

KIC 009700145

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})
009700145-01	OBS	No	2.017846	132.104516	145.6	13.611	11.6	15.3	2.23	7832	2.88	11976.99
009700145-02	OBS	No	61.259151	153.667026	783.2	7.254	27.1	8.0	2.23	7832	6.55	126.47
009700145-03	OBS	No	4.319252	132.762915	369.2	6.437	10.8	12.7	2.23	7832	5.01	4341.64
009700145-04	OBS	No	22.120799	146.801535	14.9	1.695	10.6	0.1	2.23	7832	1.02	491.81
009700145-05	OBS	No	52.189136	135.028930	988.6	2.351	7.6	9.1	2.23	7832	7.90	156.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009700145-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009700145-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009700145-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009700145-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009700145-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

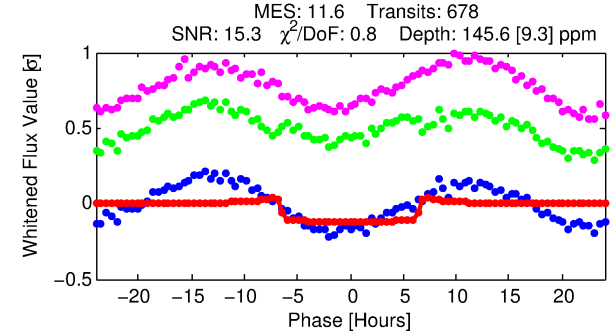
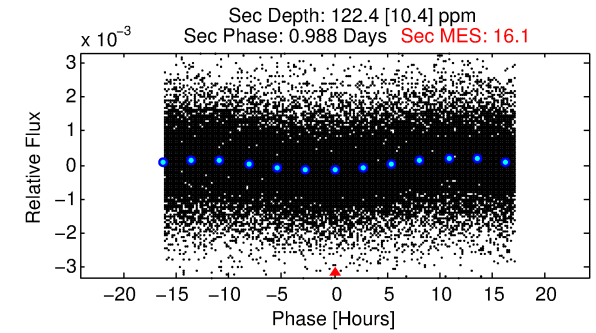
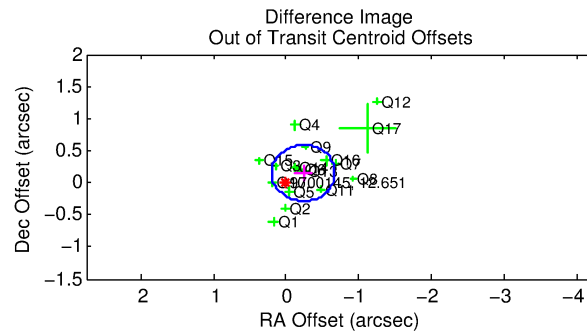
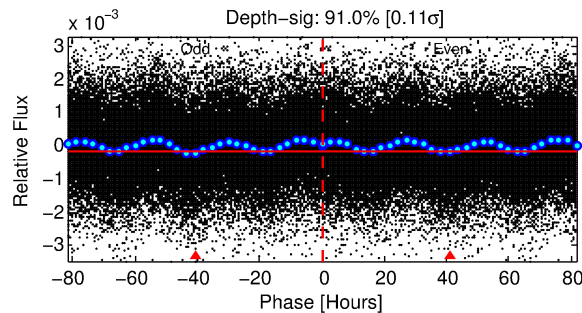
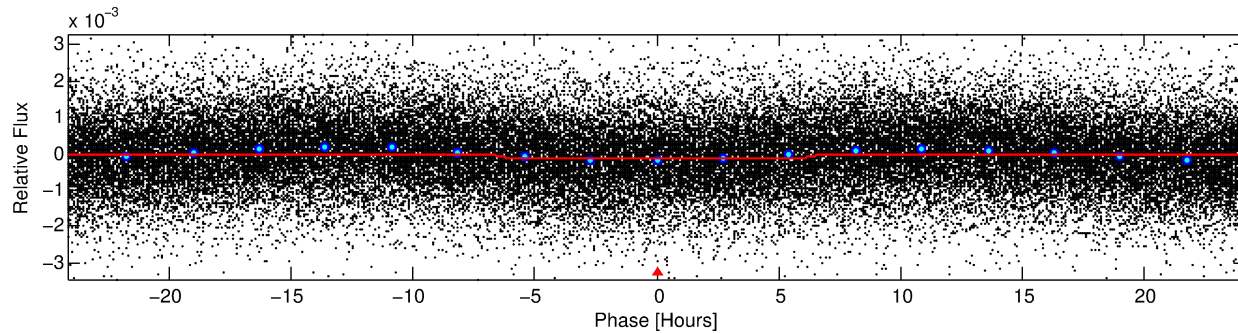
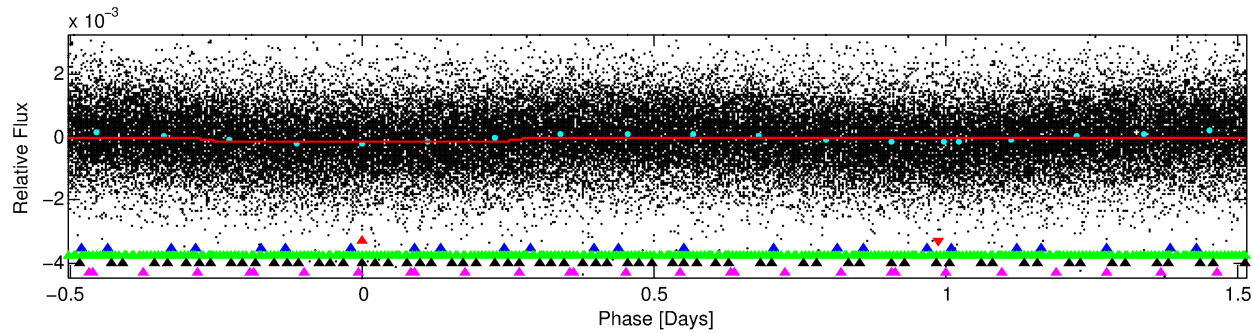
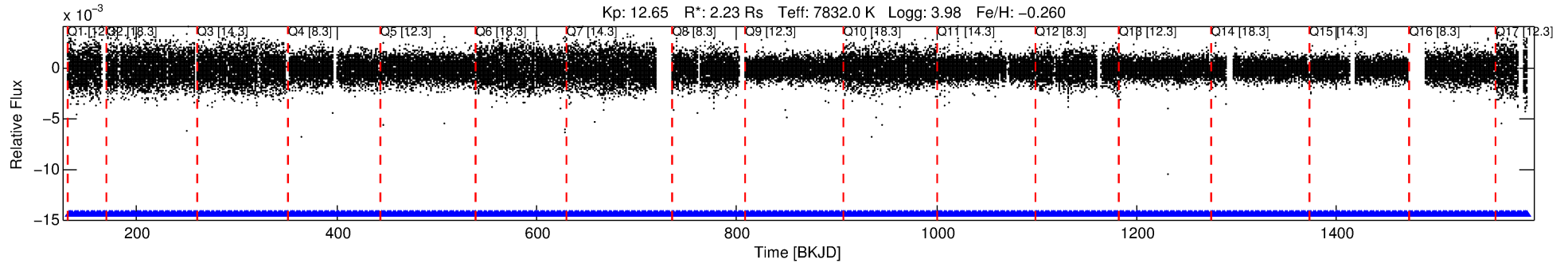
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009700145-01

No Significant Match Found

DV One-Page Summary

KIC: 9700145 Candidate: 1 of 5 Period: 2.018 d



DV Fit Results:

Period = 2.01785 [0.00002] d
Epoch = 132.1045 [0.0055] BKJD
Rp/R* = 0.0119 [0.0029]
a/R* = 1.17 [0.42]
b = 0.71 [0.94]
Seff = 11976.99 [5759.41]
Teq = 2668 [321] K
Rp = 2.88 [1.22] Re
a = 0.0374 [0.0112] AU
Ag = 11.34 [7.60] [1.36 σ]
Teffp = 7568 [989] K [4.71 σ]

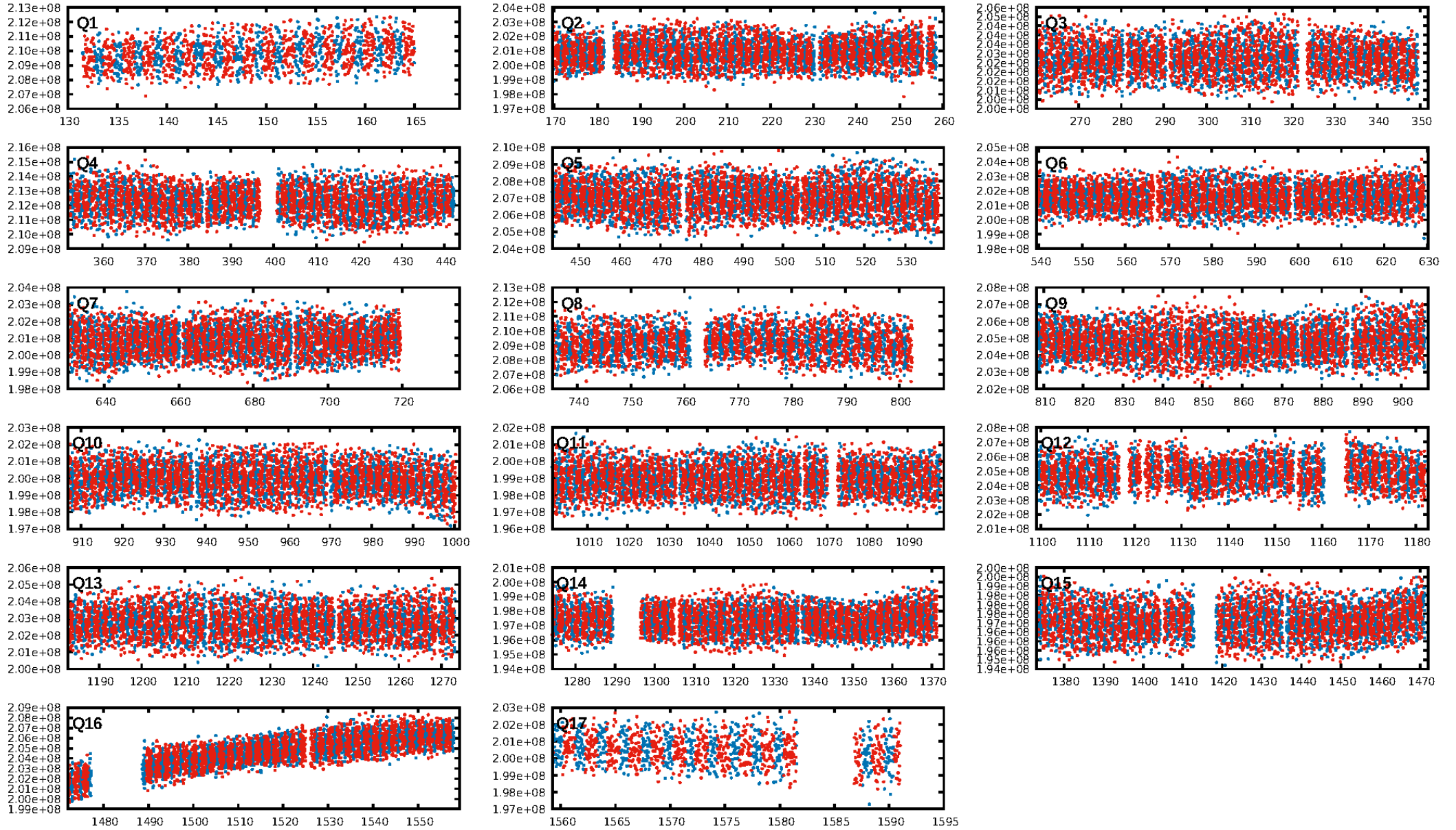
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [3.67 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.12e-24
RollingBand-fgt: 1.00 [647/647]
GhostDiagnostic-chr: 1.345
Centroid-sig: 0.0%
Centroid-so: 0.134 arcsec [1.79 σ]
OotOffset-rm: 0.280 arcsec [1.92 σ]
KicOffset-rm: 0.188 arcsec [1.21 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

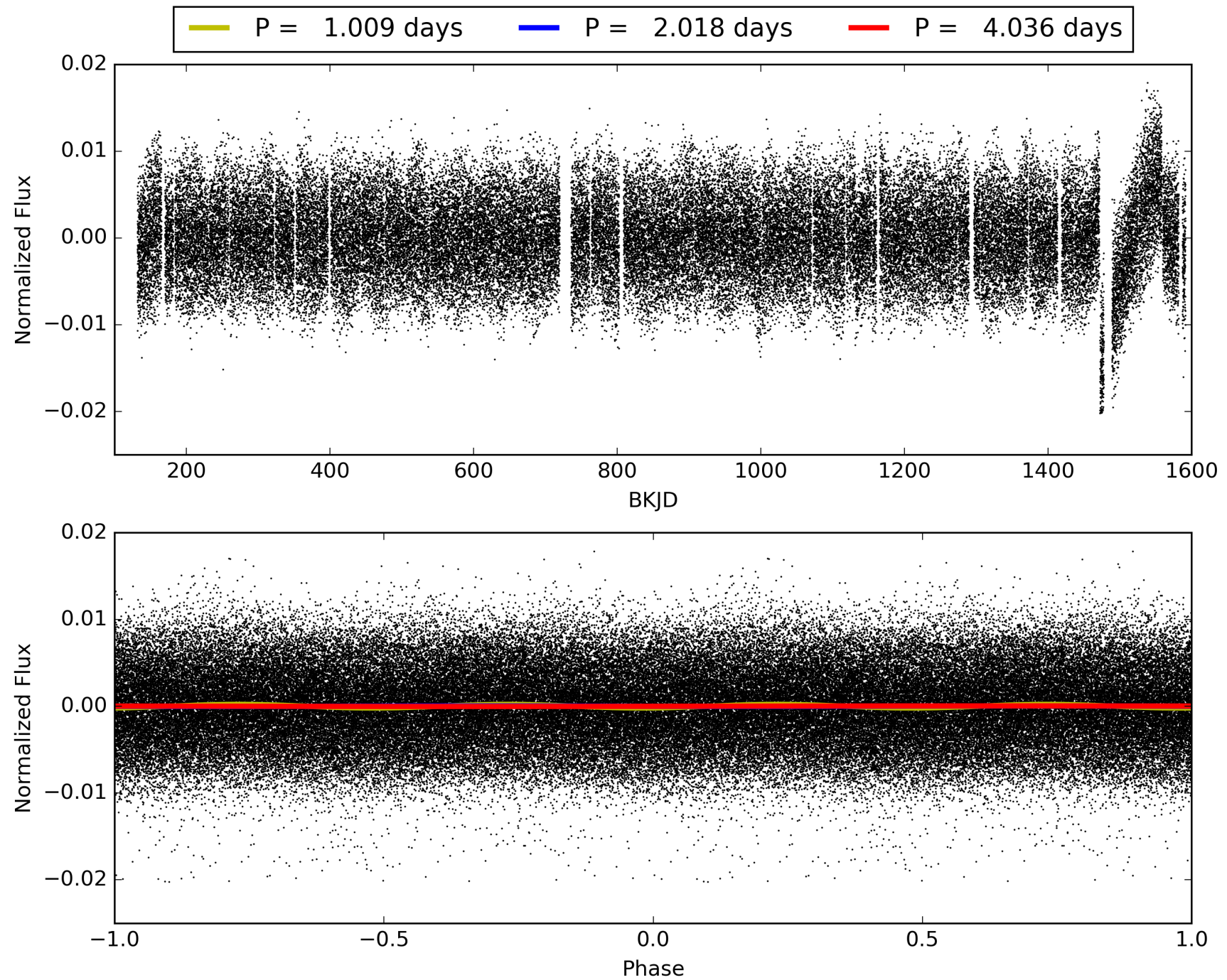
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009700145-01, PDC Light Curves

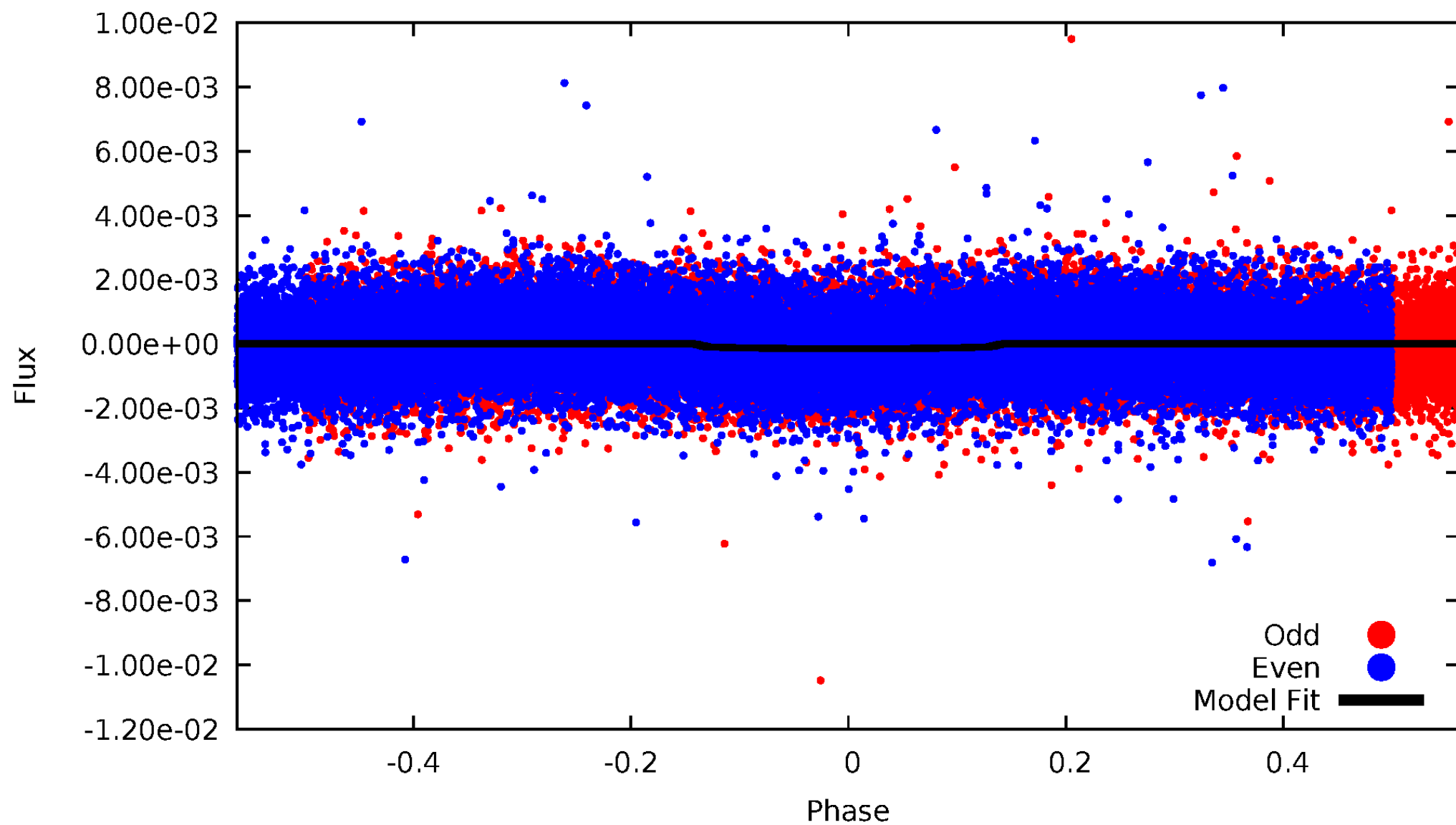


TCE 009700145-01



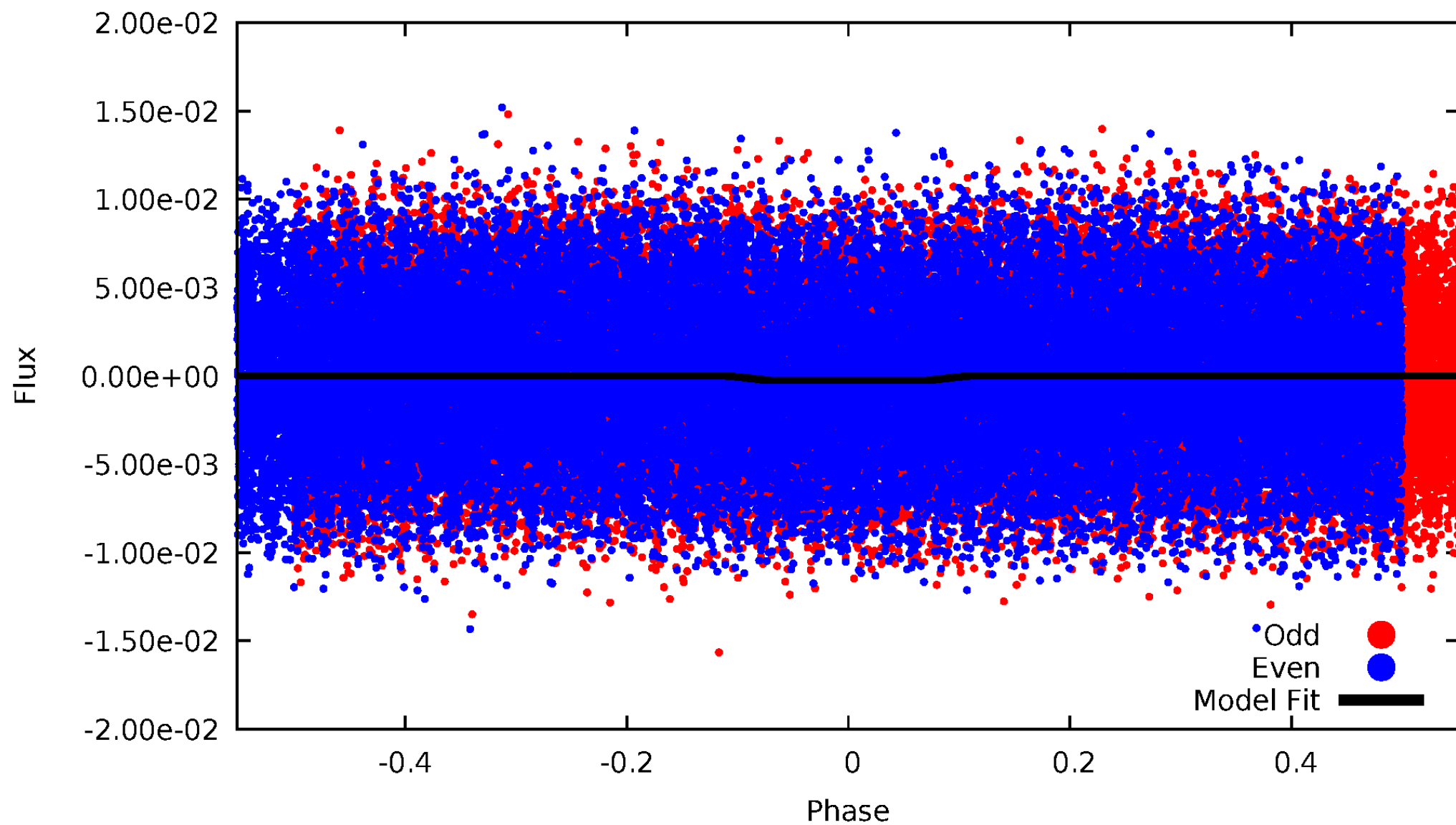
DV Odd/Even

TCE 009700145-01

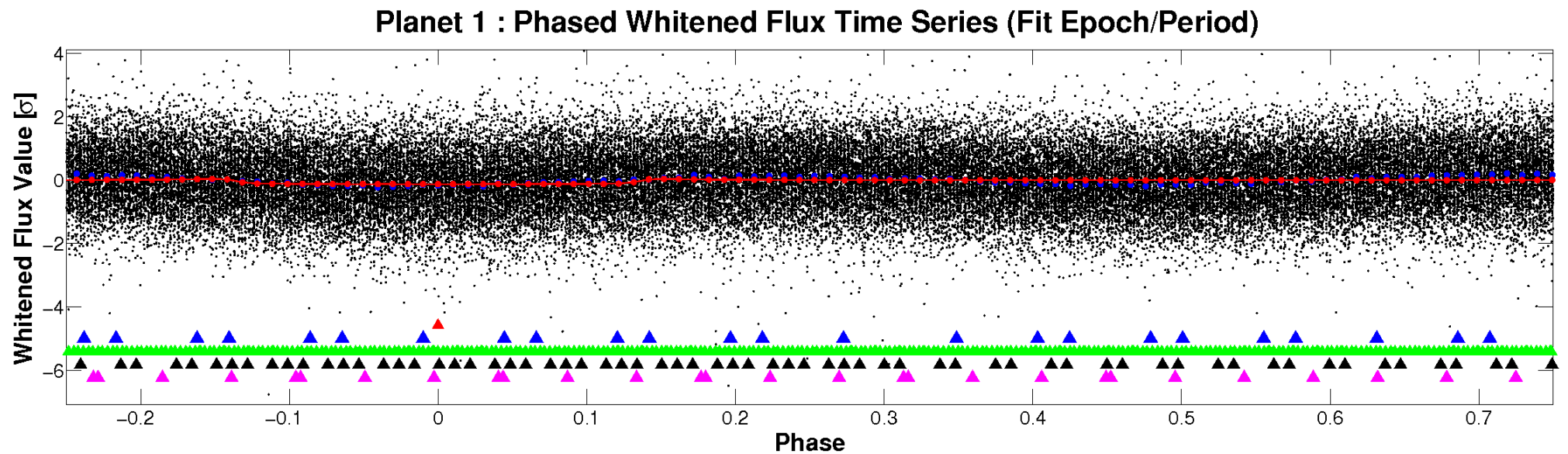
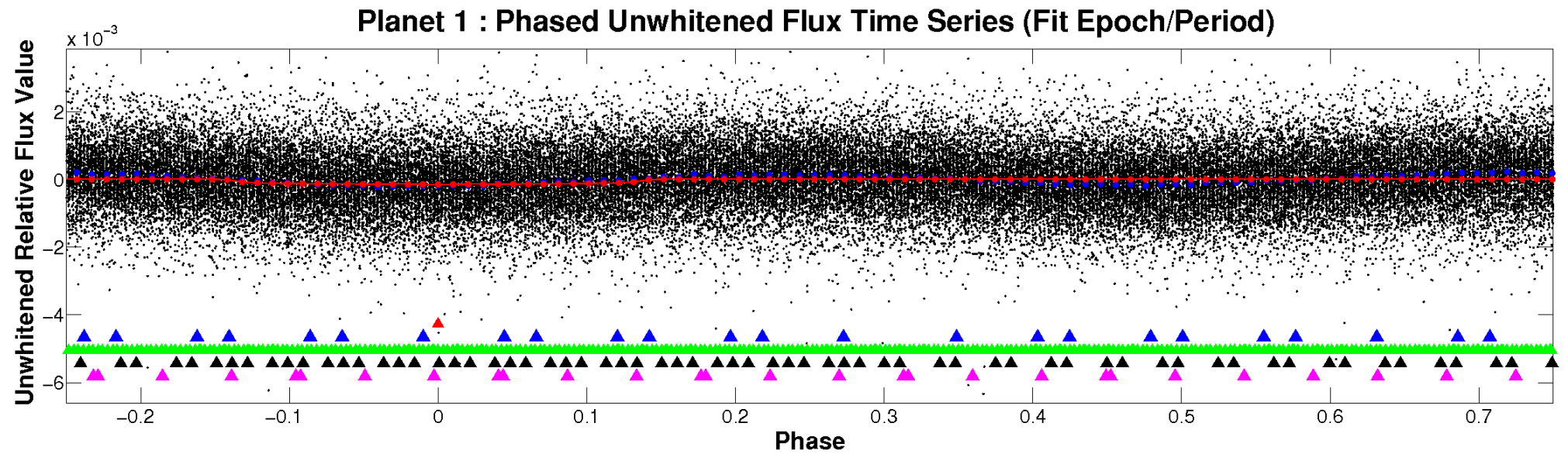


ALT Odd/Even

TCE 009700145-01

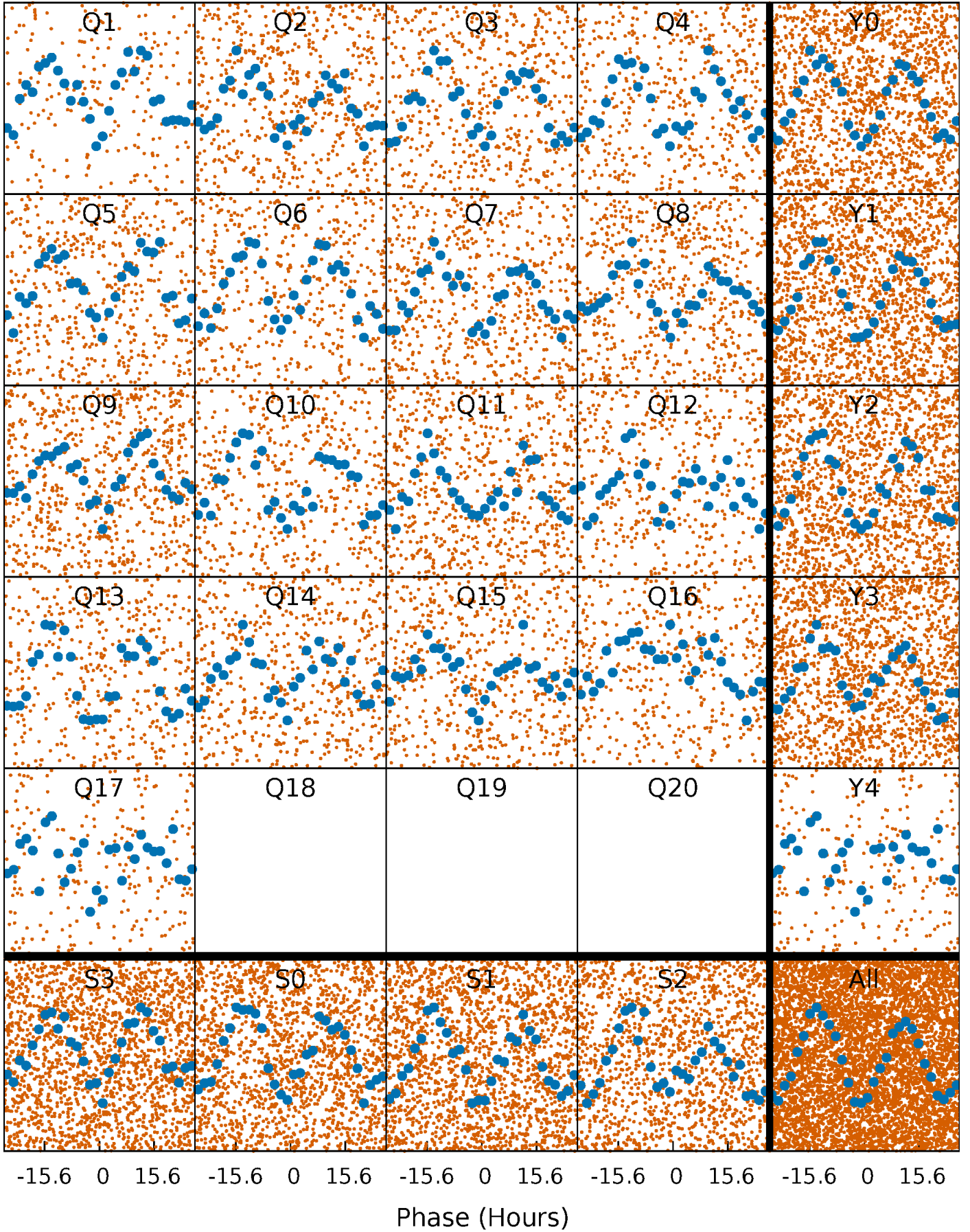


Non-Whitened Vs. Whitened Light Curve



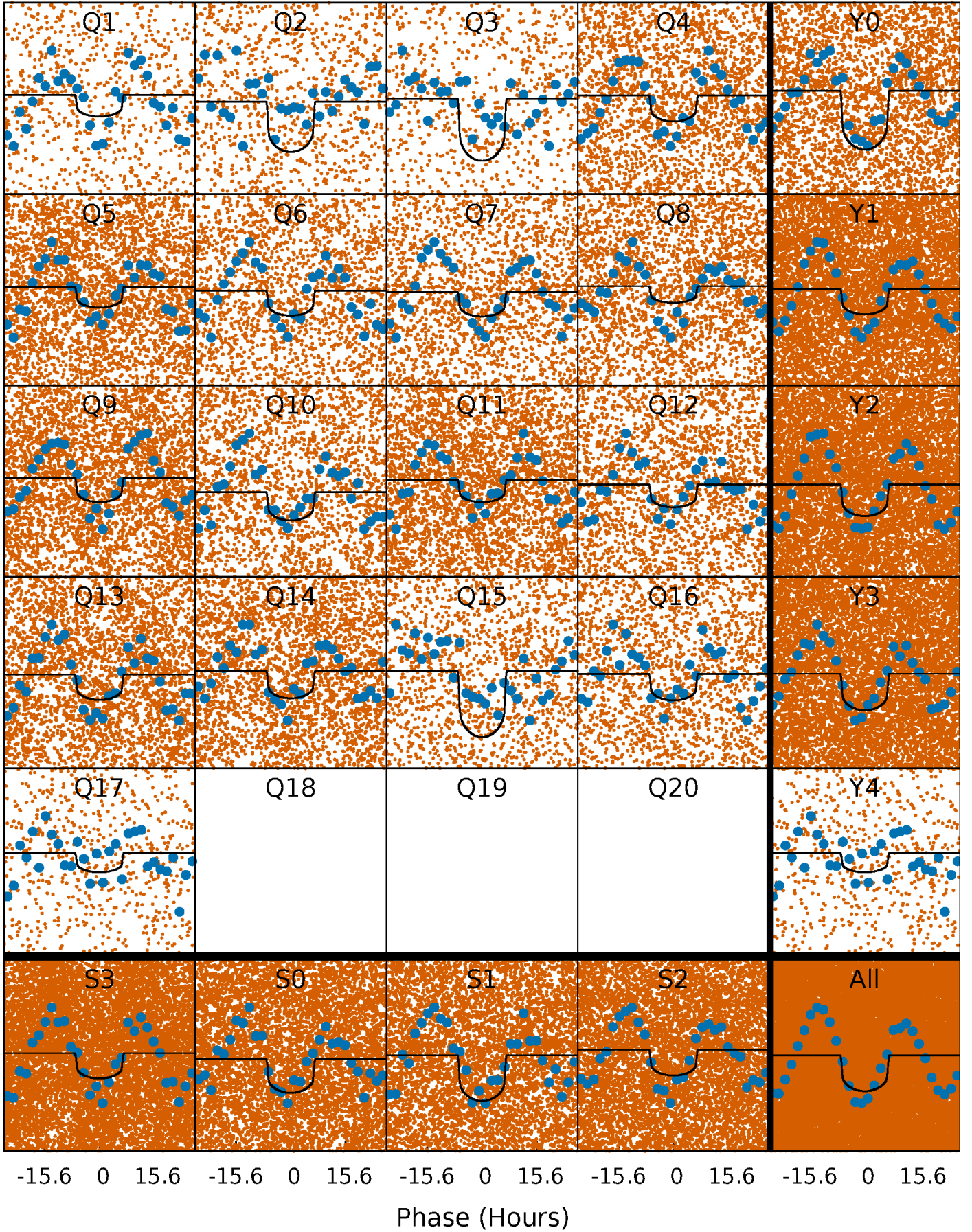
PDC Quarter-Phased Transit Curves

TCE 009700145-01 P= 2.017846 Days $T_0=132.104516$ (BKJD)



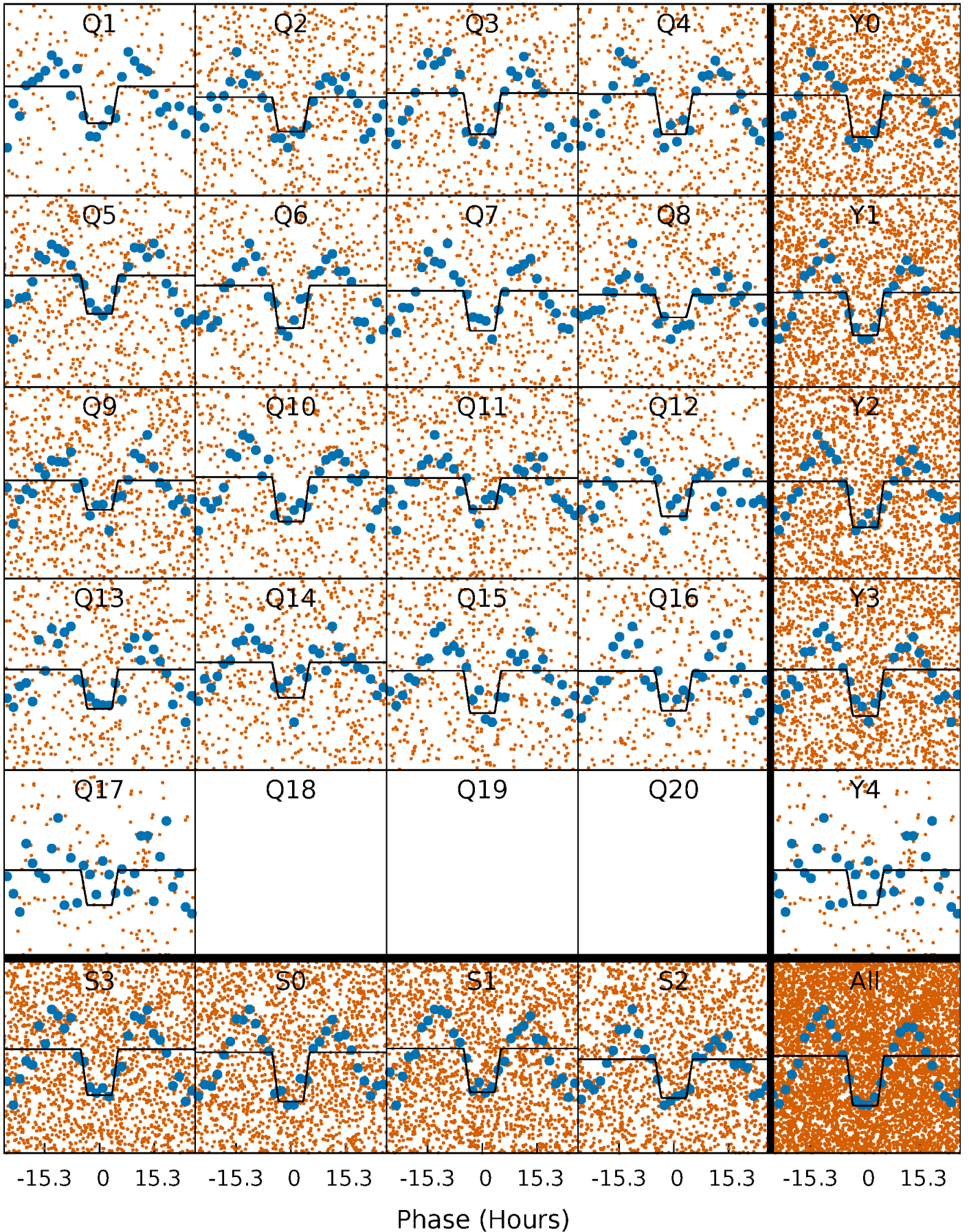
DV Quarter-Phased Transit Curves

TCE 009700145-01 P= 2.017846 Days $T_0=132.104516$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

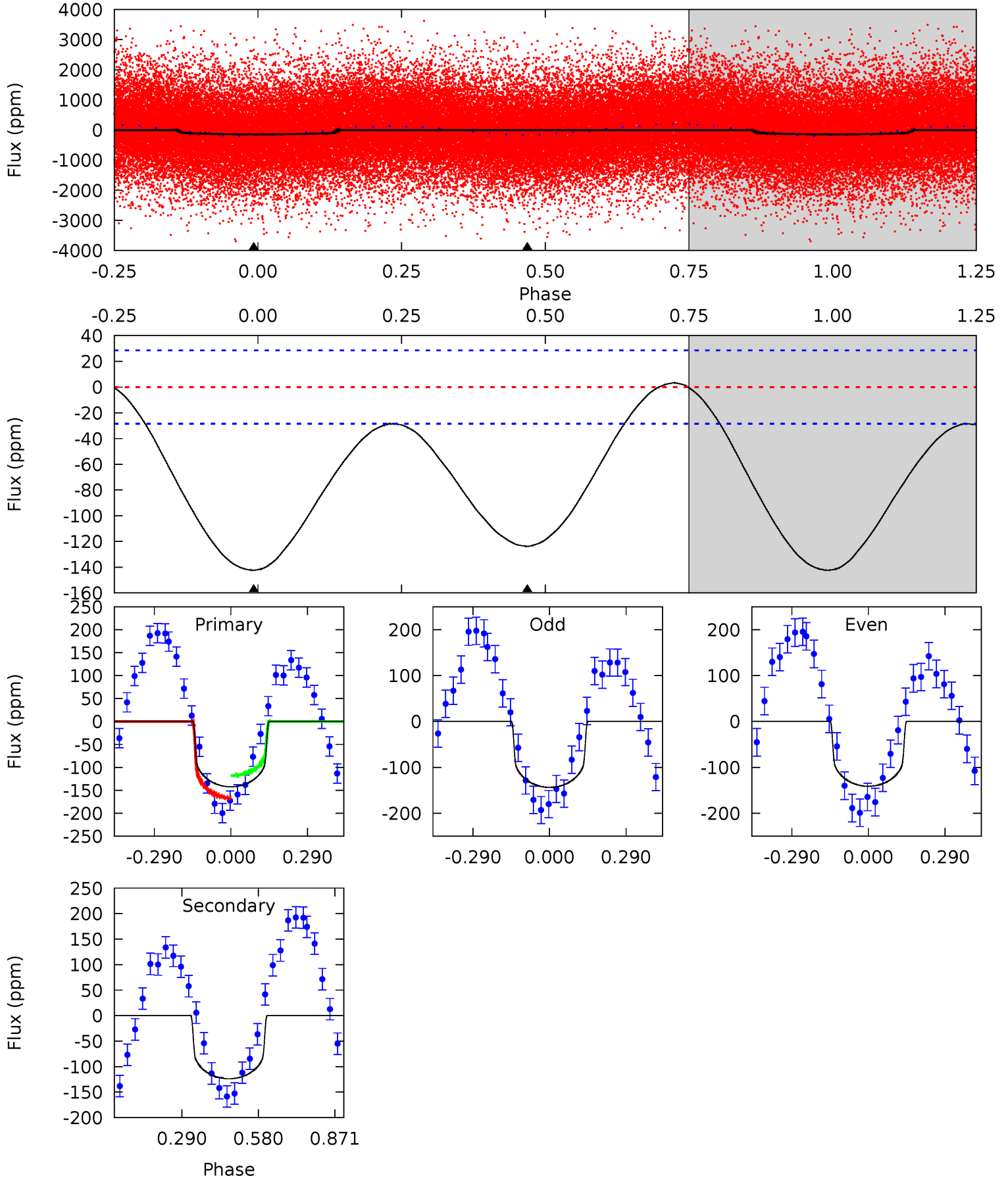
TCE 009700145-01 P= 2.017690 Days $T_0=132.119233$ (BKJD)



DV Model-Shift Uniqueness Test

009700145-01, P = 2.017846 Days, E = 130.086670 Days

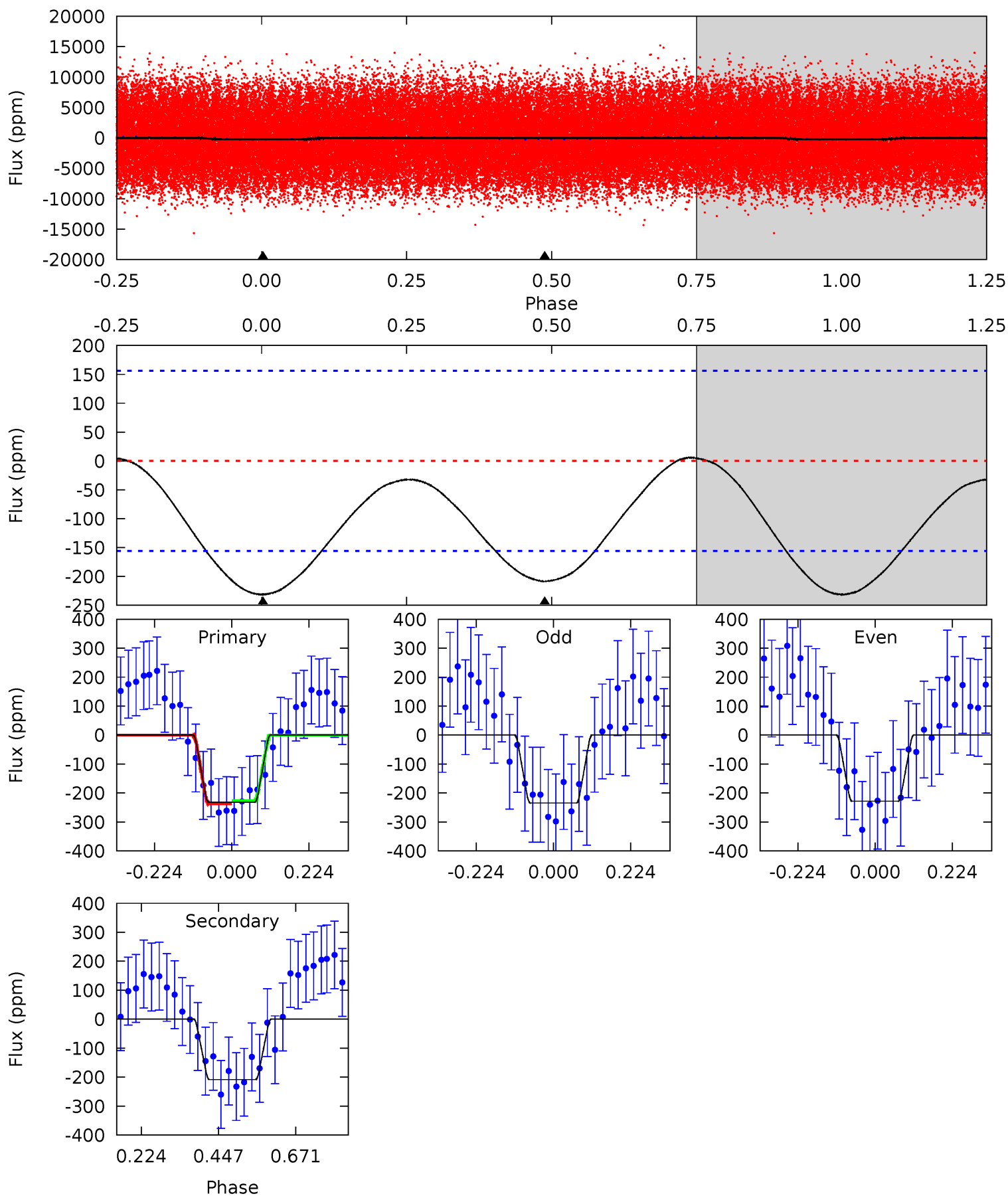
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.7	18.8	0	0	4.34	1.06	2.01	21.7	21.7	18.8	18.8	0.19	1.06	0.02	3.76



Alt Model-Shift Uniqueness Test

009700145-01, P = 2.017690 Days, E = 130.101543 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.51	5.87	0	0	4.39	1.22	0.50	6.51	6.51	5.87	5.87	0.08	1.07	0.02	0.15



Stellar Parameters For KIC 009700145

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7832^{+216}_{-325}	$3.975^{+0.253}_{-0.136}$	$-0.260^{+0.200}_{-0.350}$	$2.227^{+0.473}_{-0.768}$	$1.707^{+0.182}_{-0.364}$	$0.218^{+0.390}_{-0.076}$
	+3%/-4%	+6%/-3%	+77%/-135%	+21%/-34%	+11%/-21%	+179%/-35%
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 009700145-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-124 ± 7	$2.76^{+0.82}_{-0.78}$	3670^{+271}_{-291}	7485^{+1566}_{-915}	13^{+11}_{-5}
Alt.	-209 ± 36	$3.64^{+0.93}_{-0.83}$	3666^{+279}_{-302}	7338^{+1027}_{-830}	12^{+8}_{-4}

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 $A_{obs} \gg 1.0$

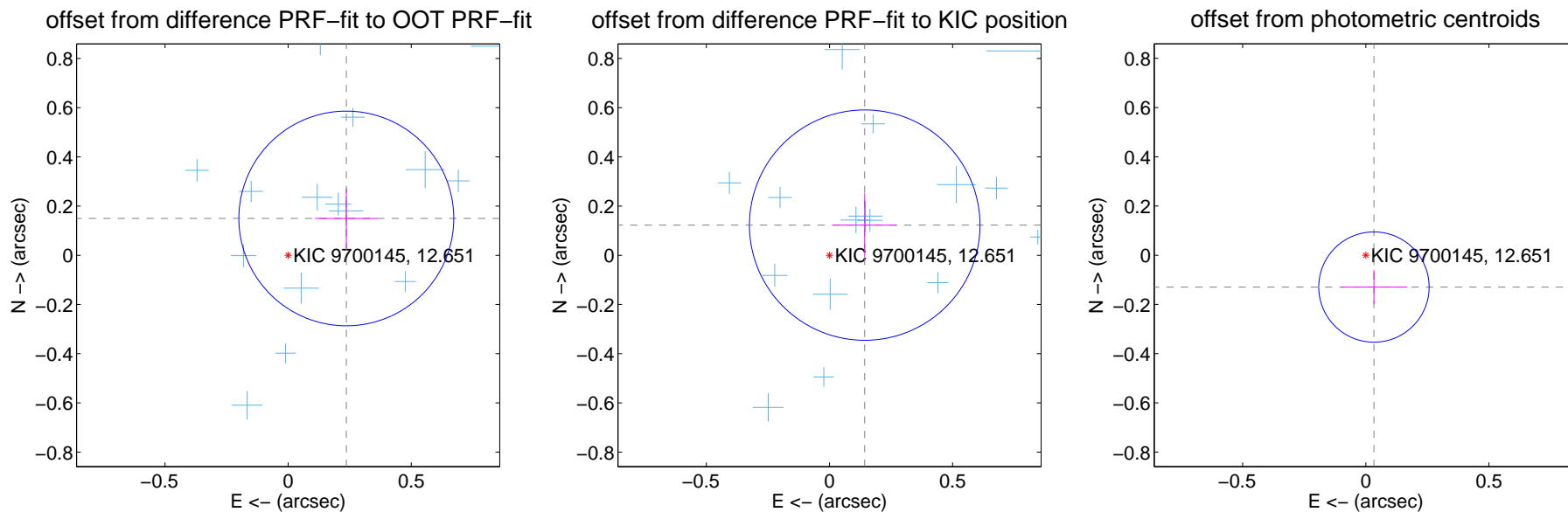
DV Centroid Data

Supplemental centroid analysis for 009700145-01. Kepler magnitude: 12.65. Transit SNR 15.26

