

KIC 005772452

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})
005772452-01	OBS	No	171.325317	167.441441	1326.7	3.564	19.2	6.2	2.89	4999	21.04	14.22
005772452-02	OBS	No	355.442762	214.806170	1017.1	2.315	19.8	5.9	2.89	4999	9.81	5.38
005772452-03	OBS	No	311.903379	215.310400	637.4	2.167	13.7	3.3	2.89	4999	7.80	6.40
005772452-04	OBS	No	335.692897	210.121618	5138.9	25.291	13.3	5.8	2.89	4999	25.57	5.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005772452-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS
005772452-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005772452-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005772452-04	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

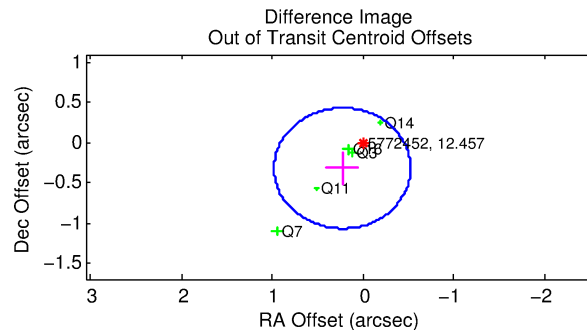
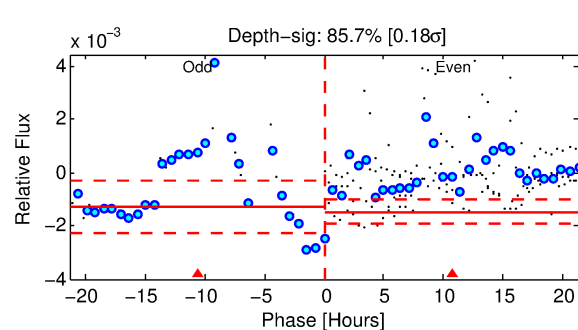
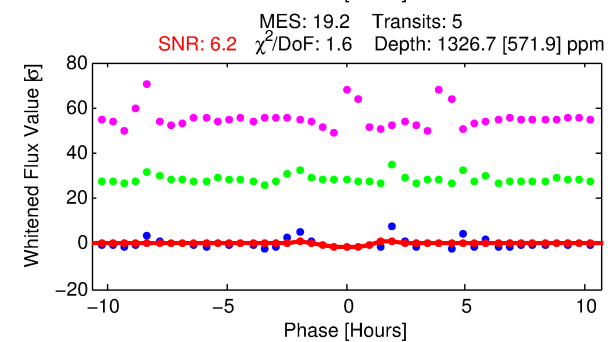
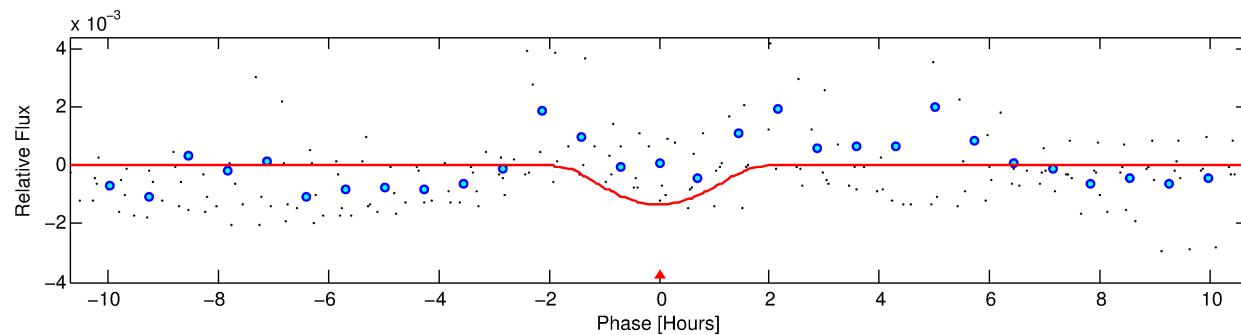
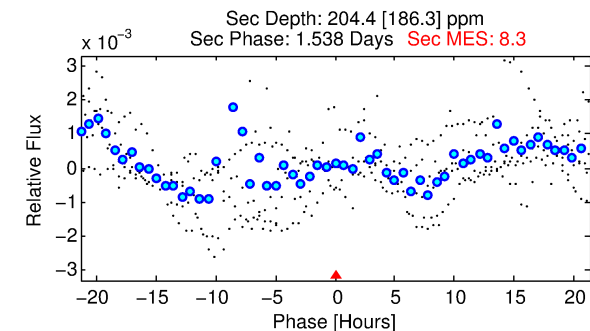
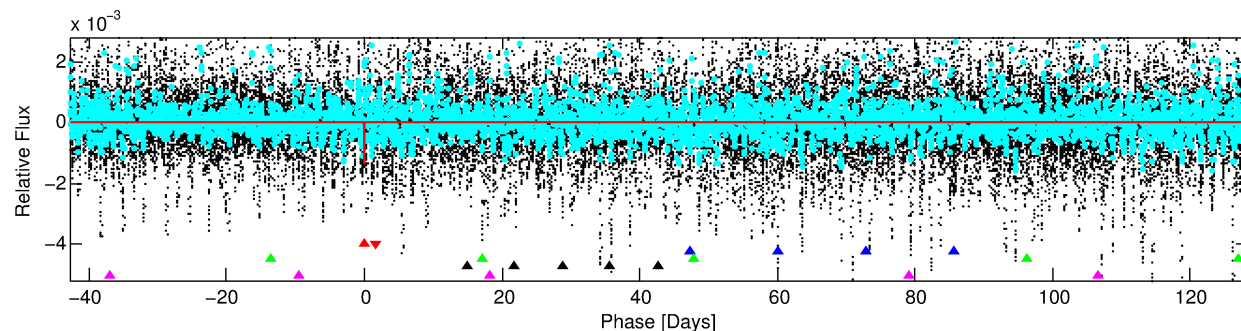
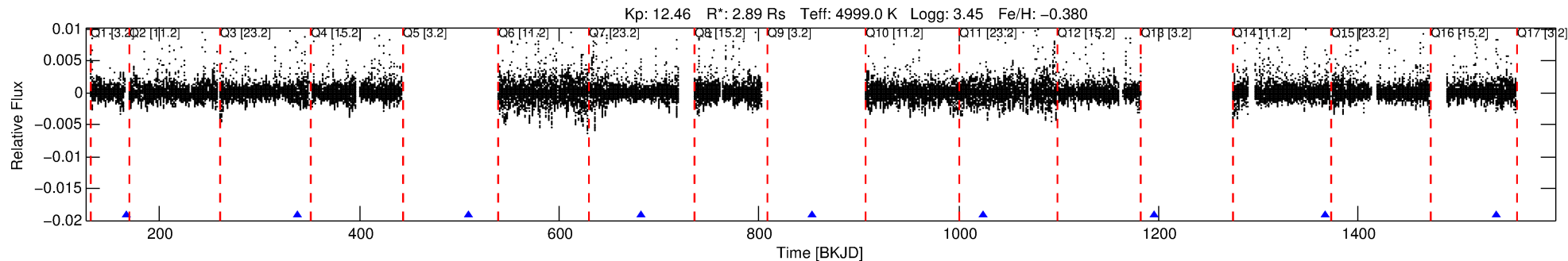
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005772452-01

No Significant Match Found

DV One-Page Summary

KIC: 5772452 Candidate: 1 of 5 Period: 171.325 d



DV Fit Results:

Period = 171.32532 [0.00290] d
Epoch = 167.4414 [0.0147] BKJD
Rp/R* = 0.0668 [0.3166]
a/R* = 136.57 [144.35]
b = 1.00 [0.43]
Seff = 14.23 [8.74]
Teq = 495 [76] K
Rp = 21.04 [100.40] Re
a = 0.5728 [0.2473] AU
Ag = 83.32 [795.32] [0.10σ]
Teffp = 2313 [5509] K [0.33σ]

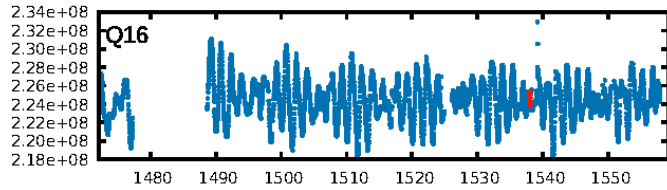
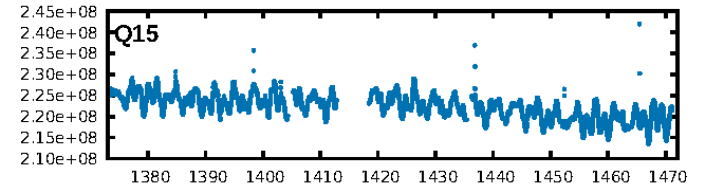
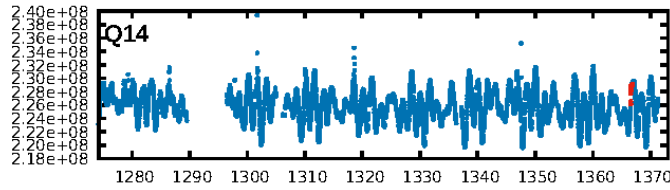
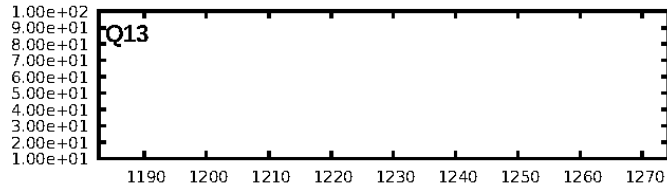
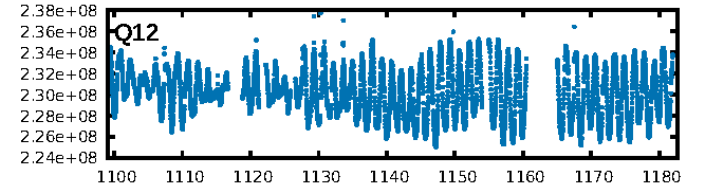
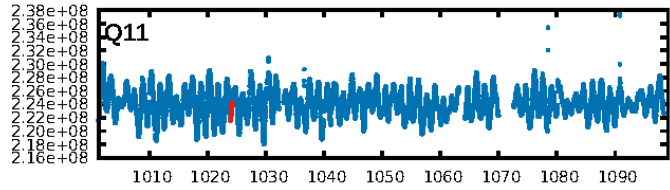
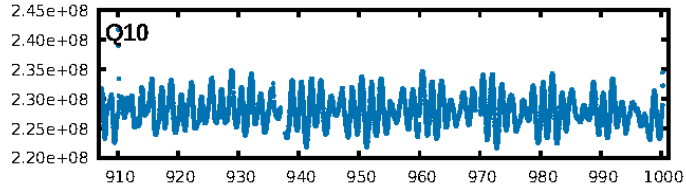
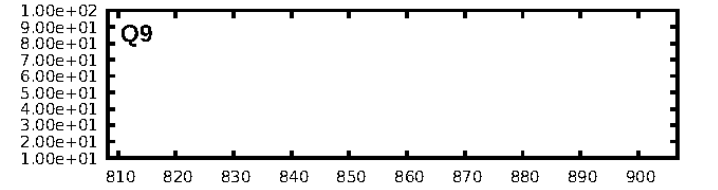
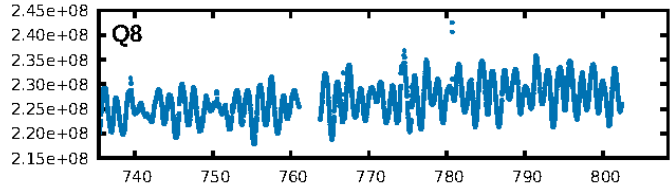
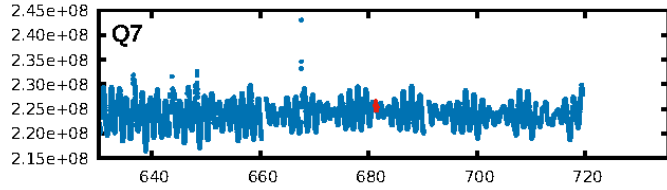
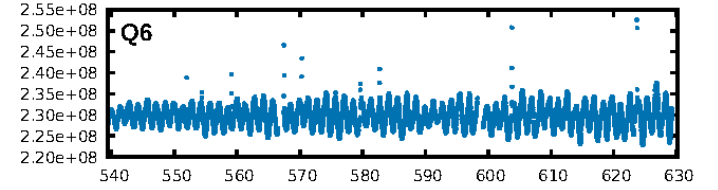
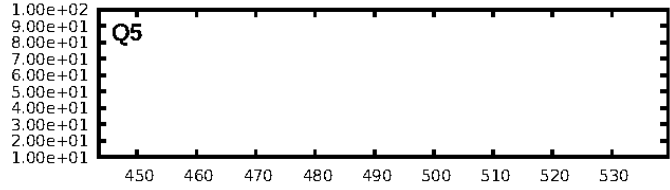
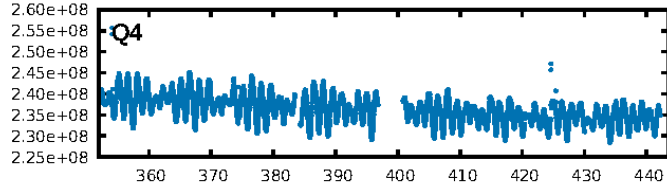
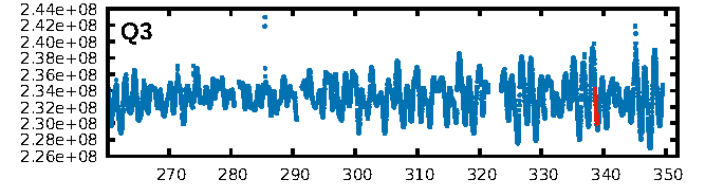
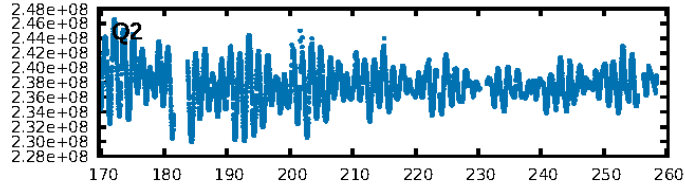
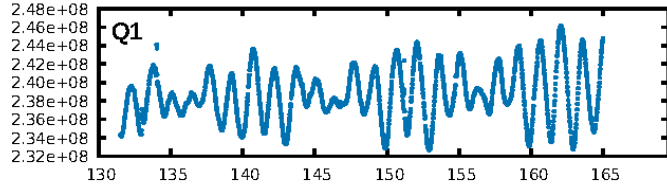
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [808.83σ]
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 78.5%
Bootstrap-pfa: 9.84e-16
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 7.037
Centroid-sig: 97.9%
Centroid-so: 0.090 arcsec [0.18σ]
OotOffset-rm: 0.392 arcsec [1.56σ]
KicOffset-rm: 0.427 arcsec [1.17σ]
OotOffset-st: 1/3/1/0 [5]
KicOffset-st: 1/3/1/0 [5]
DiffImageQuality-fgm: 0.80 [4/5]
DiffImageOverlap-fno: 1.00 [5/5]

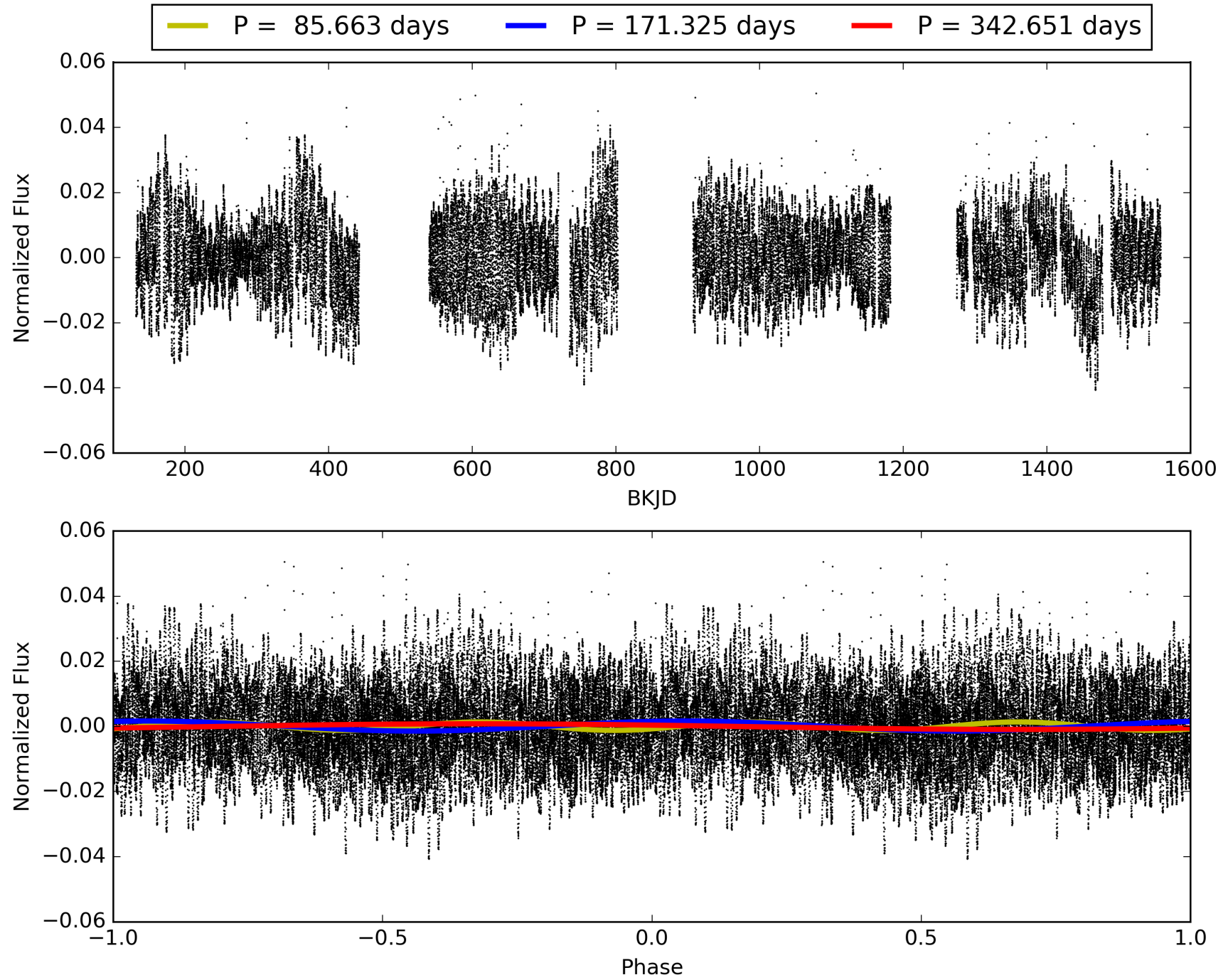
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005772452-01, PDC Light Curves

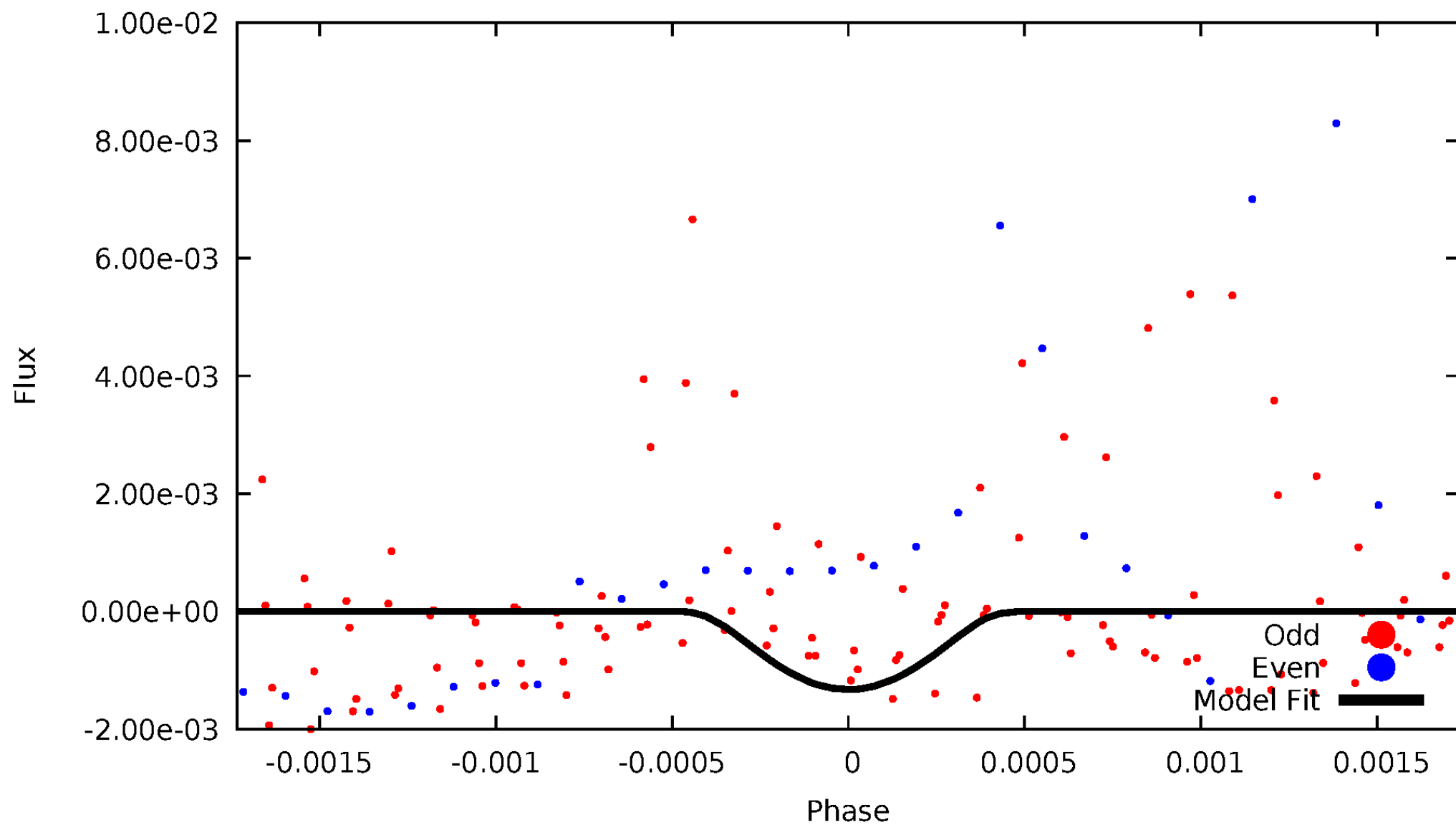


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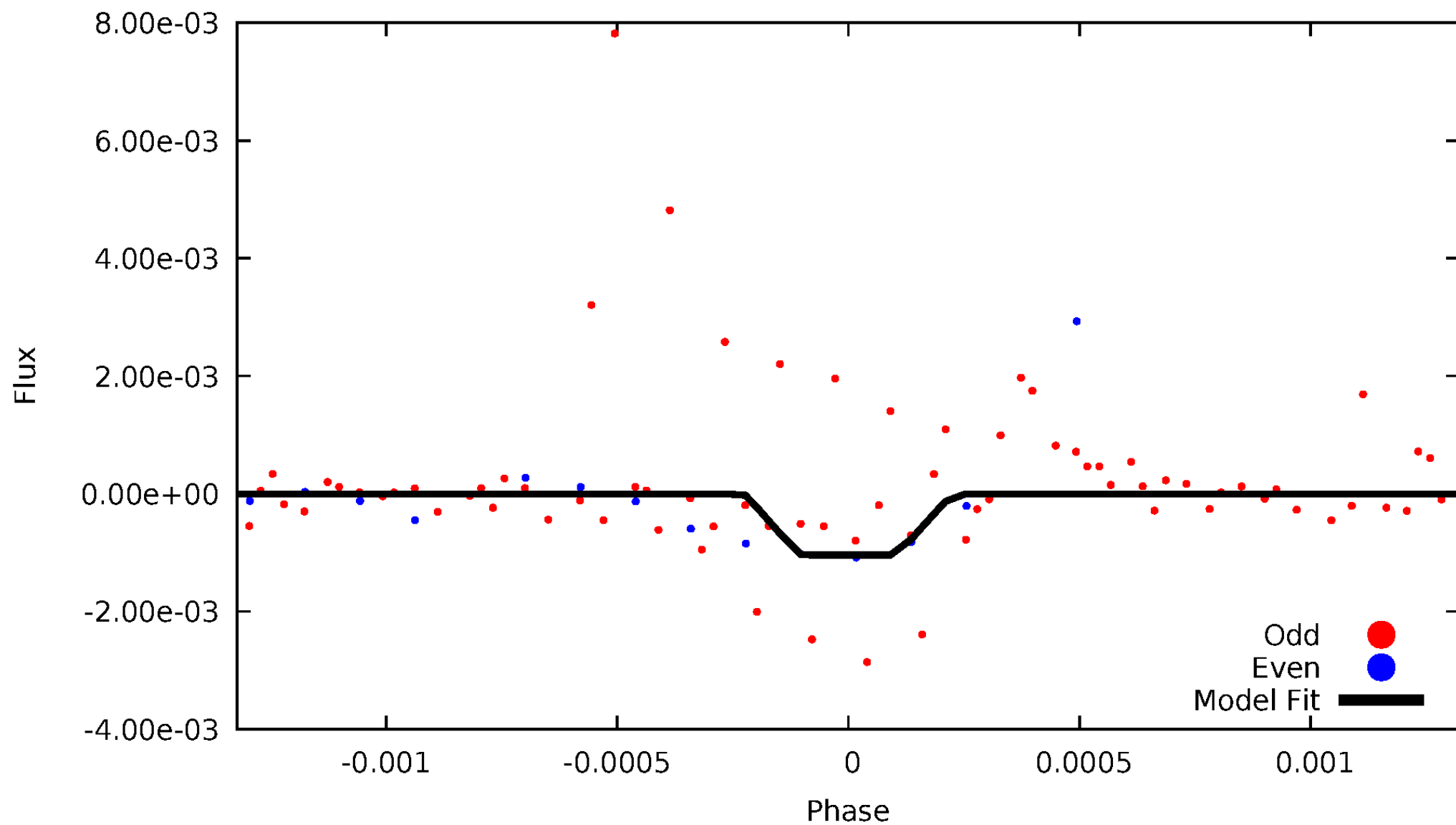
DV Odd/Even

TCE 005772452-01

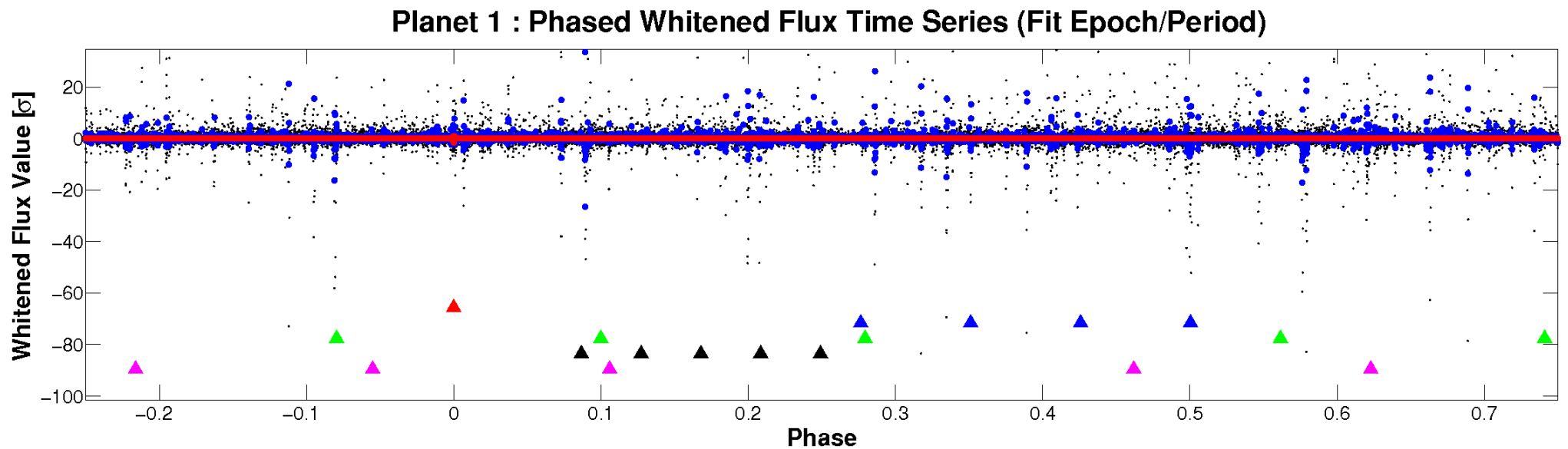
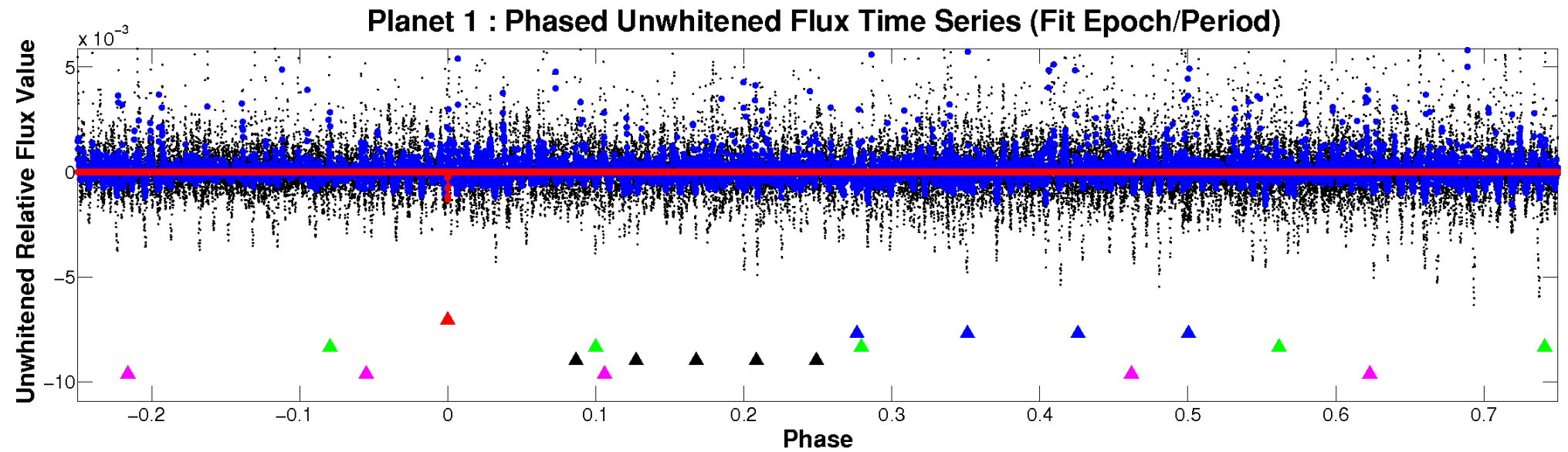


ALT Odd/Even

TCE 005772452-01

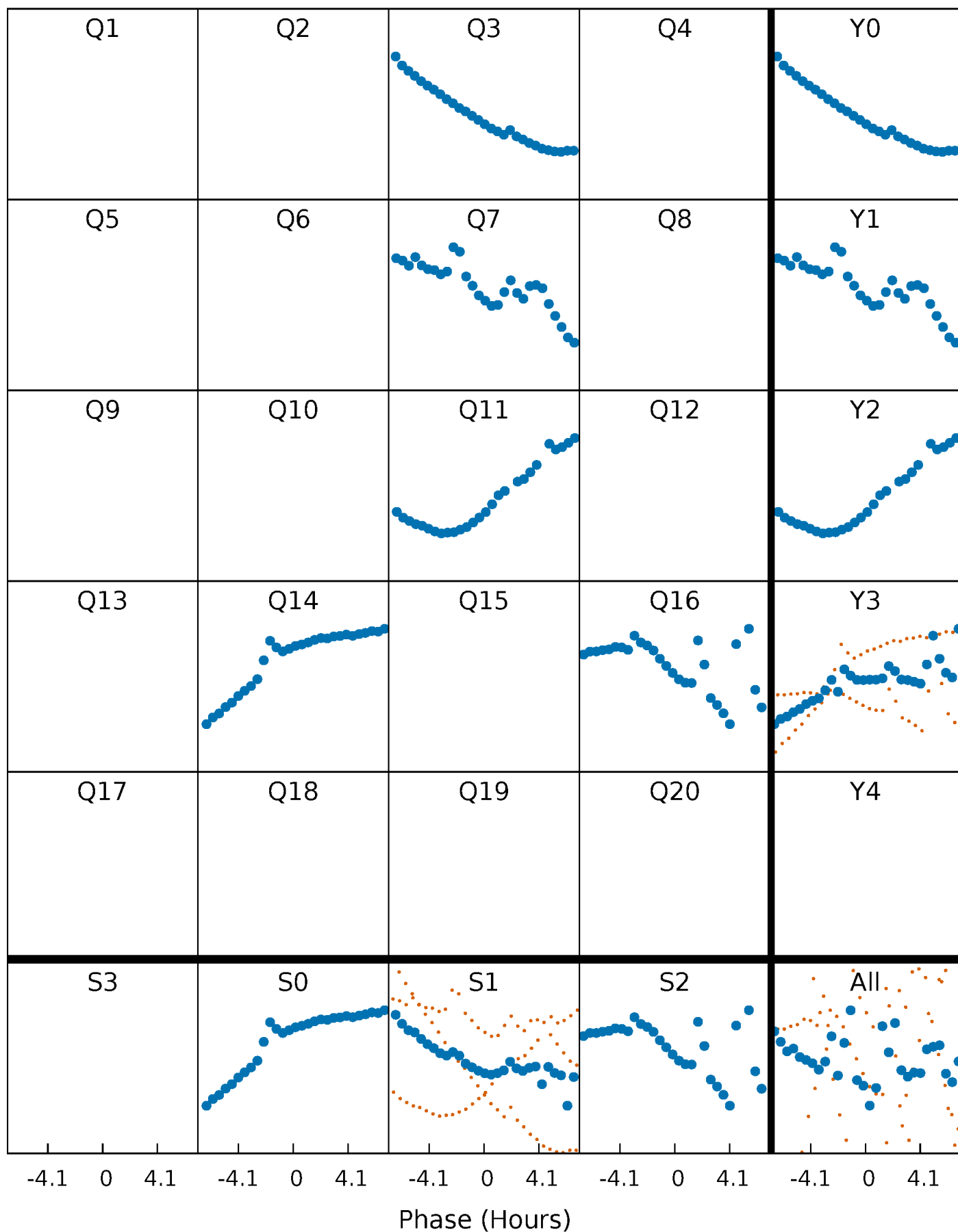


Non-Whitened Vs. Whitened Light Curve



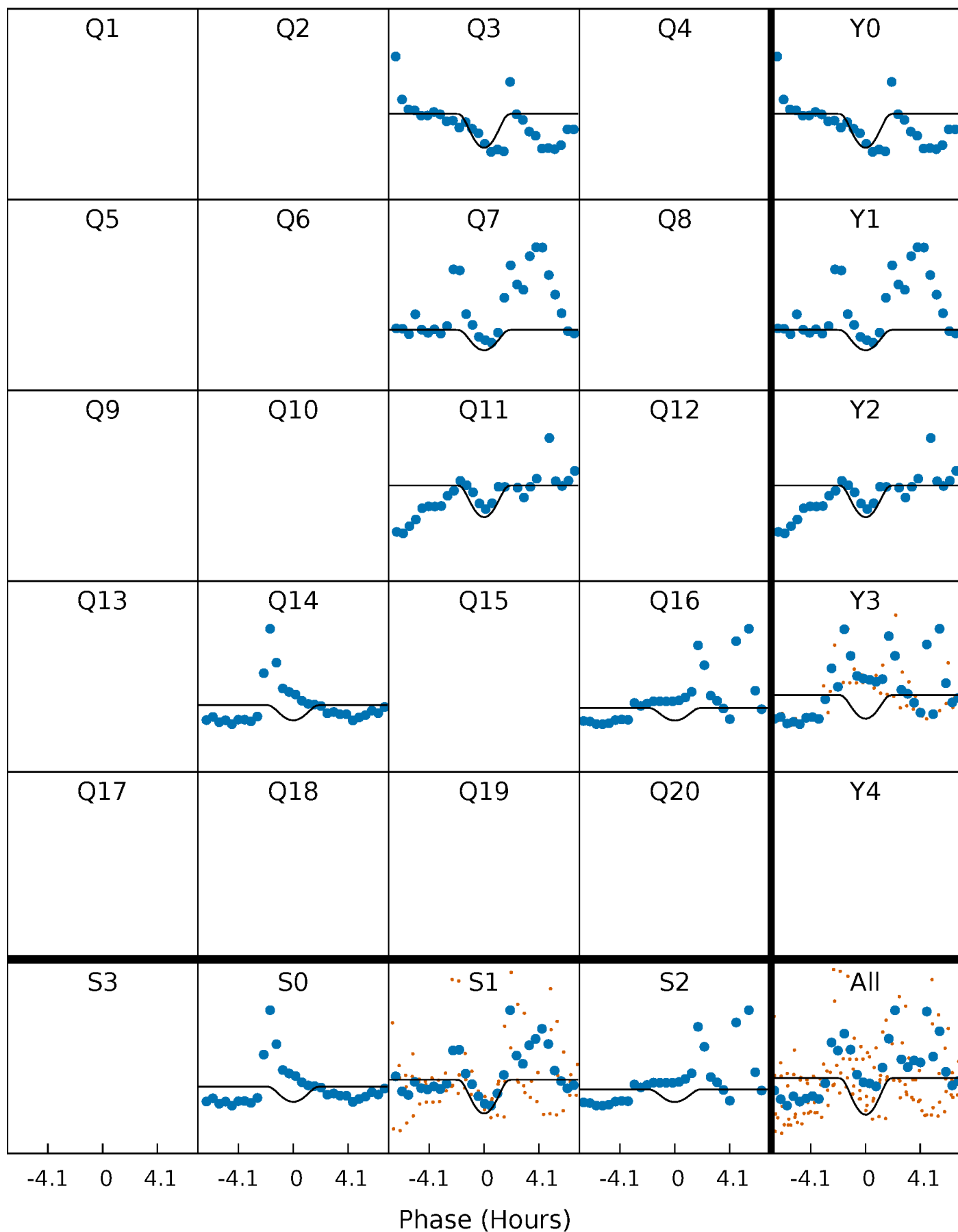
PDC Quarter-Phased Transit Curves

TCE 005772452-01 P=171.325317 Days $T_0=167.441441$ (BKJD)



