

KIC 005167392

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})
005167392-01	OBS	No	2.204295	132.867087	62.1	1.843	17.4	17.2	3.19	8365	2.93	25239.31
005167392-02	OBS	No	1.102001	131.657210	5.9	3.408	11.0	2.9	3.19	8365	0.79	63610.37
005167392-03	OBS	No	1.102215	132.209330	10.5	3.034	9.9	5.6	3.19	8365	1.20	63593.90
005167392-04	OBS	No	2.204298	132.142326	23.1	12.083	8.7	8.9	3.19	8365	1.67	25239.26
005167392-05	OBS	No	374.900056	419.330366	246.5	11.578	12.6	9.8	3.19	8365	5.18	26.78
005167392-06	OBS	No	19.772091	135.604325	220.9	1.996	8.5	8.6	3.19	8365	4.88	1354.25
005167392-07	OBS	No	14.121162	134.401966	176.1	1.713	8.3	9.5	3.19	8365	4.73	2121.34
005167392-08	OBS	No	9.322341	136.672453	245.4	2.500	7.2	-1.0	3.19	8365	5.06	3690.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005167392-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
005167392-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
005167392-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005167392-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

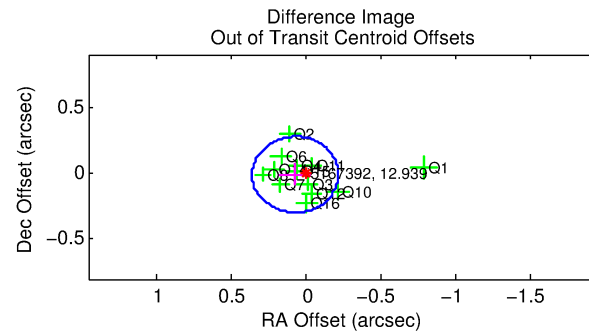
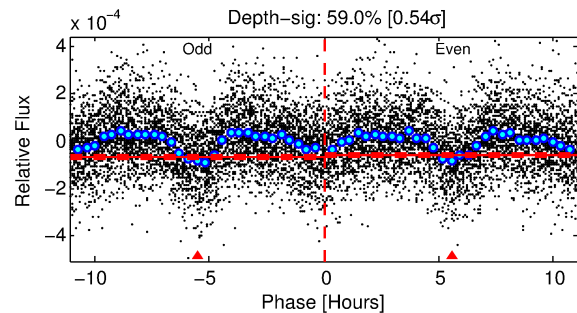
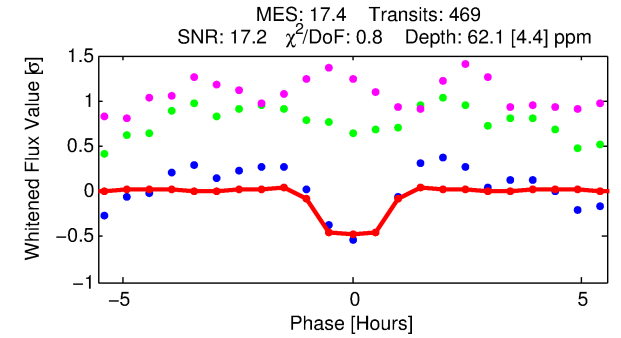
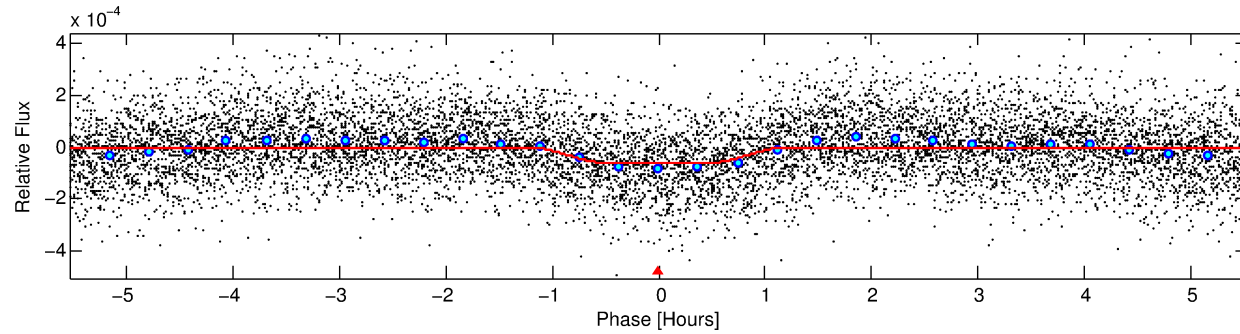
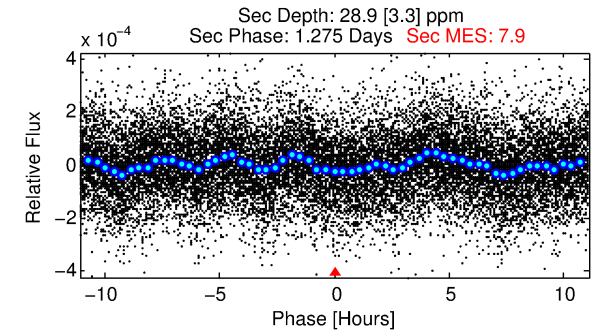
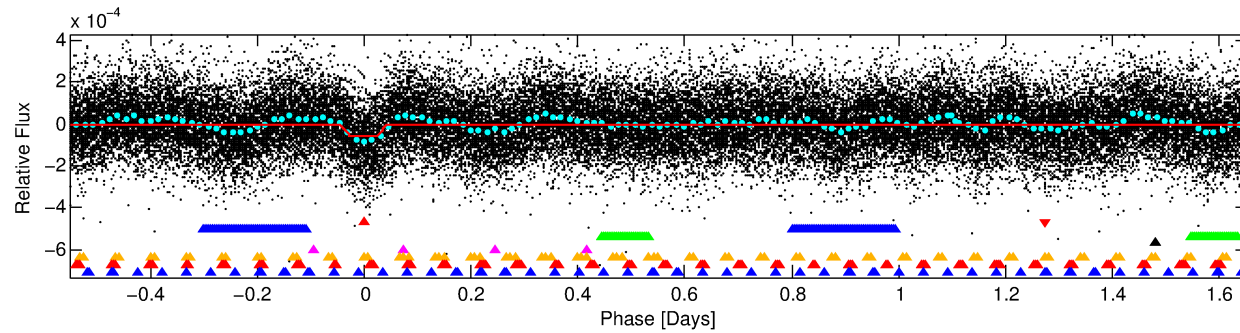
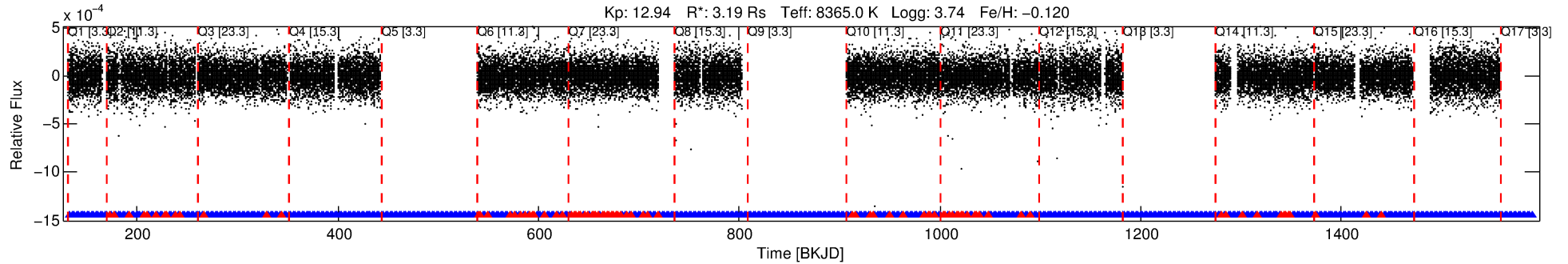
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005167392-01

No Significant Match Found

DV One-Page Summary

KIC: 5167392 Candidate: 1 of 8 Period: 2.204 d



DV Fit Results:

Period = 2.20429 [0.00001] d
Epoch = 132.8671 [0.0015] BKJD
Rp/R* = 0.0084 [0.0018]
a/R* = 4.19 [5.44]
b = 0.90 [0.28]
Seff = 25239.31 [18500.51]
Teq = 3214 [589] K
Rp = 2.93 [1.46] Re
a = 0.0420 [0.0185] AU
Ag = 3.26 [2.73] [0.83σ]
Teffp = 6679 [800] K [3.49σ]

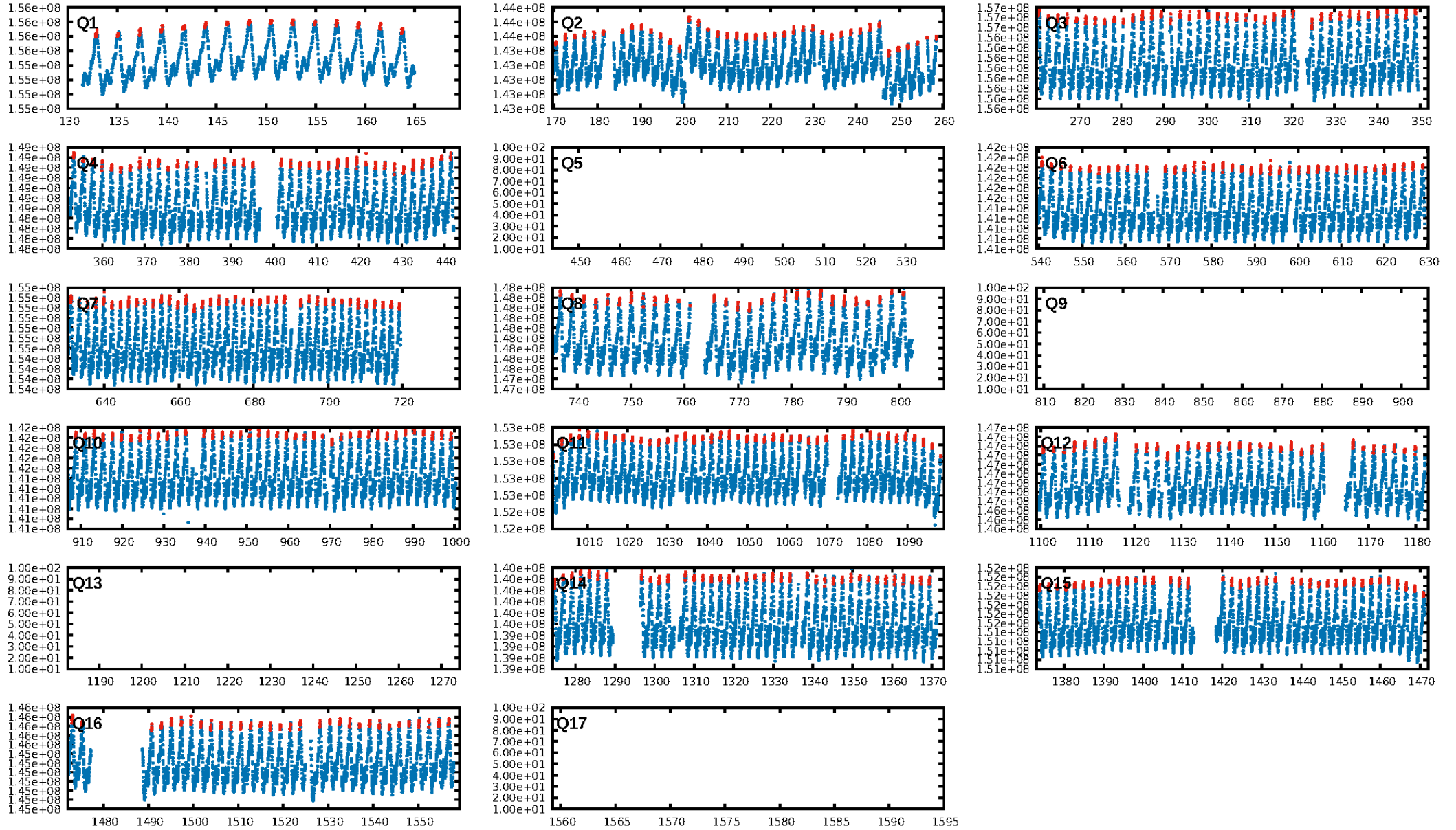
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.45σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.81 [366/454]
GhostDiagnostic-chr: 2.081
Centroid-sig: 74.2%
Centroid-so: 0.330 arcsec [0.45σ]
OotOffset-rm: 0.068 arcsec [0.71σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-rm: 0.073 arcsec [0.67σ]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 0.00 [0/13]
DiffImageOverlap-fno: 0.00 [0/13]

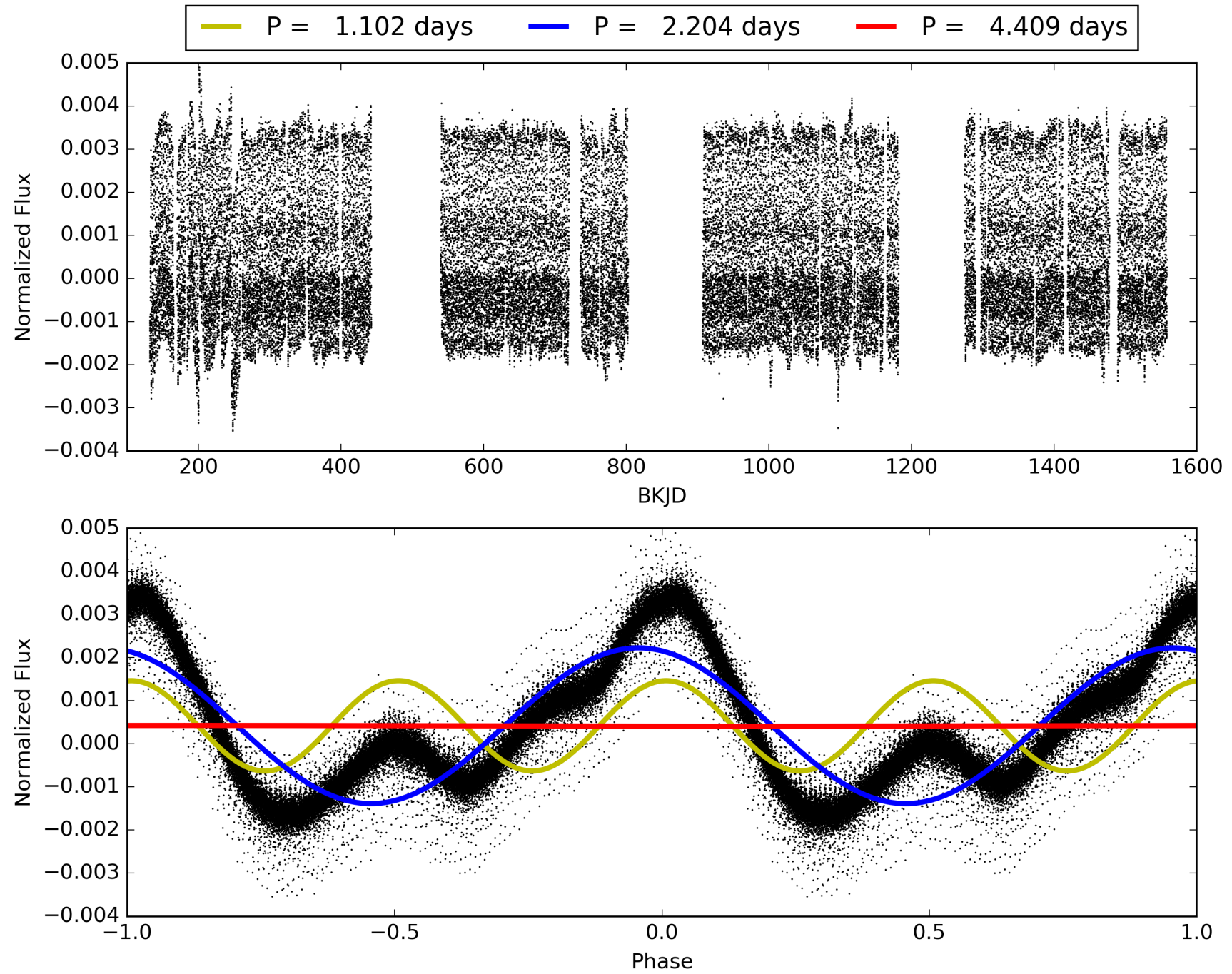
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005167392-01, PDC Light Curves

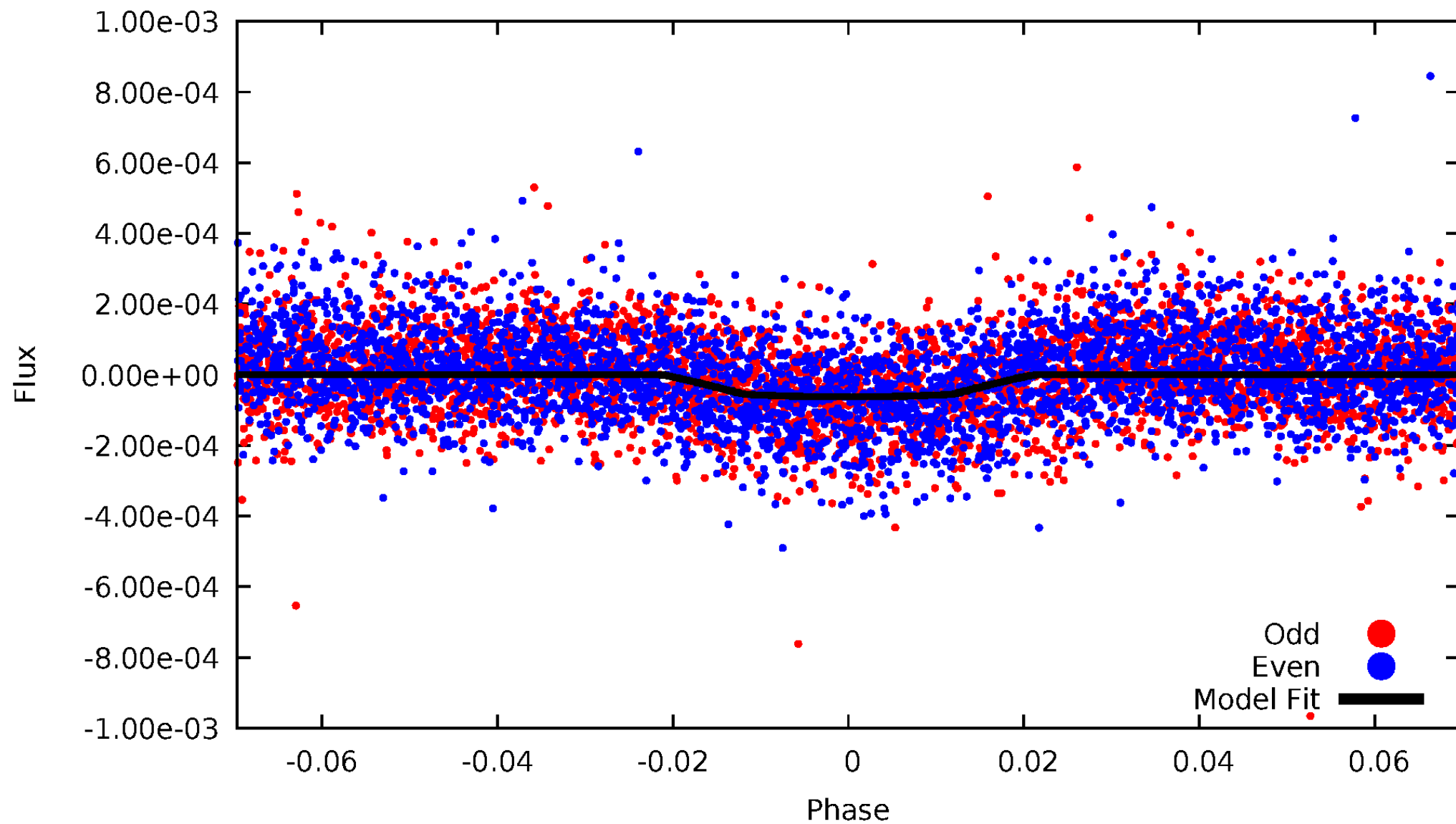


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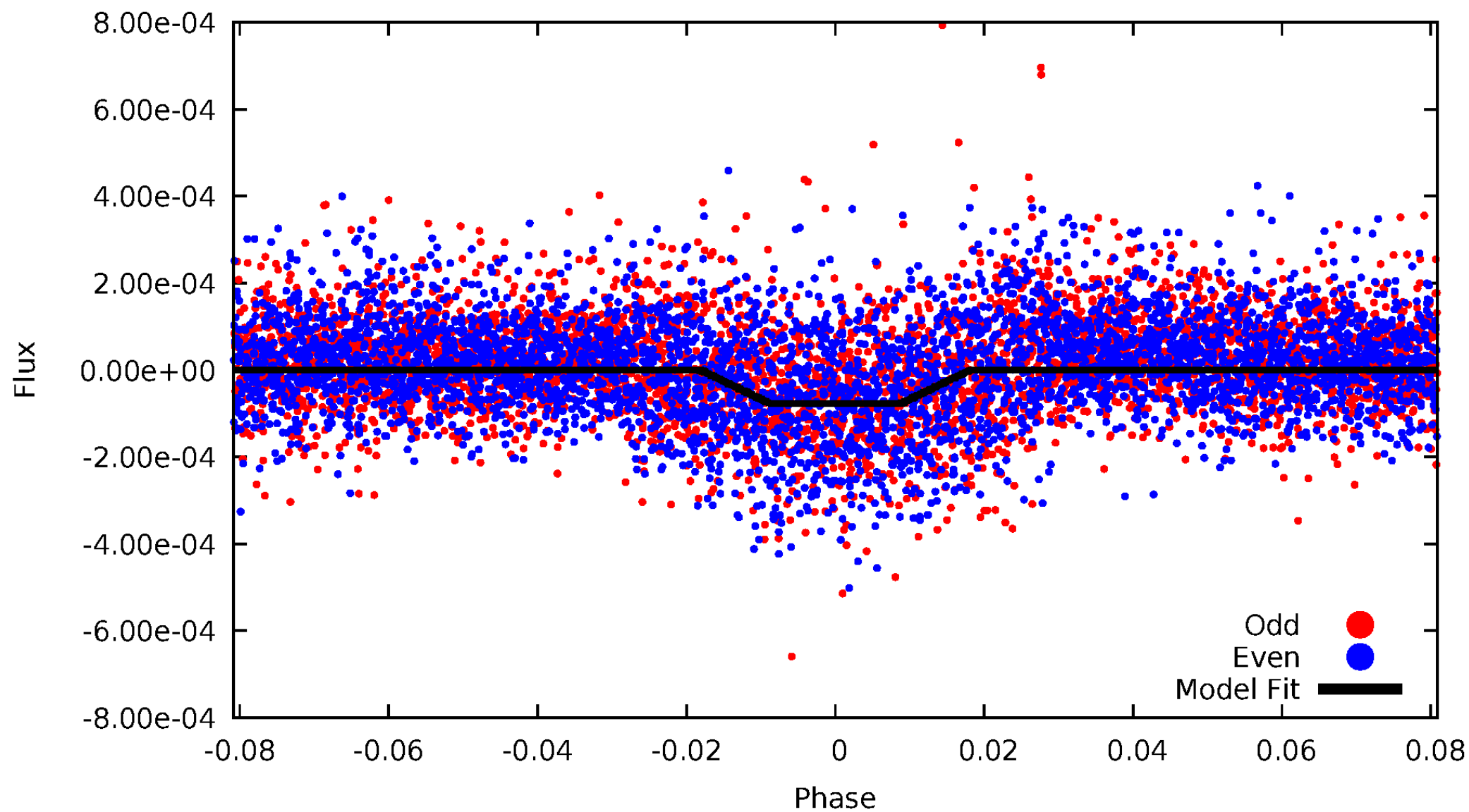
DV Odd/Even

TCE 005167392-01



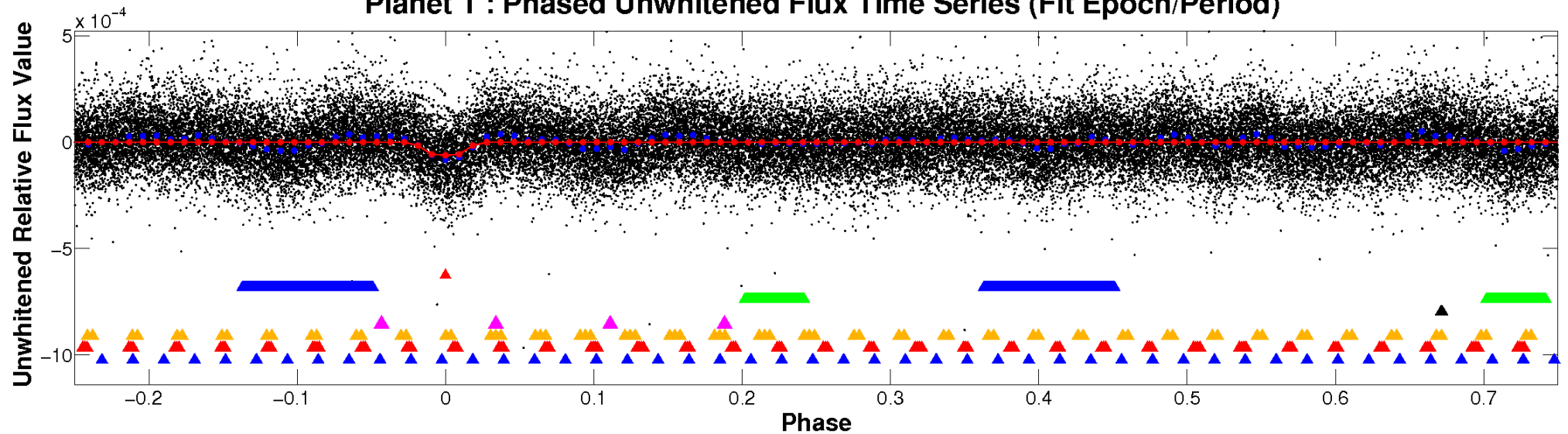
ALT Odd/Even

TCE 005167392-01

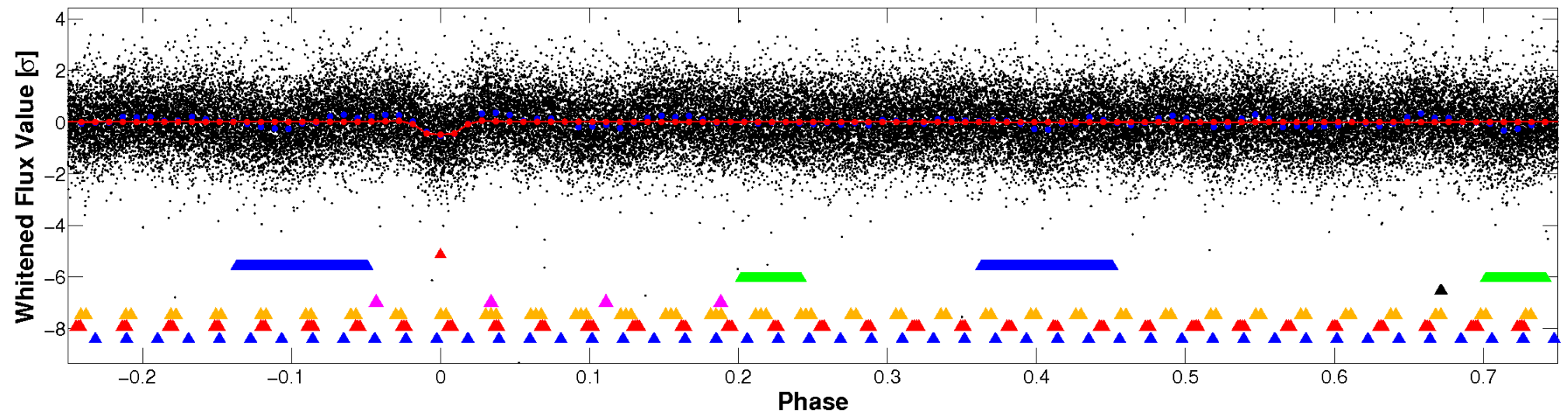


Non-Whitened Vs. Whitened Light Curve

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

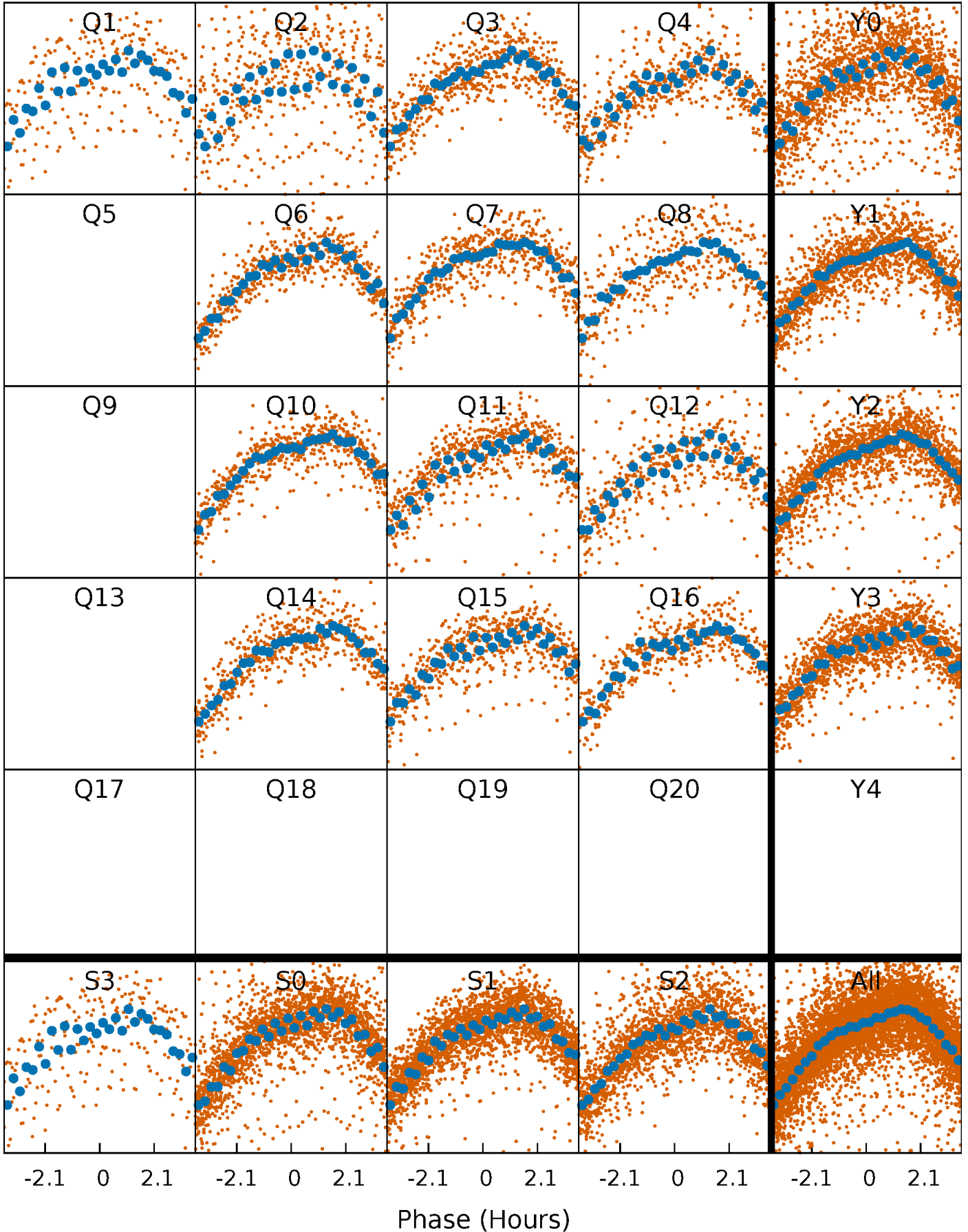


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



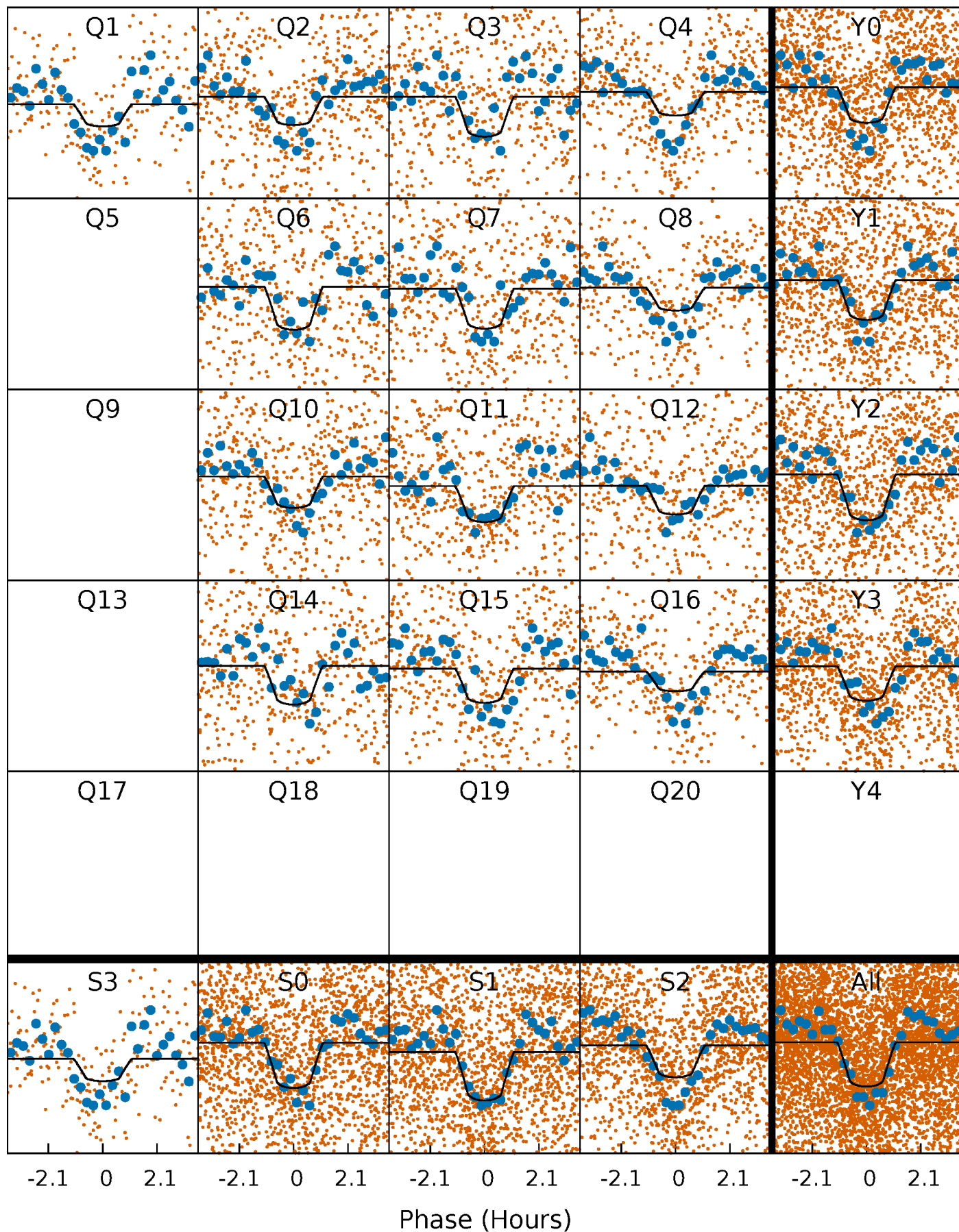
PDC Quarter-Phased Transit Curves

TCE 005167392-01 P= 2.204295 Days $T_0=132.867087$ (BKJD)



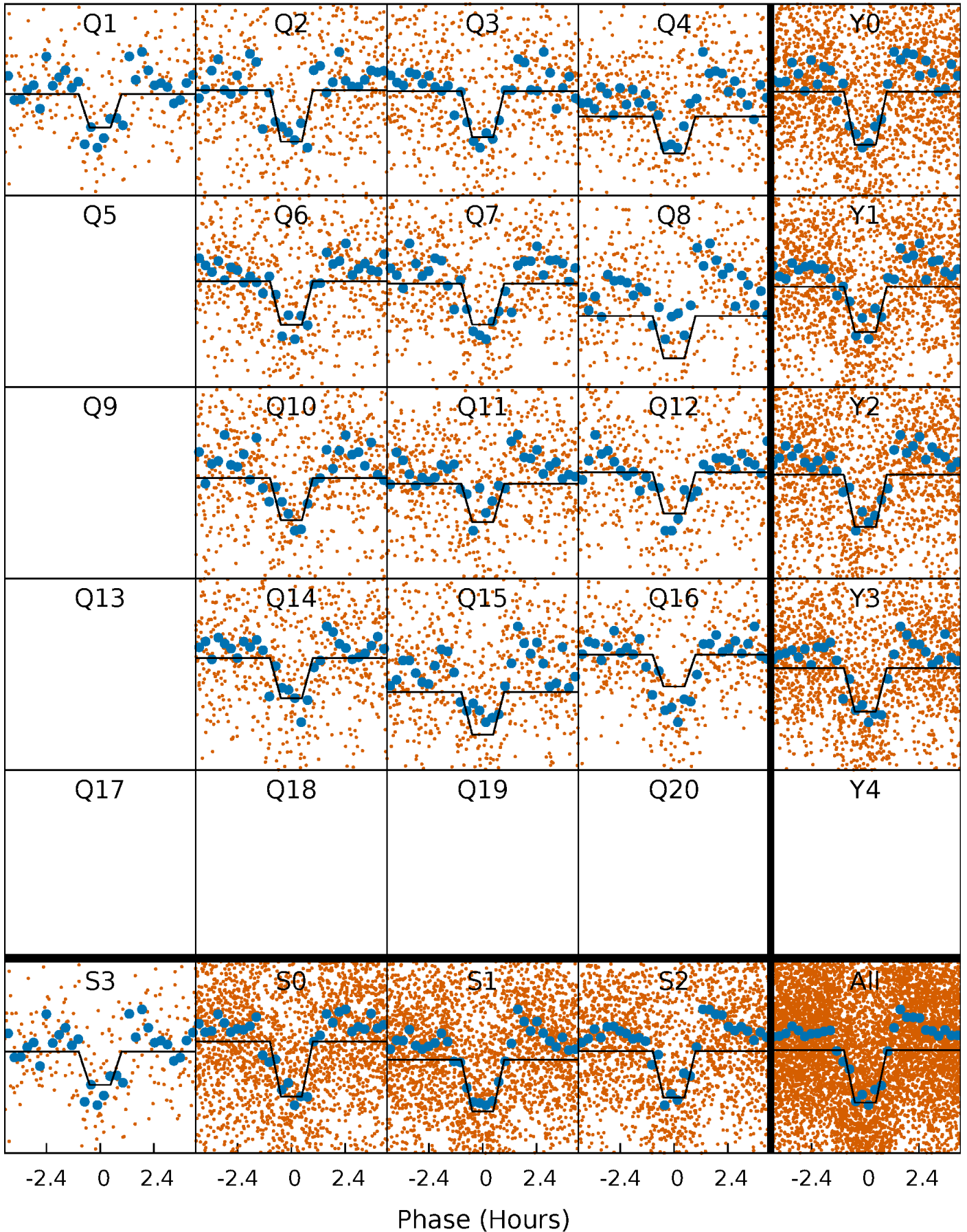
DV Quarter-Phased Transit Curves

TCE 005167392-01 P= 2.204295 Days $T_0=132.867087$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

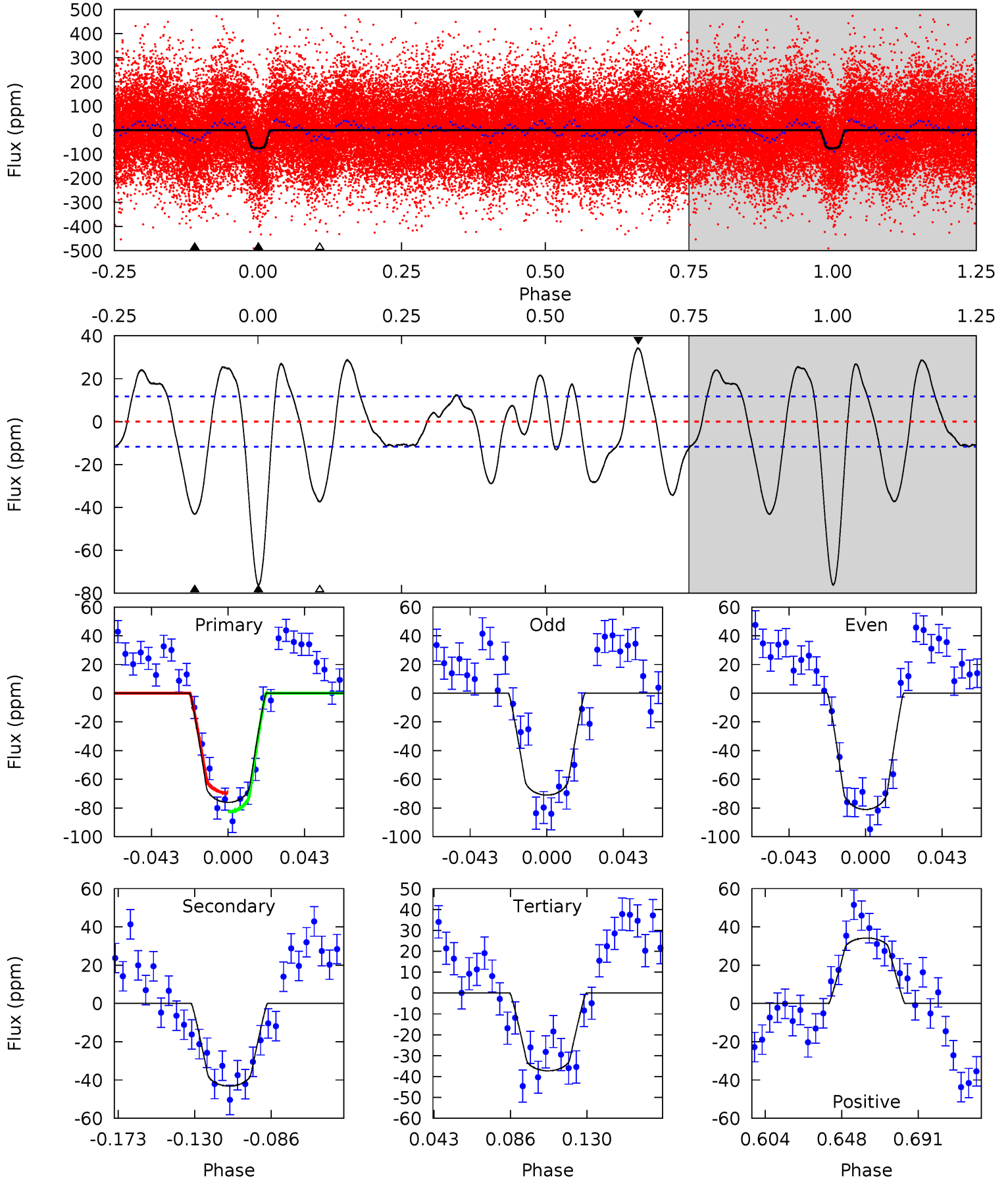
TCE 005167392-01 P= 2.204320 Days $T_0=132.860301$ (BKJD)



DV Model-Shift Uniqueness Test

005167392-01, P = 2.204295 Days, E = 130.662792 Days

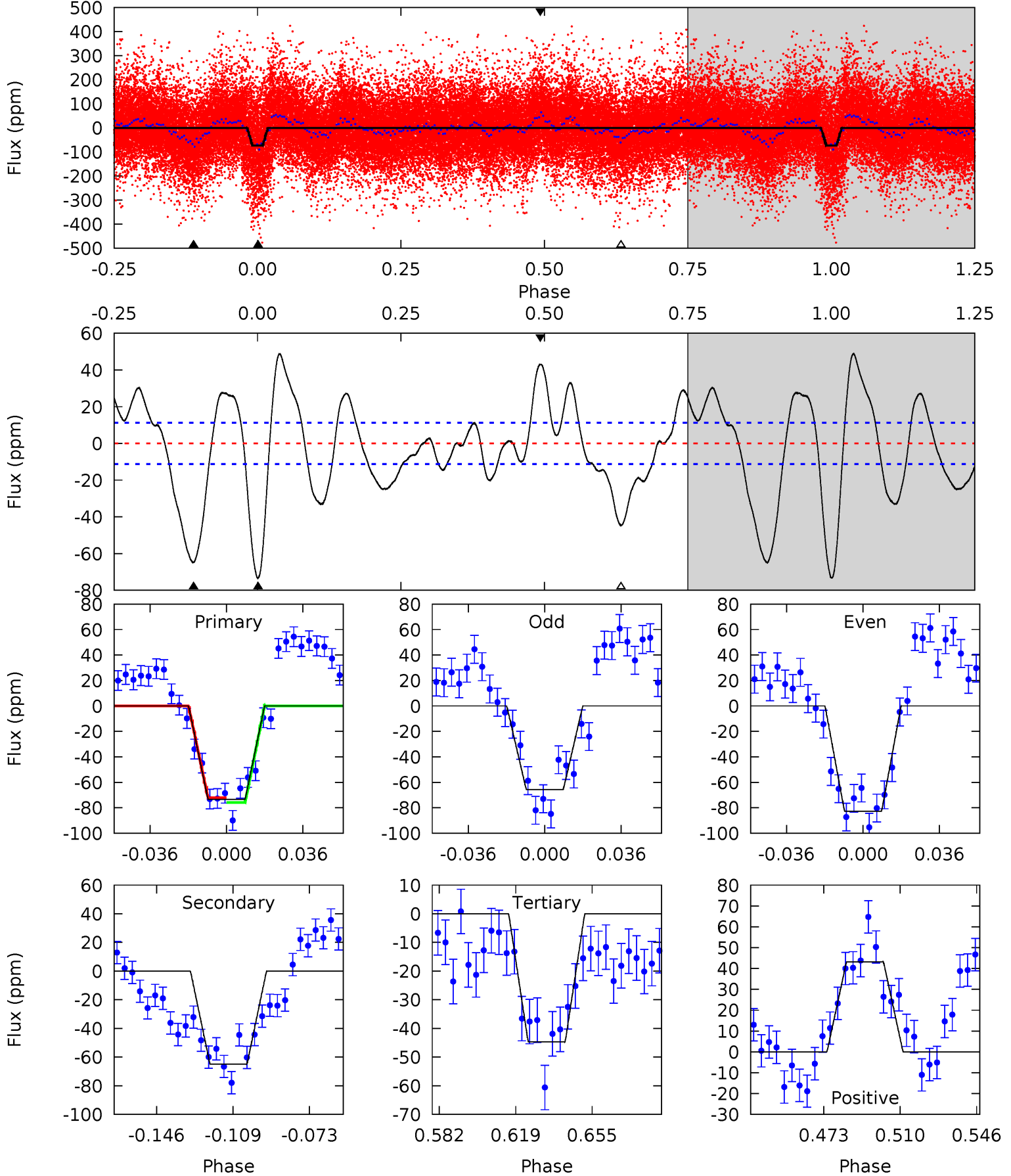
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.8	17.5	15.1	13.8	4.74	2.02	6.94	15.7	17.0	2.39	3.63	2.03	1.06	0.31	2.64



Alt Model-Shift Uniqueness Test

005167392-01, P = 2.204320 Days, E = 130.655981 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.1	27.5	18.9	18.3	4.77	2.09	8.46	12.2	12.8	8.57	9.20	3.64	1.02	0.40	0.75



Stellar Parameters For KIC 005167392

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8365^{+202}_{-376}	$3.740^{+0.420}_{-0.140}$	$-0.120^{+0.300}_{-0.400}$	$3.188^{+0.952}_{-1.429}$	$2.039^{+0.428}_{-0.471}$	$0.089^{+0.320}_{-0.038}$
	+2%/-4%	+11%/-4%	+250%/-333%	+30%/-45%	+21%/-23%	+361%/-43%
Source	KIC0	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 005167392-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-43 ± 2	$2.71^{+0.88}_{-0.76}$	4333^{+355}_{-516}	6993^{+1210}_{-740}	$5.800^{+5.110}_{-2.412}$
Alt.	-65 ± 2	$2.84^{+0.99}_{-0.82}$	4359^{+376}_{-510}	7776^{+1252}_{-874}	$7.789^{+7.342}_{-3.291}$

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 $A_{obs} \gg 1.0$

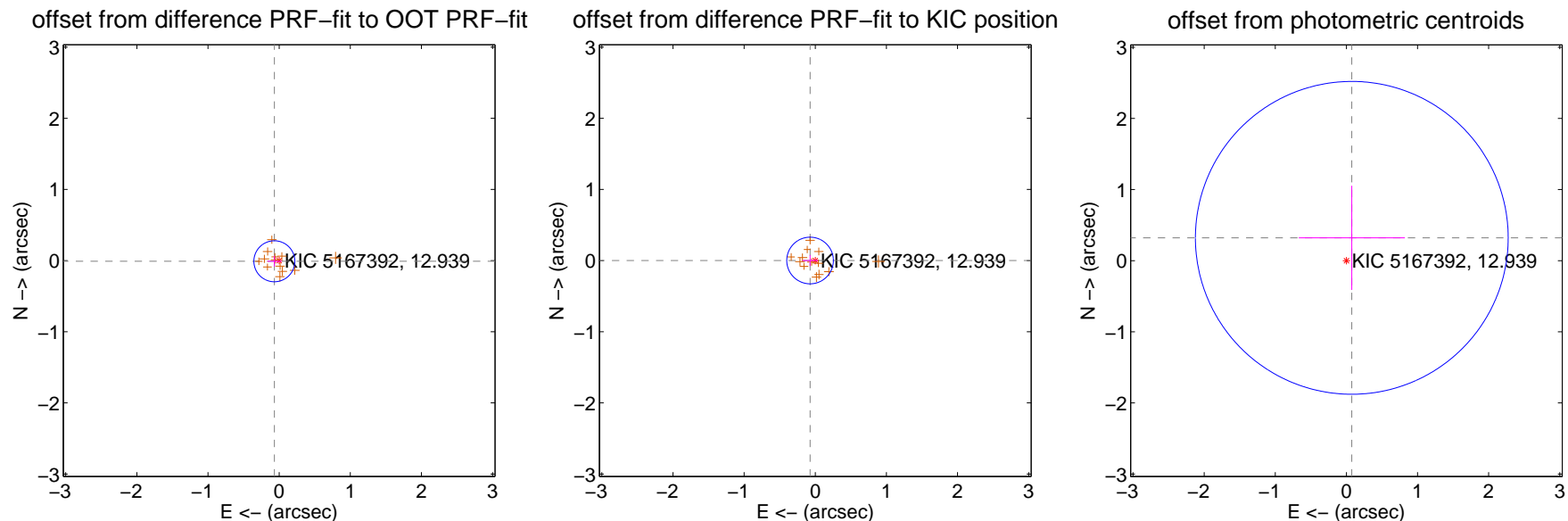
DV Centroid Data

Supplemental centroid analysis for 005167392-01. Kepler magnitude: 12.94. Transit SNR 17.25

There are 0 quarters with good PRF difference image offsets

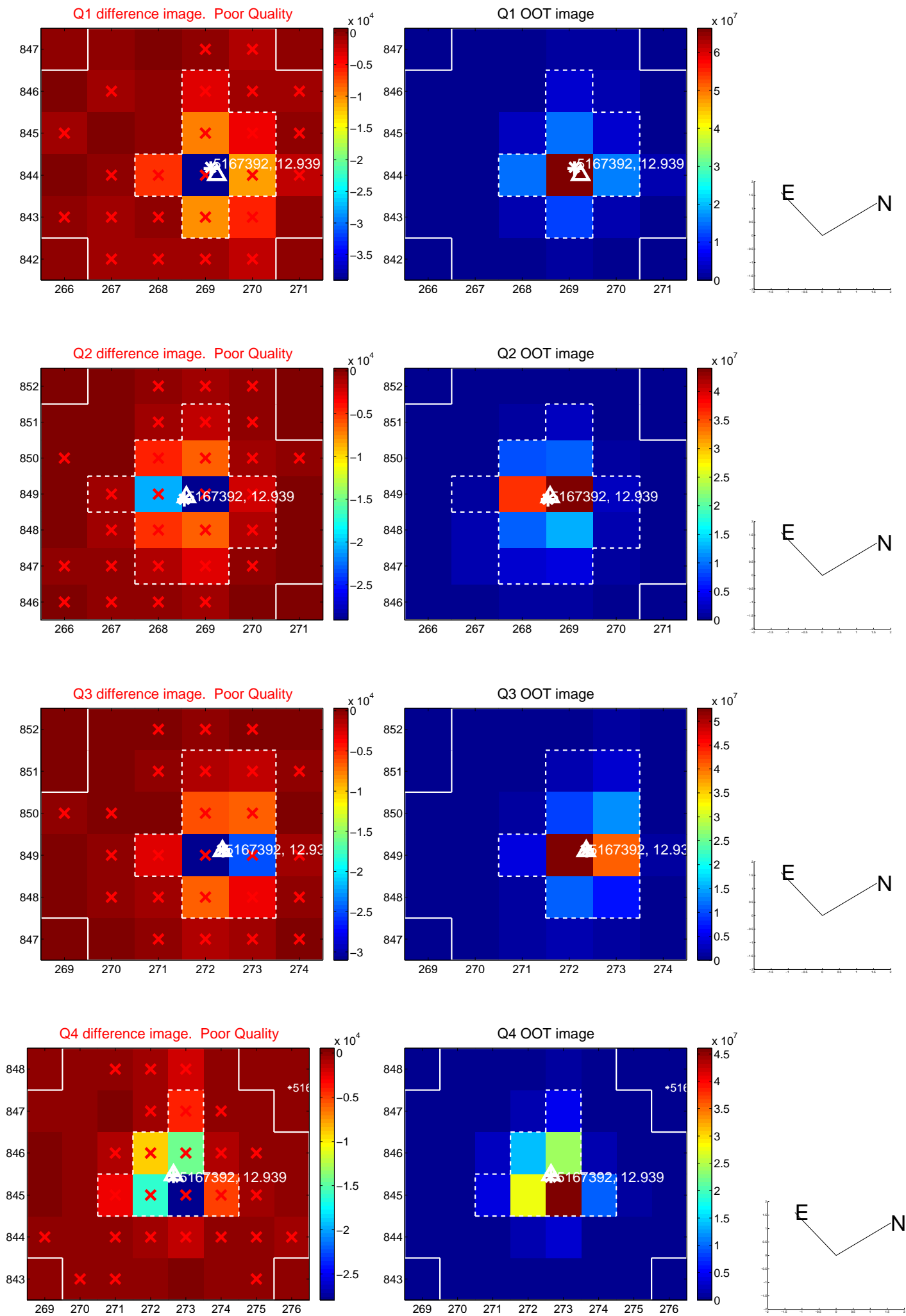
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.068 ± 0.096	0.71	0.067 ± 0.097	-0.010 ± 0.076
PRF-fit source offset from KIC position	0.073 ± 0.109	0.67	0.073 ± 0.109	0.001 ± 0.077
photometric centroid source offset	0.33 ± 0.73	0.45	-0.08 ± 0.75	0.32 ± 0.73

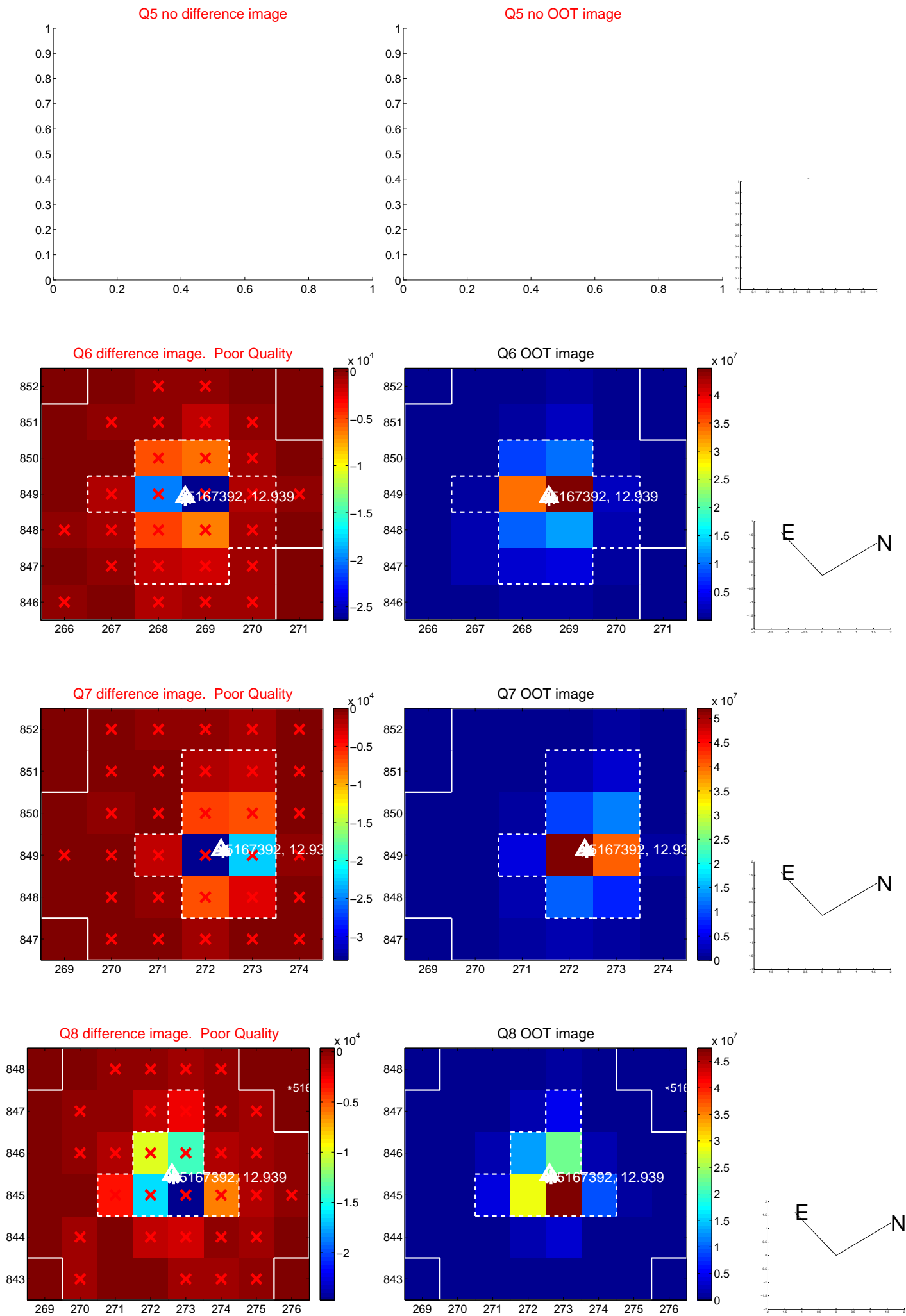


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

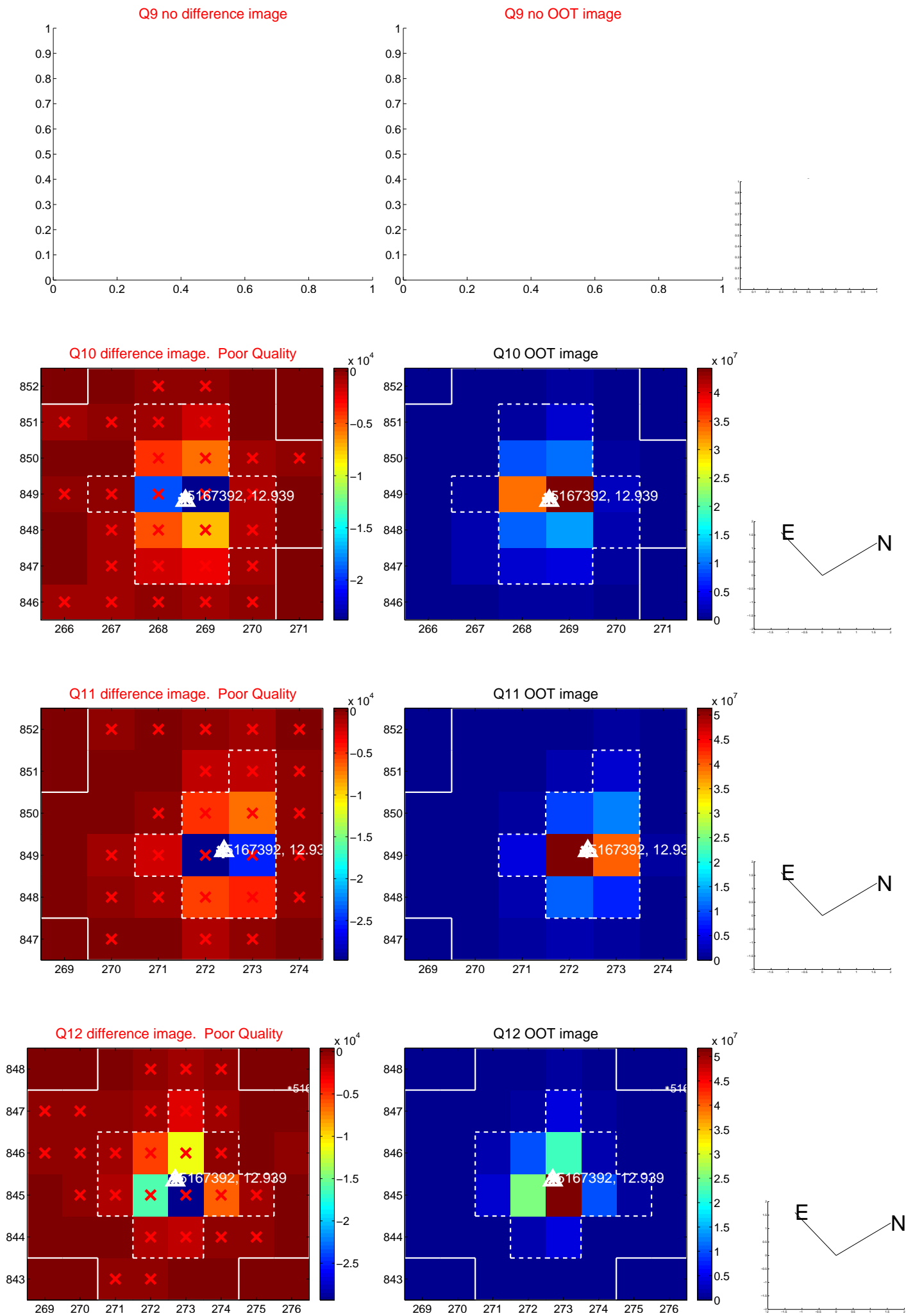
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



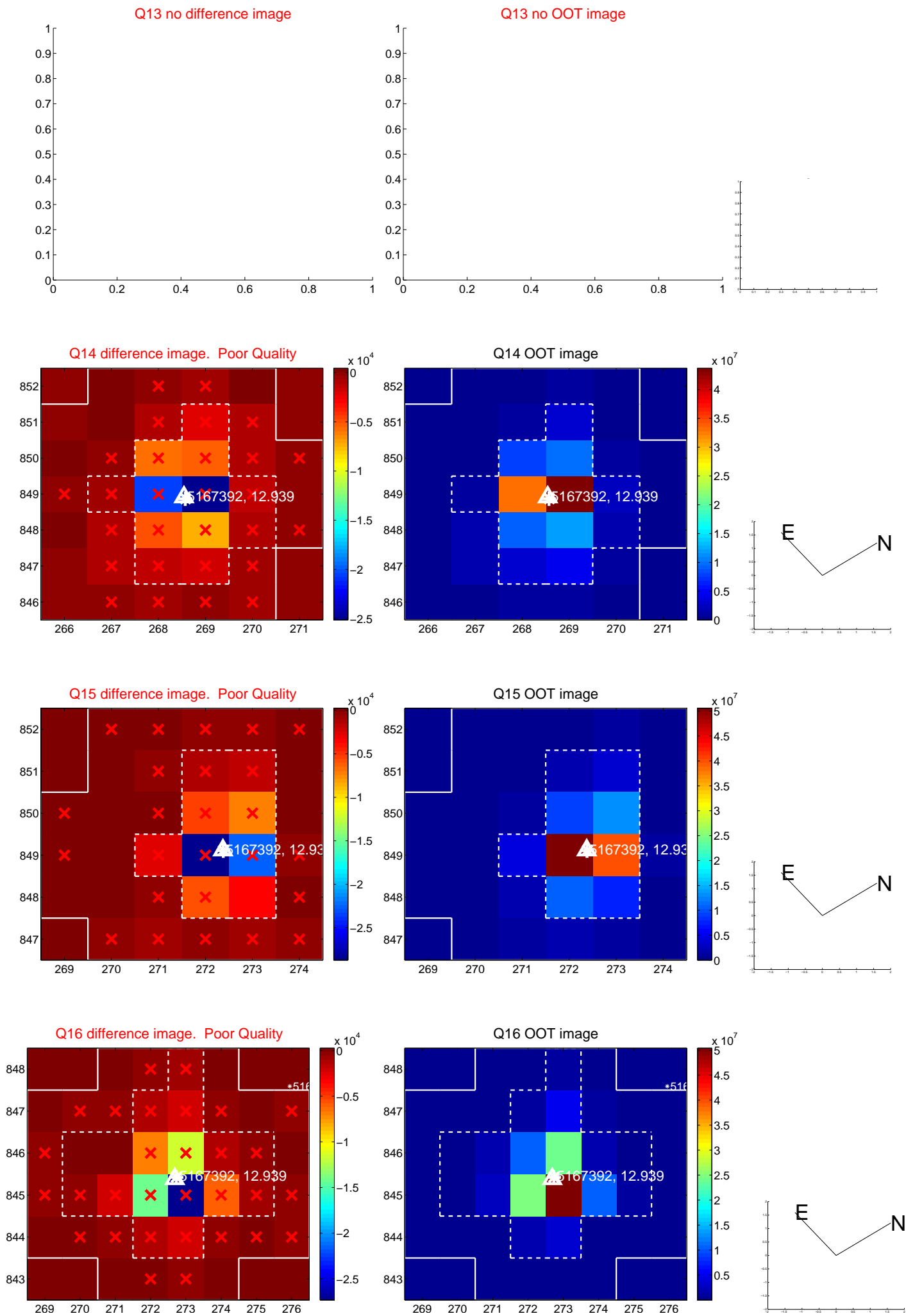
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



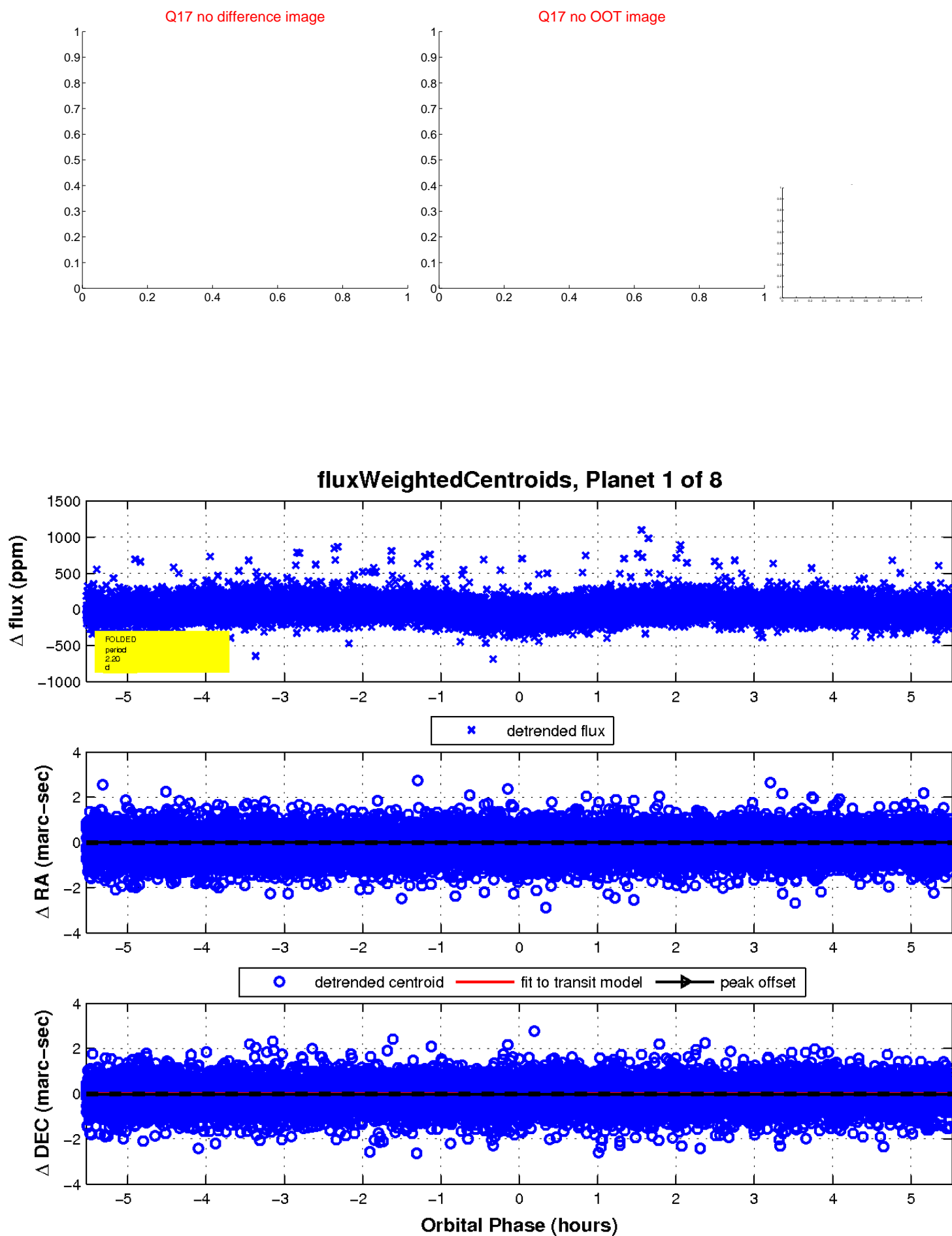
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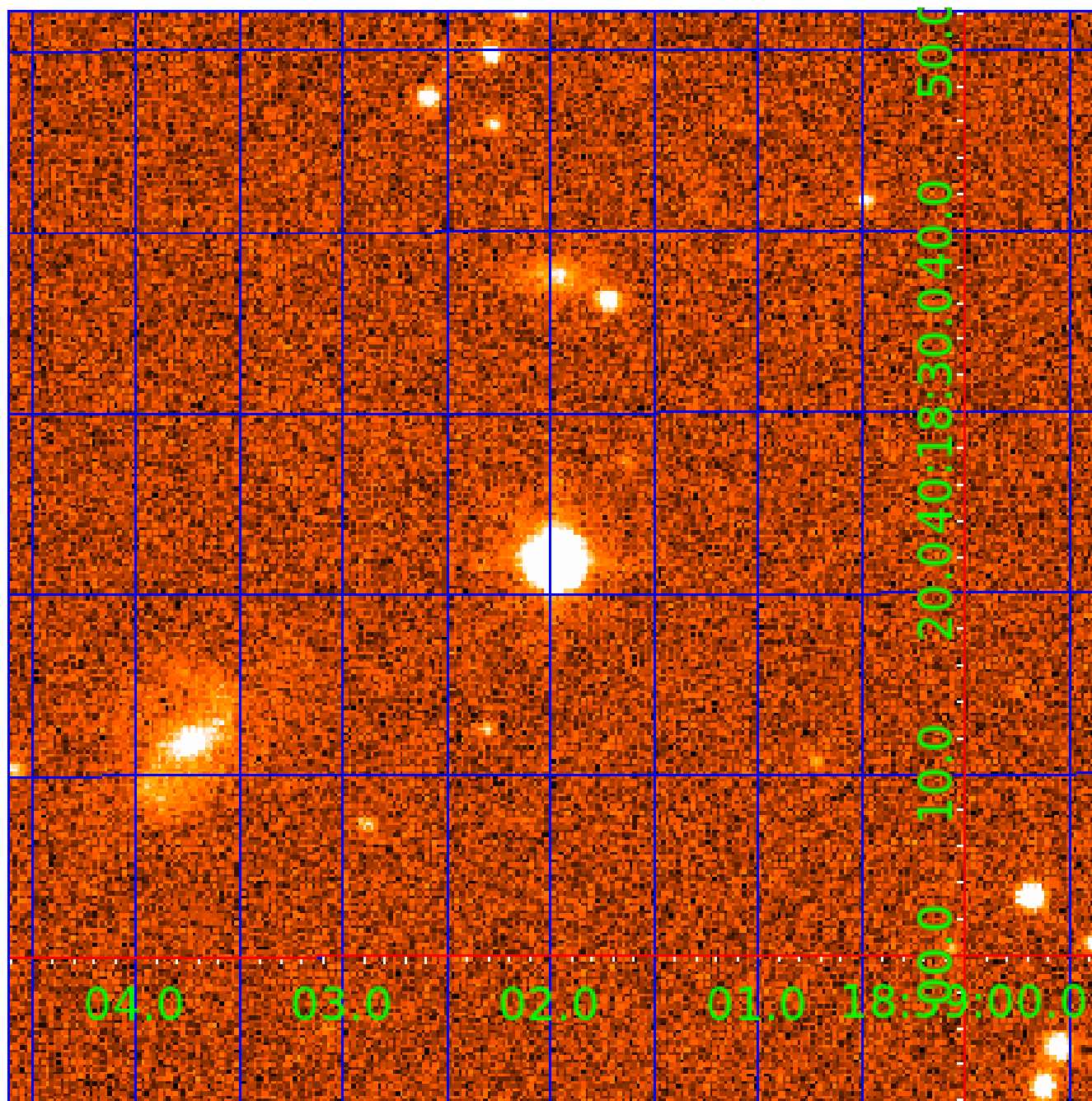


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005167392

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})
005167392-01	OBS	No	2.204295	132.867087	62.1	1.843	17.4	17.2	3.19	8365	2.93	25239.31
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005167392-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
005167392-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
005167392-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005167392-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

