

KIC 006115025

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})
006115025-01	OBS	No	1.622937	131.704277	19.9	2.758	9.8	9.6	1.40	6872	0.67	4521.93
006115025-02	OBS	No	0.810650	132.075216	15.0	3.434	10.0	9.2	1.40	6872	0.62	11409.88
006115025-03	OBS	No	368.012085	241.863381	223.8	4.644	7.7	8.5	1.40	6872	2.43	3.27
006115025-04	OBS	No	157.857791	204.395360	30.4	5.121	7.8	1.2	1.40	6872	0.90	10.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006115025-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
006115025-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
006115025-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
006115025-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

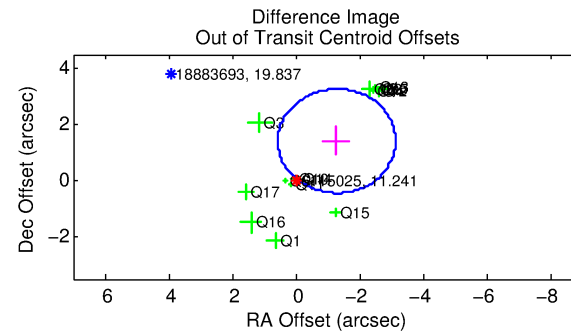
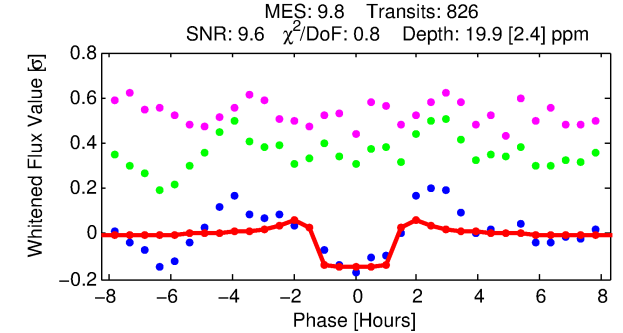
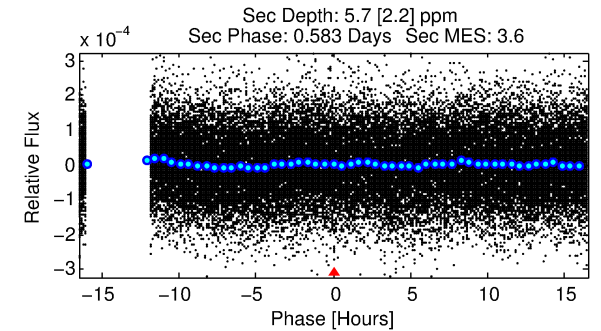
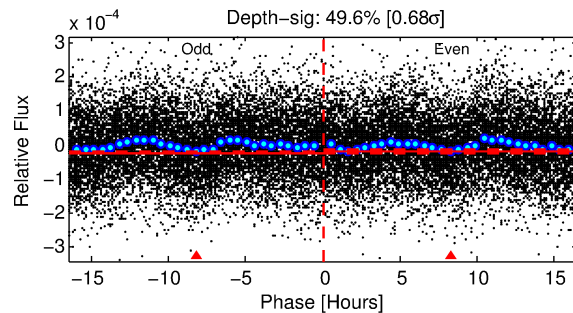
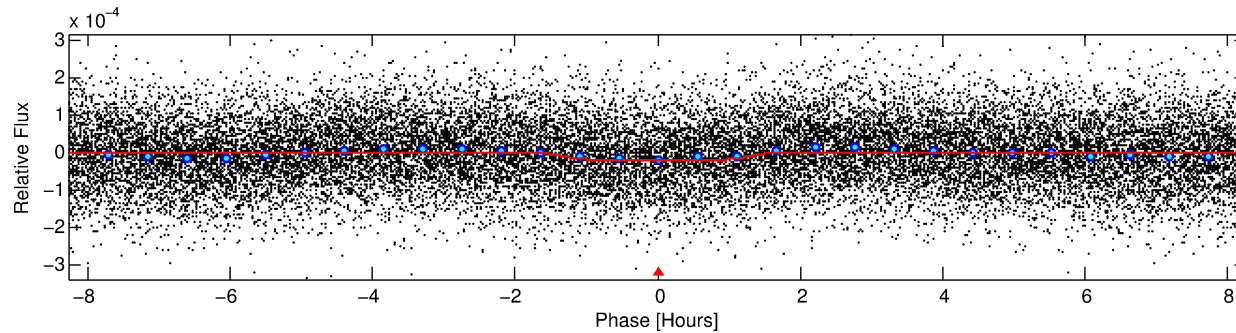
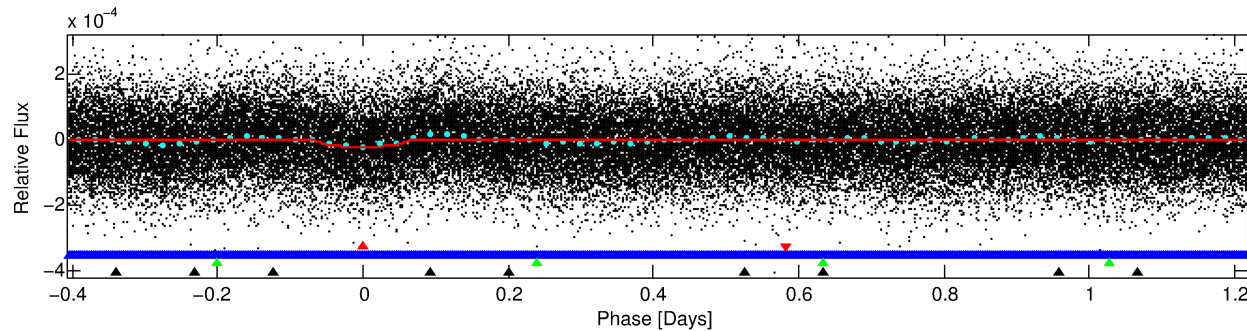
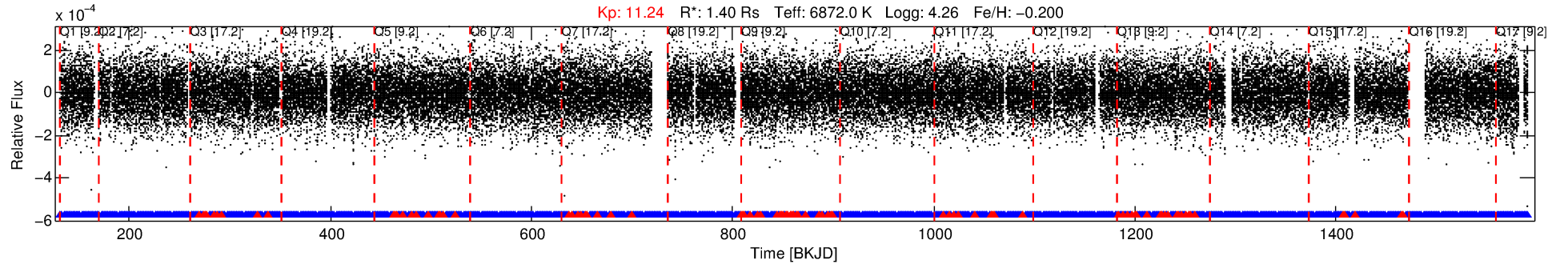
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006115025-01

No Significant Match Found

DV One-Page Summary

KIC: 6115025 Candidate: 1 of 4 Period: 1.623 d



DV Fit Results:

Period = 1.62294 [0.00001] d
Epoch = 131.7043 [0.0023] BKJD
Rp/R* = 0.0044 [0.0005]
a/R* = 3.34 [1.73]
b = 0.70 [0.42]
Seff = 4521.93 [1896.04]
Teq = 2091 [219] K
Rp = 0.67 [0.23] Re
a = 0.0295 [0.0079] AU
Ag = 6.03 [3.52] [1.43 σ]
Teffp = 5066 [608] K [4.61 σ]

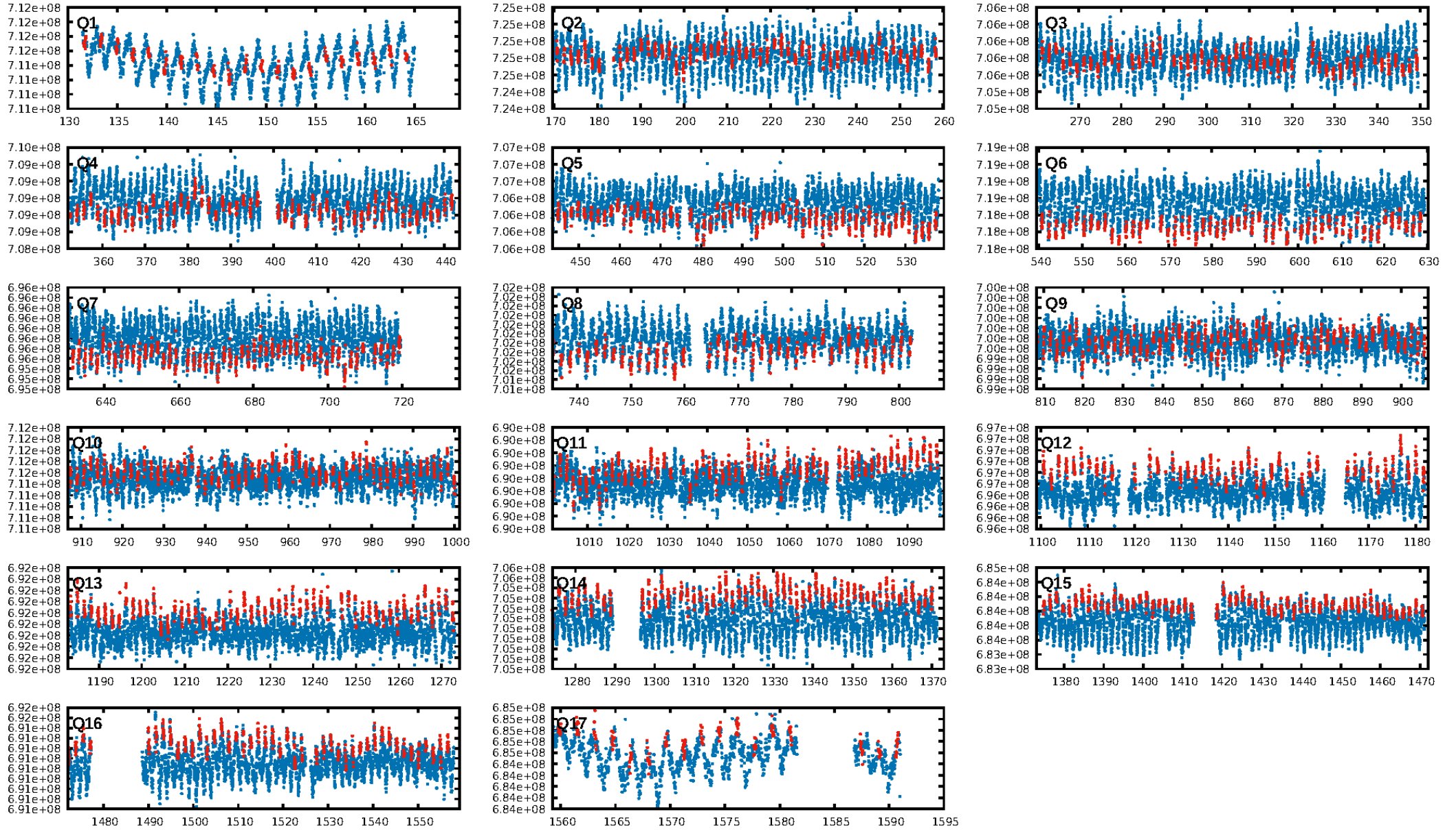
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.43 σ]
LongPeriod-sig: 100.0% [644.65 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.16e-16
RollingBand-fgt: 0.89 [704/788]
GhostDiagnostic-chr: -3.176
Centroid-sig: 1.2%
Centroid-so: 1.226 arcsec [1.99 σ]
OotOffset-rm: 1.912 arcsec [3.10 σ]
KicOffset-rm: 1.687 arcsec [2.90 σ]
OotOffset-st: 3/3/4/5 [15]
KicOffset-st: 3/3/4/5 [15]
DiffImageQuality-fgm: 0.33 [5/15]
DiffImageOverlap-fno: 0.12 [2/17]

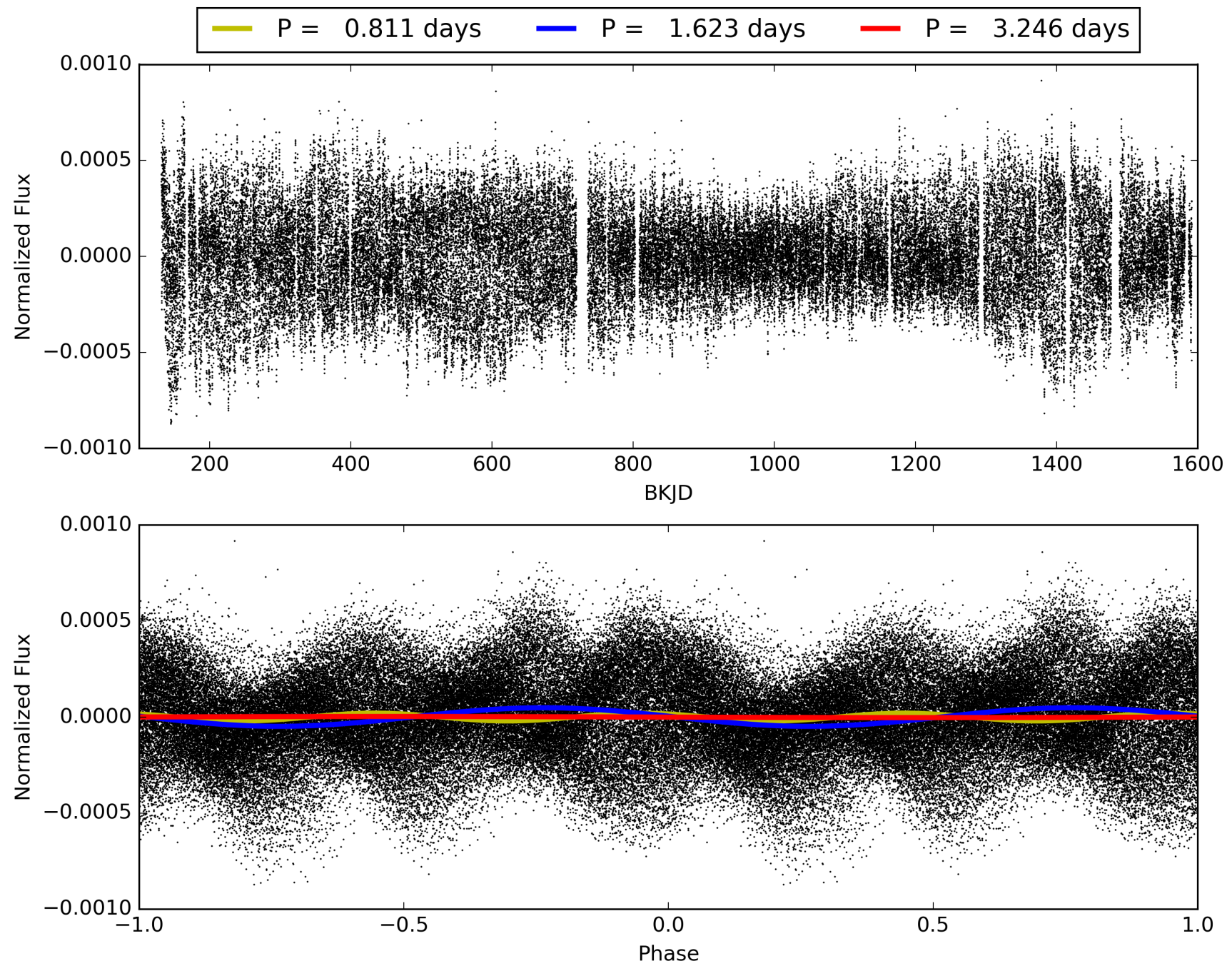
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:13:33 Z

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

TCE 006115025-01, PDC Light Curves

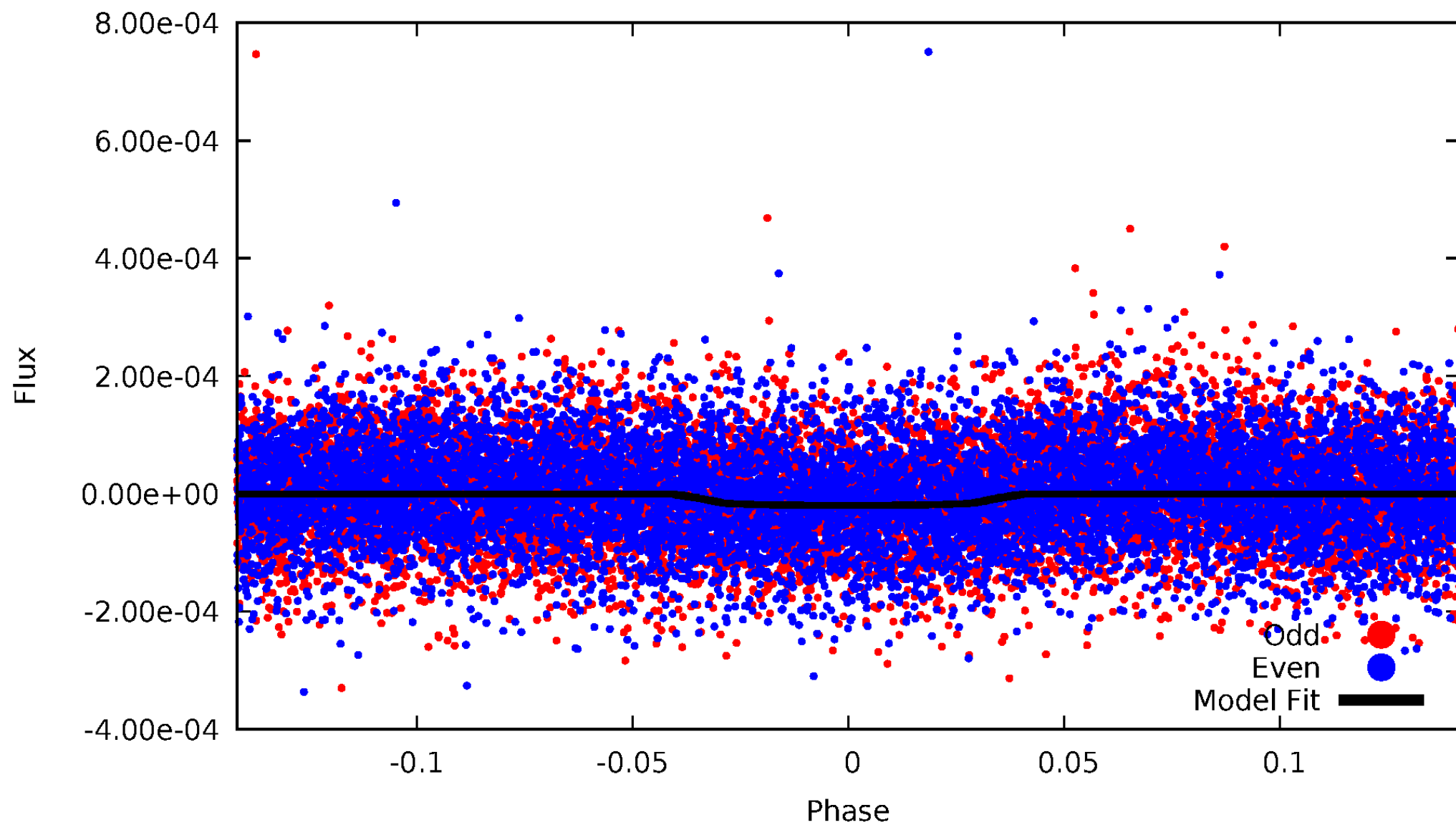


TCE 006115025-01



DV Odd/Even

TCE 006115025-01

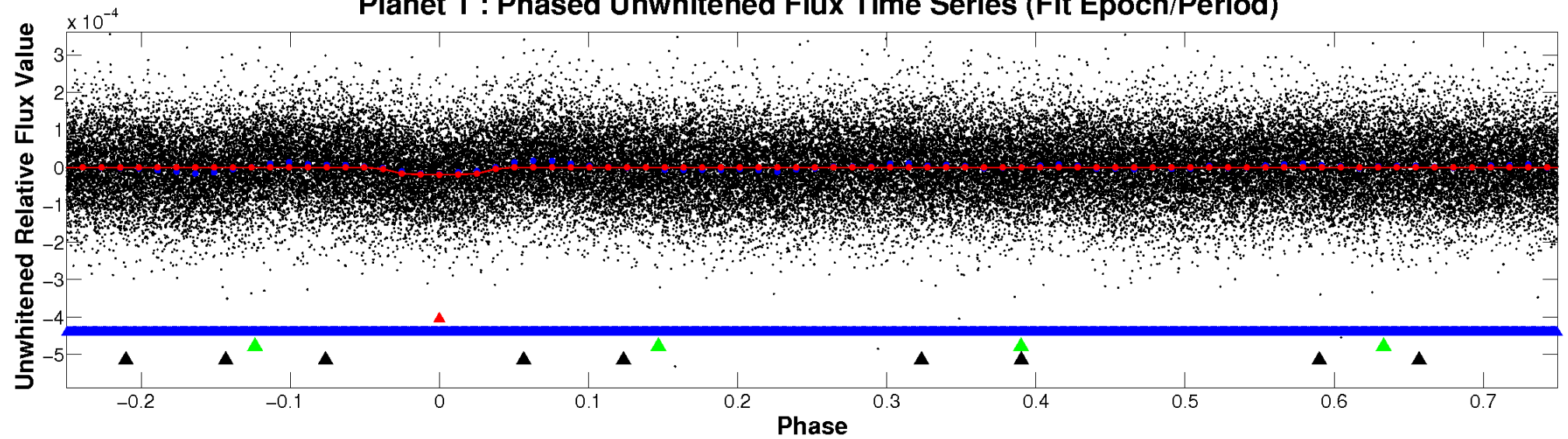


ALT Odd/Even

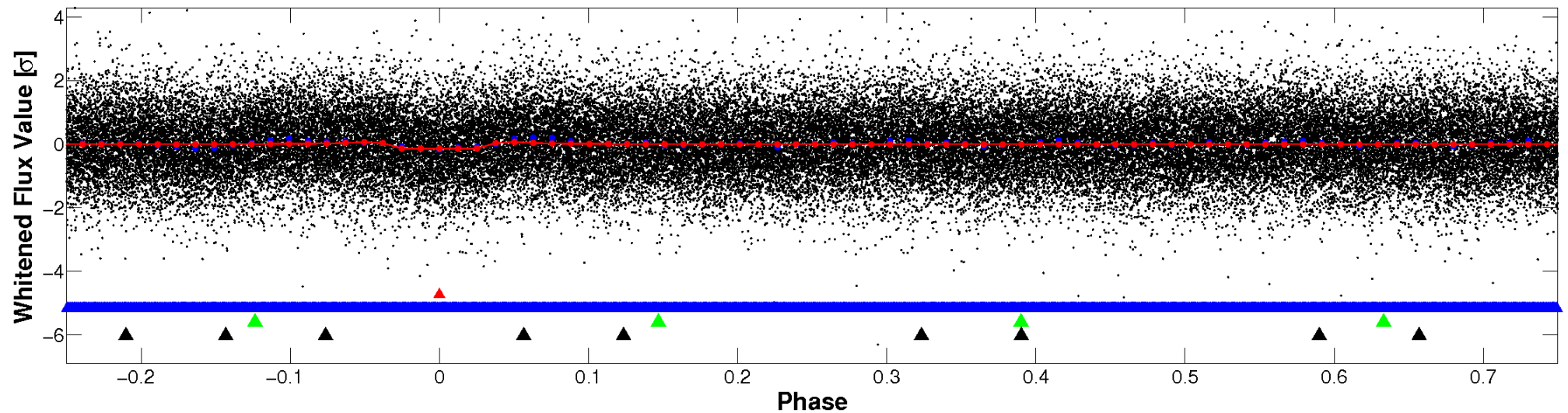
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

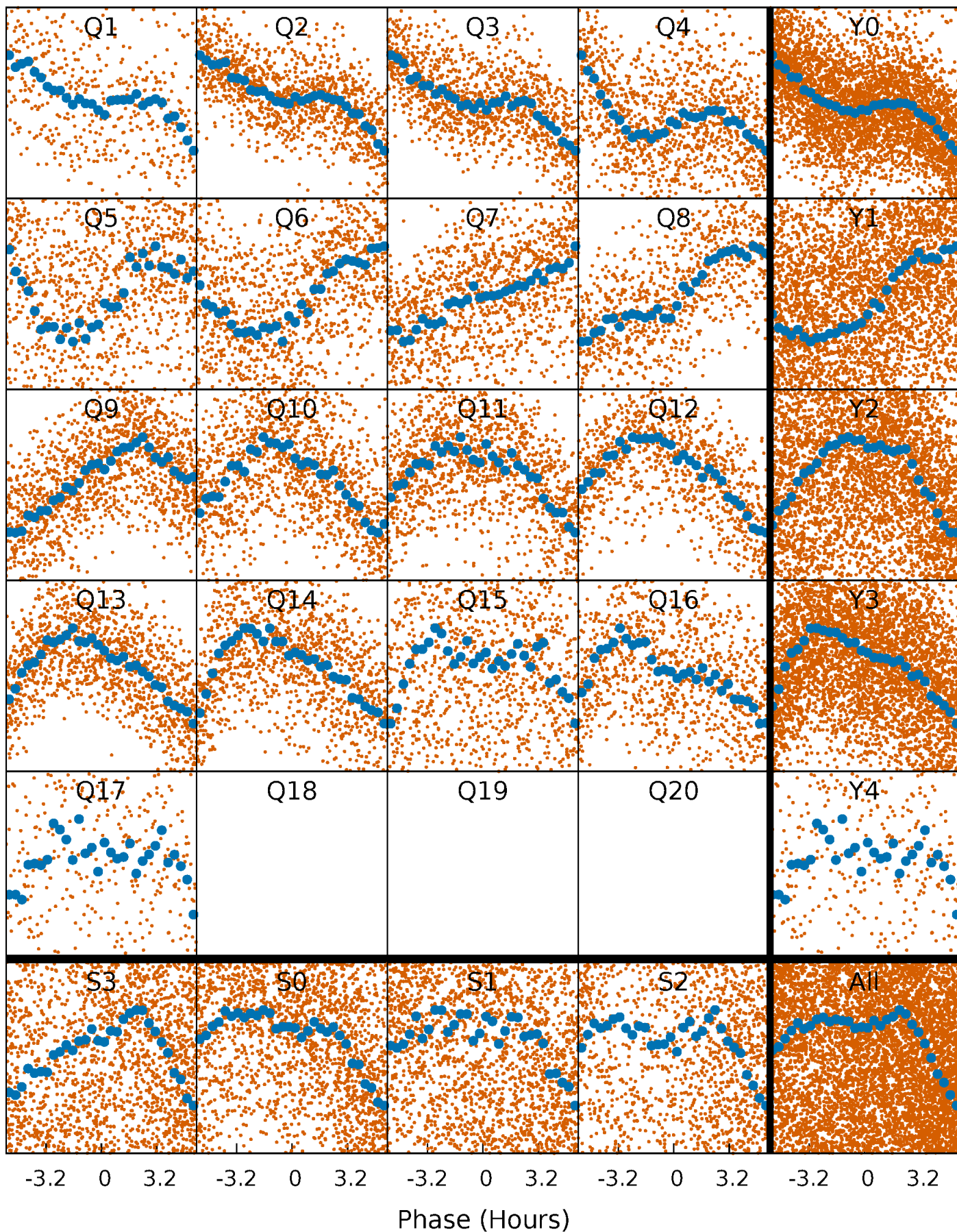


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



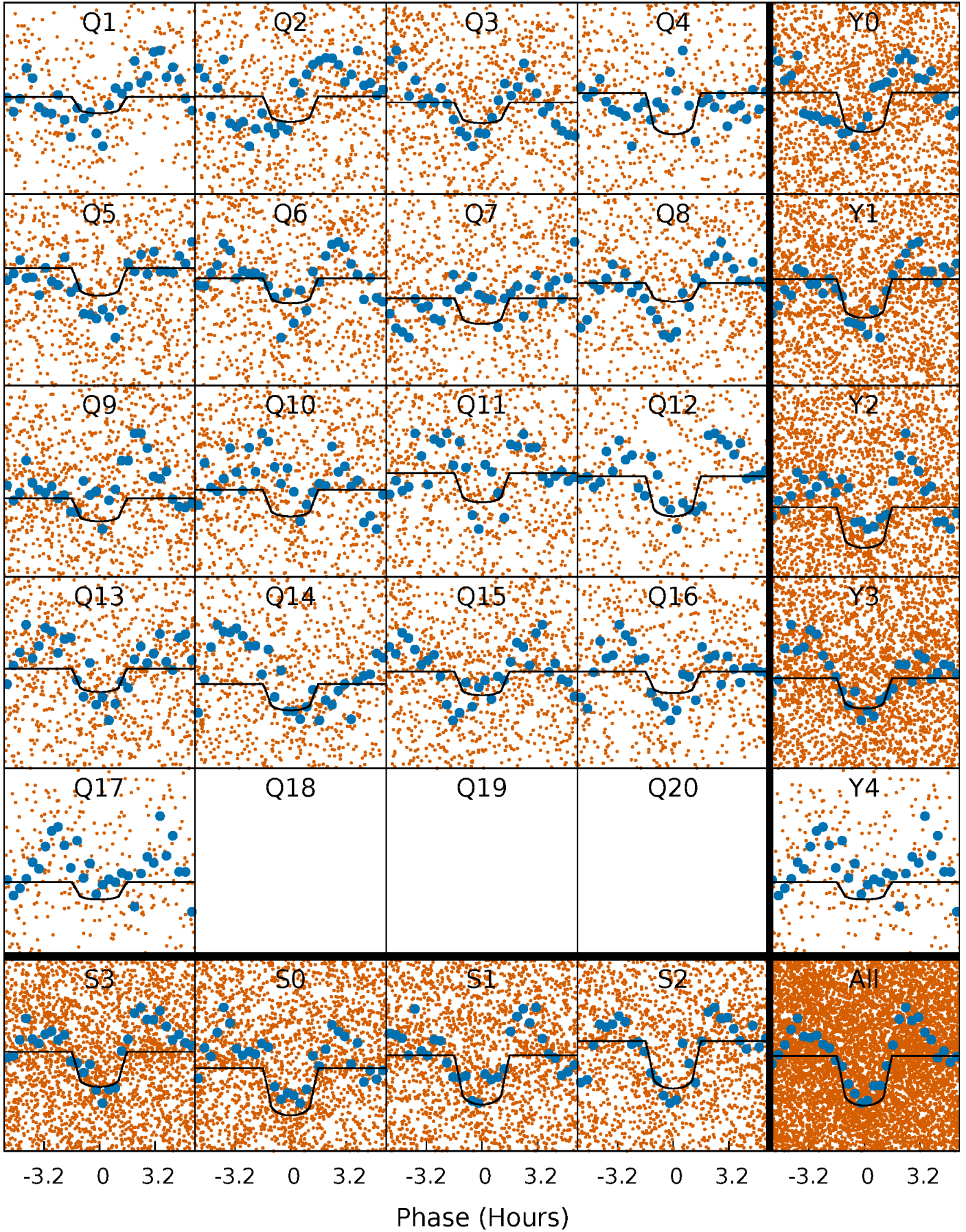
PDC Quarter-Phased Transit Curves

TCE 006115025-01 P= 1.622937 Days $T_0=131.704277$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 006115025-01 P= 1.622937 Days $T_0=131.704277$ (BKJD)

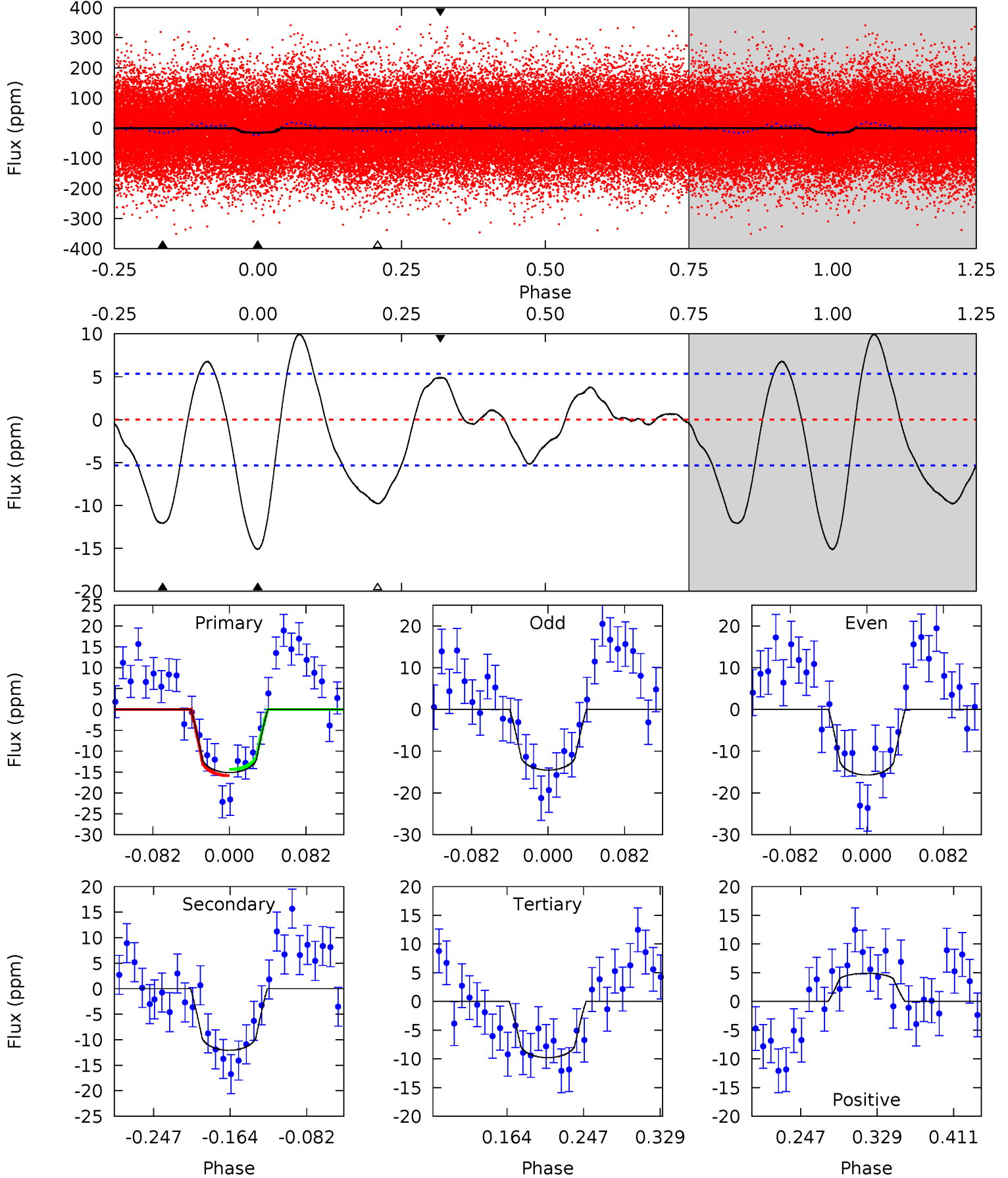


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

006115025-01, P = 1.622937 Days, E = 130.081340 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	10.4	8.44	4.23	4.61	1.74	3.44	4.59	8.81	1.97	6.19	0.51	1.00	0.40	0.65



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 006115025

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6872^{+190}_{-309}	$4.257^{+0.108}_{-0.201}$	$-0.200^{+0.250}_{-0.350}$	$1.402^{+0.462}_{-0.249}$	$1.307^{+0.196}_{-0.216}$	$0.669^{+0.344}_{-0.342}$
	+3%/-4%	+3%/-5%	+125%/-175%	+33%/-18%	+15%/-17%	+51%/-51%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 006115025-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-12±1	$0.68^{+0.14}_{-0.11}$	2943^{+239}_{-196}	6030^{+457}_{-413}	12^{+4}_{-4}
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 $A_{\text{obs}} \gg 1.0$

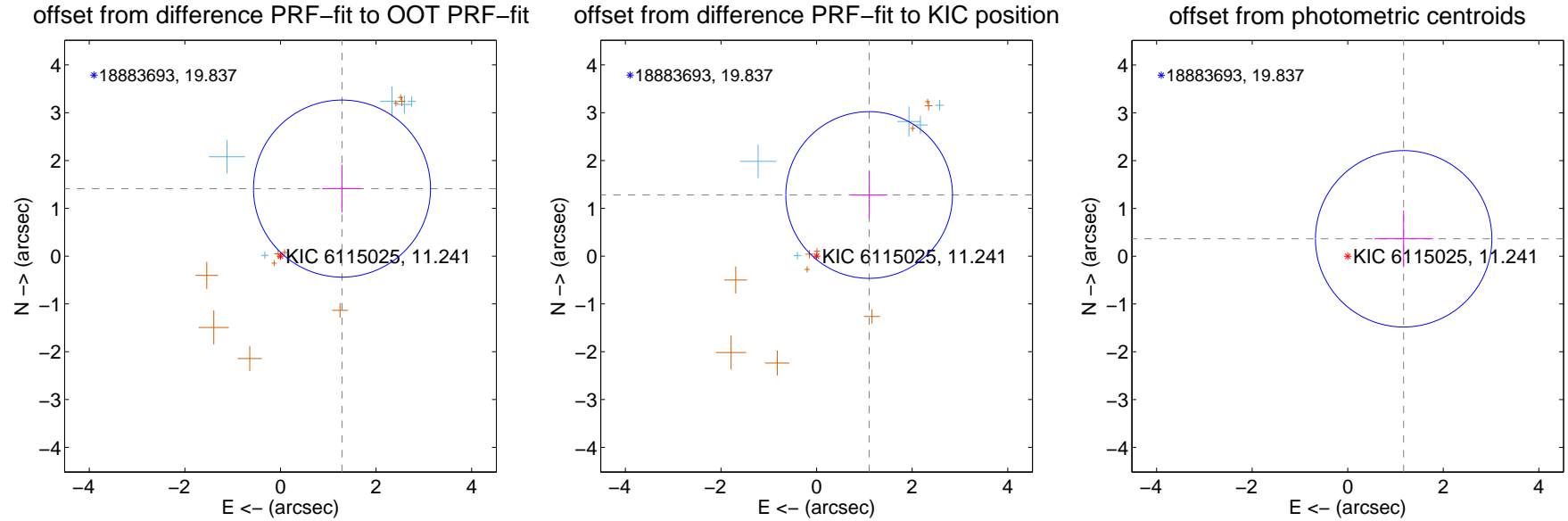
DV Centroid Data

Supplemental centroid analysis for 006115025-01. **Kepler magnitude: 11.24**. Transit SNR 9.62

