

KIC 009630640

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})
009630640-01	OBS	7204.01	3.661892	132.524688	763.6	1.842	46.7	58.4	1.59	6793	7.24	2015.04
009630640-02	OBS	No	3.661881	134.678367	320.8	12.283	16.3	19.8	1.59	6793	5.48	2015.04
009630640-03	OBS	No	3.669994	133.760119	193.3	11.269	9.1	10.5	1.59	6793	3.12	2009.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009630640-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL
009630640-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009630640-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST

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.

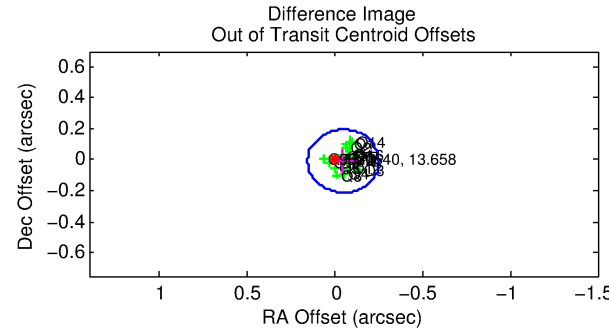
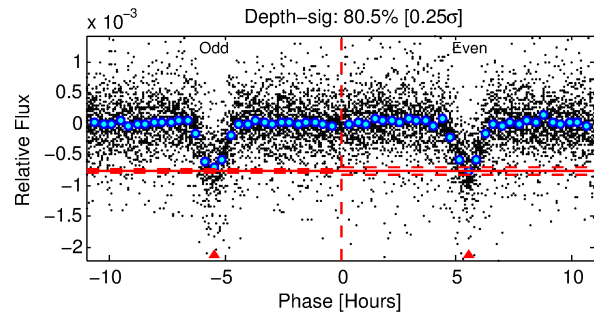
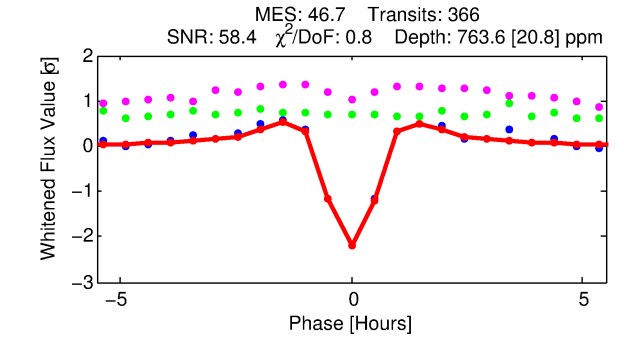
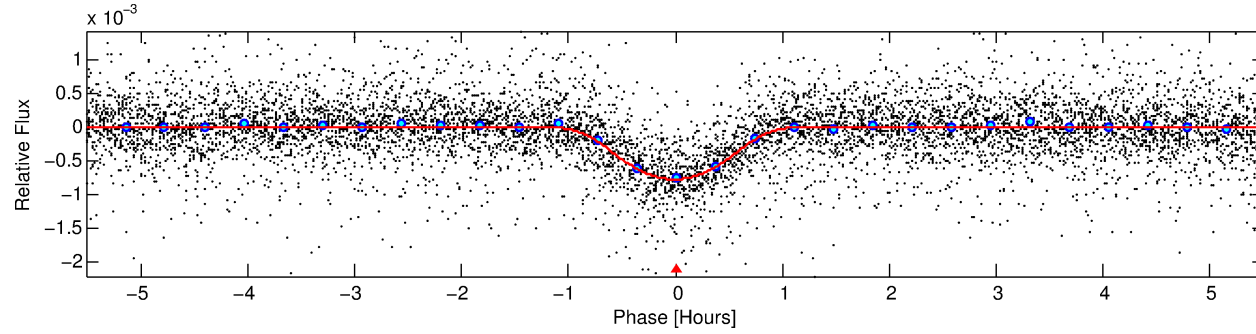
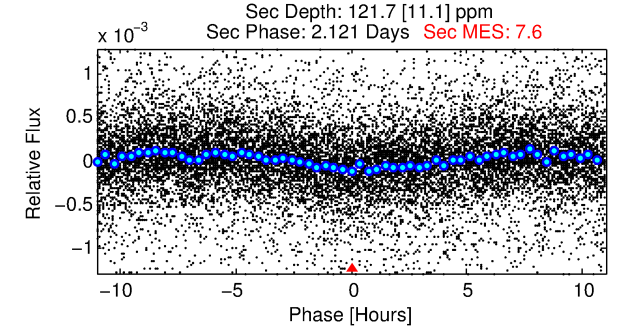
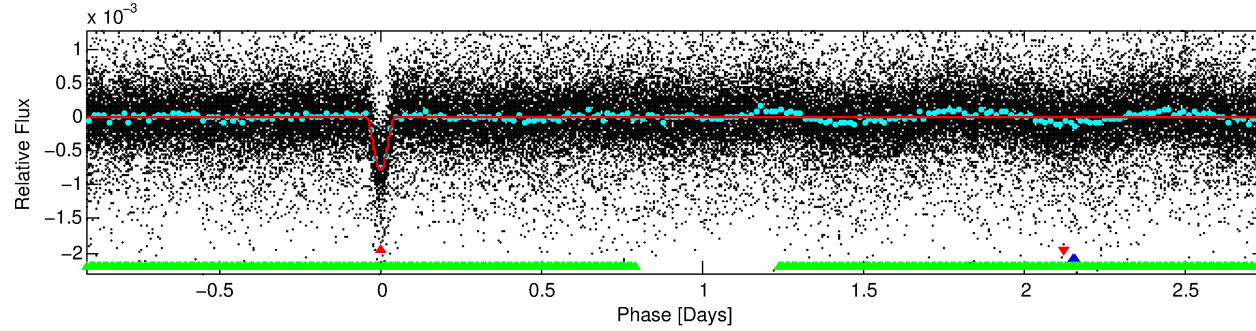
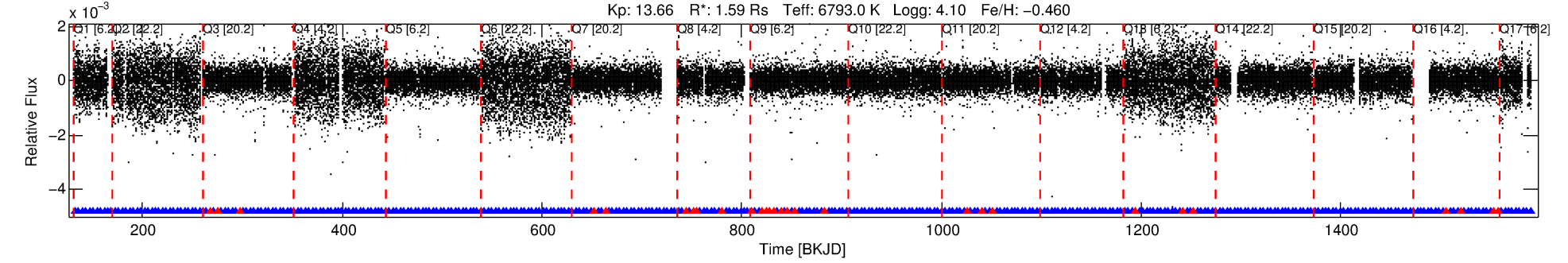
Ephemeris Match Information For 009630640-01

No Significant Match Found

DV One-Page Summary

KIC: 9630640 Candidate: 1 of 3 Period: 3.662 d
KOI: K07204 Corr: No Ephemeris Match

Kp: 13.66 R*: 1.59 Rs Teff: 6793.0 K Logg: 4.10 Fe/H: -0.460



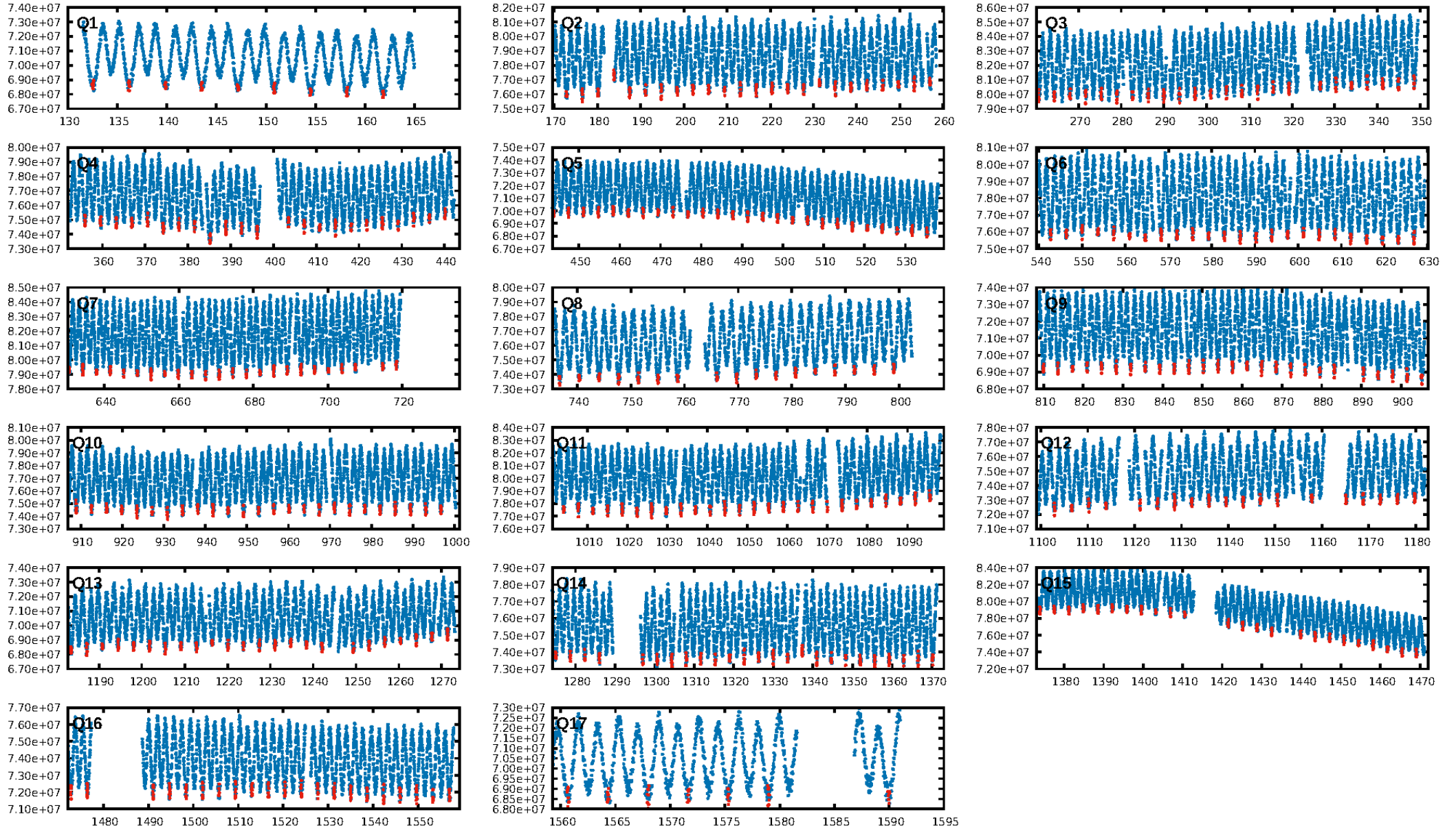
DV Fit Results:

Period = 3.66189 [0.00000] d
Epoch = 132.5247 [0.0005] BKJD
Rp/R* = 0.0418 [0.0260]
a/R* = 5.06 [0.99]
b = 0.99 [0.04]
Seff = 2015.04 [902.94]
Teq = 1708 [191] K
Rp = 7.24 [4.99] Re
a = 0.0489 [0.0133] AU
Ag = 3.05 [4.03] [0.51σ]
Teffp = 3492 [1098] K [1.60σ]

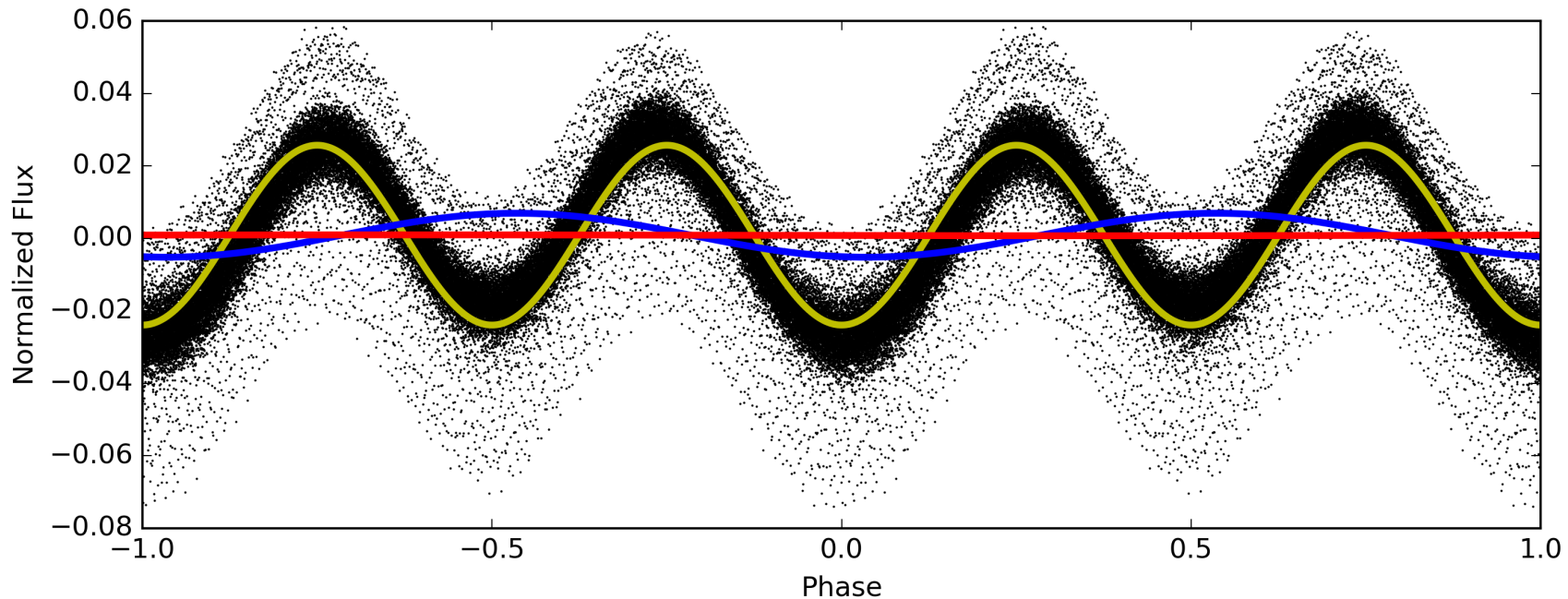
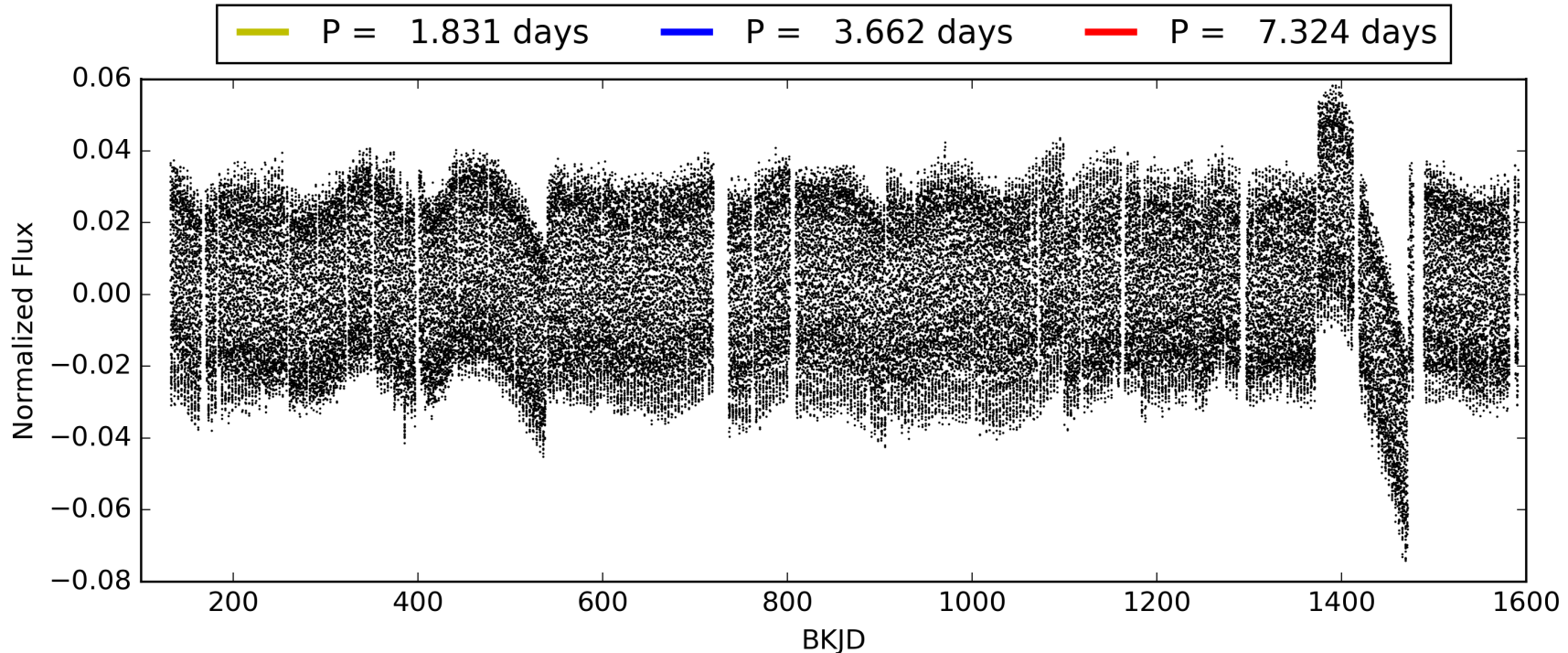
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 1.4% [0.02σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.92 [322/350]
GhostDiagnostic-chr: 0.8005
Centroid-sig: 9.1%
Centroid-so: 0.273 arcsec [1.83σ]
OotOffset-rm: 0.050 arcsec [0.74σ]
KicOffset-rm: 0.211 arcsec [3.03σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.82 [14/17]