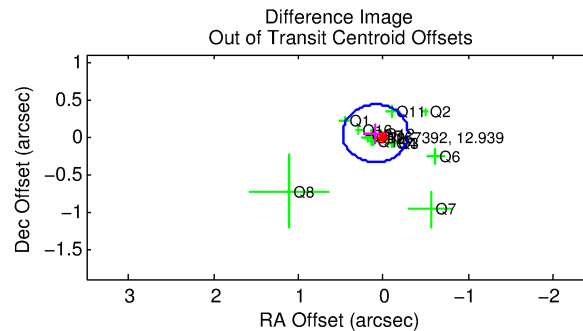
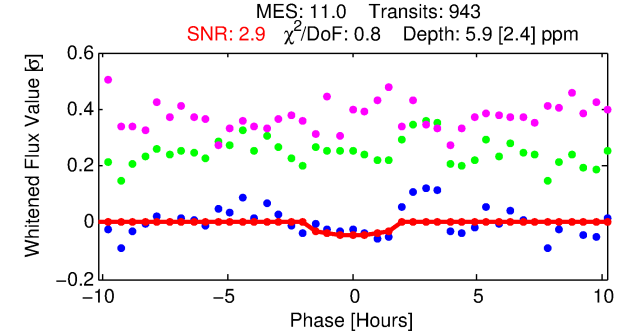
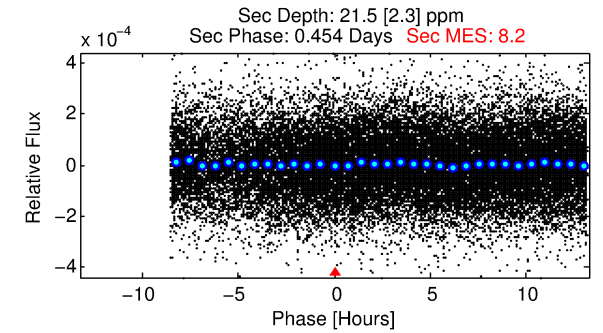
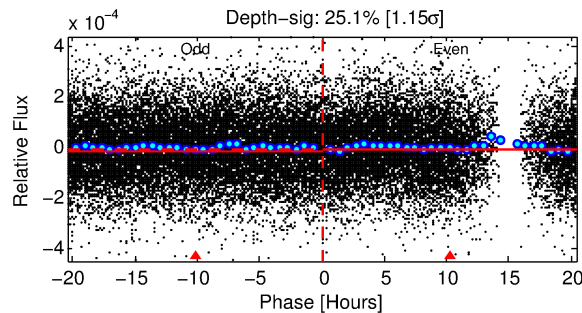
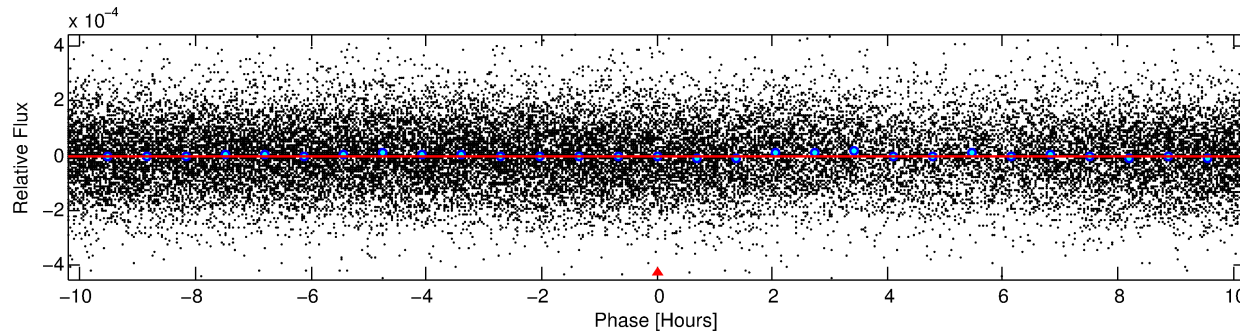
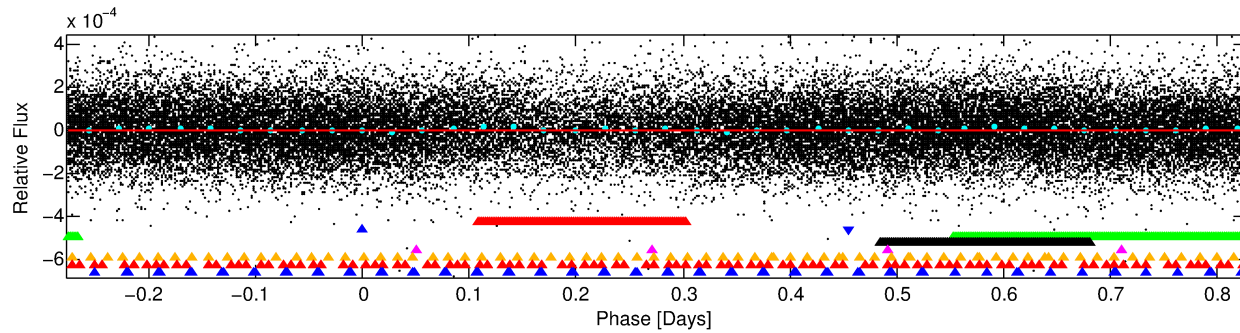
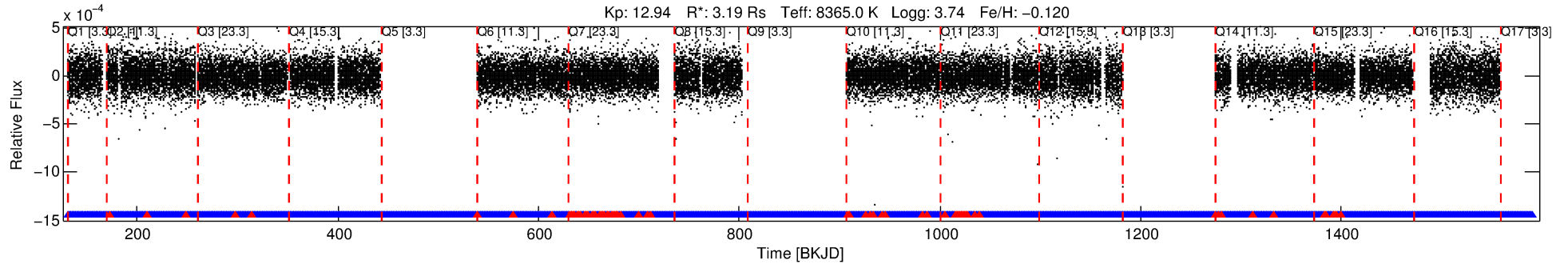
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005167392-02

No Significant Match Found

DV One-Page Summary

KIC: 5167392 Candidate: 2 of 8 Period: 1.102 d



DV Fit Results:

Period = 1.10200 [0.00004] d
Epoch = 131.6572 [0.0133] BKJD
Rp/R* = 0.0023 [0.0016]
a/R* = 2.42 [8.16]
b = 0.34 [10.74]
Seff = 63610.37 [46626.64]
Teq = 4050 [742] K
Rp = 0.79 [0.67] Re
a = 0.0265 [0.0116] AU
Ag = 13.26 [21.29] [0.58 σ]
Teffp = 11947 [4334] K [1.80 σ]

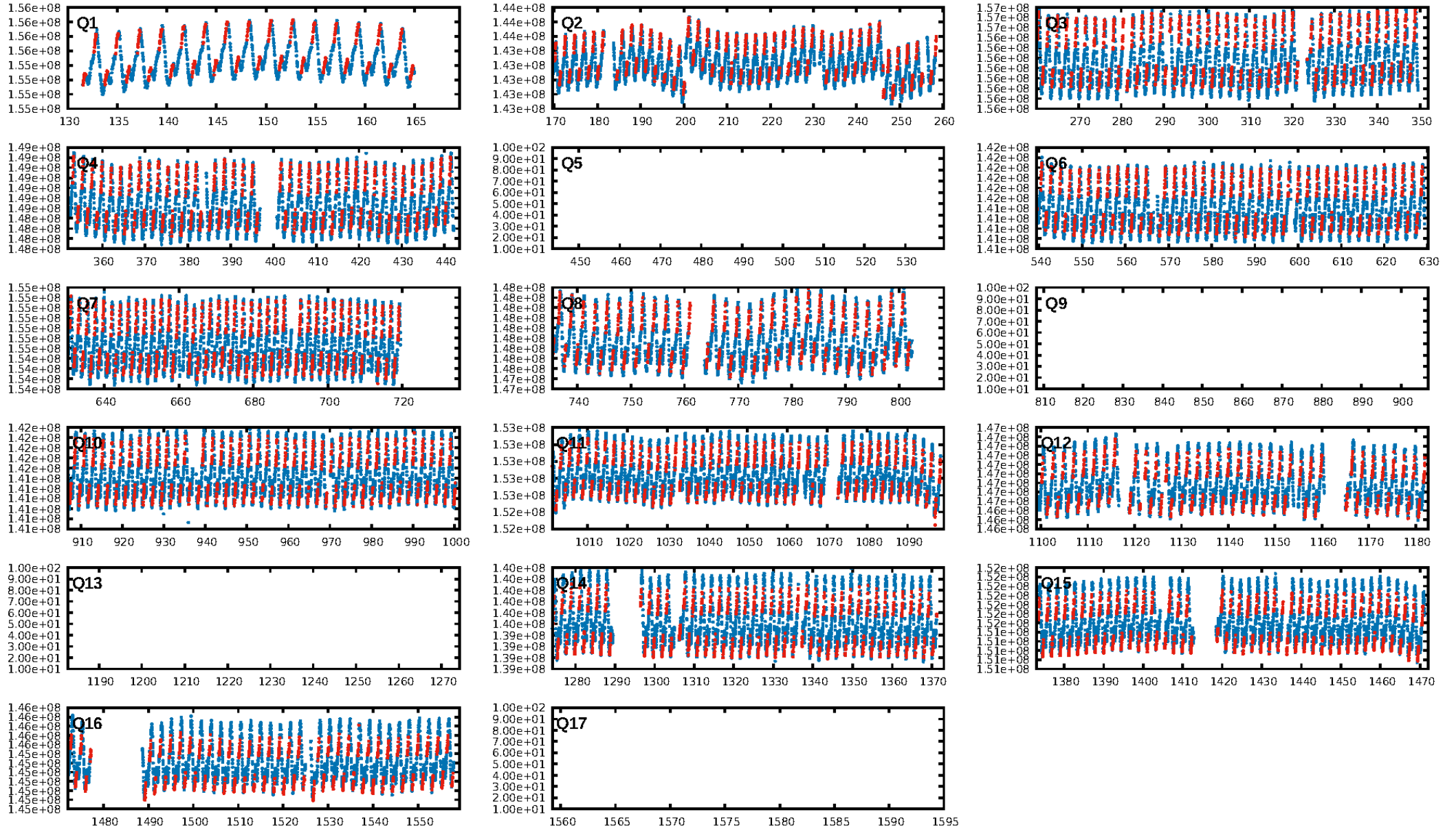
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.92 [837/912]
GhostDiagnostic-chr: 1.115
Centroid-sig: 0.0%
Centroid-so: 11.856 arcsec [2.97 σ]
OotOffset-rm: 0.101 arcsec [0.78 σ]
KicOffset-rm: 0.097 arcsec [0.72 σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 0.00 [0/13]

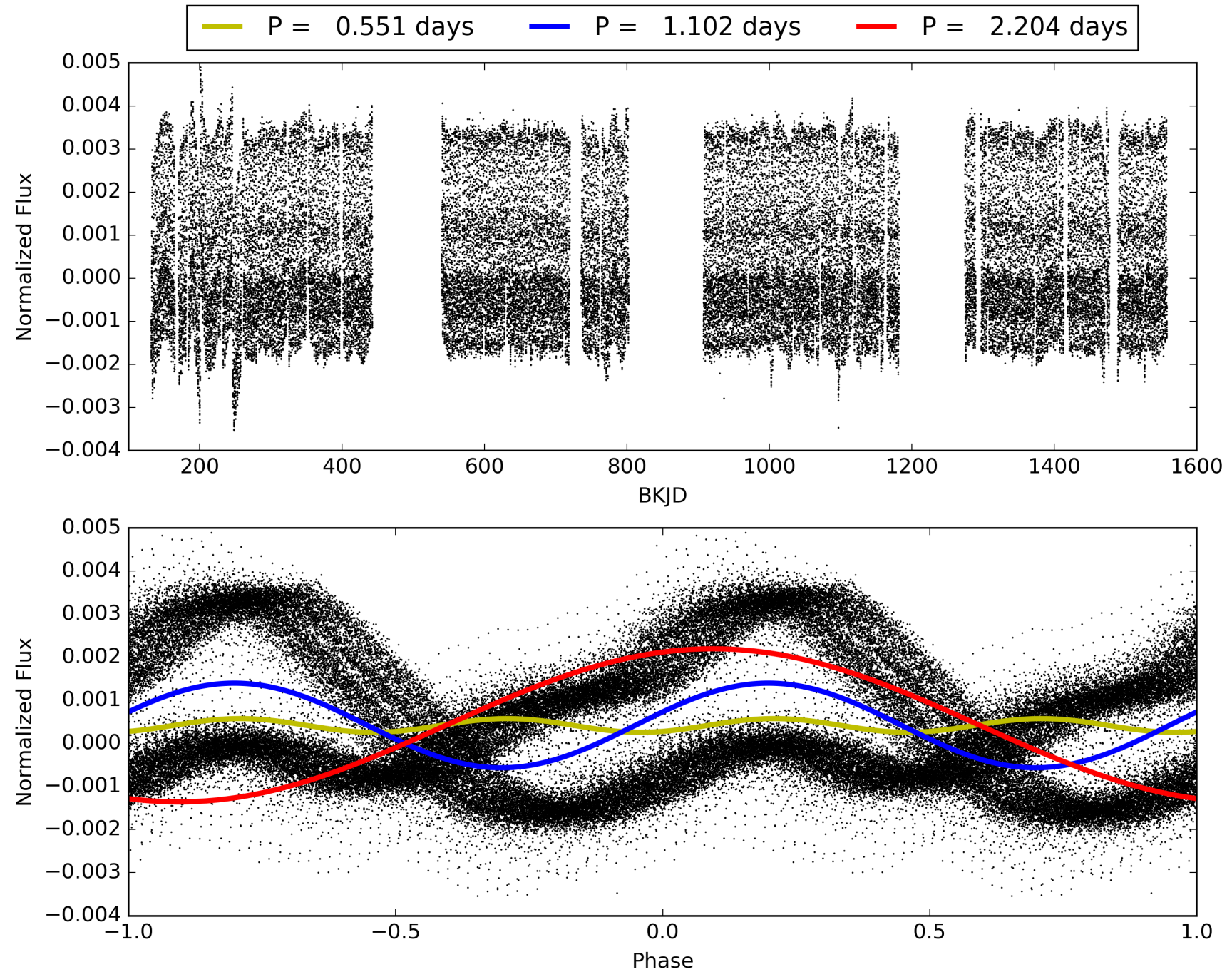
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005167392-02, PDC Light Curves

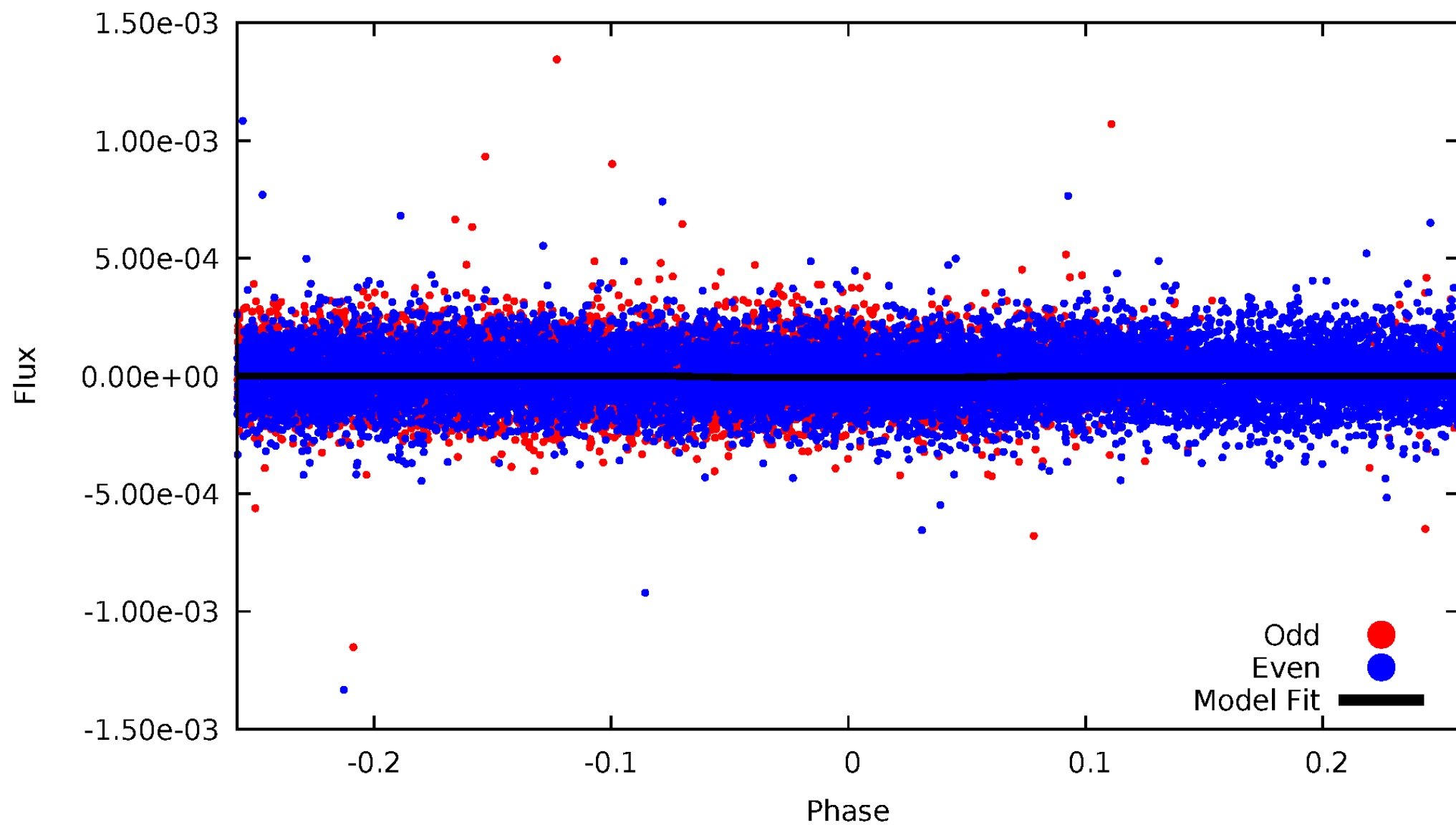


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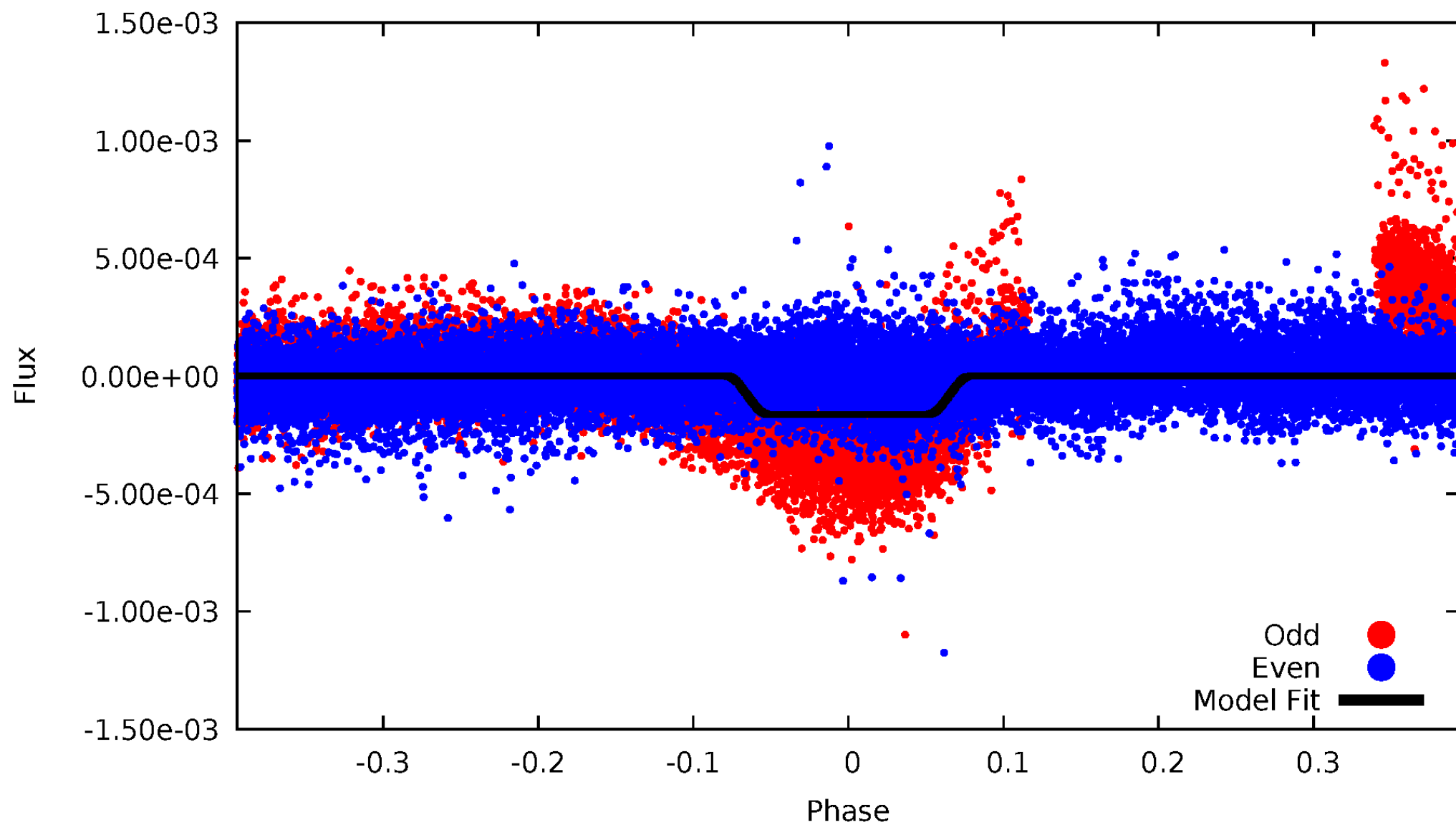
DV Odd/Even

TCE 005167392-02



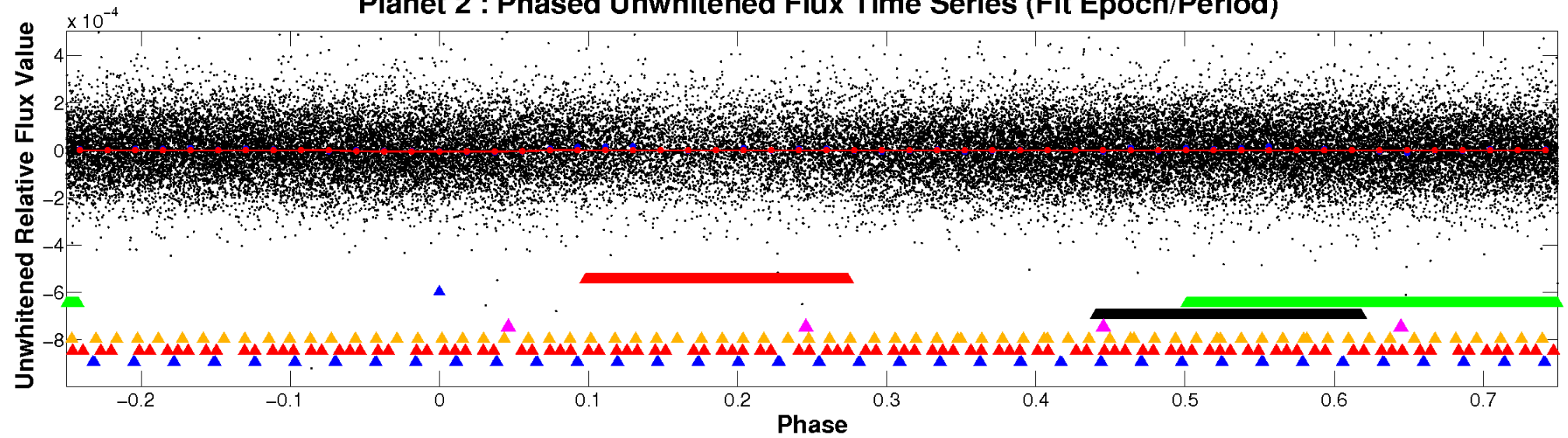
ALT Odd/Even

TCE 005167392-02

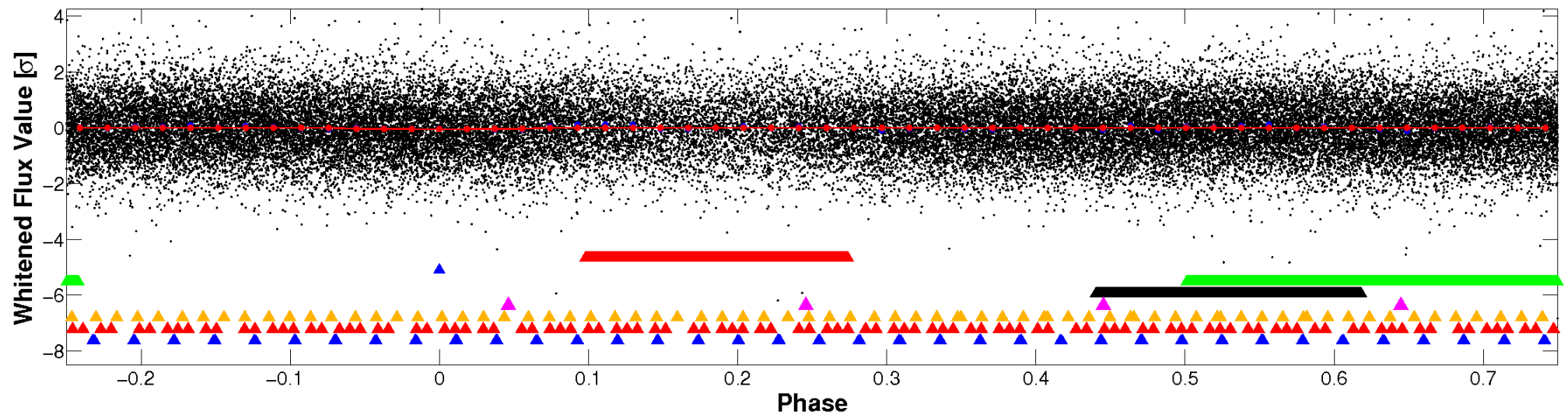


Non-Whitened Vs. Whitened Light Curve

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

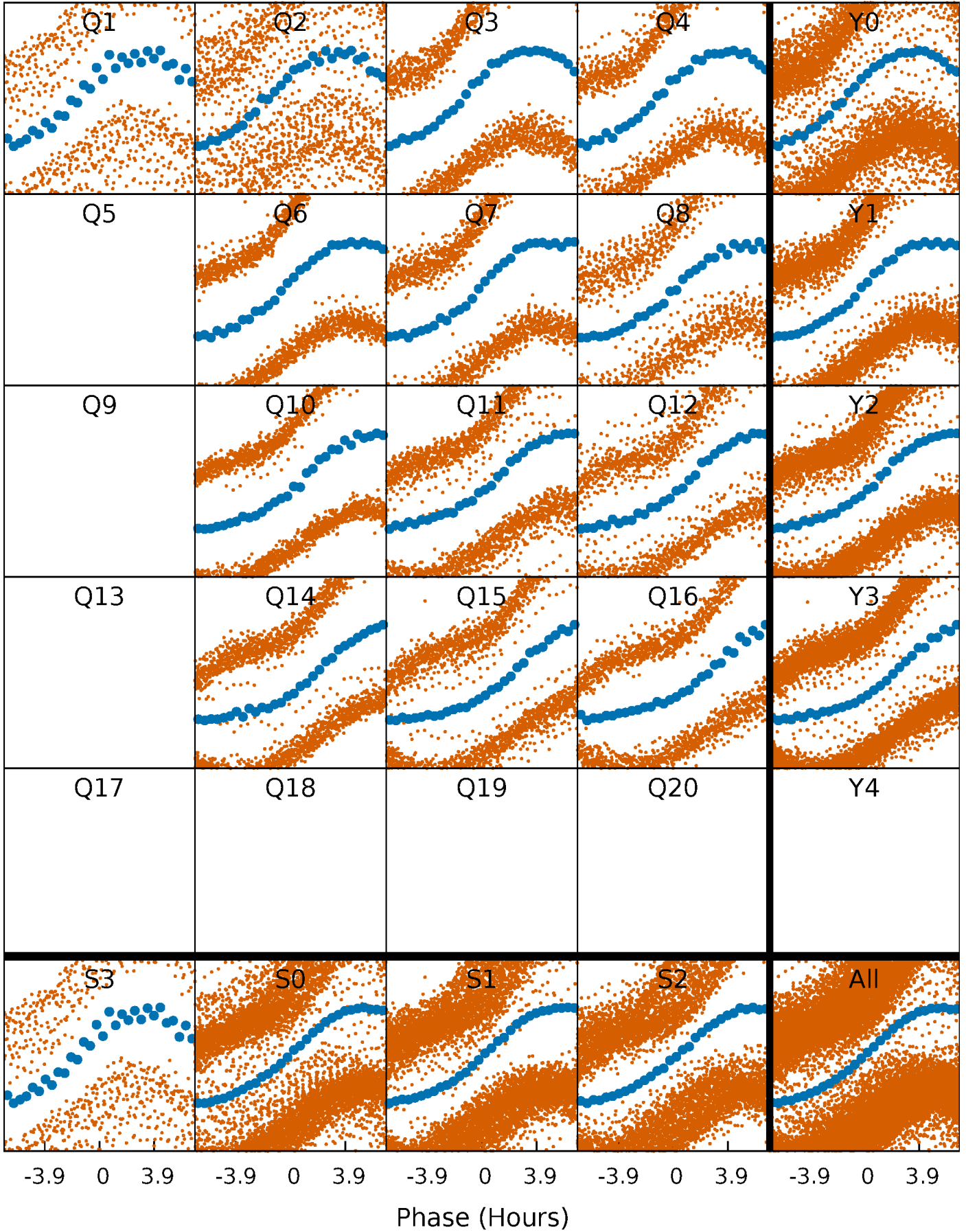


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



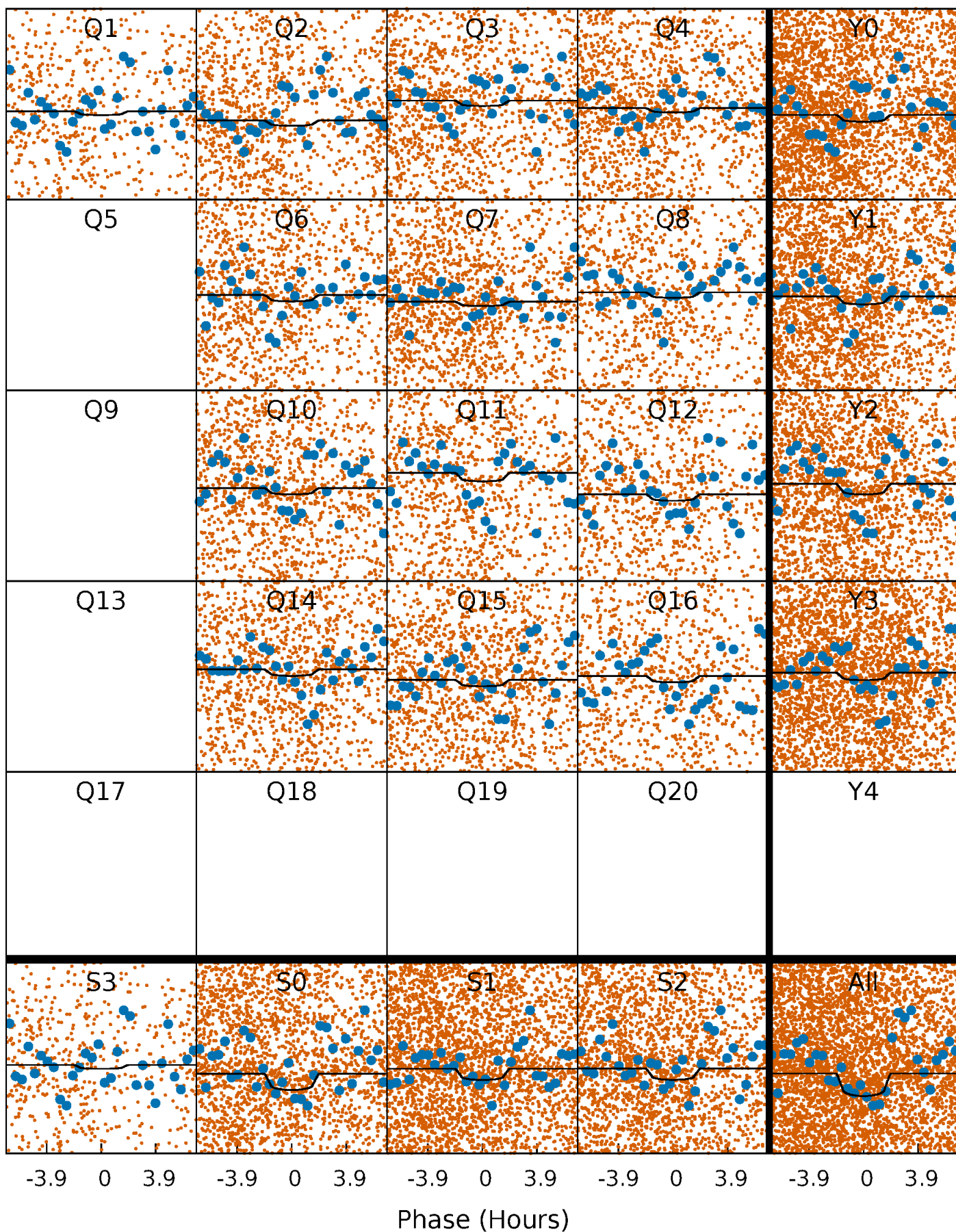
PDC Quarter-Phased Transit Curves

TCE 005167392-02 P= 1.102001 Days $T_0=131.657210$ (BKJD)



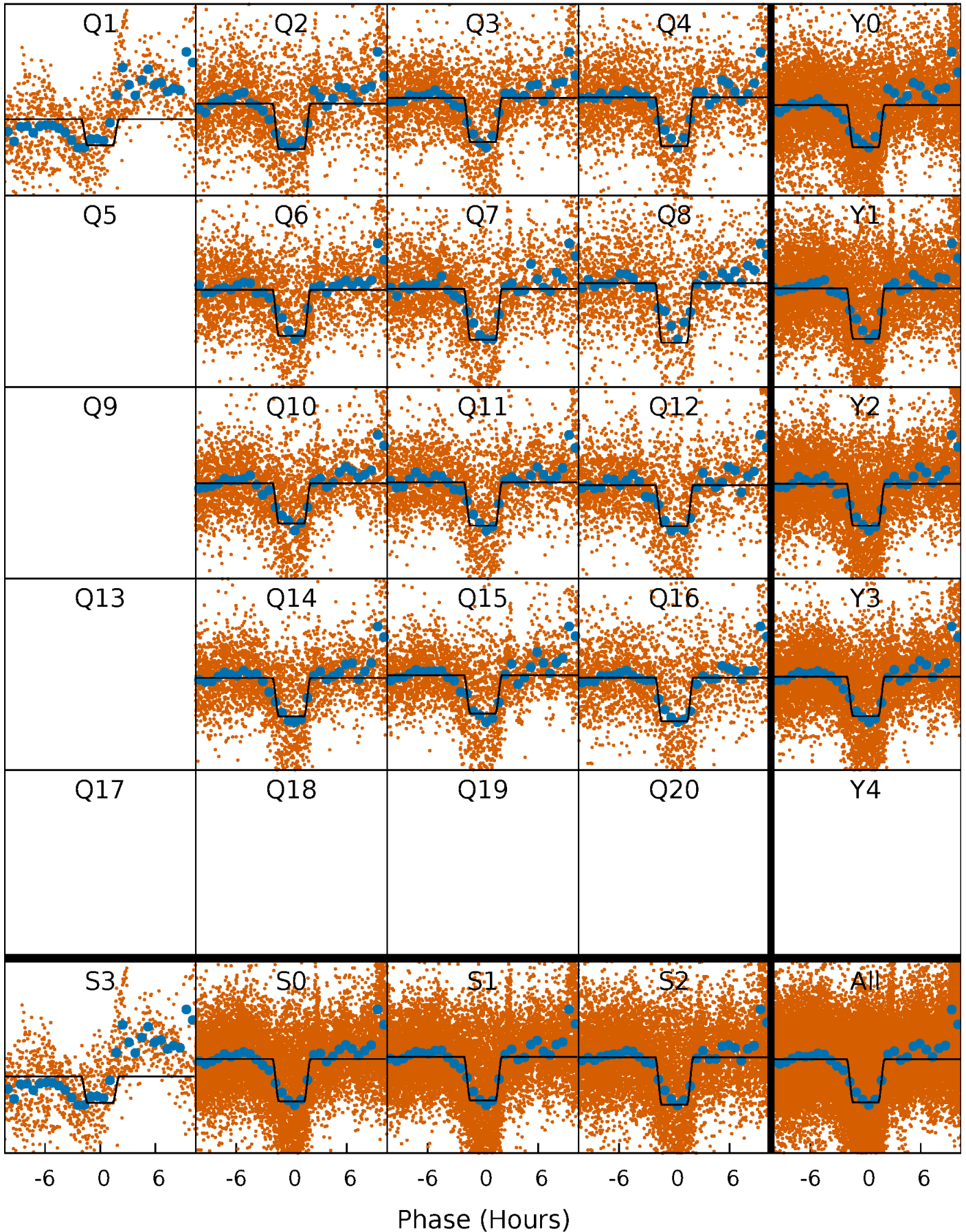
DV Quarter-Phased Transit Curves

TCE 005167392-02 P= 1.102001 Days $T_0=131.657210$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

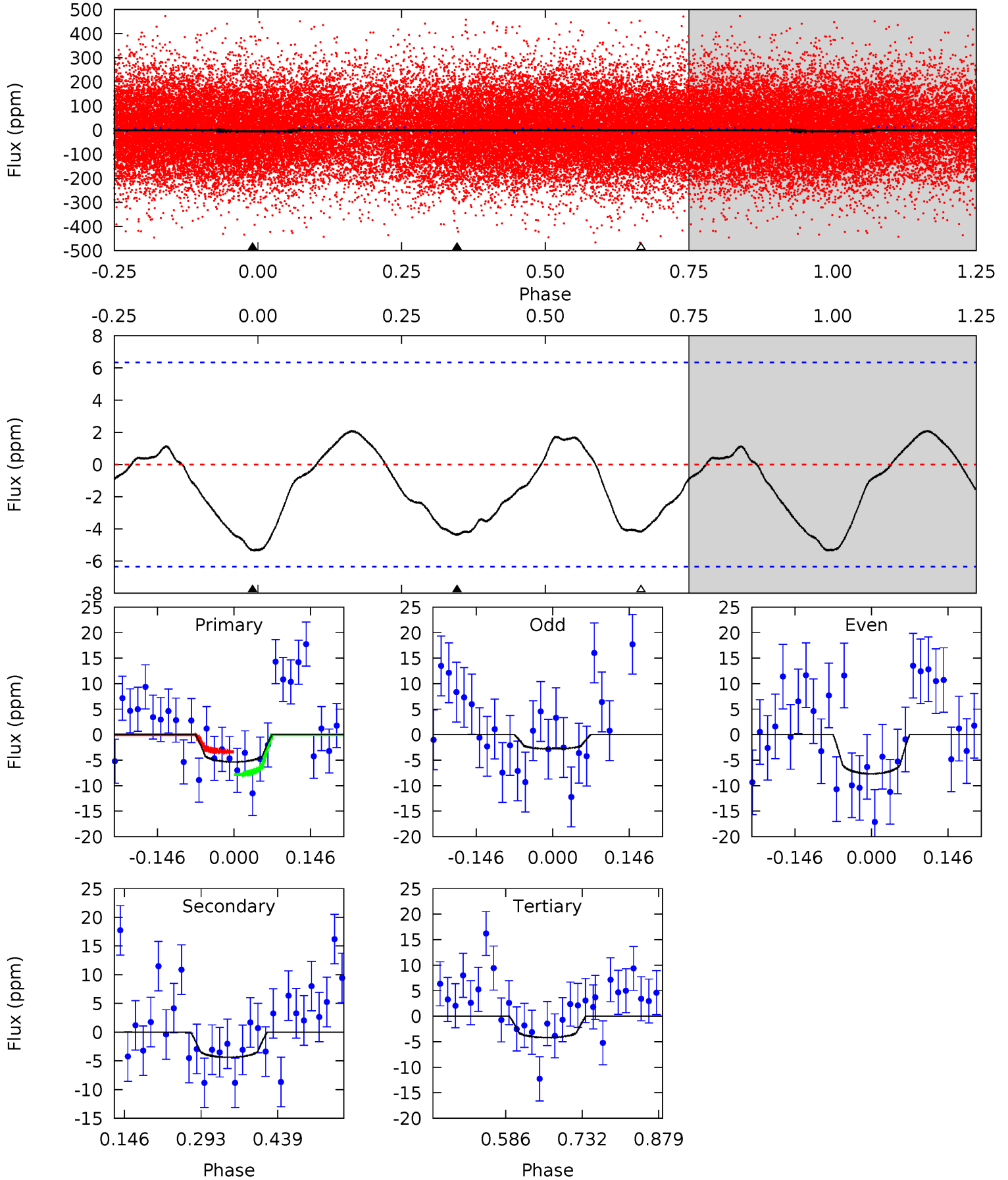
TCE 005167392-02 P= 1.102143 Days $T_0=131.516612$ (BKJD)



DV Model-Shift Uniqueness Test

005167392-02, P = 1.102001 Days, E = 130.555209 Days

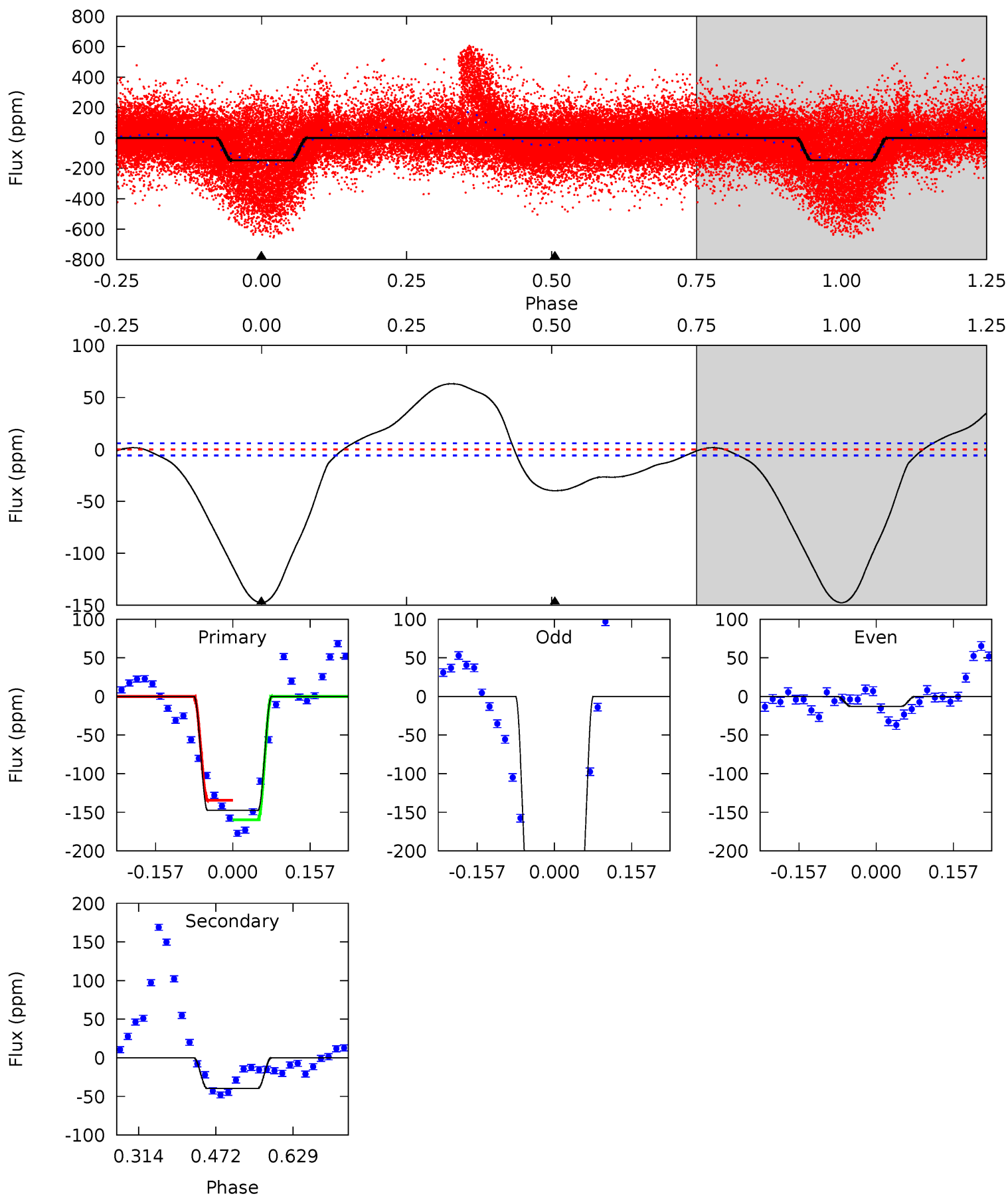
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.77	3.08	2.95	0	4.48	1.45	1.45	0.82	3.77	0.13	3.08	1.70	1.08	0.28	1.55



Alt Model-Shift Uniqueness Test

005167392-02, P = 1.102143 Days, E = 130.414469 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
112.9	30.4	0	0	4.47	1.41	18.9	112.9	112.9	30.4	30.4	85.3	1.18	0.30	9.94



Stellar Parameters For KIC 005167392

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8365^{+202}_{-376}	$3.740^{+0.420}_{-0.140}$	$-0.120^{+0.300}_{-0.400}$	$3.188^{+0.952}_{-1.429}$	$2.039^{+0.428}_{-0.471}$	$0.089^{+0.320}_{-0.038}$
	+2%/-4%	+11%/-4%	+250%/-333%	+30%/-45%	+21%/-23%	+361%/-43%
Source	KIC0	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 005167392-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4 ± 1	$0.79^{+0.52}_{-0.47}$	5466^{+498}_{-651}	7078^{+6663}_{-1962}	$2.638^{+12.243}_{-1.772}$
Alt.	-40 ± 1	$4.12^{+1.06}_{-0.98}$	5489^{+456}_{-641}	5176^{+528}_{-534}	$0.895^{+0.661}_{-0.304}$

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

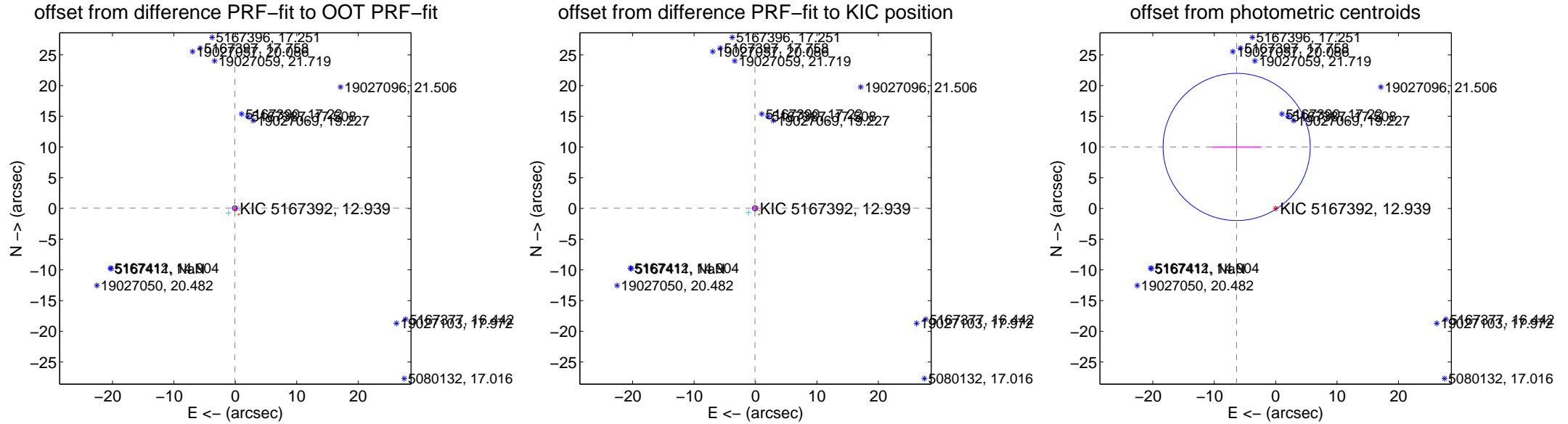
DV Centroid Data

Supplemental centroid analysis for 005167392-02. Kepler magnitude: 12.94. Transit SNR 2.90

There are 7 quarters with good PRF difference image offsets

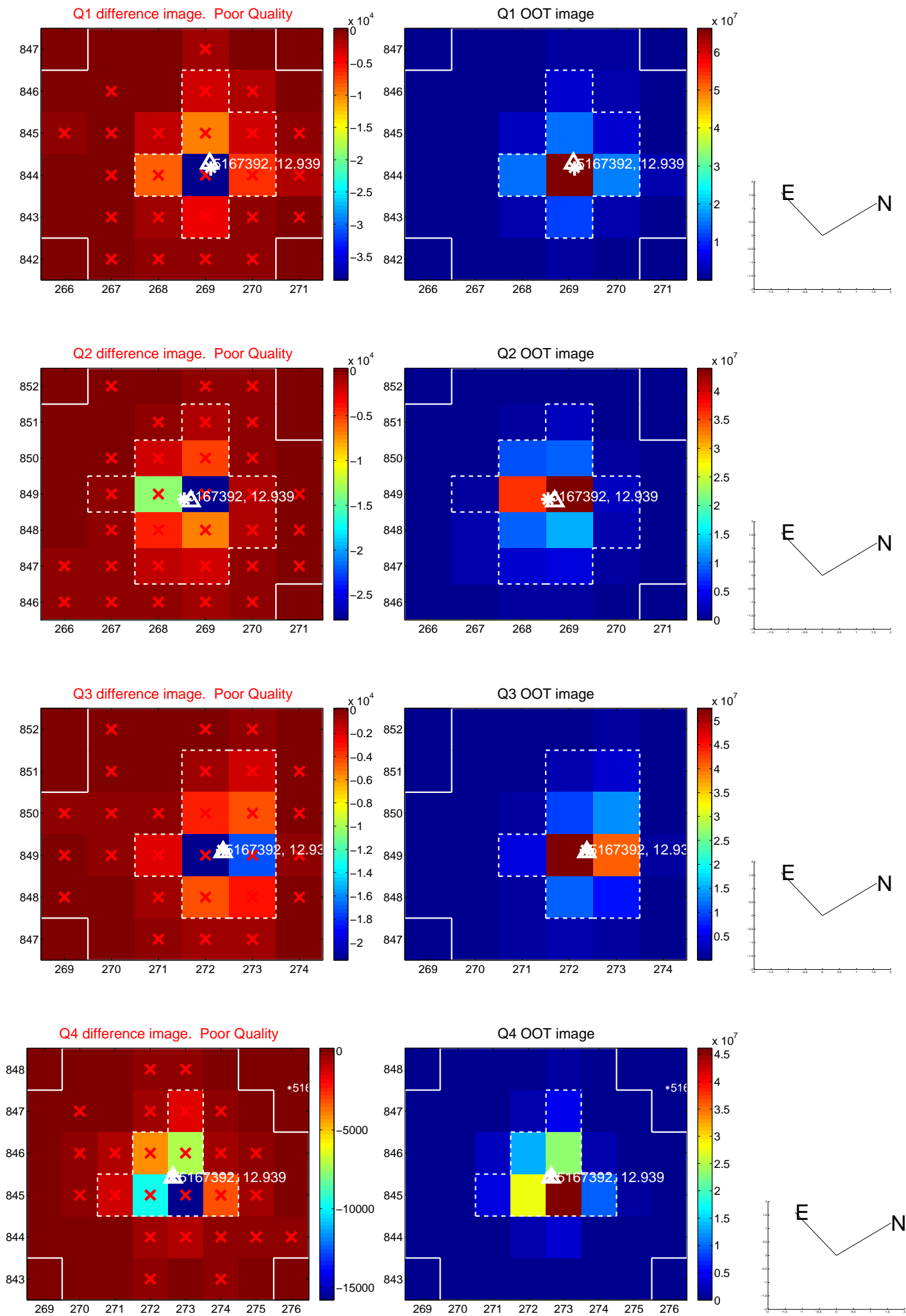
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.101 ± 0.129	0.78	0.090 ± 0.134	0.044 ± 0.130
PRF-fit source offset from KIC position	0.097 ± 0.135	0.72	0.089 ± 0.144	0.040 ± 0.117
photometric centroid source offset	11.86 ± 3.99	2.97	6.35 ± 4.04	10.01 ± 3.97

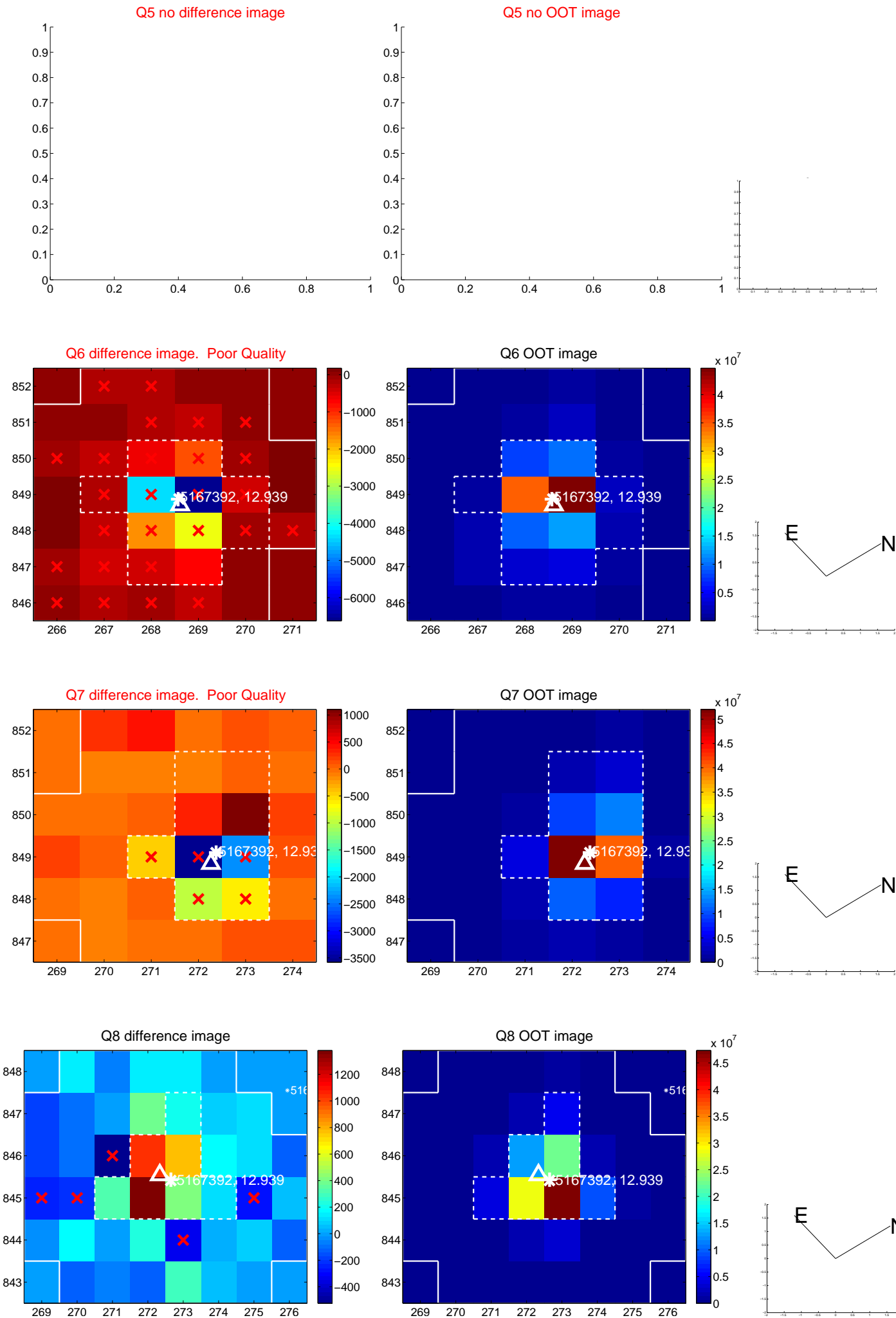


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

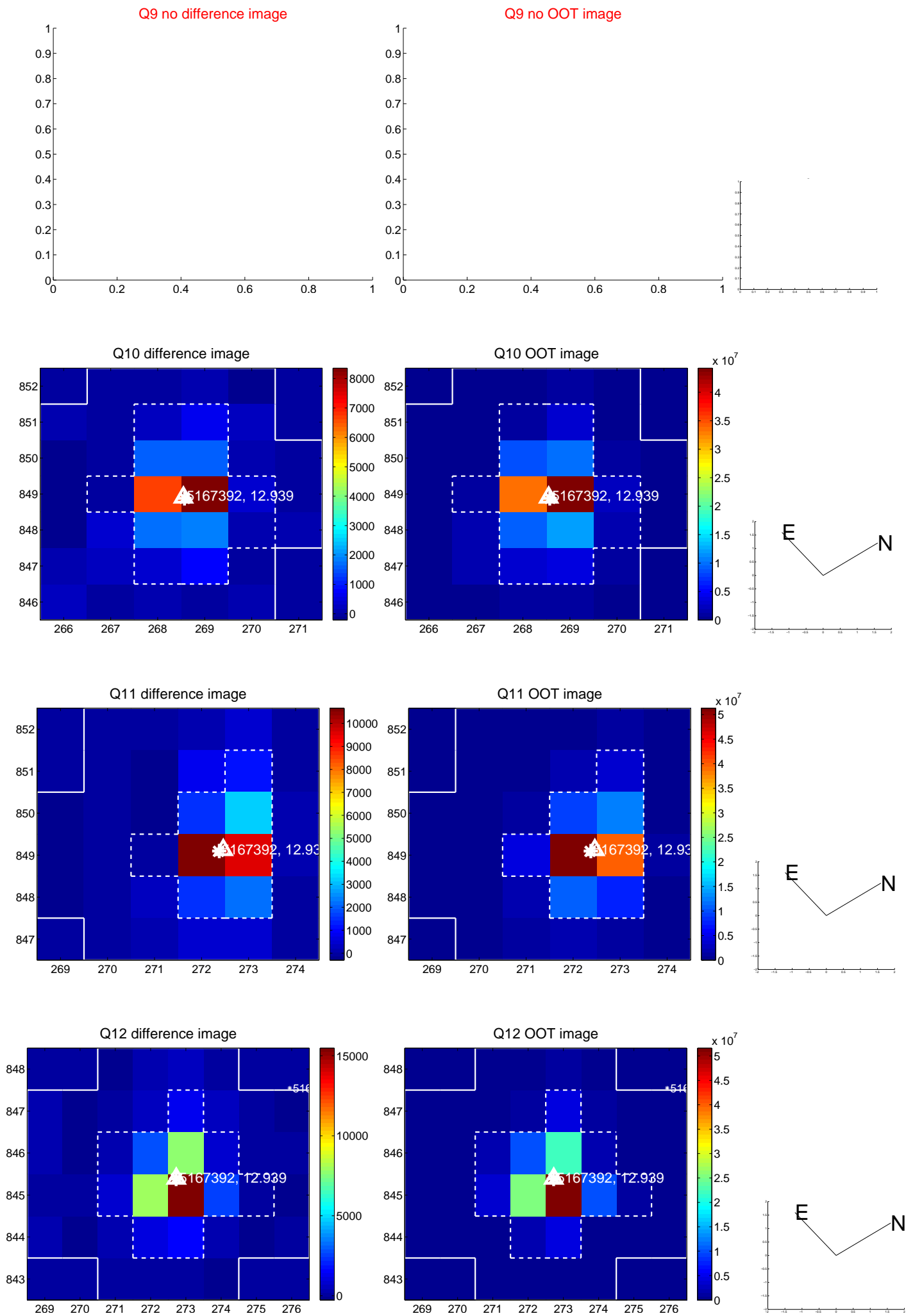
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



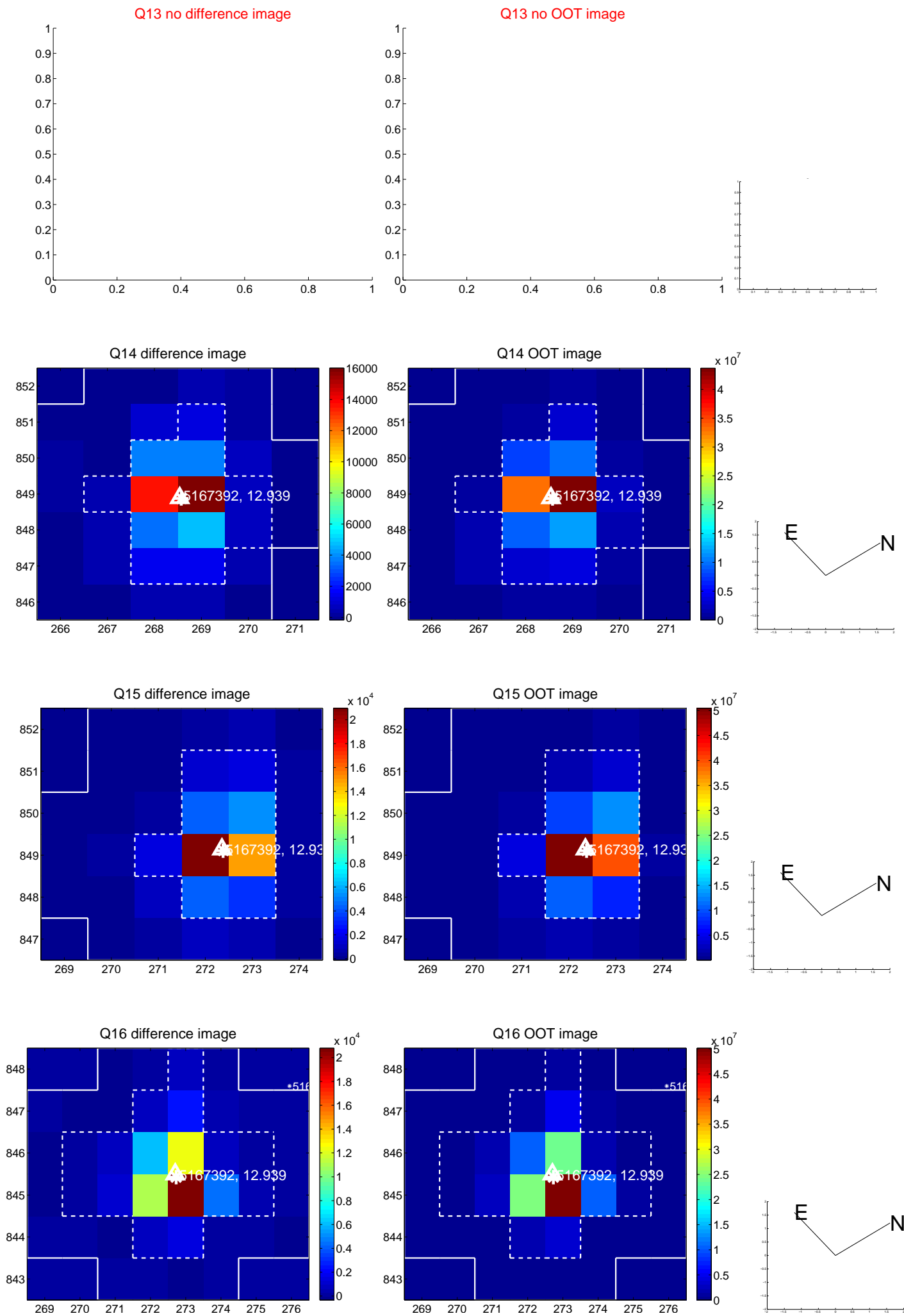
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



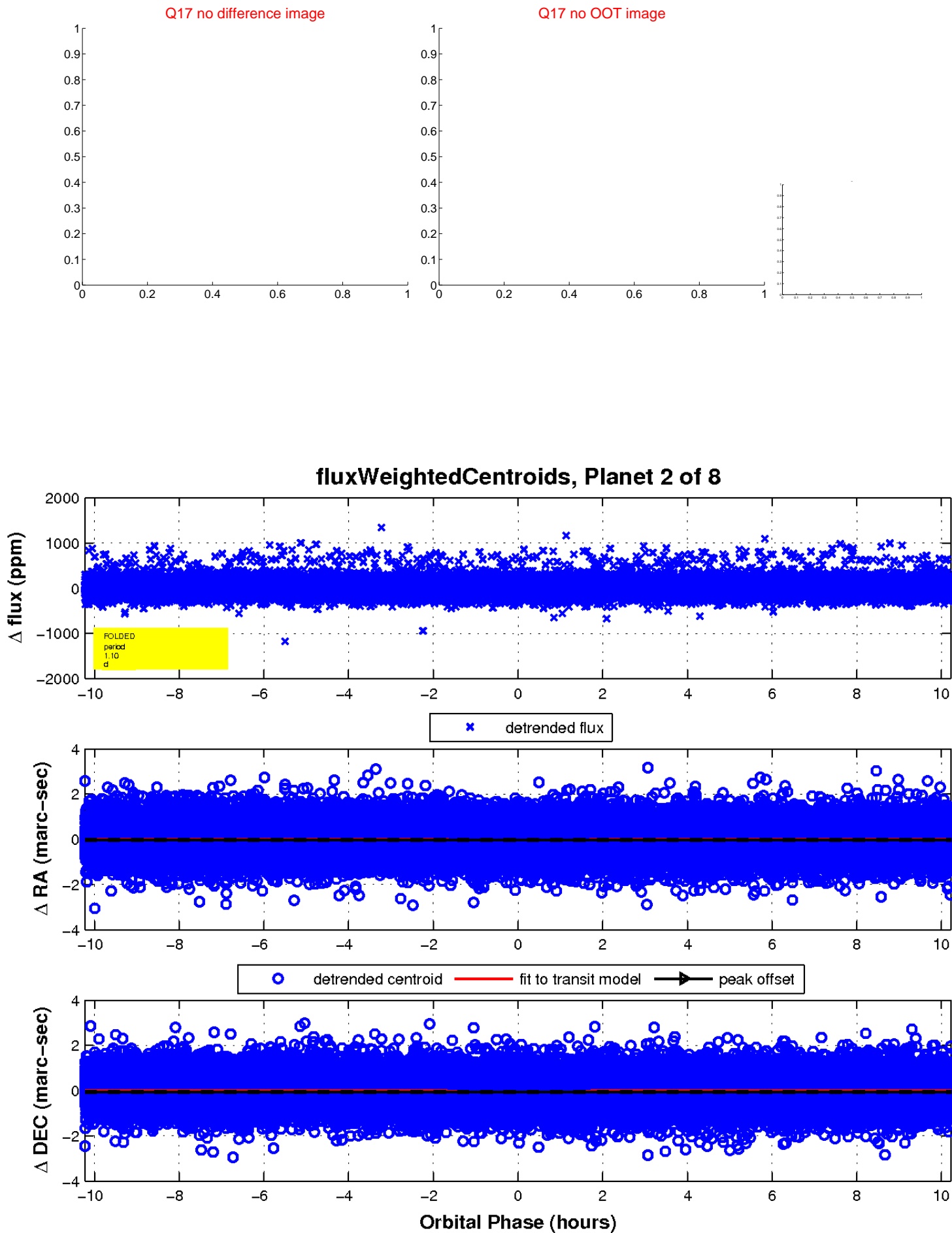
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

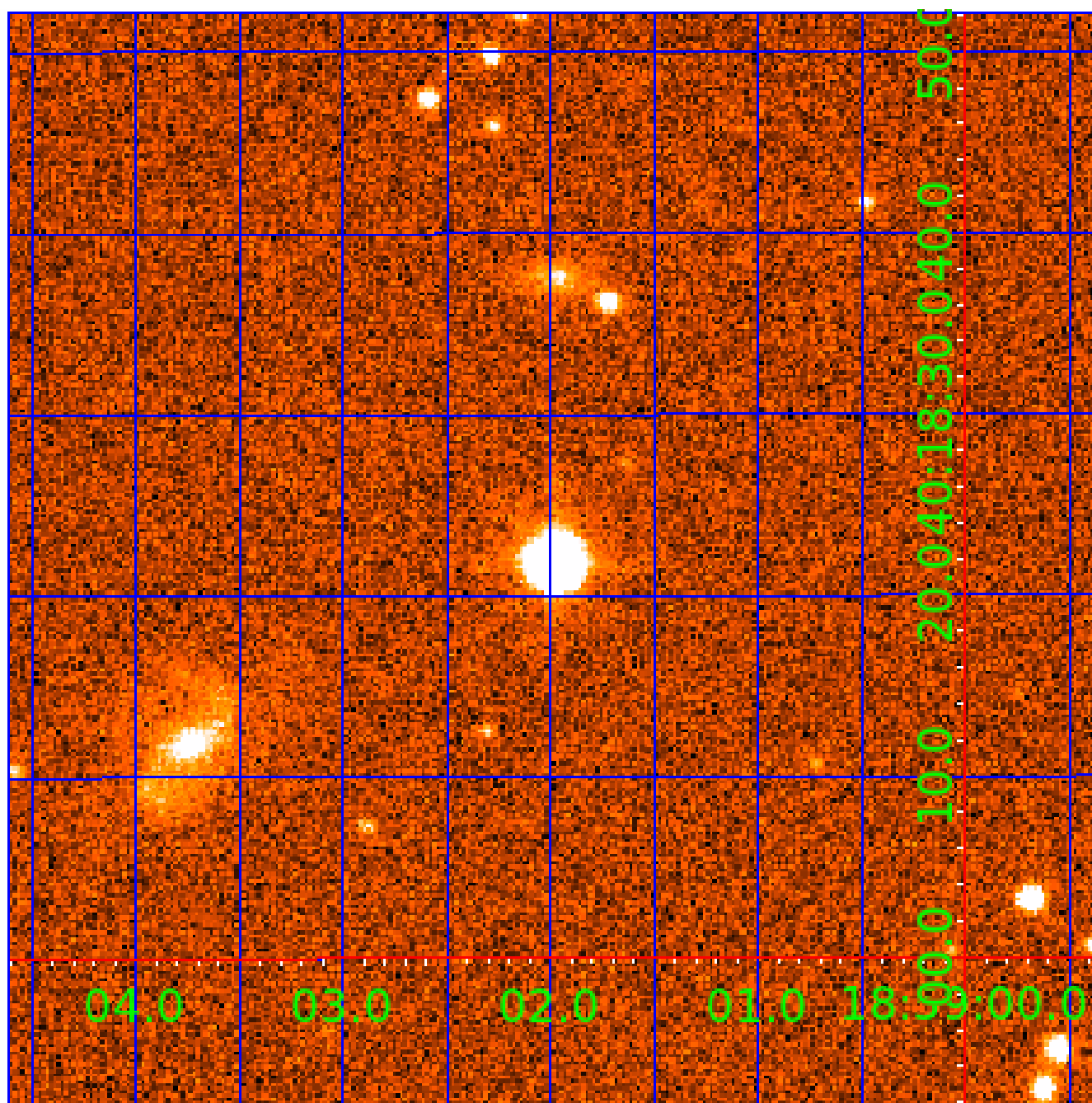


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005167392

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})
005167392-01	OBS	No	2.204295	132.867087	62.1	1.843	17.4	17.2	3.19	8365	2.93	25239.31
005167392-02	OBS	No	1.102001	131.657210	5.9	3.408	11.0	2.9	3.19	8365	0.79	63610.37
005167392-03	OBS	No	1.102215	132.209330	10.5	3.034	9.9	5.6	3.19	8365	1.20	63593.90
005167392-04	OBS	No	2.204298	132.142326	23.1	12.083	8.7	8.9	3.19	8365	1.67	25239.26
005167392-05	OBS	No	374.900056	419.330366	246.5	11.578	12.6	9.8	3.19	8365	5.18	26.78
005167392-06	OBS	No	19.772091	135.604325	220.9	1.996	8.5	8.6	3.19	8365	4.88	1354.25
005167392-07	OBS	No	14.121162	134.401966	176.1	1.713	8.3	9.5	3.19	8365	4.73	2121.34
005167392-08	OBS	No	9.322341	136.672453	245.4	2.500	7.2	-1.0	3.19	8365	5.06	3690.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005167392-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
005167392-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT— SAME_NTL_PERIOD
005167392-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
005167392-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

