

KIC 009632757

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})
009632757-01	OBS	No	520.744415	347.105527	396.7	15.584	9.1	8.4	0.91	5941	1.89	0.58
009632757-02	OBS	No	1.524061	132.996359	28.4	8.334	7.7	9.5	0.91	5941	0.49	1378.29
009632757-03	OBS	No	78.934060	133.047417	149.7	16.216	9.6	5.5	0.91	5941	1.28	7.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009632757-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009632757-02	OBS	FP	0.00	1	0	0	0	LPP_DV
009632757-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

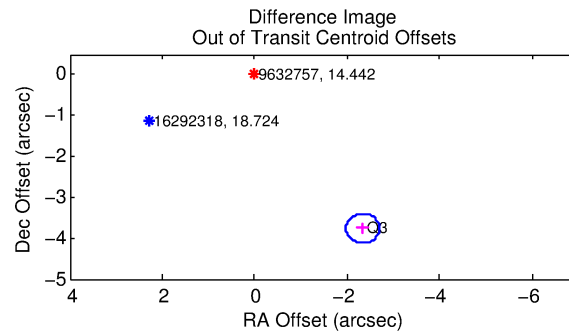
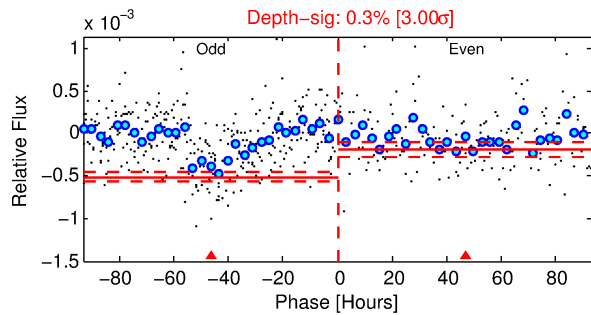
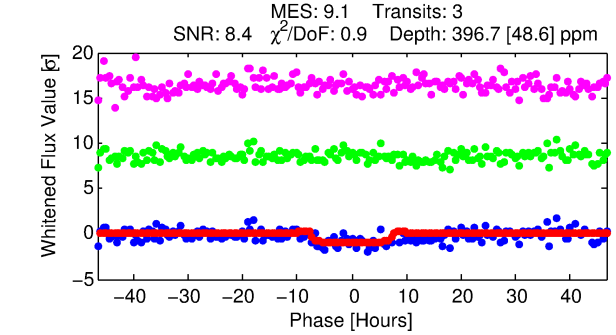
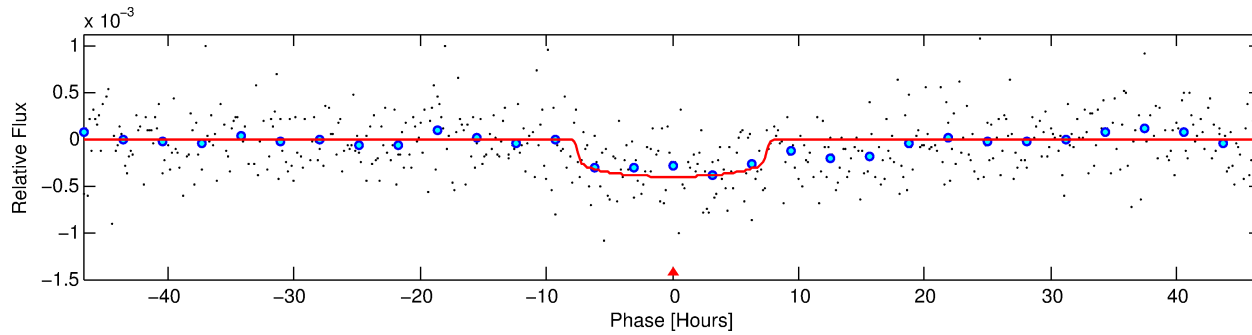
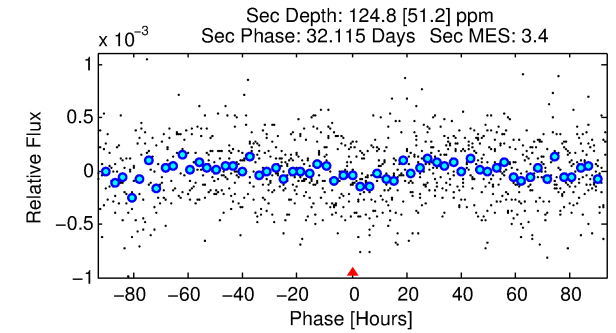
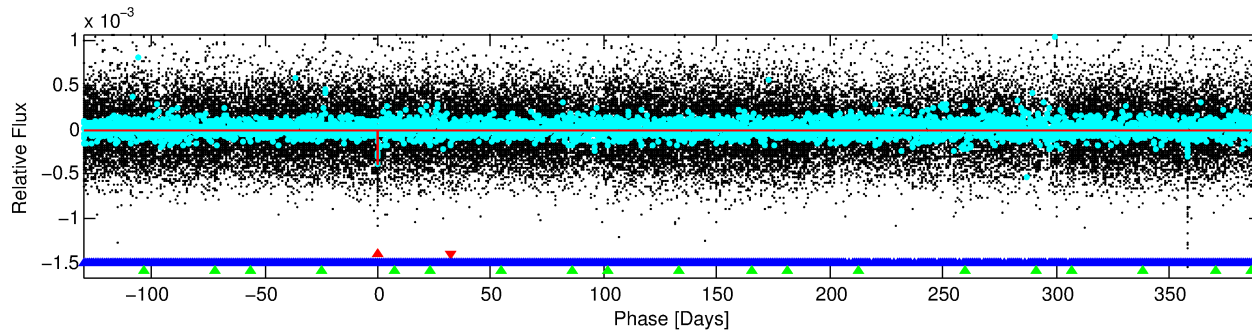
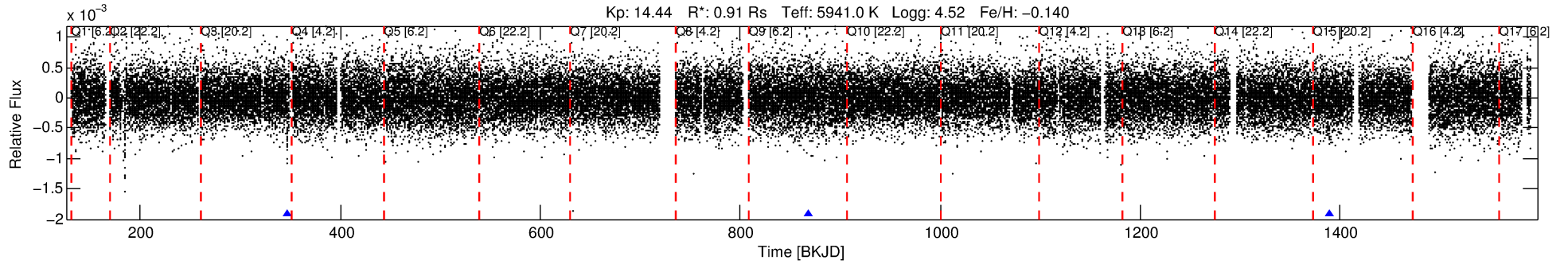
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009632757-01

No Significant Match Found

DV One-Page Summary

KIC: 9632757 Candidate: 1 of 3 Period: 520.744 d



DV Fit Results:

Period = 520.74441 [0.01382] d
Epoch = 347.1055 [0.0188] BKJD
Rp/R* = 0.0190 [0.0102]
a/R* = 211.39 [529.86]
b = 0.59 [2.75]
Seff = 0.58 [0.24]
Teq = 222 [23] K
Rp = 1.89 [1.19] Re
a = 1.2670 [0.3508] AU
Ag = 30872.93 [37687.80] [0.82σ]
Teffp = 4555 [1319] K [3.28σ]

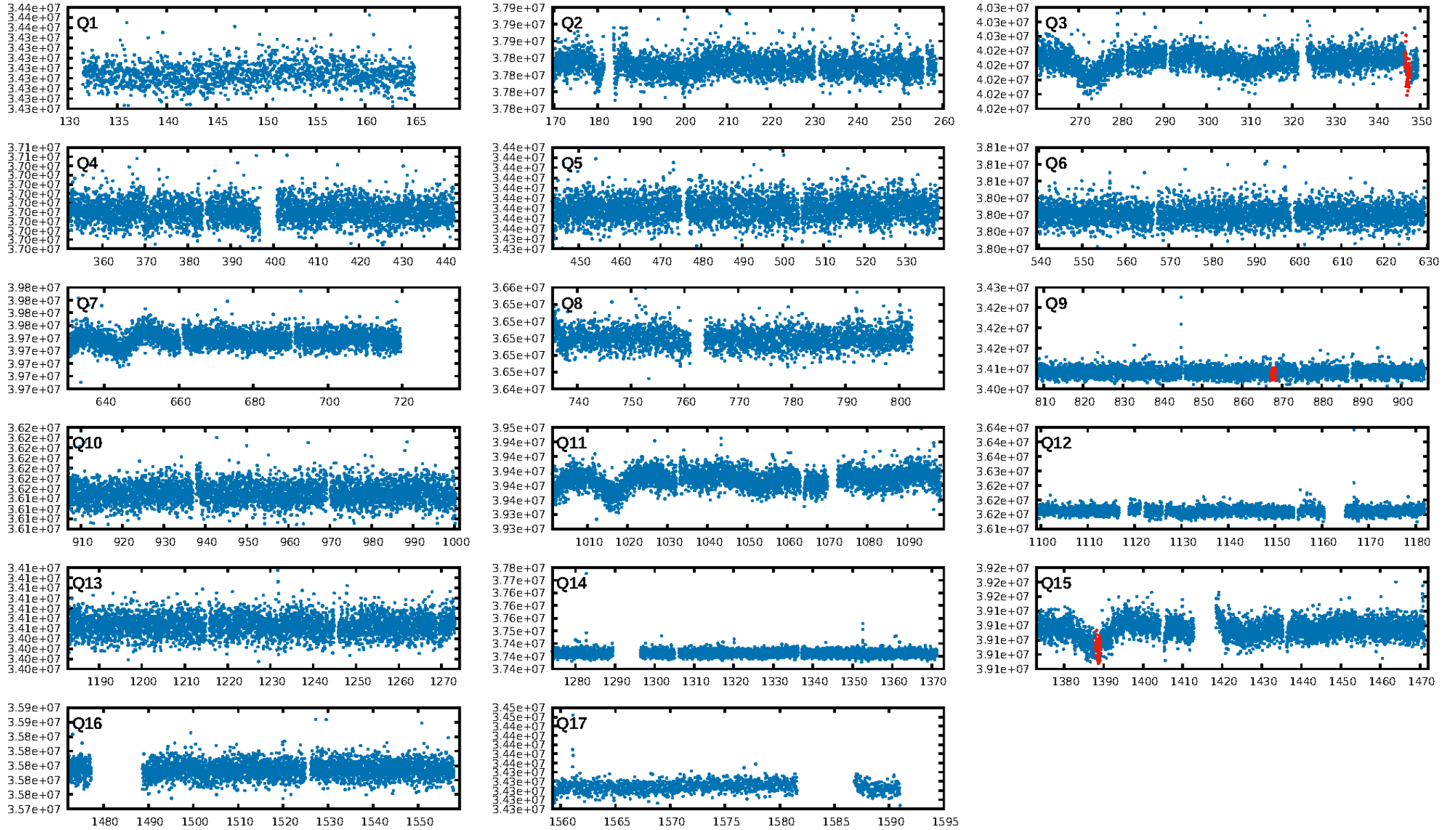
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [471.46σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.5%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 6.59e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 11.94
Centroid-sig: 0.0%
Centroid-so: 4.126 arcsec [2.22σ]
OotOffset-rm: 4.429 arcsec [36.62σ]
KicOffset-rm: 4.400 arcsec [36.39σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 0.00 [0/3]

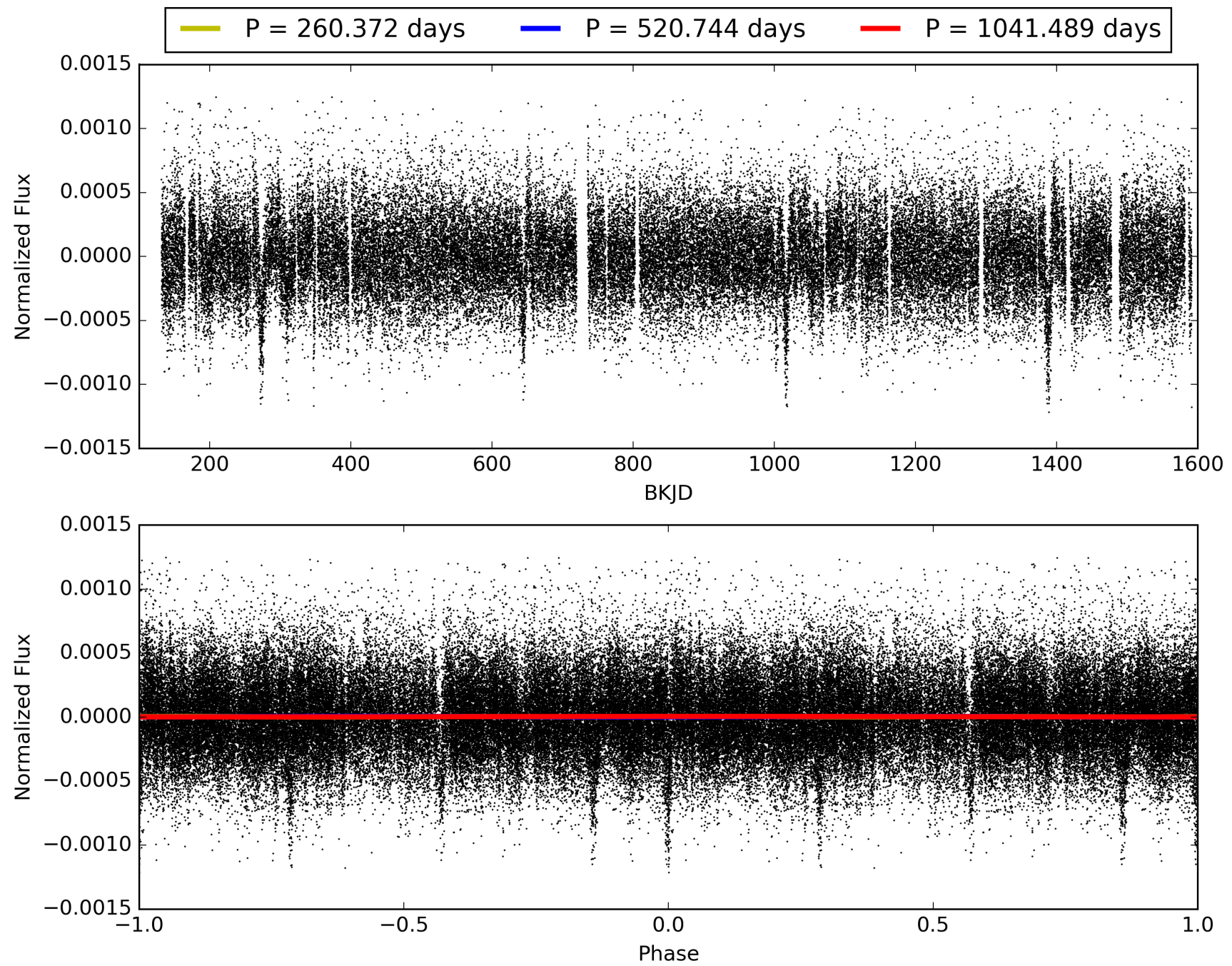
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:07:15 Z

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

TCE 009632757-01, PDC Light Curves

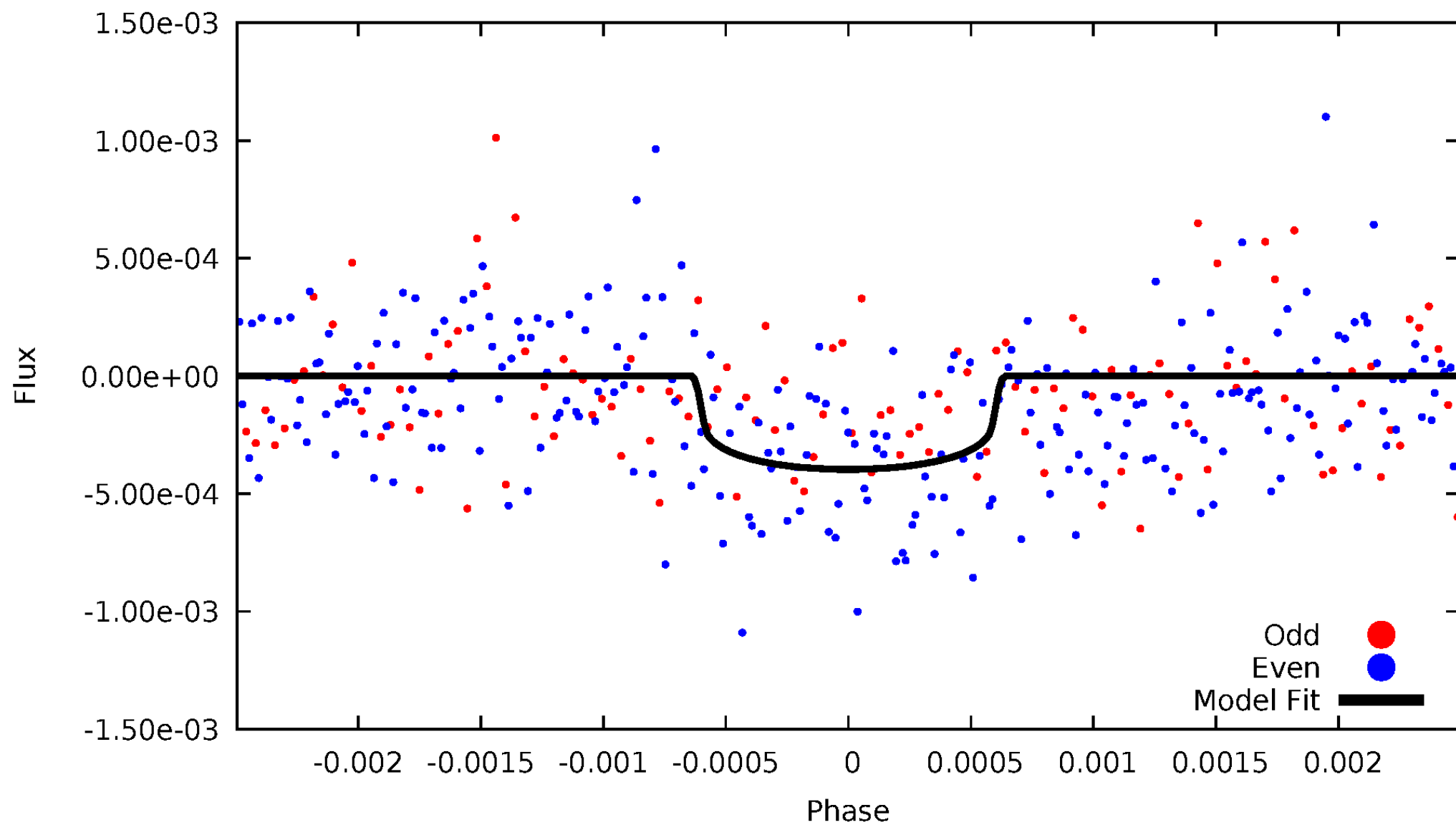


TCE 009632757-01



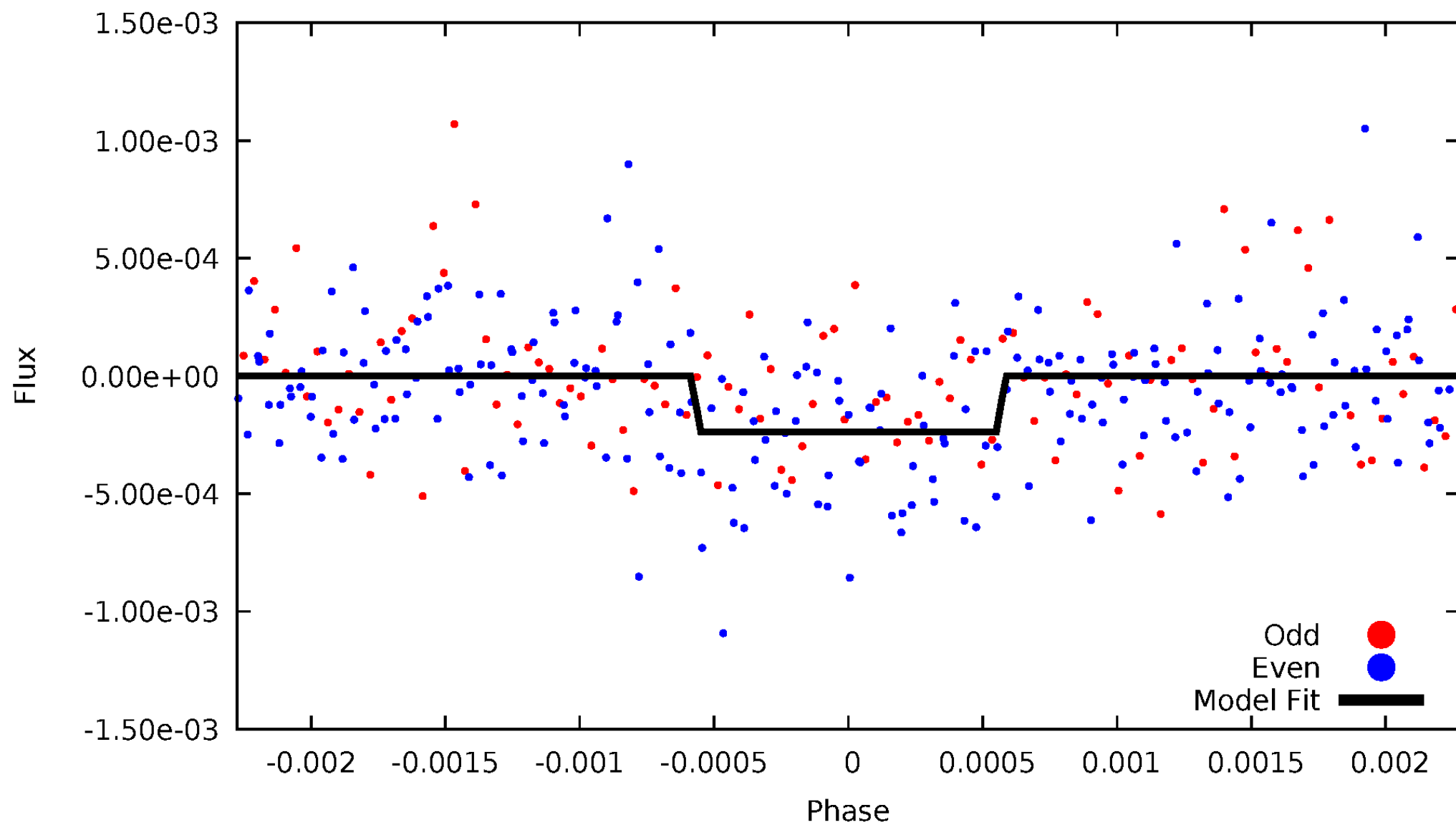
DV Odd/Even

TCE 009632757-01



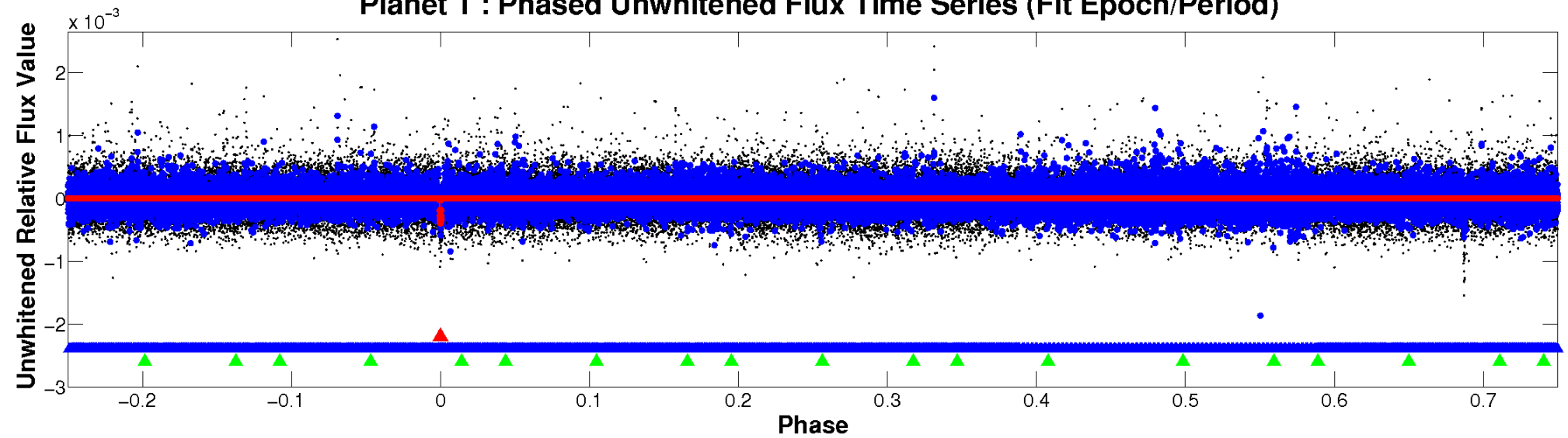
ALT Odd/Even

TCE 009632757-01

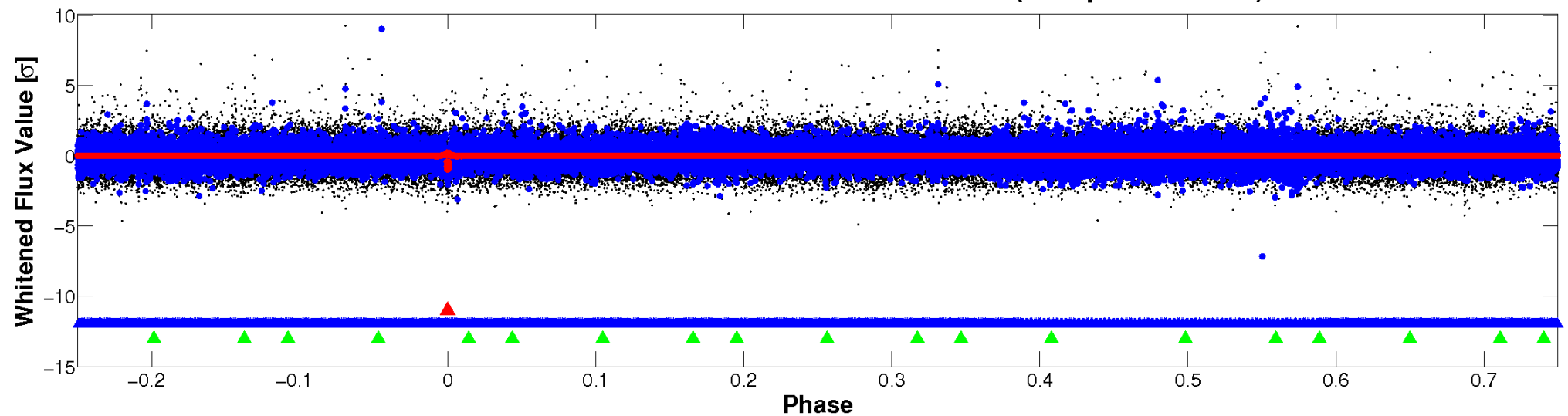


Non-Whitened Vs. Whitened Light Curve

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

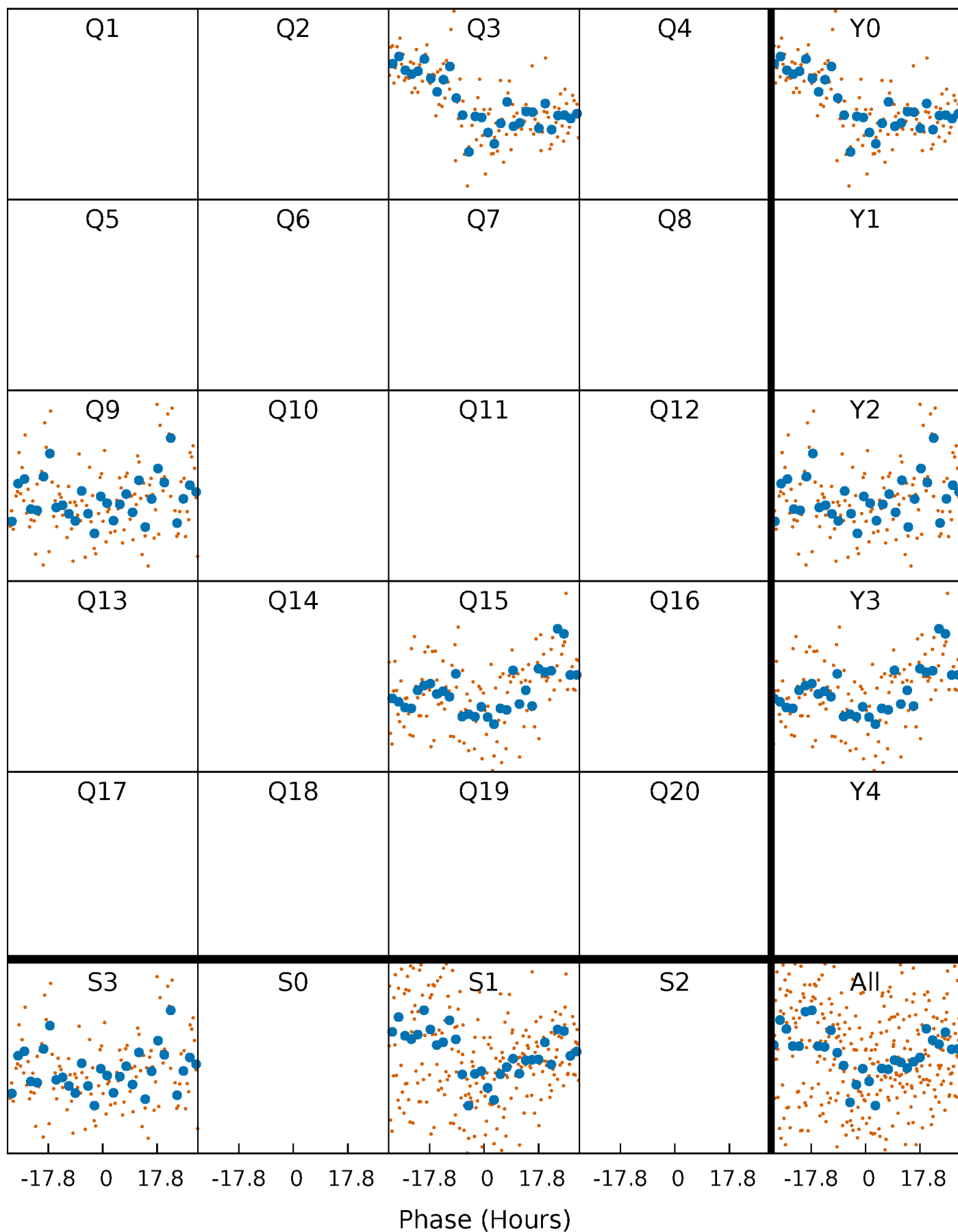


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 009632757-01 P=520.744415 Days $T_0=347.105527$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009632757-01 P=520.744415 Days $T_0=347.105527$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

