

KIC 010422241

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})
010422241-01	OBS	No	2.436951	131.628332	62.9	1.279	8.4	10.2	1.92	8037	1.55	7343.27
010422241-02	OBS	No	0.812181	132.326211	8.9	6.161	10.5	4.7	1.92	8037	0.58	31779.58
010422241-03	OBS	No	3.904990	133.754399	229.8	0.573	17.7	12.3	1.92	8037	3.19	3916.14
010422241-04	OBS	No	5.543769	135.446954	405.9	0.555	13.0	18.6	1.92	8037	4.27	2454.40
010422241-05	OBS	No	7.231381	132.095055	298.8	1.342	9.3	15.5	1.92	8037	3.41	1722.09
010422241-06	OBS	No	3.467242	131.770191	201.4	0.836	13.2	10.4	1.92	8037	2.98	4588.87
010422241-07	OBS	No	10.282993	138.707871	899.7	1.500	12.7	-1.0	1.92	8037	5.85	1076.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010422241-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010422241-02	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
010422241-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

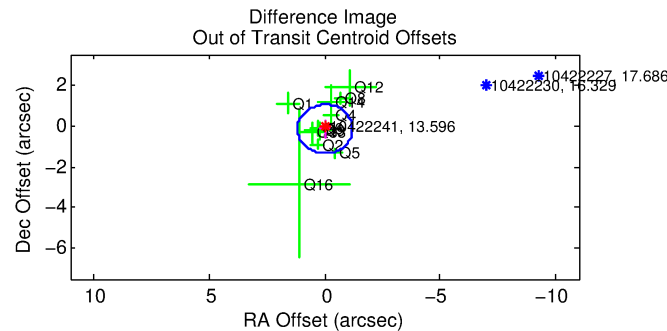
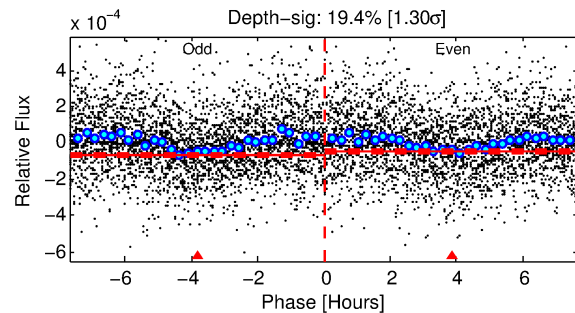
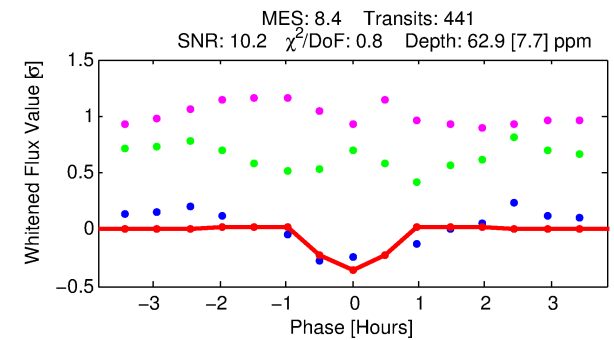
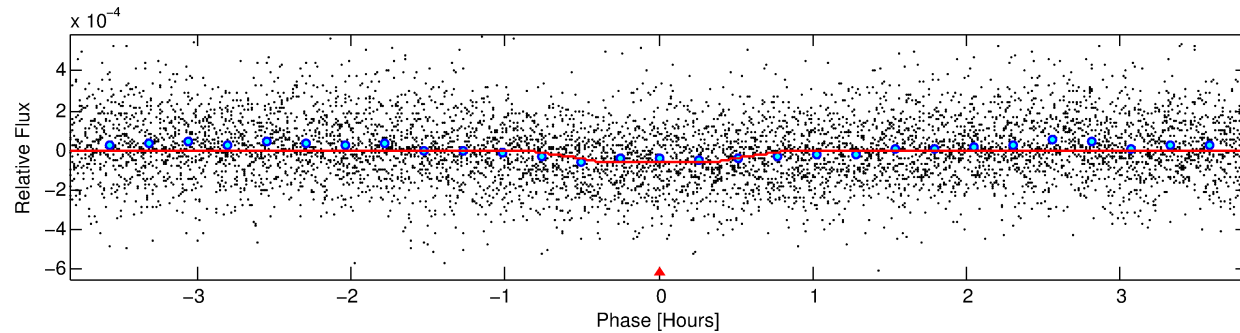
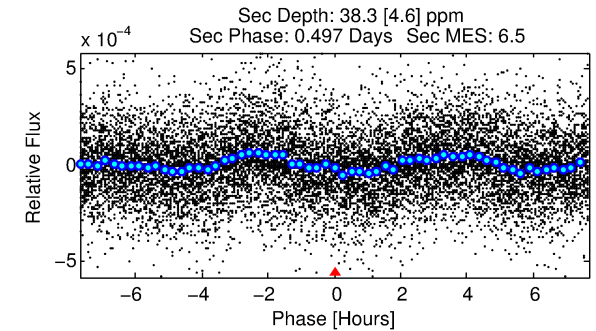
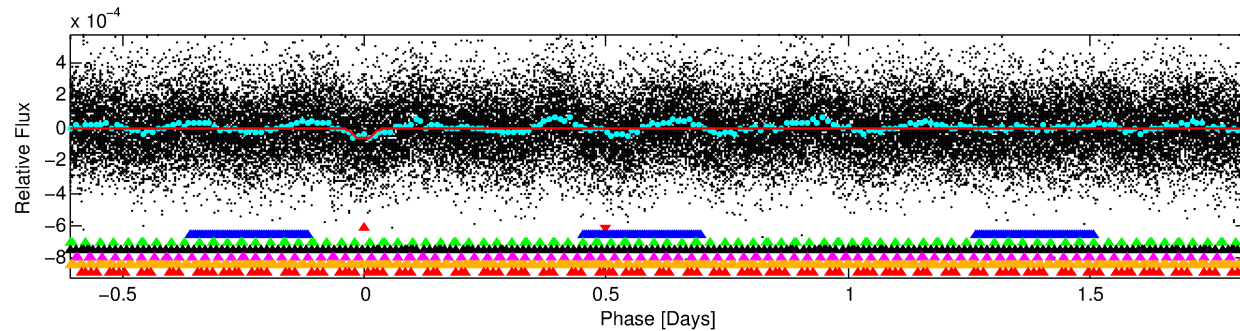
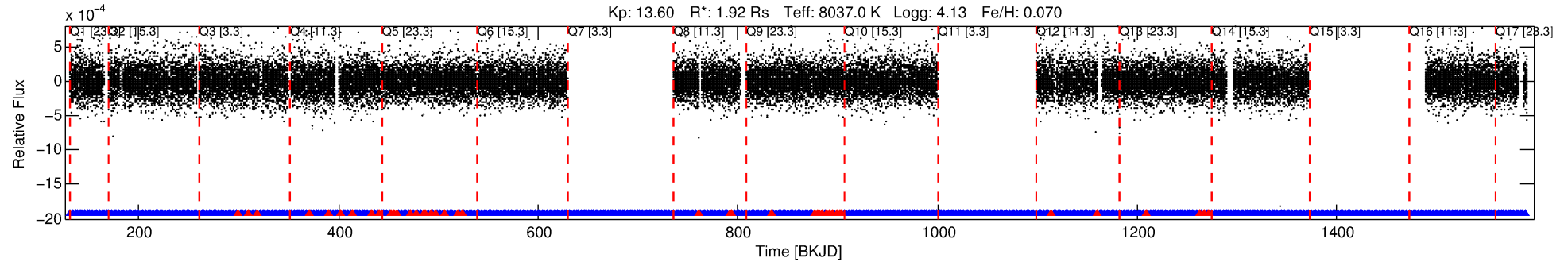
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010422241-01

No Significant Match Found

DV One-Page Summary

KIC: 10422241 Candidate: 1 of 7 Period: 2.437 d



DV Fit Results:

Period = 2.43695 [0.00001] d
Epoch = 131.6283 [0.0022] BKJD
Rp/R* = 0.0074 [0.0103]
a/R* = 14.55 [121.25]
b = 0.13 [63.45]
Seff = 7343.27 [2577.05]
Teq = 2360 [207] K
Rp = 1.55 [2.20] Re
a = 0.0433 [0.0093] AU
Ag = 16.42 [46.18] [0.33σ]
Teffp = 7347 [5142] K [0.97σ]

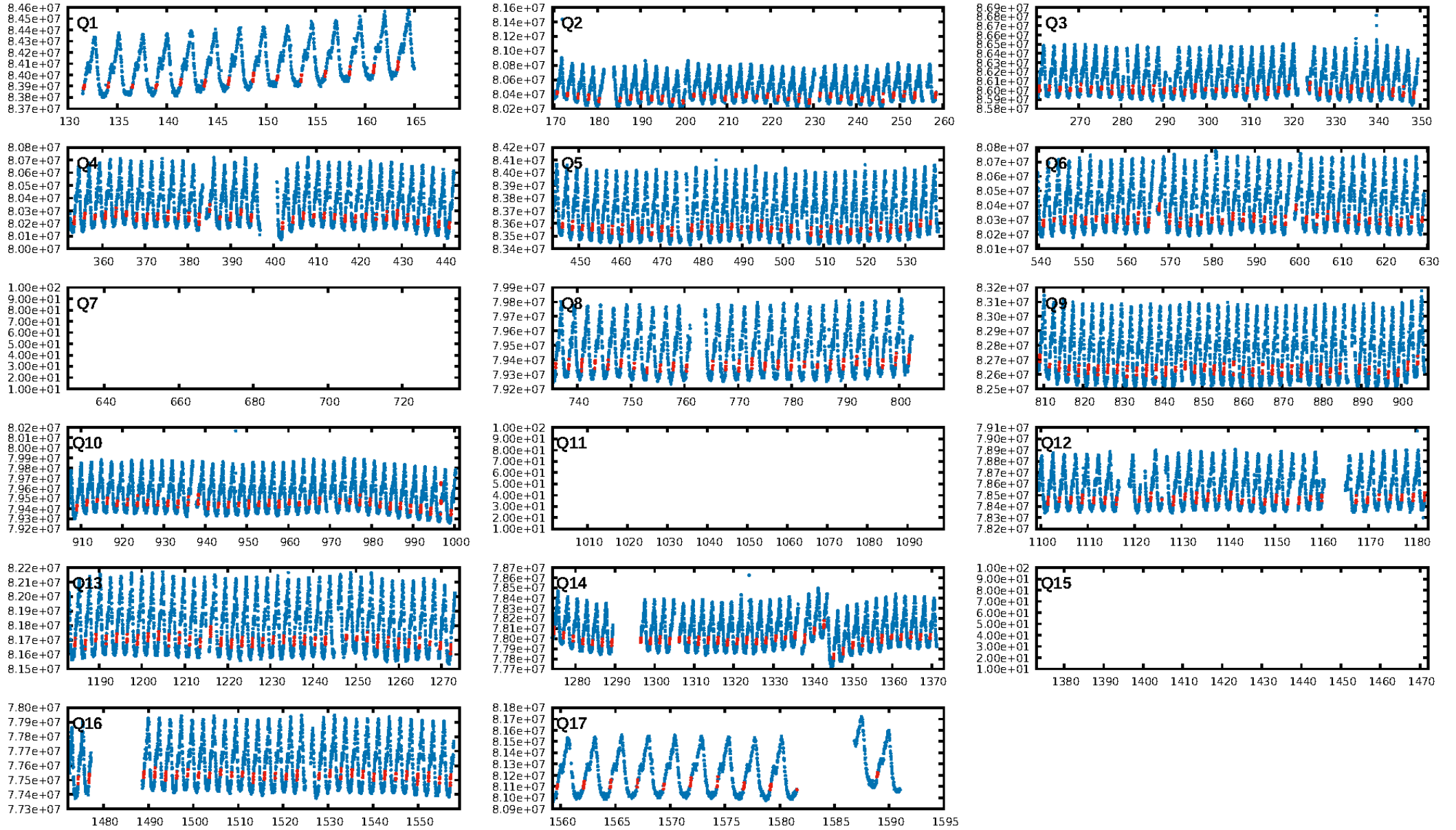
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.20σ]
LongPeriod-sig: 100.0% [16.18σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.90 [375/416]
GhostDiagnostic-chr: 0.8952
Centroid-sig: 12.0%
Centroid-so: 1.242 arcsec [0.96σ]
OotOffset-rm: 0.153 arcsec [0.39σ]
OotOffset-st: 3/1/4/4 [12]
KicOffset-rm: 0.340 arcsec [0.97σ]
KicOffset-st: 3/1/4/4 [12]
DiffImageQuality-fgm: 0.83 [10/12]
DiffImageOverlap-fno: 0.14 [2/14]

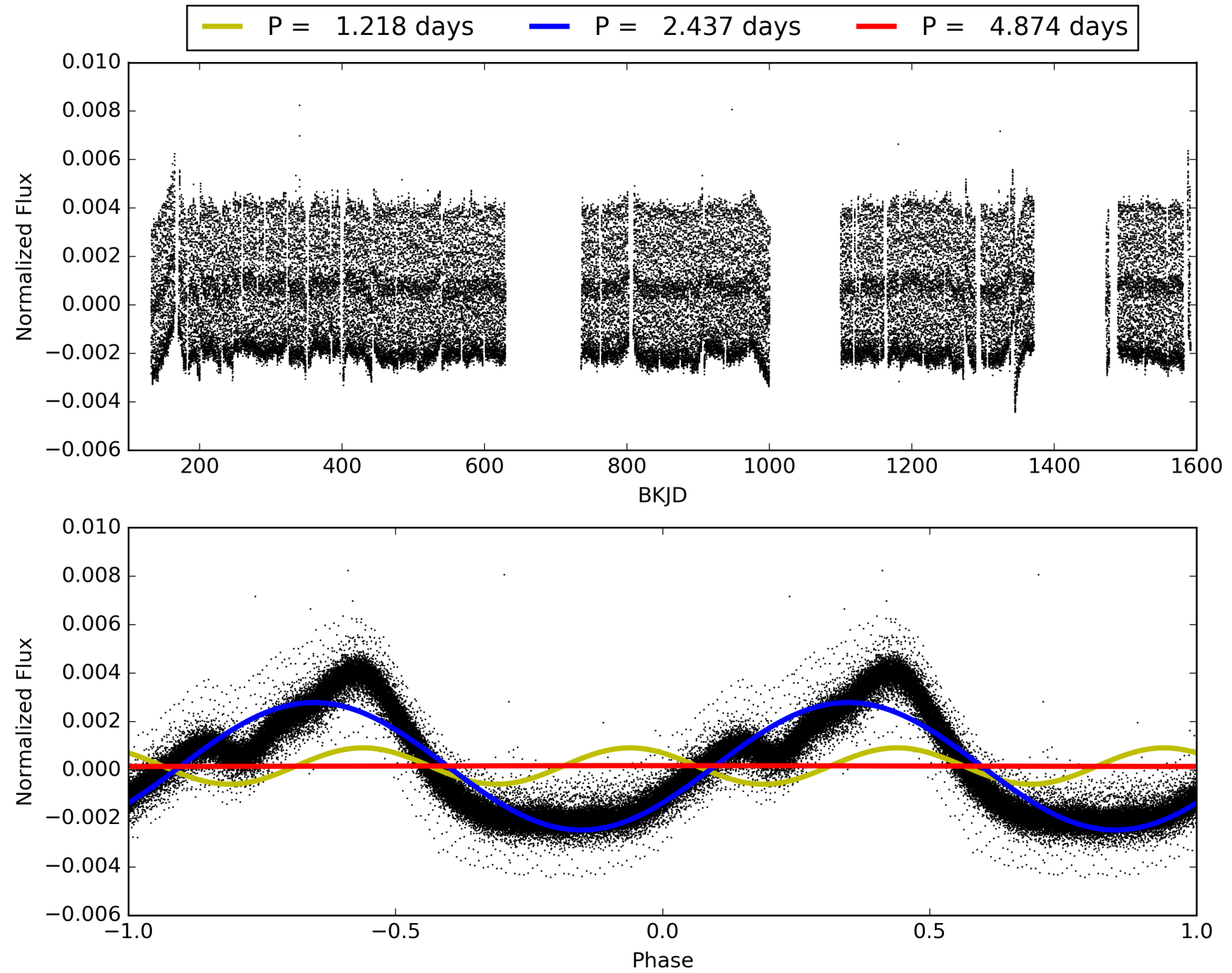
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:35:38 Z

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

TCE 010422241-01, PDC Light Curves

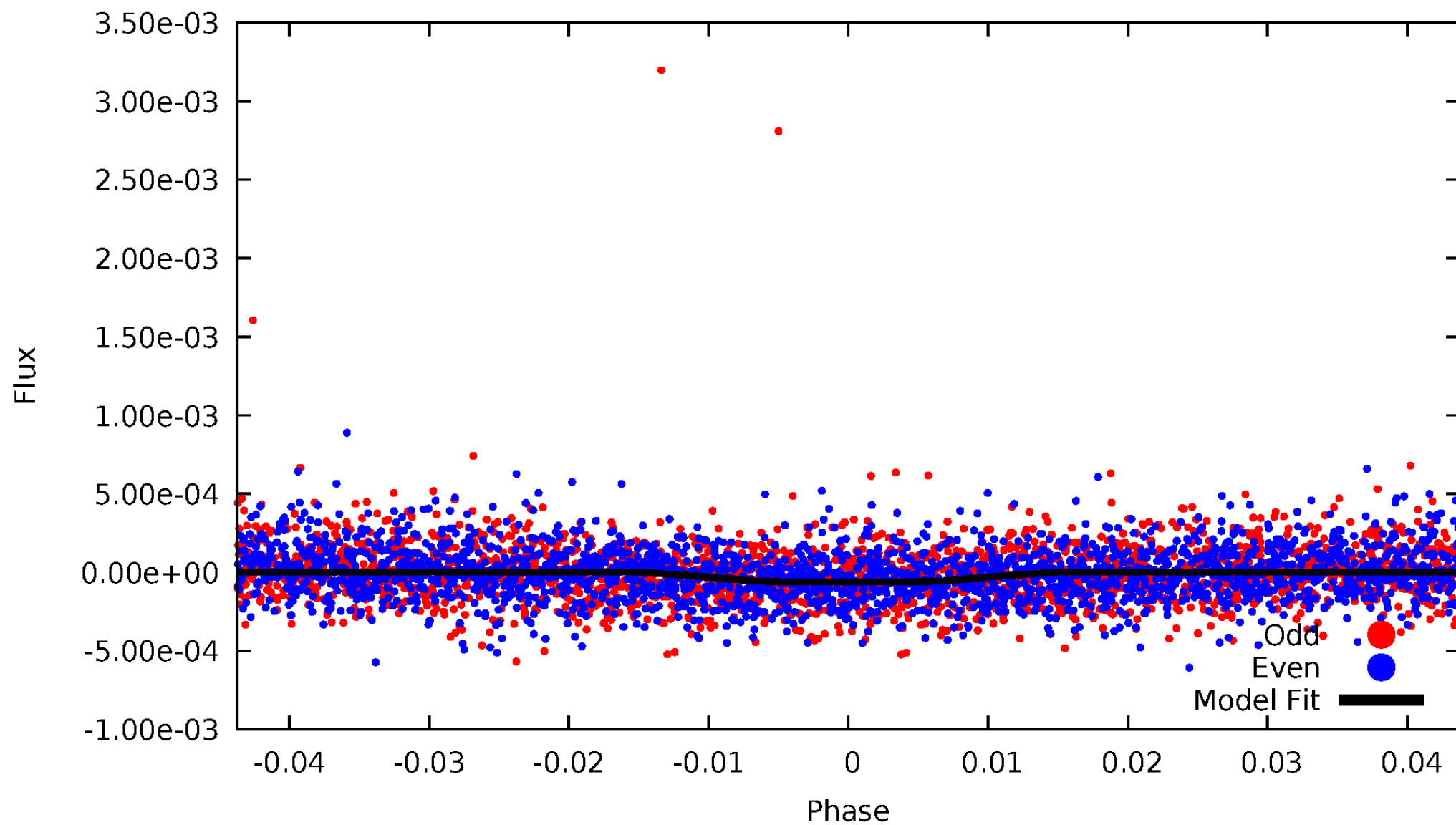


TCE 010422241-01



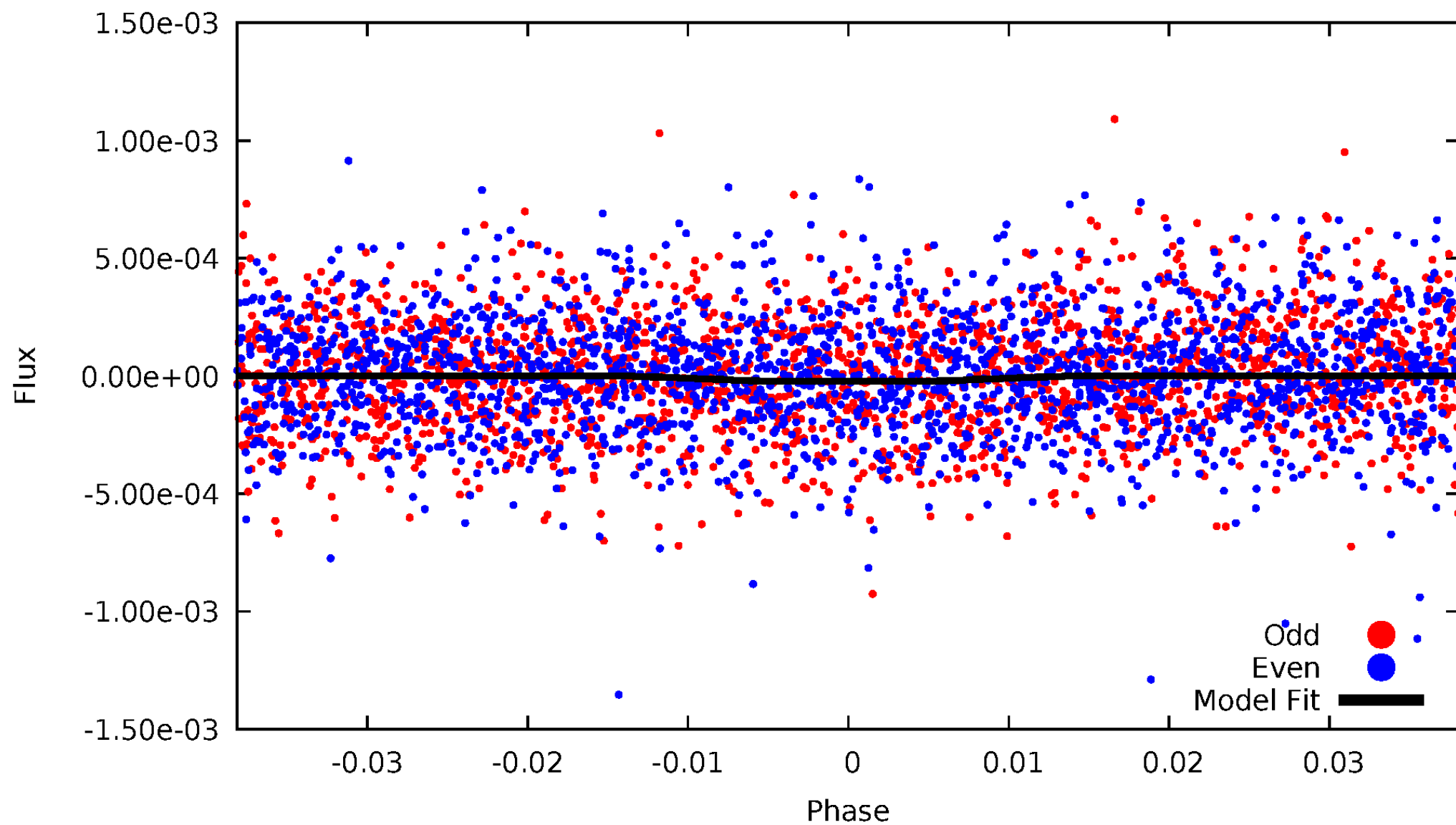
DV Odd/Even

TCE 010422241-01

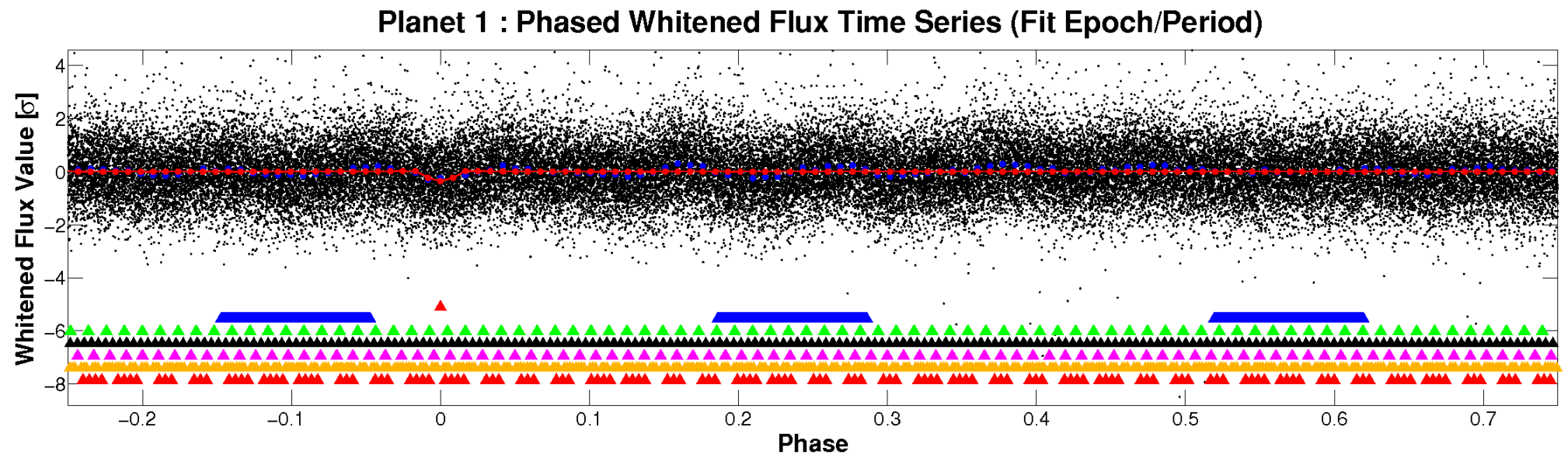
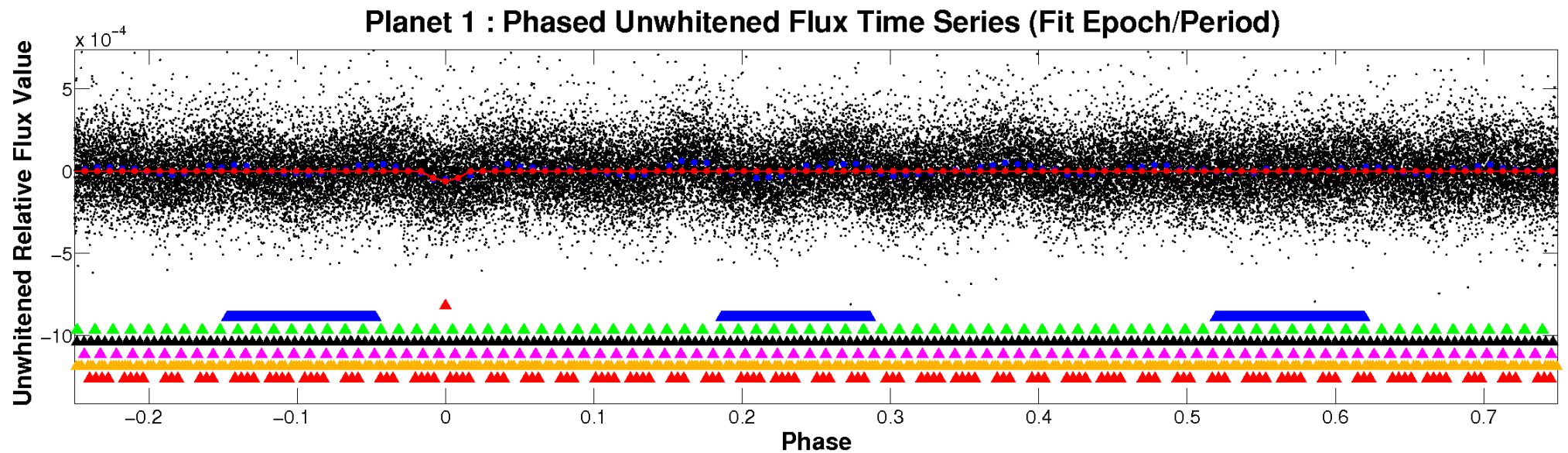


ALT Odd/Even

TCE 010422241-01

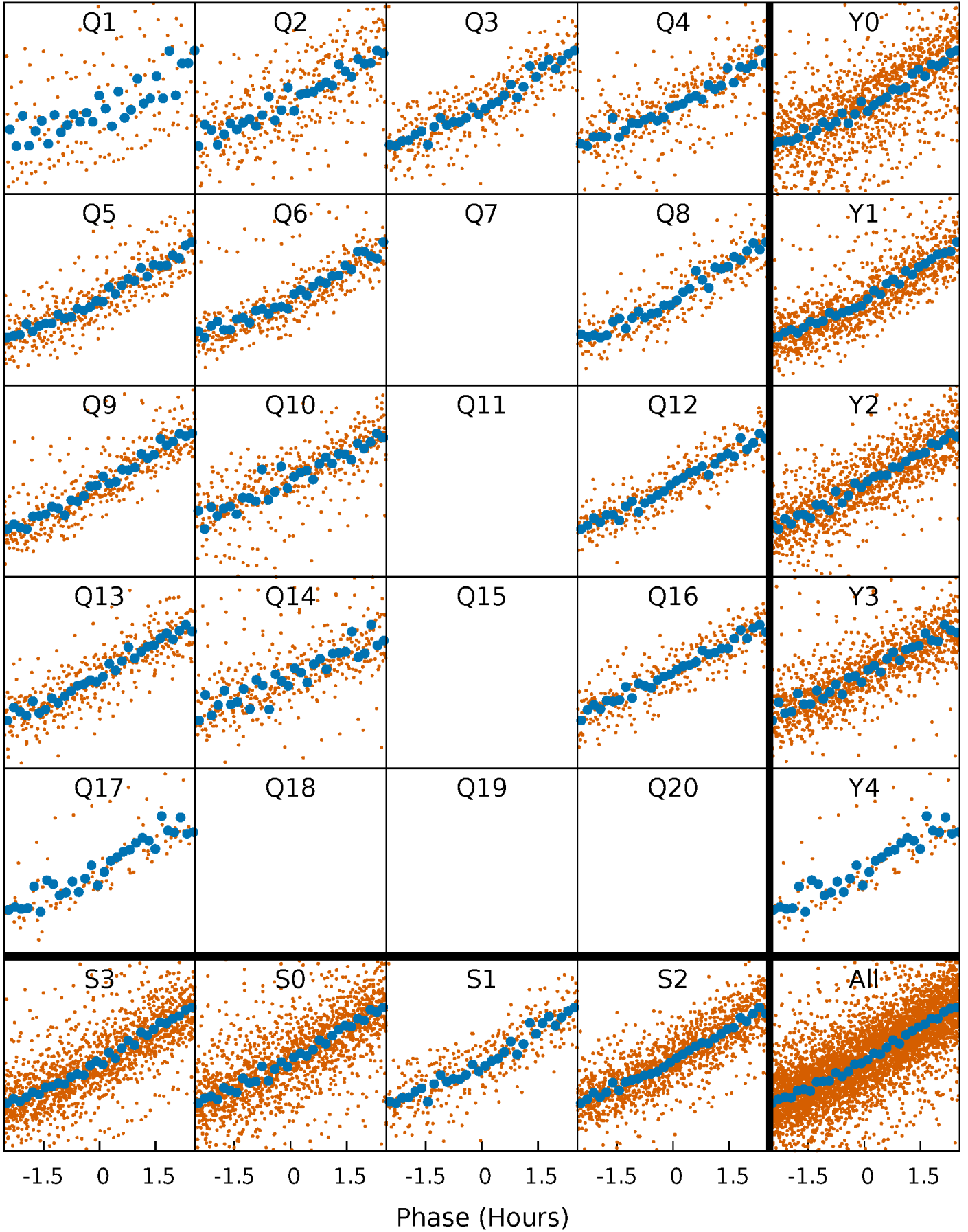


Non-Whitened Vs. Whitened Light Curve



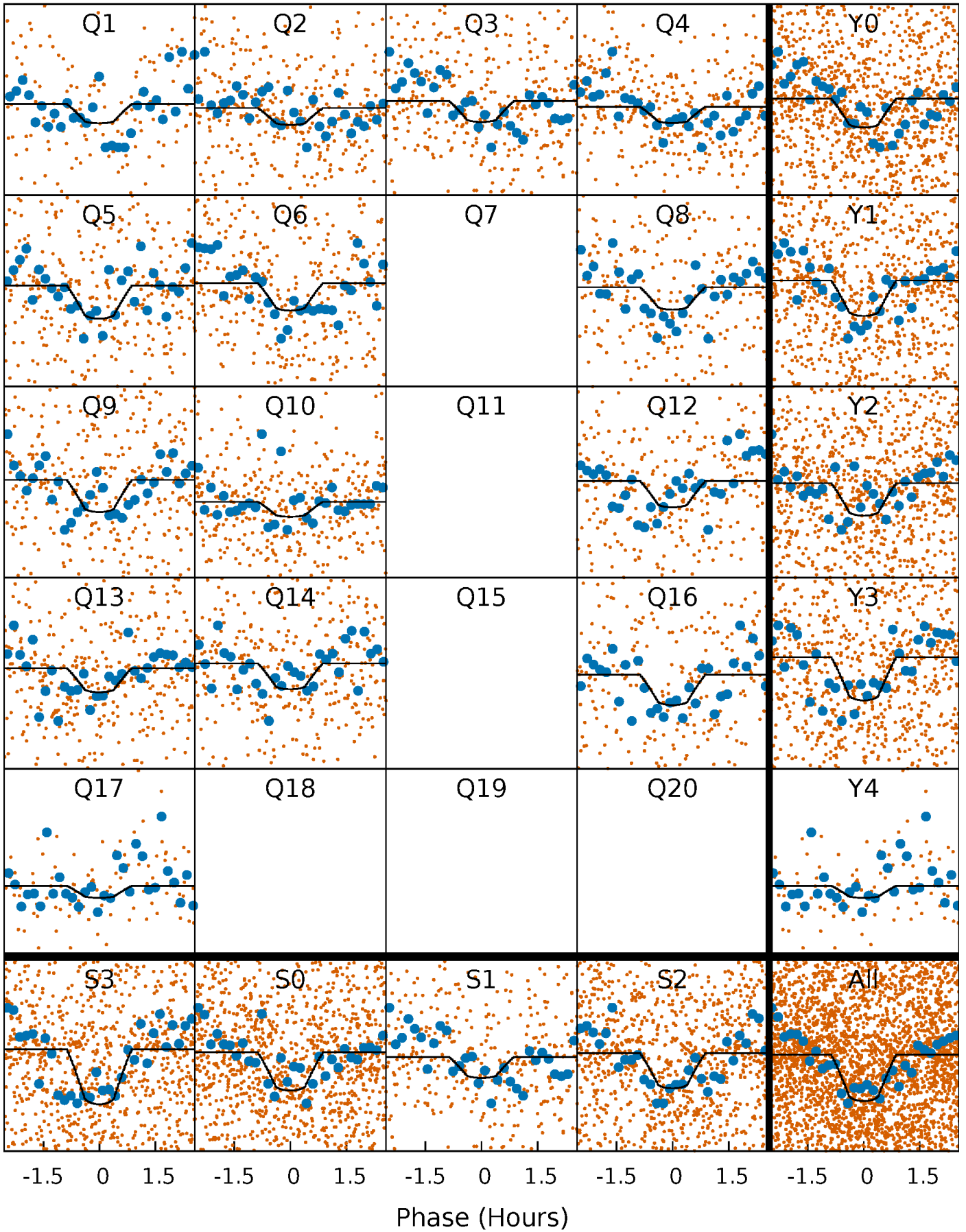
PDC Quarter-Phased Transit Curves

TCE 010422241-01 P= 2.436951 Days $T_0=131.628332$ (BKJD)



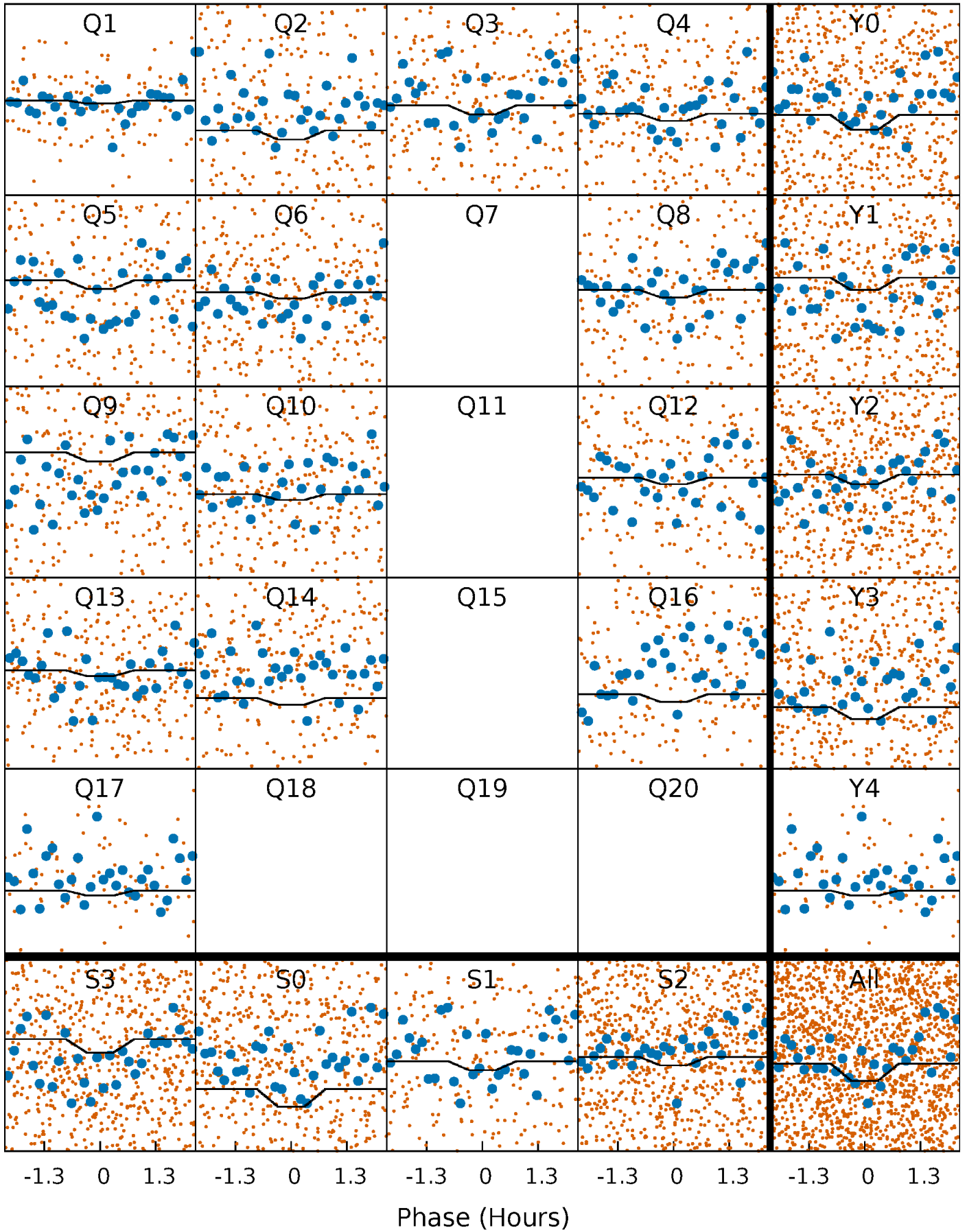
DV Quarter-Phased Transit Curves

TCE 010422241-01 P= 2.436951 Days $T_0=131.628332$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

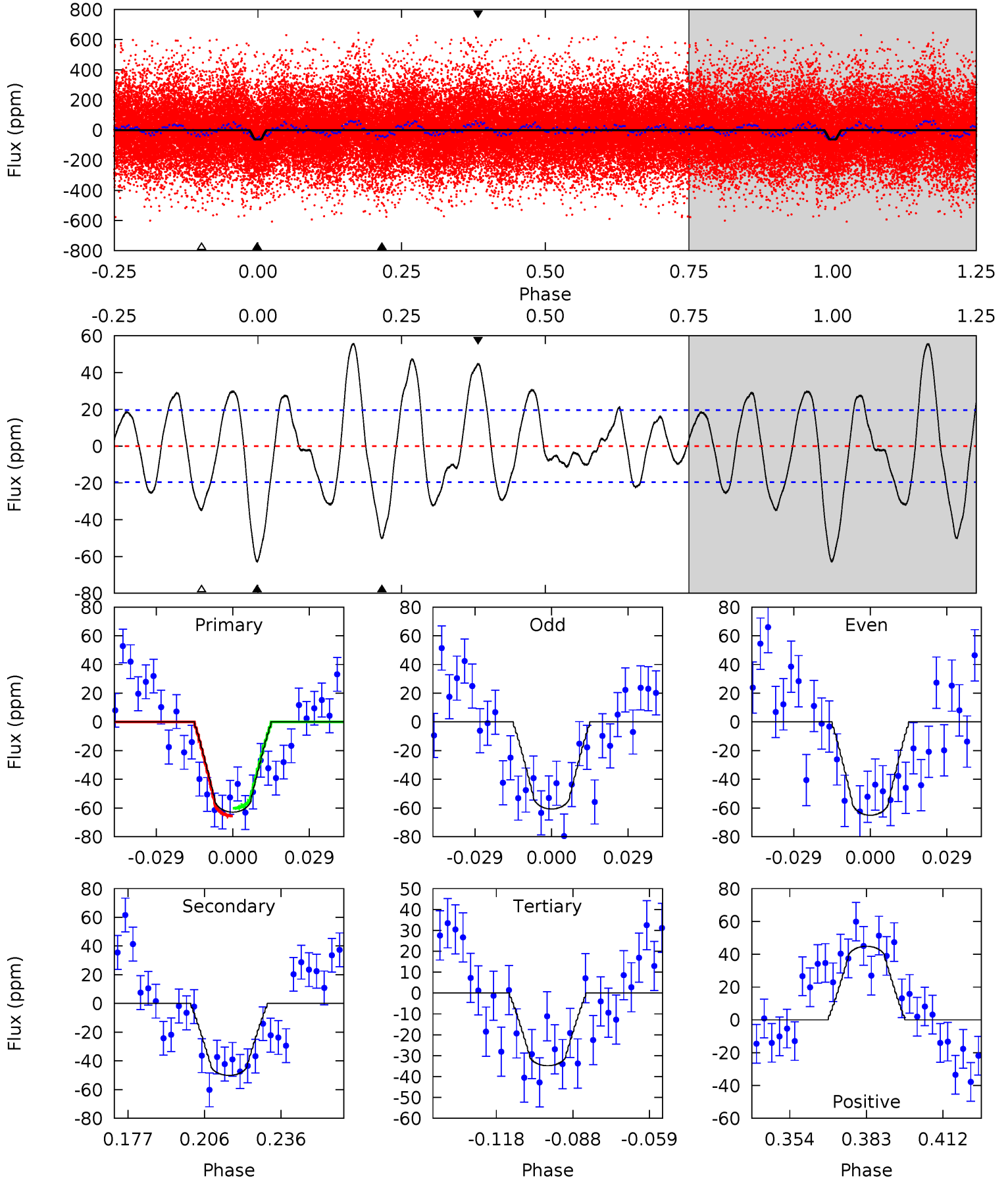
TCE 010422241-01 P= 2.436866 Days $T_0=131.626509$ (BKJD)



DV Model-Shift Uniqueness Test

010422241-01, P = 2.436951 Days, E = 129.191381 Days

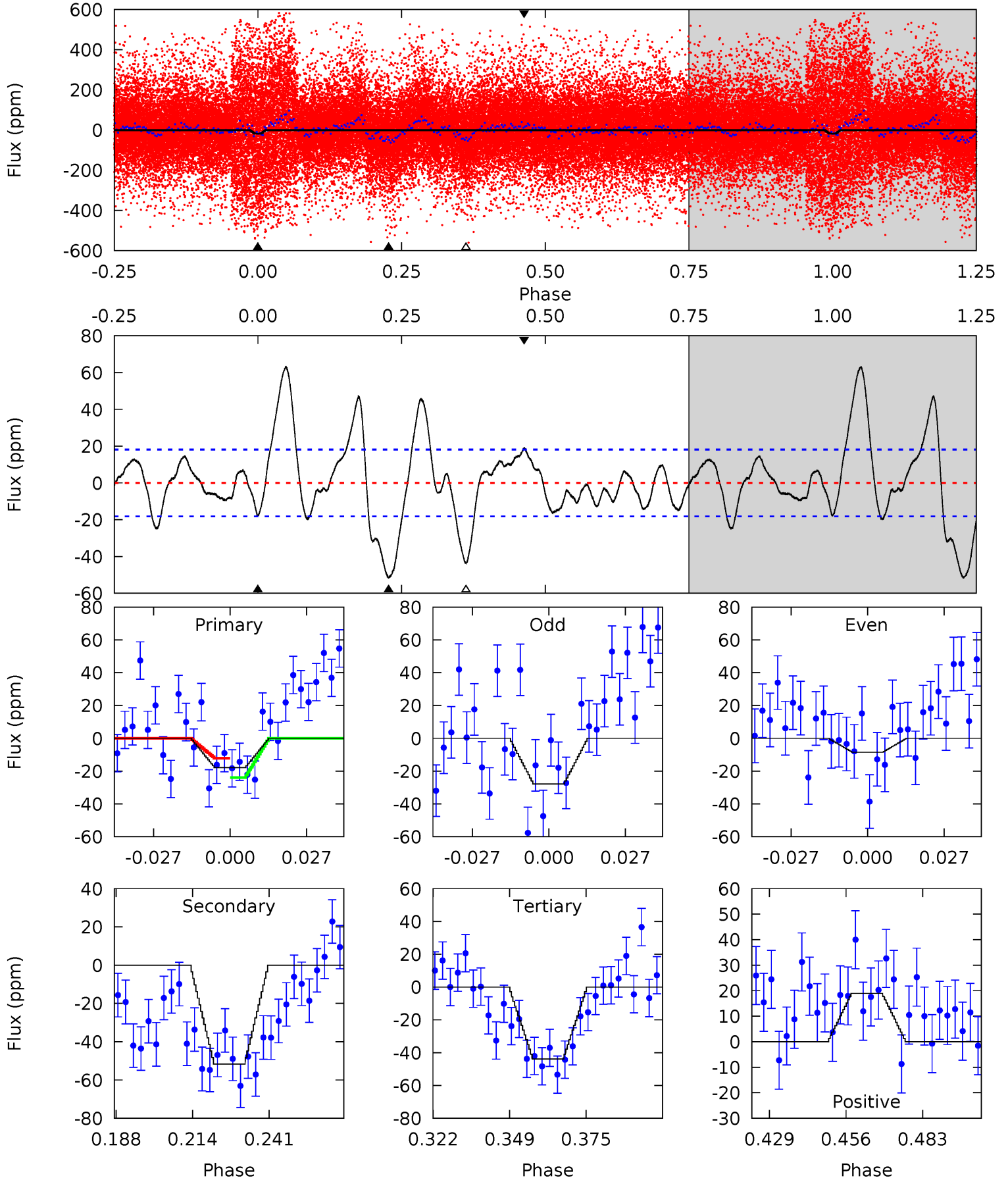
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	12.3	8.57	11.0	4.81	2.18	5.14	6.91	4.45	3.76	1.30	0.54	0.95	0.47	0.66



Alt Model-Shift Uniqueness Test

010422241-01, P = 2.436866 Days, E = 129.189643 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.75	13.7	11.6	5.04	4.83	2.21	4.74	-6.88	-0.28	2.11	8.70	2.57	0.90	0.55	1.56



Stellar Parameters For KIC 010422241

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8037^{+221}_{-331}	$4.132^{+0.112}_{-0.168}$	$0.070^{+0.250}_{-0.450}$	$1.917^{+0.494}_{-0.371}$	$1.815^{+0.170}_{-0.316}$	$0.363^{+0.190}_{-0.171}$
	+3%/-4%	+3%/-4%	+357%/-643%	+26%/-19%	+9%/-17%	+52%/-47%
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 010422241-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-50 ± 4	$2.15^{+1.97}_{-1.41}$	3335^{+229}_{-214}	6470^{+6570}_{-1715}	11^{+73}_{-8}
Alt.	-52 ± 4	$2.06^{+1.83}_{-1.40}$	3324^{+223}_{-214}	6669^{+8444}_{-1797}	12^{+109}_{-9}

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

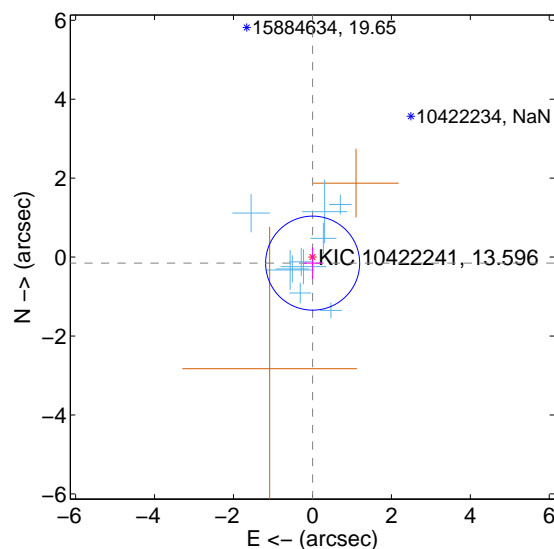
Supplemental centroid analysis for 010422241-01. Kepler magnitude: 13.60. Transit SNR 10.16

There are 10 quarters with good PRF difference image offsets

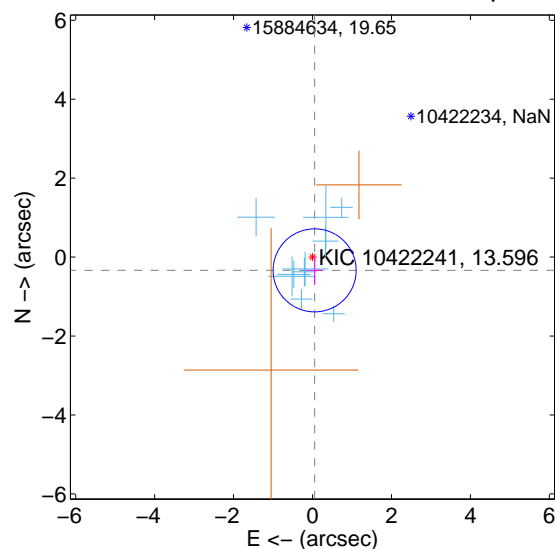
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.153 ± 0.397	0.39	-0.005 ± 0.234	-0.153 ± 0.401
PRF-fit source offset from KIC position	0.340 ± 0.351	0.97	-0.053 ± 0.202	-0.336 ± 0.366
photometric centroid source offset	1.24 ± 1.29	0.96	1.02 ± 1.27	0.71 ± 1.32

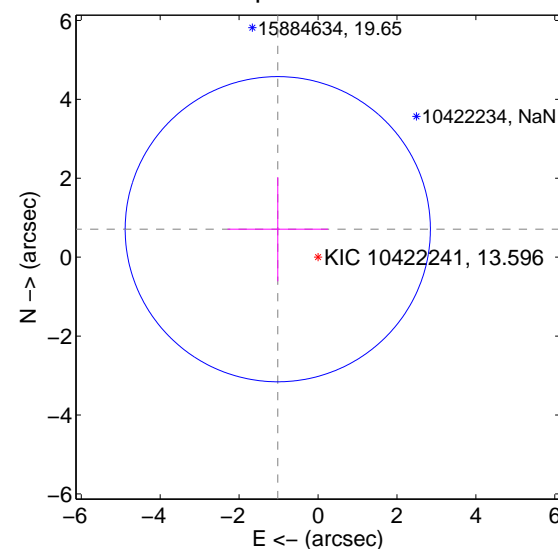
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

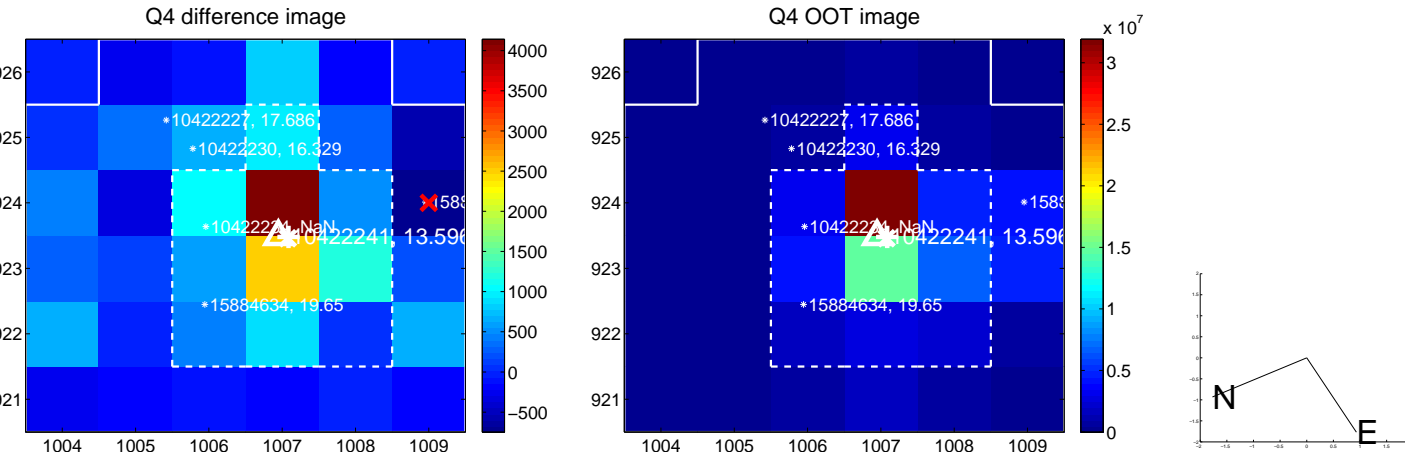
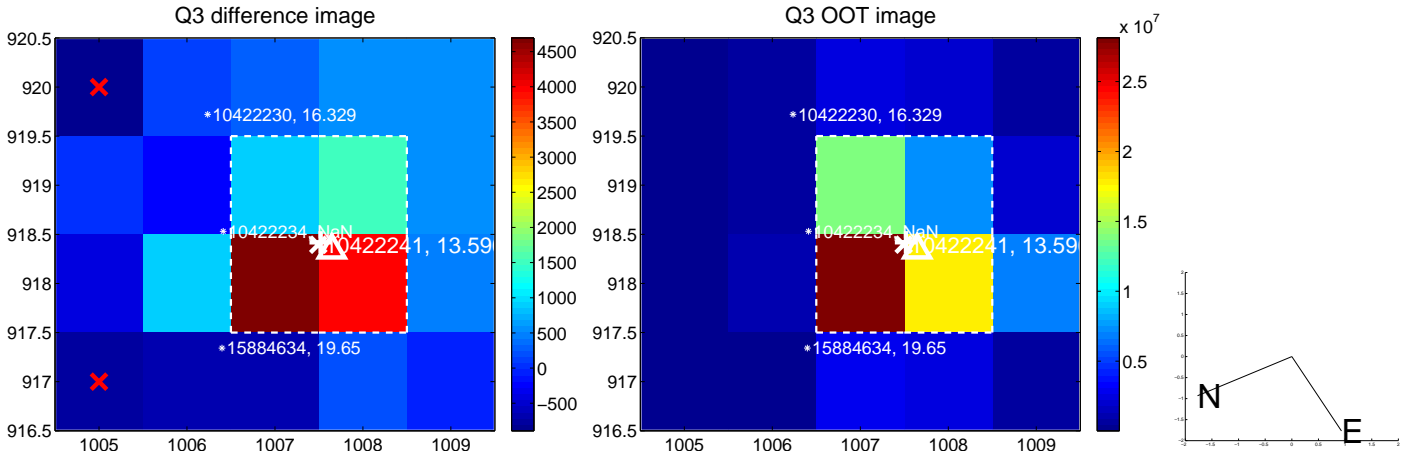
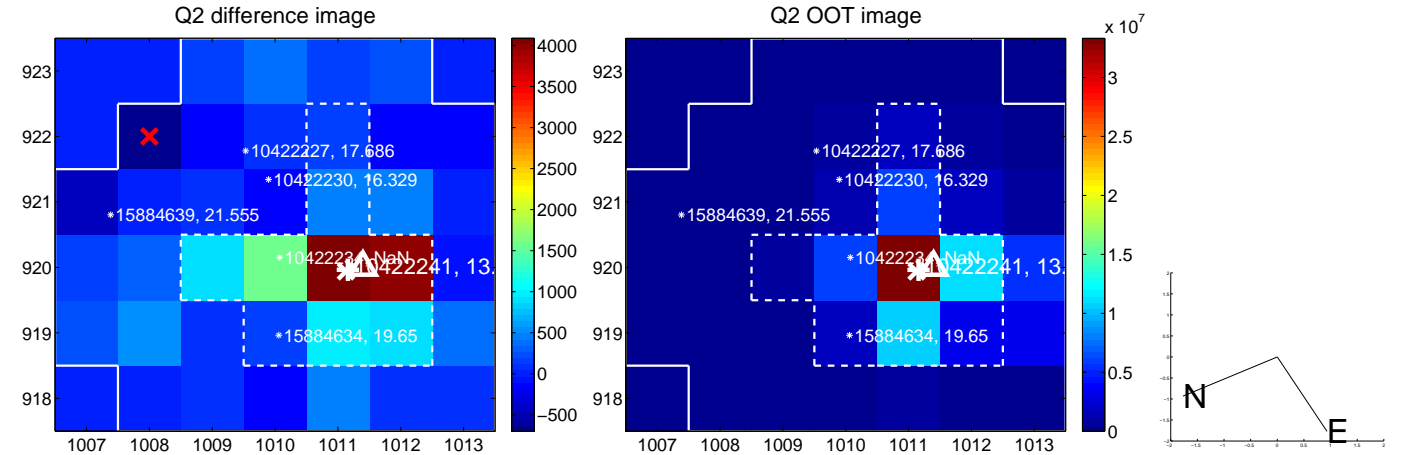
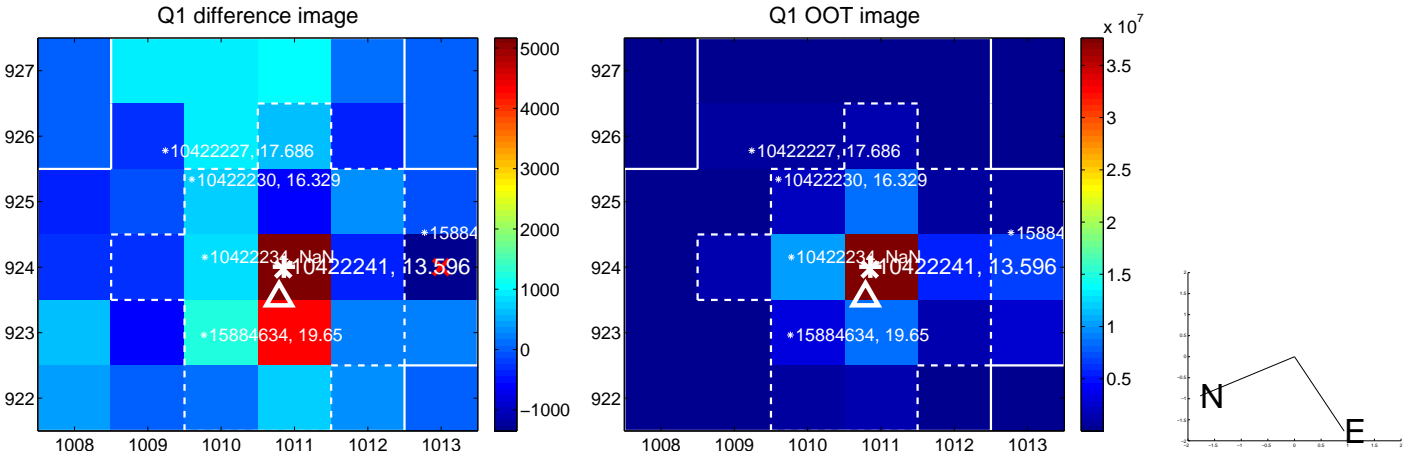


offset from photometric centroids

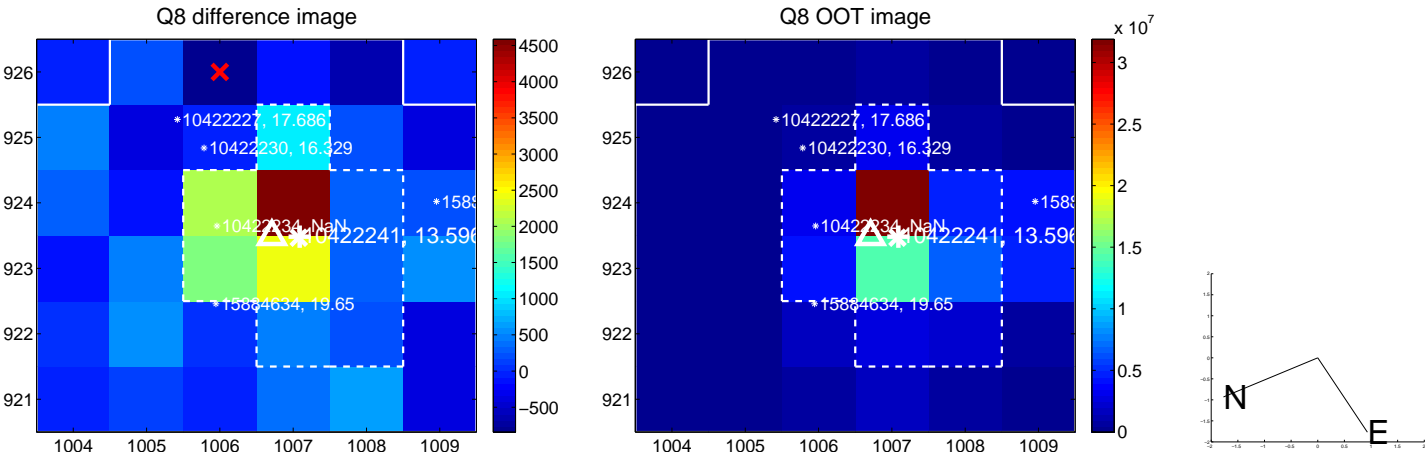
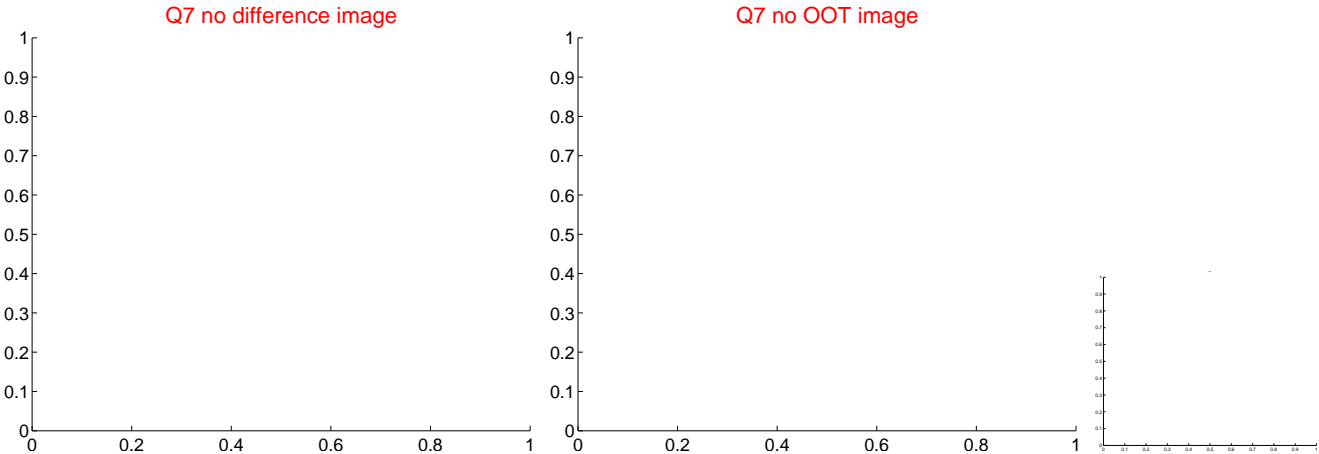
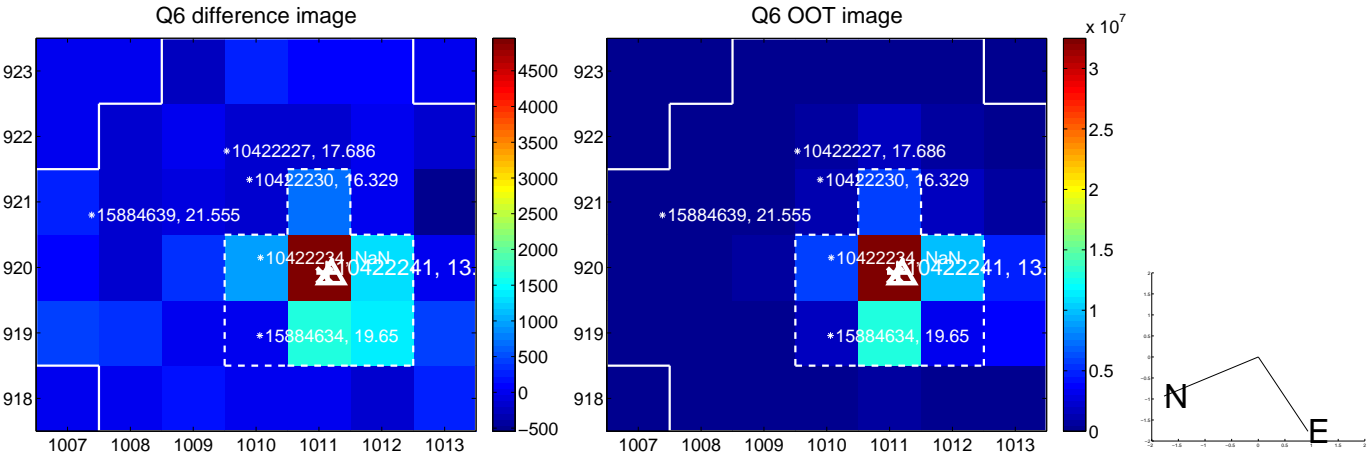
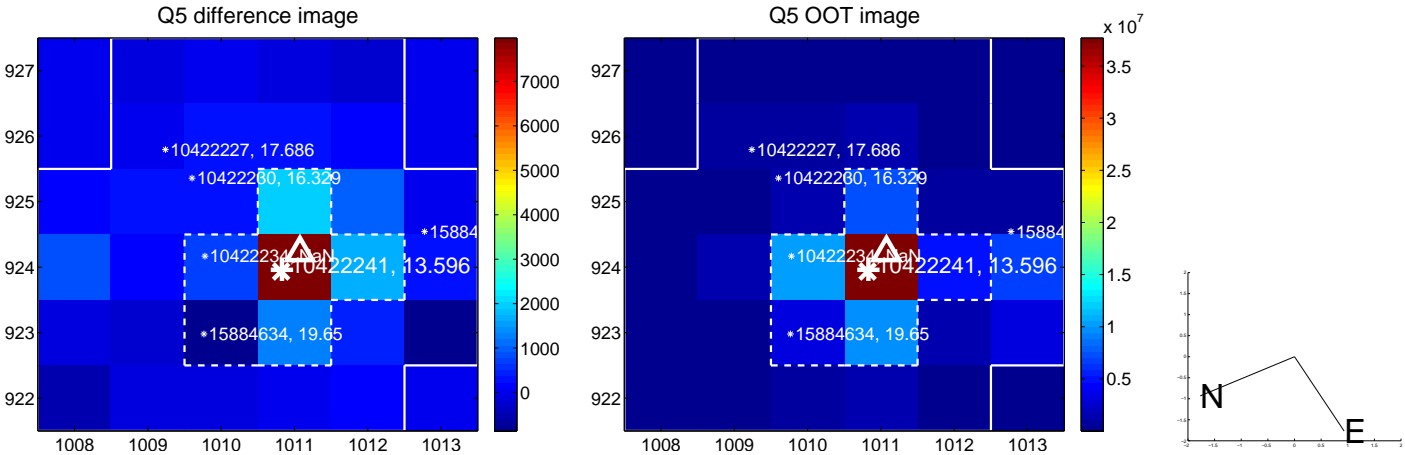