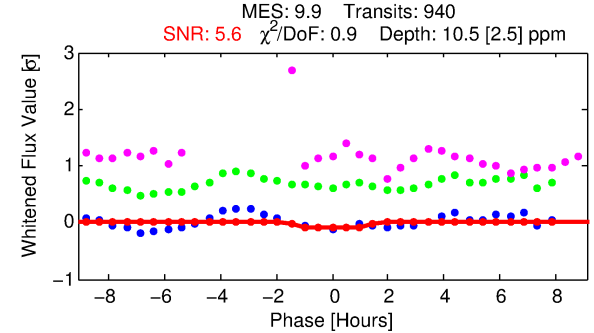
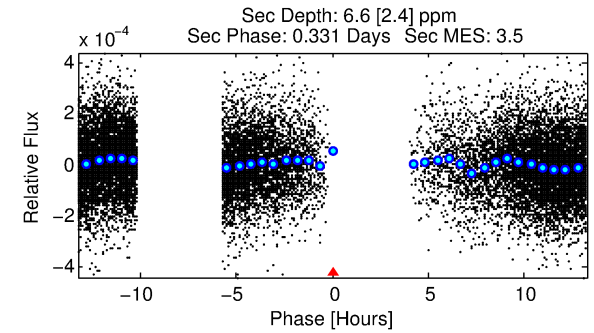
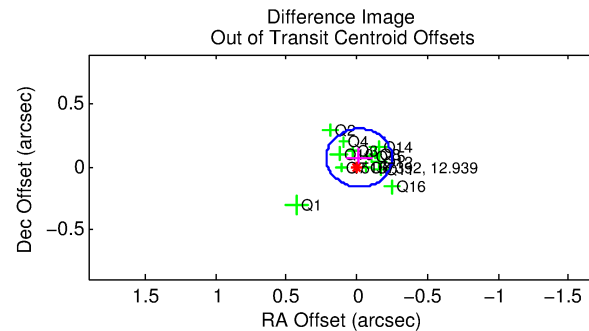
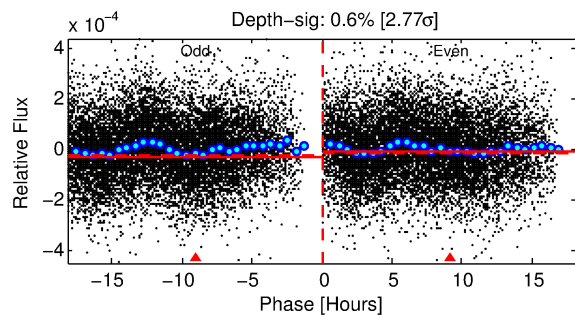
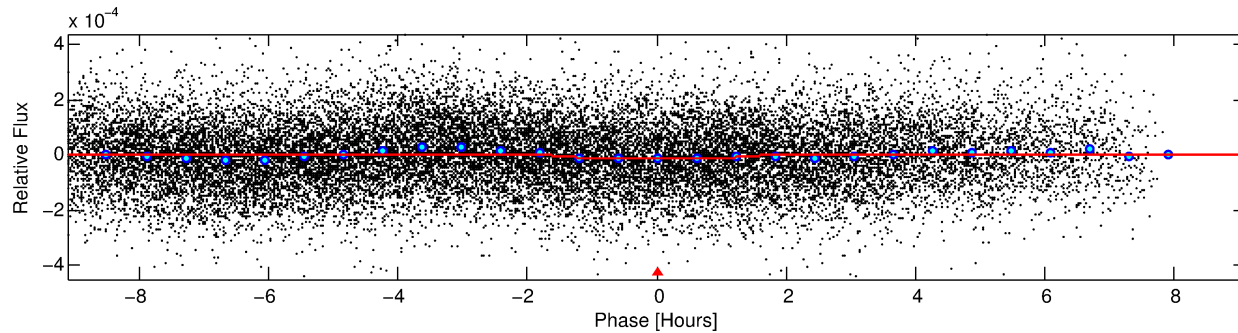
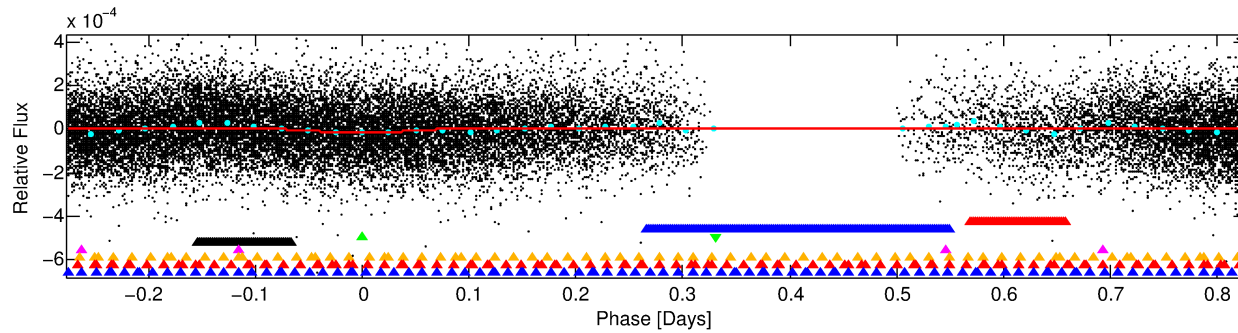
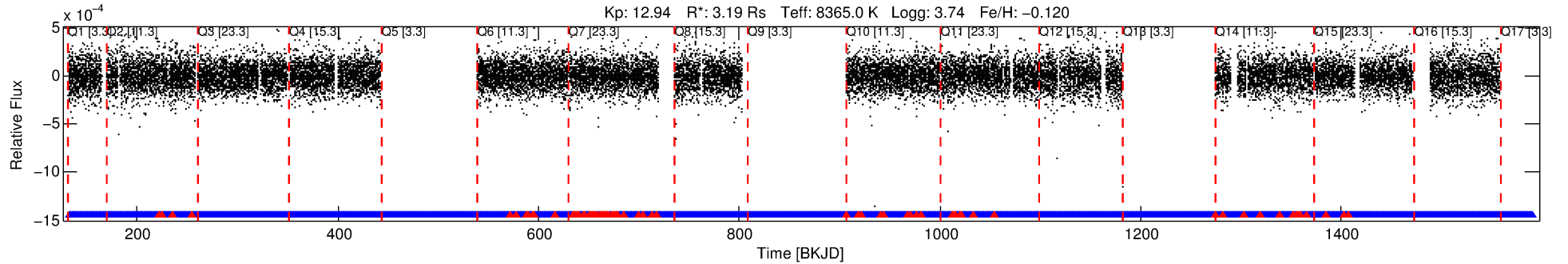
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005167392-03

No Significant Match Found

DV One-Page Summary

KIC: 5167392 Candidate: 3 of 8 Period: 1.102 d



DV Fit Results:

Period = 1.10221 [0.00003] d
Epoch = 132.2093 [0.0069] BKJD
Rp/R* = 0.0035 [0.0014]
a/R* = 1.54 [2.34]
b = 0.90 [0.55]
Seff = 63593.90 [46614.56]
Teq = 4049 [742] K
Rp = 1.20 [0.74] Re
a = 0.0265 [0.0116] AU
Ag = 1.74 [2.02] [0.37σ]
Teffp = 7195 [1671] K [1.72σ]

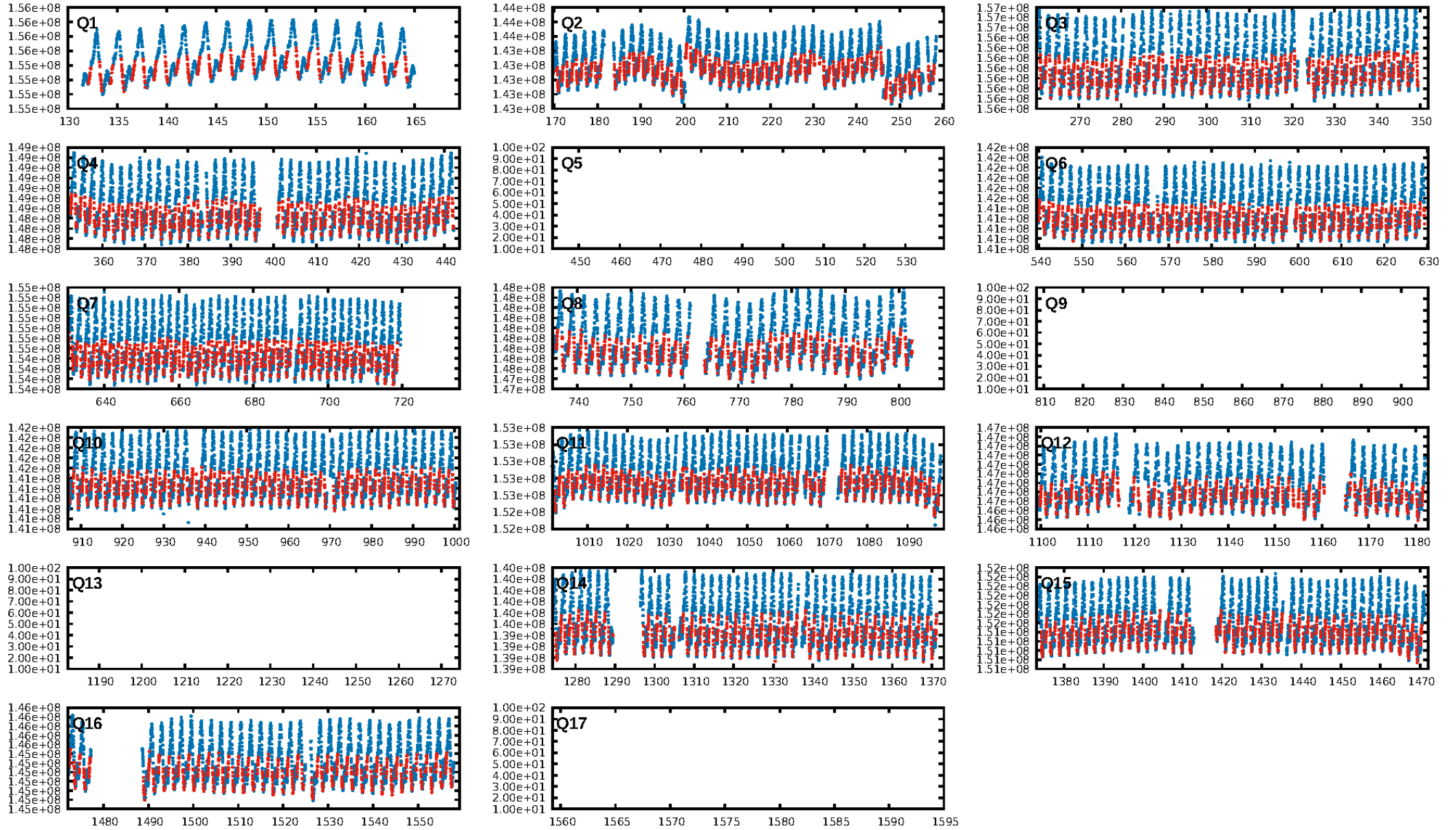
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 100.0% [7.45σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.92 [833/910]
GhostDiagnostic-chr: 4.78
Centroid-sig: 21.4%
Centroid-so: 2.632 arcsec [1.03σ]
OotOffset-rm: 0.072 arcsec [0.92σ]
KicOffset-rm: 0.078 arcsec [0.97σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 0.62 [8/13]

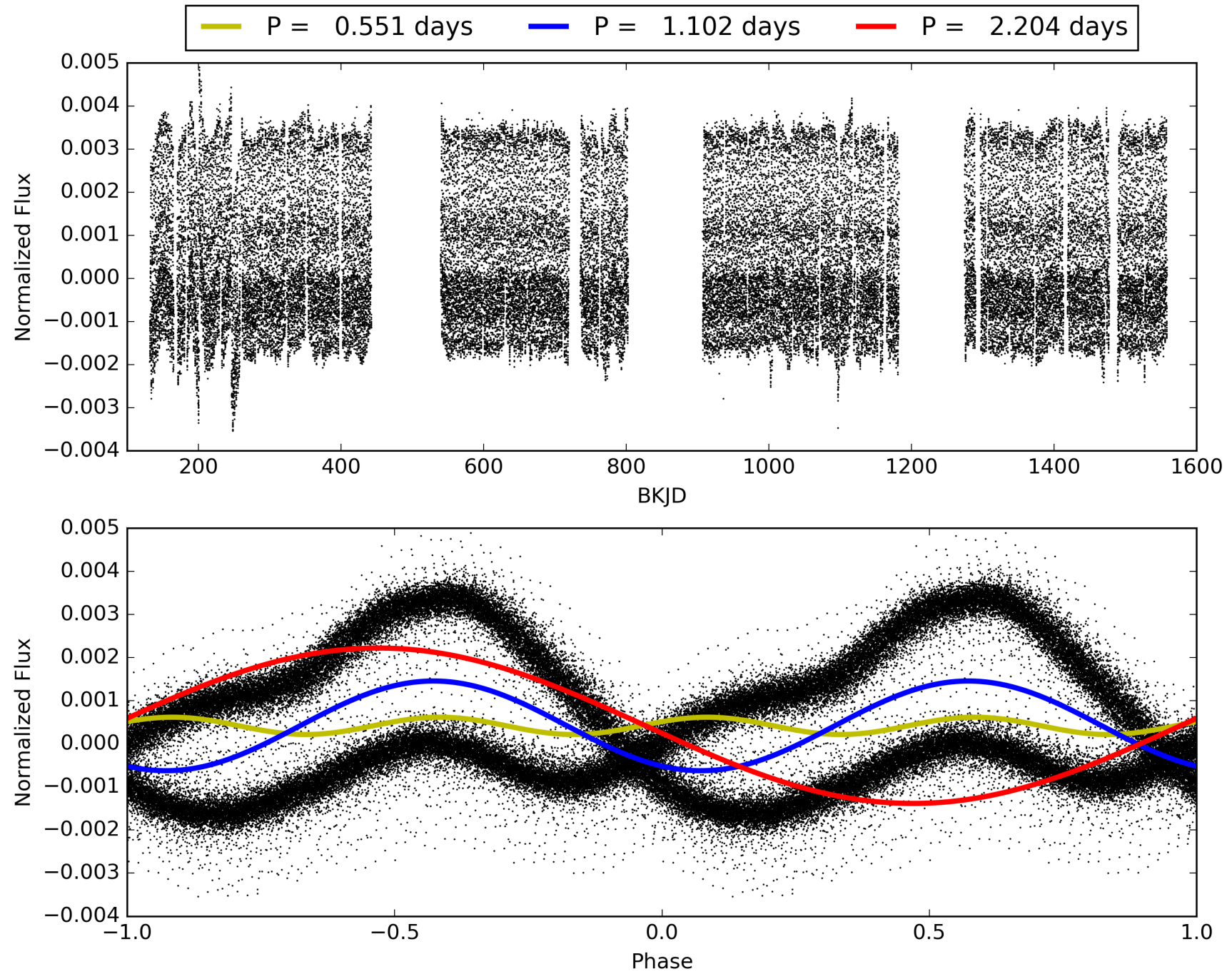
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:00:47 Z

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

TCE 005167392-03, PDC Light Curves

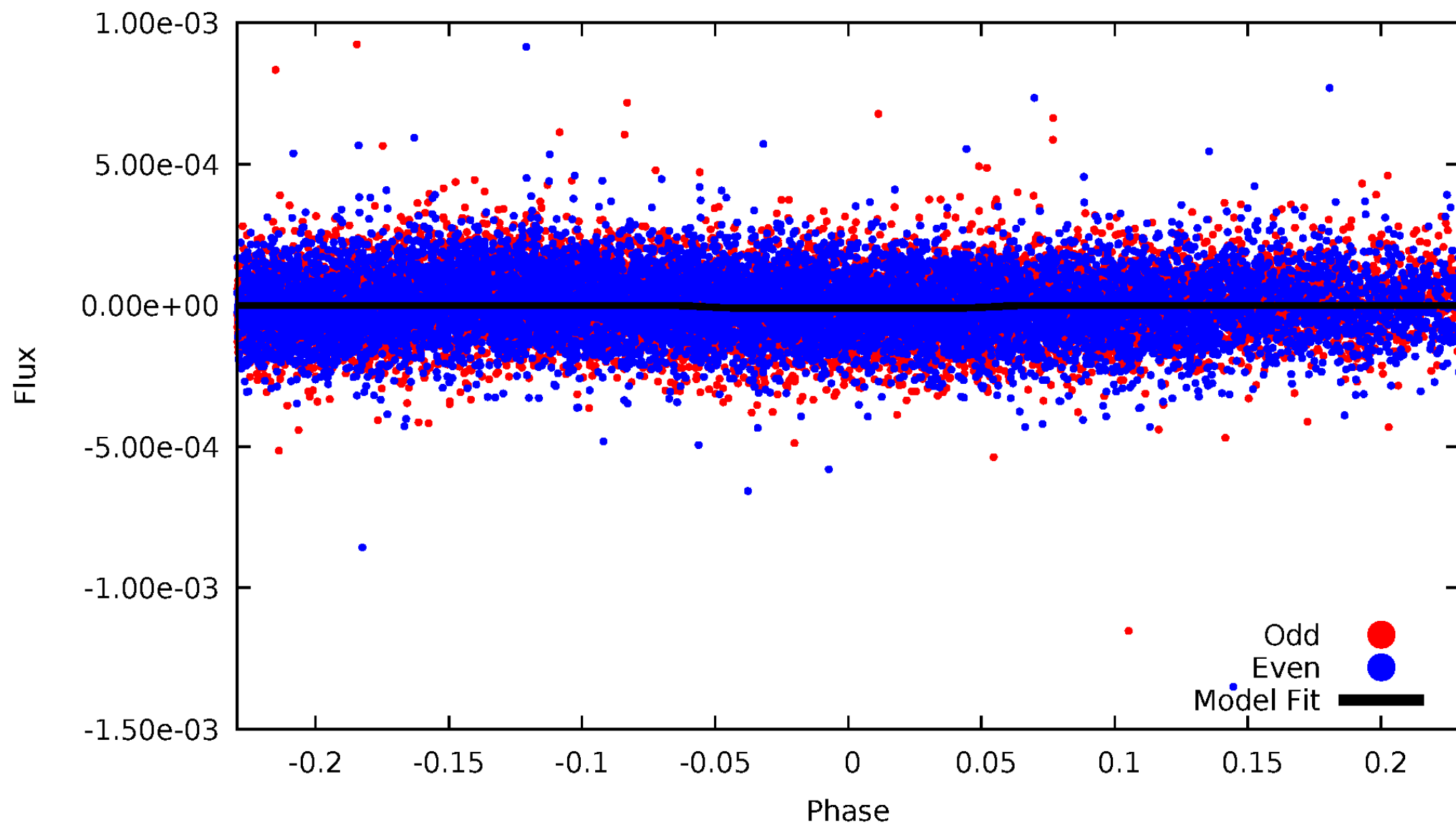


TCE 005167392-03



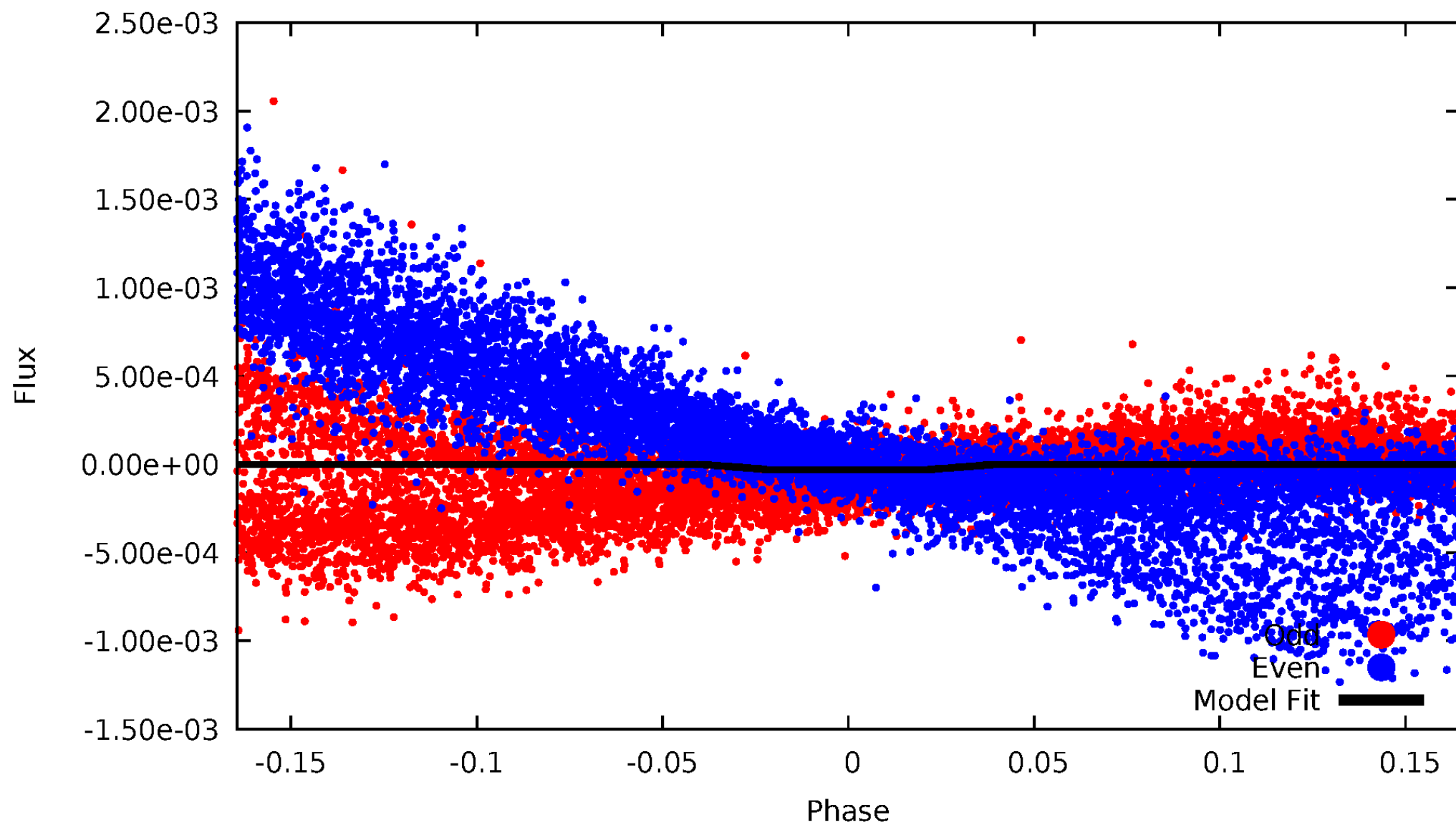
DV Odd/Even

TCE 005167392-03

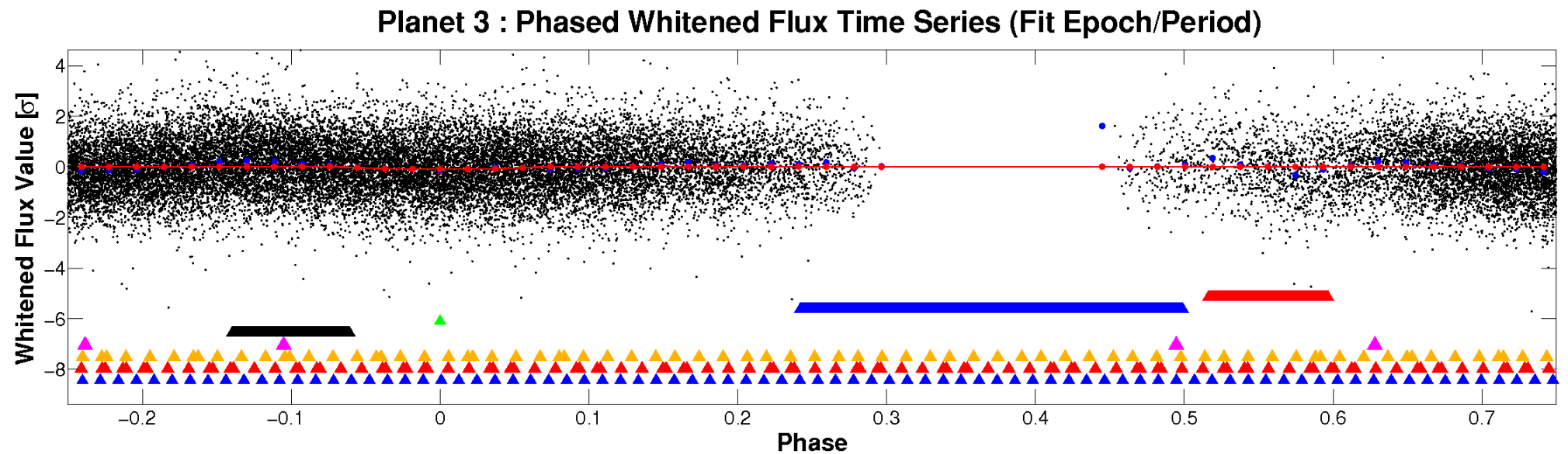
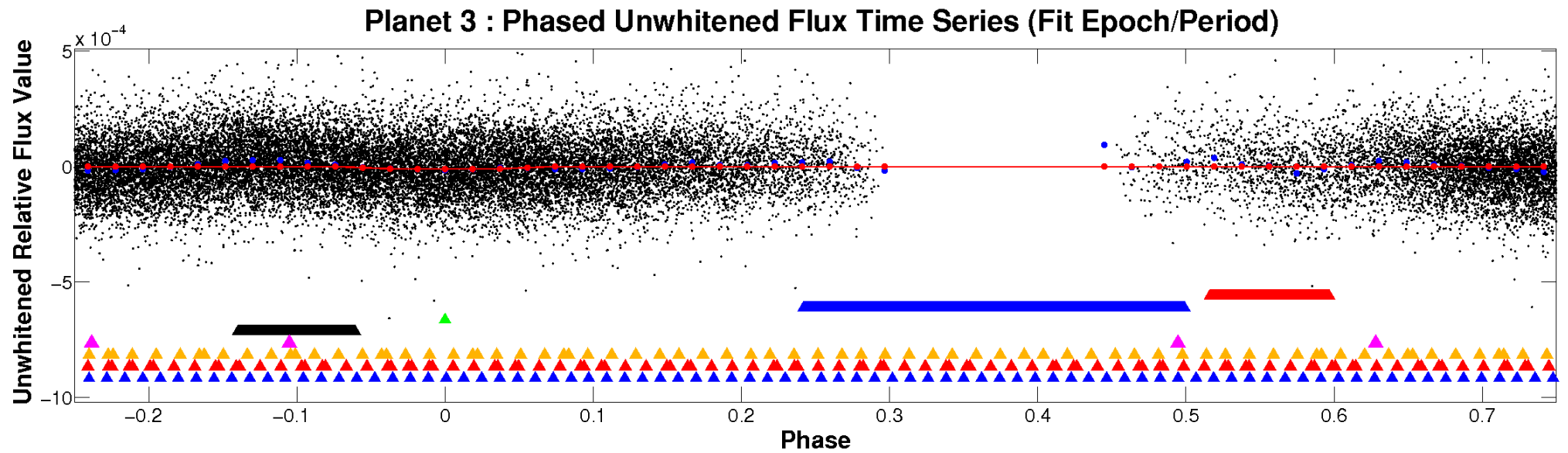


ALT Odd/Even

TCE 005167392-03

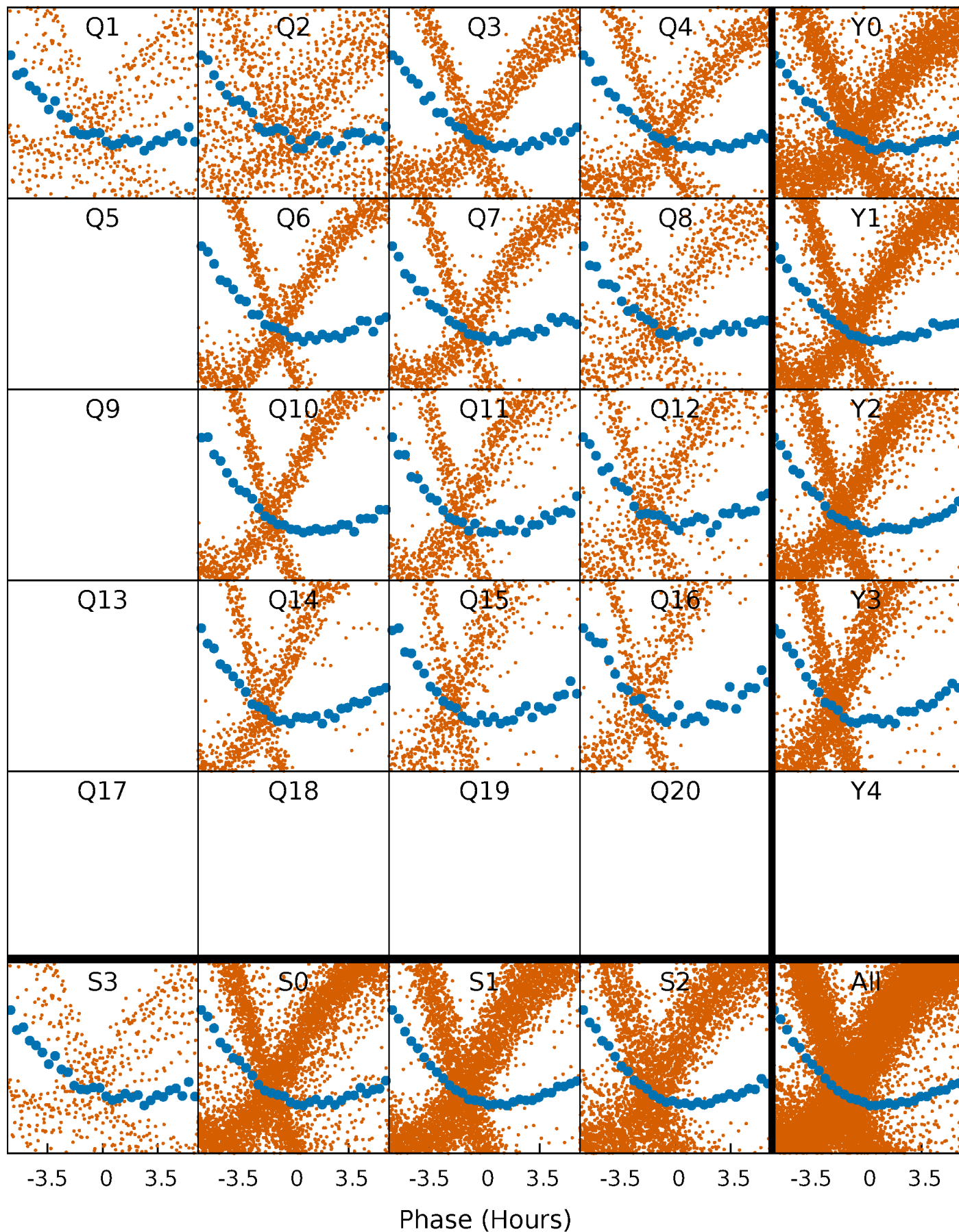


Non-Whitened Vs. Whitened Light Curve



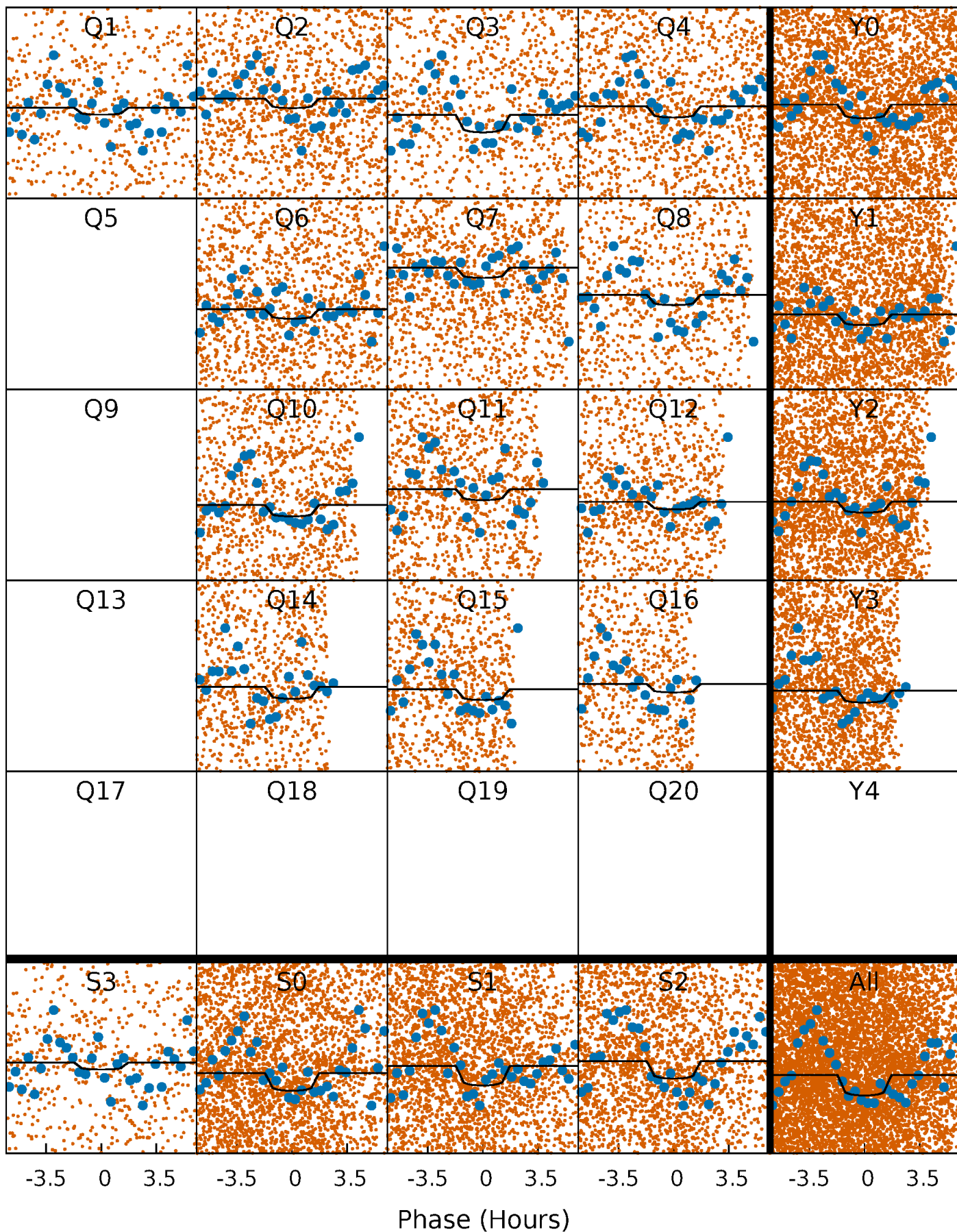
PDC Quarter-Phased Transit Curves

TCE 005167392-03 P= 1.102215 Days $T_0=132.209330$ (BKJD)



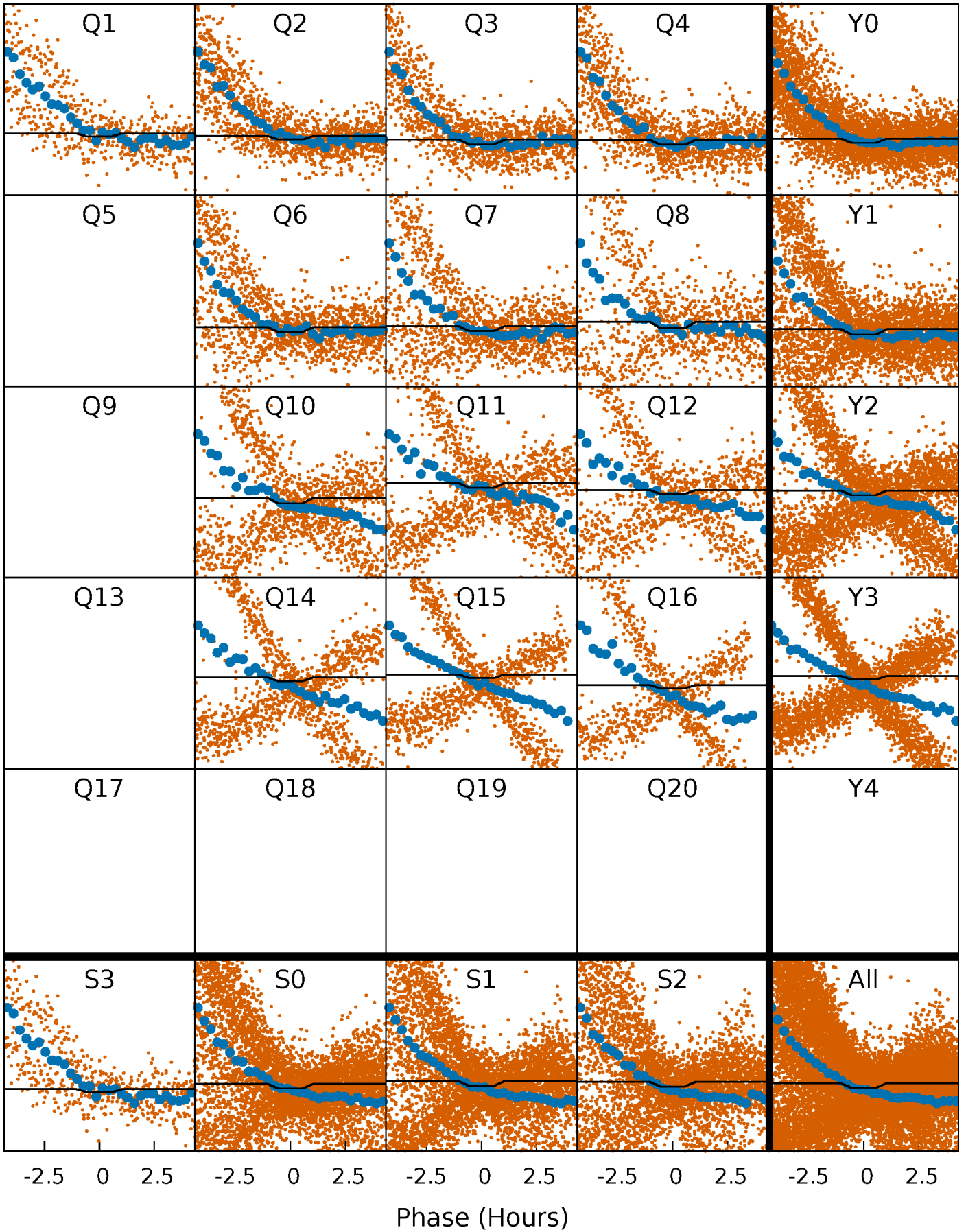
DV Quarter-Phased Transit Curves

TCE 005167392-03 P= 1.102215 Days $T_0=132.209330$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

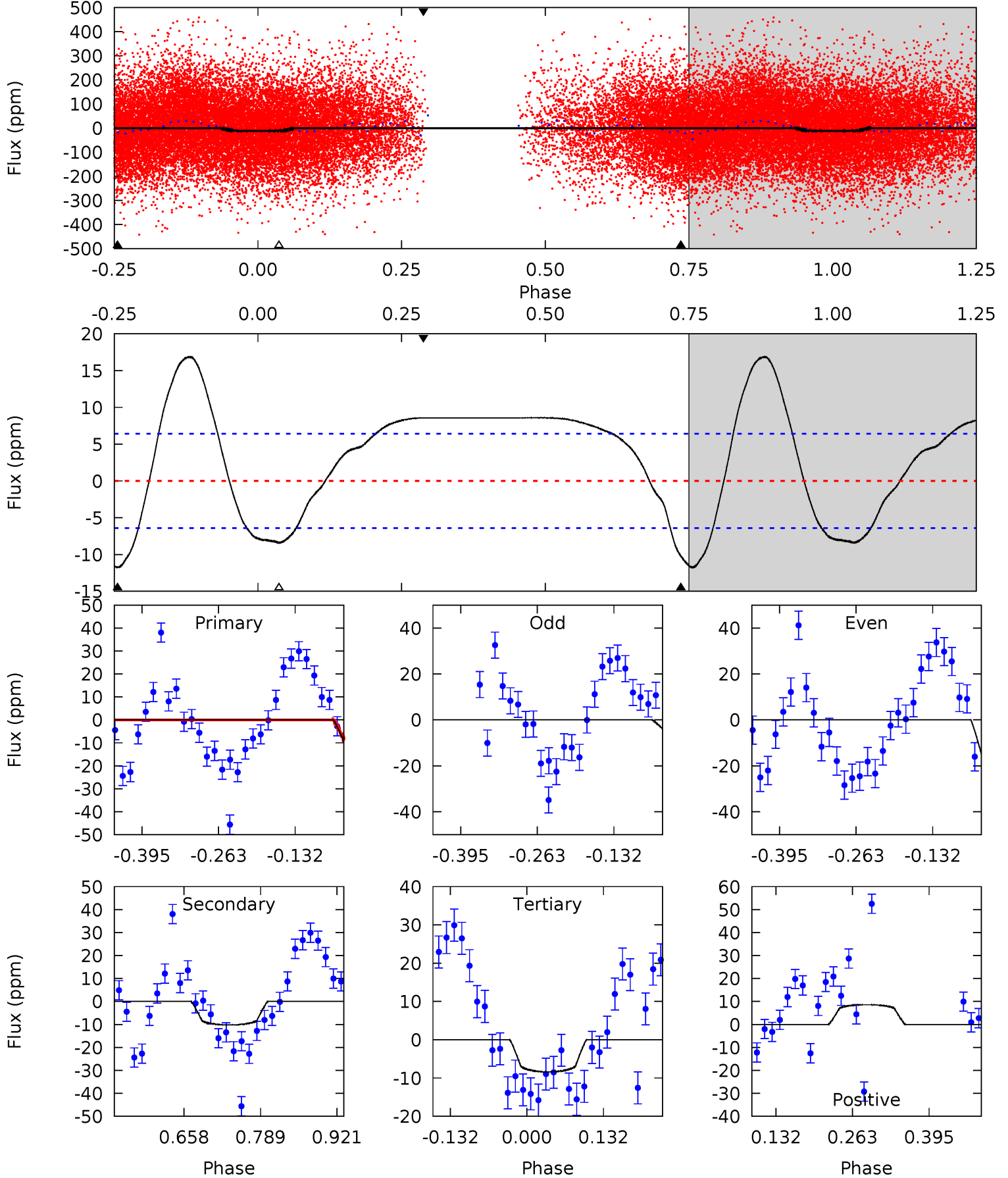
TCE 005167392-03 P= 1.102177 Days $T_0=132.170379$ (BKJD)



DV Model-Shift Uniqueness Test

005167392-03, P = 1.102215 Days, E = 131.107115 Days

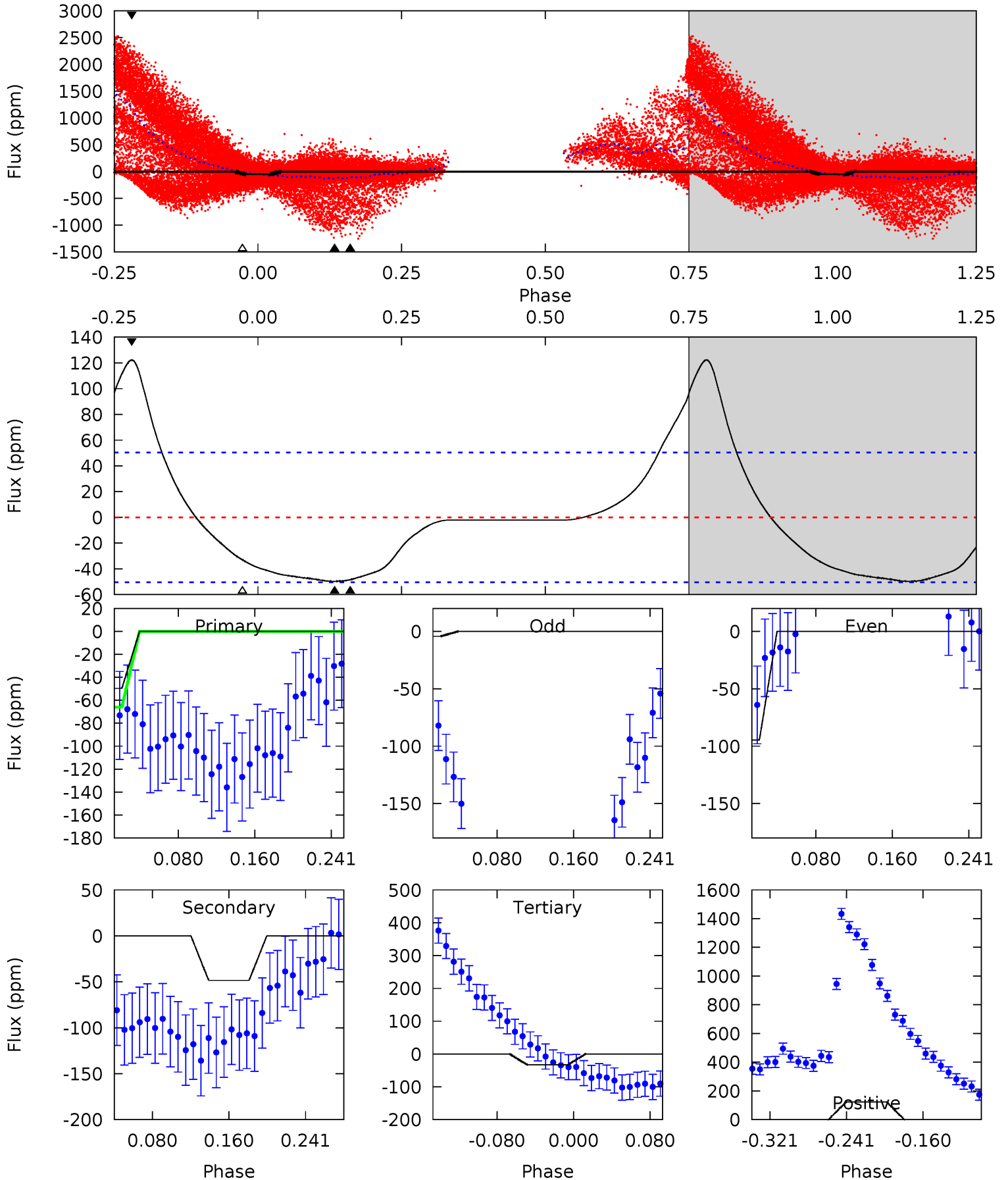
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.26	7.18	5.90	6.02	4.51	1.51	5.16	2.35	2.23	1.28	1.15	4.86	1.23	0.59	0.78



Alt Model-Shift Uniqueness Test

005167392-03, P = 1.102177 Days, E = 131.068202 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.55	4.43	3.02	11.2	4.61	1.75	4.76	1.53	-6.63	1.41	-6.75	3.95	1.12	0.71	1.56



Stellar Parameters For KIC 005167392

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8365^{+202}_{-376}	$3.740^{+0.420}_{-0.140}$	$-0.120^{+0.300}_{-0.400}$	$3.188^{+0.952}_{-1.429}$	$2.039^{+0.428}_{-0.471}$	$0.089^{+0.320}_{-0.038}$
	+2%/-4%	+11%/-4%	+250%/-333%	+30%/-45%	+21%/-23%	+361%/-43%
Source	KIC0	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 005167392-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-10 ± 1	$1.08^{+0.61}_{-0.46}$	5448^{+484}_{-657}	7702^{+3375}_{-1604}	$3.449^{+6.877}_{-2.055}$
Alt.	-48 ± 11	$1.83^{+0.67}_{-0.59}$	5495^{+492}_{-638}	9326^{+2815}_{-1687}	$5.547^{+6.374}_{-2.763}$

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

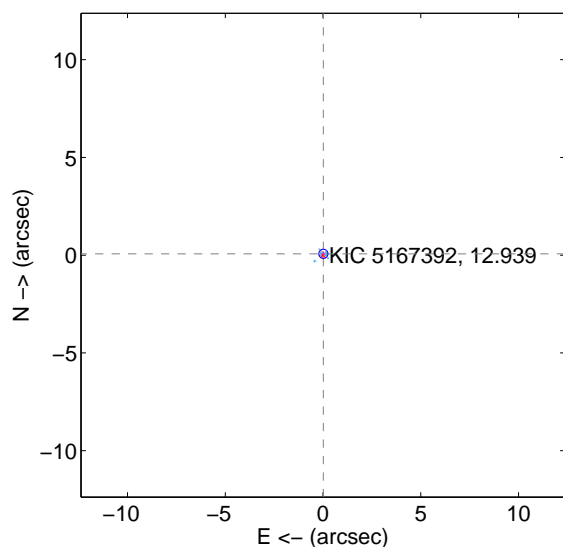
Supplemental centroid analysis for 005167392-03. Kepler magnitude: 12.94. Transit SNR 5.64

There are 13 quarters with good PRF difference image offsets

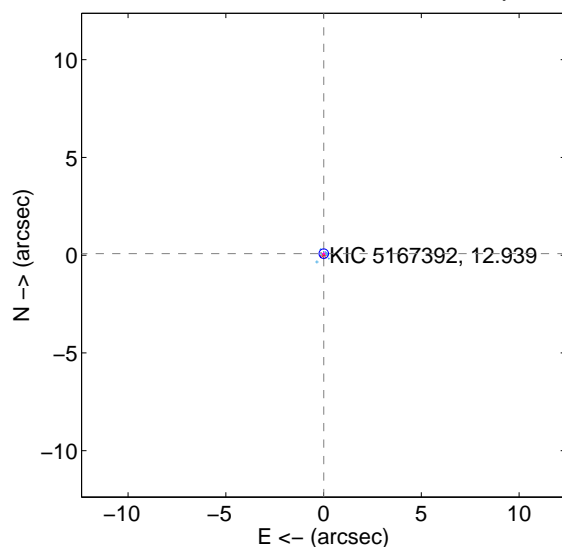
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.072 ± 0.078	0.92	-0.017 ± 0.084	0.070 ± 0.077
PRF-fit source offset from KIC position	0.078 ± 0.081	0.97	-0.009 ± 0.081	0.078 ± 0.081
photometric centroid source offset	2.63 ± 2.56	1.03	-2.00 ± 2.59	-1.72 ± 2.53

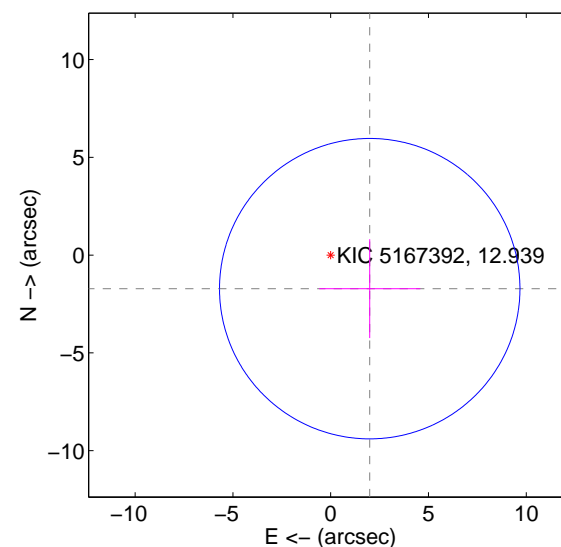
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

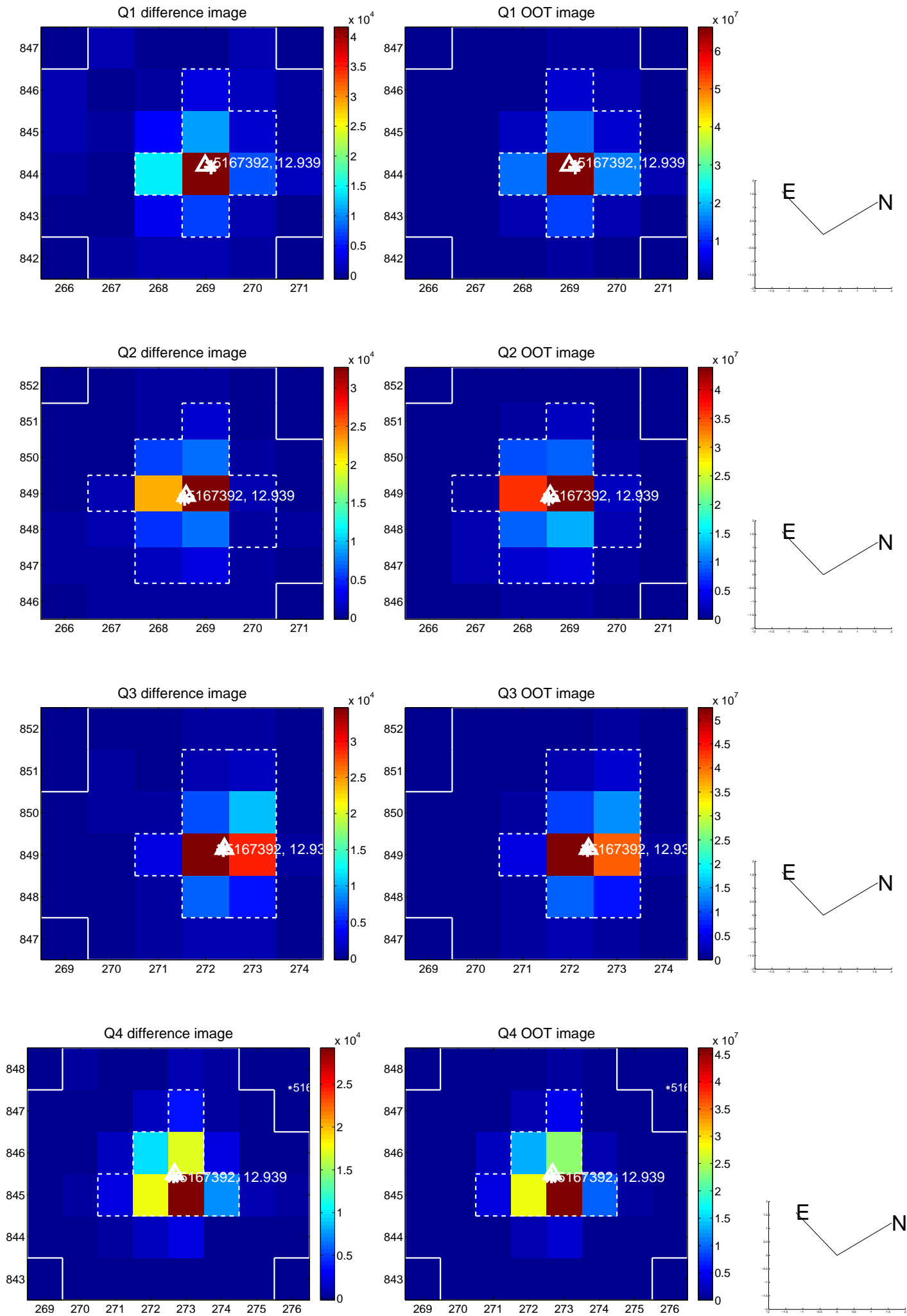


offset from photometric centroids

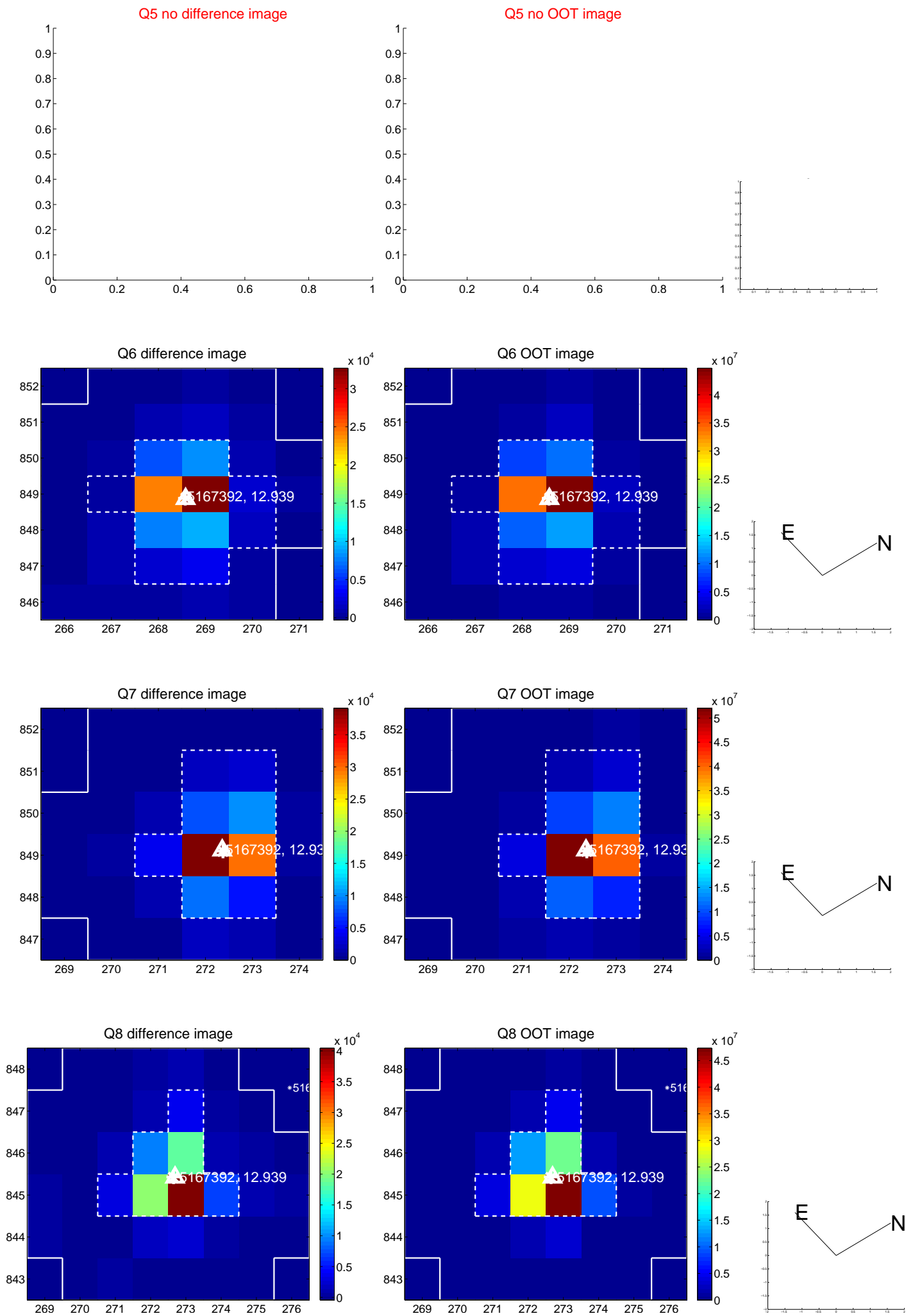


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

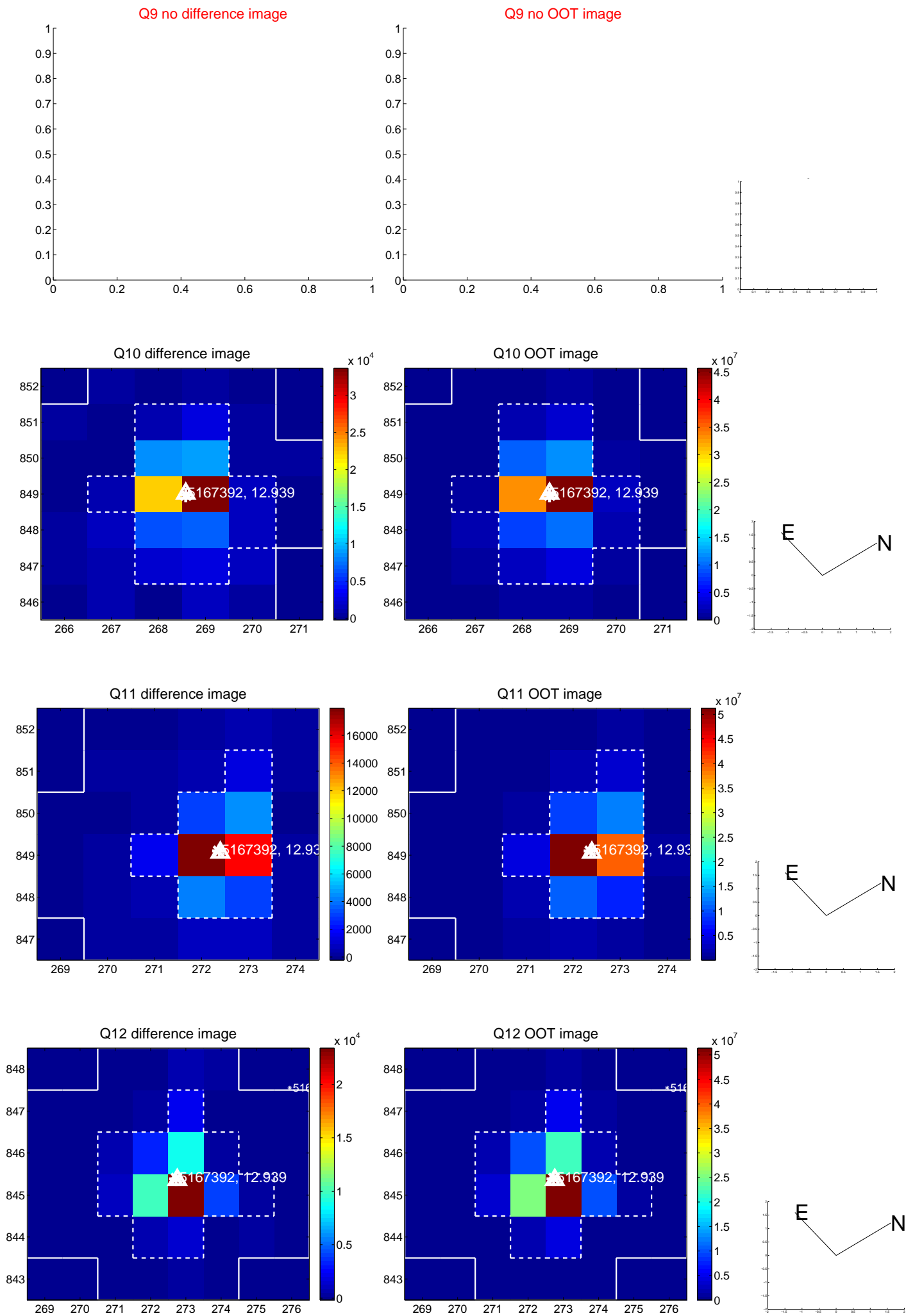
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



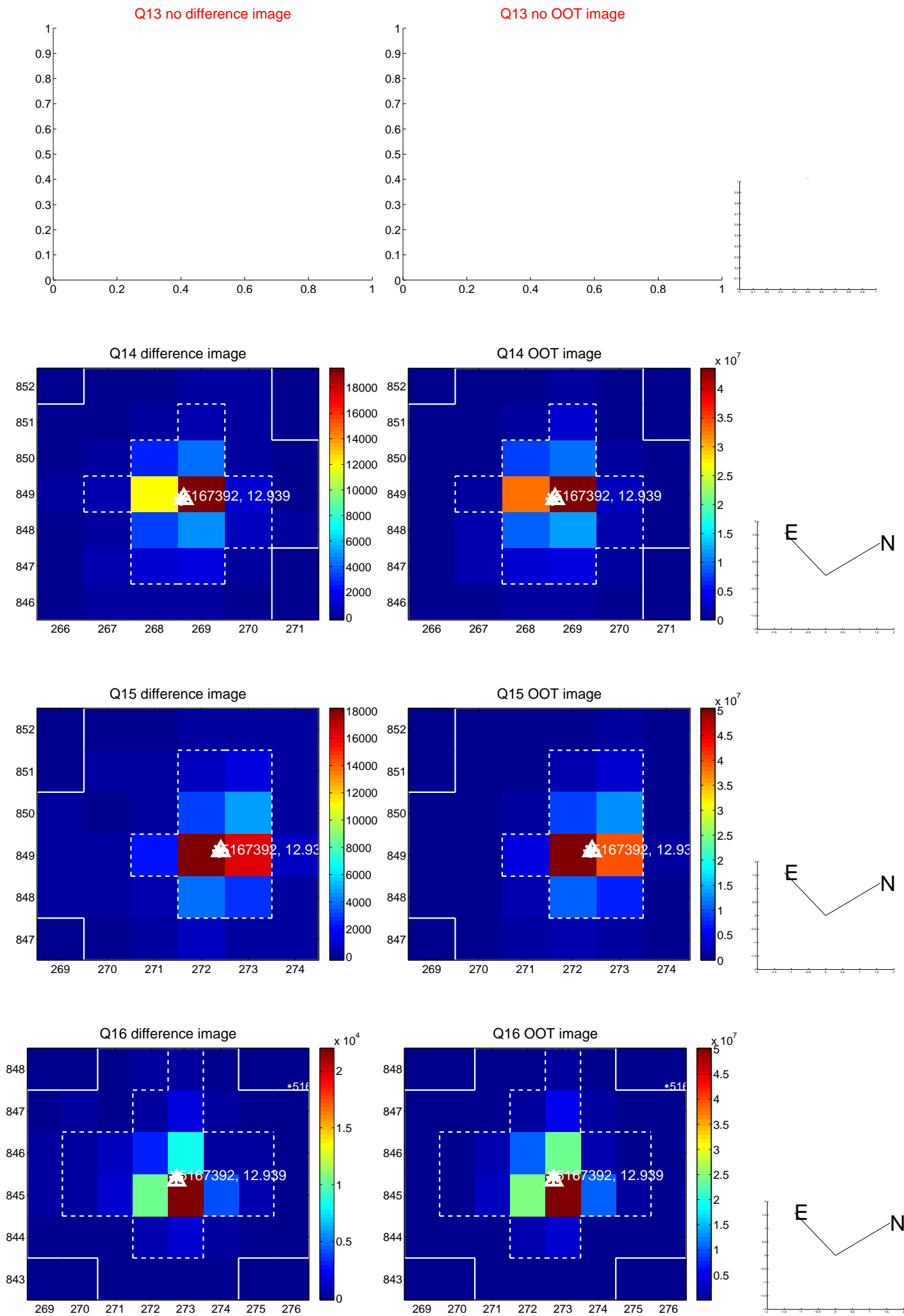
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



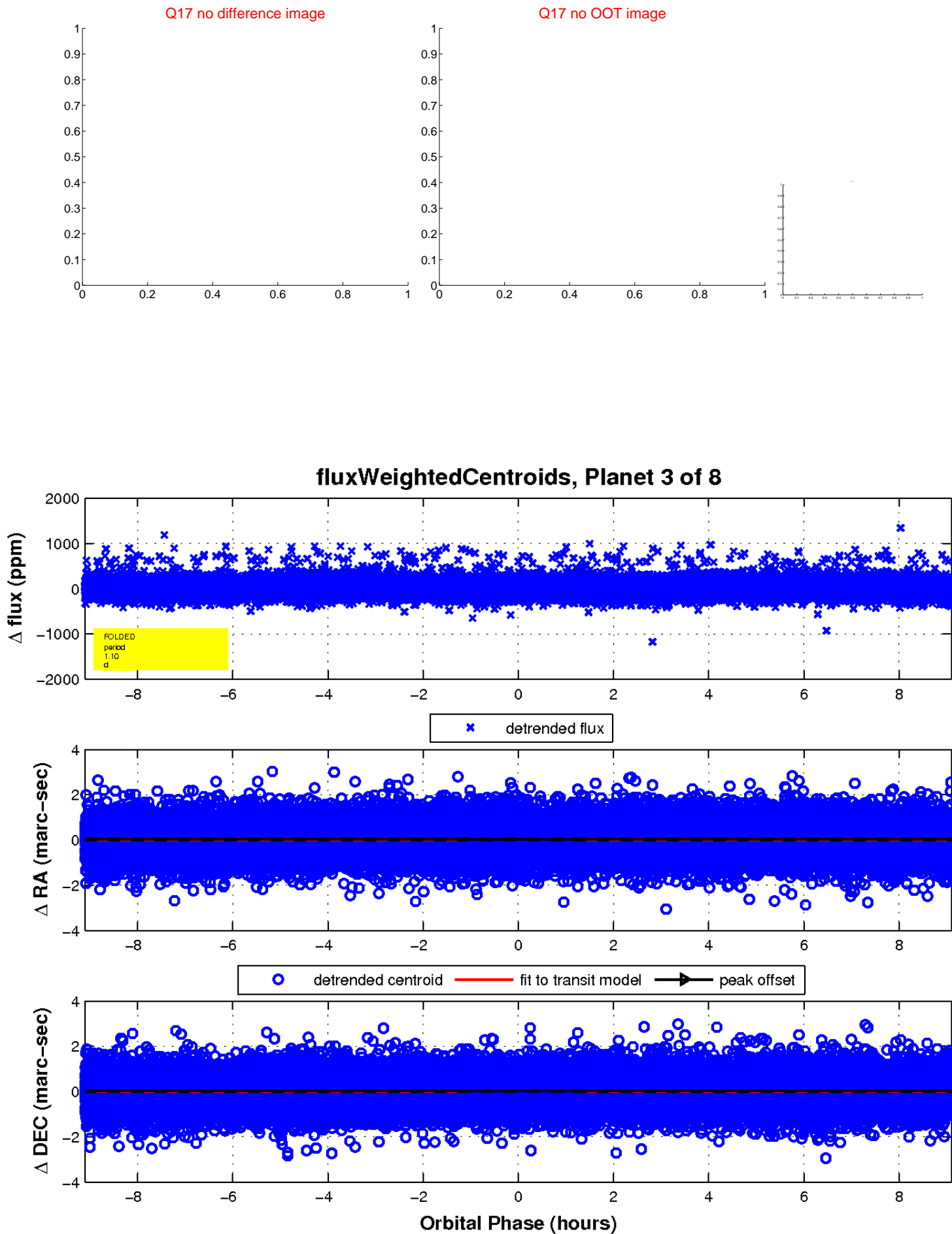
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

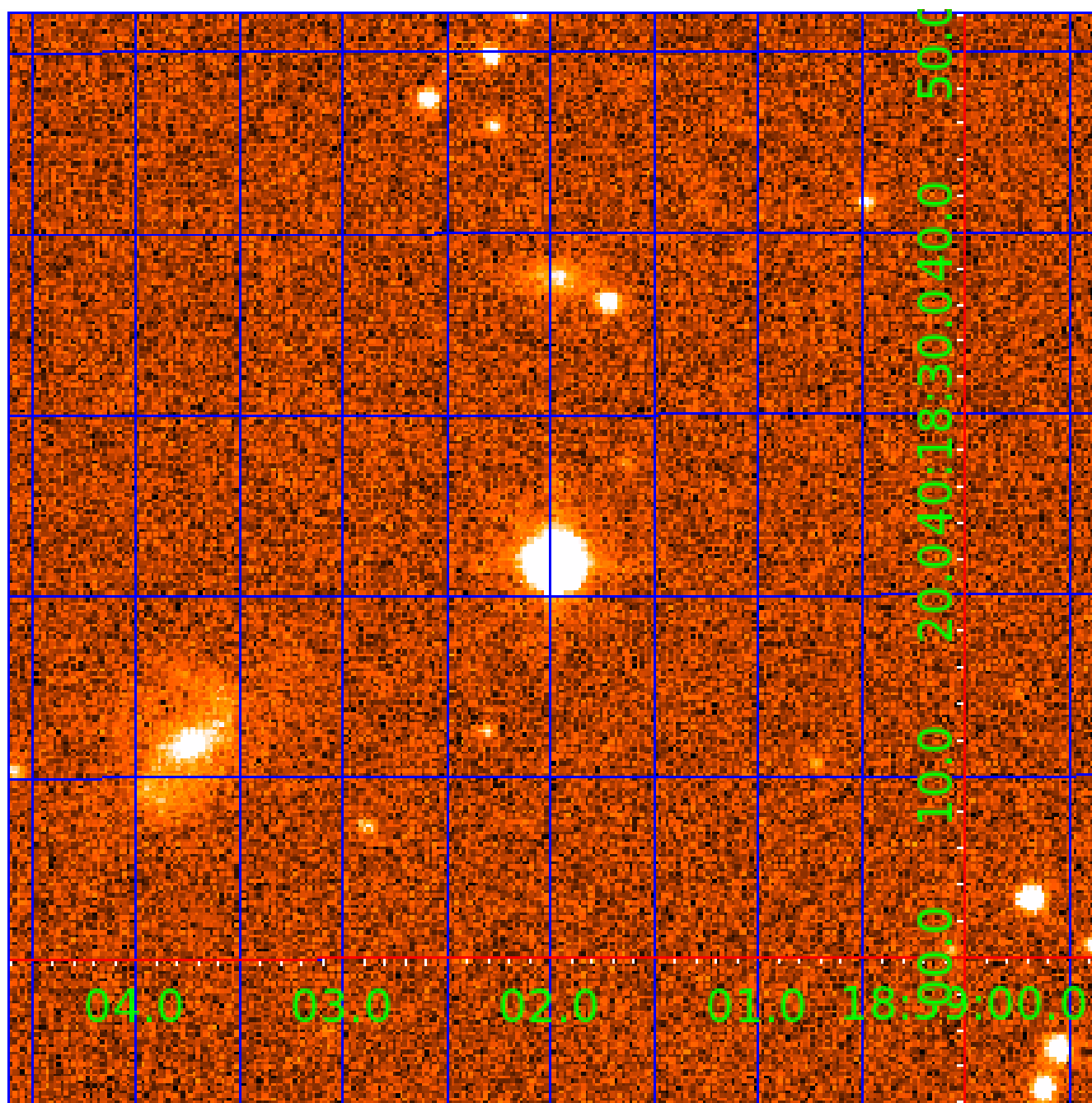


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005167392

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})
005167392-01	OBS	No	2.204295	132.867087	62.1	1.843	17.4	17.2	3.19	8365	2.93	25239.31
005167392-02	OBS	No	1.102001	131.657210	5.9	3.408	11.0	2.9	3.19	8365	0.79	63610.37
005167392-03	OBS	No	1.102215	132.209330	10.5	3.034	9.9	5.6	3.19	8365	1.20	63593.90
005167392-04	OBS	No	2.204298	132.142326	23.1	12.083	8.7	8.9	3.19	8365	1.67	25239.26
005167392-05	OBS	No	374.900056	419.330366	246.5	11.578	12.6	9.8	3.19	8365	5.18	26.78
005167392-06	OBS	No	19.772091	135.604325	220.9	1.996	8.5	8.6	3.19	8365	4.88	1354.25
005167392-07	OBS	No	14.121162	134.401966	176.1	1.713	8.3	9.5	3.19	8365	4.73	2121.34
005167392-08	OBS	No	9.322341	136.672453	245.4	2.500	7.2	-1.0	3.19	8365	5.06	3690.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005167392-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
005167392-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
005167392-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005167392-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