TCE 009630640-01, PDC Light Curves

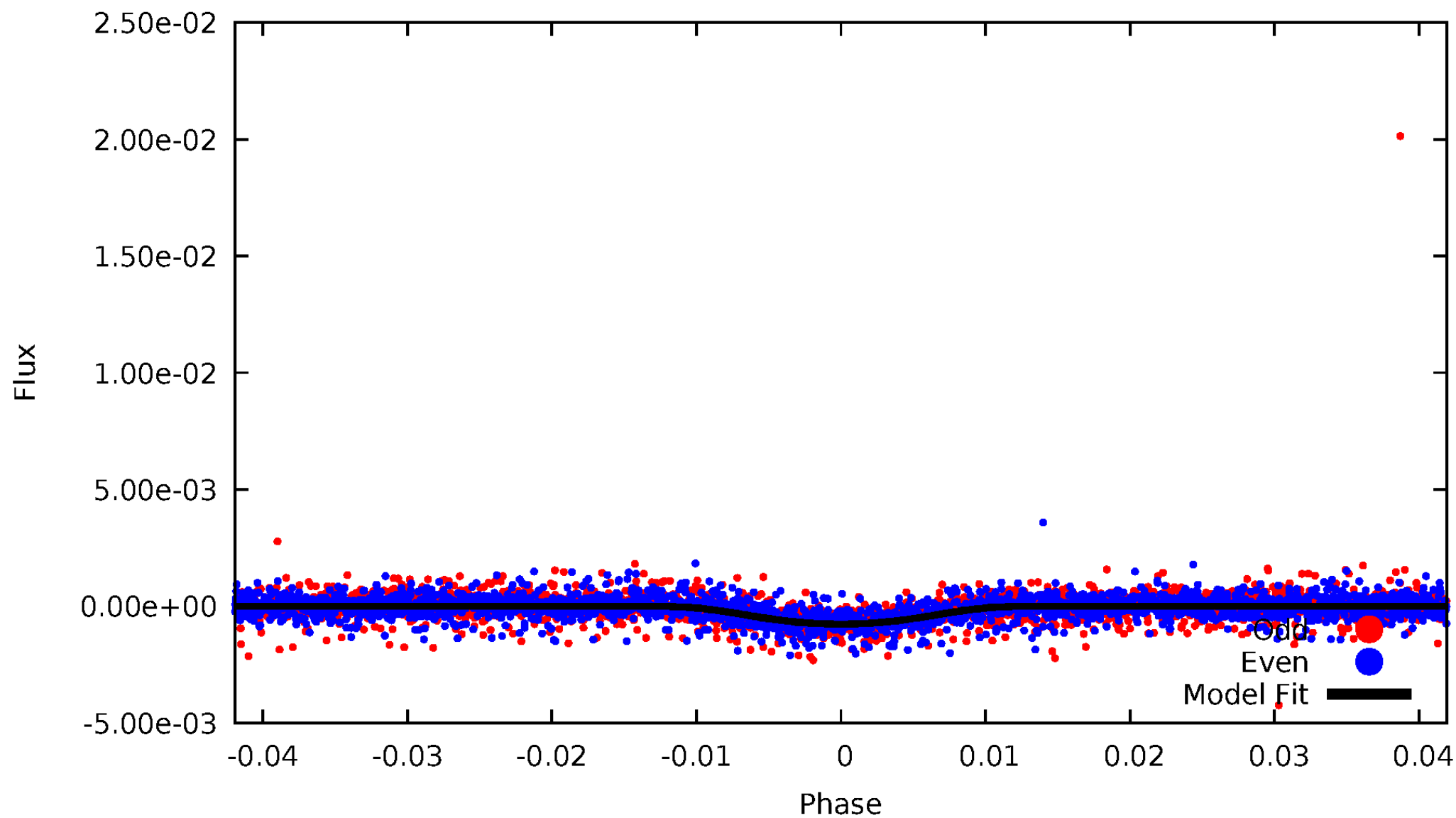


TCE 009630640-01



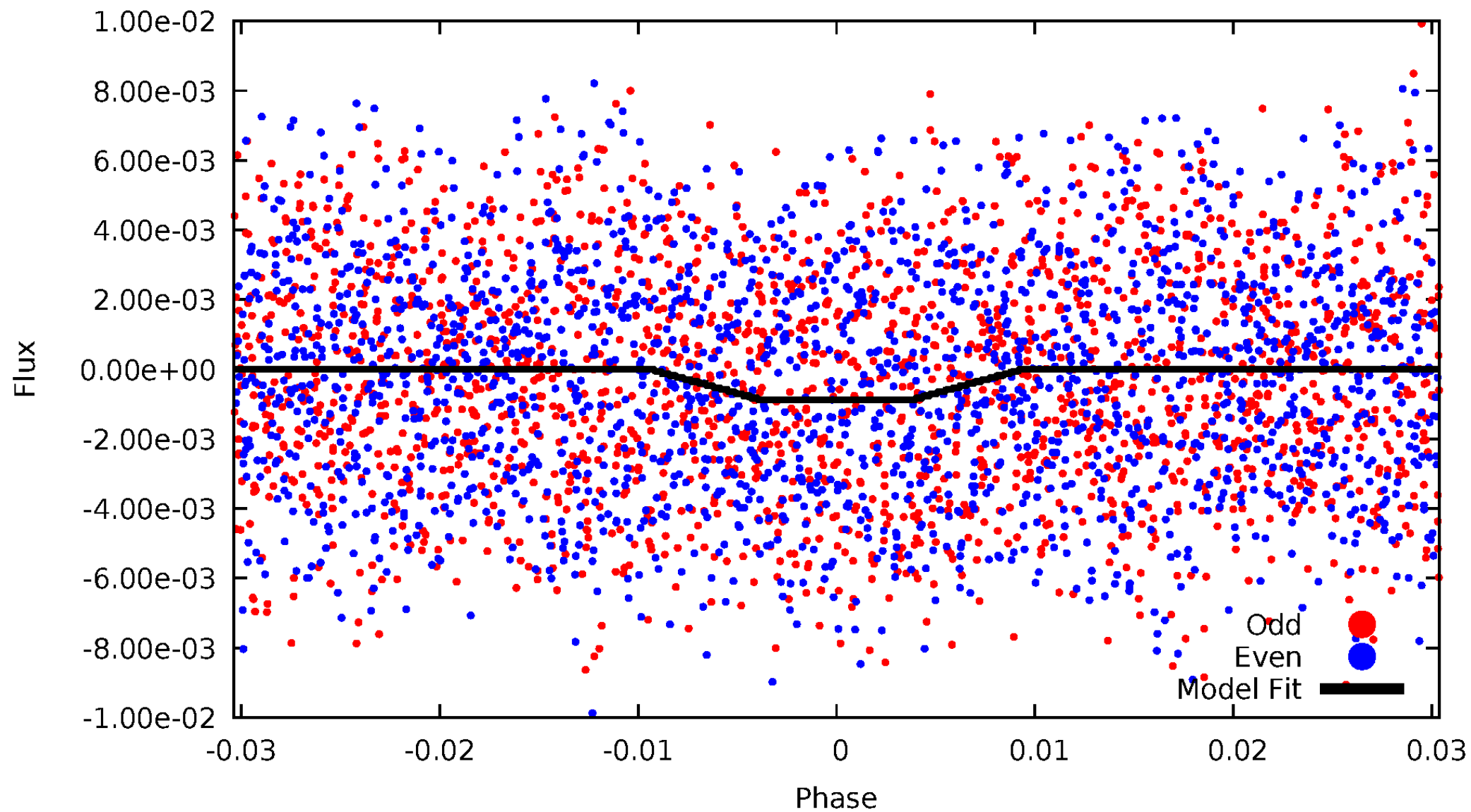
DV Odd/Even

TCE 009630640-01



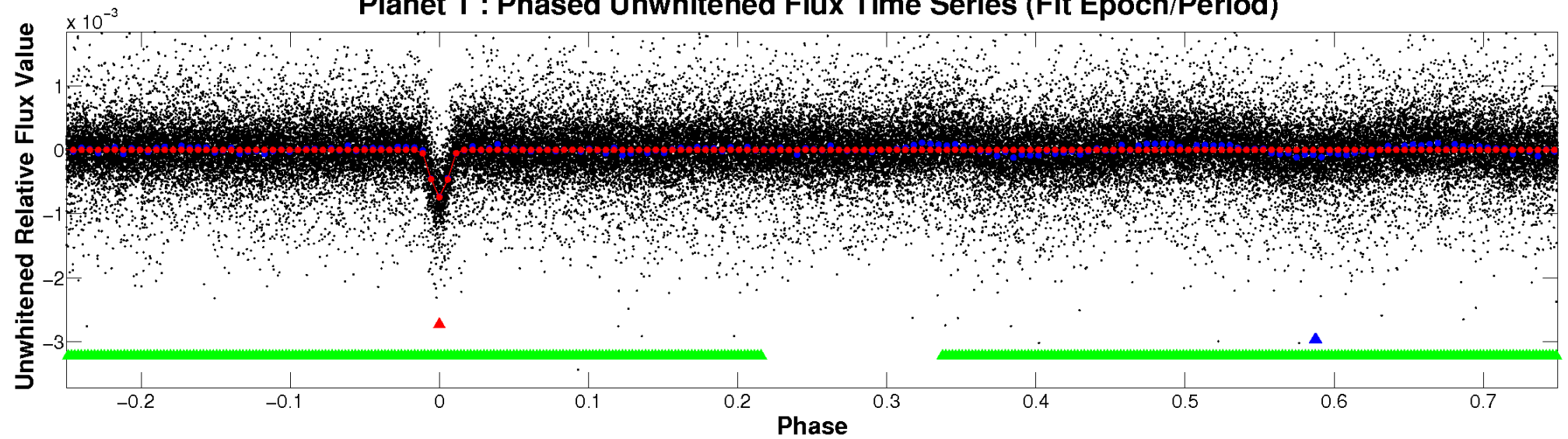
ALT Odd/Even

TCE 009630640-01

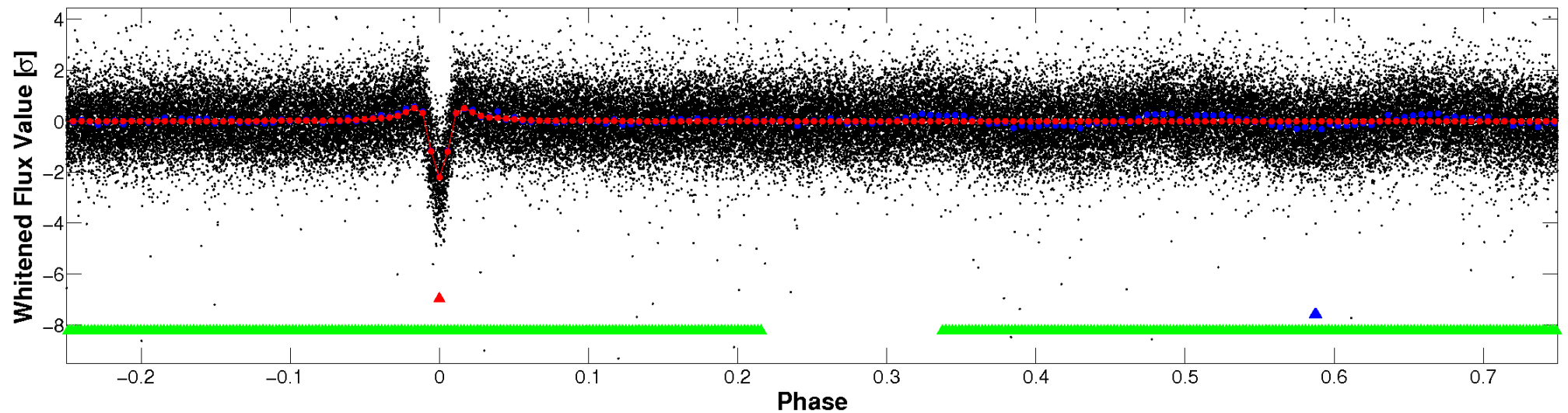


Non-Whitened Vs. Whitened Light Curve

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

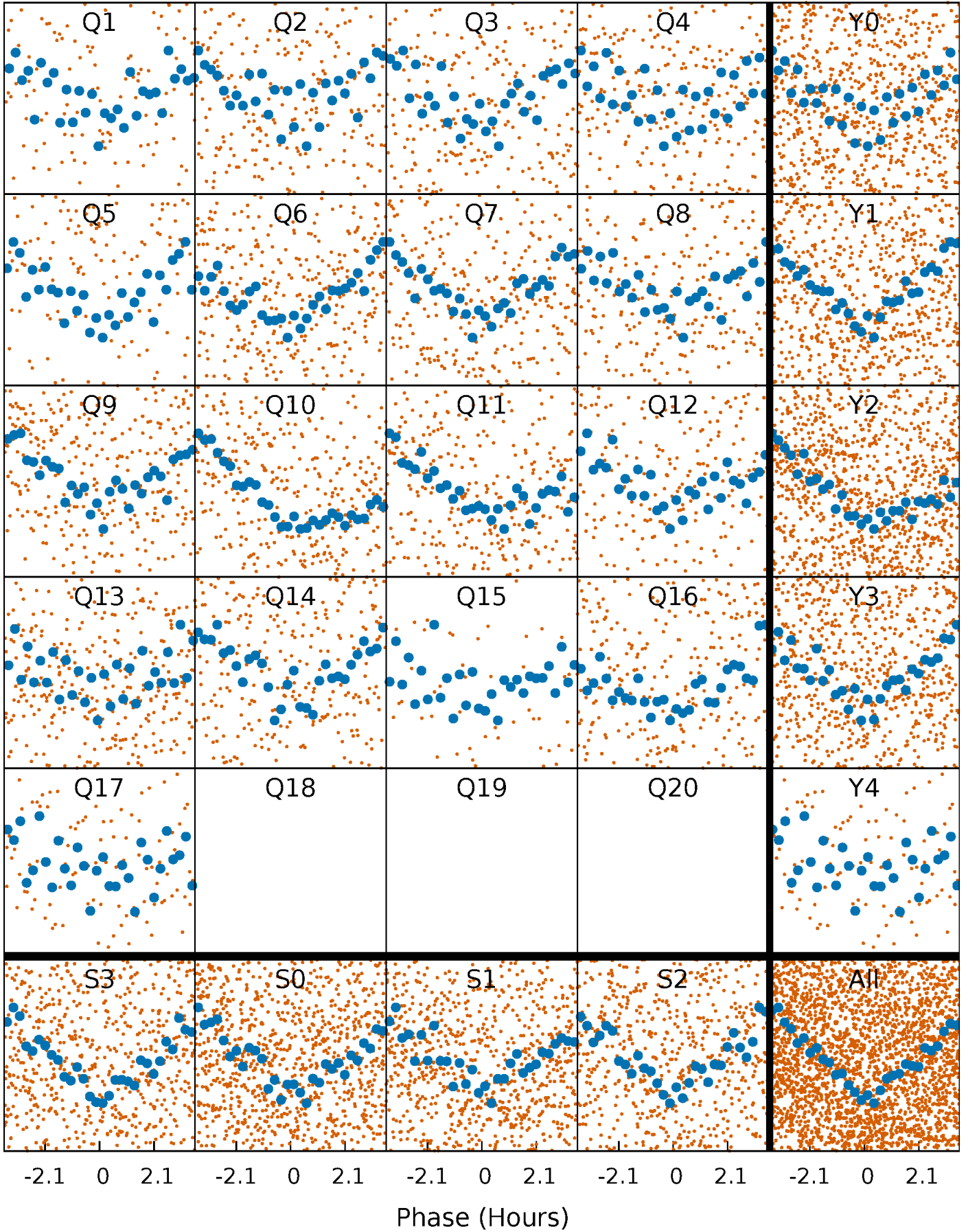


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



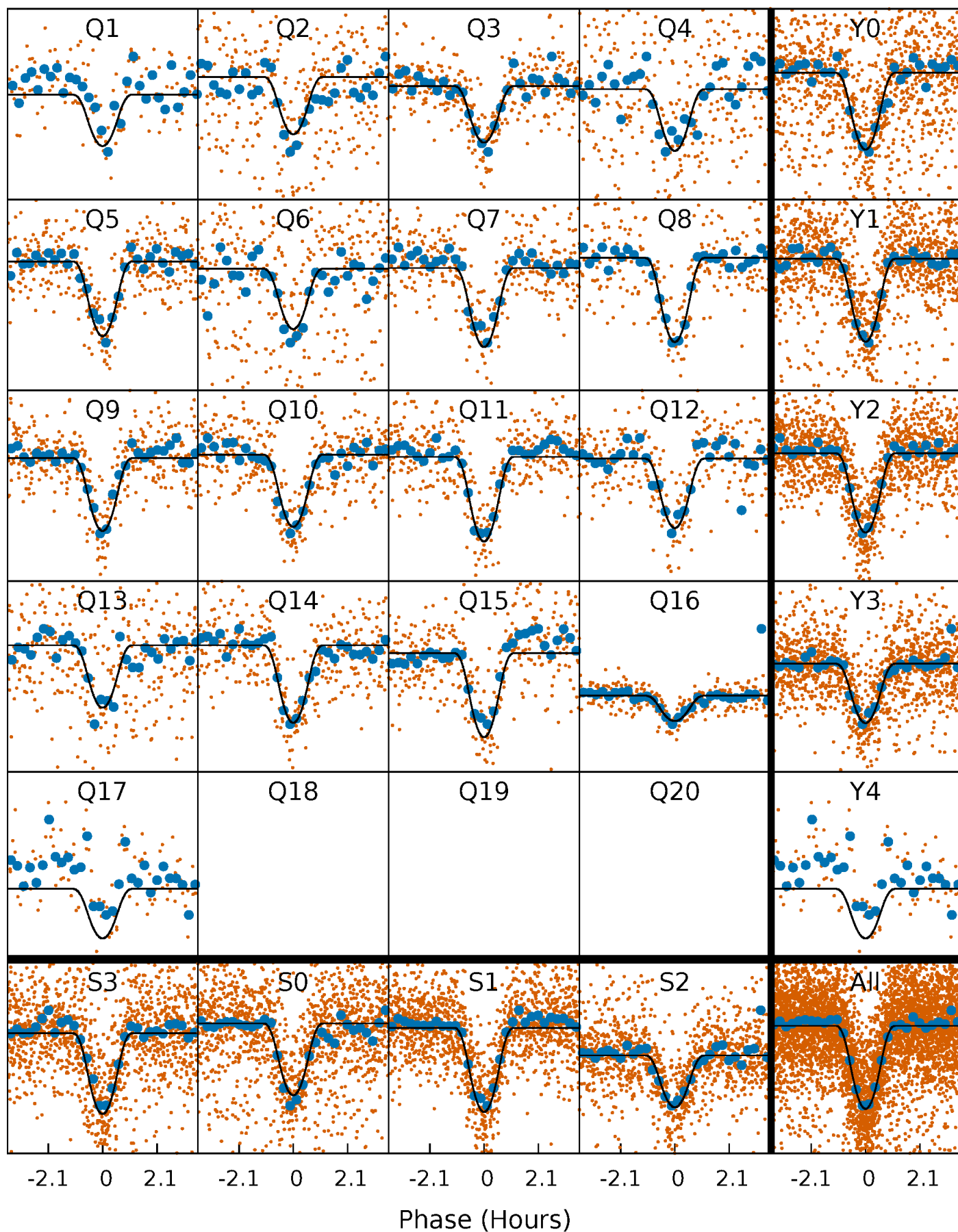
PDC Quarter-Phased Transit Curves

TCE 009630640-01 P= 3.661892 Days $T_0=132.524688$ (BKJD)



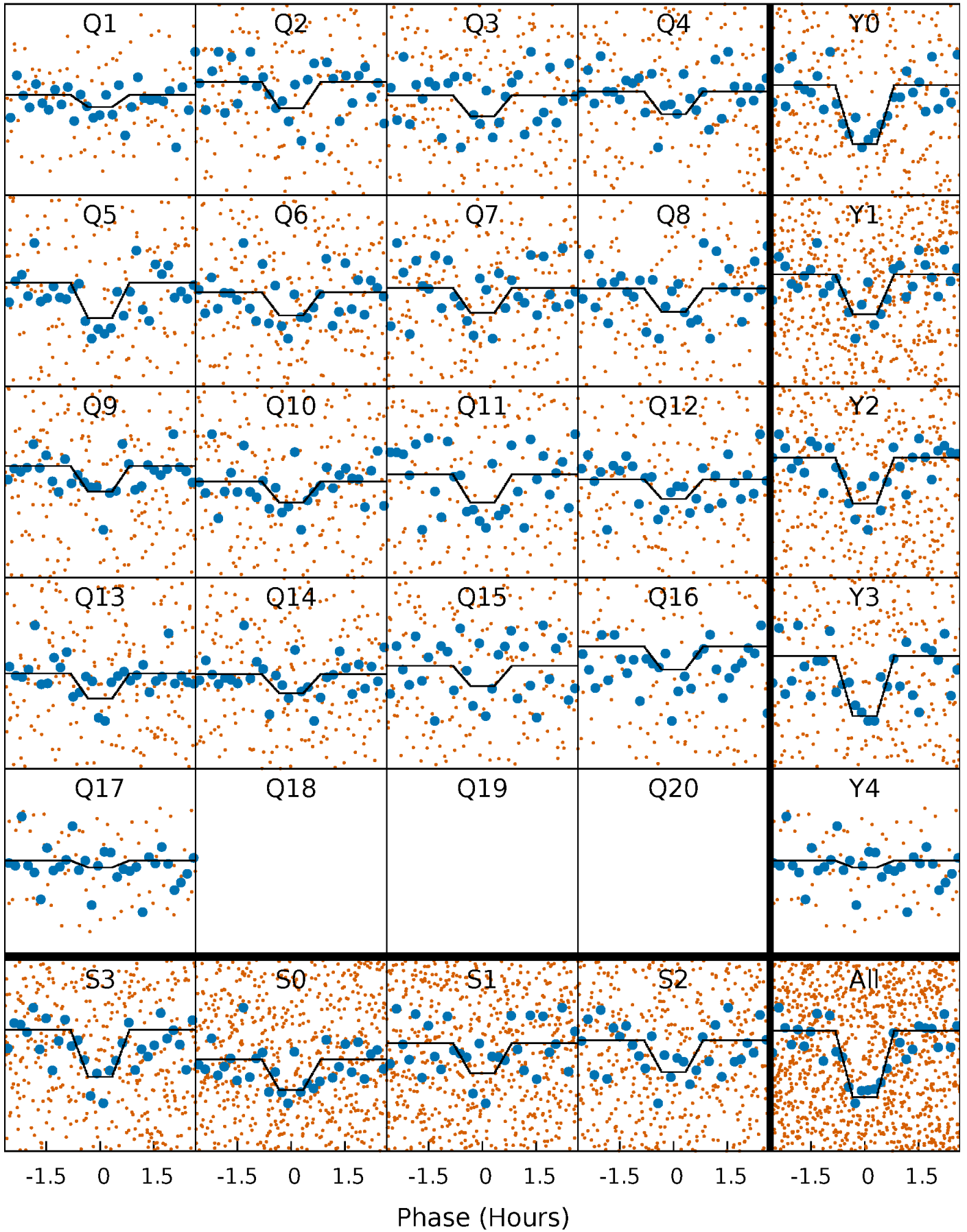
DV Quarter-Phased Transit Curves

TCE 009630640-01 P= 3.661892 Days $T_0=132.524688$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

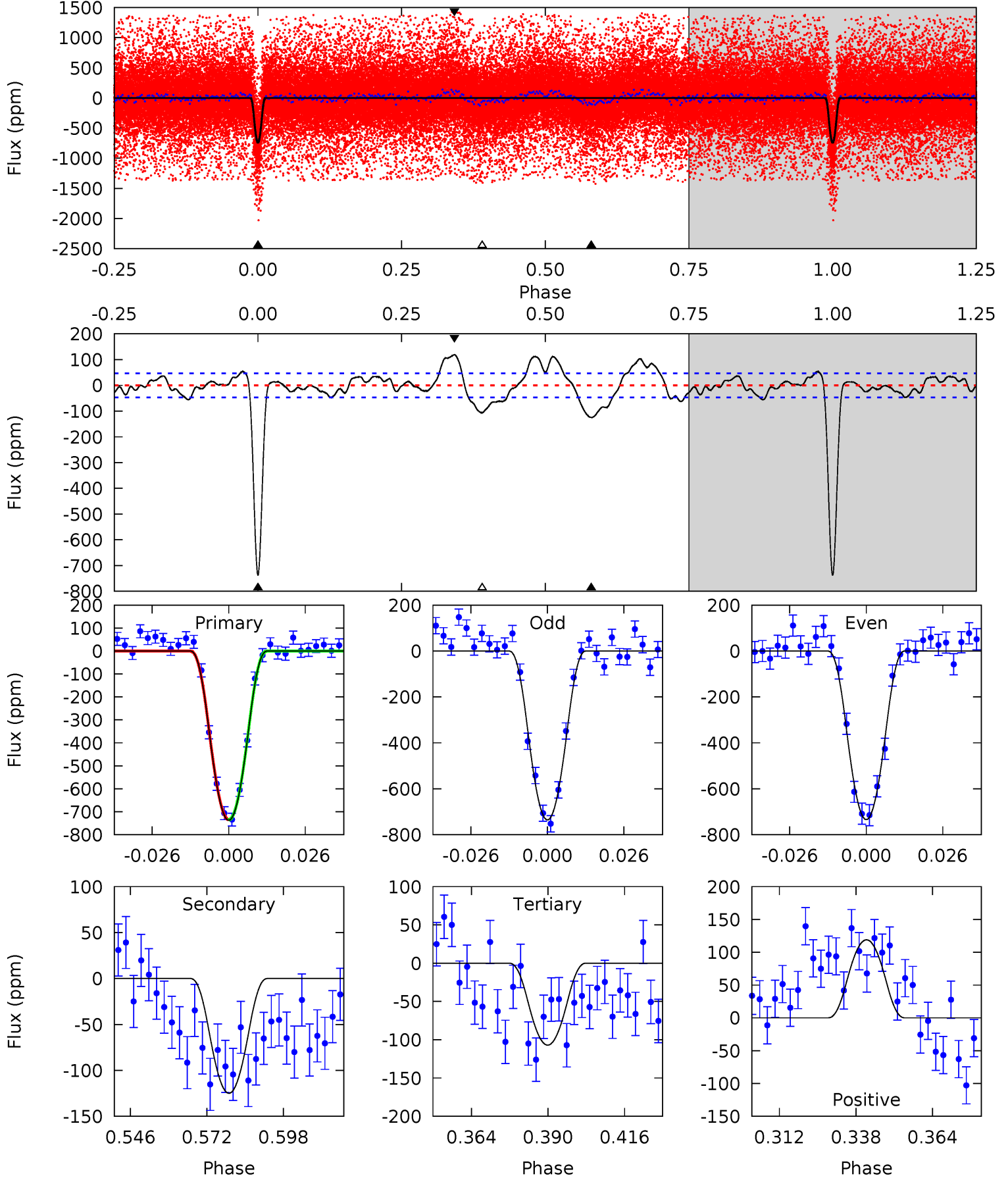
TCE 009630640-01 P= 3.661880 Days $T_0=132.527274$ (BKJD)



DV Model-Shift Uniqueness Test

009630640-01, P = 3.661892 Days, E = 128.862796 Days

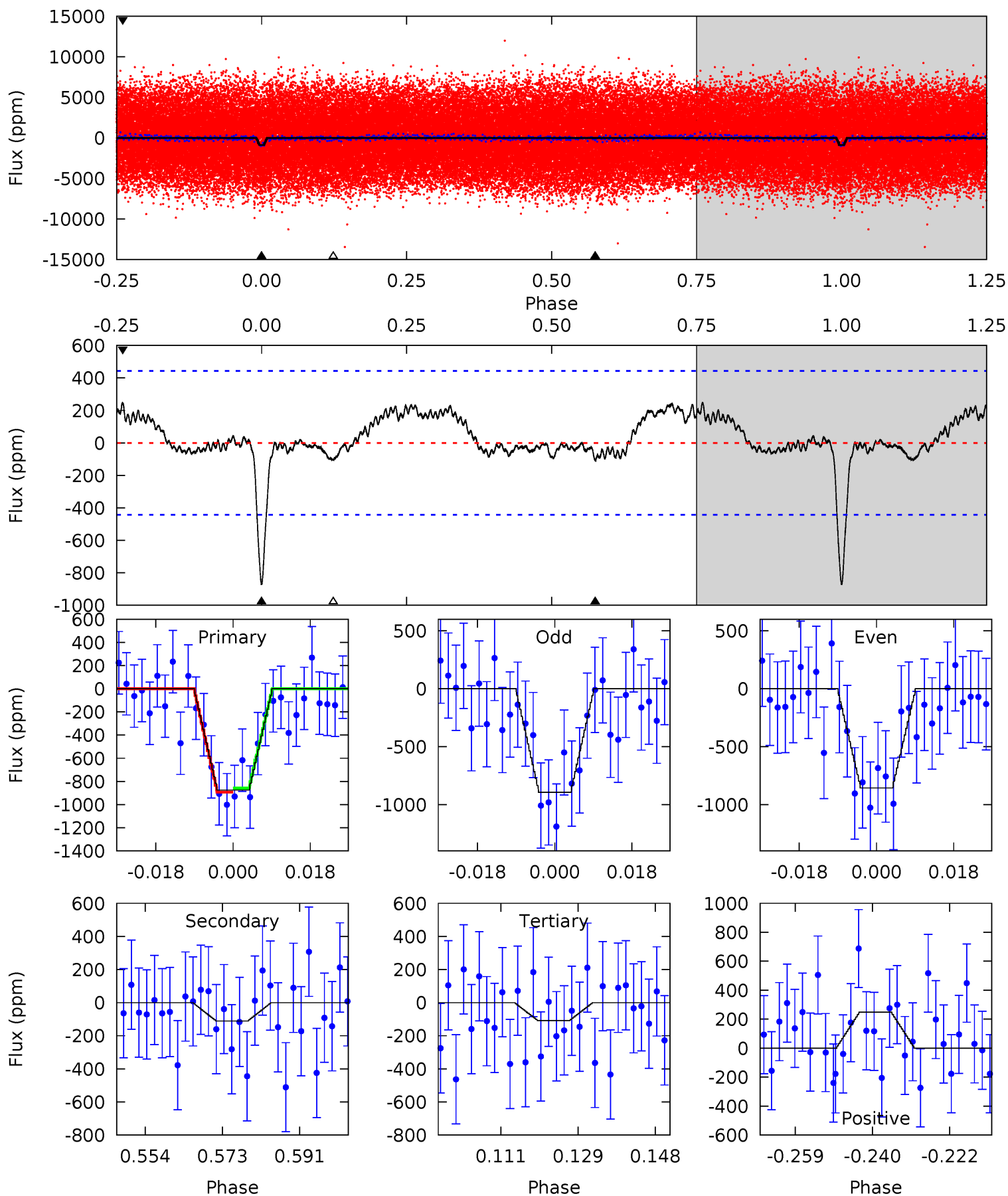
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
76.0	12.9	11.0	12.3	4.84	2.23	4.99	65.0	63.8	1.85	0.62	0.08	0.99	0.14	0.05



Alt Model-Shift Uniqueness Test

009630640-01, P = 3.661880 Days, E = 128.865394 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.69	1.23	1.20	2.75	4.91	2.36	1.12	8.49	6.94	0.03	-1.53	0.21	1.04	0.22	0.20



Stellar Parameters For KIC 009630640

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6793^{+166}_{-238}	$4.101^{+0.246}_{-0.164}$	$-0.460^{+0.250}_{-0.300}$	$1.589^{+0.425}_{-0.468}$	$1.162^{+0.193}_{-0.158}$	$0.408^{+0.613}_{-0.188}$
	+2%/-4%	+6%/-4%	+54%/-65%	+27%/-29%	+17%/-14%	+150%/-46%
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 009630640-01 / KOI 7204.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-125 ± 10	$7.47^{+4.65}_{-4.12}$	2356^{+186}_{-192}	3728^{+1276}_{-628}	$2.964^{+11.757}_{-1.828}$
Alt.	-111 ± 90	$5.49^{+4.28}_{-3.37}$	2365^{+172}_{-181}	3976^{+2117}_{-1540}	$4.142^{+24.752}_{-3.694}$

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 $A_{obs} \gg 1.0$

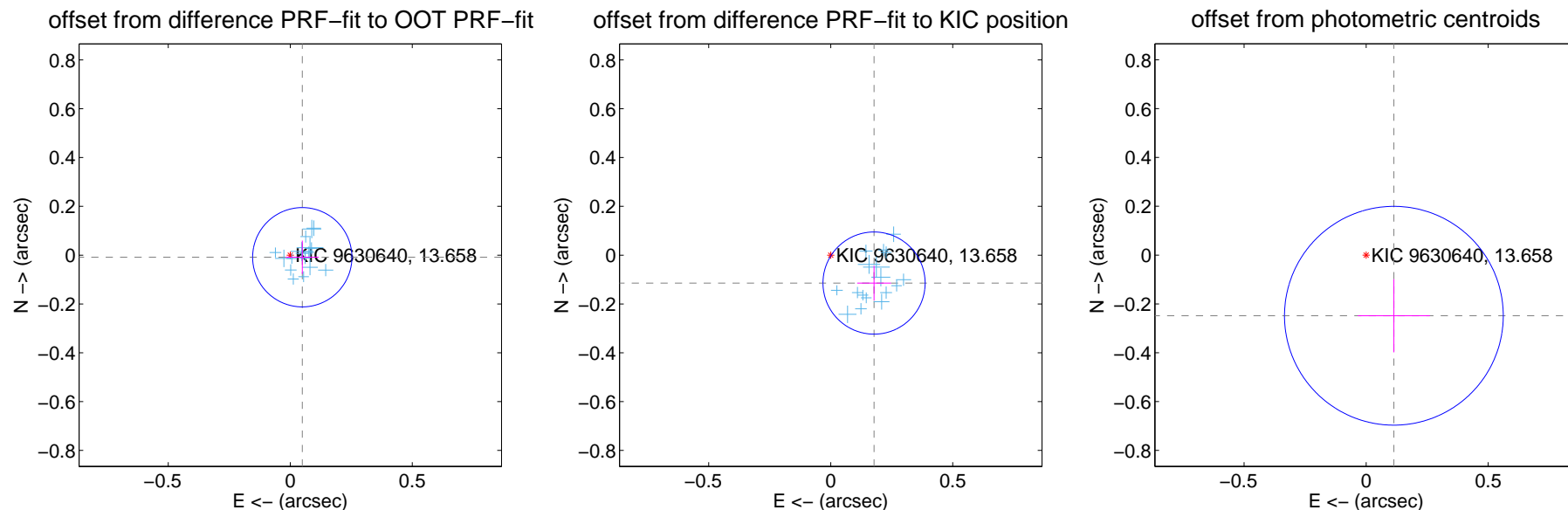
DV Centroid Data

Supplemental centroid analysis for 009630640-01. Kepler magnitude: 13.66. Transit SNR 58.37