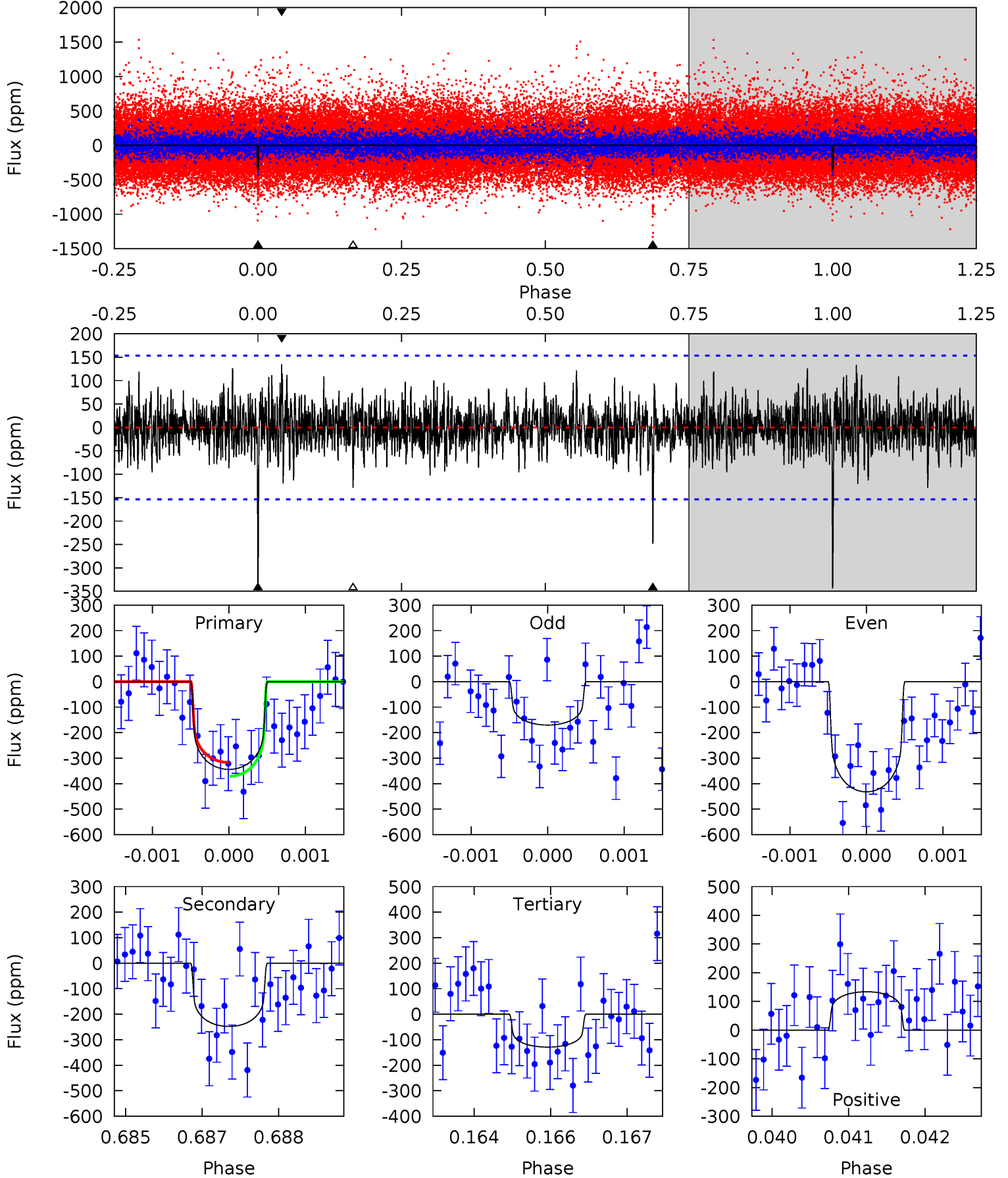
TCE 009632757-01 P=520.742465 Days $T_0=347.122655$ (BKJD)



DV Model-Shift Uniqueness Test

009632757-01, P = 520.744415 Days, E = 347.105527 Days

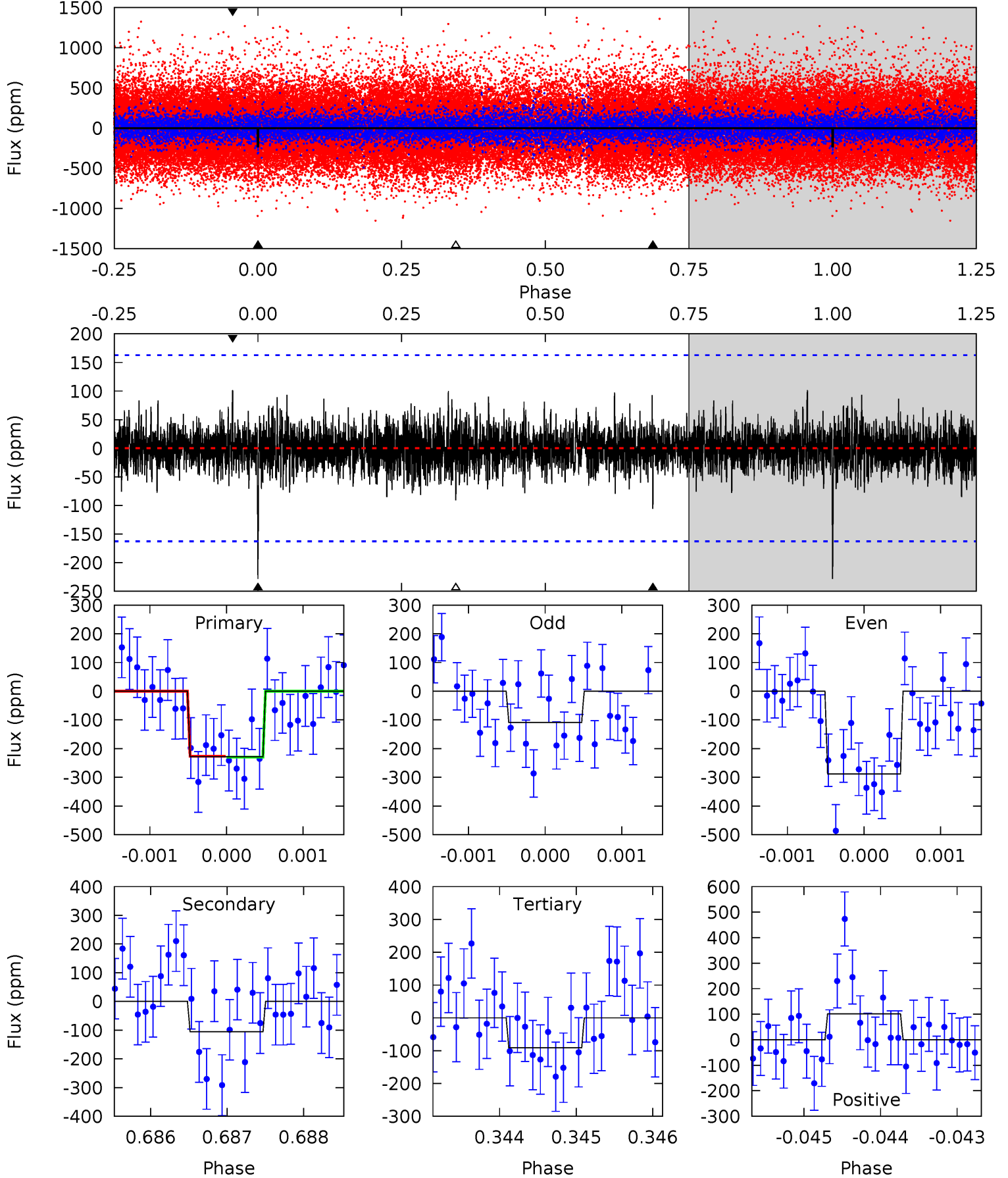
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	8.73	4.54	4.71	5.41	3.22	1.23	7.58	7.40	4.20	4.02	4.41	1.00	0.28	0.96



Alt Model-Shift Uniqueness Test

009632757-01, P = 520.742465 Days, E = 347.122655 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.62	3.52	3.03	3.39	5.43	3.25	0.86	4.58	4.23	0.49	0.13	2.87	1.03	0.31	0.04



Stellar Parameters For KIC 009632757

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5941^{+160}_{-178}	$4.519^{+0.039}_{-0.221}$	$-0.140^{+0.300}_{-0.300}$	$0.911^{+0.299}_{-0.075}$	$1.001^{+0.122}_{-0.122}$	$1.865^{+0.404}_{-1.020}$
	+3%/-3%	+1%/-5%	+214%/-214%	+33%/-8%	+12%/-12%	+22%/-55%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009632757-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-248 ± 28	$2.02^{+1.14}_{-1.00}$	317^{+21}_{-13}	5364^{+2269}_{-900}	$51655^{+154712}_{-31101}$
Alt.	-106 ± 30	$1.72^{+1.12}_{-0.95}$	318^{+22}_{-14}	4806^{+2163}_{-834}	$29029^{+117967}_{-18658}$

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

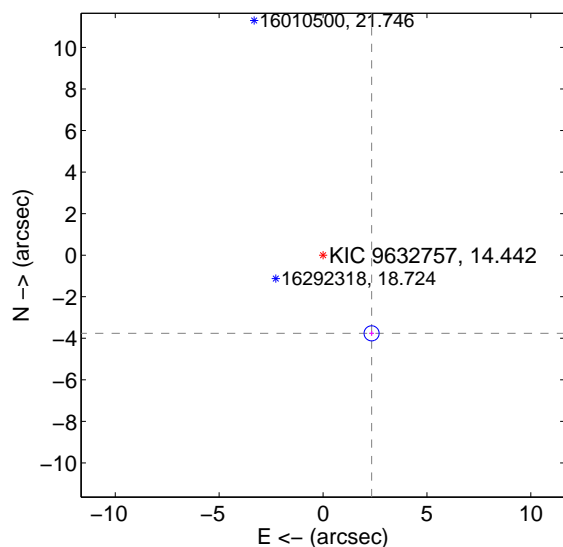
Supplemental centroid analysis for 009632757-01. Kepler magnitude: 14.44. Transit SNR 8.44

There are 1 quarters with good PRF difference image offsets

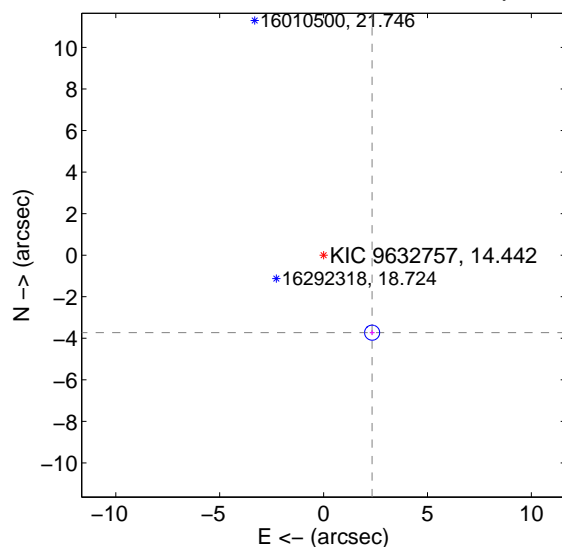
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.429 \pm 0.121	36.62	-2.337 \pm 0.120	-3.762 \pm 0.121
PRF-fit source offset from KIC position	4.400 \pm 0.121	36.39	-2.336 \pm 0.120	-3.729 \pm 0.121
photometric centroid source offset	4.13 \pm 1.86	2.22	-1.79 \pm 1.83	-3.72 \pm 1.87

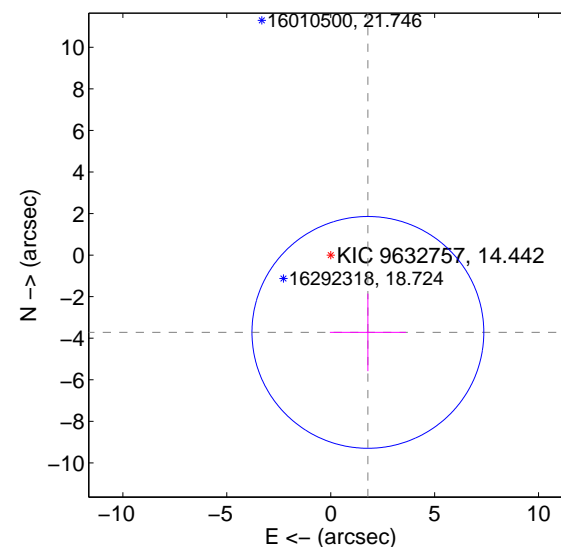
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



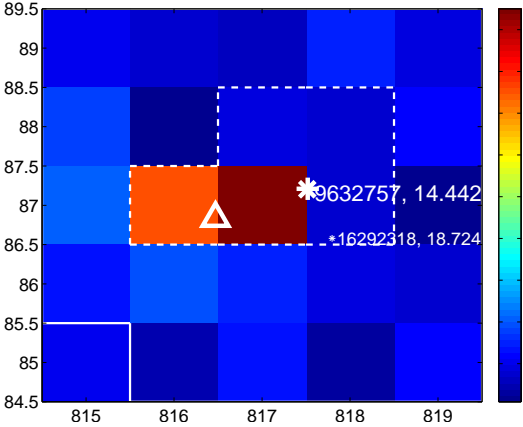
Q2 no difference image



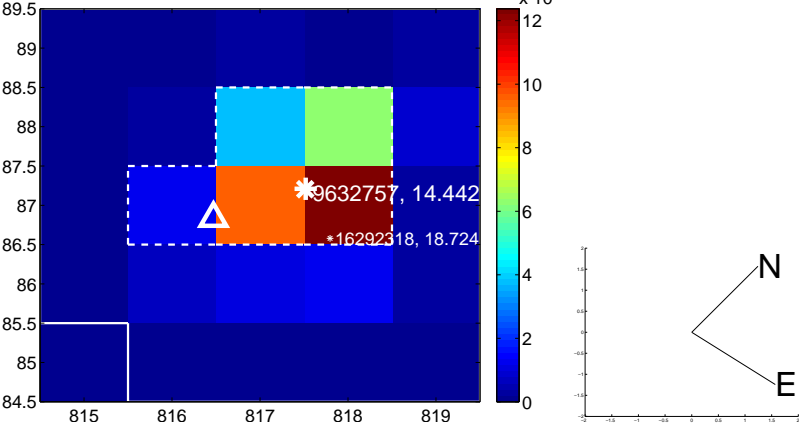
Q2 no OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image



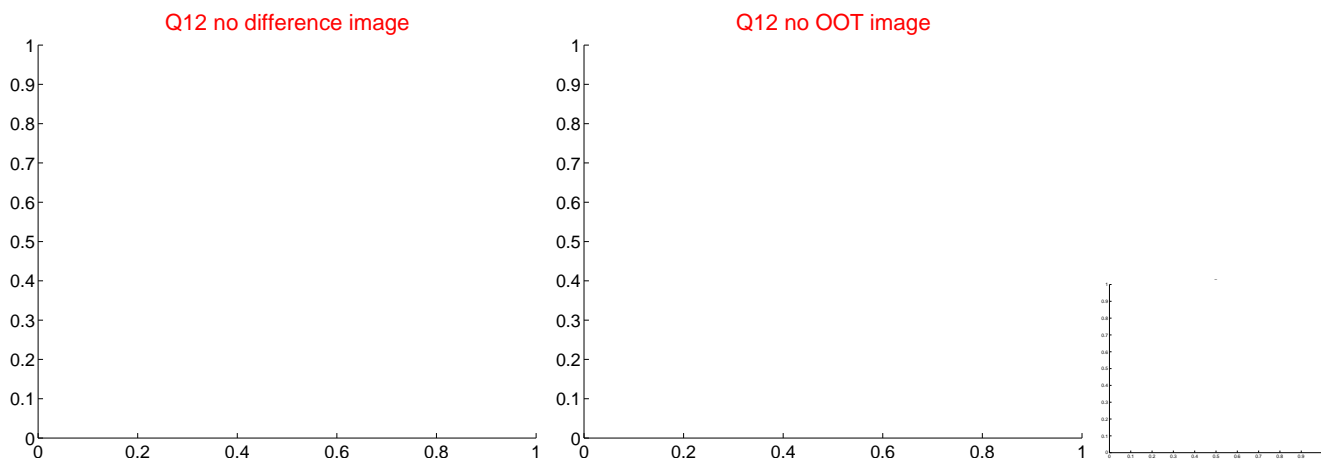
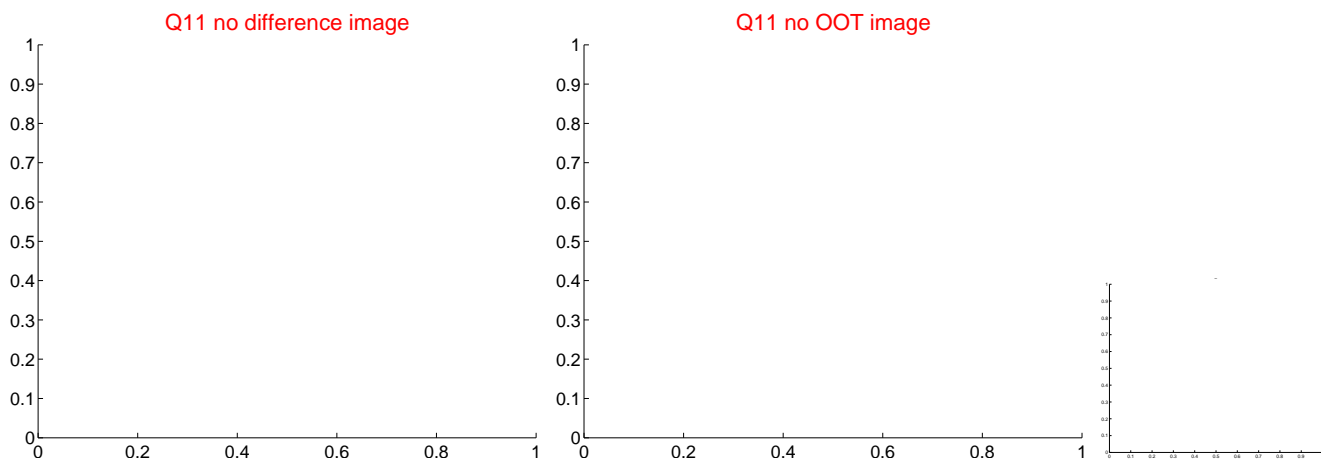
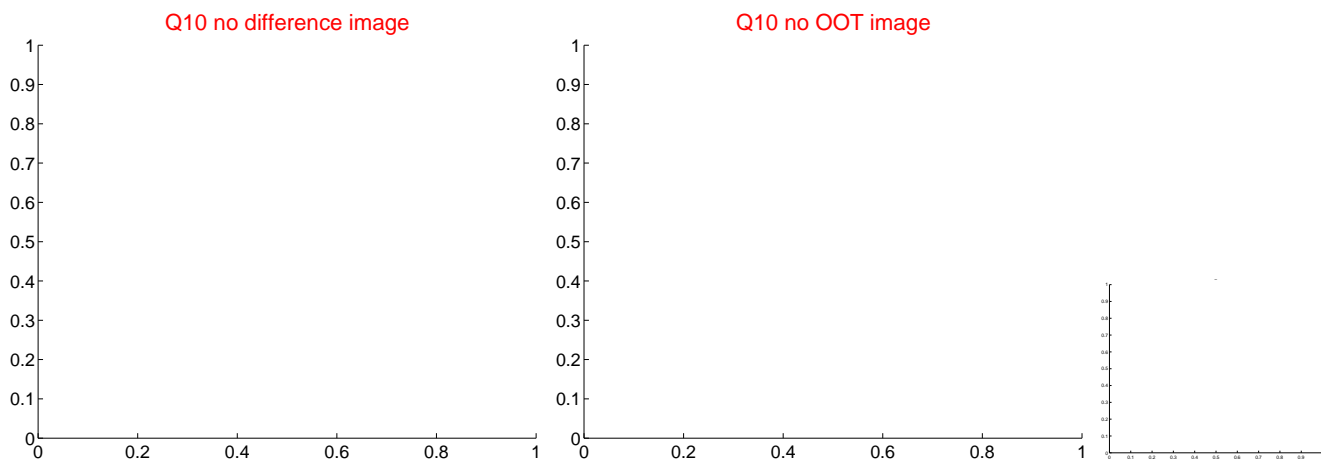
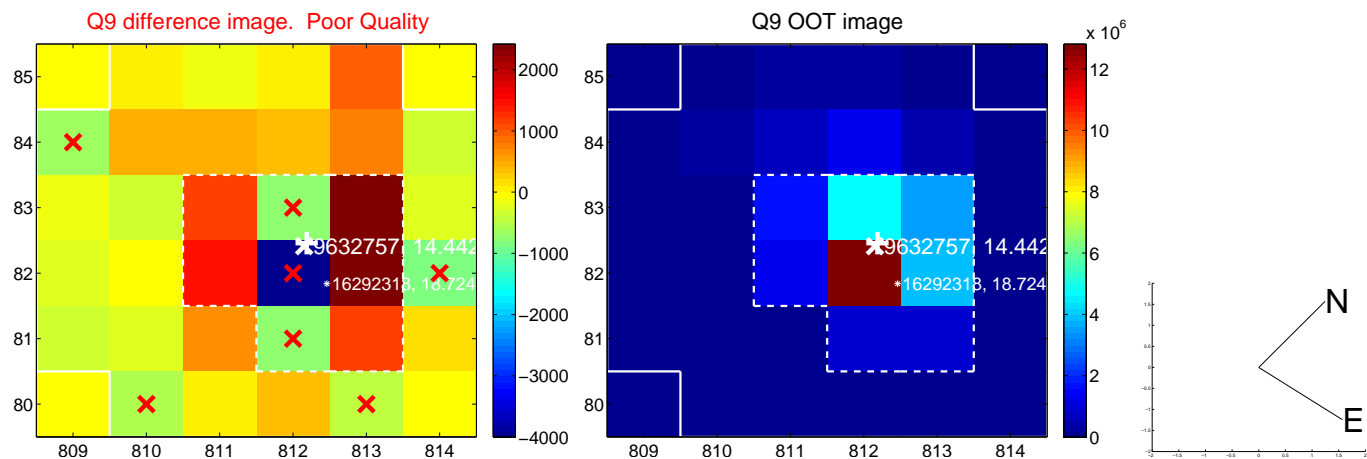
Q4 no OOT image



