

KIC 009392349

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})
009392349-01	OBS	No	462.239181	216.164926	772.4	10.453	15.0	7.5	0.83	5623	3.00	0.52
009392349-03	OBS	No	676.688965	178.111155	902.8	4.452	14.7	10.2	0.83	5623	2.70	0.32
009392349-04	OBS	No	491.662239	535.383112	877.9	3.300	14.1	9.3	0.83	5623	2.58	0.48
009392349-05	OBS	No	396.979161	319.112014	596.5	6.612	13.7	7.5	0.83	5623	2.56	0.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009392349-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009392349-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009392349-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009392349-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

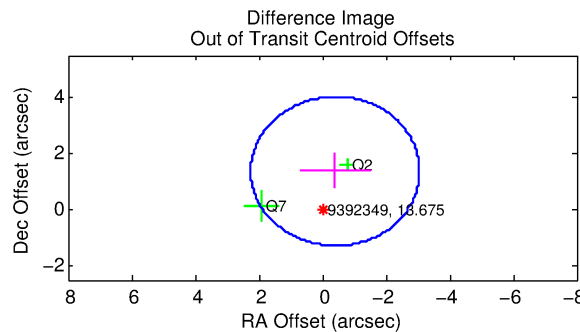
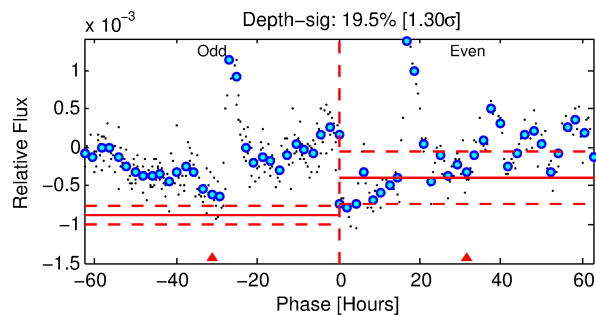
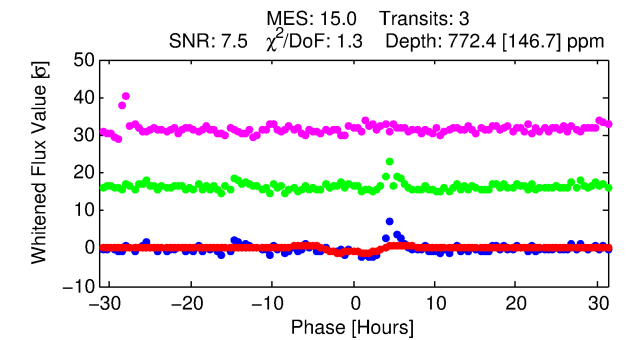
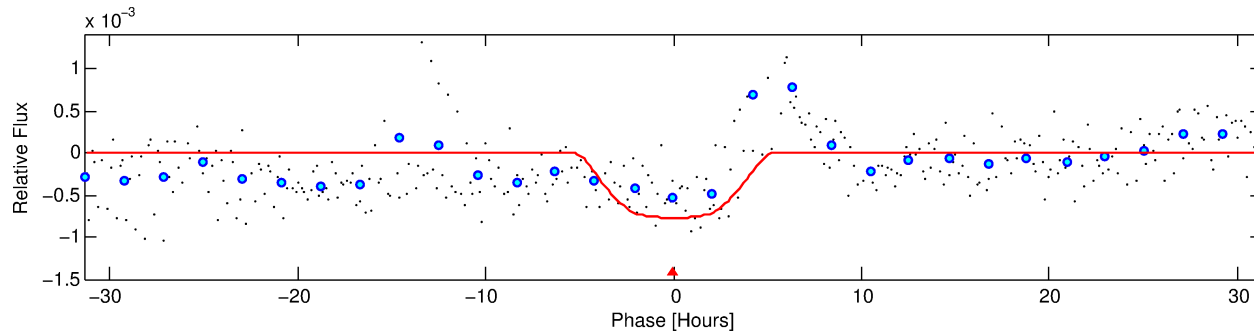
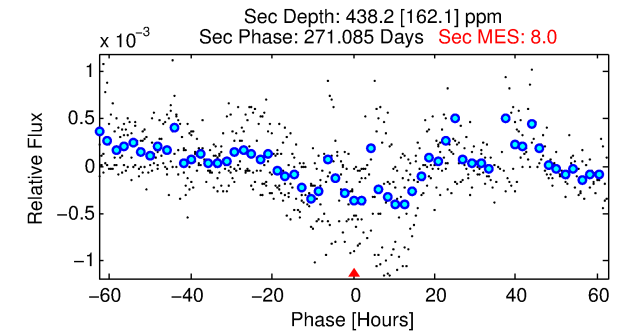
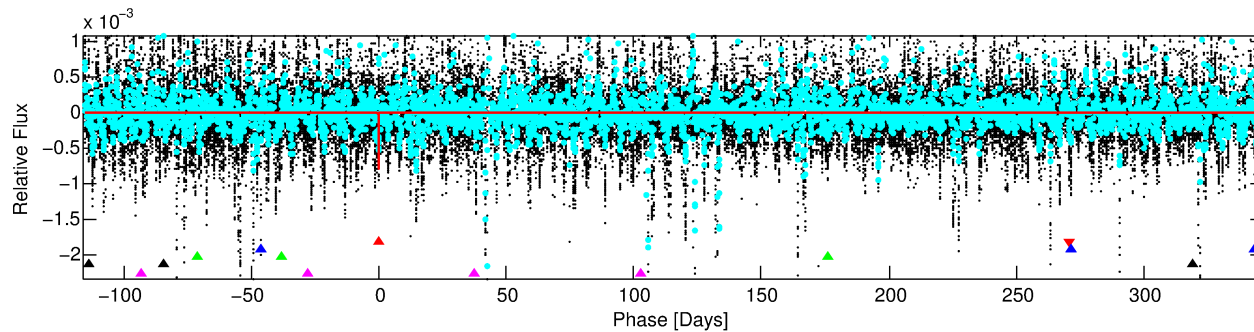
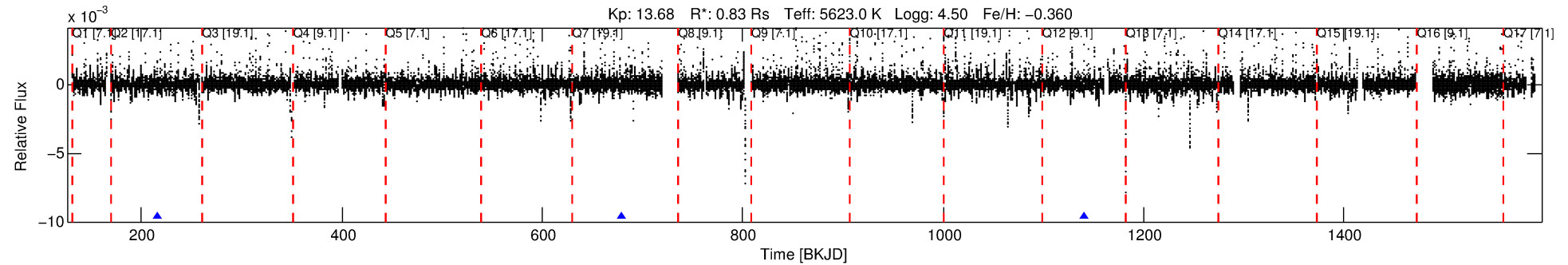
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009392349-01

No Significant Match Found

DV One-Page Summary

KIC: 9392349 Candidate: 1 of 5 Period: 462.239 d



DV Fit Results:

Period = 462.23918 [0.01374] d
Epoch = 216.1649 [0.0178] BKJD
Rp/R* = 0.0329 [0.0036]
a/R* = 131.22 [22.42]
b = 0.96 [0.02]
Seff = 0.52 [0.15]
Teq = 217 [16] K
Rp = 3.00 [0.76] Re
a = 1.0924 [0.2073] AU
Ag = 32047.78 [16402.97] [1.95 σ]
Teffp = 4486 [499] K [8.55 σ]

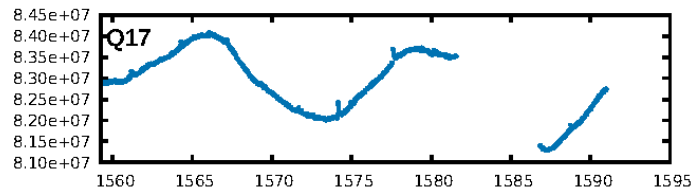
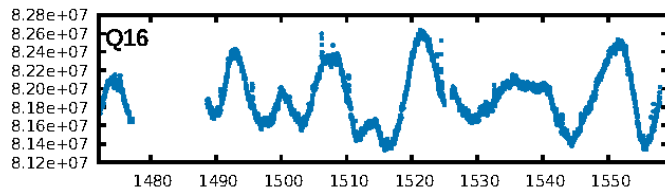
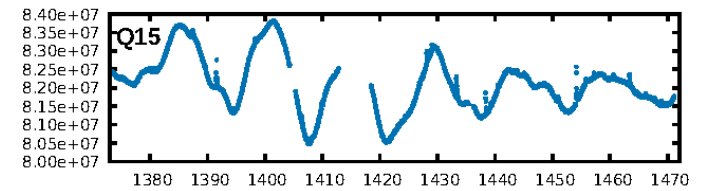
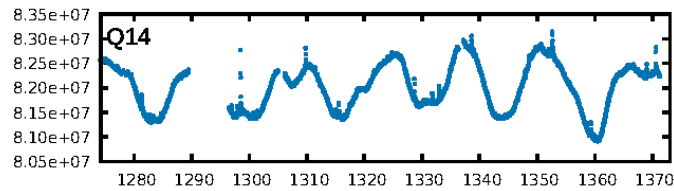
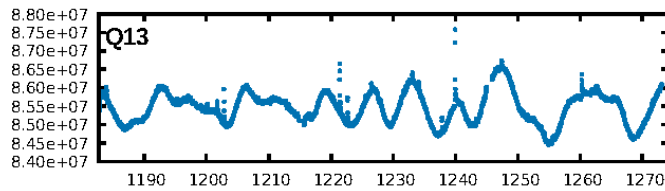
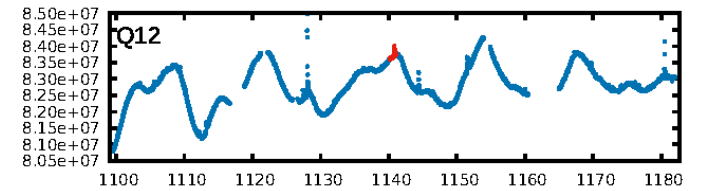
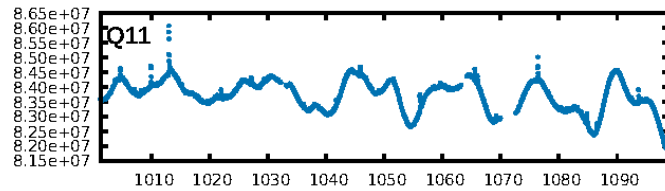
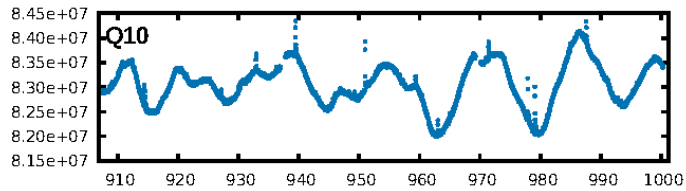
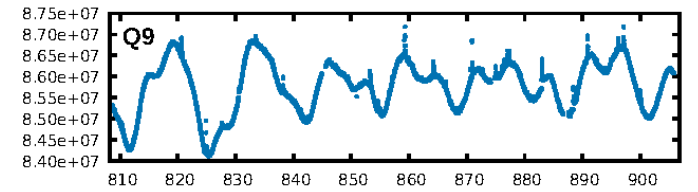
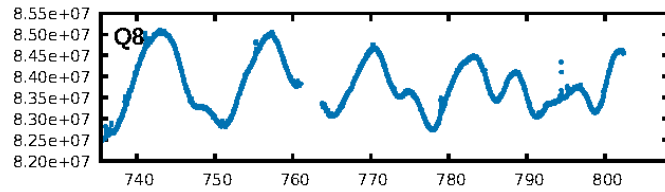
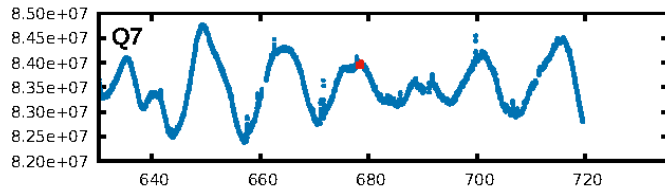
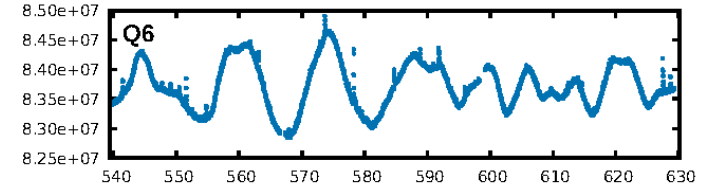
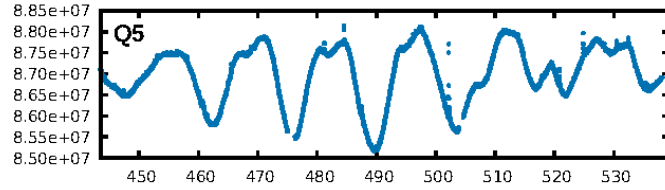
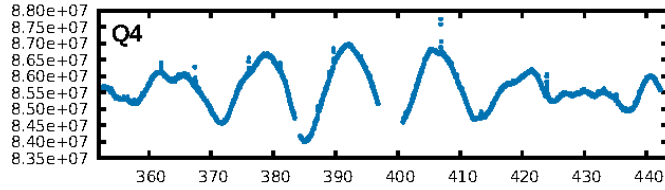
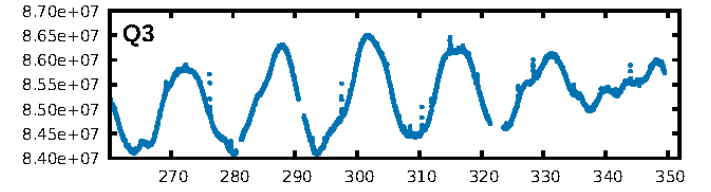
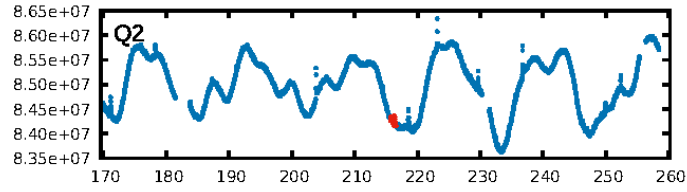
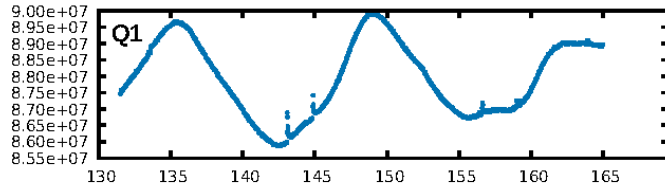
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [126.63 σ]
LongPeriod-sig: 100.0% [64.42 σ]
ModelChiSquare2-sig: 0.5%
ModelChiSquareGof-sig: 78.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2885
Centroid-sig: 13.4%
Centroid-so: 0.569 arcsec [1.28 σ]
OotOffset-rm: 1.429 arcsec [1.61 σ]
KicOffset-rm: 1.336 arcsec [1.30 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

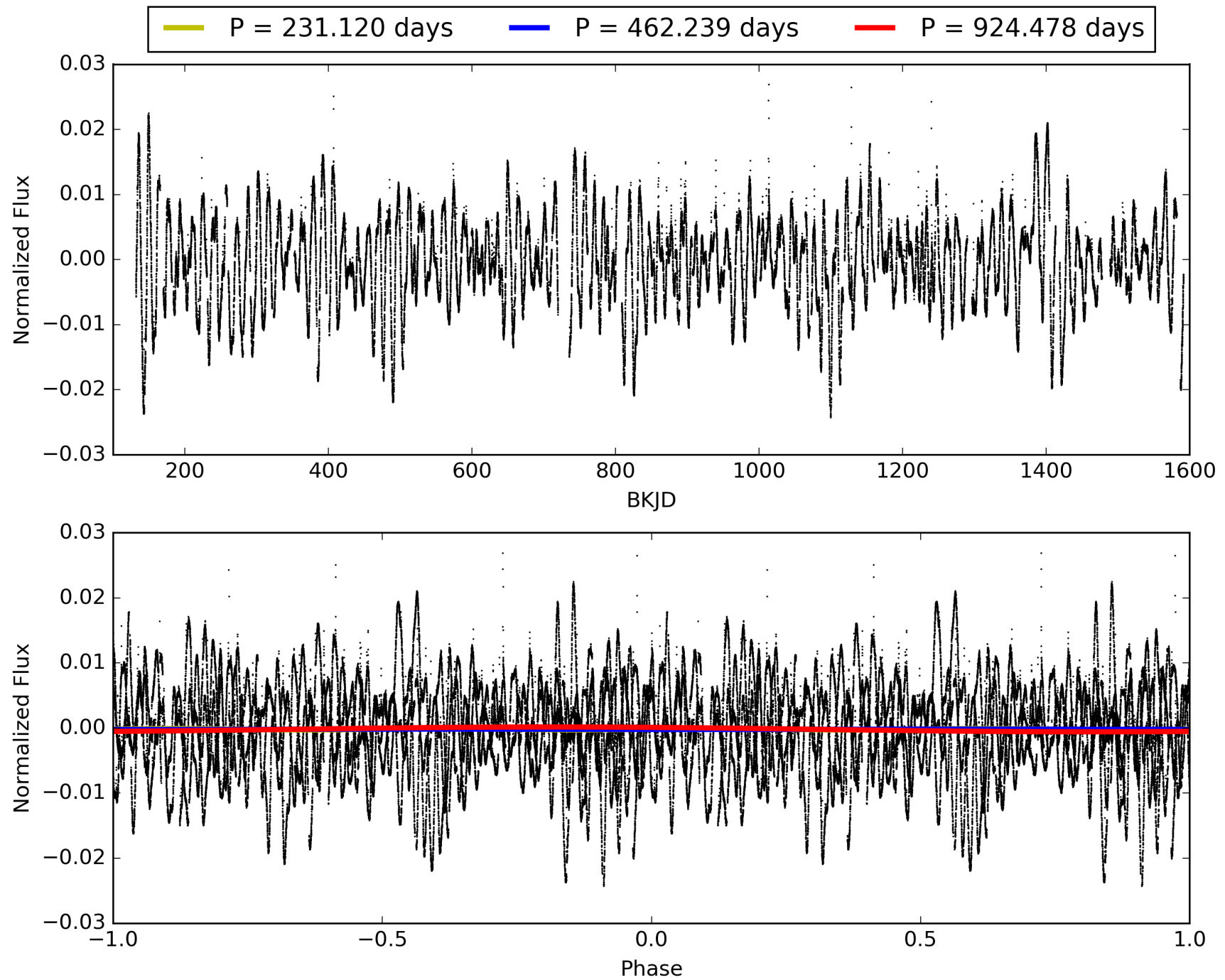
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009392349-01, PDC Light Curves

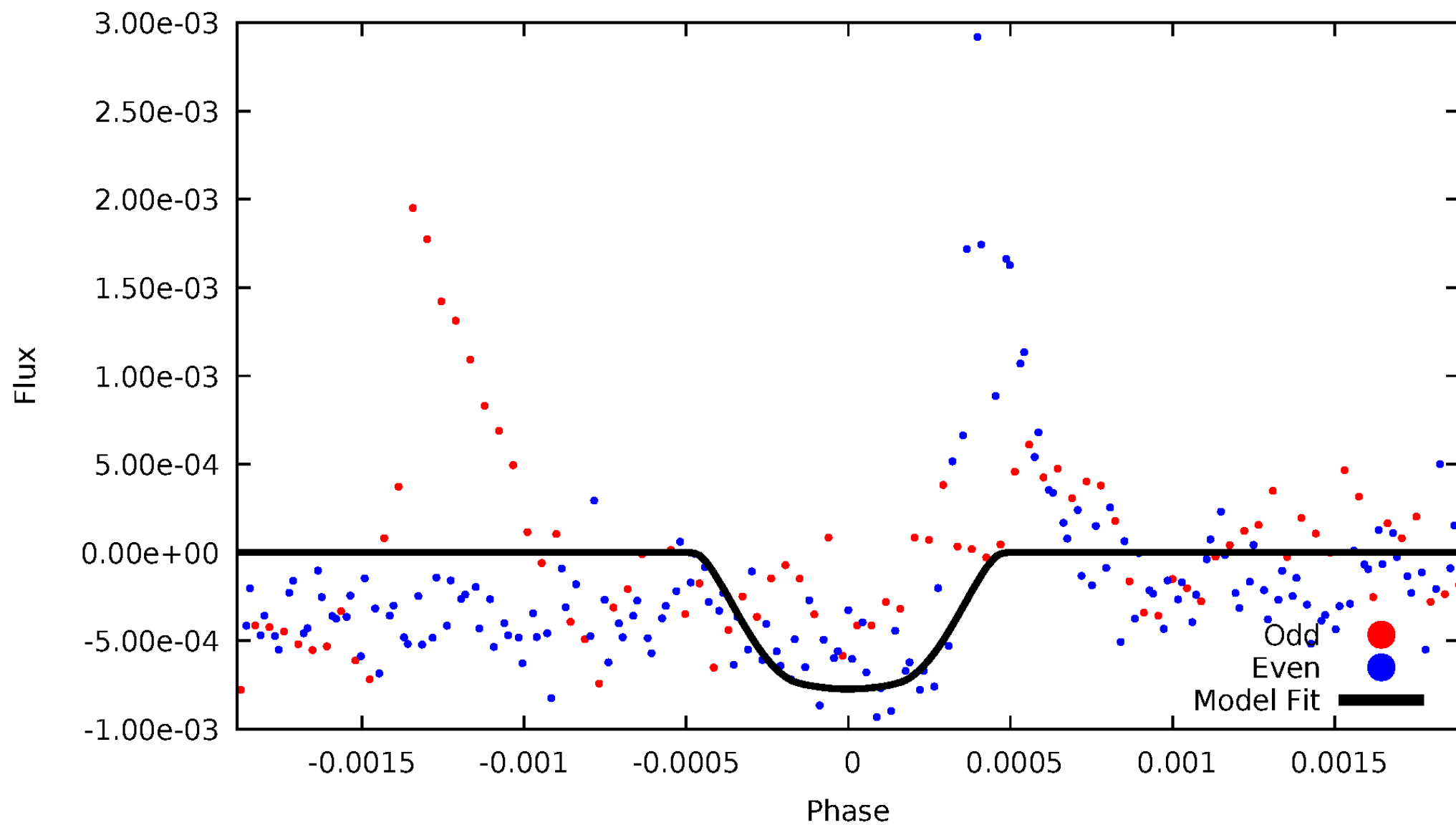


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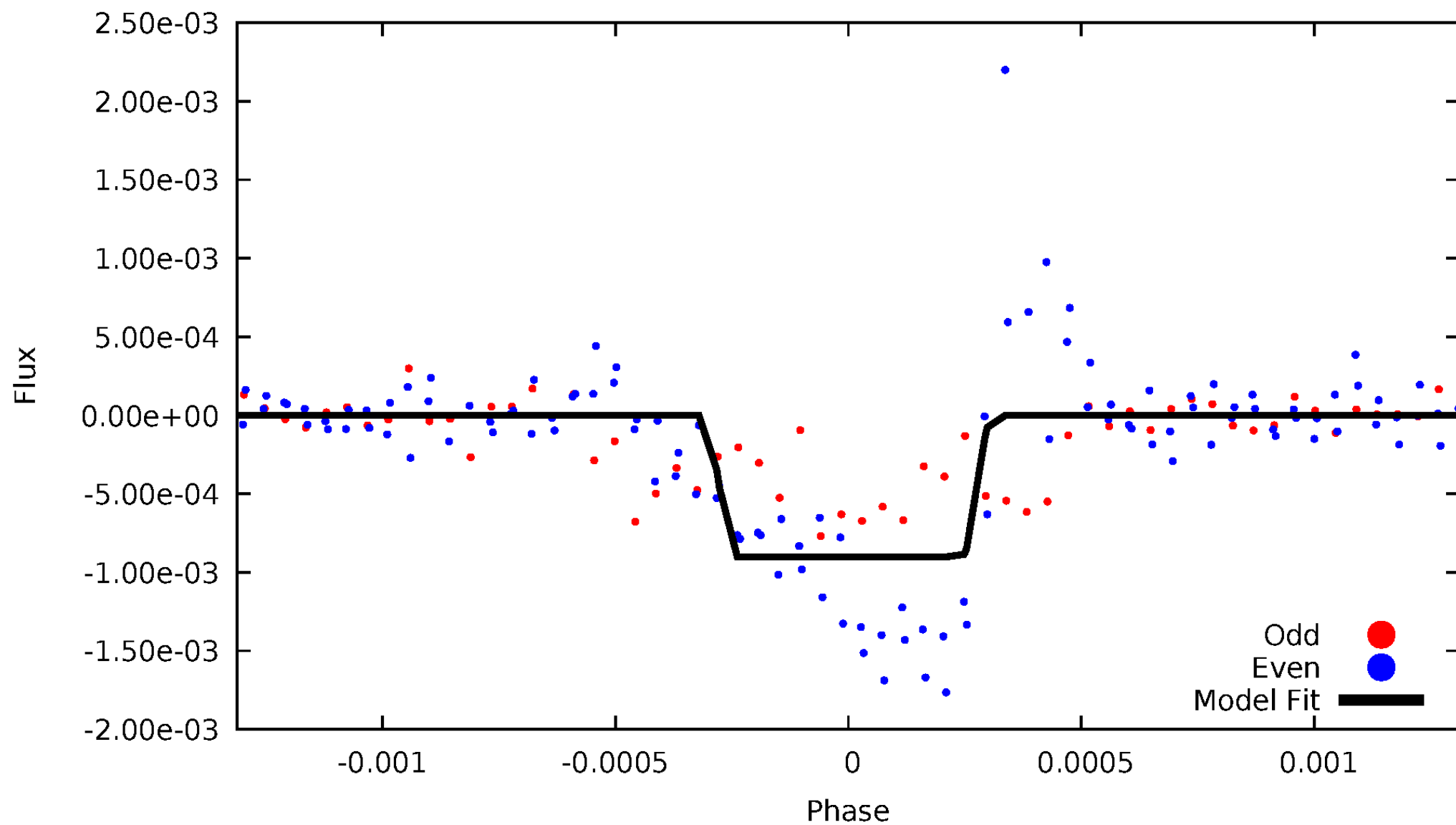
DV Odd/Even

TCE 009392349-01

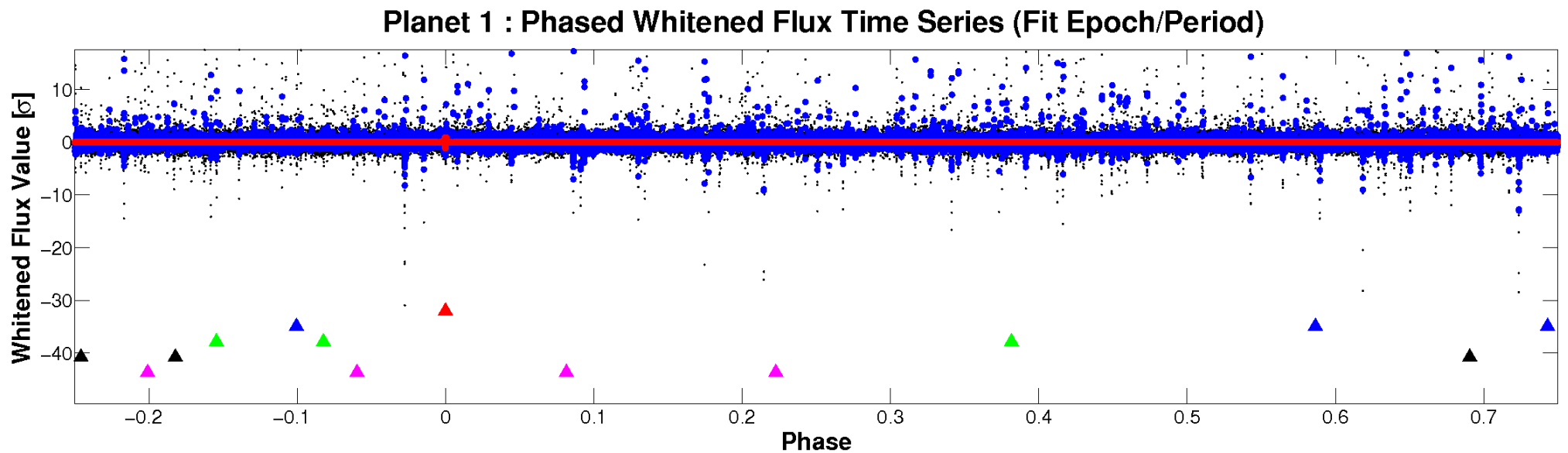
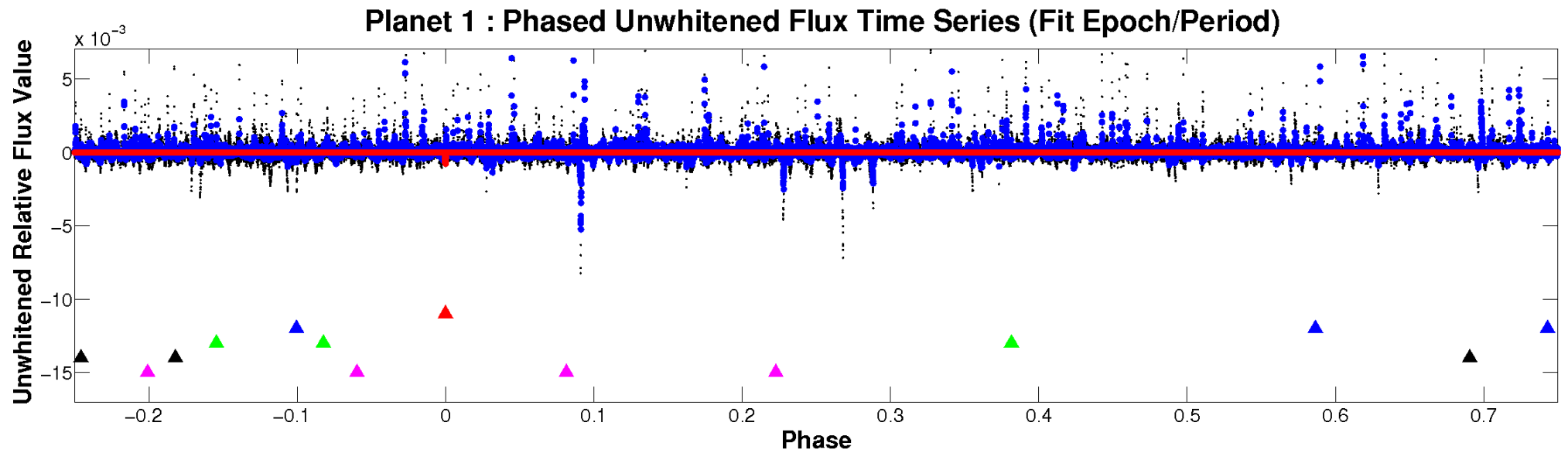


