

KIC 002696703

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})
002696703-01	OBS	3161.01	6.094054	133.660375	2730.7	1.804	140.8	271.9	1.67	6785	16.16	955.73
002696703-02	OBS	No	557.983830	330.025683	4542.8	9.697	24.8	5.0	1.67	6785	20.18	2.32
002696703-03	OBS	No	419.290930	547.486050	633.2	9.414	29.1	2.3	1.67	6785	4.91	3.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002696703-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—CENT_SATURATED
002696703-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_SATURATED
002696703-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

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

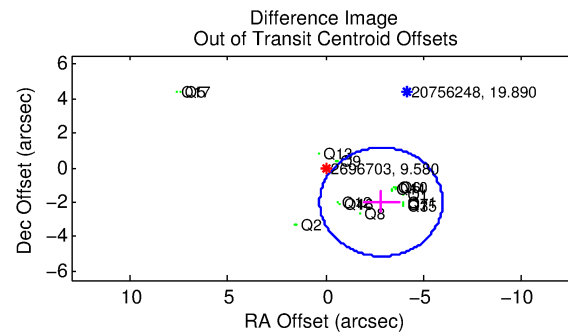
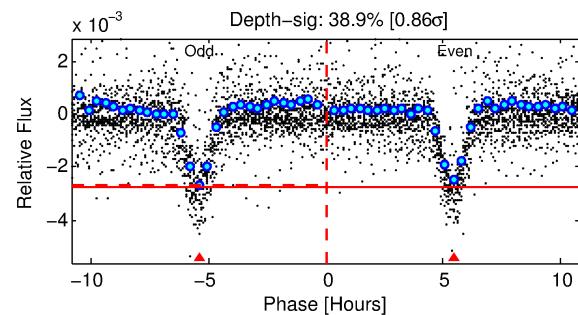
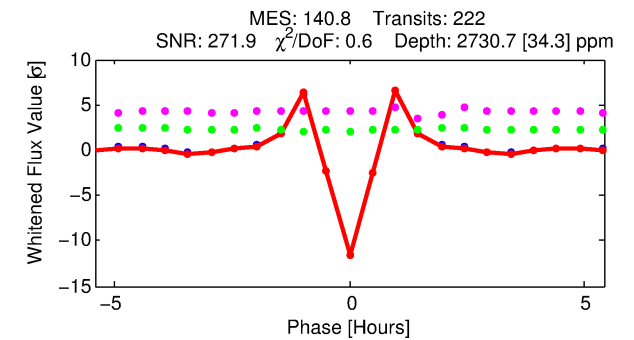
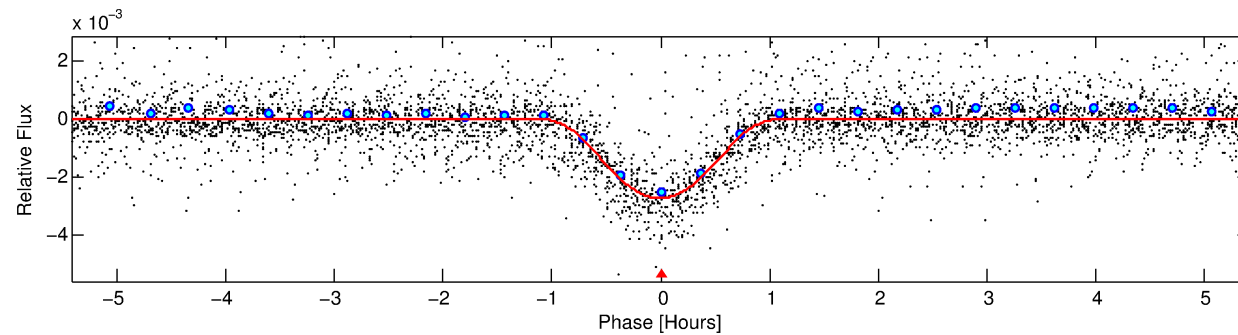
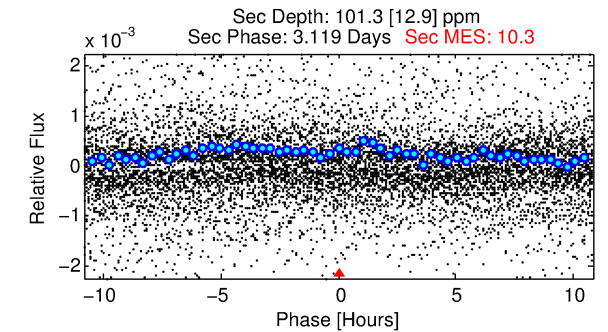
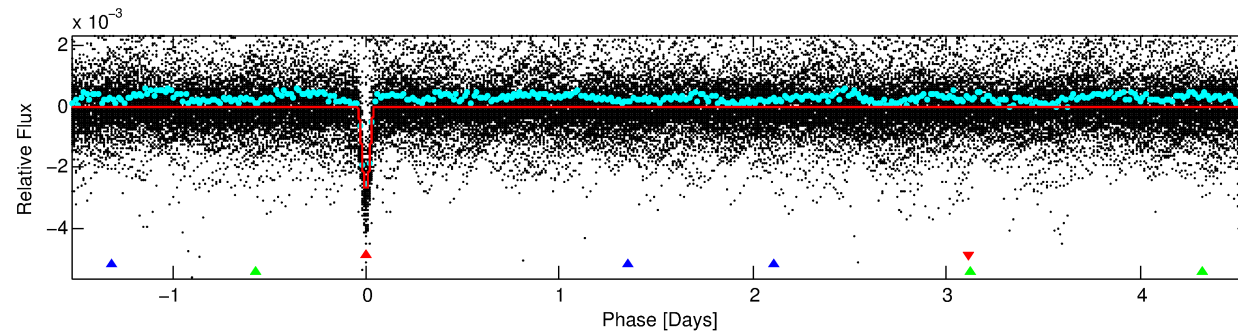
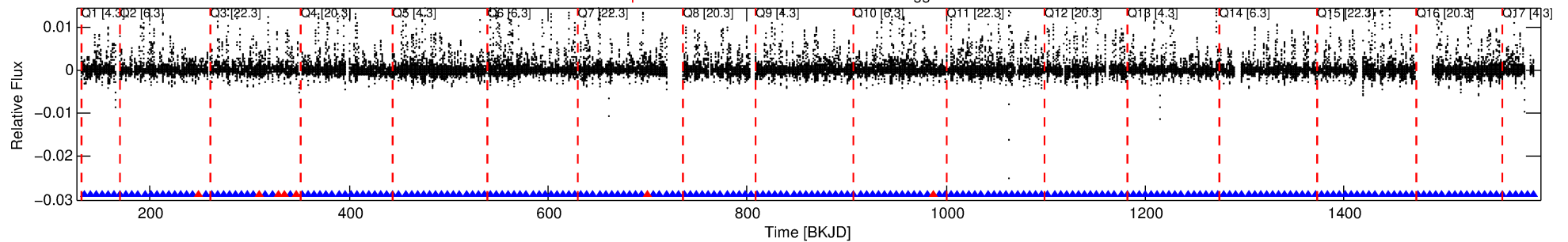
Ephemeris Match Information For 002696703-01

No Significant Match Found

DV One-Page Summary

KIC: 2696703 Candidate: 1 of 3 Period: 6.094 d
KOI: K03161.01 Corr: 0.920

Kp: 9.58 R*: 1.67 Rs Teff: 6785.0 K Logg: 4.16 Fe/H: 0.180



DV Fit Results:

Period = 6.09405 [0.00000] d
Epoch = 133.6604 [0.0001] BKJD
Rp/R* = 0.0889 [0.0084]
a/R* = 11.17 [0.23]
b = 1.00 [0.01]
Seff = 955.73 [379.12]
Teq = 1418 [141] K
Rp = 16.16 [5.29] Re
a = 0.0743 [0.0190] AU
Ag = 1.18 [0.50] [0.35σ]
Teffp = 2283 [161] K [4.05σ]

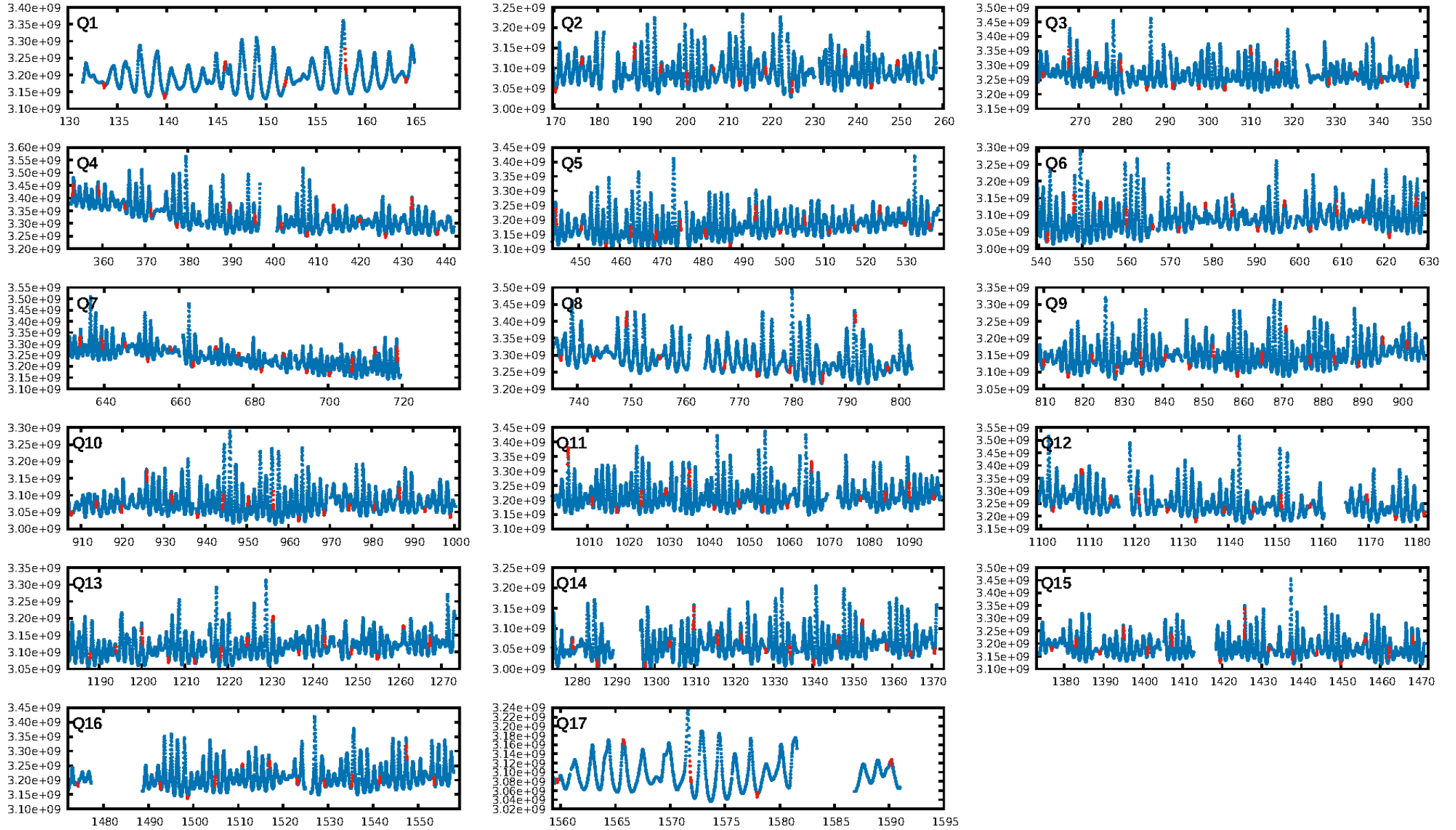
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1034.54σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.97 [204/211]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 1.044 arcsec [19.60σ]
OotOffset-rm: 3.464 arcsec [3.31σ]
KicOffset-rm: 3.204 arcsec [3.35σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

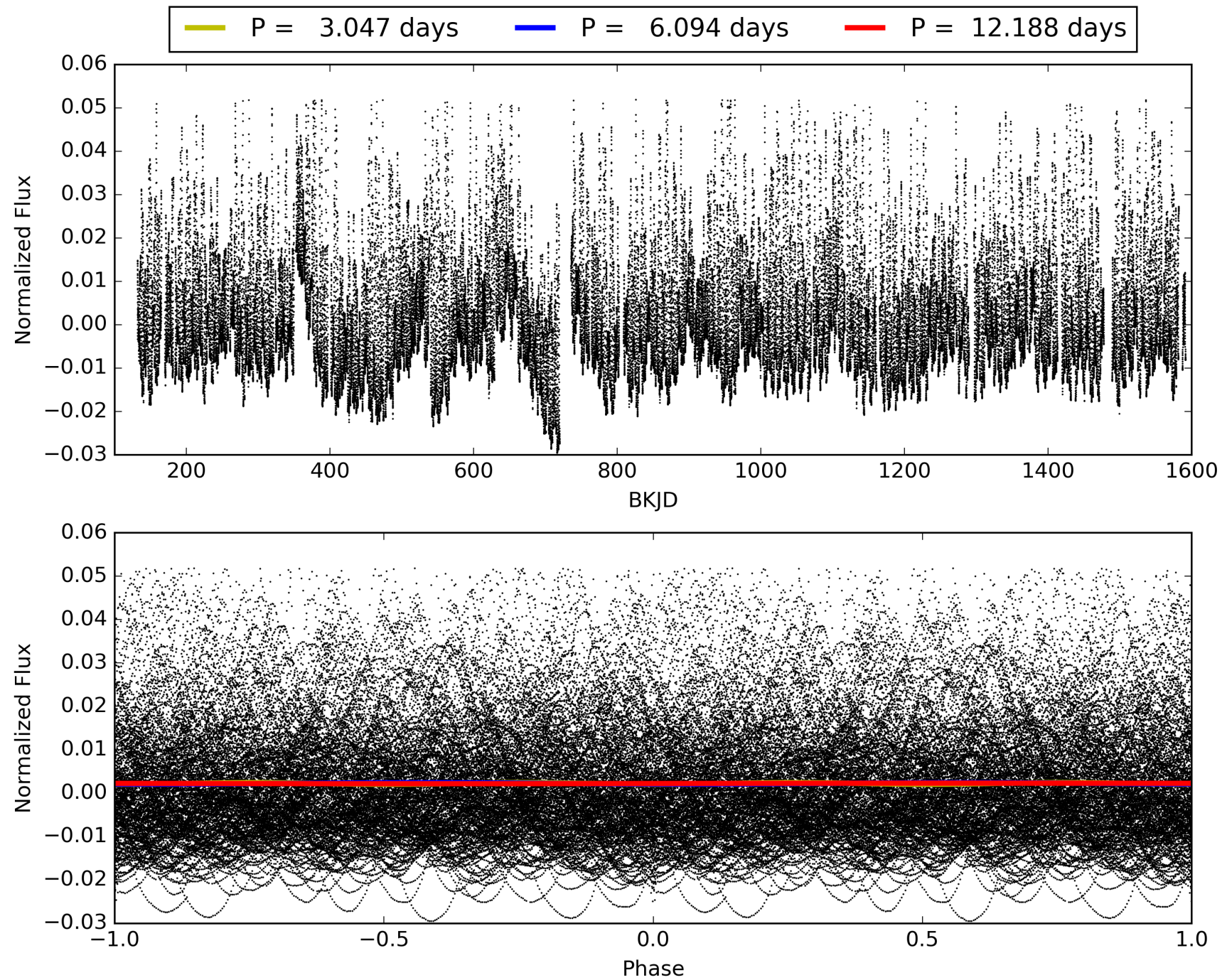
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:05:17 Z