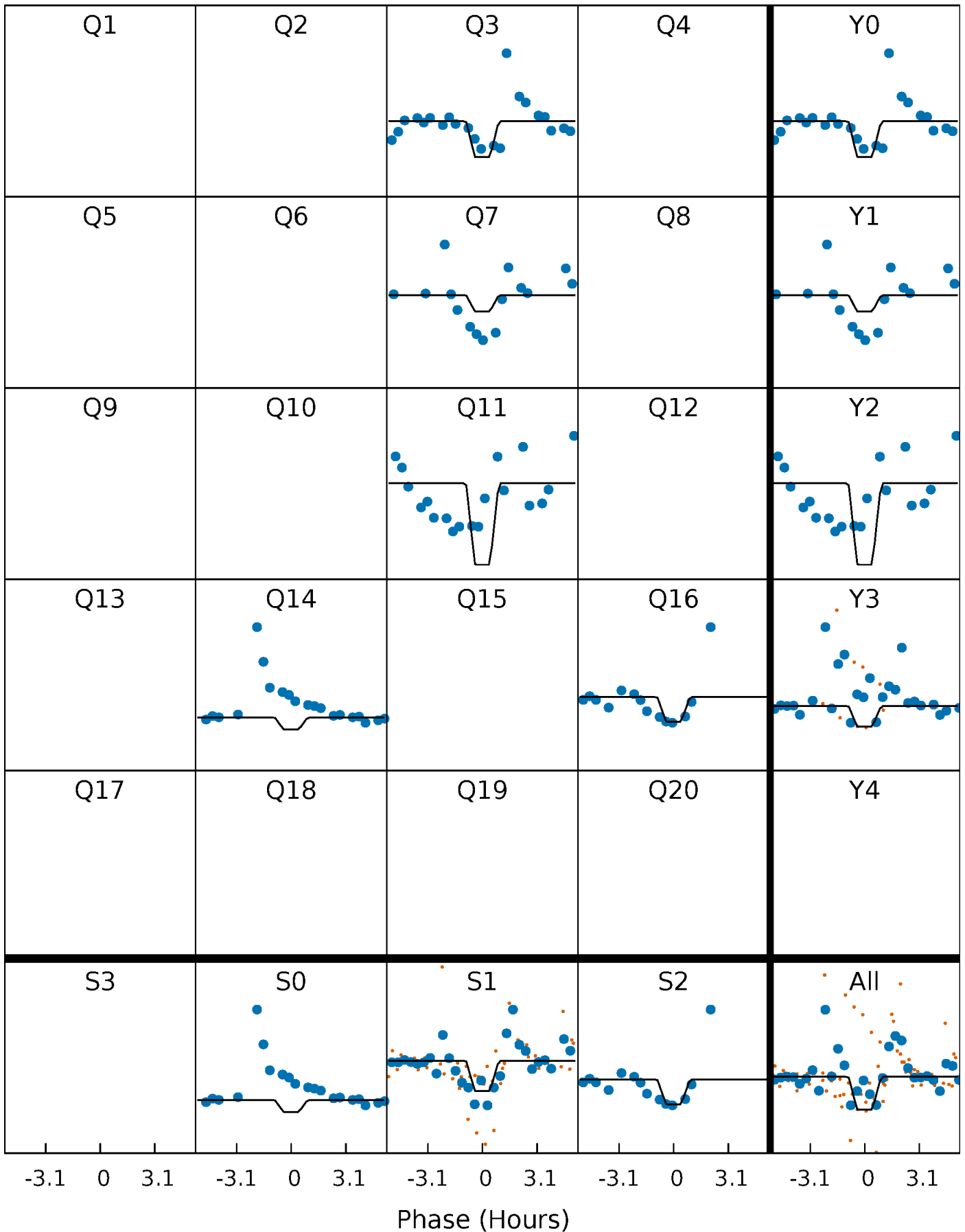
DV Quarter-Phased Transit Curves

TCE 005772452-01 P=171.325317 Days $T_0=167.441441$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

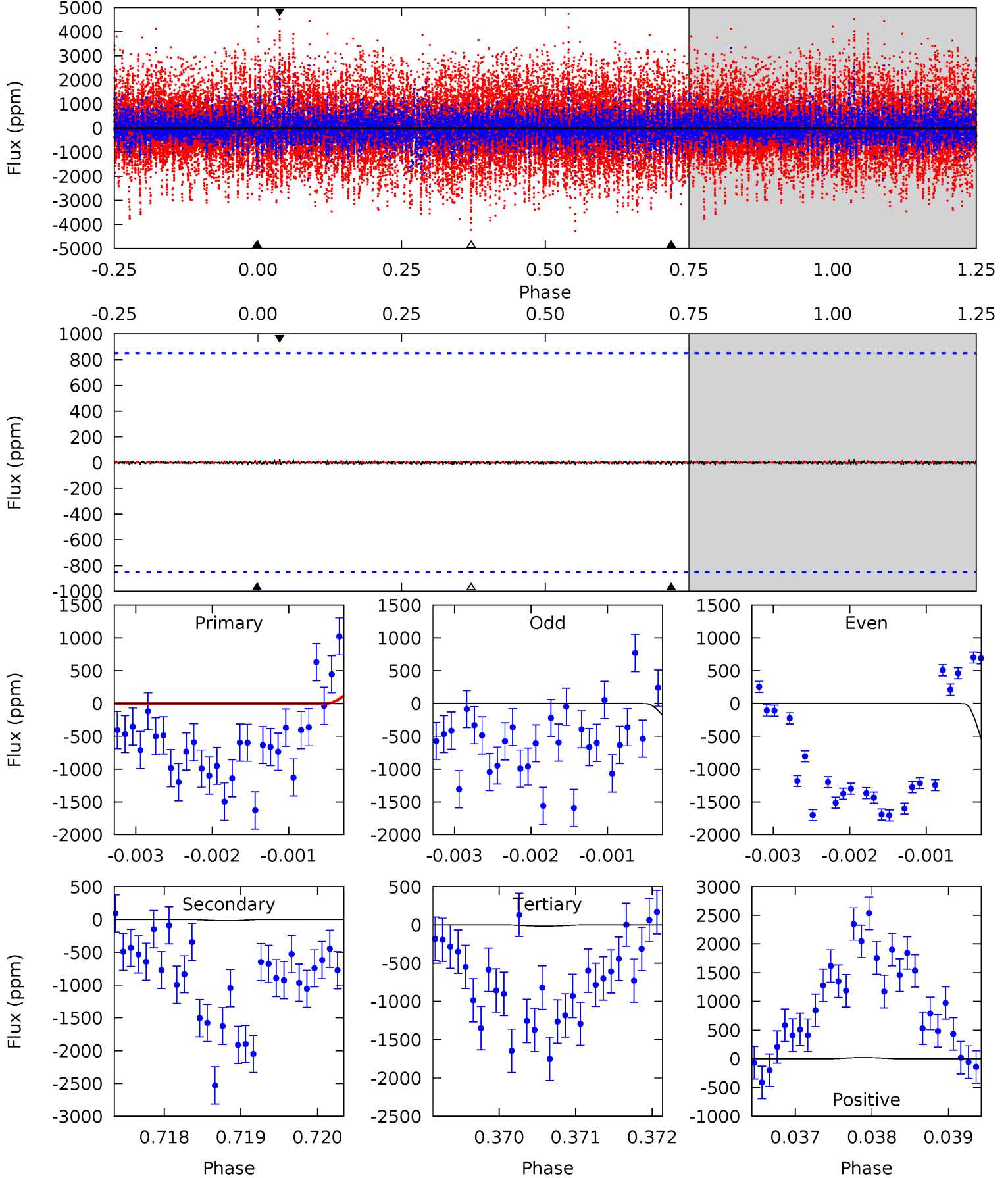
TCE 005772452-01 P=171.323974 Days $T_0=167.461708$ (BKJD)



DV Model-Shift Uniqueness Test

005772452-01, P = 171.325317 Days, E = 167.441441 Days

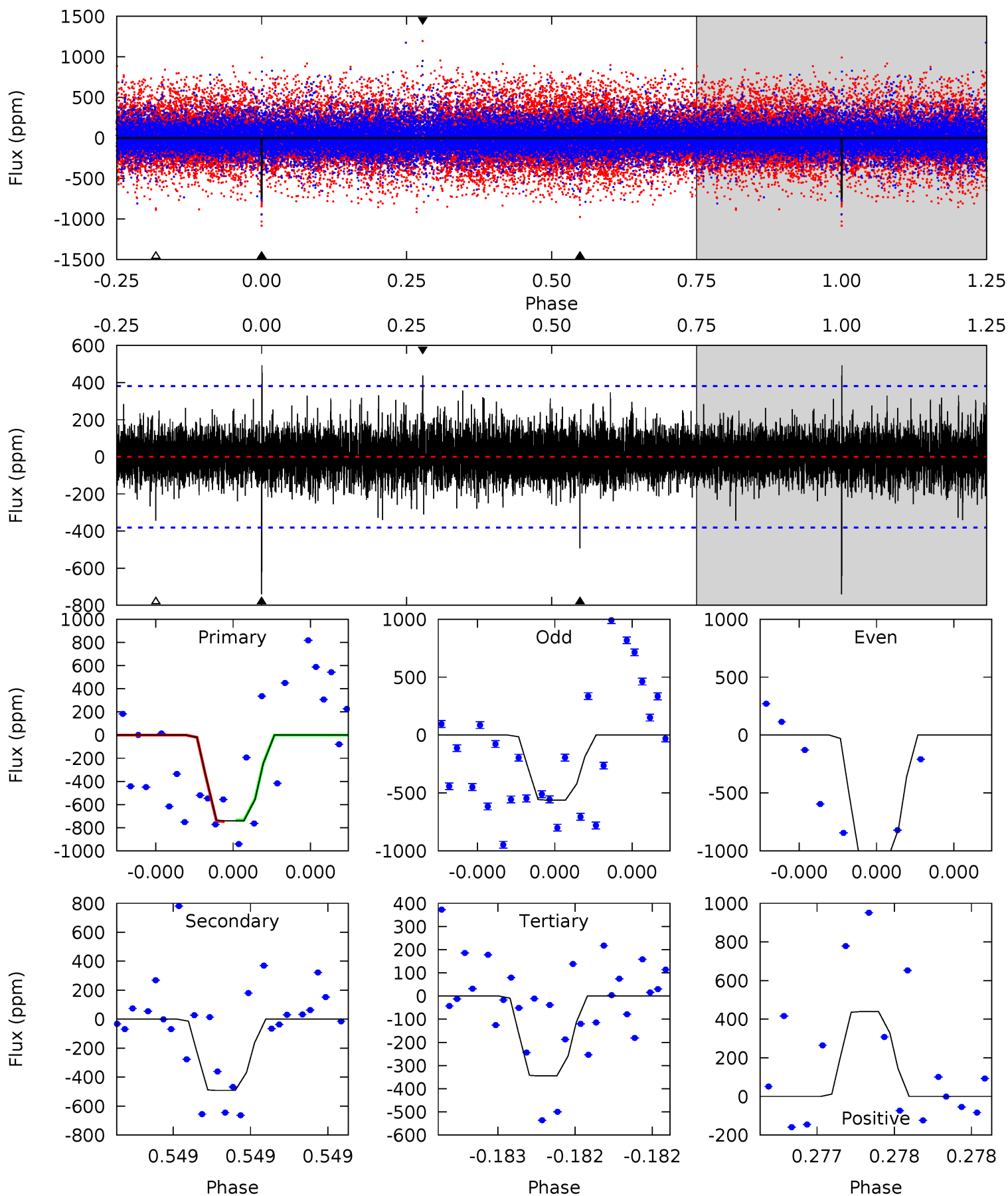
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.08	0.13	0.10	0.15	5.46	3.31	0.03	-0.02	-0.07	0.03	-0.02	1.91	-0.02	0.53	0.23



Alt Model-Shift Uniqueness Test

005772452-01, P = 171.323974 Days, E = 167.461708 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	7.21	5.05	6.43	5.58	3.49	1.17	5.79	4.42	2.16	0.78	3.55	0.88	0.40	0



Stellar Parameters For KIC 005772452

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4999^{+125}_{-100}	$3.448^{+0.320}_{-0.288}$	$-0.380^{+0.300}_{-0.200}$	$2.888^{+1.538}_{-1.231}$	$0.855^{+0.293}_{-0.158}$	$0.050^{+0.108}_{-0.033}$
	+3%/-2%	+9%/-8%	+79%/-53%	+53%/-43%	+34%/-18%	+217%/-67%
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 005772452-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-20 ± 156	$77.87^{+92.92}_{-51.88}$	697^{+91}_{-74}	1476^{+809}_{-3604}	$0.387^{+11.142}_{-5.244}$
Alt.	-492 ± 68	$73.98^{+80.16}_{-52.86}$	696^{+87}_{-77}	2417^{+912}_{-377}	17^{+184}_{-13}

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

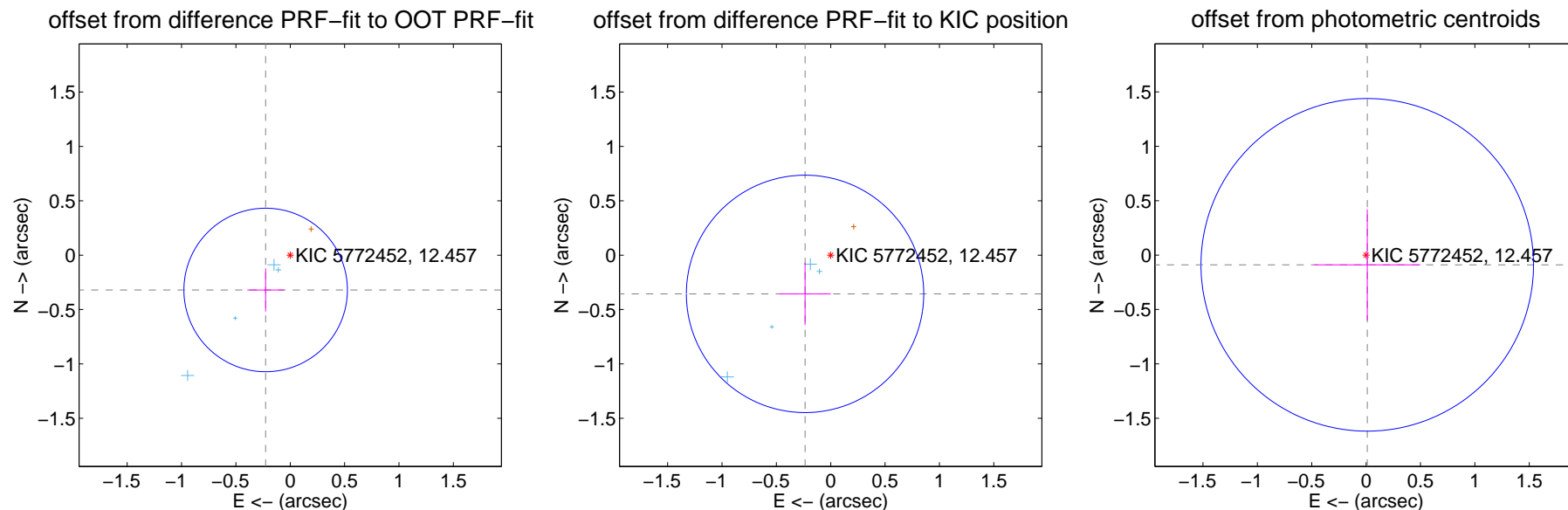
DV Centroid Data

Supplemental centroid analysis for 005772452-01. Kepler magnitude: 12.46. Transit SNR 6.25

There are 4 quarters with good PRF difference image offsets

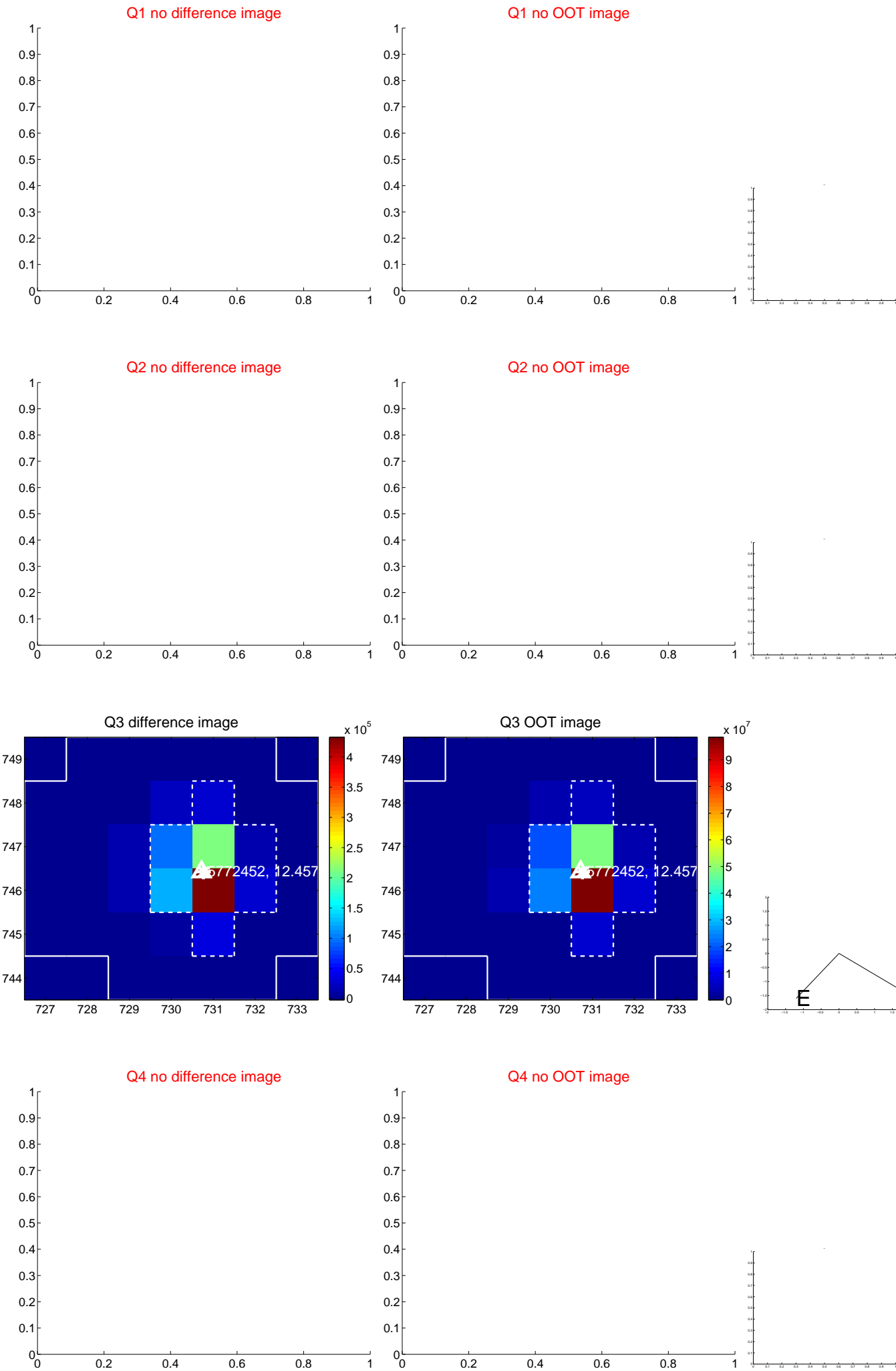
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.392 ± 0.251	1.56	0.226 ± 0.169	-0.320 ± 0.198
PRF-fit source offset from KIC position	0.427 ± 0.364	1.17	0.236 ± 0.236	-0.356 ± 0.287
photometric centroid source offset	0.09 ± 0.51	0.18	-0.01 ± 0.49	-0.09 ± 0.51

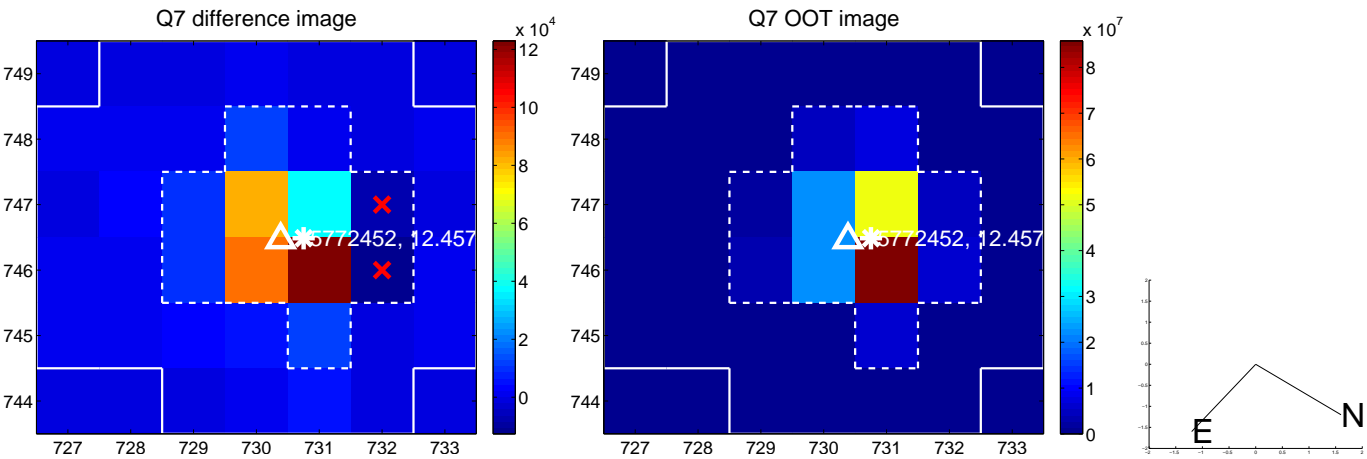


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

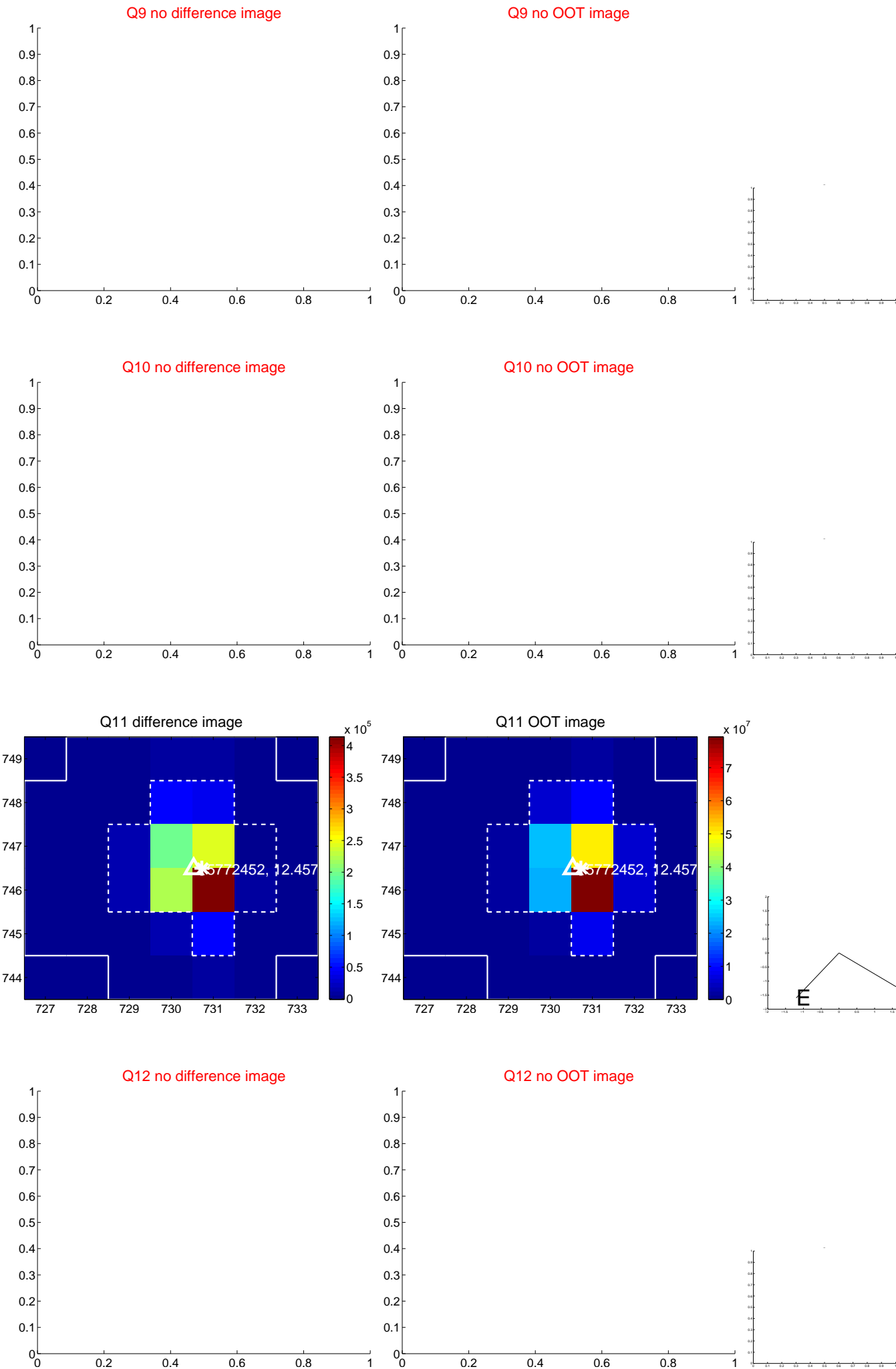
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



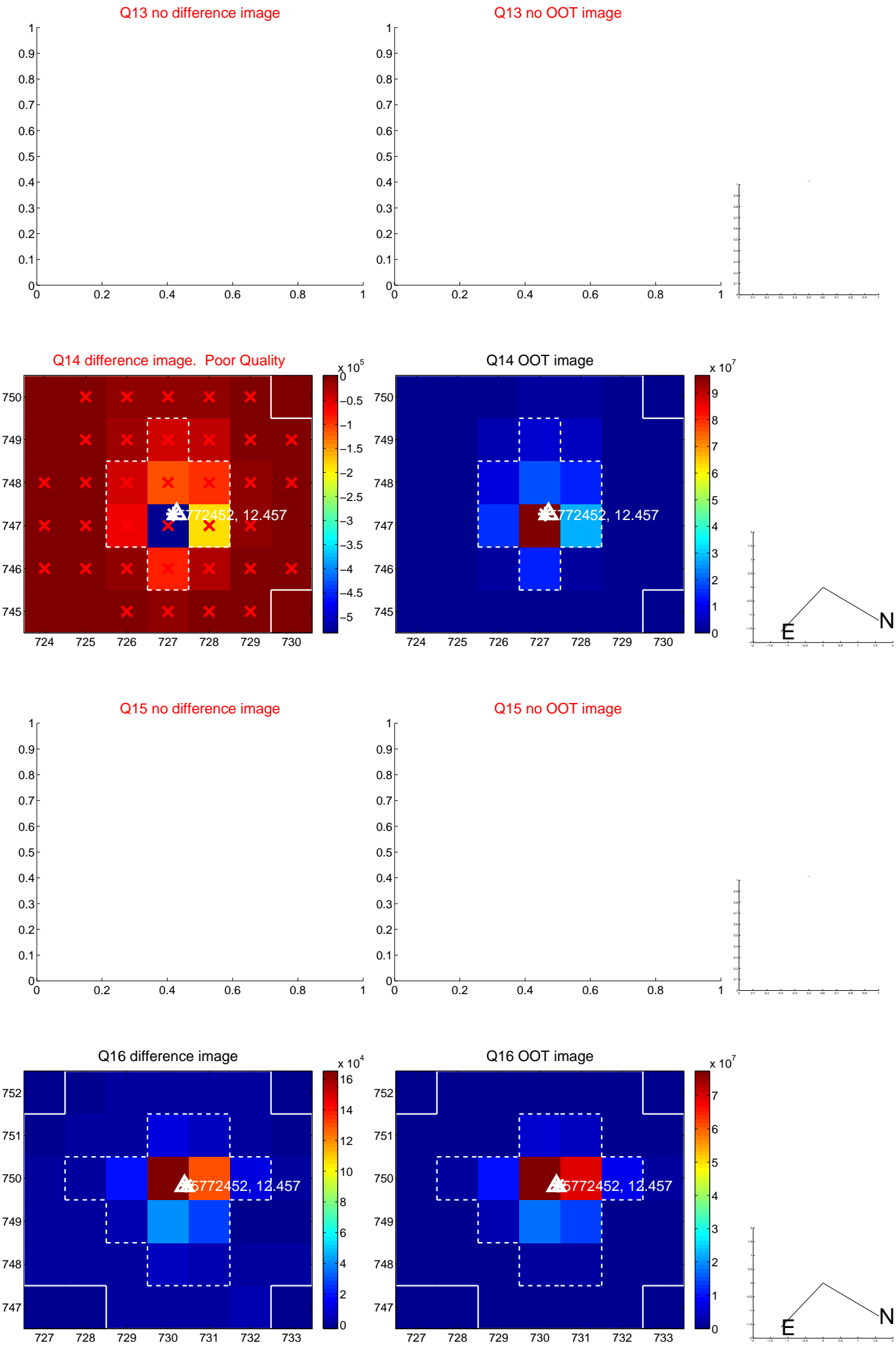
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



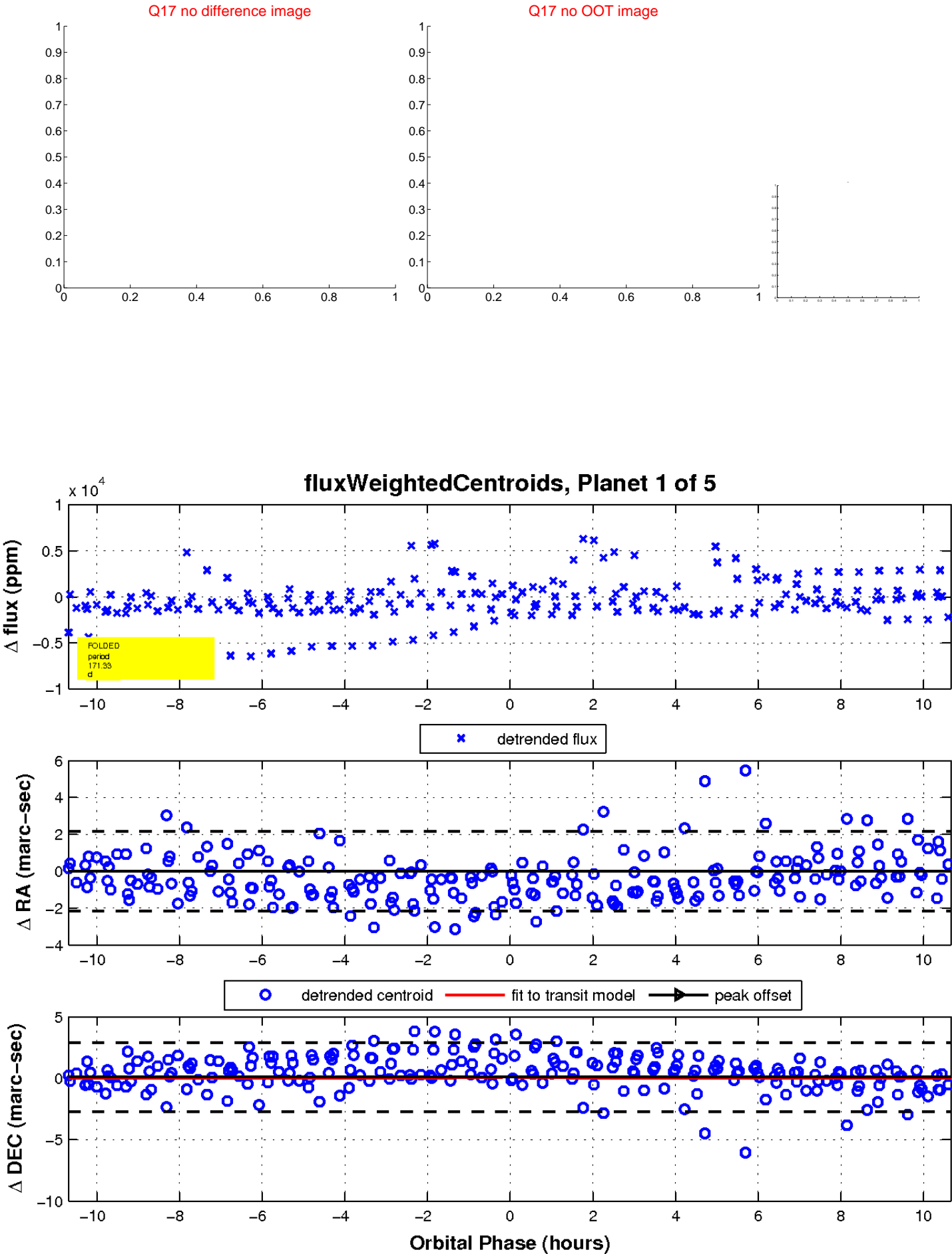
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

