

KIC 006964043

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})
006964043-01	OBS	No	236.757090	339.573474	72525.8	8.827	688.2	516.7	0.91	5582	39.05	1.44
006964043-02	OBS	1351.01	5.362932	131.826644	10989.5	2.658	400.2	231.1	0.91	5582	9.60	223.85
006964043-03	OBS	No	237.183580	336.134518	46329.1	9.687	396.2	188.3	0.91	5582	33.70	1.43
006964043-04	OBS	No	159.105683	267.772408	509.0	8.315	155.5	4.8	0.91	5582	2.40	2.44
006964043-05	OBS	No	238.698037	269.628237	15880.8	7.500	146.1	-1.0	0.91	5582	11.28	1.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006964043-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—DEEP_V_SHAPED
006964043-02	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT
006964043-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—INCONSISTENT_TRANS
006964043-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—INCONSISTENT_TRANS
006964043-05	OBS	FP	0.38	1	0	0	0	INCONSISTENT_TRANS—CENT_NOFITS

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

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

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

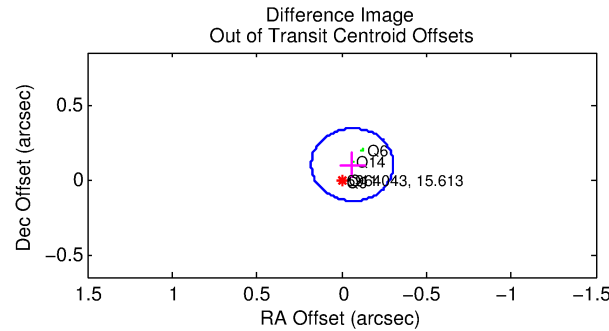
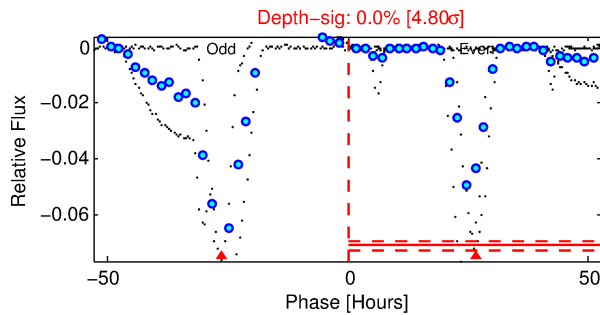
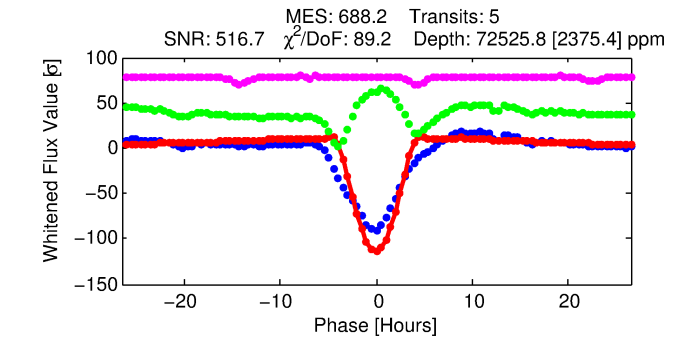
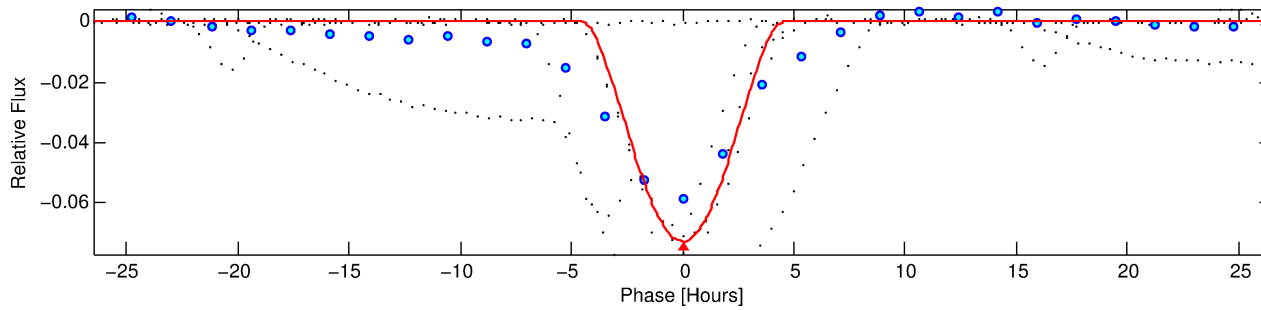
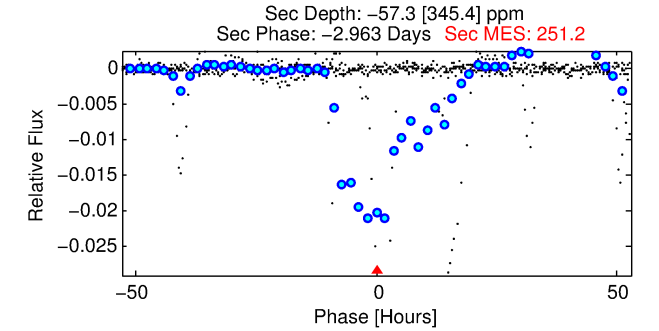
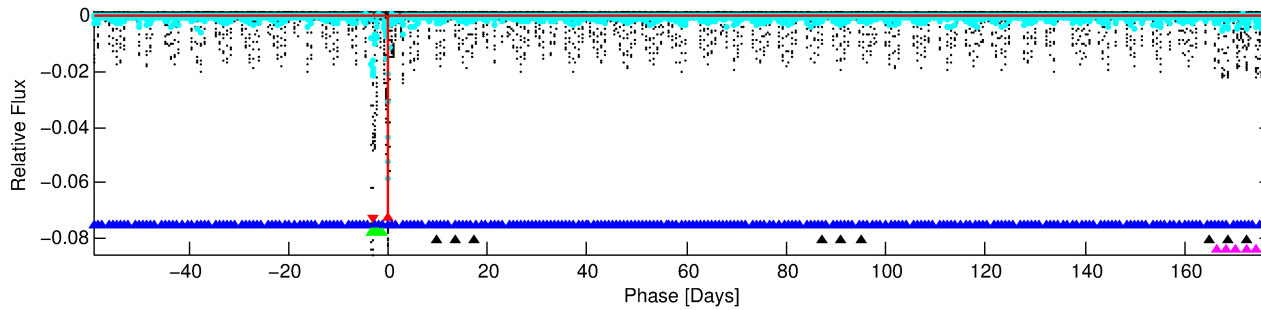
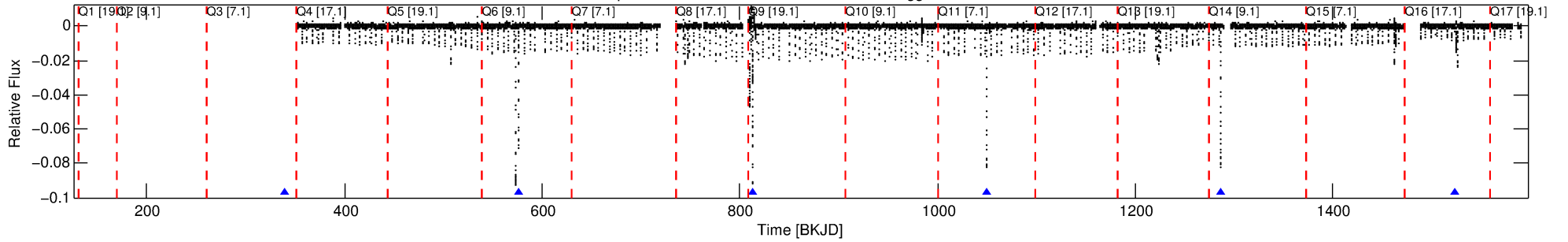
Ephemeris Match Information For 006964043-01

No Significant Match Found

DV One-Page Summary

KIC: 6964043 Candidate: 1 of 5 Period: 236.757 d
KOI: K01351 Corr: No Ephemeris Match

Kp: 15.61 R*: 0.91 Rs Teff: 5582.0 K Logg: 4.45 Fe/H: -0.220



DV Fit Results:

Period = 236.75709 [0.00117] d
Epoch = 339.5735 [0.0040] BKJD
Rp/R* = 0.3954 [0.7319]
a/R* = 206.97 [6.97]
b = 0.96 [1.01]
Seff = 1.43 [0.49]
Teq = 279 [24] K
Rp = 39.05 [73.00] Re
a = 0.7047 [0.1525] AU
Ag = N/A
Teffp = N/A

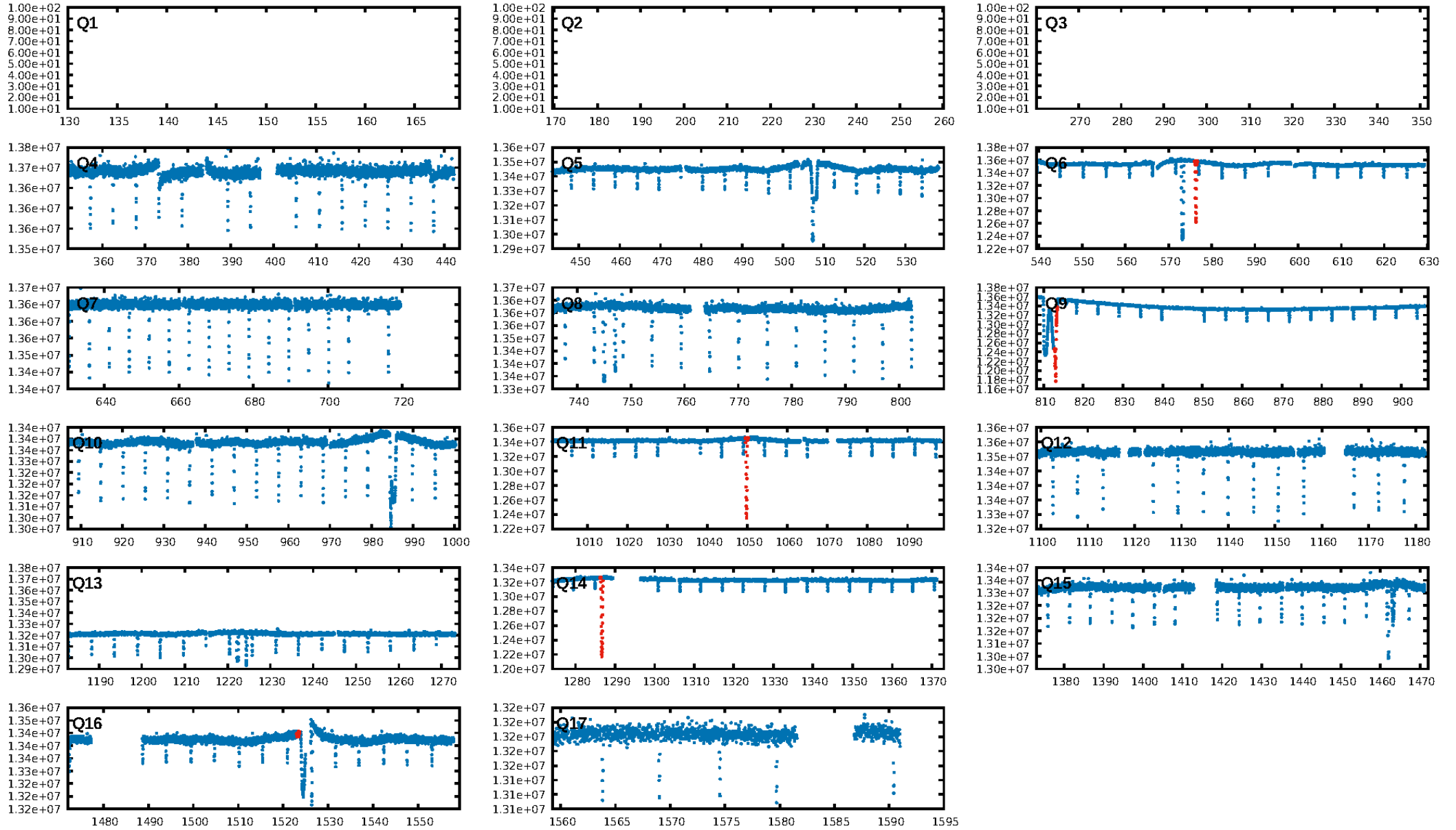
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [153.68σ]
LongPeriod-sig: 56.5% [0.78σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 11.85
Centroid-sig: 0.0%
Centroid-so: 0.188 arcsec [11.82σ]
OotOffset-rm: 0.118 arcsec [1.47σ]
KicOffset-rm: 0.119 arcsec [1.13σ]
OotOffset-st: 2/1/0/1 [4]
KicOffset-st: 2/1/0/1 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 0.60 [3/5]

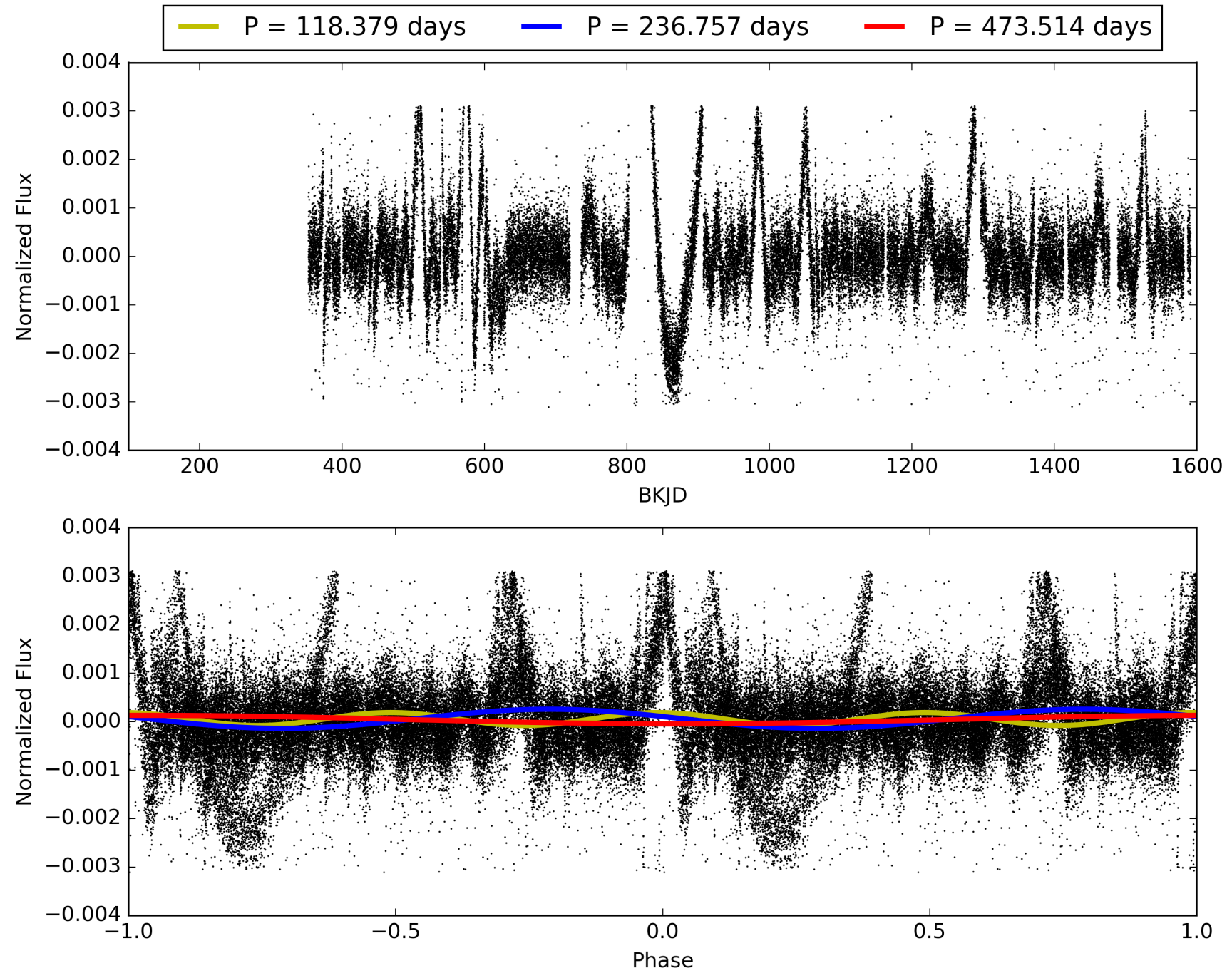
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006964043-01, PDC Light Curves

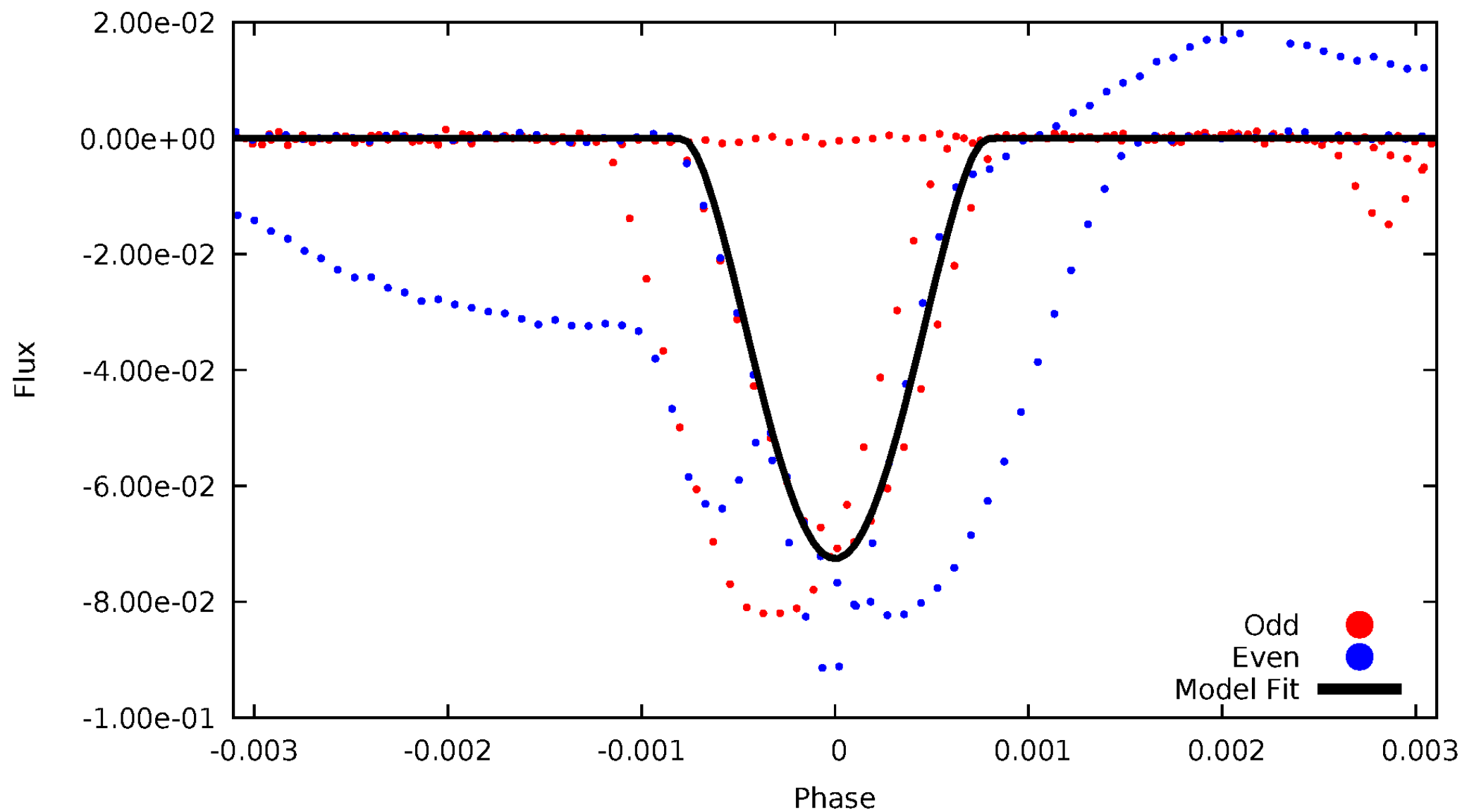


TCE 006964043-01



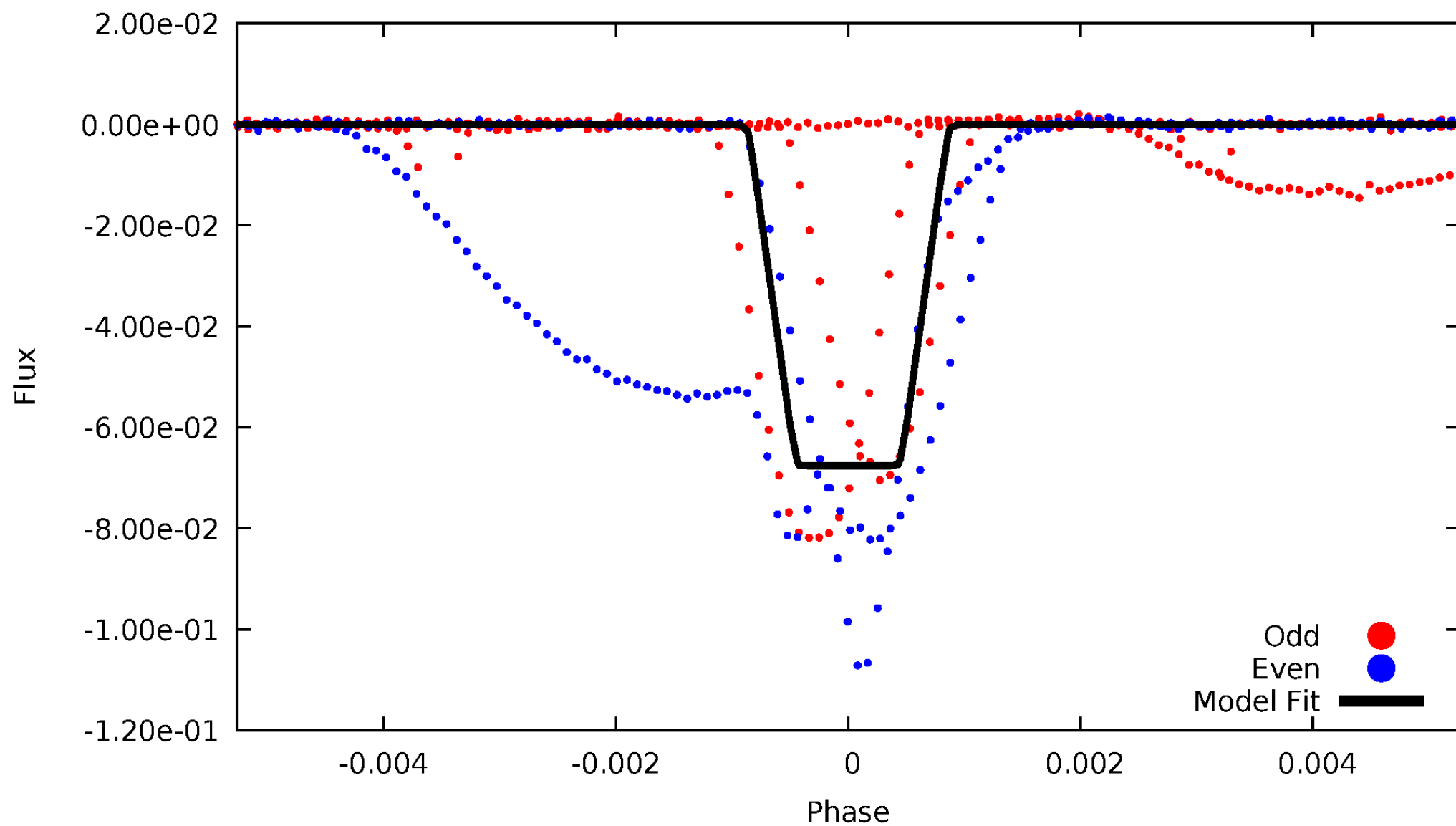
DV Odd/Even

TCE 006964043-01



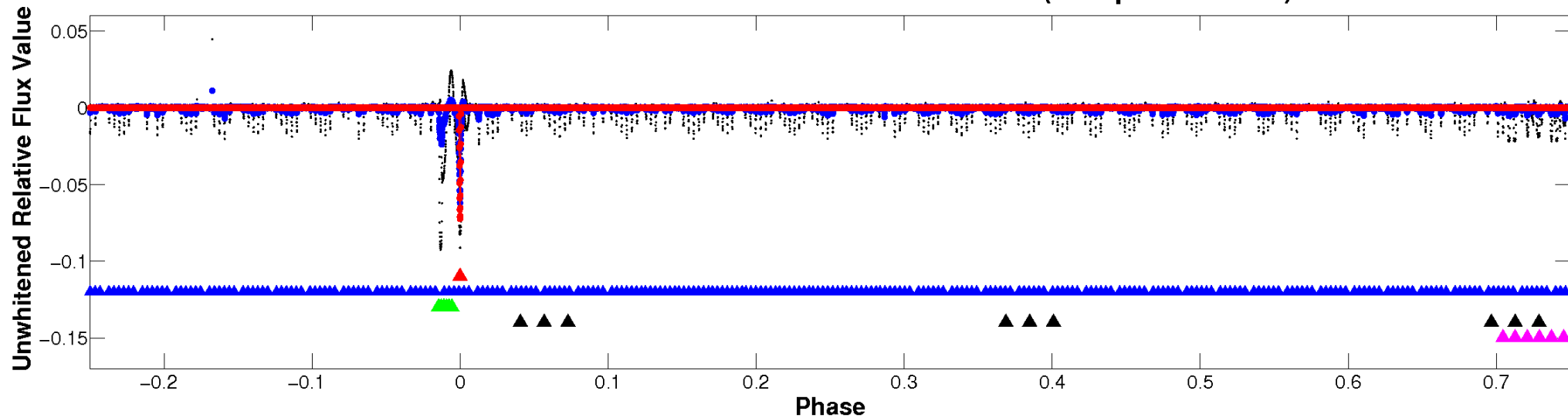
ALT Odd/Even

TCE 006964043-01

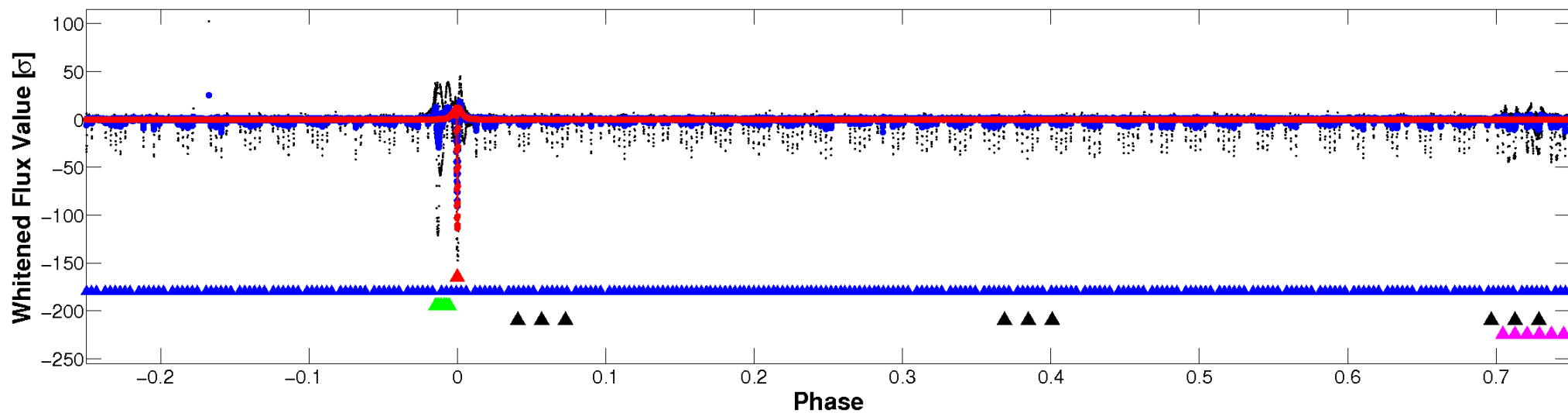


Non-Whitened Vs. Whitened Light Curve

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

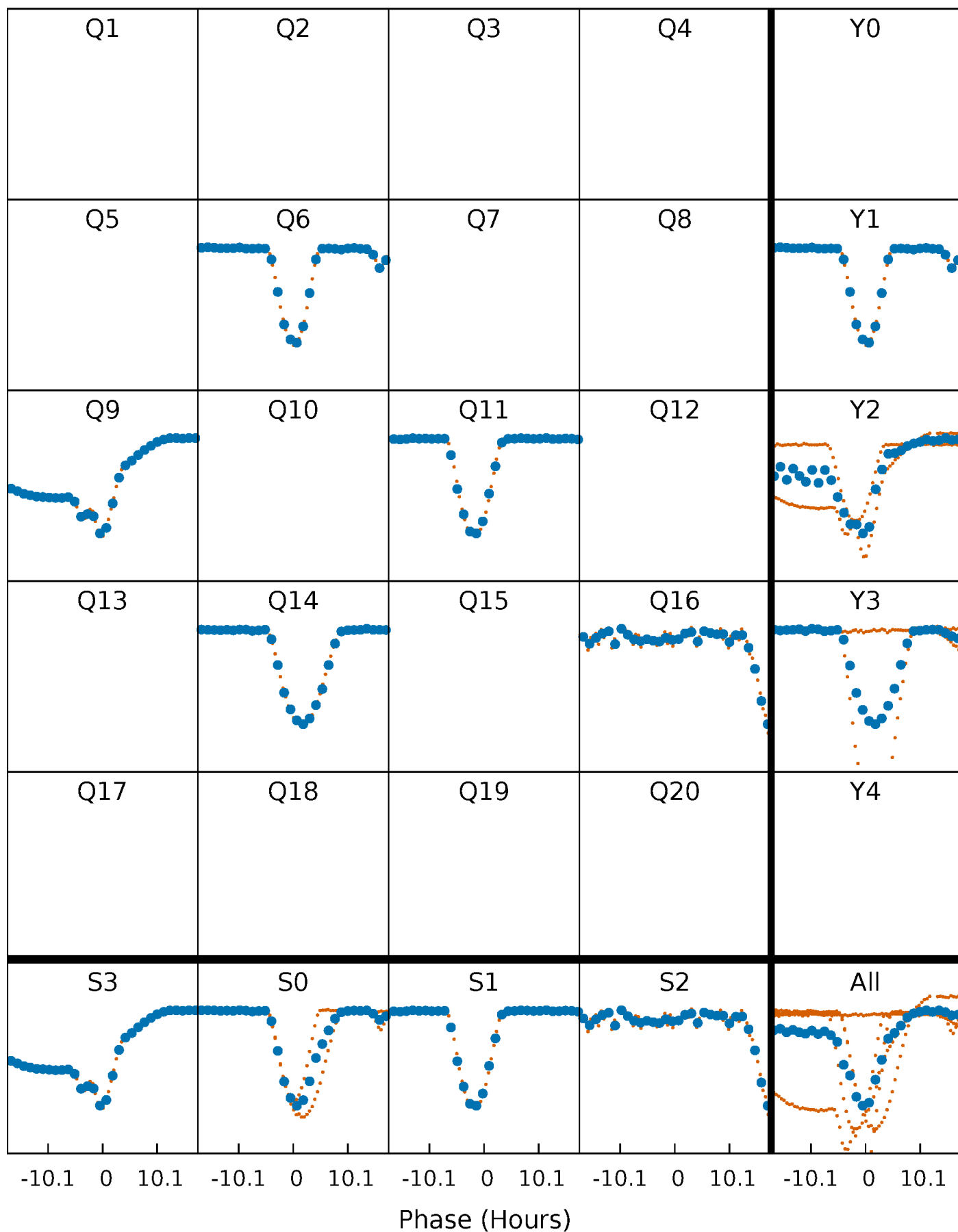


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



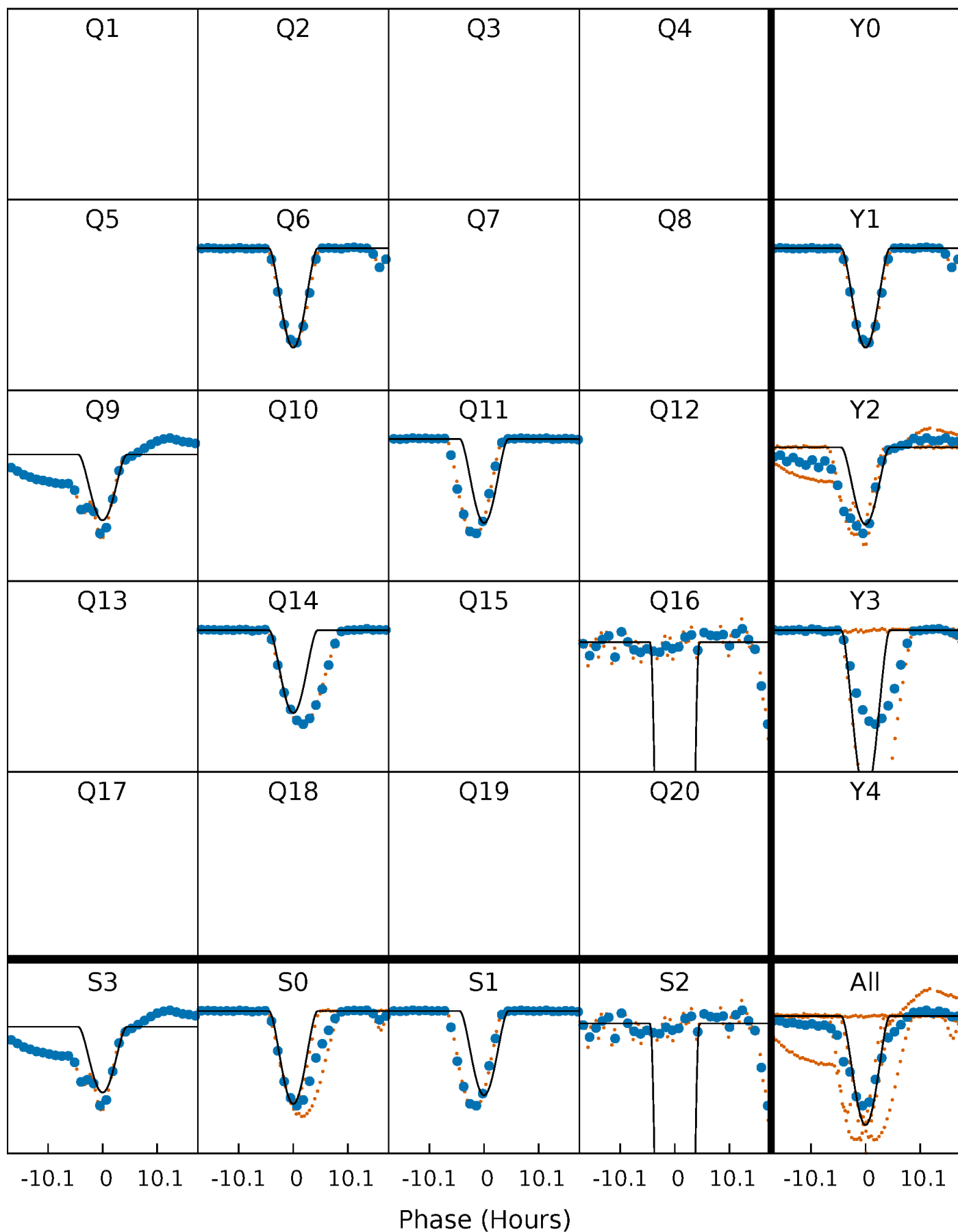
PDC Quarter-Phased Transit Curves

TCE 006964043-01 P=236.757090 Days $T_0=339.573474$ (BKJD)



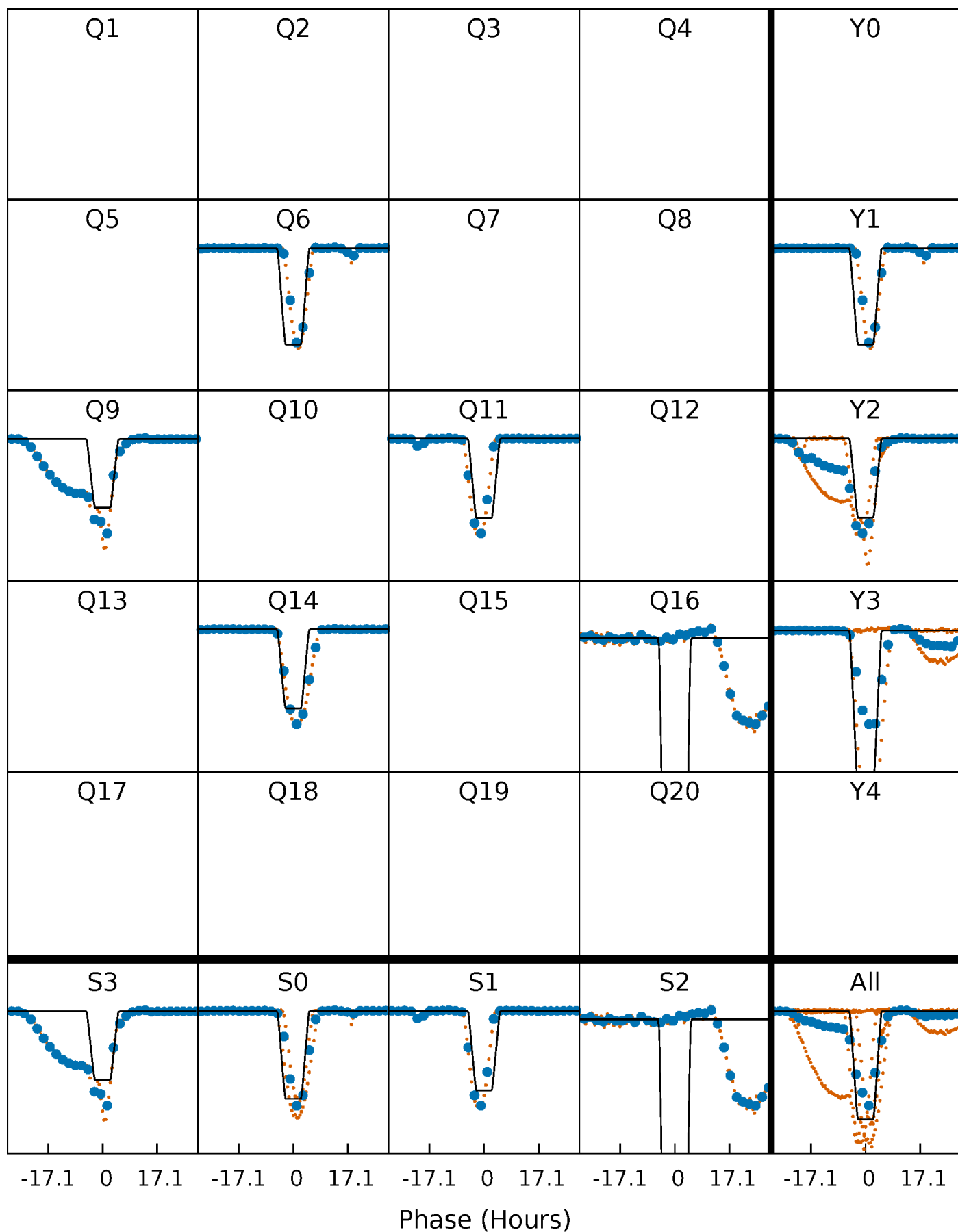
DV Quarter-Phased Transit Curves

TCE 006964043-01 P=236.757090 Days $T_0=339.573474$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

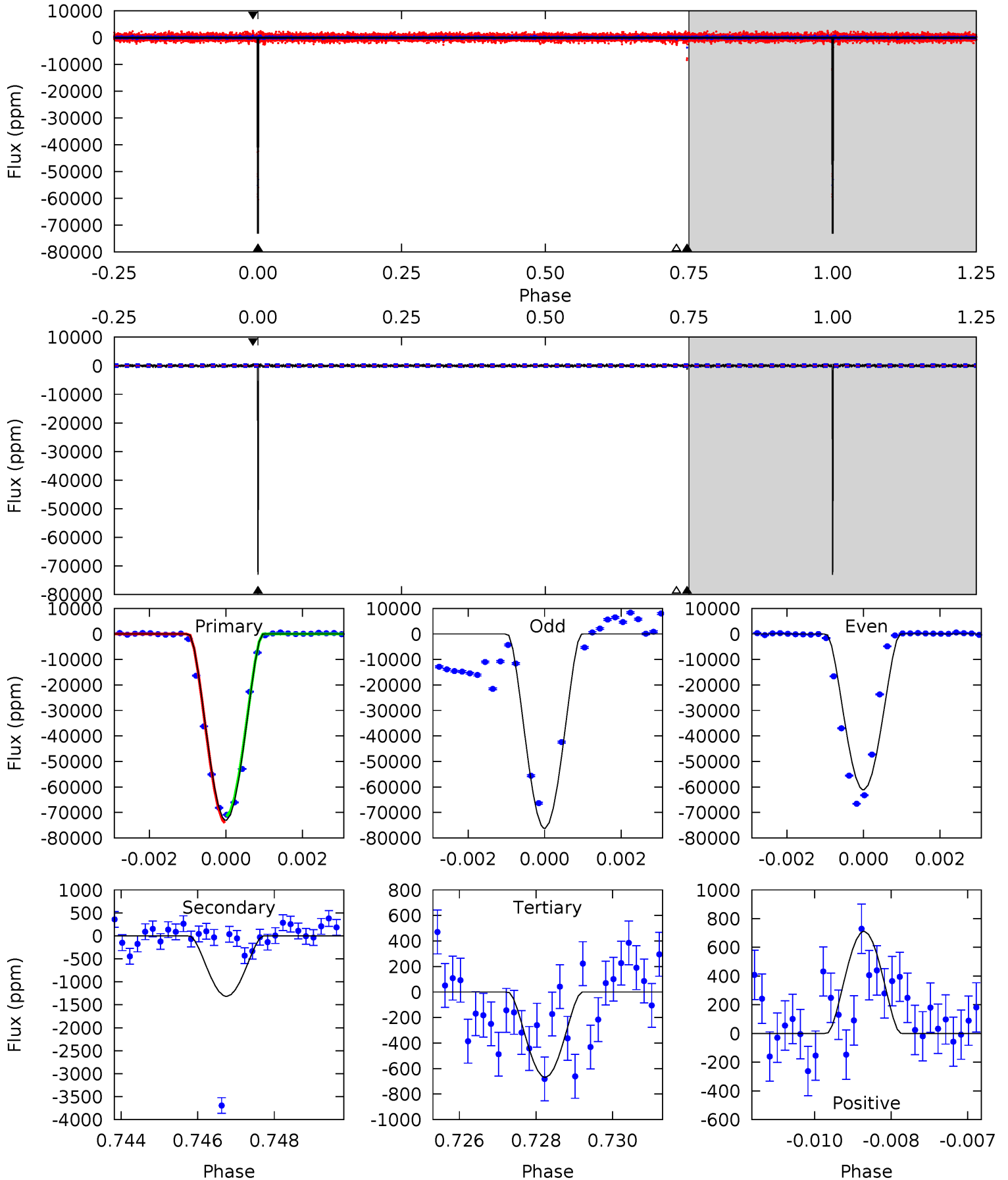
TCE 006964043-01 P=236.784093 Days $T_0=339.485091$ (BKJD)



DV Model-Shift Uniqueness Test

006964043-01, P = 236.757090 Days, E = 339.573474 Days

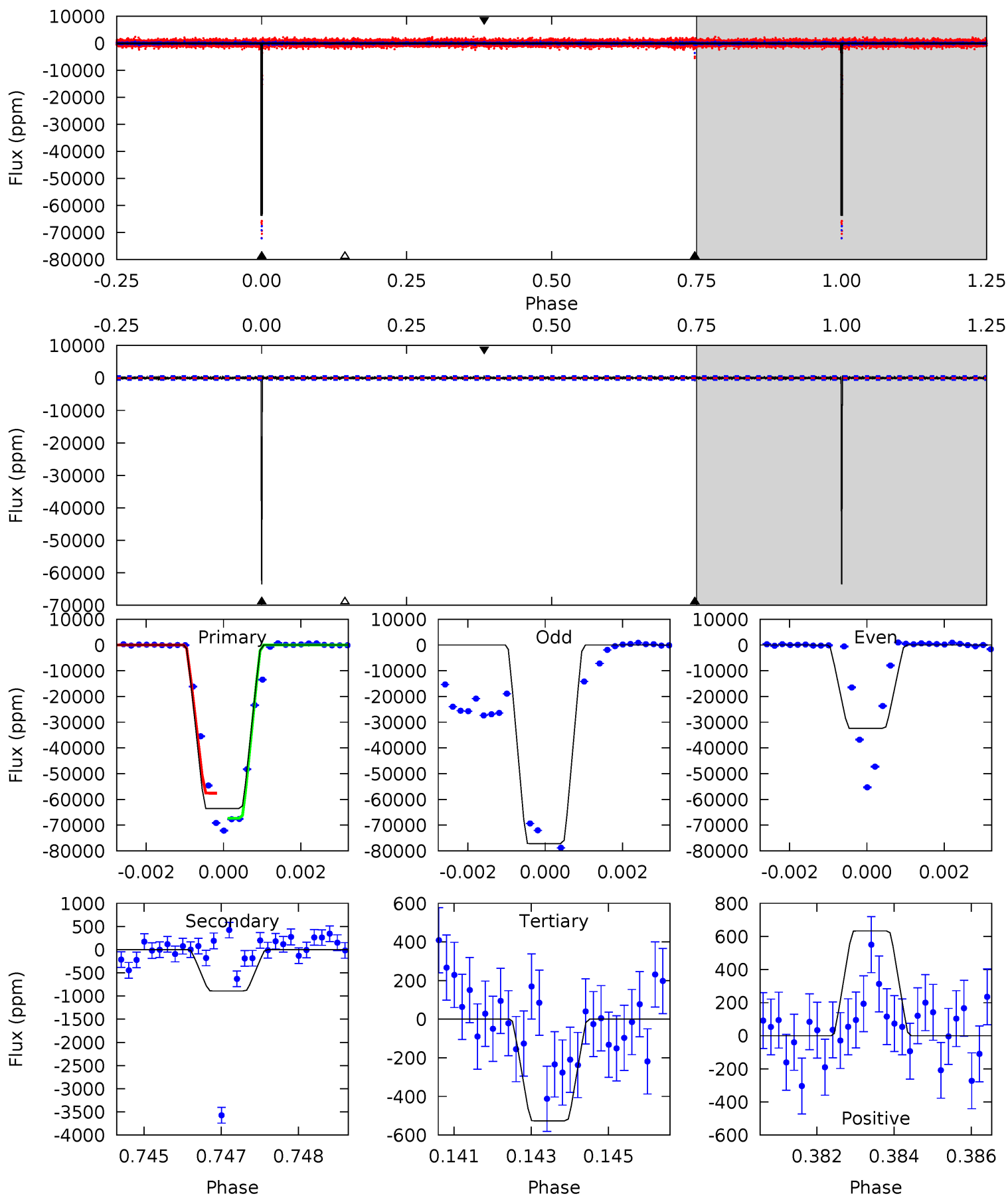
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
795.4	14.3	7.28	7.74	5.36	3.15	1.68	788.1	787.6	7.04	6.58	27.9	0.85	0.01	13.5