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

TCE 002696703-01, PDC Light Curves

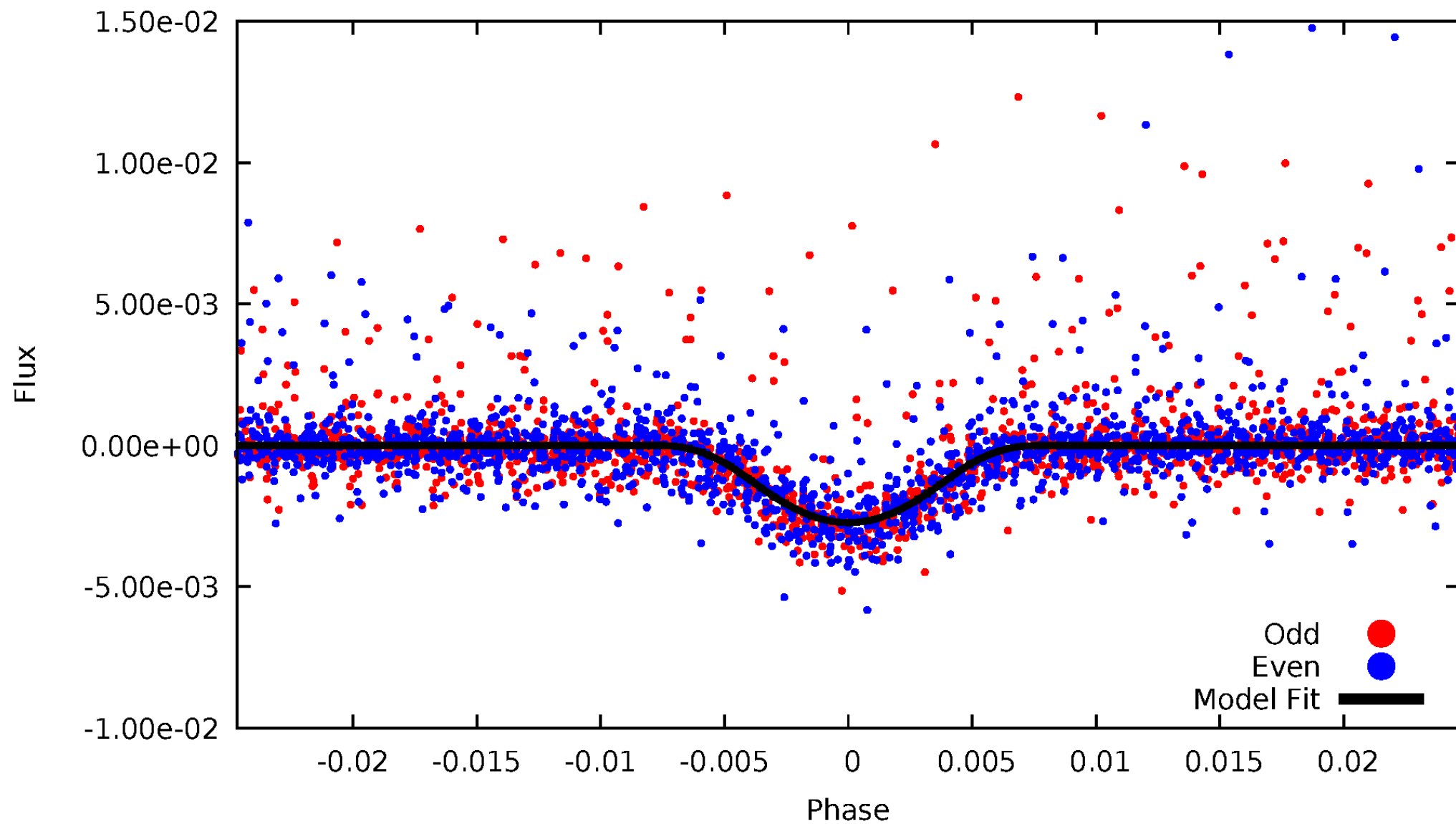


TCE 002696703-01



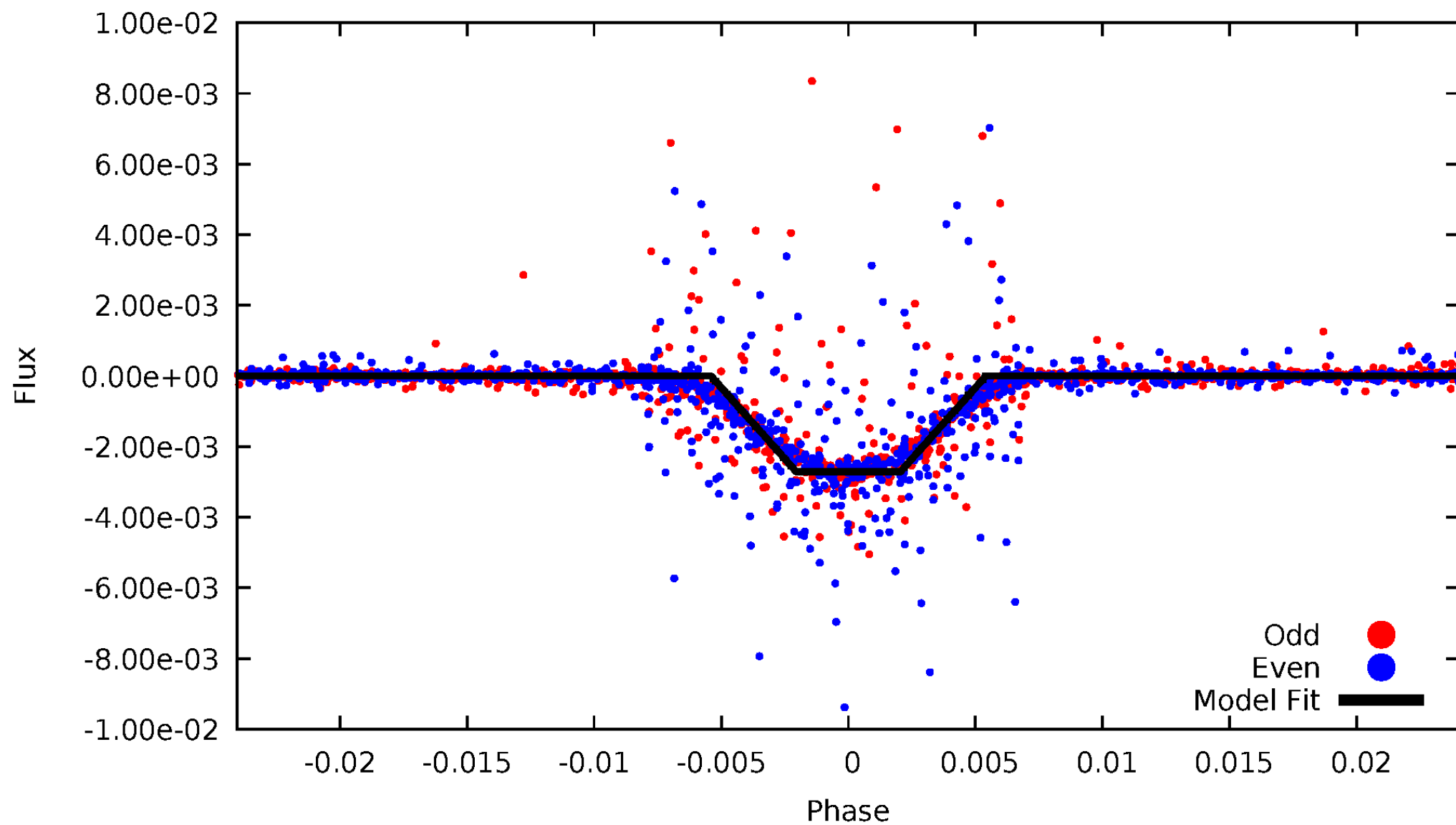
DV Odd/Even

TCE 002696703-01



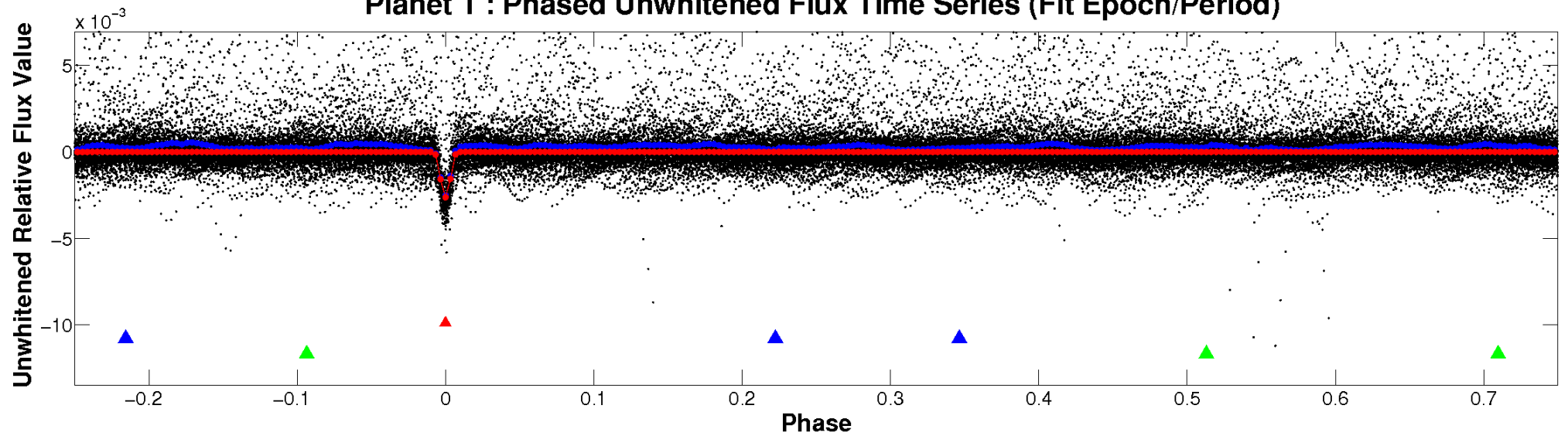
ALT Odd/Even

TCE 002696703-01

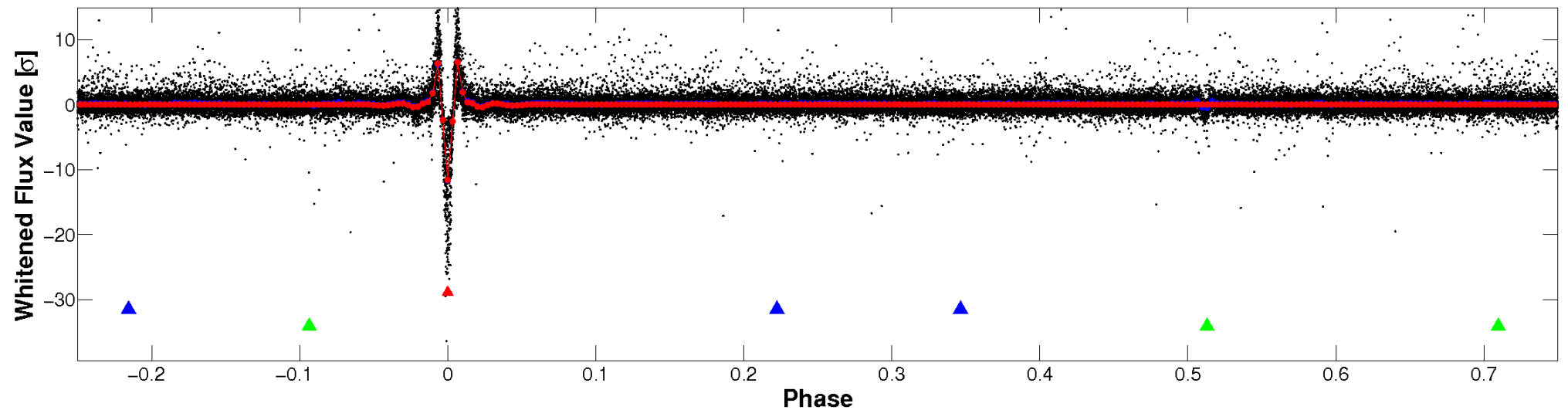


Non-Whitened Vs. Whitened Light Curve

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

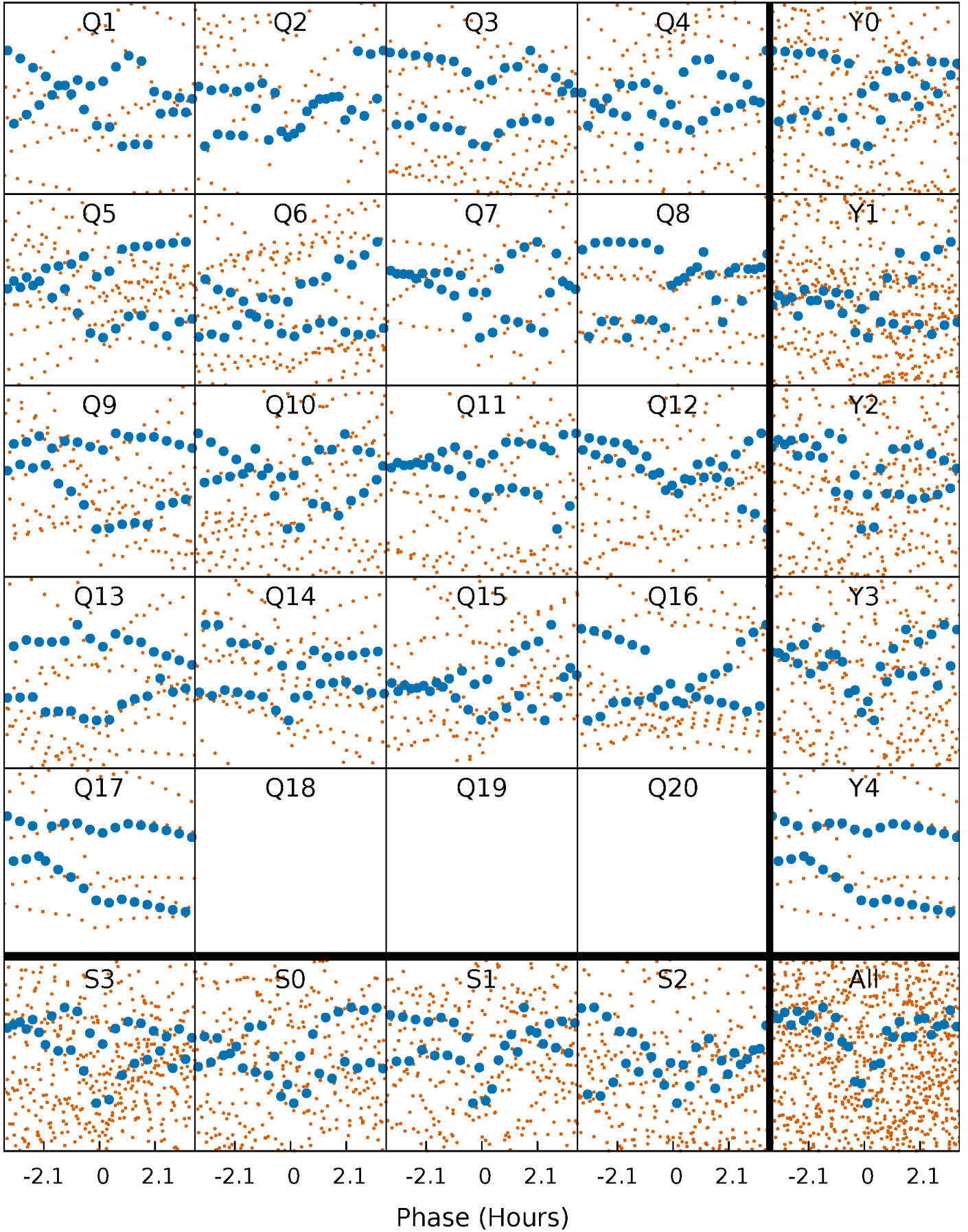


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



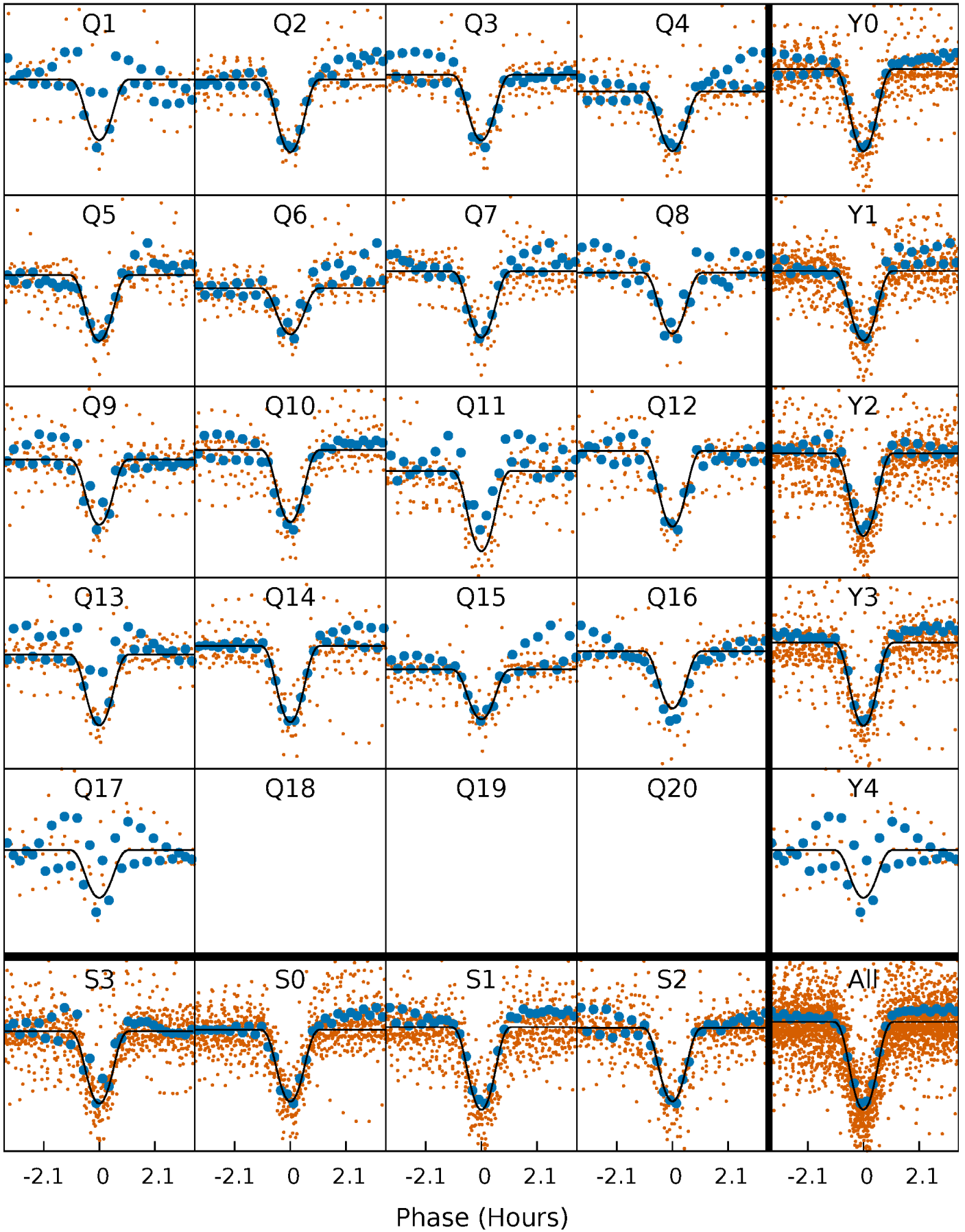
PDC Quarter-Phased Transit Curves

TCE 002696703-01 P= 6.094054 Days $T_0=133.660375$ (BKJD)



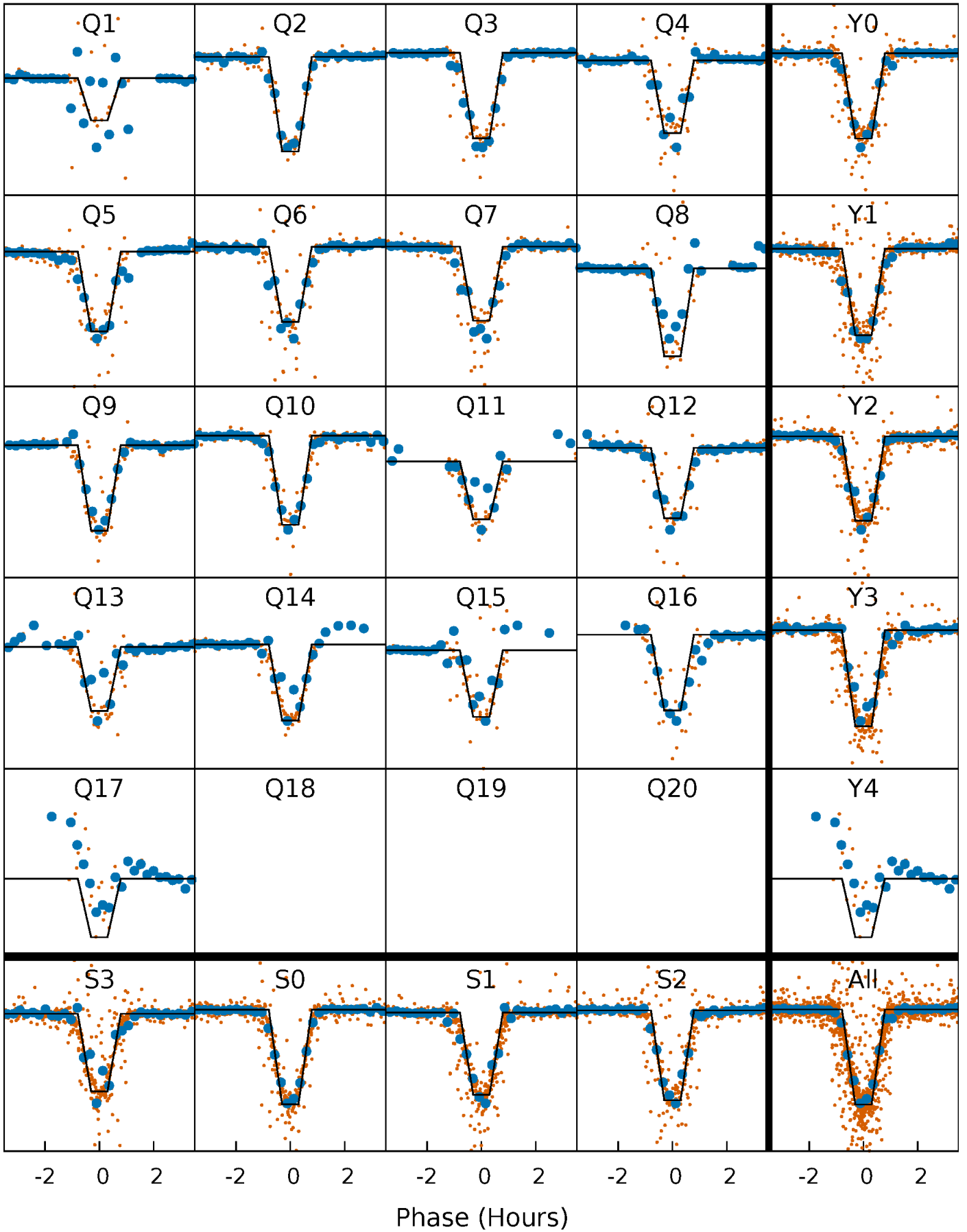
DV Quarter-Phased Transit Curves

TCE 002696703-01 P= 6.094054 Days $T_0=133.660375$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

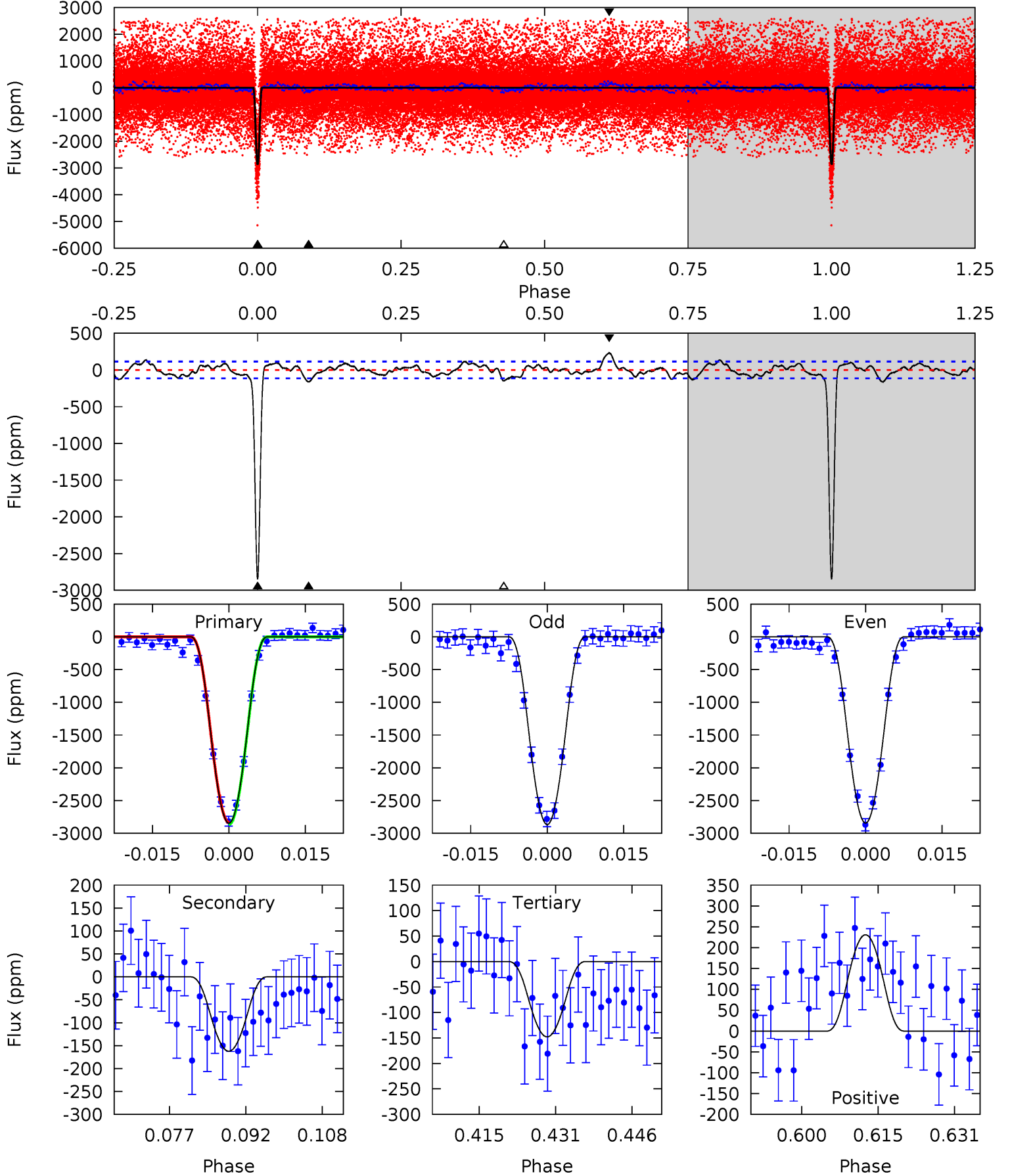
TCE 002696703-01 P= 6.094042 Days $T_0=133.661523$ (BKJD)



DV Model-Shift Uniqueness Test

002696703-01, P = 6.094054 Days, E = 127.566321 Days

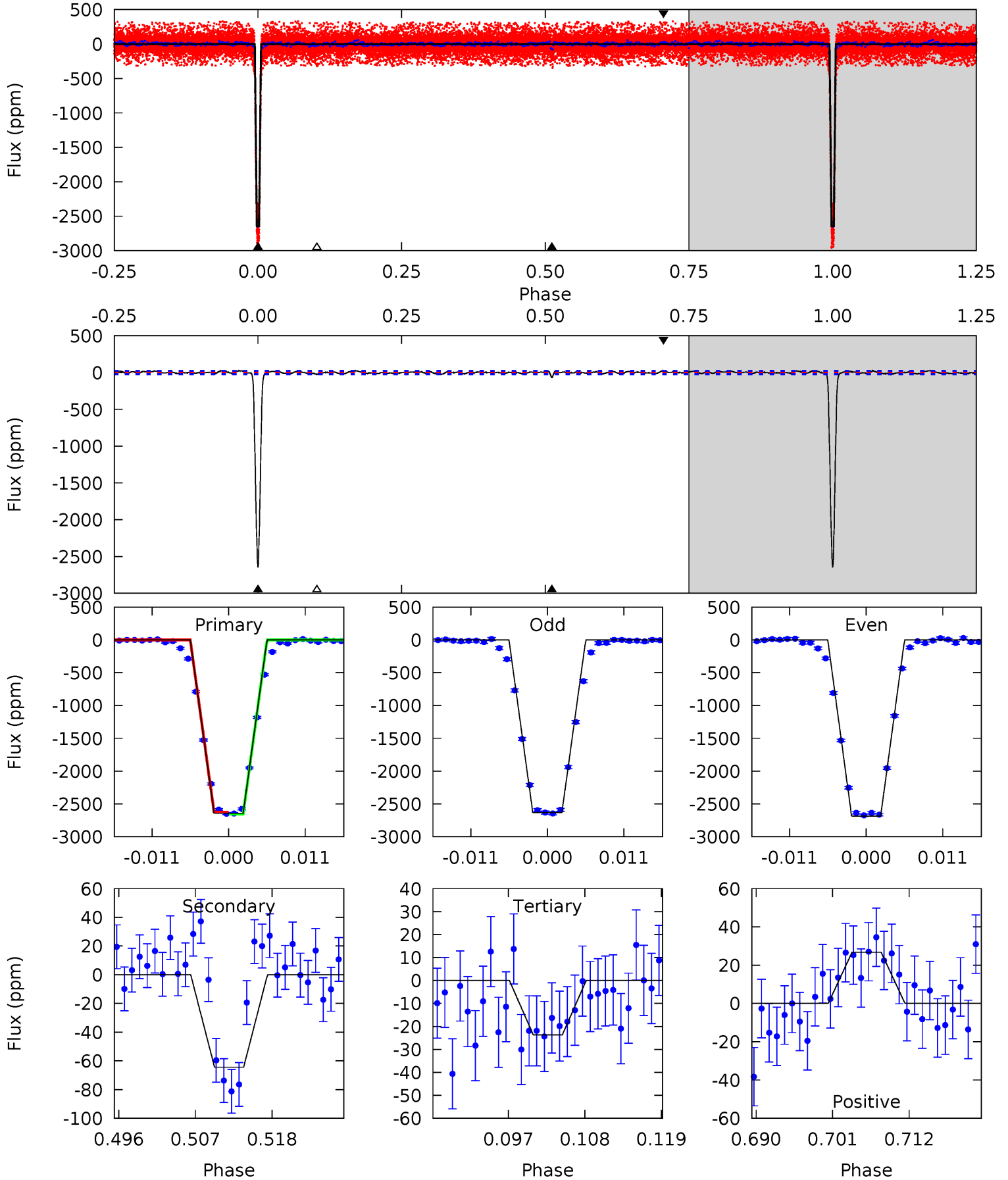
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
123.3	7.03	6.41	10.0	4.94	2.42	2.77	116.9	113.3	0.62	-2.98	0.52	0.91	0.08	0.69



Alt Model-Shift Uniqueness Test

002696703-01, P = 6.094042 Days, E = 127.567481 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
576.5	14.0	5.16	5.84	5.01	2.55	1.98	571.4	570.7	8.88	8.21	5.78	0.99	0.01	3.47



Stellar Parameters For KIC 002696703

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6785^{+185}_{-278}	$4.162^{+0.128}_{-0.192}$	$0.180^{+0.200}_{-0.350}$	$1.666^{+0.522}_{-0.304}$	$1.470^{+0.197}_{-0.241}$	$0.448^{+0.285}_{-0.235}$
	+3%/-4%	+3%/-5%	+111%/-194%	+31%/-18%	+13%/-16%	+64%/-53%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 002696703-01 / KOI 3161.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-162 ± 23	$16.37^{+2.85}_{-2.36}$	1986^{+163}_{-121}	3069^{+154}_{-138}	$1.823^{+0.654}_{-0.550}$
Alt.	-64 ± 5	$9.50^{+2.27}_{-1.86}$	1994^{+144}_{-134}	3150^{+219}_{-174}	$2.112^{+1.183}_{-0.741}$

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 $A_{obs} \gg 1.0$

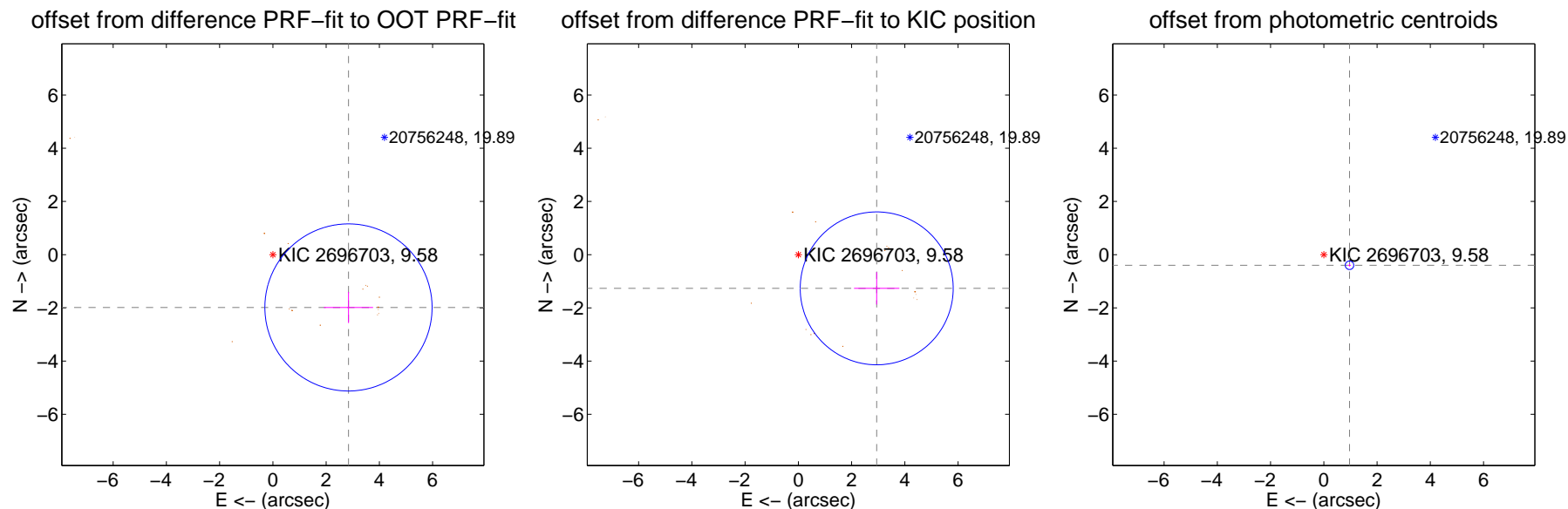
DV Centroid Data

Supplemental centroid analysis for 002696703-01. **Kepler magnitude: 9.58.** Transit SNR 271.91