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

Q13 no difference image



Q13 no OOT image



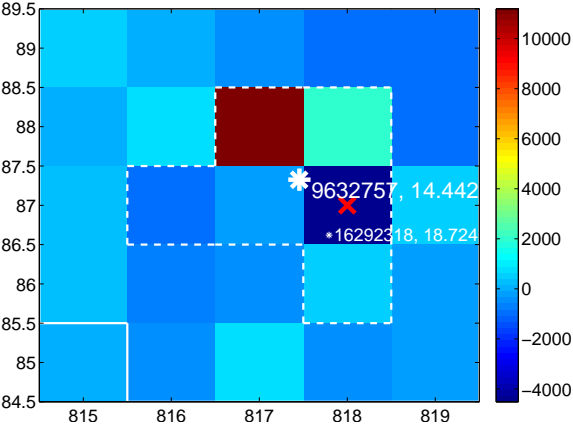
Q14 no difference image



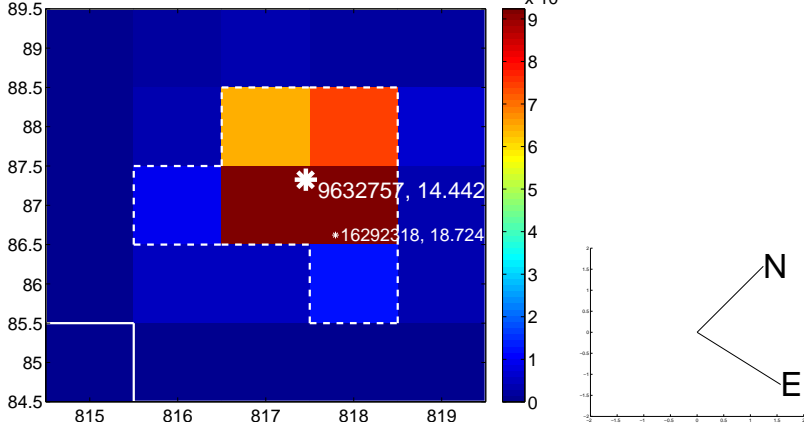
Q14 no OOT image



Q15 difference image. Poor Quality



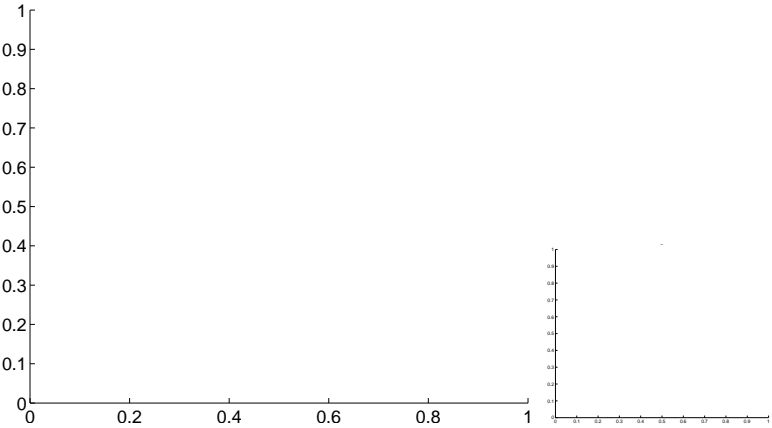
Q15 OOT image



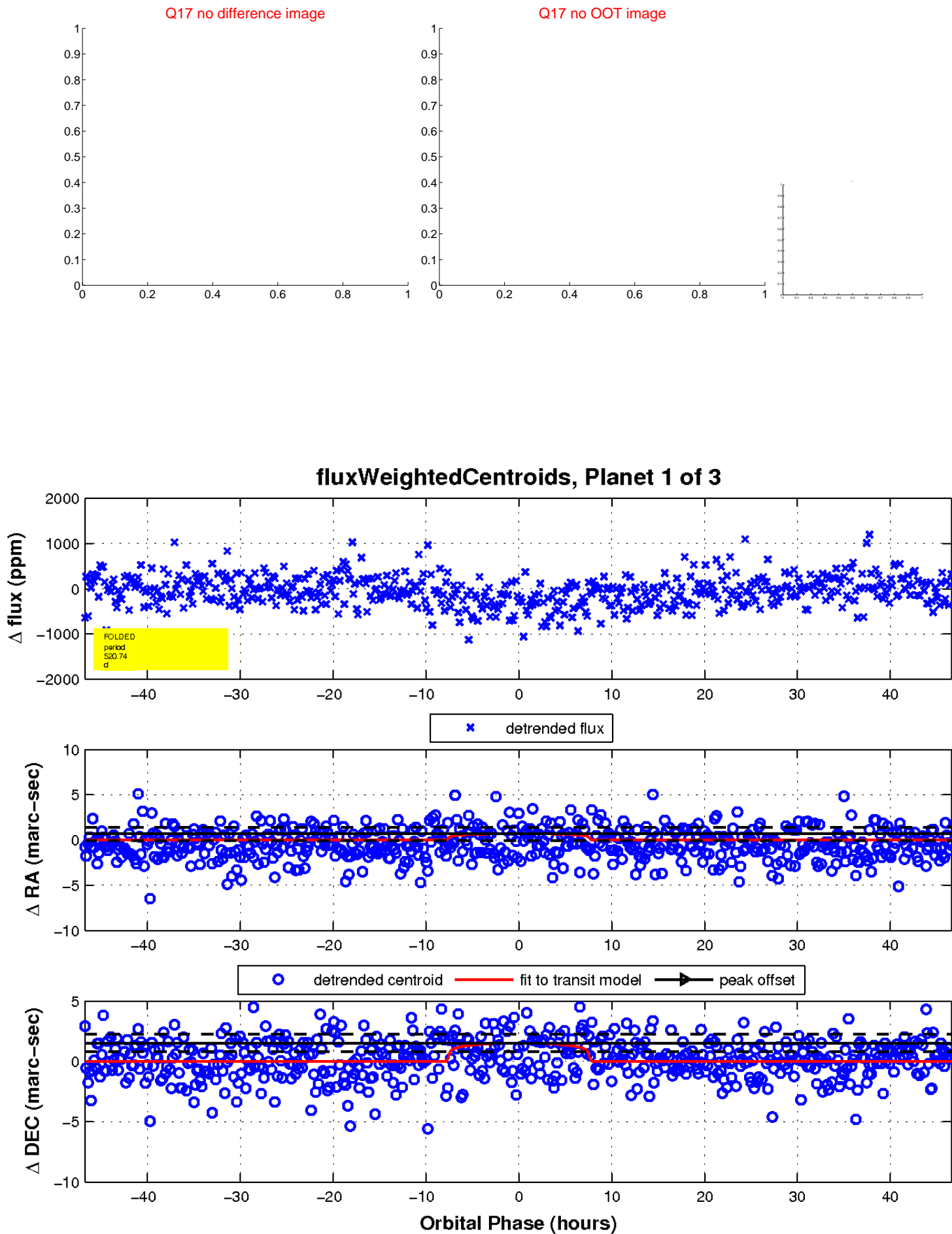
Q16 no difference image



Q16 no OOT image

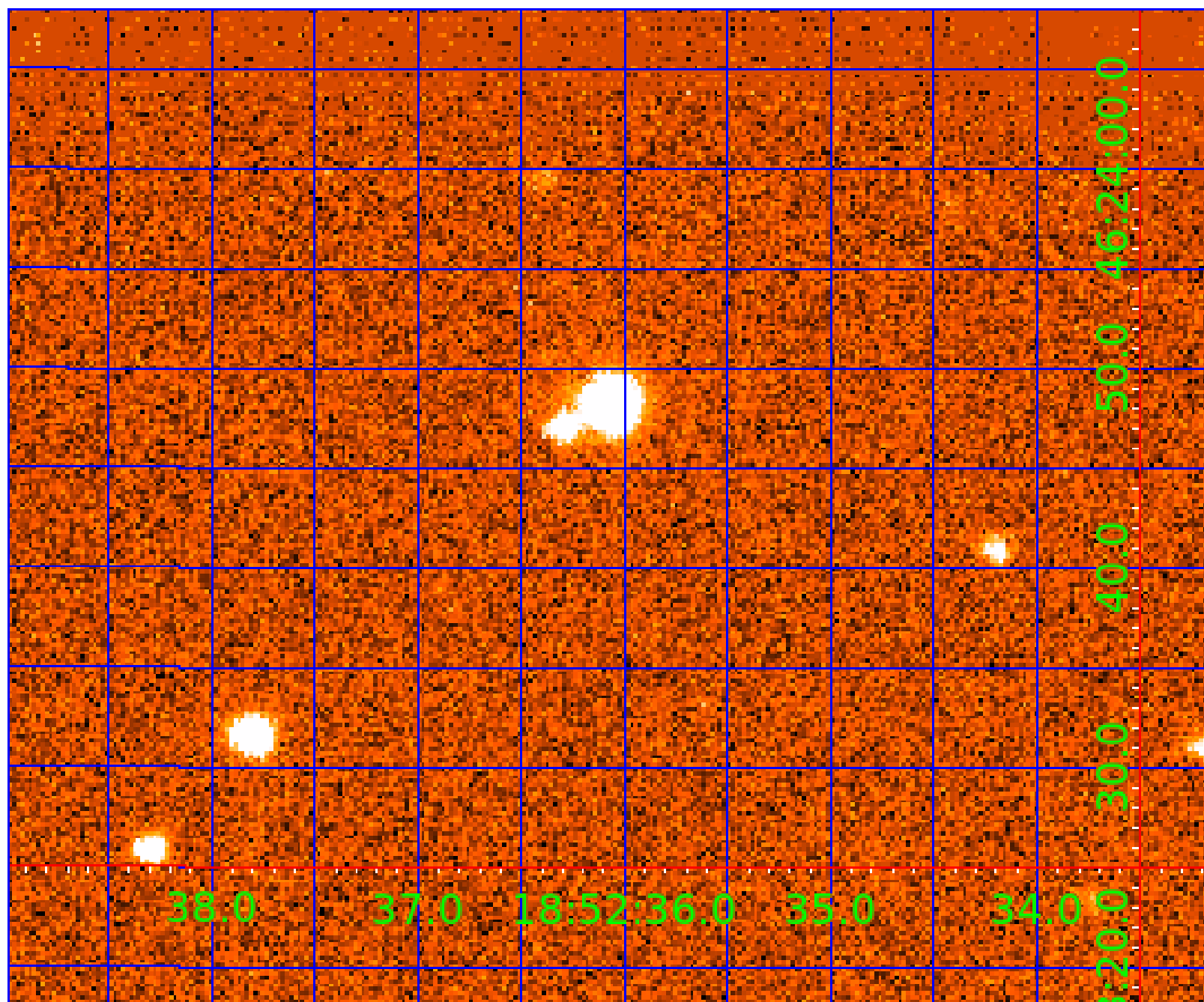


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009632757

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})
009632757-01	OBS	No	520.744415	347.105527	396.7	15.584	9.1	8.4	0.91	5941	1.89	0.58
009632757-02	OBS	No	1.524061	132.996359	28.4	8.334	7.7	9.5	0.91	5941	0.49	1378.29
009632757-03	OBS	No	78.934060	133.047417	149.7	16.216	9.6	5.5	0.91	5941	1.28	7.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009632757-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009632757-02	OBS	FP	0.00	1	0	0	0	LPP_DV
009632757-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

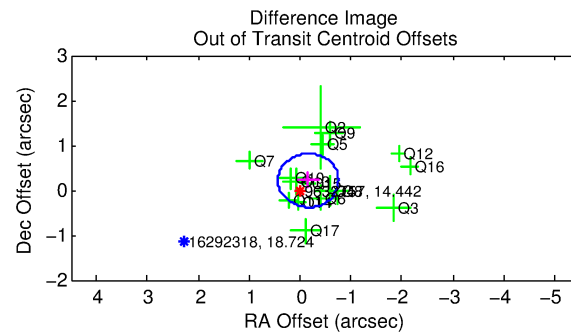
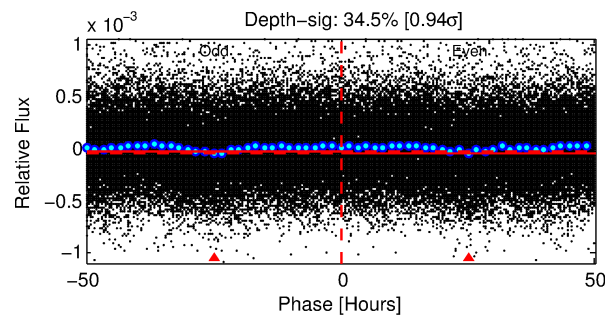
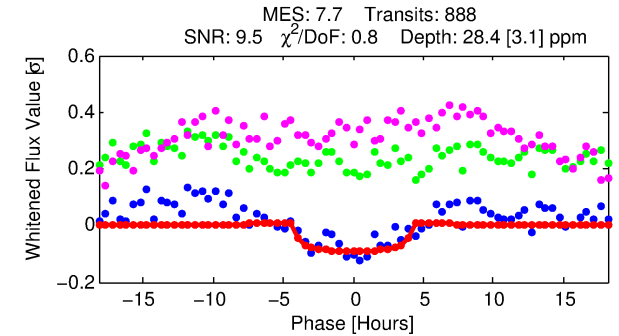
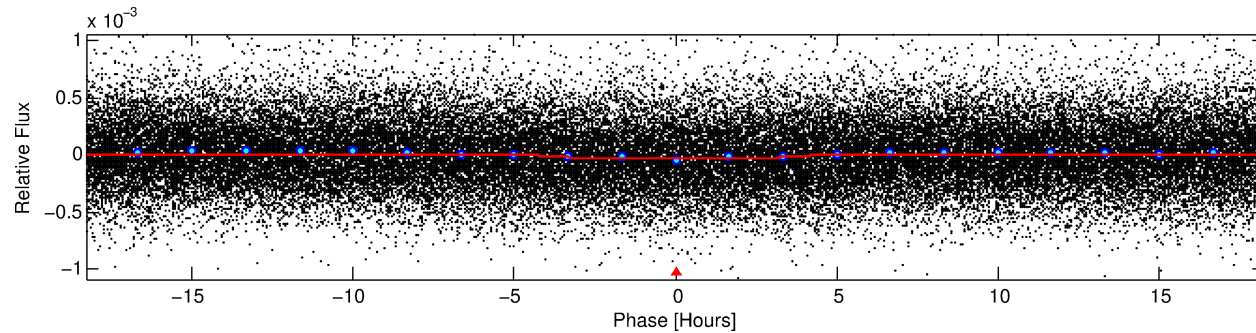
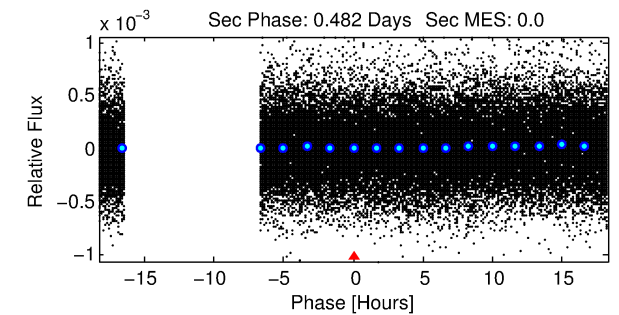
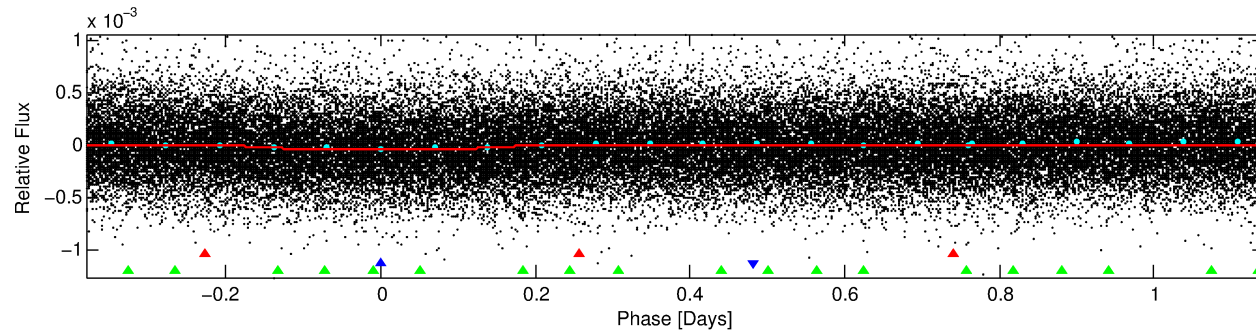
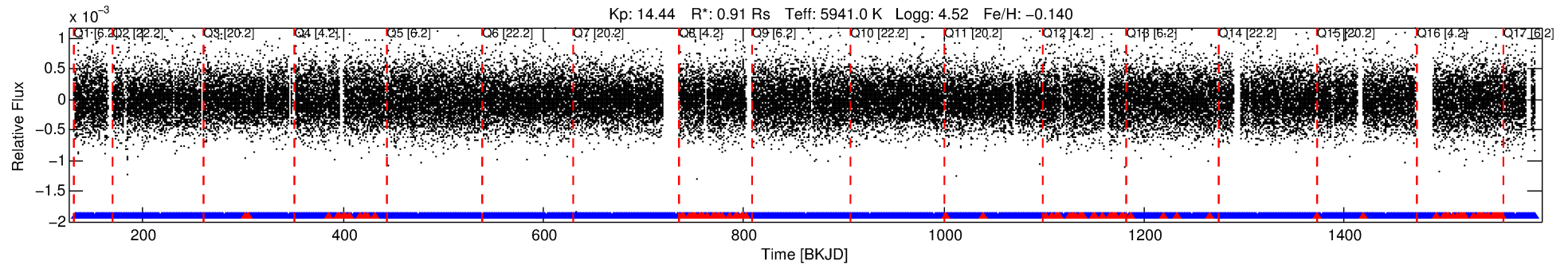
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009632757-02

No Significant Match Found

DV One-Page Summary

KIC: 9632757 Candidate: 2 of 3 Period: 1.524 d



DV Fit Results:

Period = 1.52406 [0.00003] d
Epoch = 132.9964 [0.0086] BKJD
Rp/R* = 0.0050 [0.0056]
a/R* = 1.44 [3.97]
b = 0.44 [9.64]
Seff = 1378.29 [580.40]
Teff = 1554 [164] K
Rp = 0.49 [0.58] Re
a = 0.0259 [0.0072] AU
Ag = N/A
Teffp = N/A

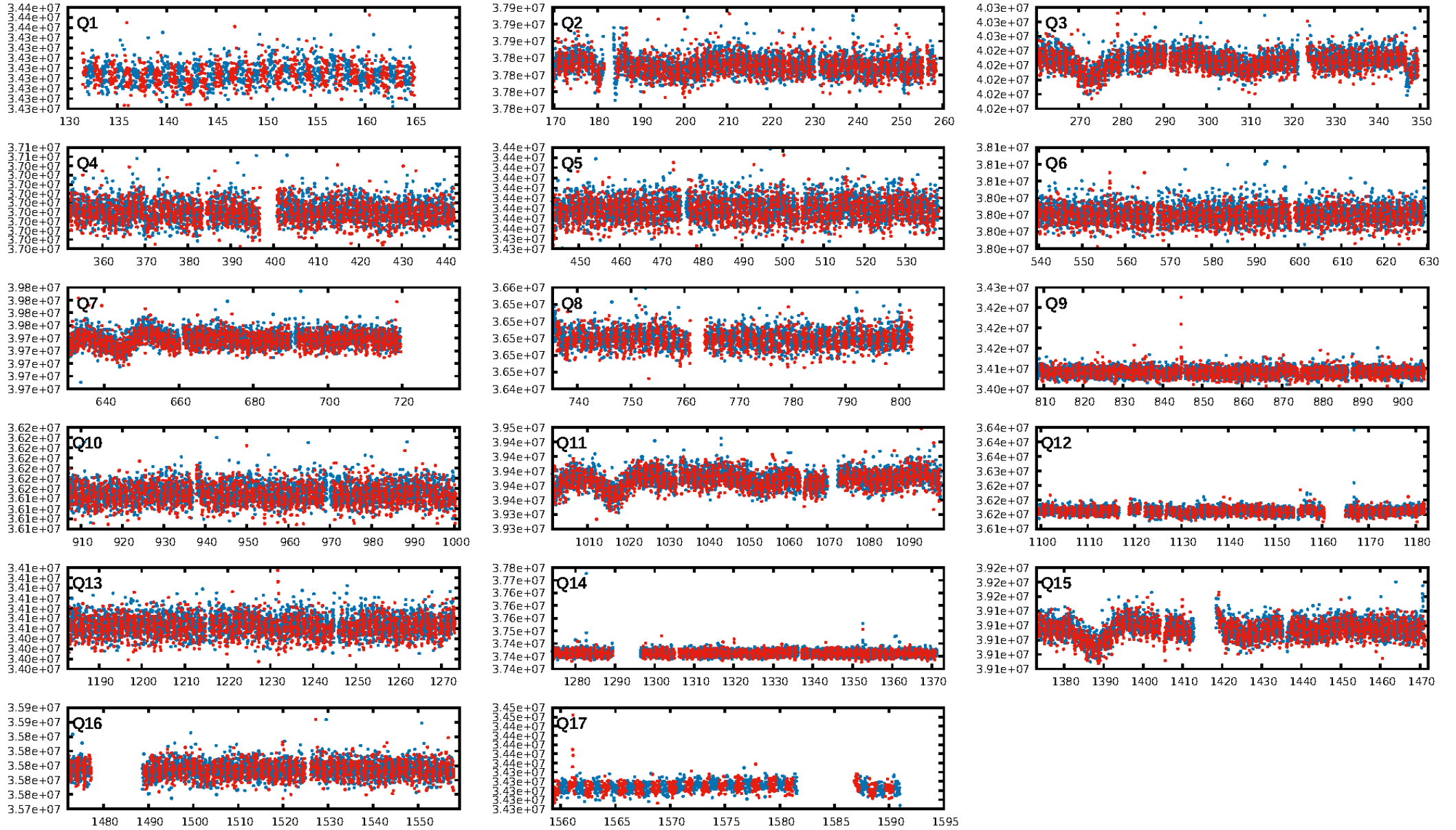
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [101.90σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.08e-14
RollingBand-fgt: 0.90 [763/847]
GhostDiagnostic-chr: 3.665
Centroid-sig: 39.3%
Centroid-so: 1.555 arcsec [0.94σ]
OotOffset-rm: 0.269 arcsec [1.35σ]
KicOffset-rm: 0.268 arcsec [1.45σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [17/17]

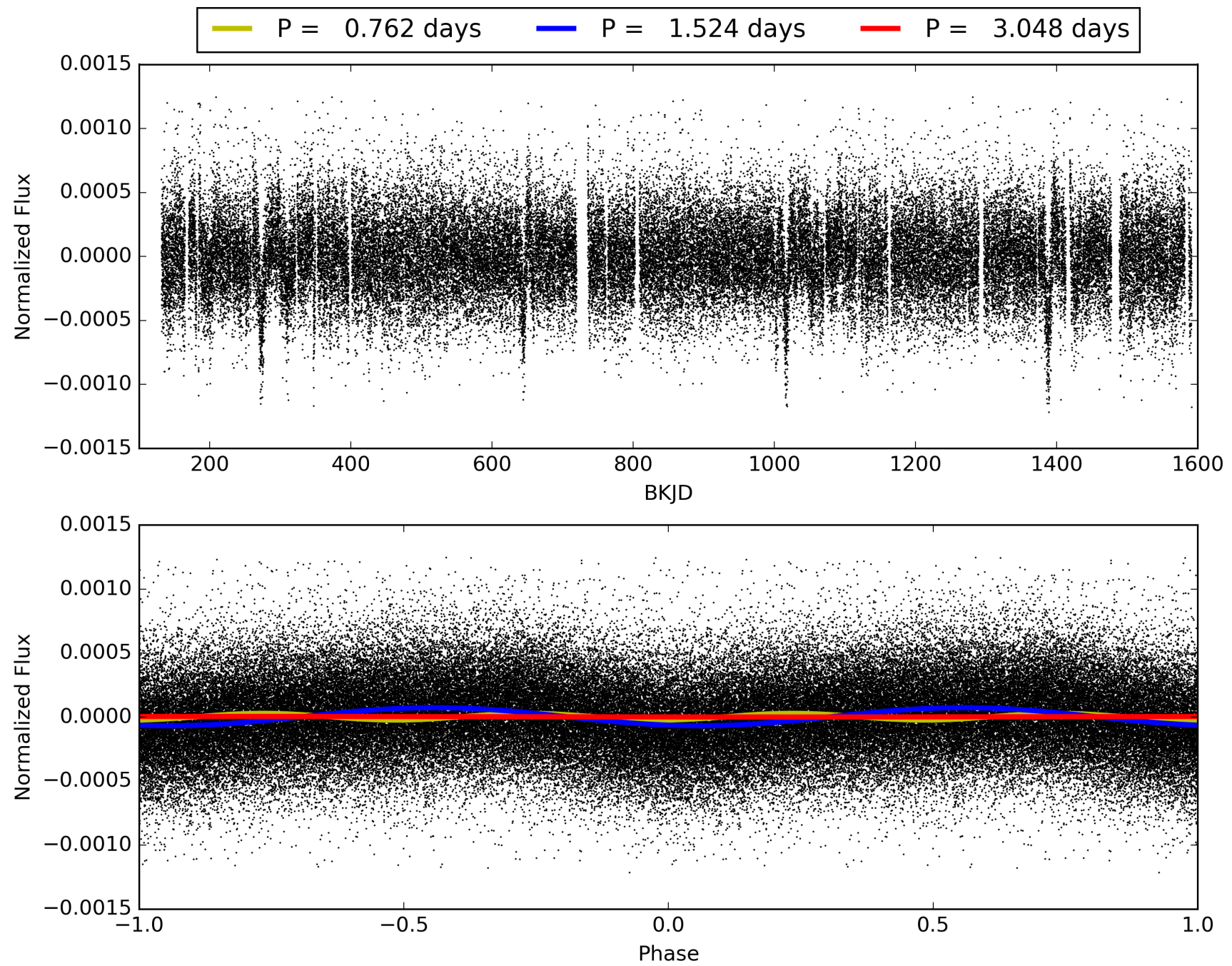
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:07:25 Z