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

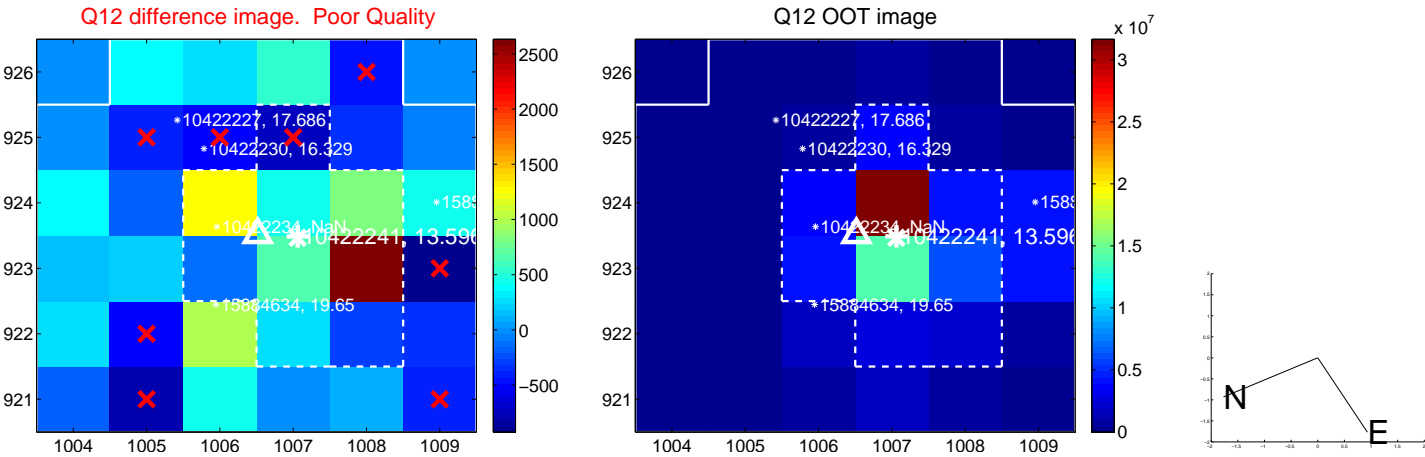
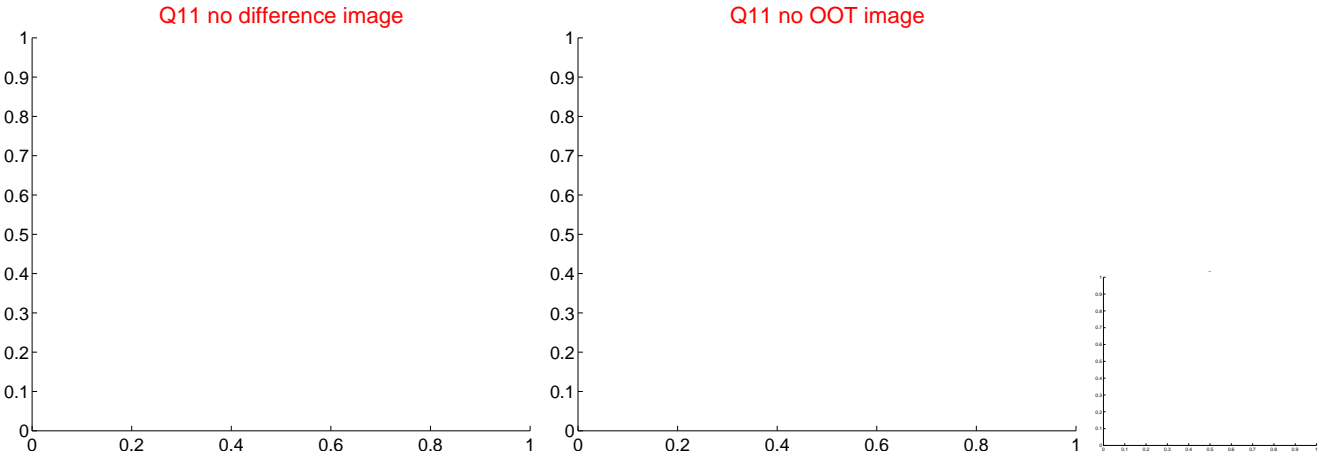
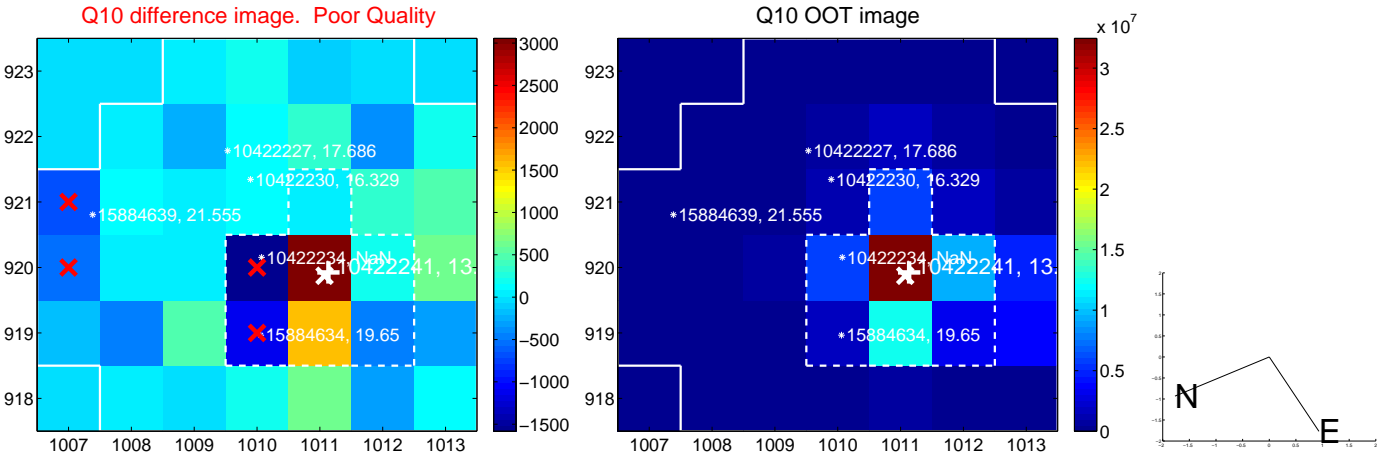
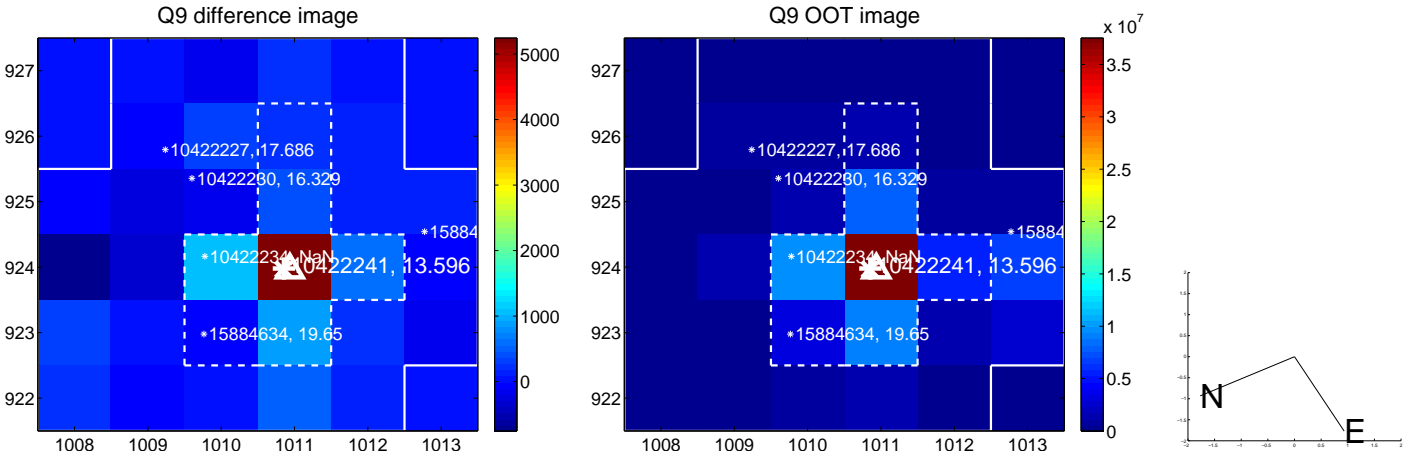
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



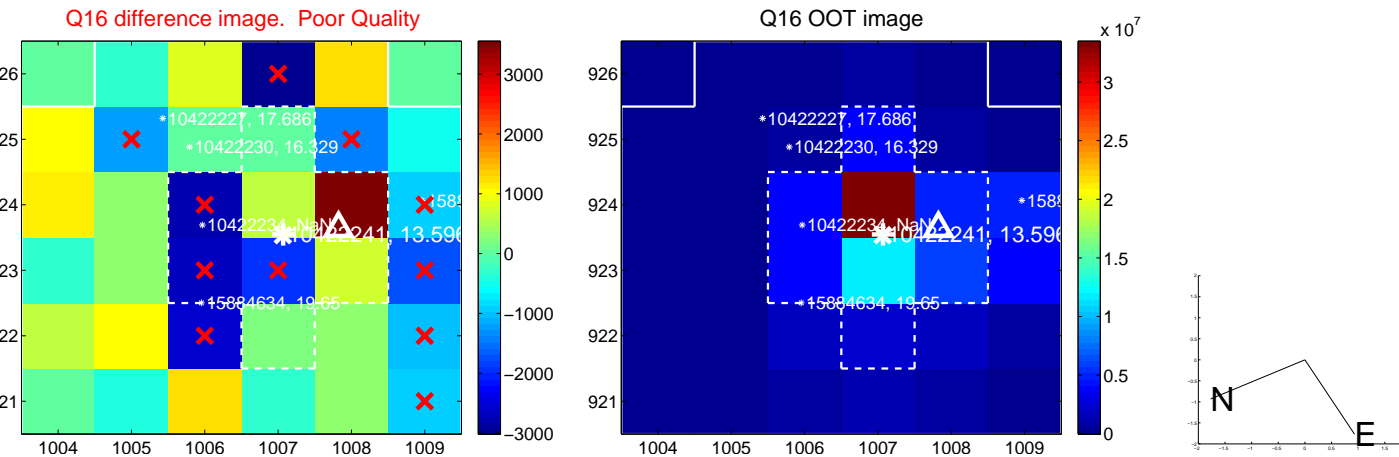
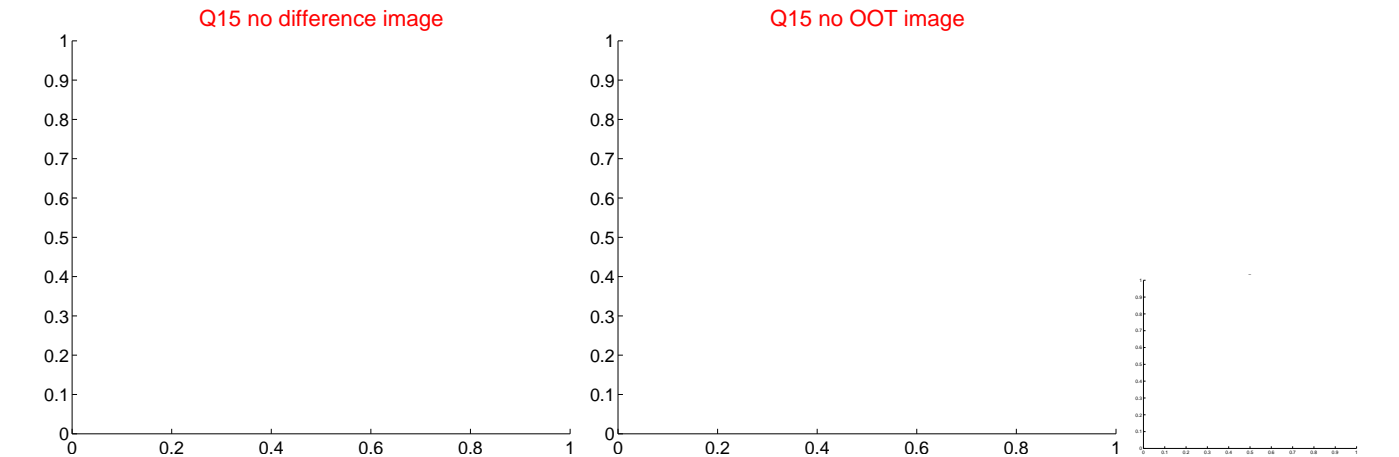
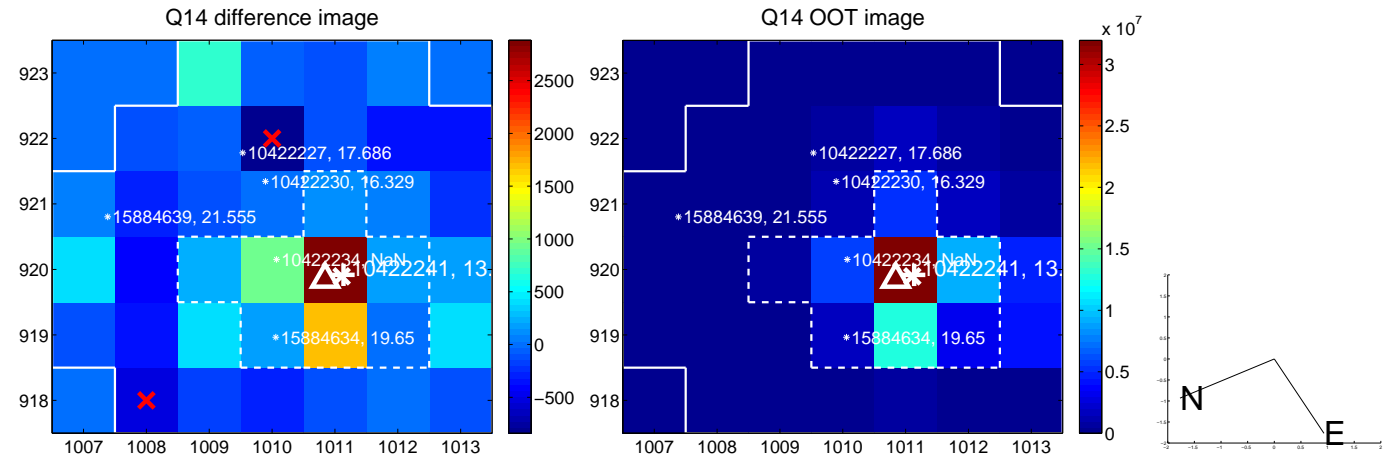
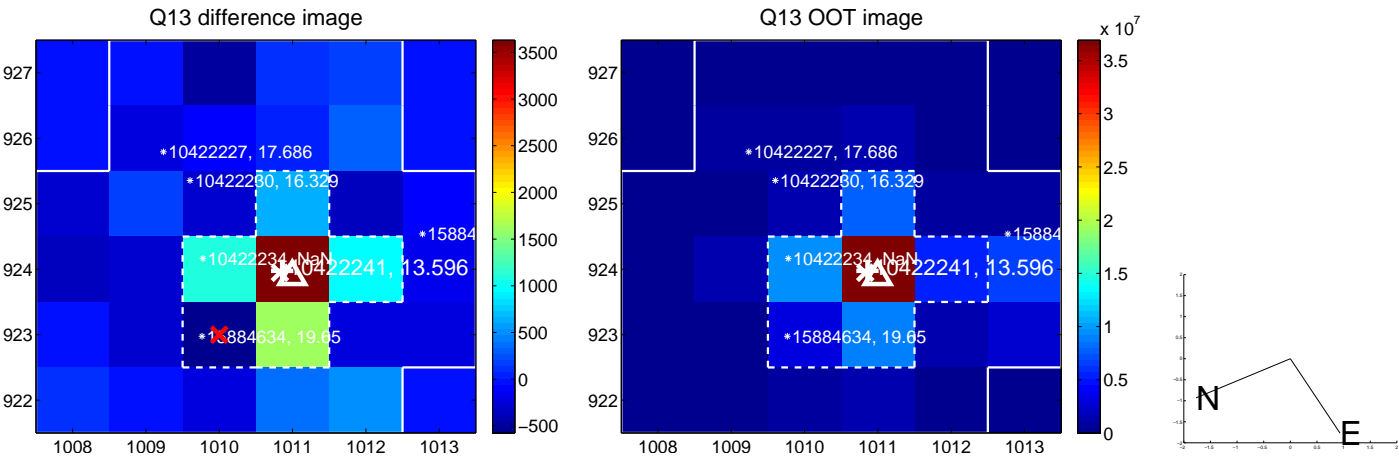
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



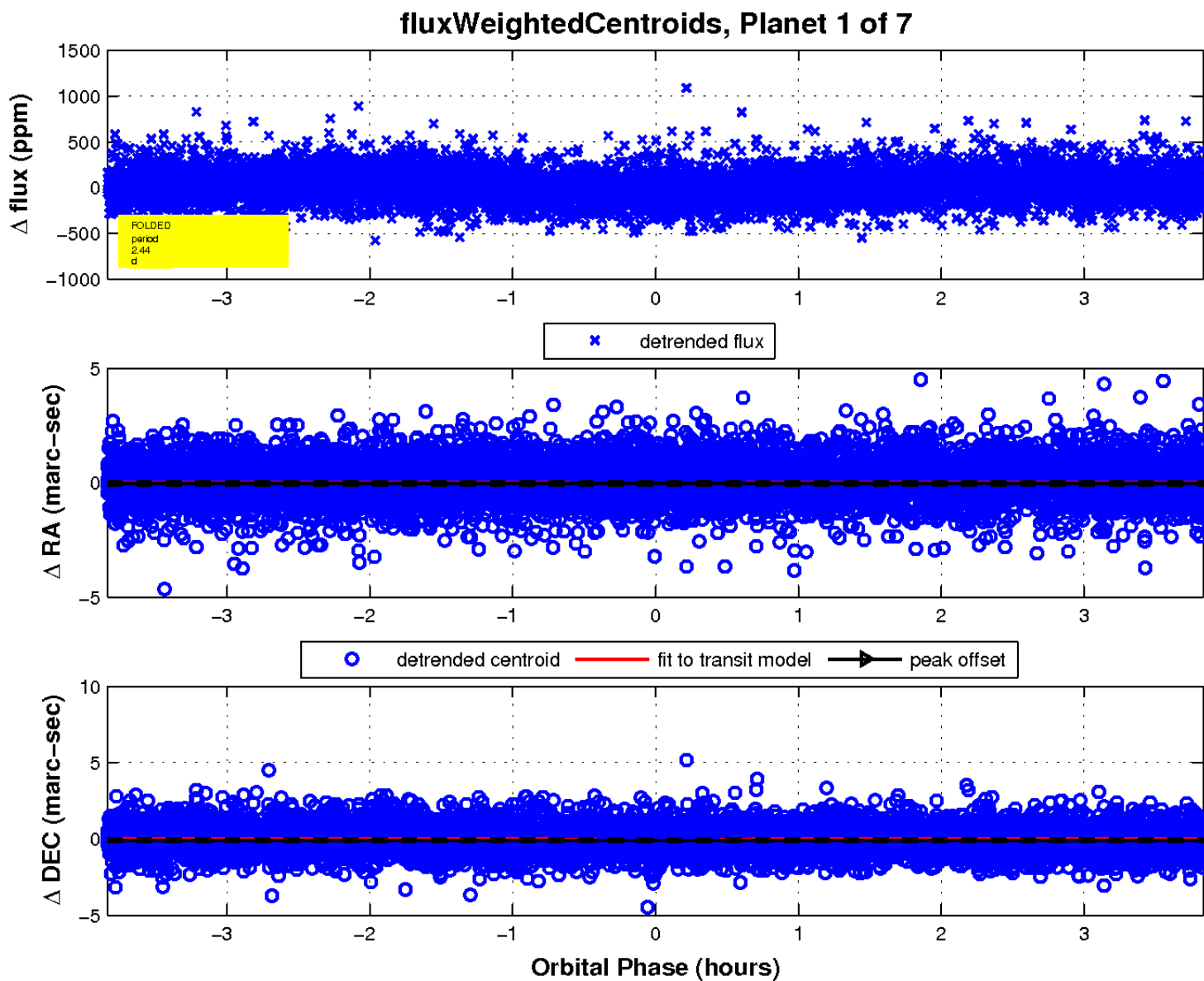
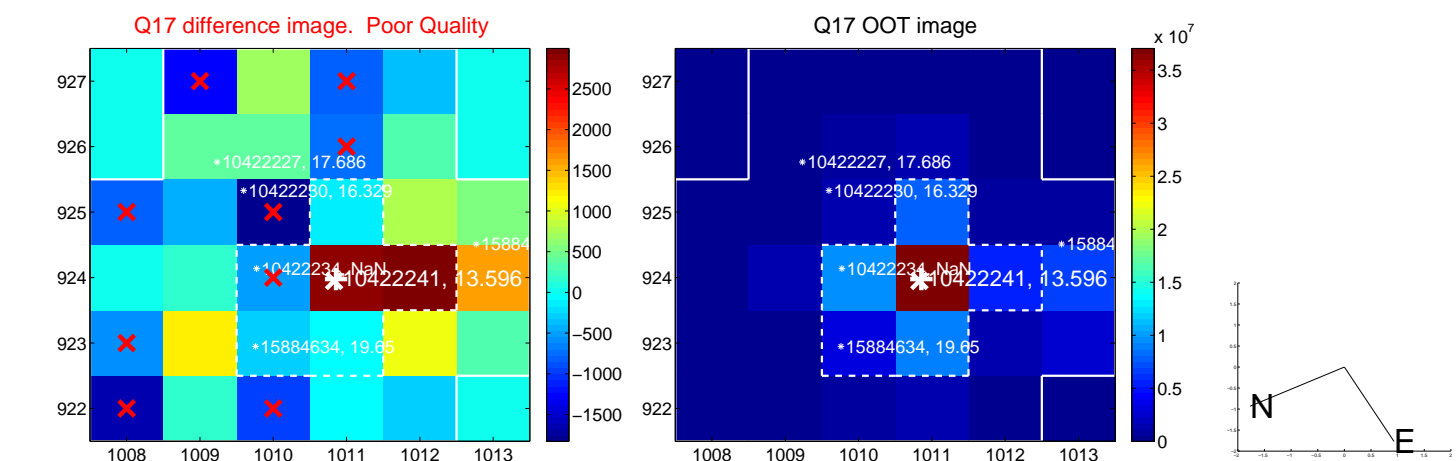
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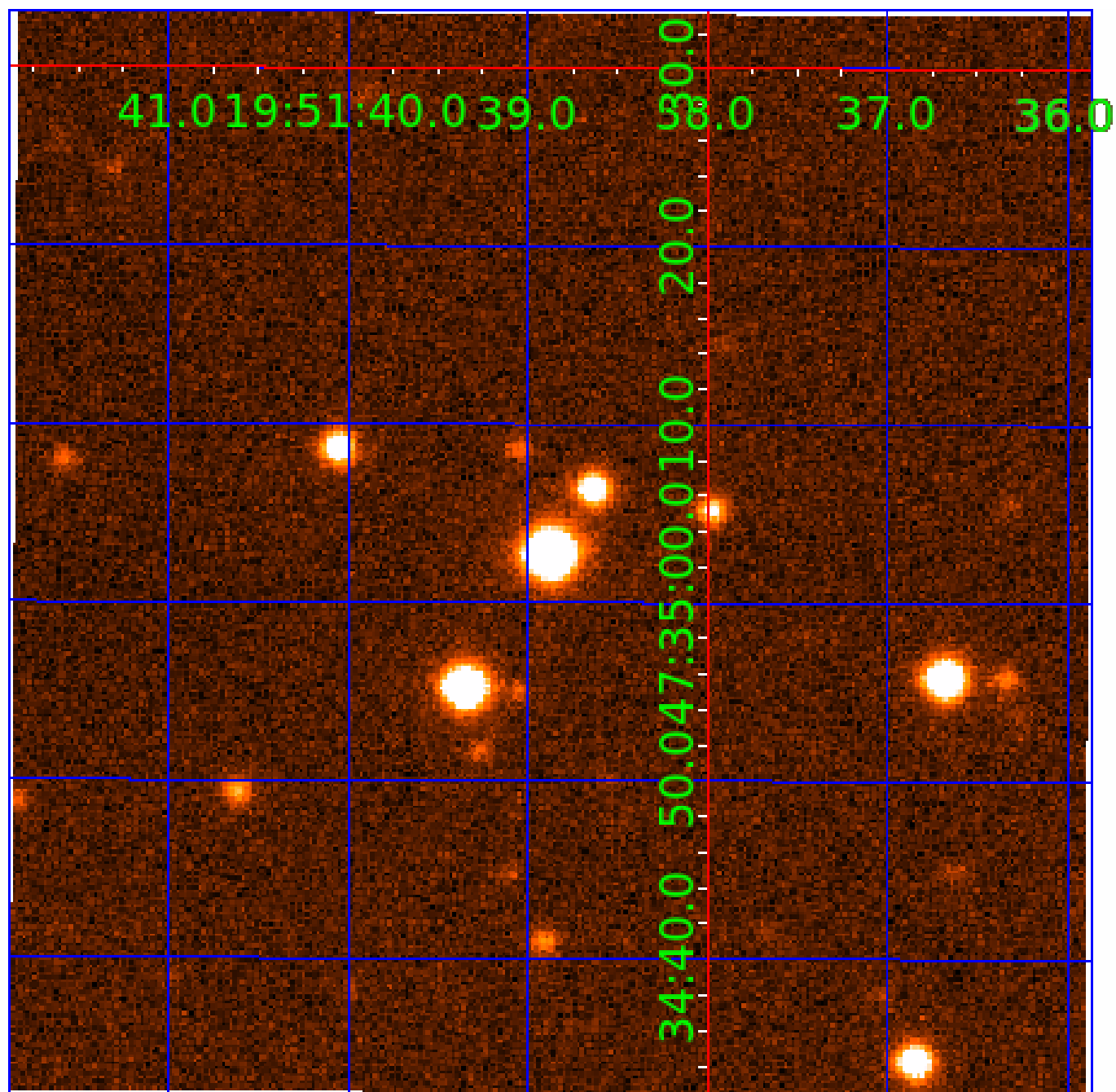


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010422241

Q1-17 DR25 TCE Parameters

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010422241-02	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
010422241-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

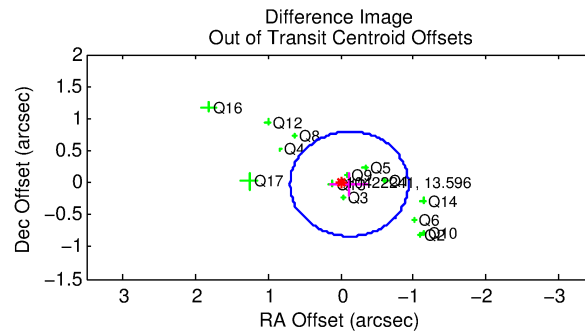
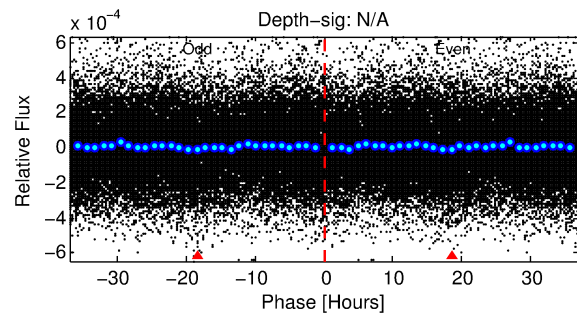
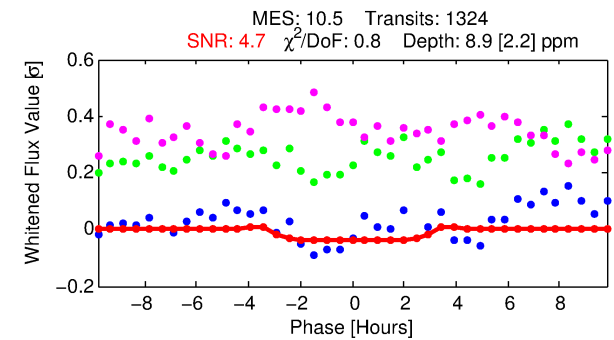
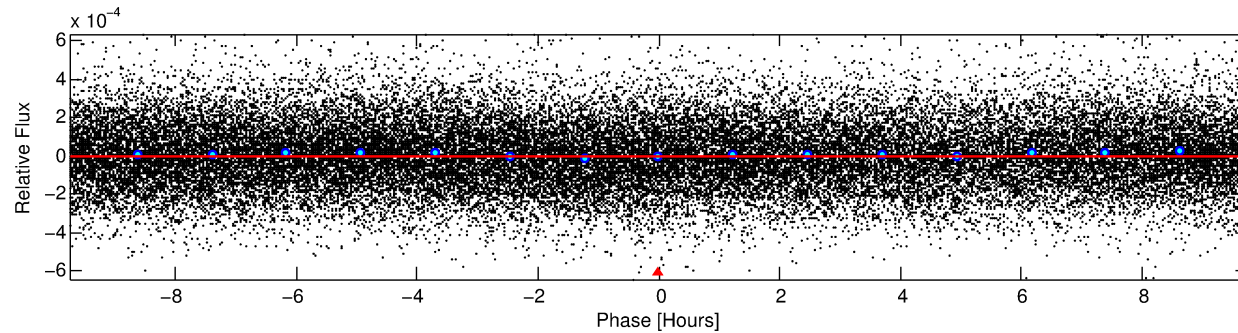
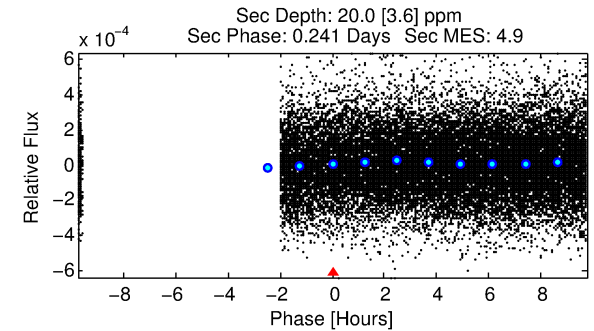
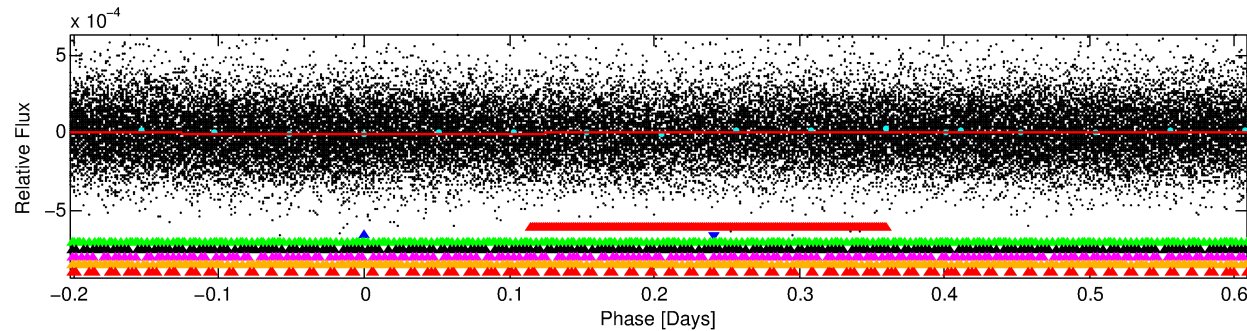
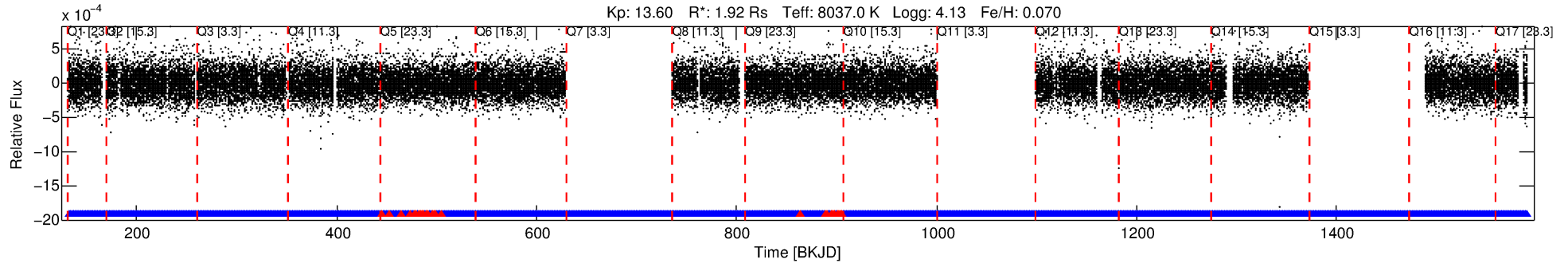
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010422241-02

No Significant Match Found

DV One-Page Summary

KIC: 10422241 Candidate: 2 of 7 Period: 0.812 d



DV Fit Results:

Period = 0.81218 [0.00003] d
Epoch = 132.3262 [0.0118] BKJD
Rp/R* = 0.0028 [0.0056]
a/R* = 1.18 [4.05]
b = 0.28 [39.85]
Seff = 31779.58 [11152.76]
Teq = 3405 [299] K
Rp = 0.58 [1.18] Re
a = 0.0208 [0.0045] AU
Ag = 14.02 [56.36] [0.23σ]
Teffp = 10185 [10215] K [0.66σ]

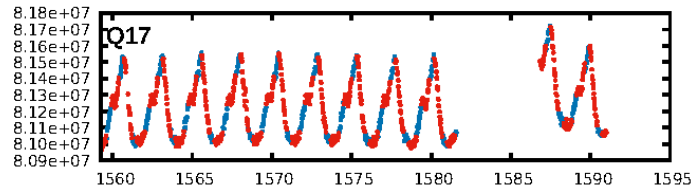
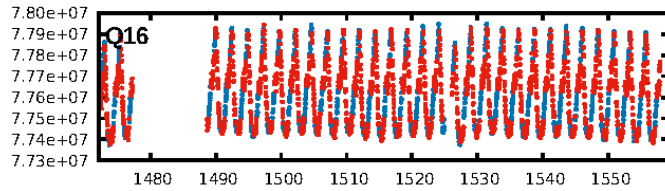
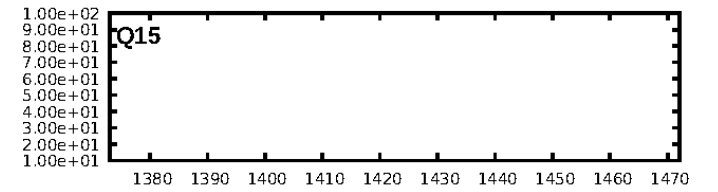
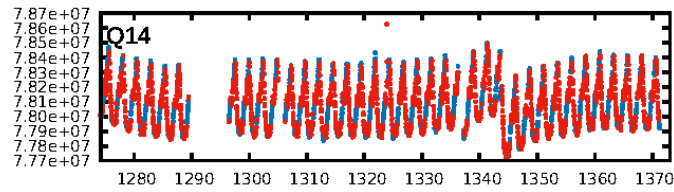
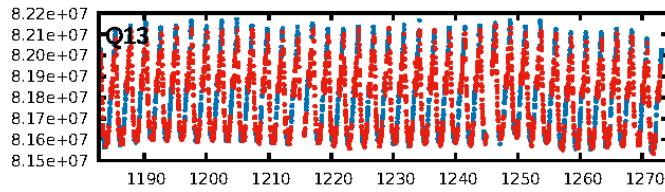
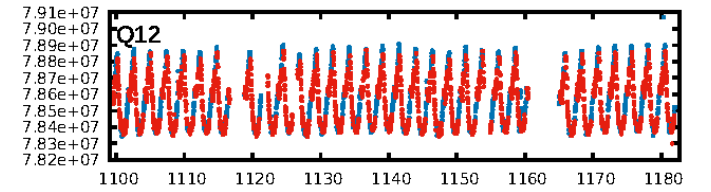
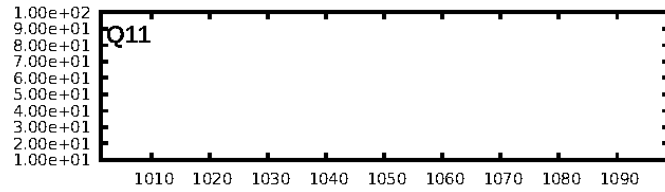
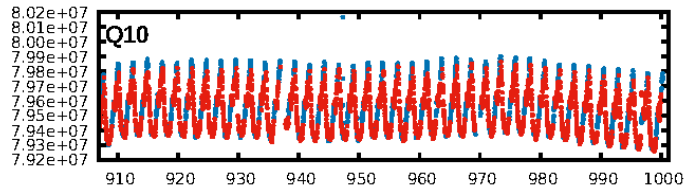
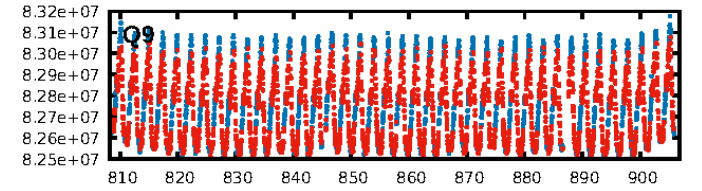
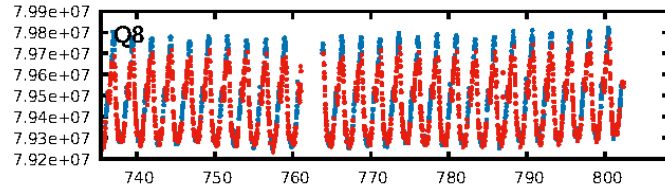
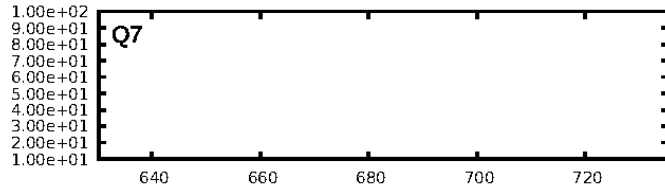
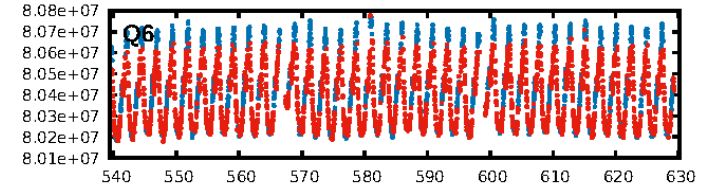
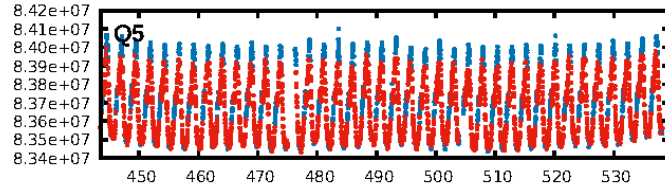
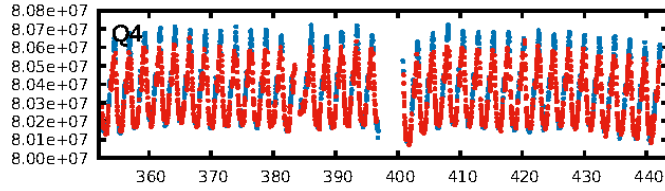
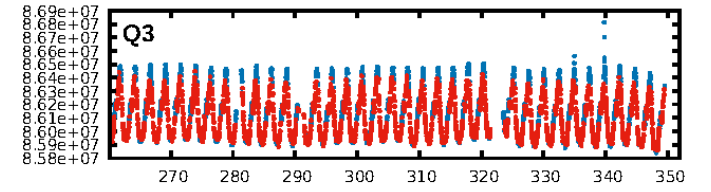
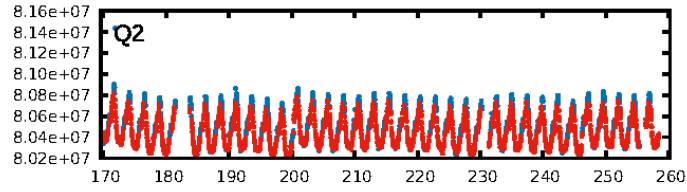
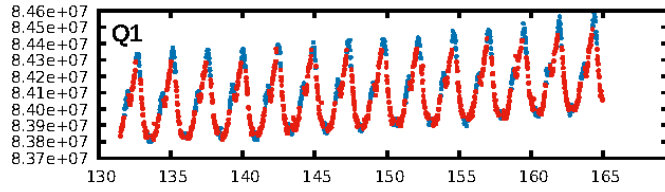
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [6.20σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [1219/1248]
GhostDiagnostic-chr: -0.2182
Centroid-sig: 0.0%
Centroid-so: 8.565 arcsec [3.27σ]
OotOffset-rm: 0.120 arcsec [0.44σ]
KicOffset-rm: 0.226 arcsec [0.74σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

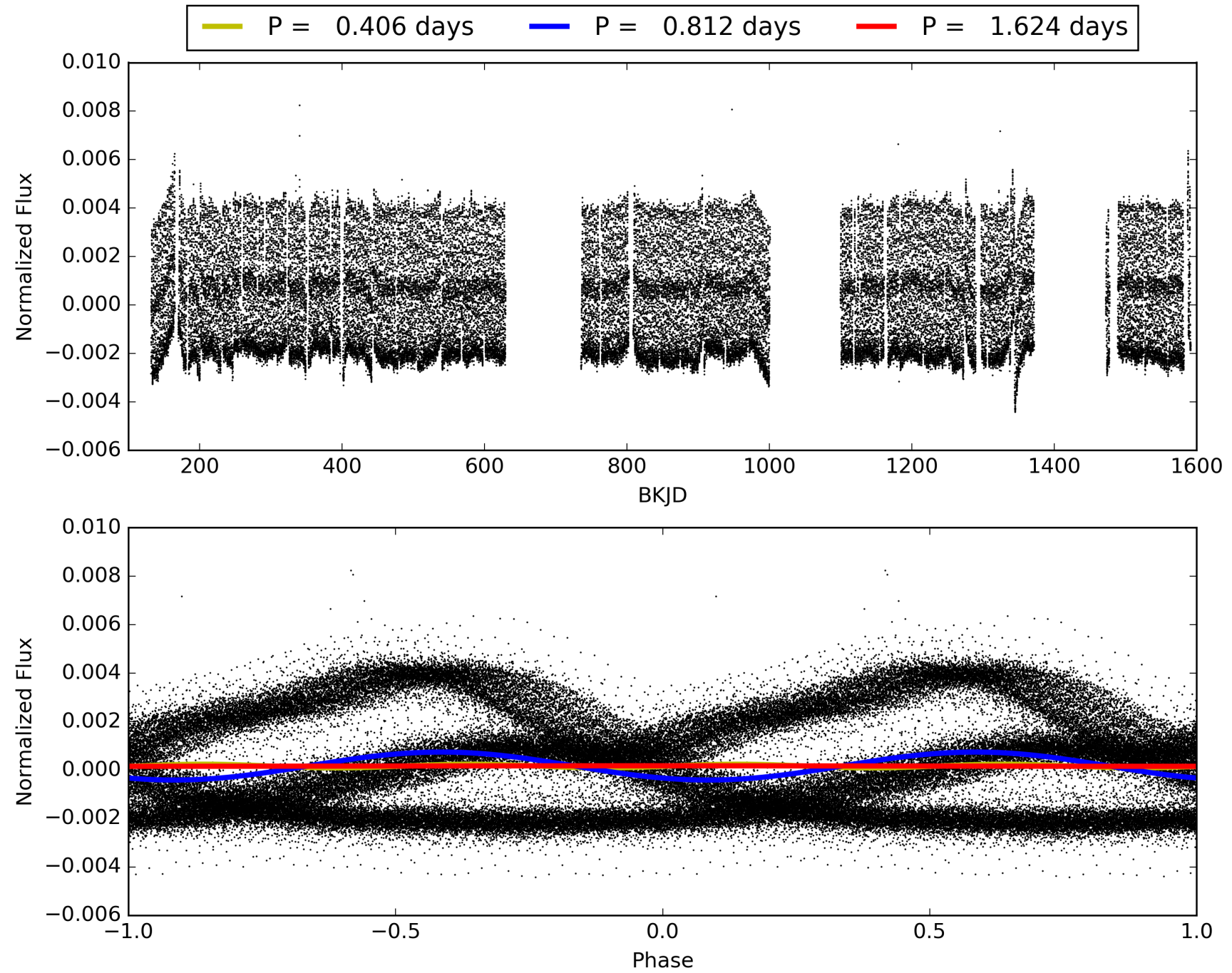
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:35:49 Z

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

TCE 010422241-02, PDC Light Curves

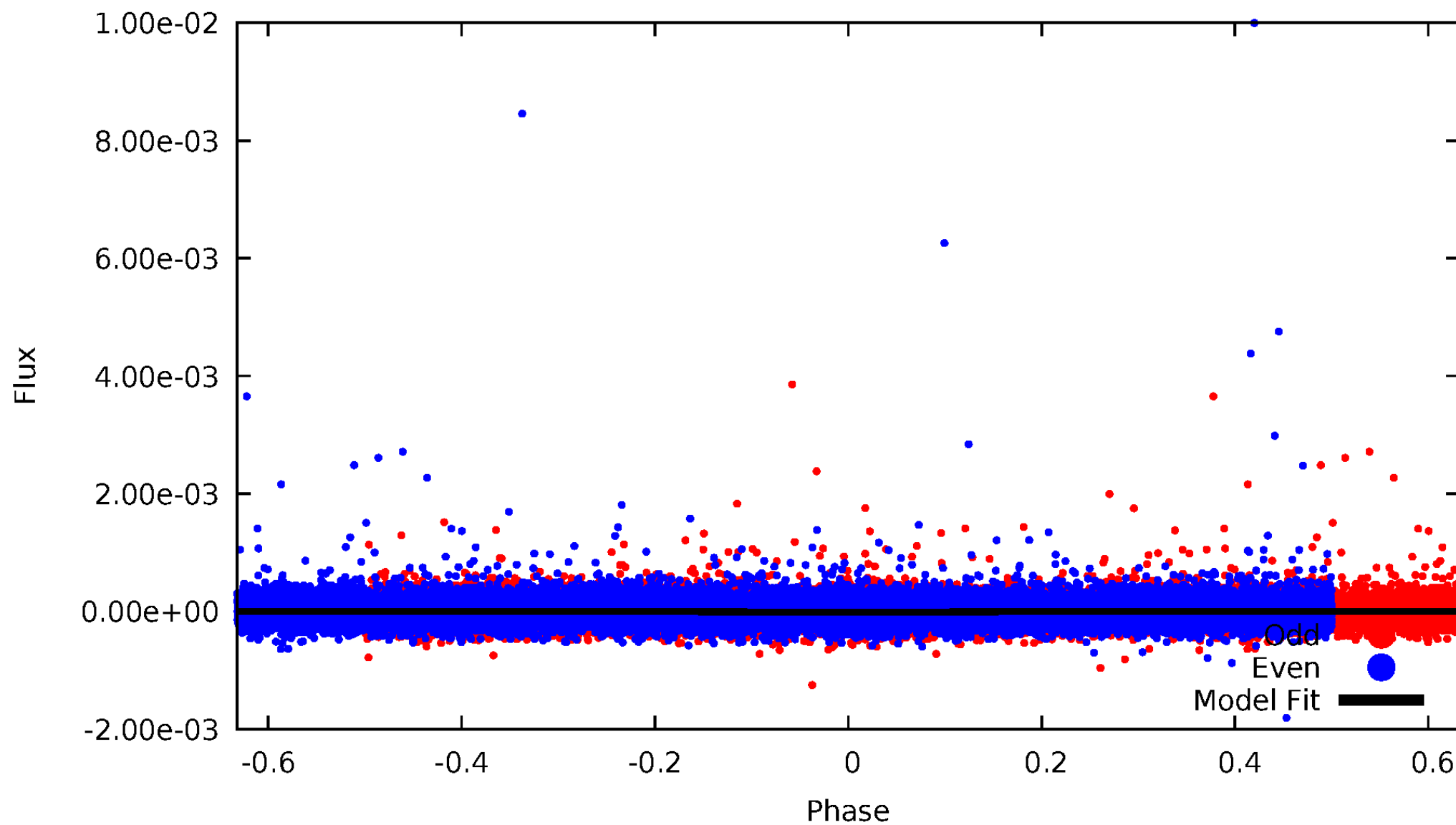


TCE 010422241-02



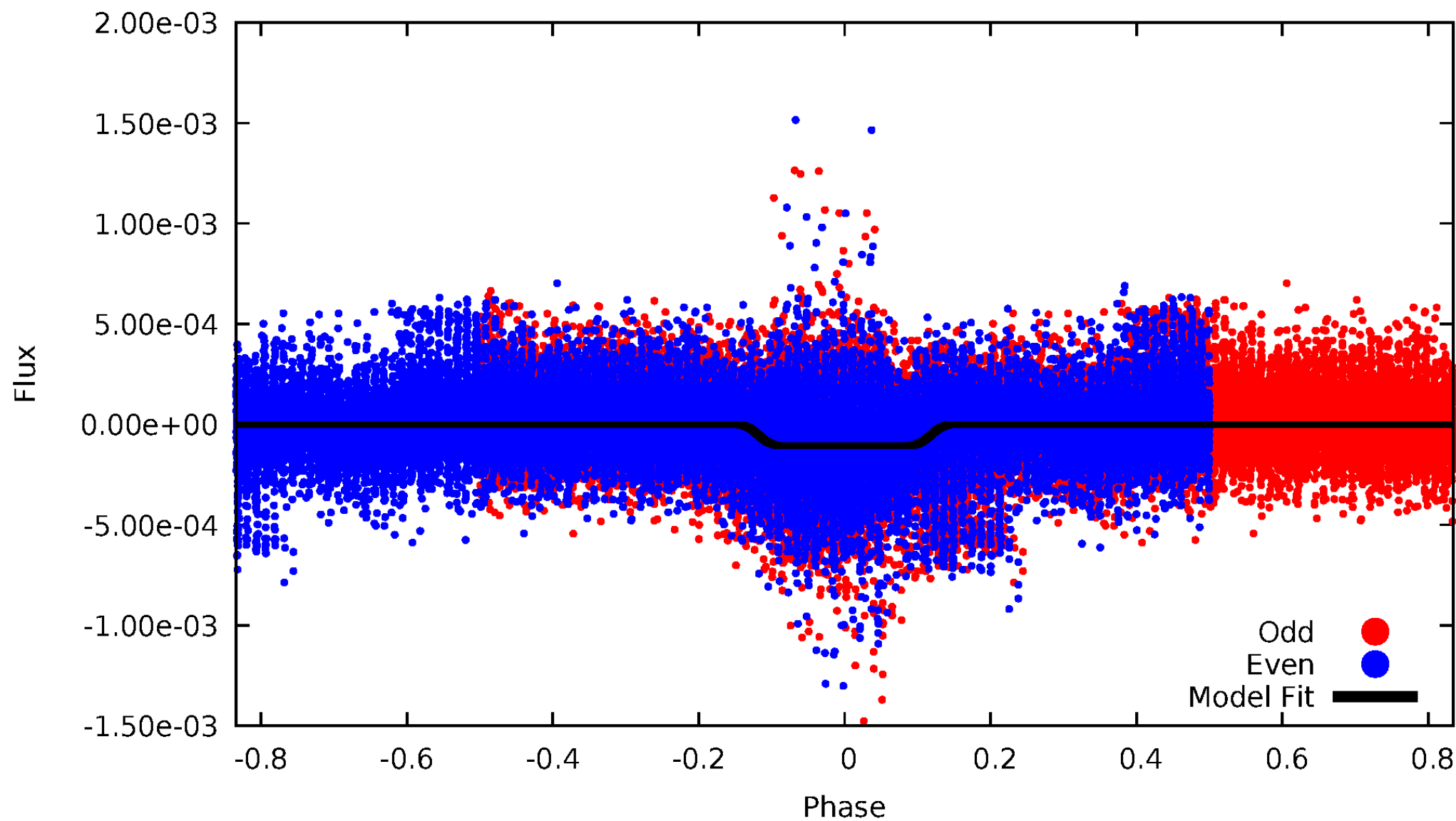
DV Odd/Even

TCE 010422241-02



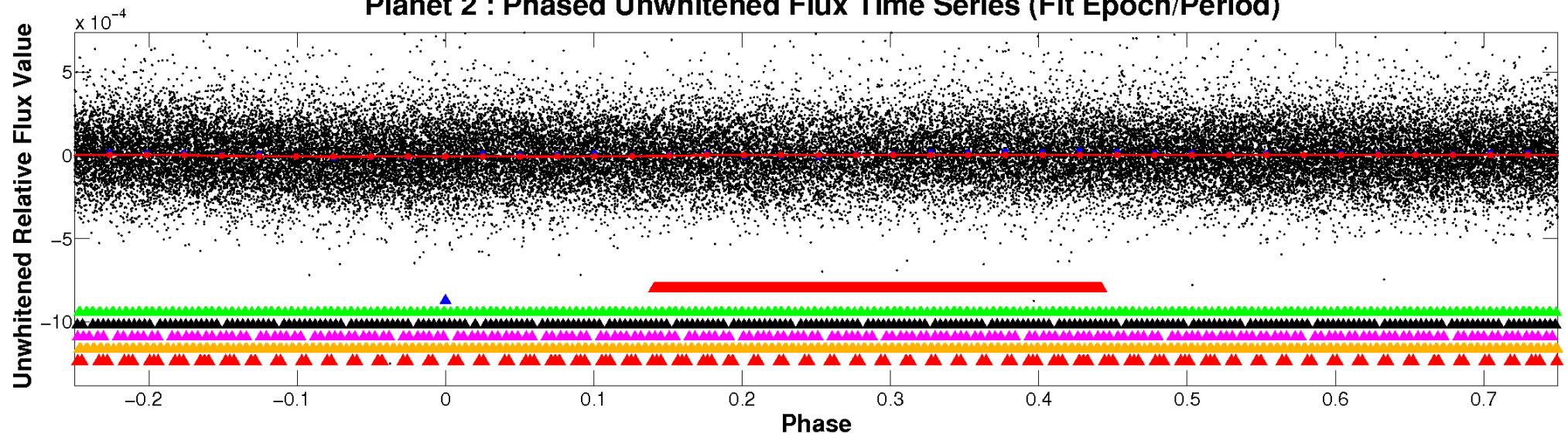
ALT Odd/Even

TCE 010422241-02

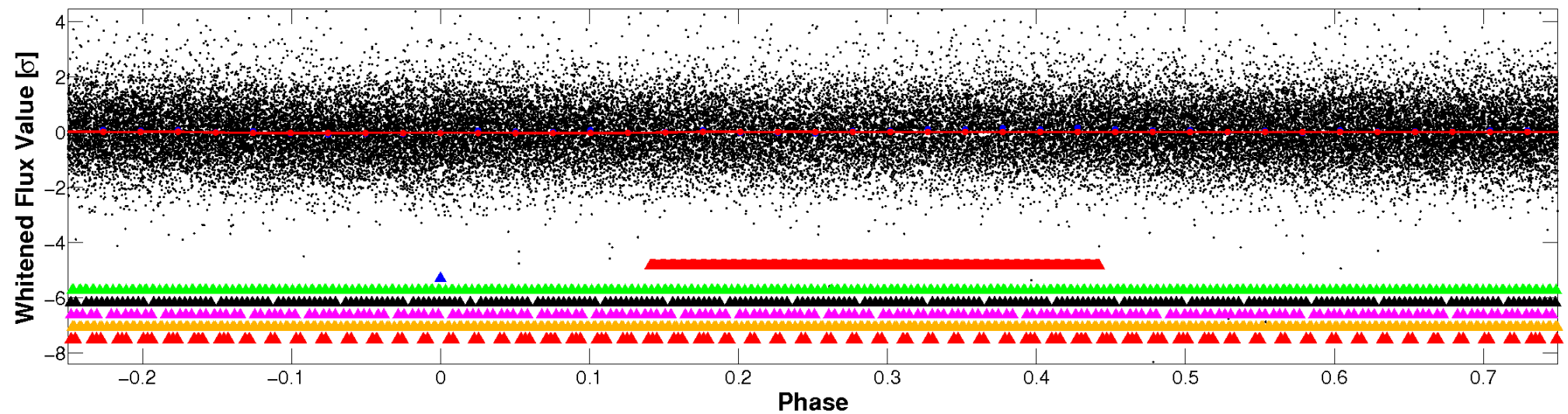


Non-Whitened Vs. Whitened Light Curve

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

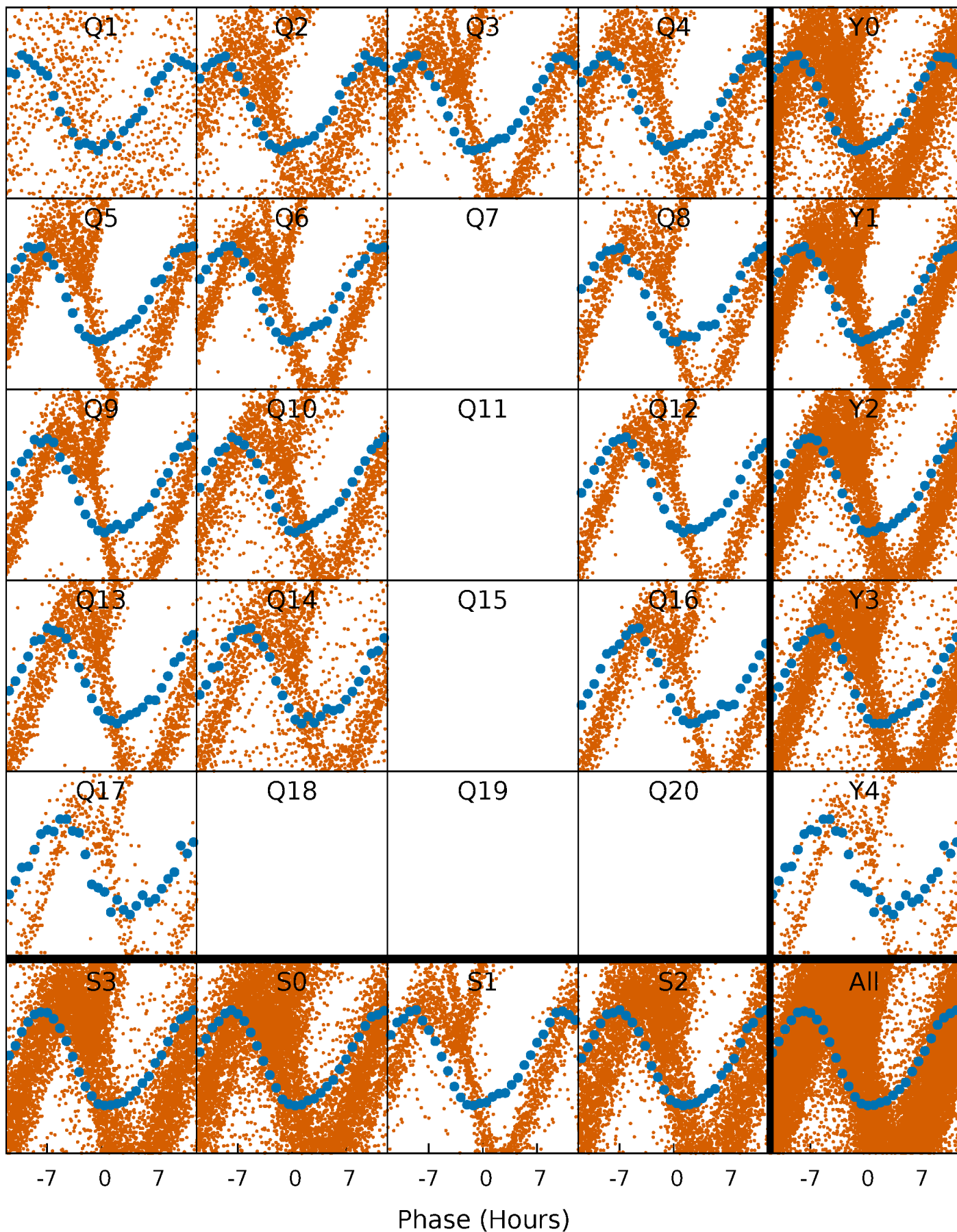


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



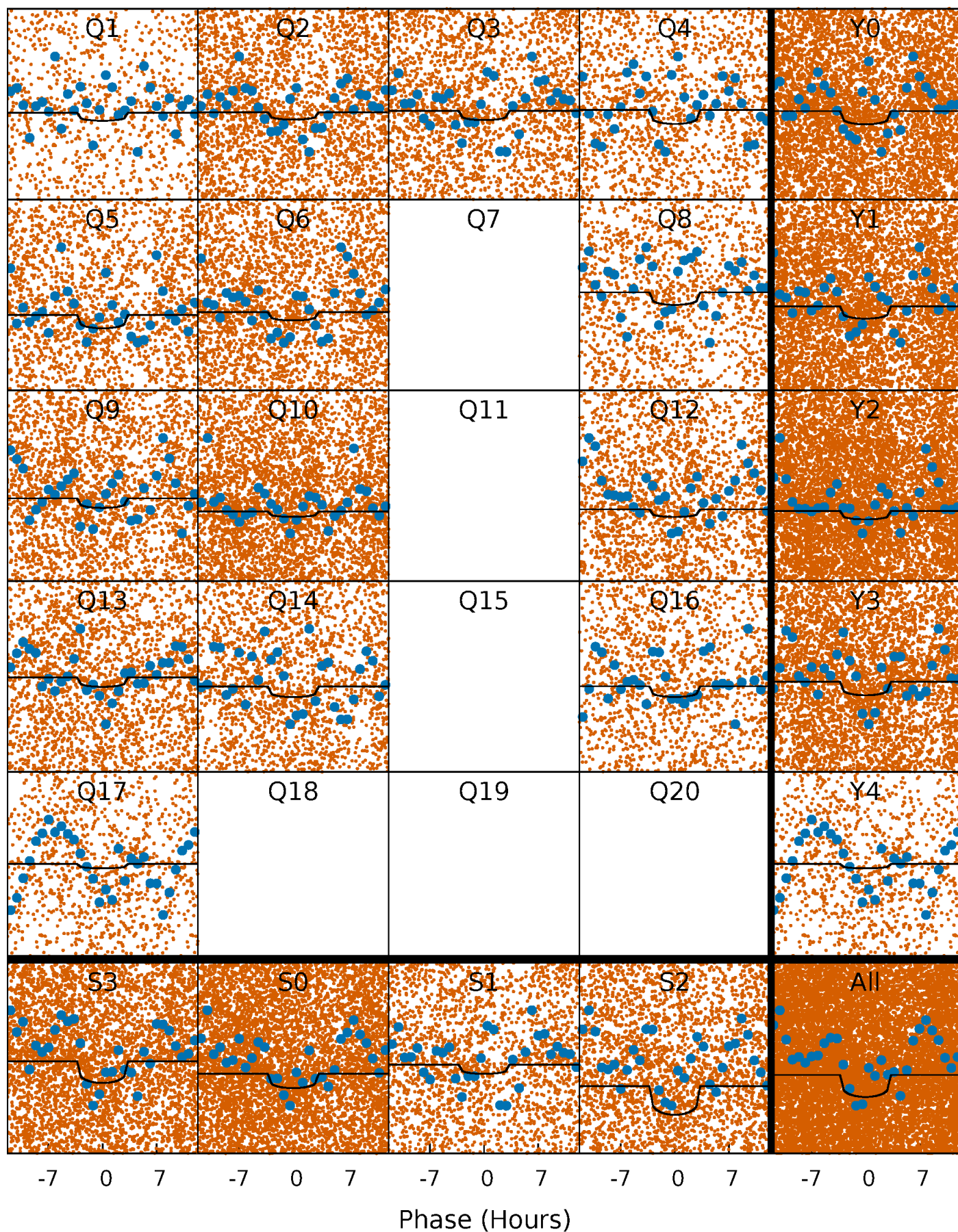
PDC Quarter-Phased Transit Curves

TCE 010422241-02 P= 0.812181 Days $T_0=132.326211$ (BKJD)



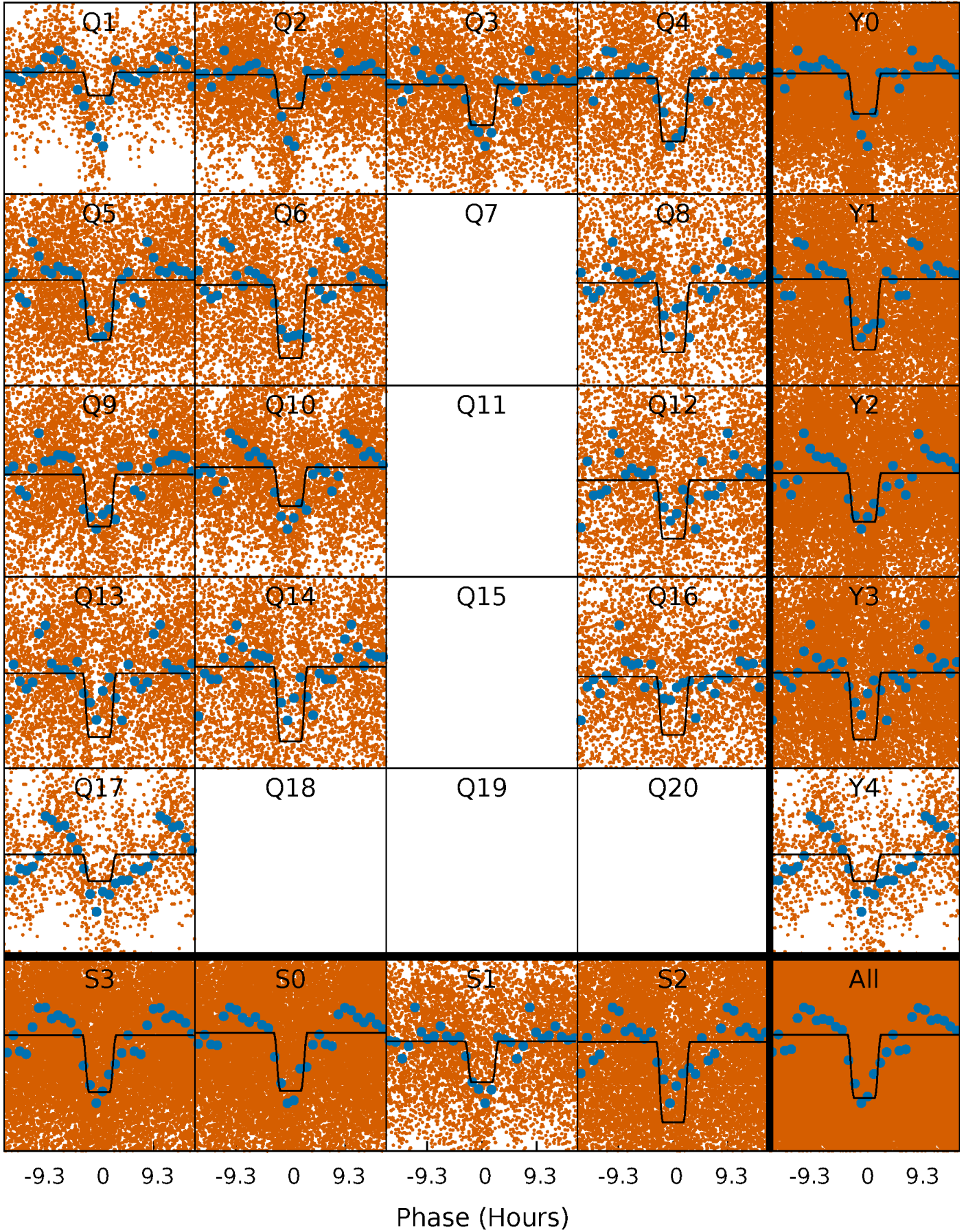
DV Quarter-Phased Transit Curves

TCE 010422241-02 $P = 0.812181$ Days $T_0 = 132.326211$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

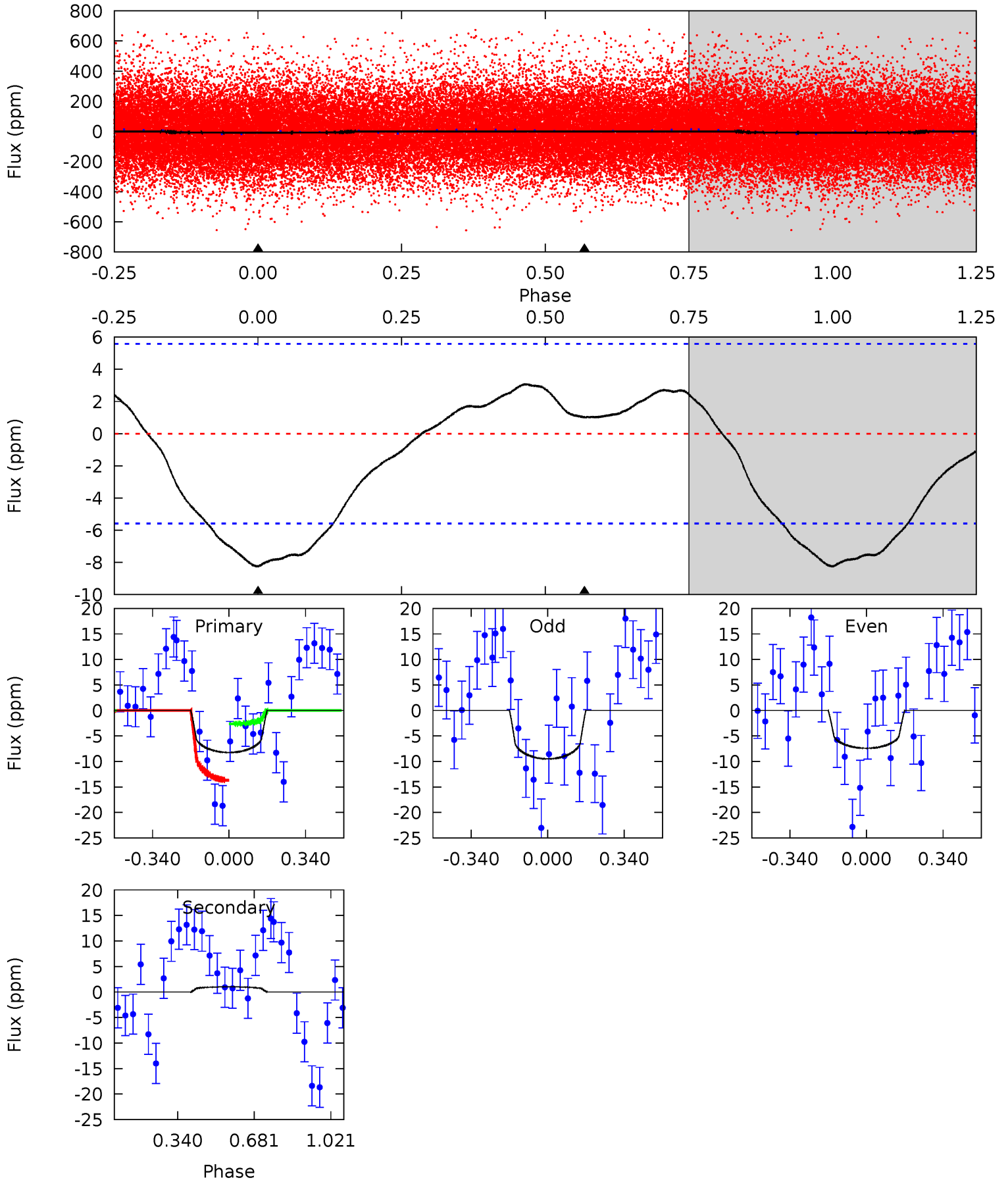
TCE 010422241-02 P= 0.812256 Days $T_0=132.245890$ (BKJD)