There are 0 quarters with good PRF difference image offsets

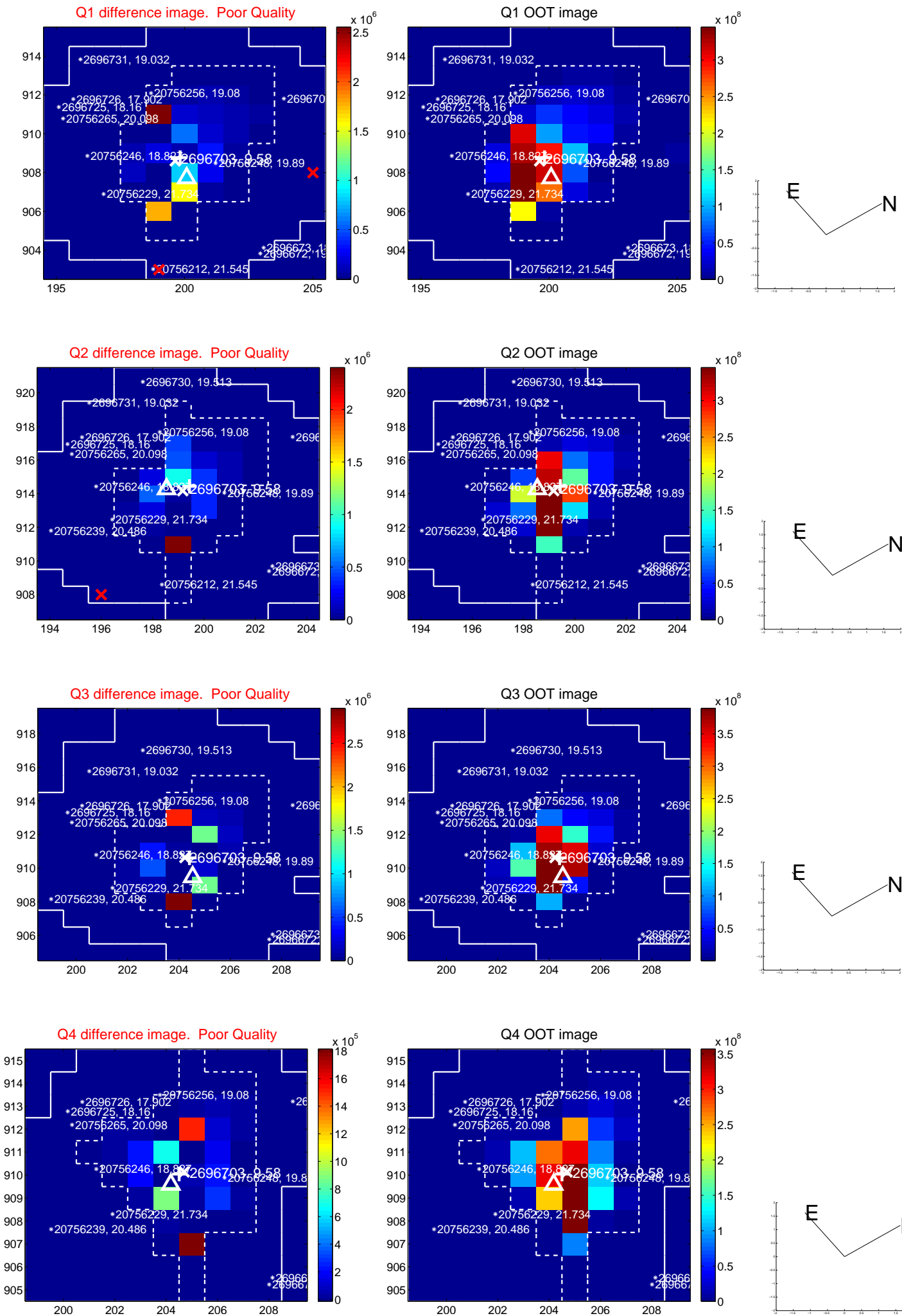
The direct PRF centroid is offset from the target star catalog position by about 0.70 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.464 ± 1.047	3.31	-2.839 ± 0.924	-1.984 ± 0.585
PRF-fit source offset from KIC position	3.204 ± 0.958	3.35	-2.943 ± 0.851	-1.266 ± 0.607
photometric centroid source offset	1.04 ± 0.05	19.60	-0.96 ± 0.05	-0.40 ± 0.04

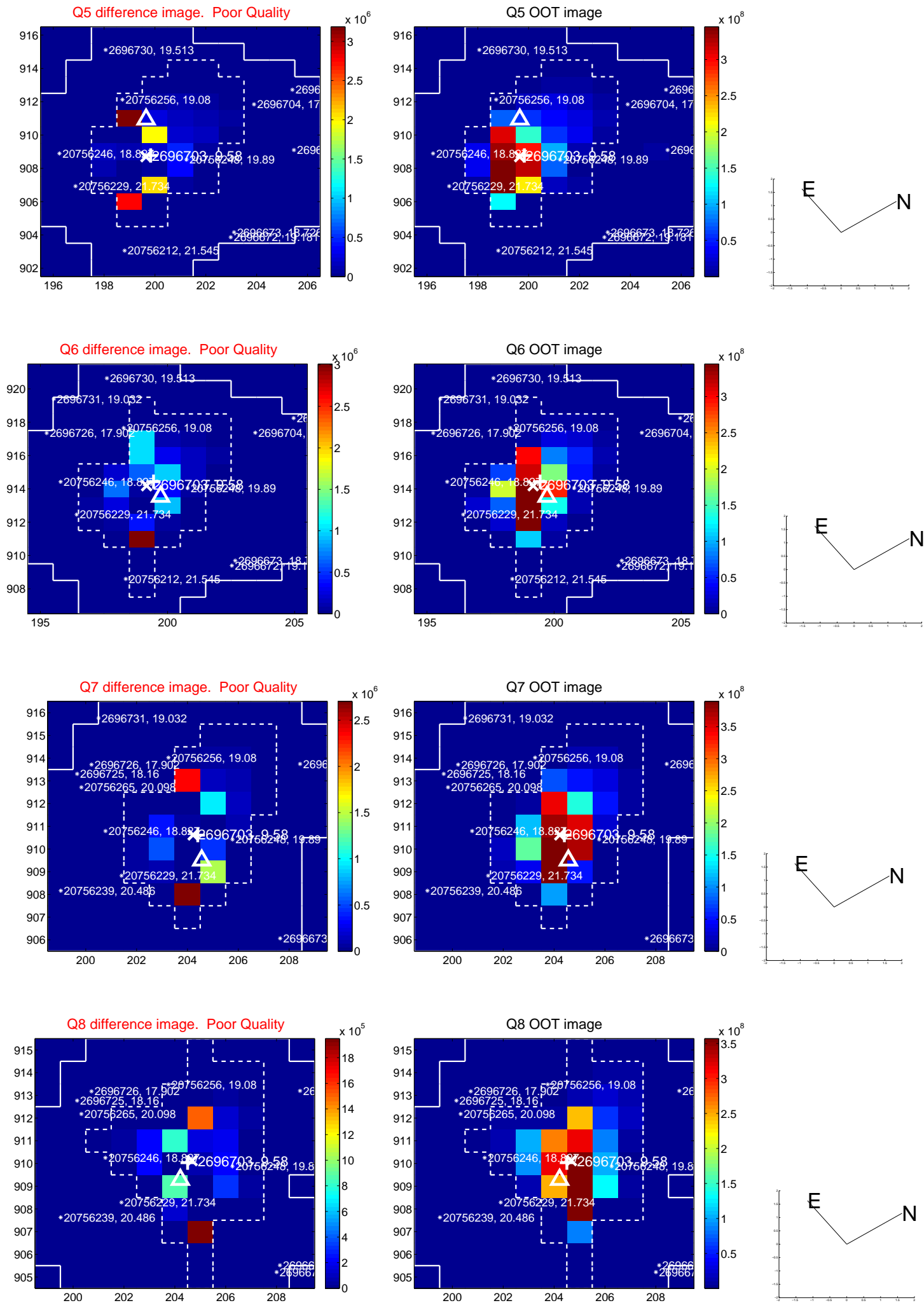


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

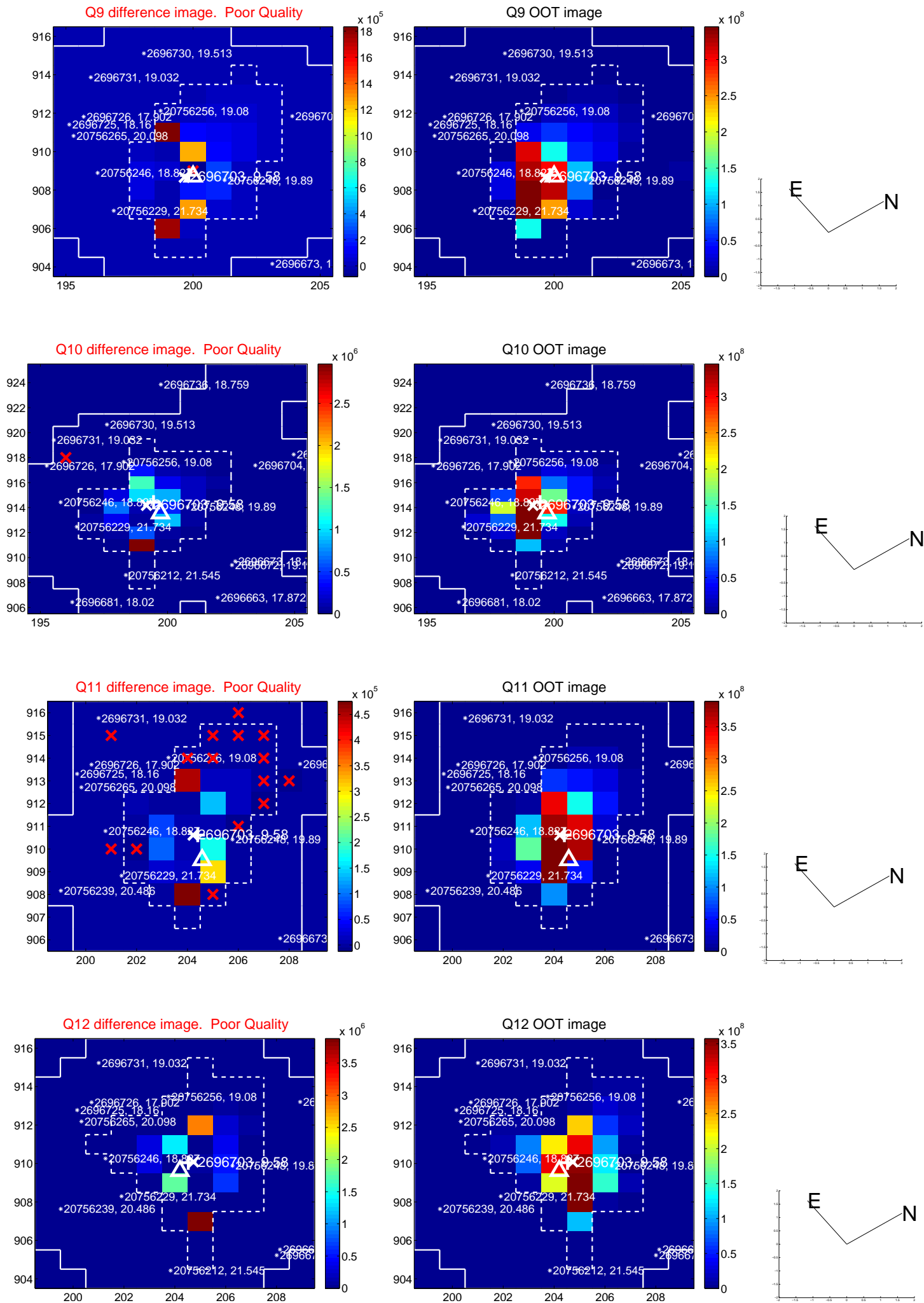
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



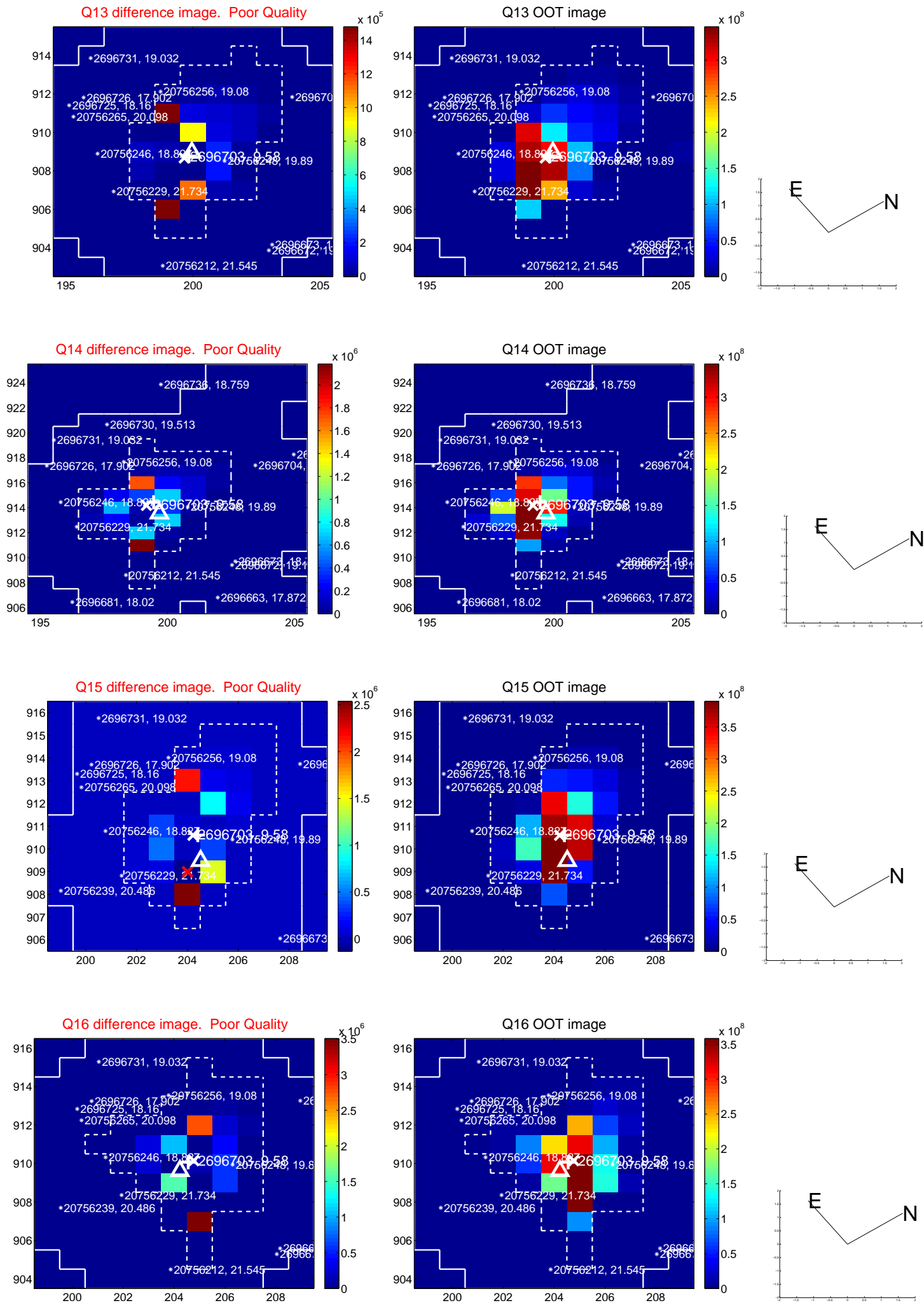
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



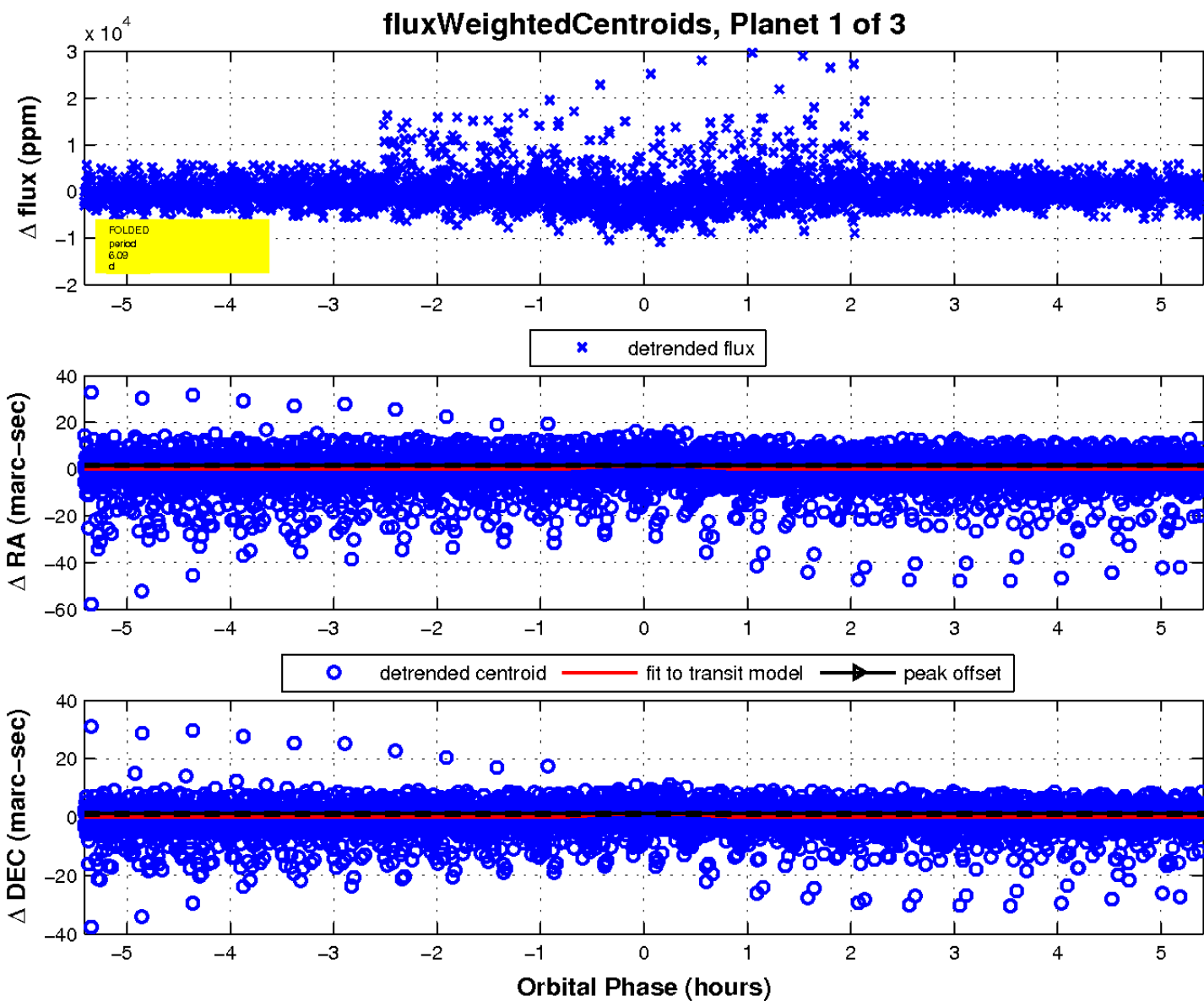
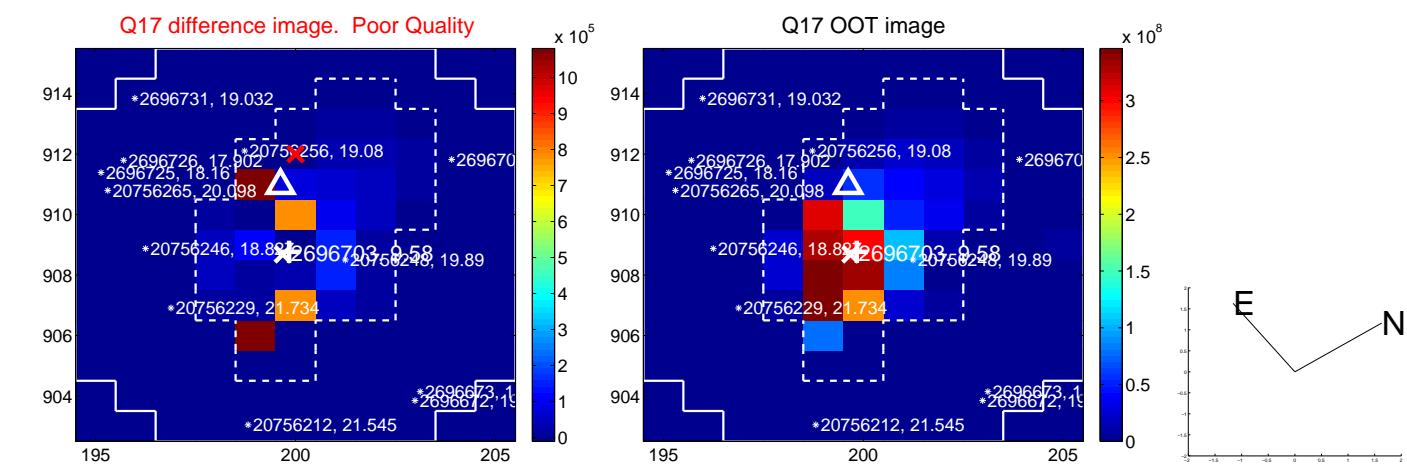
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

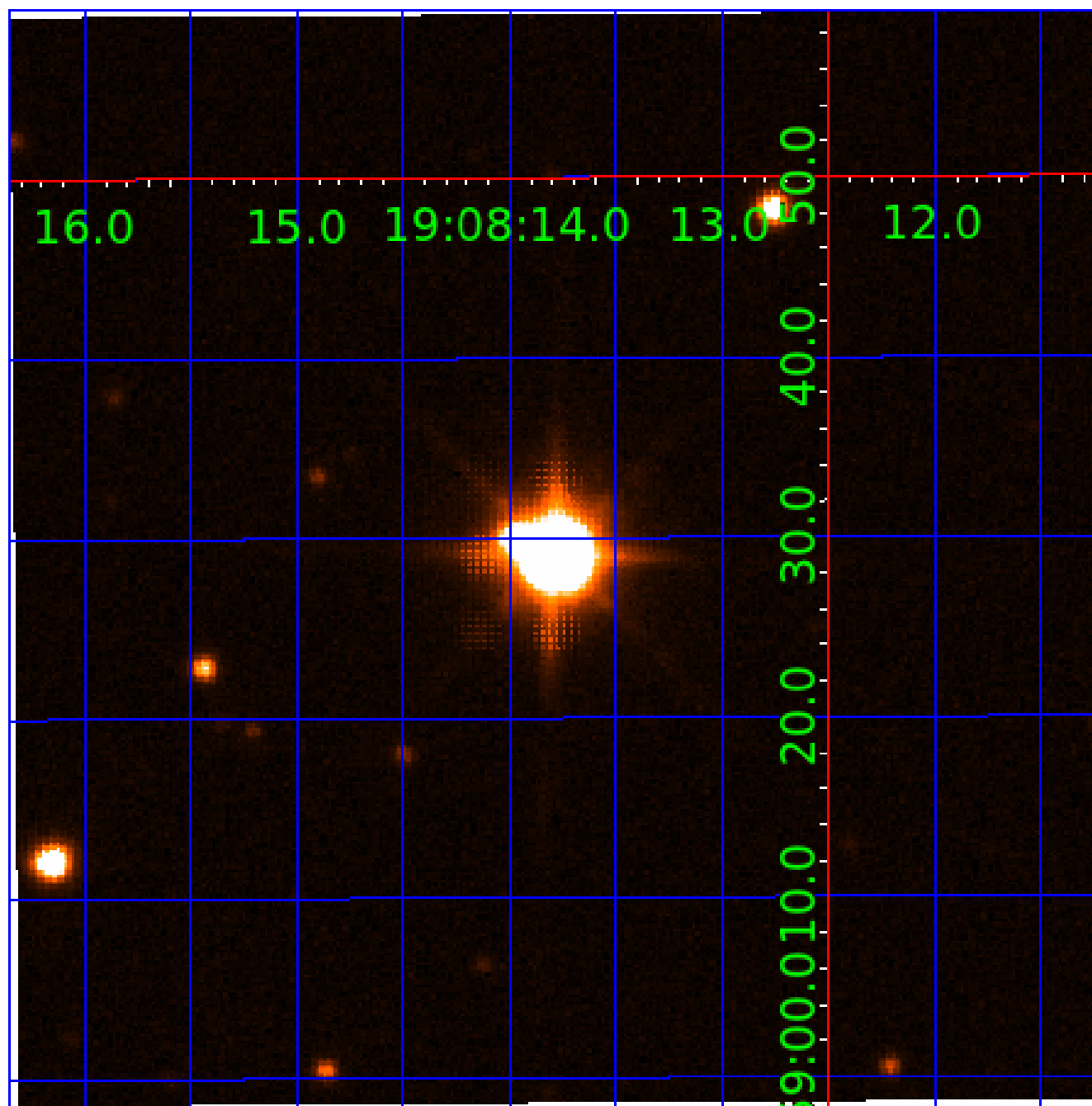


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002696703

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})
002696703-01	OBS	3161.01	6.094054	133.660375	2730.7	1.804	140.8	271.9	1.67	6785	16.16	955.73
002696703-02	OBS	No	557.983830	330.025683	4542.8	9.697	24.8	5.0	1.67	6785	20.18	2.32
002696703-03	OBS	No	419.290930	547.486050	633.2	9.414	29.1	2.3	1.67	6785	4.91	3.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002696703-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—CENT_SATURATED
002696703-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_SATURATED
002696703-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