There are 17 quarters with good PRF difference image offsets

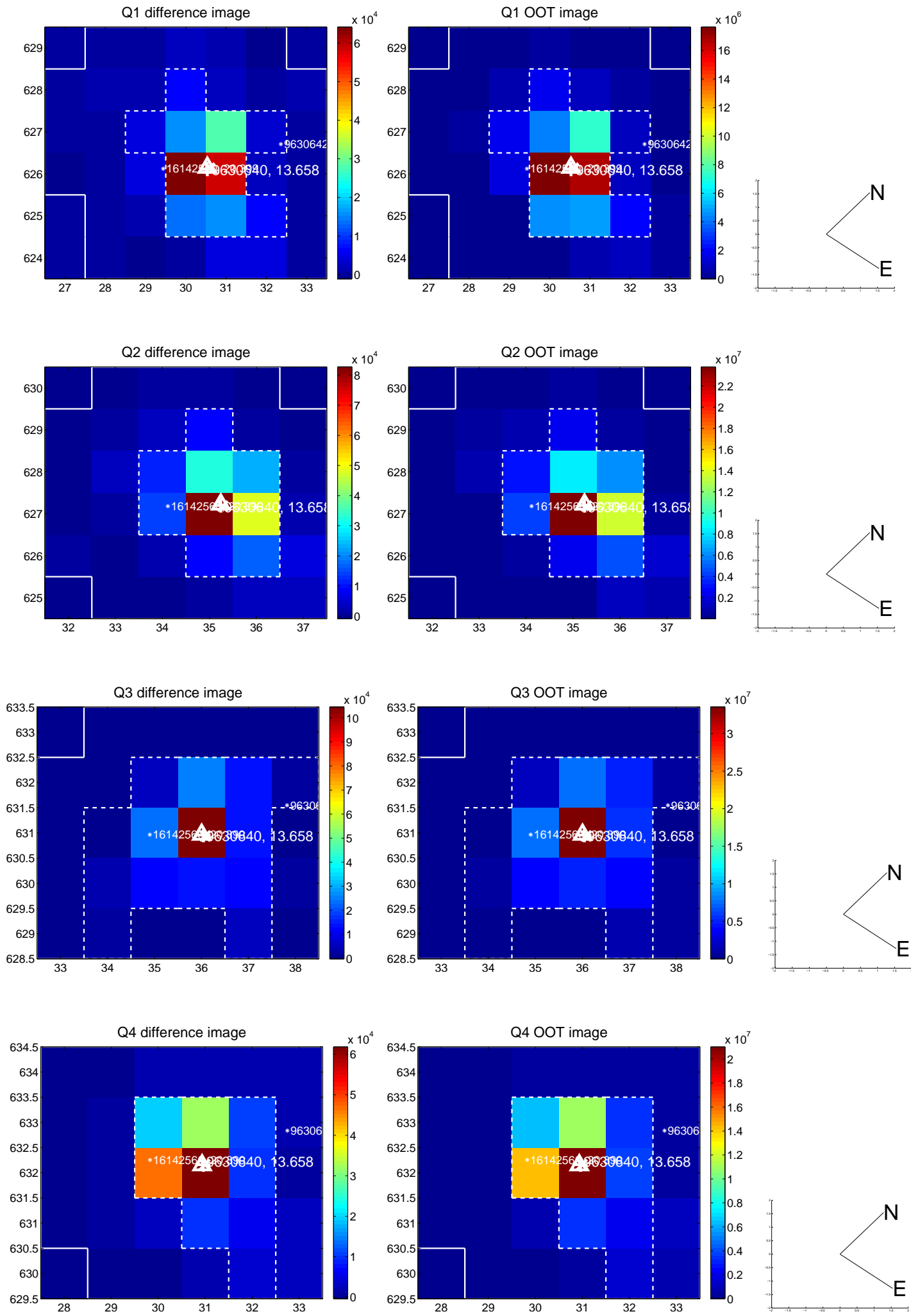
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.050 ± 0.068	0.74	-0.049 ± 0.068	-0.009 ± 0.068
PRF-fit source offset from KIC position	0.211 ± 0.070	3.03	-0.178 ± 0.069	-0.114 ± 0.071
photometric centroid source offset	0.27 ± 0.15	1.83	-0.11 ± 0.15	-0.25 ± 0.15

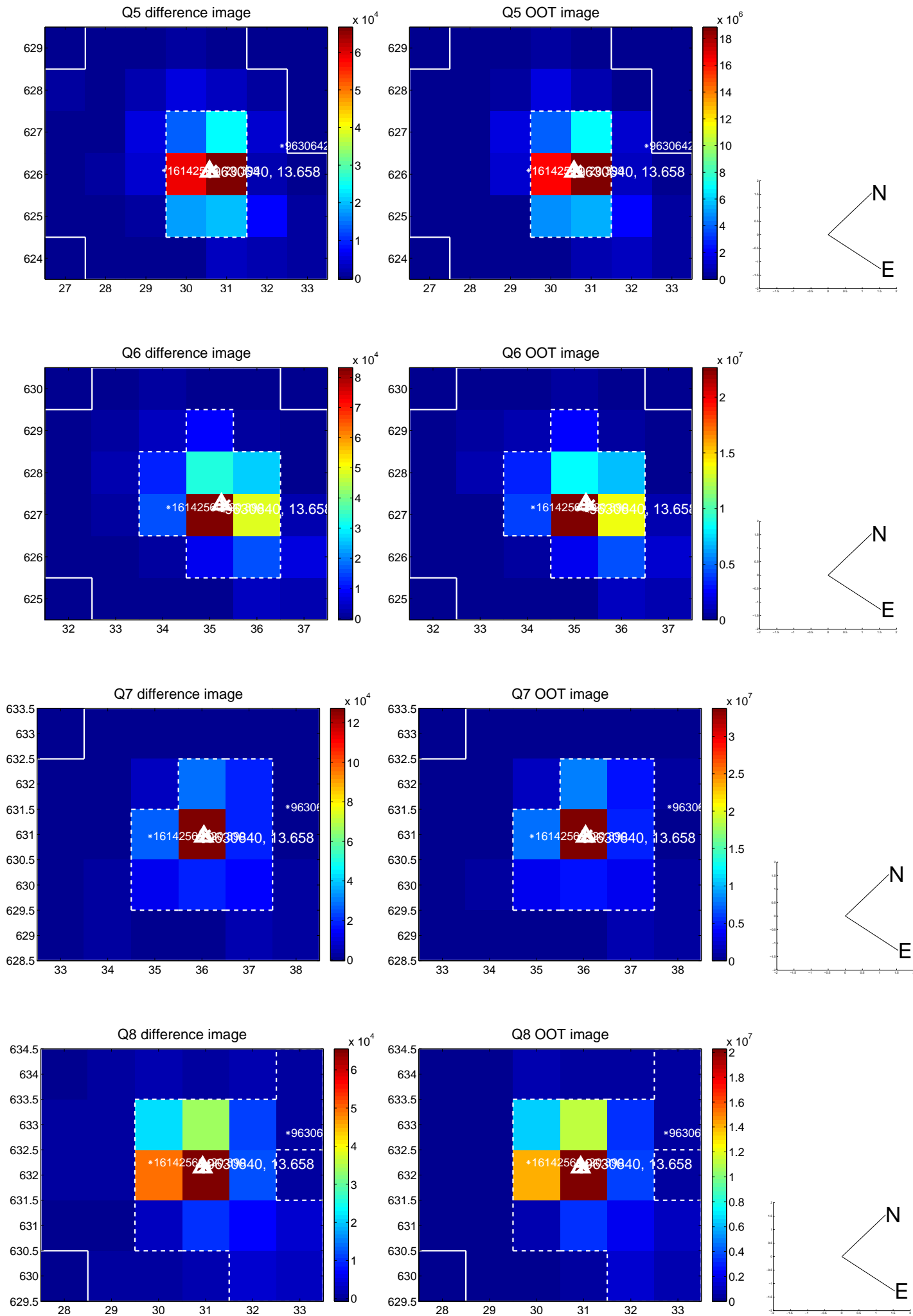


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

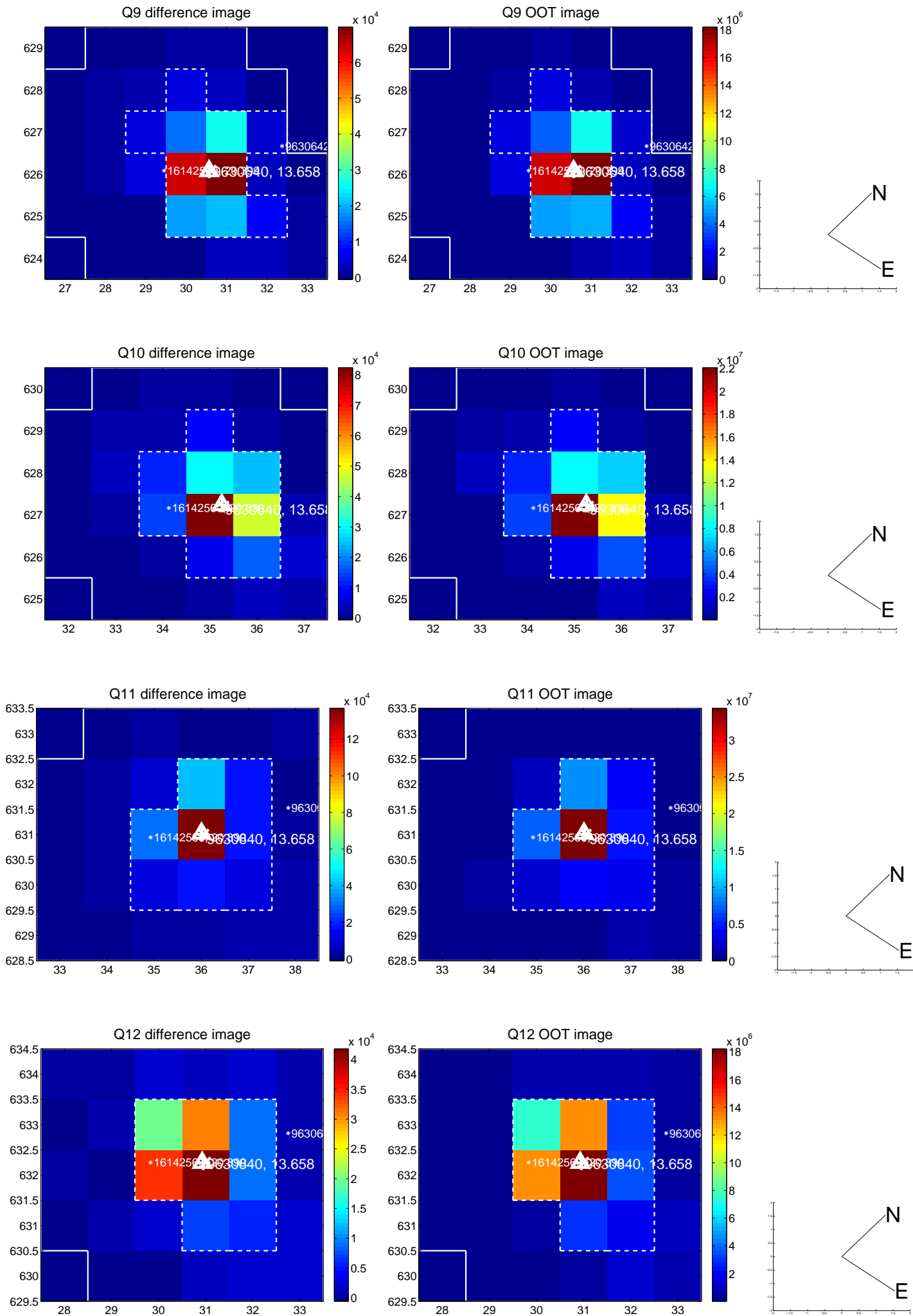
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



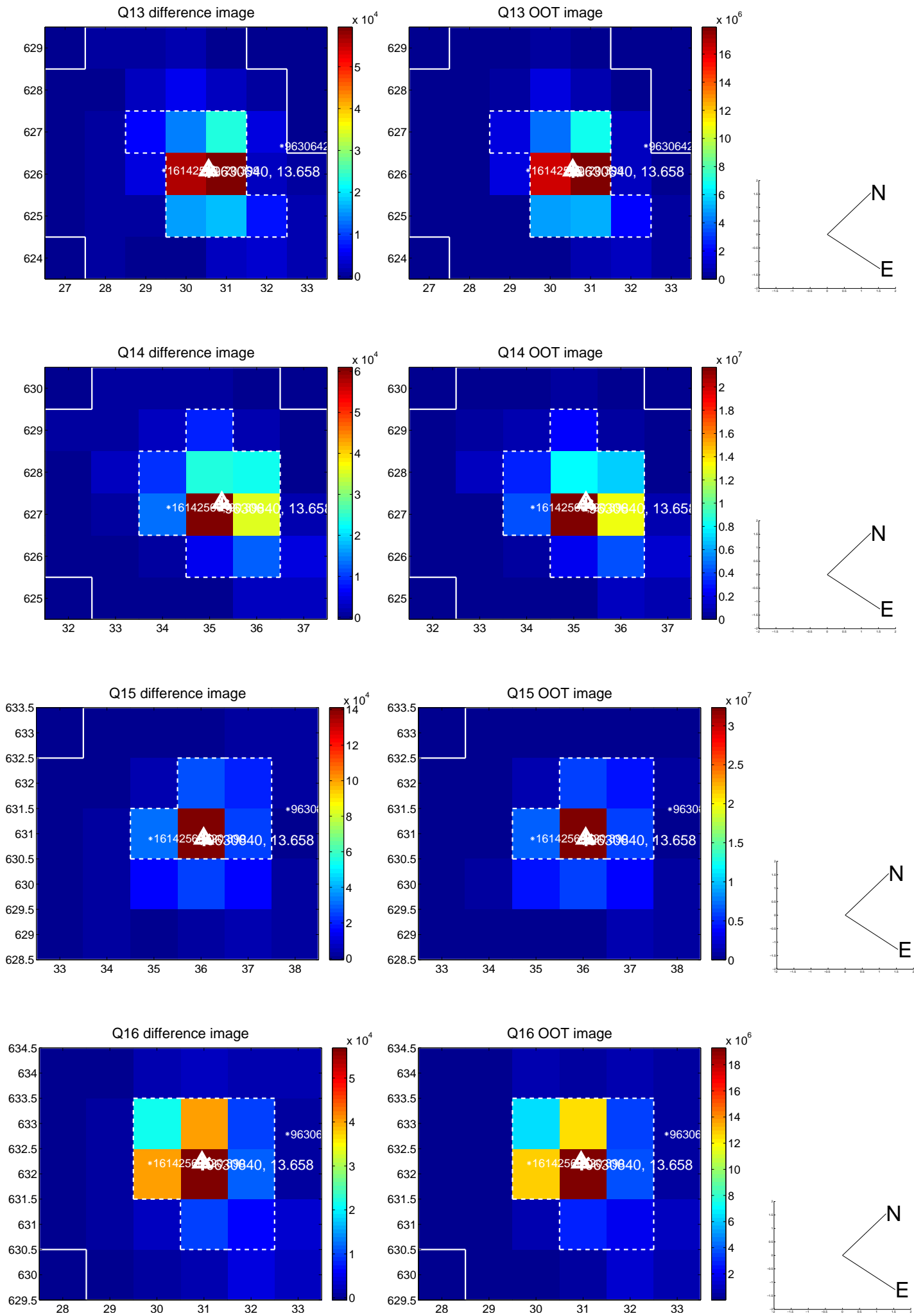
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



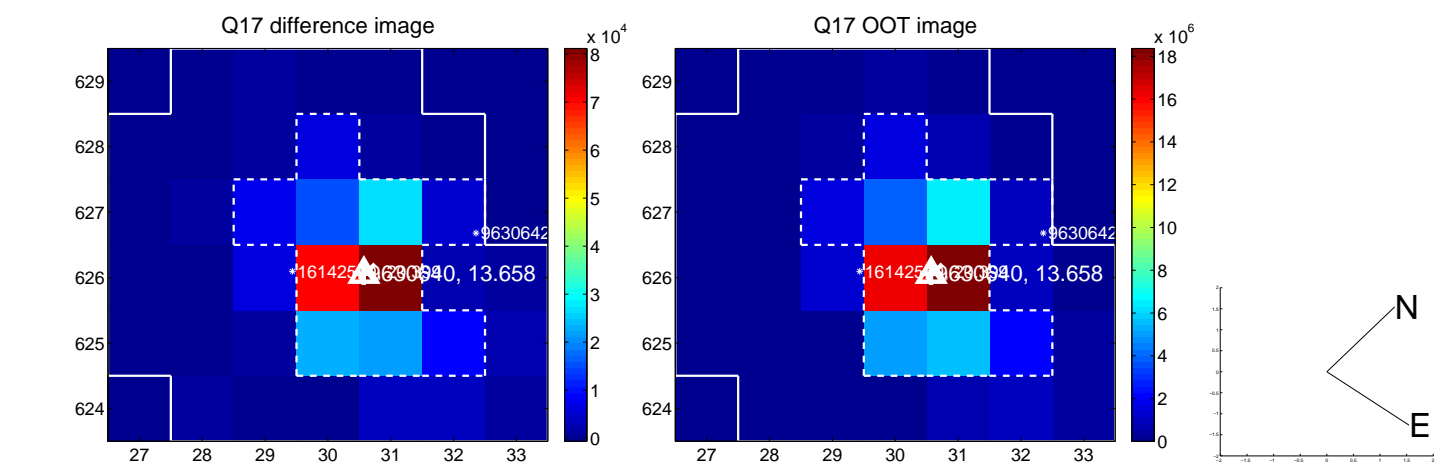
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



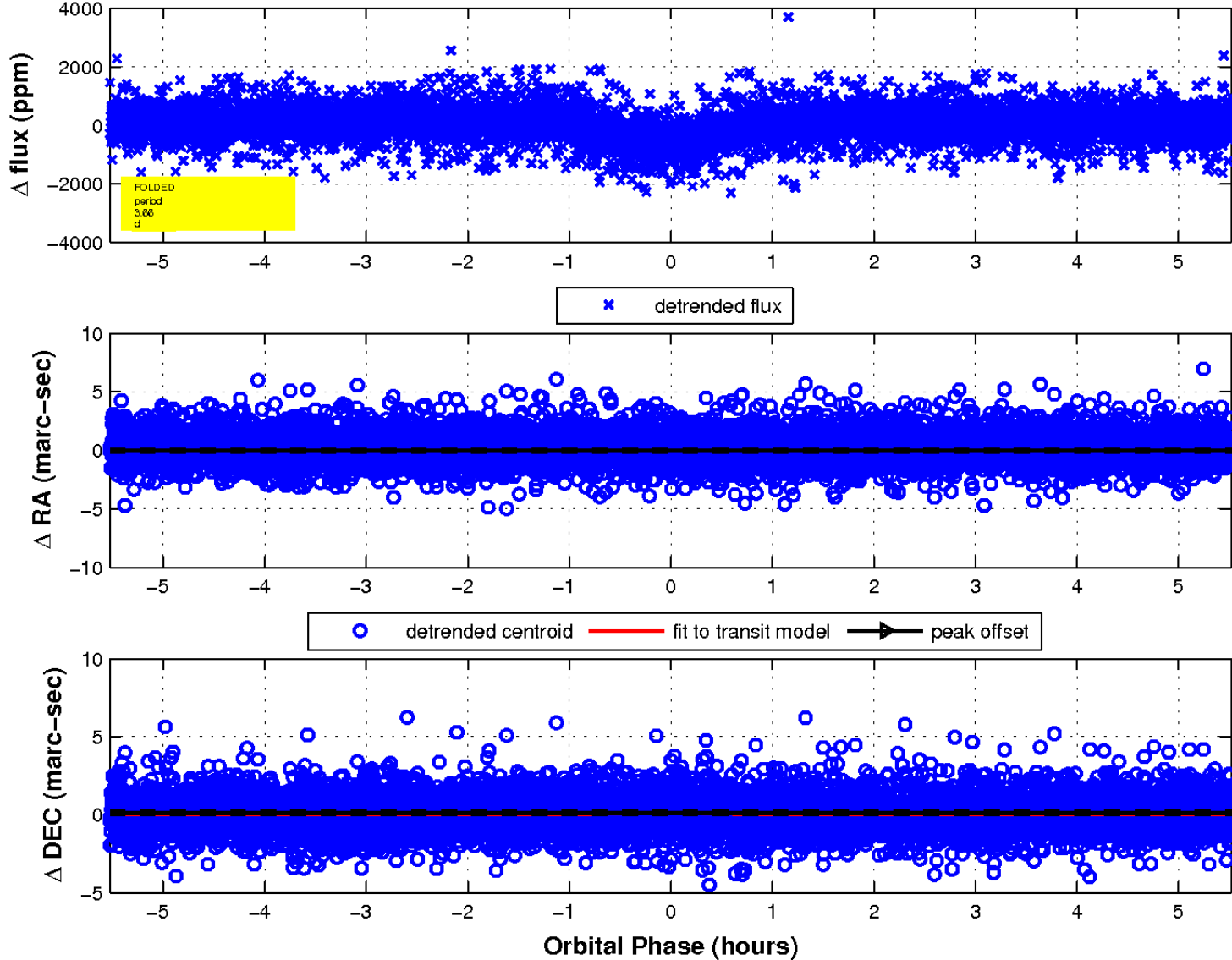
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

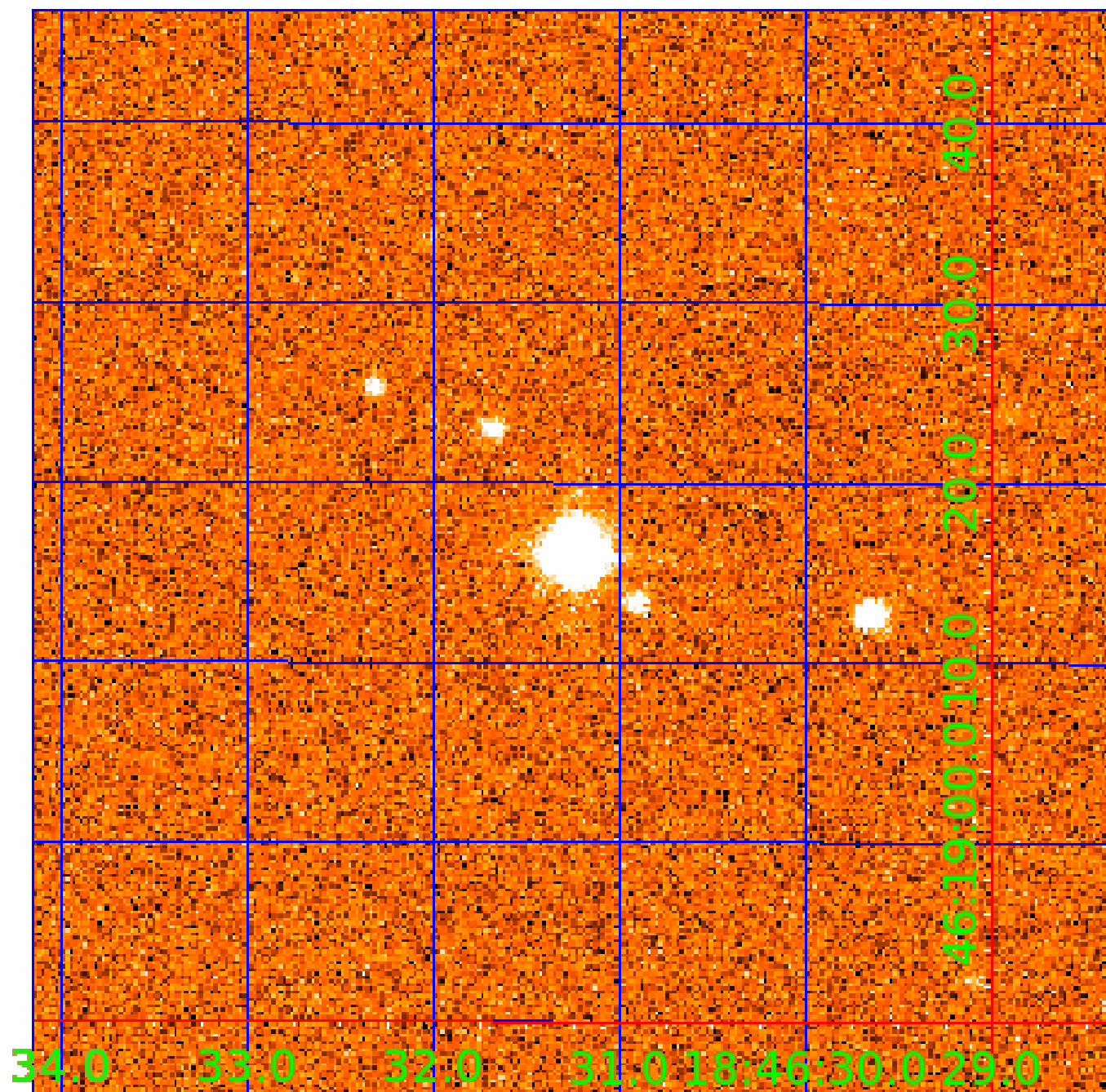


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 009630640

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})
009630640-01	OBS	7204.01	3.661892	132.524688	763.6	1.842	46.7	58.4	1.59	6793	7.24	2015.04
009630640-02	OBS	No	3.661881	134.678367	320.8	12.283	16.3	19.8	1.59	6793	5.48	2015.04
009630640-03	OBS	No	3.669994	133.760119	193.3	11.269	9.1	10.5	1.59	6793	3.12	2009.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009630640-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL
009630640-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009630640-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST

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.

