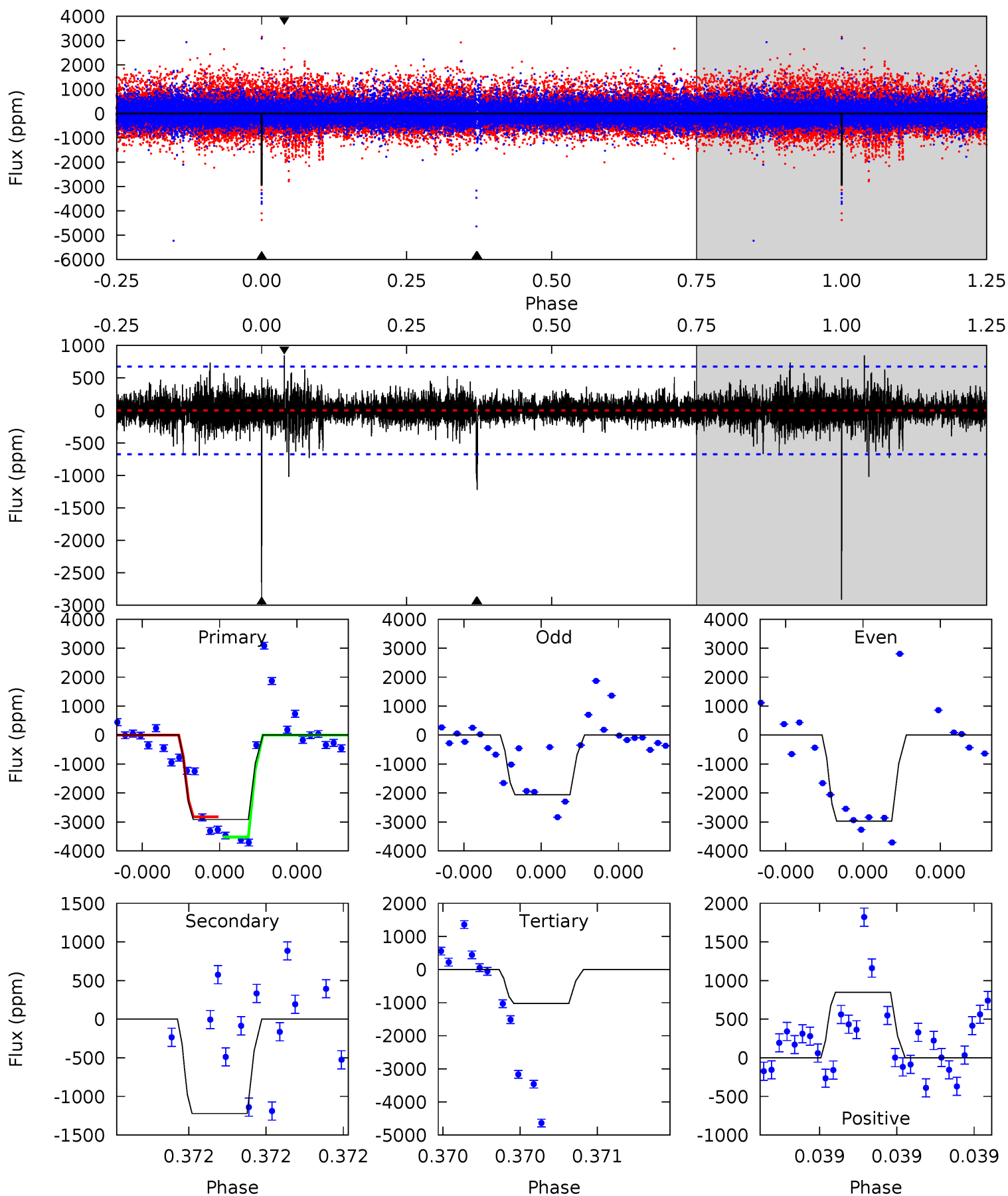
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.27	4.24	3.99	107.9	5.61	3.54	2.03	0.28	-103.6	0.25	-103.6	0.73	1.30	0.96	1.77



Alt Model-Shift Uniqueness Test

004349043-03, P = 453.631843 Days, E = 181.766802 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.3	10.2	8.55	7.08	5.64	3.58	1.04	15.8	17.3	1.65	3.13	4.00	0.82	0.23	2.83



Stellar Parameters For KIC 004349043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4575^{+138}_{-124}	$4.564^{+0.060}_{-0.020}$	$0.180^{+0.200}_{-0.300}$	$0.737^{+0.031}_{-0.062}$	$0.726^{+0.057}_{-0.051}$	$2.553^{+0.599}_{-0.237}$
	+3%/-3%	+1%/-0%	+111%/-167%	+4%/-8%	+8%/-7%	+23%/-9%
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 004349043-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1130 ± 266	$3.85^{+1.42}_{-1.46}$	236^{+7}_{-7}	3999^{+750}_{-458}	45630^{+69072}_{-22807}
Alt.	-1222 ± 120	$4.30^{+1.30}_{-1.60}$	235^{+8}_{-7}	3906^{+721}_{-342}	39494^{+66435}_{-15738}

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

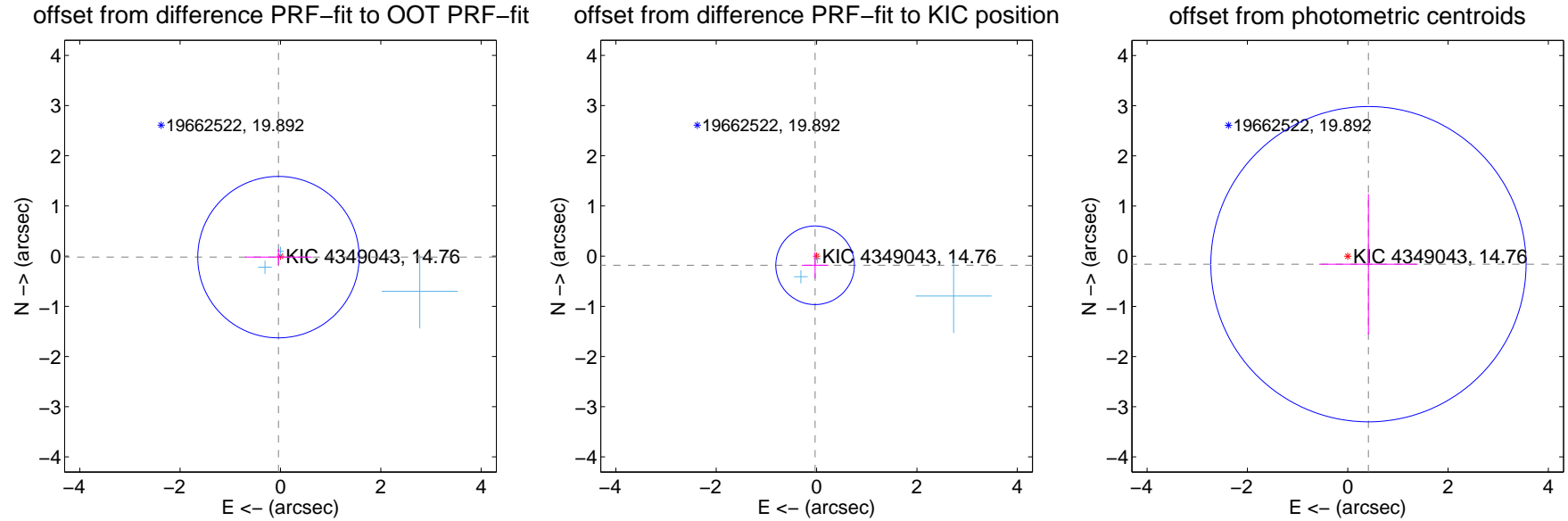
DV Centroid Data

Supplemental centroid analysis for 004349043-03. Kepler magnitude: 14.76. Transit SNR 5.64

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.045 ± 0.536	0.08	0.040 ± 0.664	-0.020 ± 0.164
PRF-fit source offset from KIC position	0.185 ± 0.261	0.71	0.030 ± 0.266	-0.182 ± 0.261
photometric centroid source offset	0.44 ± 1.05	0.42	-0.41 ± 0.98	-0.16 ± 1.40



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.