Alt Model-Shift Uniqueness Test

006964043-01, P = 236.784093 Days, E = 339.485091 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
592.9	8.31	4.91	5.91	5.34	3.12	1.27	587.9	586.9	3.40	2.41	88.5	0.88	0.01	0



Stellar Parameters For KIC 006964043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5582^{+200}_{-183}	$4.445^{+0.112}_{-0.168}$	$-0.220^{+0.300}_{-0.300}$	$0.905^{+0.236}_{-0.127}$	$0.832^{+0.118}_{-0.072}$	$1.580^{+0.823}_{-0.742}$
	+4%/-3%	+3%/-4%	+136%/-136%	+26%/-14%	+14%/-9%	+52%/-47%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006964043-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1316 ± 92	$69.64^{+58.42}_{-44.89}$	393^{+28}_{-22}	2212^{+648}_{-257}	74^{+521}_{-52}
Alt.	-891 ± 107	$62.10^{+59.90}_{-43.18}$	393^{+27}_{-20}	2180^{+724}_{-284}	63^{+550}_{-46}

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 $A_{obs} \gg 1.0$

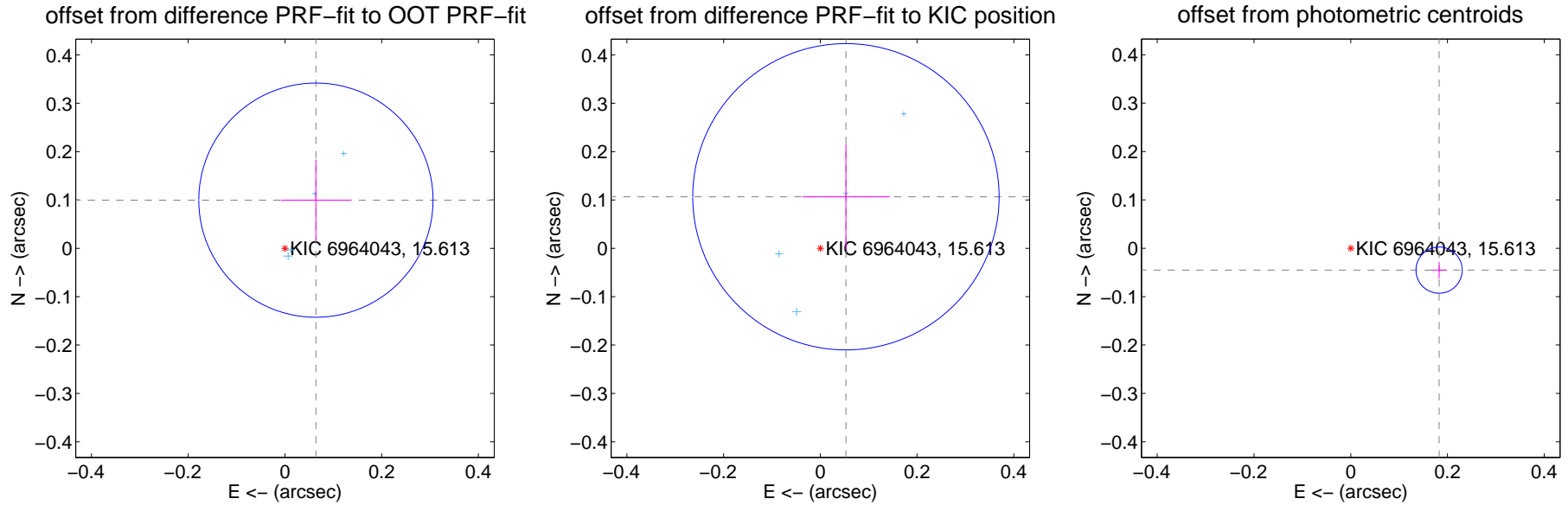
DV Centroid Data

Supplemental centroid analysis for 006964043-01. Kepler magnitude: 15.61. Transit SNR 516.73

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.118 ± 0.081	1.47	-0.064 ± 0.072	0.100 ± 0.084
PRF-fit source offset from KIC position	0.119 ± 0.106	1.13	-0.053 ± 0.090	0.107 ± 0.109
photometric centroid source offset	0.19 ± 0.02	11.82	-0.18 ± 0.02	-0.05 ± 0.02

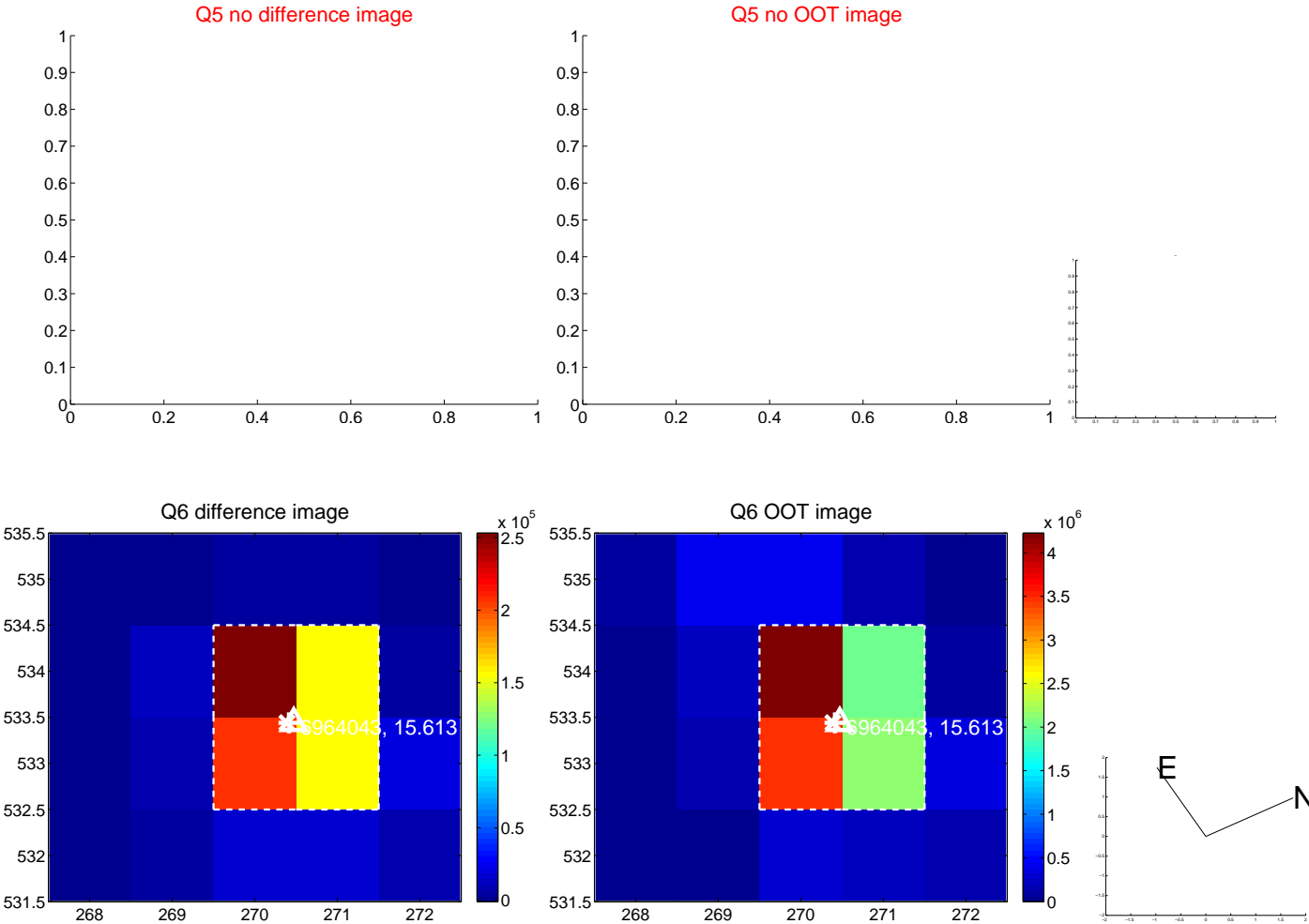


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

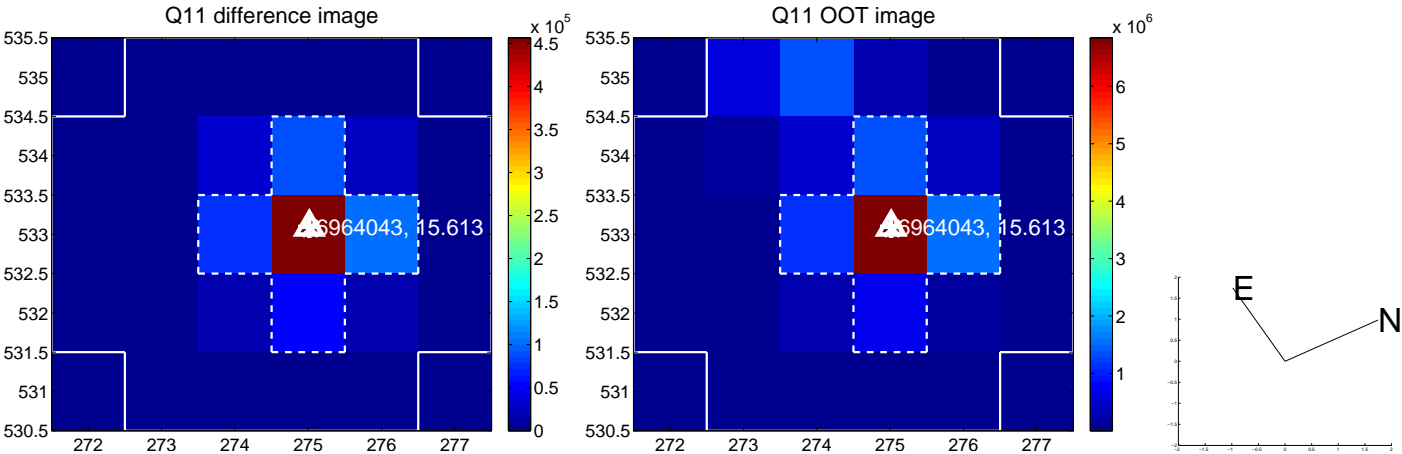
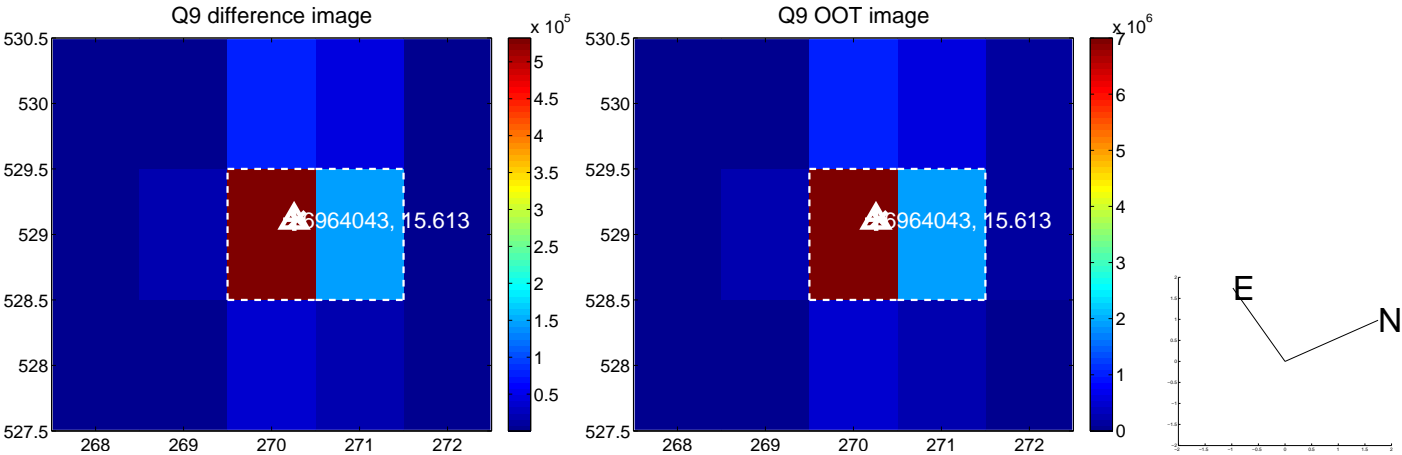
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



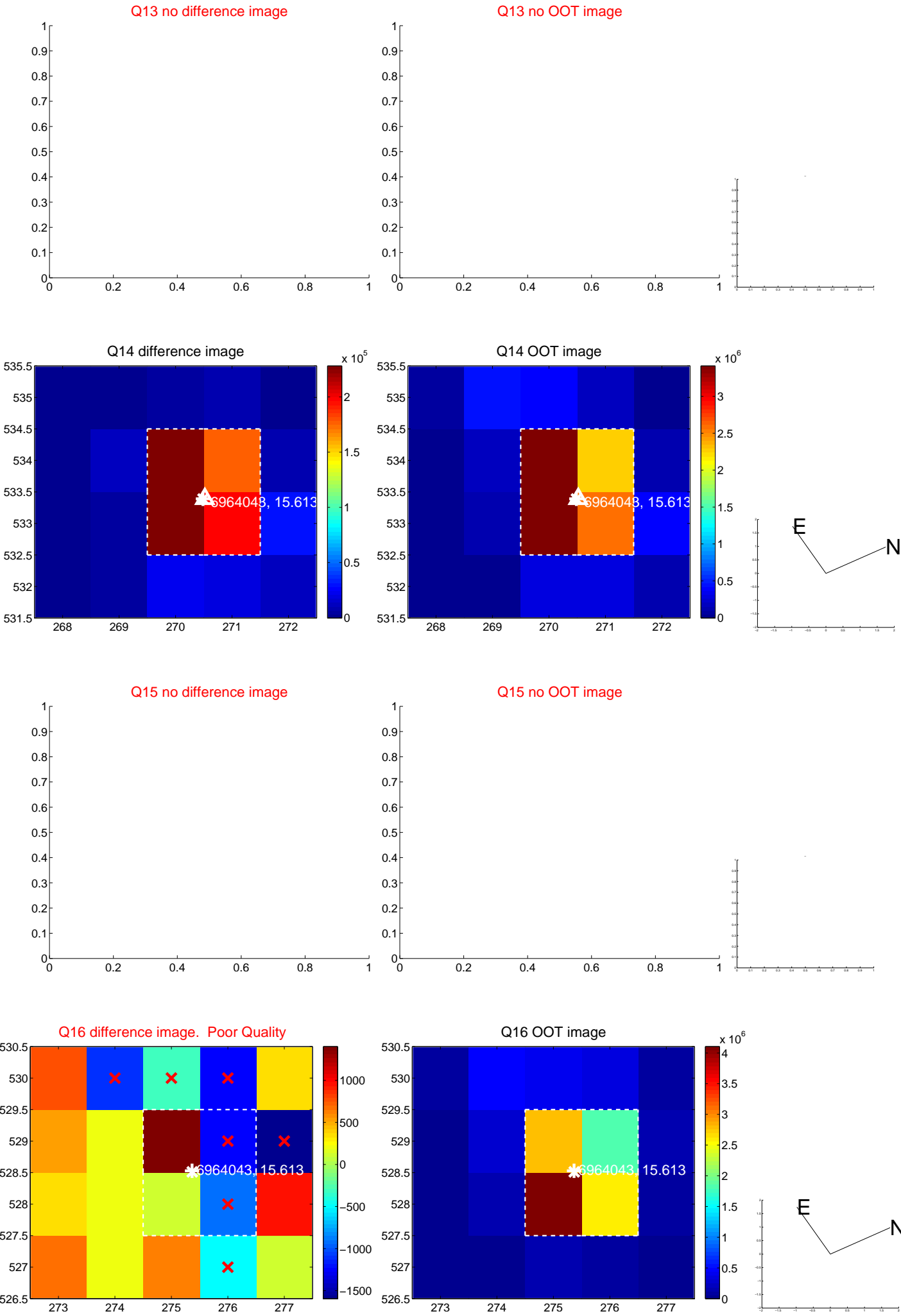
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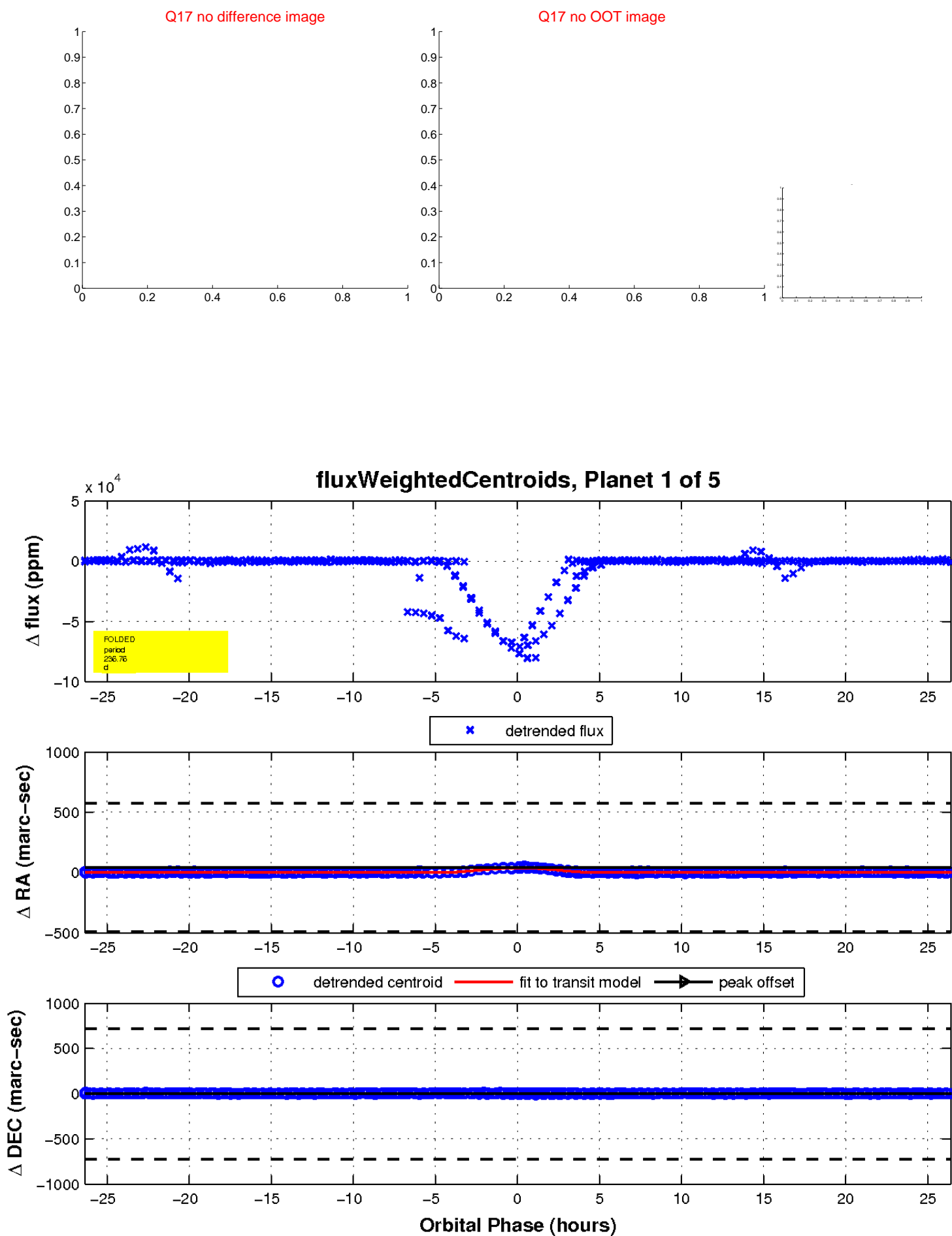
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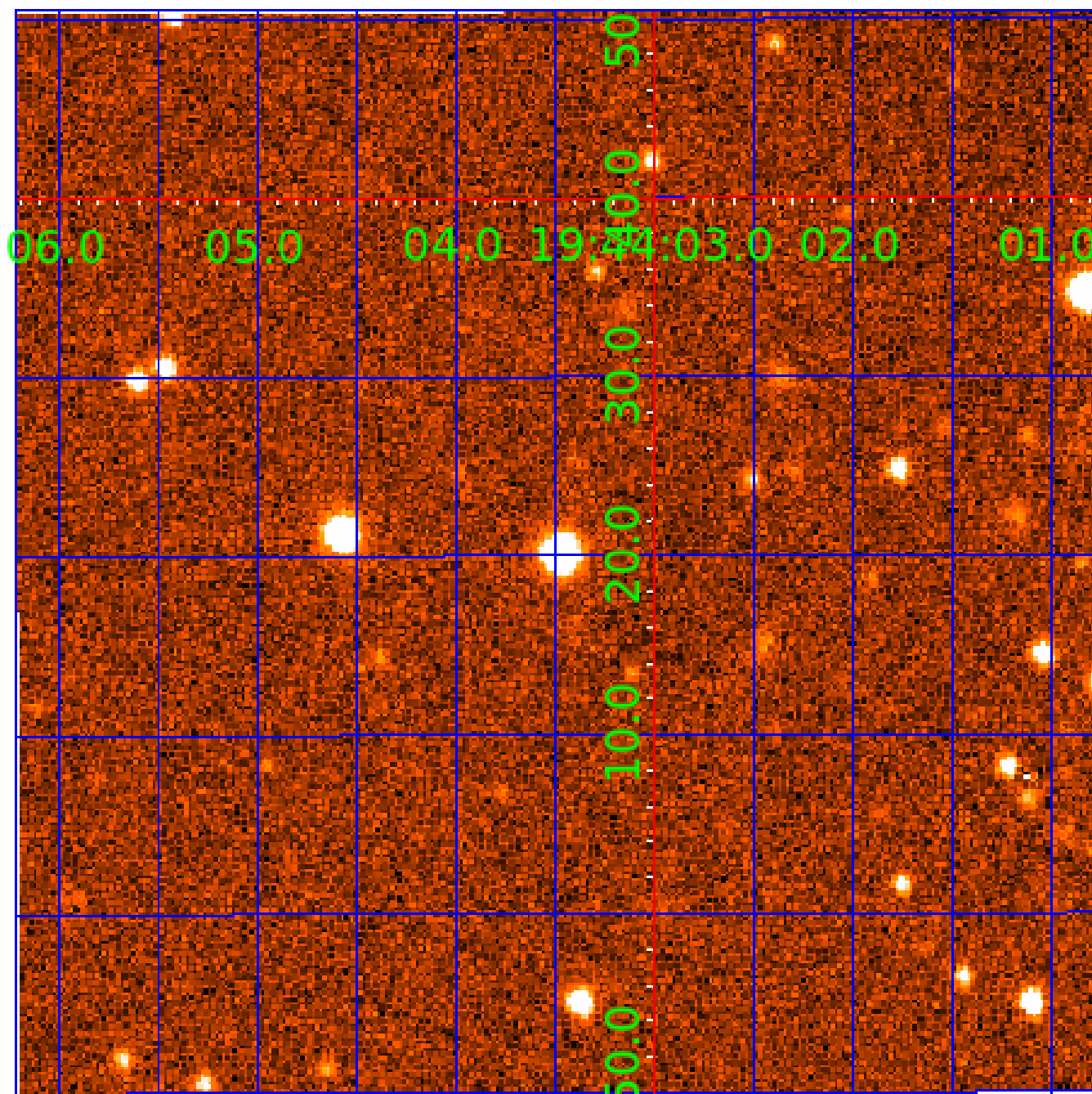


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006964043

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})
006964043-01	OBS	No	236.757090	339.573474	72525.8	8.827	688.2	516.7	0.91	5582	39.05	1.44
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006964043-05	OBS	No	238.698037	269.628237	15880.8	7.500	146.1	-1.0	0.91	5582	11.28	1.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006964043-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—DEEP_V_SHAPED
006964043-02	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT
006964043-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—INCONSISTENT_TRANS
006964043-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—INCONSISTENT_TRANS
006964043-05	OBS	FP	0.38	1	0	0	0	INCONSISTENT_TRANS—CENT_NOFITS

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

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

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

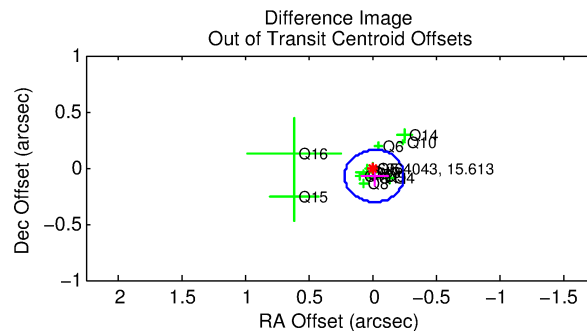
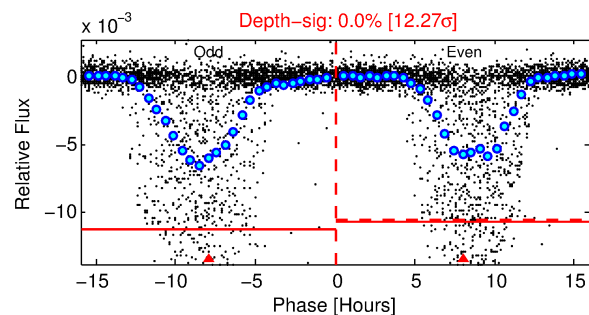
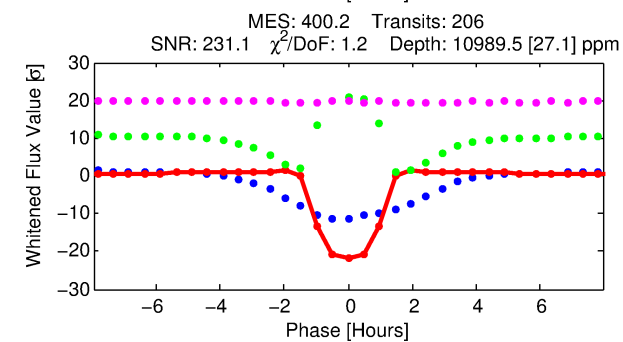
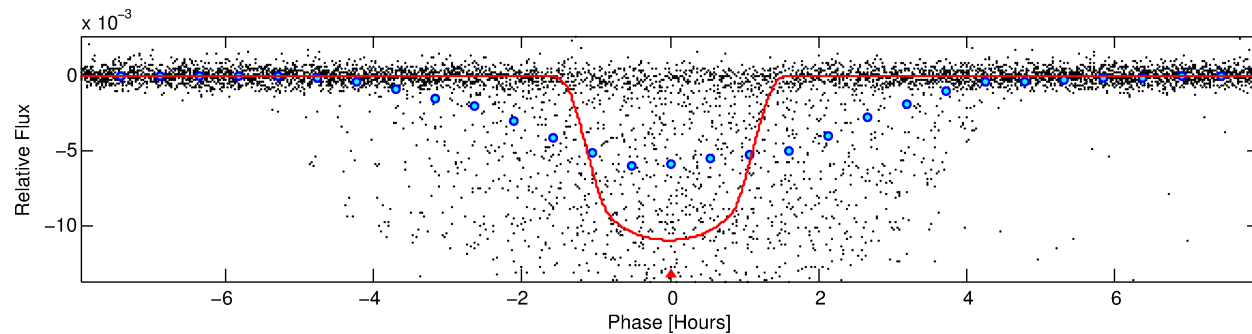
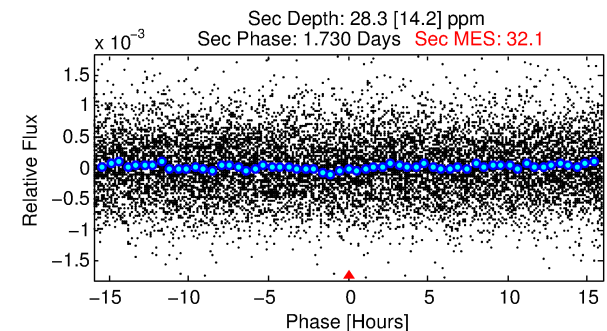
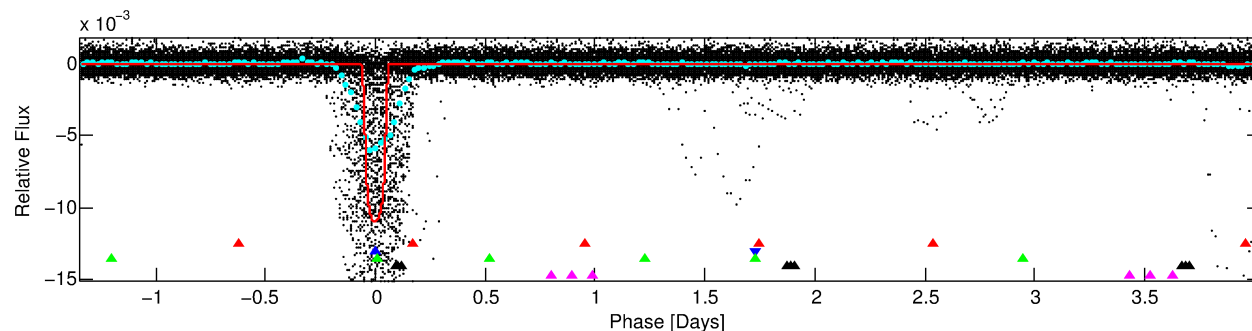
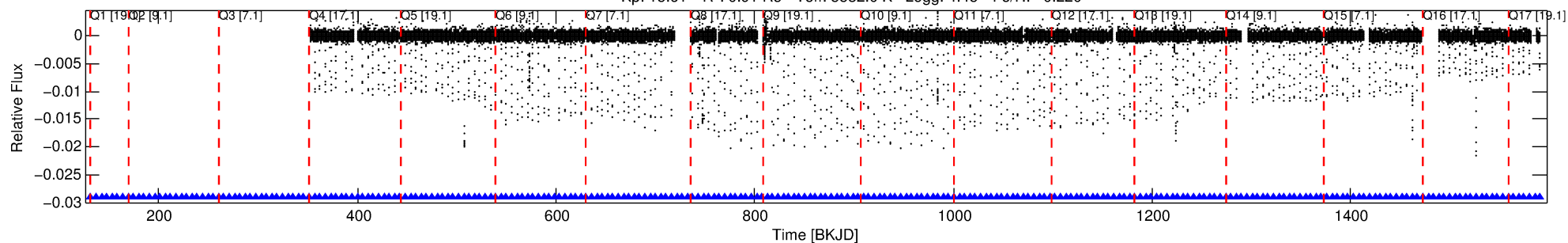
Ephemeris Match Information For 006964043-02

No Significant Match Found

DV One-Page Summary

KIC: 6964043 Candidate: 2 of 5 Period: 5.363 d
KOI: K01351 Corr: No Ephemeris Match

Kp: 15.61 R*: 0.91 Rs Teff: 5582.0 K Logg: 4.45 Fe/H: -0.220



DV Fit Results:

Period = 5.36293 [0.00000] d
Epoch = 131.8266 [0.0001] BKJD
Rp/R* = 0.0972 [0.0012]
a/R* = 15.60 [0.75]
b = 0.43 [0.09]
Seff = 223.85 [76.66]
Teq = 986 [84] K
Rp = 9.60 [2.51] Re
a = 0.0564 [0.0122] AU
Ag = 0.54 [0.32] [-1.45σ]
Teff = 1306 [171] K [1.68σ]

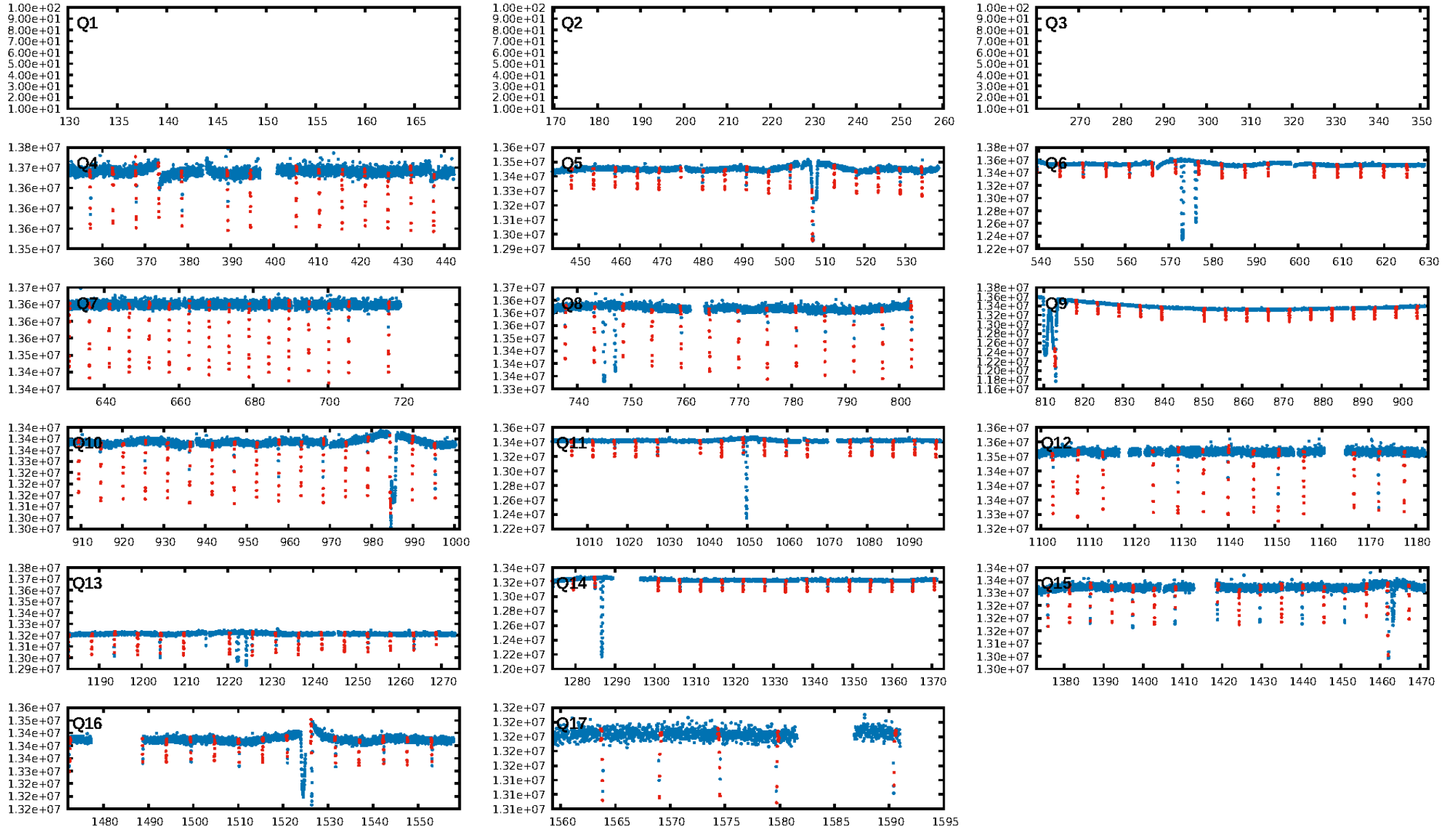
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [422.68σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-ftg: 1.00 [201/201]
GhostDiagnostic-chr: 13
Centroid-sig: 0.0%
Centroid-so: 0.307 arcsec [13.22σ]
OotOffset-rm: 0.076 arcsec [0.99σ]
KicOffset-rm: 0.123 arcsec [1.30σ]
OotOffset-st: 3/3/4/3 [13]
KicOffset-st: 3/3/4/3 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [14/14]

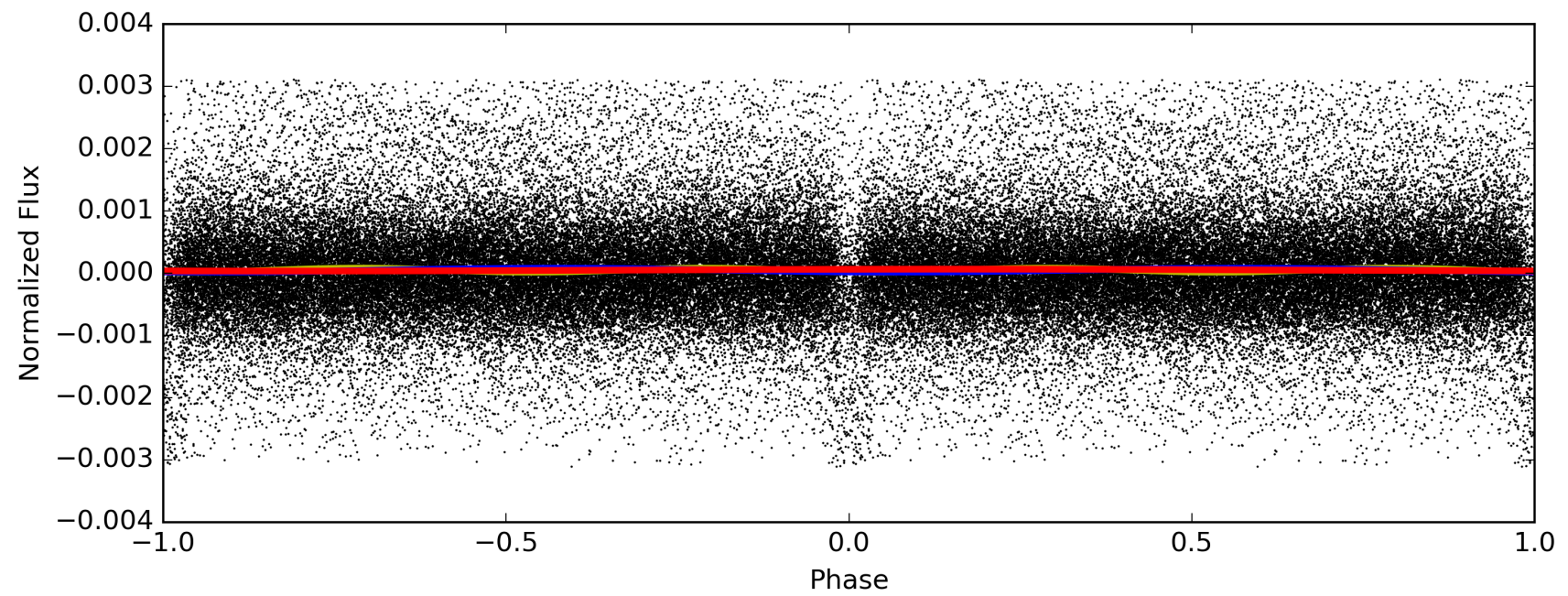
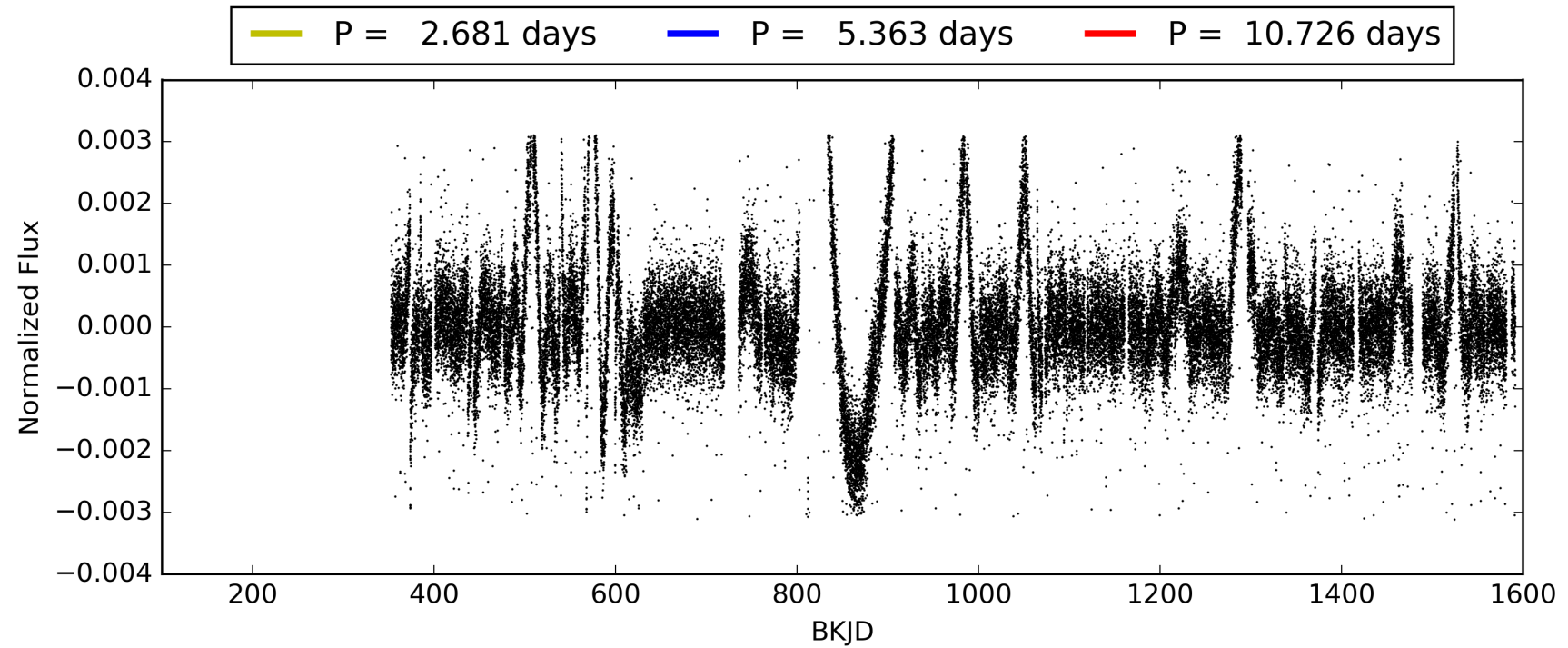
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:48:20 Z