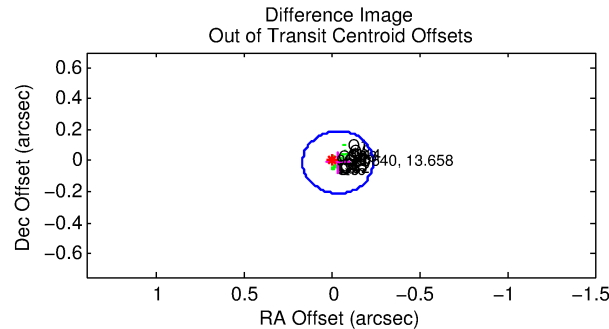
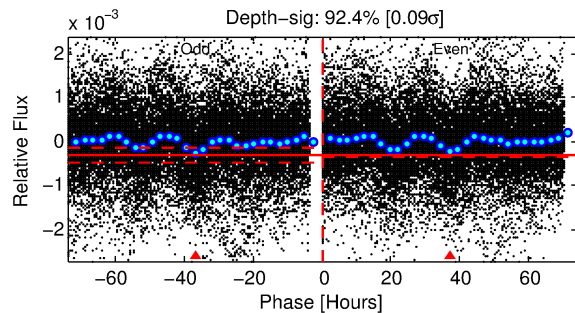
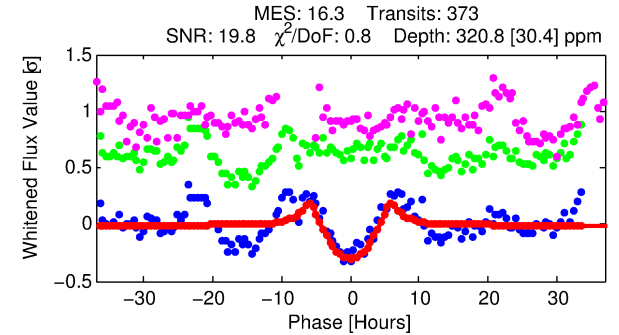
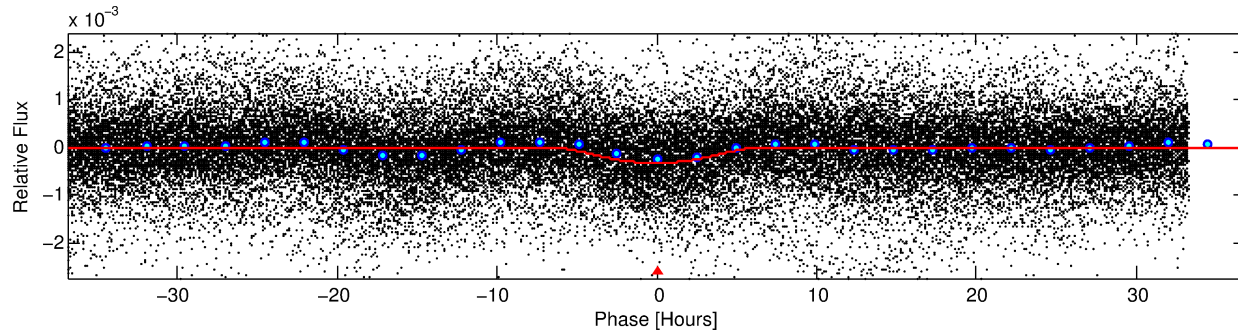
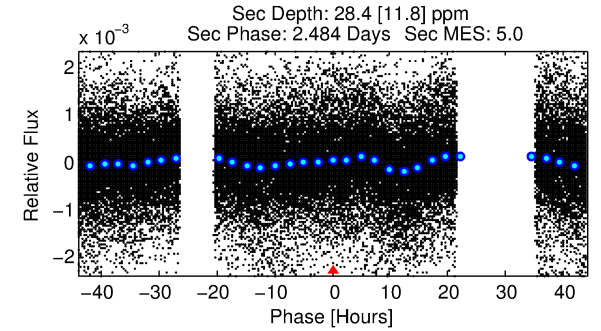
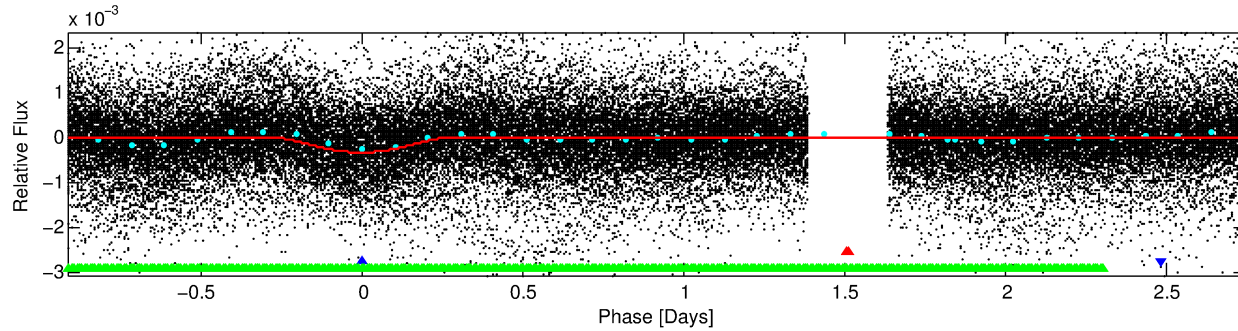
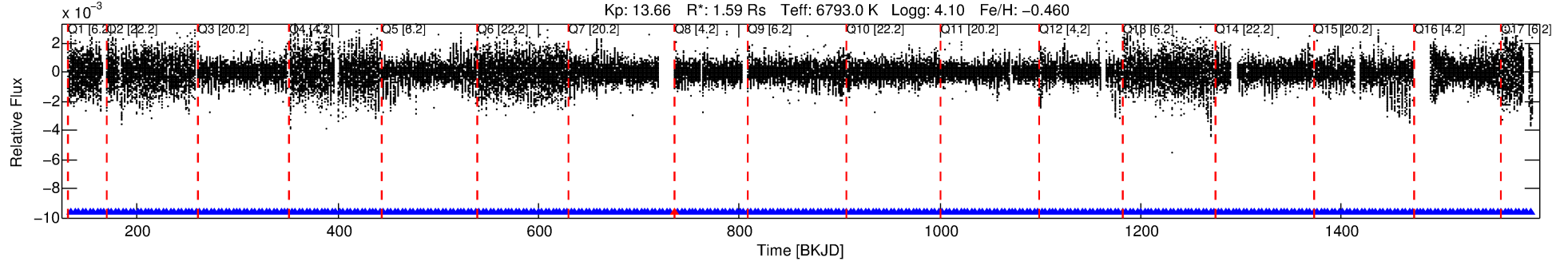
Ephemeris Match Information For 009630640-02

No Significant Match Found

DV One-Page Summary

KIC: 9630640 Candidate: 2 of 3 Period: 3.662 d
KOI: K07204 Corr: No Ephemeris Match

Kp: 13.66 R*: 1.59 Rs Teff: 6793.0 K Logg: 4.10 Fe/H: -0.460



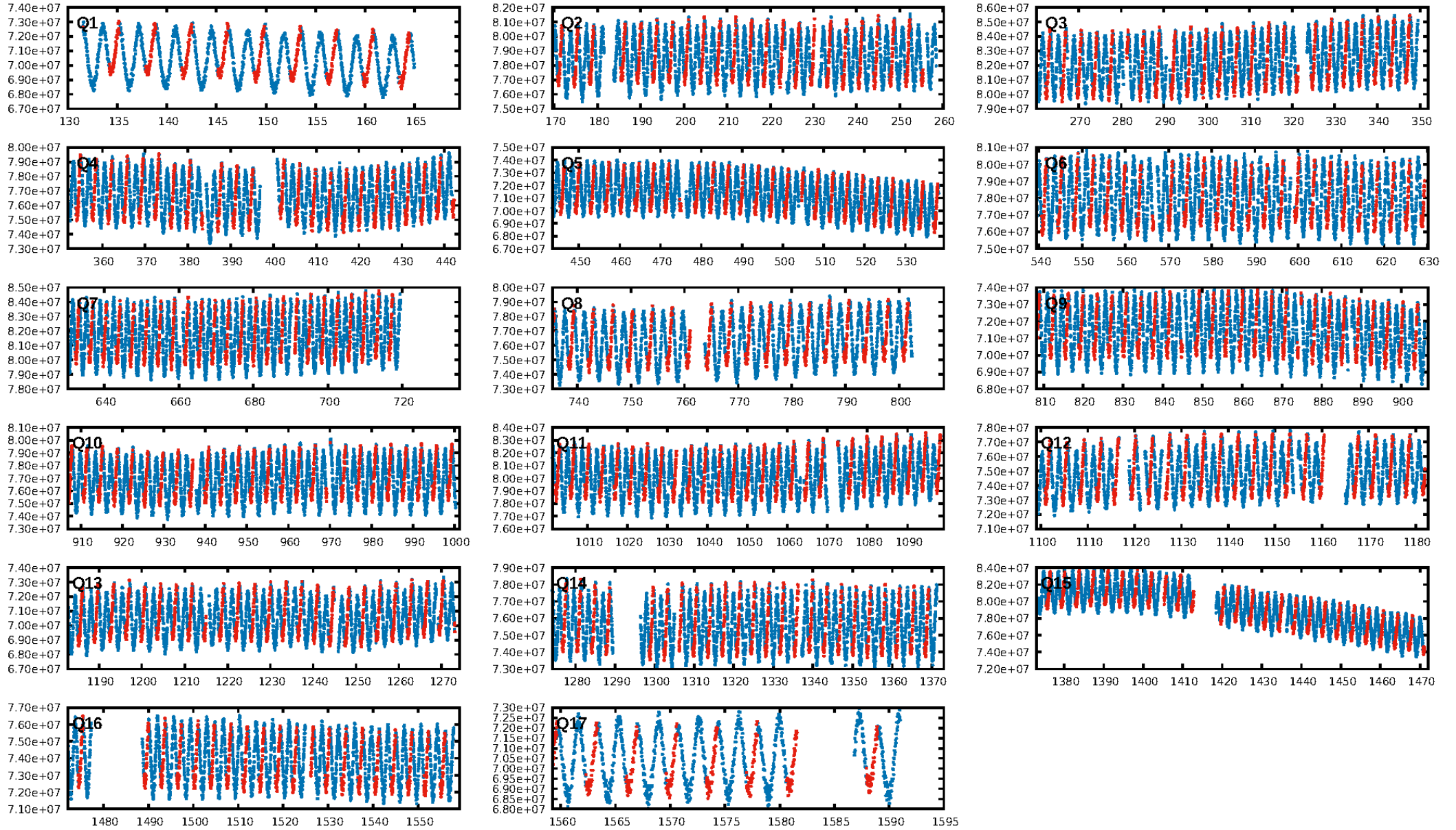
DV Fit Results:

Period = 3.66188 [0.00004] d
Epoch = 134.6784 [0.0091] BKJD
Rp/R* = 0.0316 [0.0191]
a/R* = 1.16 [0.02]
b = 1.00 [0.03]
Seff = 2015.04 [902.94]
Teq = 1708 [191] K
Rp = 5.48 [3.69] Re
a = 0.0489 [0.0133] AU
Ag = 1.24 [1.67] [0.14 σ]
Teffp = 2788 [897] K [1.18 σ]

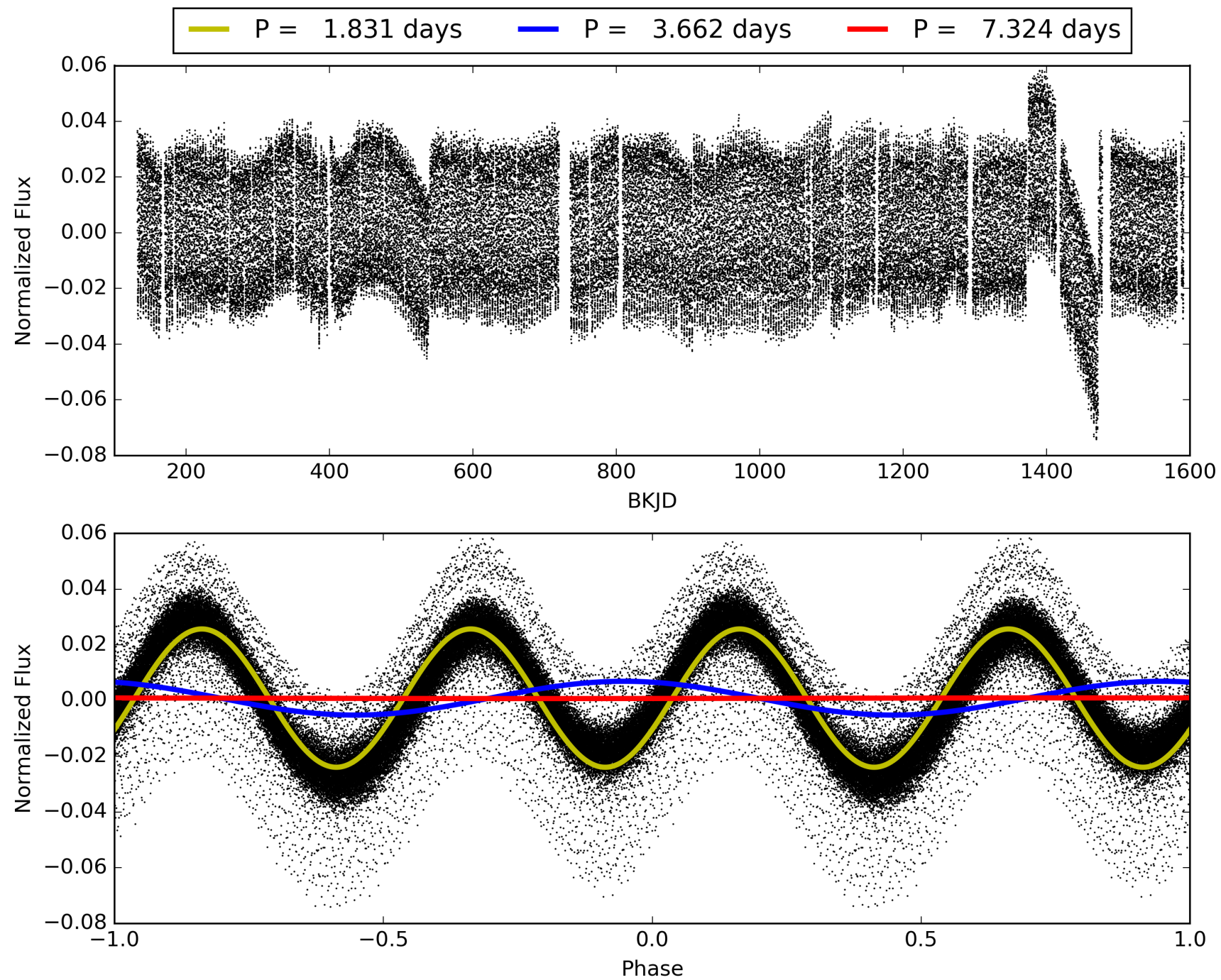
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [355/356]
GhostDiagnostic-chr: 0.6201
Centroid-sig: 41.5%
Centroid-so: 0.157 arcsec [0.90 σ]
OotOffset-rm: 0.035 arcsec [0.52 σ]
KicOffset-rm: 0.199 arcsec [2.91 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.41 [7/17]