Q5 no difference image



Q5 no OOT image



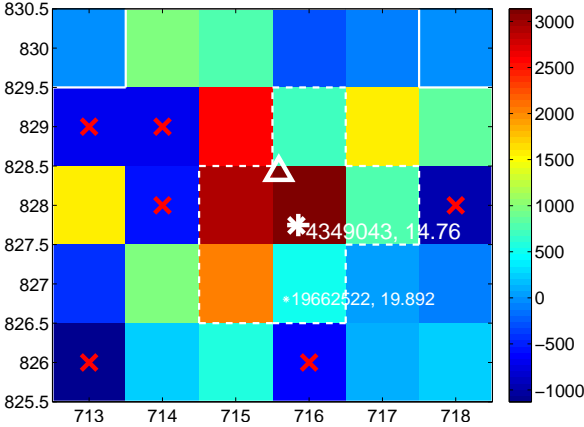
Q6 no difference image



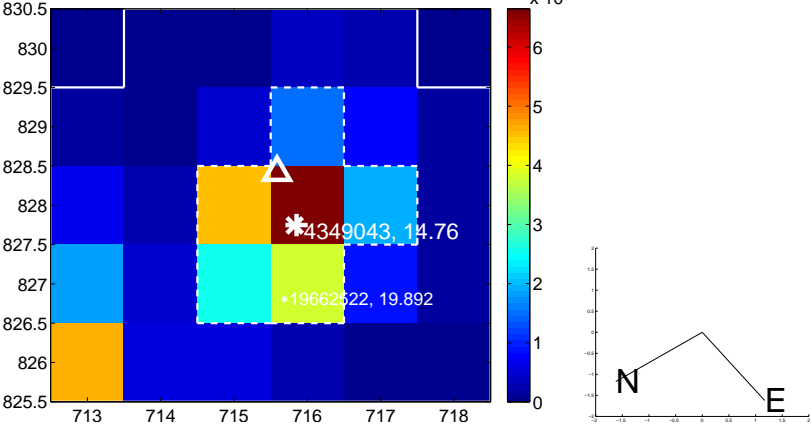
Q6 no OOT image



Q7 difference image



Q7 OOT image



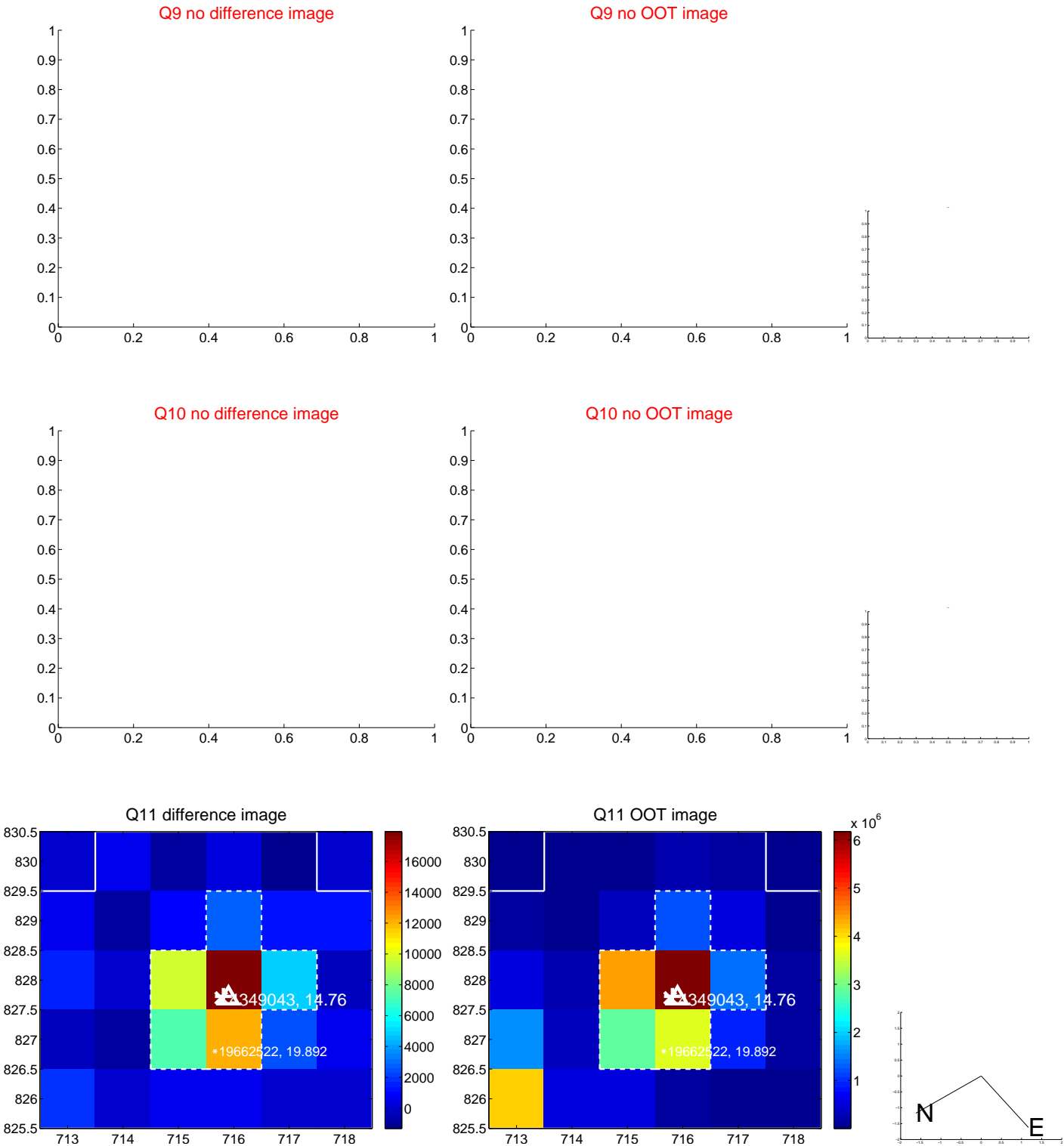
Q8 no difference image



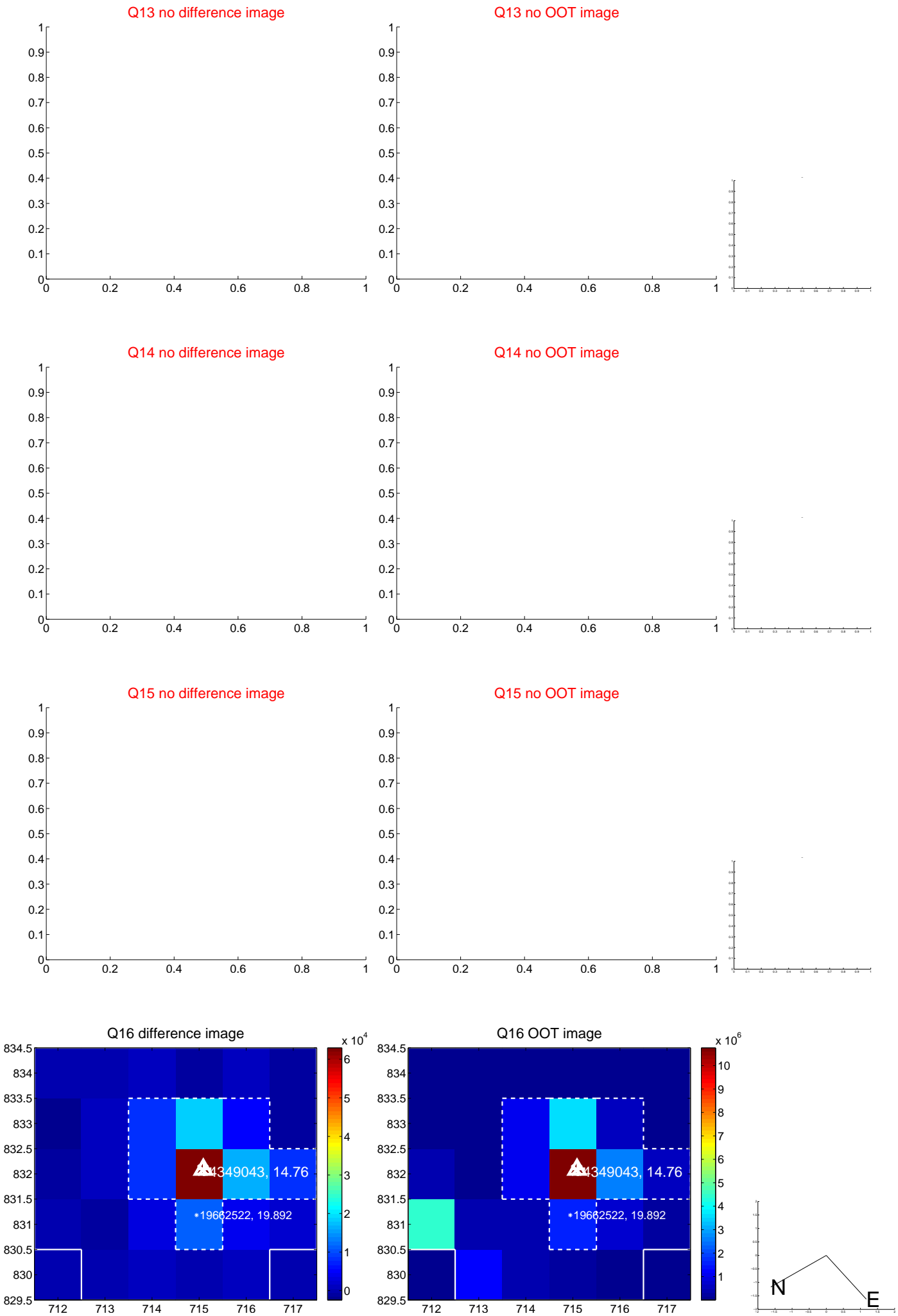
Q8 no OOT image



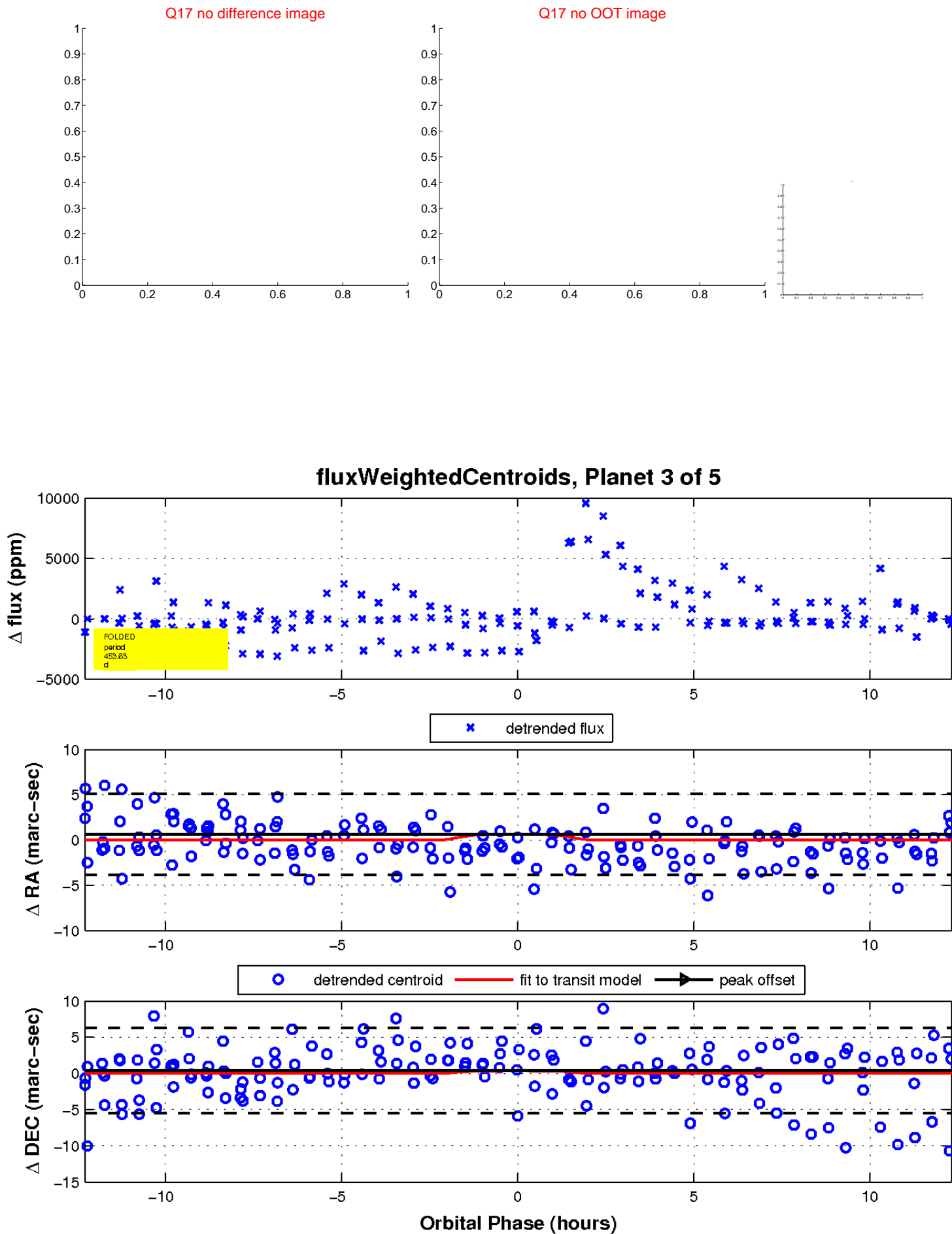
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

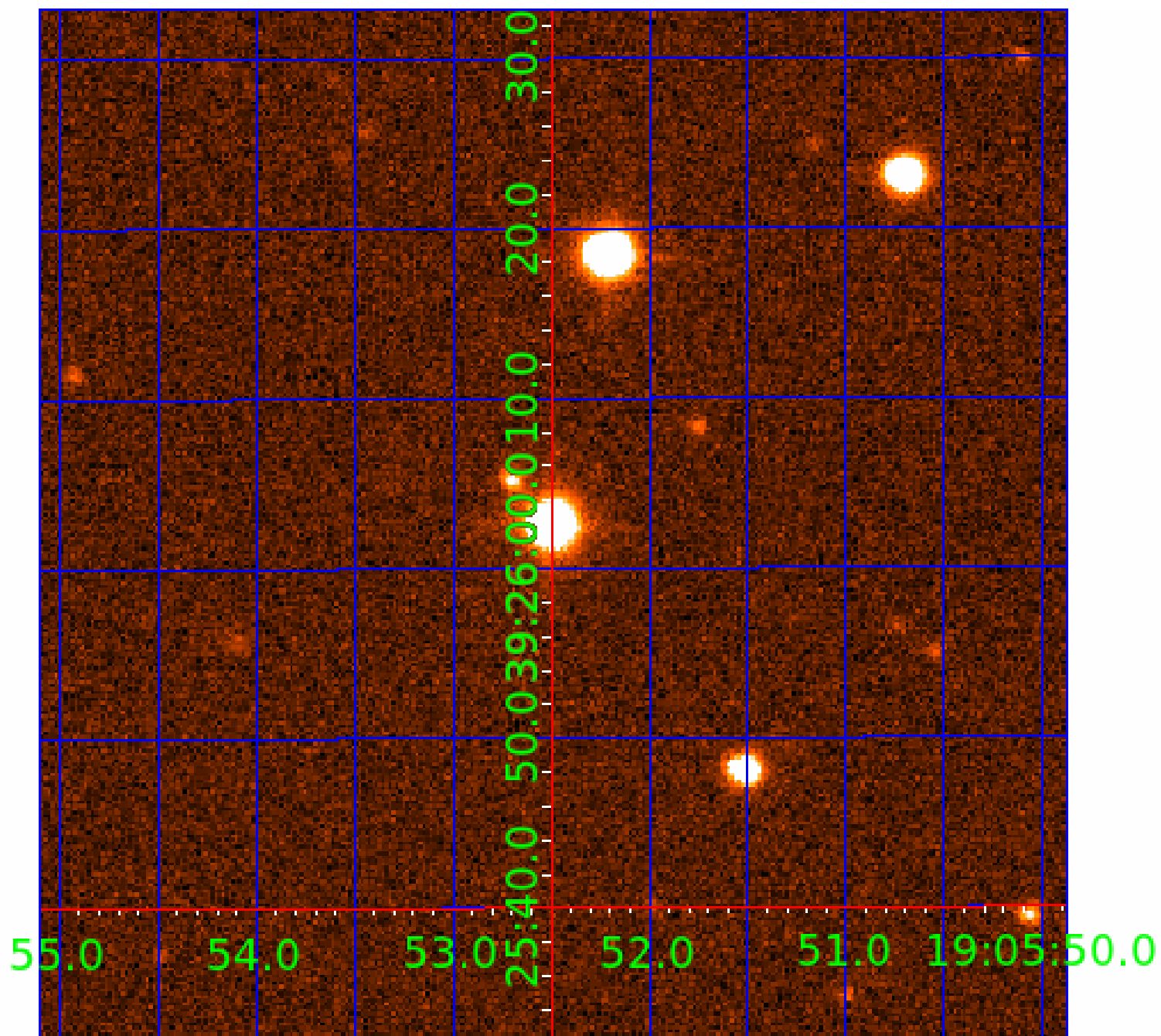


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004349043

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})
004349043-01	OBS	No	416.904140	359.927795	2267.8	3.893	16.7	8.0	0.74	4575	3.64	0.22
004349043-02	OBS	No	560.130530	431.743759	1954.1	5.468	13.2	6.4	0.74	4575	3.14	0.15
004349043-03	OBS	No	453.625055	181.796037	1722.4	4.181	12.7	5.6	0.74	4575	3.86	0.20
004349043-05	OBS	No	382.184441	242.107053	1891.9	3.000	11.9	-1.0	0.74	4575	3.06	0.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004349043-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004349043-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
004349043-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— INCONSISTENT_TRANS
004349043-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