There are 17 quarters with good PRF difference image offsets

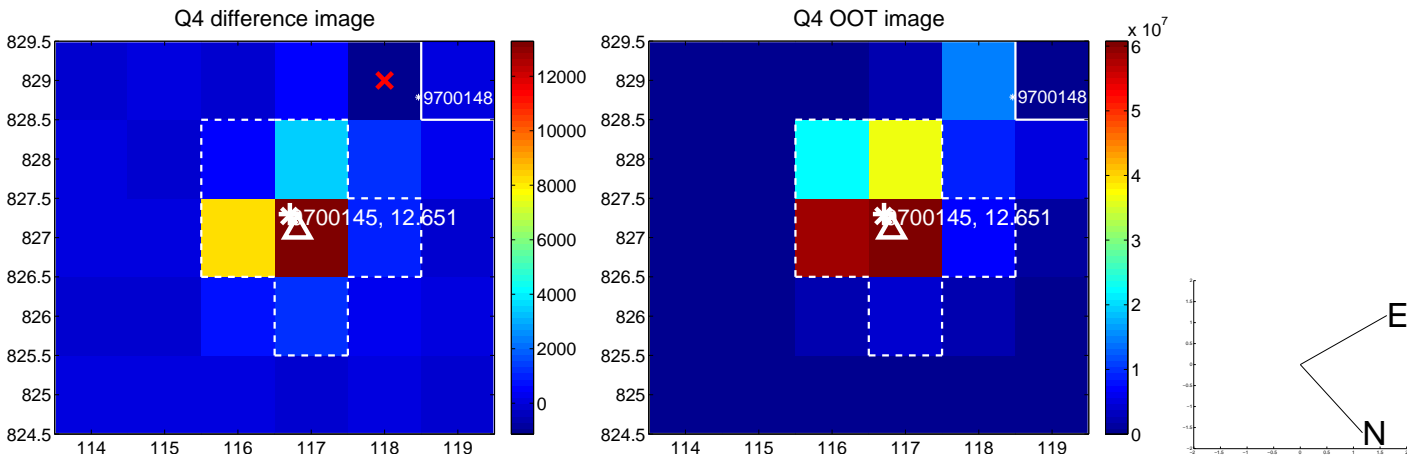
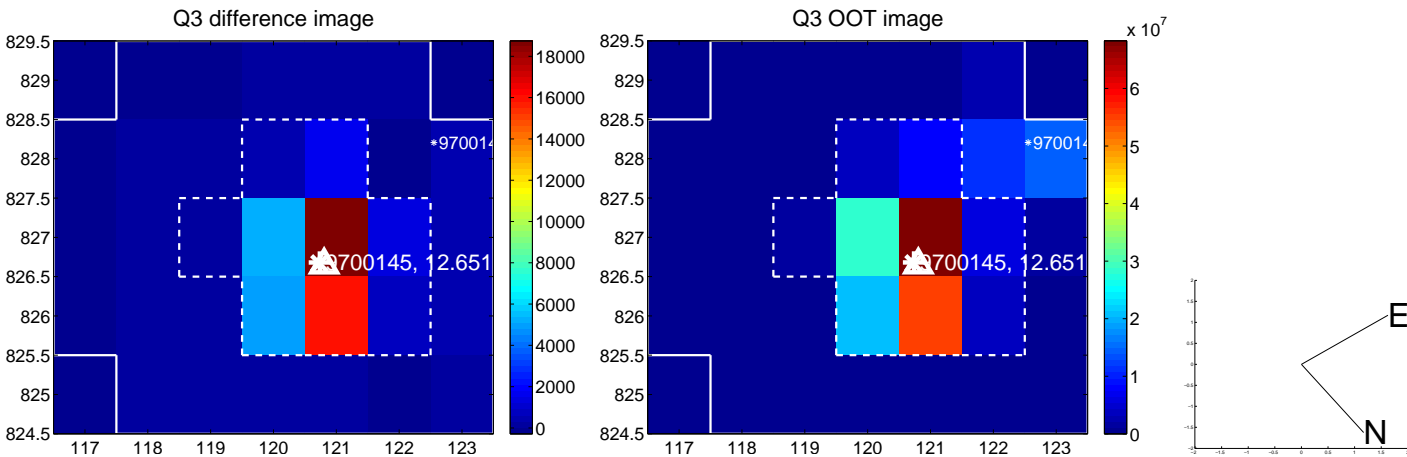
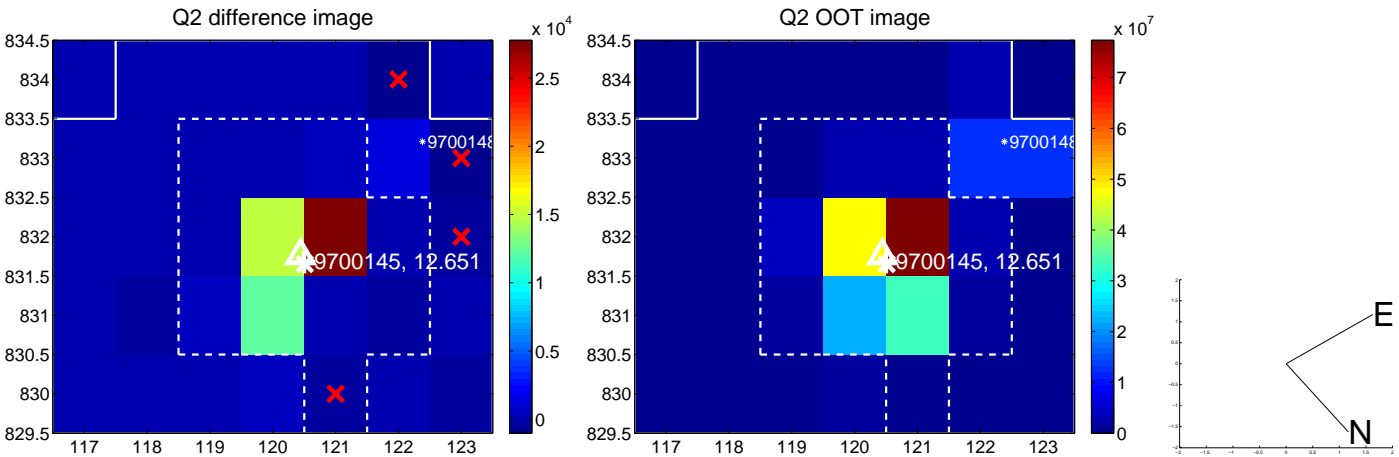
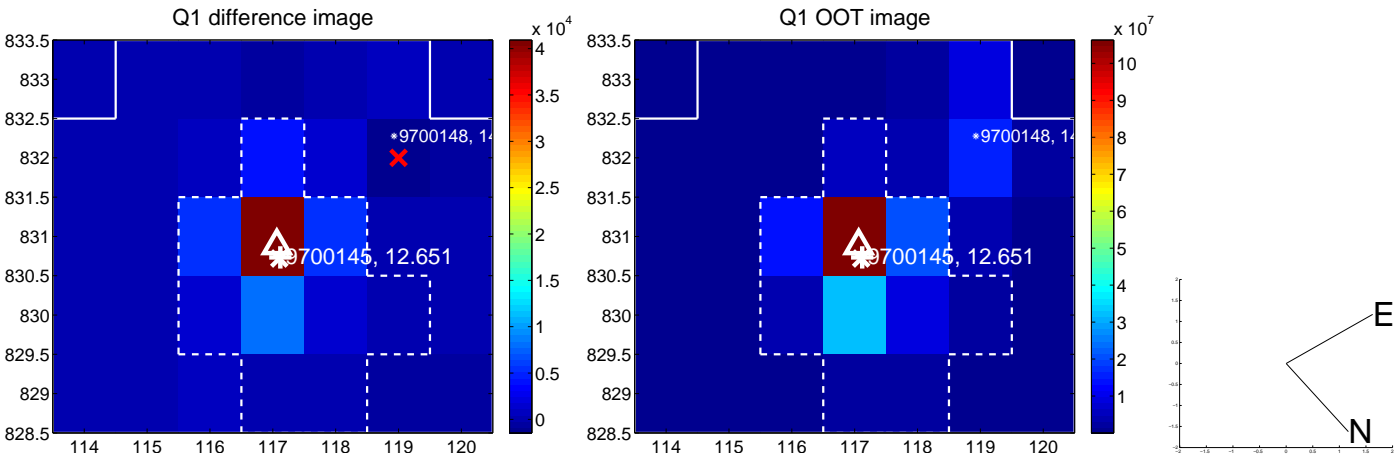
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.280 ± 0.145	1.92	-0.236 ± 0.127	0.150 ± 0.121
PRF-fit source offset from KIC position	0.188 ± 0.156	1.21	-0.143 ± 0.130	0.123 ± 0.129
photometric centroid source offset	0.13 ± 0.07	1.79	-0.03 ± 0.14	-0.13 ± 0.07

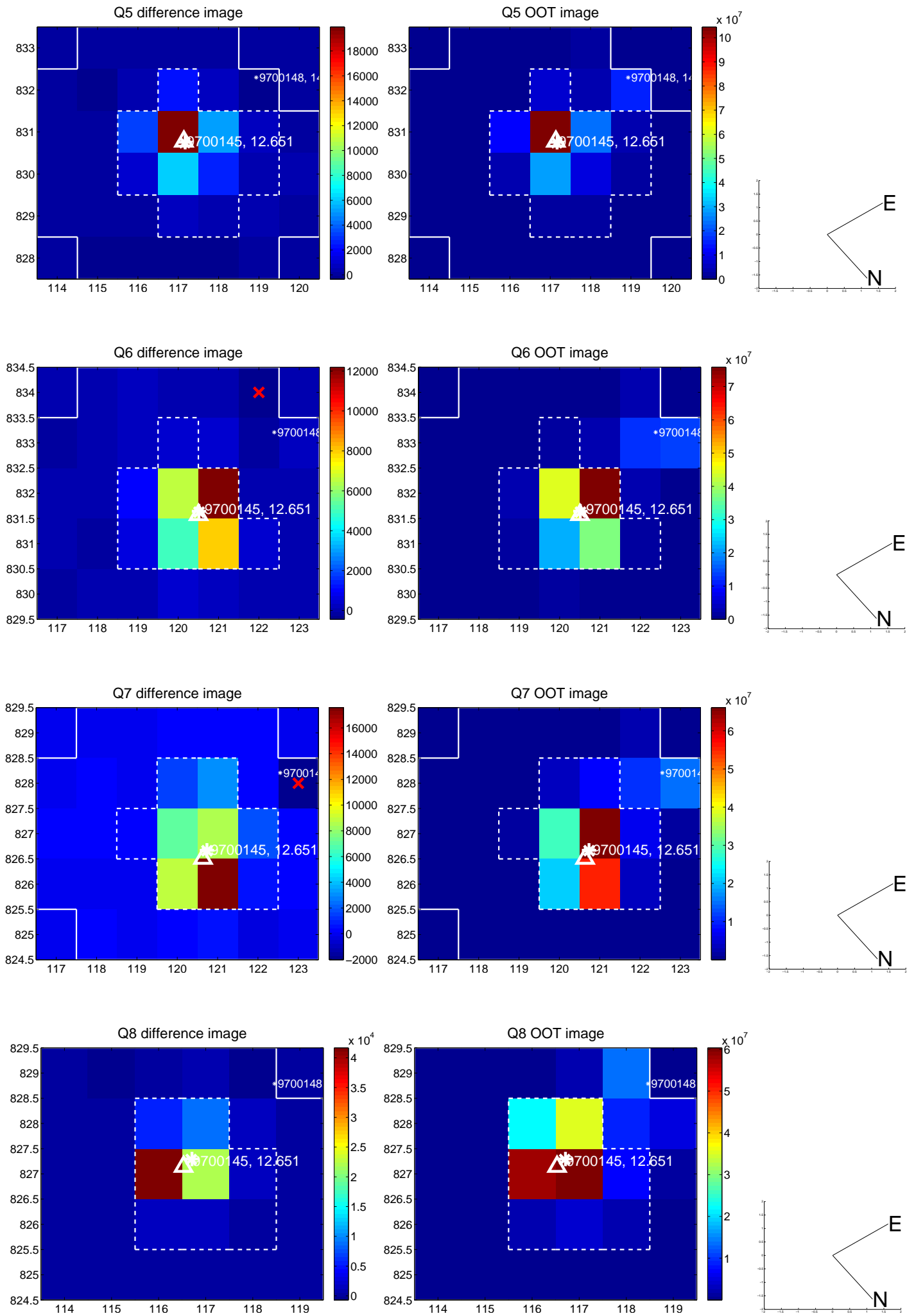


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

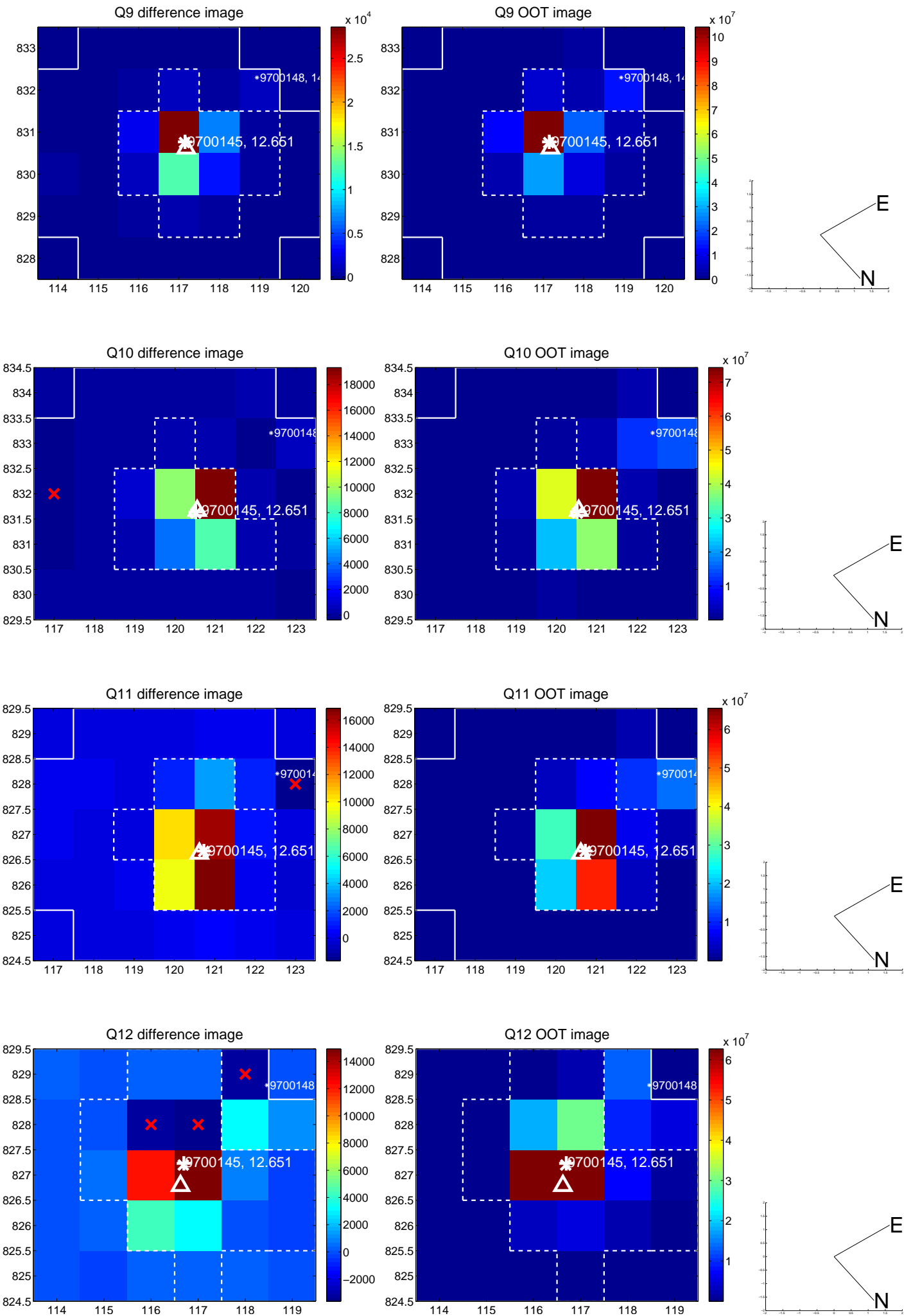
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



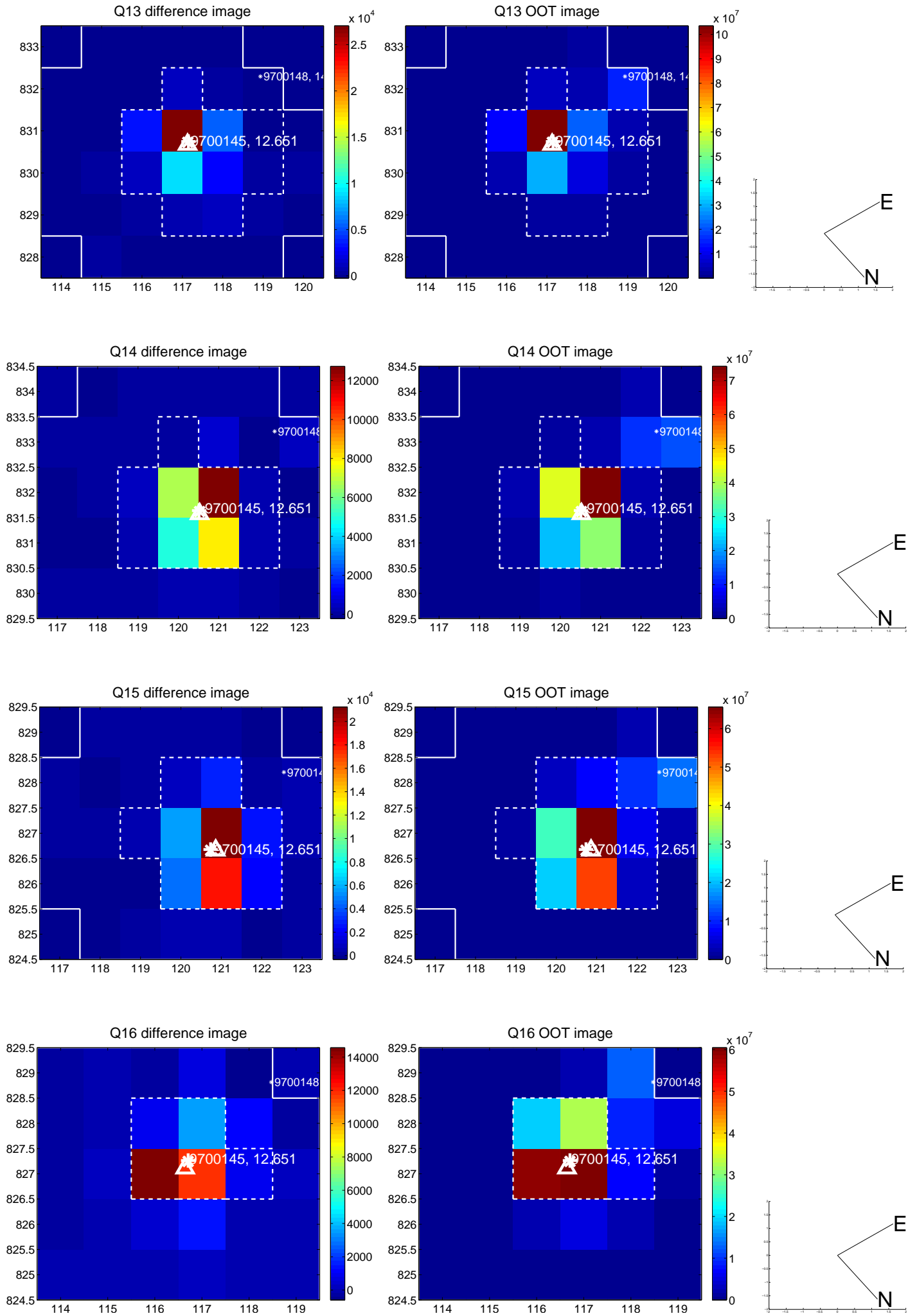
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



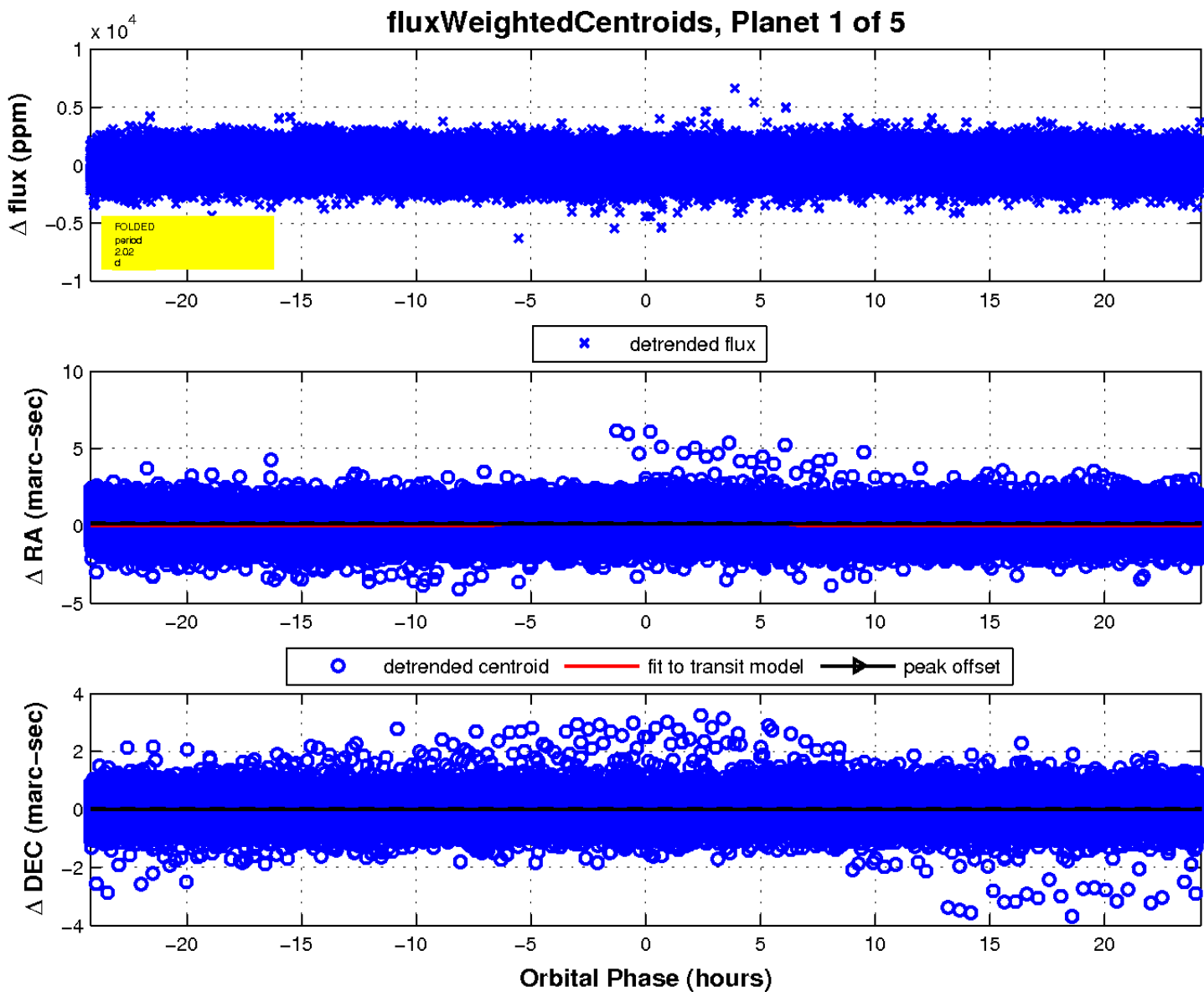
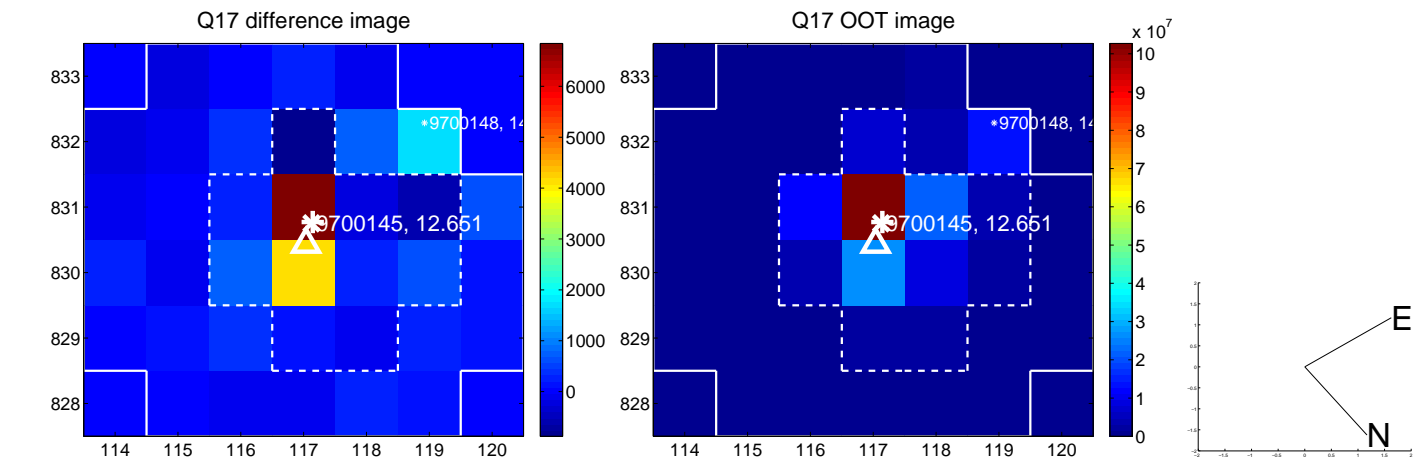
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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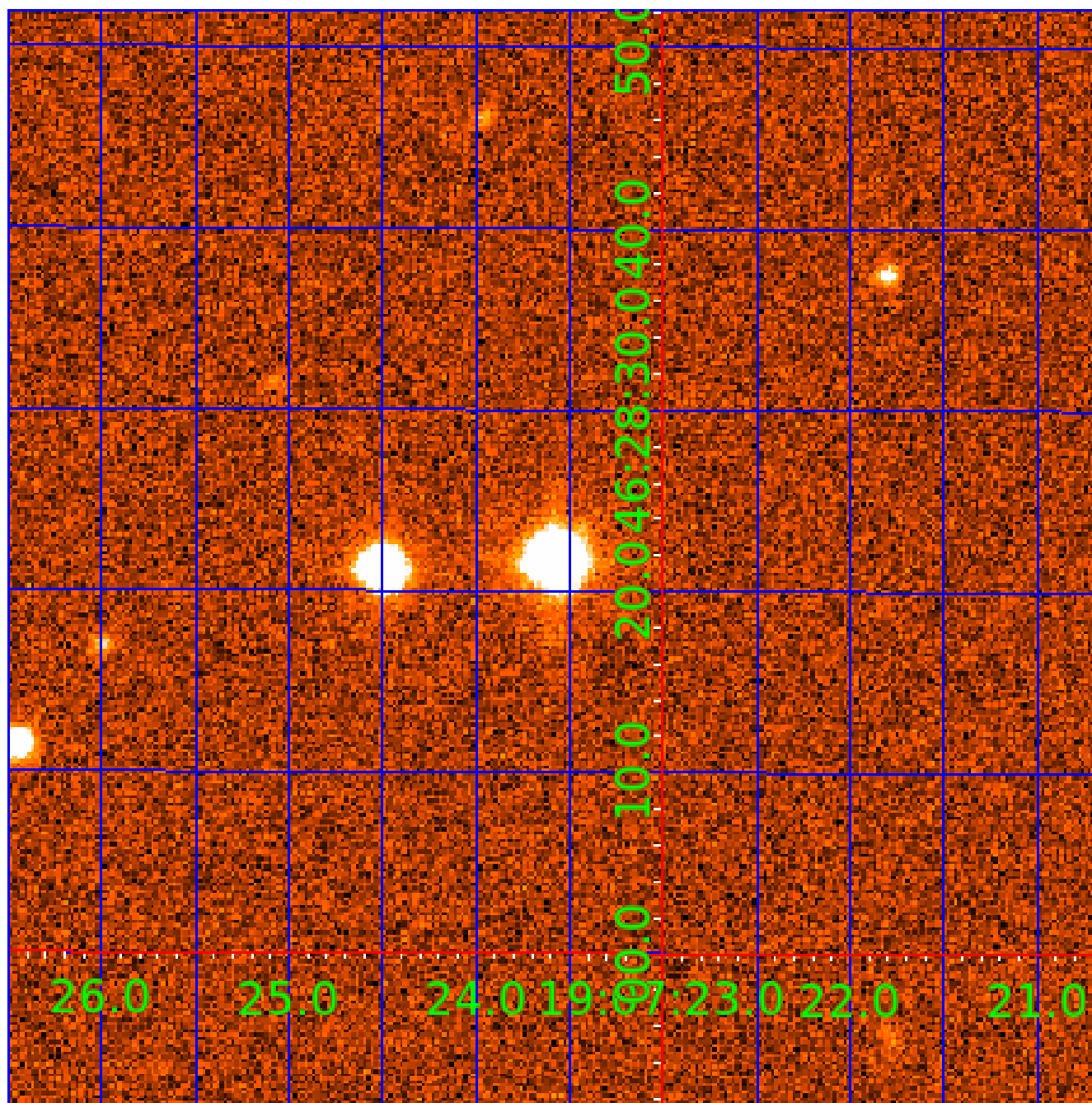


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009700145

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009700145-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009700145-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009700145-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009700145-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009700145-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

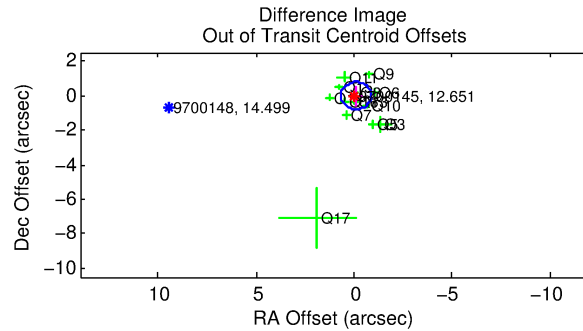
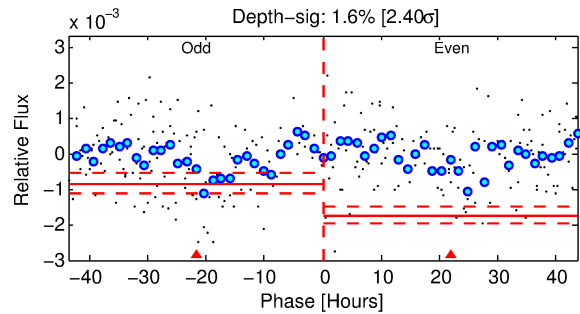
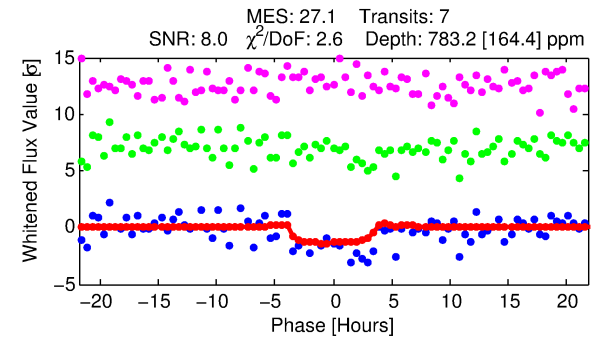
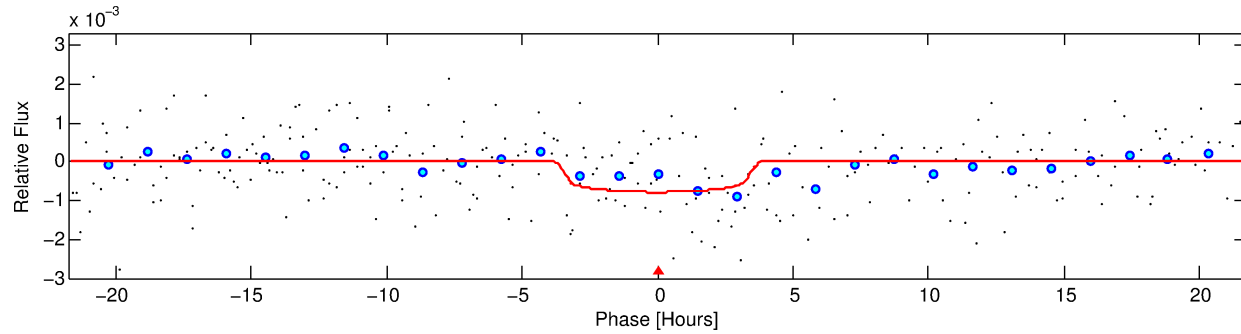
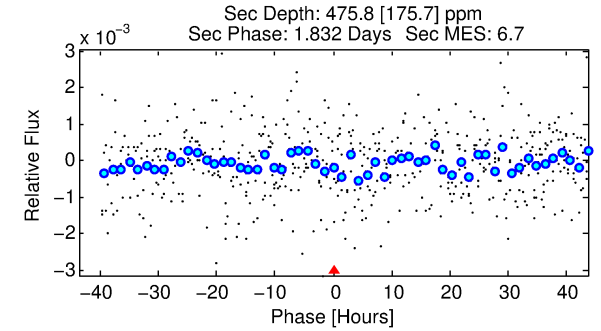
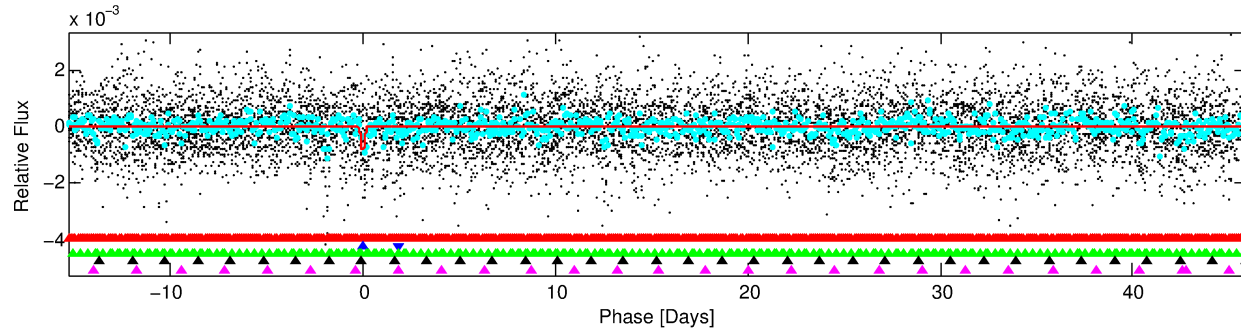
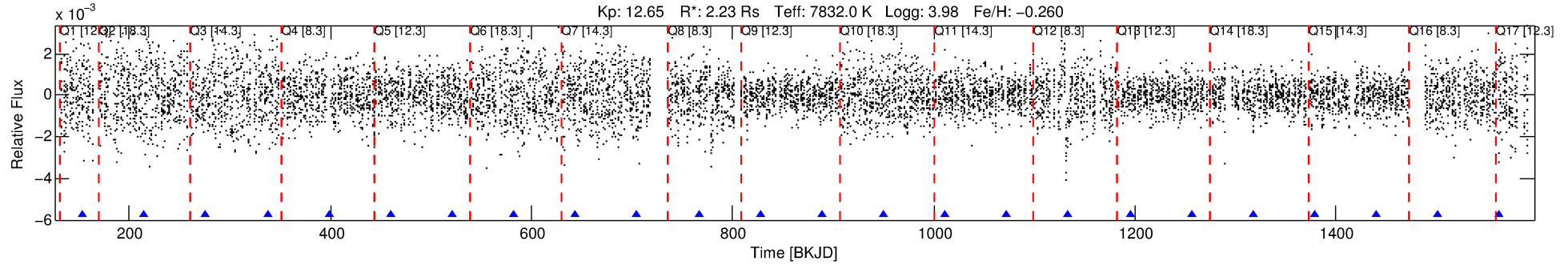
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009700145-02

No Significant Match Found

DV One-Page Summary

KIC: 9700145 Candidate: 2 of 5 Period: 61.259 d



DV Fit Results:

Period = 61.25915 [0.00206] d
Epoch = 153.6670 [0.0289] BKJD
Rp/R* = 0.0270 [0.0303]
a/R* = 52.91 [312.70]
b = 0.62 [5.93]
Seff = 126.47 [60.81]
Teff = 855 [103] K
Rp = 6.55 [7.71] Re
a = 0.3636 [0.1094] AU
Ag = 806.56 [1875.42] [0.43σ]
Teffp = 7046 [4028] K [1.54σ]

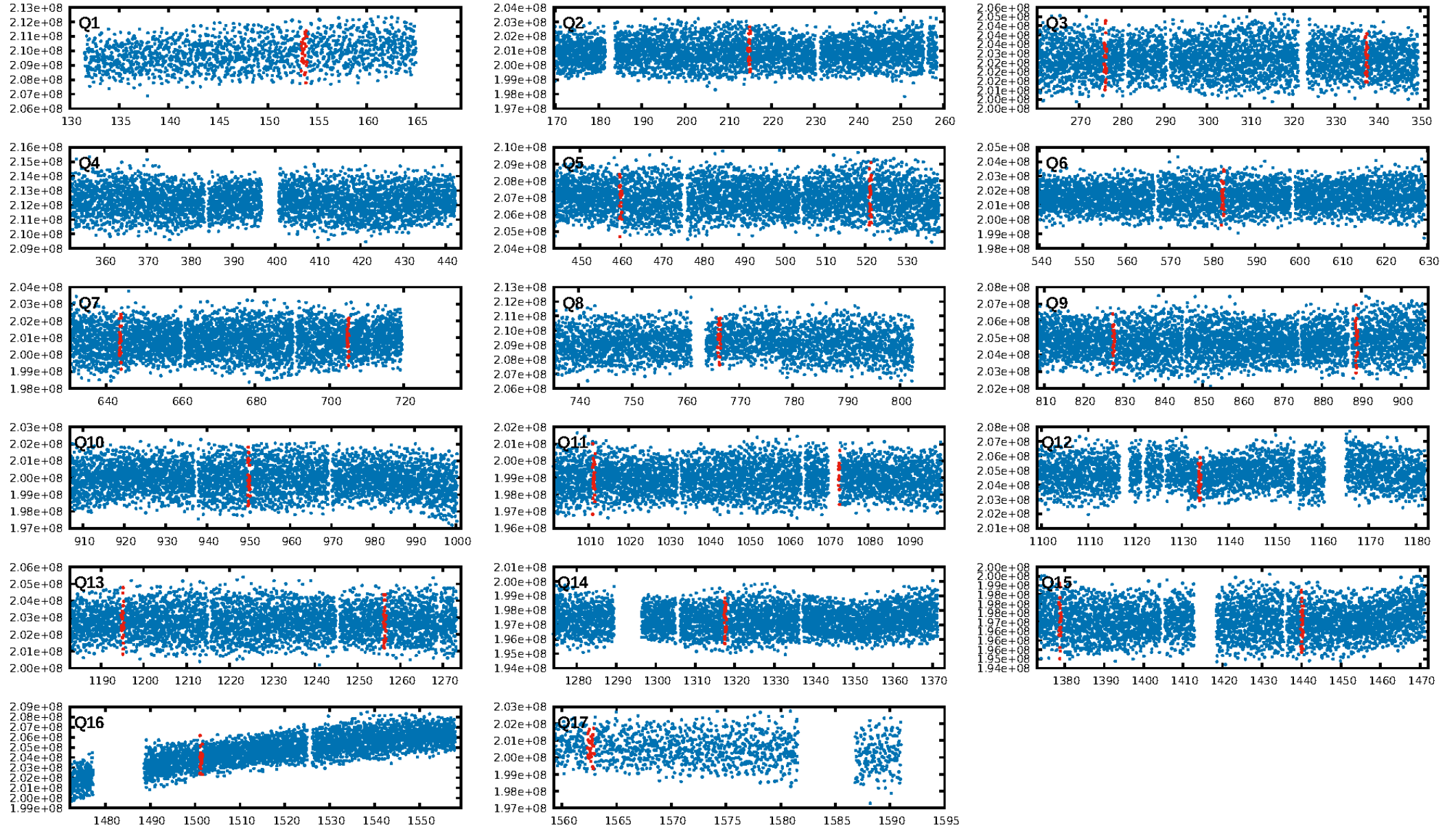
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.55σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 29.3%
Bootstrap-pfa: 3.85e-171
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -0.715
Centroid-sig: 0.4%
Centroid-so: 1.408 arcsec [7.09σ]
OotOffset-rm: 0.093 arcsec [0.36σ]
KicOffset-rm: 0.040 arcsec [0.10σ]
OotOffset-st: 3/4/2/4 [13]
KicOffset-st: 3/4/2/4 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 0.13 [2/15]

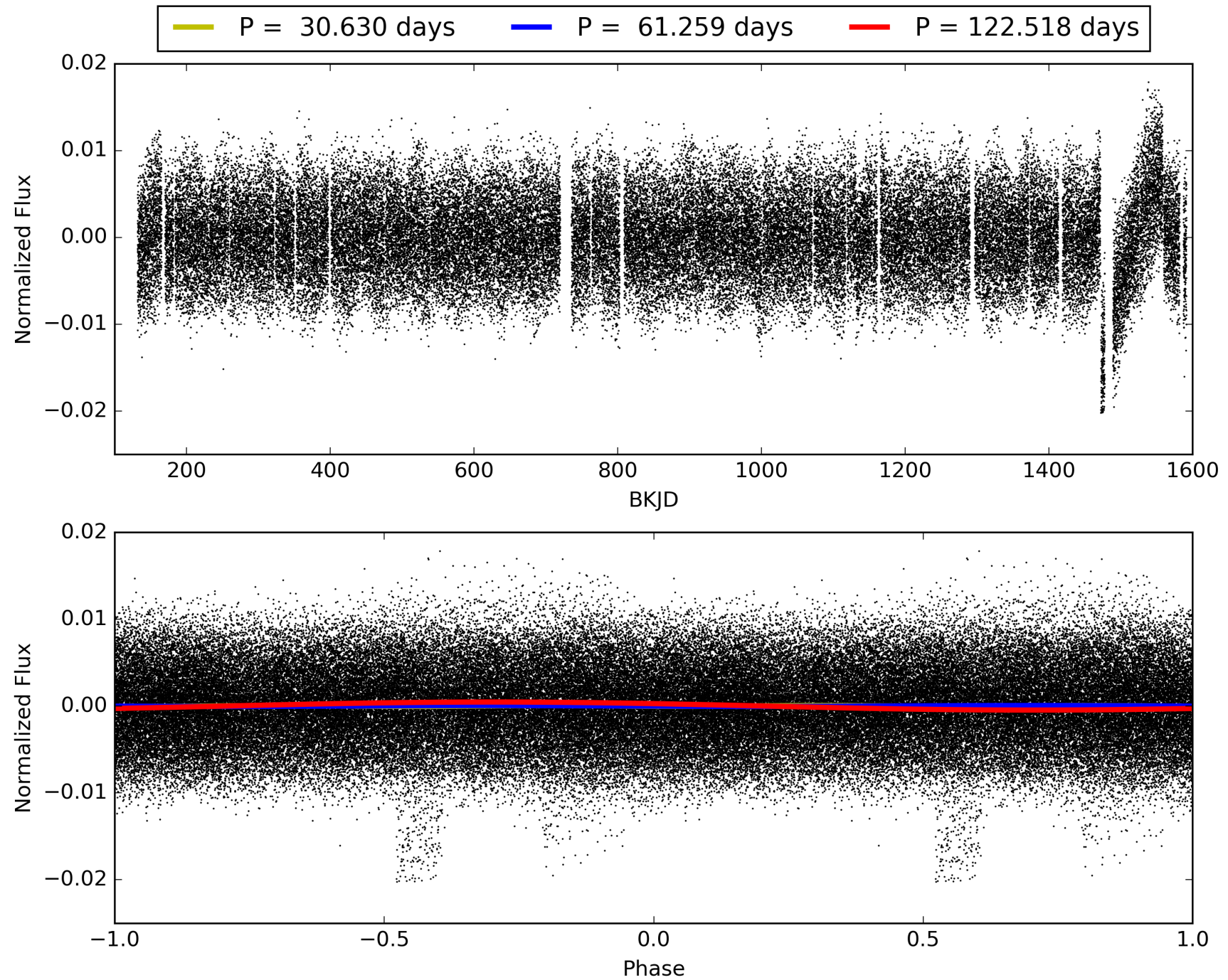
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009700145-02, PDC Light Curves