DV Model-Shift Uniqueness Test

010422241-02, P = 0.812181 Days, E = 130.701849 Days

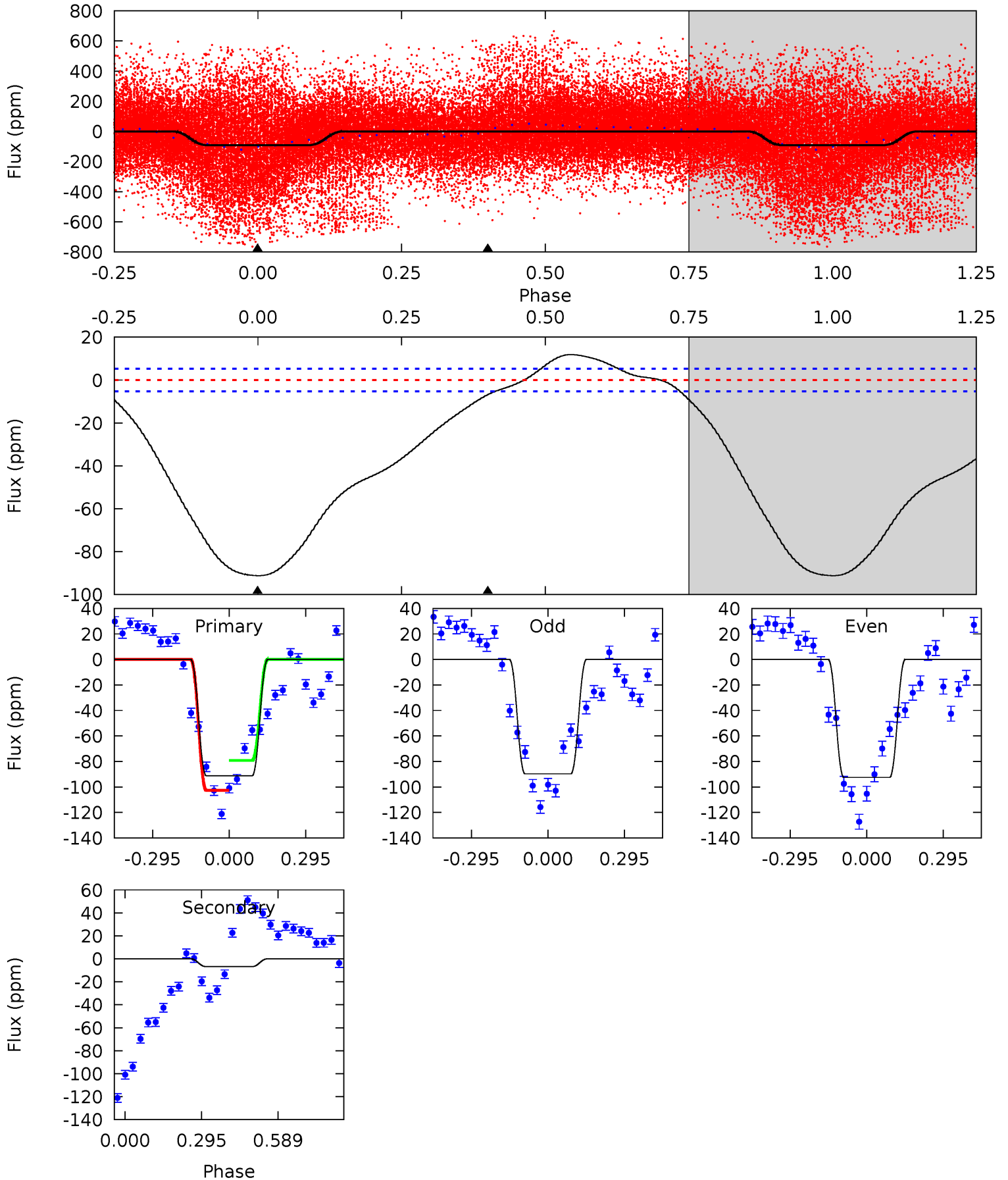
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.36	-0.78	0	0	4.30	0.95	0.72	6.36	6.36	-0.78	-0.78	0.80	0.52	0.27	4.29



Alt Model-Shift Uniqueness Test

010422241-02, P = 0.812256 Days, E = 131.433634 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
74.7	5.56	0	0	4.33	1.05	2.33	74.7	74.7	5.56	5.56	1.14	1.20	0.12	8.02



Stellar Parameters For KIC 010422241

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	8037^{+221}_{-331}	$4.132^{+0.112}_{-0.168}$	$0.070^{+0.250}_{-0.450}$	$1.917^{+0.494}_{-0.371}$	$1.815^{+0.170}_{-0.316}$	$0.363^{+0.190}_{-0.171}$
	+3%/-4%	+3%/-4%	+357%/-643%	+26%/-19%	+9%/-17%	+52%/-47%
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 010422241-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	1 ± 1	$1.06^{+1.07}_{-0.72}$	4783^{+315}_{-273}	-4420^{+495}_{-1568}	$-0.119^{+0.159}_{-1.331}$
Alt.	-7 ± 1	$2.22^{+1.23}_{-1.10}$	4779^{+351}_{-268}	2235^{+2891}_{-5990}	$0.304^{+0.896}_{-0.179}$

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 $A_{obs} \gg 1.0$

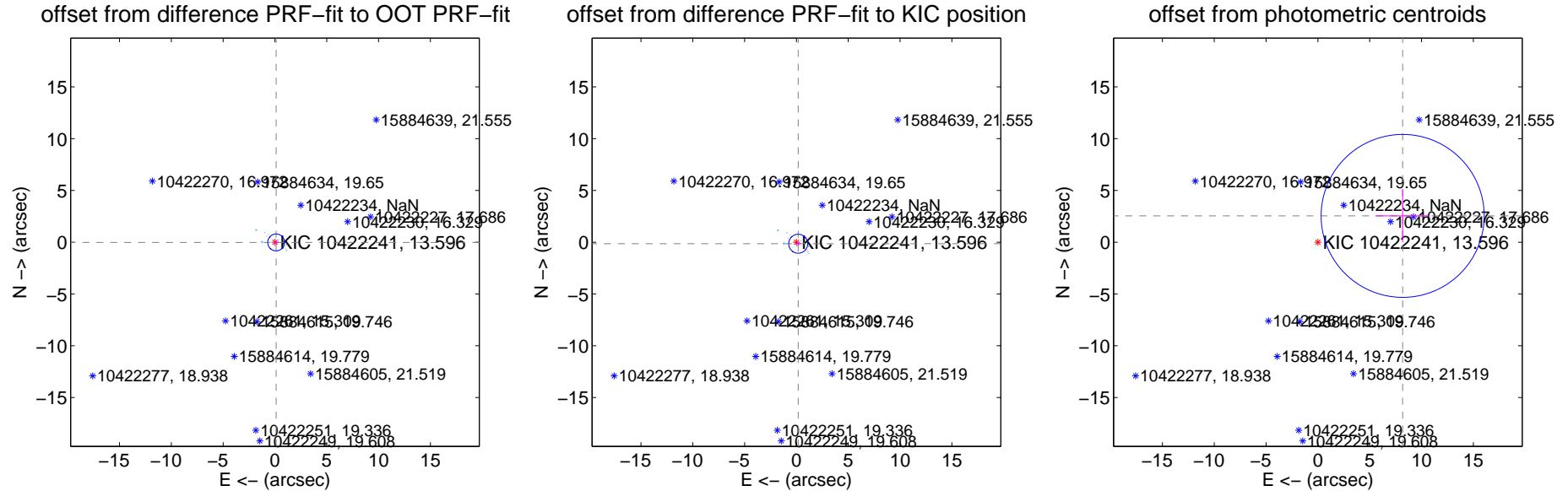
DV Centroid Data

Supplemental centroid analysis for 010422241-02. Kepler magnitude: 13.60. Transit SNR 4.69

There are 14 quarters with good PRF difference image offsets

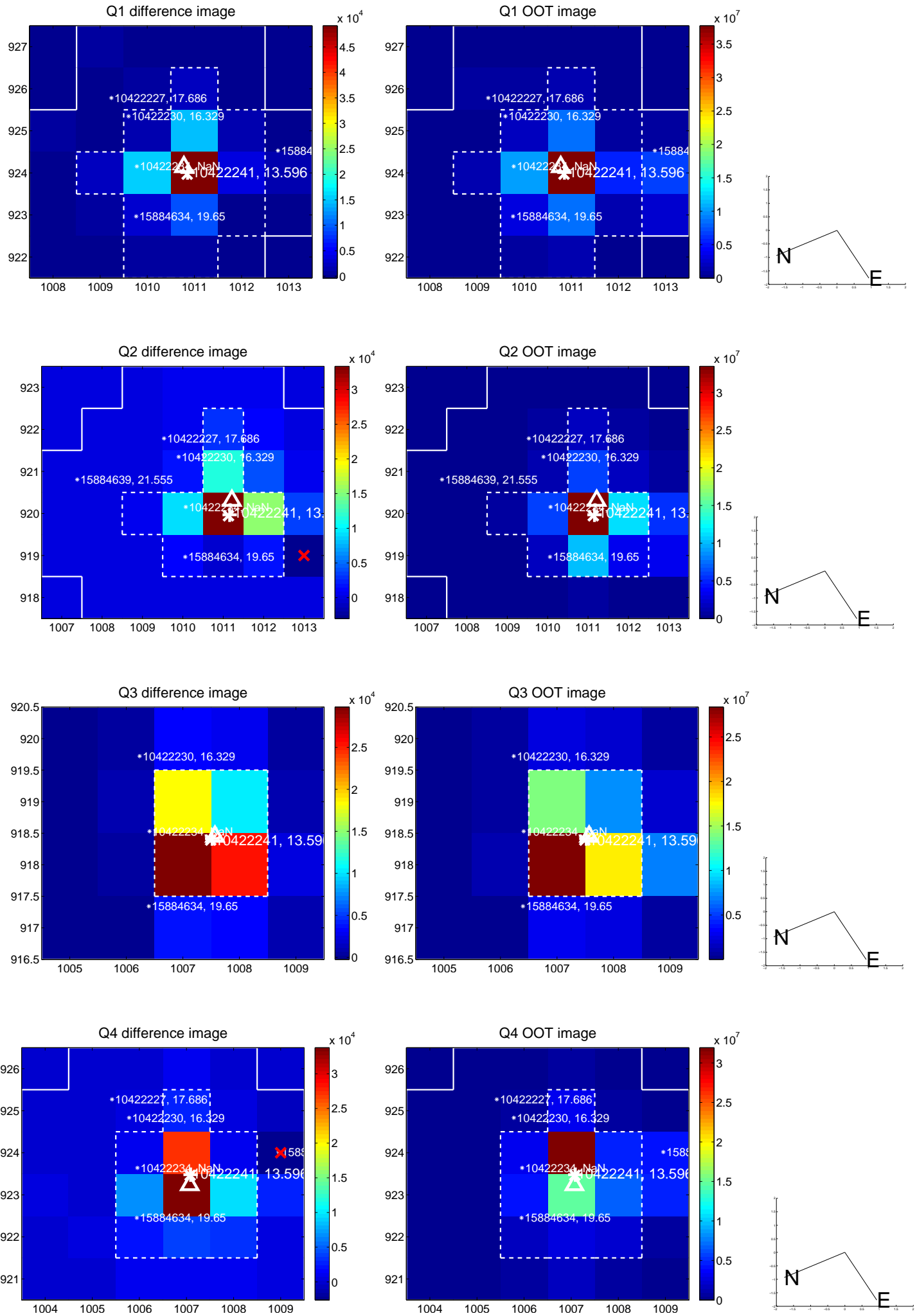
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.120 ± 0.271	0.44	-0.118 ± 0.252	-0.020 ± 0.173
PRF-fit source offset from KIC position	0.226 ± 0.305	0.74	-0.171 ± 0.260	-0.147 ± 0.196
photometric centroid source offset	8.56 ± 2.62	3.27	-8.18 ± 2.63	2.54 ± 2.54

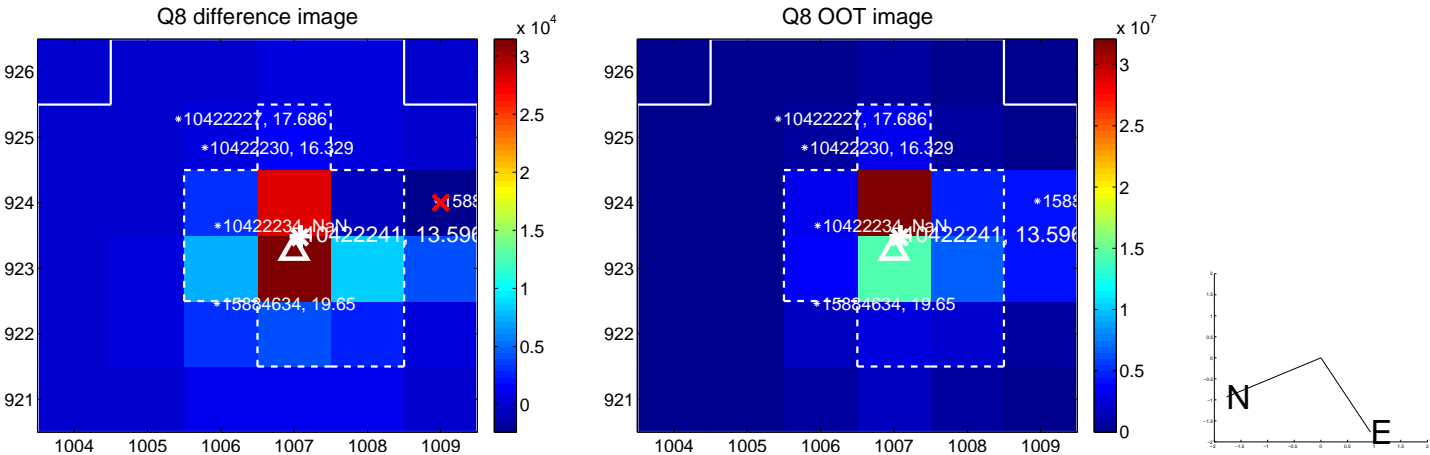
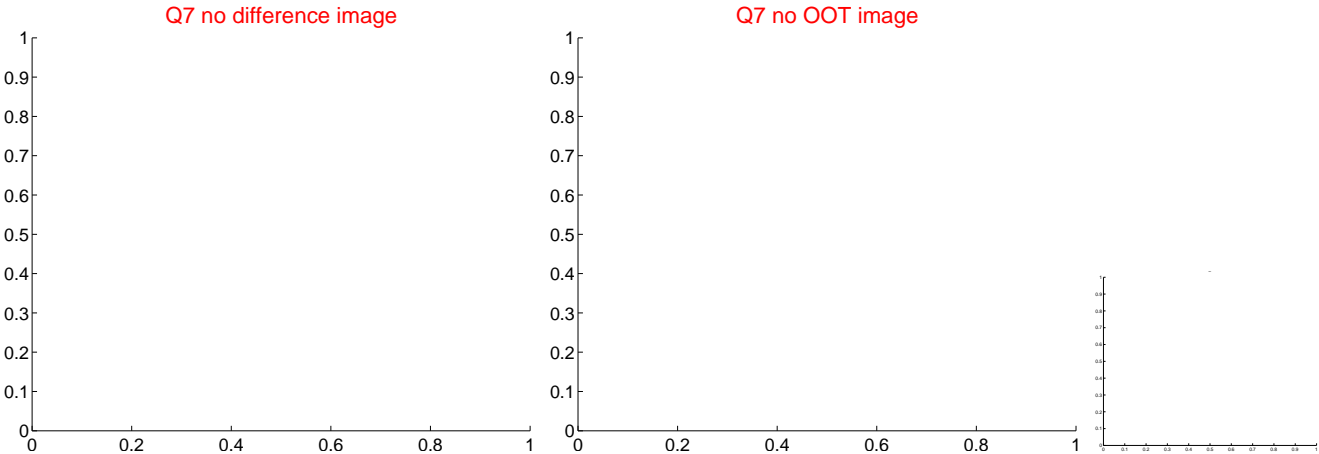
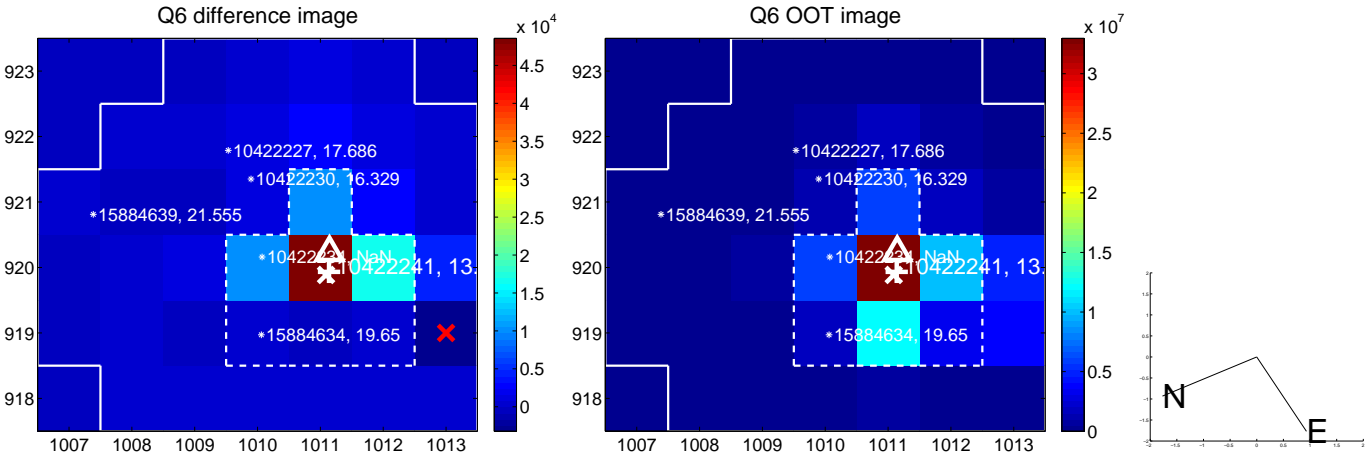
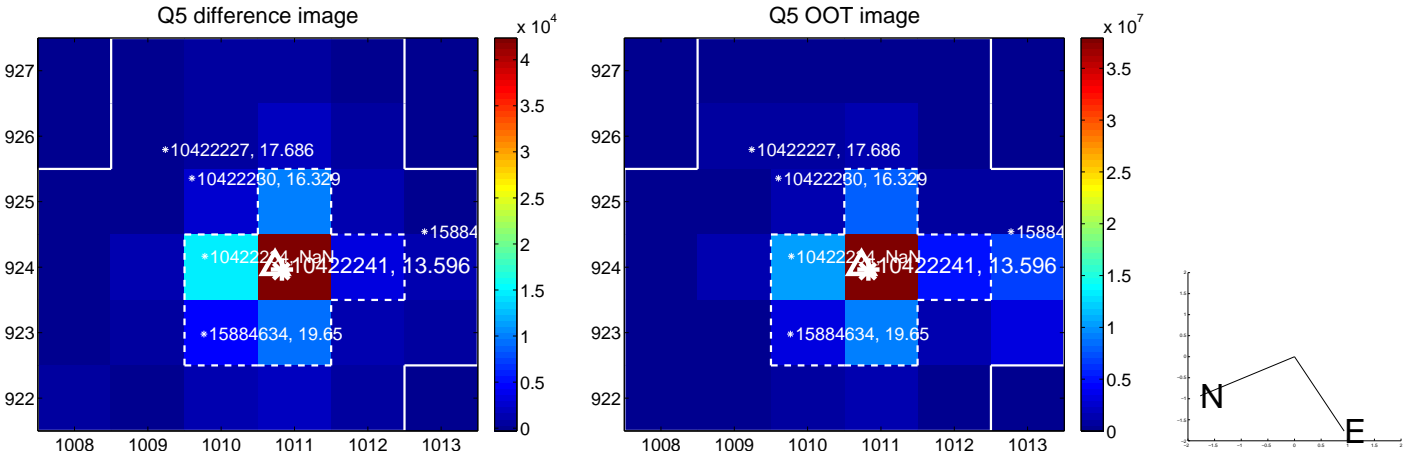


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

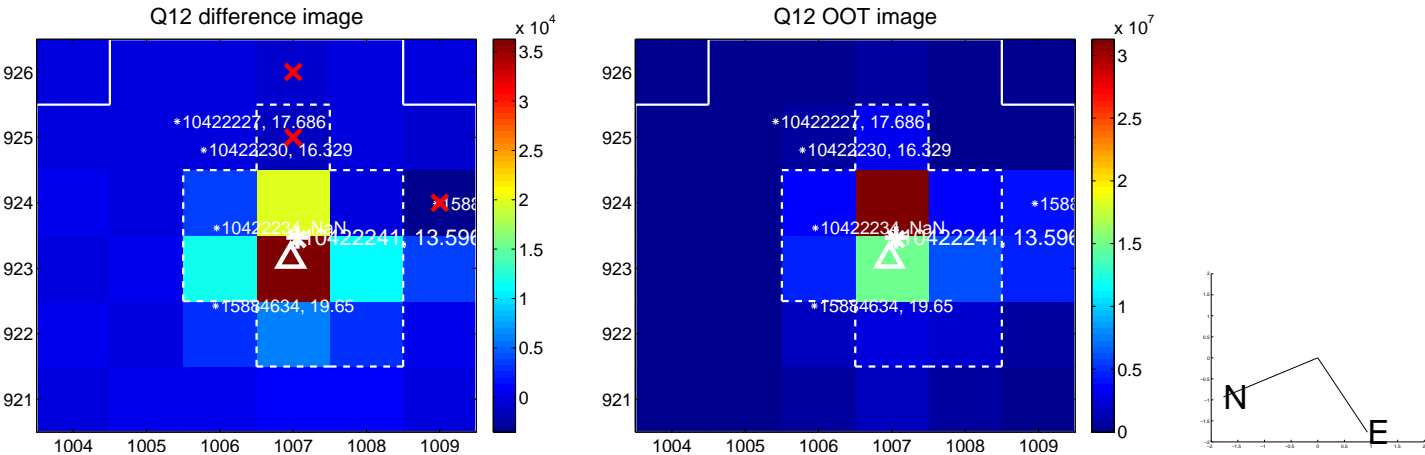
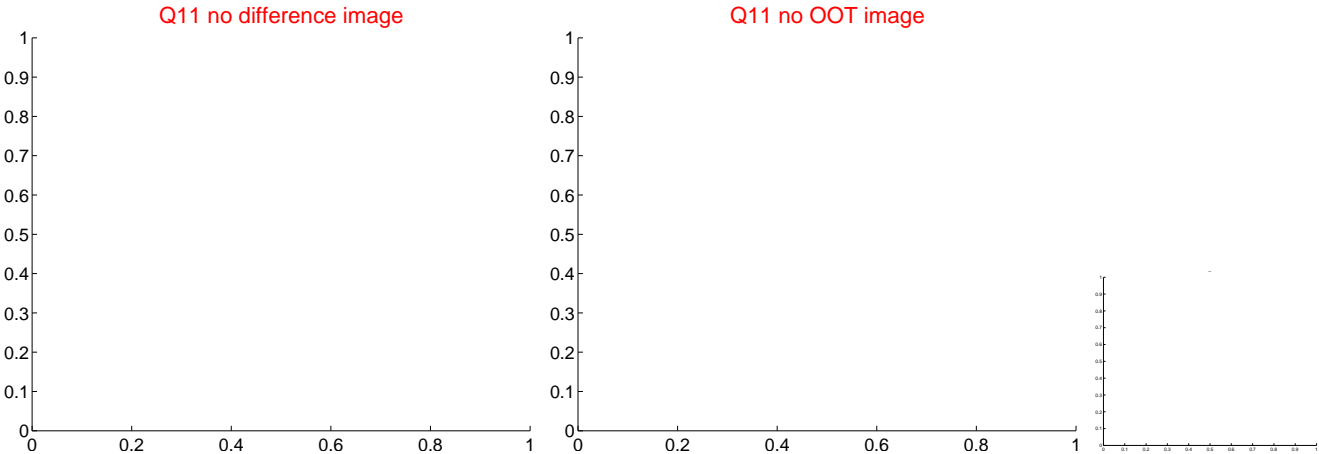
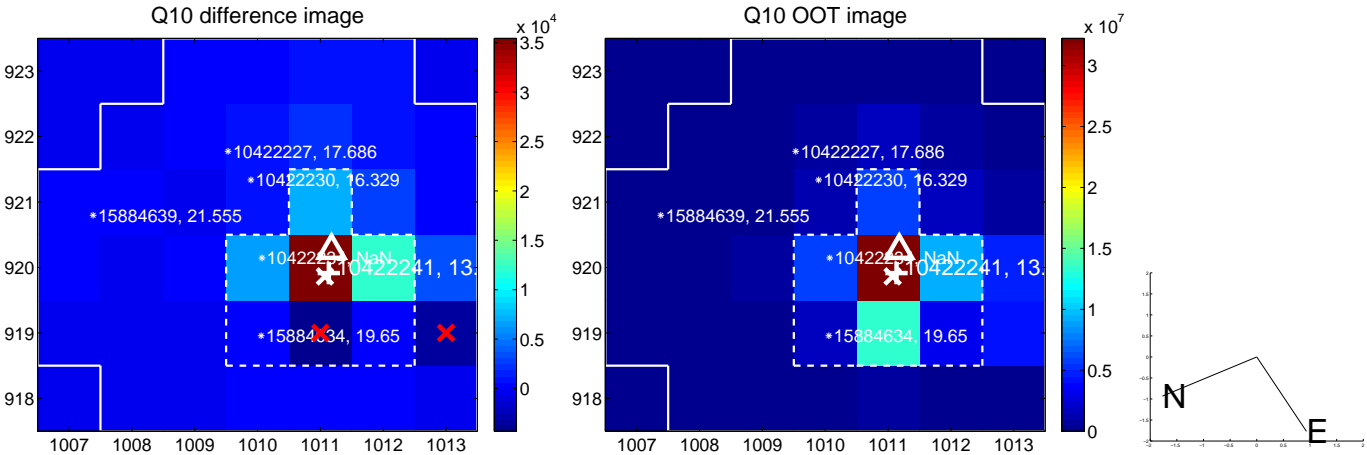
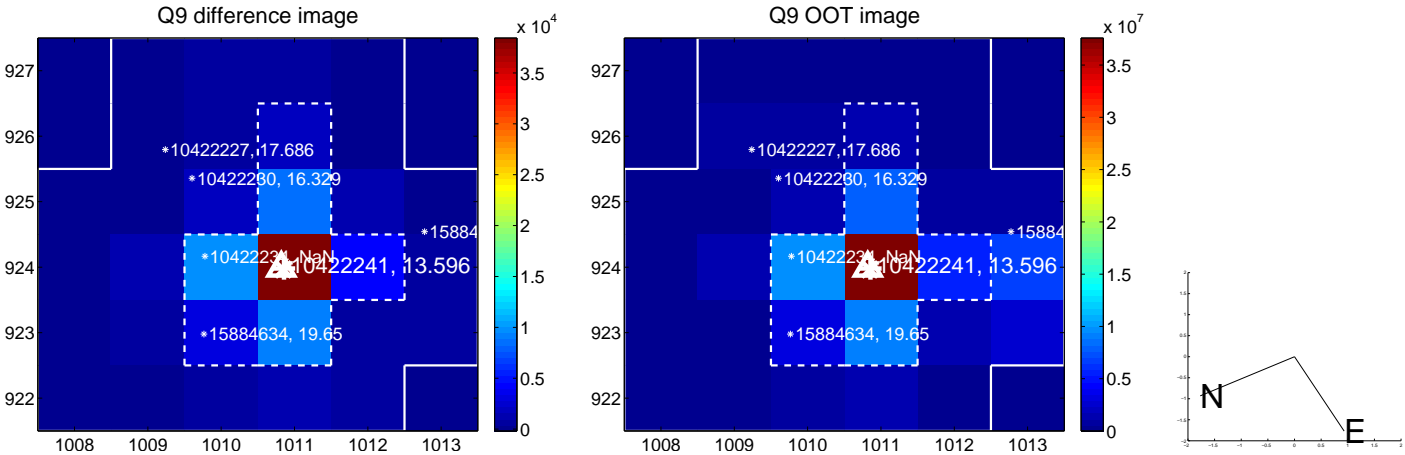
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



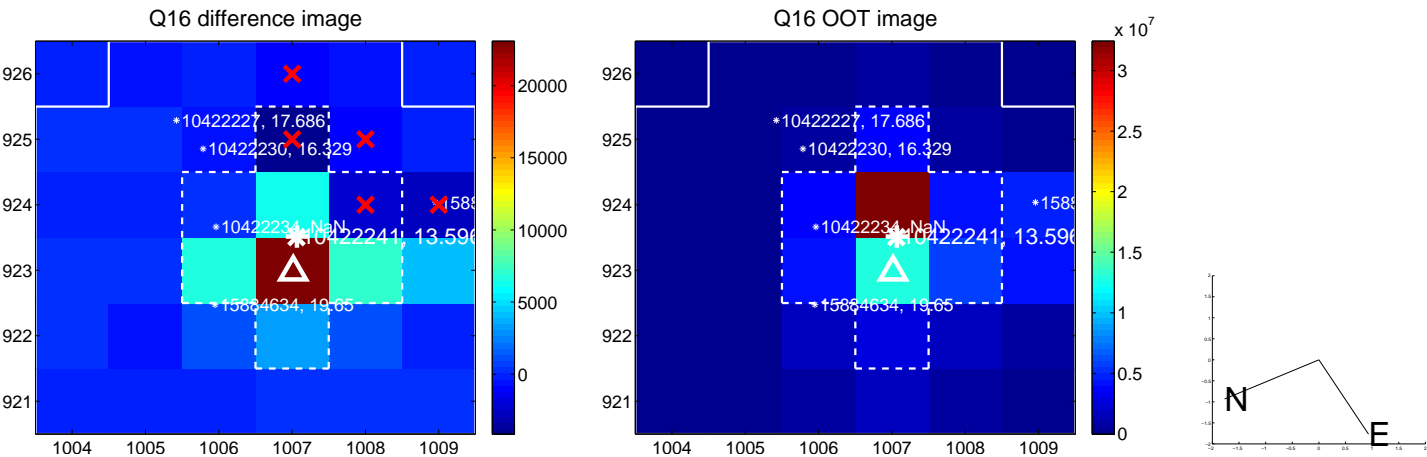
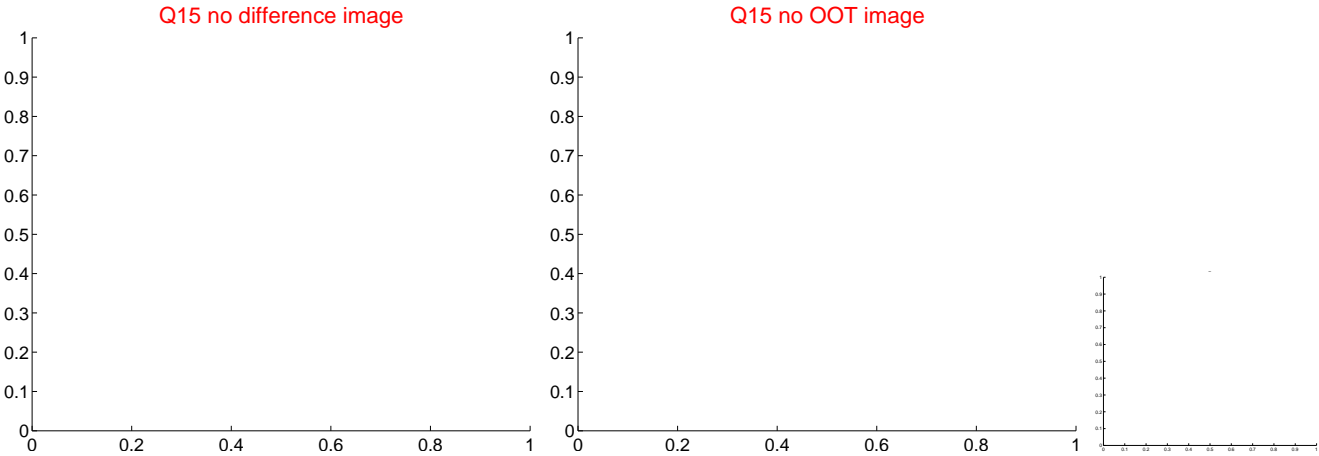
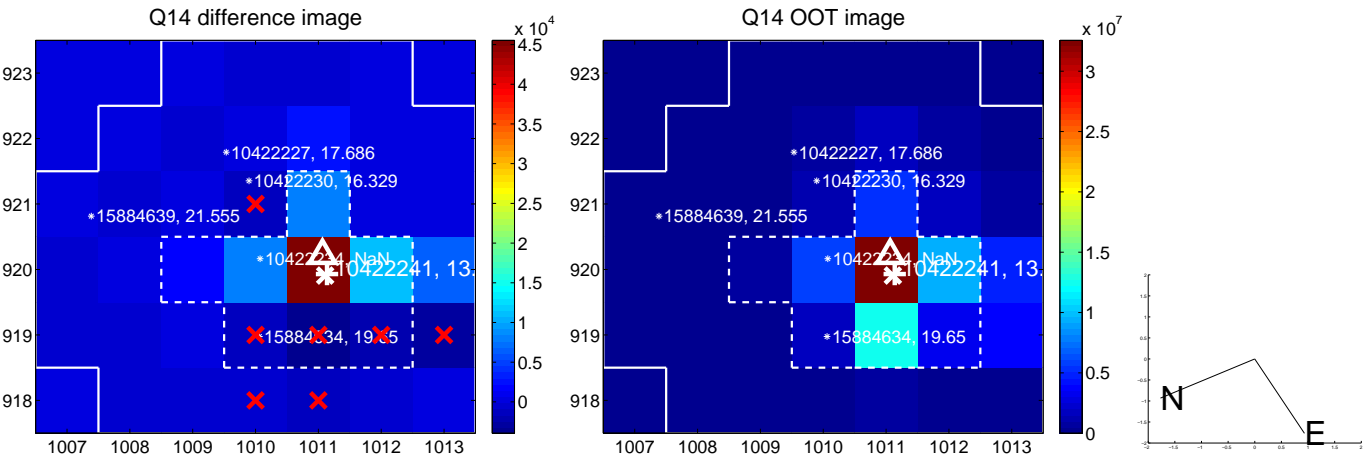
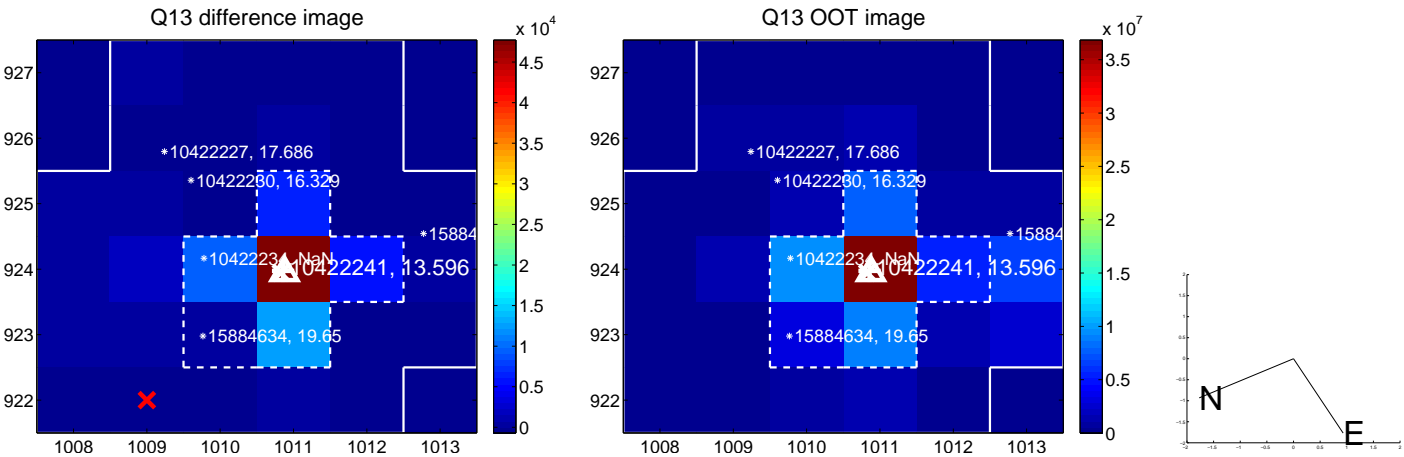
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



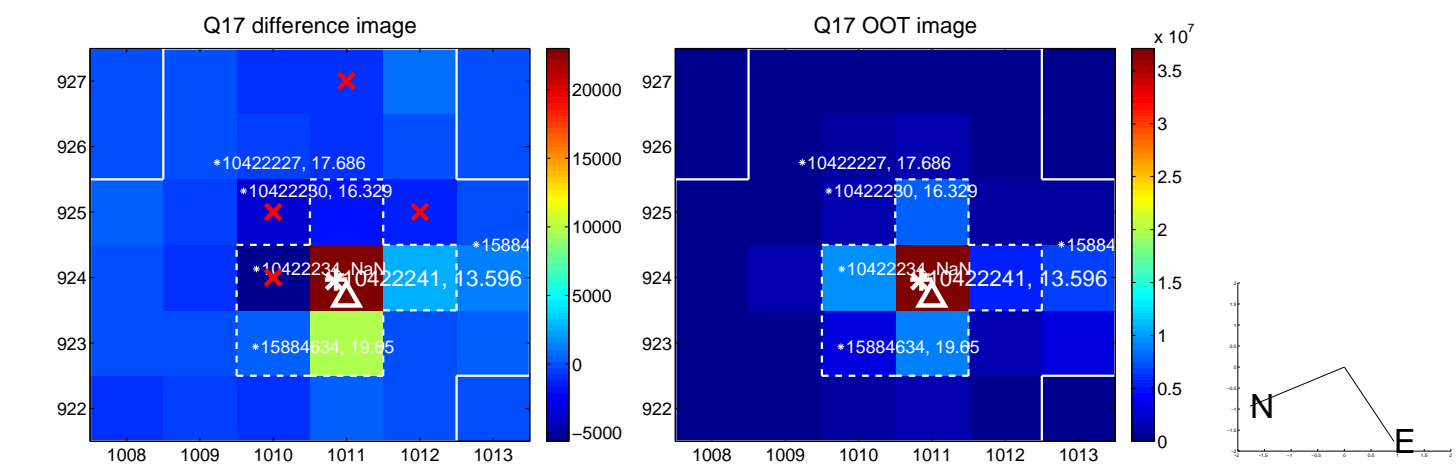
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



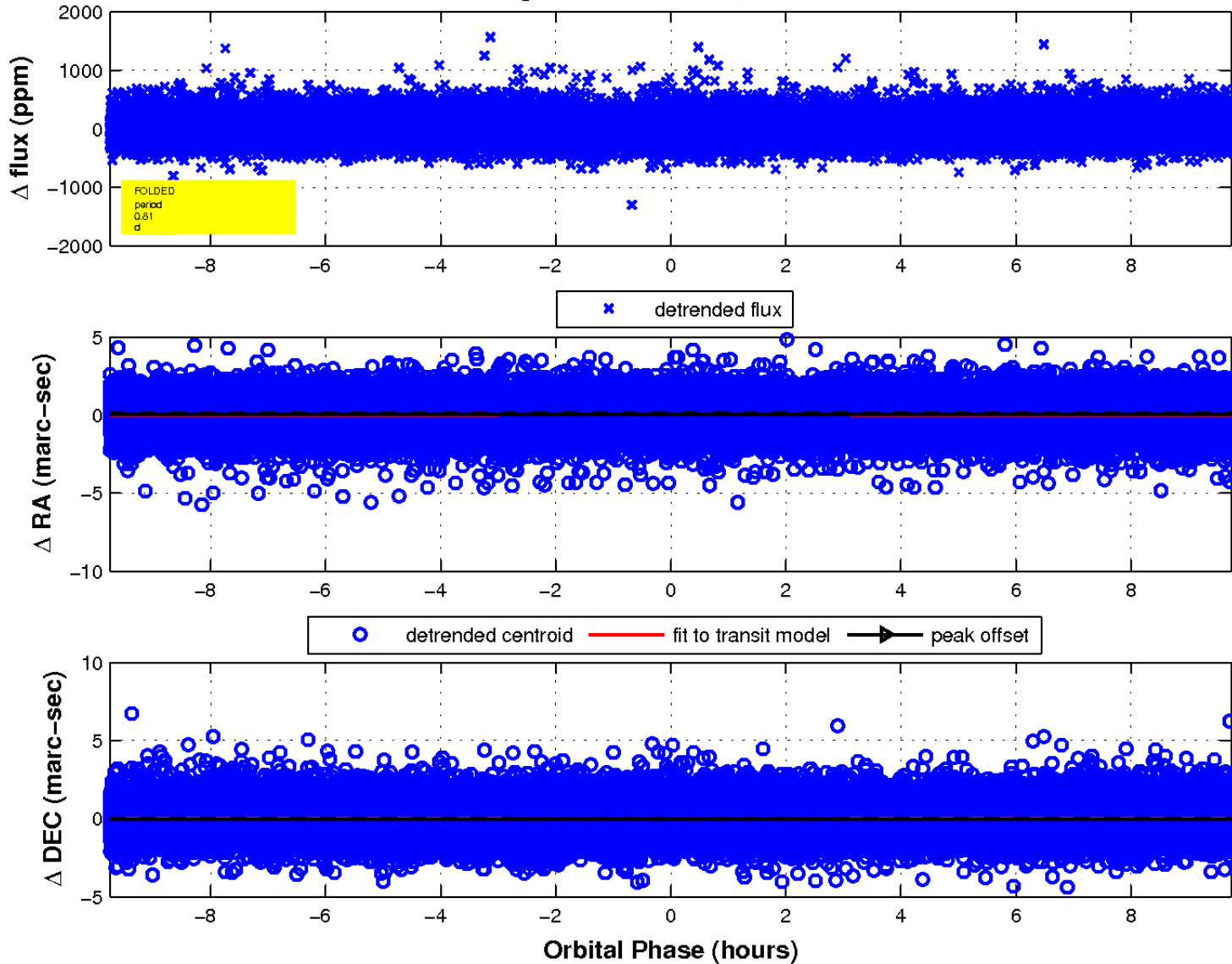
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

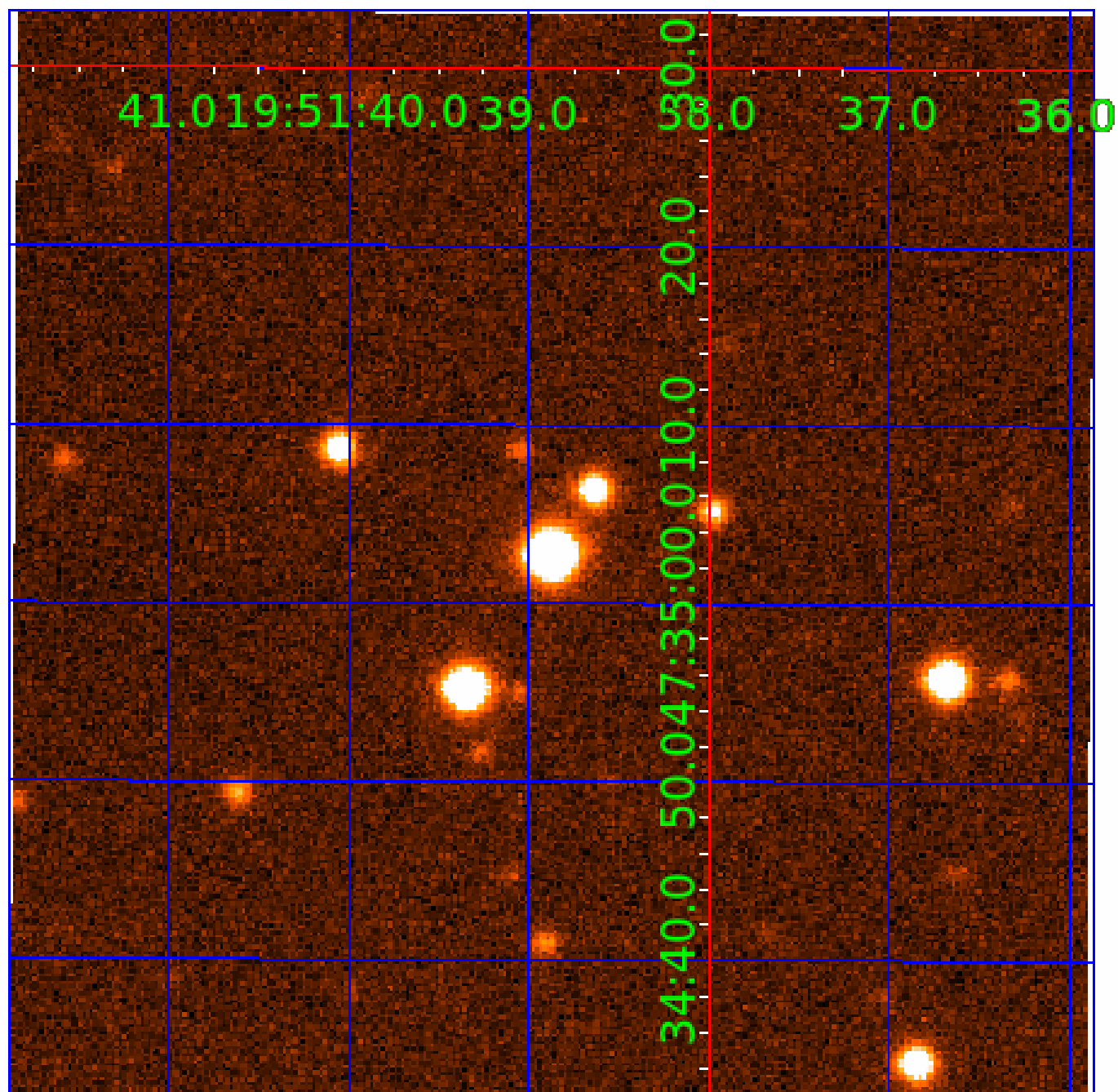


fluxWeightedCentroids, Planet 2 of 7



UKIRT Image

Declination



KIC 010422241

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})
010422241-01	OBS	No	2.436951	131.628332	62.9	1.279	8.4	10.2	1.92	8037	1.55	7343.27
010422241-02	OBS	No	0.812181	132.326211	8.9	6.161	10.5	4.7	1.92	8037	0.58	31779.58
010422241-03	OBS	No	3.904990	133.754399	229.8	0.573	17.7	12.3	1.92	8037	3.19	3916.14
010422241-04	OBS	No	5.543769	135.446954	405.9	0.555	13.0	18.6	1.92	8037	4.27	2454.40
010422241-05	OBS	No	7.231381	132.095055	298.8	1.342	9.3	15.5	1.92	8037	3.41	1722.09
010422241-06	OBS	No	3.467242	131.770191	201.4	0.836	13.2	10.4	1.92	8037	2.98	4588.87
010422241-07	OBS	No	10.282993	138.707871	899.7	1.500	12.7	-1.0	1.92	8037	5.85	1076.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010422241-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010422241-02	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
010422241-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

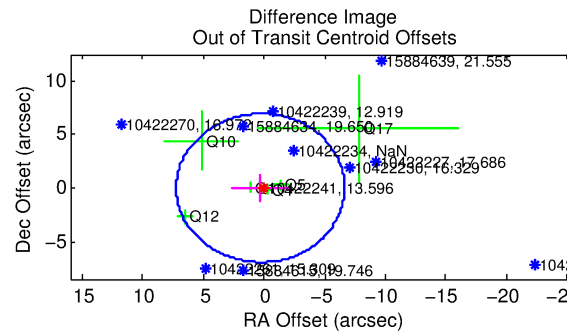
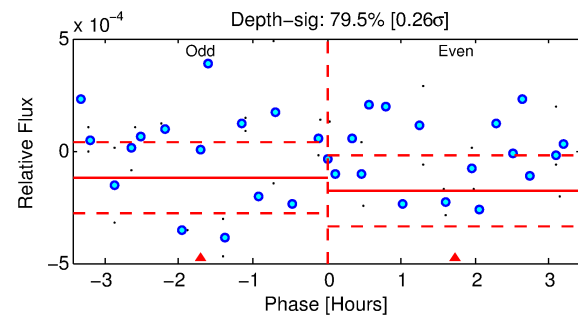
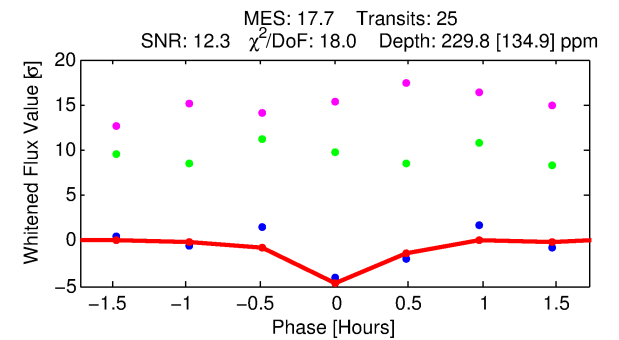
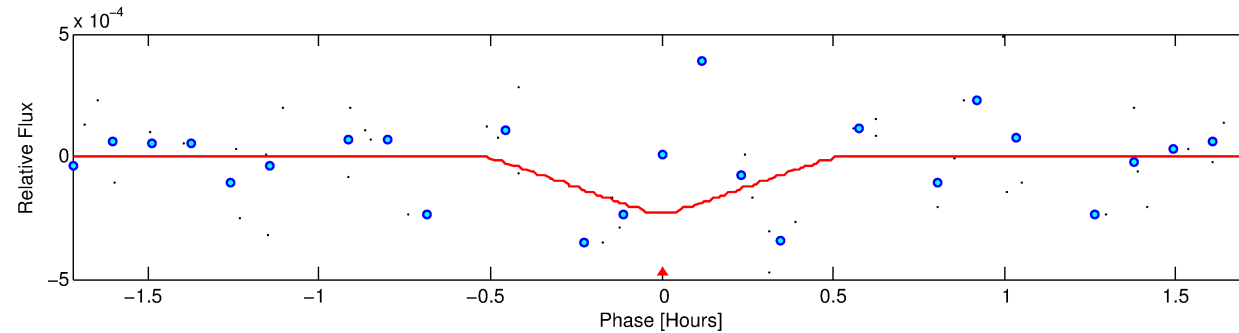
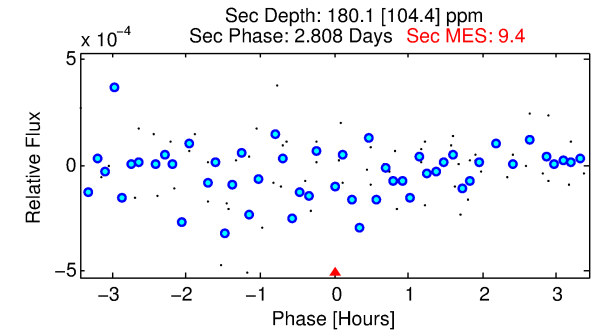
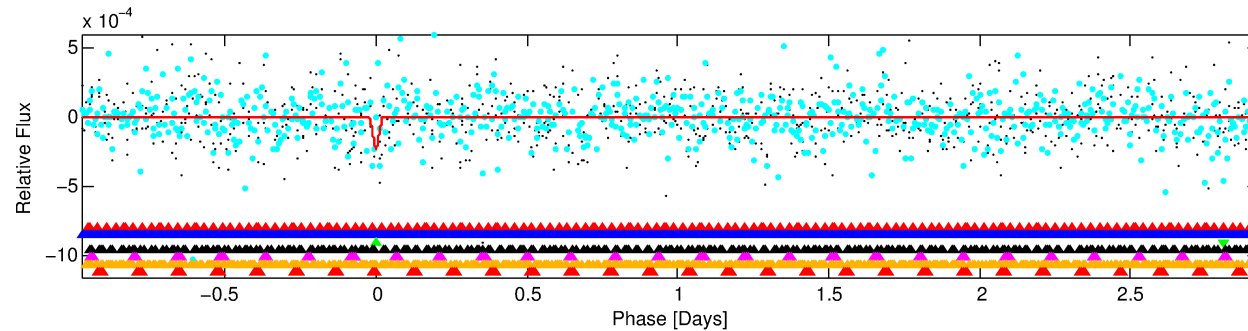
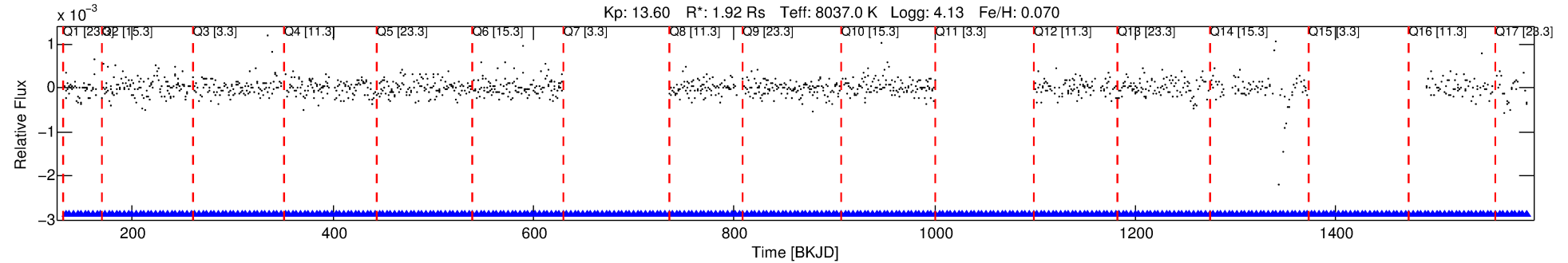
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010422241-03

No Significant Match Found

DV One-Page Summary

KIC: 10422241 Candidate: 3 of 7 Period: 3.905 d



DV Fit Results:

Period = 3.90499 [0.00005] d
Epoch = 133.7544 [0.0066] BKJD
Rp/R* = 0.0152 [0.0200]
a/R* = 39.35 [302.02]
b = 0.68 [6.09]
Seff = 3916.14 [1374.33]
Teq = 2017 [177] K
Rp = 3.19 [4.27] Re
a = 0.0592 [0.0127] AU
Ag = 34.24 [92.92] [0.36σ]
Teffp = 7544 [5094] K [1.08σ]

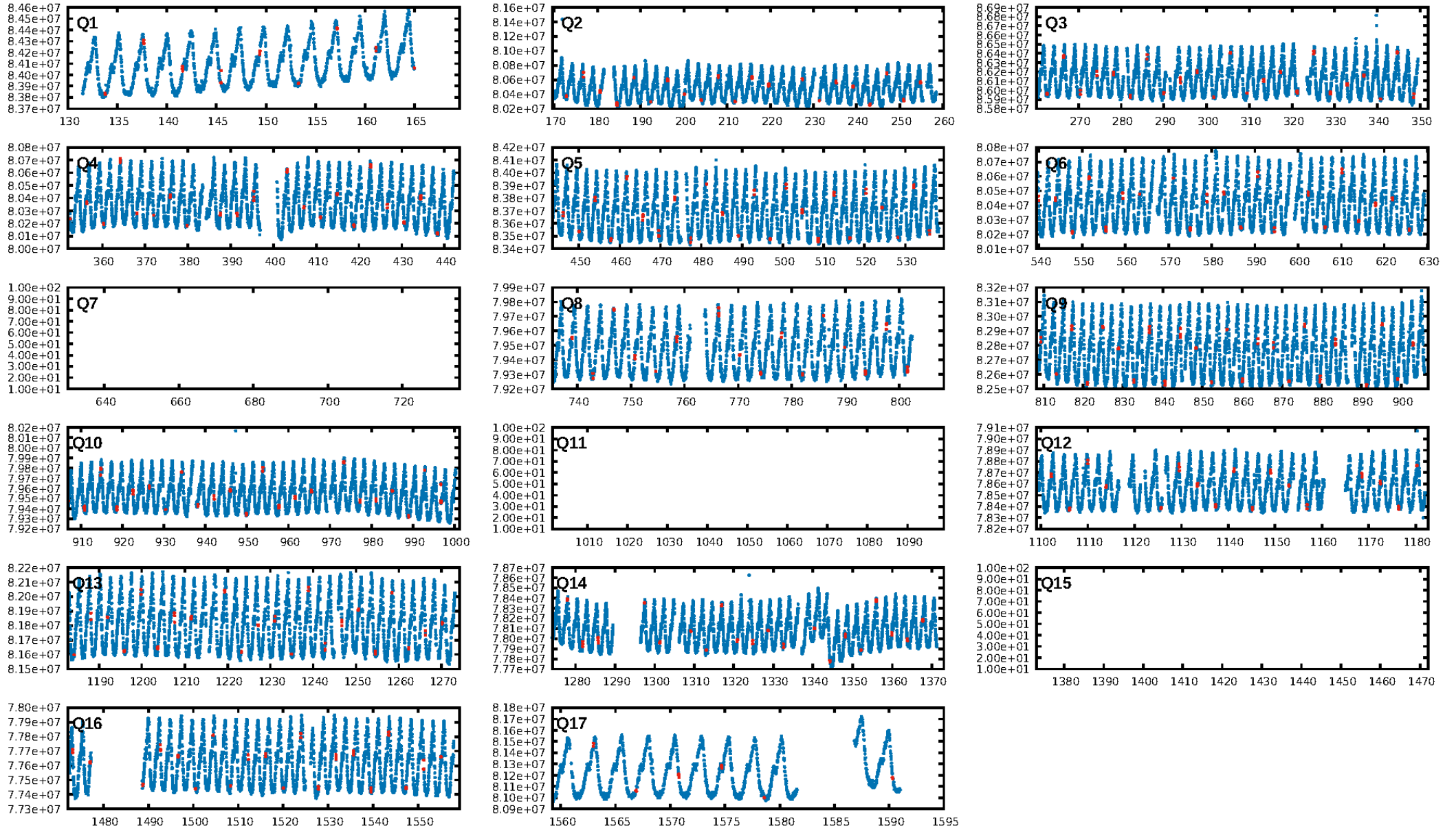
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.36σ]
LongPeriod-sig: 100.0% [49.28σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [24/24]
GhostDiagnostic-chr: 2.443
Centroid-sig: 56.6%
Centroid-so: 0.946 arcsec [1.32σ]
OotOffset-rm: 0.294 arcsec [0.13σ]
KicOffset-rm: 0.200 arcsec [0.10σ]
OotOffset-st: 1/0/2/3 [6]
KicOffset-st: 1/0/2/3 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 0.77 [10/13]

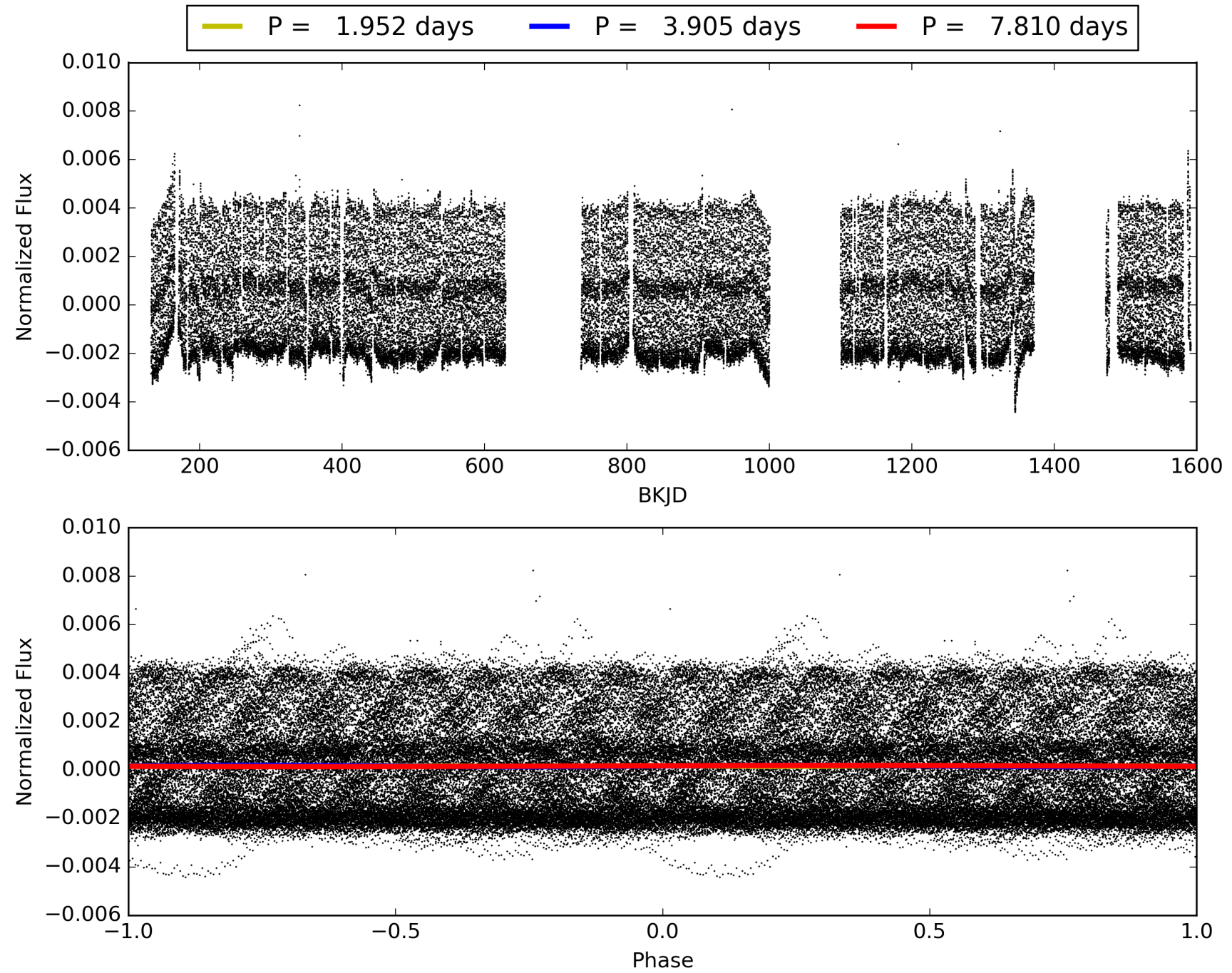
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:35:59 Z

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

TCE 010422241-03, PDC Light Curves

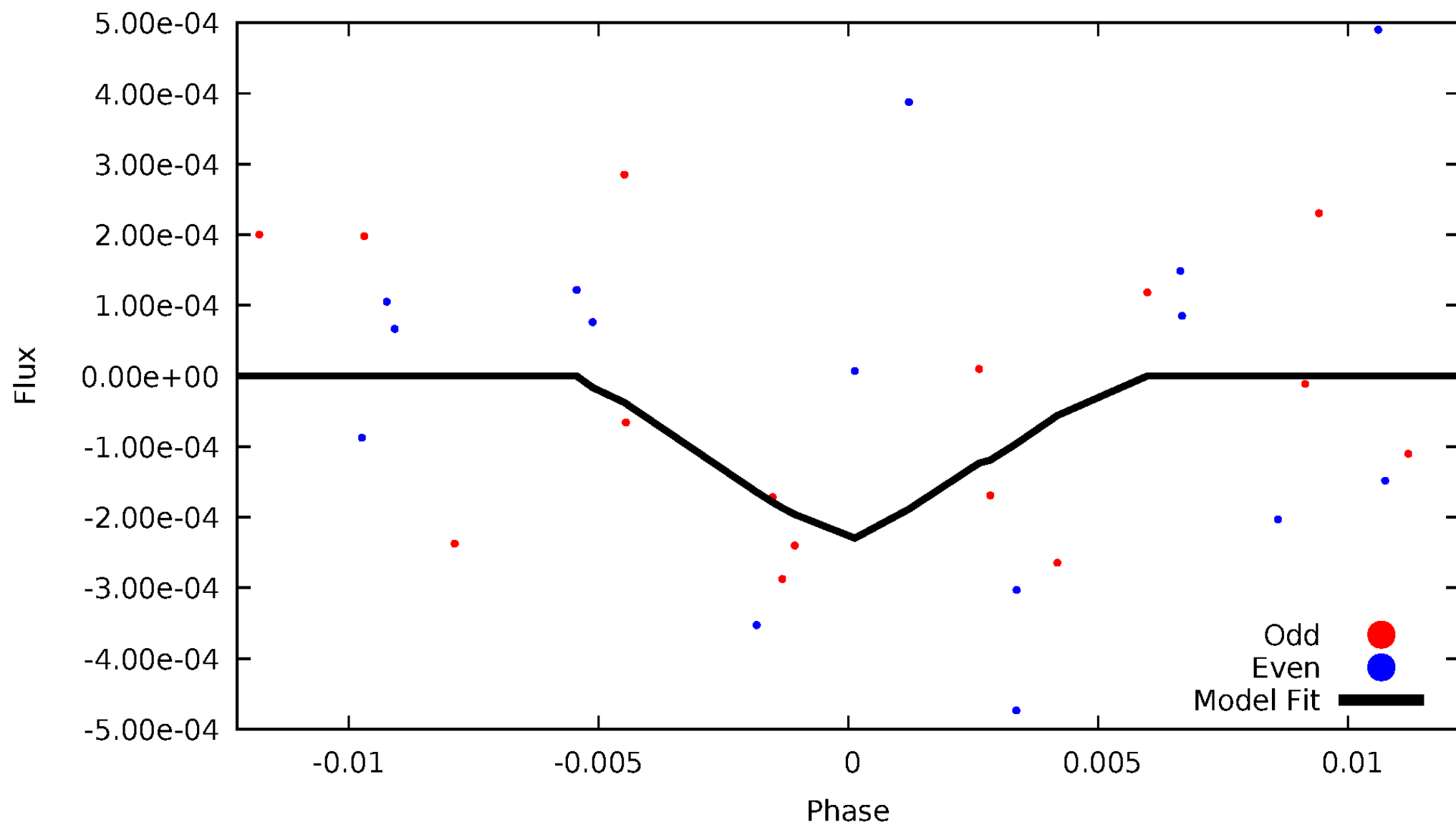


TCE 010422241-03



DV Odd/Even

TCE 010422241-03

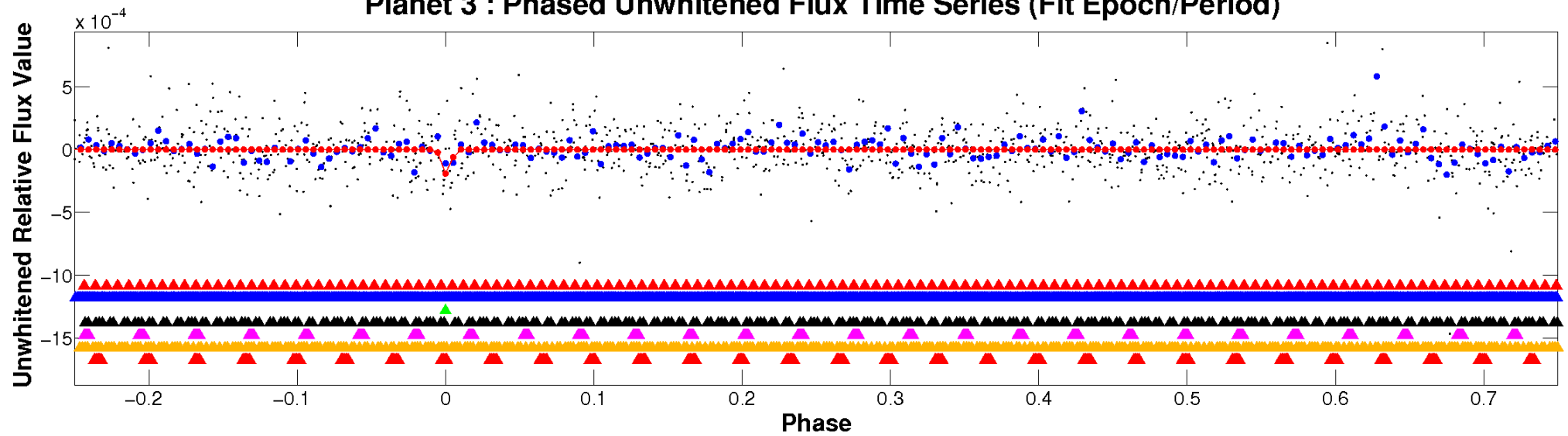


ALT Odd/Even

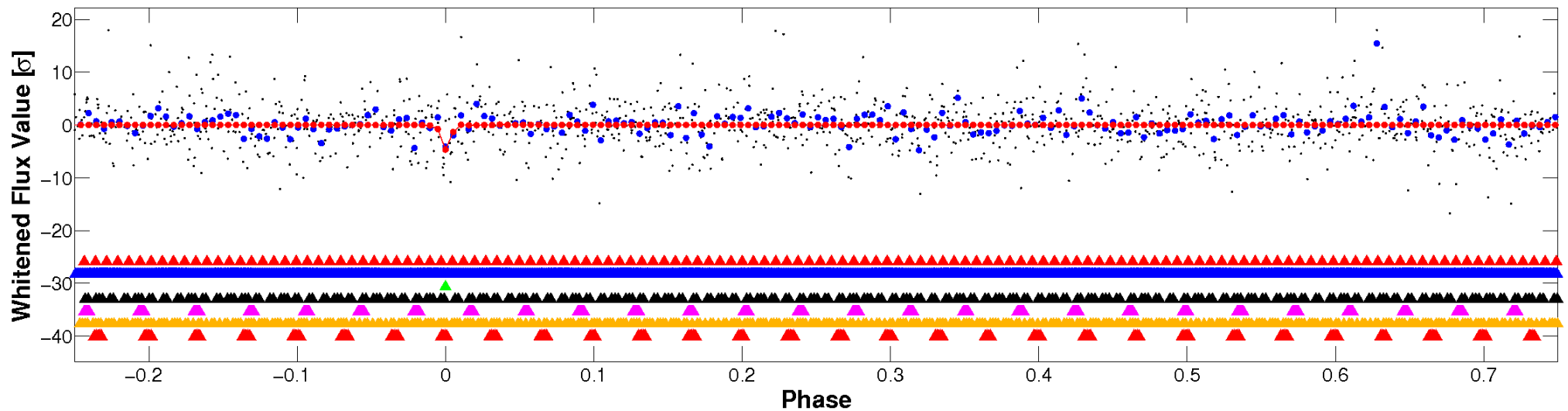
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