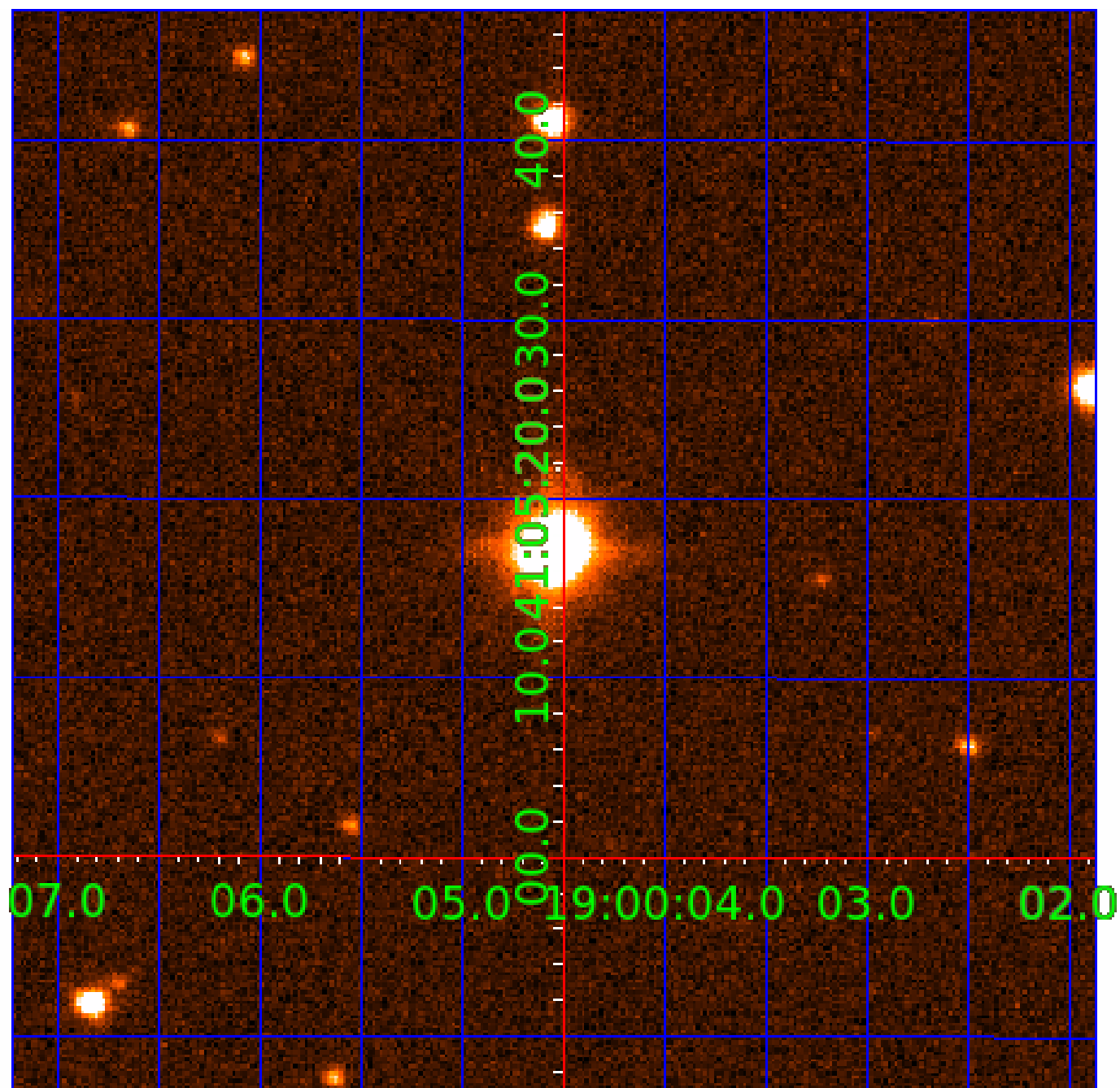


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005772452

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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Robovetter Results

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005772452-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005772452-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005772452-04	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

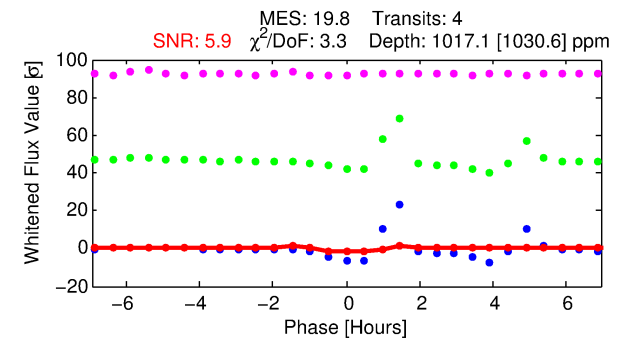
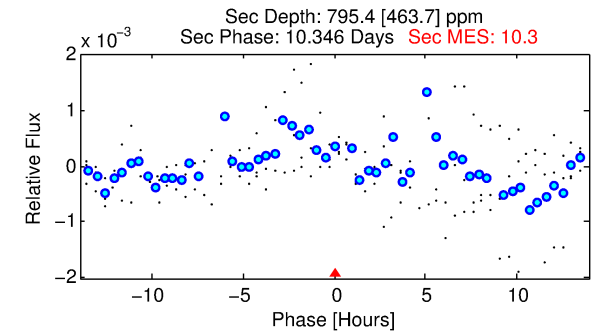
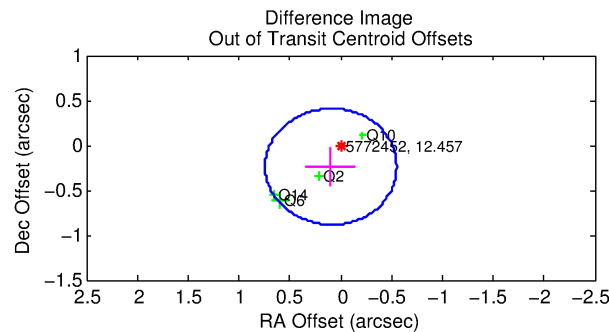
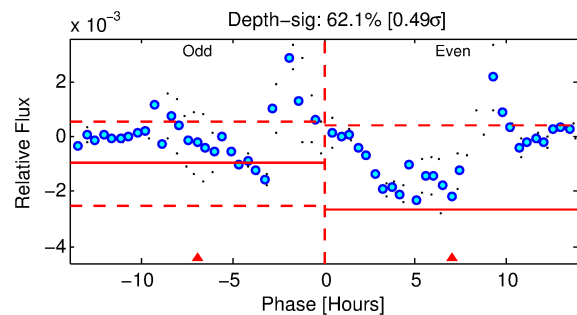
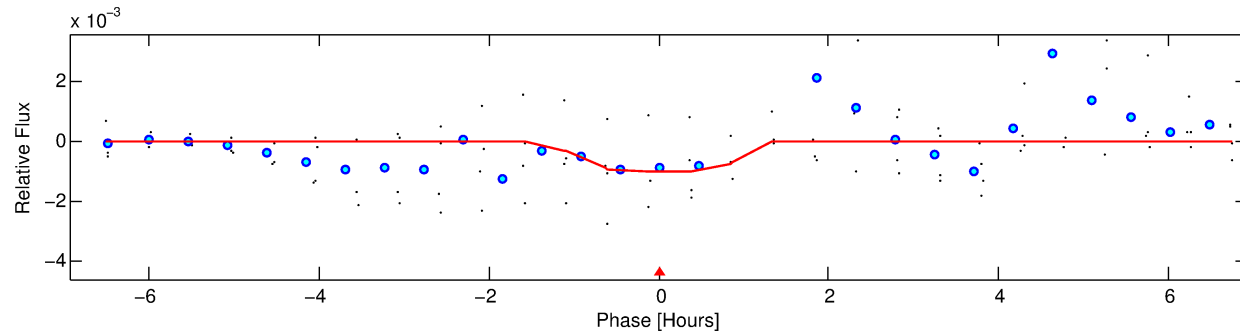
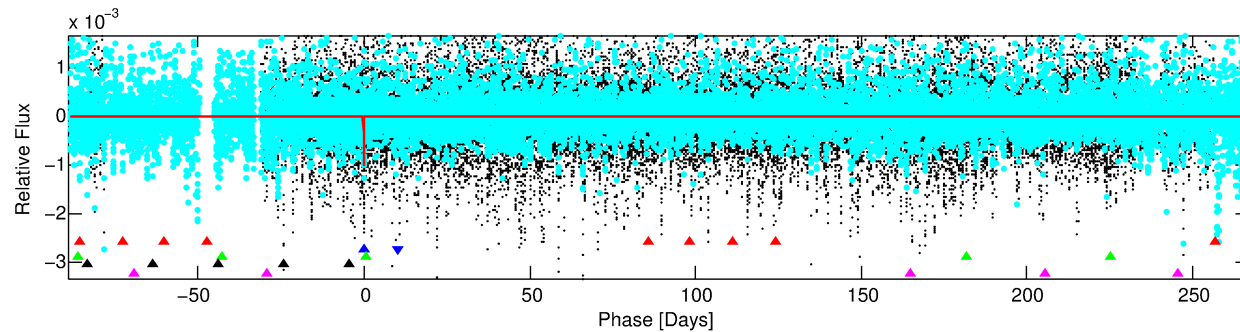
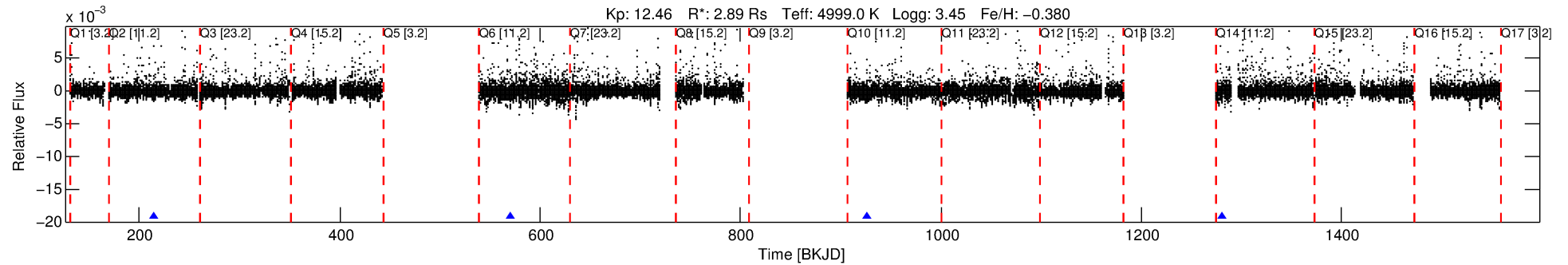
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005772452-02

No Significant Match Found

DV One-Page Summary

KIC: 5772452 Candidate: 2 of 5 Period: 355.443 d



DV Fit Results:

Period = 355.44276 [0.01317] d
Epoch = 214.8062 [0.0270] BKJD
Rp/R* = 0.0311 [0.1817]
a/R* = 901.34 [18465.81]
b = 0.69 [15.96]
Seff = 5.38 [3.30]
Teq = 388 [60] K
Rp = 9.81 [57.51] Re
a = 0.9317 [0.4022] AU
Ag = 3947.52 [46214.35] [0.09 σ]
Teffp = 4758 [13909] K [0.31 σ]

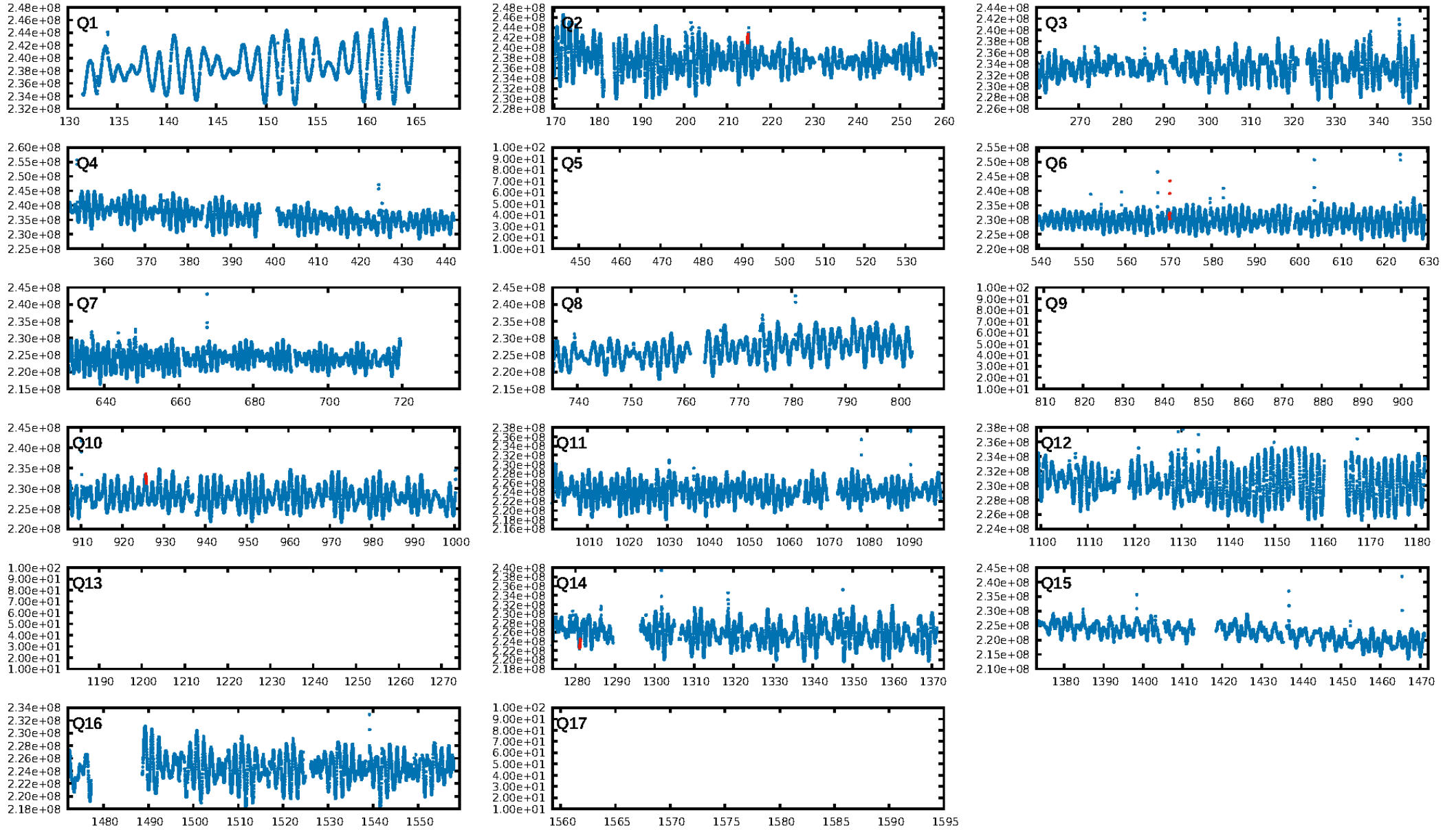
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.66 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 15.6%
Bootstrap-pfa: 3.36e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.4933
Centroid-sig: 55.6%
Centroid-so: 0.487 arcsec [0.63 σ]
OotOffset-rm: 0.257 arcsec [1.19 σ]
OotOffset-st: 4/0/0/0 [4]
KicOffset-rm: 0.261 arcsec [1.22 σ]
KicOffset-st: 4/0/0/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [4/4]

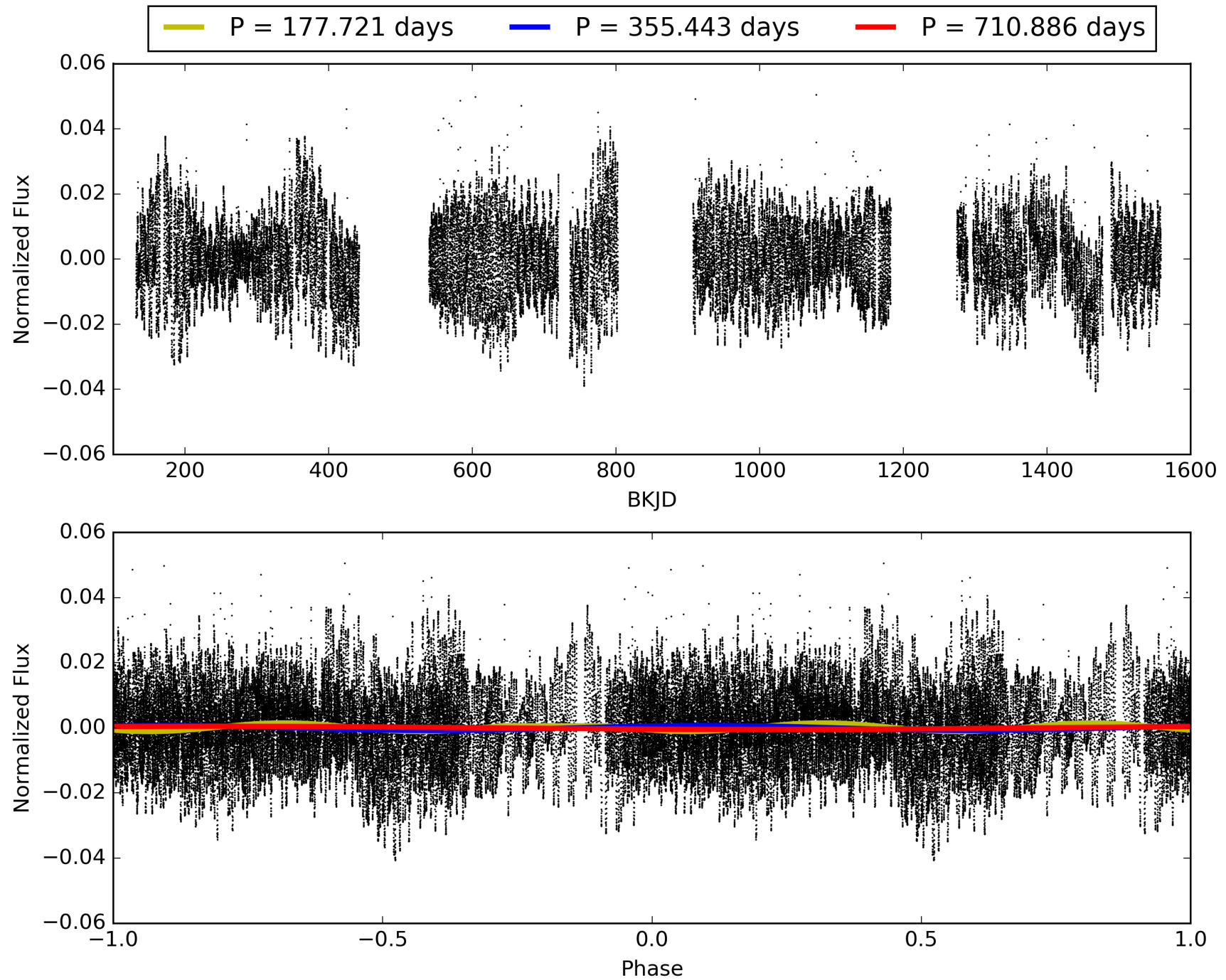
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:07:13 Z

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

TCE 005772452-02, PDC Light Curves

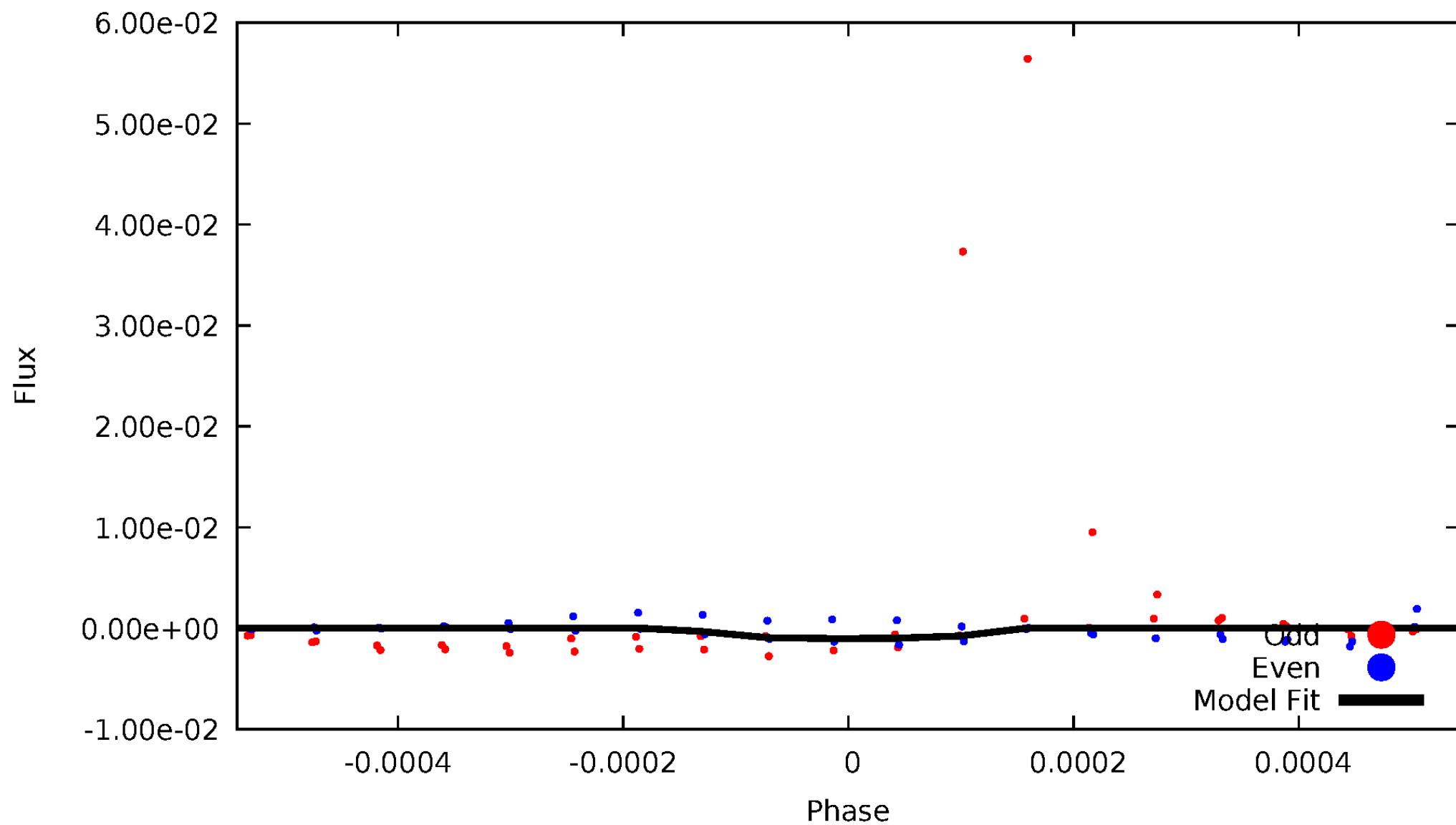


TCE 005772452-02



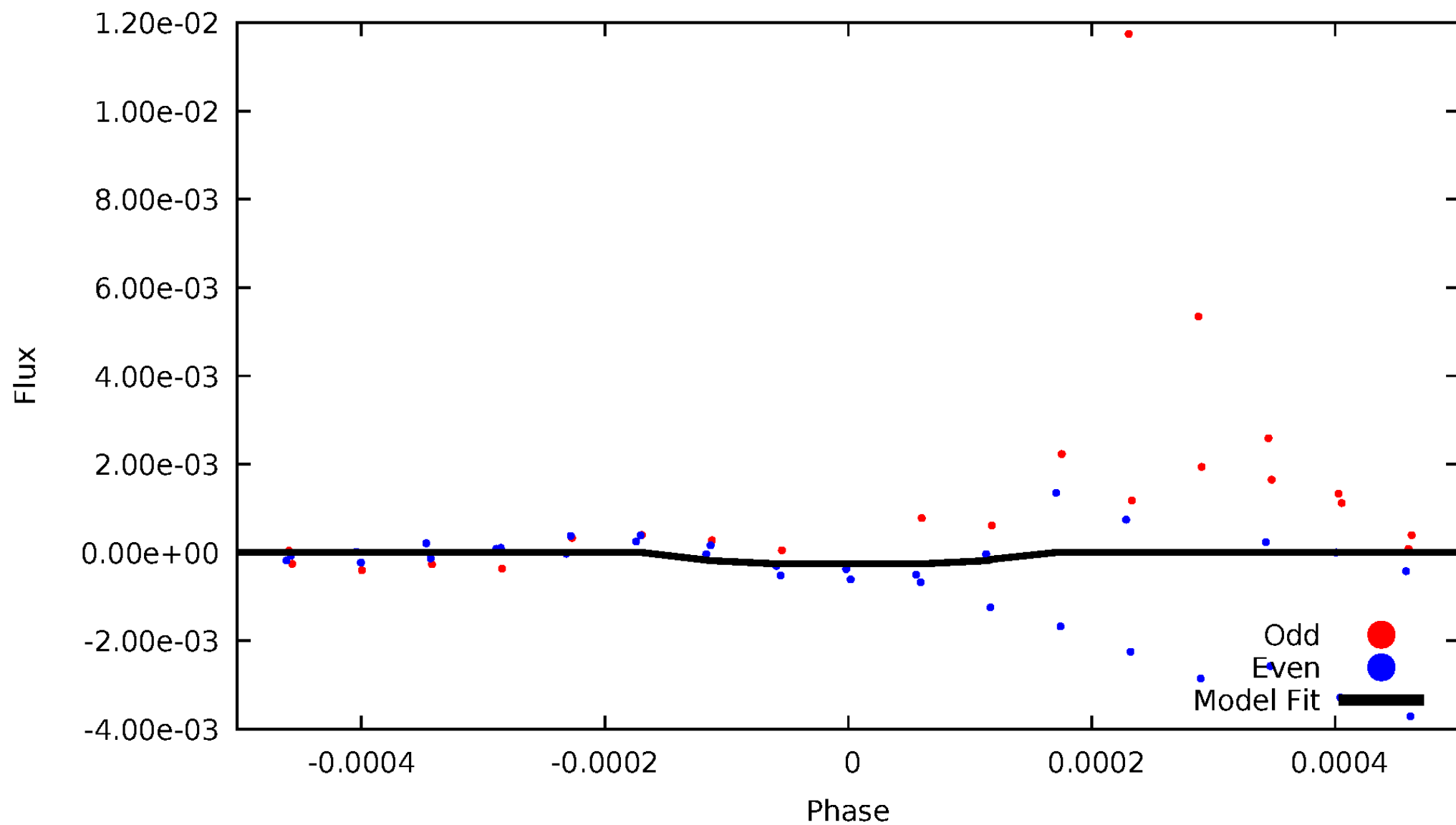
DV Odd/Even

TCE 005772452-02



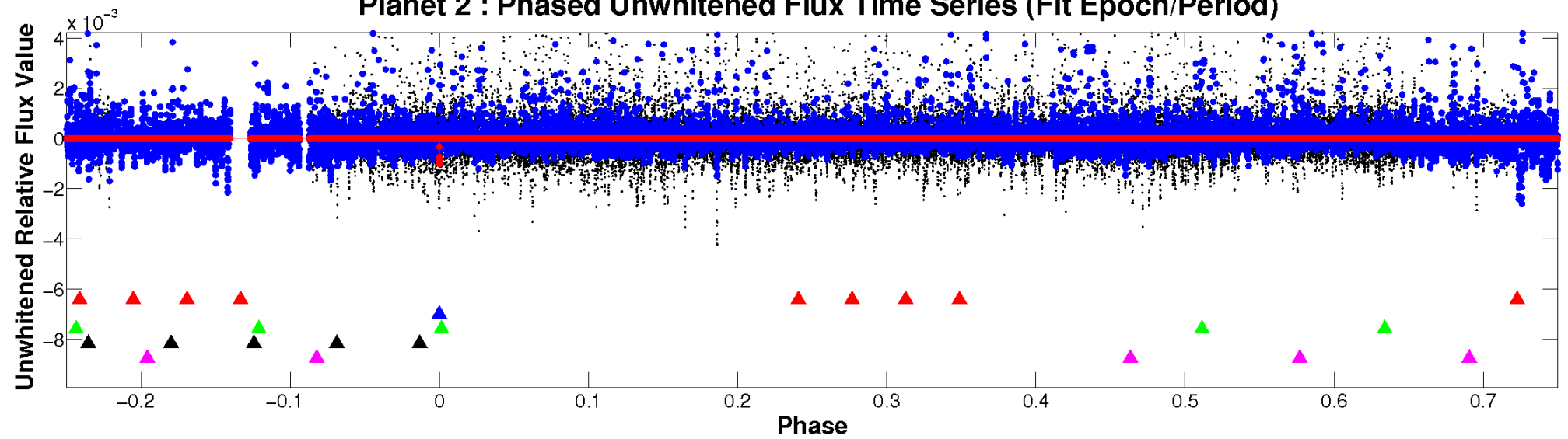
ALT Odd/Even

TCE 005772452-02

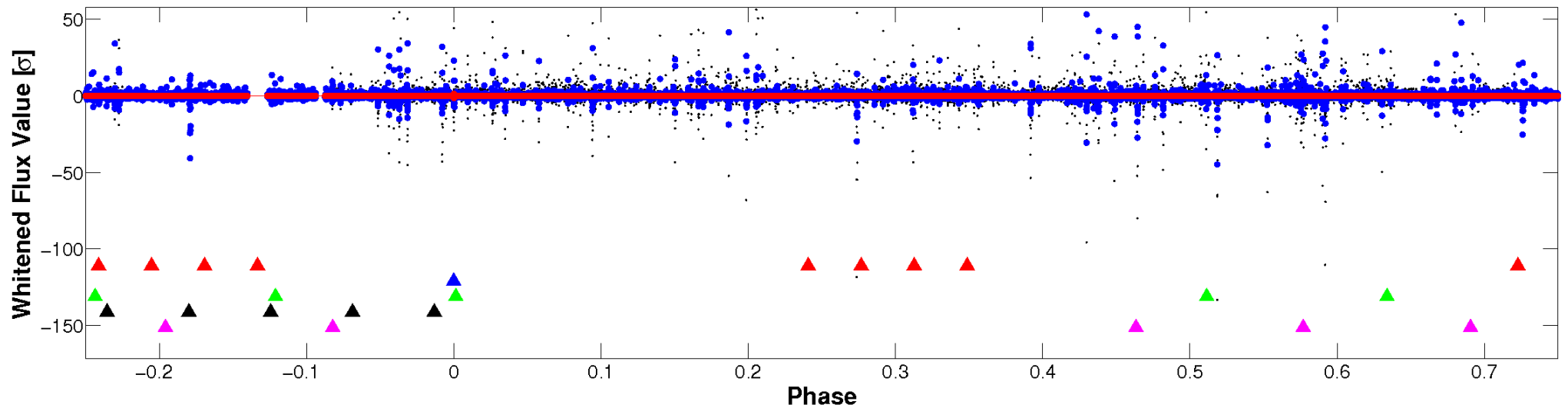


Non-Whitened Vs. Whitened Light Curve

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

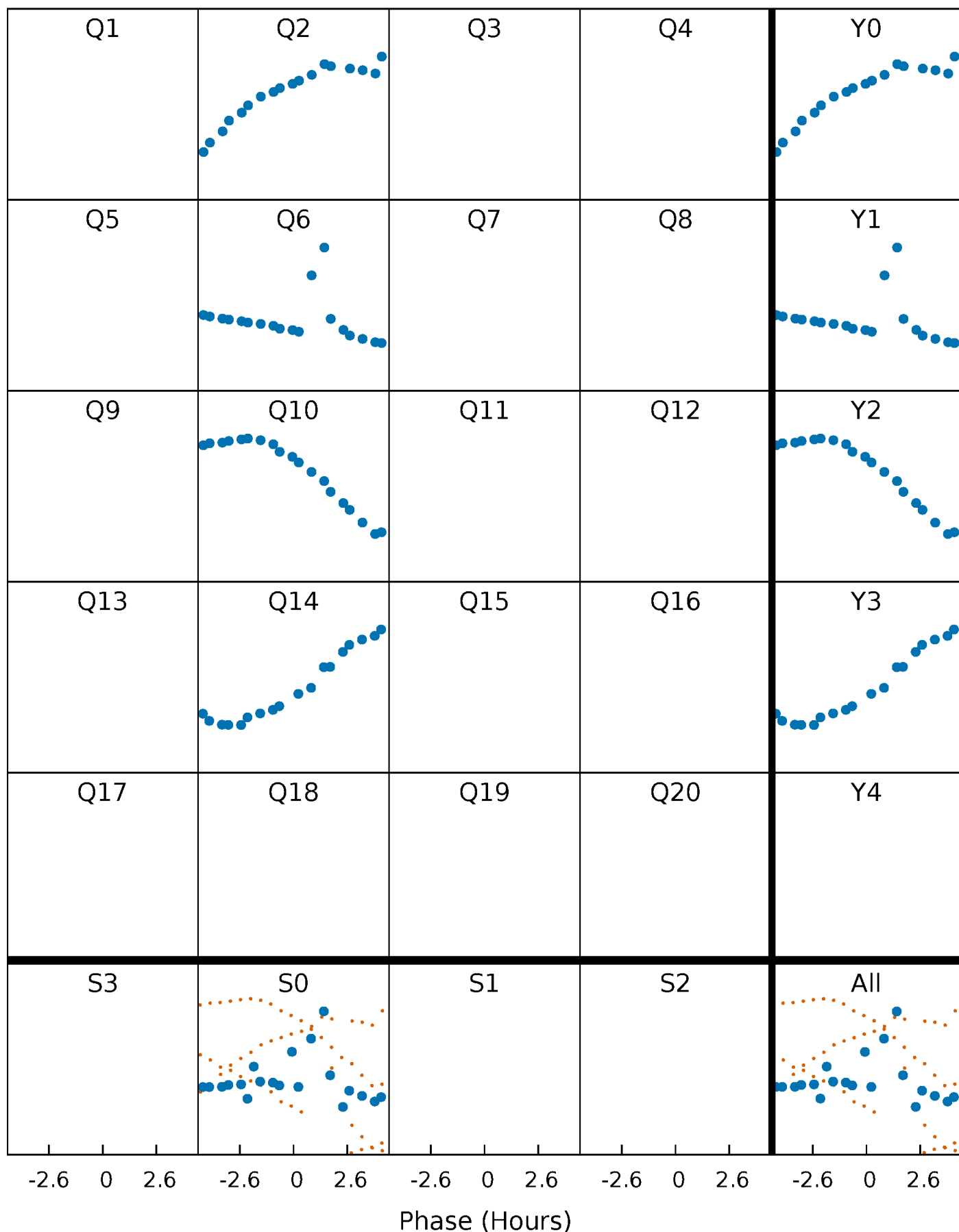


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



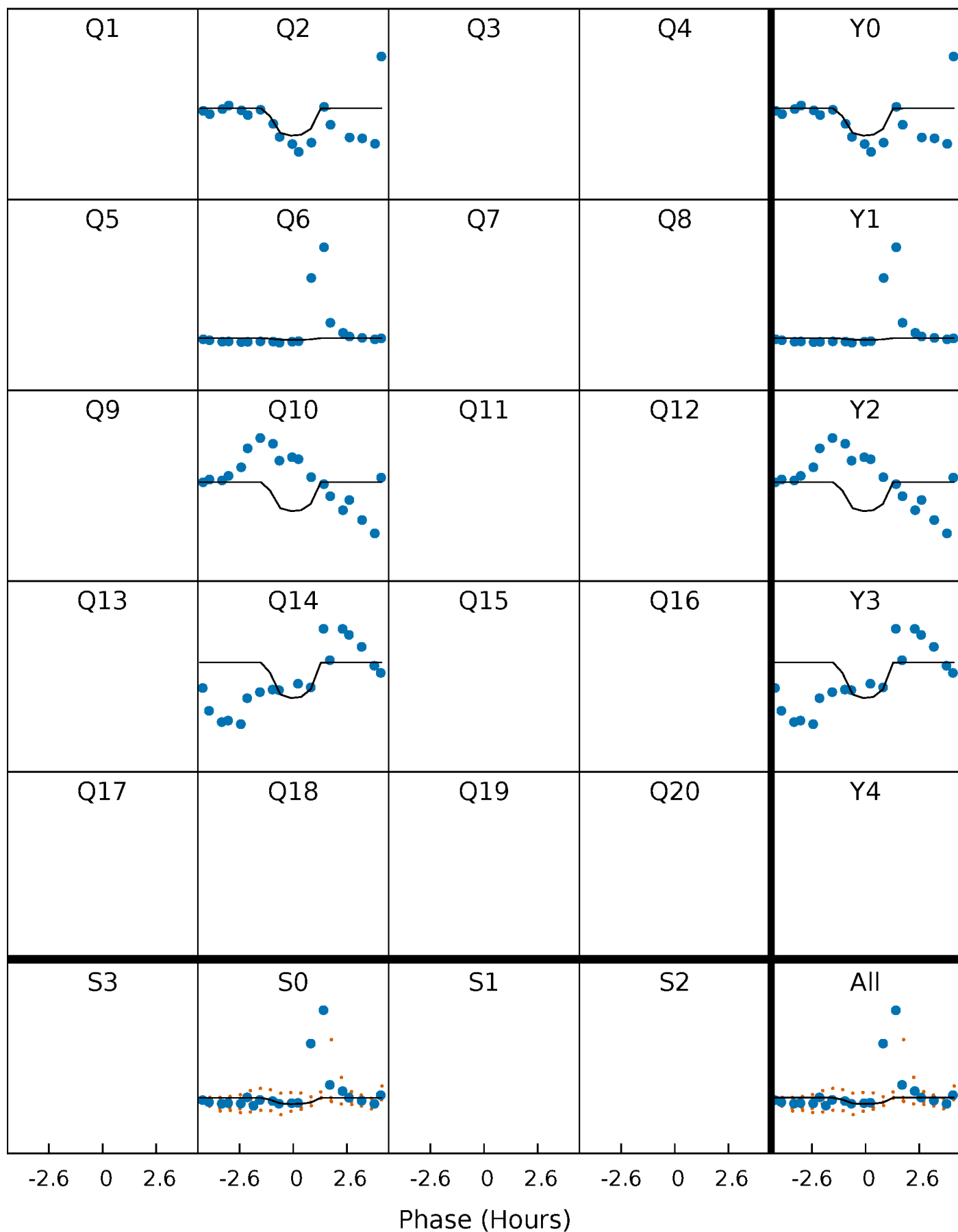
PDC Quarter-Phased Transit Curves

TCE 005772452-02 P=355.442762 Days $T_0=214.806170$ (BKJD)