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

TCE 009632757-02, PDC Light Curves

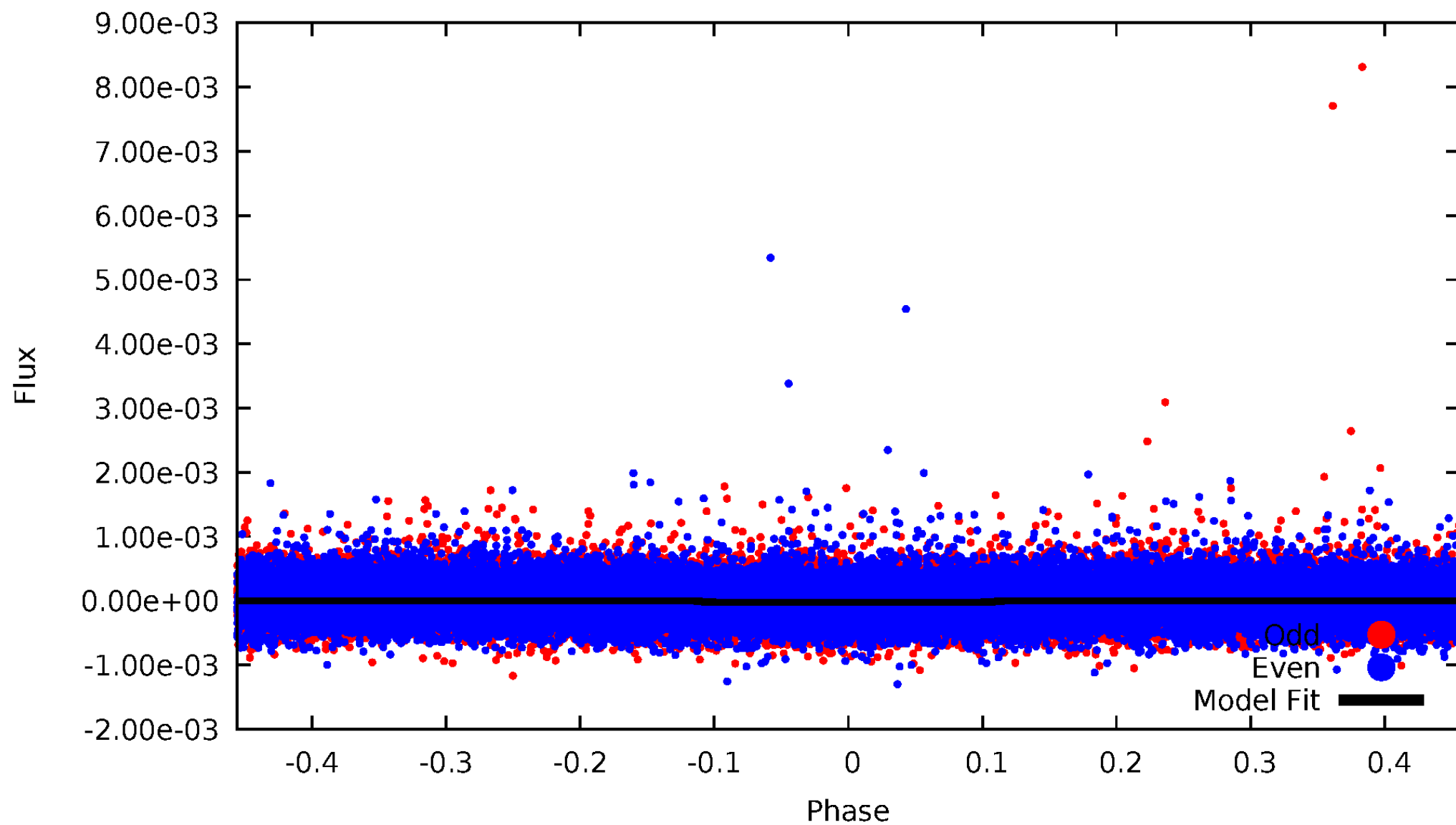


TCE 009632757-02



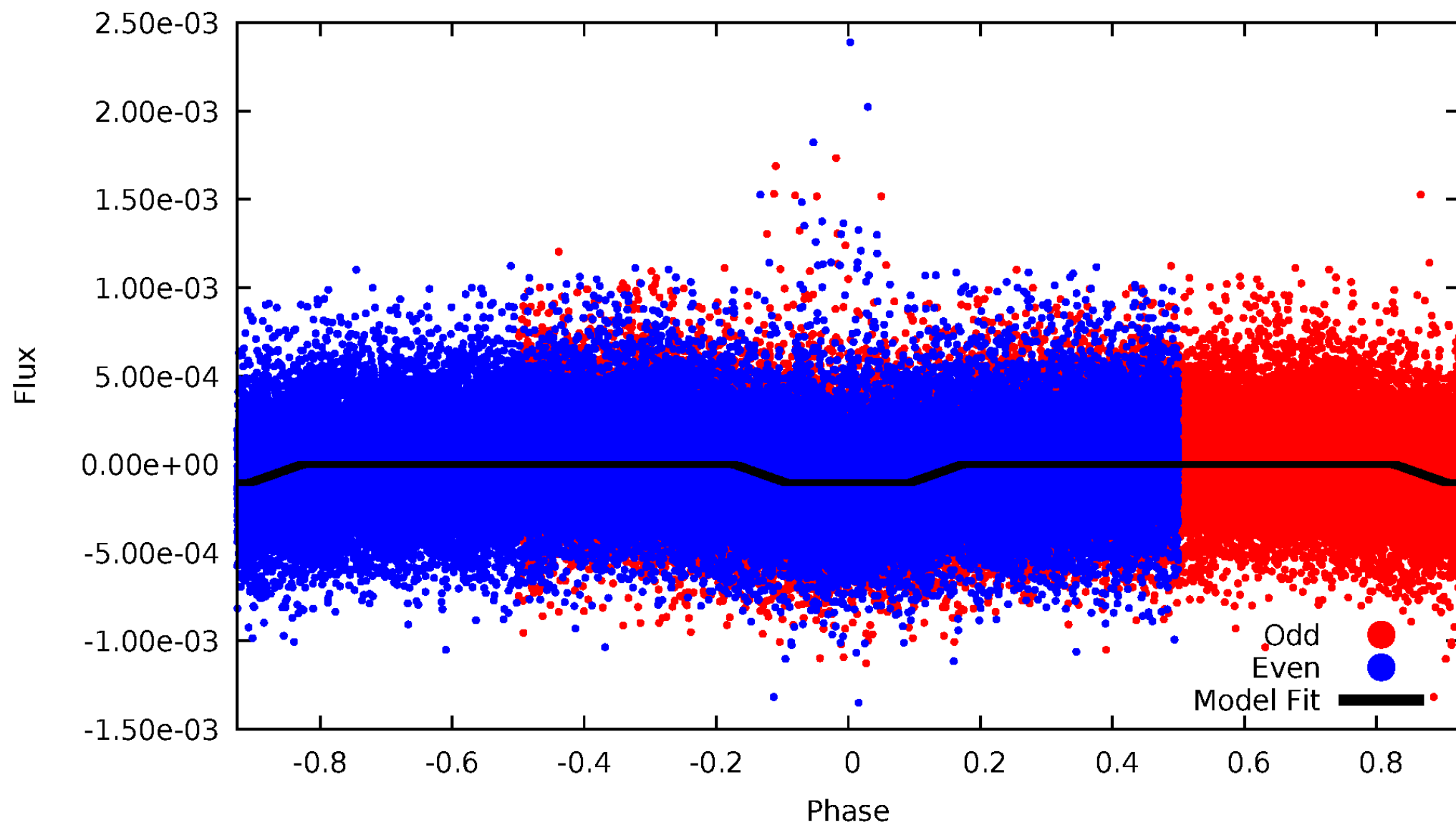
DV Odd/Even

TCE 009632757-02



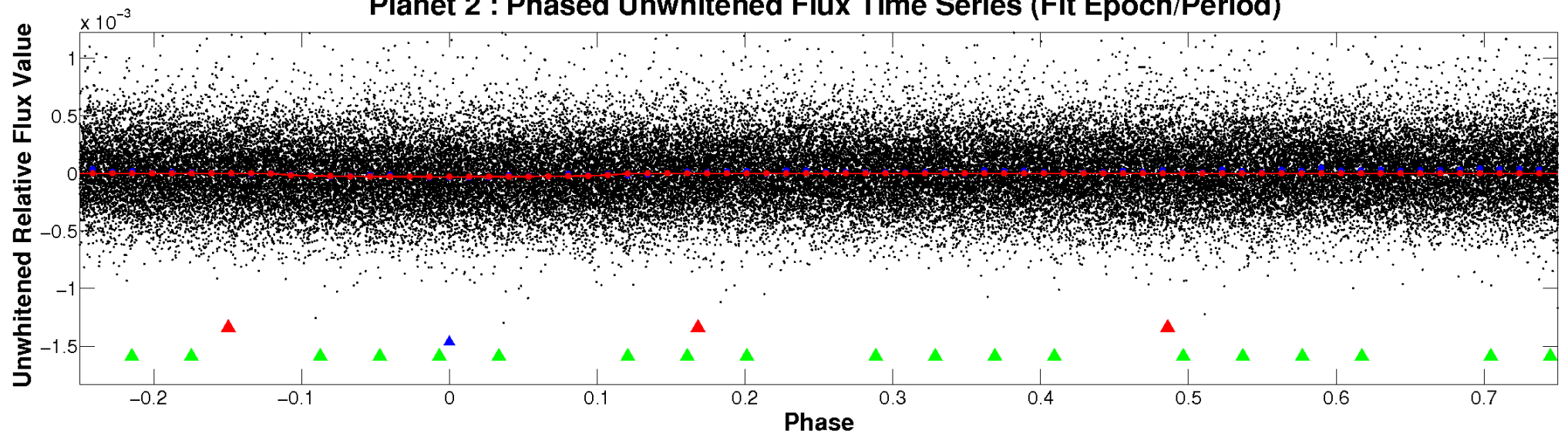
ALT Odd/Even

TCE 009632757-02

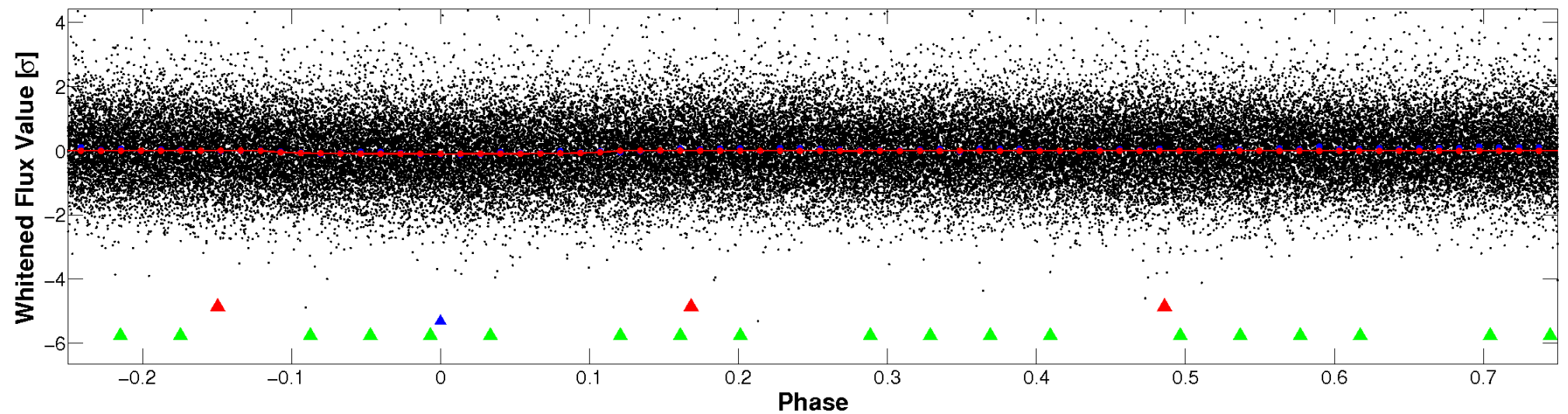


Non-Whitened Vs. Whitened Light Curve

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

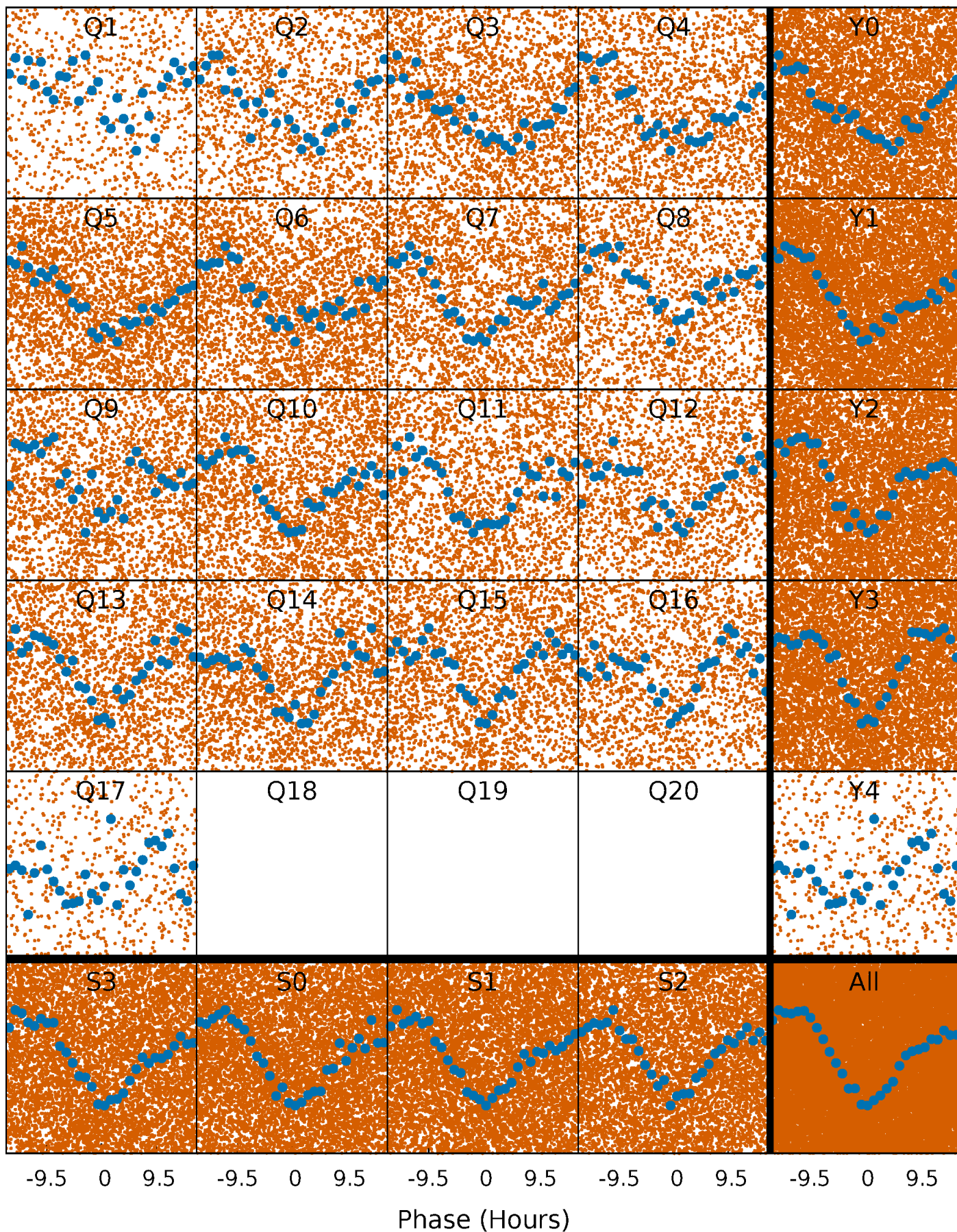


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



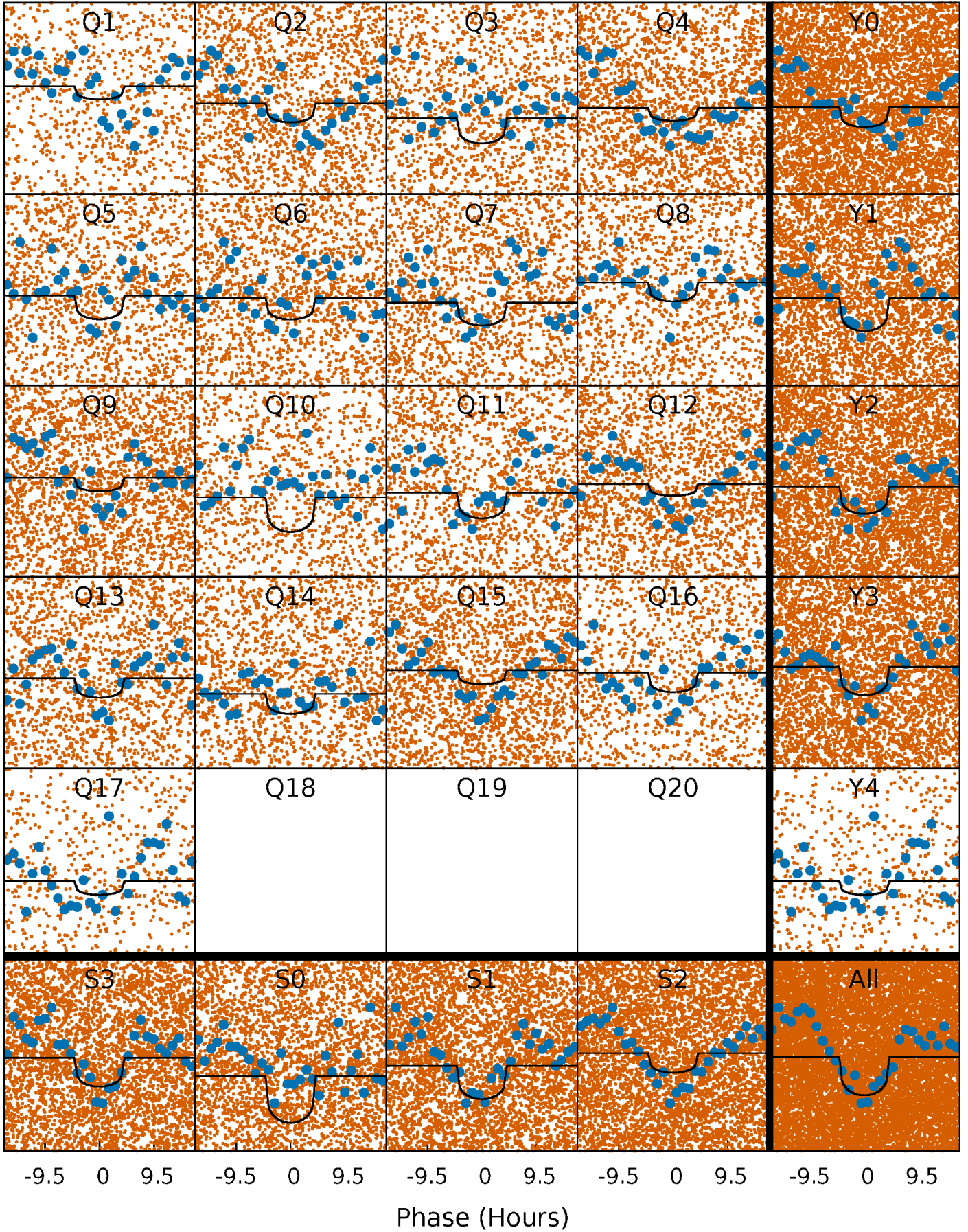
PDC Quarter-Phased Transit Curves

TCE 009632757-02 P= 1.524061 Days $T_0=132.996359$ (BKJD)



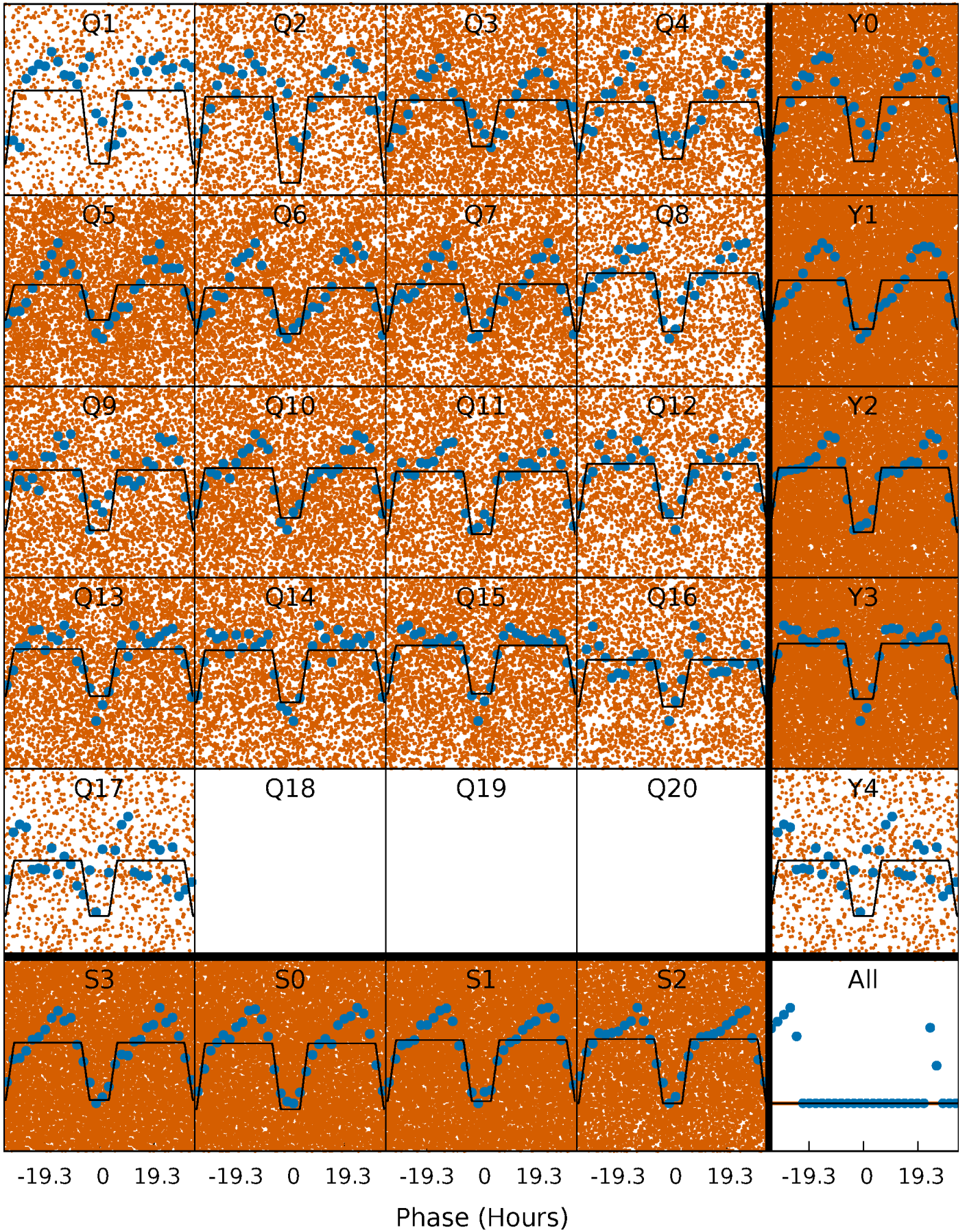
DV Quarter-Phased Transit Curves

TCE 009632757-02 P= 1.524061 Days $T_0=132.996359$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

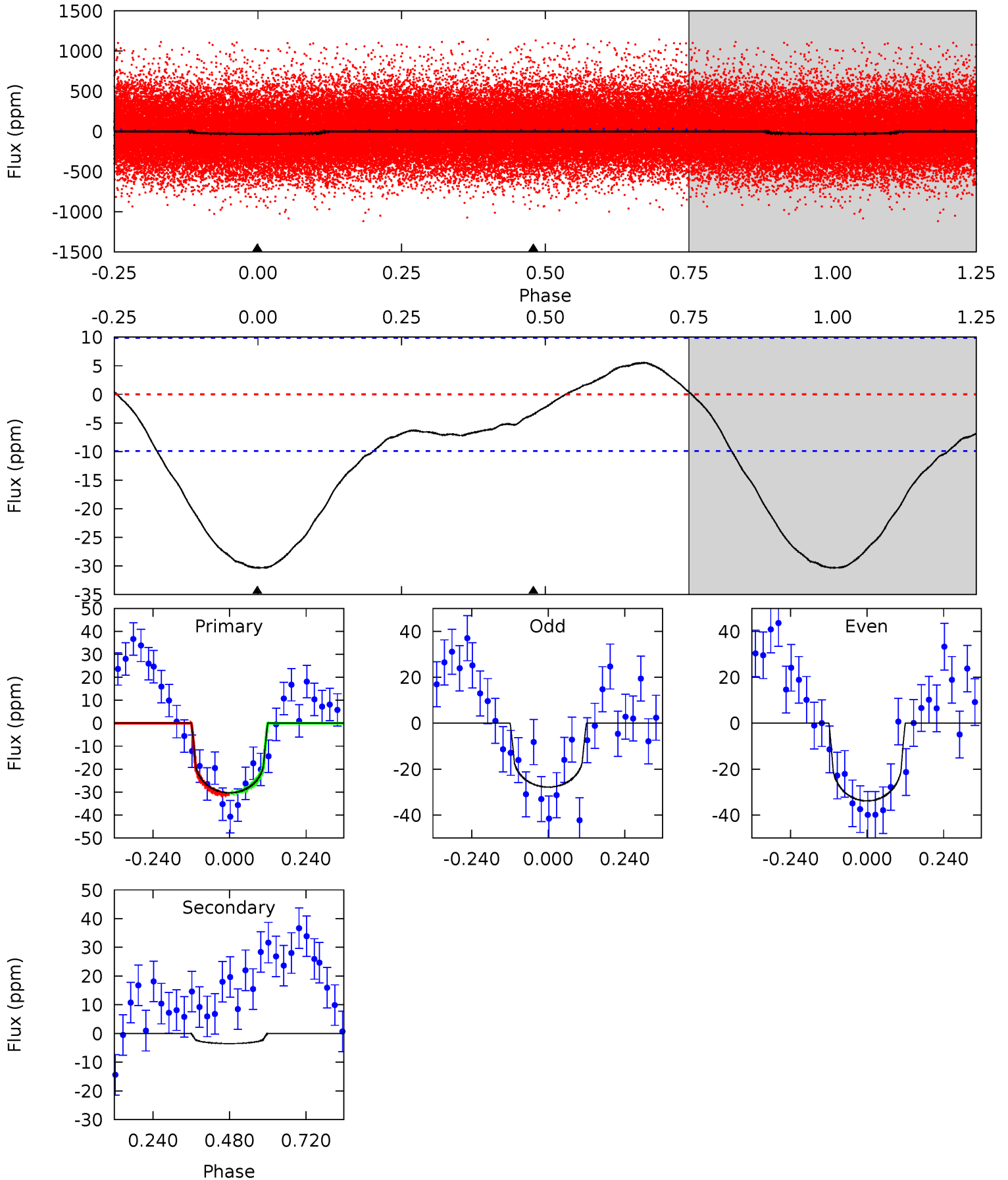
TCE 009632757-02 P= 1.524077 Days $T_0=133.021713$ (BKJD)



DV Model-Shift Uniqueness Test

009632757-02, P = 1.524061 Days, E = 131.472298 Days

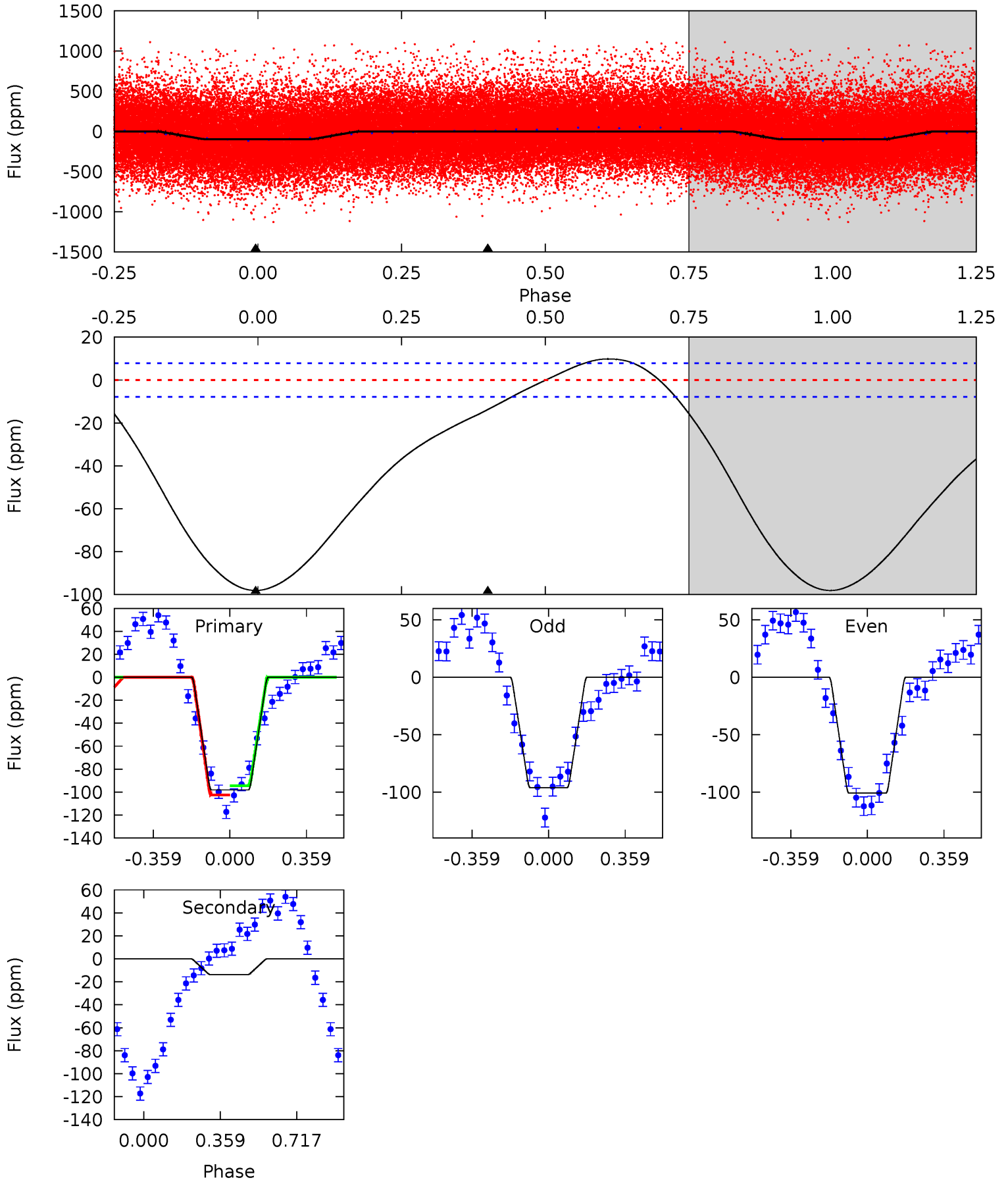
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	1.55	0	0	4.38	1.18	1.88	13.4	13.4	1.55	1.55	1.33	0.84	0.15	0.16



Alt Model-Shift Uniqueness Test

009632757-02, P = 1.524077 Days, E = 131.497636 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
53.6	7.50	0	0	4.29	0.92	3.80	53.6	53.6	7.50	7.50	1.31	0.96	0.09	2.23



Stellar Parameters For KIC 009632757

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5941^{+160}_{-178}	$4.519^{+0.039}_{-0.221}$	$-0.140^{+0.300}_{-0.300}$	$0.911^{+0.299}_{-0.075}$	$1.001^{+0.122}_{-0.122}$	$1.865^{+0.404}_{-1.020}$
	+3%/-3%	+1%/-5%	+214%/-214%	+33%/-8%	+12%/-12%	+22%/-55%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009632757-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4 ± 2	$0.65^{+0.54}_{-0.41}$	2225^{+172}_{-99}	3509^{+1804}_{-908}	$2.633^{+16.966}_{-2.067}$
Alt.	-14 ± 2	$1.09^{+0.59}_{-0.58}$	2217^{+170}_{-91}	3819^{+1391}_{-517}	$4.054^{+14.813}_{-2.284}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

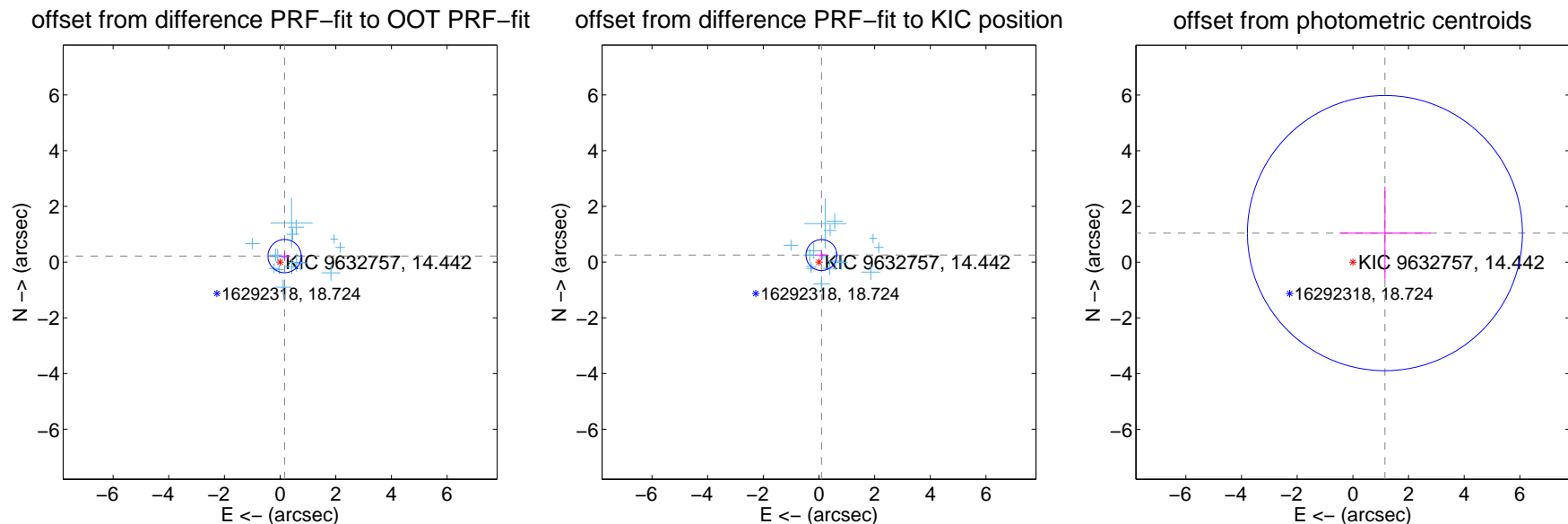
DV Centroid Data

Supplemental centroid analysis for 009632757-02. Kepler magnitude: 14.44. Transit SNR 9.51