There are 5 quarters with good PRF difference image offsets

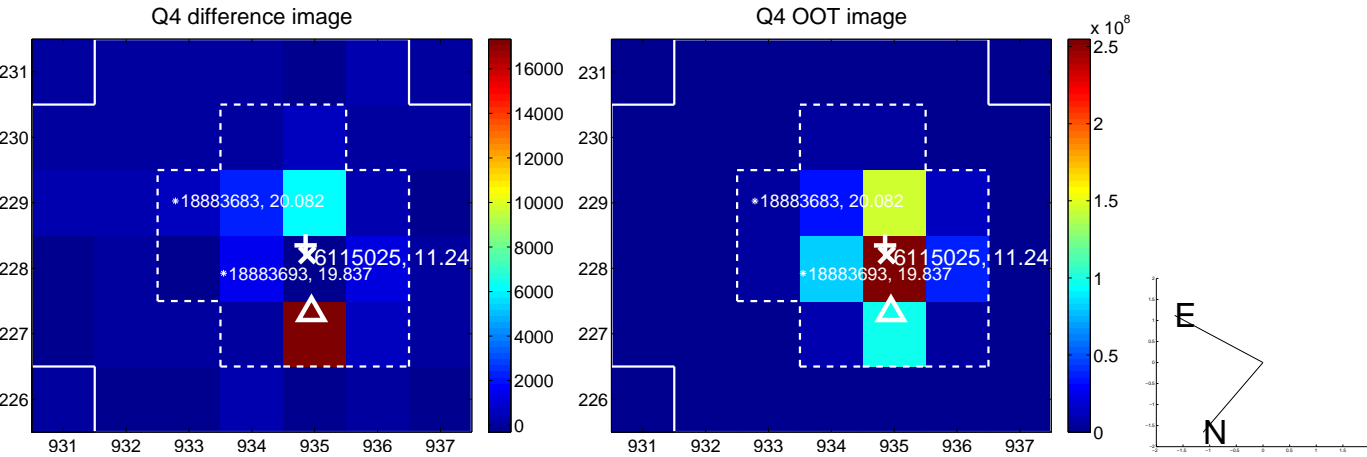
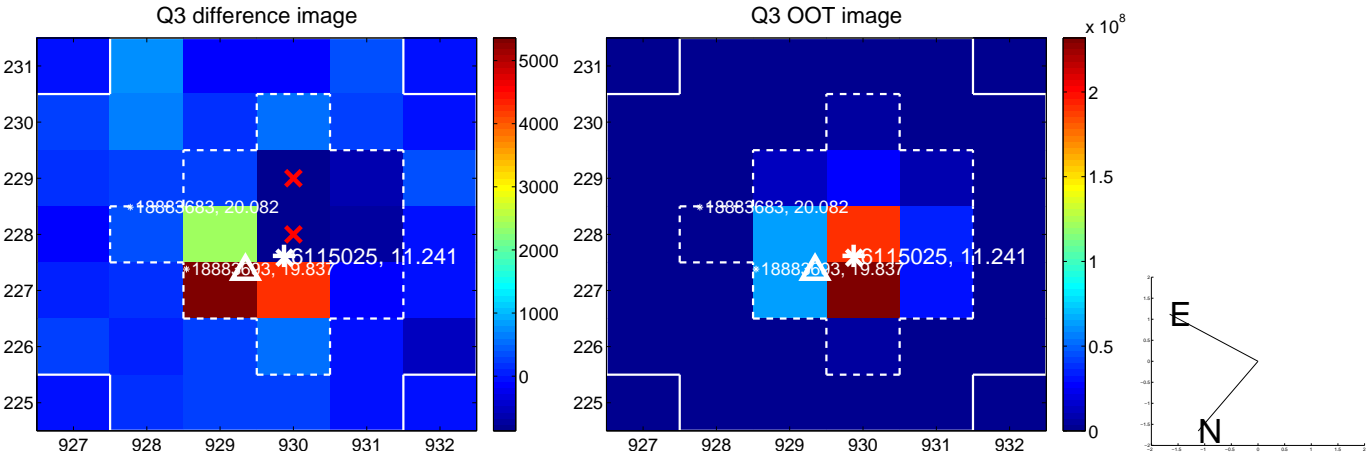
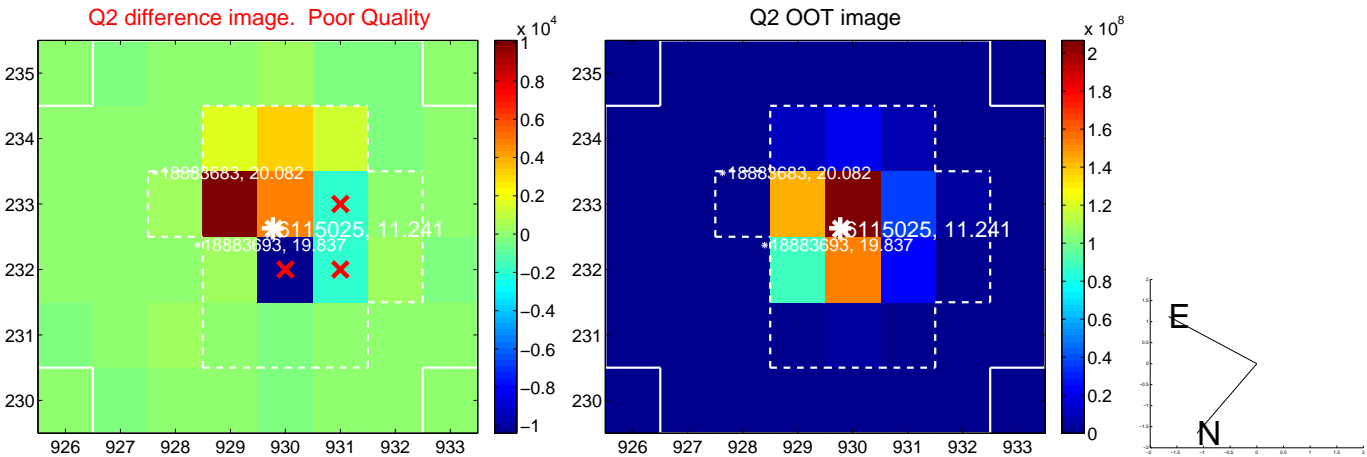
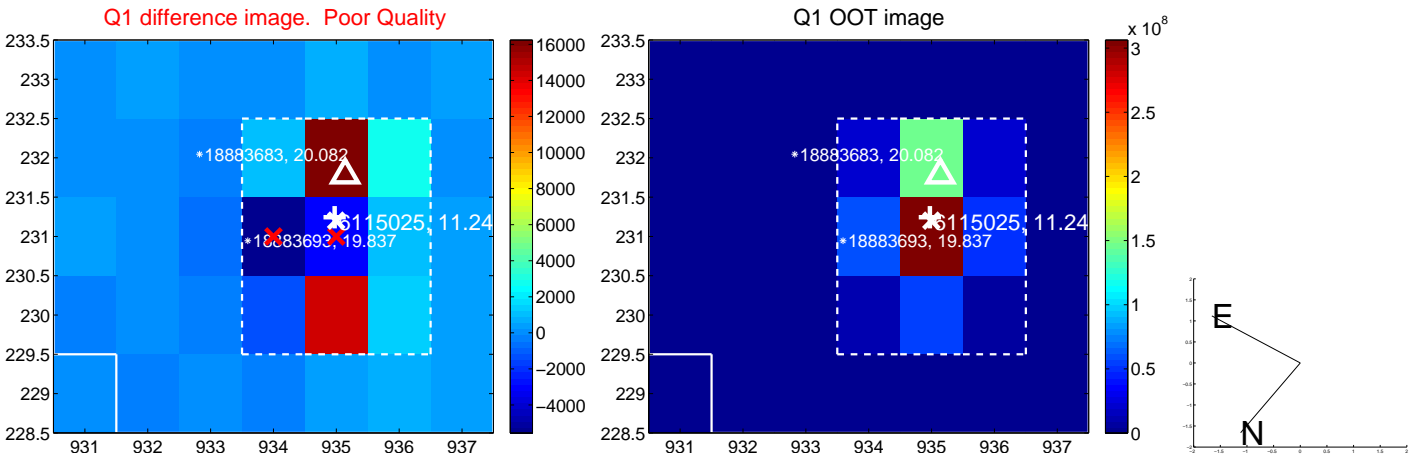
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.912 ± 0.617	3.10	-1.288 ± 0.418	1.413 ± 0.498
PRF-fit source offset from KIC position	1.687 ± 0.581	2.90	-1.100 ± 0.383	1.279 ± 0.488
photometric centroid source offset	1.23 ± 0.62	1.99	-1.17 ± 0.62	0.36 ± 0.59

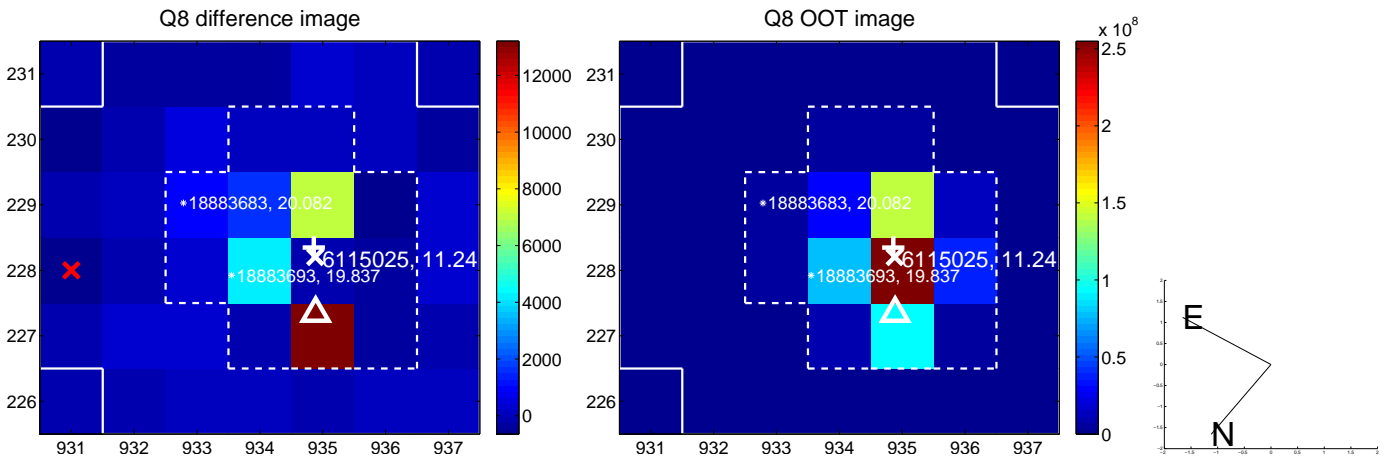
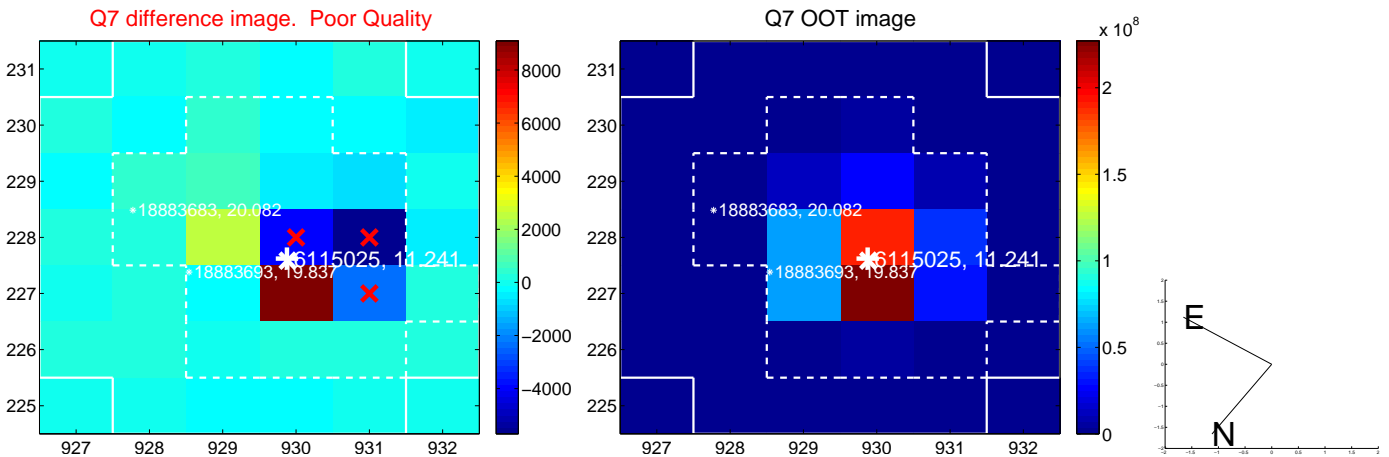
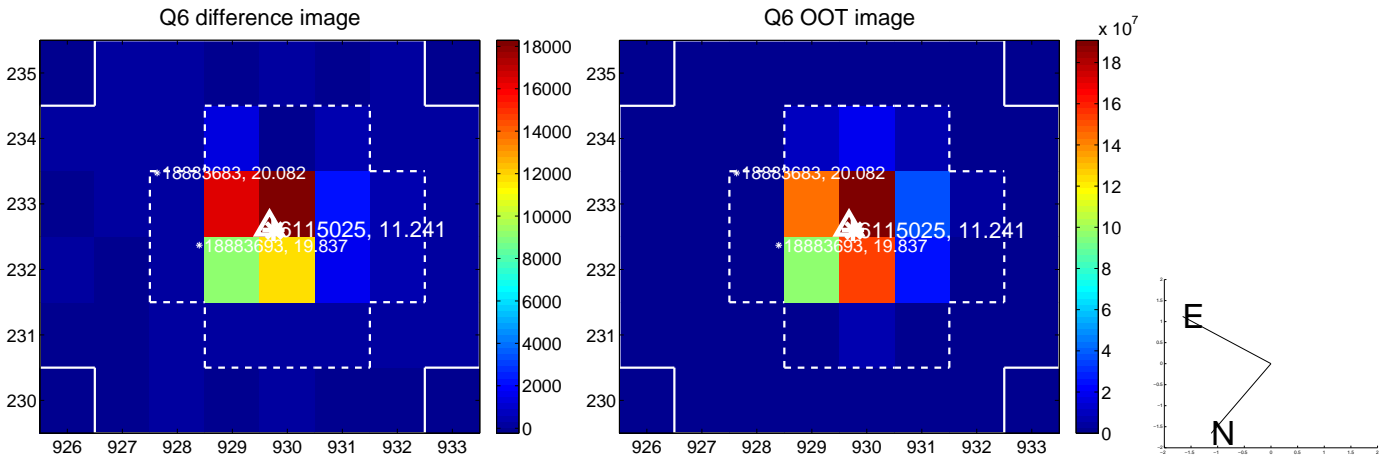
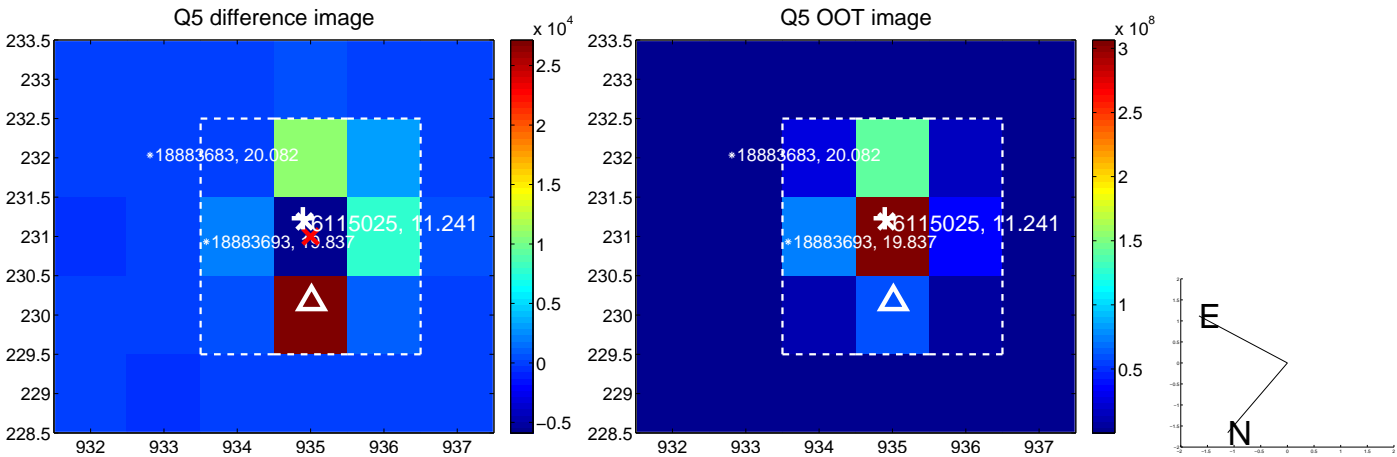


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

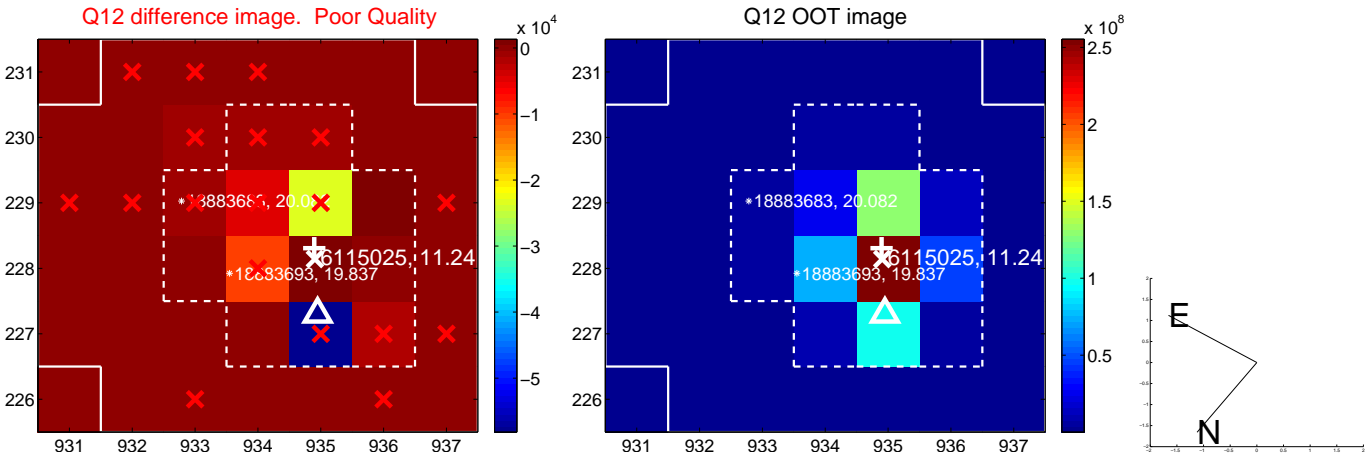
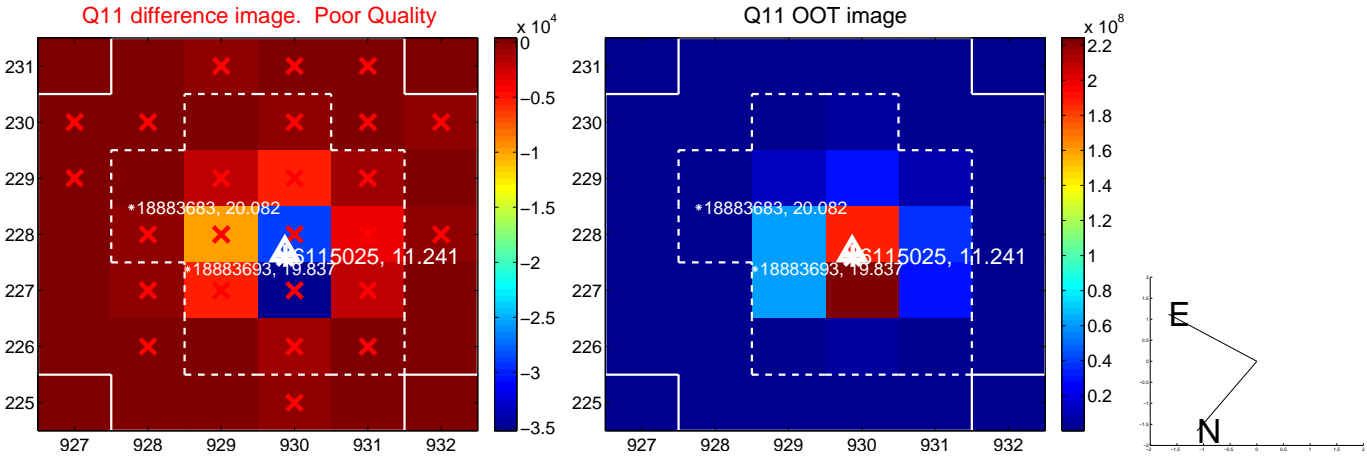
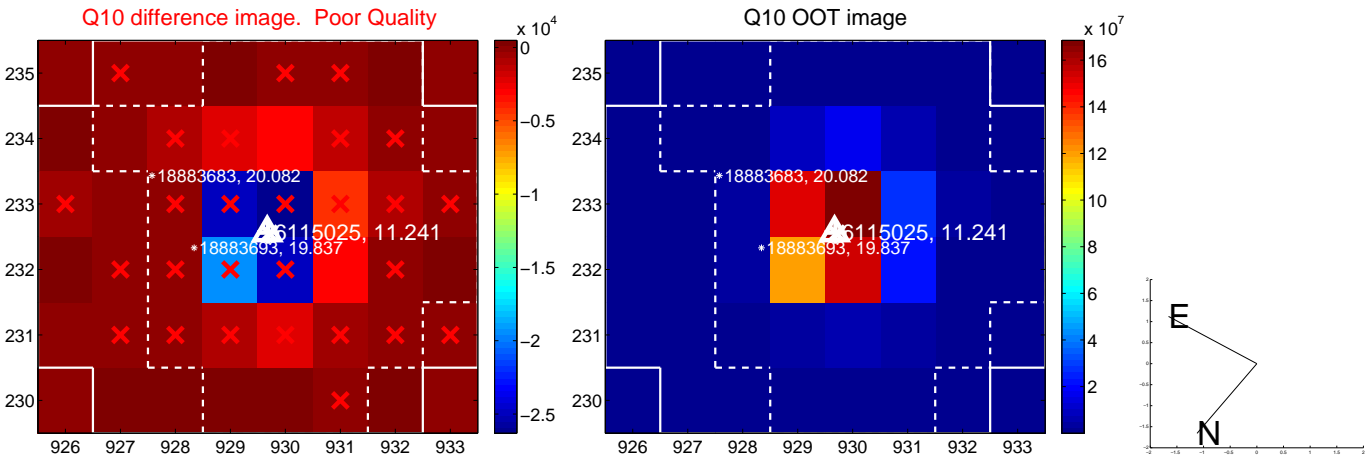
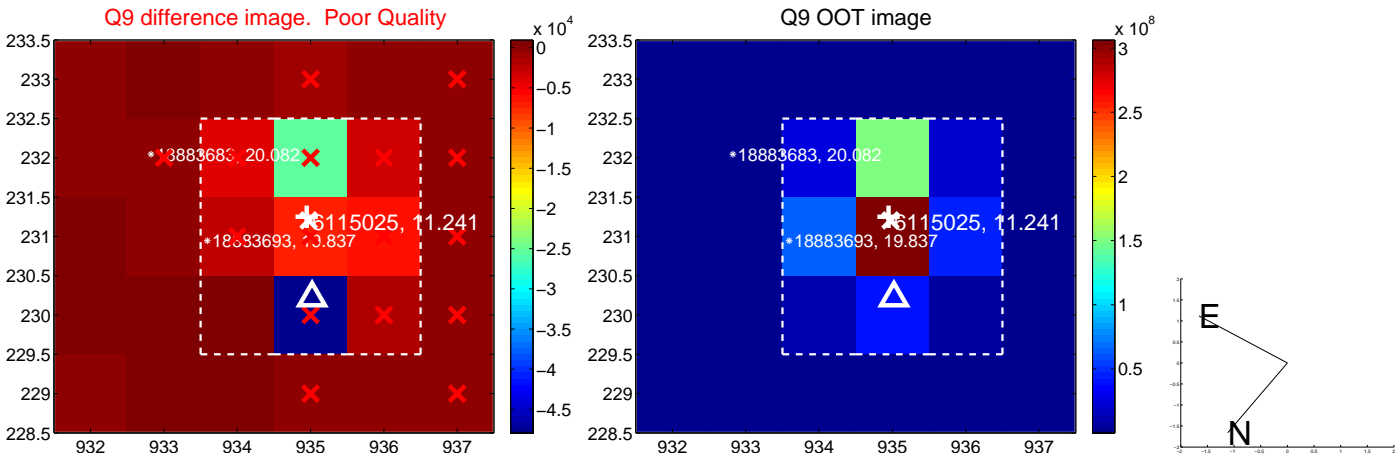
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



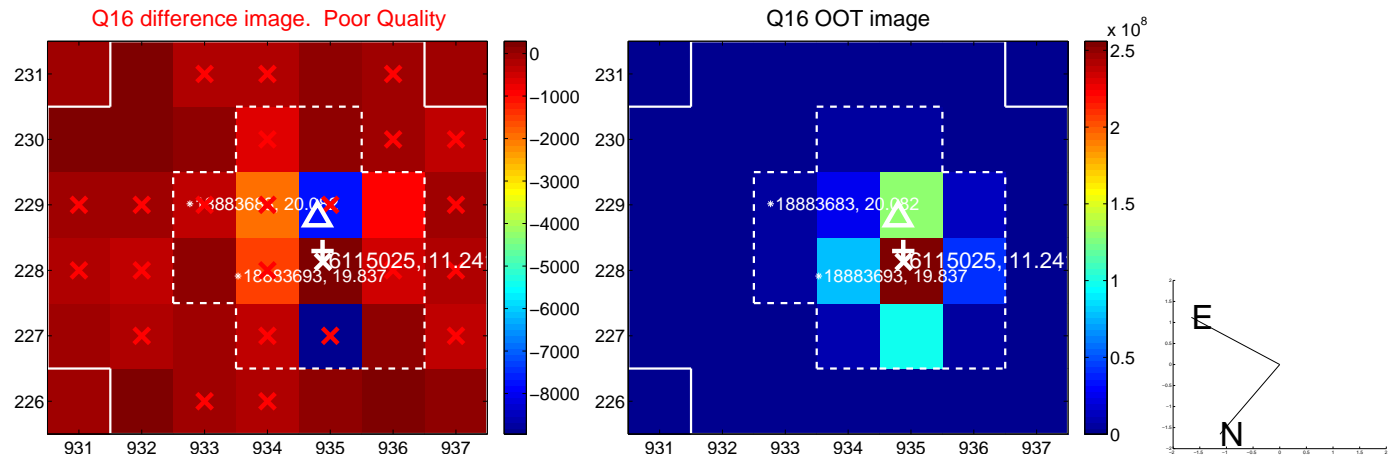
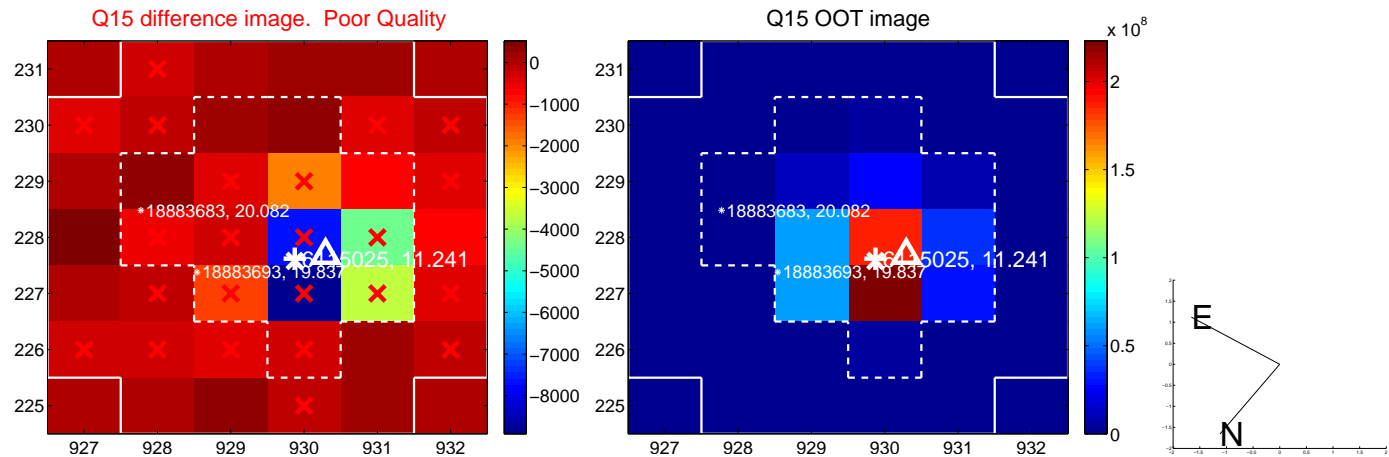
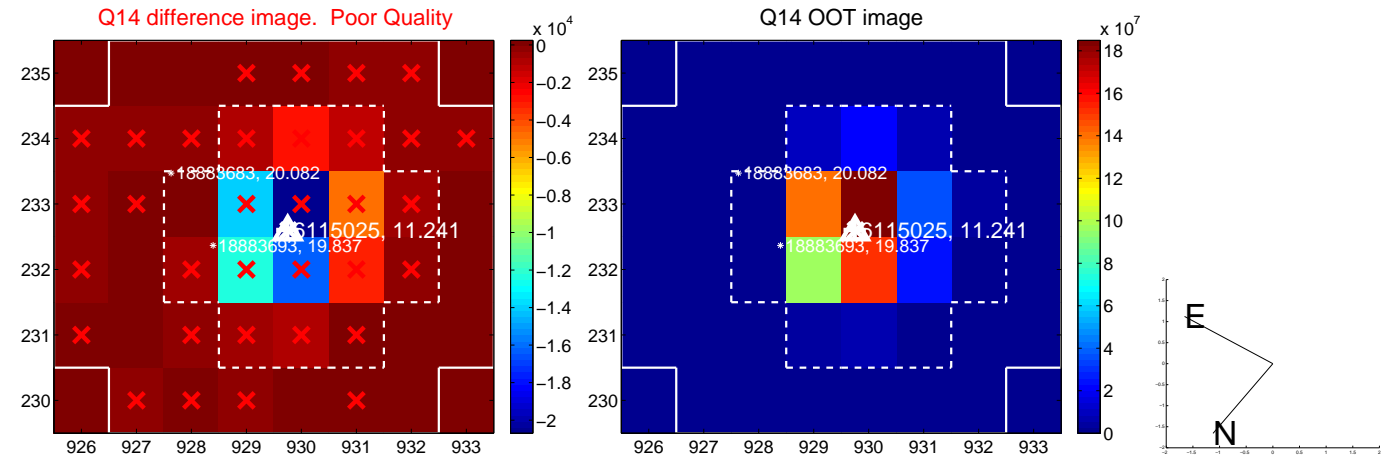
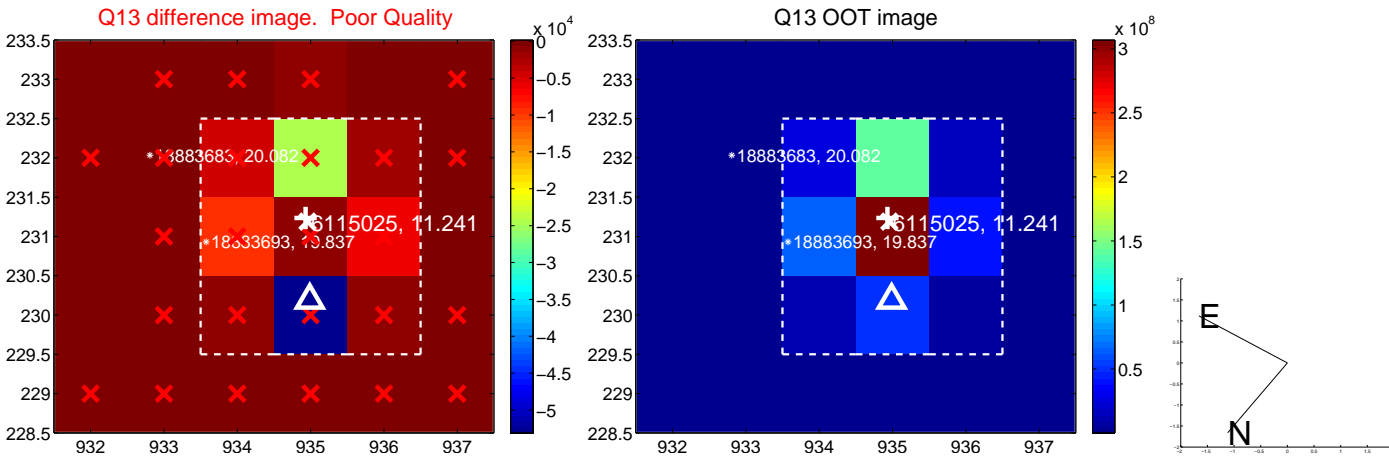
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



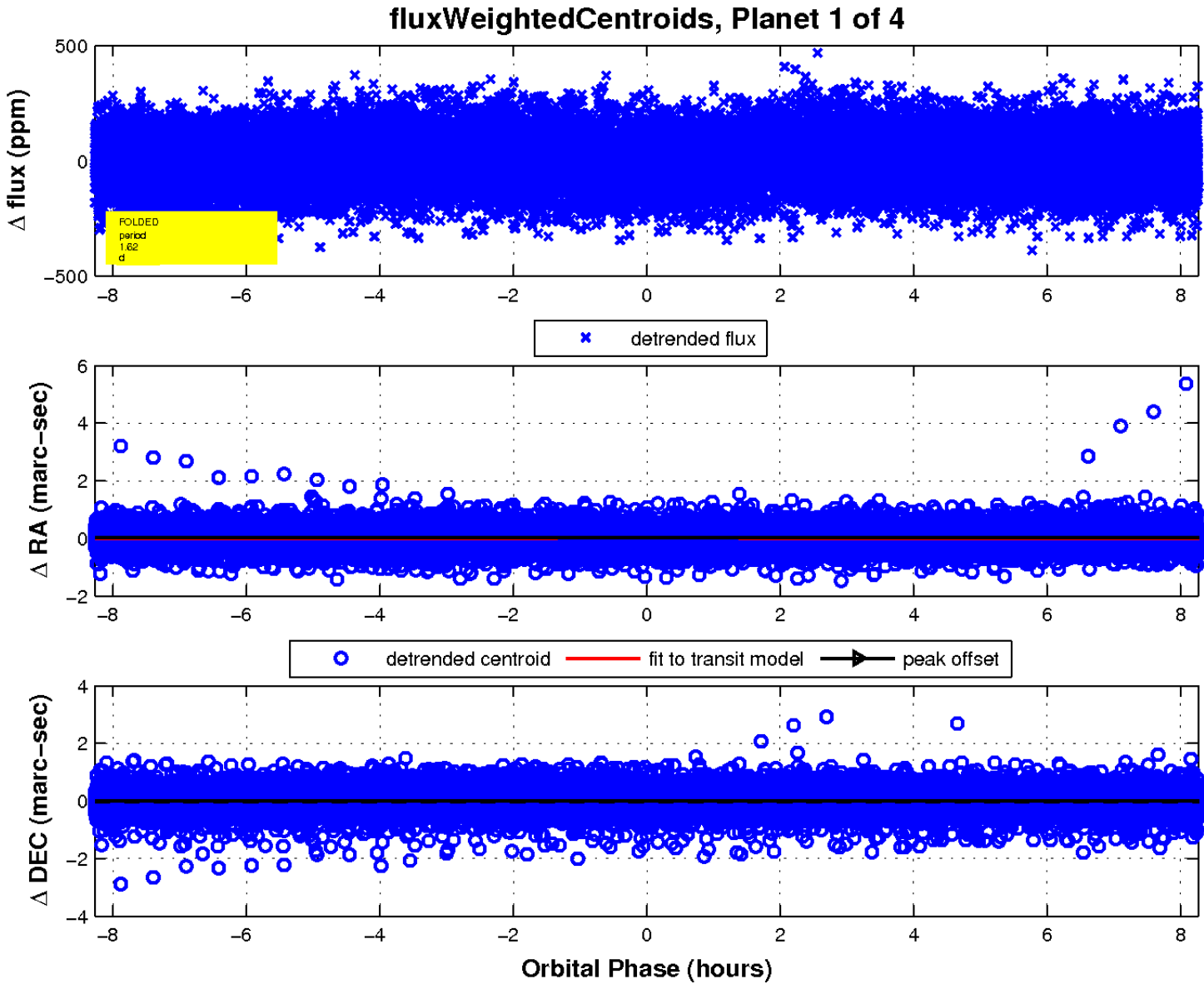
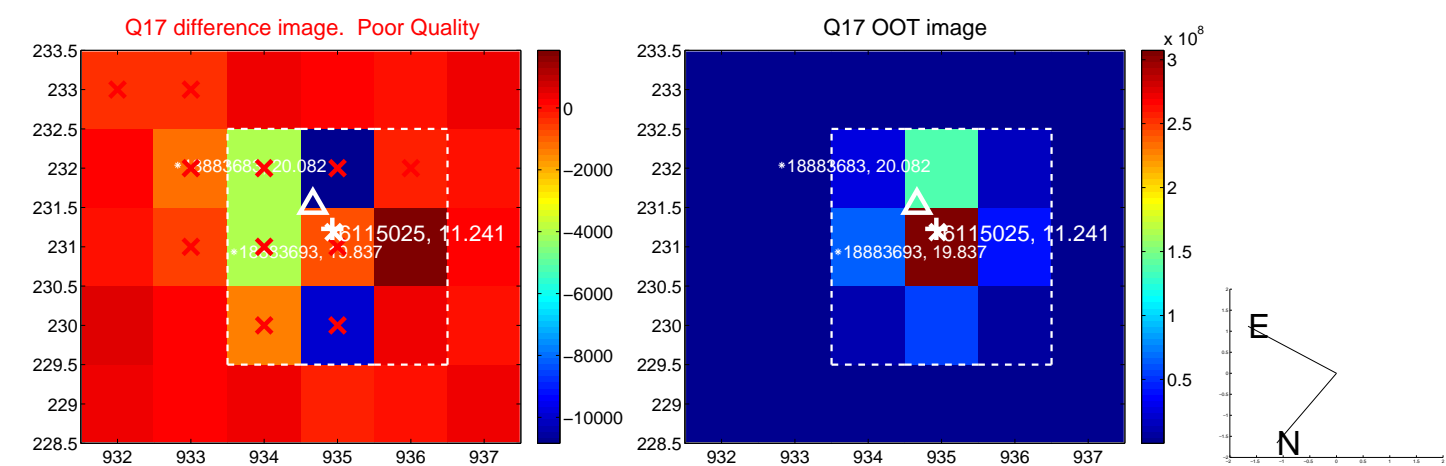
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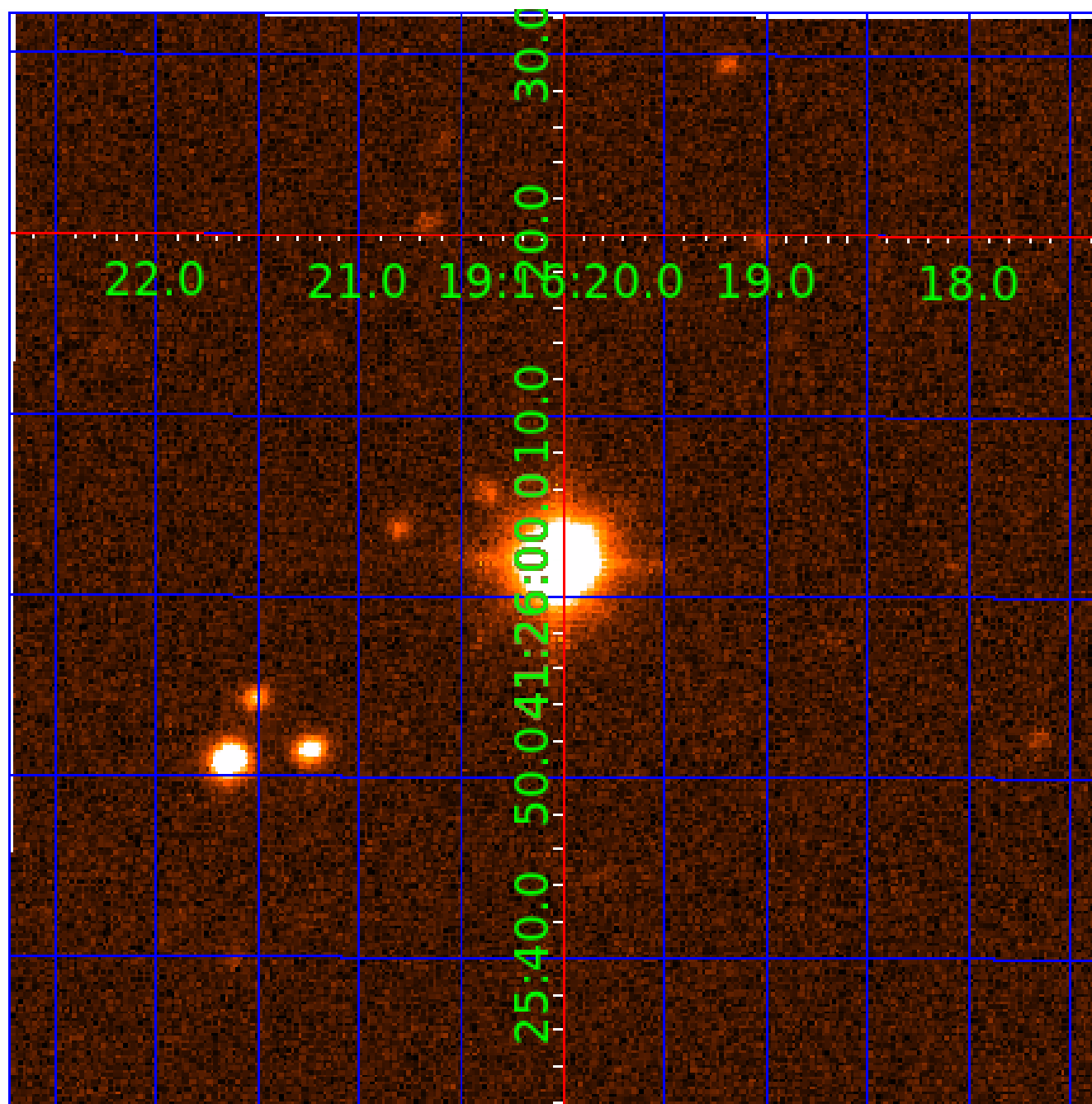


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006115025

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})
006115025-01	OBS	No	1.622937	131.704277	19.9	2.758	9.8	9.6	1.40	6872	0.67	4521.93
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006115025-03	OBS	No	368.012085	241.863381	223.8	4.644	7.7	8.5	1.40	6872	2.43	3.27
006115025-04	OBS	No	157.857791	204.395360	30.4	5.121	7.8	1.2	1.40	6872	0.90	10.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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006115025-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
006115025-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
006115025-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