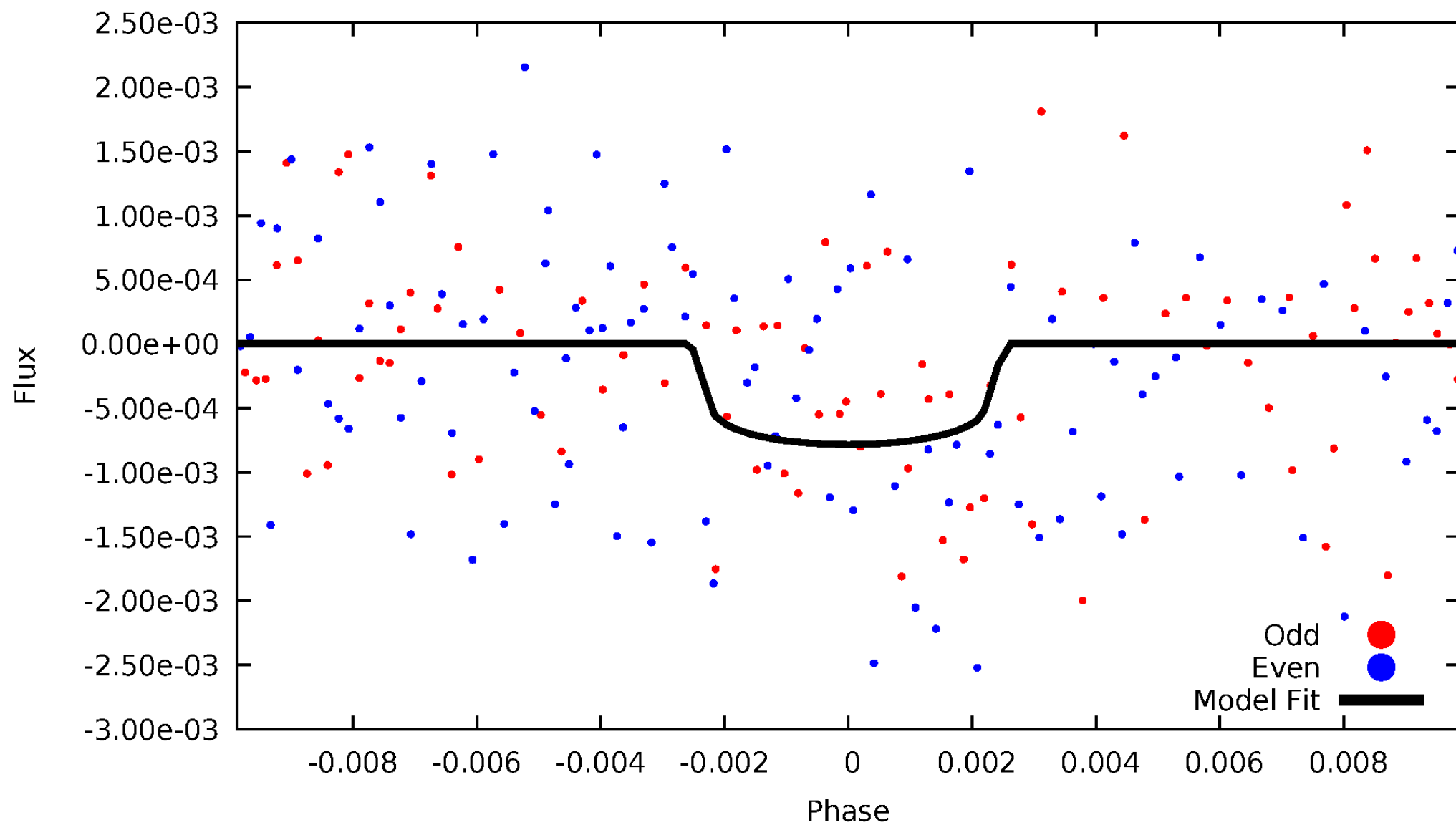


TCE 009700145-02



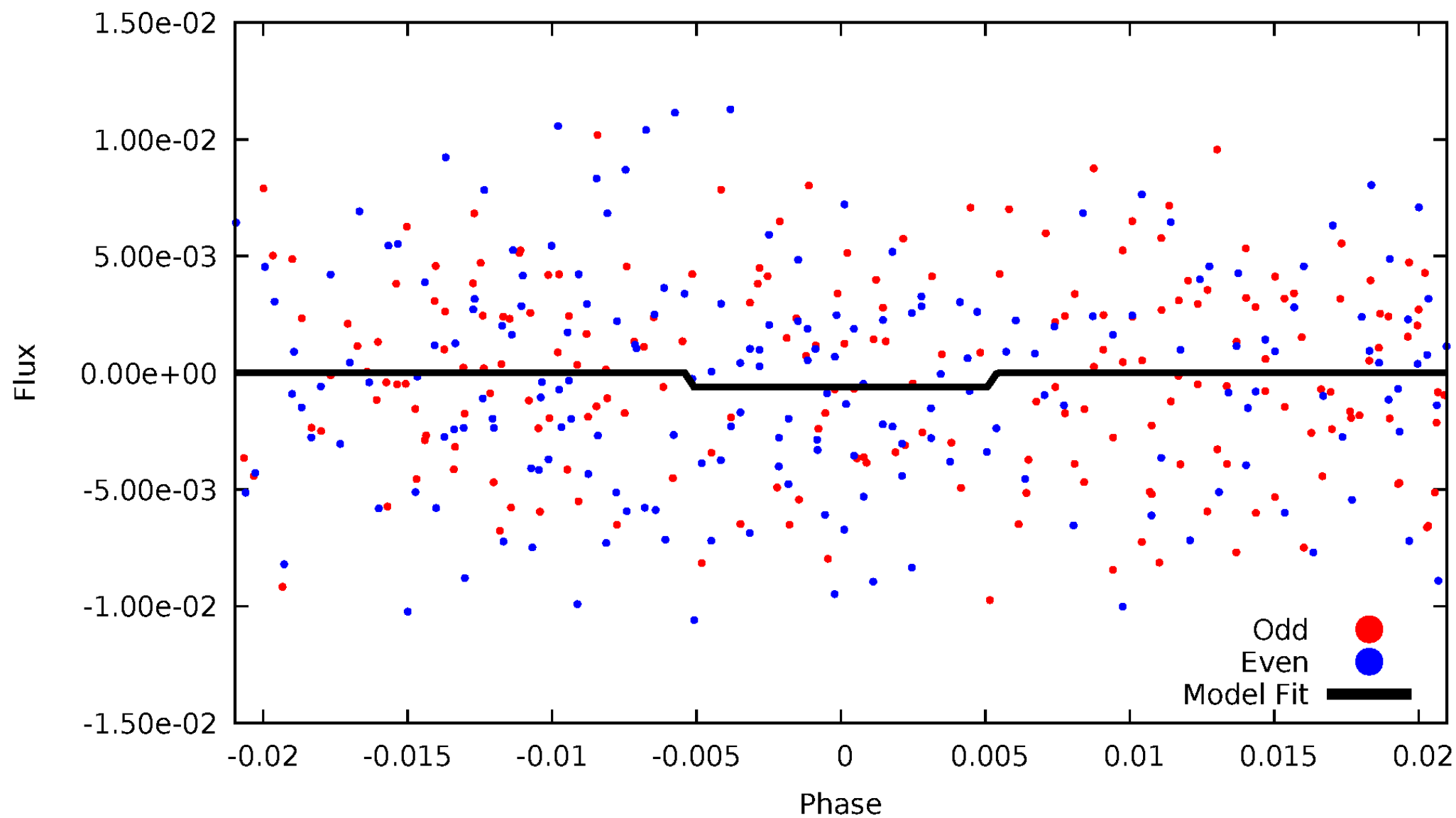
DV Odd/Even

TCE 009700145-02



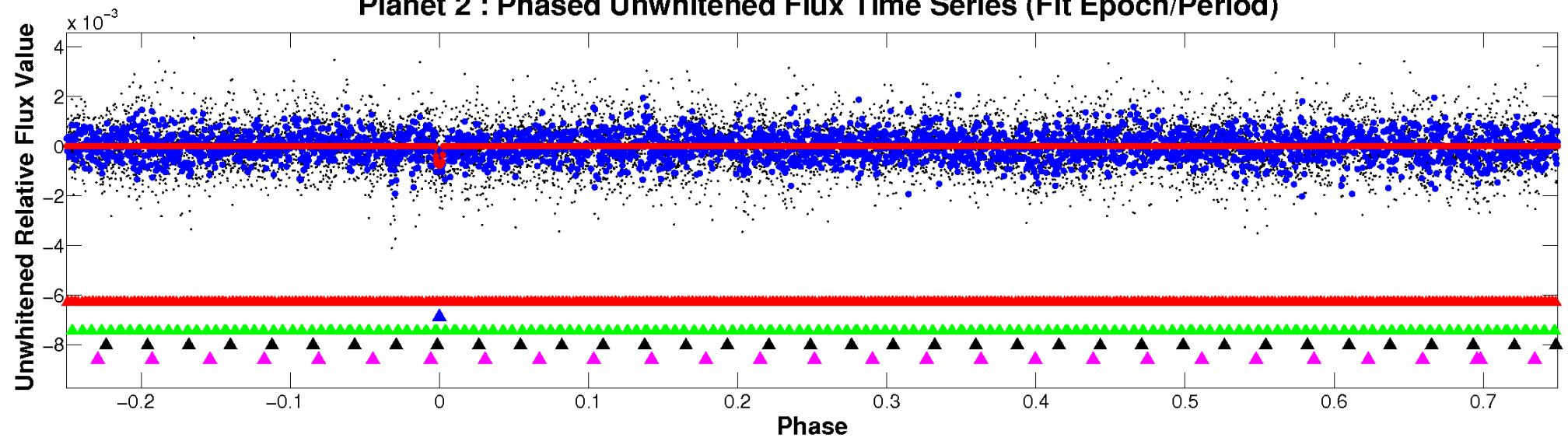
ALT Odd/Even

TCE 009700145-02

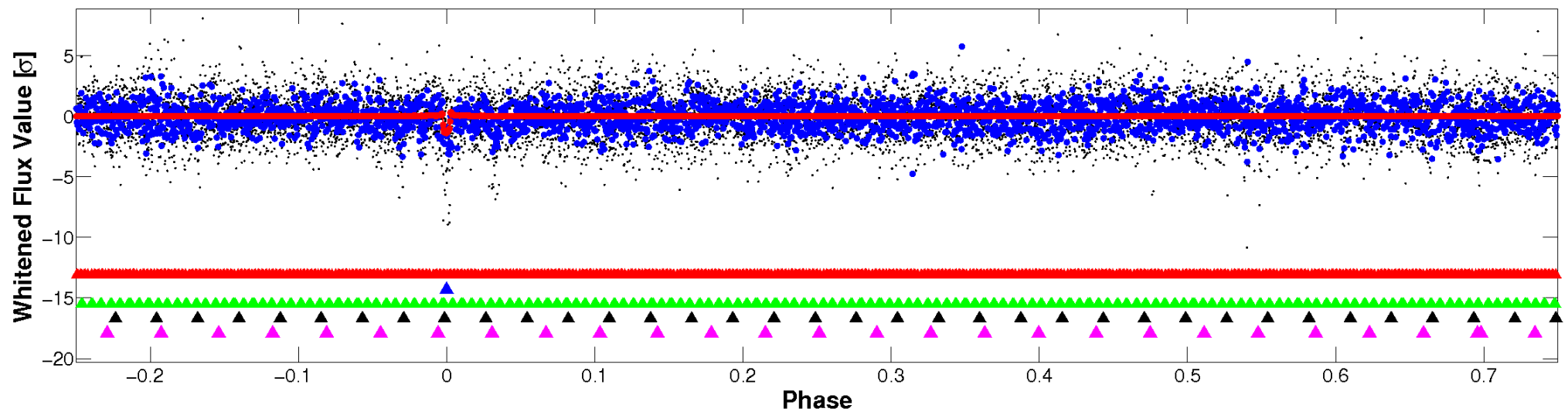


Non-Whitened Vs. Whitened Light Curve

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

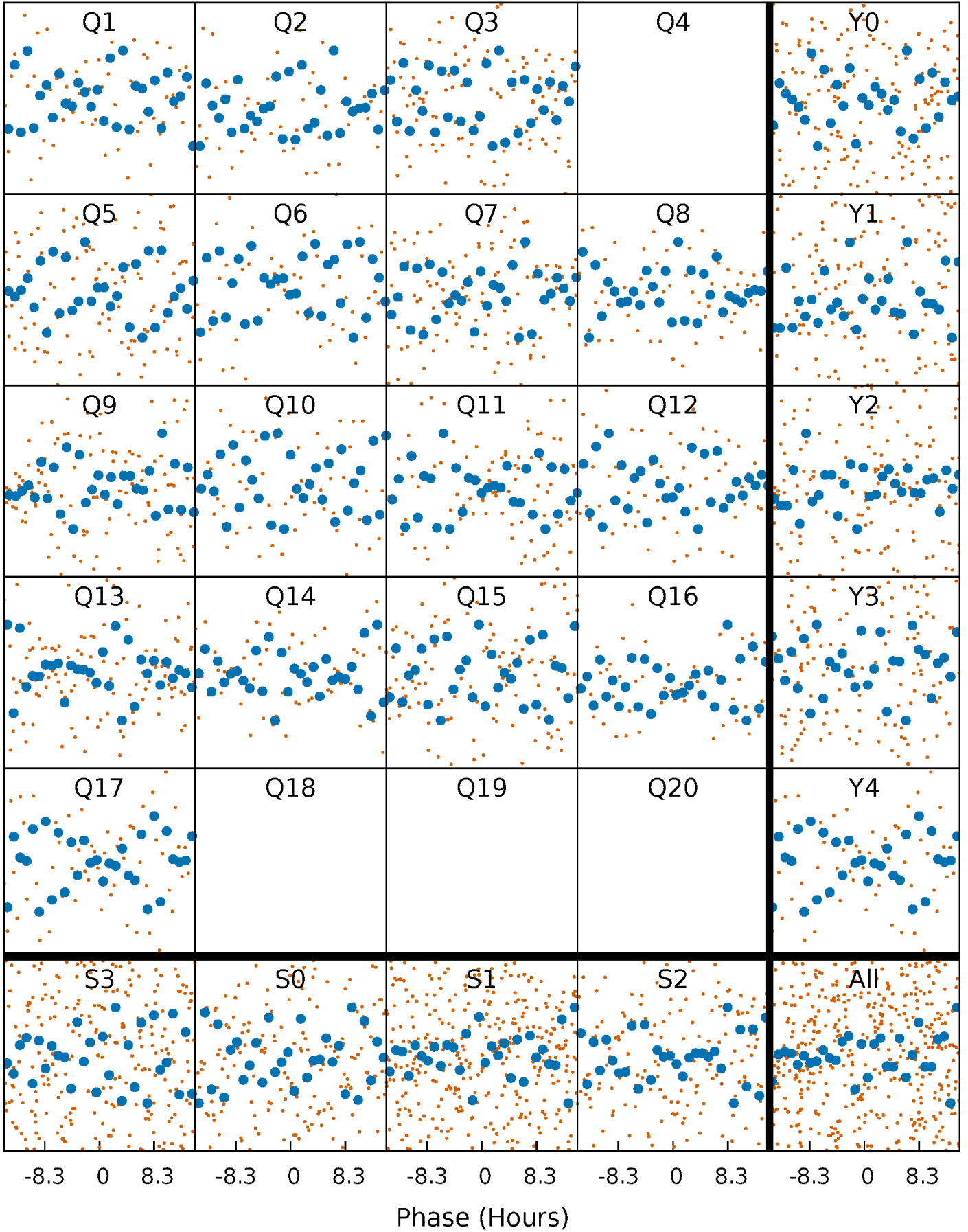


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



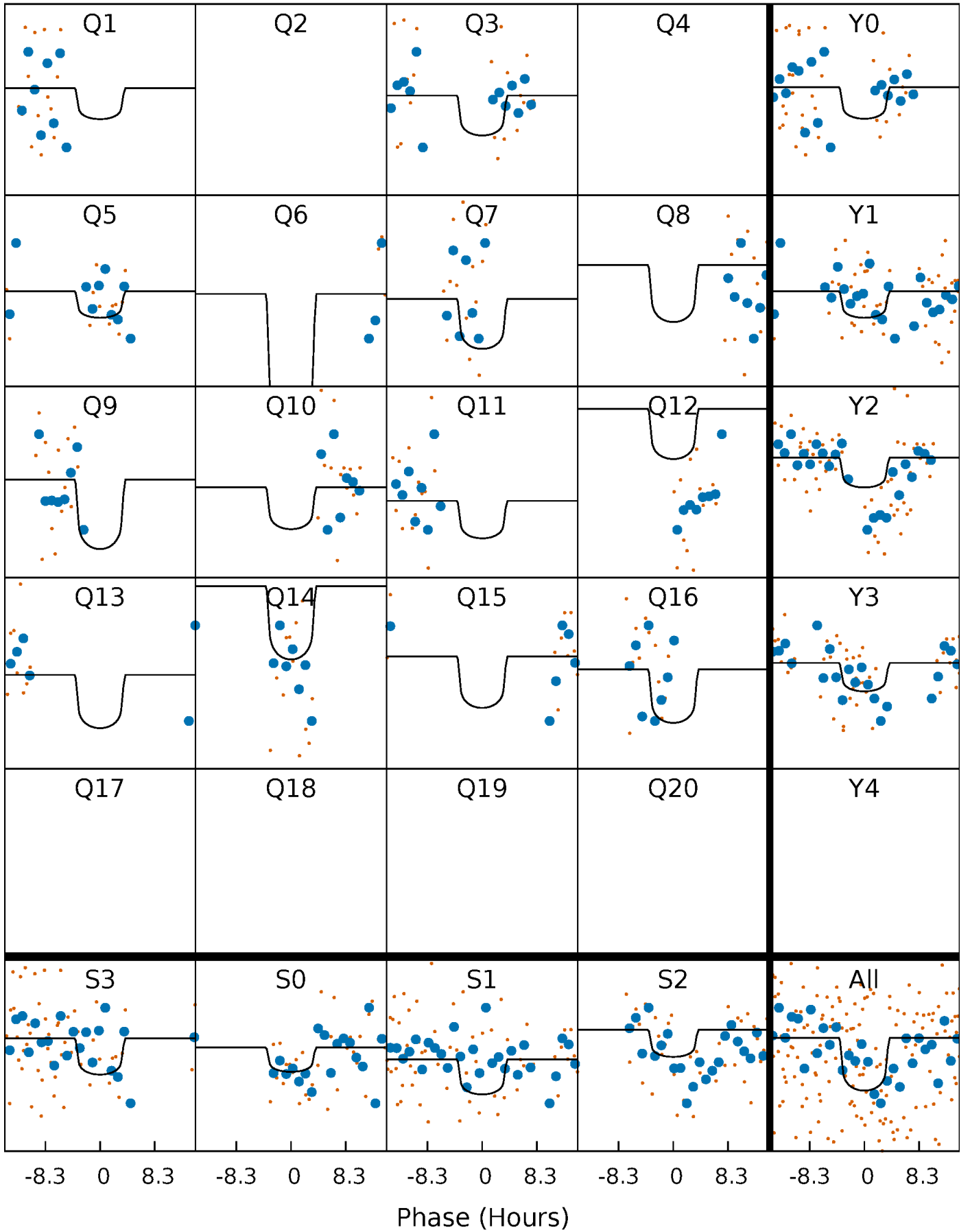
PDC Quarter-Phased Transit Curves

TCE 009700145-02 $P = 61.259151$ Days $T_0 = 153.667026$ (BKJD)



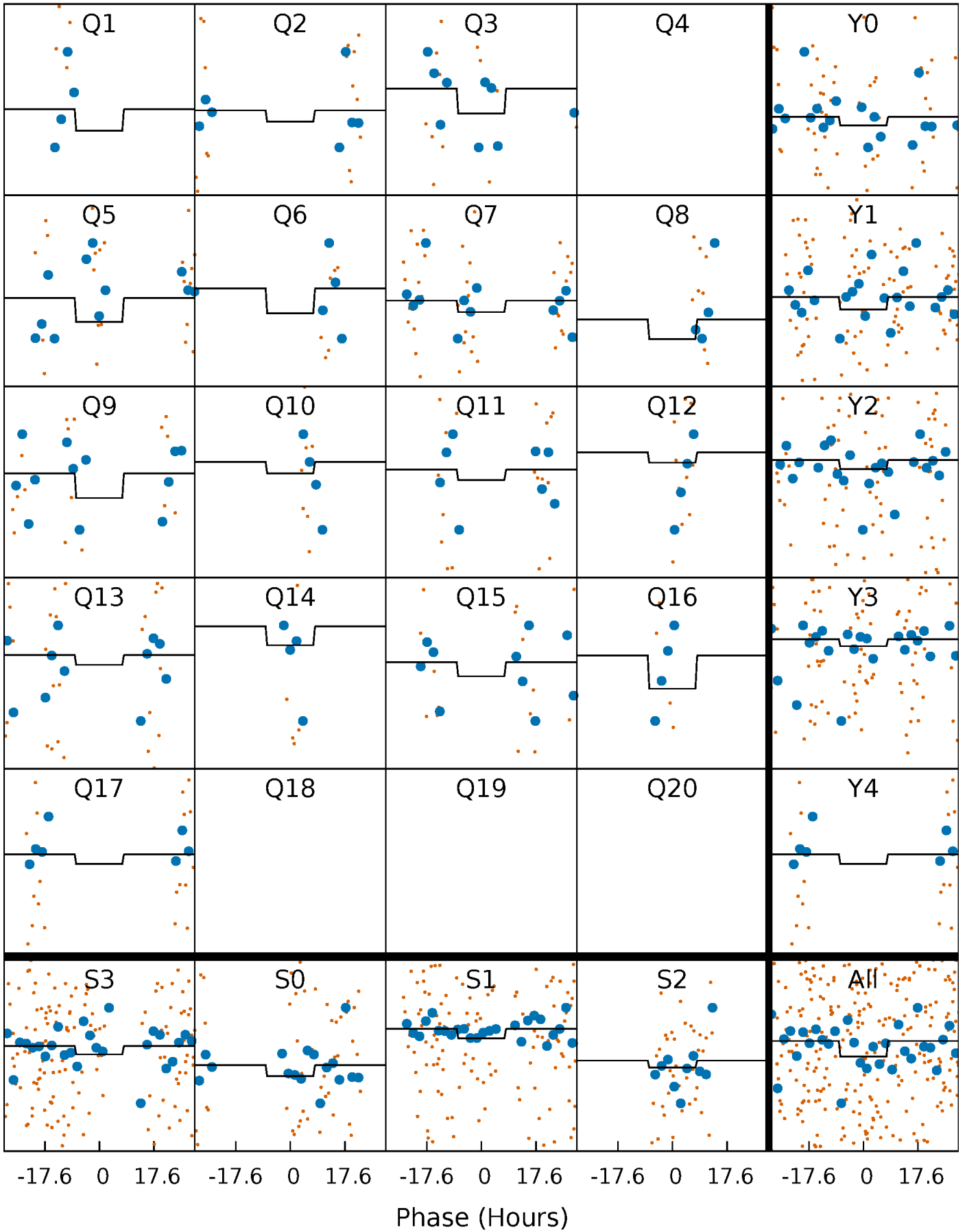
DV Quarter-Phased Transit Curves

TCE 009700145-02 P= 61.259151 Days $T_0=153.667026$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

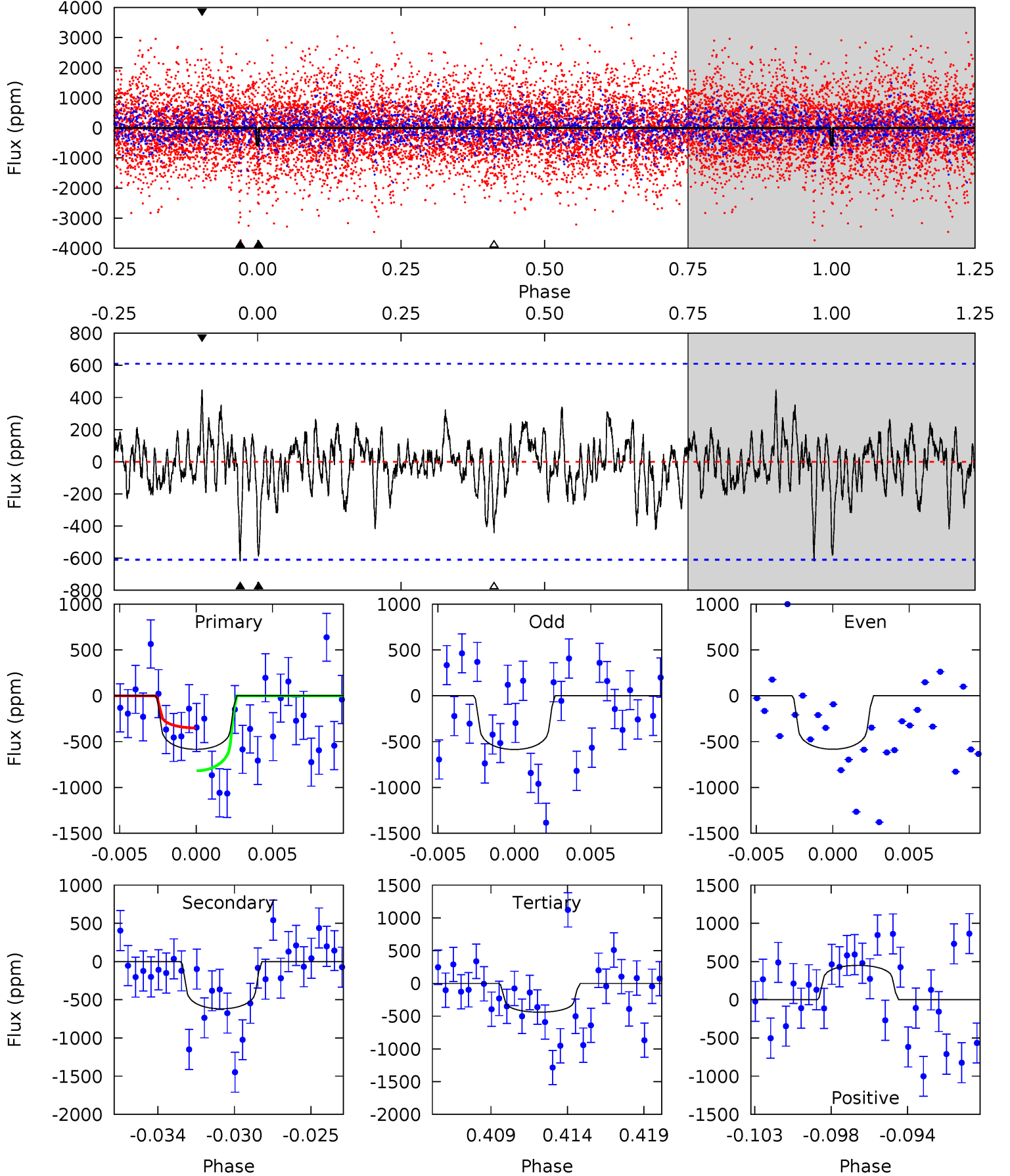
TCE 009700145-02 P= 61.252434 Days $T_0=153.792902$ (BKJD)



DV Model-Shift Uniqueness Test

009700145-02, P = 61.259151 Days, E = 92.407875 Days

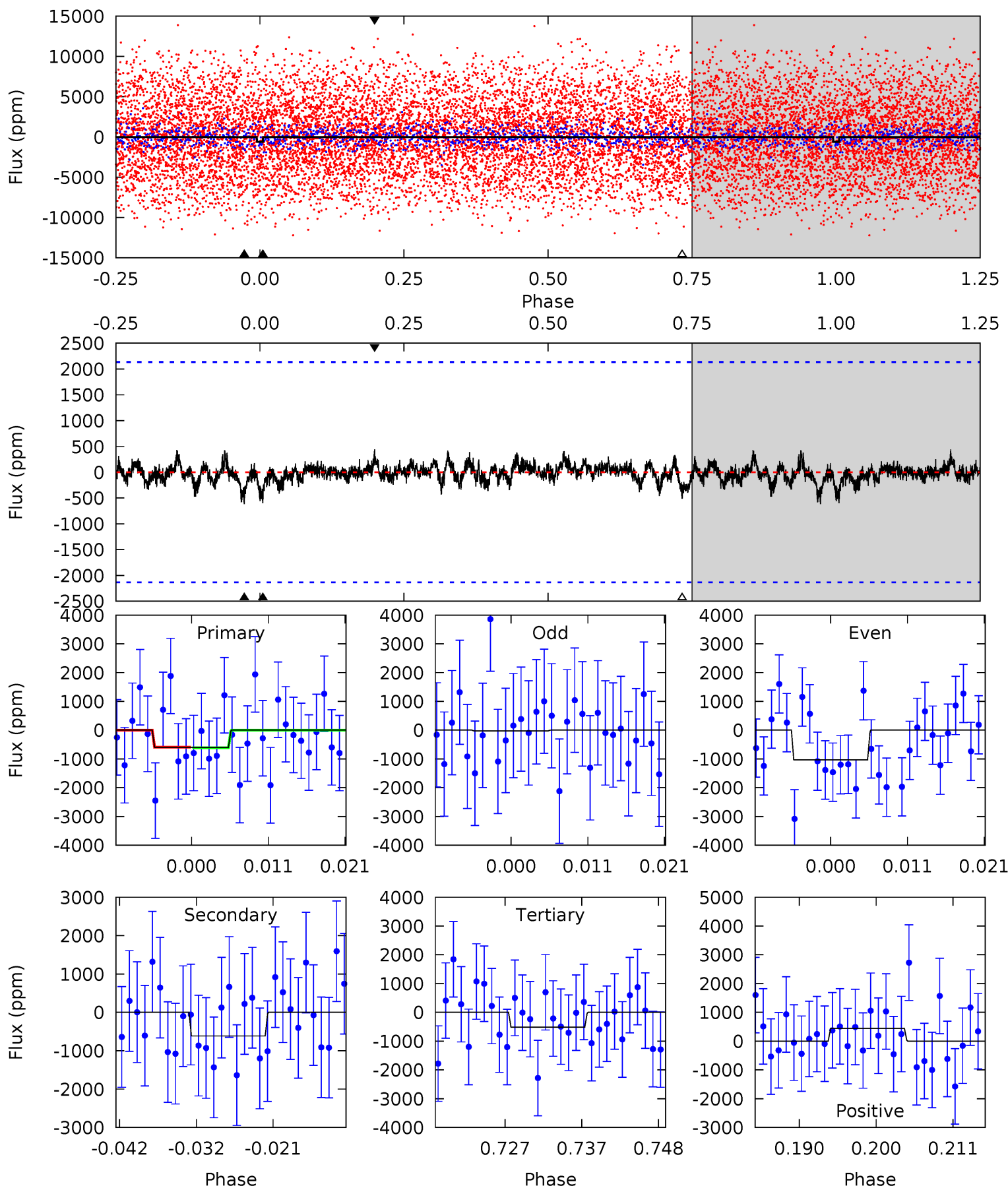
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.95	5.23	3.72	3.81	5.16	2.81	1.14	1.22	1.14	1.51	1.43	0.01	2.03	0.42	1.99



Alt Model-Shift Uniqueness Test

009700145-02, P = 61.252434 Days, E = 92.540468 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.41	1.45	1.21	1.04	5.02	2.56	0.32	0.20	0.37	0.24	0.41	1.17	1.34	0.42	0.02



Stellar Parameters For KIC 009700145

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7832^{+216}_{-325}	$3.975^{+0.253}_{-0.136}$	$-0.260^{+0.200}_{-0.350}$	$2.227^{+0.473}_{-0.768}$	$1.707^{+0.182}_{-0.364}$	$0.218^{+0.390}_{-0.076}$
	+3%/-4%	+6%/-3%	+77%/-135%	+21%/-34%	+11%/-21%	+179%/-35%
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 009700145-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-619 ± 118	$8.01^{+6.84}_{-5.01}$	1185^{+79}_{-97}	6515^{+6256}_{-1610}	682^{+4462}_{-487}
Alt.	-617 ± 425	$7.45^{+6.70}_{-5.05}$	1180^{+81}_{-108}	6252^{+7896}_{-1924}	600^{+6217}_{-492}

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 $A_{obs} \gg 1.0$

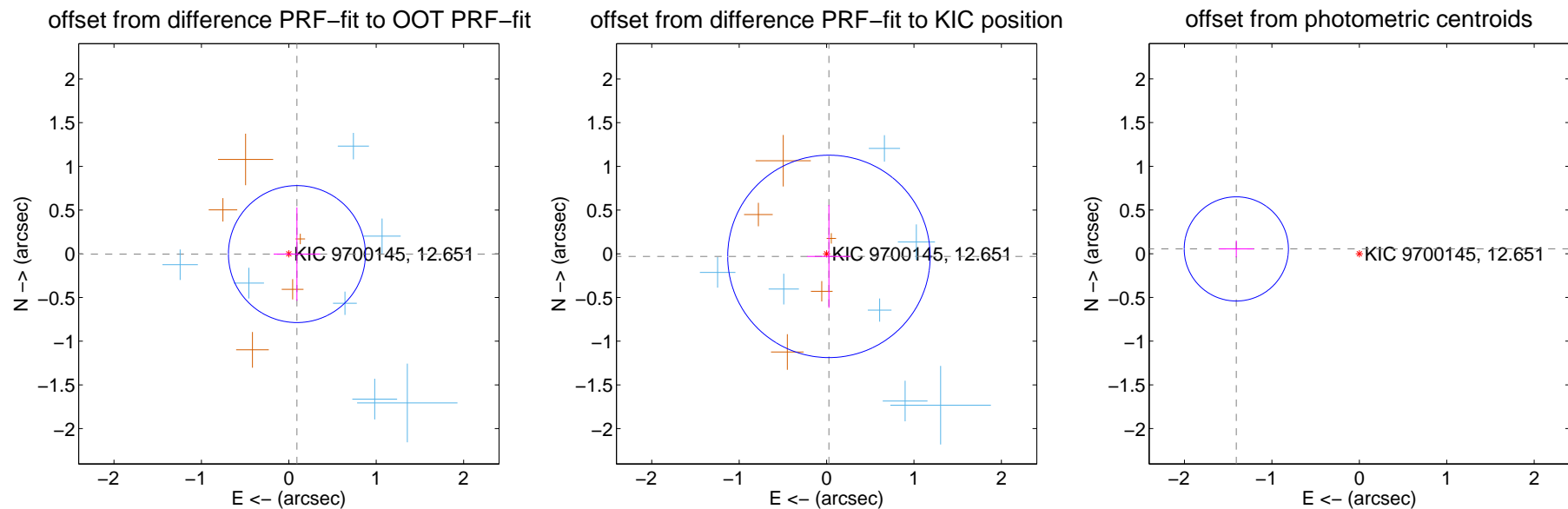
DV Centroid Data

Supplemental centroid analysis for 009700145-02. Kepler magnitude: 12.65. Transit SNR 8.02

There are 7 quarters with good PRF difference image offsets

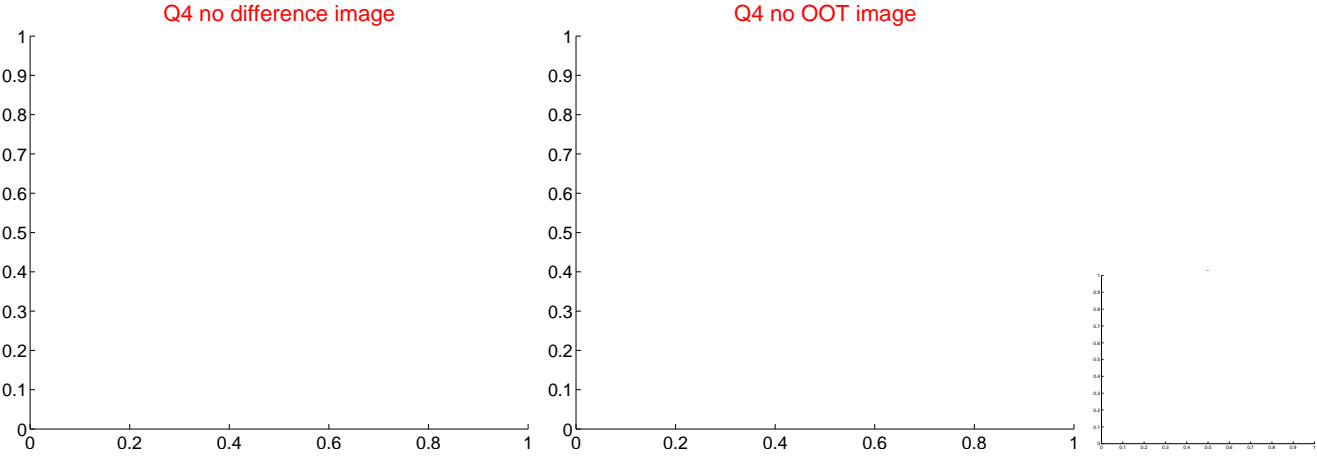
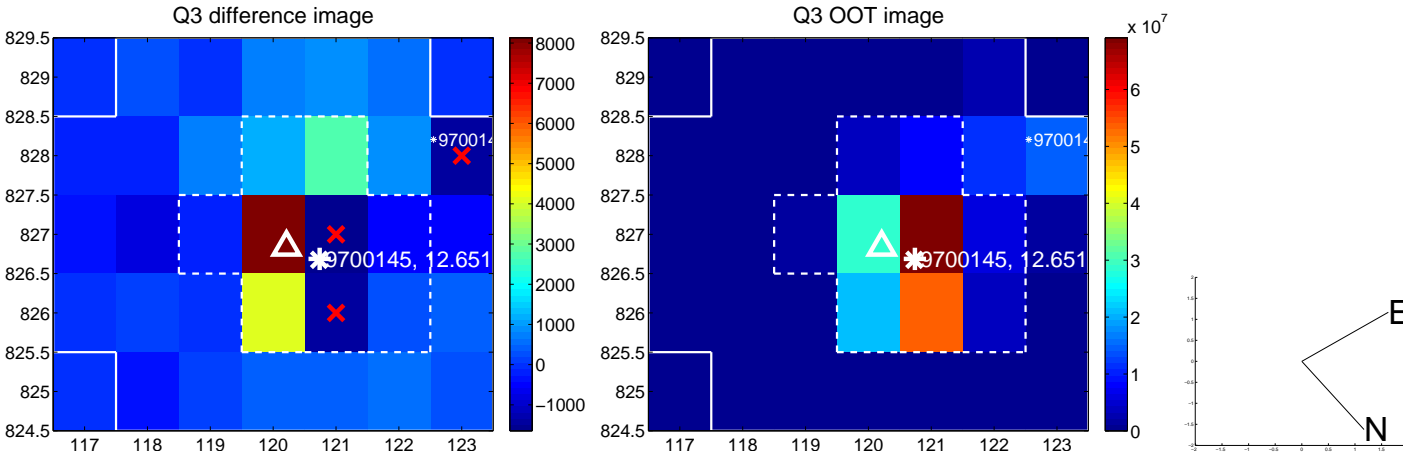
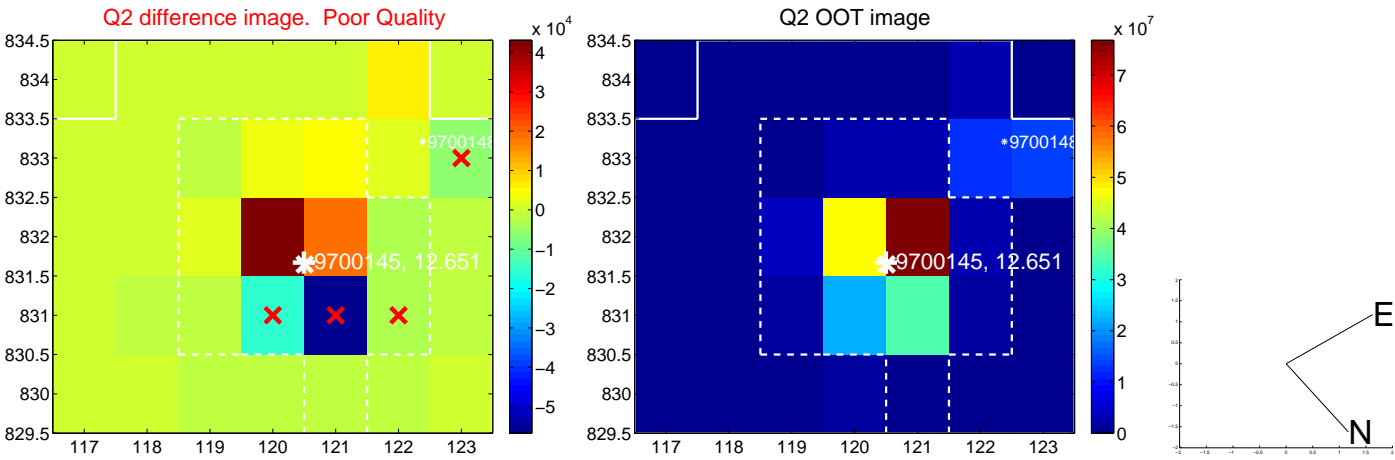
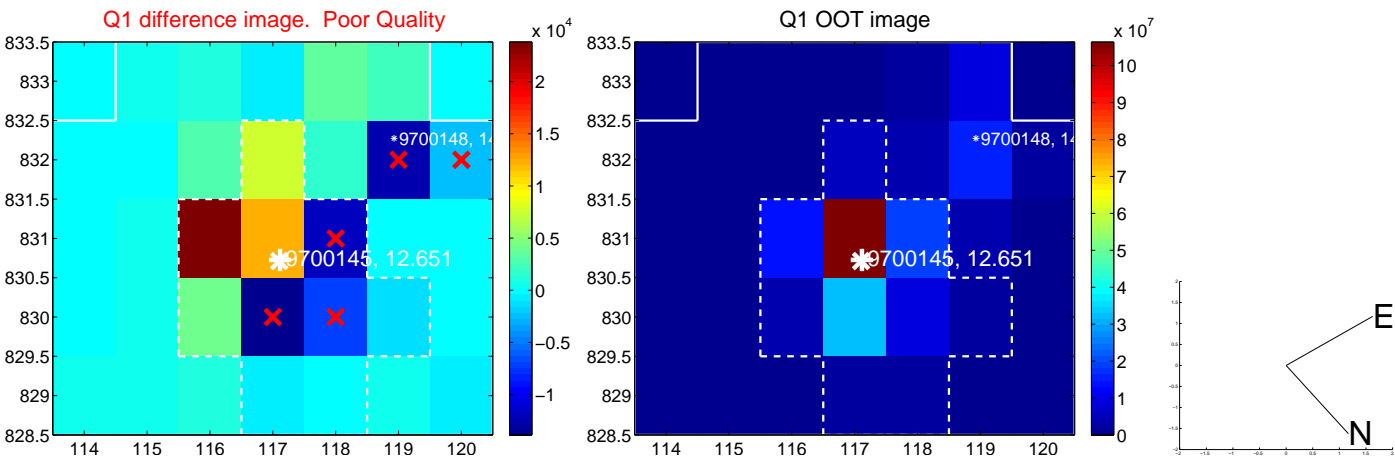
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.093 ± 0.261	0.36	-0.093 ± 0.267	-0.003 ± 0.534
PRF-fit source offset from KIC position	0.040 ± 0.386	0.10	-0.027 ± 0.248	-0.030 ± 0.588
photometric centroid source offset	1.41 ± 0.20	7.09	1.41 ± 0.20	0.05 ± 0.10

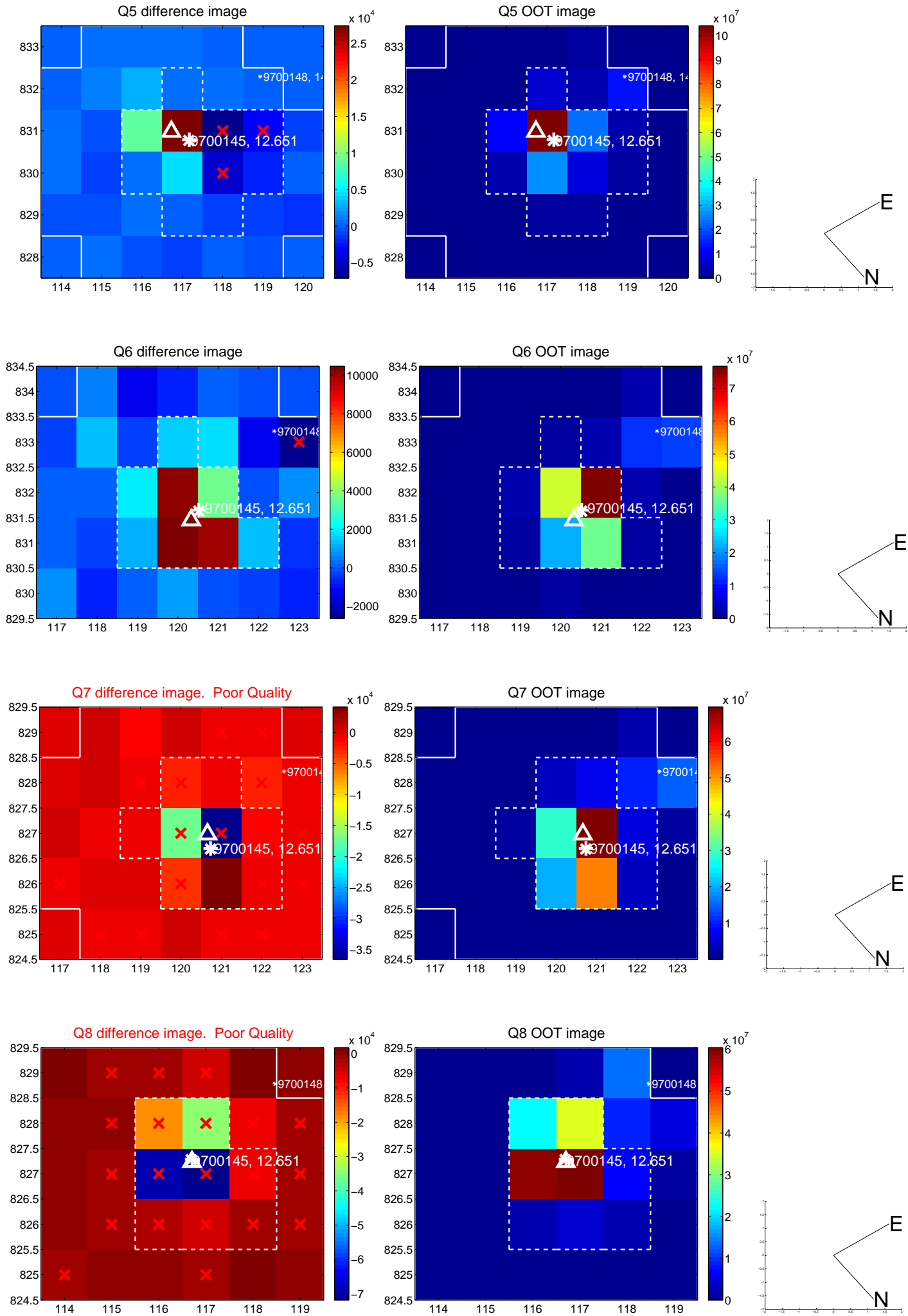


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

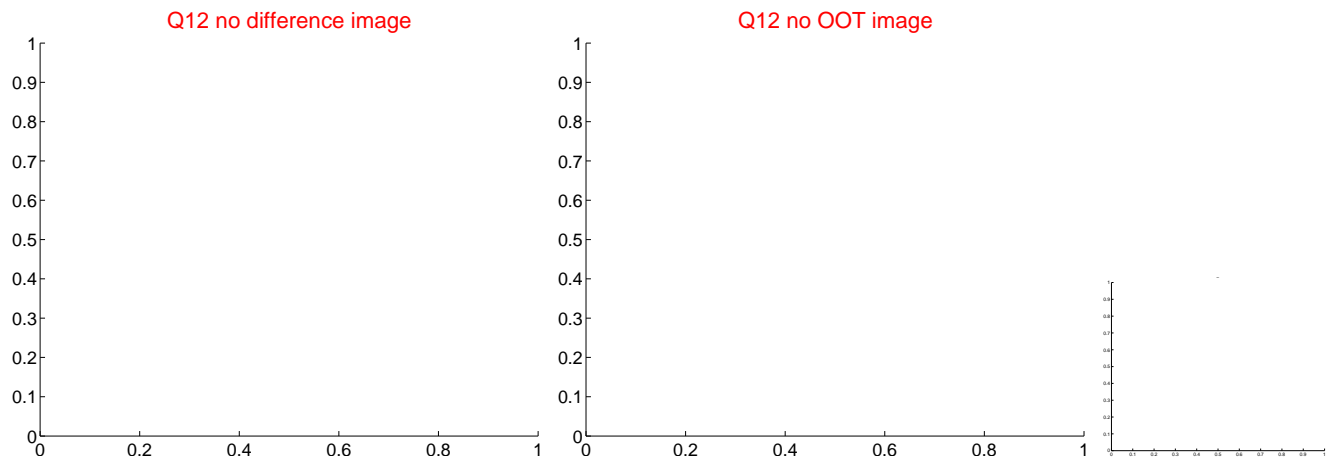
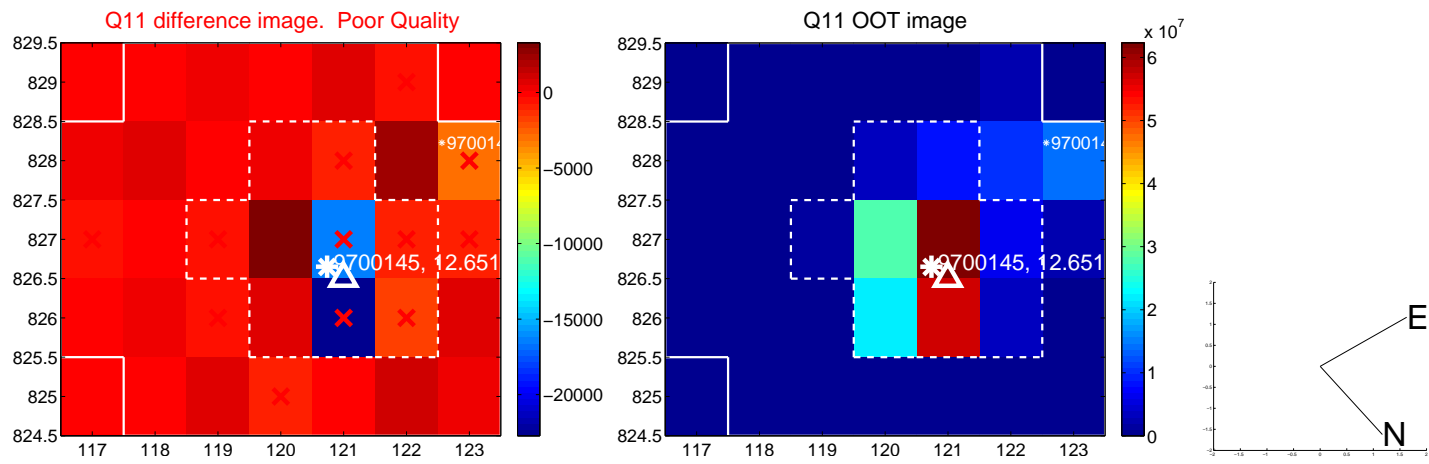
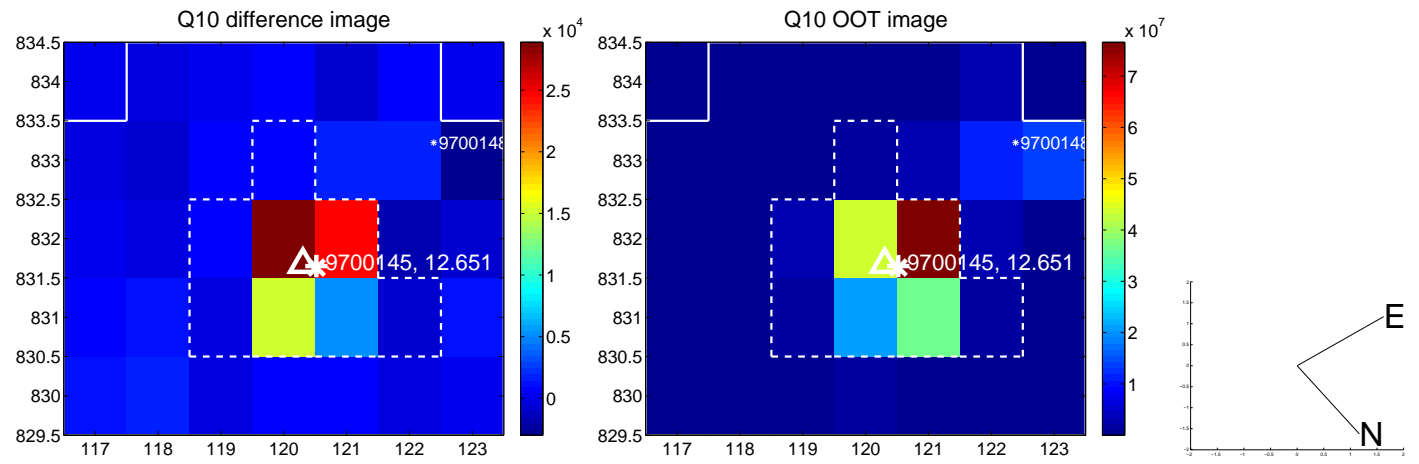
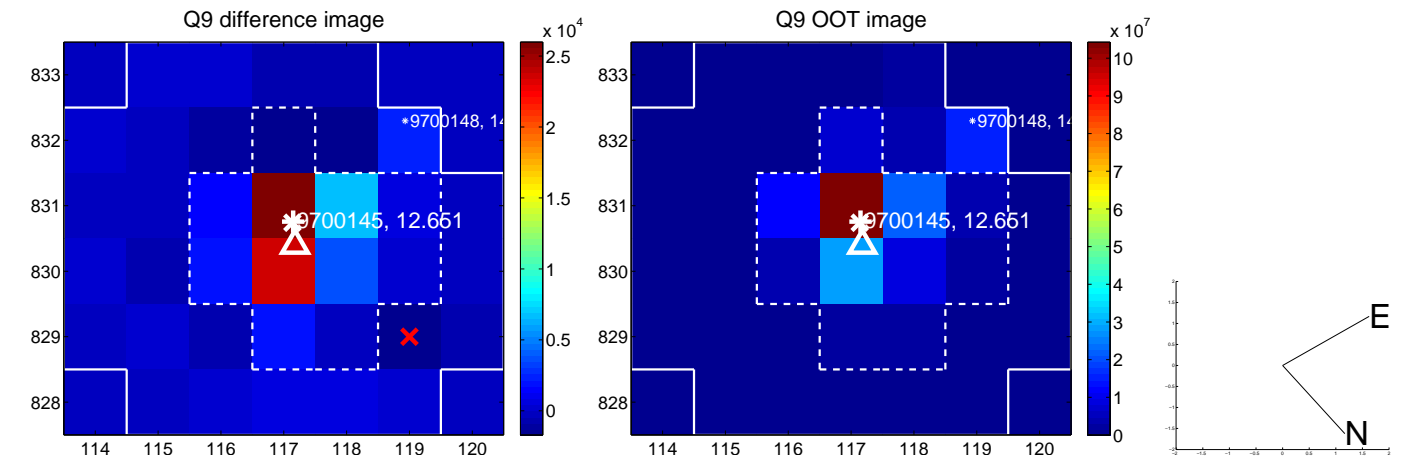
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



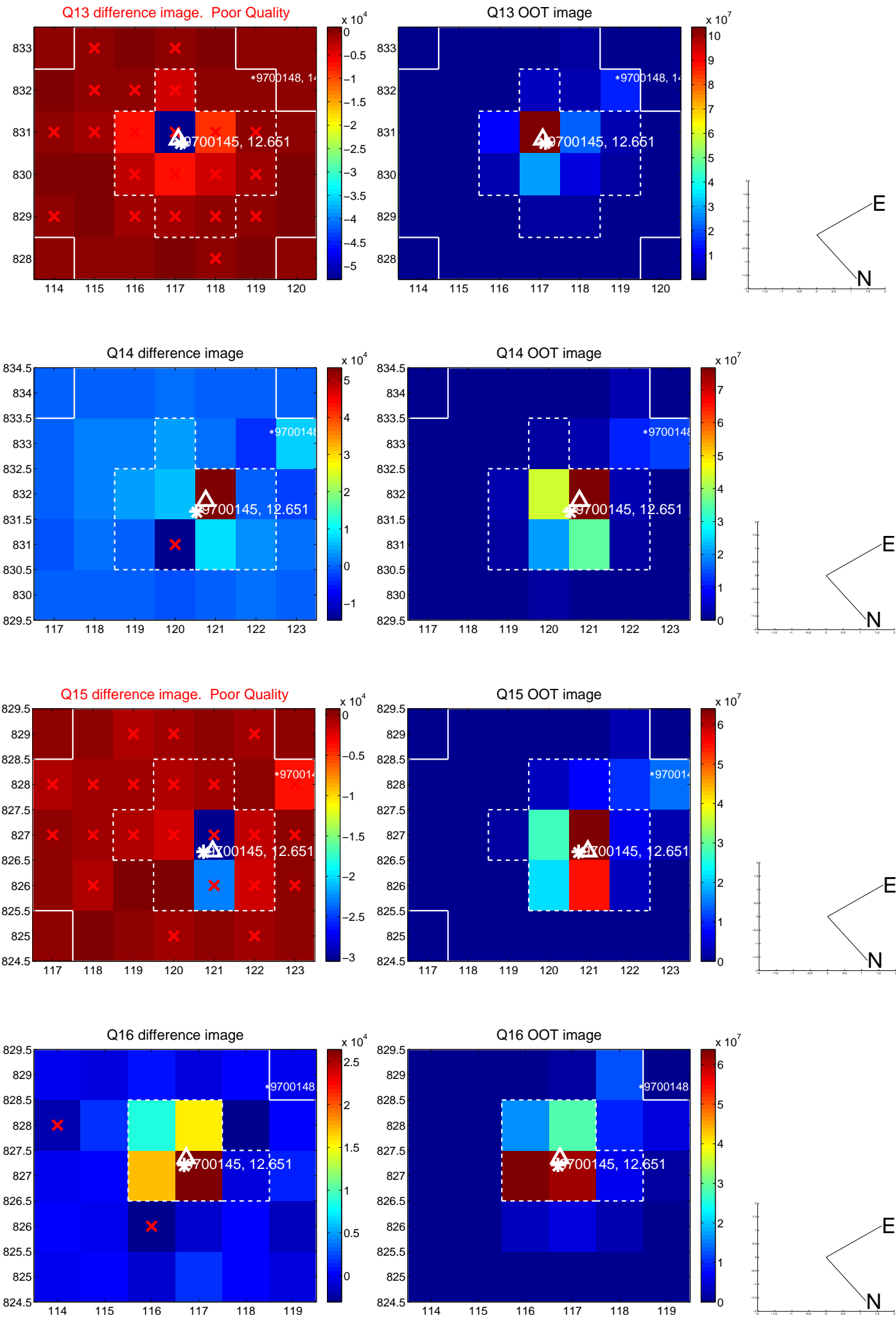
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