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

TCE 006964043-02, PDC Light Curves

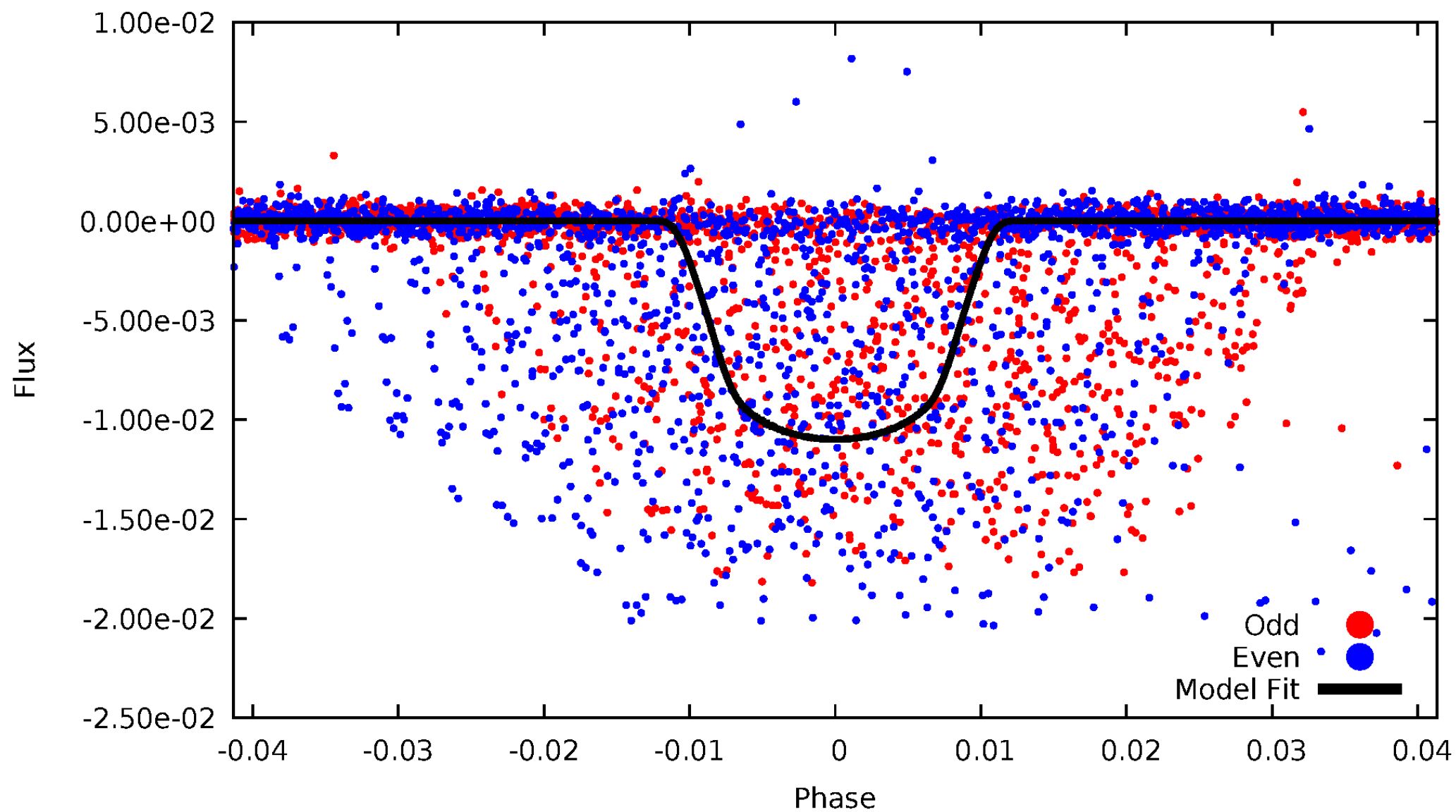


TCE 006964043-02



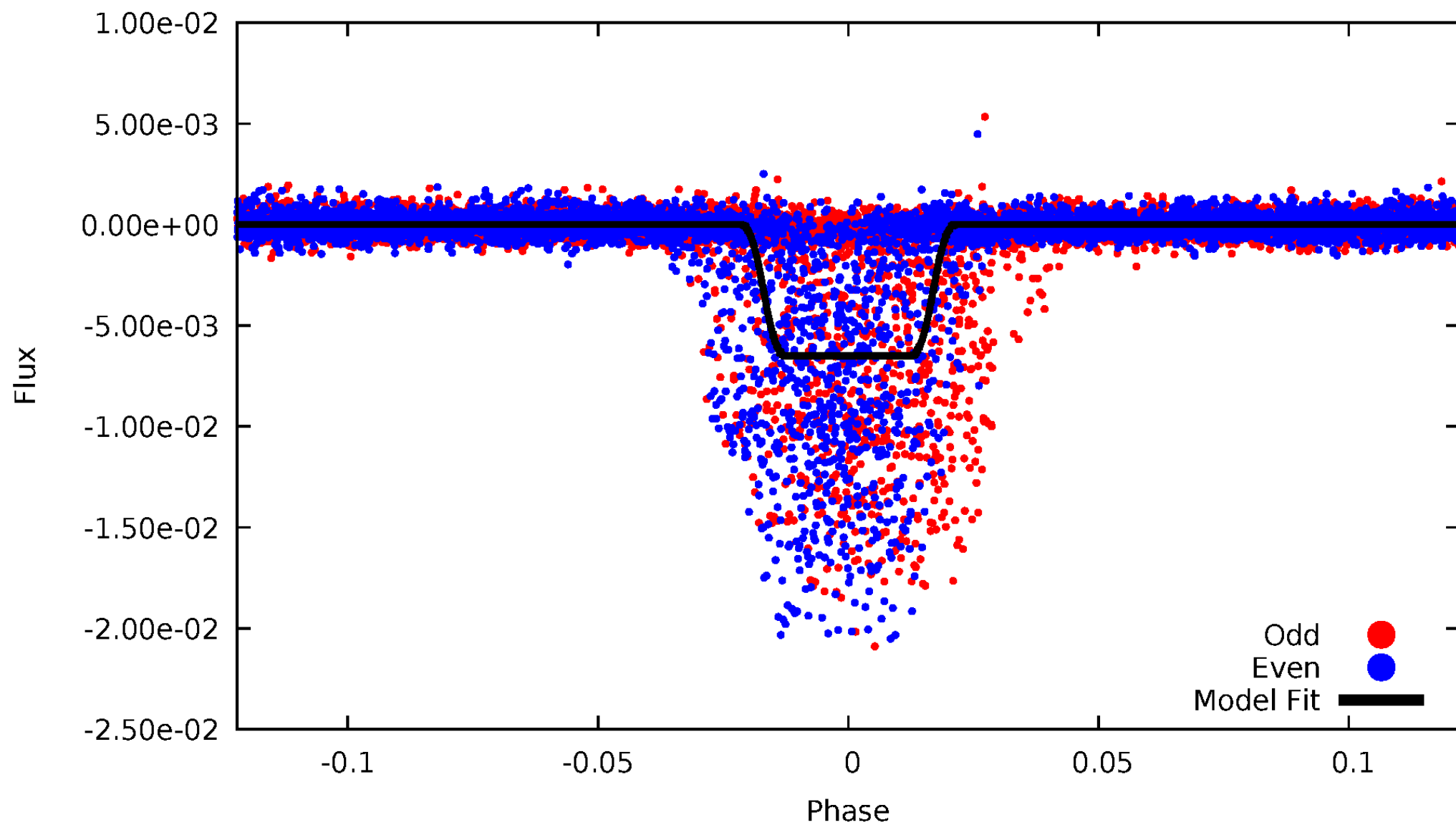
DV Odd/Even

TCE 006964043-02



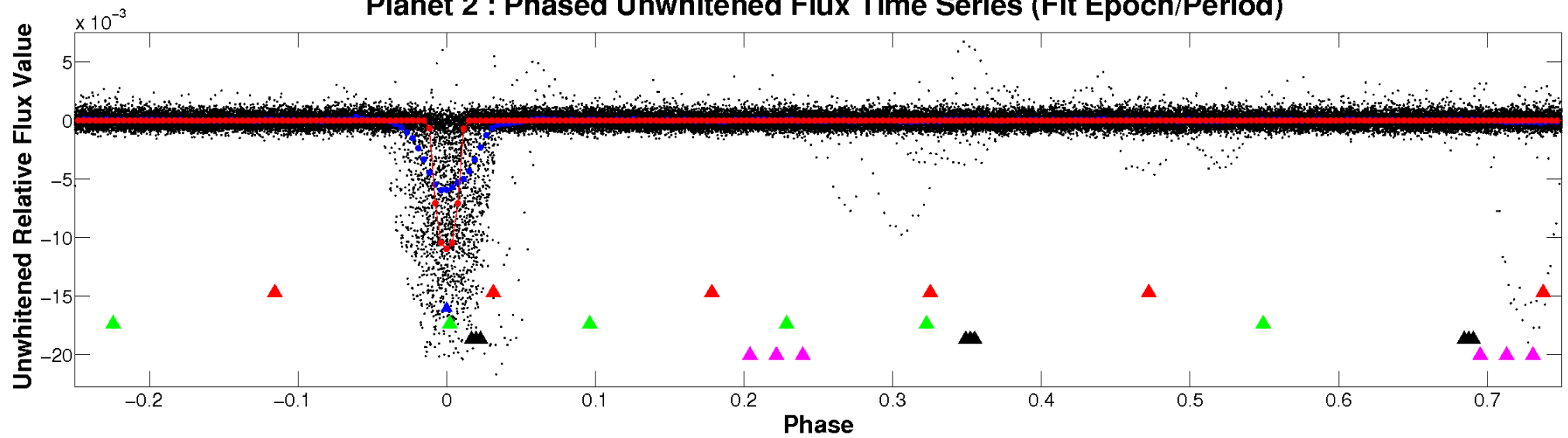
ALT Odd/Even

TCE 006964043-02

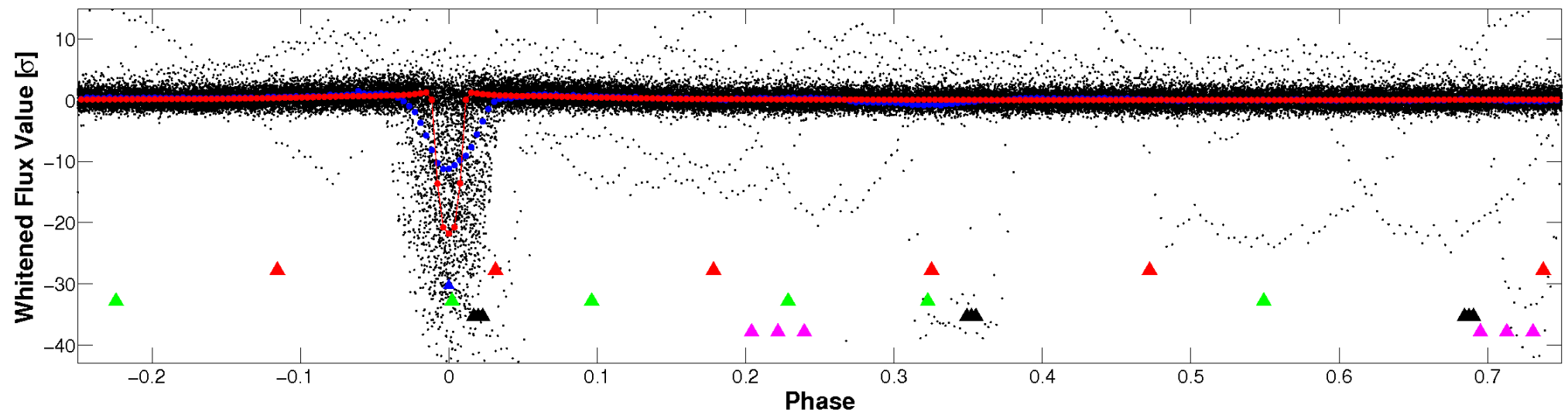


Non-Whitened Vs. Whitened Light Curve

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

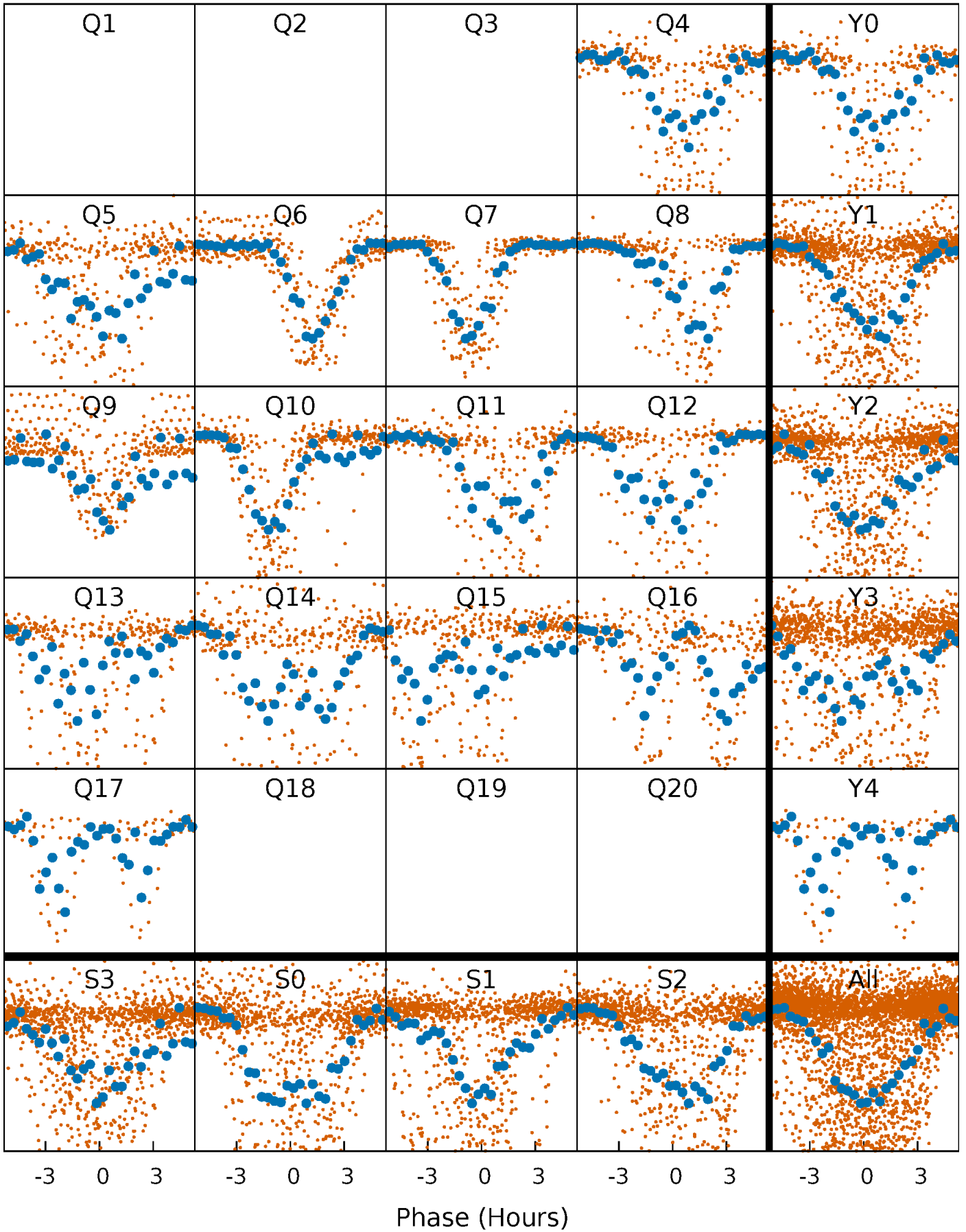


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



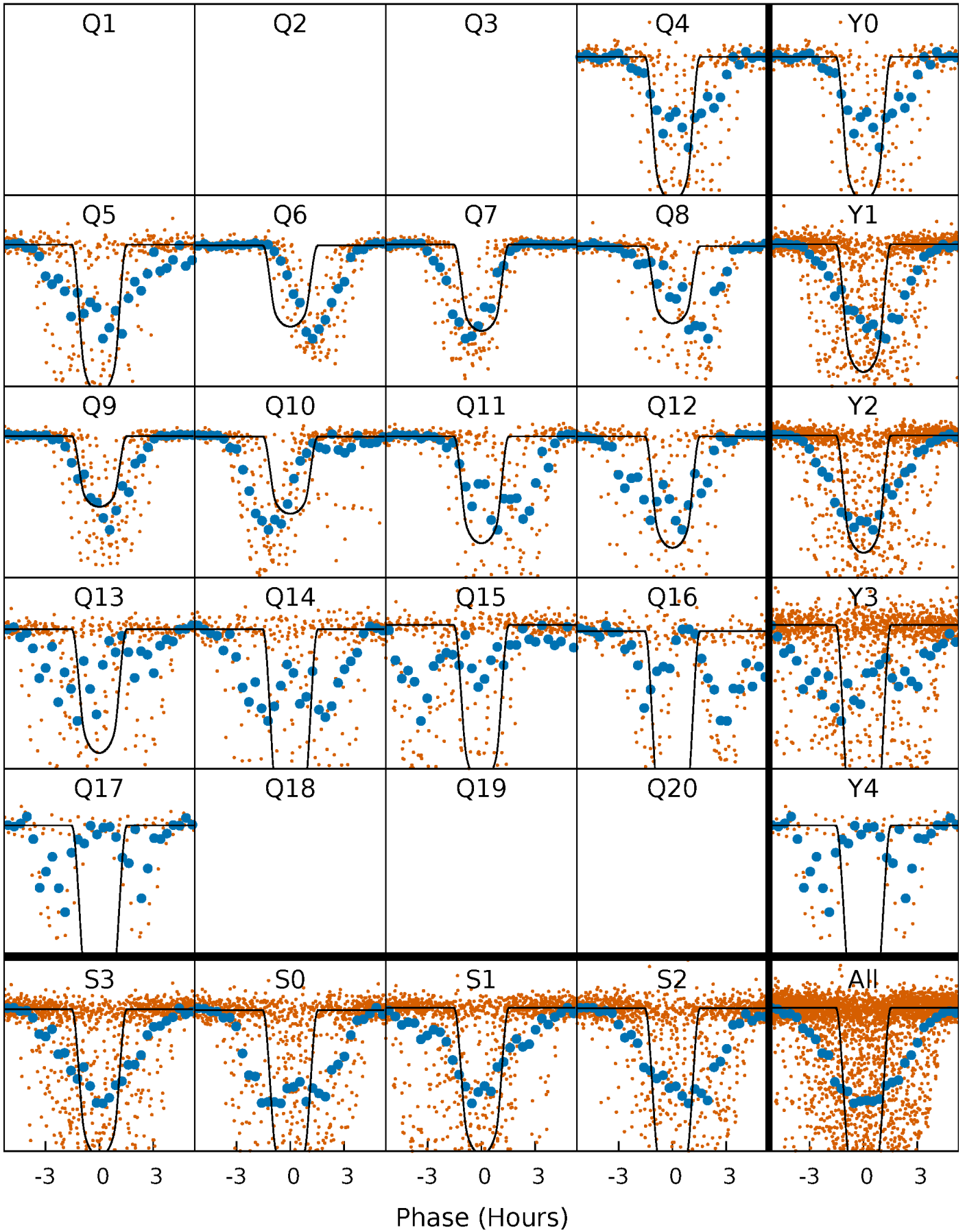
PDC Quarter-Phased Transit Curves

TCE 006964043-02 $P = 5.362932$ Days $T_0 = 131.826644$ (BKJD)



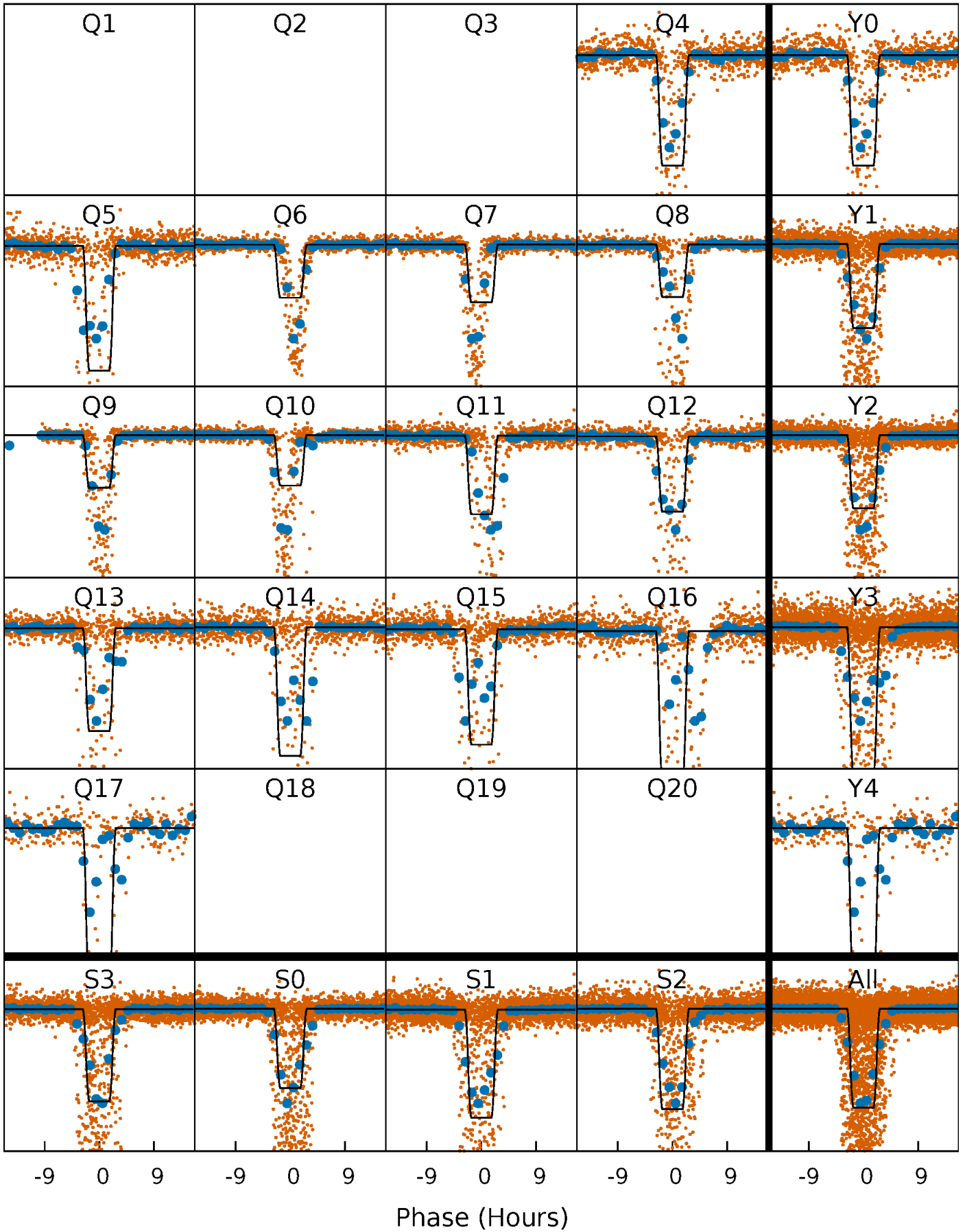
DV Quarter-Phased Transit Curves

TCE 006964043-02 P= 5.362932 Days $T_0=131.826644$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

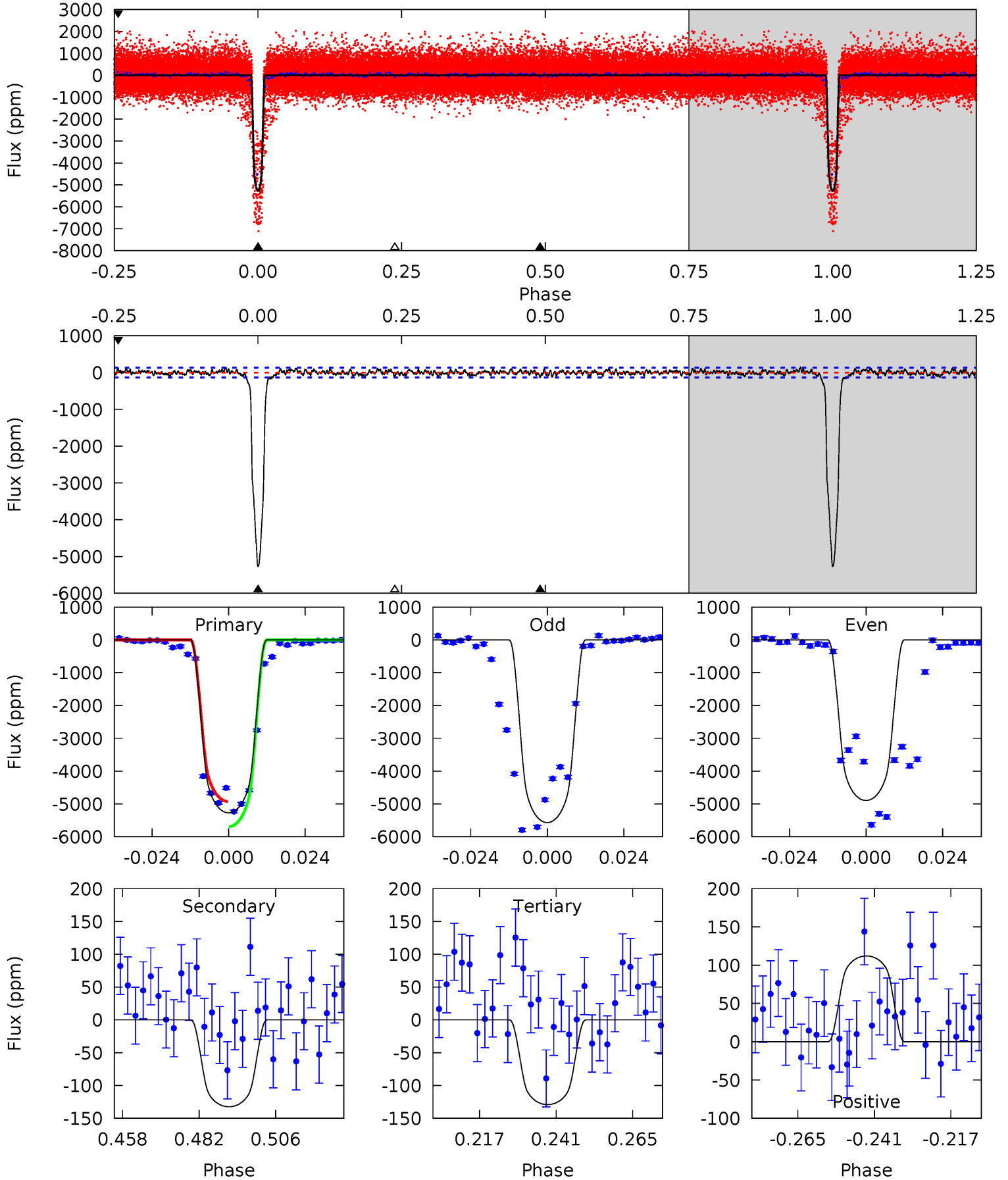
TCE 006964043-02 P= 5.362560 Days $T_0=131.880530$ (BKJD)



DV Model-Shift Uniqueness Test

006964043-02, P = 5.362932 Days, E = 131.826644 Days

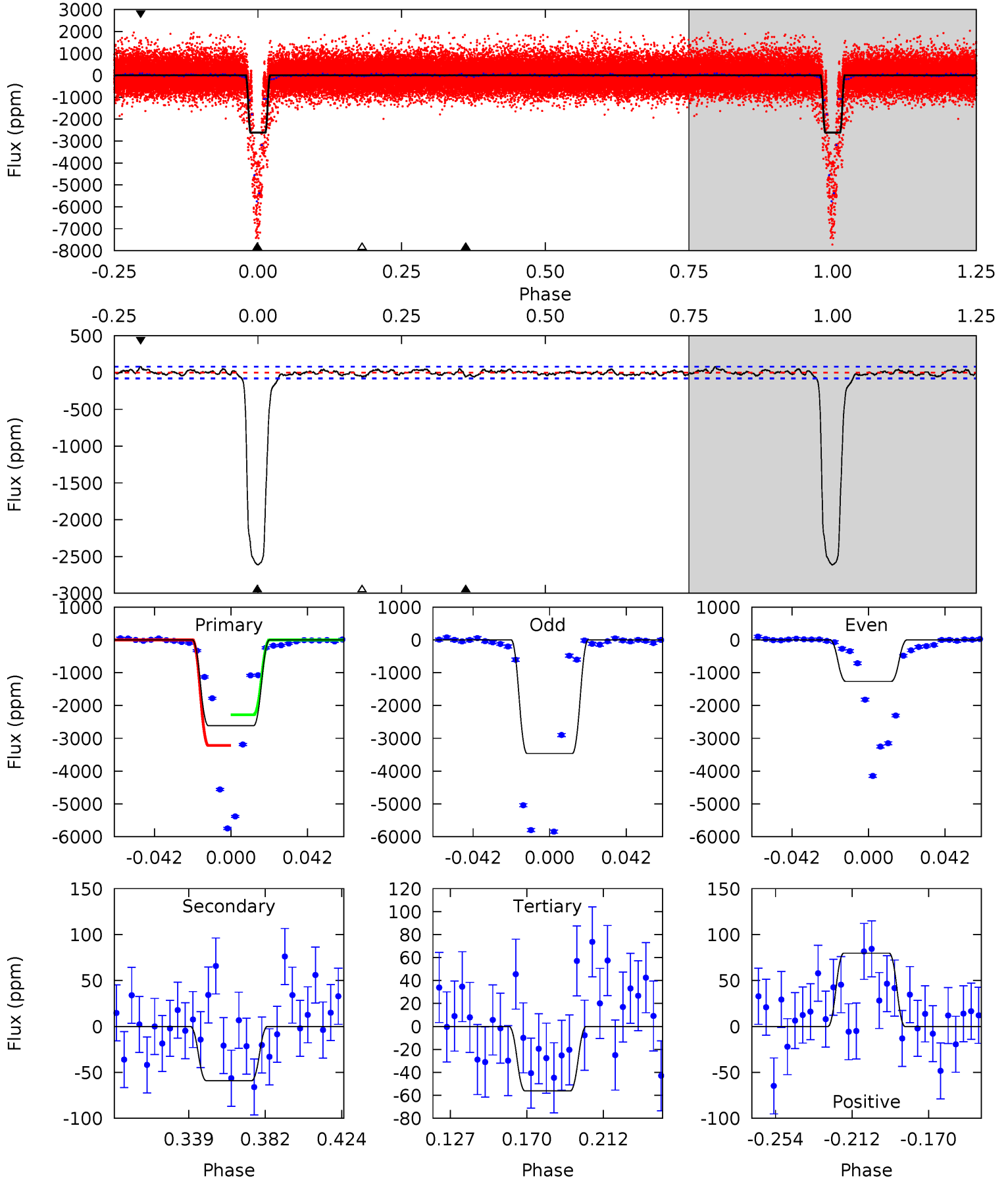
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
189.1	4.75	4.63	4.02	4.85	2.26	1.59	184.5	185.1	0.12	0.73	11.8	1.10	0.03	0



Alt Model-Shift Uniqueness Test

006964043-02, P = 5.362560 Days, E = 131.880530 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
154.8	3.50	3.33	4.73	4.74	2.03	1.38	151.5	150.1	0.17	-1.23	69.1	0.94	0.03	0



Stellar Parameters For KIC 006964043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5582^{+200}_{-183}	$4.445^{+0.112}_{-0.168}$	$-0.220^{+0.300}_{-0.300}$	$0.905^{+0.236}_{-0.127}$	$0.832^{+0.118}_{-0.072}$	$1.580^{+0.823}_{-0.742}$
	+4%/-3%	+3%/-4%	+136%/-136%	+26%/-14%	+14%/-9%	+52%/-47%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006964043-02 / KOI 1351.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-132±28	$9.65^{+1.61}_{-0.81}$	1391^{+94}_{-82}	2649^{+96}_{-109}	$2.387^{+0.797}_{-0.693}$
Alt.	-59±17	$8.01^{+1.14}_{-0.70}$	1388^{+91}_{-78}	2489^{+107}_{-135}	$1.559^{+0.596}_{-0.502}$

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 $A_{obs} \gg 1.0$

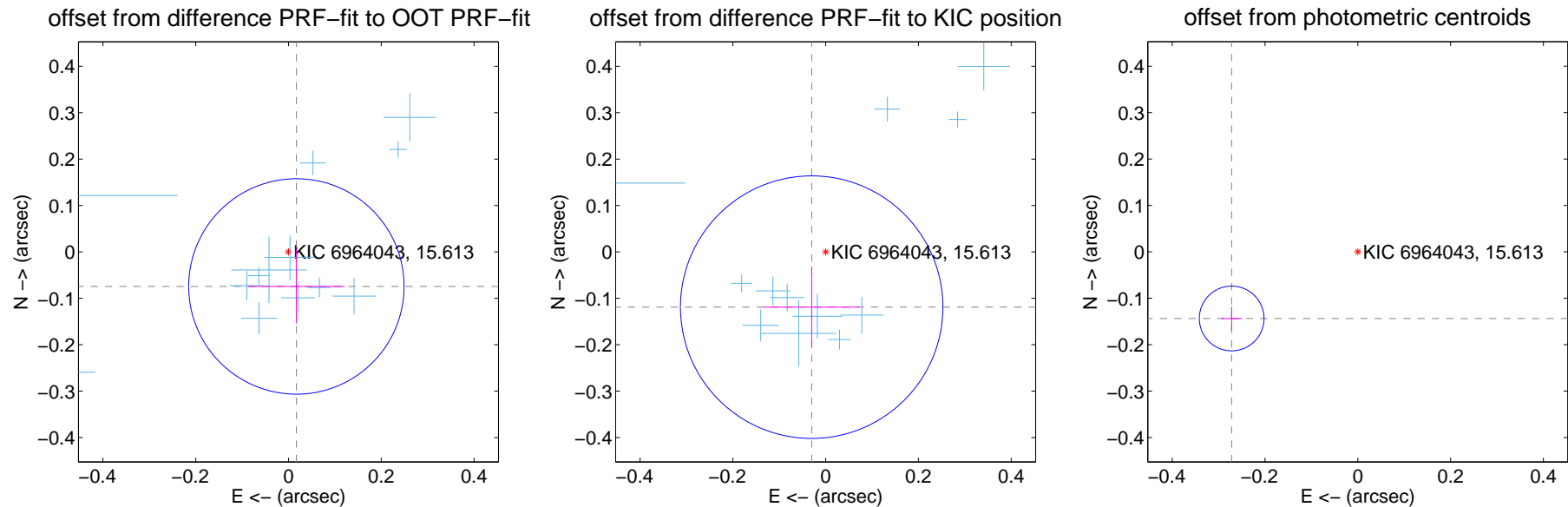
DV Centroid Data

Supplemental centroid analysis for 006964043-02. Kepler magnitude: 15.61. Transit SNR 231.11

There are 13 quarters with good PRF difference image offsets

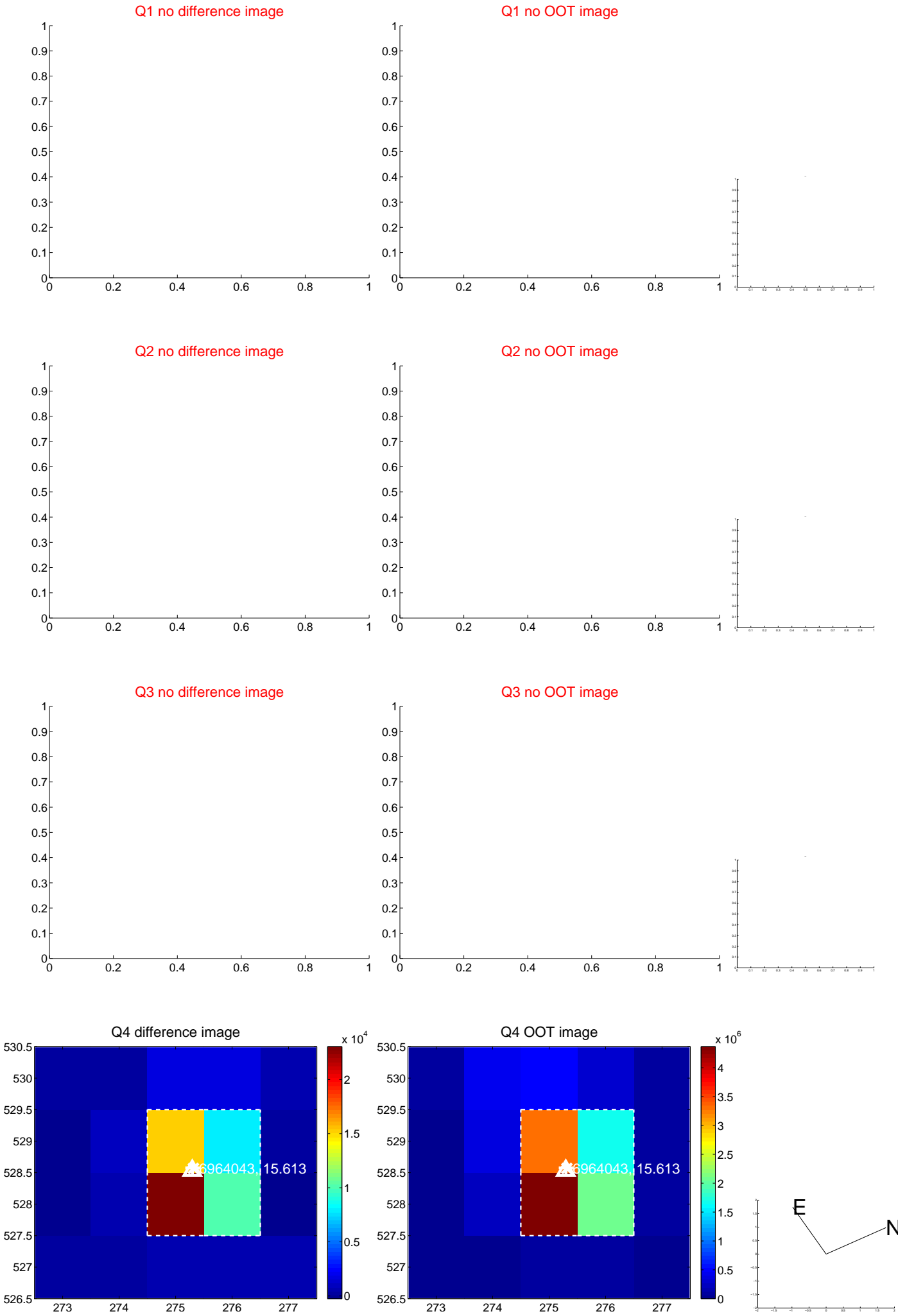
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.076 ± 0.077	0.99	-0.017 ± 0.104	-0.074 ± 0.080
PRF-fit source offset from KIC position	0.123 ± 0.094	1.30	0.030 ± 0.104	-0.119 ± 0.088
photometric centroid source offset	0.31 ± 0.02	13.22	0.27 ± 0.02	-0.14 ± 0.03

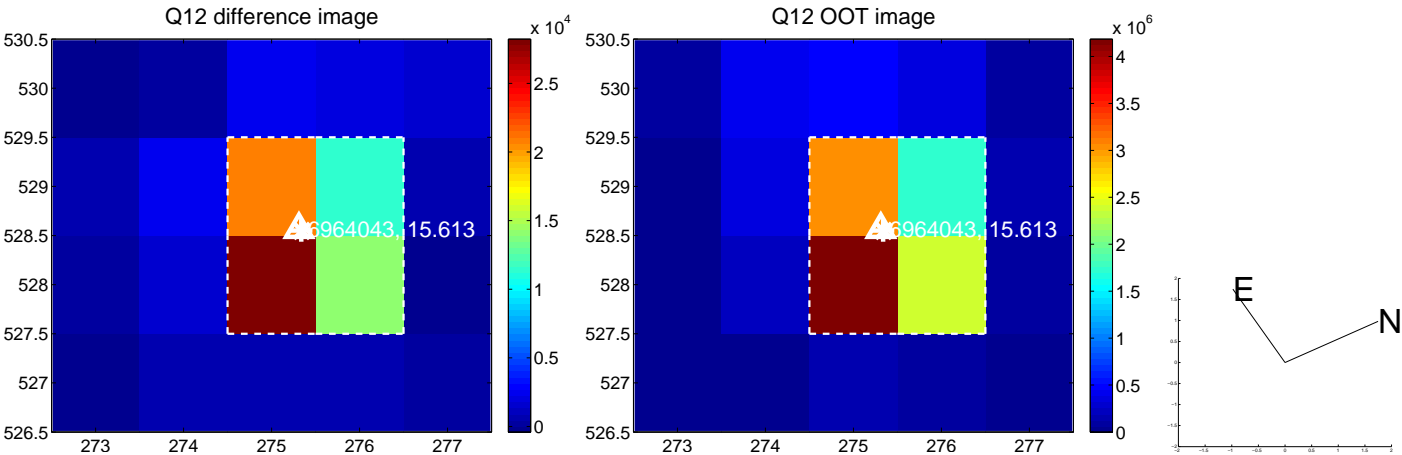
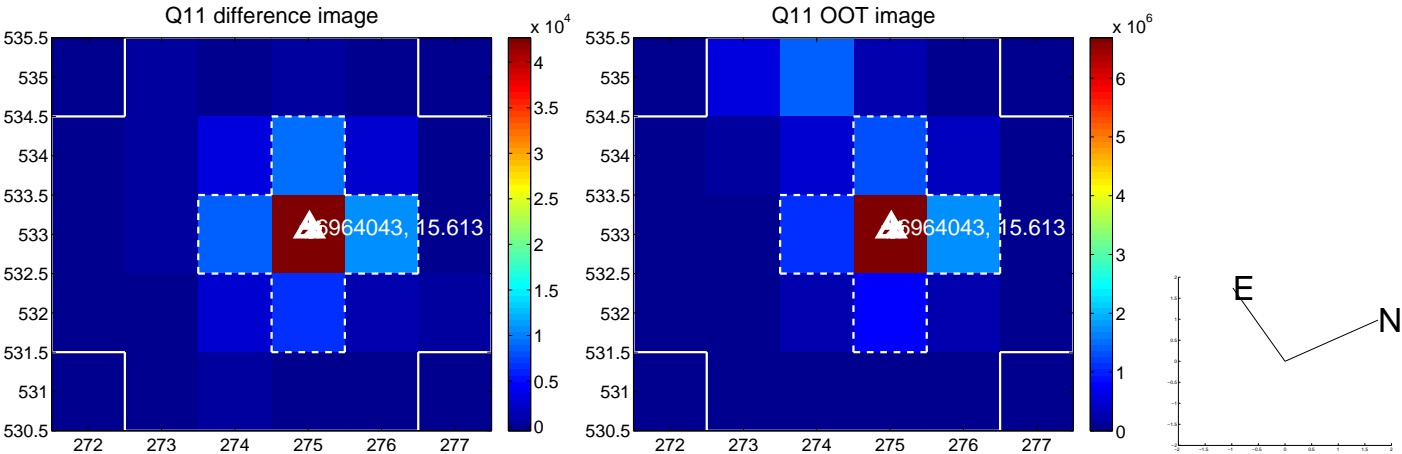
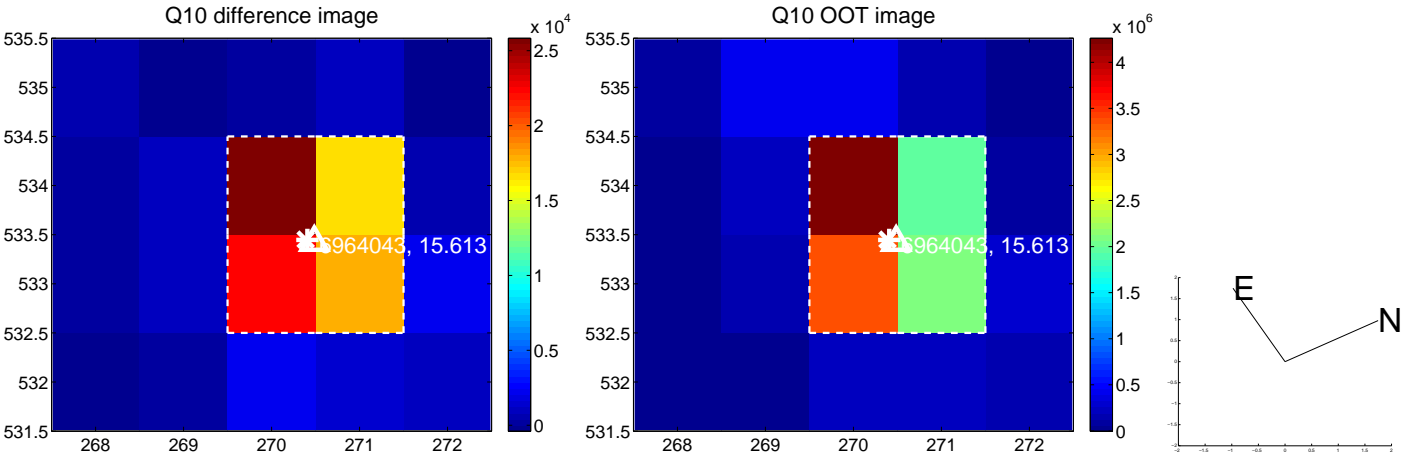
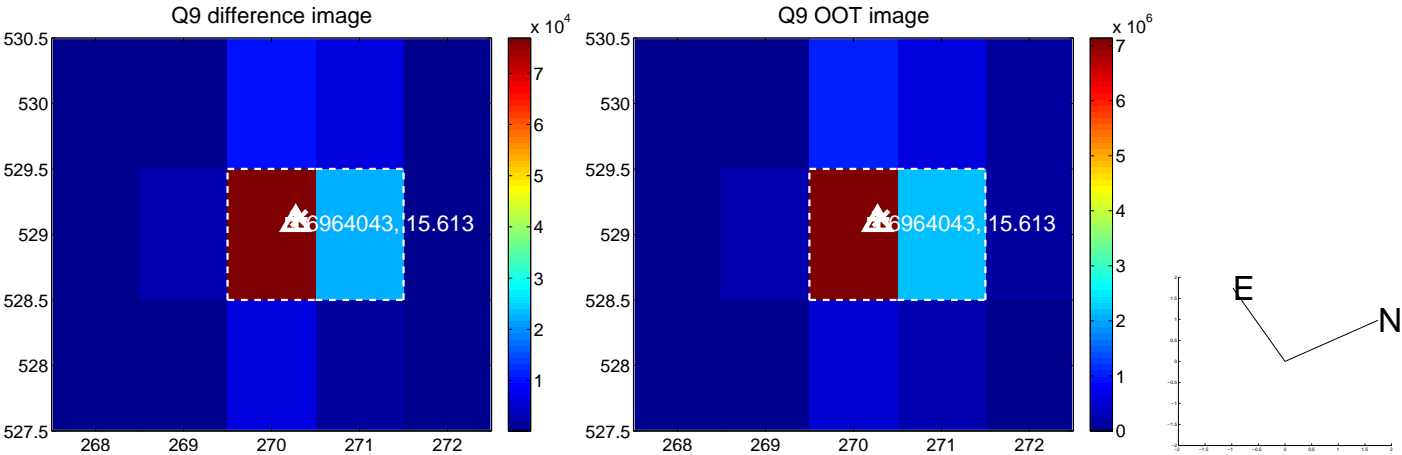


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

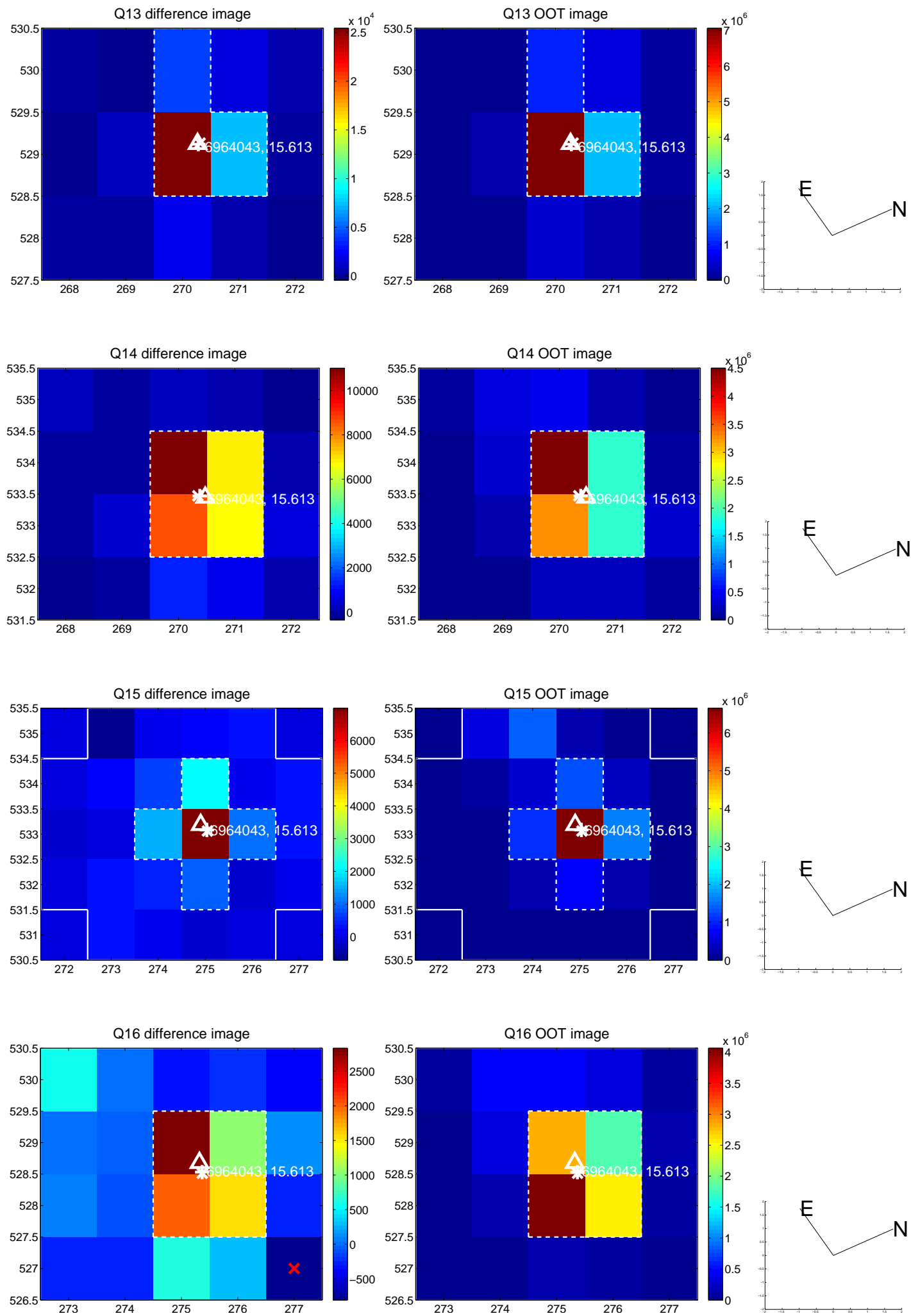
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