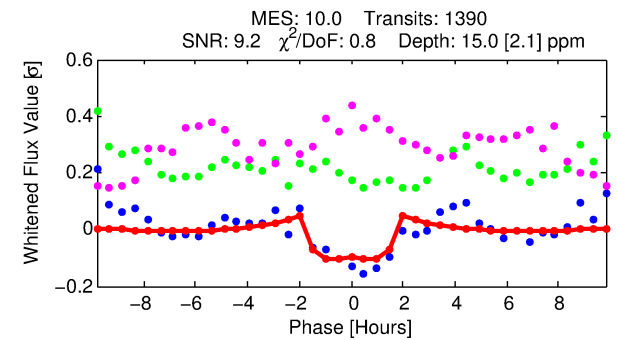
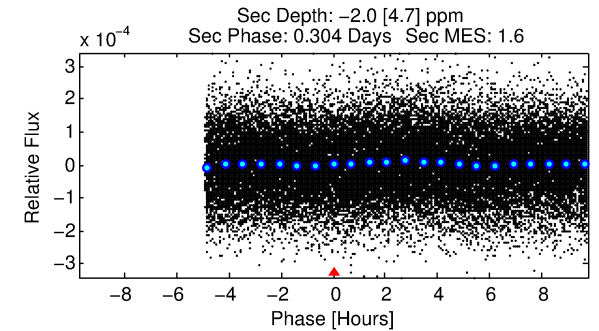
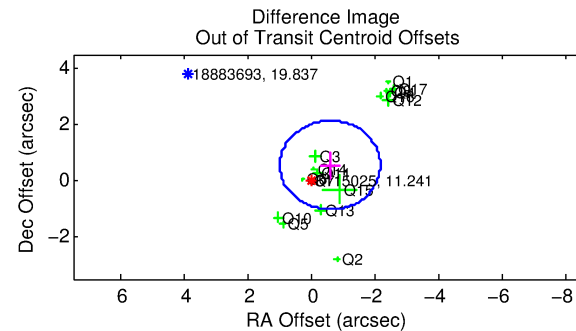
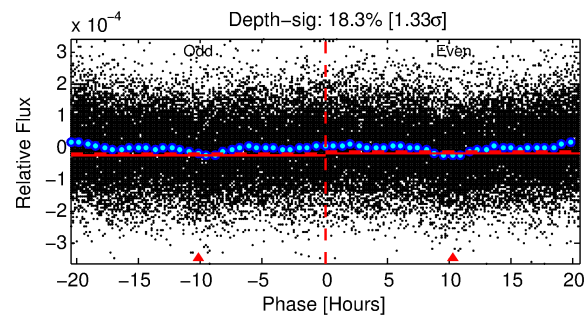
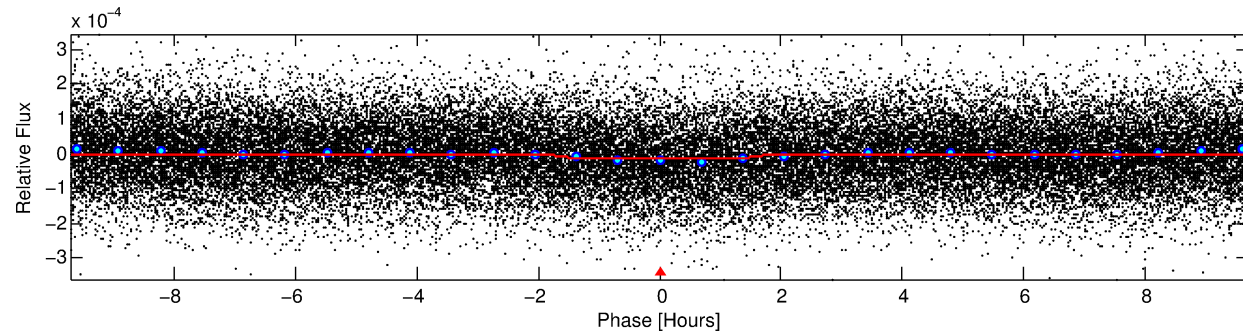
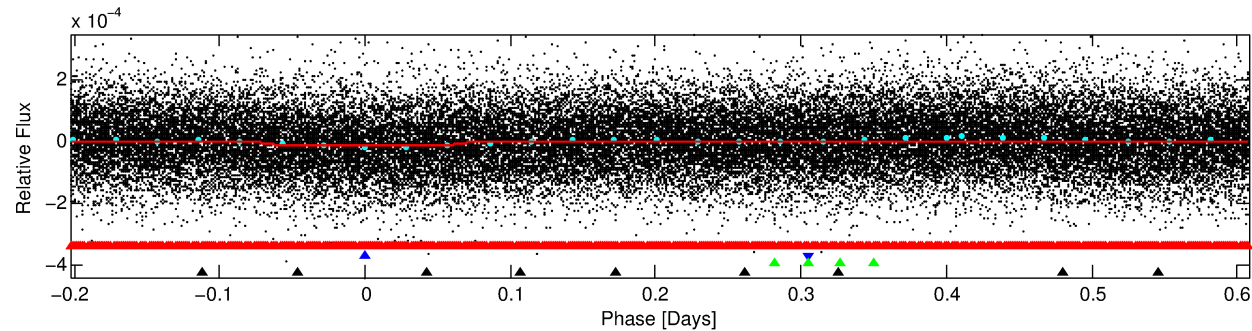
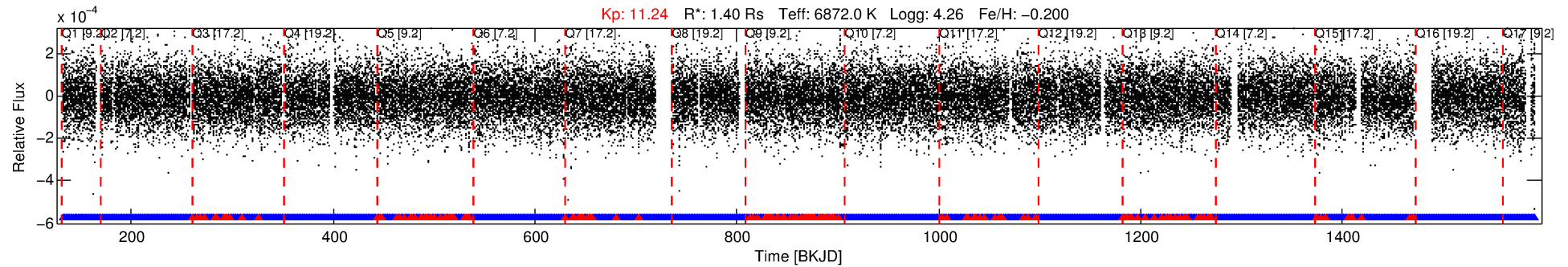
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006115025-02

No Significant Match Found

DV One-Page Summary

KIC: 6115025 Candidate: 2 of 4 Period: 0.811 d



DV Fit Results:

Period = 0.81065 [0.00001] d
Epoch = 132.0752 [0.0026] BKJD
 $R_p/R^* = 0.0041$ [0.0009]
 $a/R^* = 1.26$ [0.59]
 $b = 0.89$ [0.31]
 $\text{Seff} = 11409.88$ [4784.17]
 $T_{\text{eq}} = 2635$ [276] K
 $R_p = 0.63$ [0.25] R_e
 $a = 0.0186$ [0.0050] AU
 $\text{Ag} = \text{N/A}$
 $\text{Teffp} = \text{N/A}$

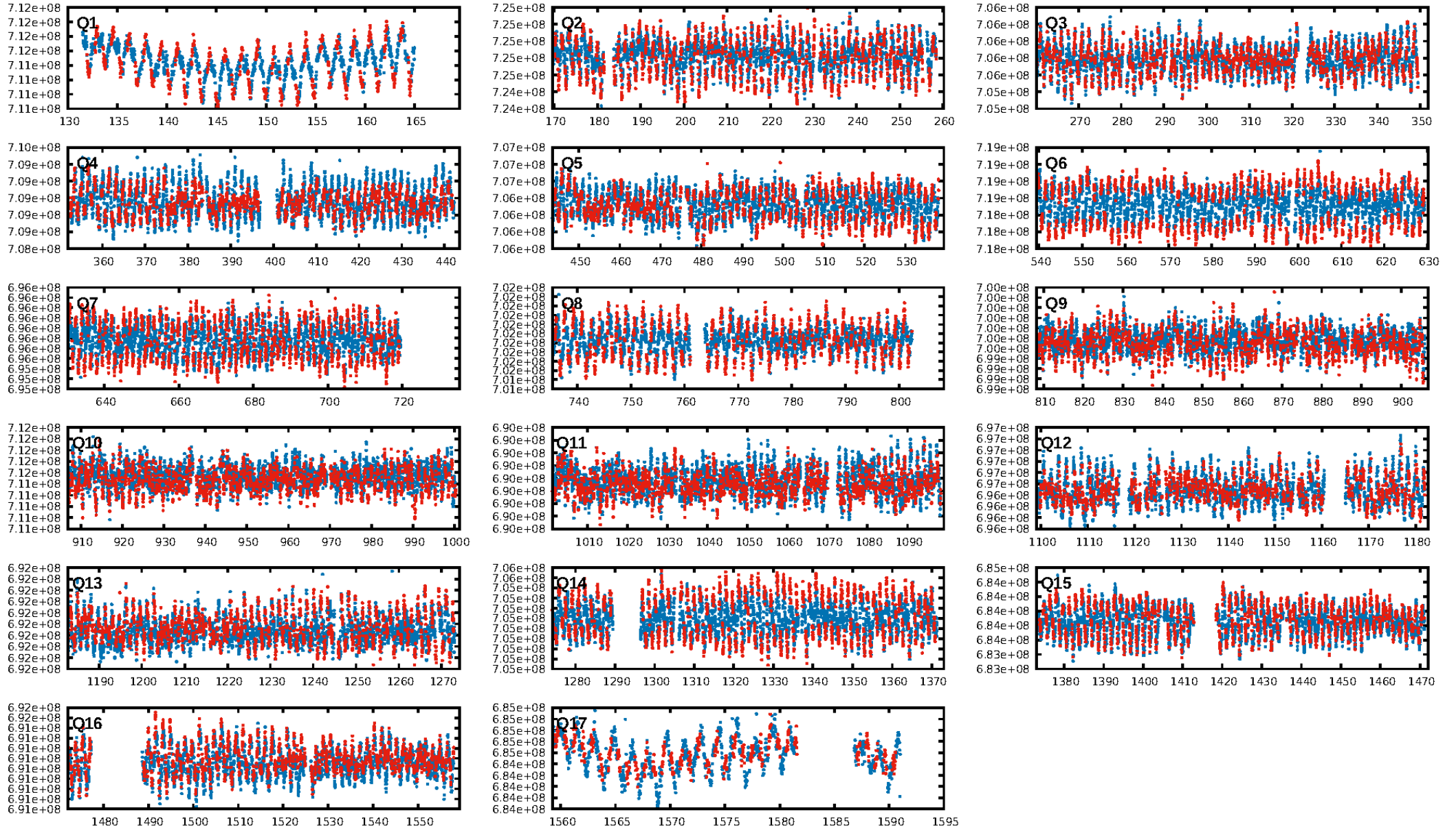
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.43 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.16e-17
RollingBand-fgt: 0.89 [1176/1316]
GhostDiagnostic-chr: 5.391
Centroid-sig: 14.8%
Centroid-so: 0.524 arcsec [1.03 σ]
OotOffset-rm: 0.801 arcsec [1.52 σ]
KicOffset-rm: 0.468 arcsec [1.04 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.31 [5/16]
DiffImageOverlap-fno: 1.00 [17/17]

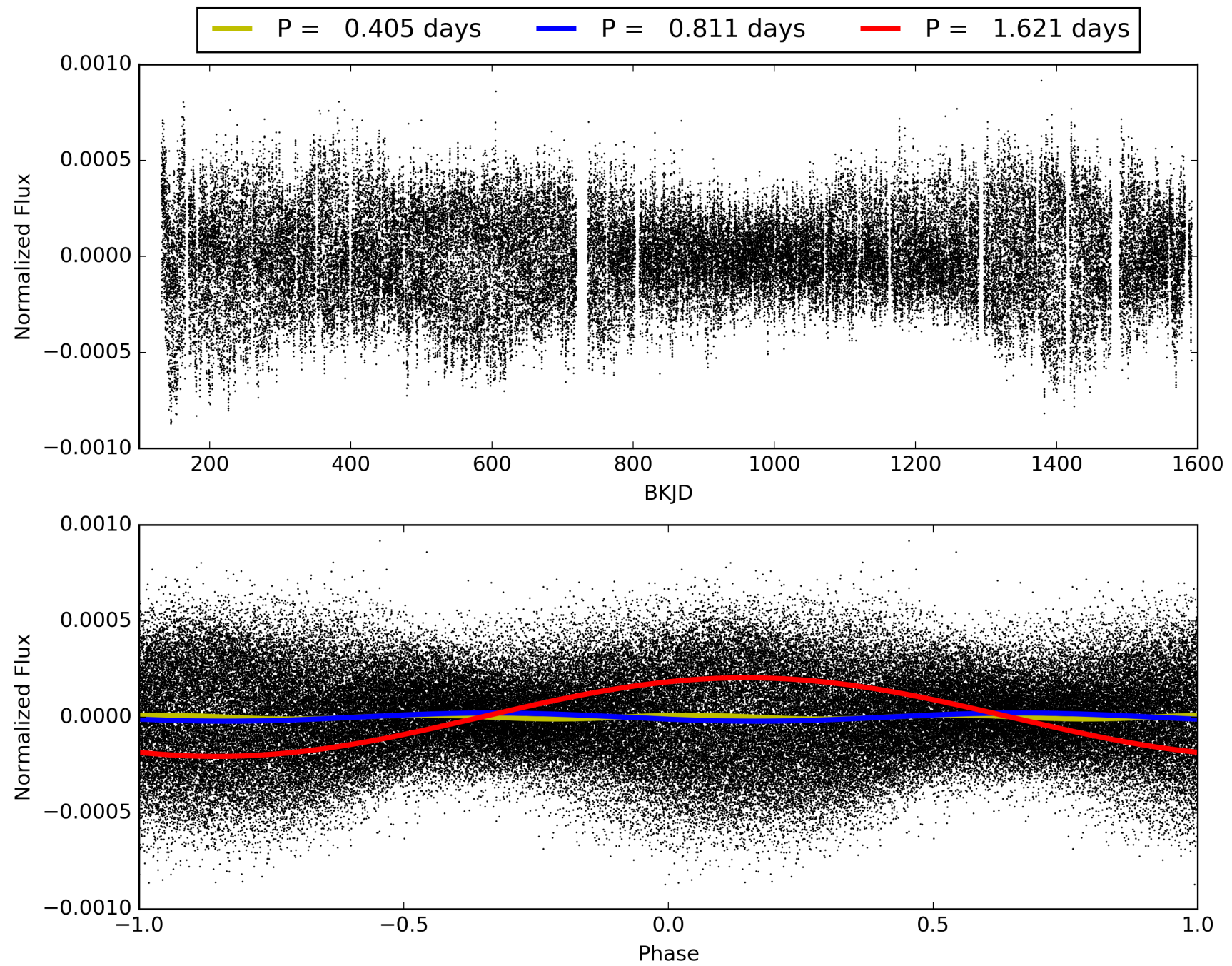
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:13:45 Z

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

TCE 006115025-02, PDC Light Curves

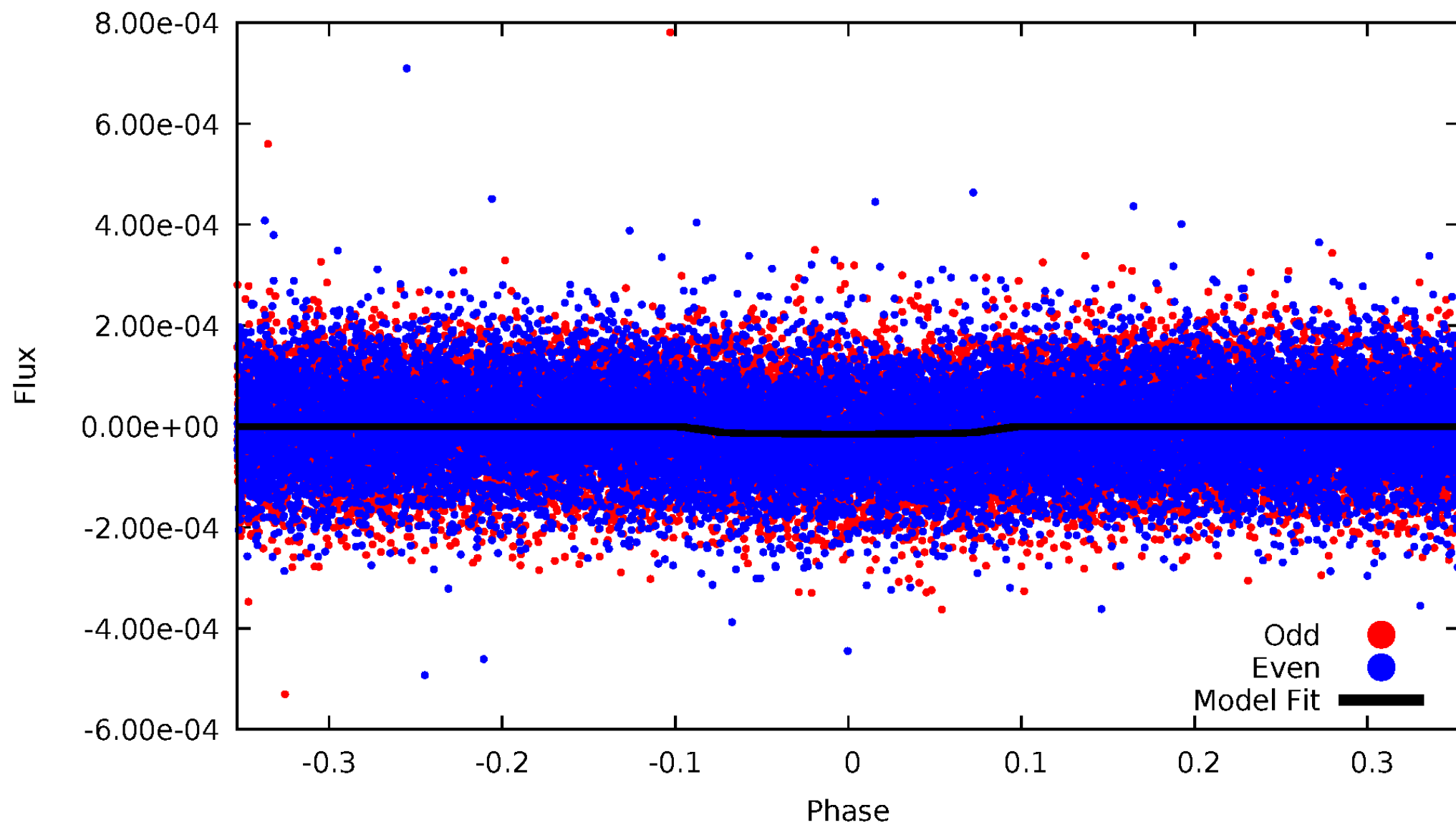


TCE 006115025-02



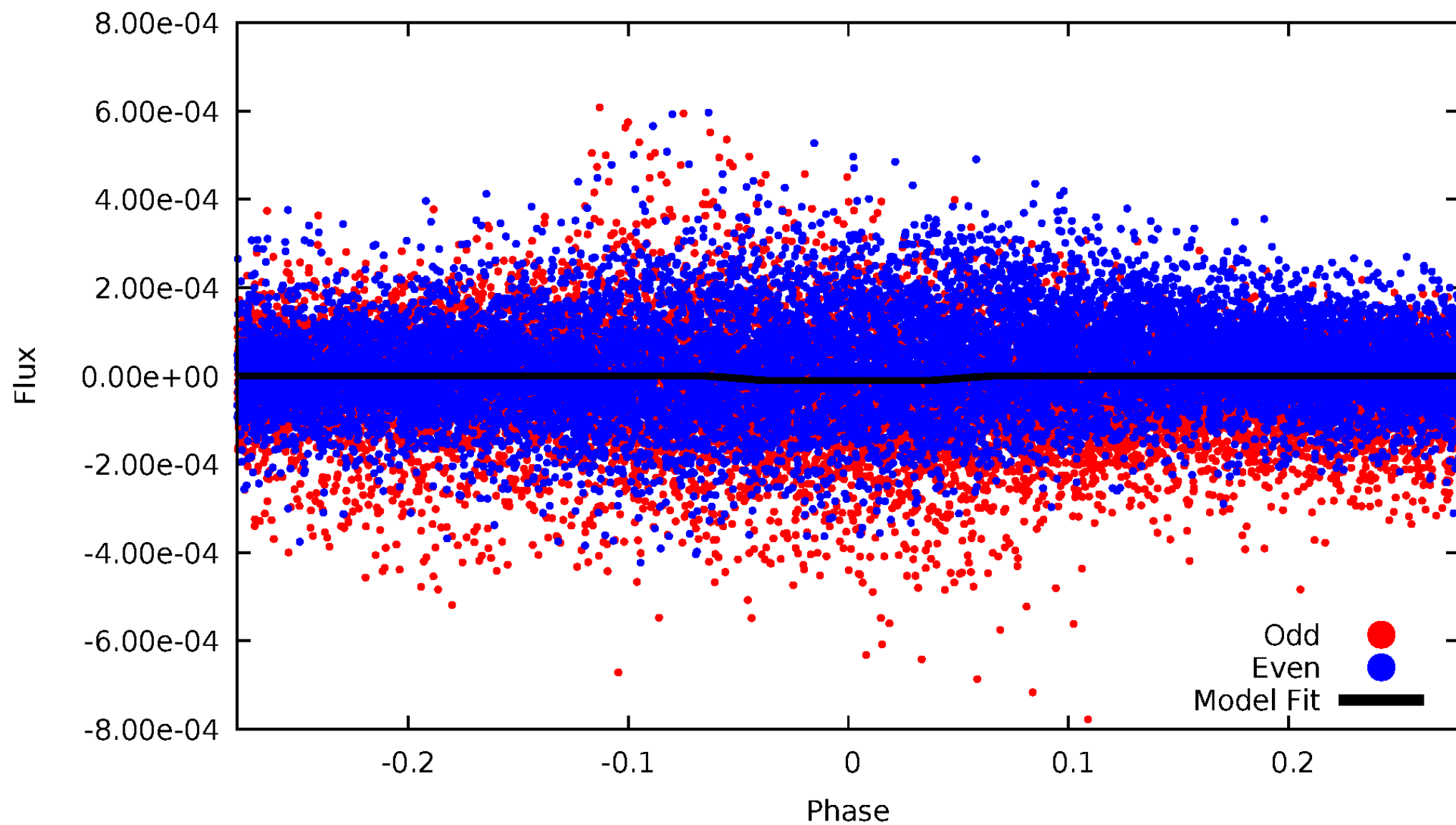
DV Odd/Even

TCE 006115025-02



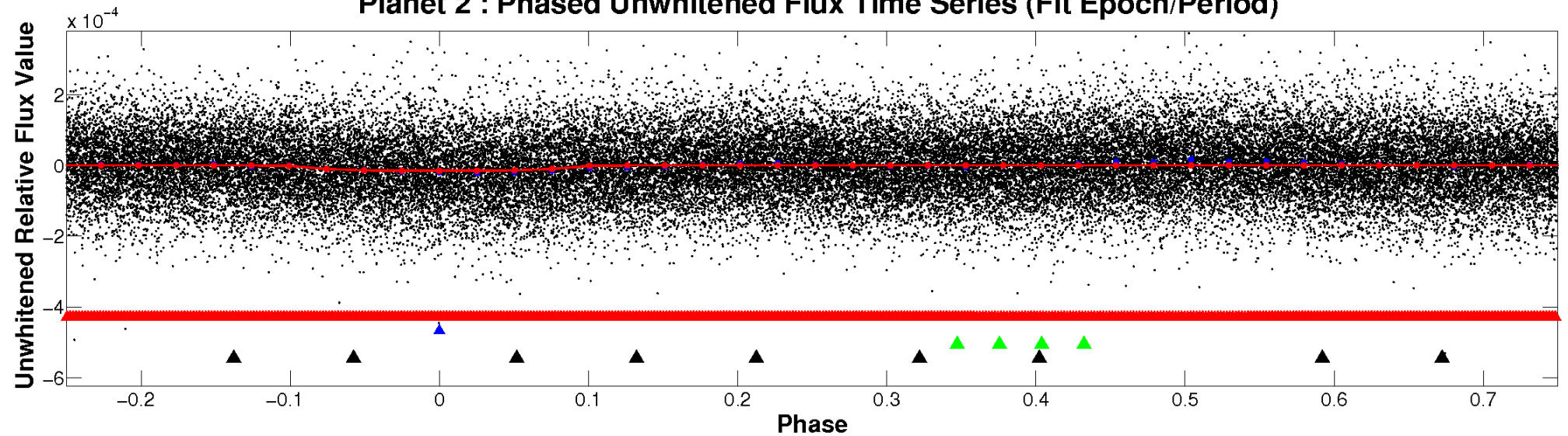
ALT Odd/Even

TCE 006115025-02

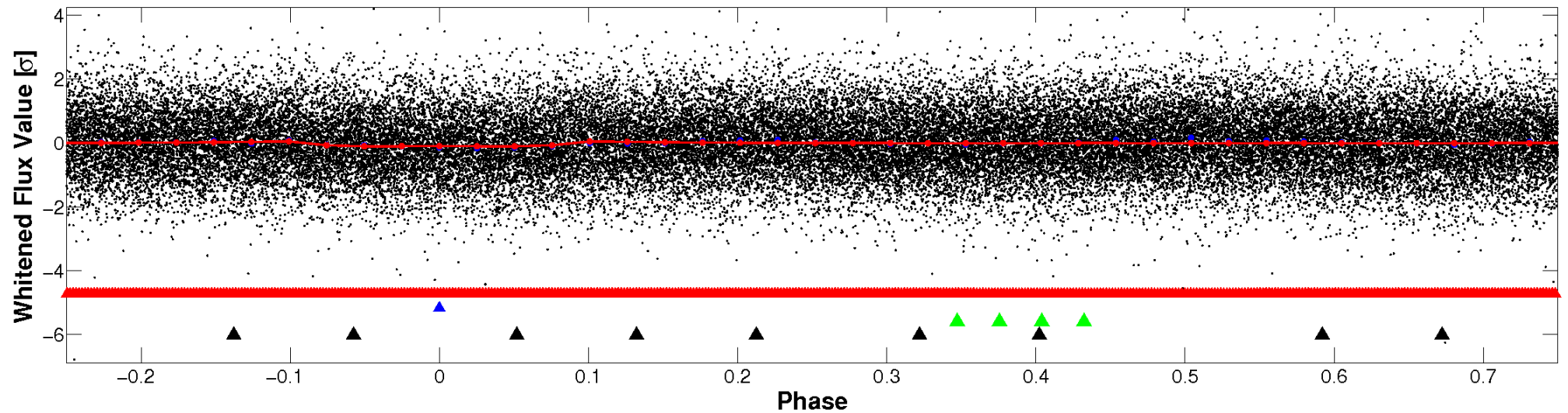


Non-Whitened Vs. Whitened Light Curve

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

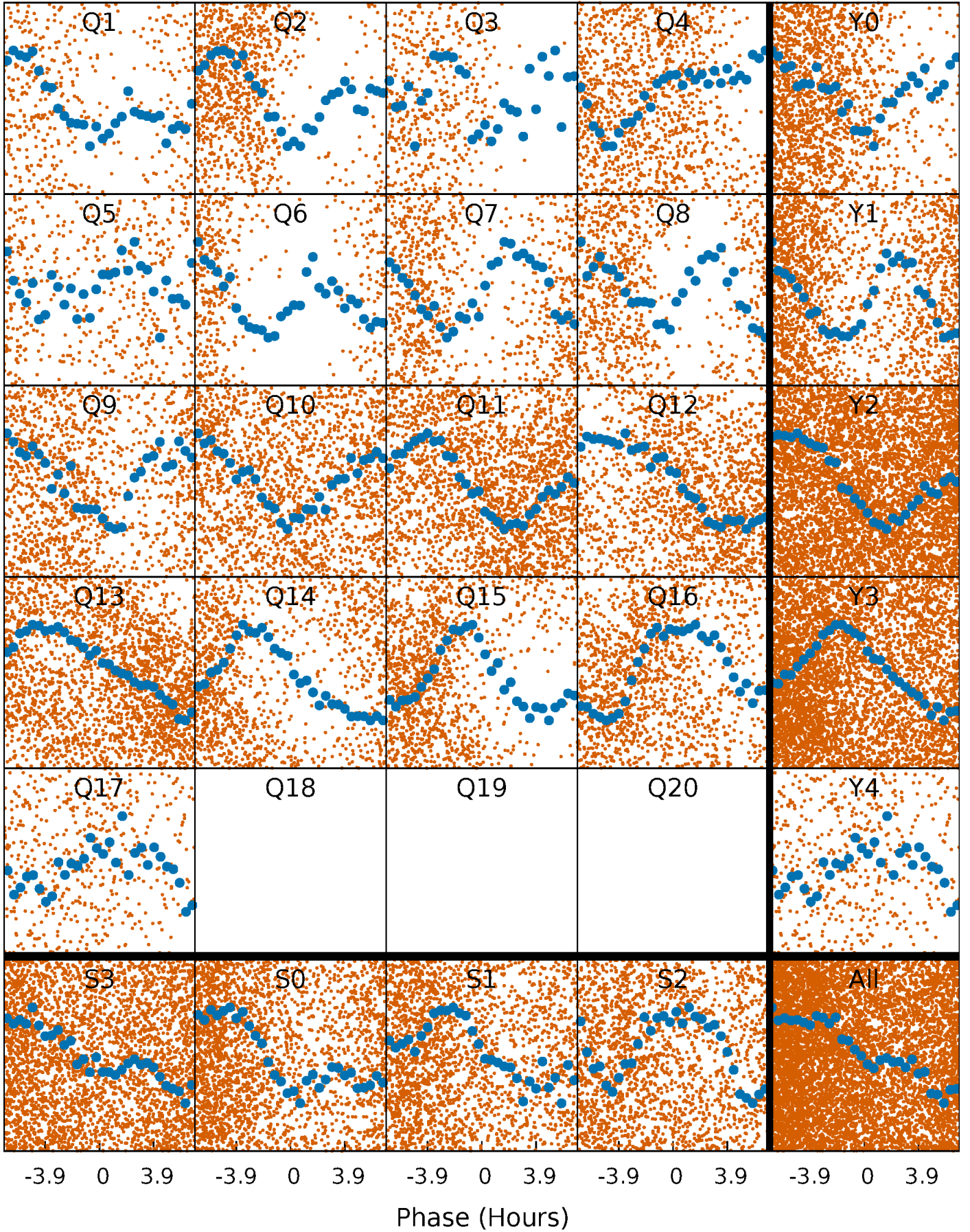


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



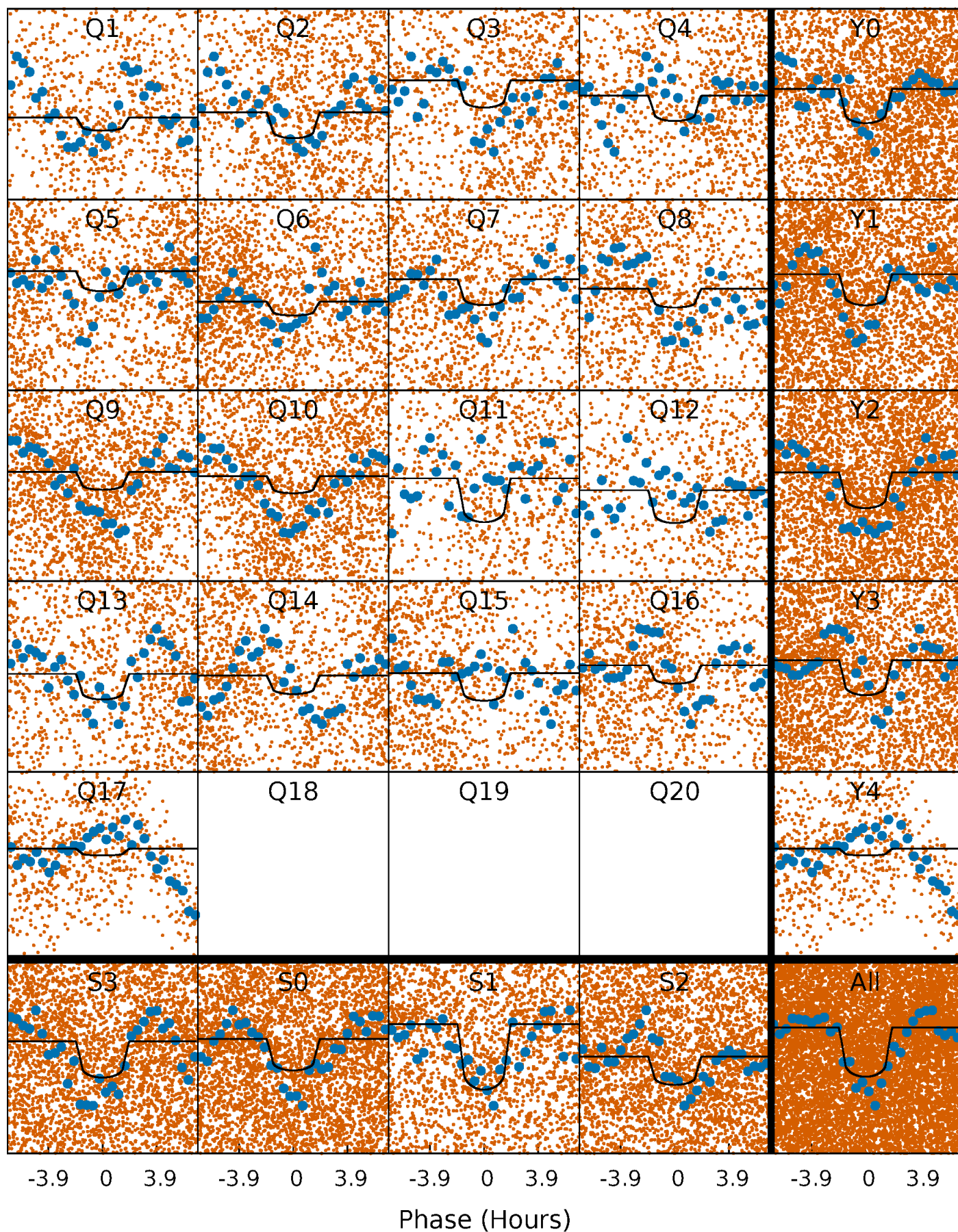
PDC Quarter-Phased Transit Curves

TCE 006115025-02 P= 0.810650 Days $T_0=132.075216$ (BKJD)



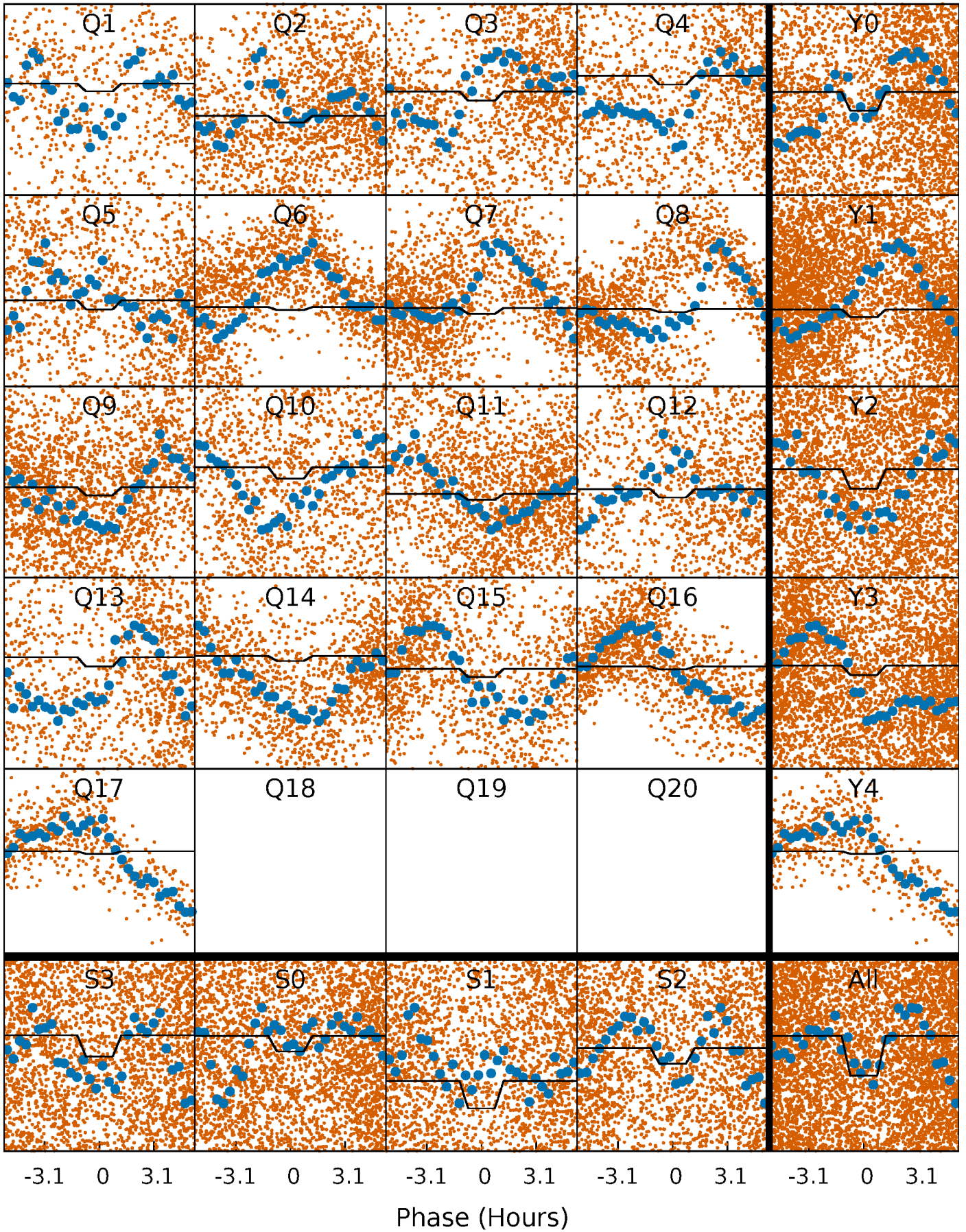
DV Quarter-Phased Transit Curves

TCE 006115025-02 P= 0.810650 Days $T_0=132.075216$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

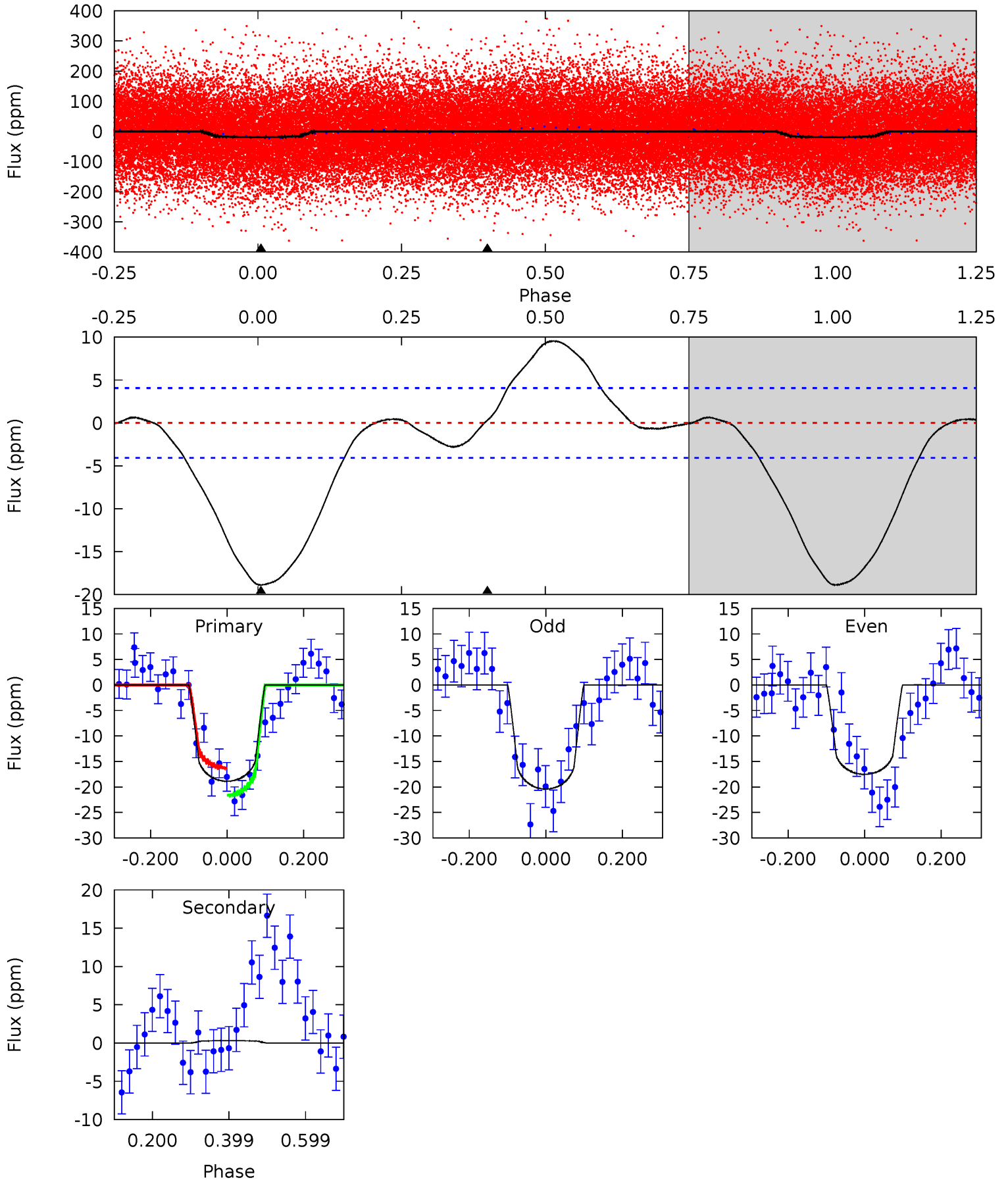
TCE 006115025-02 P= 0.810688 Days $T_0=132.069237$ (BKJD)