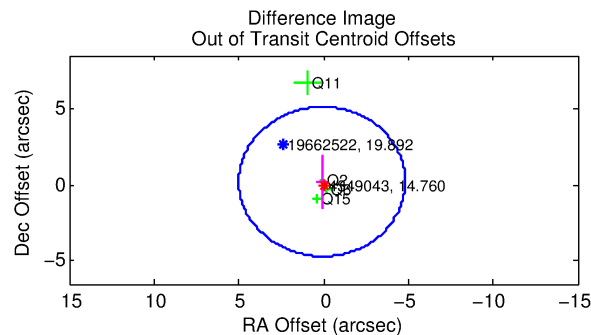
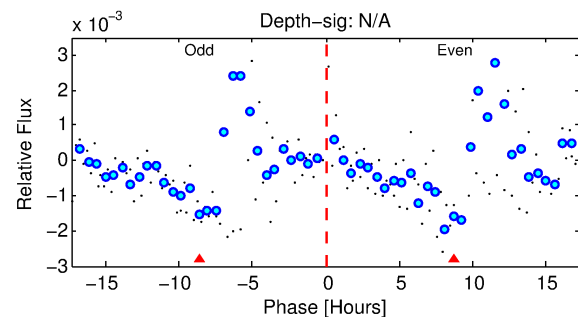
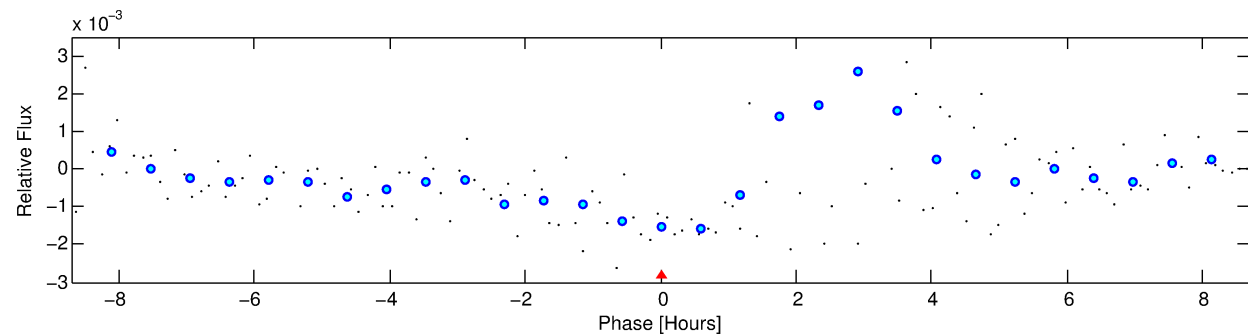
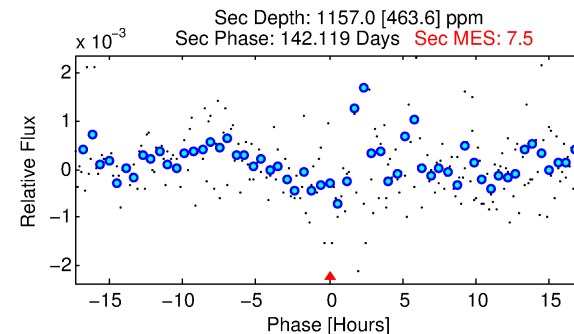
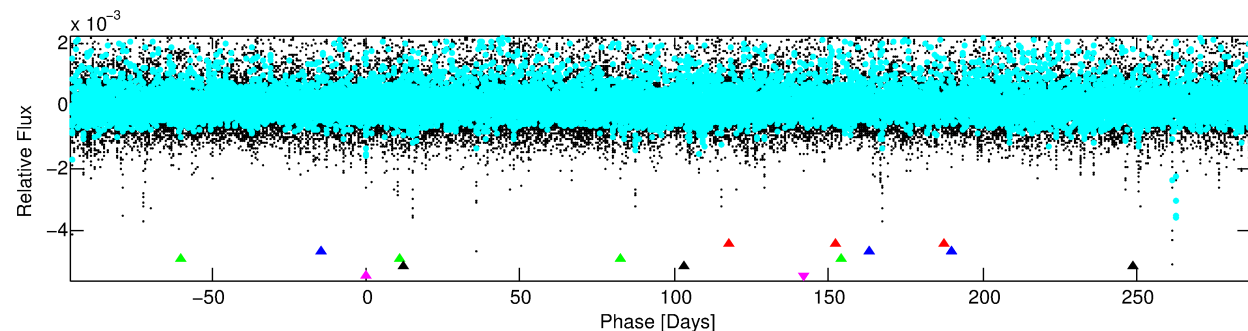
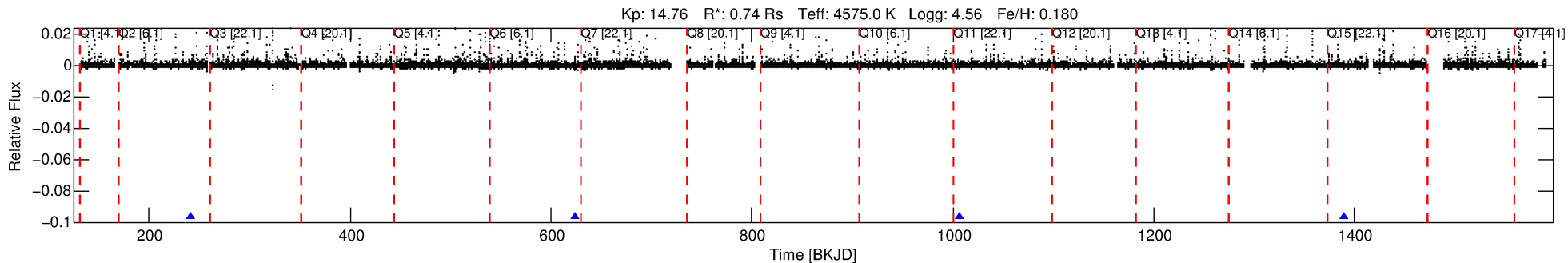
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004349043-05

No Significant Match Found

DV One-Page Summary

KIC: 4349043 Candidate: 5 of 5 Period: 382.184 d



TPS TCE Results:

Period = 382.18444 d
Epoch = 242.1071 BKJD

DV fit results are unavailable

DV Diagnostic Results:

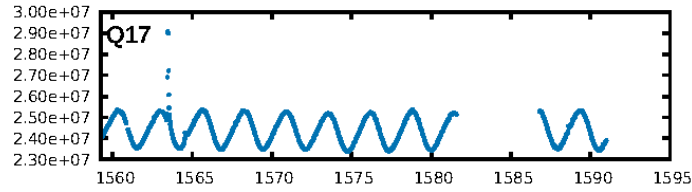
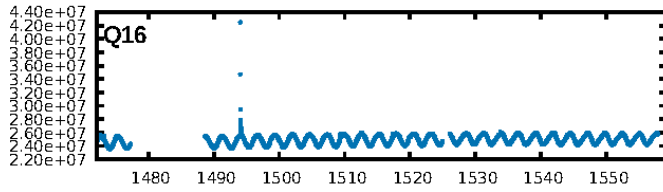
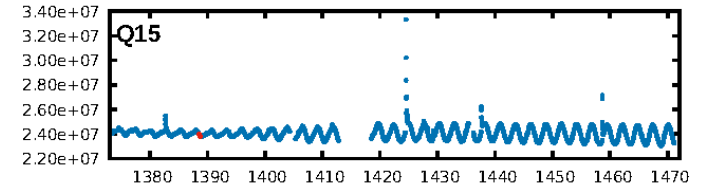
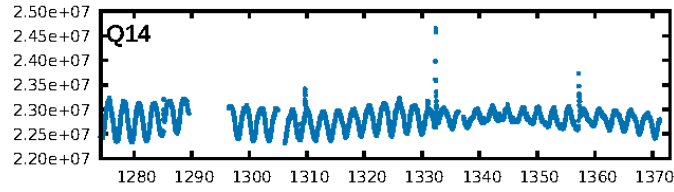
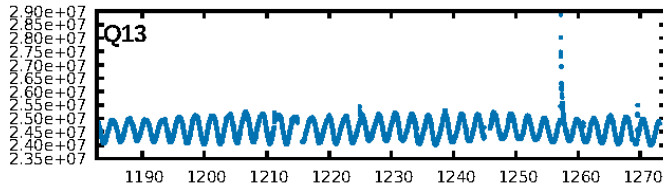
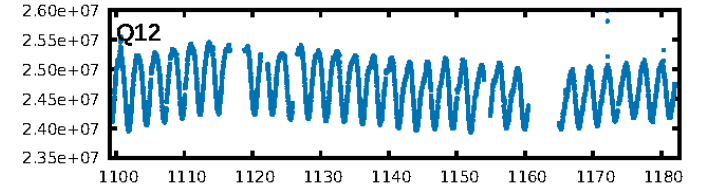
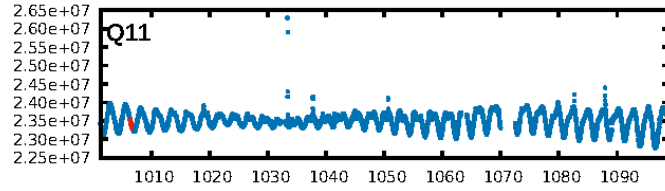
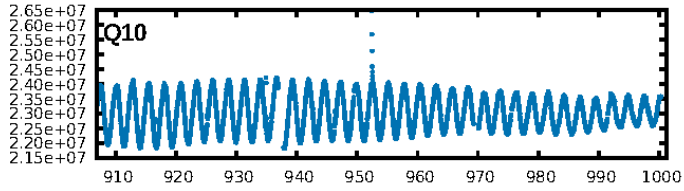
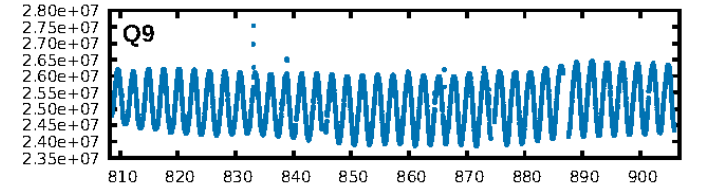
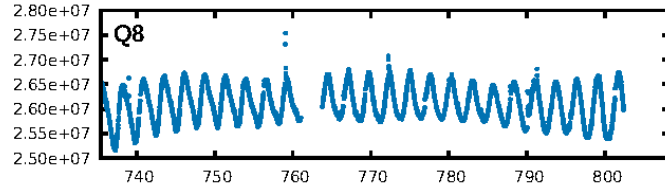
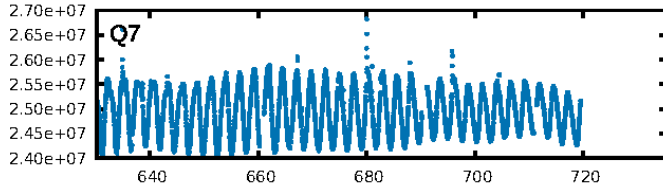
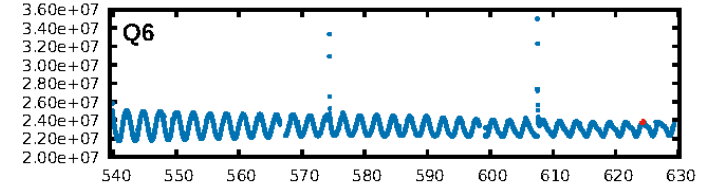
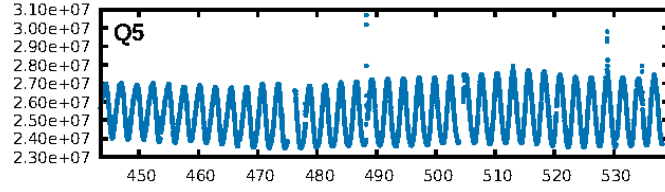
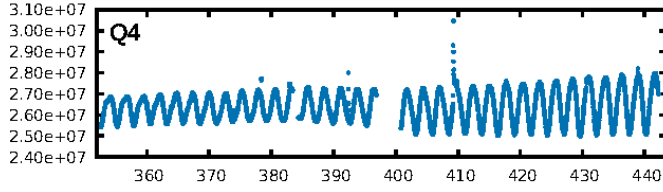
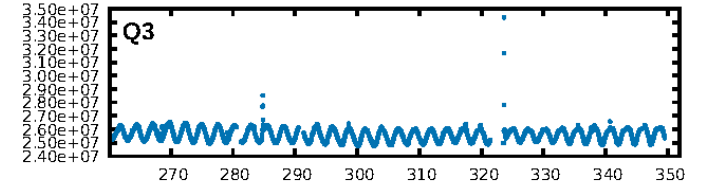
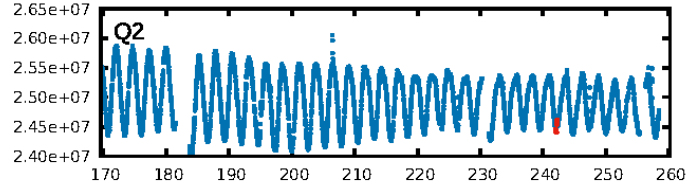
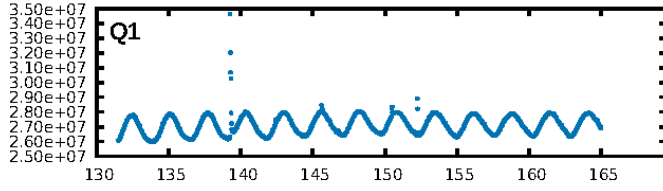
ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [169.54σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.491

Centroid-sig: 96.6%
Centroid-so: 0.156 arcsec [0.29σ]
OotOffset-rm: 0.235 arcsec [0.14σ]
KicOffset-rm: 0.212 arcsec [0.14σ]
OotOffset-st: 2/2/0/0 [4]
KicOffset-st: 2/2/0/0 [4]
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DiffImageOverlap-fno: 1.00 [4/4]