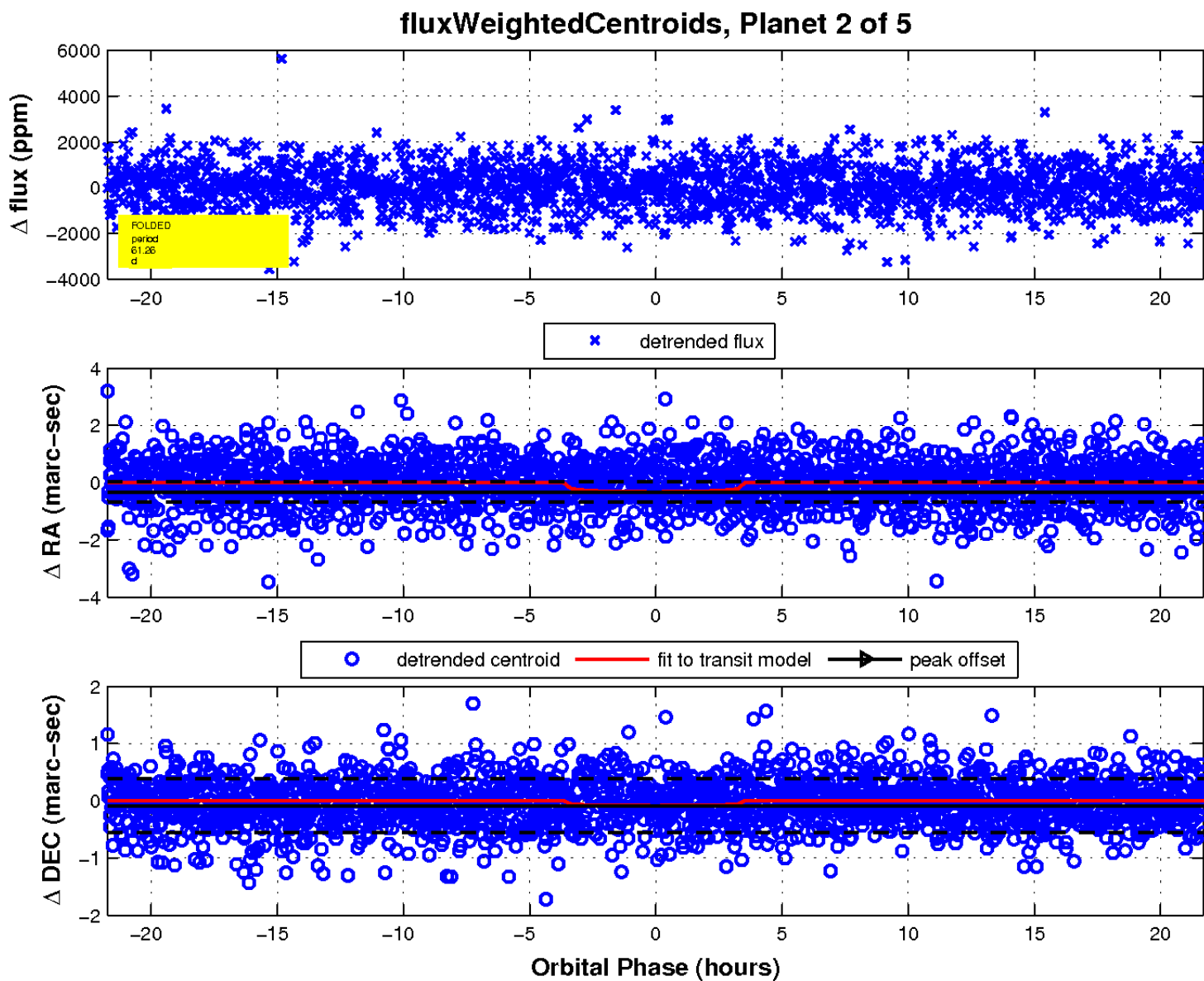
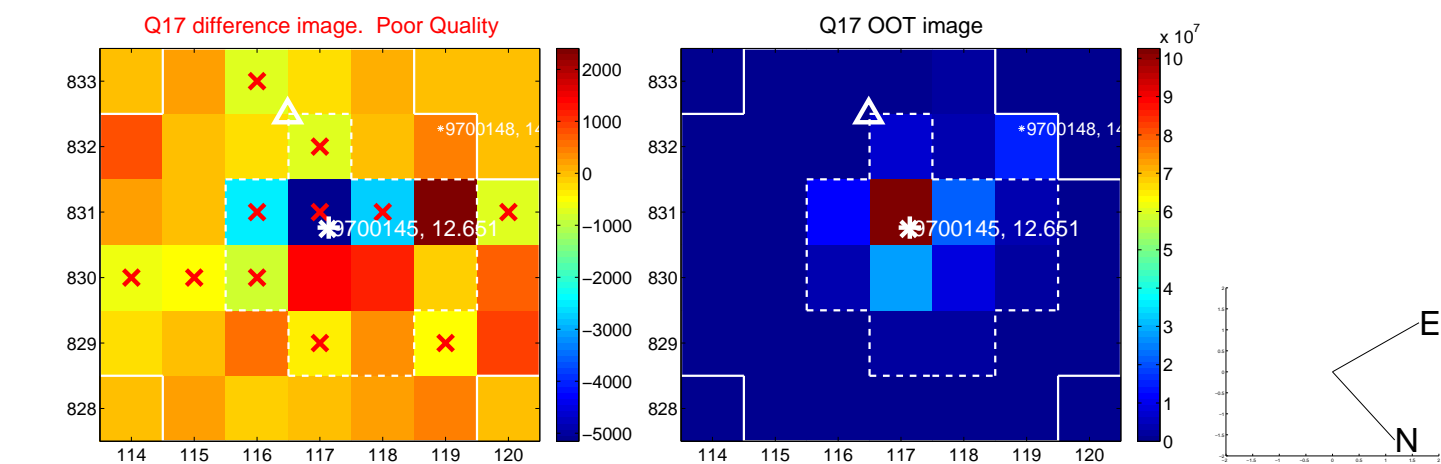
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

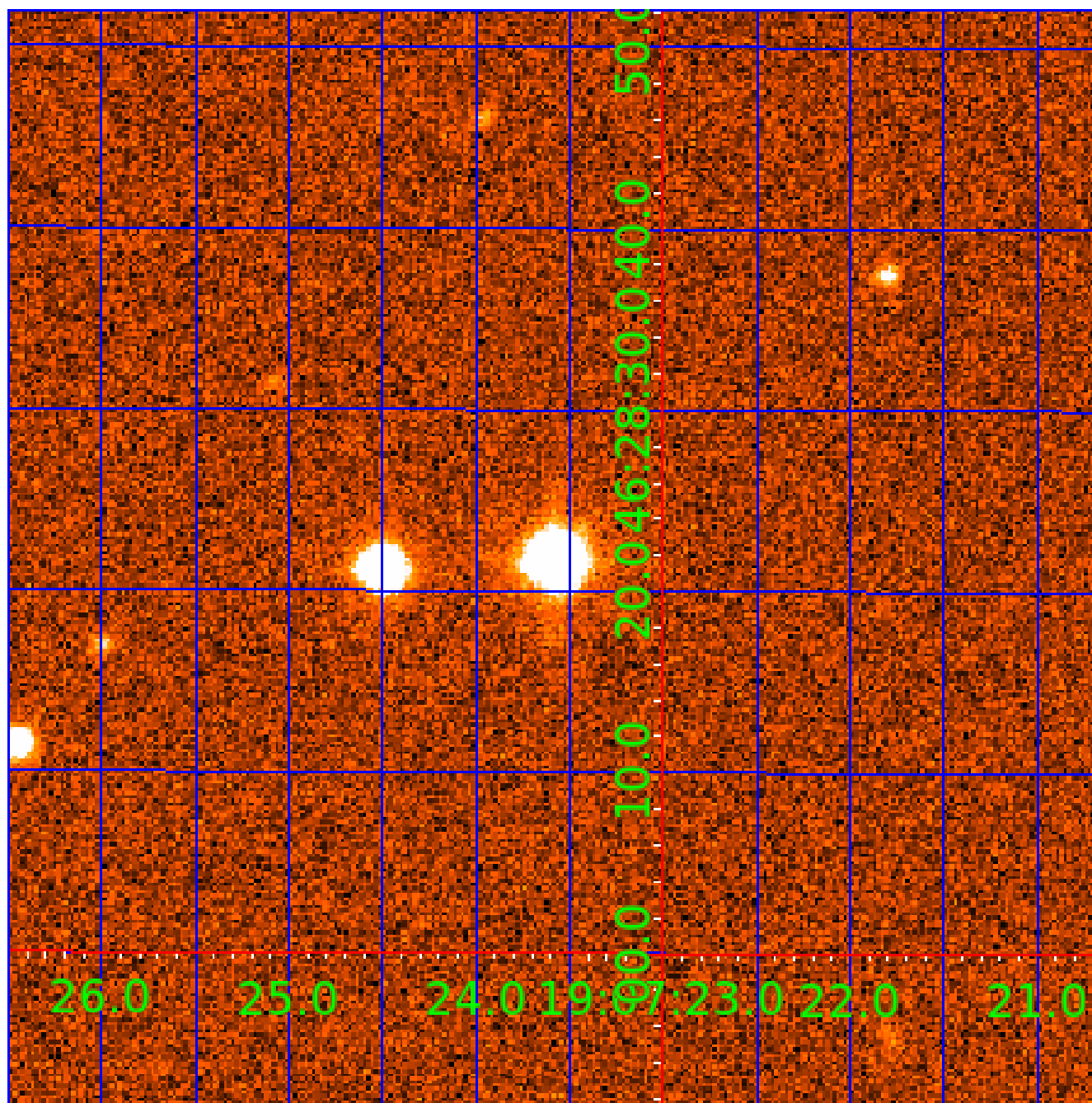


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009700145

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})
009700145-01	OBS	No	2.017846	132.104516	145.6	13.611	11.6	15.3	2.23	7832	2.88	11976.99
009700145-02	OBS	No	61.259151	153.667026	783.2	7.254	27.1	8.0	2.23	7832	6.55	126.47
009700145-03	OBS	No	4.319252	132.762915	369.2	6.437	10.8	12.7	2.23	7832	5.01	4341.64
009700145-04	OBS	No	22.120799	146.801535	14.9	1.695	10.6	0.1	2.23	7832	1.02	491.81
009700145-05	OBS	No	52.189136	135.028930	988.6	2.351	7.6	9.1	2.23	7832	7.90	156.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009700145-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009700145-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009700145-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009700145-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009700145-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

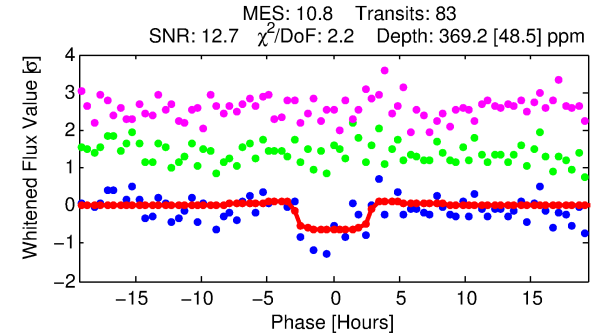
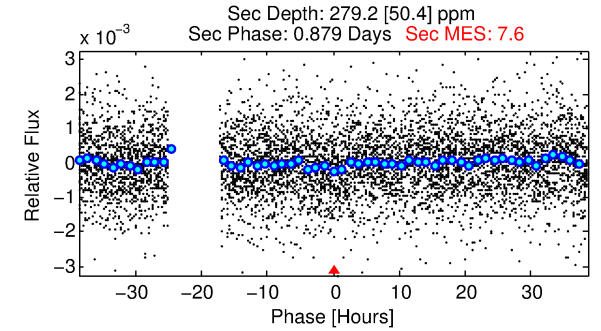
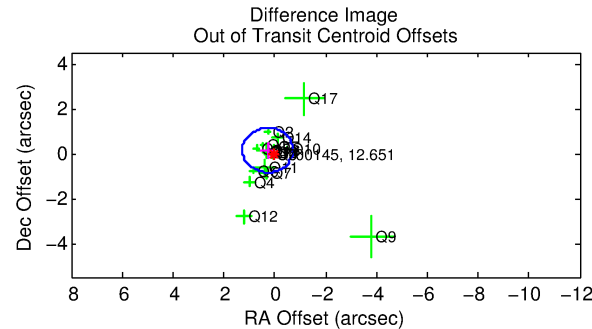
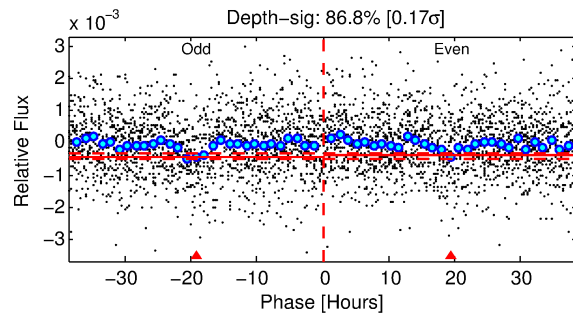
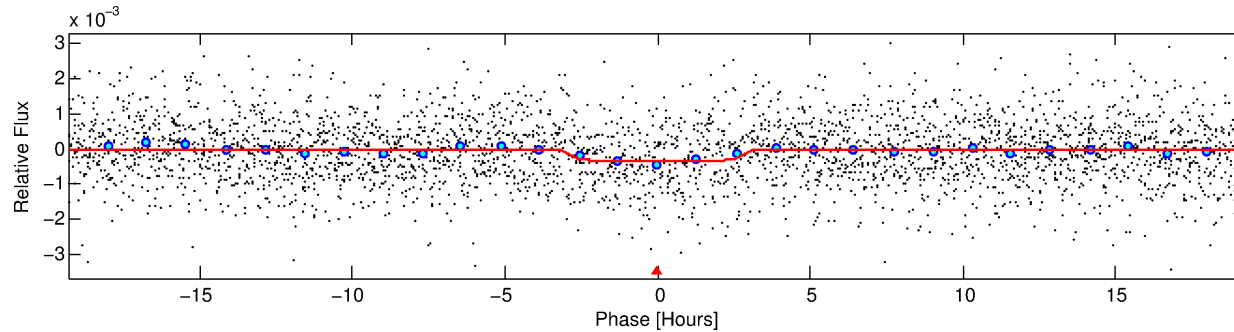
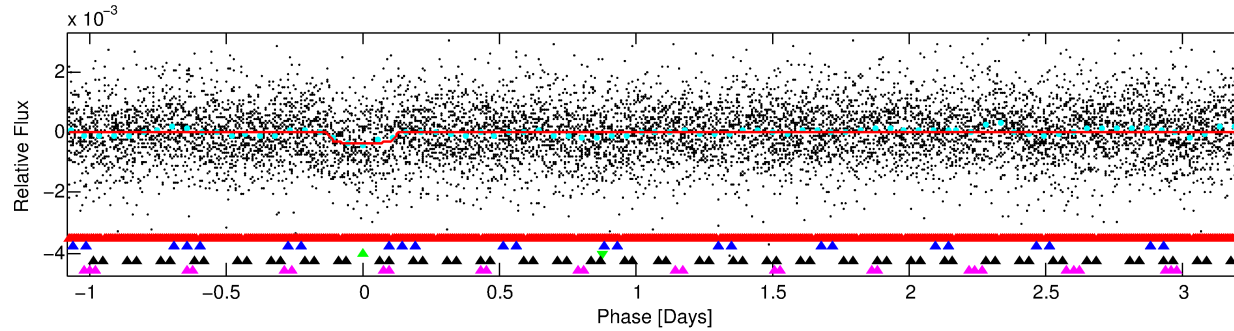
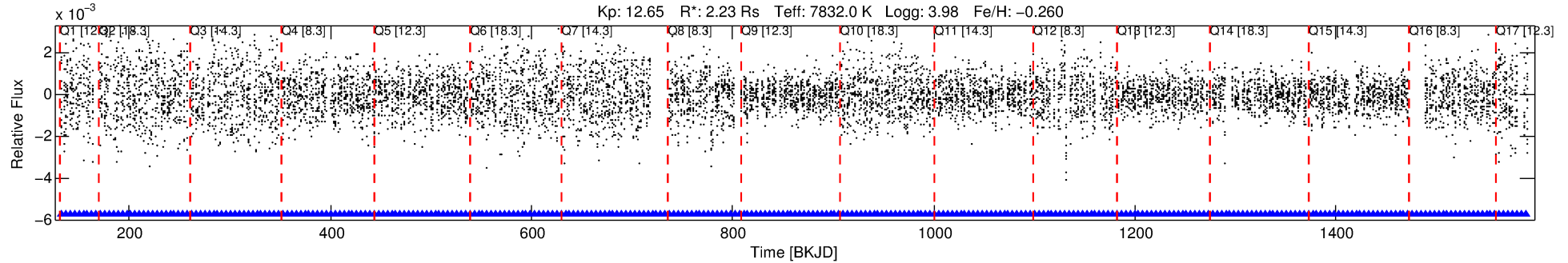
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009700145-03

No Significant Match Found

DV One-Page Summary

KIC: 9700145 Candidate: 3 of 5 Period: 4.319 d



DV Fit Results:

Period = 4.31925 [0.00006] d
Epoch = 132.7629 [0.0115] BKJD
Rp/R* = 0.0206 [0.0039]
a/R* = 2.64 [2.29]
b = 0.90 [0.22]
Seff = 4341.64 [2087.78]
Teq = 2070 [249] K
Rp = 5.01 [1.97] Re
a = 0.0621 [0.0187] AU
Ag = 23.57 [14.57] [1.55 σ]
Teffp = 7051 [800] K [5.95 σ]

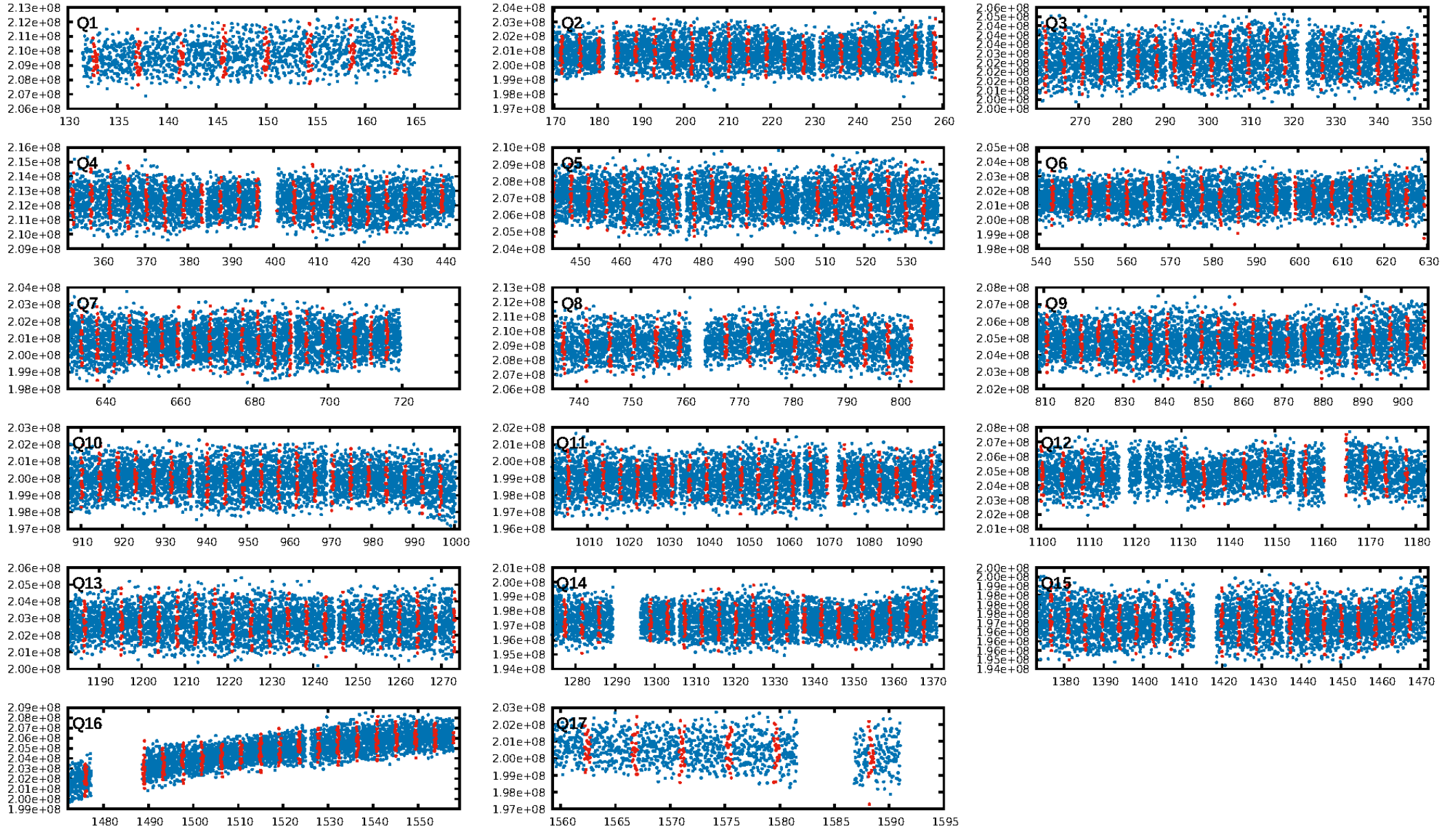
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.67 σ]
LongPeriod-sig: 100.0% [64.18 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.03e-15
RollingBand-fgt: 1.00 [80/80]
GhostDiagnostic-chr: 1.077
Centroid-sig: 87.0%
Centroid-so: 1.041 arcsec [9.03 σ]
OotOffset-rm: 0.316 arcsec [0.95 σ]
KicOffset-rm: 0.359 arcsec [1.18 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 0.94 [16/17]

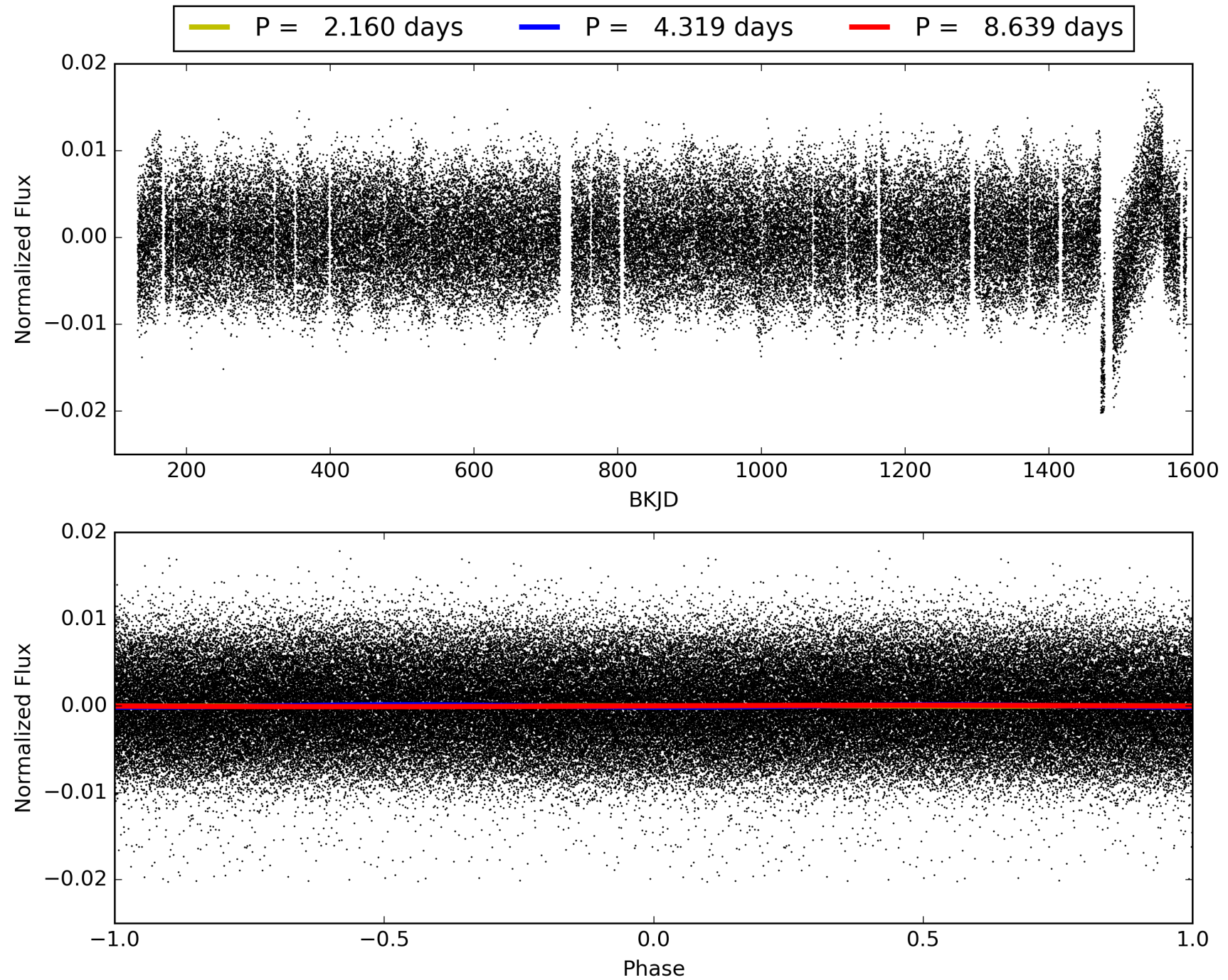
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:32:08 Z

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

TCE 009700145-03, PDC Light Curves

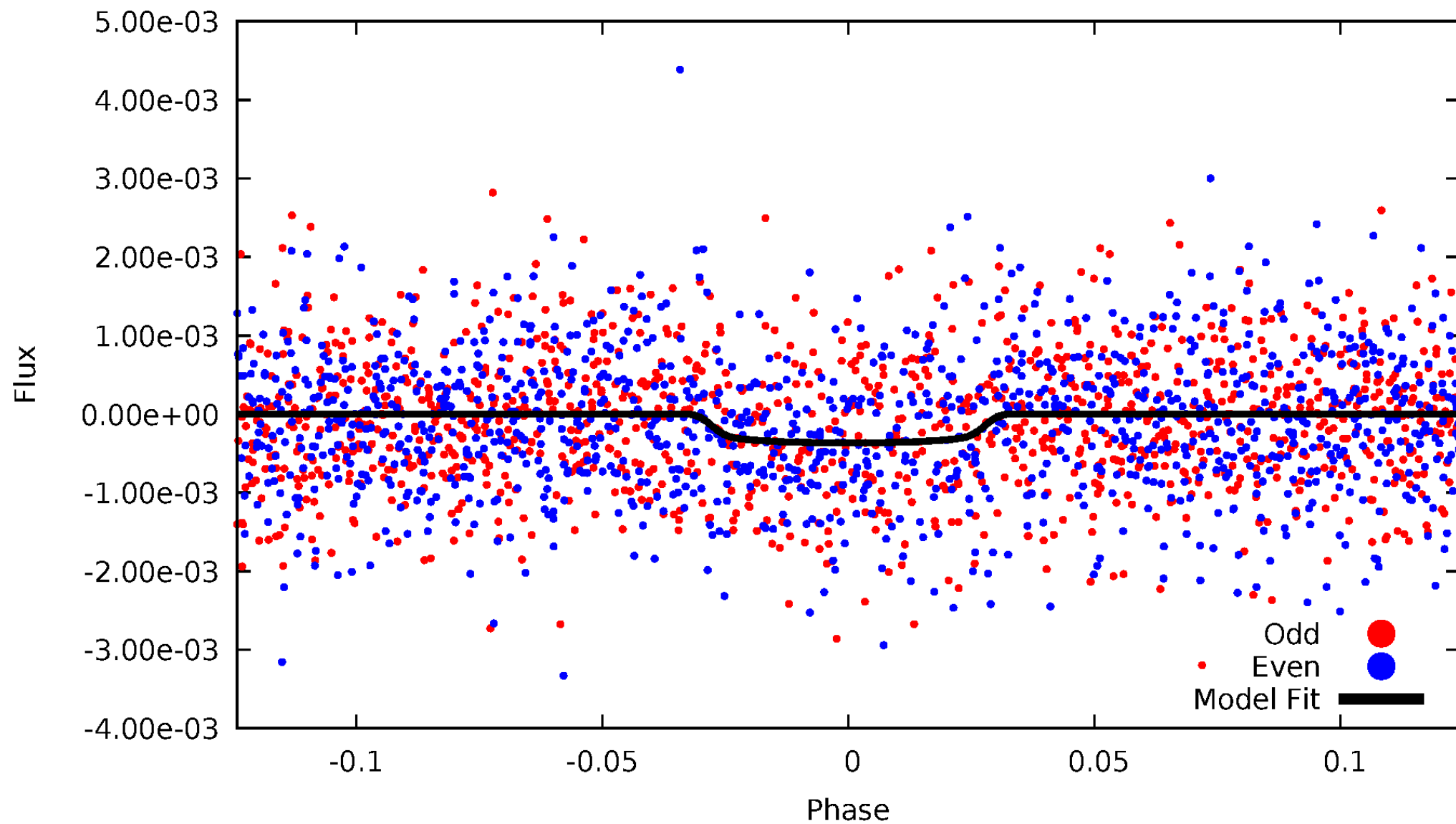


TCE 009700145-03



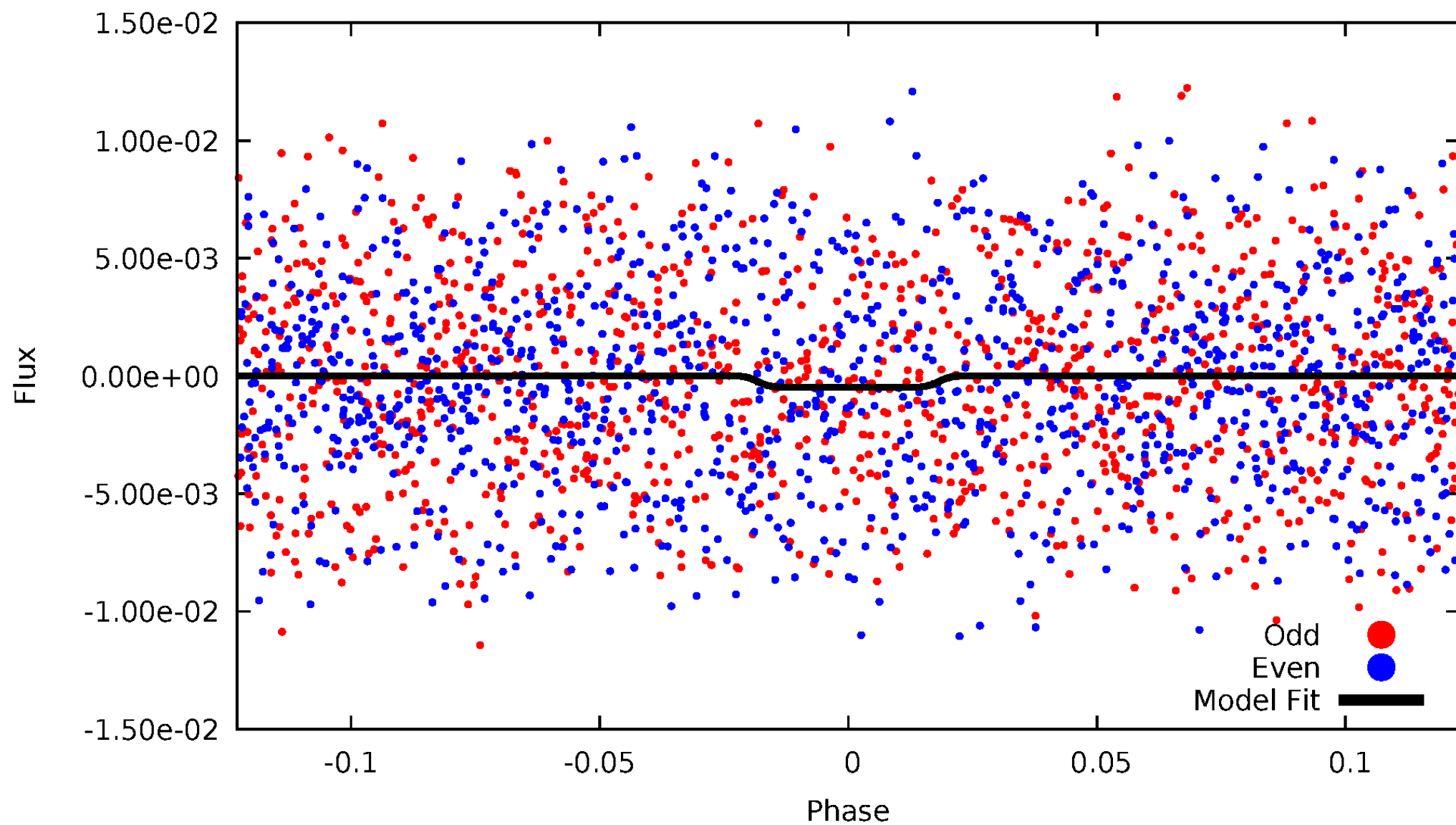
DV Odd/Even

TCE 009700145-03



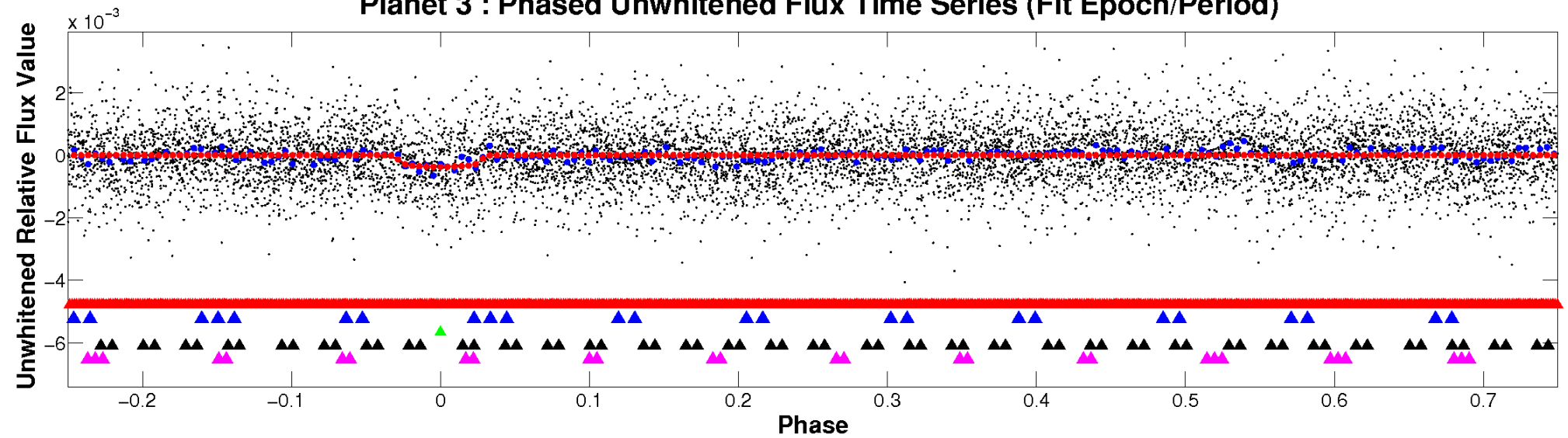
ALT Odd/Even

TCE 009700145-03

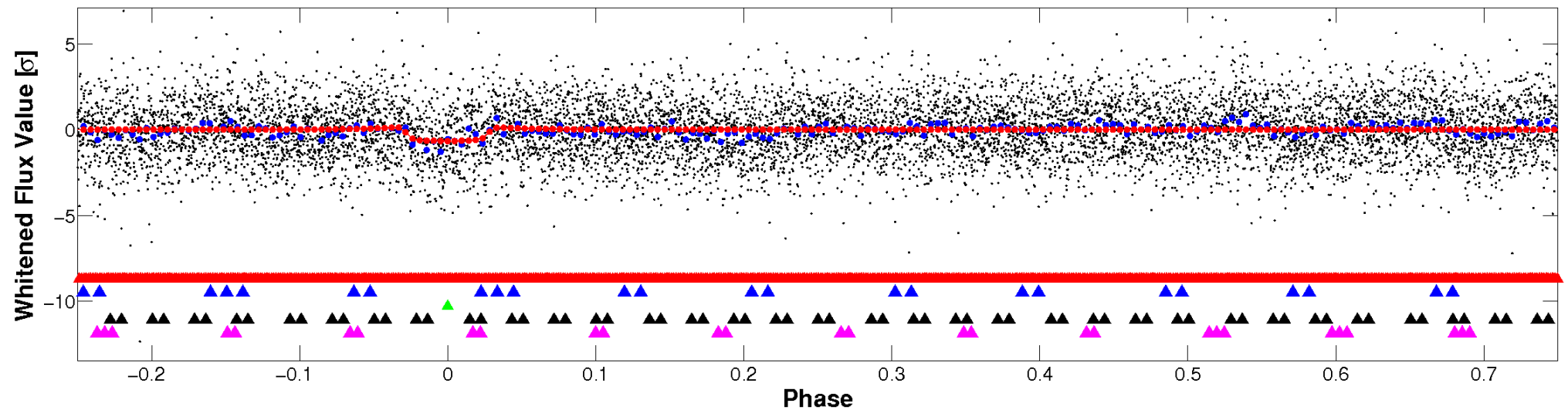


Non-Whitened Vs. Whitened Light Curve

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

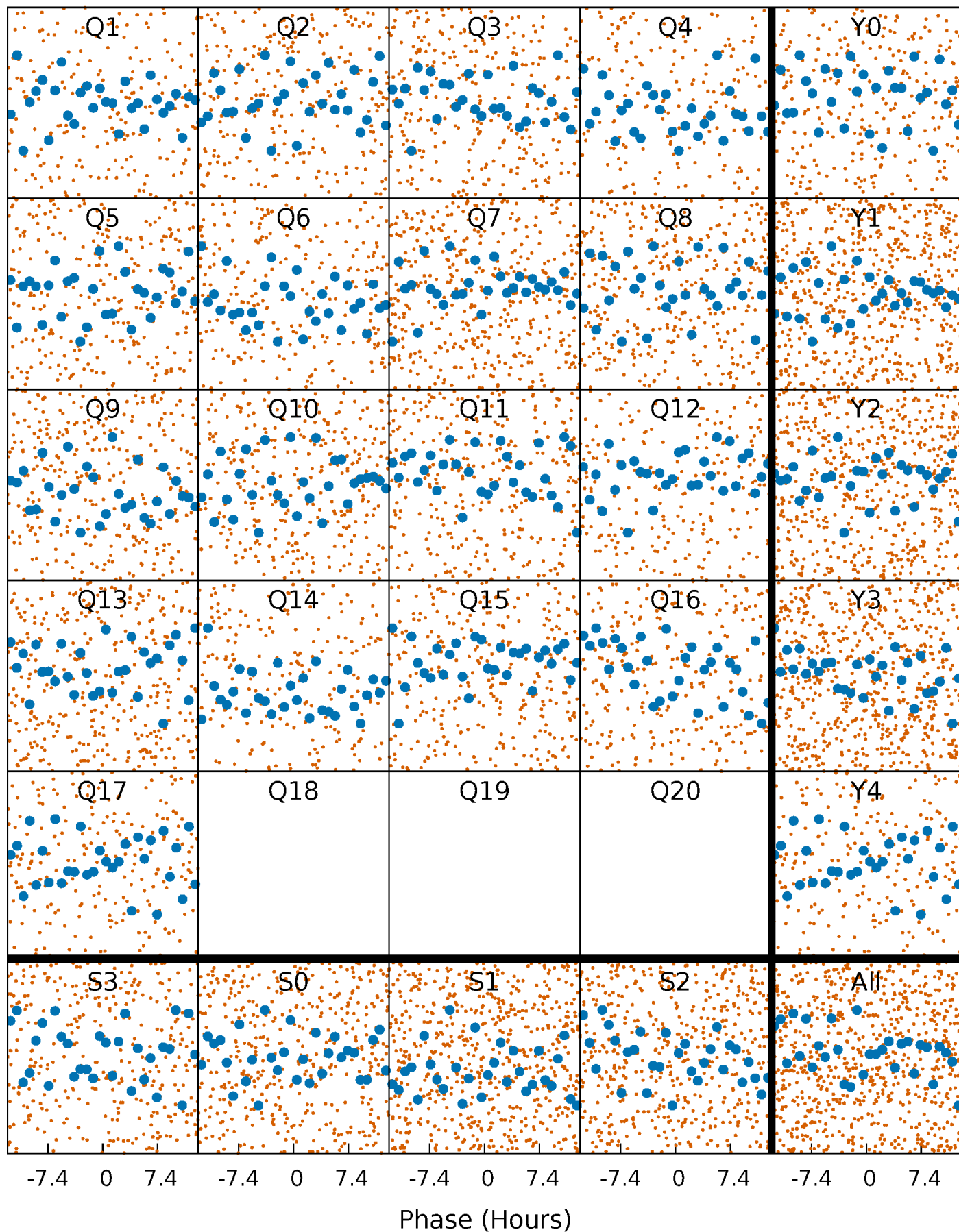


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



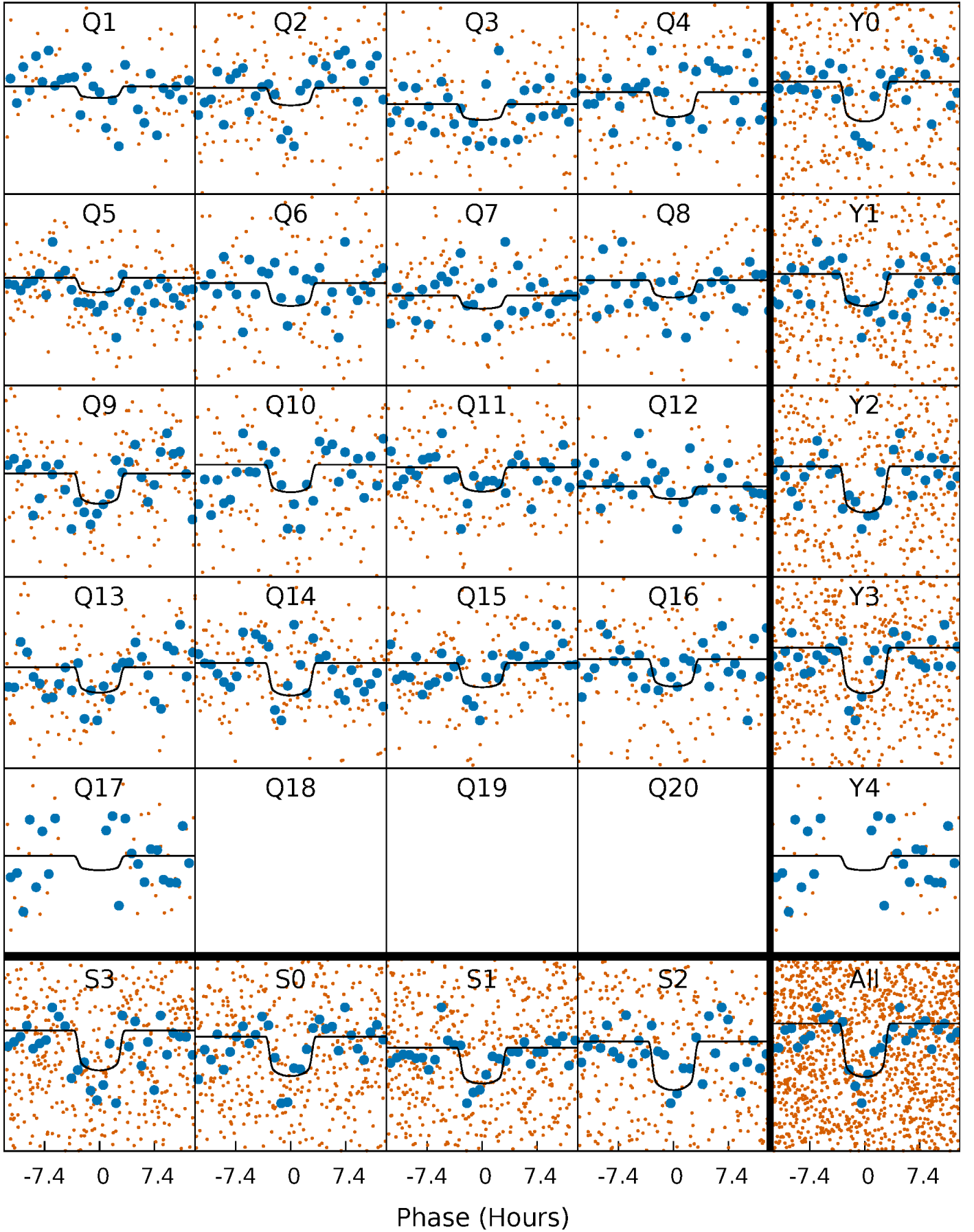
PDC Quarter-Phased Transit Curves

TCE 009700145-03 P= 4.319252 Days $T_0=132.762915$ (BKJD)



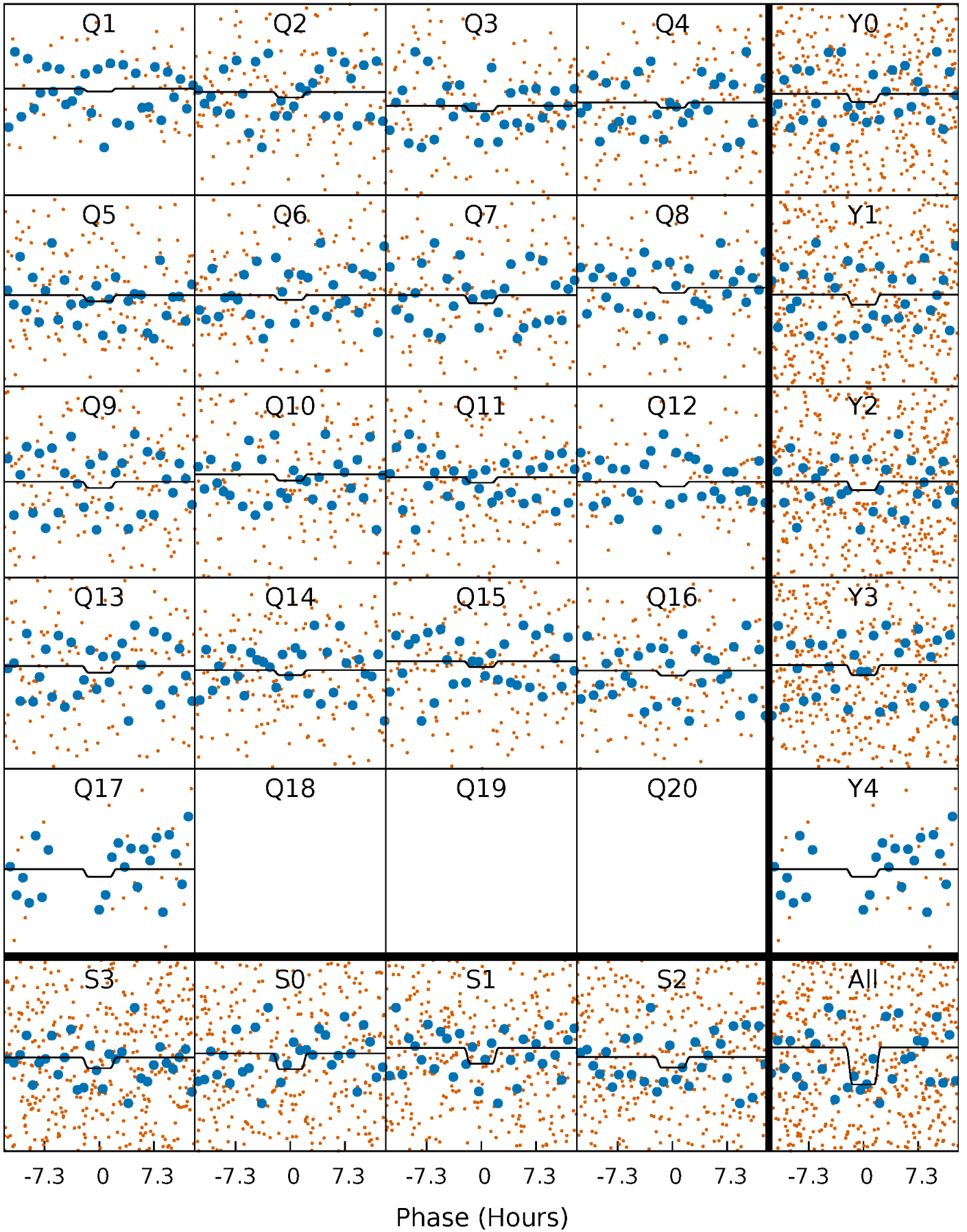
DV Quarter-Phased Transit Curves

TCE 009700145-03 P= 4.319252 Days $T_0=132.762915$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