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

Ephemeris Match Information For 002696703-02

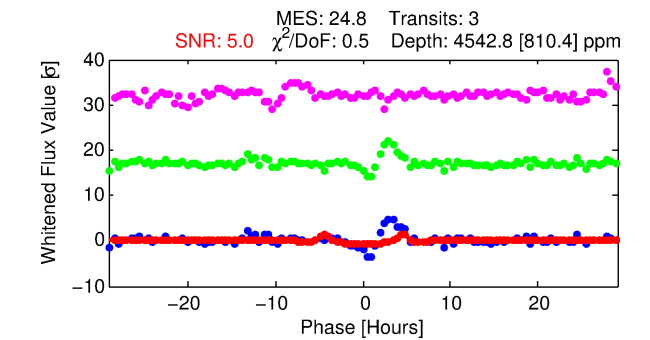
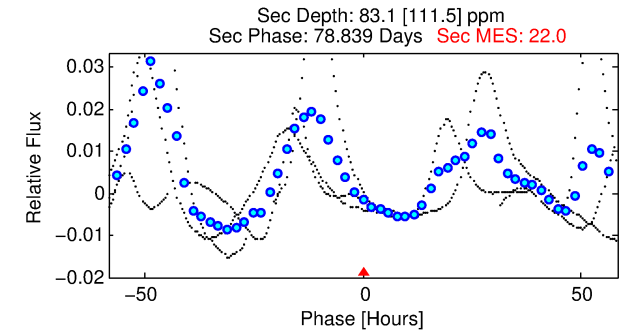
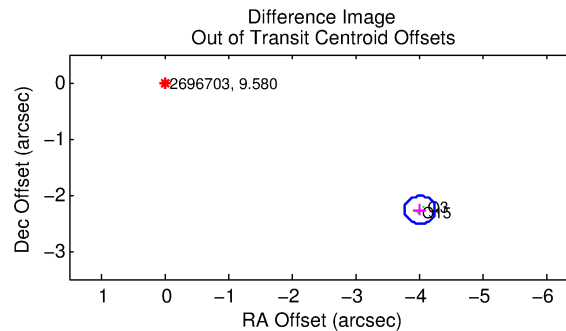
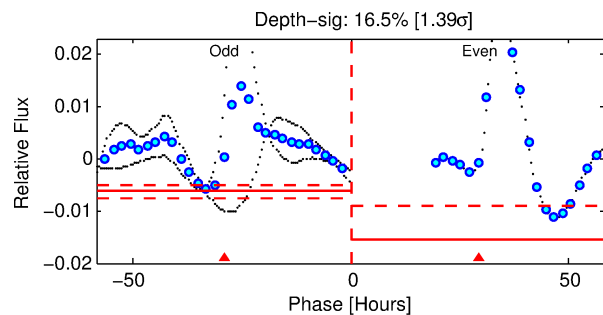
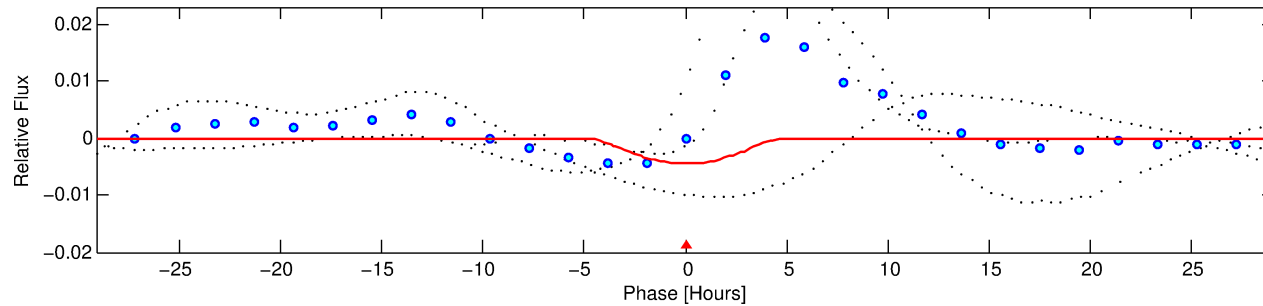
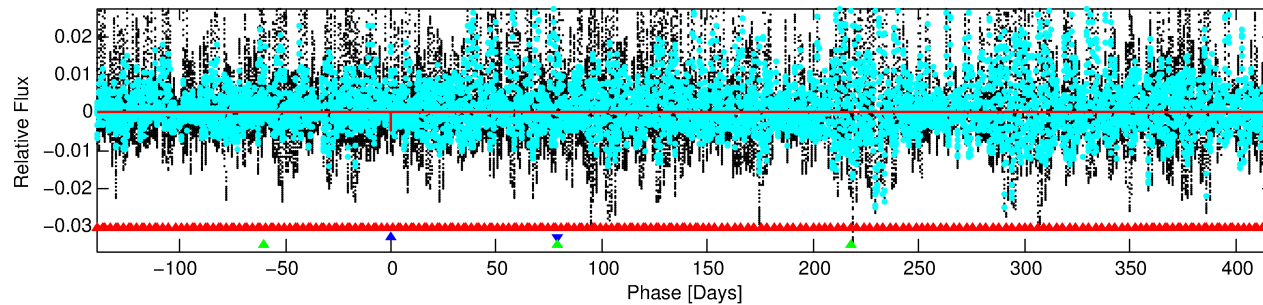
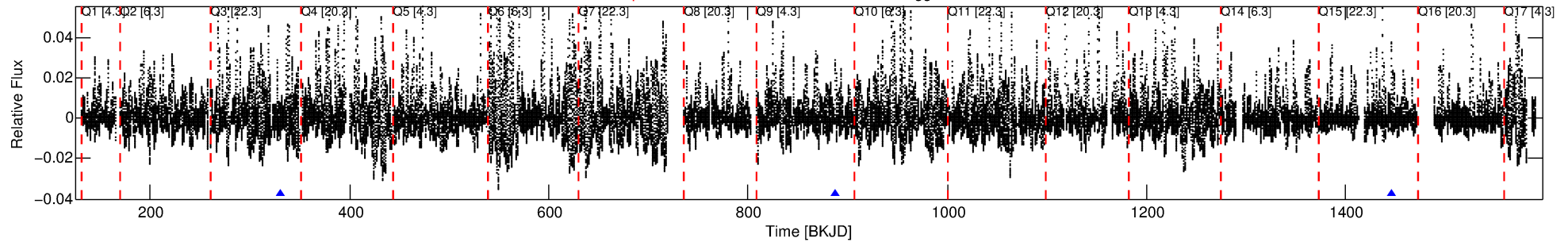
No Significant Match Found

DV One-Page Summary

KIC: 2696703 Candidate: 2 of 3 Period: 557.984 d

KOI: K03161 Corr: No Ephemeris Match

Kp: 9.58 R*: 1.67 Rs Teff: 6785.0 K Logg: 4.16 Fe/H: 0.180



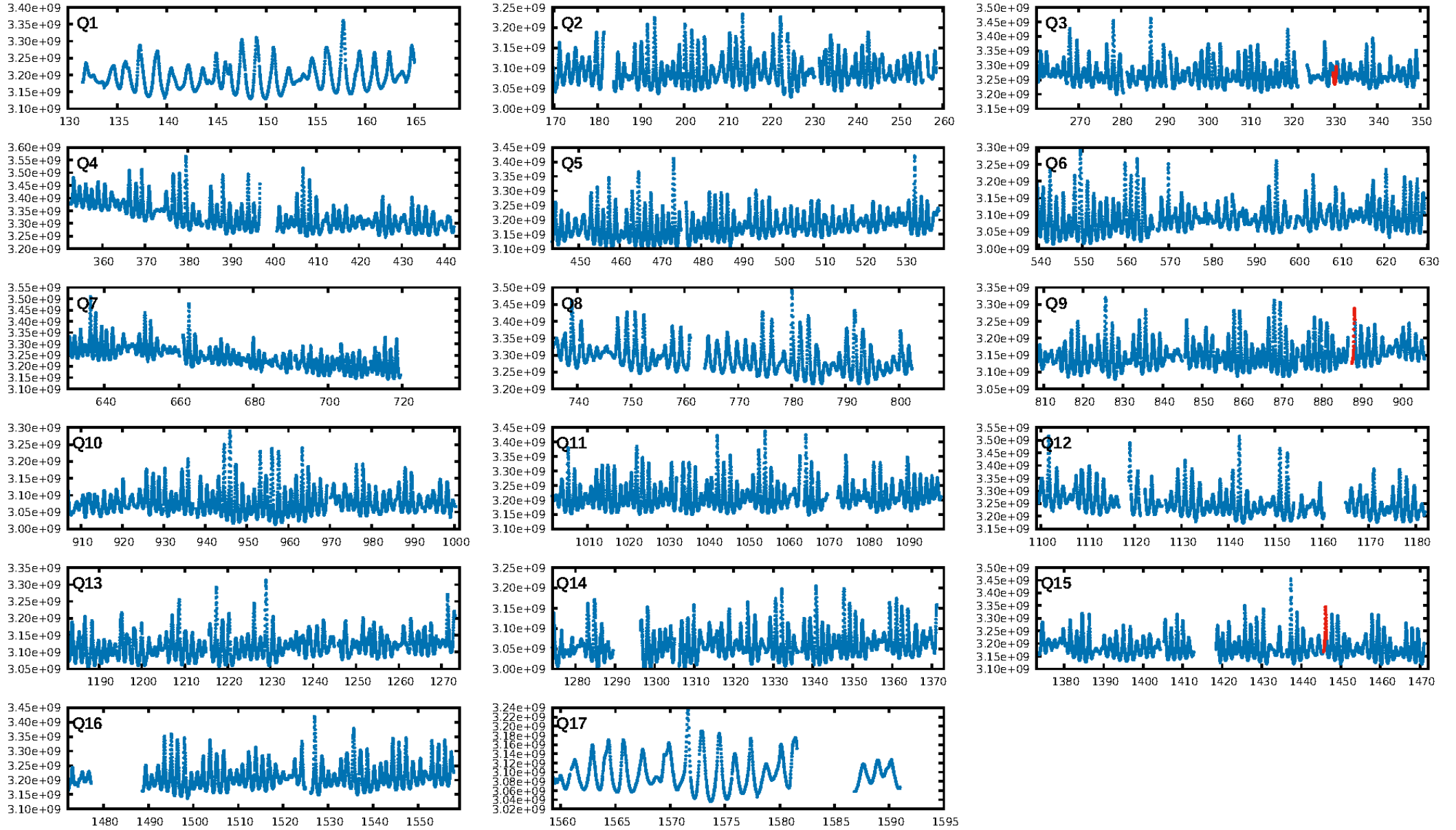
DV Fit Results:

Period = 557.98383 [0.00480] d
Epoch = 330.0257 [0.0058] BKJD
Rp/R* = 0.1110 [0.0841]
a/R* = 213.06 [25.01]
b = 1.00 [0.11]
Seff = 2.32 [0.92]
Teq = 315 [31] K
Rp = 20.18 [16.55] Re
a = 1.5086 [0.3856] AU
Ag = 255.49 [525.17] [0.48σ]
Teffp = 1944 [987] K [1.65σ]

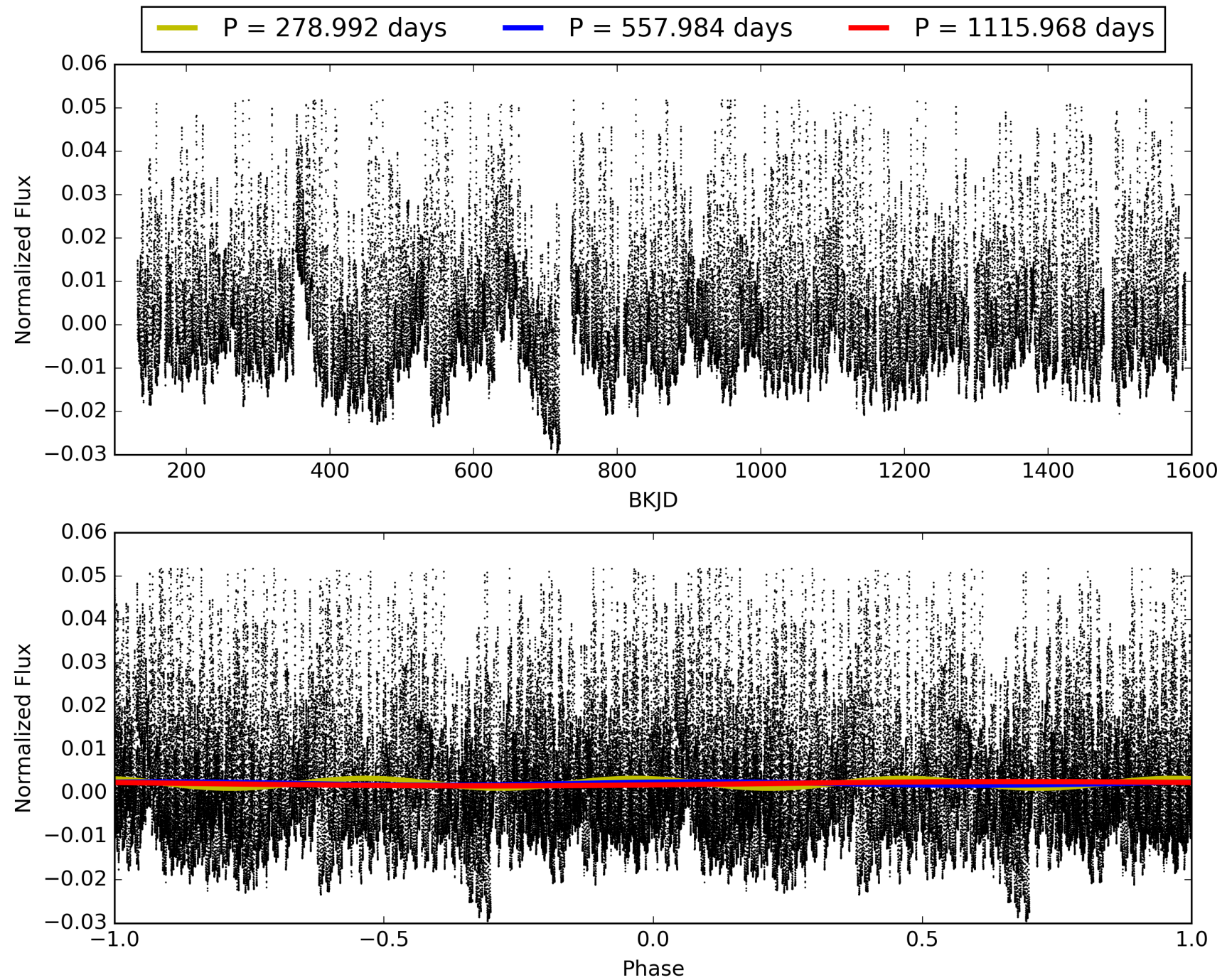
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [246.29σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.69e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: N/A
Centroid-sig: 61.2%
Centroid-so: 0.360 arcsec [0.88σ]
OotOffset-rm: 4.612 arcsec [56.15σ]
KicOffset-rm: 4.819 arcsec [45.38σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 002696703-02, PDC Light Curves