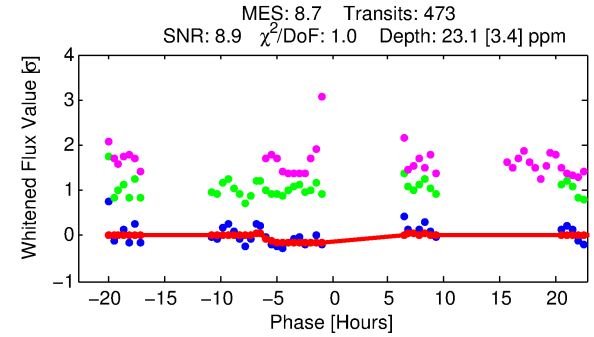
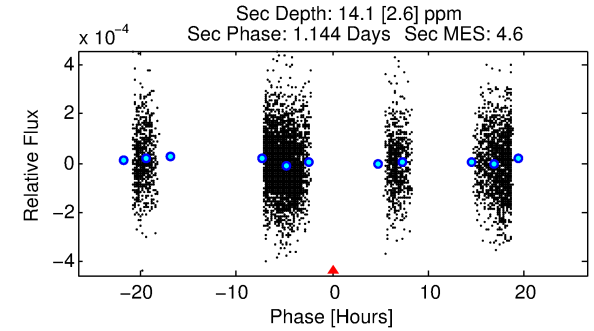
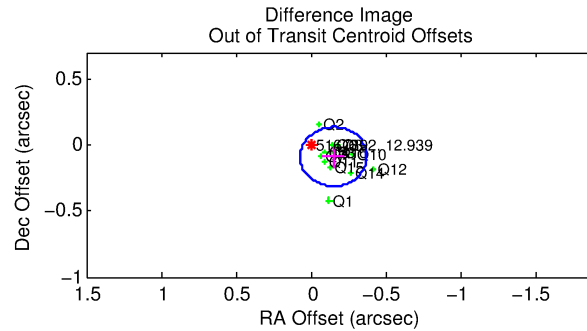
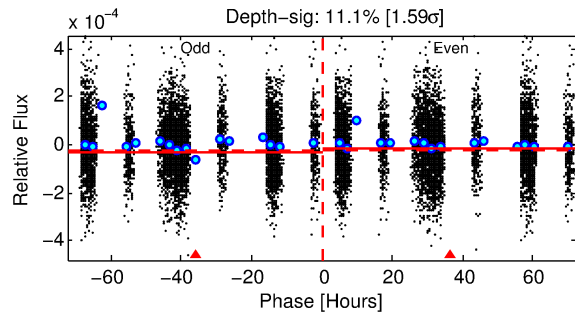
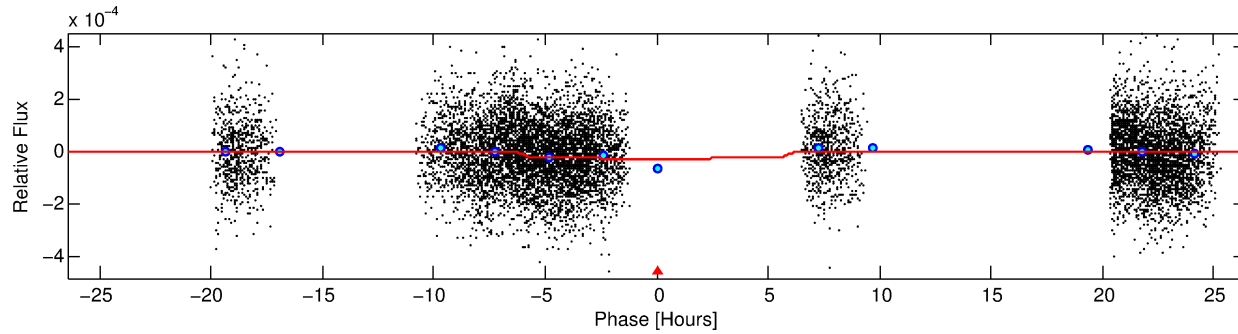
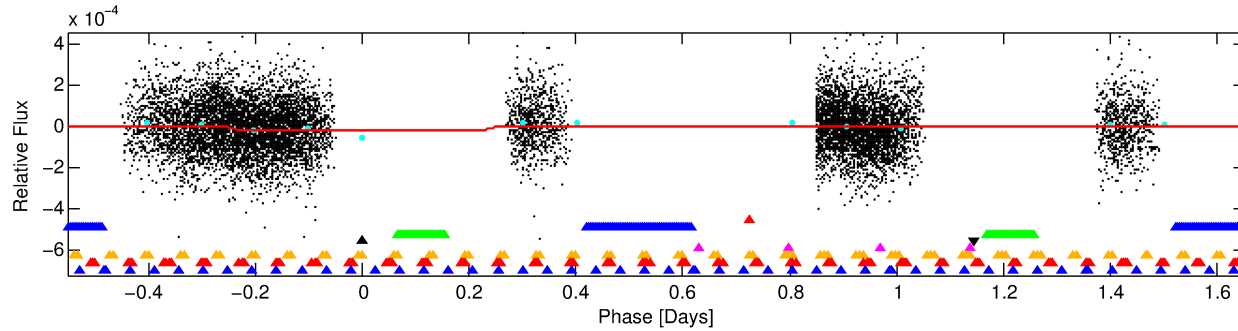
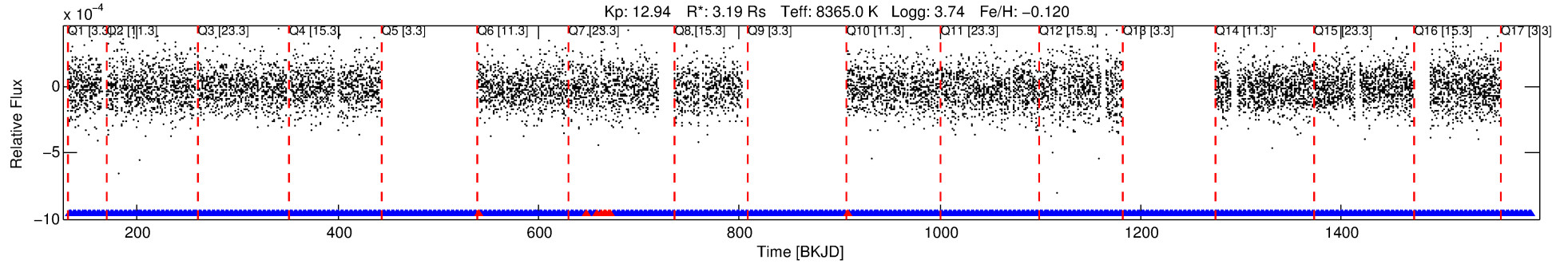
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005167392-04

No Significant Match Found

DV One-Page Summary

KIC: 5167392 Candidate: 4 of 8 Period: 2.204 d



DV Fit Results:

Period = 2.20430 [0.00004] d
Epoch = 132.1423 [0.0344] BKJD
Rp/R* = 0.0048 [0.0020]
a/R* = 1.26 [1.13]
b = 0.76 [1.43]
Seff = 25239.26 [18500.47]
Teq = 3214 [589] K
Rp = 1.67 [1.01] Re
a = 0.0420 [0.0185] AU
Ag = 4.94 [5.43] [0.73σ]
Teffp = 7408 [1587] K [2.48σ]

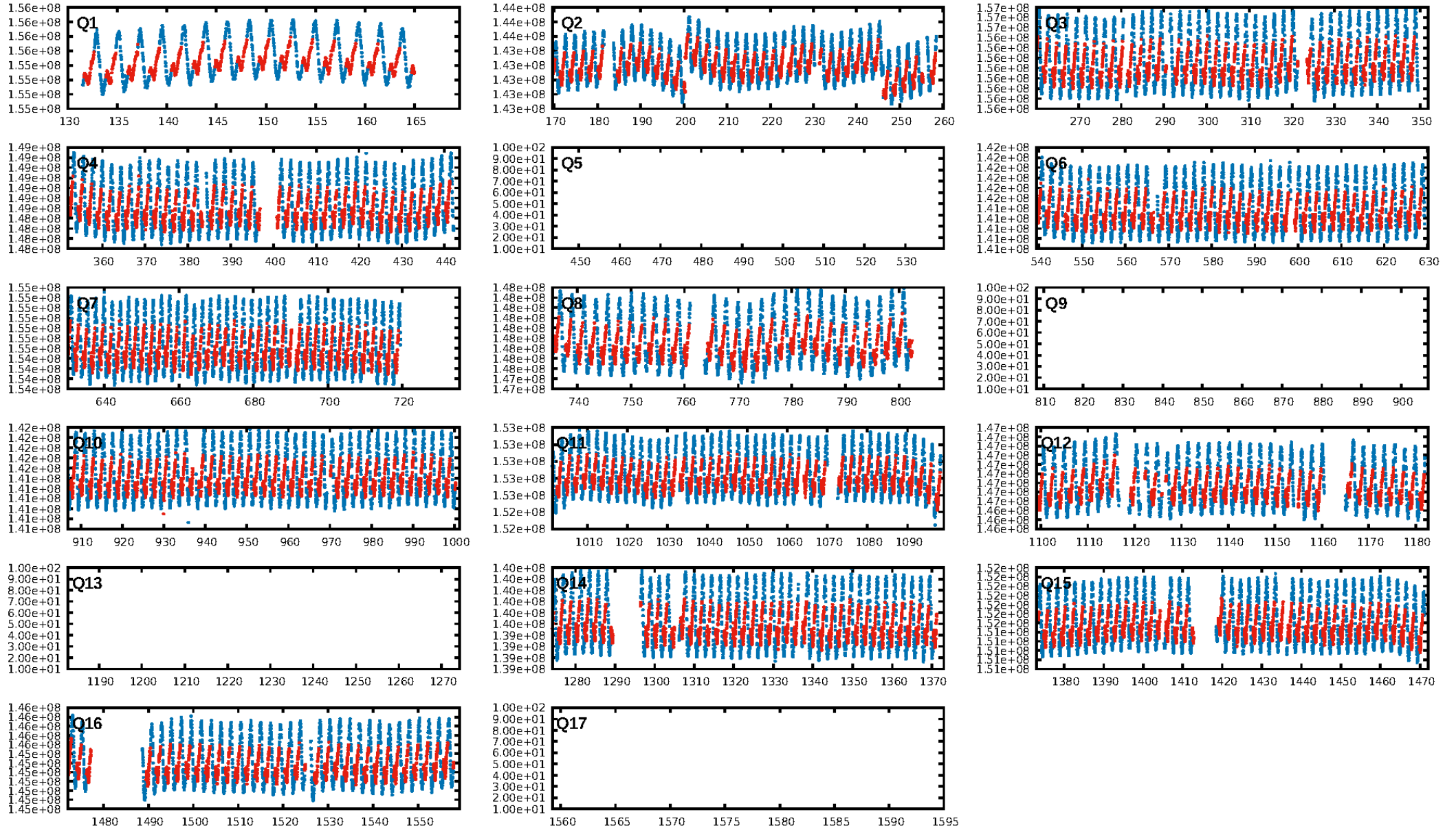
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [13.84σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [448/457]
GhostDiagnostic-chr: 1.837
Centroid-sig: 0.0%
Centroid-so: 6.976 arcsec [6.99σ]
OotOffset-rm: 0.176 arcsec [2.36σ]
KicOffset-rm: 0.163 arcsec [2.05σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 0.00 [0/13]

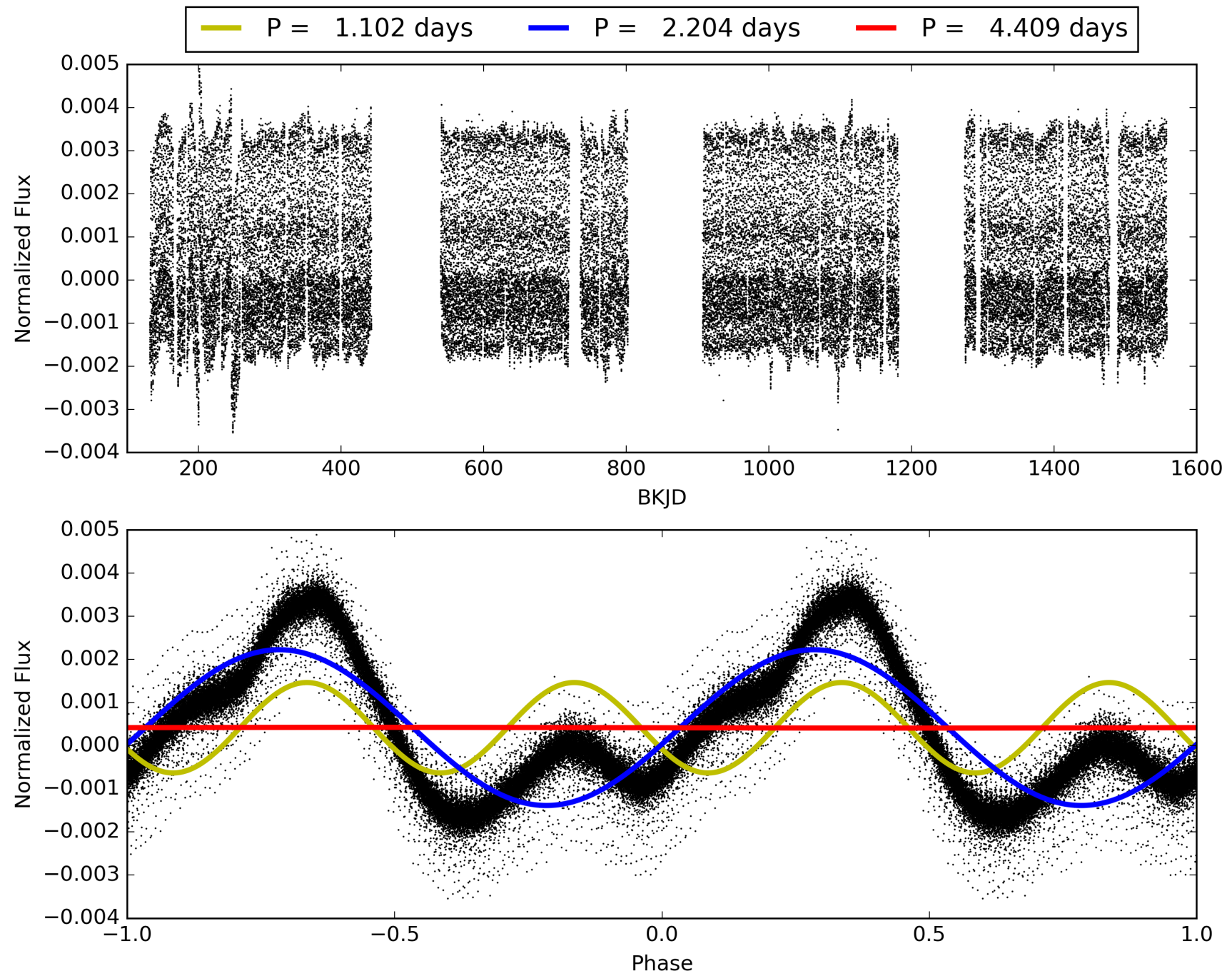
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:00:57 Z

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

TCE 005167392-04, PDC Light Curves

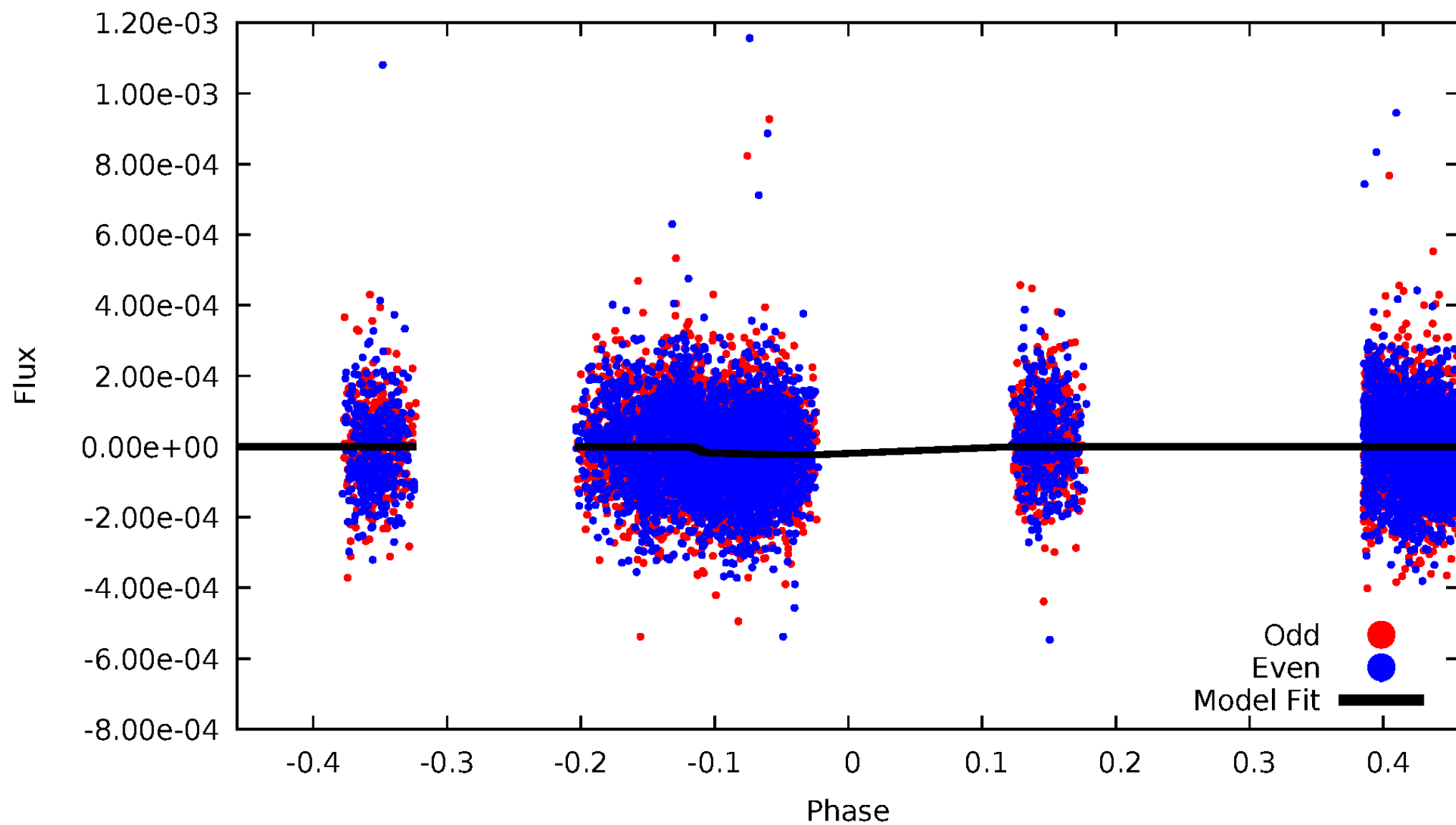


TCE 005167392-04



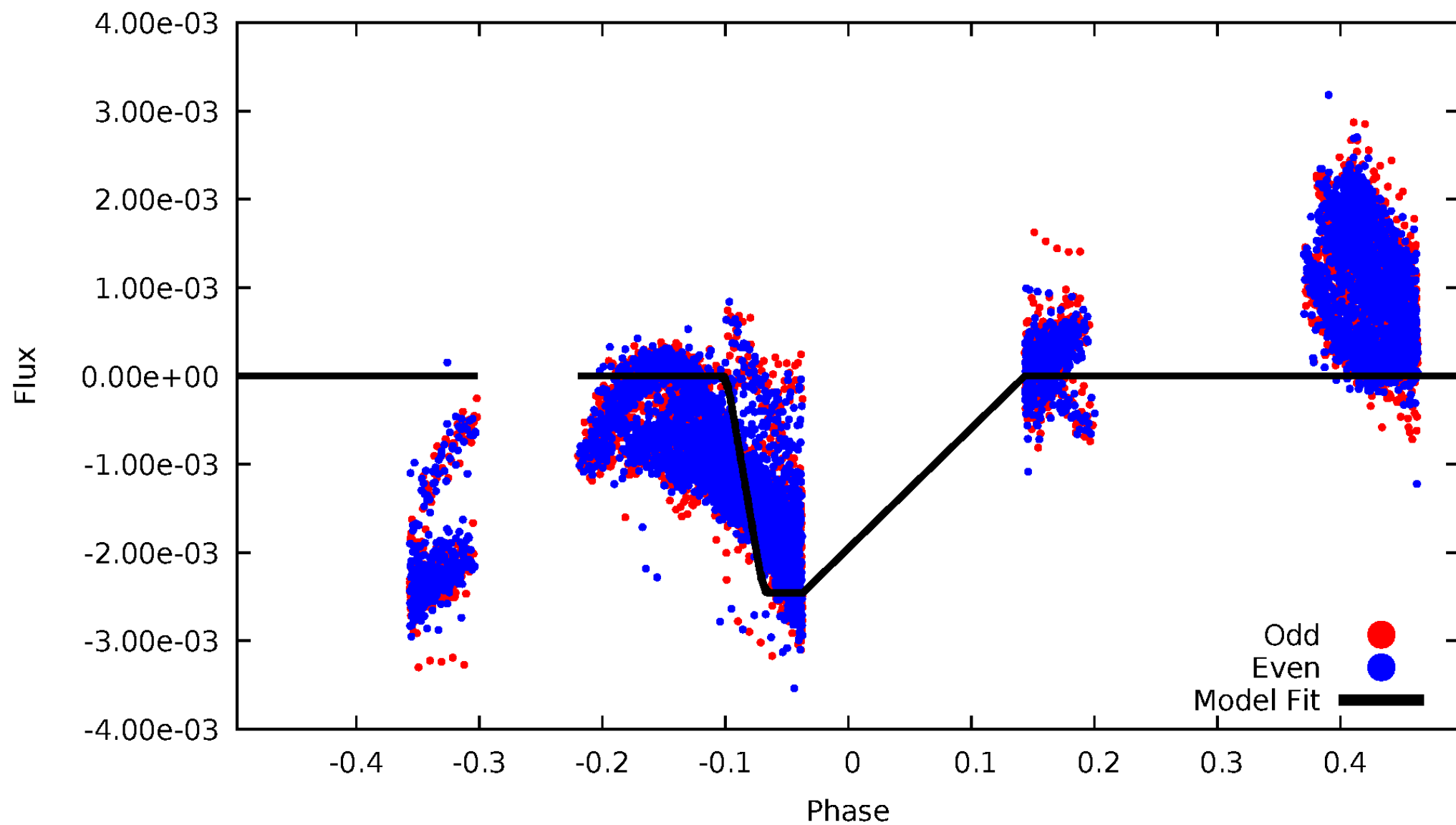
DV Odd/Even

TCE 005167392-04



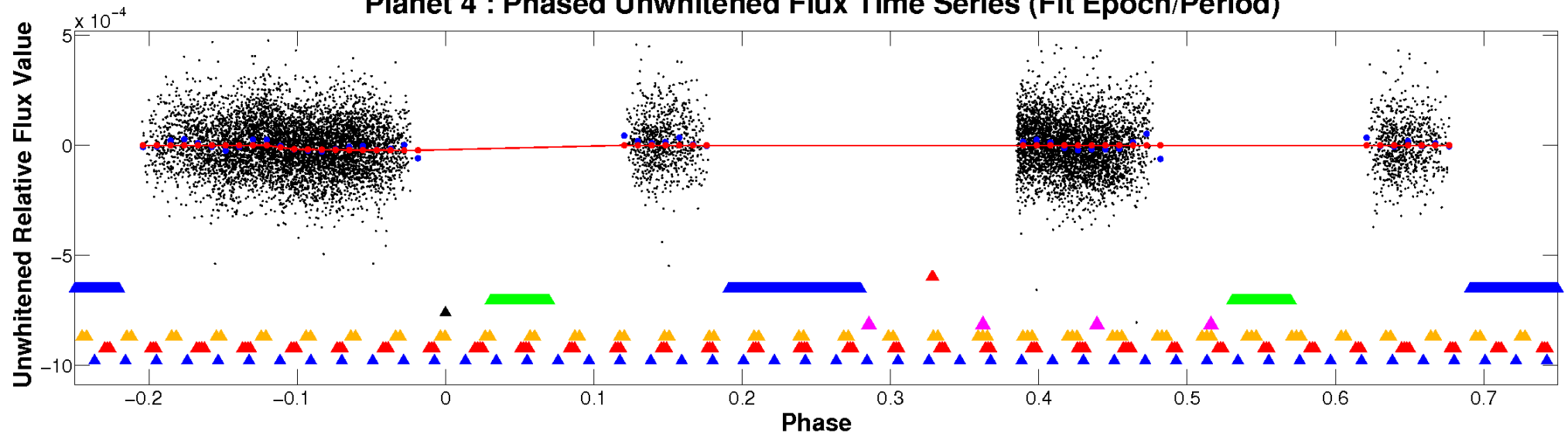
ALT Odd/Even

TCE 005167392-04

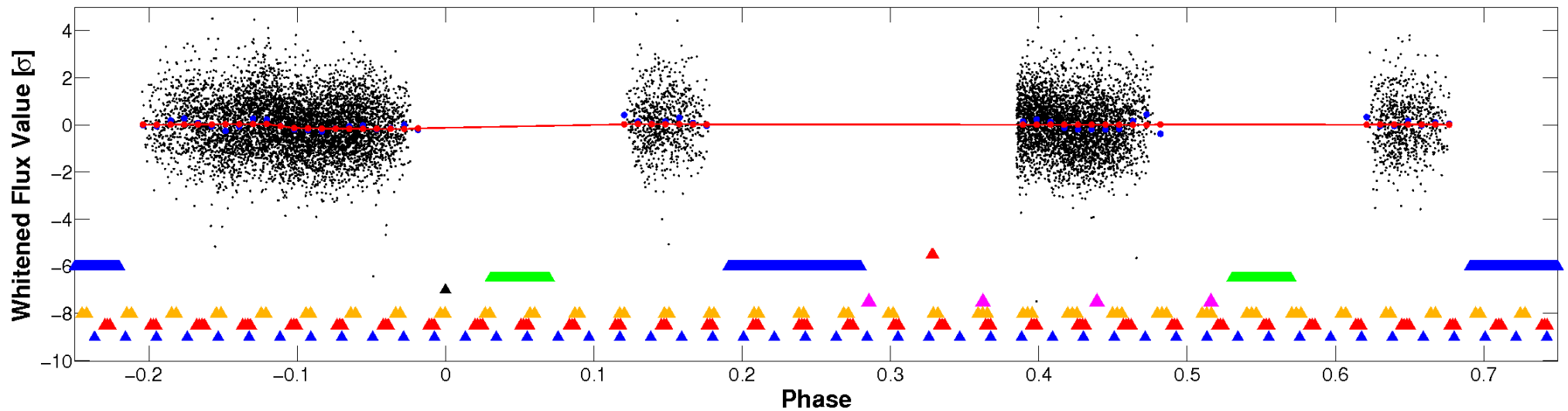


Non-Whitened Vs. Whitened Light Curve

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

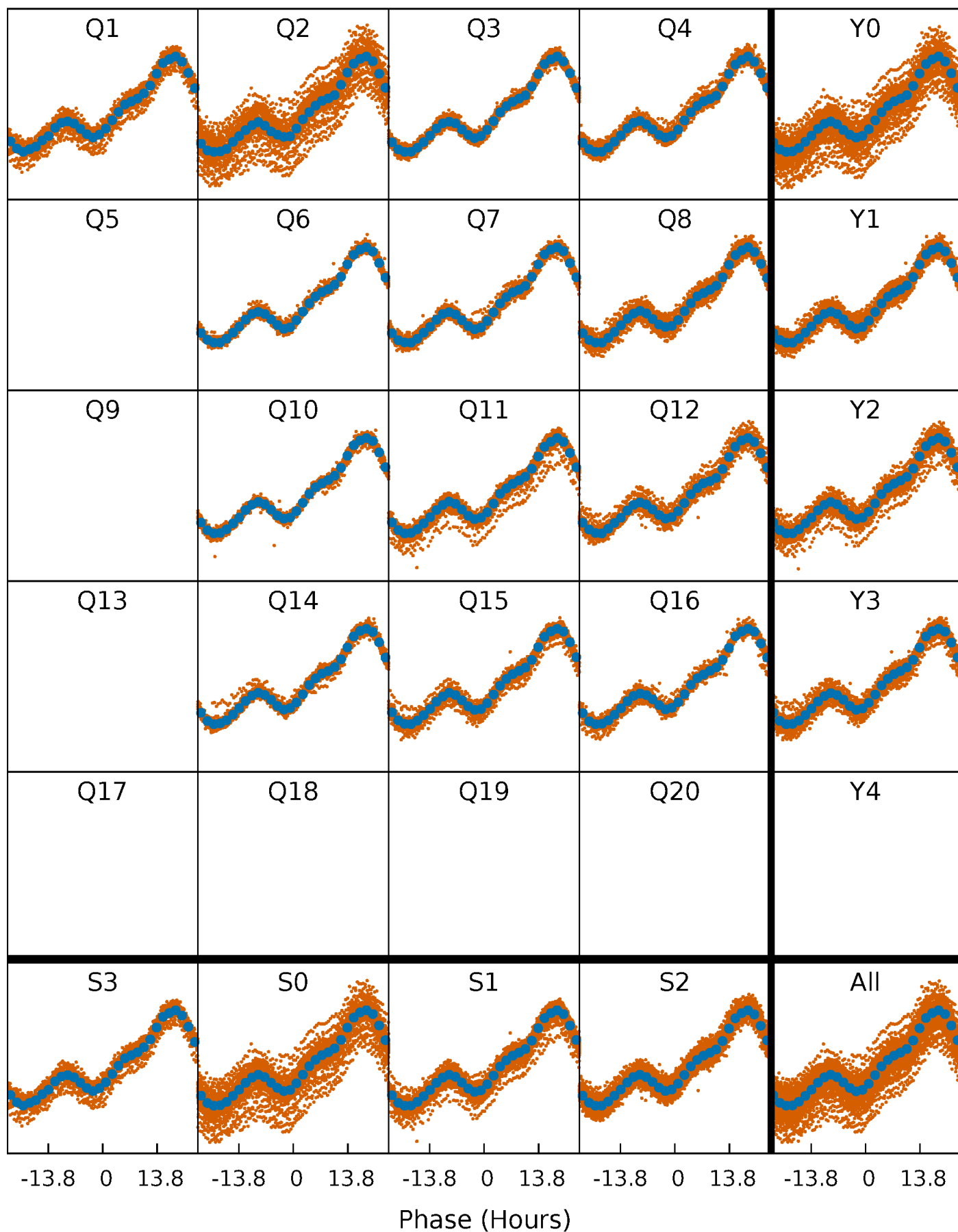


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



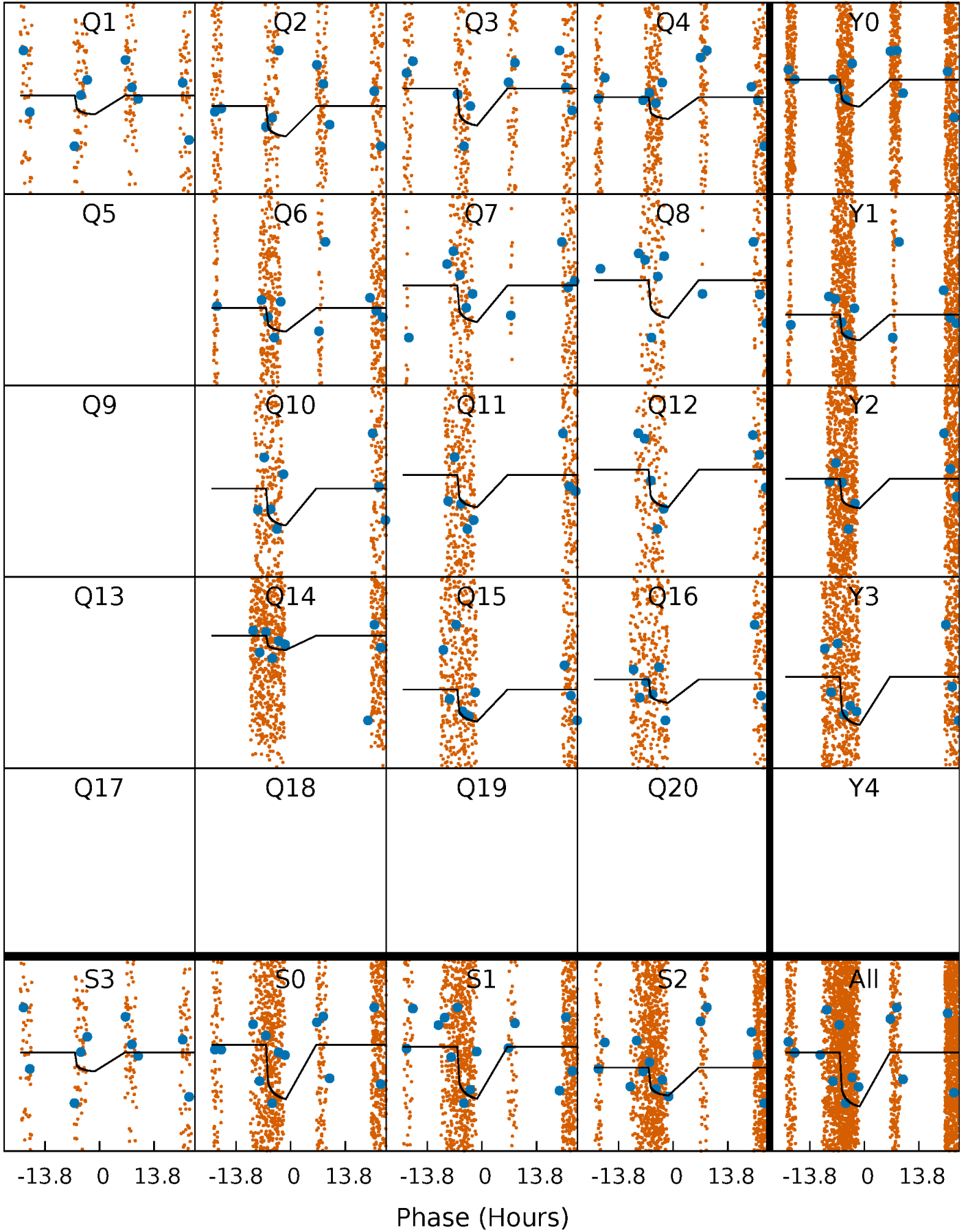
PDC Quarter-Phased Transit Curves

TCE 005167392-04 $P = 2.204298$ Days $T_0 = 132.142326$ (BKJD)



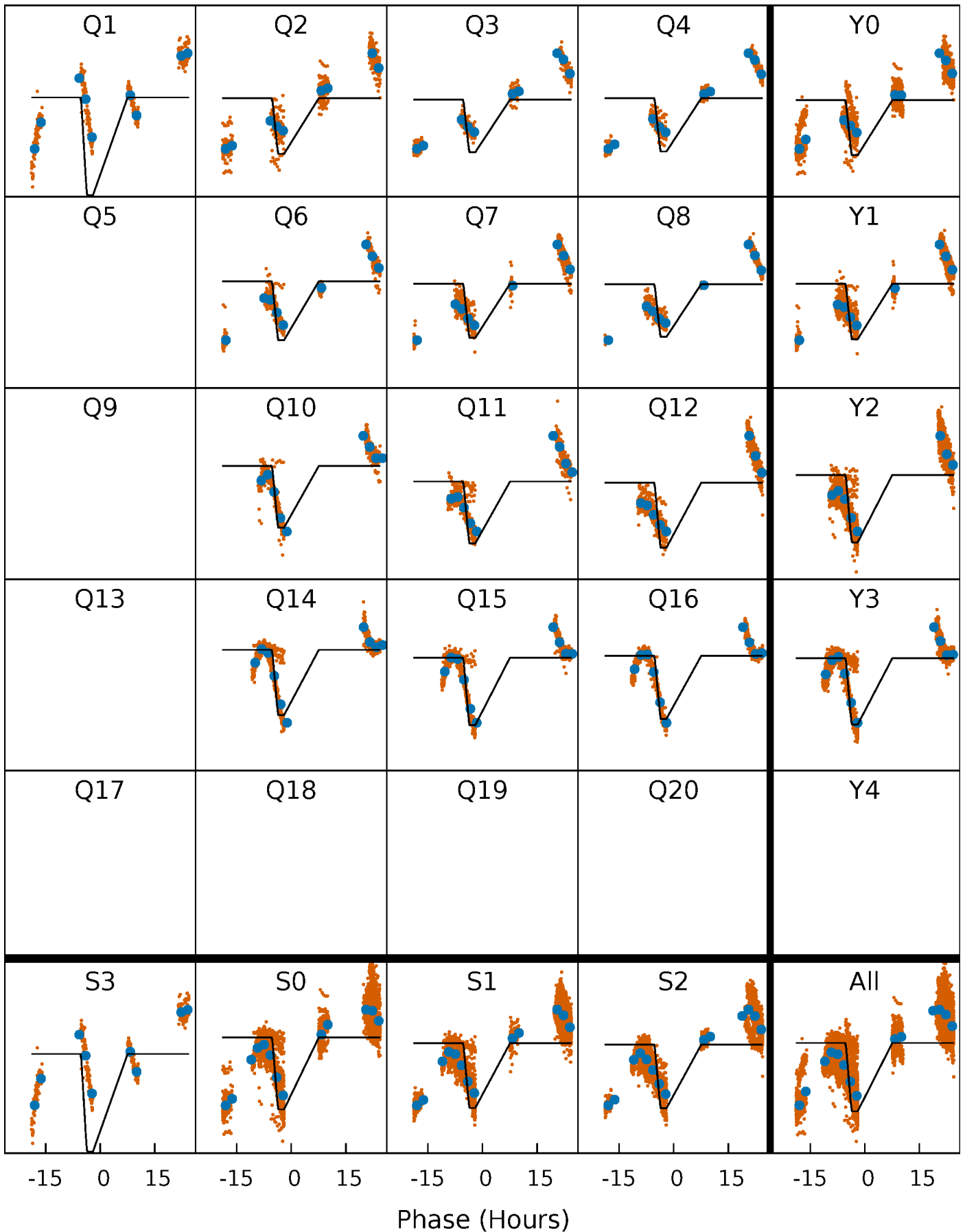
DV Quarter-Phased Transit Curves

TCE 005167392-04 P= 2.204298 Days $T_0=132.142326$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

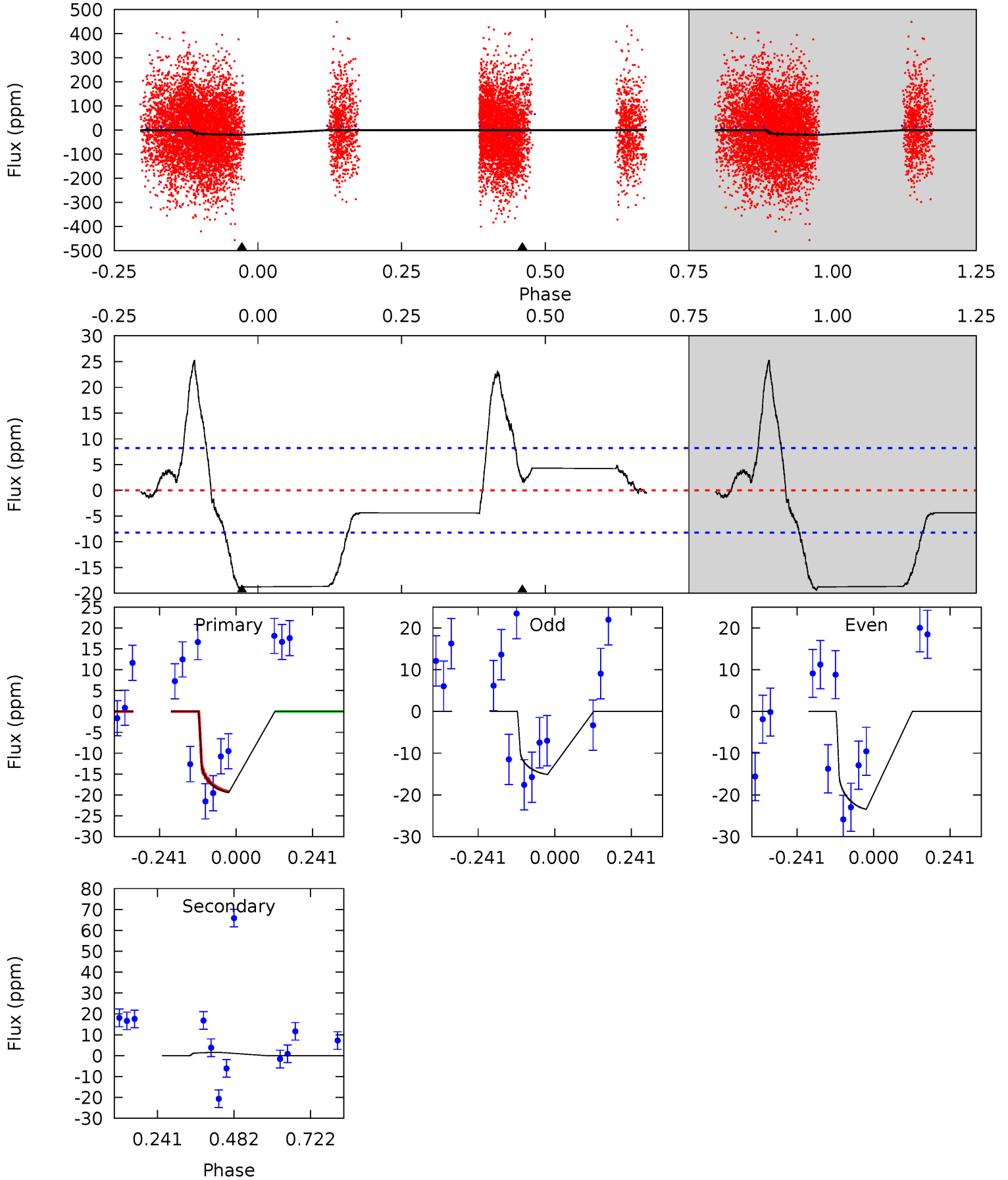
TCE 005167392-04 $P = 2.204426$ Days $T_0 = 132.093391$ (BKJD)



DV Model-Shift Uniqueness Test

005167392-04, P = 2.204298 Days, E = 129.938028 Days

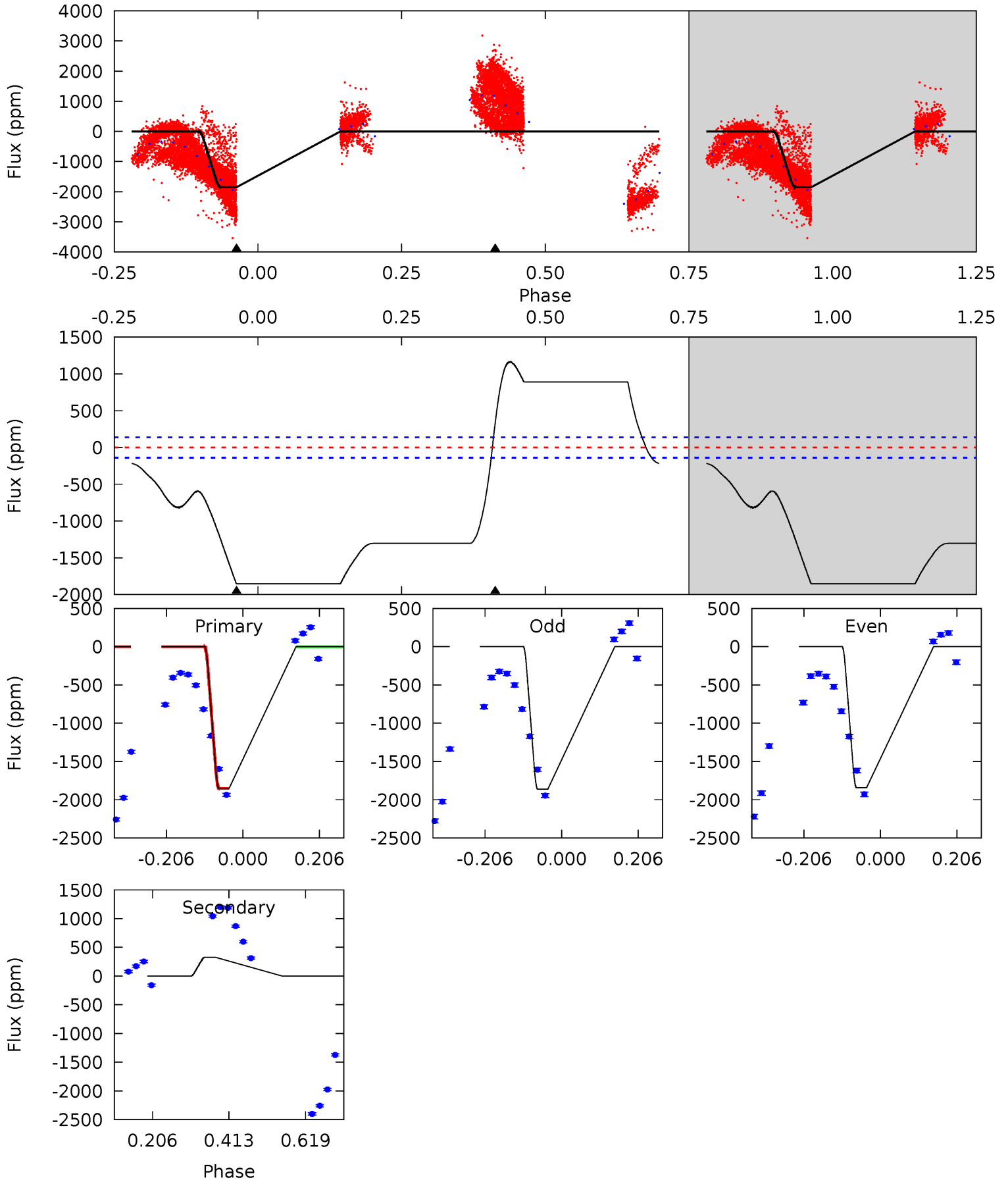
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	-0.83	0	0	4.38	1.17	2.98	10.3	10.3	-0.83	-0.83	2.23	0	0.57	0



Alt Model-Shift Uniqueness Test

005167392-04, P = 2.204426 Days, E = 129.888965 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
59.1	-10.5	0	0	4.41	1.26	28.3	59.1	59.1	-10.5	-10.5	0.33	0	0.39	0



Stellar Parameters For KIC 005167392

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8365^{+202}_{-376}	$3.740^{+0.420}_{-0.140}$	$-0.120^{+0.300}_{-0.400}$	$3.188^{+0.952}_{-1.429}$	$2.039^{+0.428}_{-0.471}$	$0.089^{+0.320}_{-0.038}$
	+2%/-4%	+11%/-4%	+250%/-333%	+30%/-45%	+21%/-23%	+361%/-43%
Source	KIC0	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 005167392-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	2 ± 2	$1.52^{+0.77}_{-0.64}$	4361^{+392}_{-492}	-4575^{+1165}_{-1285}	$-0.545^{+0.696}_{-1.877}$
Alt.	328 ± 31	$16.90^{+3.17}_{-3.90}$	4359^{+387}_{-505}	-5208^{+192}_{-180}	$-1.161^{+0.330}_{-0.666}$

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

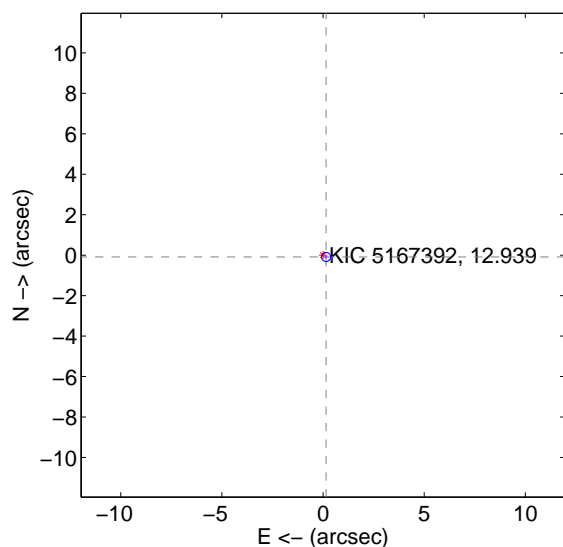
Supplemental centroid analysis for 005167392-04. Kepler magnitude: 12.94. Transit SNR 8.91

There are 13 quarters with good PRF difference image offsets

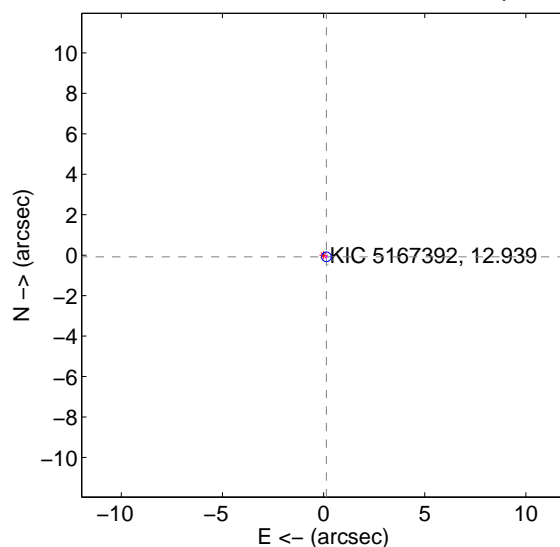
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.176 ± 0.074	2.36	-0.152 ± 0.071	-0.089 ± 0.076
PRF-fit source offset from KIC position	0.163 ± 0.079	2.05	-0.141 ± 0.072	-0.082 ± 0.081
photometric centroid source offset	6.98 ± 1.00	6.99	-4.24 ± 1.00	-5.54 ± 0.99

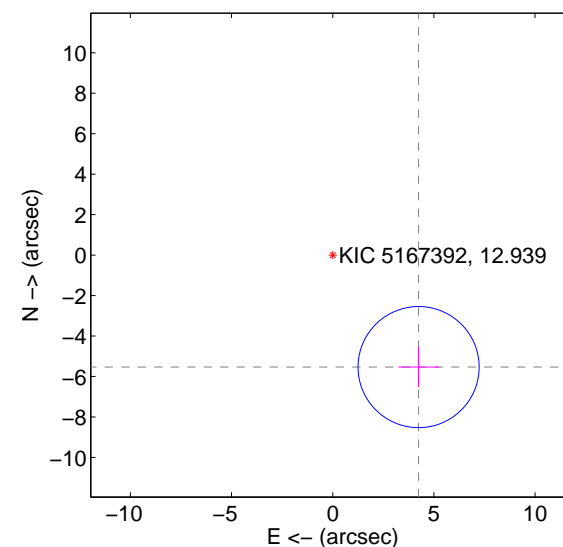
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

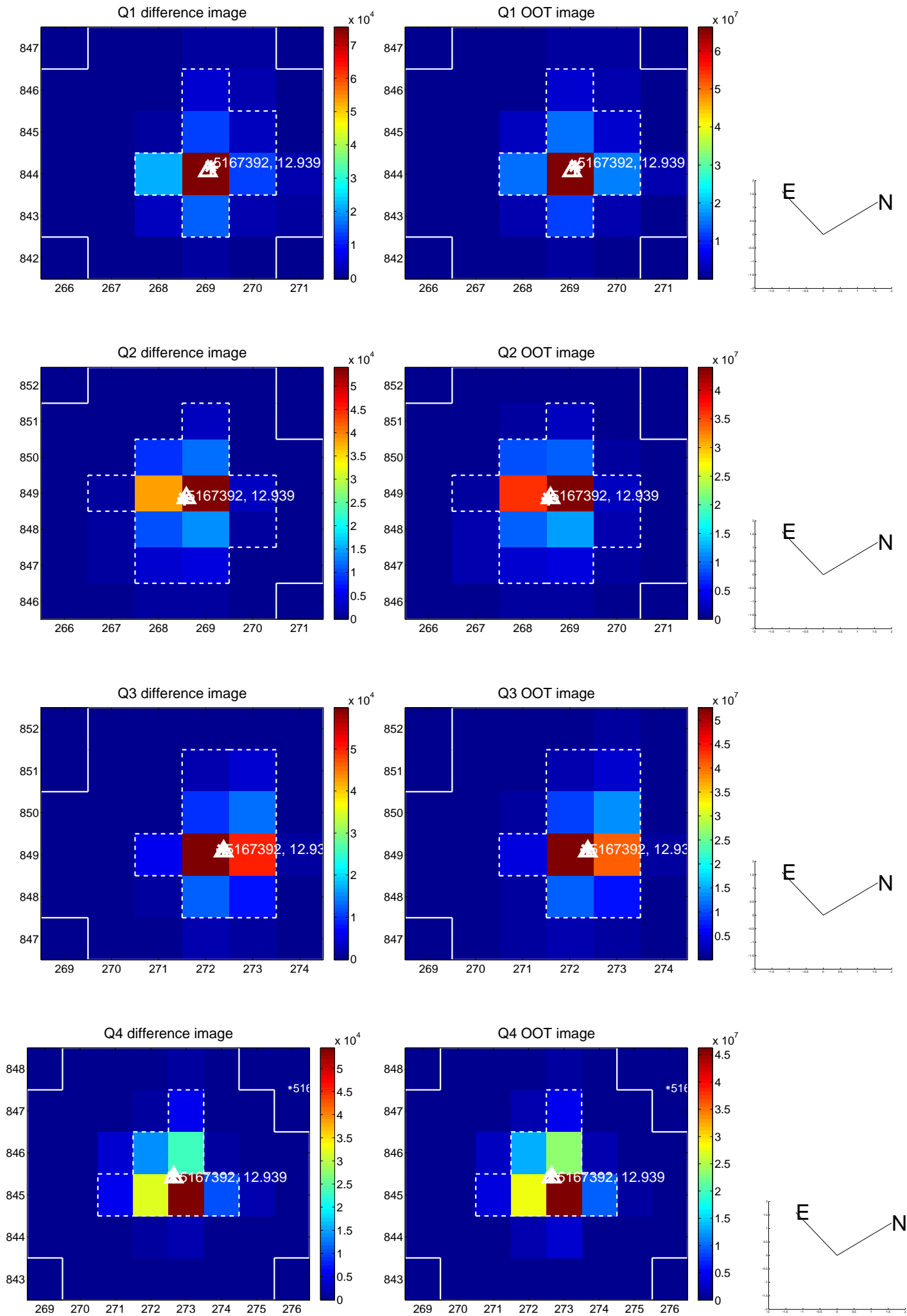


offset from photometric centroids

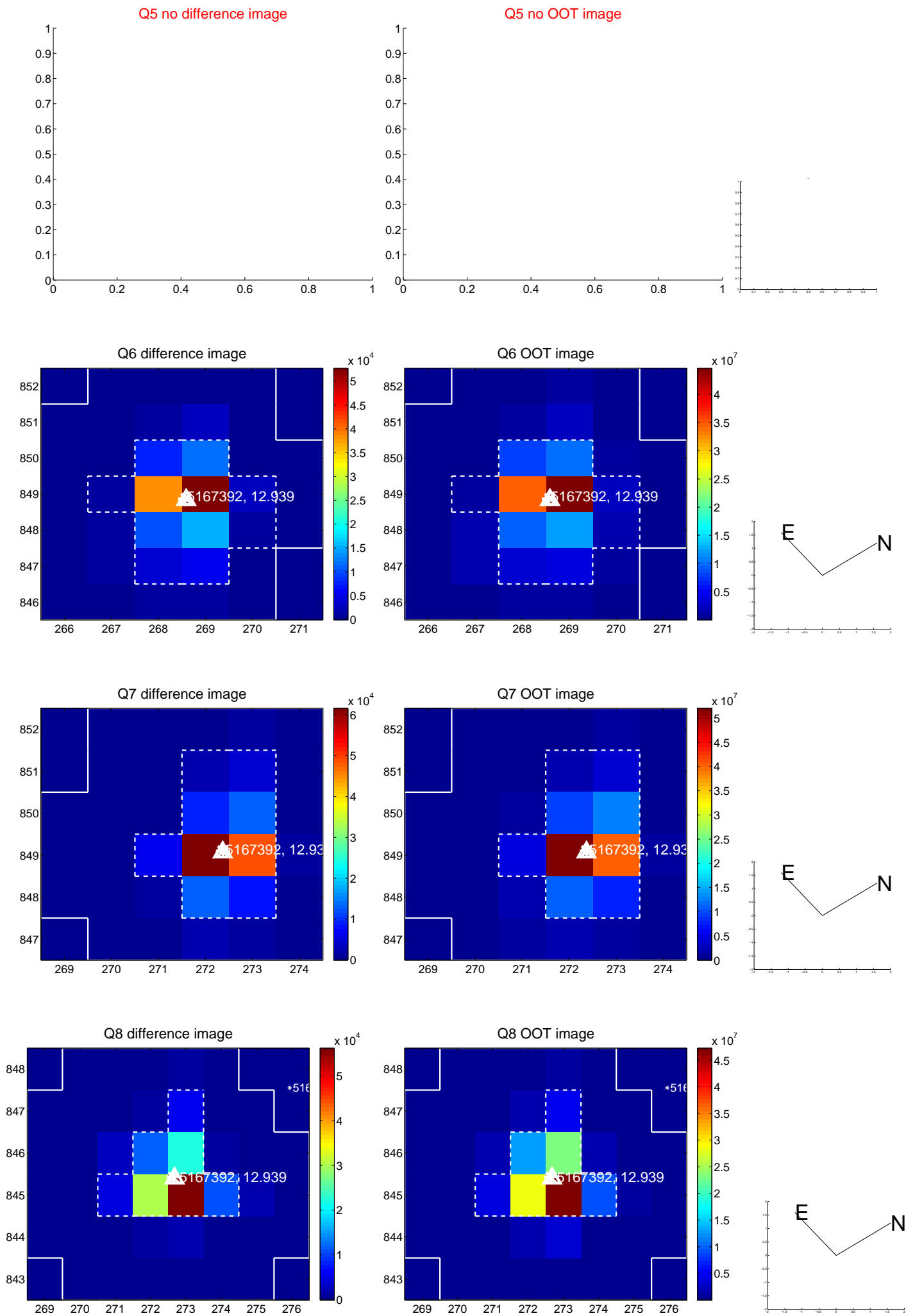


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

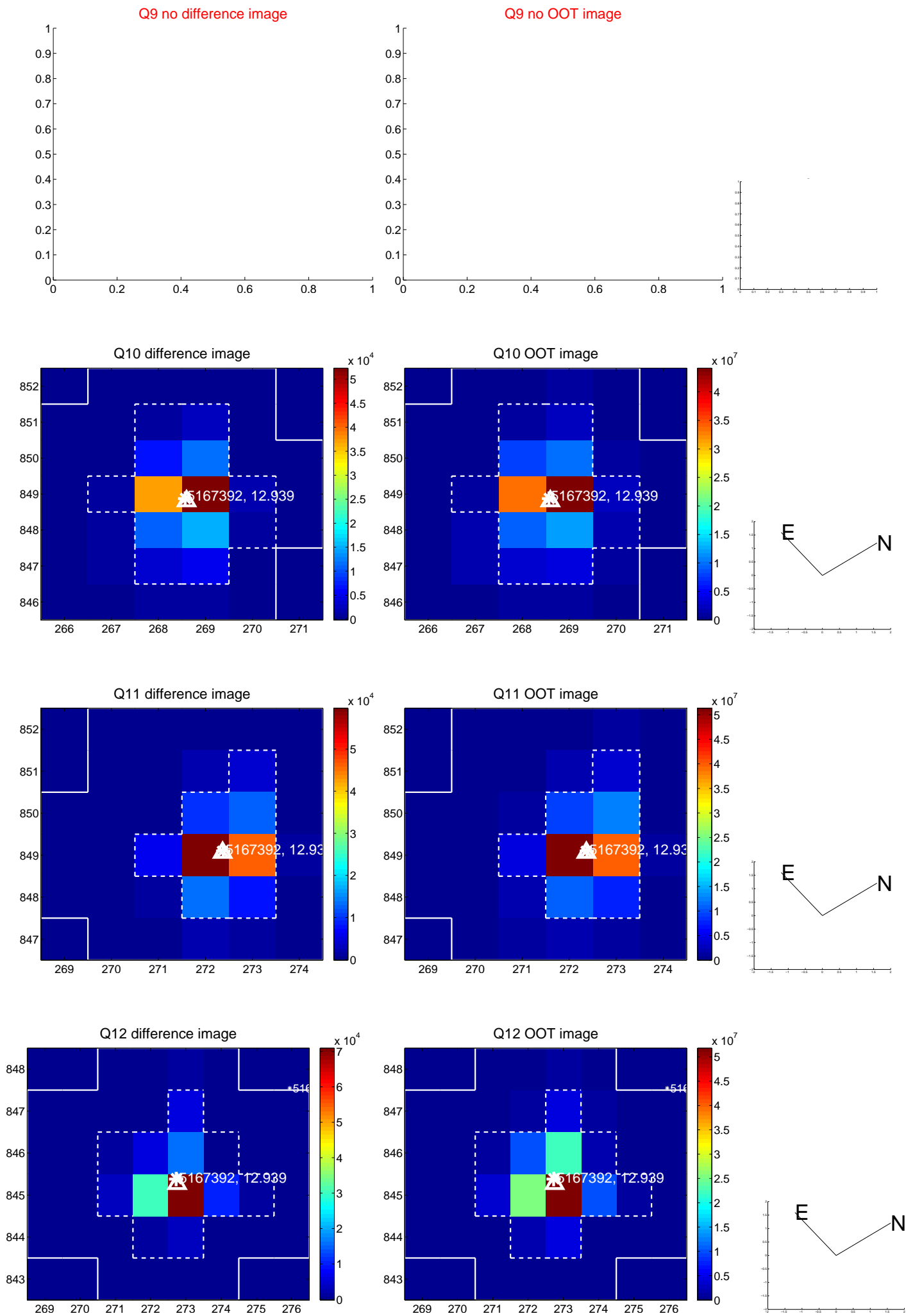
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



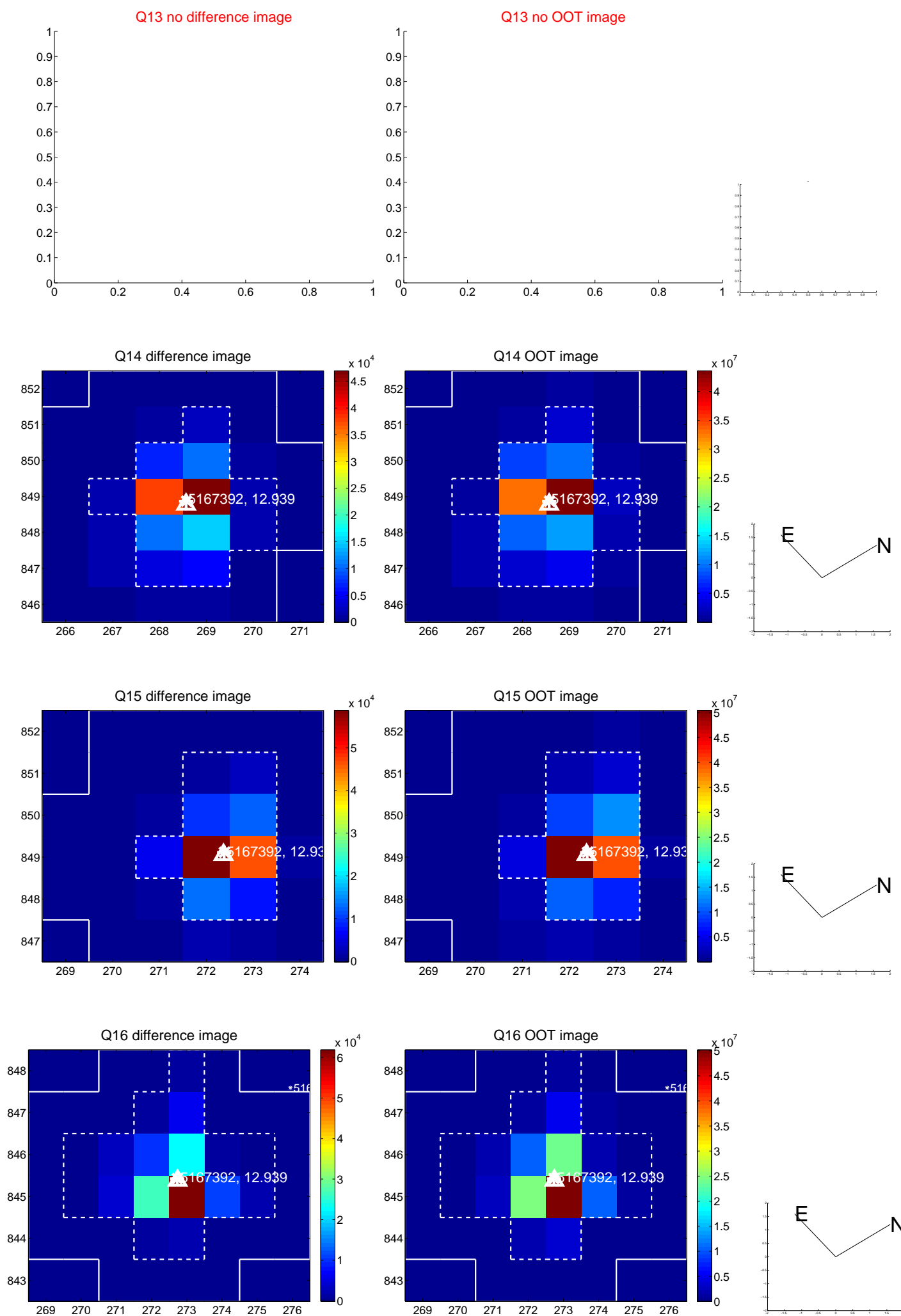
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



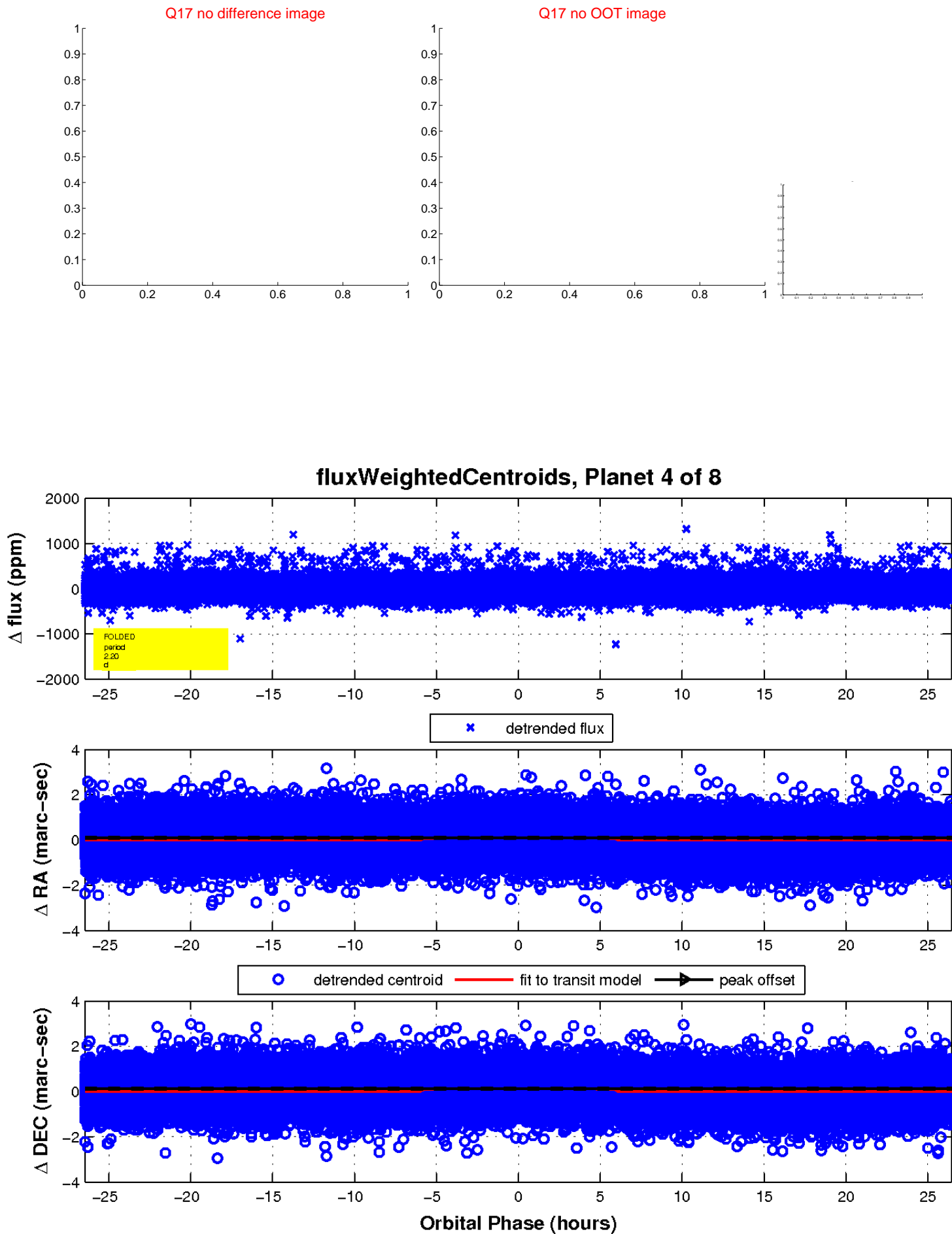
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

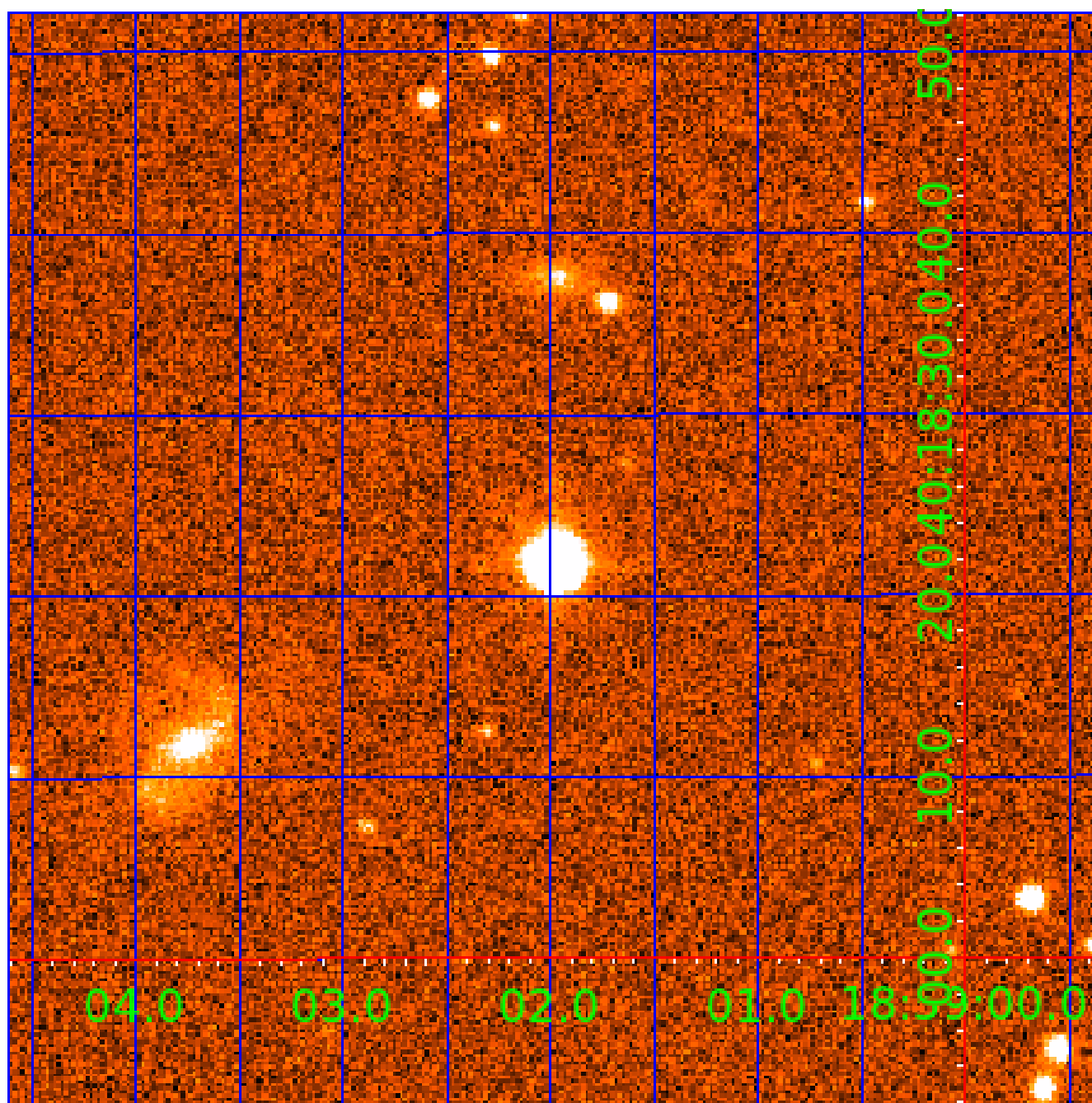


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005167392

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})
005167392-01	OBS	No	2.204295	132.867087	62.1	1.843	17.4	17.2	3.19	8365	2.93	25239.31
005167392-02	OBS	No	1.102001	131.657210	5.9	3.408	11.0	2.9	3.19	8365	0.79	63610.37
005167392-03	OBS	No	1.102215	132.209330	10.5	3.034	9.9	5.6	3.19	8365	1.20	63593.90
005167392-04	OBS	No	2.204298	132.142326	23.1	12.083	8.7	8.9	3.19	8365	1.67	25239.26
005167392-05	OBS	No	374.900056	419.330366	246.5	11.578	12.6	9.8	3.19	8365	5.18	26.78
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005167392-07	OBS	No	14.121162	134.401966	176.1	1.713	8.3	9.5	3.19	8365	4.73	2121.34
005167392-08	OBS	No	9.322341	136.672453	245.4	2.500	7.2	-1.0	3.19	8365	5.06	3690.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005167392-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
005167392-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
005167392-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005167392-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