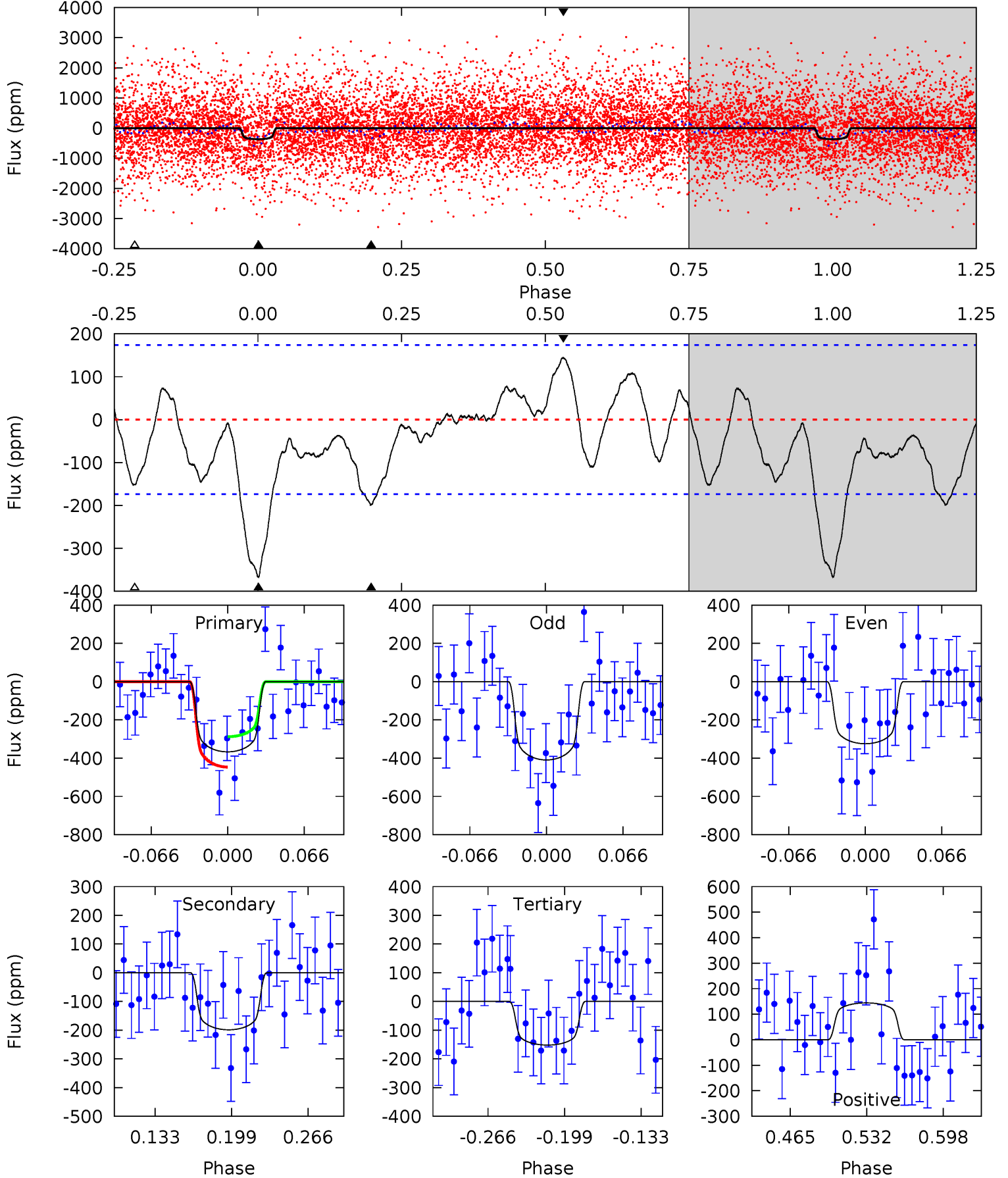
TCE 009700145-03 P= 4.319412 Days $T_0=132.746513$ (BKJD)



DV Model-Shift Uniqueness Test

009700145-03, P = 4.319252 Days, E = 132.762915 Days

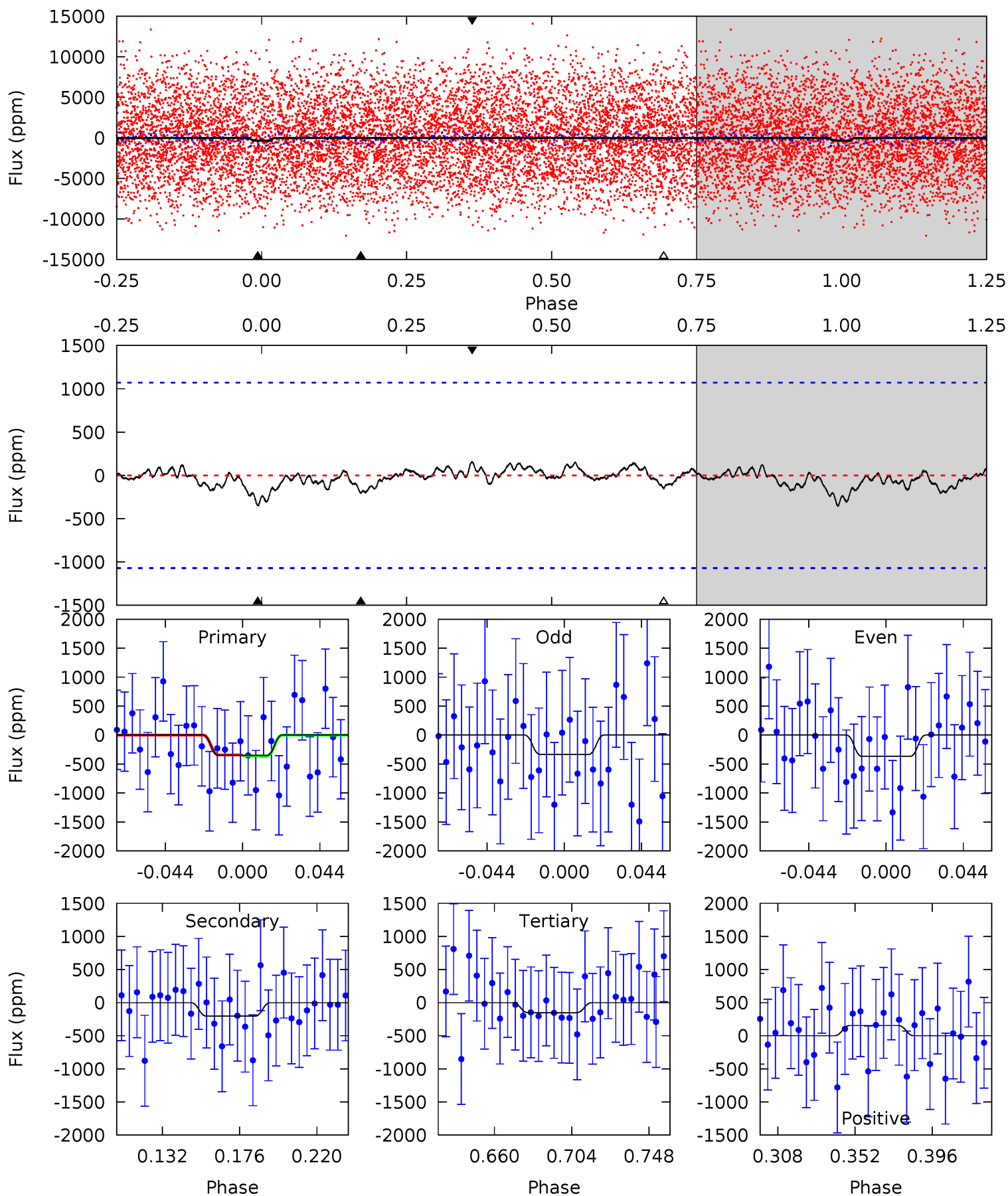
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.82	5.32	4.06	3.86	4.65	1.84	1.87	5.76	5.96	1.25	1.45	1.14	0.95	0.28	2.13



Alt Model-Shift Uniqueness Test

009700145-03, P = 4.319412 Days, E = 132.746513 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.55	0.91	0.67	0.68	4.73	2.01	0.31	0.88	0.87	0.24	0.23	0.07	0.65	0.31	0.04



Stellar Parameters For KIC 009700145

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7832^{+216}_{-325}	$3.975^{+0.253}_{-0.136}$	$-0.260^{+0.200}_{-0.350}$	$2.227^{+0.473}_{-0.768}$	$1.707^{+0.182}_{-0.364}$	$0.218^{+0.390}_{-0.076}$
	+3%/-4%	+6%/-3%	+77%/-135%	+21%/-34%	+11%/-21%	+179%/-35%
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 009700145-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-199 ± 37	$4.85^{+1.20}_{-1.19}$	2855^{+197}_{-234}	6254^{+873}_{-567}	17^{+13}_{-6}
Alt.	-205 ± 226	$5.06^{+1.30}_{-1.18}$	2867^{+198}_{-233}	6048^{+1698}_{-10288}	15^{+23}_{-17}

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

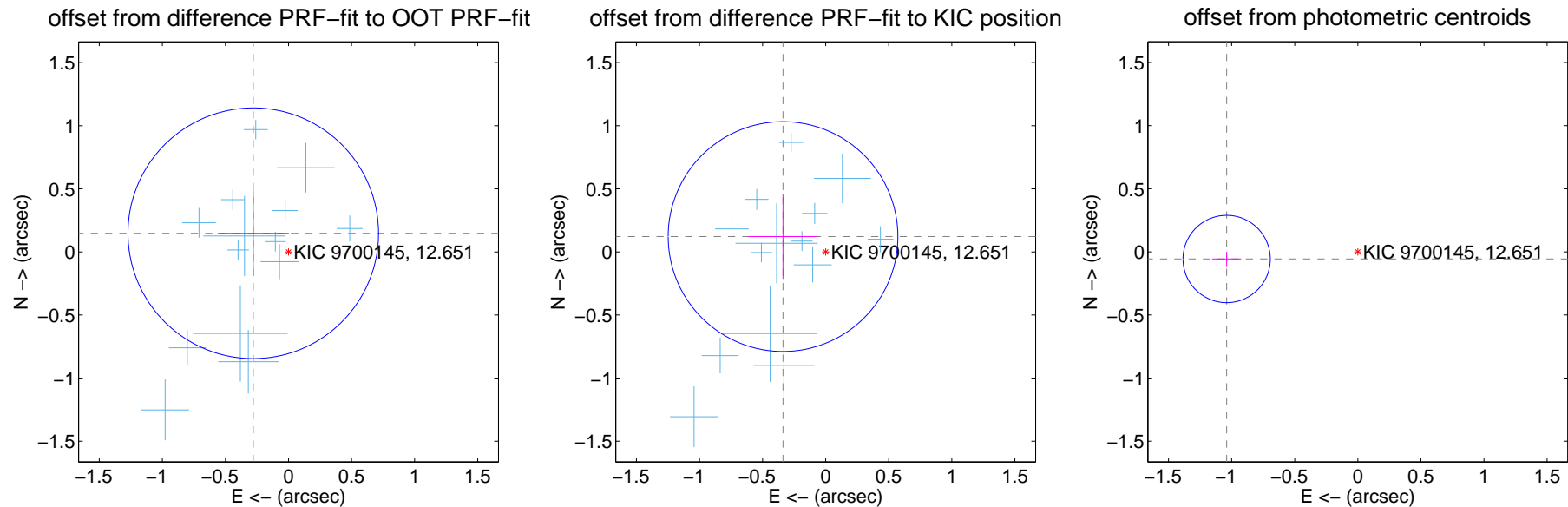
DV Centroid Data

Supplemental centroid analysis for 009700145-03. Kepler magnitude: 12.65. Transit SNR 12.70

There are 15 quarters with good PRF difference image offsets

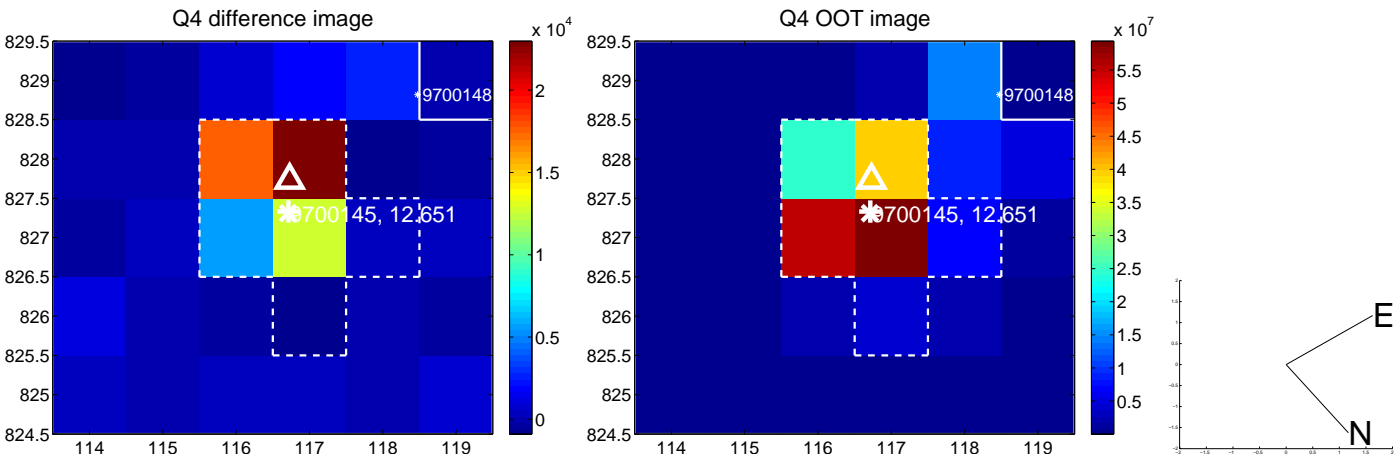
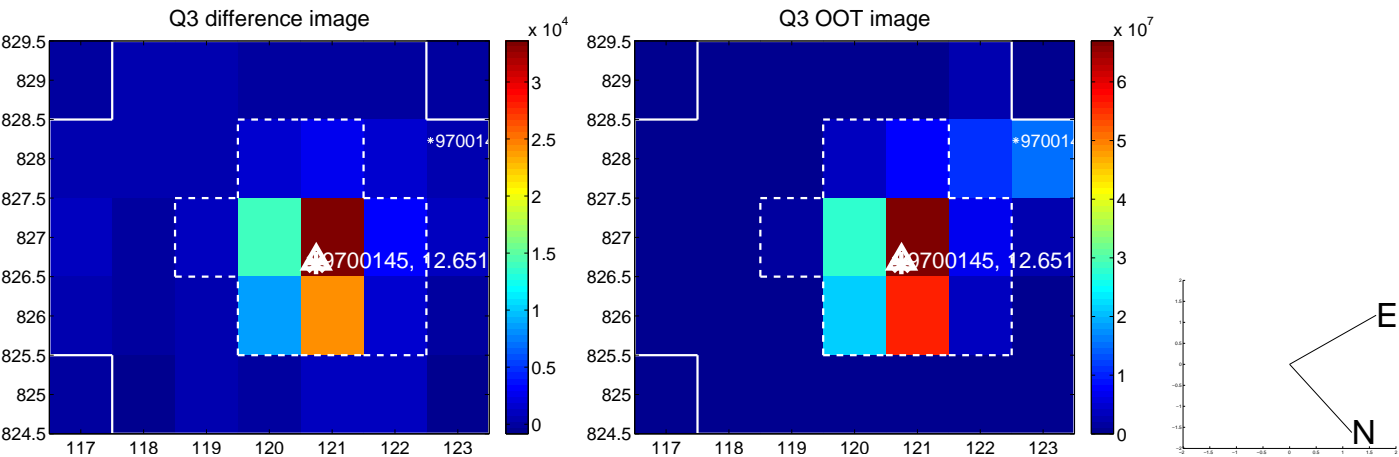
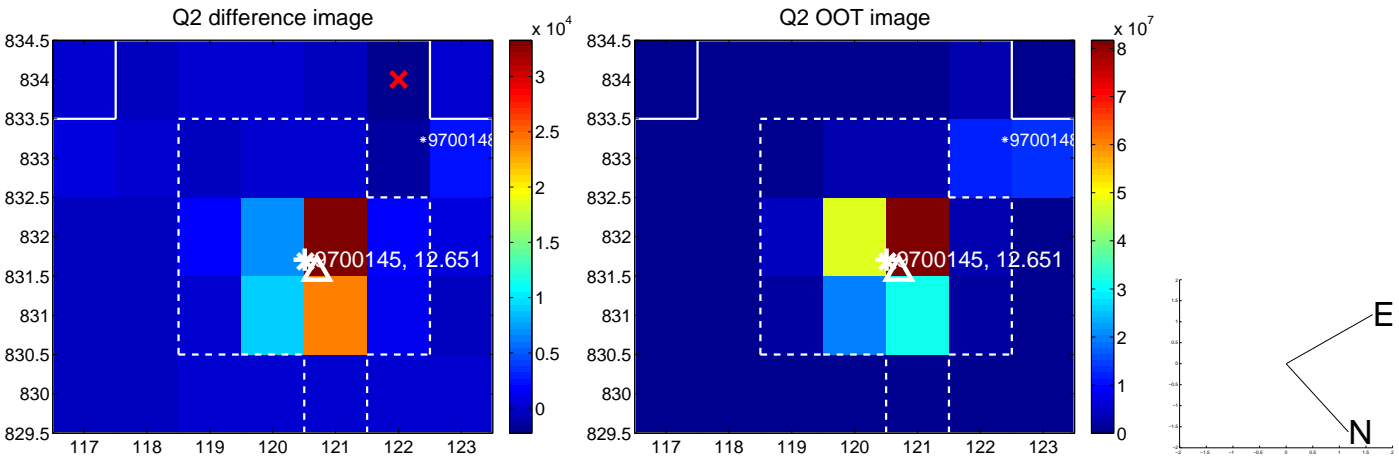
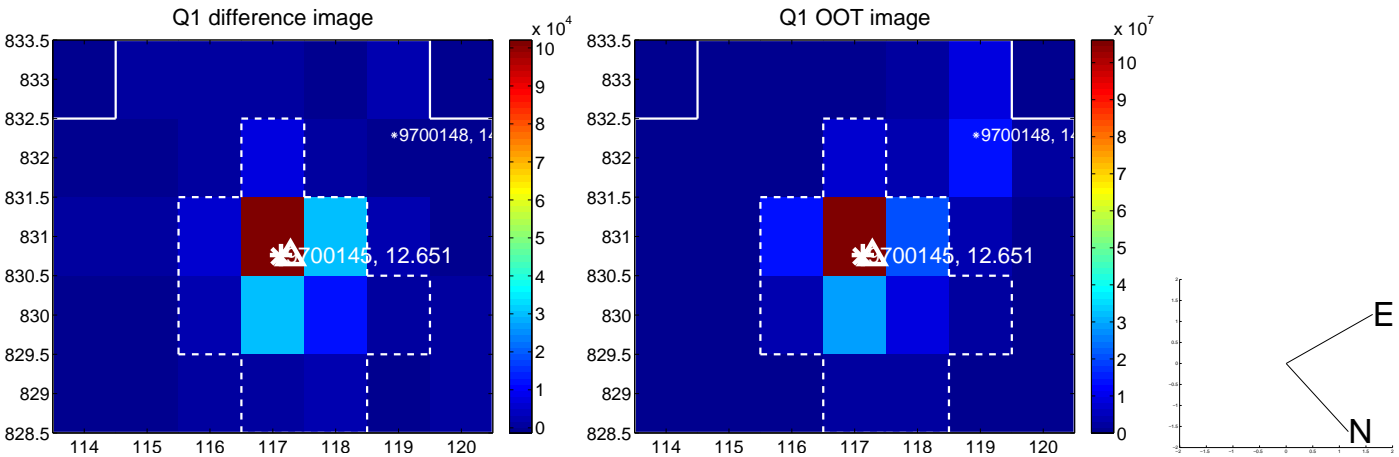
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.316 ± 0.331	0.95	0.279 ± 0.282	0.148 ± 0.339
PRF-fit source offset from KIC position	0.359 ± 0.303	1.18	0.338 ± 0.274	0.122 ± 0.335
photometric centroid source offset	1.04 ± 0.12	9.03	1.04 ± 0.12	-0.06 ± 0.06

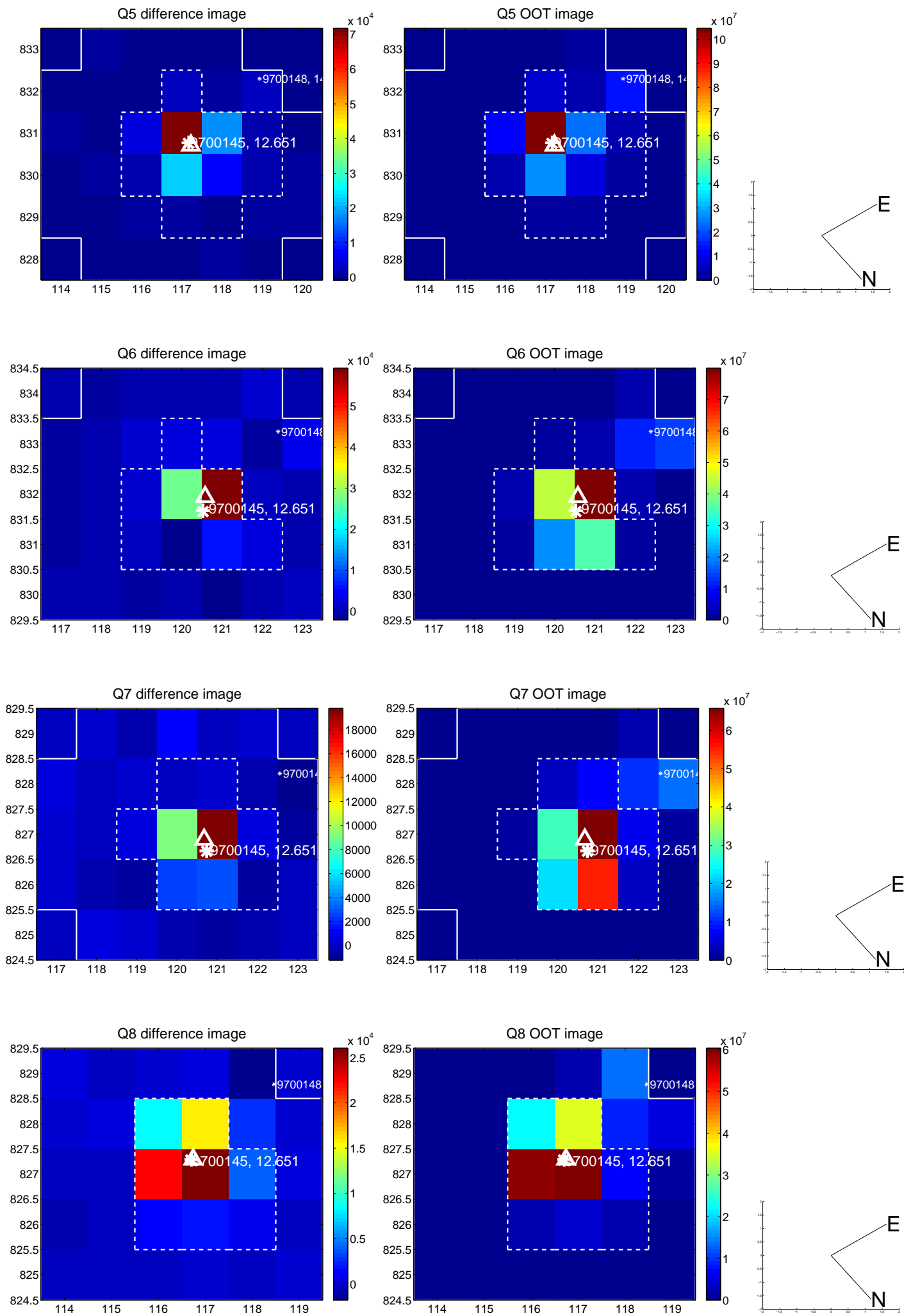


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

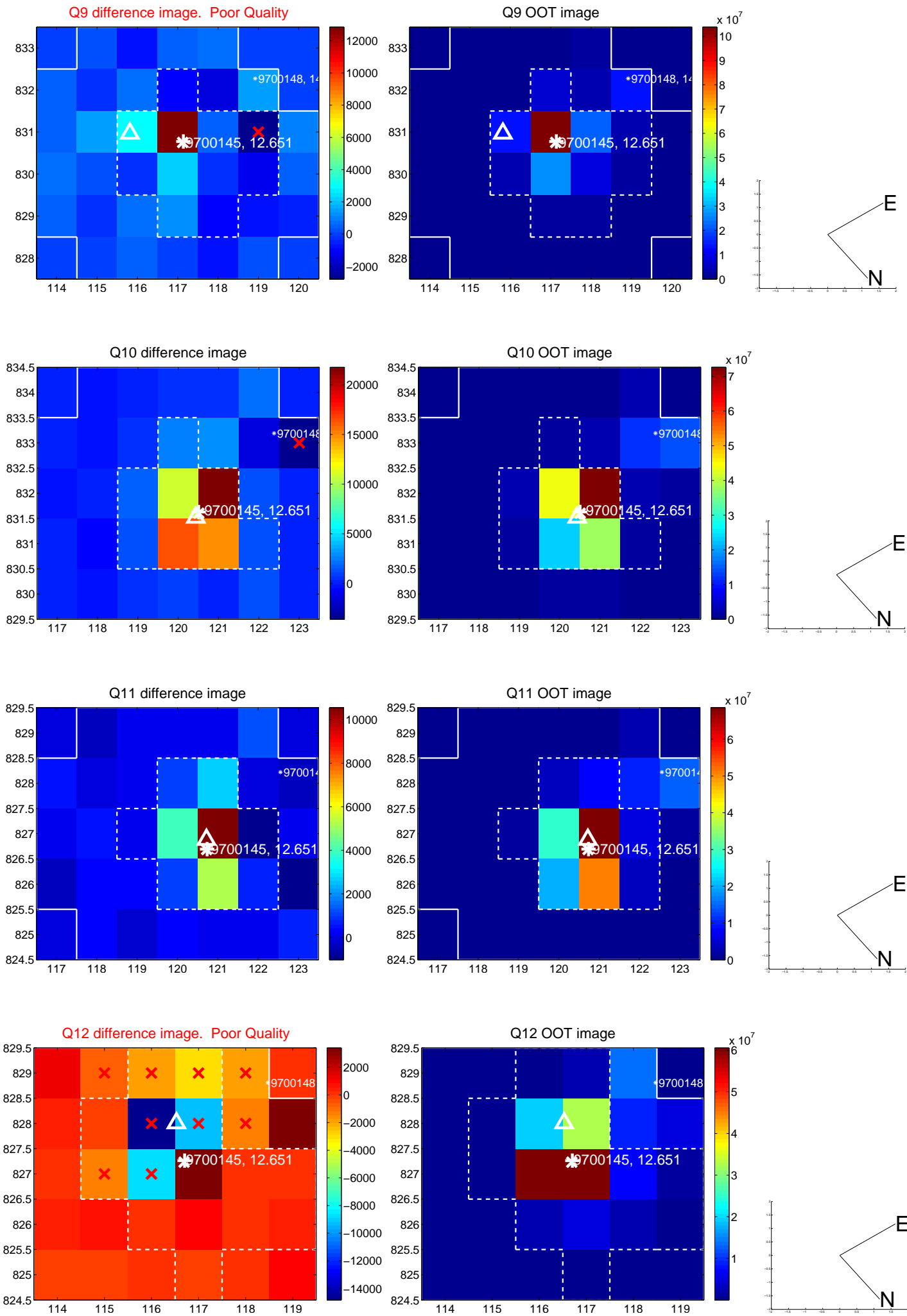
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



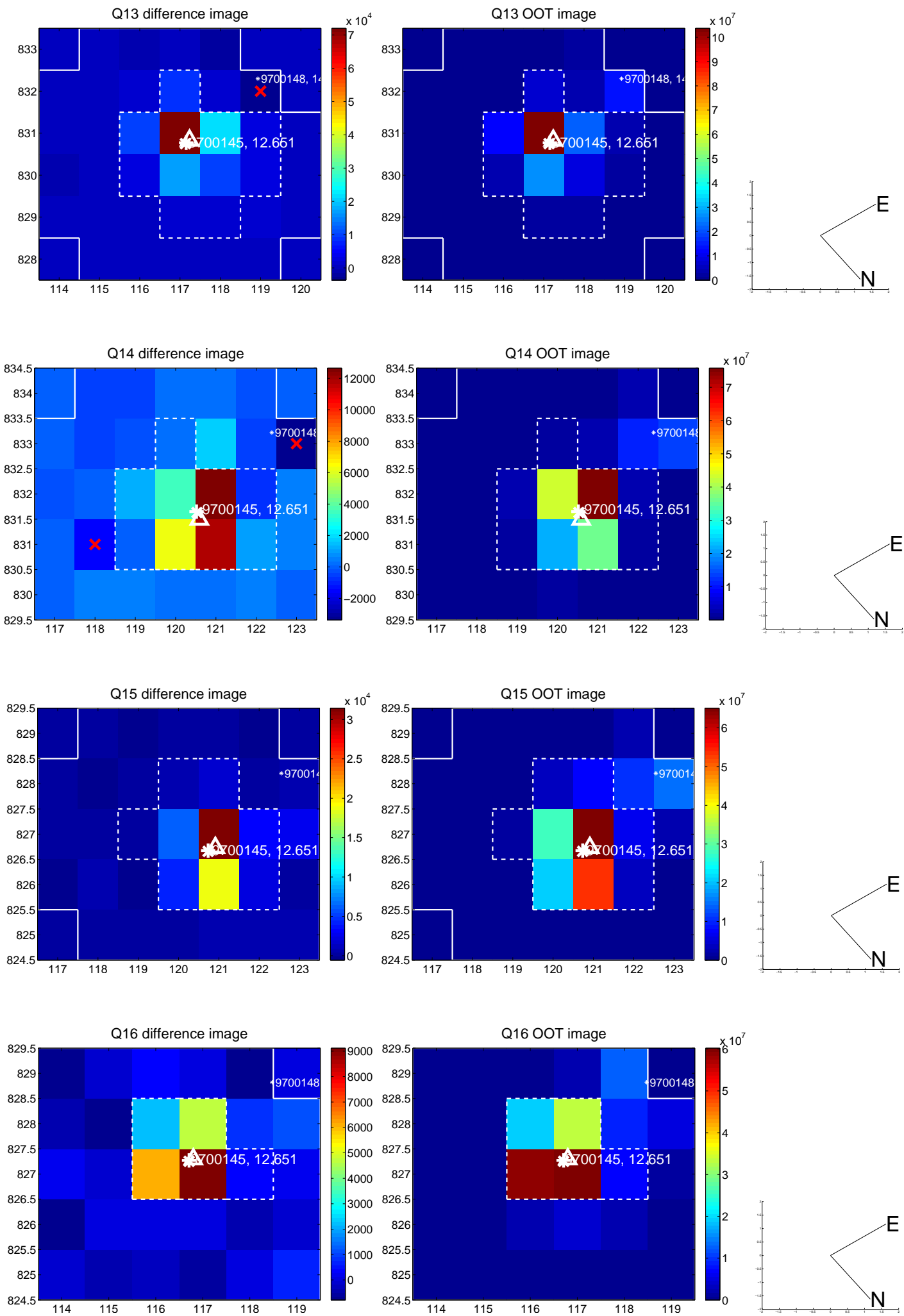
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



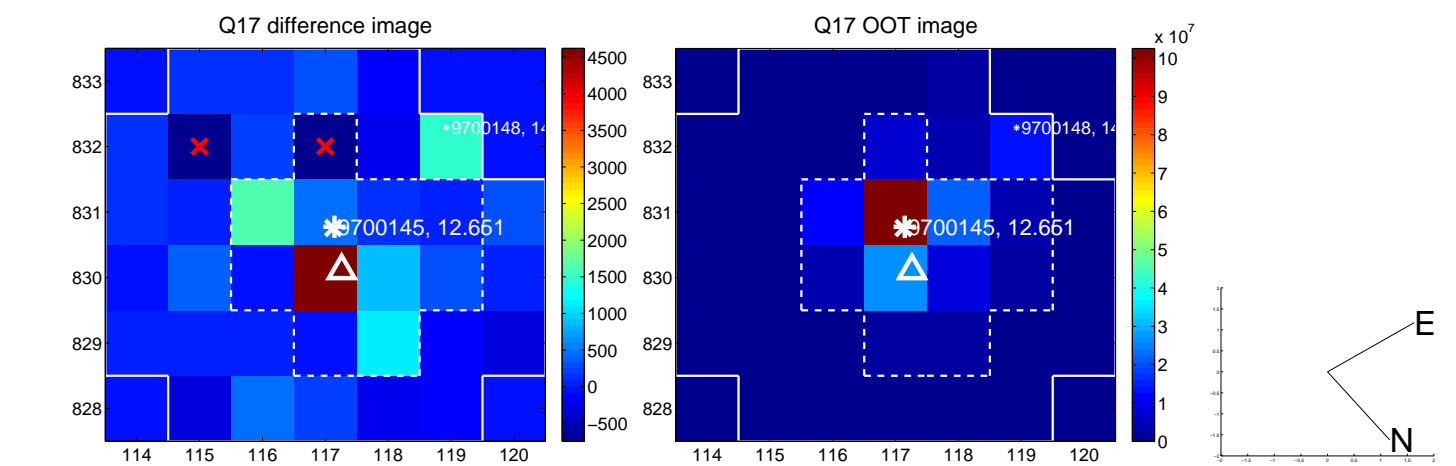
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



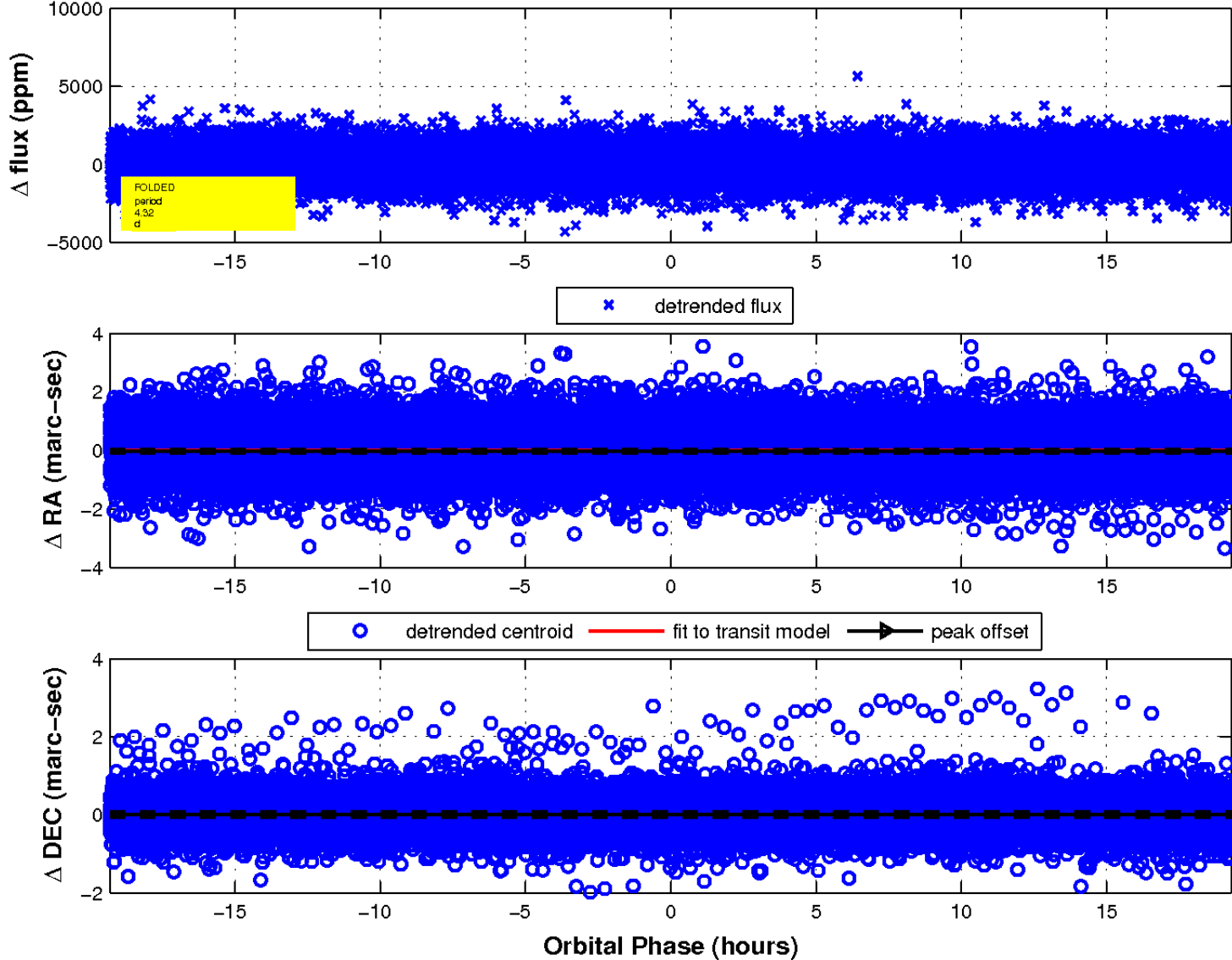
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

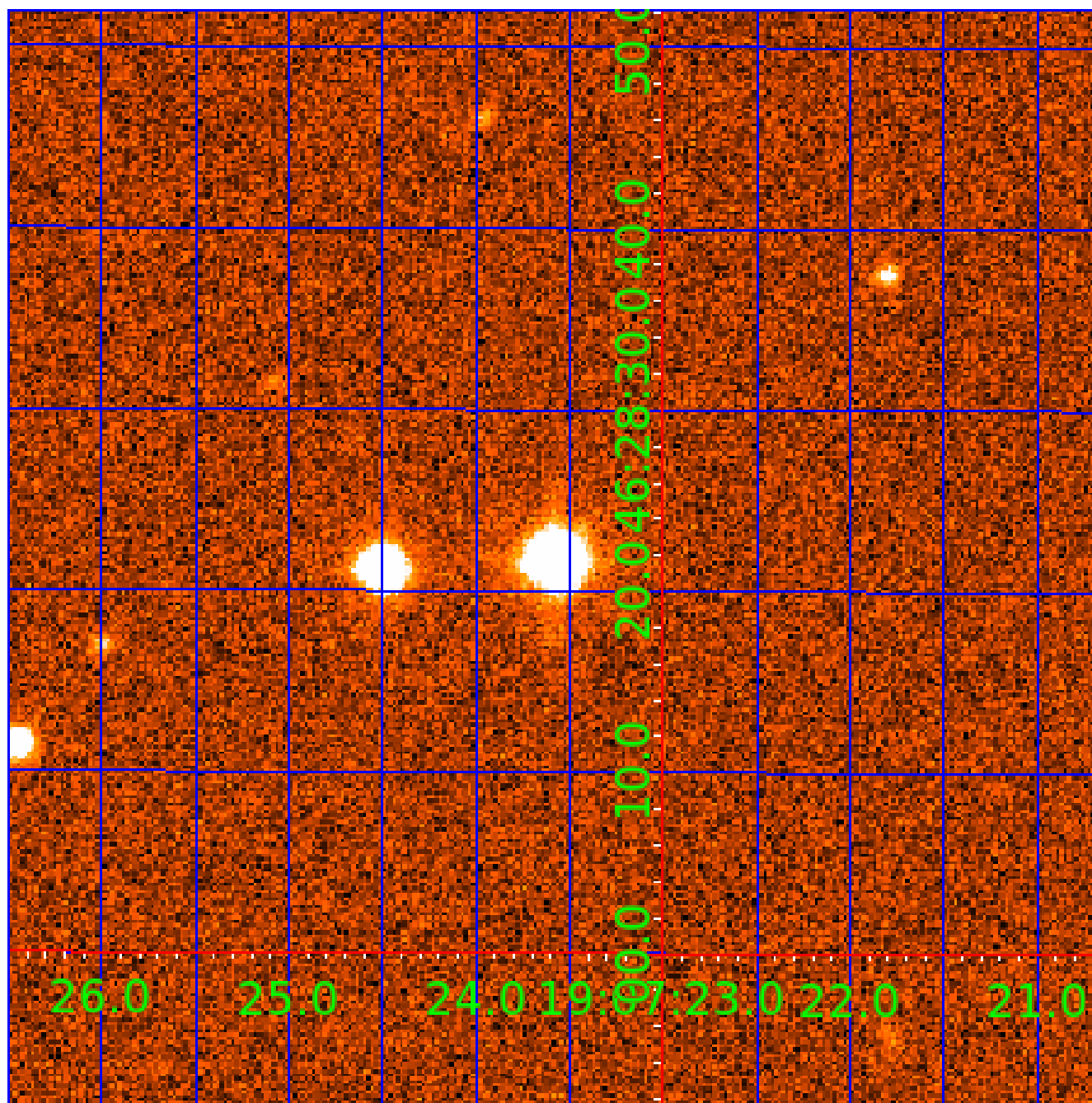


fluxWeightedCentroids, Planet 3 of 5



UKIRT Image

Declination



KIC 009700145

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})
009700145-01	OBS	No	2.017846	132.104516	145.6	13.611	11.6	15.3	2.23	7832	2.88	11976.99
009700145-02	OBS	No	61.259151	153.667026	783.2	7.254	27.1	8.0	2.23	7832	6.55	126.47
009700145-03	OBS	No	4.319252	132.762915	369.2	6.437	10.8	12.7	2.23	7832	5.01	4341.64
009700145-04	OBS	No	22.120799	146.801535	14.9	1.695	10.6	0.1	2.23	7832	1.02	491.81
009700145-05	OBS	No	52.189136	135.028930	988.6	2.351	7.6	9.1	2.23	7832	7.90	156.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009700145-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009700145-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009700145-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009700145-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009700145-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

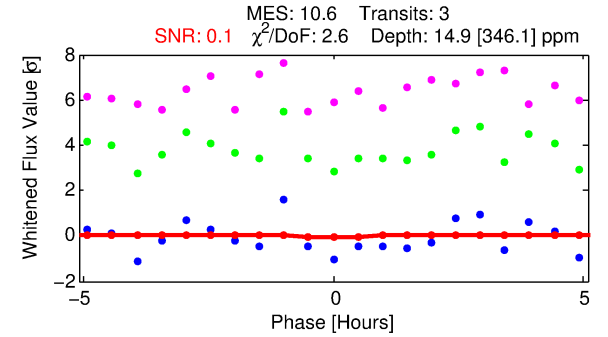
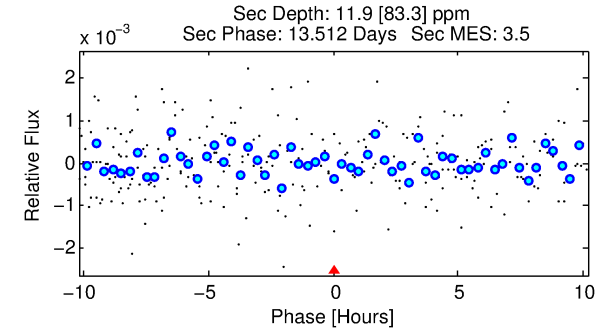
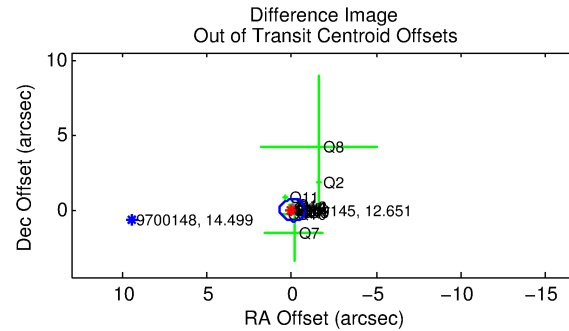
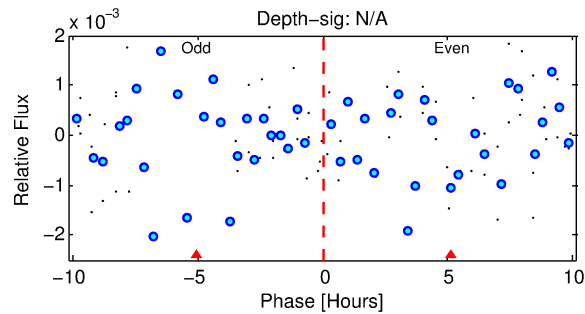
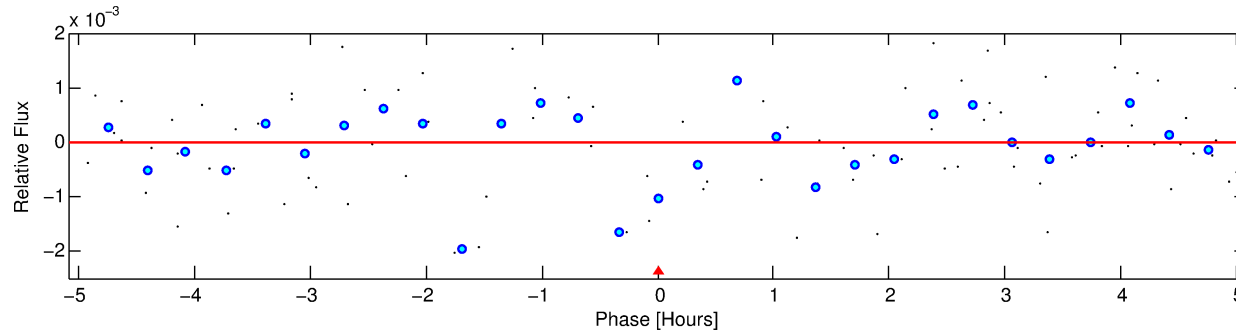
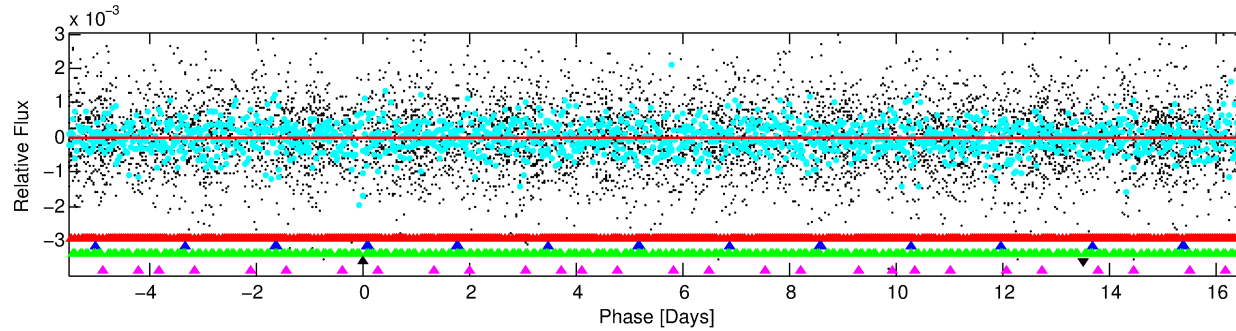
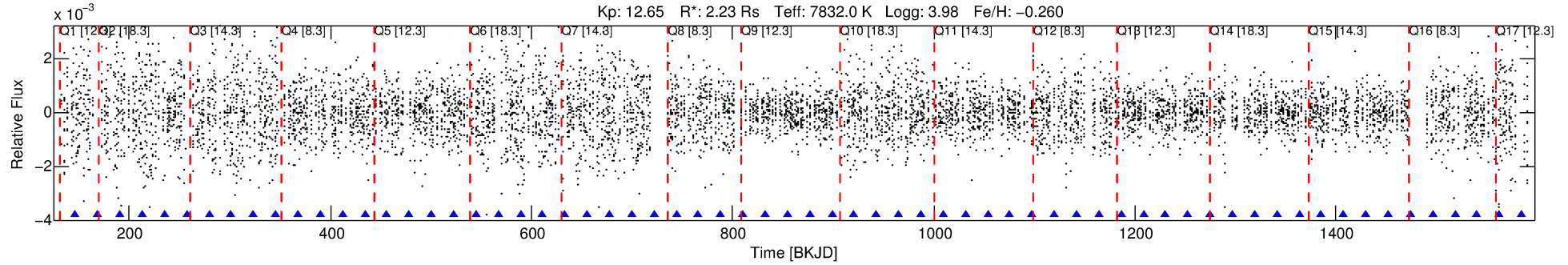
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009700145-04

No Significant Match Found

DV One-Page Summary

KIC: 9700145 Candidate: 4 of 5 Period: 22.121 d



DV Fit Results:

Period = 22.12080 [0.03386] d
Epoch = 146.8015 [1.3541] BKJD
Rp/R* = 0.0042 [0.1608]
a/R* = 41.85 [9352.34]
b = 0.91 [42.46]
Seff = 491.81 [236.50]
Teq = 1201 [144] K
Rp = 1.02 [39.09] Re
a = 0.1844 [0.0555] AU
Ag = 215.31 [16596.22] [0.01σ]
Teffp = 7112 [137045] K [0.04σ]

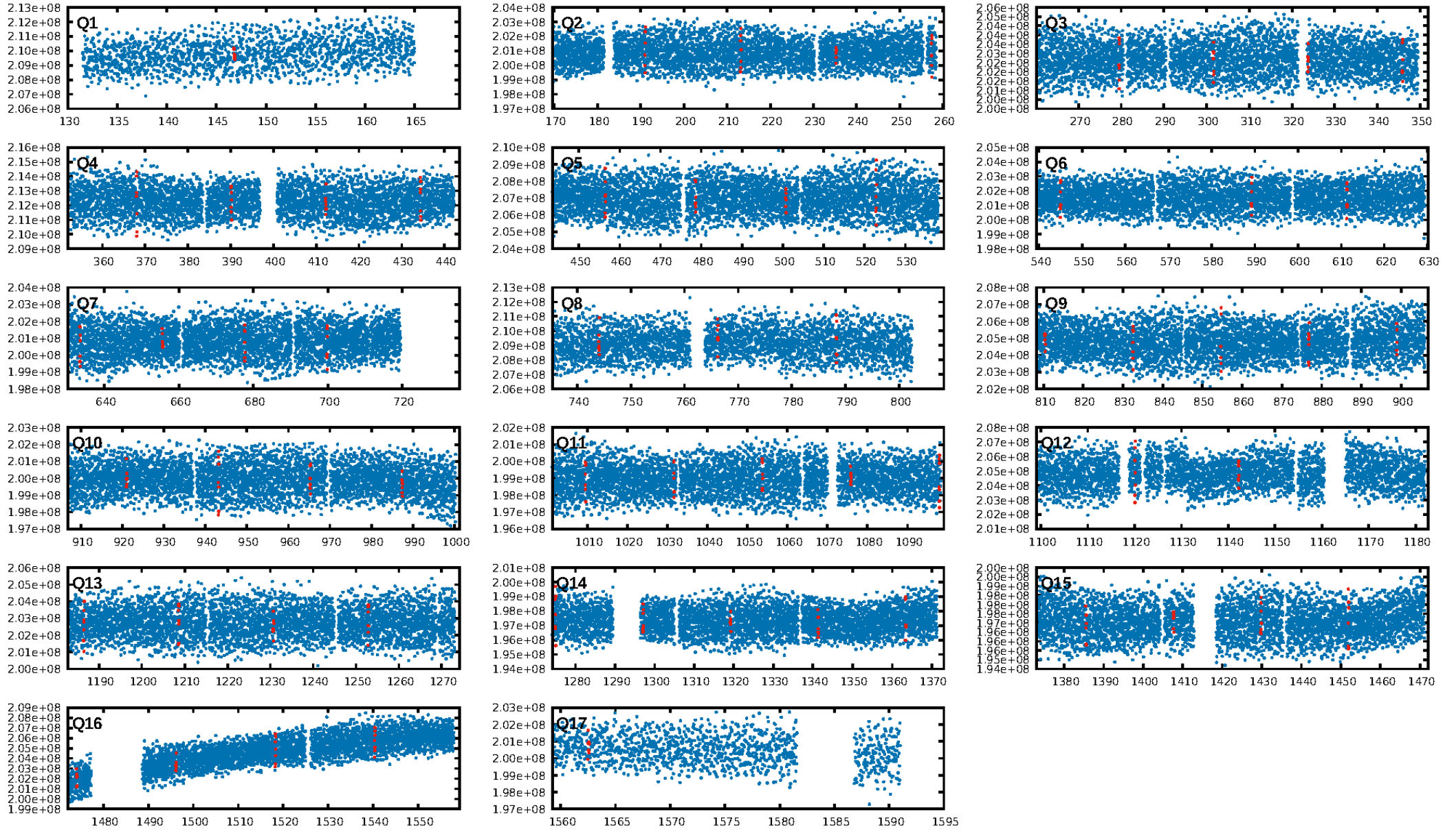
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [64.18σ]
LongPeriod-sig: 100.0% [248.99σ]
ModelChiSquare2-sig: 12.0%
ModelChiSquareGof-sig: 2.0%
Bootstrap-pfa: 3.32e-57
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.09528
Centroid-sig: 3.9%
Centroid-so: 10.636 arcsec [1.24σ]
OotOffset-rm: 0.053 arcsec [0.21σ]
KicOffset-rm: 0.070 arcsec [0.22σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.59 [10/17]
DiffImageOverlap-fno: 0.53 [9/17]