TCE 009630640-02, PDC Light Curves

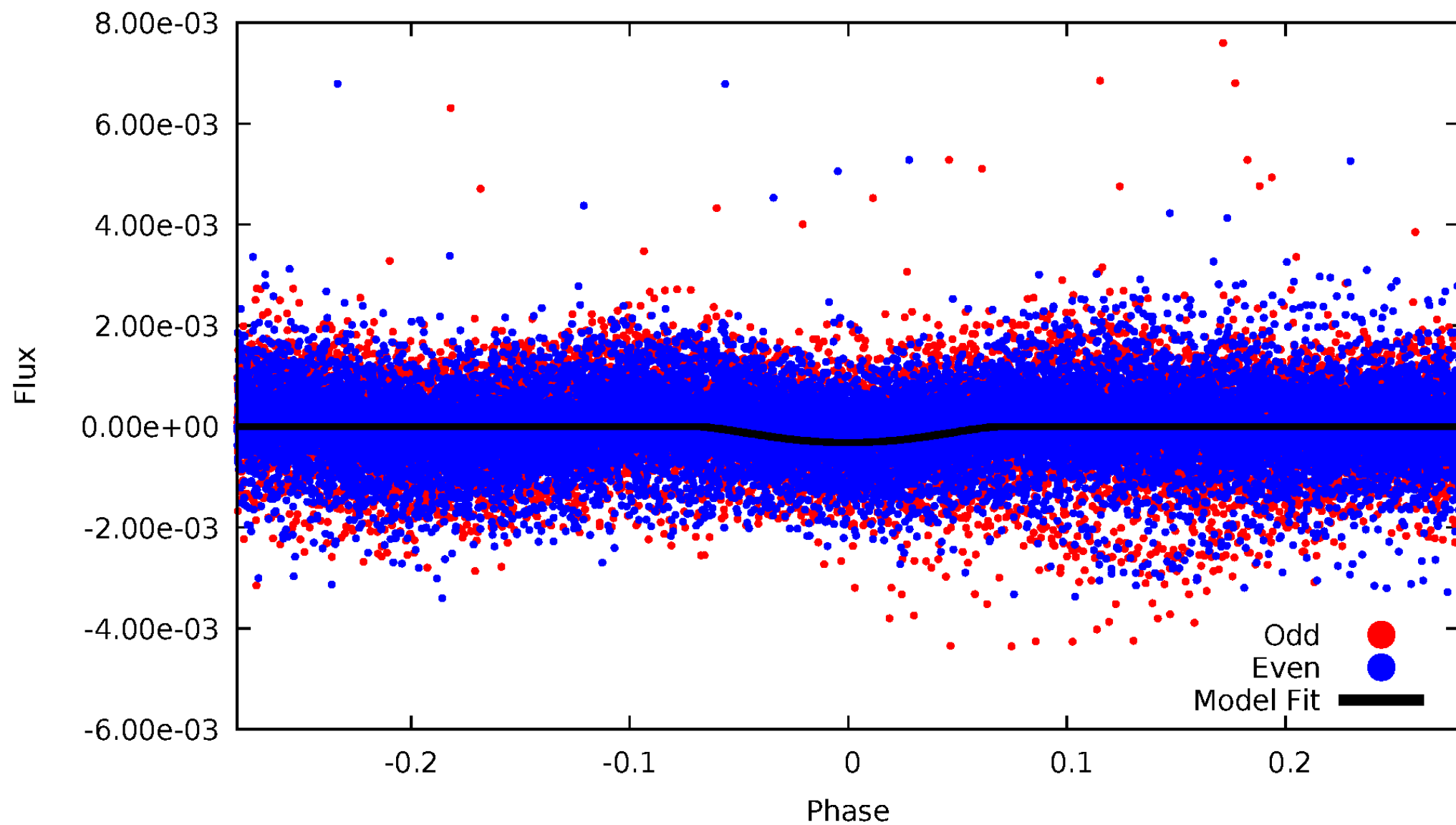


TCE 009630640-02



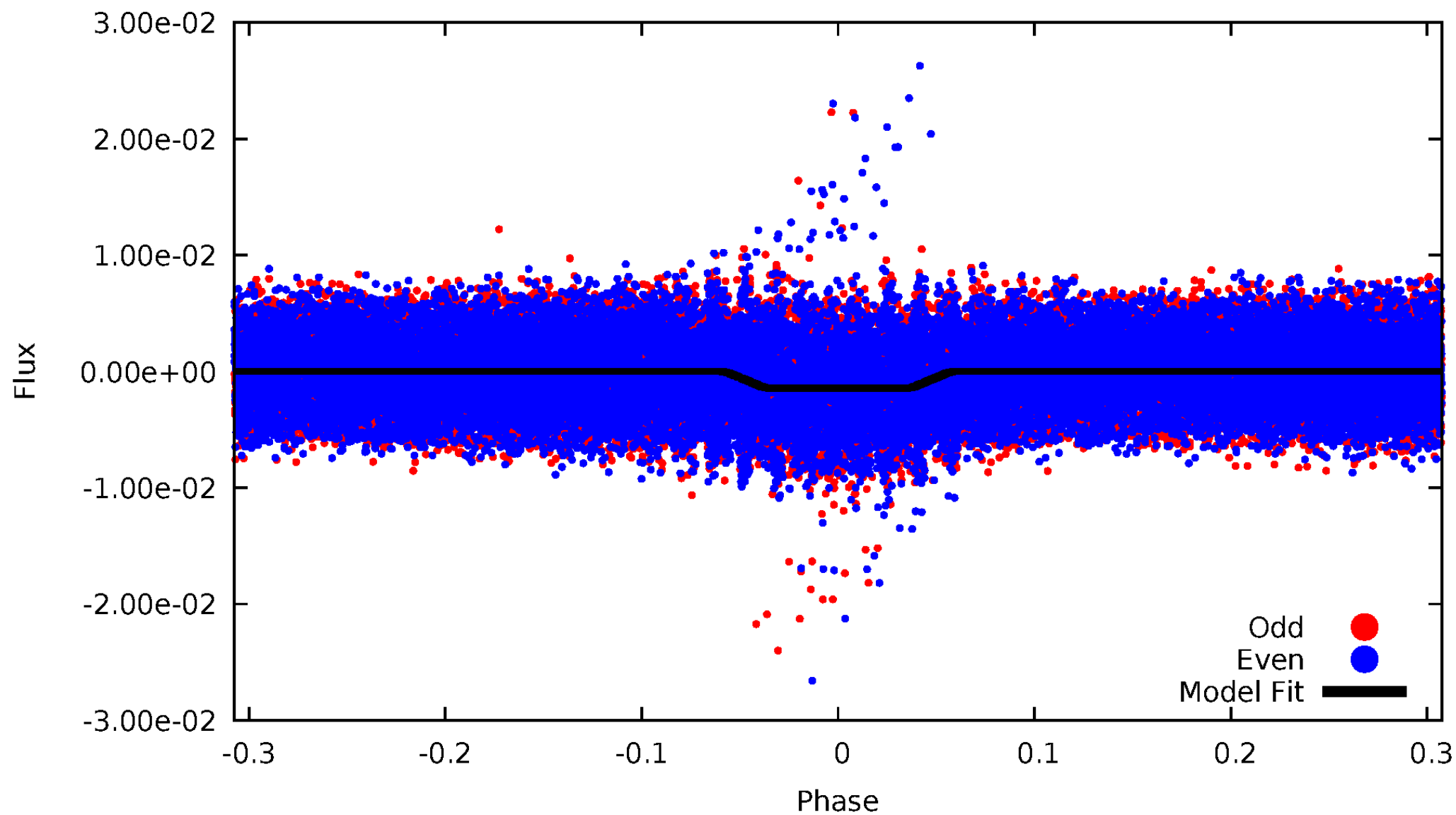
DV Odd/Even

TCE 009630640-02



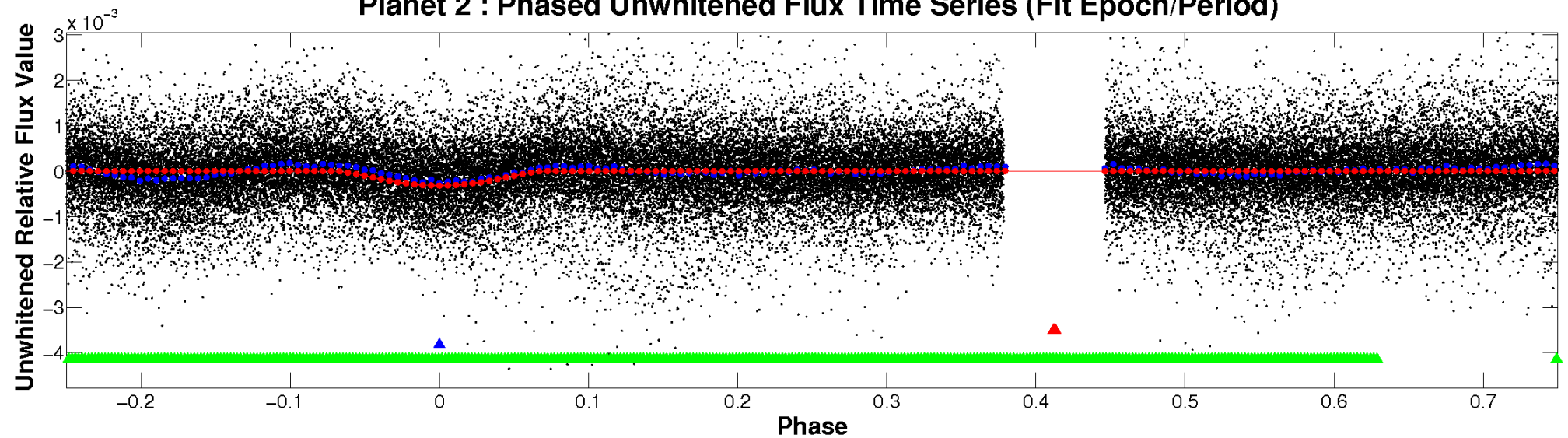
ALT Odd/Even

TCE 009630640-02

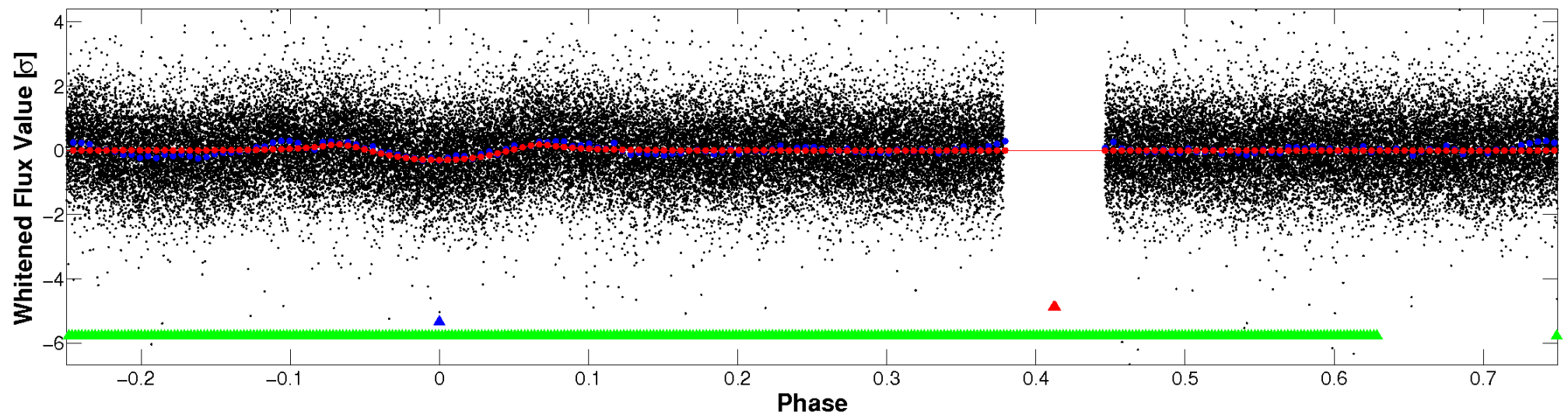


Non-Whitened Vs. Whitened Light Curve

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

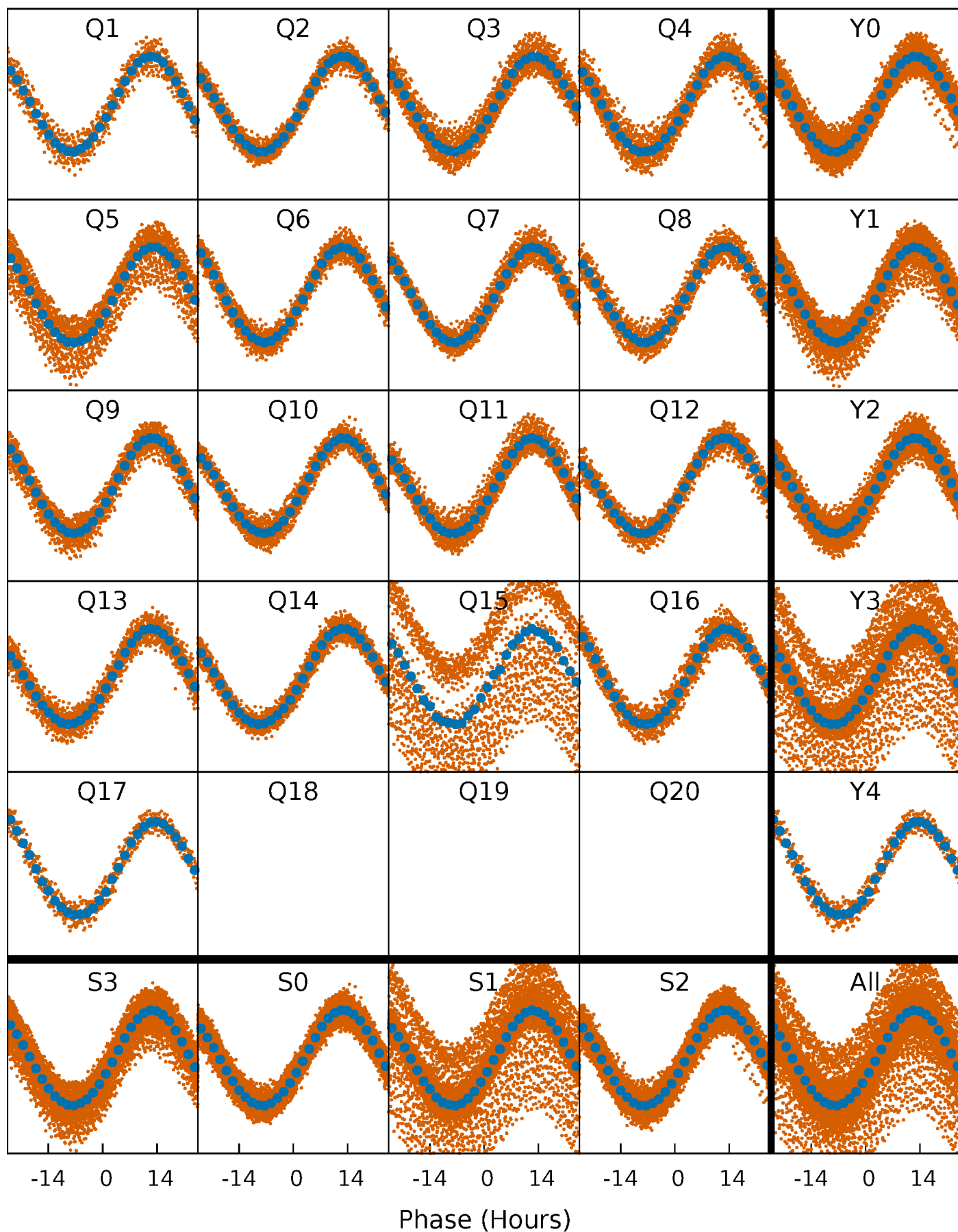


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



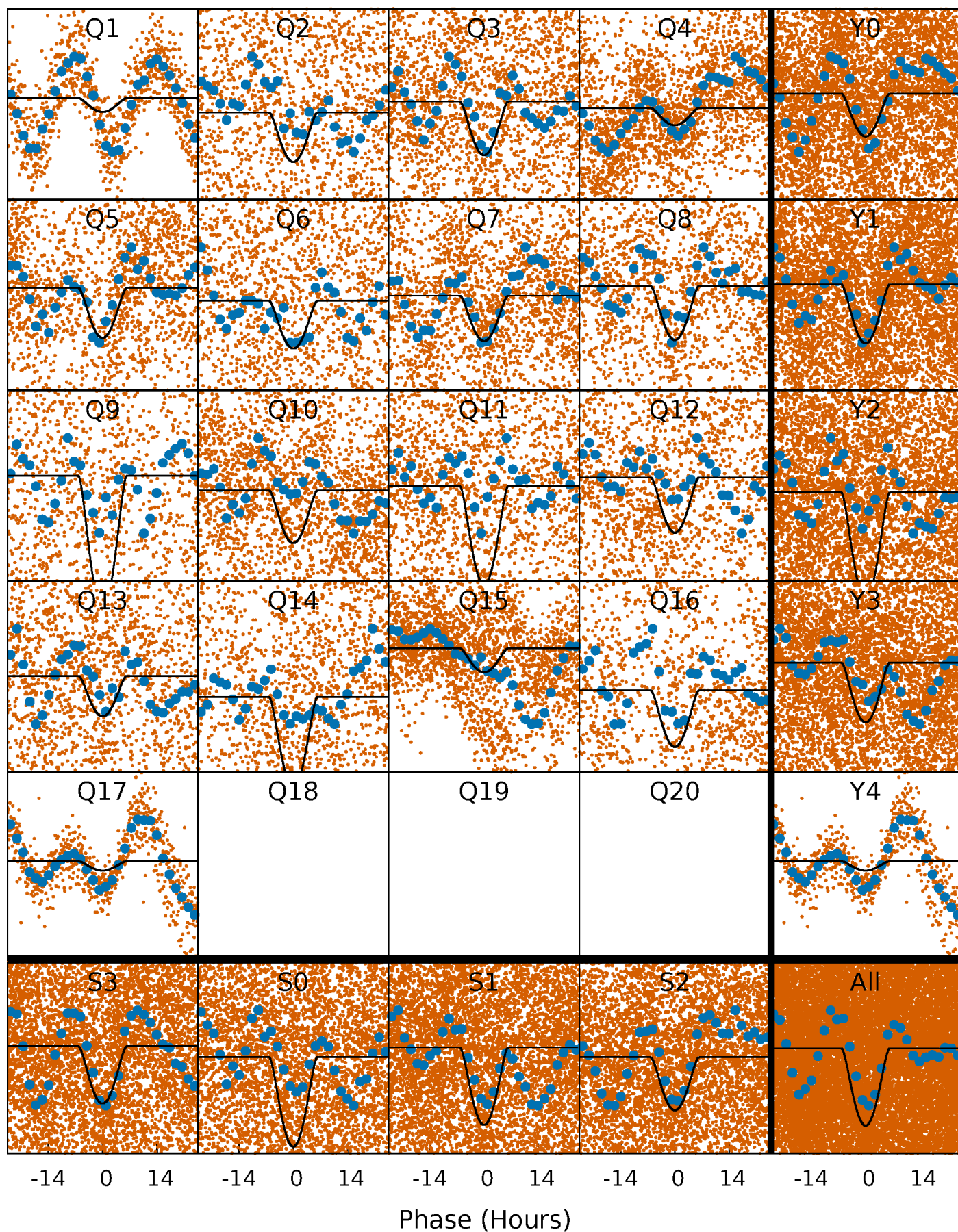
PDC Quarter-Phased Transit Curves

TCE 009630640-02 P= 3.661881 Days $T_0=134.678367$ (BKJD)



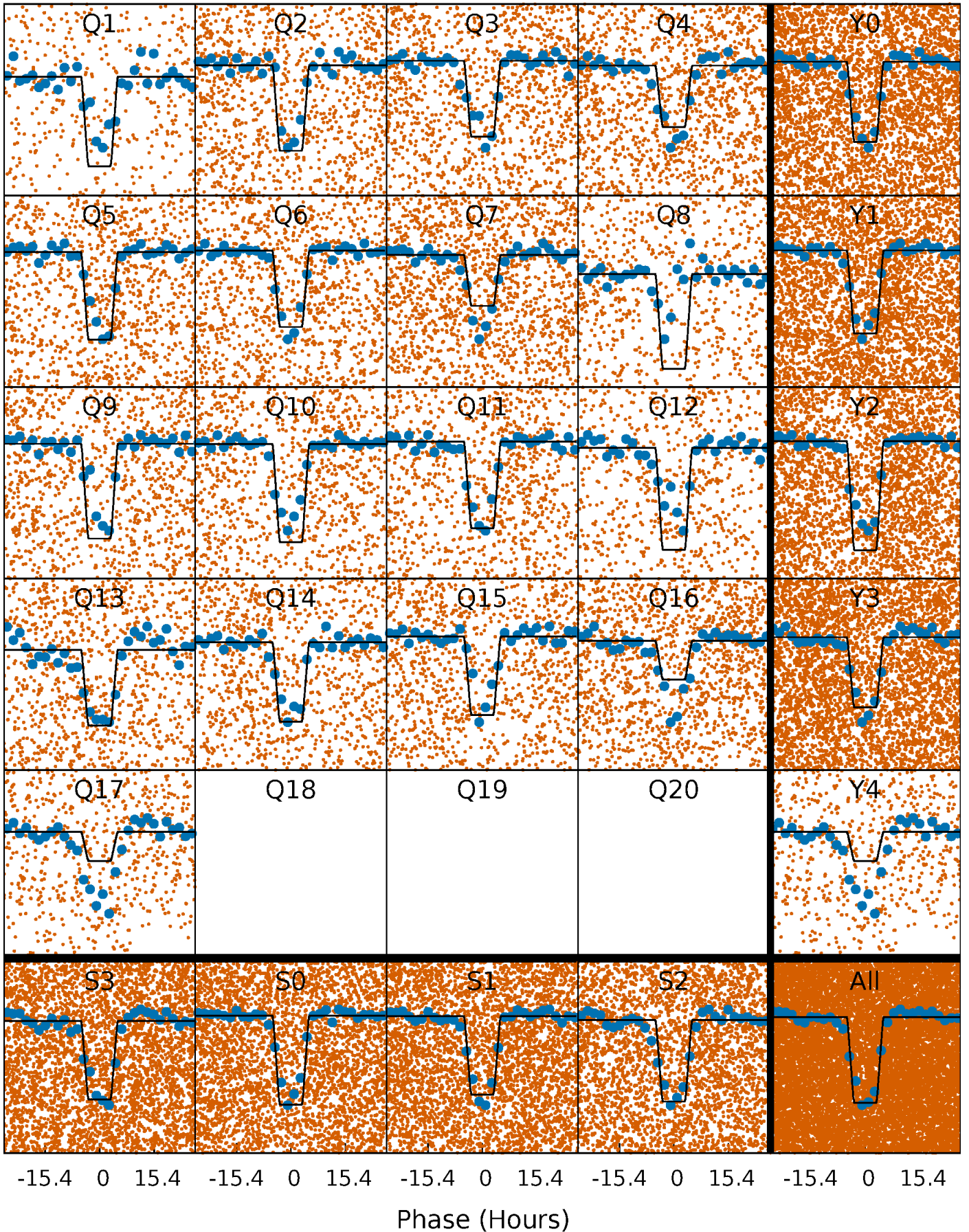
DV Quarter-Phased Transit Curves

TCE 009630640-02 P= 3.661881 Days $T_0=134.678367$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

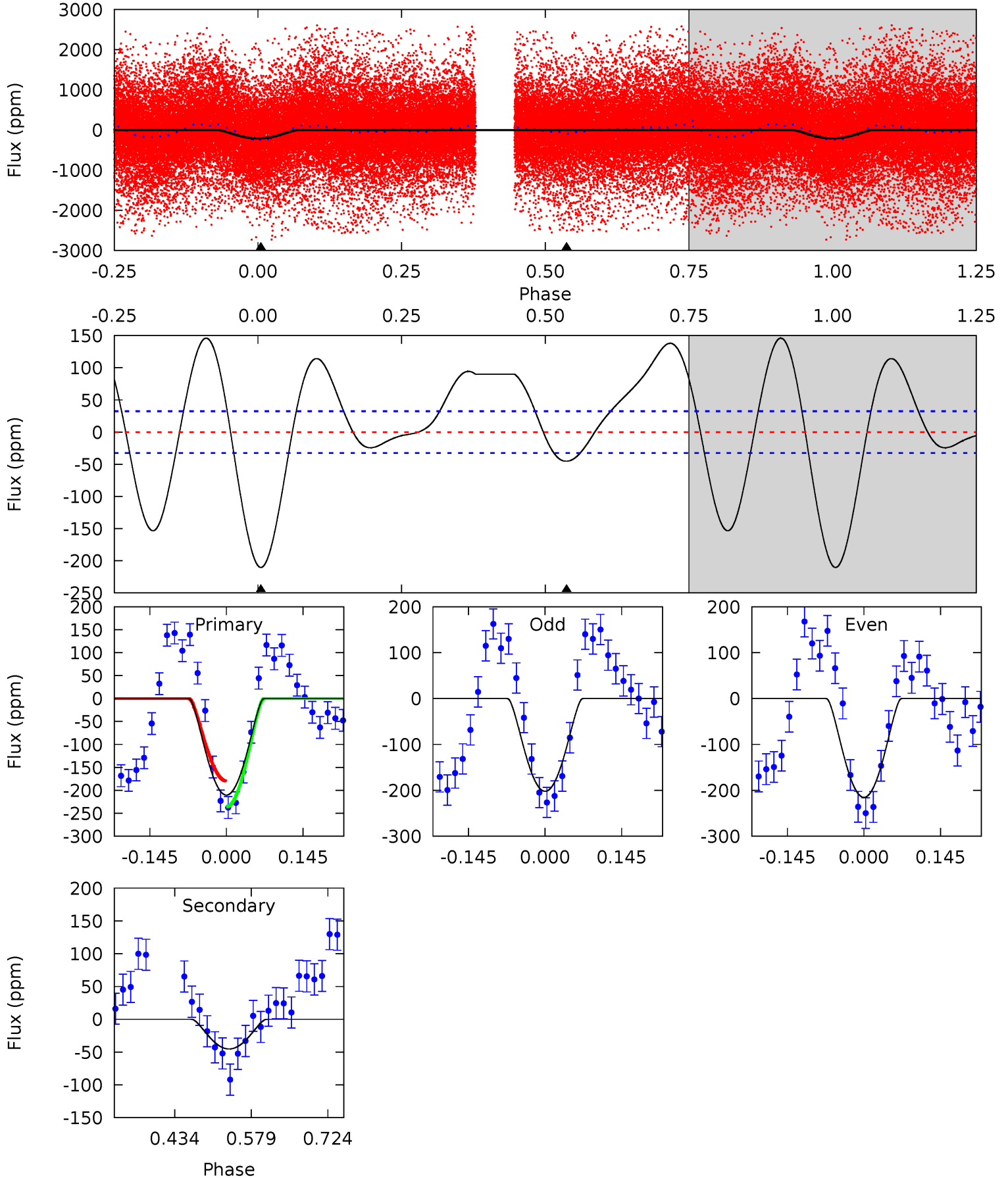
TCE 009630640-02 $P = 3.661903$ Days $T_0 = 134.689769$ (BKJD)



DV Model-Shift Uniqueness Test

009630640-02, P = 3.661881 Days, E = 131.016486 Days

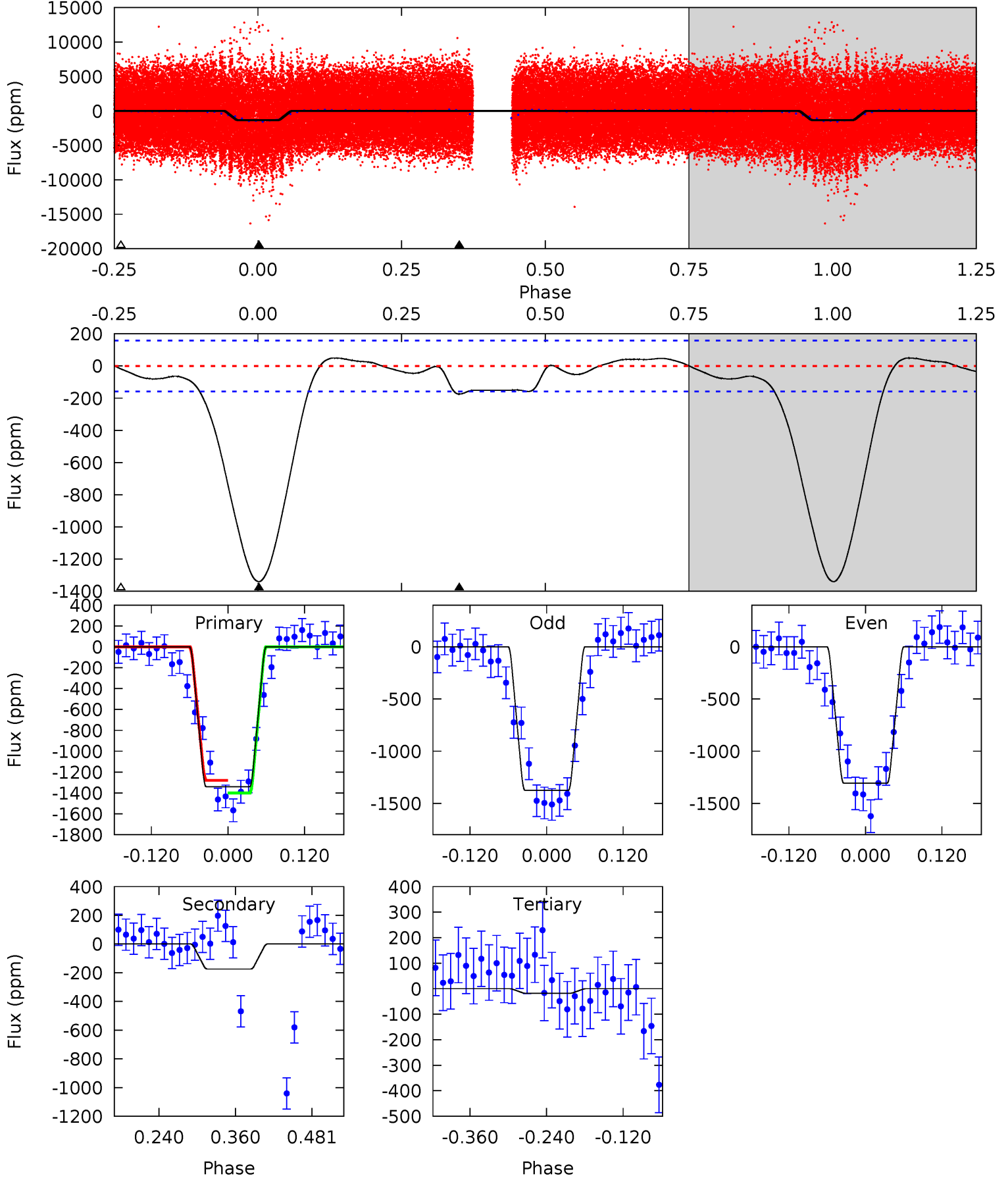
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.1	6.26	0	0	4.49	1.46	10.9	29.1	29.1	6.26	6.26	0.91	0.99	0.41	3.97



Alt Model-Shift Uniqueness Test

009630640-02, P = 3.661903 Days, E = 131.027866 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.4	4.99	0.52	0	4.53	1.55	1.44	37.9	38.4	4.47	4.99	0.99	0.97	0.04	1.73



Stellar Parameters For KIC 009630640

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6793^{+166}_{-238}	$4.101^{+0.246}_{-0.164}$	$-0.460^{+0.250}_{-0.300}$	$1.589^{+0.425}_{-0.468}$	$1.162^{+0.193}_{-0.158}$	$0.408^{+0.613}_{-0.188}$
	+2%/-4%	+6%/-4%	+54%/-65%	+27%/-29%	+17%/-14%	+150%/-46%
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 009630640-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-45 ± 7	$5.37^{+3.42}_{-2.89}$	2375^{+174}_{-193}	3488^{+1208}_{-604}	$2.064^{+7.653}_{-1.296}$
Alt.	-174 ± 35	$6.56^{+3.47}_{-2.98}$	2366^{+184}_{-178}	4176^{+1133}_{-637}	$5.379^{+12.496}_{-3.179}$

T_{max} = Theoretical Maximum Planetary Temperature

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

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

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

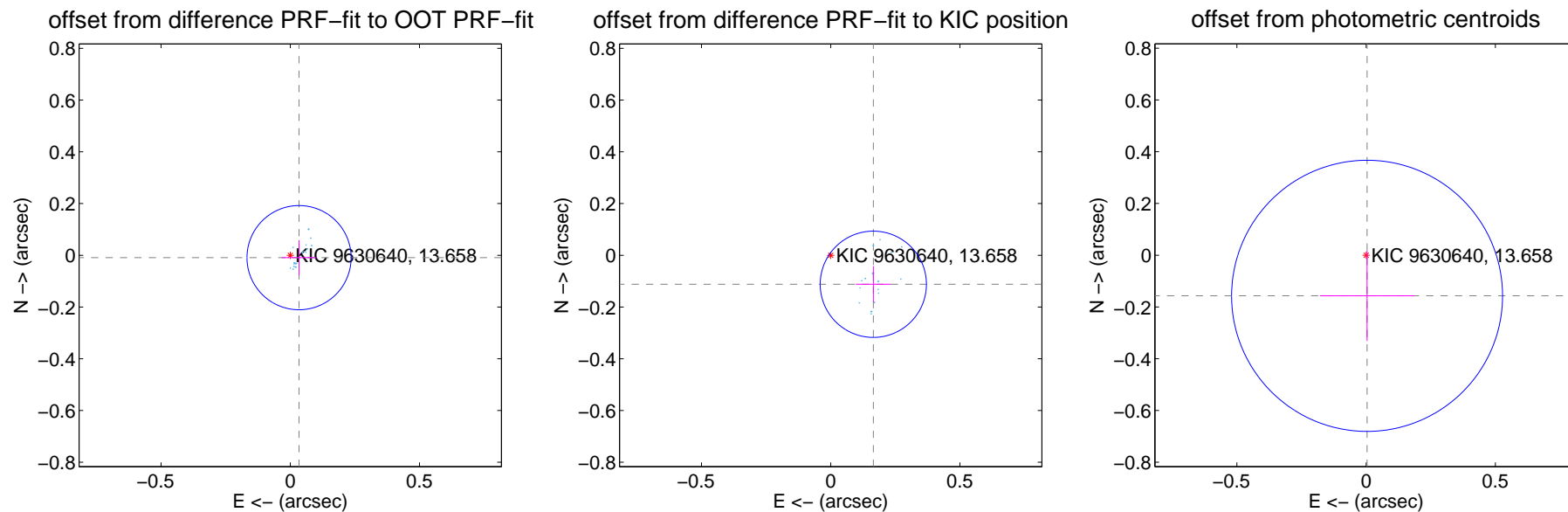
DV Centroid Data

Supplemental centroid analysis for 009630640-02. Kepler magnitude: 13.66. Transit SNR 19.83

There are 17 quarters with good PRF difference image offsets

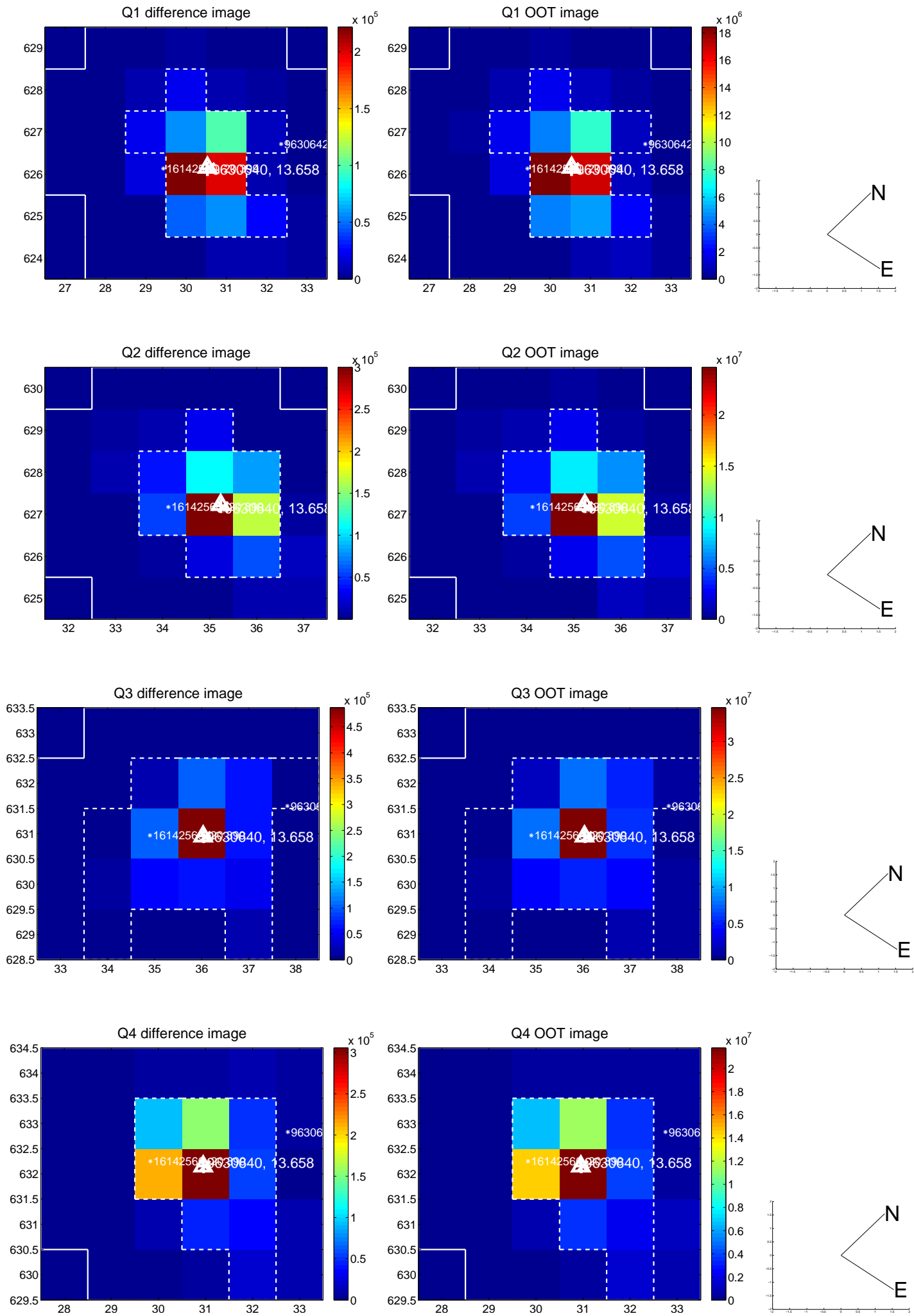
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.035 ± 0.067	0.52	-0.034 ± 0.067	-0.009 ± 0.068
PRF-fit source offset from KIC position	0.199 ± 0.068	2.91	-0.165 ± 0.068	-0.112 ± 0.070
photometric centroid source offset	0.16 ± 0.17	0.90	-0.00 ± 0.18	-0.16 ± 0.17