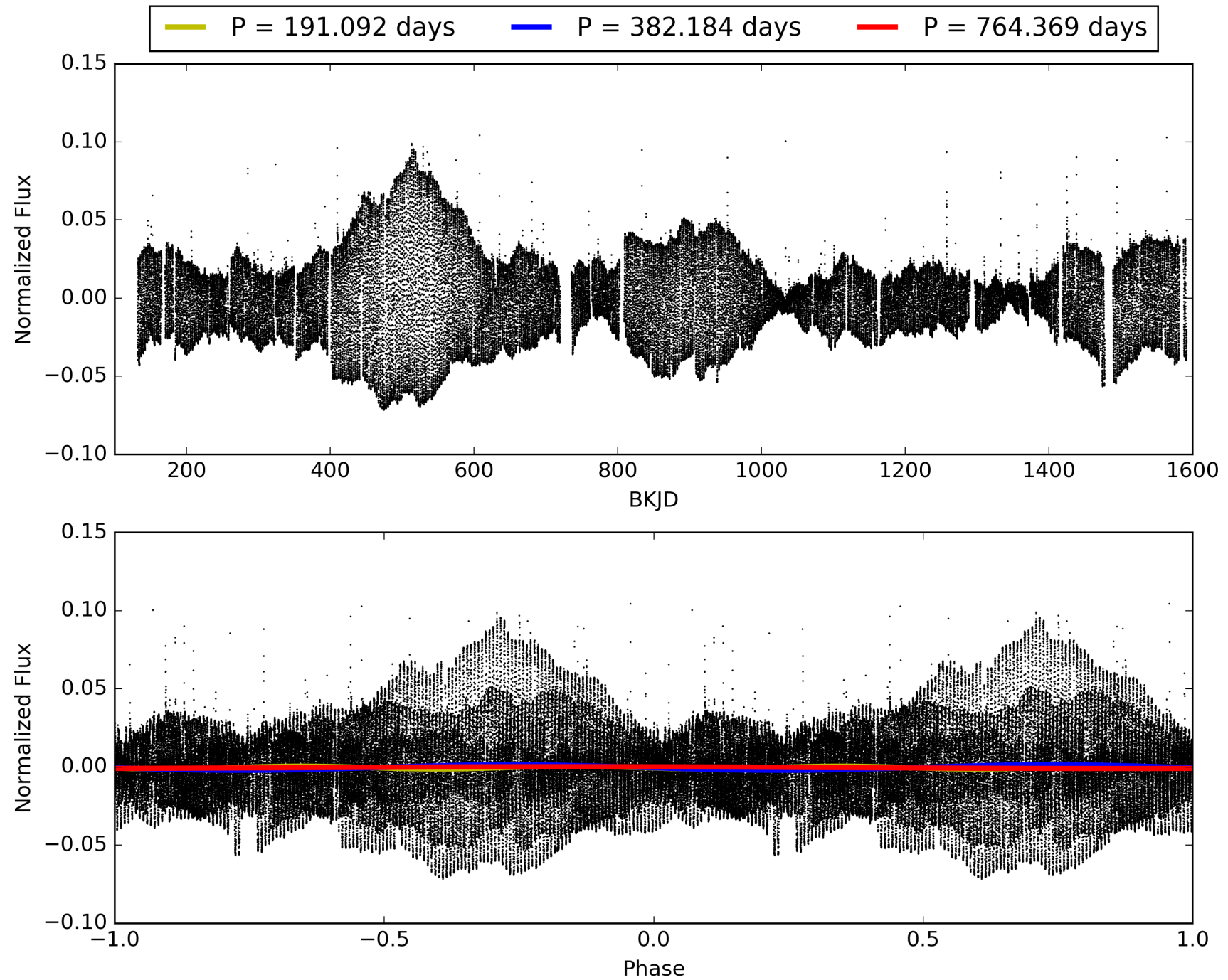
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:27:42 Z