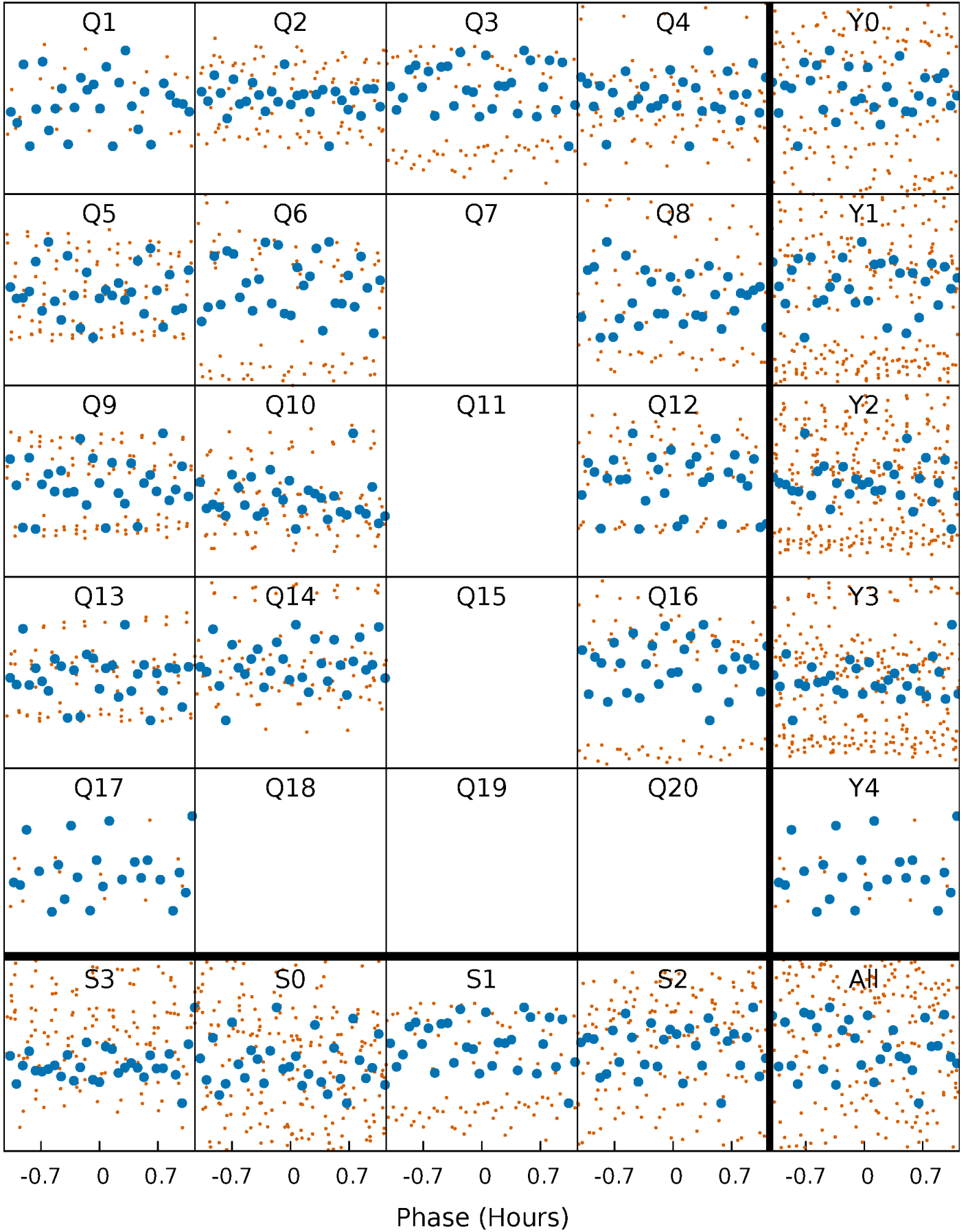


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



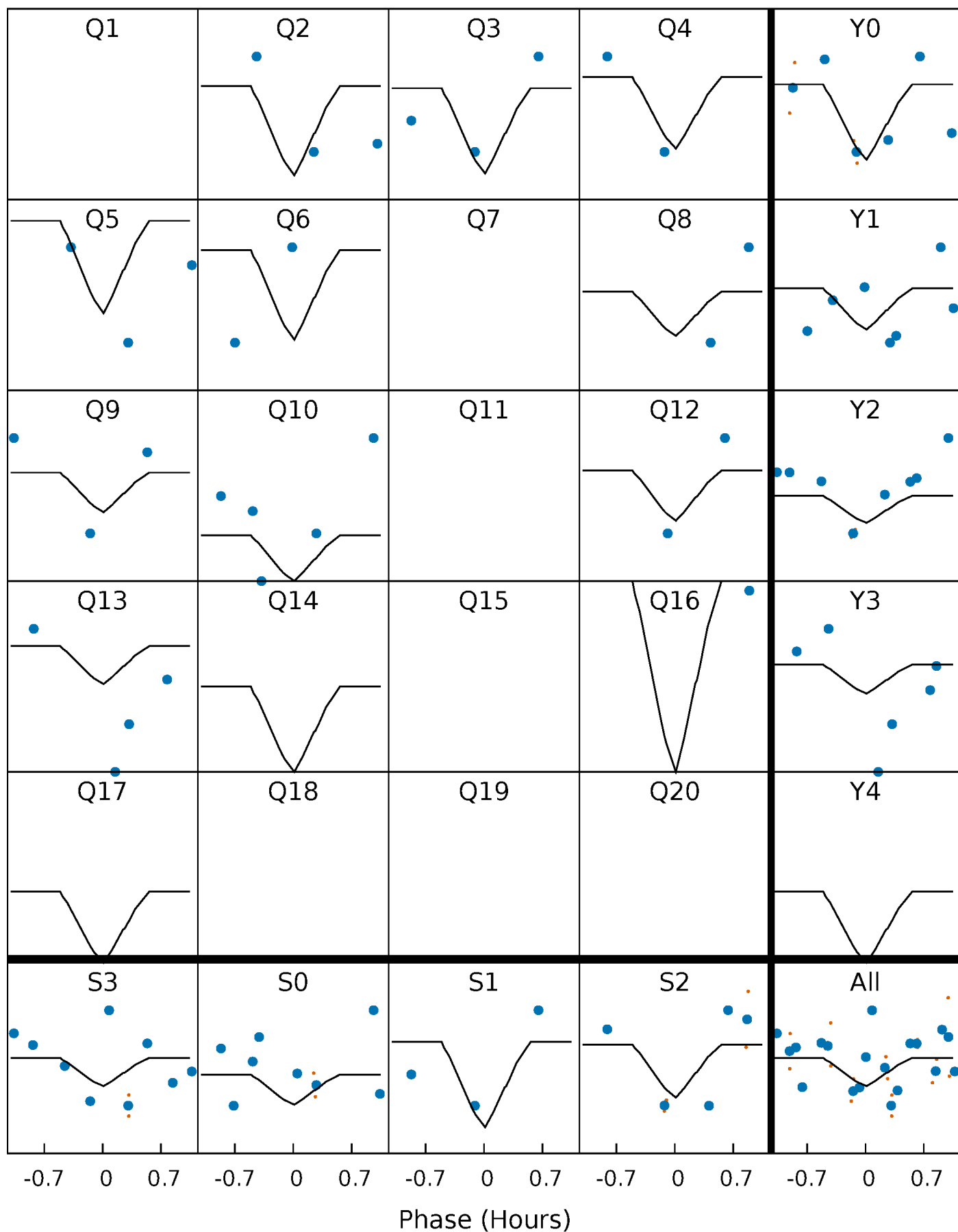
PDC Quarter-Phased Transit Curves

TCE 010422241-03 P= 3.904990 Days $T_0=133.754399$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010422241-03 P= 3.904990 Days $T_0=133.754399$ (BKJD)

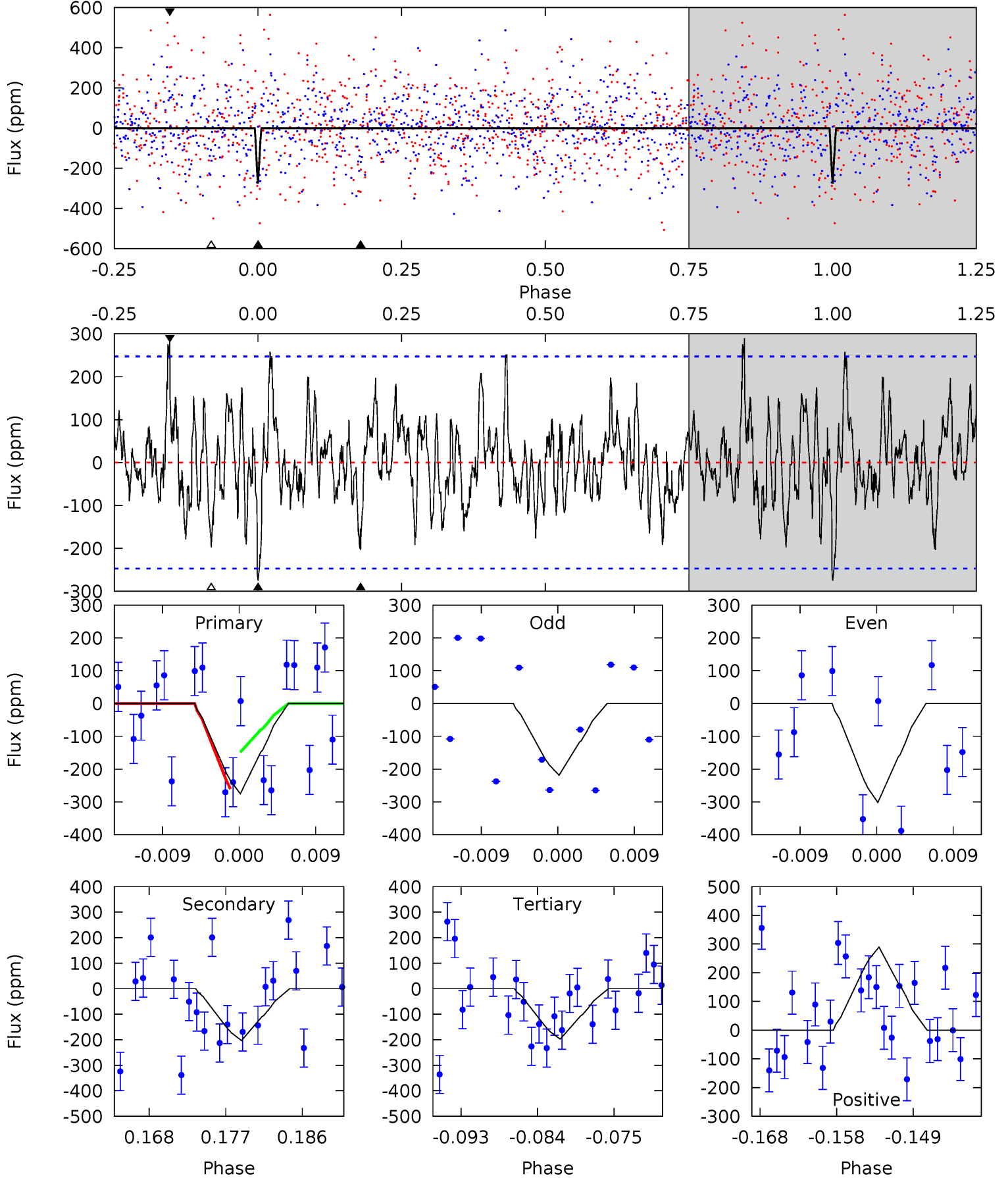


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

010422241-03, P = 3.904990 Days, E = 129.849409 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.61	4.15	4.03	5.90	5.04	2.60	1.67	1.58	-0.29	0.12	-1.76	0.84	0	0.51	1.10



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 010422241

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8037^{+221}_{-331}	$4.132^{+0.112}_{-0.168}$	$0.070^{+0.250}_{-0.450}$	$1.917^{+0.494}_{-0.371}$	$1.815^{+0.170}_{-0.316}$	$0.363^{+0.190}_{-0.171}$
	+3%/-4%	+3%/-4%	+357%/-643%	+26%/-19%	+9%/-17%	+52%/-47%
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 010422241-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-203 ± 49	$4.32^{+3.93}_{-2.67}$	2828^{+198}_{-176}	6437^{+5692}_{-1691}	20^{+122}_{-15}
Alt.	N/A	N/A	N/A	N/A	N/A

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

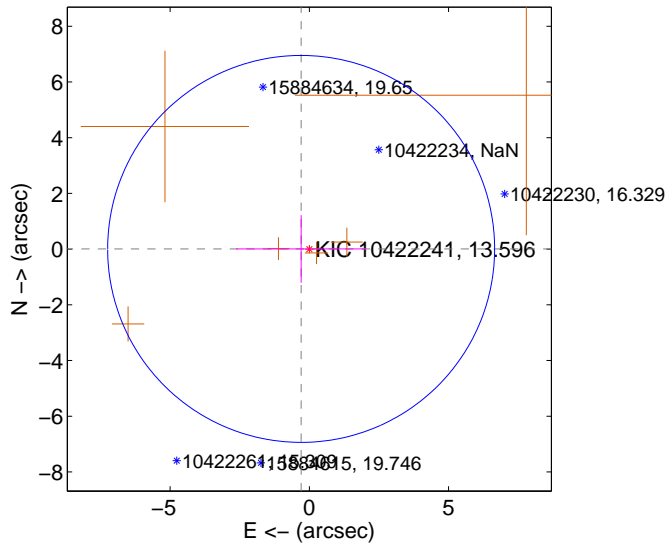
Supplemental centroid analysis for 010422241-03. Kepler magnitude: 13.60. Transit SNR 12.31

There are 0 quarters with good PRF difference image offsets

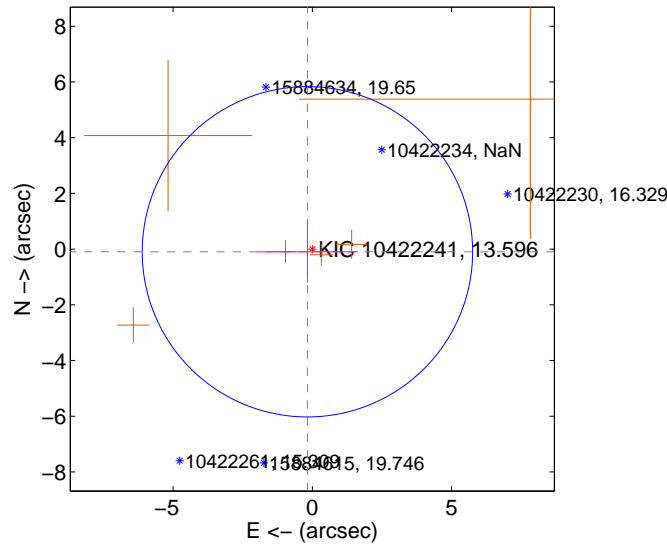
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.294 ± 2.316	0.13	0.294 ± 2.332	0.007 ± 1.215
PRF-fit source offset from KIC position	0.200 ± 1.977	0.10	0.176 ± 1.819	-0.096 ± 1.094
photometric centroid source offset	0.95 ± 0.71	1.32	-0.12 ± 0.69	-0.94 ± 0.72

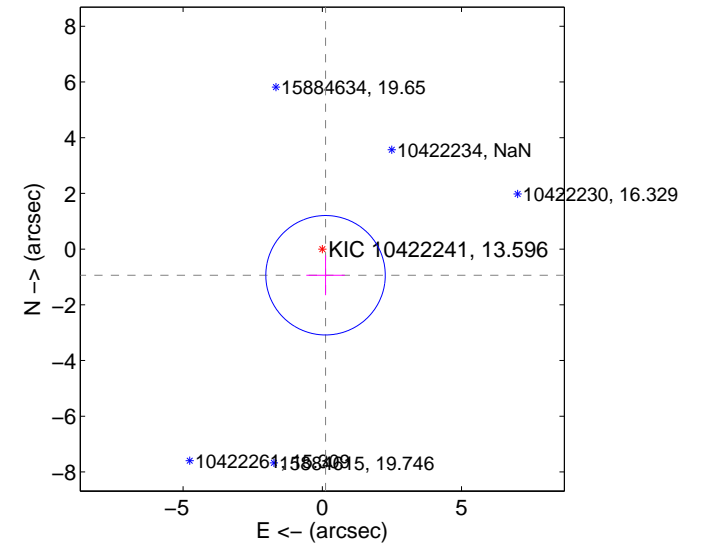
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

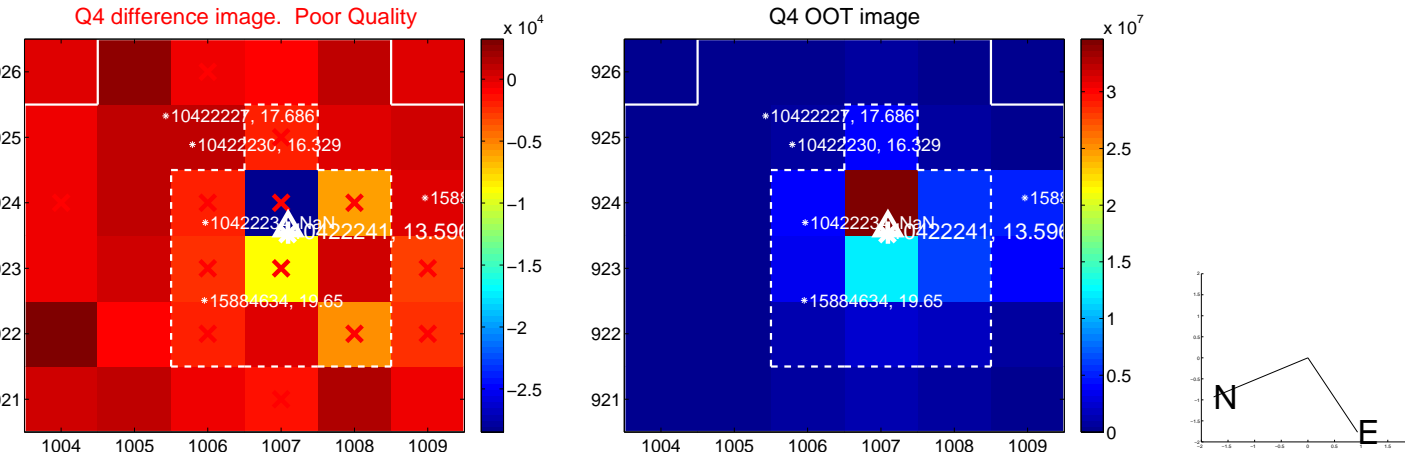
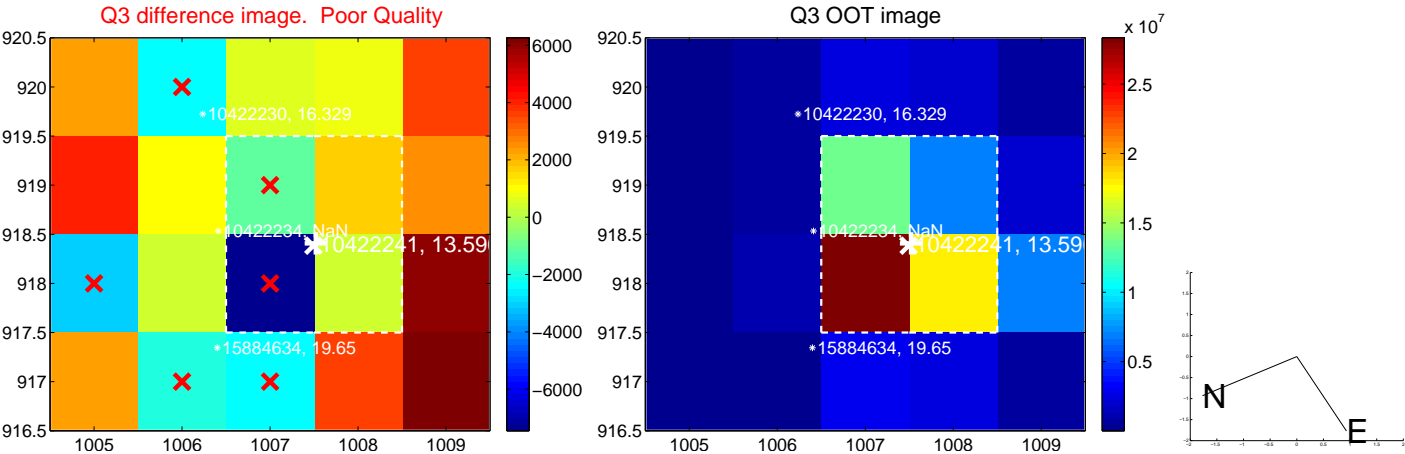
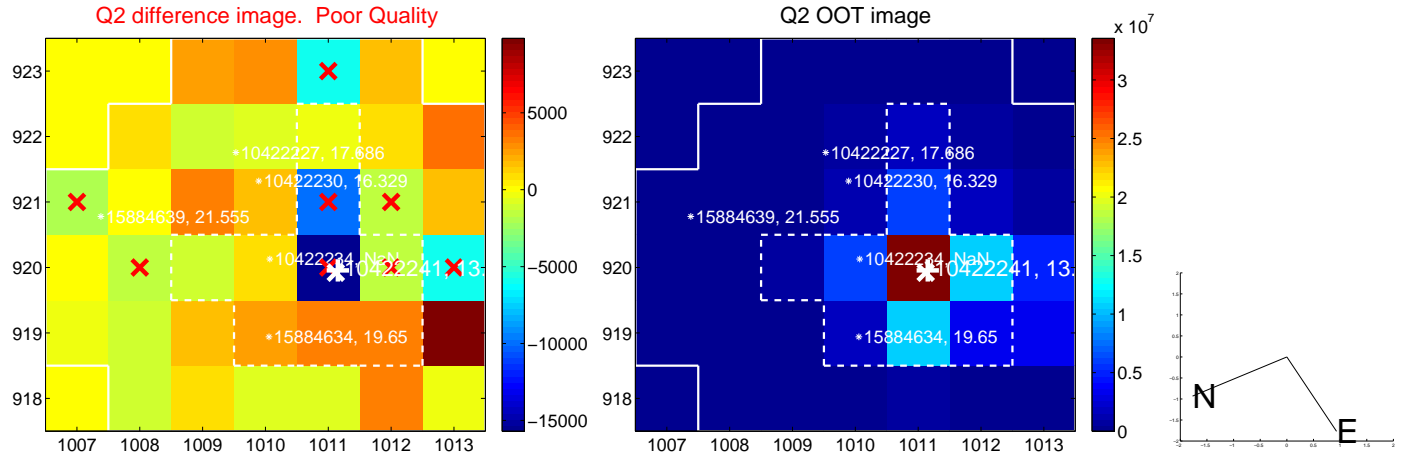
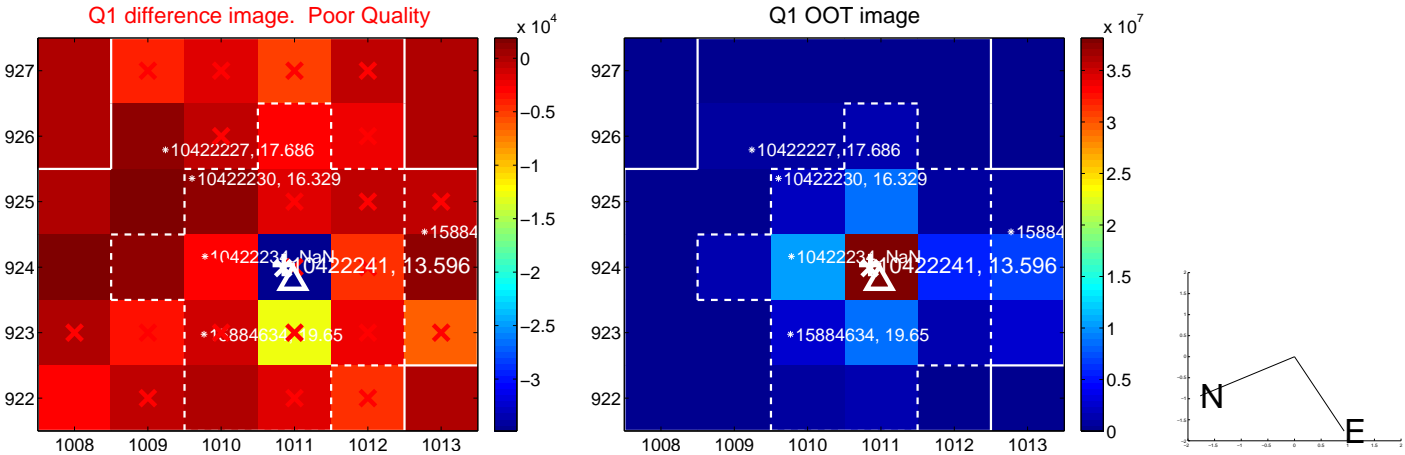


offset from photometric centroids

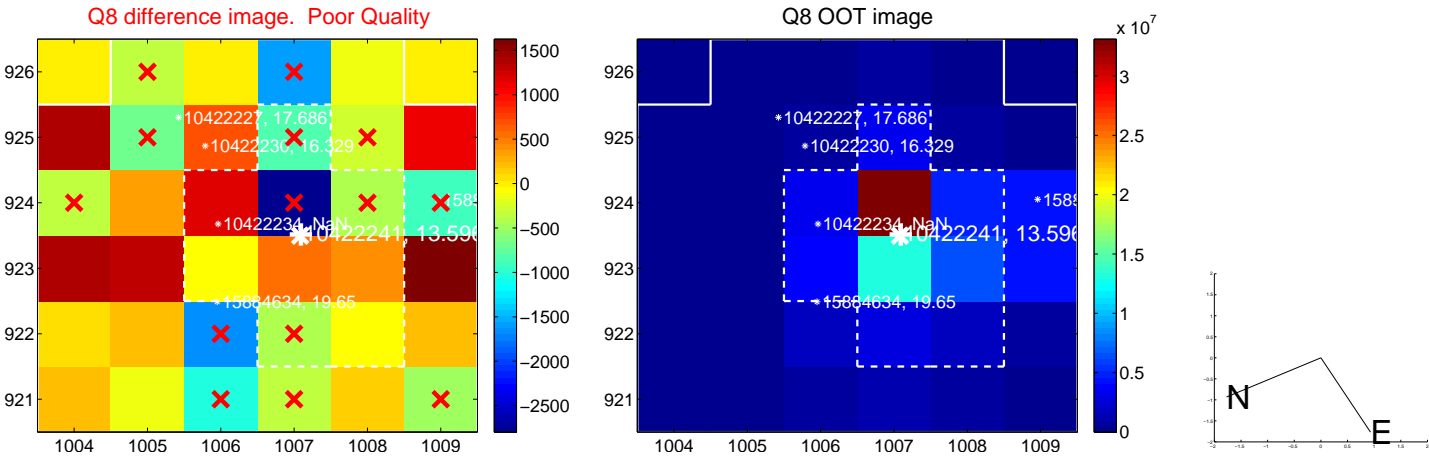
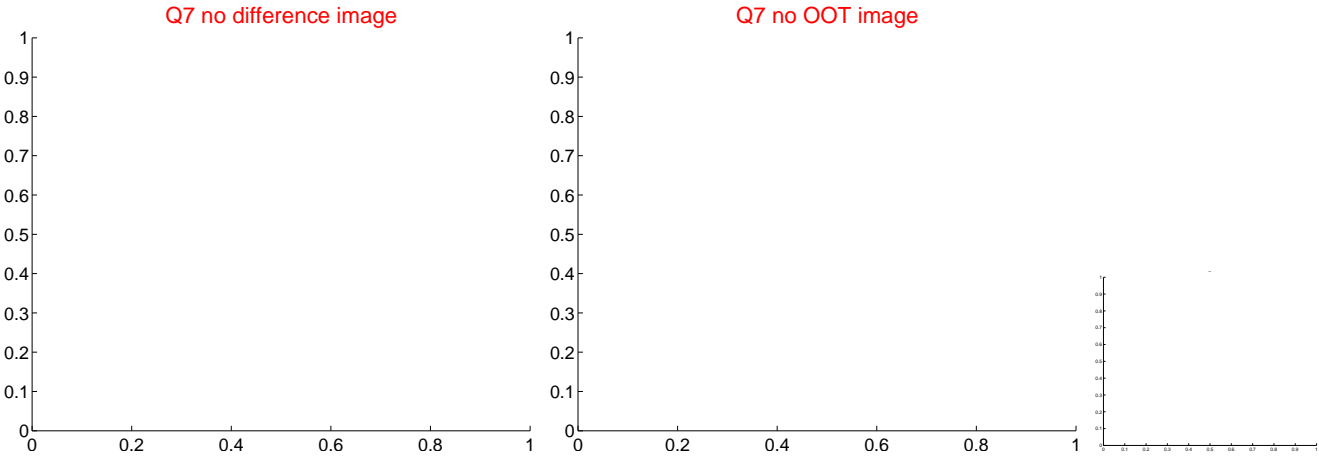
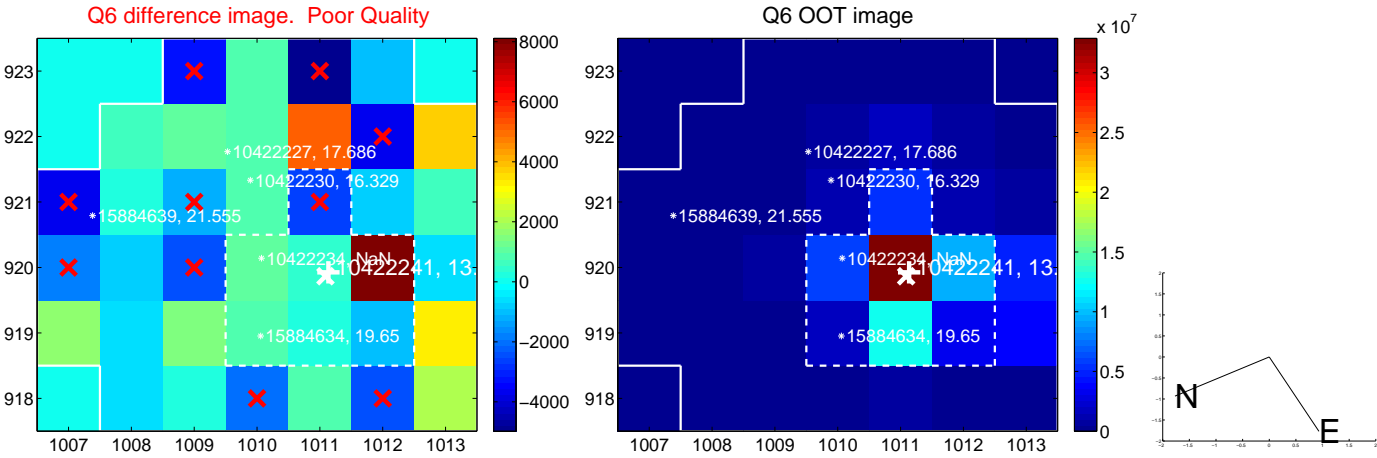
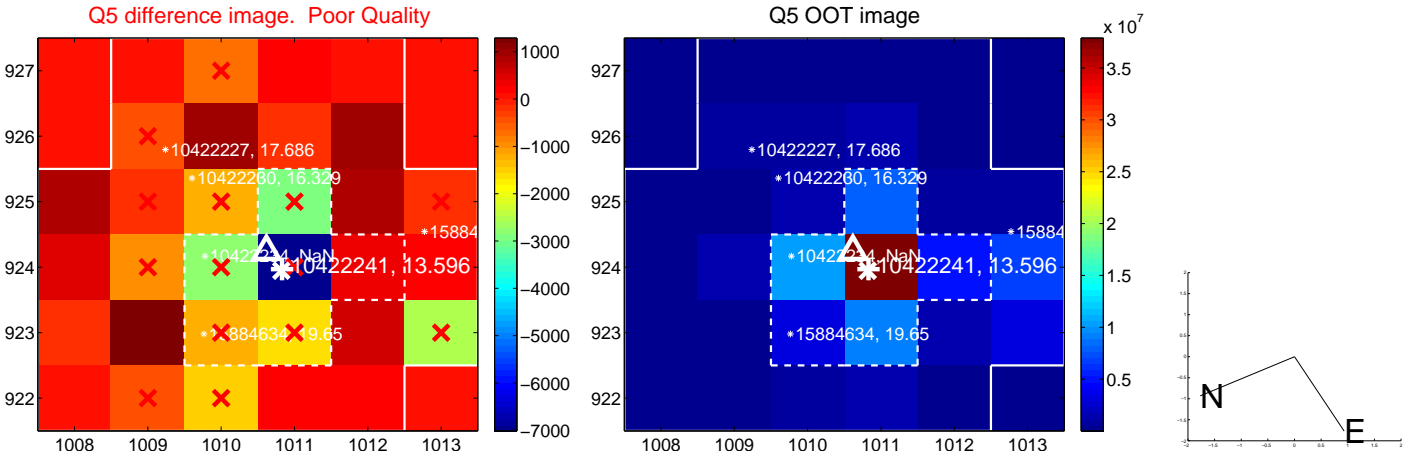


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

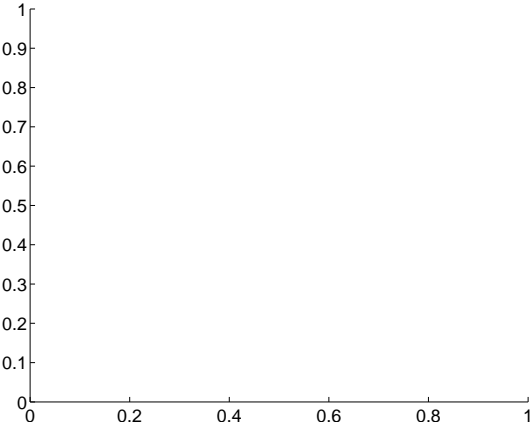


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

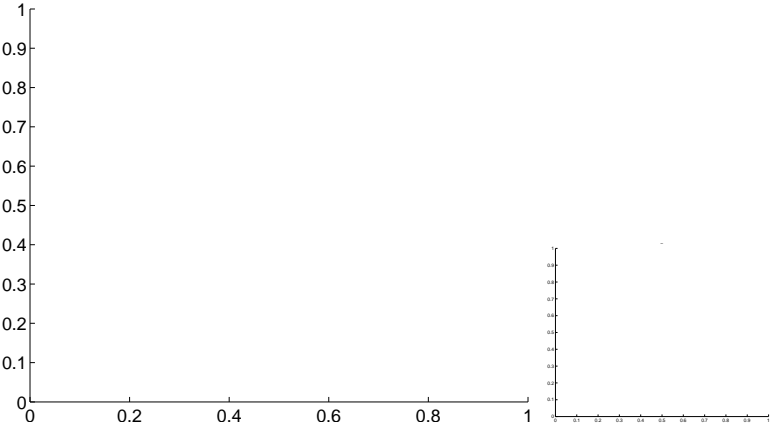


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

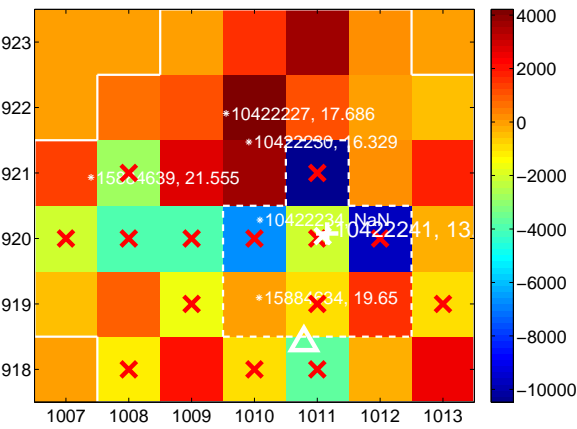
Q9 no difference image



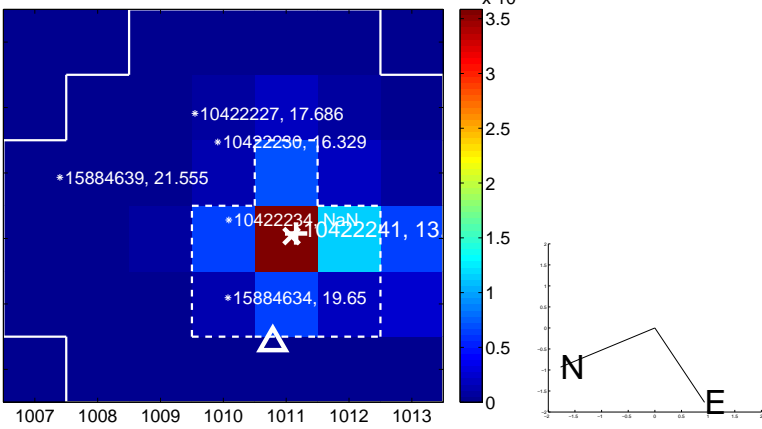
Q9 no OOT image



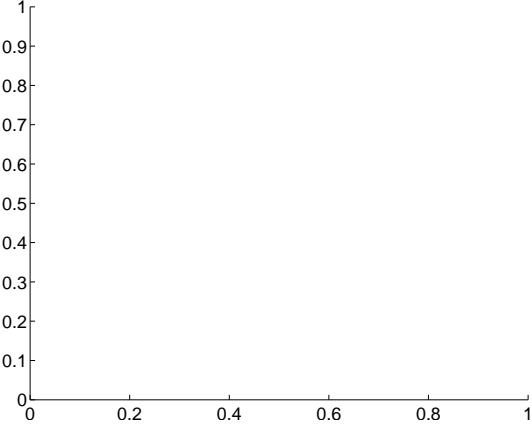
Q10 difference image. Poor Quality



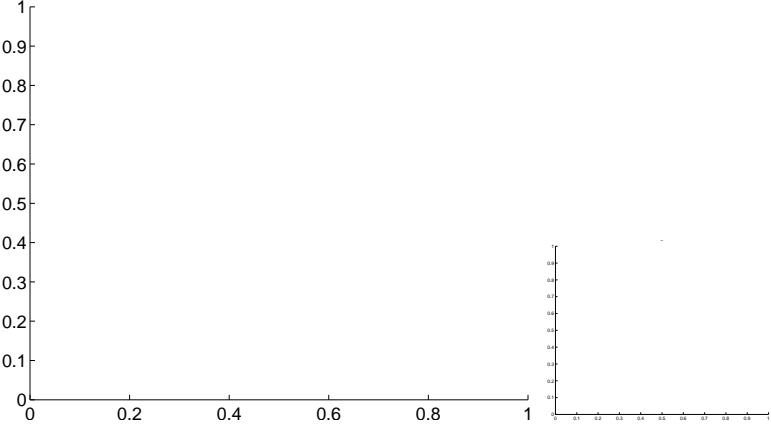
Q10 OOT image



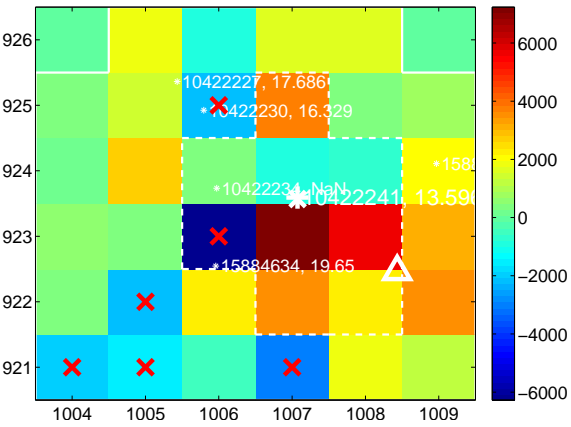
Q11 no difference image



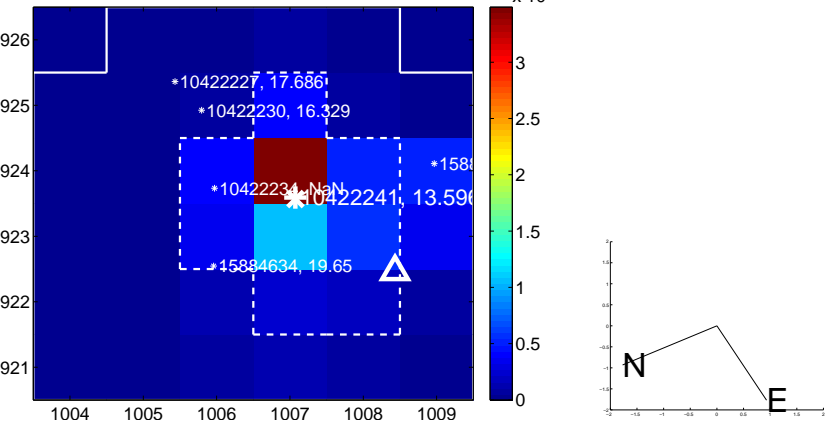
Q11 no OOT image



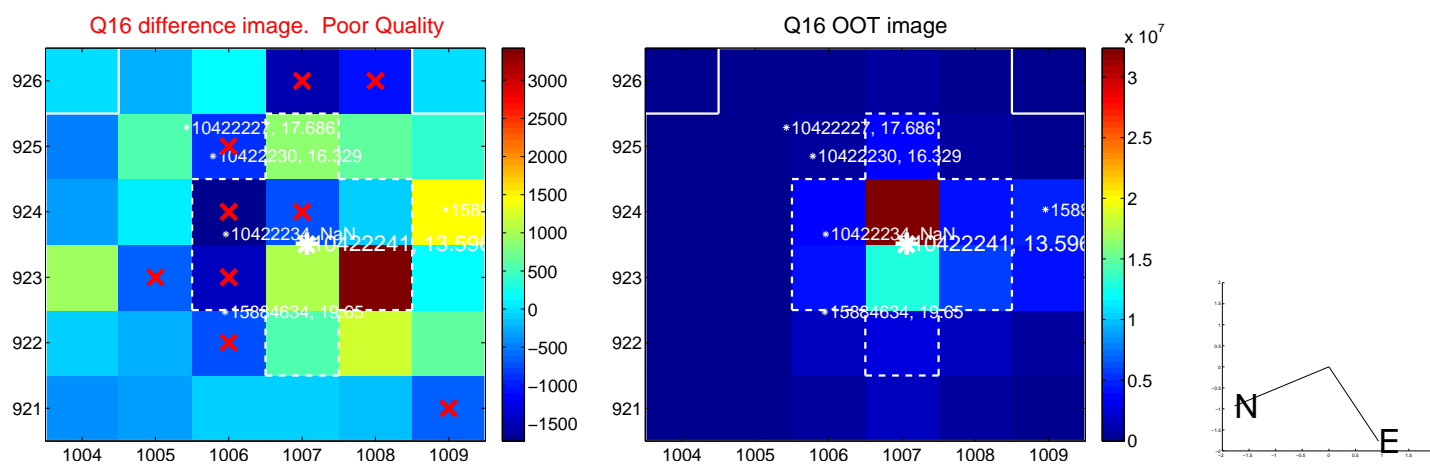
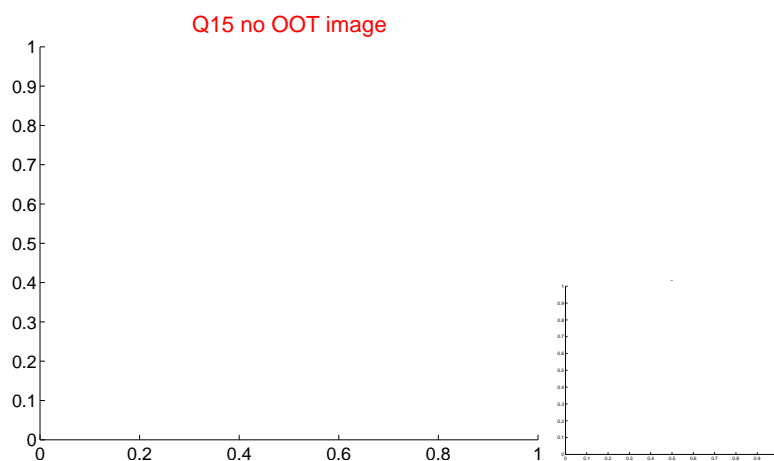
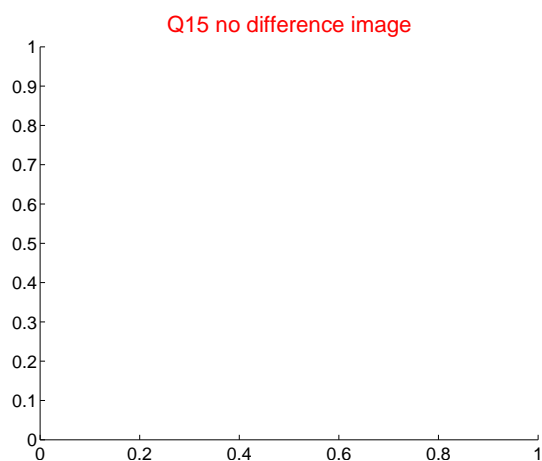
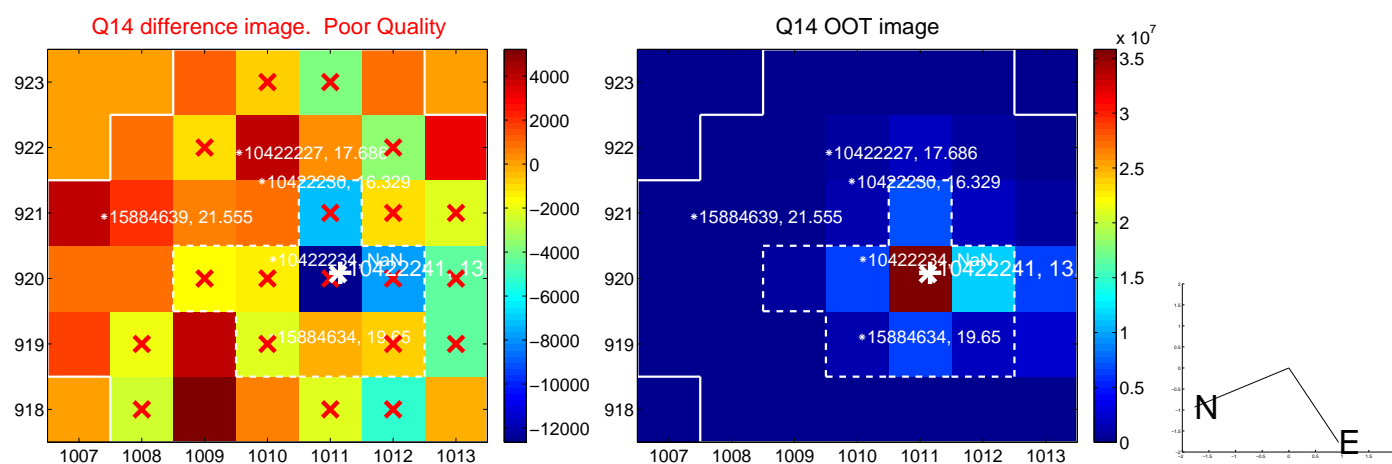
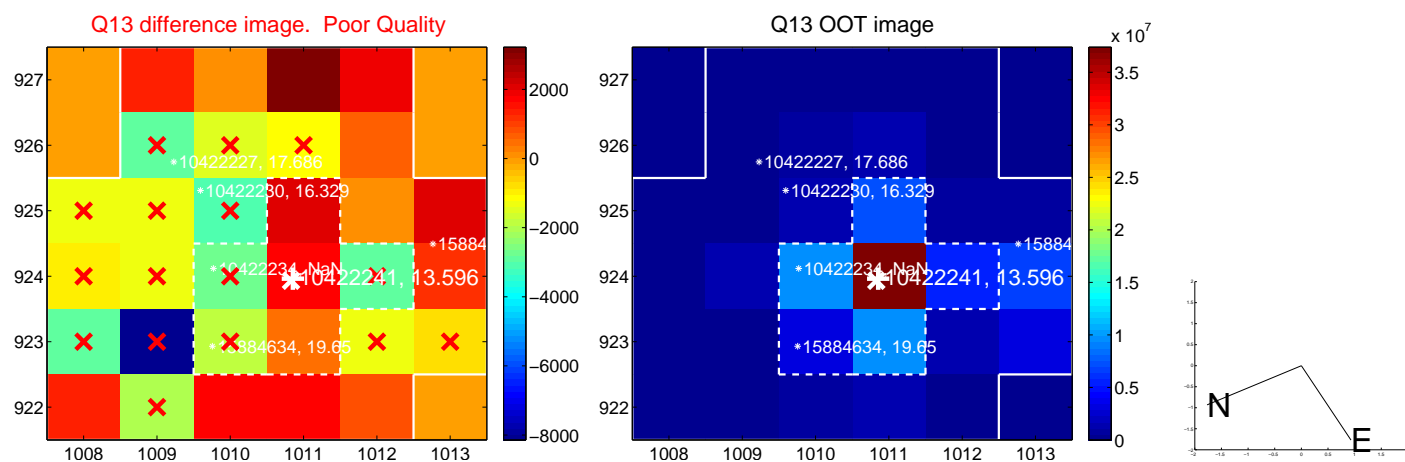
Q12 difference image. Poor Quality



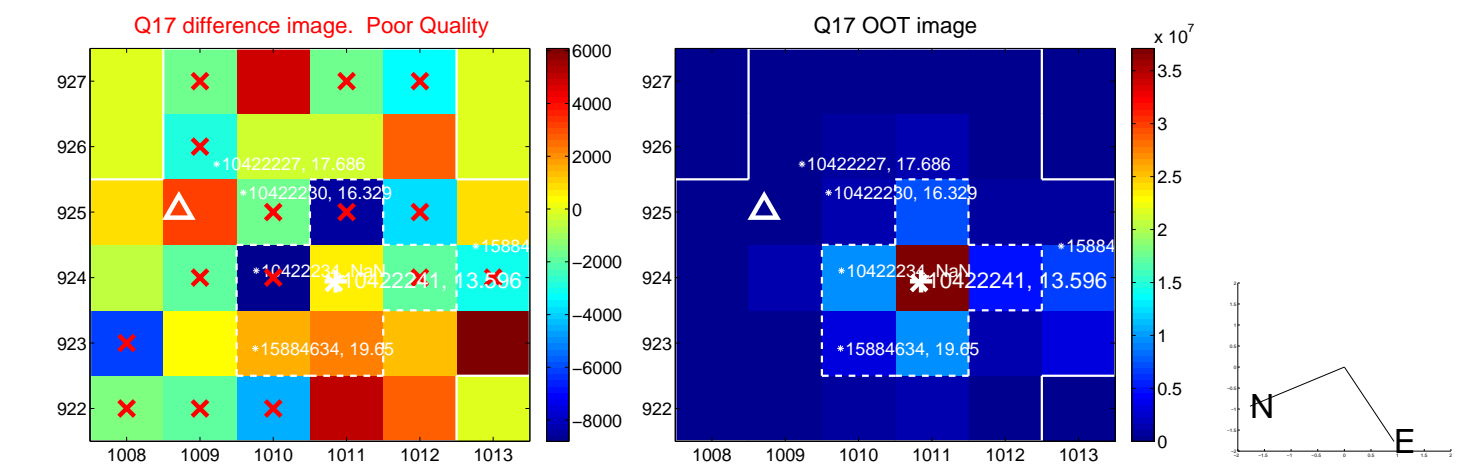
Q12 OOT image



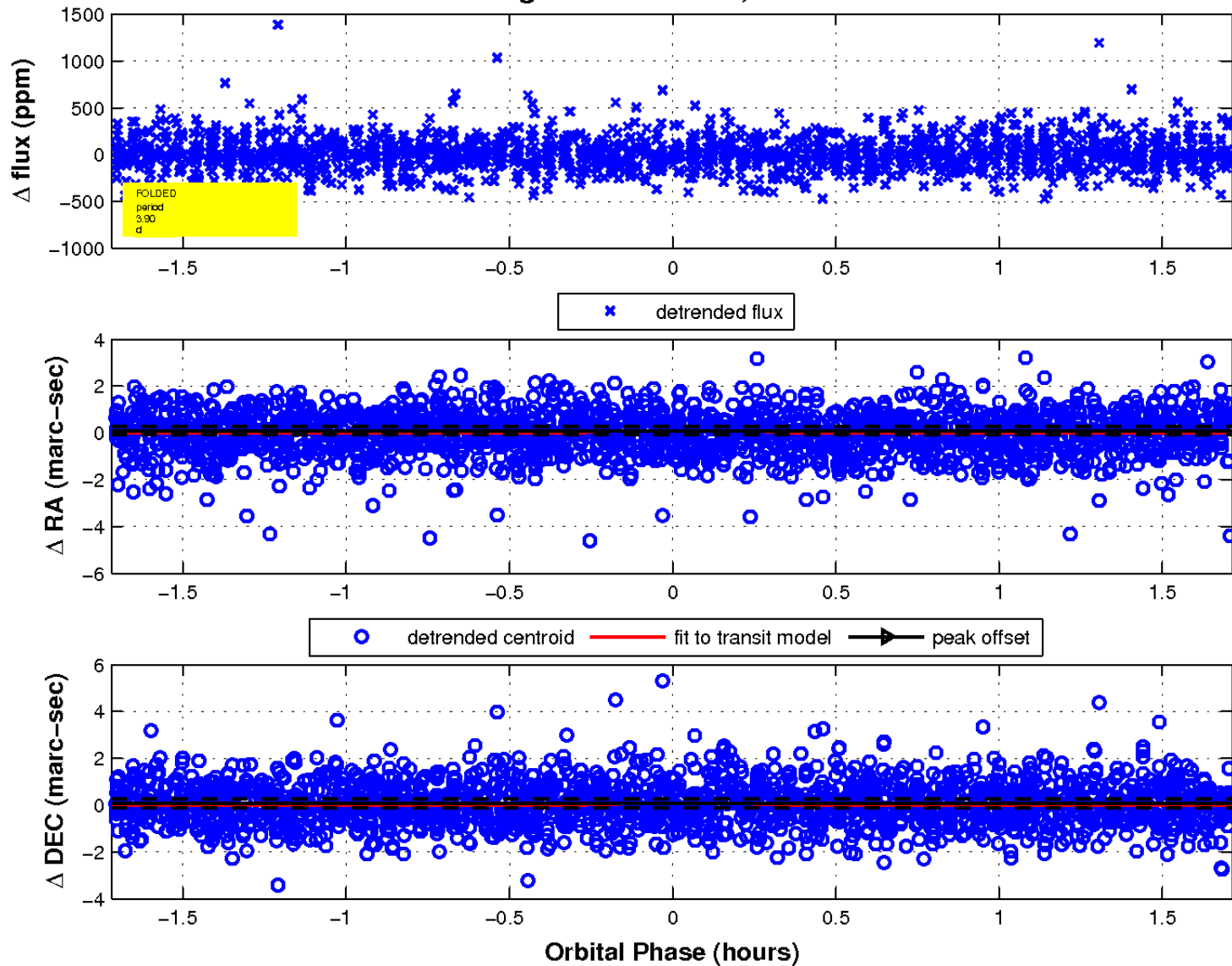
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

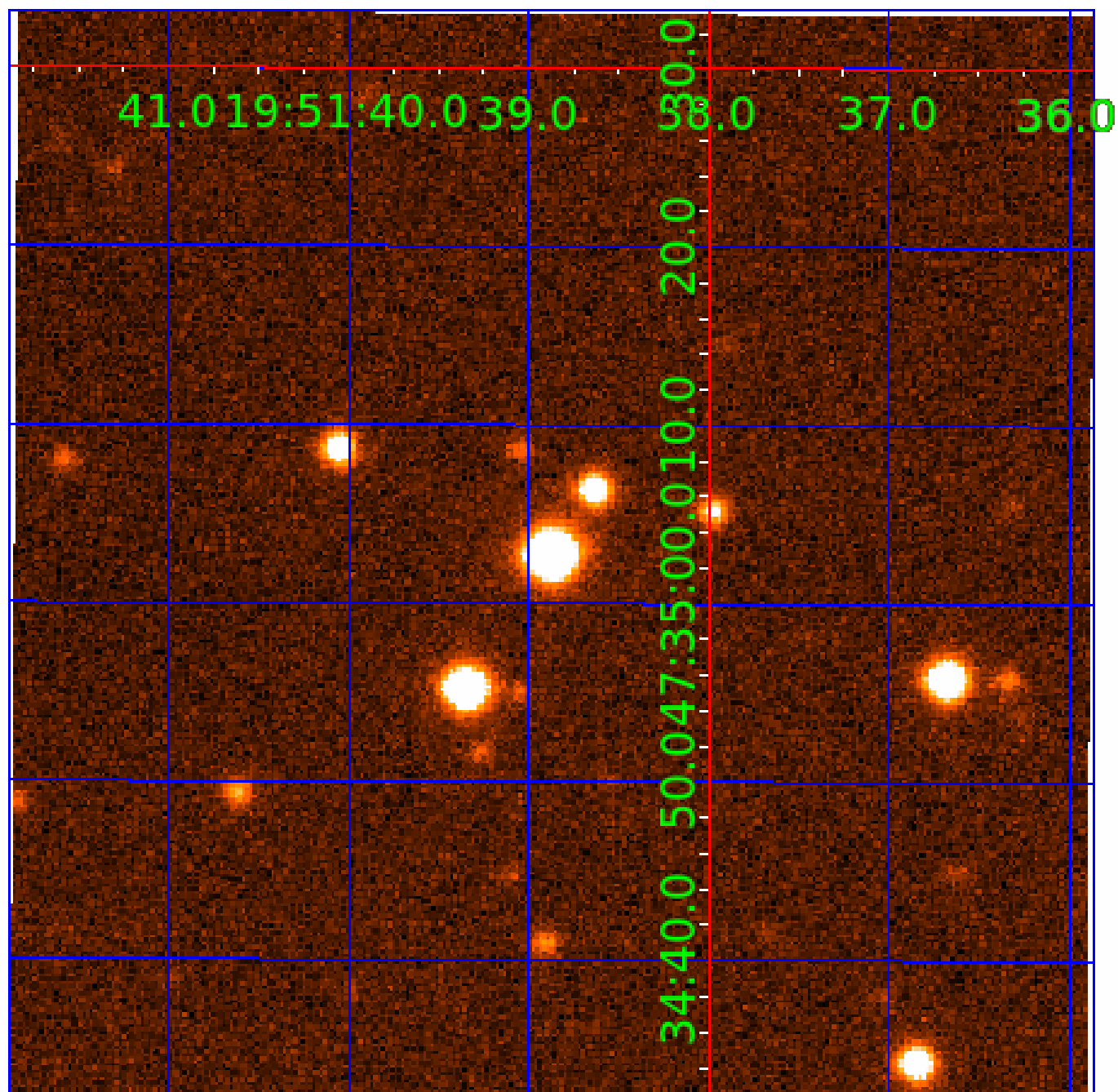


fluxWeightedCentroids, Planet 3 of 7



UKIRT Image

Declination



KIC 010422241

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})
010422241-01	OBS	No	2.436951	131.628332	62.9	1.279	8.4	10.2	1.92	8037	1.55	7343.27
010422241-02	OBS	No	0.812181	132.326211	8.9	6.161	10.5	4.7	1.92	8037	0.58	31779.58
010422241-03	OBS	No	3.904990	133.754399	229.8	0.573	17.7	12.3	1.92	8037	3.19	3916.14
010422241-04	OBS	No	5.543769	135.446954	405.9	0.555	13.0	18.6	1.92	8037	4.27	2454.40
010422241-05	OBS	No	7.231381	132.095055	298.8	1.342	9.3	15.5	1.92	8037	3.41	1722.09
010422241-06	OBS	No	3.467242	131.770191	201.4	0.836	13.2	10.4	1.92	8037	2.98	4588.87
010422241-07	OBS	No	10.282993	138.707871	899.7	1.500	12.7	-1.0	1.92	8037	5.85	1076.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010422241-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010422241-02	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
010422241-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

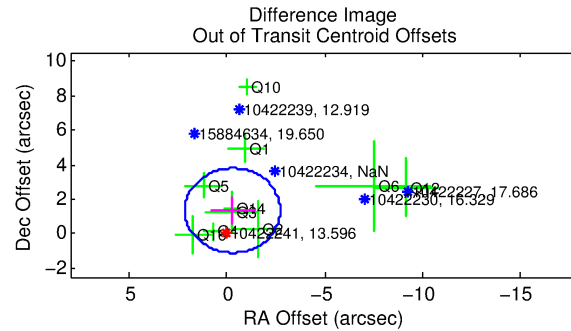
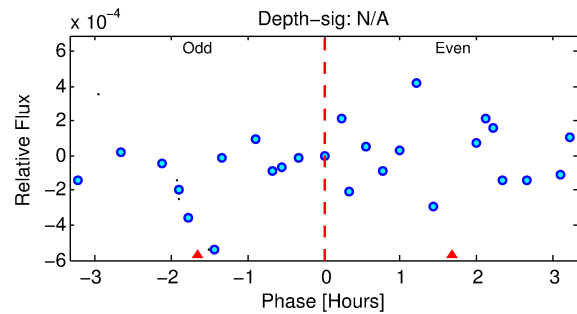
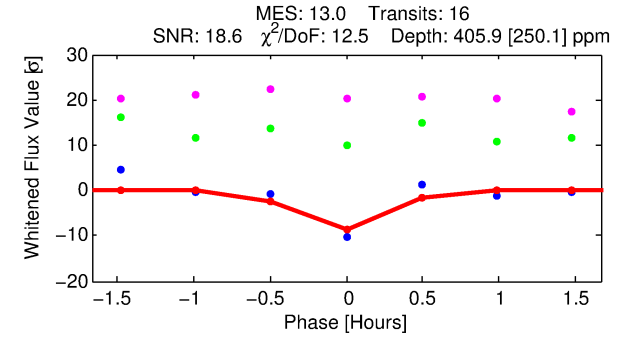
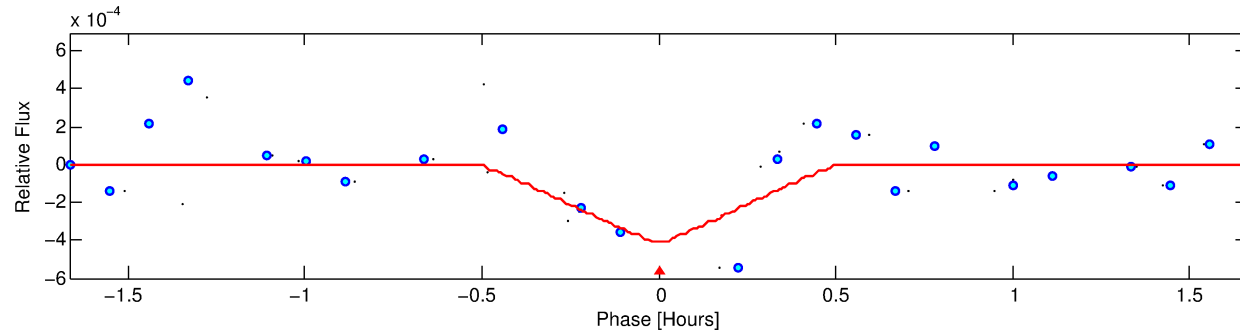
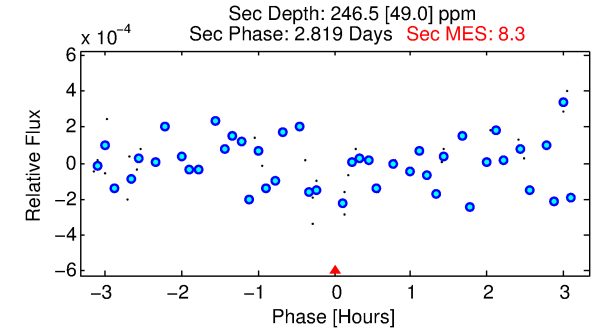
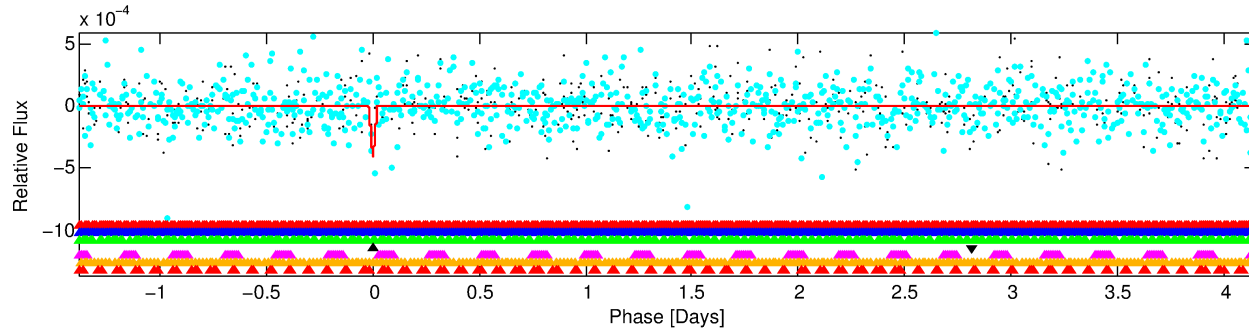
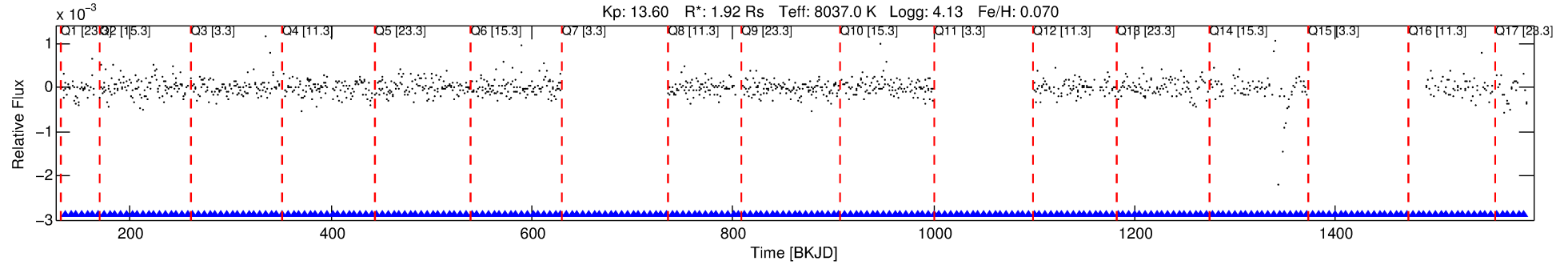
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010422241-04

No Significant Match Found

DV One-Page Summary

KIC: 10422241 Candidate: 4 of 7 Period: 5.544 d



DV Fit Results:

Period = 5.54377 [0.00006] d
Epoch = 135.4470 [0.0040] BKJD
Rp/R* = 0.0204 [0.0229]
a/R* = 56.62 [293.78]
b = 0.70 [3.95]
Seff = 2454.40 [861.35]
Teff = 1795 [157] K
Rp = 4.27 [4.91] Re
a = 0.0748 [0.0161] AU
Ag = 41.64 [94.50] [0.43σ]
Teffp = 7049 [3973] K [1.32σ]

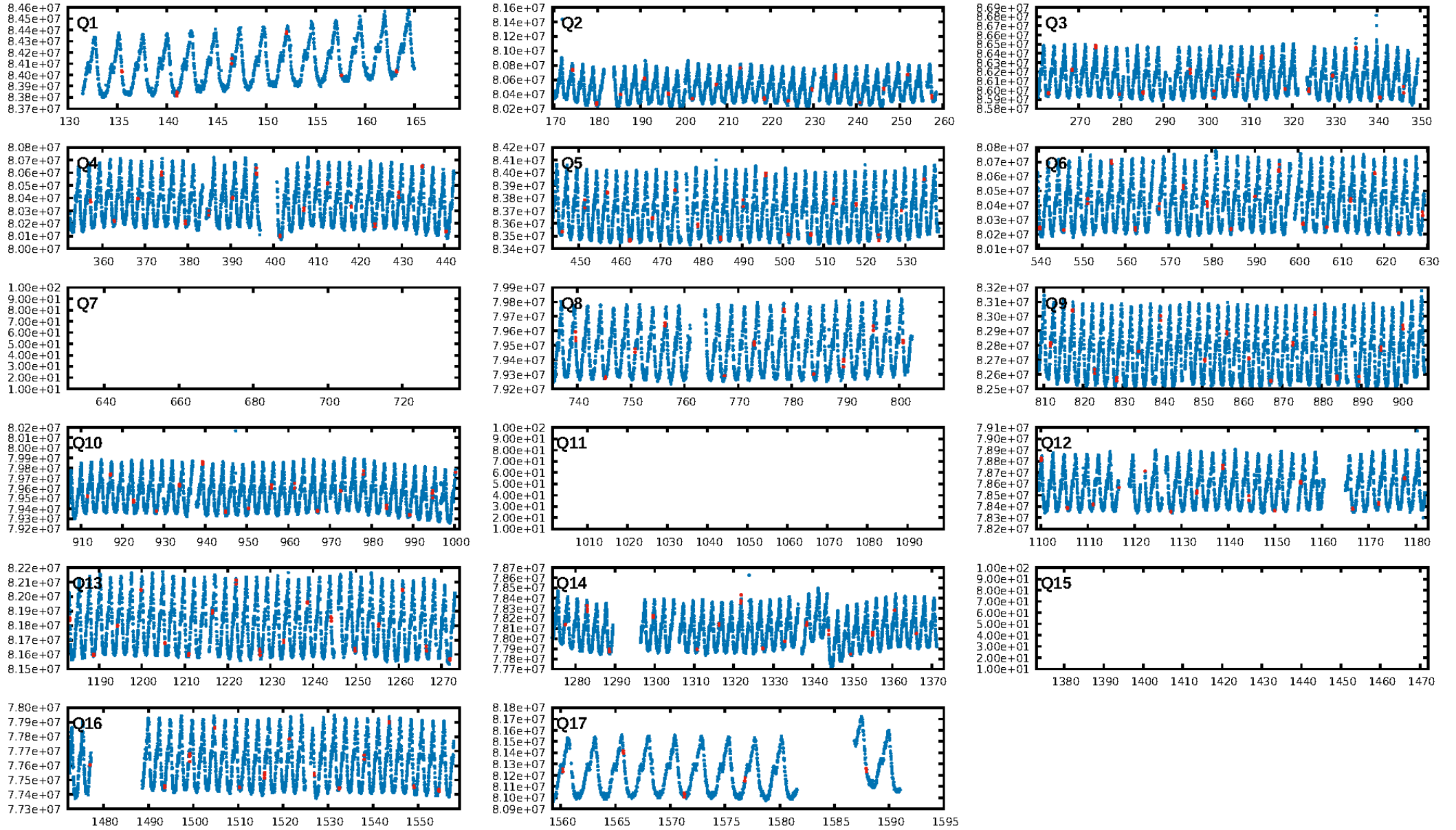
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [49.28σ]
LongPeriod-sig: 100.0% [27.89σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: -5.006
Centroid-sig: 0.1%
Centroid-so: 1.852 arcsec [3.85σ]
OotOffset-rm: 1.377 arcsec [1.69σ]
OotOffset-st: 4/1/3/2 [10]
KicOffset-rm: 1.272 arcsec [1.42σ]
KicOffset-st: 4/1/3/2 [10]
DiffImageQuality-fgm: 0.20 [2/10]
DiffImageOverlap-fno: 0.42 [5/12]