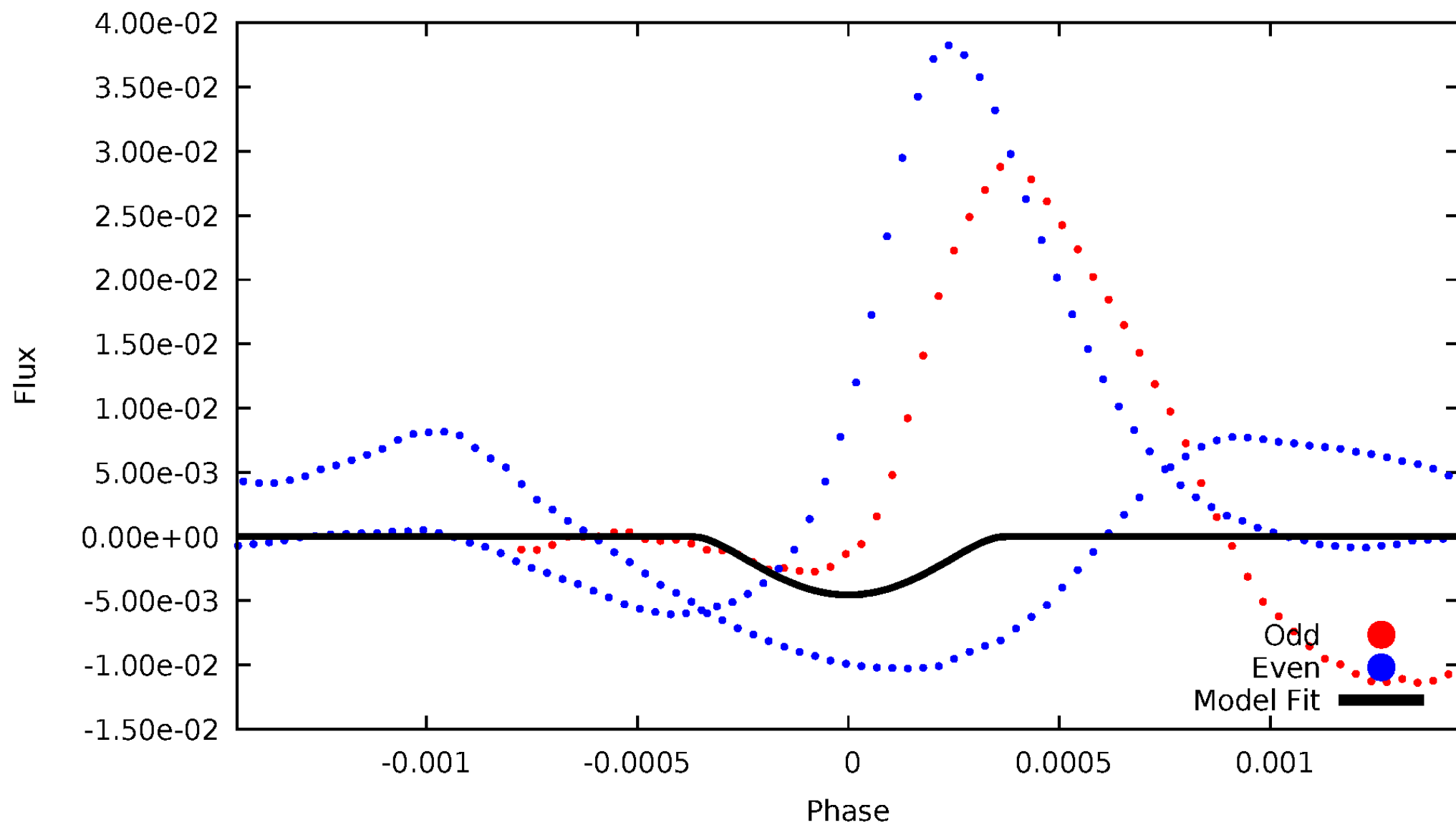


TCE 002696703-02



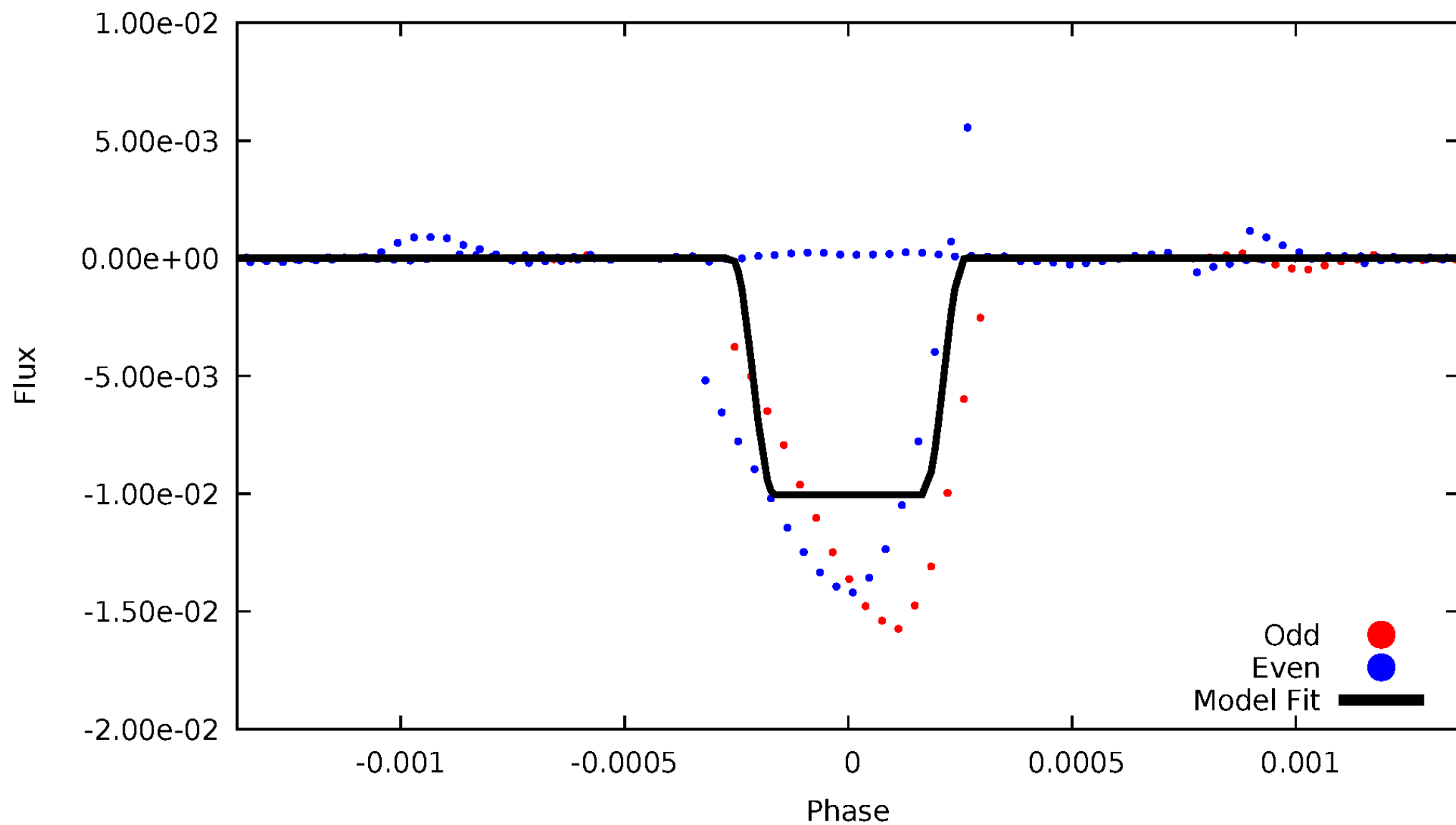
DV Odd/Even

TCE 002696703-02



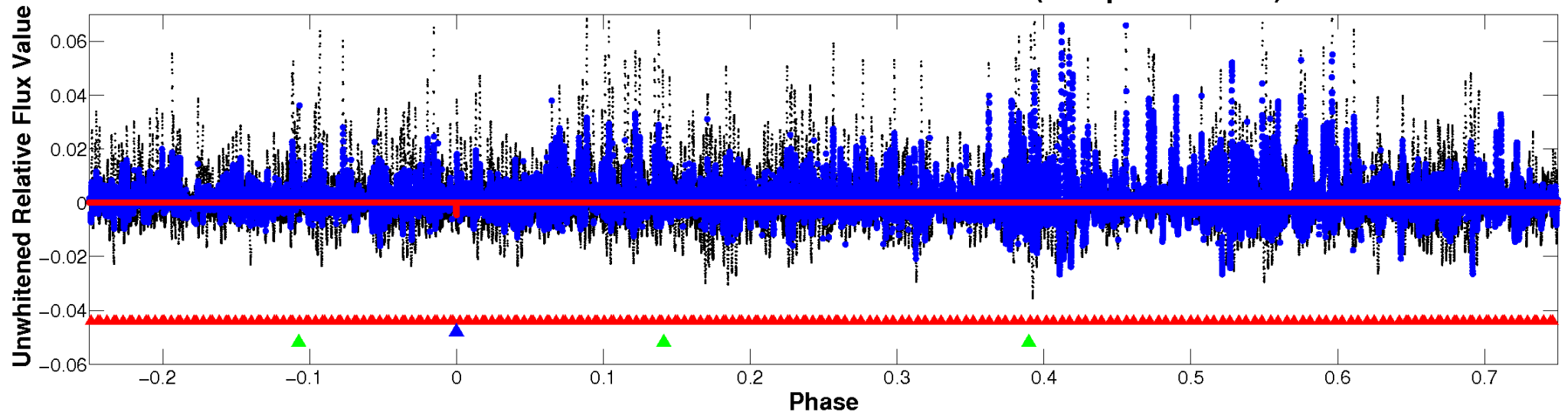
ALT Odd/Even

TCE 002696703-02

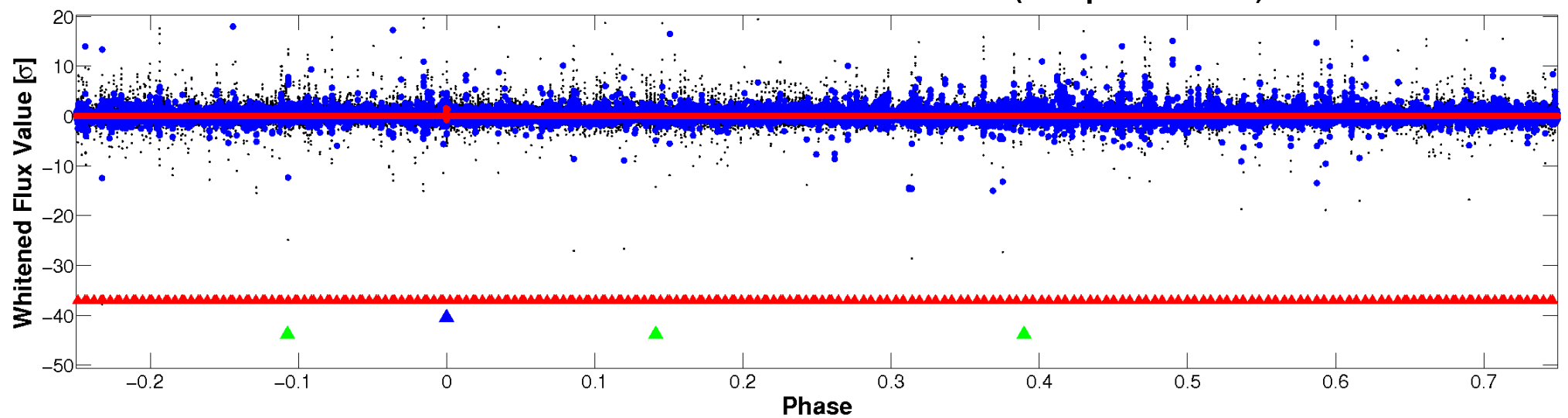


Non-Whitened Vs. Whitened Light Curve

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

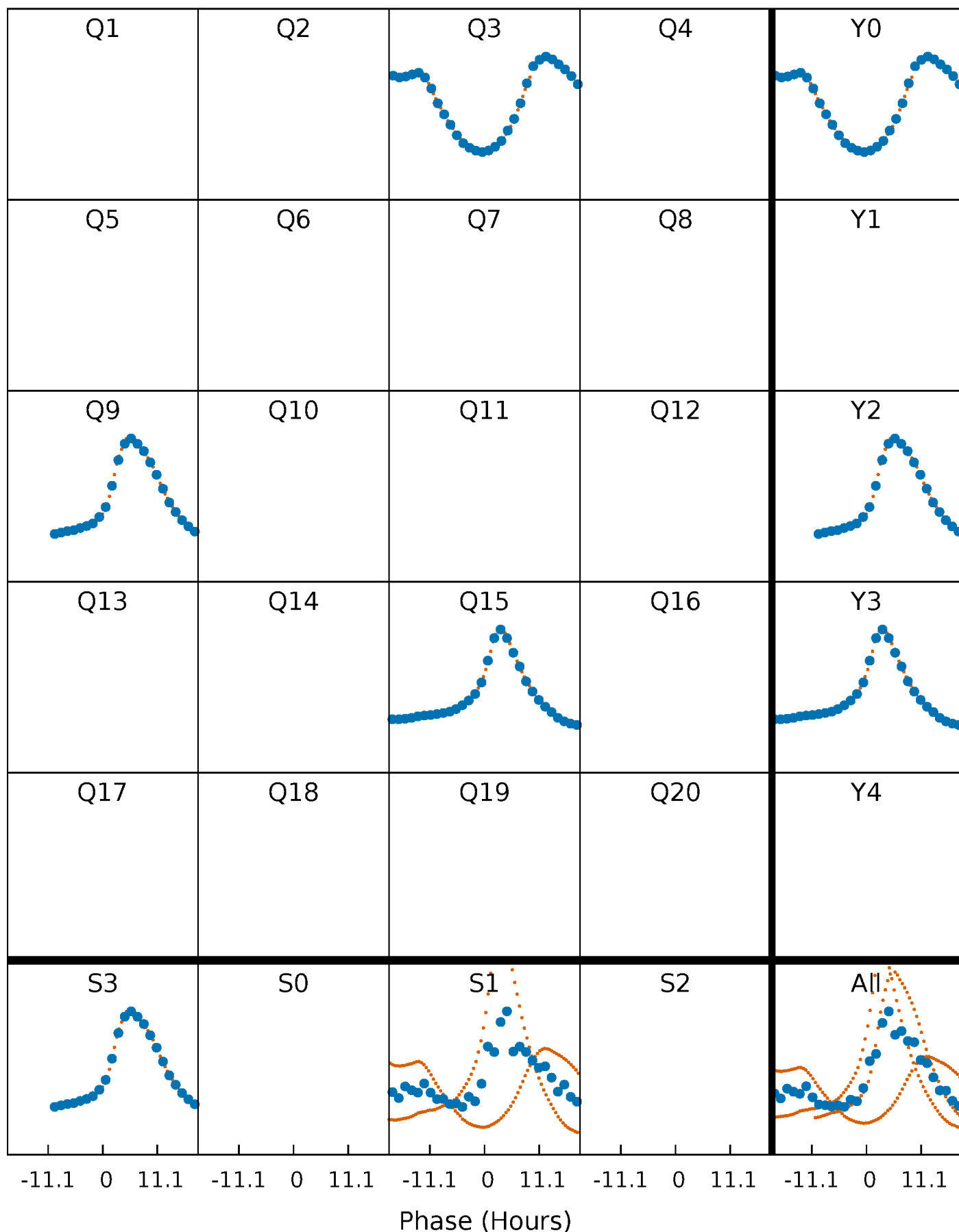


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



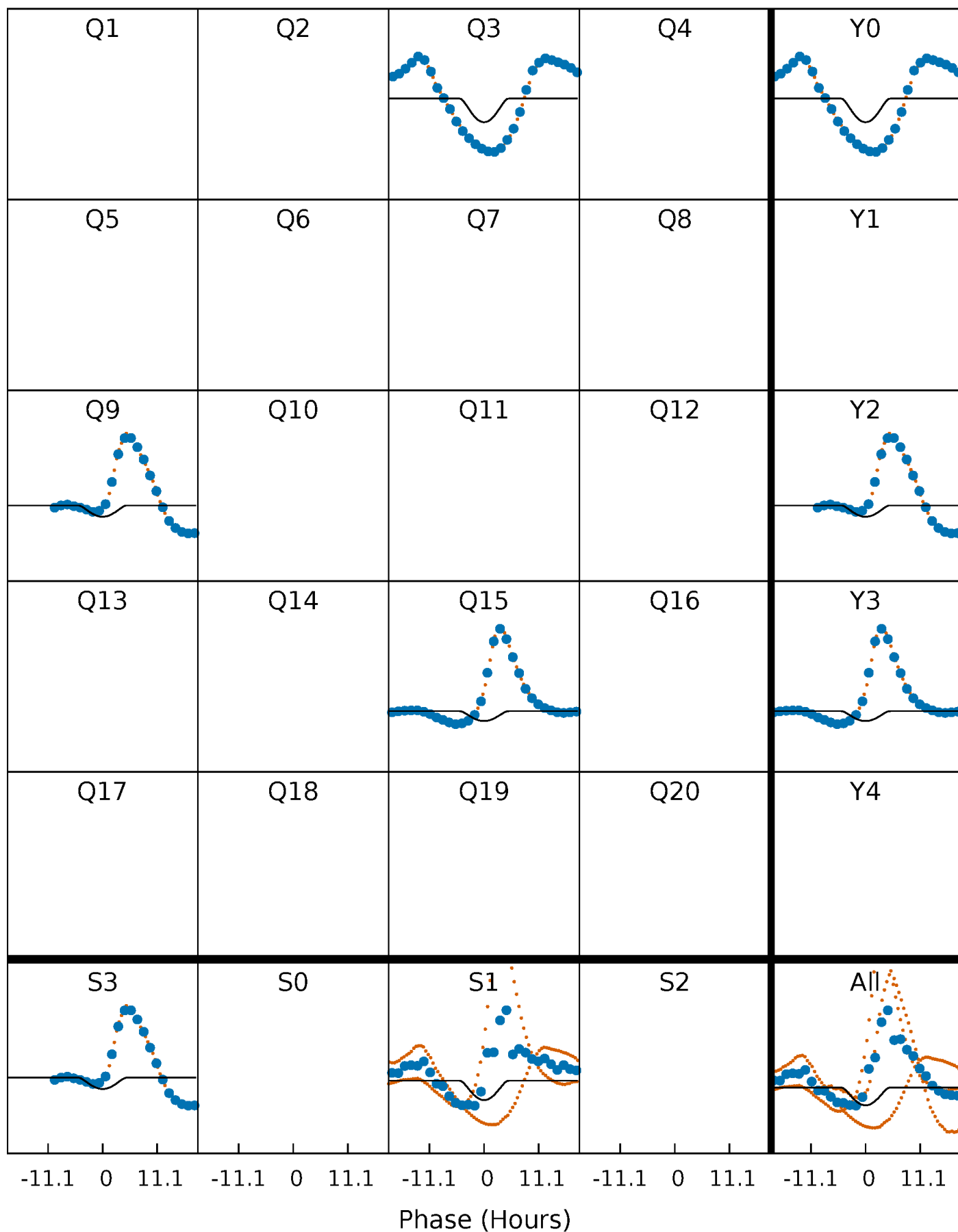
PDC Quarter-Phased Transit Curves

TCE 002696703-02 P=557.983830 Days $T_0=330.025683$ (BKJD)



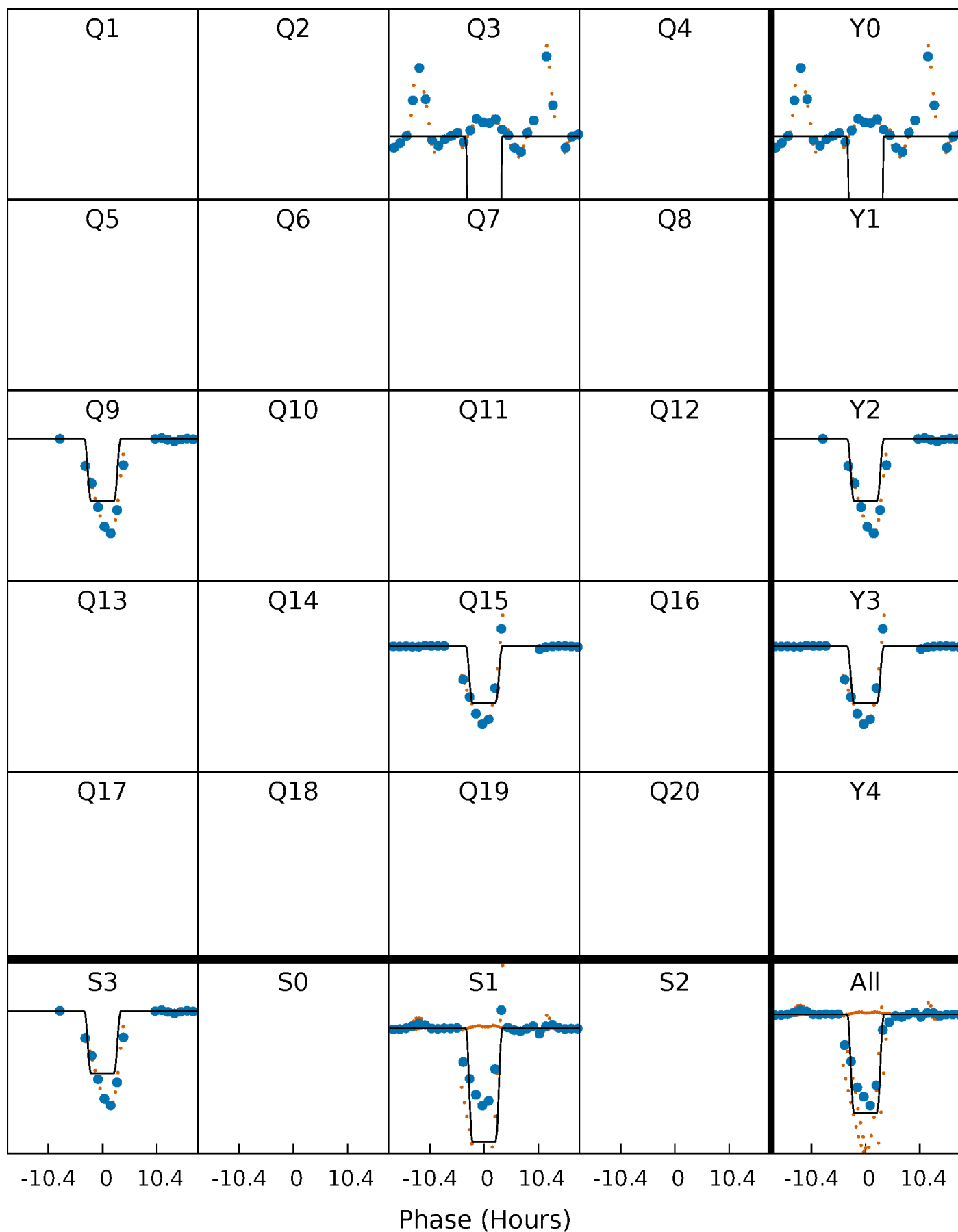
DV Quarter-Phased Transit Curves

TCE 002696703-02 $P=557.983830$ Days $T_0=330.025683$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

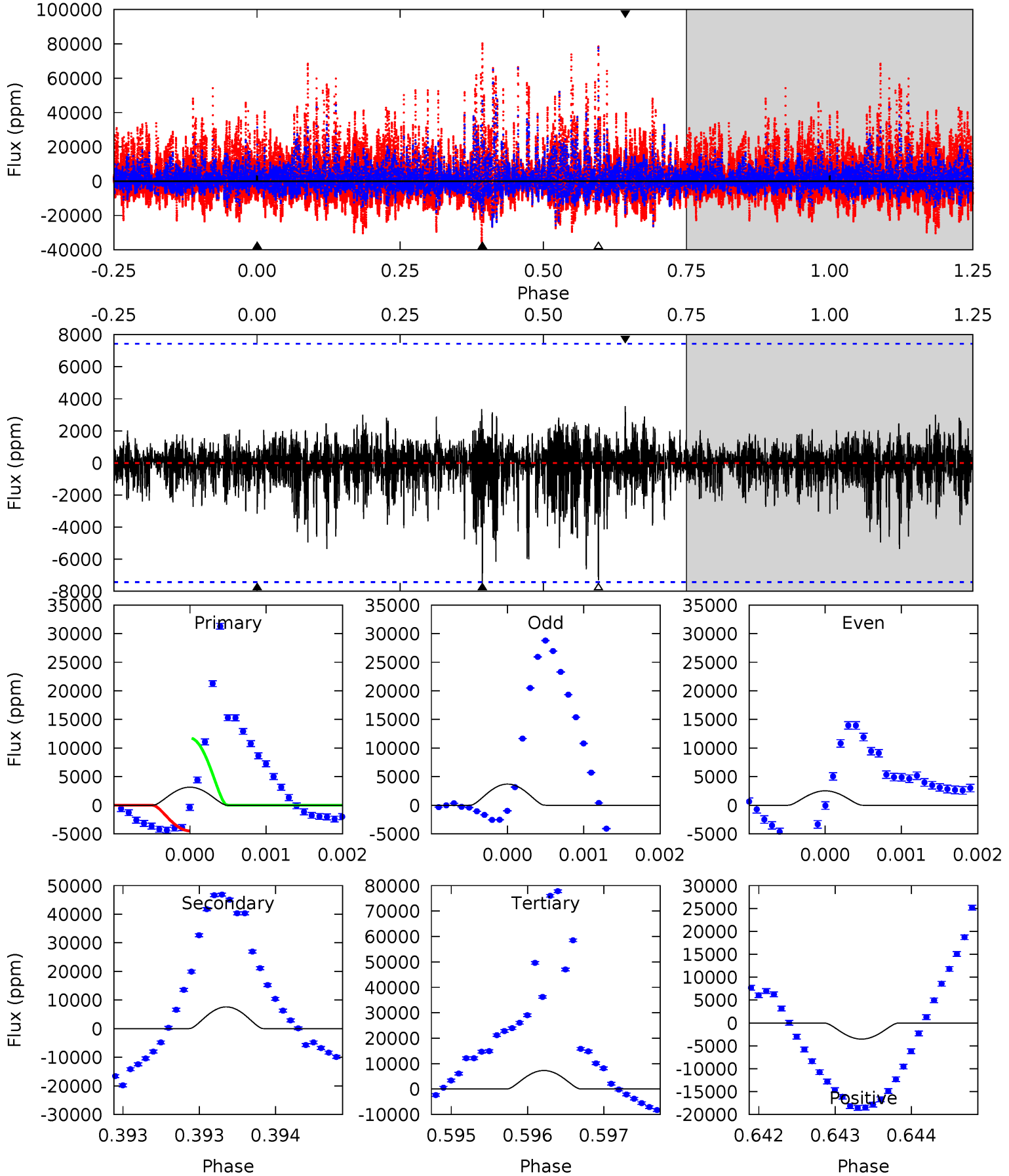
TCE 002696703-02 P=557.951978 Days $T_0=330.012270$ (BKJD)



DV Model-Shift Uniqueness Test

002696703-02, P = 557.983830 Days, E = 330.025683 Days

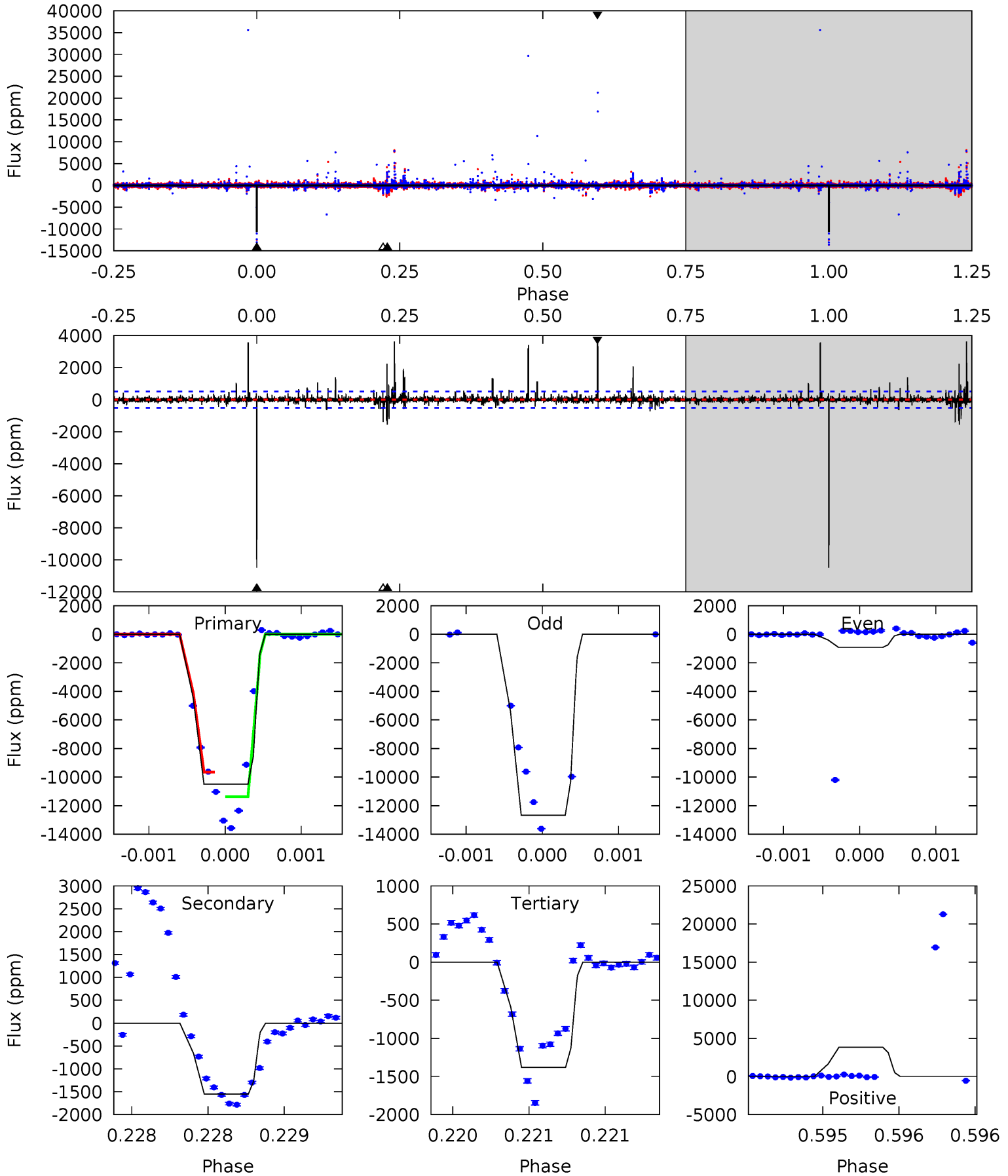
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.34	5.63	5.41	2.62	5.50	3.37	0.90	-3.07	-0.28	0.23	3.02	0.40	0.79	0.32	2.67



Alt Model-Shift Uniqueness Test

002696703-02, P = 557.951978 Days, E = 330.012270 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
115.0	17.0	15.1	41.9	5.57	3.47	1.57	99.8	73.0	1.89	-24.9	53.4	0.69	0.27	0



Stellar Parameters For KIC 002696703

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6785^{+185}_{-278}	$4.162^{+0.128}_{-0.192}$	$0.180^{+0.200}_{-0.350}$	$1.666^{+0.522}_{-0.304}$	$1.470^{+0.197}_{-0.241}$	$0.448^{+0.285}_{-0.235}$
	+3%/-4%	+3%/-5%	+111%/-194%	+31%/-18%	+13%/-16%	+64%/-53%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 002696703-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-7613 \pm 1351	$23.18^{+13.66}_{-13.02}$	440^{+33}_{-28}	5634^{+3614}_{-1022}	18099^{+80512}_{-11405}
Alt.	-1553 \pm 91	$21.31^{+15.30}_{-12.77}$	441^{+34}_{-30}	4203^{+1815}_{-731}	4126^{+20585}_{-2675}

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 $A_{obs} \gg 1.0$

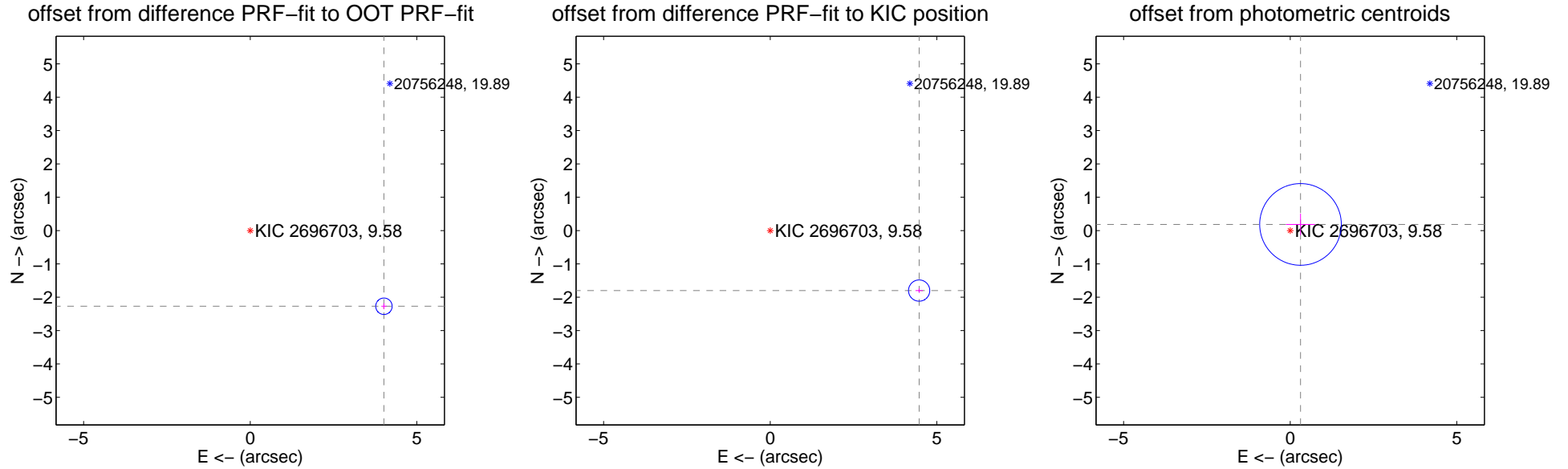
DV Centroid Data

Supplemental centroid analysis for 002696703-02. **Kepler magnitude: 9.58.** Transit SNR 4.95