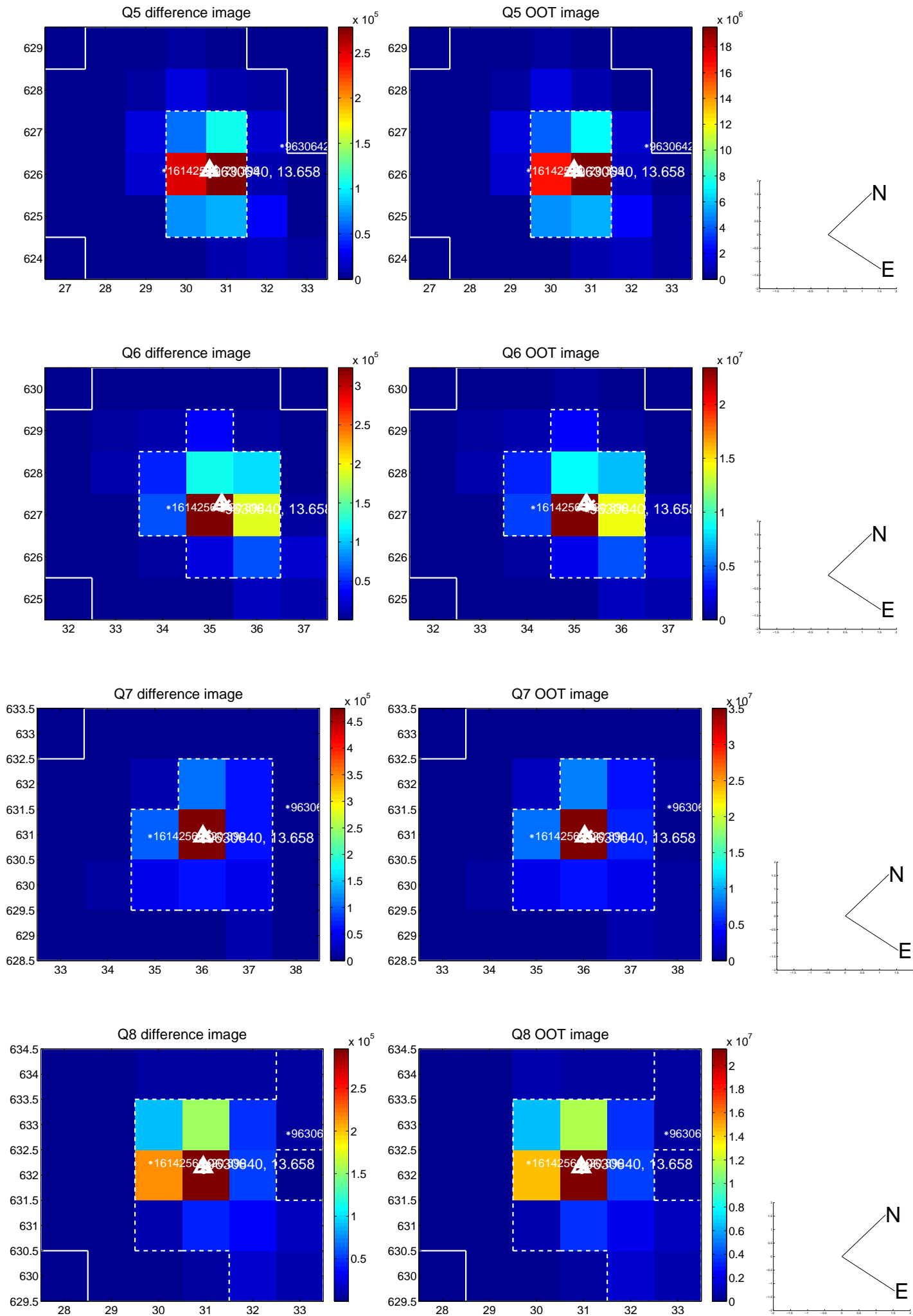


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

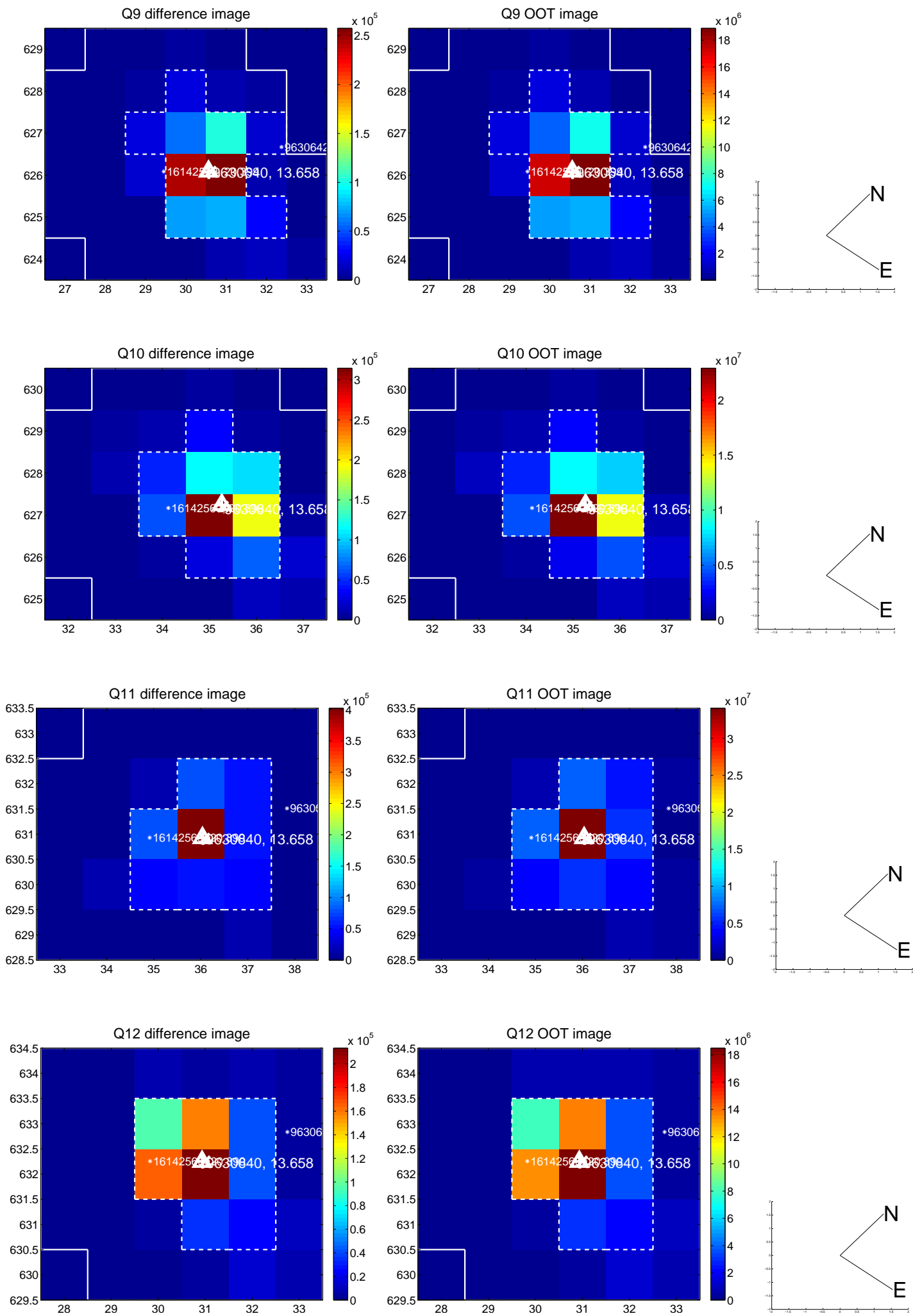
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



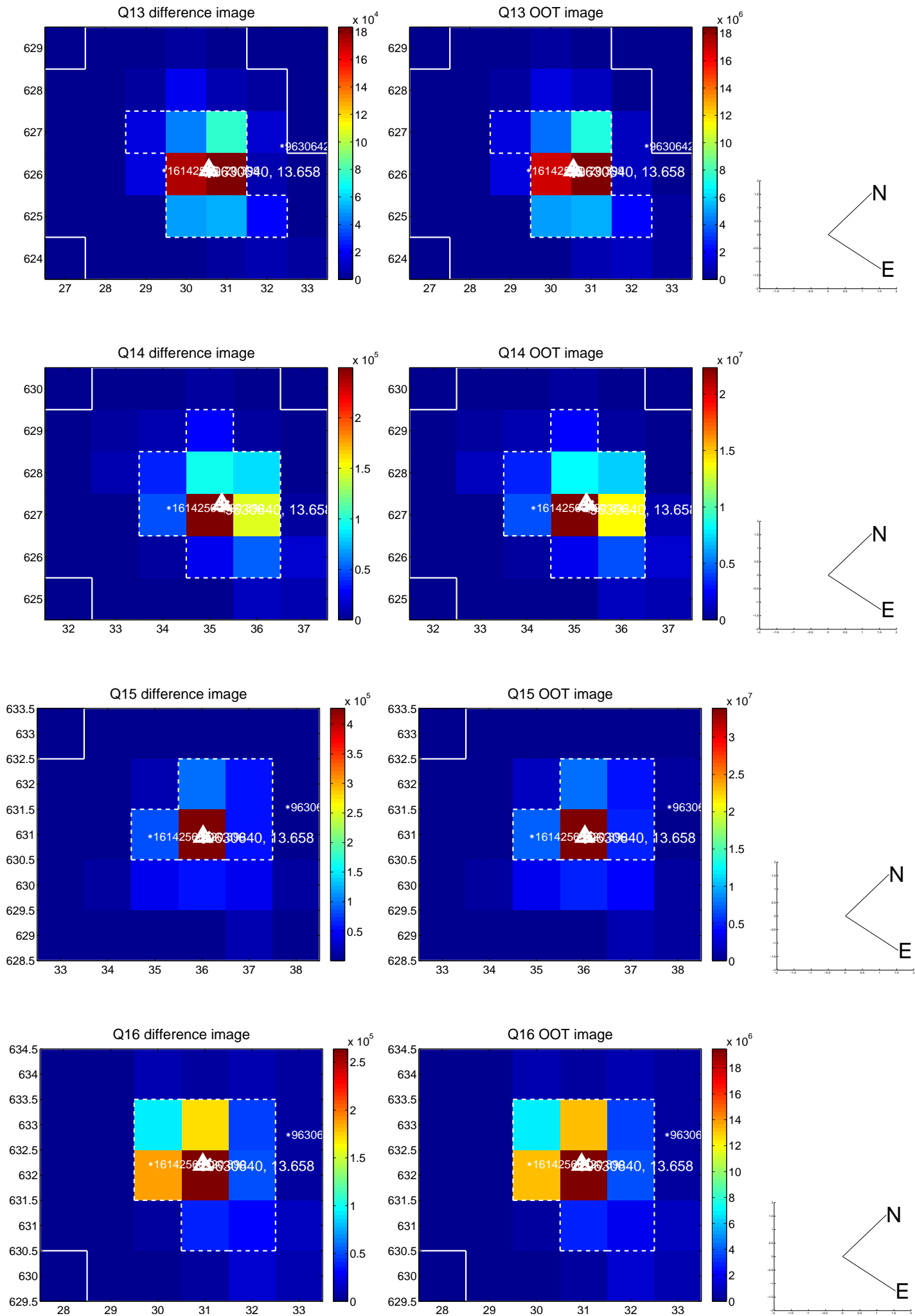
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

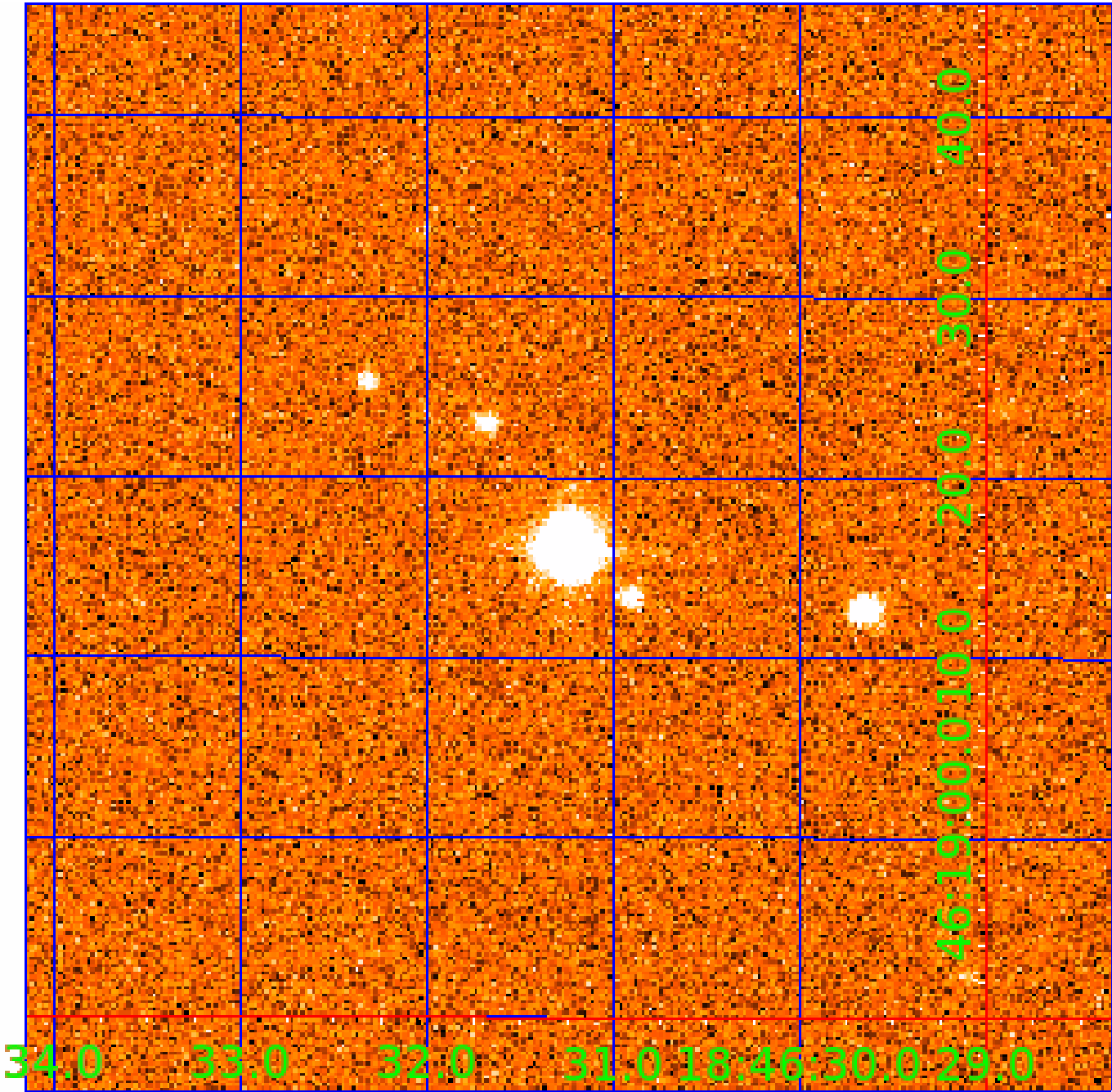


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009630640

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})
009630640-01	OBS	7204.01	3.661892	132.524688	763.6	1.842	46.7	58.4	1.59	6793	7.24	2015.04
009630640-02	OBS	No	3.661881	134.678367	320.8	12.283	16.3	19.8	1.59	6793	5.48	2015.04
009630640-03	OBS	No	3.669994	133.760119	193.3	11.269	9.1	10.5	1.59	6793	3.12	2009.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009630640-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL
009630640-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
009630640-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST

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.

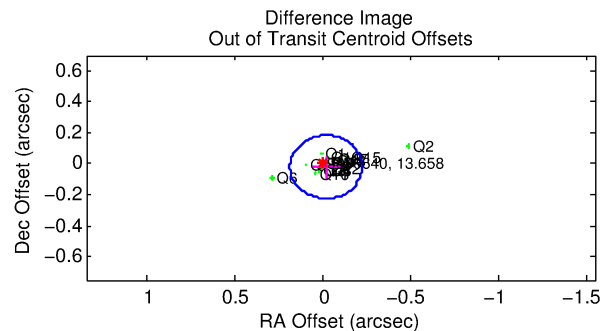
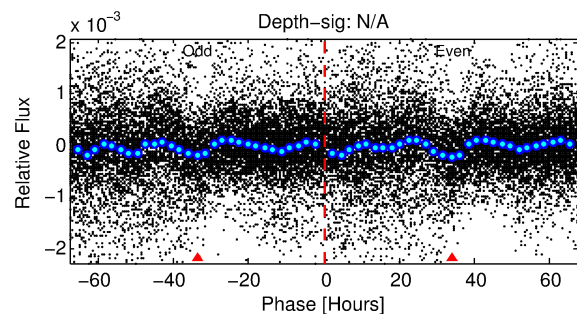
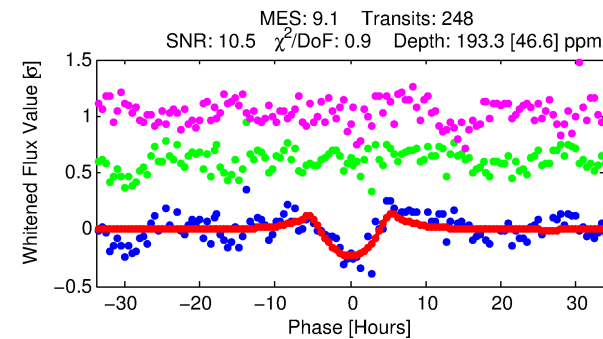
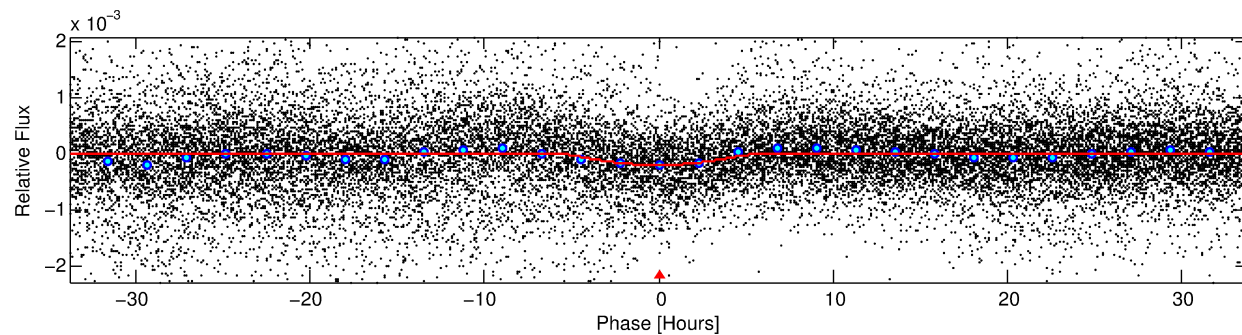
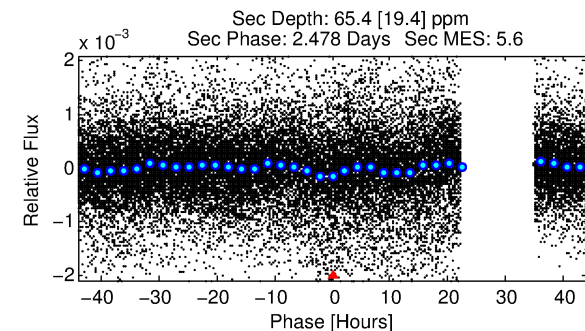
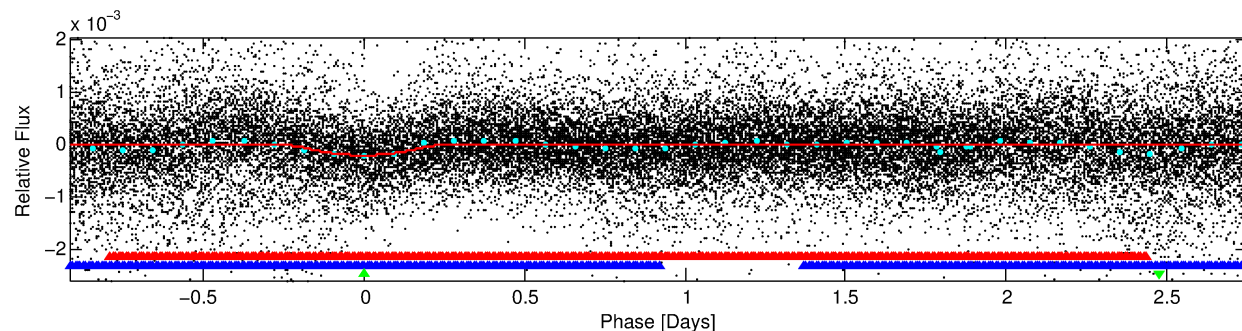
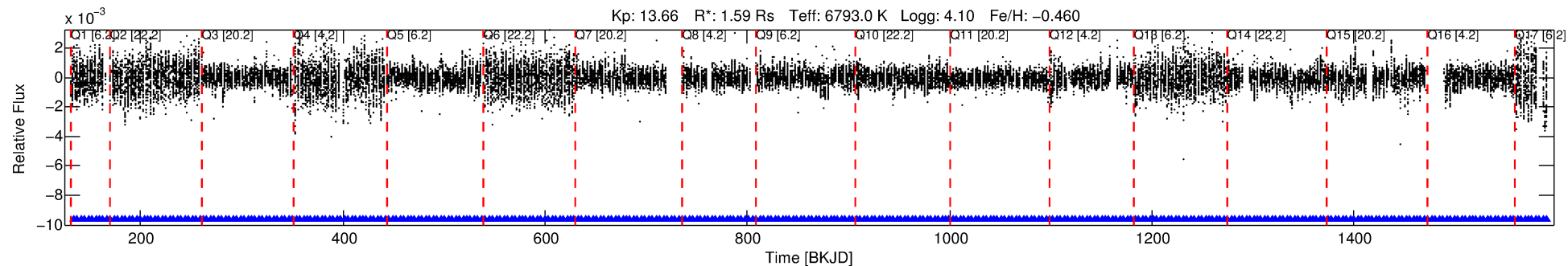
Ephemeris Match Information For 009630640-03

No Significant Match Found

DV One-Page Summary

KIC: 9630640 Candidate: 3 of 3 Period: 3.670 d
KOI: K07204 Corr: No Ephemeris Match

Kp: 13.66 R*: 1.59 Rs Teff: 6793.0 K Logg: 4.10 Fe/H: -0.460



DV Fit Results:

Period = 3.66999 [0.00009] d
Epoch = 133.7601 [0.0241] BKJD
Rp/R* = 0.0180 [0.0047]
a/R* = 1.18 [0.05]
b = 0.99 [0.01]
Seff = 2009.11 [900.28]
Teq = 1707 [191] K
Rp = 3.12 [1.22] Re
a = 0.0490 [0.0133] AU
Ag = 8.86 [6.50] [1.21σ]
Teffp = 4554 [699] K [3.93σ]

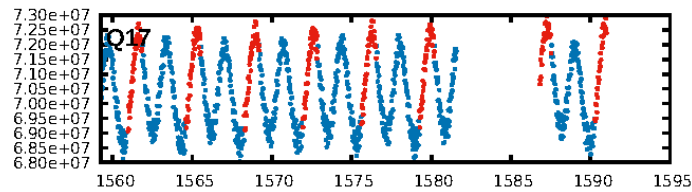
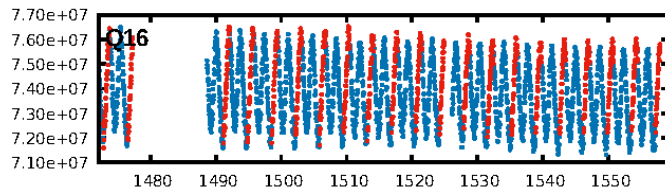
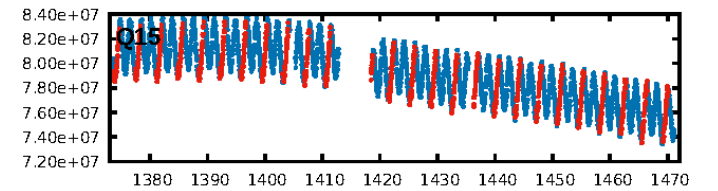
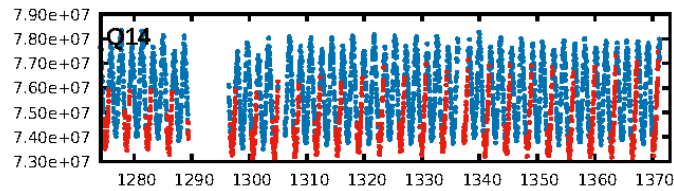
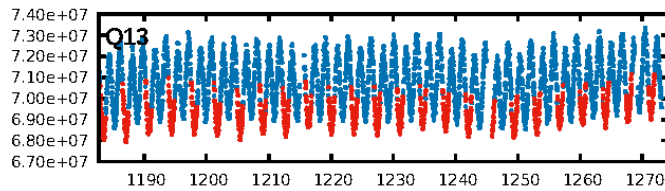
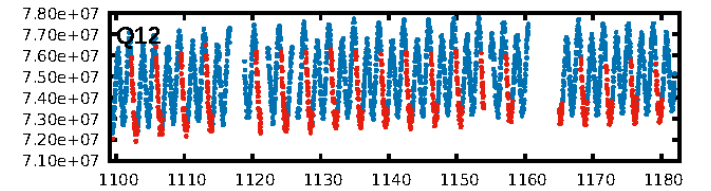
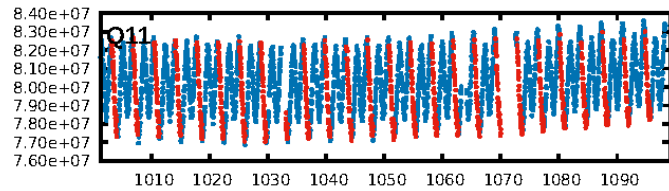
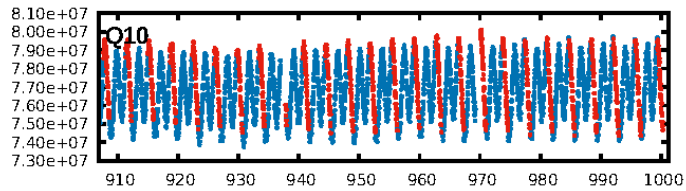
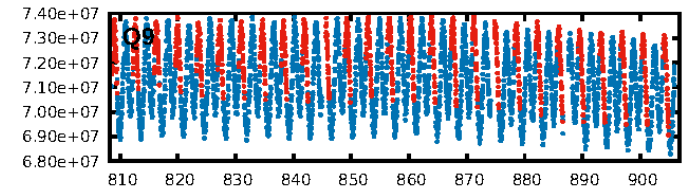
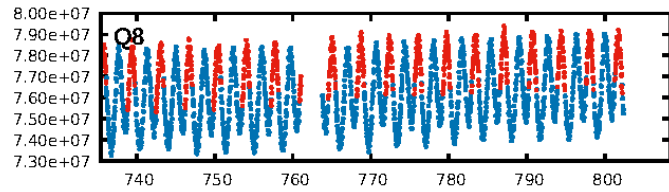
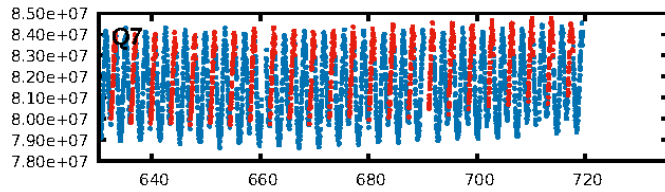
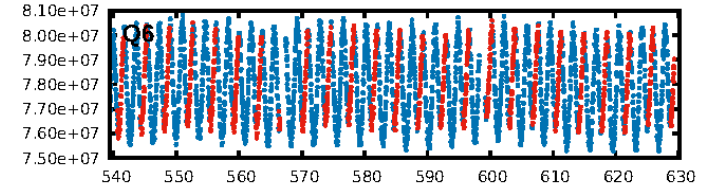
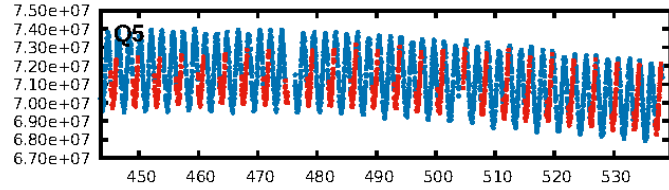
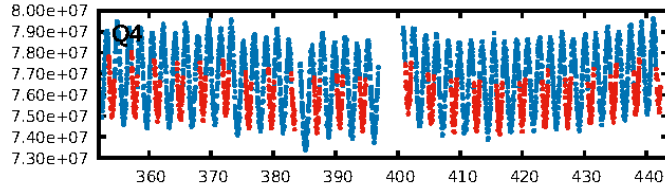
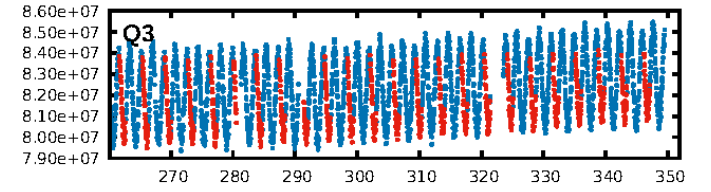
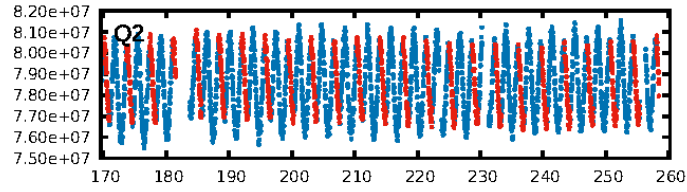
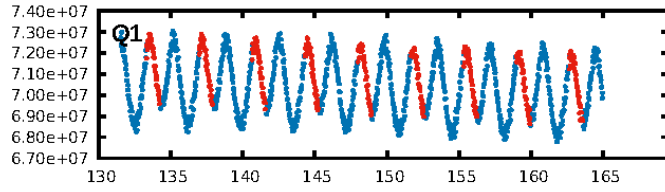
DV Diagnostic Results:

ShortPeriod-sig: 1.4% [0.02σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [231/231]
GhostDiagnostic-chr: -0.08537
Centroid-sig: 31.3%
Centroid-so: 0.230 arcsec [0.78σ]
OotOffset-rm: 0.026 arcsec [0.38σ]
KicOffset-rm: 0.179 arcsec [2.56σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.59 [10/17]
DiffImageOverlap-fno: 0.00 [0/17]