There are 16 quarters with good PRF difference image offsets

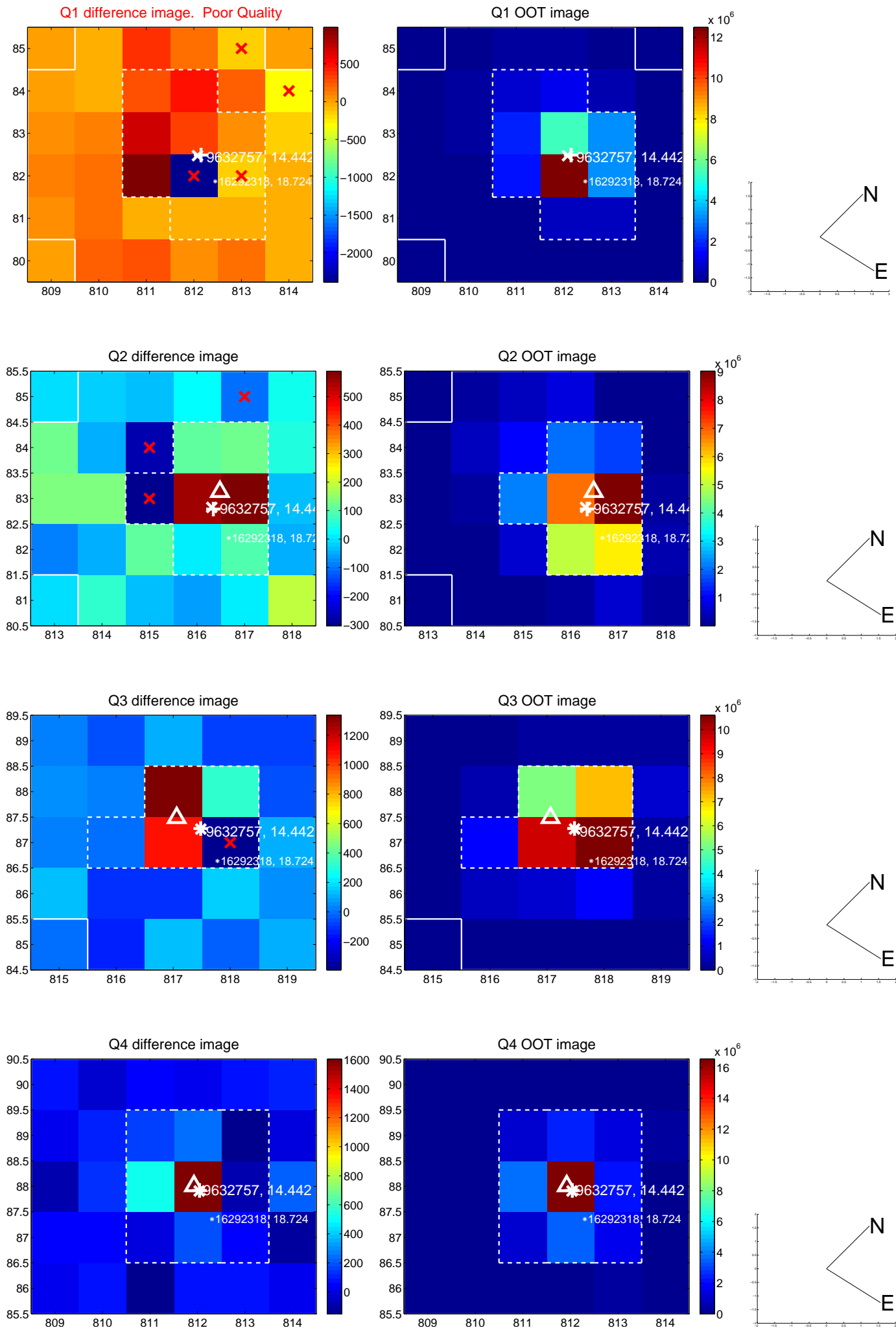
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.269 ± 0.199	1.35	-0.161 ± 0.208	0.215 ± 0.171
PRF-fit source offset from KIC position	0.268 ± 0.185	1.45	-0.090 ± 0.225	0.253 ± 0.175
photometric centroid source offset	1.56 ± 1.65	0.94	-1.15 ± 1.63	1.04 ± 1.66

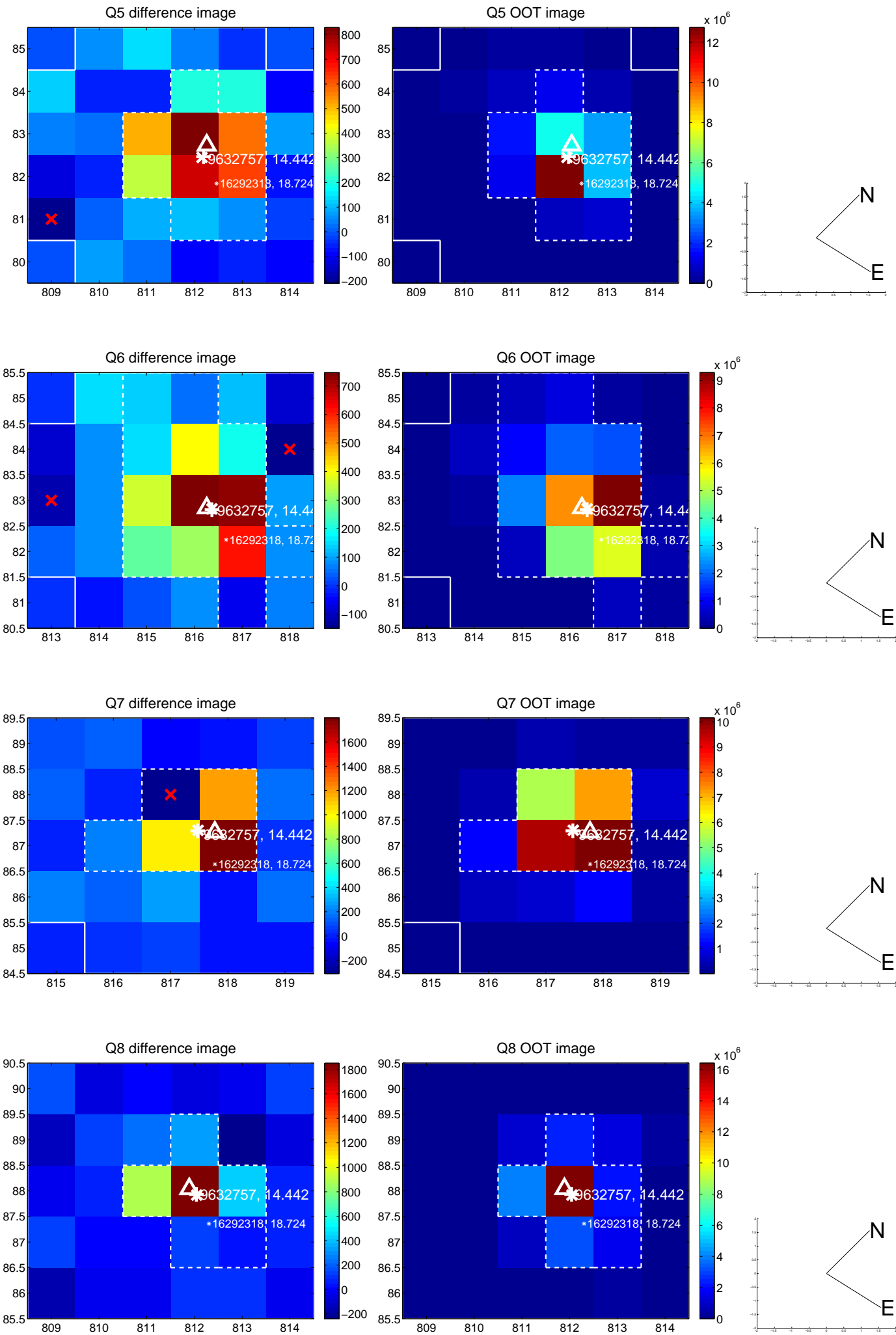


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

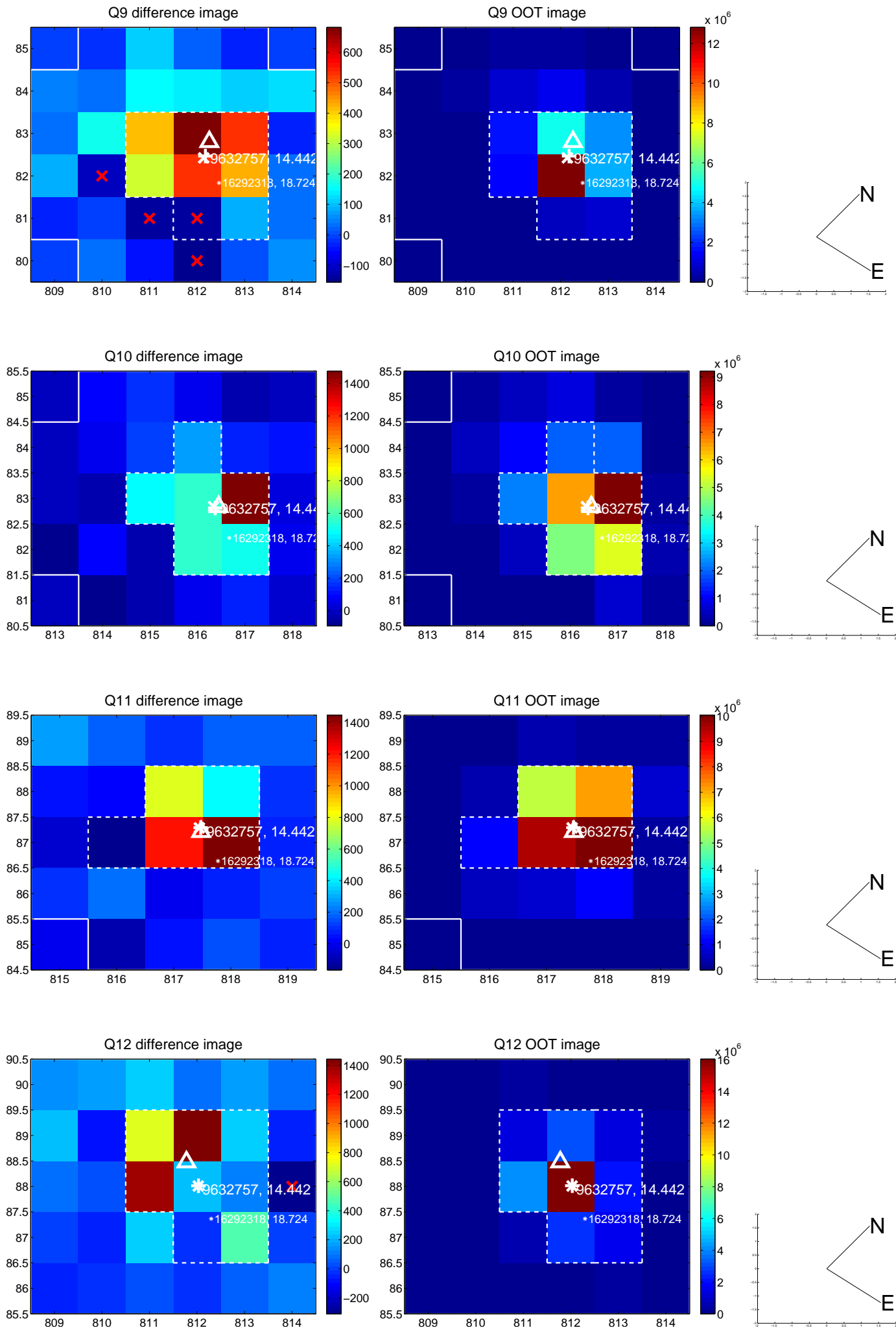
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



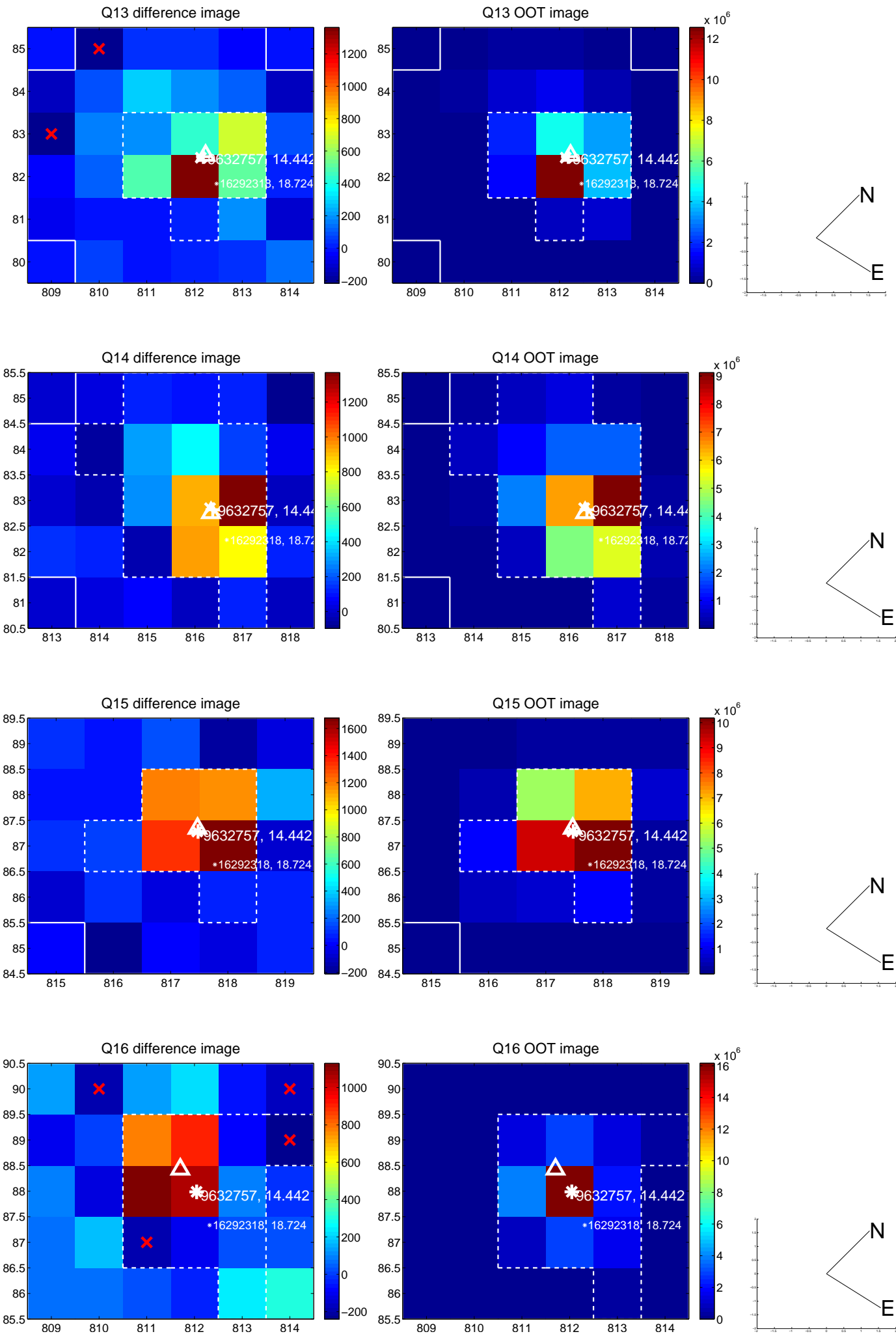
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



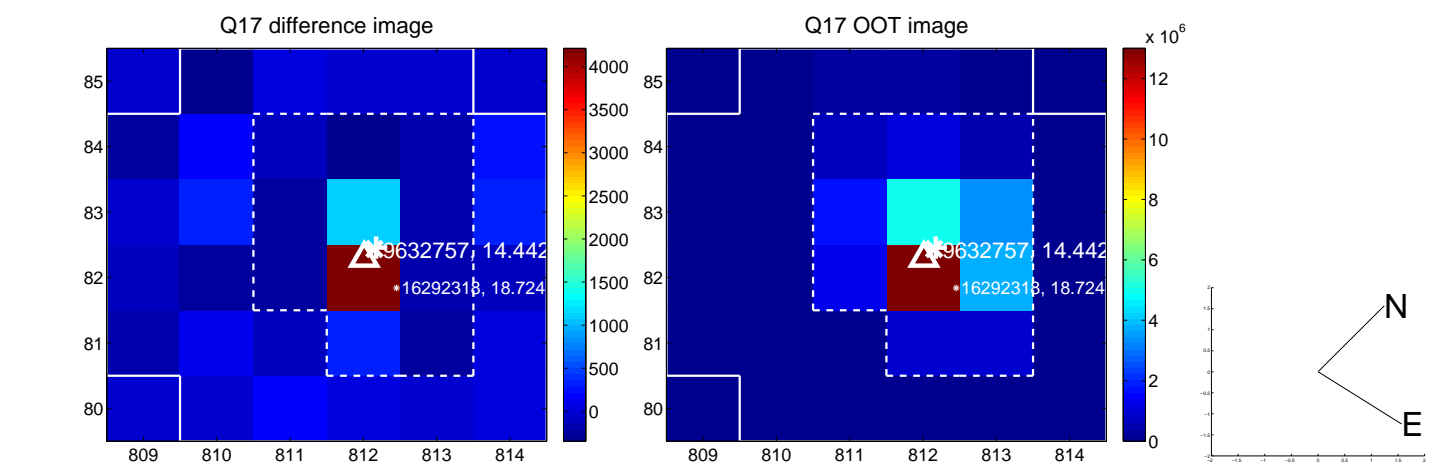
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



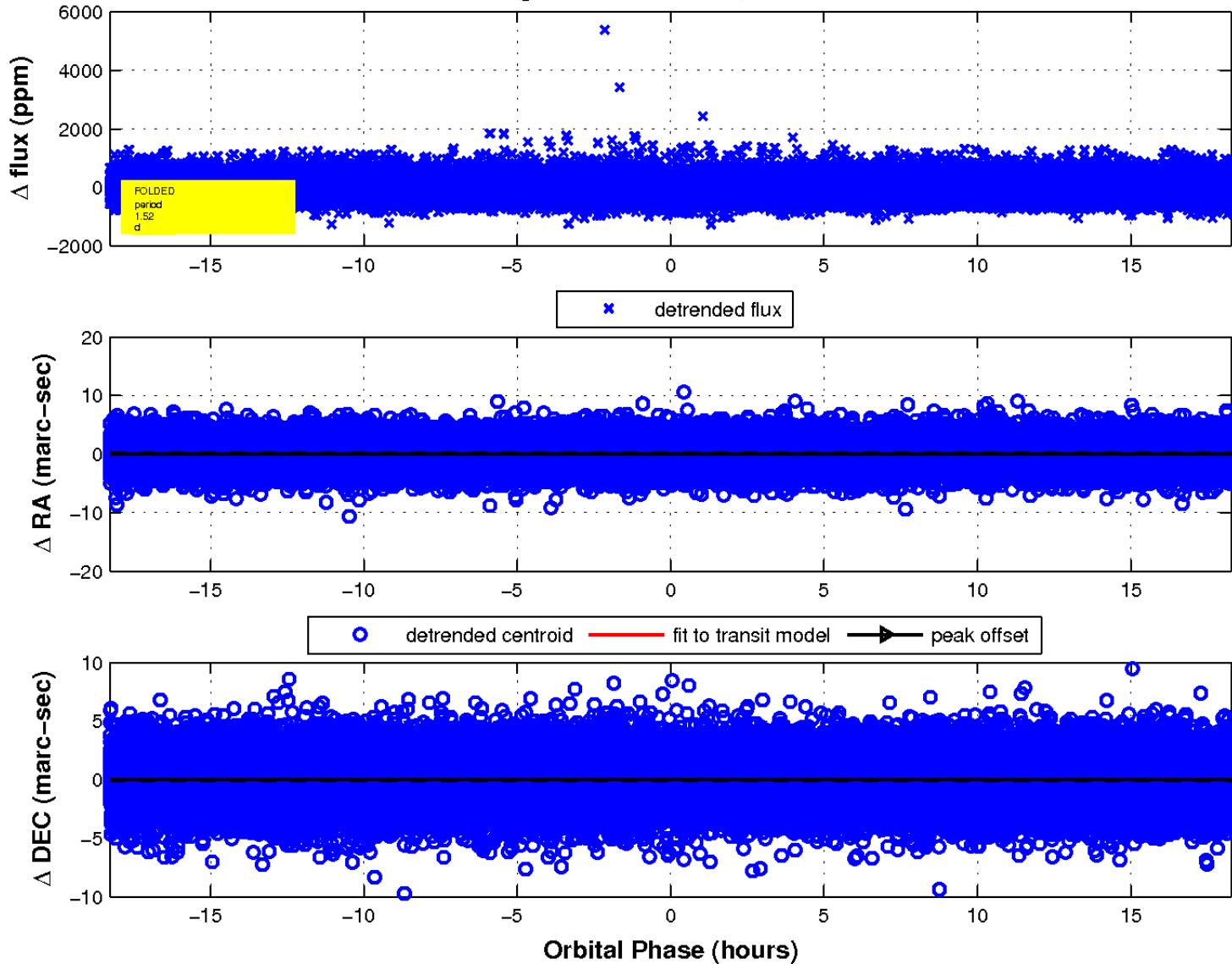
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

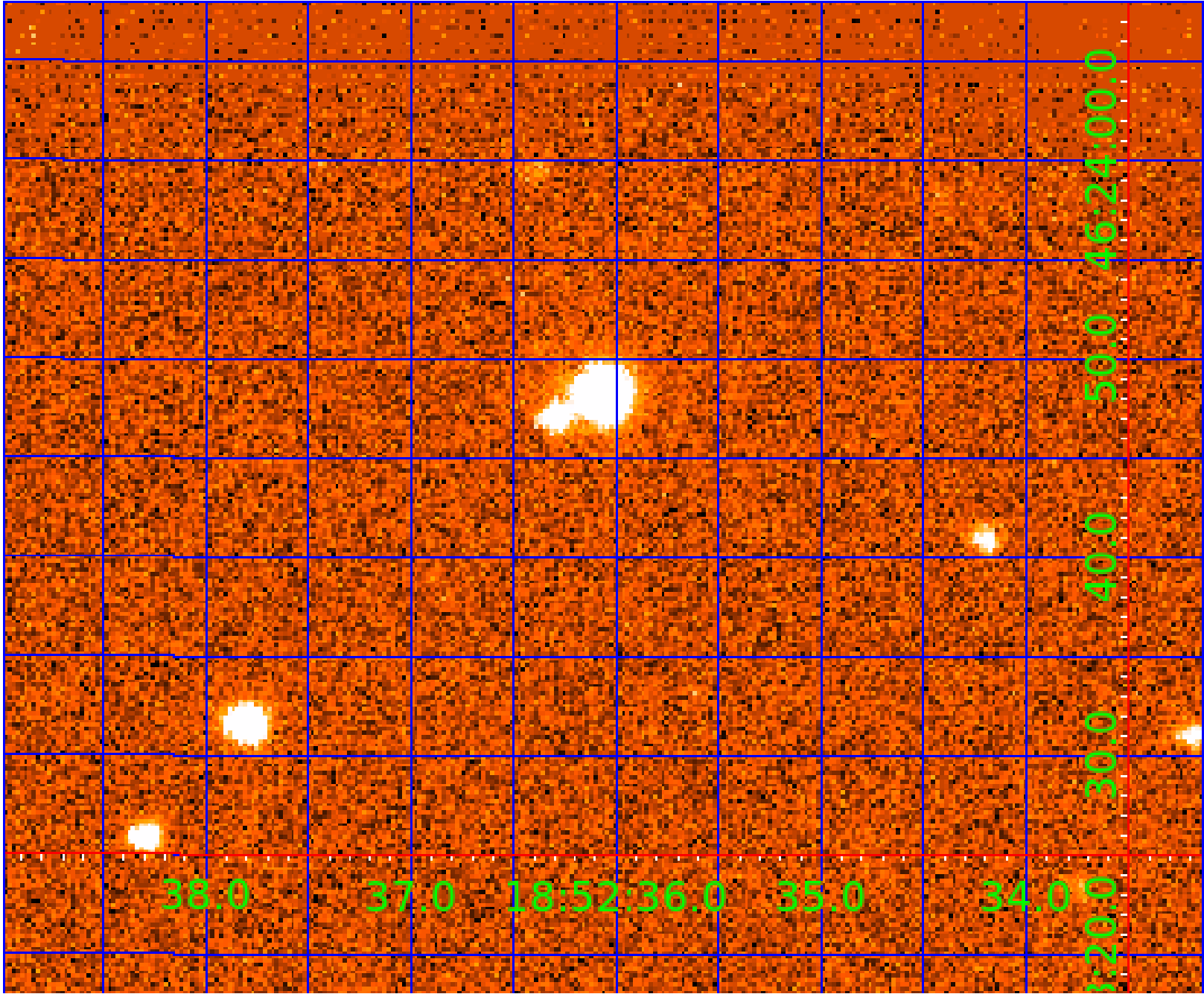


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 009632757

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})
009632757-01	OBS	No	520.744415	347.105527	396.7	15.584	9.1	8.4	0.91	5941	1.89	0.58
009632757-02	OBS	No	1.524061	132.996359	28.4	8.334	7.7	9.5	0.91	5941	0.49	1378.29
009632757-03	OBS	No	78.934060	133.047417	149.7	16.216	9.6	5.5	0.91	5941	1.28	7.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009632757-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009632757-02	OBS	FP	0.00	1	0	0	0	LPP_DV
009632757-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