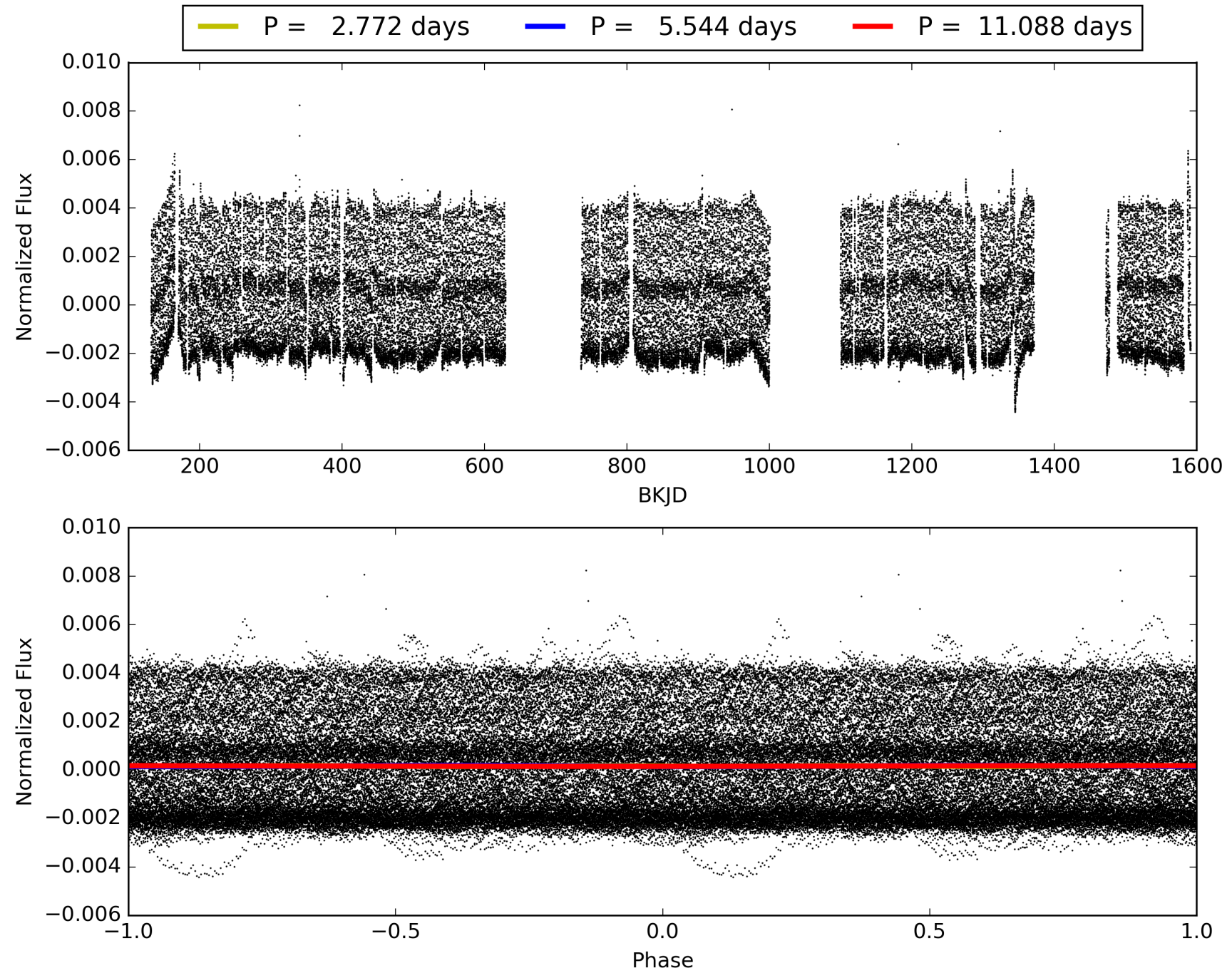
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:36:02 Z

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

TCE 010422241-04, PDC Light Curves

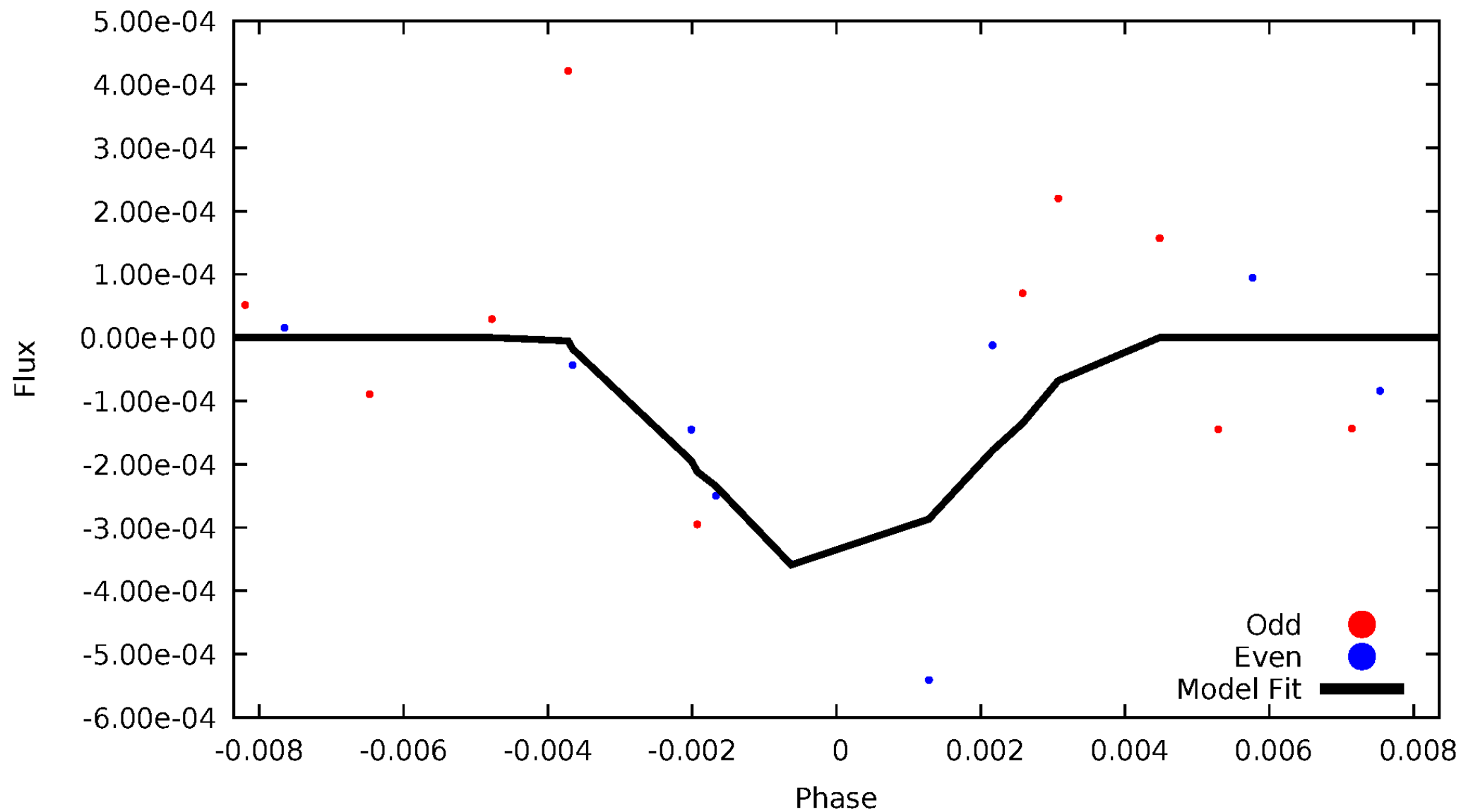


TCE 010422241-04



DV Odd/Even

TCE 010422241-04

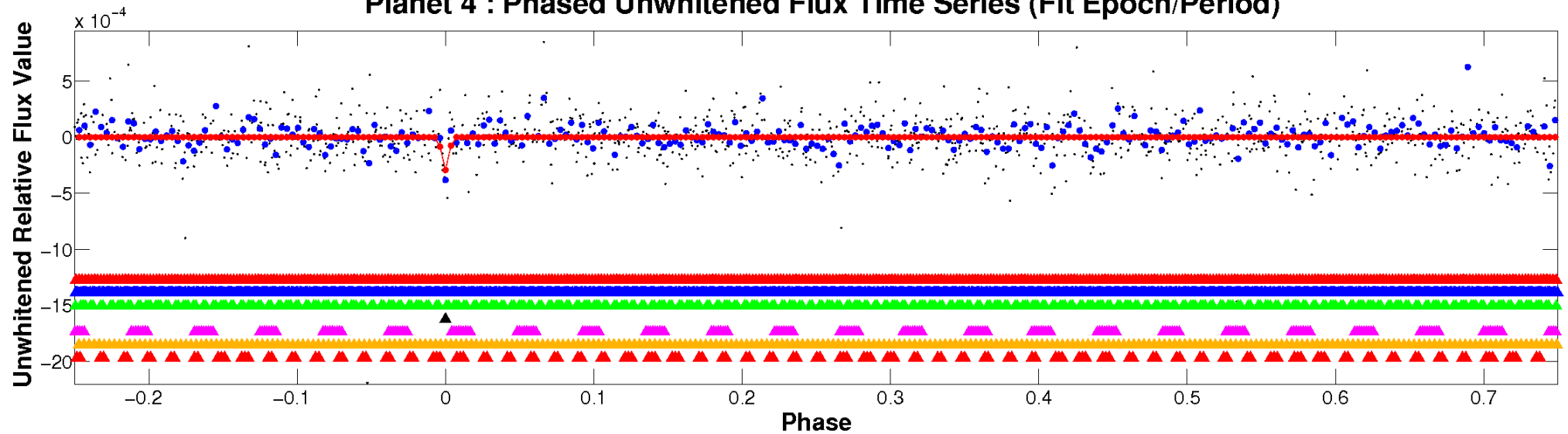


ALT Odd/Even

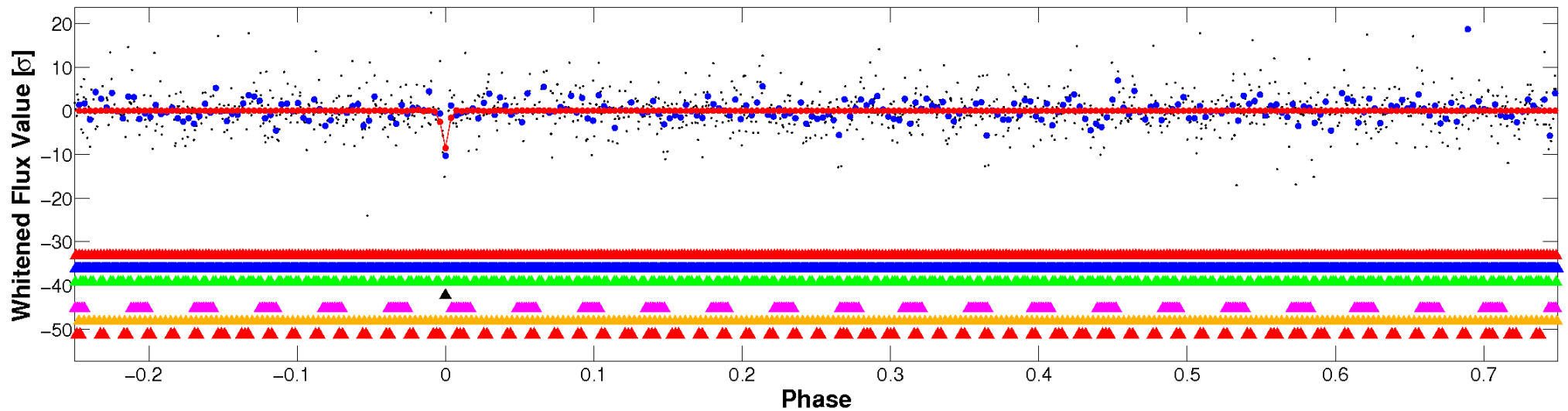
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

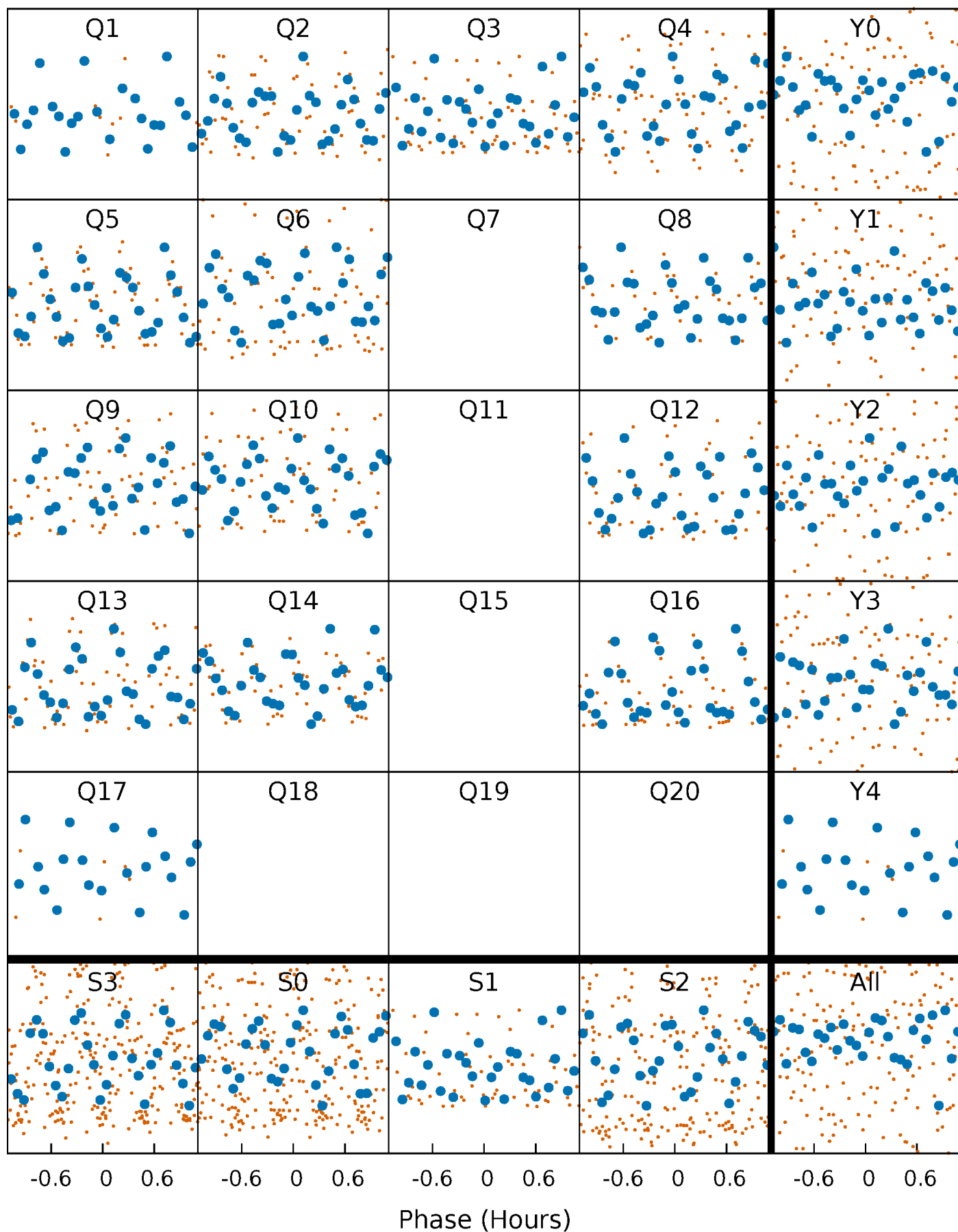


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



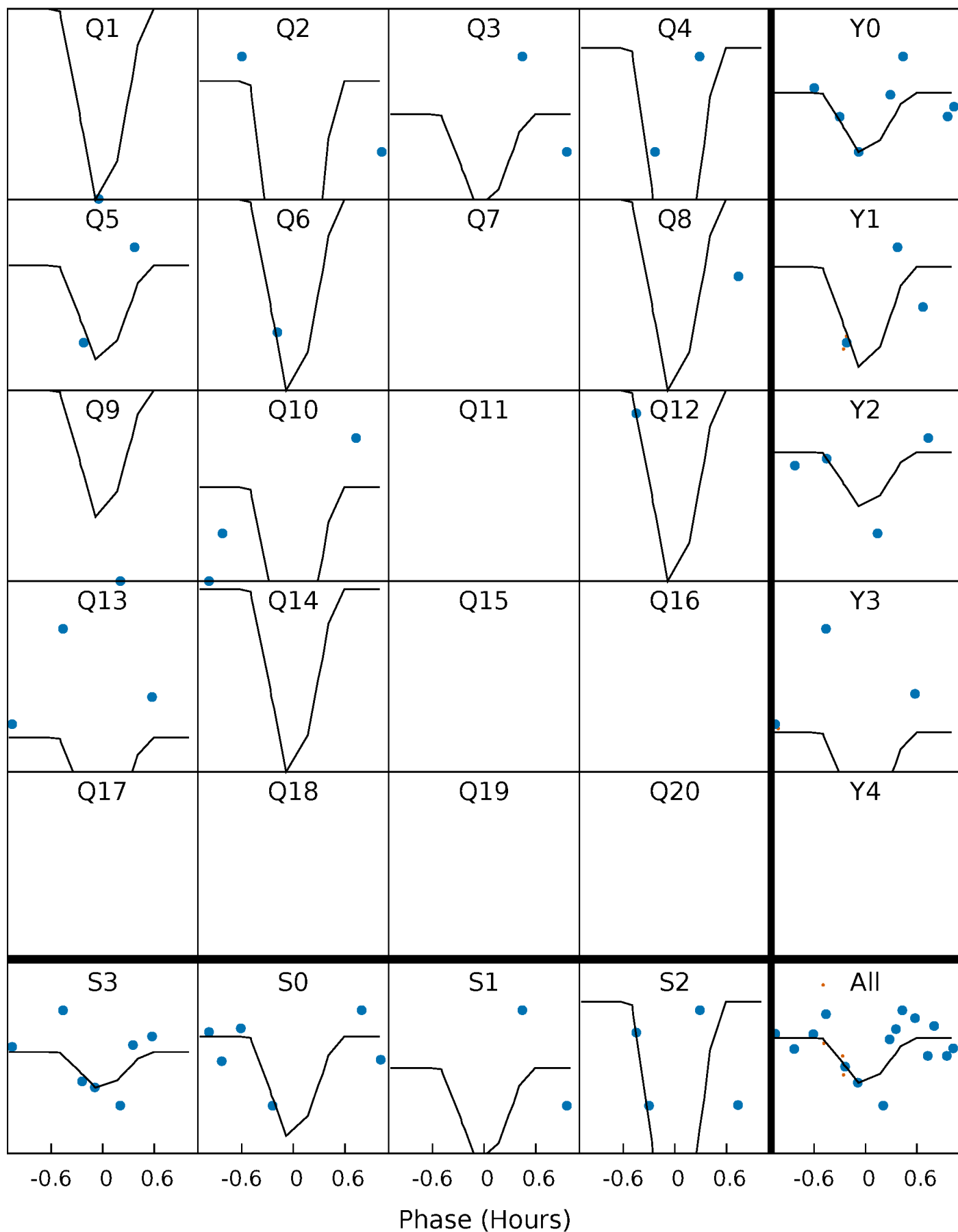
PDC Quarter-Phased Transit Curves

TCE 010422241-04 P= 5.543769 Days $T_0=135.446954$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010422241-04 P= 5.543769 Days $T_0=135.446954$ (BKJD)

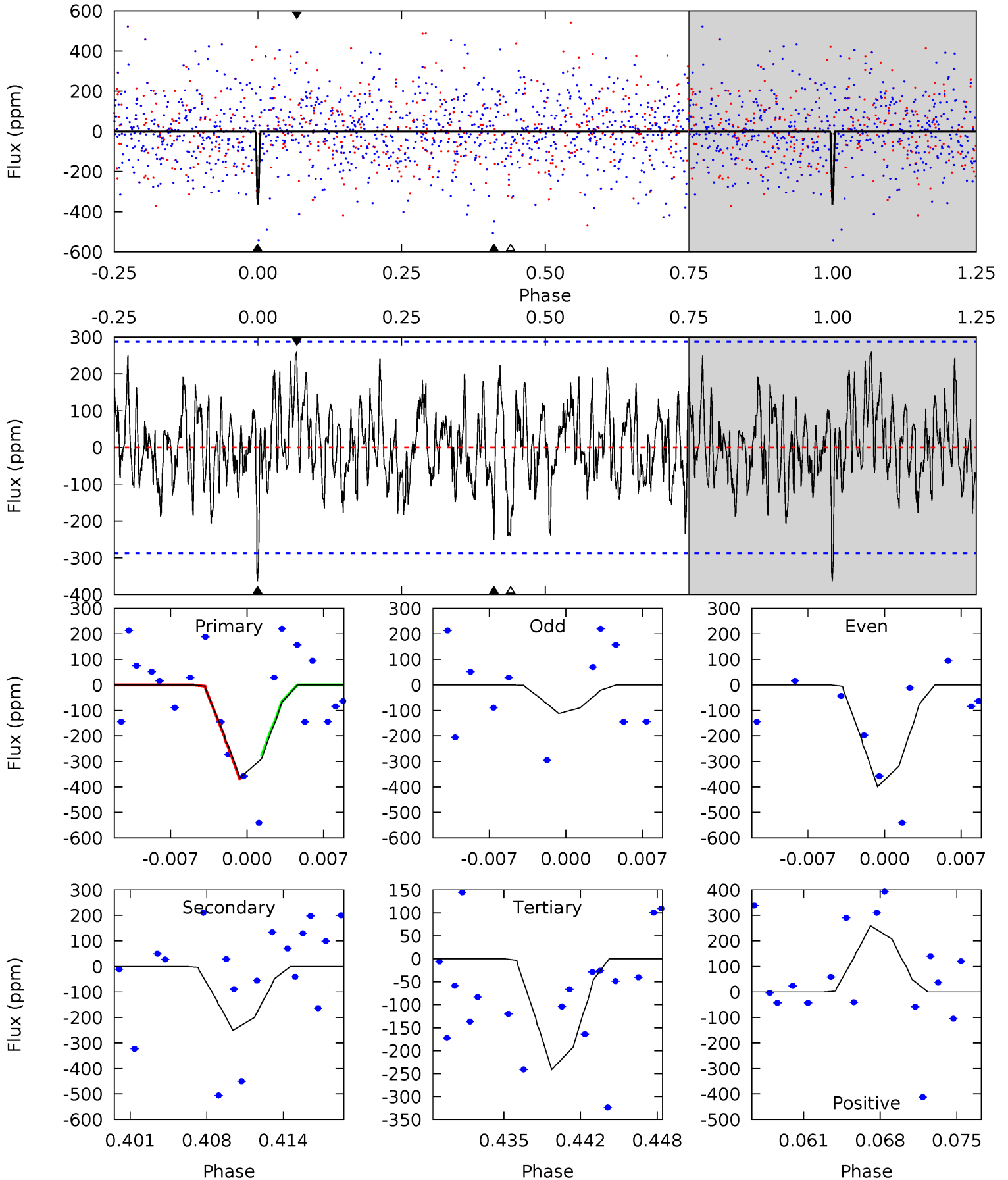


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

010422241-04, P = 5.543769 Days, E = 129.903185 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.44	4.44	4.27	4.60	5.10	2.71	1.62	2.17	1.84	0.17	-0.17	2.17	0	0.42	0.81



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 010422241

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8037^{+221}_{-331}	$4.132^{+0.112}_{-0.168}$	$0.070^{+0.250}_{-0.450}$	$1.917^{+0.494}_{-0.371}$	$1.815^{+0.170}_{-0.316}$	$0.363^{+0.190}_{-0.171}$
	+3%/-4%	+3%/-4%	+357%/-643%	+26%/-19%	+9%/-17%	+52%/-47%
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 010422241-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-250 ± 56	$5.34^{+4.39}_{-3.40}$	2514^{+178}_{-158}	6129^{+5633}_{-1489}	27^{+170}_{-19}
Alt.	N/A	N/A	N/A	N/A	N/A

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

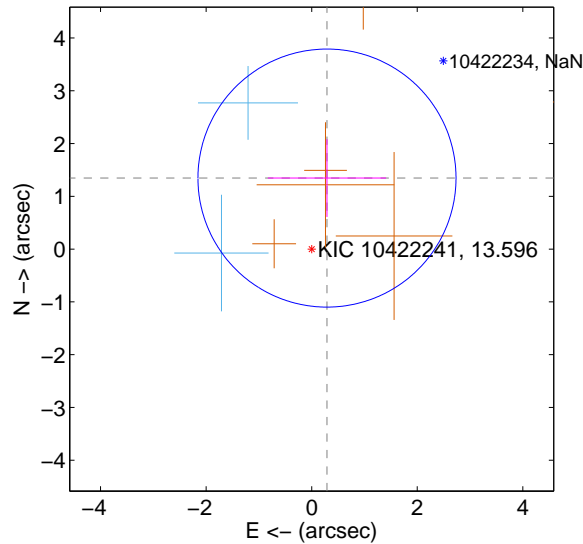
Supplemental centroid analysis for 010422241-04. Kepler magnitude: 13.60. Transit SNR 18.64

There are 2 quarters with good PRF difference image offsets

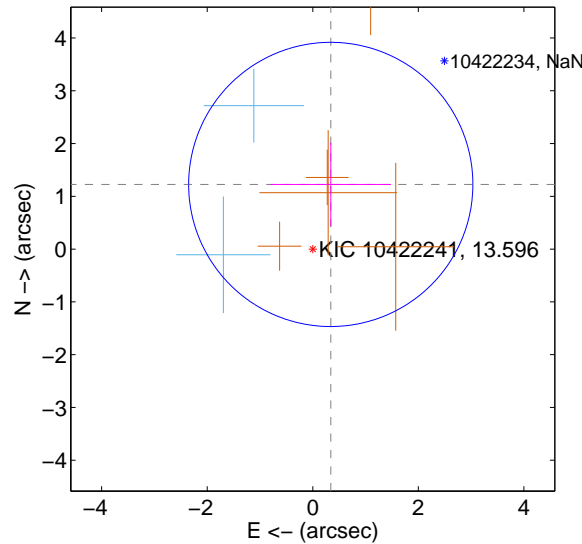
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.377 ± 0.815	1.69	-0.290 ± 1.119	1.346 ± 0.736
PRF-fit source offset from KIC position	1.272 ± 0.898	1.42	-0.341 ± 1.142	1.225 ± 0.792
photometric centroid source offset	1.85 ± 0.48	3.85	1.10 ± 0.47	-1.49 ± 0.49

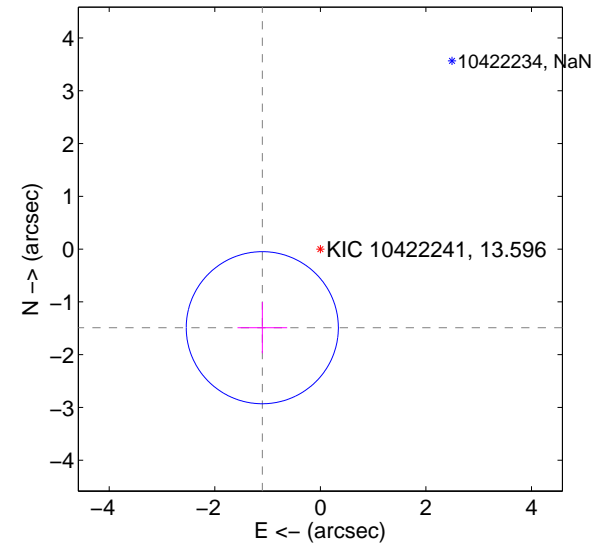
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

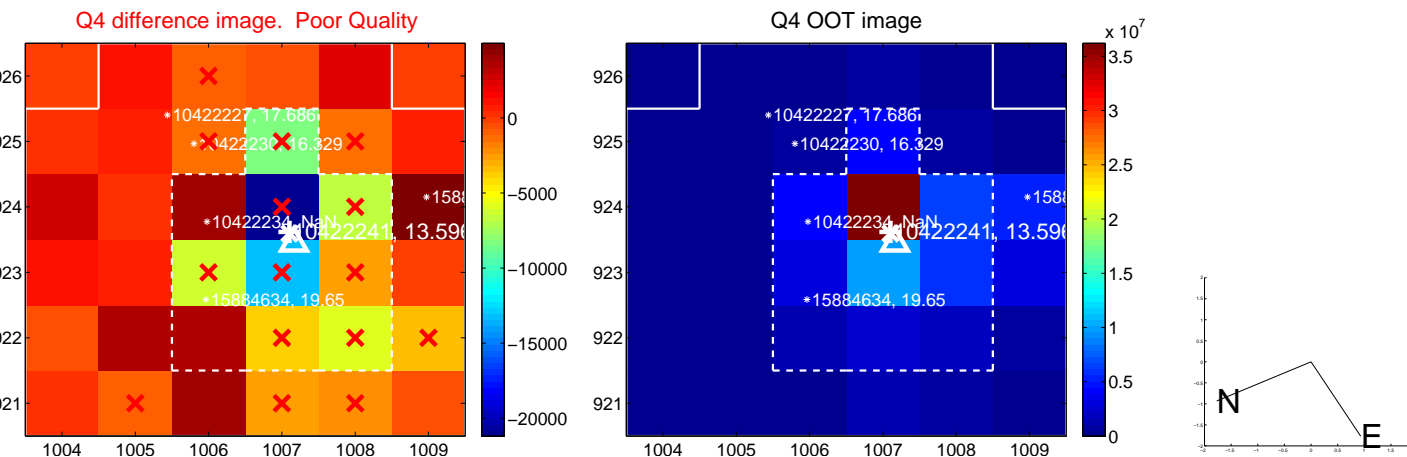
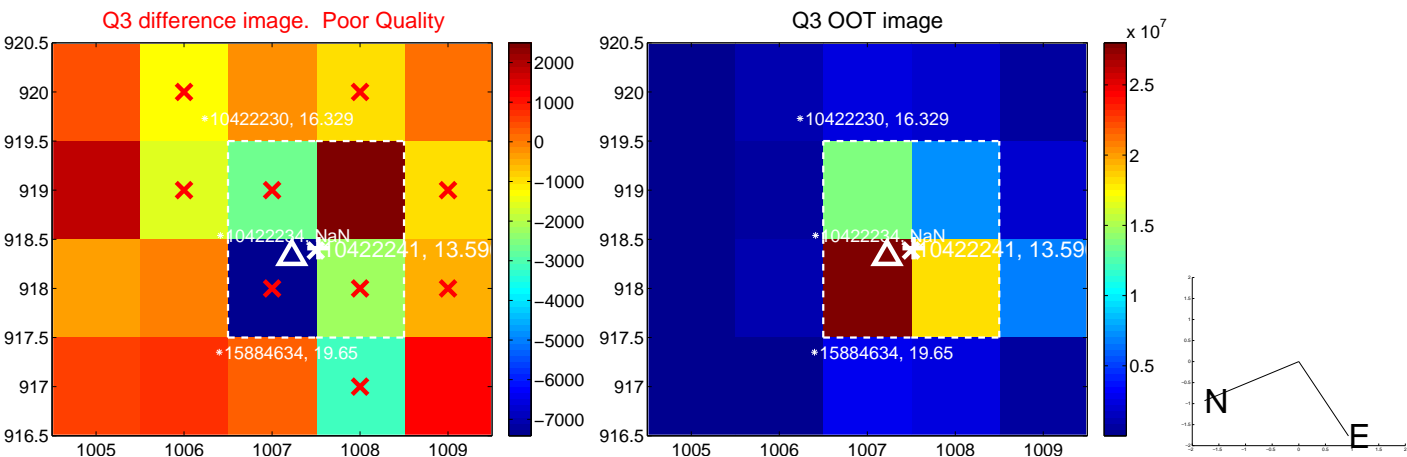
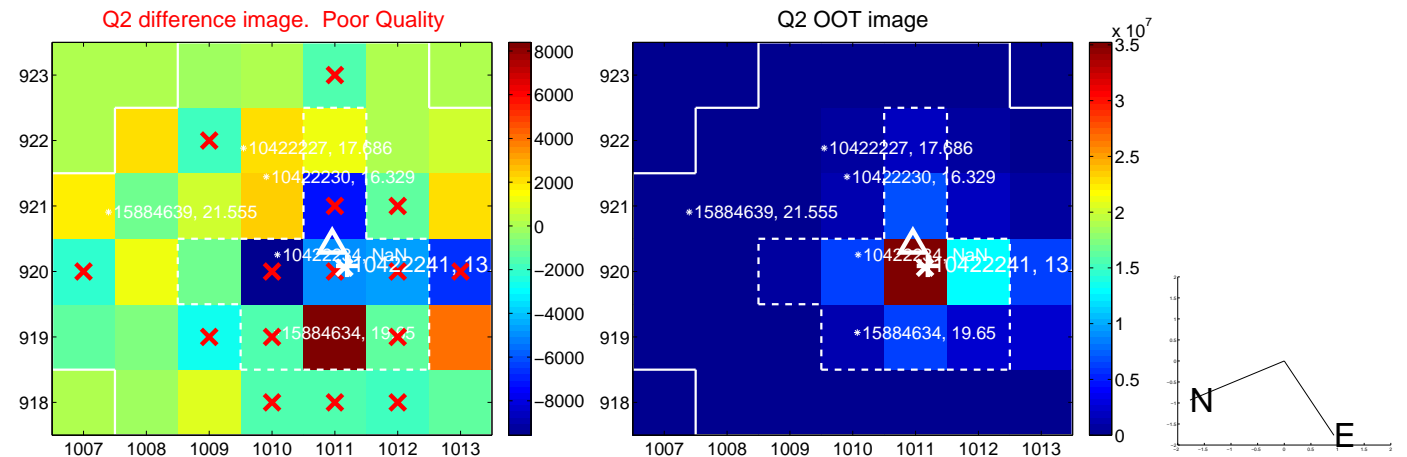
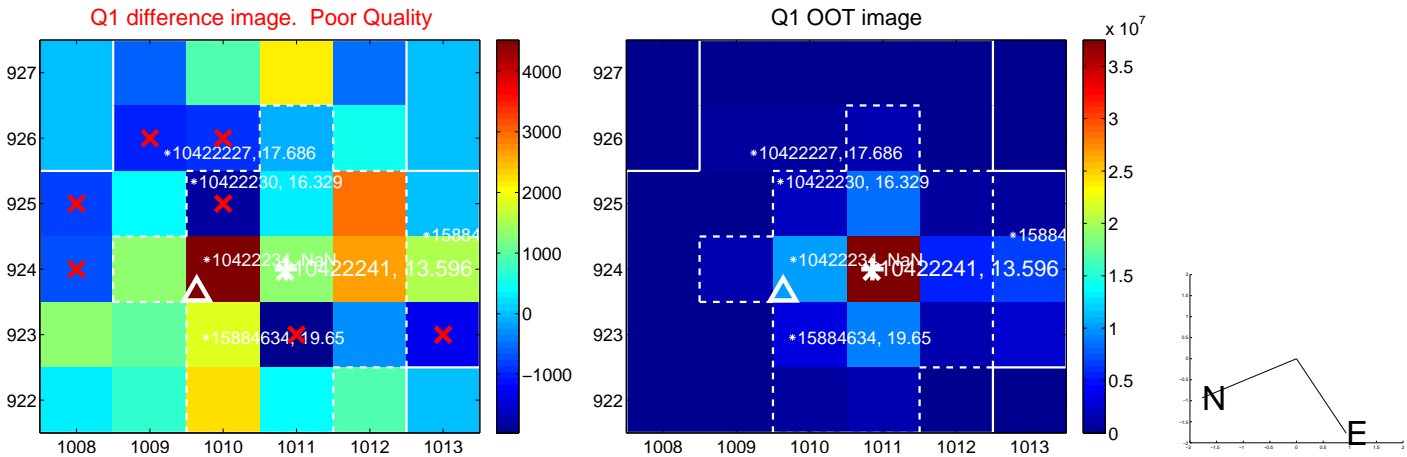


offset from photometric centroids

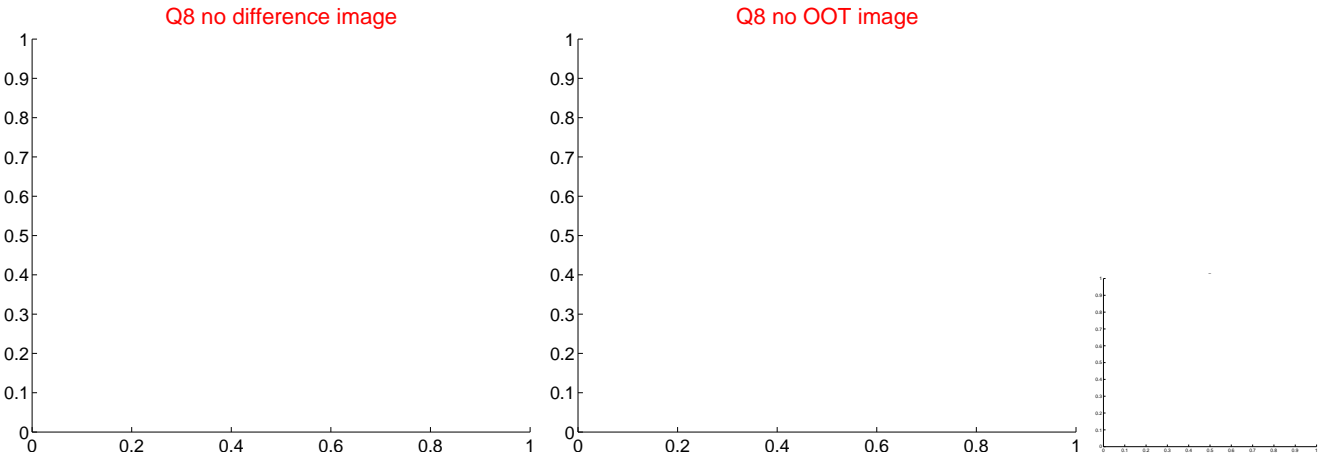
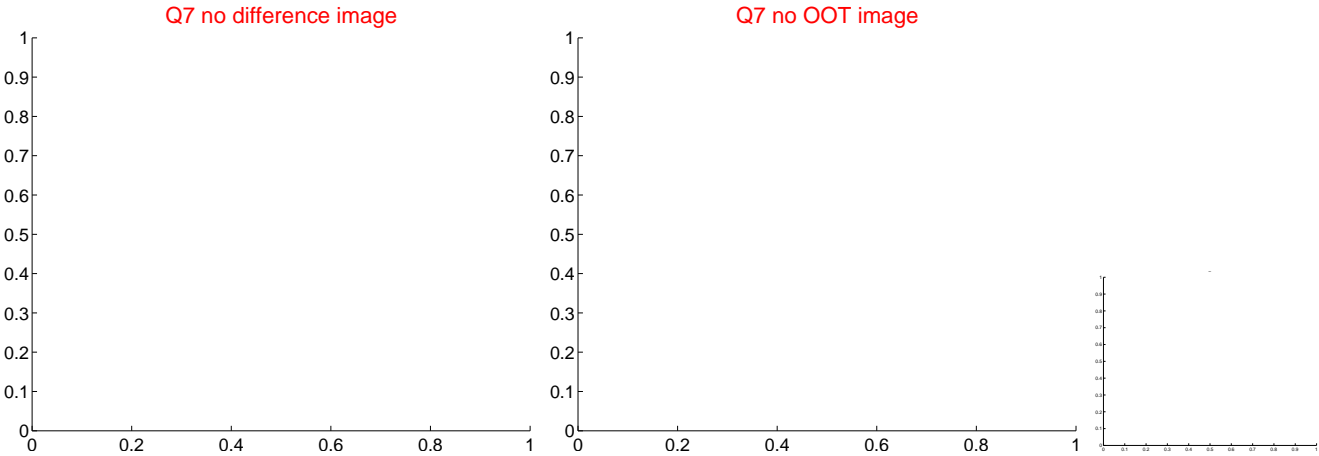
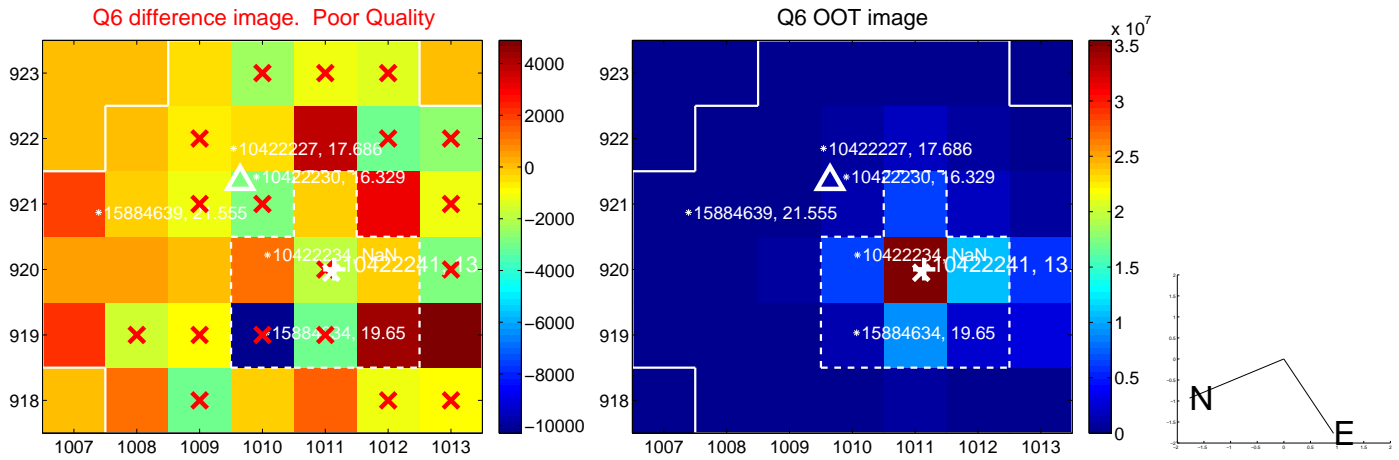
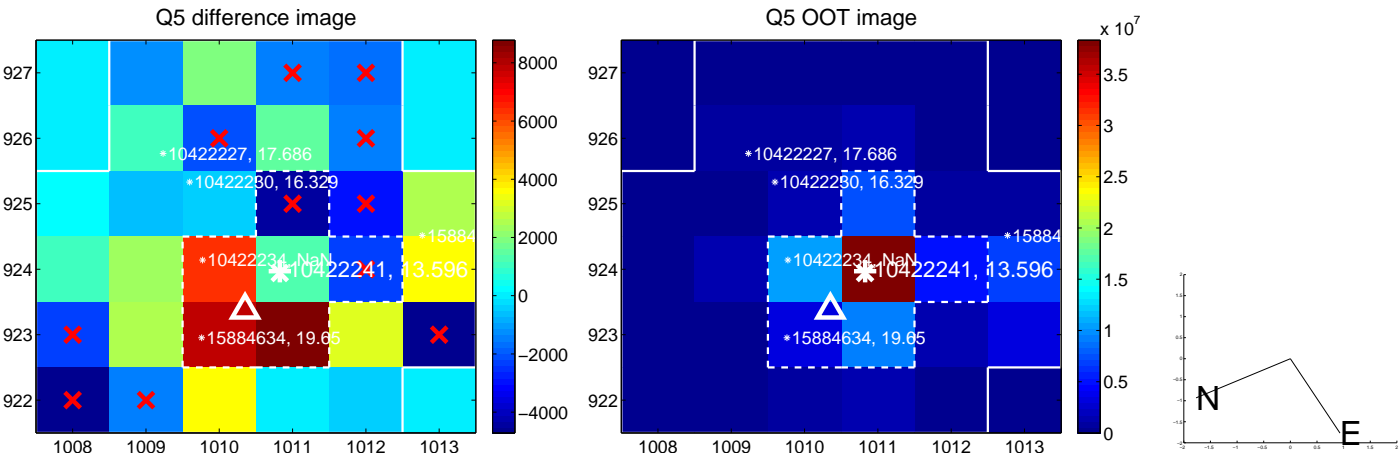


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

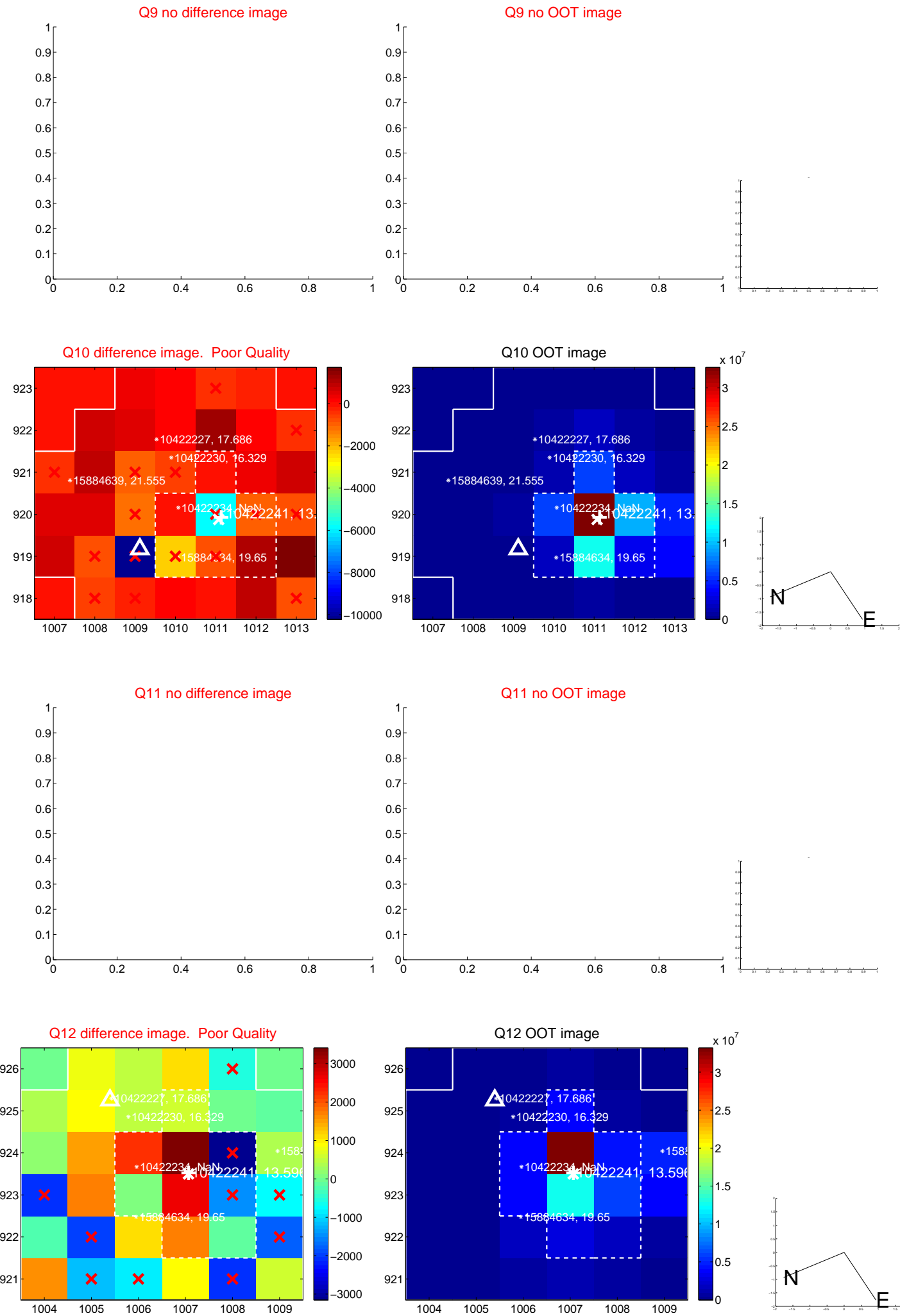
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



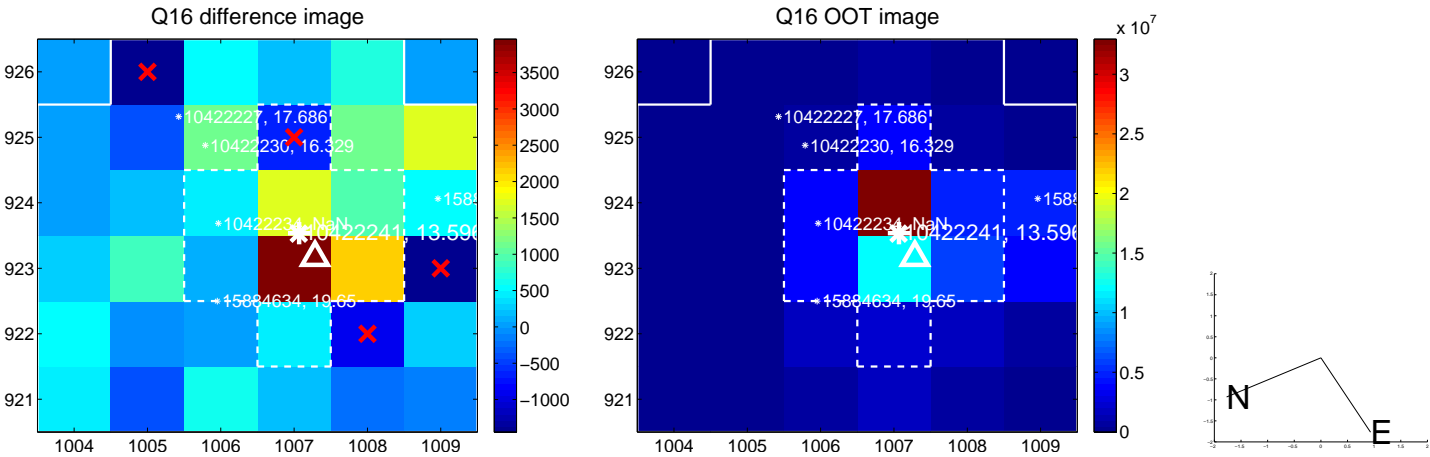
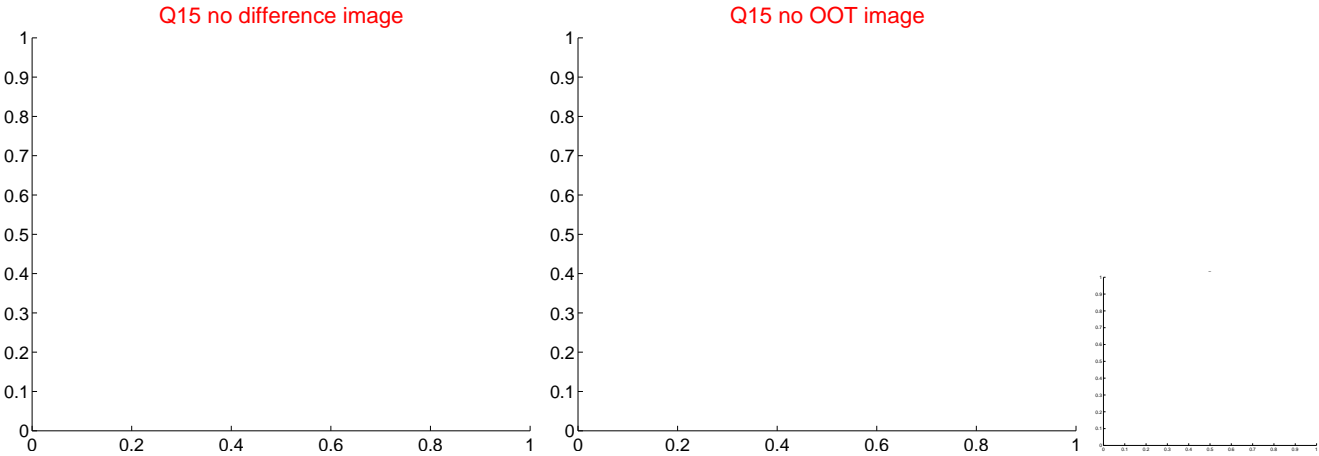
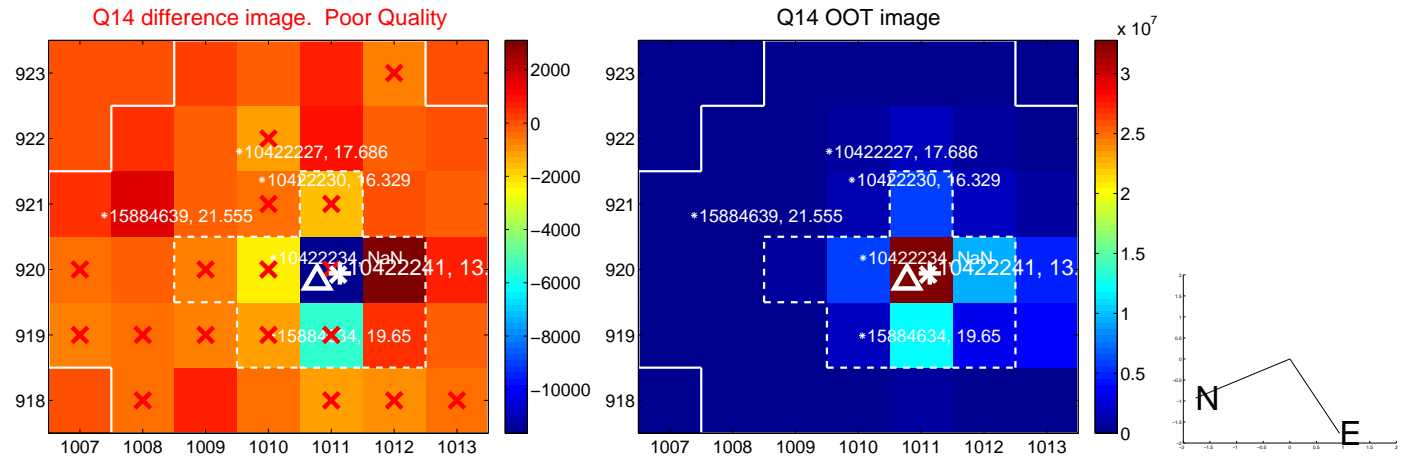
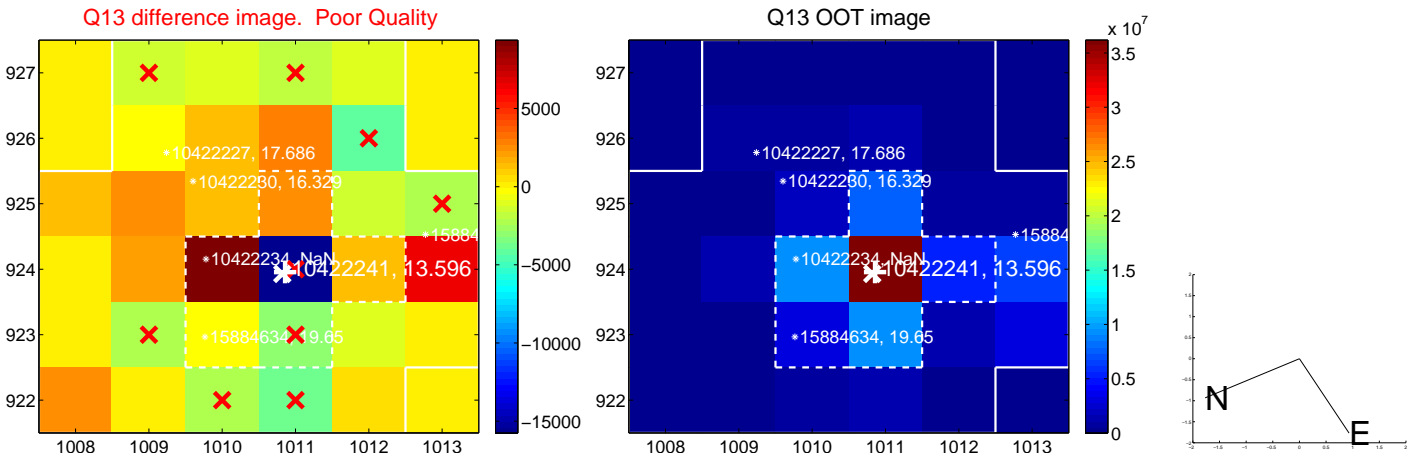
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



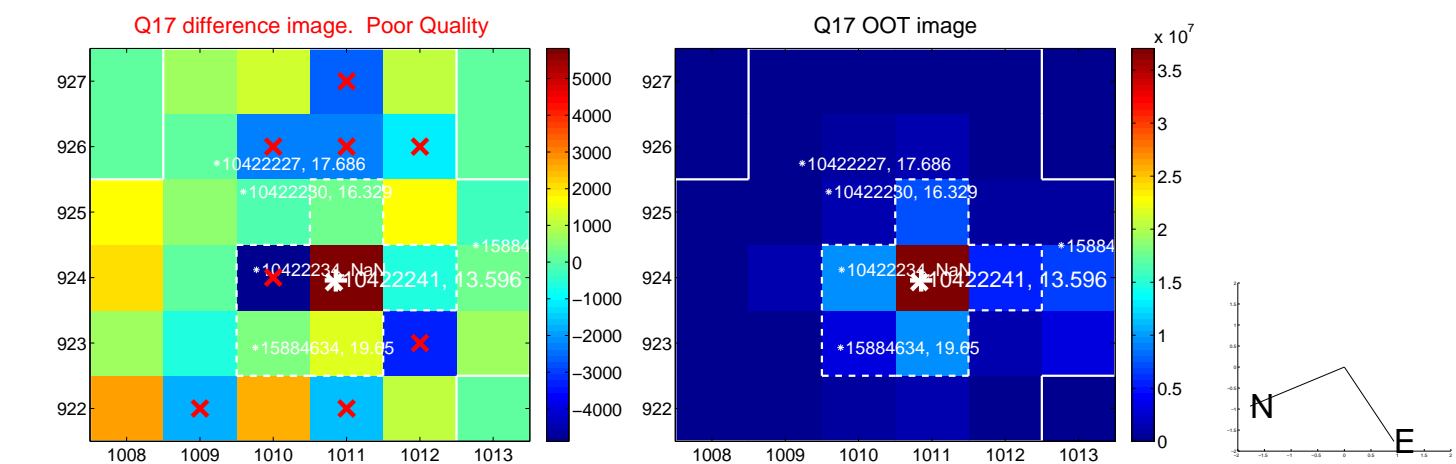
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



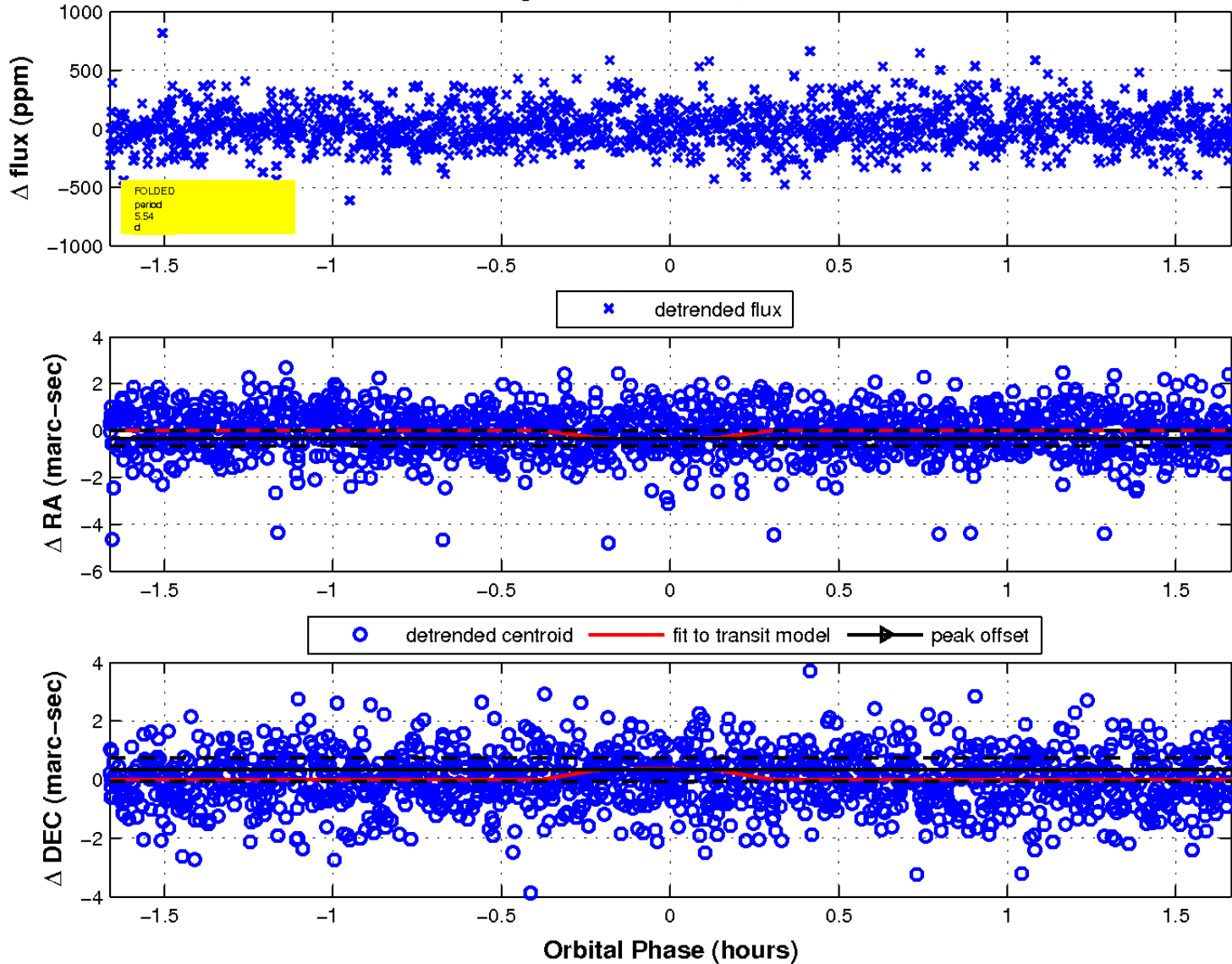
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

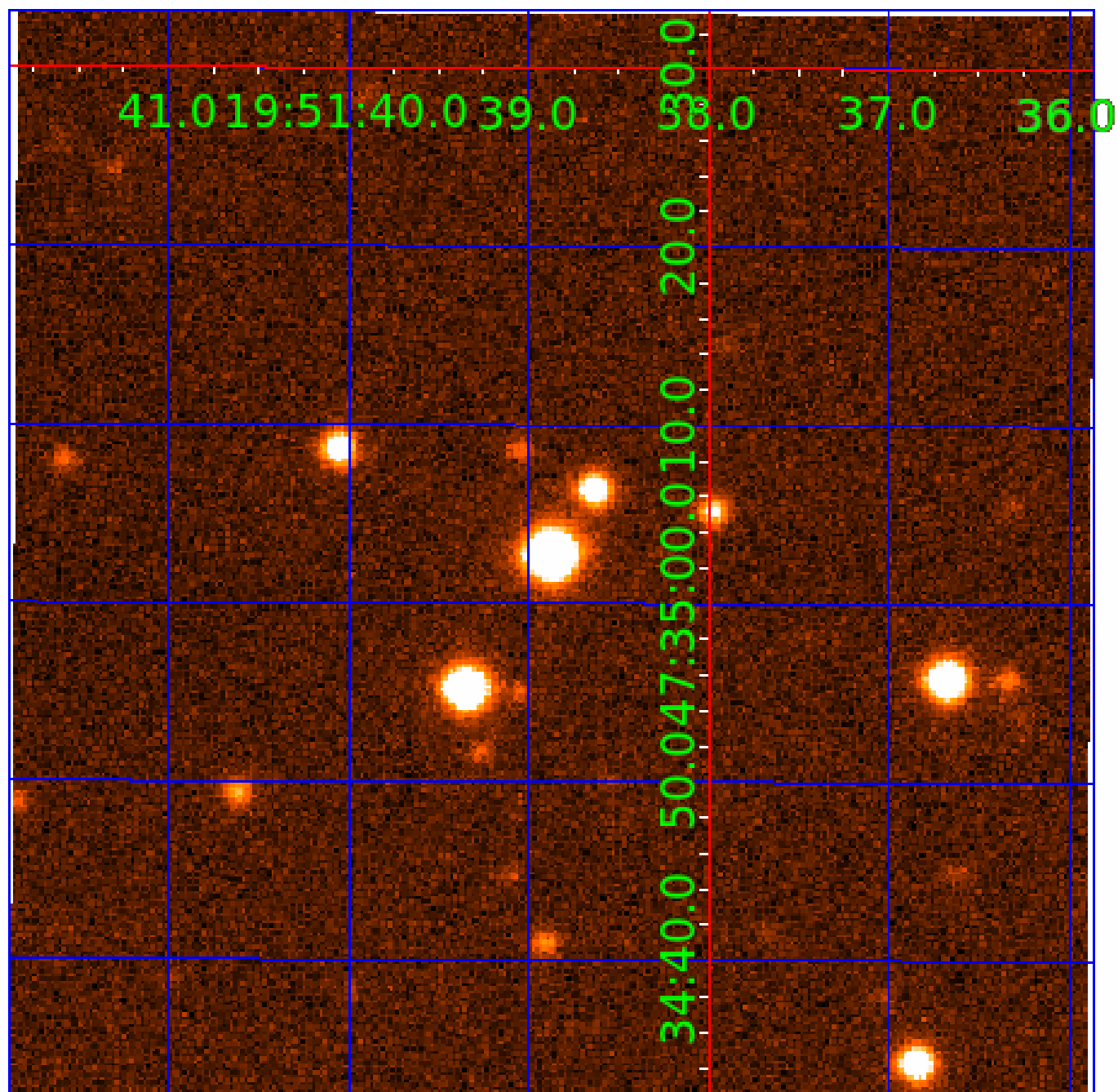


fluxWeightedCentroids, Planet 4 of 7



UKIRT Image

Declination



KIC 010422241

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})
010422241-01	OBS	No	2.436951	131.628332	62.9	1.279	8.4	10.2	1.92	8037	1.55	7343.27
010422241-02	OBS	No	0.812181	132.326211	8.9	6.161	10.5	4.7	1.92	8037	0.58	31779.58
010422241-03	OBS	No	3.904990	133.754399	229.8	0.573	17.7	12.3	1.92	8037	3.19	3916.14
010422241-04	OBS	No	5.543769	135.446954	405.9	0.555	13.0	18.6	1.92	8037	4.27	2454.40
010422241-05	OBS	No	7.231381	132.095055	298.8	1.342	9.3	15.5	1.92	8037	3.41	1722.09
010422241-06	OBS	No	3.467242	131.770191	201.4	0.836	13.2	10.4	1.92	8037	2.98	4588.87
010422241-07	OBS	No	10.282993	138.707871	899.7	1.500	12.7	-1.0	1.92	8037	5.85	1076.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010422241-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010422241-02	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
010422241-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