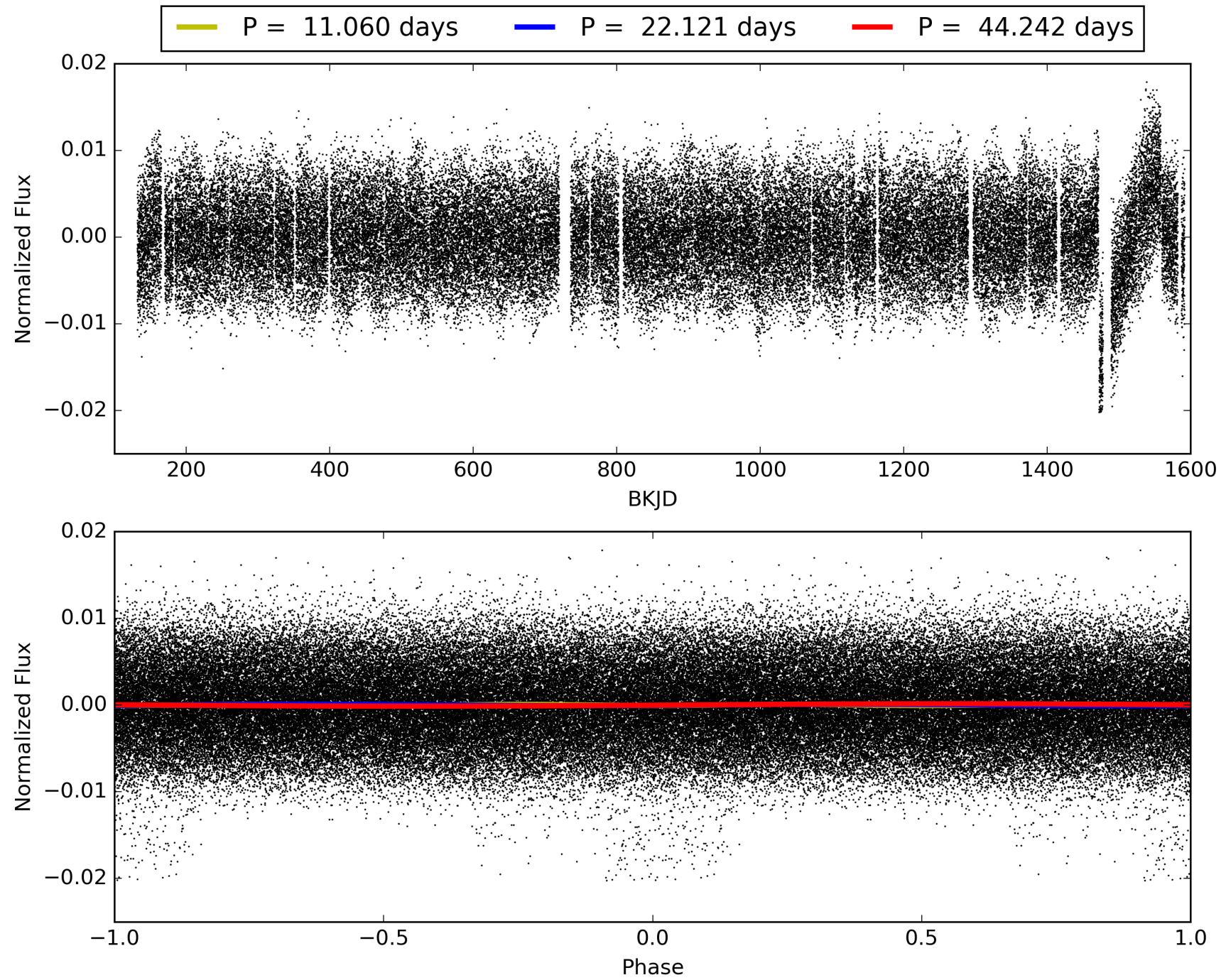
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:32:12 Z

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

TCE 009700145-04, PDC Light Curves

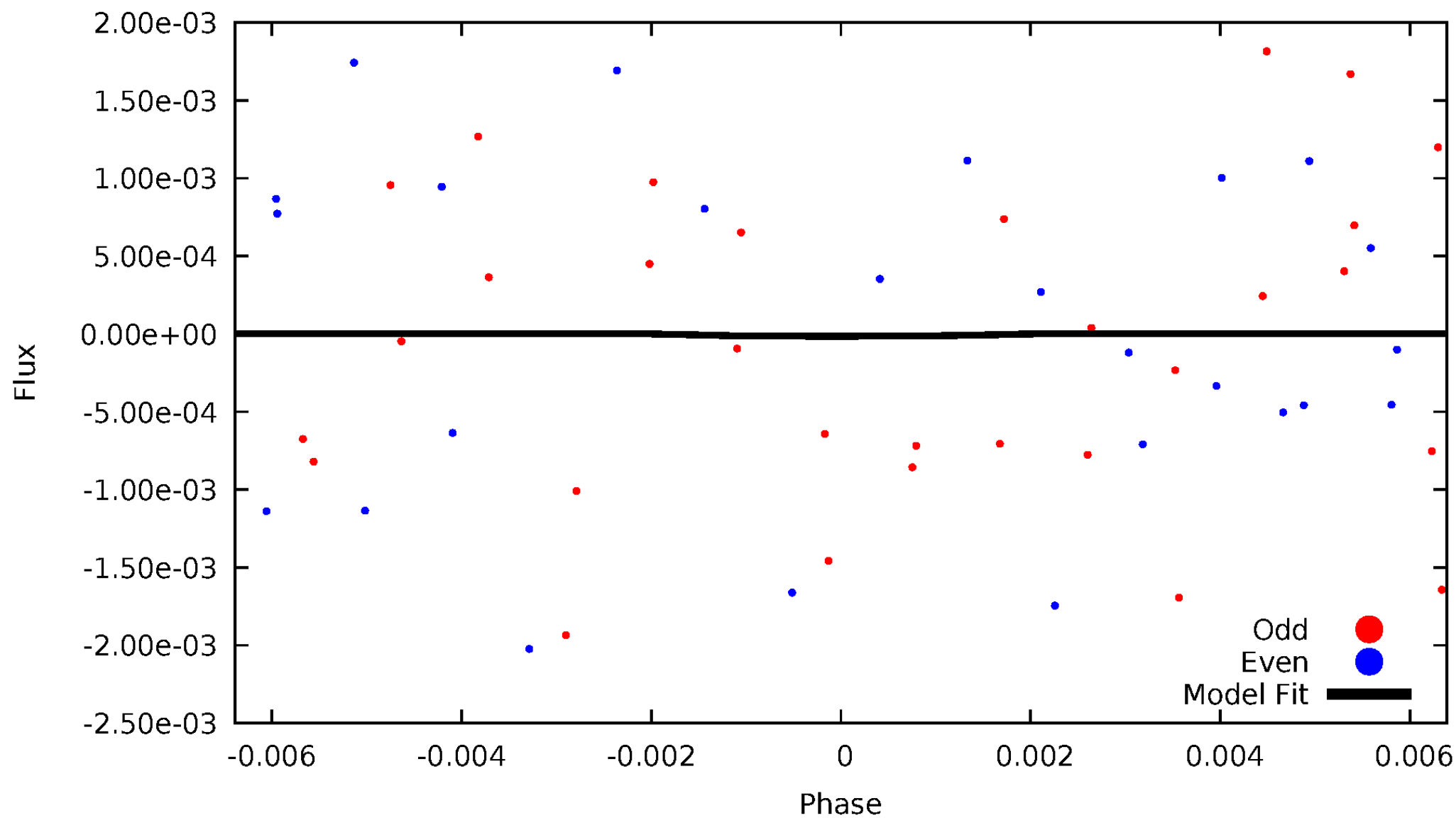


TCE 009700145-04



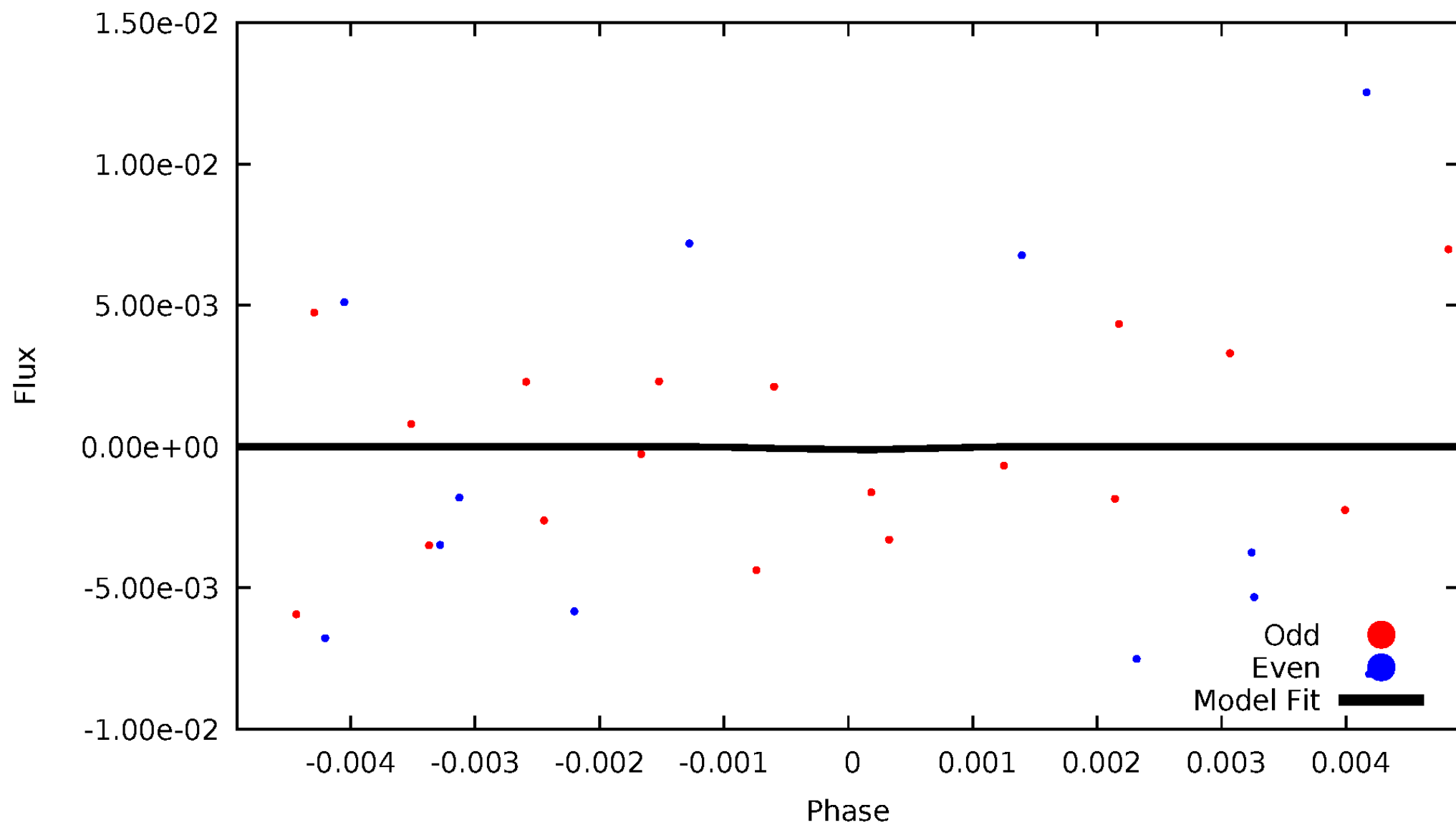
DV Odd/Even

TCE 009700145-04



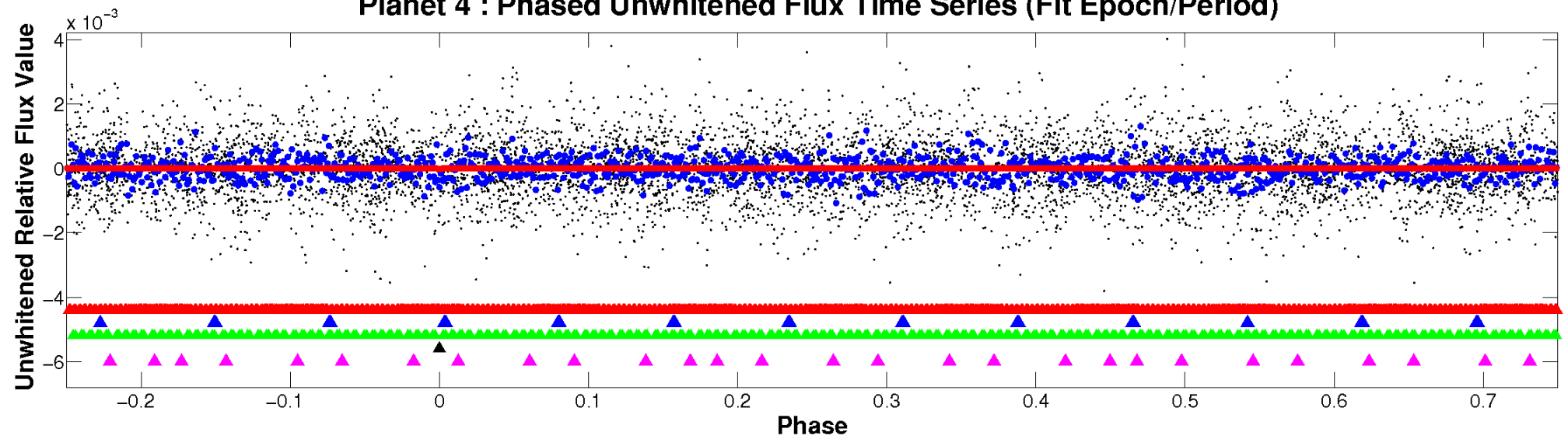
ALT Odd/Even

TCE 009700145-04

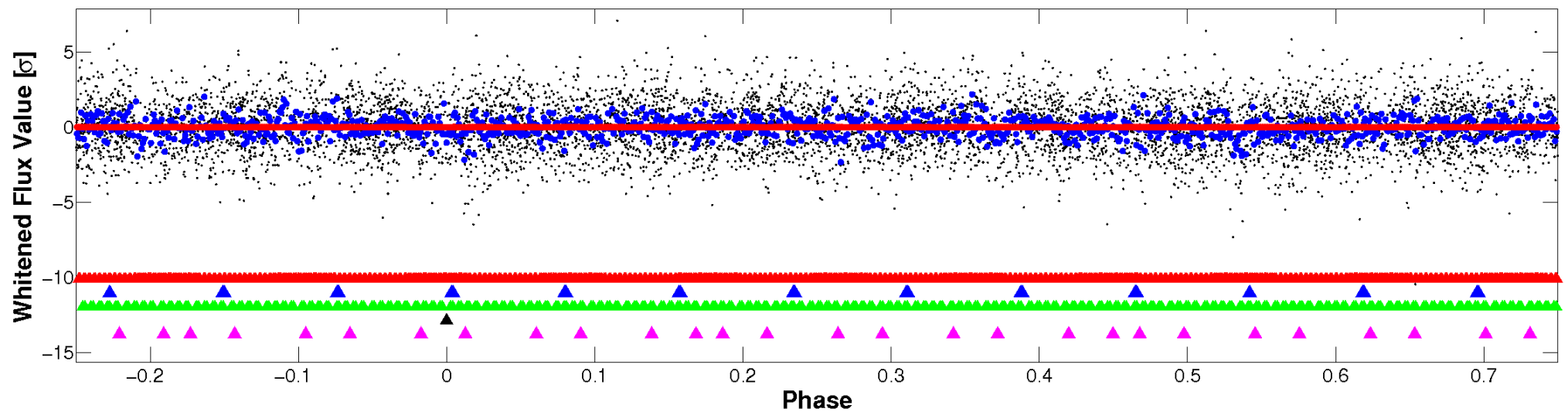


Non-Whitened Vs. Whitened Light Curve

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

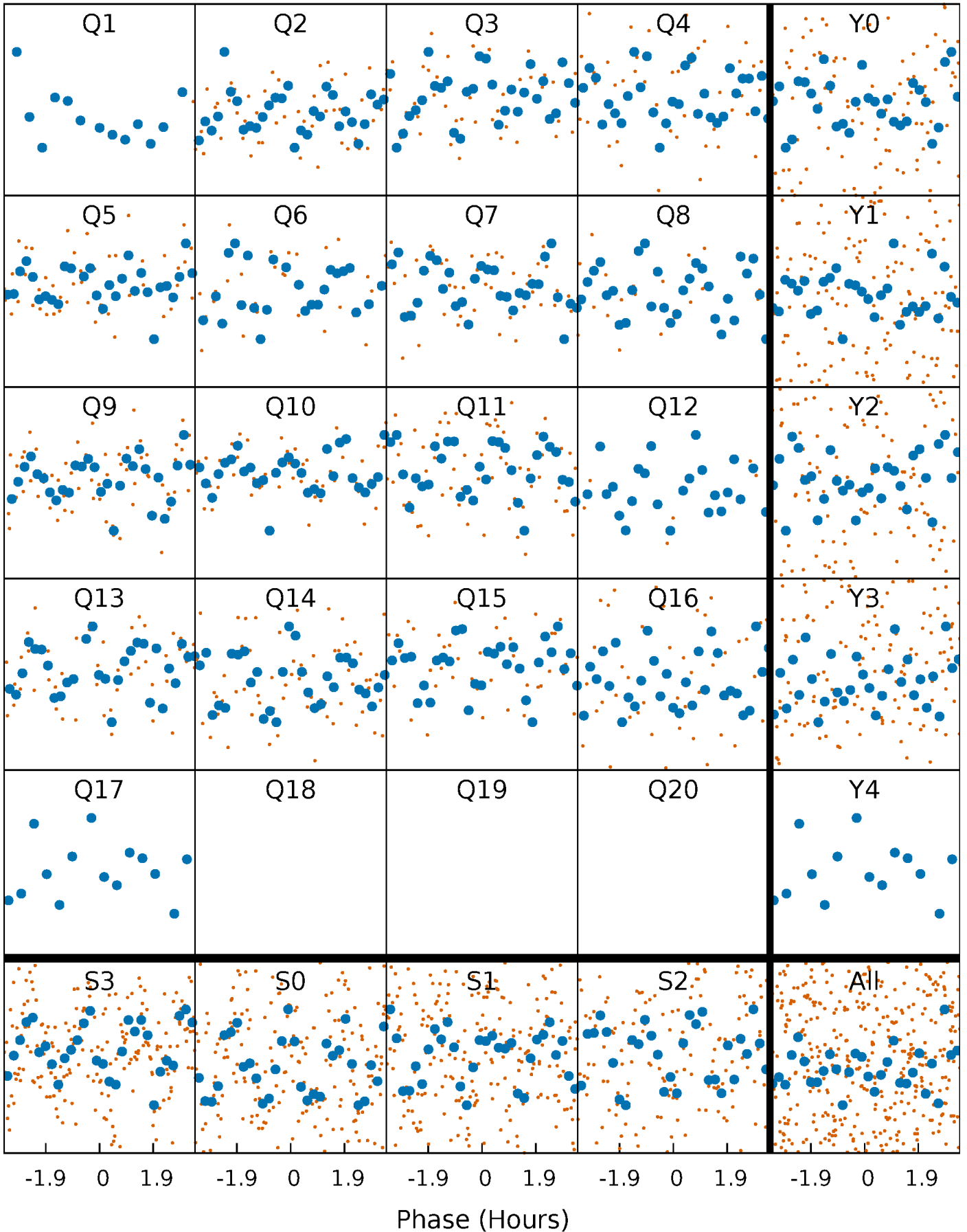


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



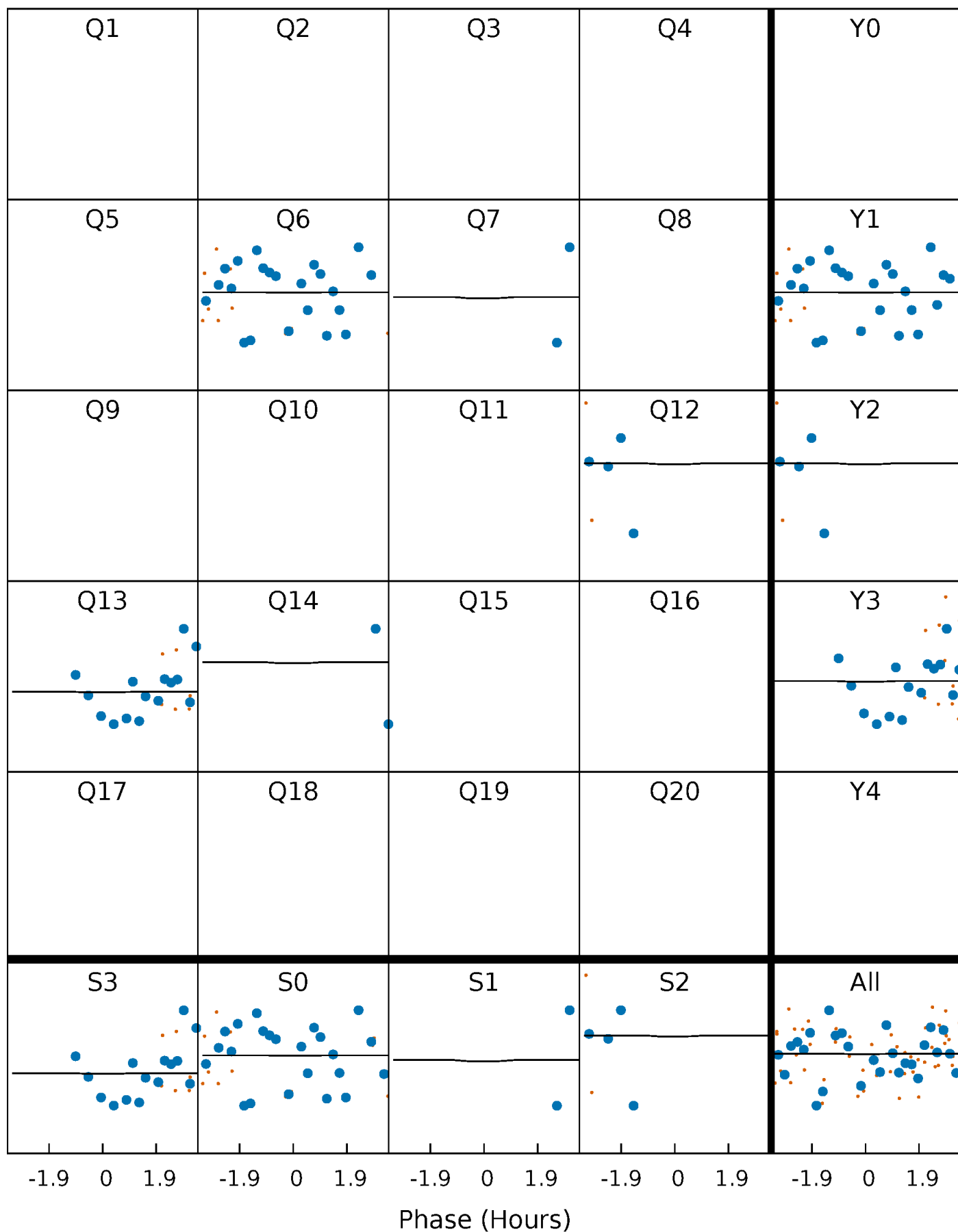
PDC Quarter-Phased Transit Curves

TCE 009700145-04 P= 22.120799 Days $T_0=146.801535$ (BKJD)



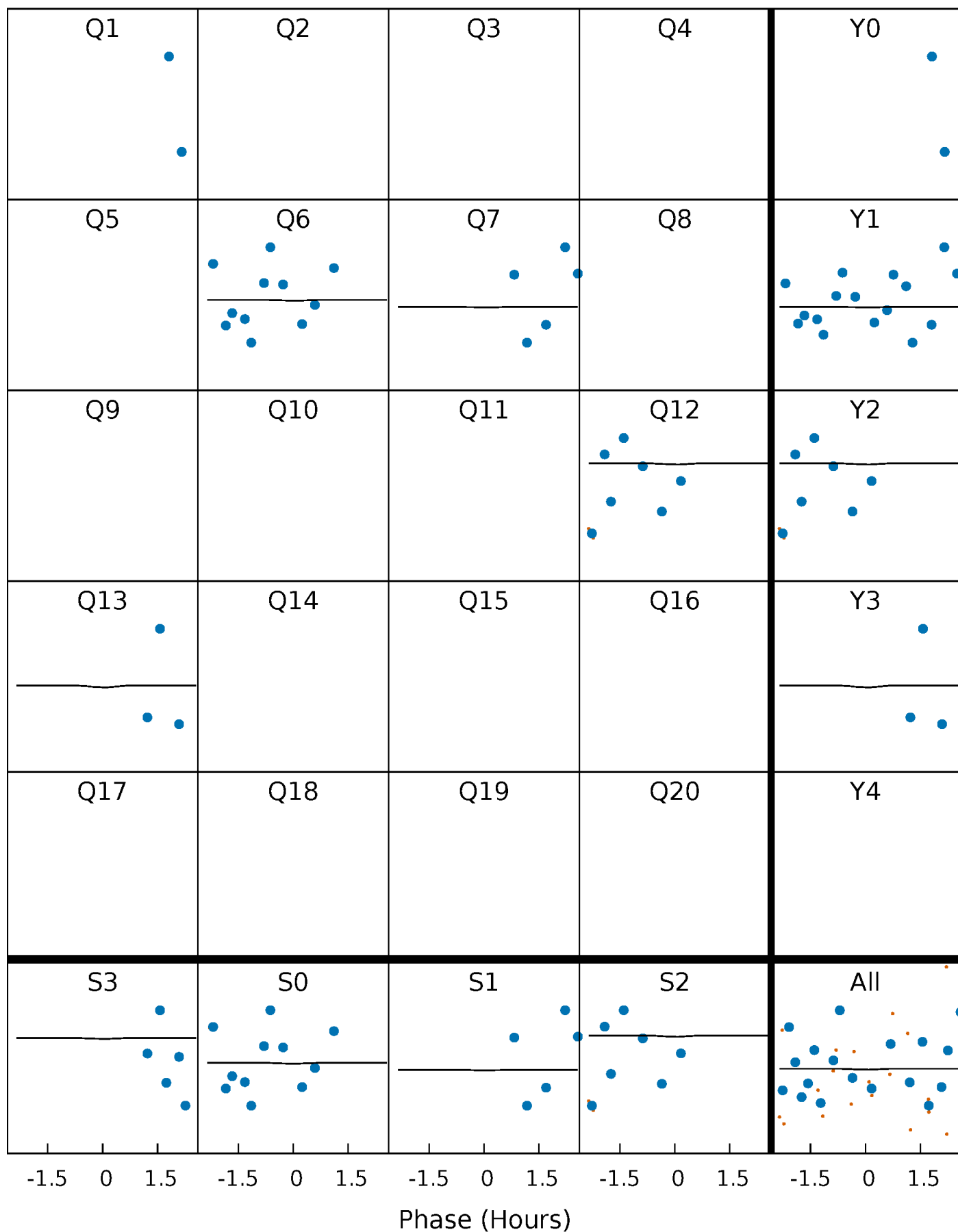
DV Quarter-Phased Transit Curves

TCE 009700145-04 P= 22.120799 Days $T_0=146.801535$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

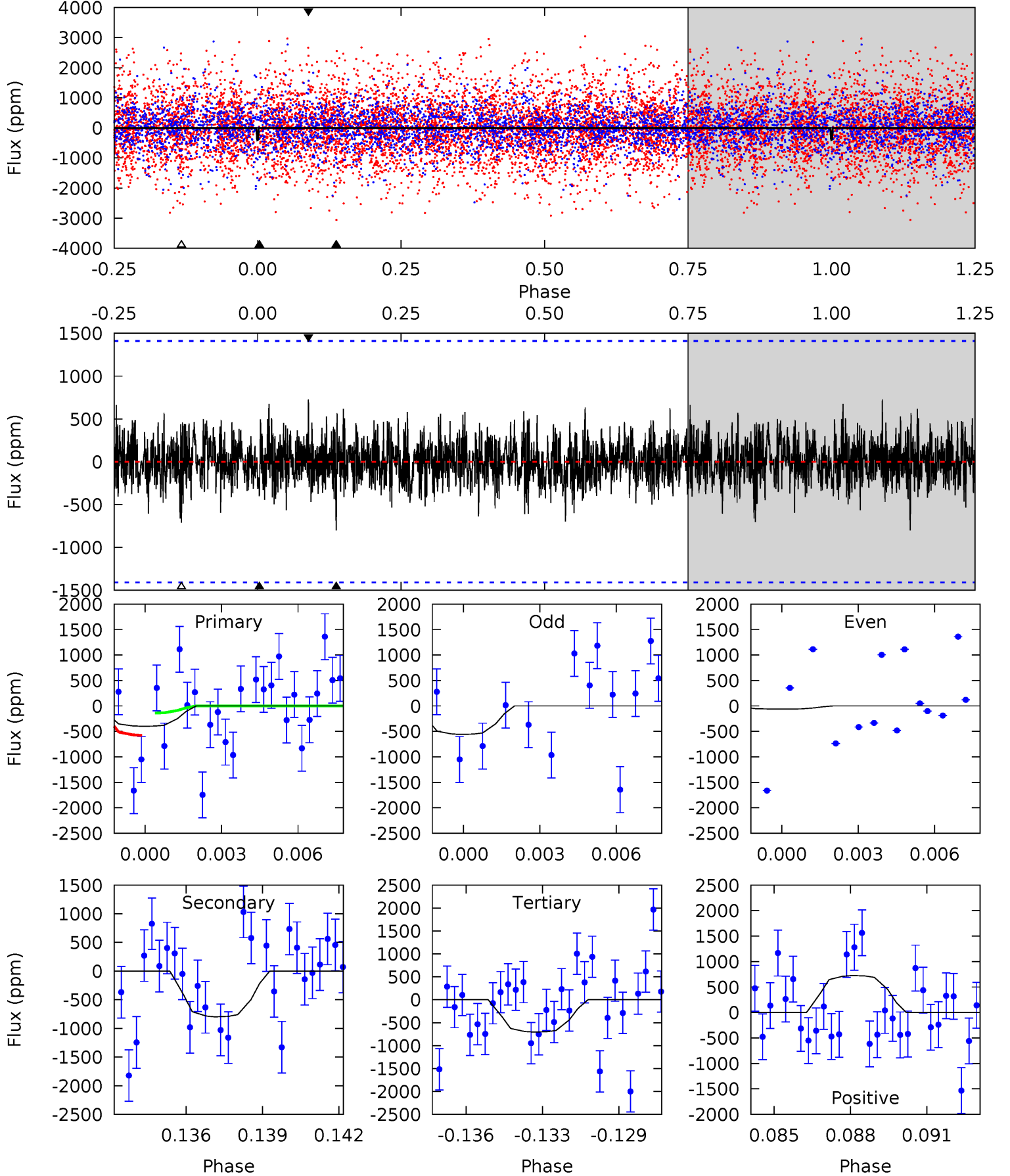
TCE 009700145-04 P= 22.114224 Days $T_0=147.031668$ (BKJD)



DV Model-Shift Uniqueness Test

009700145-04, P = 22.120799 Days, E = 124.680736 Days

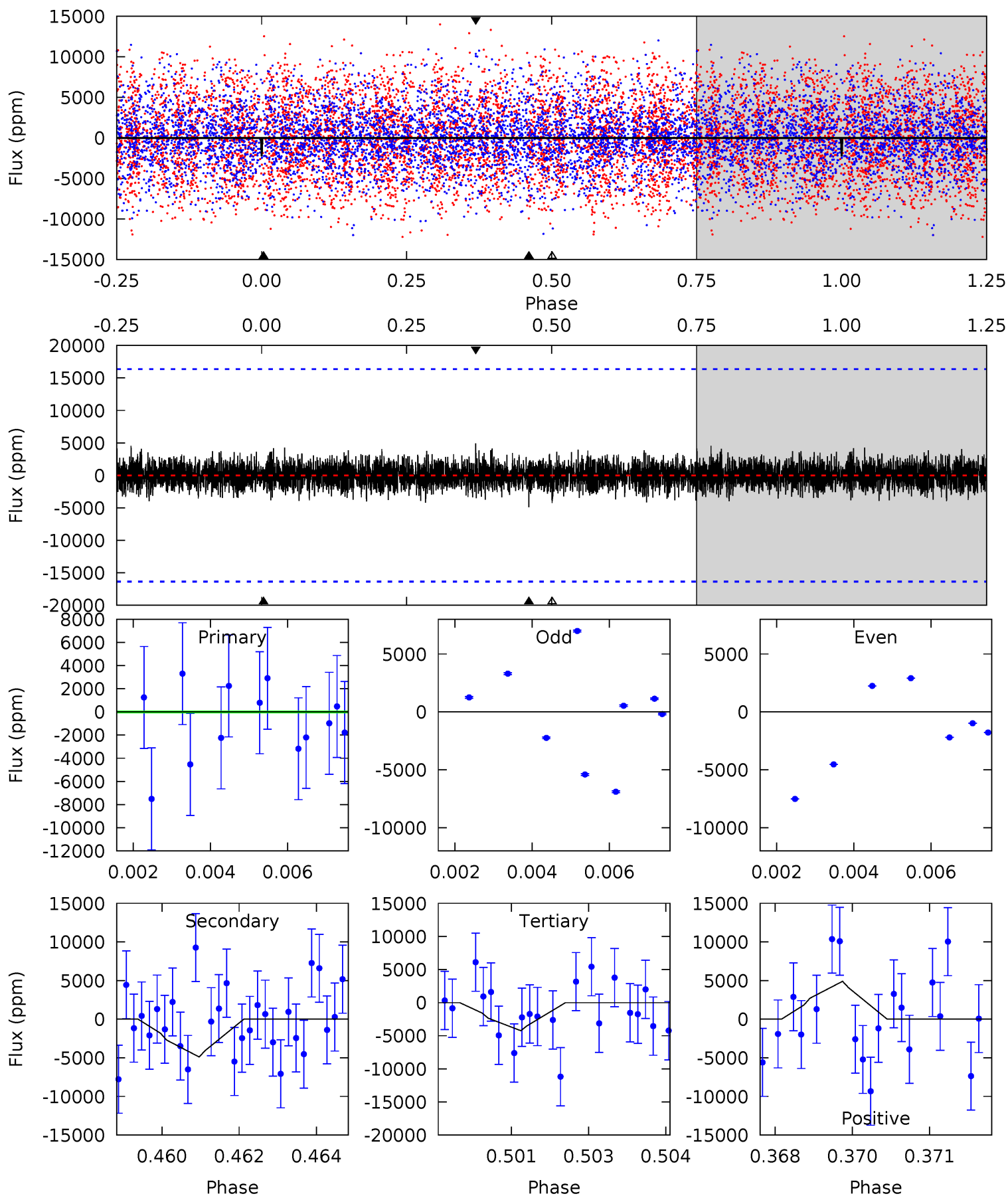
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.49	2.97	2.62	2.70	5.24	2.95	0.75	-1.14	-1.21	0.35	0.27	0.95	0.81	0.48	0.83



Alt Model-Shift Uniqueness Test

009700145-04, P = 22.114224 Days, E = 124.917444 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.74	1.60	1.38	1.60	5.34	3.11	0.43	-0.65	-0.87	0.21	-0.01	0	1.00	0.50	0.00



Stellar Parameters For KIC 009700145

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7832^{+216}_{-325}	$3.975^{+0.253}_{-0.136}$	$-0.260^{+0.200}_{-0.350}$	$2.227^{+0.473}_{-0.768}$	$1.707^{+0.182}_{-0.364}$	$0.218^{+0.390}_{-0.076}$
	+3%/-4%	+6%/-3%	+77%/-135%	+21%/-34%	+11%/-21%	+179%/-35%
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 009700145-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-798 ± 269	$25.43^{+29.04}_{-18.30}$	1653^{+119}_{-141}	4101^{+3230}_{-967}	22^{+287}_{-18}
Alt.	-4889 ± 3062	$25.41^{+27.95}_{-18.41}$	1655^{+111}_{-142}	5899^{+8328}_{-1930}	121^{+1728}_{-104}

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

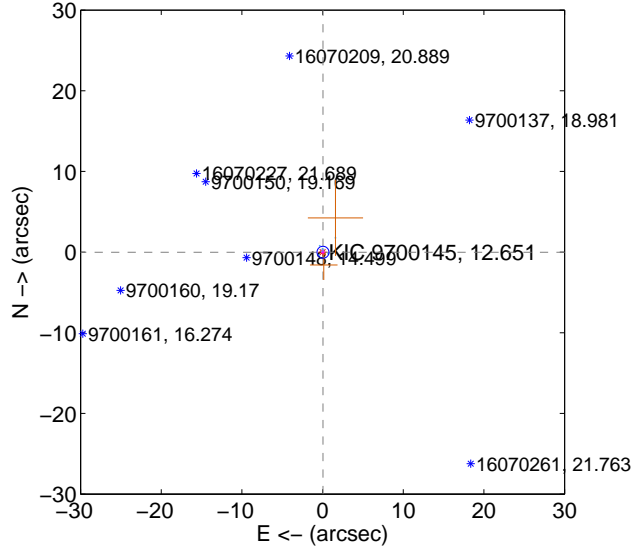
Supplemental centroid analysis for 009700145-04. Kepler magnitude: 12.65. Transit SNR 0.08

There are 10 quarters with good PRF difference image offsets

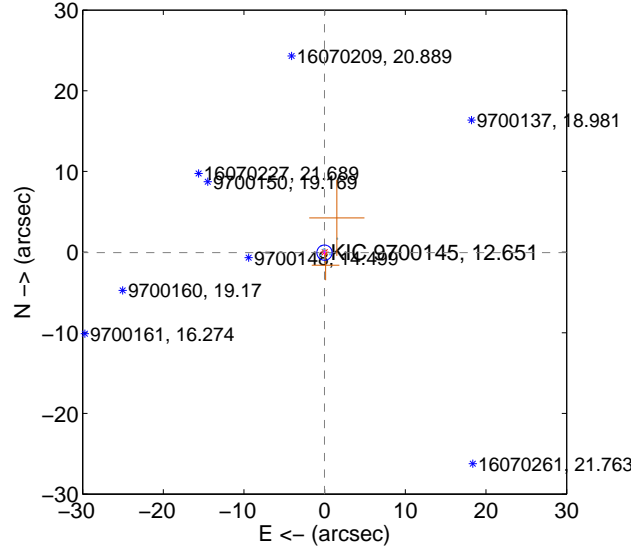
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.053 ± 0.247	0.21	-0.049 ± 0.236	-0.020 ± 0.306
PRF-fit source offset from KIC position	0.070 ± 0.314	0.22	0.019 ± 0.155	-0.067 ± 0.297
photometric centroid source offset	10.64 ± 8.56	1.24	8.06 ± 10.19	6.94 ± 5.66

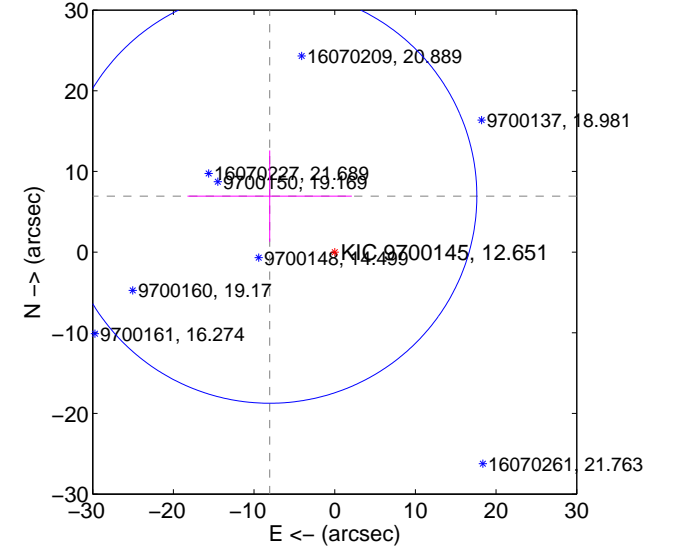
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

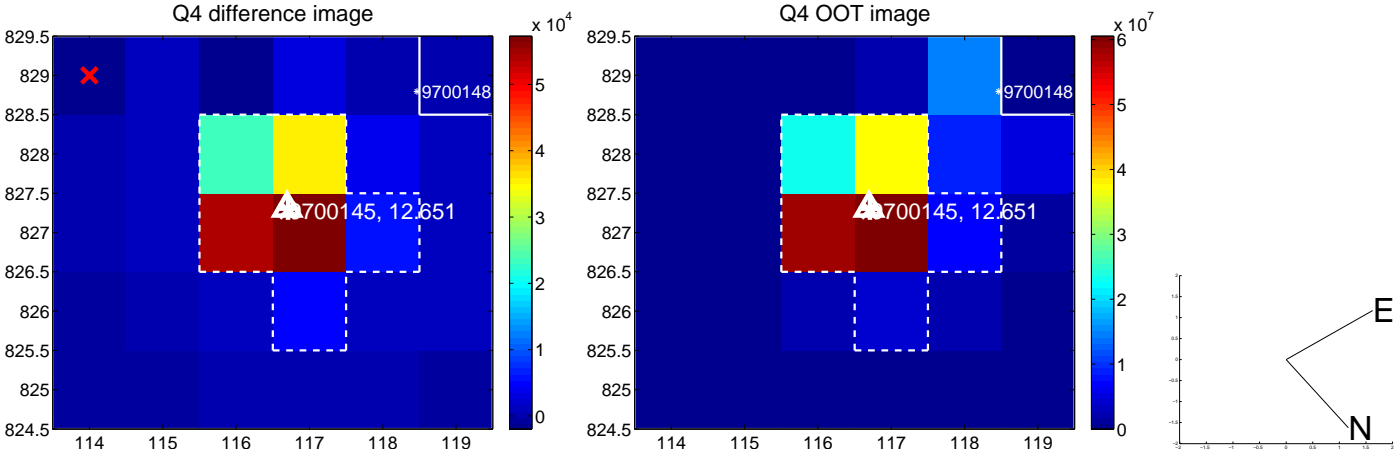
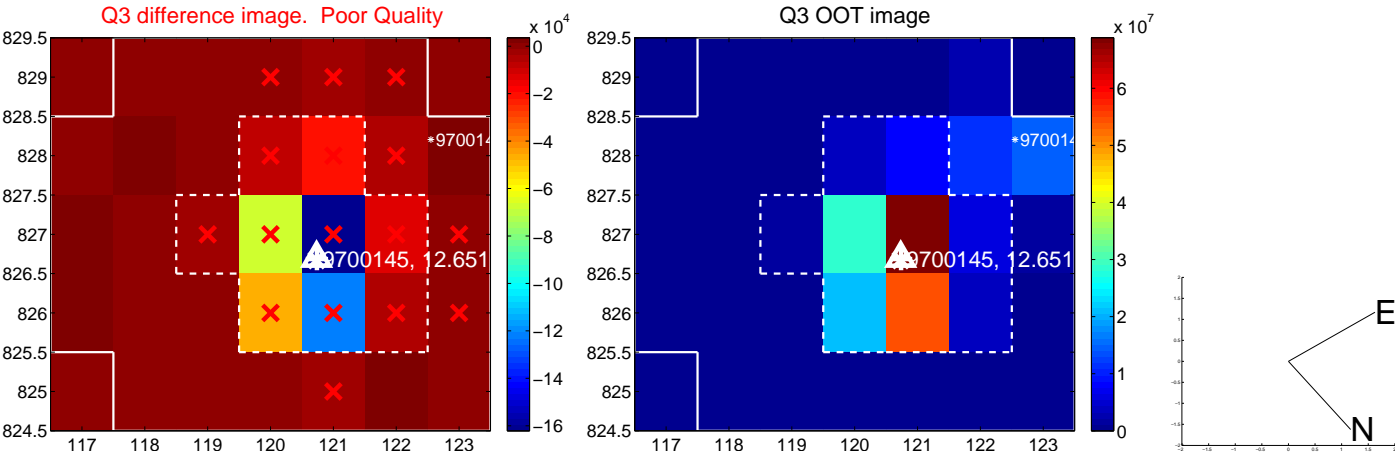
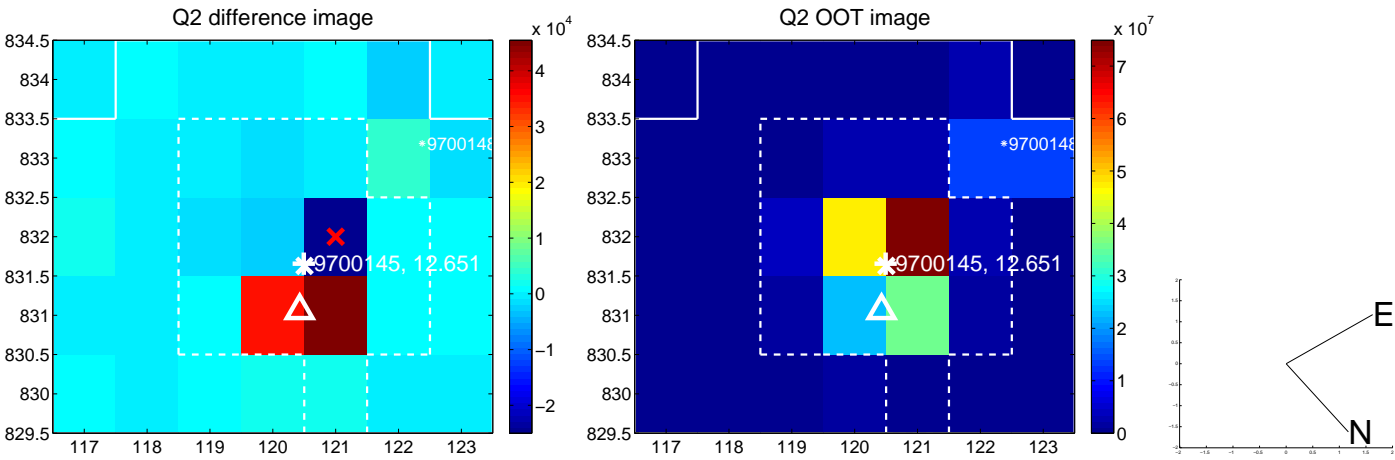
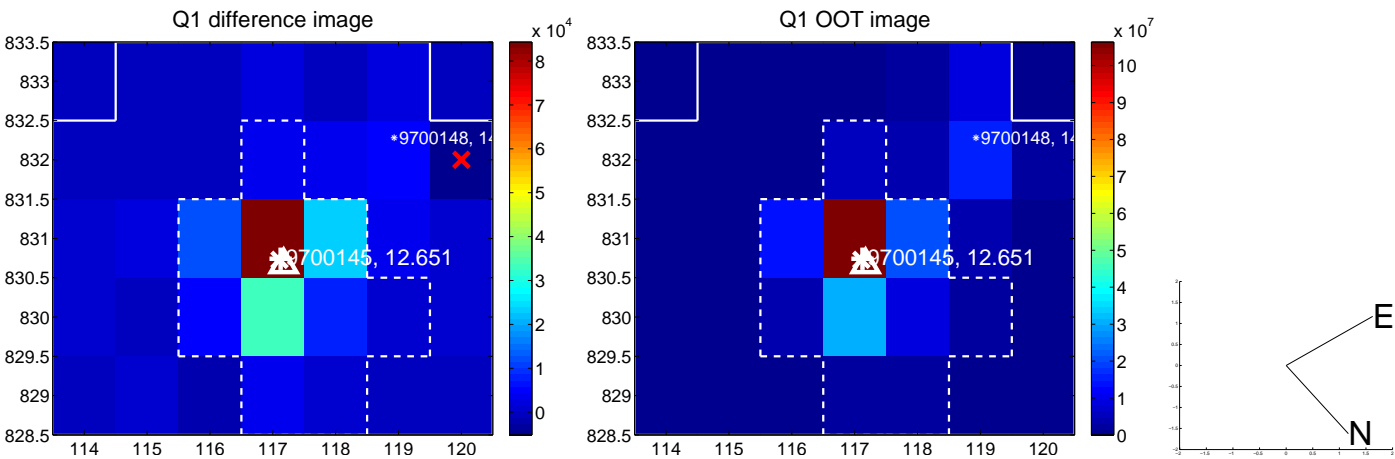


offset from photometric centroids

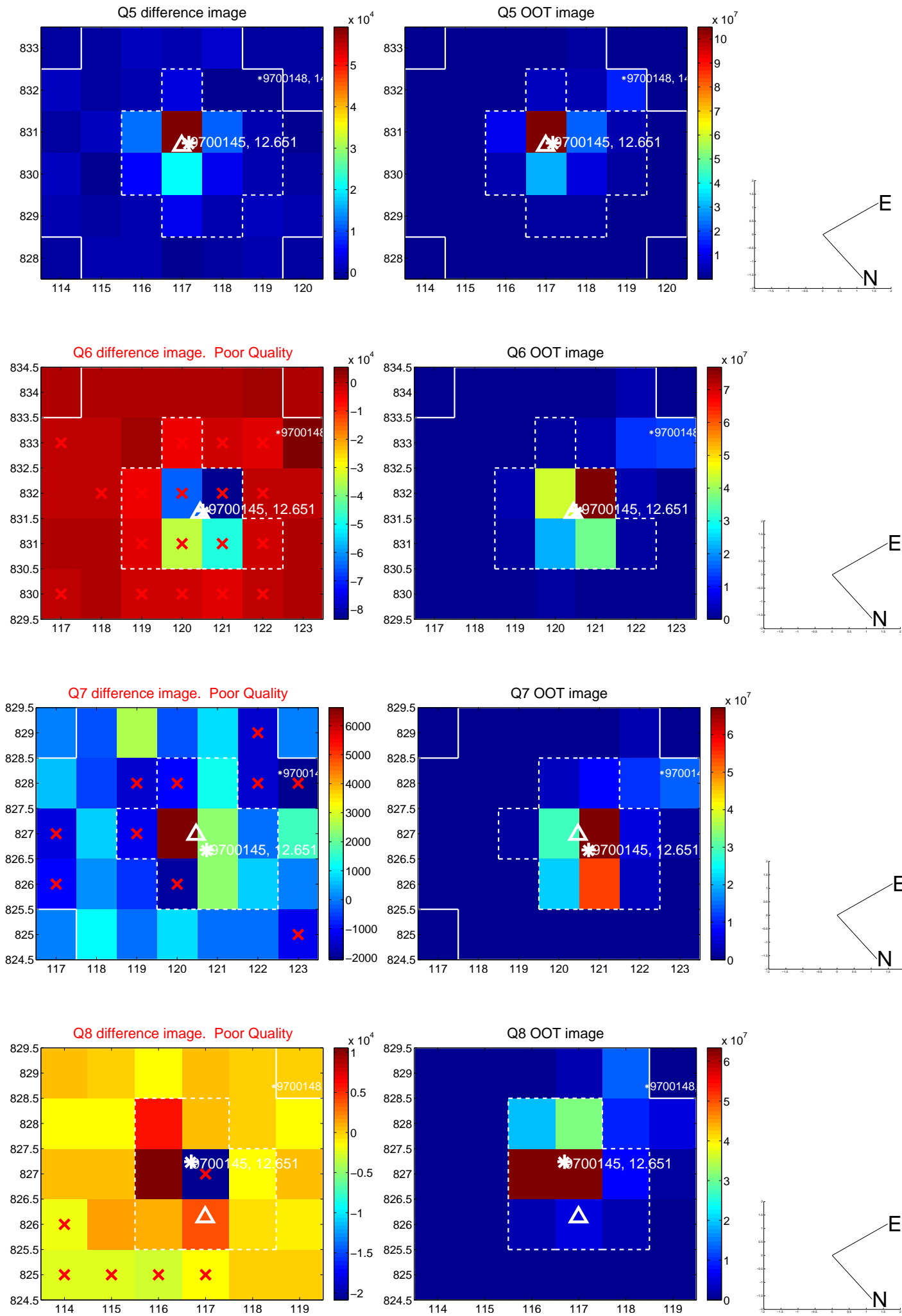


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

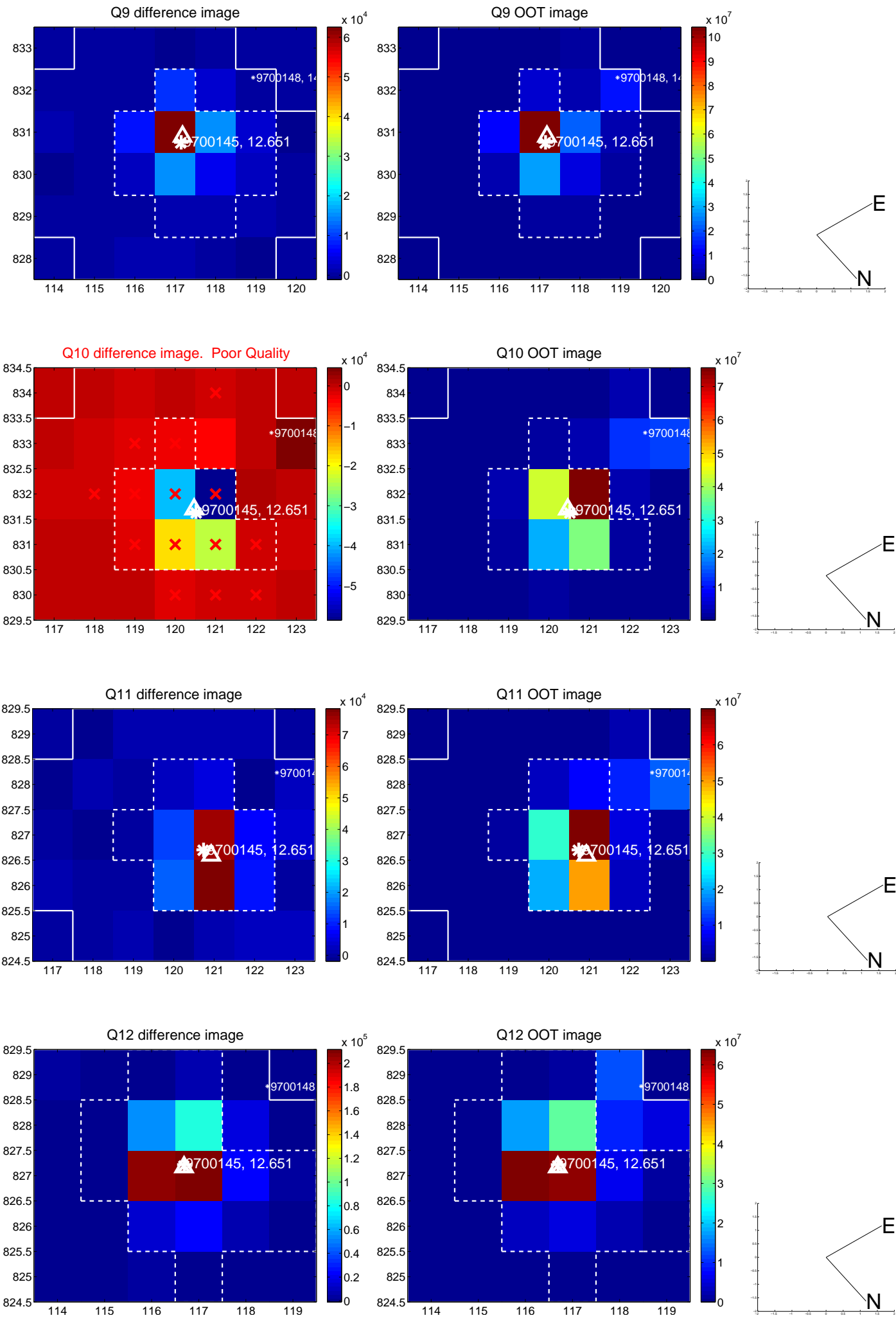
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