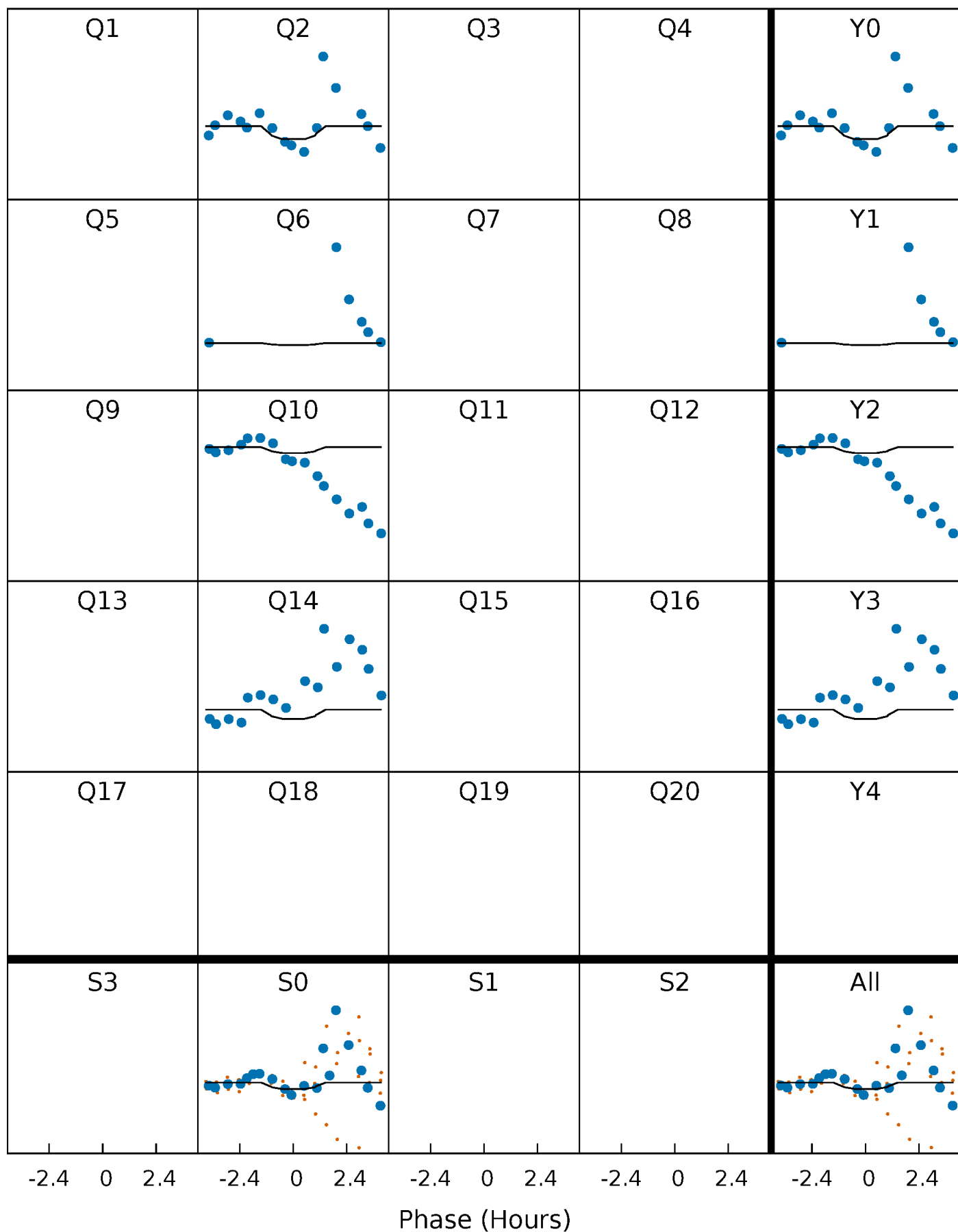
DV Quarter-Phased Transit Curves

TCE 005772452-02 P=355.442762 Days $T_0=214.806170$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

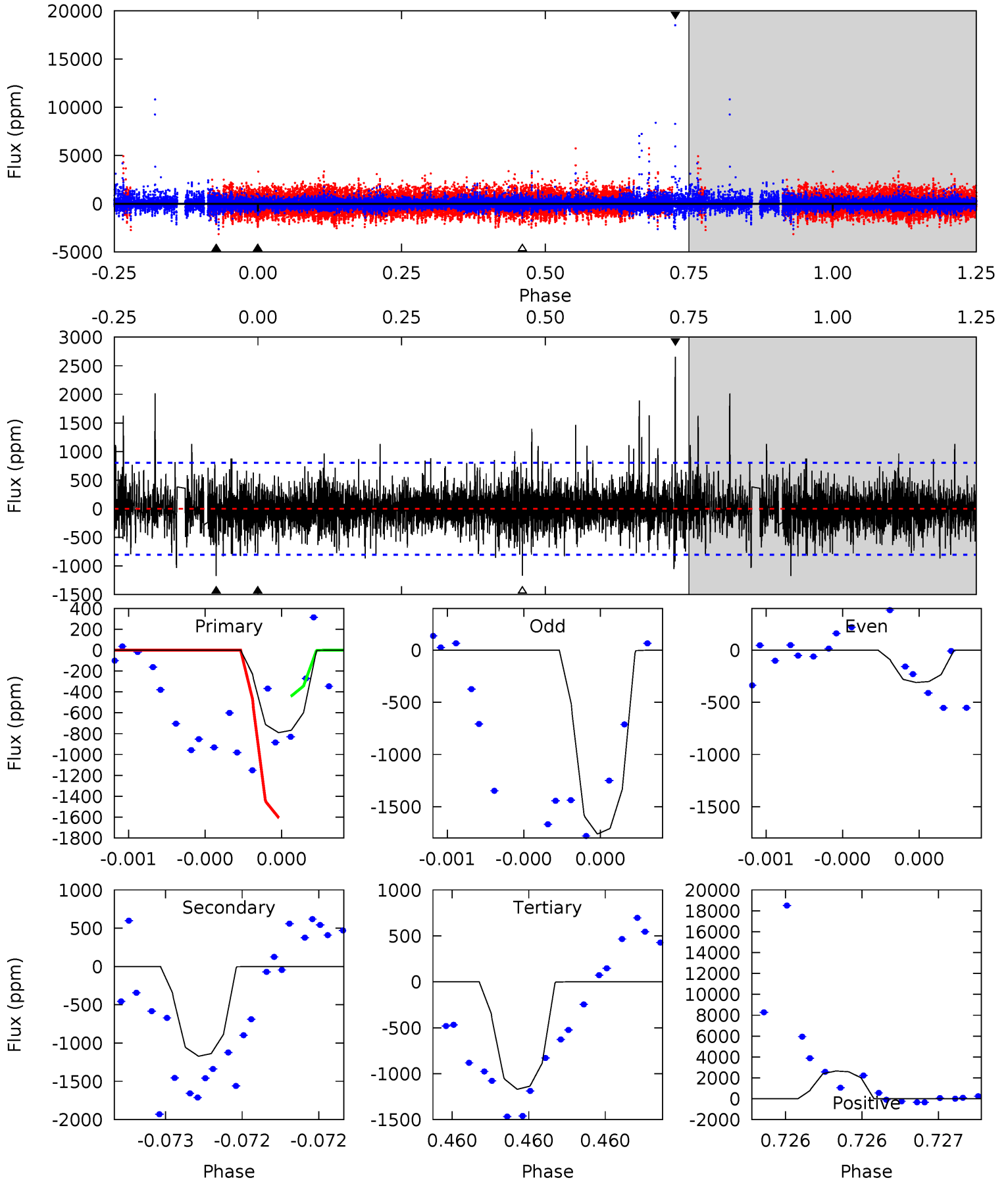
TCE 005772452-02 P=355.441776 Days $T_0=214.802377$ (BKJD)



DV Model-Shift Uniqueness Test

005772452-02, P = 355.442762 Days, E = 214.806170 Days

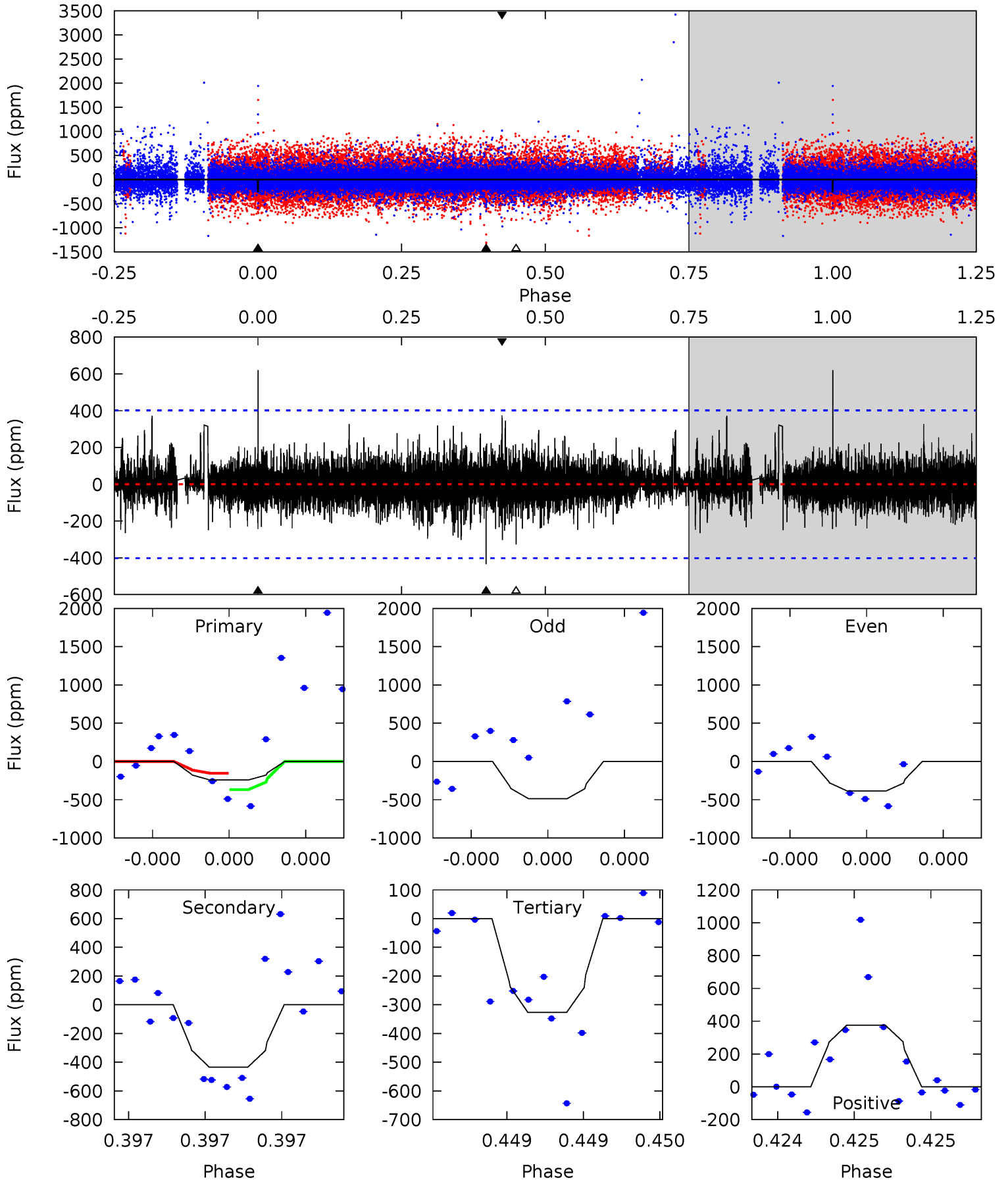
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.54	8.22	8.20	18.6	5.64	3.58	1.75	-2.66	-13.1	0.01	-10.4	4.07	-367.0	0.69	3.65



Alt Model-Shift Uniqueness Test

005772452-02, P = 355.441776 Days, E = 214.802377 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.44	6.16	4.64	5.32	5.70	3.68	0.99	-1.20	-1.89	1.52	0.84	0.56	0.49	0.59	1.50



Stellar Parameters For KIC 005772452

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4999^{+125}_{-100}	$3.448^{+0.320}_{-0.288}$	$-0.380^{+0.300}_{-0.200}$	$2.888^{+1.538}_{-1.231}$	$0.855^{+0.293}_{-0.158}$	$0.050^{+0.108}_{-0.033}$
	+3%/-2%	+9%/-8%	+79%/-53%	+53%/-43%	+34%/-18%	+217%/-67%
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 005772452-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1172 ± 143	$42.09^{+47.98}_{-30.74}$	544^{+67}_{-60}	3115^{+1683}_{-550}	327^{+3673}_{-261}
Alt.	-434 ± 70	$41.46^{+50.89}_{-29.57}$	550^{+67}_{-58}	2752^{+1294}_{-488}	123^{+1560}_{-98}

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

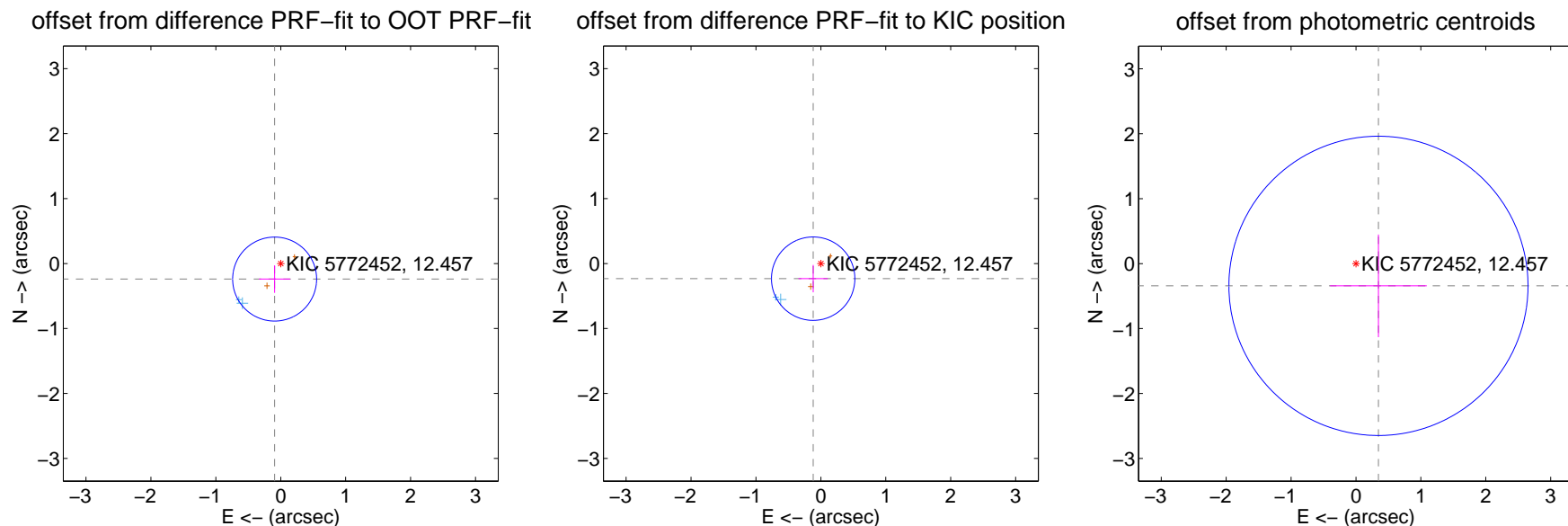
DV Centroid Data

Supplemental centroid analysis for 005772452-02. Kepler magnitude: 12.46. Transit SNR 5.93

There are 2 quarters with good PRF difference image offsets

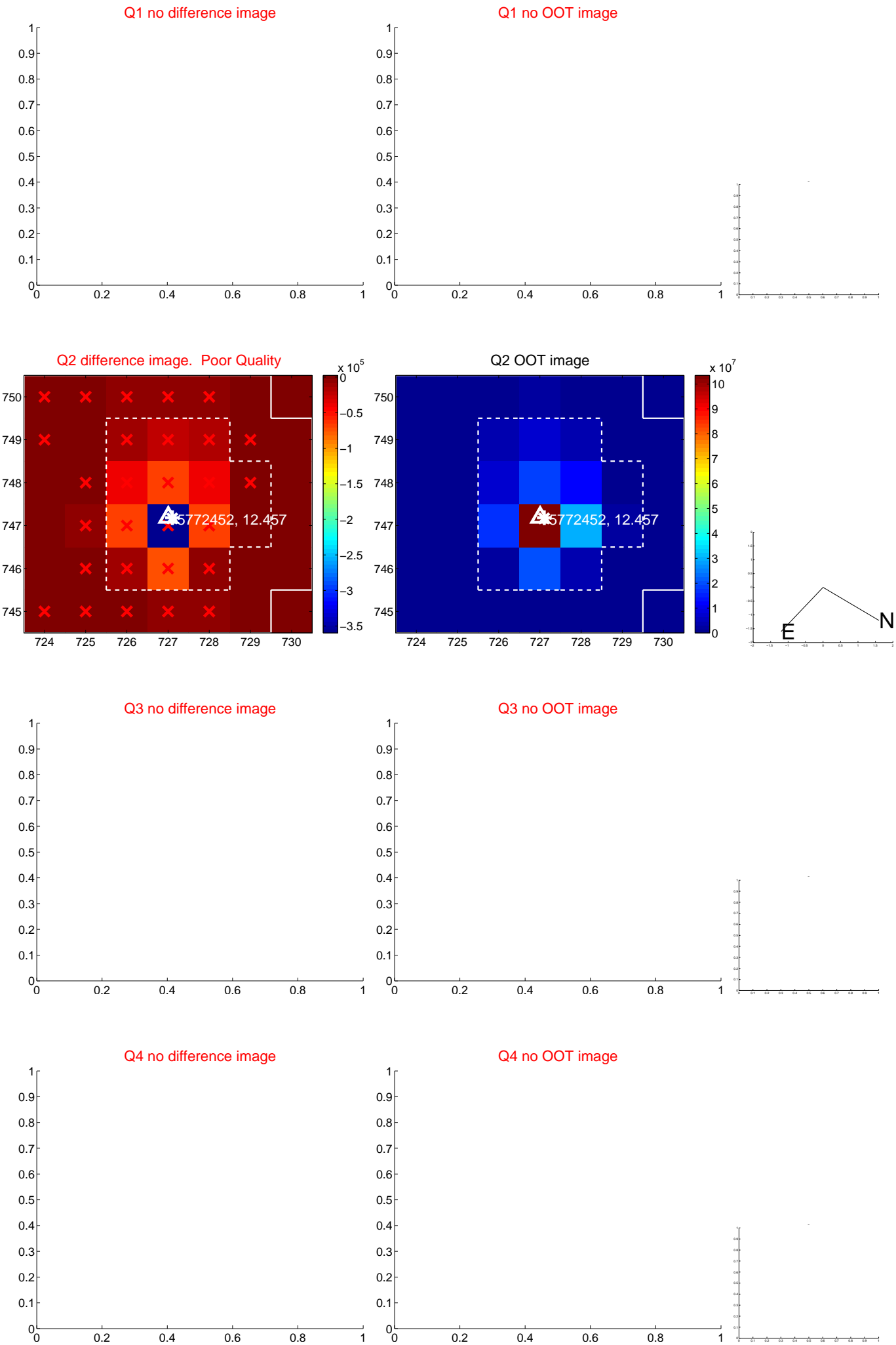
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.257 ± 0.215	1.19	0.094 ± 0.241	-0.239 ± 0.211
PRF-fit source offset from KIC position	0.261 ± 0.214	1.22	0.119 ± 0.226	-0.233 ± 0.211
photometric centroid source offset	0.49 ± 0.77	0.63	-0.35 ± 0.75	-0.34 ± 0.79

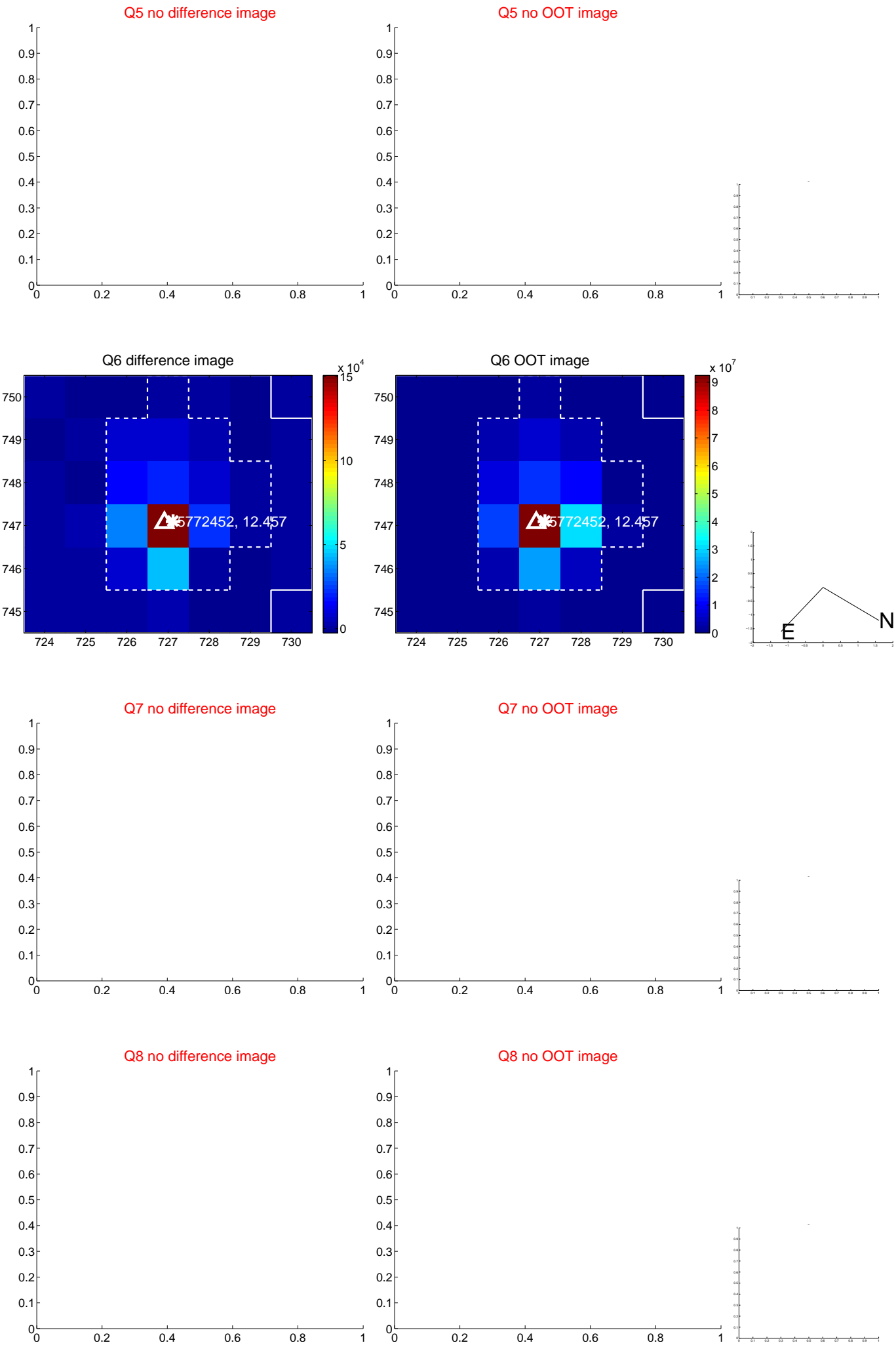


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

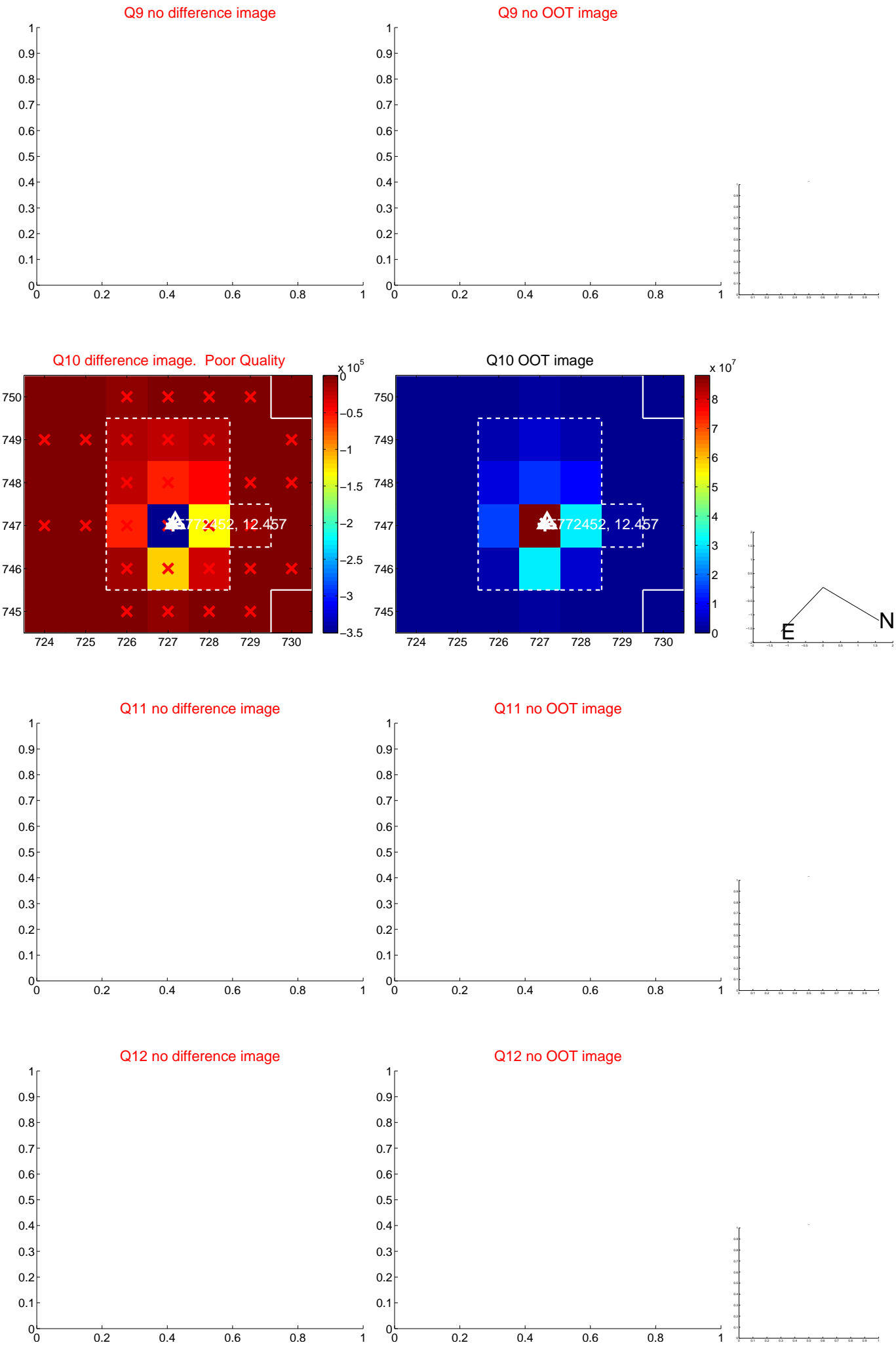
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



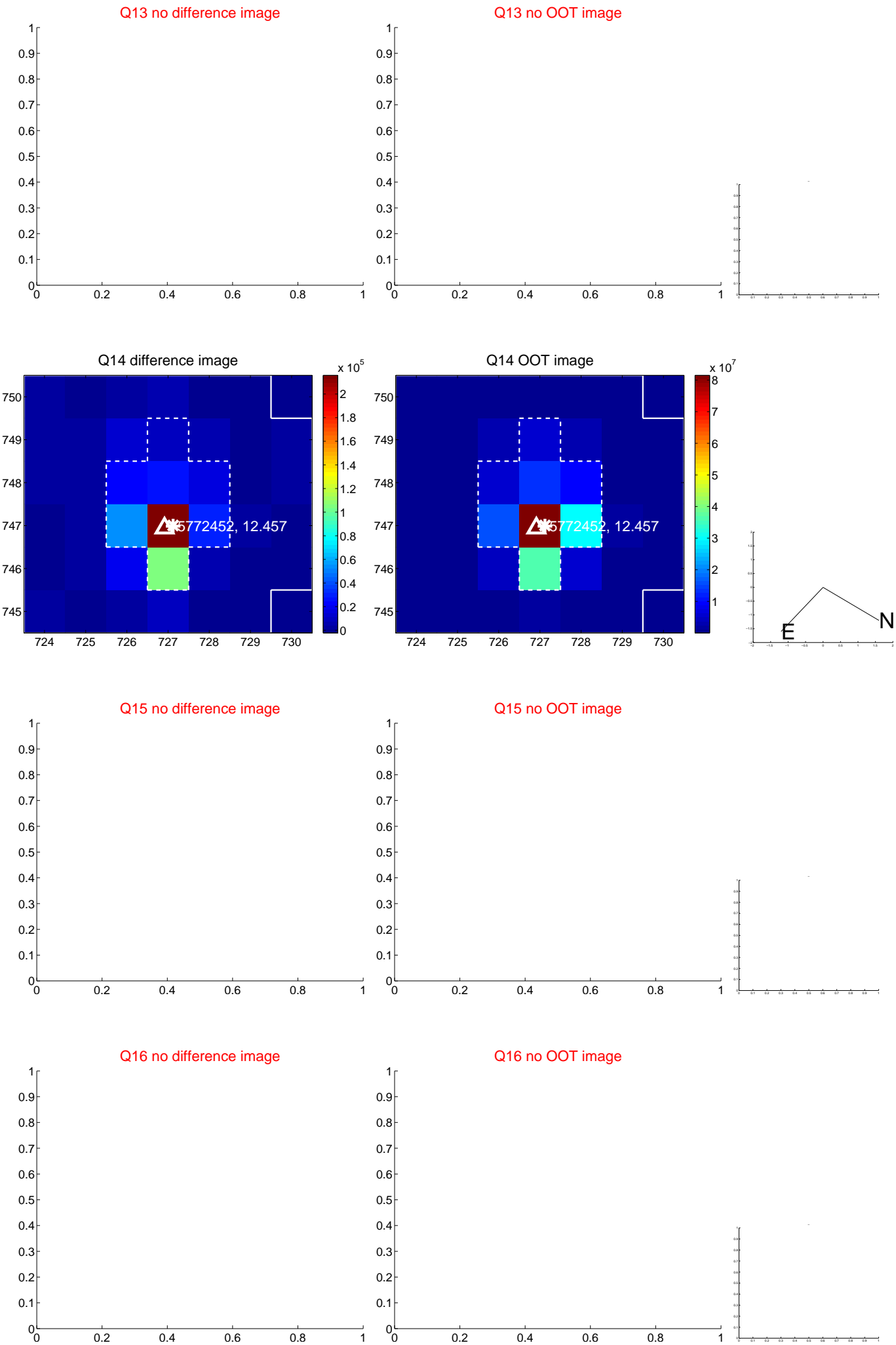
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



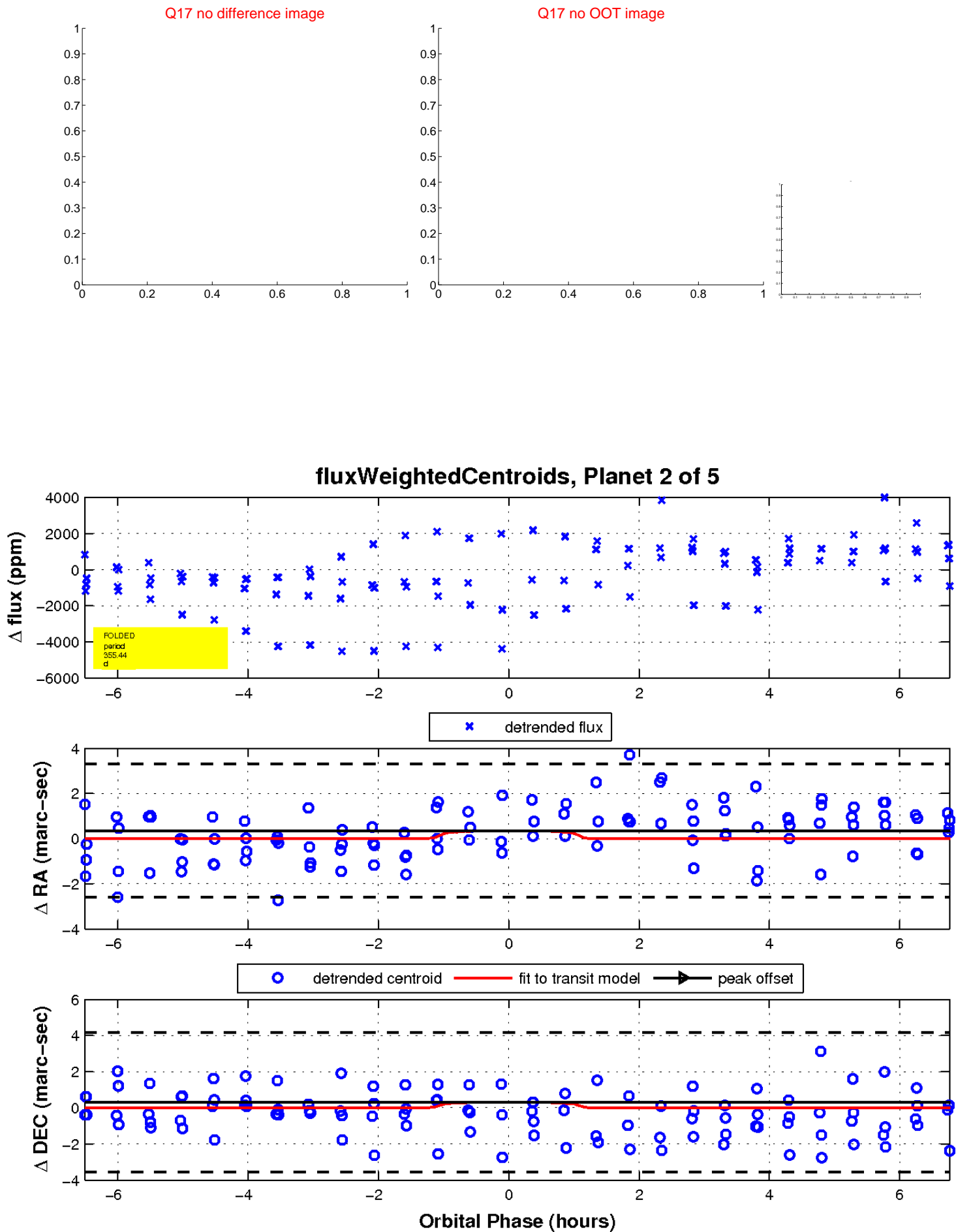
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