There are 0 quarters with good PRF difference image offsets

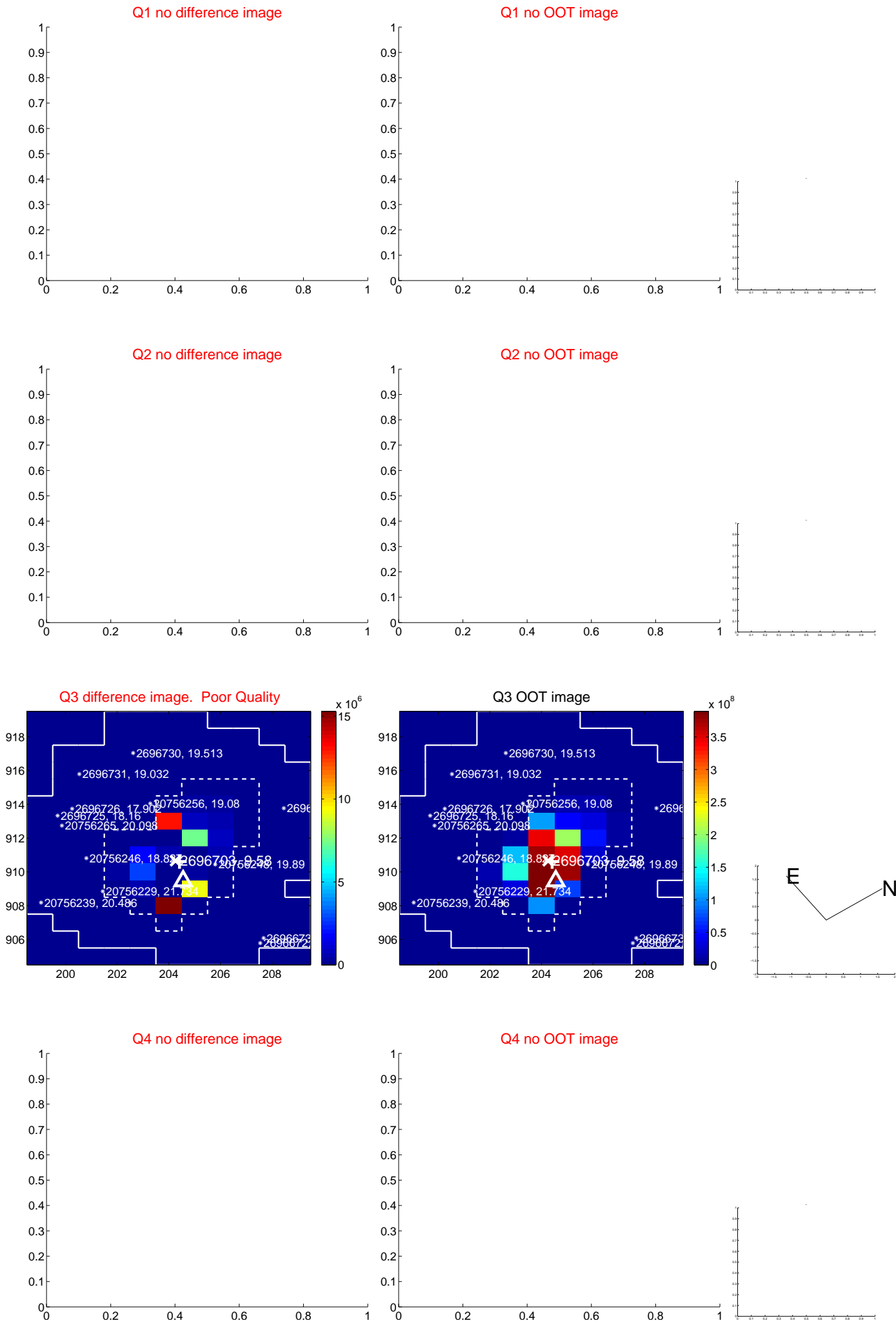
The direct PRF centroid is offset from the target star catalog position by about 0.67 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.612 \pm 0.082	56.15	-4.014 \pm 0.079	-2.270 \pm 0.090
PRF-fit source offset from KIC position	4.819 \pm 0.106	45.38	-4.471 \pm 0.111	-1.800 \pm 0.067
photometric centroid source offset	0.36 \pm 0.41	0.88	-0.31 \pm 0.43	0.18 \pm 0.32



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

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



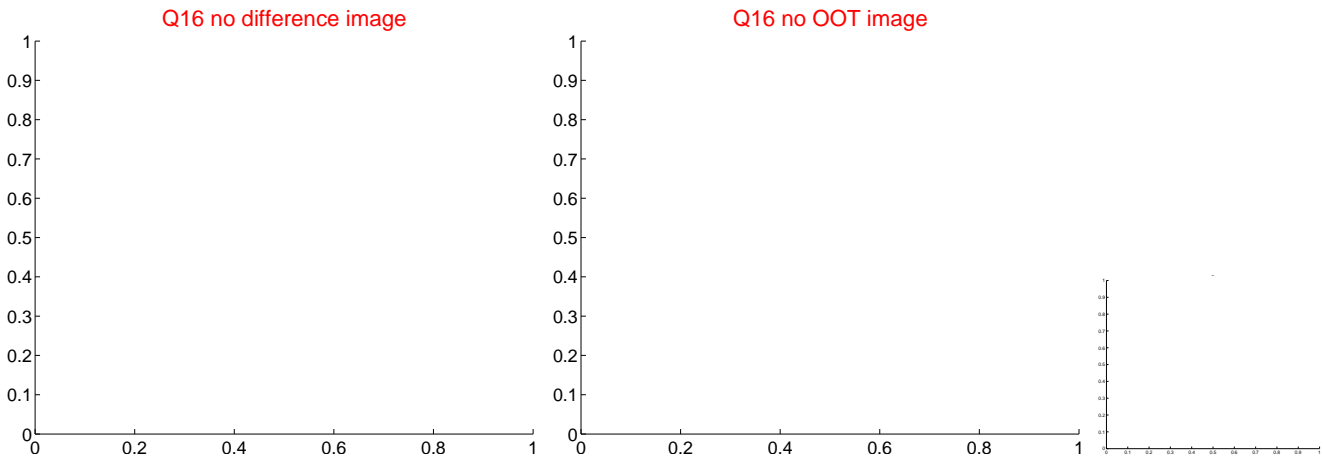
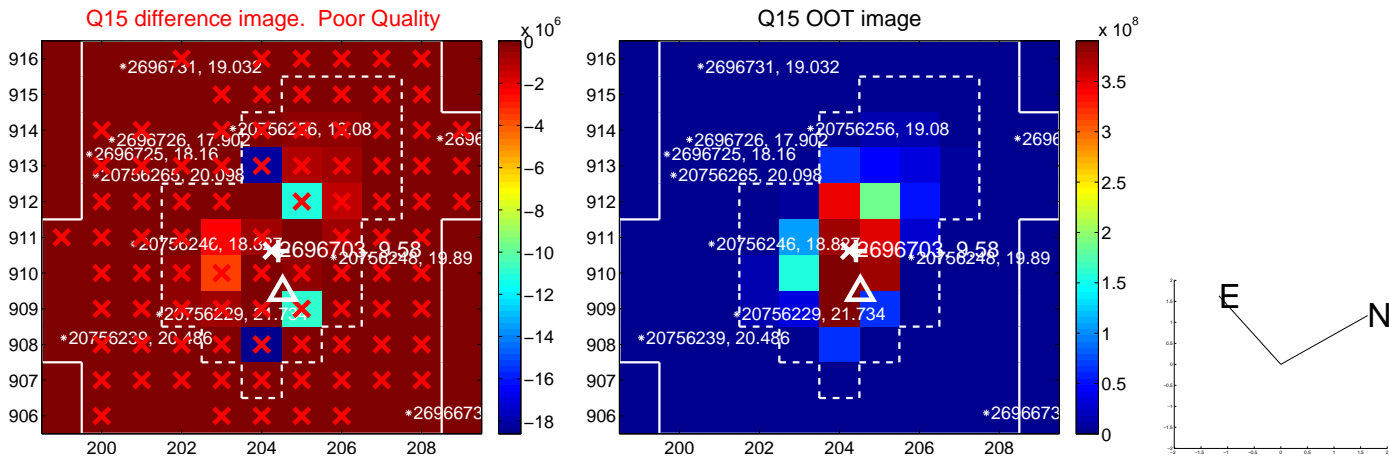
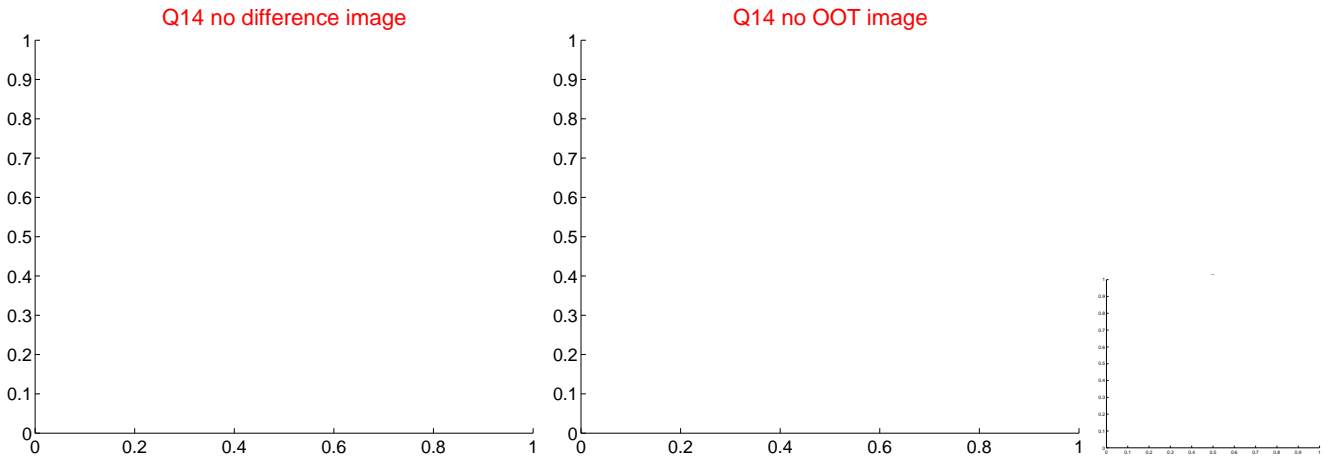
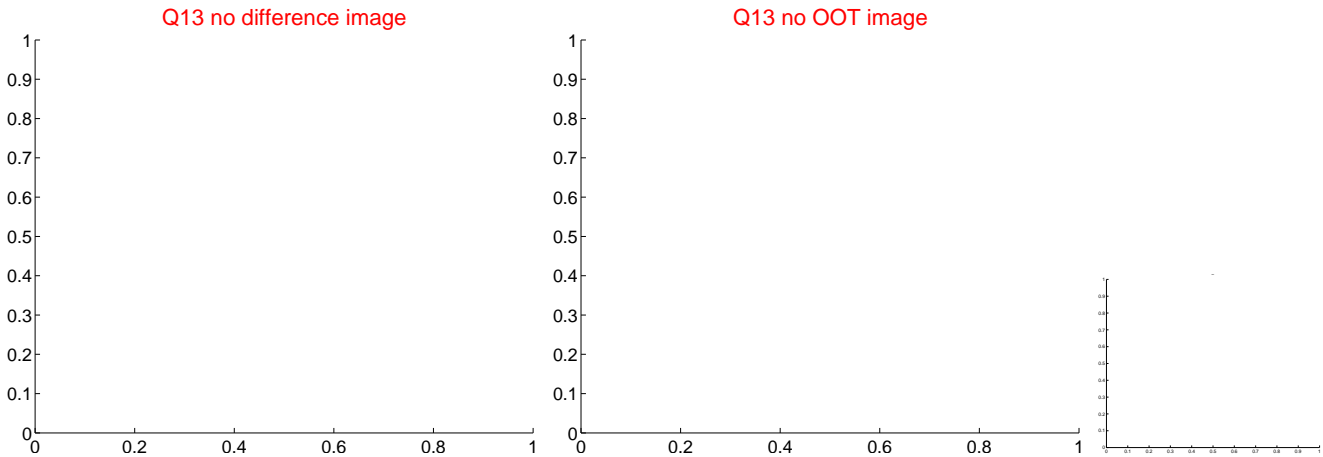
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



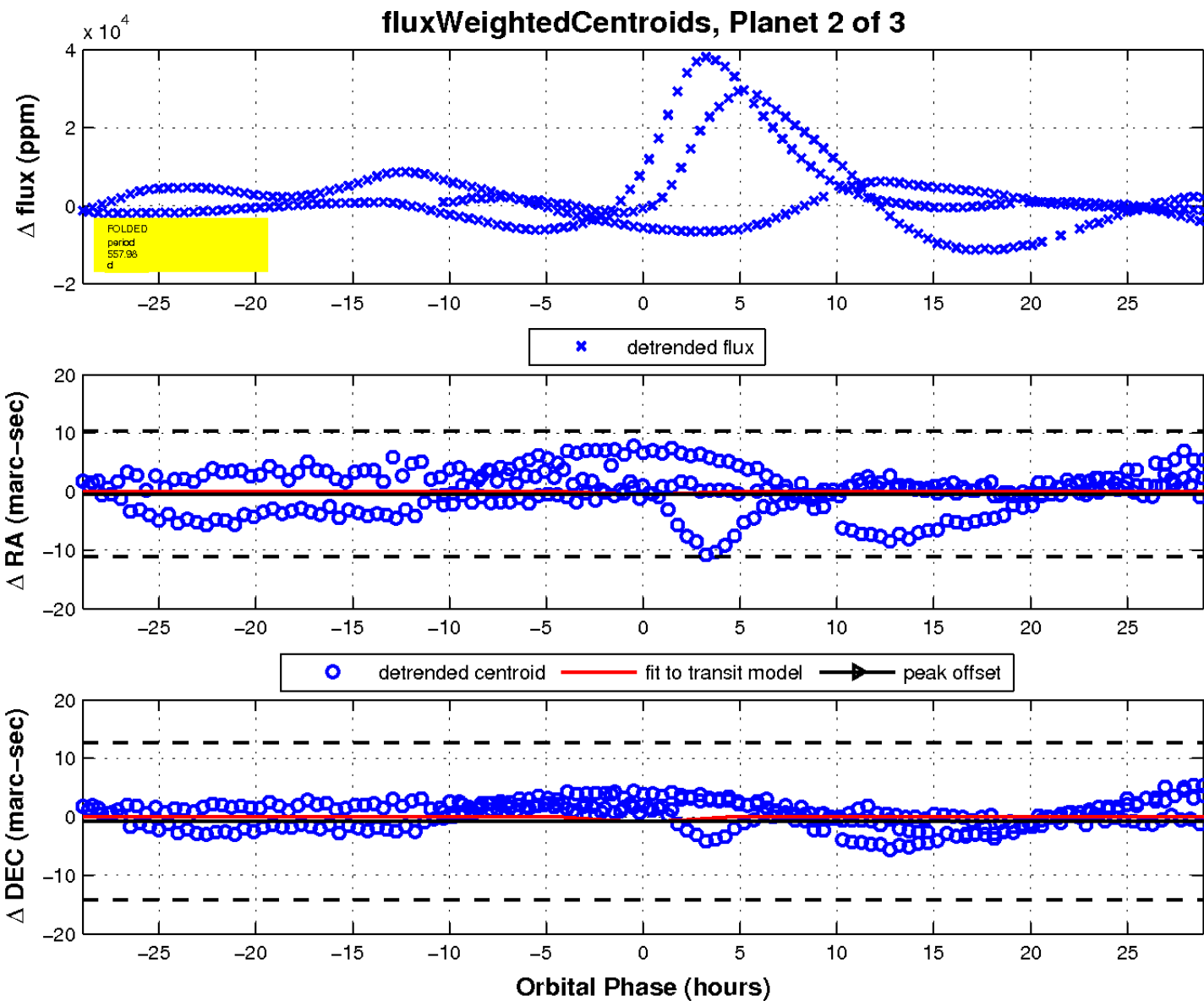
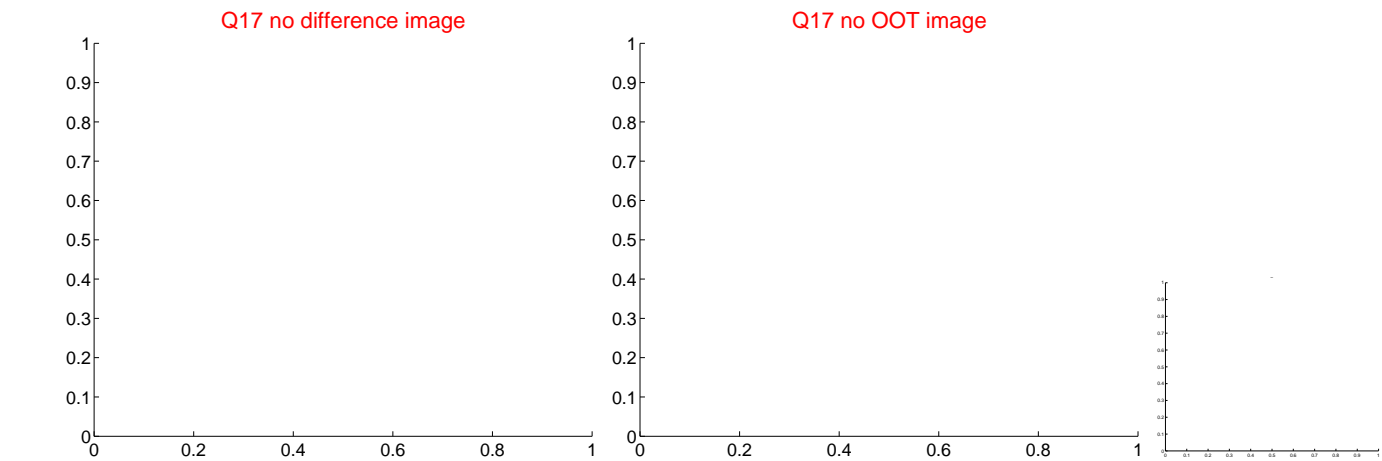
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

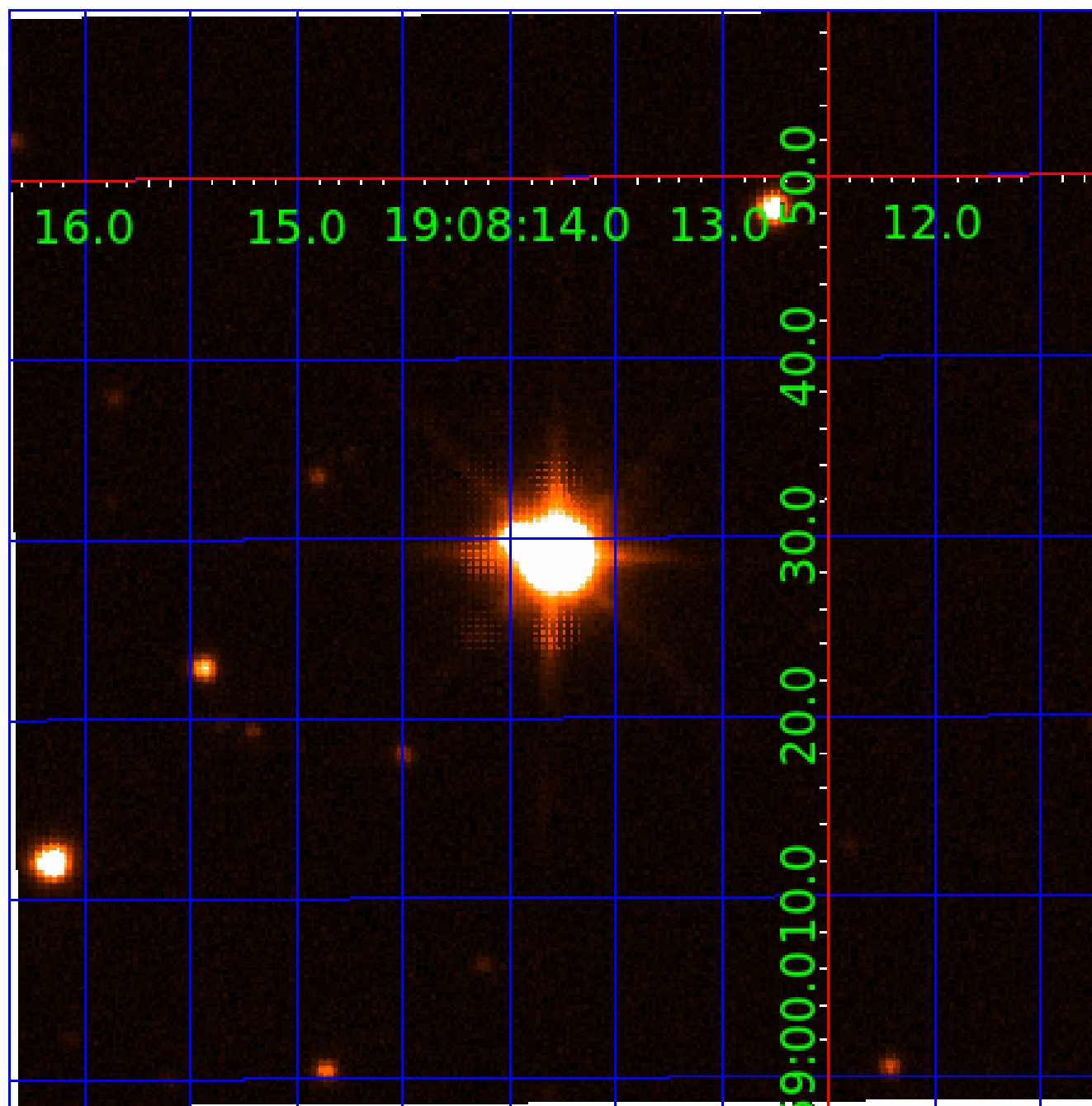


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002696703

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})
002696703-01	OBS	3161.01	6.094054	133.660375	2730.7	1.804	140.8	271.9	1.67	6785	16.16	955.73
002696703-02	OBS	No	557.983830	330.025683	4542.8	9.697	24.8	5.0	1.67	6785	20.18	2.32
002696703-03	OBS	No	419.290930	547.486050	633.2	9.414	29.1	2.3	1.67	6785	4.91	3.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002696703-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—CENT_SATURATED
002696703-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_SATURATED
002696703-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