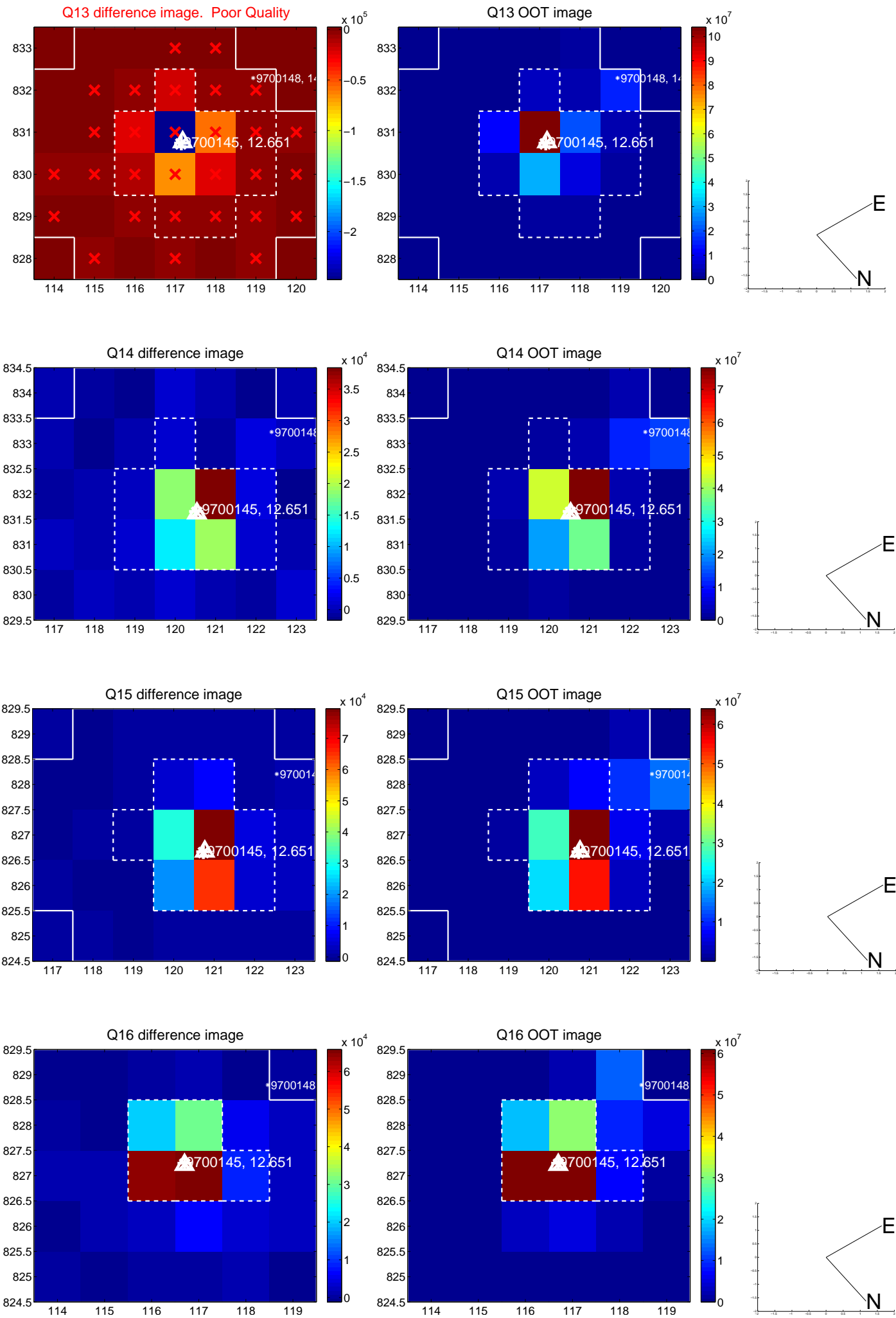
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



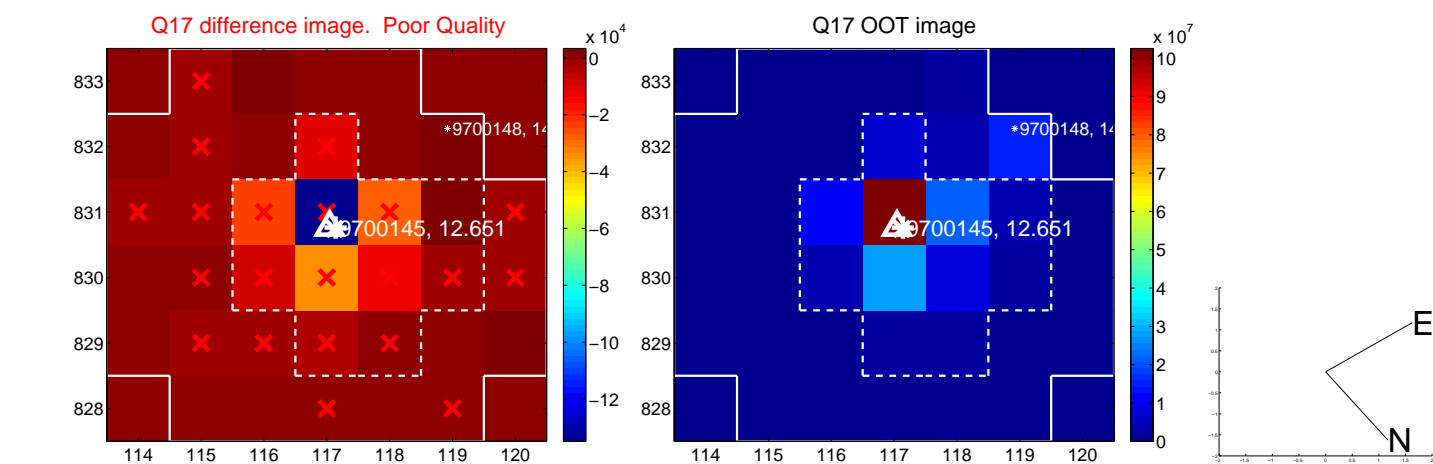
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



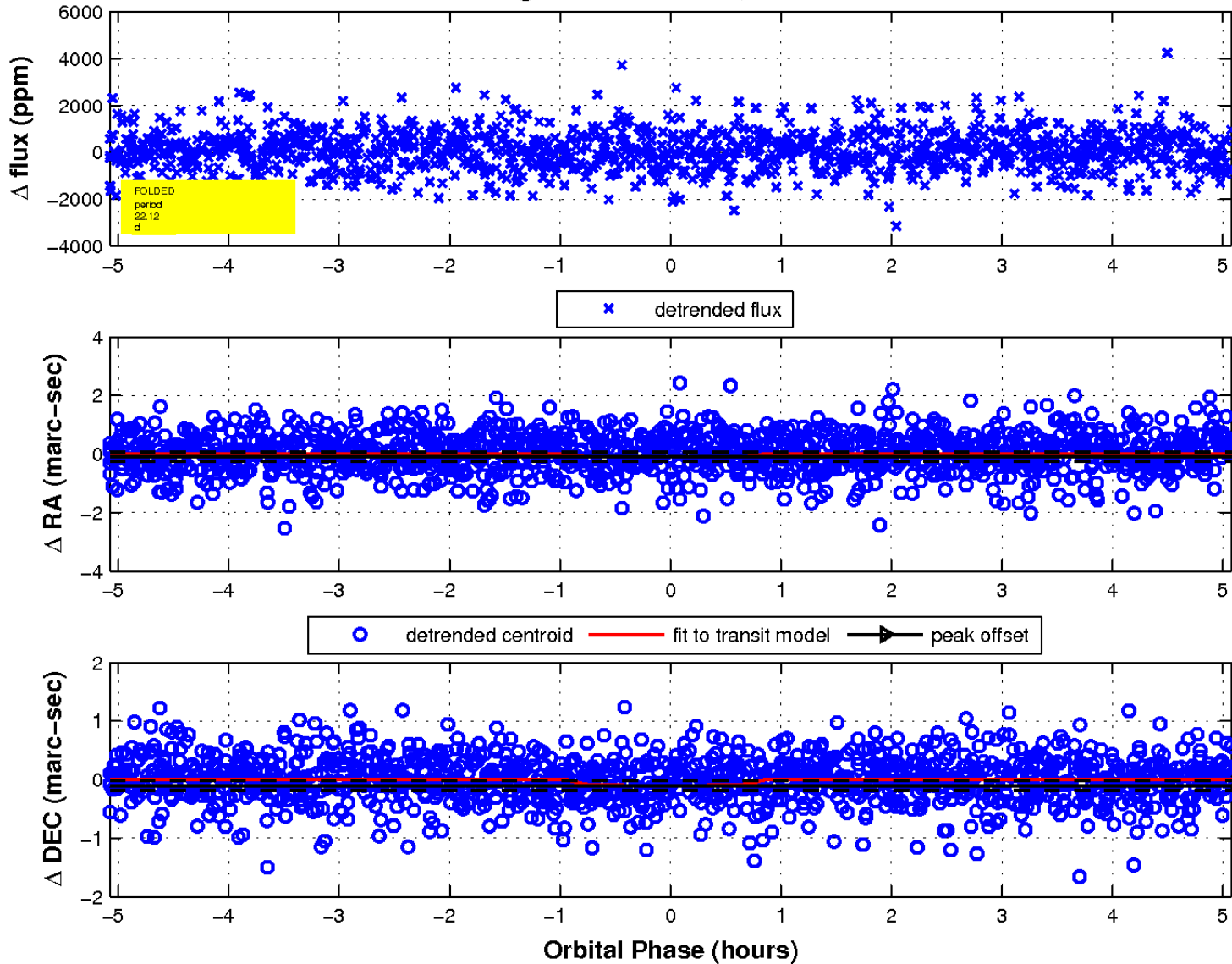
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

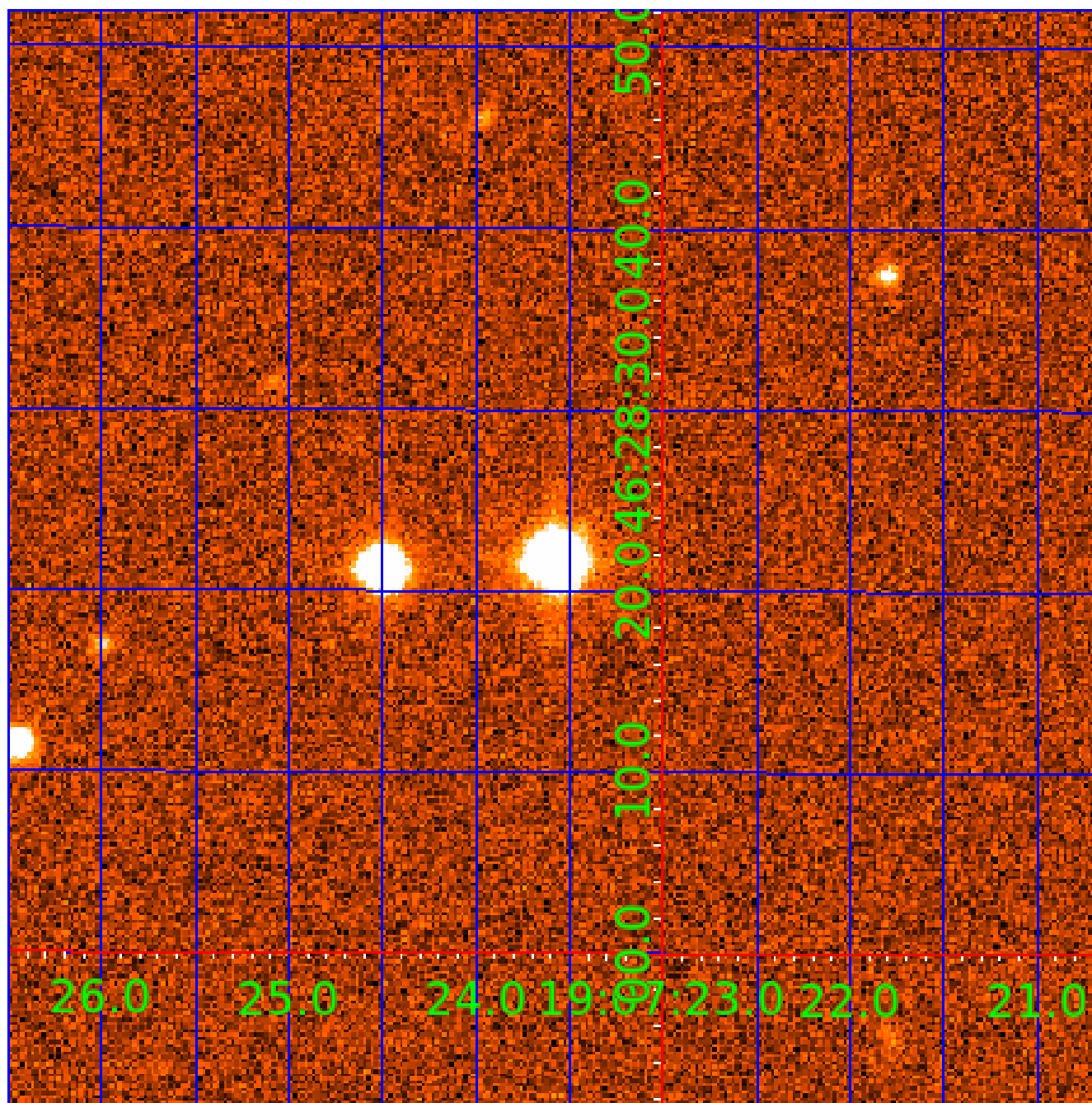


fluxWeightedCentroids, Planet 4 of 5



UKIRT Image

Declination



KIC 009700145

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})
009700145-01	OBS	No	2.017846	132.104516	145.6	13.611	11.6	15.3	2.23	7832	2.88	11976.99
009700145-02	OBS	No	61.259151	153.667026	783.2	7.254	27.1	8.0	2.23	7832	6.55	126.47
009700145-03	OBS	No	4.319252	132.762915	369.2	6.437	10.8	12.7	2.23	7832	5.01	4341.64
009700145-04	OBS	No	22.120799	146.801535	14.9	1.695	10.6	0.1	2.23	7832	1.02	491.81
009700145-05	OBS	No	52.189136	135.028930	988.6	2.351	7.6	9.1	2.23	7832	7.90	156.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009700145-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009700145-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009700145-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009700145-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009700145-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

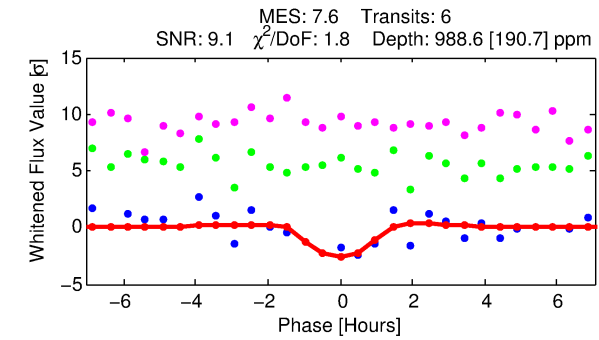
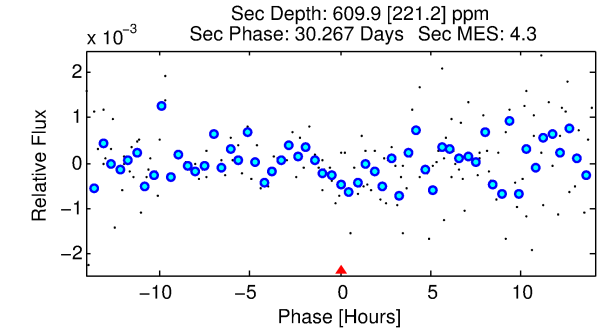
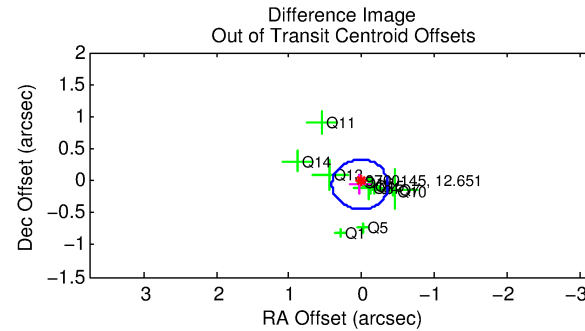
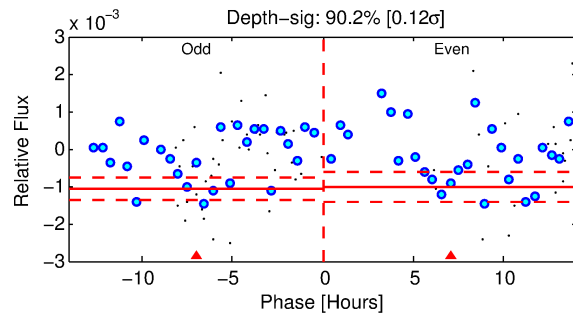
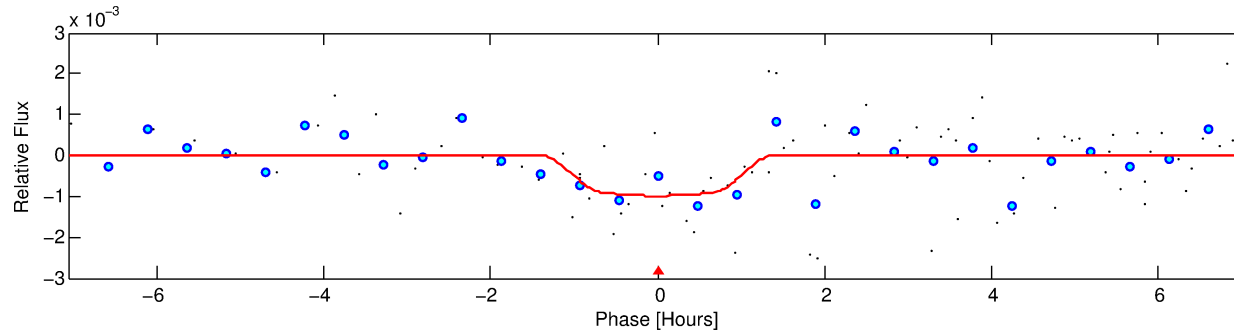
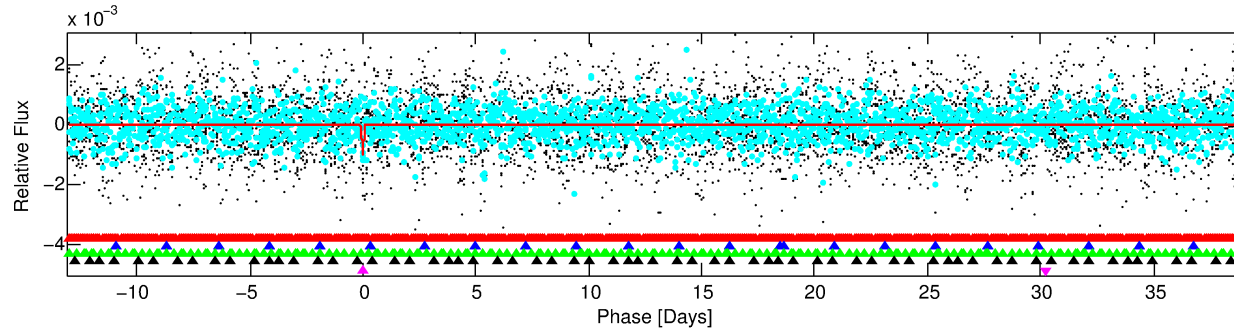
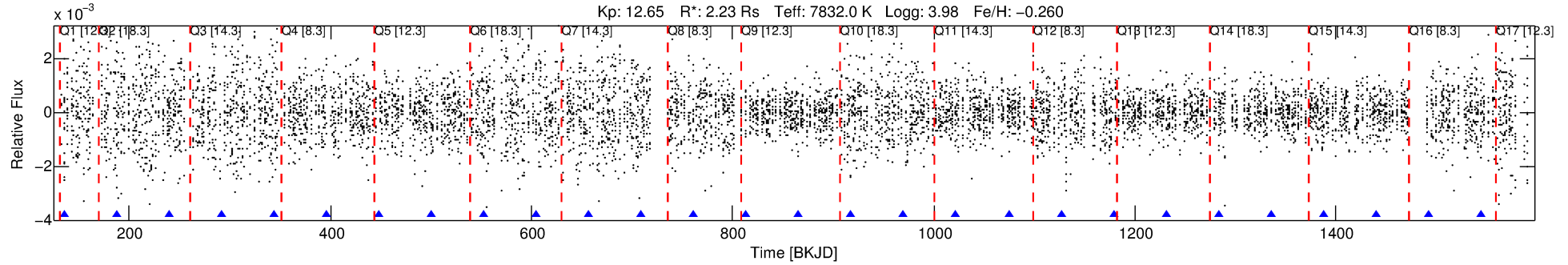
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009700145-05

No Significant Match Found

DV One-Page Summary

KIC: 9700145 Candidate: 5 of 5 Period: 52.189 d



DV Fit Results:

Period = 52.18914 [0.00071] d
Epoch = 135.0289 [0.0114] BKJD
Rp/R* = 0.0325 [0.0369]
a/R* = 101.79 [620.26]
b = 0.84 [2.17]
Seff = 156.59 [75.30]
Teq = 902 [108] K
Rp = 7.90 [9.36] Re
a = 0.3268 [0.0983] AU
Ag = 574.42 [1345.04] [0.43 σ]
Teffp = 6828 [3932] K [1.51 σ]

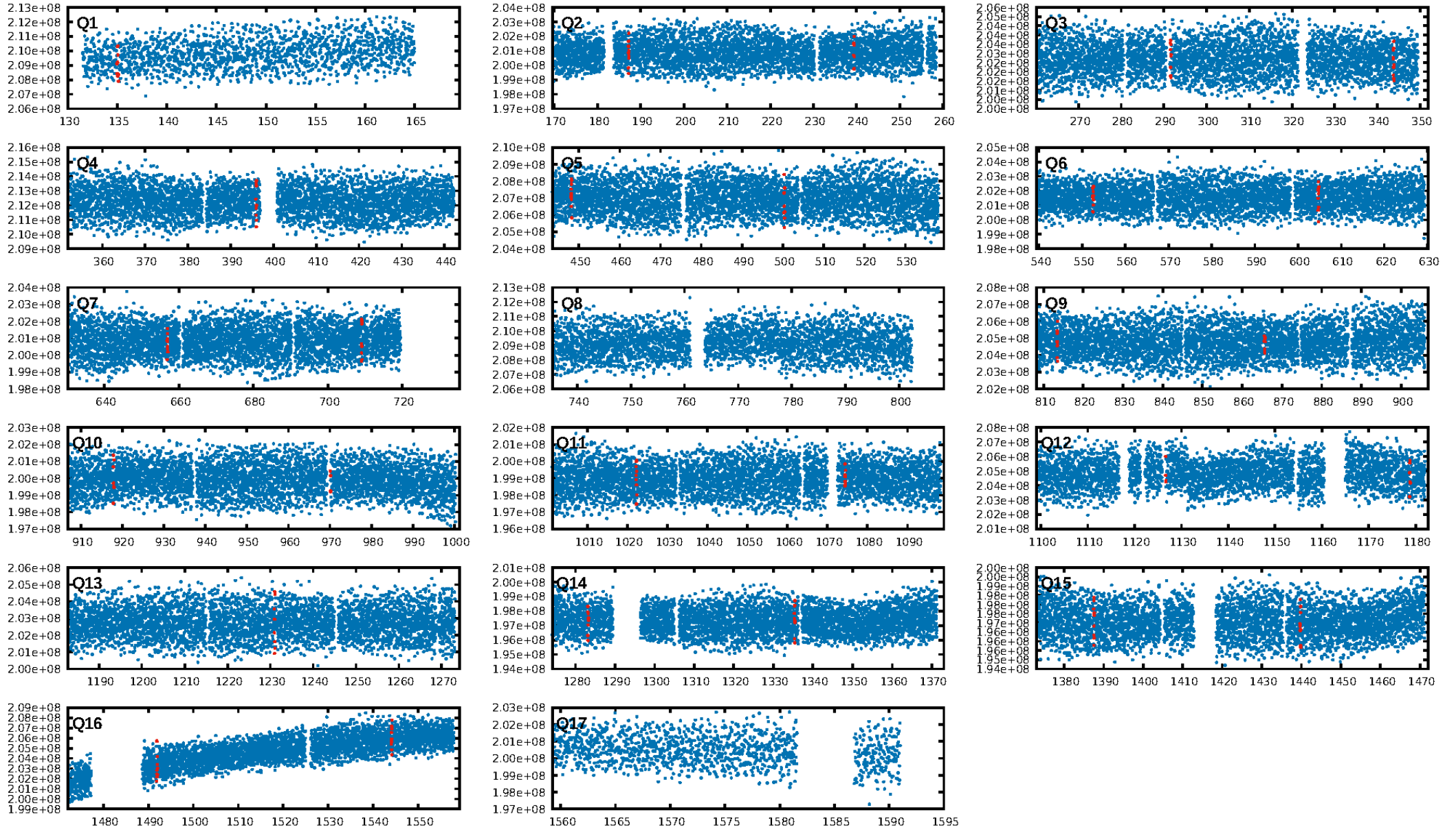
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [248.99 σ]
LongPeriod-sig: 100.0% [28.55 σ]
ModelChiSquare2-sig: 66.2%
ModelChiSquareGof-sig: 95.4%
Bootstrap-pfa: 5.24e-08
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 21.56
Centroid-sig: 9.3%
Centroid-so: 0.744 arcsec [3.43 σ]
OotOffset-rm: 0.065 arcsec [0.50 σ]
KicOffset-rm: 0.139 arcsec [1.10 σ]
OotOffset-st: 2/4/2/3 [11]
KicOffset-st: 2/4/2/3 [11]
DiffImageQuality-fgm: 0.45 [5/11]
DiffImageOverlap-fno: 0.50 [7/14]

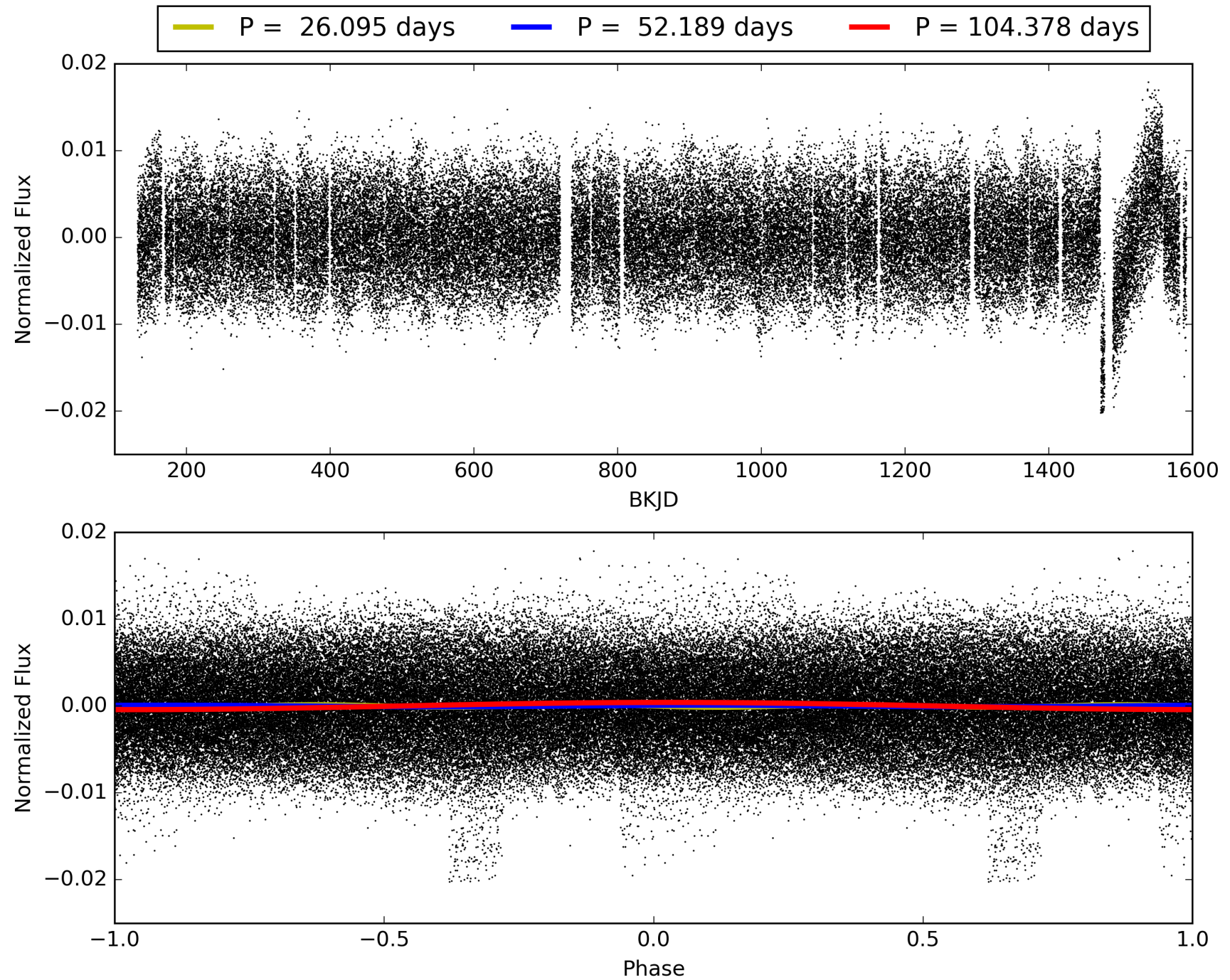
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:32:15 Z

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

TCE 009700145-05, PDC Light Curves

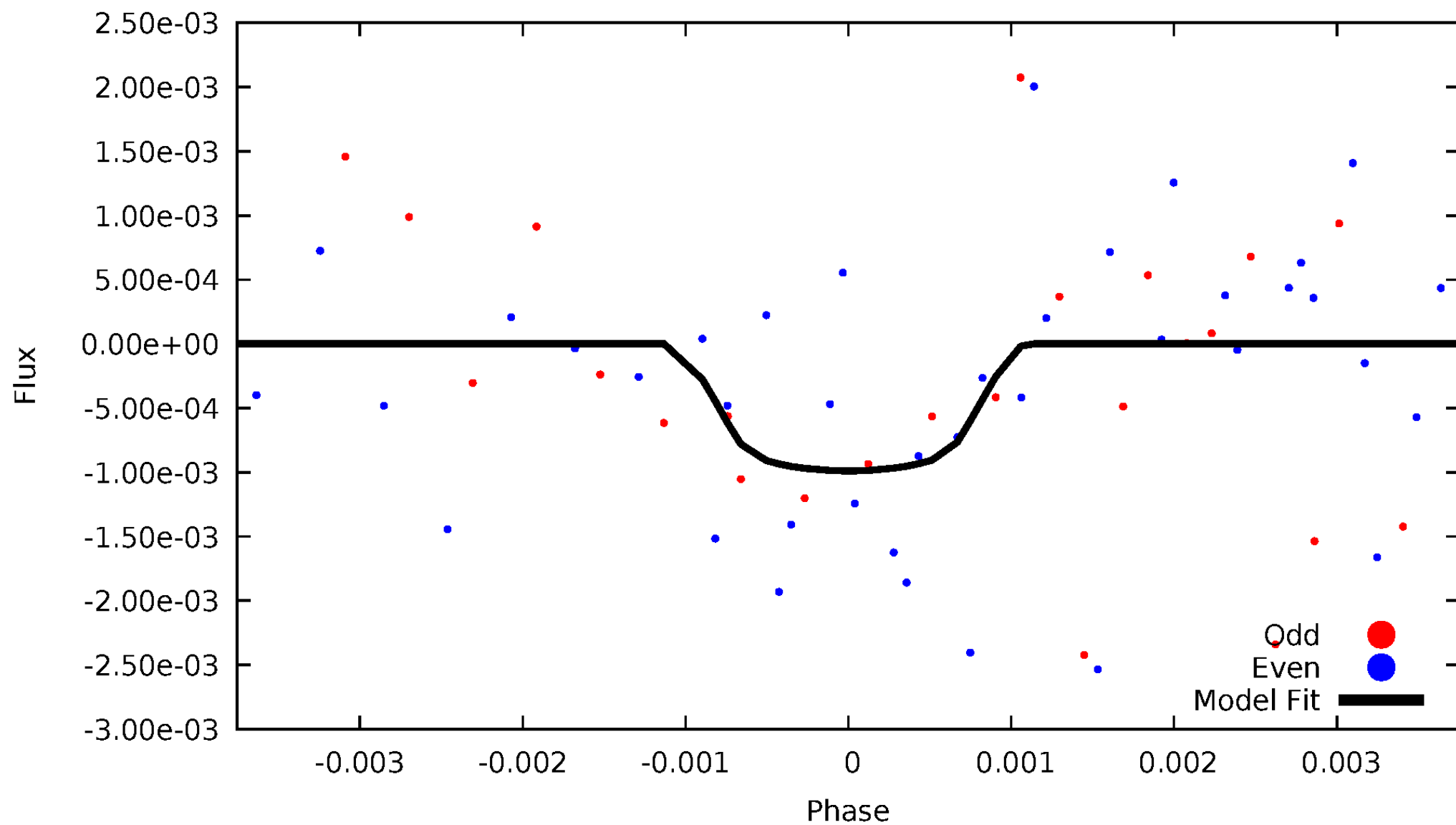


TCE 009700145-05



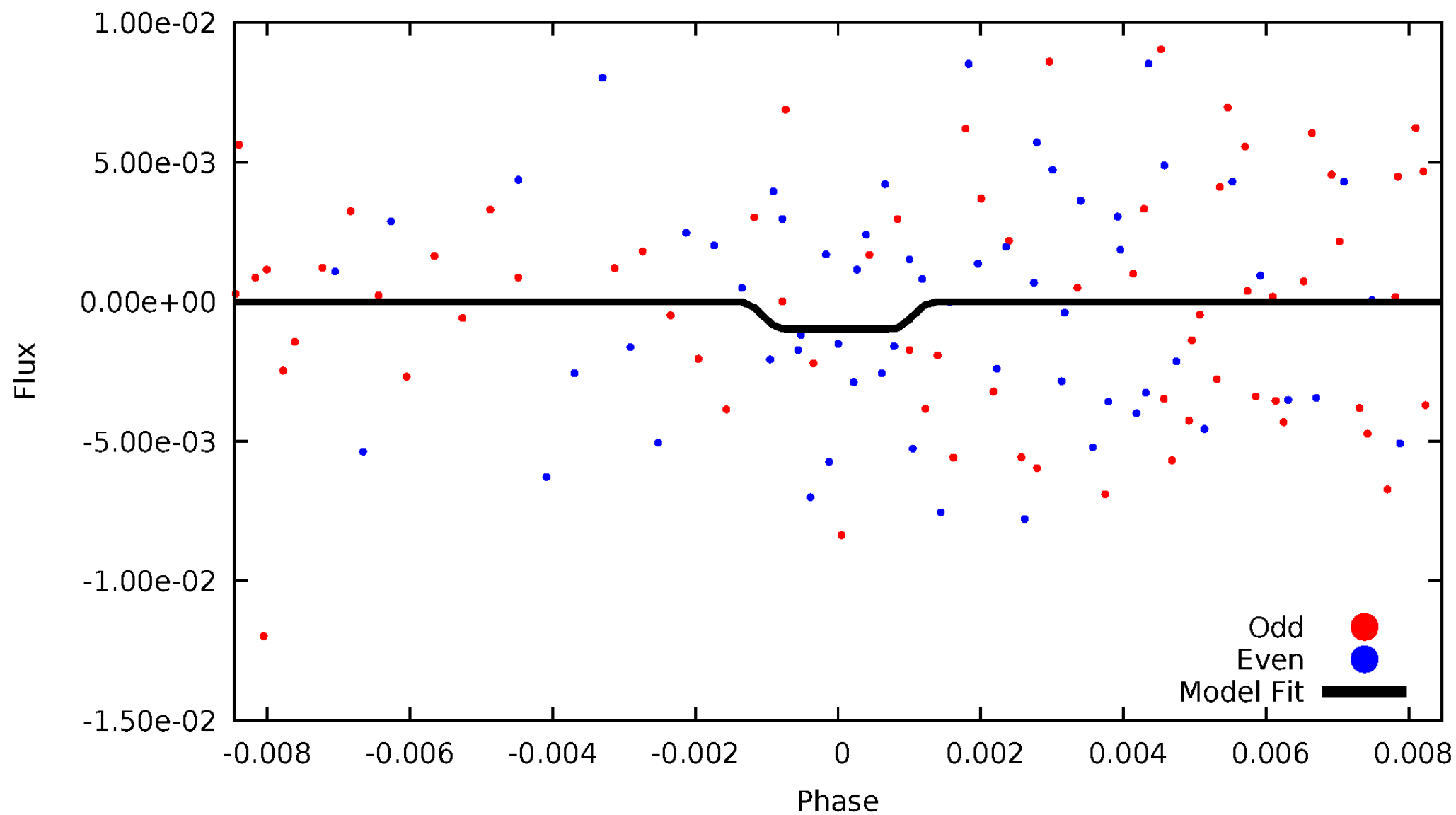
DV Odd/Even

TCE 009700145-05



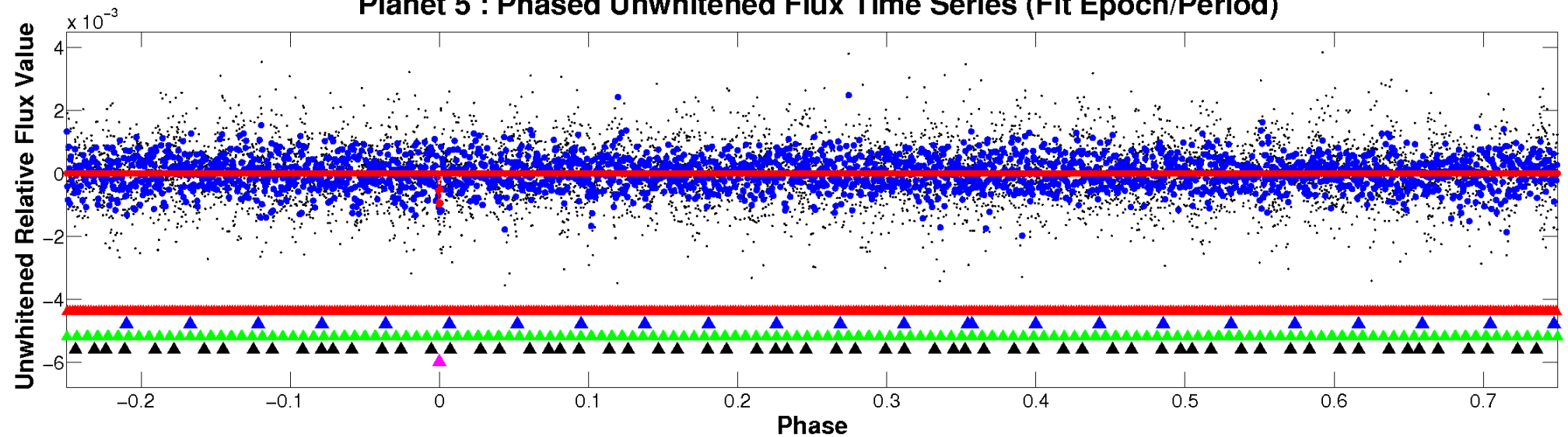
ALT Odd/Even

TCE 009700145-05

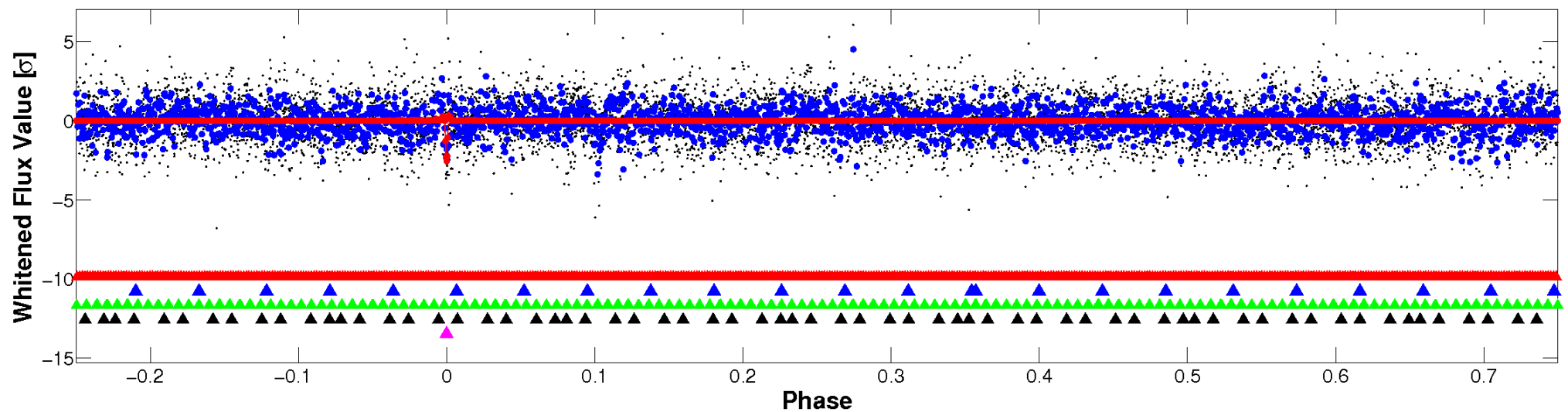


Non-Whitened Vs. Whitened Light Curve

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

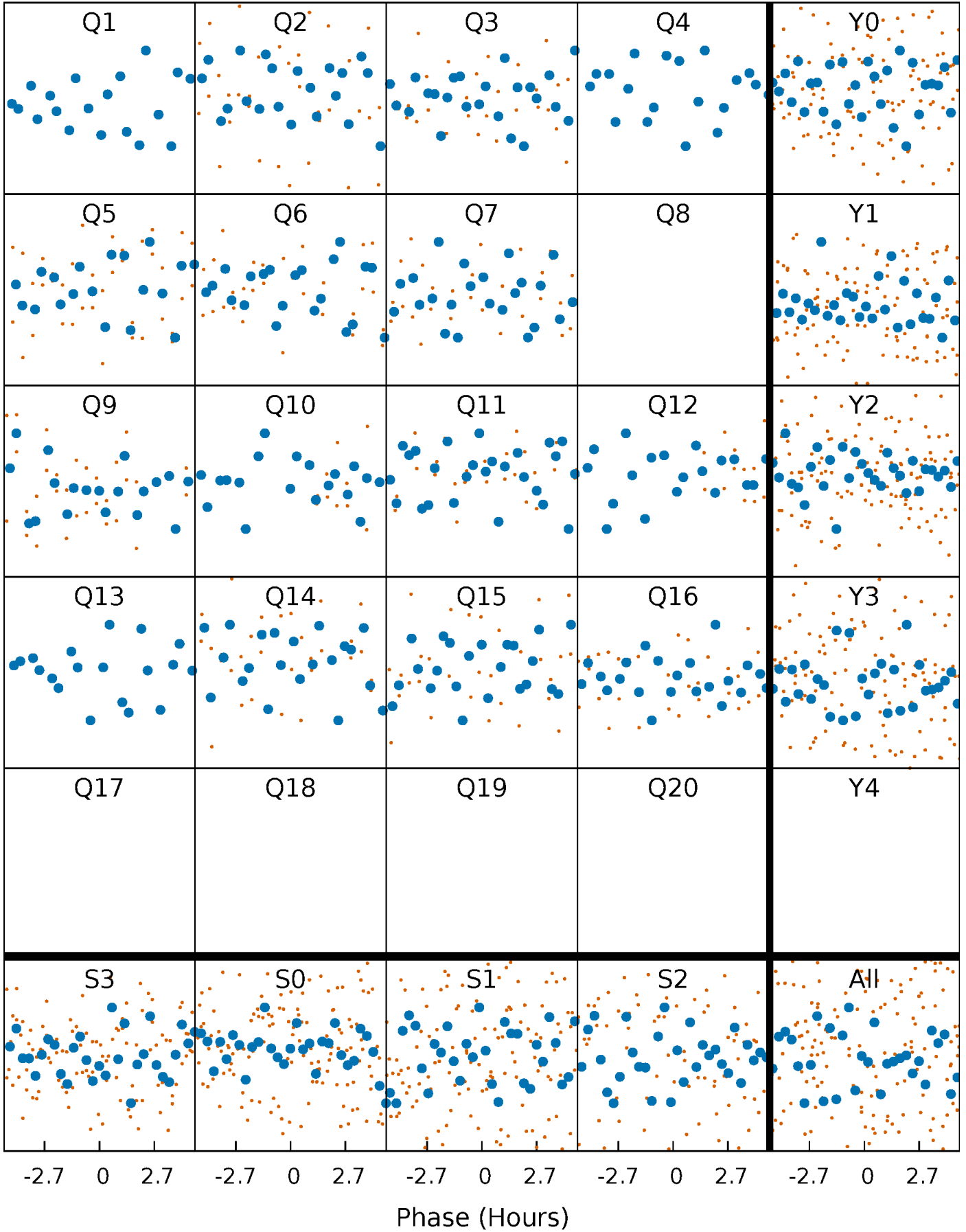


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



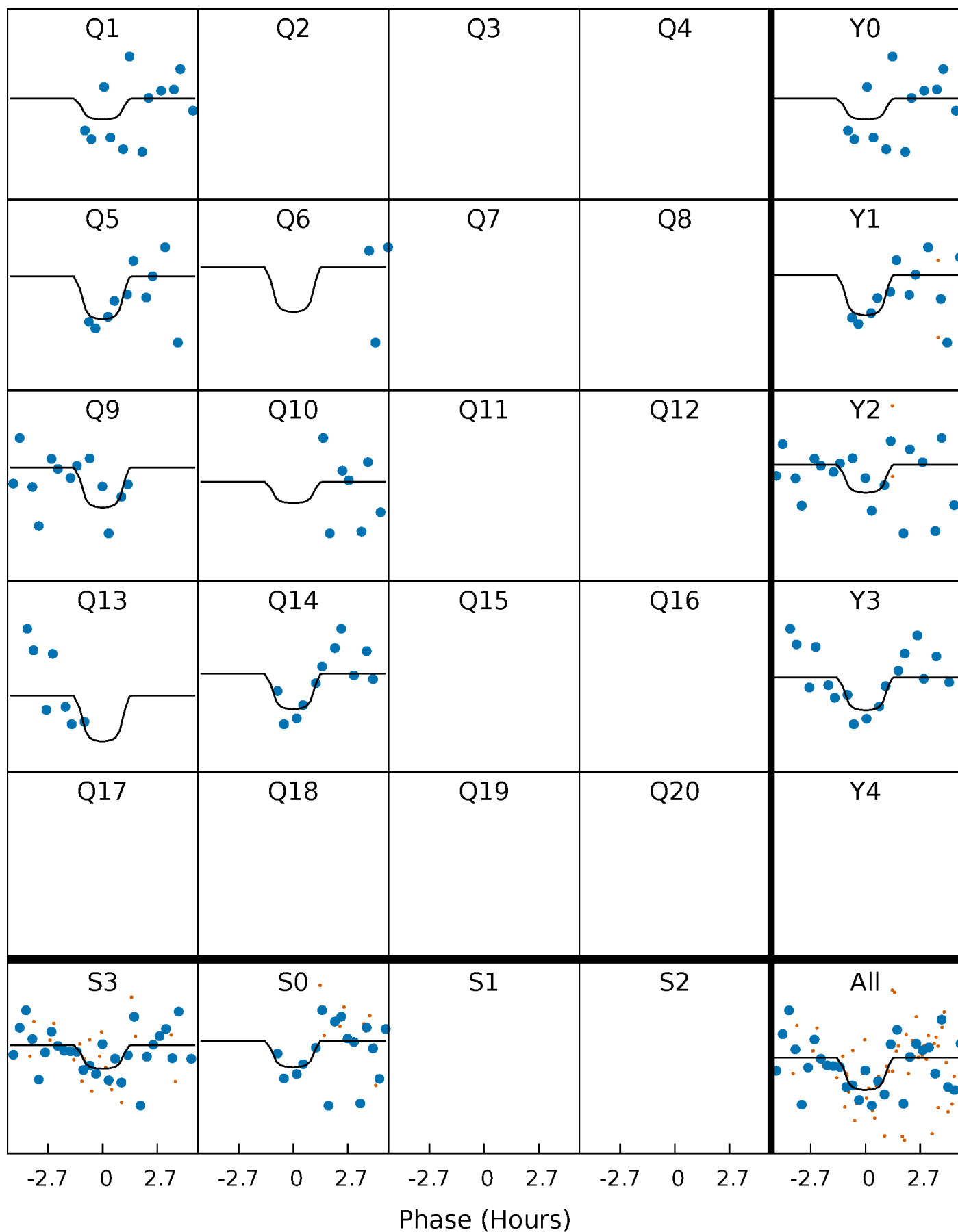
PDC Quarter-Phased Transit Curves

TCE 009700145-05 $P = 52.189136$ Days $T_0 = 135.028930$ (BKJD)