ALT Odd/Even

TCE 009392349-01

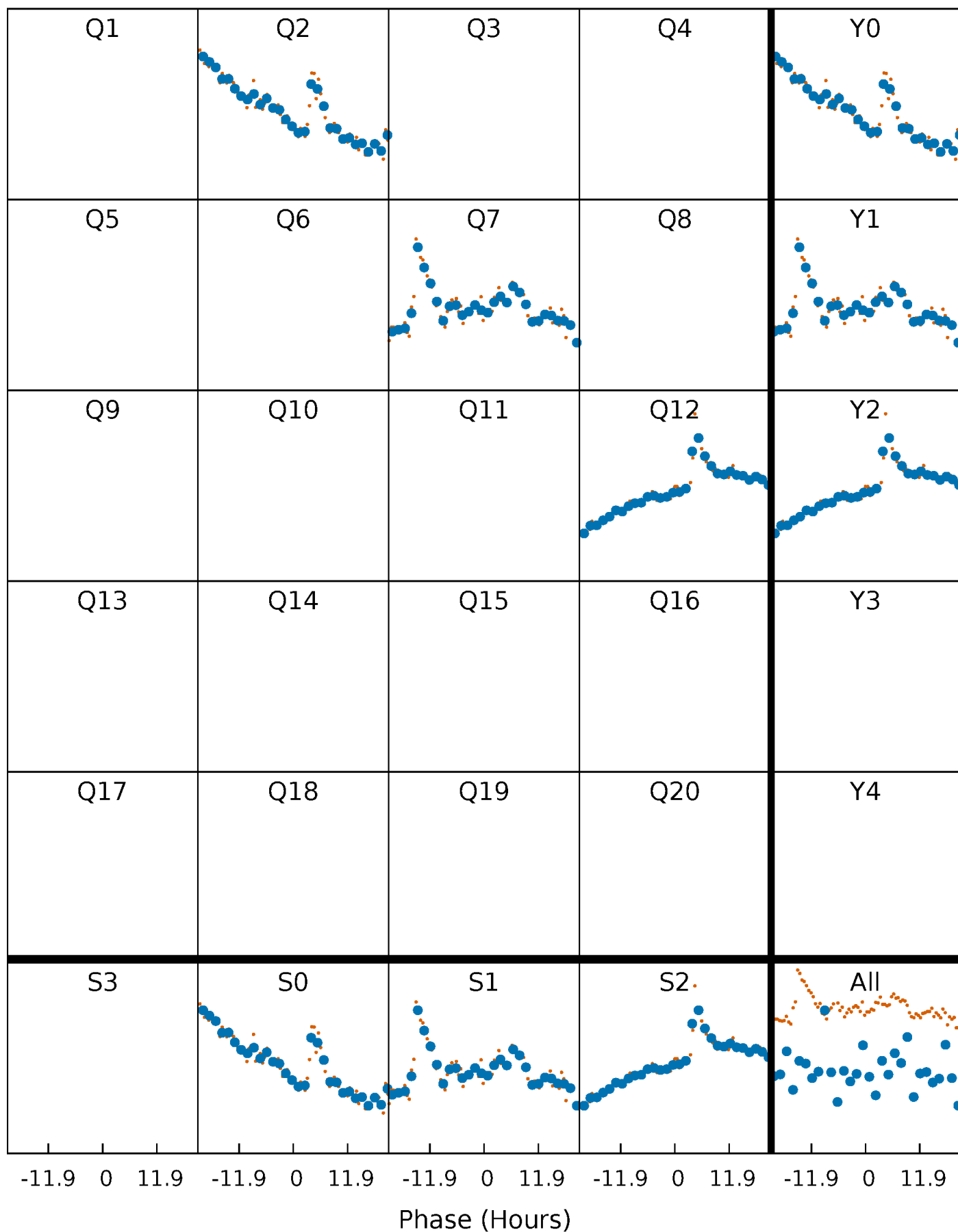


Non-Whitened Vs. Whitened Light Curve



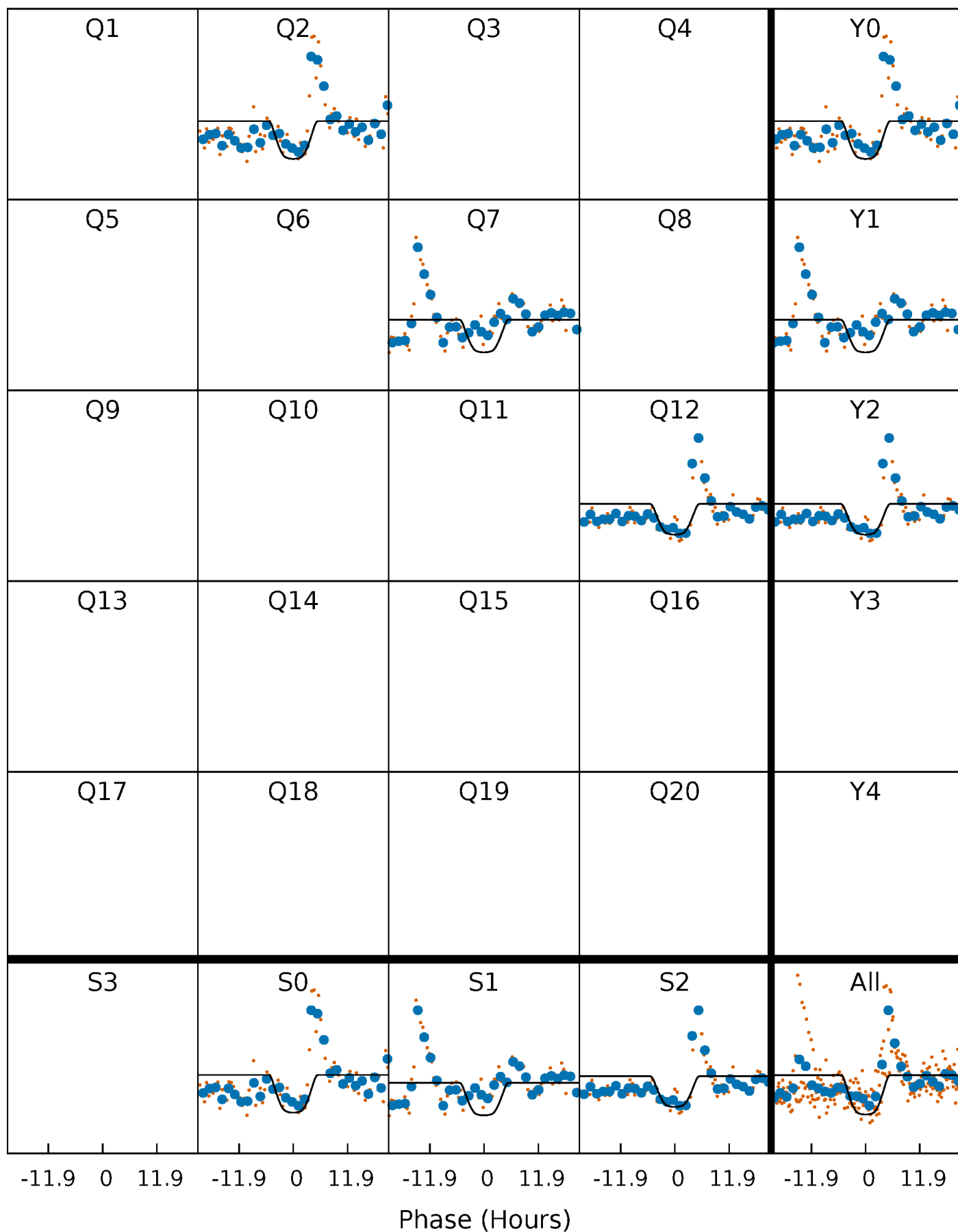
PDC Quarter-Phased Transit Curves

TCE 009392349-01 P=462.239181 Days $T_0=216.164926$ (BKJD)



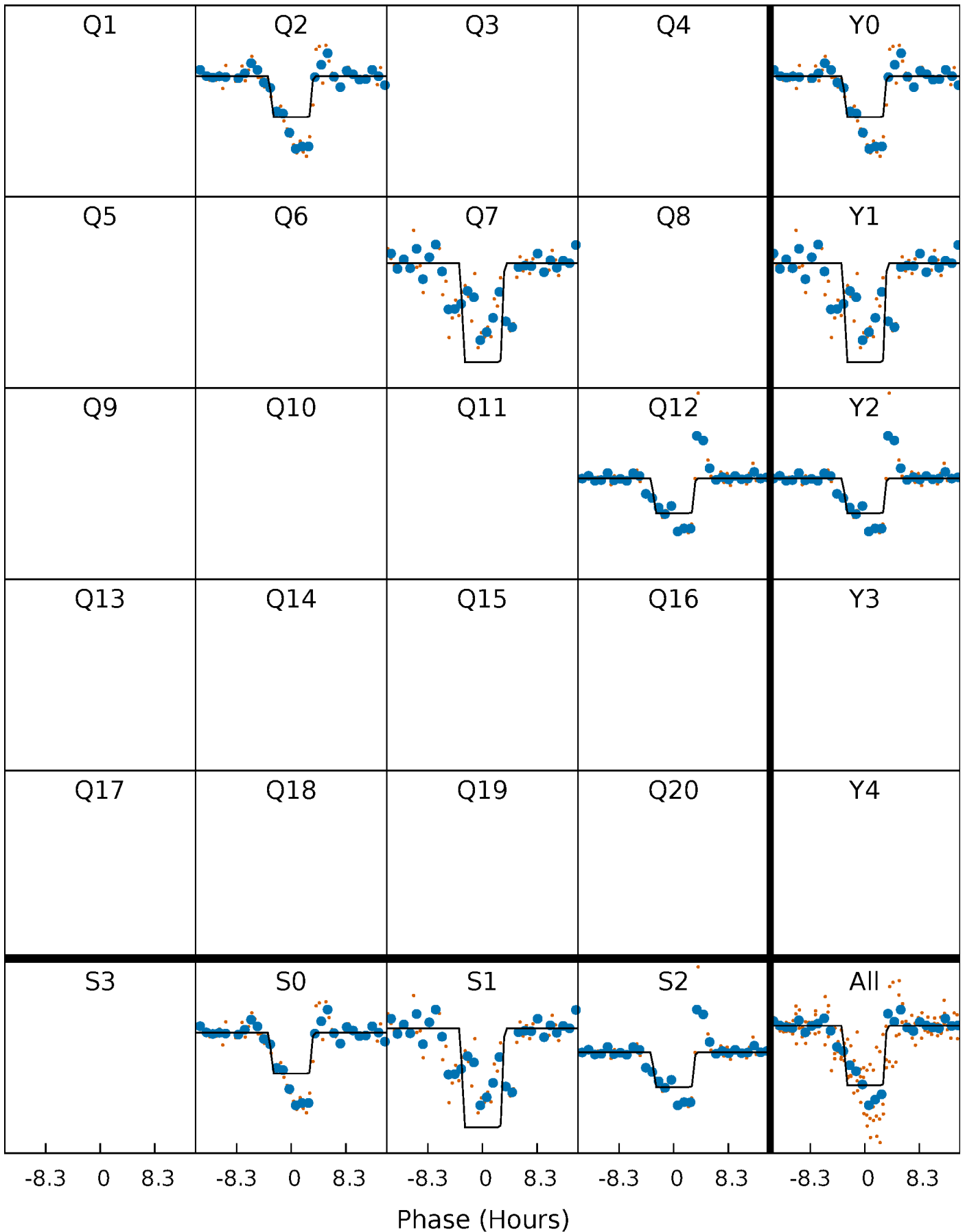
DV Quarter-Phased Transit Curves

TCE 009392349-01 P=462.239181 Days $T_0=216.164926$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

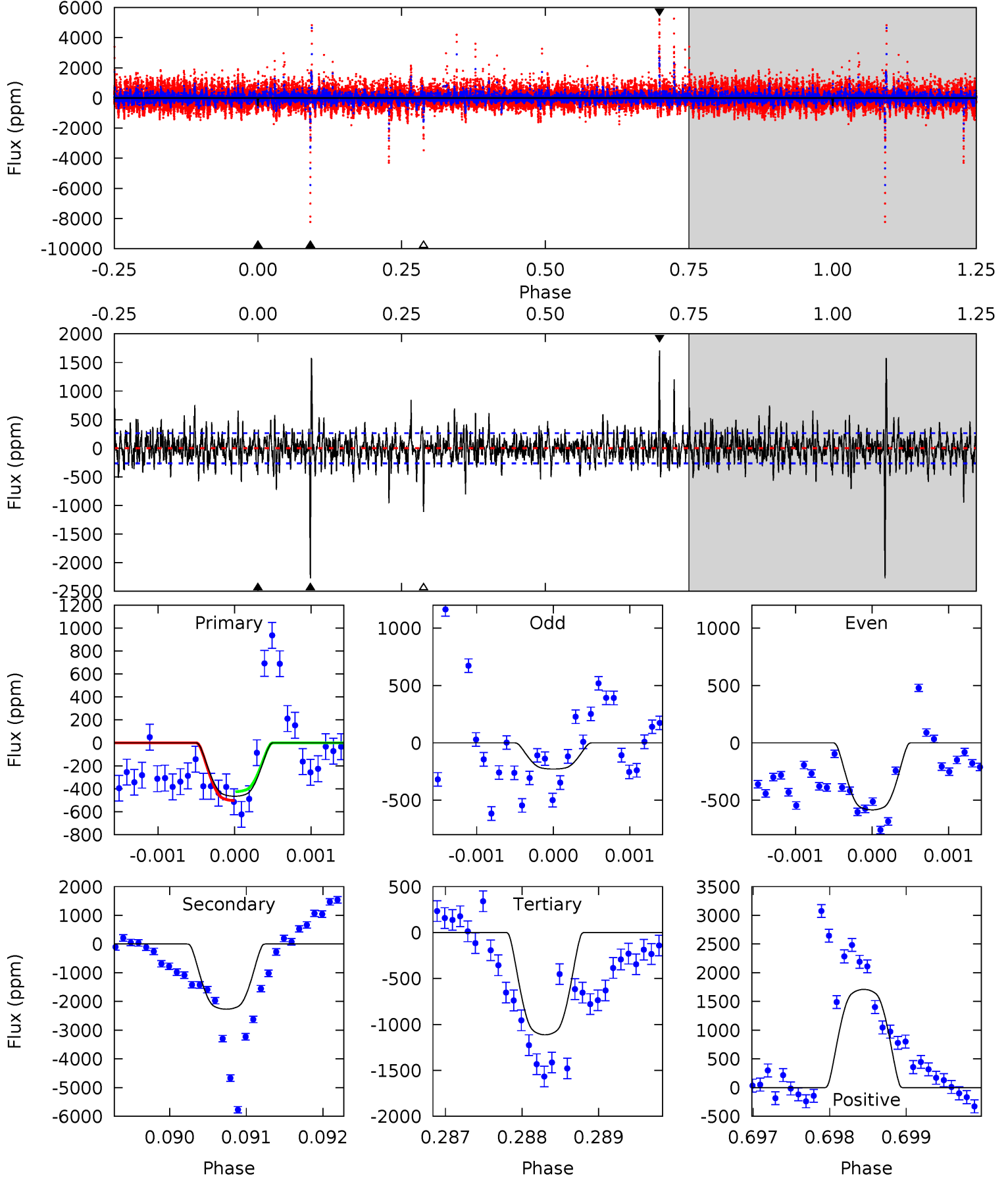
TCE 009392349-01 P=462.247994 Days $T_0=216.175593$ (BKJD)



DV Model-Shift Uniqueness Test

009392349-01, P = 462.239181 Days, E = 216.164926 Days

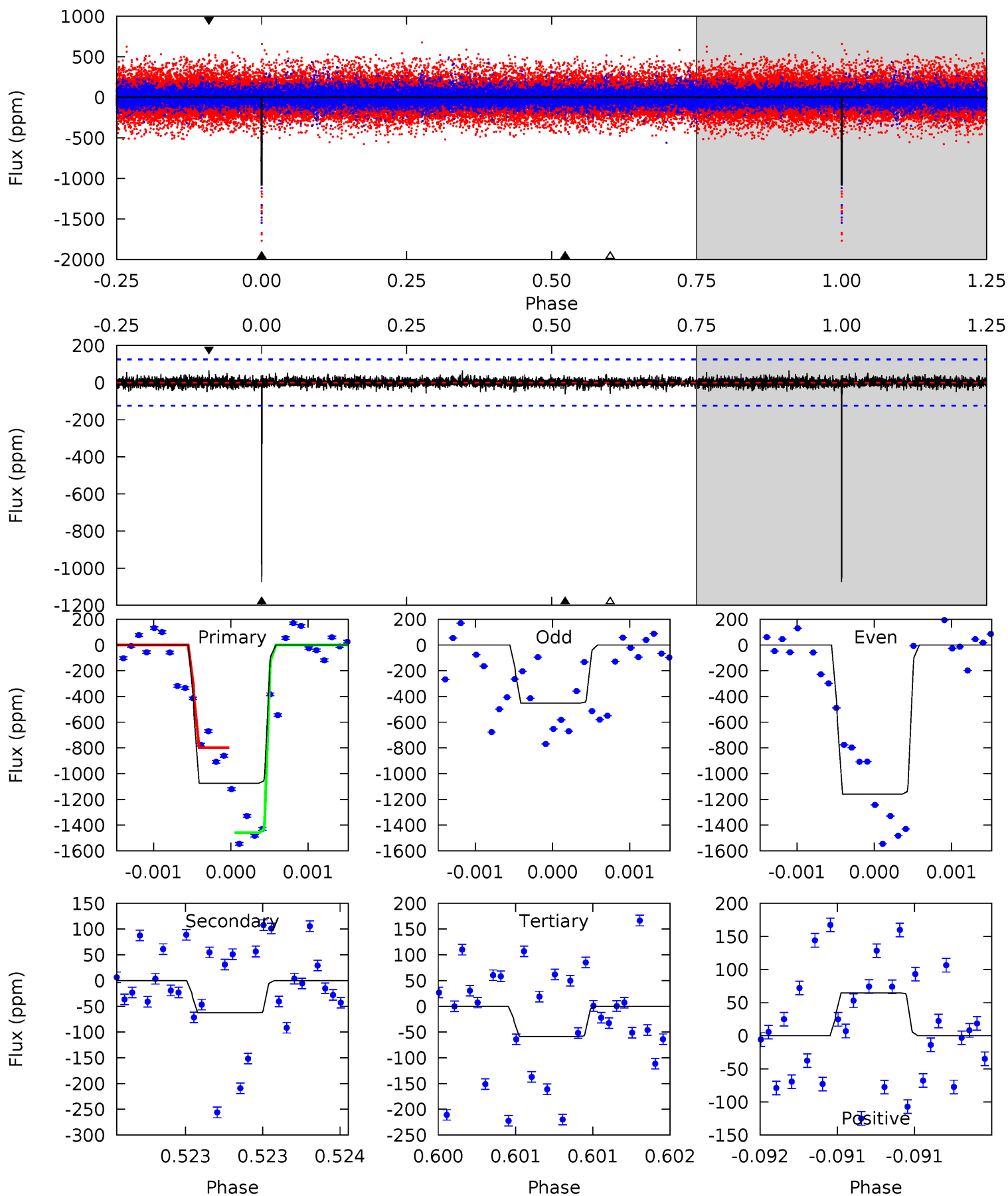
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.59	46.8	23.0	35.3	5.46	3.30	4.09	-13.4	-25.7	23.9	11.5	2.84	0.99	0.43	0.81



Alt Model-Shift Uniqueness Test

009392349-01, P = 462.247994 Days, E = 216.175593 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.6	2.78	2.59	2.86	5.55	3.44	0.55	45.0	44.7	0.19	-0.08	16.2	0.87	0.06	14.6



Stellar Parameters For KIC 009392349

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5623^{+152}_{-152}	$4.505^{+0.081}_{-0.150}$	$-0.360^{+0.300}_{-0.300}$	$0.835^{+0.189}_{-0.087}$	$0.813^{+0.106}_{-0.071}$	$1.971^{+0.659}_{-0.816}$
	+3%/-3%	+2%/-3%	+83%/-83%	+23%/-10%	+13%/-9%	+33%/-41%
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 009392349-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2270 ± 48	$3.06^{+0.46}_{-0.40}$	306^{+18}_{-14}	6790^{+524}_{-415}	159735^{+51181}_{-38447}
Alt.	-63 ± 23	$2.78^{+0.50}_{-0.40}$	306^{+19}_{-15}	3369^{+255}_{-243}	5005^{+2619}_{-2071}

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 $A_{obs} \gg 1.0$

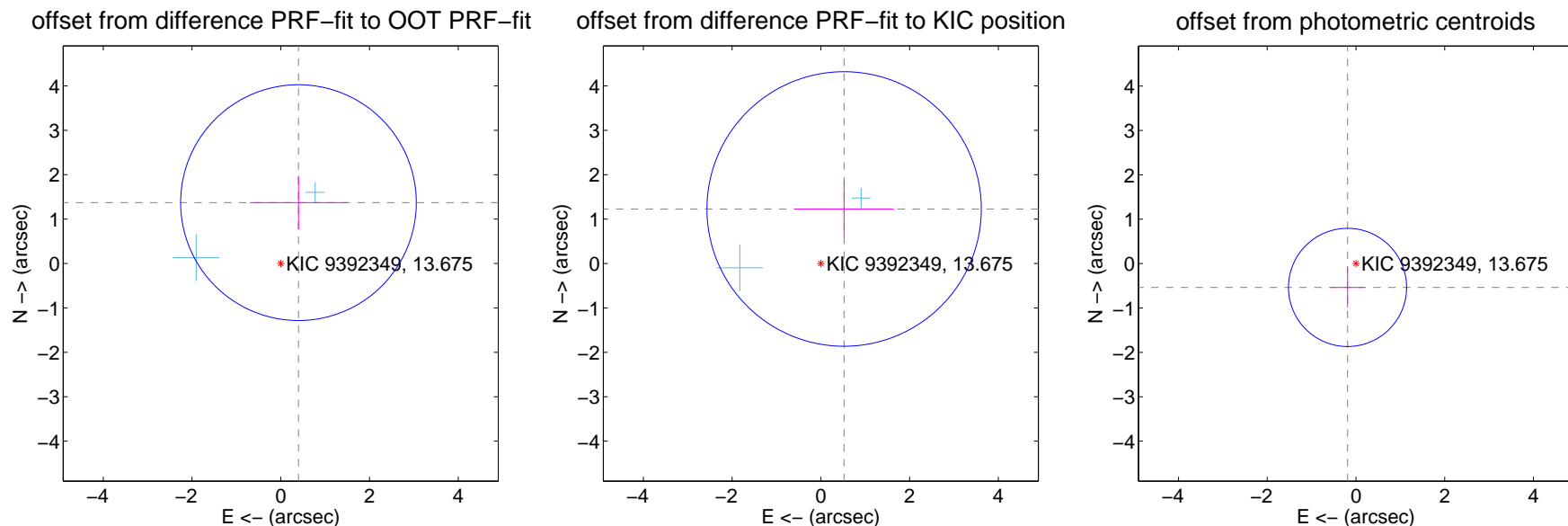
DV Centroid Data

Supplemental centroid analysis for 009392349-01. Kepler magnitude: 13.68. Transit SNR 7.47

There are 2 quarters with good PRF difference image offsets

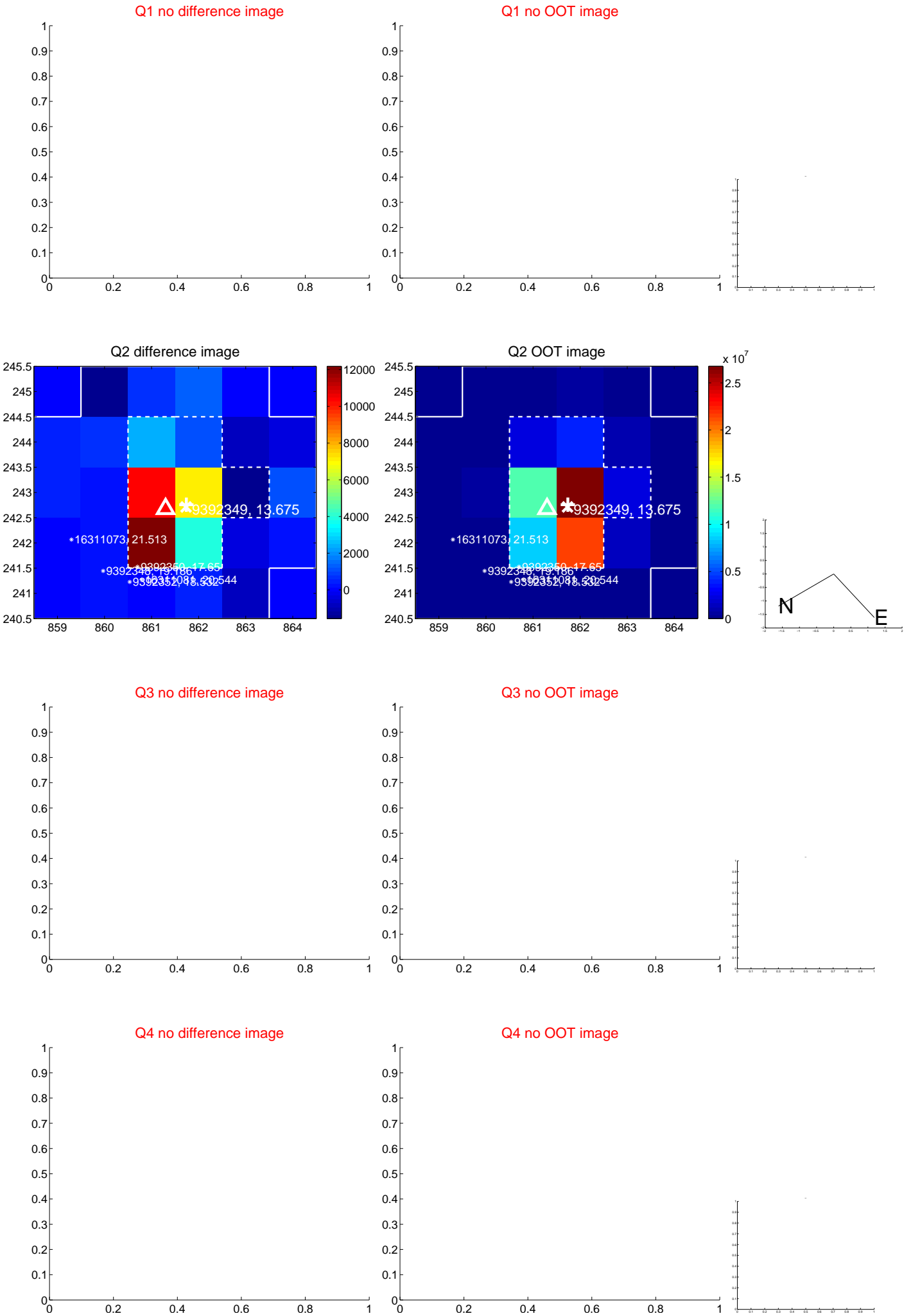
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.429 ± 0.885	1.61	-0.399 ± 1.097	1.372 ± 0.604
PRF-fit source offset from KIC position	1.336 ± 1.031	1.30	-0.524 ± 1.119	1.229 ± 0.645
photometric centroid source offset	0.57 ± 0.44	1.28	0.19 ± 0.38	-0.54 ± 0.45

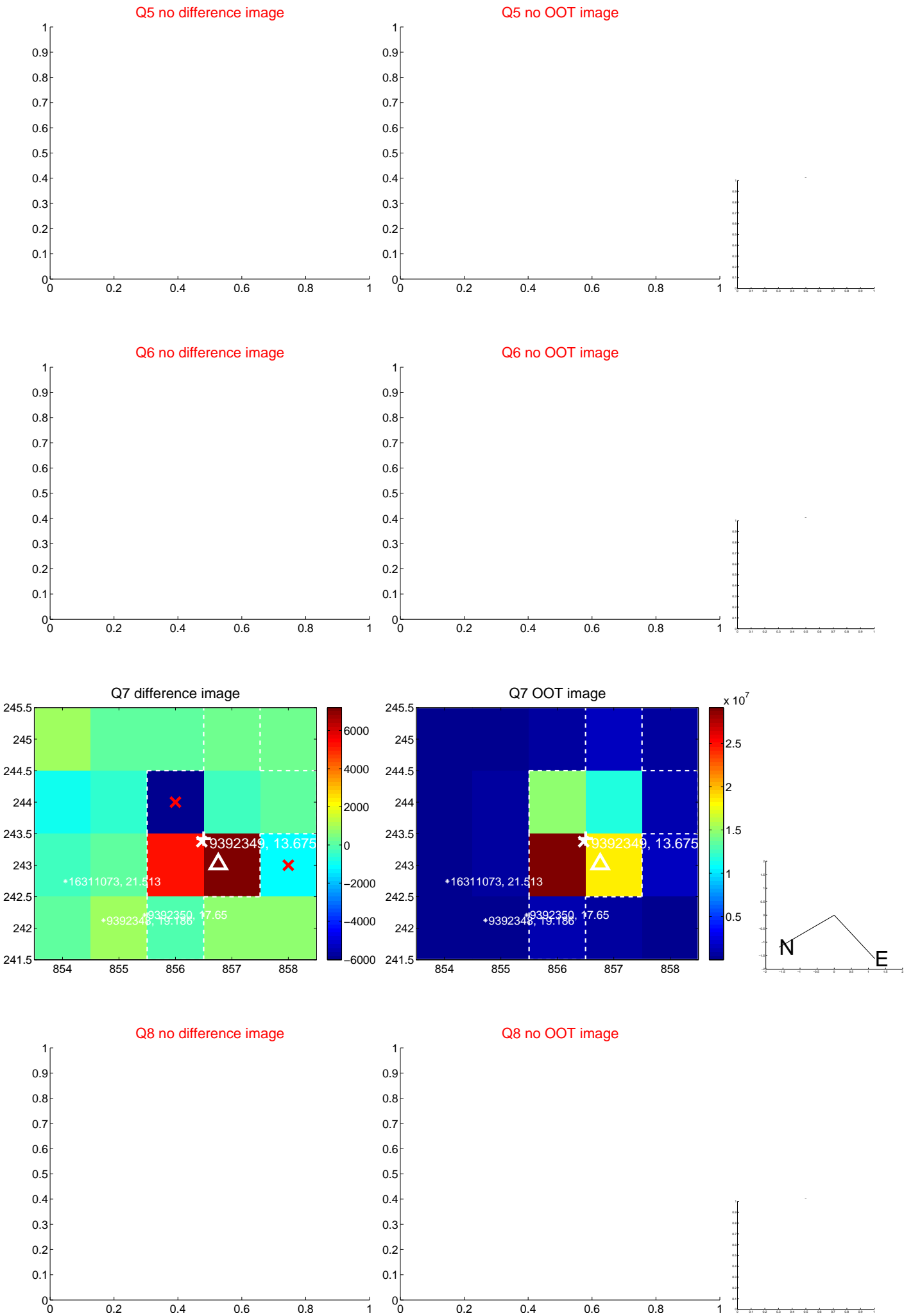


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

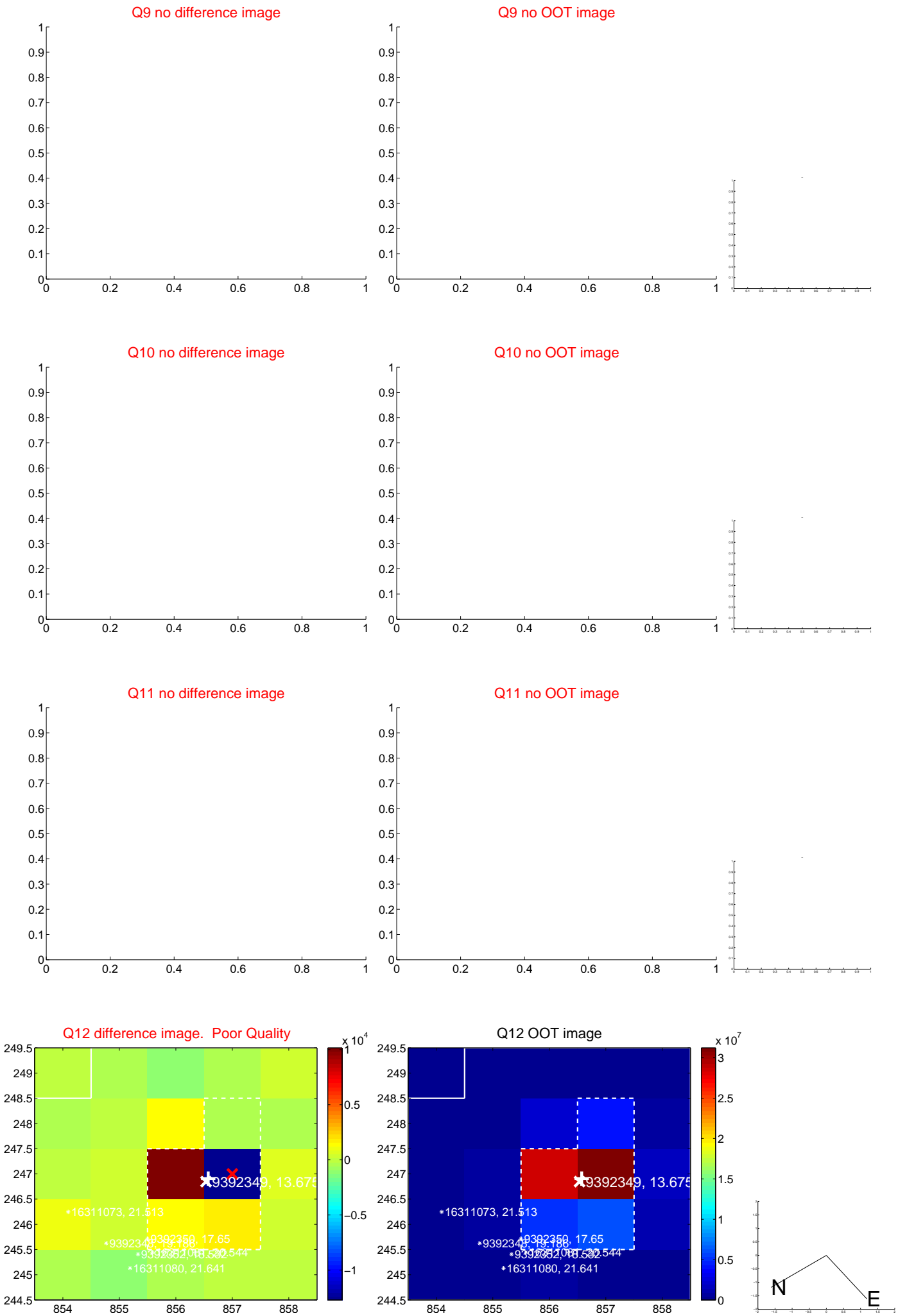
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



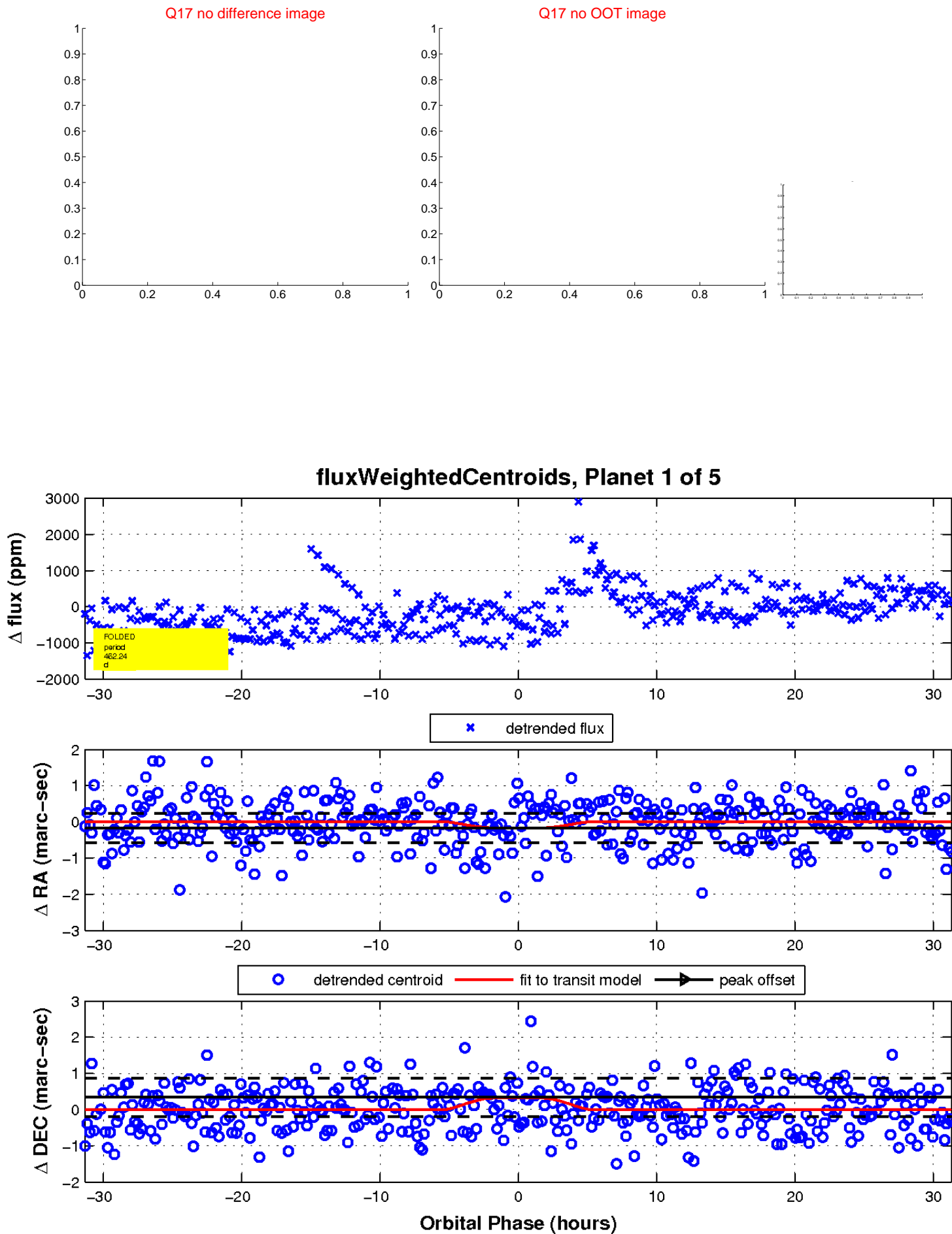
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