DV Model-Shift Uniqueness Test

006115025-02, P = 0.810650 Days, E = 131.264566 Days

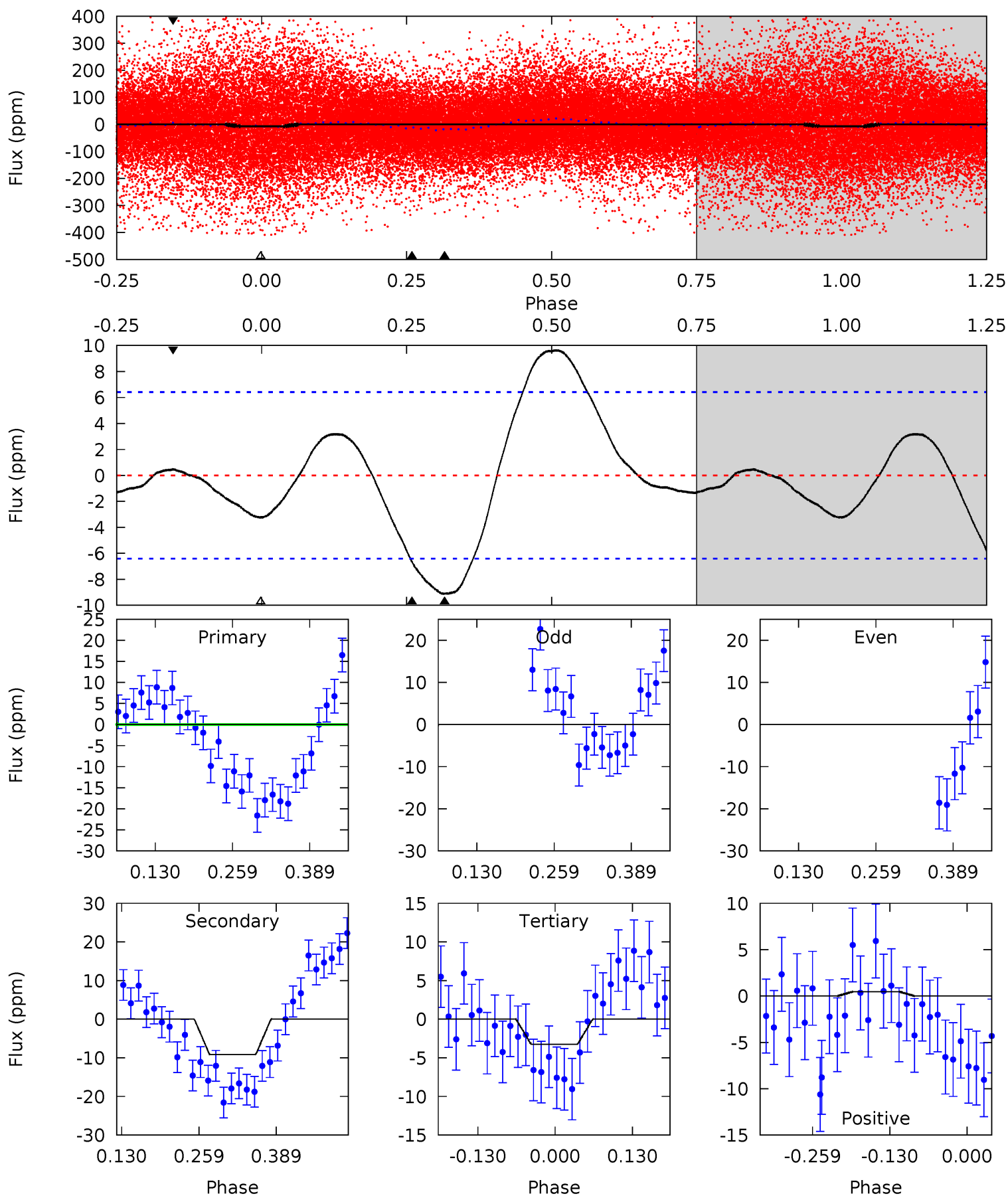
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	-0.34	0	0	4.42	1.28	1.19	20.5	20.5	-0.34	-0.34	1.57	1.06	0.34	3.00



Alt Model-Shift Uniqueness Test

006115025-02, P = 0.810688 Days, E = 131.258549 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.67	6.41	2.29	0.33	4.51	1.52	2.69	2.39	4.34	4.12	6.08	7.02	0.63	0.51	0.05



Stellar Parameters For KIC 006115025

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6872^{+190}_{-309}	$4.257^{+0.108}_{-0.201}$	$-0.200^{+0.250}_{-0.350}$	$1.402^{+0.462}_{-0.249}$	$1.307^{+0.196}_{-0.216}$	$0.669^{+0.344}_{-0.342}$
	+3%/-4%	+3%/-5%	+125%/-175%	+33%/-18%	+15%/-17%	+51%/-51%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 006115025-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1	$0.64^{+0.18}_{-0.15}$	3723^{+300}_{-227}	-3799^{+1033}_{-497}	$-0.157^{+0.404}_{-0.474}$
Alt.	-9 ± 1	$0.49^{+0.16}_{-0.15}$	3717^{+301}_{-225}	6657^{+1544}_{-934}	$7.234^{+7.316}_{-3.324}$

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 $A_{obs} \gg 1.0$

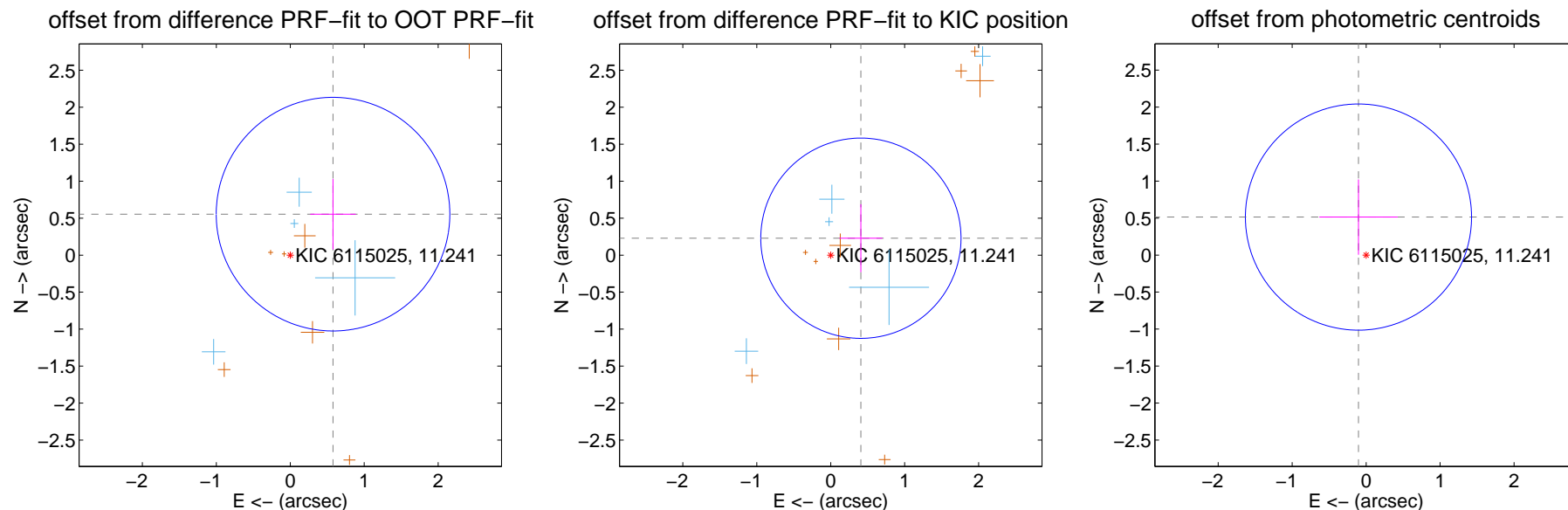
DV Centroid Data

Supplemental centroid analysis for 006115025-02. **Kepler magnitude: 11.24.** Transit SNR 9.23

There are 5 quarters with good PRF difference image offsets

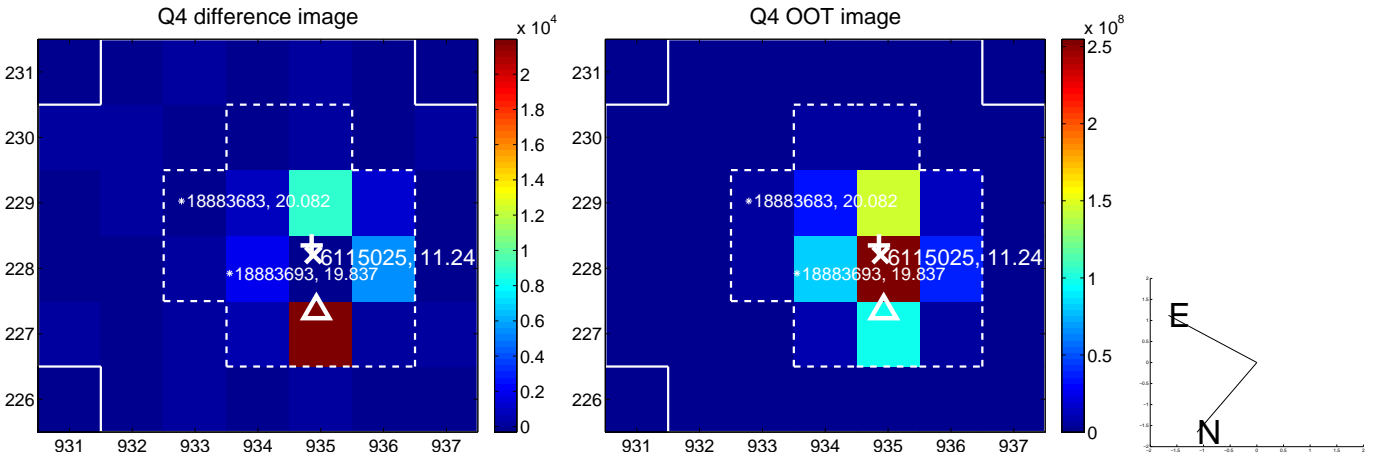
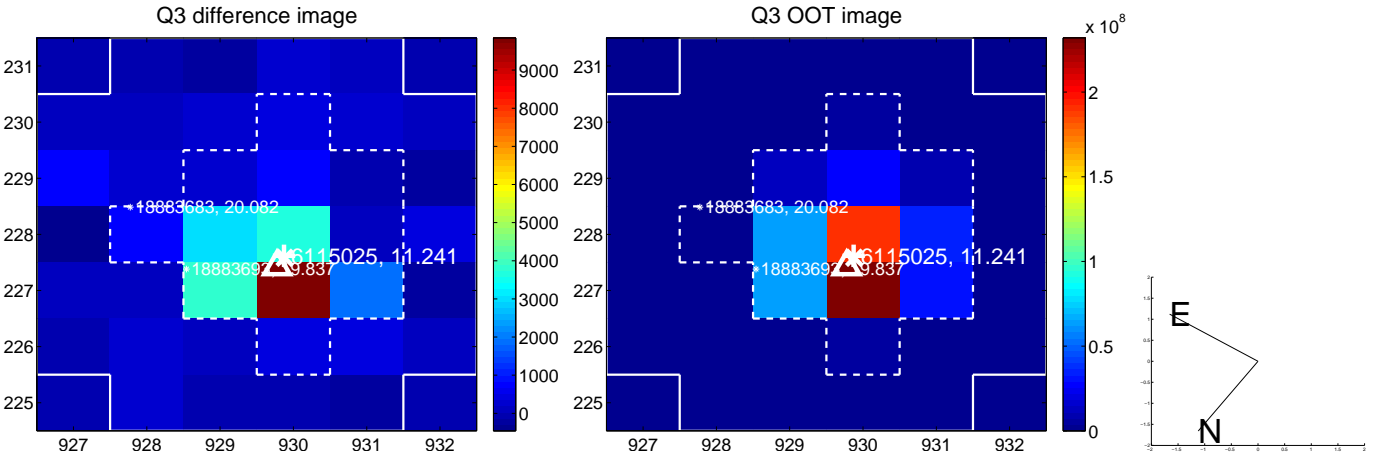
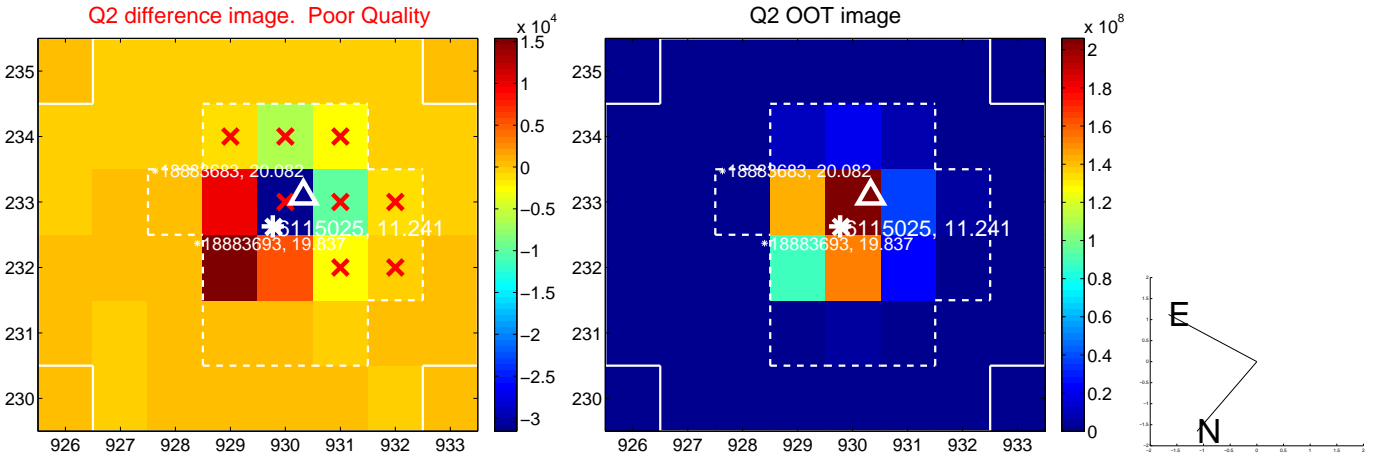
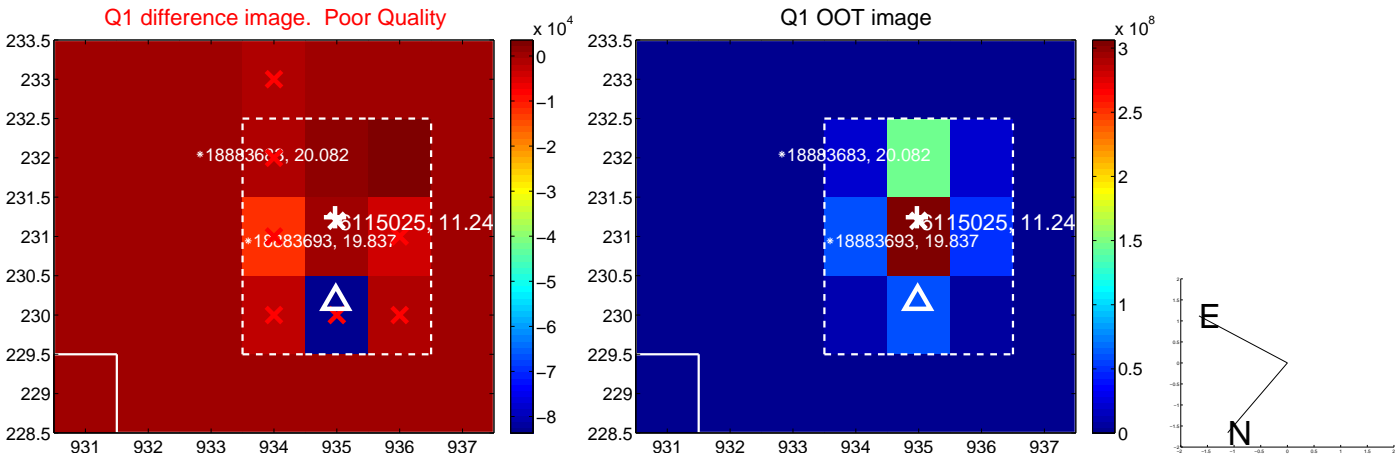
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.801 ± 0.526	1.52	-0.578 ± 0.308	0.554 ± 0.478
PRF-fit source offset from KIC position	0.468 ± 0.451	1.04	-0.408 ± 0.290	0.229 ± 0.458
photometric centroid source offset	0.52 ± 0.51	1.03	0.10 ± 0.53	0.51 ± 0.51

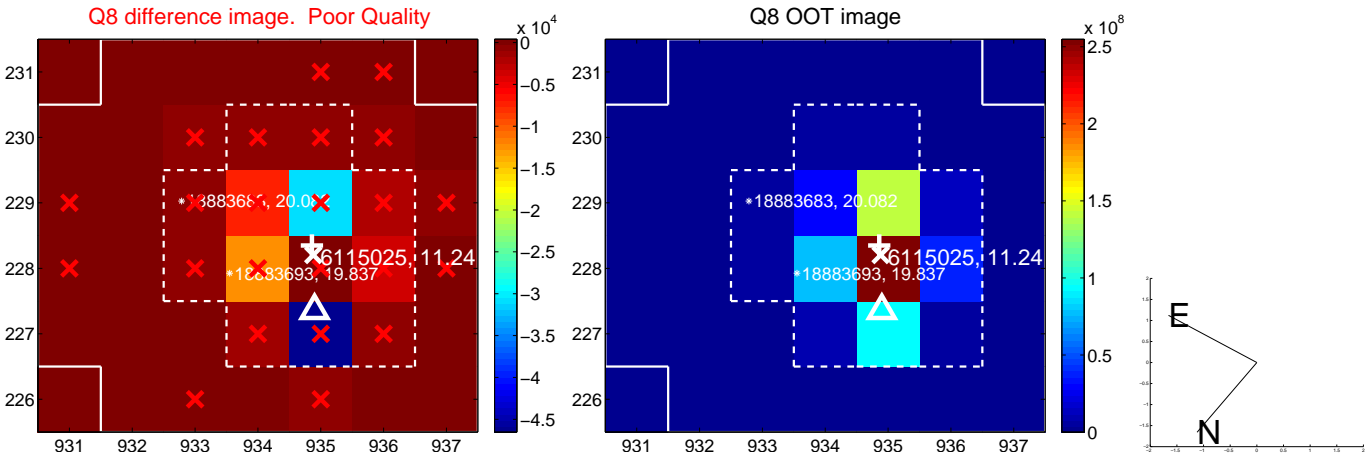
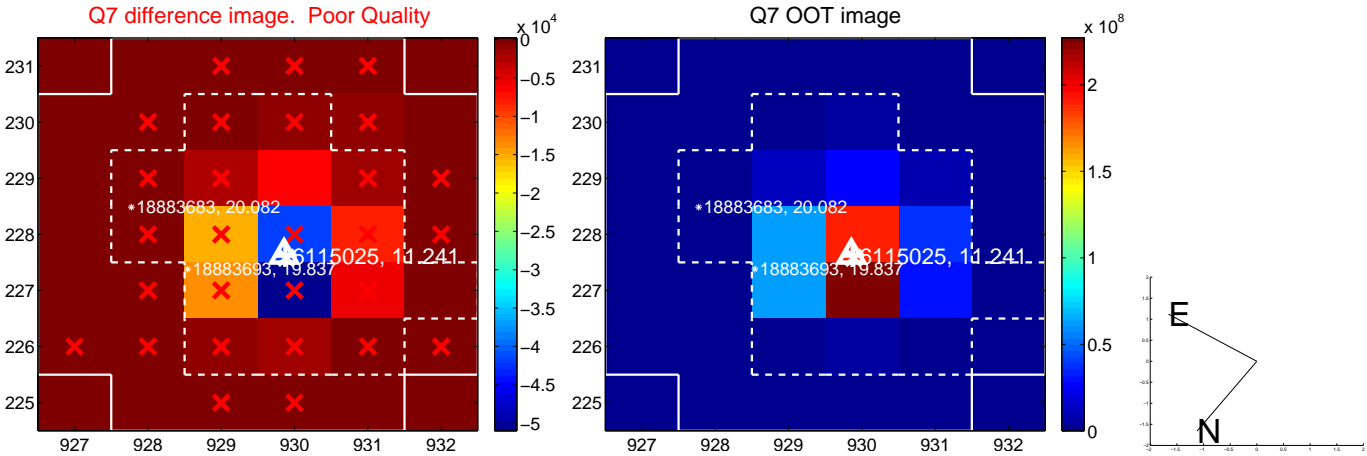
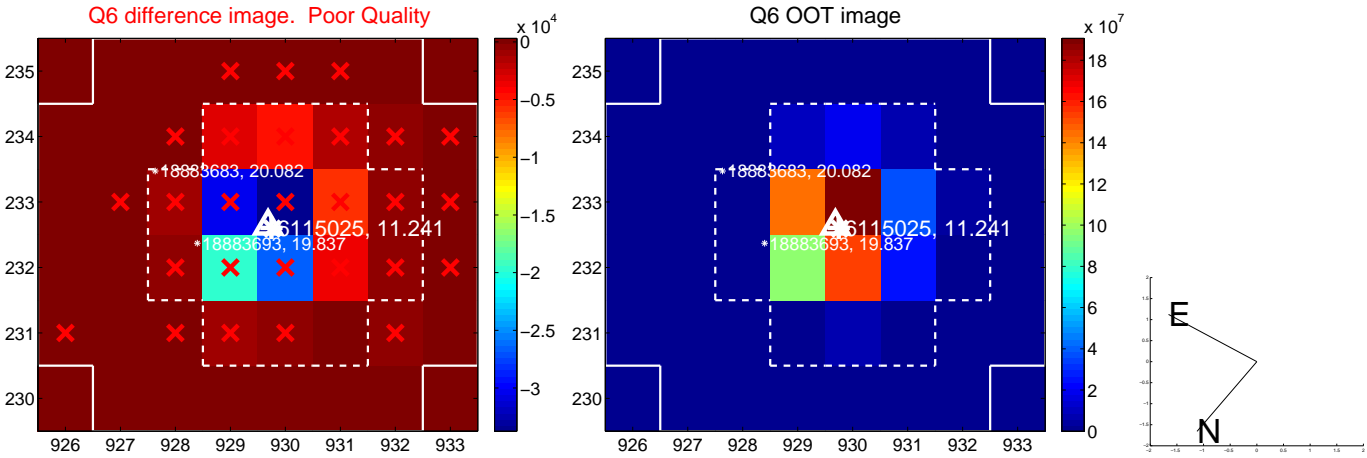
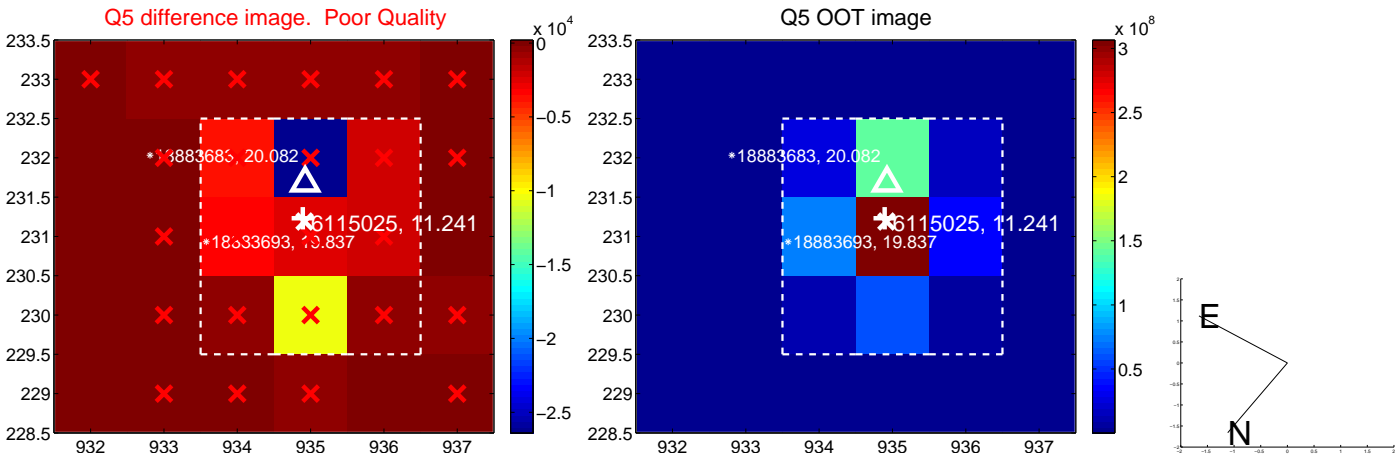


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

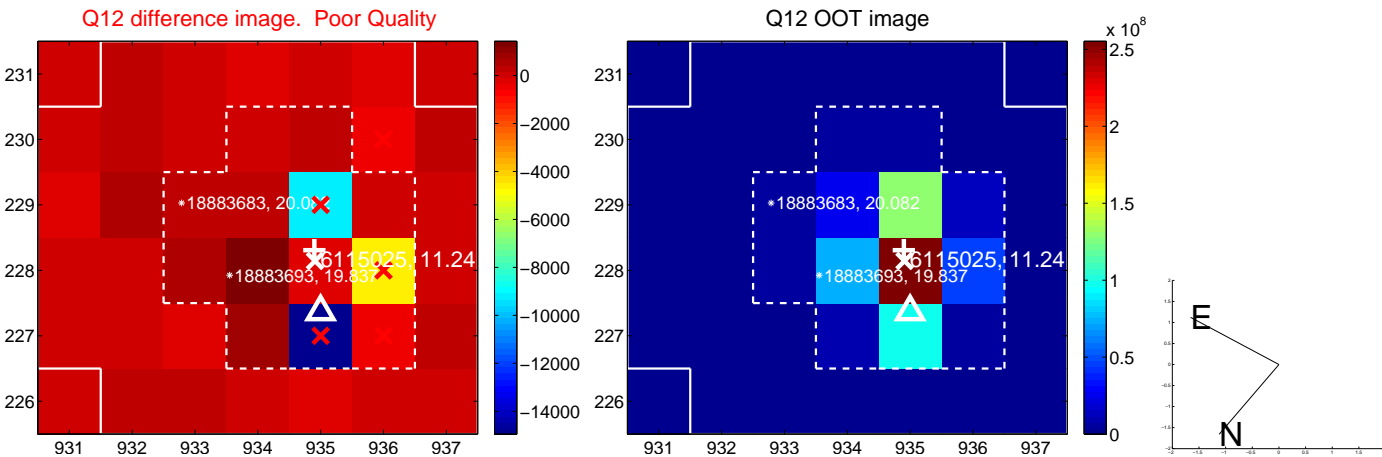
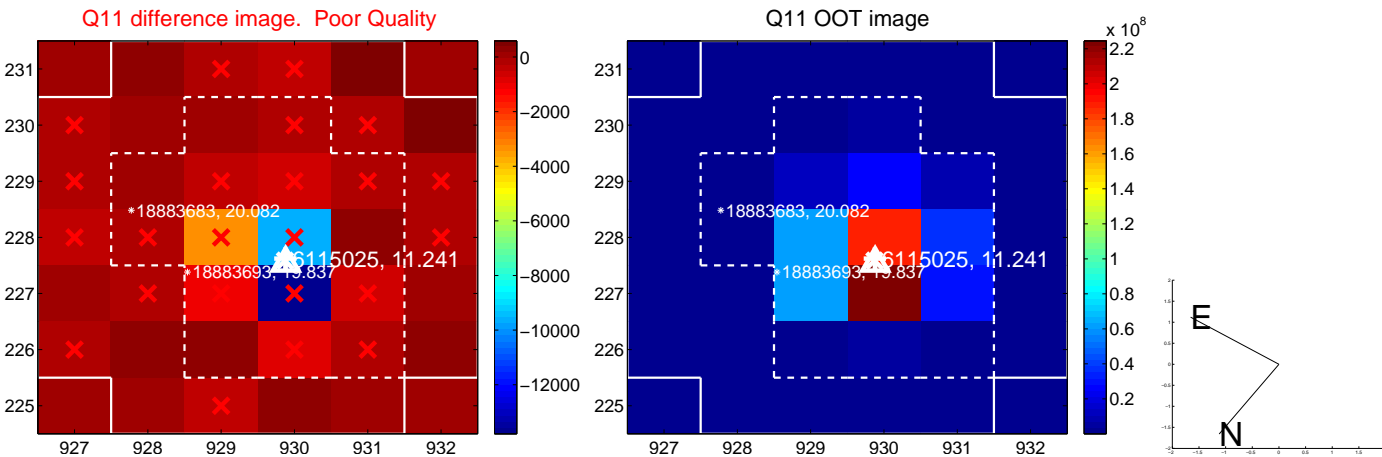
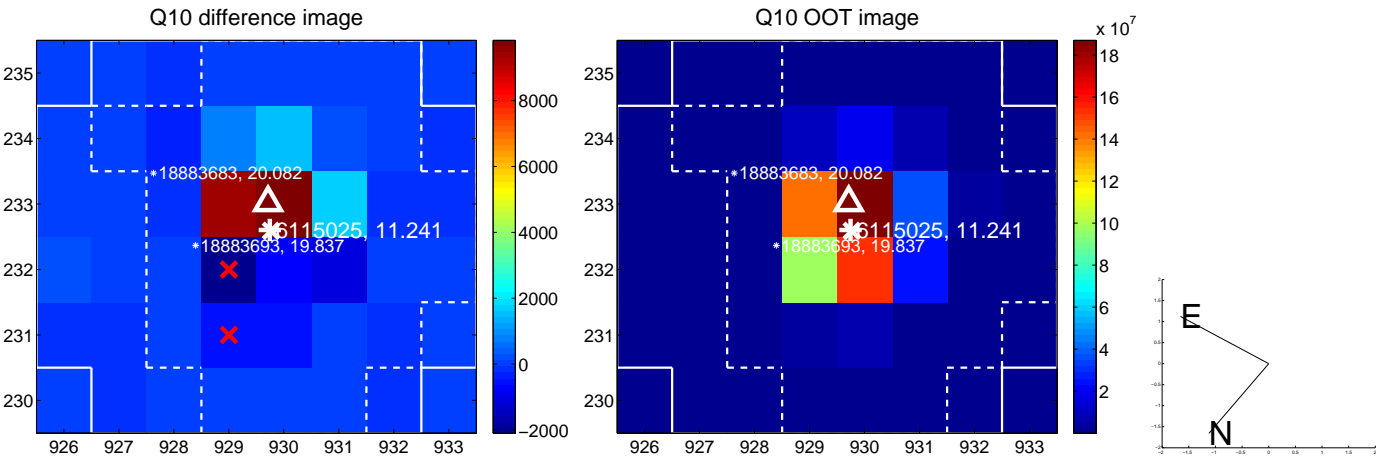
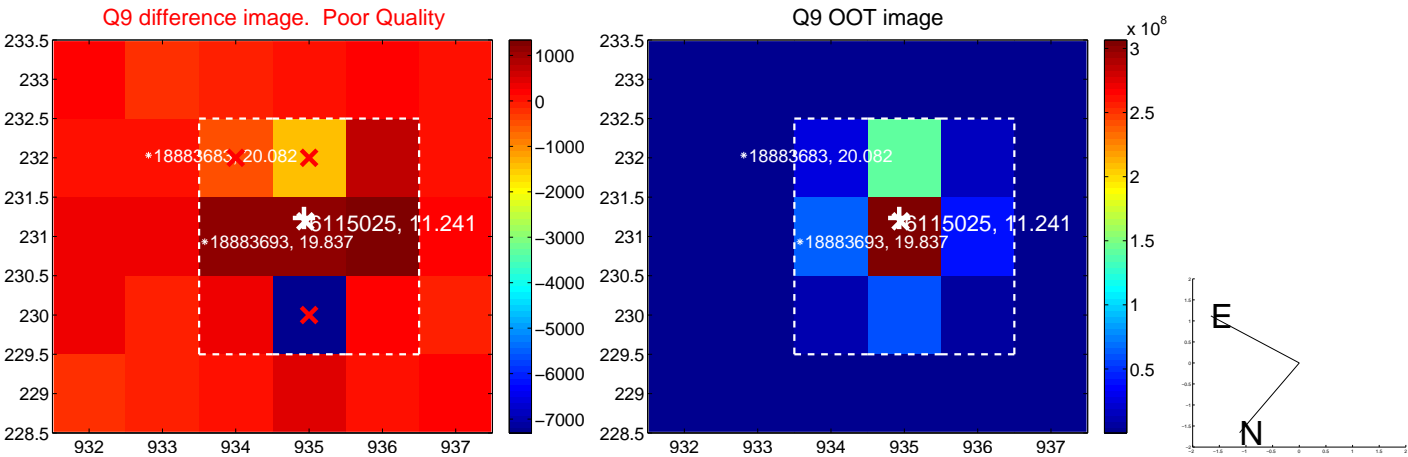
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



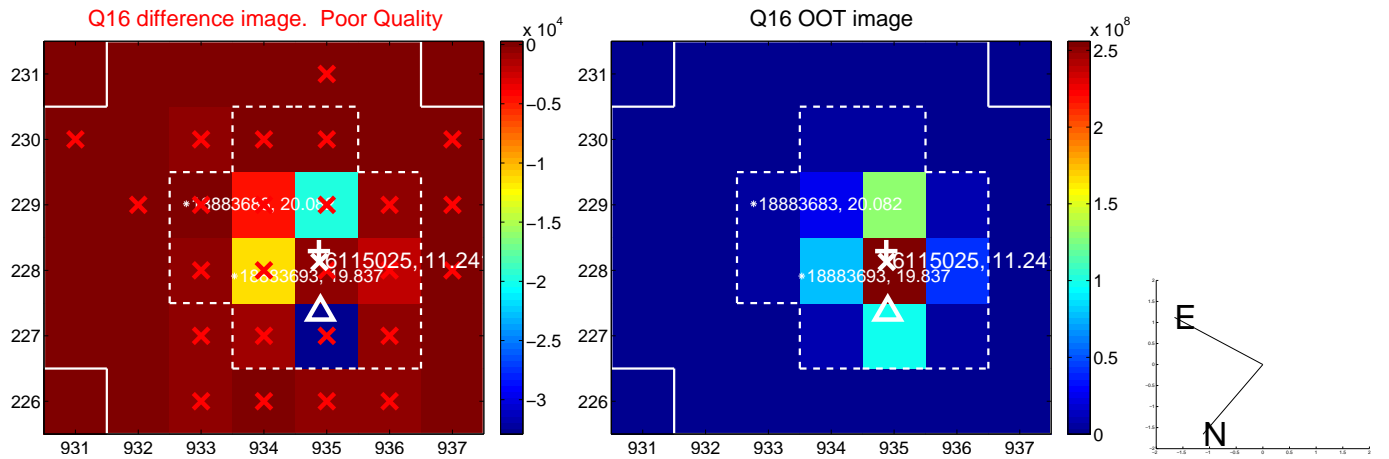
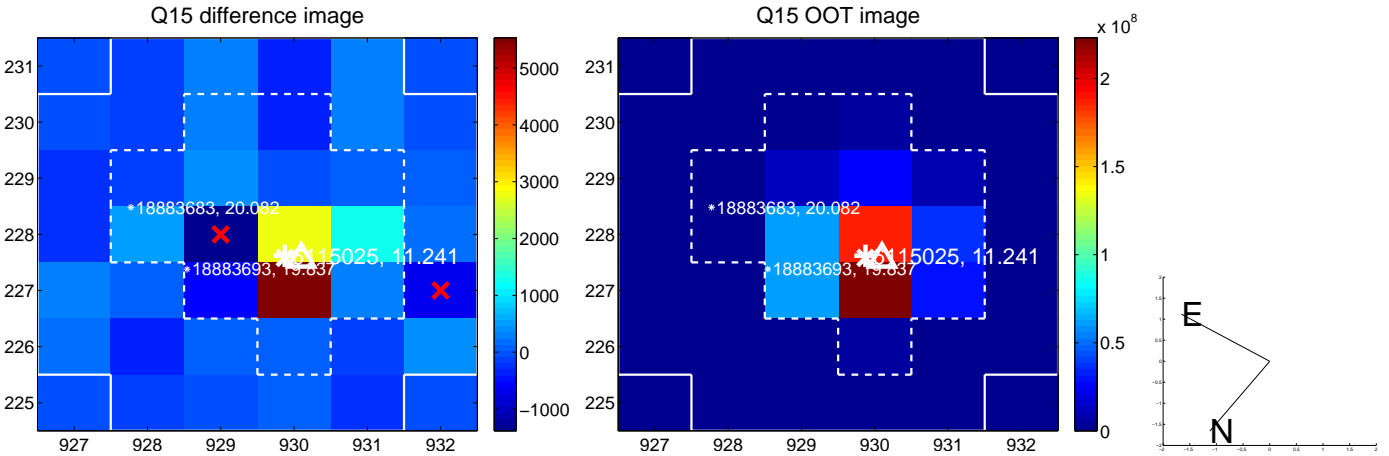
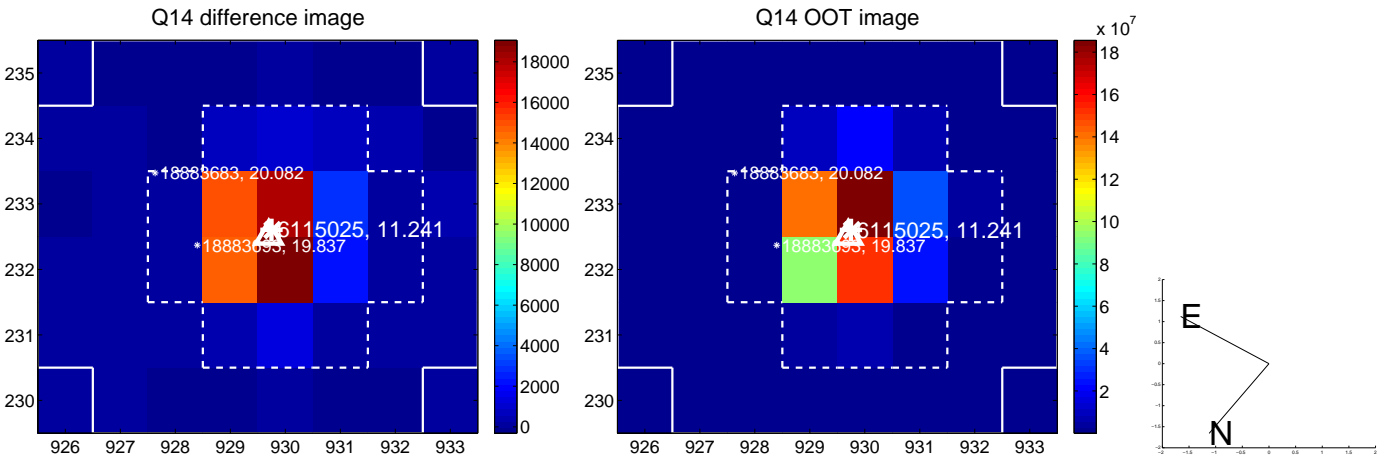
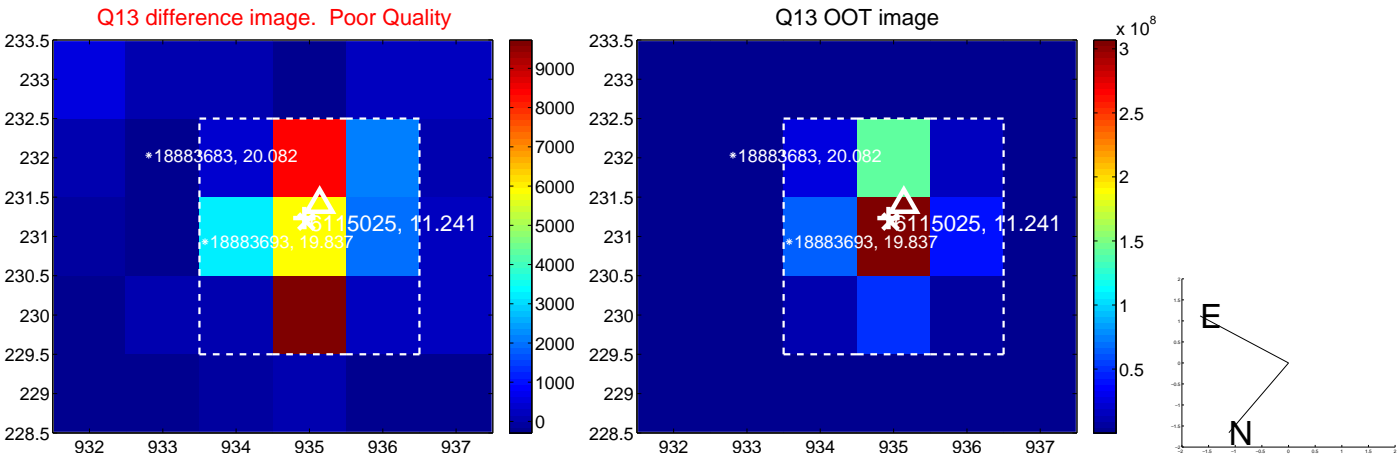
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