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

TCE 004349043-05, PDC Light Curves

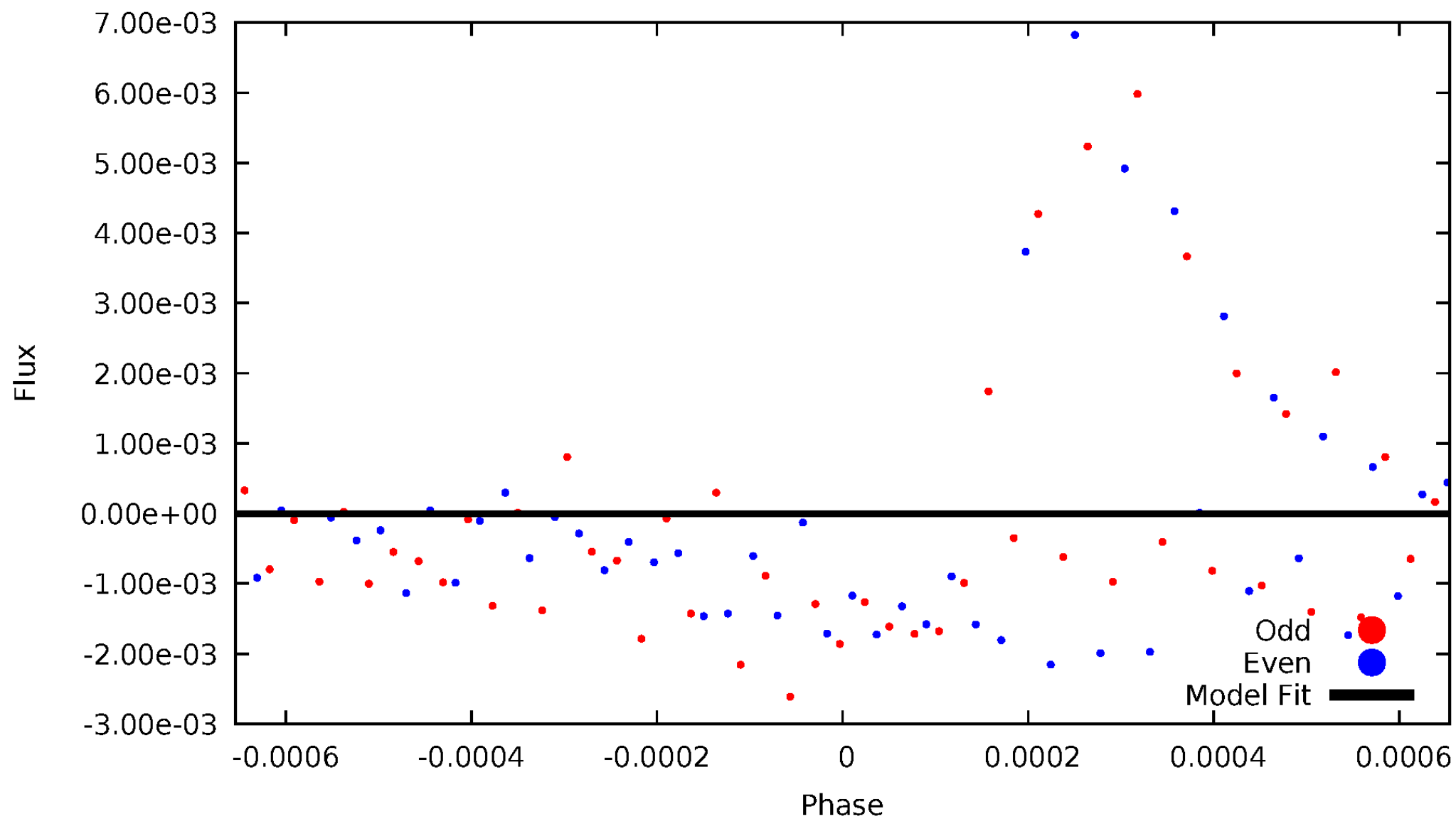


TCE 004349043-05



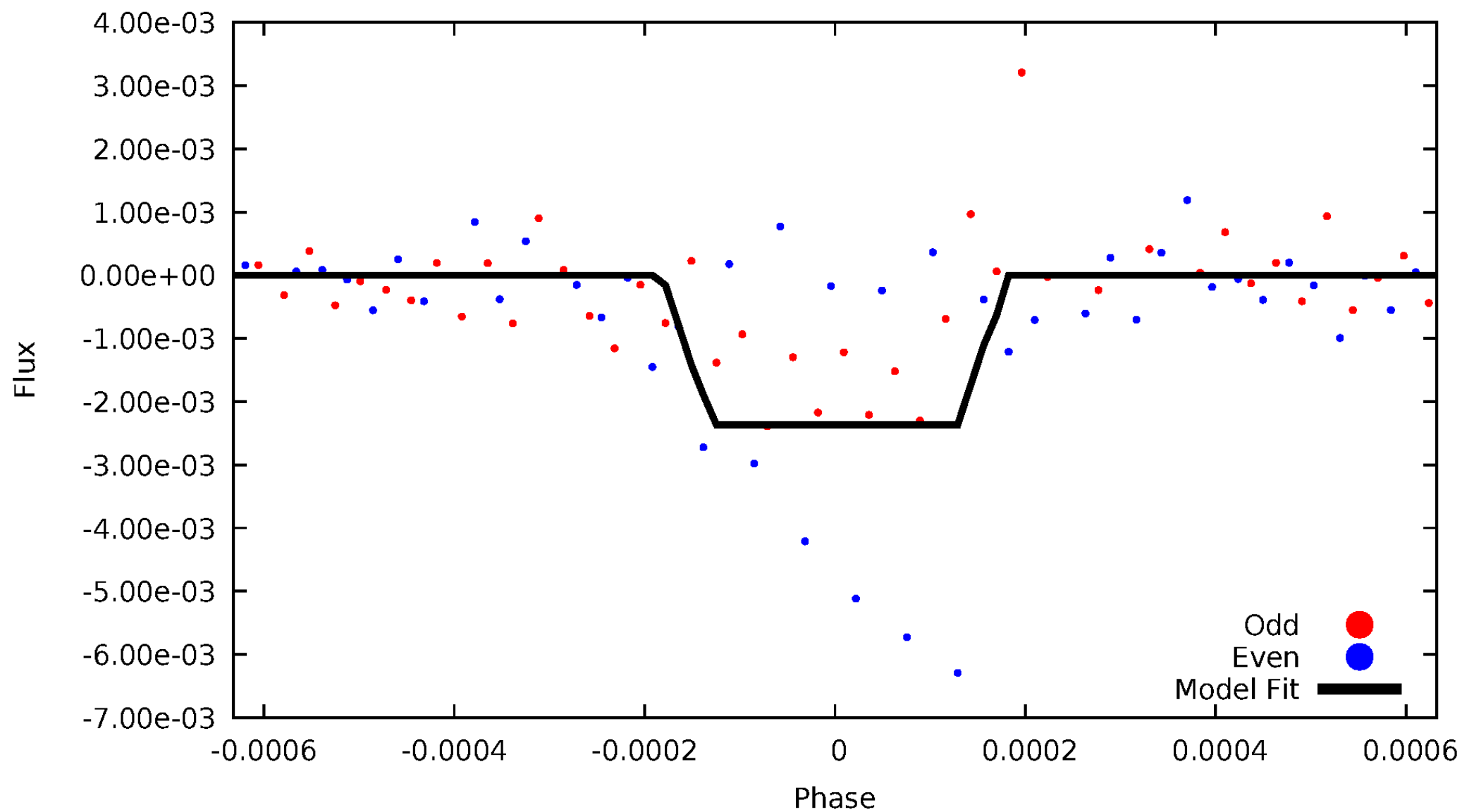
DV Odd/Even

TCE 004349043-05

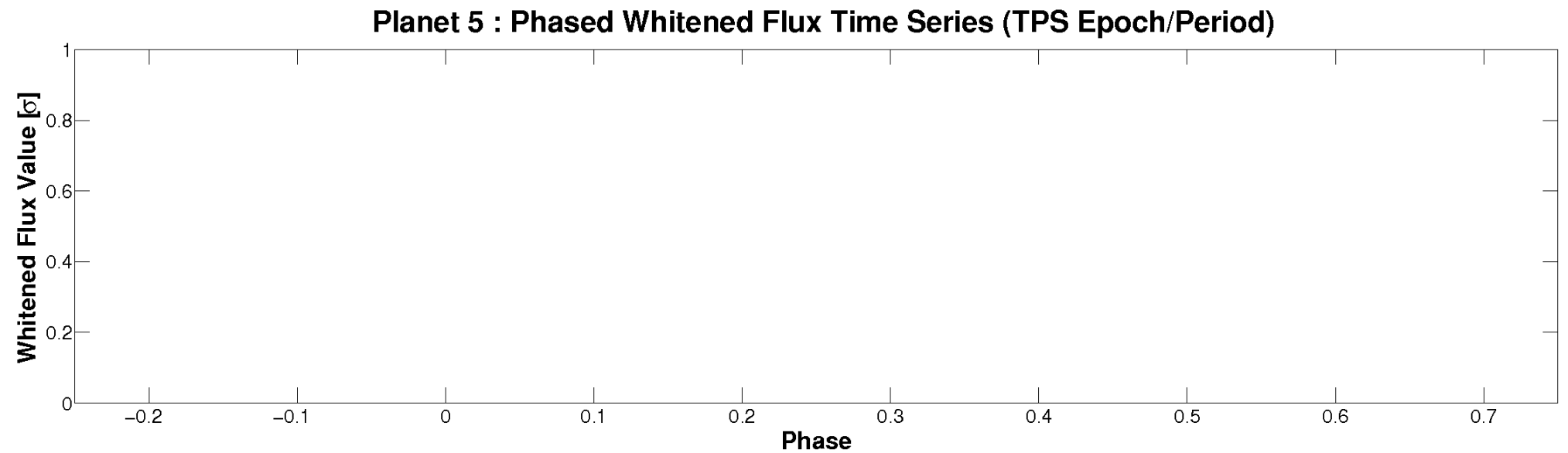
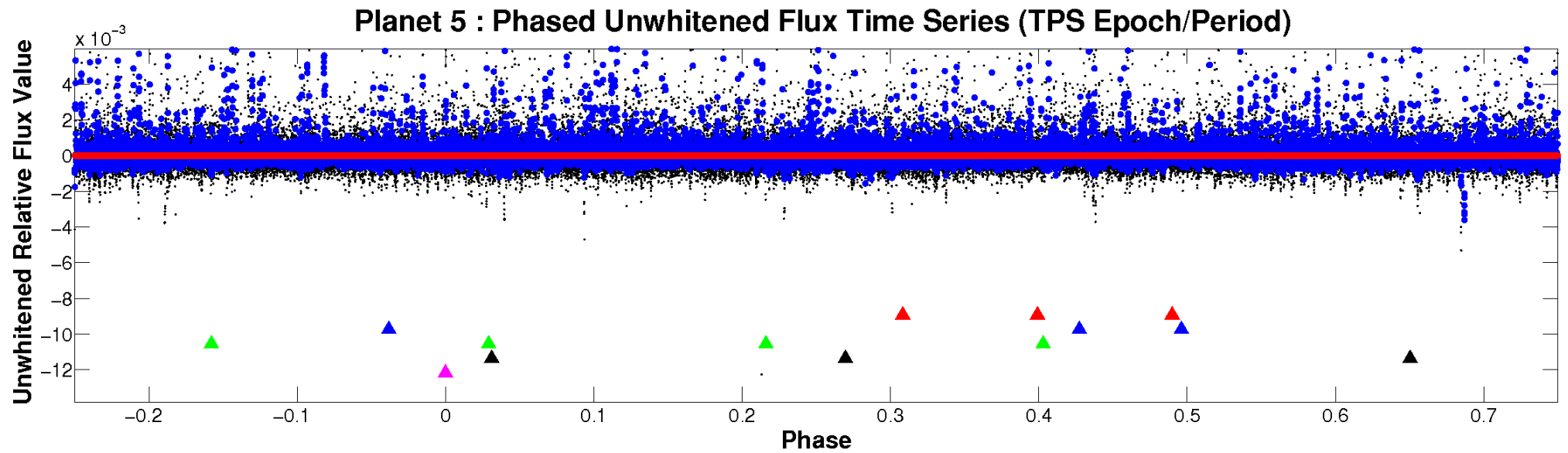


ALT Odd/Even

TCE 004349043-05

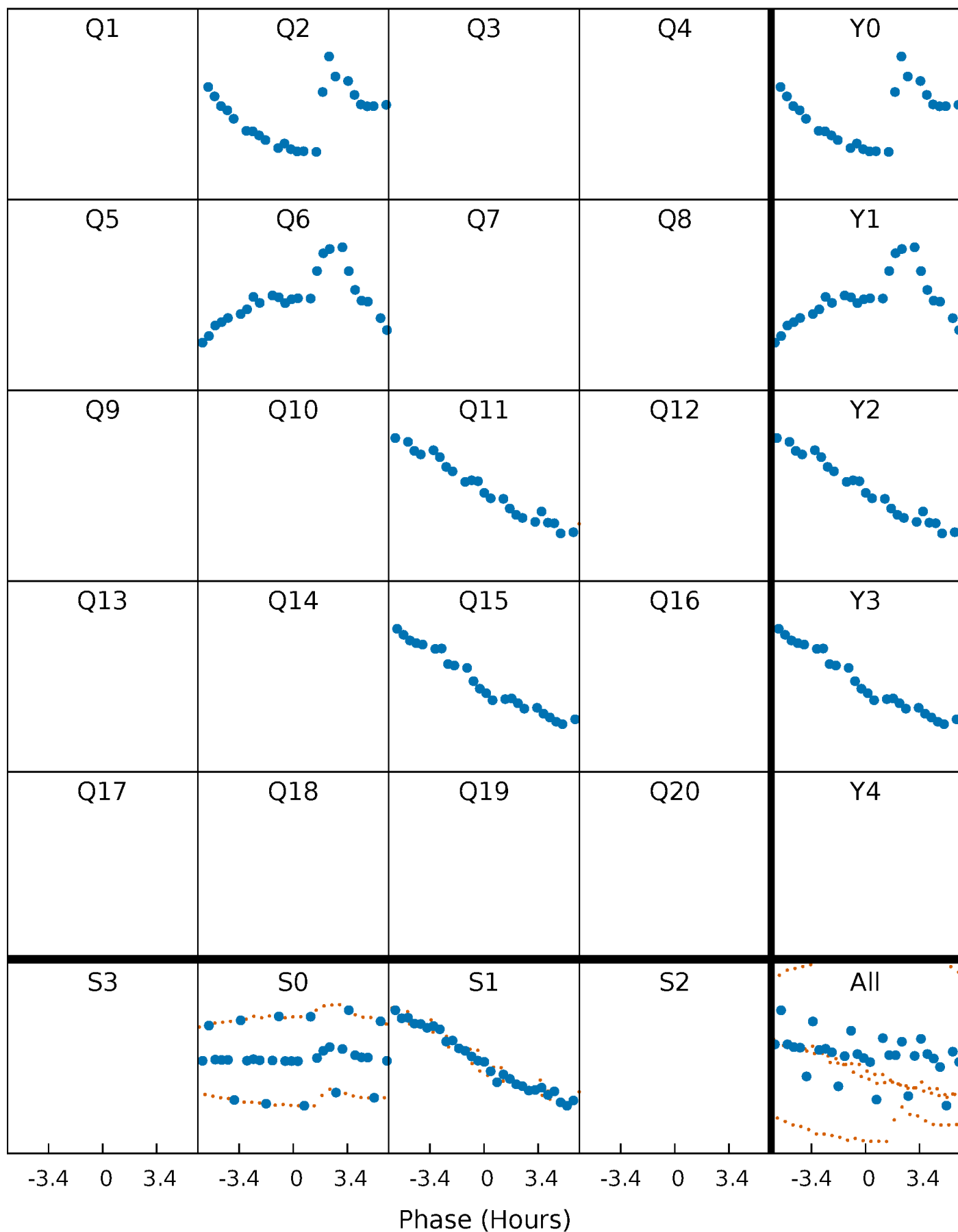


Non-Whitened Vs. Whitened Light Curve



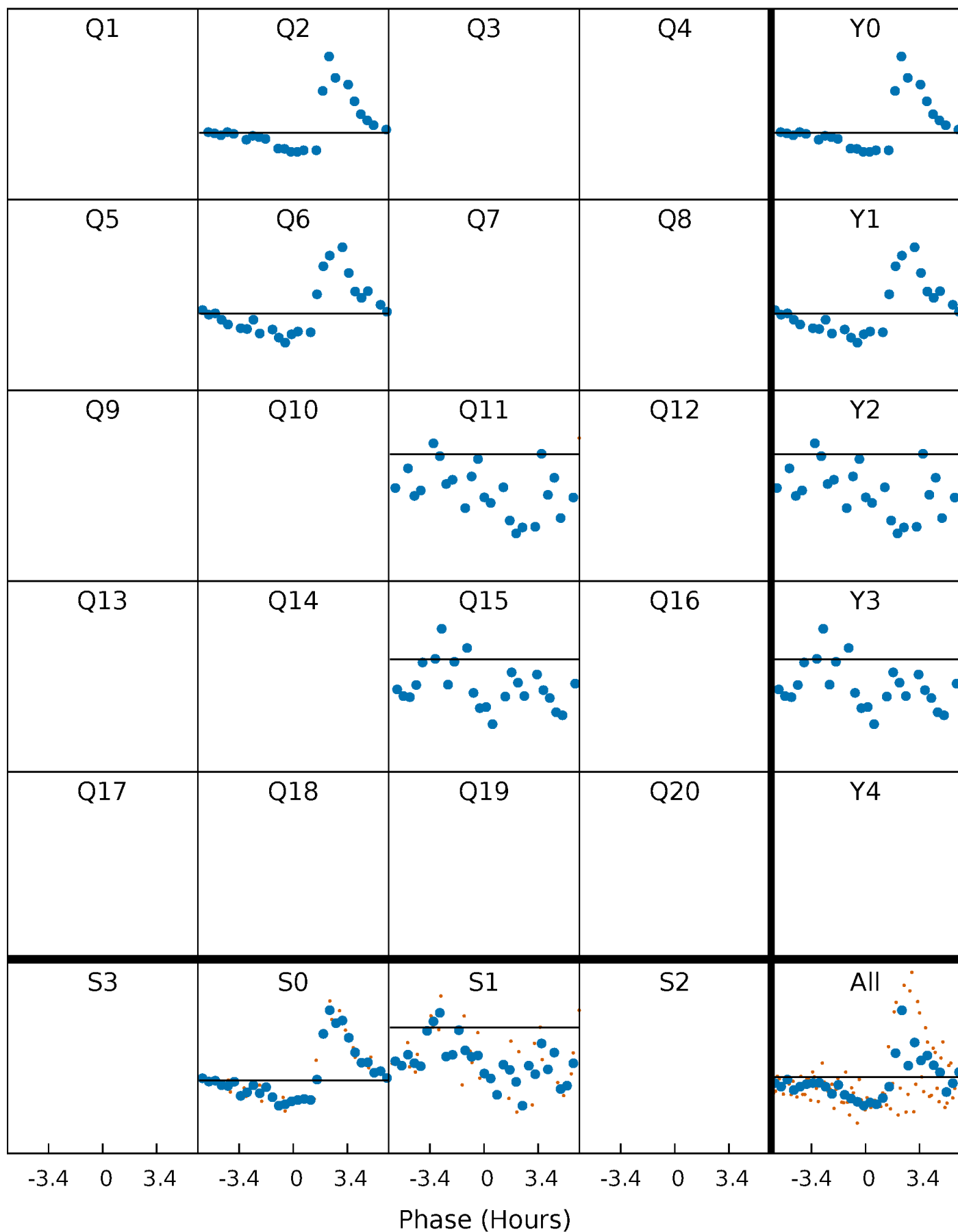
PDC Quarter-Phased Transit Curves

TCE 004349043-05 $P=382.184441$ Days $T_0=242.107053$ (BKJD)



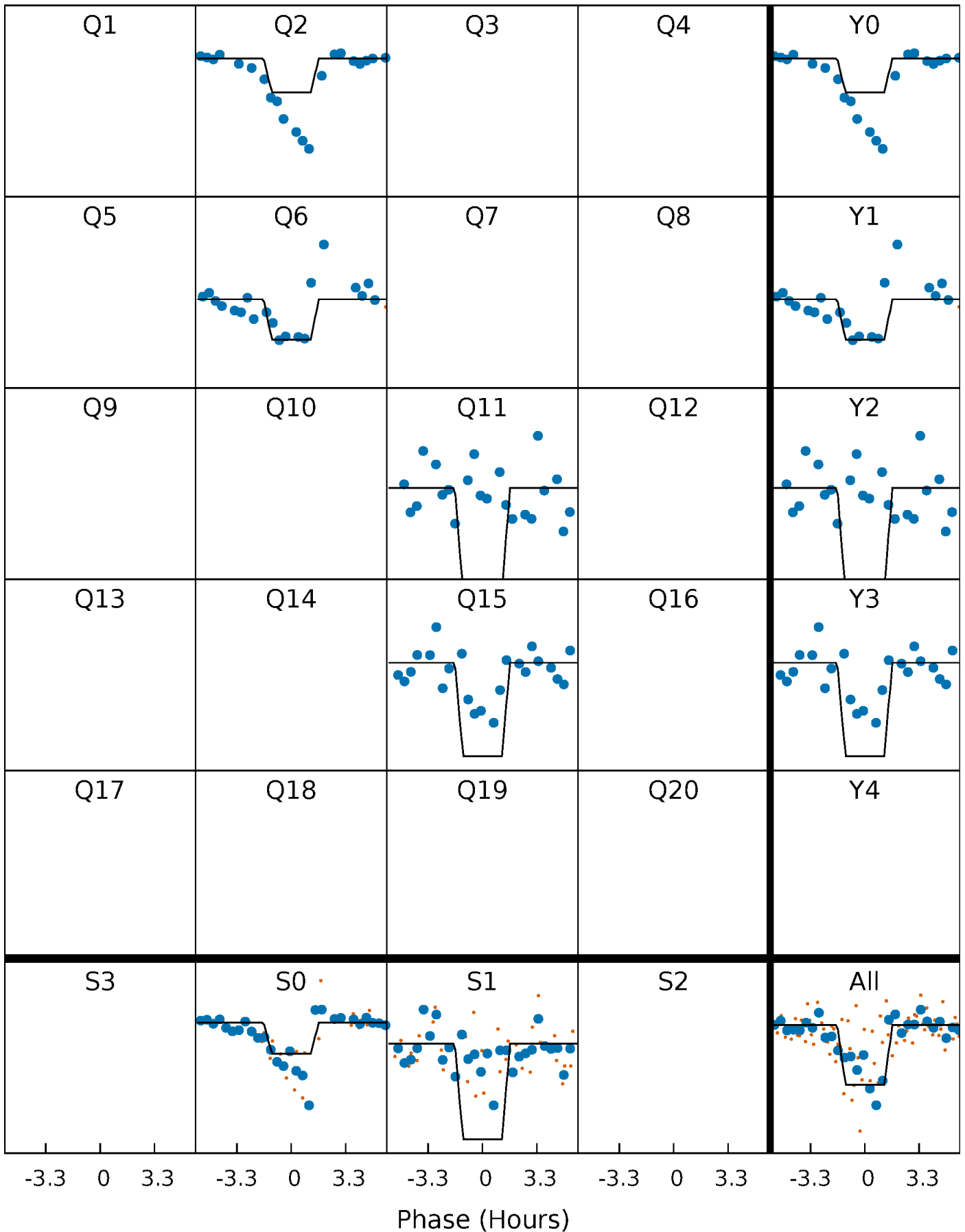
DV Quarter-Phased Transit Curves

TCE 004349043-05 P=382.184441 Days $T_0=242.107053$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