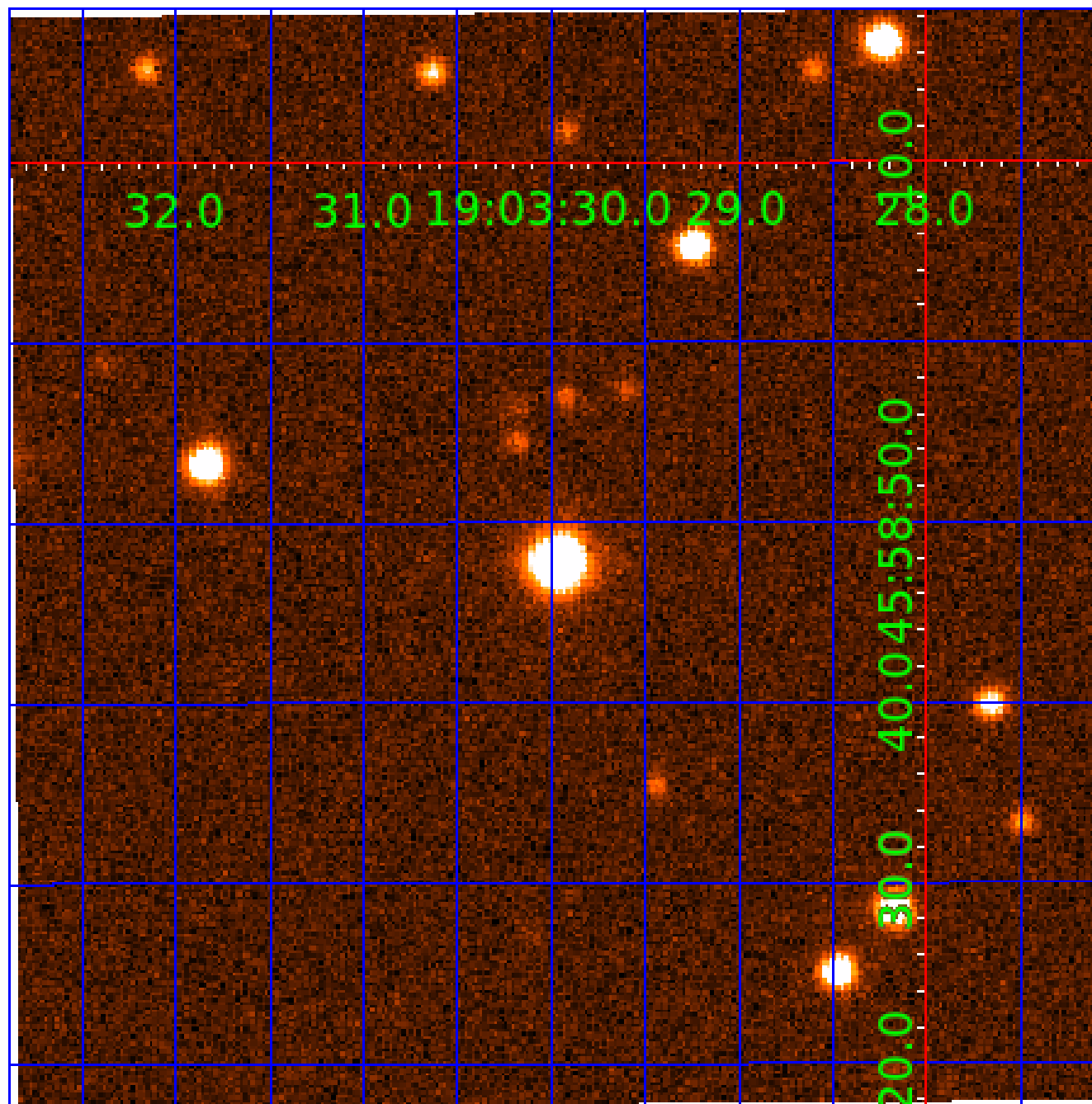


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009392349

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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009392349-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009392349-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009392349-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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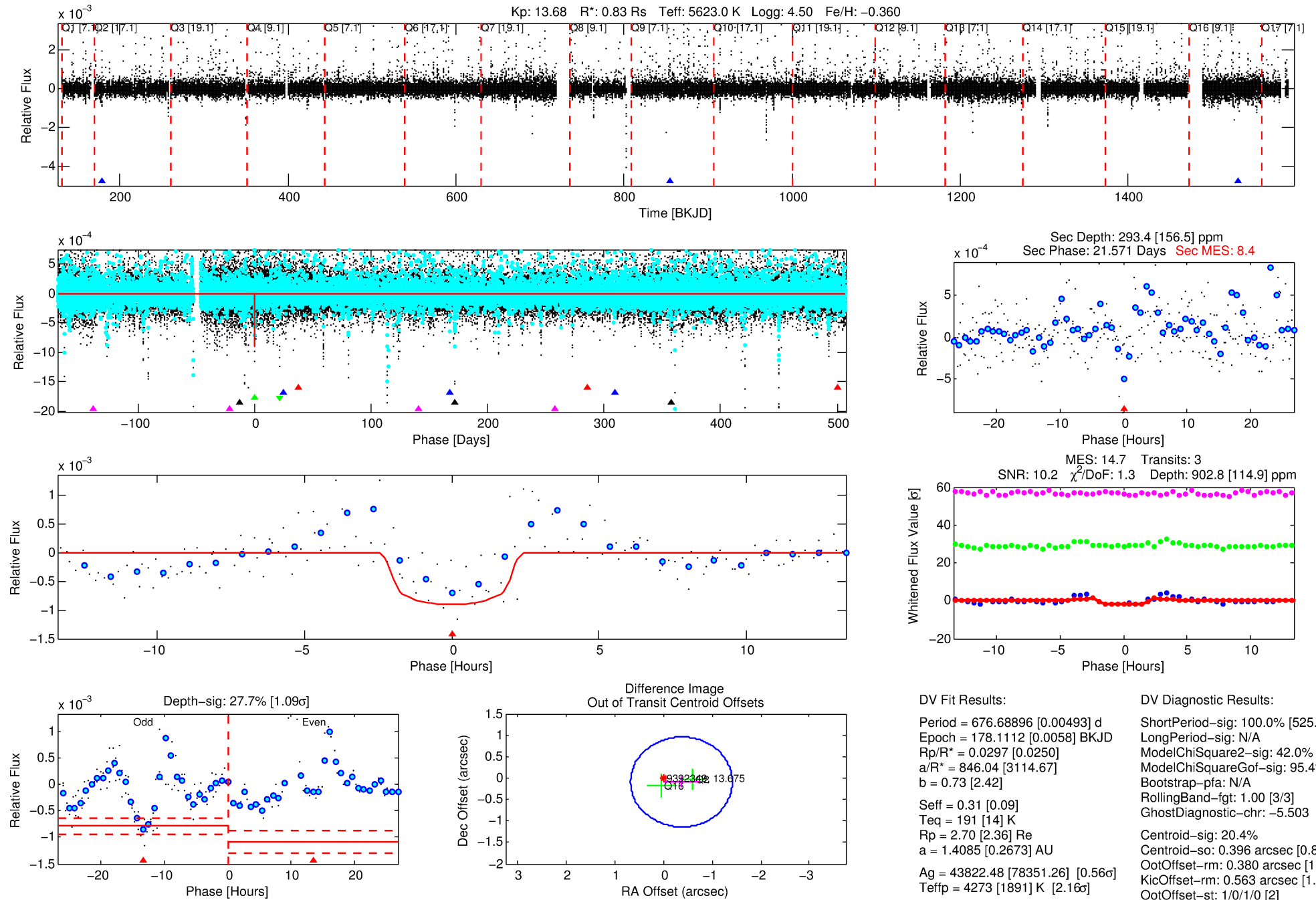
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009392349-03

No Significant Match Found

DV One-Page Summary

KIC: 9392349 Candidate: 3 of 5 Period: 676.689 d



DV Fit Results:

Period = 676.68896 [0.00493] d
Epoch = 178.1112 [0.0058] BKJD
Rp/R* = 0.0297 [0.0250]
a/R* = 846.04 [3114.67]
b = 0.73 [2.42]
Seff = 0.31 [0.09]
Teq = 191 [14] K
Rp = 2.70 [2.36] Re
a = 1.4085 [0.2673] AU
Ag = 43822.48 [78351.26] [0.56 σ]
Teffp = 4273 [1891] K [2.16 σ]

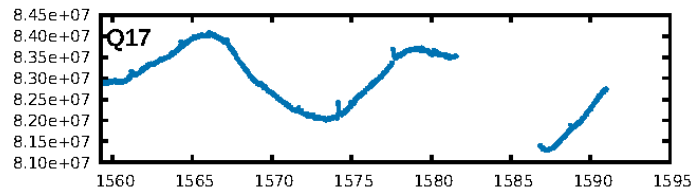
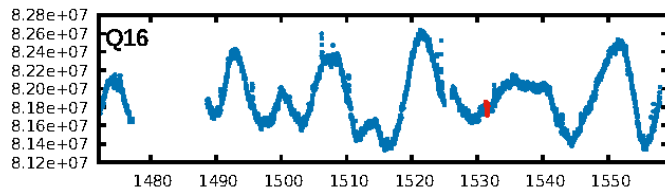
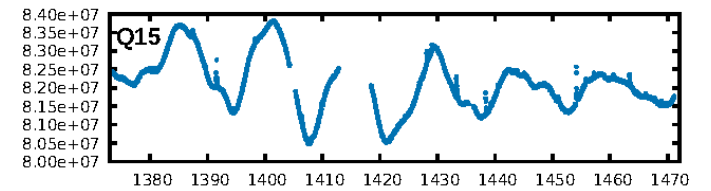
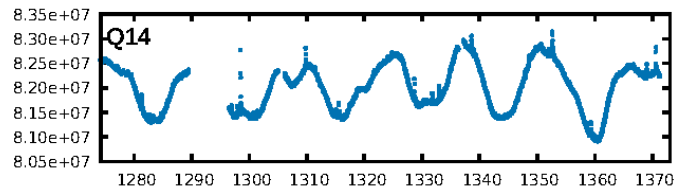
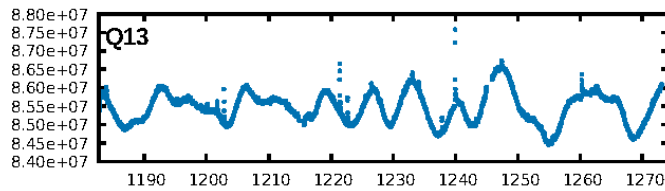
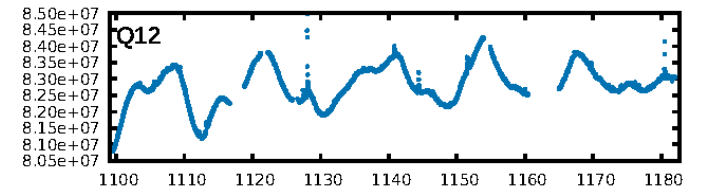
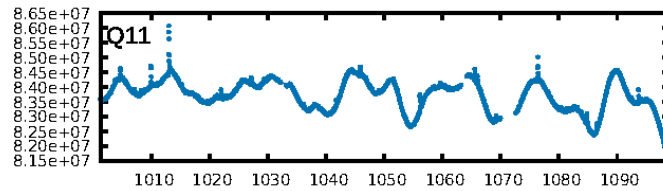
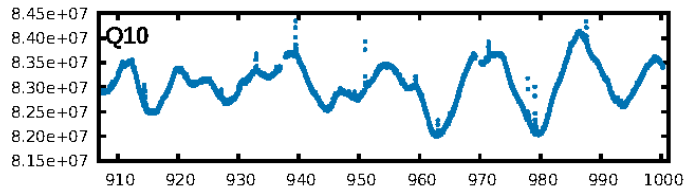
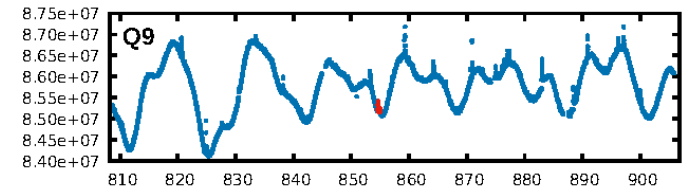
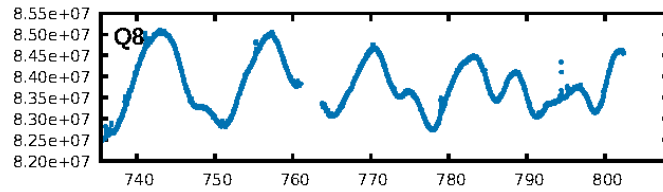
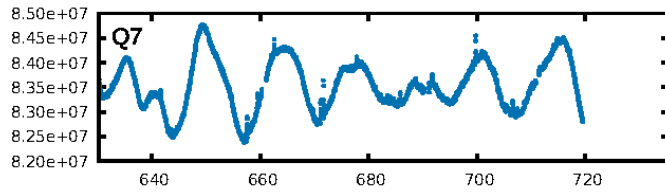
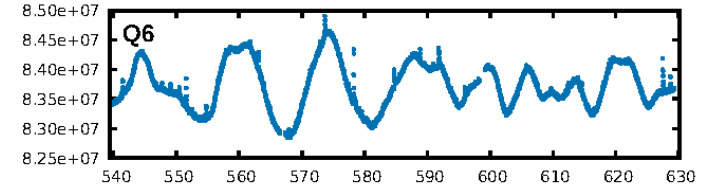
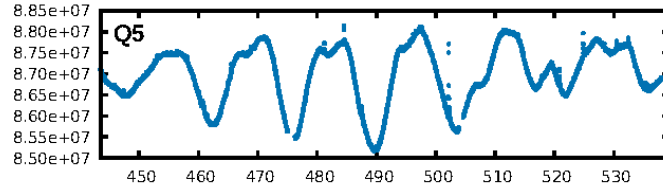
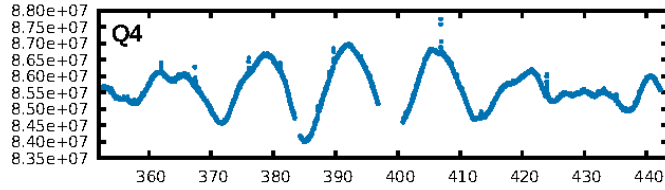
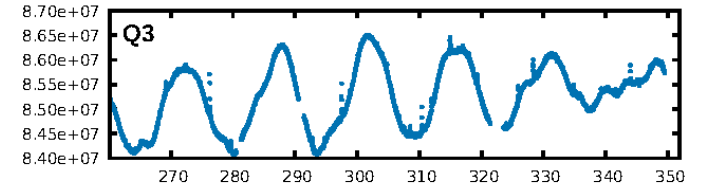
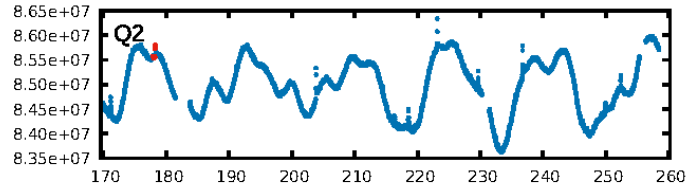
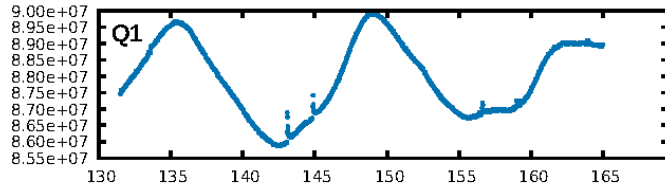
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [525.29 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 42.0%
ModelChiSquareGof-sig: 95.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -5.503
Centroid-sig: 20.4%
Centroid-so: 0.396 arcsec [0.84 σ]
OotOffset-rm: 0.380 arcsec [1.09 σ]
KicOffset-rm: 0.563 arcsec [1.53 σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

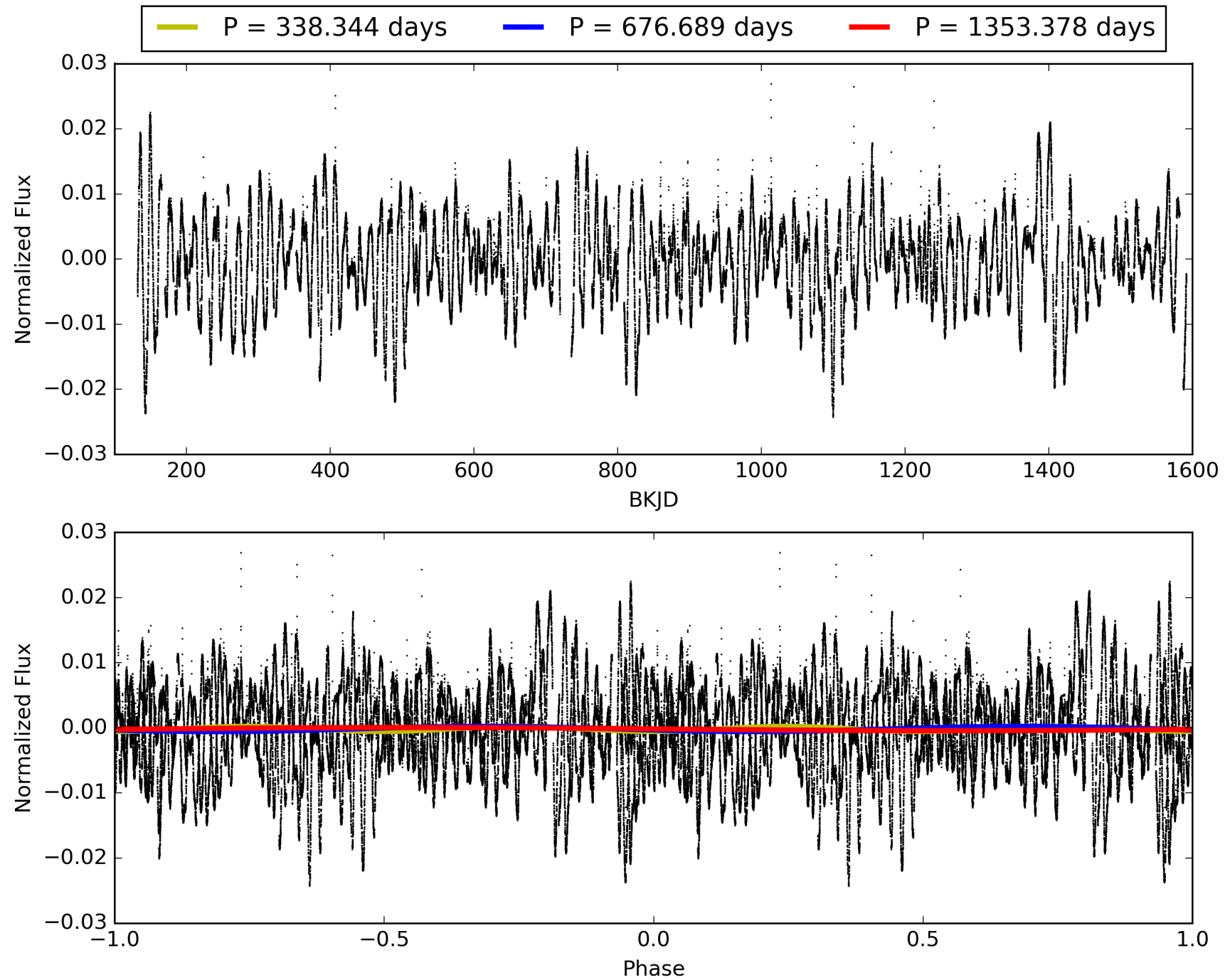
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:46:50 Z