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

Ephemeris Match Information For 002696703-03

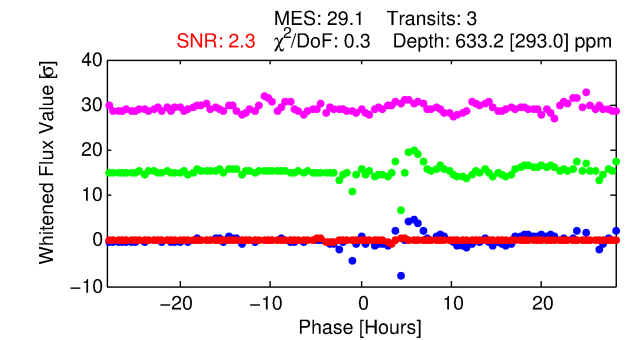
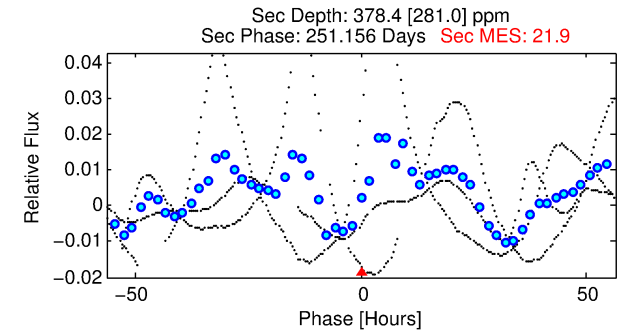
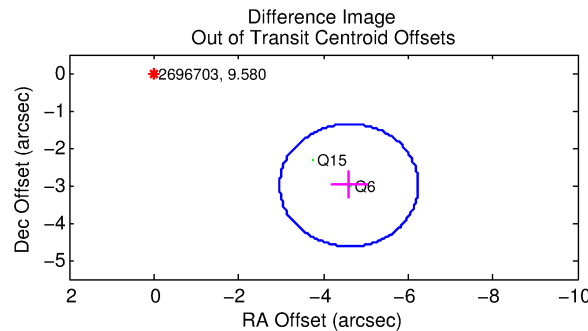
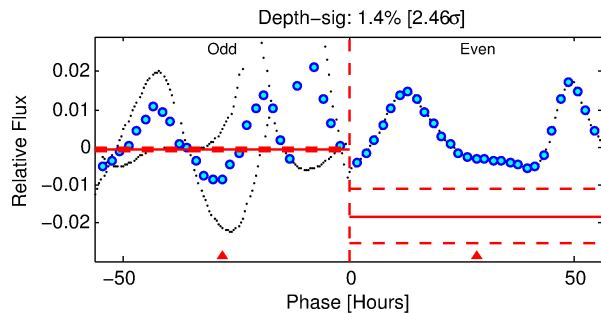
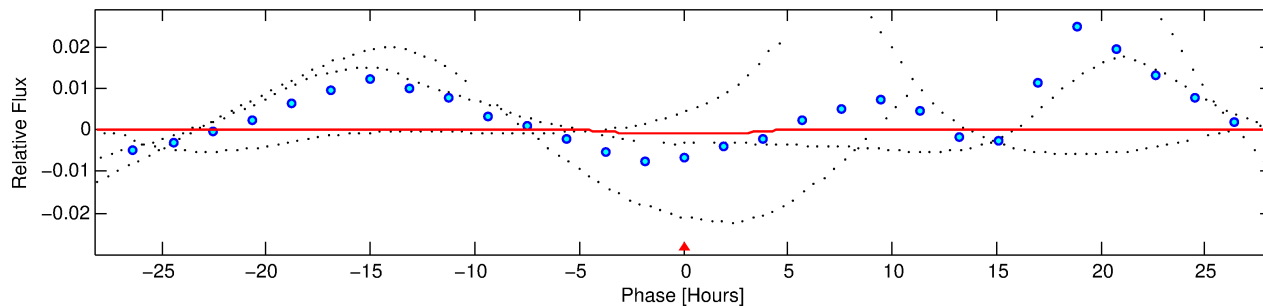
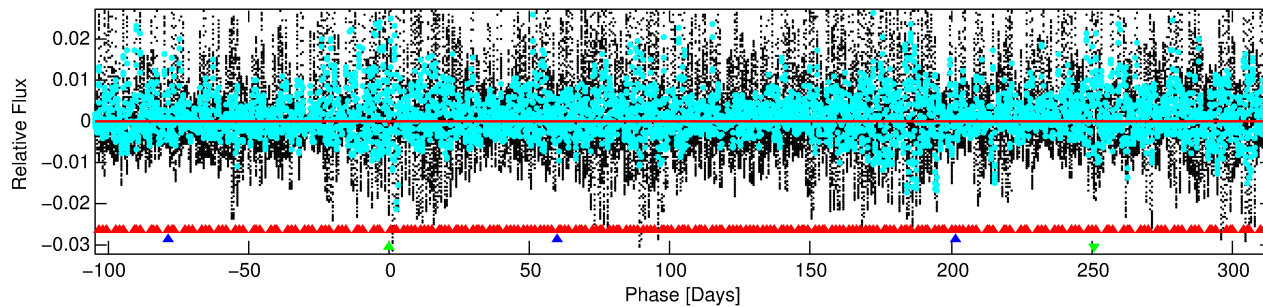
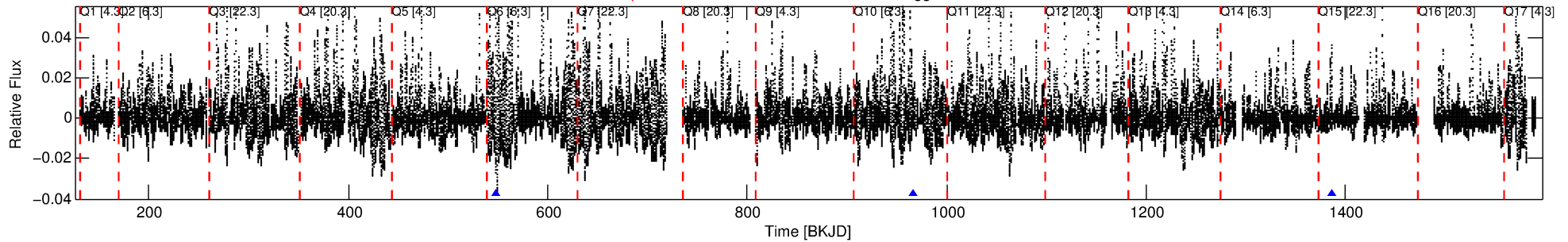
No Significant Match Found

DV One-Page Summary

KIC: 2696703 Candidate: 3 of 3 Period: 419.291 d

KOI: K03161 Corr: No Ephemeris Match

Kp: 9.58 R*: 1.67 Rs T_{eff}: 6785.0 K Logg: 4.16 Fe/H: 0.180



DV Fit Results:

Period = 419.29093 [0.00956] d
Epoch = 547.4860 [0.0152] BKJD
Rp/R* = 0.0270 [0.0064]
a/R* = 165.22 [21.33]
b = 0.90 [0.03]
Seff = 3.39 [1.34]
T_{eq} = 346 [34] K
Rp = 4.91 [1.92] R_e
a = 1.2469 [0.3187] AU
Ag = 13434.60 [12768.25] [1.05σ]
T_{effp} = 5759 [1288] K [4.20σ]

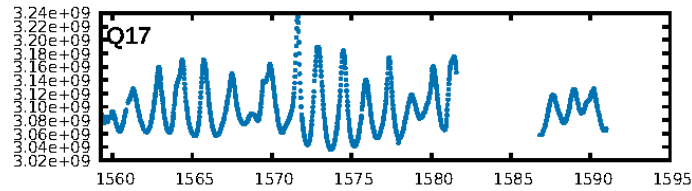
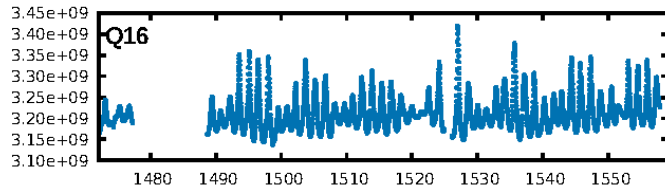
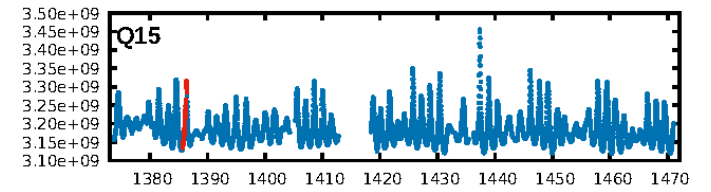
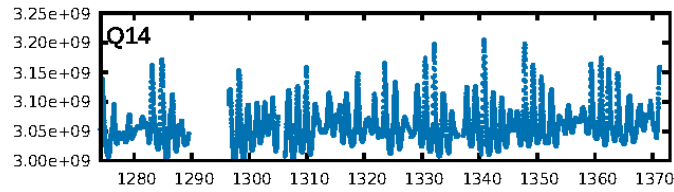
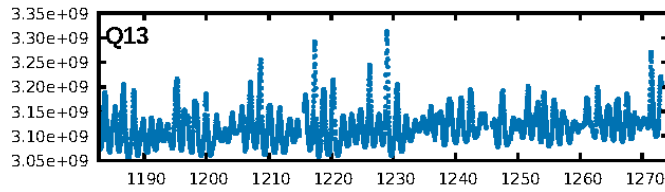
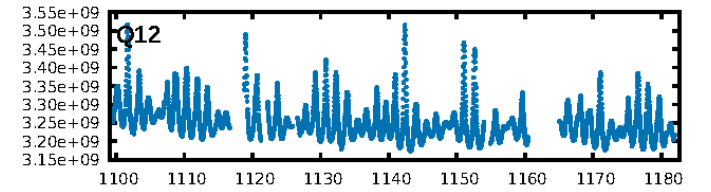
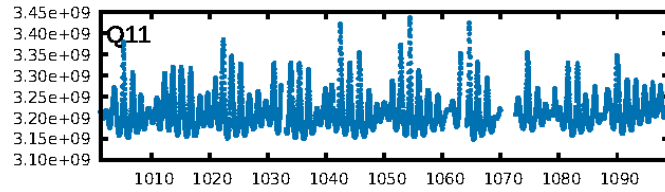
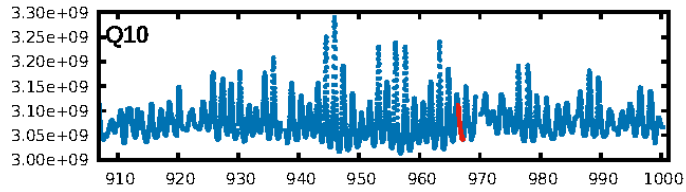
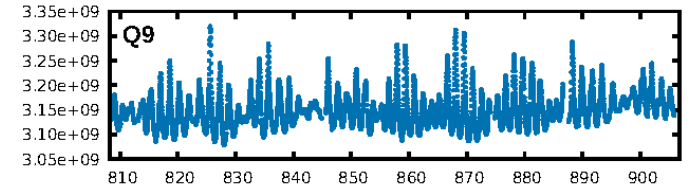
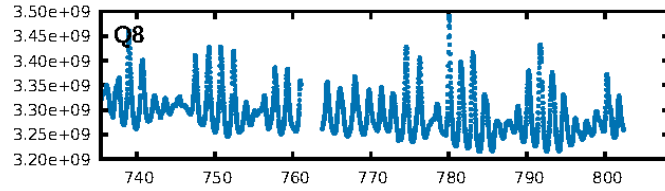
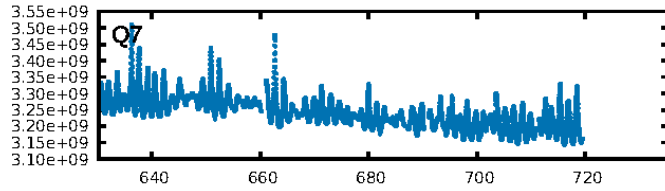
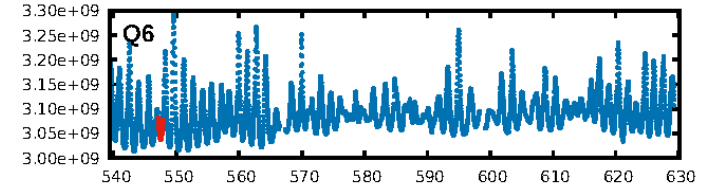
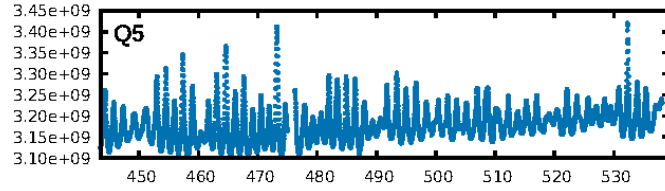
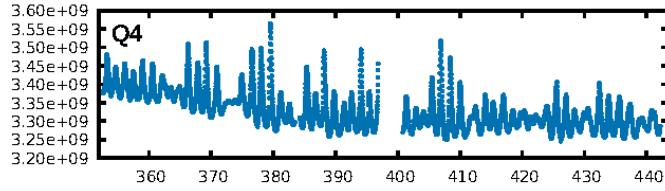
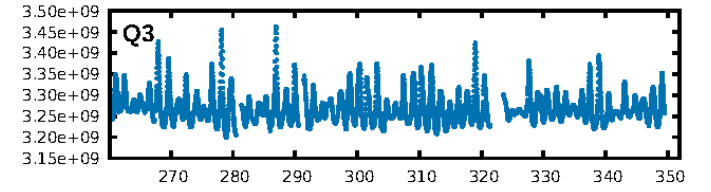
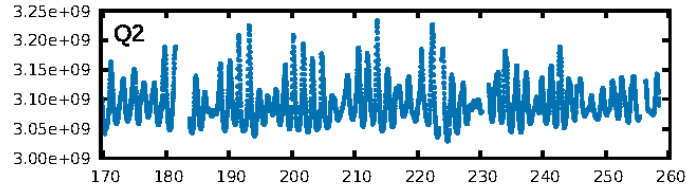
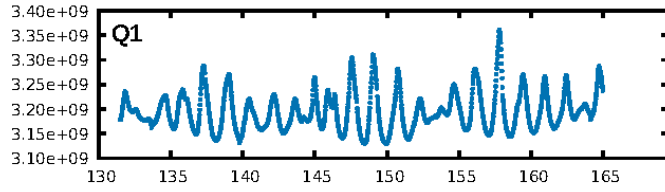
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1034.54σ]
LongPeriod-sig: 100.0% [246.29σ]
ModelChiSquare2-sig: 97.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.34e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: N/A
Centroid-sig: 2.2%
Centroid-so: 6.041 arcsec [1.43σ]
OotOffset-rm: 5.494 arcsec [10.07σ]
KicOffset-rm: 5.184 arcsec [21.34σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.50 [1/2]

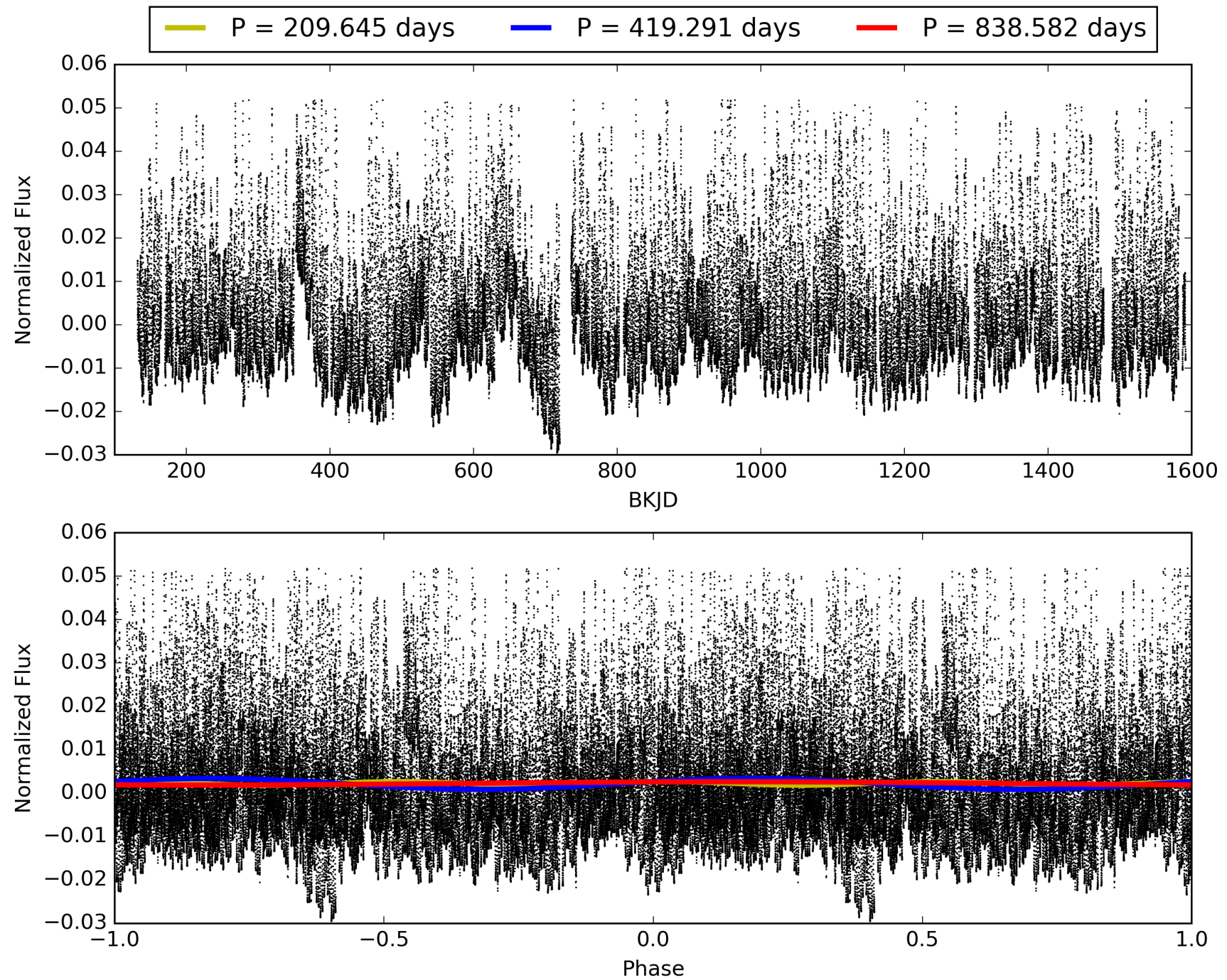
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:05:38 Z