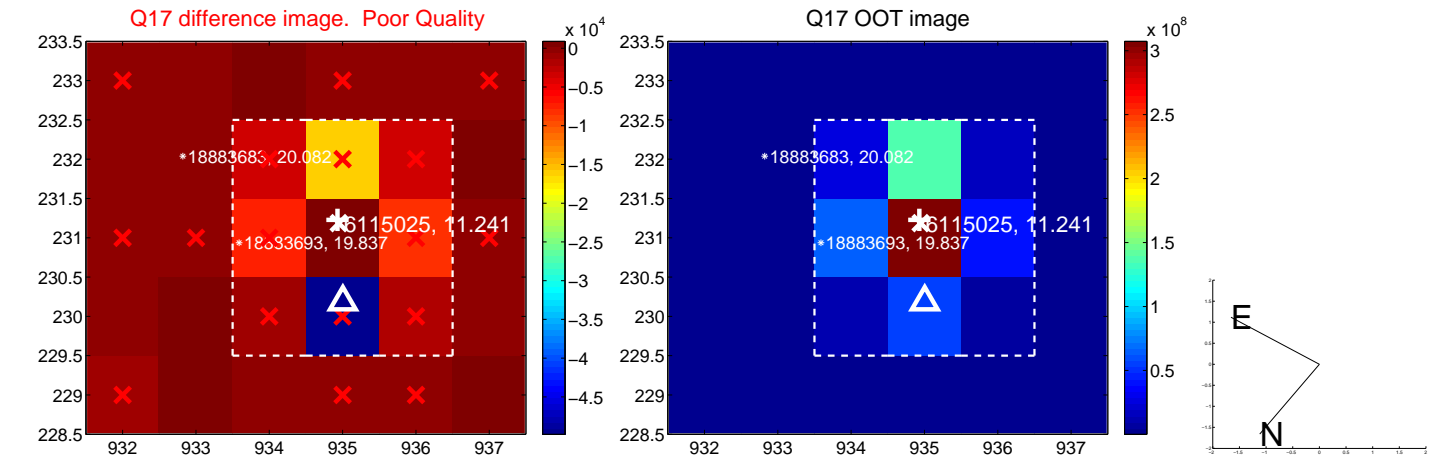
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



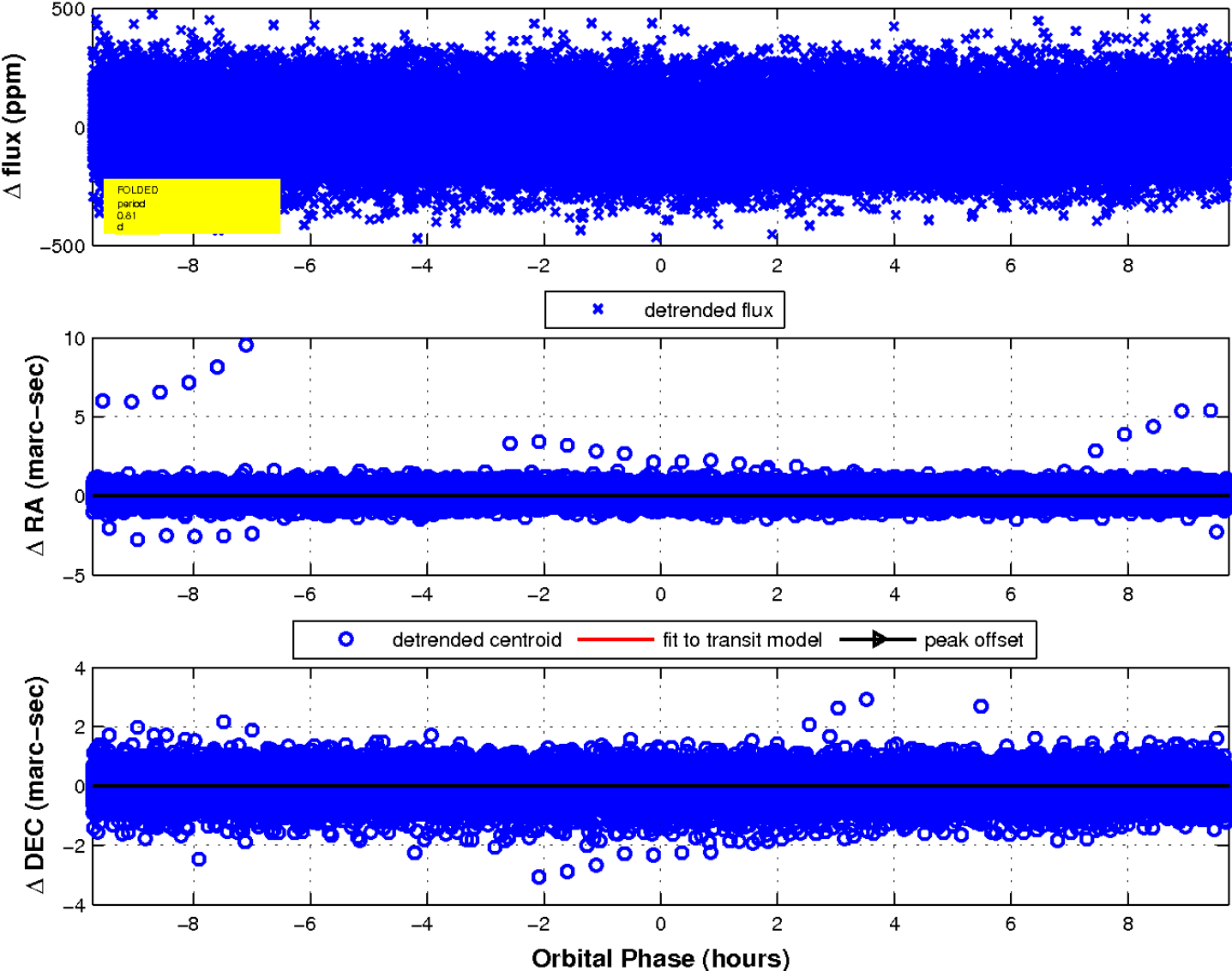
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

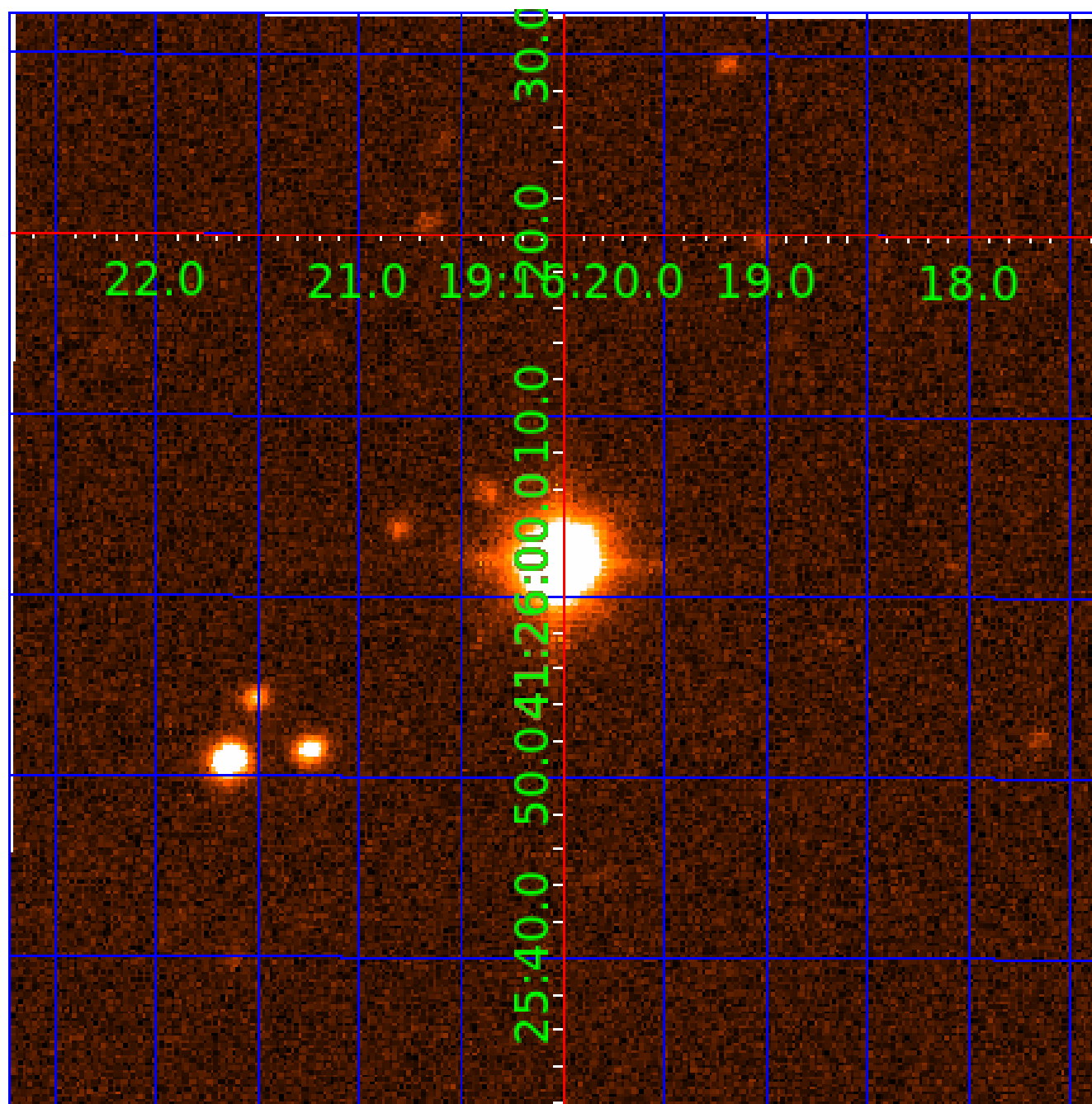


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 006115025

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})
006115025-01	OBS	No	1.622937	131.704277	19.9	2.758	9.8	9.6	1.40	6872	0.67	4521.93
006115025-02	OBS	No	0.810650	132.075216	15.0	3.434	10.0	9.2	1.40	6872	0.62	11409.88
006115025-03	OBS	No	368.012085	241.863381	223.8	4.644	7.7	8.5	1.40	6872	2.43	3.27
006115025-04	OBS	No	157.857791	204.395360	30.4	5.121	7.8	1.2	1.40	6872	0.90	10.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006115025-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
006115025-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
006115025-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
006115025-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

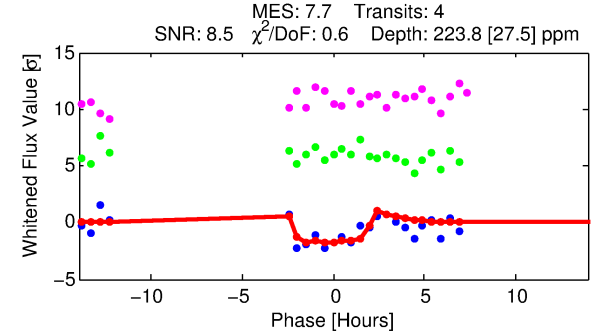
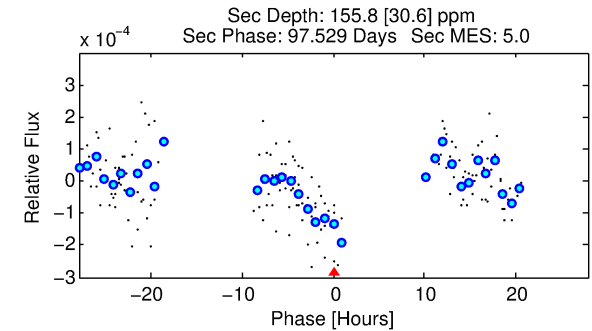
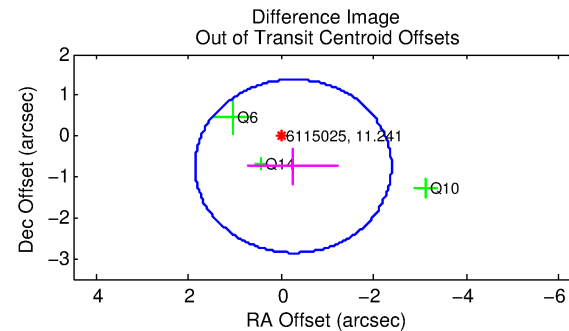
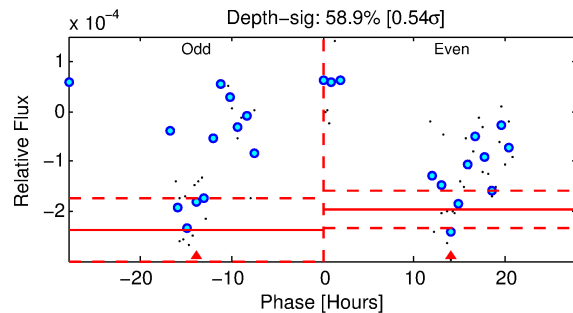
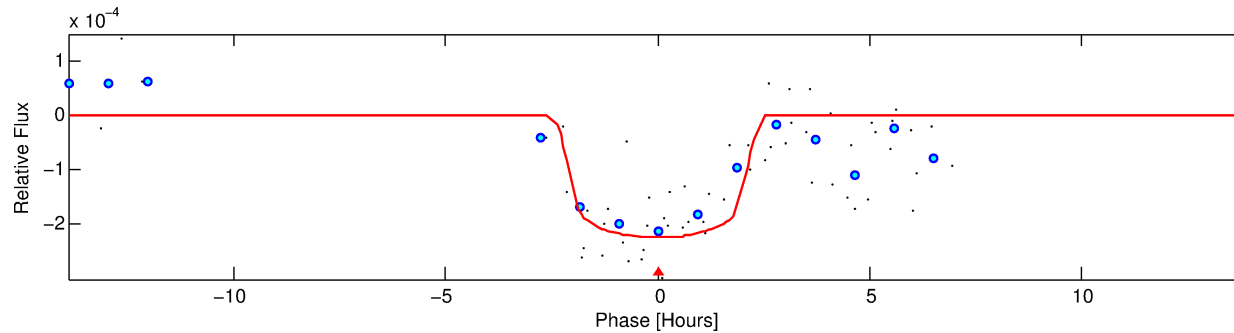
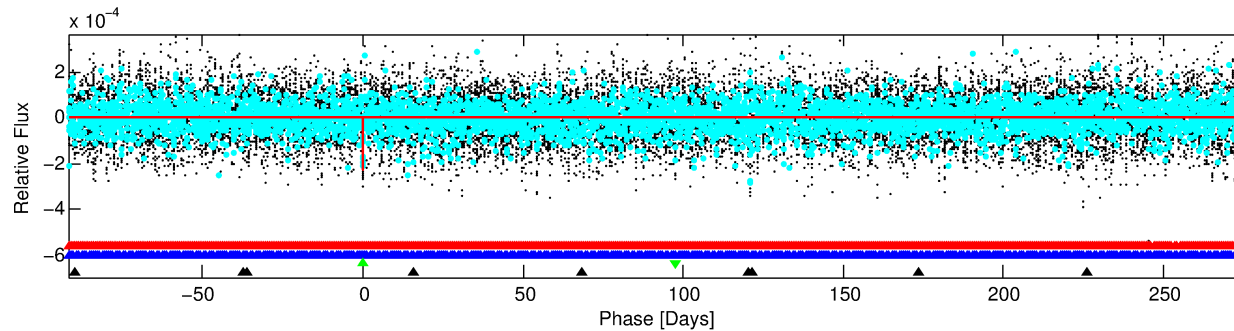
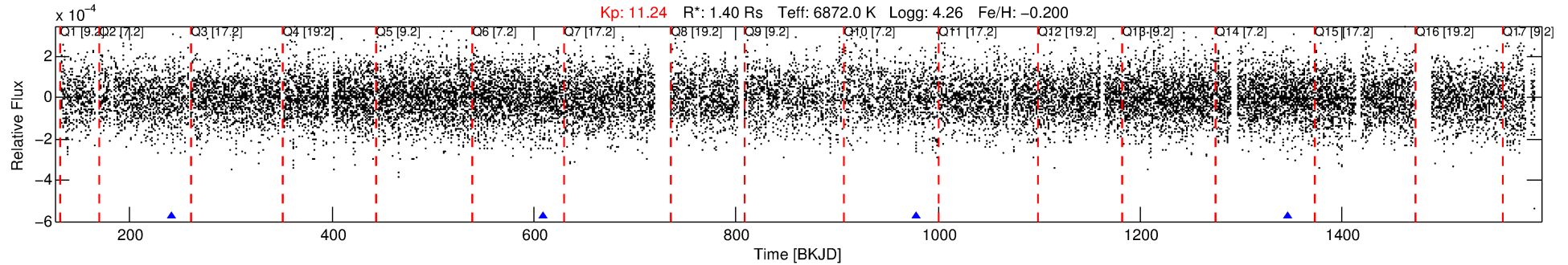
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006115025-03

No Significant Match Found

DV One-Page Summary

KIC: 6115025 Candidate: 3 of 4 Period: 368.012 d



DV Fit Results:

Period = 368.01208 [0.00456] d
Epoch = 241.8634 [0.0069] BKJD
Rp/R* = 0.0159 [0.0091]
a/R* = 292.11 [1004.31]
b = 0.89 [0.78]
Seff = 3.27 [1.37]
Teq = 343 [36] K
Rp = 2.43 [1.61] Re
a = 1.0959 [0.2942] AU
Ag = 17451.02 [21435.30] [0.81 σ]
Teffp = 6093 [1801] K [3.19 σ]

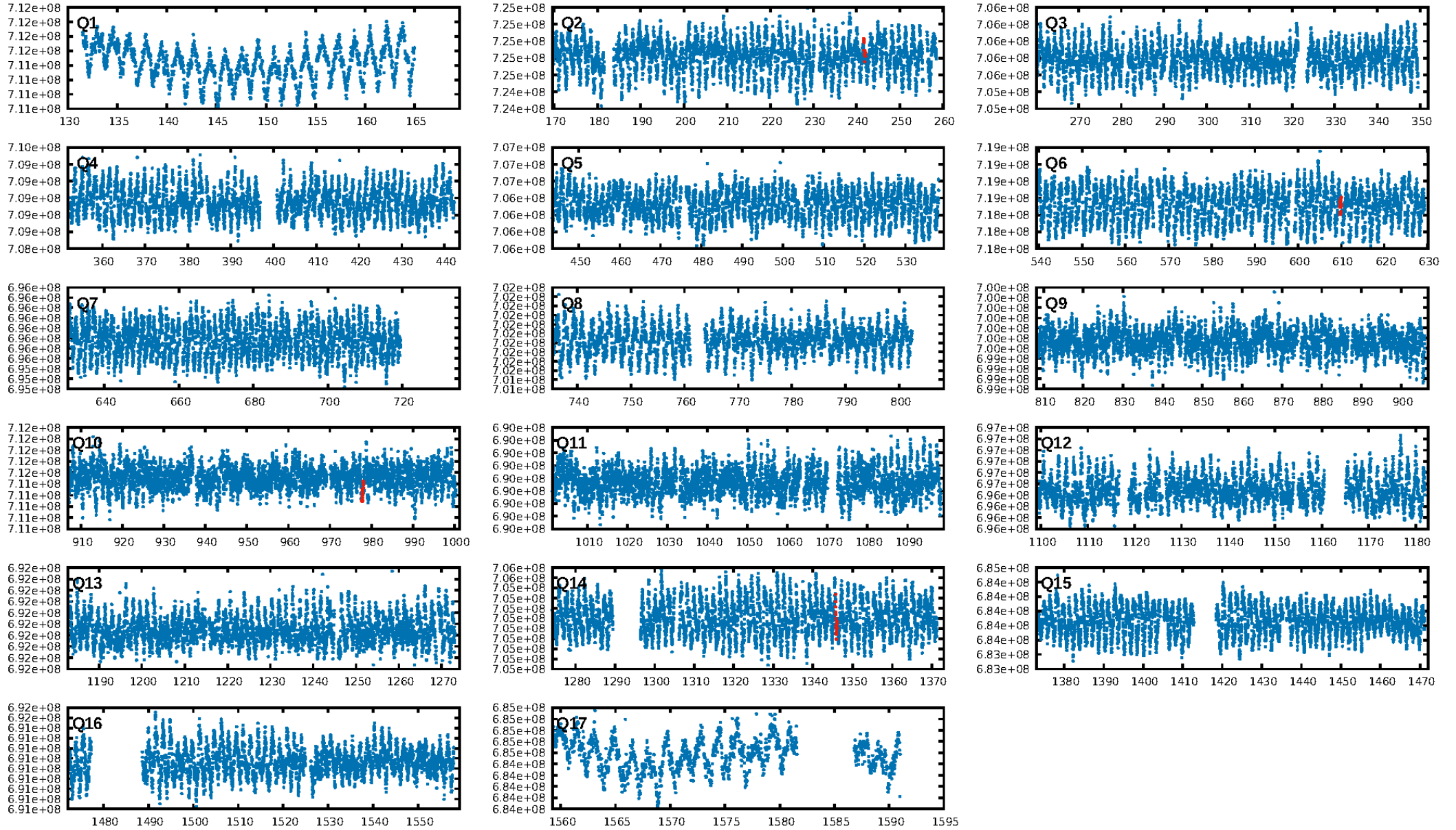
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [729.55 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 92.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.86e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 6.022
Centroid-sig: 31.8%
Centroid-so: 0.581 arcsec [1.00 σ]
OotOffset-rm: 0.782 arcsec [1.10 σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-rm: 0.738 arcsec [1.76 σ]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/4]

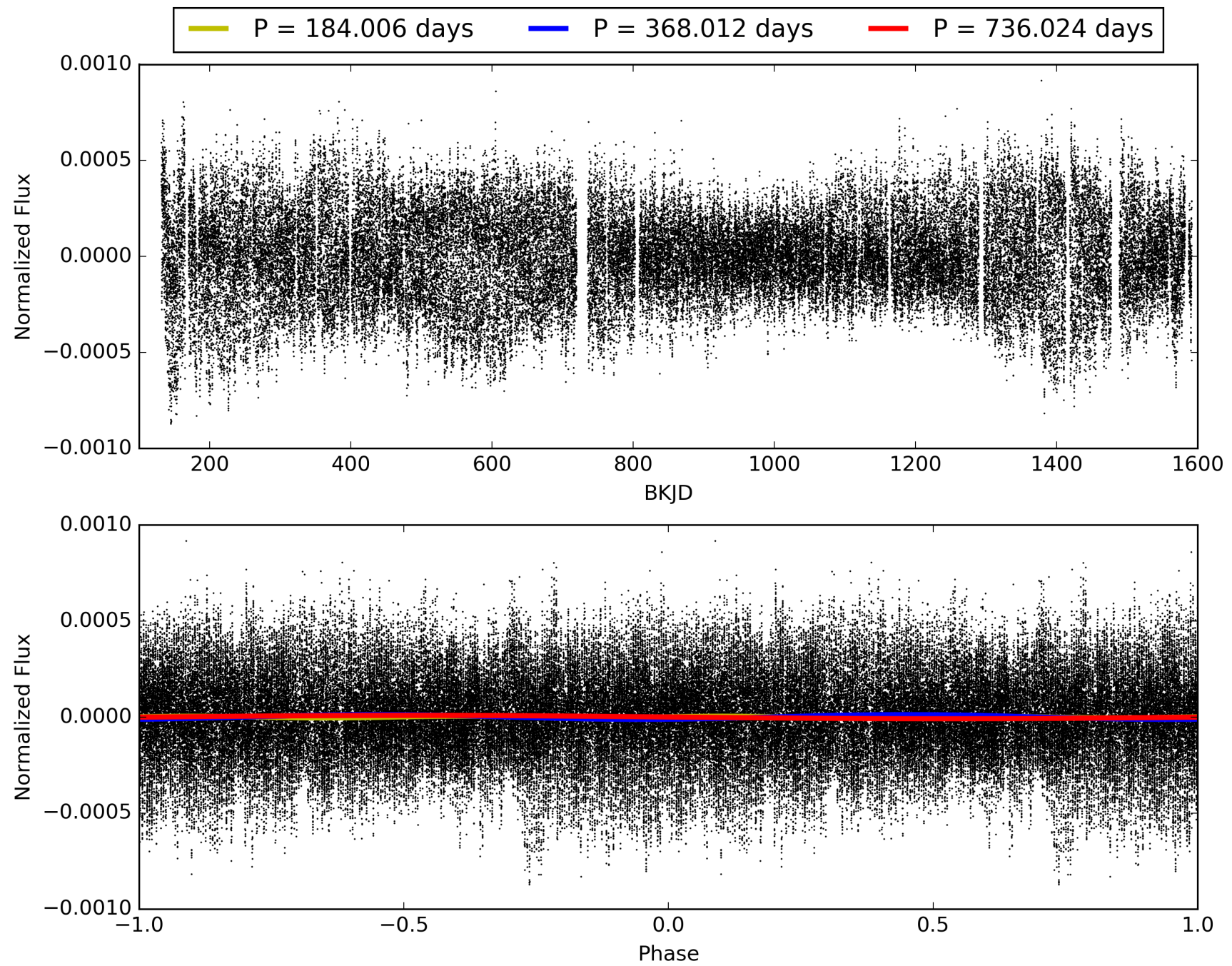
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:13:56 Z

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

TCE 006115025-03, PDC Light Curves

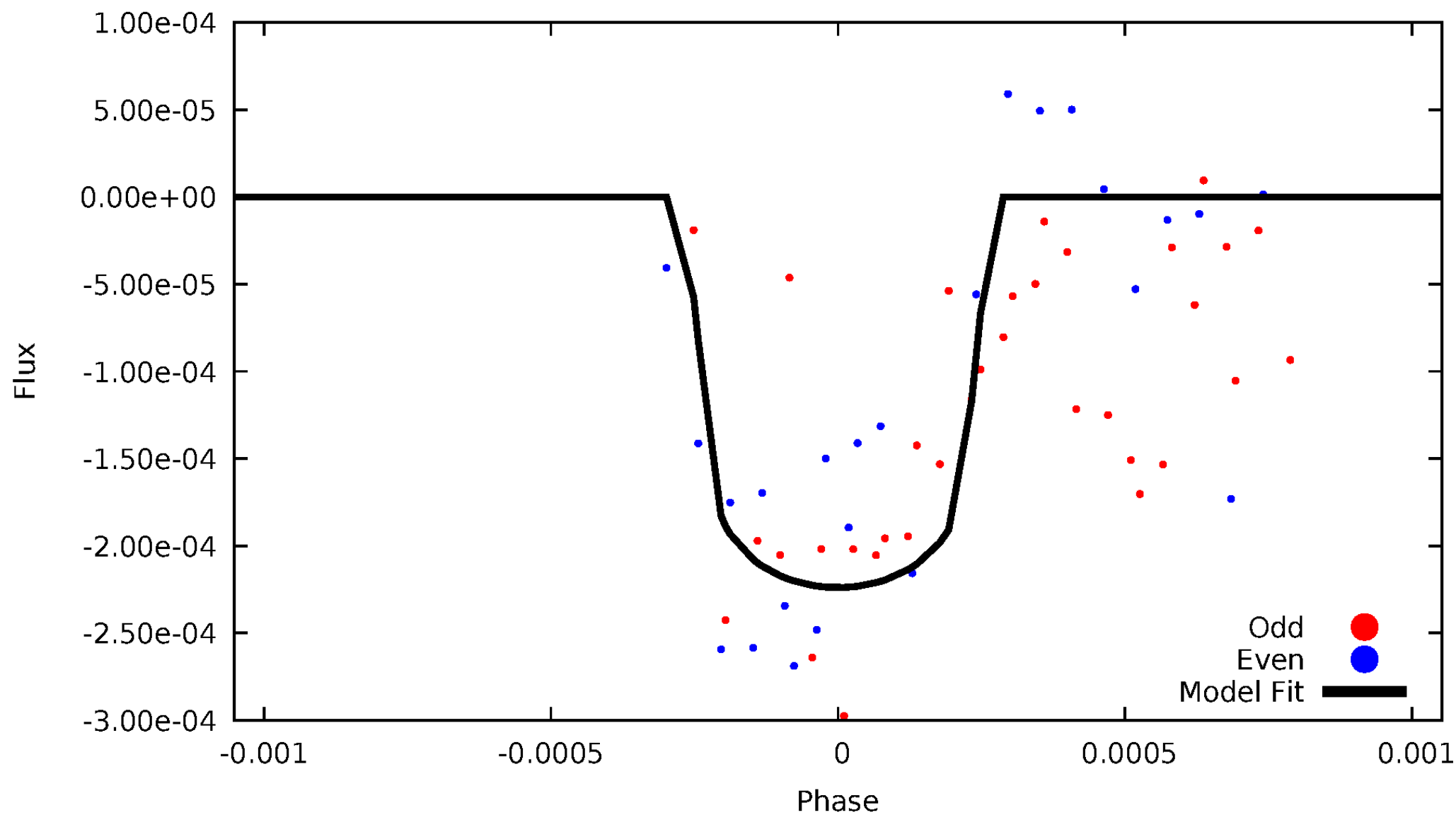


TCE 006115025-03



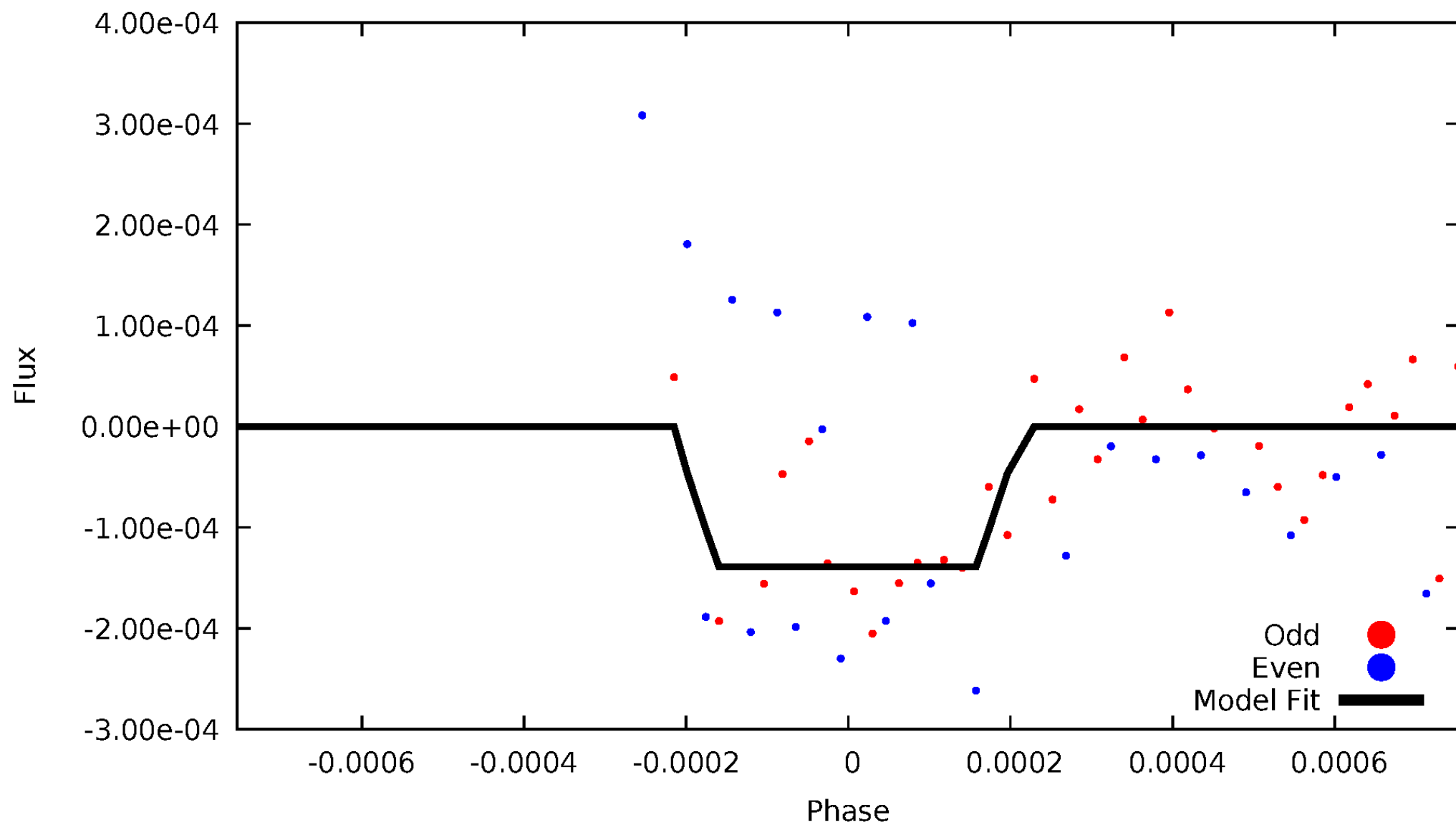
DV Odd/Even

TCE 006115025-03



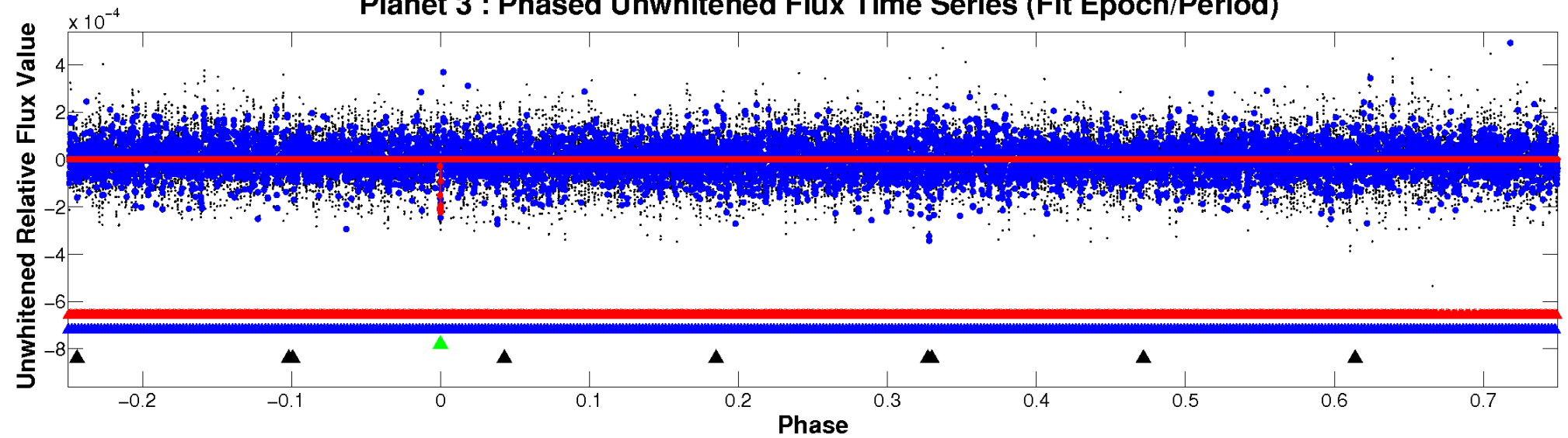
ALT Odd/Even

TCE 006115025-03

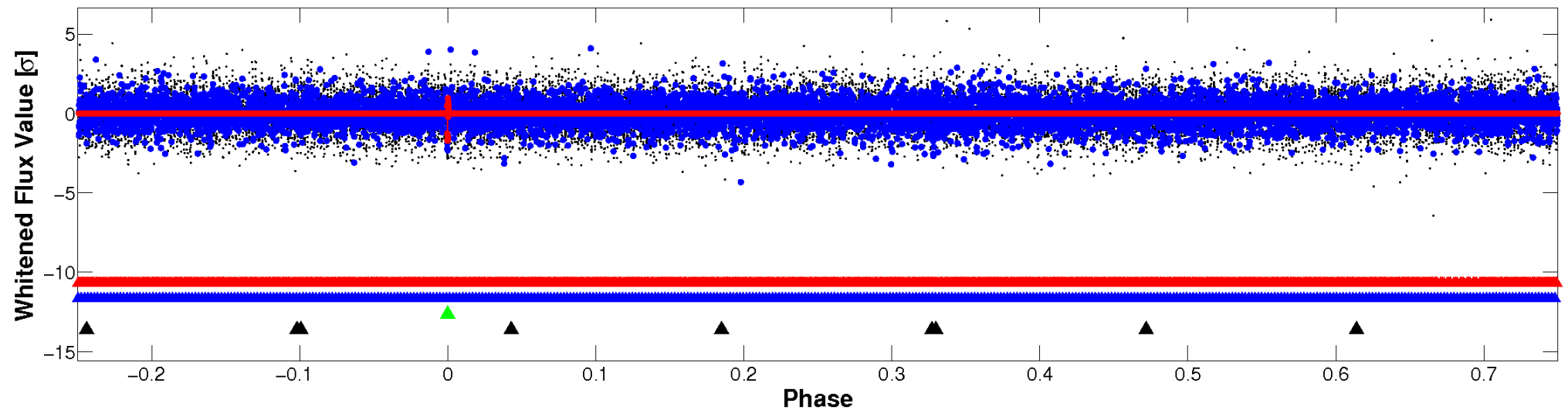


Non-Whitened Vs. Whitened Light Curve

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

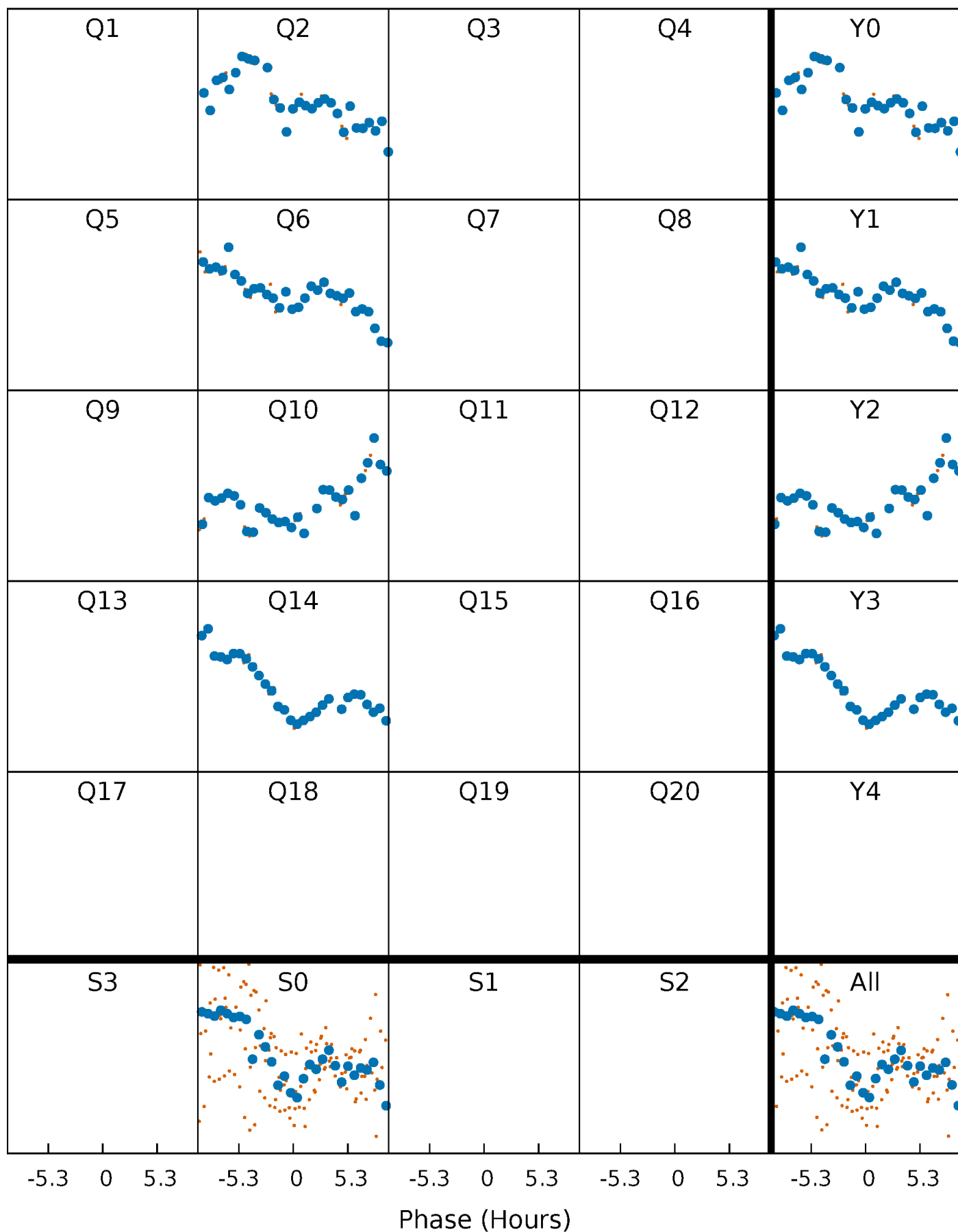


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



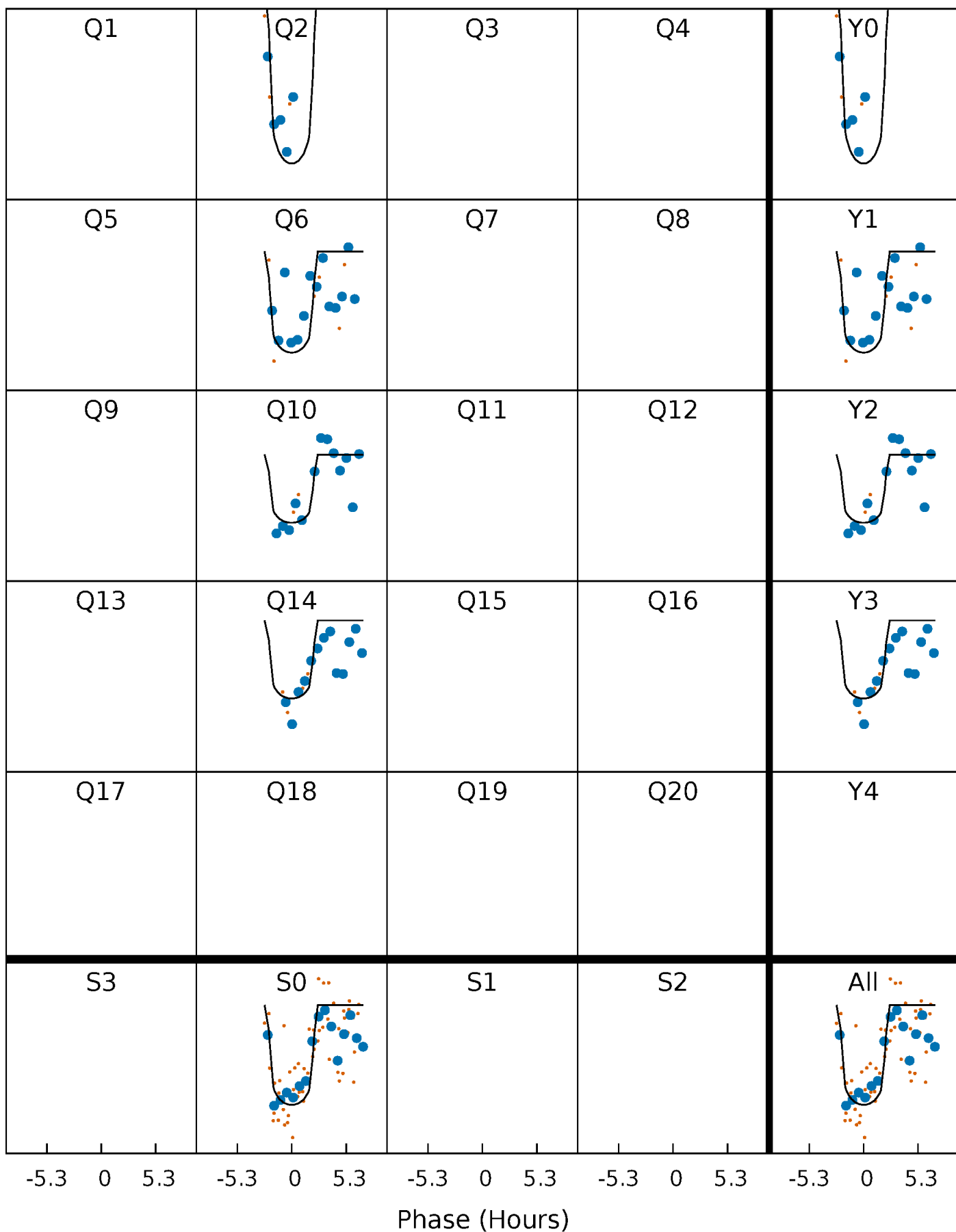
PDC Quarter-Phased Transit Curves

TCE 006115025-03 $P=368.012085$ Days $T_0=241.863381$ (BKJD)