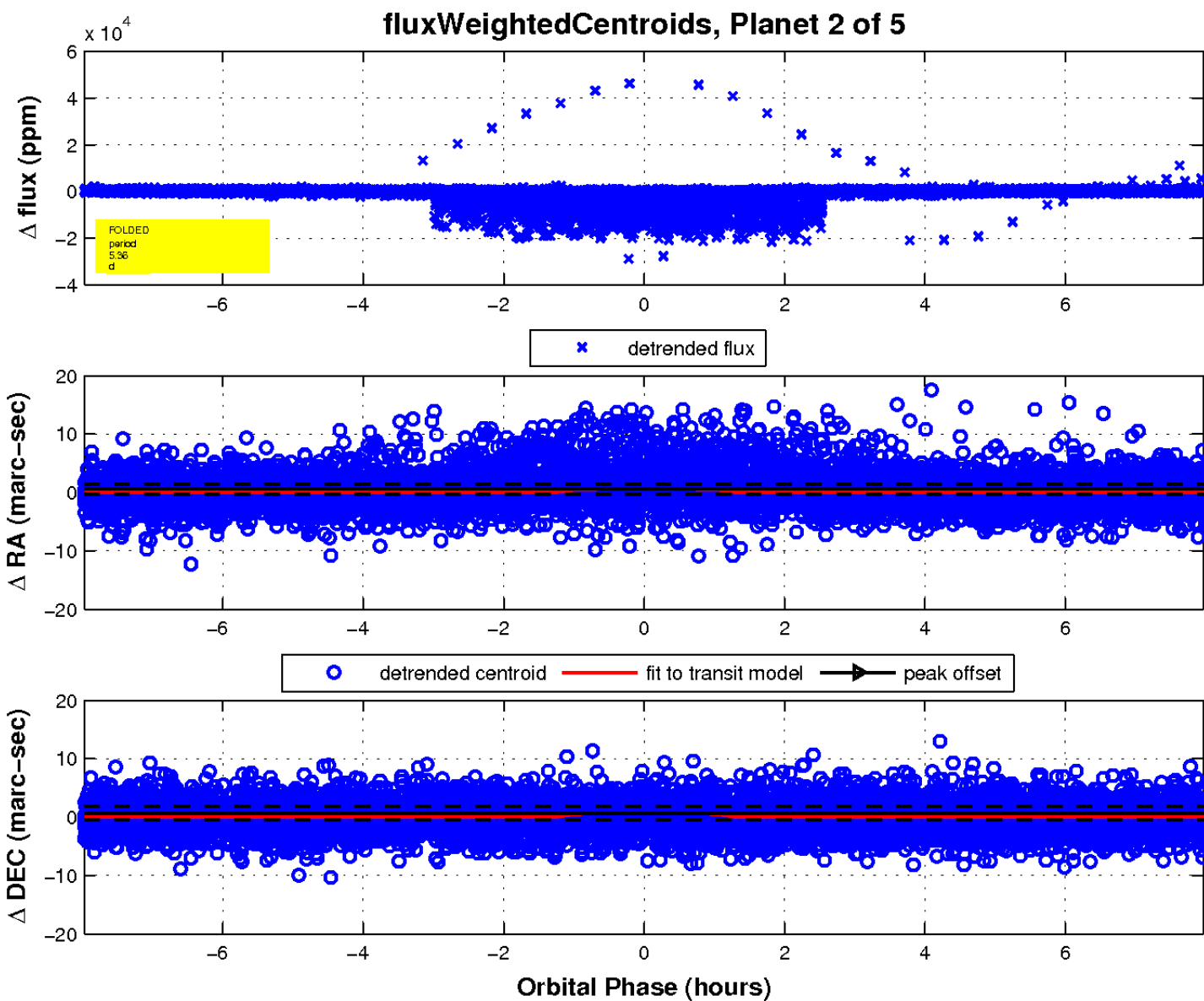
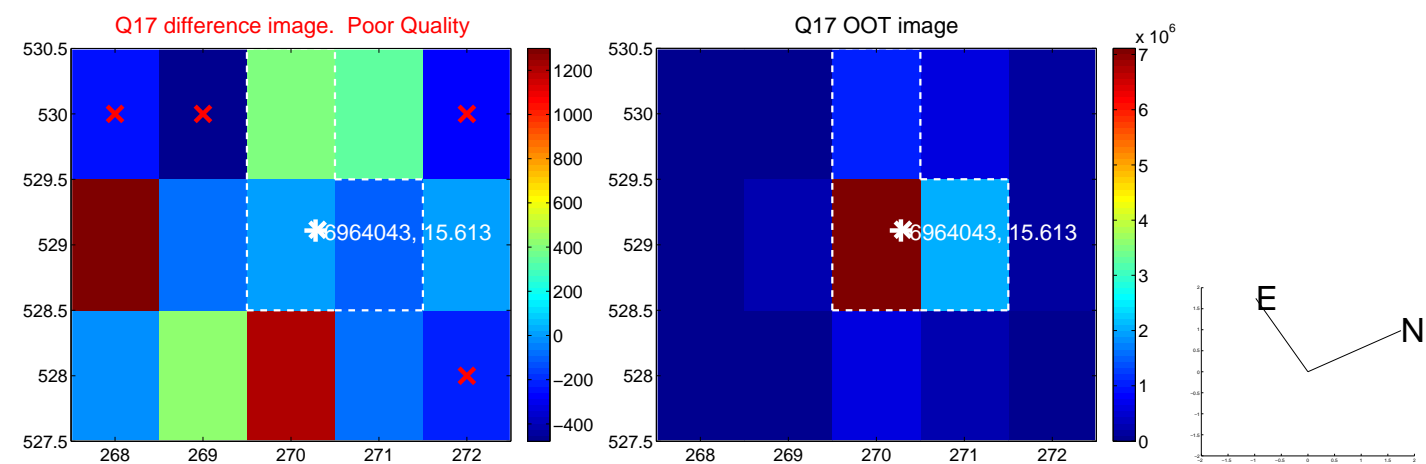
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

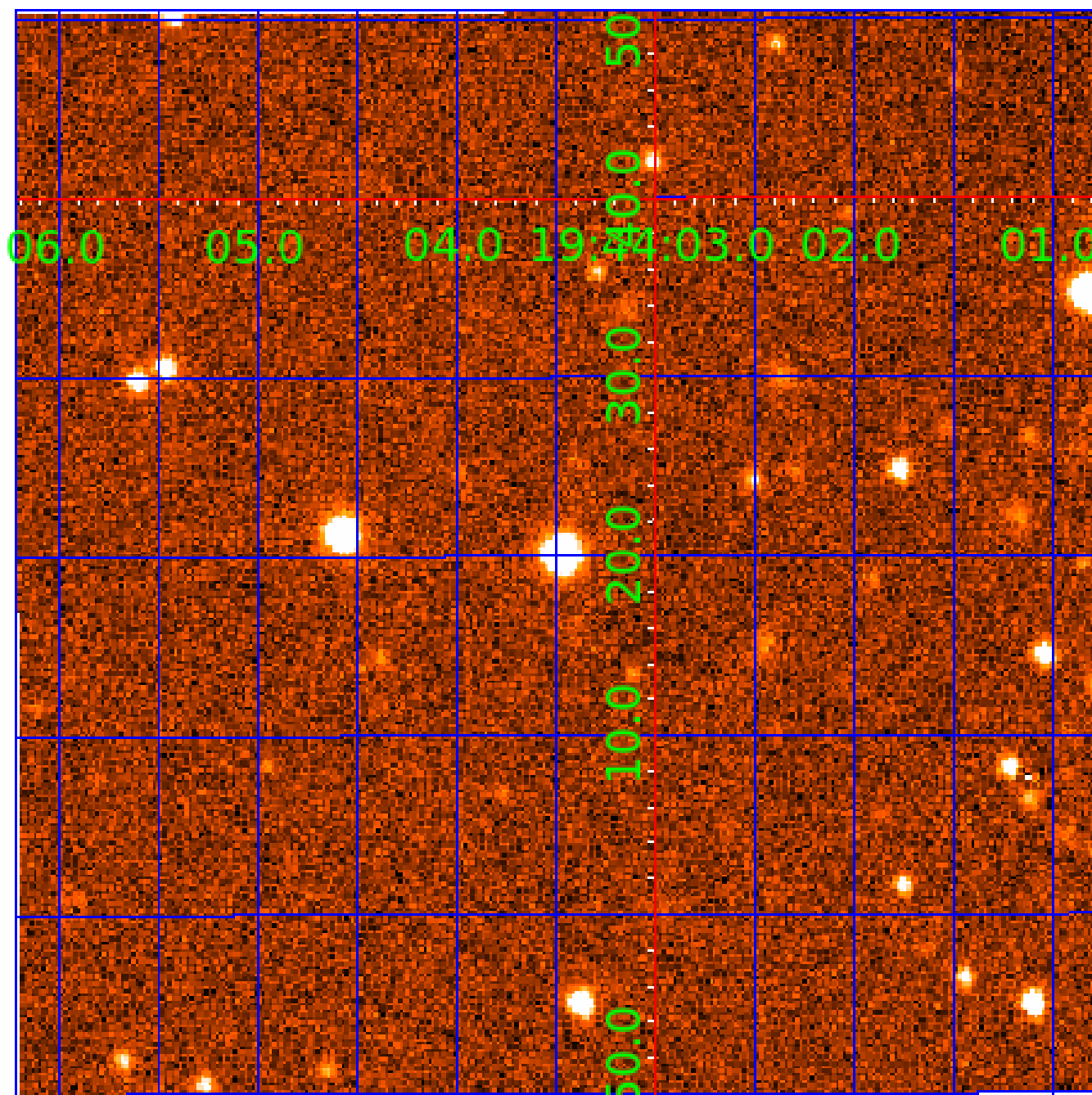


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006964043

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})
006964043-01	OBS	No	236.757090	339.573474	72525.8	8.827	688.2	516.7	0.91	5582	39.05	1.44
006964043-02	OBS	1351.01	5.362932	131.826644	10989.5	2.658	400.2	231.1	0.91	5582	9.60	223.85
006964043-03	OBS	No	237.183580	336.134518	46329.1	9.687	396.2	188.3	0.91	5582	33.70	1.43
006964043-04	OBS	No	159.105683	267.772408	509.0	8.315	155.5	4.8	0.91	5582	2.40	2.44
006964043-05	OBS	No	238.698037	269.628237	15880.8	7.500	146.1	-1.0	0.91	5582	11.28	1.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006964043-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—DEEP_V_SHAPED
006964043-02	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT
006964043-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—INCONSISTENT_TRANS
006964043-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—INCONSISTENT_TRANS
006964043-05	OBS	FP	0.38	1	0	0	0	INCONSISTENT_TRANS—CENT_NOFITS

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

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

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

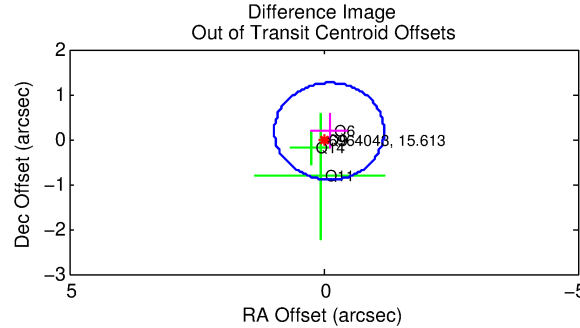
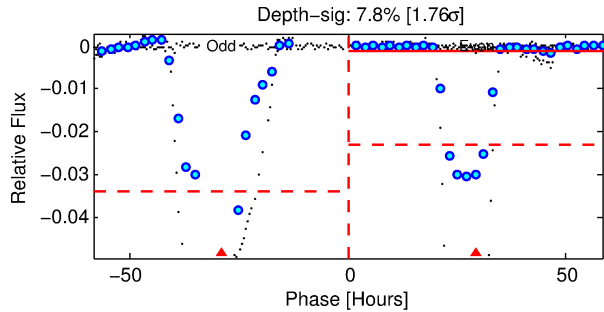
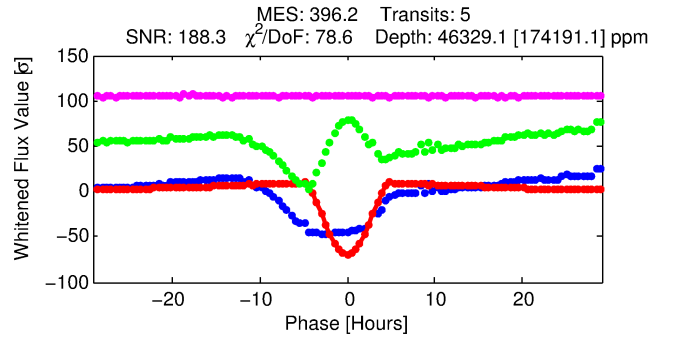
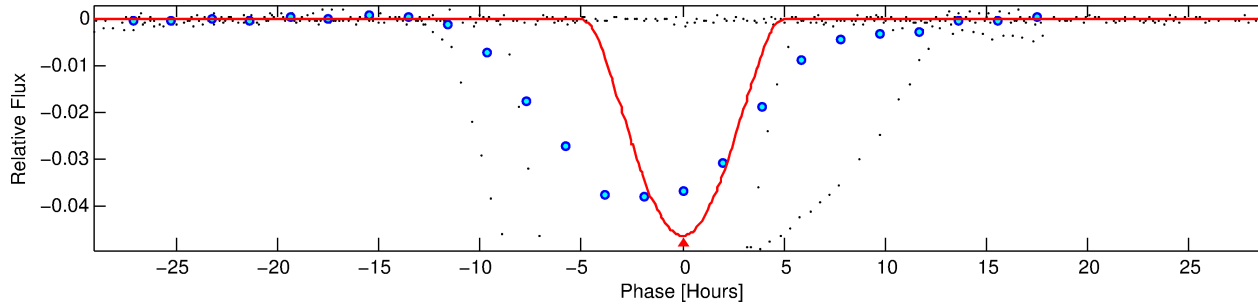
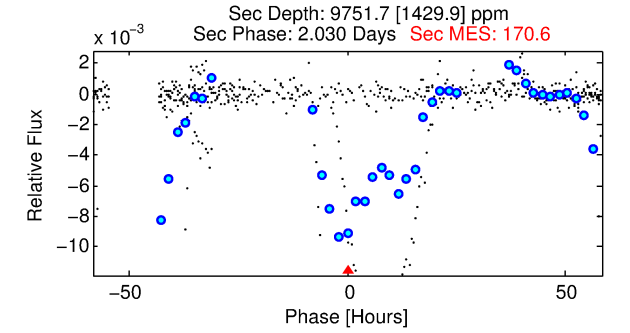
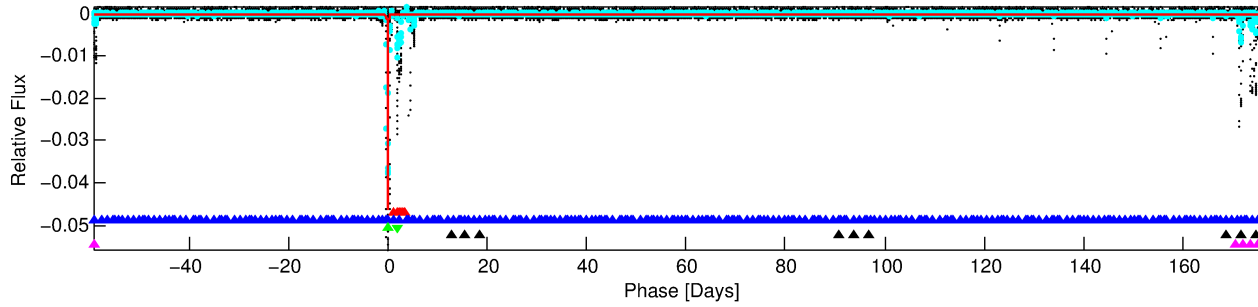
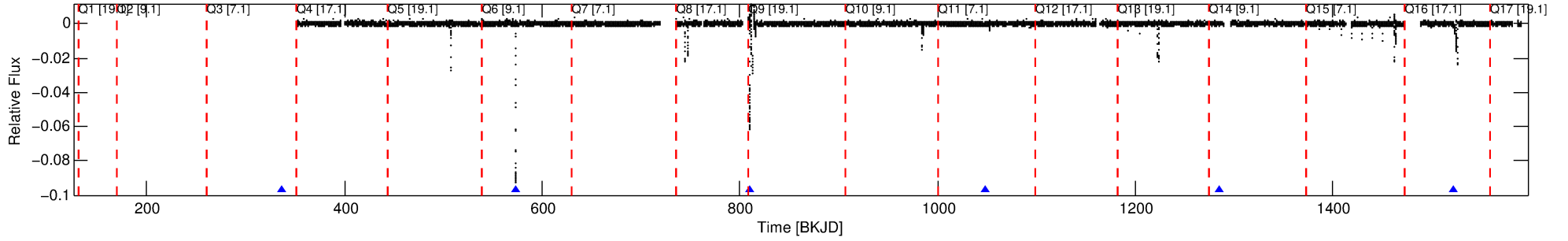
Ephemeris Match Information For 006964043-03

No Significant Match Found

DV One-Page Summary

KIC: 6964043 Candidate: 3 of 5 Period: 237.184 d
KOI: K01351 Corr: No Ephemeris Match

Kp: 15.61 R*: 0.91 Rs Teff: 5582.0 K Logg: 4.45 Fe/H: -0.220



DV Fit Results:

Period = 237.18358 [0.00197] d
Epoch = 336.1345 [0.0060] BKJD
Rp/R* = 0.3412 [0.9314]
a/R* = 167.18 [8.41]
b = 1.00 [0.43]
Seff = 1.43 [0.49]
Teq = 279 [24] K
Rp = 33.70 [92.40] Re
a = 0.7055 [0.1527] AU
Ag = 2351.96 [12865.13] [0.18σ]
Teffp = 3003 [4101] K [0.66σ]

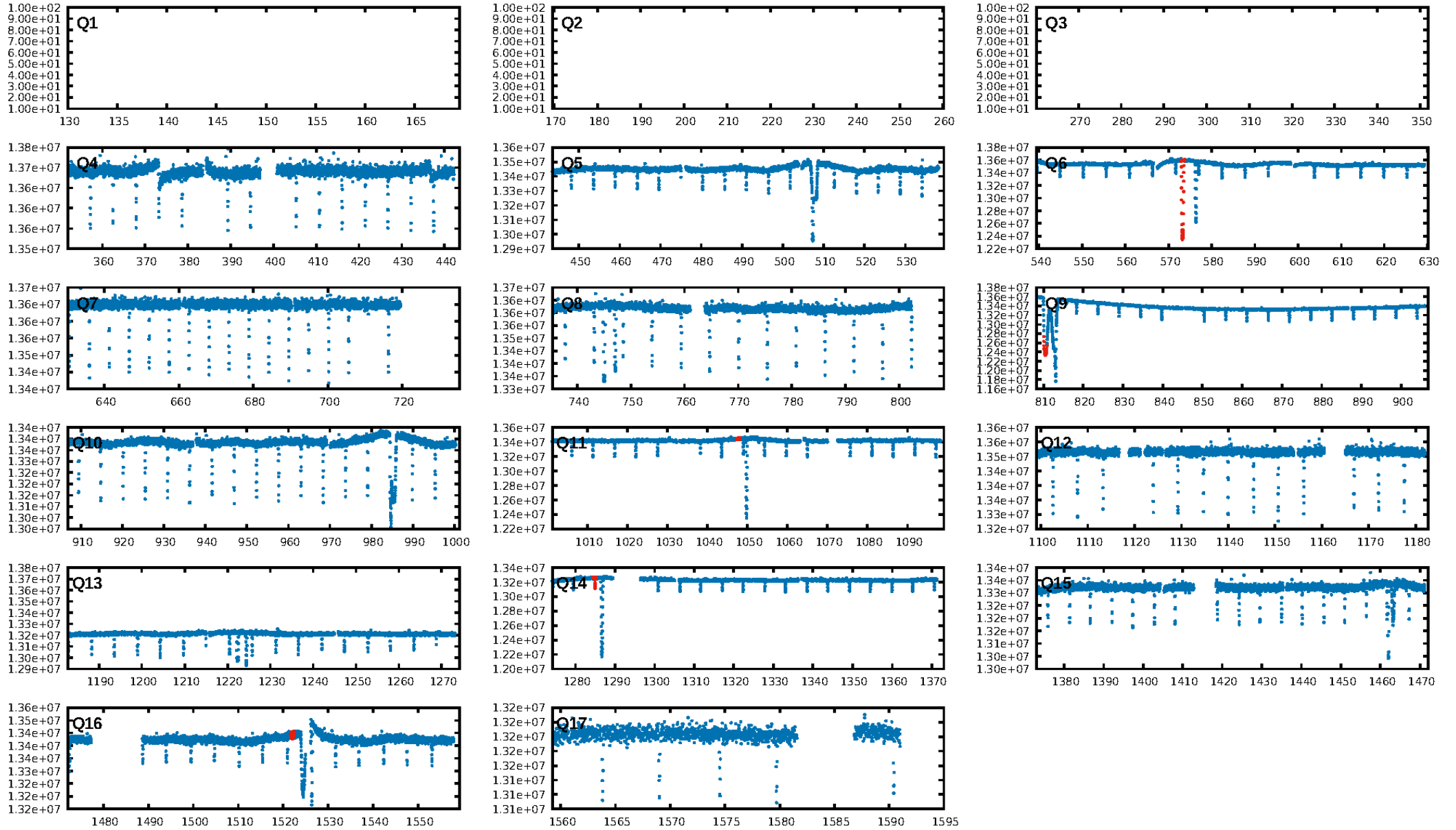
DV Diagnostic Results:

ShortPeriod-sig: 56.5% [0.78σ]
LongPeriod-sig: 99.7% [2.97σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 12.79
Centroid-sig: 0.5%
Centroid-so: 0.104 arcsec [4.28σ]
OotOffset-rm: 0.209 arcsec [0.58σ]
KicOffset-rm: 0.283 arcsec [0.79σ]
OotOffset-st: 2/1/0/1 [4]
KicOffset-st: 2/1/0/1 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 0.80 [4/5]

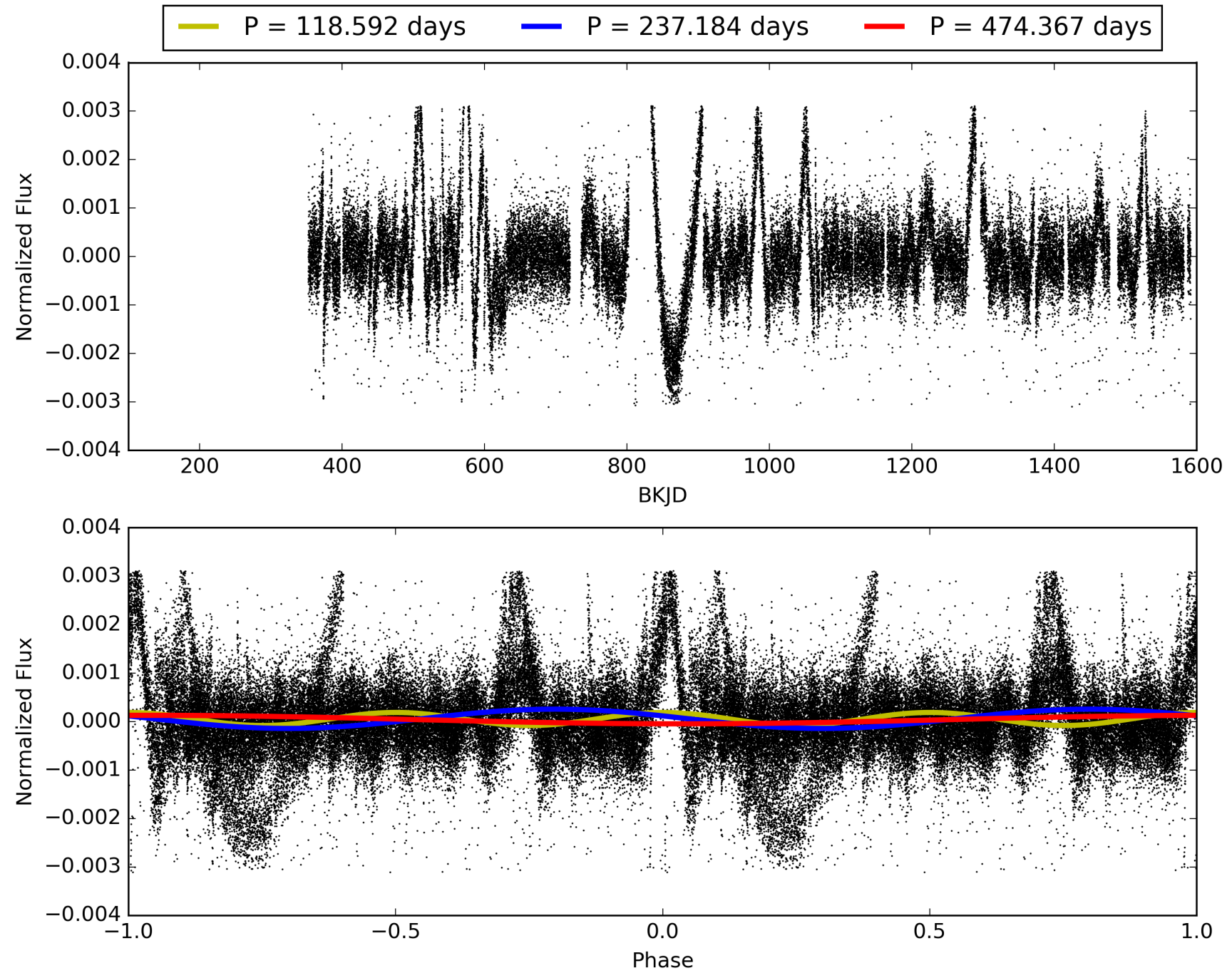
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:48:27 Z

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

TCE 006964043-03, PDC Light Curves

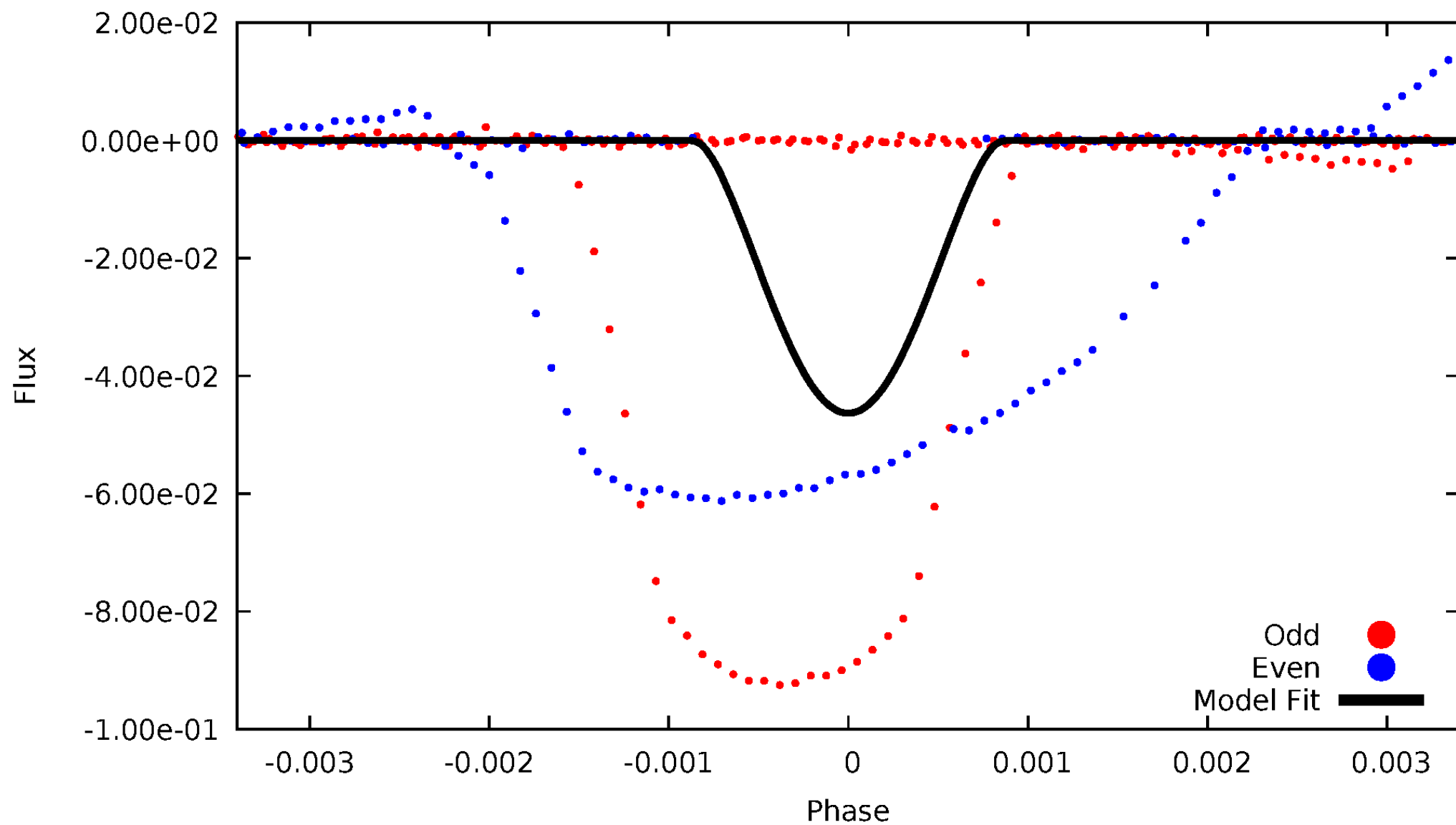


TCE 006964043-03



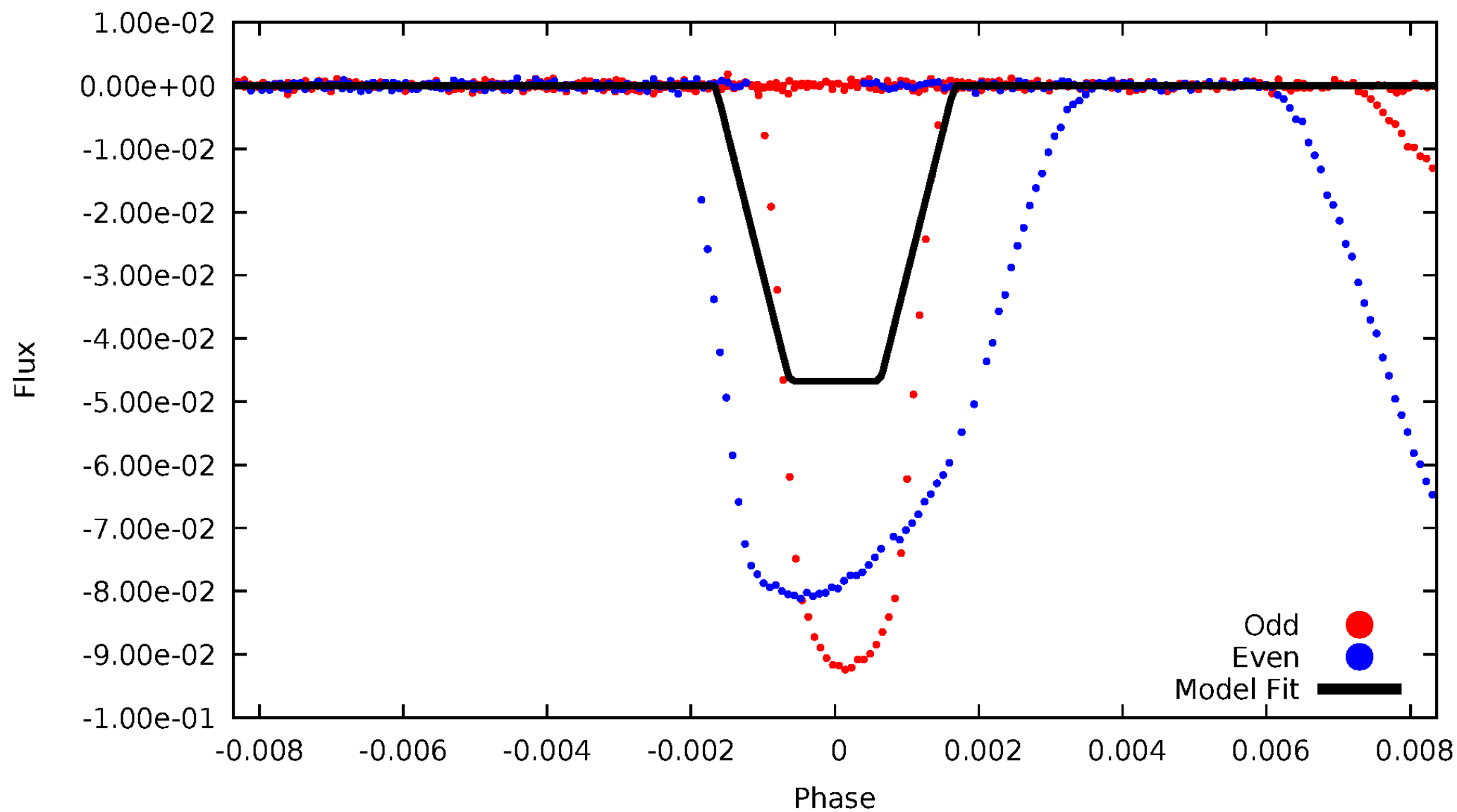
DV Odd/Even

TCE 006964043-03



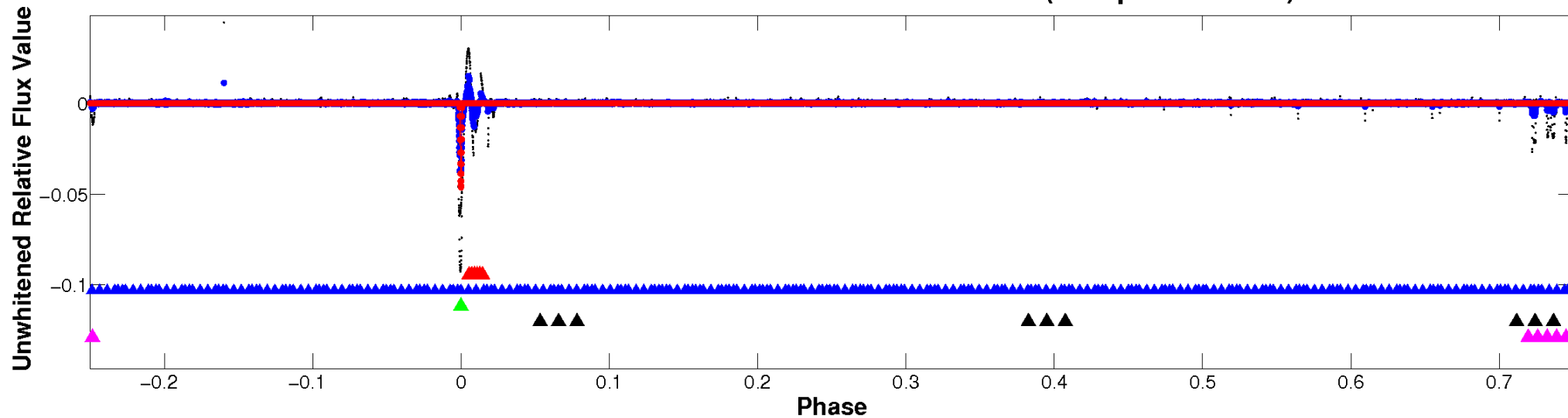
ALT Odd/Even

TCE 006964043-03

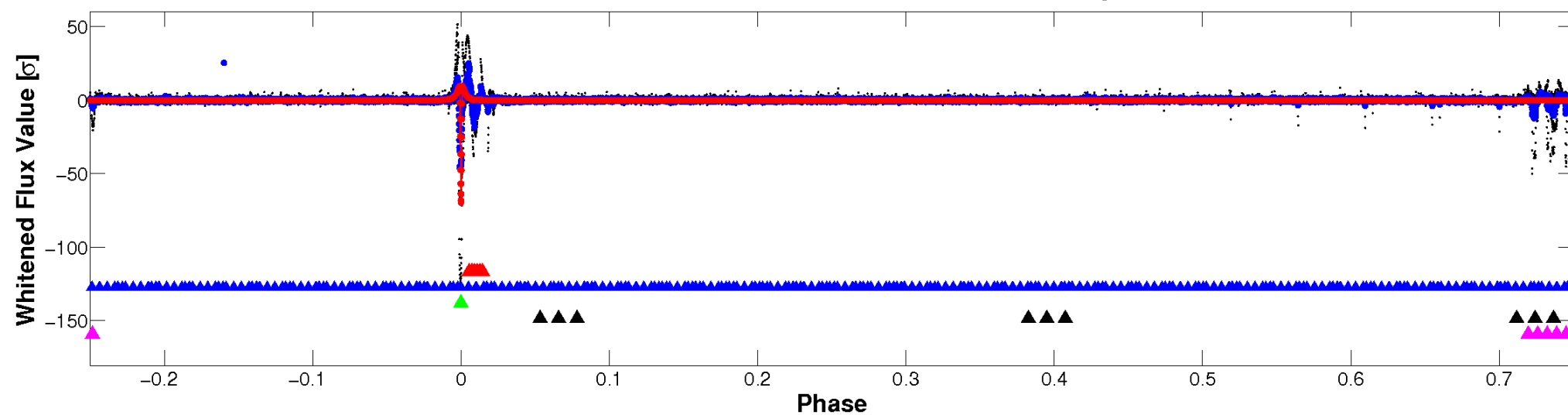


Non-Whitened Vs. Whitened Light Curve

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

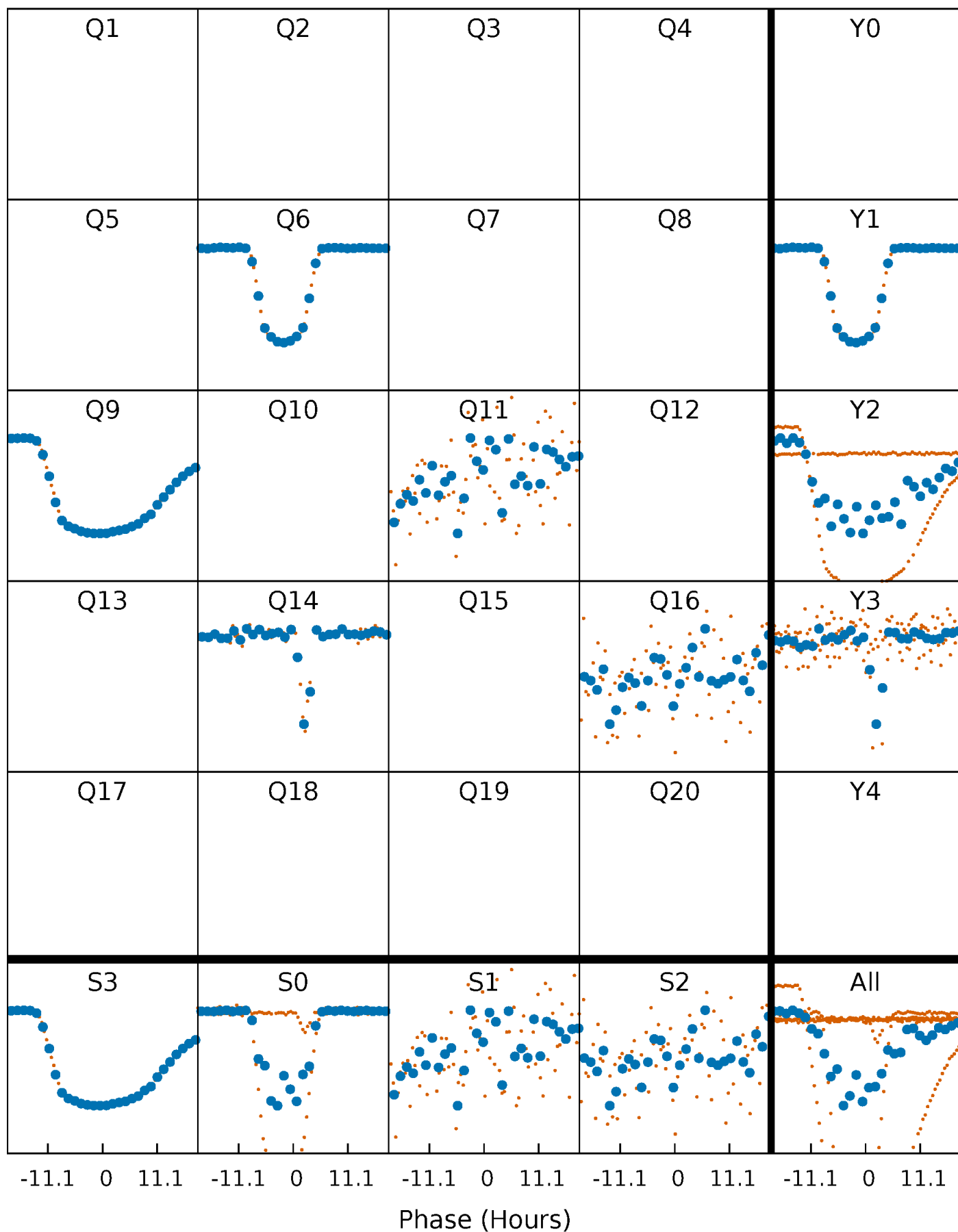


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



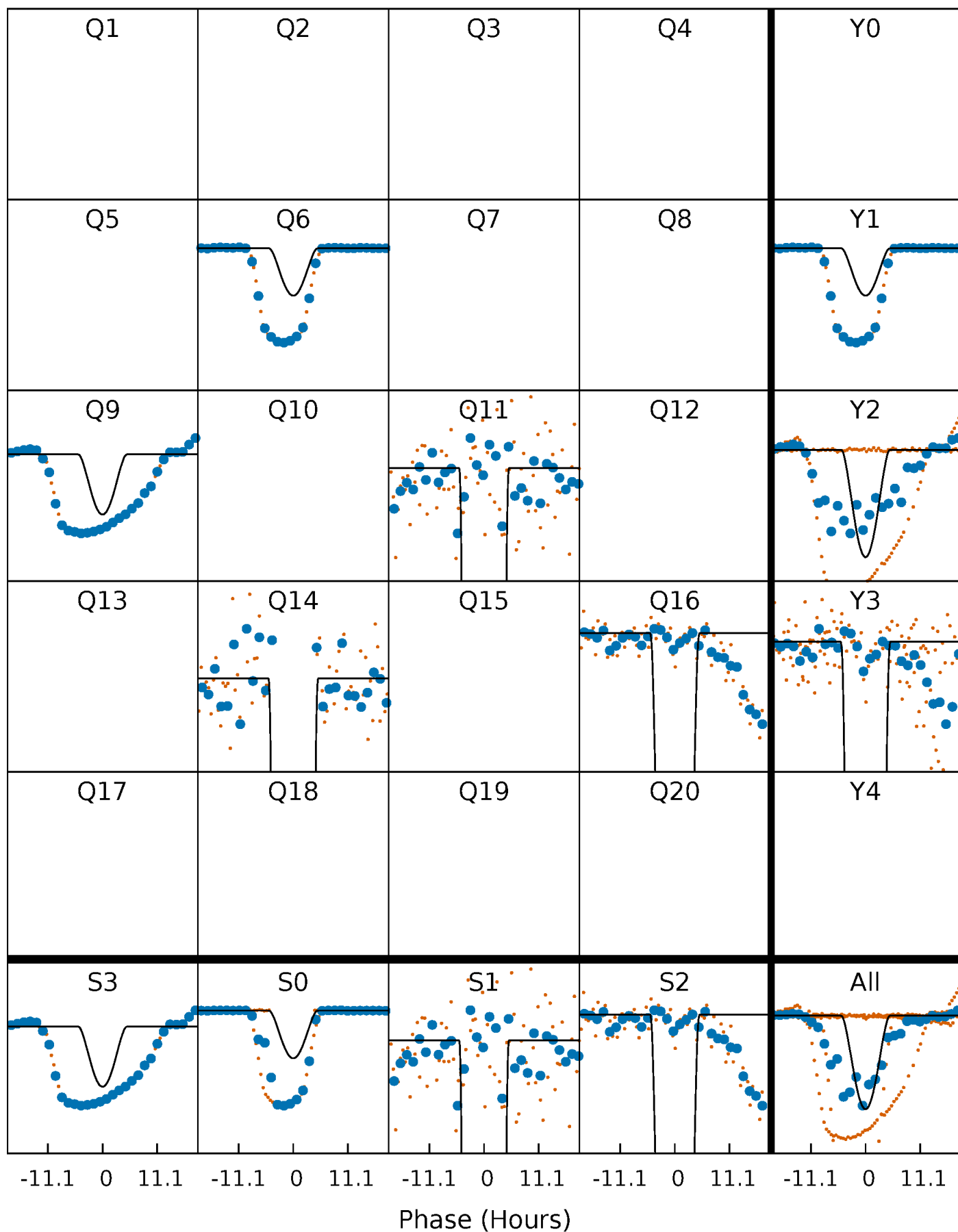
PDC Quarter-Phased Transit Curves

TCE 006964043-03 $P=237.183580$ Days $T_0=336.134518$ (BKJD)