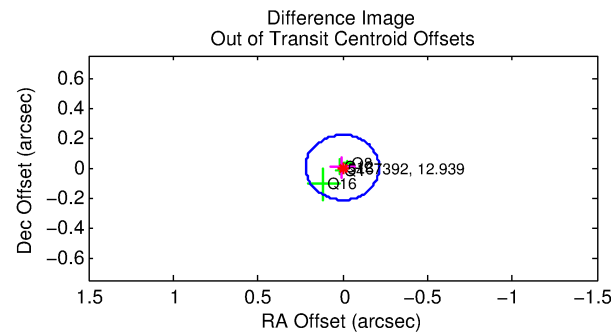
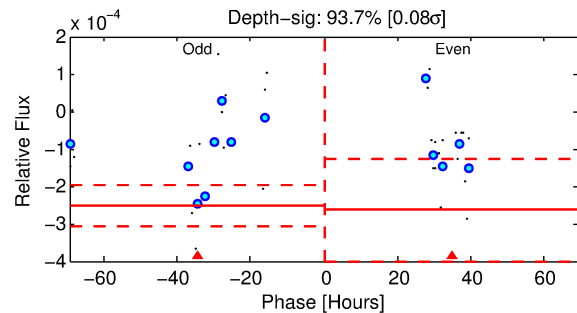
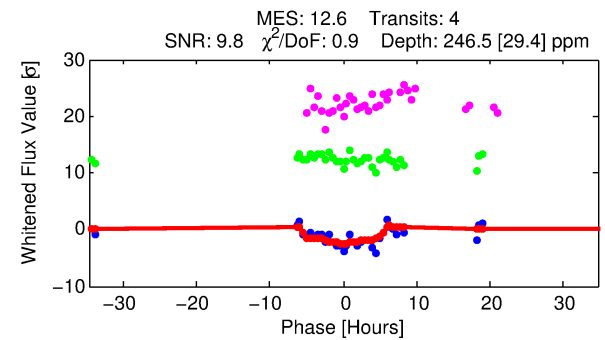
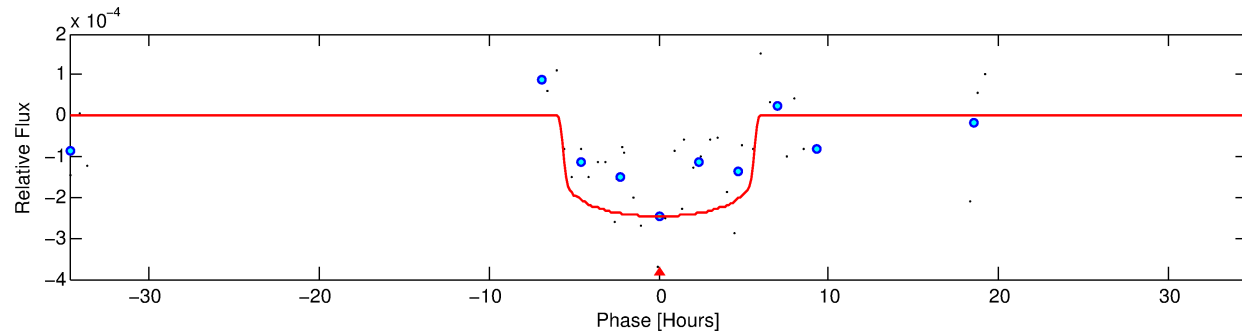
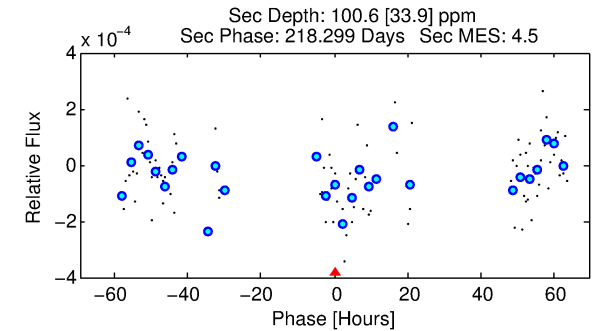
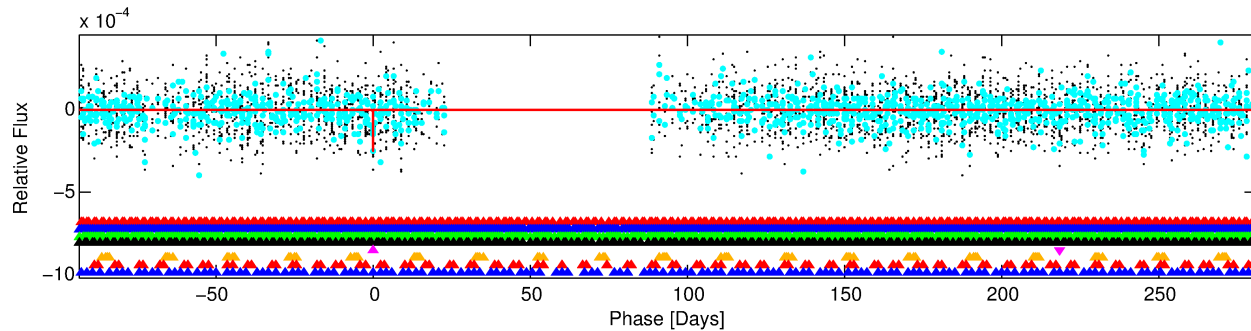
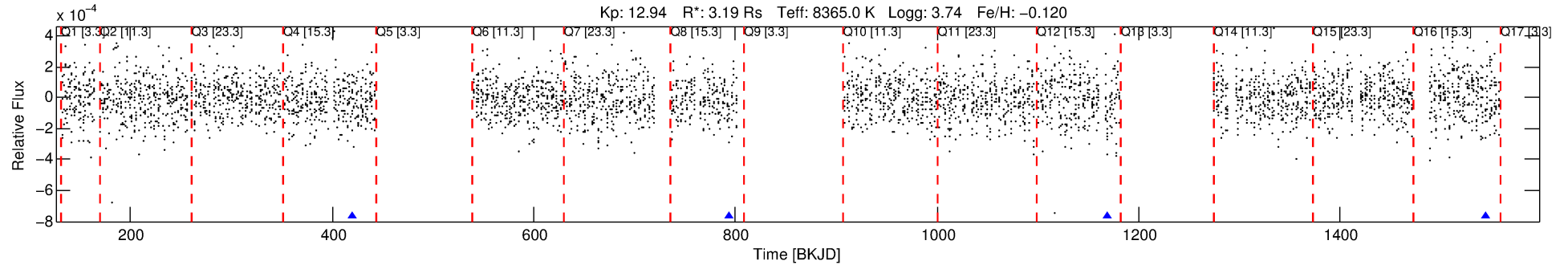
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005167392-05

No Significant Match Found

DV One-Page Summary

KIC: 5167392 Candidate: 5 of 8 Period: 374.900 d



DV Fit Results:

Period = 374.90006 [0.04940] d
Epoch = 419.3304 [0.0744] BKJD
Rp/R* = 0.0149 [0.0237]
a/R* = 220.84 [2049.25]
b = 0.48 [14.94]
Seff = 26.78 [19.63]
Teq = 580 [106] K
Rp = 5.18 [8.57] Re
a = 1.2902 [0.5671] AU
Ag = 3433.53 [11268.95] [0.30 sigma]
Teffp = 6866 [5508] K [1.14 sigma]

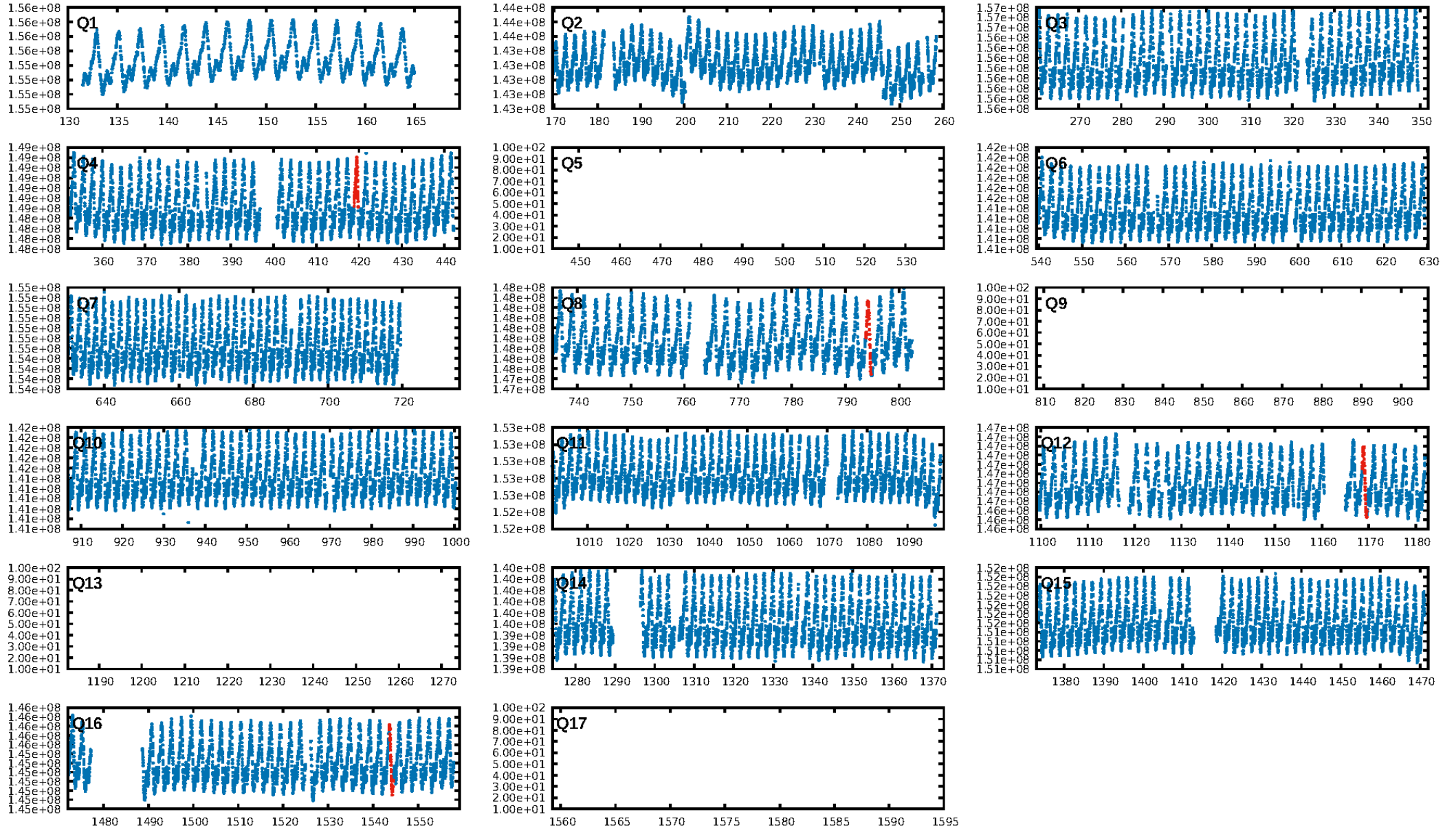
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [725.45 sigma]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 43.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 3.129
Centroid-sig: 95.7%
Centroid-so: 0.195 arcsec [0.19 sigma]
OotOffset-rm: 0.002 arcsec [0.03 sigma]
OotOffset-st: 0/0/4/0 [4]
KicOffset-rm: 0.050 arcsec [0.66 sigma]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.00 [0/4]

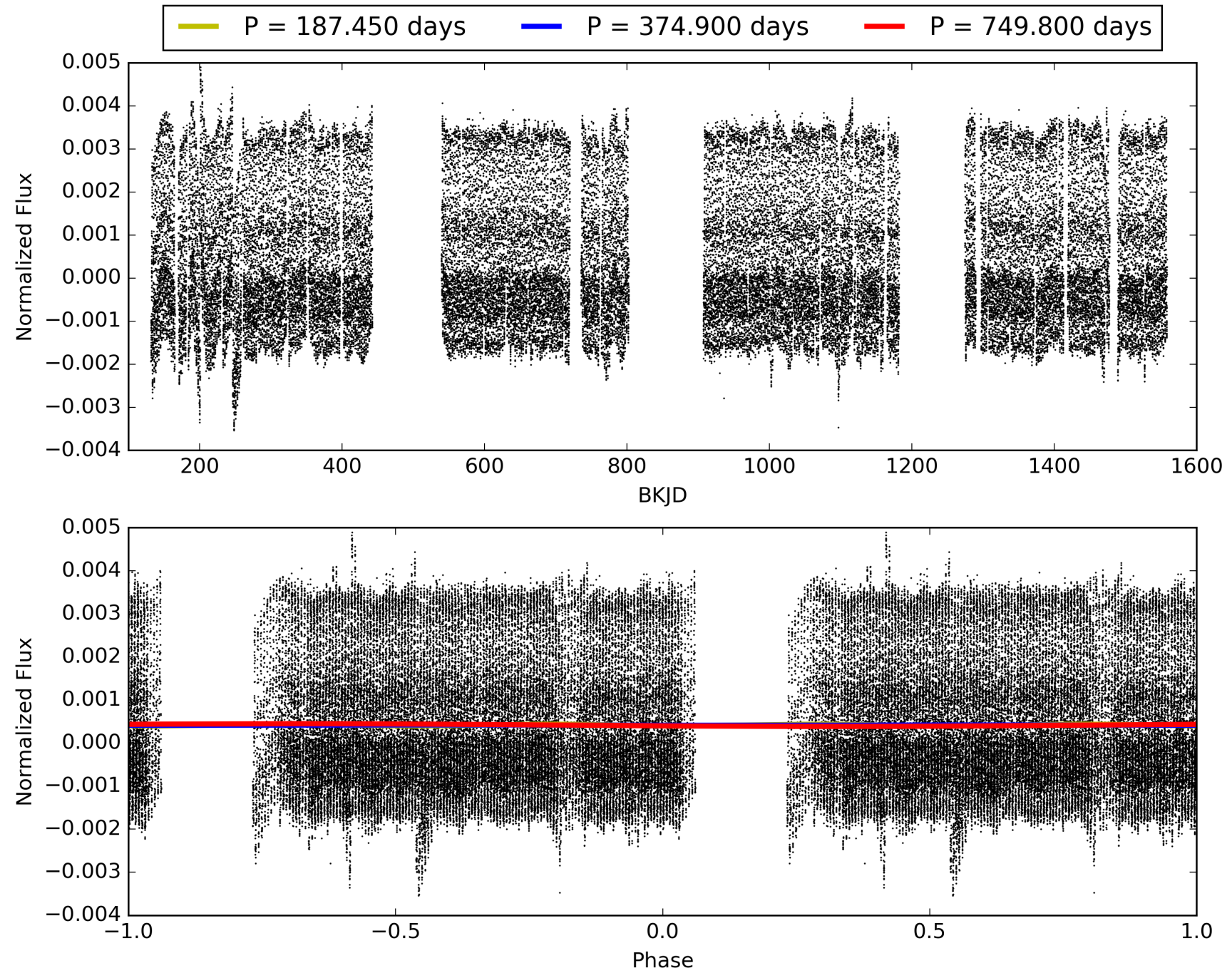
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:01:01 Z

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

TCE 005167392-05, PDC Light Curves

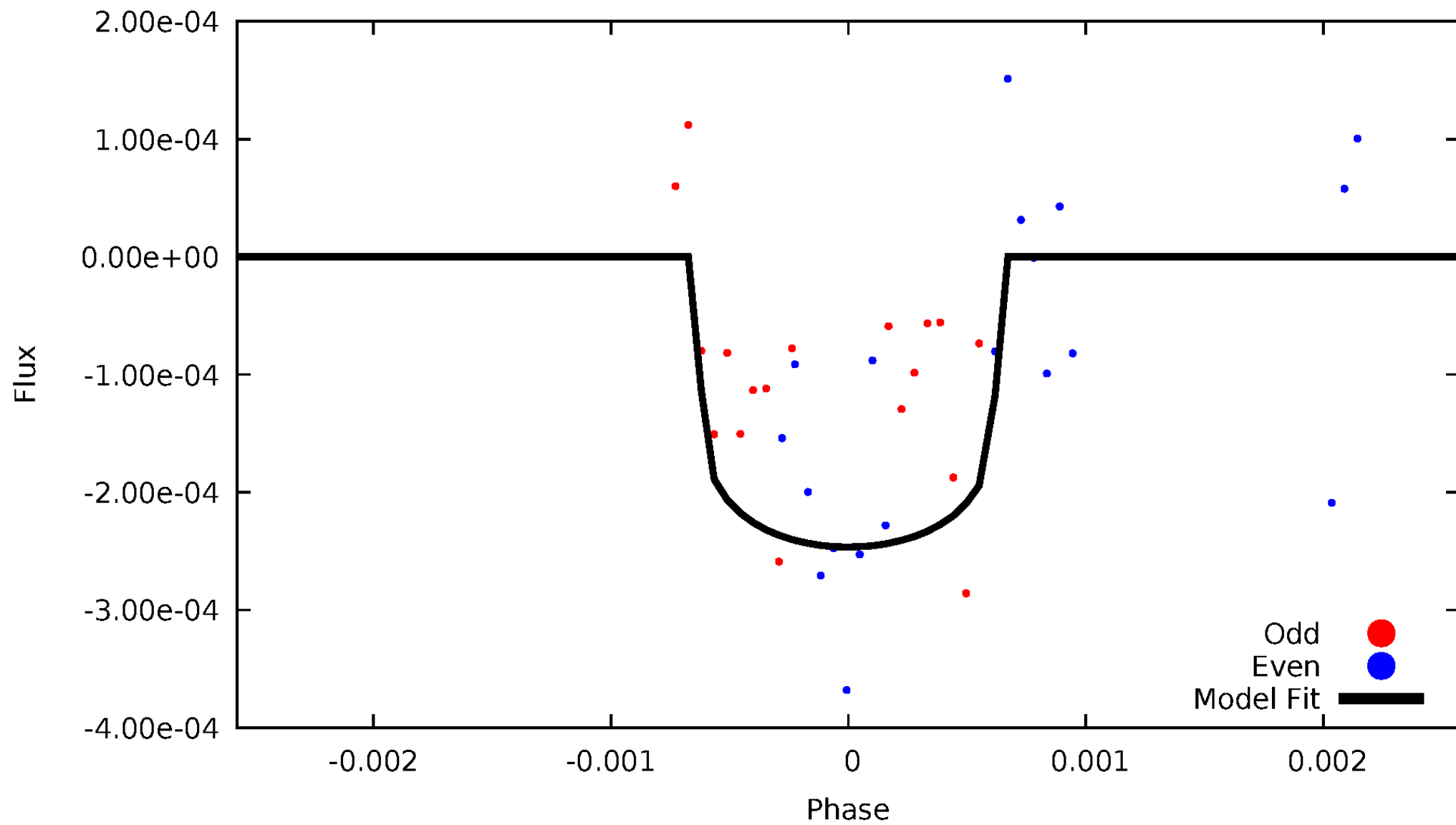


TCE 005167392-05



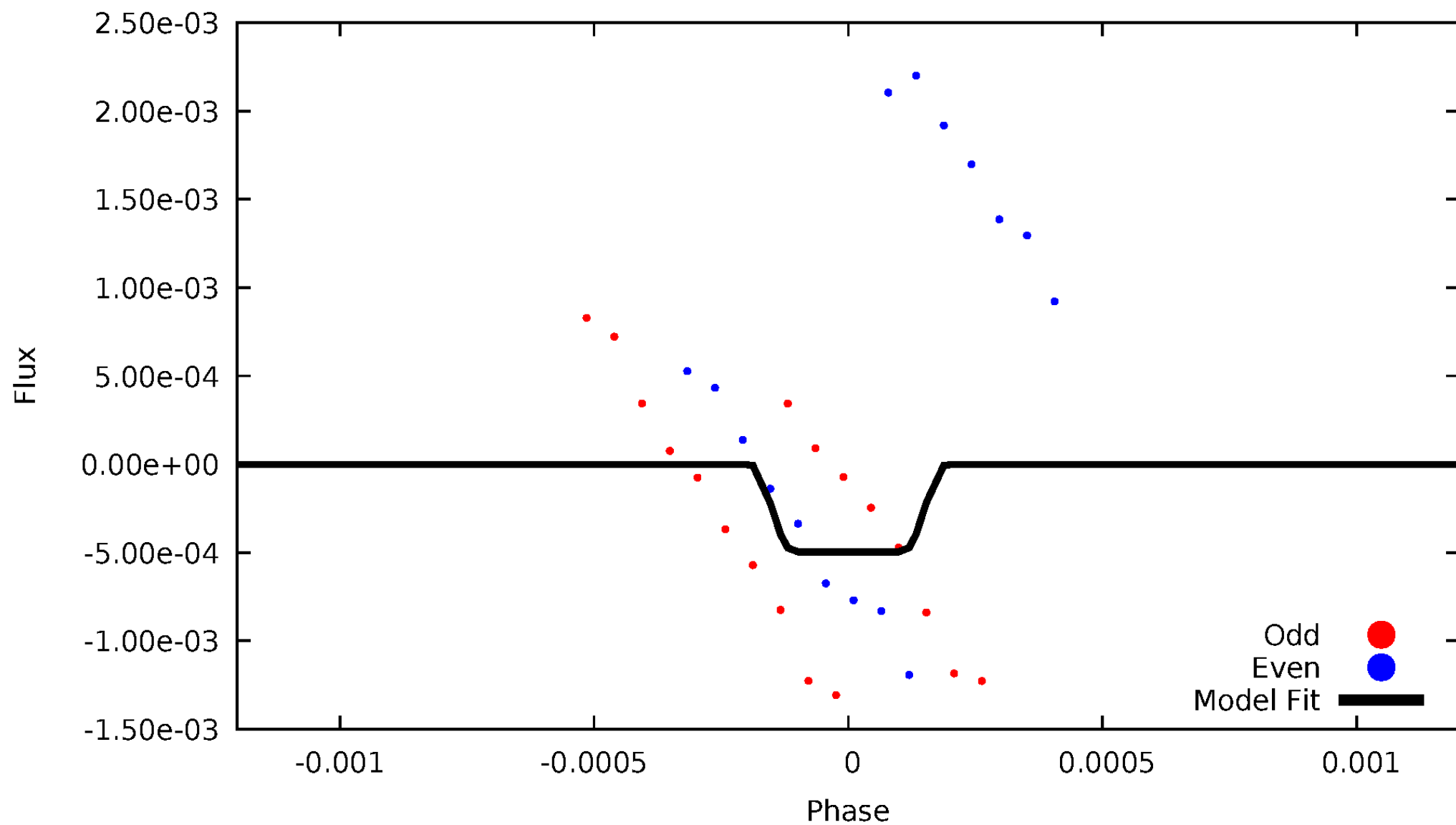
DV Odd/Even

TCE 005167392-05



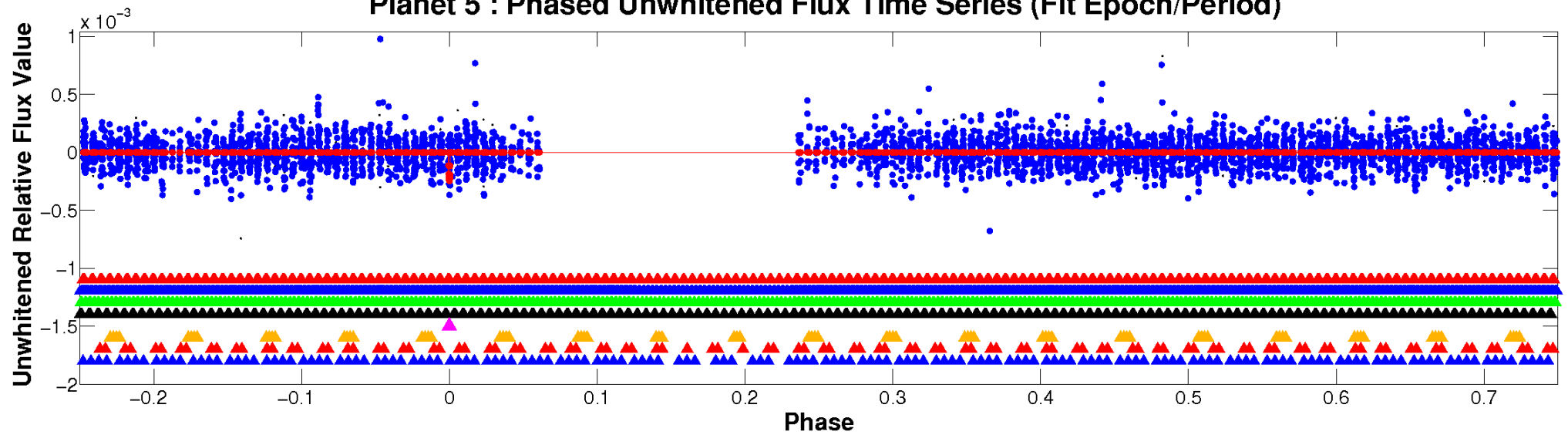
ALT Odd/Even

TCE 005167392-05

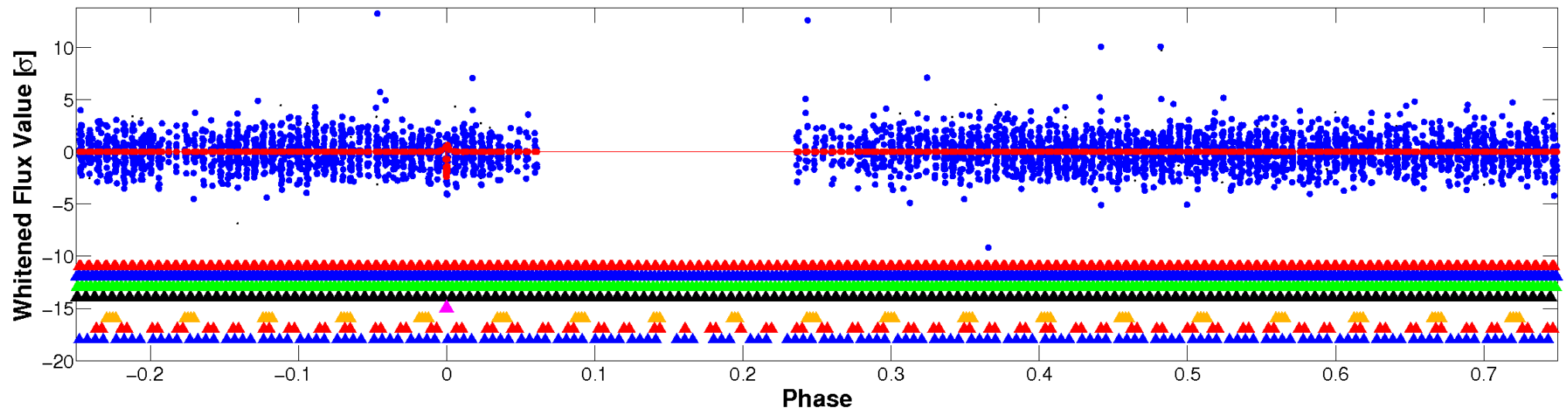


Non-Whitened Vs. Whitened Light Curve

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

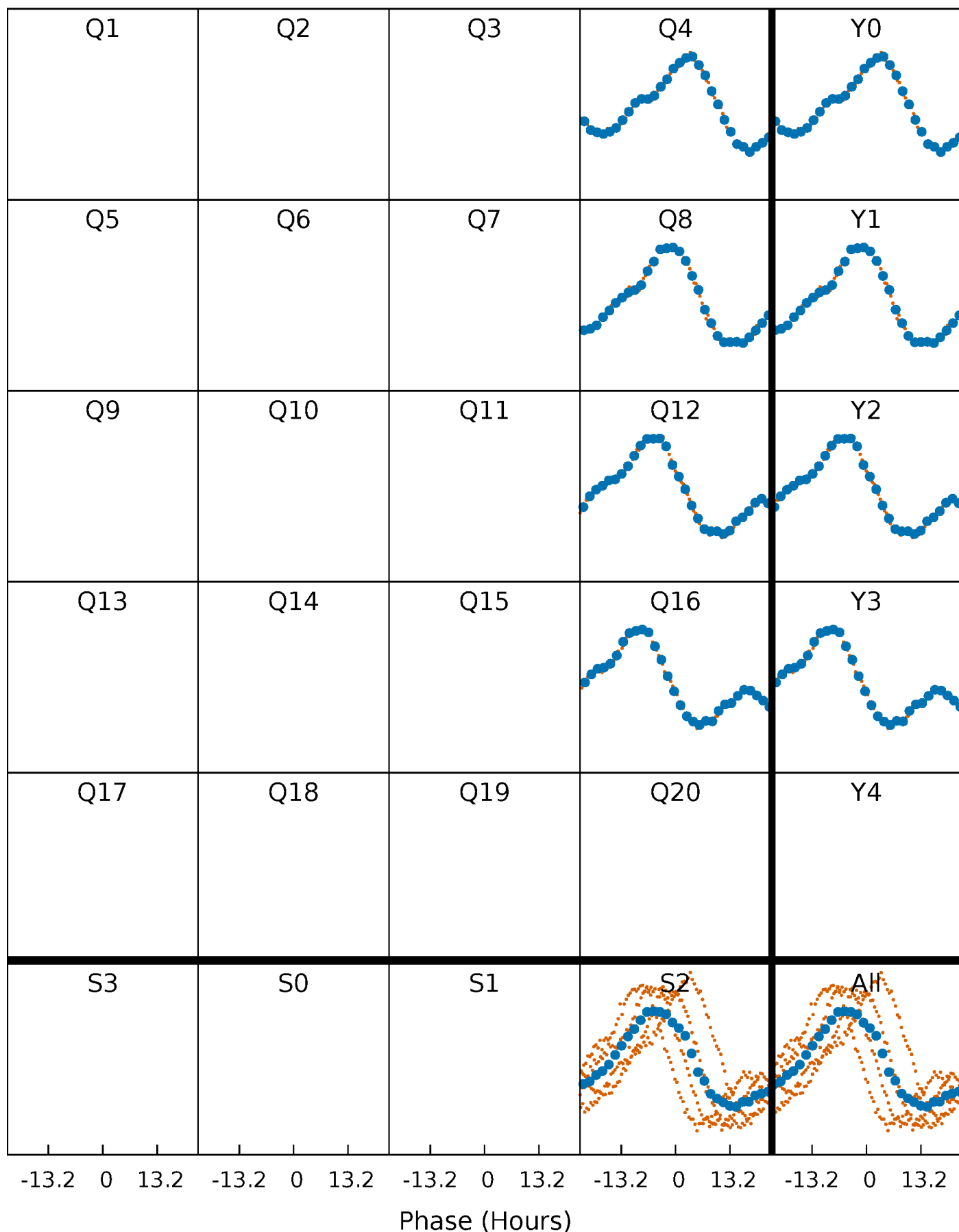


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



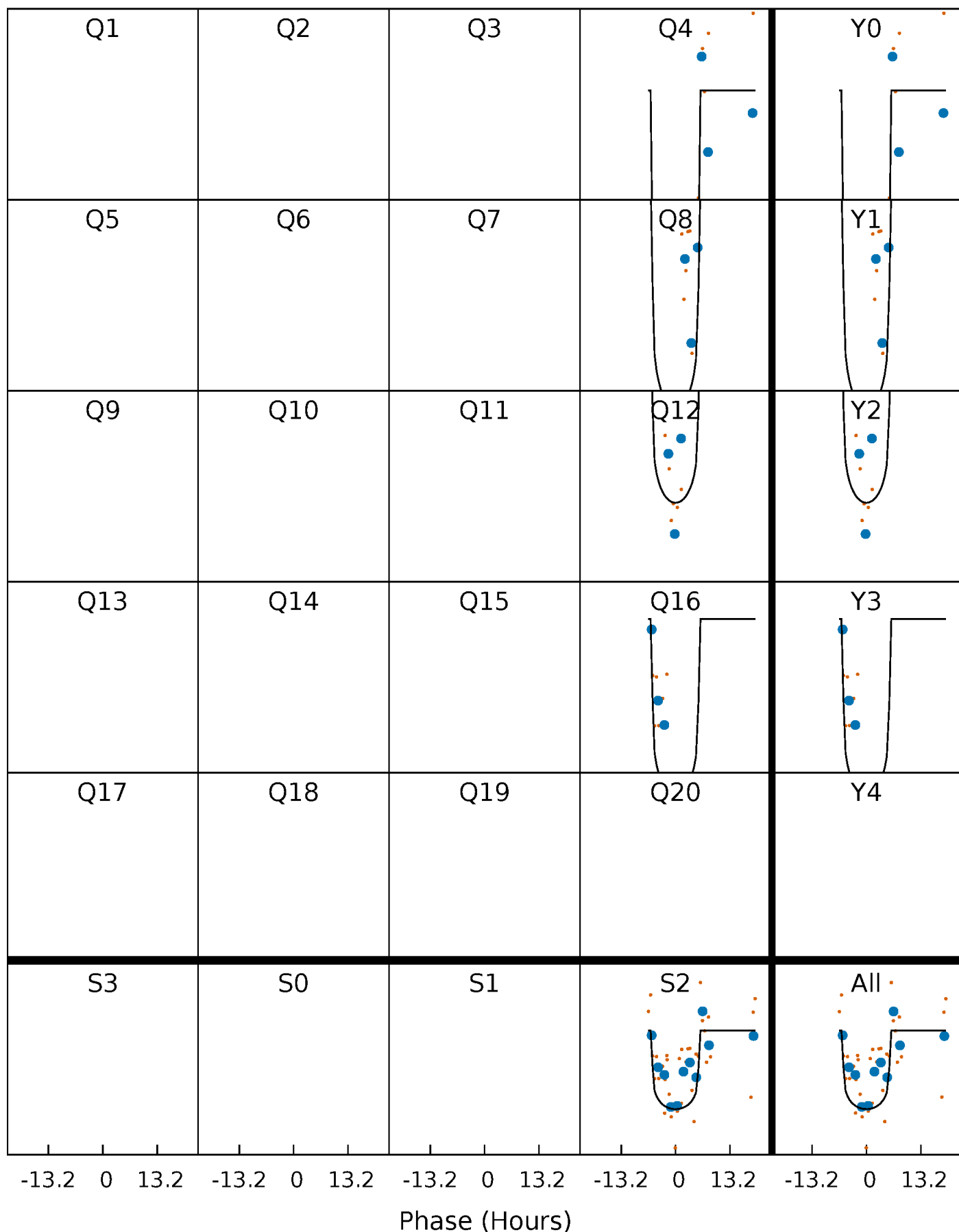
PDC Quarter-Phased Transit Curves

TCE 005167392-05 $P=374.900056$ Days $T_0=419.330366$ (BKJD)



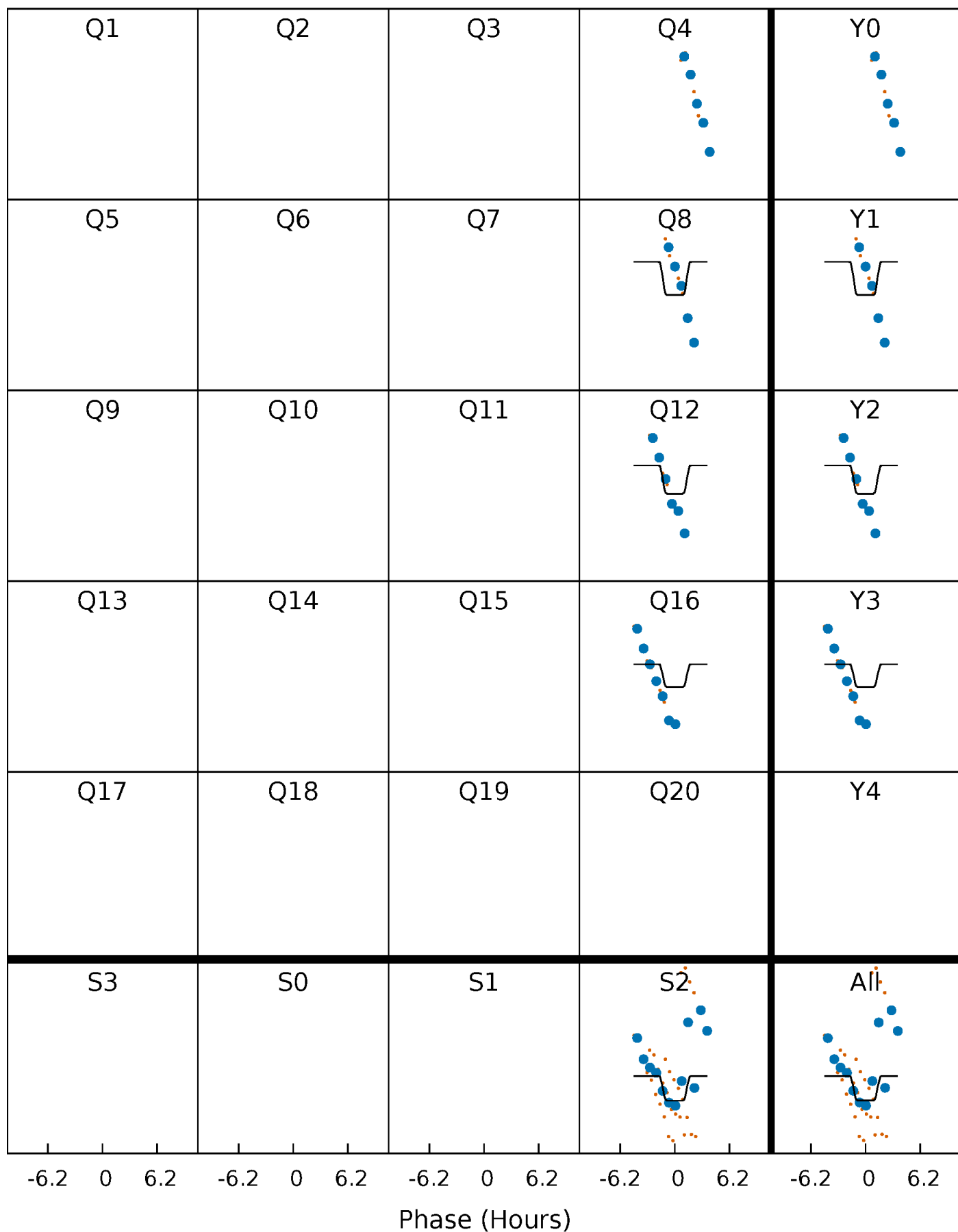
DV Quarter-Phased Transit Curves

TCE 005167392-05 $P=374.900056$ Days $T_0=419.330366$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

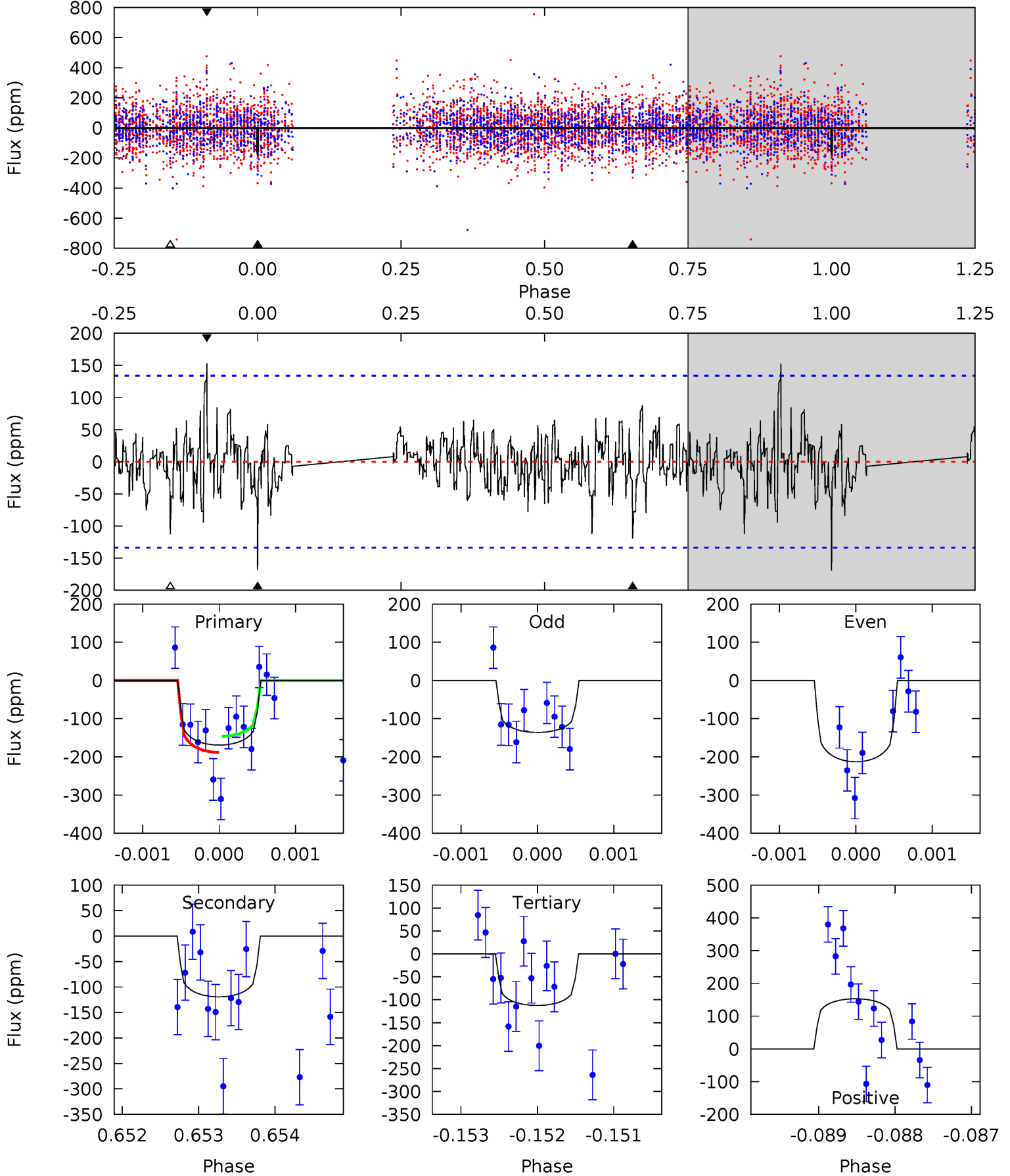
TCE 005167392-05 $P=374.805980$ Days $T_0=419.532516$ (BKJD)



DV Model-Shift Uniqueness Test

005167392-05, $P = 374.900056$ Days, $E = 44.430310$ Days

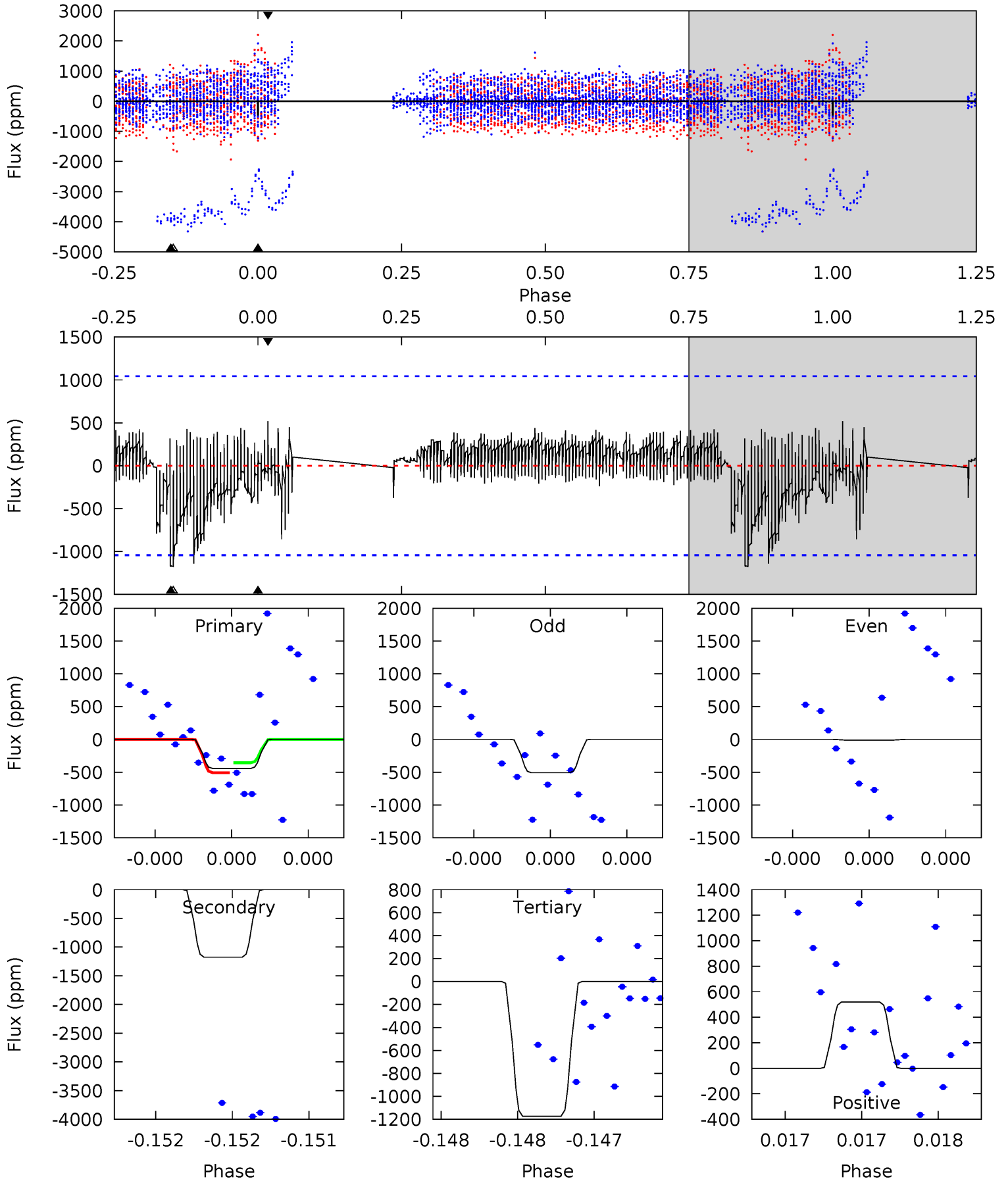
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.85	4.83	4.56	6.20	5.41	3.23	1.36	2.29	0.65	0.28	-1.36	1.54	1.08	0.47	0.84



Alt Model-Shift Uniqueness Test

005167392-05, P = 374.805980 Days, E = 44.726536 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.38	6.33	6.31	2.79	5.61	3.54	1.28	-3.94	-0.42	0.01	3.53	1.36	-0.15	0.31	0.42



Stellar Parameters For KIC 005167392

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8365^{+202}_{-376}	$3.740^{+0.420}_{-0.140}$	$-0.120^{+0.300}_{-0.400}$	$3.188^{+0.952}_{-1.429}$	$2.039^{+0.428}_{-0.471}$	$0.089^{+0.320}_{-0.038}$
	+2%/-4%	+11%/-4%	+250%/-333%	+30%/-45%	+21%/-23%	+361%/-43%
Source	KIC0	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 005167392-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-119 ± 25	$7.67^{+7.07}_{-5.01}$	779^{+72}_{-88}	5451^{+4632}_{-1268}	1883^{+14101}_{-1398}
Alt.	-1176 ± 186	$8.55^{+7.53}_{-5.73}$	781^{+71}_{-98}	9636^{+21444}_{-2795}	$14332^{+109105}_{-9958}$

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

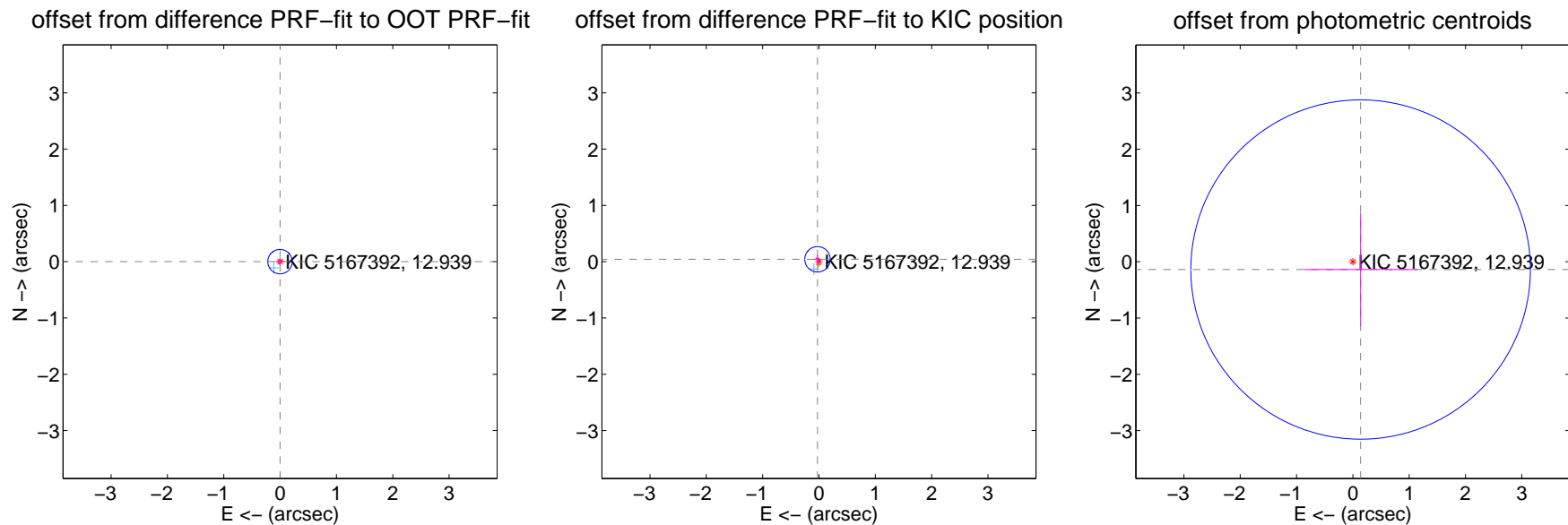
DV Centroid Data

Supplemental centroid analysis for 005167392-05. Kepler magnitude: 12.94. Transit SNR 9.78

There are 1 quarters with good PRF difference image offsets

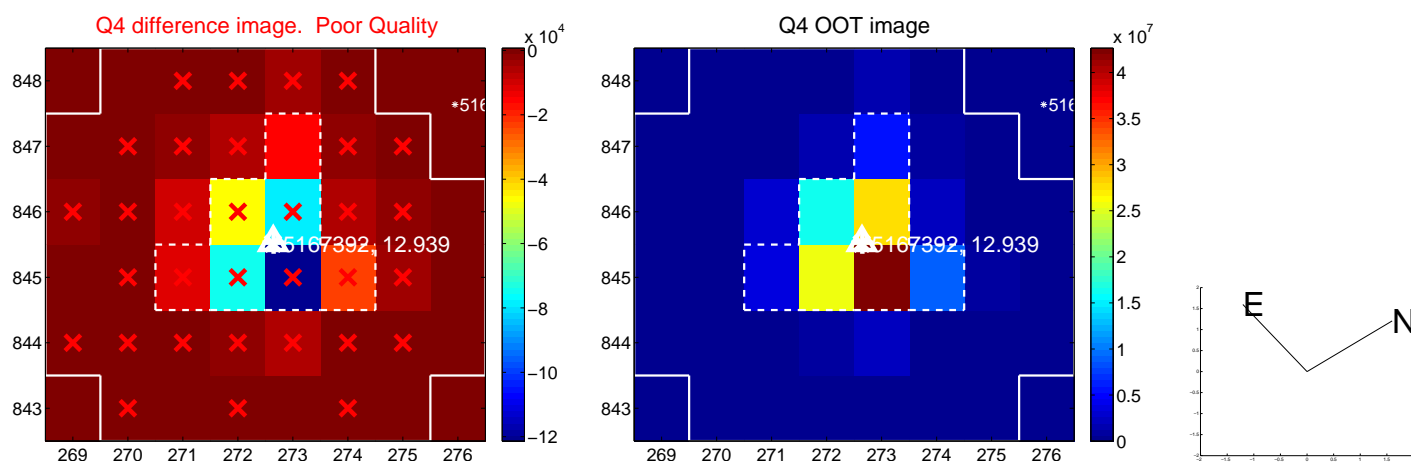
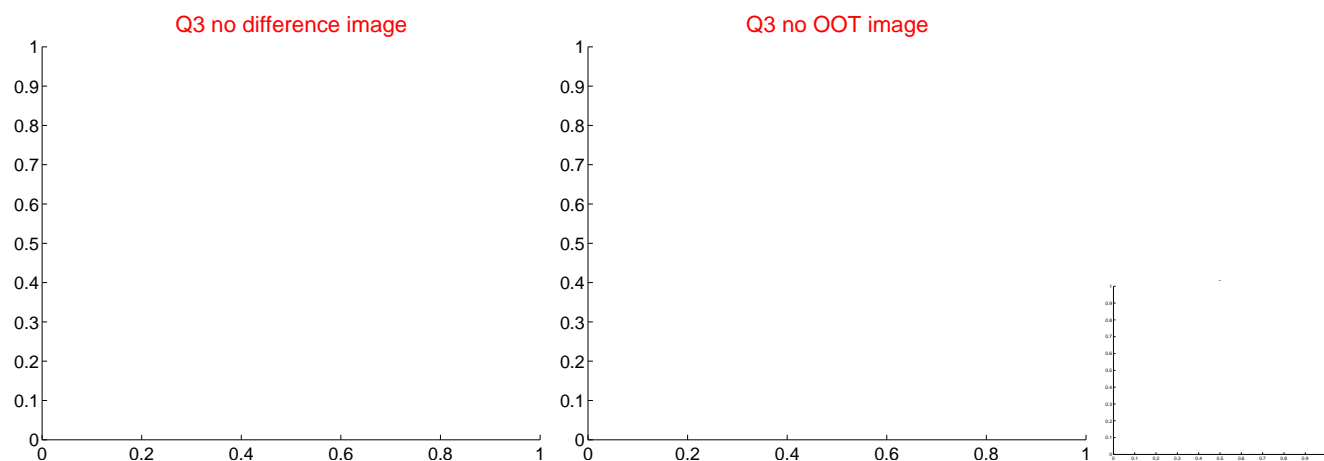
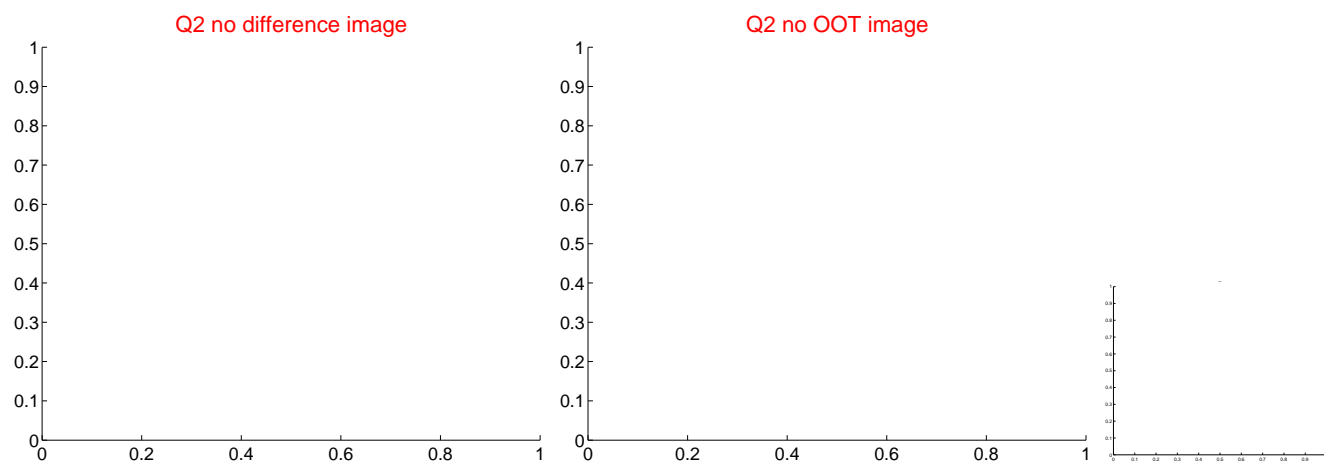
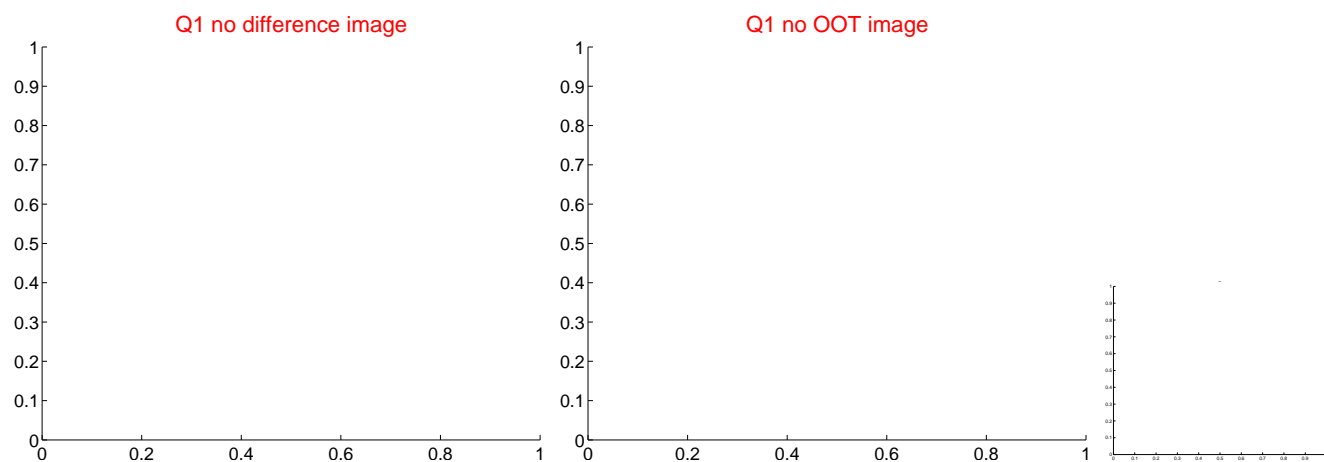
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.002 ± 0.072	0.03	0.002 ± 0.072	0.001 ± 0.073
PRF-fit source offset from KIC position	0.050 ± 0.075	0.66	0.026 ± 0.069	0.042 ± 0.080
photometric centroid source offset	0.20 ± 1.01	0.19	-0.14 ± 1.01	-0.14 ± 1.00

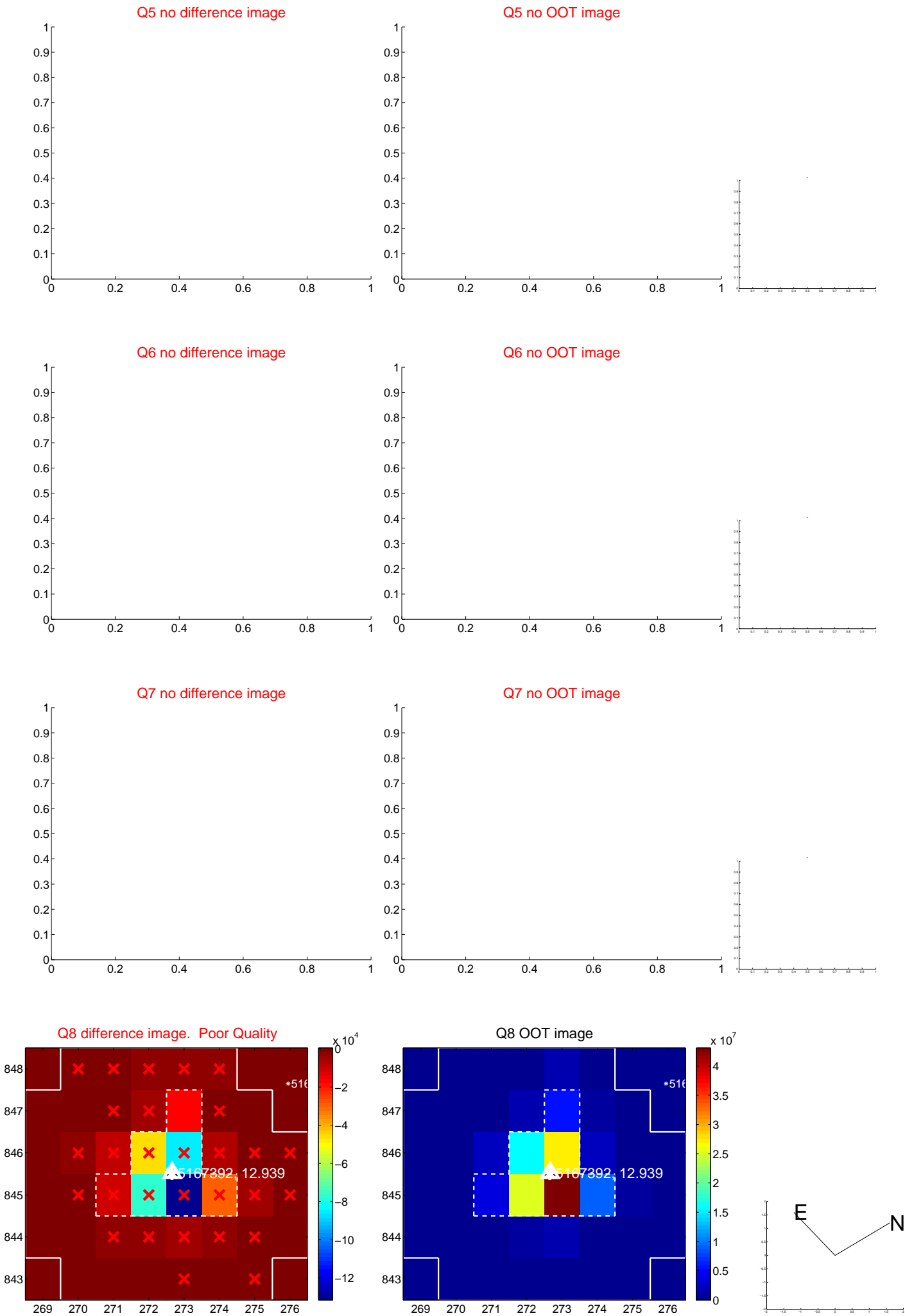


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

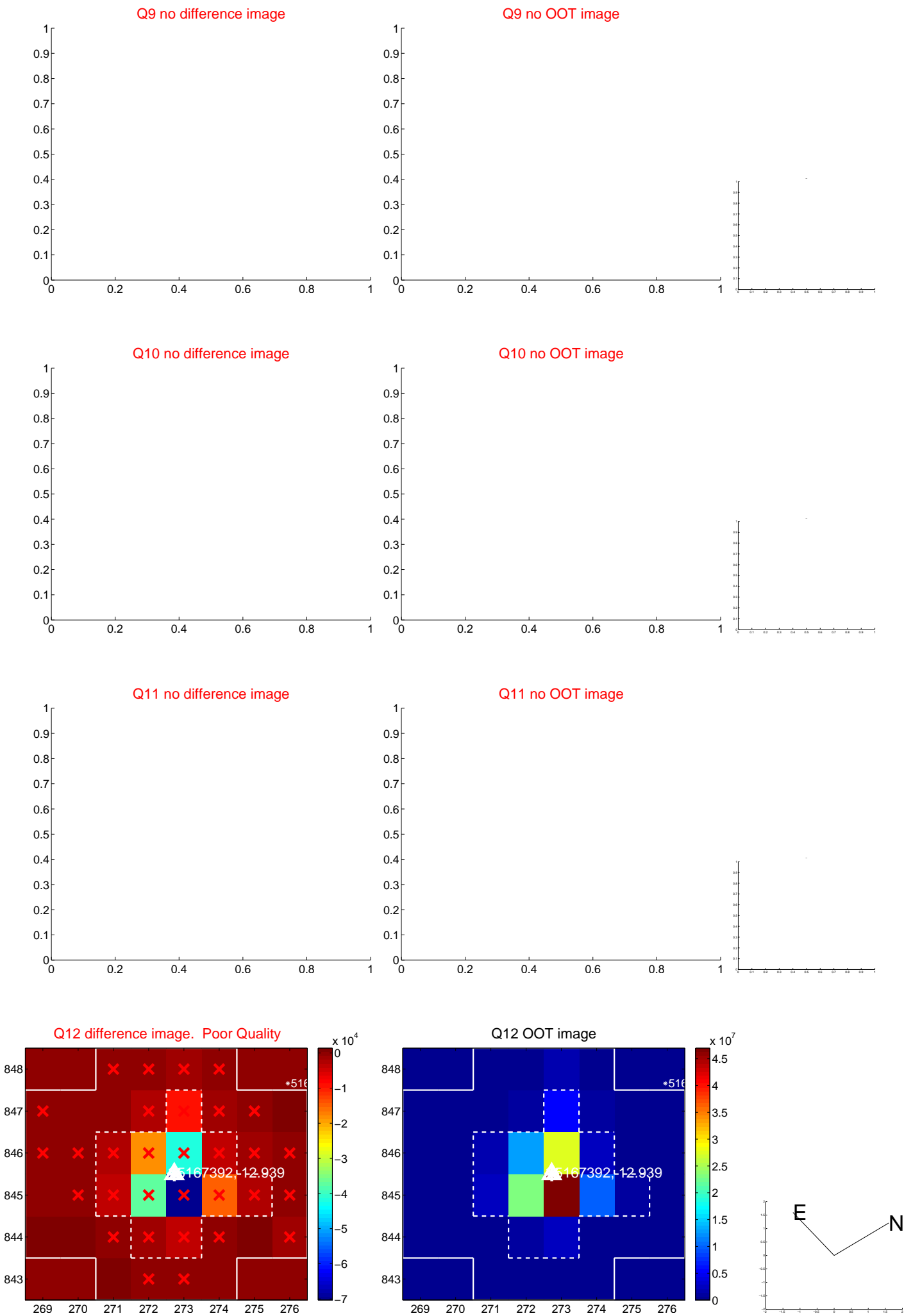
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



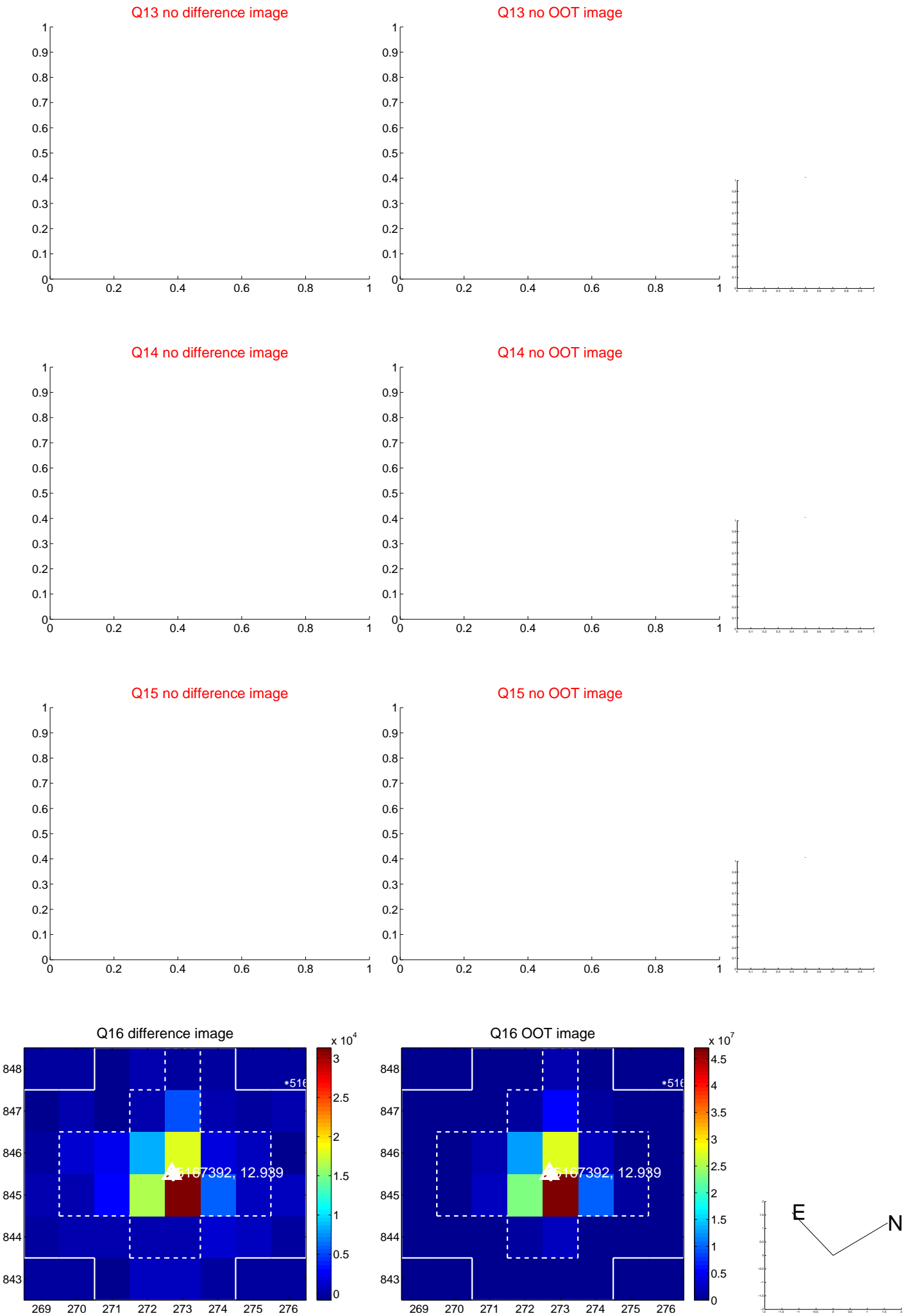
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



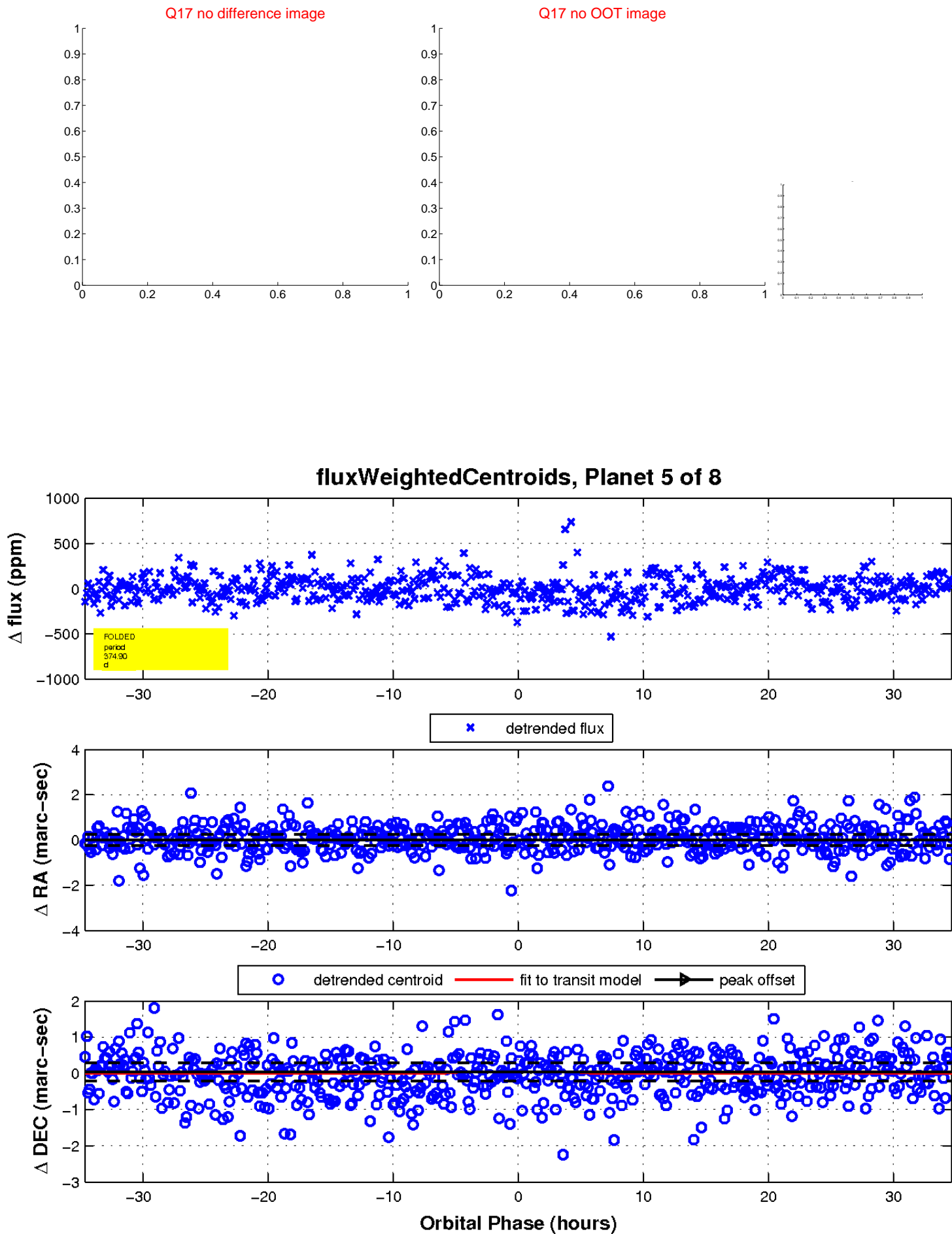
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