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

TCE 009392349-03, PDC Light Curves

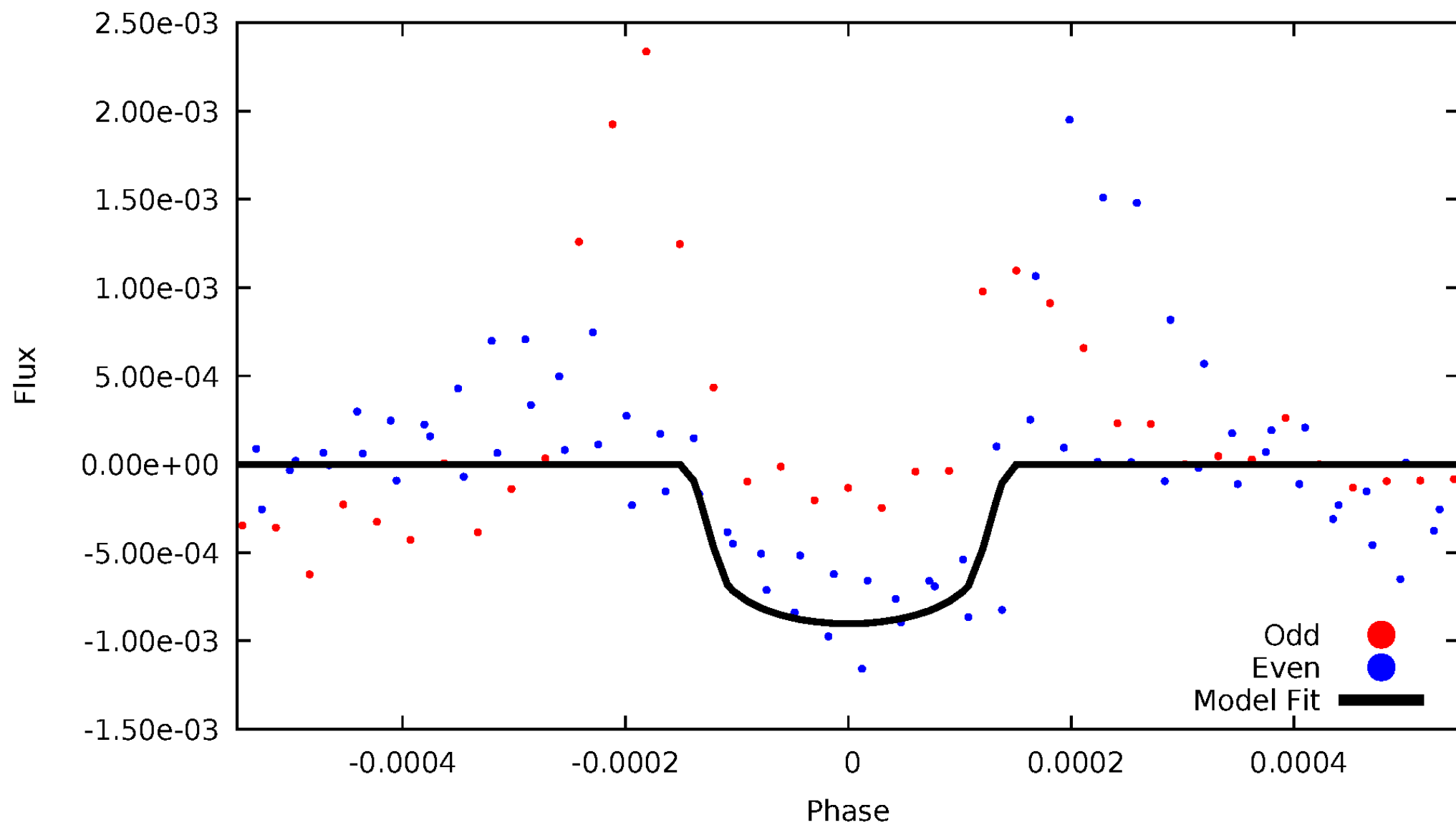


TCE 009392349-03



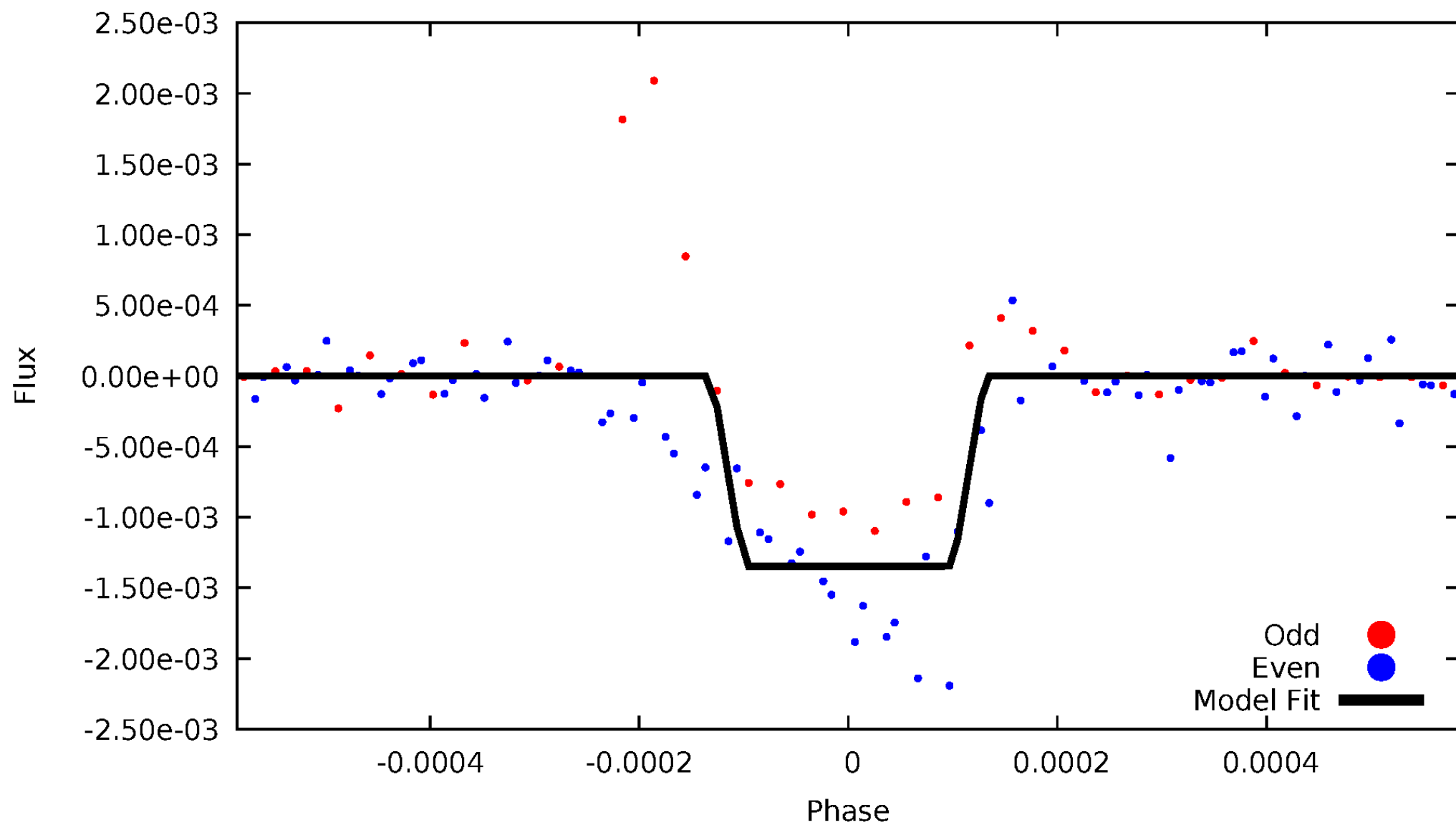
DV Odd/Even

TCE 009392349-03



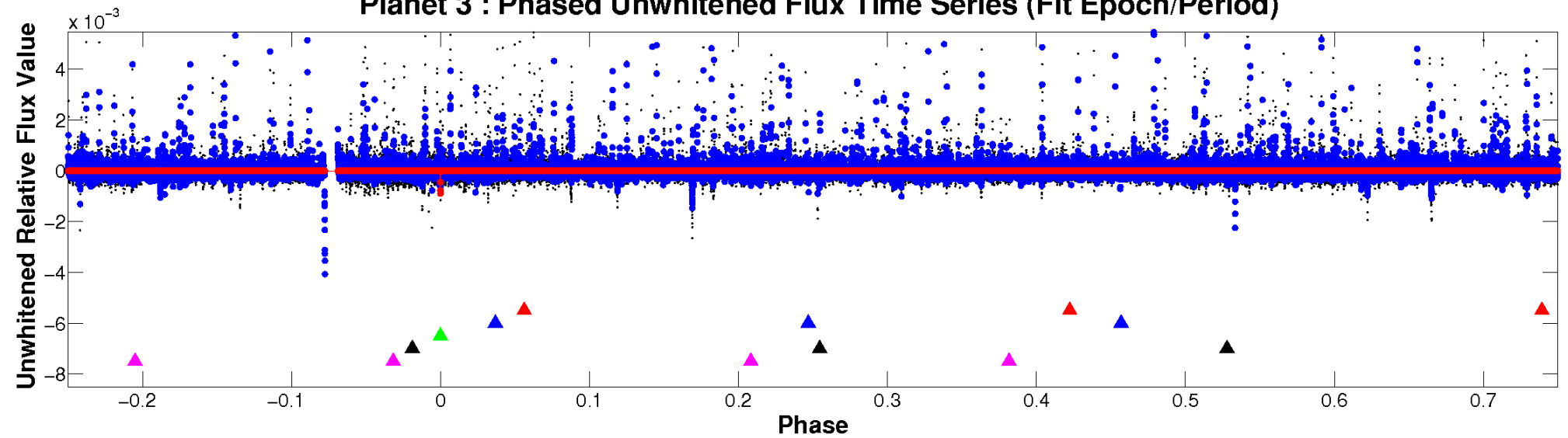
ALT Odd/Even

TCE 009392349-03

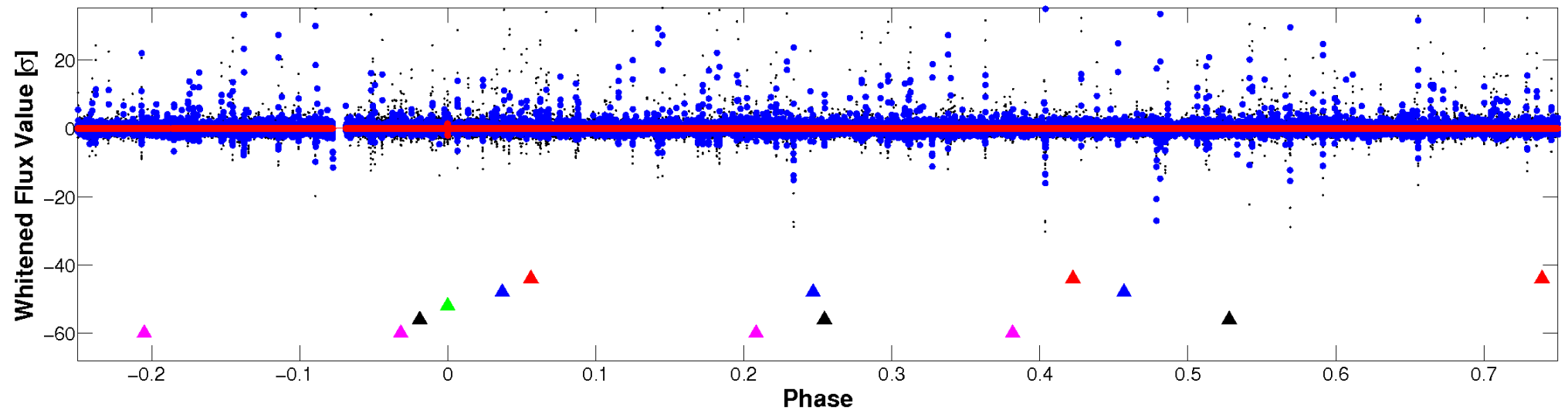


Non-Whitened Vs. Whitened Light Curve

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

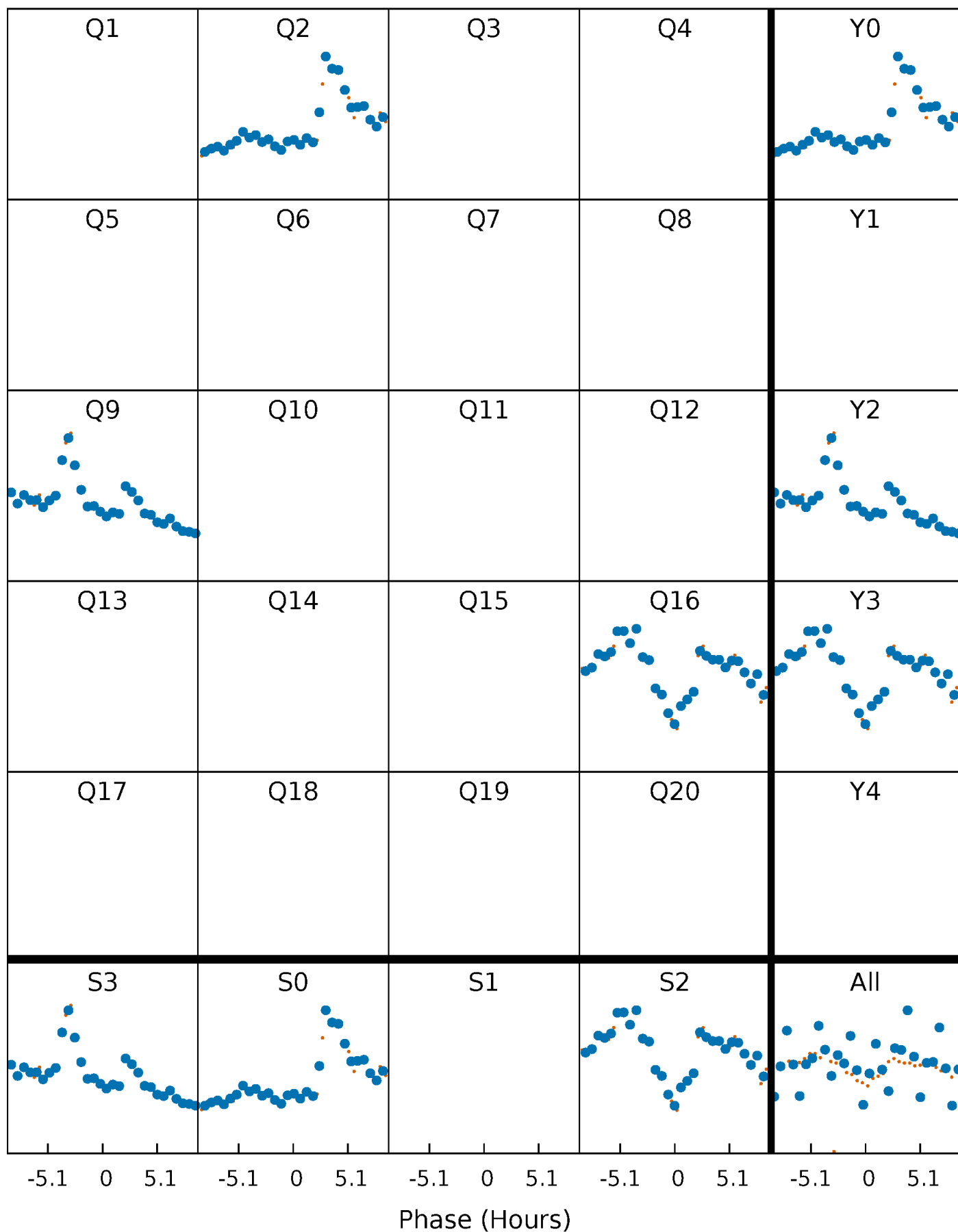


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



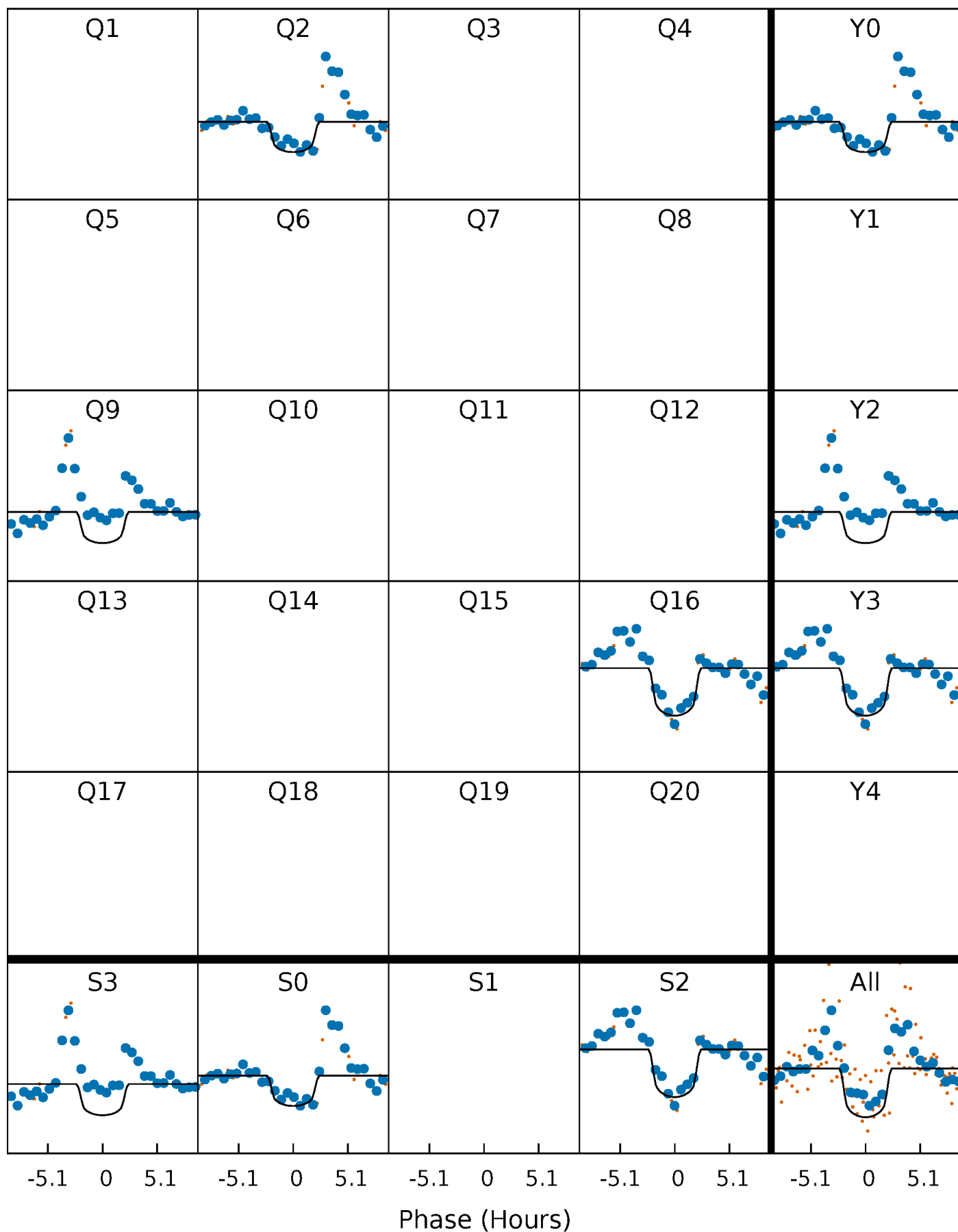
PDC Quarter-Phased Transit Curves

TCE 009392349-03 $P=676.688965$ Days $T_0=178.111154$ (BKJD)



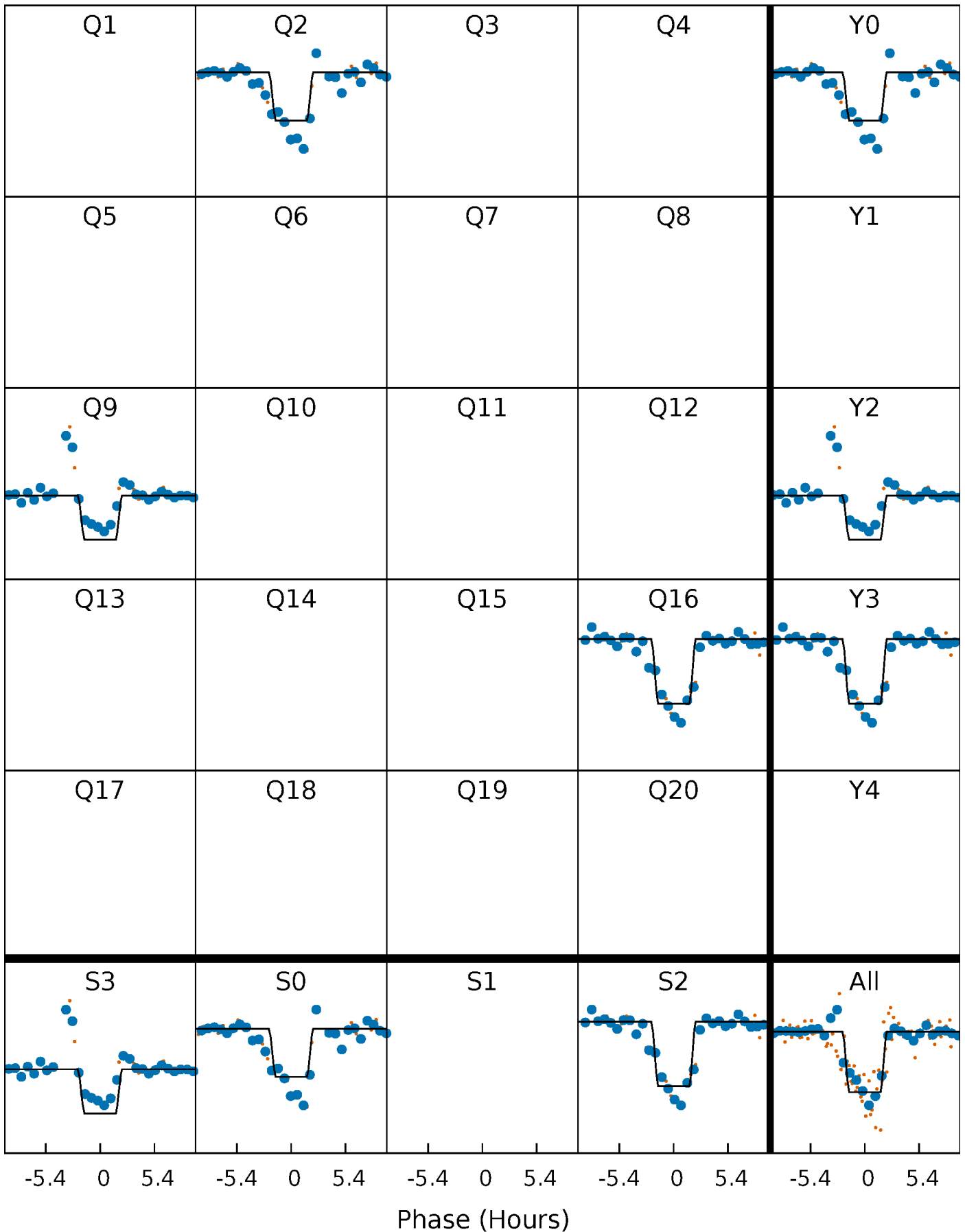
DV Quarter-Phased Transit Curves

TCE 009392349-03 $P=676.688965$ Days $T_0=178.111154$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

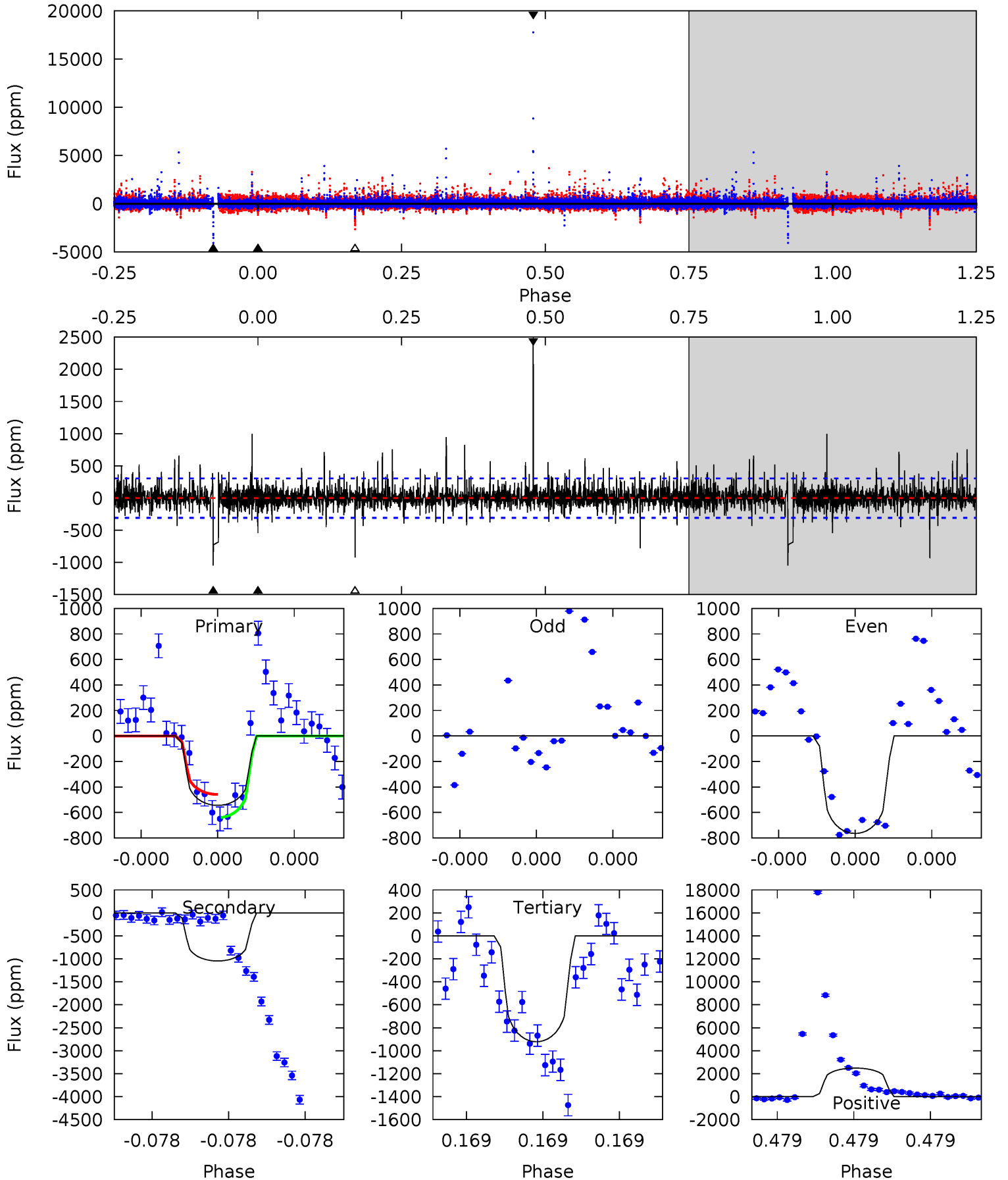
TCE 009392349-03 P=676.664151 Days $T_0=178.139082$ (BKJD)



DV Model-Shift Uniqueness Test

009392349-03, P = 676.688965 Days, E = 178.111154 Days

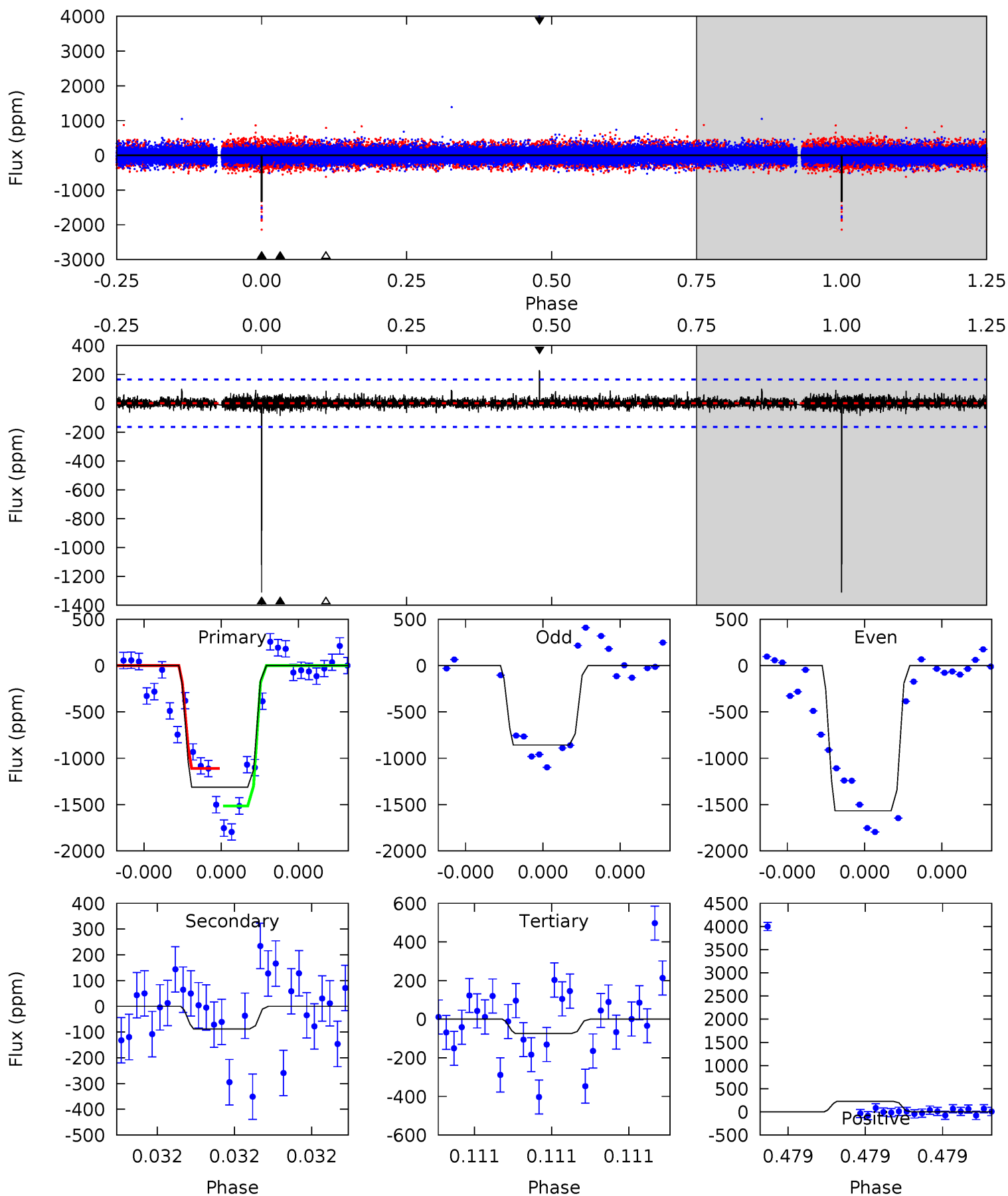
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	19.4	17.1	46.0	5.66	3.62	2.15	-6.99	-36.0	2.31	-26.7	4.65	0.69	0.70	1.69



Alt Model-Shift Uniqueness Test

009392349-03, P = 676.664151 Days, E = 178.139082 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.4	3.05	2.58	7.95	5.69	3.66	0.58	42.9	37.5	0.46	-4.91	12.0	0.96	0.15	7.21



Stellar Parameters For KIC 009392349

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5623^{+152}_{-152}	$4.505^{+0.081}_{-0.150}$	$-0.360^{+0.300}_{-0.300}$	$0.835^{+0.189}_{-0.087}$	$0.813^{+0.106}_{-0.071}$	$1.971^{+0.659}_{-0.816}$
	+3%/-3%	+2%/-3%	+83%/-83%	+23%/-10%	+13%/-9%	+33%/-41%
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 009392349-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1047 ± 54	$3.15^{+2.20}_{-1.84}$	270^{+17}_{-12}	5521^{+3623}_{-1125}	$116950^{+557775}_{-76807}$
Alt.	-88 ± 29	$3.64^{+2.32}_{-2.15}$	269^{+18}_{-12}	3300^{+1115}_{-482}	7302^{+33056}_{-4952}

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

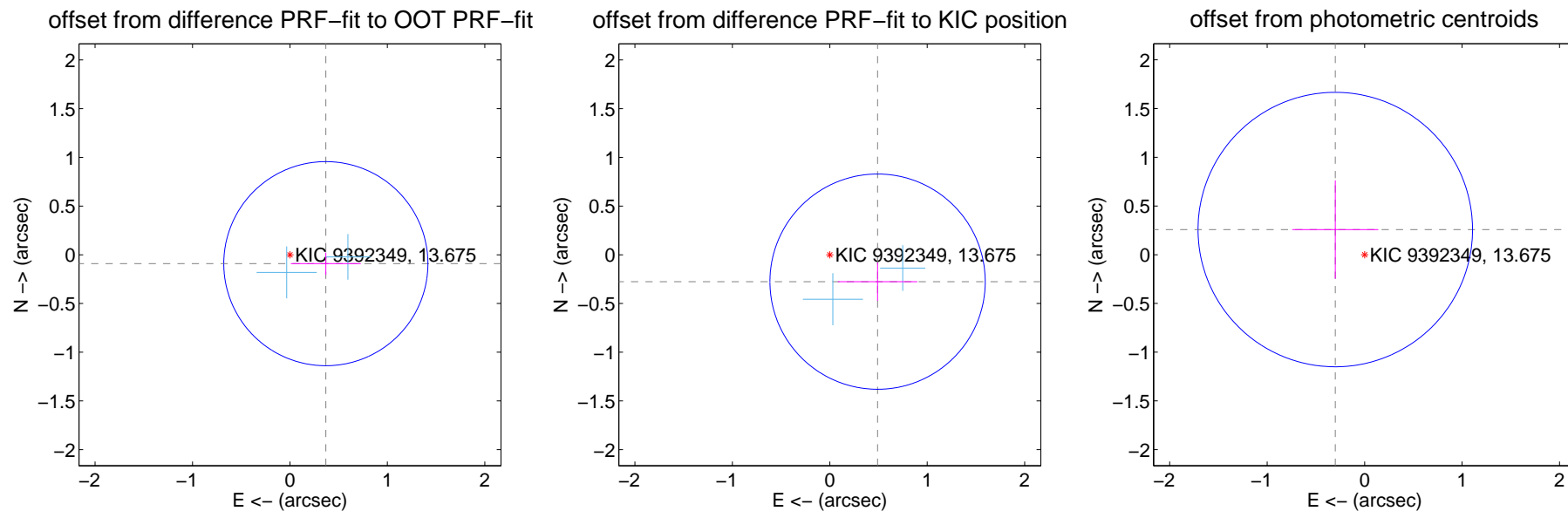
DV Centroid Data

Supplemental centroid analysis for 009392349-03. Kepler magnitude: 13.68. Transit SNR 10.19

There are 2 quarters with good PRF difference image offsets

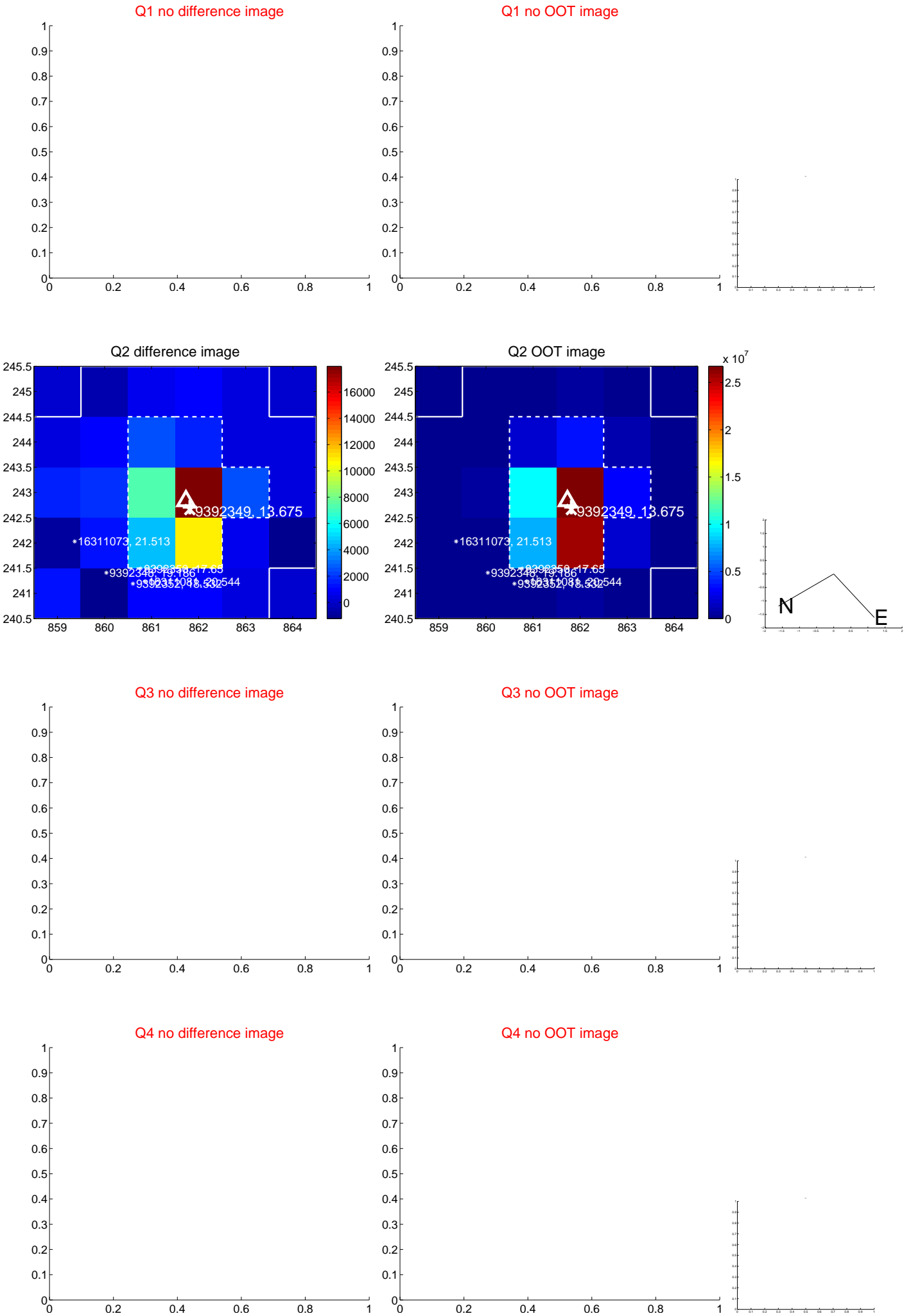
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.380 ± 0.349	1.09	-0.369 ± 0.359	-0.091 ± 0.114
PRF-fit source offset from KIC position	0.563 ± 0.368	1.53	-0.490 ± 0.408	-0.276 ± 0.197
photometric centroid source offset	0.40 ± 0.47	0.84	0.30 ± 0.44	0.26 ± 0.50



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.

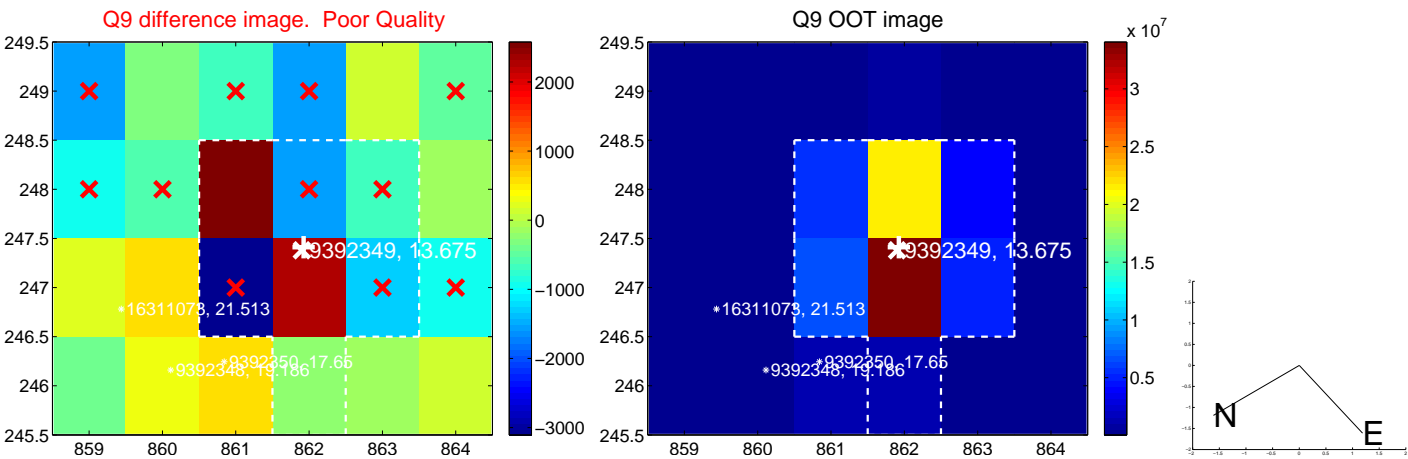
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



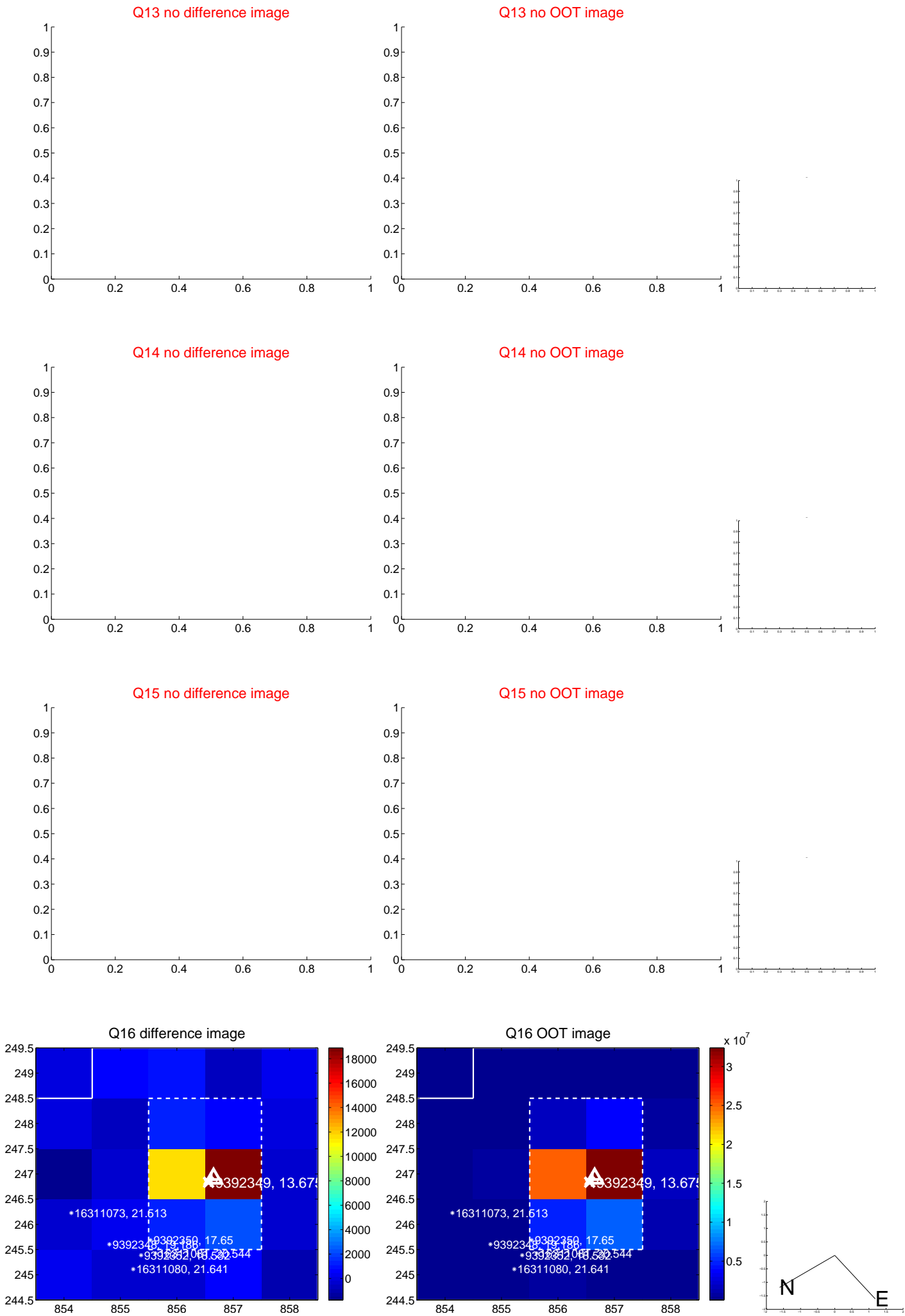
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



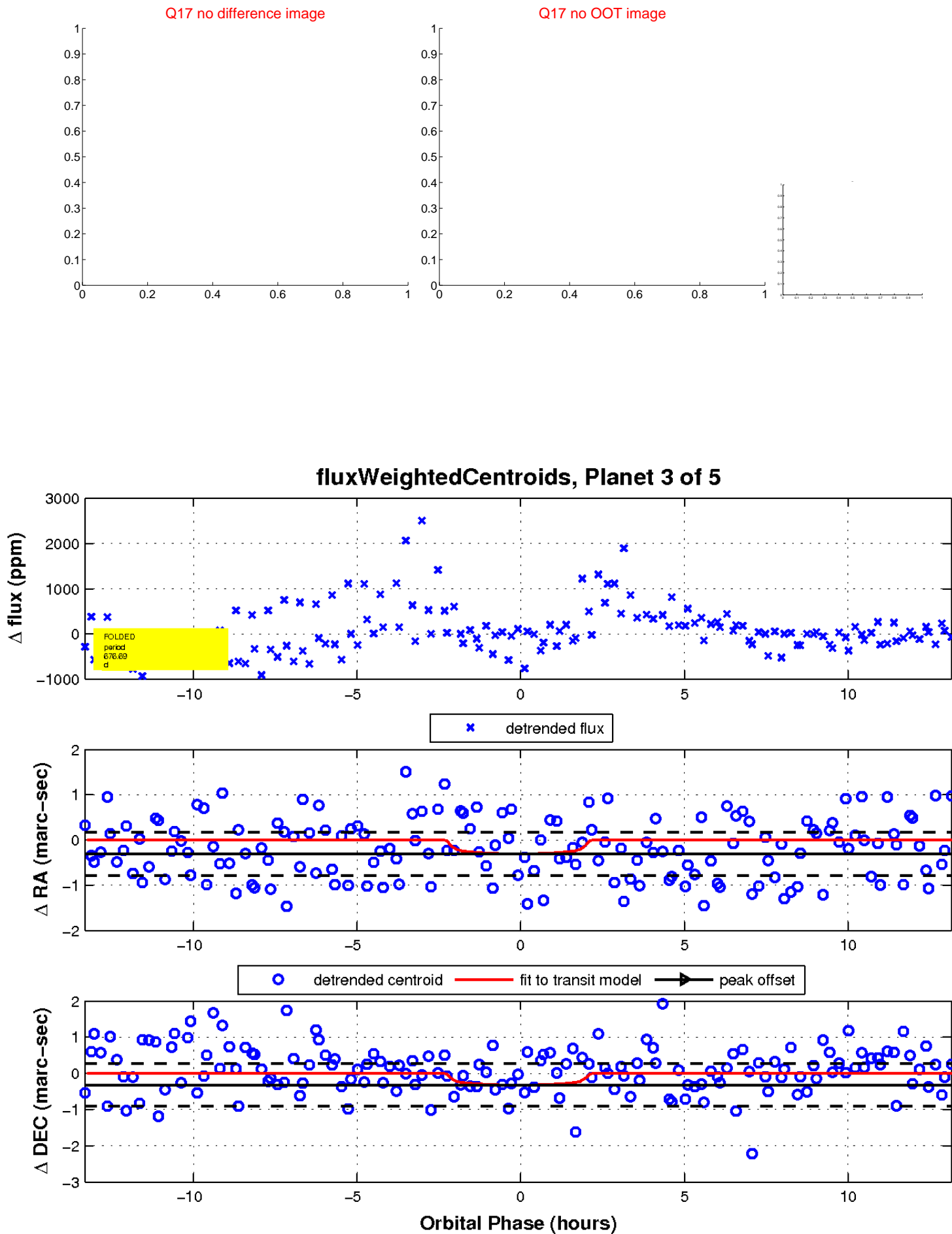
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