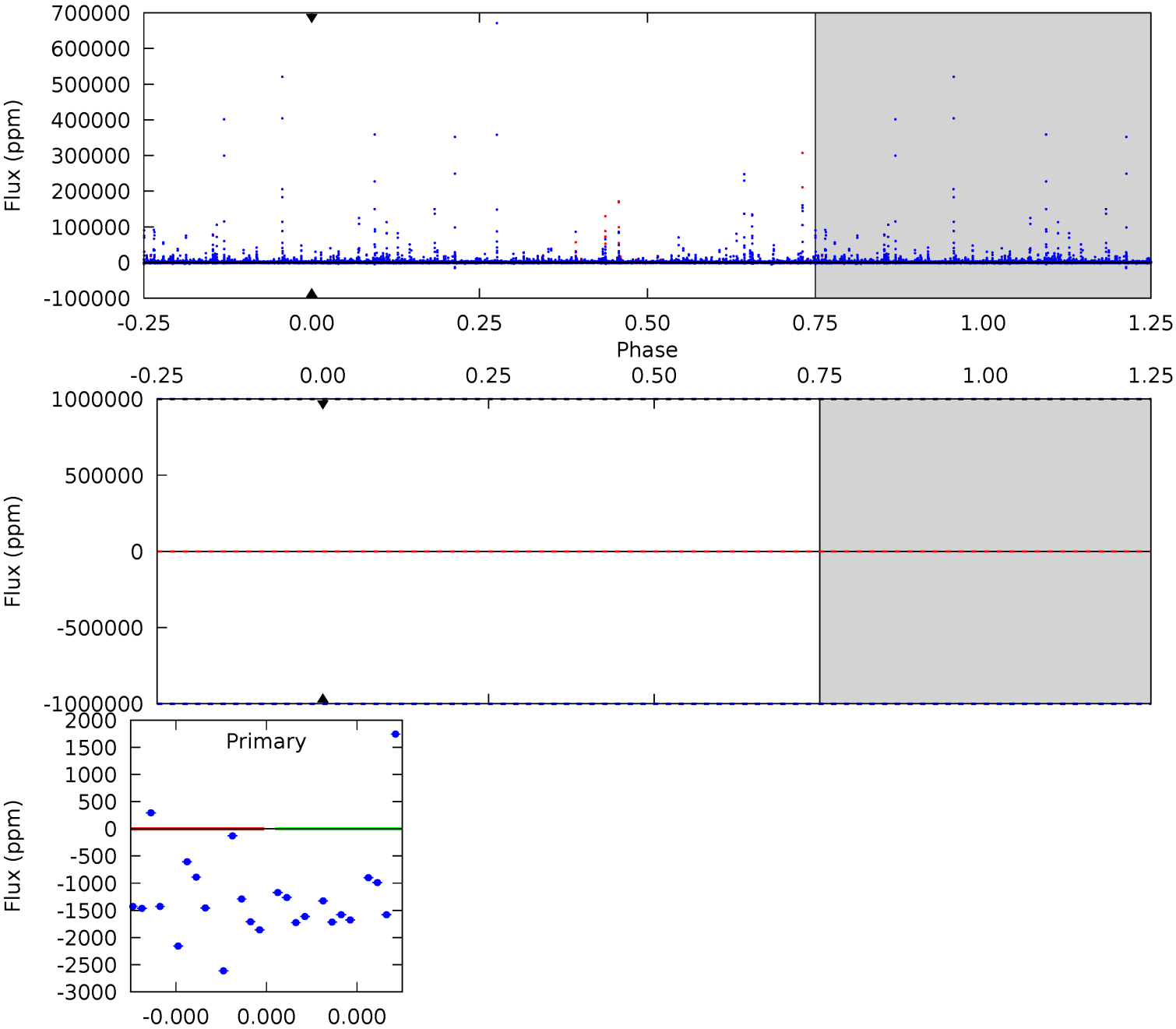
TCE 004349043-05 P=382.184441 Days $T_0=242.112693$ (BKJD)



DV Model-Shift Uniqueness Test

004349043-05, P = 382.184441 Days, E = 242.107053 Days

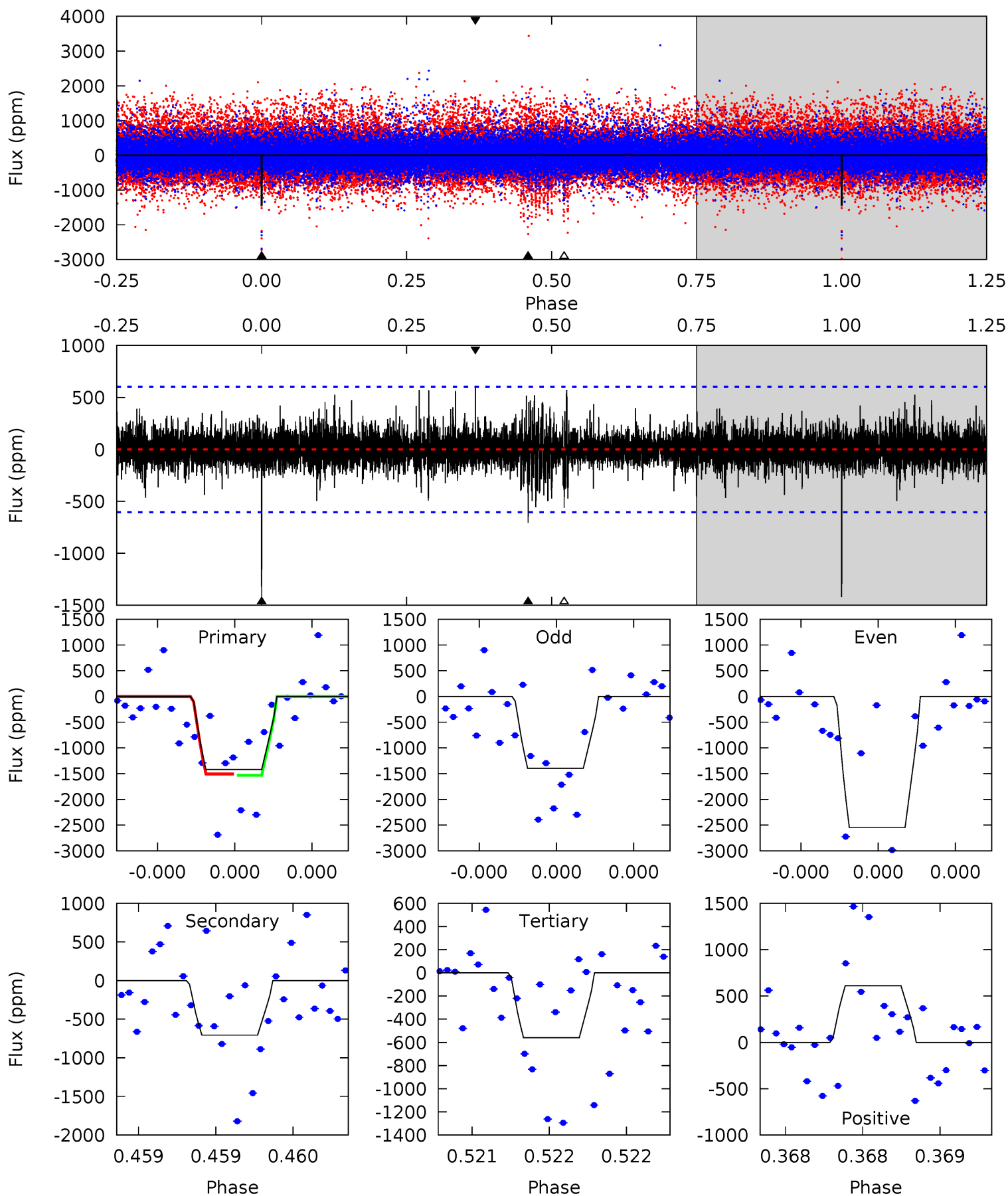
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

004349043-05, P = 382.184441 Days, E = 242.112693 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	6.60	5.24	5.71	5.64	3.59	1.02	8.03	7.55	1.36	0.89	5.07	1.33	0.30	0.11



Stellar Parameters For KIC 004349043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4575^{+138}_{-124}	$4.564^{+0.060}_{-0.020}$	$0.180^{+0.200}_{-0.300}$	$0.737^{+0.031}_{-0.062}$	$0.726^{+0.057}_{-0.051}$	$2.553^{+0.599}_{-0.237}$
	+3%/-3%	+1%/-0%	+111%/-167%	+4%/-8%	+8%/-7%	+23%/-9%
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 004349043-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$6.86^{+6.52}_{-4.61}$	250^{+8}_{-7}	-2388^{+13562}_{-7650}	$-957.431^{+1811353.870}_{-1314815.290}$
Alt.	-706 ± 107	$7.10^{+6.42}_{-4.98}$	250^{+9}_{-8}	3054^{+1442}_{-475}	6904^{+64347}_{-5056}

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

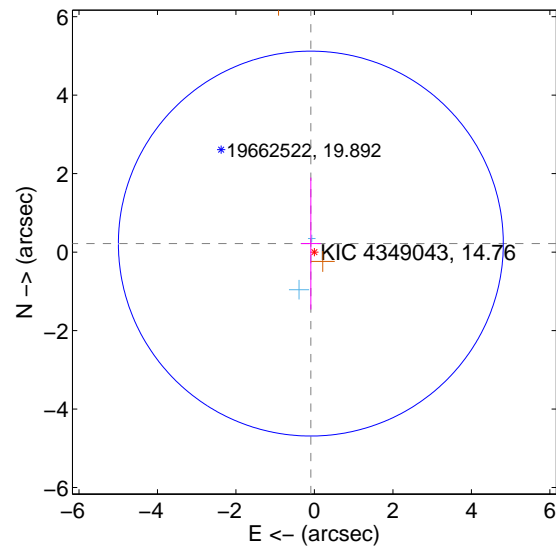
Supplemental centroid analysis for 004349043-05. Kepler magnitude: 14.76. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

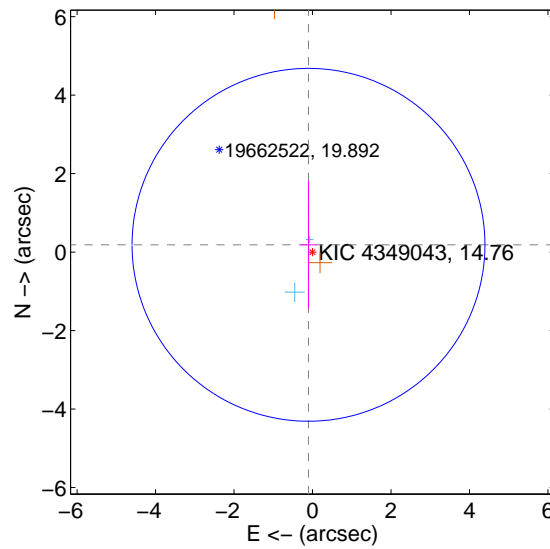
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.235 ± 1.635	0.14	0.091 ± 0.250	0.217 ± 1.681
PRF-fit source offset from KIC position	0.212 ± 1.499	0.14	0.103 ± 0.206	0.186 ± 1.626
photometric centroid source offset	0.16 ± 0.54	0.29	-0.14 ± 0.52	0.06 ± 0.64

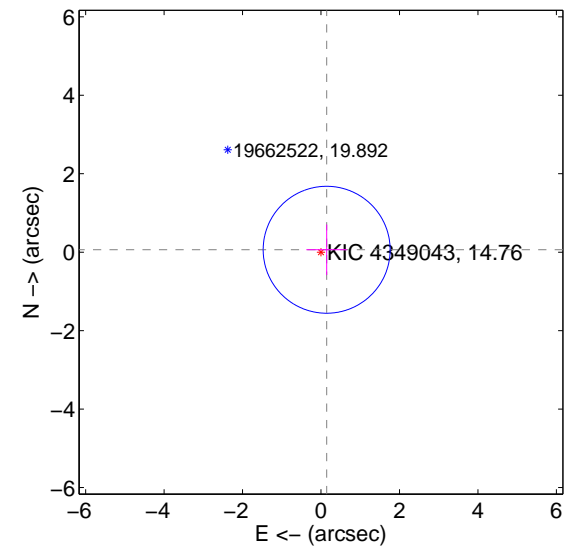
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