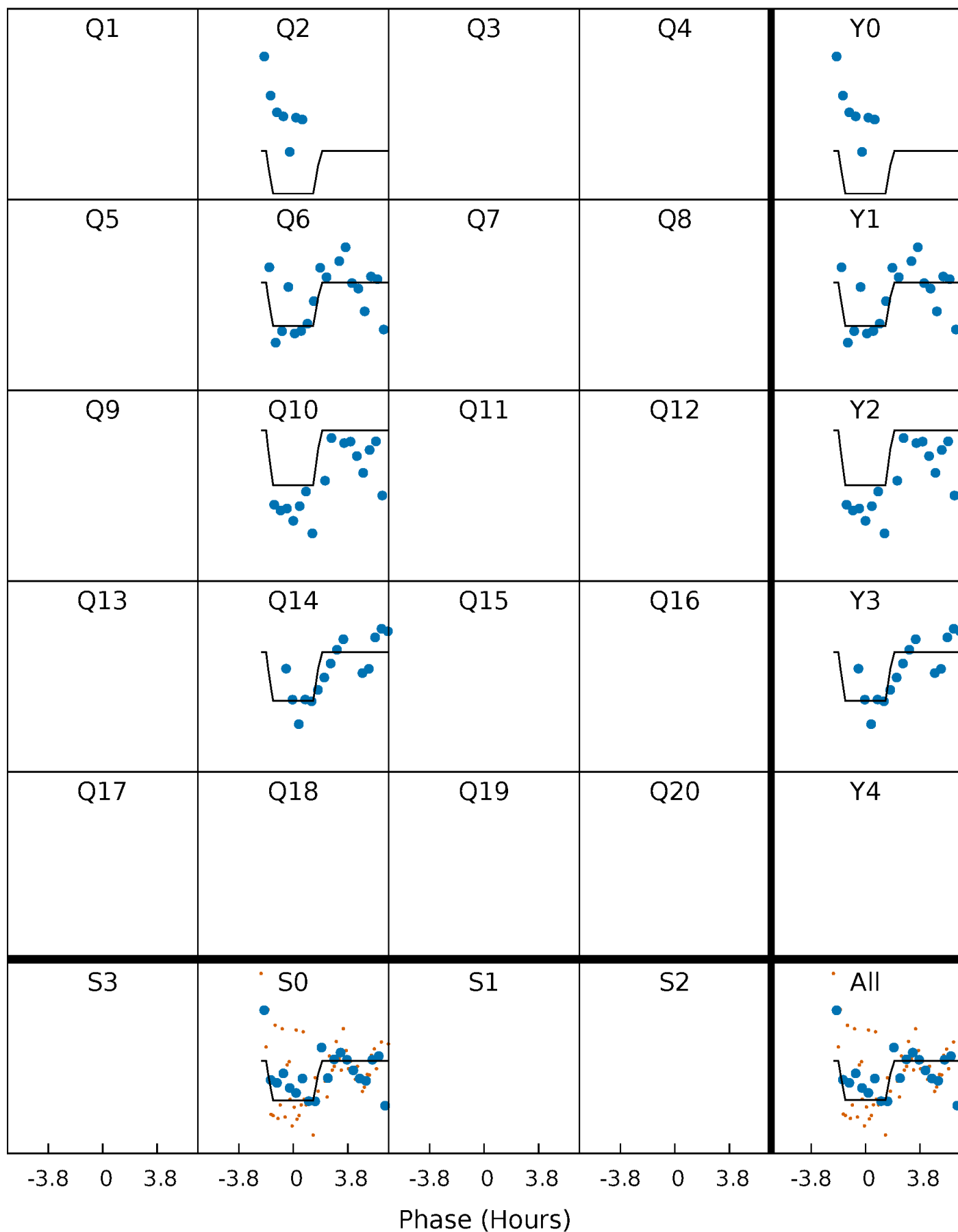
DV Quarter-Phased Transit Curves

TCE 006115025-03 P=368.012085 Days $T_0=241.863381$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

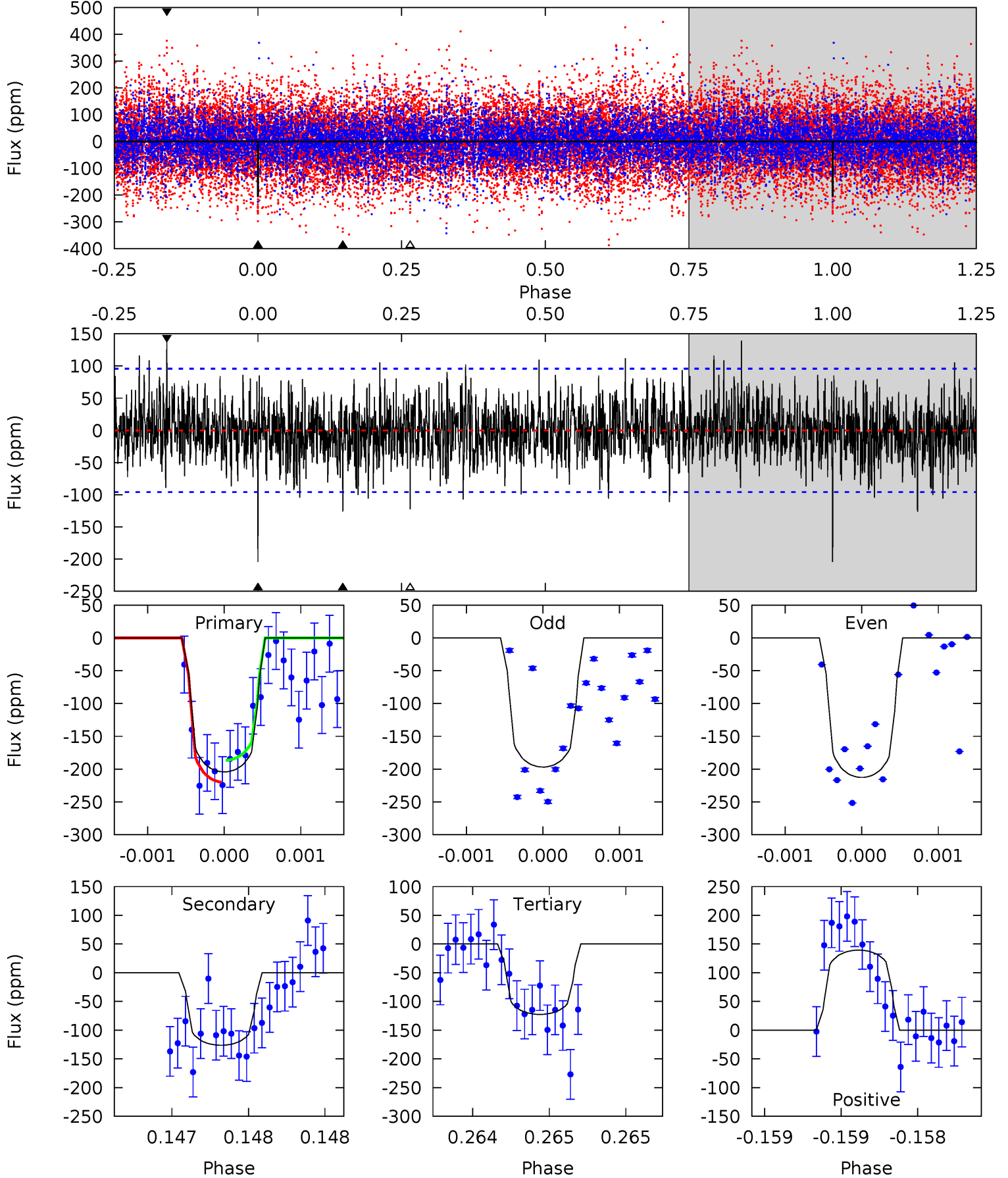
TCE 006115025-03 P=368.015227 Days $T_0=241.846885$ (BKJD)



DV Model-Shift Uniqueness Test

006115025-03, P = 368.012085 Days, E = 241.863381 Days

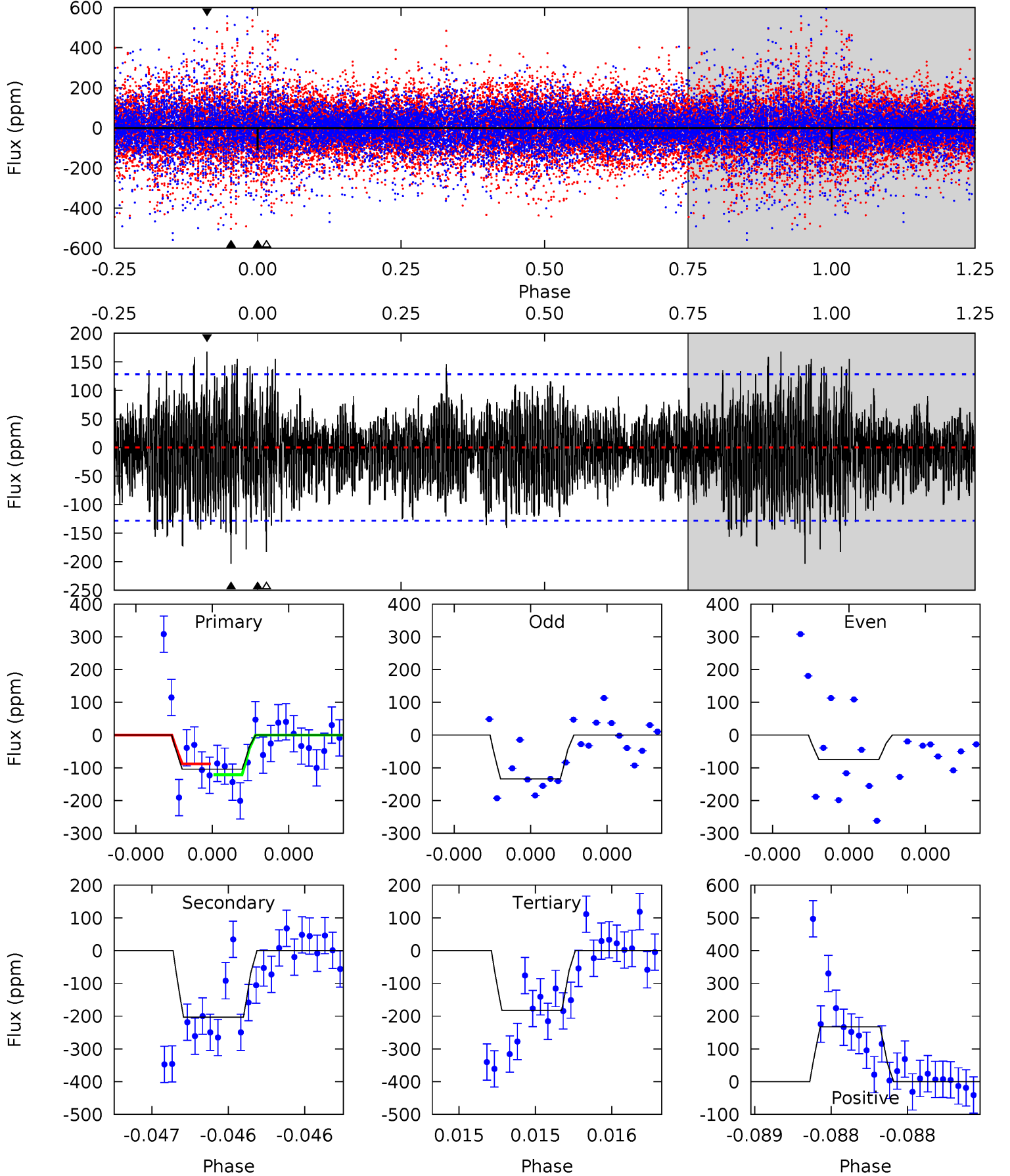
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	7.32	7.10	8.08	5.56	3.46	1.99	4.74	3.76	0.22	-0.76	0.46	0.98	0.41	0.96



Alt Model-Shift Uniqueness Test

006115025-03, P = 368.015227 Days, E = 241.846885 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.57	8.90	7.99	7.33	5.61	3.54	2.22	-3.41	-2.76	0.92	1.57	1.24	0.71	0.45	0.73



Stellar Parameters For KIC 006115025

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6872^{+190}_{-309}	$4.257^{+0.108}_{-0.201}$	$-0.200^{+0.250}_{-0.350}$	$1.402^{+0.462}_{-0.249}$	$1.307^{+0.196}_{-0.216}$	$0.669^{+0.344}_{-0.342}$
	+3%/-4%	+3%/-5%	+125%/-175%	+33%/-18%	+15%/-17%	+51%/-51%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 006115025-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-126 ± 17	$2.62^{+1.36}_{-1.44}$	483^{+40}_{-30}	5661^{+2936}_{-990}	12100^{+43861}_{-7010}
Alt.	-203 ± 23	$2.07^{+1.33}_{-1.22}$	484^{+36}_{-32}	7120^{+6273}_{-1570}	$30597^{+153220}_{-19202}$

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 $A_{obs} \gg 1.0$

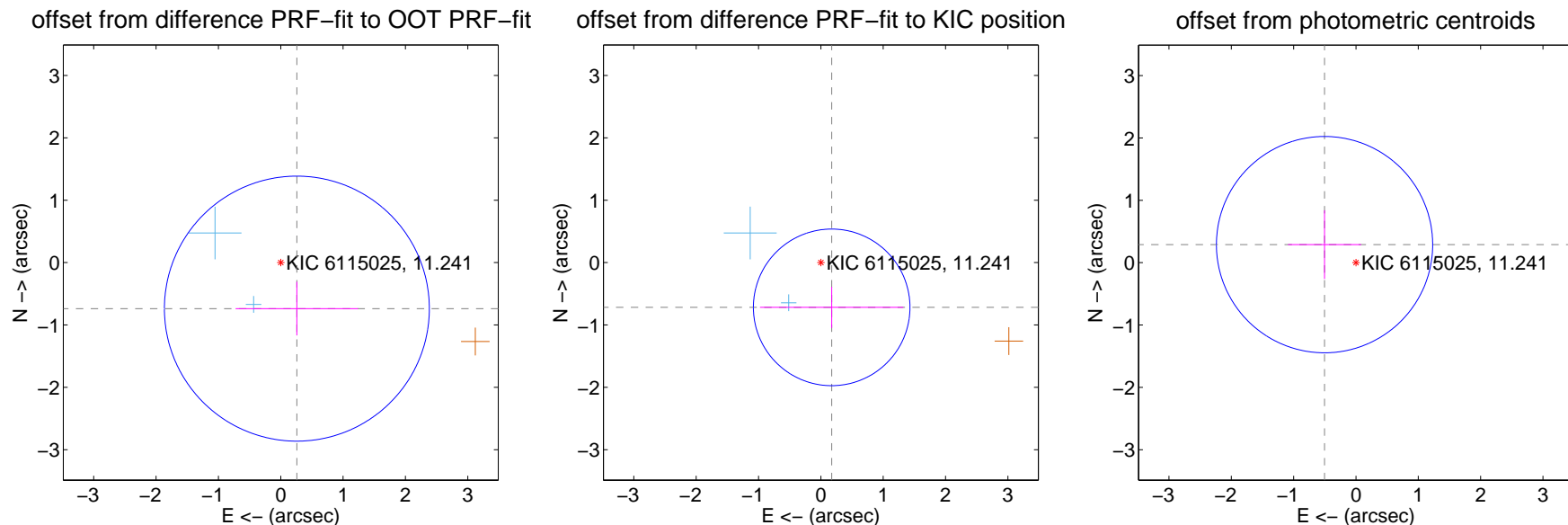
DV Centroid Data

Supplemental centroid analysis for 006115025-03. **Kepler magnitude: 11.24.** Transit SNR 8.49

There are 2 quarters with good PRF difference image offsets

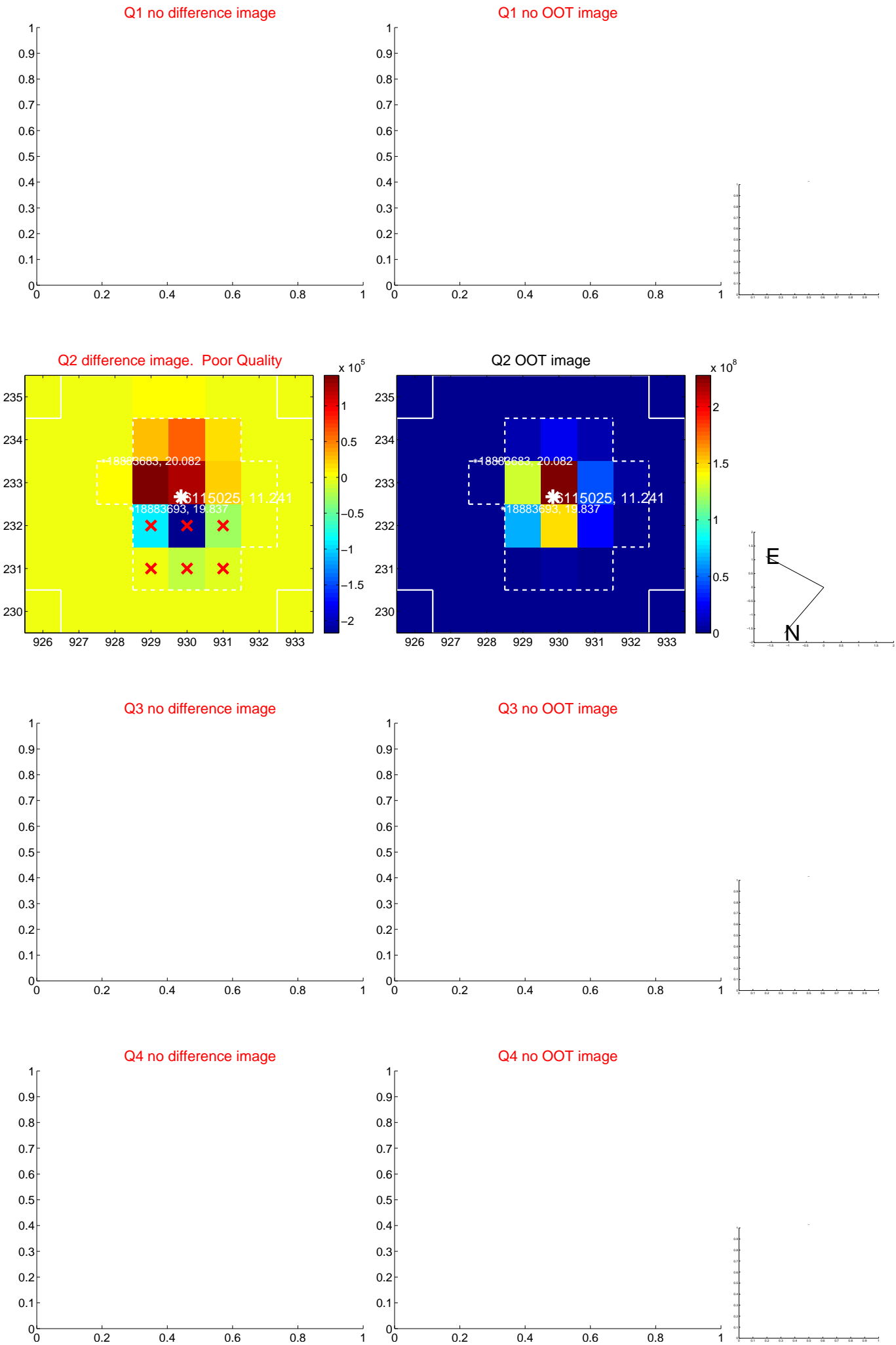
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.782 ± 0.708	1.10	-0.258 ± 0.982	-0.738 ± 0.430
PRF-fit source offset from KIC position	0.738 ± 0.418	1.76	-0.173 ± 1.150	-0.718 ± 0.329
photometric centroid source offset	0.58 ± 0.58	1.00	0.50 ± 0.59	0.29 ± 0.55

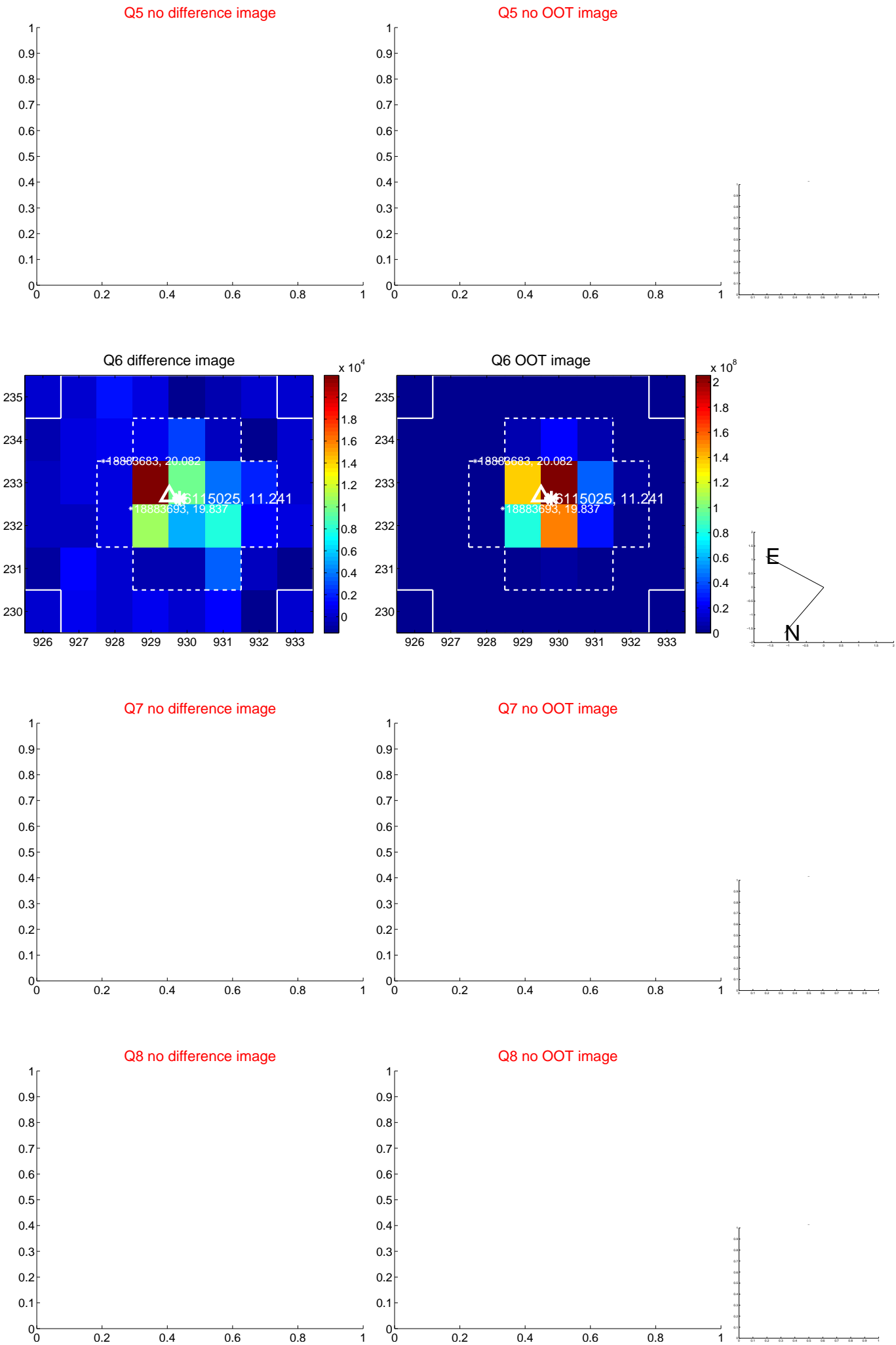


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

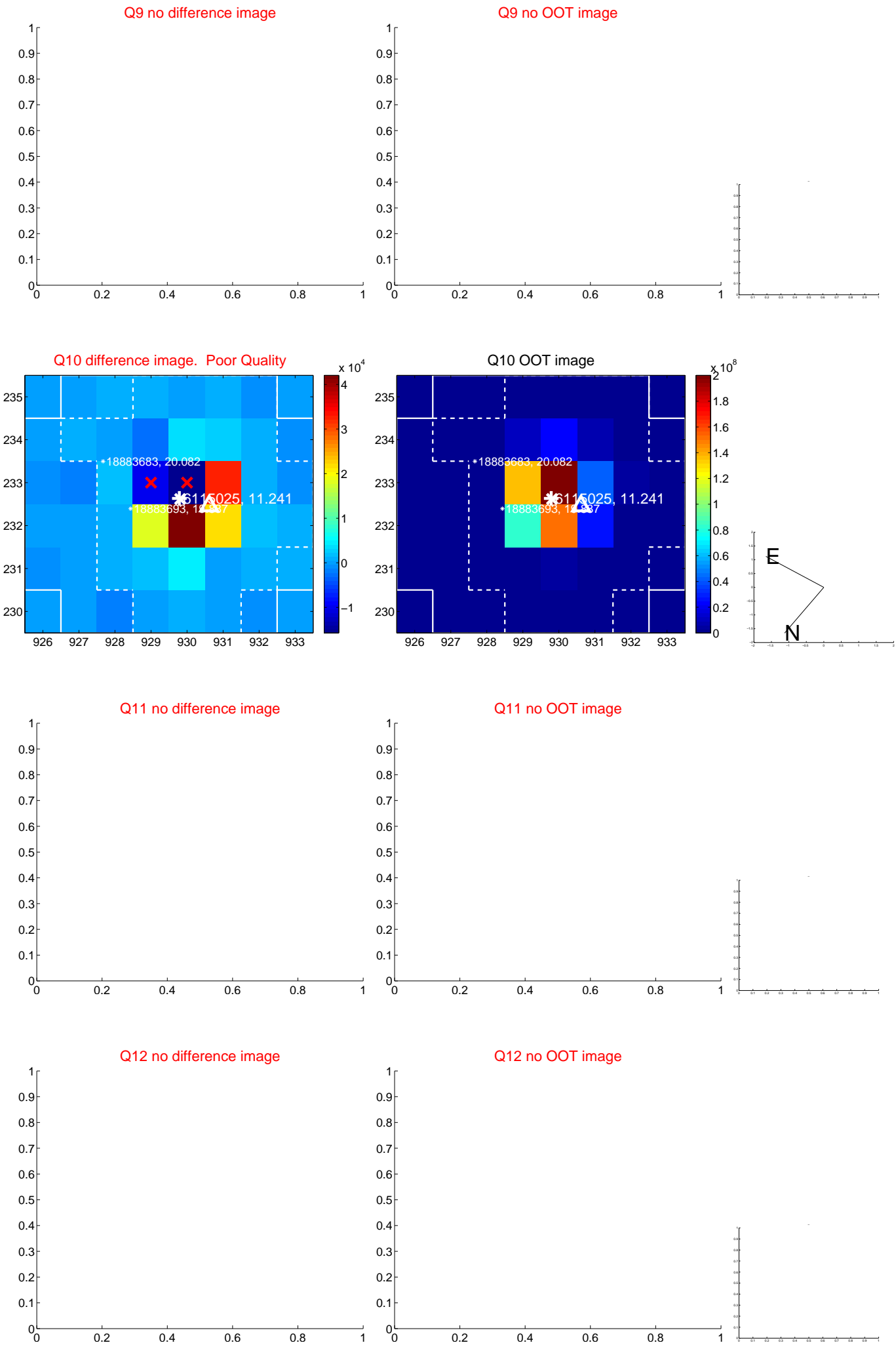
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



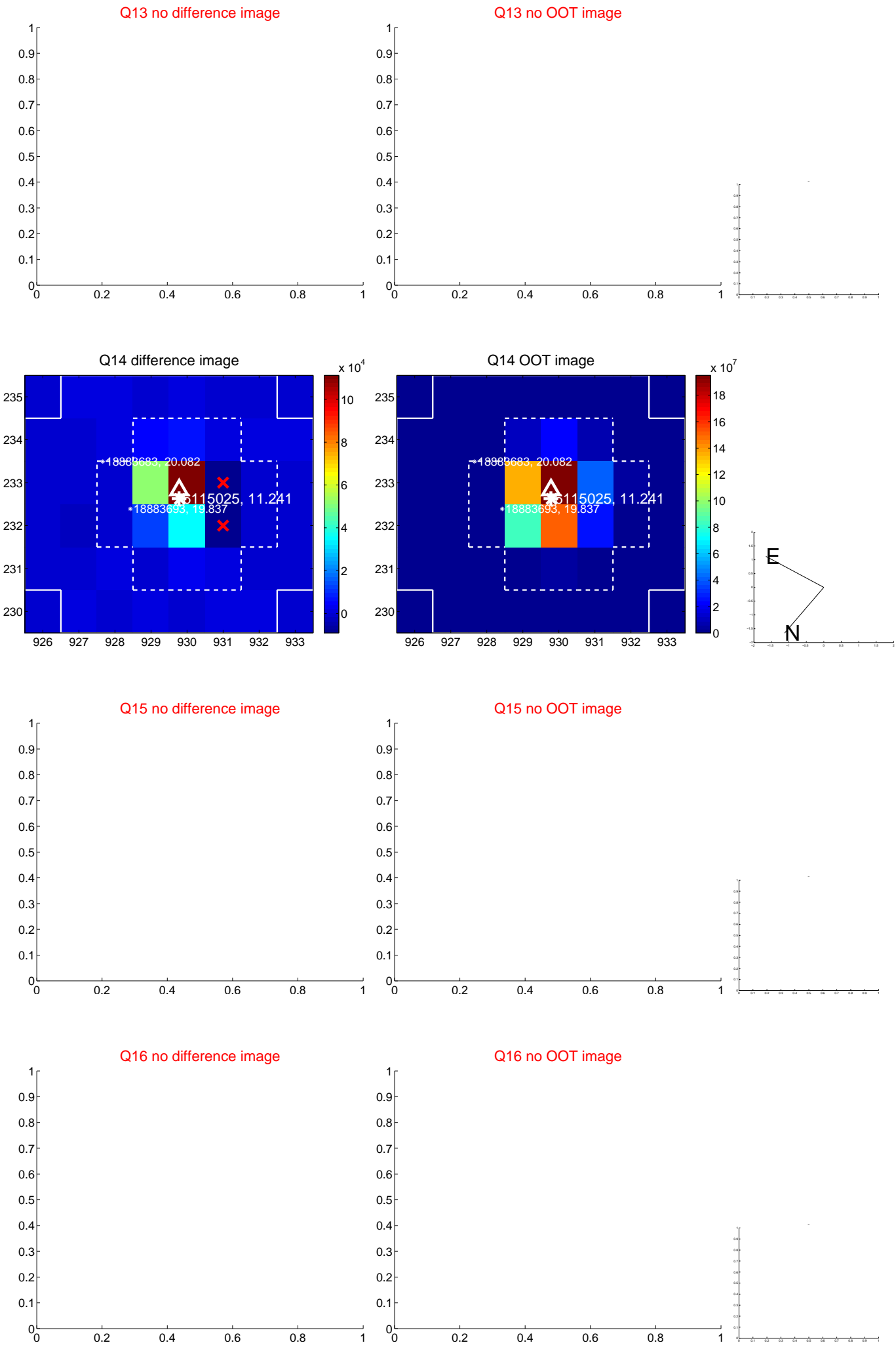
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



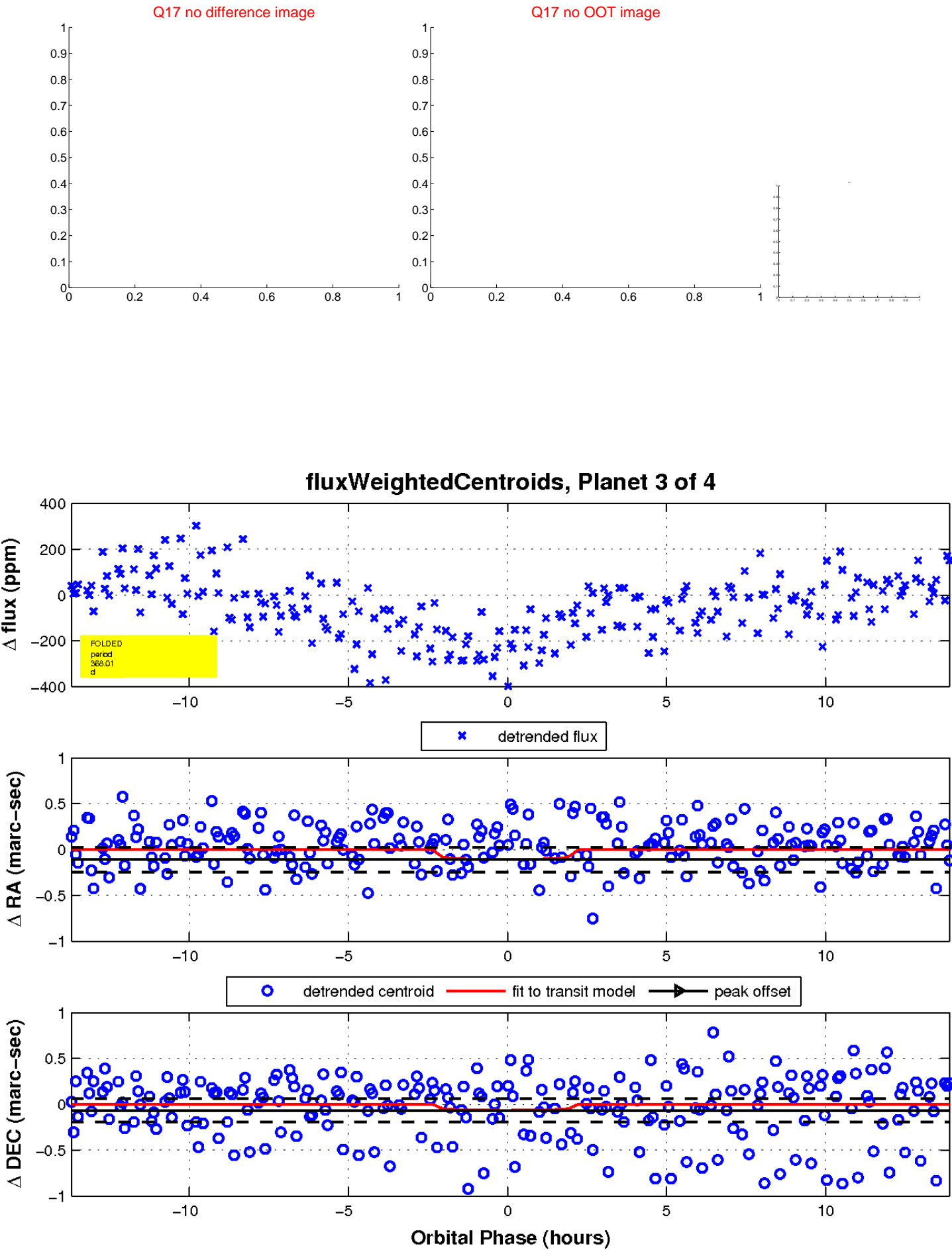
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

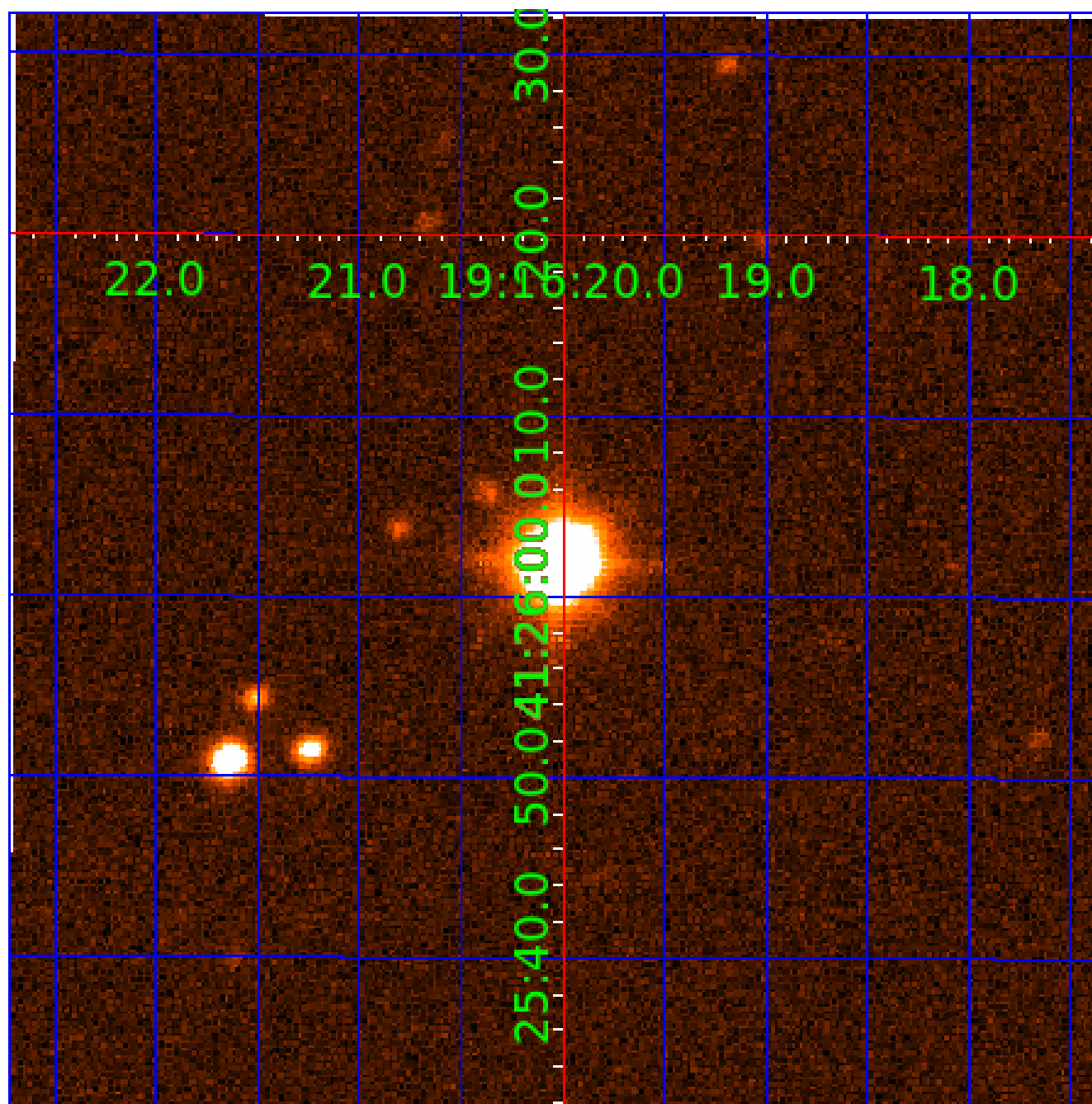


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006115025

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})
006115025-01	OBS	No	1.622937	131.704277	19.9	2.758	9.8	9.6	1.40	6872	0.67	4521.93
006115025-02	OBS	No	0.810650	132.075216	15.0	3.434	10.0	9.2	1.40	6872	0.62	11409.88
006115025-03	OBS	No	368.012085	241.863381	223.8	4.644	7.7	8.5	1.40	6872	2.43	3.27
006115025-04	OBS	No	157.857791	204.395360	30.4	5.121	7.8	1.2	1.40	6872	0.90	10.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006115025-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
006115025-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
006115025-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
006115025-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