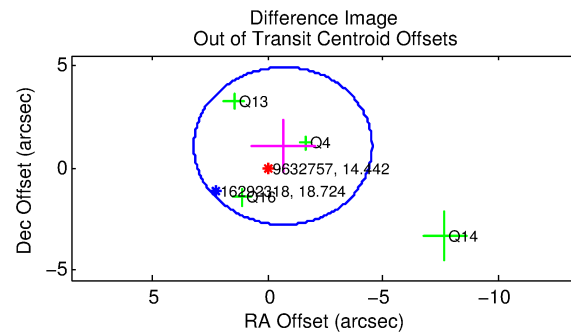
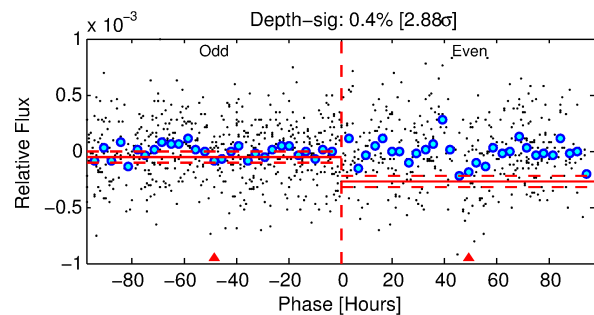
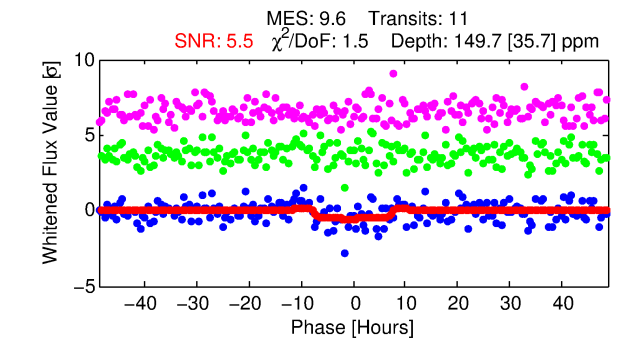
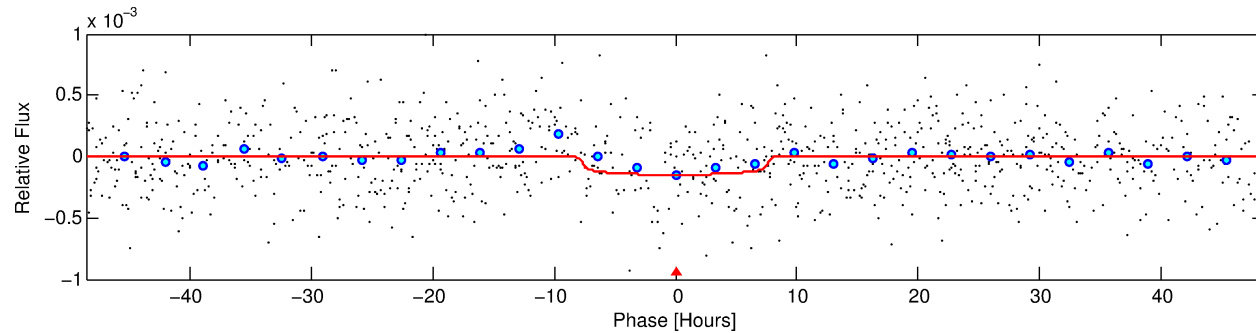
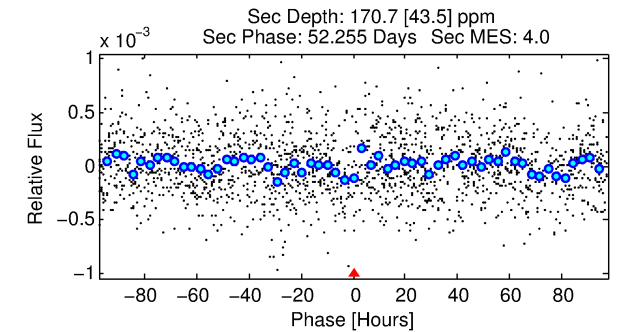
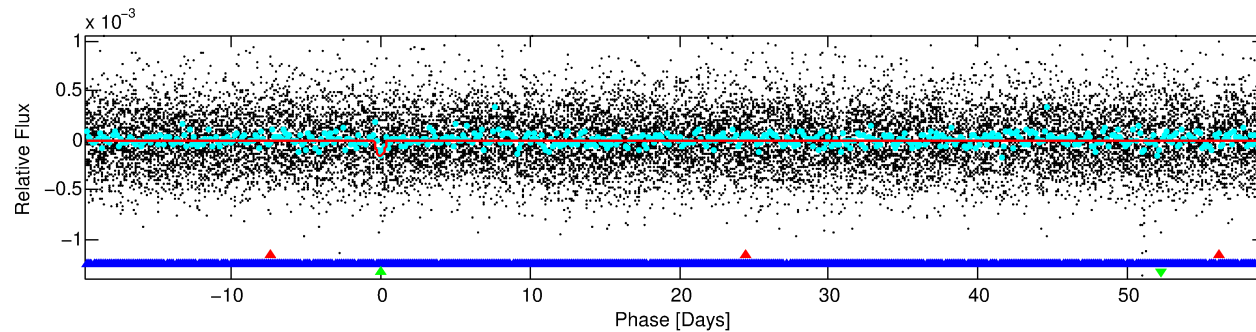
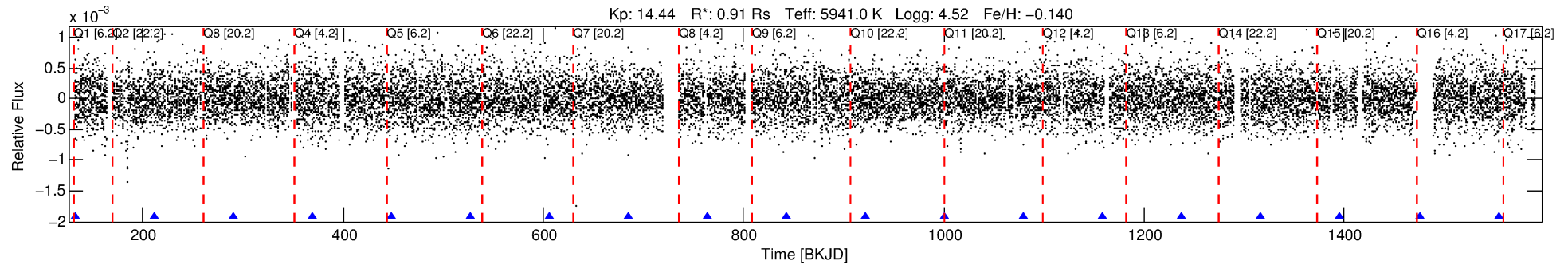
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009632757-03

No Significant Match Found

DV One-Page Summary

KIC: 9632757 Candidate: 3 of 3 Period: 78.934 d



DV Fit Results:

Period = 78.93406 [0.00444] d
Epoch = 133.0474 [0.0450] BKJD
Rp/R* = 0.0129 [0.0045]
a/R* = 19.64 [31.32]
b = 0.86 [0.47]
Seff = 7.14 [3.01]
Teff = 417 [44] K
Rp = 1.28 [0.61] Re
a = 0.3602 [0.0997] AU
Ag = 7437.09 [6282.02] [1.18σ]
Teffp = 5985 [1124] K [4.95σ]

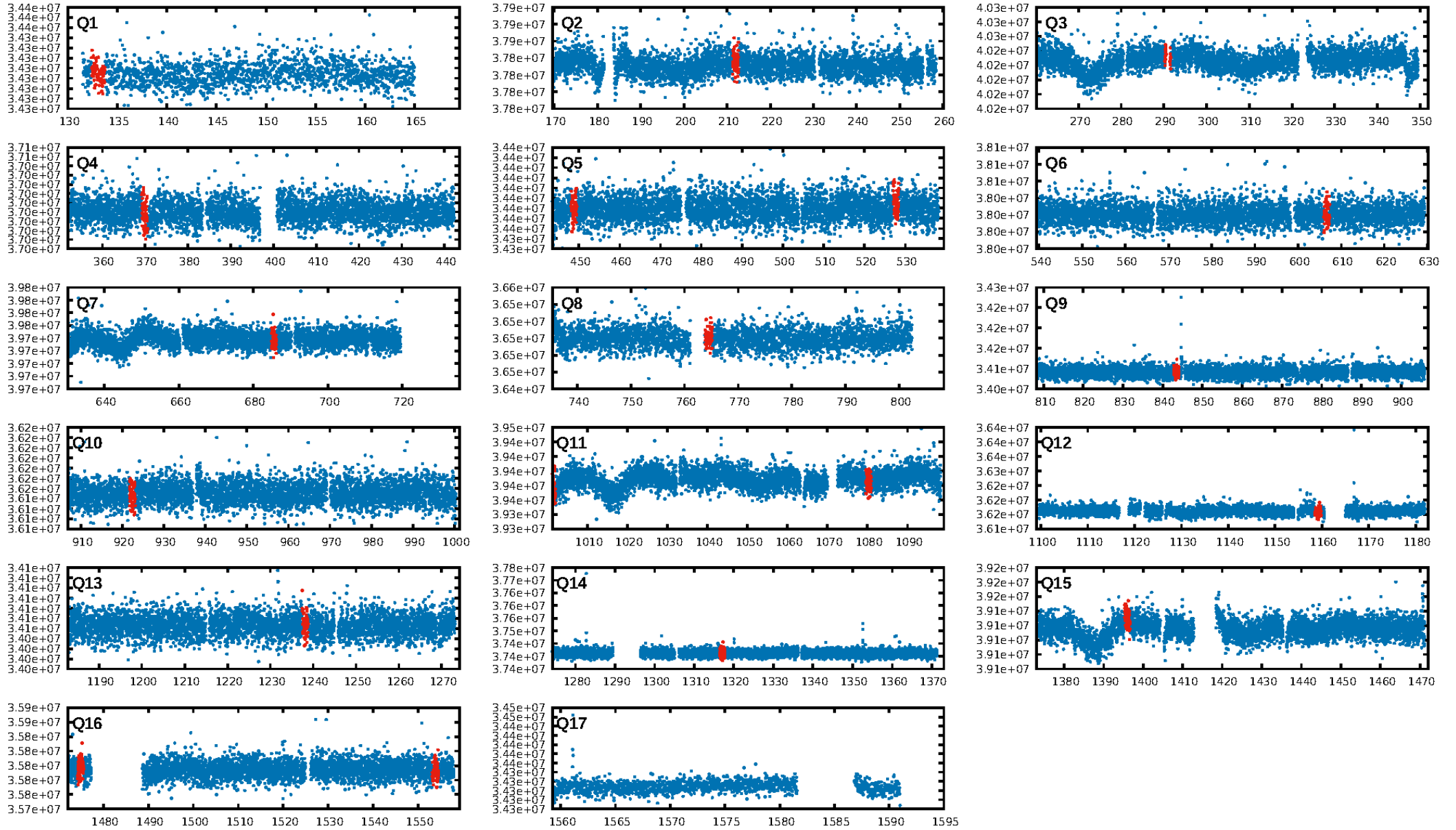
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [101.90σ]
LongPeriod-sig: 100.0% [471.46σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.36e-19
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: -0.4038
Centroid-sig: 0.5%
Centroid-so: 5.020 arcsec [2.71σ]
OotOffset-rm: 1.252 arcsec [0.97σ]
KicOffset-rm: 1.322 arcsec [1.00σ]
OotOffset-st: 1/0/2/1 [4]
KicOffset-st: 1/0/2/1 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.00 [0/13]

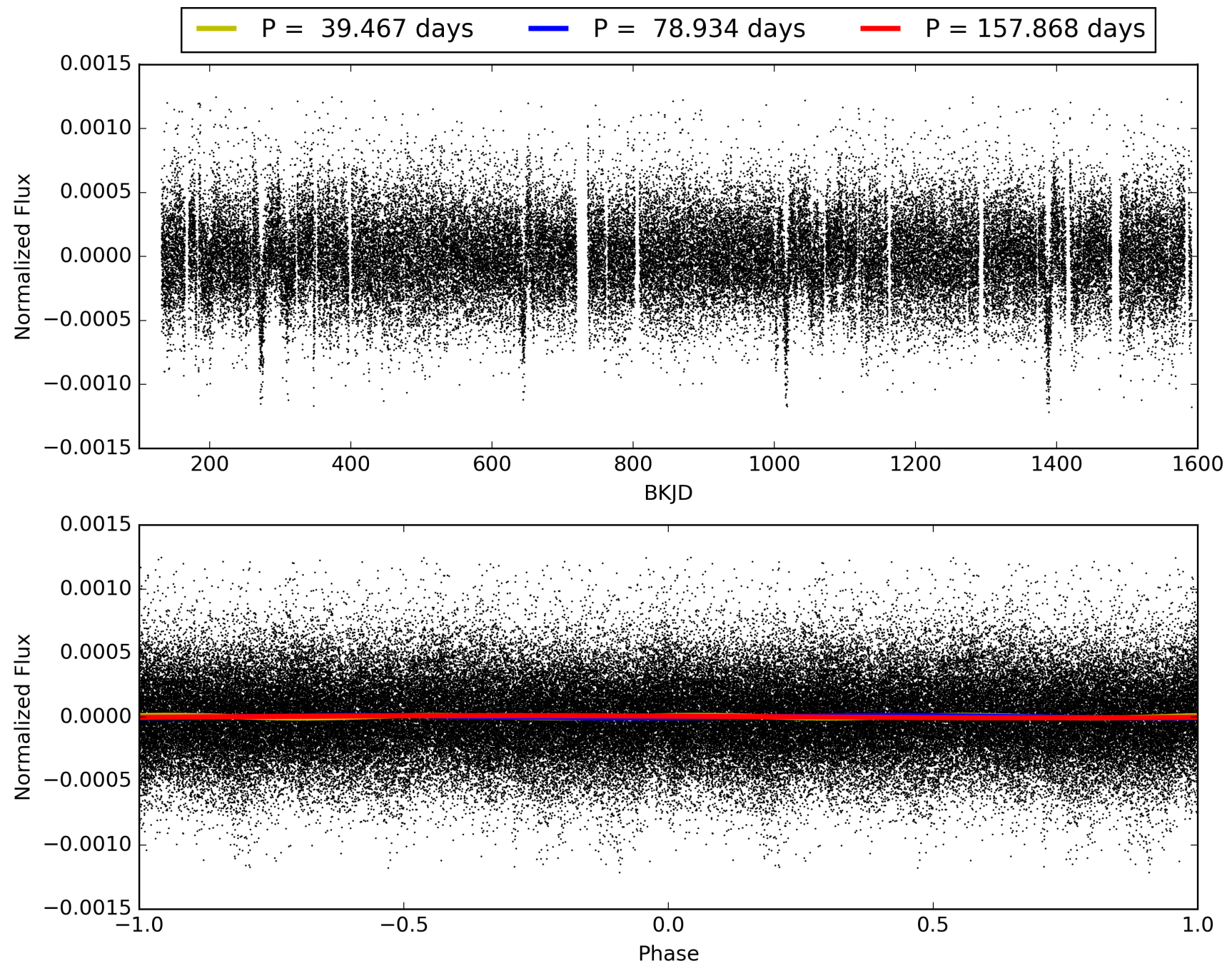
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:07:36 Z

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

TCE 009632757-03, PDC Light Curves

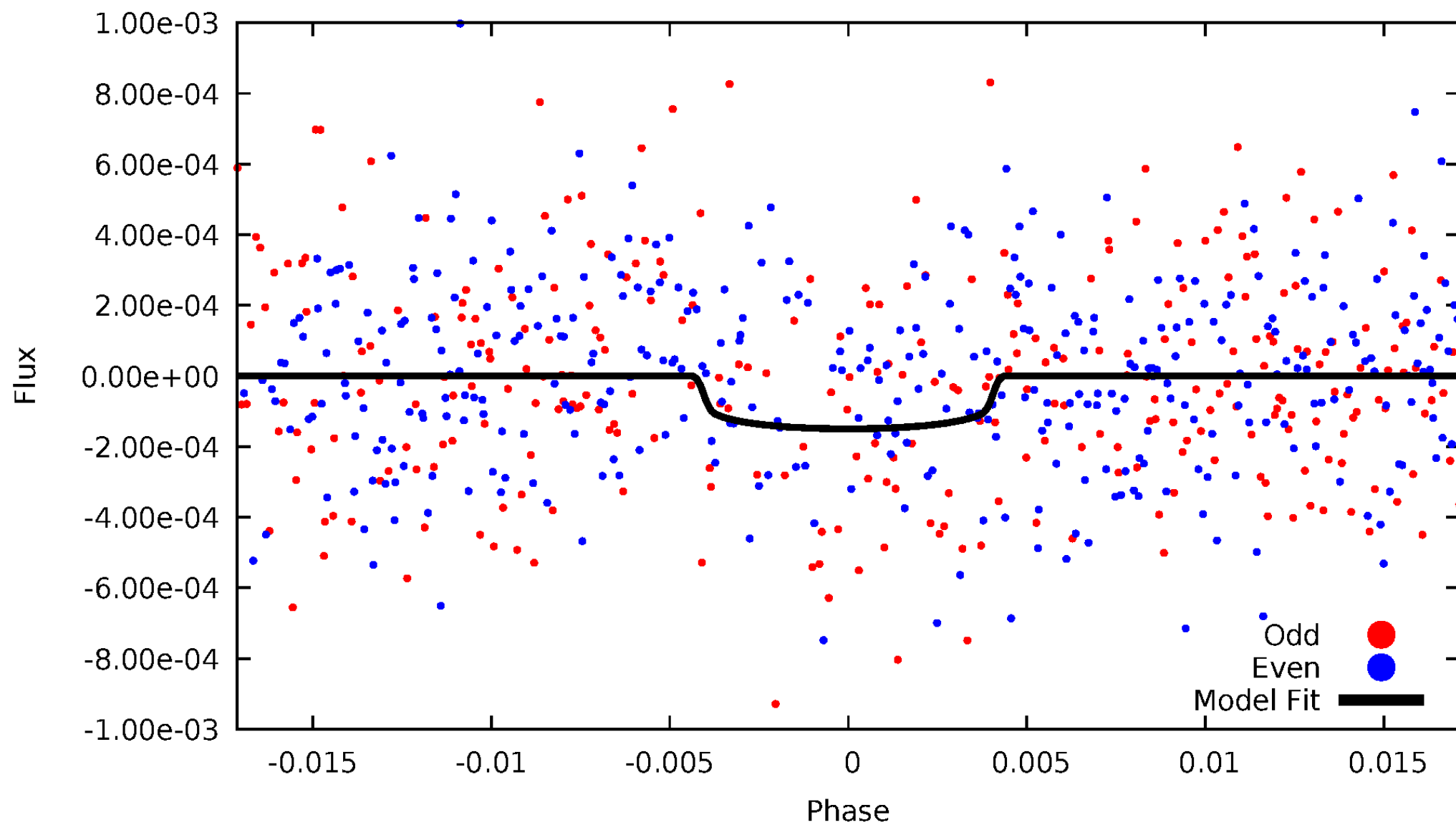


TCE 009632757-03



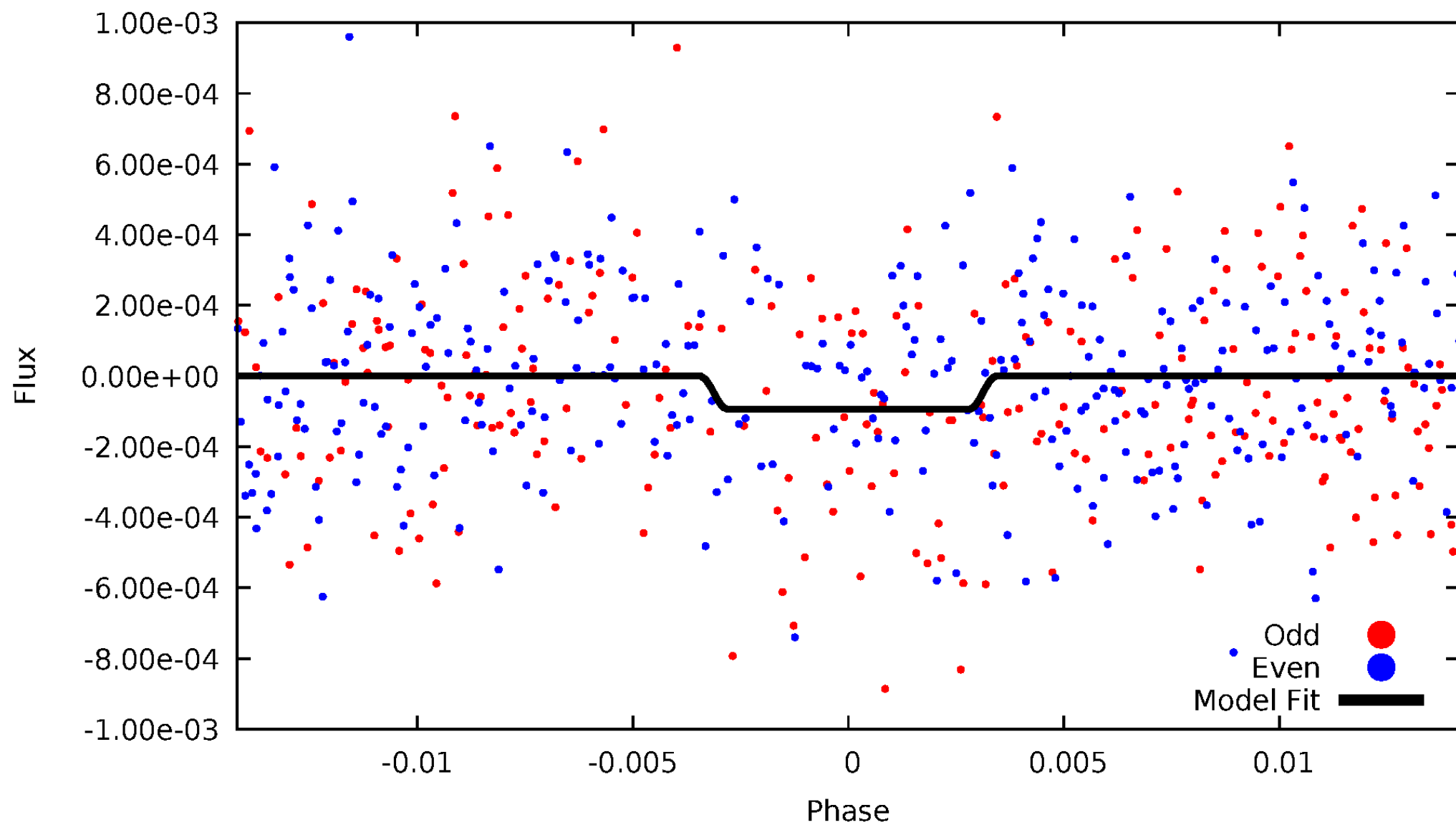
DV Odd/Even

TCE 009632757-03

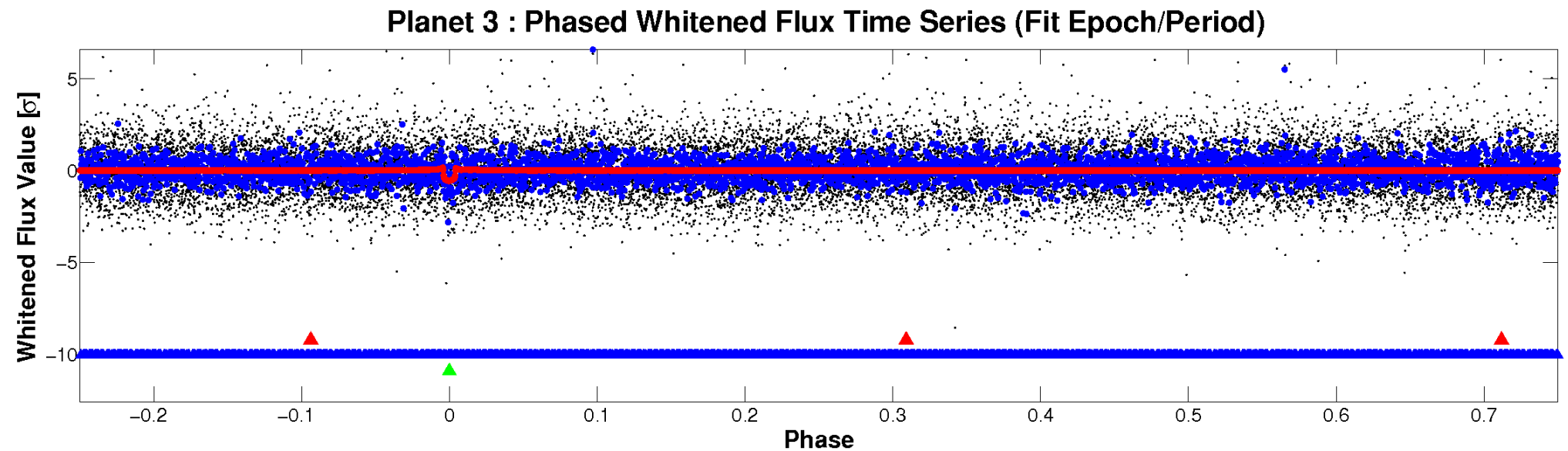
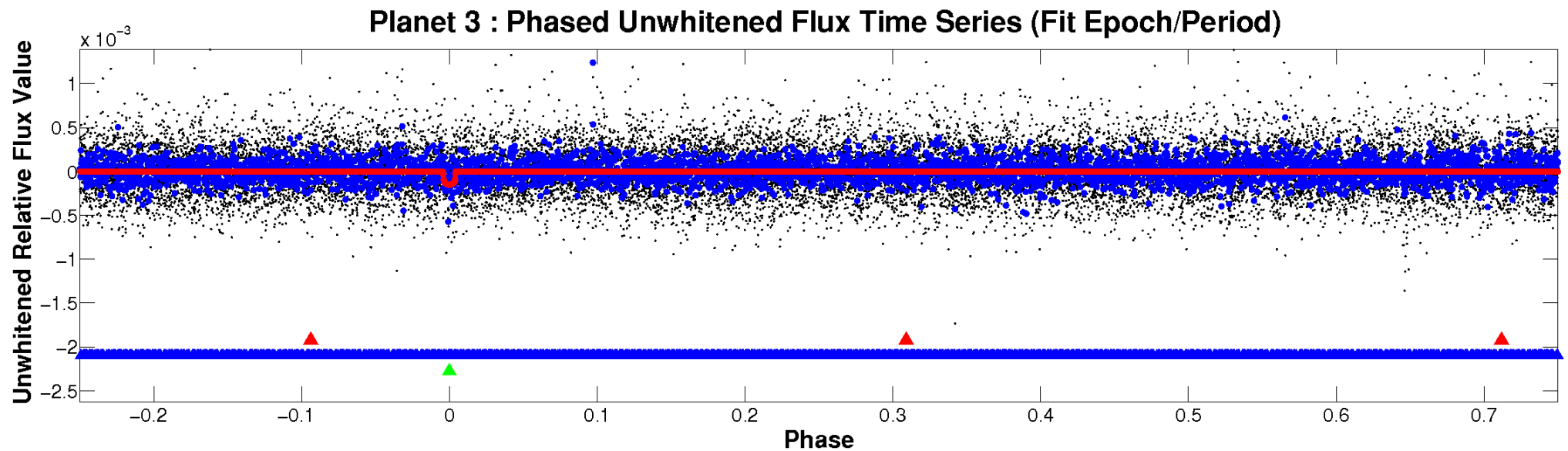