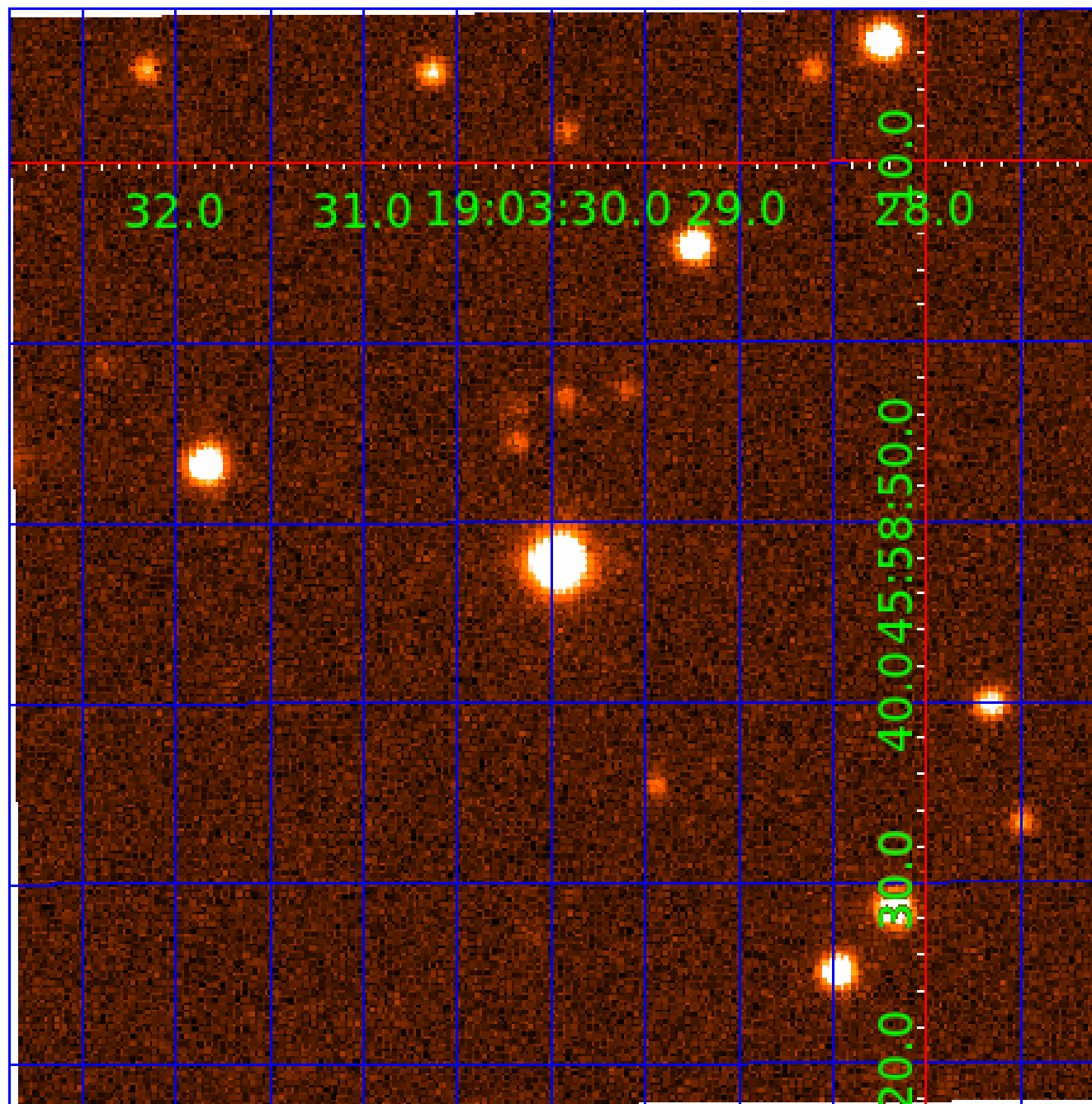


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009392349

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})
009392349-01	OBS	No	462.239181	216.164926	772.4	10.453	15.0	7.5	0.83	5623	3.00	0.52
009392349-03	OBS	No	676.688965	178.111155	902.8	4.452	14.7	10.2	0.83	5623	2.70	0.32
009392349-04	OBS	No	491.662239	535.383112	877.9	3.300	14.1	9.3	0.83	5623	2.58	0.48
009392349-05	OBS	No	396.979161	319.112014	596.5	6.612	13.7	7.5	0.83	5623	2.56	0.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009392349-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009392349-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009392349-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009392349-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

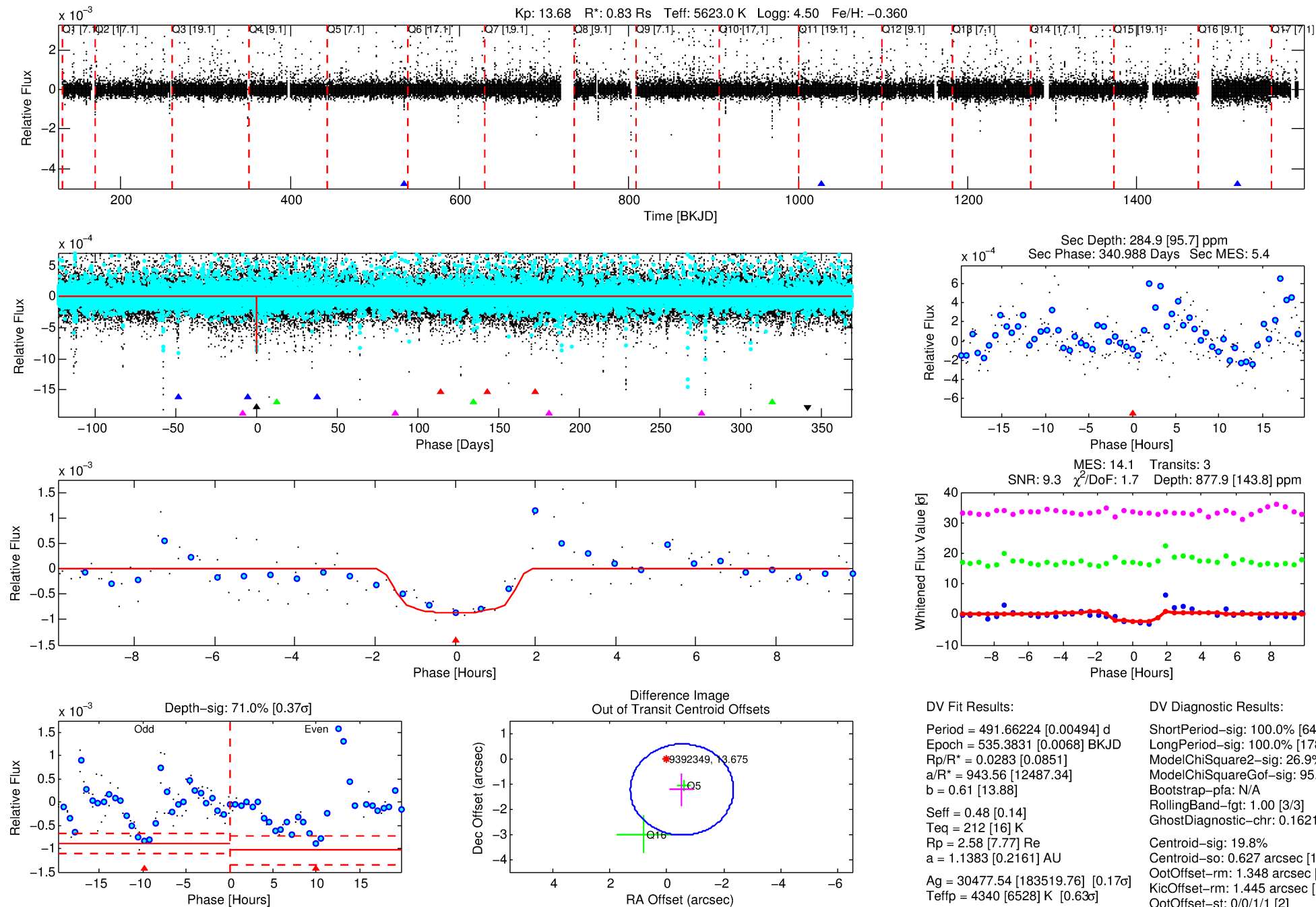
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009392349-04

No Significant Match Found

DV One-Page Summary

KIC: 9392349 Candidate: 4 of 5 Period: 491.662 d



DV Fit Results:

Period = 491.66224 [0.00494] d
Epoch = 535.3831 [0.0068] BKJD
Rp/R* = 0.0283 [0.0851]
a/R* = 943.56 [12487.34]
b = 0.61 [13.88]
Seff = 0.48 [0.14]
Teq = 212 [16] K
Rp = 2.58 [7.77] Re
a = 1.1383 [0.2161] AU
Ag = 30477.54 [183519.76] [0.17 σ]
Teffp = 4340 [6528] K [0.63 σ]

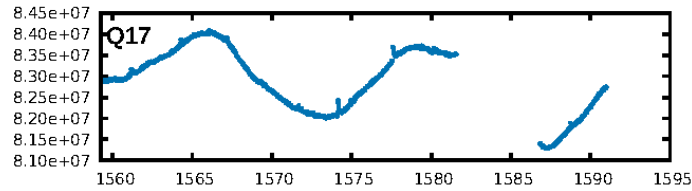
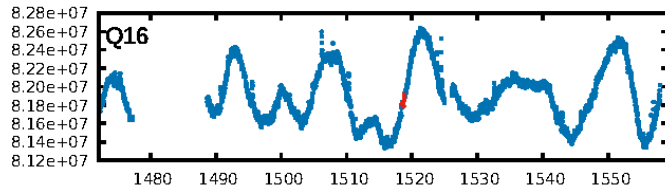
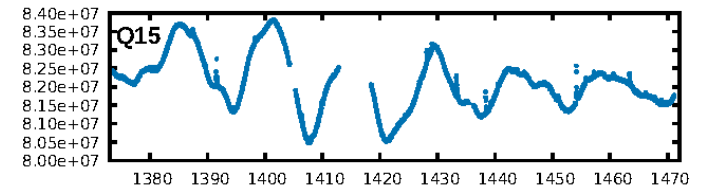
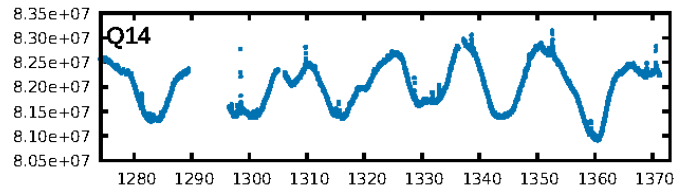
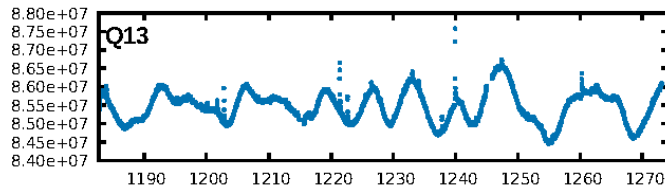
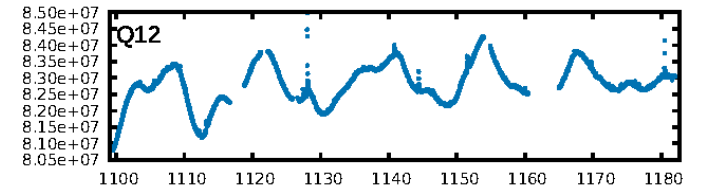
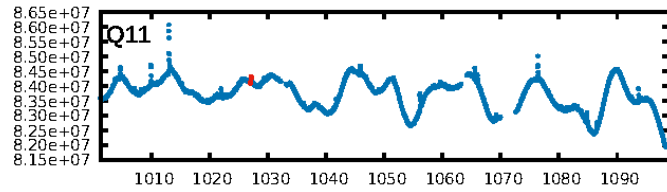
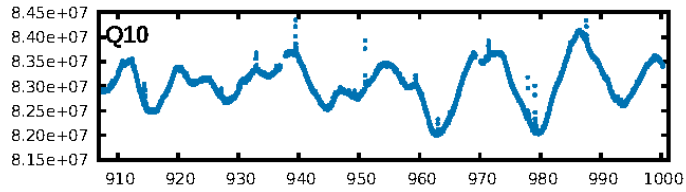
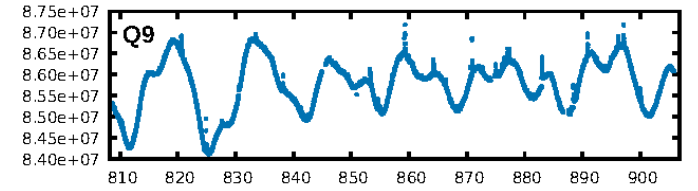
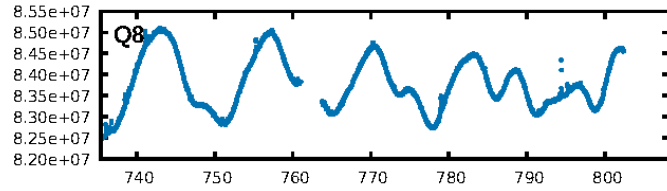
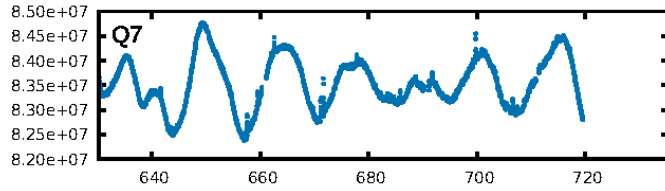
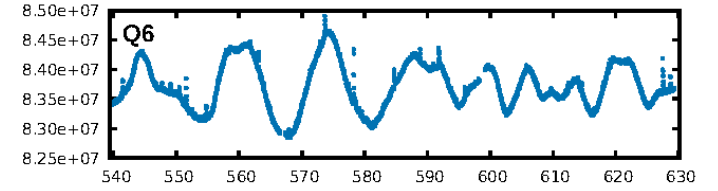
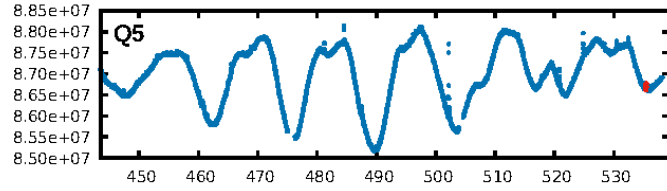
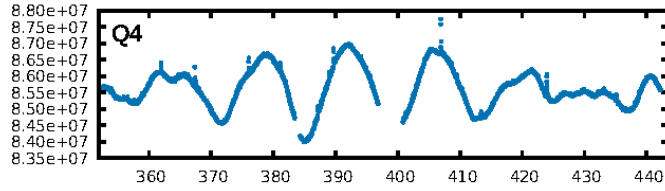
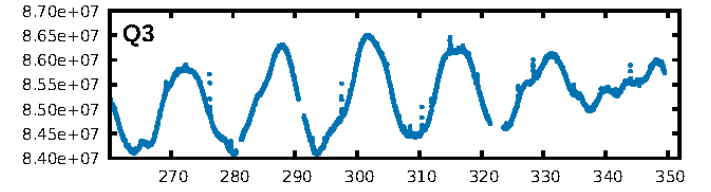
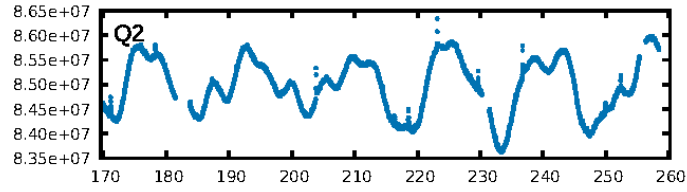
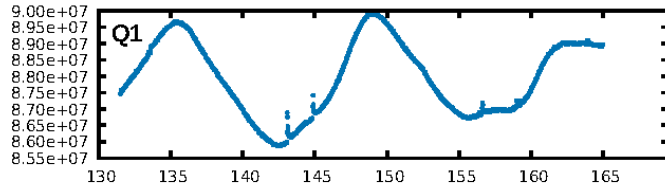
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [64.42 σ]
LongPeriod-sig: 100.0% [178.70 σ]
ModelChiSquare2-sig: 26.9%
ModelChiSquareGof-sig: 95.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1621
Centroid-sig: 19.8%
Centroid-so: 0.627 arcsec [1.22 σ]
OotOffset-rm: 1.348 arcsec [2.24 σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-rm: 1.445 arcsec [1.93 σ]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

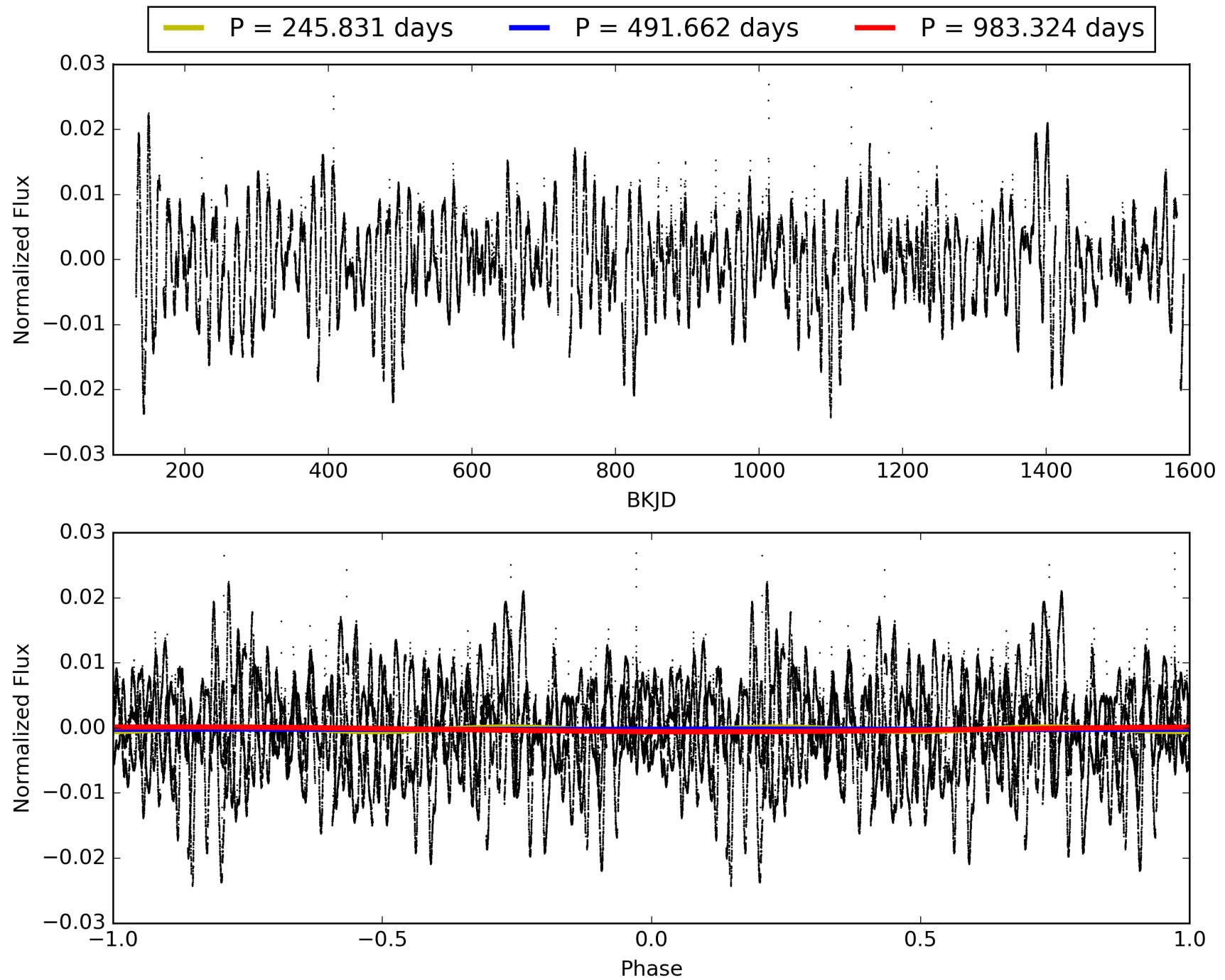
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:47:11 Z