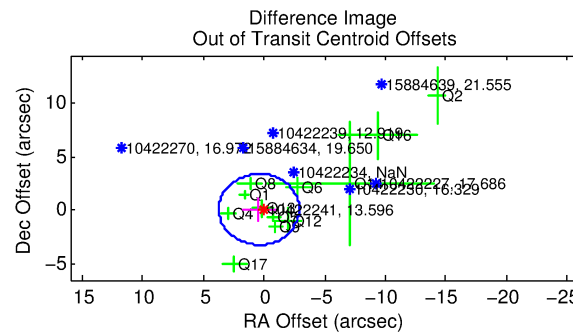
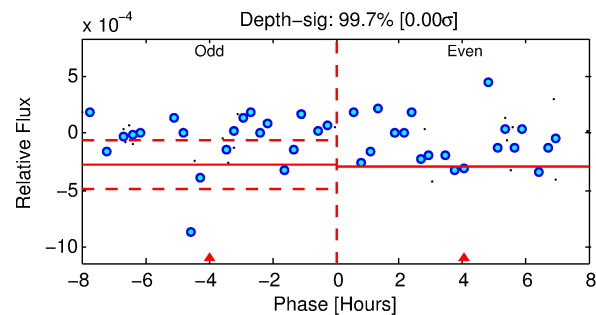
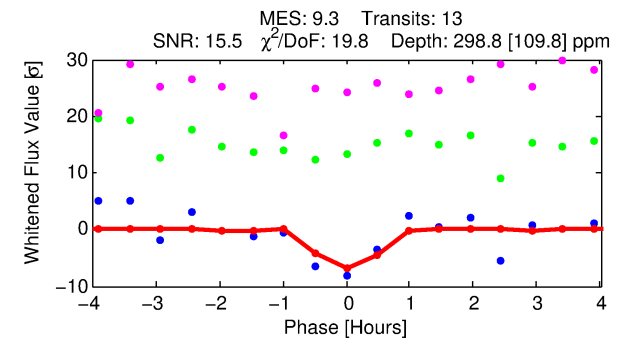
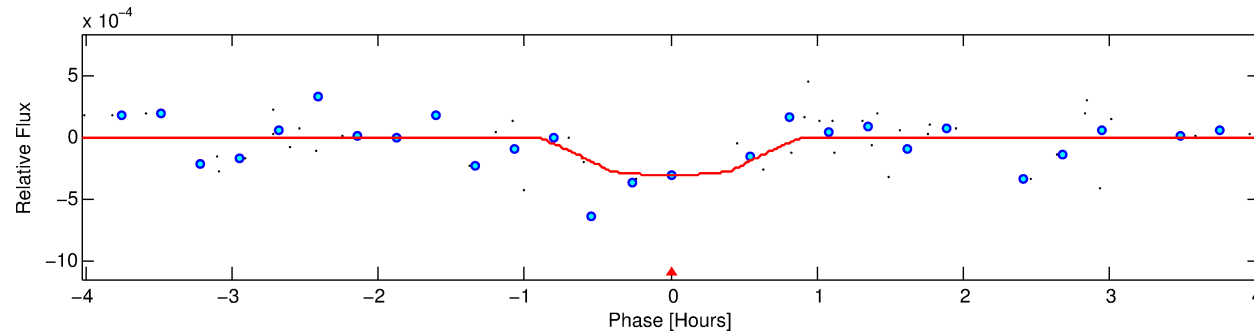
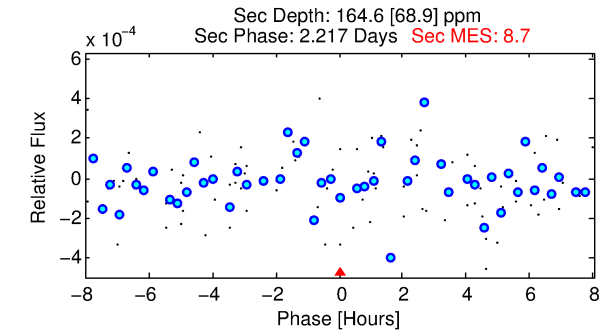
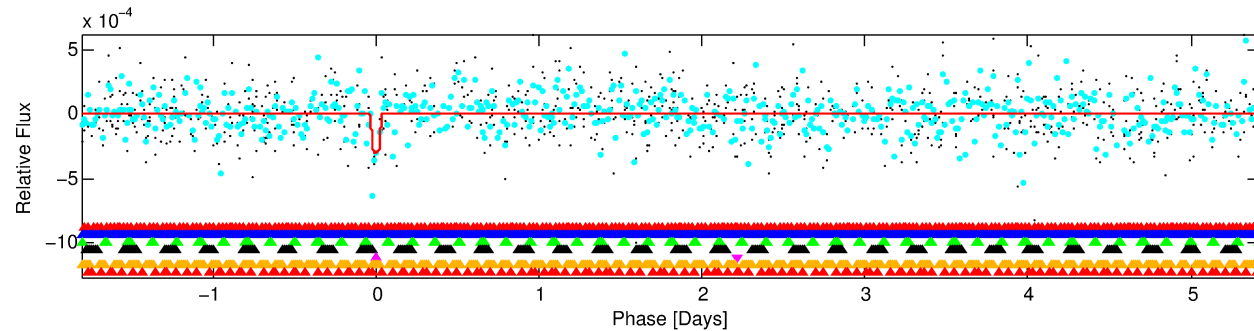
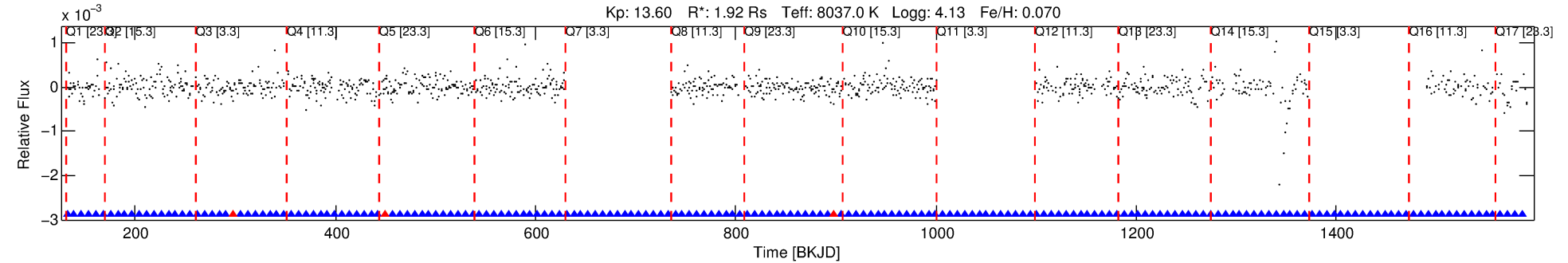
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010422241-05

No Significant Match Found

DV One-Page Summary

KIC: 10422241 Candidate: 5 of 7 Period: 7.231 d



DV Fit Results:

Period = 7.23138 [0.00010] d
Epoch = 132.0951 [0.0101] BKJD
Rp/R* = 0.0163 [0.0380]
a/R* = 38.83 [536.77]
b = 0.38 [31.36]
Seff = 1722.09 [604.35]
Teq = 1643 [144] K
Rp = 3.41 [8.00] Re
a = 0.0893 [0.0192] AU
Ag = 62.01 [290.54] [0.21 σ]
Teffp = 7127 [8335] K [0.66 σ]

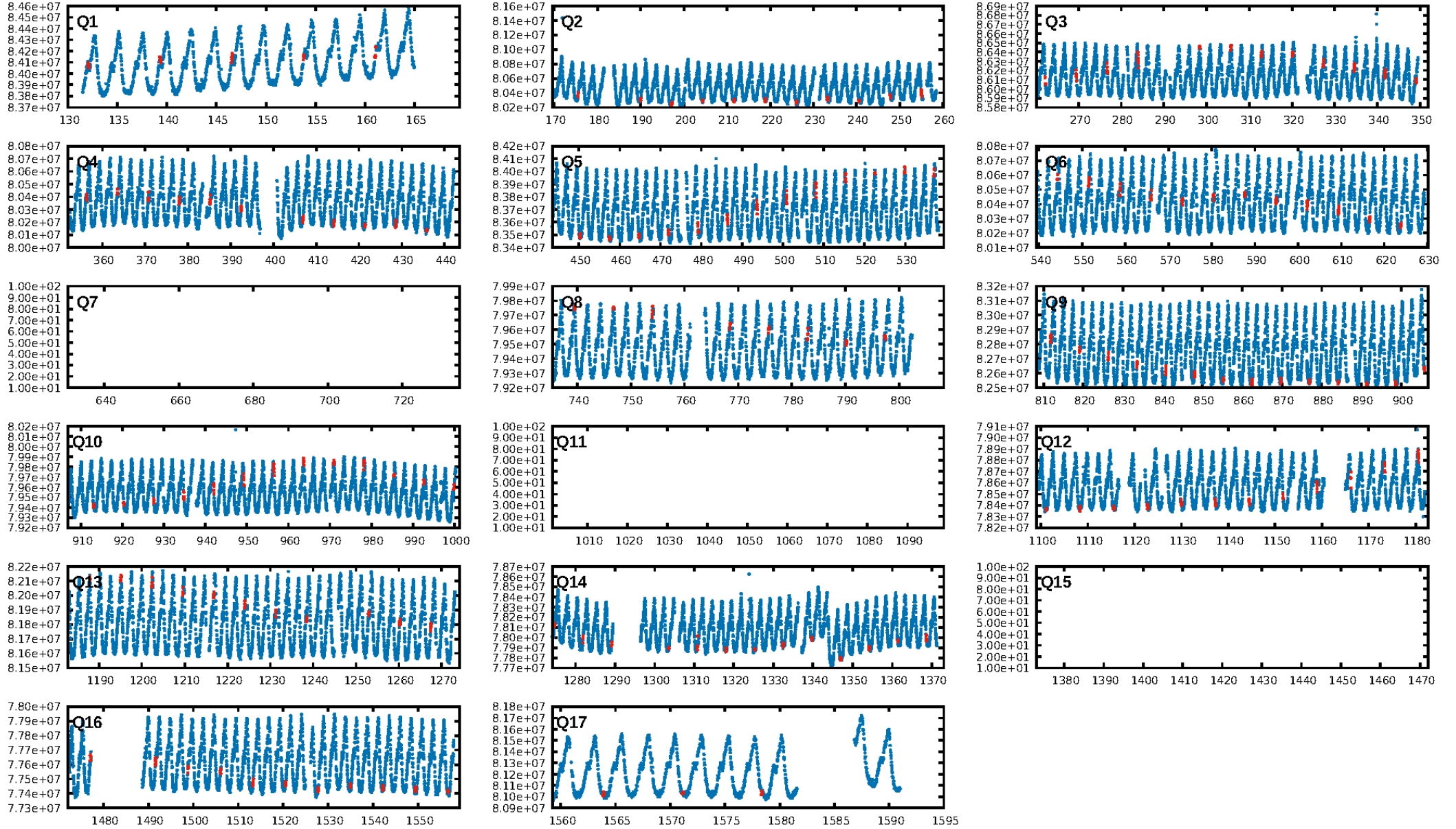
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [27.89 σ]
LongPeriod-sig: 100.0% [36.39 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.77 [10/13]
GhostDiagnostic-chr: 2.065
Centroid-sig: 8.8%
Centroid-so: 0.883 arcsec [1.87 σ]
OotOffset-rm: 0.437 arcsec [0.39 σ]
OotOffset-st: 3/0/4/5 [12]
KicOffset-rm: 0.361 arcsec [0.26 σ]
KicOffset-st: 3/0/4/5 [12]
DiffImageQuality-fgm: 0.08 [1/12]
DiffImageOverlap-fno: 0.50 [7/14]

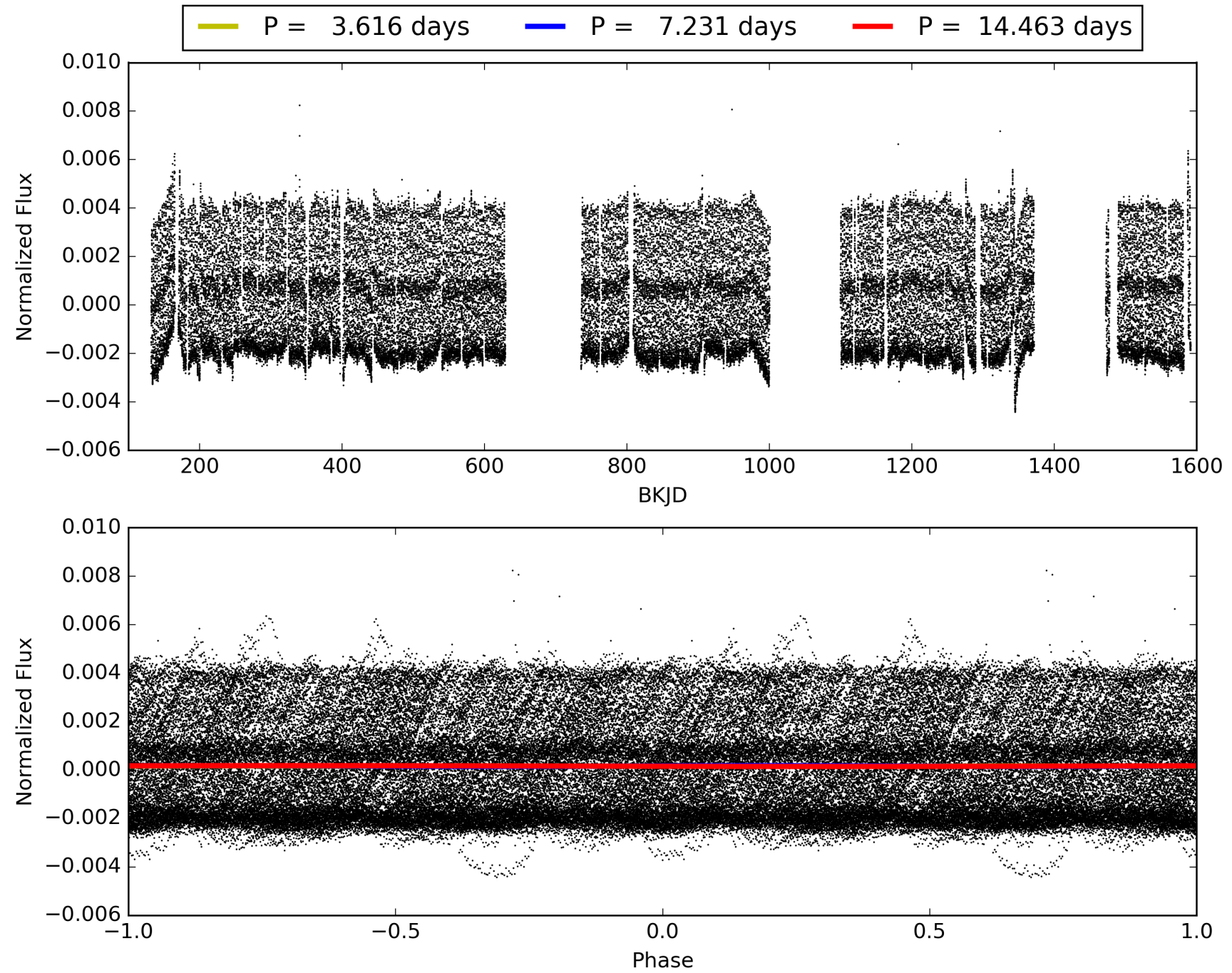
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:36:05 Z

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

TCE 010422241-05, PDC Light Curves

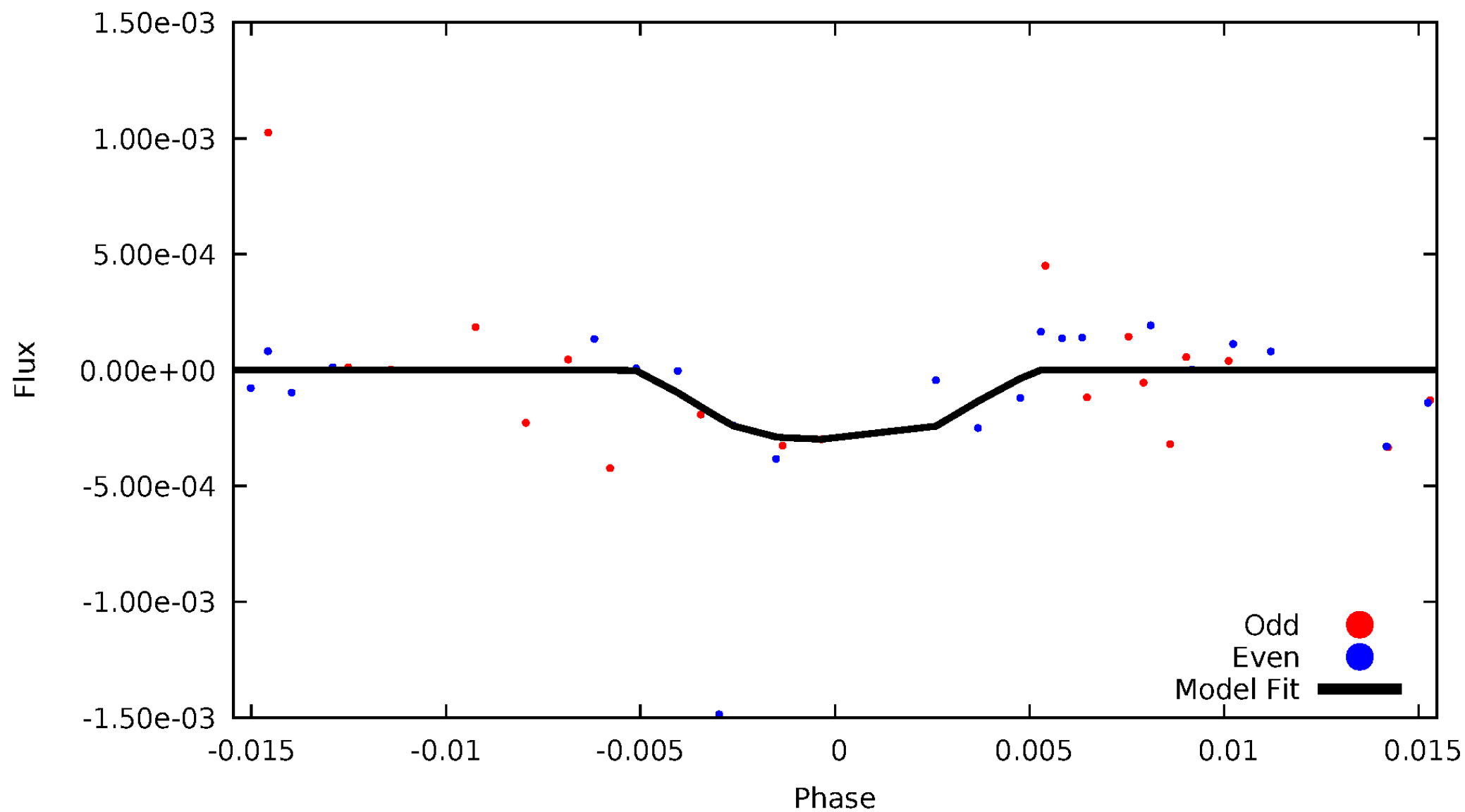


TCE 010422241-05



DV Odd/Even

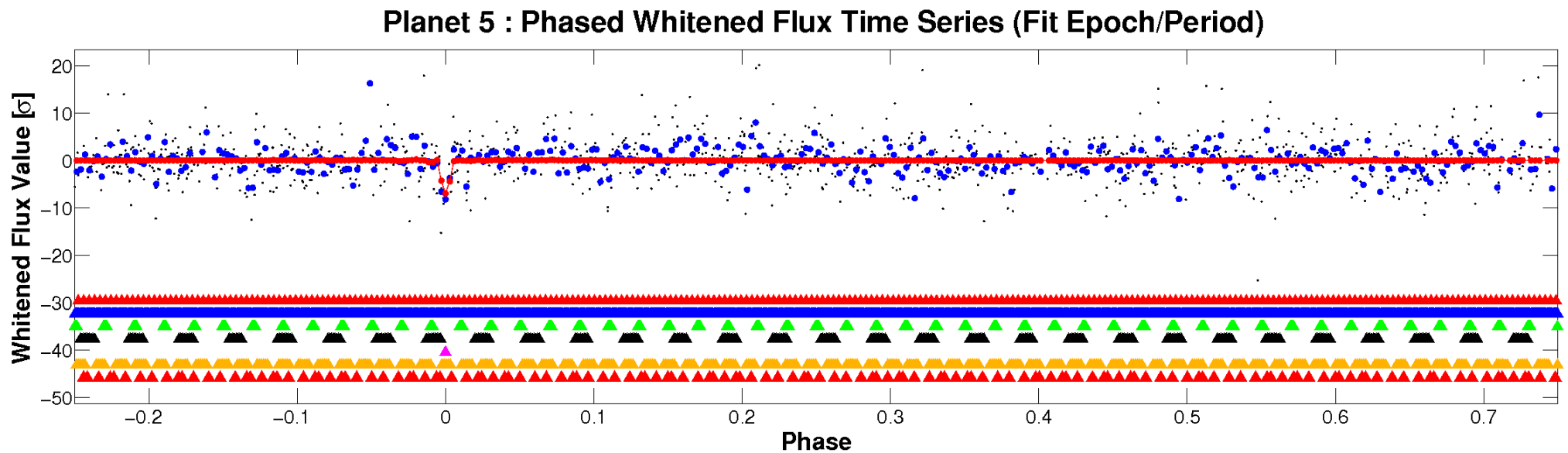
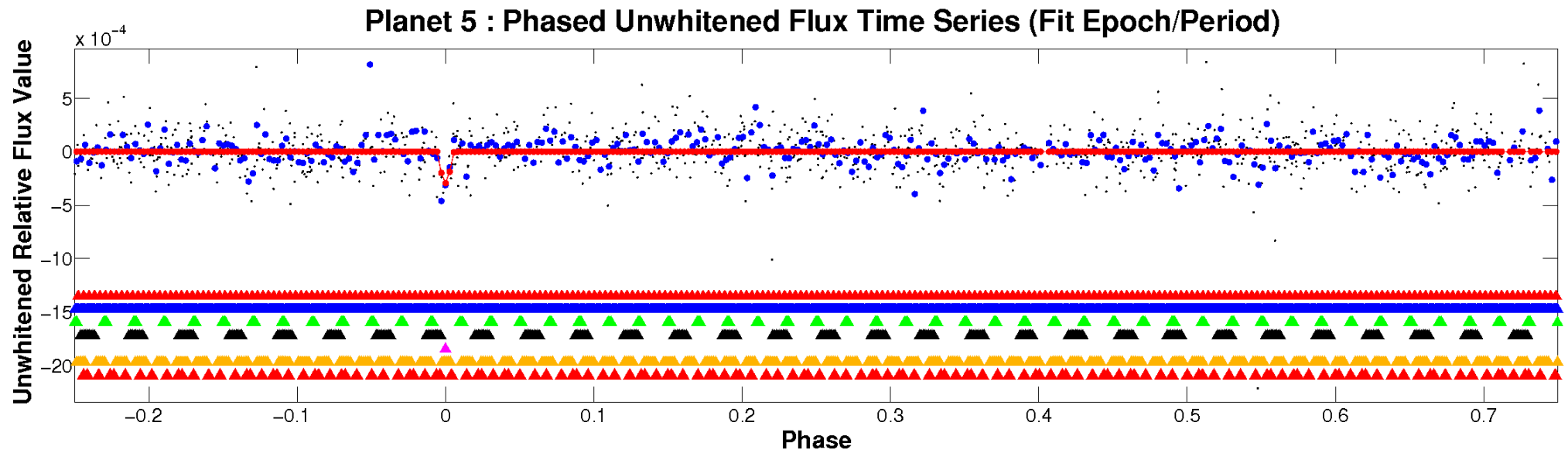
TCE 010422241-05



ALT Odd/Even

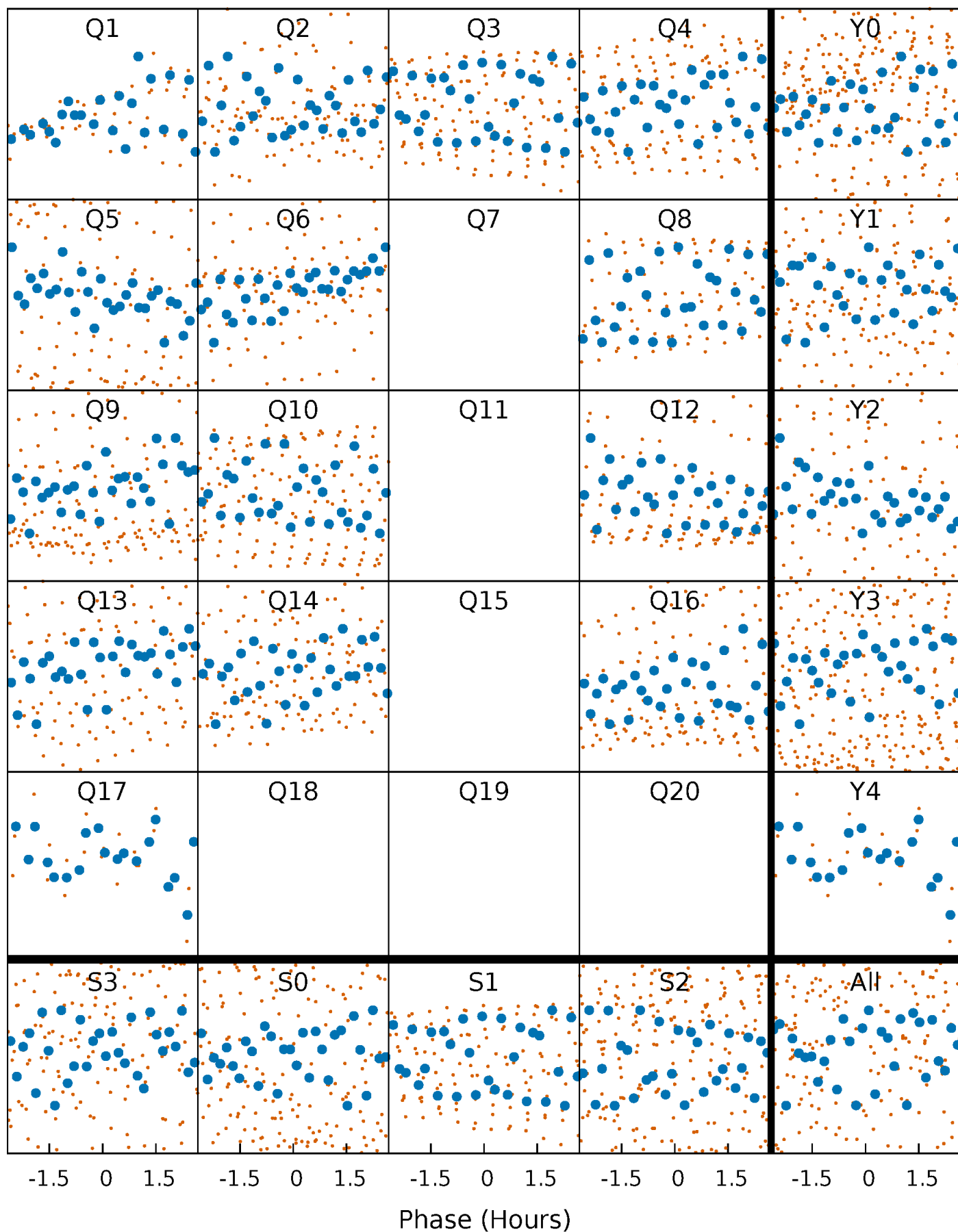
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve



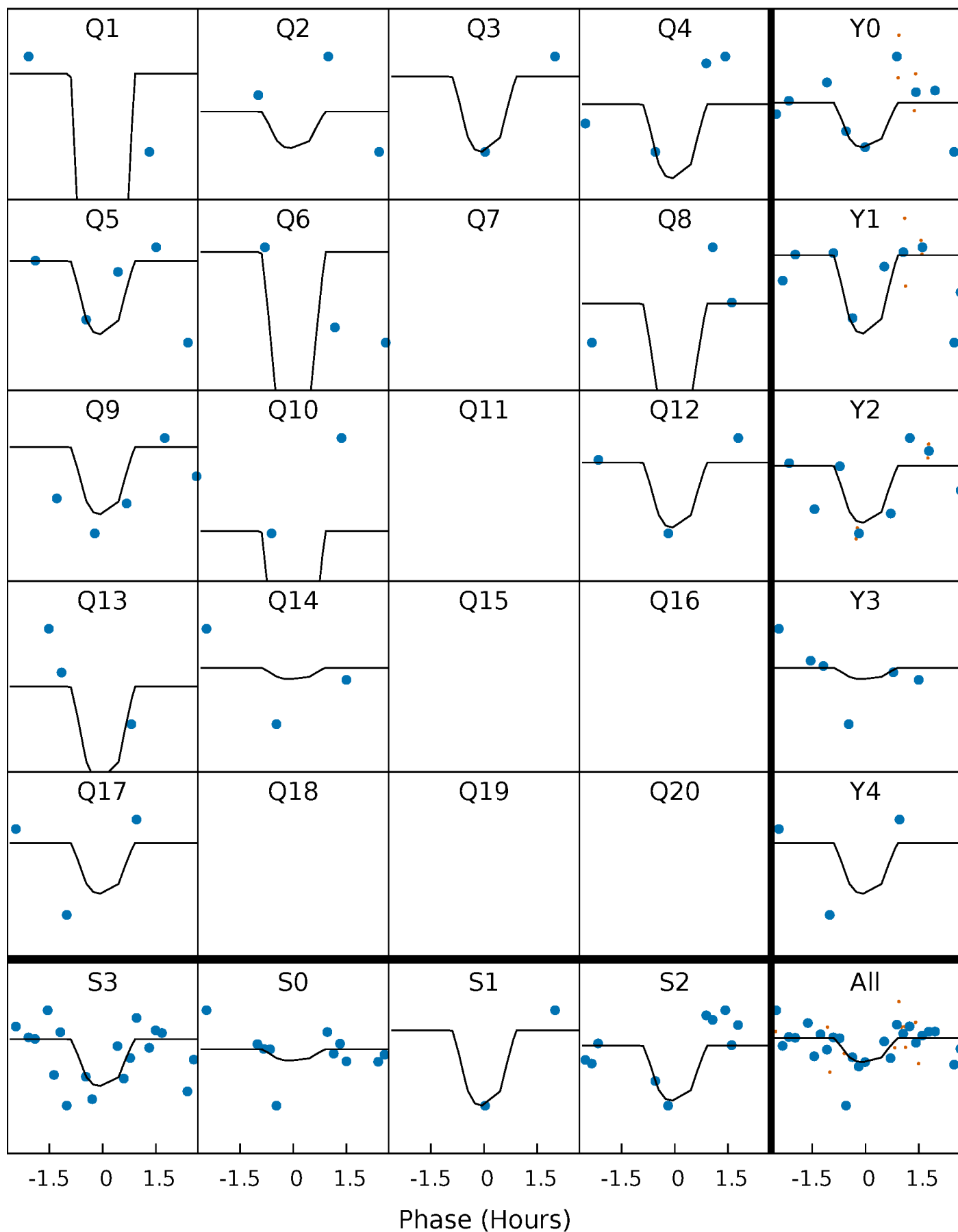
PDC Quarter-Phased Transit Curves

TCE 010422241-05 $P = 7.231381$ Days $T_0 = 132.095055$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010422241-05 P= 7.231381 Days $T_0=132.095055$ (BKJD)

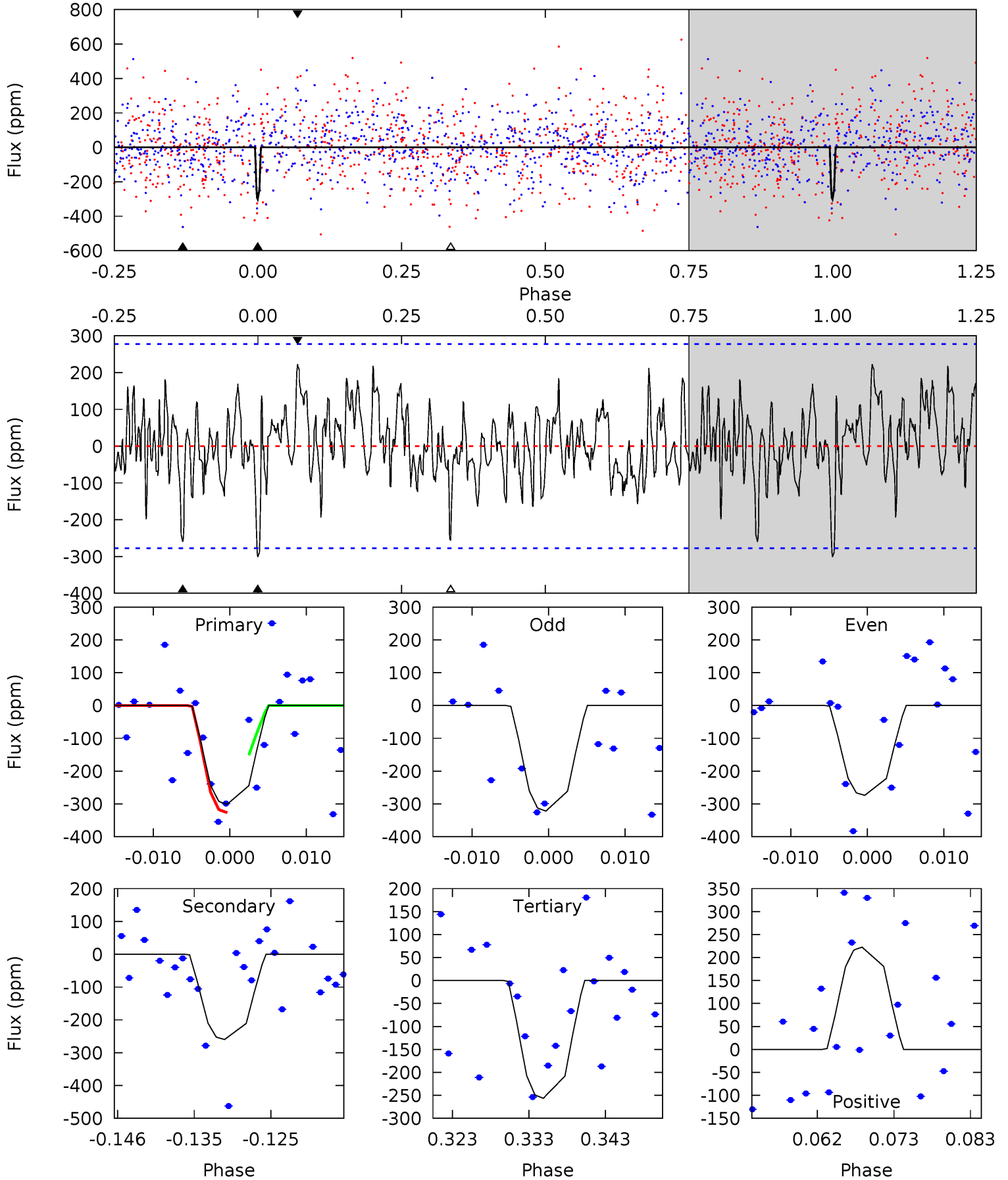


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

010422241-05, P = 7.231381 Days, E = 124.863674 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.45	4.70	4.64	4.03	5.02	2.56	1.48	0.81	1.42	0.06	0.67	0.39	0	0.43	1.52



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 010422241

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8037^{+221}_{-331}	$4.132^{+0.112}_{-0.168}$	$0.070^{+0.250}_{-0.450}$	$1.917^{+0.494}_{-0.371}$	$1.815^{+0.170}_{-0.316}$	$0.363^{+0.190}_{-0.171}$
	+3%/-4%	+3%/-4%	+357%/-643%	+26%/-19%	+9%/-17%	+52%/-47%
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 010422241-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-260 ± 55	$7.14^{+6.76}_{-4.85}$	2311^{+144}_{-131}	5348^{+5082}_{-1265}	22^{+188}_{-16}
Alt.	N/A	N/A	N/A	N/A	N/A

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

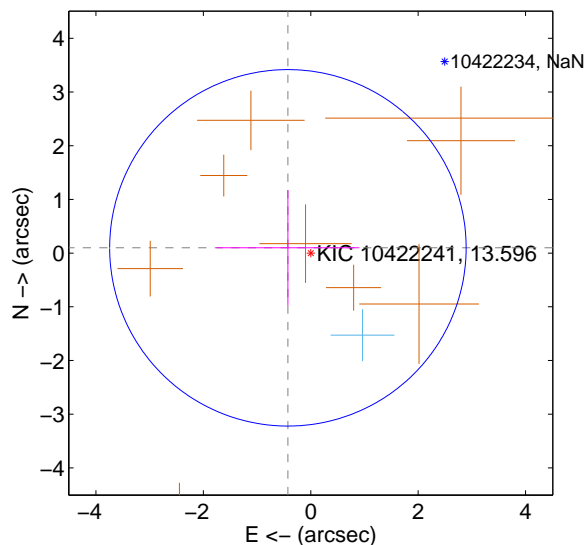
Supplemental centroid analysis for 010422241-05. Kepler magnitude: 13.60. Transit SNR 15.48

There are 1 quarters with good PRF difference image offsets

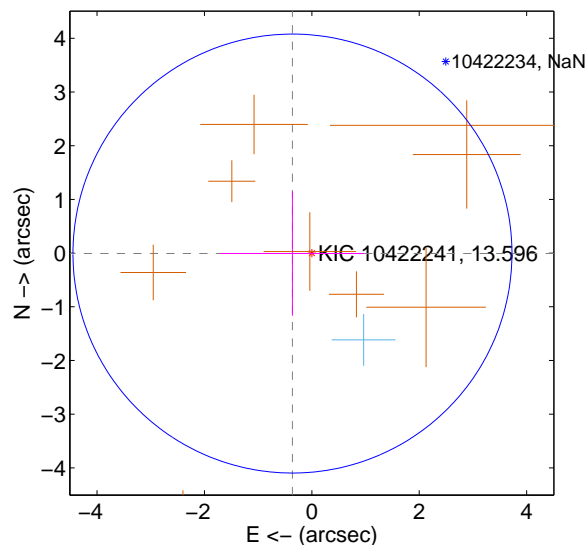
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.437 ± 1.106	0.39	0.425 ± 1.333	0.098 ± 1.074
PRF-fit source offset from KIC position	0.361 ± 1.362	0.26	0.361 ± 1.339	-0.008 ± 1.158
photometric centroid source offset	0.88 ± 0.47	1.87	-0.47 ± 0.46	-0.75 ± 0.48

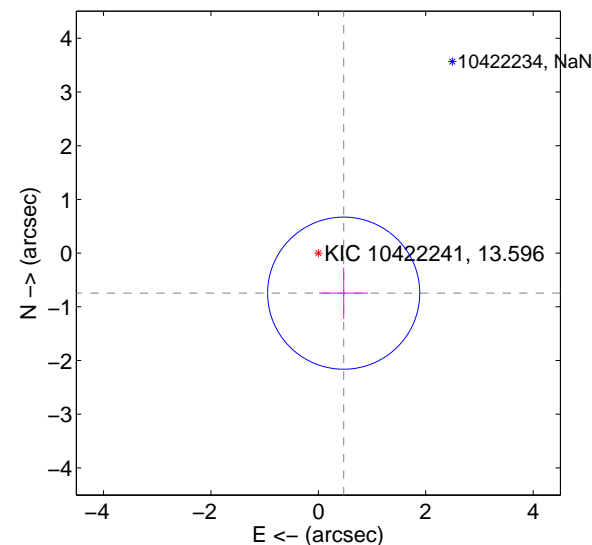
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

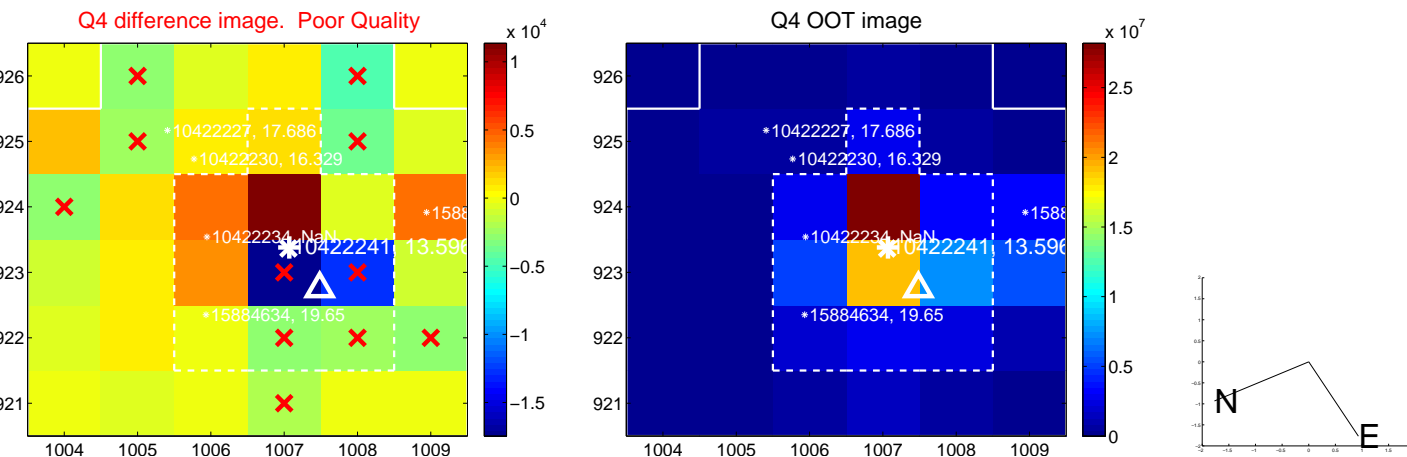
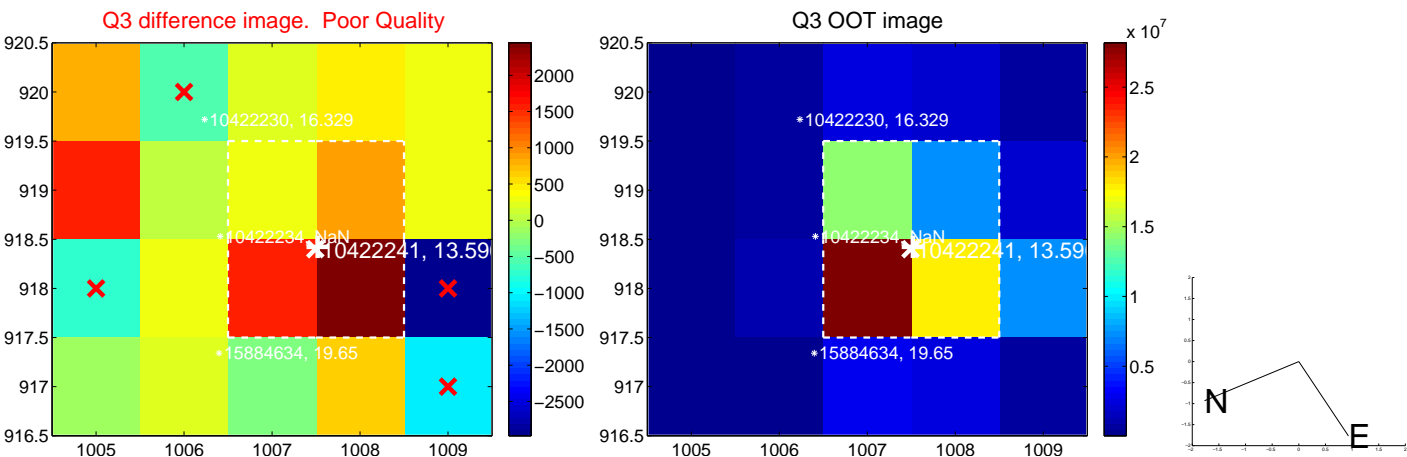
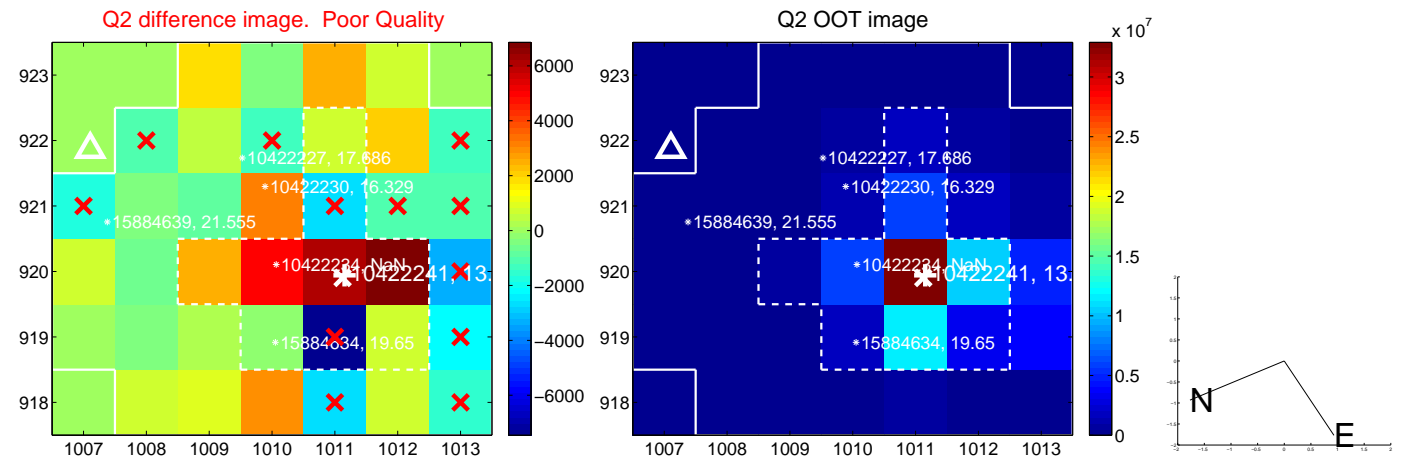
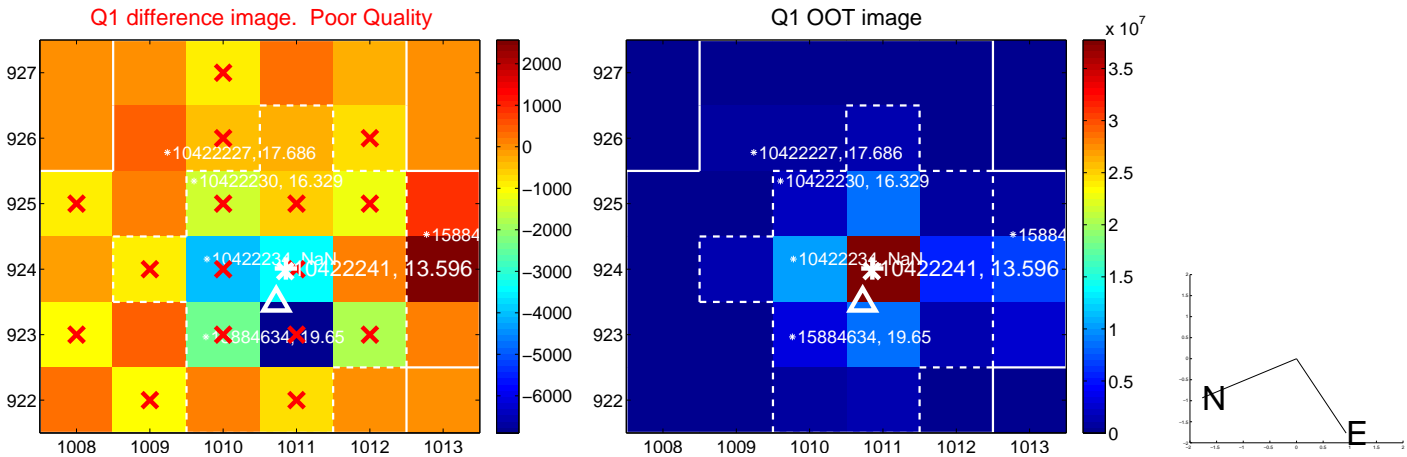


offset from photometric centroids

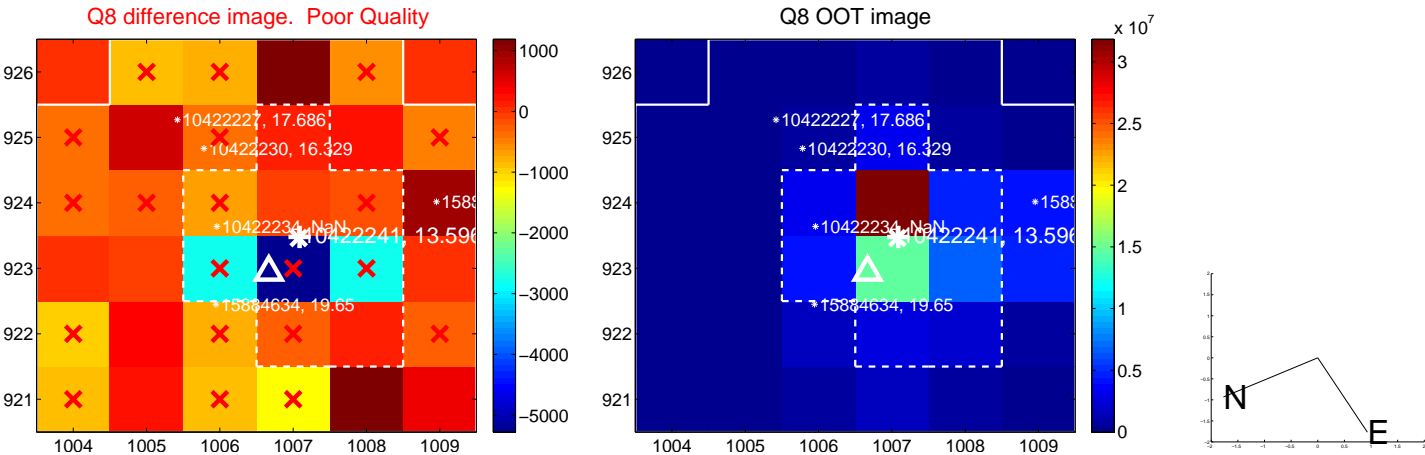
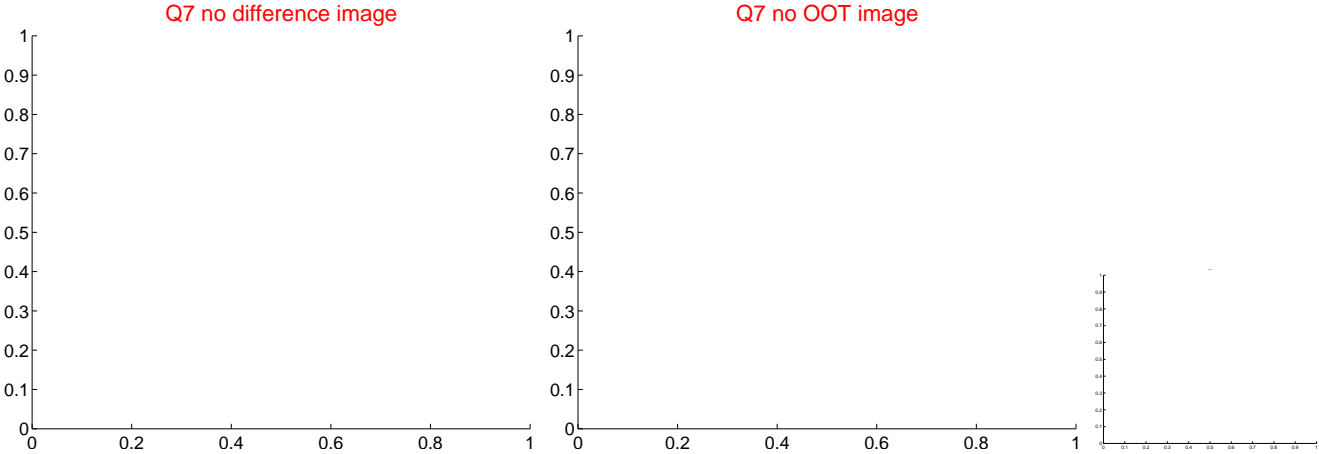
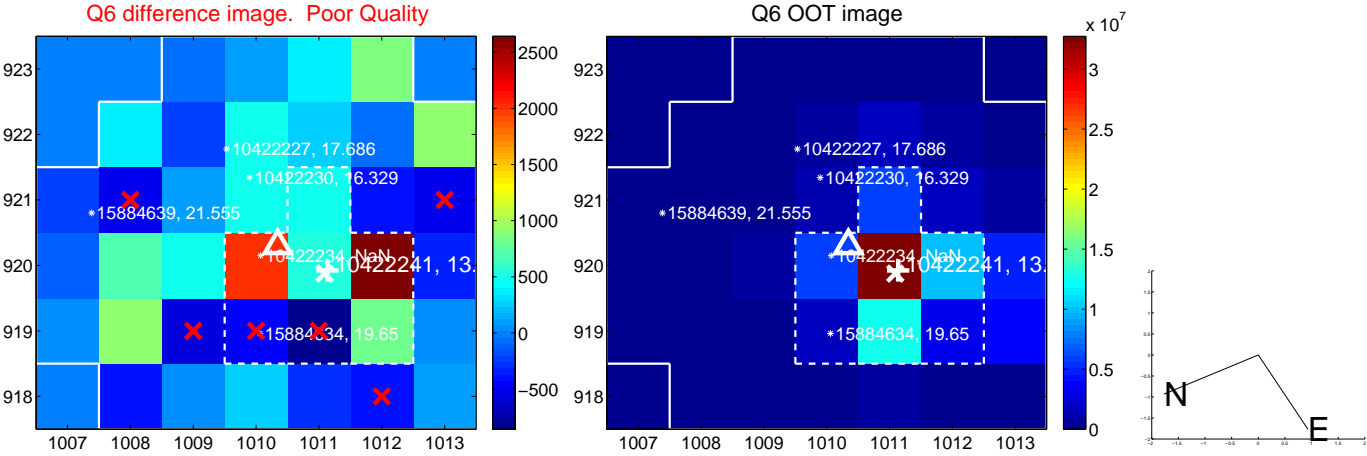
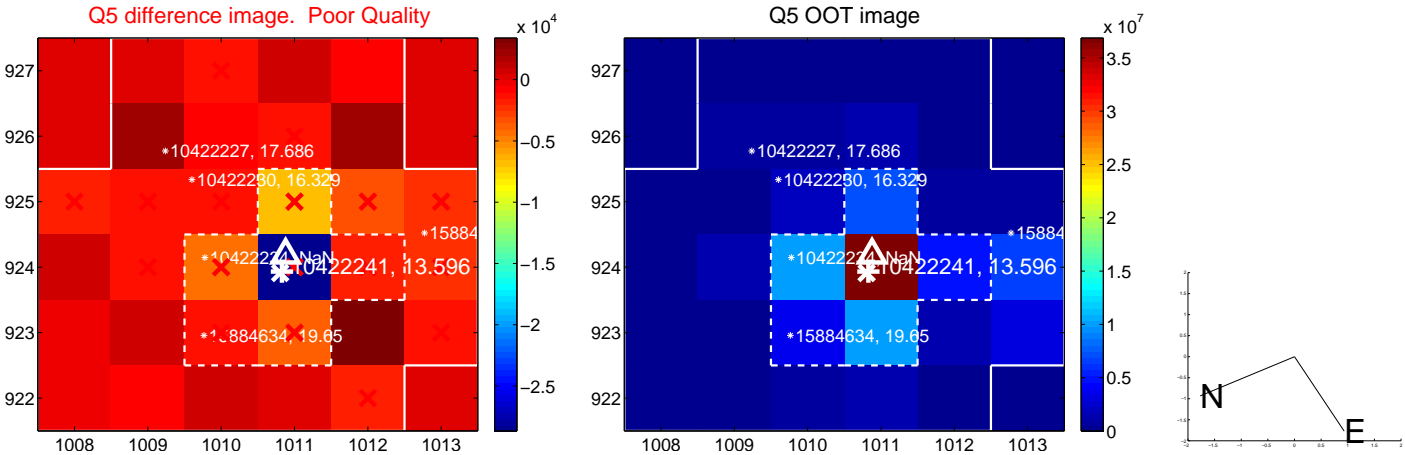


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

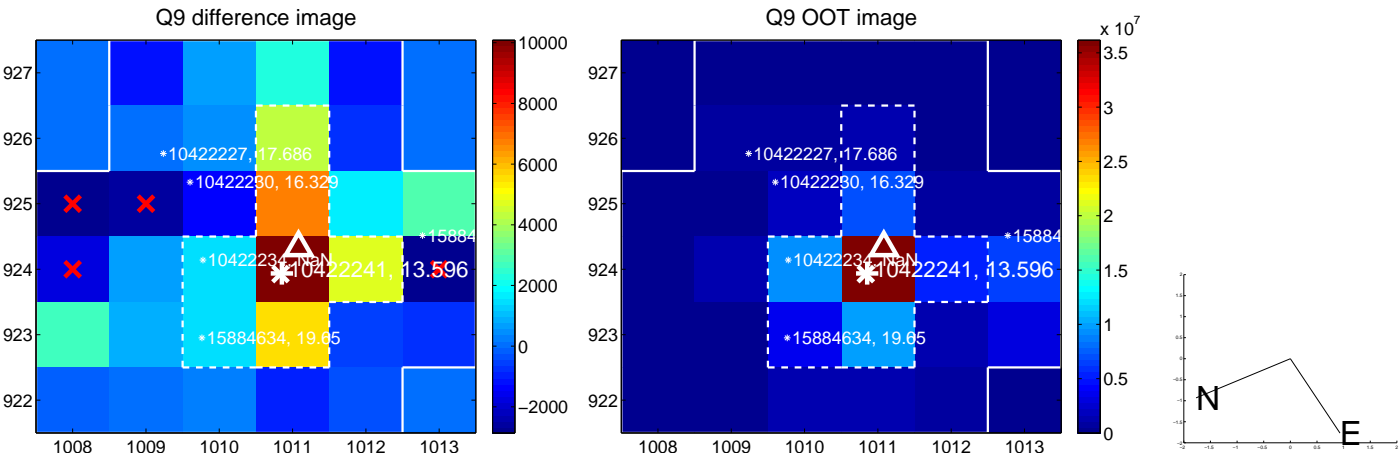
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



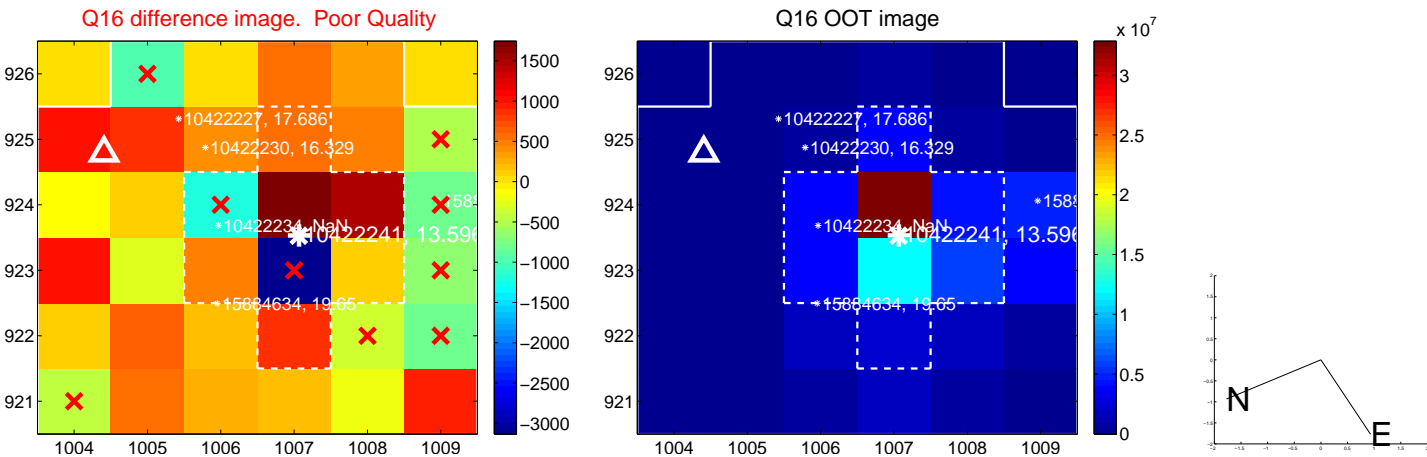
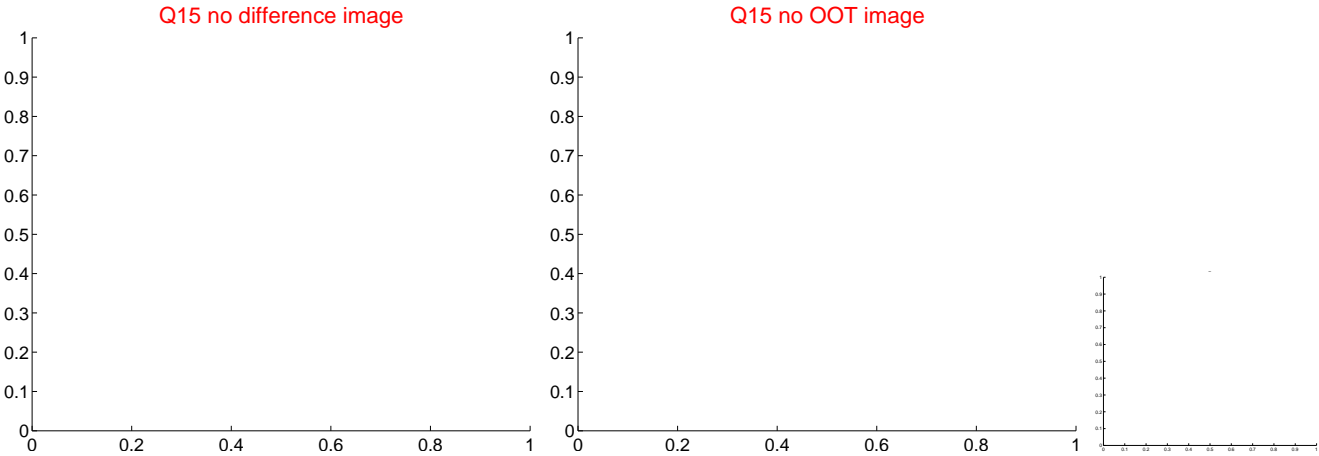
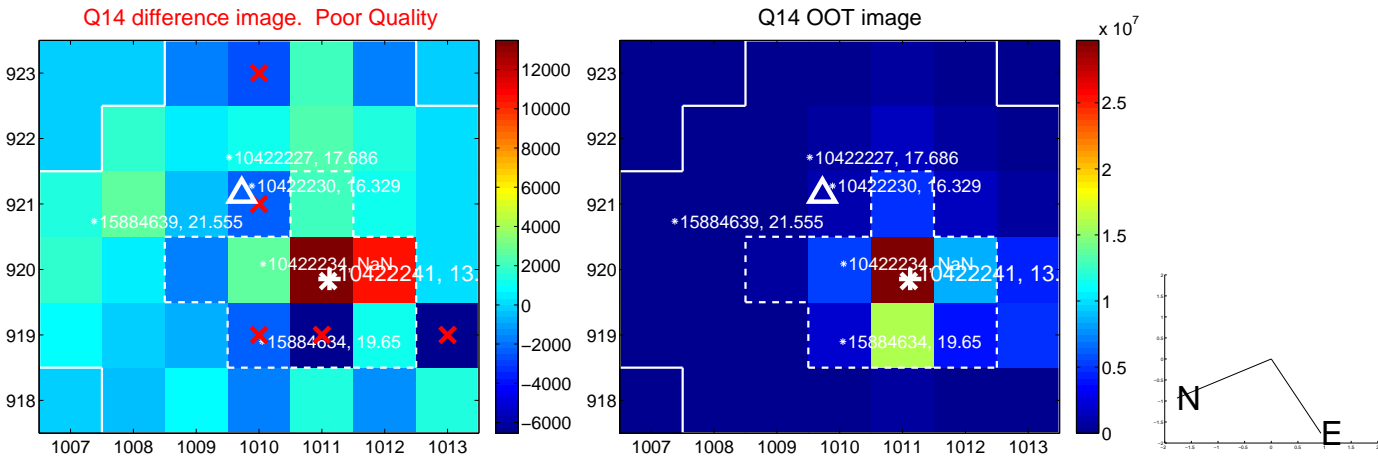
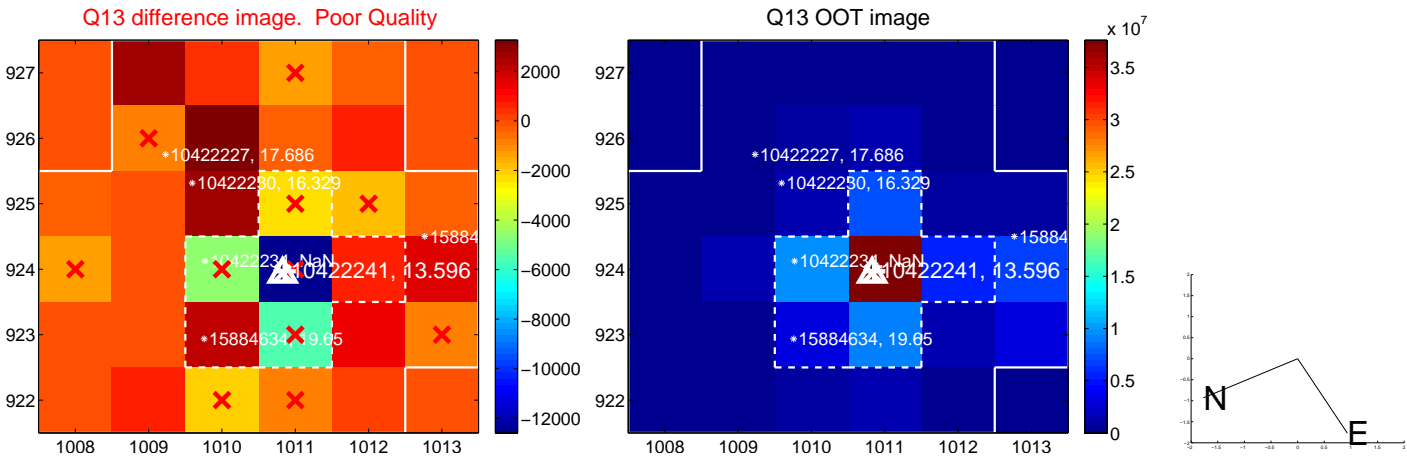
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



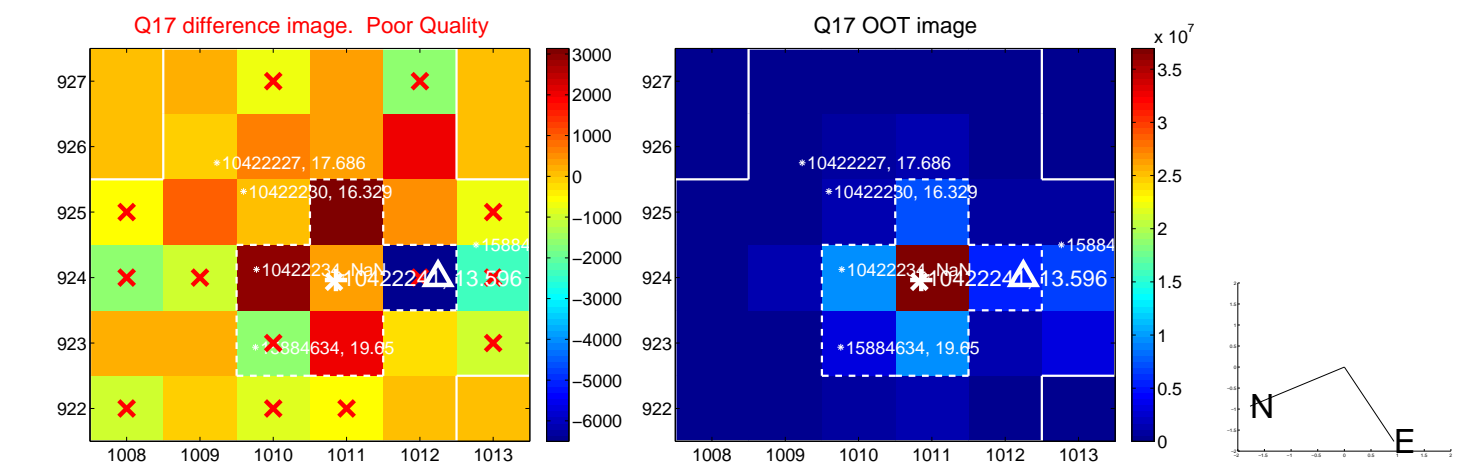
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



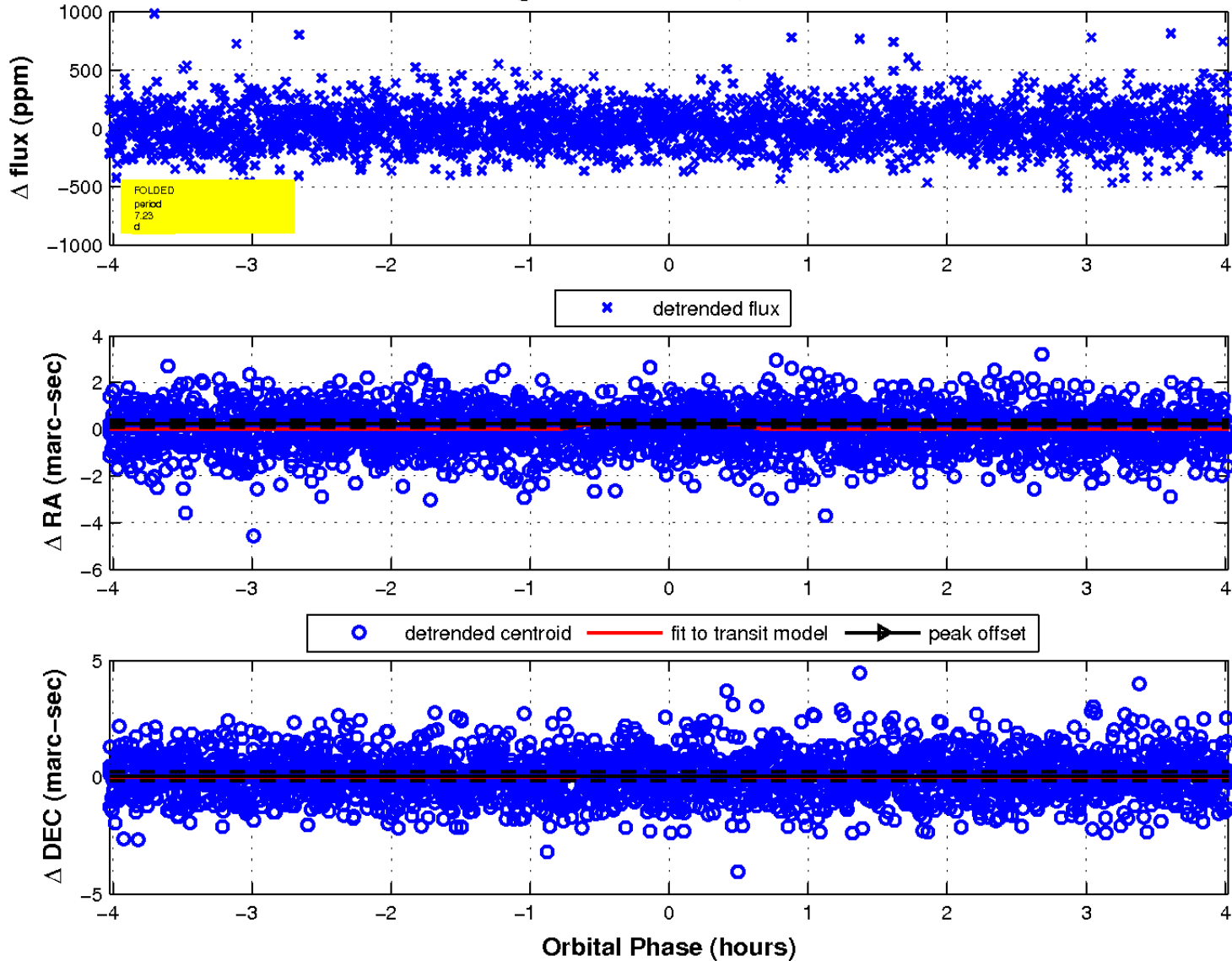
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