ALT Odd/Even

TCE 009632757-03

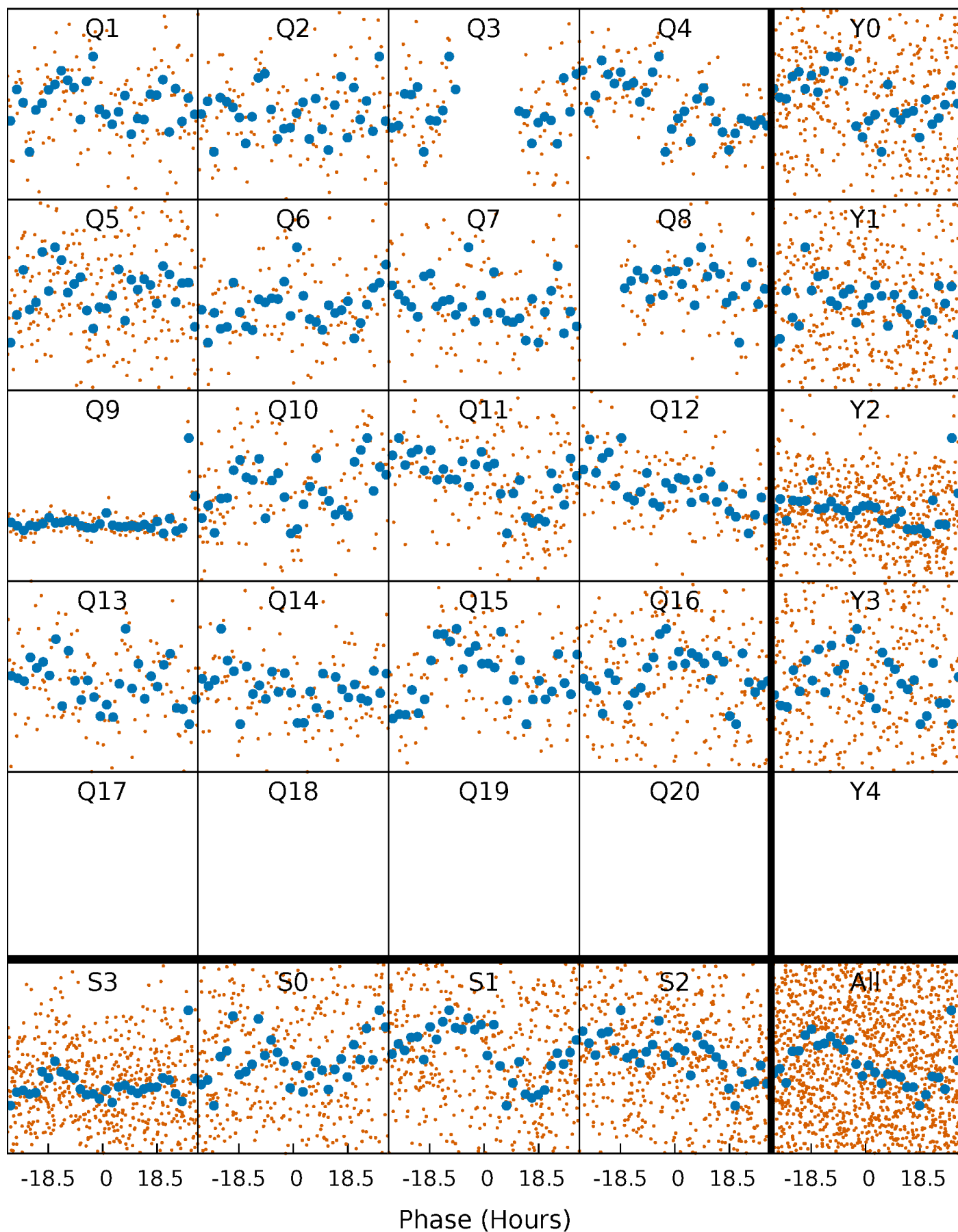


Non-Whitened Vs. Whitened Light Curve



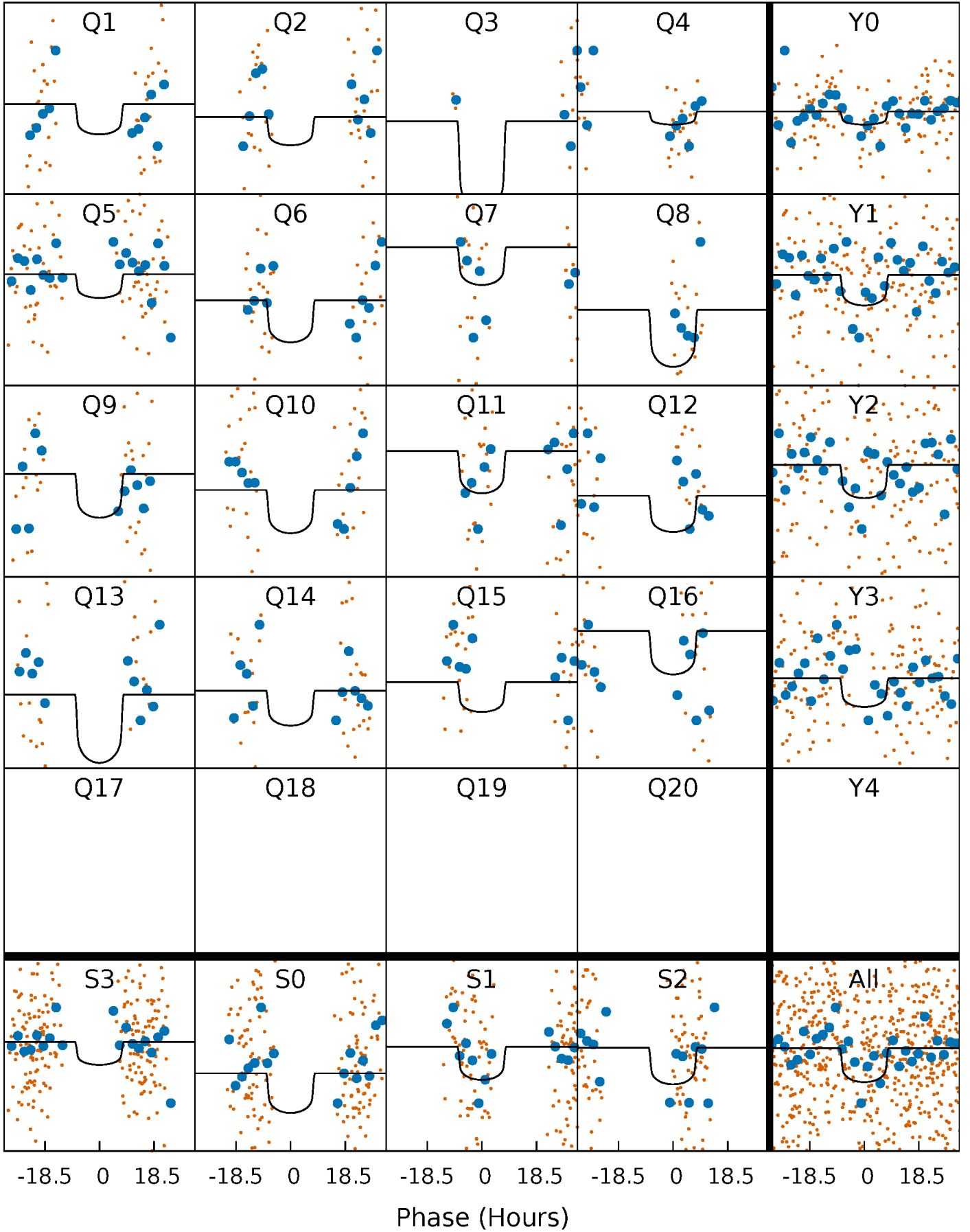
PDC Quarter-Phased Transit Curves

TCE 009632757-03 P= 78.934060 Days $T_0=133.047417$ (BKJD)



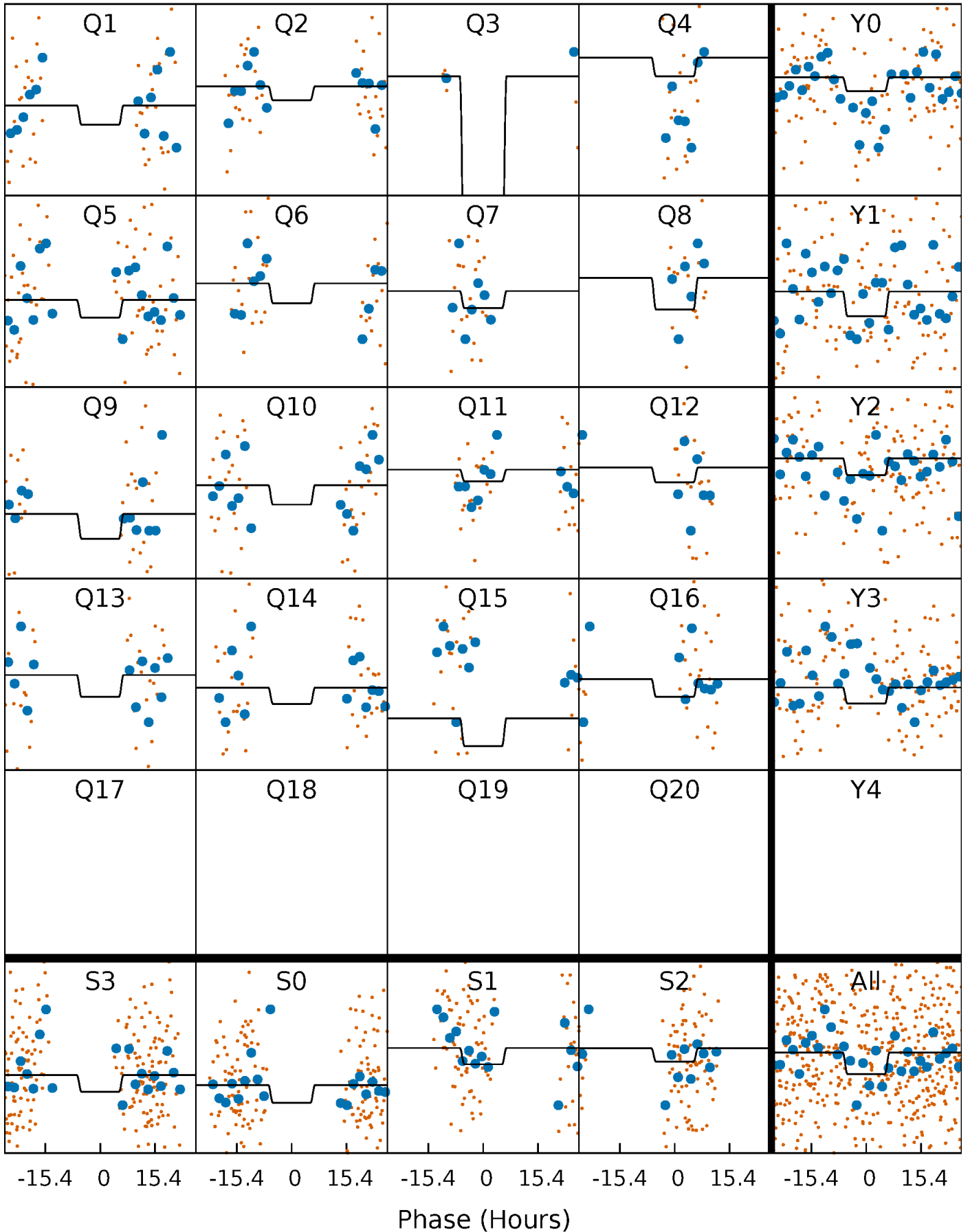
DV Quarter-Phased Transit Curves

TCE 009632757-03 $P = 78.934060$ Days $T_0 = 133.047417$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

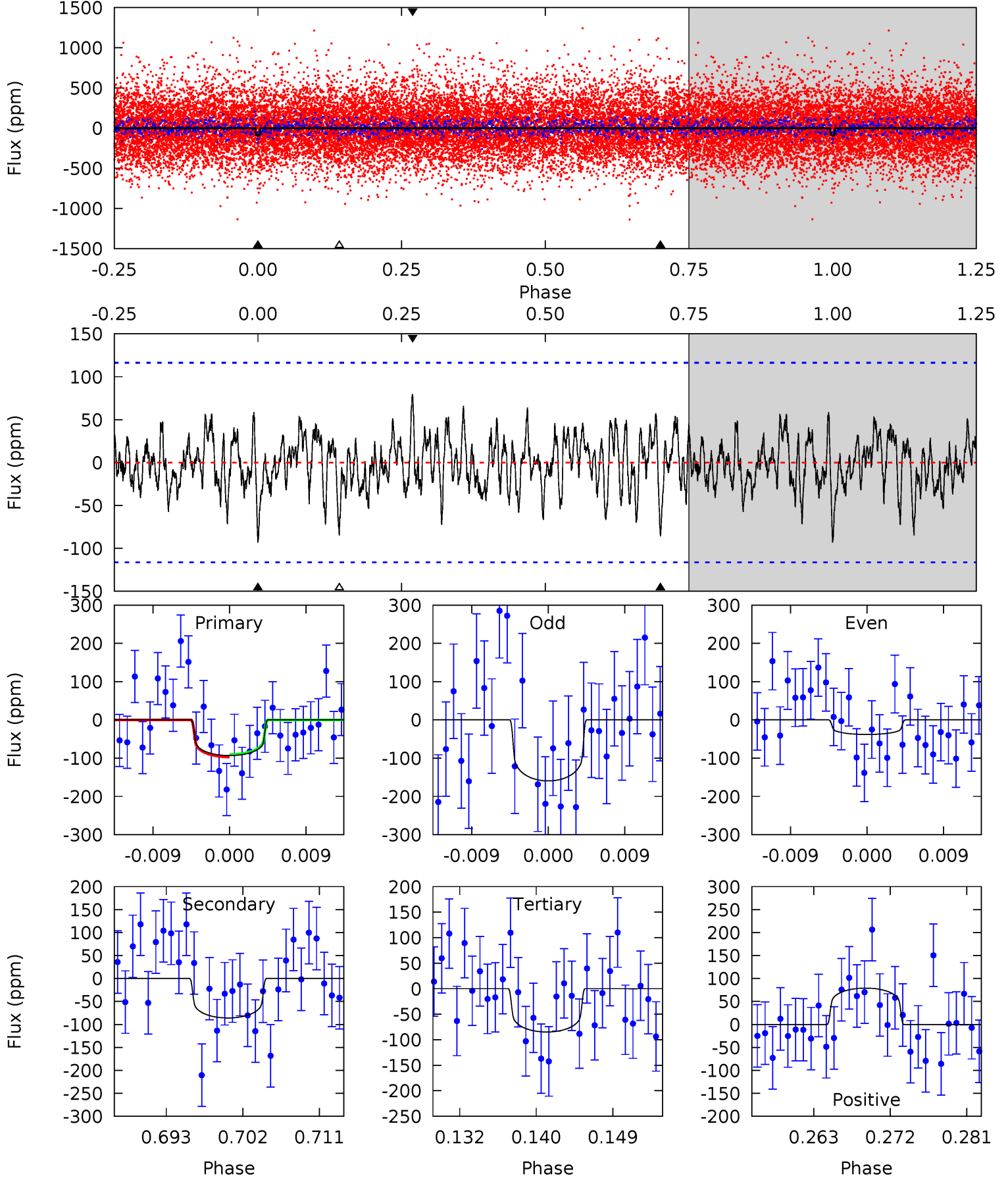
TCE 009632757-03 P= 78.932541 Days $T_0=133.108963$ (BKJD)



DV Model-Shift Uniqueness Test

009632757-03, P = 78.934060 Days, E = 54.113357 Days

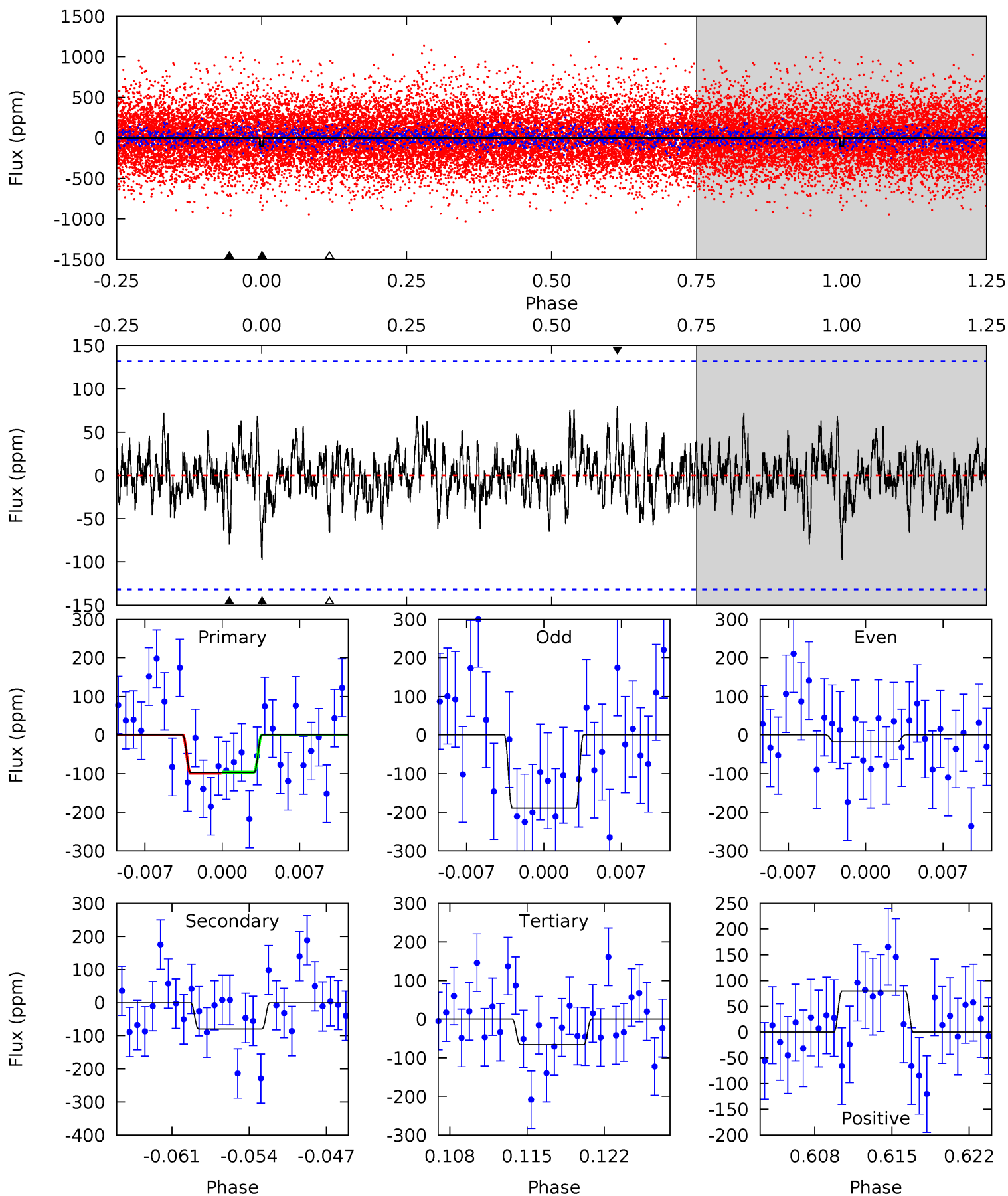
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.05	3.73	3.69	3.44	5.05	2.62	1.16	0.36	0.61	0.05	0.30	2.63	0.54	0.46	0.13



Alt Model-Shift Uniqueness Test

009632757-03, P = 78.932541 Days, E = 54.176422 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.75	3.06	2.53	3.06	5.10	2.71	0.91	1.22	0.69	0.53	-0.00	3.29	0.56	0.45	0.05



Stellar Parameters For KIC 009632757

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5941^{+160}_{-178}	$4.519^{+0.039}_{-0.221}$	$-0.140^{+0.300}_{-0.300}$	$0.911^{+0.299}_{-0.075}$	$1.001^{+0.122}_{-0.122}$	$1.865^{+0.404}_{-1.020}$
	+3%/-3%	+1%/-5%	+214%/-214%	+33%/-8%	+12%/-12%	+22%/-55%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009632757-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-86 ± 23	$1.37^{+0.50}_{-0.50}$	598^{+43}_{-28}	5062^{+1149}_{-604}	3174^{+4779}_{-1555}
Alt.	-79 ± 26	$1.03^{+0.53}_{-0.46}$	599^{+42}_{-28}	5629^{+2018}_{-925}	4909^{+11387}_{-2842}

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

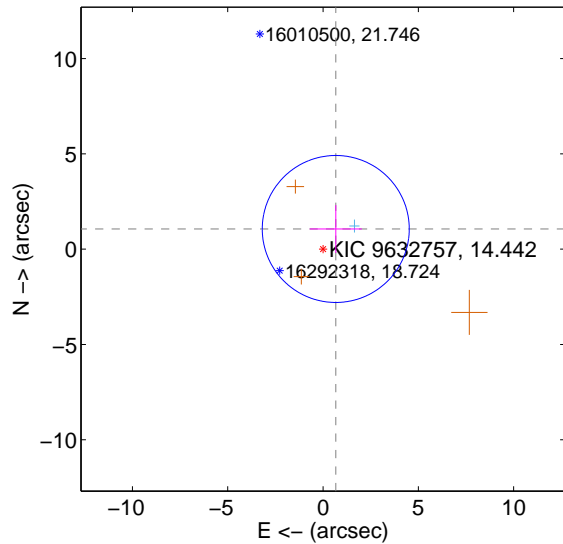
Supplemental centroid analysis for 009632757-03. Kepler magnitude: 14.44. Transit SNR 5.47

There are 1 quarters with good PRF difference image offsets

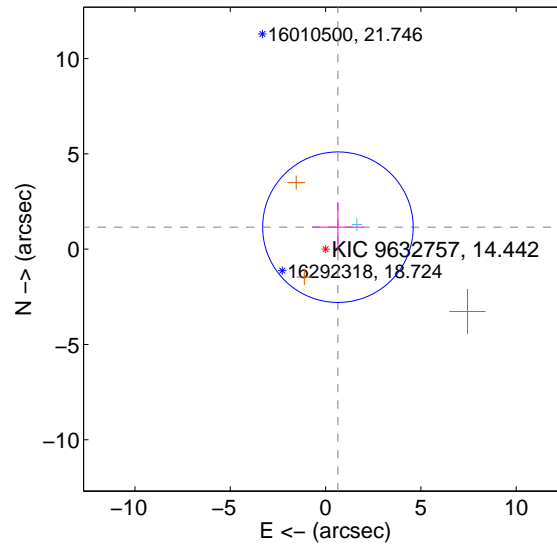
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.252 ± 1.285	0.97	-0.668 ± 1.365	1.060 ± 1.252
PRF-fit source offset from KIC position	1.322 ± 1.316	1.00	-0.647 ± 1.342	1.153 ± 1.308
photometric centroid source offset	5.02 ± 1.85	2.71	4.97 ± 1.85	-0.68 ± 1.79

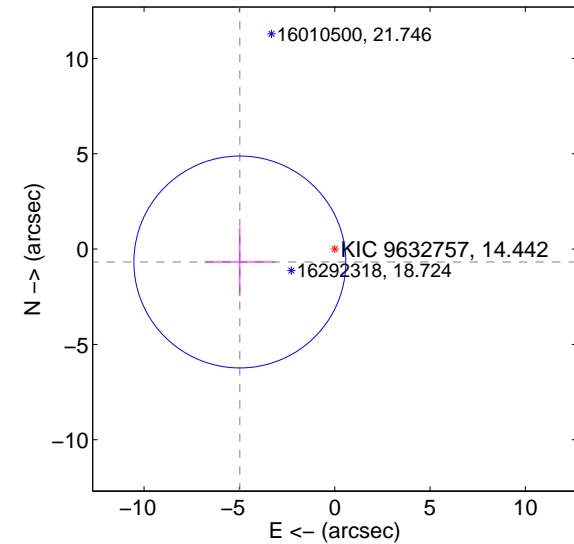
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

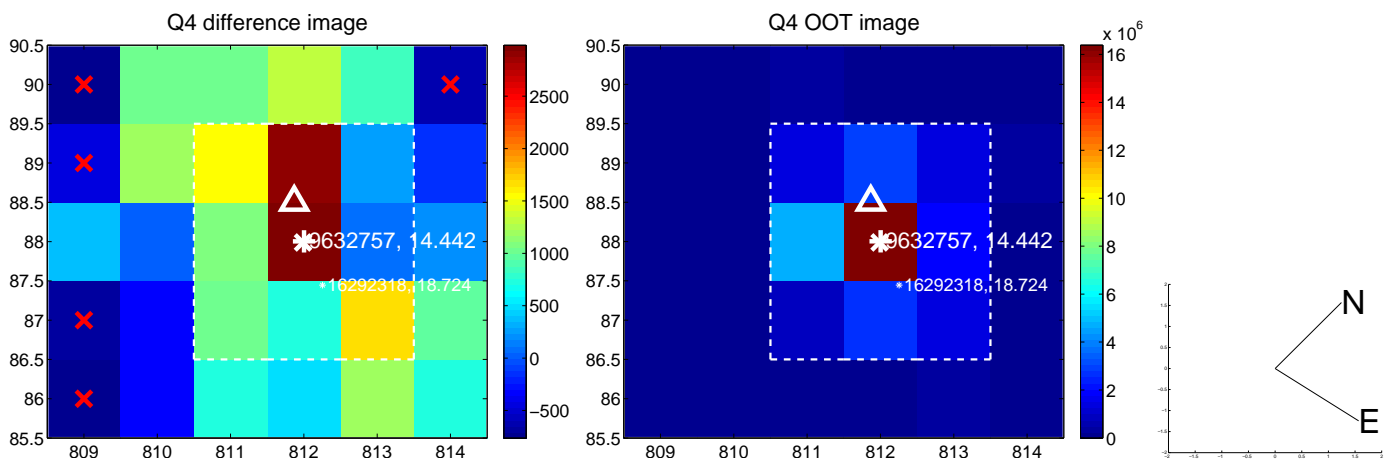
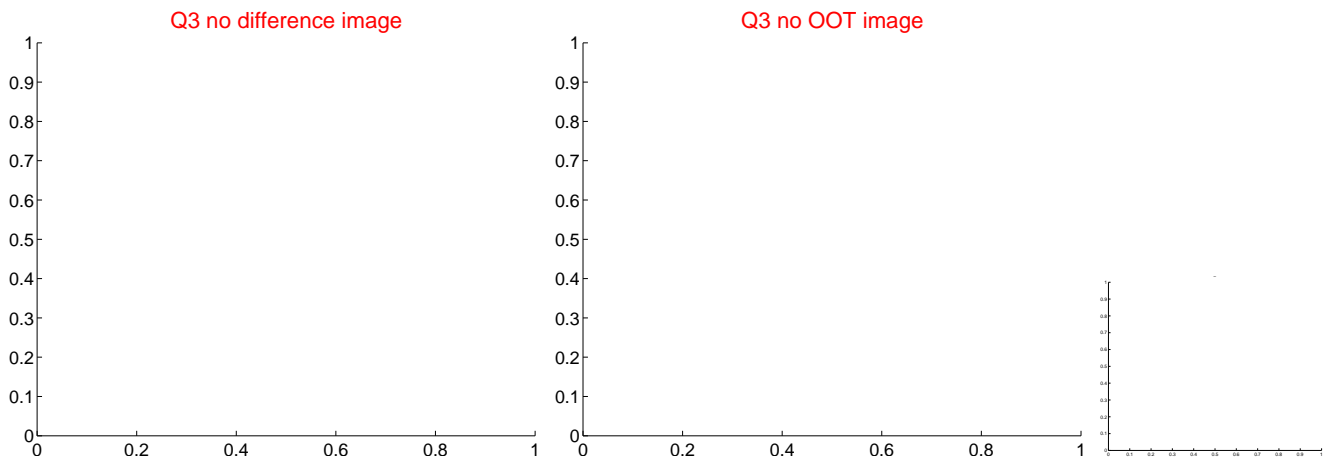
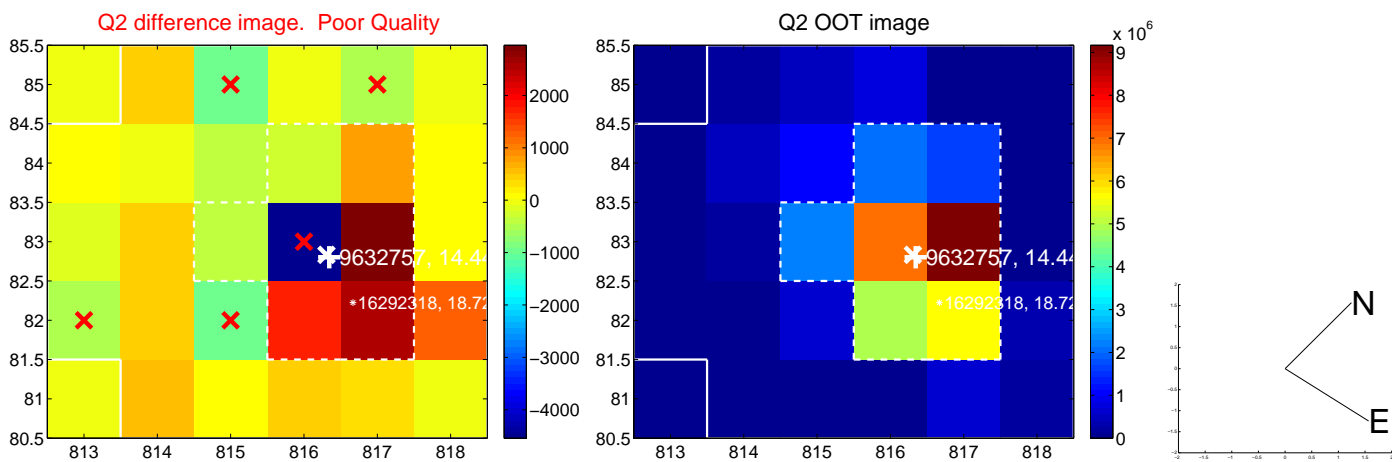
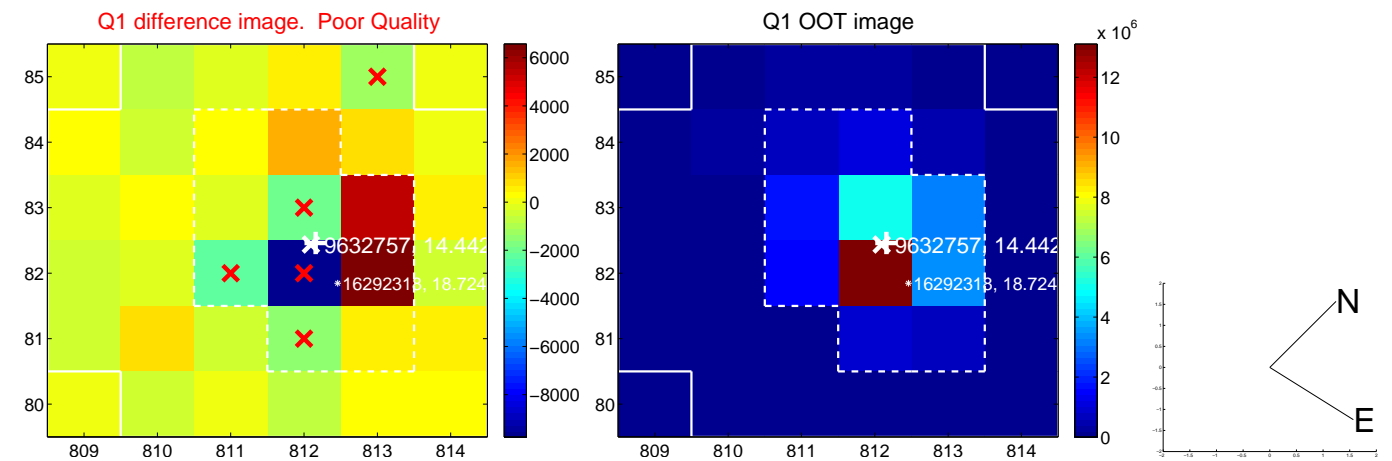