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

TCE 009392349-04, PDC Light Curves

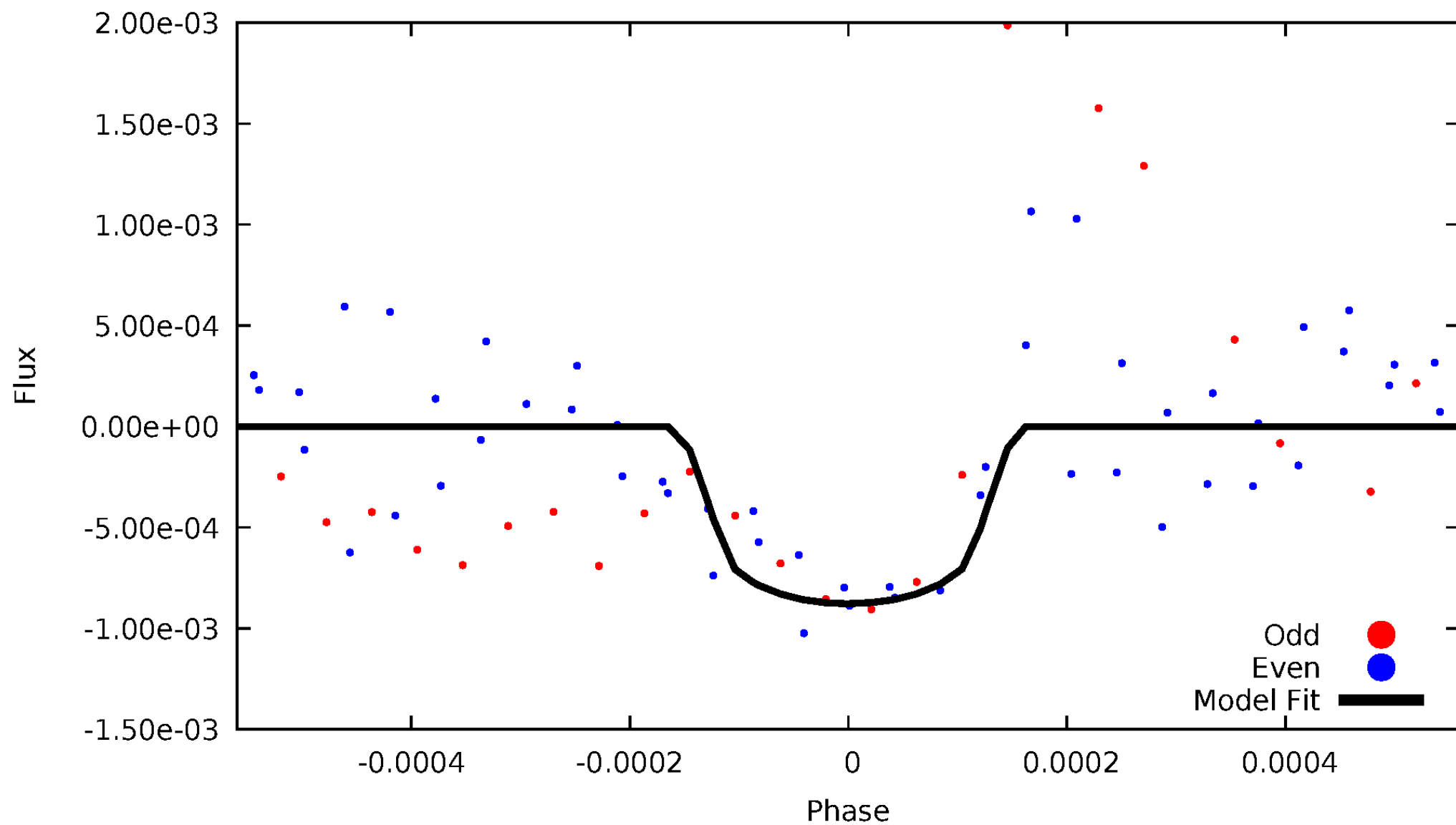


TCE 009392349-04



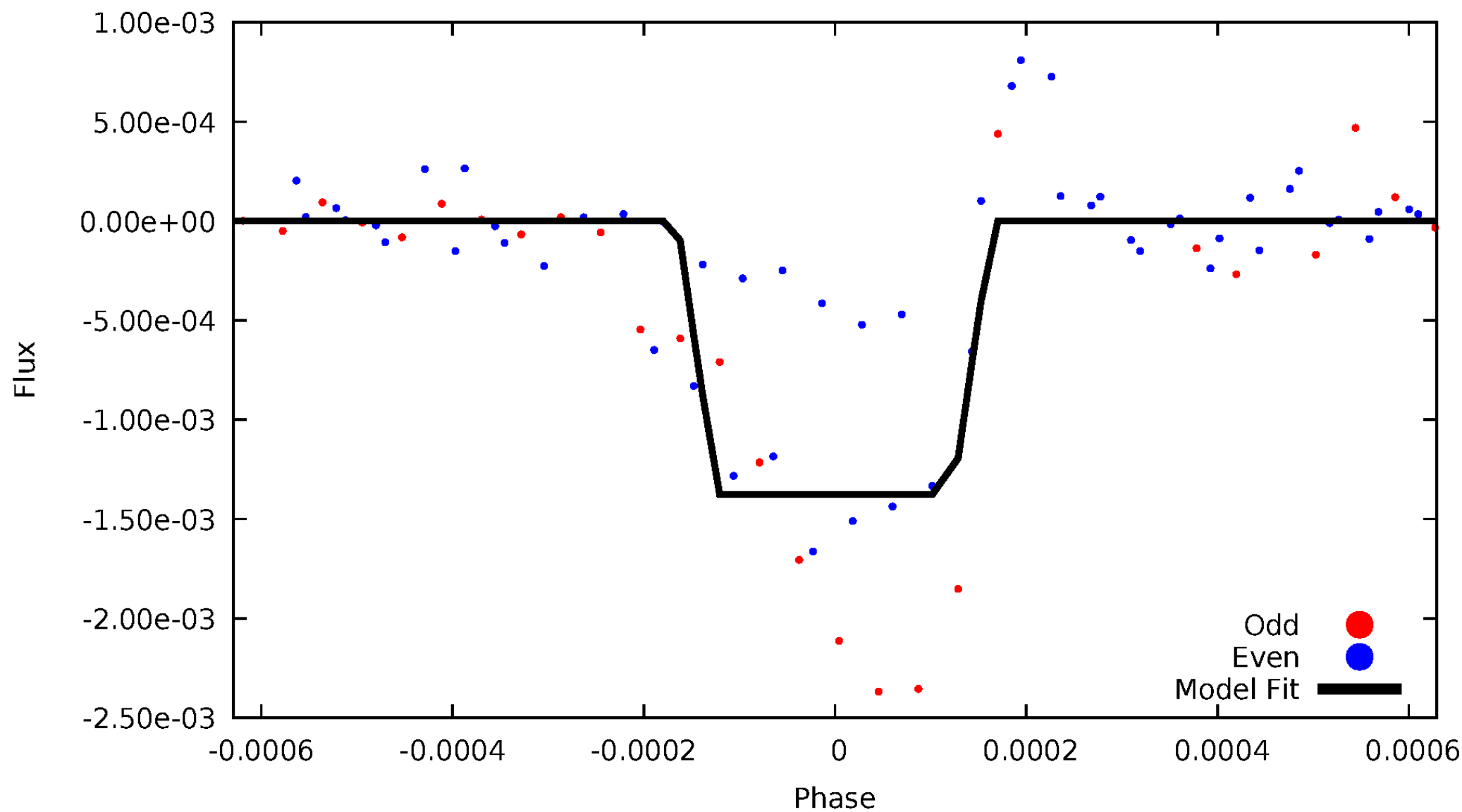
DV Odd/Even

TCE 009392349-04



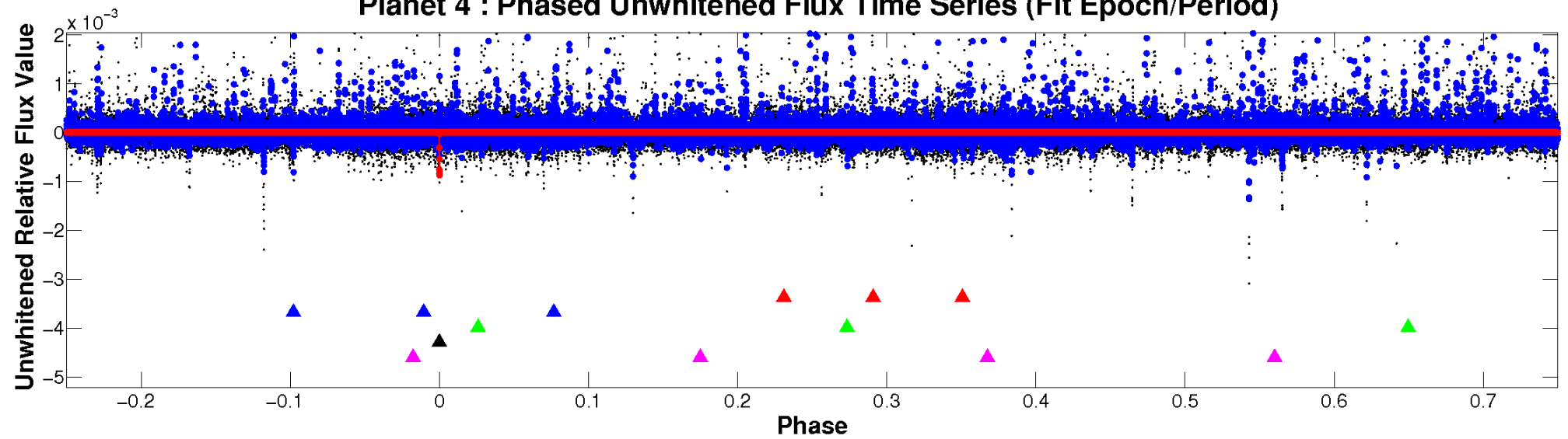
ALT Odd/Even

TCE 009392349-04

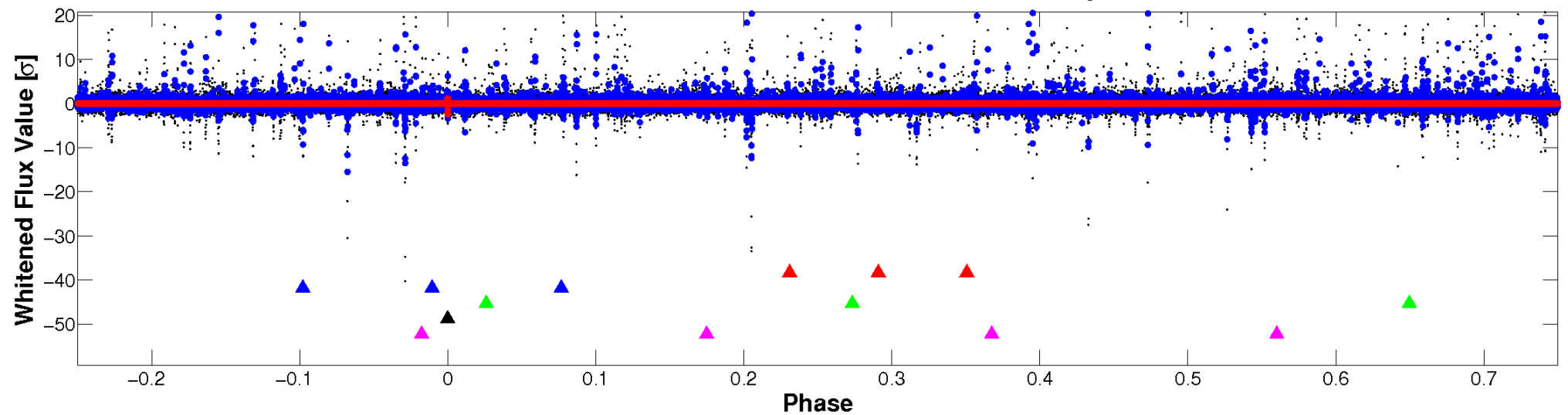


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

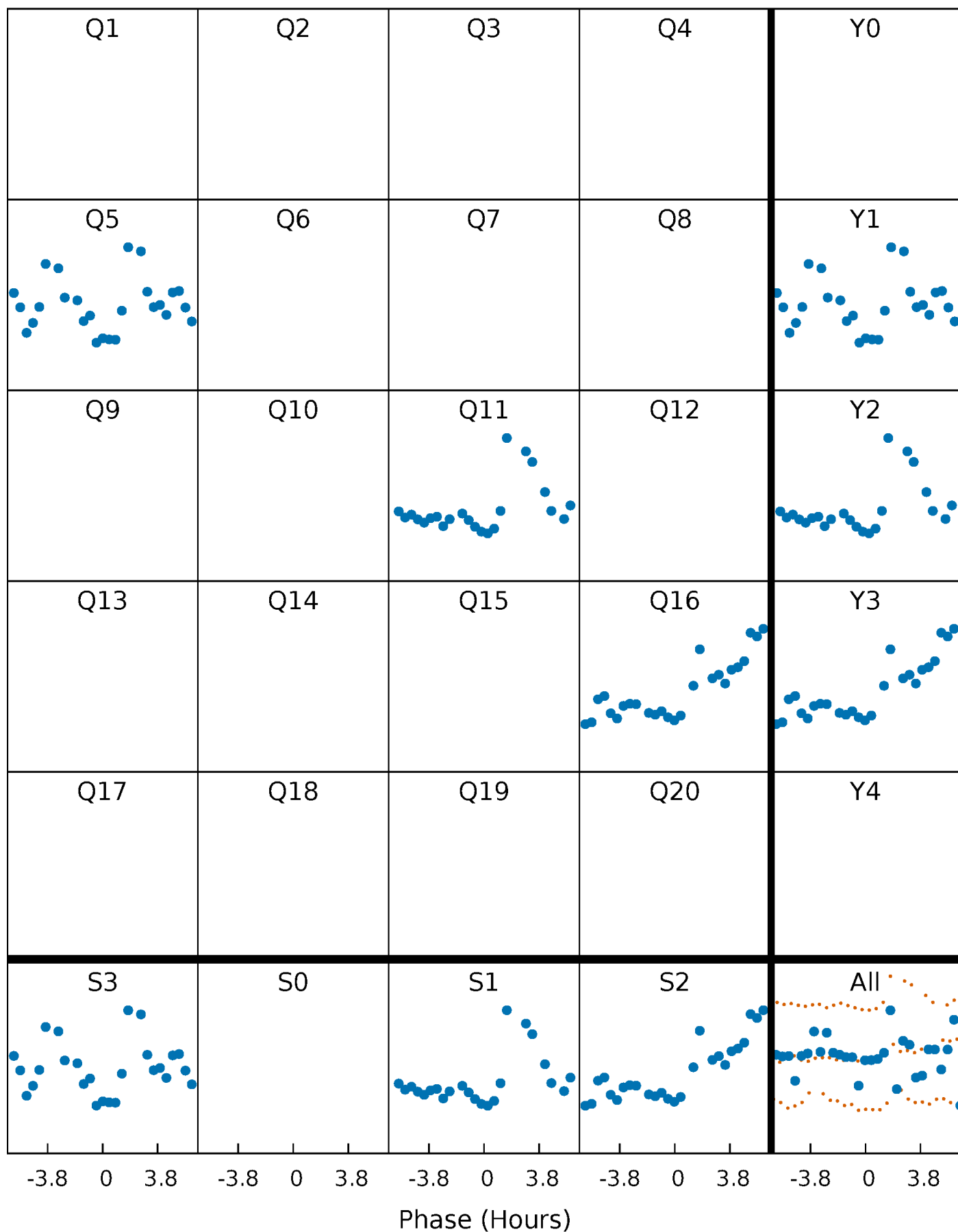


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



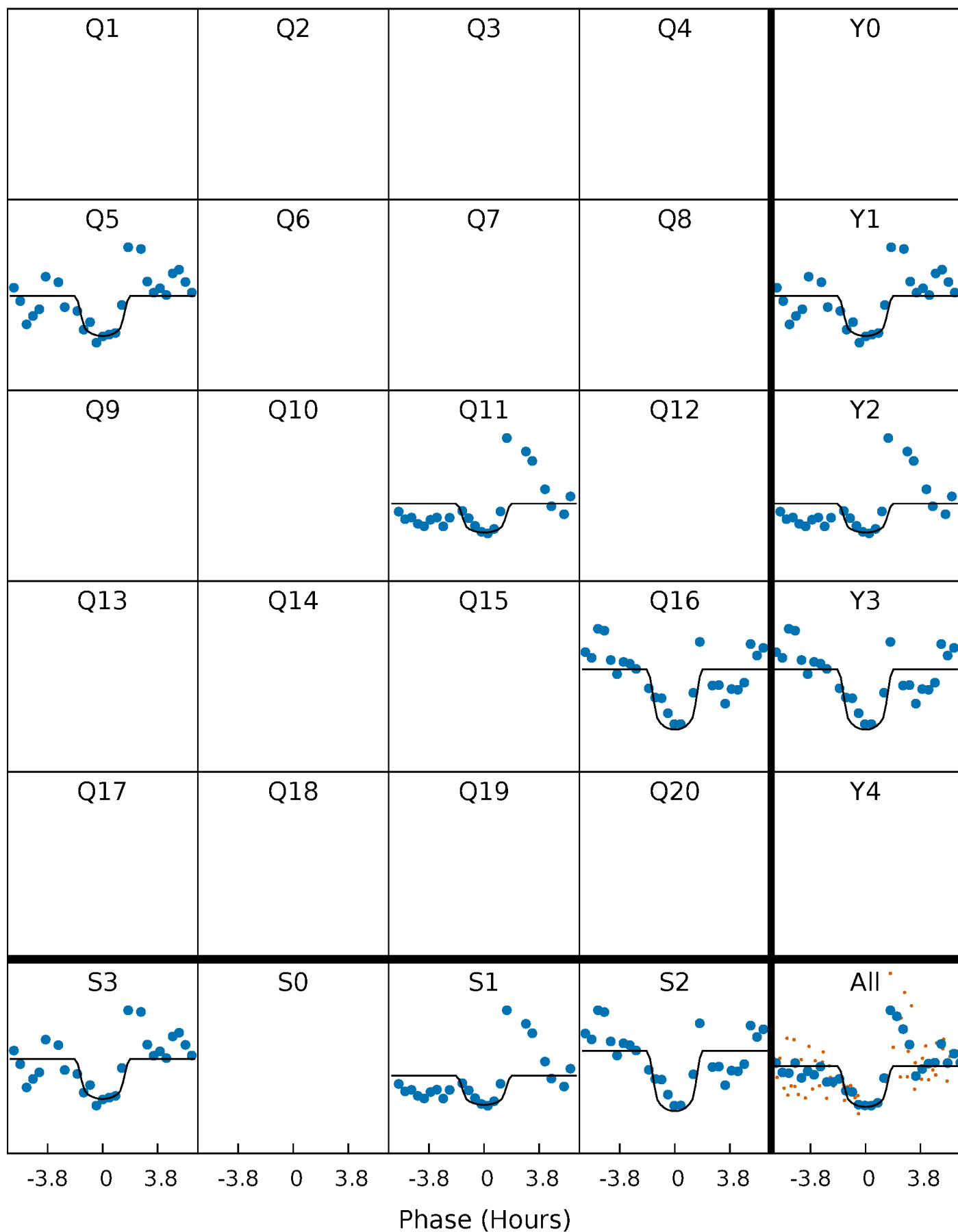
PDC Quarter-Phased Transit Curves

TCE 009392349-04 $P=491.662239$ Days $T_0=535.383112$ (BKJD)



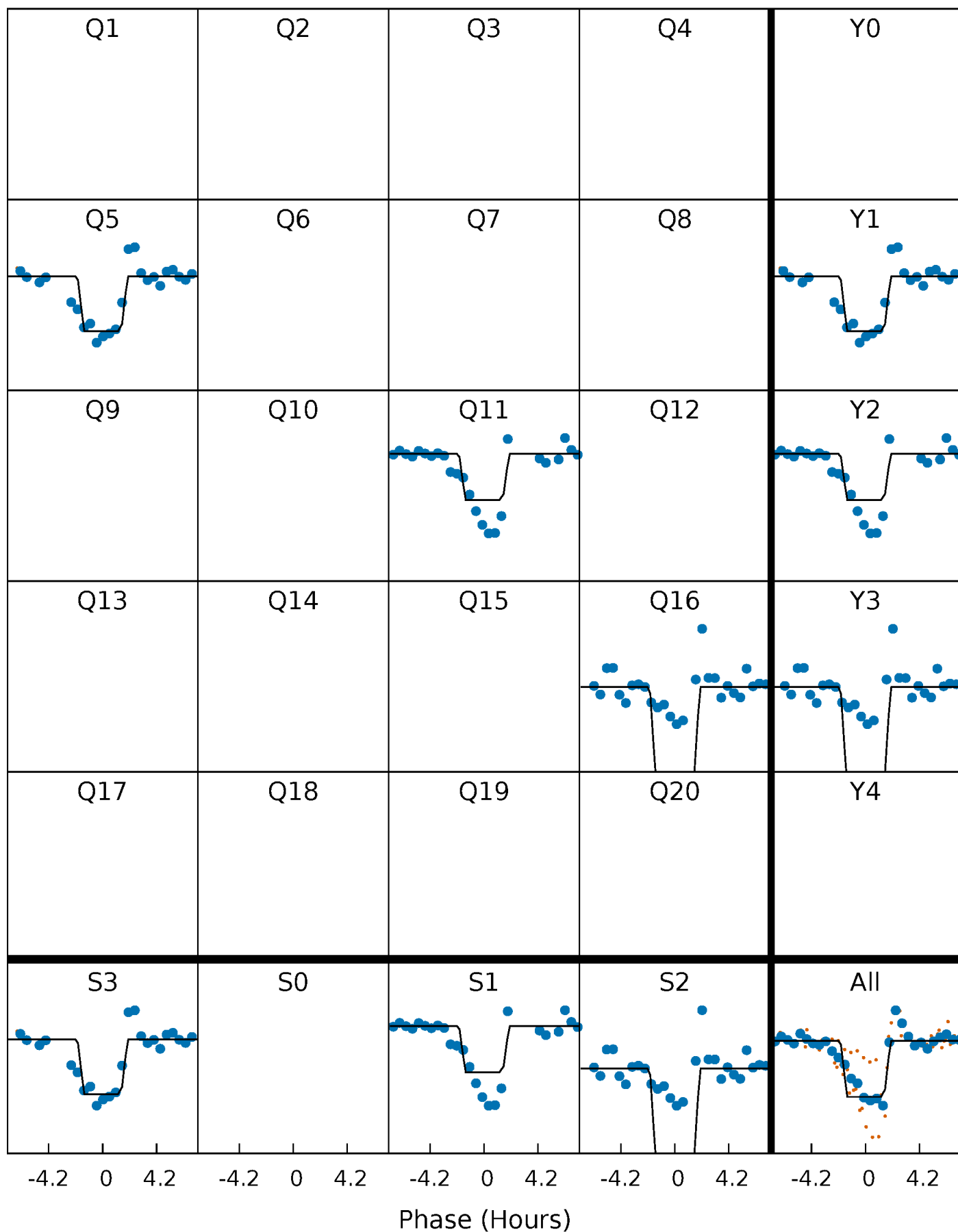
DV Quarter-Phased Transit Curves

TCE 009392349-04 $P=491.662239$ Days $T_0=535.383112$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

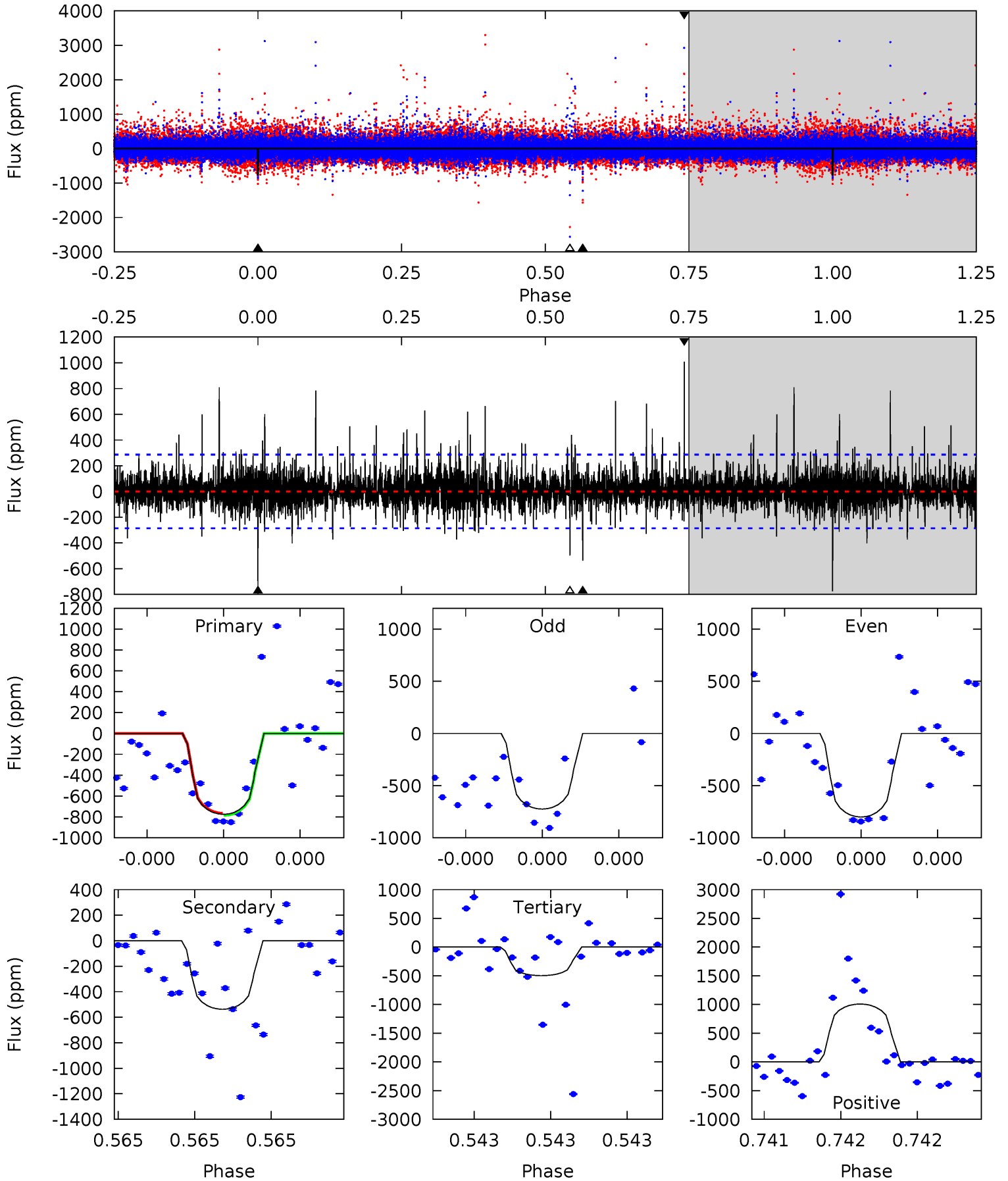
TCE 009392349-04 P=491.658698 Days $T_0=535.374483$ (BKJD)



DV Model-Shift Uniqueness Test

009392349-04, P = 491.662239 Days, E = 43.720873 Days

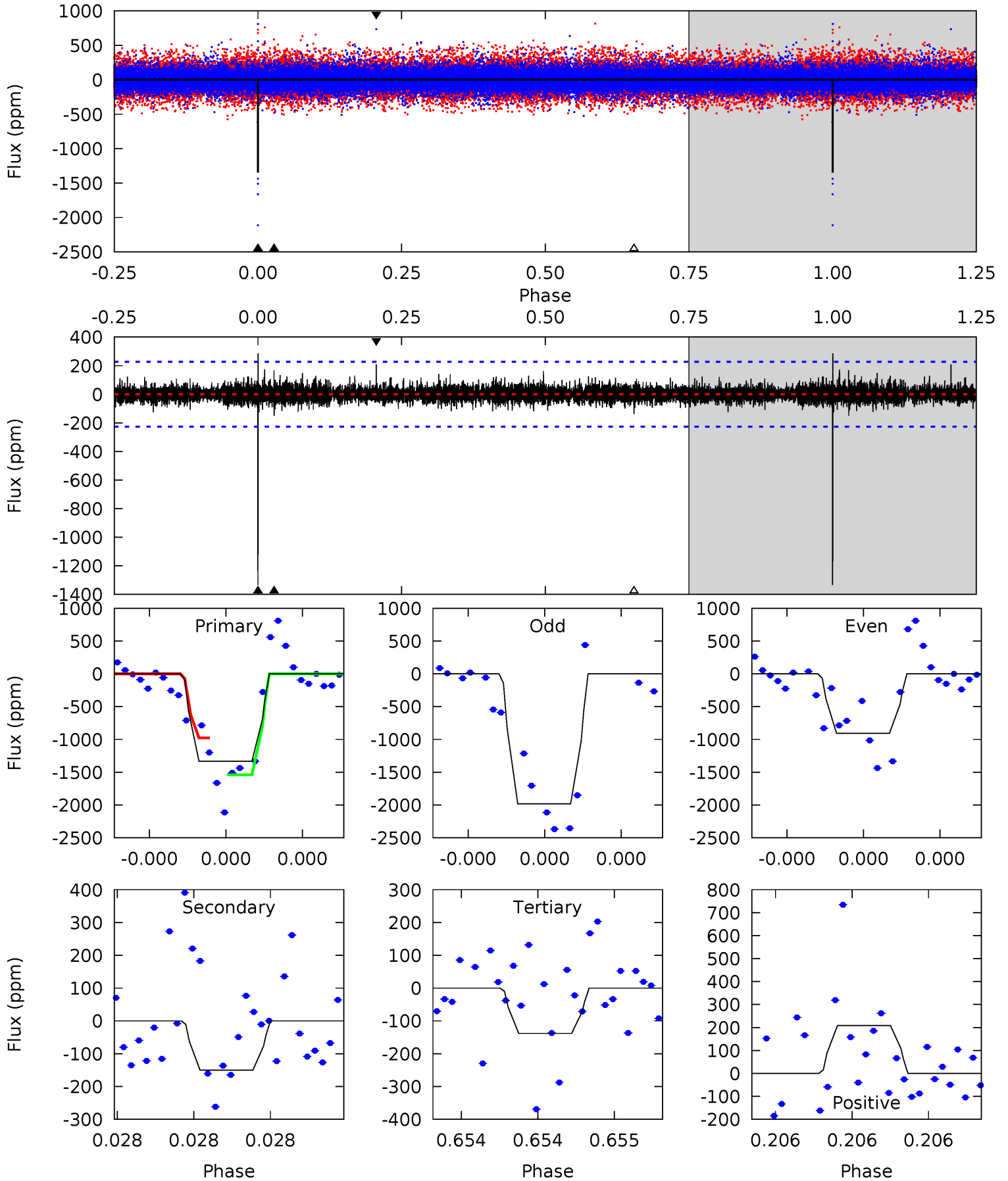
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	10.6	9.84	20.0	5.66	3.61	1.80	5.50	-4.61	0.79	-9.32	0.45	1.08	0.57	0.18



Alt Model-Shift Uniqueness Test

009392349-04, P = 491.658698 Days, E = 43.715785 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.3	3.74	3.44	5.20	5.66	3.61	0.73	29.8	28.1	0.29	-1.47	15.9	0.84	0.18	0



Stellar Parameters For KIC 009392349

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5623^{+152}_{-152}	$4.505^{+0.081}_{-0.150}$	$-0.360^{+0.300}_{-0.300}$	$0.835^{+0.189}_{-0.087}$	$0.813^{+0.106}_{-0.071}$	$1.971^{+0.659}_{-0.816}$
	+3%/-3%	+2%/-3%	+83%/-83%	+23%/-10%	+13%/-9%	+33%/-41%
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 009392349-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-537 ± 51	$6.42^{+6.50}_{-4.44}$	299^{+17}_{-13}	3694^{+2189}_{-706}	9625^{+88616}_{-7311}
Alt.	-150 ± 40	$7.13^{+6.12}_{-4.64}$	299^{+17}_{-13}	2911^{+1276}_{-435}	2002^{+16185}_{-1438}

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 $A_{obs} \gg 1.0$

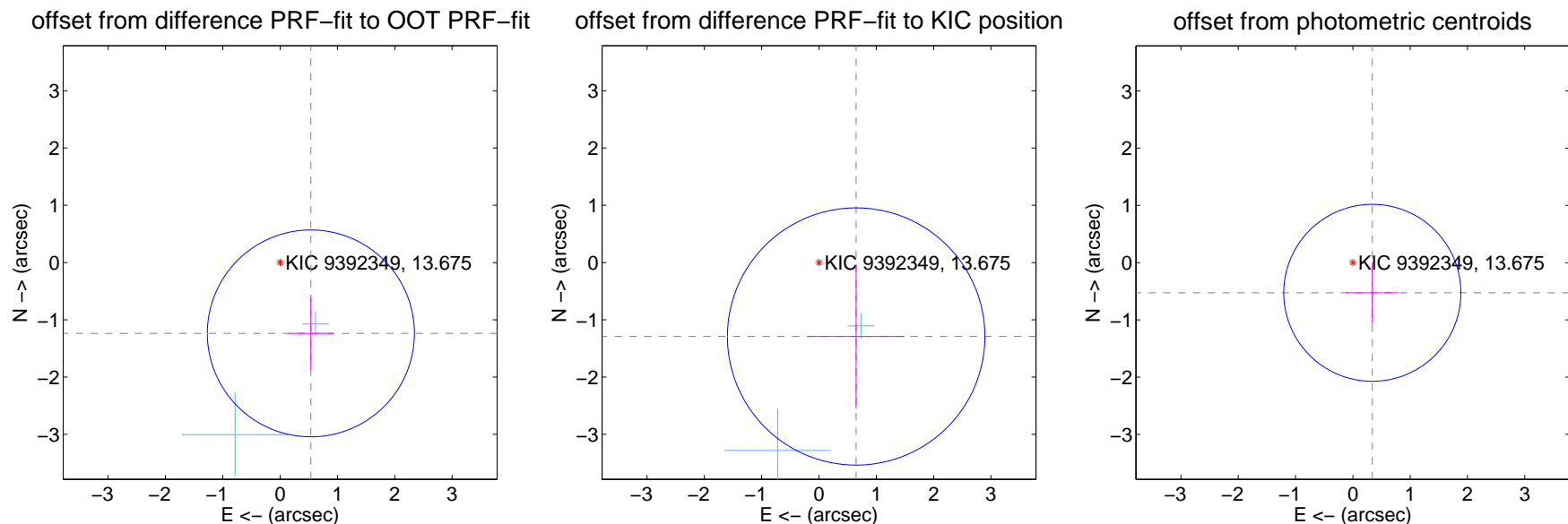
DV Centroid Data

Supplemental centroid analysis for 009392349-04. Kepler magnitude: 13.68. Transit SNR 9.27

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.348 ± 0.602	2.24	-0.537 ± 0.393	-1.237 ± 0.634
PRF-fit source offset from KIC position	1.445 ± 0.748	1.93	-0.648 ± 0.842	-1.291 ± 1.258
photometric centroid source offset	0.63 ± 0.52	1.22	-0.34 ± 0.46	-0.53 ± 0.54

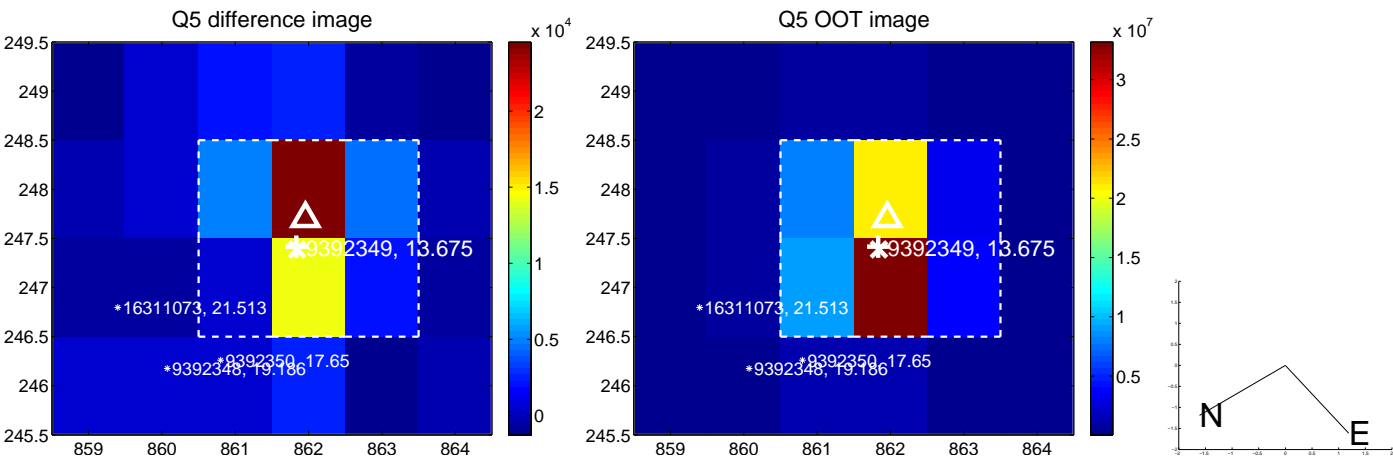


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



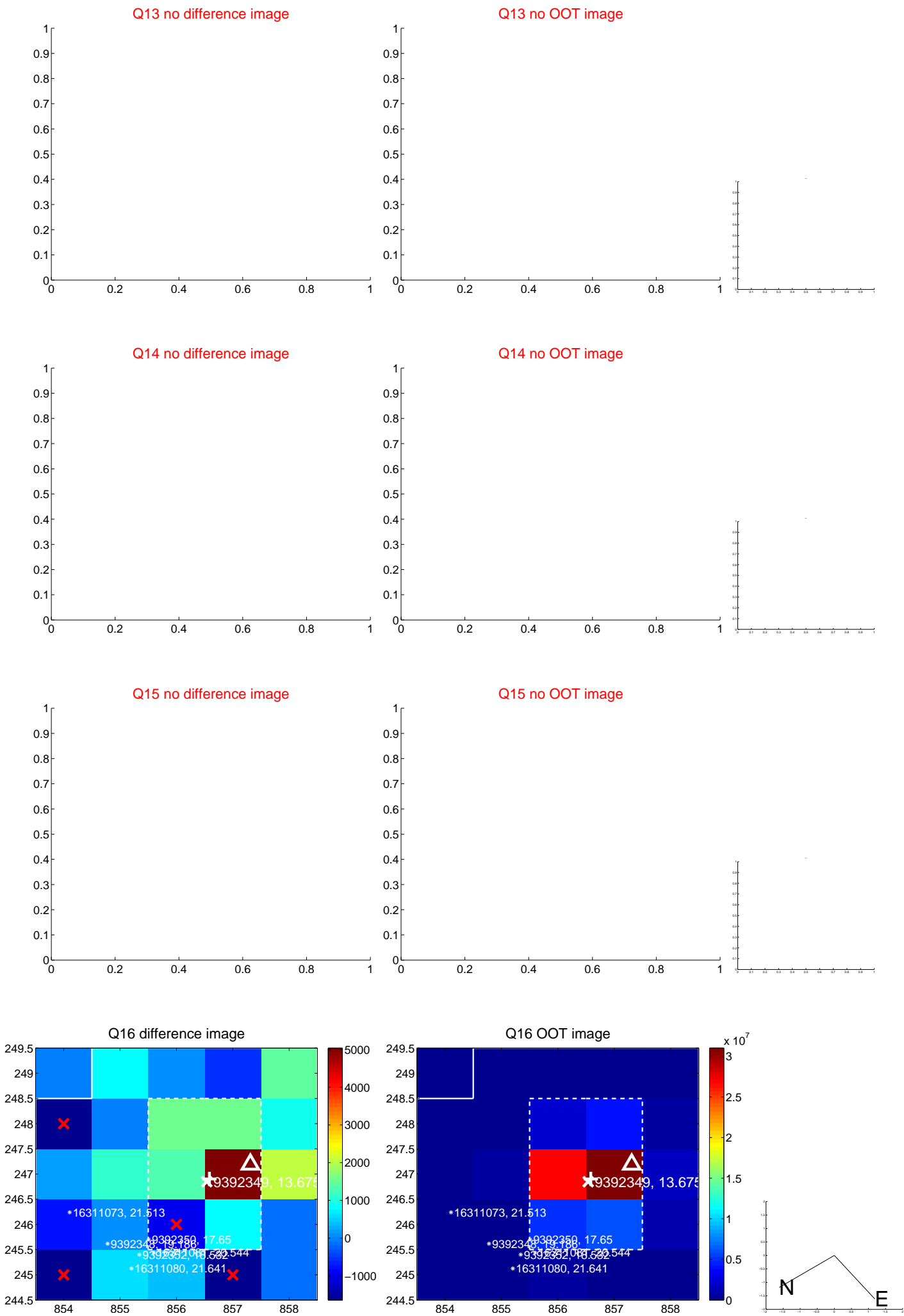
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



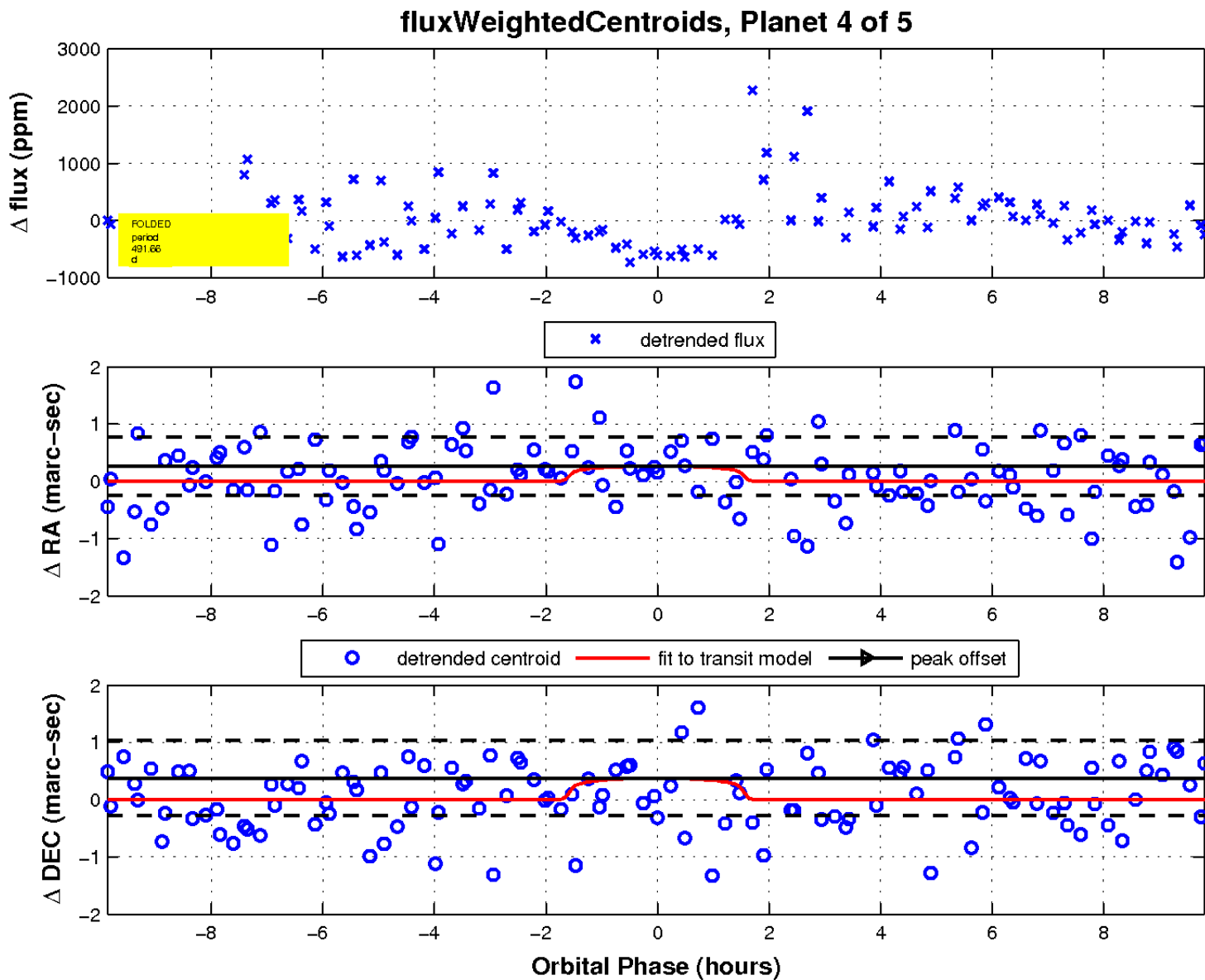
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