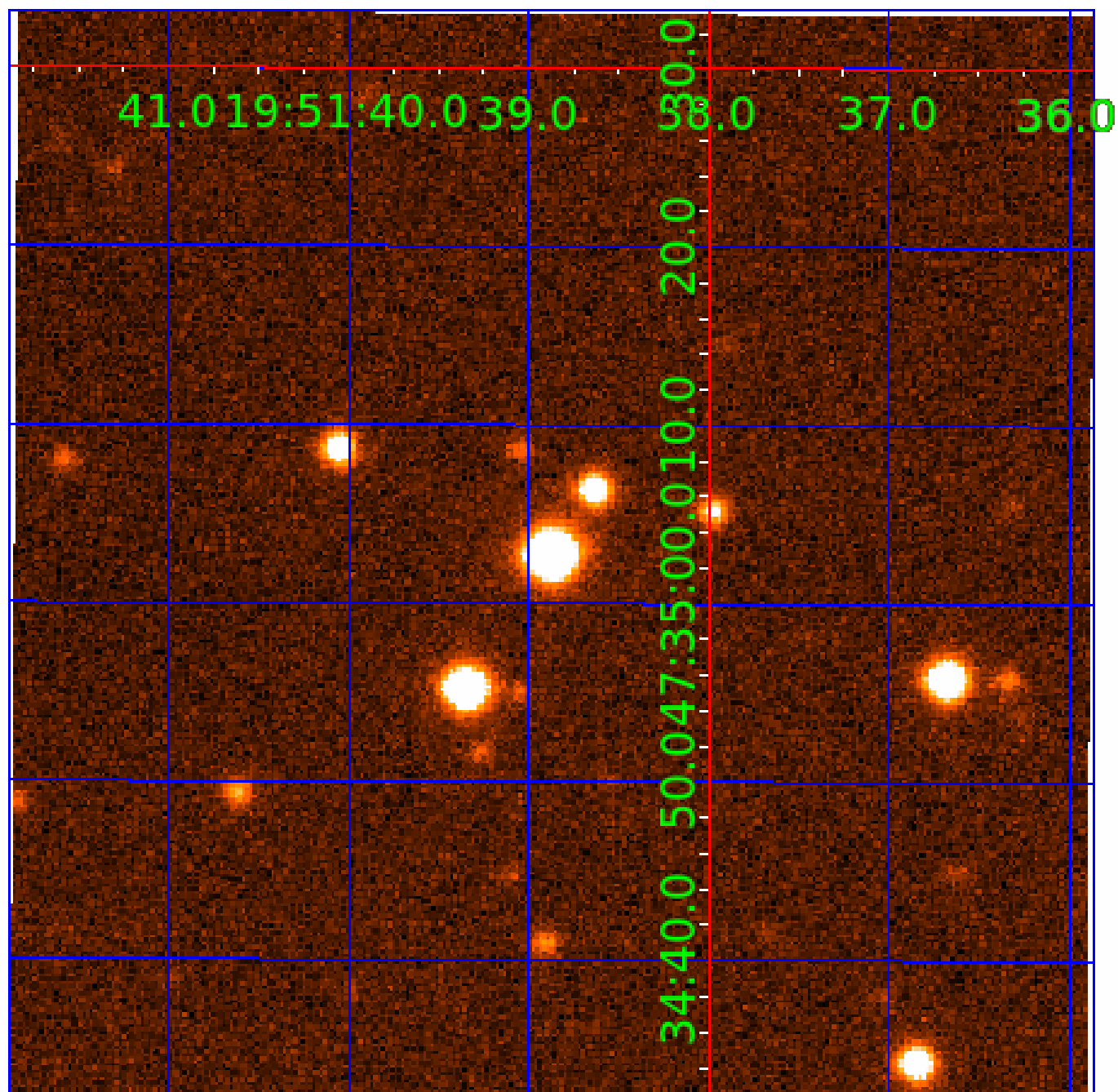


fluxWeightedCentroids, Planet 5 of 7



UKIRT Image

Declination



KIC 010422241

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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010422241-03	OBS	No	3.904990	133.754399	229.8	0.573	17.7	12.3	1.92	8037	3.19	3916.14
010422241-04	OBS	No	5.543769	135.446954	405.9	0.555	13.0	18.6	1.92	8037	4.27	2454.40
010422241-05	OBS	No	7.231381	132.095055	298.8	1.342	9.3	15.5	1.92	8037	3.41	1722.09
010422241-06	OBS	No	3.467242	131.770191	201.4	0.836	13.2	10.4	1.92	8037	2.98	4588.87
010422241-07	OBS	No	10.282993	138.707871	899.7	1.500	12.7	-1.0	1.92	8037	5.85	1076.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010422241-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010422241-02	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
010422241-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

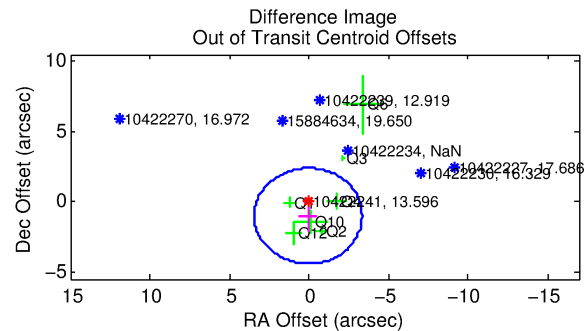
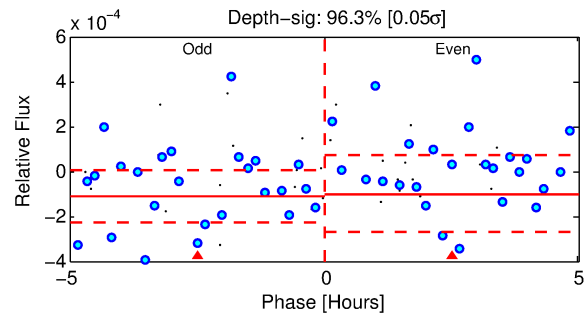
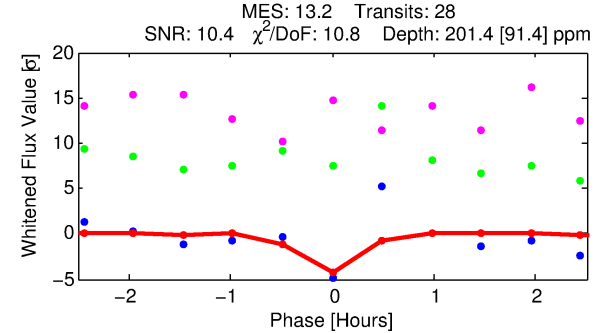
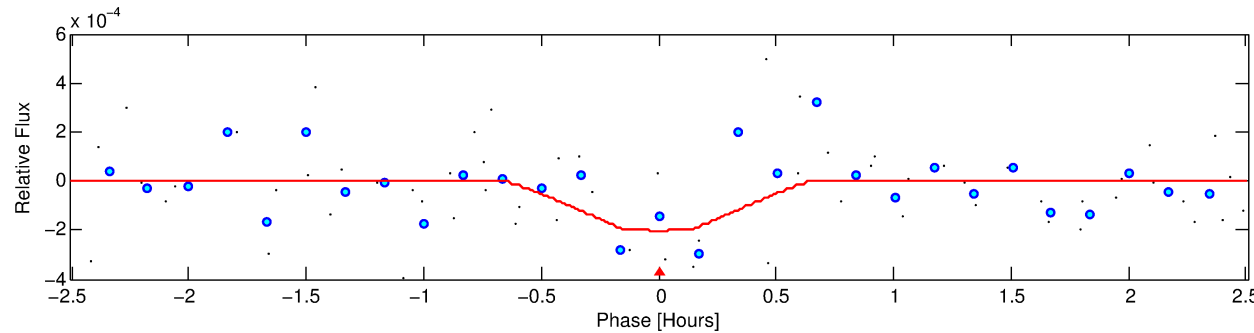
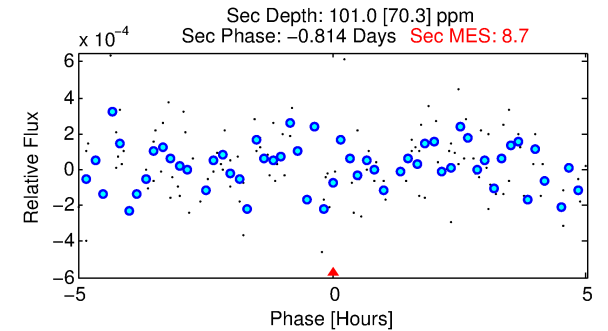
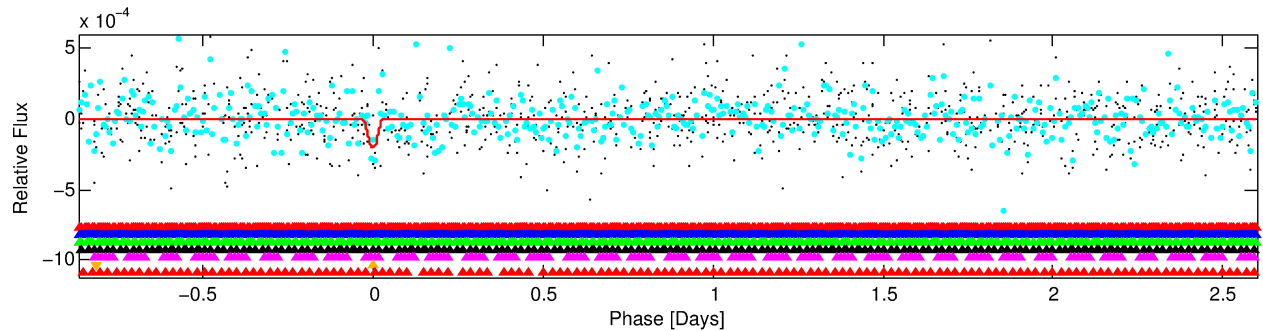
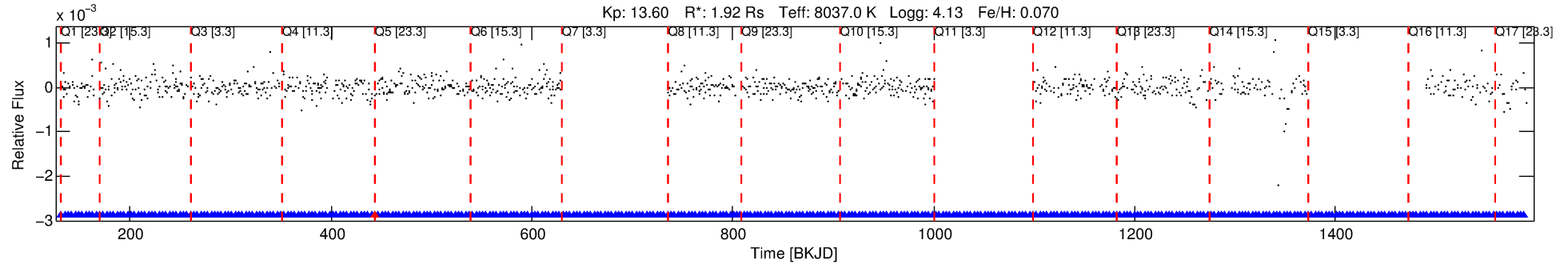
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010422241-06

No Significant Match Found

DV One-Page Summary

KIC: 10422241 Candidate: 6 of 7 Period: 3.467 d



DV Fit Results:

Period = 3.46724 [0.00005] d
Epoch = 131.7702 [0.0074] BKJD
Rp/R* = 0.0142 [0.0200]
a/R* = 21.88 [181.59]
b = 0.74 [5.16]
Seff = 4588.87 [1610.42]
Teq = 2099 [184] K
Rp = 2.98 [4.25] Re
a = 0.0547 [0.0118] AU
Ag = 18.76 [54.56] [0.33σ]
Teffp = 6753 [4891] K [0.95σ]

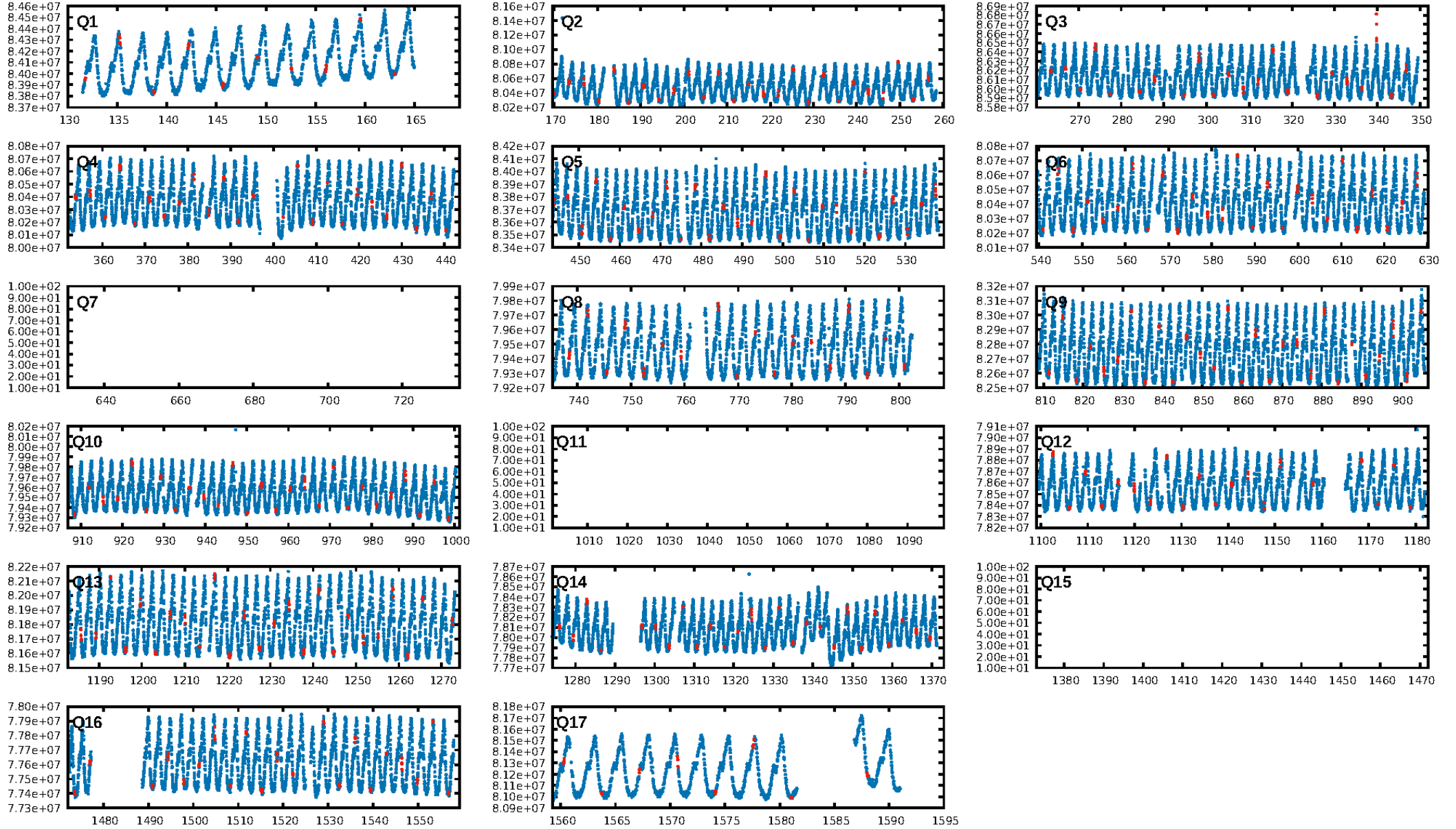
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [16.18σ]
LongPeriod-sig: 100.0% [10.36σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.96 [25/26]
GhostDiagnostic-chr: 0.5201
Centroid-sig: 0.0%
Centroid-so: 0.977 arcsec [1.60σ]
OotOffset-rm: 1.015 arcsec [0.89σ]
OotOffset-st: 3/1/2/1 [7]
KicOffset-rm: 1.130 arcsec [0.94σ]
KicOffset-st: 3/1/2/1 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 0.93 [13/14]

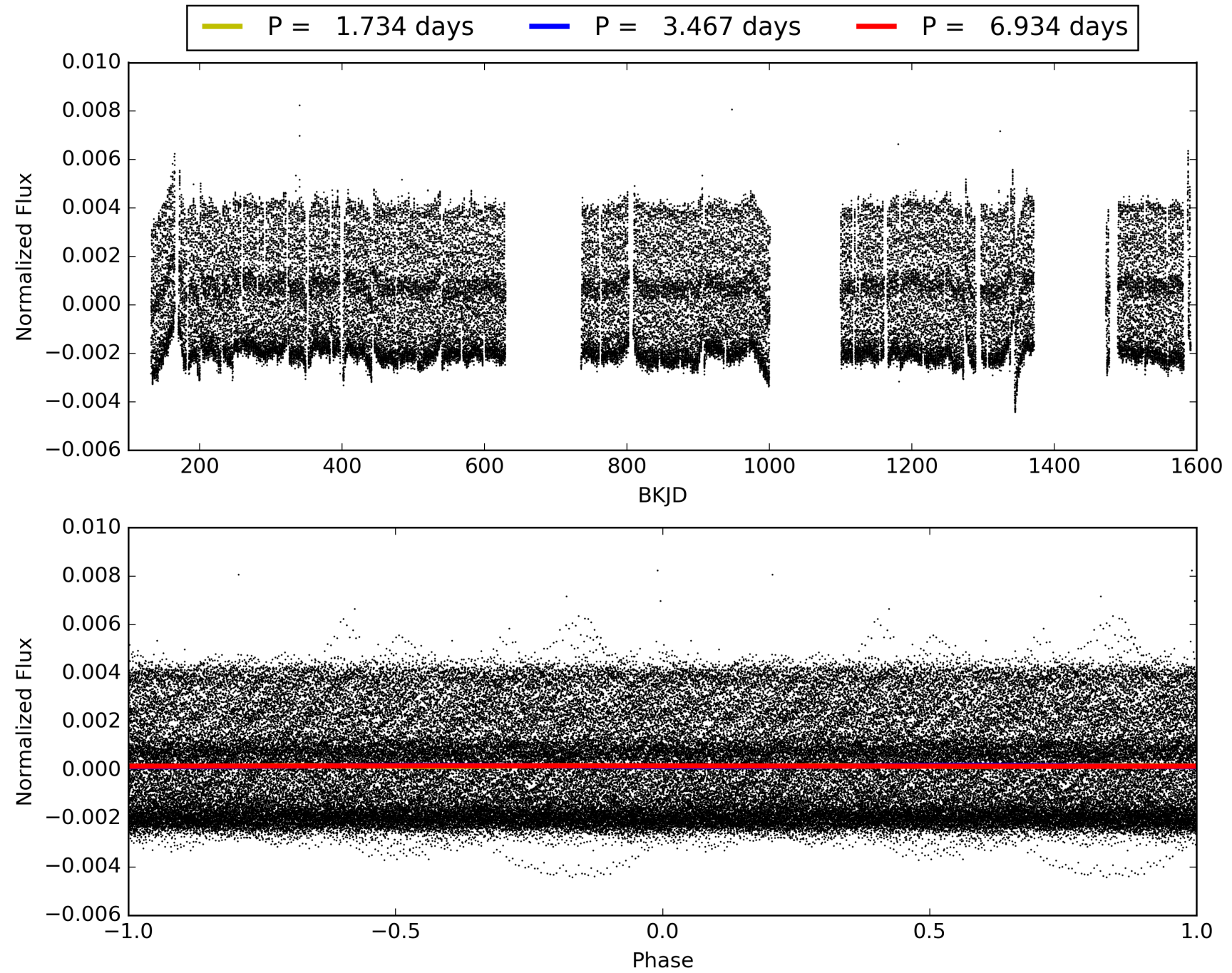
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:36:08 Z

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

TCE 010422241-06, PDC Light Curves

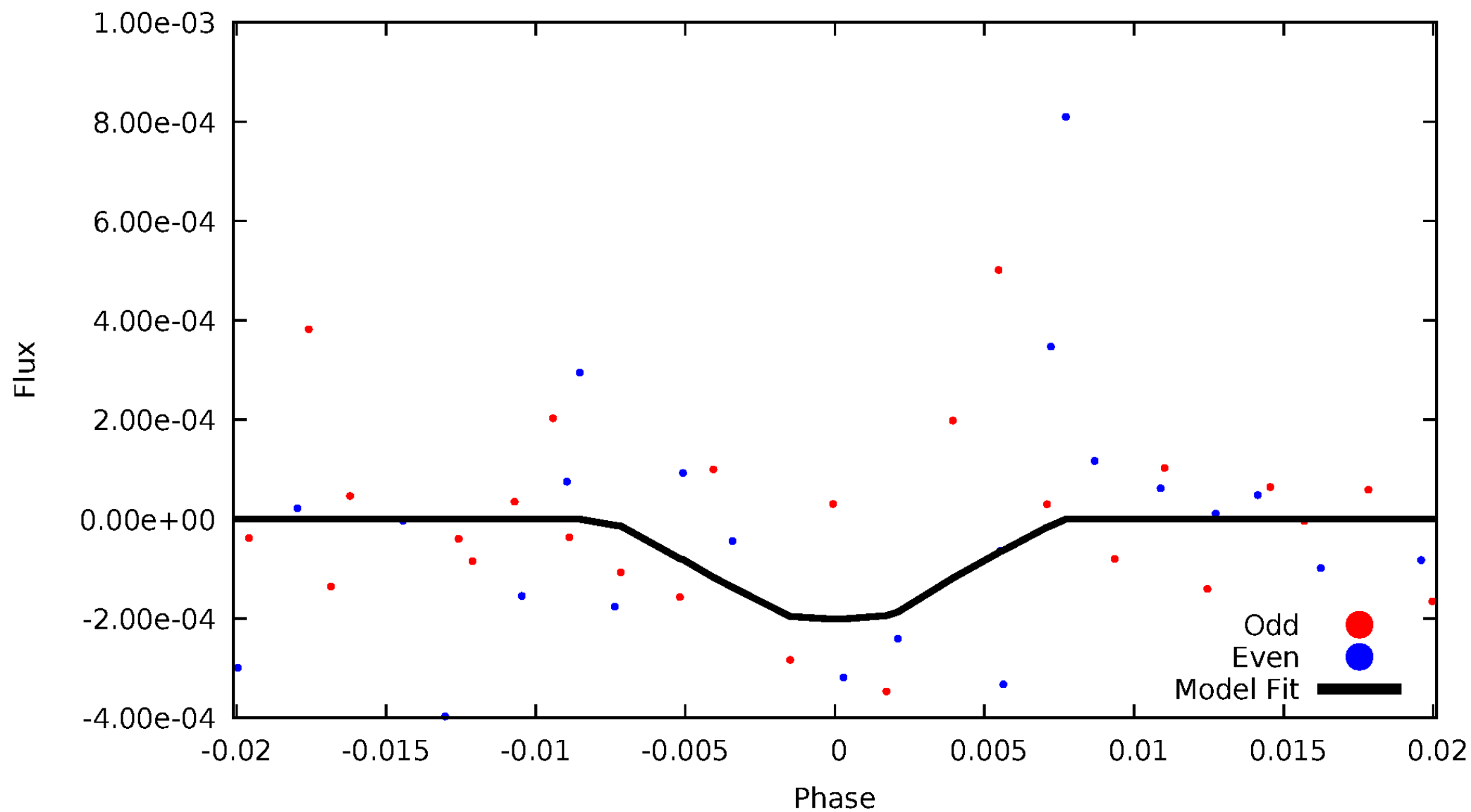


TCE 010422241-06



DV Odd/Even

TCE 010422241-06

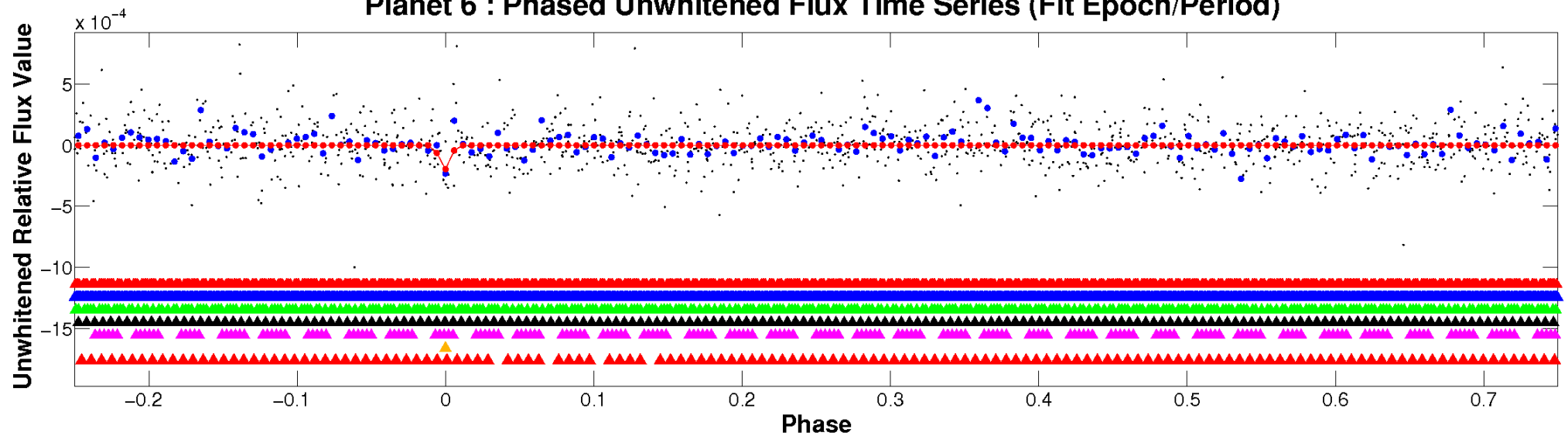


ALT Odd/Even

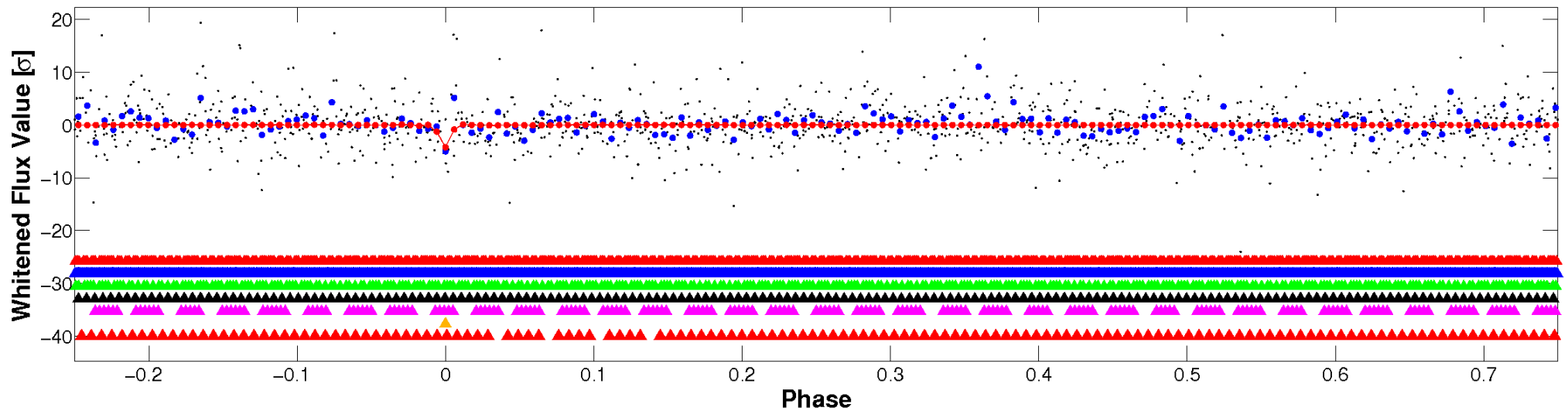
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

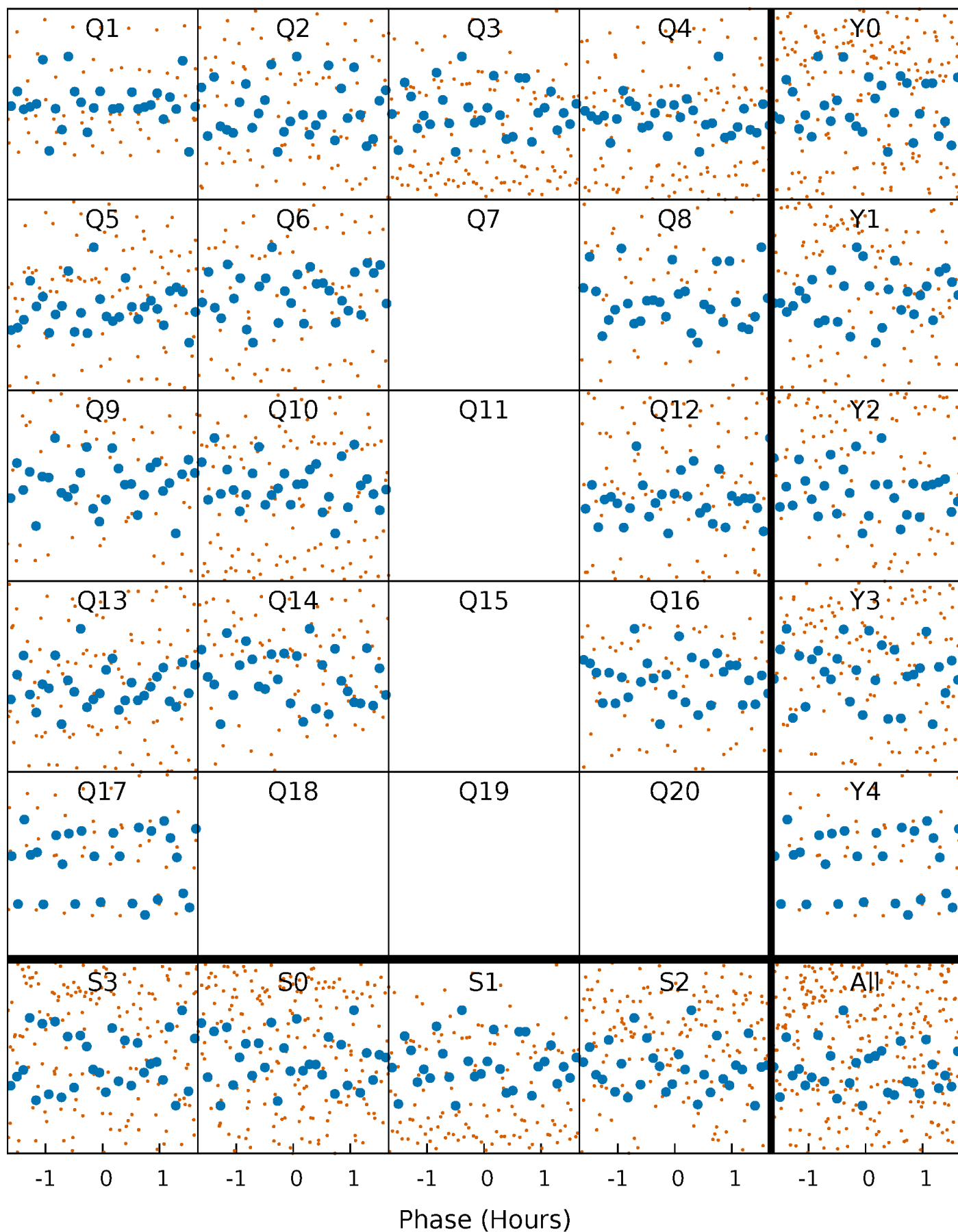


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



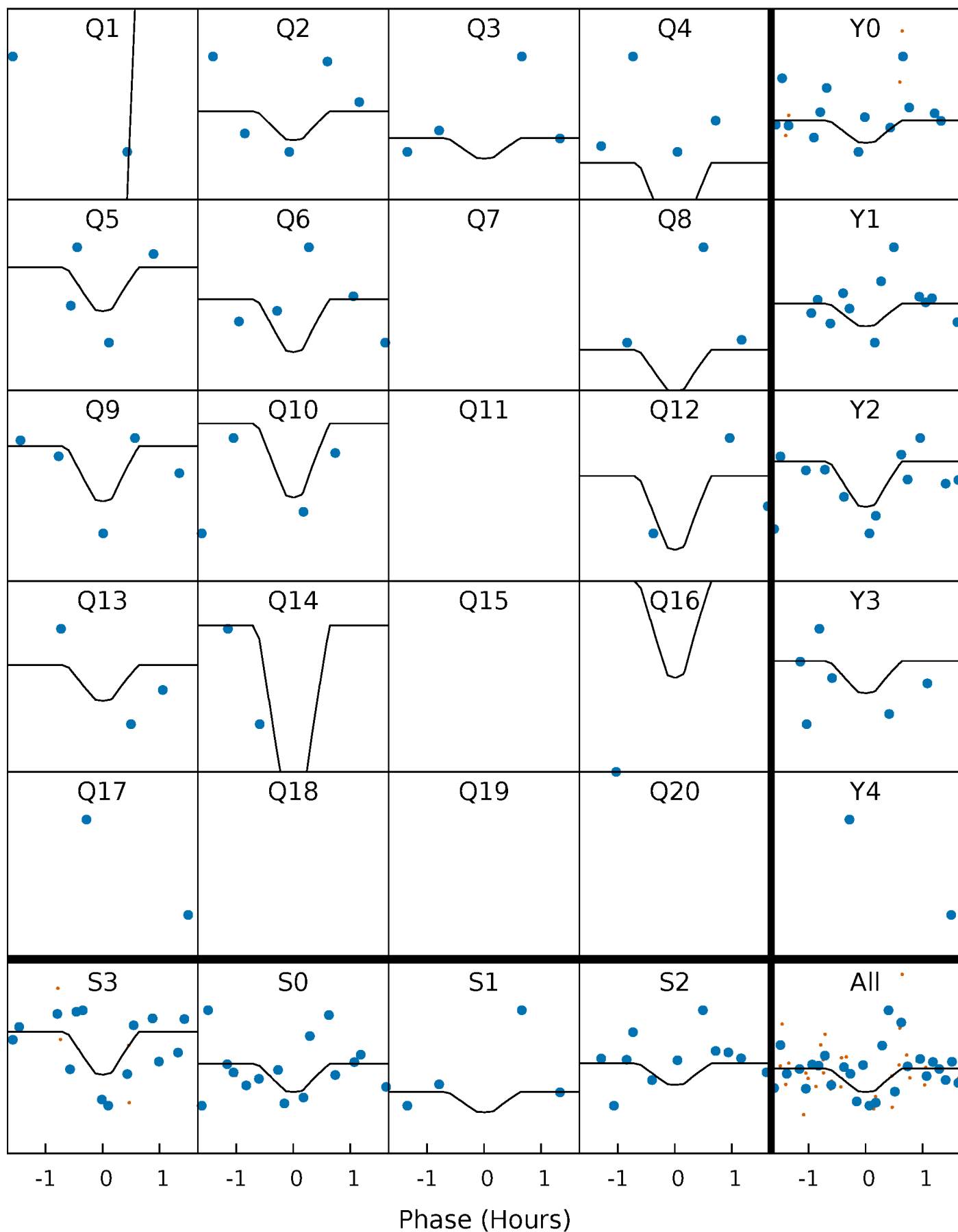
PDC Quarter-Phased Transit Curves

TCE 010422241-06 P= 3.467242 Days $T_0=131.770191$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010422241-06 P= 3.467242 Days $T_0=131.770191$ (BKJD)

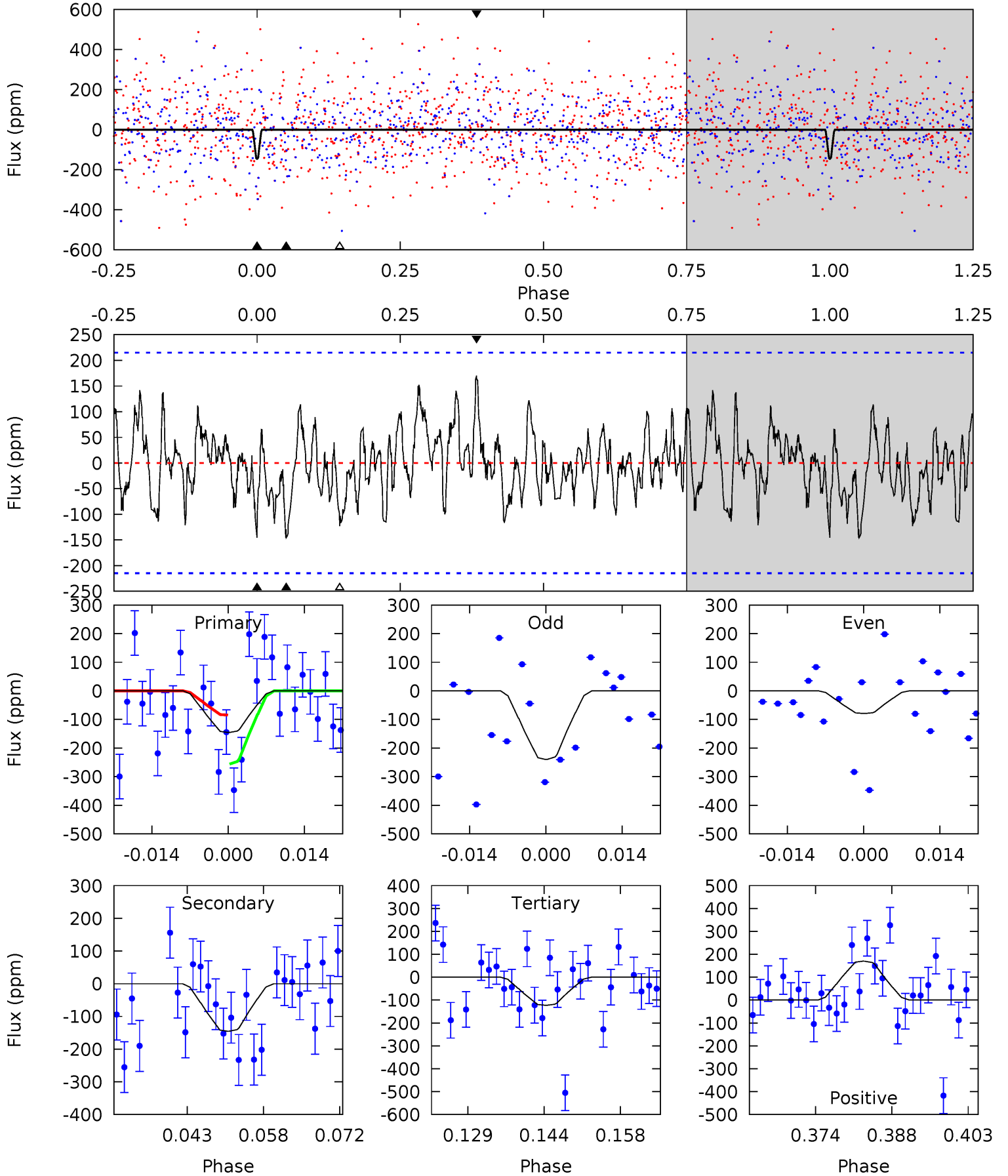


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

010422241-06, P = 3.467242 Days, E = 131.770191 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.36	3.36	2.83	3.92	4.96	2.45	1.29	0.53	-0.56	0.53	-0.56	1.87	0	0.54	1.92



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 010422241

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8037^{+221}_{-331}	$4.132^{+0.112}_{-0.168}$	$0.070^{+0.250}_{-0.450}$	$1.917^{+0.494}_{-0.371}$	$1.815^{+0.170}_{-0.316}$	$0.363^{+0.190}_{-0.171}$
	+3%/-4%	+3%/-4%	+357%/-643%	+26%/-19%	+9%/-17%	+52%/-47%
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 010422241-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-145 ± 43	$4.34^{+3.84}_{-2.72}$	2941^{+211}_{-169}	5826^{+5404}_{-1418}	11^{+77}_{-8}
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{obs} \gg 1.0$

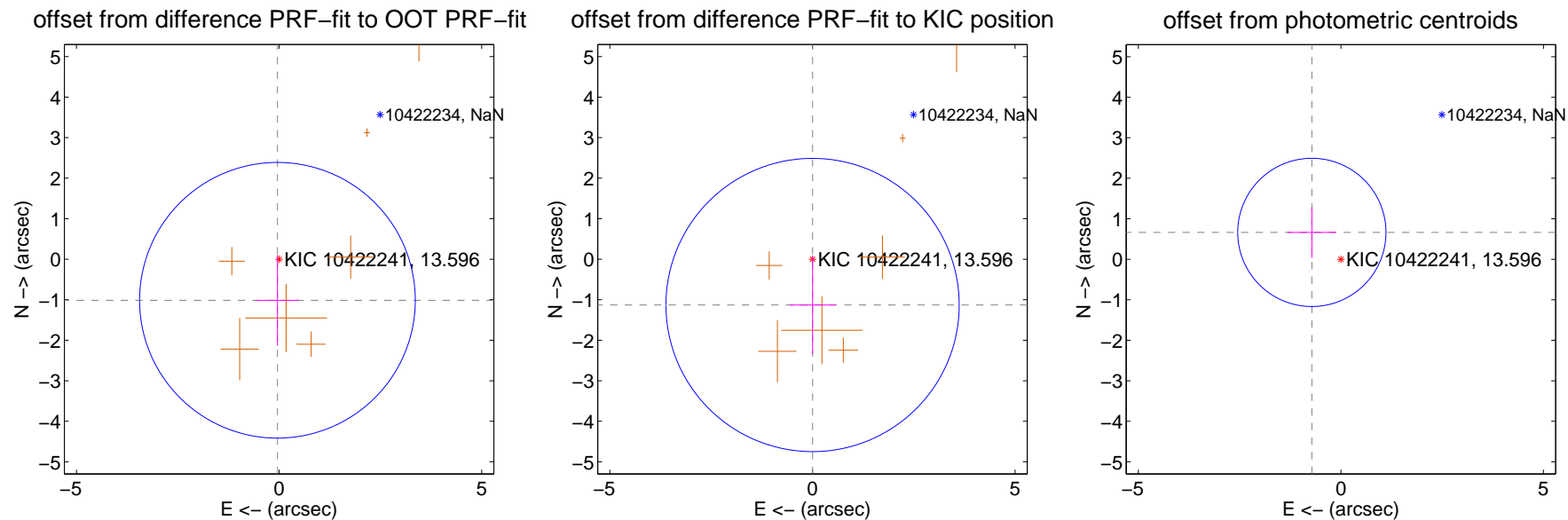
DV Centroid Data

Supplemental centroid analysis for 010422241-06. Kepler magnitude: 13.60. Transit SNR 10.43

There are 0 quarters with good PRF difference image offsets

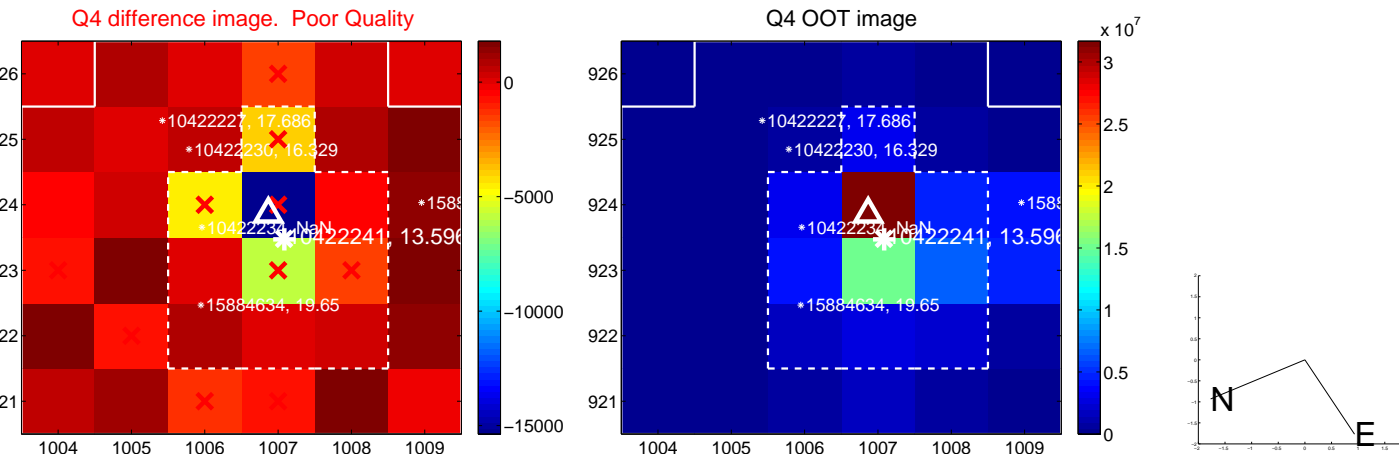
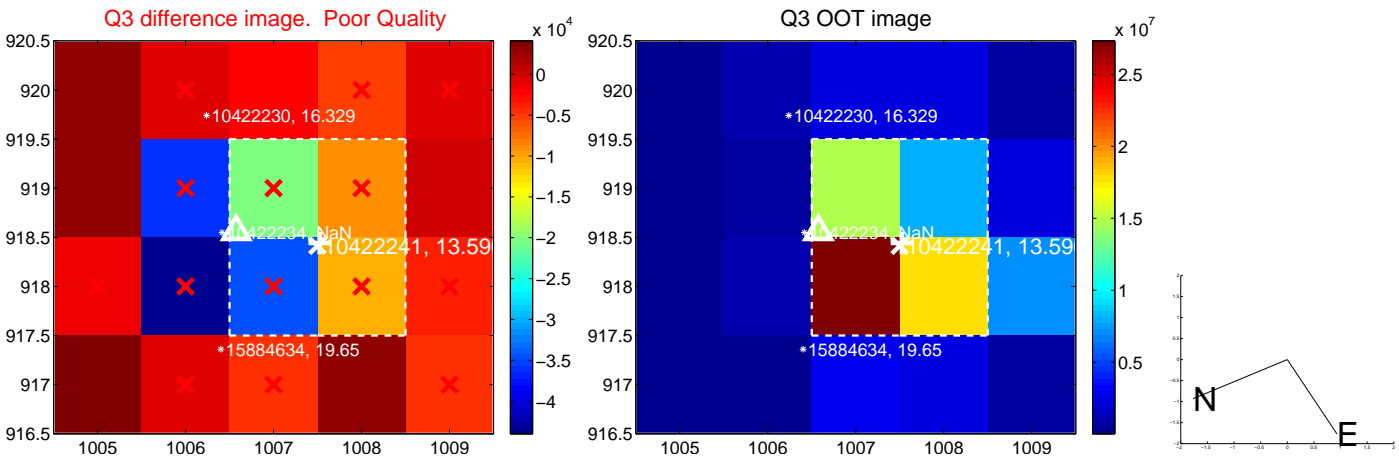
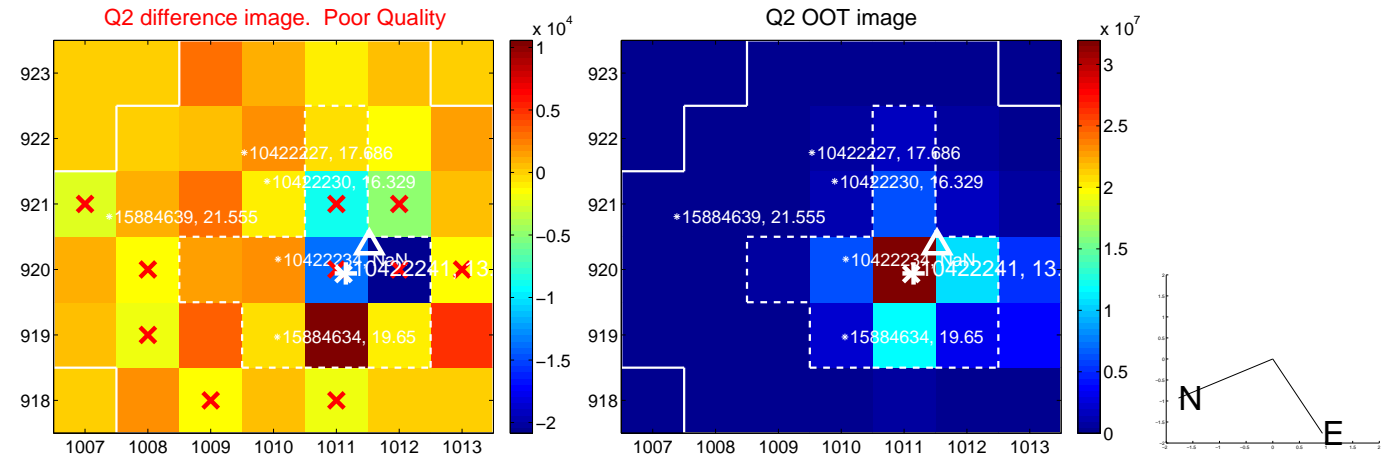
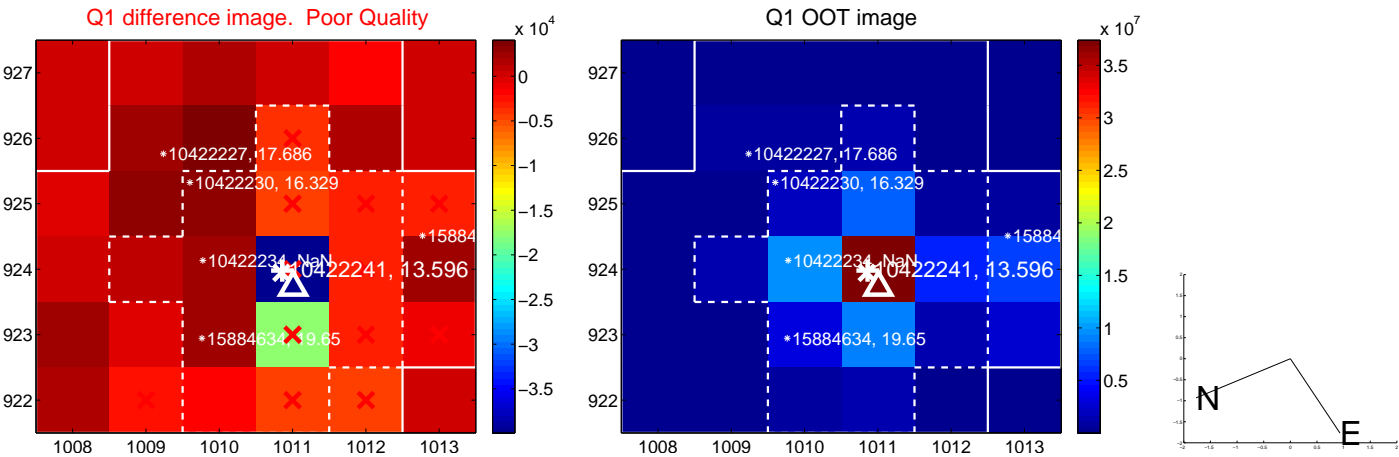
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.015 ± 1.134	0.89	0.040 ± 0.533	-1.014 ± 1.119
PRF-fit source offset from KIC position	1.130 ± 1.206	0.94	-0.003 ± 0.569	-1.130 ± 1.207
photometric centroid source offset	0.98 ± 0.61	1.60	0.72 ± 0.60	0.66 ± 0.62

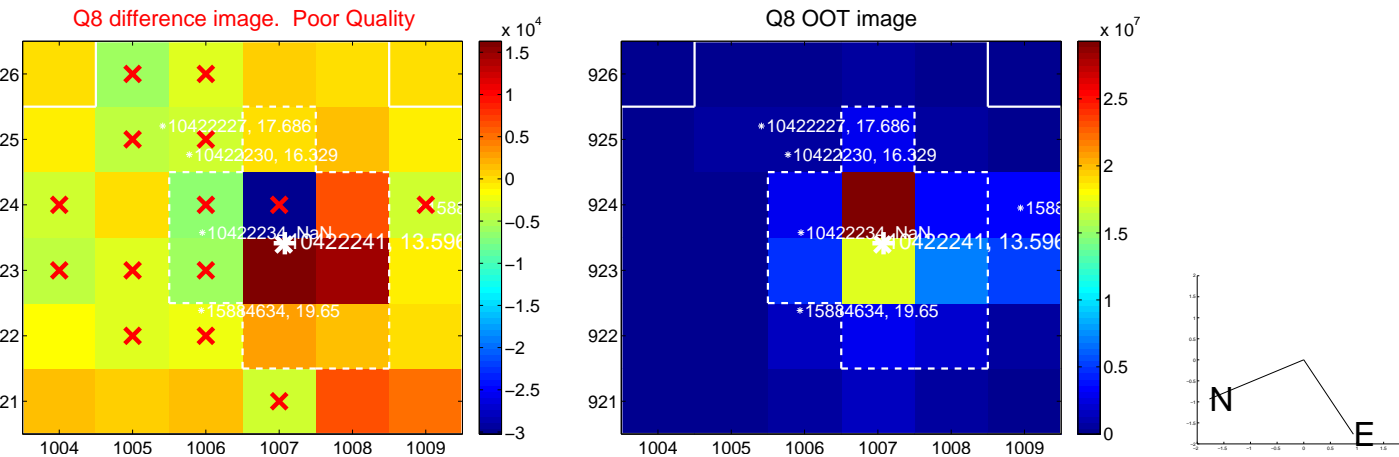
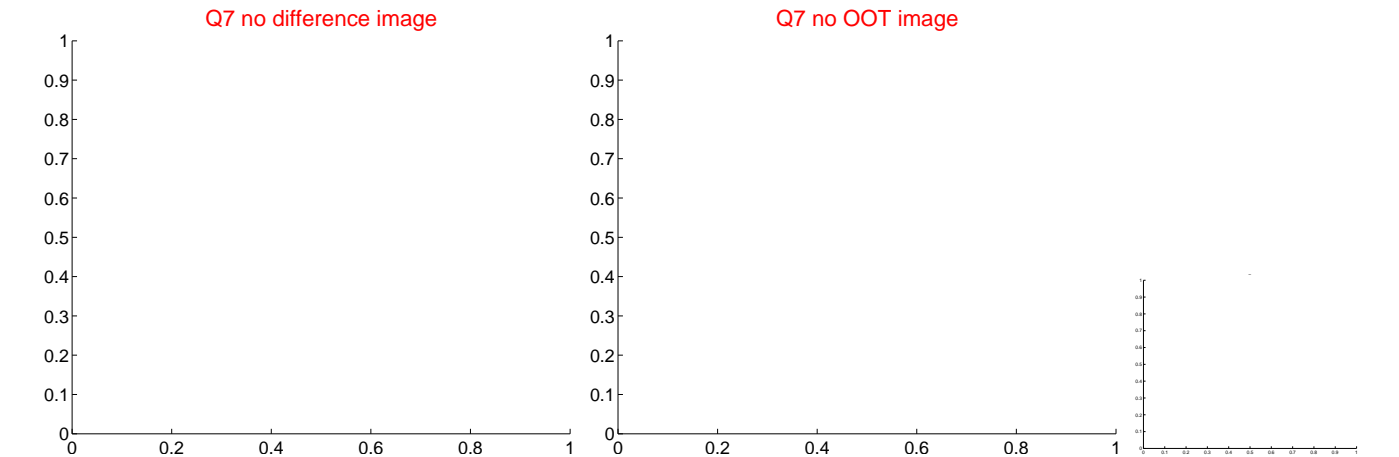
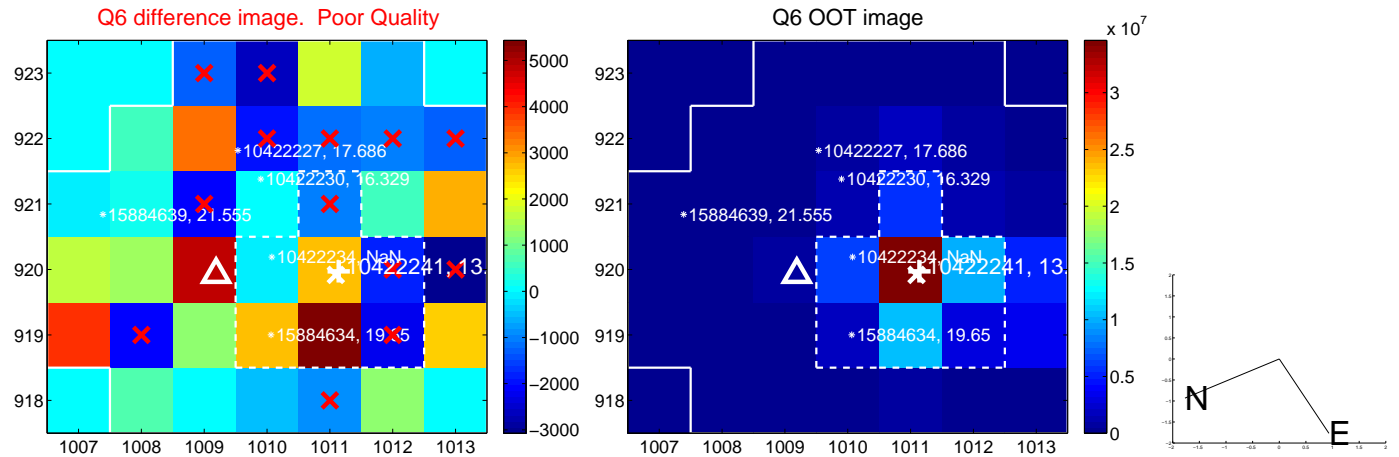
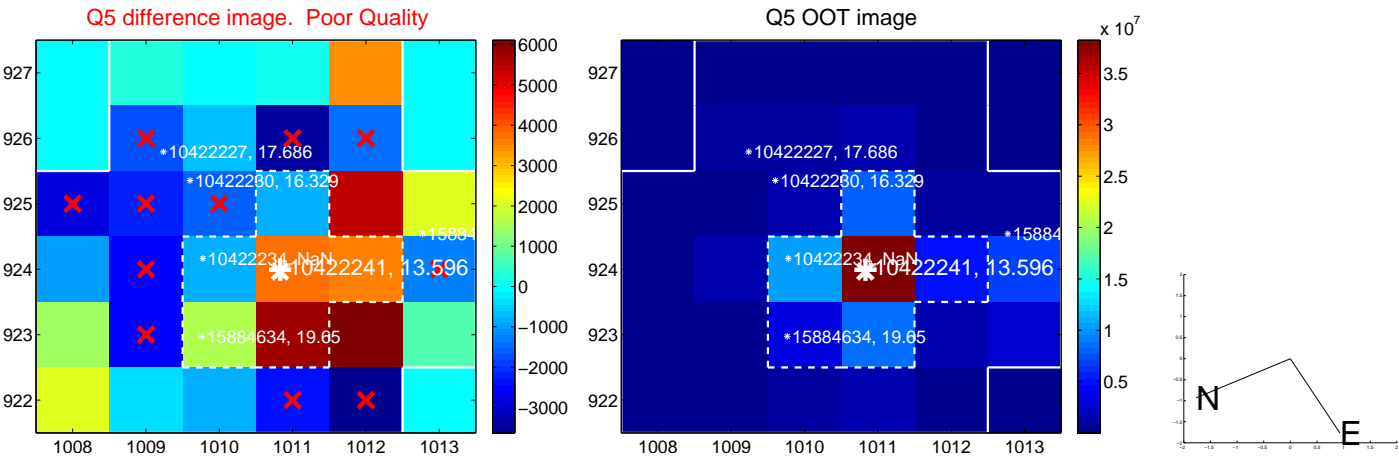


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

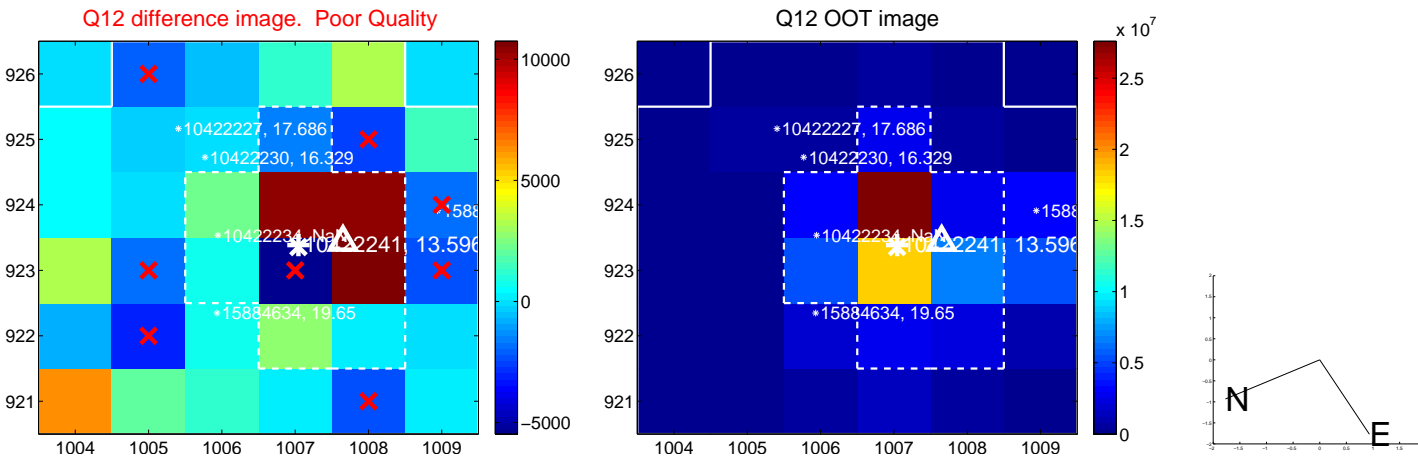
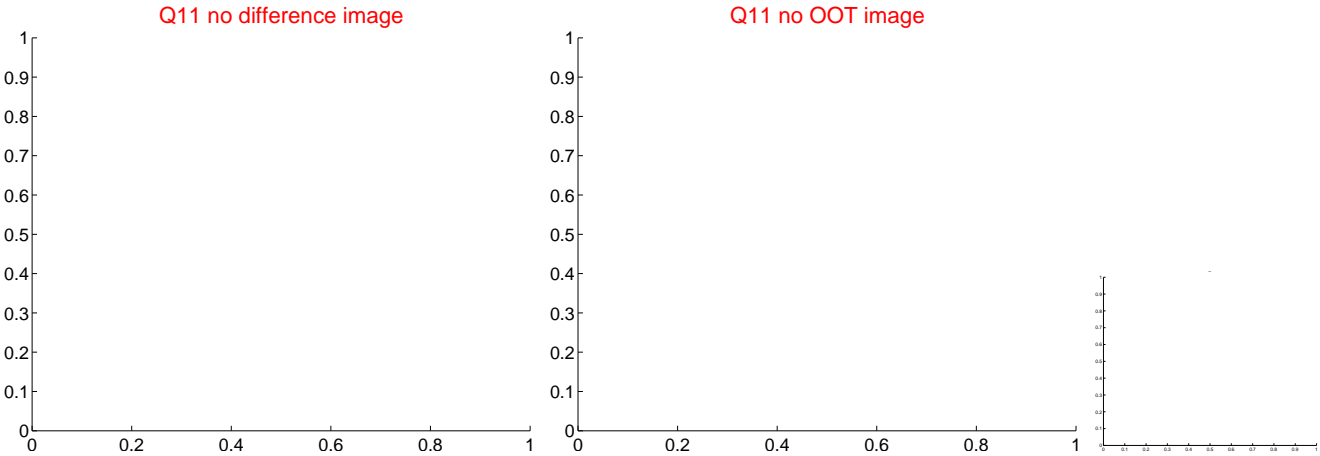
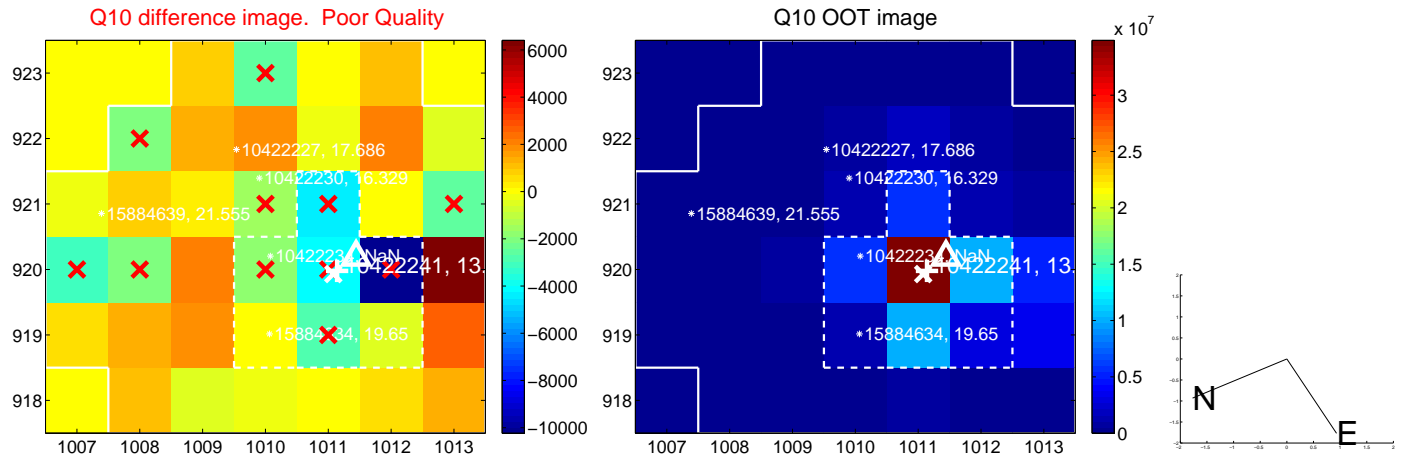
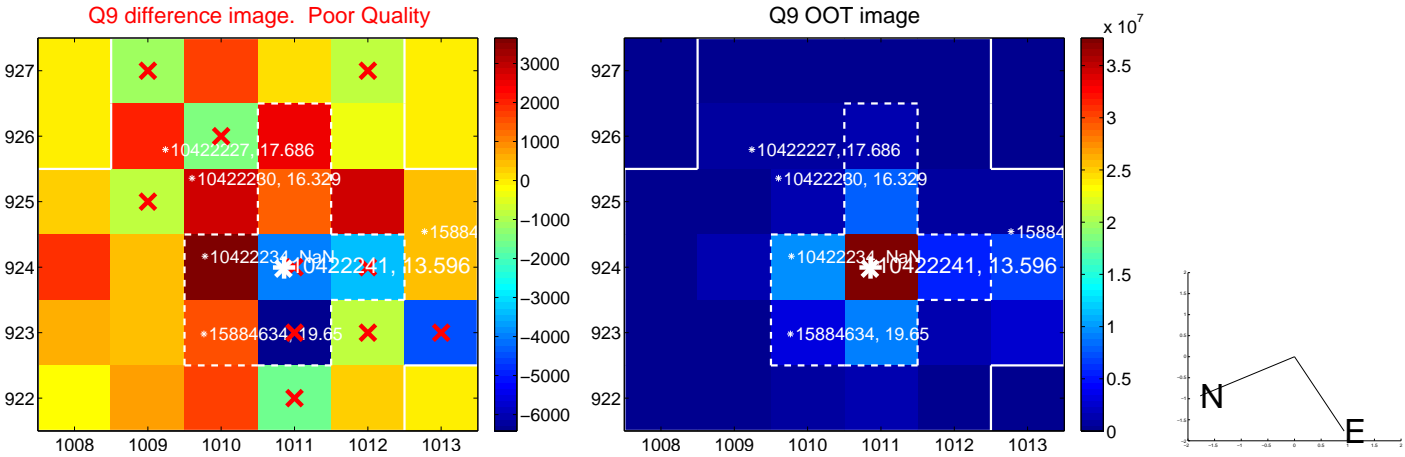
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