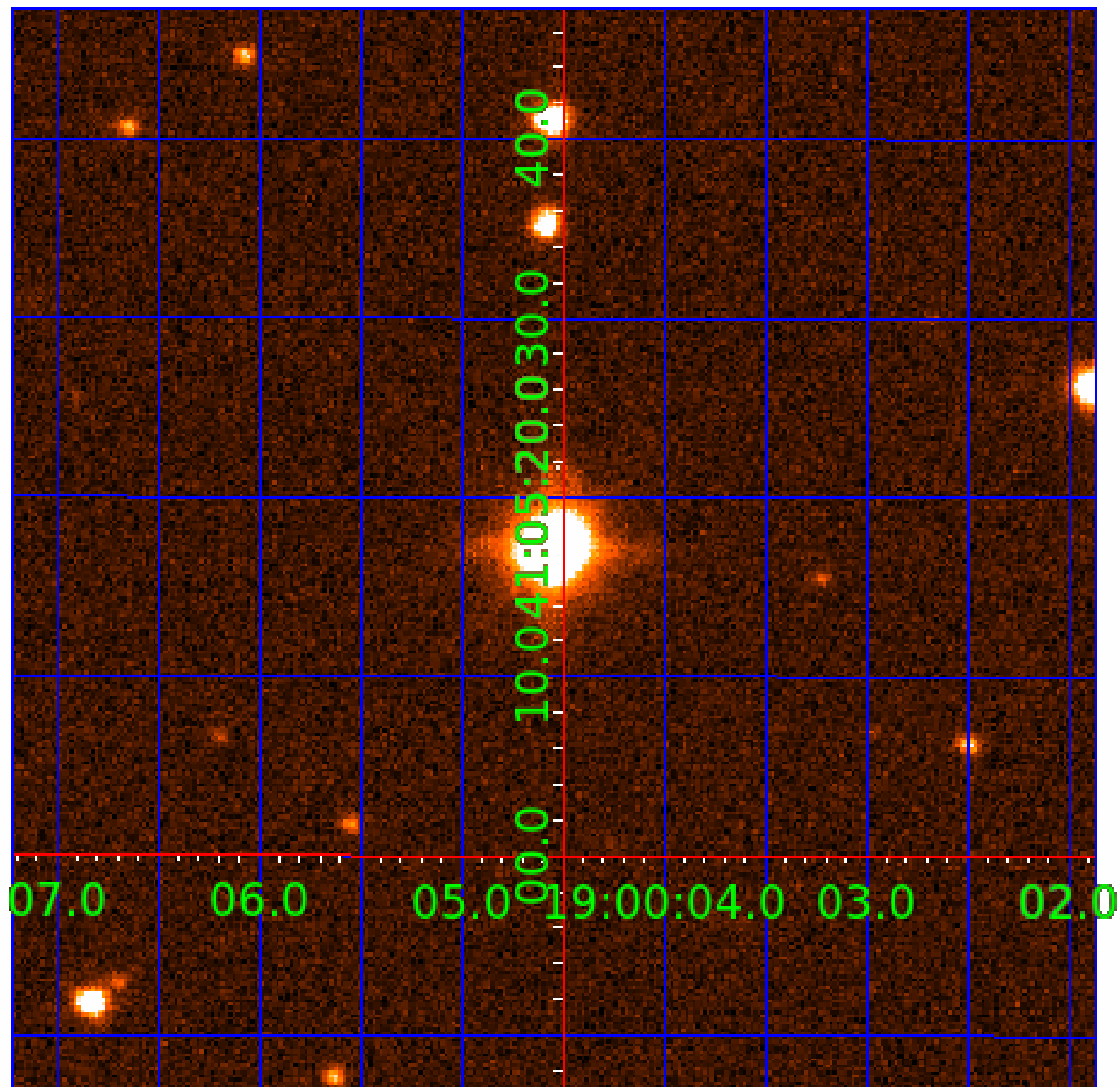


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005772452

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})
005772452-01	OBS	No	171.325317	167.441441	1326.7	3.564	19.2	6.2	2.89	4999	21.04	14.22
005772452-02	OBS	No	355.442762	214.806170	1017.1	2.315	19.8	5.9	2.89	4999	9.81	5.38
005772452-03	OBS	No	311.903379	215.310400	637.4	2.167	13.7	3.3	2.89	4999	7.80	6.40
005772452-04	OBS	No	335.692897	210.121618	5138.9	25.291	13.3	5.8	2.89	4999	25.57	5.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005772452-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS
005772452-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005772452-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005772452-04	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

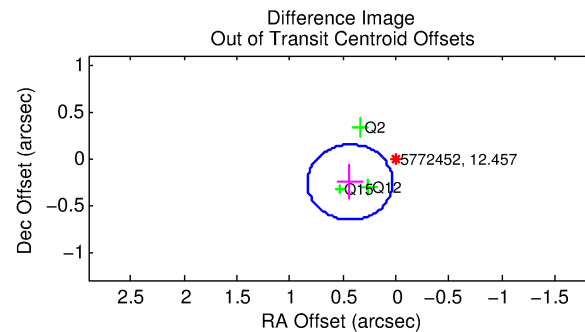
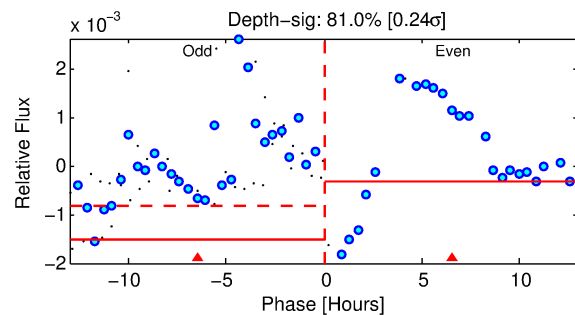
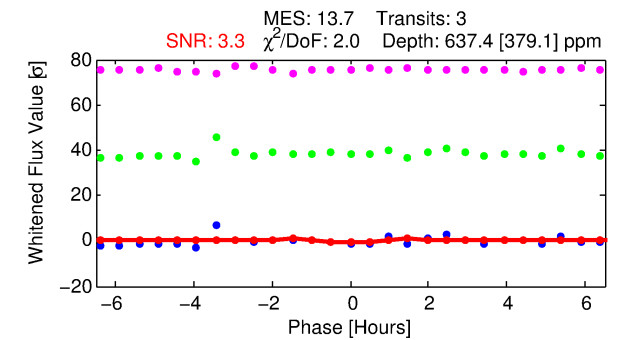
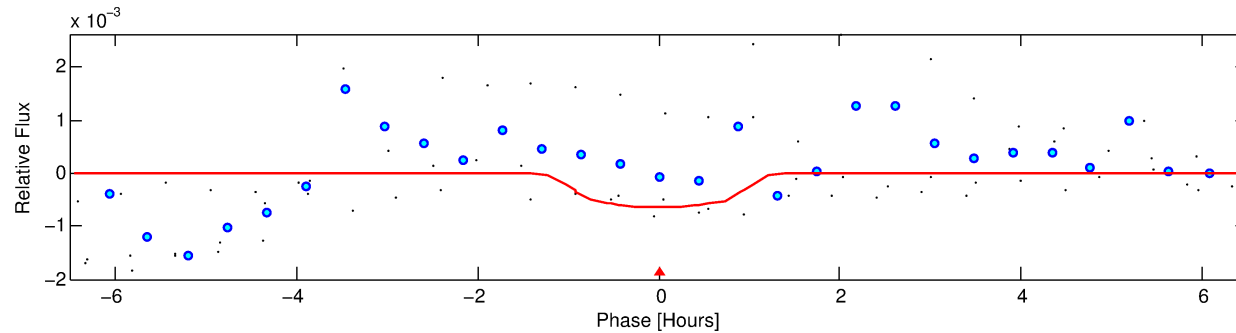
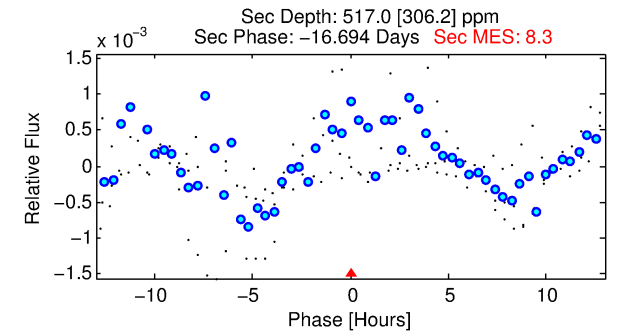
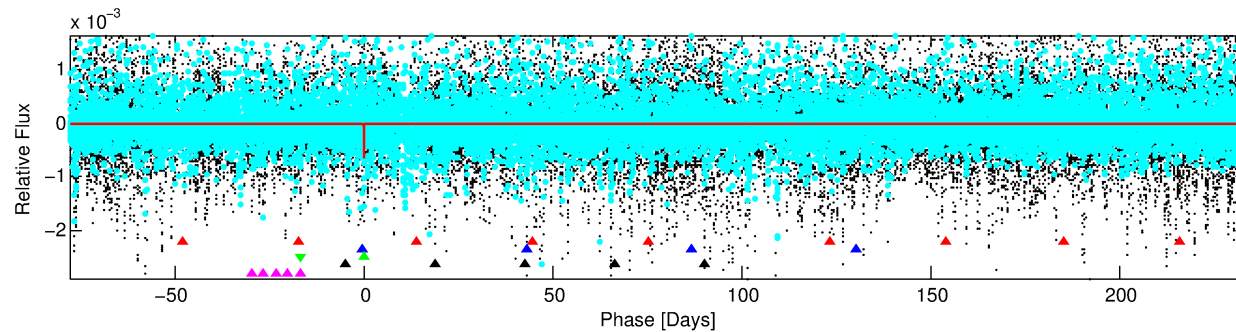
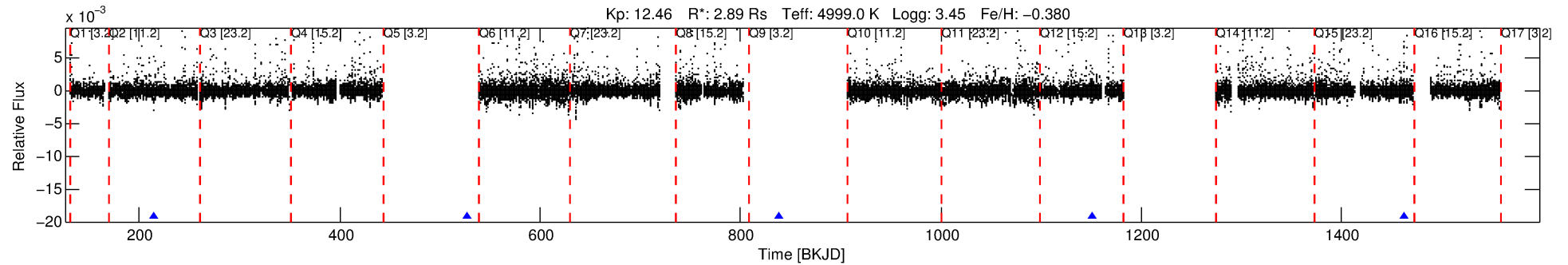
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005772452-03

No Significant Match Found

DV One-Page Summary

KIC: 5772452 Candidate: 3 of 5 Period: 311.903 d



DV Fit Results:

Period = 311.90338 [0.00594] d
Epoch = 215.3104 [0.0182] BKJD
Rp/R* = 0.0248 [0.1613]
a/R* = 820.16 [19549.33]
b = 0.70 [17.54]
Seff = 6.40 [3.93]
Teq = 406 [62] K
Rp = 7.80 [51.01] Re
a = 0.8540 [0.3687] AU
Ag = 3408.60 [44525.83] [0.08 σ]
Teffp = 4791 [15630] K [0.28 σ]

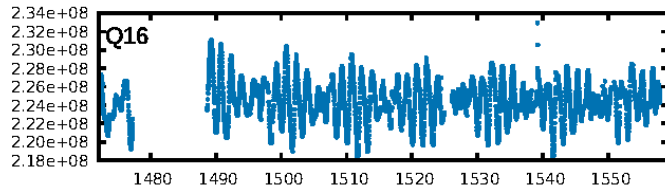
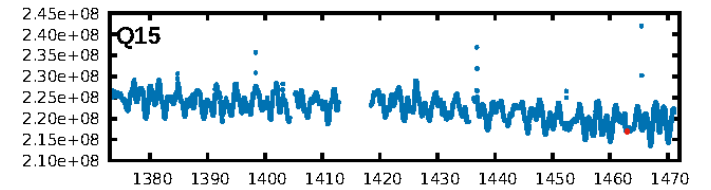
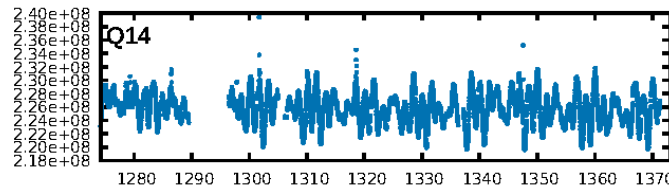
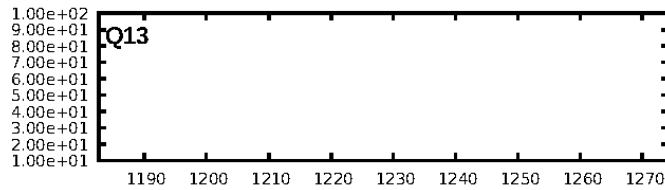
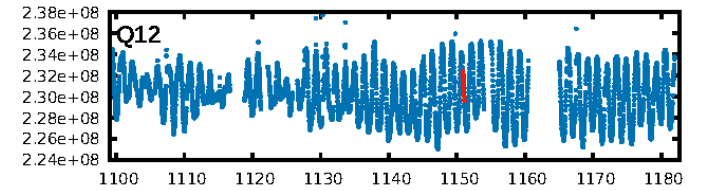
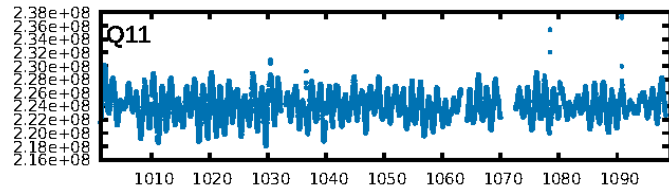
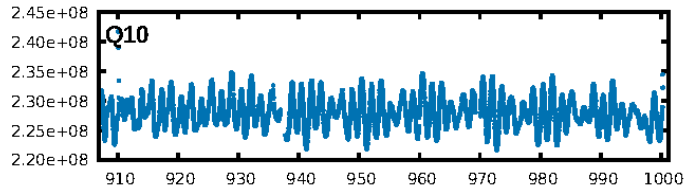
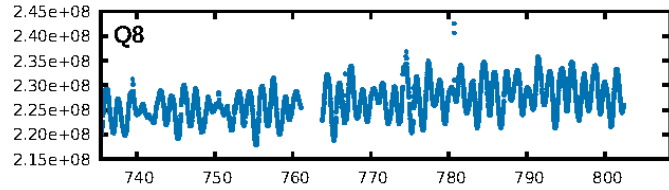
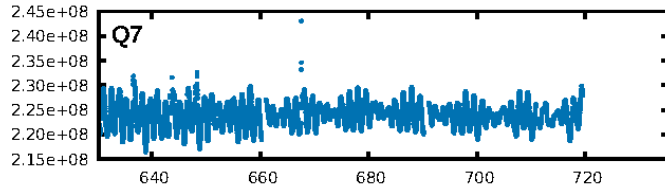
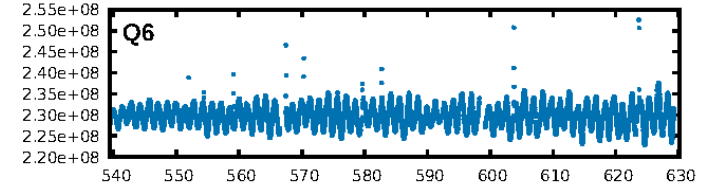
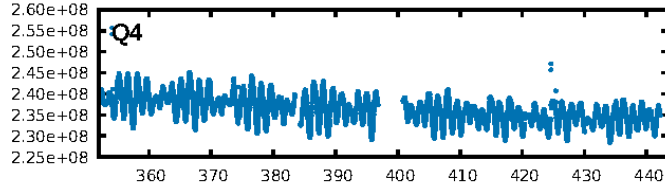
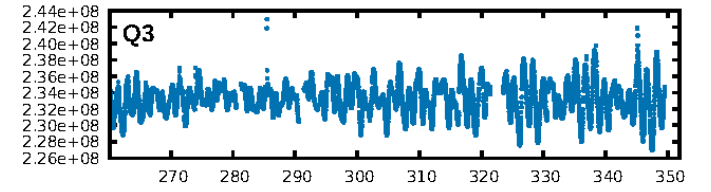
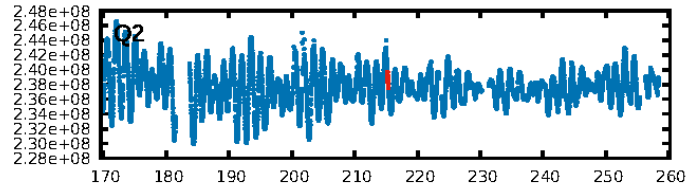
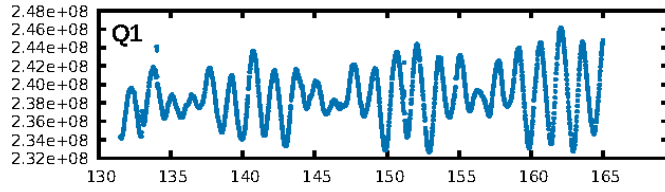
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [808.83 σ]
LongPeriod-sig: 100.0% [19.91 σ]
ModelChiSquare2-sig: 6.2%
ModelChiSquareGof-sig: 78.6%
Bootstrap-pfa: 7.44e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1991
Centroid-sig: 84.3%
Centroid-so: 0.480 arcsec [0.40 σ]
OotOffset-rm: 0.500 arcsec [3.73 σ]
KicOffset-rm: 0.504 arcsec [3.56 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

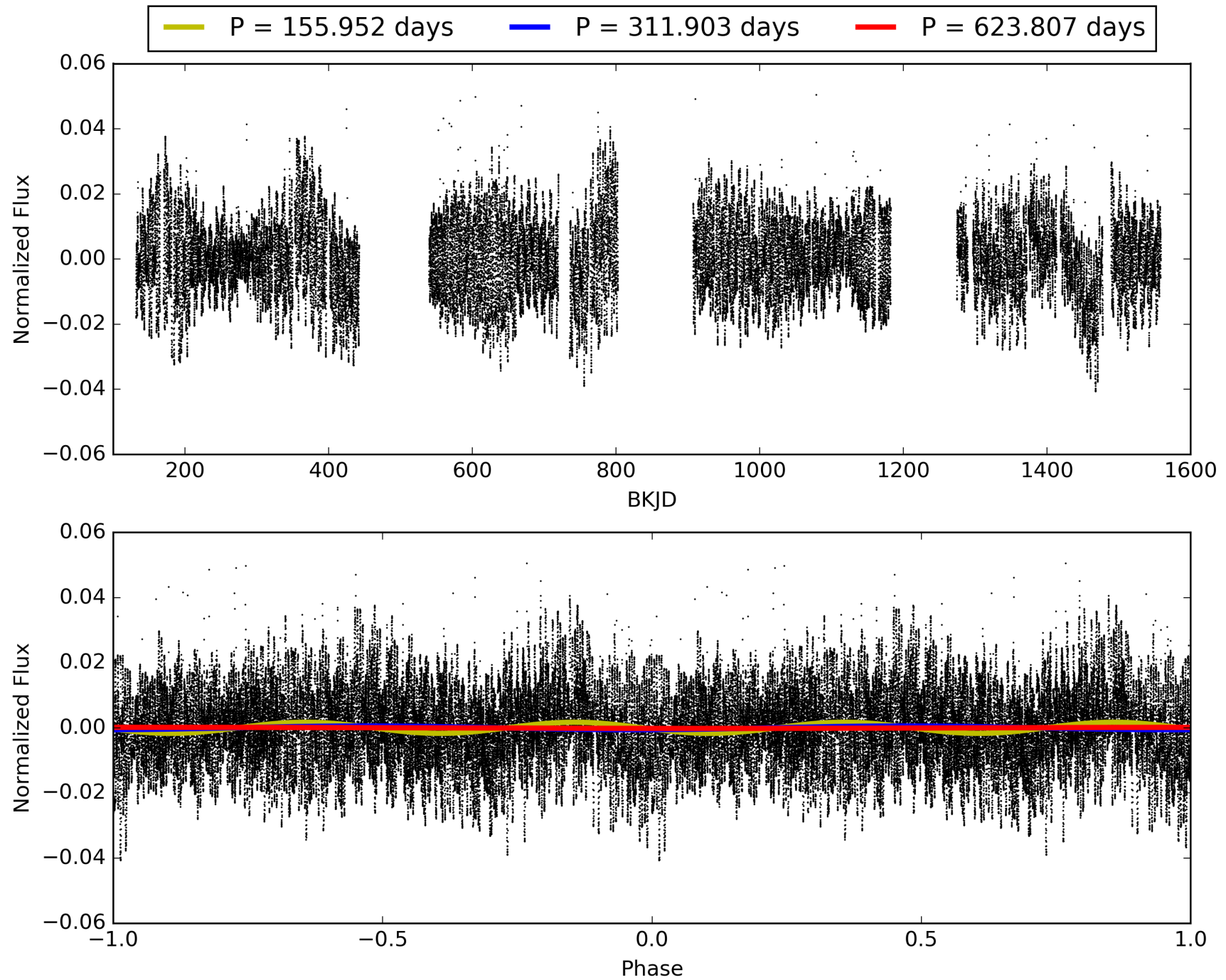
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:07:29 Z