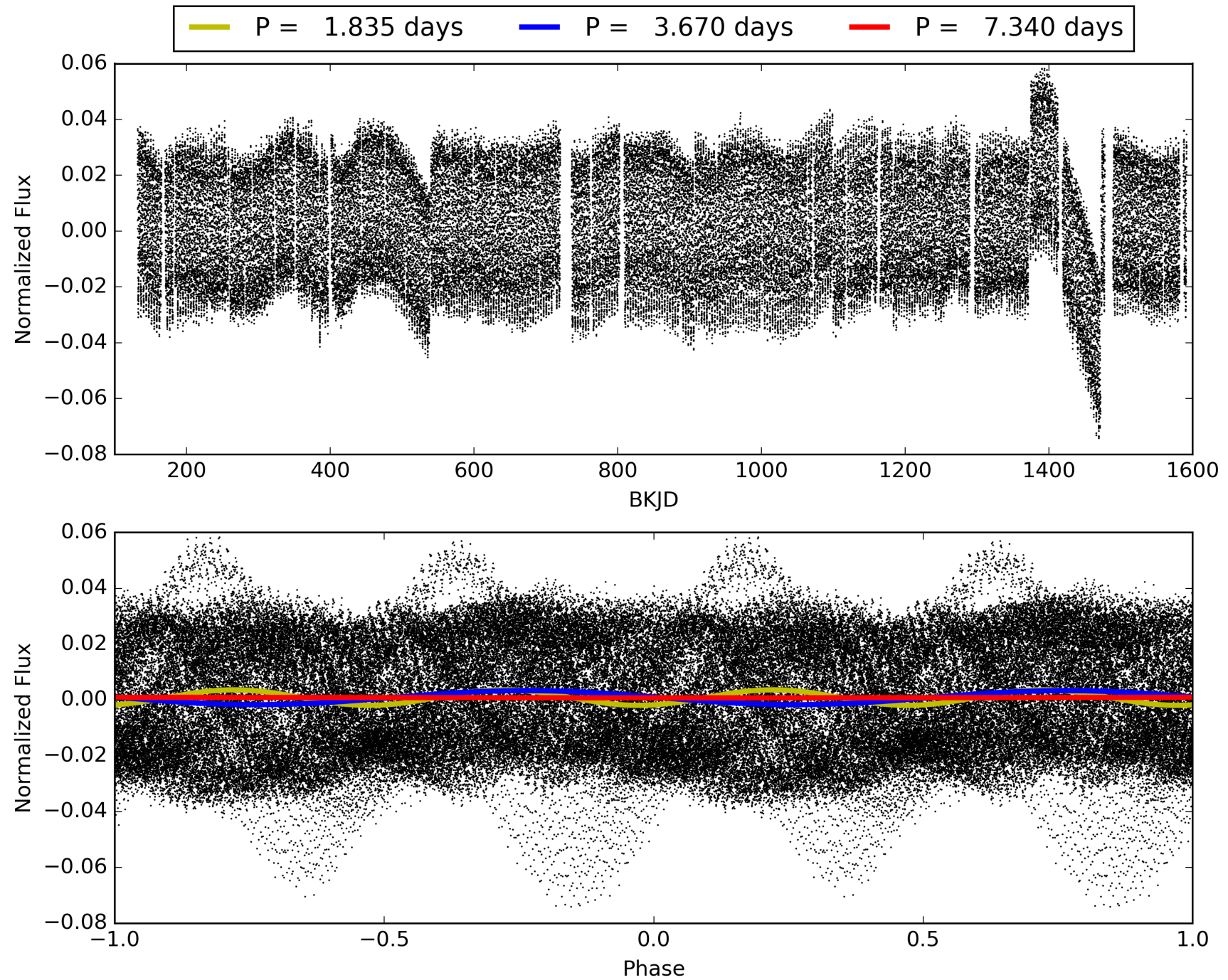
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:18:57 Z

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

TCE 009630640-03, PDC Light Curves

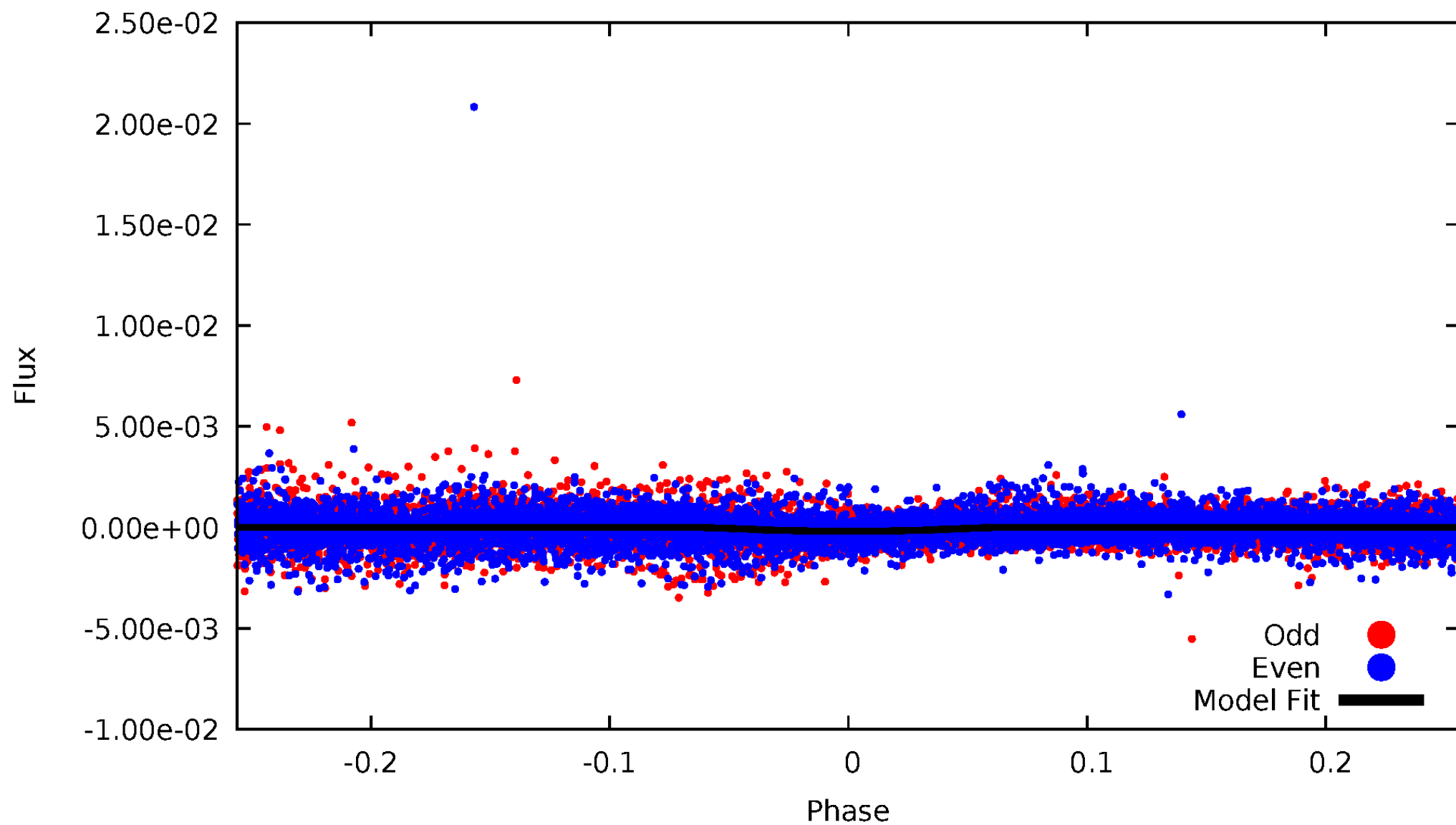


TCE 009630640-03



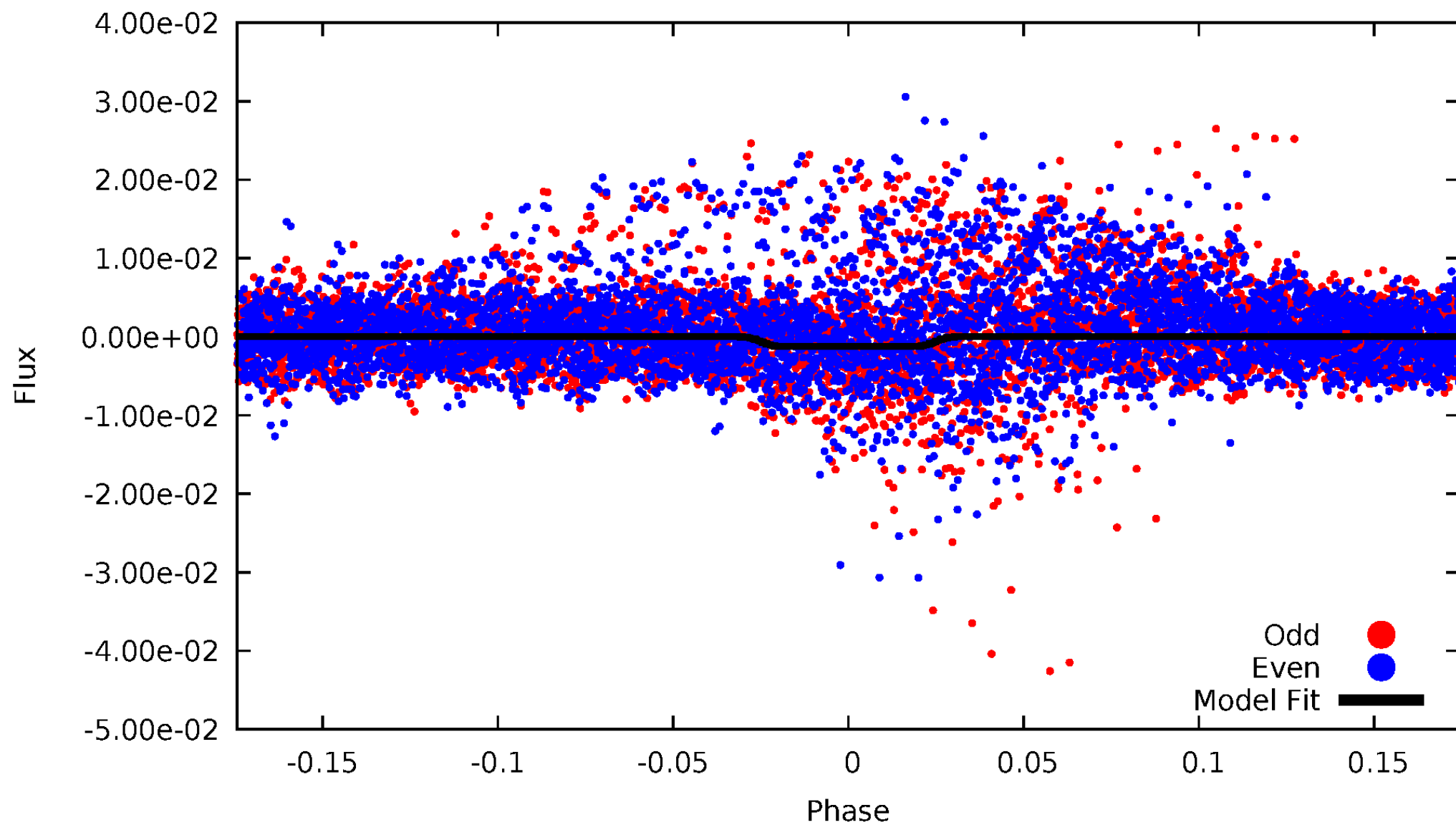
DV Odd/Even

TCE 009630640-03

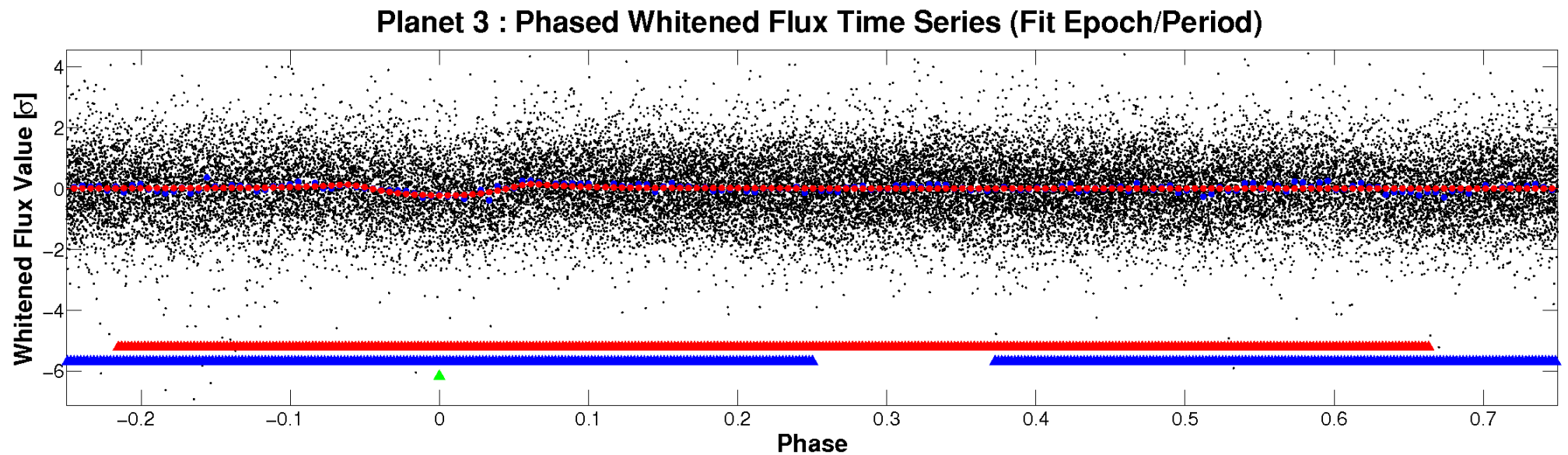
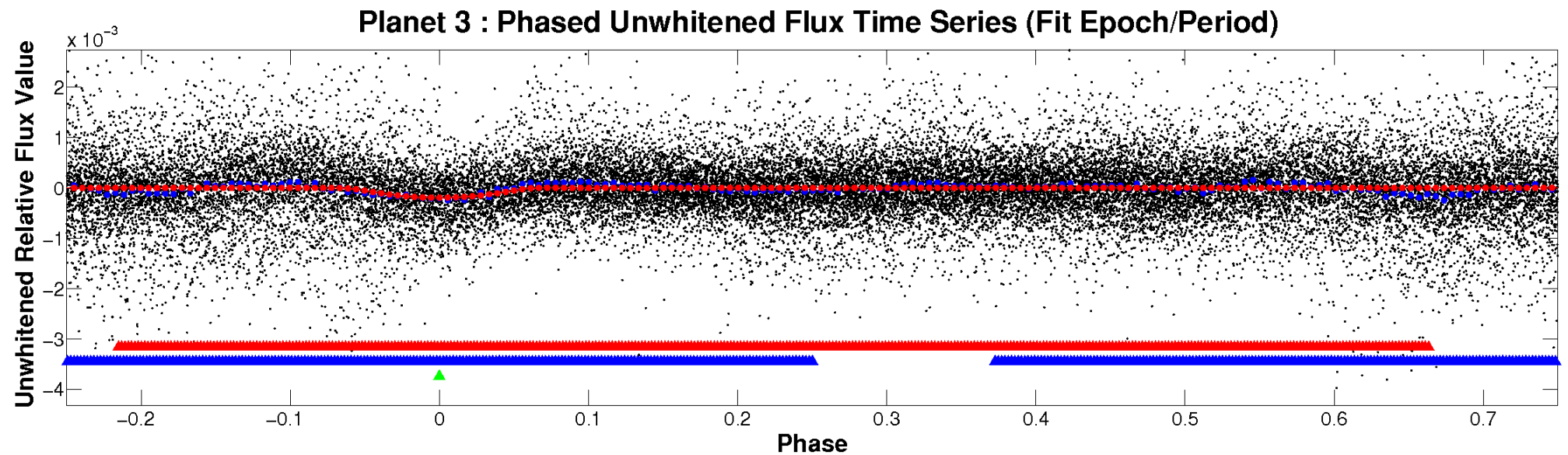


ALT Odd/Even

TCE 009630640-03

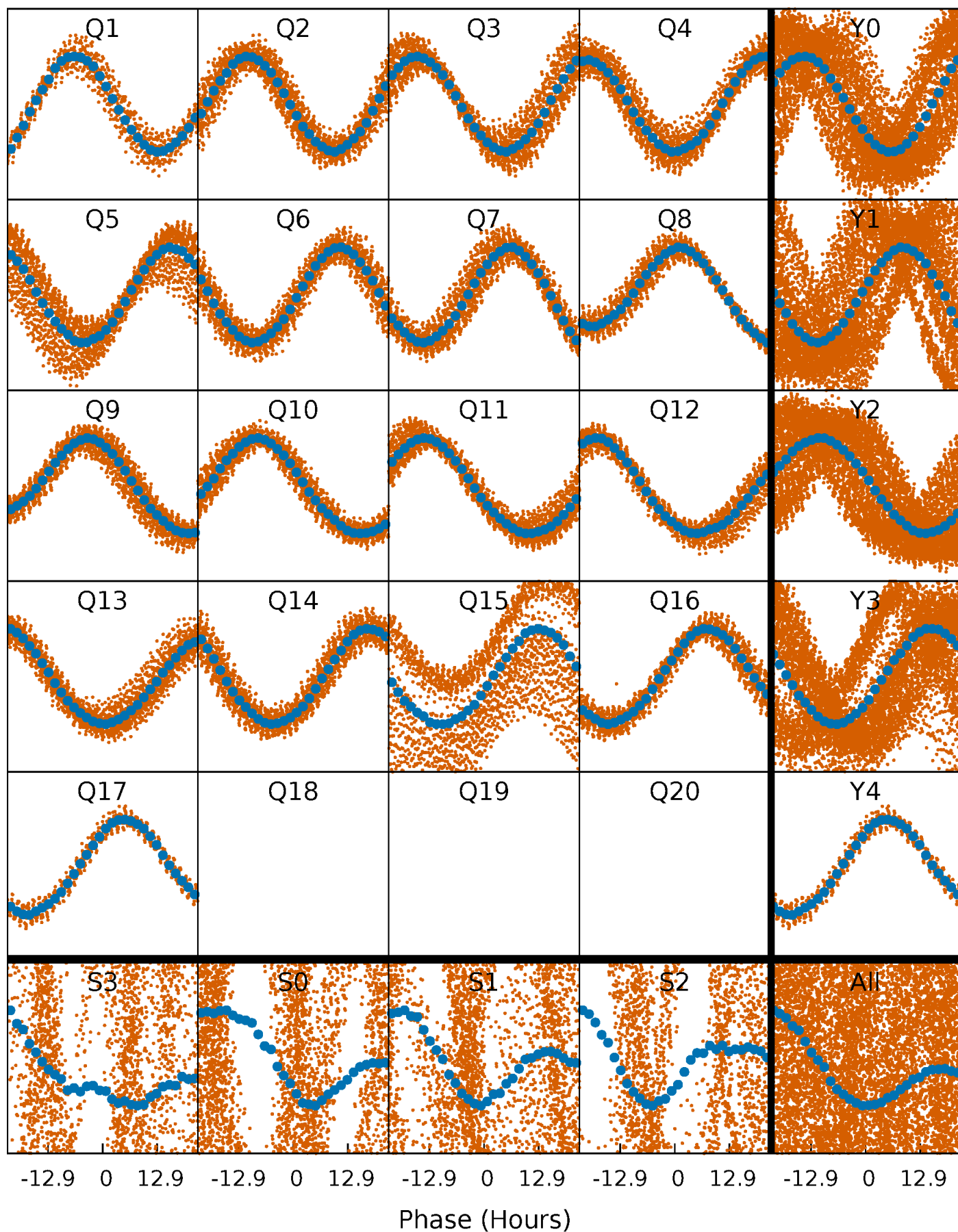


Non-Whitened Vs. Whitened Light Curve



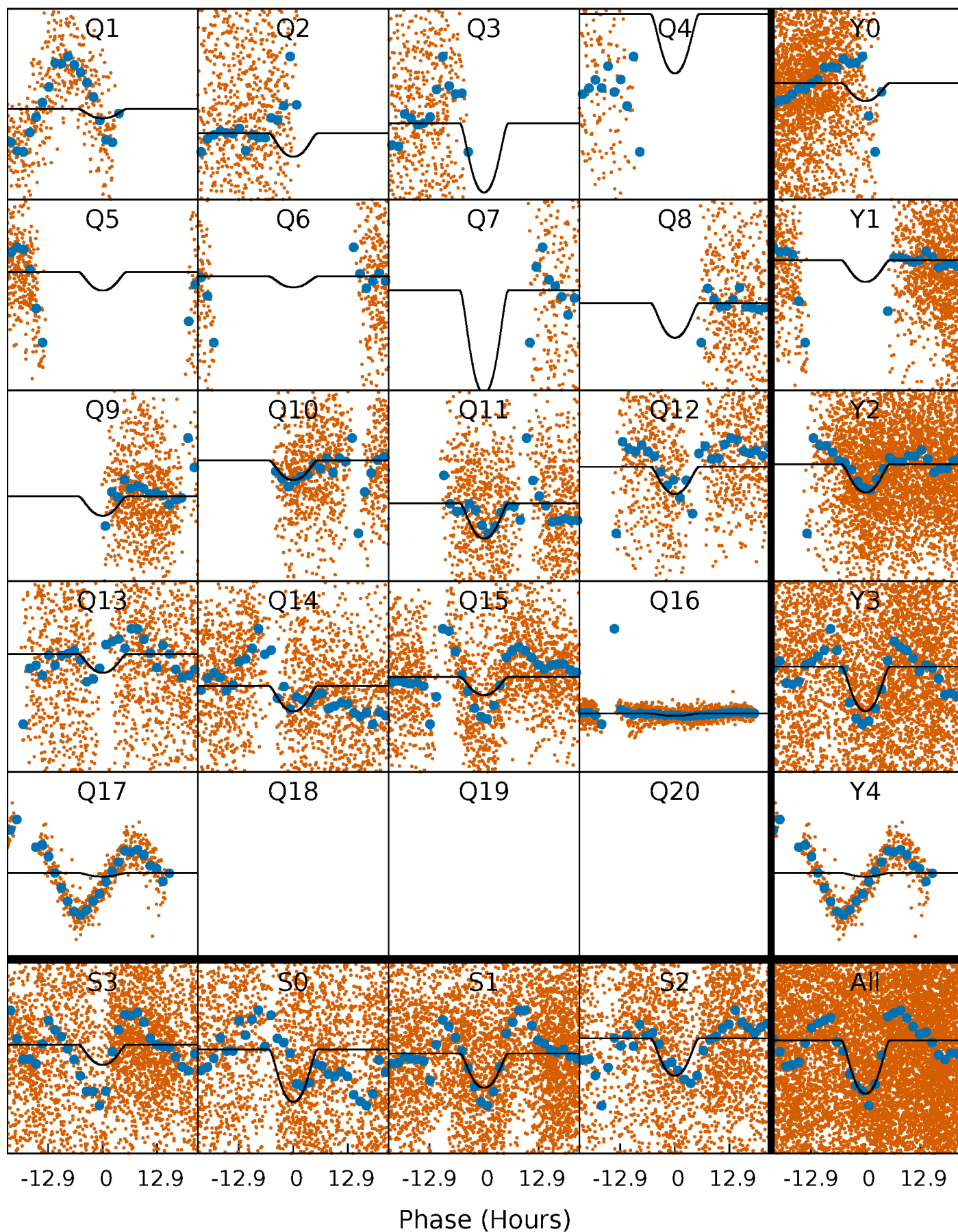
PDC Quarter-Phased Transit Curves

TCE 009630640-03 P= 3.669994 Days $T_0=133.760119$ (BKJD)



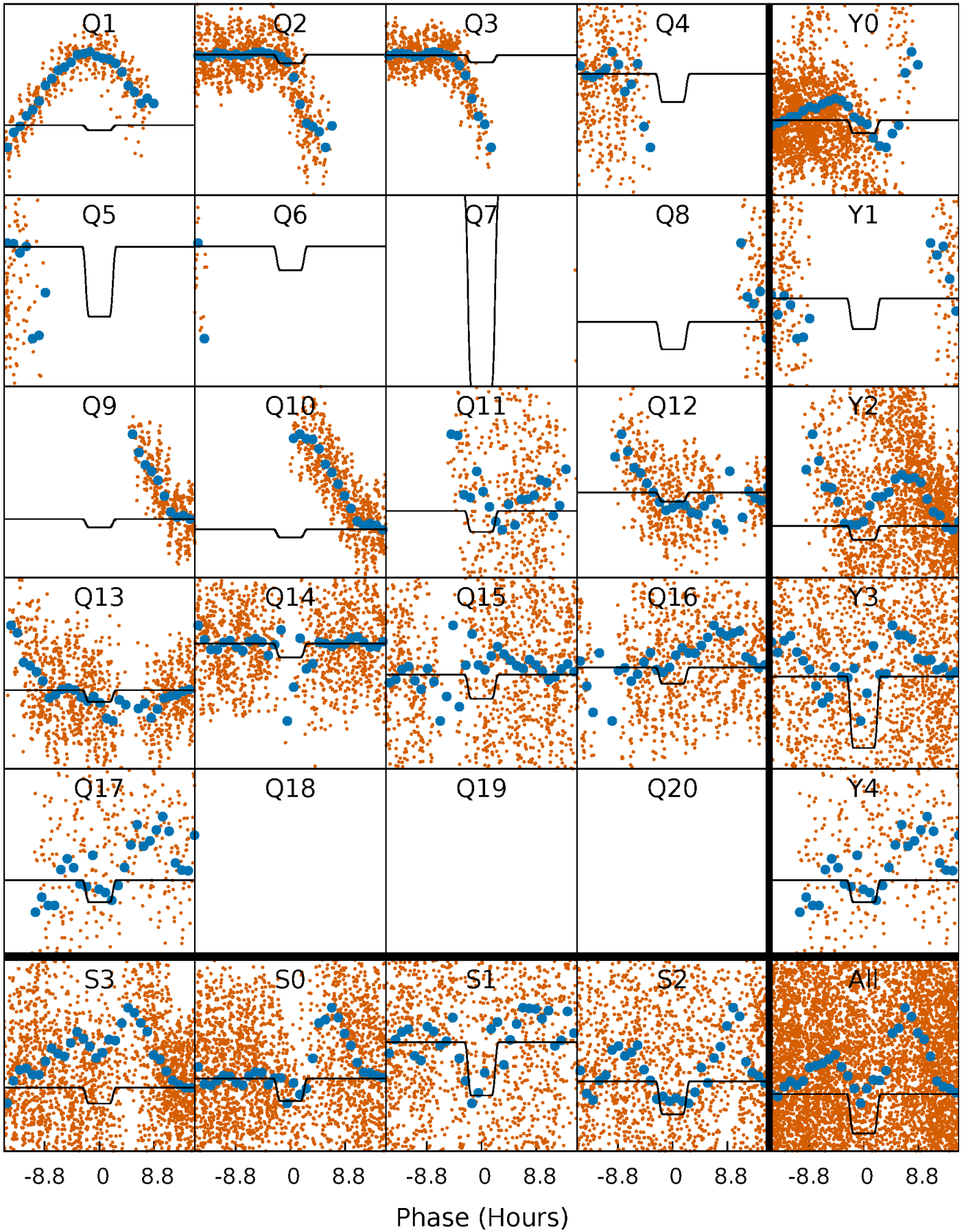
DV Quarter-Phased Transit Curves

TCE 009630640-03 P= 3.669994 Days $T_0=133.760119$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