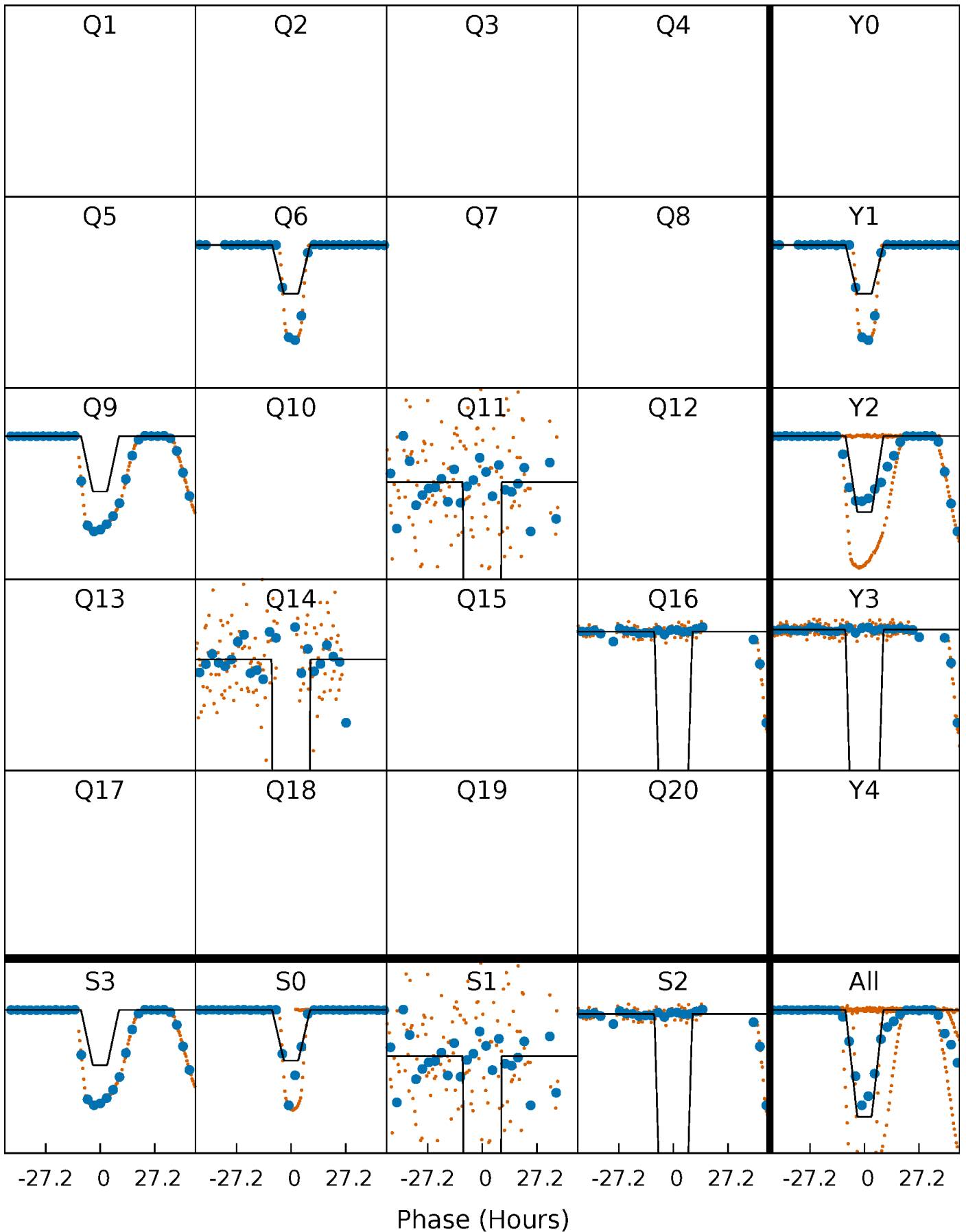
DV Quarter-Phased Transit Curves

TCE 006964043-03 P=237.183580 Days $T_0=336.134518$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

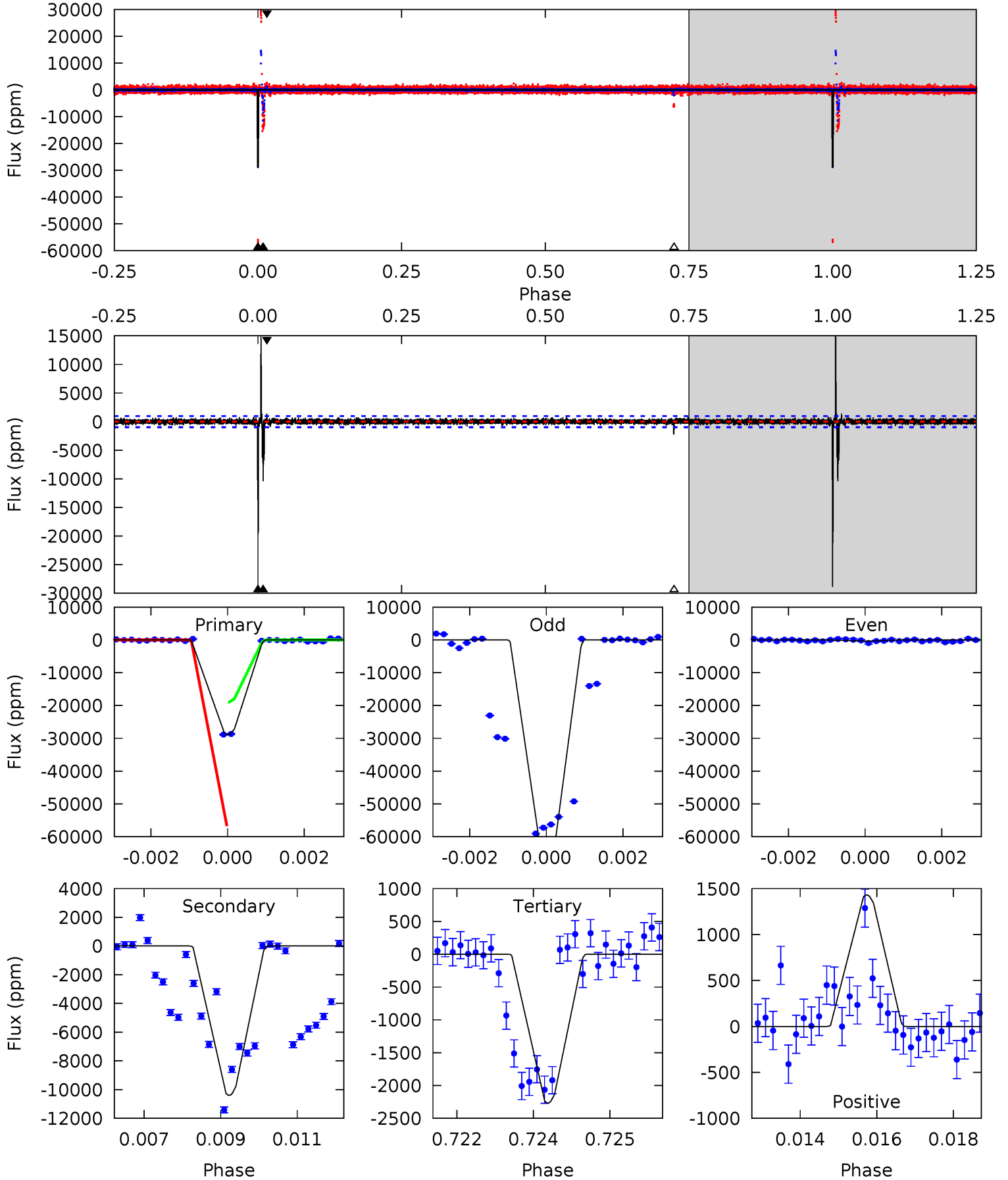
TCE 006964043-03 P=237.254065 Days $T_0=335.939193$ (BKJD)



DV Model-Shift Uniqueness Test

006964043-03, P = 237.183580 Days, E = 336.134518 Days

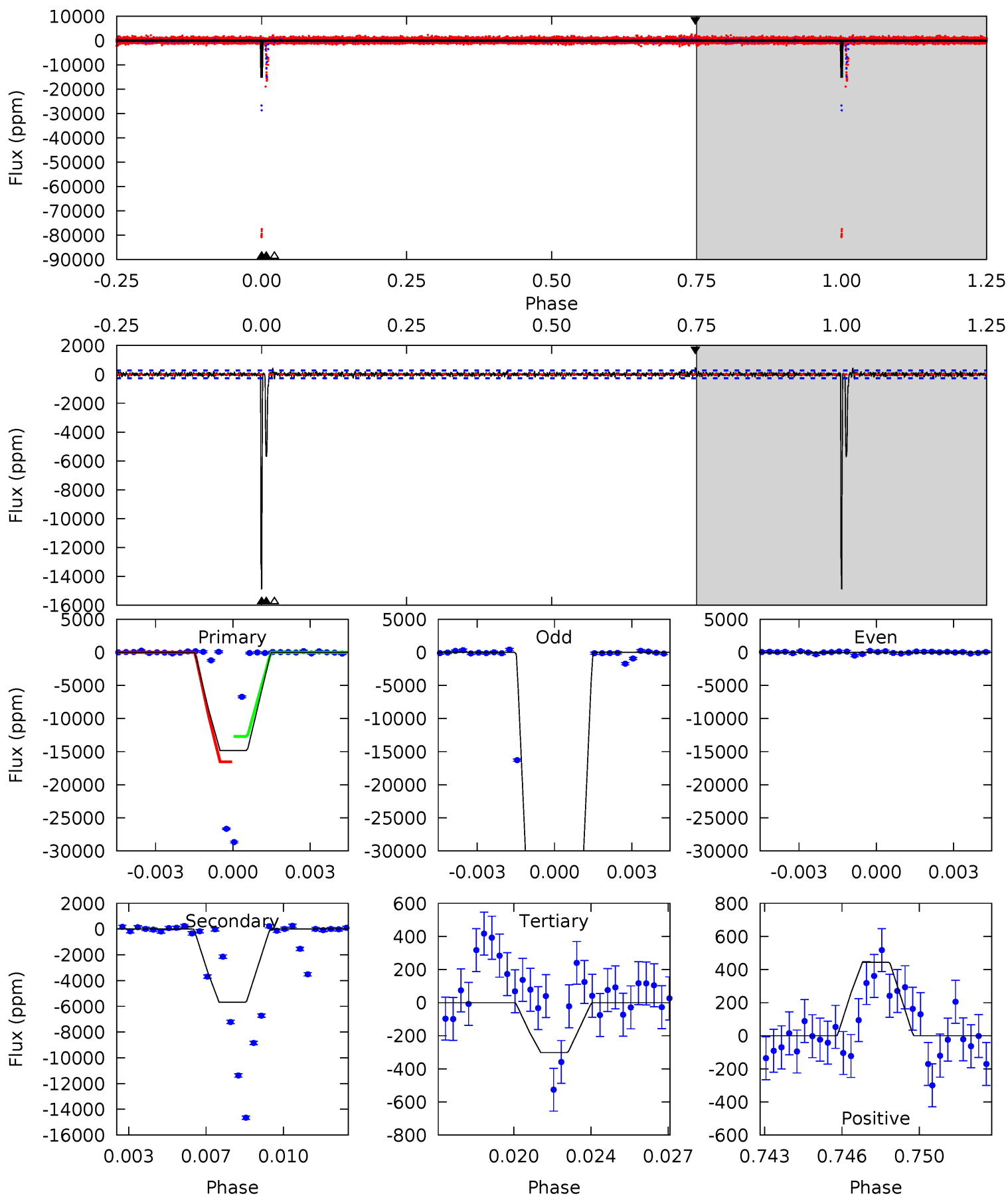
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
159.0	57.2	12.5	7.87	5.35	3.13	1.87	146.5	151.1	44.7	49.3	190.4	74.6	0.34	98.1



Alt Model-Shift Uniqueness Test

006964043-03, P = 237.254065 Days, E = 335.939193 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
293.1	112.3	5.95	8.77	5.23	2.93	1.32	287.2	284.3	106.4	103.5	497.0	-798.0	0.03	0



Stellar Parameters For KIC 006964043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5582^{+200}_{-183}	$4.445^{+0.112}_{-0.168}$	$-0.220^{+0.300}_{-0.300}$	$0.905^{+0.236}_{-0.127}$	$0.832^{+0.118}_{-0.072}$	$1.580^{+0.823}_{-0.742}$
	+4%/-3%	+3%/-4%	+136%/-136%	+26%/-14%	+14%/-9%	+52%/-47%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006964043-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10392 ± 182	$74.94^{+75.60}_{-50.83}$	391^{+28}_{-22}	2791^{+1132}_{-403}	513^{+4394}_{-383}
Alt.	-5692 ± 51	$69.62^{+74.81}_{-45.02}$	393^{+25}_{-24}	2656^{+903}_{-424}	326^{+2390}_{-250}

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 $A_{obs} \gg 1.0$

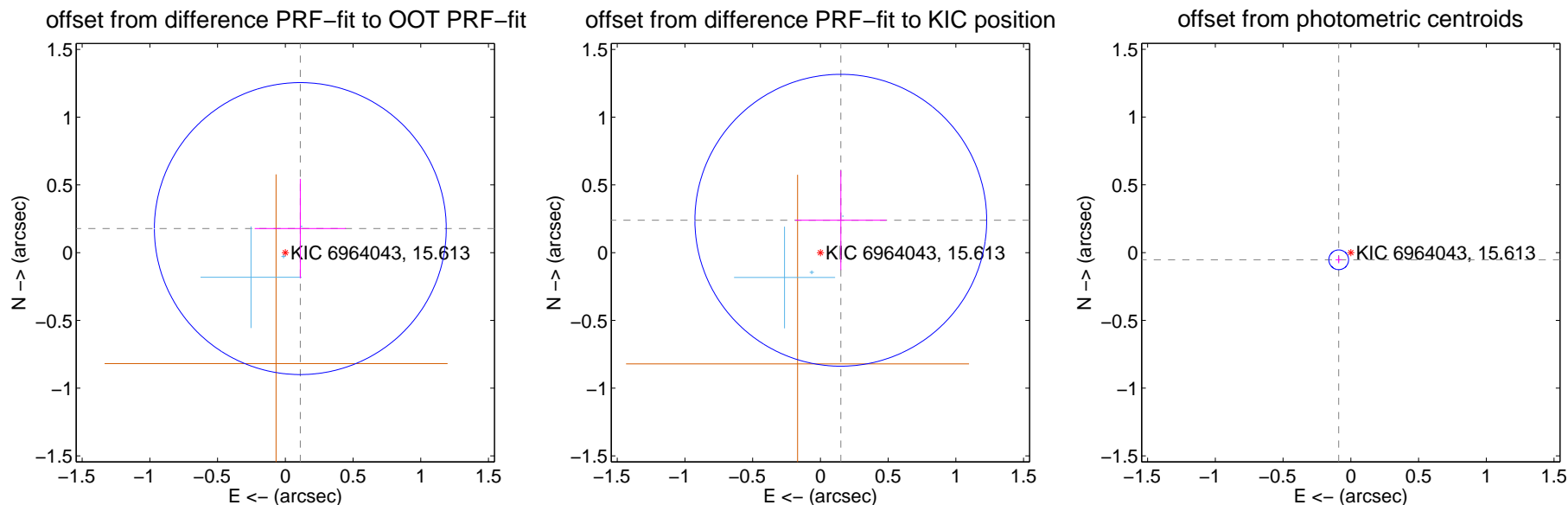
DV Centroid Data

Supplemental centroid analysis for 006964043-03. Kepler magnitude: 15.61. Transit SNR 188.34

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.209 ± 0.359	0.58	-0.111 ± 0.337	0.178 ± 0.368
PRF-fit source offset from KIC position	0.283 ± 0.359	0.79	-0.151 ± 0.337	0.239 ± 0.368
photometric centroid source offset	0.10 ± 0.02	4.28	0.09 ± 0.02	-0.05 ± 0.03

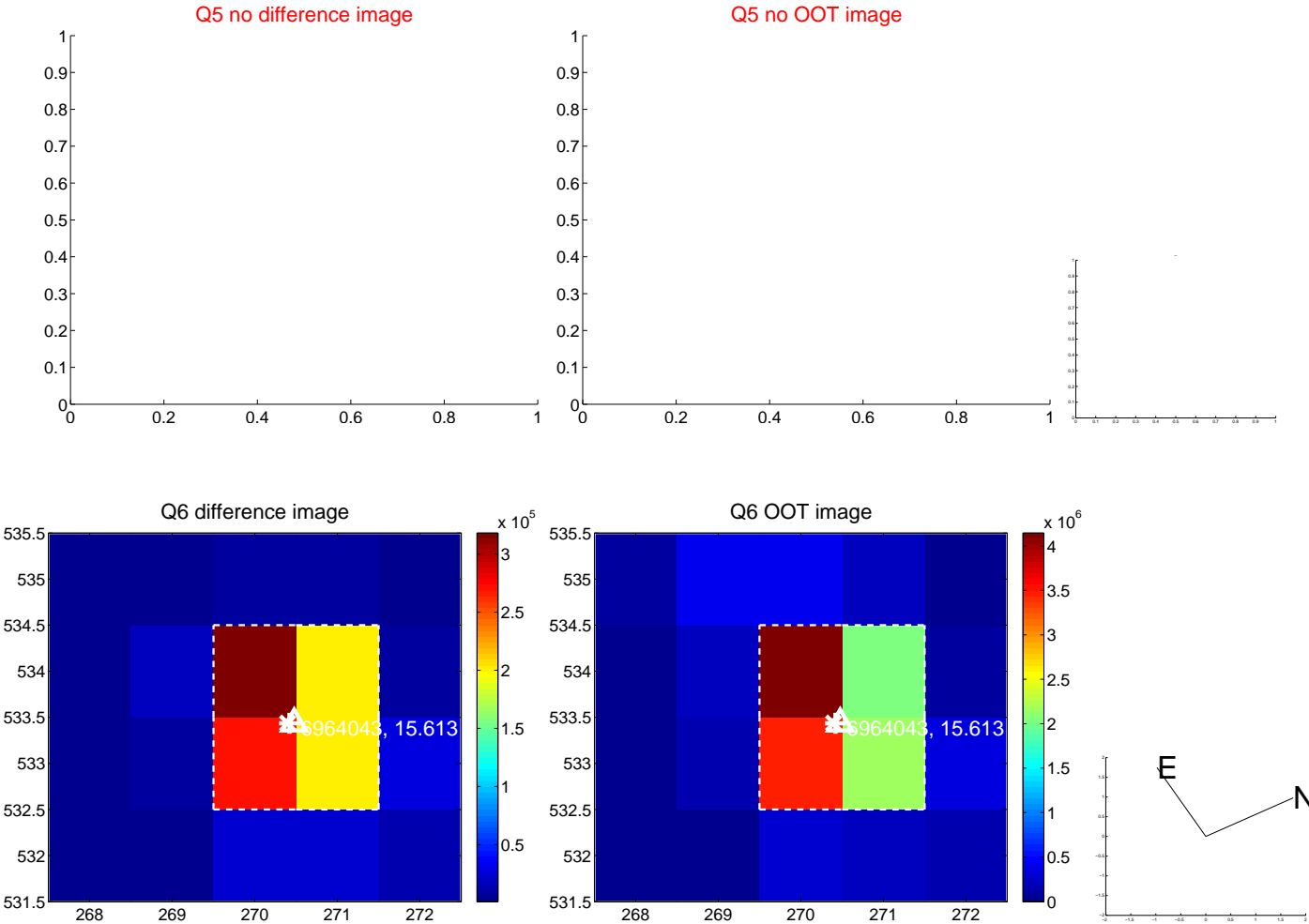


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

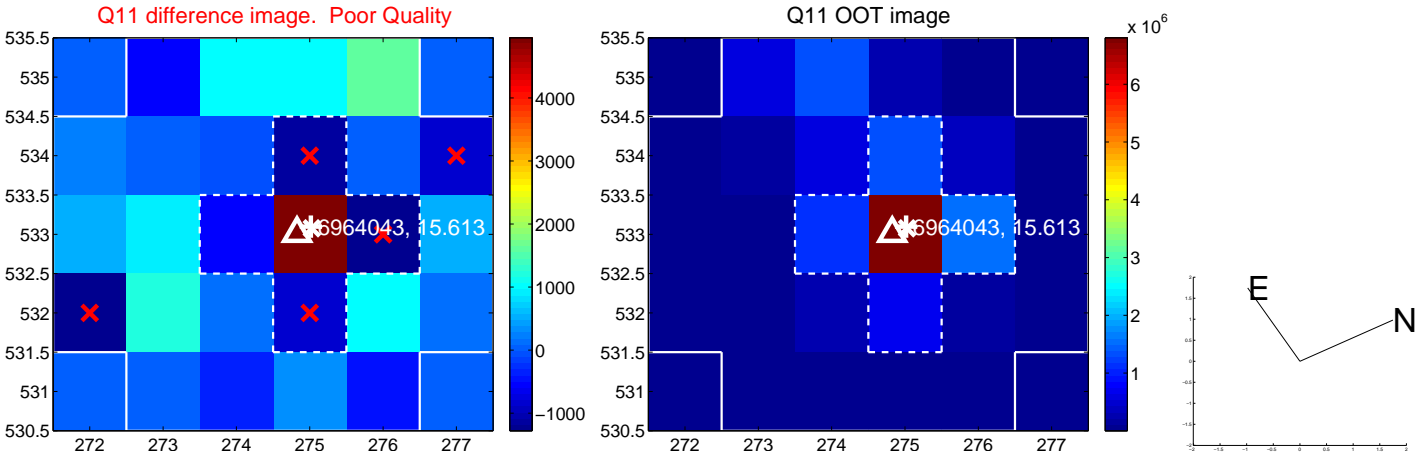
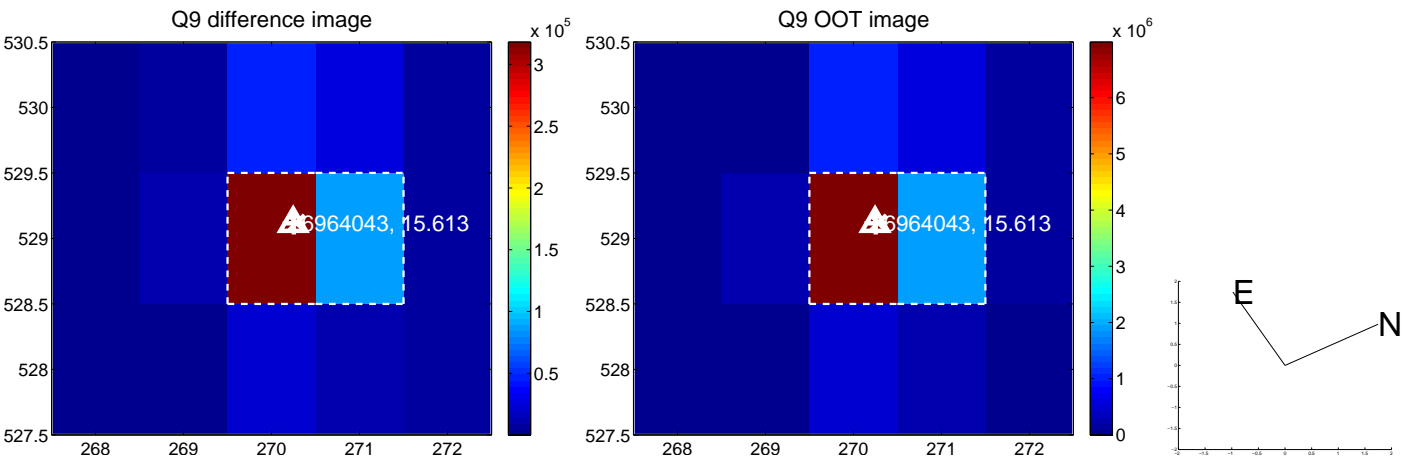
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.

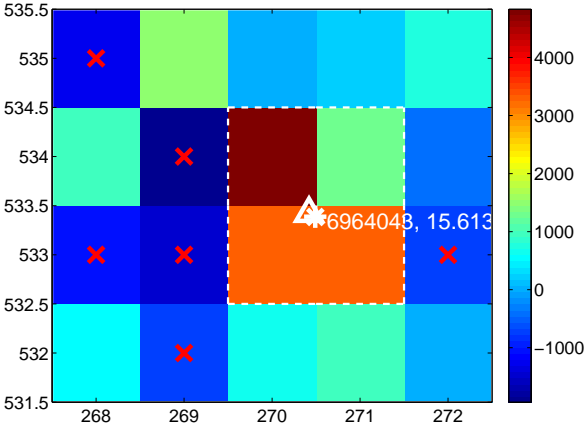
Q13 no difference image



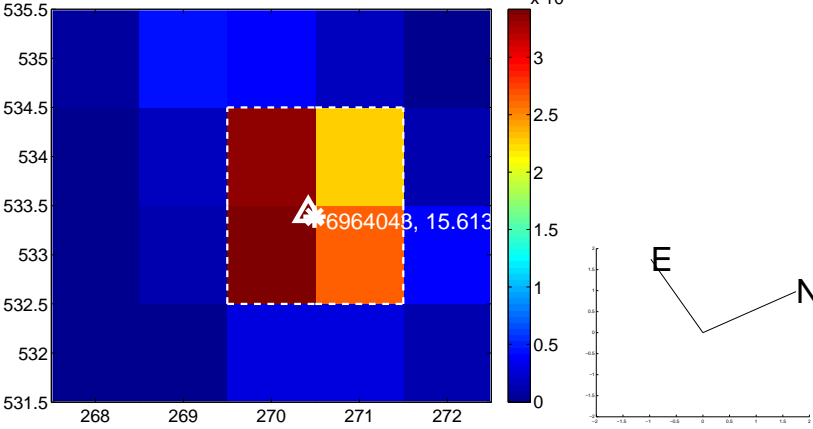
Q13 no OOT image



Q14 difference image



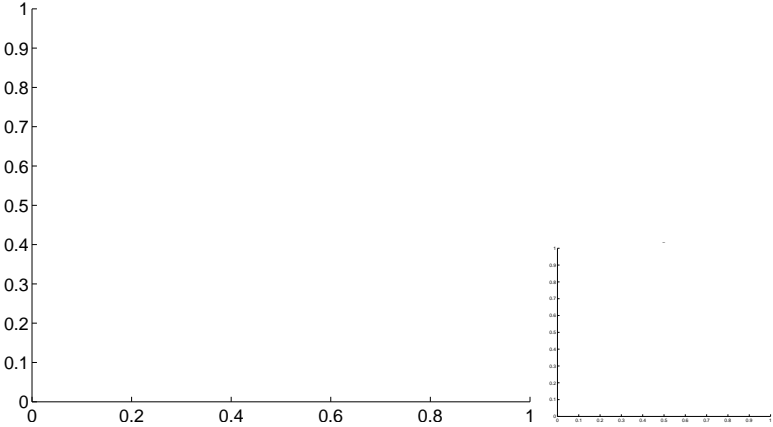
Q14 OOT image



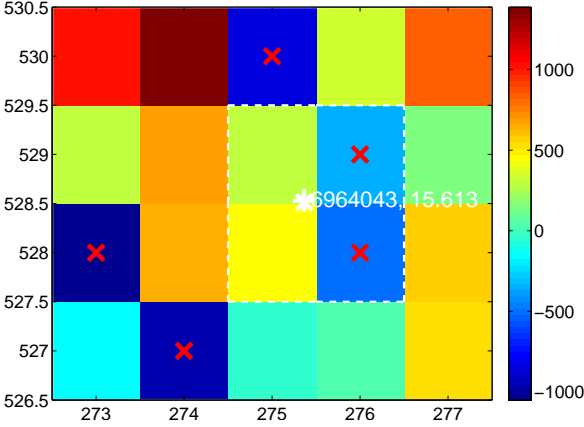
Q15 no difference image



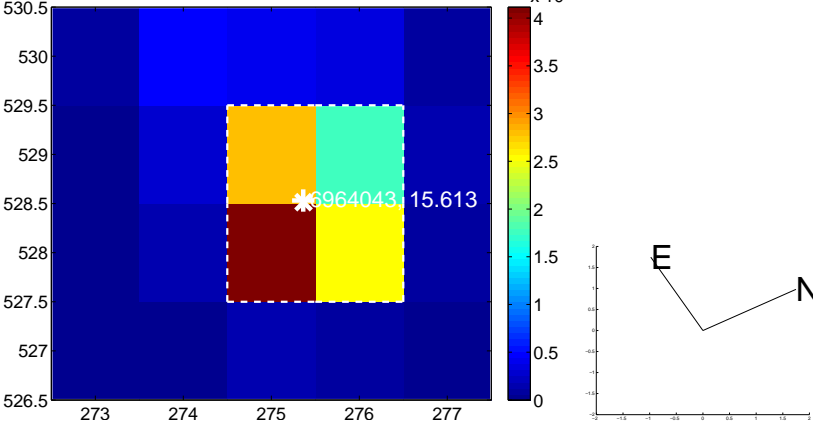
Q15 no OOT image



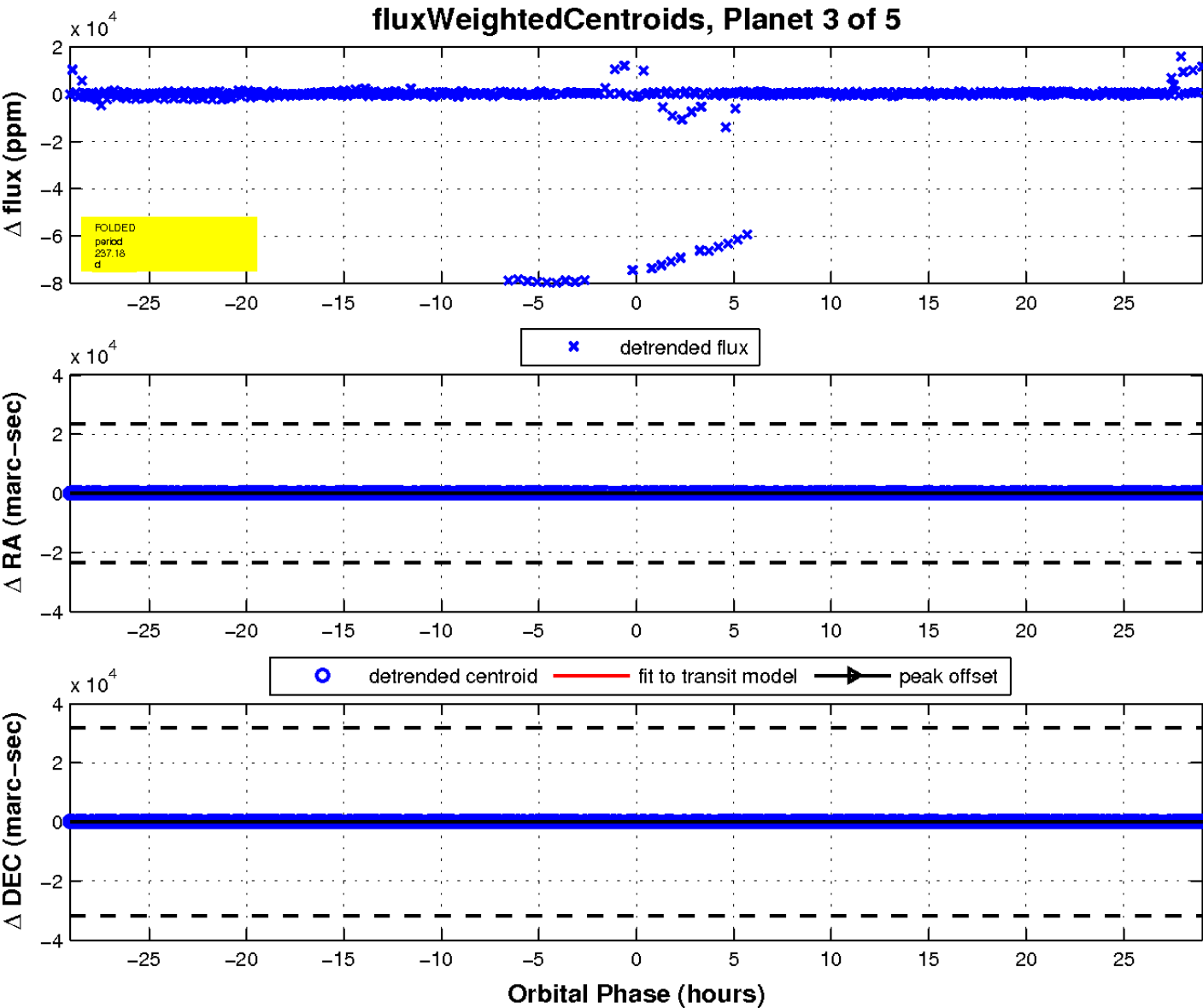
Q16 difference image. Poor Quality



Q16 OOT image

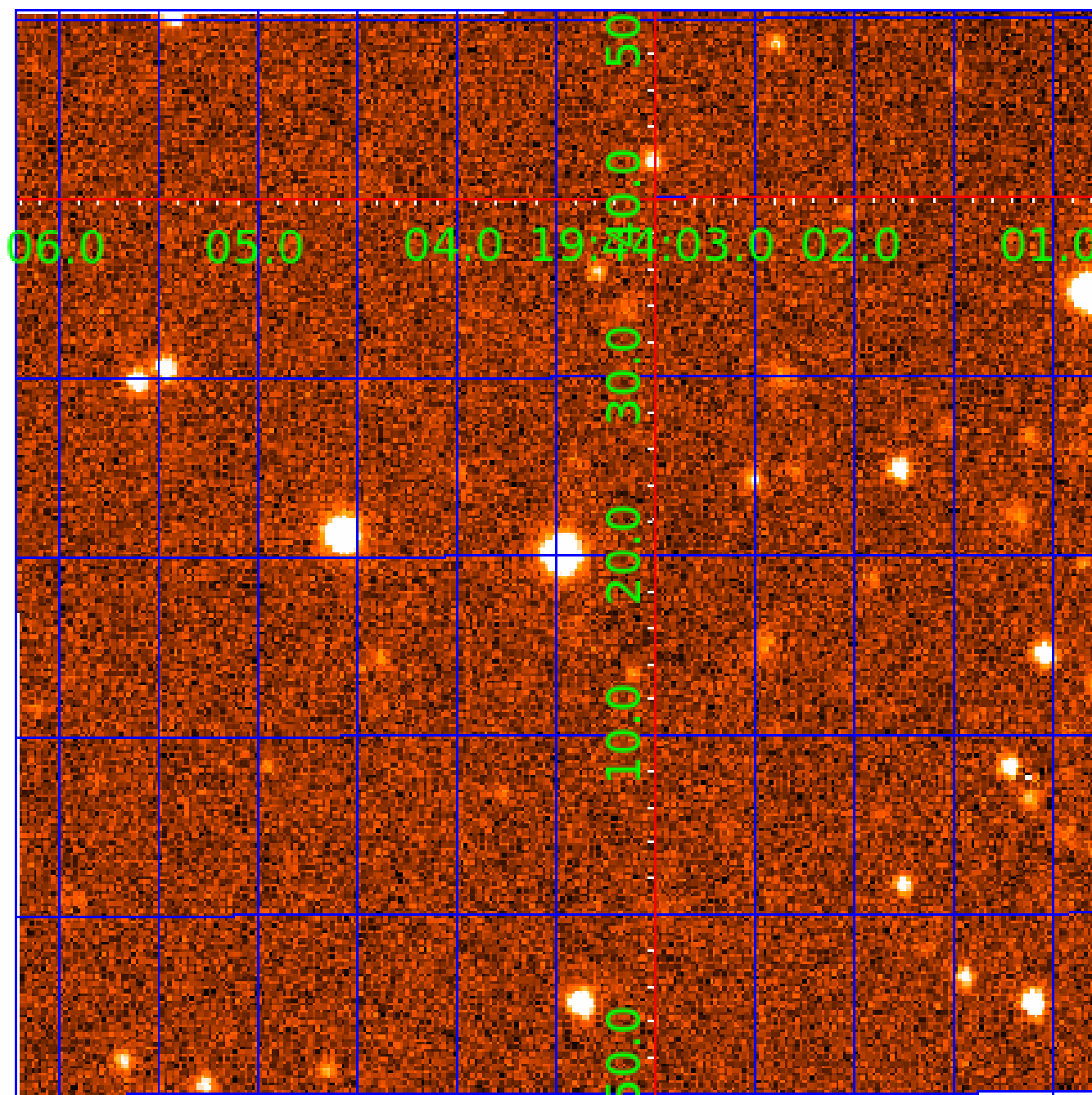


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006964043

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})
006964043-01	OBS	No	236.757090	339.573474	72525.8	8.827	688.2	516.7	0.91	5582	39.05	1.44
006964043-02	OBS	1351.01	5.362932	131.826644	10989.5	2.658	400.2	231.1	0.91	5582	9.60	223.85
006964043-03	OBS	No	237.183580	336.134518	46329.1	9.687	396.2	188.3	0.91	5582	33.70	1.43
006964043-04	OBS	No	159.105683	267.772408	509.0	8.315	155.5	4.8	0.91	5582	2.40	2.44
006964043-05	OBS	No	238.698037	269.628237	15880.8	7.500	146.1	-1.0	0.91	5582	11.28	1.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006964043-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—DEEP_V_SHAPED
006964043-02	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT
006964043-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—INCONSISTENT_TRANS
006964043-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—INCONSISTENT_TRANS
006964043-05	OBS	FP	0.38	1	0	0	0	INCONSISTENT_TRANS—CENT_NOFITS

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

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

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

Ephemeris Match Information For 006964043-04

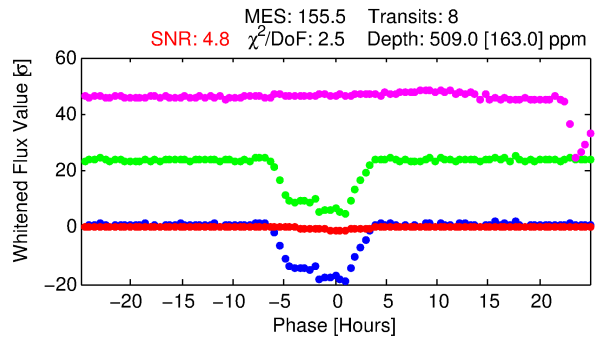
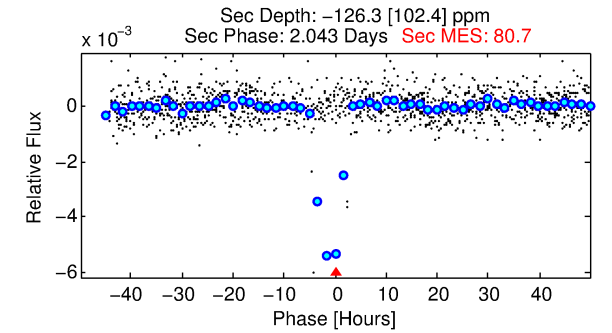
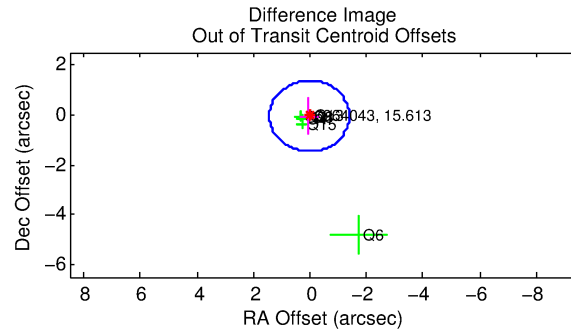
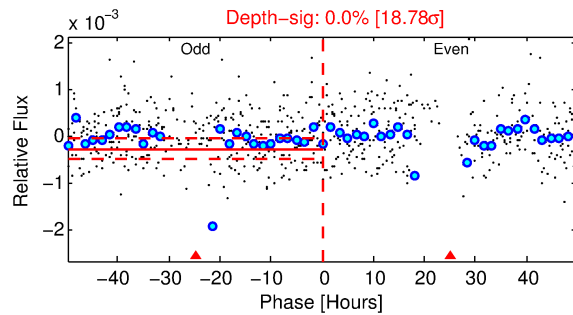
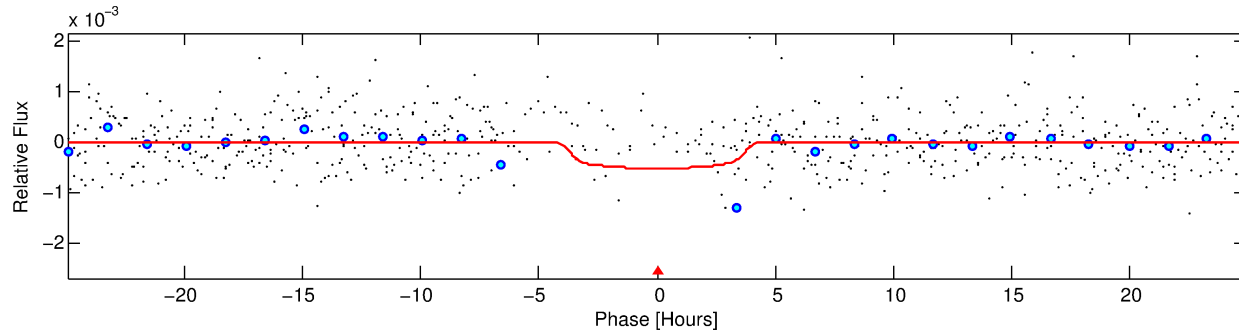
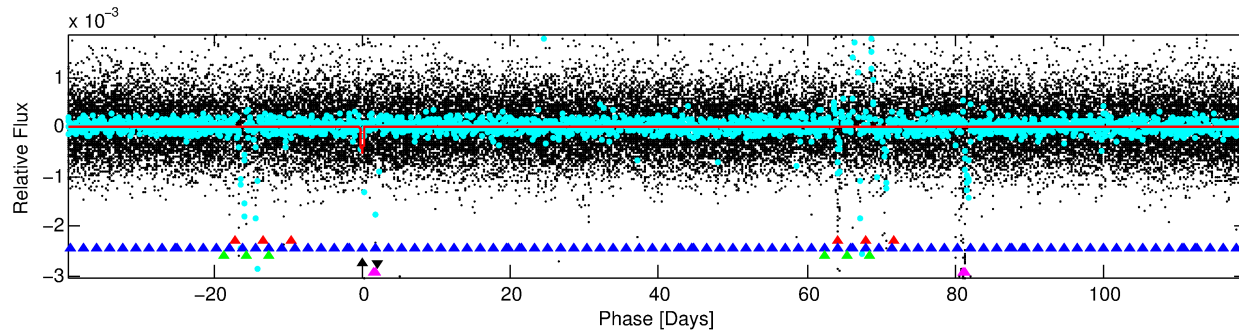
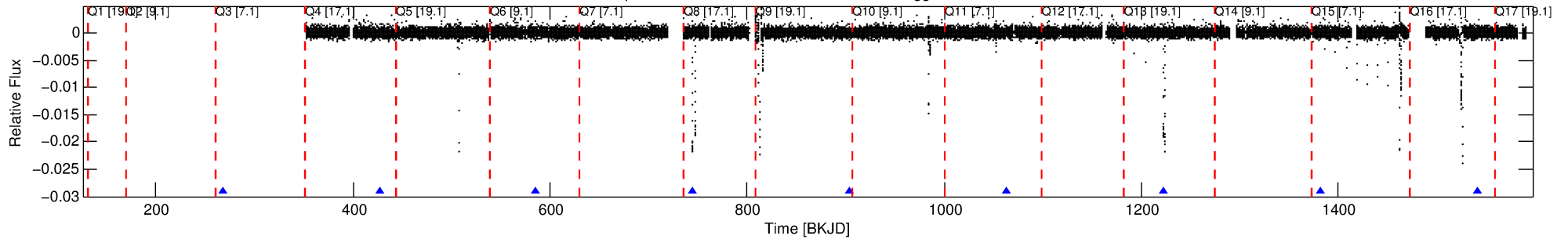
No Significant Match Found

DV One-Page Summary

KIC: 6964043 Candidate: 4 of 5 Period: 159.106 d

KOI: K01351 Corr: No Ephemeris Match

Kp: 15.61 R*: 0.91 Rs Teff: 5582.0 K Logg: 4.45 Fe/H: -0.220



DV Fit Results:

Period = 159.10568 [0.00935] d
Epoch = 267.7724 [0.0483] BKJD
Rp/R* = 0.0243 [0.0110]
a/R* = 75.03 [139.25]
b = 0.89 [0.46]
Seff = 2.44 [0.83]
Teq = 319 [27] K
Rp = 2.40 [1.25] Re
a = 0.5407 [0.1170] AU
Ag = N/A
Teffp = N/A

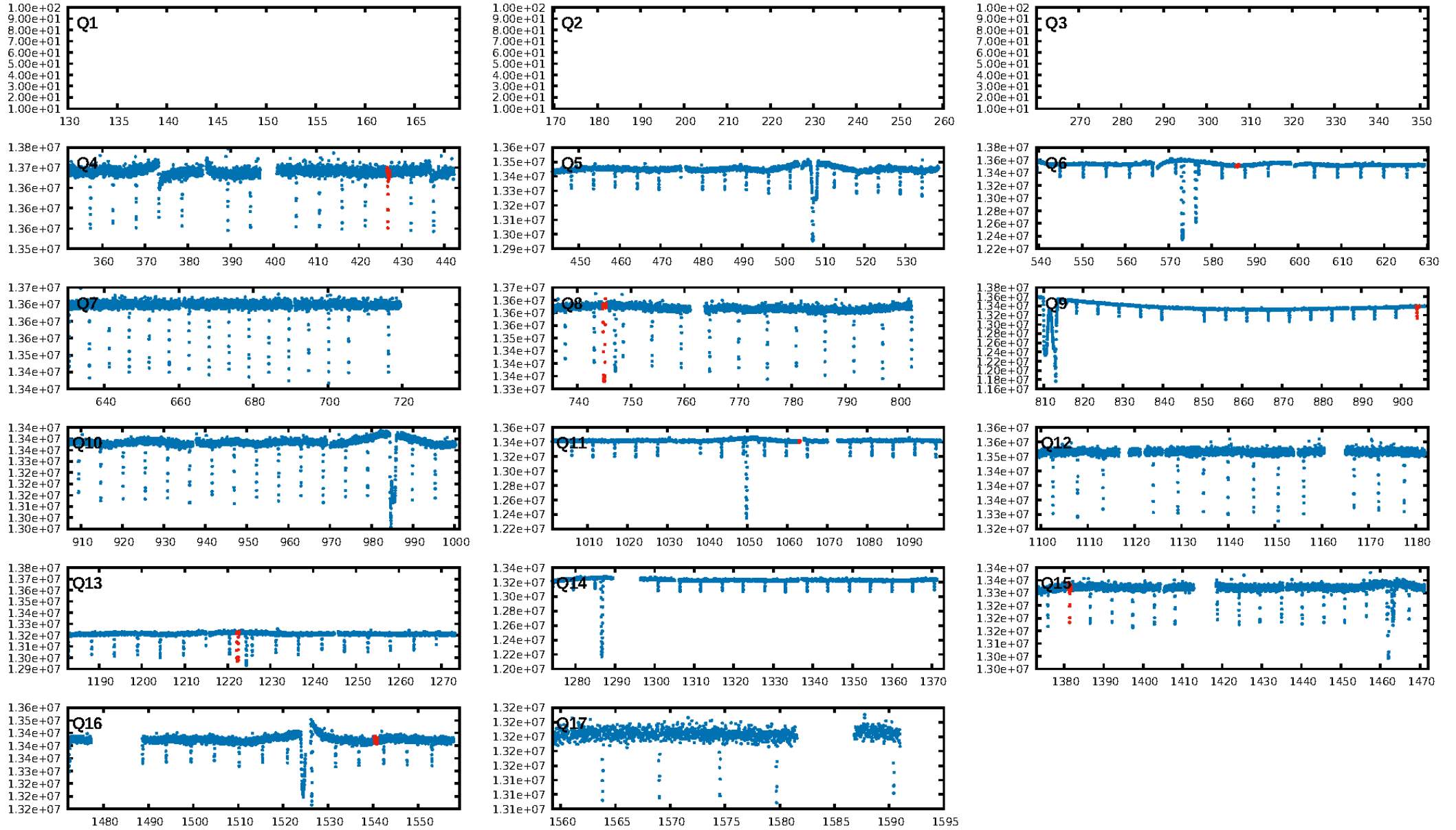
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [422.68σ]
LongPeriod-sig: 100.0% [153.68σ]
ModelChiSquare2-sig: 6.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -6.082
Centroid-sig: 40.3%
Centroid-so: 1.539 arcsec [1.04σ]
OotOffset-rm: 0.061 arcsec [0.13σ]
KicOffset-rm: 0.150 arcsec [0.33σ]
OotOffset-st: 1/1/2/2 [6]
KicOffset-st: 1/1/2/2 [6]
DiffImageQuality-fgm: 0.83 [5/6]
DiffImageOverlap-fno: 0.57 [4/7]