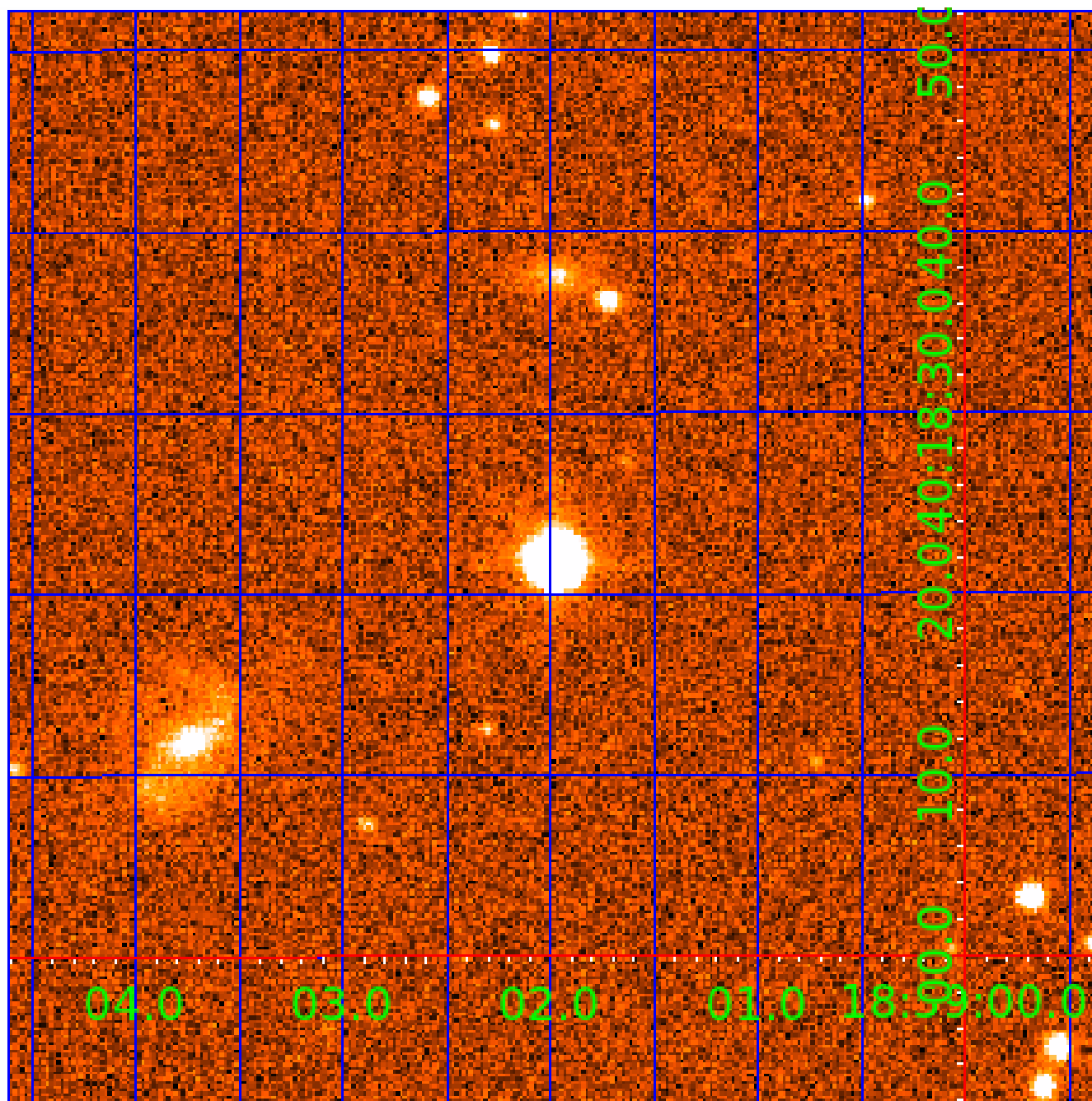


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005167392

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})
005167392-01	OBS	No	2.204295	132.867087	62.1	1.843	17.4	17.2	3.19	8365	2.93	25239.31
005167392-02	OBS	No	1.102001	131.657210	5.9	3.408	11.0	2.9	3.19	8365	0.79	63610.37
005167392-03	OBS	No	1.102215	132.209330	10.5	3.034	9.9	5.6	3.19	8365	1.20	63593.90
005167392-04	OBS	No	2.204298	132.142326	23.1	12.083	8.7	8.9	3.19	8365	1.67	25239.26
005167392-05	OBS	No	374.900056	419.330366	246.5	11.578	12.6	9.8	3.19	8365	5.18	26.78
005167392-06	OBS	No	19.772091	135.604325	220.9	1.996	8.5	8.6	3.19	8365	4.88	1354.25
005167392-07	OBS	No	14.121162	134.401966	176.1	1.713	8.3	9.5	3.19	8365	4.73	2121.34
005167392-08	OBS	No	9.322341	136.672453	245.4	2.500	7.2	-1.0	3.19	8365	5.06	3690.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005167392-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
005167392-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT— SAME_NTL_PERIOD
005167392-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
005167392-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

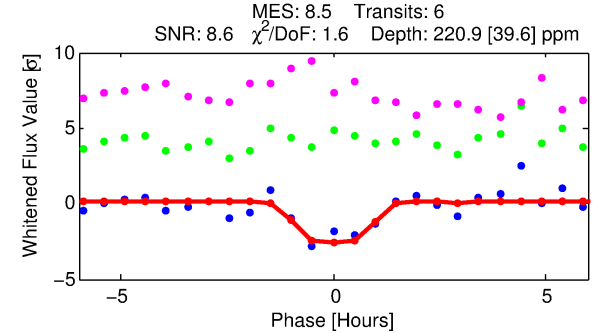
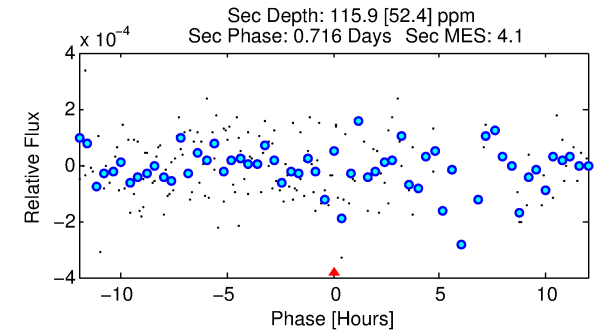
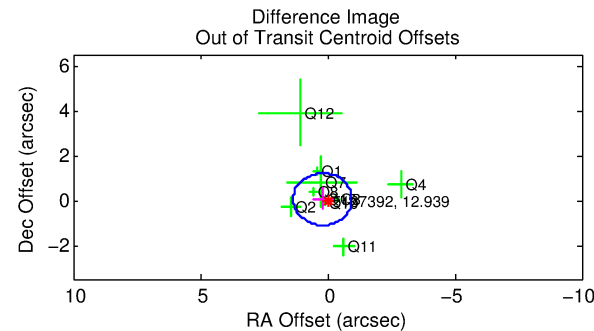
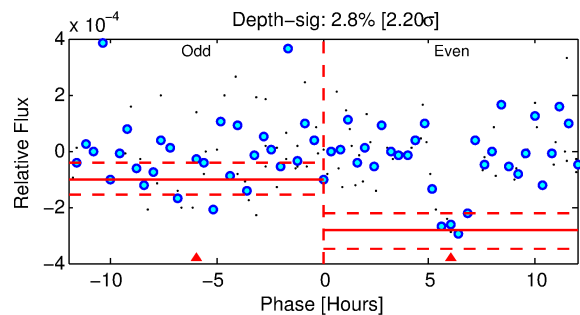
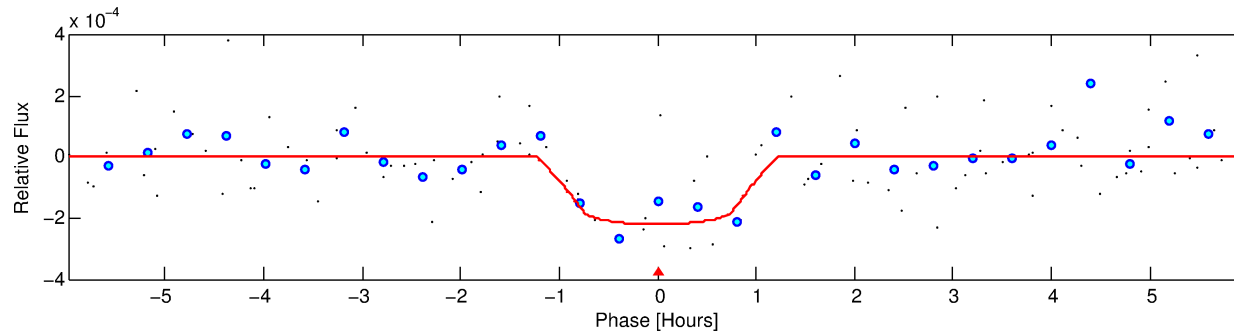
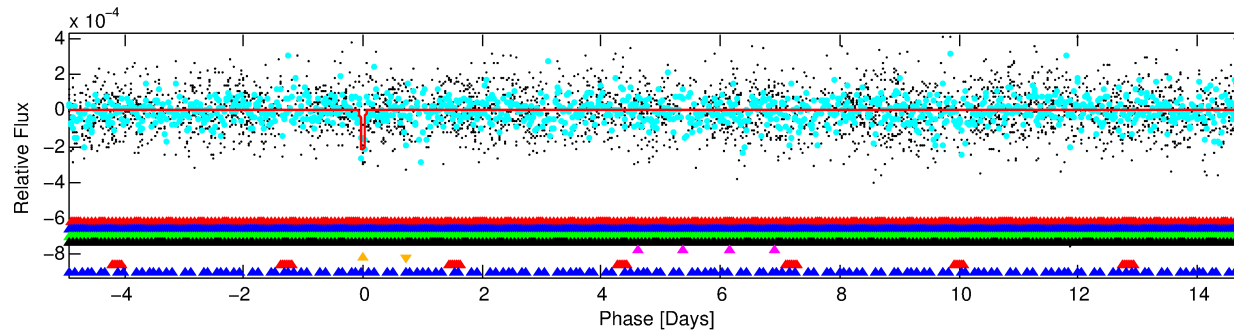
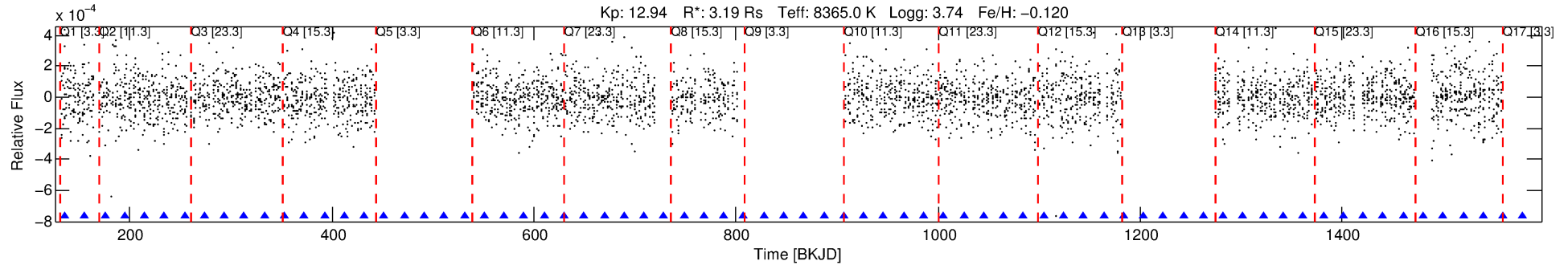
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005167392-06

No Significant Match Found

DV One-Page Summary

KIC: 5167392 Candidate: 6 of 8 Period: 19.772 d



DV Fit Results:

Period = 19.77209 [0.00019] d
Epoch = 135.6043 [0.0111] BKJD
Rp/R* = 0.0140 [0.0270]
a/R* = 69.94 [771.02]
b = 0.42 [22.18]
Seff = 1354.25 [992.67]
Teq = 1547 [283] K
Rp = 4.88 [9.63] Re
a = 0.1814 [0.0798] AU
Ag = 88.07 [346.59] [0.25 σ]
Teffp = 7327 [7097] K [0.81 σ]

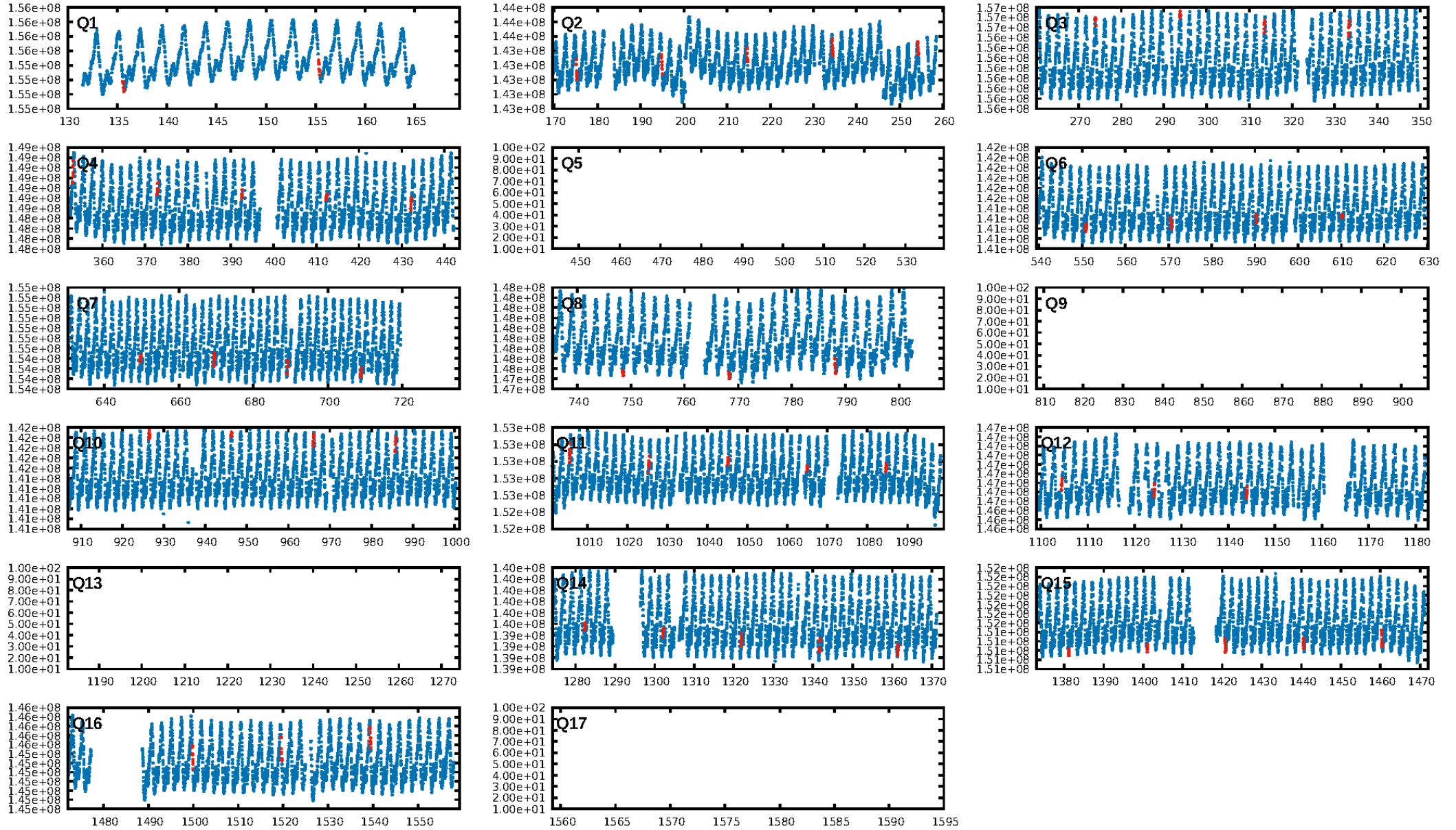
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [51.57 σ]
LongPeriod-sig: 100.0% [725.45 σ]
ModelChiSquare2-sig: 1.5%
ModelChiSquareGof-sig: 98.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.3924
Centroid-sig: 87.7%
Centroid-so: 0.251 arcsec [0.41 σ]
OotOffset-rm: 0.209 arcsec [0.54 σ]
OotOffset-st: 2/4/3/1 [10]
KicOffset-rm: 0.207 arcsec [0.61 σ]
KicOffset-st: 2/4/3/1 [10]
DiffImageQuality-fgm: 0.50 [5/10]
DiffImageOverlap-fno: 0.00 [0/13]

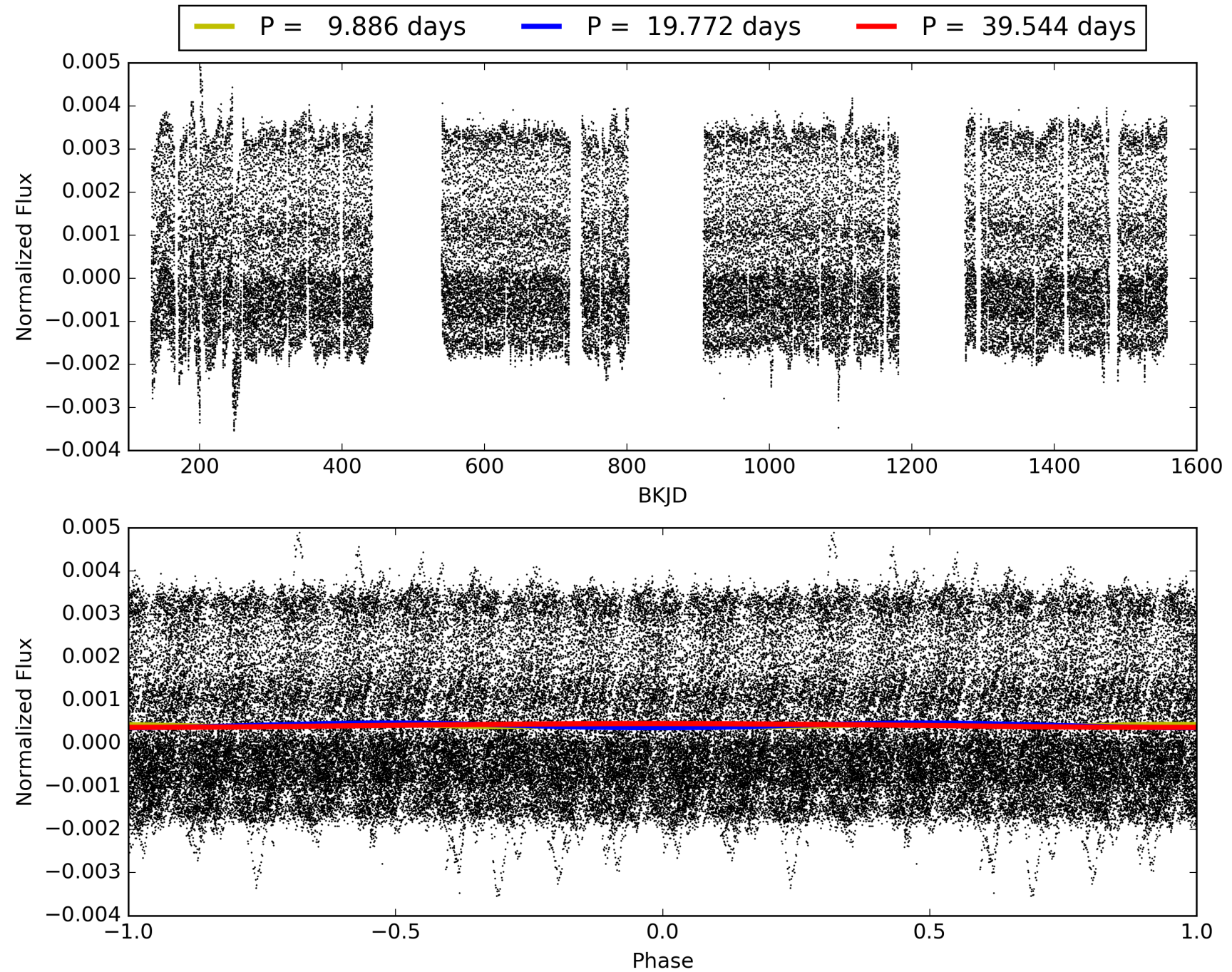
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:01:04 Z

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

TCE 005167392-06, PDC Light Curves

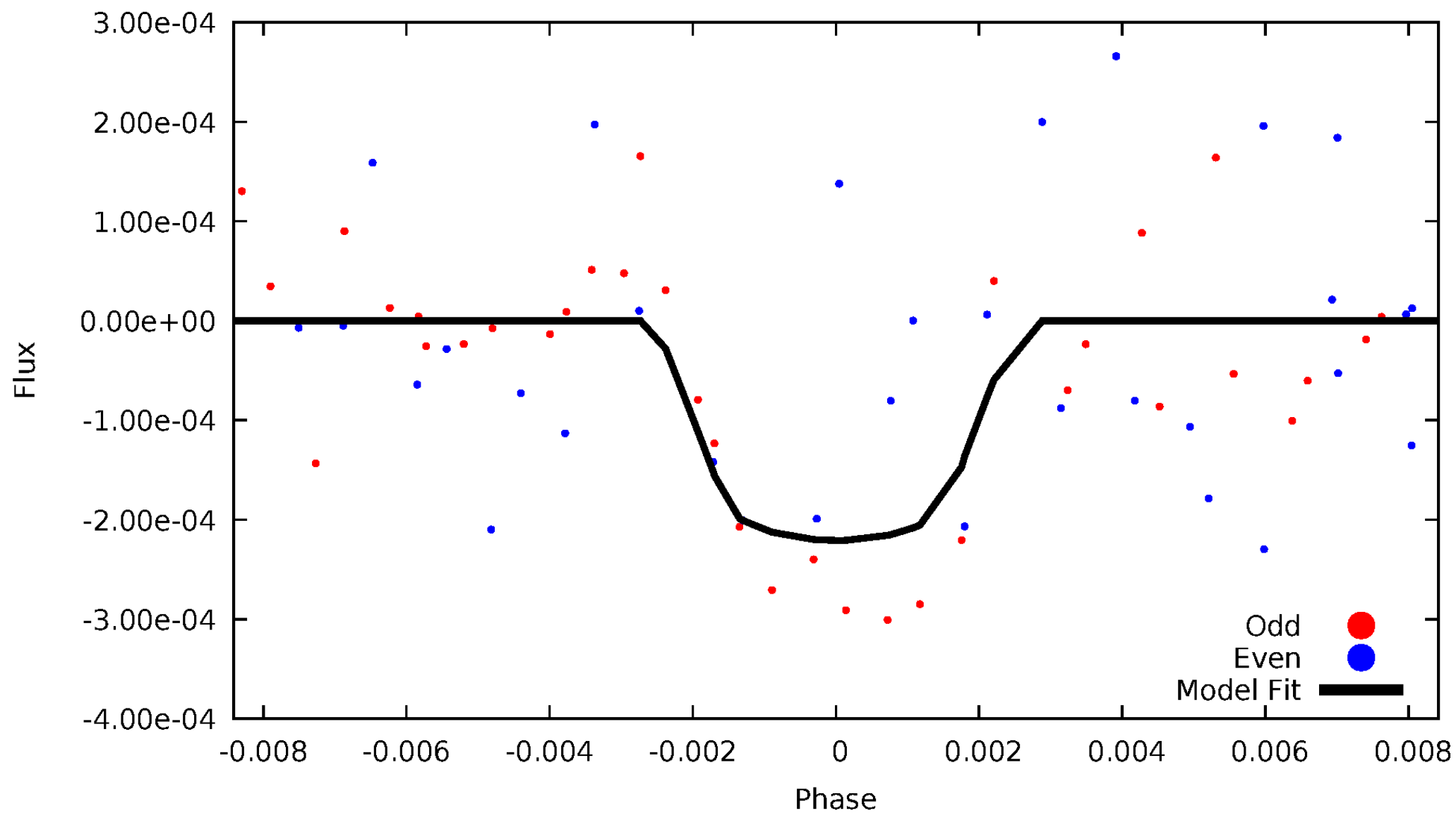


TCE 005167392-06



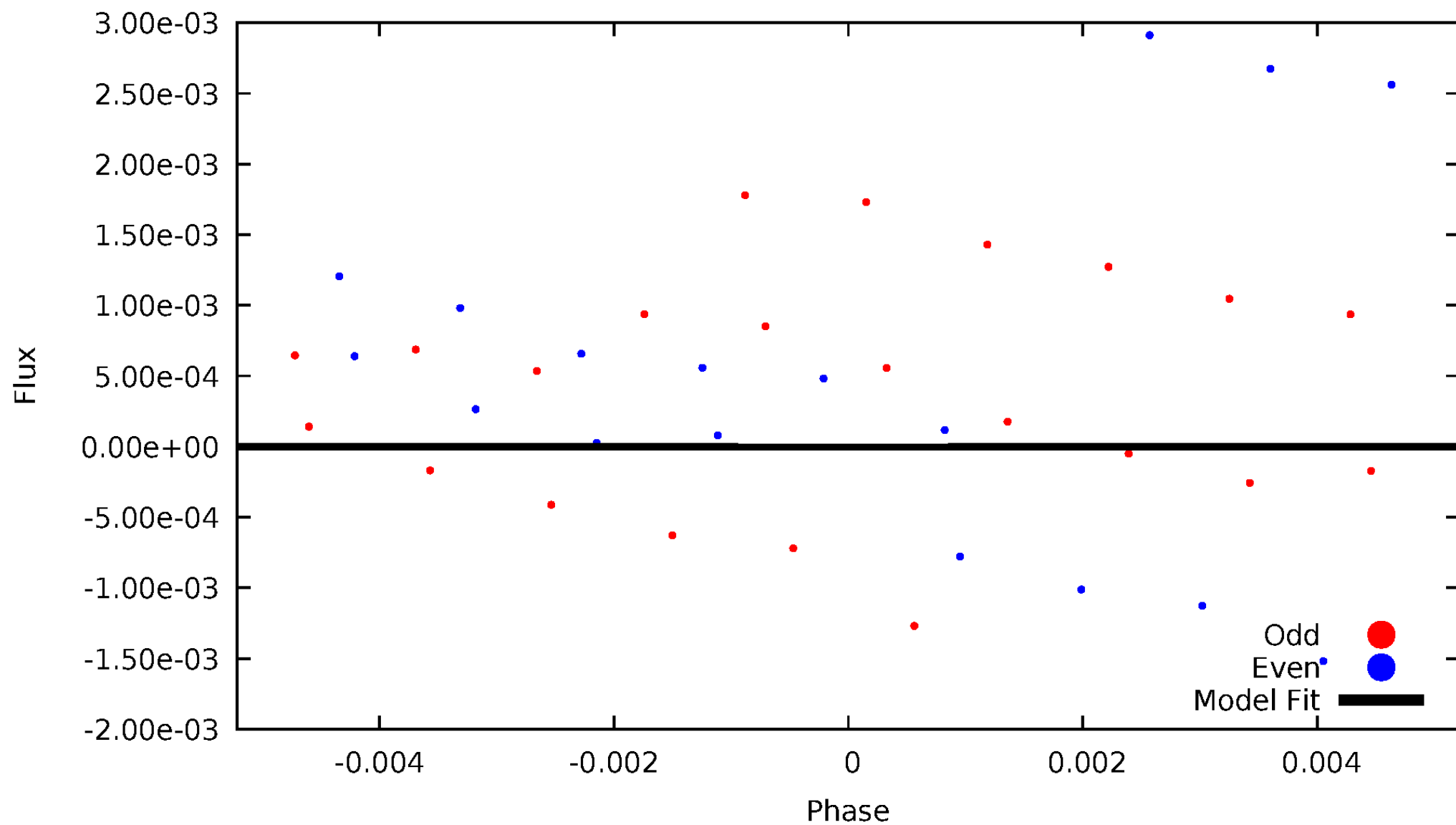
DV Odd/Even

TCE 005167392-06



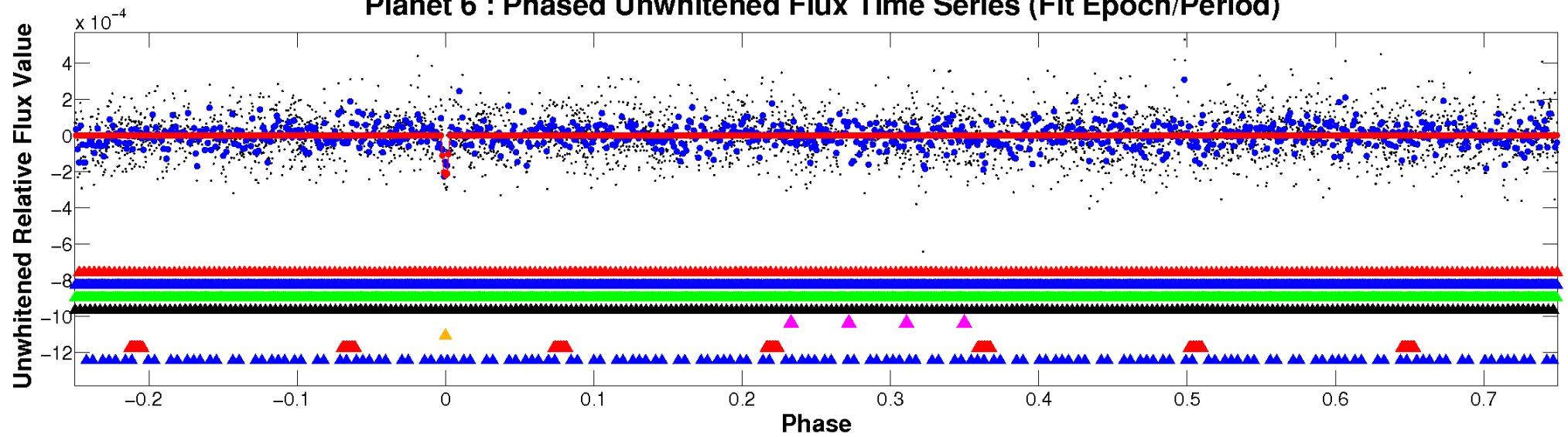
ALT Odd/Even

TCE 005167392-06

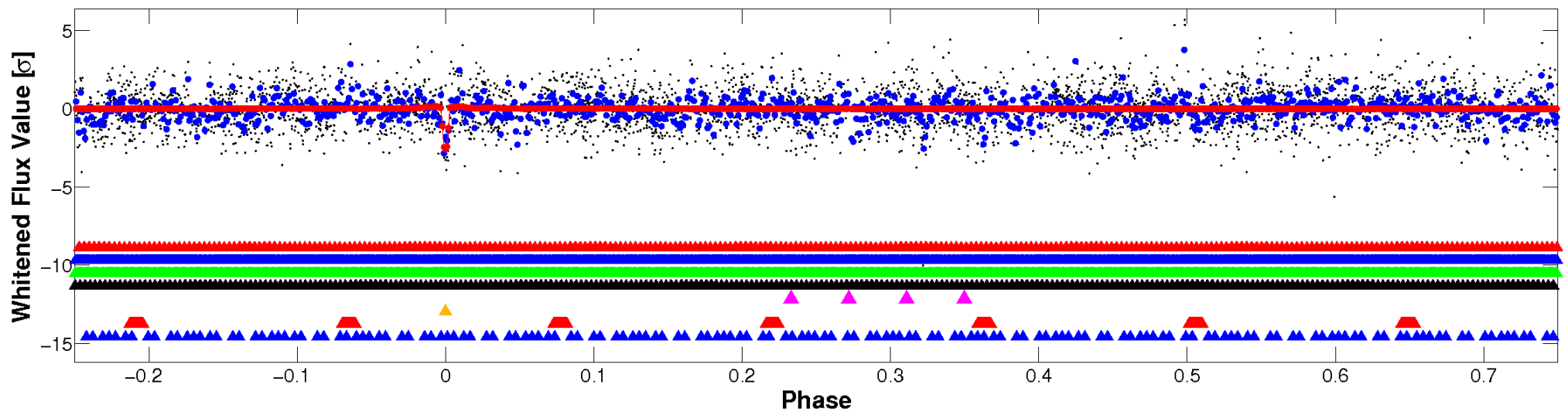


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

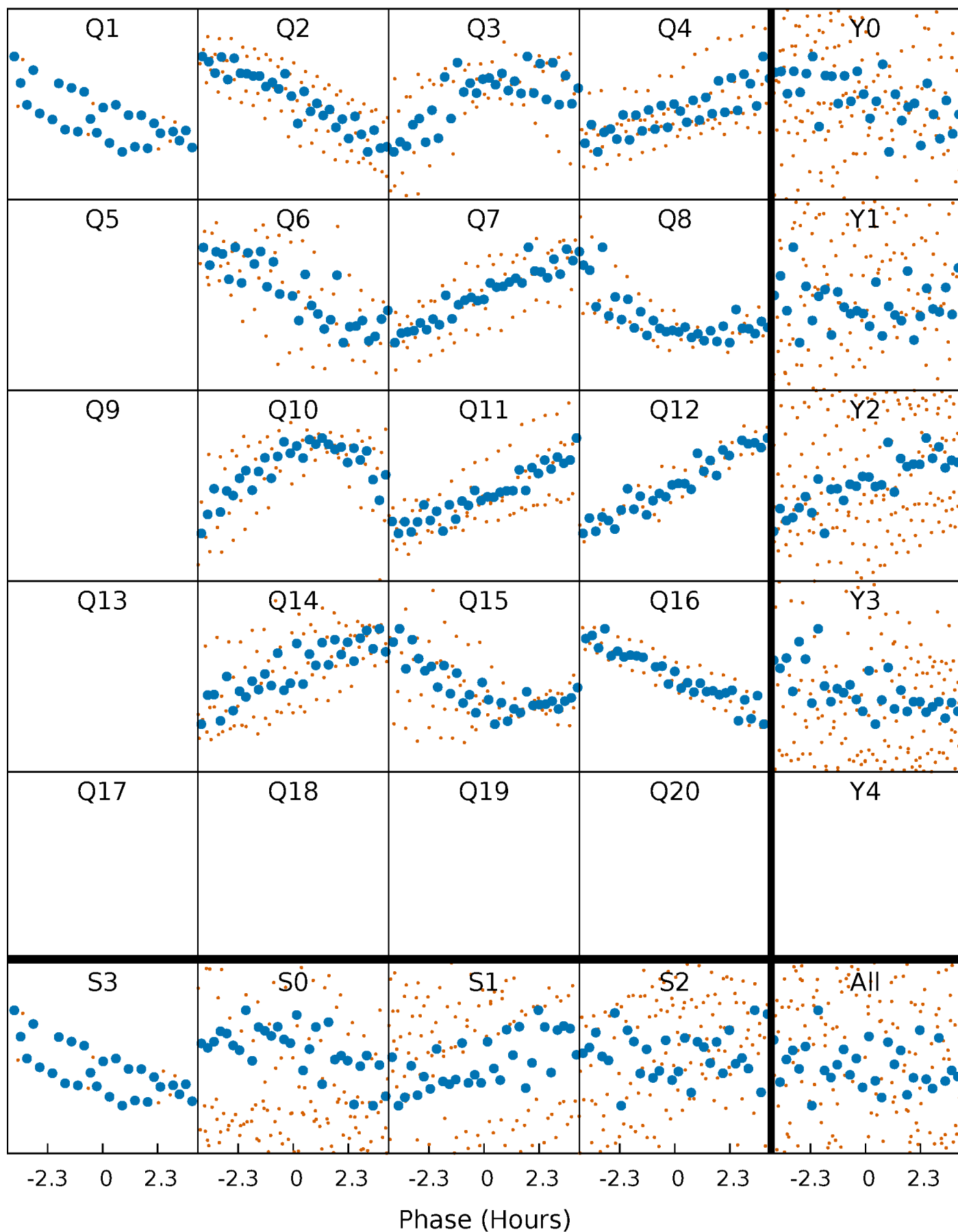


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



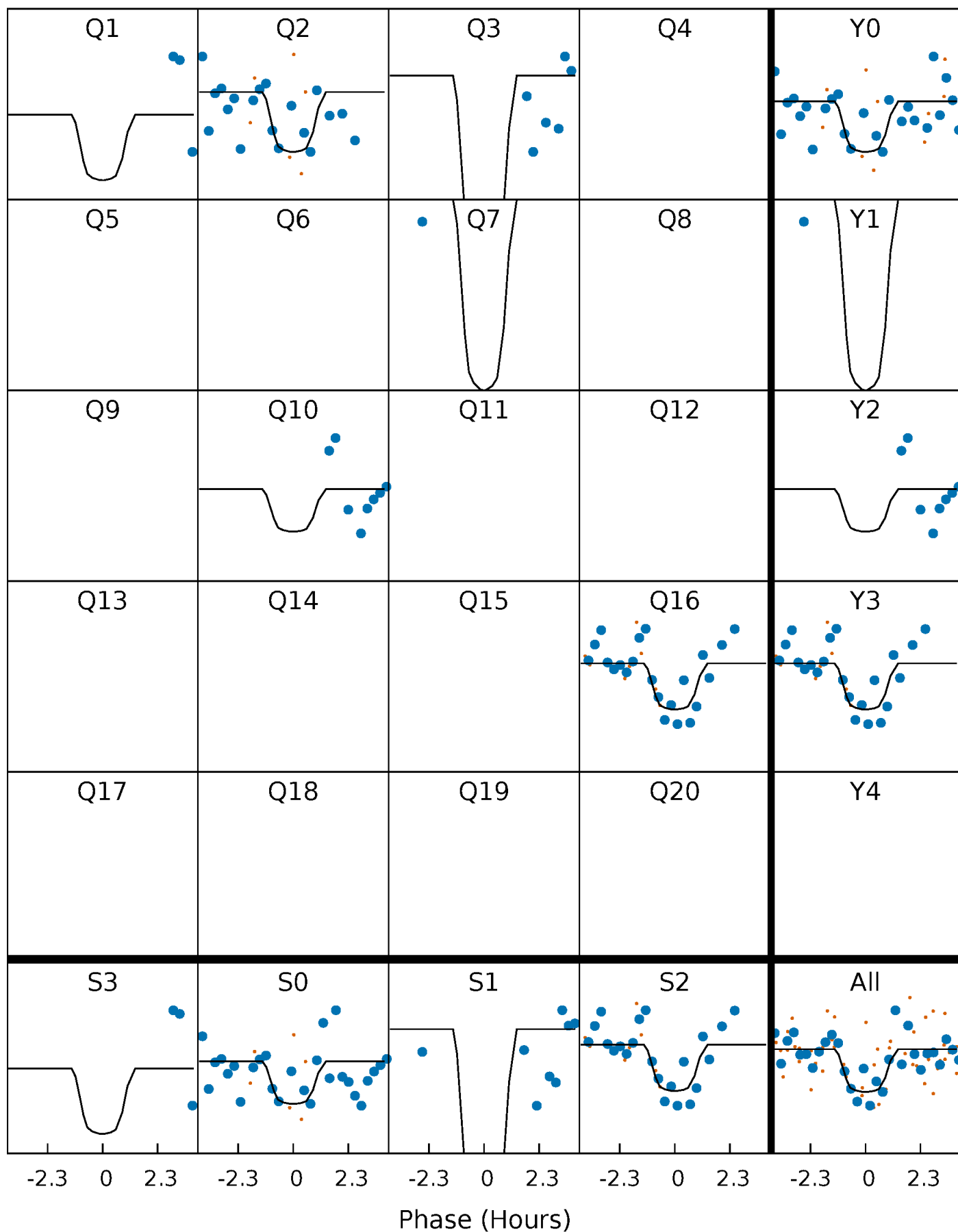
PDC Quarter-Phased Transit Curves

TCE 005167392-06 P= 19.772091 Days $T_0=135.604325$ (BKJD)



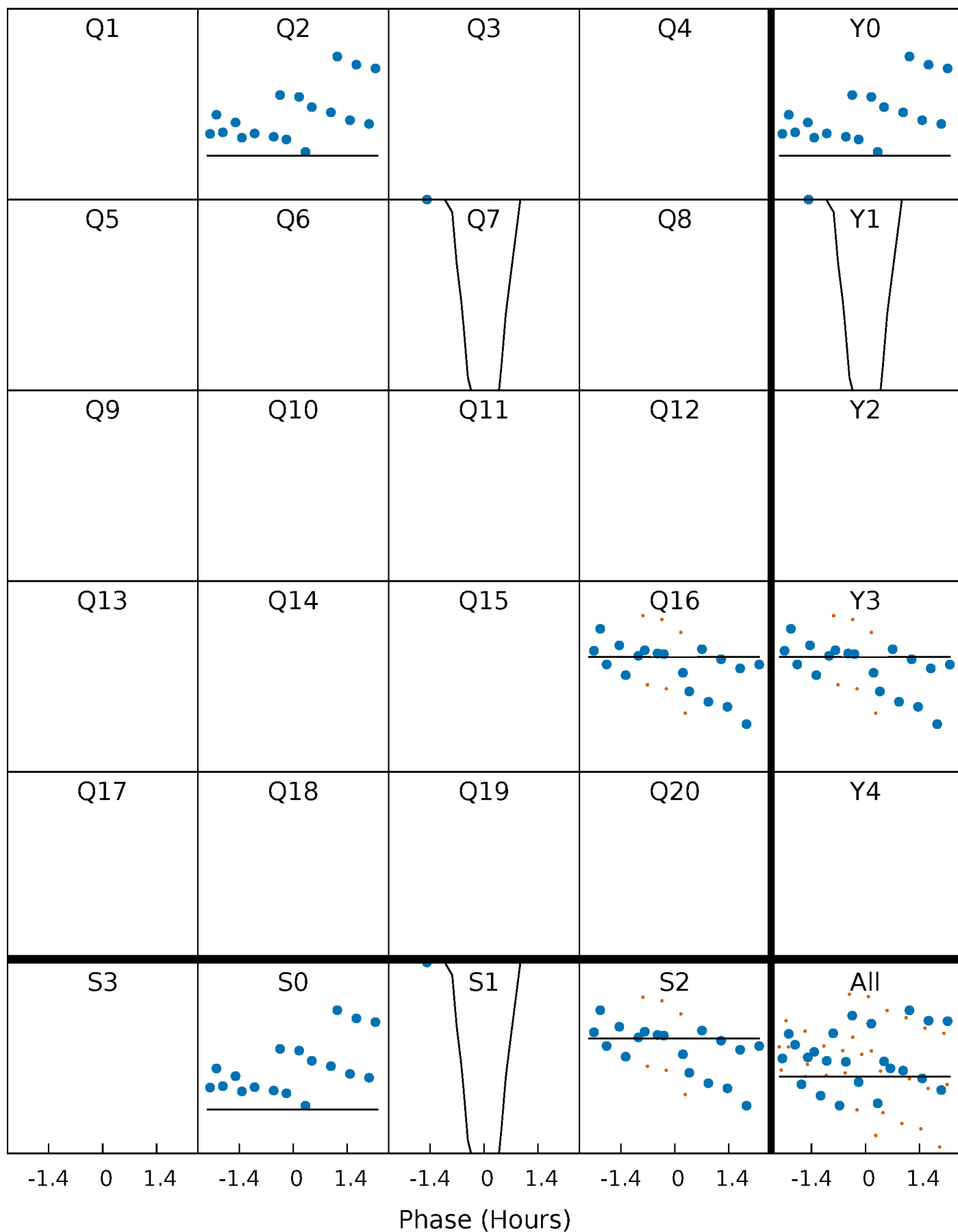
DV Quarter-Phased Transit Curves

TCE 005167392-06 P= 19.772091 Days $T_0=135.604325$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

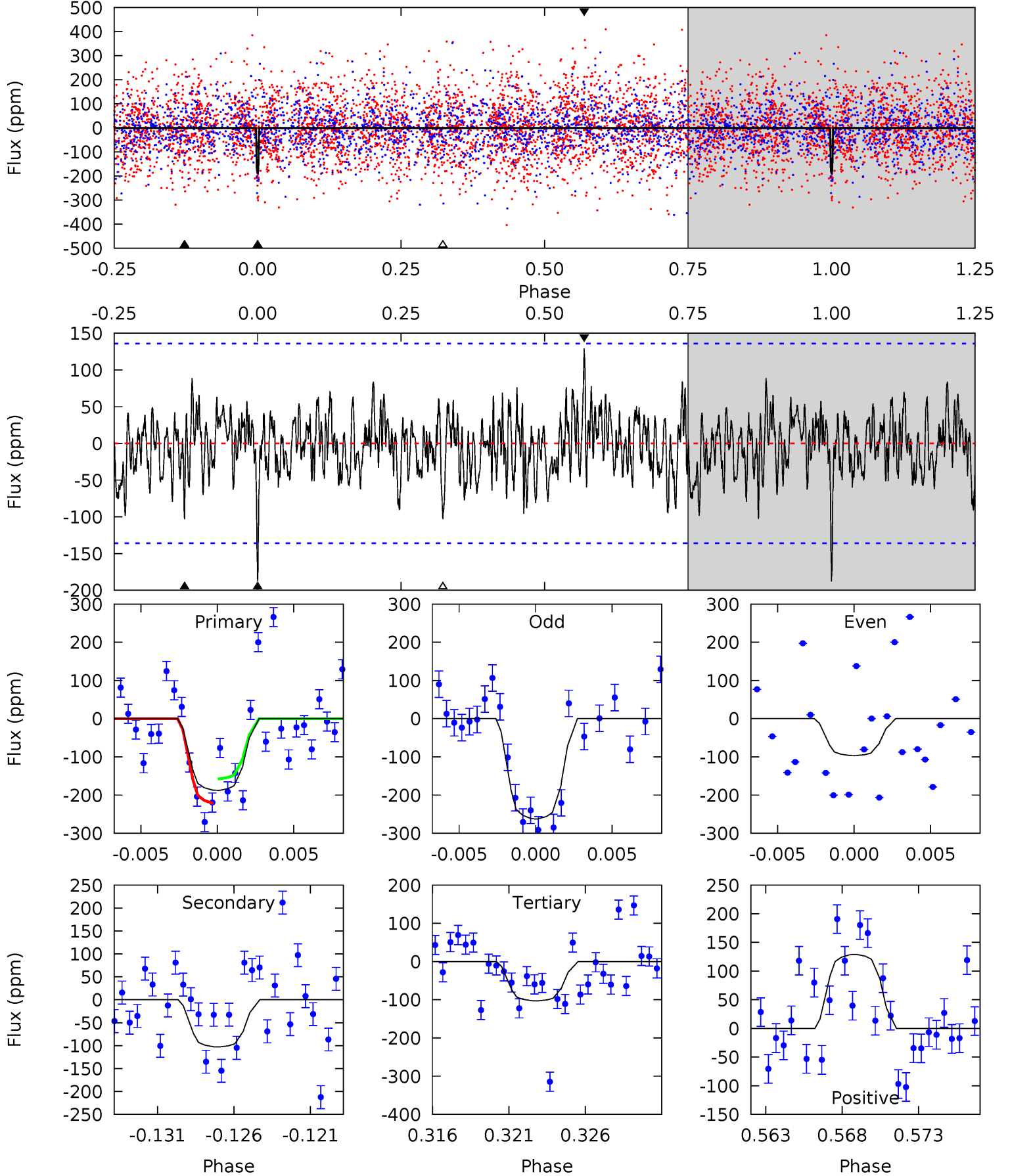
TCE 005167392-06 P= 19.772174 Days $T_0=135.553824$ (BKJD)



DV Model-Shift Uniqueness Test

005167392-06, P = 19.772091 Days, E = 115.832234 Days

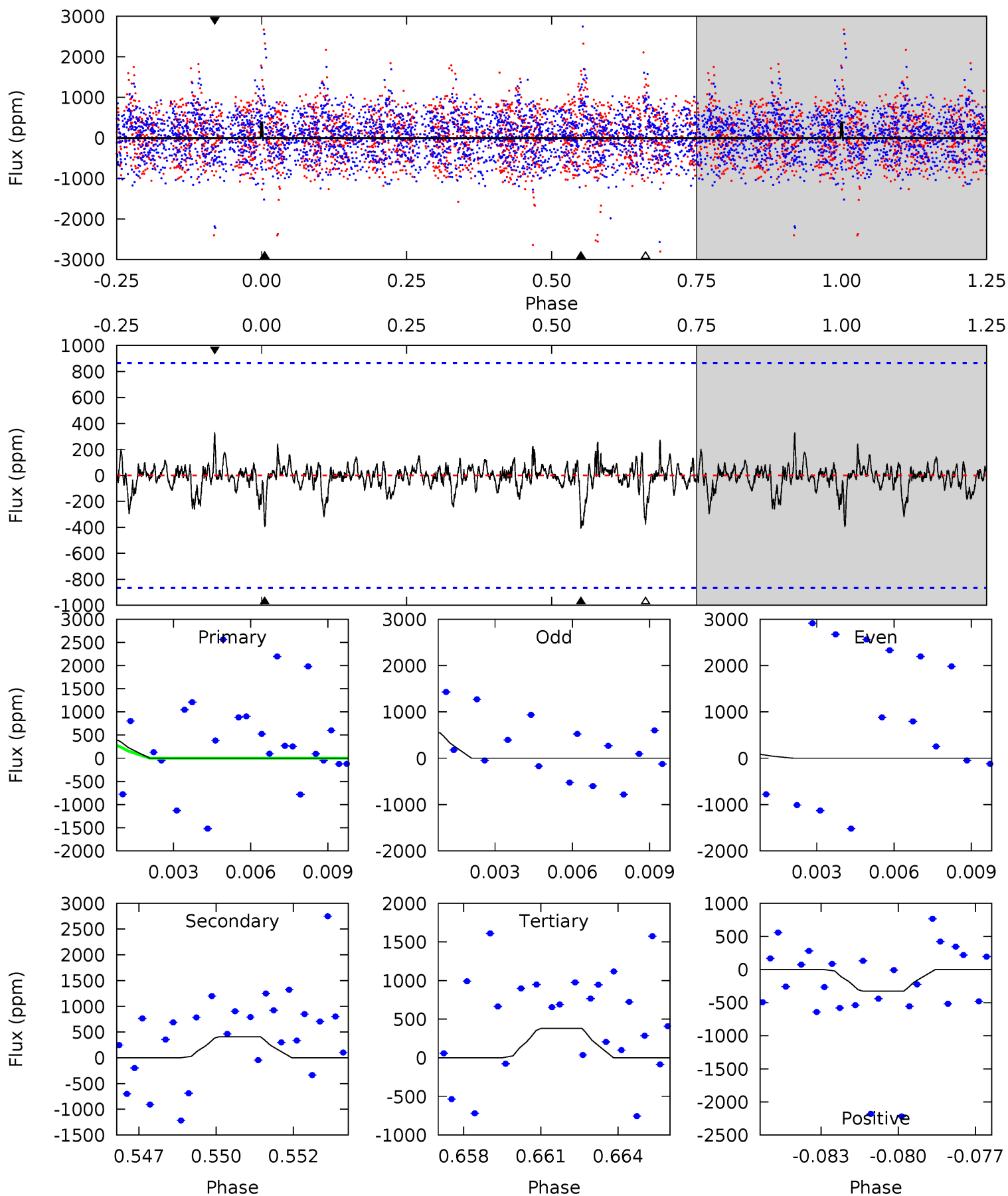
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.11	3.89	3.89	4.89	5.15	2.79	1.32	3.21	2.22	0.00	-1.00	3.14	0.72	0.41	1.21



Alt Model-Shift Uniqueness Test

005167392-06, P = 19.772174 Days, E = 115.781650 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.35	2.49	2.31	1.98	5.26	2.98	0.53	0.04	0.37	0.18	0.51	1.35	0.73	0.44	0.81



Stellar Parameters For KIC 005167392

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8365^{+202}_{-376}	$3.740^{+0.420}_{-0.140}$	$-0.120^{+0.300}_{-0.400}$	$3.188^{+0.952}_{-1.429}$	$2.039^{+0.428}_{-0.471}$	$0.089^{+0.320}_{-0.038}$
	+2%/-4%	+11%/-4%	+250%/-333%	+30%/-45%	+21%/-23%	+361%/-43%
Source	KIC0	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 005167392-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-103 ± 26	$7.43^{+7.55}_{-4.90}$	2091^{+184}_{-255}	5231^{+4386}_{-1235}	32^{+235}_{-24}
Alt.	-409 ± 165	$5.80^{+6.88}_{-3.89}$	2086^{+184}_{-239}	8637^{+13713}_{-3043}	204^{+1673}_{-164}

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

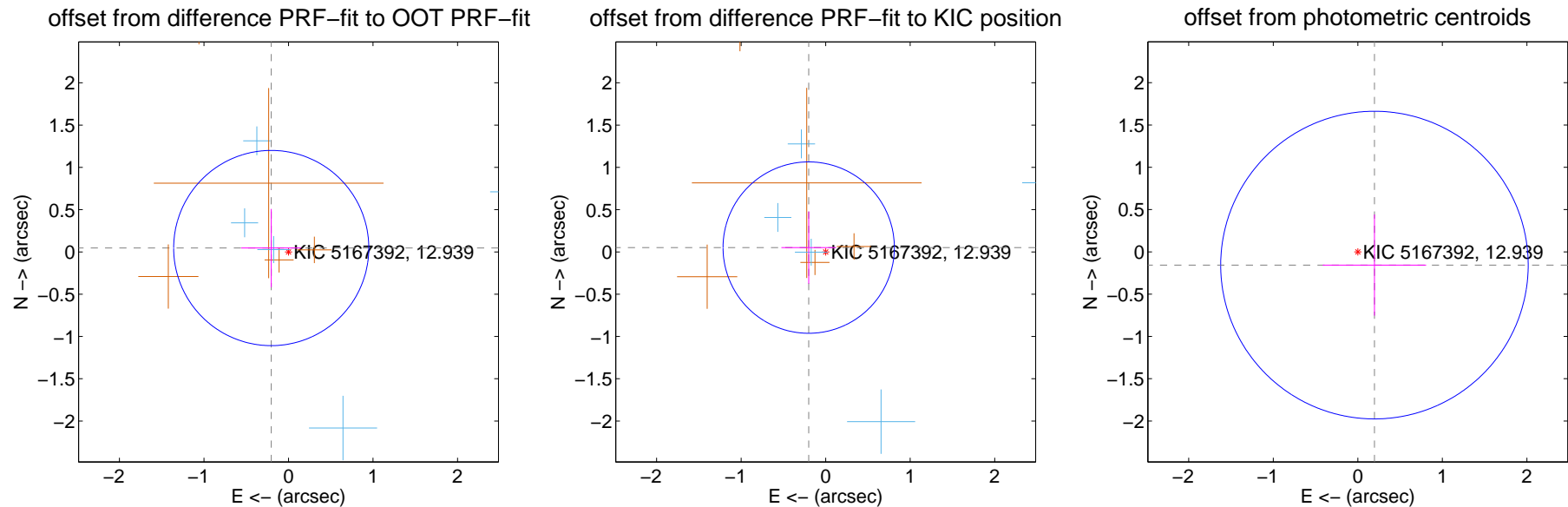
DV Centroid Data

Supplemental centroid analysis for 005167392-06. Kepler magnitude: 12.94. Transit SNR 8.62

There are 5 quarters with good PRF difference image offsets

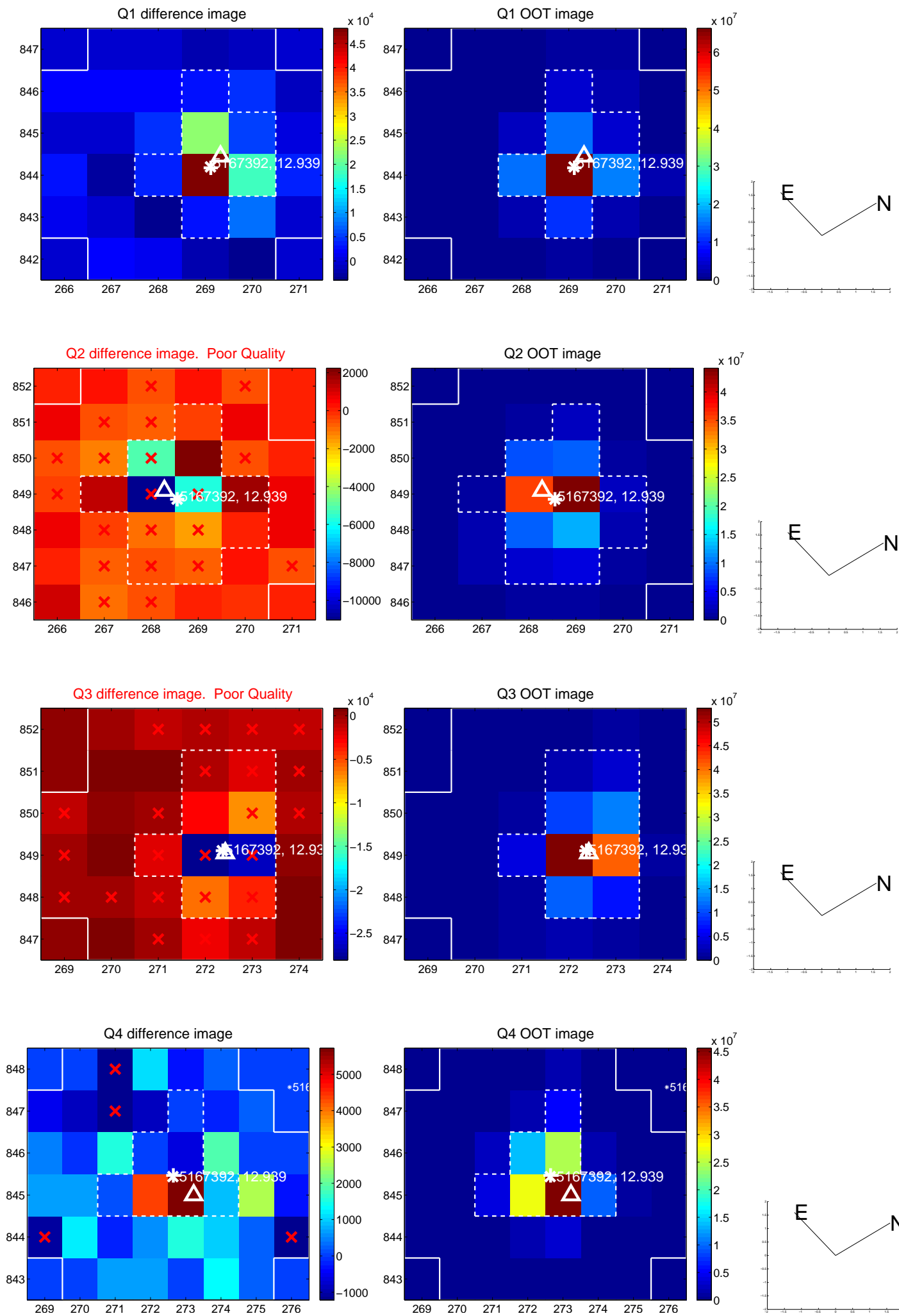
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.209 ± 0.385	0.54	0.204 ± 0.355	0.046 ± 0.462
PRF-fit source offset from KIC position	0.207 ± 0.338	0.61	0.201 ± 0.323	0.051 ± 0.427
photometric centroid source offset	0.25 ± 0.61	0.41	-0.20 ± 0.61	-0.16 ± 0.60

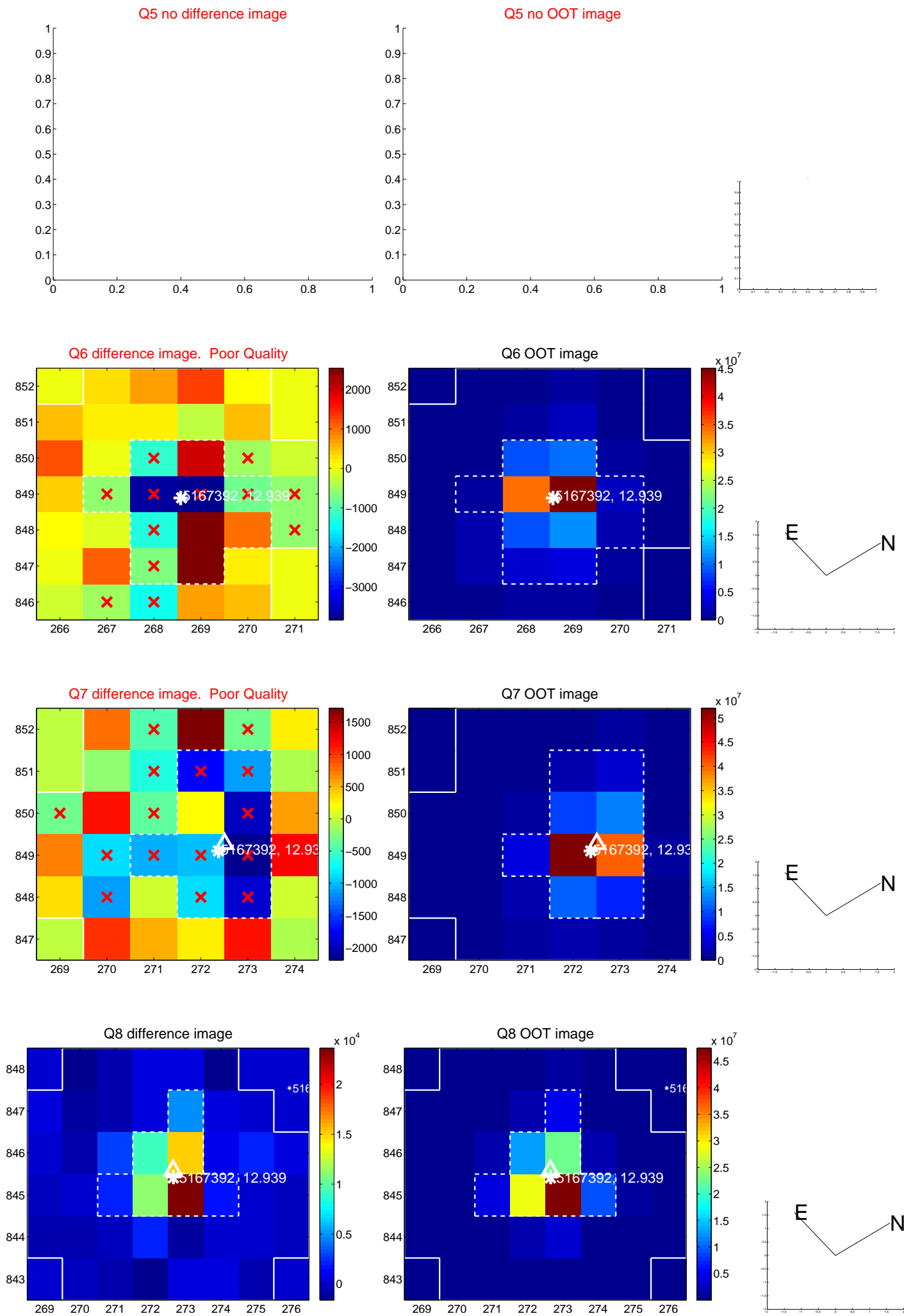


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

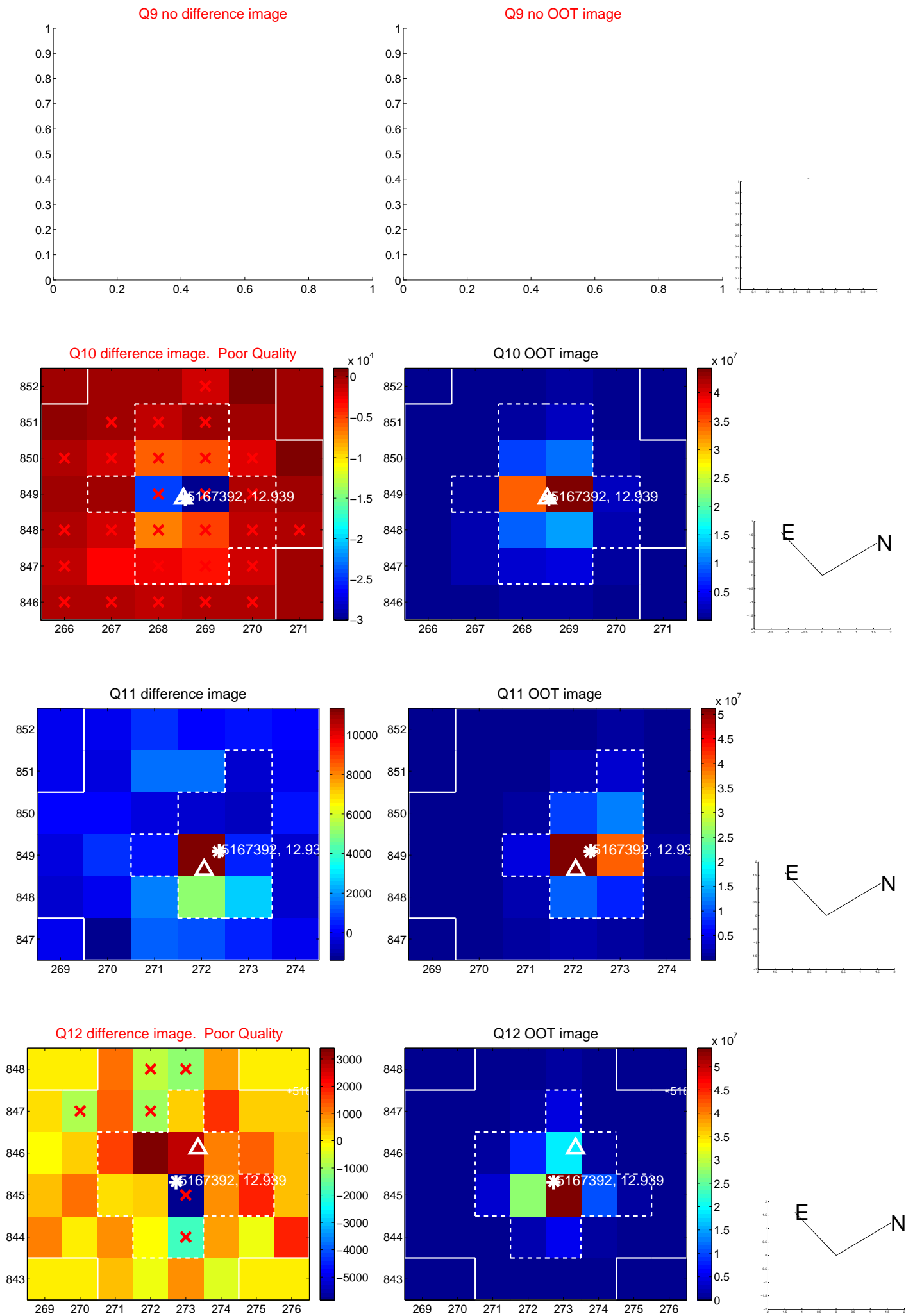
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



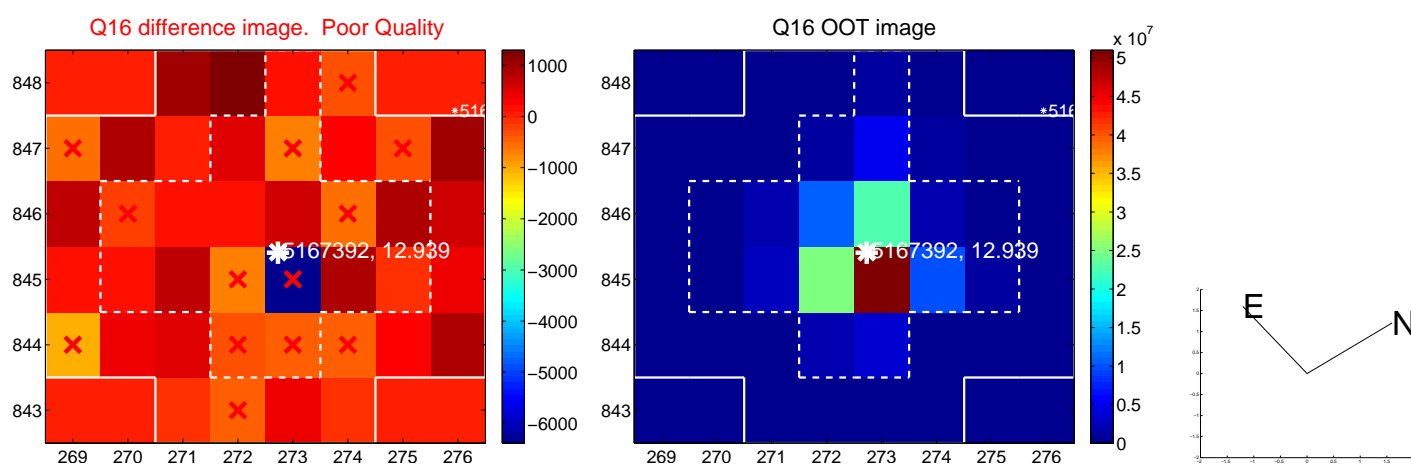
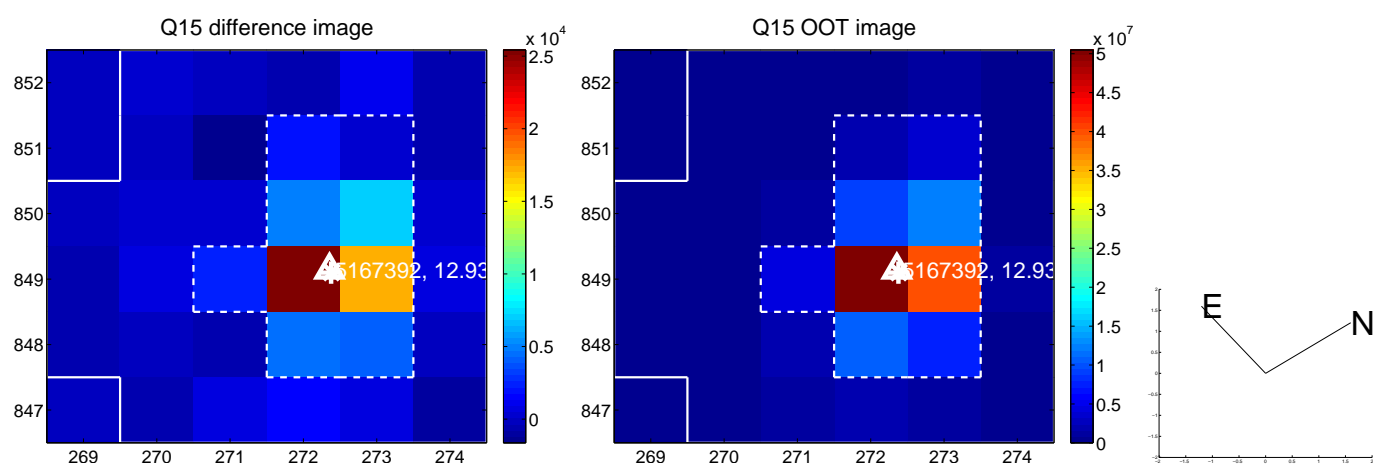
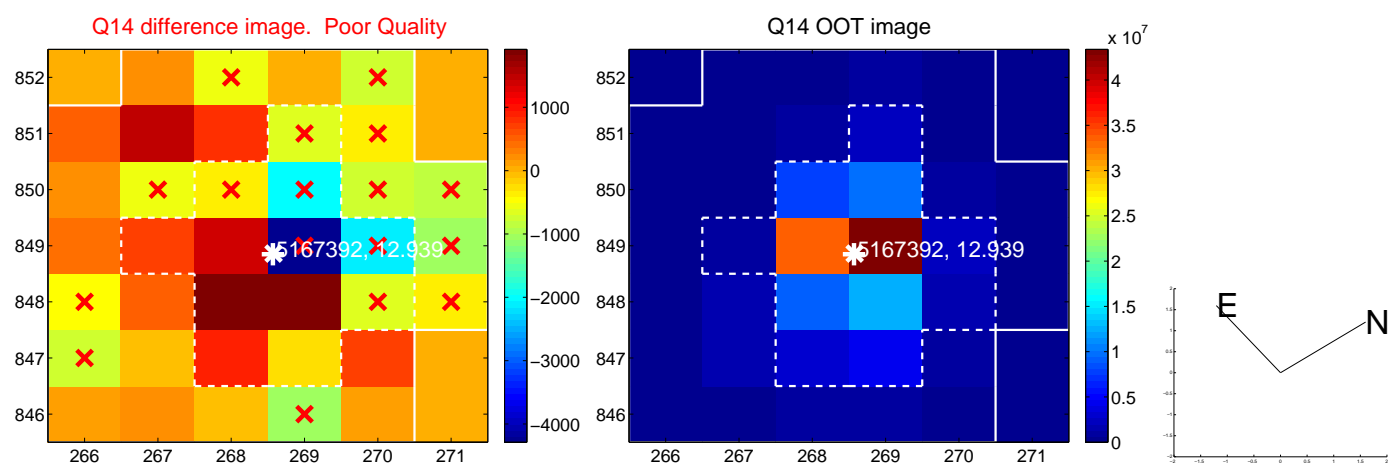
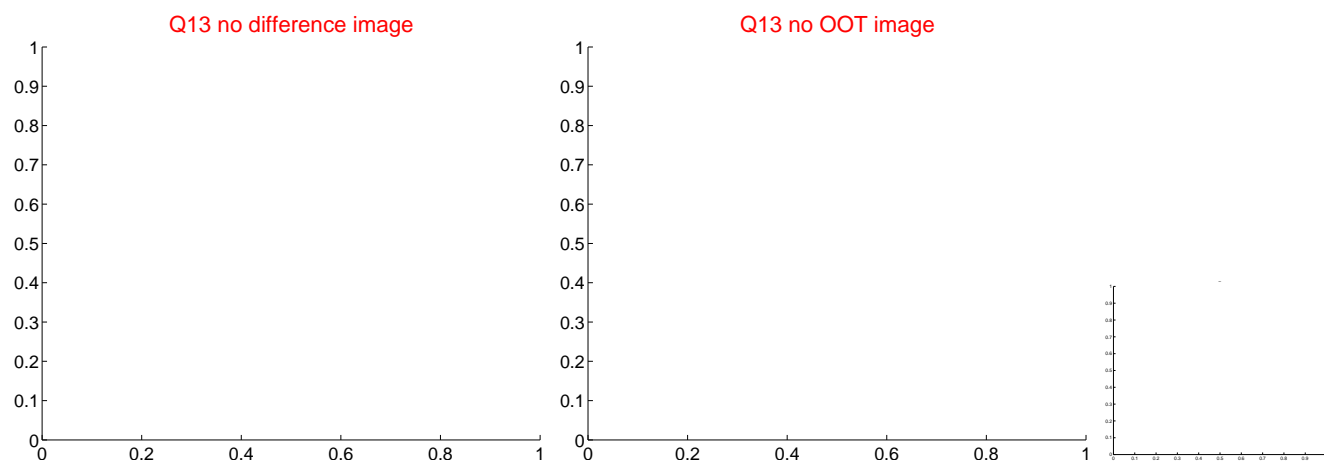
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