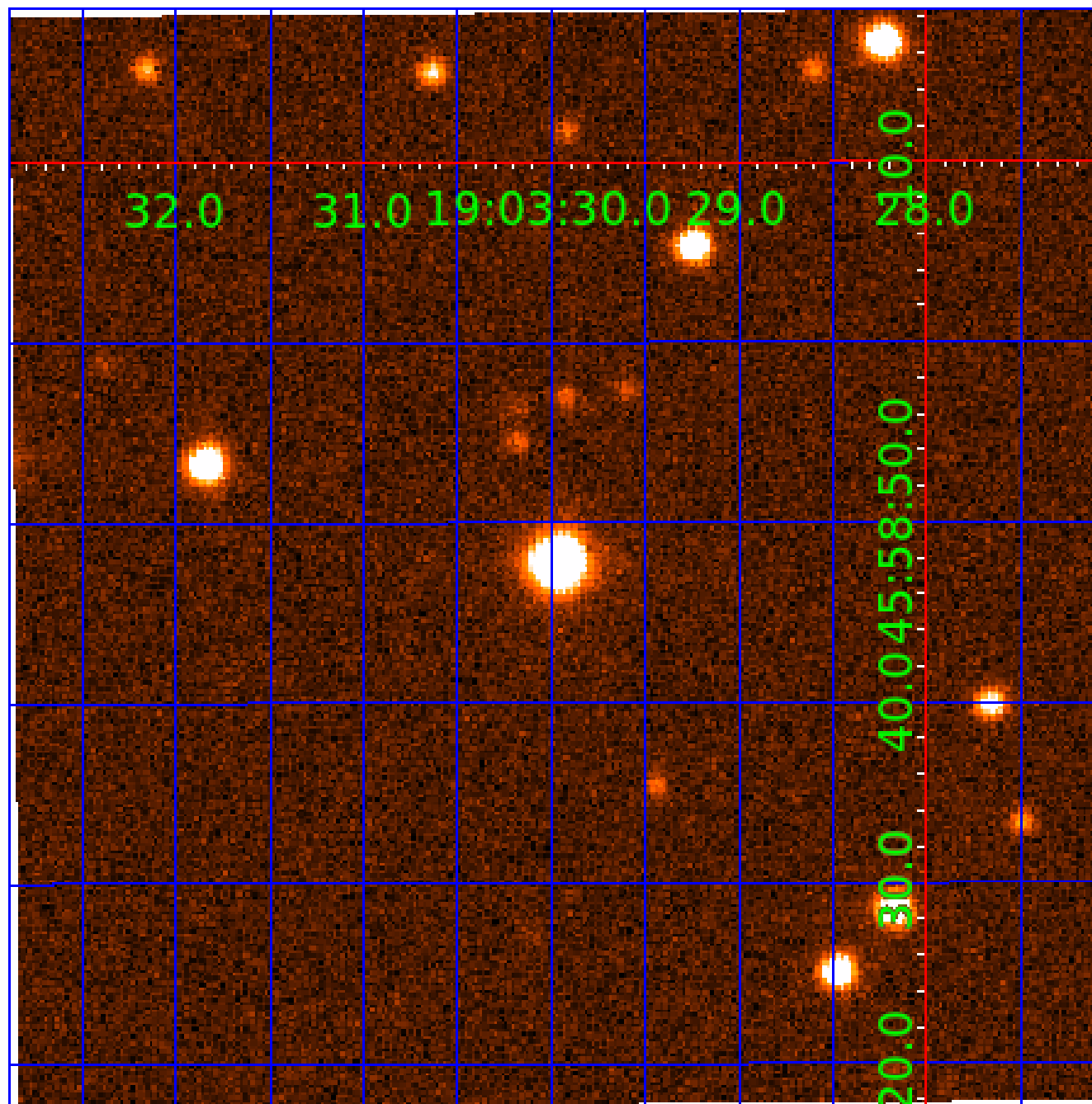


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009392349

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})
009392349-01	OBS	No	462.239181	216.164926	772.4	10.453	15.0	7.5	0.83	5623	3.00	0.52
009392349-03	OBS	No	676.688965	178.111155	902.8	4.452	14.7	10.2	0.83	5623	2.70	0.32
009392349-04	OBS	No	491.662239	535.383112	877.9	3.300	14.1	9.3	0.83	5623	2.58	0.48
009392349-05	OBS	No	396.979161	319.112014	596.5	6.612	13.7	7.5	0.83	5623	2.56	0.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009392349-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009392349-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009392349-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
009392349-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

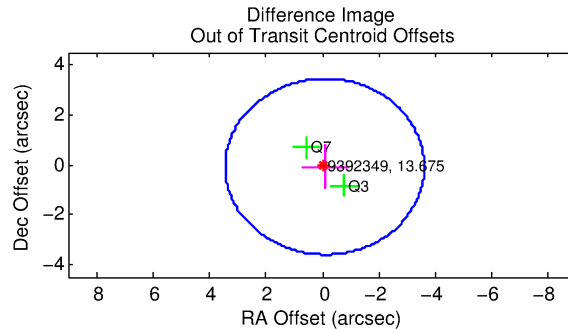
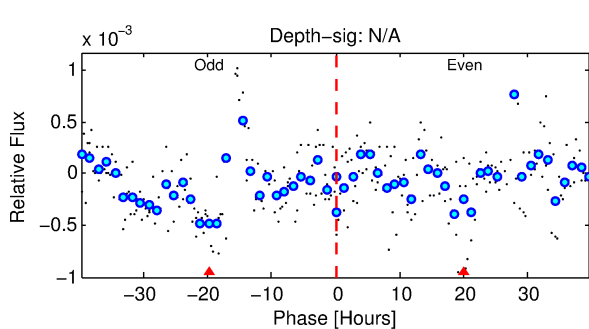
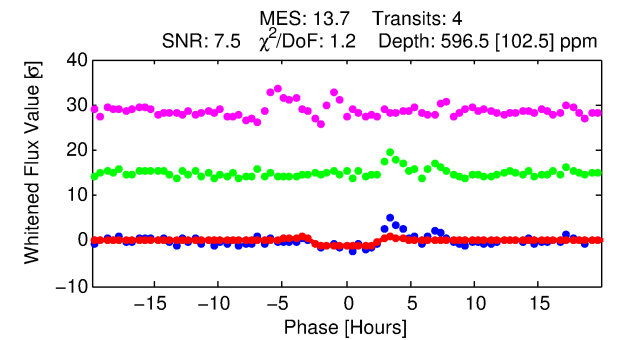
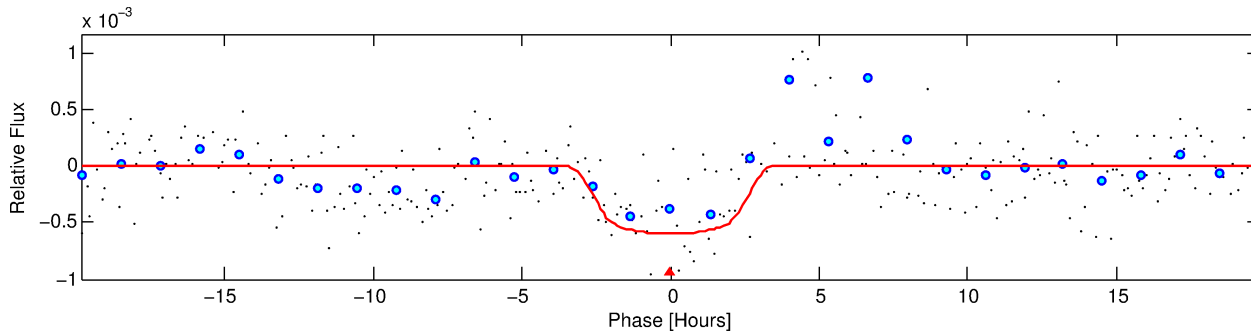
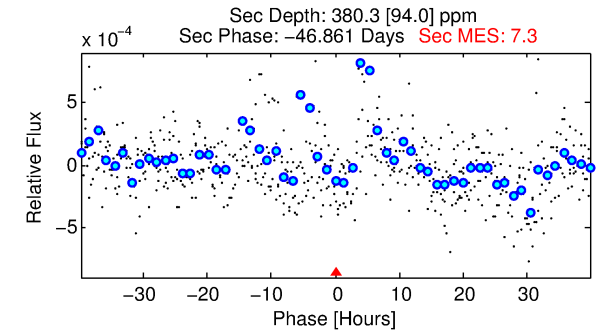
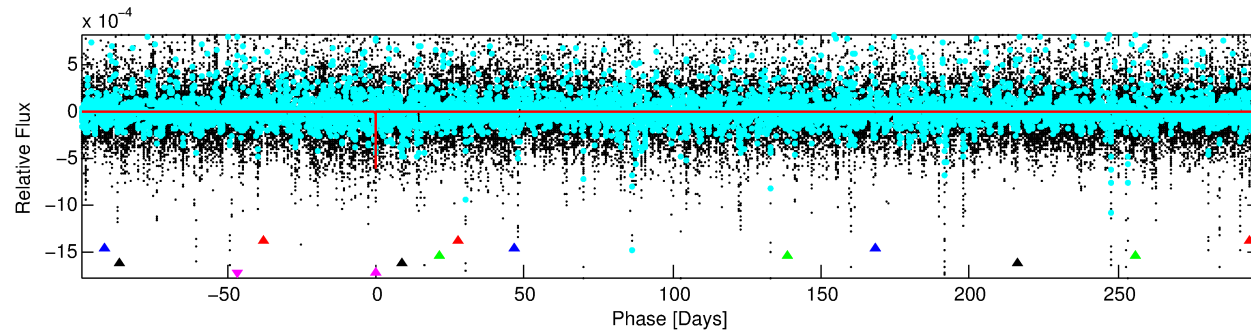
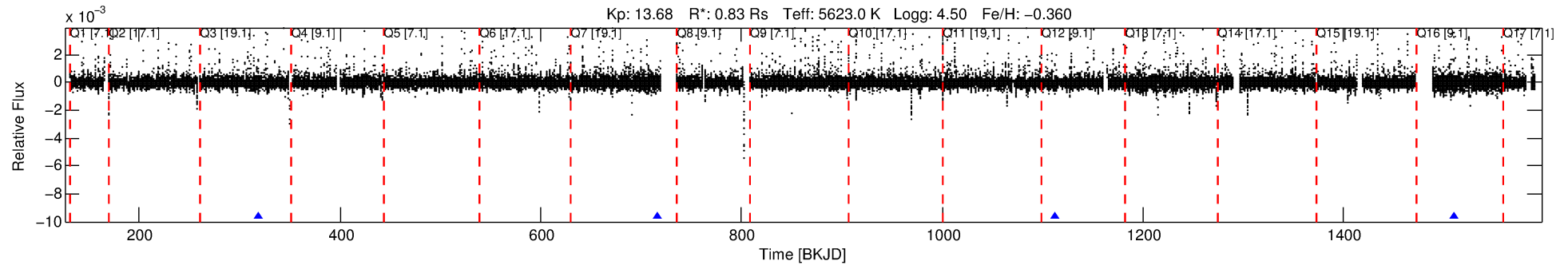
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009392349-05

No Significant Match Found

DV One-Page Summary

KIC: 9392349 Candidate: 5 of 5 Period: 396.979 d



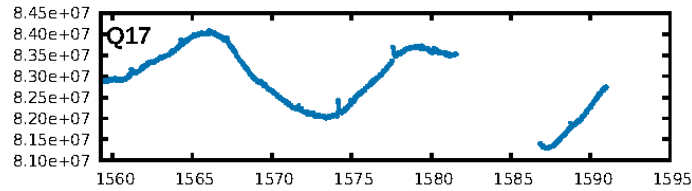
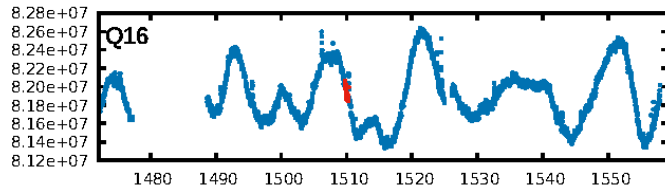
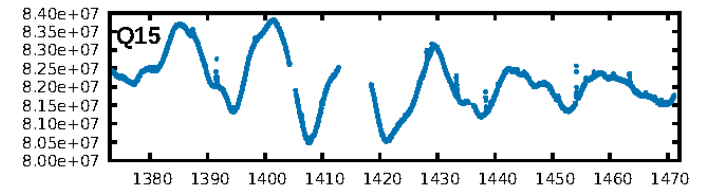
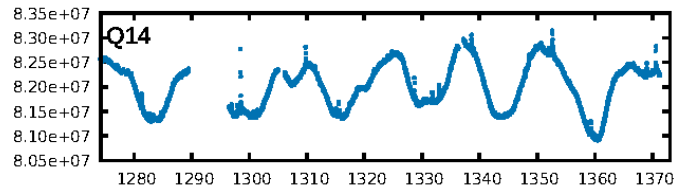
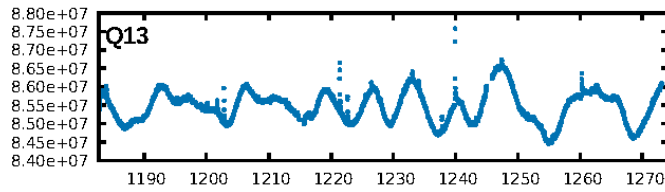
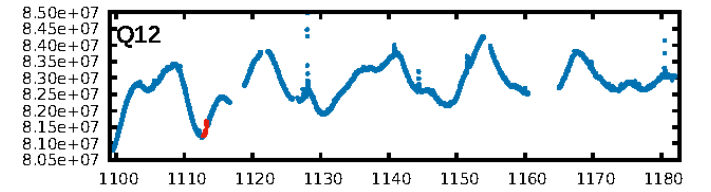
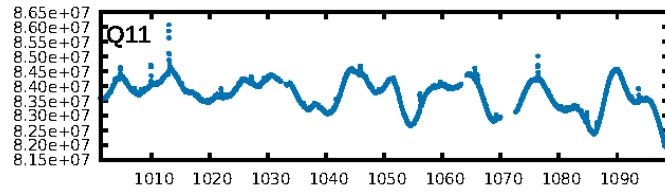
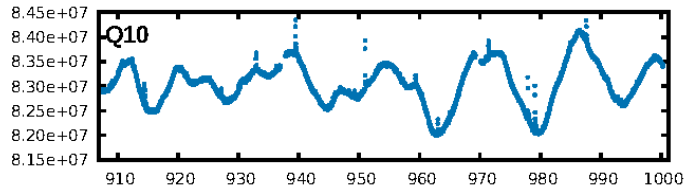
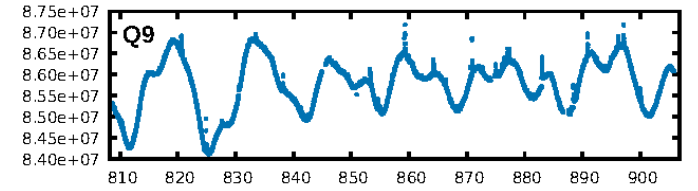
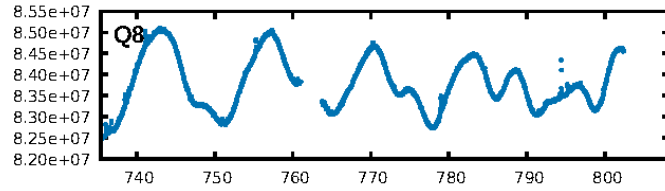
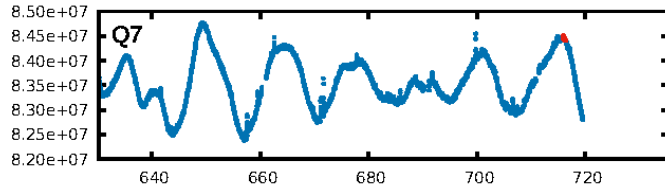
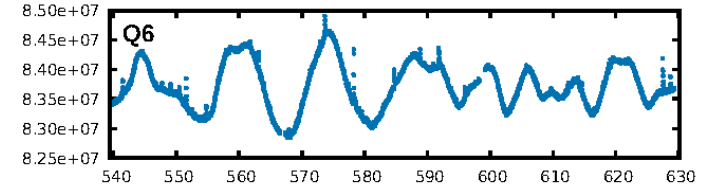
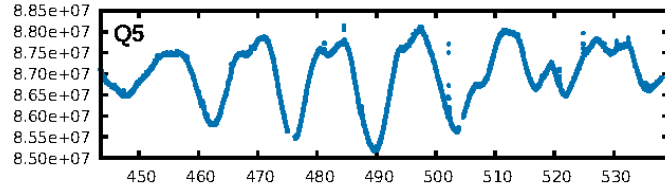
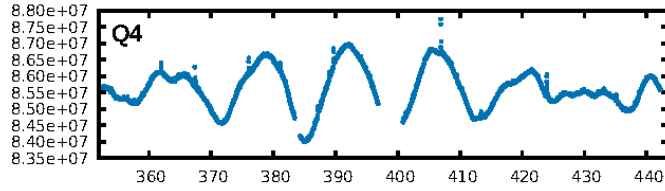
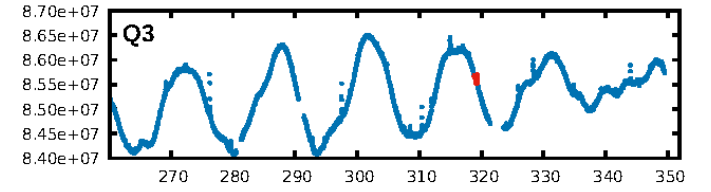
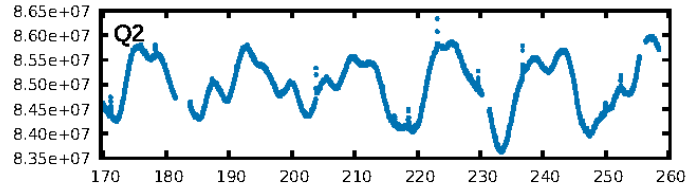
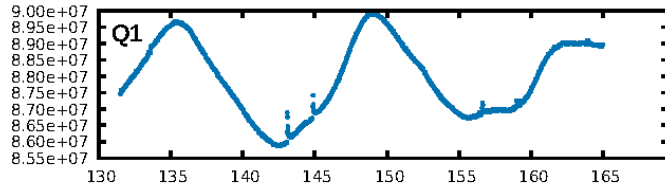
DV Fit Results:

Period = 396.97916 [0.00699] d
Epoch = 319.1120 [0.0114] BKJD
 $R_p/R^* = 0.0280$ [0.0032]
 $a/R^* = 188.55$ [54.88]
 $b = 0.94$ [0.04]
 $S_{\text{eff}} = 0.64$ [0.19]
 $T_{\text{eq}} = 228$ [17] K
 $R_p = 2.56$ [0.65] R_e
 $a = 0.9870$ [0.1873] AU
 $A_g = 31209.87$ [13593.12] [2.30 σ]
Teffp = 4689 [415] K [10.73 σ]

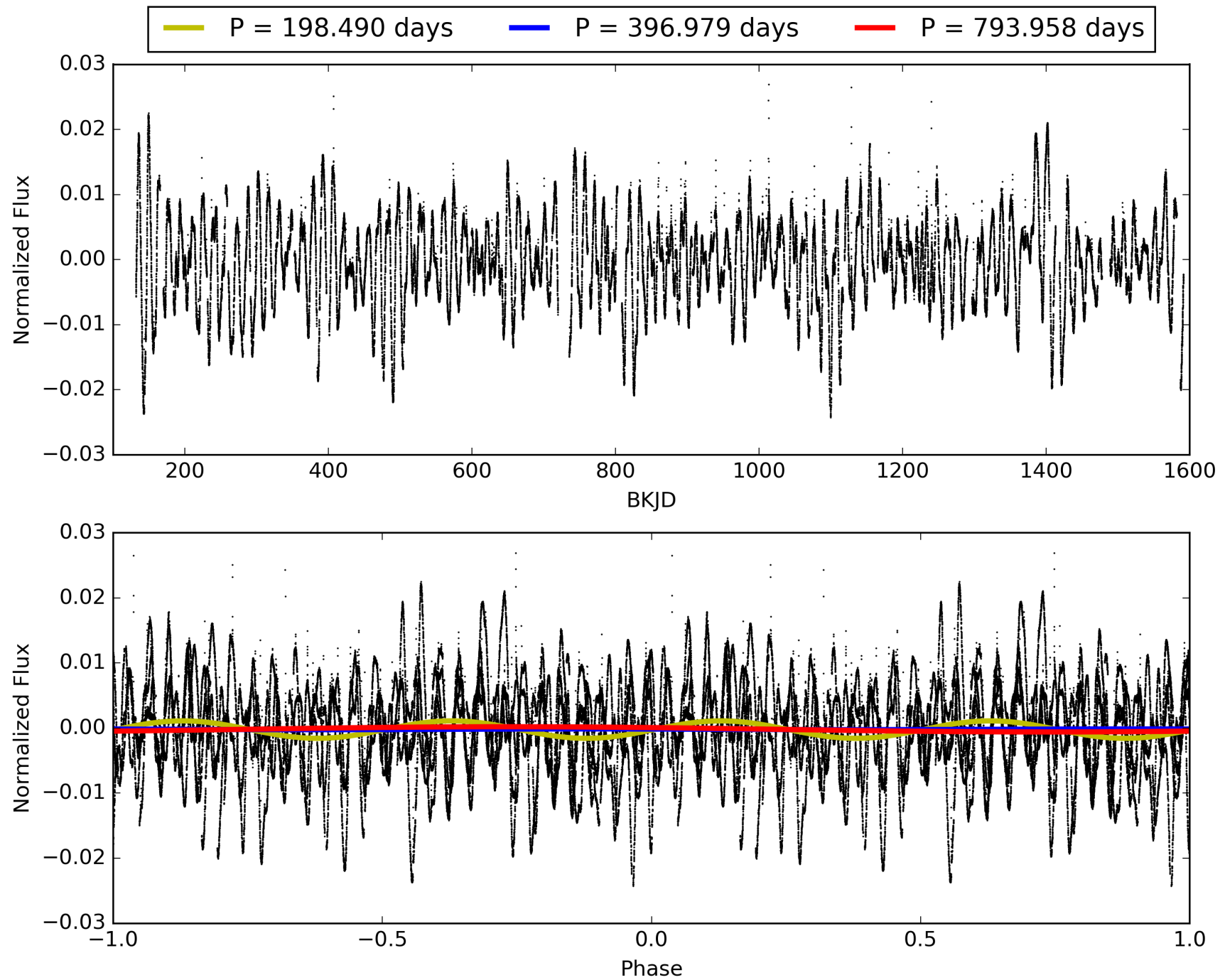
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [126.63 σ]
ModelChiSquare2-sig: 27.1%
ModelChiSquareGof-sig: 96.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.2134
Centroid-sig: 80.6%
Centroid-so: 0.262 arcsec [0.56 σ]
OotOffset-rm: 0.116 arcsec [0.10 σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-rm: 0.320 arcsec [0.38 σ]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 009392349-05, PDC Light Curves