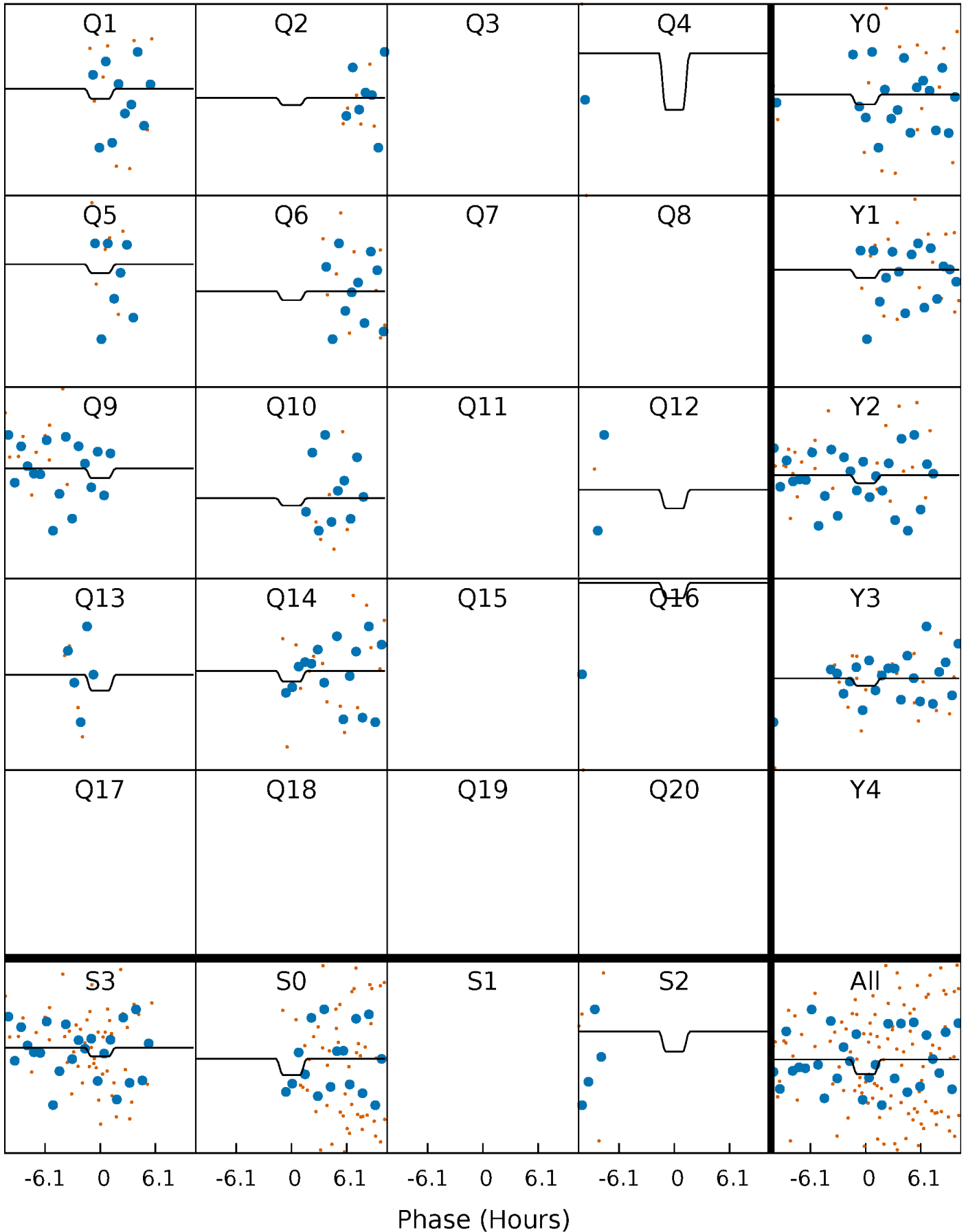
DV Quarter-Phased Transit Curves

TCE 009700145-05 $P = 52.189136$ Days $T_0 = 135.028930$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

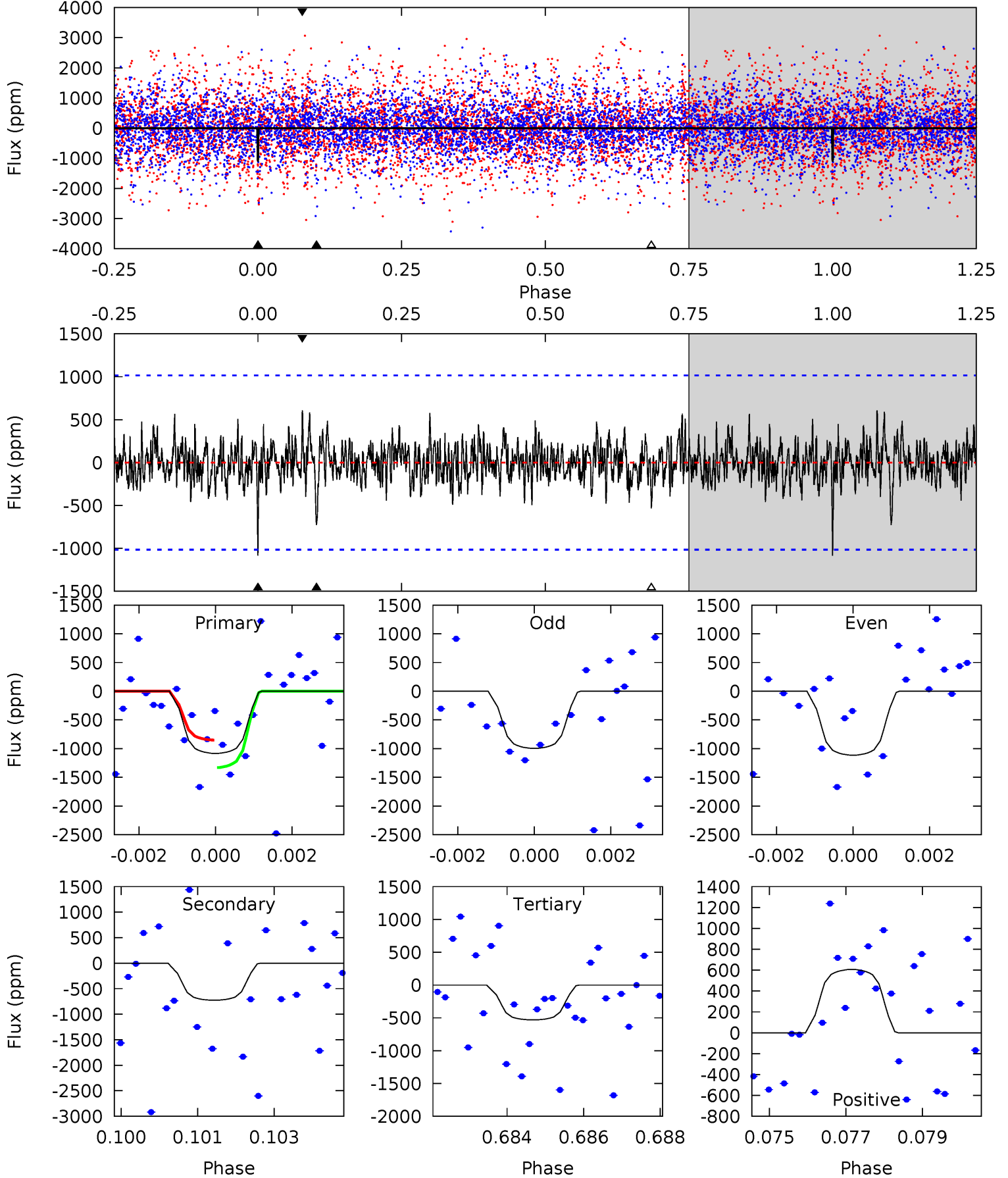
TCE 009700145-05 P= 52.189008 Days $T_0=135.033690$ (BKJD)



DV Model-Shift Uniqueness Test

009700145-05, P = 52.189136 Days, E = 82.839794 Days

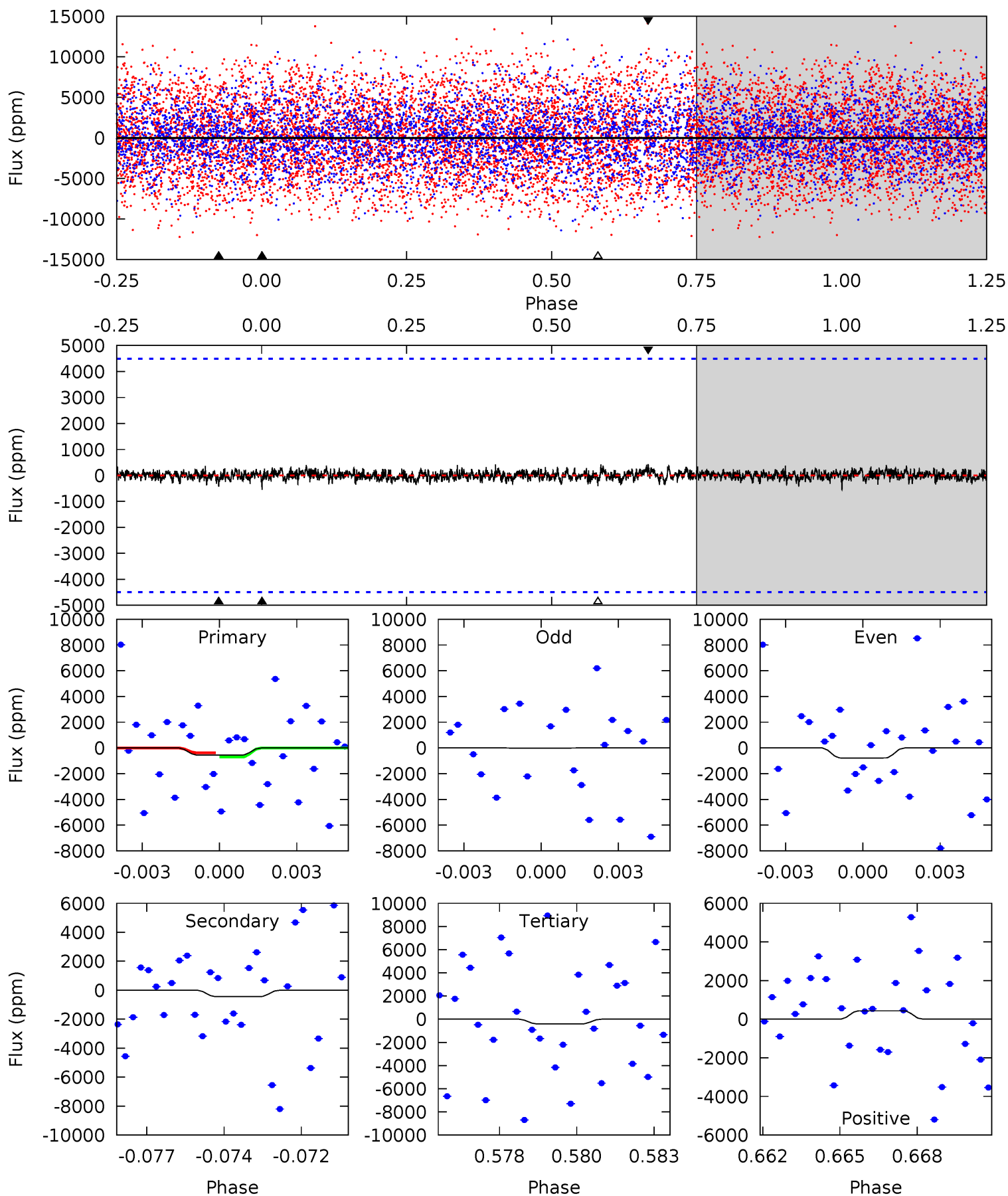
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.70	3.82	2.80	3.19	5.34	3.11	0.95	2.90	2.51	1.02	0.63	0.30	1.02	0.36	1.26



Alt Model-Shift Uniqueness Test

009700145-05, P = 52.189008 Days, E = 82.844682 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.65	0.51	0.48	0.51	5.28	3.02	0.15	0.17	0.14	0.04	0.01	0.41	1.69	0.44	0.19



Stellar Parameters For KIC 009700145

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7832^{+216}_{-325}	$3.975^{+0.253}_{-0.136}$	$-0.260^{+0.200}_{-0.350}$	$2.227^{+0.473}_{-0.768}$	$1.707^{+0.182}_{-0.364}$	$0.218^{+0.390}_{-0.076}$
	+3%/-4%	+6%/-3%	+77%/-135%	+21%/-34%	+11%/-21%	+179%/-35%
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 009700145-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-726 ± 190	$10.25^{+7.94}_{-6.57}$	1251^{+83}_{-106}	5902^{+5279}_{-1265}	394^{+2731}_{-271}
Alt.	-437 ± 851	$9.61^{+7.82}_{-5.82}$	1252^{+77}_{-104}	5110^{+4518}_{-10273}	200^{+1847}_{-401}

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 $A_{obs} \gg 1.0$

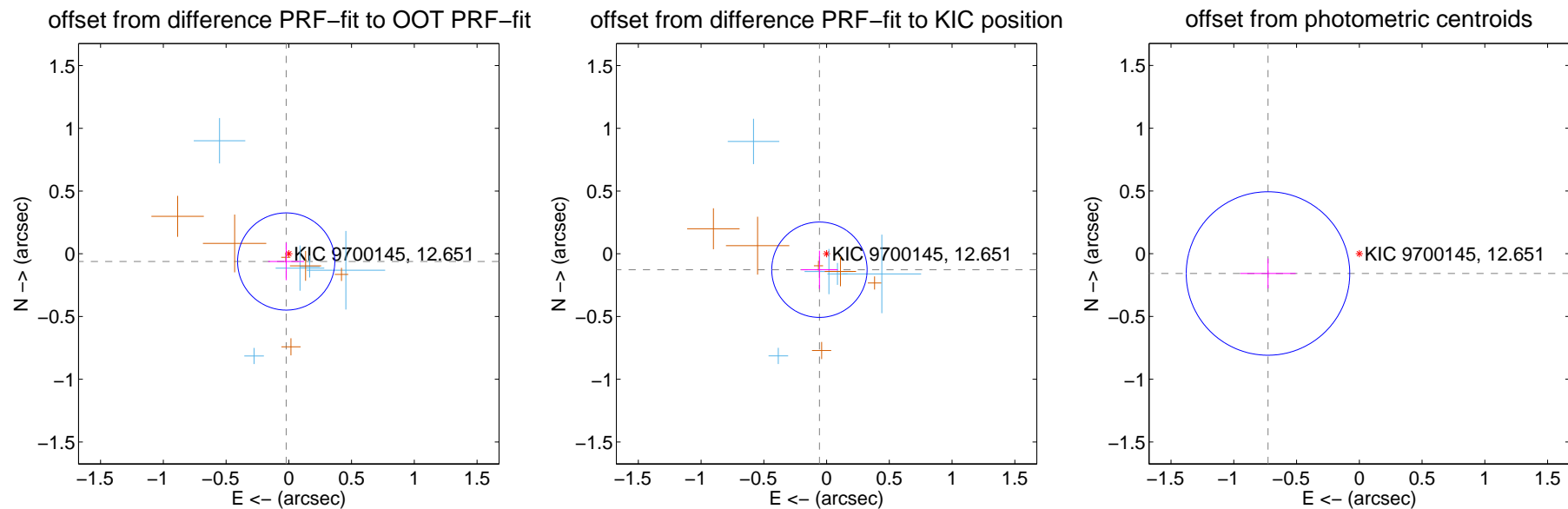
DV Centroid Data

Supplemental centroid analysis for 009700145-05. Kepler magnitude: 12.65. Transit SNR 9.10

There are 5 quarters with good PRF difference image offsets

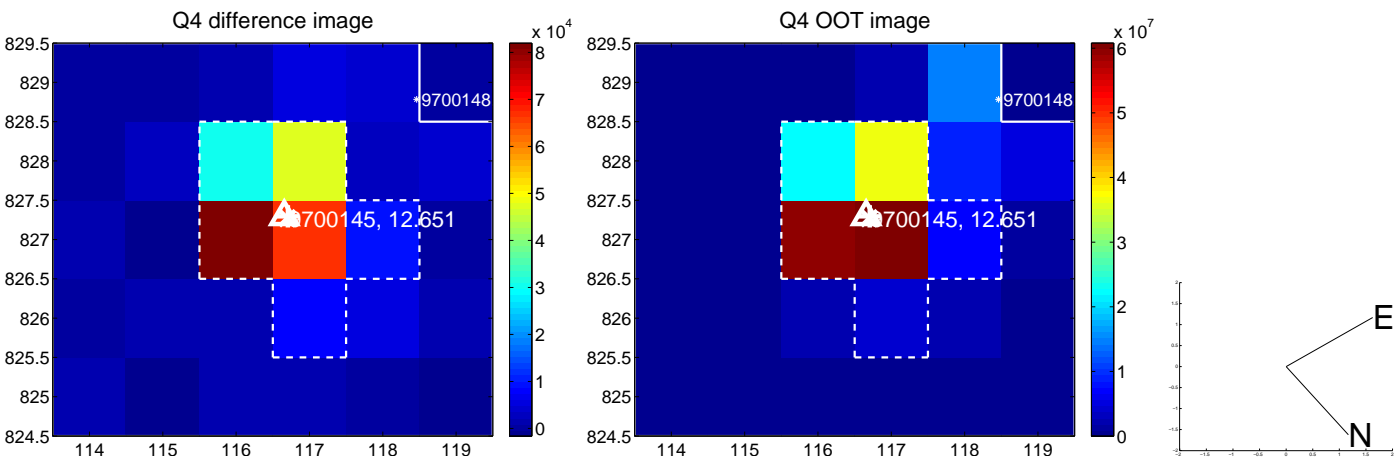
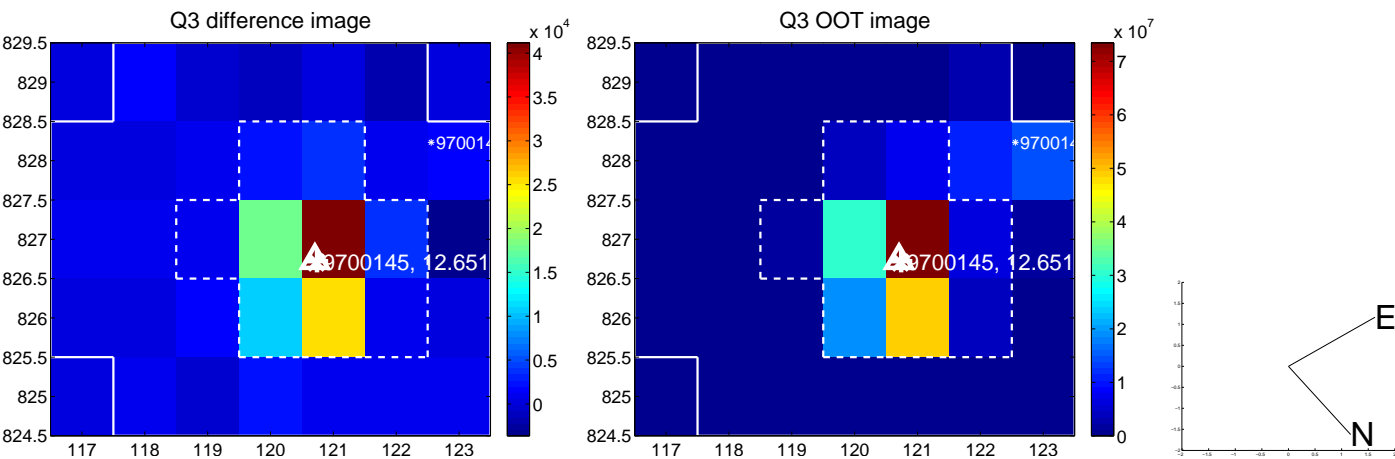
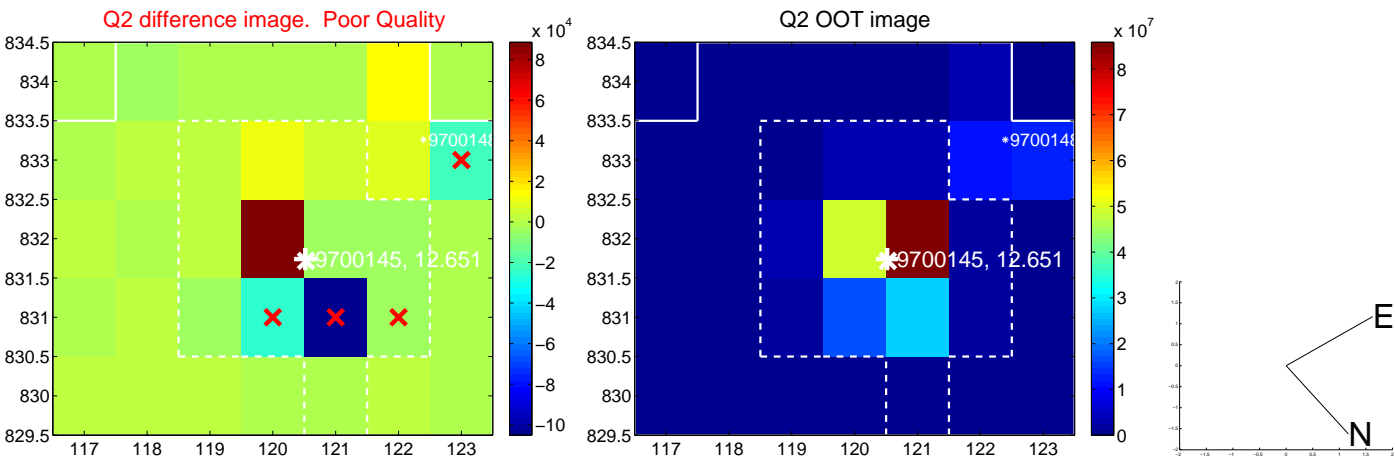
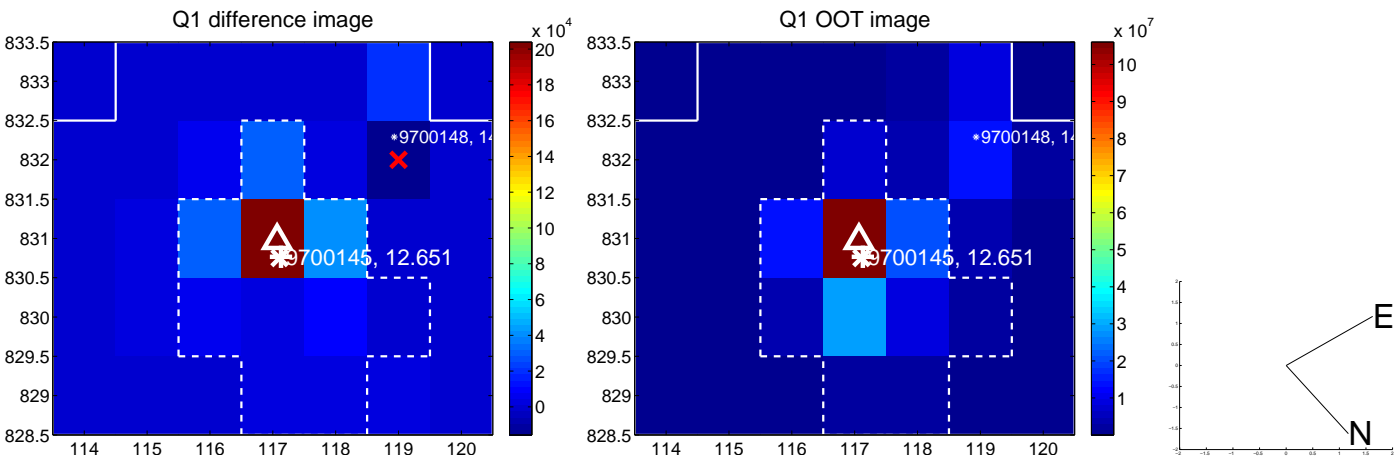
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.065 ± 0.129	0.50	0.021 ± 0.144	-0.061 ± 0.149
PRF-fit source offset from KIC position	0.139 ± 0.127	1.10	0.057 ± 0.146	-0.127 ± 0.152
photometric centroid source offset	0.74 ± 0.22	3.43	0.73 ± 0.22	-0.16 ± 0.12

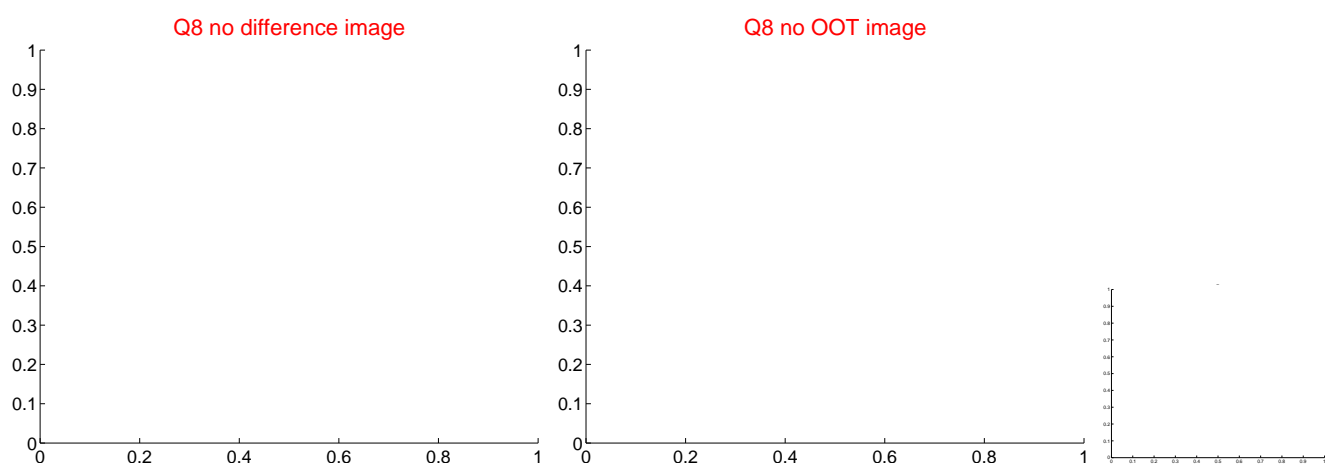
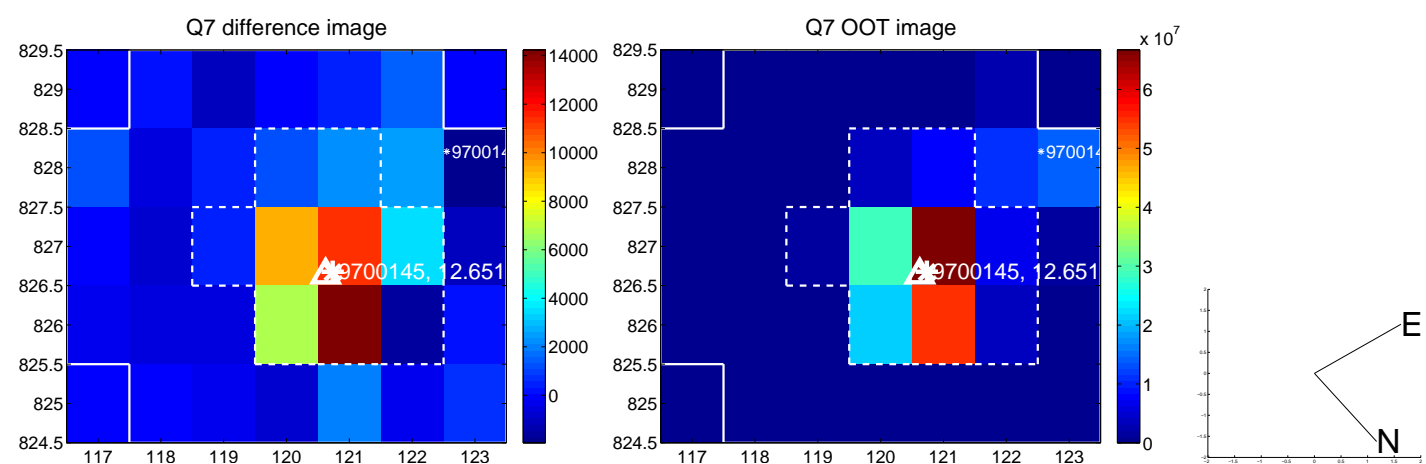
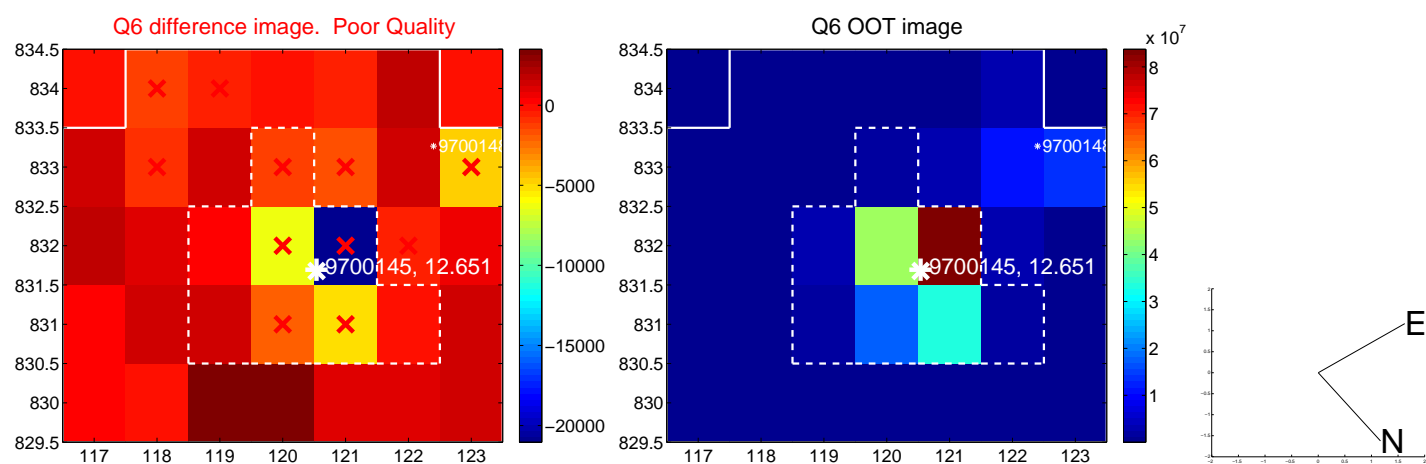
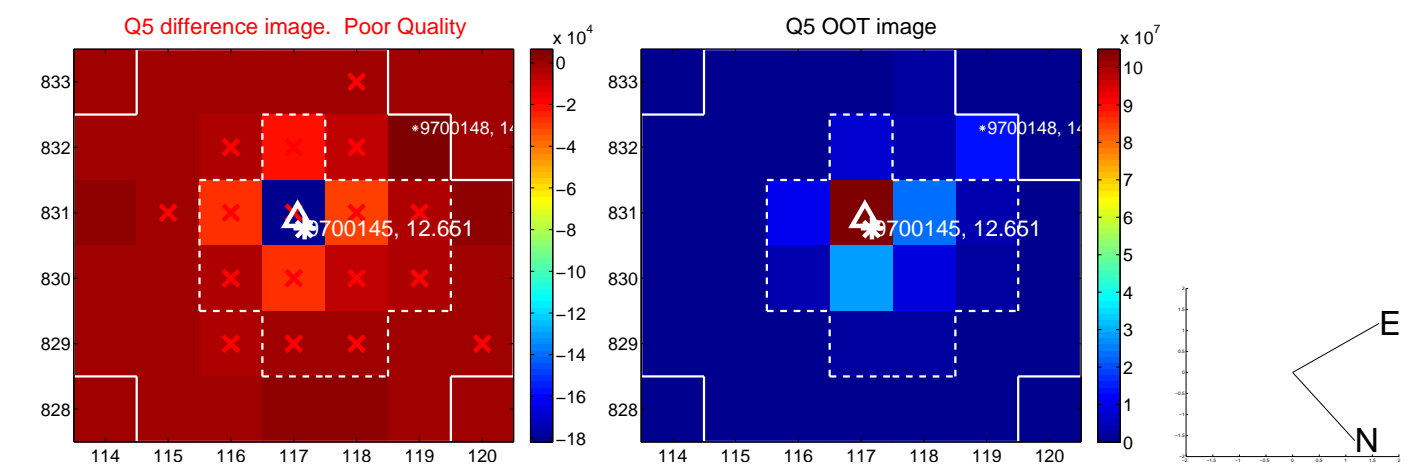


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

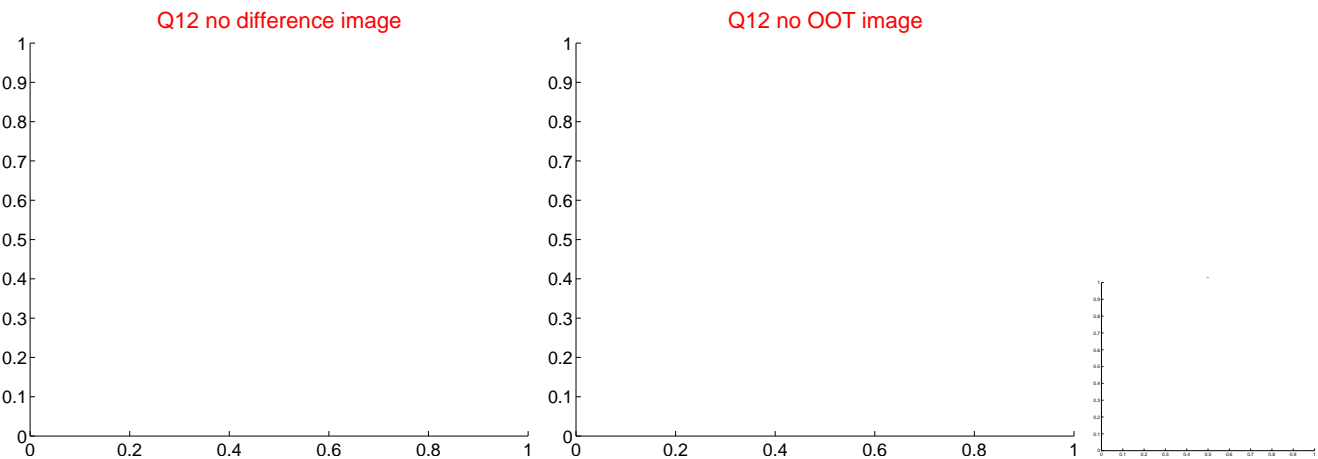
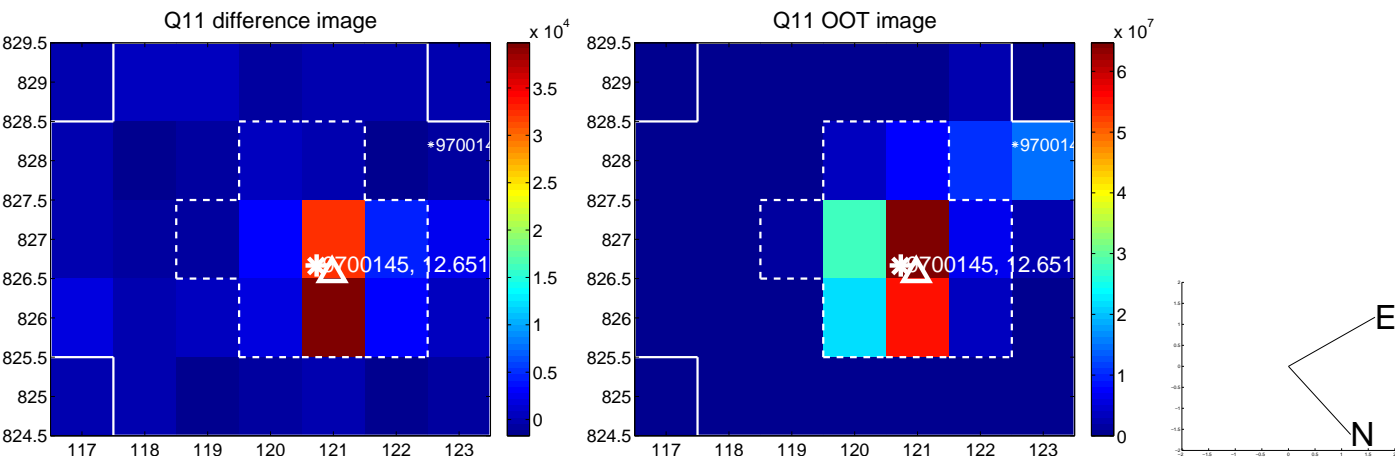
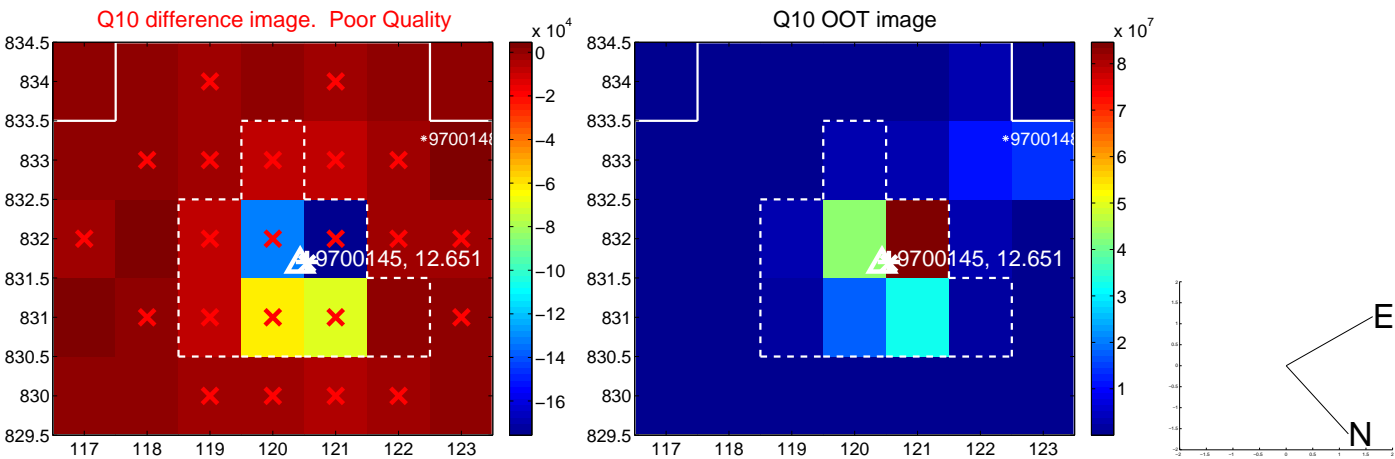
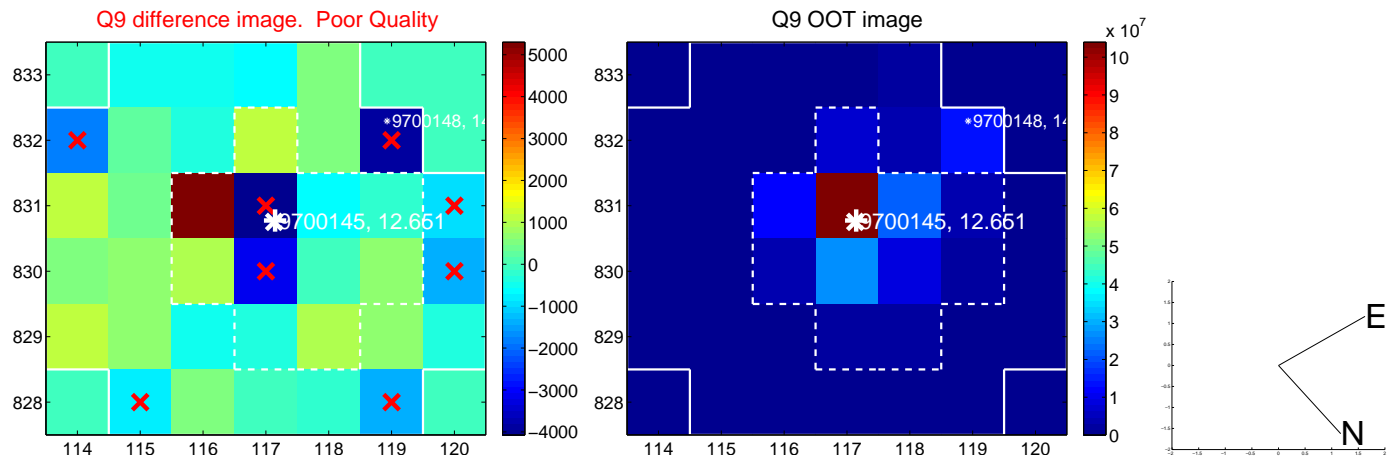
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



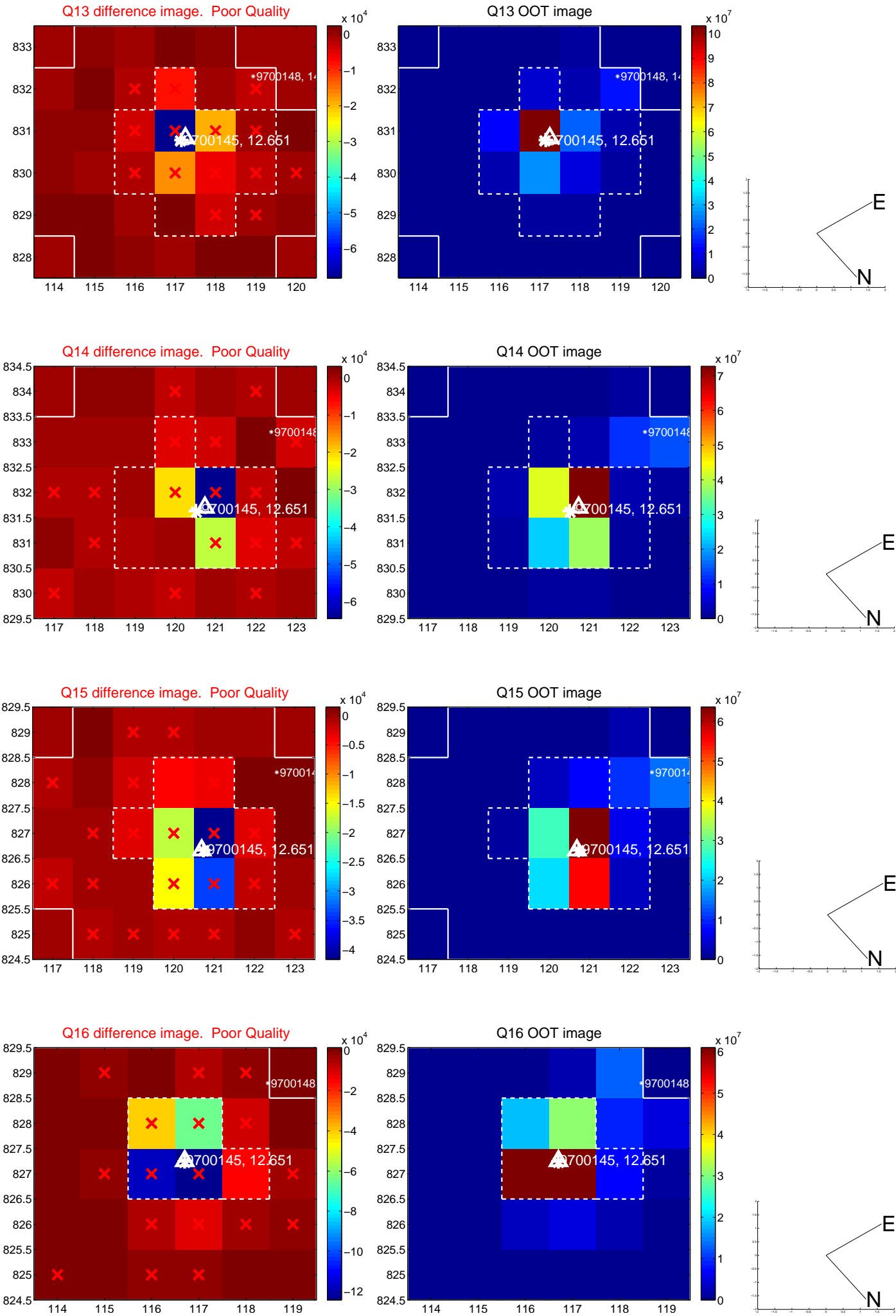
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



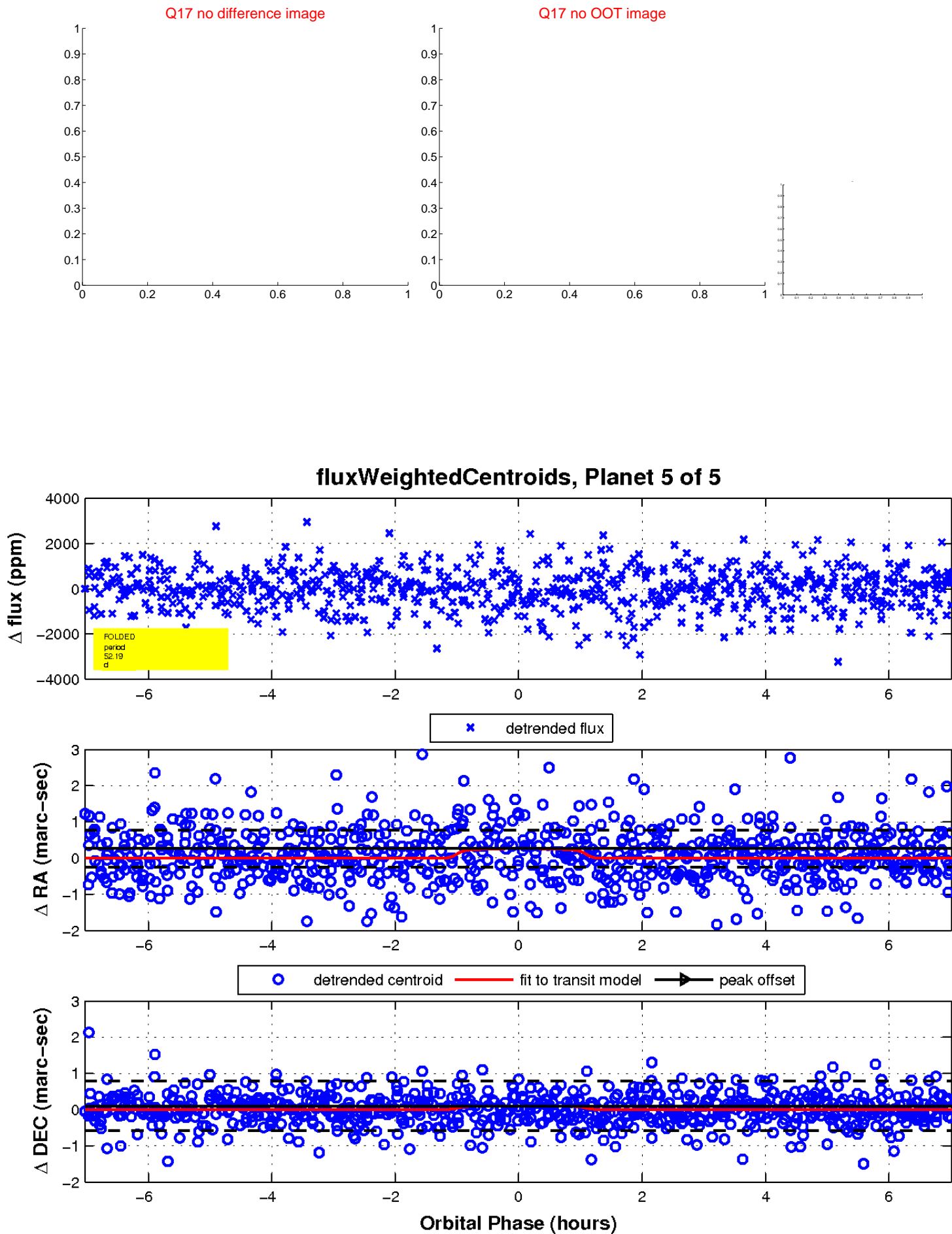
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