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

TCE 005772452-03, PDC Light Curves

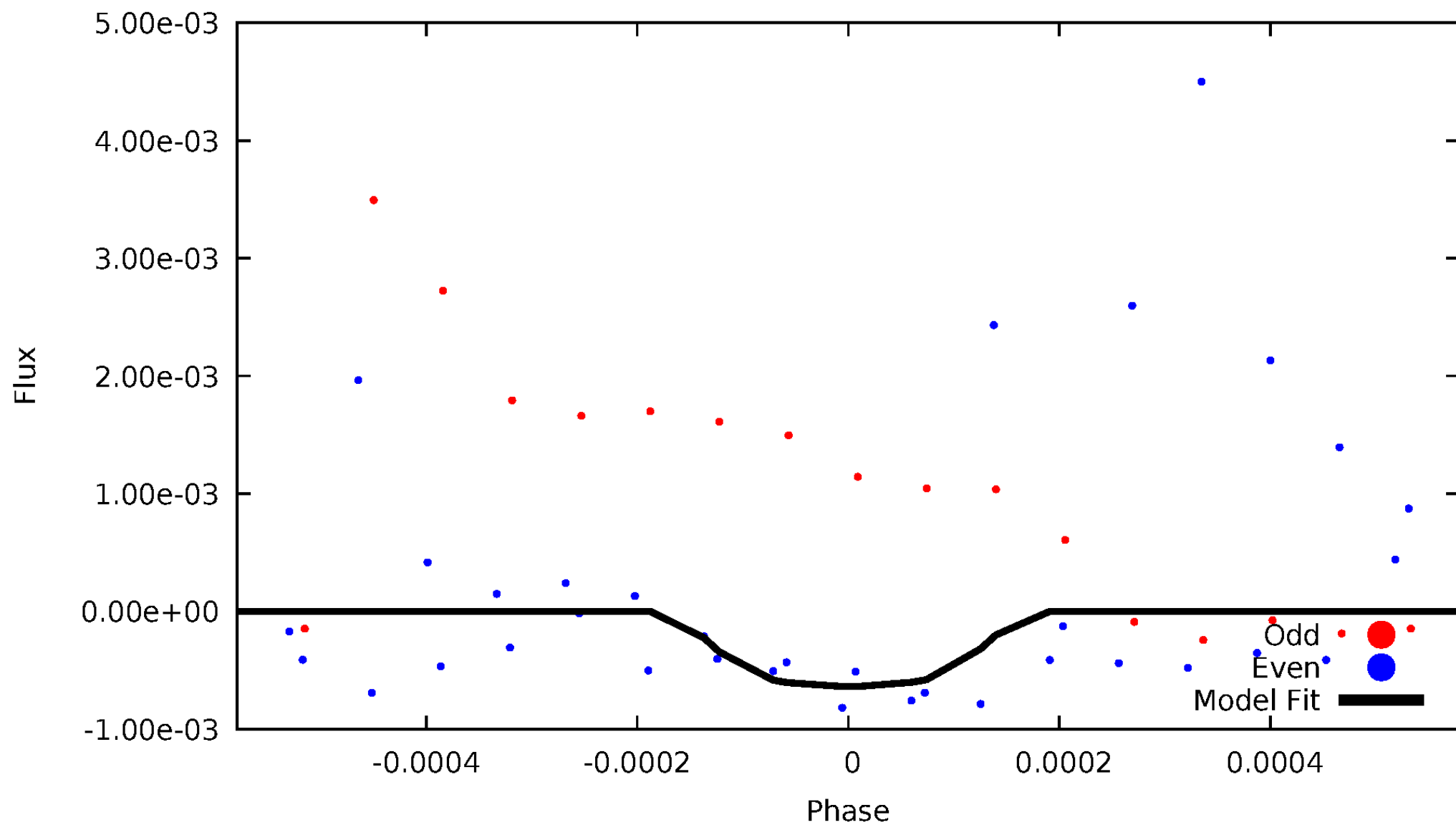


TCE 005772452-03



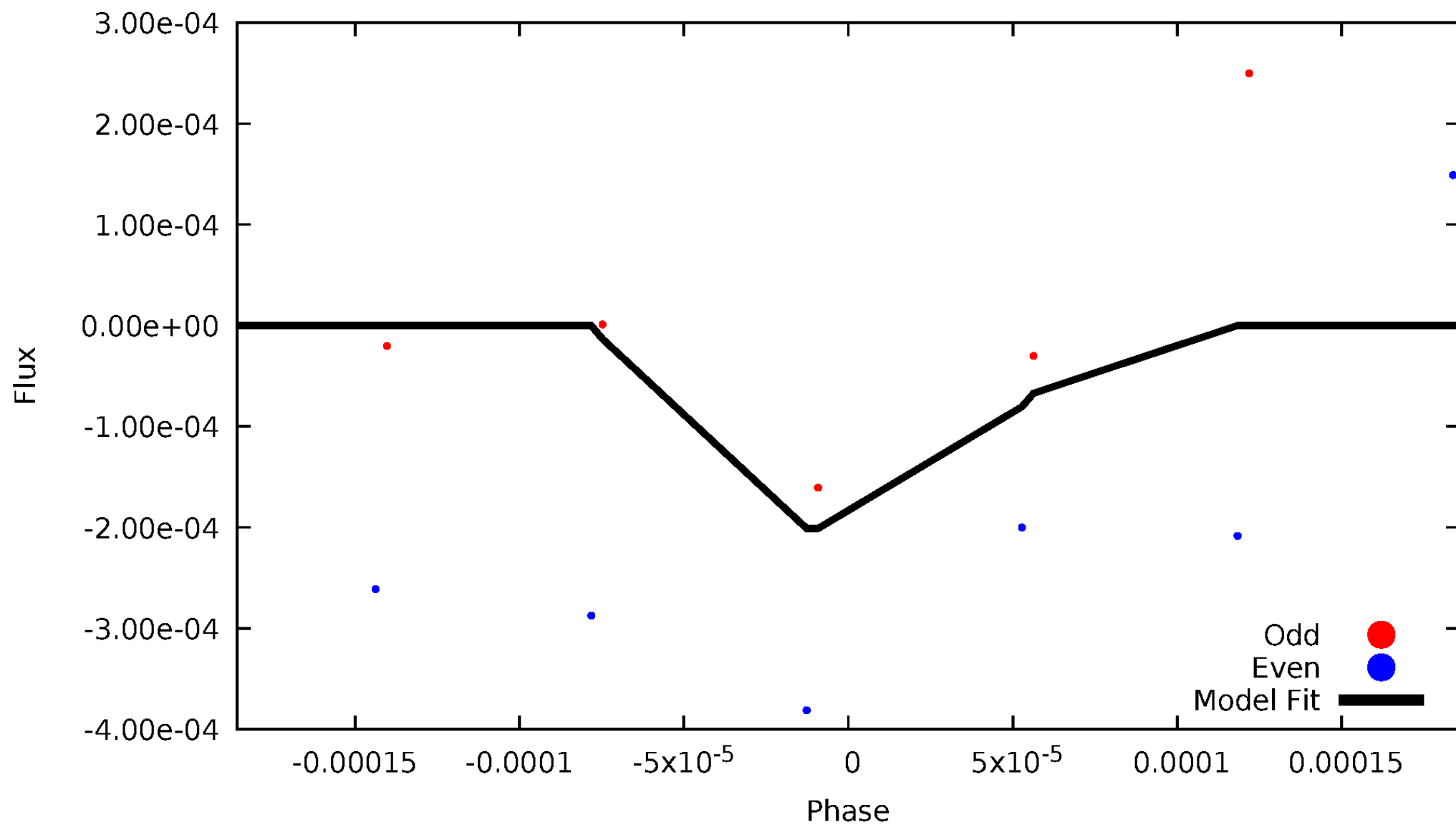
DV Odd/Even

TCE 005772452-03



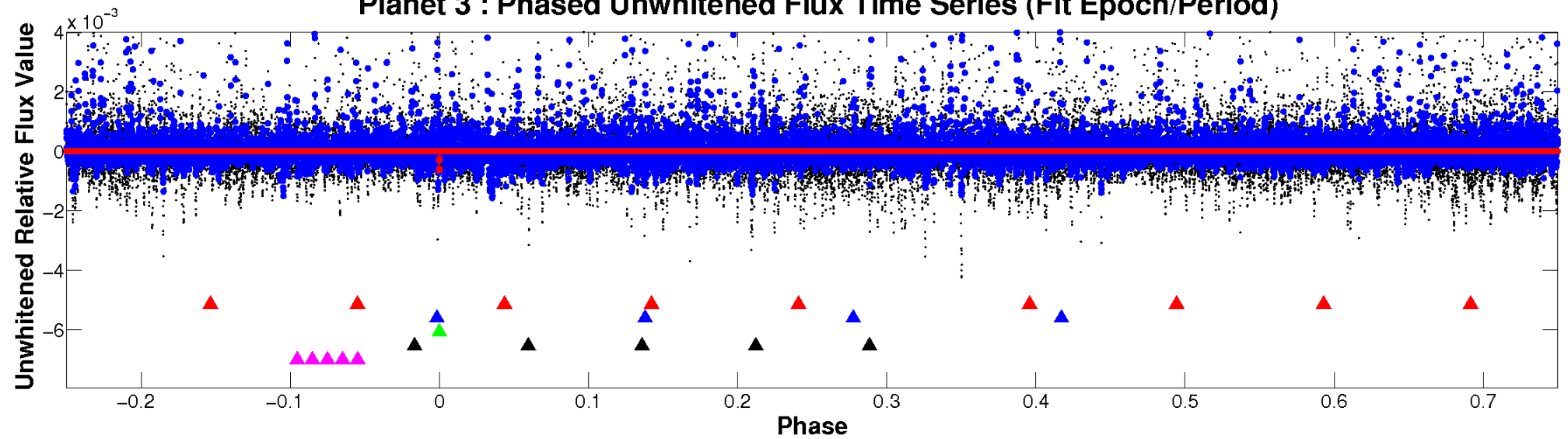
ALT Odd/Even

TCE 005772452-03

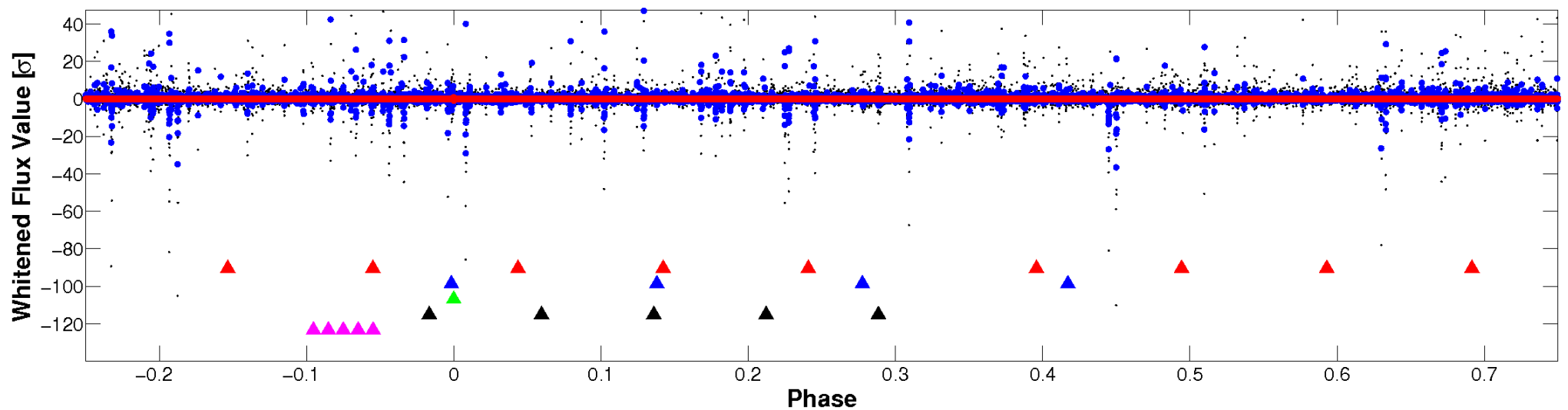


Non-Whitened Vs. Whitened Light Curve

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

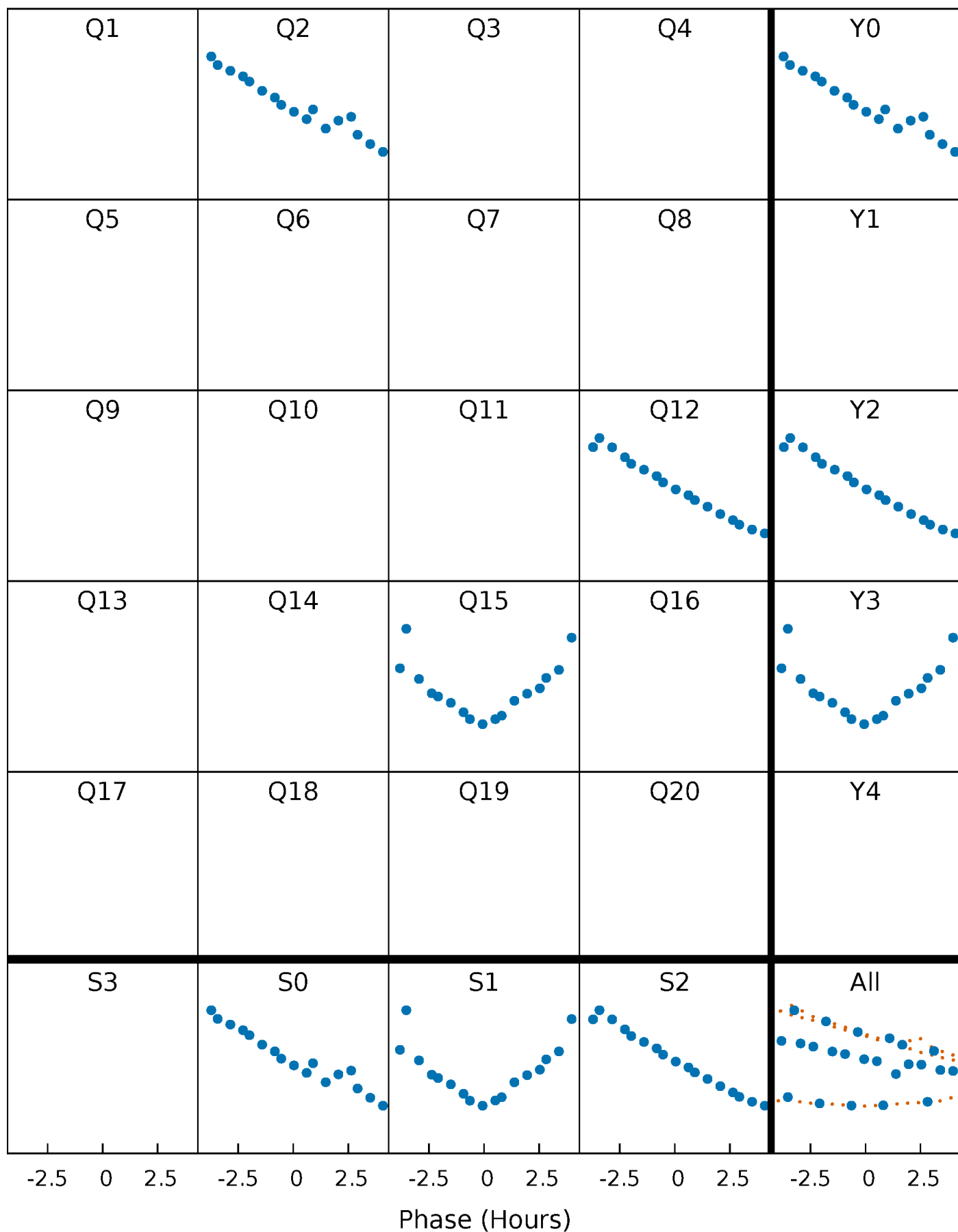


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



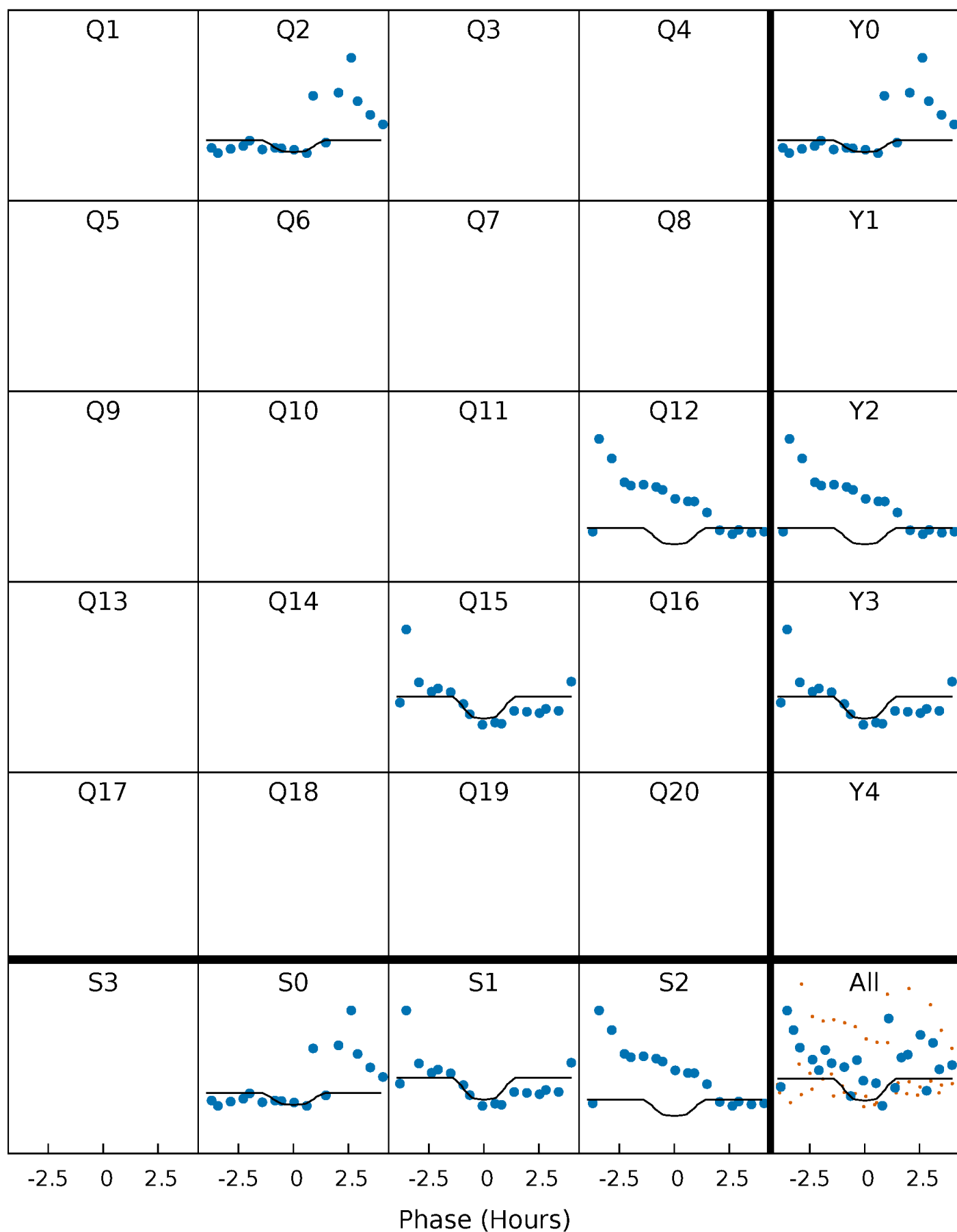
PDC Quarter-Phased Transit Curves

TCE 005772452-03 P=311.903379 Days $T_0=215.310400$ (BKJD)



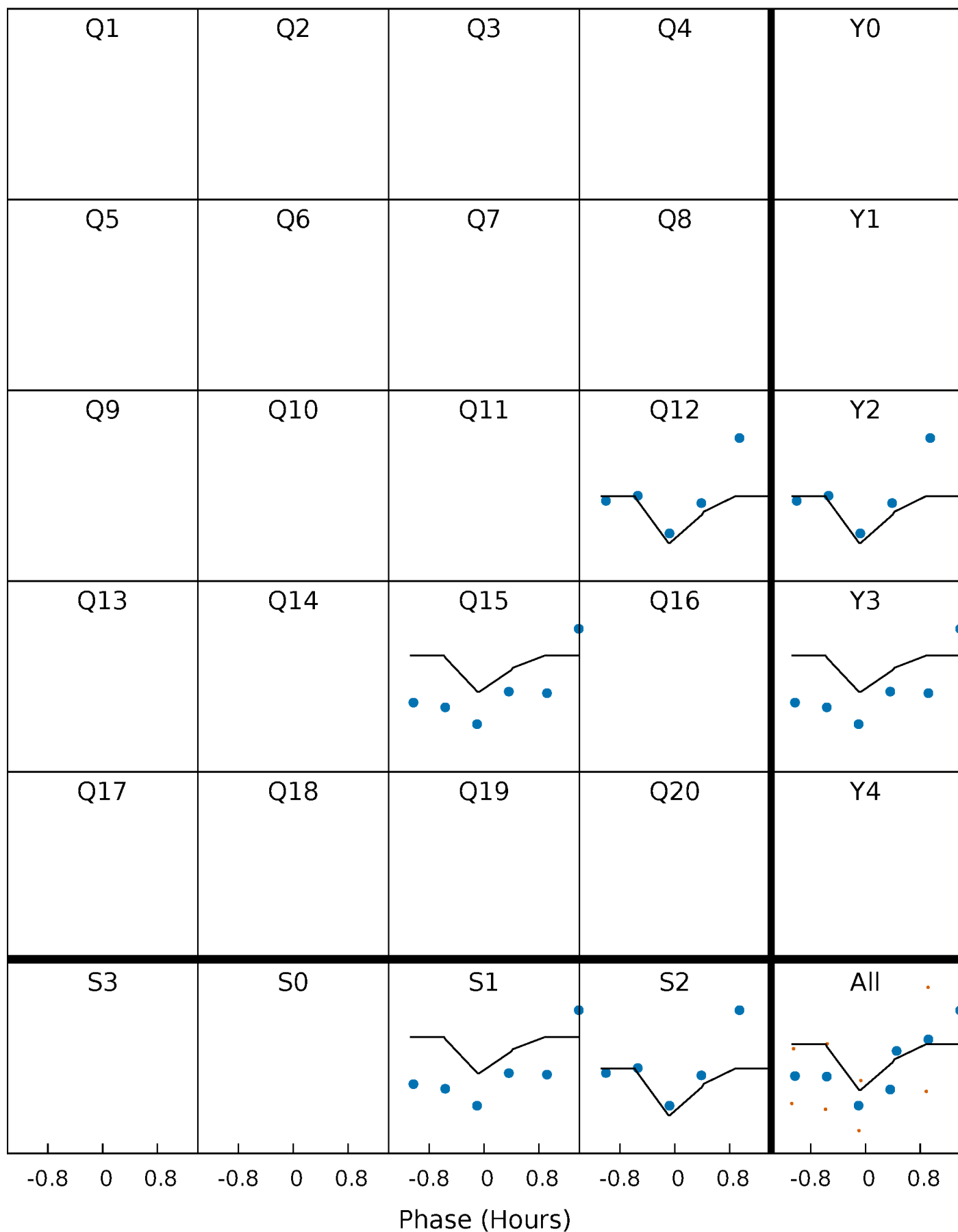
DV Quarter-Phased Transit Curves

TCE 005772452-03 $P=311.903379$ Days $T_0=215.310400$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

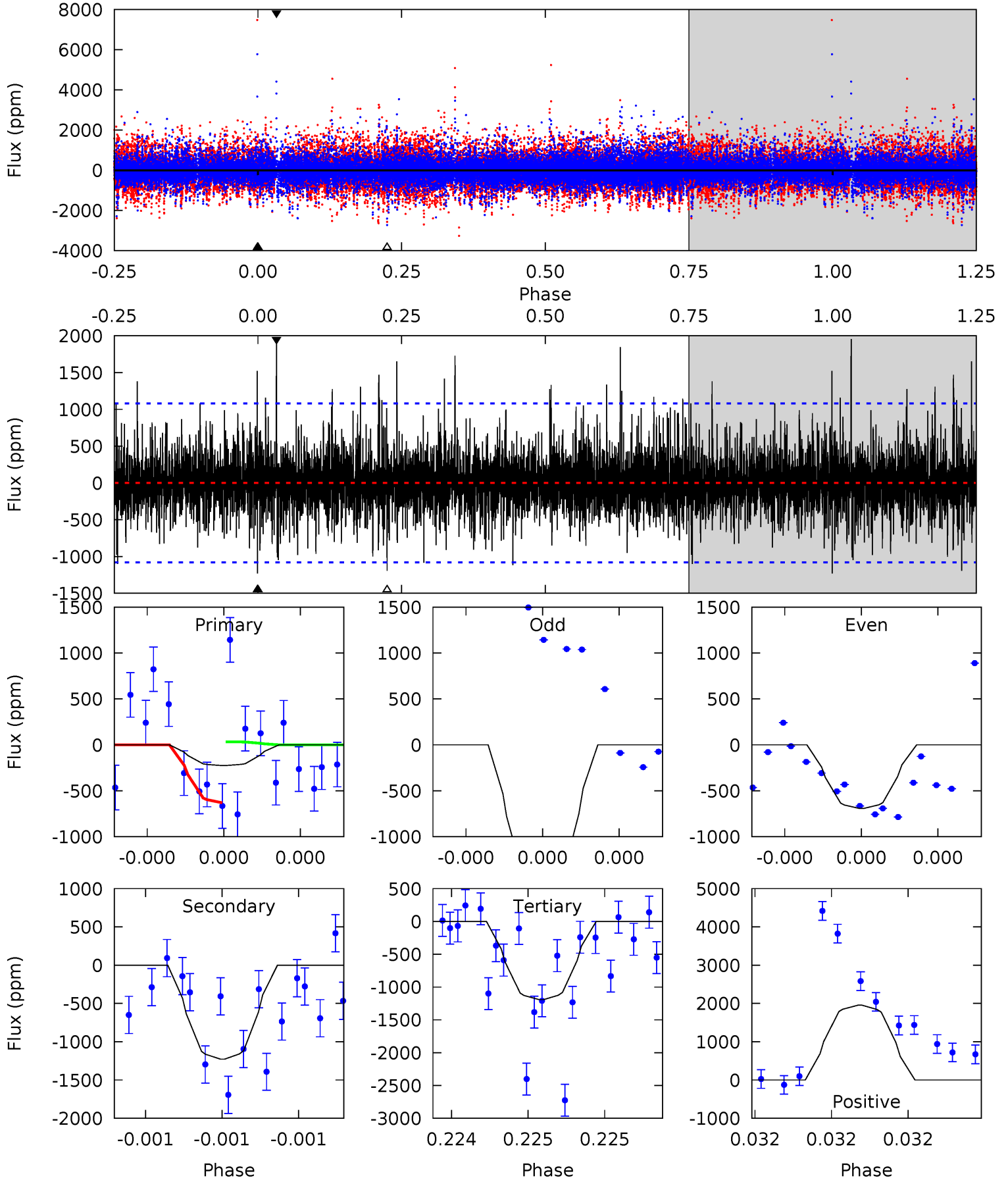
TCE 005772452-03 P=311.899901 Days $T_0=215.326485$ (BKJD)



DV Model-Shift Uniqueness Test

005772452-03, P = 311.903379 Days, E = 215.310400 Days

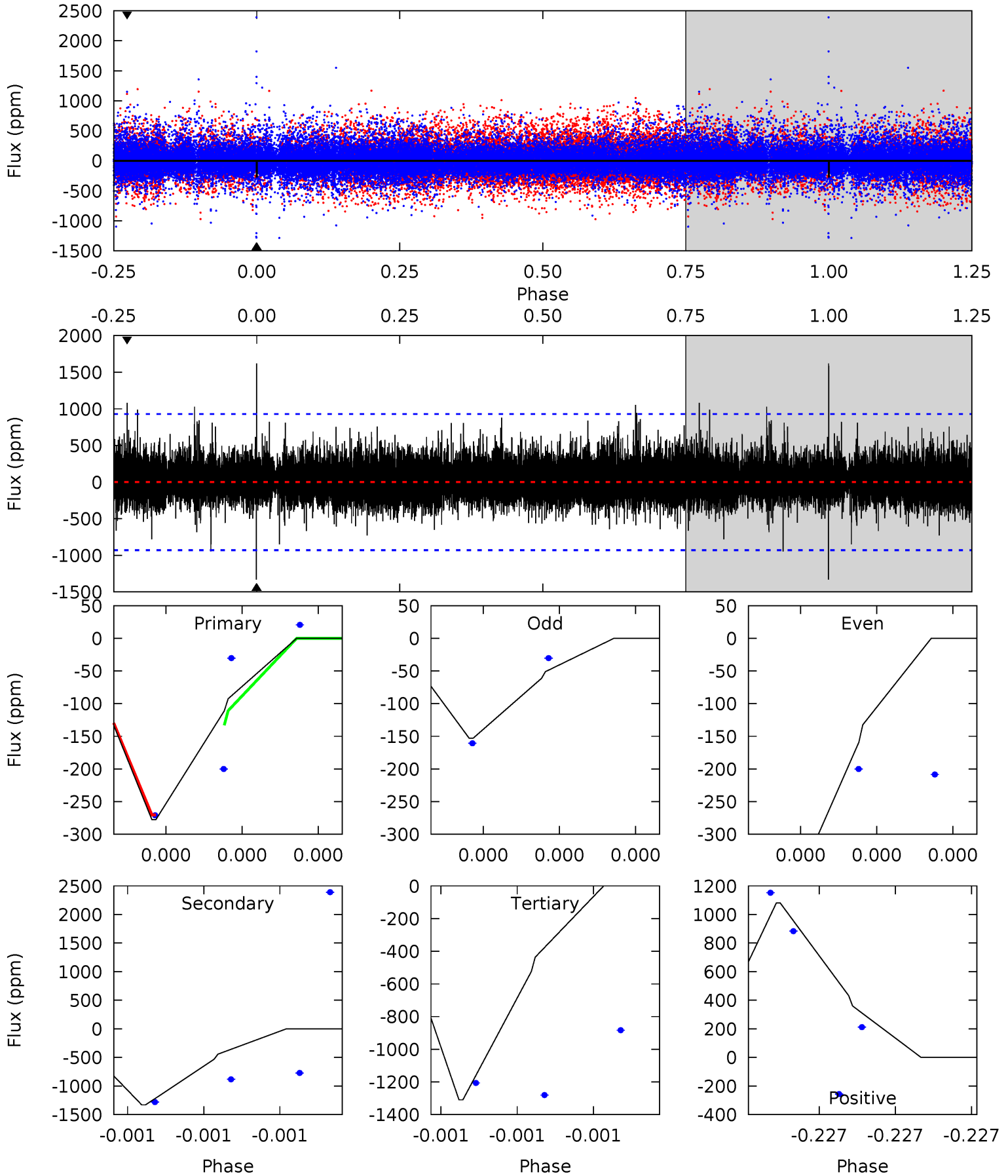
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.19	6.46	6.27	10.3	5.68	3.65	1.53	-5.09	-9.09	0.19	-3.82	1.16	-0.46	0.61	1.50



Alt Model-Shift Uniqueness Test

005772452-03, P = 311.899901 Days, E = 215.326485 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.76	8.45	8.32	6.86	5.91	3.98	1.06	-6.55	-5.10	0.13	1.59	0.60	1.00	0.55	0.44



Stellar Parameters For KIC 005772452

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4999^{+125}_{-100}	$3.448^{+0.320}_{-0.288}$	$-0.380^{+0.300}_{-0.200}$	$2.888^{+1.538}_{-1.231}$	$0.855^{+0.293}_{-0.158}$	$0.050^{+0.108}_{-0.033}$
	+3%/-2%	+9%/-8%	+79%/-53%	+53%/-43%	+34%/-18%	+217%/-67%
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 005772452-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1228 ± 190	$35.63^{+44.84}_{-24.05}$	572^{+68}_{-59}	3298^{+1595}_{-645}	377^{+3584}_{-300}
Alt.	-1331 ± 157	$39.72^{+40.00}_{-27.96}$	570^{+71}_{-59}	3261^{+1650}_{-561}	369^{+3562}_{-284}

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 $A_{obs} \gg 1.0$

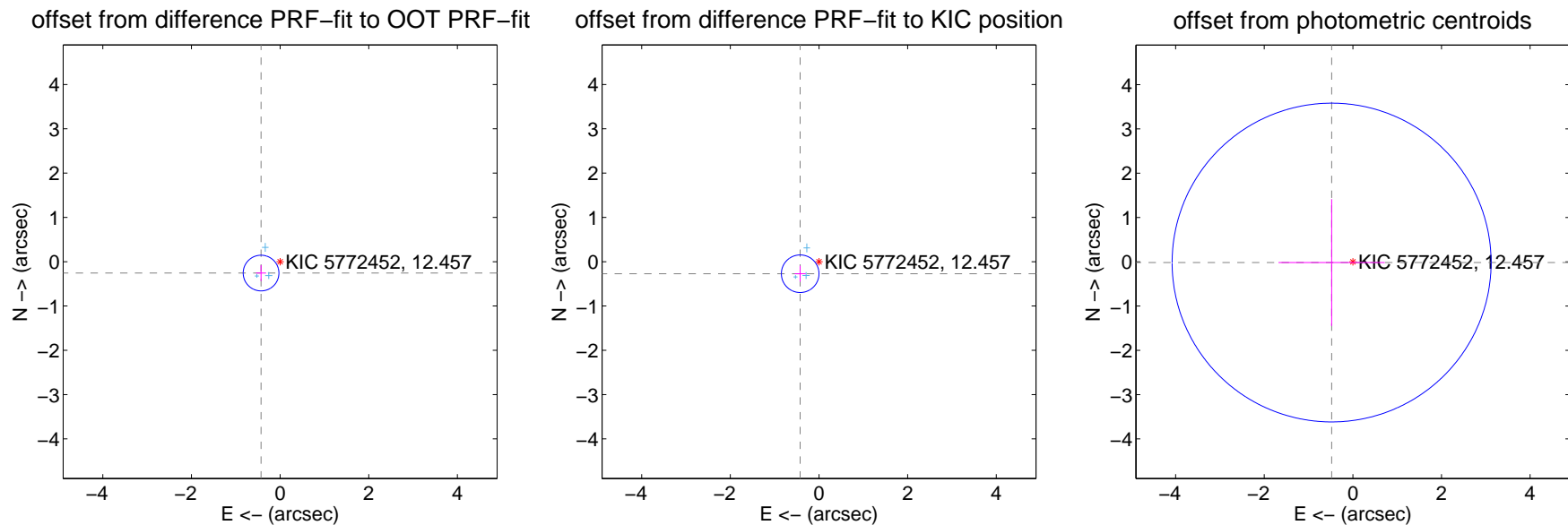
DV Centroid Data

Supplemental centroid analysis for 005772452-03. Kepler magnitude: 12.46. Transit SNR 3.33

There are 3 quarters with good PRF difference image offsets

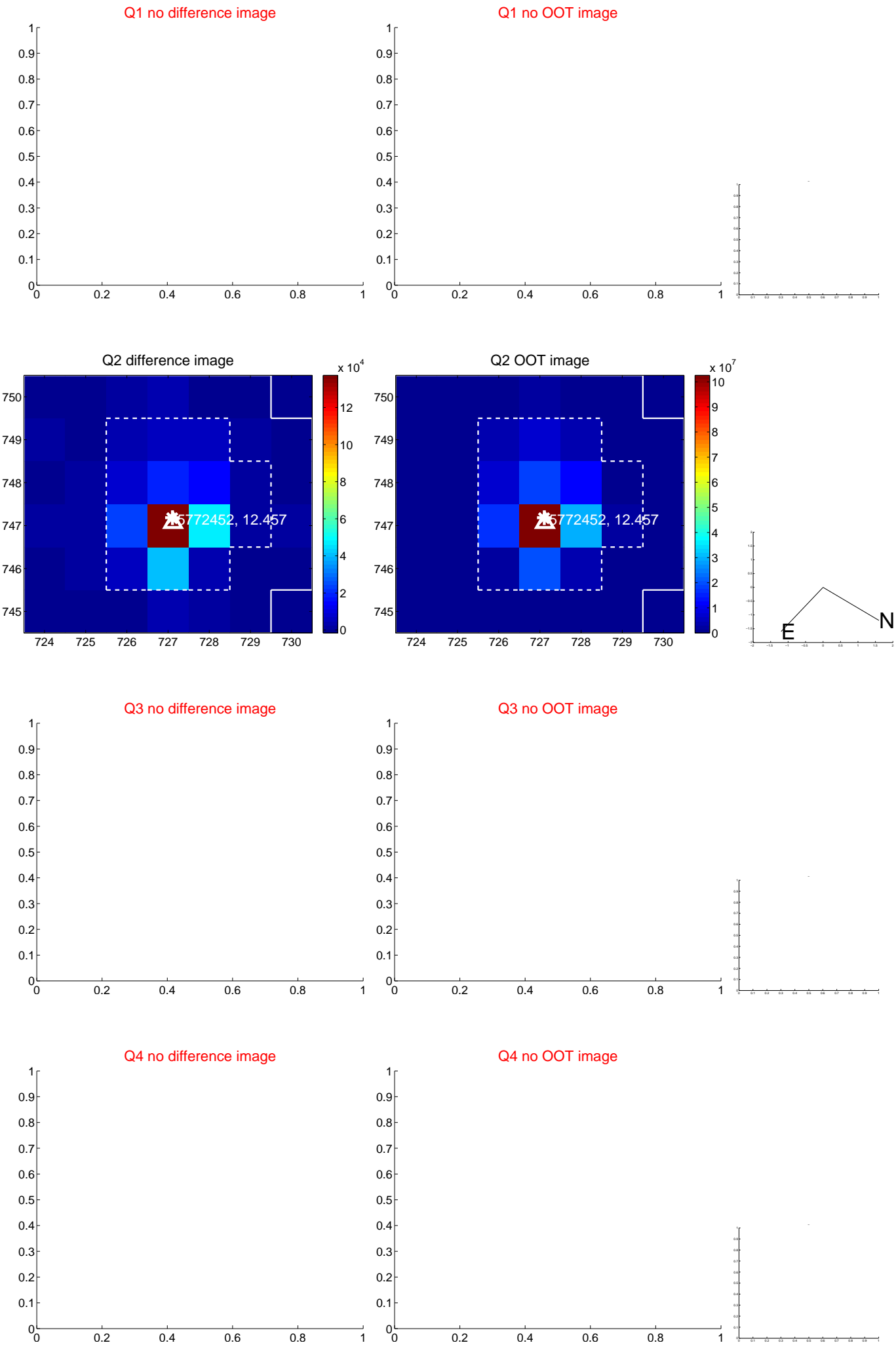
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.500 ± 0.134	3.73	0.430 ± 0.114	-0.256 ± 0.180
PRF-fit source offset from KIC position	0.504 ± 0.141	3.56	0.424 ± 0.123	-0.271 ± 0.178
photometric centroid source offset	0.48 ± 1.20	0.40	0.48 ± 1.20	-0.02 ± 1.43



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.

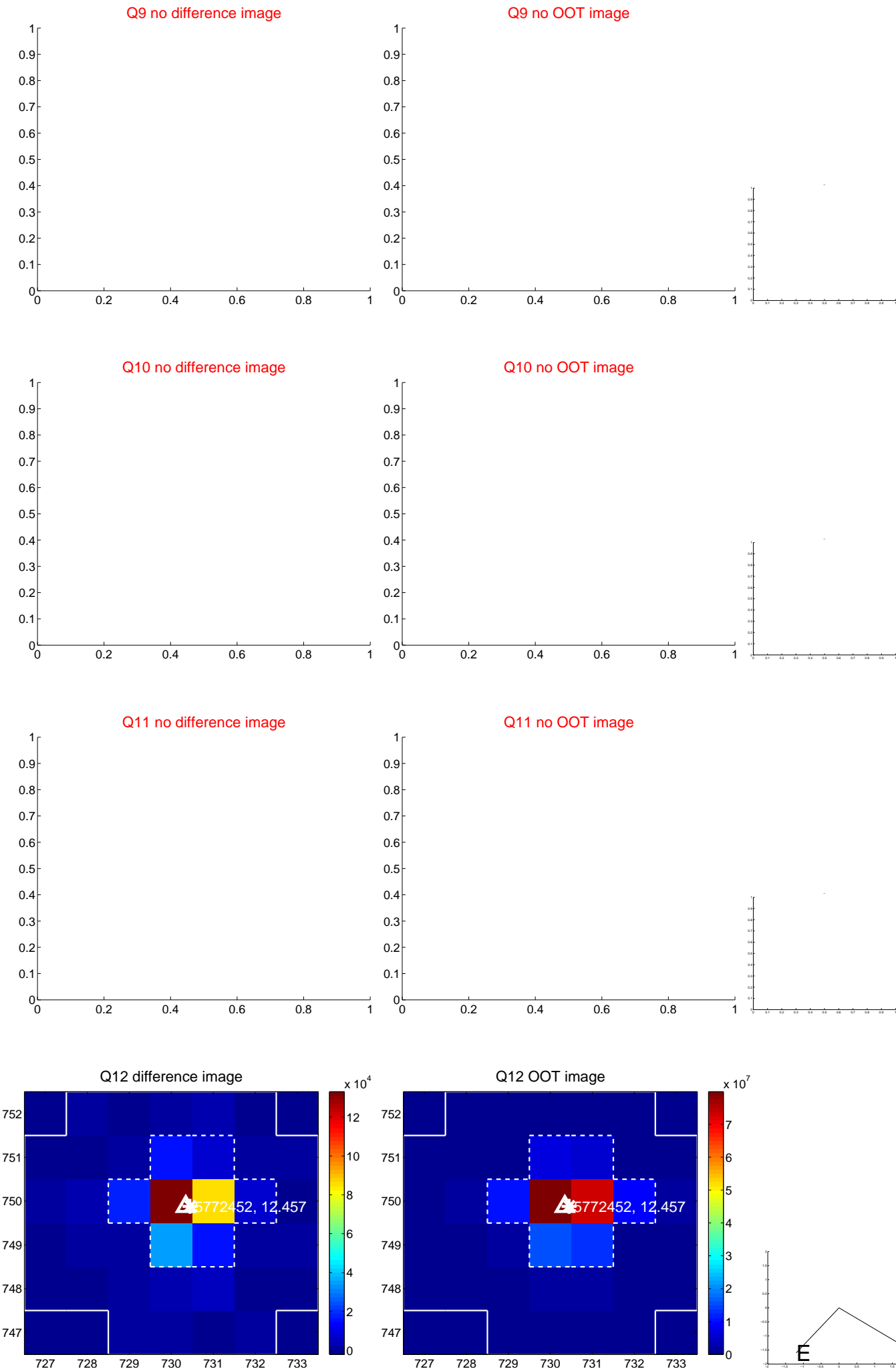
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



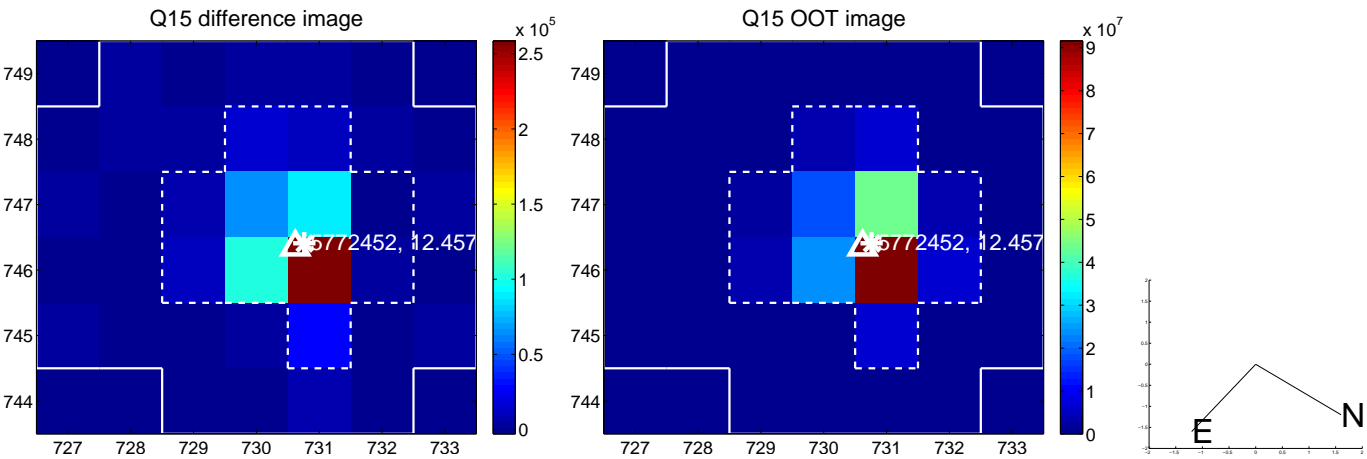
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



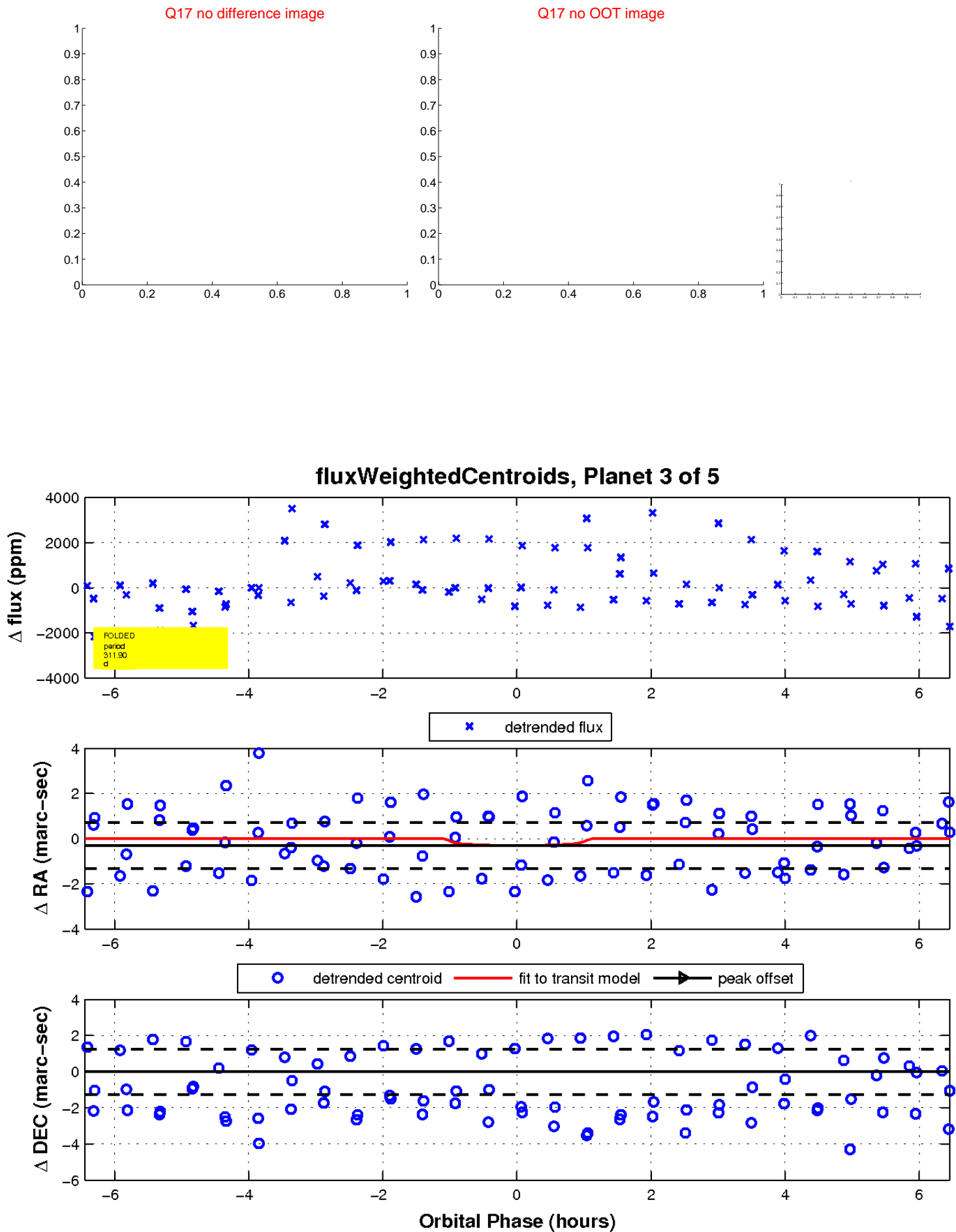
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