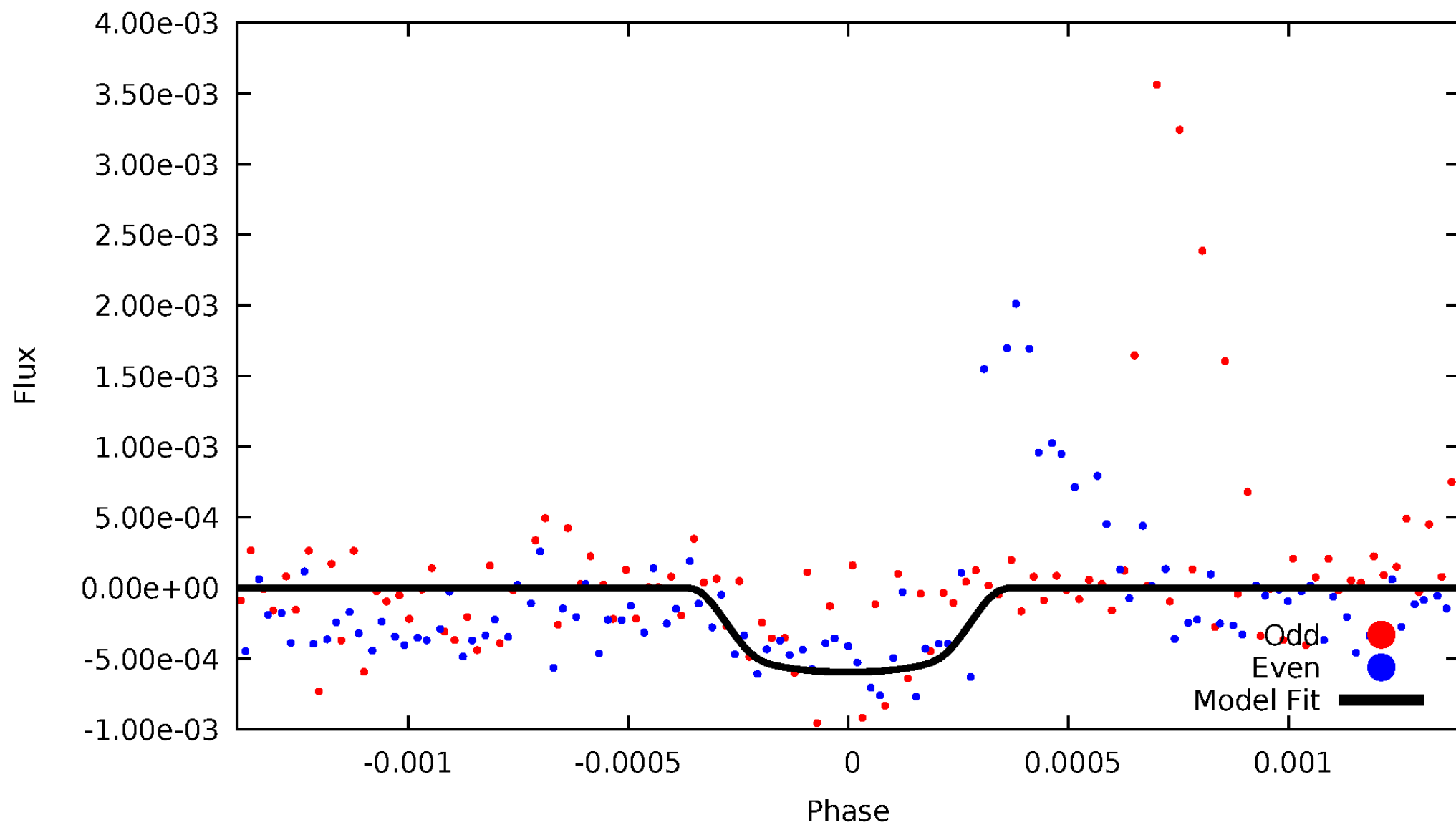


TCE 009392349-05



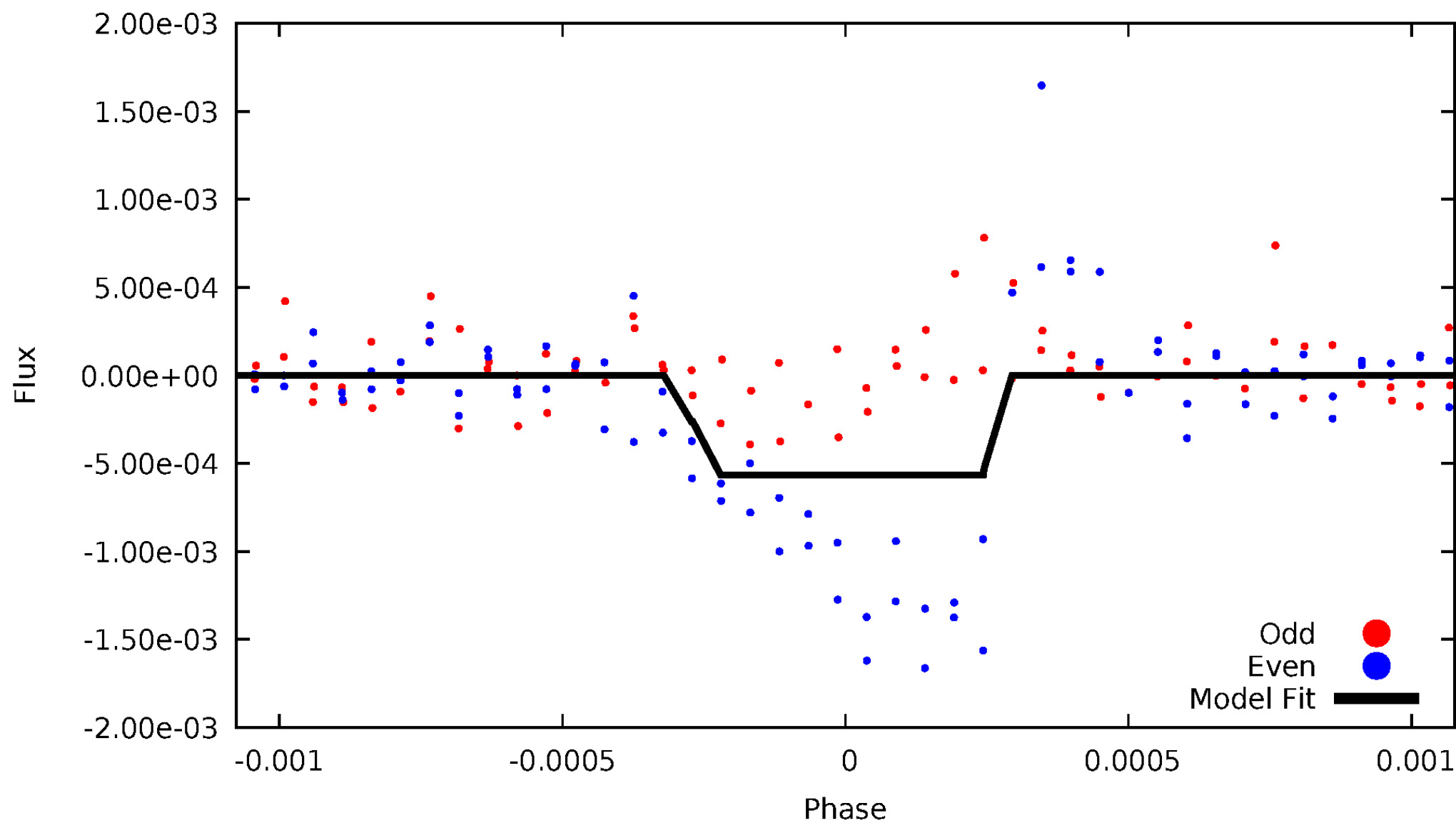
DV Odd/Even

TCE 009392349-05



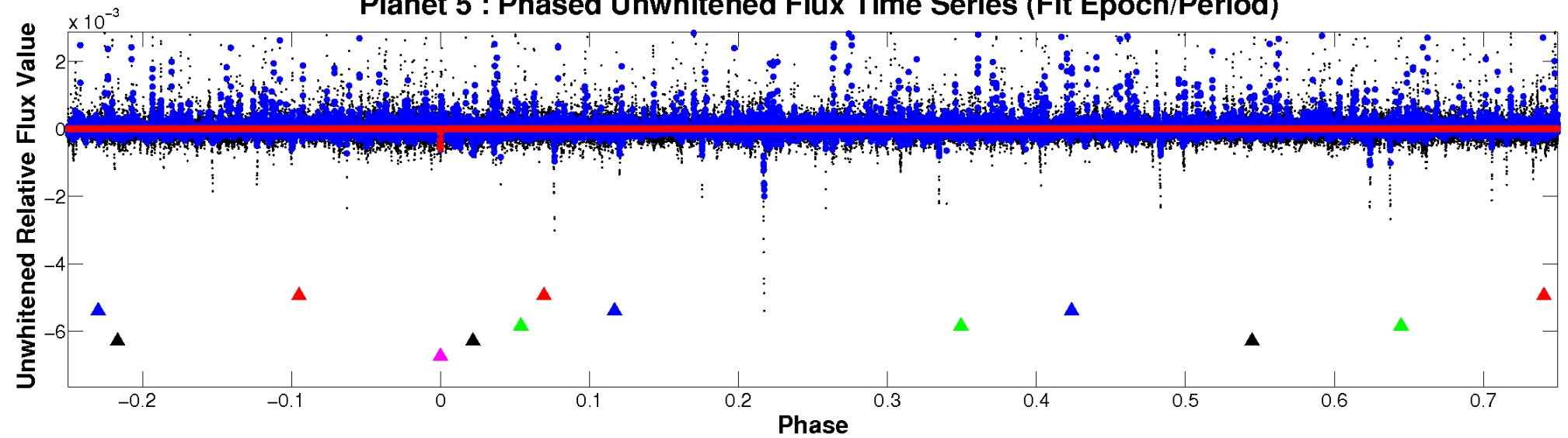
ALT Odd/Even

TCE 009392349-05

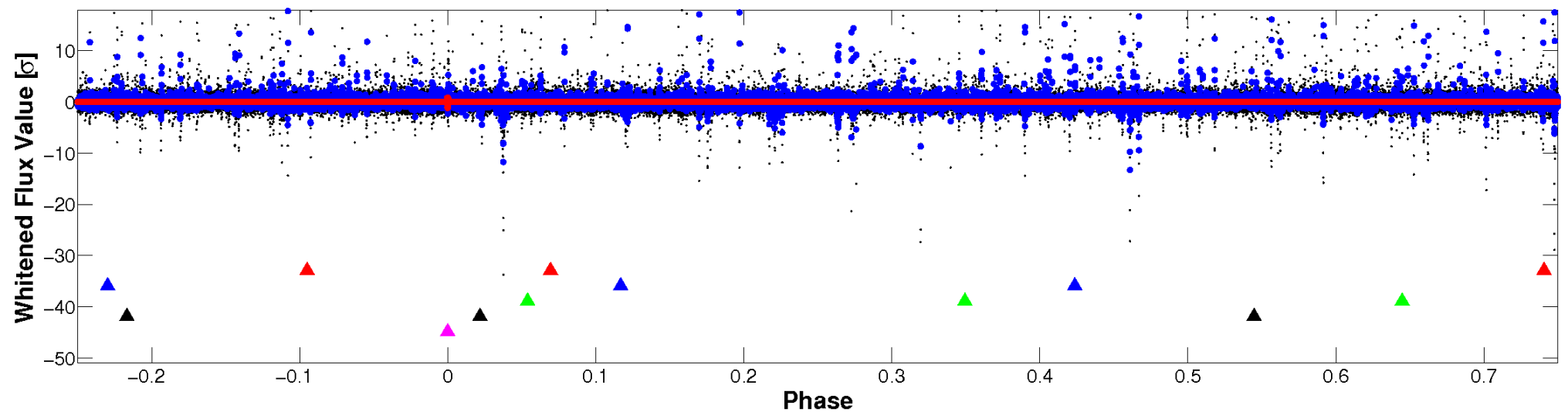


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

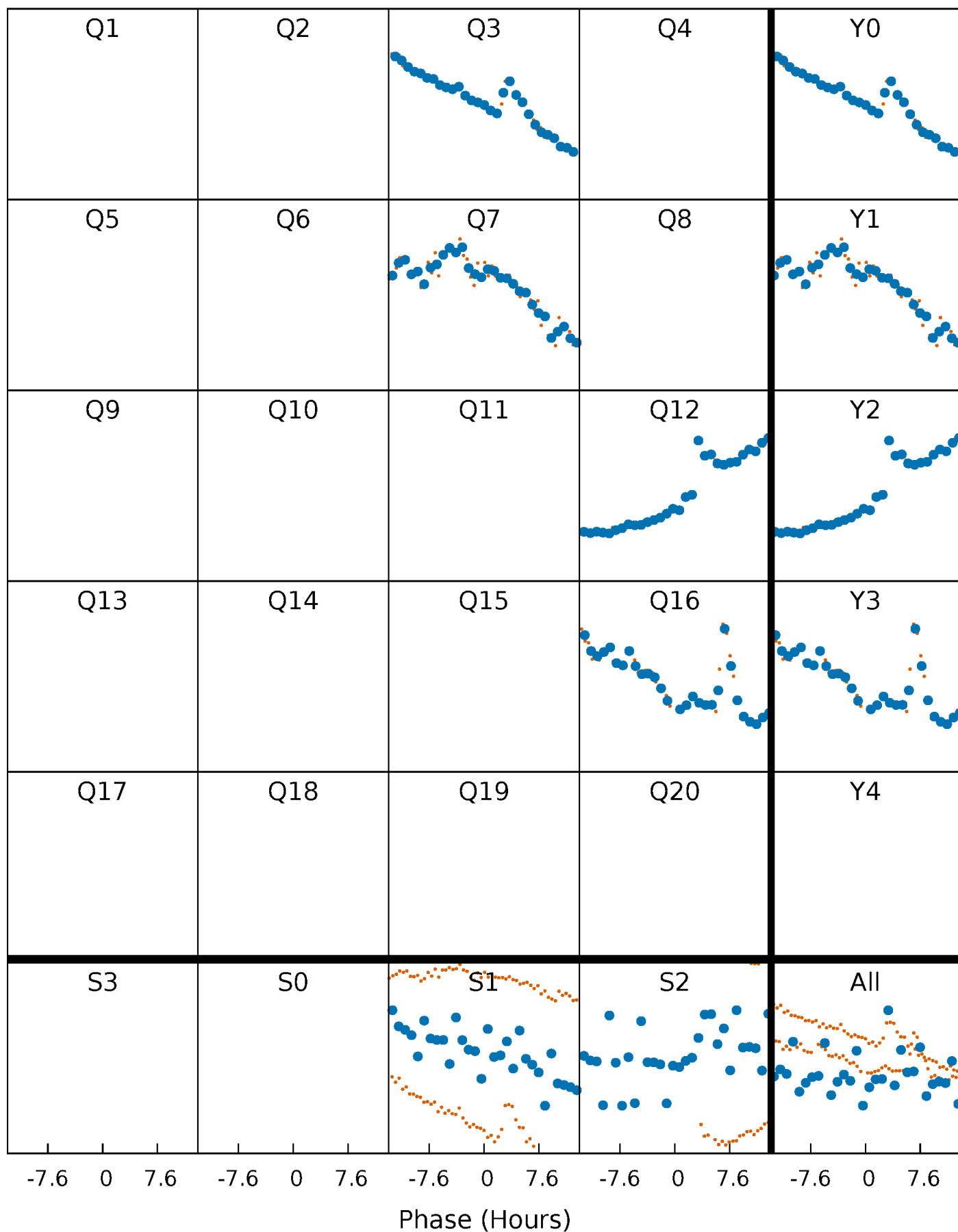


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



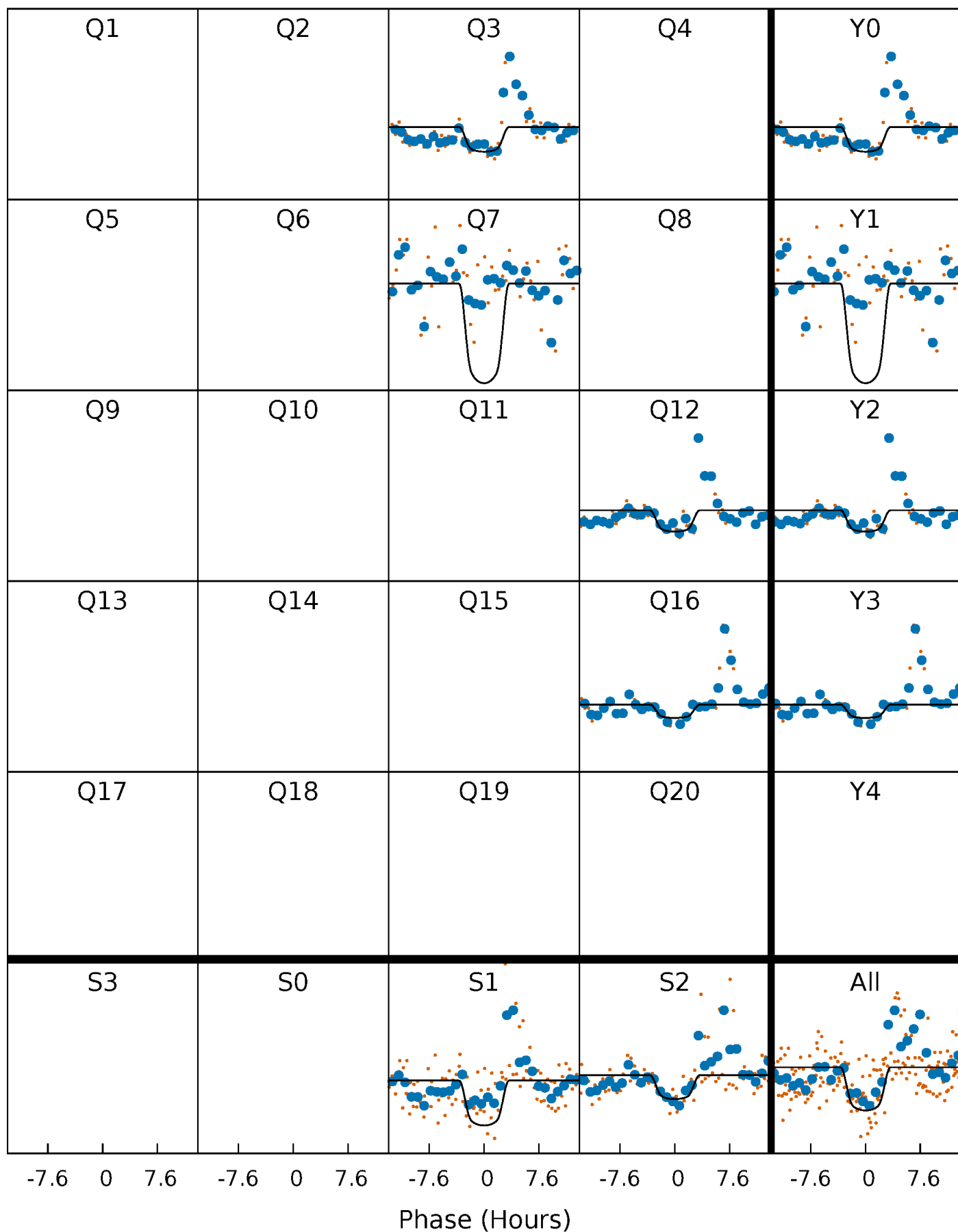
PDC Quarter-Phased Transit Curves

TCE 009392349-05 $P=396.979161$ Days $T_0=319.112014$ (BKJD)



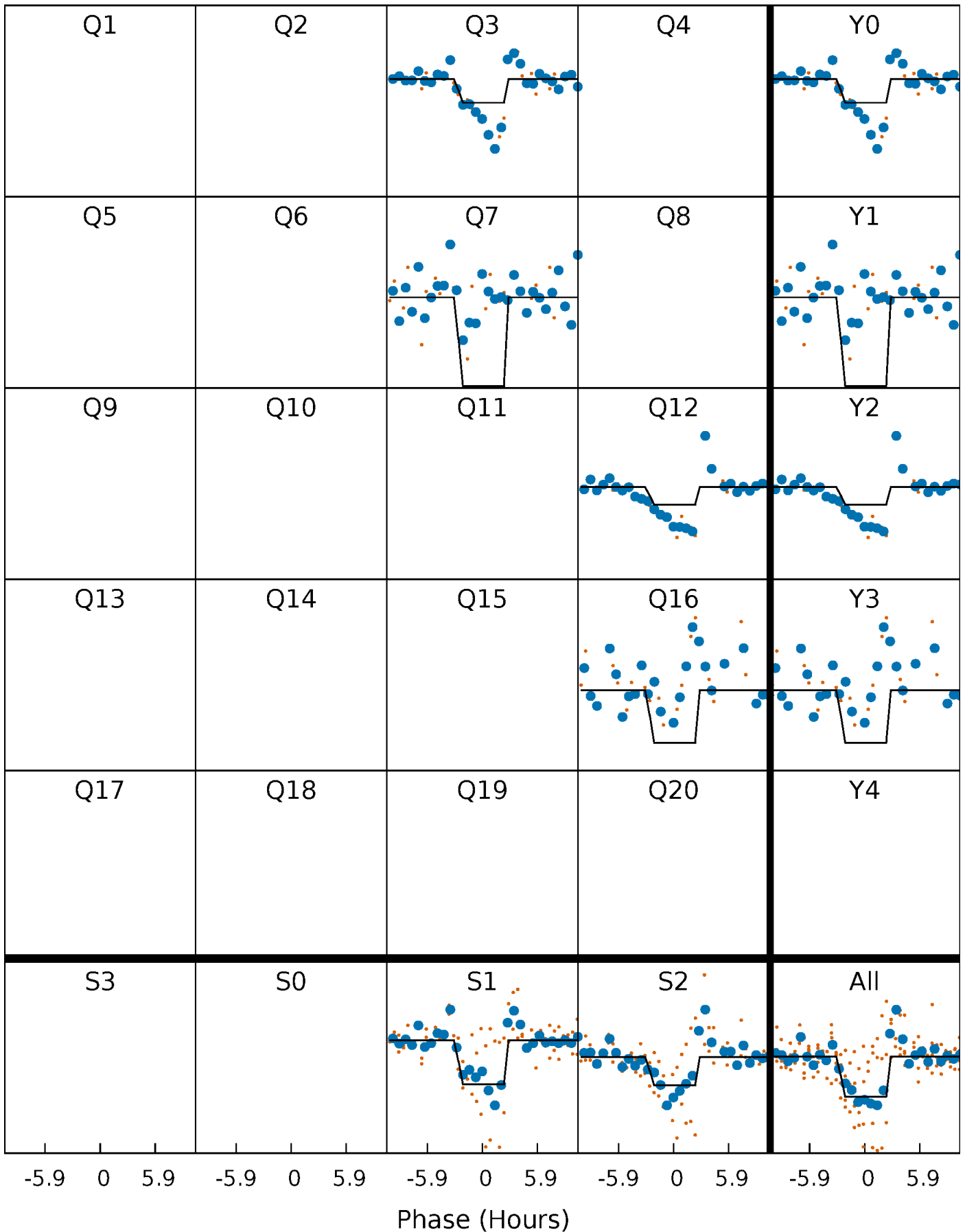
DV Quarter-Phased Transit Curves

TCE 009392349-05 $P=396.979161$ Days $T_0=319.112014$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

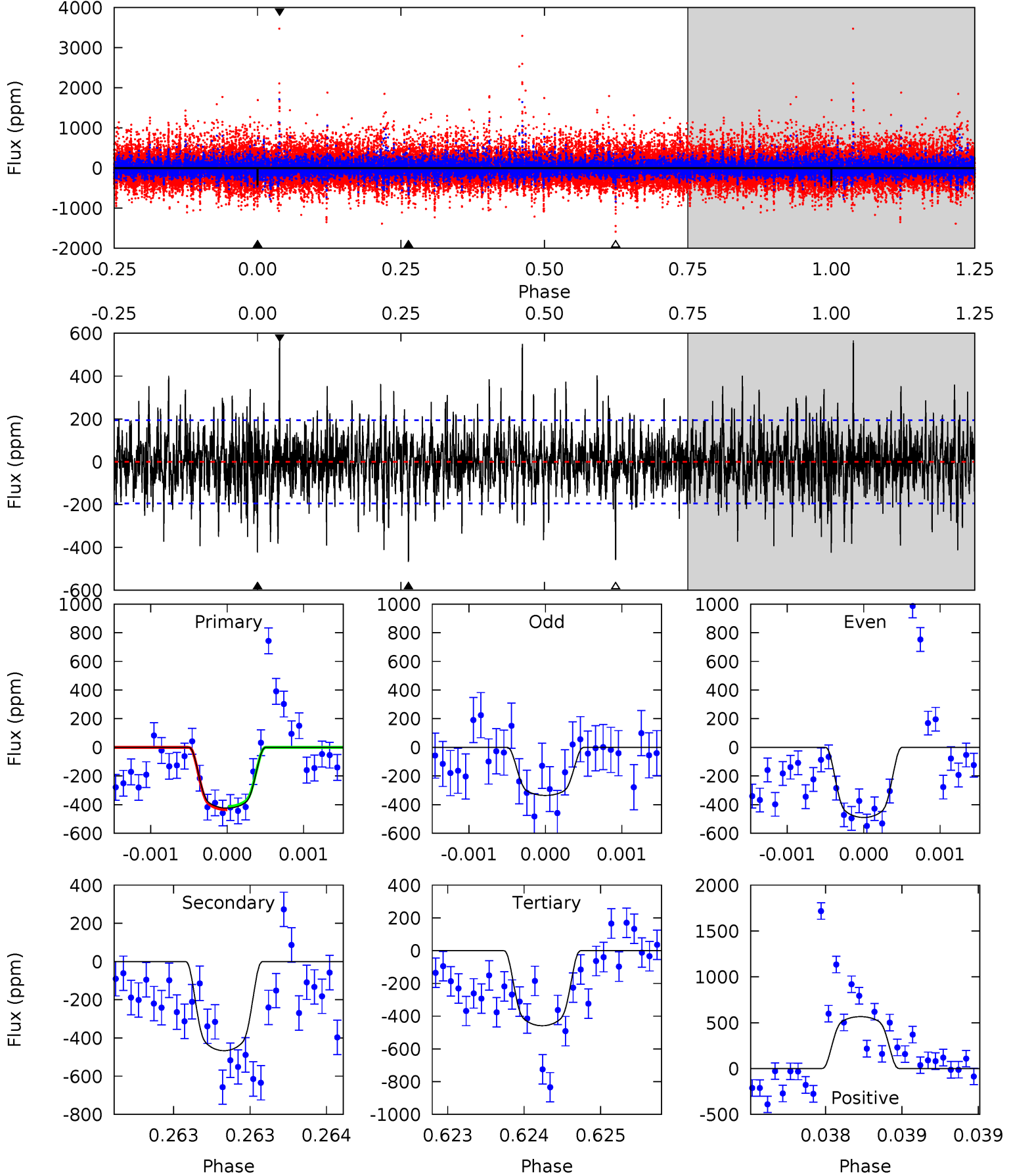
TCE 009392349-05 $P=396.983204$ Days $T_0=319.117505$ (BKJD)



DV Model-Shift Uniqueness Test

009392349-05, P = 396.979161 Days, E = 319.112014 Days

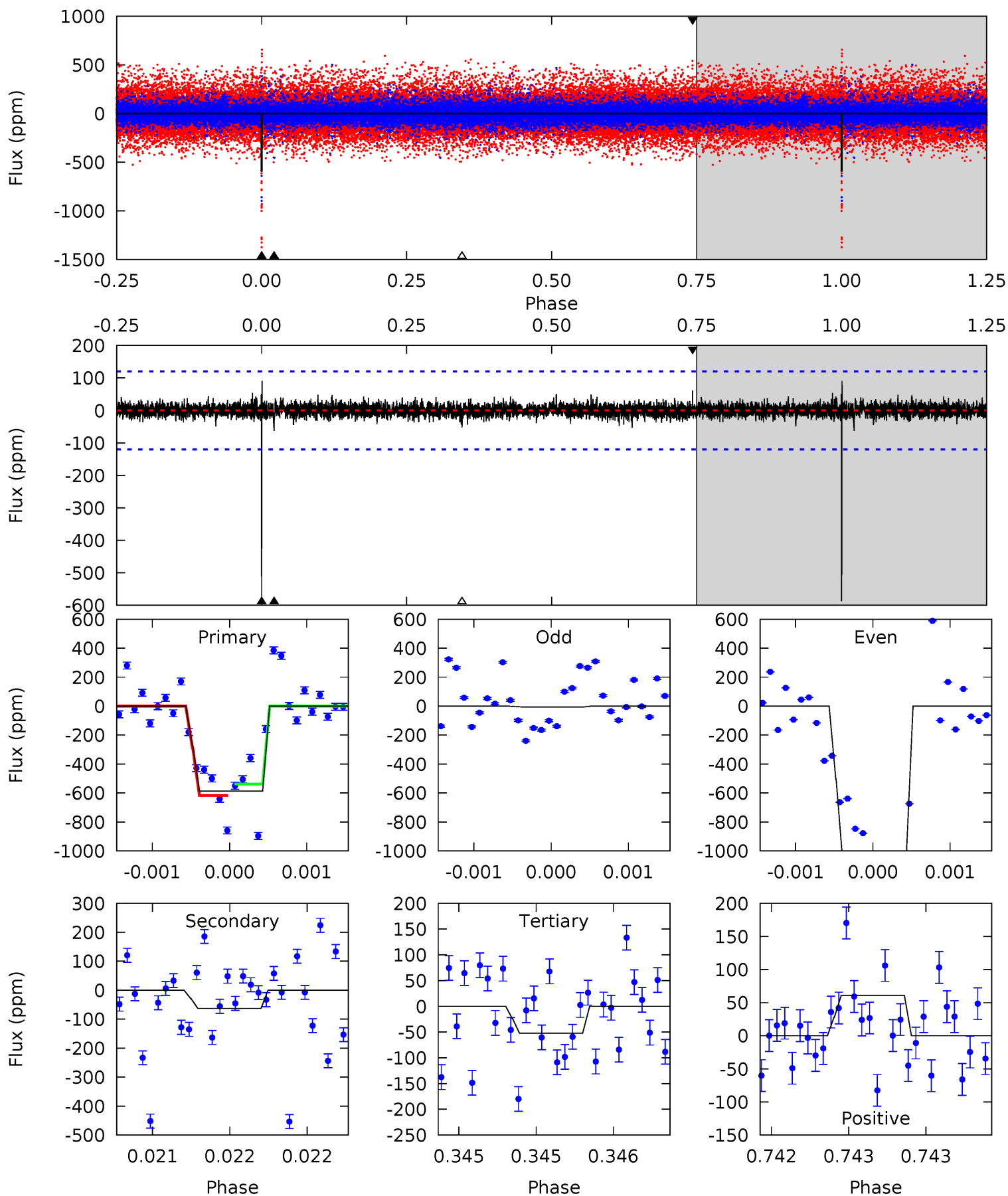
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	13.2	13.0	16.1	5.51	3.38	2.93	-0.97	-4.02	0.23	-2.82	1.58	0.86	0.55	0.32



Alt Model-Shift Uniqueness Test

009392349-05, P = 396.983204 Days, E = 319.117505 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.1	2.90	2.42	2.82	5.55	3.45	0.52	24.7	24.3	0.48	0.08	27.2	1.01	0.13	1.74



Stellar Parameters For KIC 009392349

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5623^{+152}_{-152}	$4.505^{+0.081}_{-0.150}$	$-0.360^{+0.300}_{-0.300}$	$0.835^{+0.189}_{-0.087}$	$0.813^{+0.106}_{-0.071}$	$1.971^{+0.659}_{-0.816}$
	+3%/-3%	+2%/-3%	+83%/-83%	+23%/-10%	+13%/-9%	+33%/-41%
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 009392349-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-467 ± 35	$2.61^{+0.39}_{-0.37}$	321^{+17}_{-13}	5015^{+310}_{-271}	36573^{+13127}_{-8864}
Alt.	-63 ± 22	$2.21^{+0.35}_{-0.34}$	322^{+17}_{-15}	3657^{+288}_{-314}	6528^{+3953}_{-2717}

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

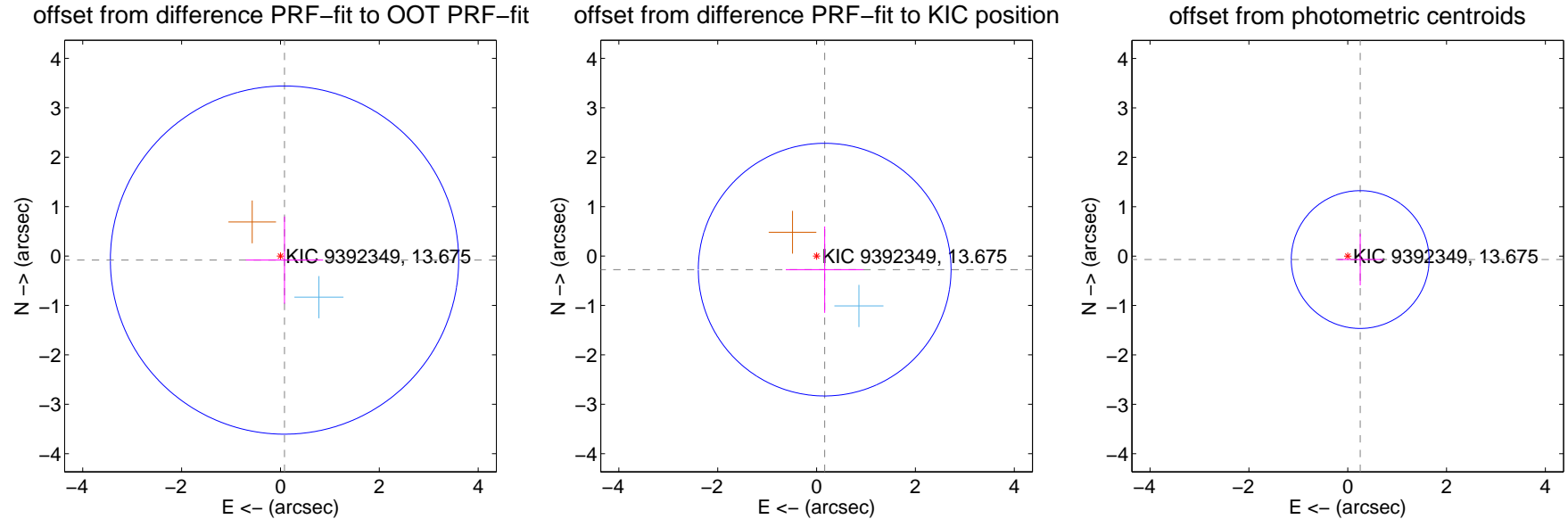
DV Centroid Data

Supplemental centroid analysis for 009392349-05. Kepler magnitude: 13.68. Transit SNR 7.52

There are 1 quarters with good PRF difference image offsets

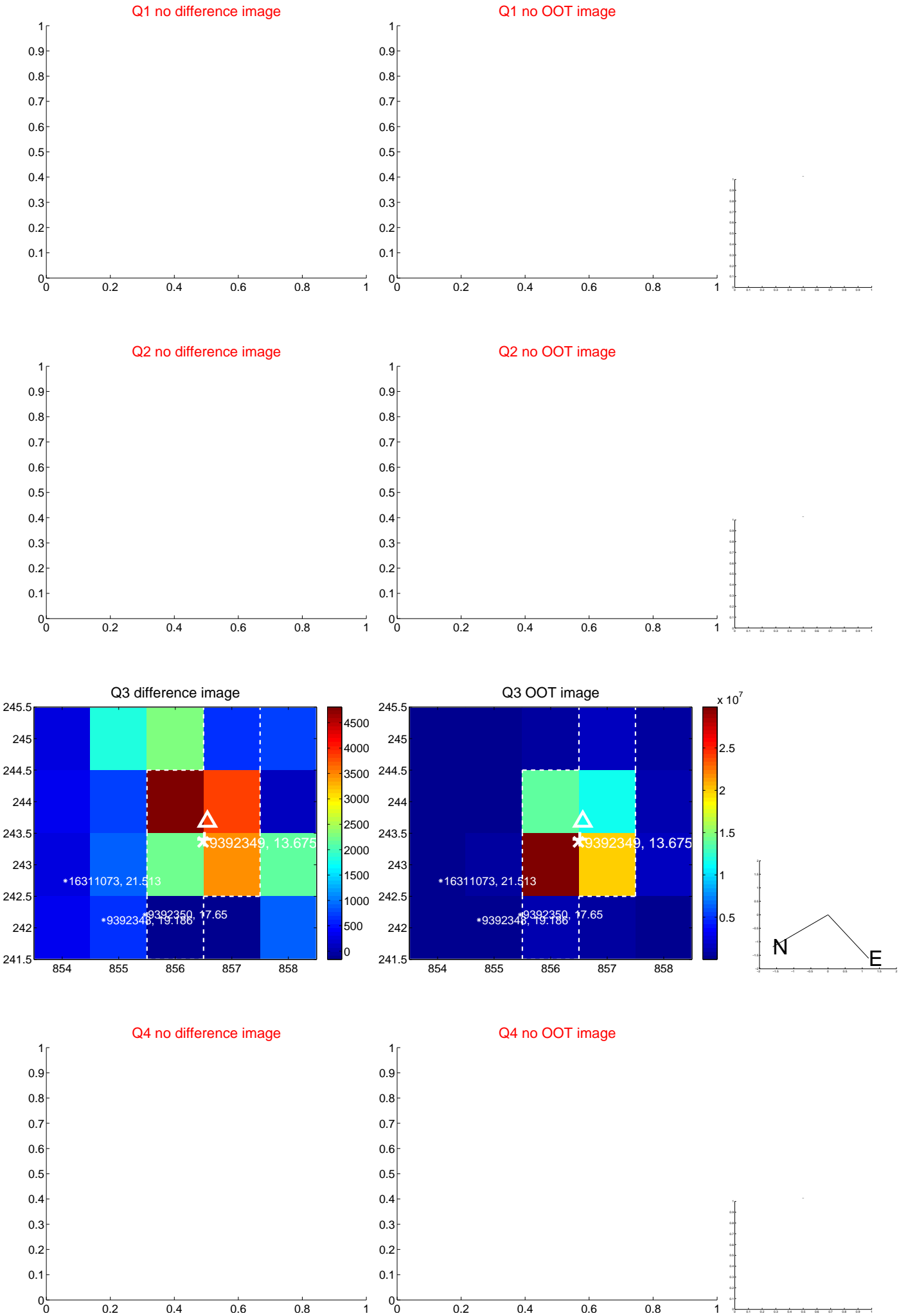
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.116 ± 1.174	0.10	-0.082 ± 0.782	-0.082 ± 0.882
PRF-fit source offset from KIC position	0.320 ± 0.852	0.38	-0.164 ± 0.787	-0.275 ± 0.874
photometric centroid source offset	0.26 ± 0.46	0.56	-0.25 ± 0.46	-0.07 ± 0.52

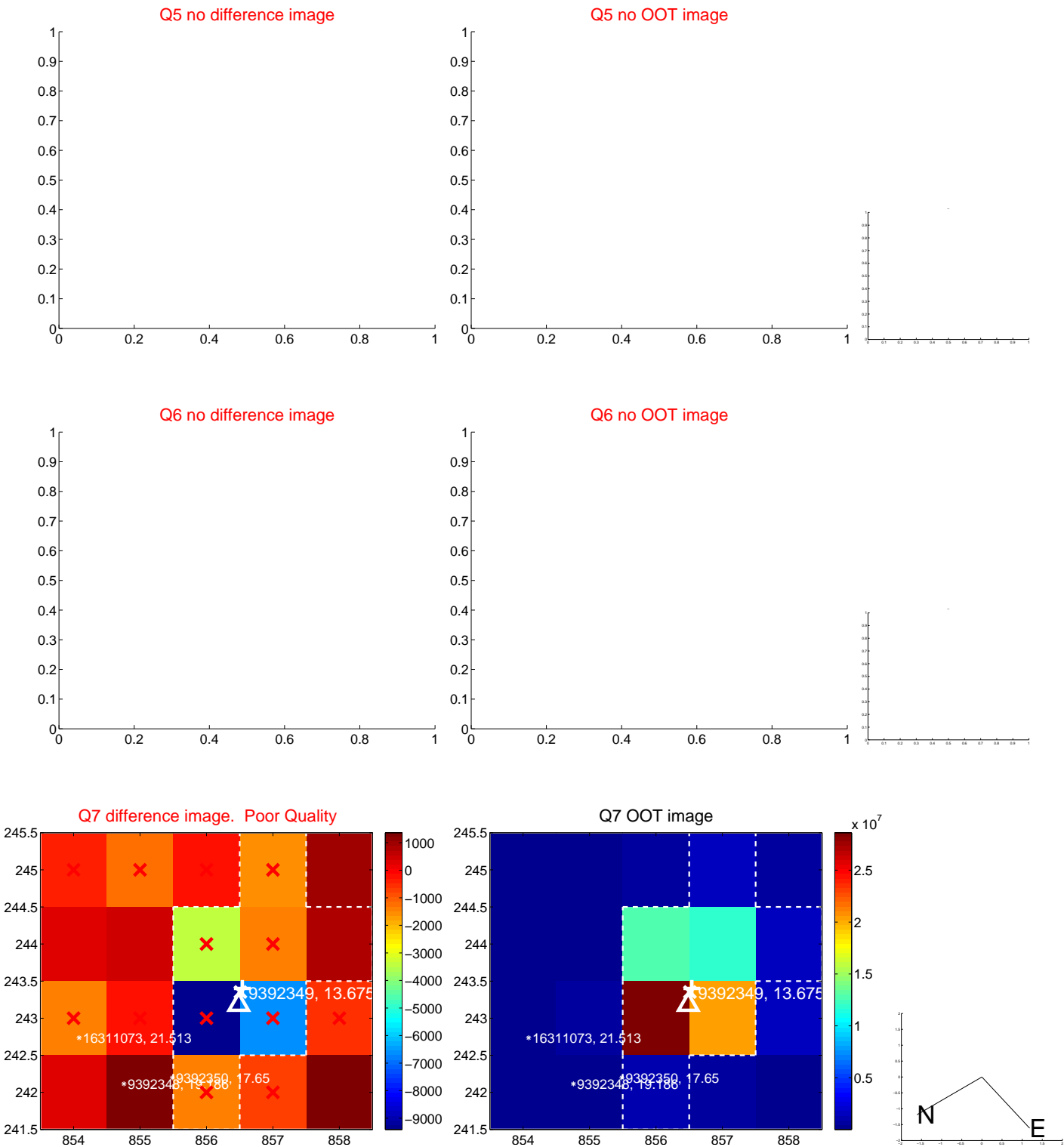


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



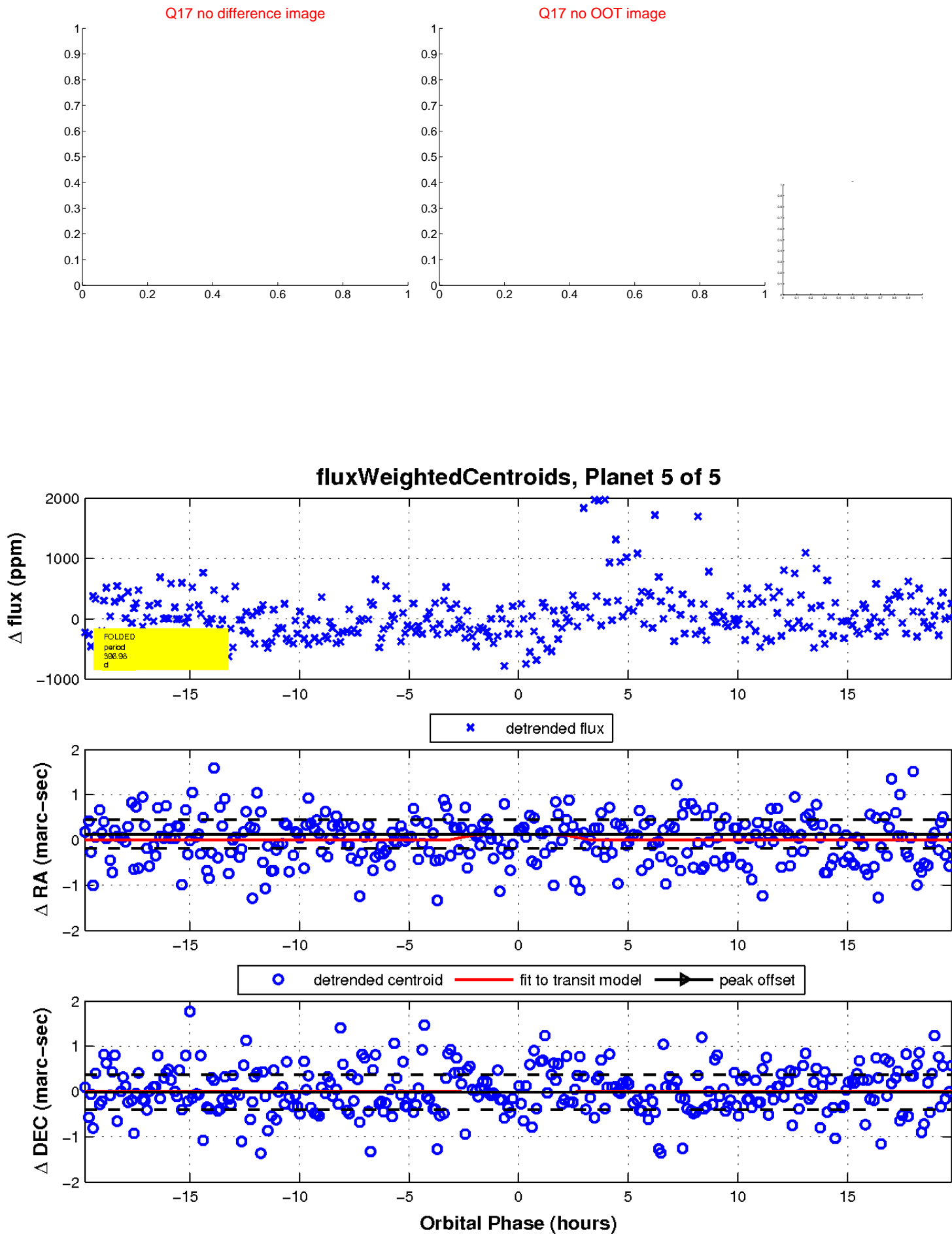
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