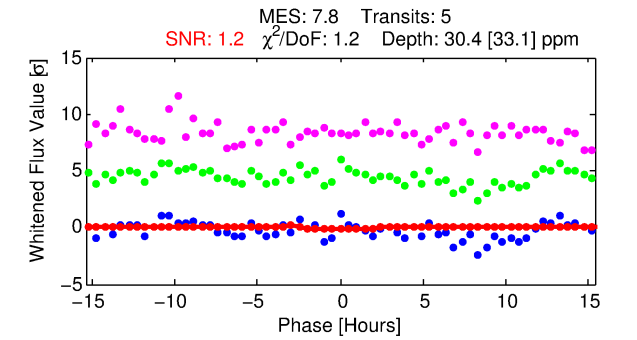
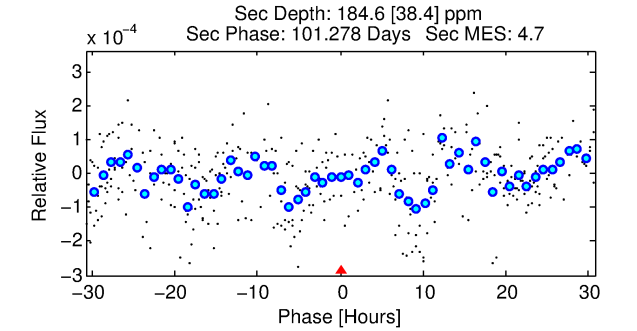
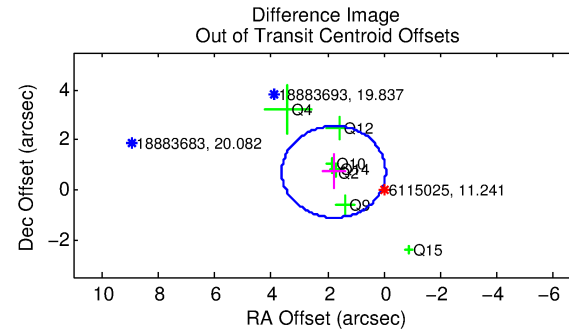
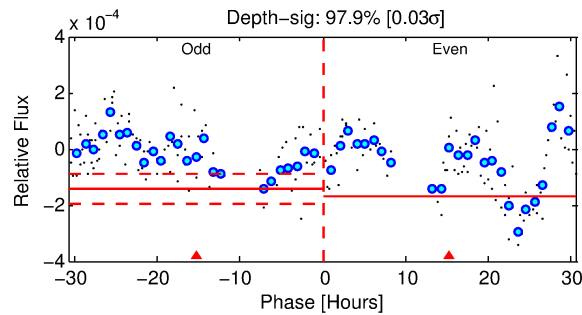
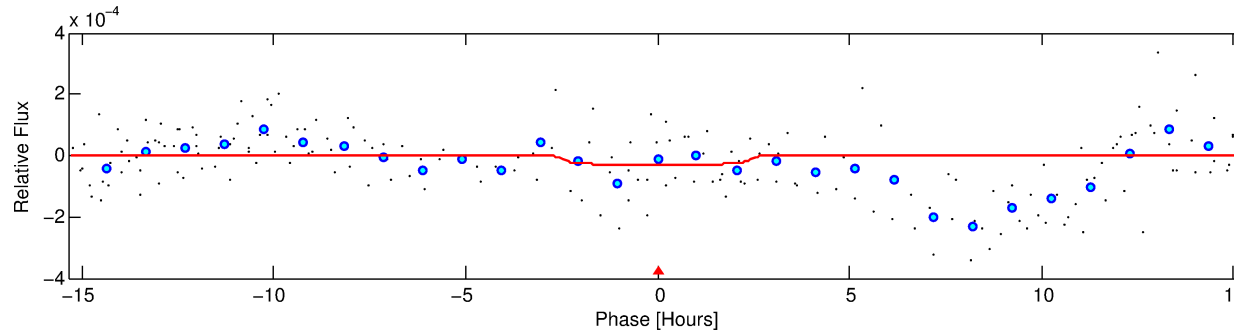
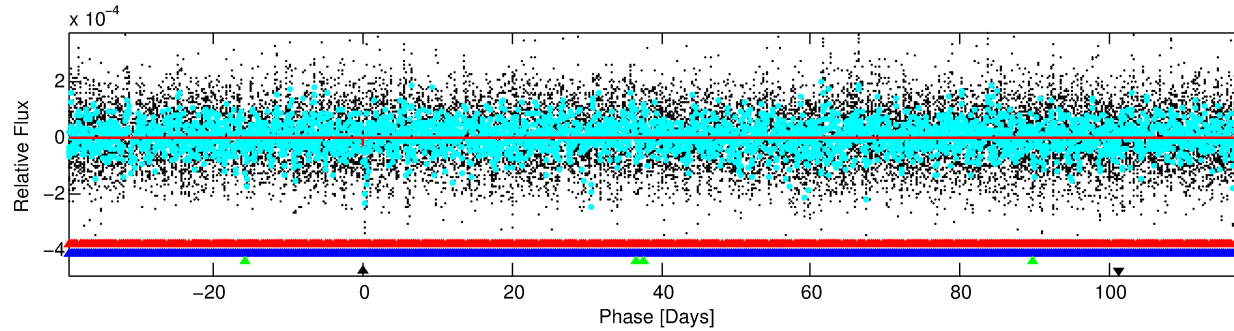
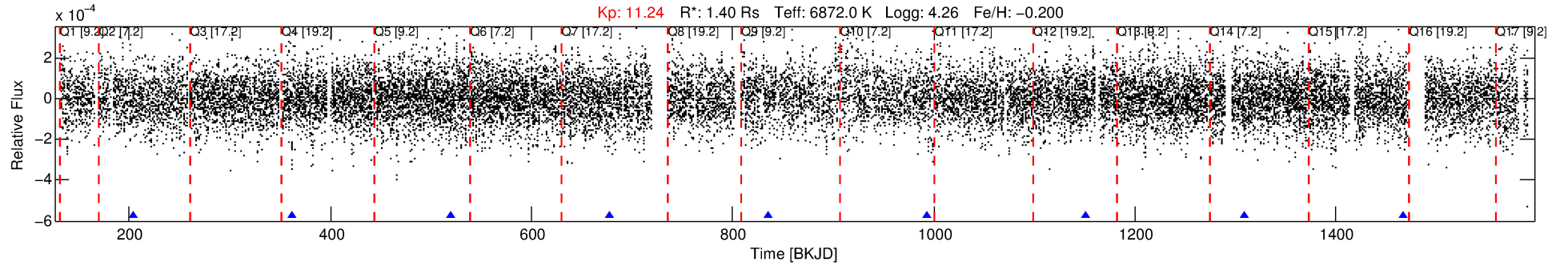
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006115025-04

No Significant Match Found

DV One-Page Summary

KIC: 6115025 Candidate: 4 of 4 Period: 157.858 d



DV Fit Results:

Period = 157.85779 [0.01250] d
 Epoch = 204.3954 [0.0587] BKJD
 Rp/R* = 0.0059 [0.0090]
 a/R* = 103.62 [845.42]
 b = 0.90 [1.66]
 Seff = 10.11 [4.24]
 Teq = 455 [48] K
 Rp = 0.90 [1.41] Re
 a = 0.6233 [0.1673] AU
 Ag = 48445.49 [148947.84] [0.33 σ]
 Teff = 10429 [7969] K [1.25 σ]

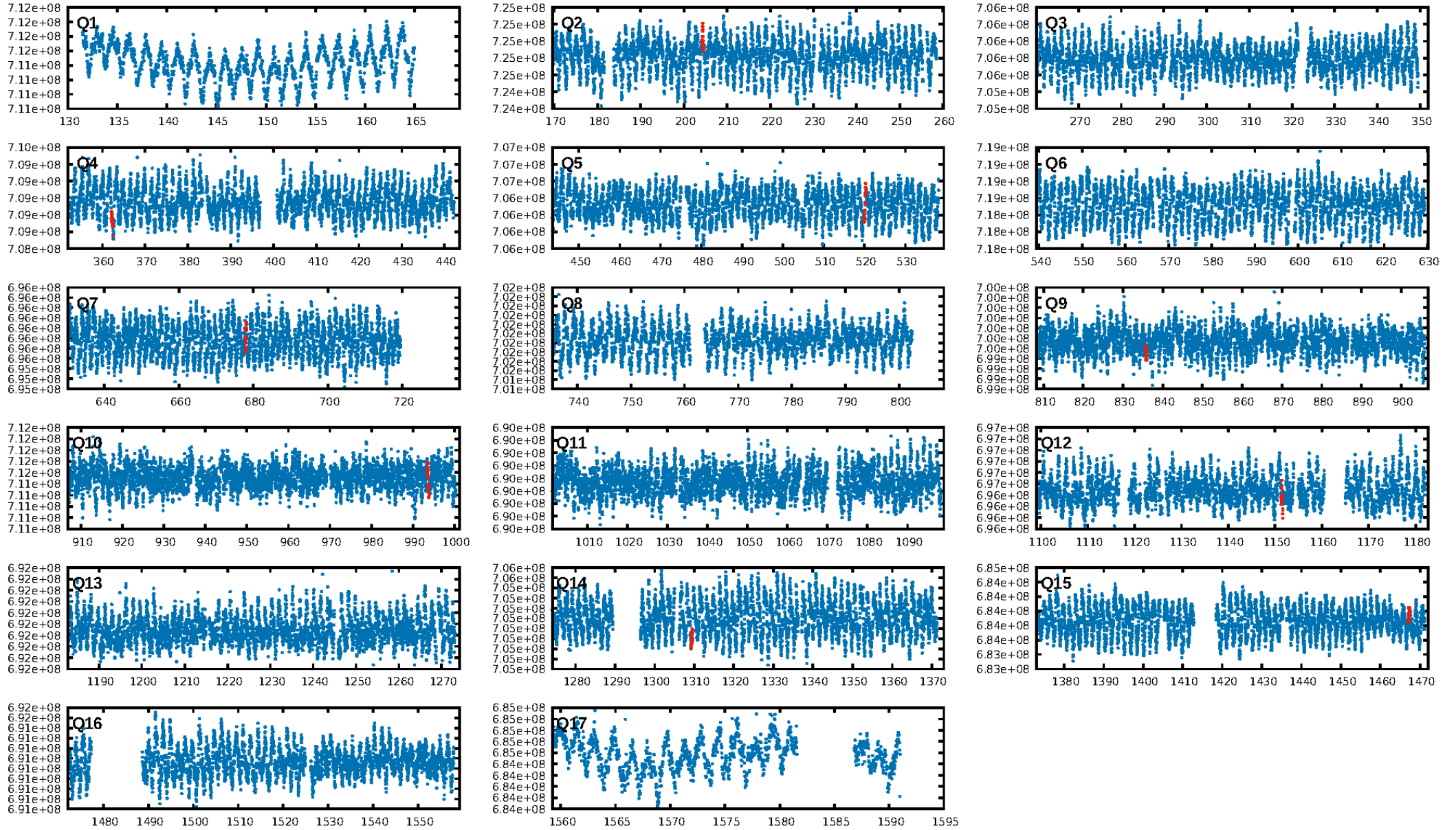
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [644.65 σ]
 LongPeriod-sig: 100.0% [729.55 σ]
 ModelChiSquare2-sig: 76.0%
 ModelChiSquareGof-sig: 99.2%
 Bootstrap-pfa: 2.08e-09
 RollingBand-fgt: 1.00 [5/5]
 GhostDiagnostic-chr: -1.888
 Centroid-sig: 0.4%
 Centroid-so: 5.312 arcsec [1.71 σ]
 OotOffset-rm: 1.915 arcsec [3.13 σ]
 KicOffset-rm: 1.988 arcsec [3.02 σ]
 OotOffset-st: 3/1/2/1 [7]
 KicOffset-st: 3/1/2/1 [7]
 DiffImageQuality-fgm: 0.43 [3/7]
 DiffImageOverlap-fno: 0.00 [0/9]

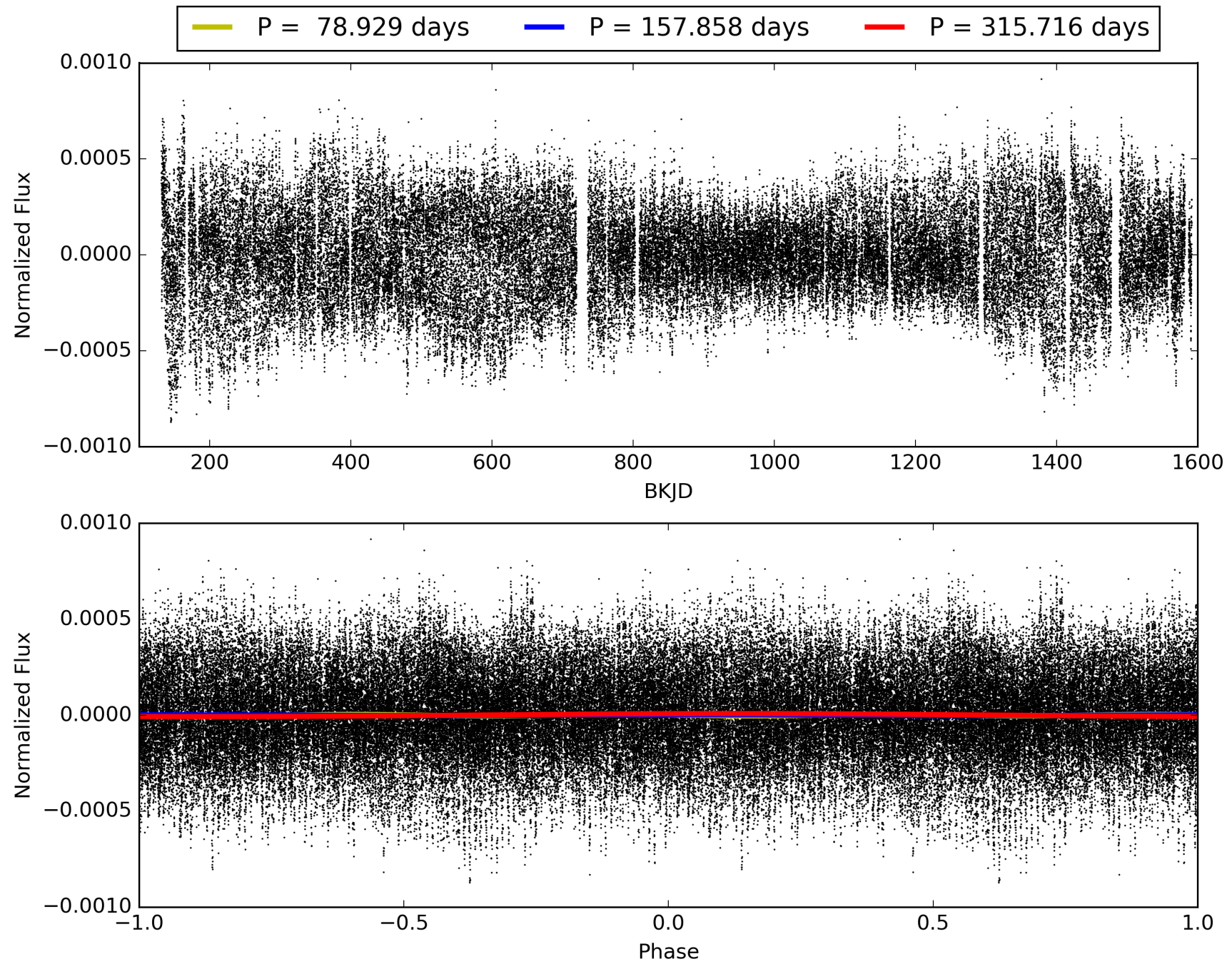
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:14:01 Z

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

TCE 006115025-04, PDC Light Curves

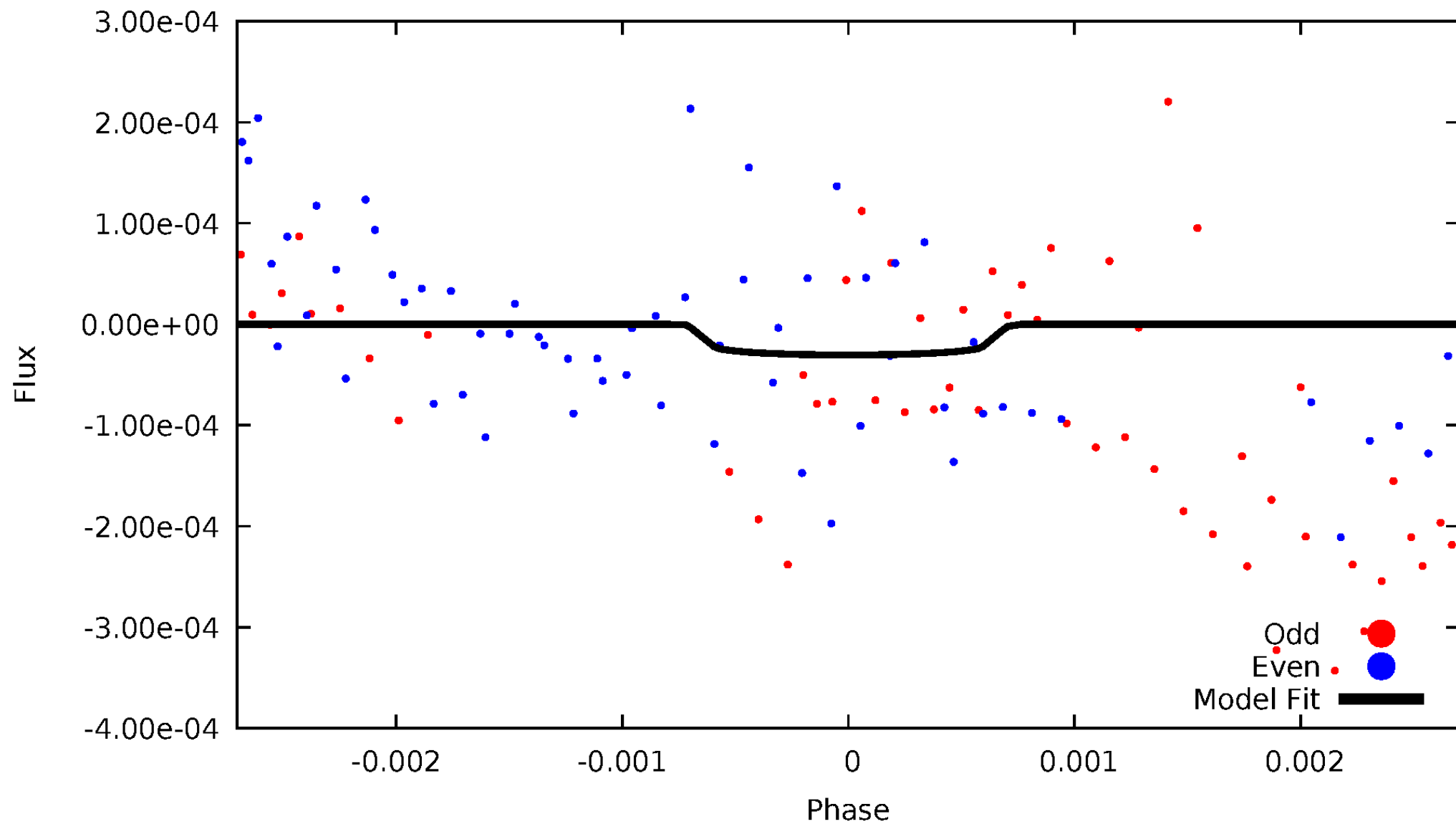


TCE 006115025-04



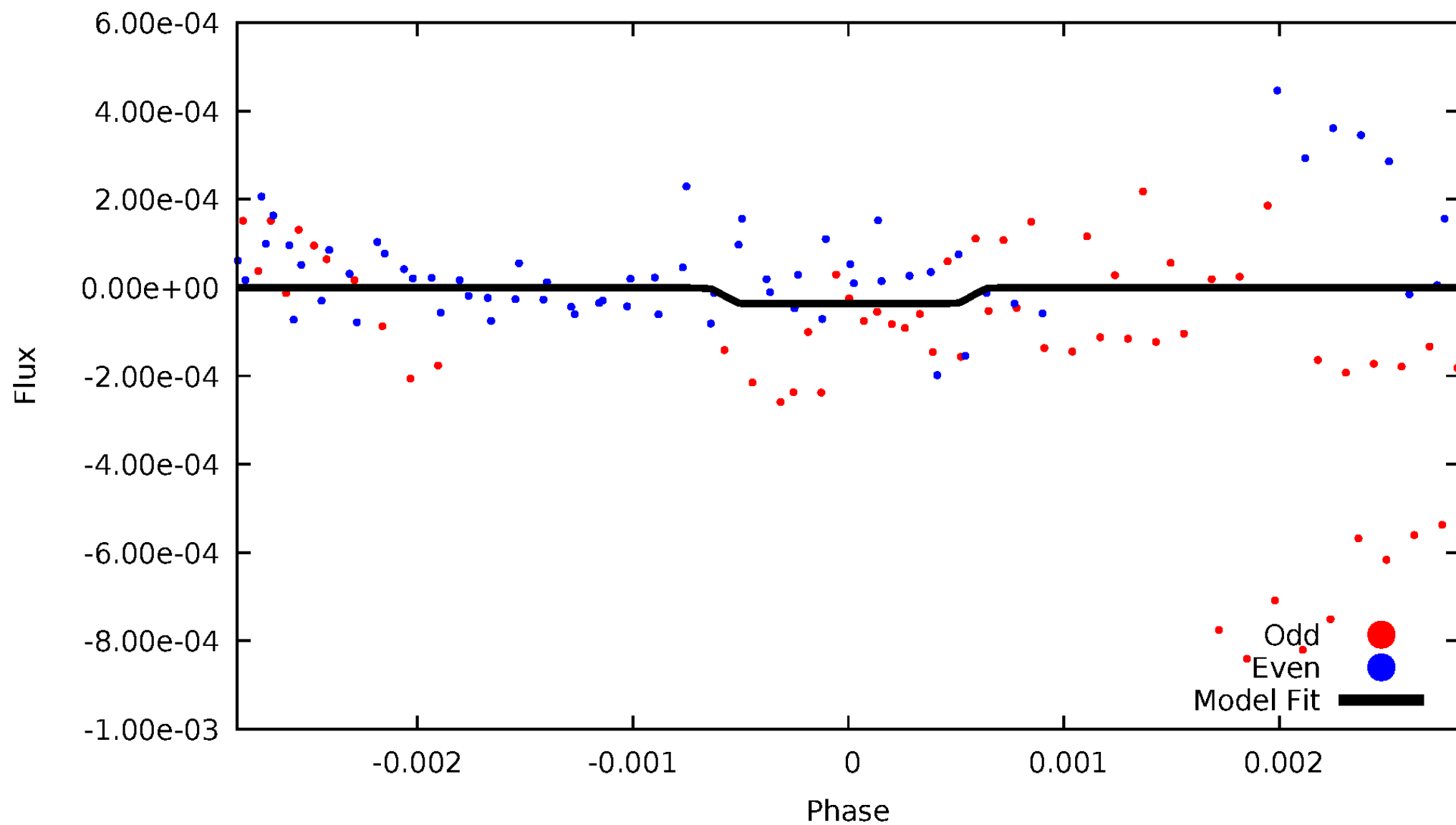
DV Odd/Even

TCE 006115025-04



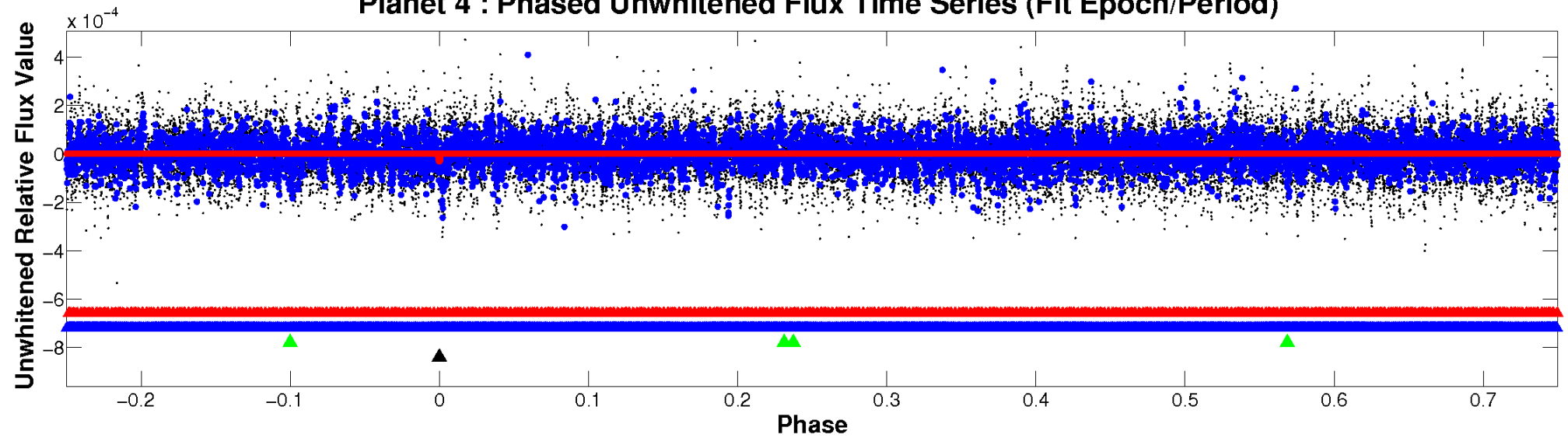
ALT Odd/Even

TCE 006115025-04

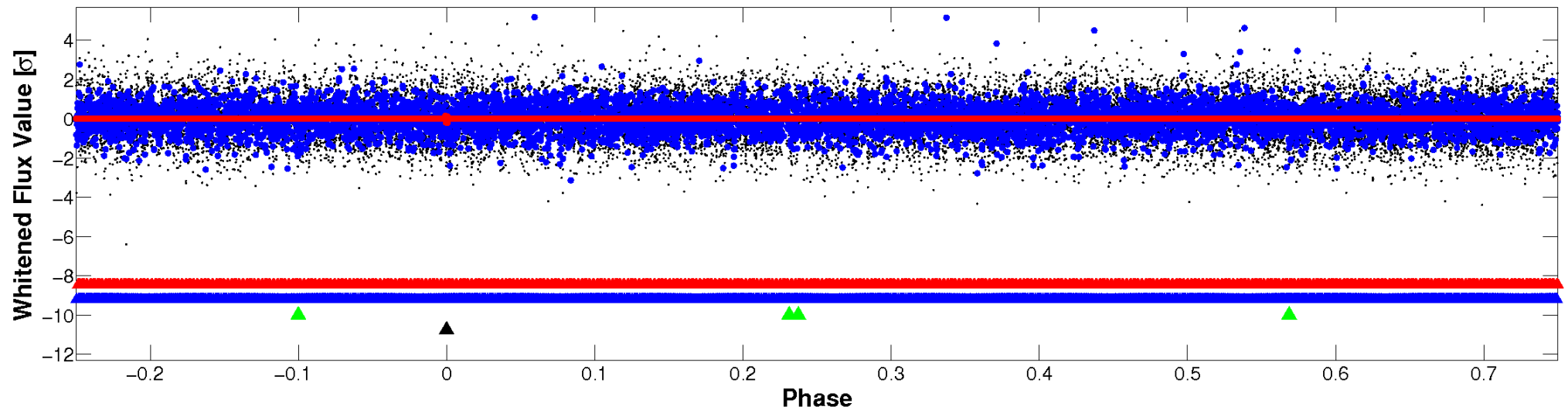


Non-Whitened Vs. Whitened Light Curve

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

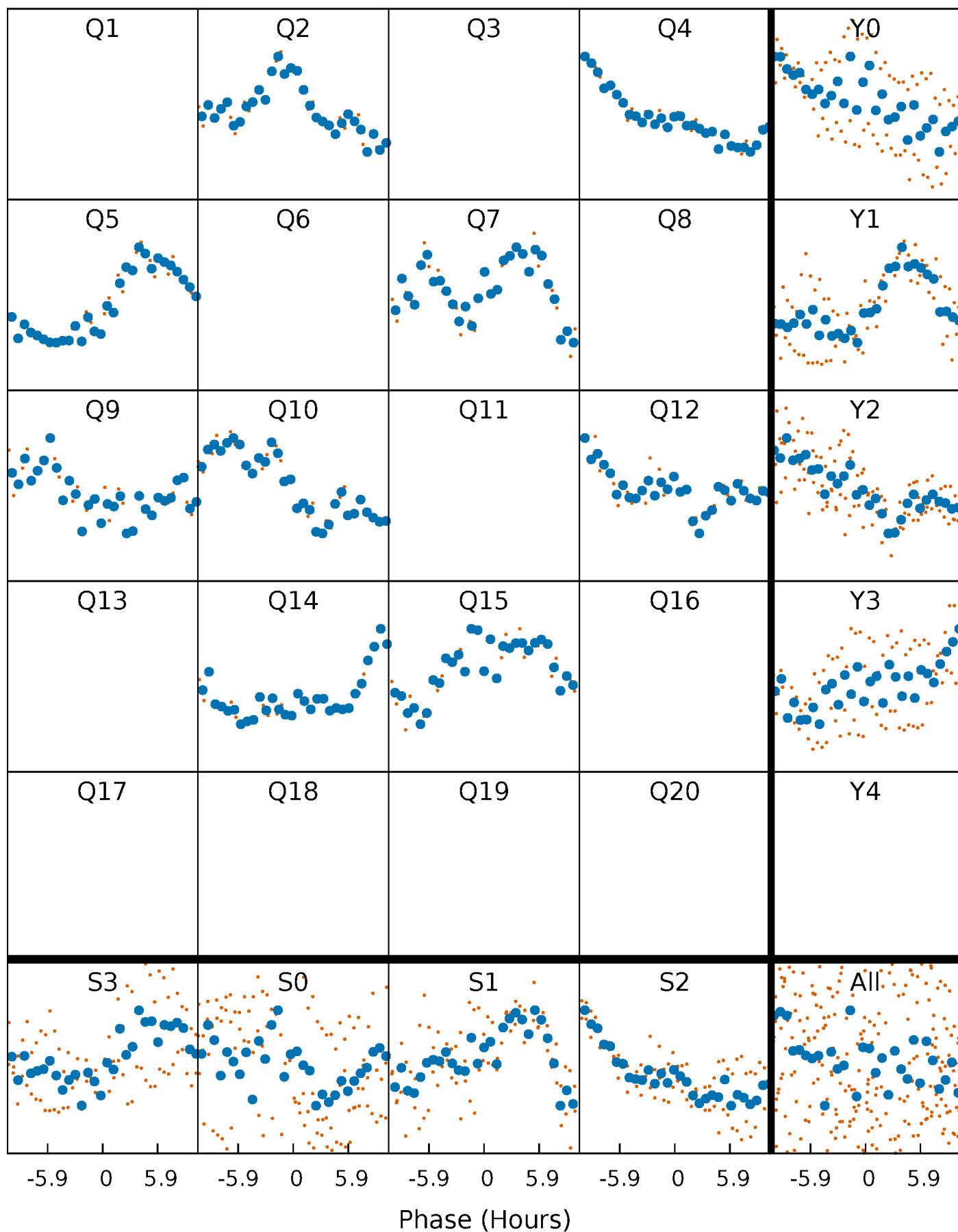


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



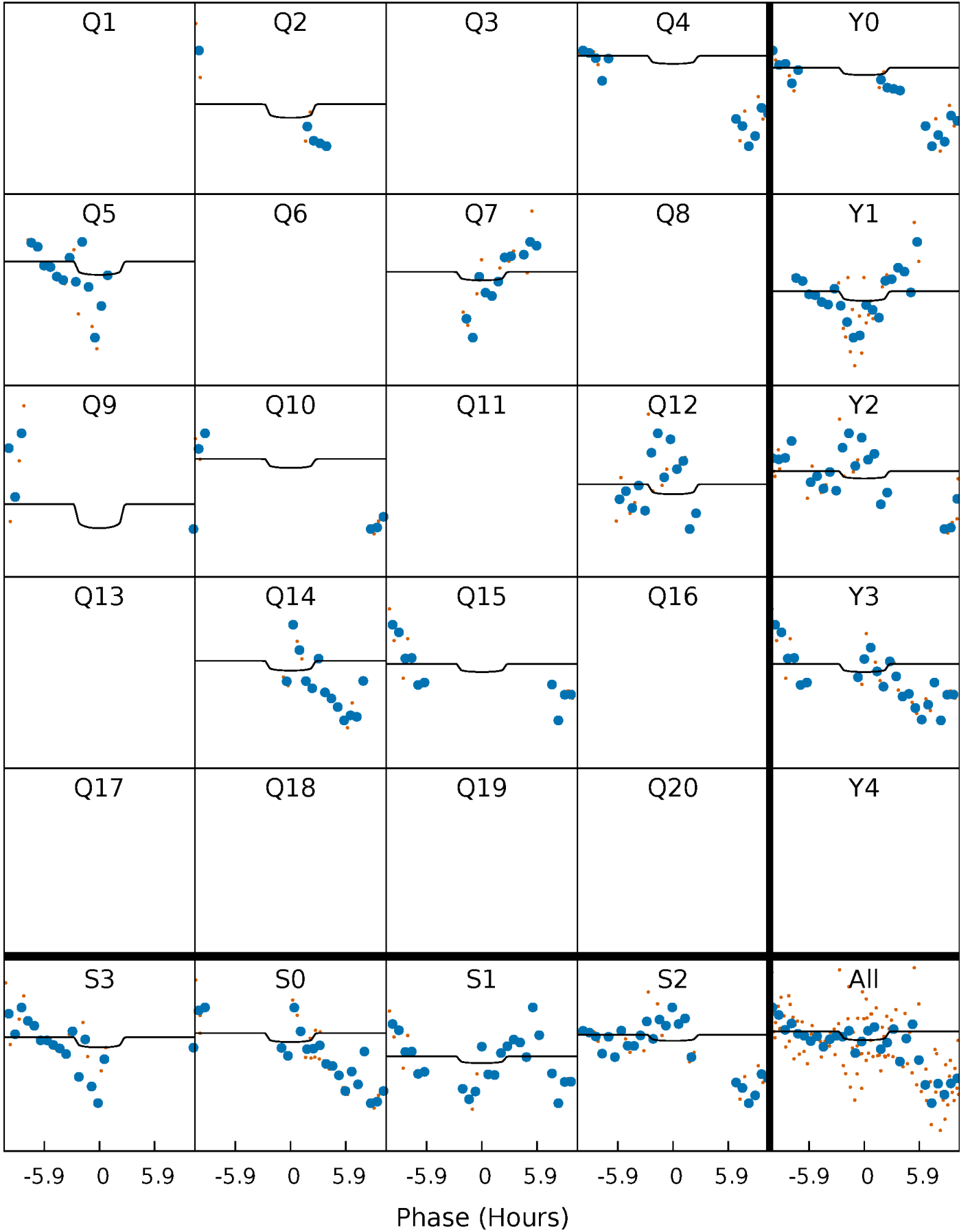
PDC Quarter-Phased Transit Curves

TCE 006115025-04 P=157.857791 Days $T_0=204.395360$ (BKJD)



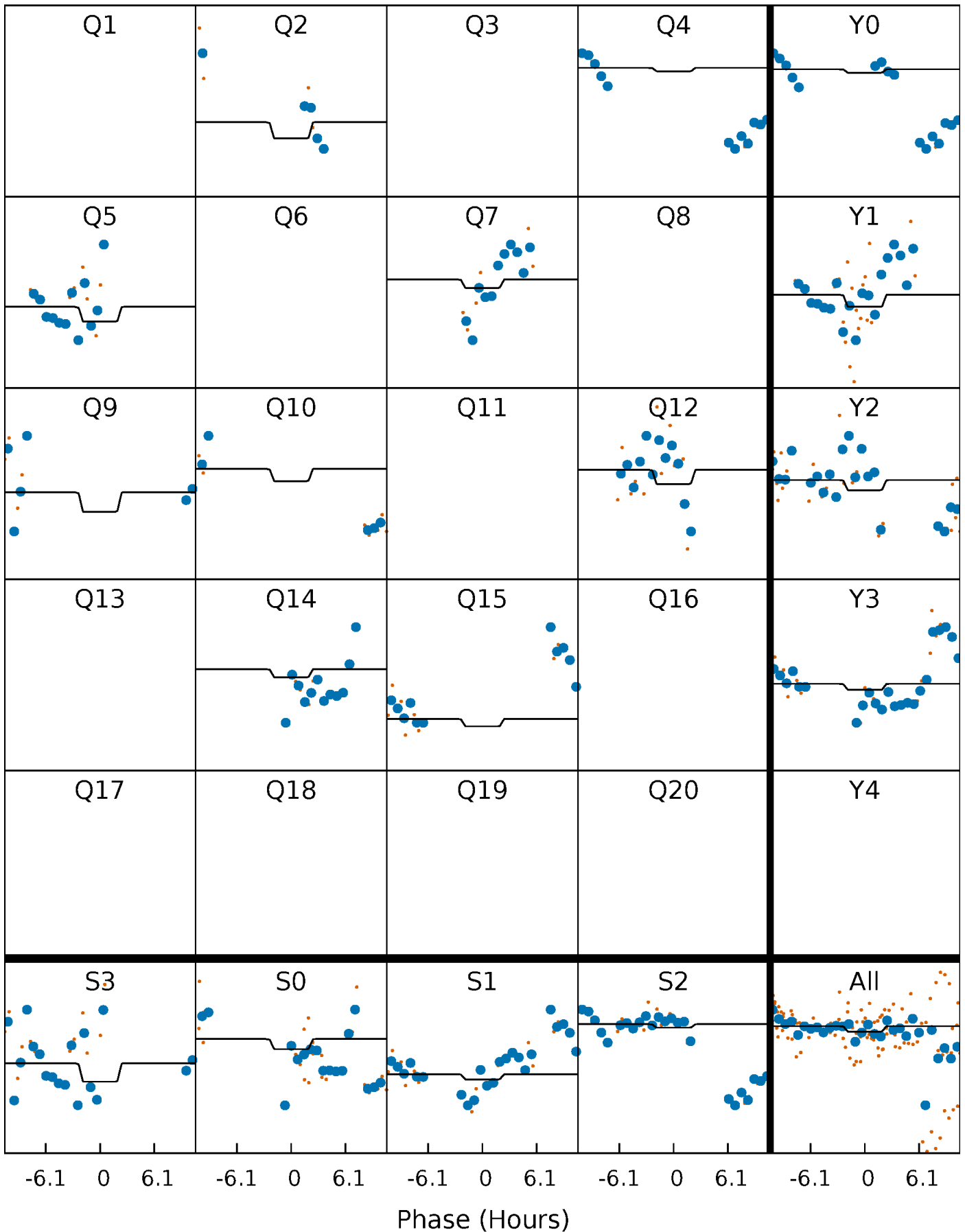
DV Quarter-Phased Transit Curves

TCE 006115025-04 P=157.857791 Days $T_0=204.395360$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

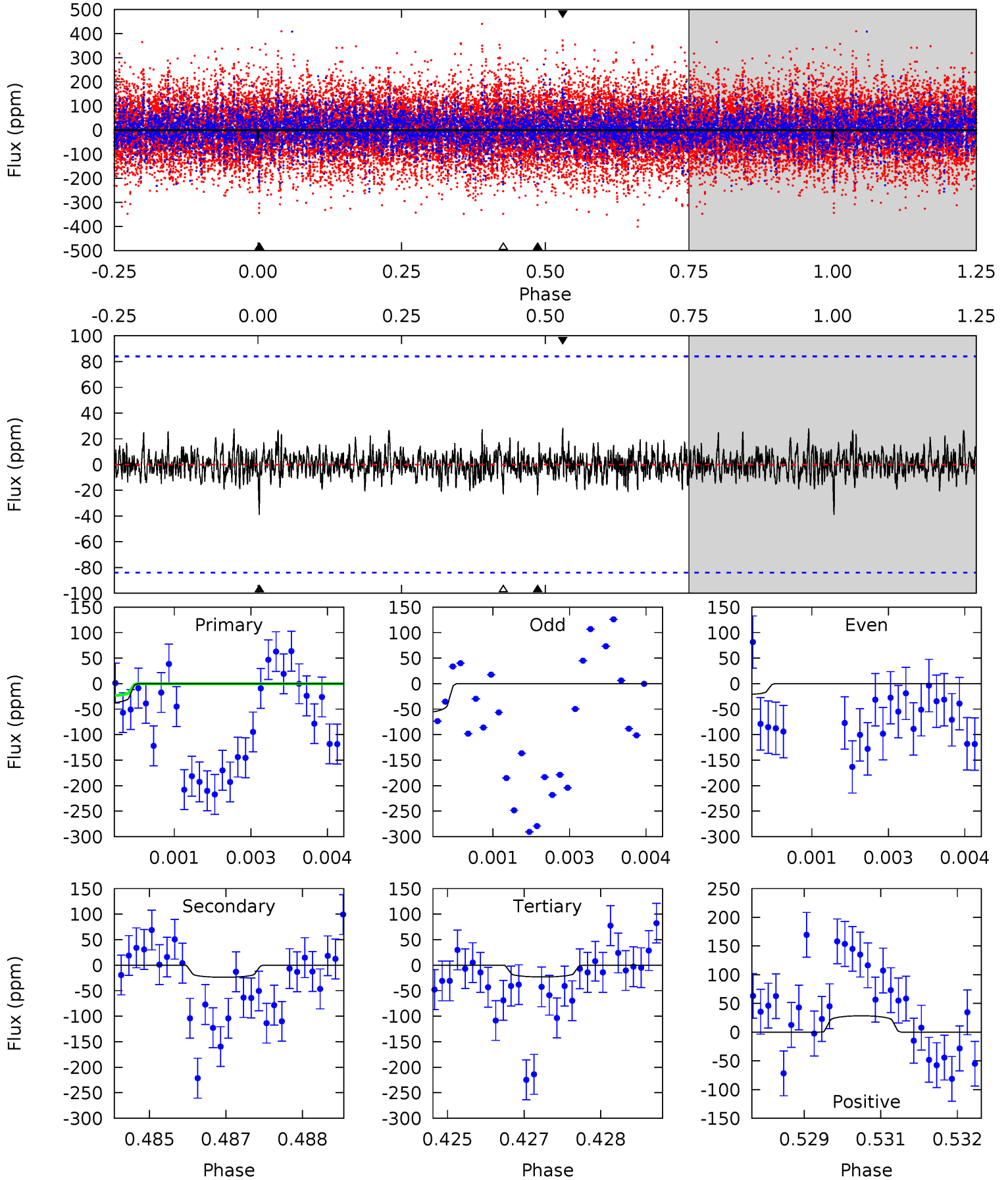
TCE 006115025-04 P=157.858089 Days $T_0=204.401984$ (BKJD)