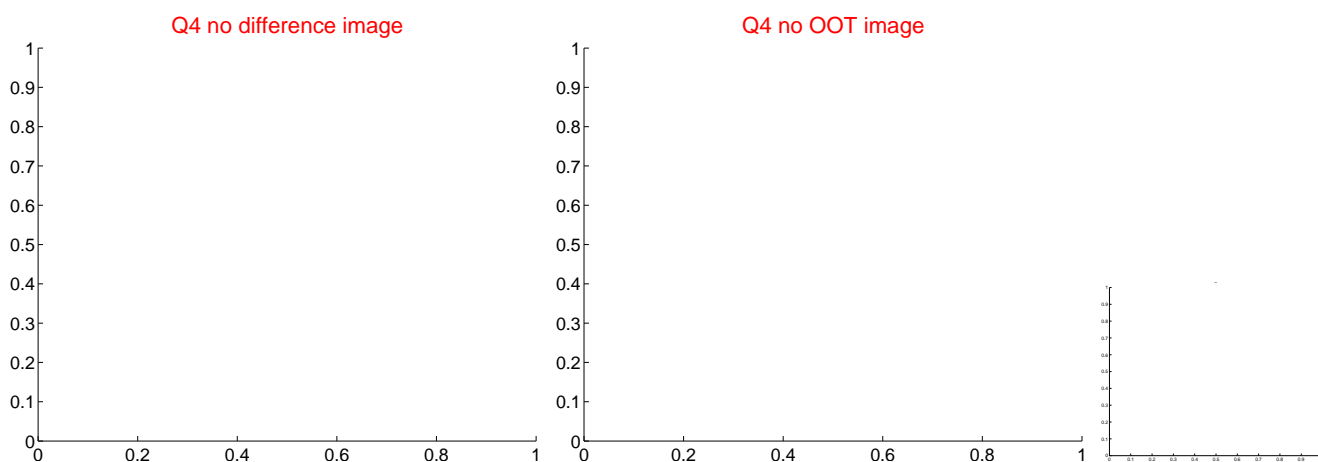
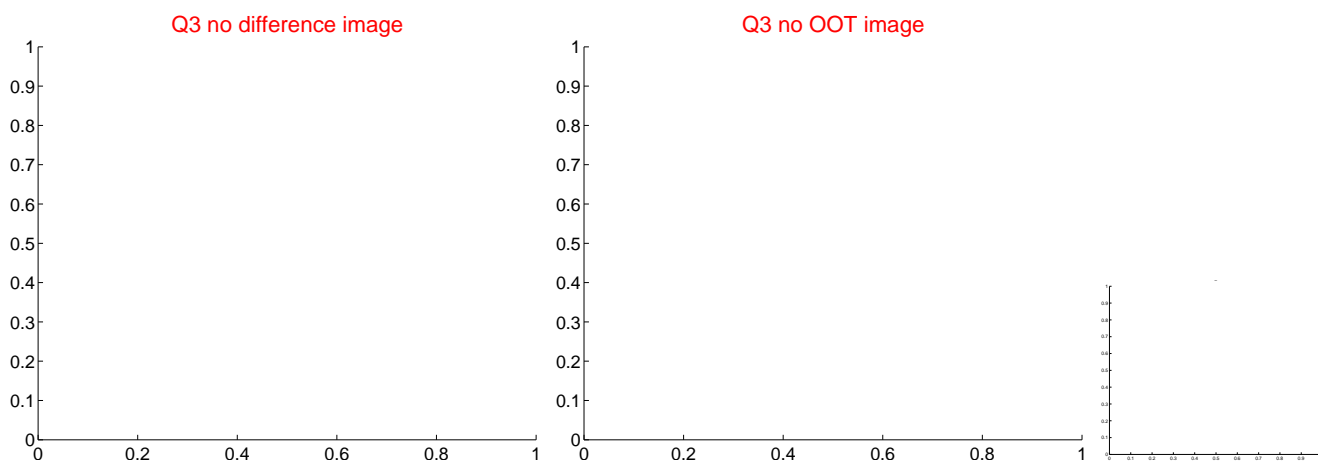
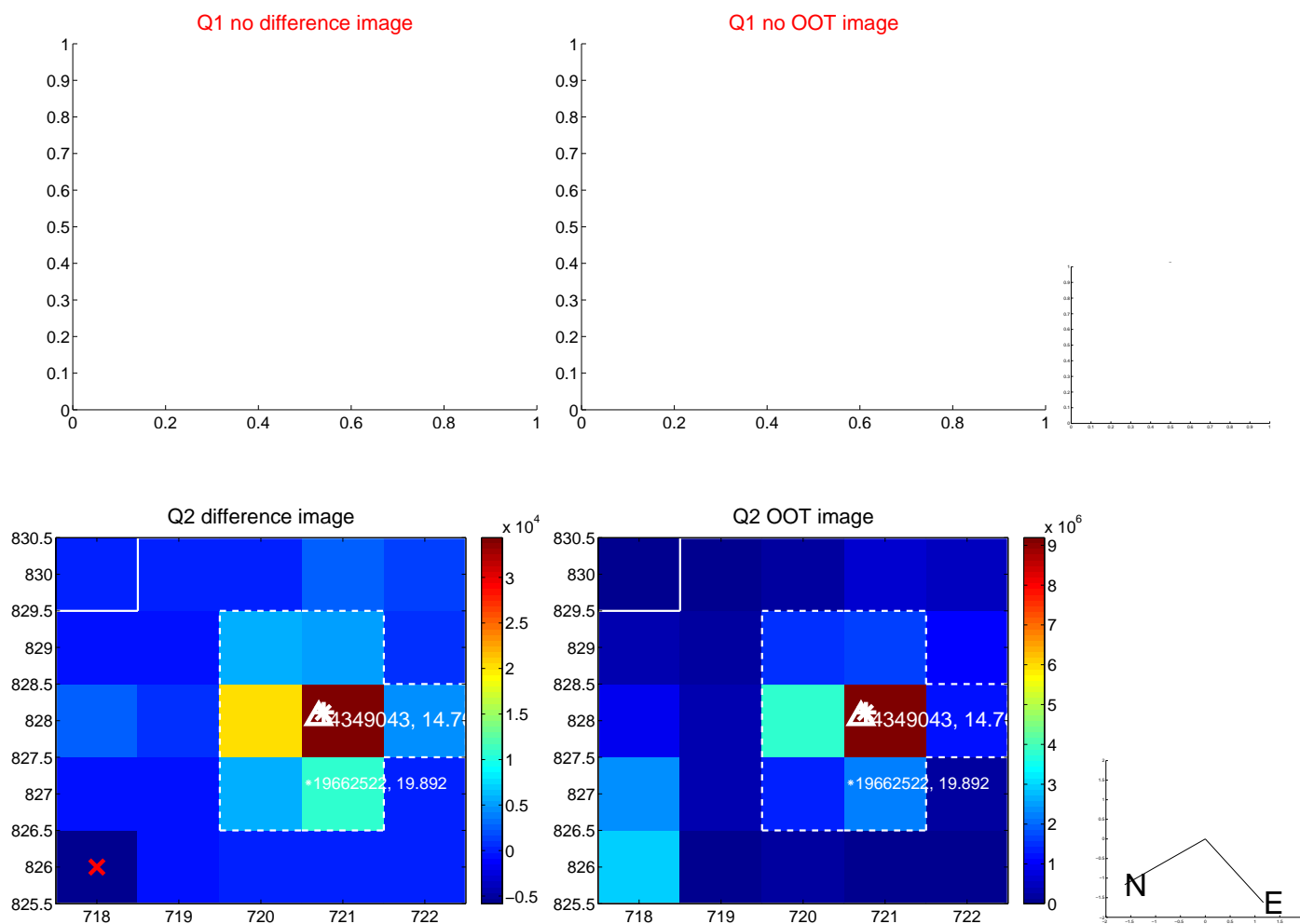


offset from photometric centroids

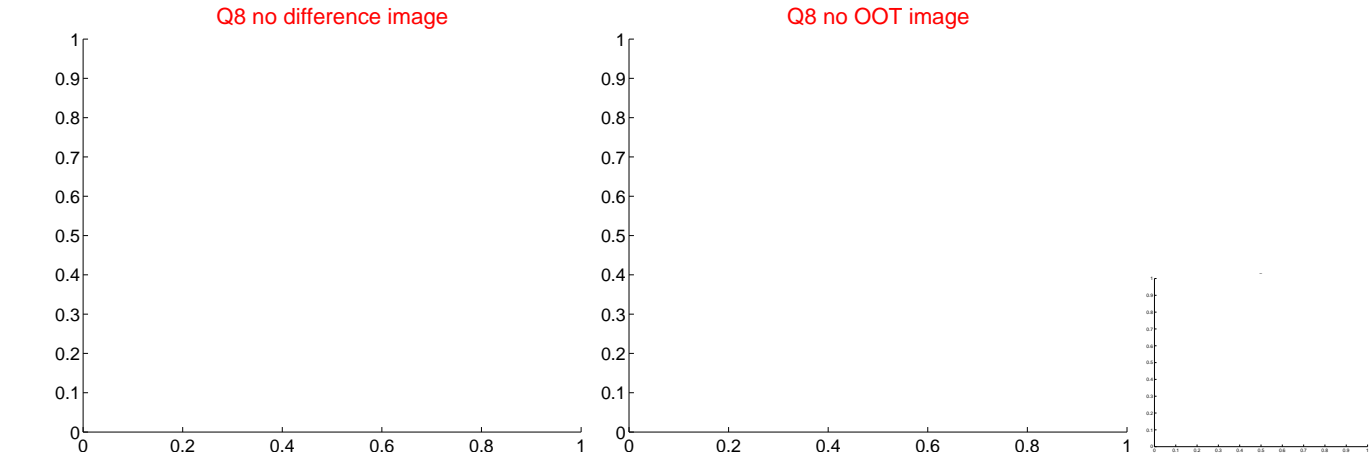
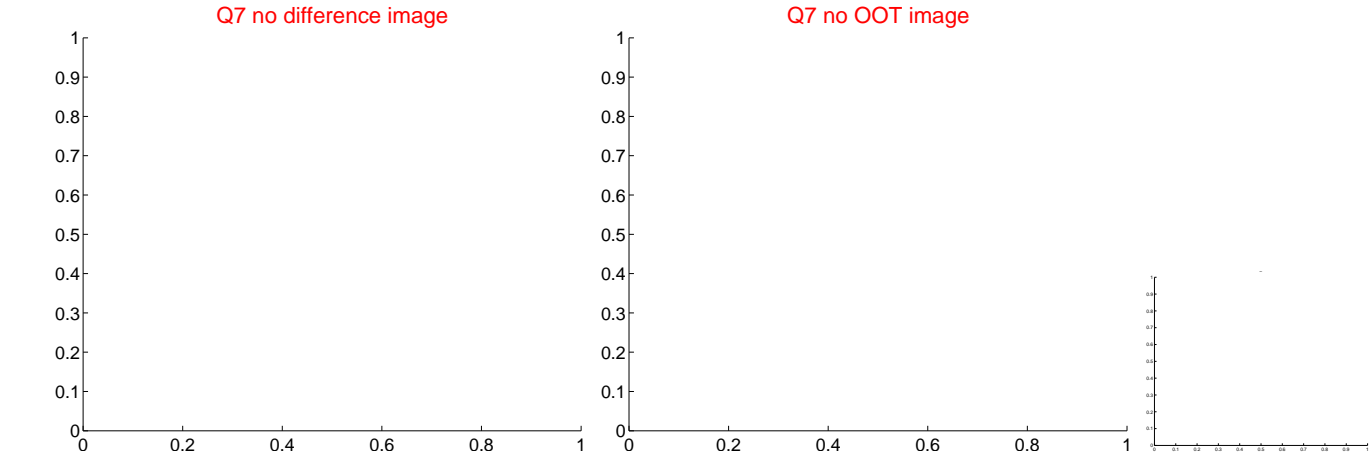
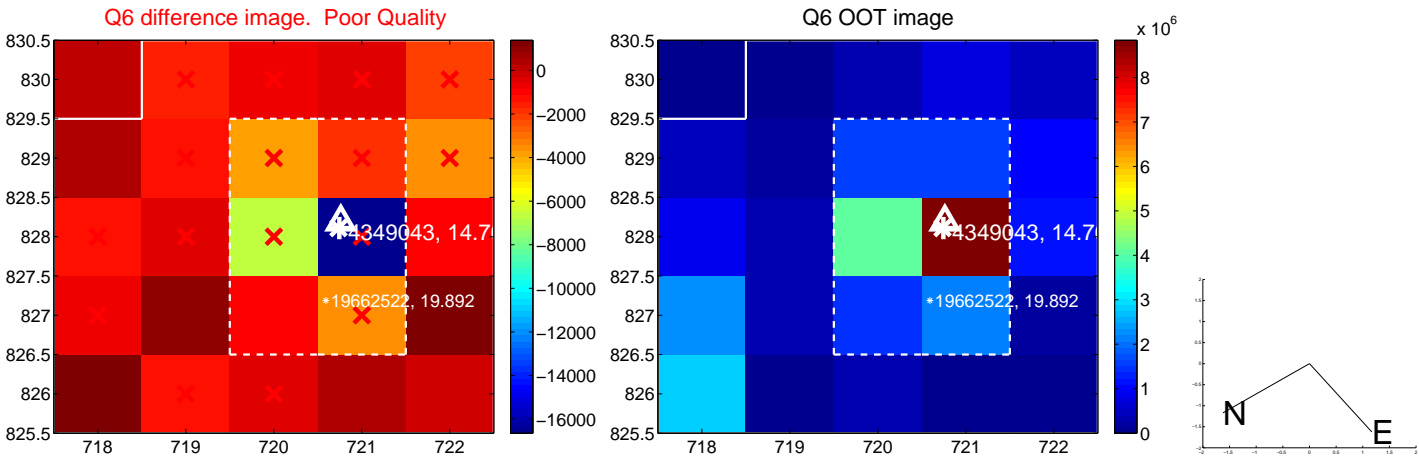
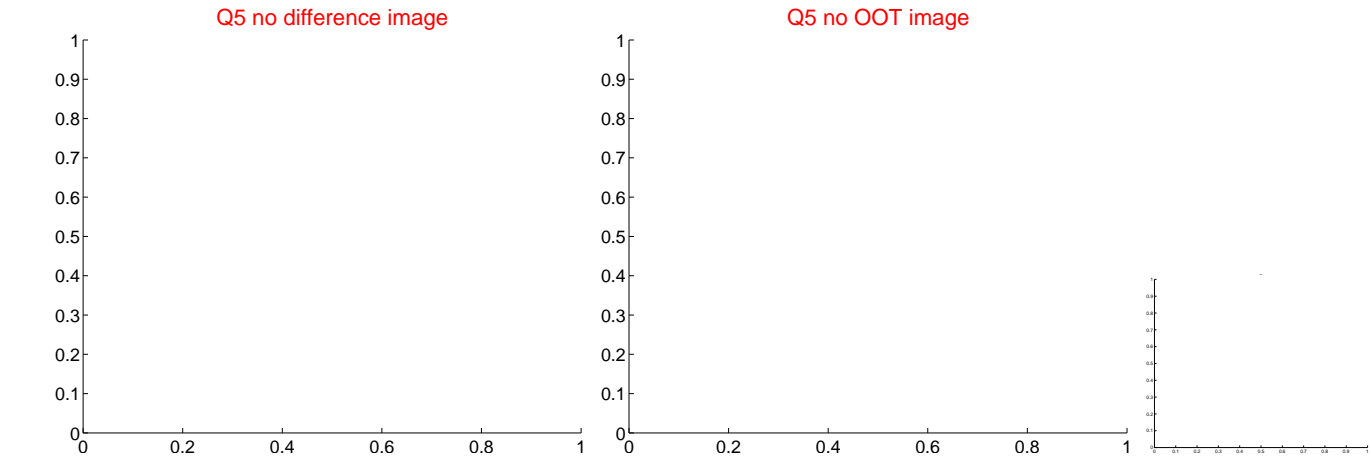