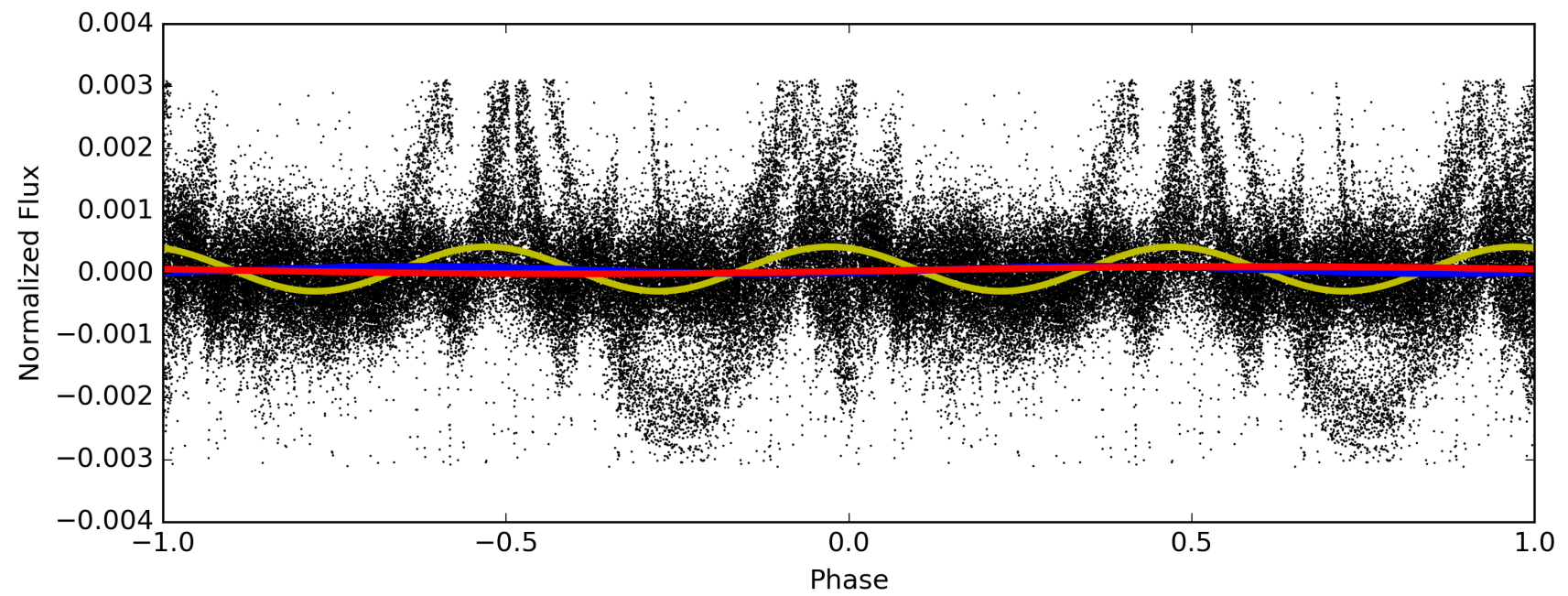
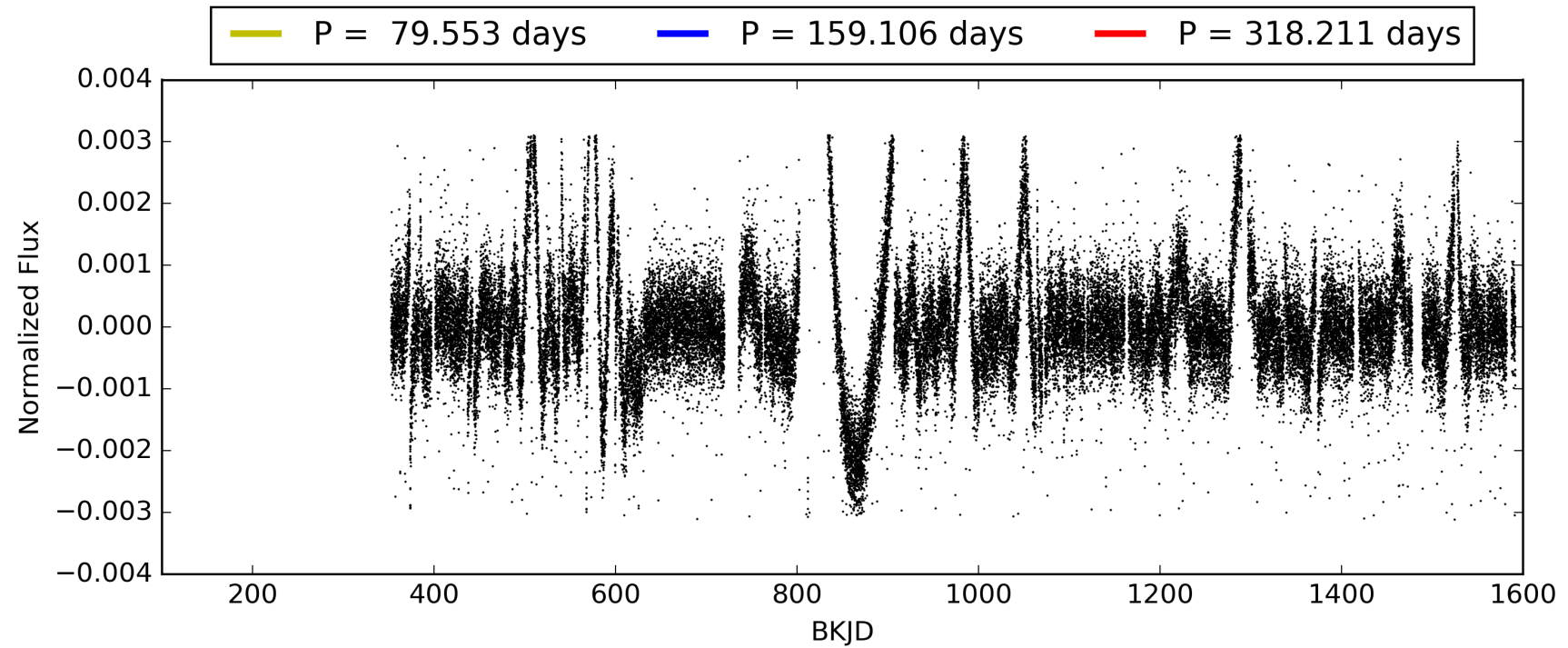
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:48:33 Z

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

TCE 006964043-04, PDC Light Curves

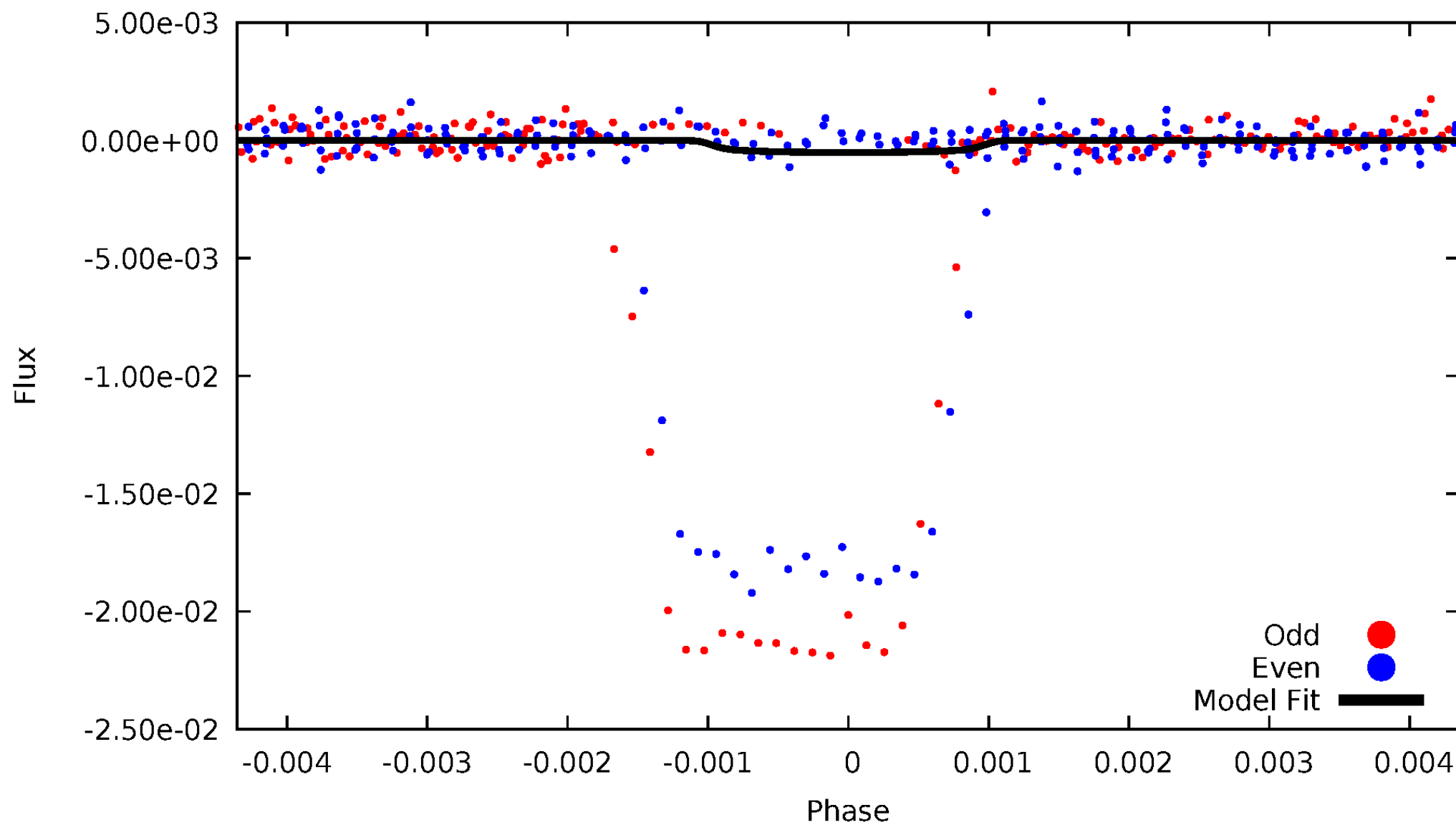


TCE 006964043-04



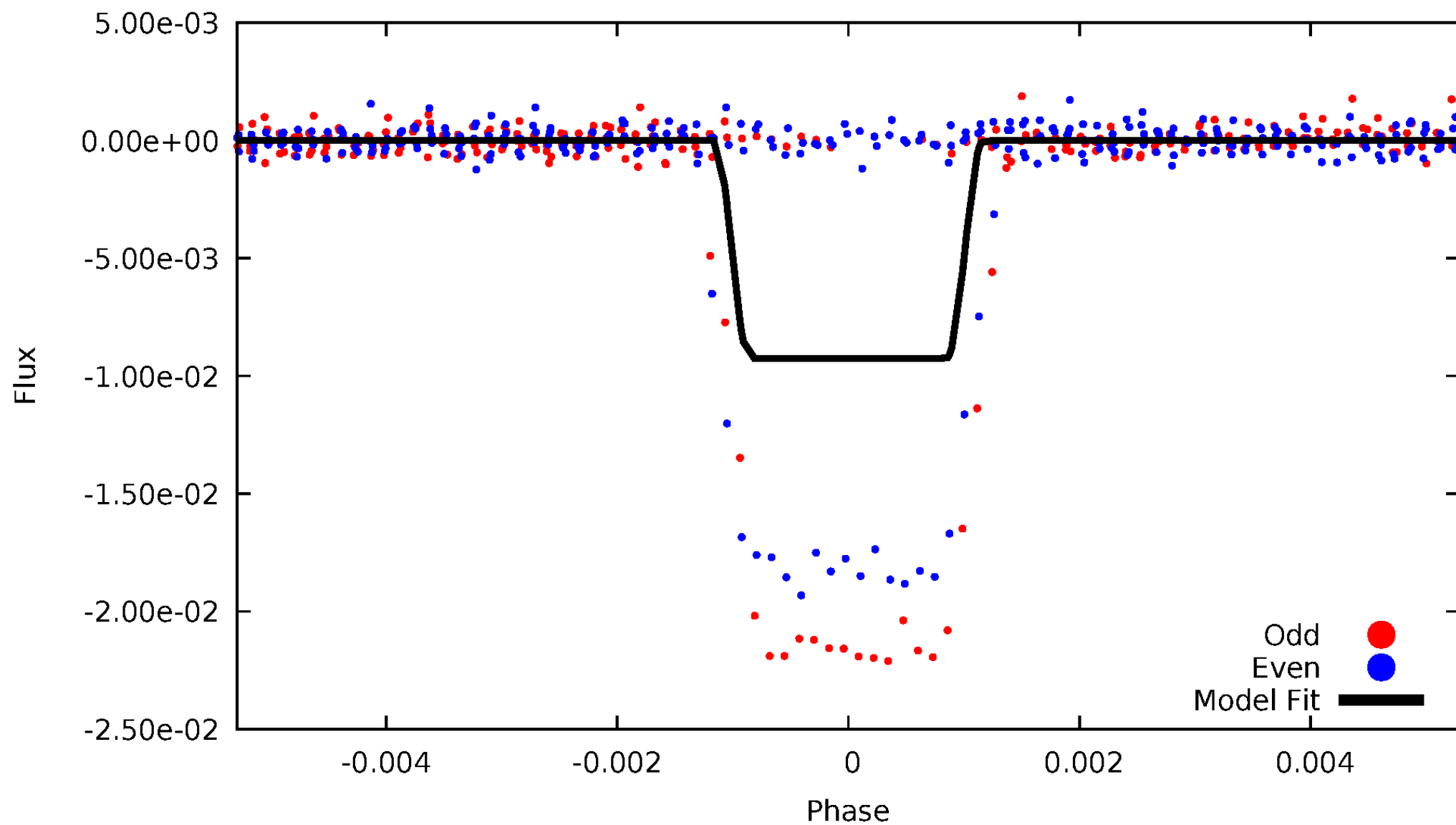
DV Odd/Even

TCE 006964043-04



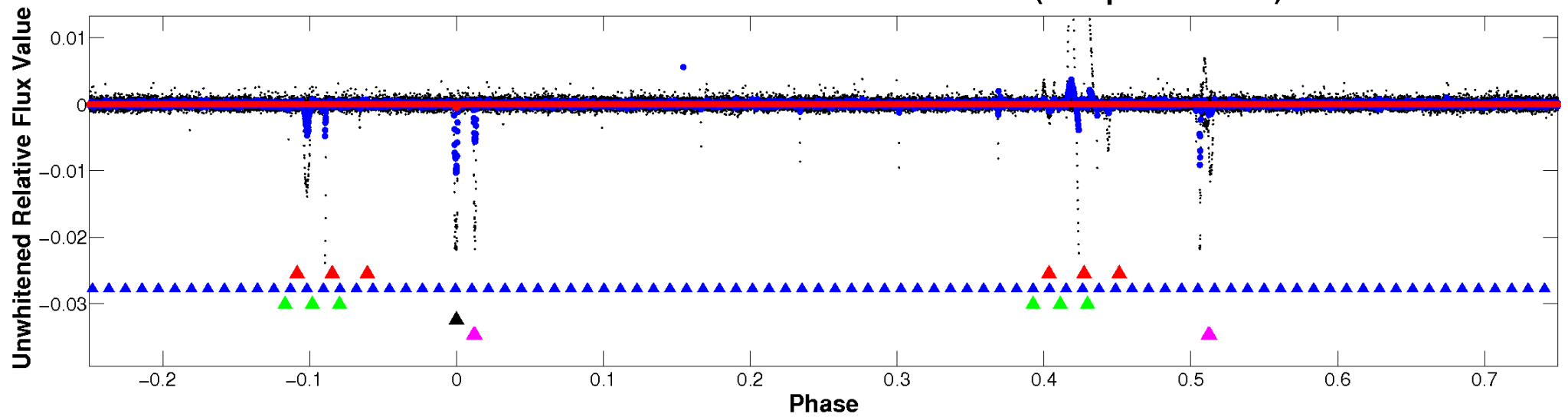
ALT Odd/Even

TCE 006964043-04

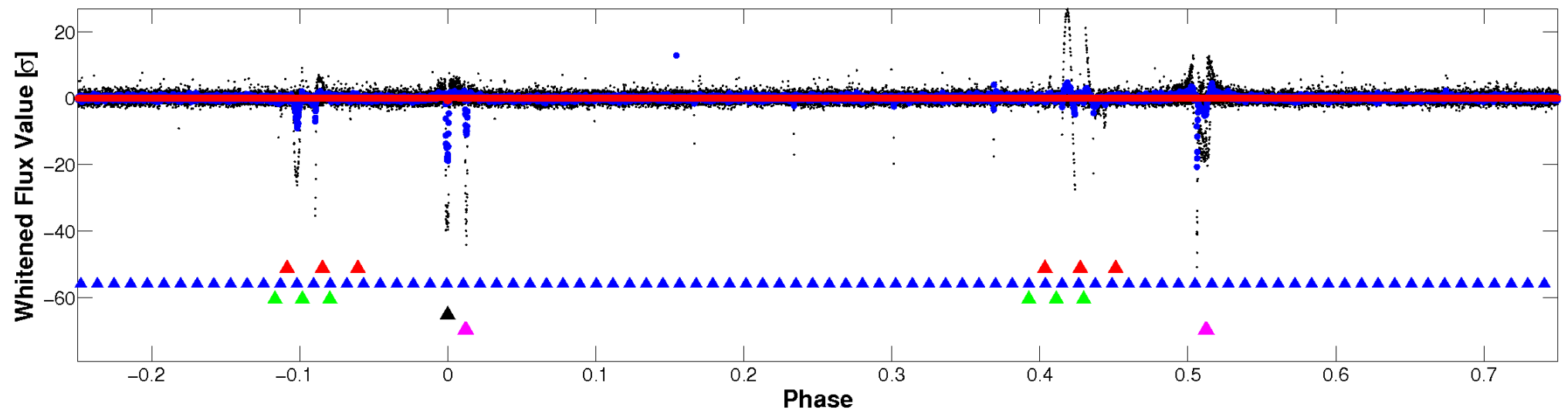


Non-Whitened Vs. Whitened Light Curve

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

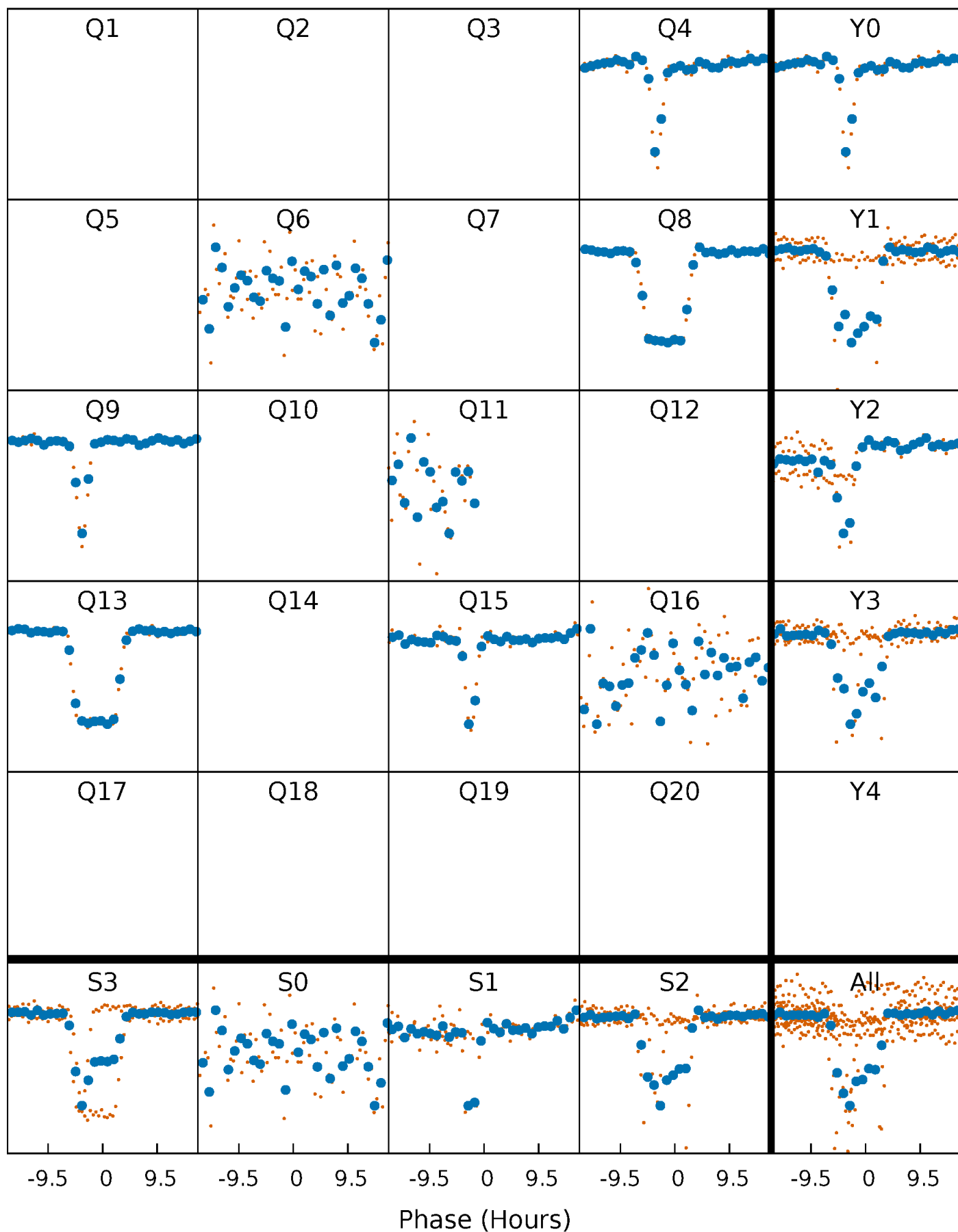


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



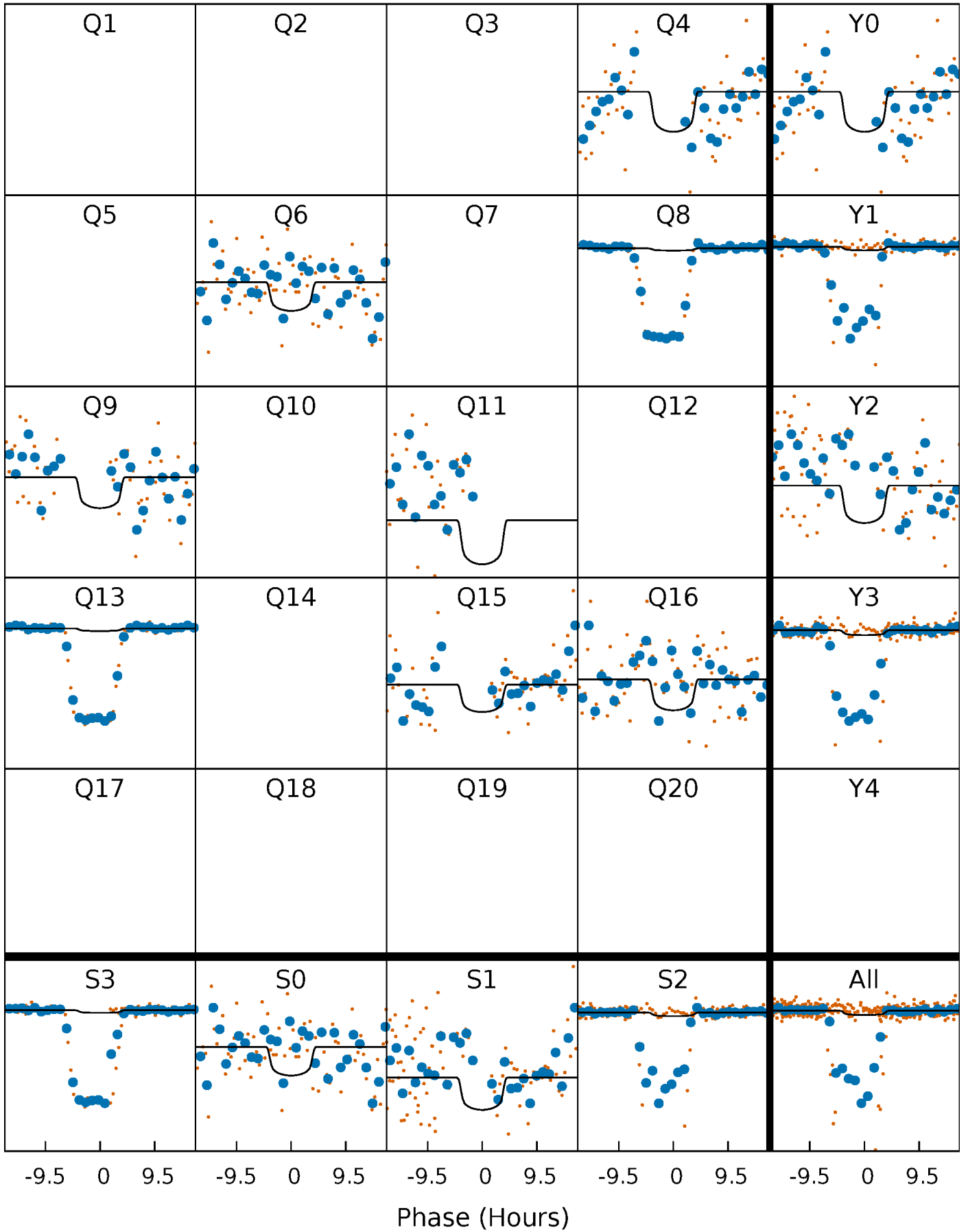
PDC Quarter-Phased Transit Curves

TCE 006964043-04 P=159.105683 Days $T_0=267.772408$ (BKJD)



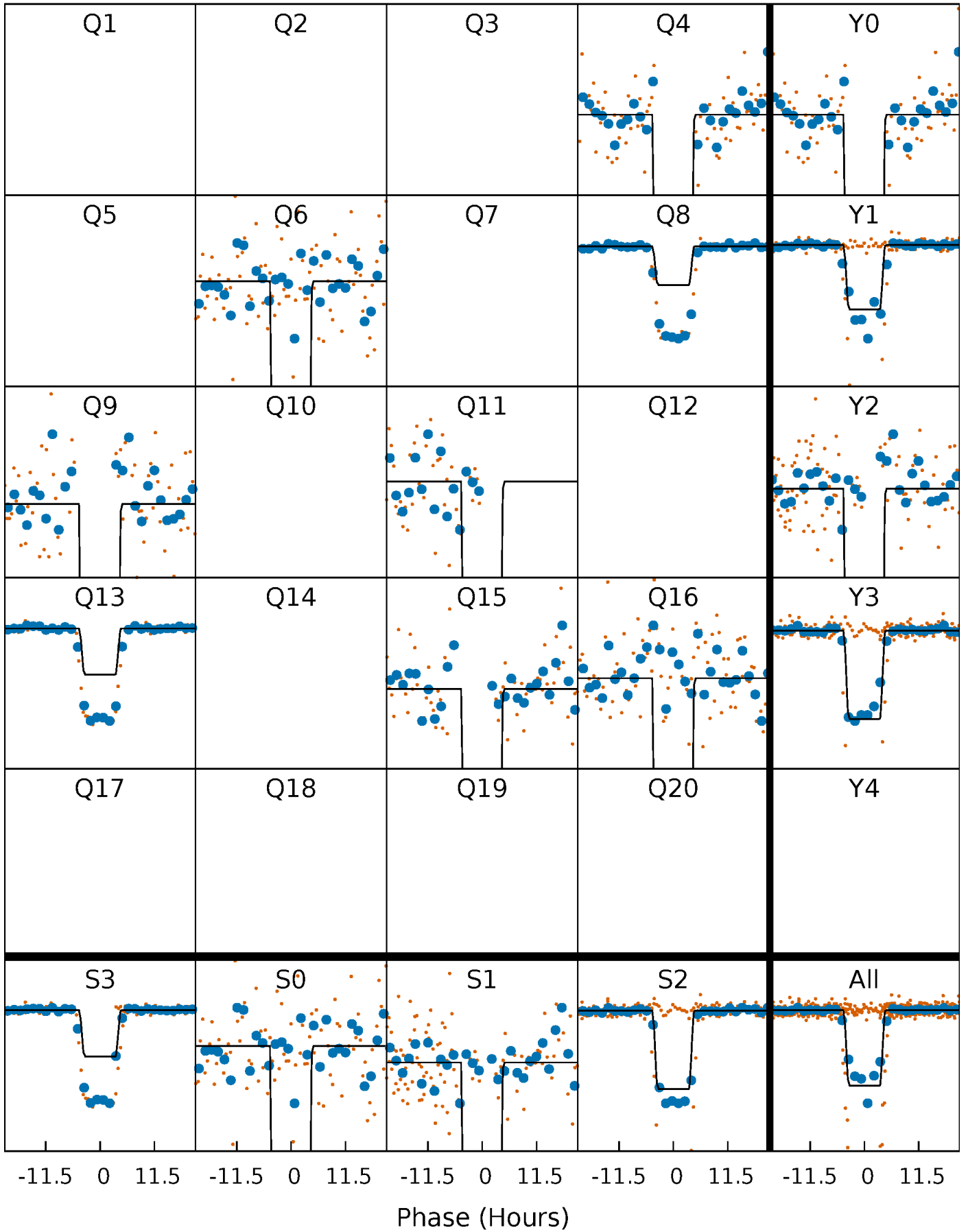
DV Quarter-Phased Transit Curves

TCE 006964043-04 $P=159.105683$ Days $T_0=267.772408$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

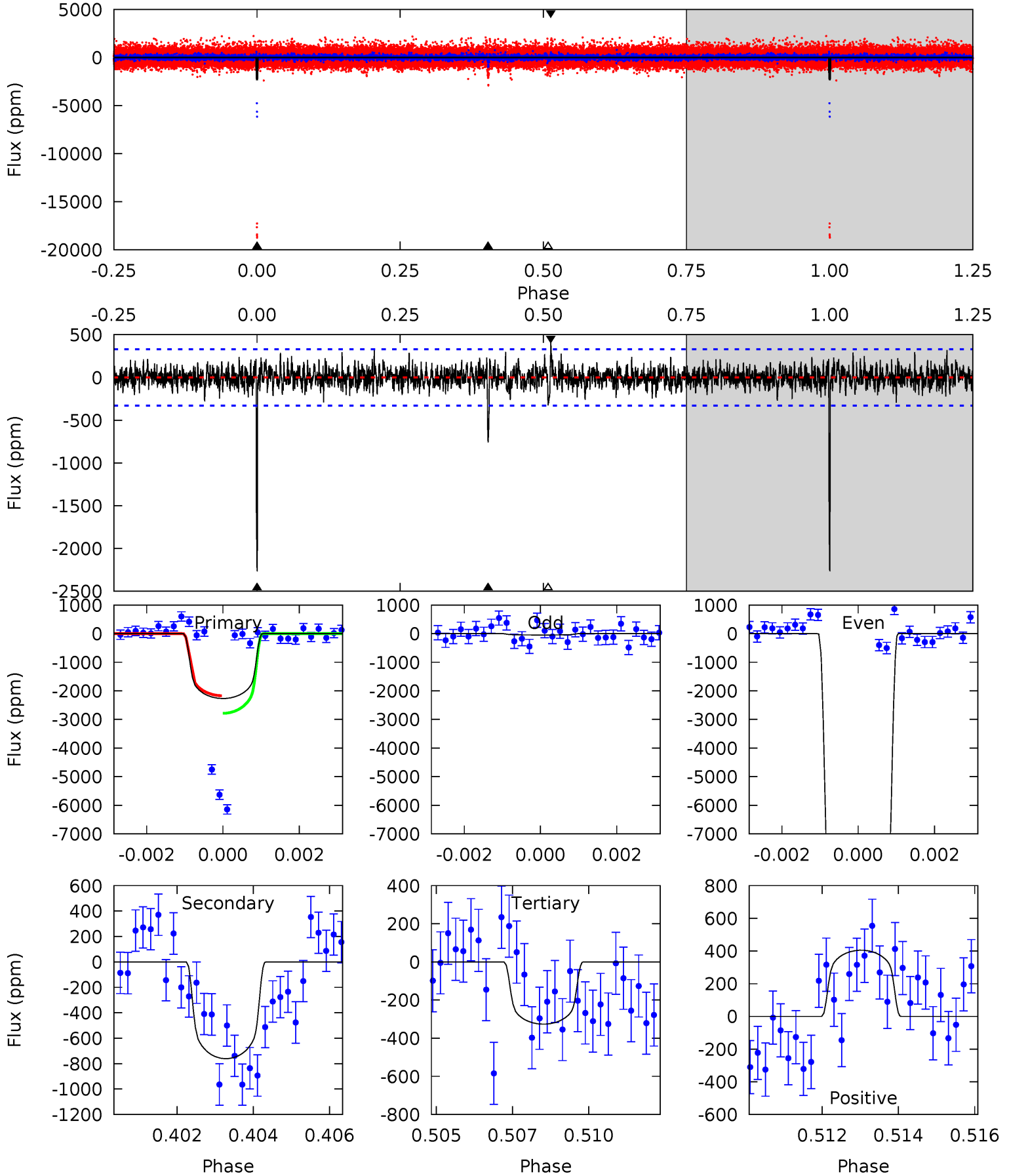
TCE 006964043-04 P=159.116132 Days $T_0=267.665580$ (BKJD)



DV Model-Shift Uniqueness Test

006964043-04, P = 159.105683 Days, E = 267.772408 Days

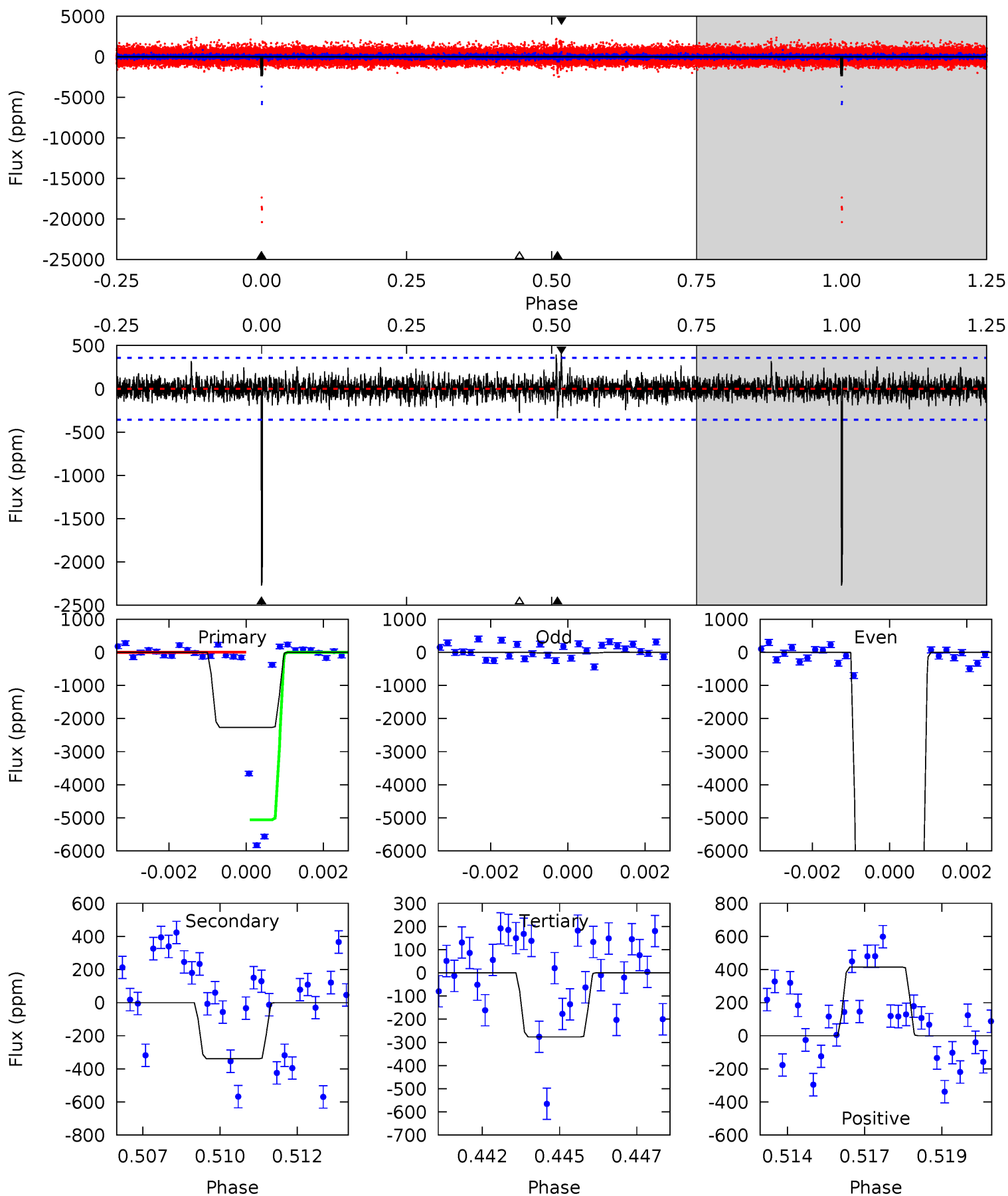
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.5	12.2	5.25	6.51	5.31	3.06	1.35	31.2	30.0	6.99	5.73	100.9	31.2	0.15	4.58



Alt Model-Shift Uniqueness Test

006964043-04, P = 159.116132 Days, E = 267.665580 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.6	5.03	4.10	6.15	5.30	3.05	1.05	29.5	27.5	0.93	-1.12	114.8	164.7	0.17	36.8



Stellar Parameters For KIC 006964043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5582^{+200}_{-183}	$4.445^{+0.112}_{-0.168}$	$-0.220^{+0.300}_{-0.300}$	$0.905^{+0.236}_{-0.127}$	$0.832^{+0.118}_{-0.072}$	$1.580^{+0.823}_{-0.742}$
	+4%/-3%	+3%/-4%	+136%/-136%	+26%/-14%	+14%/-9%	+52%/-47%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006964043-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-760 ± 62	$2.55^{+1.13}_{-1.09}$	448^{+31}_{-24}	5858^{+2092}_{-969}	18875^{+41304}_{-10001}
Alt.	-339 ± 67	$9.63^{+1.59}_{-1.33}$	448^{+31}_{-26}	3077^{+155}_{-140}	588^{+242}_{-187}

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 $A_{obs} \gg 1.0$

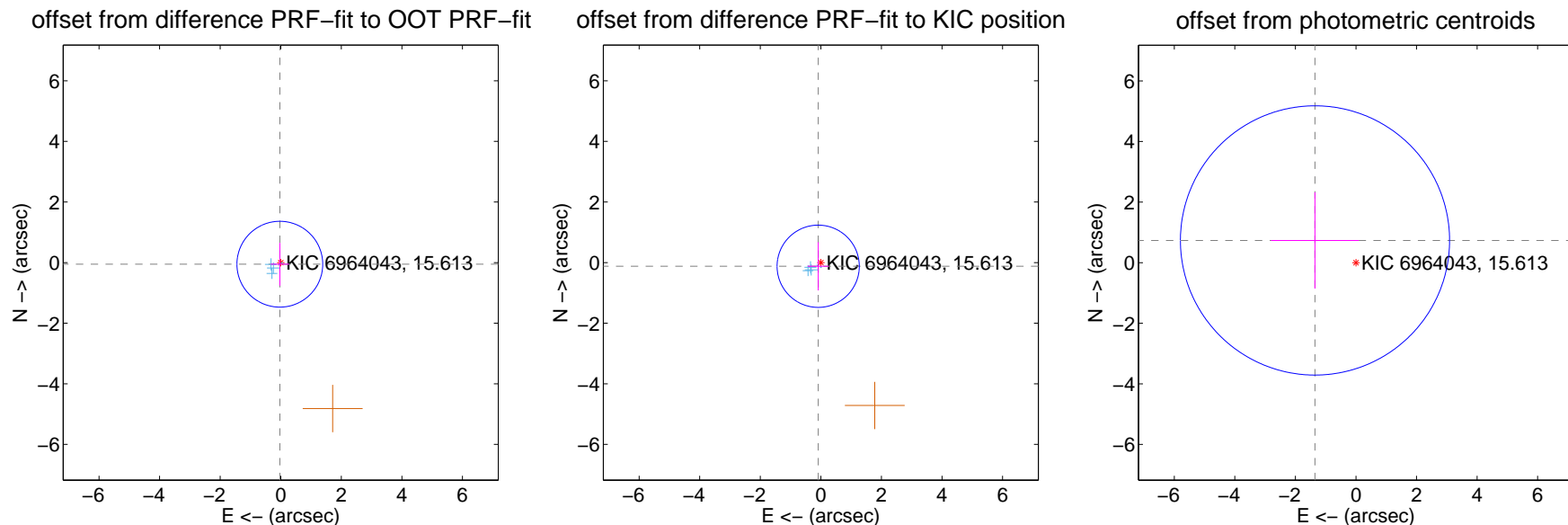
DV Centroid Data

Supplemental centroid analysis for 006964043-04. Kepler magnitude: 15.61. Transit SNR 4.76

There are 5 quarters with good PRF difference image offsets

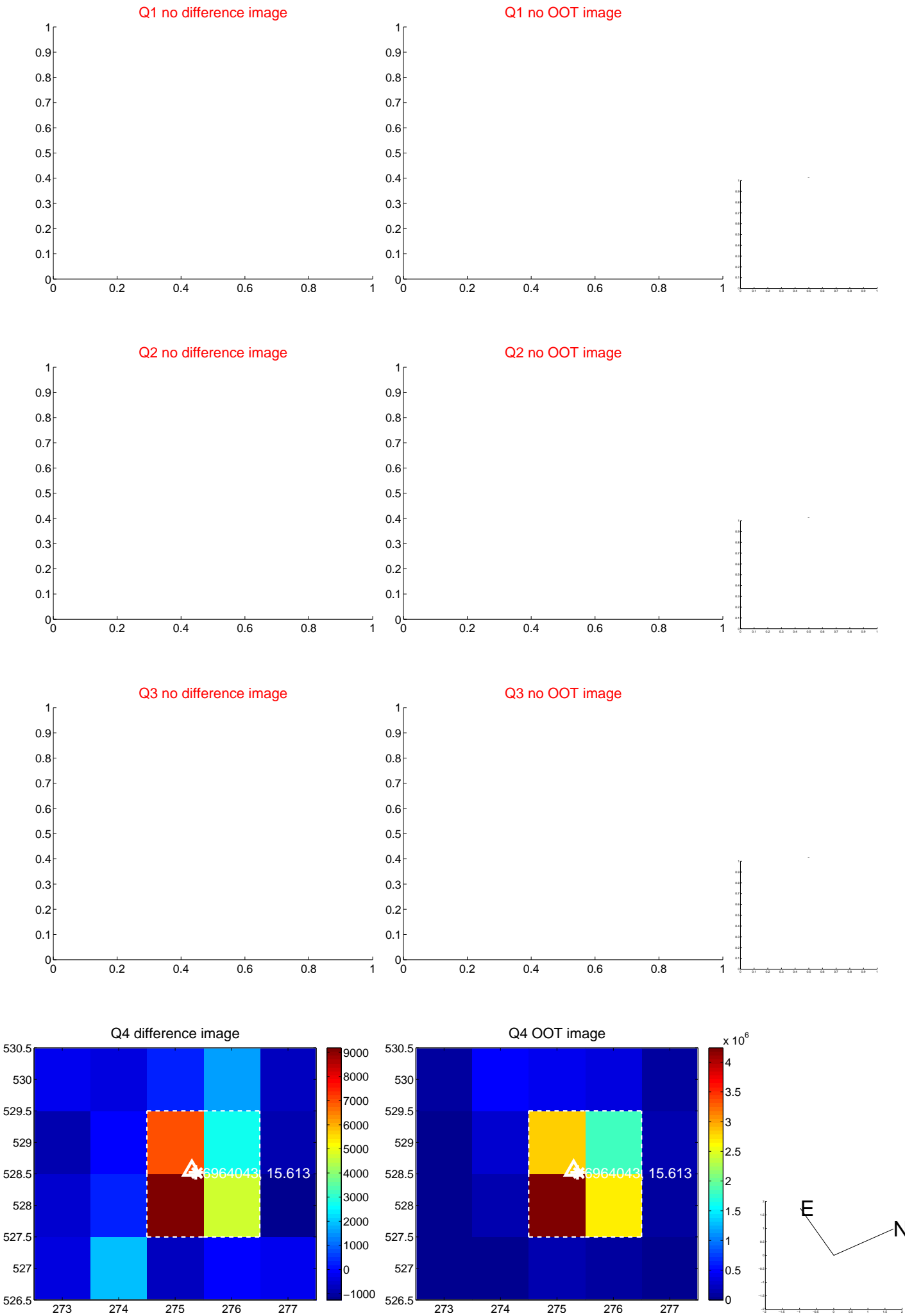
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.061 ± 0.472	0.13	0.030 ± 0.305	-0.053 ± 0.705
PRF-fit source offset from KIC position	0.150 ± 0.452	0.33	0.088 ± 0.349	-0.121 ± 0.797
photometric centroid source offset	1.54 ± 1.48	1.04	1.35 ± 1.45	0.73 ± 1.59



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

white ×: 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.