DV Model-Shift Uniqueness Test

006115025-04, $P = 157.857791$ Days, $E = 46.537569$ Days

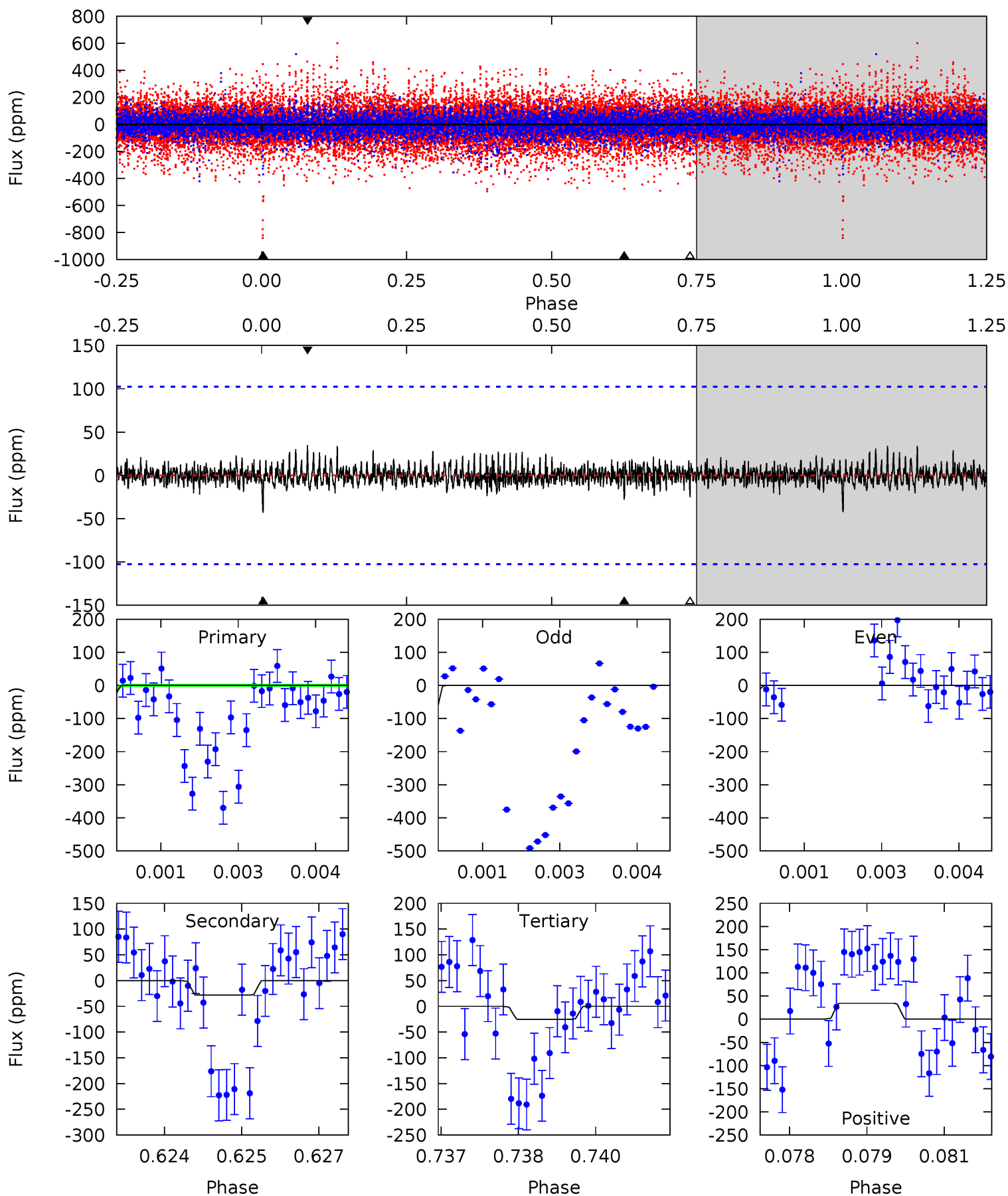
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.49	1.52	1.48	1.83	5.38	3.18	0.49	1.02	0.67	0.04	-0.31	1.16	0.67	0.42	0.95



Alt Model-Shift Uniqueness Test

006115025-04, P = 157.858089 Days, E = 46.543895 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.23	1.48	1.33	1.80	5.40	3.21	0.44	0.90	0.43	0.15	-0.32	2.33	-11.4	0.45	0.72



Stellar Parameters For KIC 006115025

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6872^{+190}_{-309}	$4.257^{+0.108}_{-0.201}$	$-0.200^{+0.250}_{-0.350}$	$1.402^{+0.462}_{-0.249}$	$1.307^{+0.196}_{-0.216}$	$0.669^{+0.344}_{-0.342}$
	+3%/-4%	+3%/-5%	+125%/-175%	+33%/-18%	+15%/-17%	+51%/-51%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 006115025-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-24 ± 16	$1.43^{+1.15}_{-0.94}$	641^{+51}_{-39}	4870^{+3839}_{-1190}	2052^{+16387}_{-1653}
Alt.	-28 ± 19	$1.39^{+1.22}_{-0.87}$	640^{+47}_{-38}	5130^{+3634}_{-1404}	2662^{+16573}_{-2186}

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

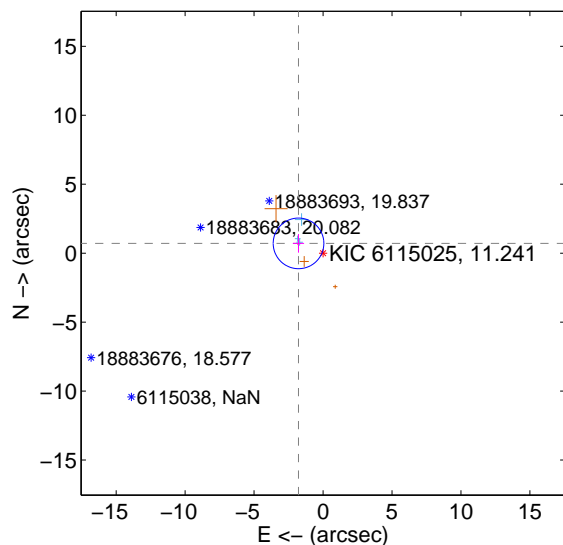
Supplemental centroid analysis for 006115025-04. **Kepler magnitude: 11.24.** Transit SNR 1.16

There are 3 quarters with good PRF difference image offsets

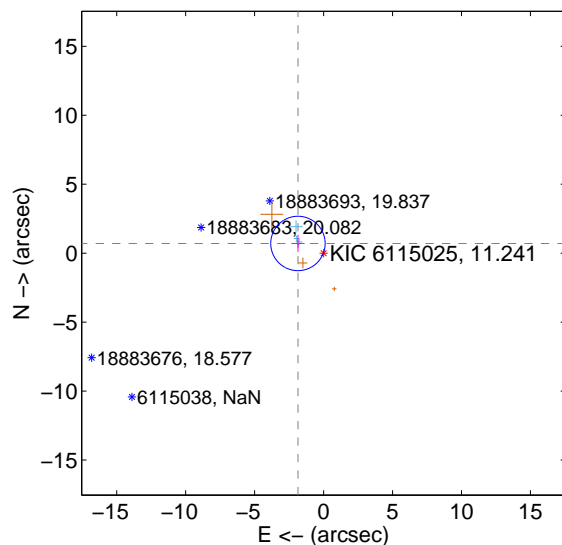
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.915 \pm 0.612	3.13	1.778 \pm 0.407	0.711 \pm 0.677
PRF-fit source offset from KIC position	1.988 \pm 0.658	3.02	1.859 \pm 0.477	0.705 \pm 0.625
photometric centroid source offset	5.31 \pm 3.10	1.71	-2.15 \pm 3.22	4.86 \pm 3.08

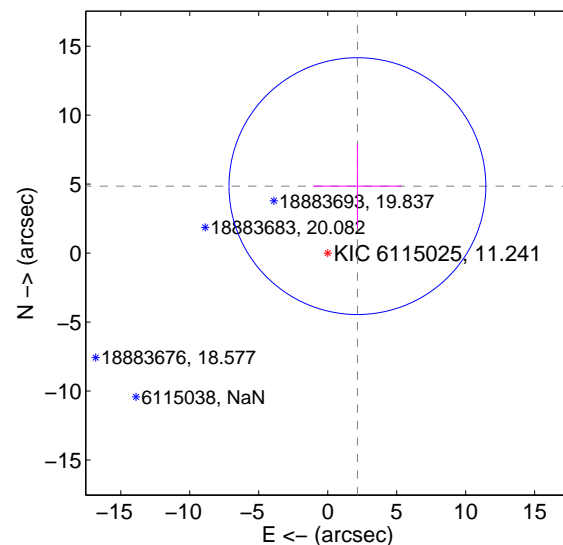
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

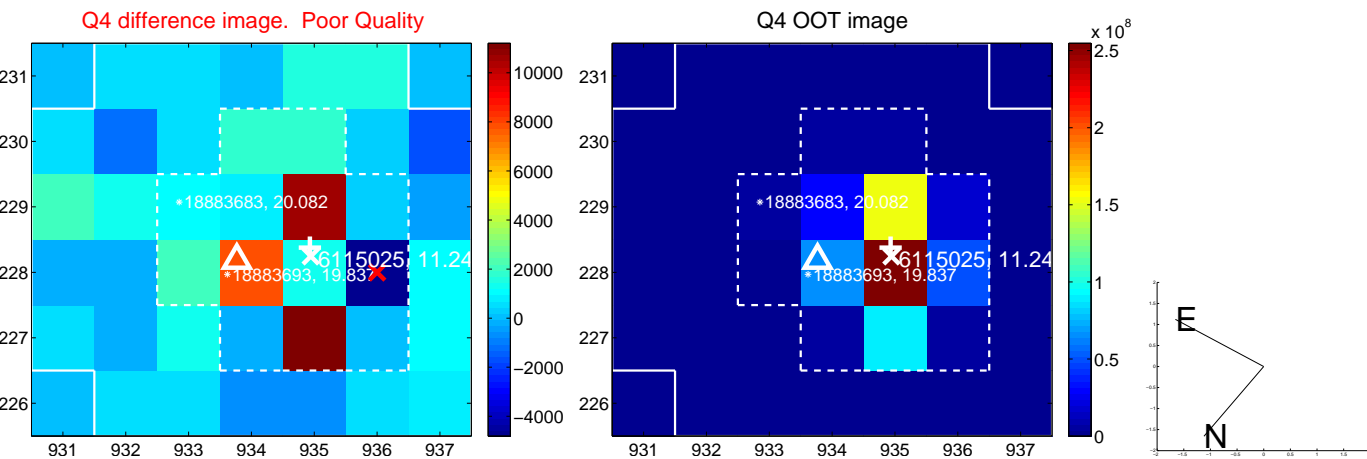
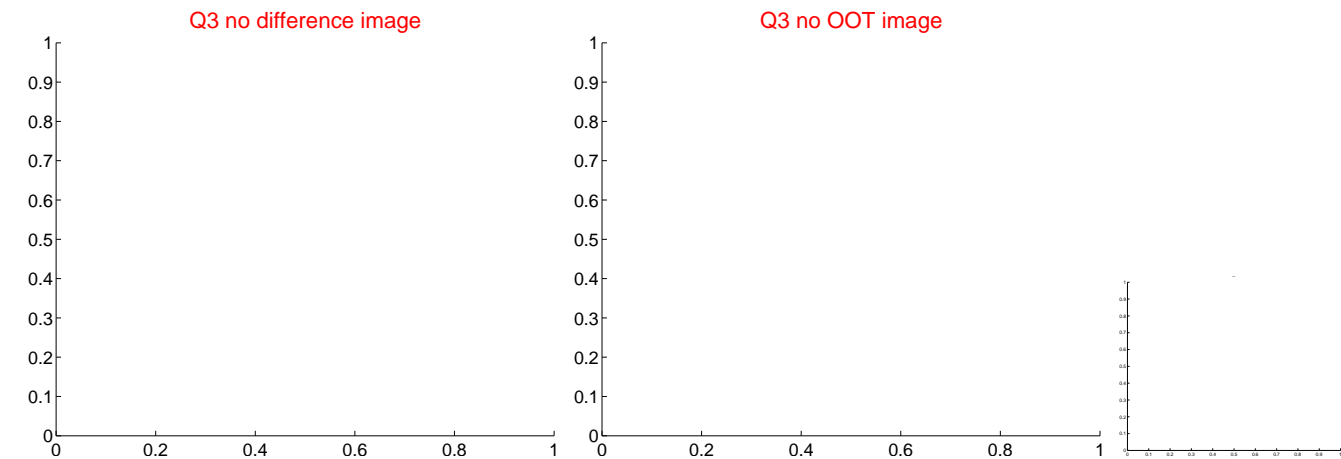
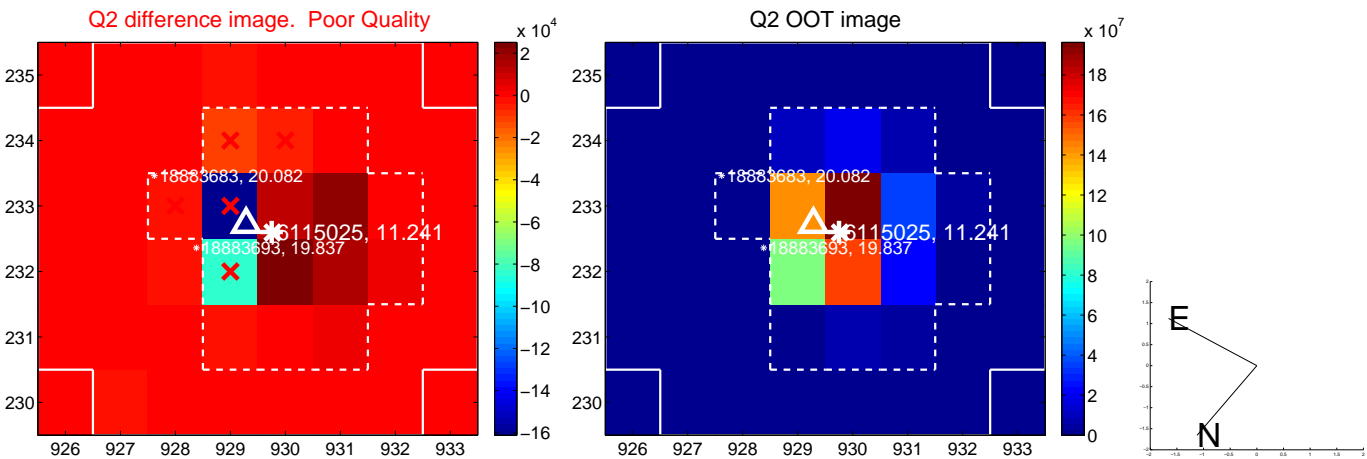
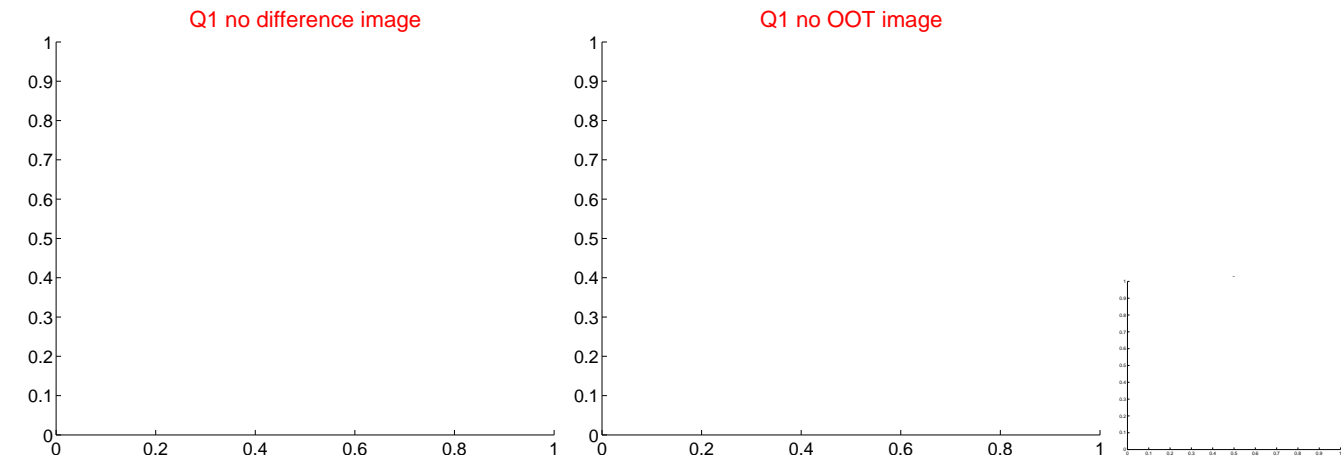


offset from photometric centroids

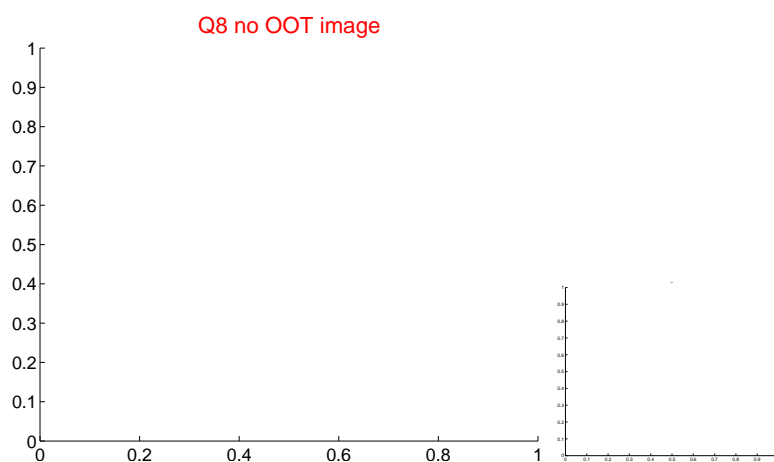
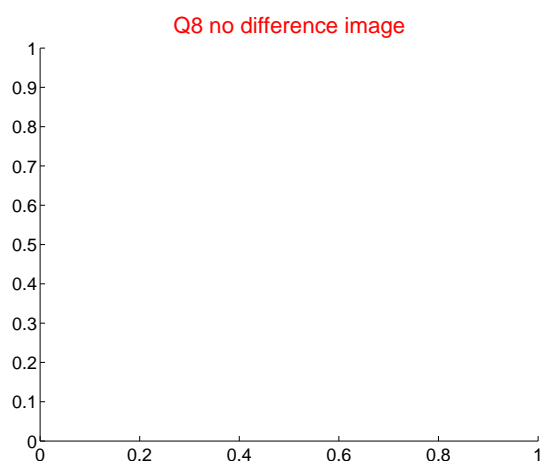
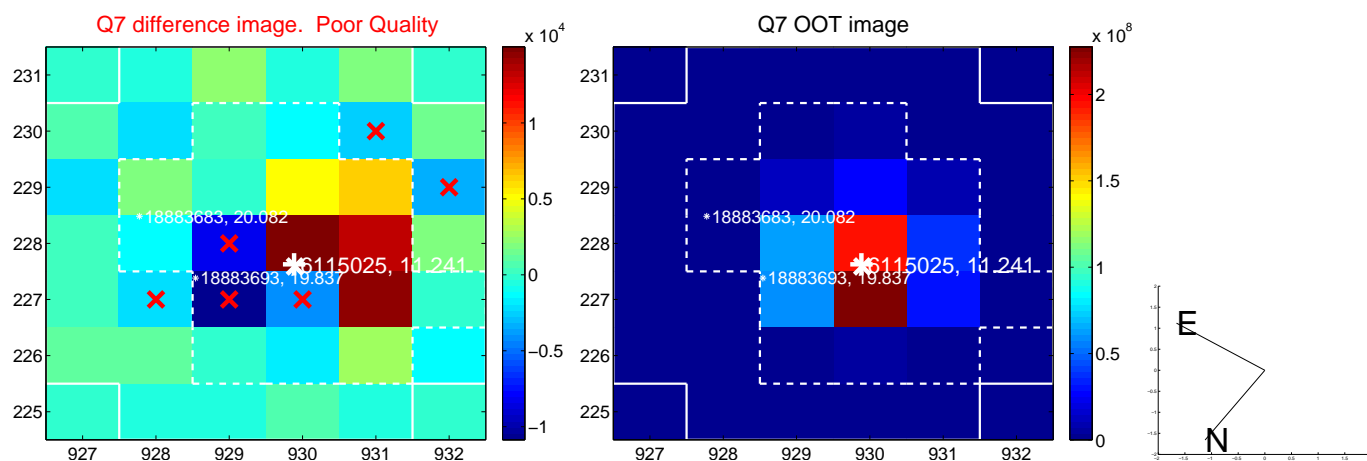
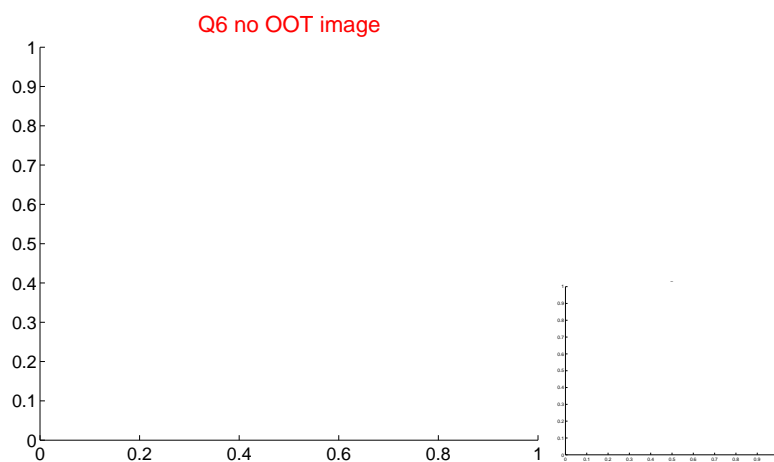
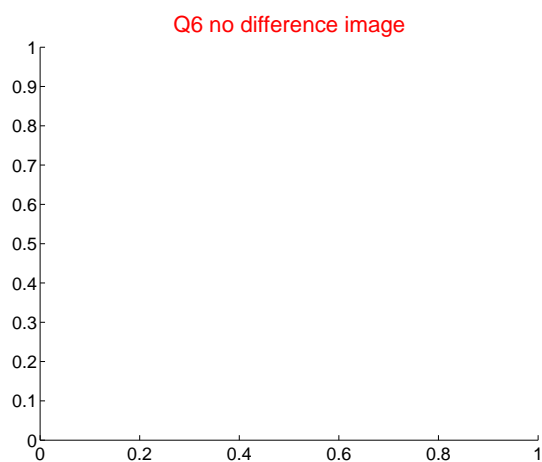
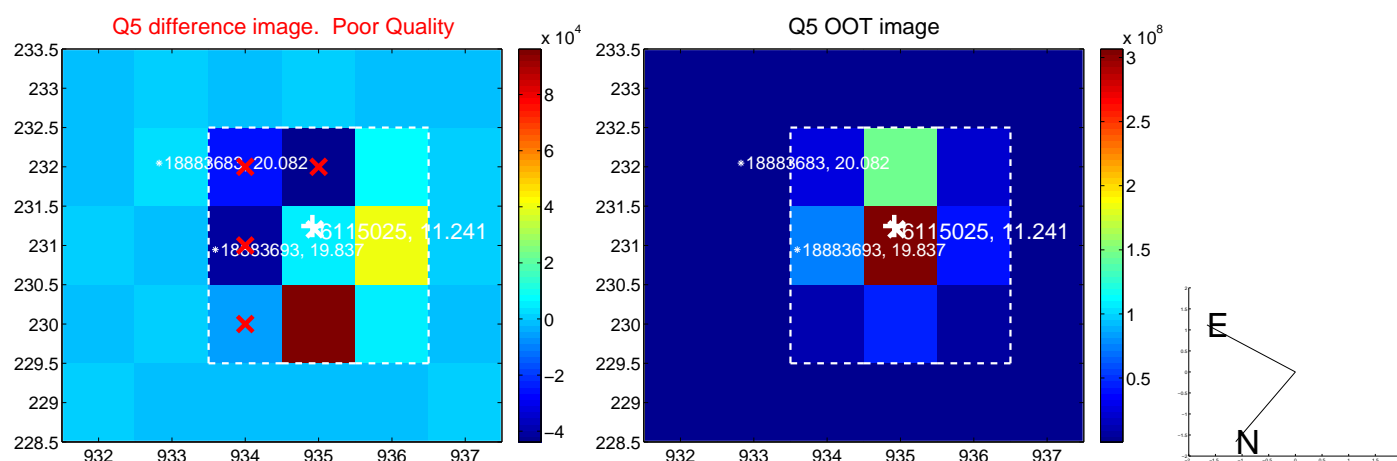


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

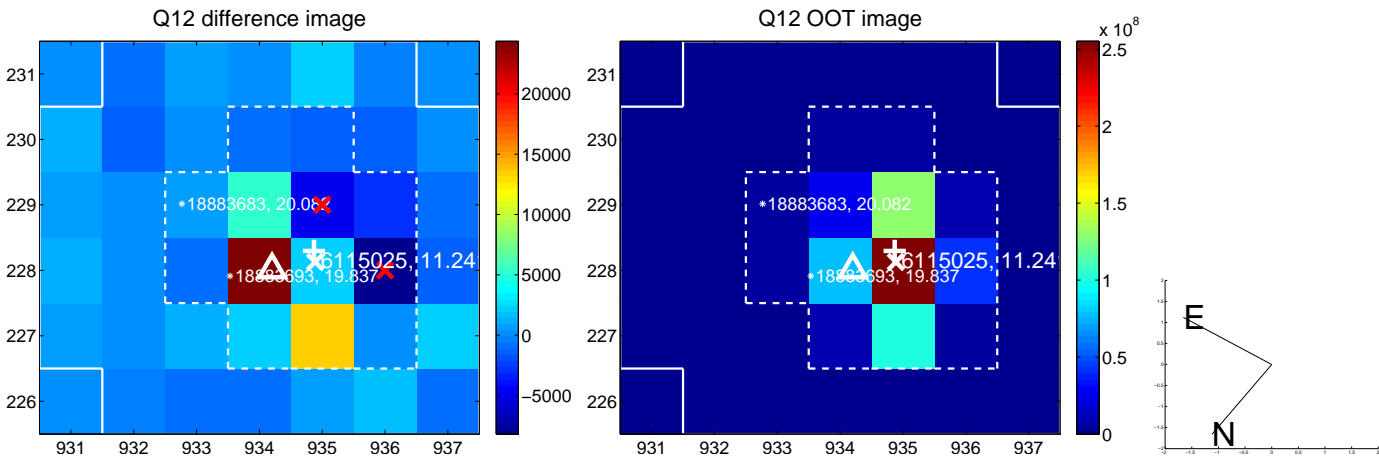
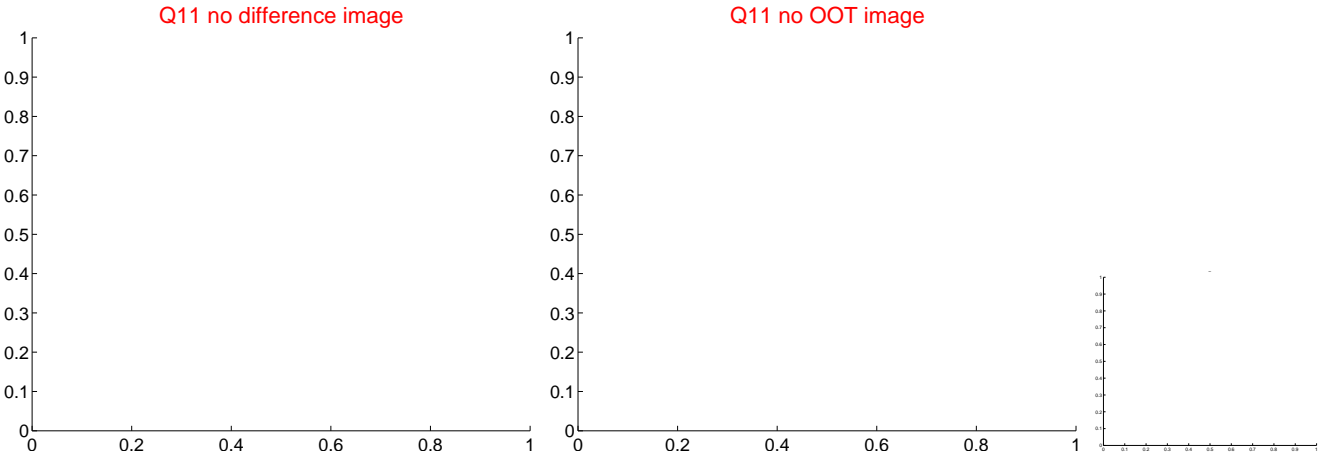
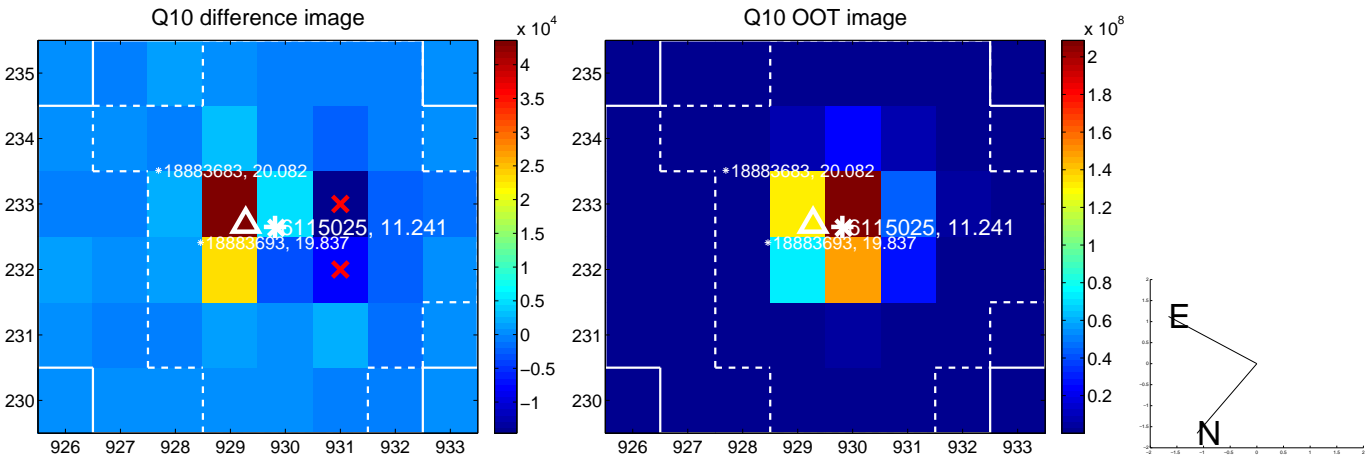
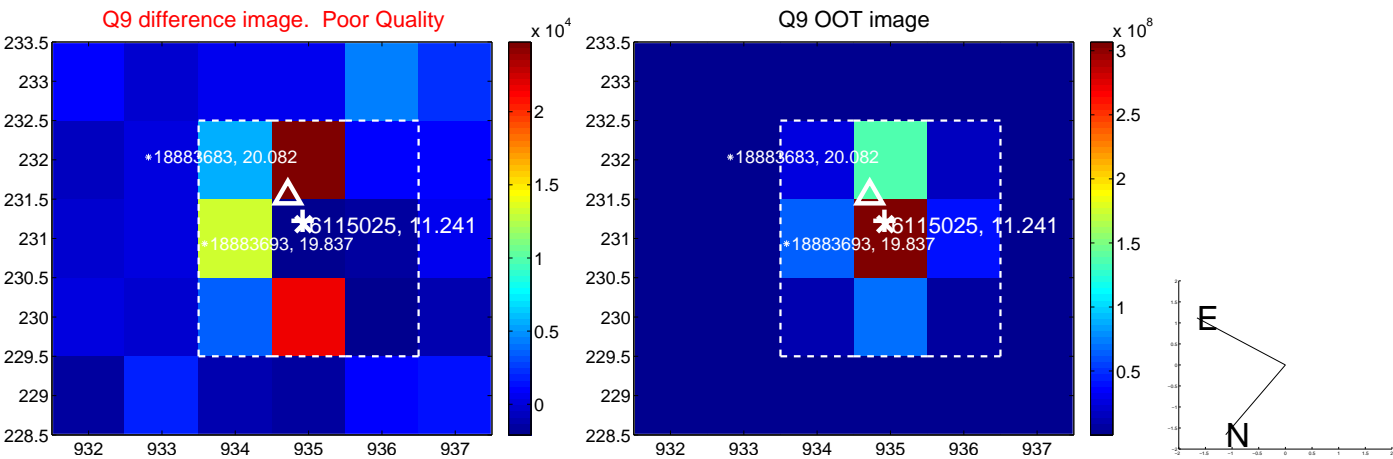
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



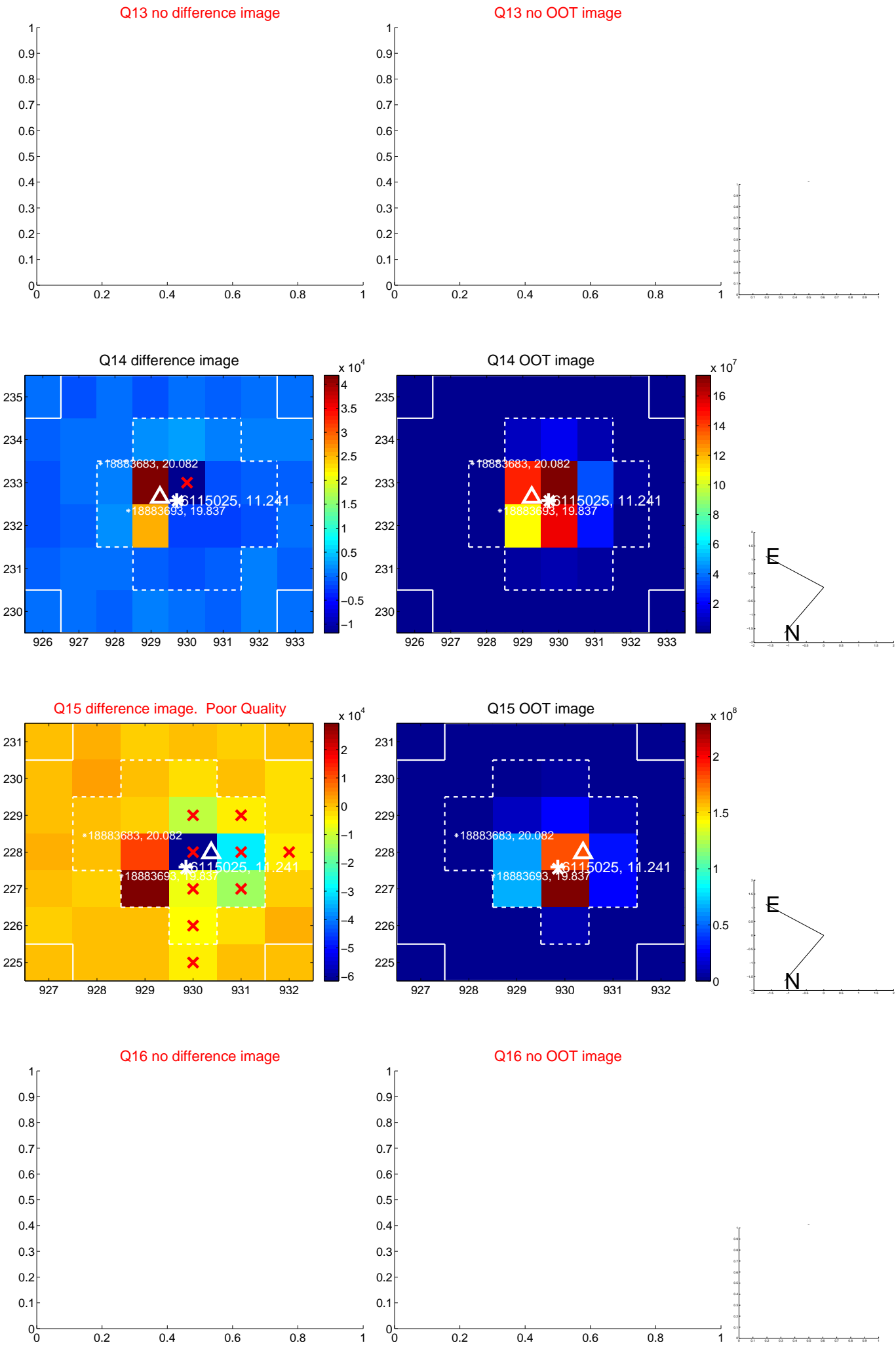
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



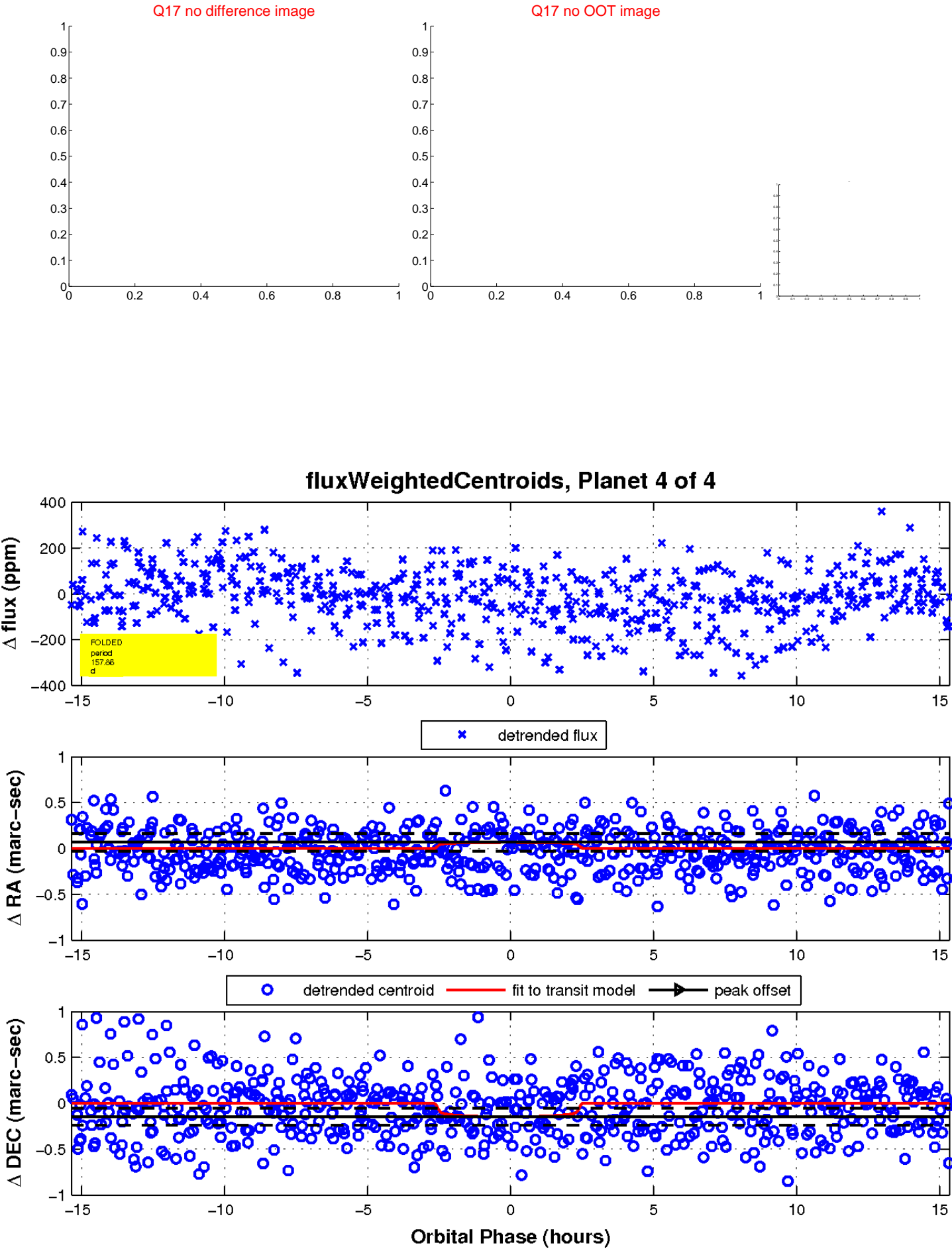
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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.



UKIRT Image

Declination