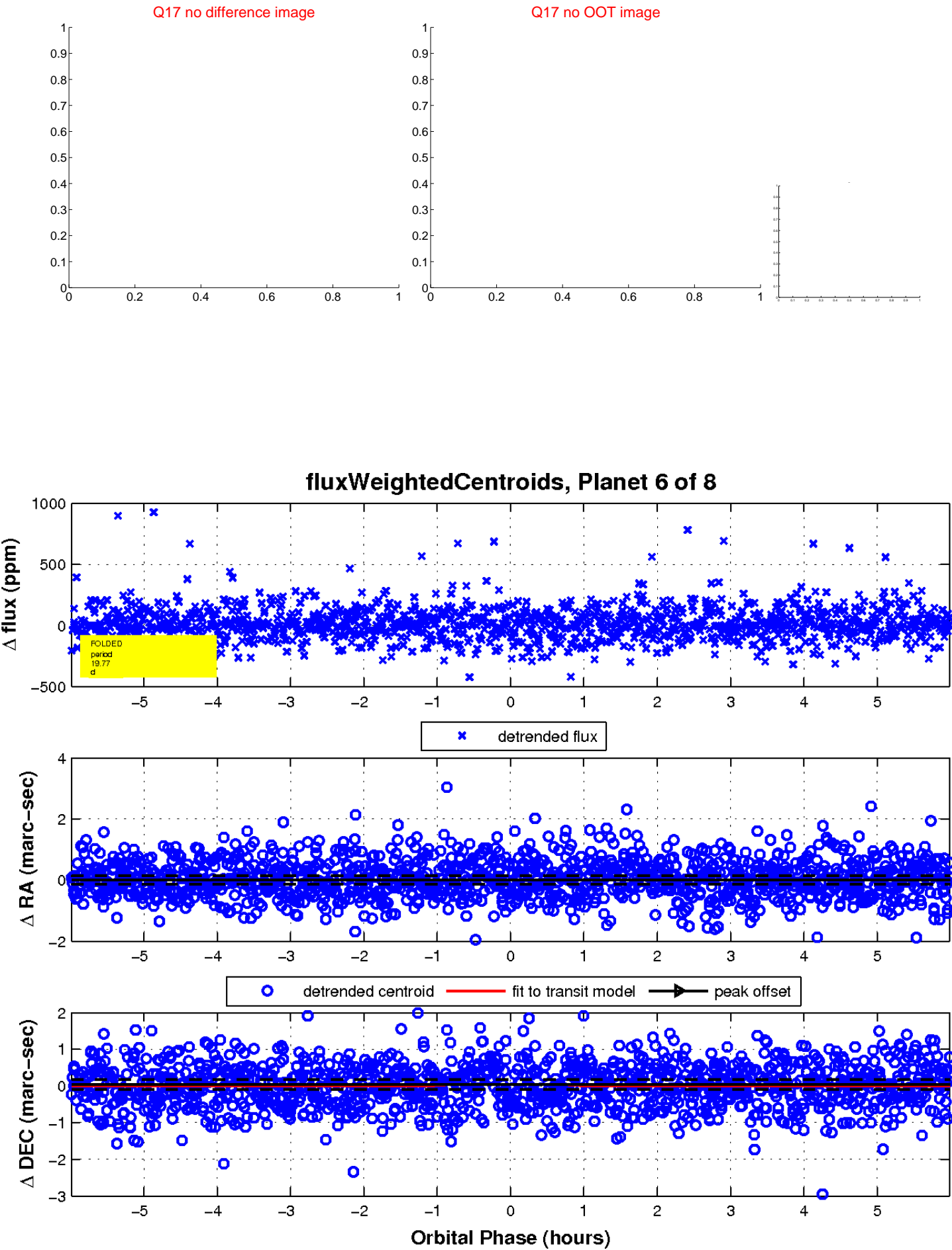
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

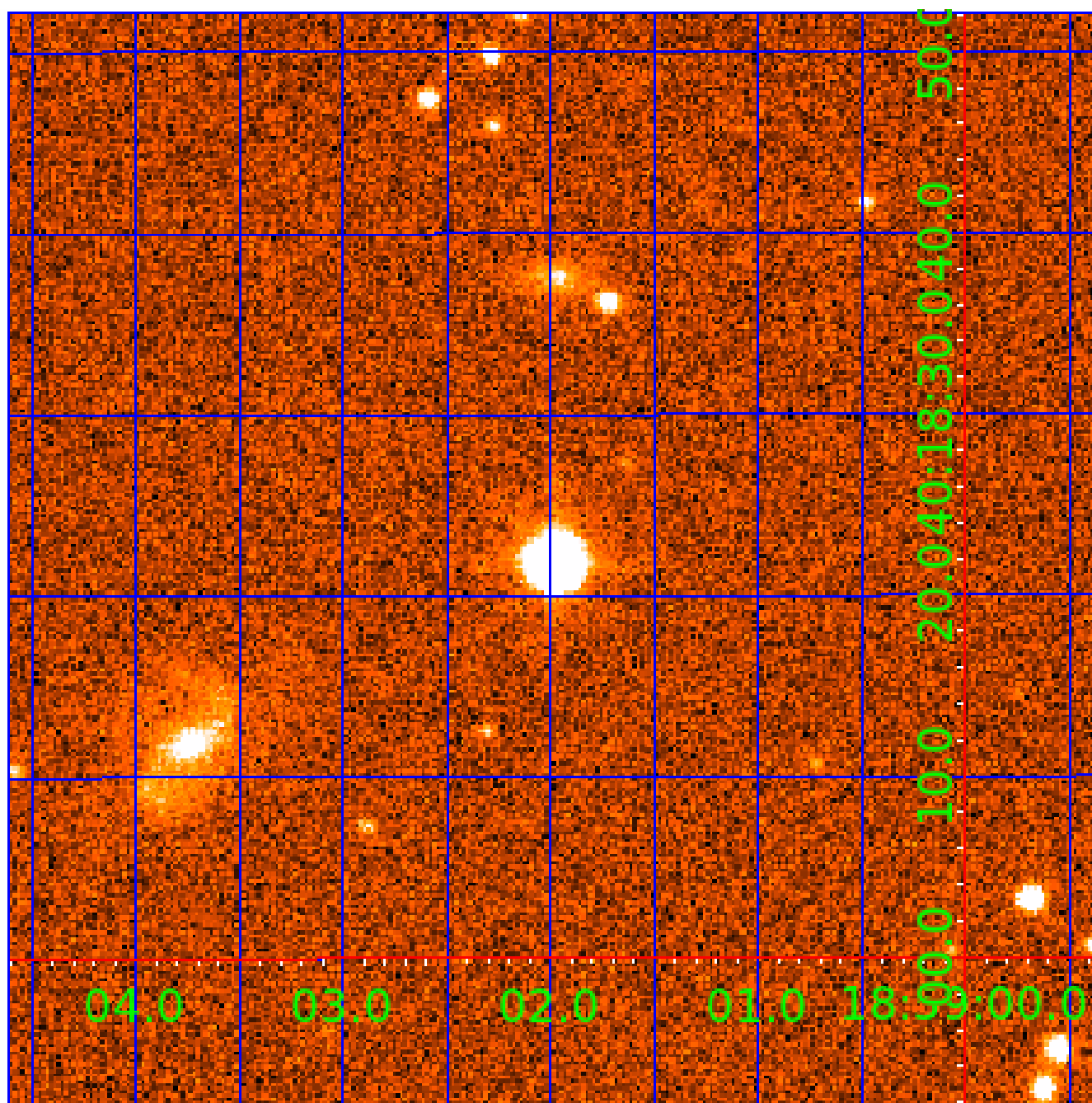


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005167392

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})
005167392-01	OBS	No	2.204295	132.867087	62.1	1.843	17.4	17.2	3.19	8365	2.93	25239.31
005167392-02	OBS	No	1.102001	131.657210	5.9	3.408	11.0	2.9	3.19	8365	0.79	63610.37
005167392-03	OBS	No	1.102215	132.209330	10.5	3.034	9.9	5.6	3.19	8365	1.20	63593.90
005167392-04	OBS	No	2.204298	132.142326	23.1	12.083	8.7	8.9	3.19	8365	1.67	25239.26
005167392-05	OBS	No	374.900056	419.330366	246.5	11.578	12.6	9.8	3.19	8365	5.18	26.78
005167392-06	OBS	No	19.772091	135.604325	220.9	1.996	8.5	8.6	3.19	8365	4.88	1354.25
005167392-07	OBS	No	14.121162	134.401966	176.1	1.713	8.3	9.5	3.19	8365	4.73	2121.34
005167392-08	OBS	No	9.322341	136.672453	245.4	2.500	7.2	-1.0	3.19	8365	5.06	3690.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005167392-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
005167392-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
005167392-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005167392-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

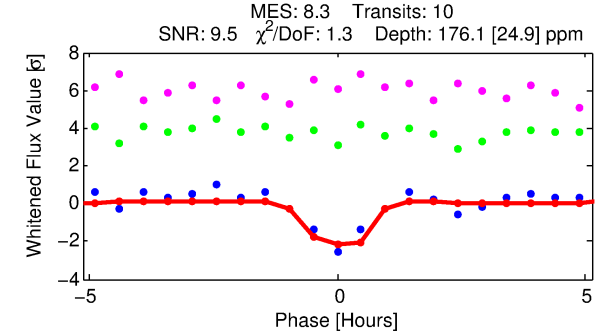
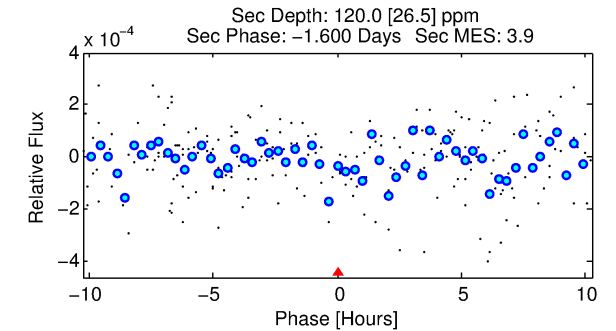
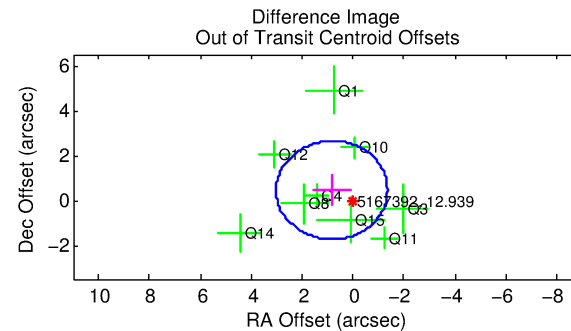
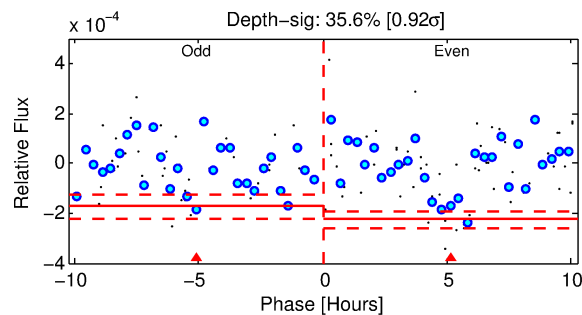
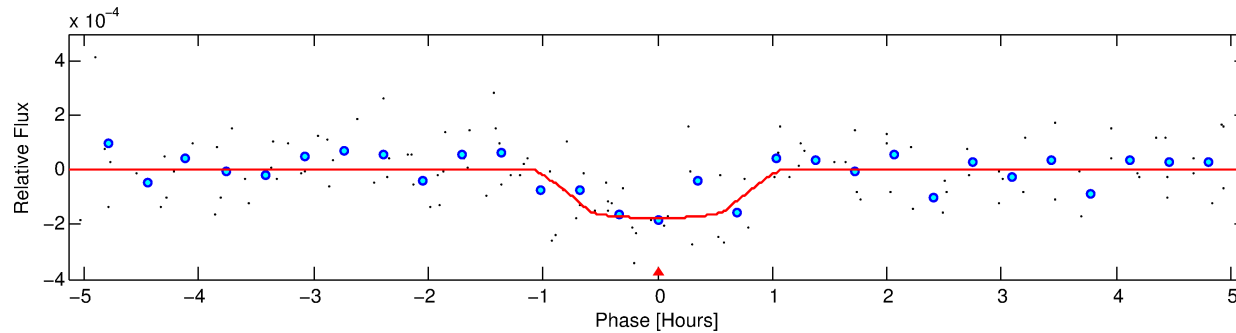
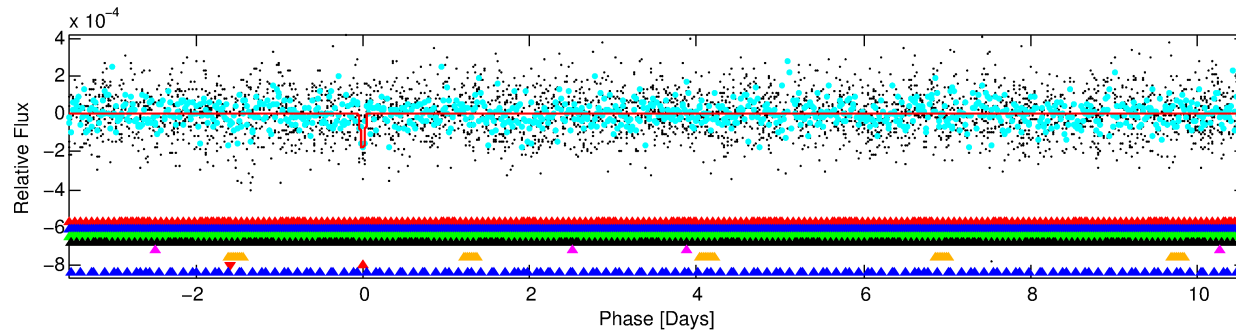
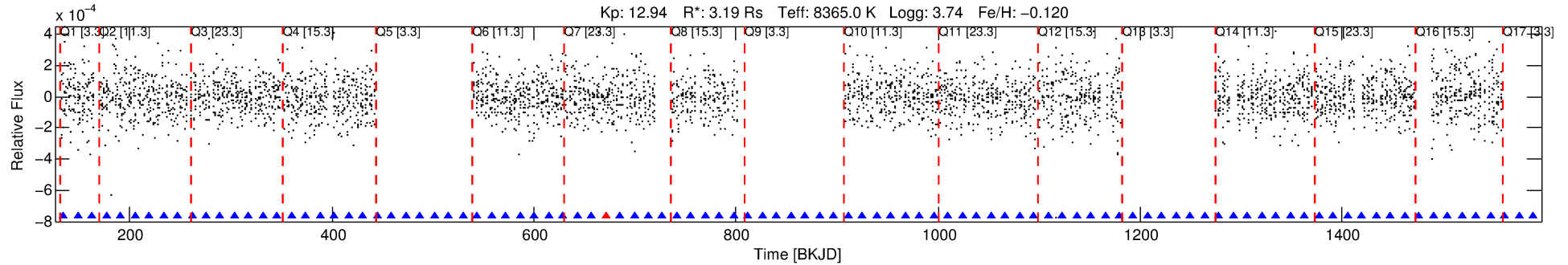
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005167392-07

No Significant Match Found

DV One-Page Summary

KIC: 5167392 Candidate: 7 of 8 Period: 14.121 d



DV Fit Results:

Period = 14.12116 [0.00014] d
Epoch = 134.4020 [0.0083] BKJD
Rp/R* = 0.0136 [0.0200]
a/R* = 36.97 [334.51]
b = 0.83 [3.52]
Seff = 2121.34 [1554.95]
Teq = 1731 [317] K
Rp = 4.73 [7.27] Re
a = 0.1450 [0.0637] AU
Ag = 62.05 [188.39] [0.32 σ]
Teffp = 7510 [5551] K [1.04 σ]

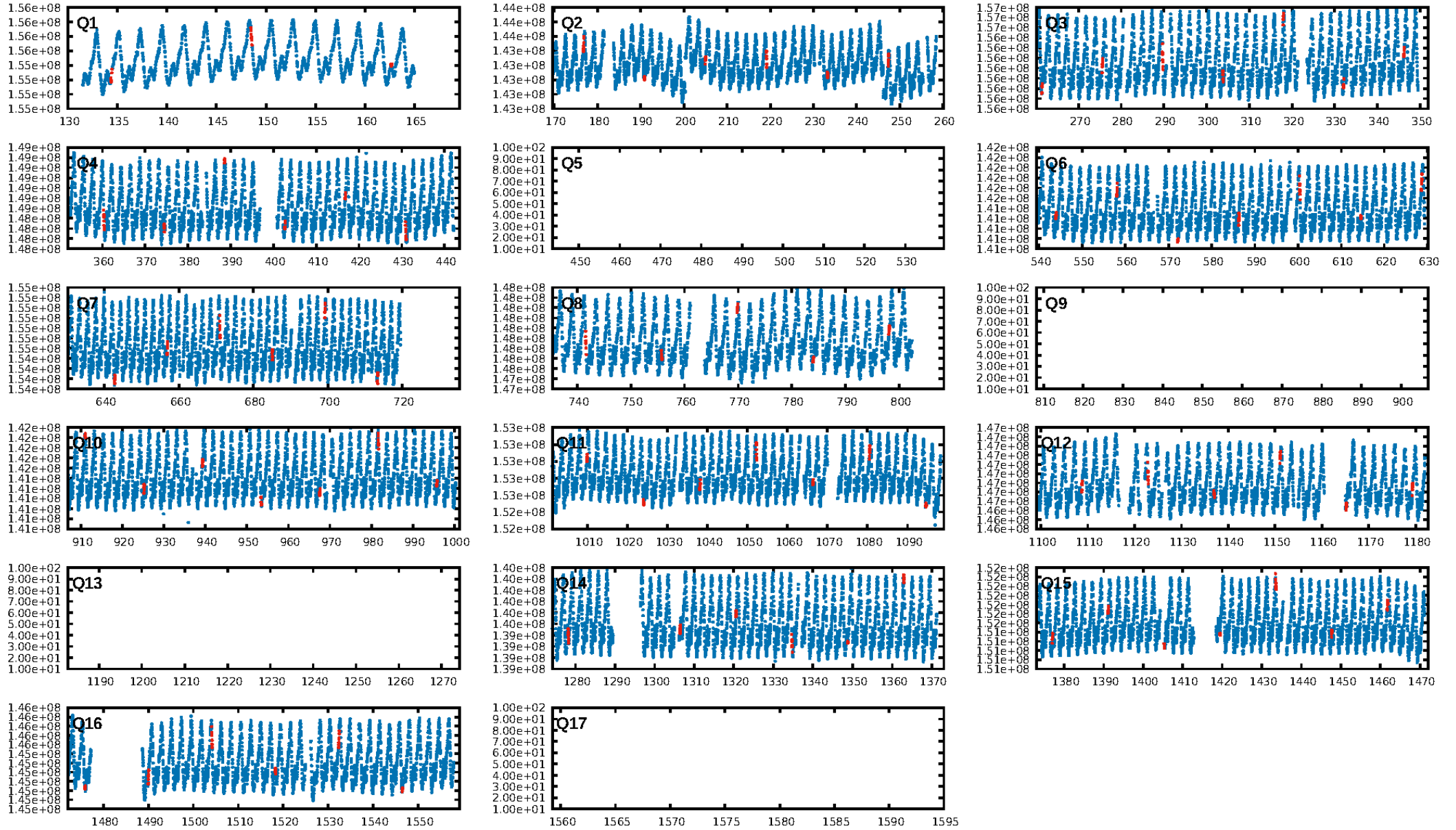
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [38.00 σ]
LongPeriod-sig: 100.0% [51.57 σ]
ModelChiSquare2-sig: 26.9%
ModelChiSquareGof-sig: 96.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.89 [8/9]
GhostDiagnostic-chr: -0.5839
Centroid-sig: 15.1%
Centroid-so: 1.016 arcsec [1.50 σ]
OotOffset-rm: 0.947 arcsec [1.30 σ]
KicOffset-rm: 0.999 arcsec [1.36 σ]
OotOffset-st: 2/3/3/1 [9]
KicOffset-st: 2/3/3/1 [9]
DiffImageQuality-fgm: 0.22 [2/9]
DiffImageOverlap-fno: 0.00 [0/13]

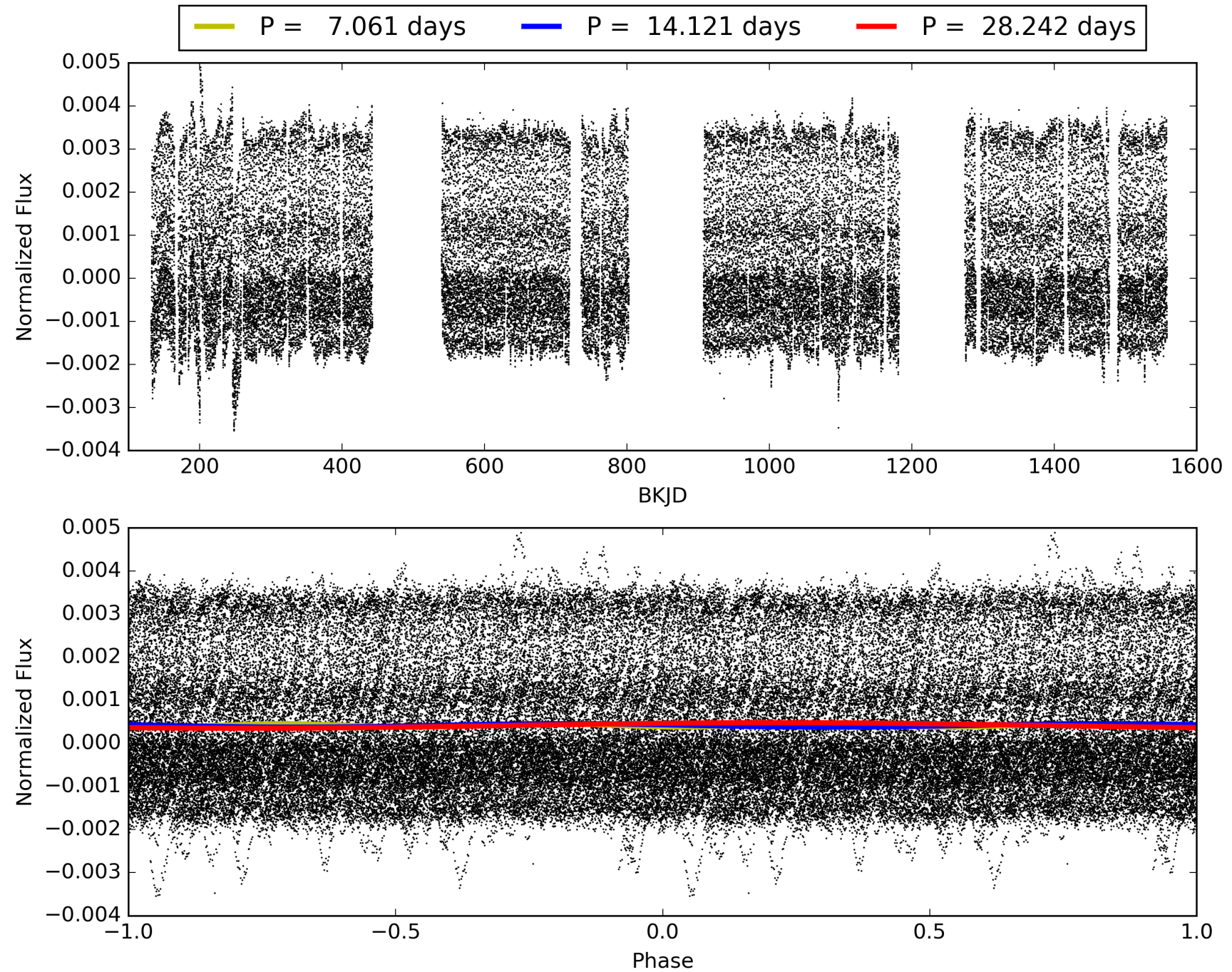
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:01:07 Z

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

TCE 005167392-07, PDC Light Curves

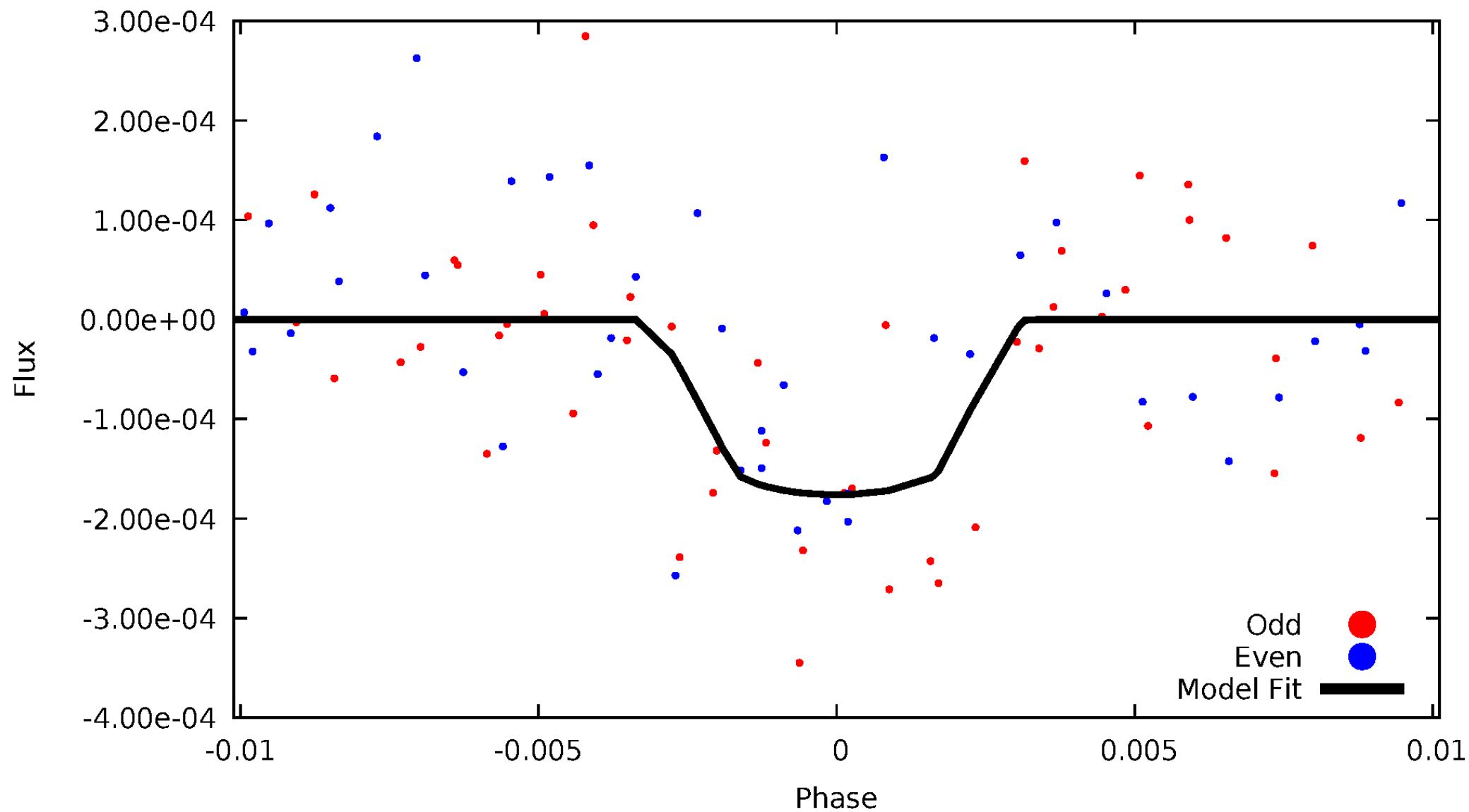


TCE 005167392-07



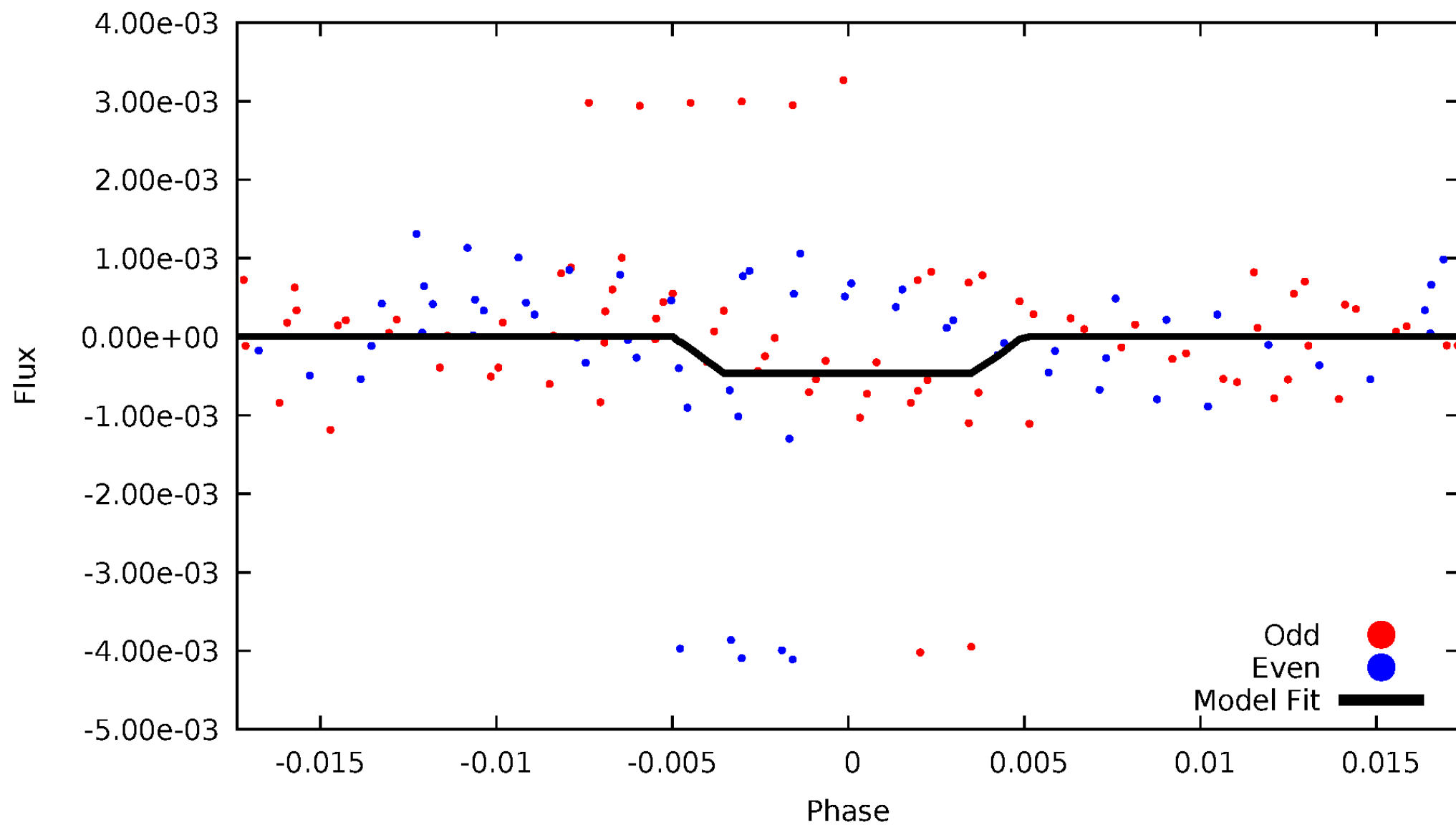
DV Odd/Even

TCE 005167392-07



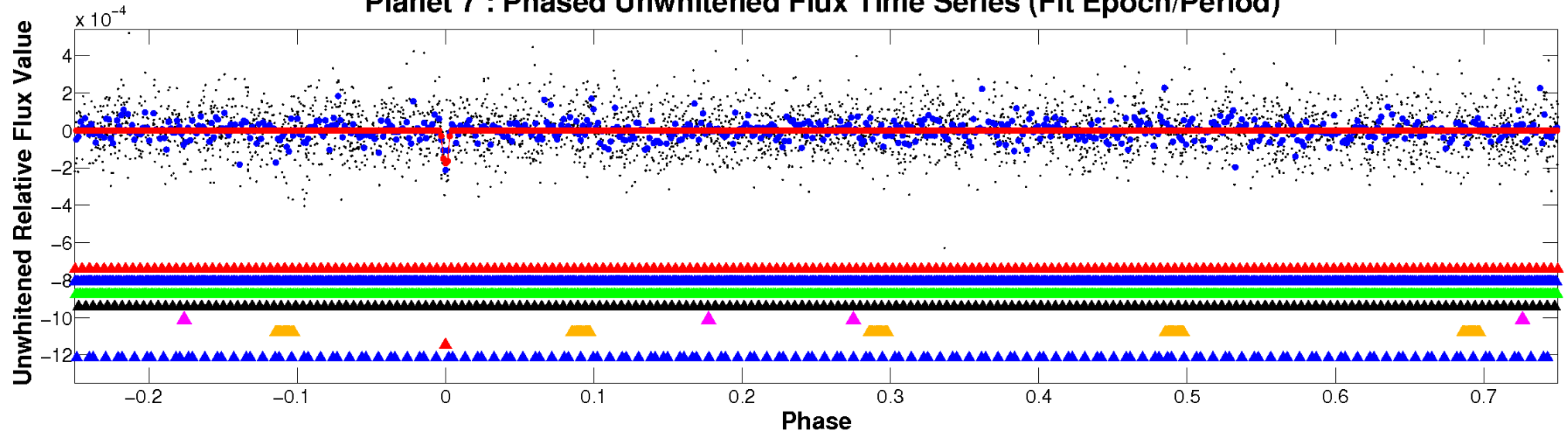
ALT Odd/Even

TCE 005167392-07

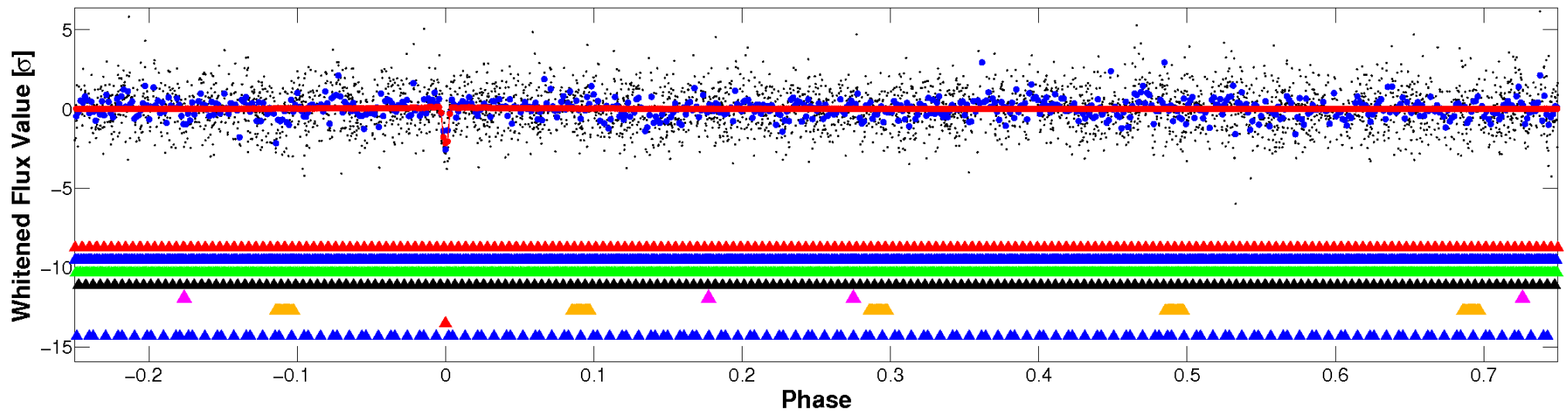


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

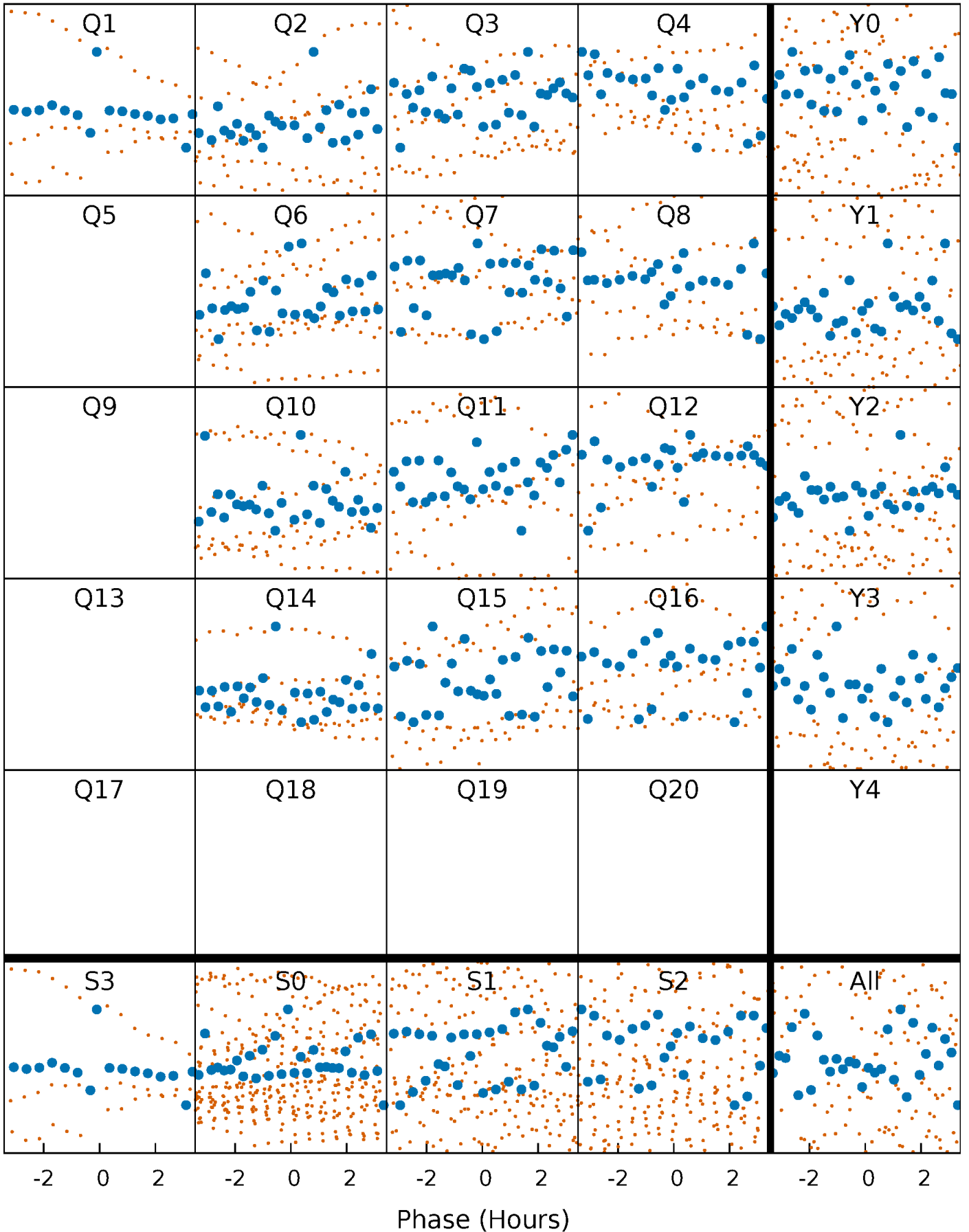


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



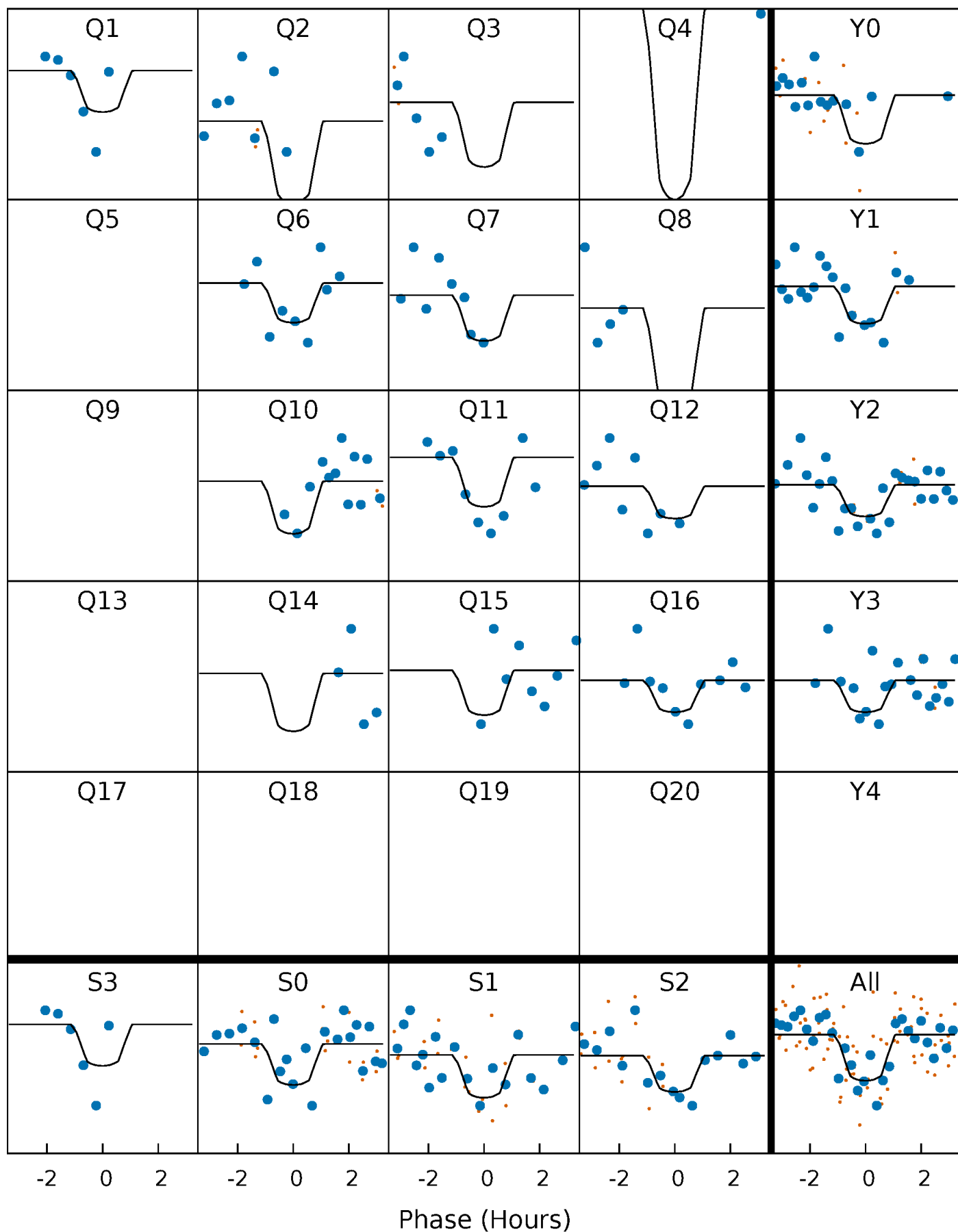
PDC Quarter-Phased Transit Curves

TCE 005167392-07 $P = 14.121162$ Days $T_0 = 134.401966$ (BKJD)



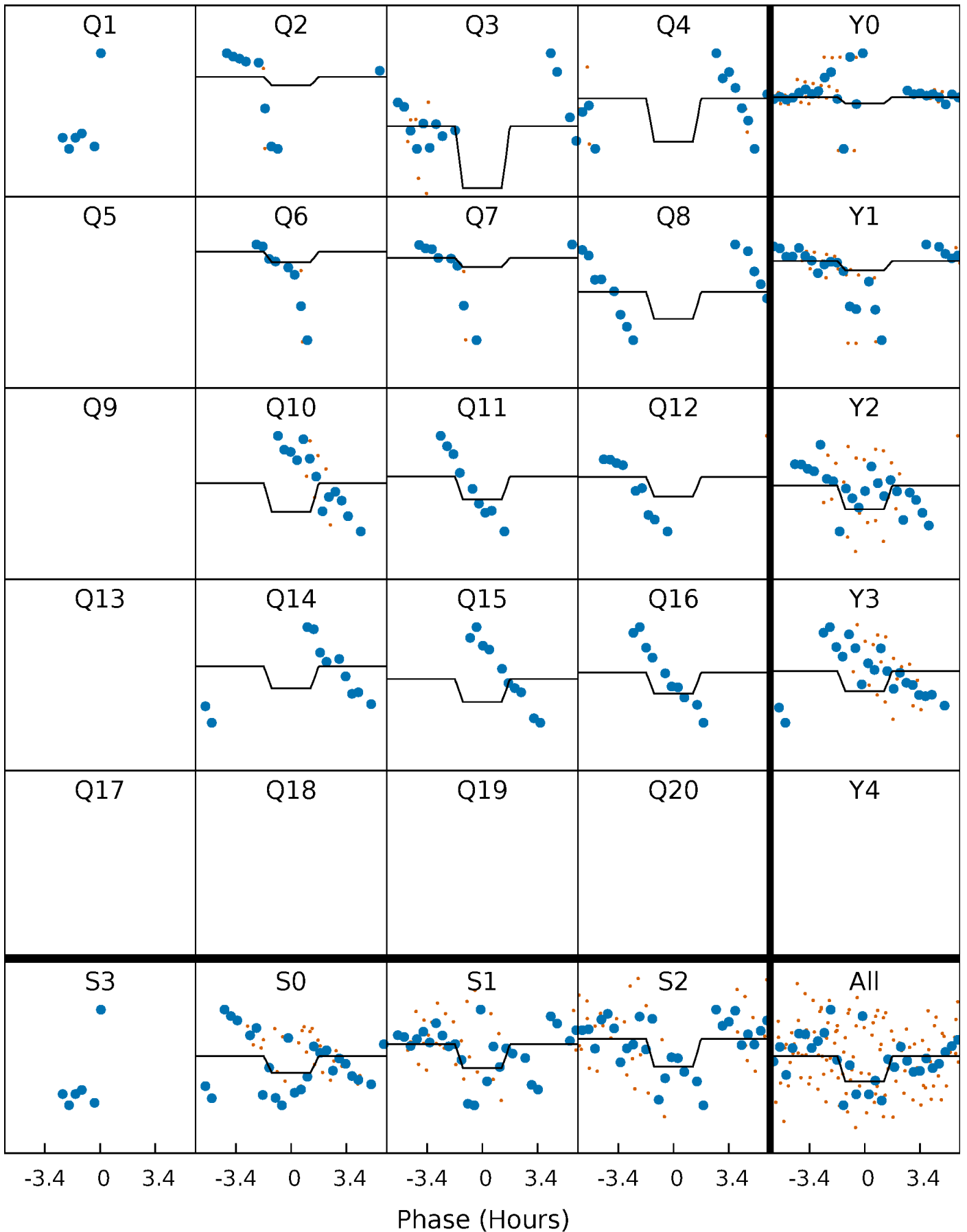
DV Quarter-Phased Transit Curves

TCE 005167392-07 P= 14.121162 Days $T_0=134.401966$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

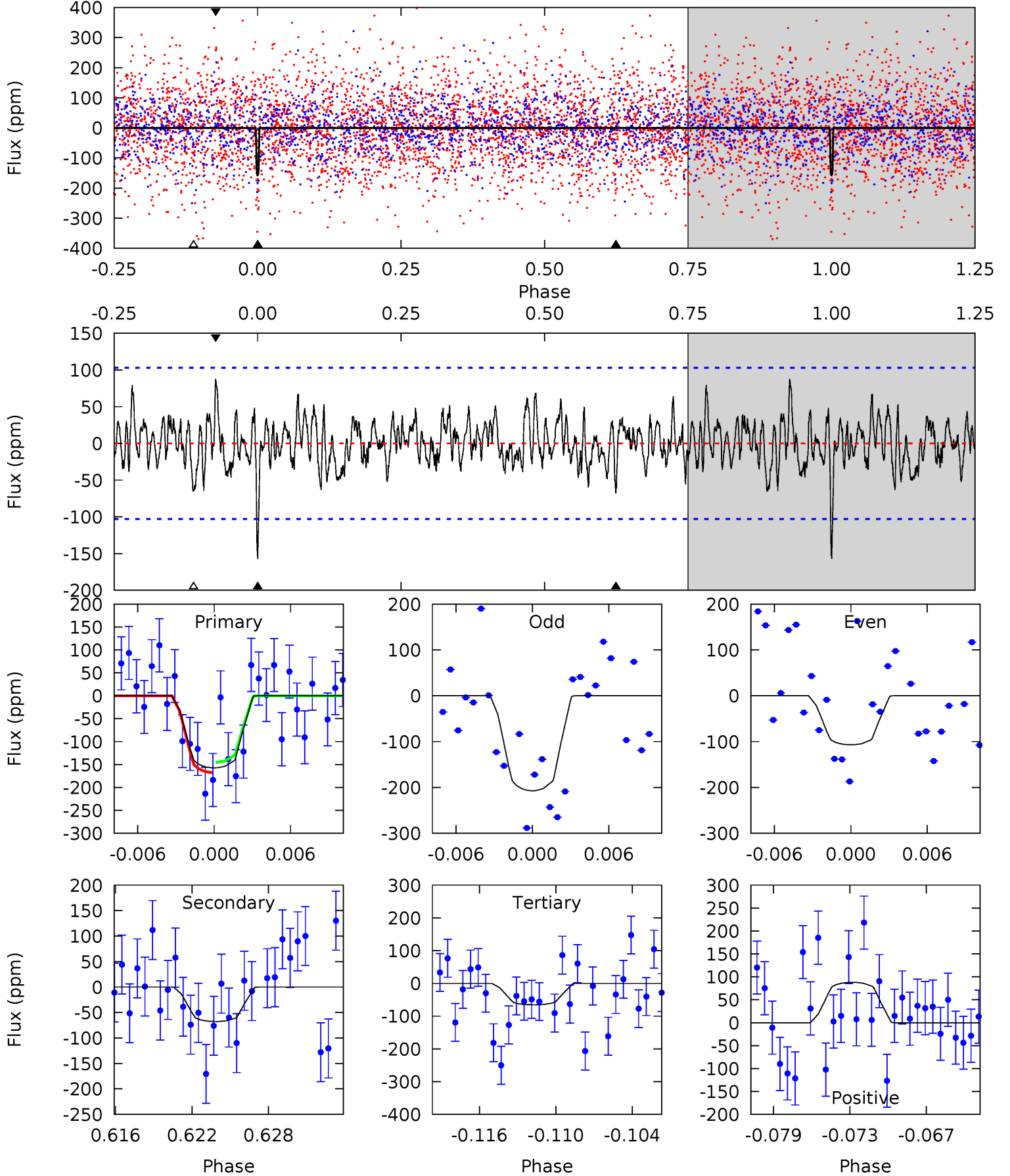
TCE 005167392-07 $P = 14.121347$ Days $T_0 = 134.415339$ (BKJD)



DV Model-Shift Uniqueness Test

005167392-07, P = 14.121162 Days, E = 120.280804 Days

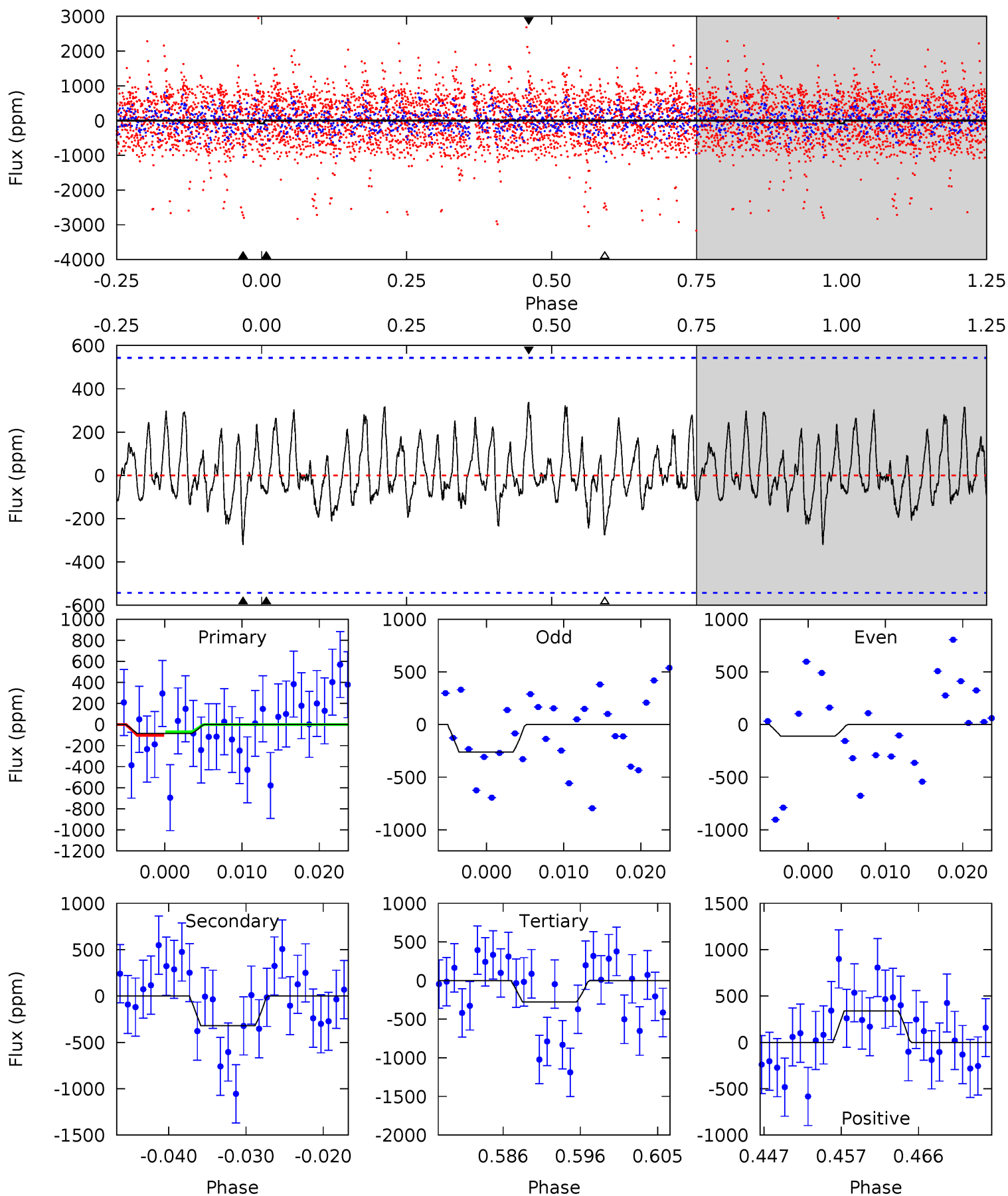
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.82	3.37	3.26	4.38	5.12	2.74	1.27	4.56	3.44	0.11	-1.01	2.49	0.86	0.36	0.56



Alt Model-Shift Uniqueness Test

005167392-07, $P = 14.121347$ Days, $E = 120.293992$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.79	2.97	2.55	3.14	5.03	2.58	1.13	-1.76	-2.35	0.42	-0.17	0.65	1.31	0.51	0.15



Stellar Parameters For KIC 005167392

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8365^{+202}_{-376}	$3.740^{+0.420}_{-0.140}$	$-0.120^{+0.300}_{-0.400}$	$3.188^{+0.952}_{-1.429}$	$2.039^{+0.428}_{-0.471}$	$0.089^{+0.320}_{-0.038}$
	+2%/-4%	+11%/-4%	+250%/-333%	+30%/-45%	+21%/-23%	+361%/-43%
Source	KIC0	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 005167392-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-68 ± 20	$6.34^{+5.70}_{-4.31}$	2337^{+212}_{-260}	5184^{+4419}_{-1196}	18^{+162}_{-13}
Alt.	-321 ± 108	$7.92^{+6.79}_{-4.60}$	2352^{+198}_{-291}	6677^{+5700}_{-1670}	56^{+275}_{-40}

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

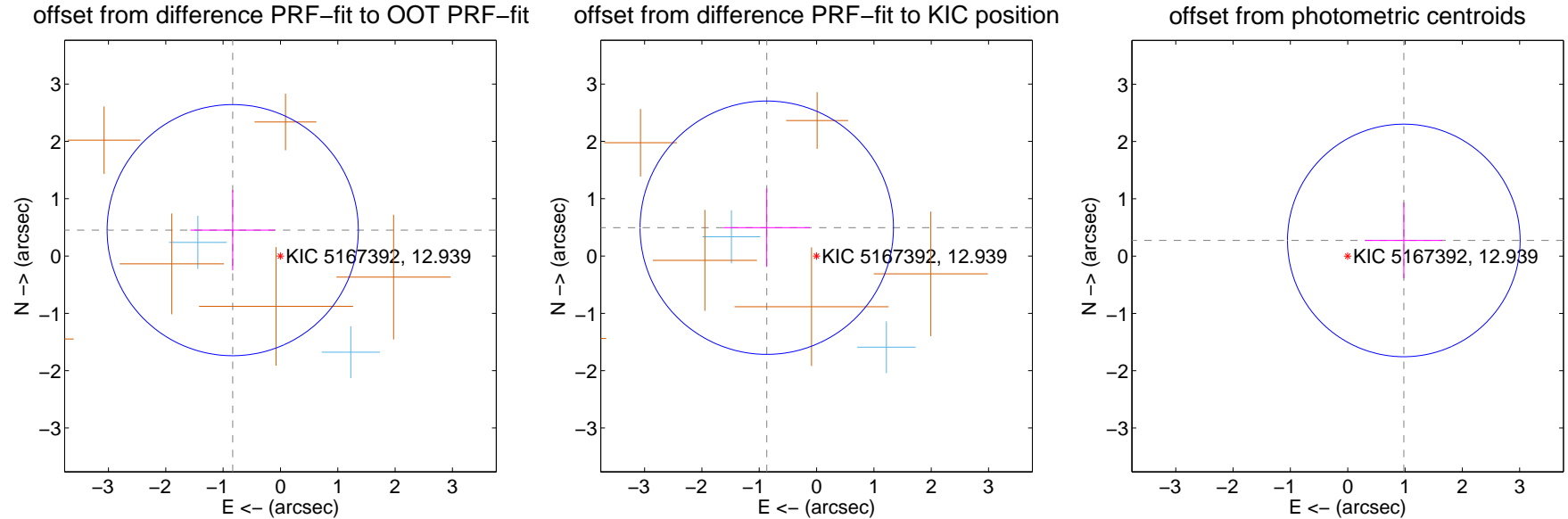
DV Centroid Data

Supplemental centroid analysis for 005167392-07. Kepler magnitude: 12.94. Transit SNR 9.51

There are 2 quarters with good PRF difference image offsets

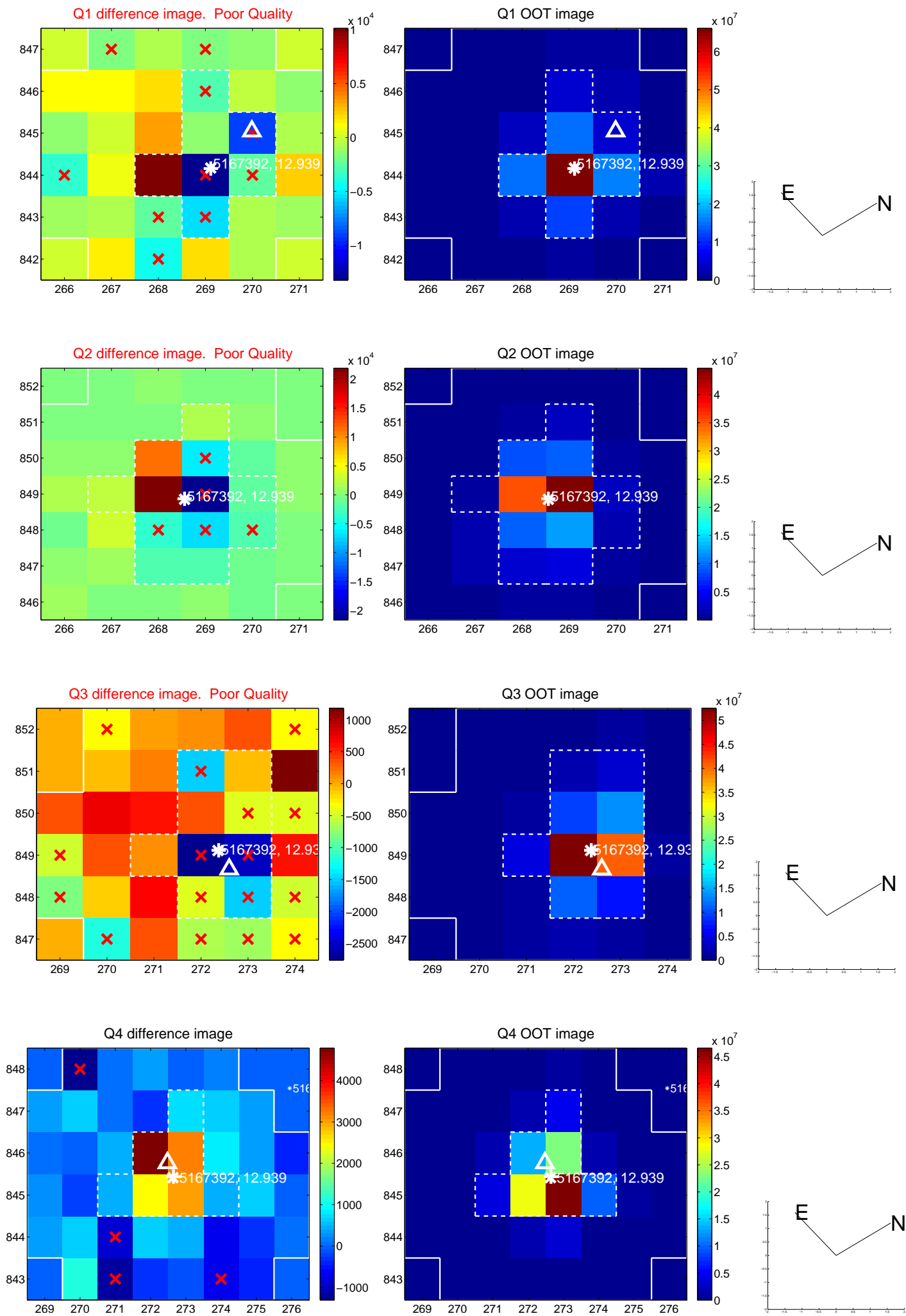
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.947 ± 0.730	1.30	0.832 ± 0.739	0.451 ± 0.700
PRF-fit source offset from KIC position	0.999 ± 0.737	1.36	0.869 ± 0.753	0.494 ± 0.684
photometric centroid source offset	1.02 ± 0.68	1.50	-0.98 ± 0.68	0.27 ± 0.66

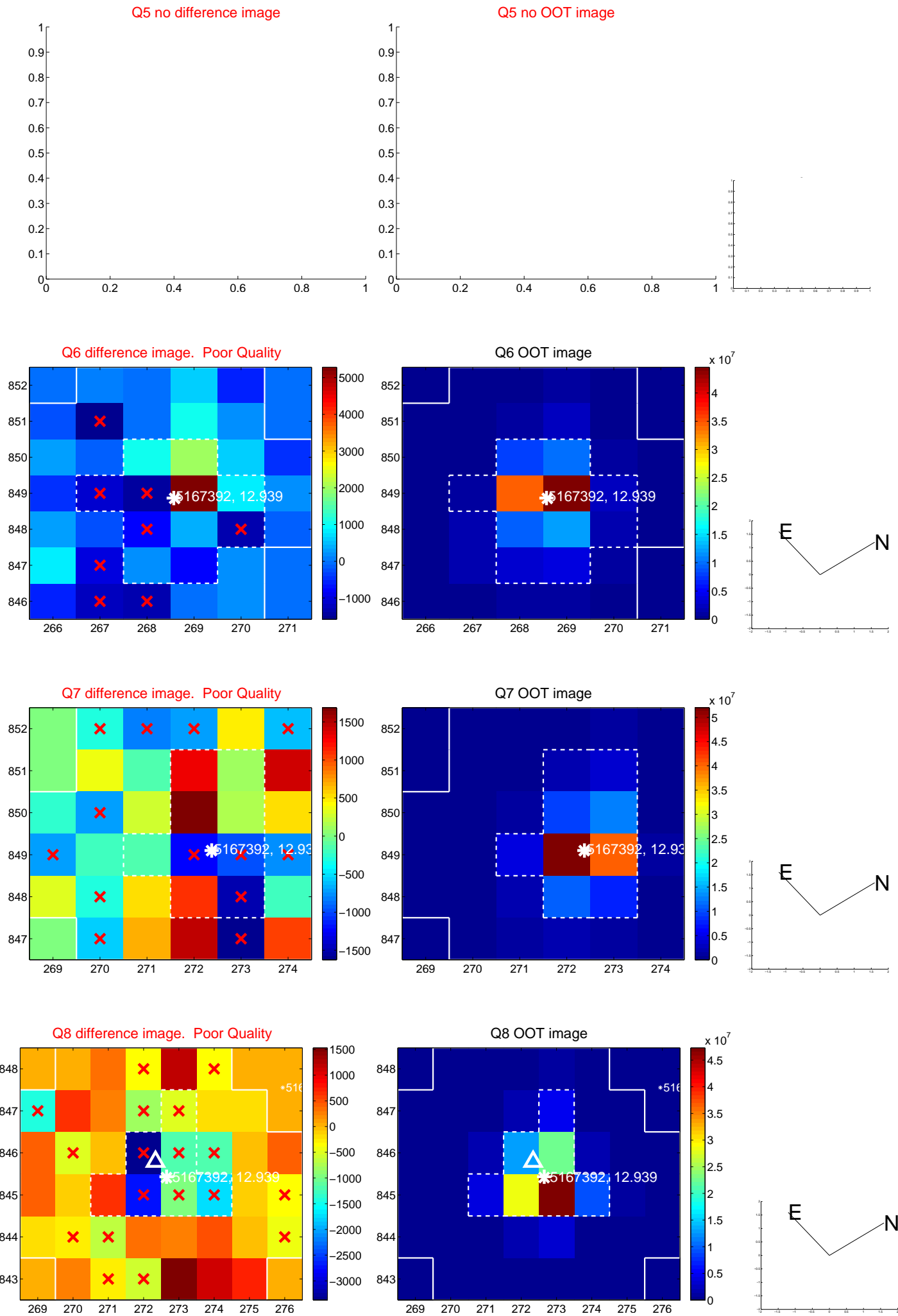


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

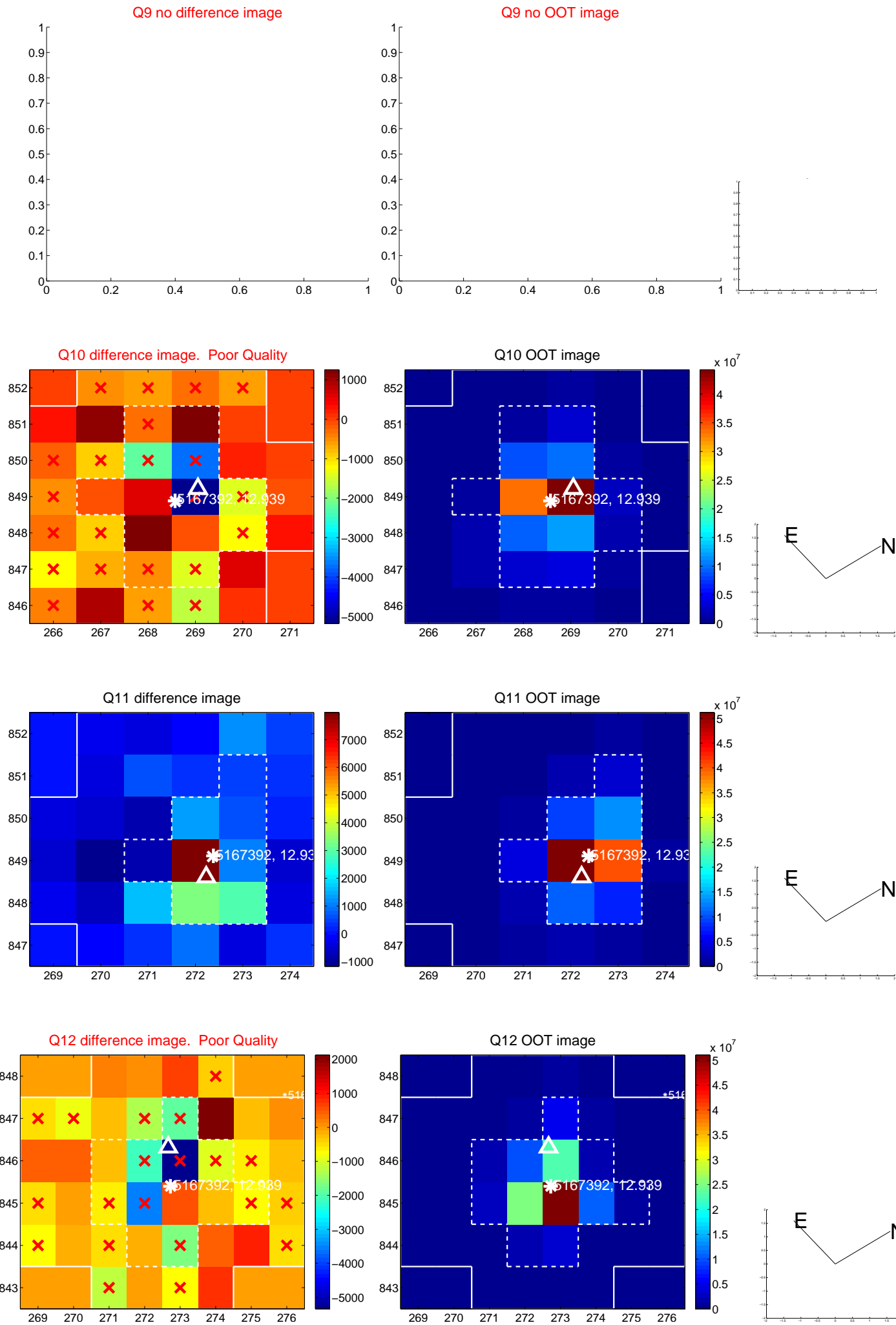
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



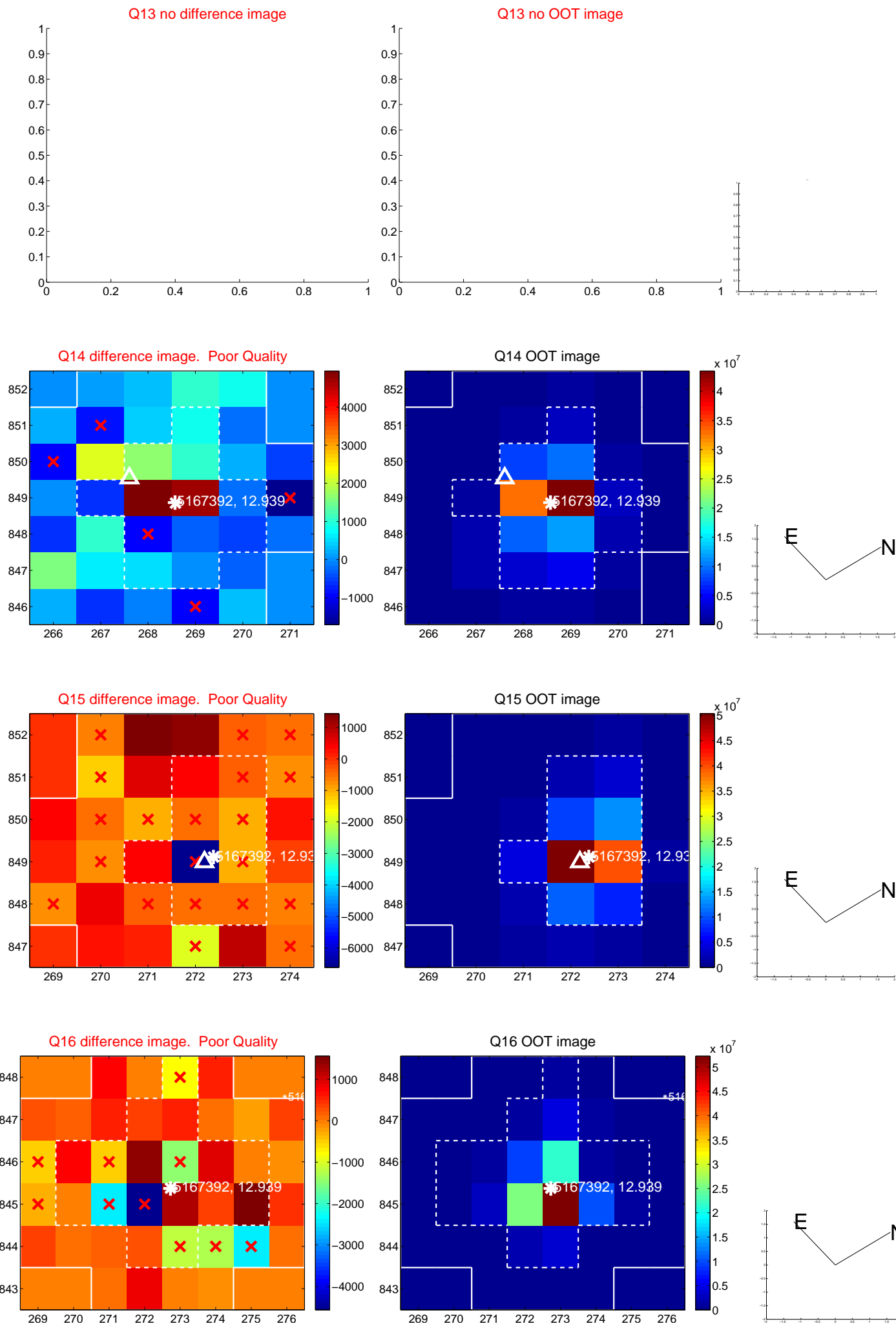
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