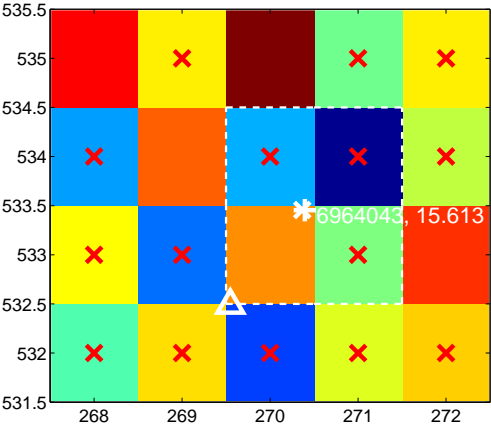
Q5 no difference image



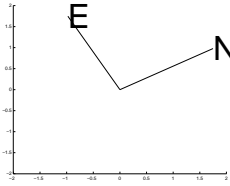
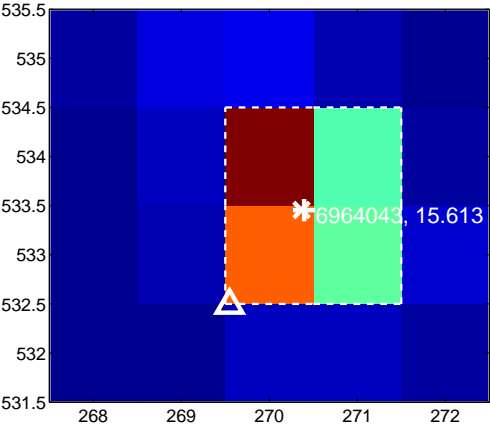
Q5 no OOT image



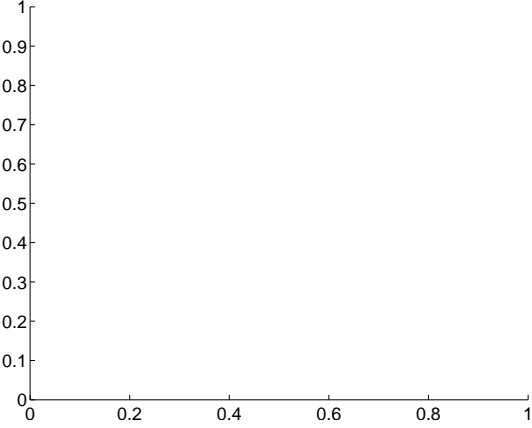
Q6 difference image. Poor Quality



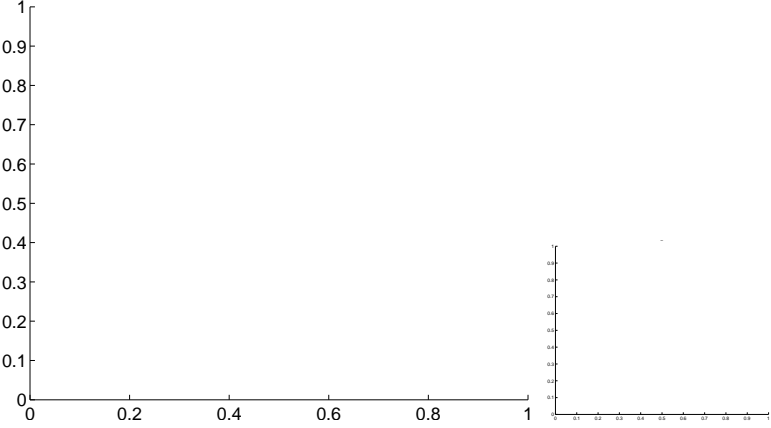
Q6 OOT image



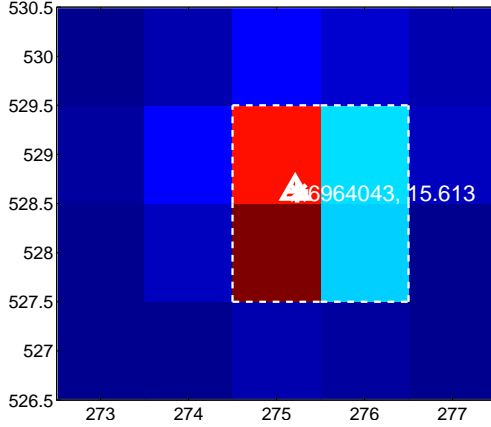
Q7 no difference image



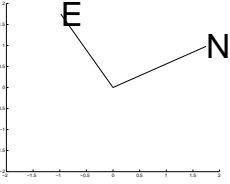
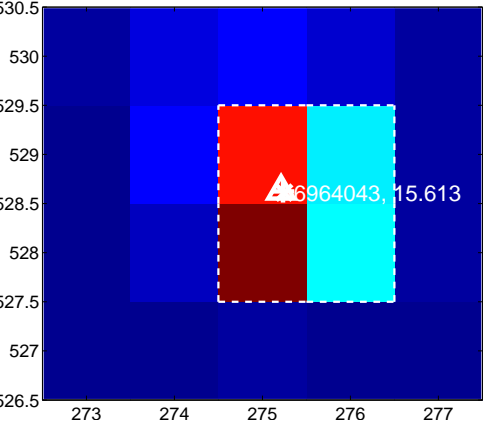
Q7 no OOT image



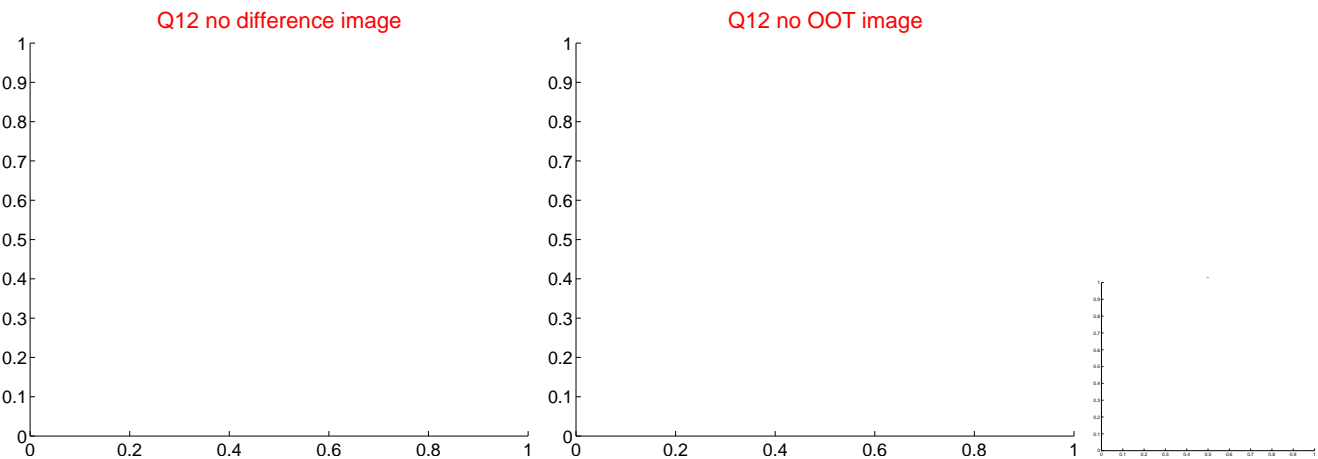
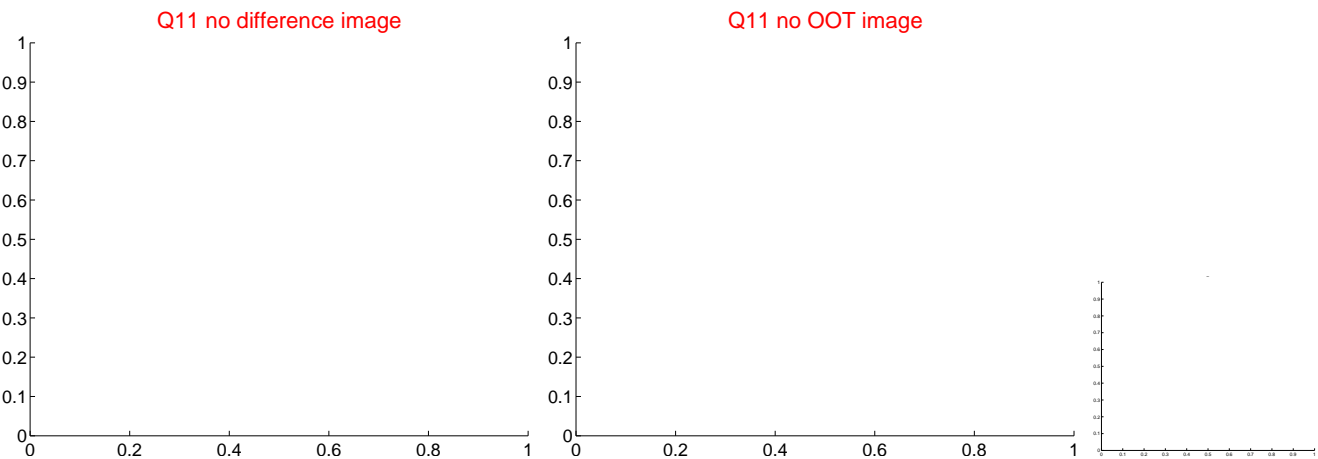
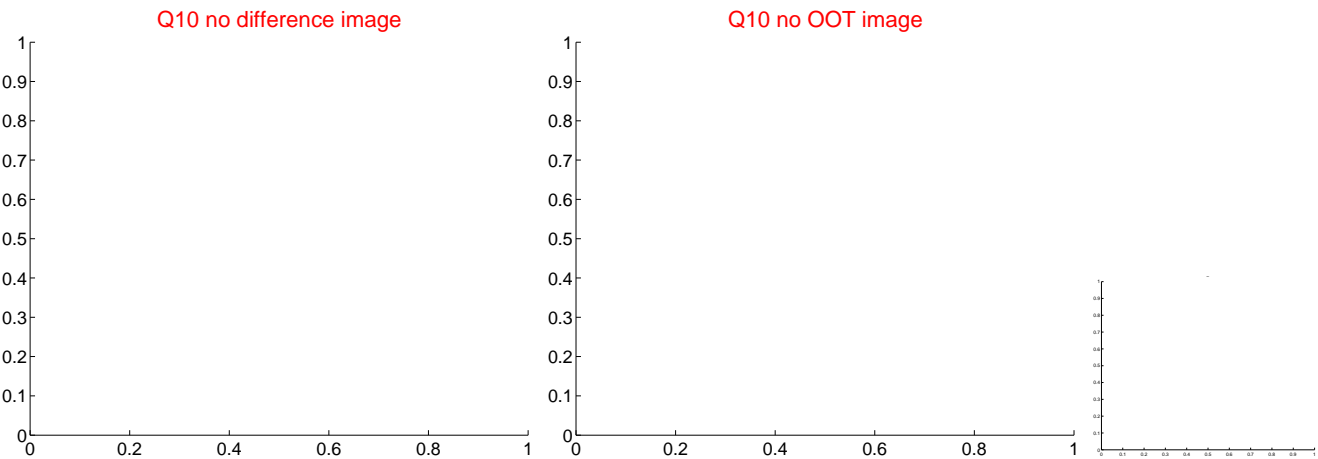
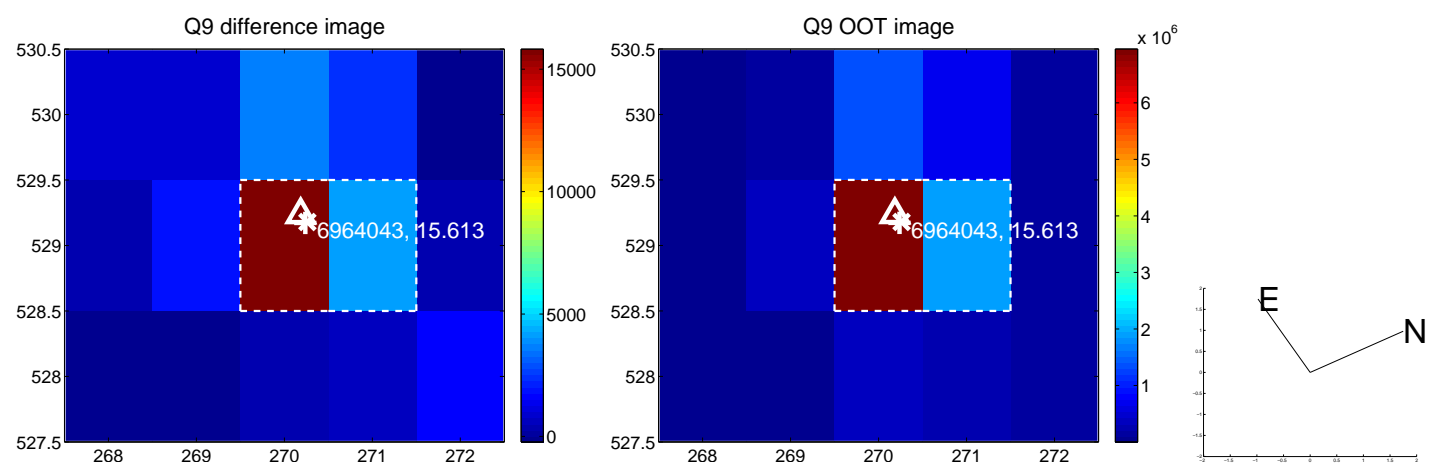
Q8 difference image



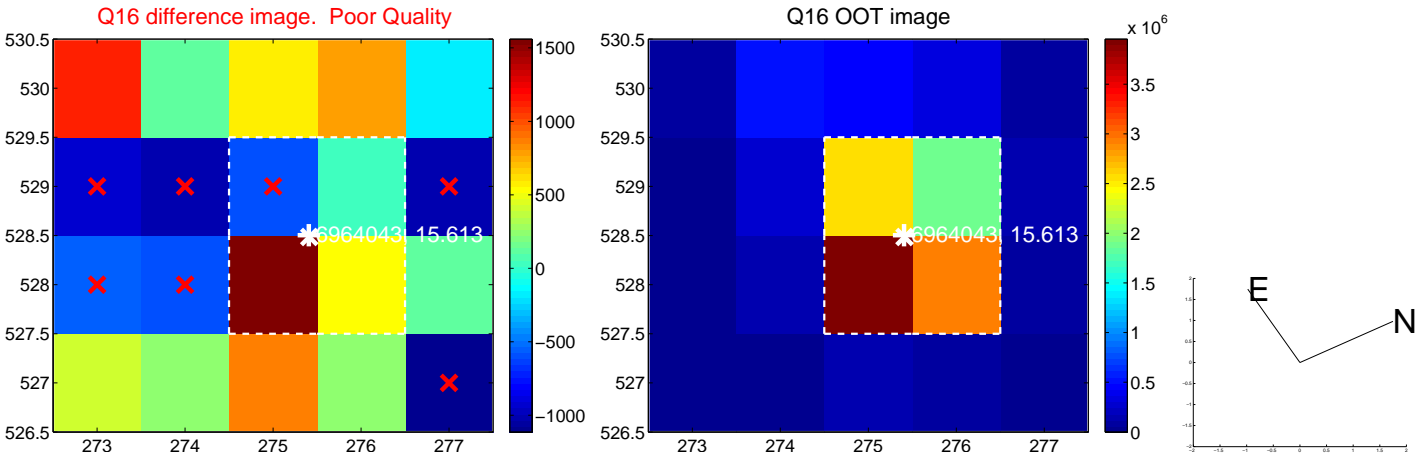
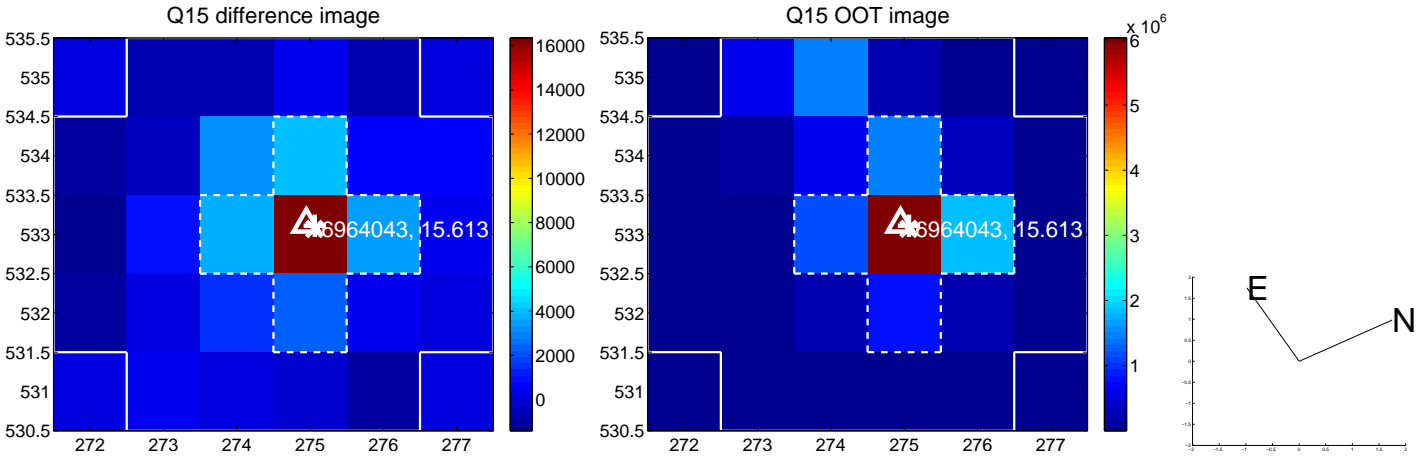
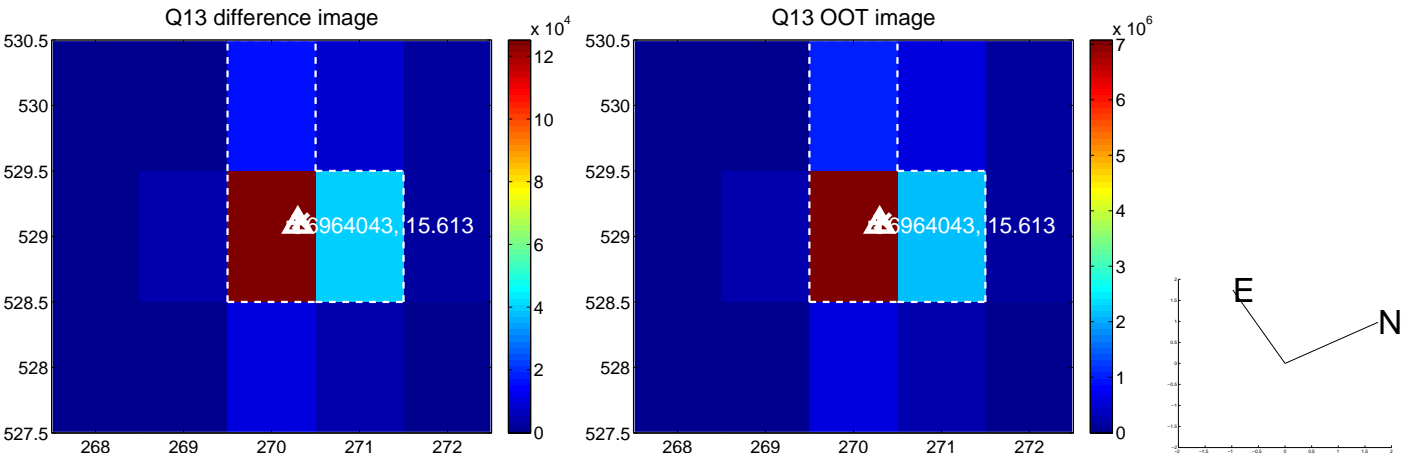
Q8 OOT image



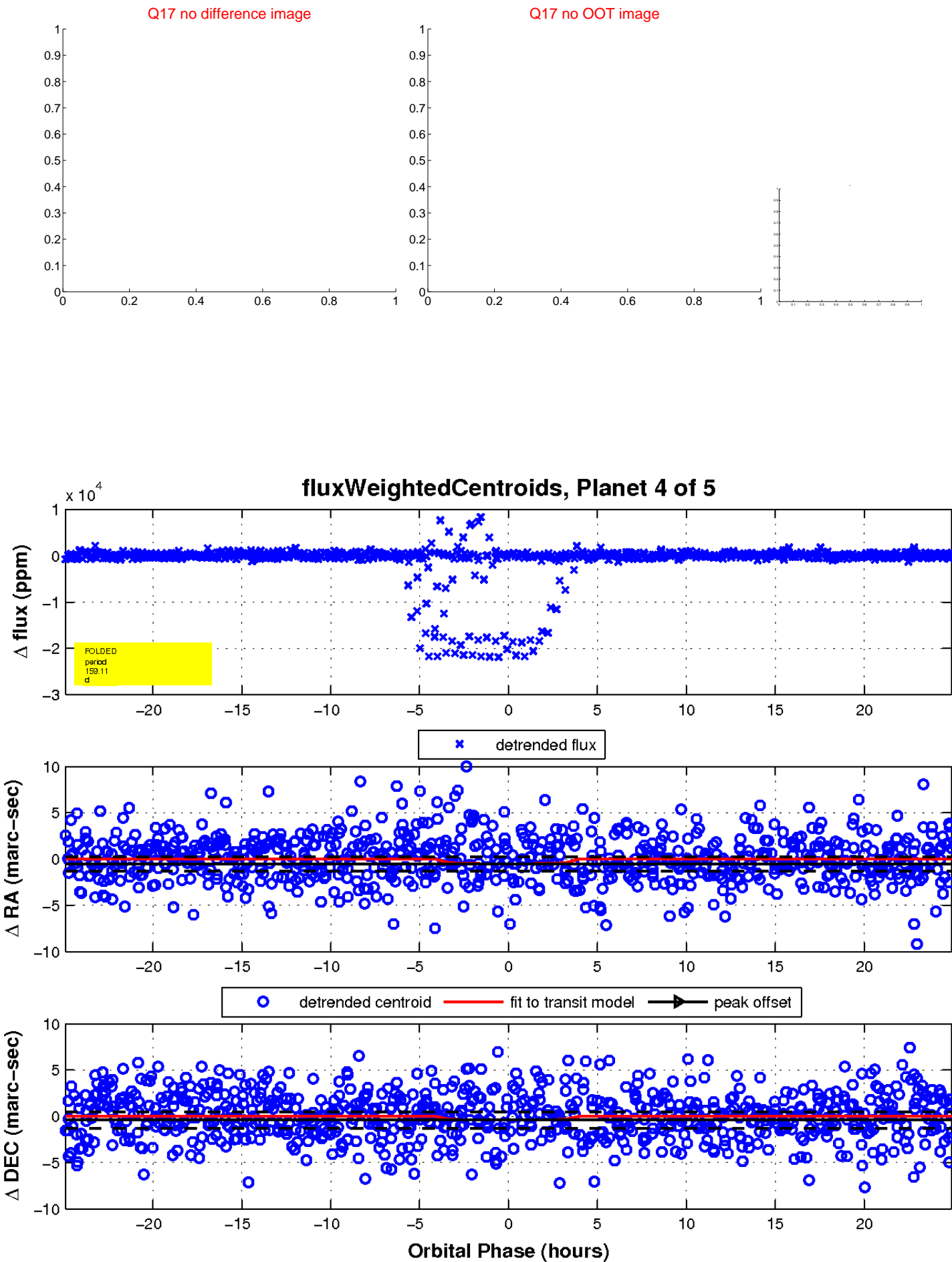
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

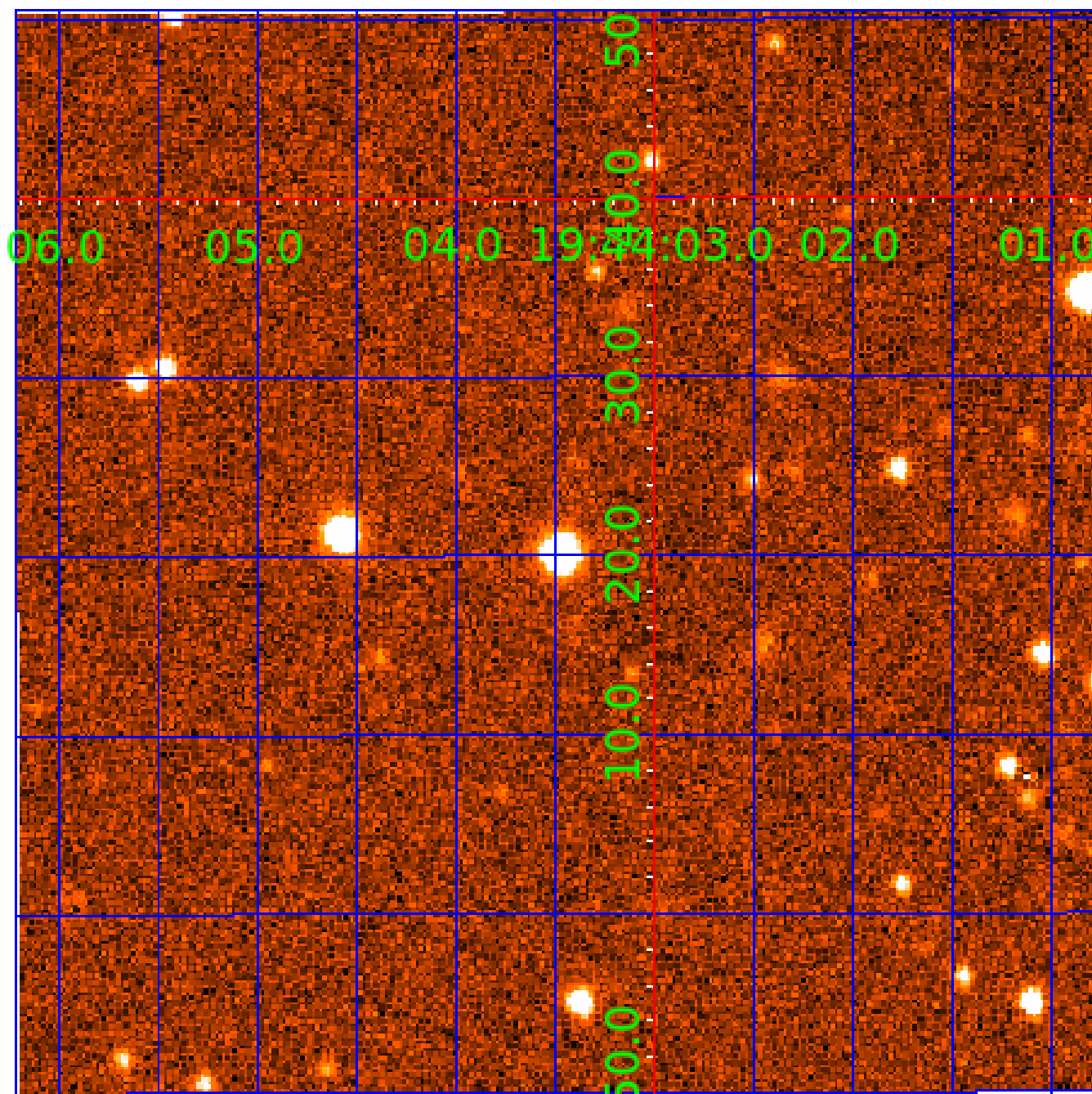


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006964043

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})
006964043-01	OBS	No	236.757090	339.573474	72525.8	8.827	688.2	516.7	0.91	5582	39.05	1.44
006964043-02	OBS	1351.01	5.362932	131.826644	10989.5	2.658	400.2	231.1	0.91	5582	9.60	223.85
006964043-03	OBS	No	237.183580	336.134518	46329.1	9.687	396.2	188.3	0.91	5582	33.70	1.43
006964043-04	OBS	No	159.105683	267.772408	509.0	8.315	155.5	4.8	0.91	5582	2.40	2.44
006964043-05	OBS	No	238.698037	269.628237	15880.8	7.500	146.1	-1.0	0.91	5582	11.28	1.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006964043-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—DEEP_V_SHAPED
006964043-02	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT
006964043-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—INCONSISTENT_TRANS
006964043-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—INCONSISTENT_TRANS
006964043-05	OBS	FP	0.38	1	0	0	0	INCONSISTENT_TRANS—CENT_NOFITS

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

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

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

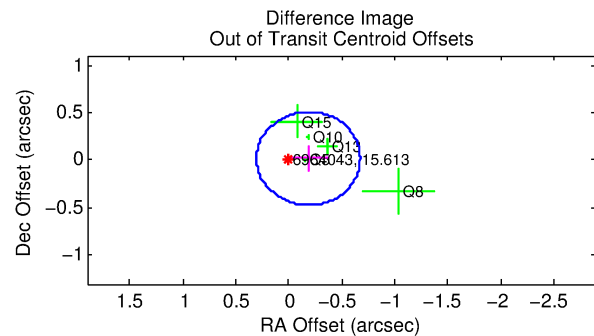
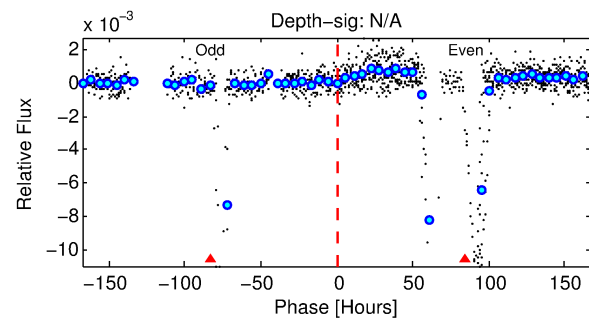
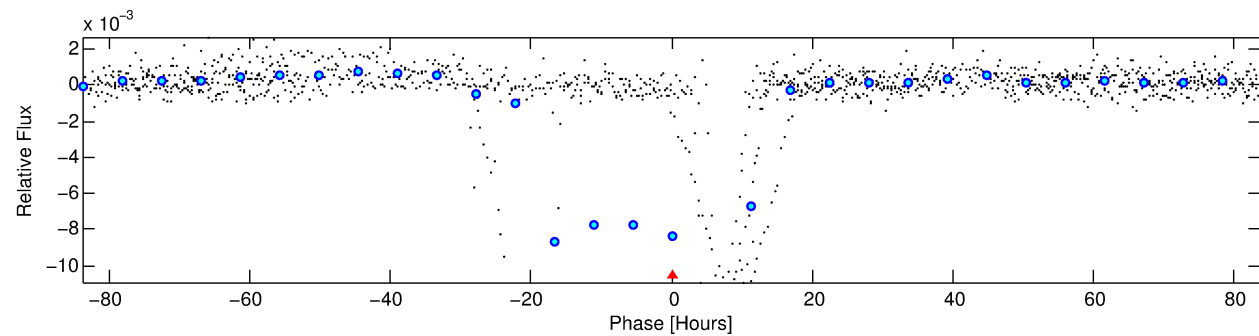
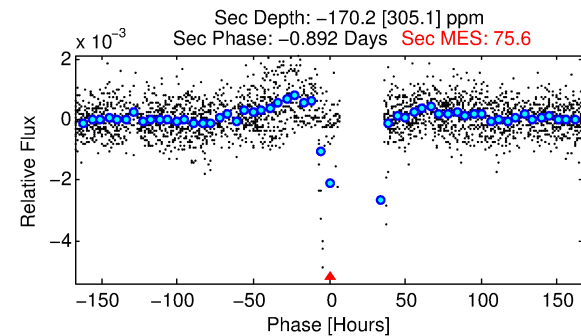
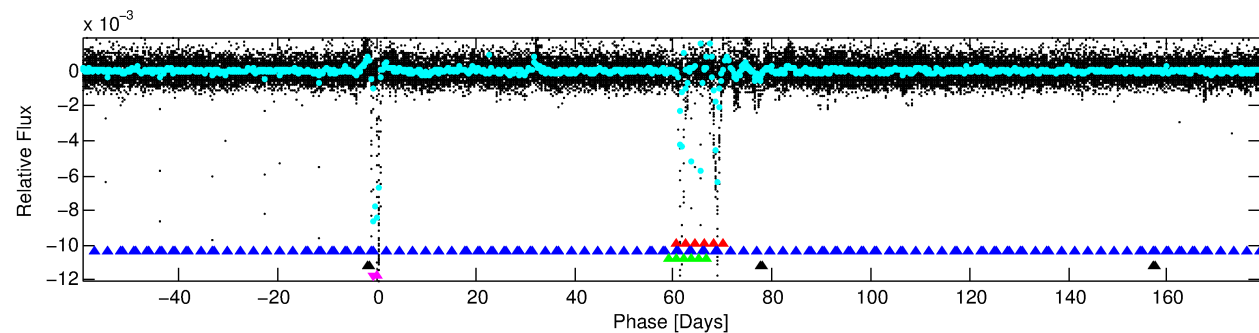
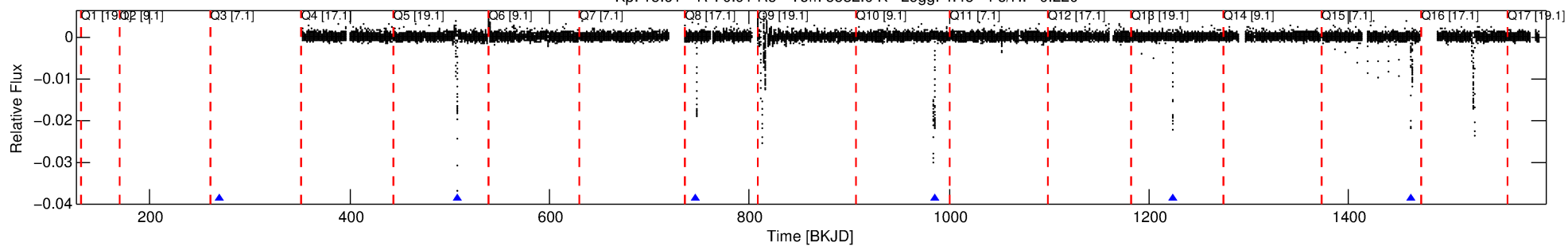
Ephemeris Match Information For 006964043-05

No Significant Match Found

DV One-Page Summary

KIC: 6964043 Candidate: 5 of 5 Period: 238.698 d
KOI: K01351 Corr: No Ephemeris Match

Kp: 15.61 R*: 0.91 Rs Teff: 5582.0 K Logg: 4.45 Fe/H: -0.220



TPS TCE Results:

Period = 238.69804 d
Epoch = 269.6282 BKJD

DV fit results are unavailable

DV Diagnostic Results:

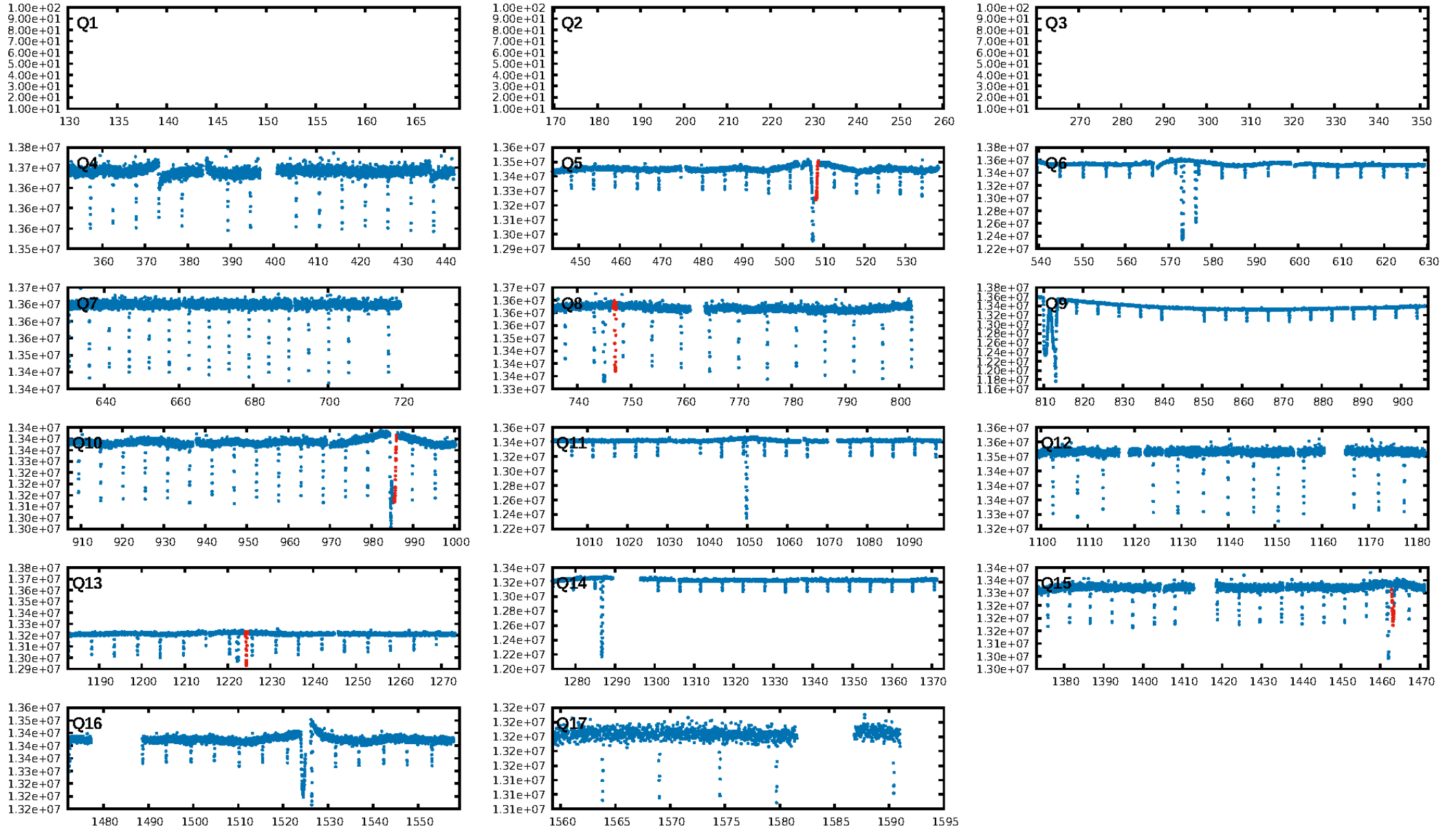
ShortPeriod-sig: 99.7% [2.97 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 4.312

Centroid-sig: 0.1%
Centroid-so: 0.204 arcsec [3.40 σ]
OotOffset-rm: 0.188 arcsec [1.15 σ]
KicOffset-rm: 0.292 arcsec [1.67 σ]
OotOffset-st: 1/1/1/2 [5]
KicOffset-st: 1/1/1/2 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 0.00 [0/5]

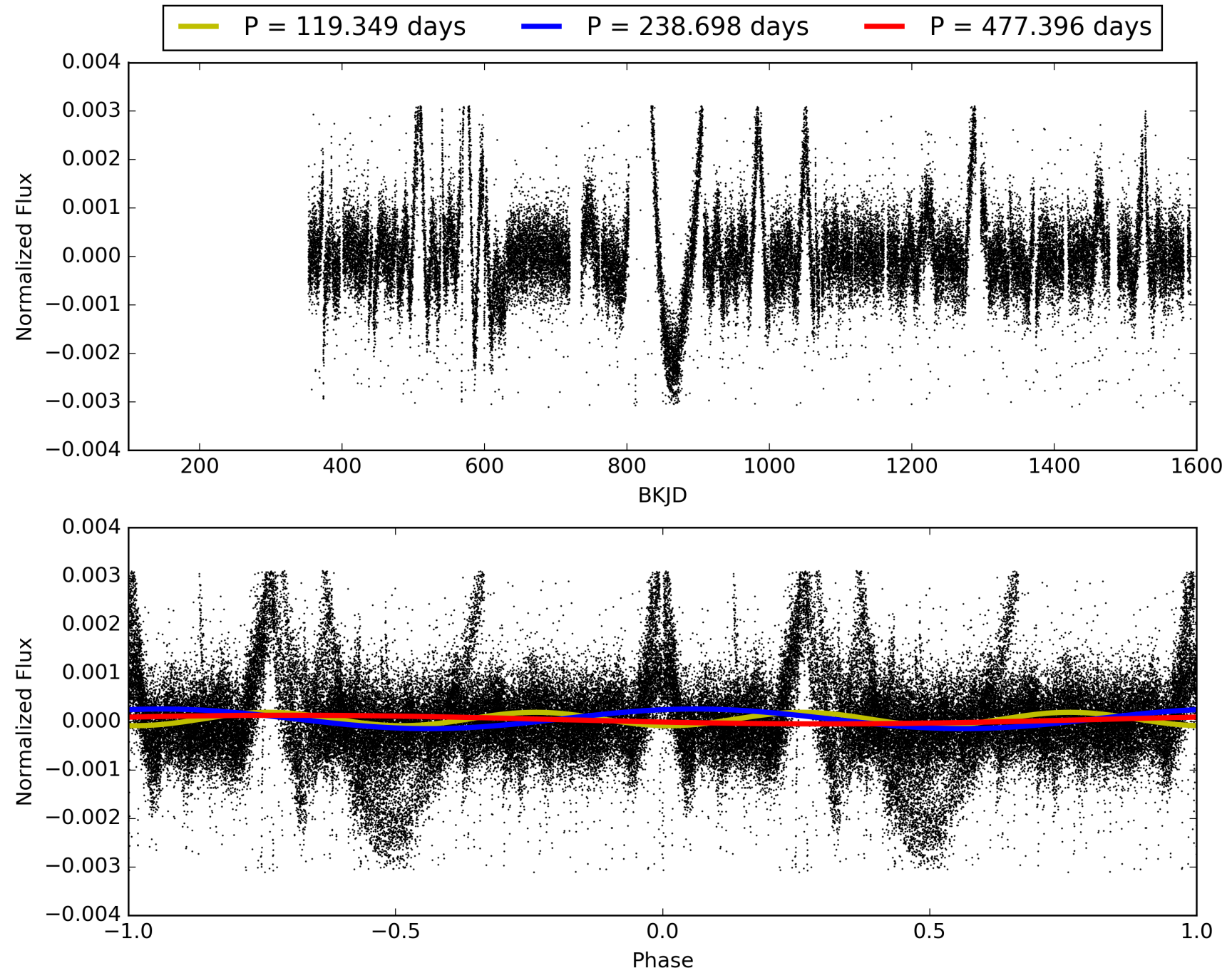
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:48:39 Z