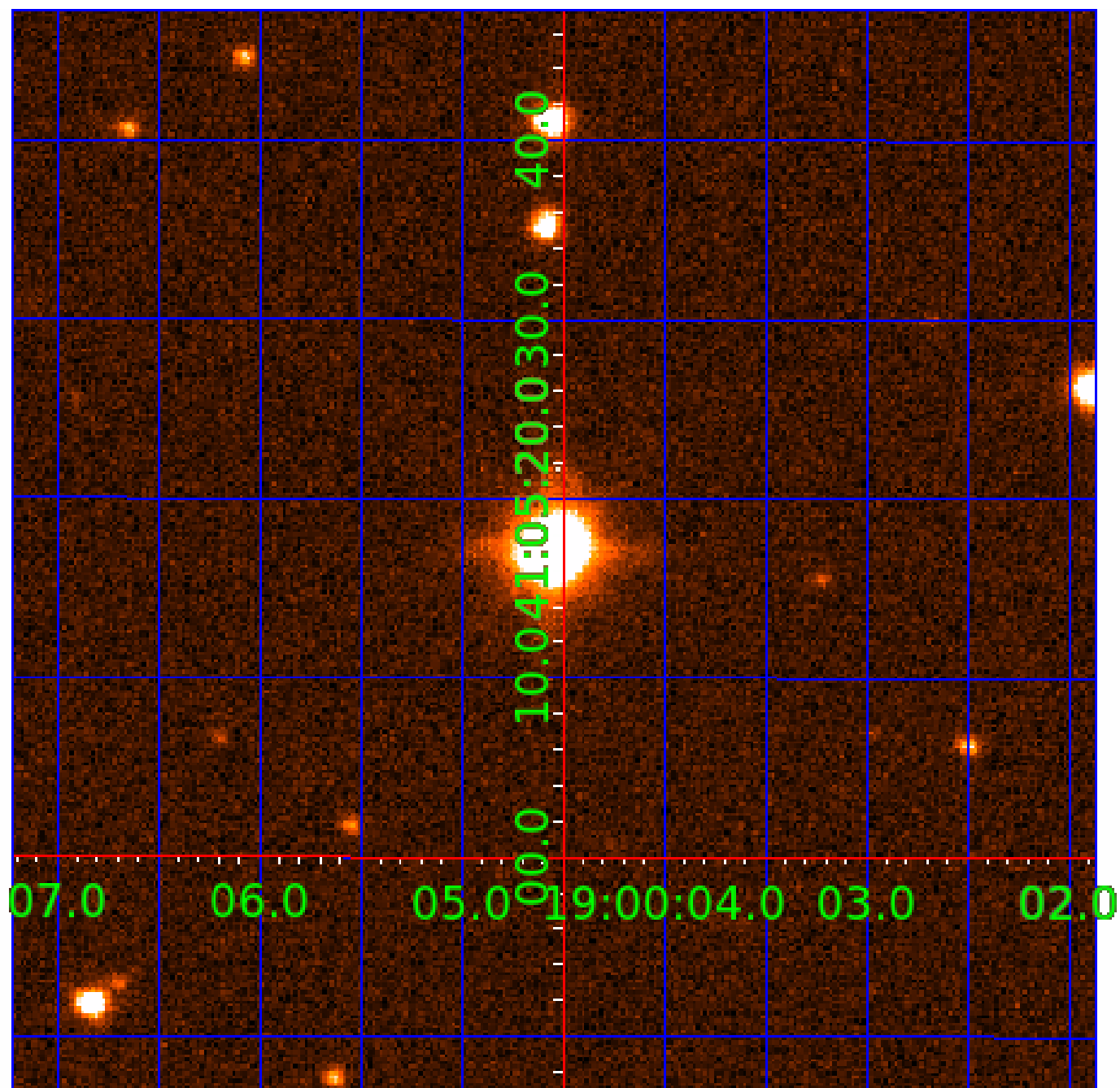


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005772452

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})
005772452-01	OBS	No	171.325317	167.441441	1326.7	3.564	19.2	6.2	2.89	4999	21.04	14.22
005772452-02	OBS	No	355.442762	214.806170	1017.1	2.315	19.8	5.9	2.89	4999	9.81	5.38
005772452-03	OBS	No	311.903379	215.310400	637.4	2.167	13.7	3.3	2.89	4999	7.80	6.40
005772452-04	OBS	No	335.692897	210.121618	5138.9	25.291	13.3	5.8	2.89	4999	25.57	5.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005772452-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS
005772452-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005772452-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005772452-04	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

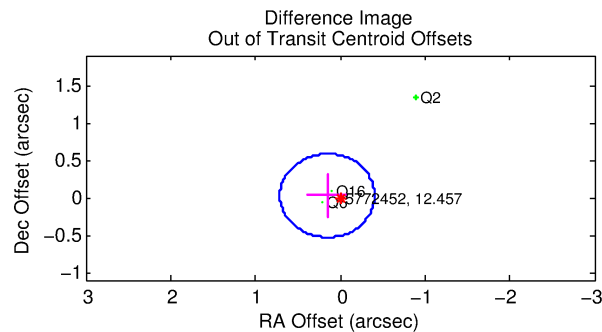
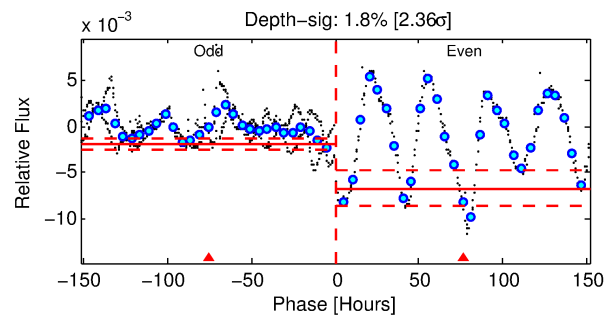
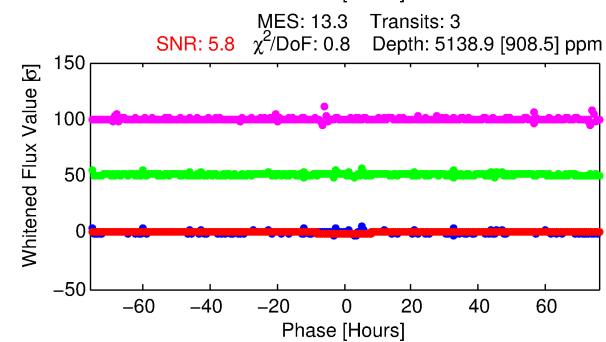
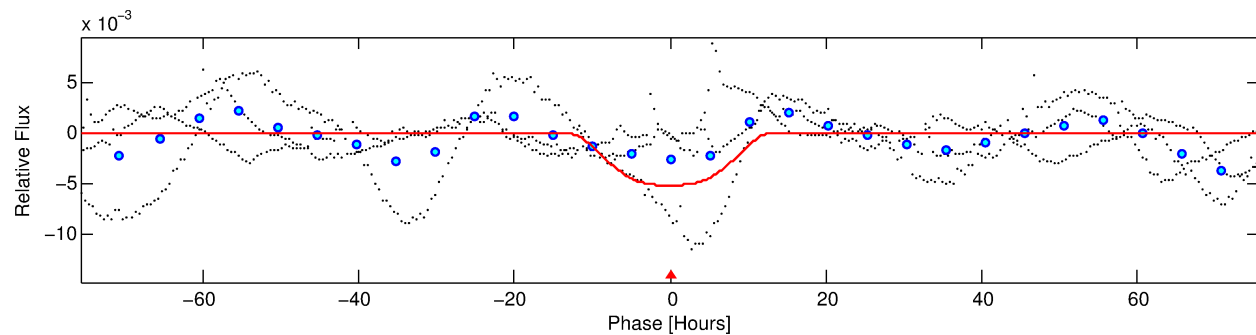
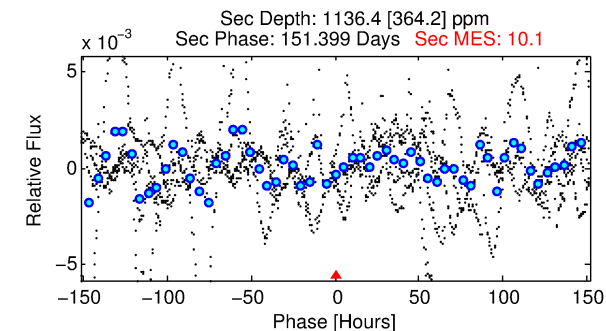
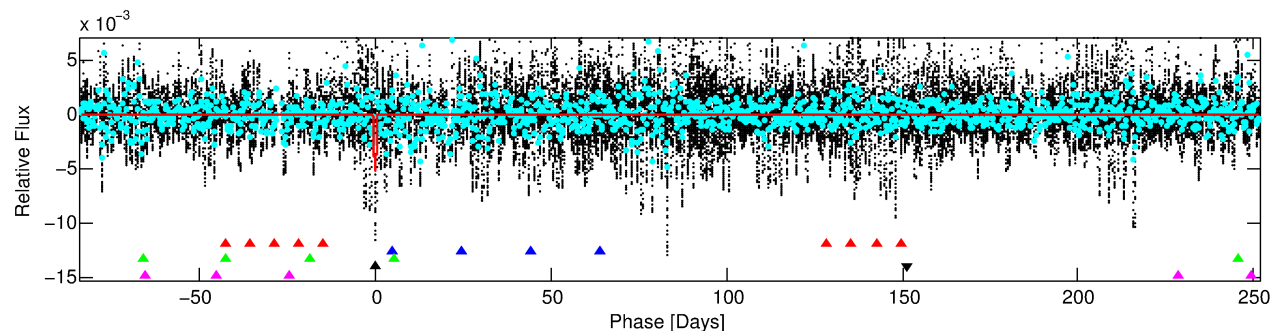
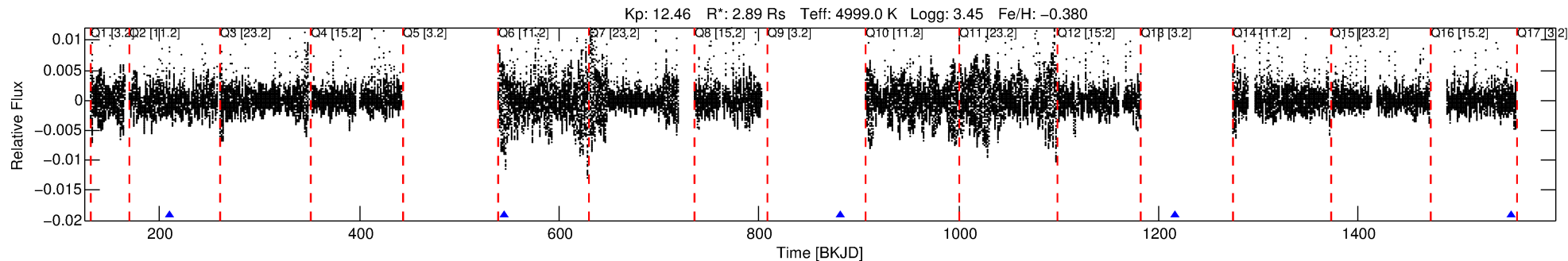
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005772452-04

No Significant Match Found

DV One-Page Summary

KIC: 5772452 Candidate: 4 of 5 Period: 335.693 d



DV Fit Results:

Period = 335.69290 [0.01142] d
Epoch = 210.1216 [0.0272] BKJD
Rp/R* = 0.0811 [0.0081]
a/R* = 59.34 [4.23]
b = 0.91 [0.02]
Seff = 5.80 [3.56]
Teq = 396 [61] K
Rp = 25.57 [13.85] Re
a = 0.8969 [0.3872] AU
Ag = 769.26 [549.14] [1.40σ]
Teffp = 3222 [314] K [8.83σ]

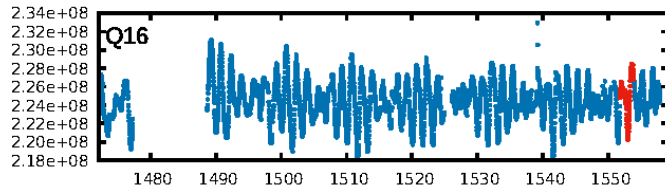
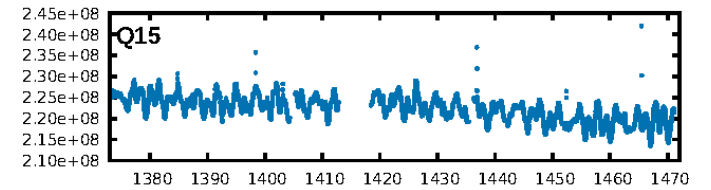
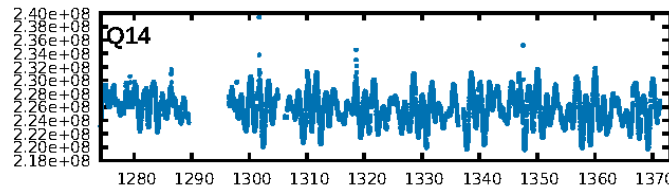
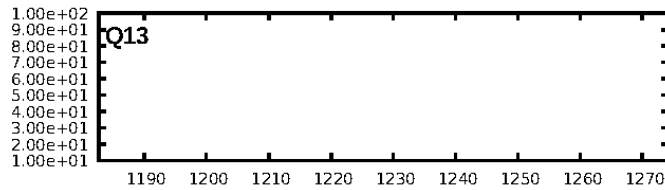
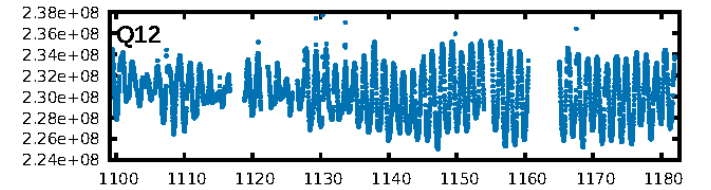
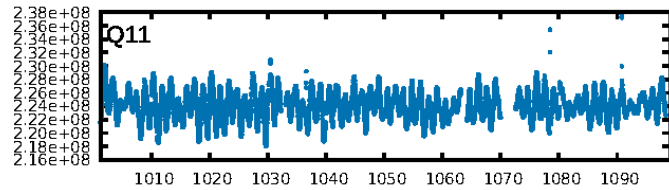
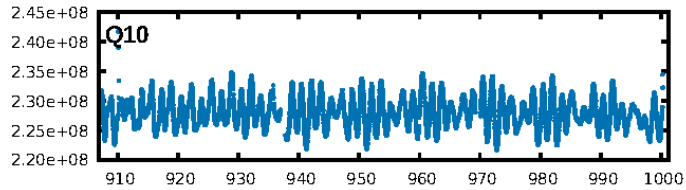
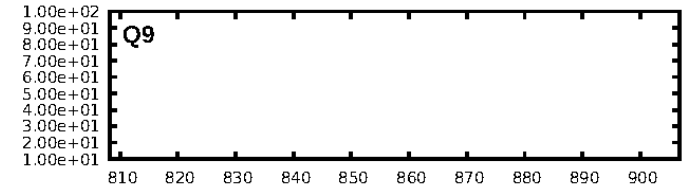
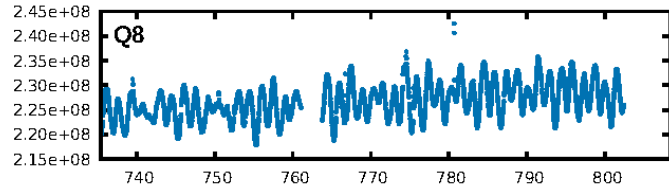
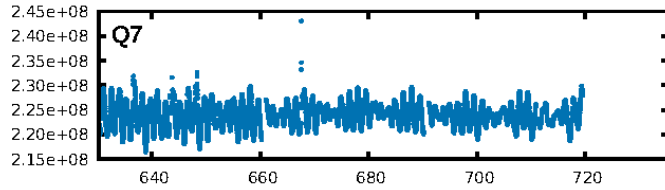
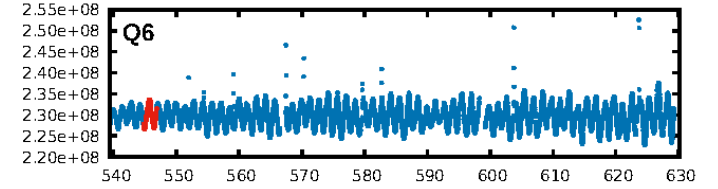
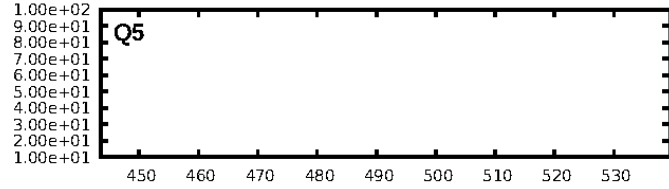
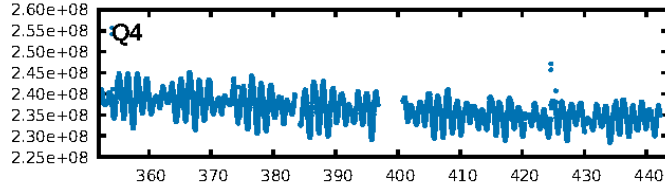
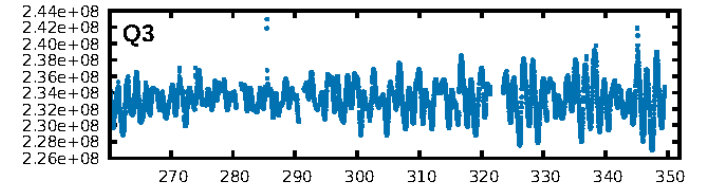
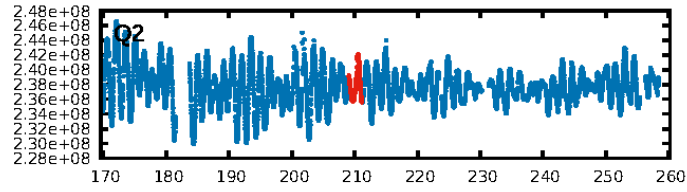
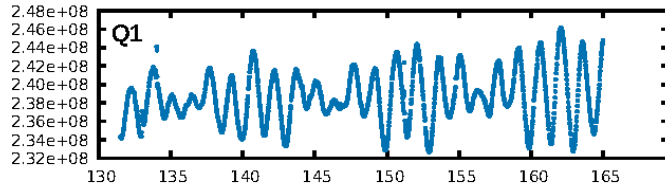
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.43σ]
LongPeriod-sig: 100.0% [18.66σ]
ModelChiSquare2-sig: 38.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.34e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.048
Centroid-sig: 42.2%
Centroid-so: 0.198 arcsec [0.93σ]
OotOffset-rm: 0.155 arcsec [0.84σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-rm: 0.196 arcsec [0.98σ]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

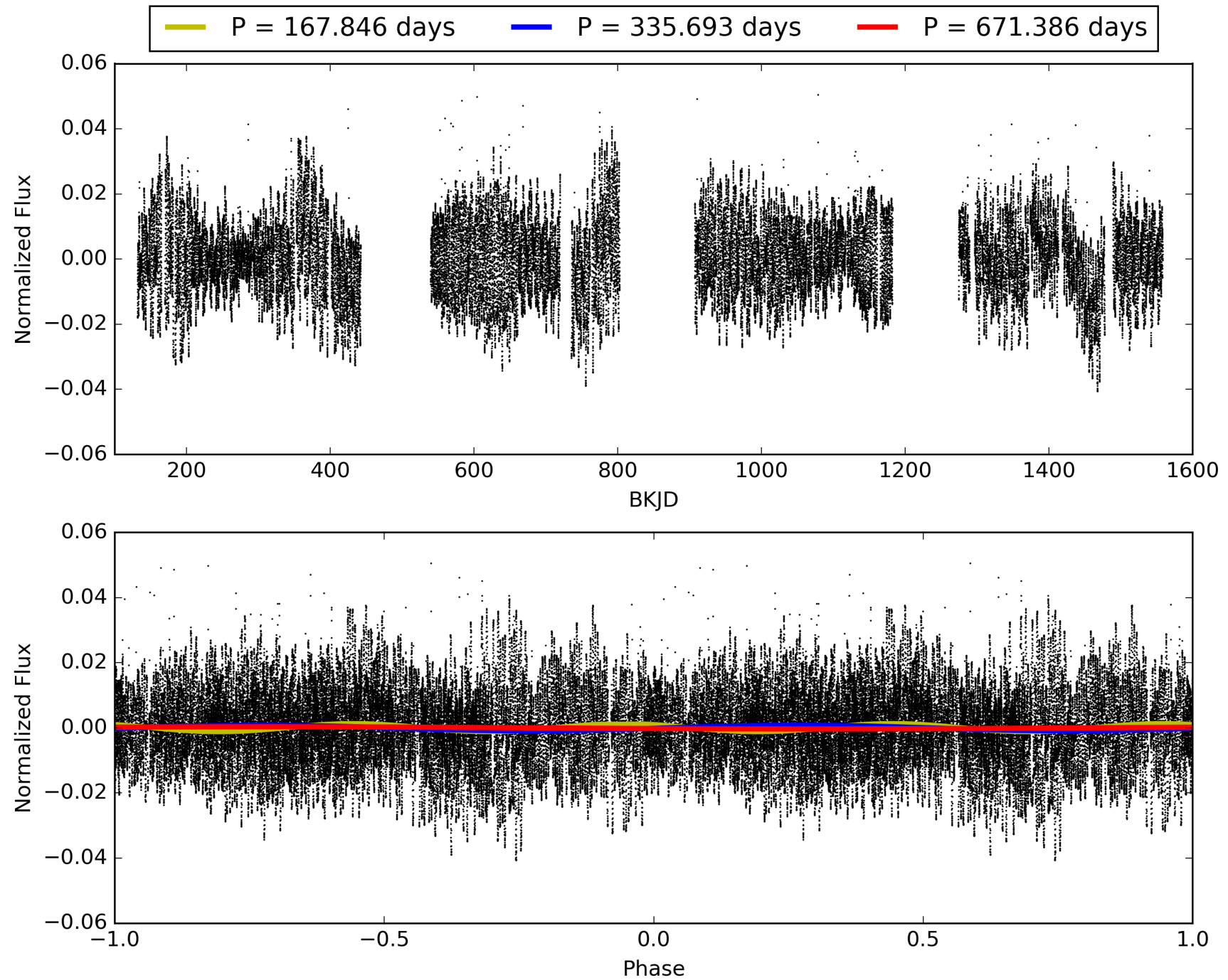
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:07:36 Z

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

TCE 005772452-04, PDC Light Curves

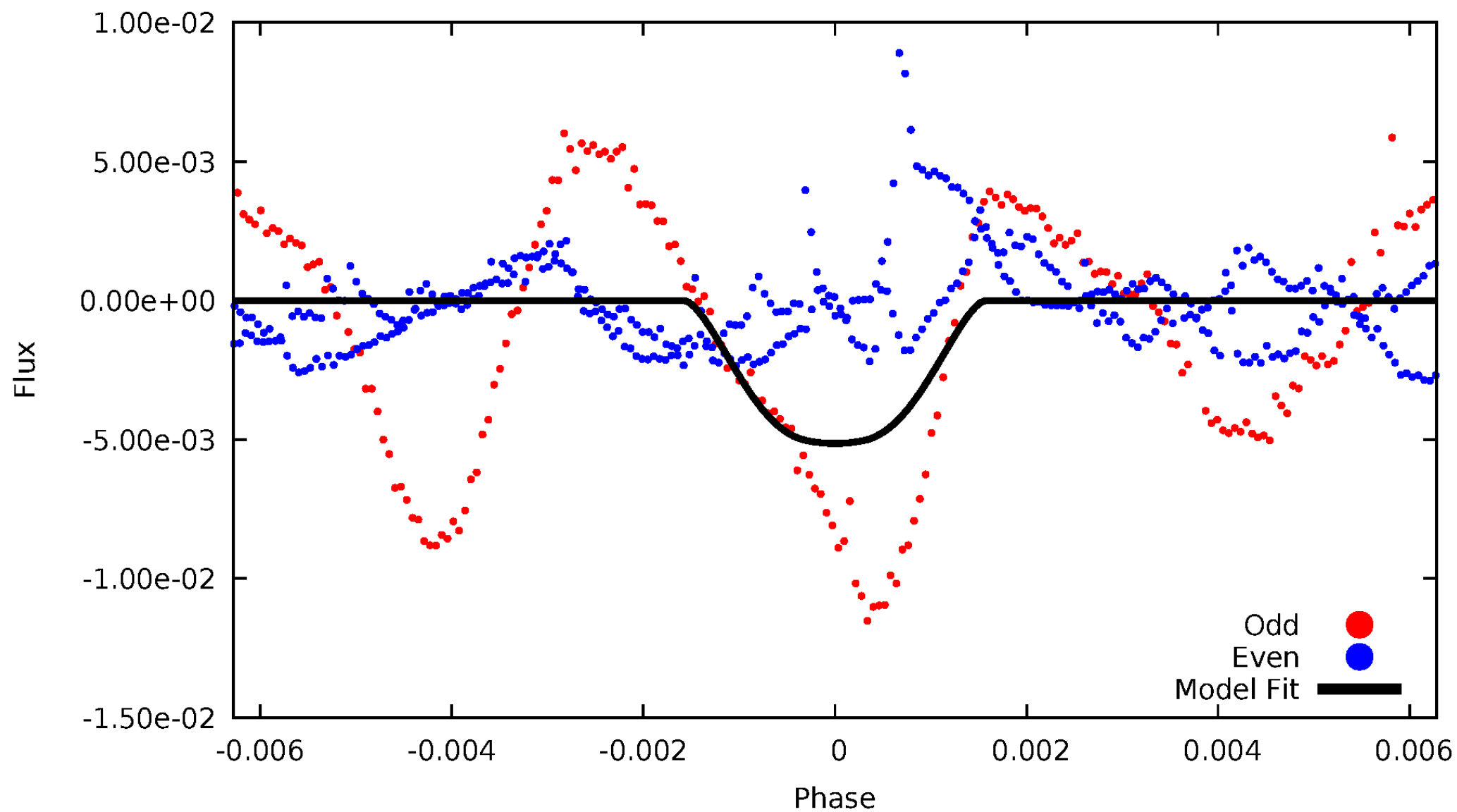


TCE 005772452-04



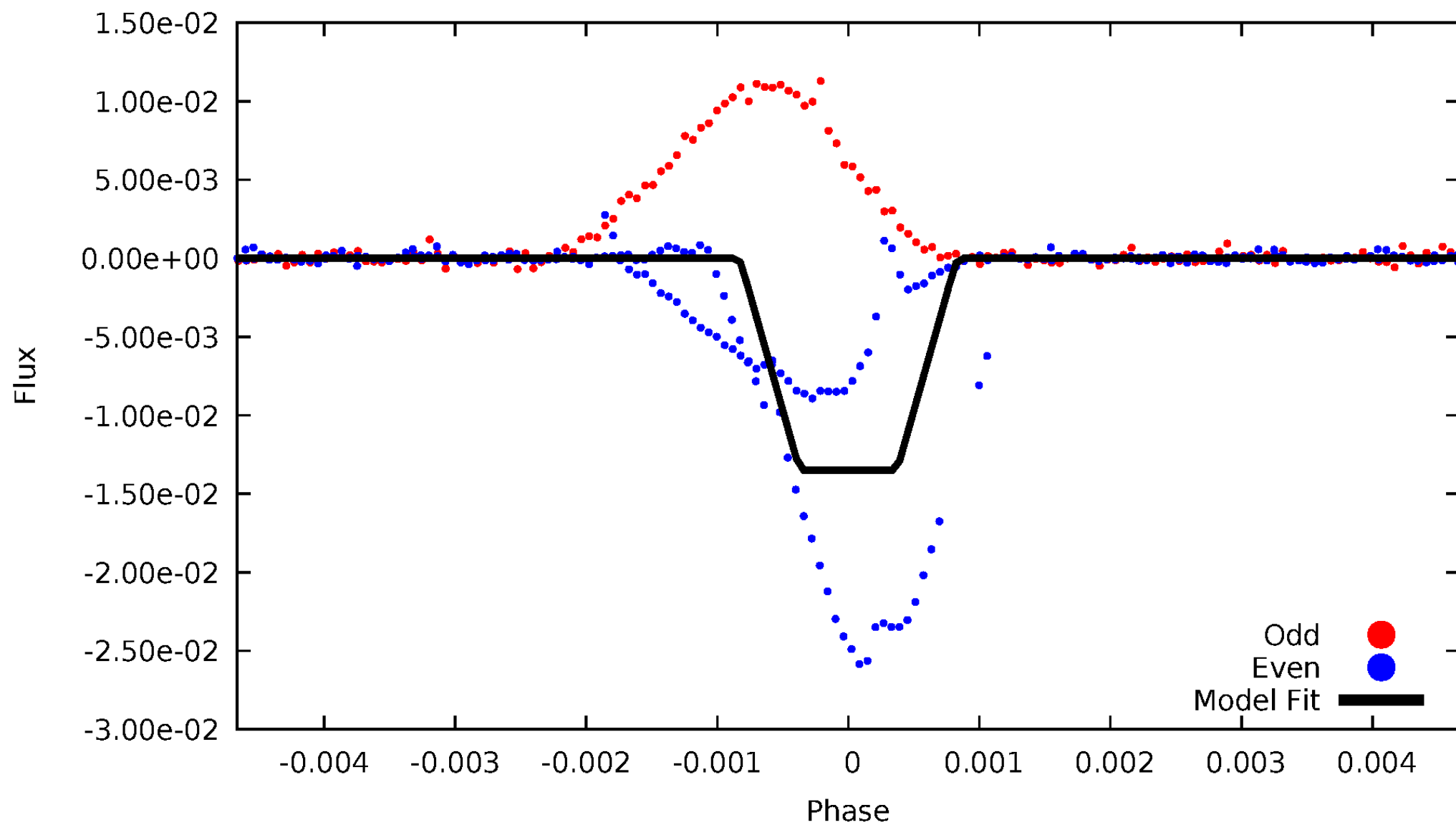
DV Odd/Even

TCE 005772452-04



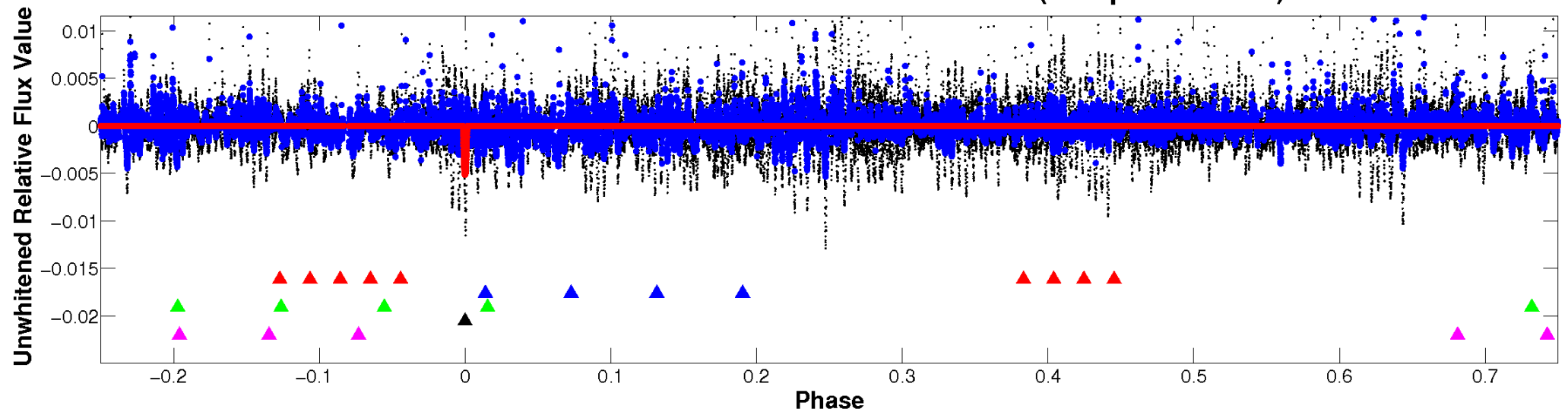
ALT Odd/Even

TCE 005772452-04

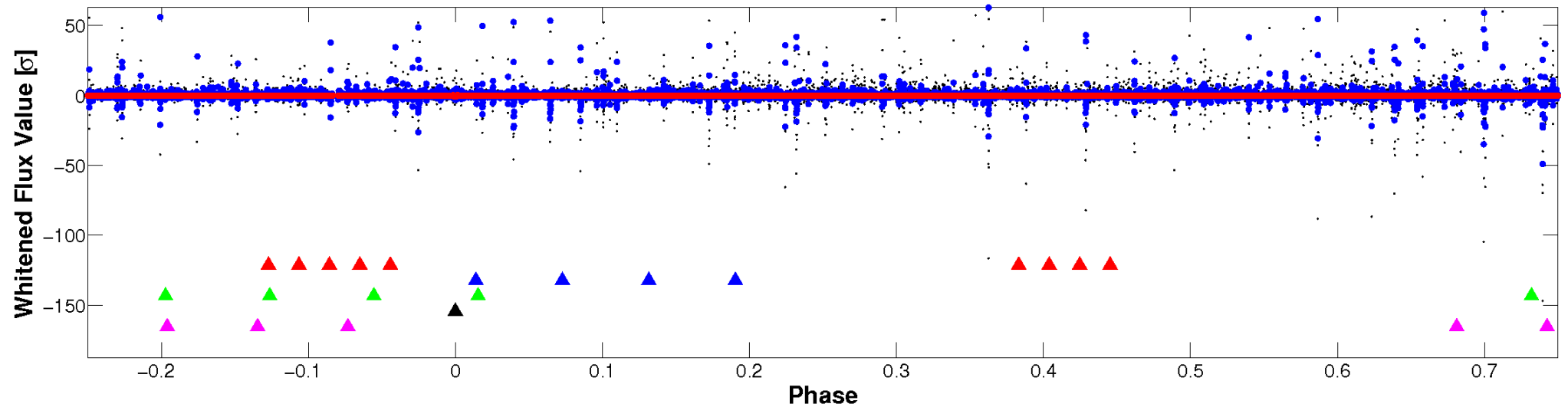


Non-Whitened Vs. Whitened Light Curve

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

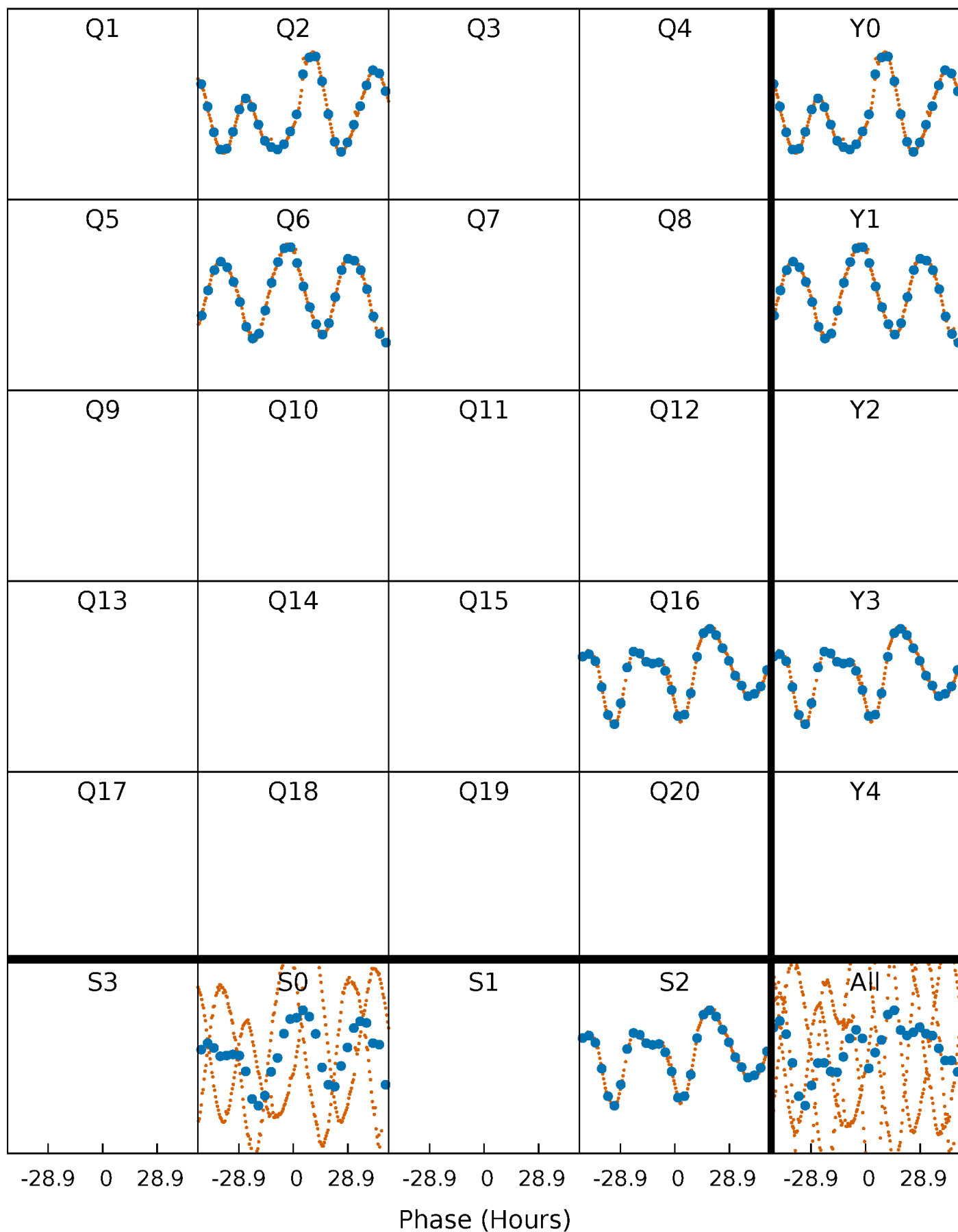


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



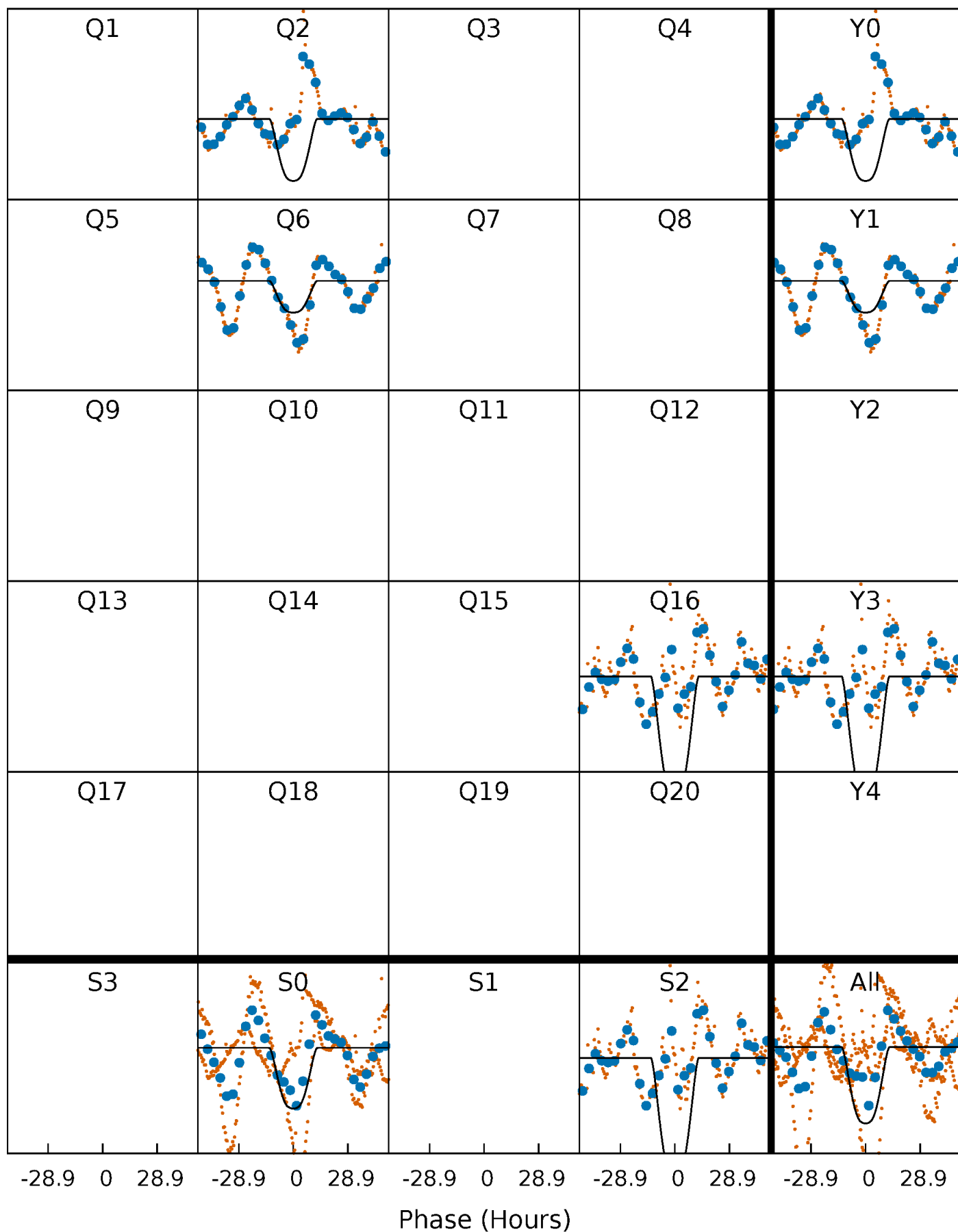
PDC Quarter-Phased Transit Curves

TCE 005772452-04 P=335.692897 Days $T_0=210.121618$ (BKJD)