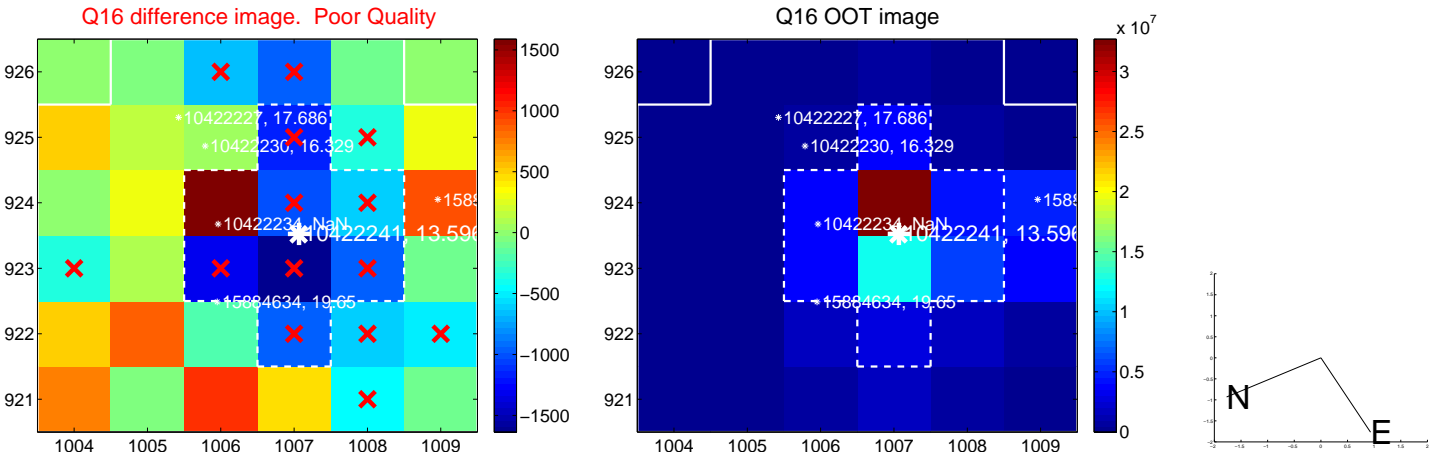
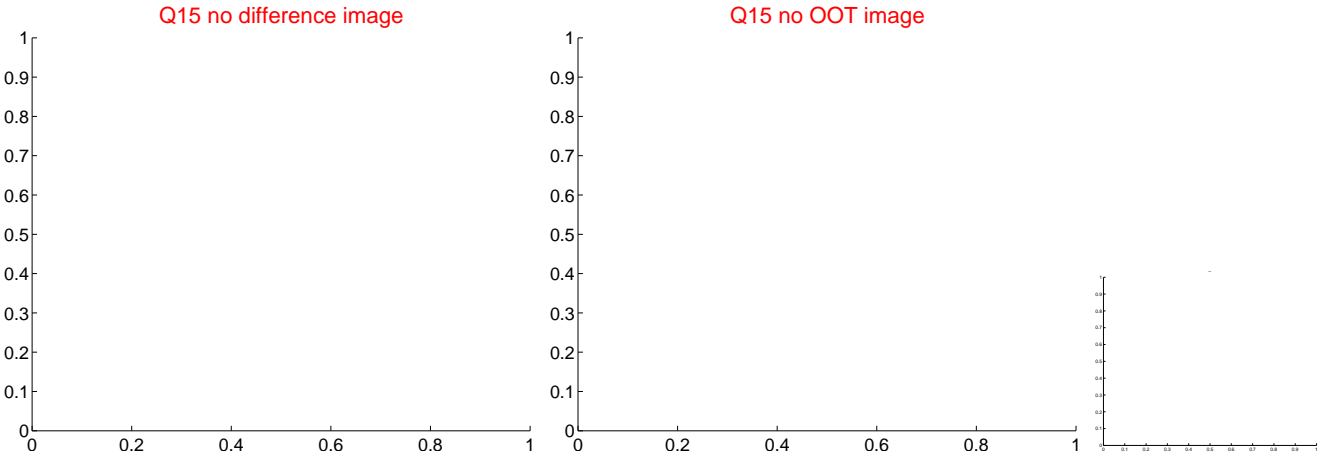
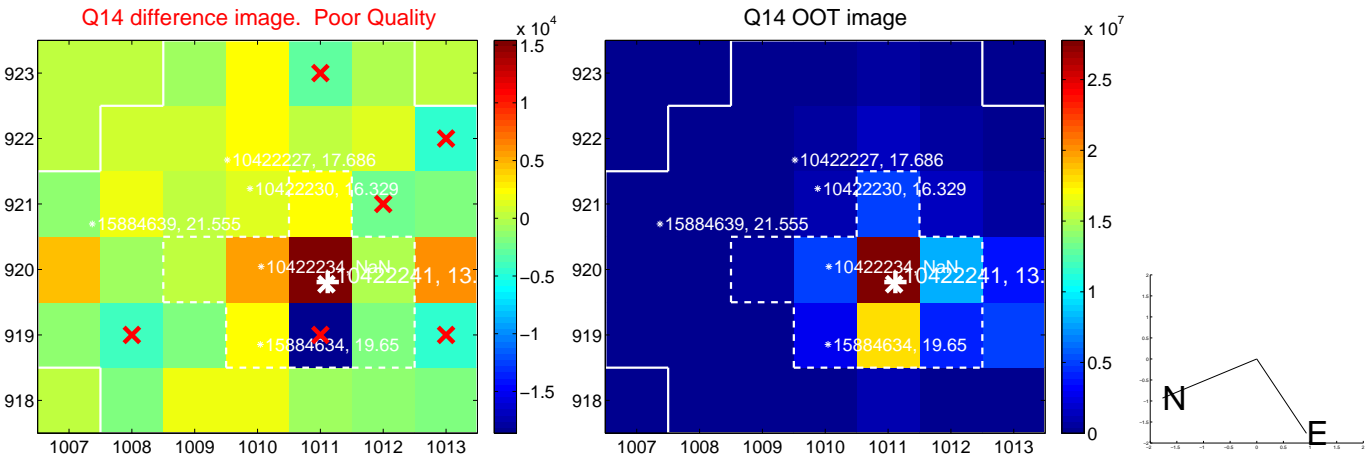
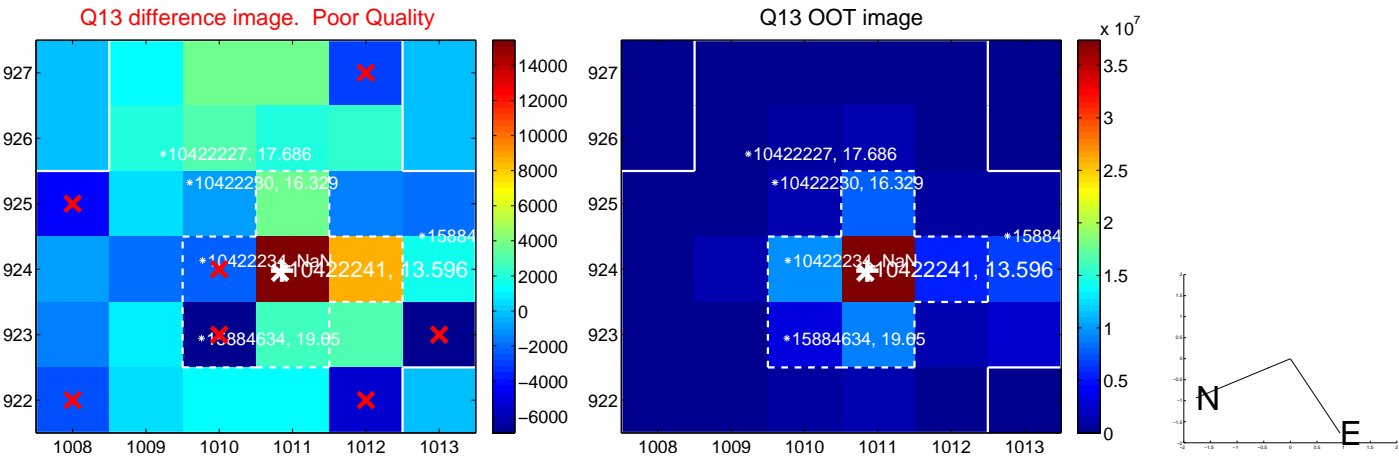
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



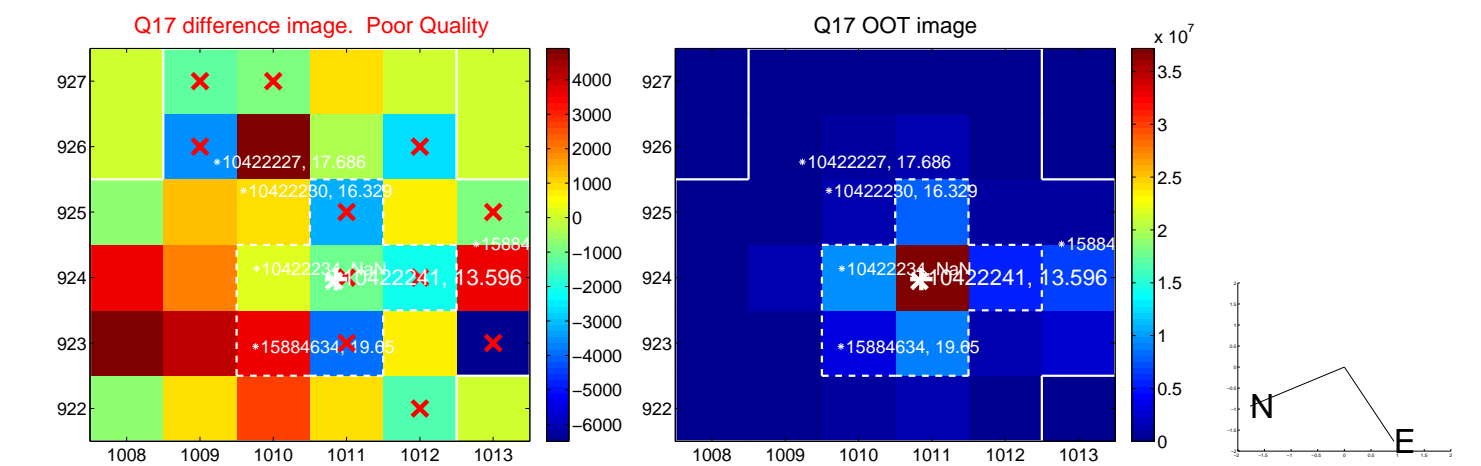
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



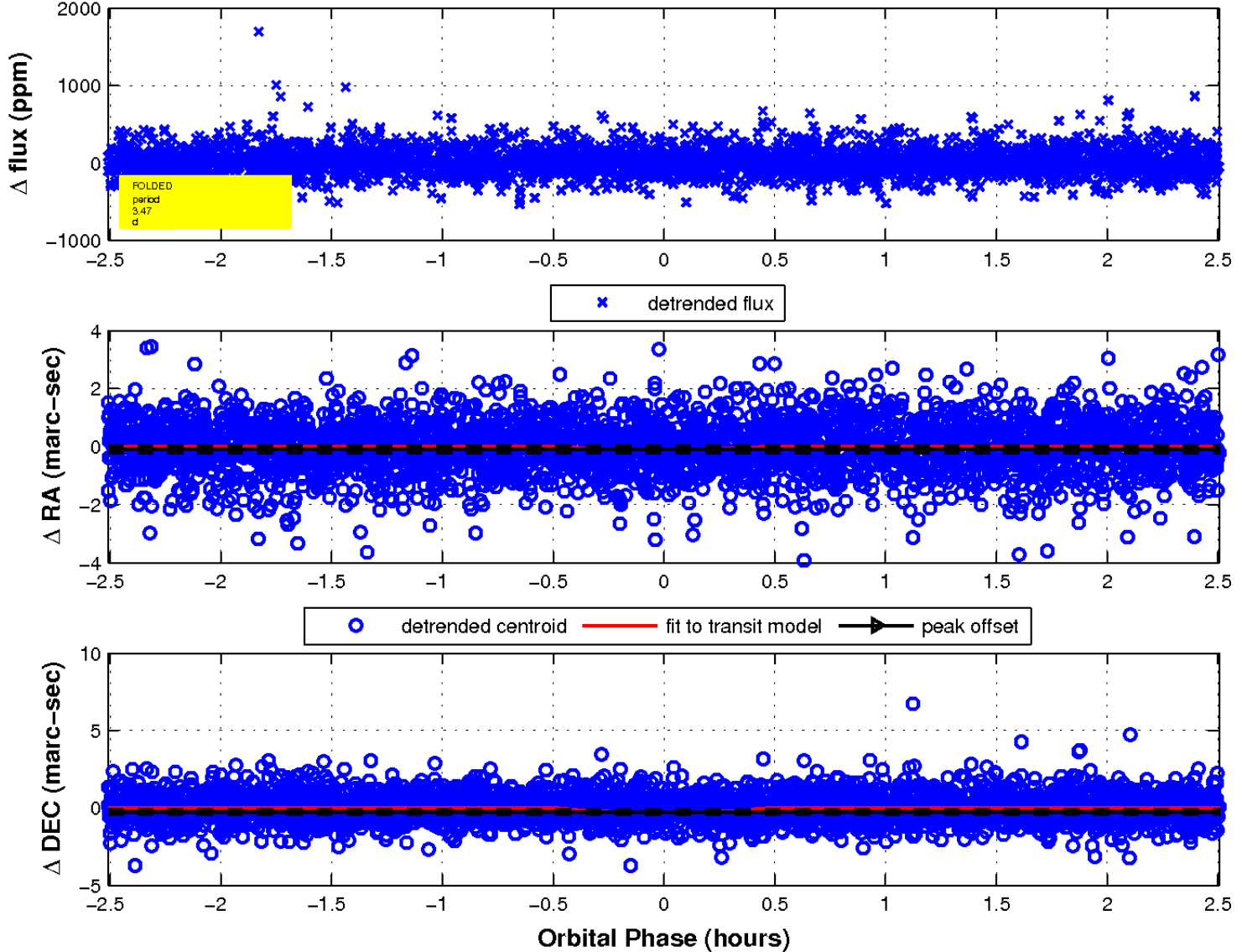
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

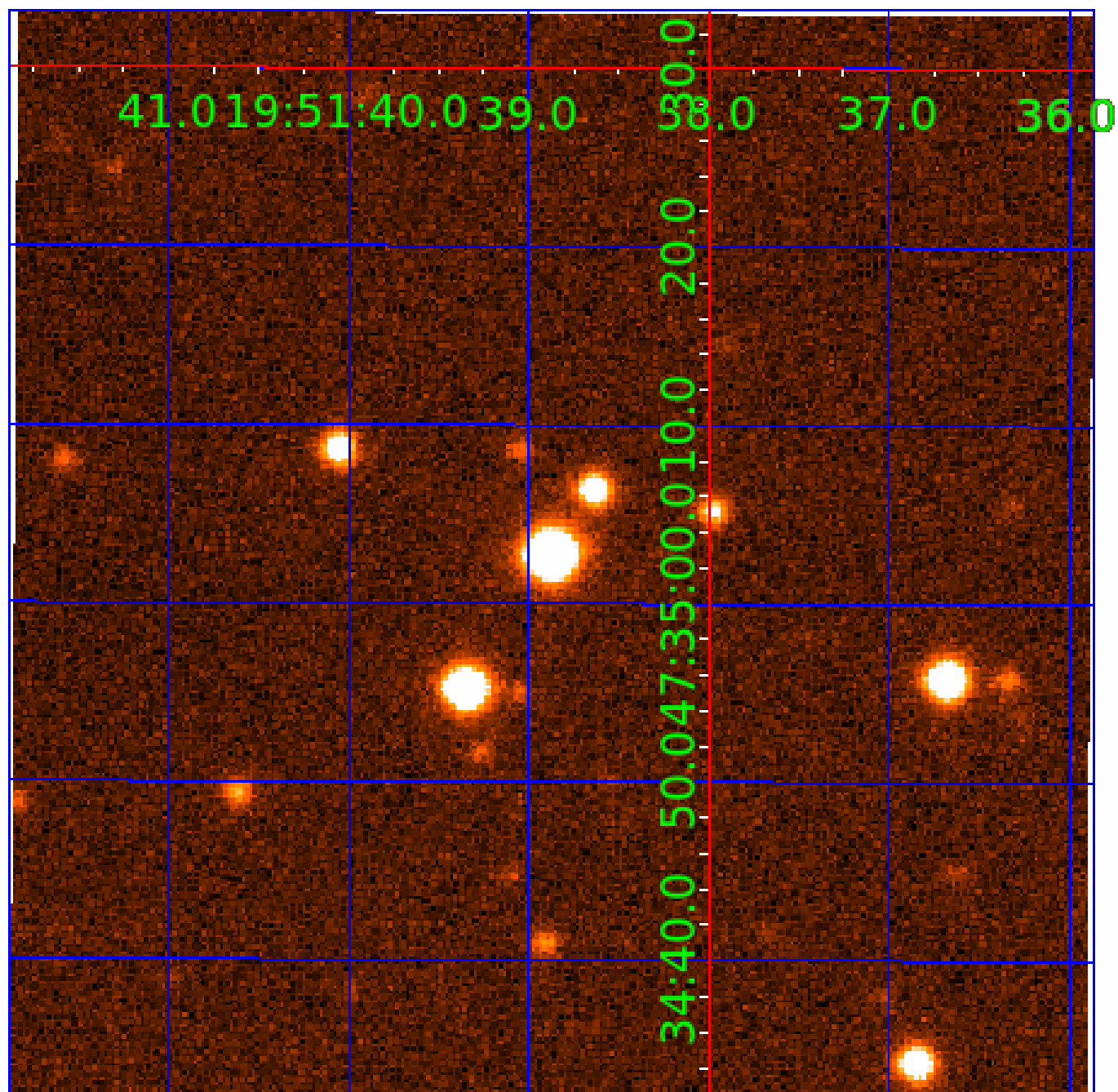


fluxWeightedCentroids, Planet 6 of 7



UKIRT Image

Declination



KIC 010422241

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})
010422241-01	OBS	No	2.436951	131.628332	62.9	1.279	8.4	10.2	1.92	8037	1.55	7343.27
010422241-02	OBS	No	0.812181	132.326211	8.9	6.161	10.5	4.7	1.92	8037	0.58	31779.58
010422241-03	OBS	No	3.904990	133.754399	229.8	0.573	17.7	12.3	1.92	8037	3.19	3916.14
010422241-04	OBS	No	5.543769	135.446954	405.9	0.555	13.0	18.6	1.92	8037	4.27	2454.40
010422241-05	OBS	No	7.231381	132.095055	298.8	1.342	9.3	15.5	1.92	8037	3.41	1722.09
010422241-06	OBS	No	3.467242	131.770191	201.4	0.836	13.2	10.4	1.92	8037	2.98	4588.87
010422241-07	OBS	No	10.282993	138.707871	899.7	1.500	12.7	-1.0	1.92	8037	5.85	1076.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010422241-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010422241-02	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
010422241-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
010422241-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010422241-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS

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

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

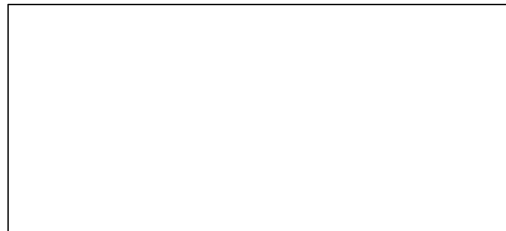
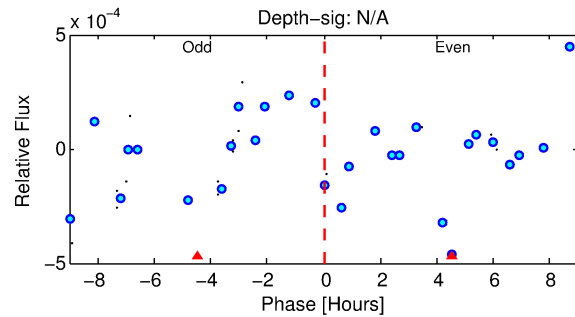
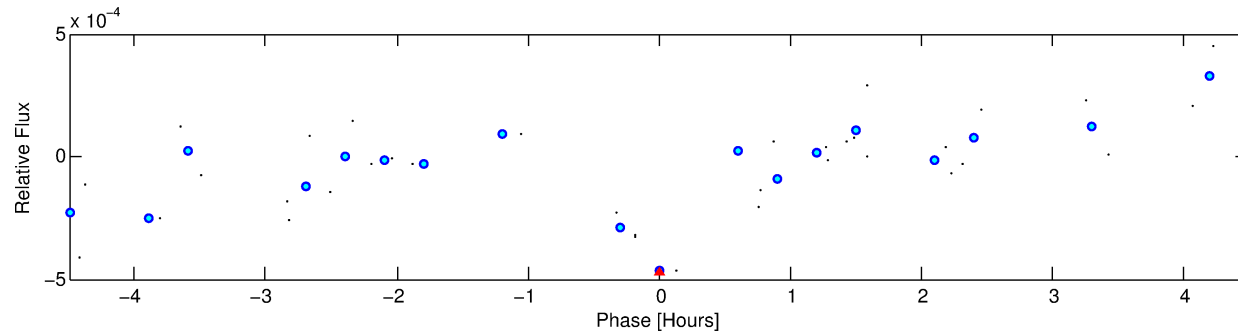
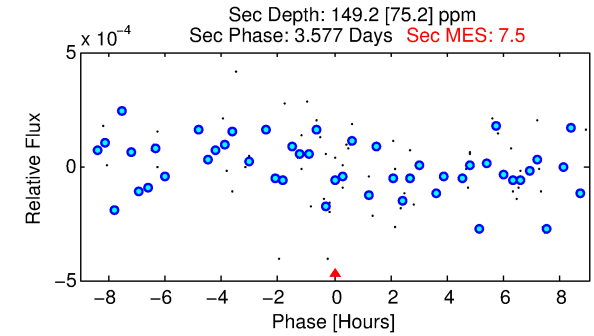
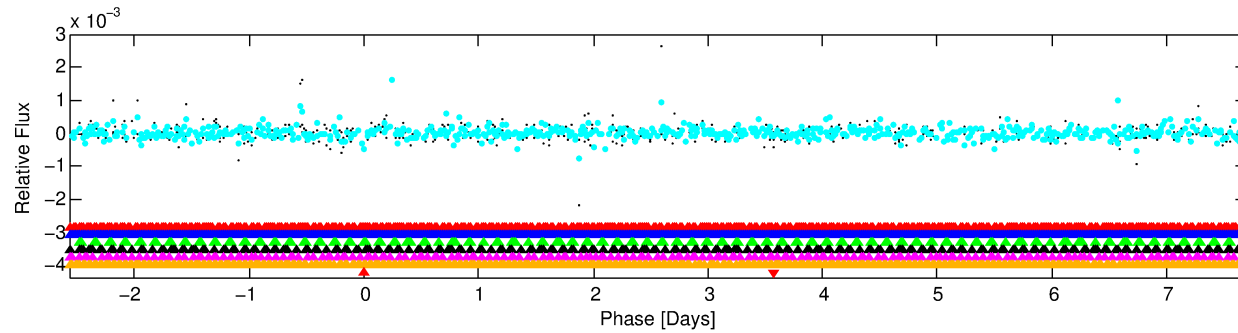
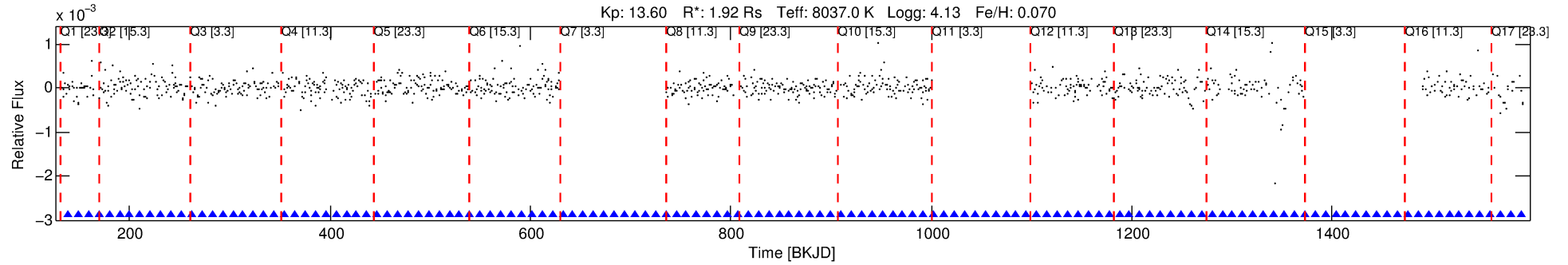
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010422241-07

No Significant Match Found

DV One-Page Summary

KIC: 10422241 Candidate: 7 of 7 Period: 10.283 d



TPS TCE Results:

Period = 10.28299 d
Epoch = 138.7079 BKJD

DV fit results are unavailable

DV Diagnostic Results:

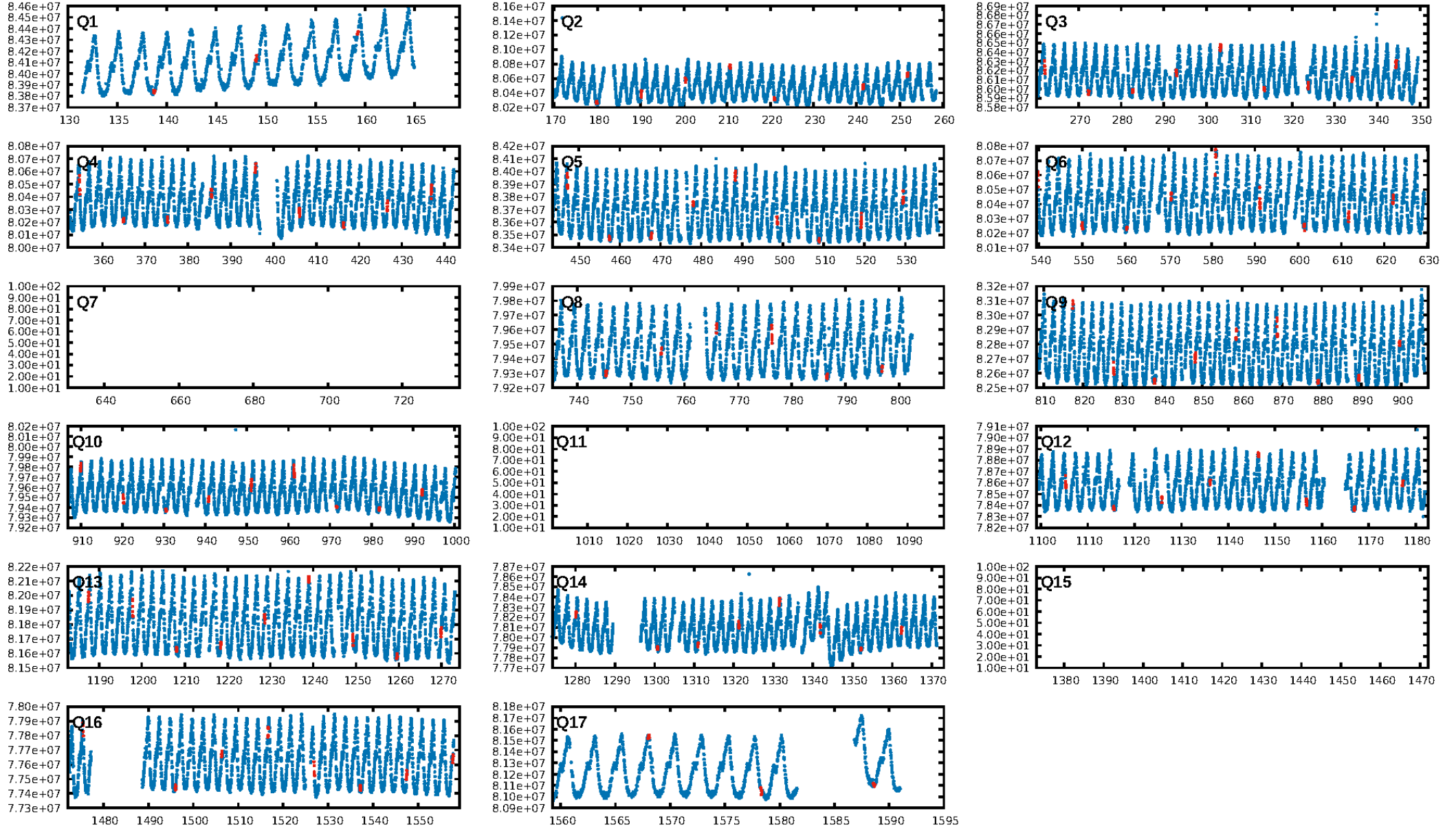
ShortPeriod-sig: 100.0% [36.39σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: N/A
GhostDiagnostic-chr: N/A

Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: N/A

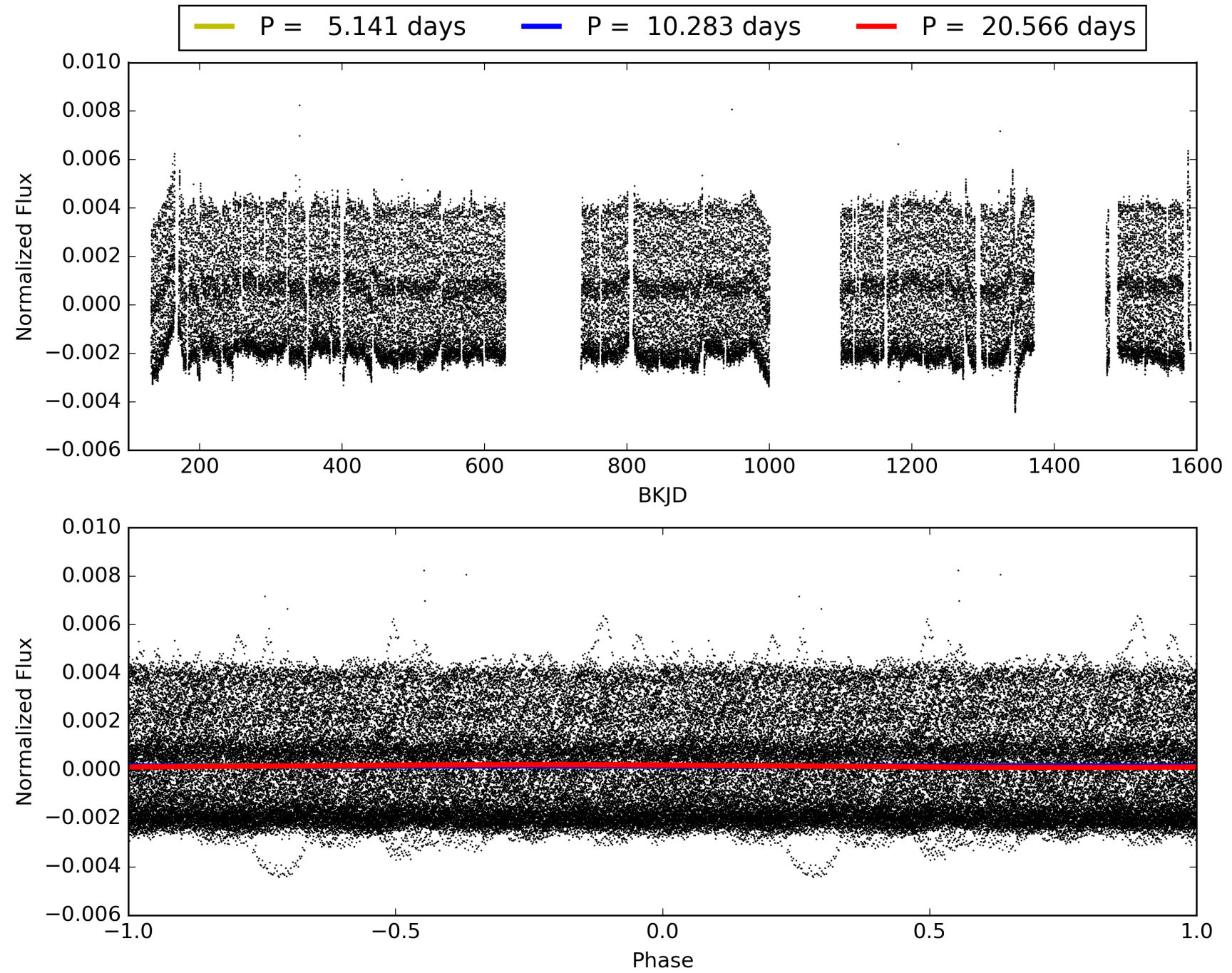
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:36:10 Z

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

TCE 010422241-07, PDC Light Curves

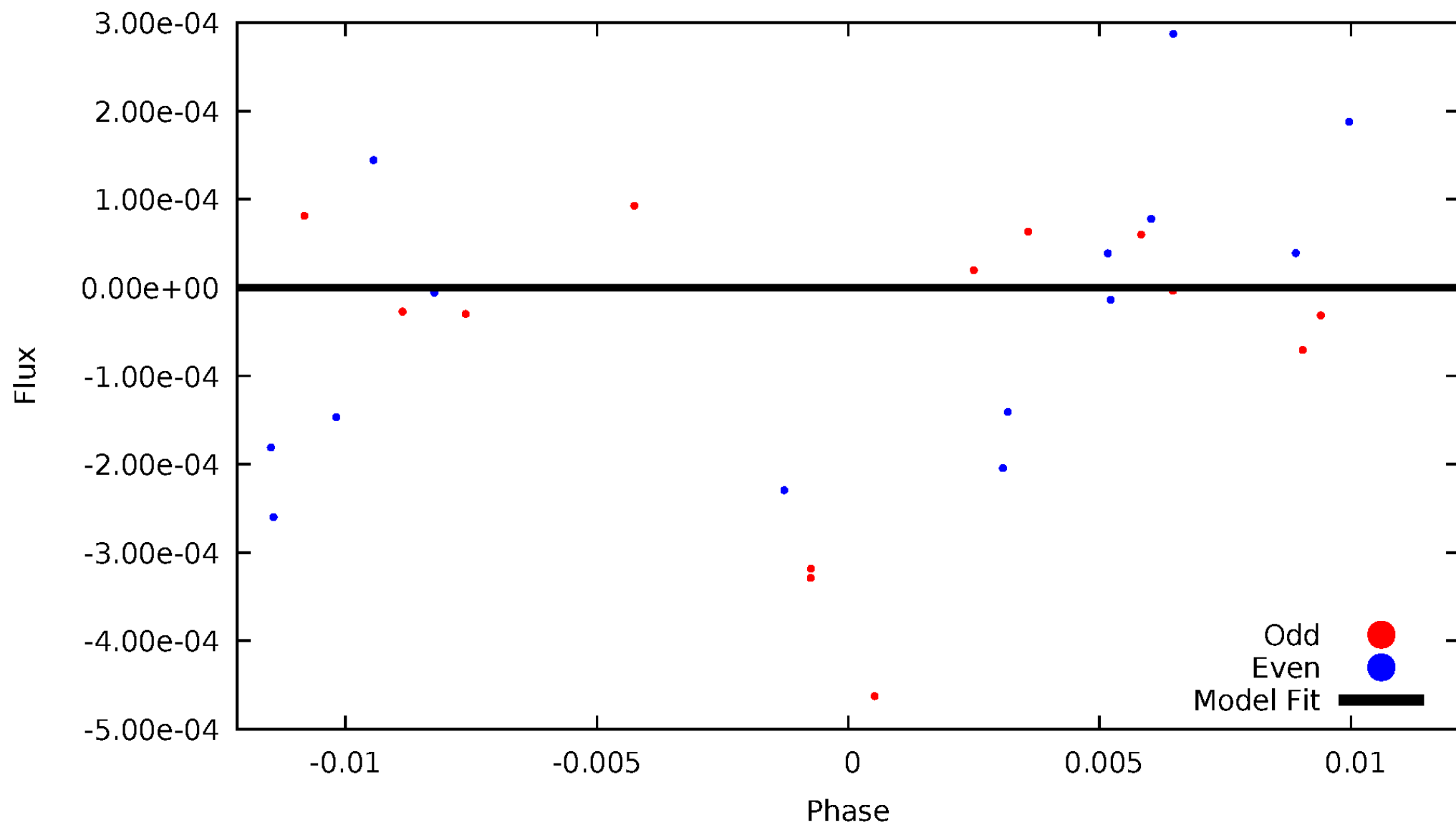


TCE 010422241-07



DV Odd/Even

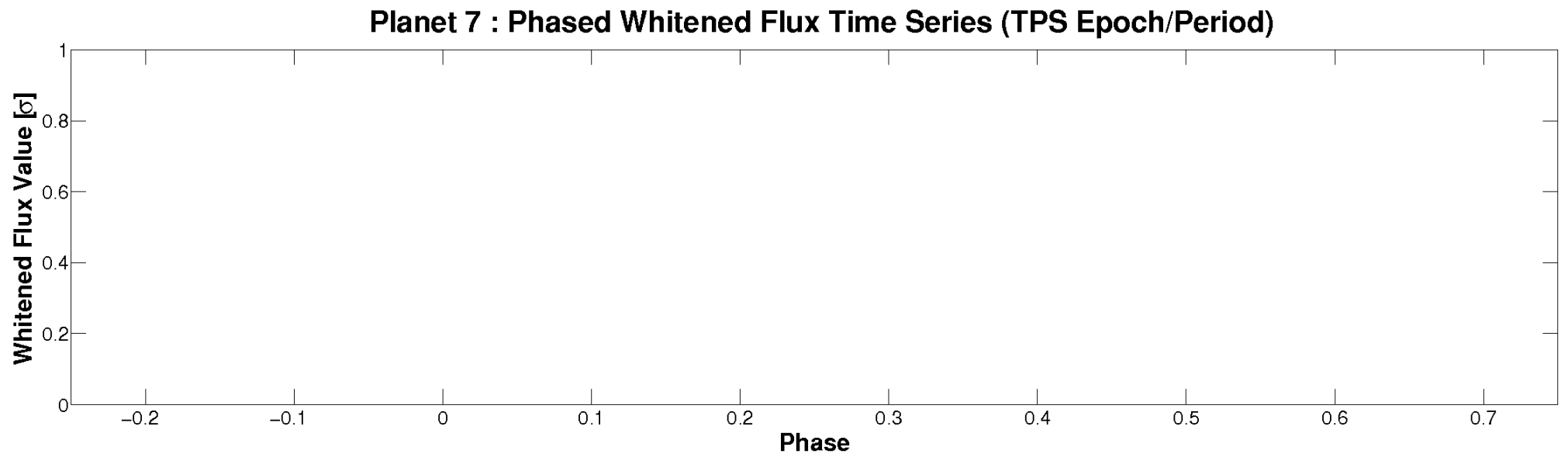
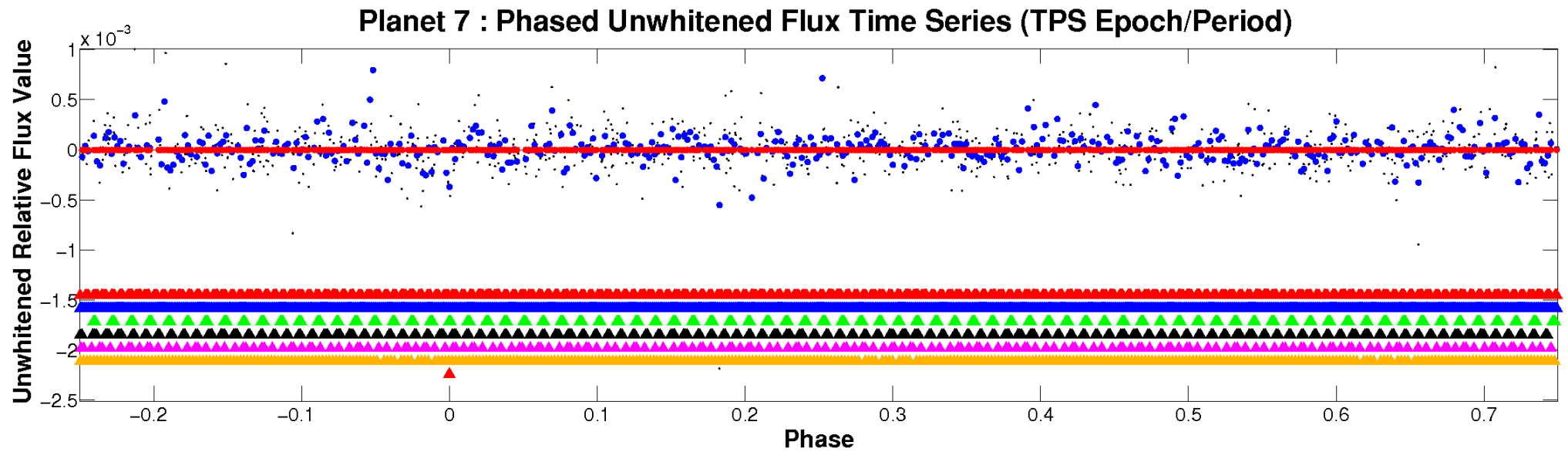
TCE 010422241-07



ALT Odd/Even

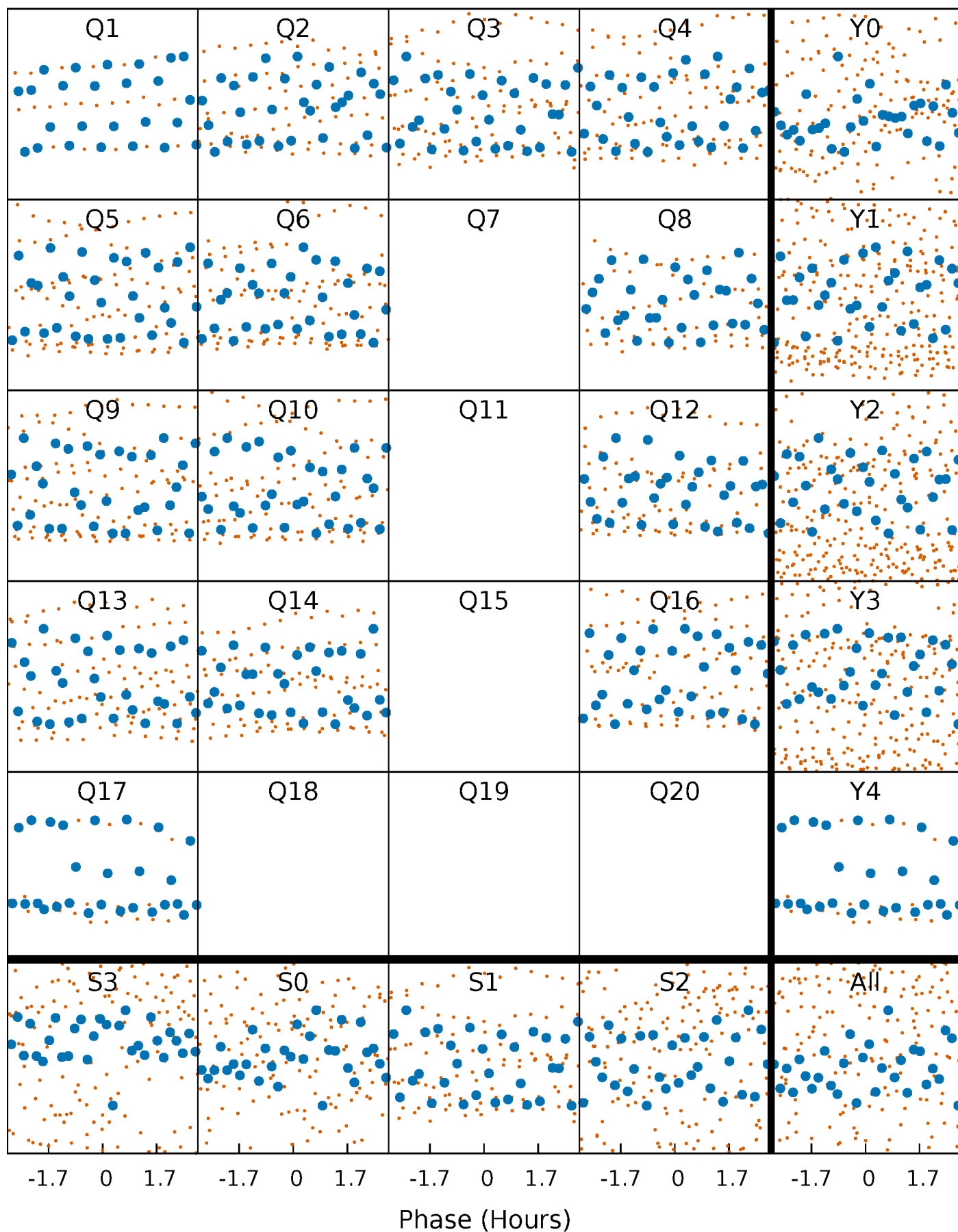
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve



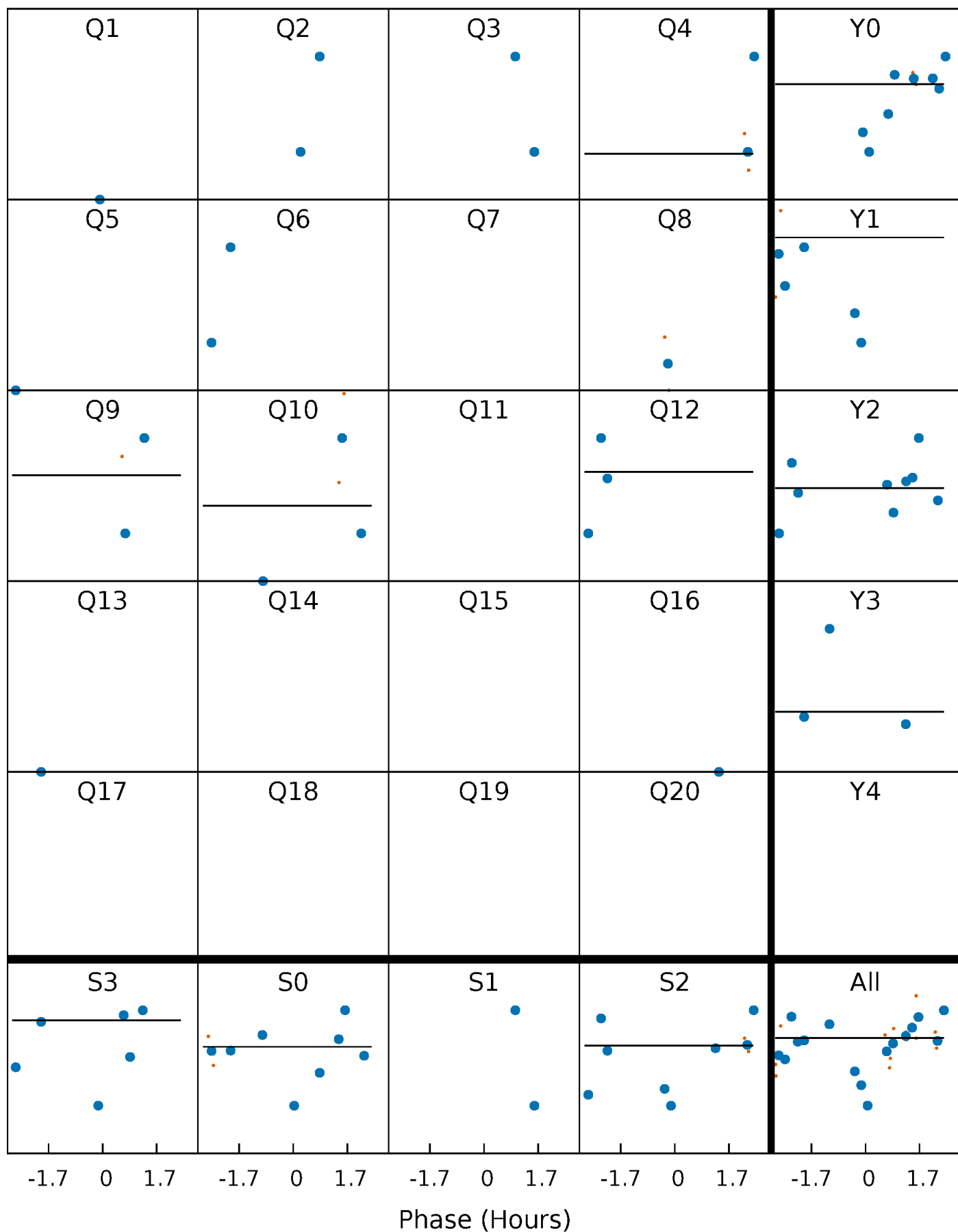
PDC Quarter-Phased Transit Curves

TCE 010422241-07 $P = 10.282993$ Days $T_0 = 138.707871$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010422241-07 P= 10.282993 Days $T_0=138.707871$ (BKJD)

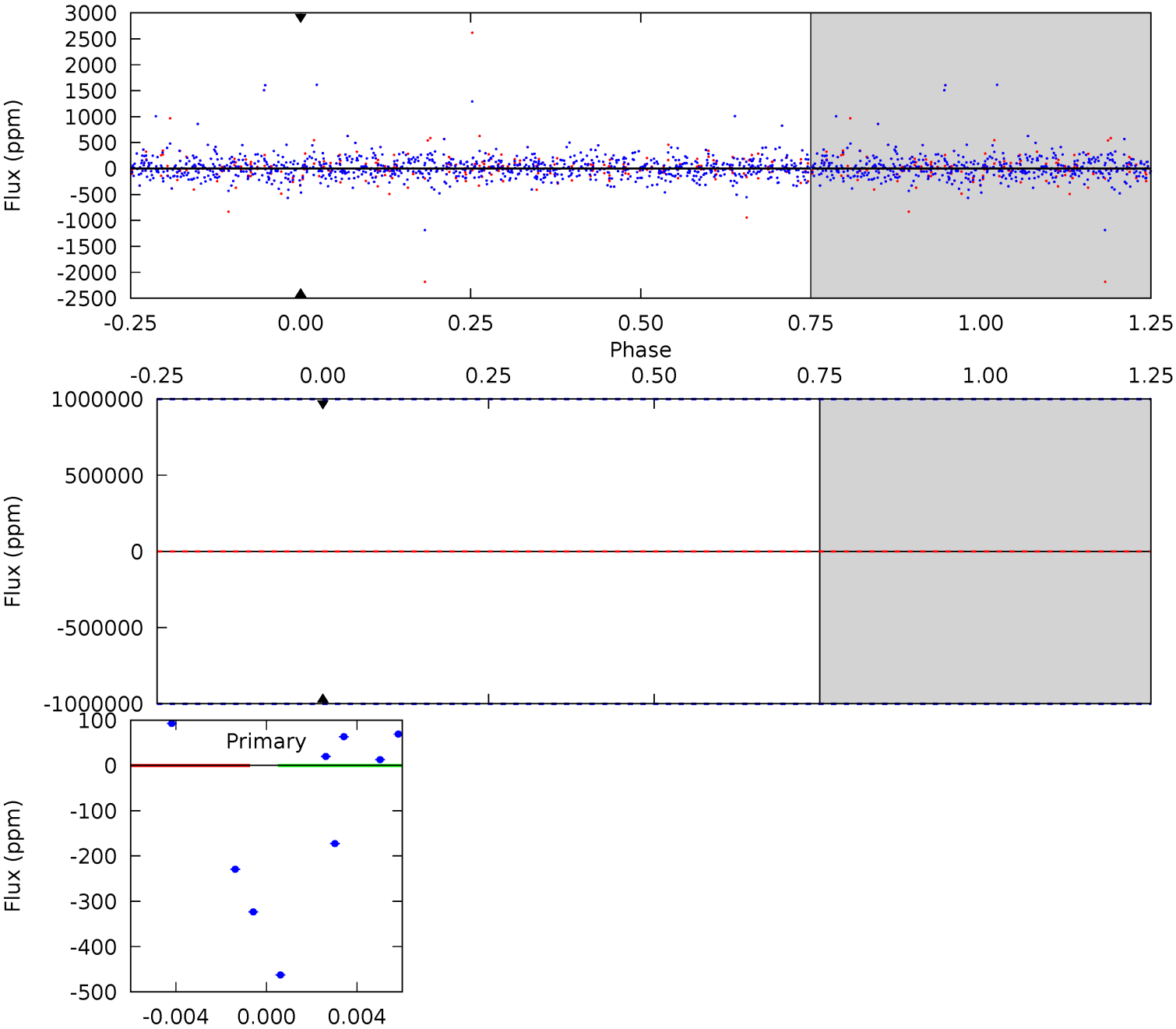


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

010422241-07, P = 10.282993 Days, E = 128.424878 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

This plot does not exist for this TCE.

Stellar Parameters For KIC 010422241

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8037^{+221}_{-331}	$4.132^{+0.112}_{-0.168}$	$0.070^{+0.250}_{-0.450}$	$1.917^{+0.494}_{-0.371}$	$1.815^{+0.170}_{-0.316}$	$0.363^{+0.190}_{-0.171}$
	+3%/-4%	+3%/-4%	+357%/-643%	+26%/-19%	+9%/-17%	+52%/-47%
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 010422241-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$16.22^{+16.60}_{-11.41}$	2056^{+136}_{-128}	-5854^{+58458}_{-43101}	$-44.030^{+5710.435}_{-4688.315}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

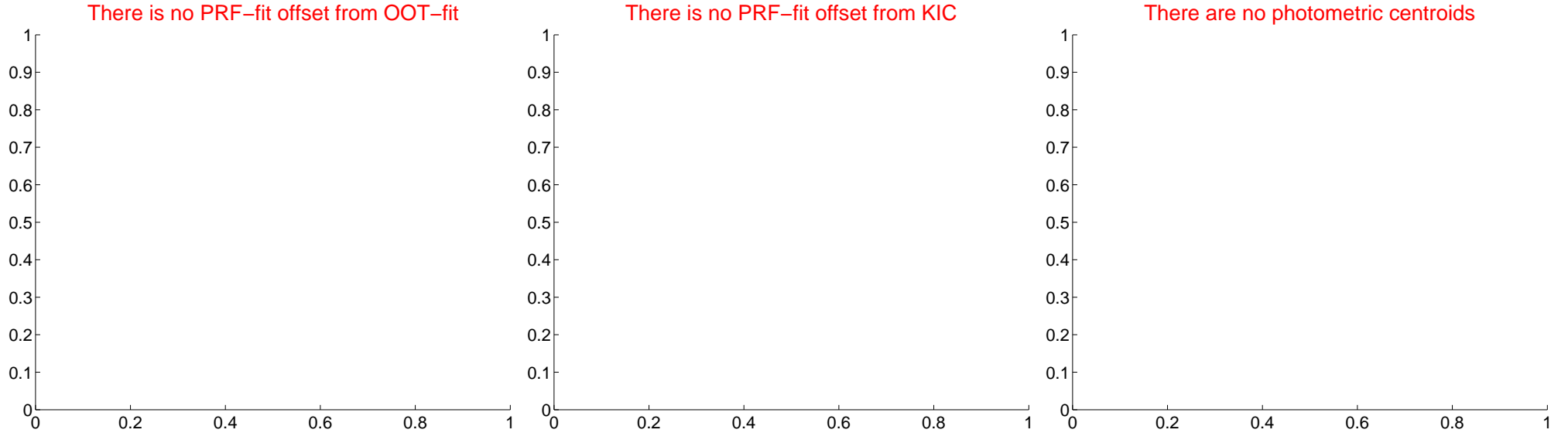
DV Centroid Data

Supplemental centroid analysis for 010422241-07. Kepler magnitude: 13.60. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

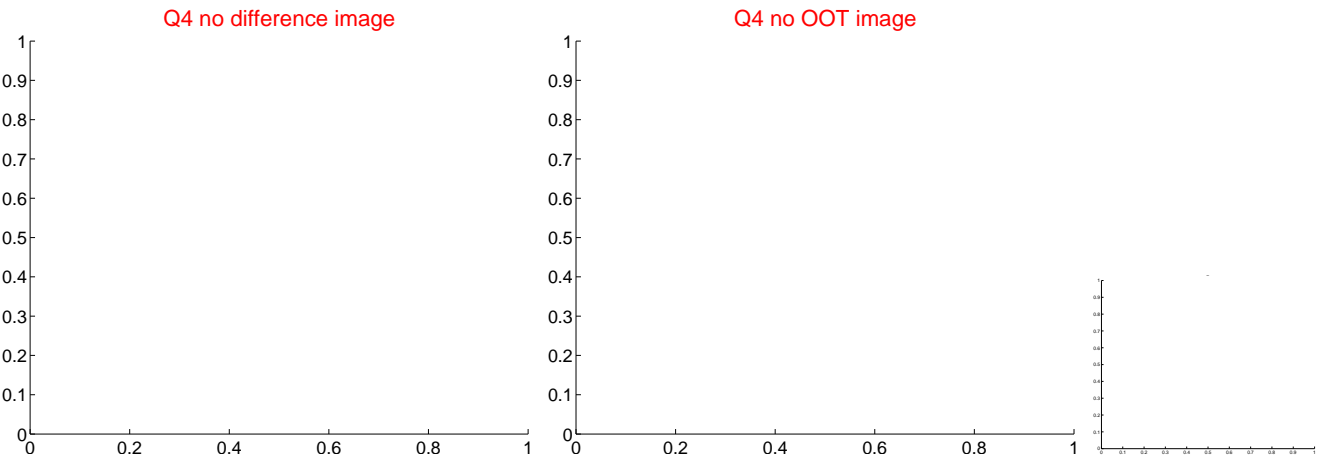
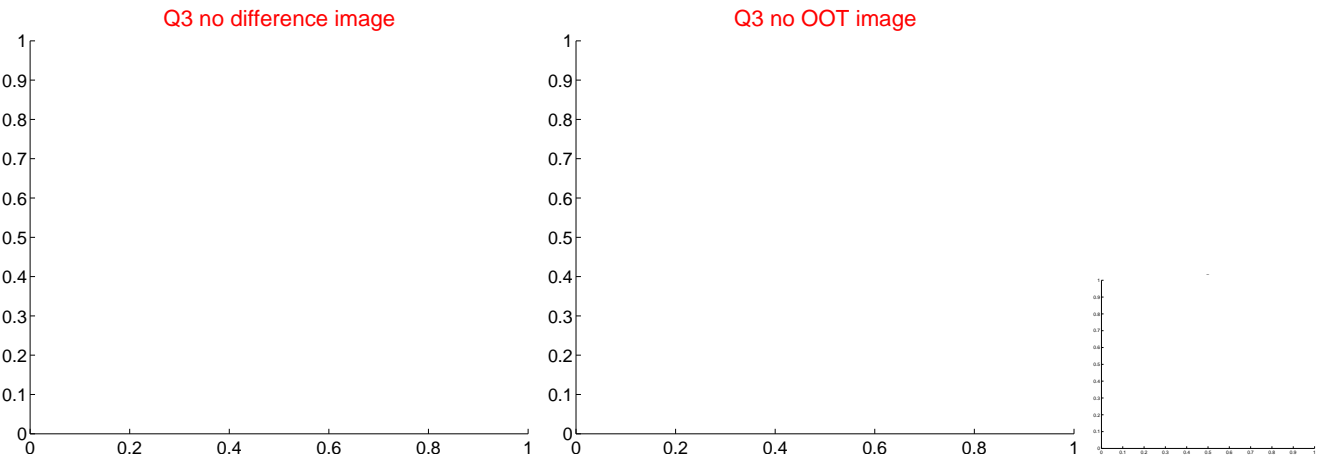
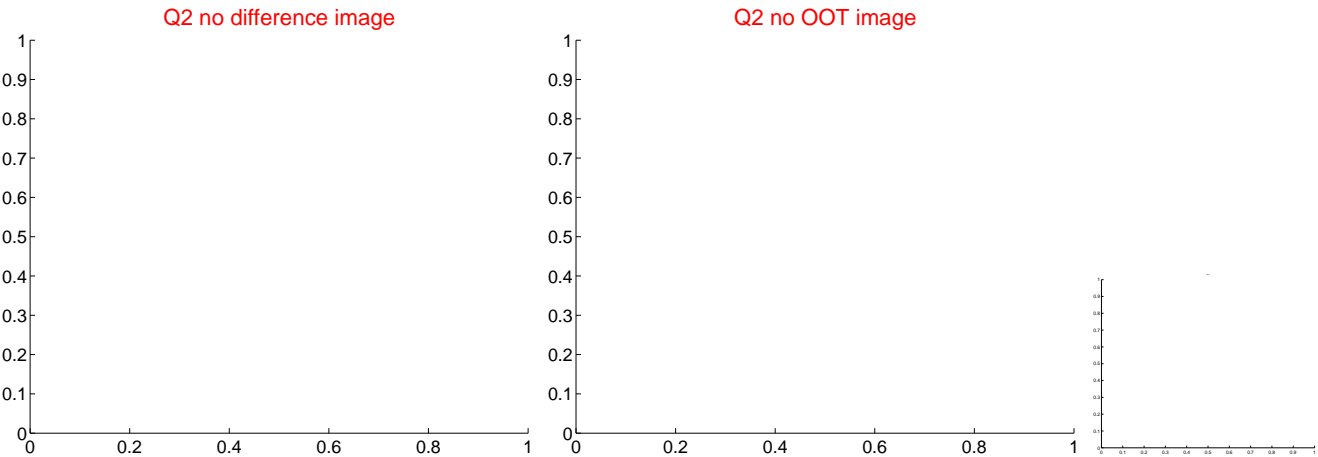
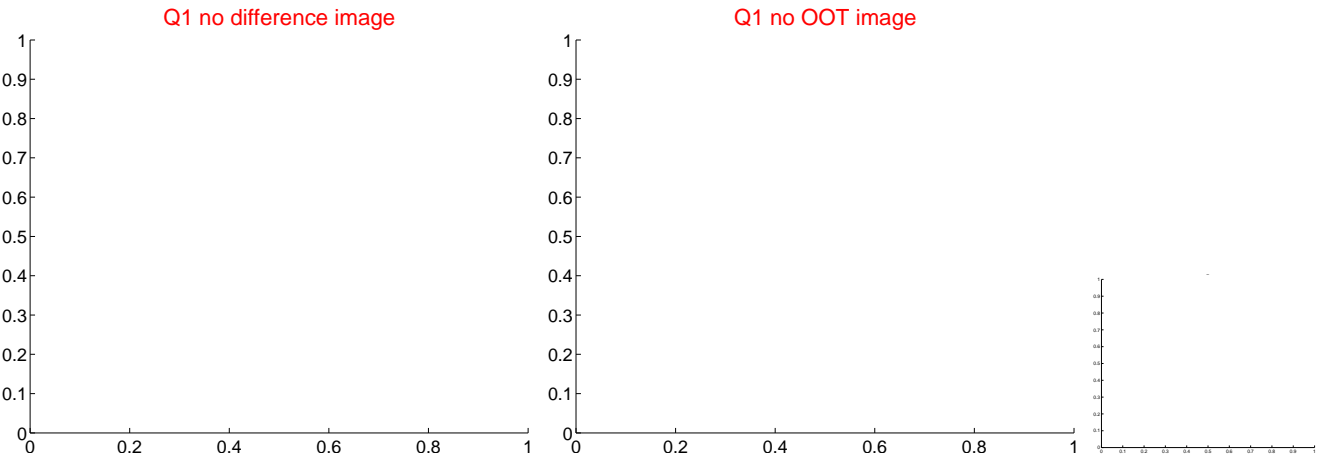
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—



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.

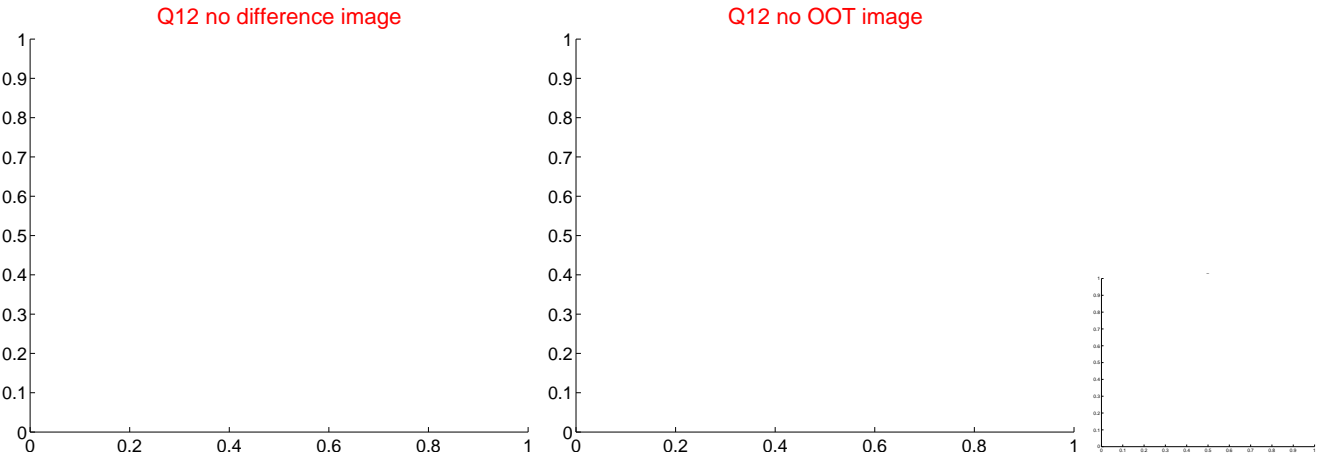
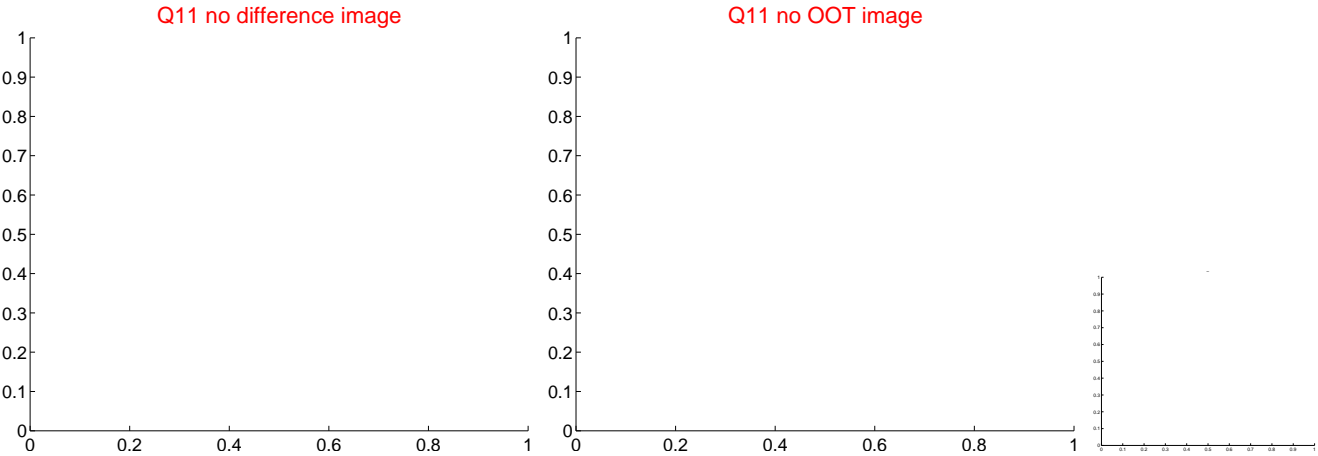
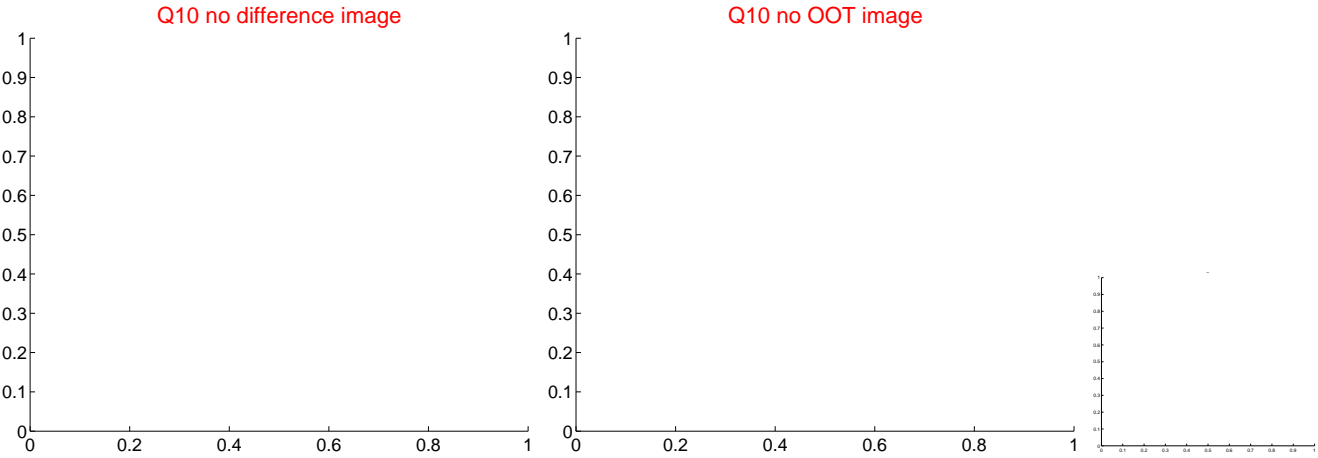
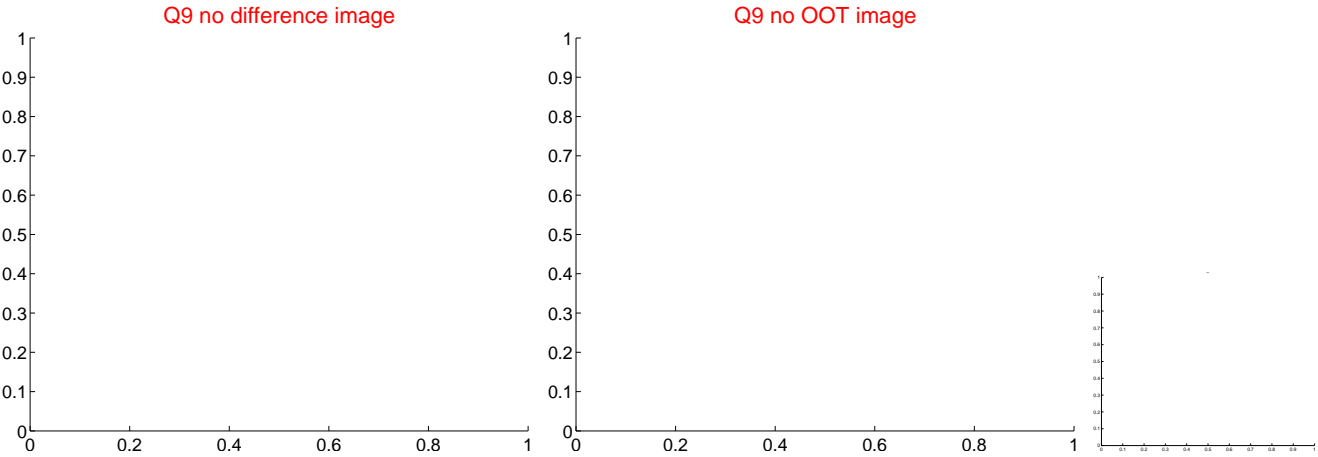
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



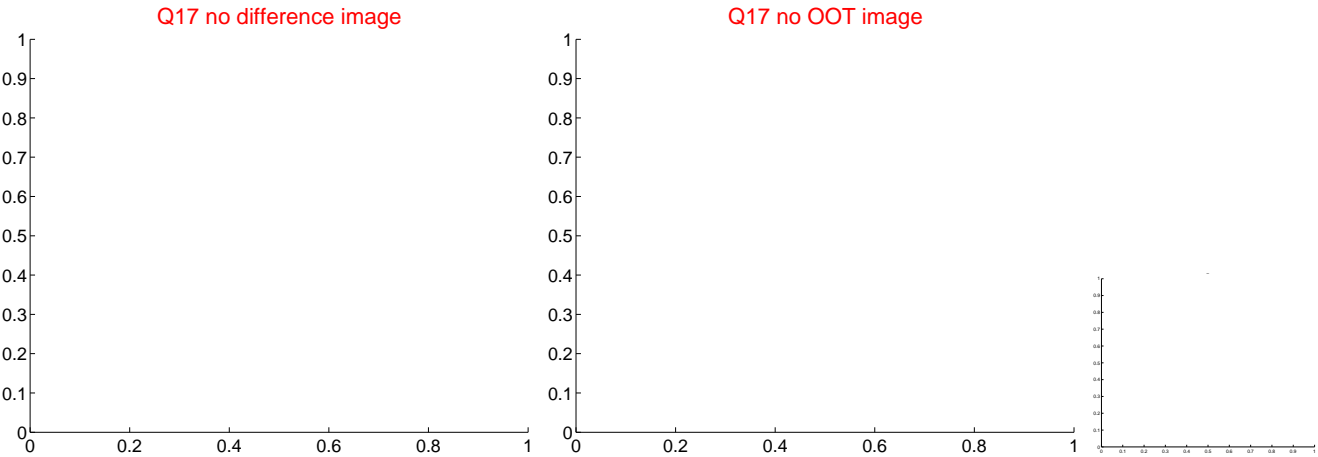
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