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

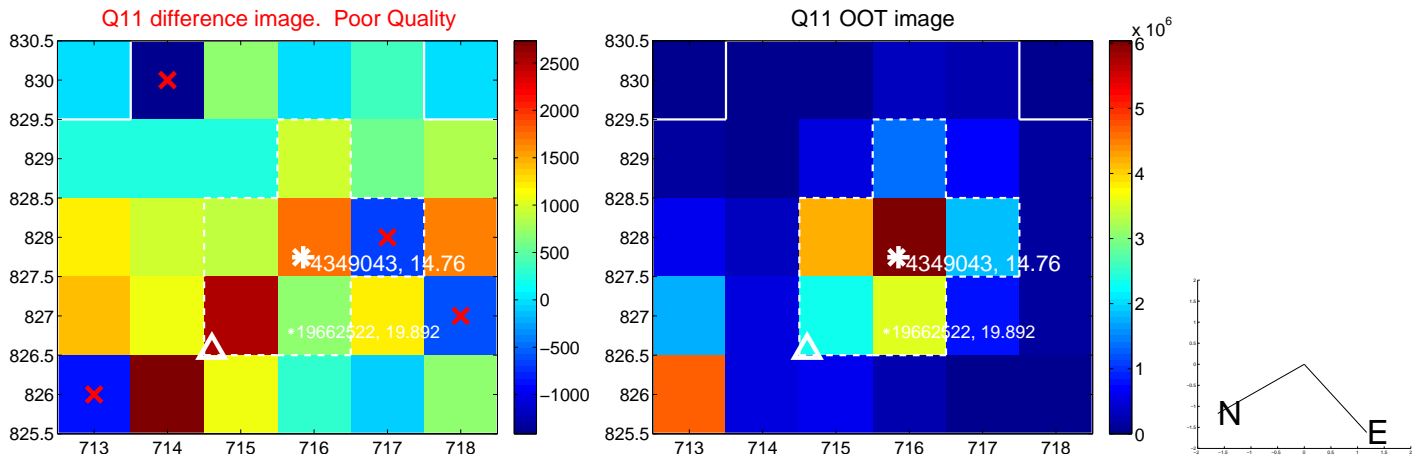
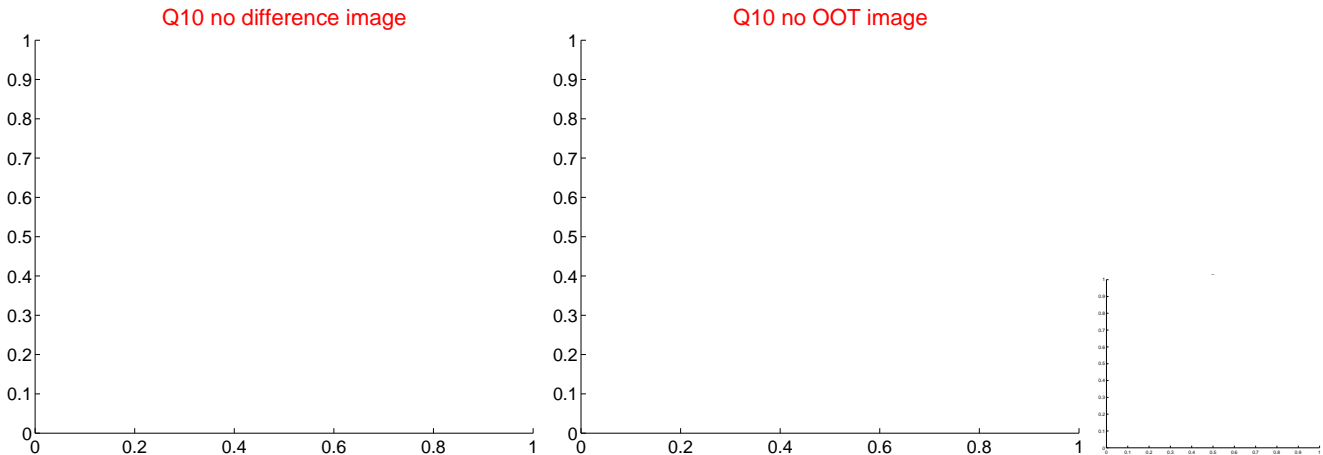
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



white ×: 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.

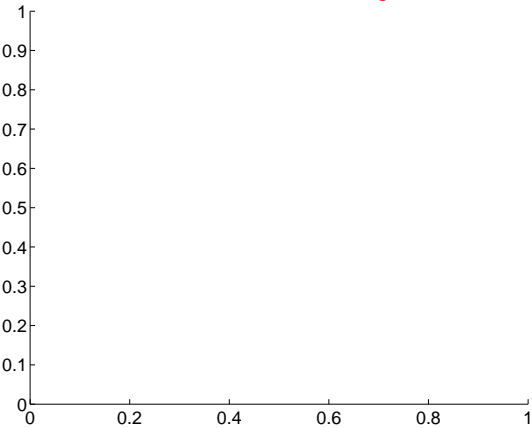
Q13 no difference image



Q13 no OOT image



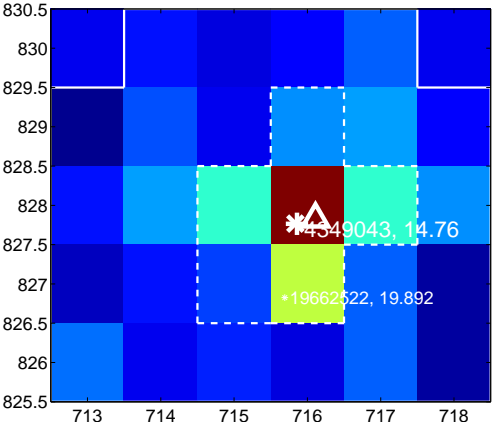
Q14 no difference image



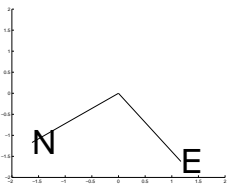
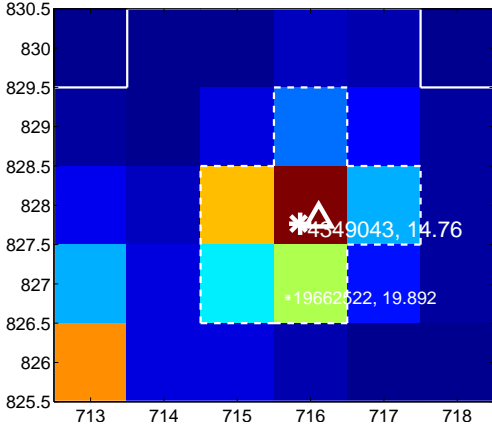
Q14 no OOT image



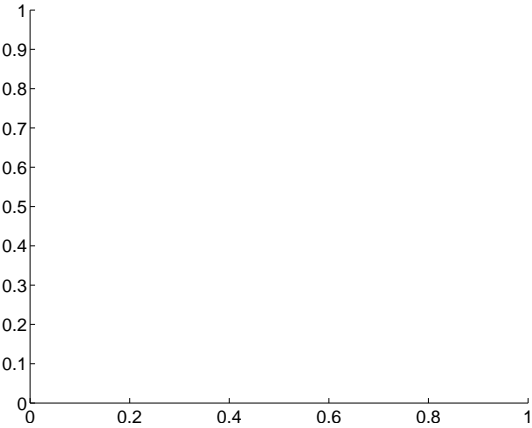
Q15 difference image



Q15 OOT image



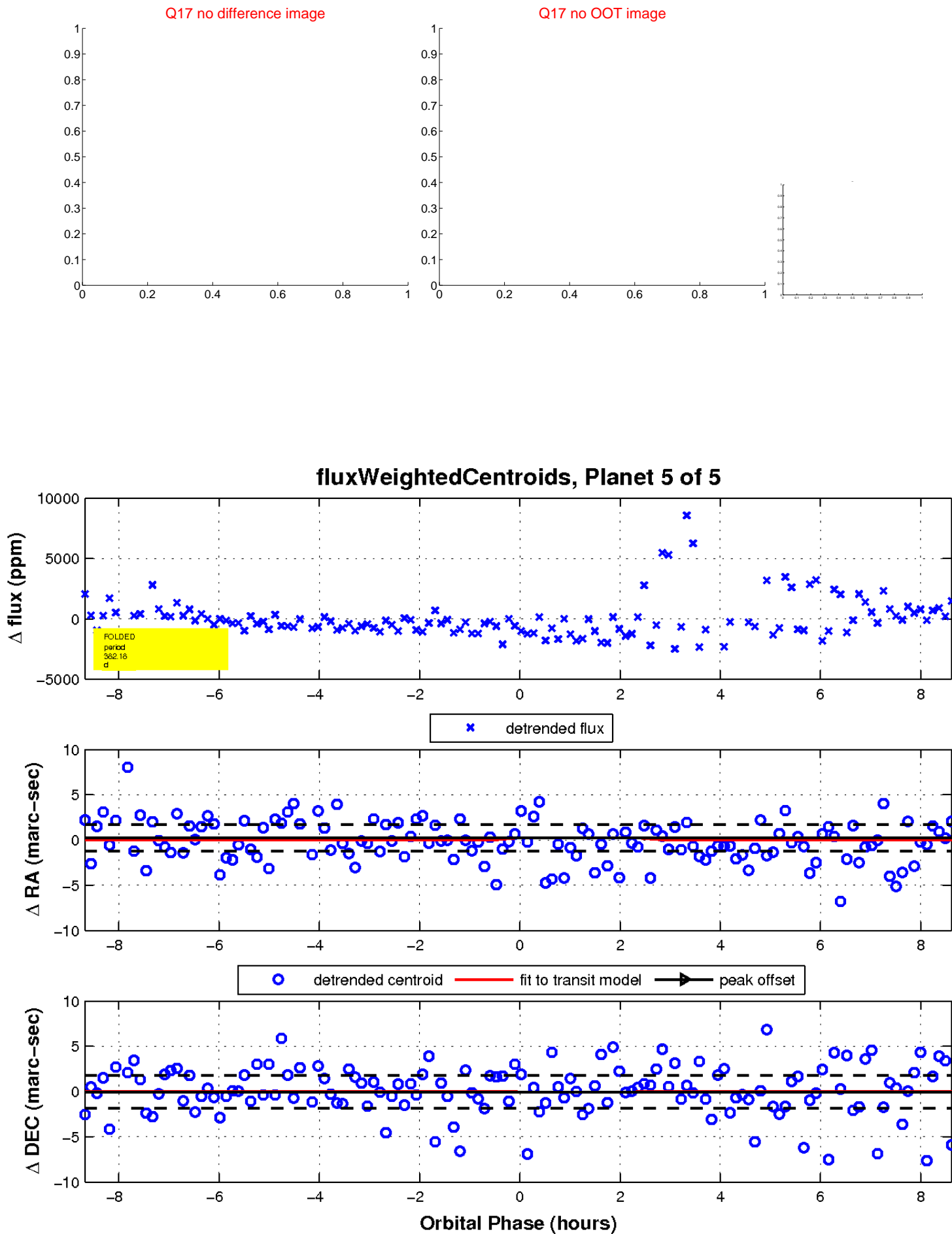
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