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

TCE 006964043-05, PDC Light Curves

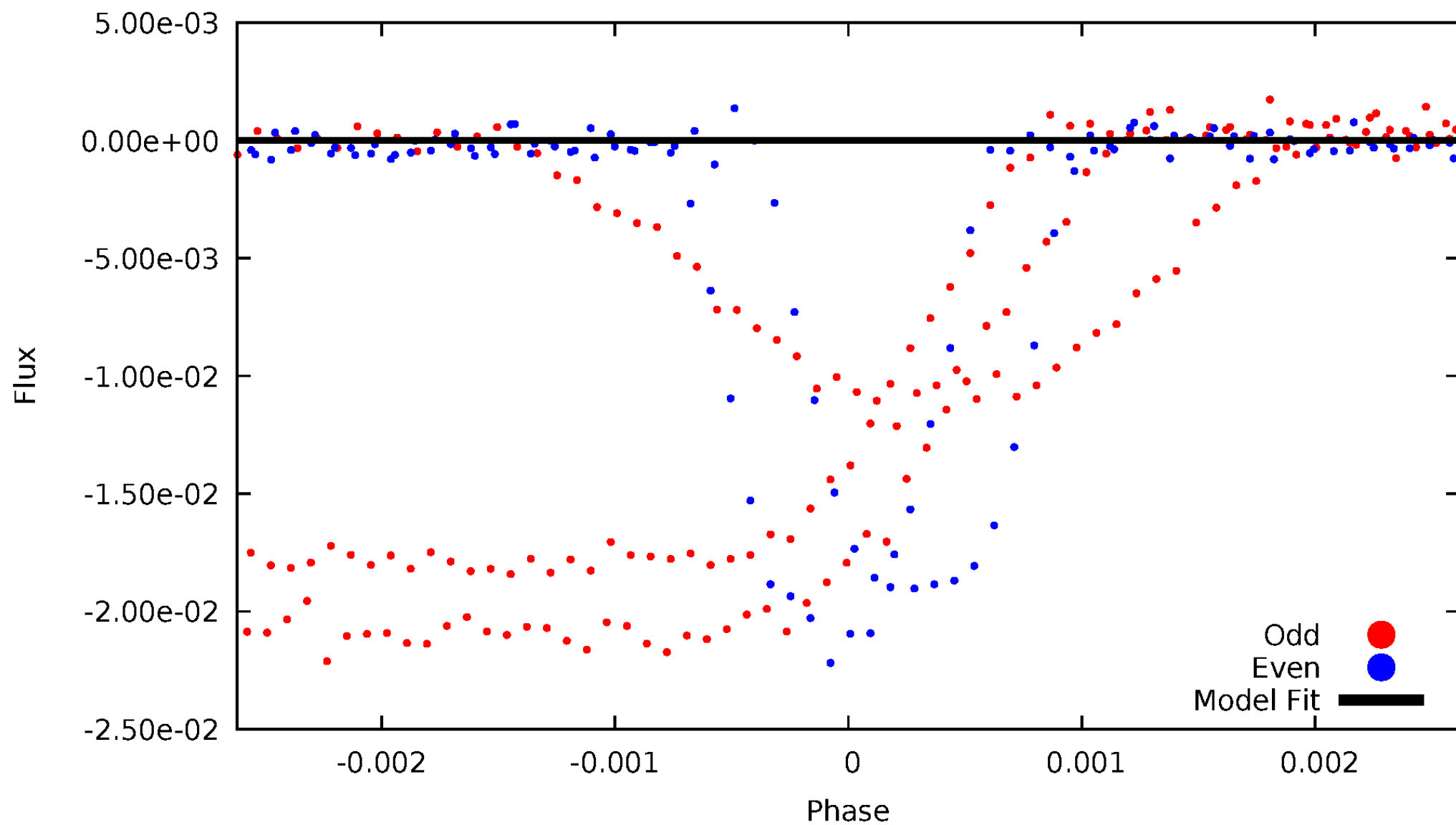


TCE 006964043-05



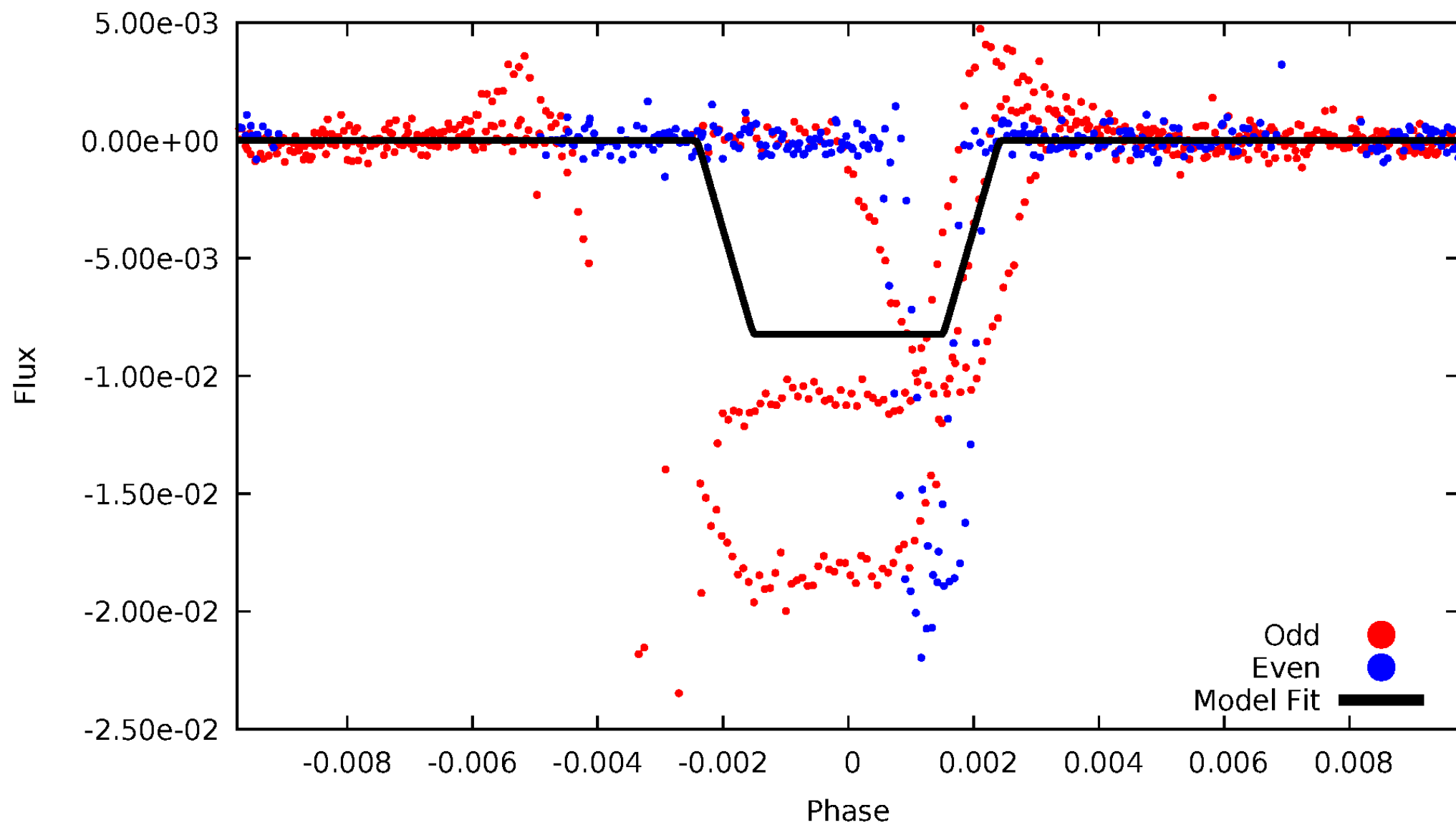
DV Odd/Even

TCE 006964043-05



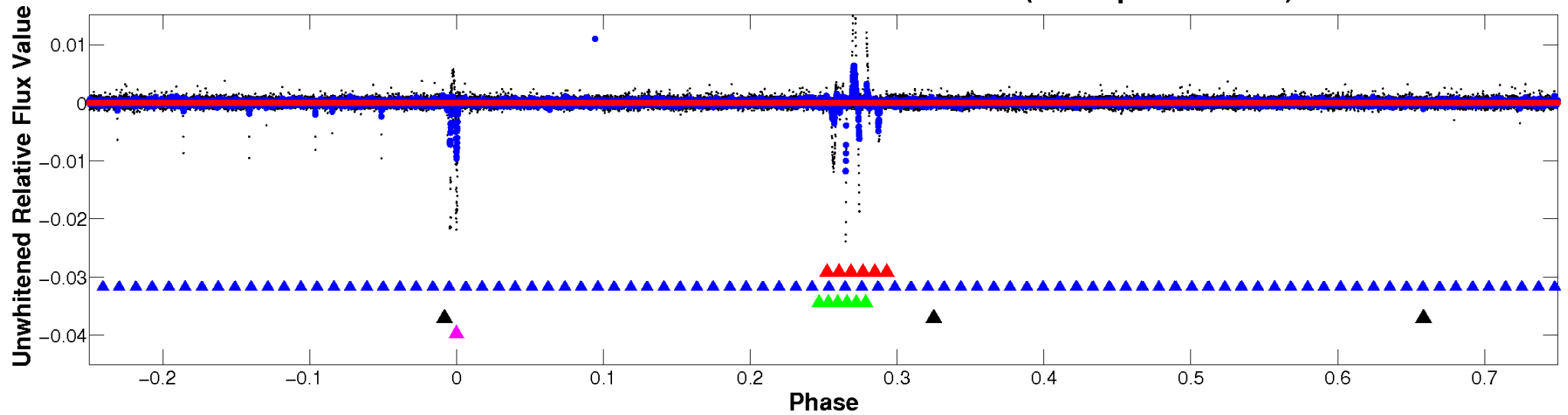
ALT Odd/Even

TCE 006964043-05



Non-Whitened Vs. Whitened Light Curve

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

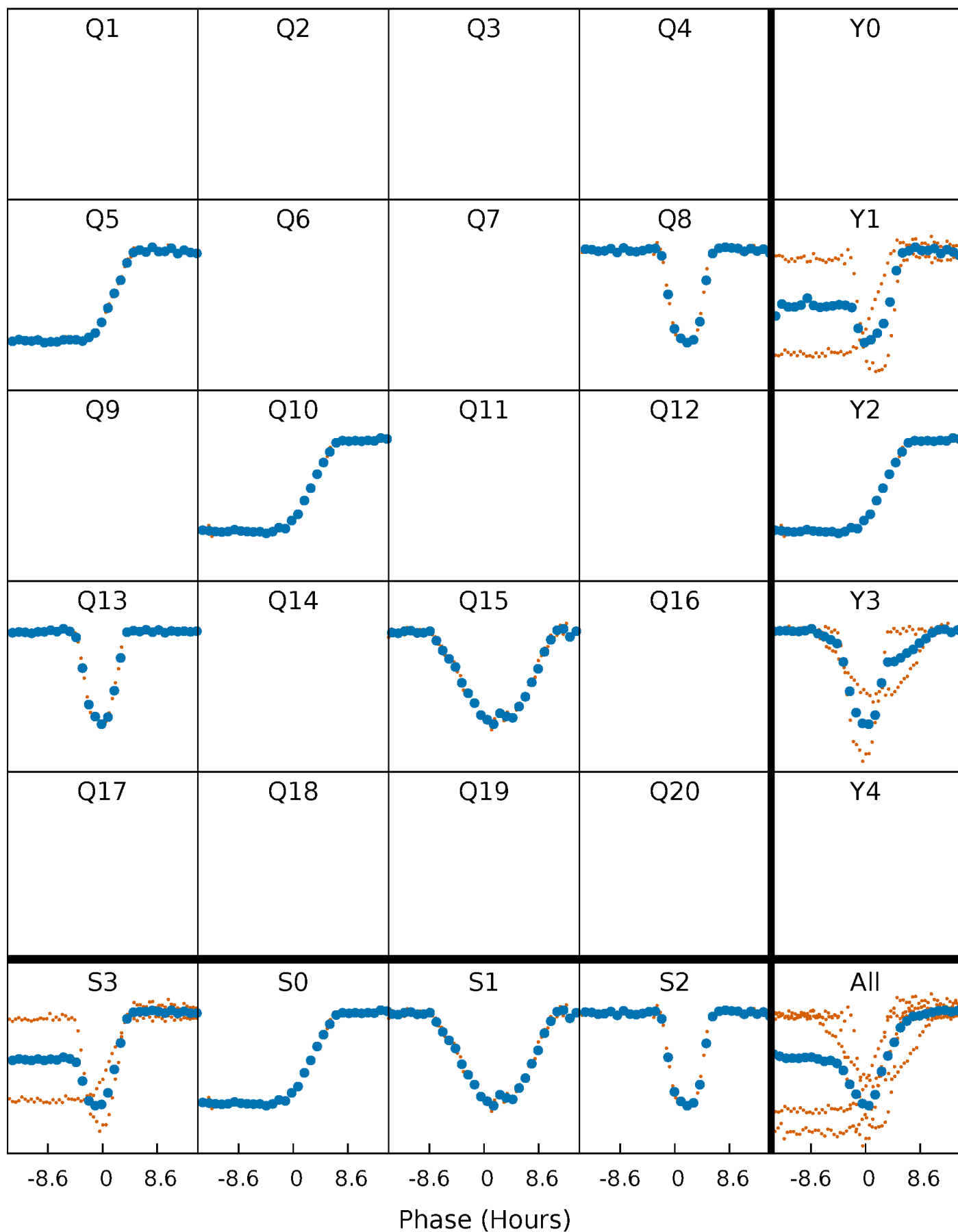


Planet 5 : Phased Whitened Flux Time Series (TPS Epoch/Period)



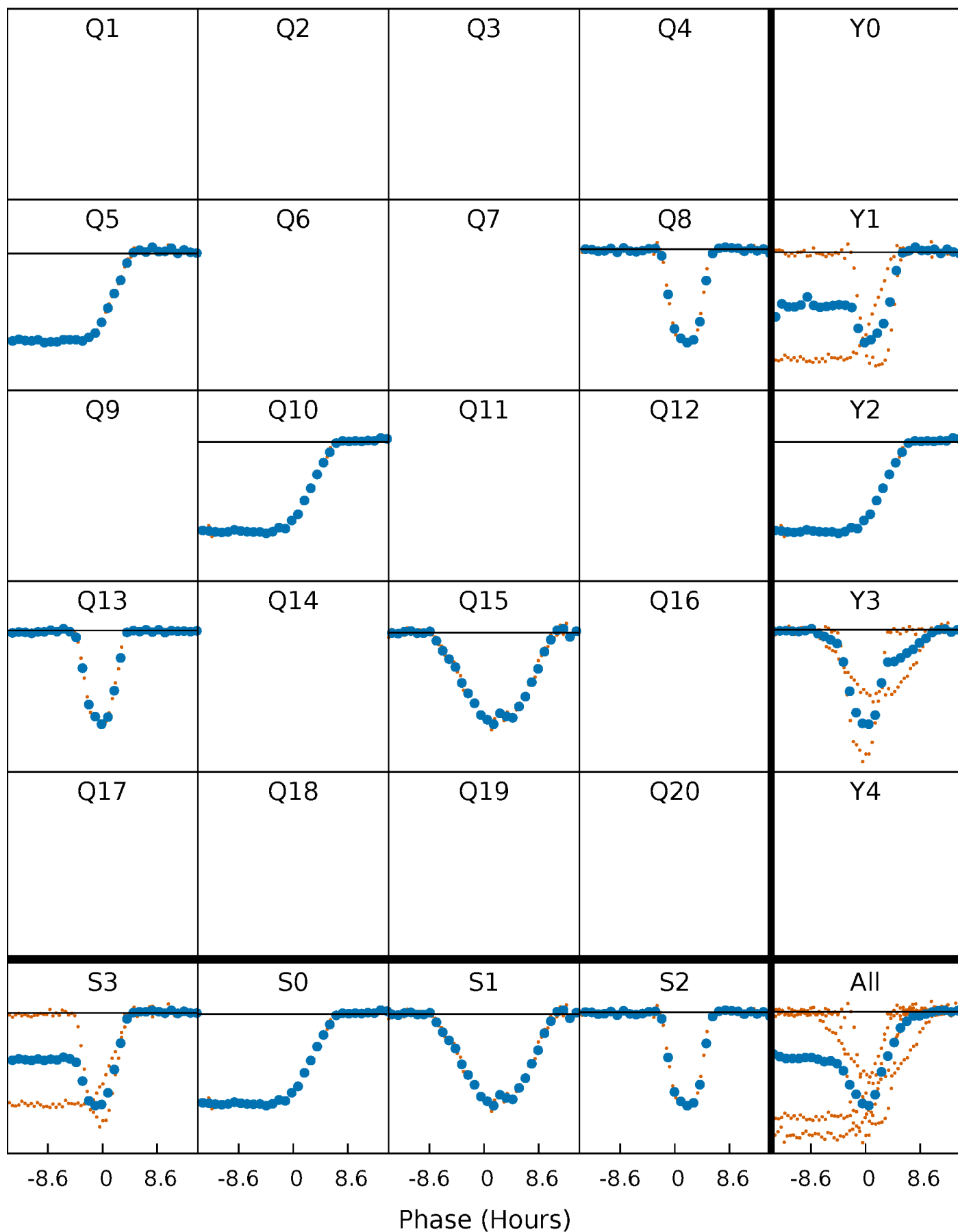
PDC Quarter-Phased Transit Curves

TCE 006964043-05 $P=238.698037$ Days $T_0=269.628237$ (BKJD)



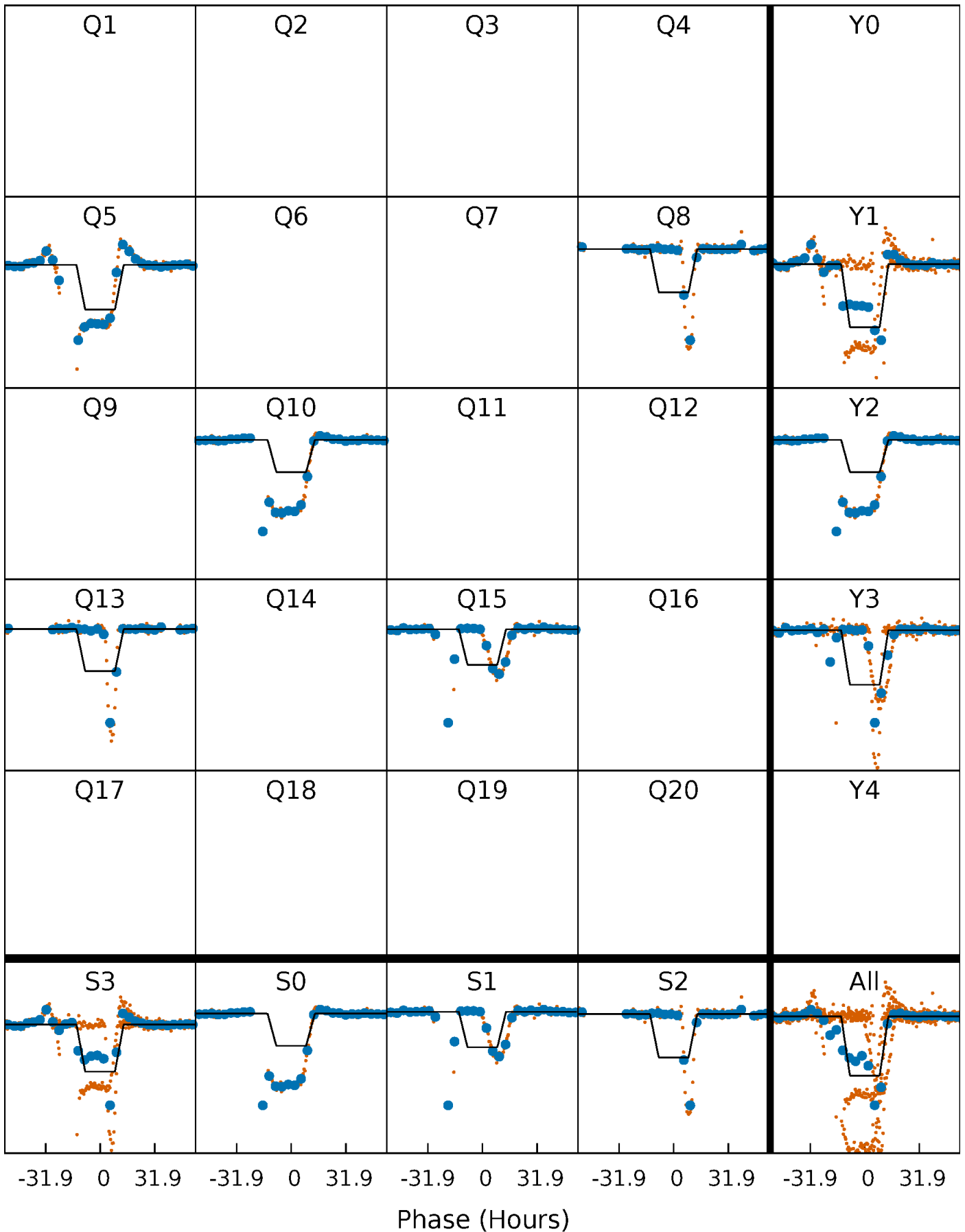
DV Quarter-Phased Transit Curves

TCE 006964043-05 $P=238.698037$ Days $T_0=269.628237$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

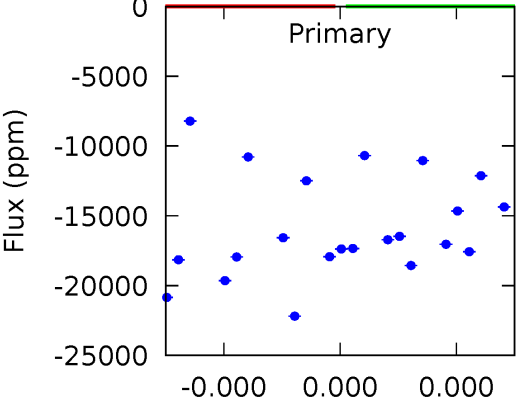
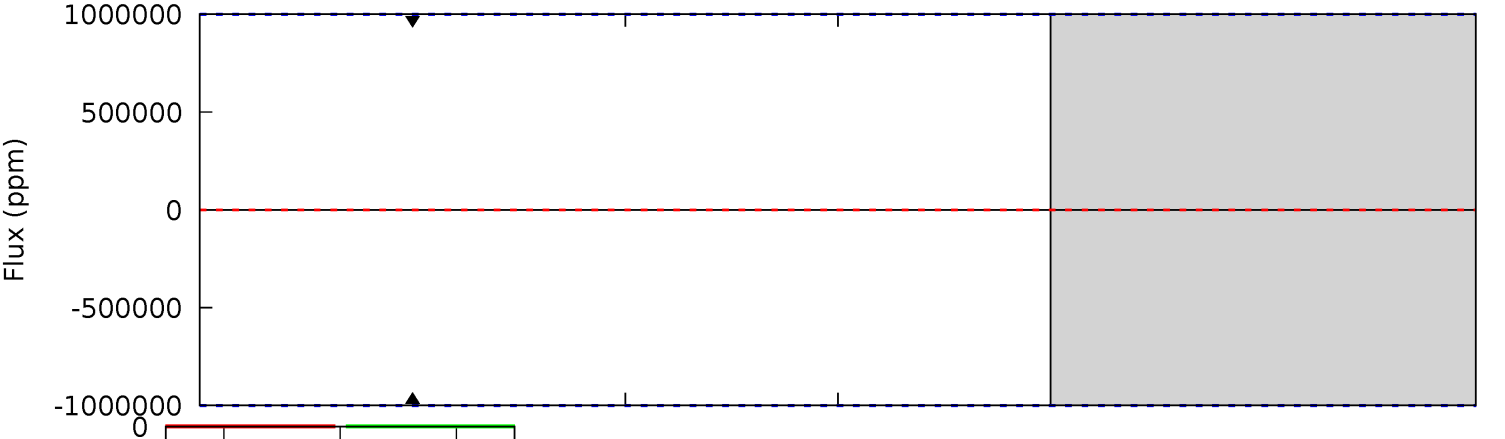
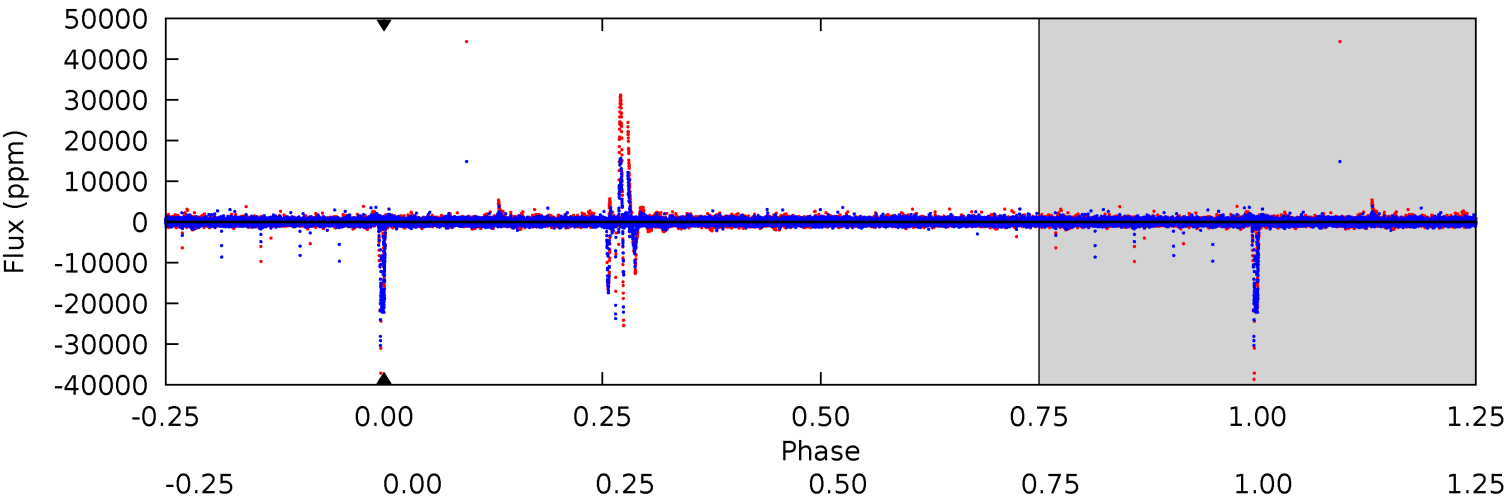
TCE 006964043-05 $P=238.698037$ Days $T_0=269.332010$ (BKJD)



DV Model-Shift Uniqueness Test

006964043-05, P = 238.698037 Days, E = 269.628237 Days

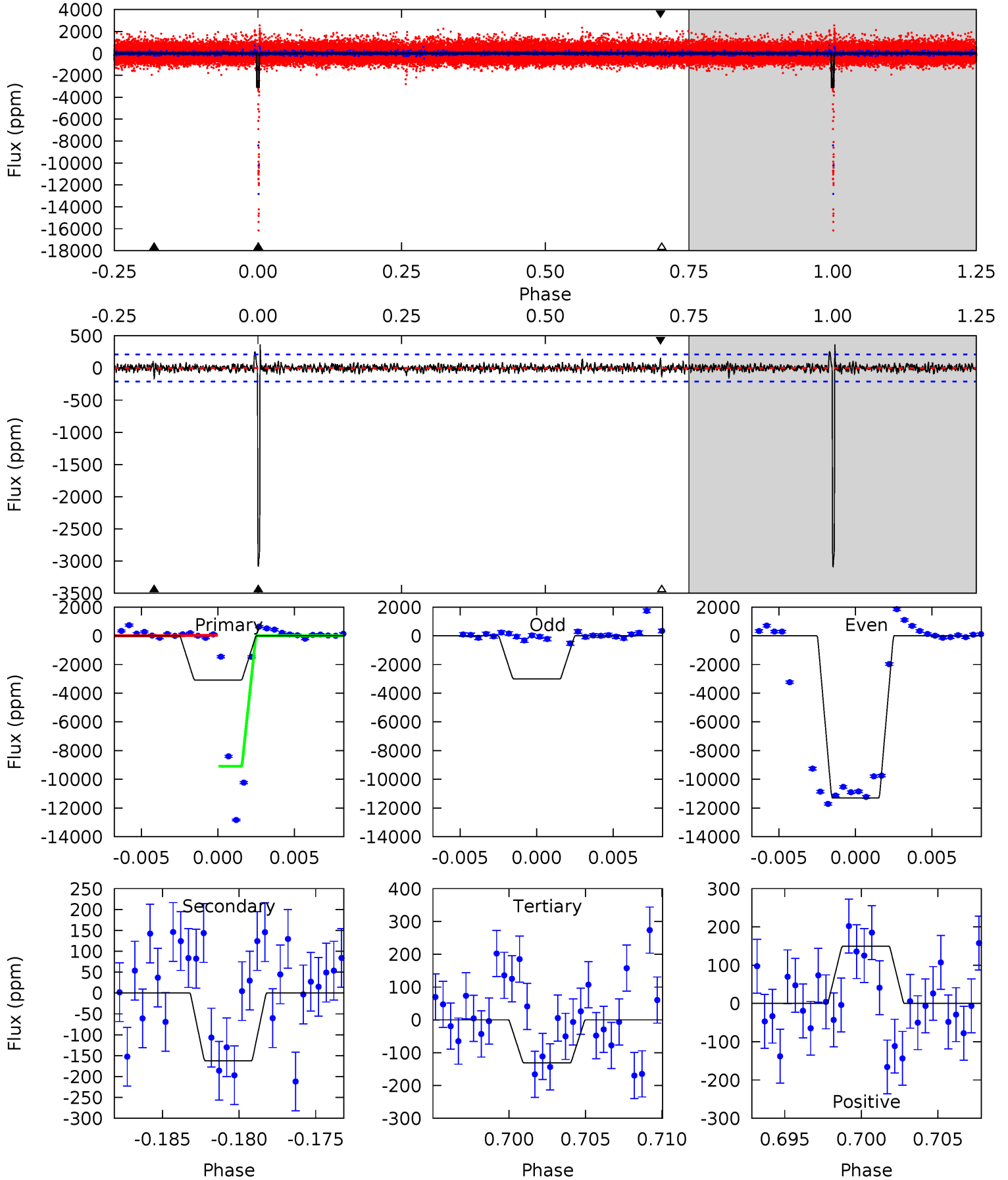
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

006964043-05, $P = 238.698037$ Days, $E = 269.332010$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
75.7	3.99	3.23	3.67	5.16	2.82	0.84	72.5	72.0	0.76	0.32	109.8	1.60	0.11	108.1



Stellar Parameters For KIC 006964043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5582^{+200}_{-183}	$4.445^{+0.112}_{-0.168}$	$-0.220^{+0.300}_{-0.300}$	$0.905^{+0.236}_{-0.127}$	$0.832^{+0.118}_{-0.072}$	$1.580^{+0.823}_{-0.742}$
	+4%/-3%	+3%/-4%	+136%/-136%	+26%/-14%	+14%/-9%	+52%/-47%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006964043-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$12.83^{+9.86}_{-7.91}$	392^{+27}_{-23}	-4220^{+15008}_{-6880}	$-5698.358^{+243721.100}_{-268104.470}$
Alt.	-162 ± 41	$11.99^{+8.78}_{-7.80}$	392^{+28}_{-20}	2621^{+884}_{-334}	302^{+2086}_{-207}

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 $A_{obs} \gg 1.0$

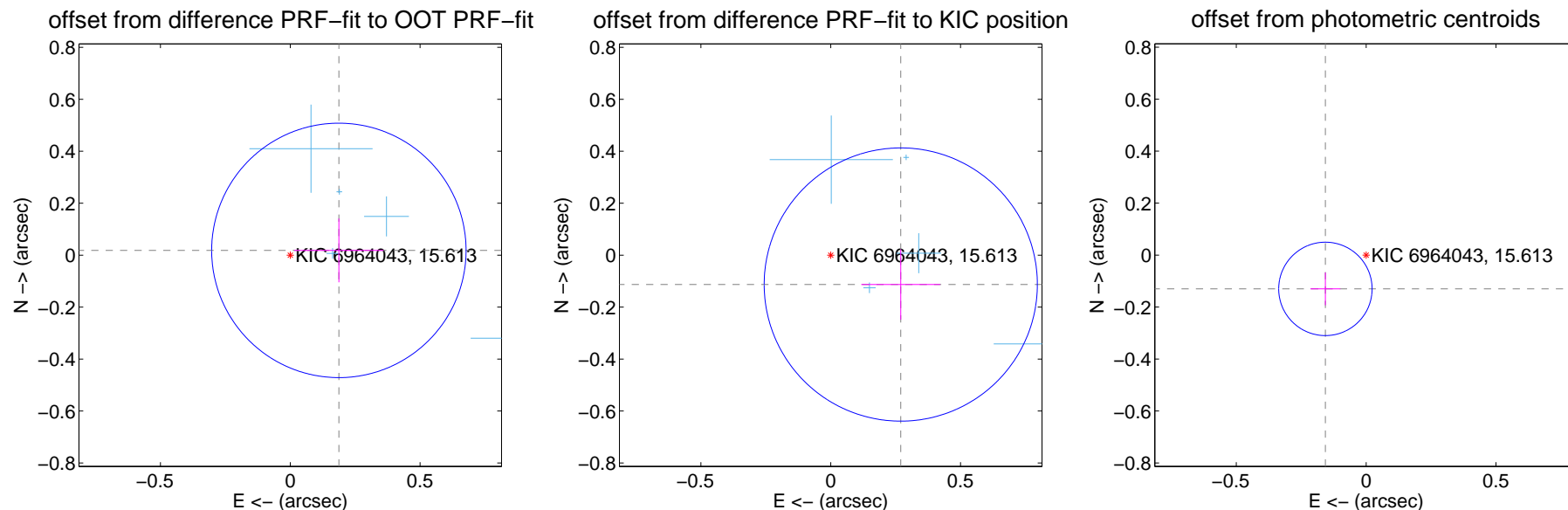
DV Centroid Data

Supplemental centroid analysis for 006964043-05. Kepler magnitude: 15.61. Transit SNR -1.00

There are 5 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.188 ± 0.163	1.15	-0.187 ± 0.172	0.018 ± 0.123
PRF-fit source offset from KIC position	0.292 ± 0.175	1.67	-0.270 ± 0.152	-0.113 ± 0.135
photometric centroid source offset	0.20 ± 0.06	3.40	0.16 ± 0.06	-0.13 ± 0.06

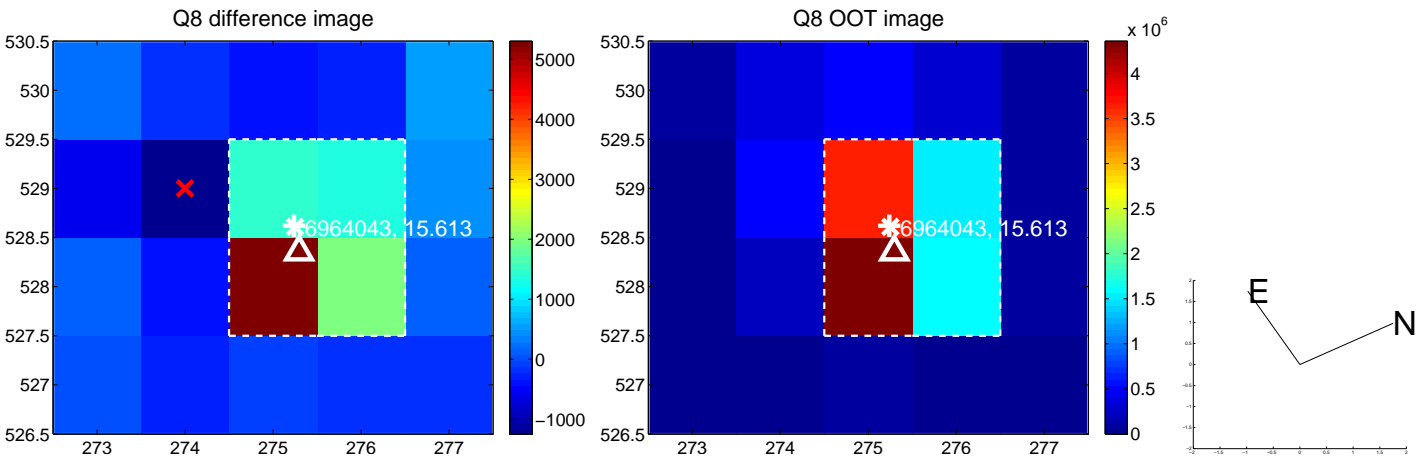
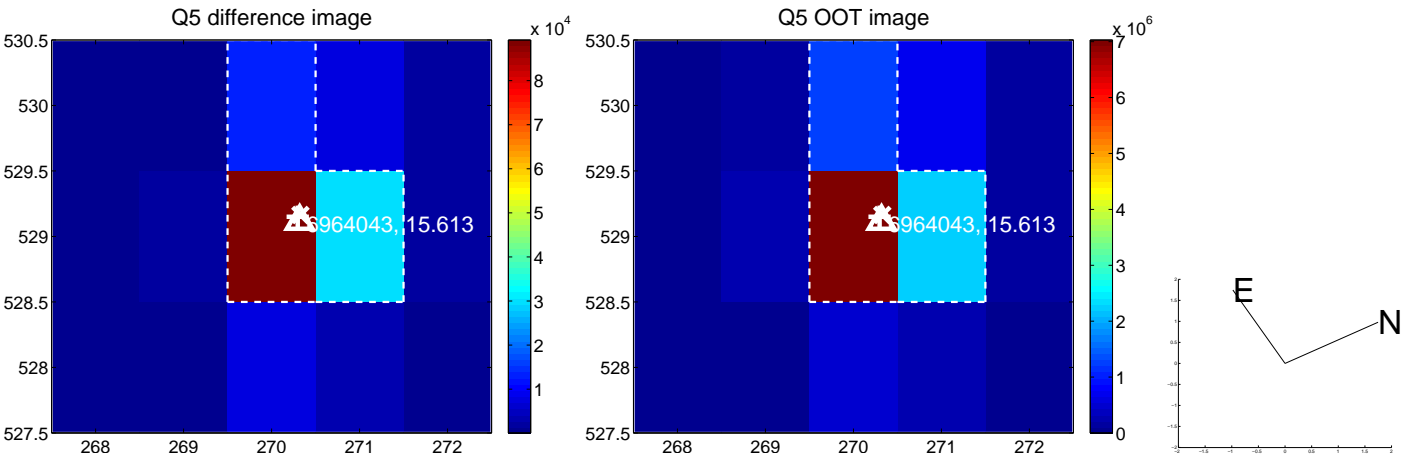


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

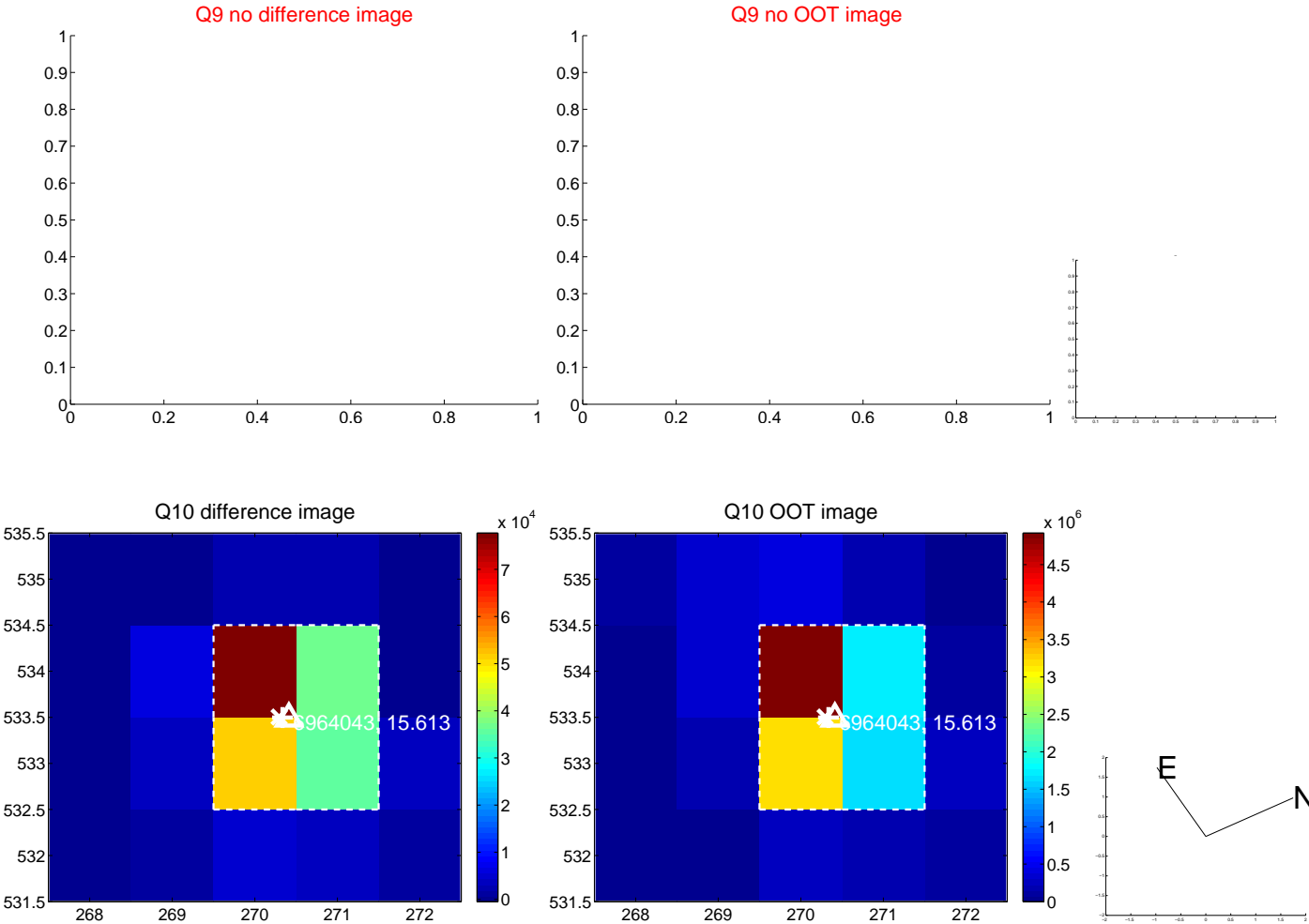
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



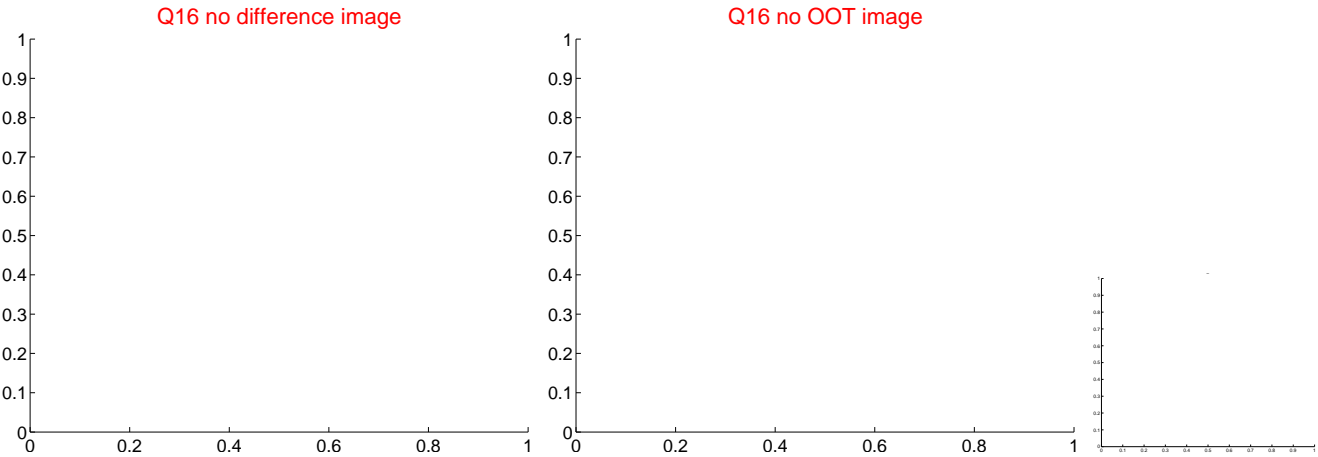
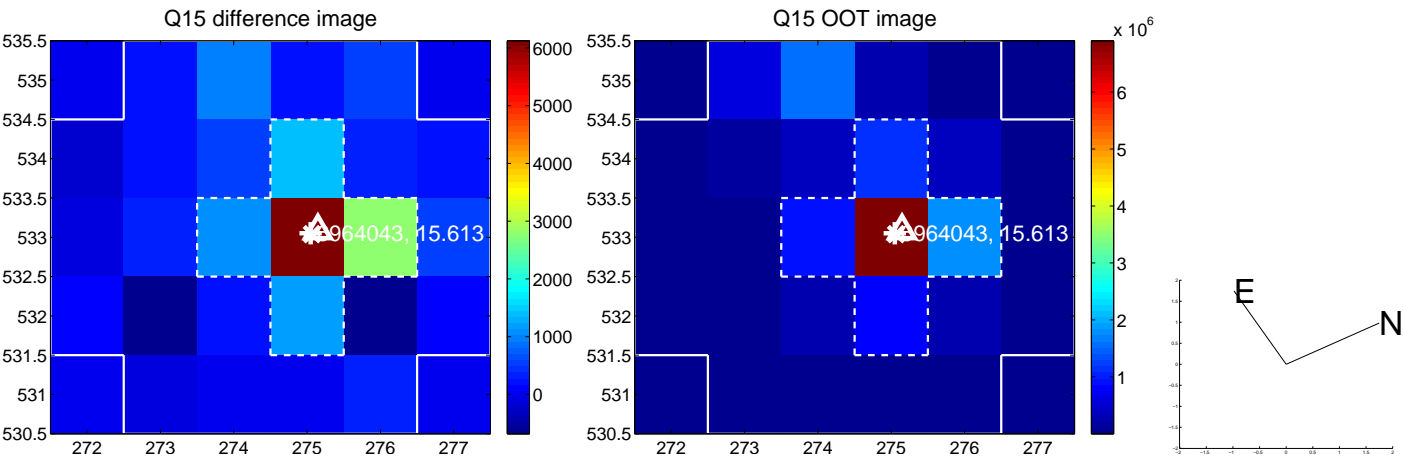
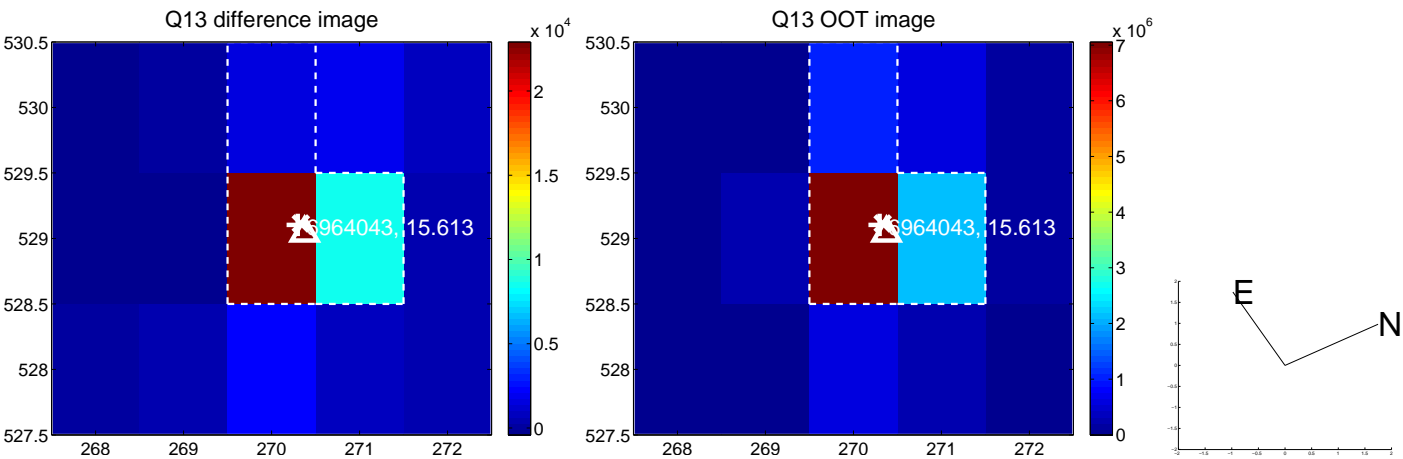
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



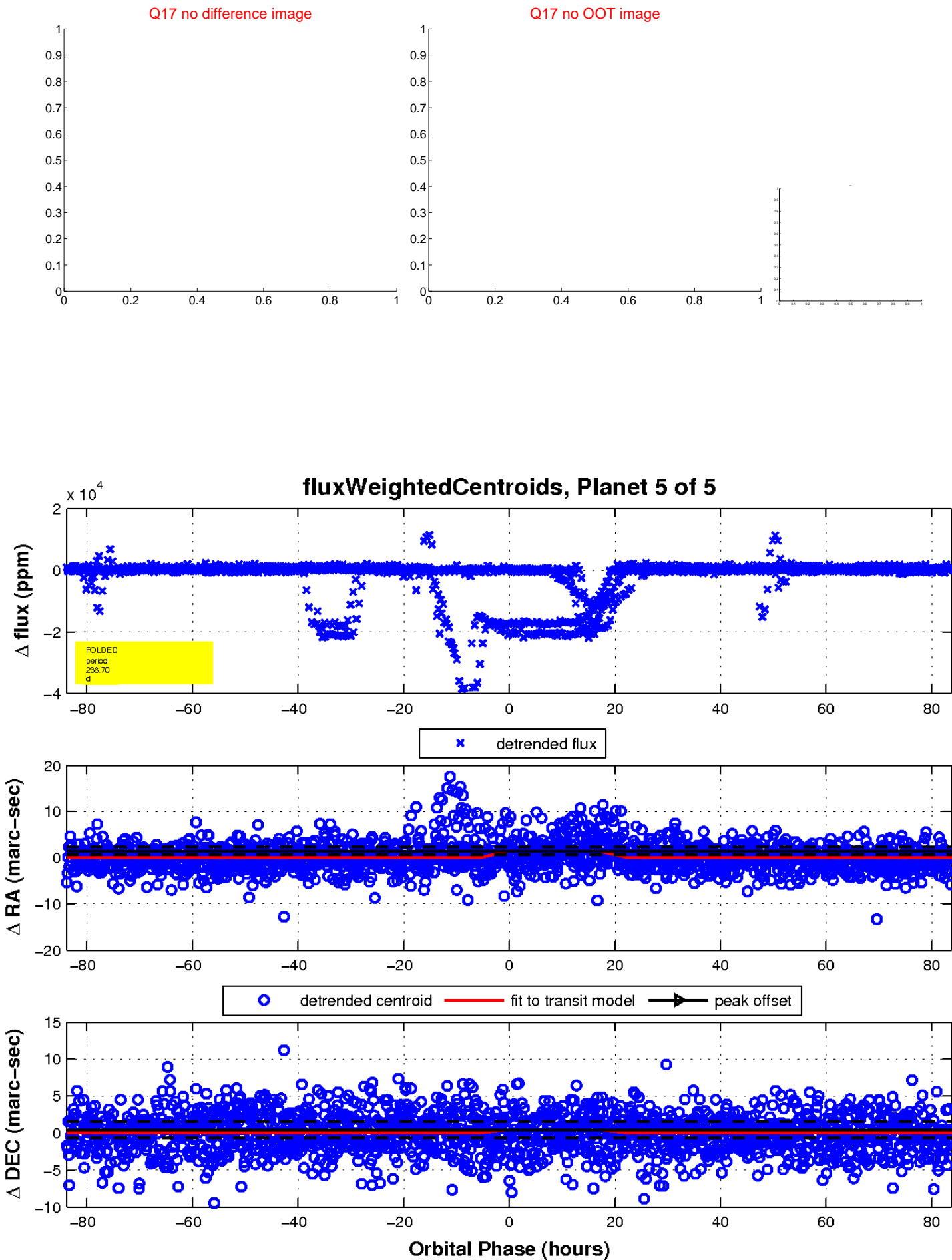
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