offset from photometric centroids

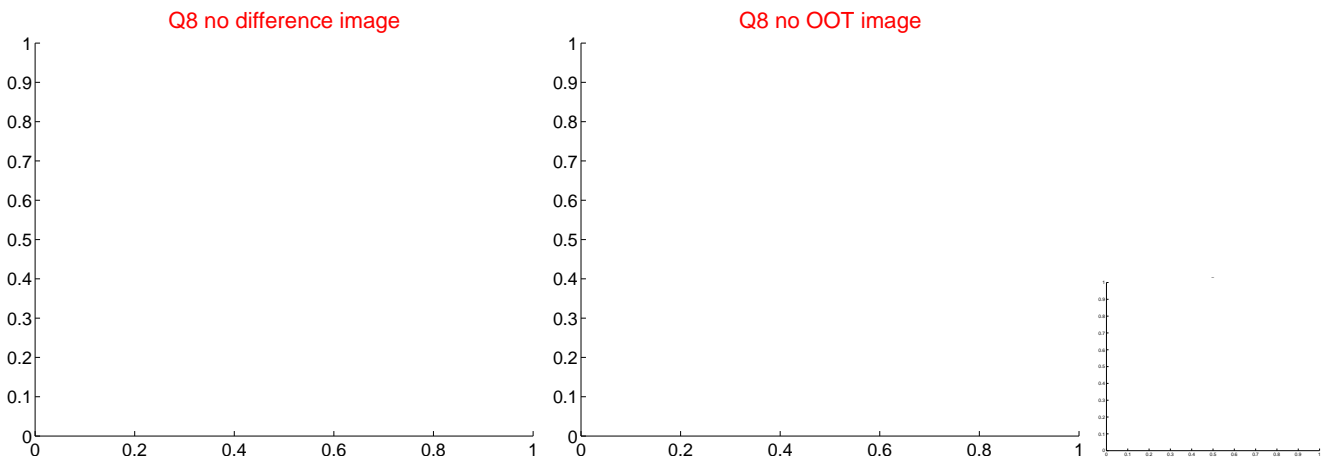
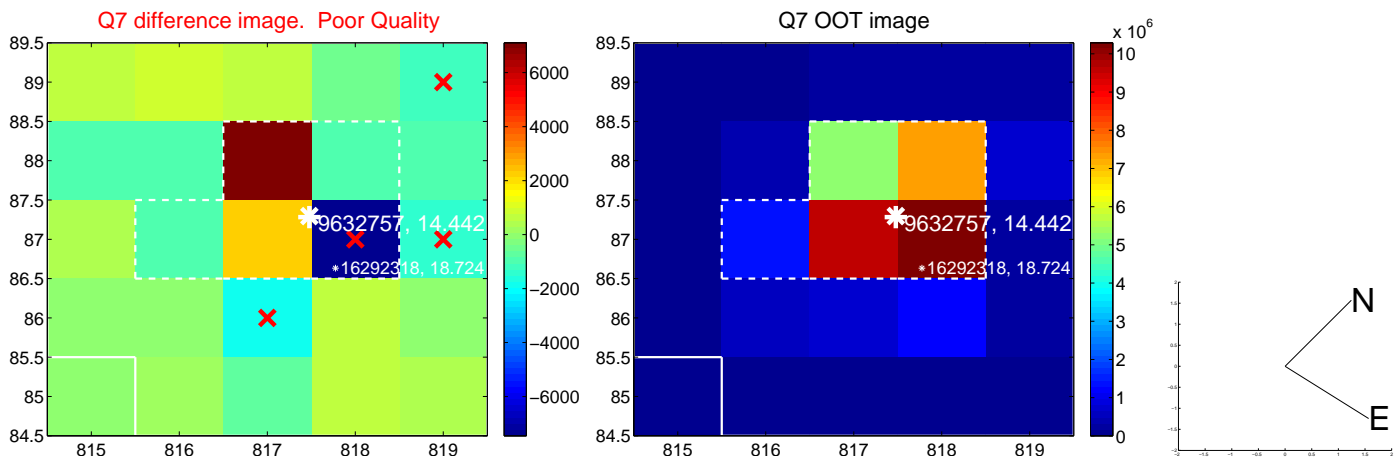
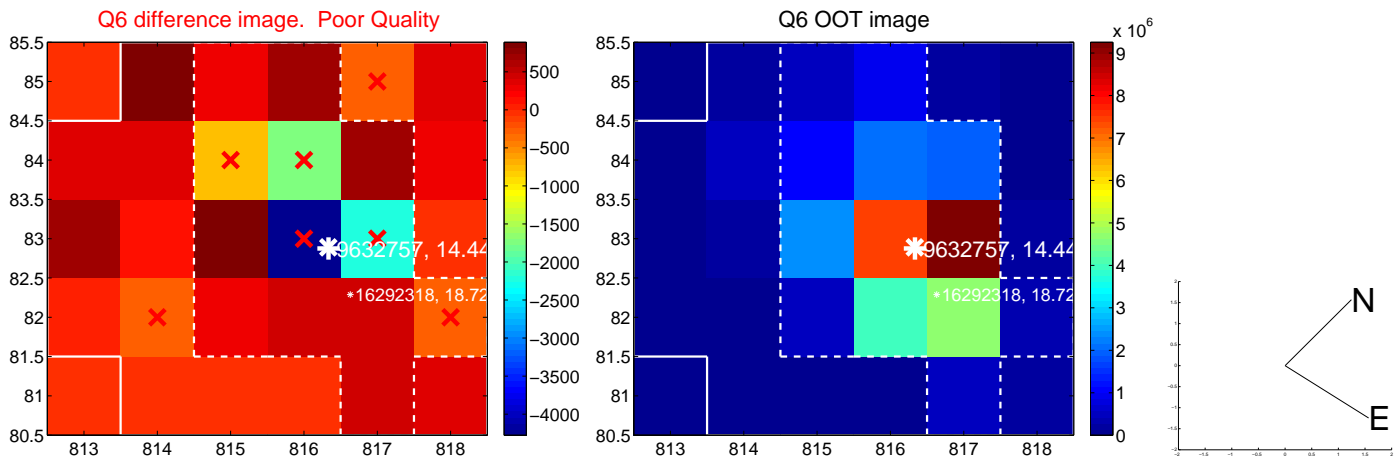
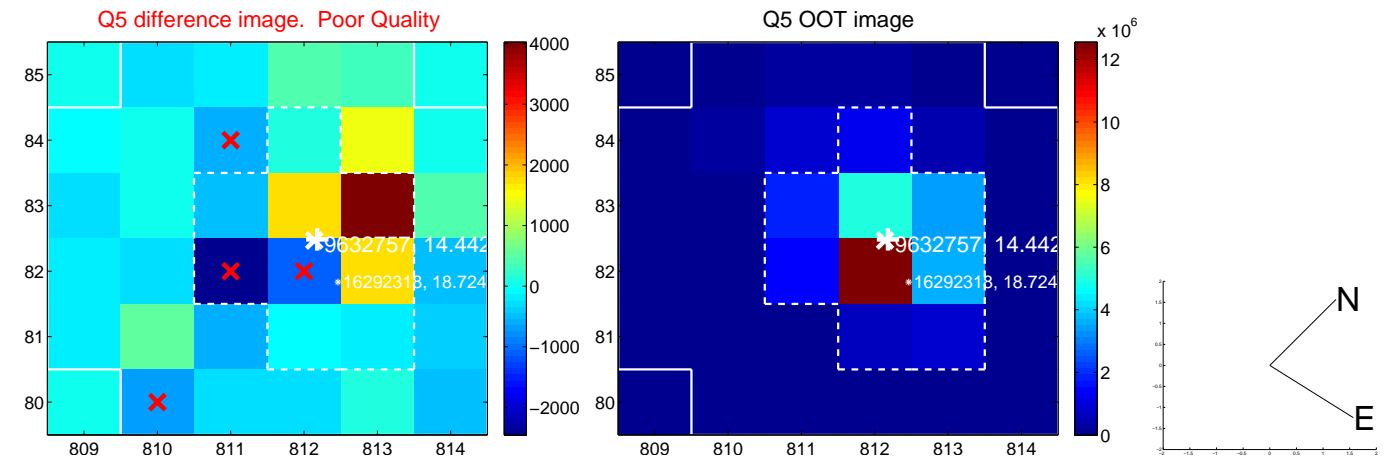


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

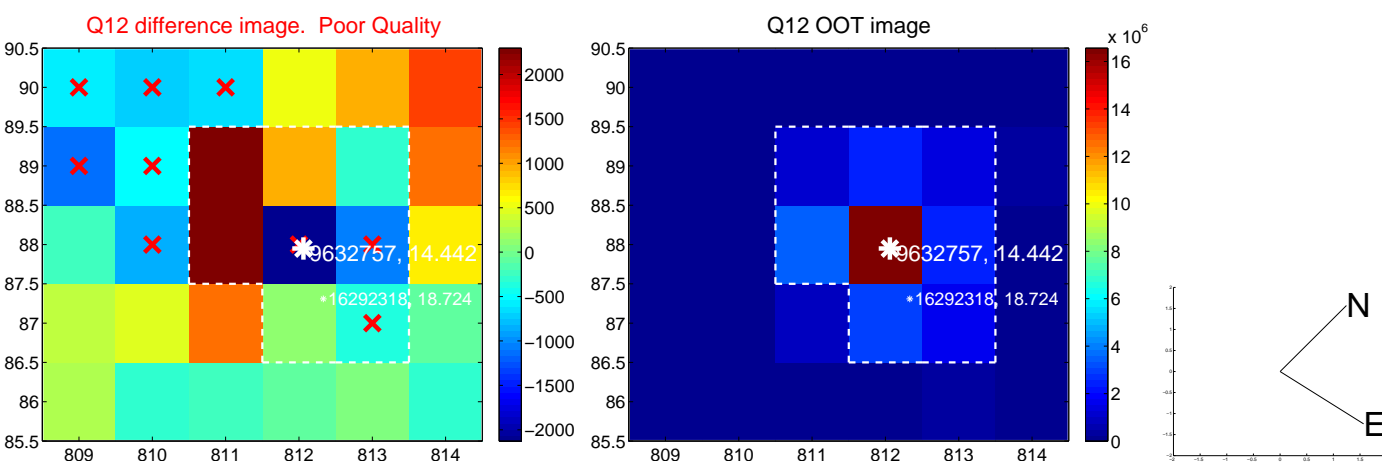
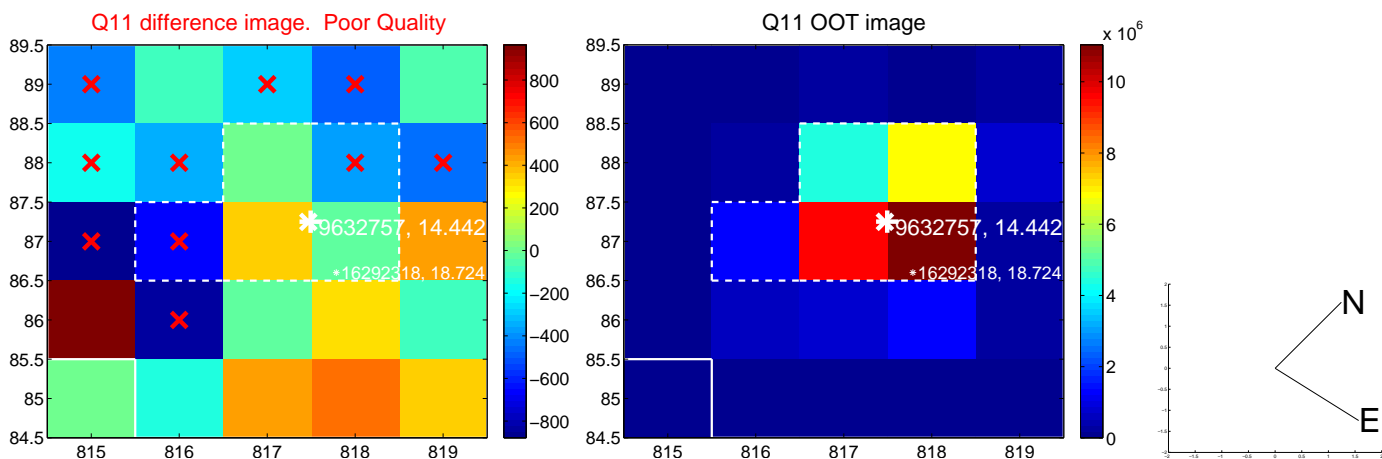
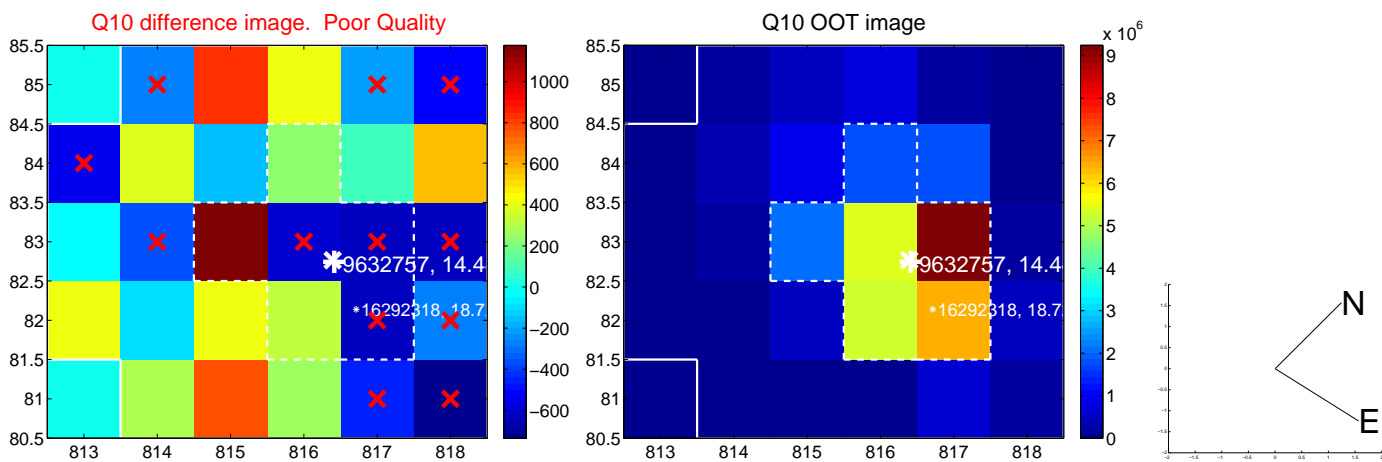
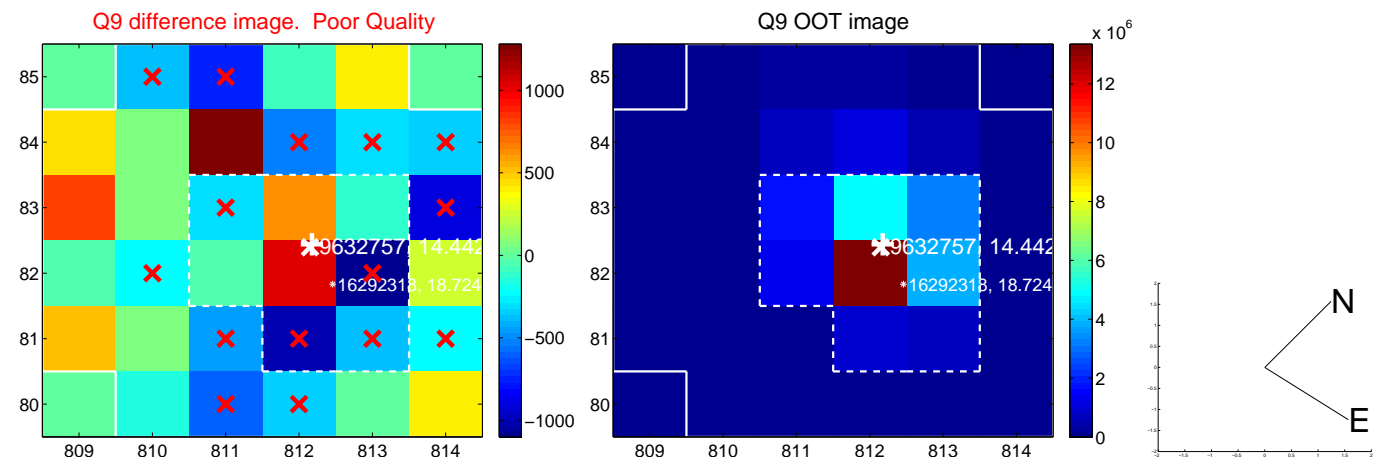
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



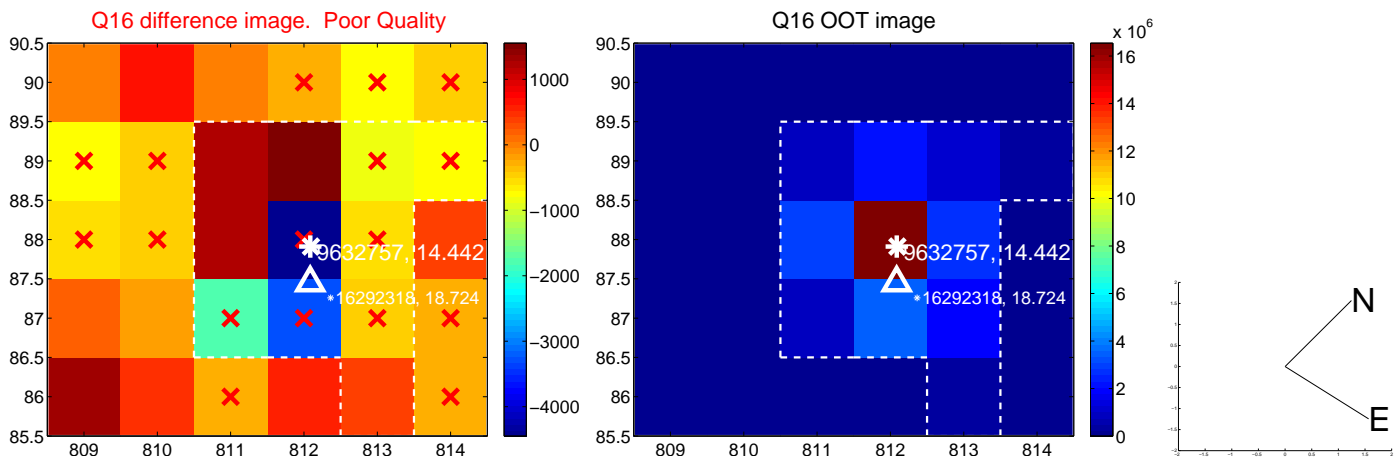
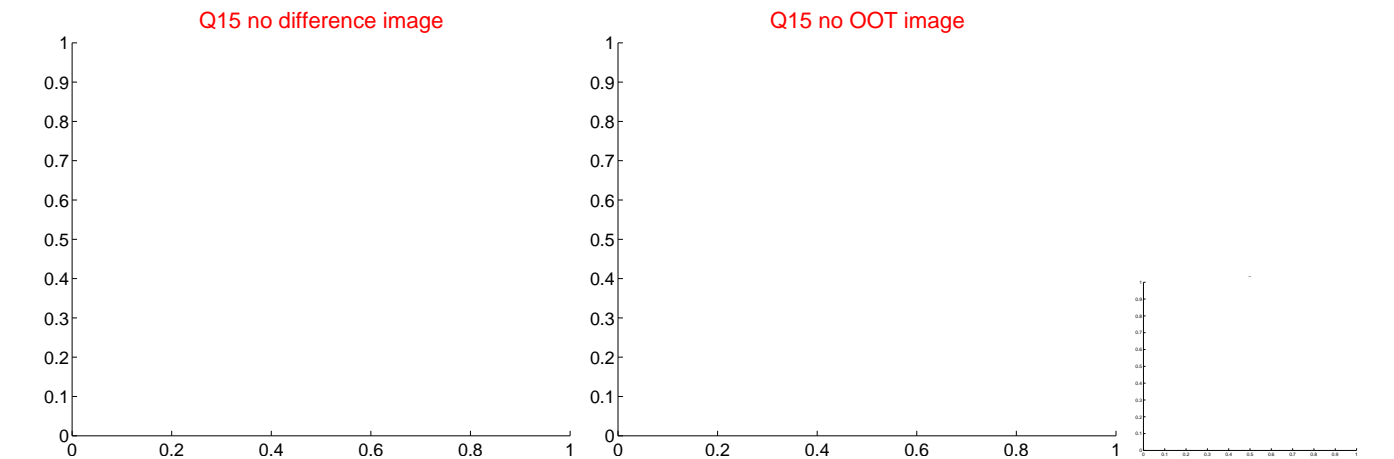
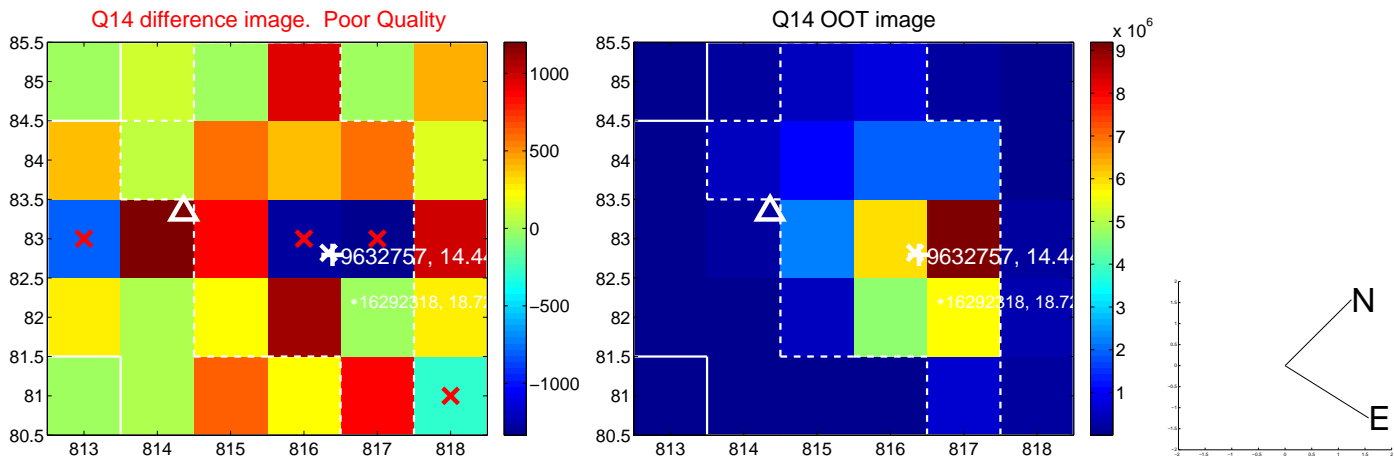
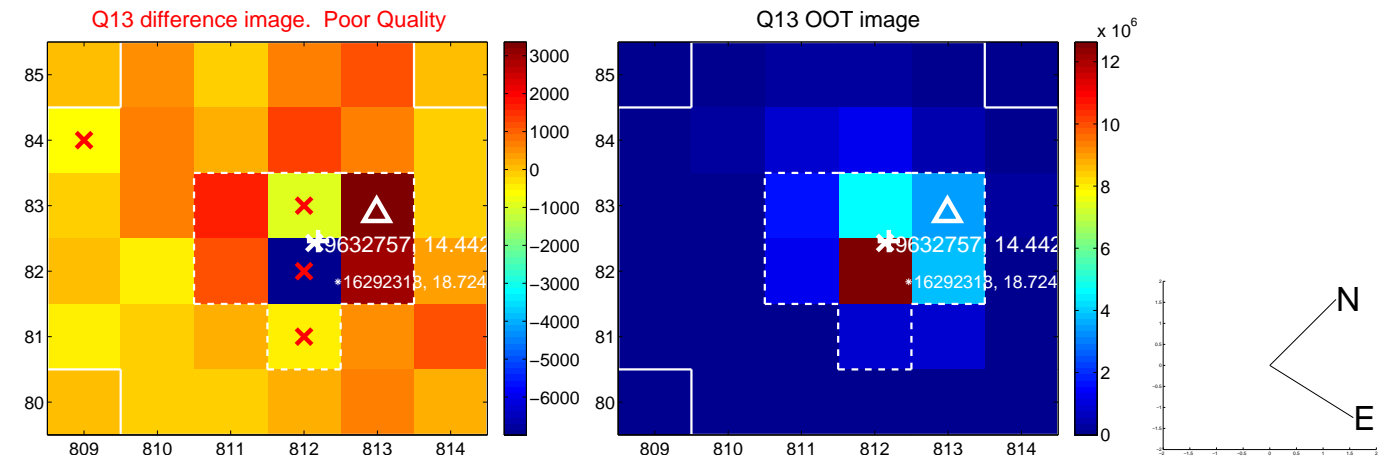
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



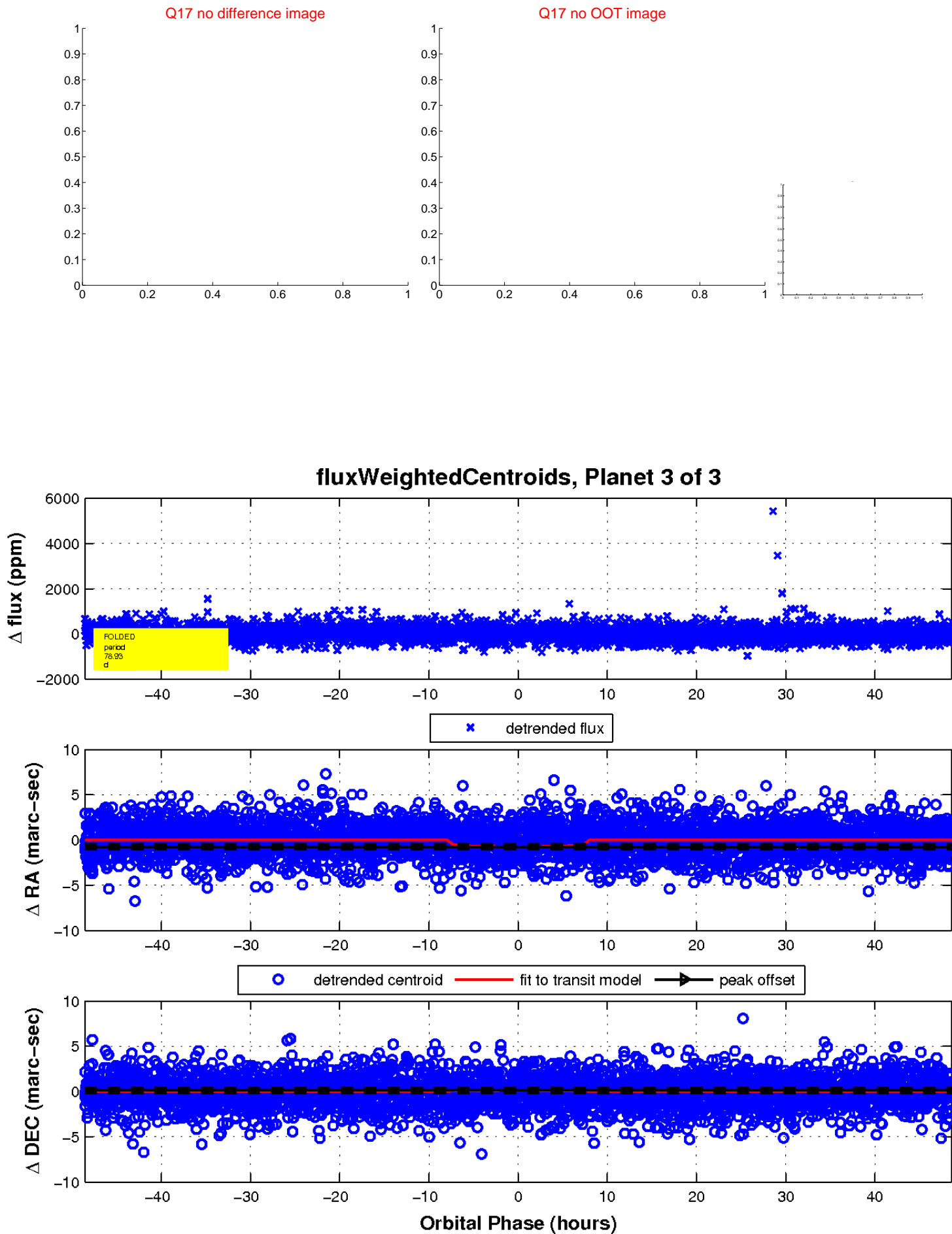
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