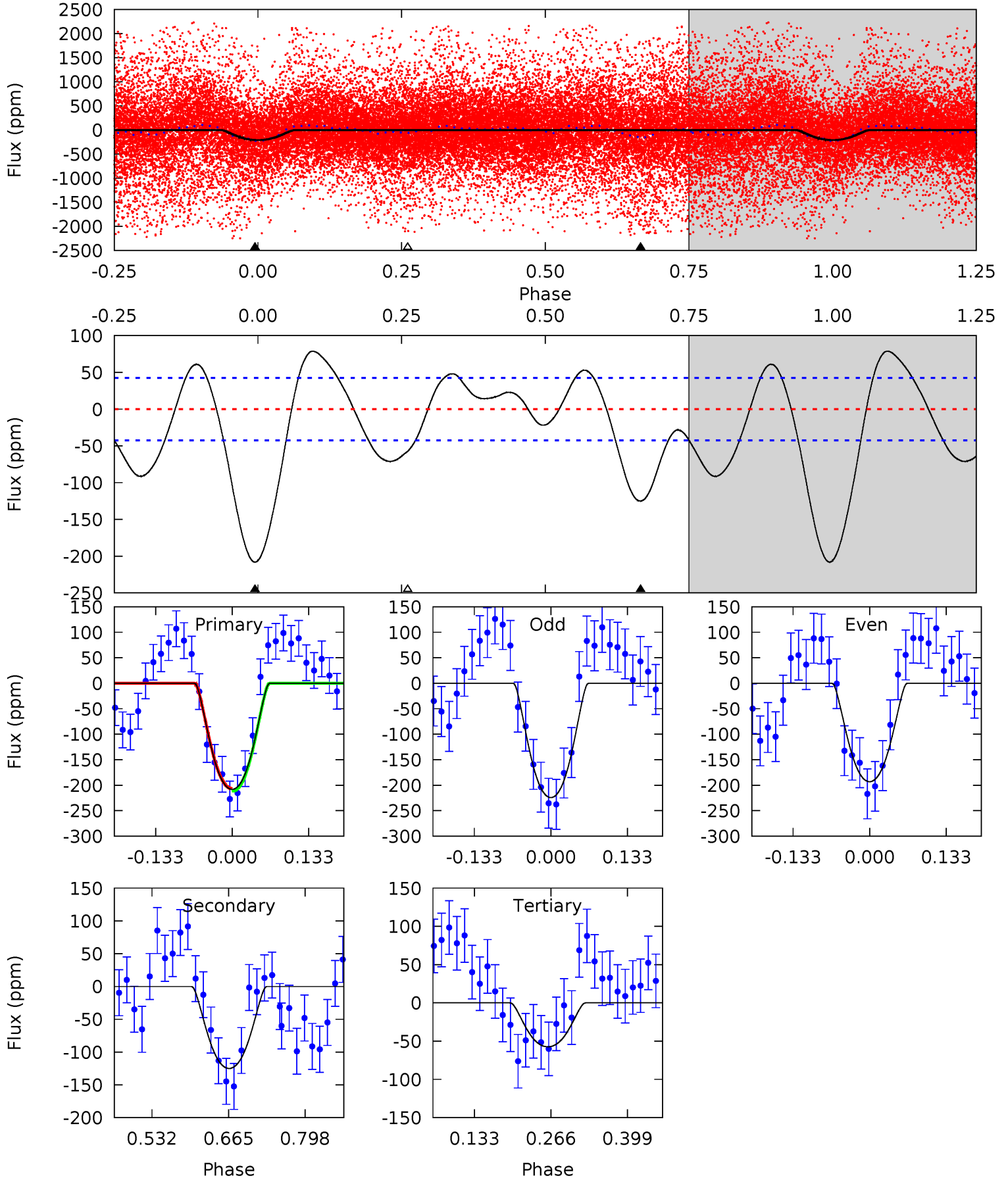
TCE 009630640-03 P= 3.670048 Days $T_0=133.543694$ (BKJD)



DV Model-Shift Uniqueness Test

009630640-03, P = 3.669994 Days, E = 130.090125 Days

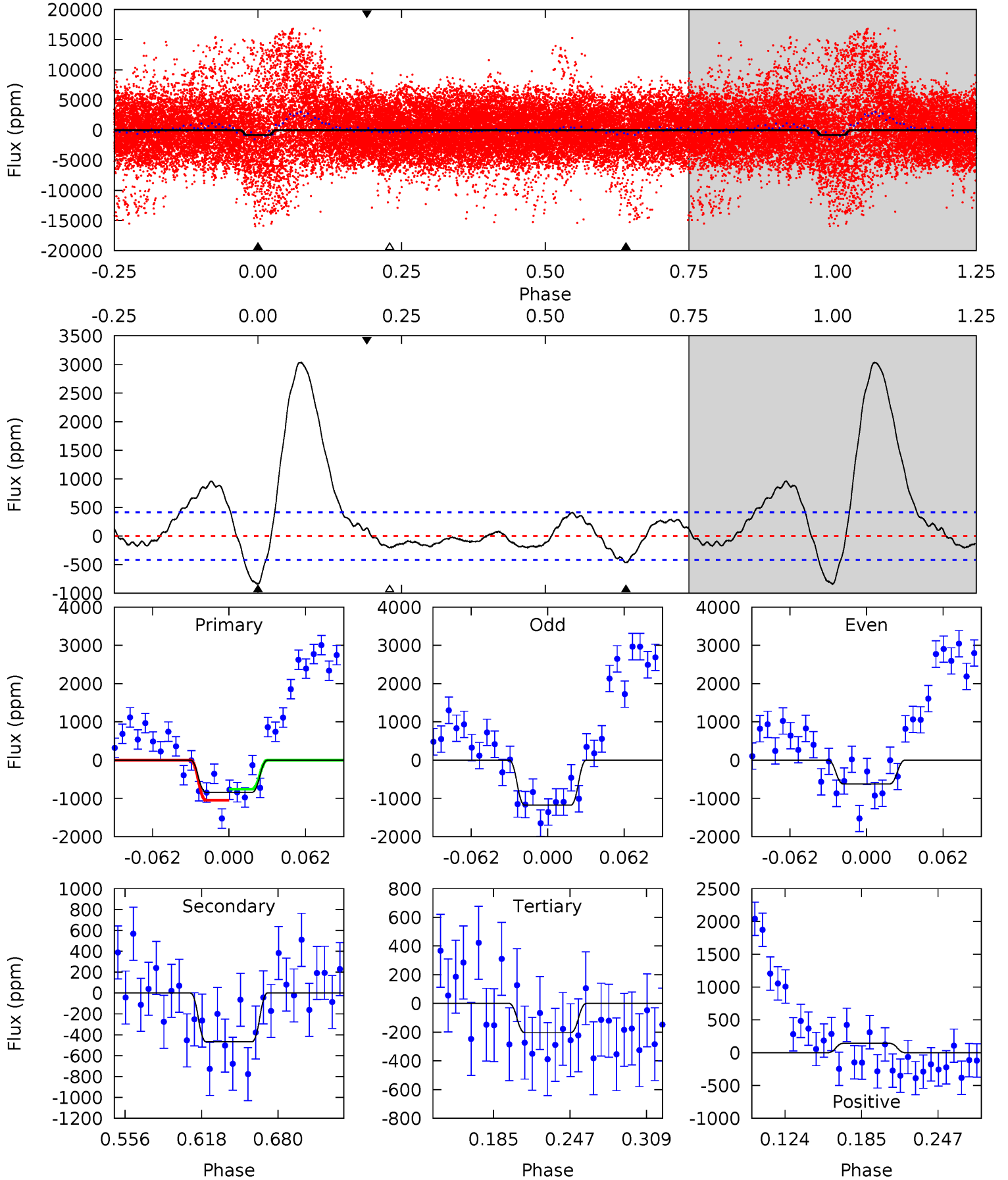
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	13.3	6.09	0	4.50	1.50	4.11	16.0	22.1	7.17	13.3	1.66	0.22	0.27	0.24



Alt Model-Shift Uniqueness Test

009630640-03, P = 3.670048 Days, E = 129.873646 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.44	5.23	2.28	1.60	4.66	1.87	7.52	7.15	7.84	2.95	3.63	3.09	-0.56	0.78	1.64



Stellar Parameters For KIC 009630640

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6793^{+166}_{-238}	$4.101^{+0.246}_{-0.164}$	$-0.460^{+0.250}_{-0.300}$	$1.589^{+0.425}_{-0.468}$	$1.162^{+0.193}_{-0.158}$	$0.408^{+0.613}_{-0.188}$
	+2%/-4%	+6%/-4%	+54%/-65%	+27%/-29%	+17%/-14%	+150%/-46%
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 009630640-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-125 ± 9	$3.08^{+0.88}_{-0.98}$	2357^{+178}_{-192}	5289^{+888}_{-469}	17^{+20}_{-7}
Alt.	-466 ± 89	$6.02^{+1.35}_{-1.11}$	2378^{+163}_{-196}	5298^{+416}_{-401}	17^{+9}_{-6}

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

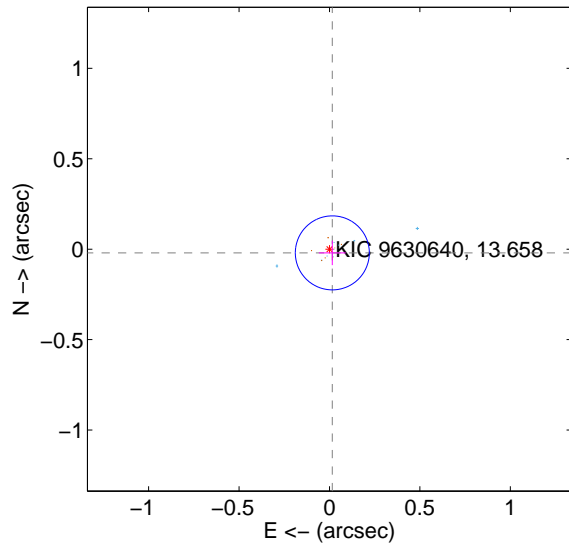
Supplemental centroid analysis for 009630640-03. Kepler magnitude: 13.66. Transit SNR 10.45

There are 10 quarters with good PRF difference image offsets

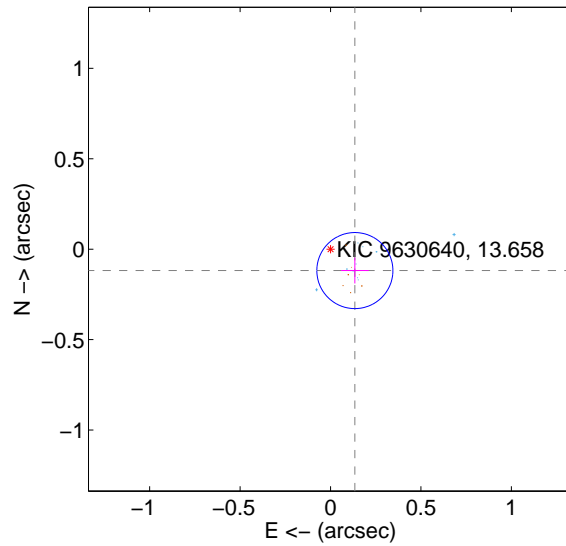
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.026 ± 0.068	0.38	-0.016 ± 0.075	-0.020 ± 0.068
PRF-fit source offset from KIC position	0.179 ± 0.070	2.56	-0.135 ± 0.076	-0.118 ± 0.072
photometric centroid source offset	0.23 ± 0.30	0.78	0.20 ± 0.30	-0.11 ± 0.29

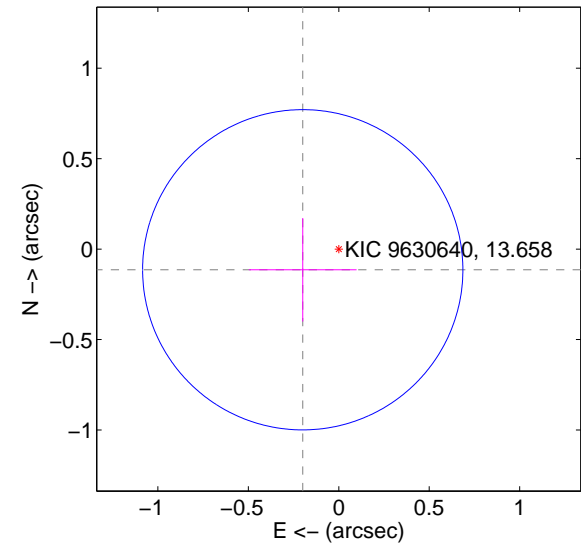
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

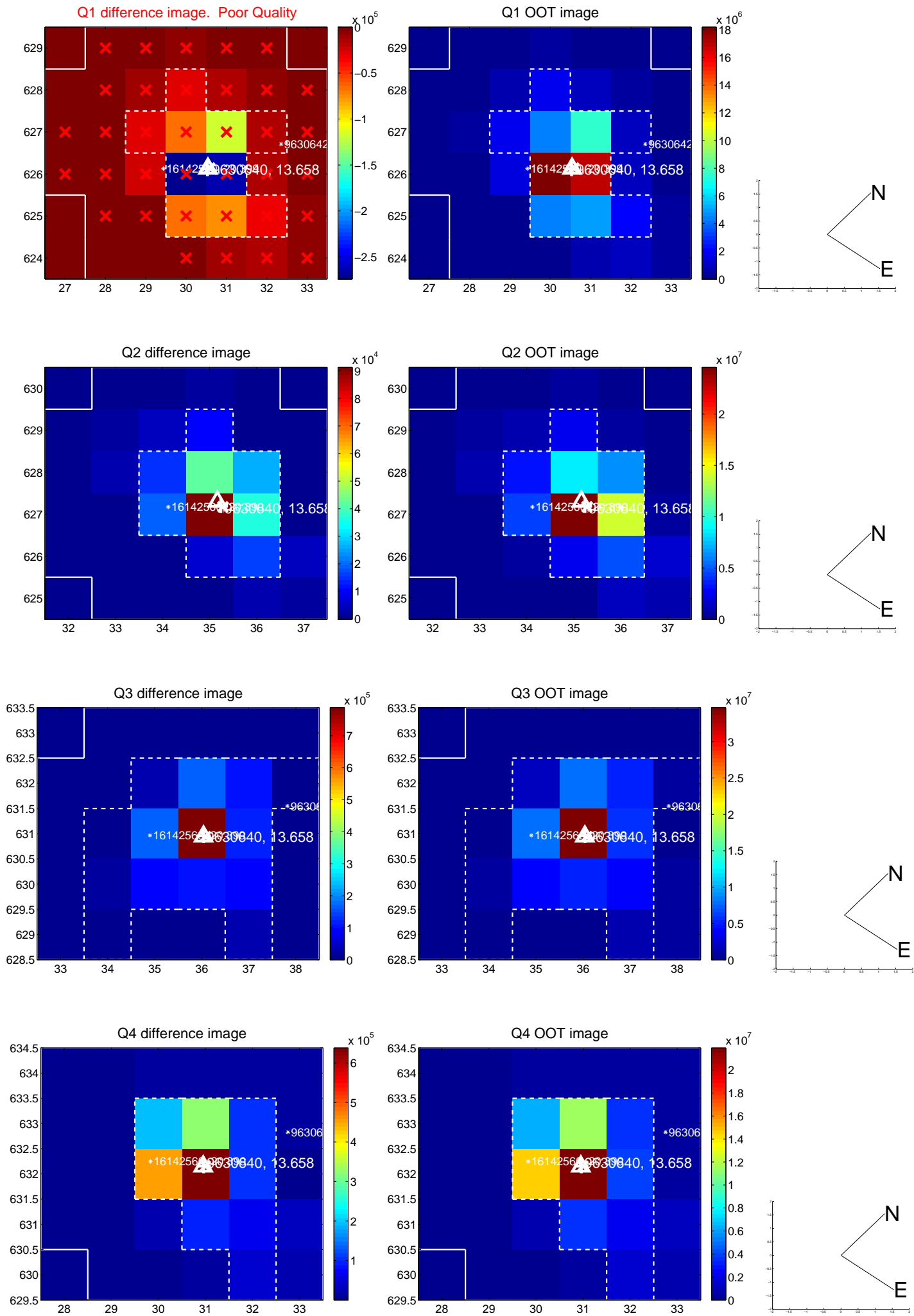


offset from photometric centroids

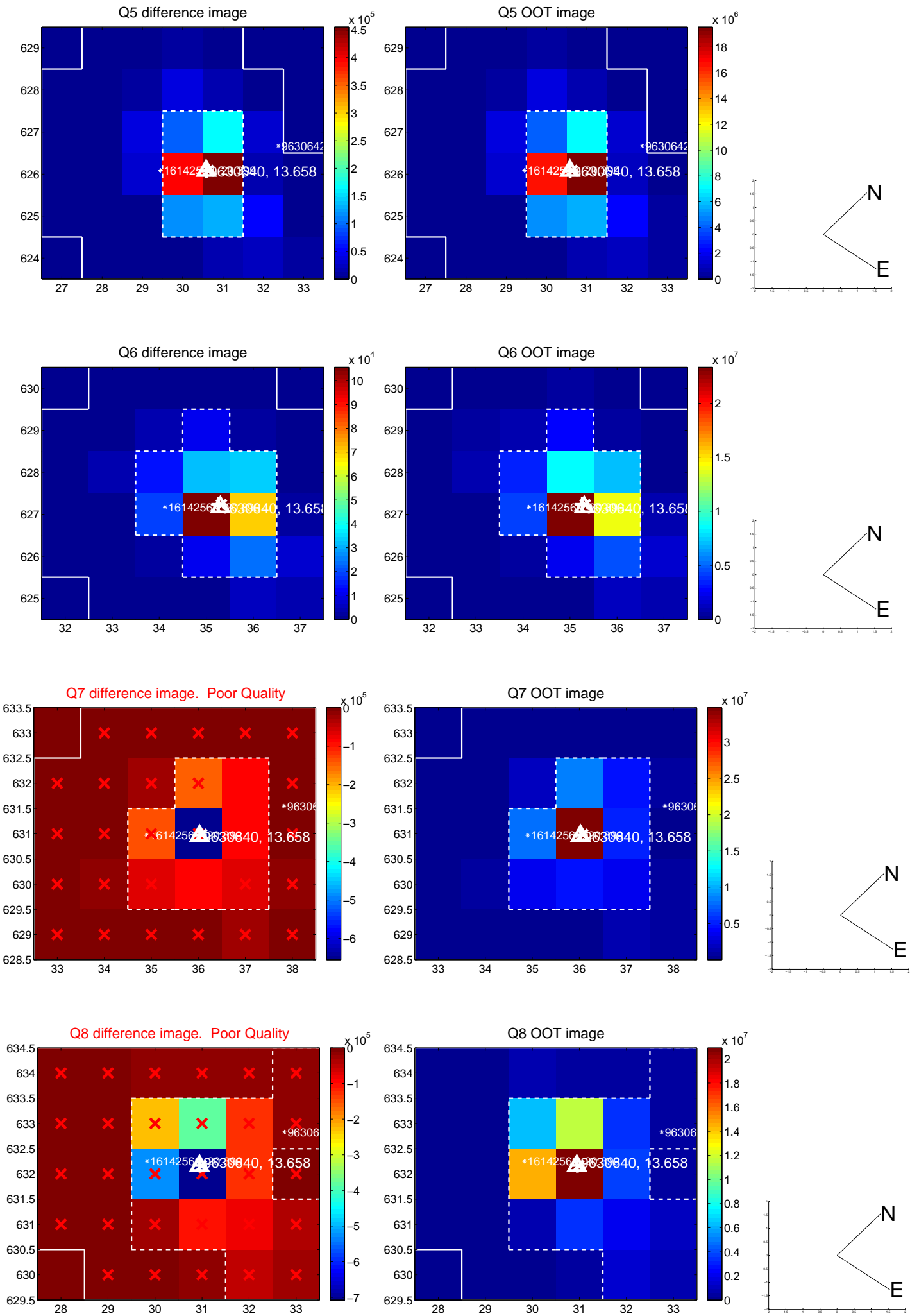


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

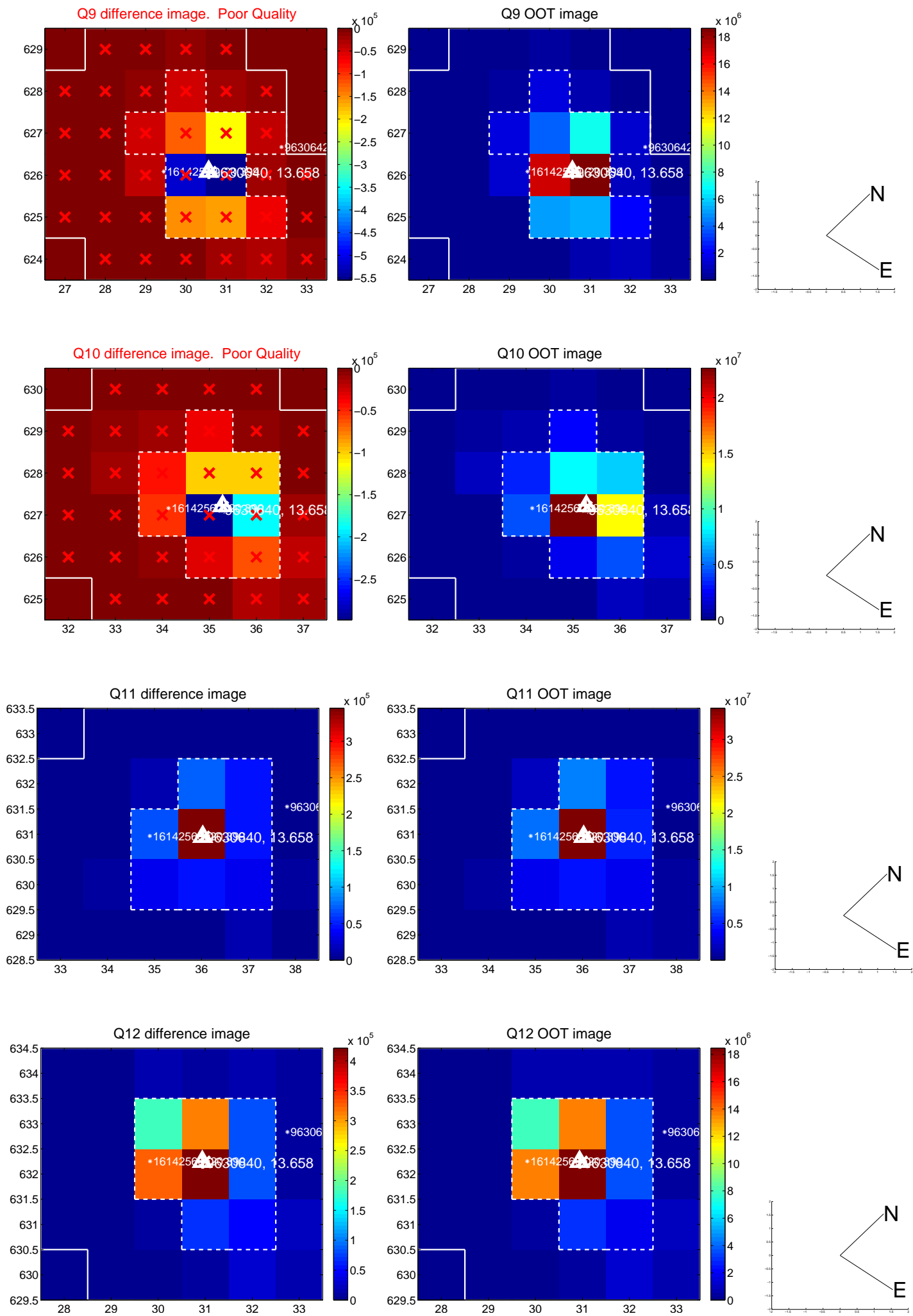
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



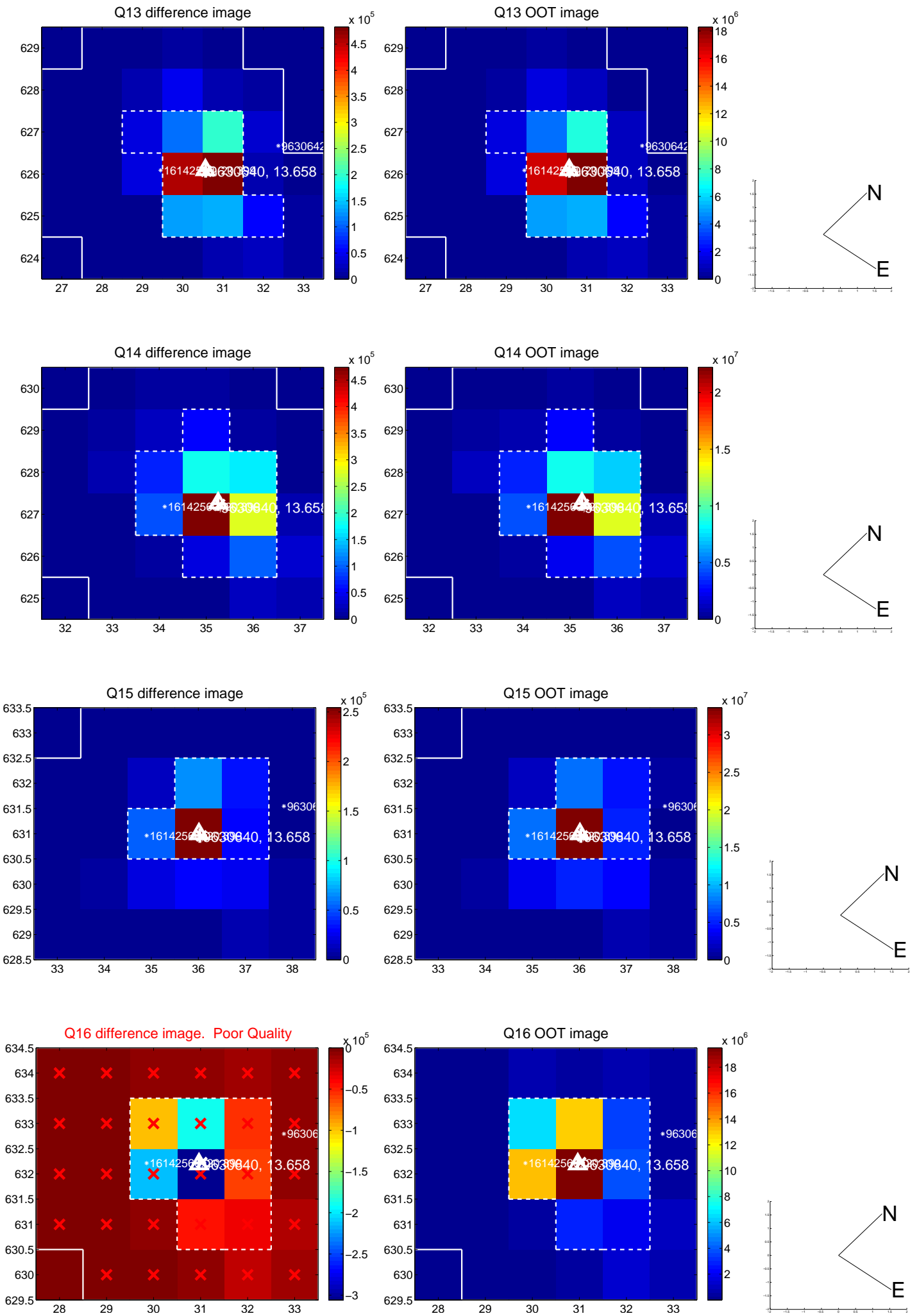
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