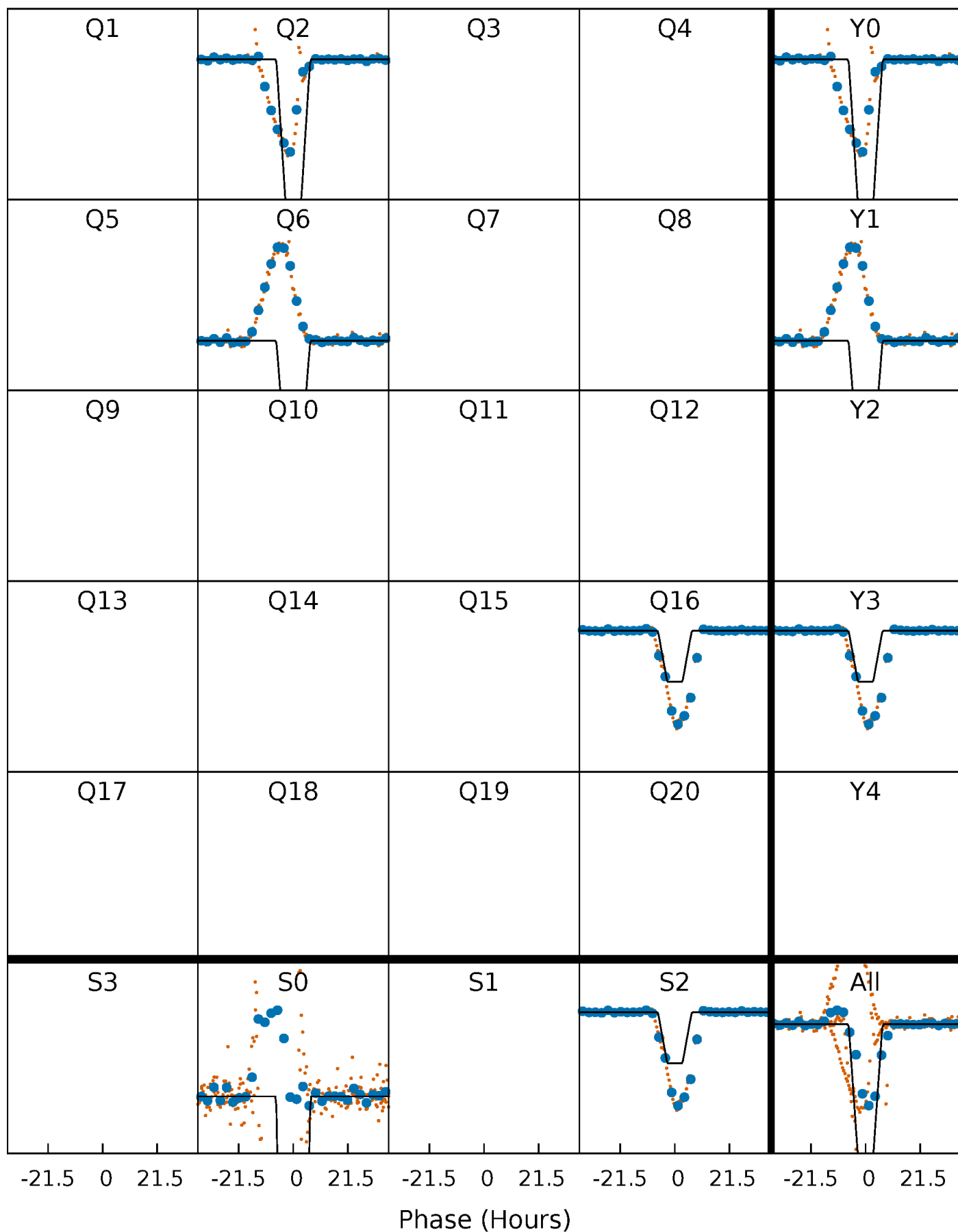
DV Quarter-Phased Transit Curves

TCE 005772452-04 P=335.692897 Days $T_0=210.121618$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

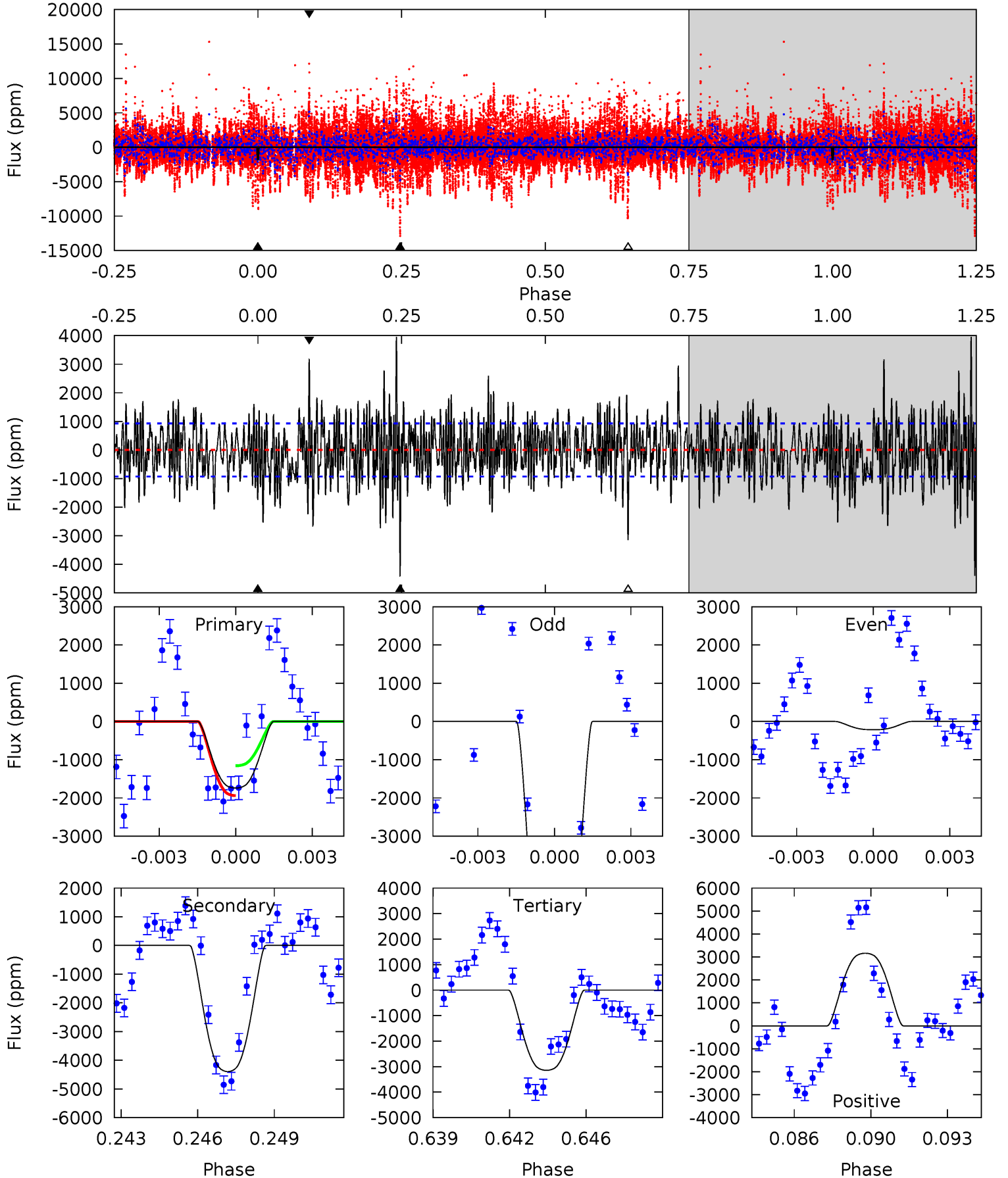
TCE 005772452-04 P=335.682524 Days $T_0=210.255513$ (BKJD)



DV Model-Shift Uniqueness Test

005772452-04, P = 335.692897 Days, E = 210.121618 Days

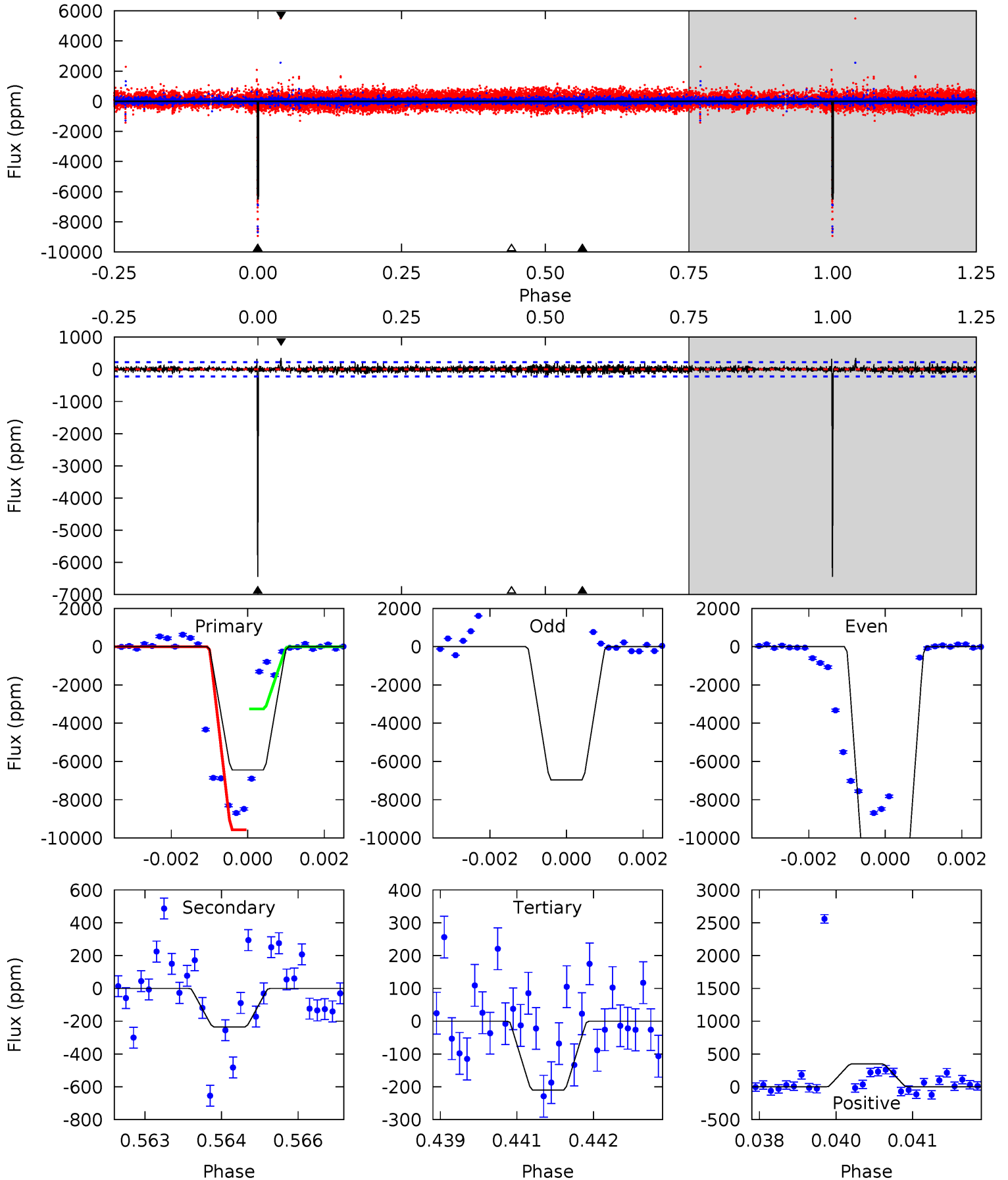
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.79	24.7	17.7	17.8	5.24	2.95	4.76	-7.90	-8.00	7.03	6.93	19.7	7.02	0.47	2.20



Alt Model-Shift Uniqueness Test

005772452-04, P = 335.682524 Days, E = 210.255513 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
156.3	5.71	5.10	8.45	5.36	3.15	1.18	151.2	147.8	0.61	-2.74	113.5	1.16	0.05	0



Stellar Parameters For KIC 005772452

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4999^{+125}_{-100}	$3.448^{+0.320}_{-0.288}$	$-0.380^{+0.300}_{-0.200}$	$2.888^{+1.538}_{-1.231}$	$0.855^{+0.293}_{-0.158}$	$0.050^{+0.108}_{-0.033}$
	+3%/-2%	+9%/-8%	+79%/-53%	+53%/-43%	+34%/-18%	+217%/-67%
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 005772452-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4396 ± 178	$25.85^{+7.85}_{-6.04}$	555^{+66}_{-62}	4616^{+242}_{-208}	3023^{+1943}_{-1227}
Alt.	-235 ± 41	$37.52^{+10.98}_{-8.50}$	558^{+63}_{-59}	2605^{+85}_{-82}	75^{+49}_{-30}

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 $A_{obs} \gg 1.0$

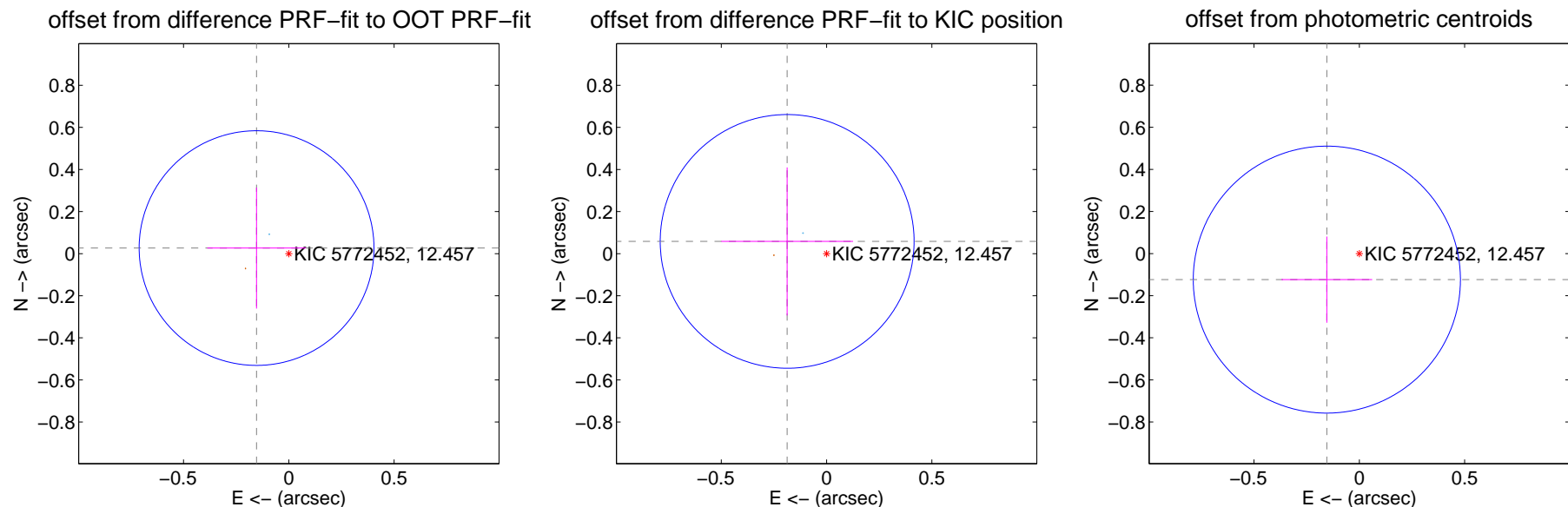
DV Centroid Data

Supplemental centroid analysis for 005772452-04. Kepler magnitude: 12.46. Transit SNR 5.79

There are 1 quarters with good PRF difference image offsets

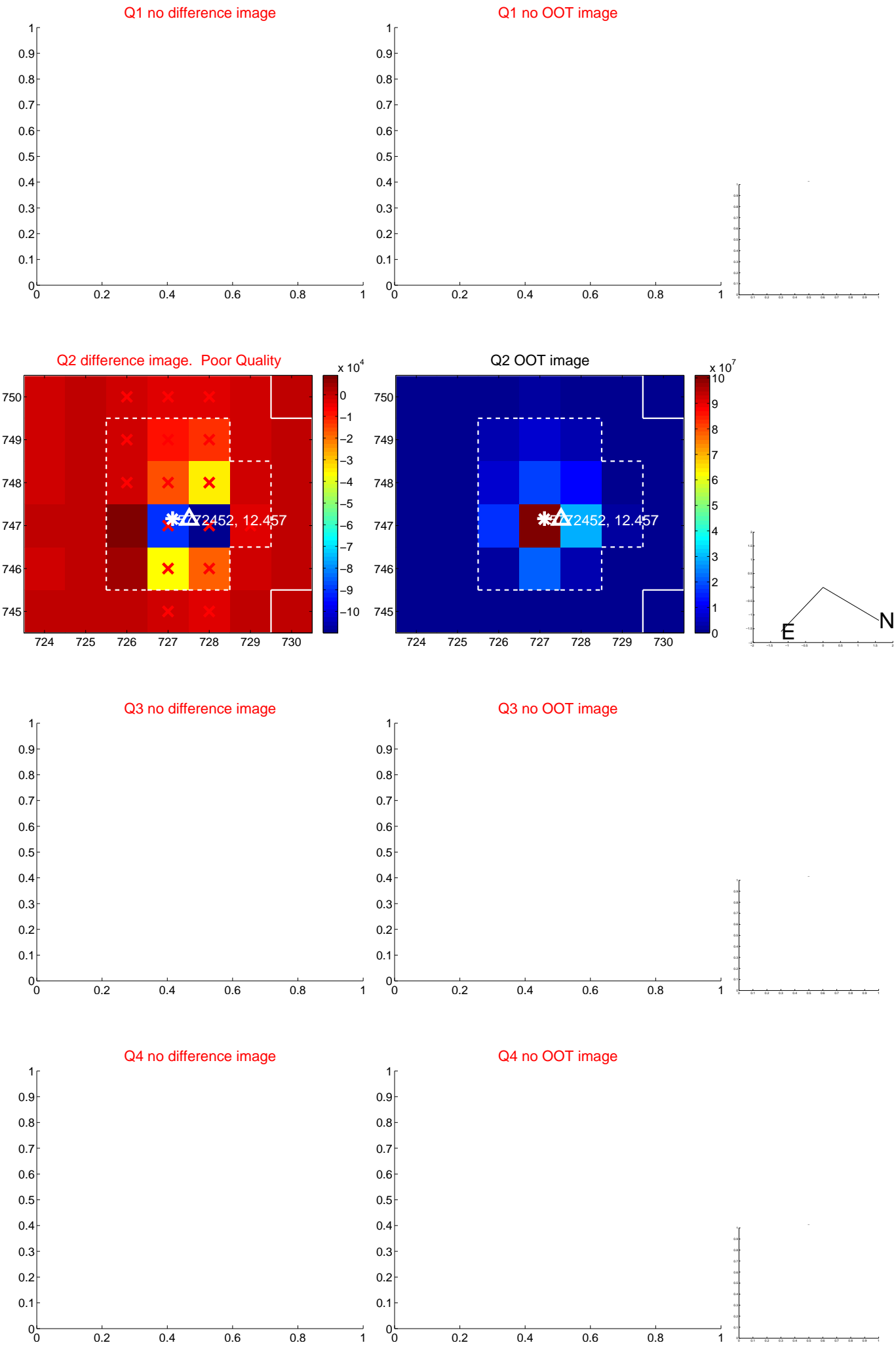
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.155 ± 0.186	0.84	0.153 ± 0.234	0.027 ± 0.287
PRF-fit source offset from KIC position	0.196 ± 0.201	0.98	0.187 ± 0.313	0.058 ± 0.352
photometric centroid source offset	0.20 ± 0.21	0.93	0.15 ± 0.22	-0.12 ± 0.20

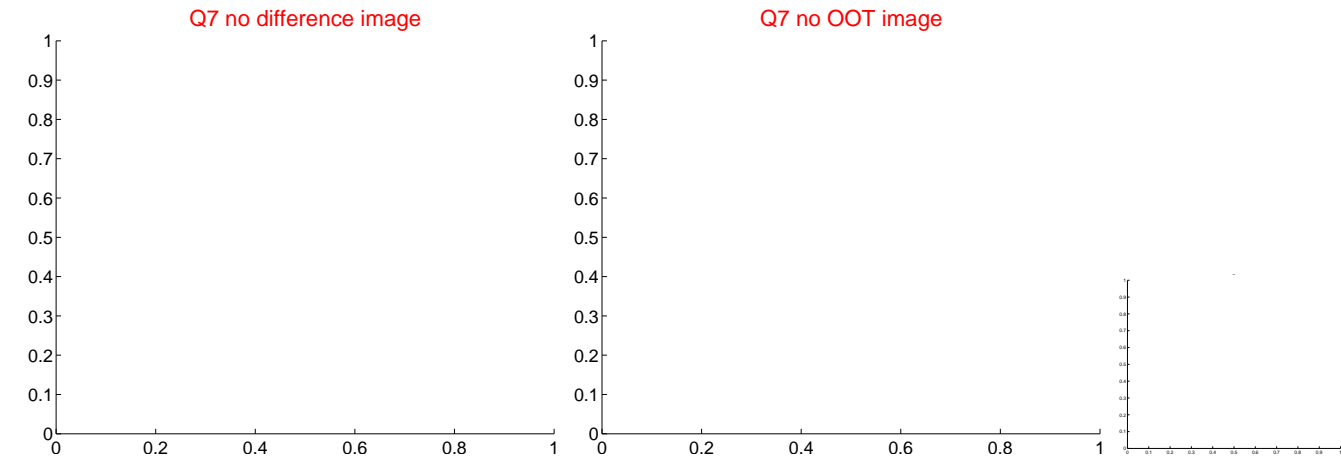
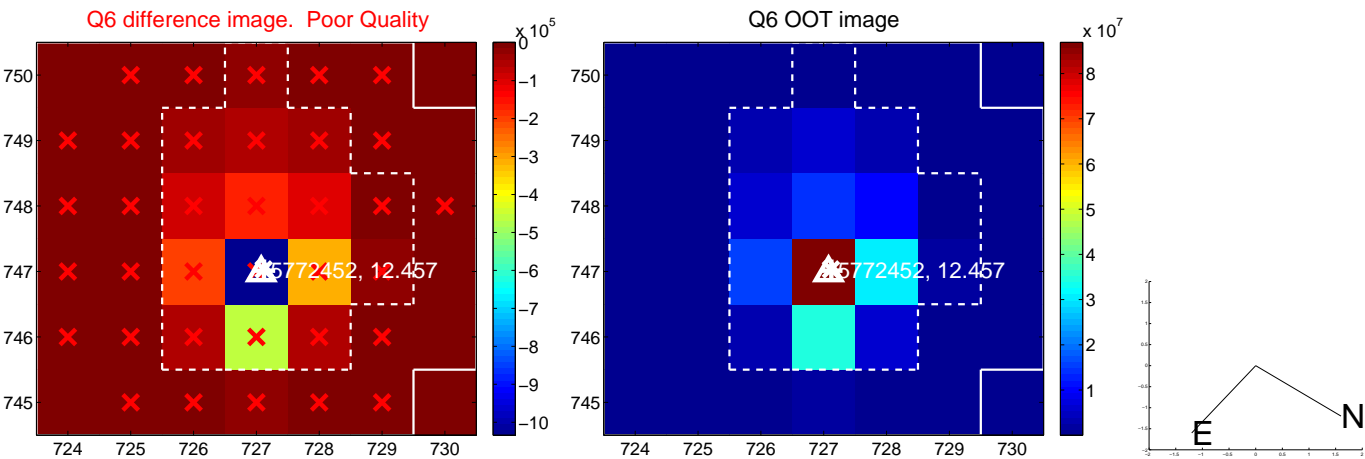


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



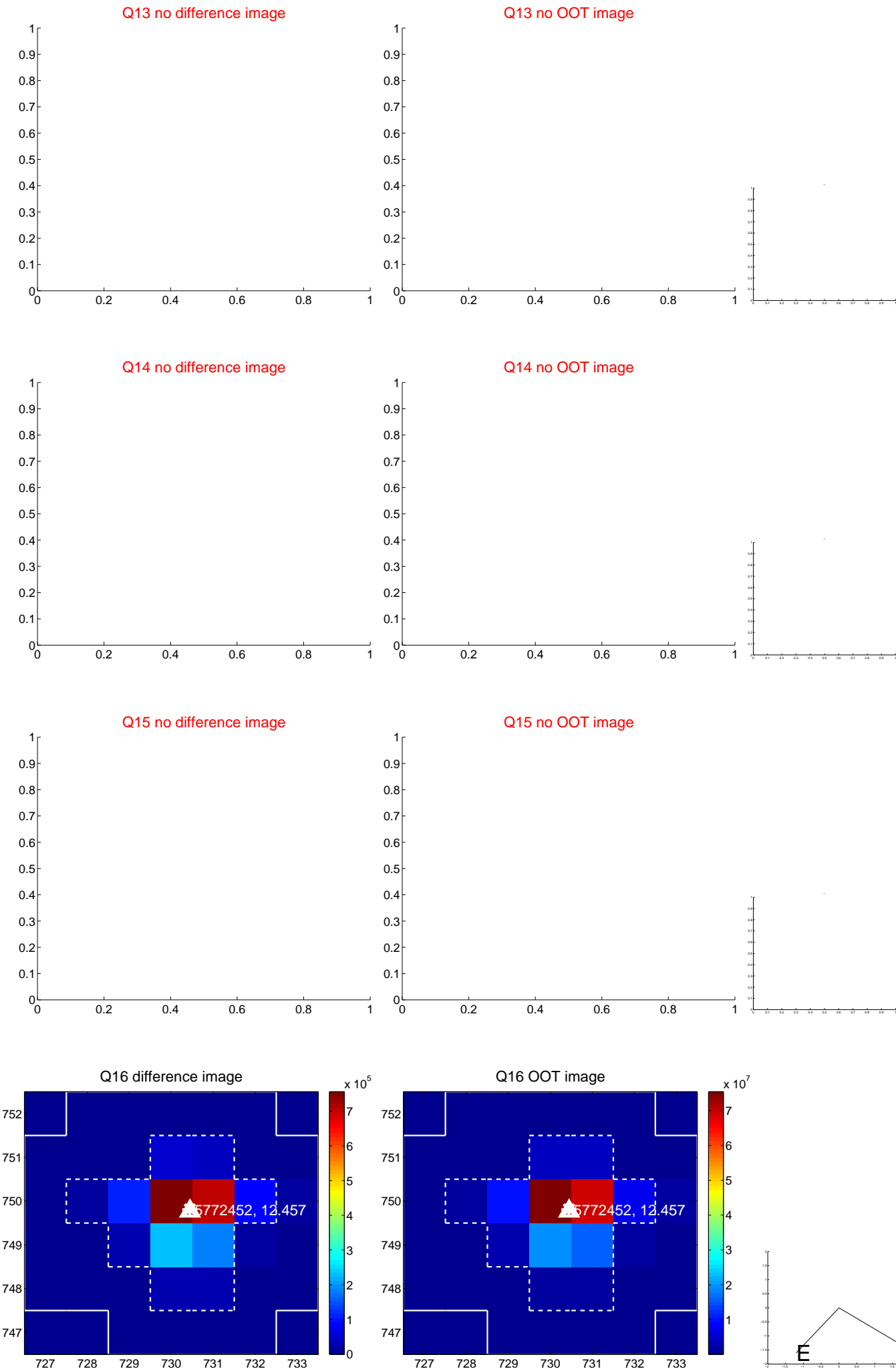
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



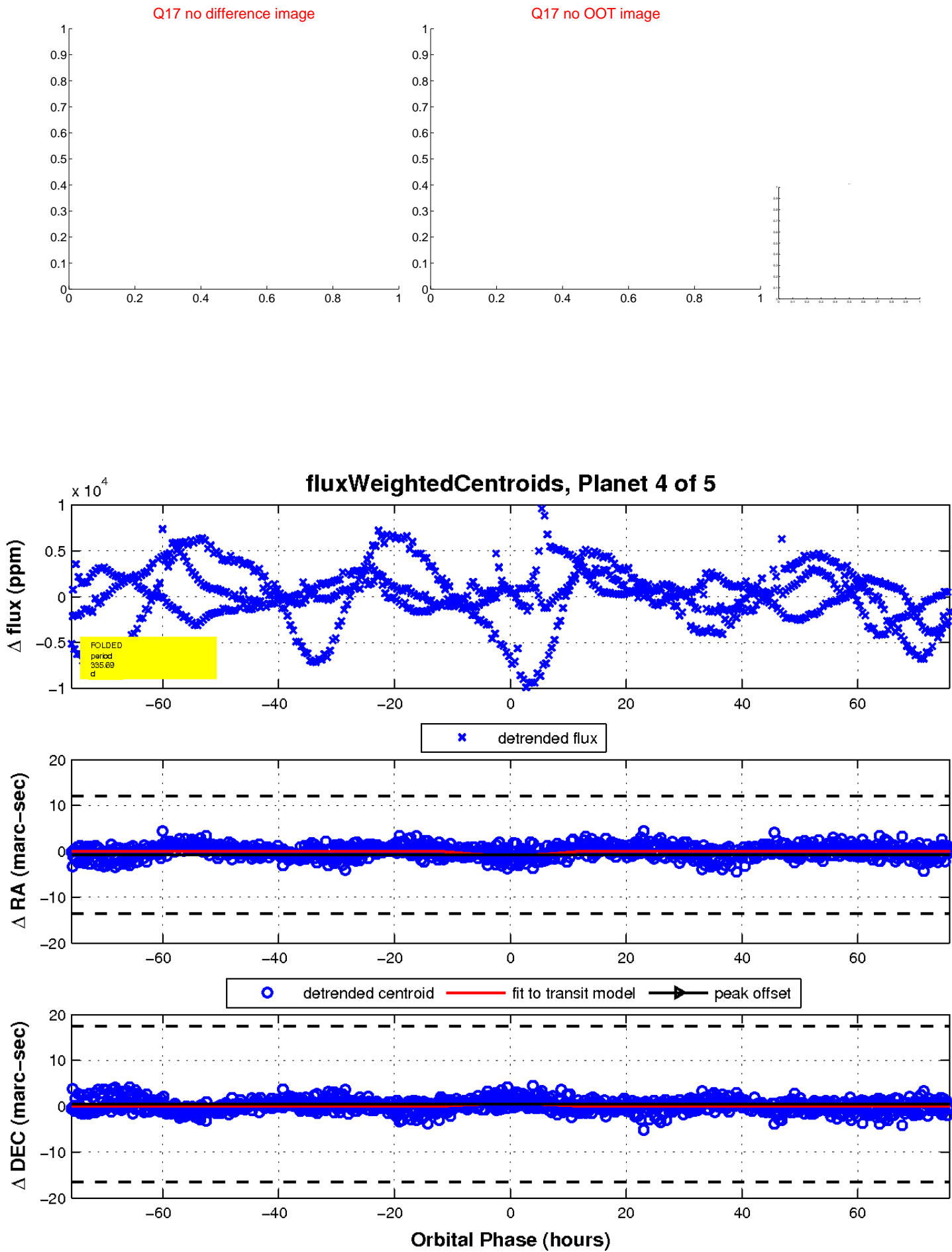
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