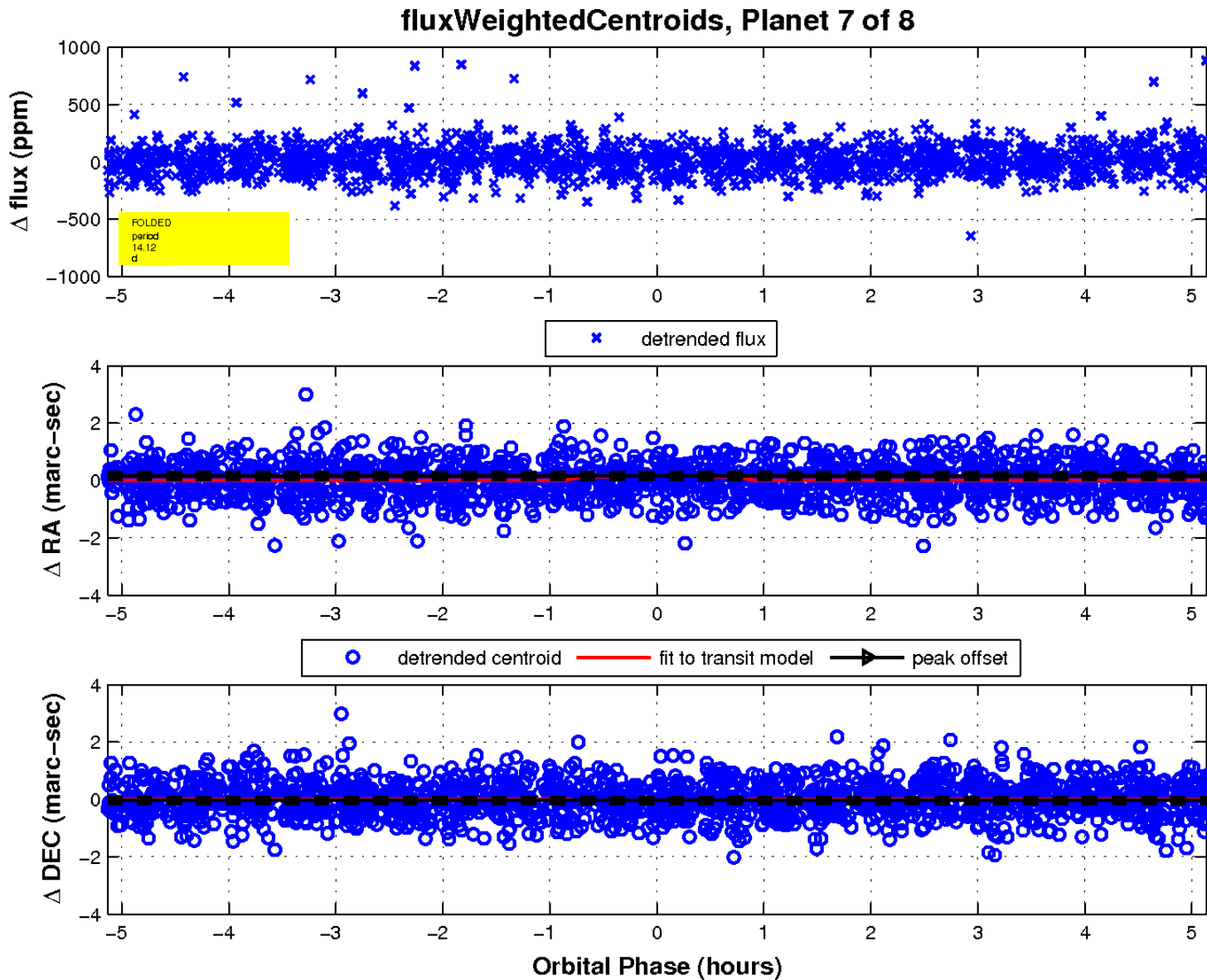
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

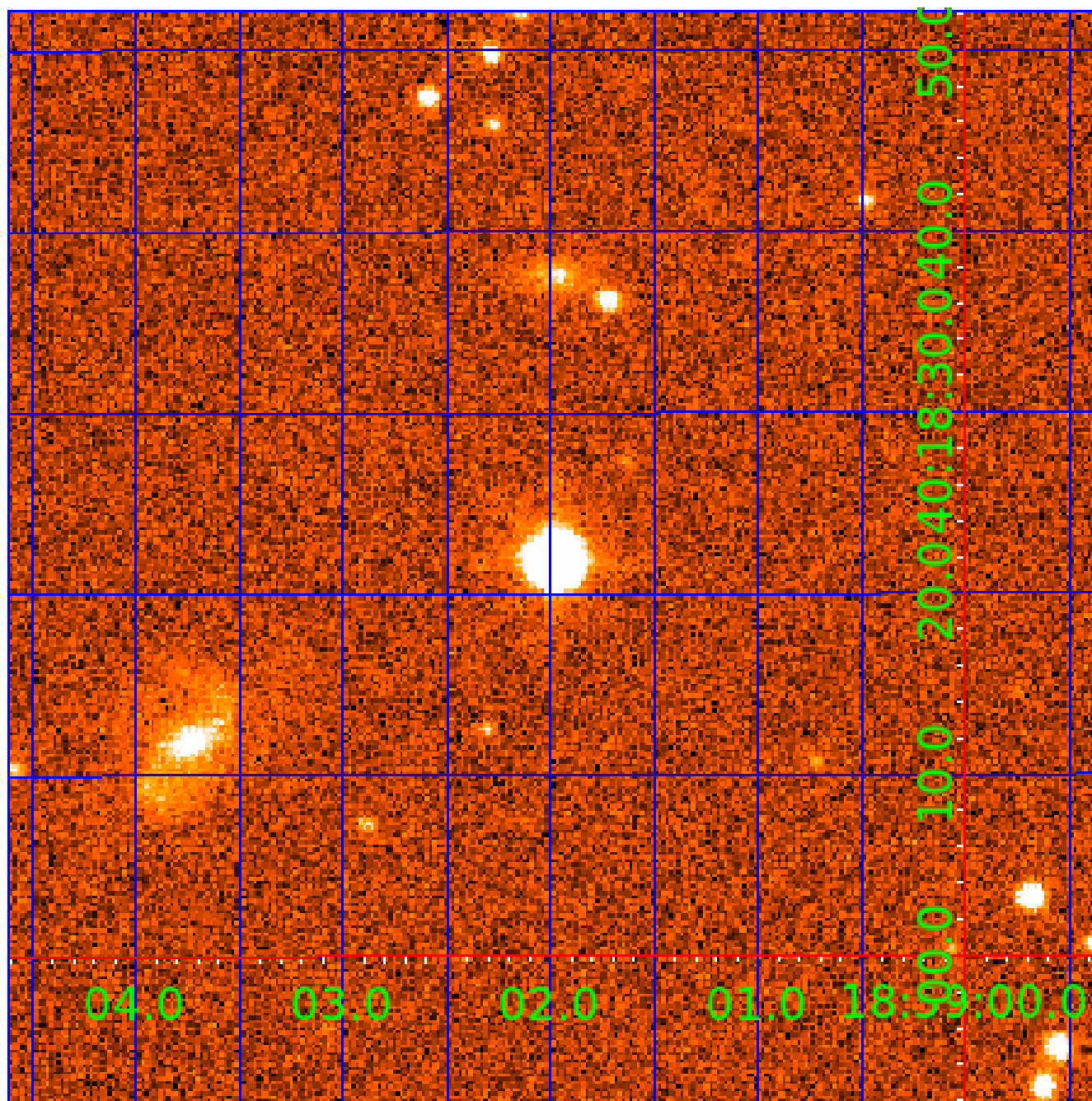


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005167392

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})
005167392-01	OBS	No	2.204295	132.867087	62.1	1.843	17.4	17.2	3.19	8365	2.93	25239.31
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005167392-03	OBS	No	1.102215	132.209330	10.5	3.034	9.9	5.6	3.19	8365	1.20	63593.90
005167392-04	OBS	No	2.204298	132.142326	23.1	12.083	8.7	8.9	3.19	8365	1.67	25239.26
005167392-05	OBS	No	374.900056	419.330366	246.5	11.578	12.6	9.8	3.19	8365	5.18	26.78
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005167392-08	OBS	No	9.322341	136.672453	245.4	2.500	7.2	-1.0	3.19	8365	5.06	3690.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005167392-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
005167392-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
005167392-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
005167392-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005167392-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005167392-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

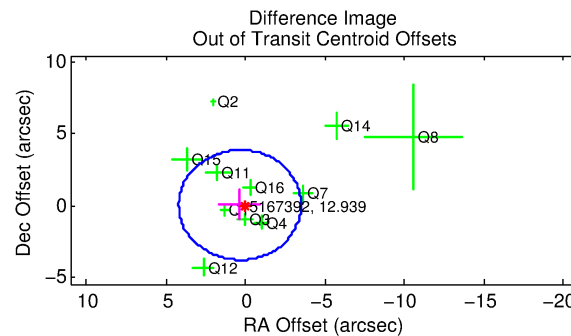
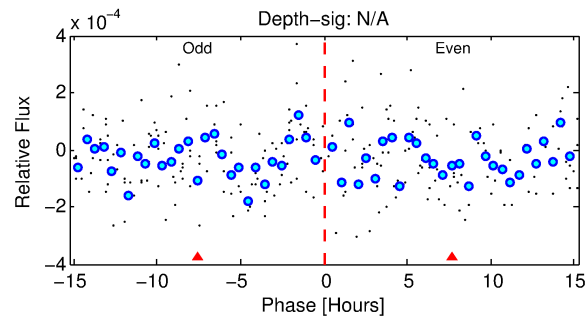
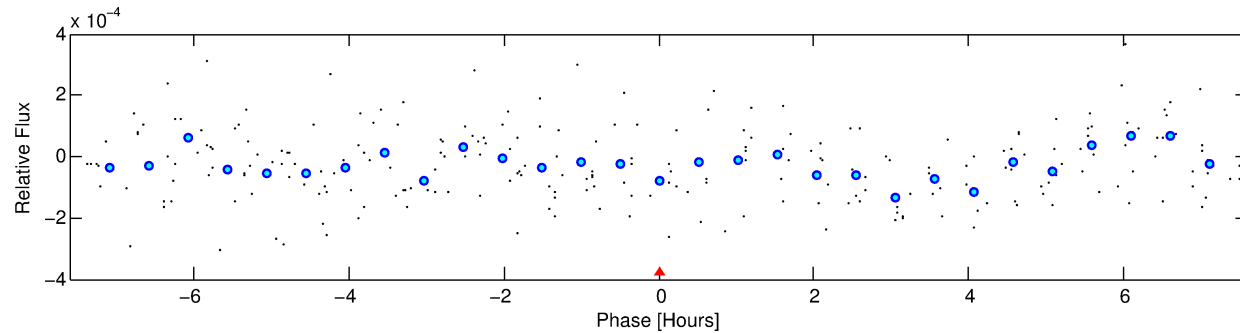
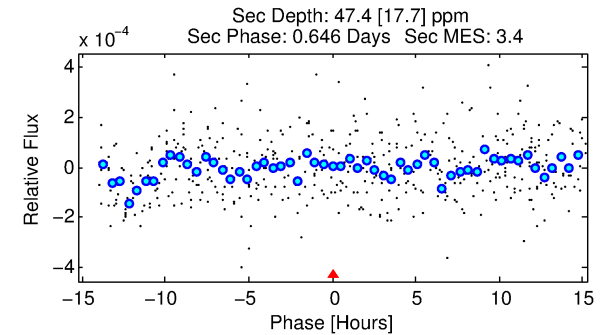
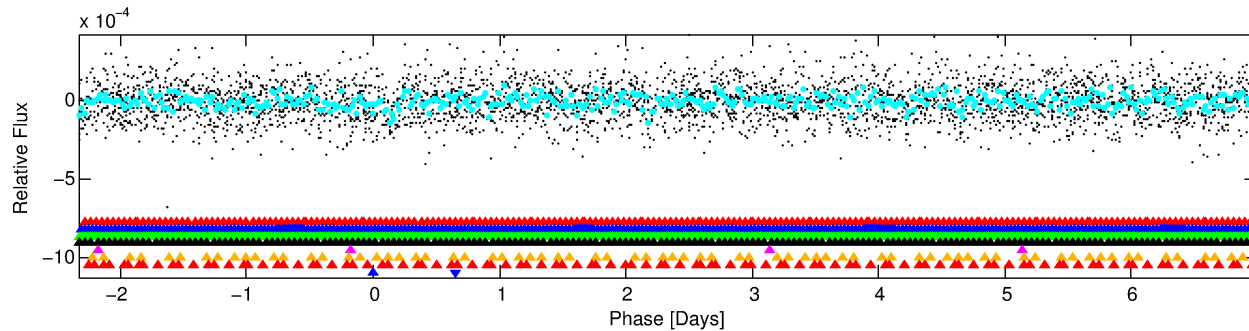
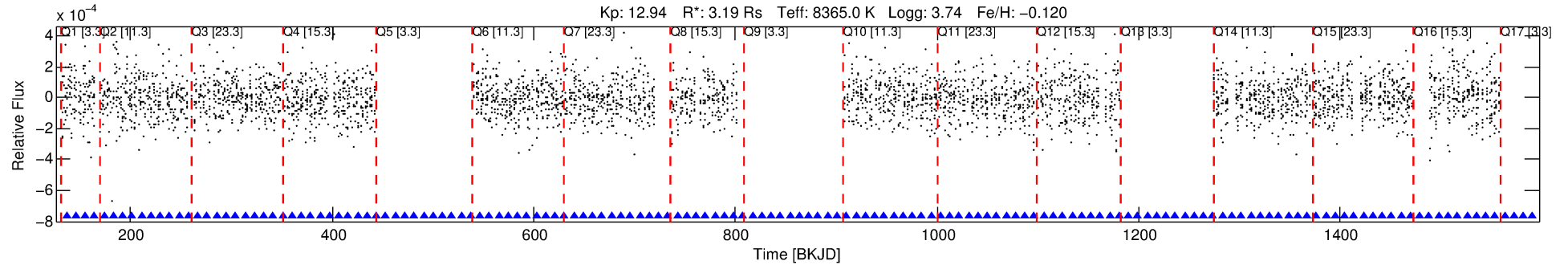
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005167392-08

No Significant Match Found

DV One-Page Summary

KIC: 5167392 Candidate: 8 of 8 Period: 9.322 d



TPS TCE Results:

Period = 9.32234 d
Epoch = 136.6725 BKJD

DV fit results are unavailable

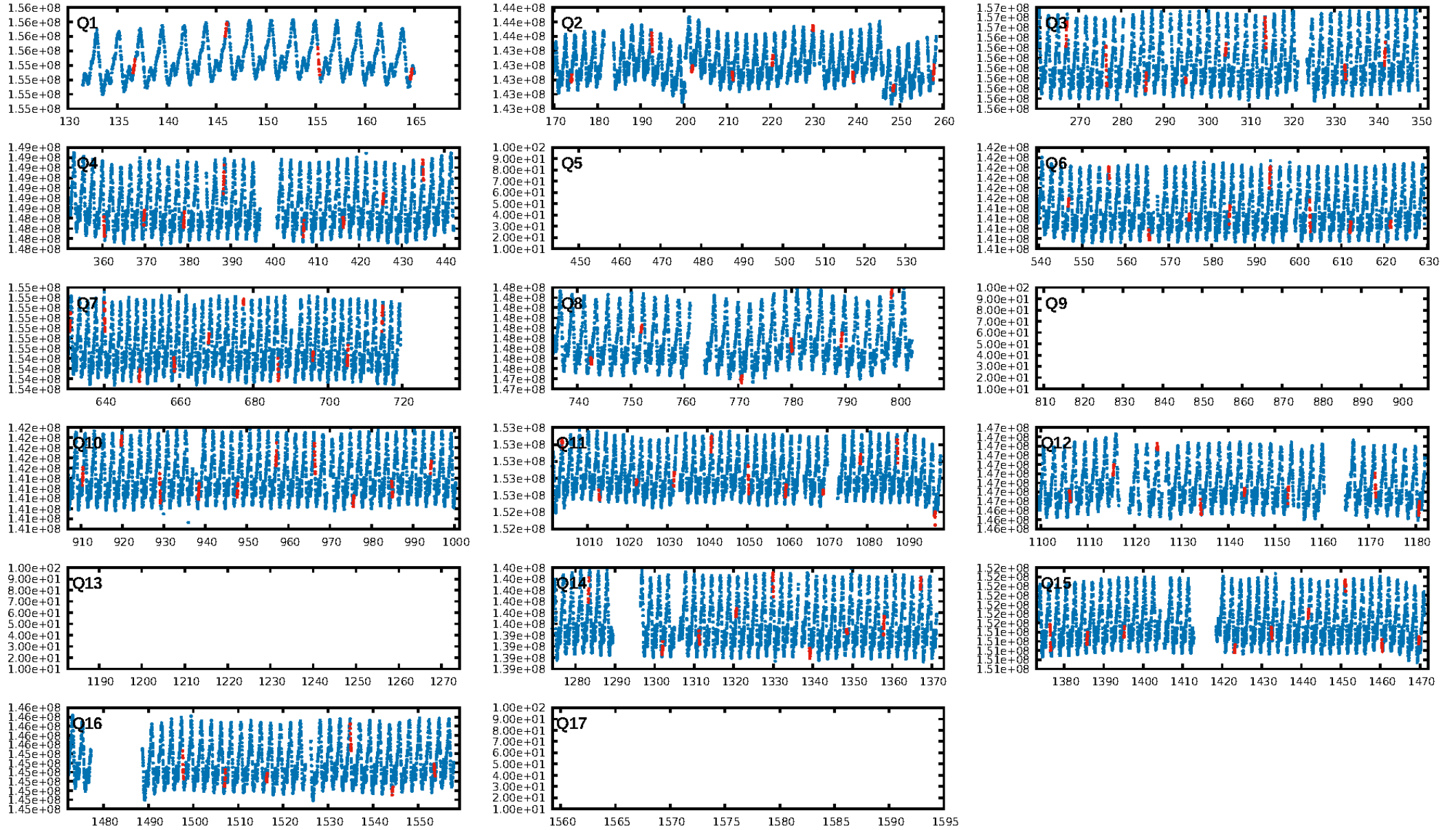
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.84σ]
LongPeriod-sig: 100.0% [38.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [14/14]
GhostDiagnostic-chr: -0.5422
Centroid-sig: 43.0%
Centroid-so: 0.014 arcsec [0.10σ]
OotOffset-rm: 0.330 arcsec [0.26σ]
KicOffset-rm: 0.409 arcsec [0.39σ]
OotOffset-st: 2/4/4/1 [11]
KicOffset-st: 2/4/4/1 [11]
DiffImageQuality-fgm: 0.18 [2/11]
DiffImageOverlap-fno: 0.00 [0/13]

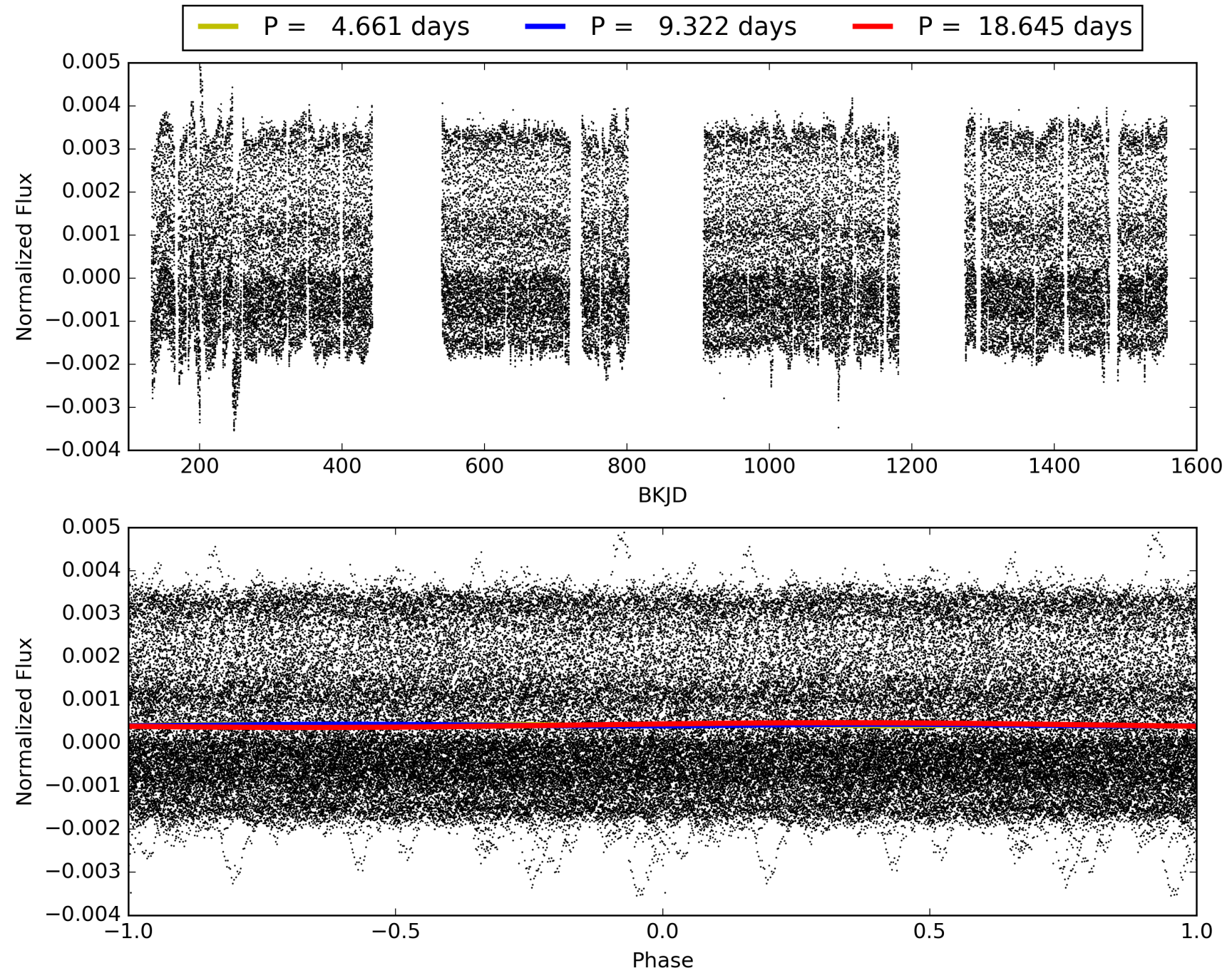
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:01:10 Z

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

TCE 005167392-08, PDC Light Curves

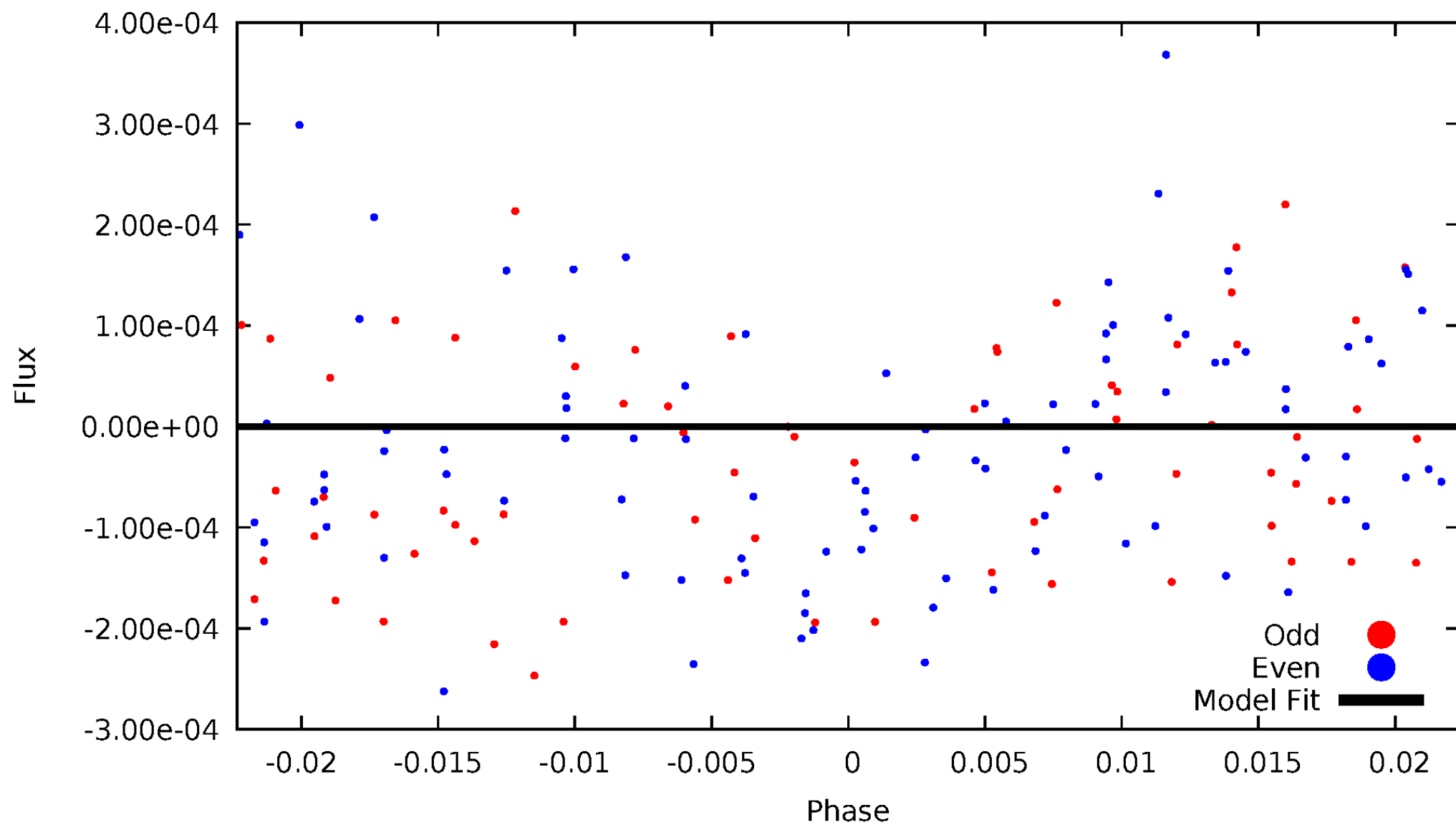


TCE 005167392-08



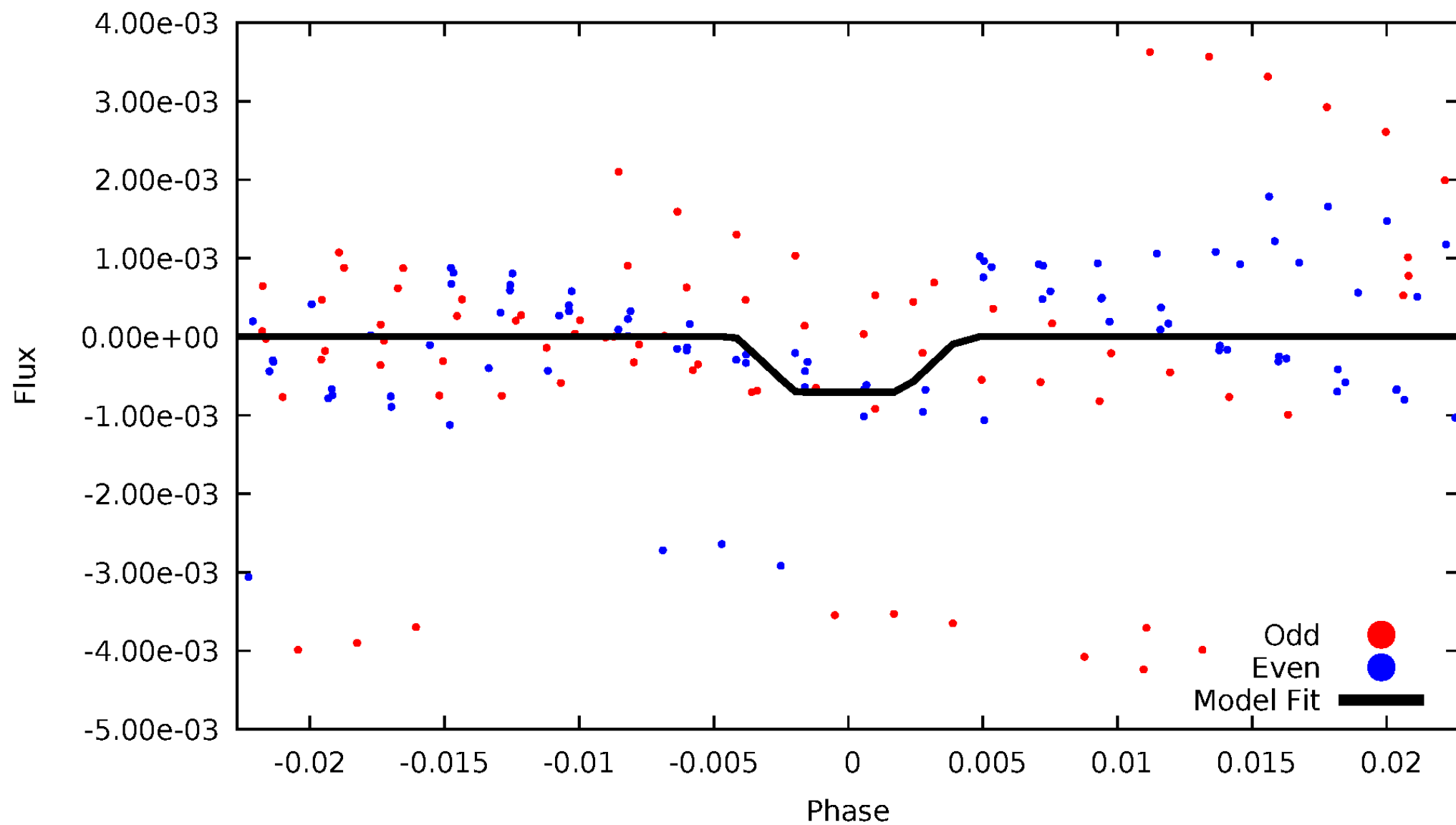
DV Odd/Even

TCE 005167392-08



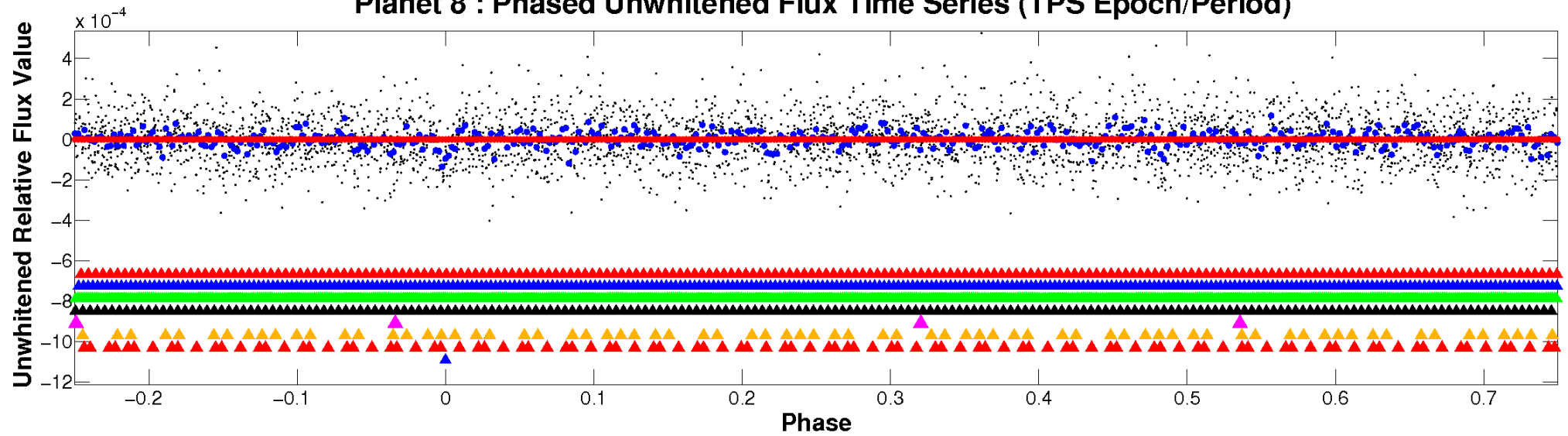
ALT Odd/Even

TCE 005167392-08

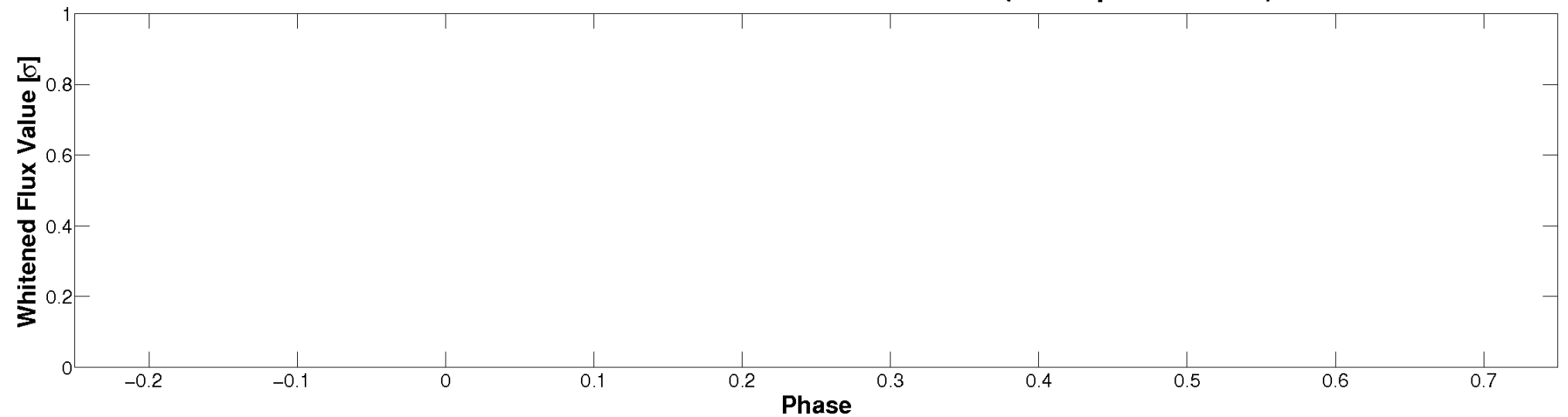


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

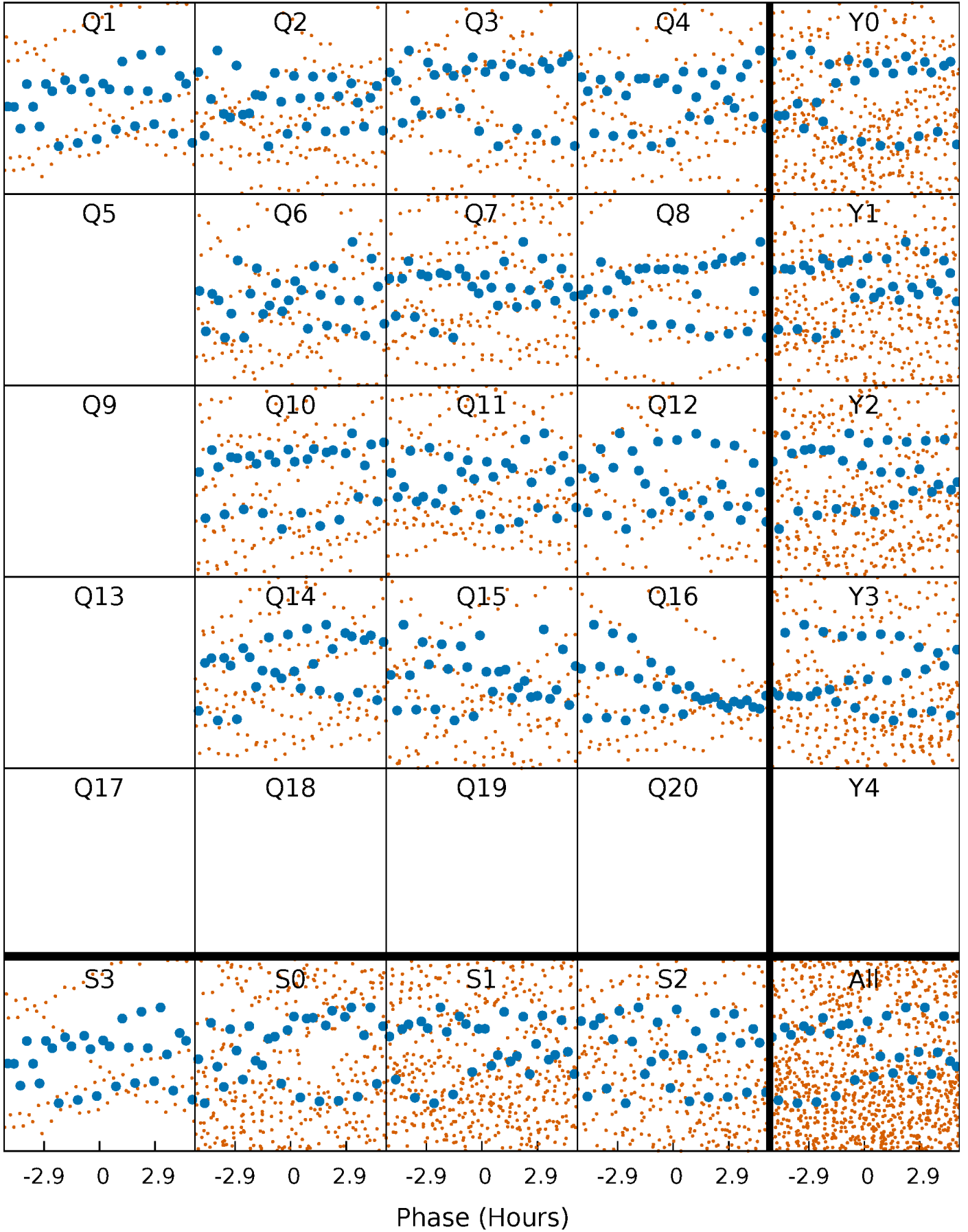


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



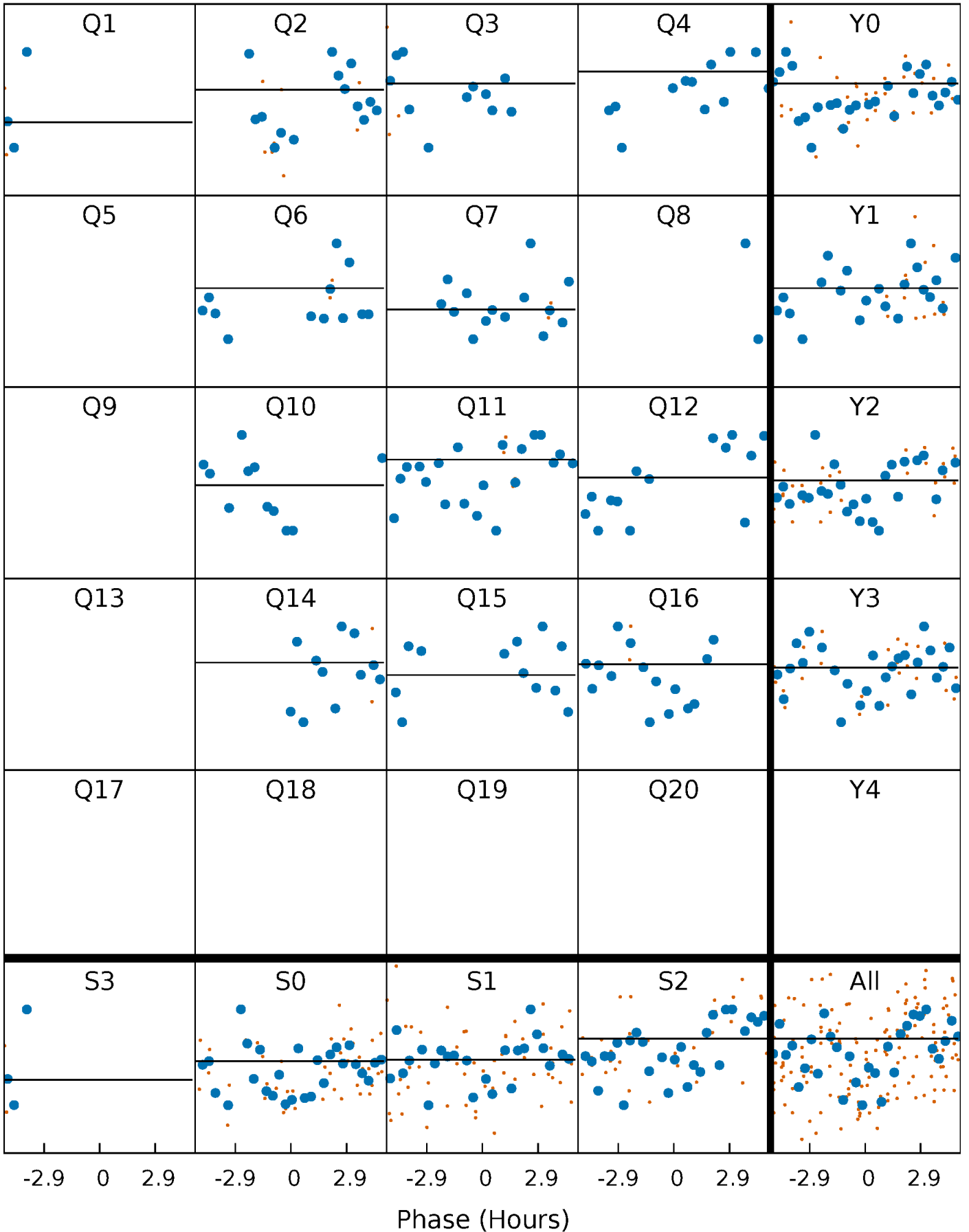
PDC Quarter-Phased Transit Curves

TCE 005167392-08 P= 9.322341 Days $T_0=136.672453$ (BKJD)



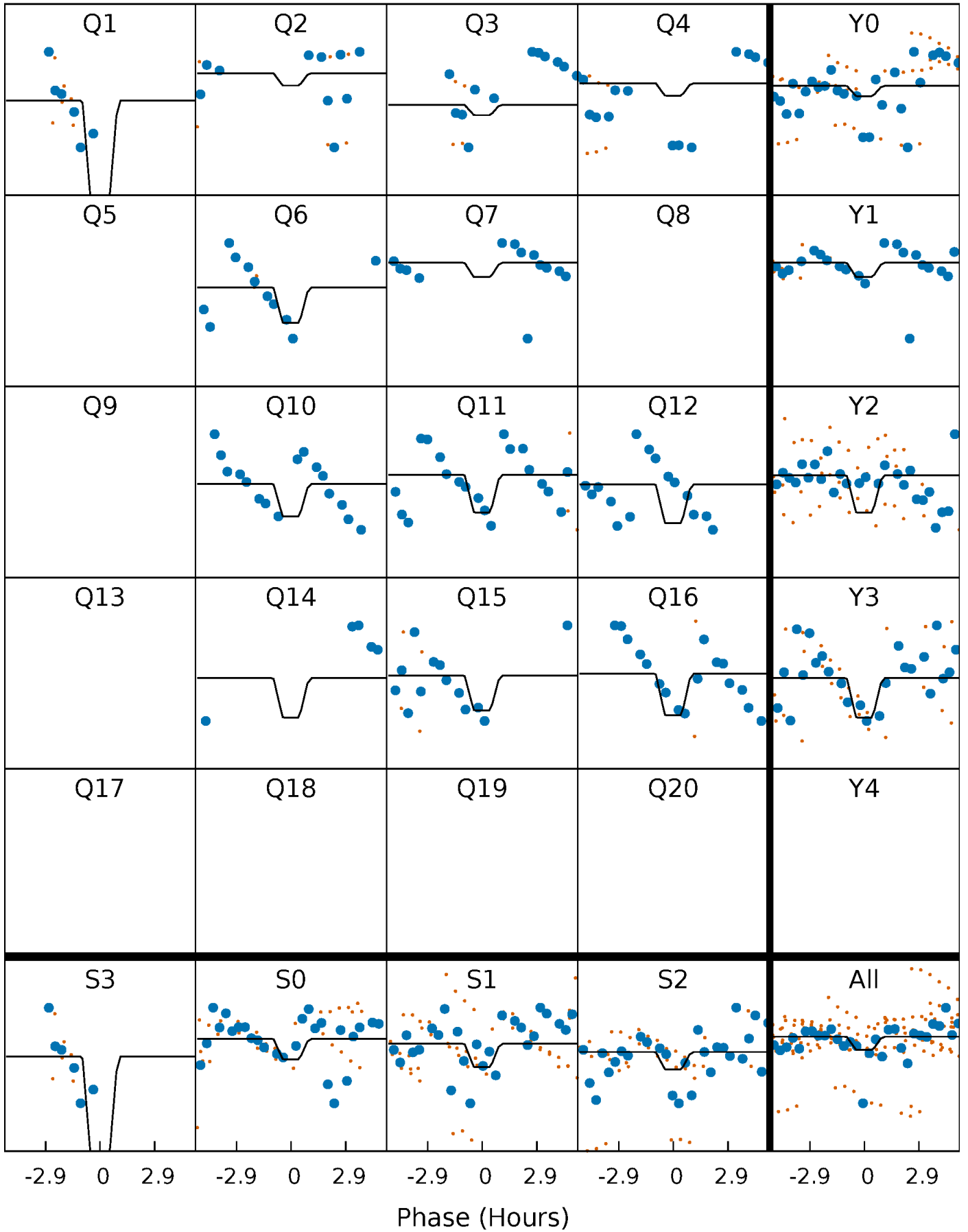
DV Quarter-Phased Transit Curves

TCE 005167392-08 $P = 9.322341$ Days $T_0 = 136.672453$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

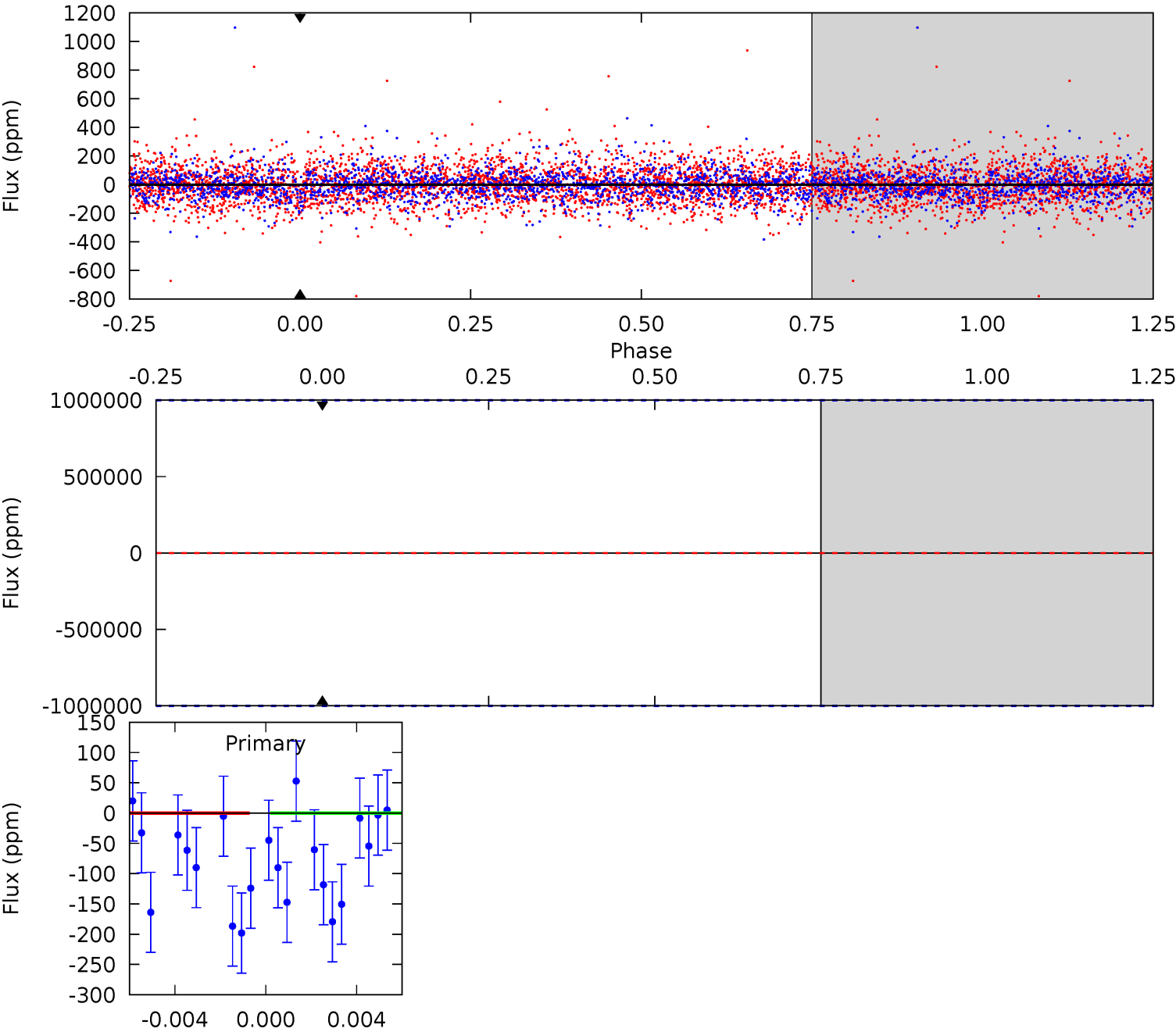
TCE 005167392-08 P= 9.322341 Days $T_0=136.529199$ (BKJD)



DV Model-Shift Uniqueness Test

005167392-08, P = 9.322341 Days, E = 127.350112 Days

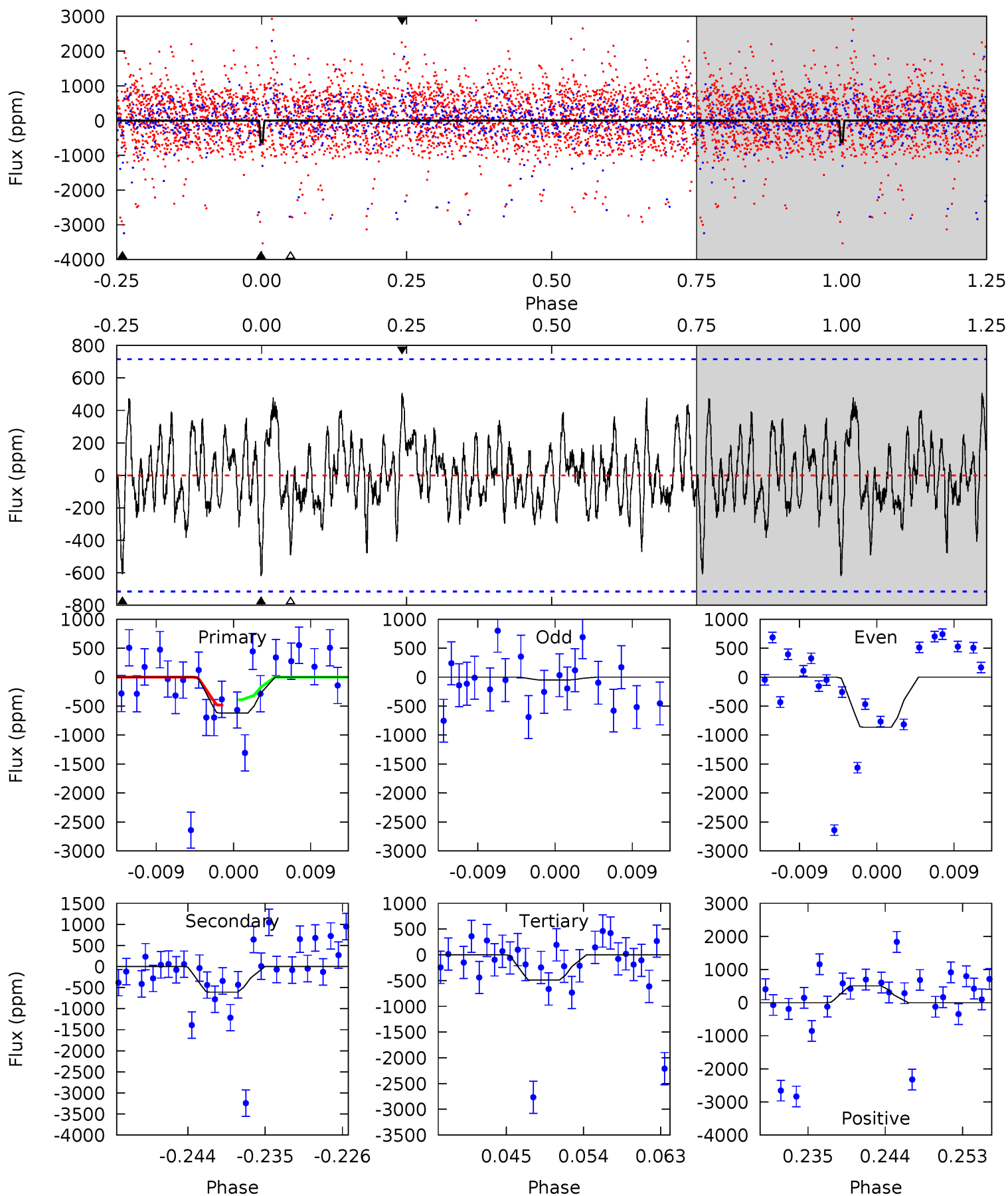
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005167392-08, P = 9.322341 Days, E = 127.206858 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.36	4.29	3.46	3.57	5.05	2.61	1.23	0.90	0.79	0.83	0.72	2.76	1.04	0.45	0



Stellar Parameters For KIC 005167392

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8365^{+202}_{-376}	$3.740^{+0.420}_{-0.140}$	$-0.120^{+0.300}_{-0.400}$	$3.188^{+0.952}_{-1.429}$	$2.039^{+0.428}_{-0.471}$	$0.089^{+0.320}_{-0.038}$
	+2%/-4%	+11%/-4%	+250%/-333%	+30%/-45%	+21%/-23%	+361%/-43%
Source	KIC0	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 005167392-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$23.08^{+27.74}_{-16.86}$	2689^{+218}_{-324}	-3526^{+63928}_{-46592}	$-1.802^{+2898.990}_{-2090.944}$
Alt.	-608 ± 142	$24.62^{+28.73}_{-16.48}$	2695^{+222}_{-345}	4521^{+3415}_{-1097}	$6.332^{+50.492}_{-4.985}$

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 $A_{obs} \gg 1.0$

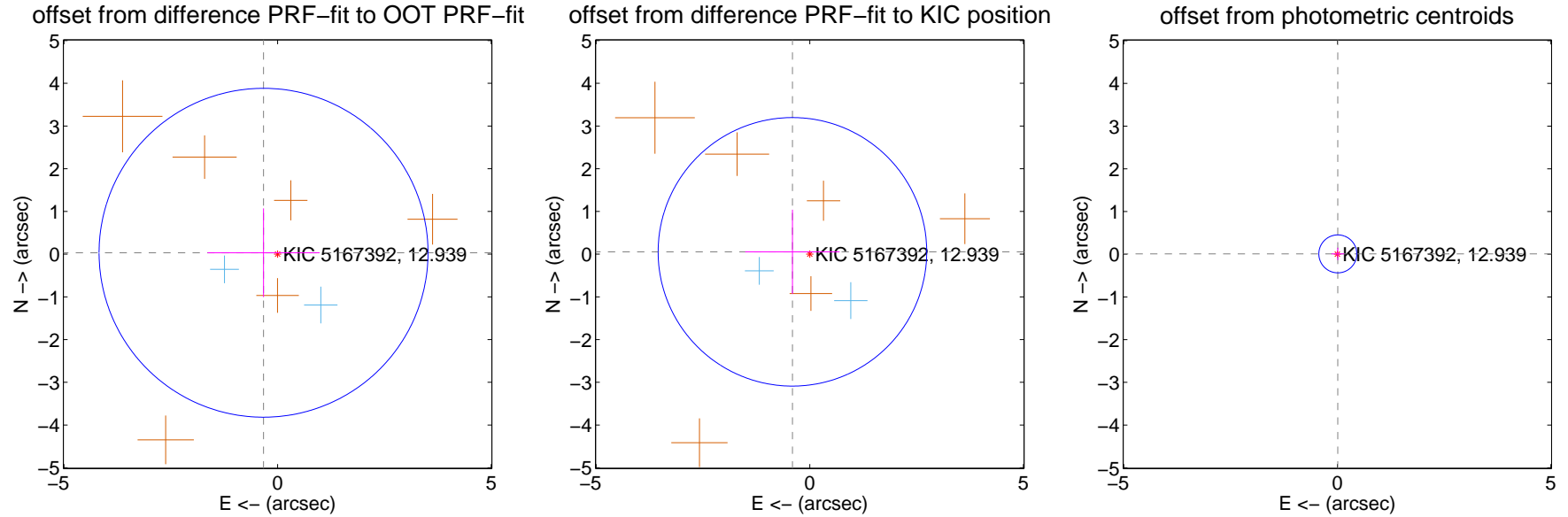
DV Centroid Data

Supplemental centroid analysis for 005167392-08. Kepler magnitude: 12.94. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

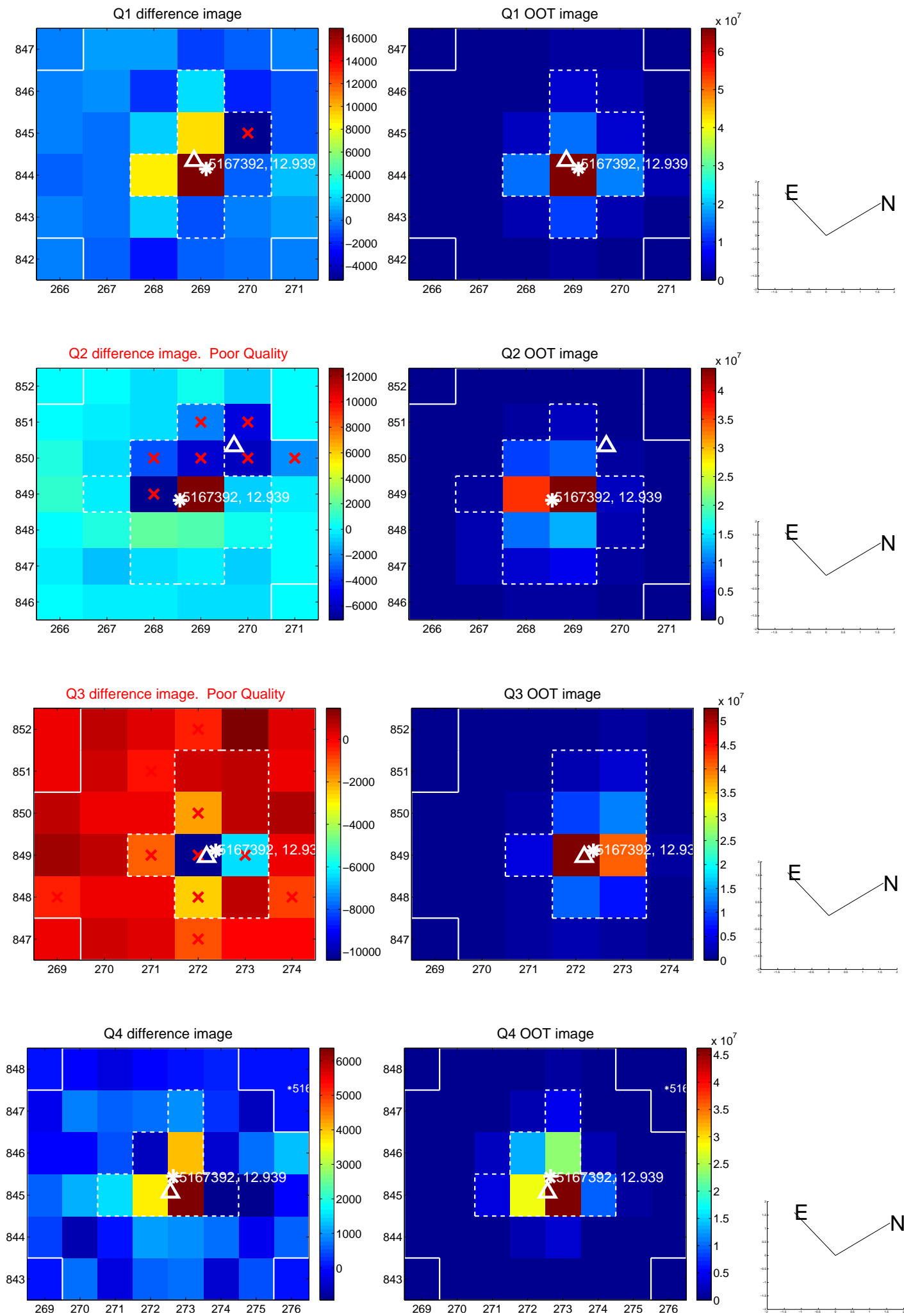
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.330 ± 1.283	0.26	0.328 ± 1.311	0.033 ± 1.038
PRF-fit source offset from KIC position	0.409 ± 1.048	0.39	0.405 ± 1.104	0.054 ± 0.986
photometric centroid source offset	0.01 ± 0.15	0.10	-0.01 ± 0.15	0.01 ± 0.15

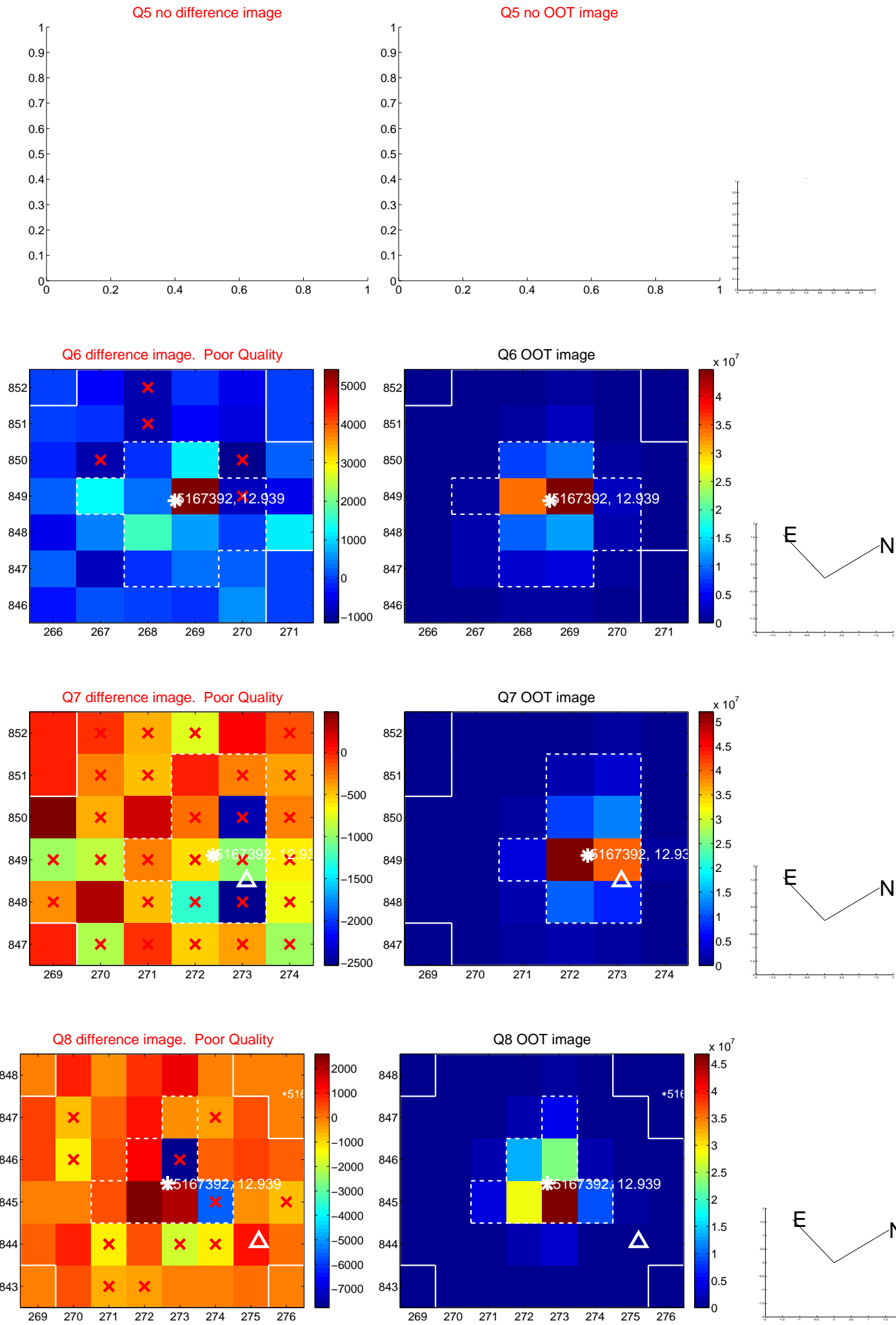


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

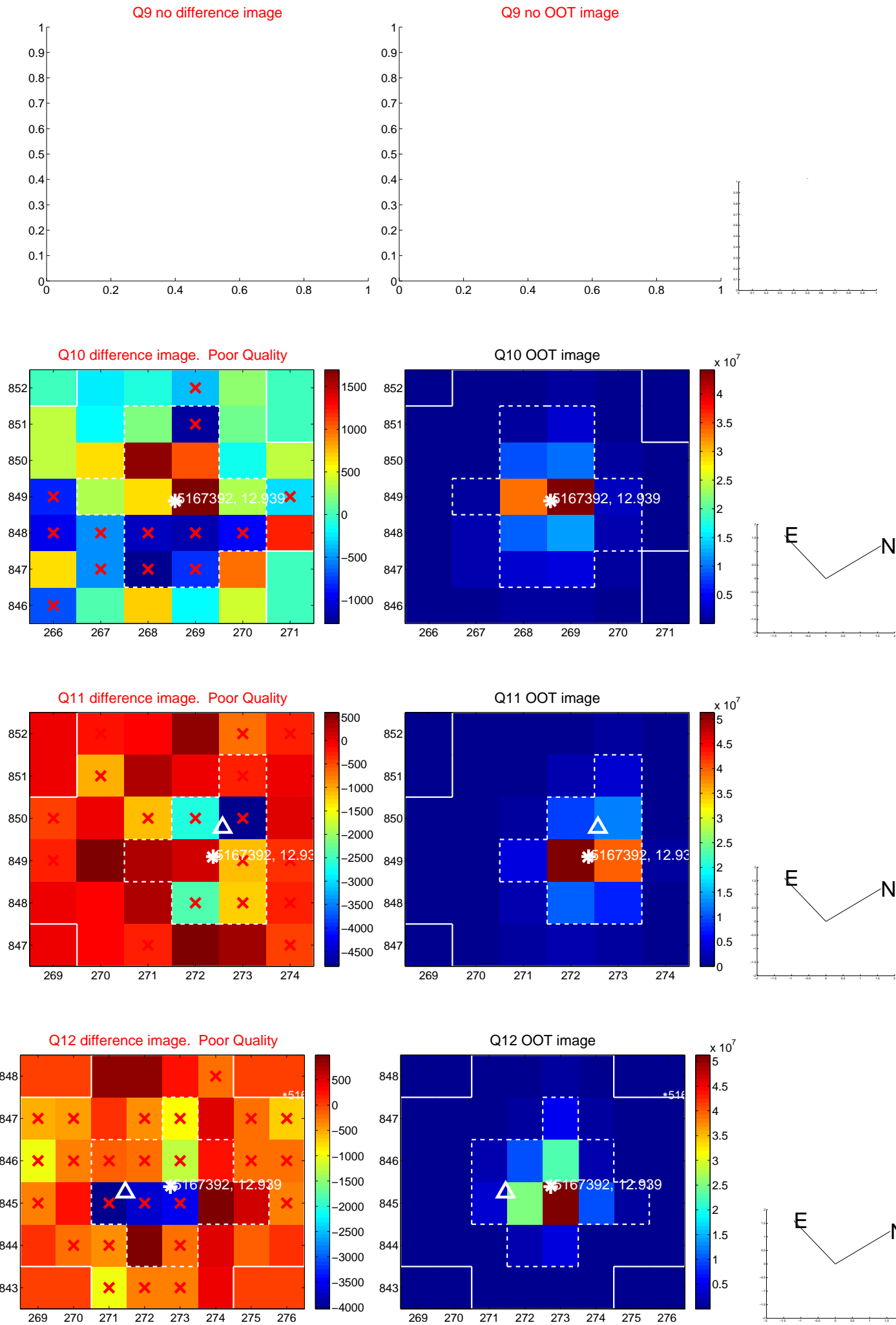
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



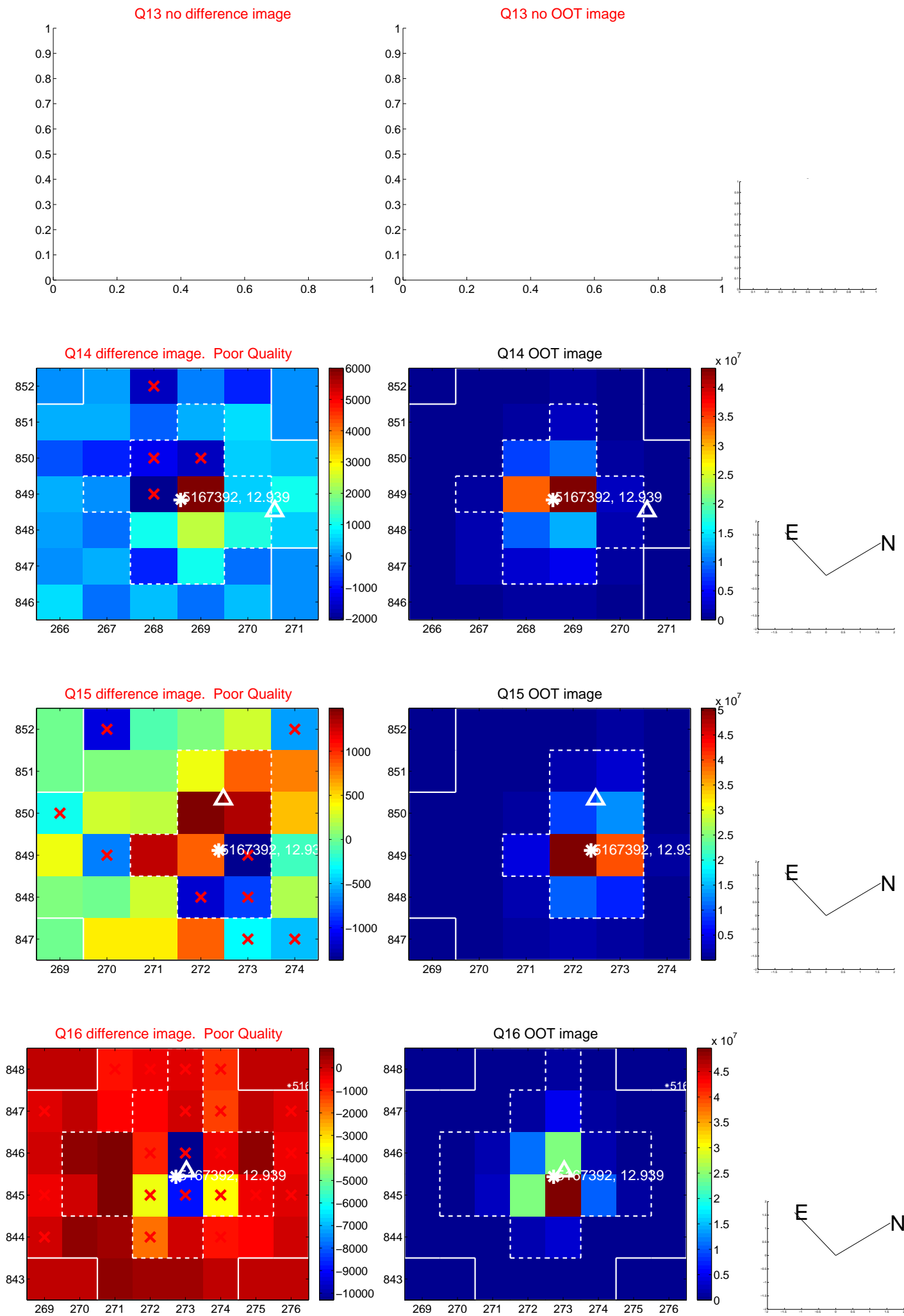
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



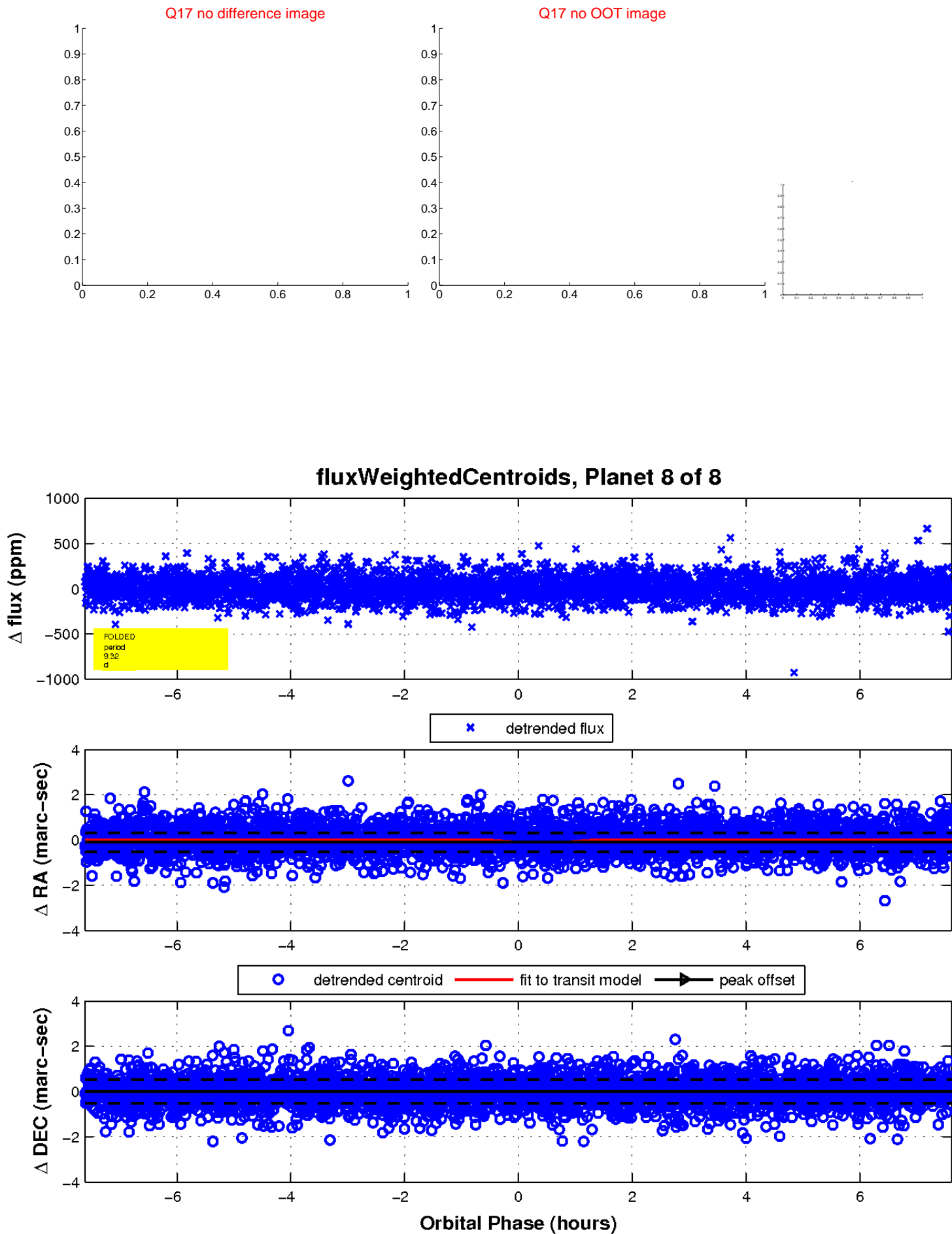
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