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

TCE 002696703-03, PDC Light Curves

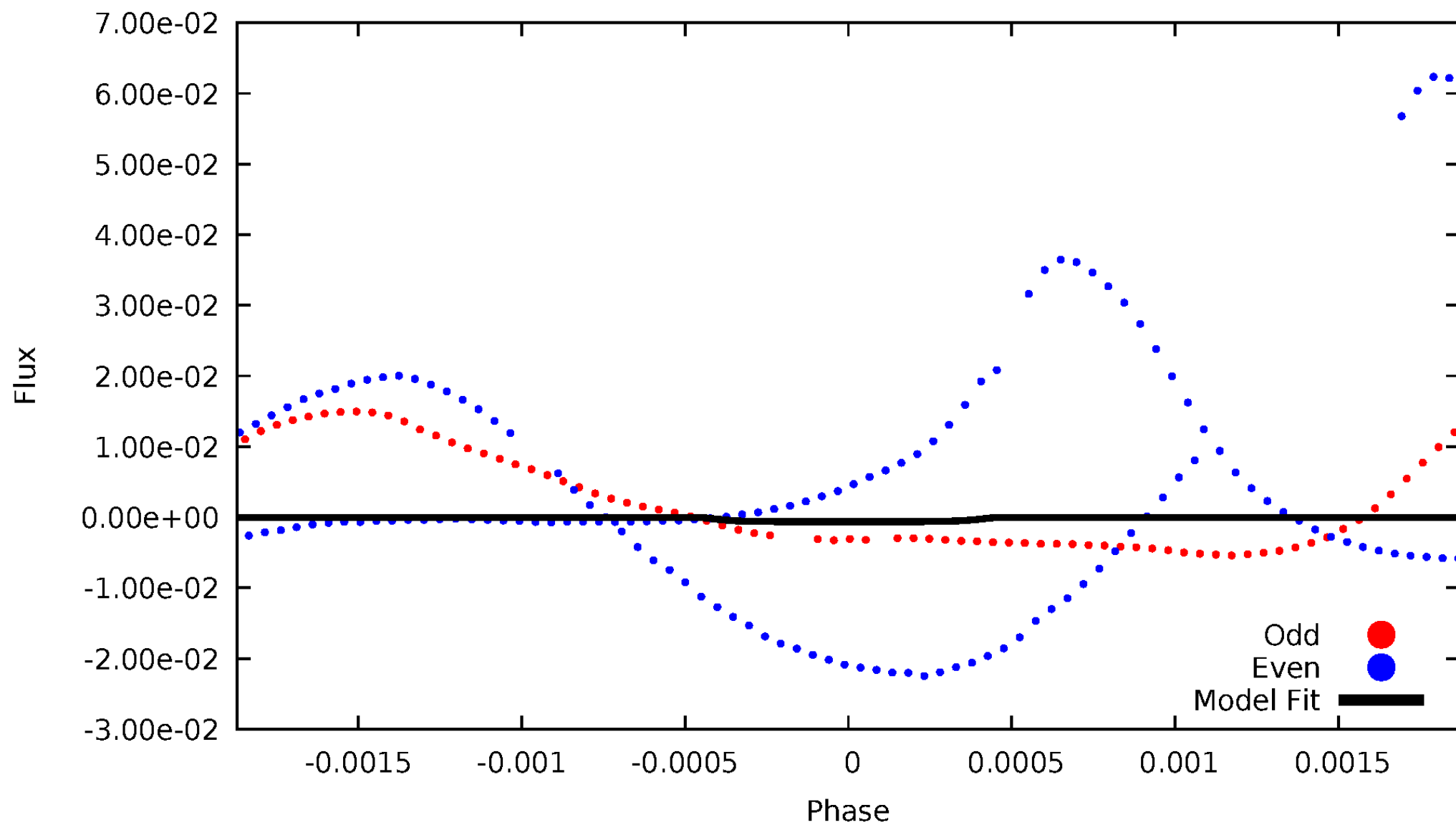


TCE 002696703-03



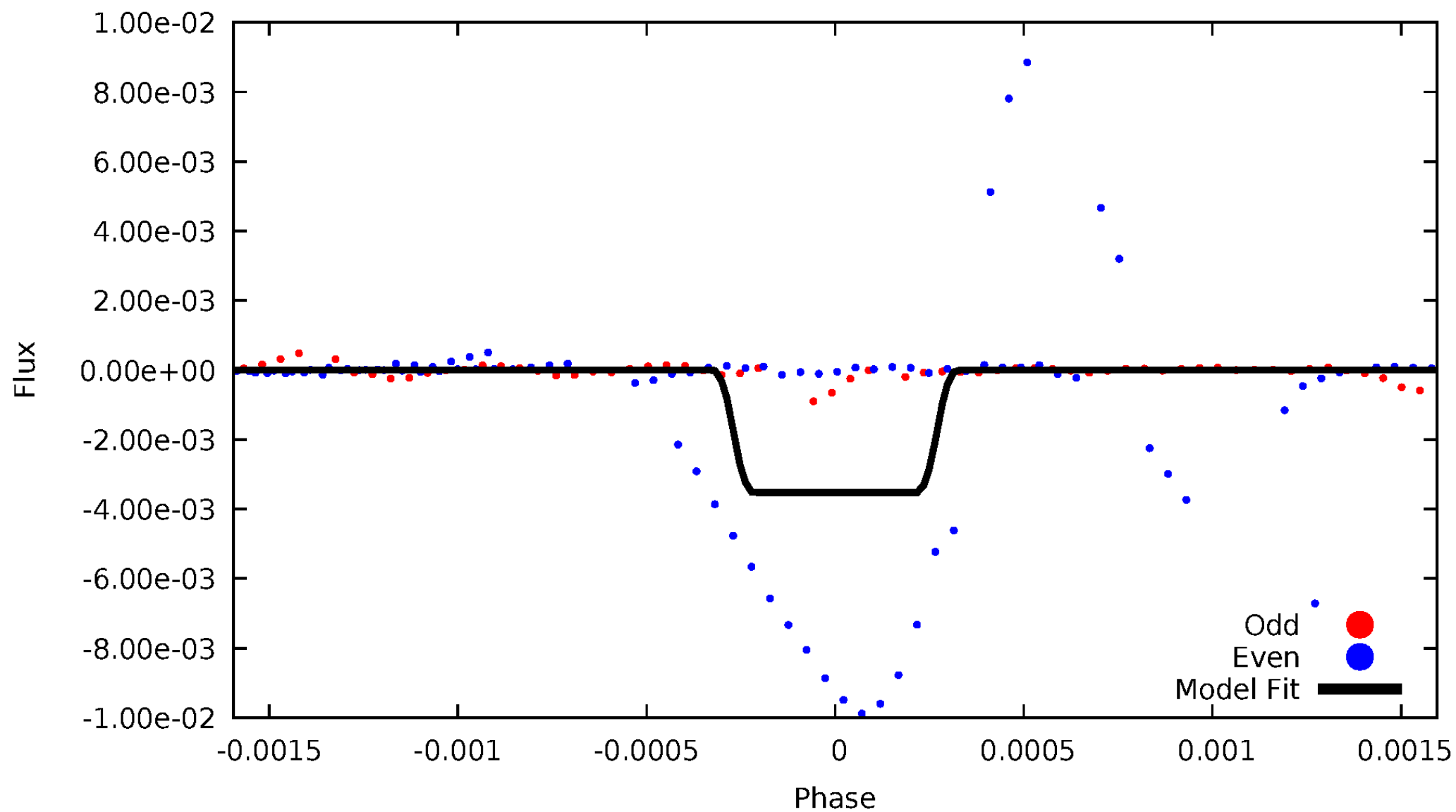
DV Odd/Even

TCE 002696703-03



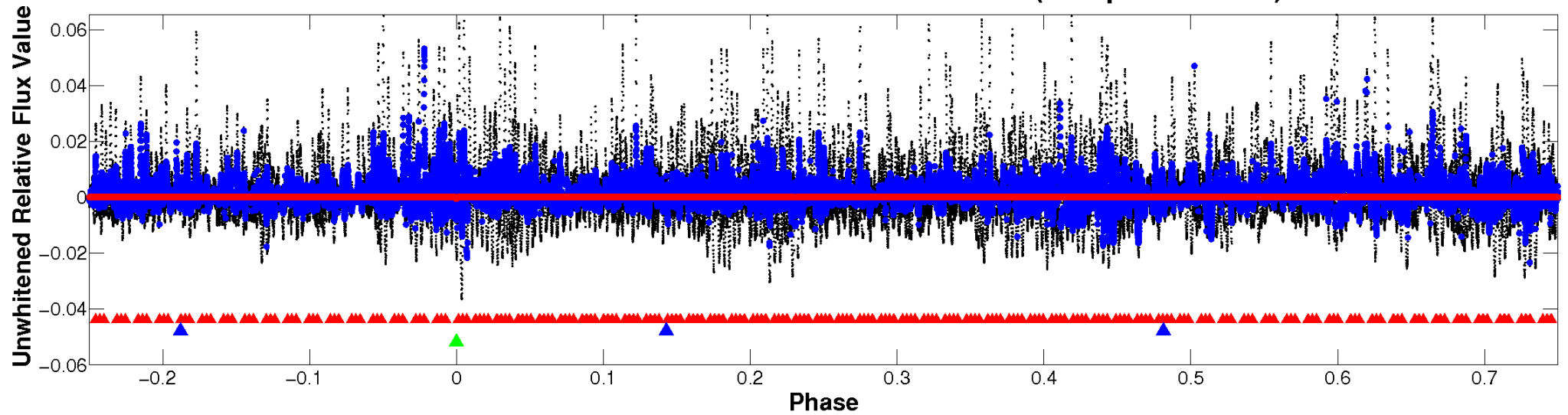
ALT Odd/Even

TCE 002696703-03

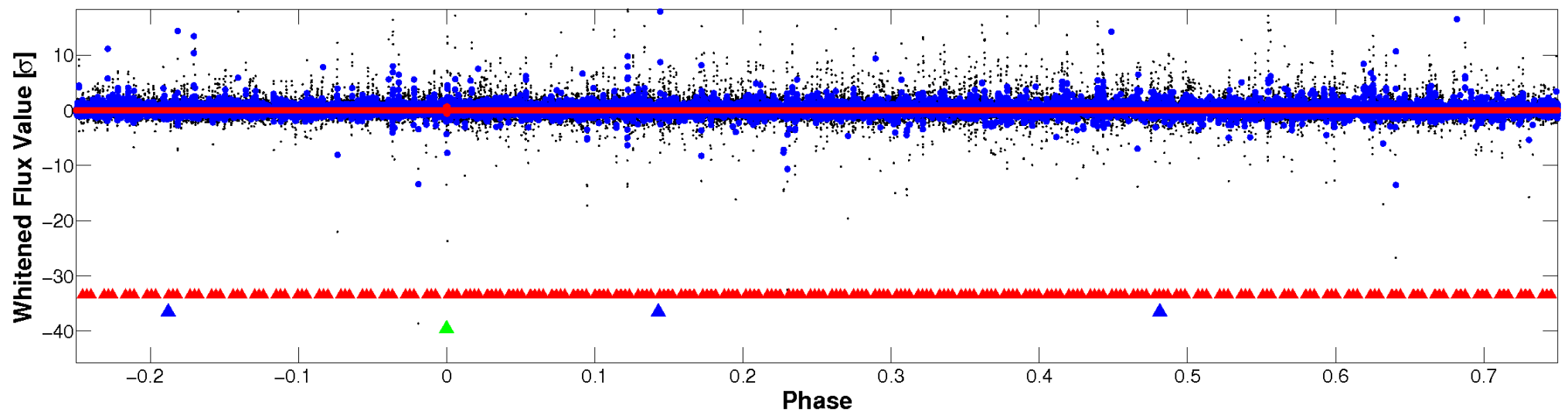


Non-Whitened Vs. Whitened Light Curve

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

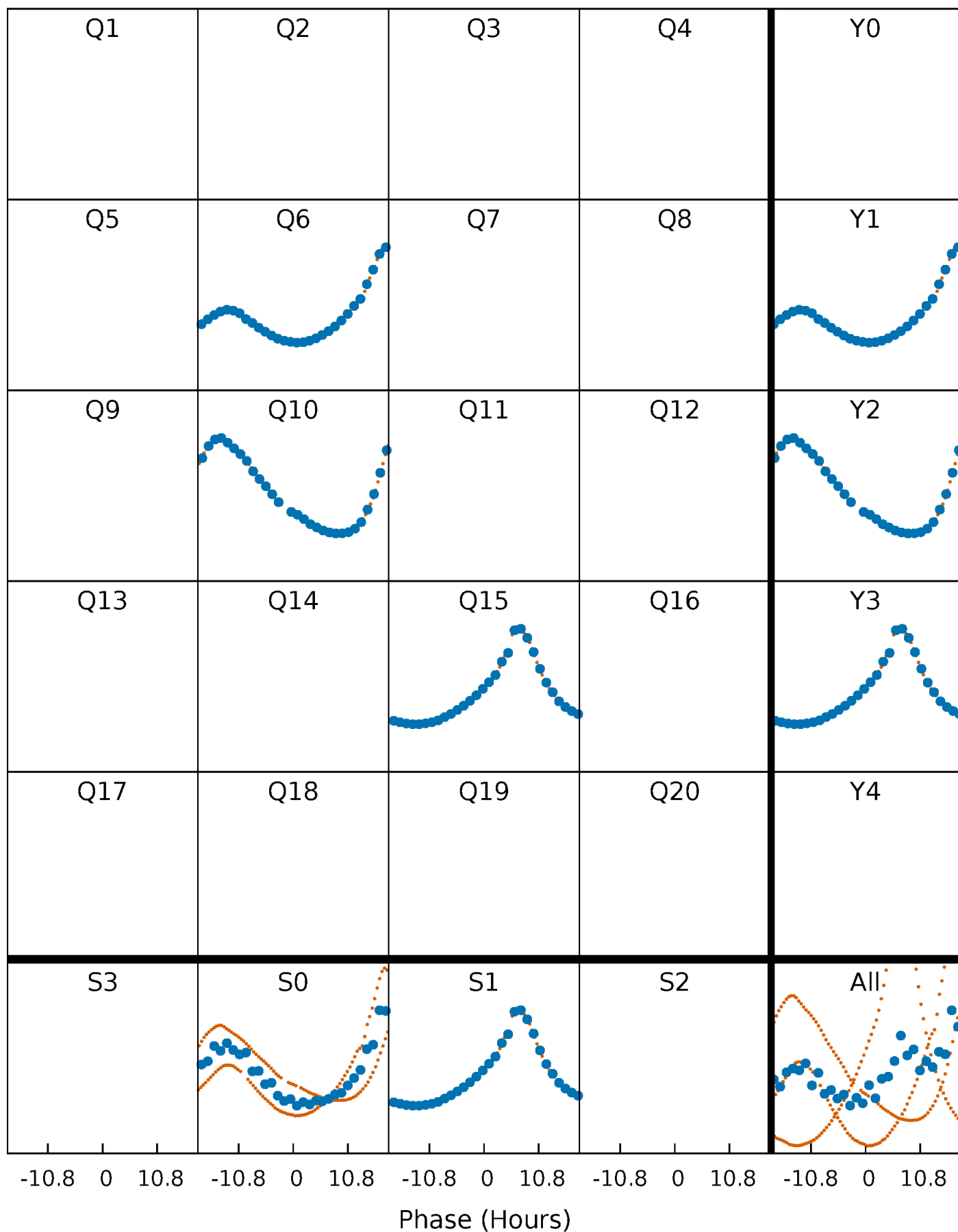


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



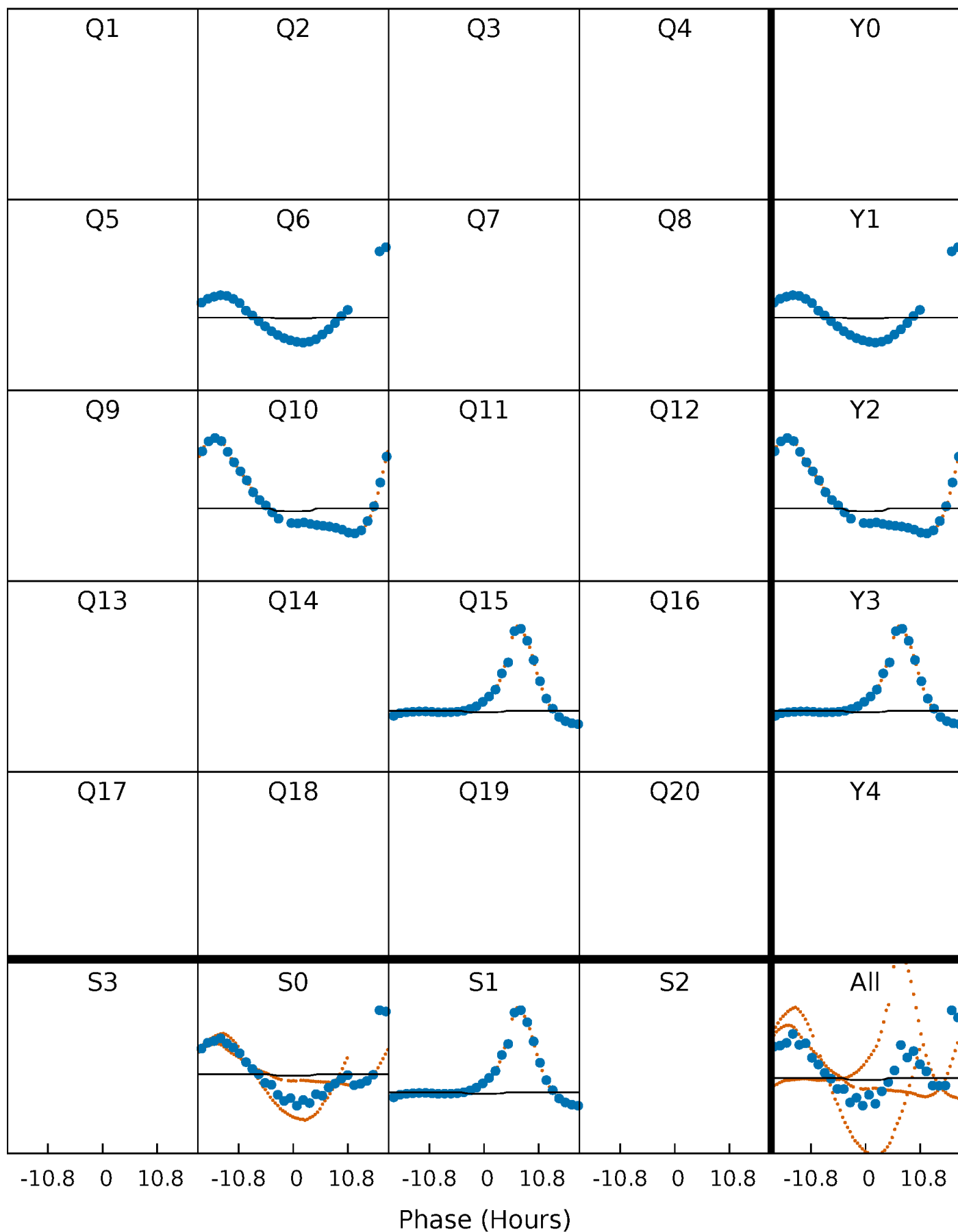
PDC Quarter-Phased Transit Curves

TCE 002696703-03 $P=419.290930$ Days $T_0=547.486050$ (BKJD)



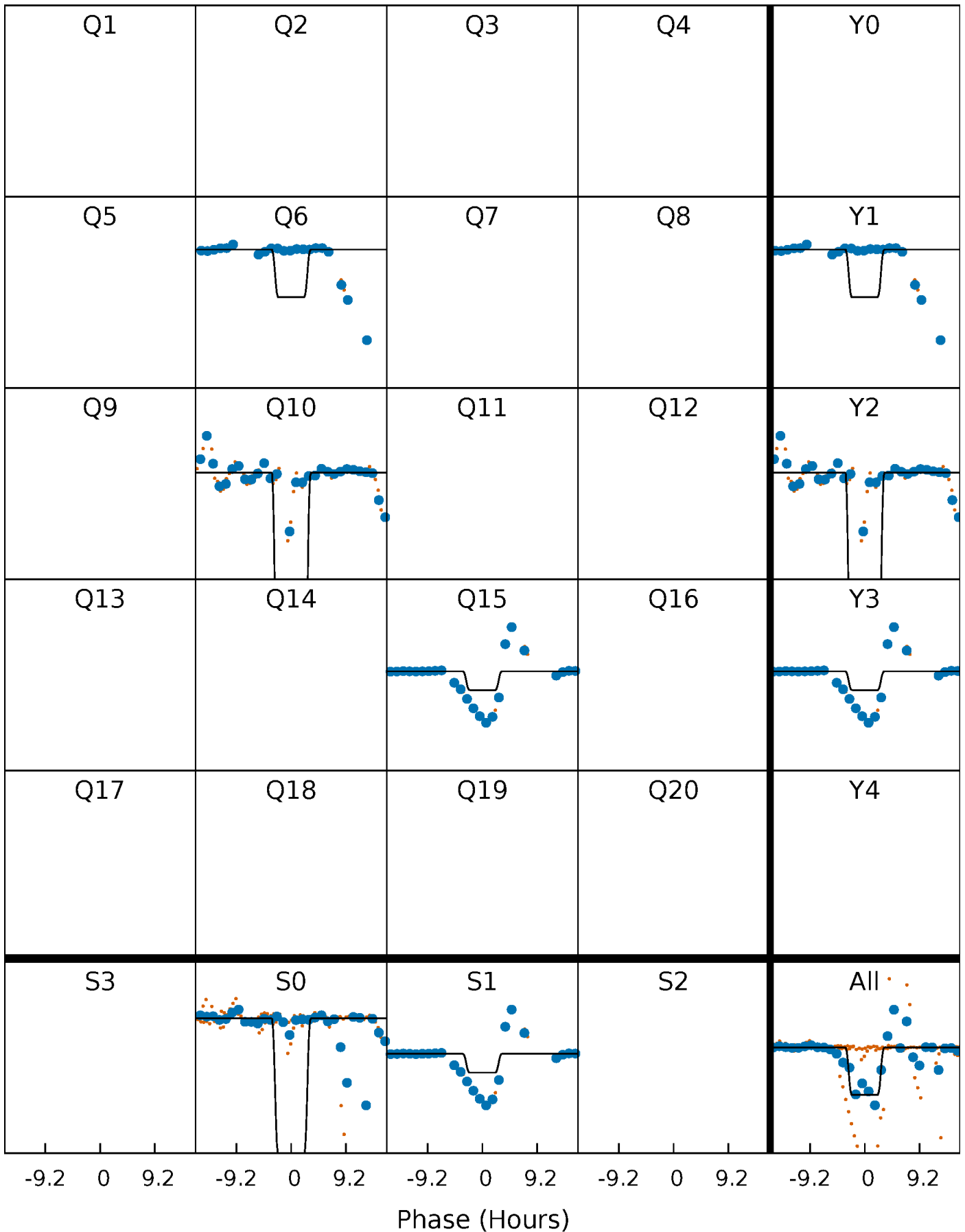
DV Quarter-Phased Transit Curves

TCE 002696703-03 $P=419.290930$ Days $T_0=547.486050$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

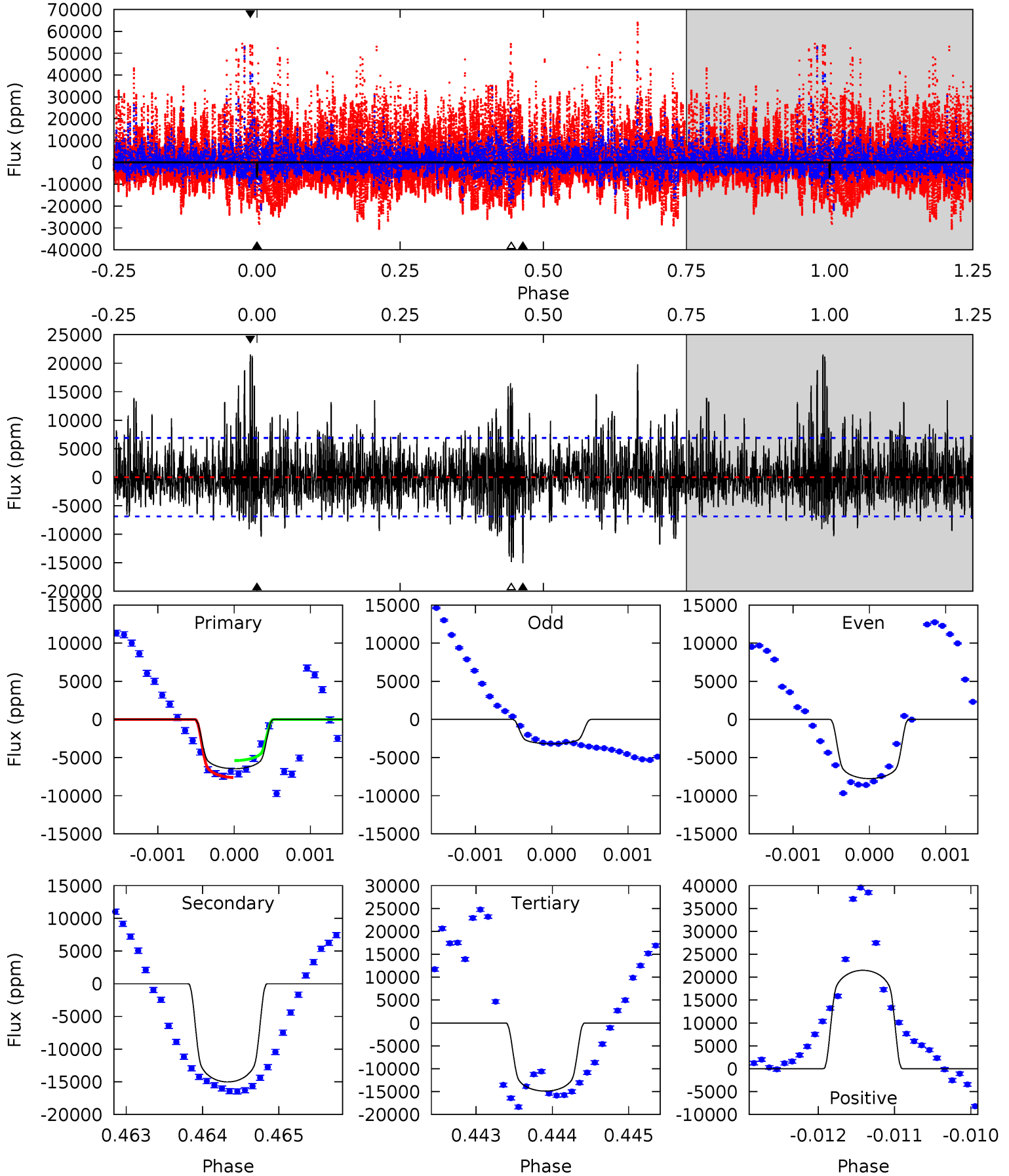
TCE 002696703-03 P=419.364763 Days $T_0=547.397310$ (BKJD)



DV Model-Shift Uniqueness Test

002696703-03, P = 419.290930 Days, E = 128.195120 Days

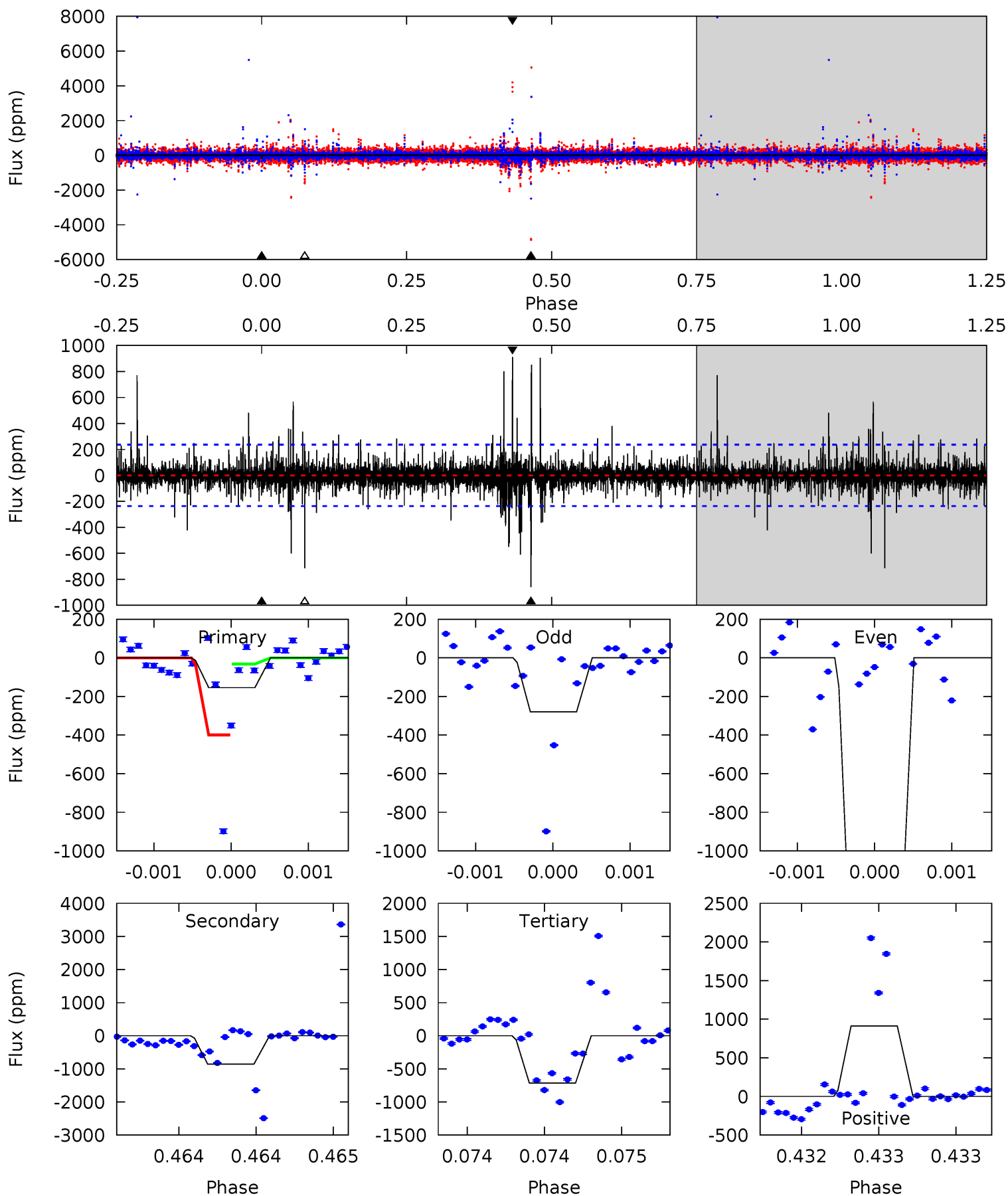
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.13	11.9	11.8	17.1	5.46	3.31	3.17	-6.69	-11.9	0.11	-5.14	1.48	1.95	0.59	0.88



Alt Model-Shift Uniqueness Test

002696703-03, P = 419.364763 Days, E = 128.032547 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.62	20.1	16.7	21.3	5.53	3.41	1.53	-13.1	-17.7	3.41	-1.22	7.21	10.1	0.51	4.28



Stellar Parameters For KIC 002696703

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6785^{+185}_{-278}	$4.162^{+0.128}_{-0.192}$	$0.180^{+0.200}_{-0.350}$	$1.666^{+0.522}_{-0.304}$	$1.470^{+0.197}_{-0.241}$	$0.448^{+0.285}_{-0.235}$
	+3%/-4%	+3%/-5%	+111%/-194%	+31%/-18%	+13%/-16%	+64%/-53%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 002696703-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-15021 ± 1260	$4.97^{+1.41}_{-1.27}$	487^{+34}_{-28}	23056^{+11167}_{-5109}	$512782^{+418136}_{-195298}$
Alt.	-859 ± 43	$10.77^{+2.10}_{-1.60}$	485^{+40}_{-32}	4849^{+285}_{-248}	6222^{+2196}_{-1843}

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

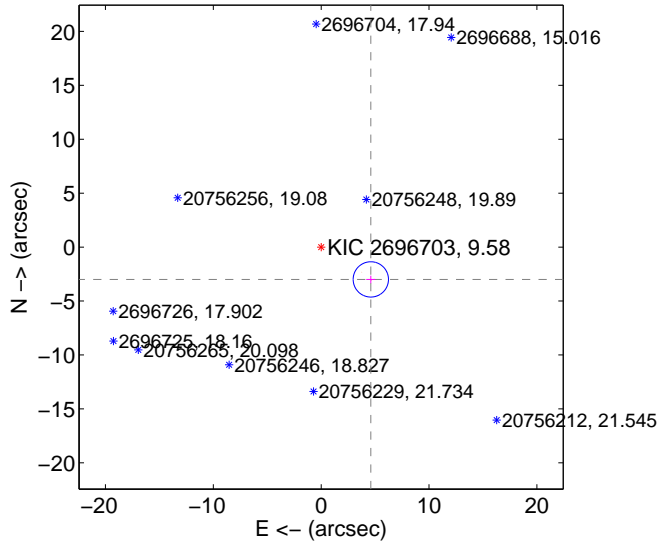
Supplemental centroid analysis for 002696703-03. **Kepler magnitude: 9.58.** Transit SNR 2.26

There are 0 quarters with good PRF difference image offsets

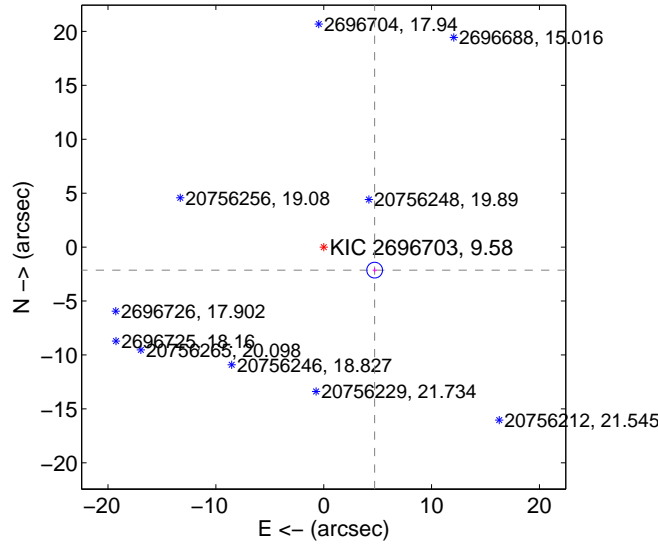
The direct PRF centroid is offset from the target star catalog position by about 0.85 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.494 ± 0.545	10.07	-4.605 ± 0.427	-2.996 ± 0.351
PRF-fit source offset from KIC position	5.184 ± 0.243	21.34	-4.723 ± 0.188	-2.136 ± 0.190
photometric centroid source offset	6.04 ± 4.22	1.43	-4.72 ± 4.76	-3.77 ± 3.18

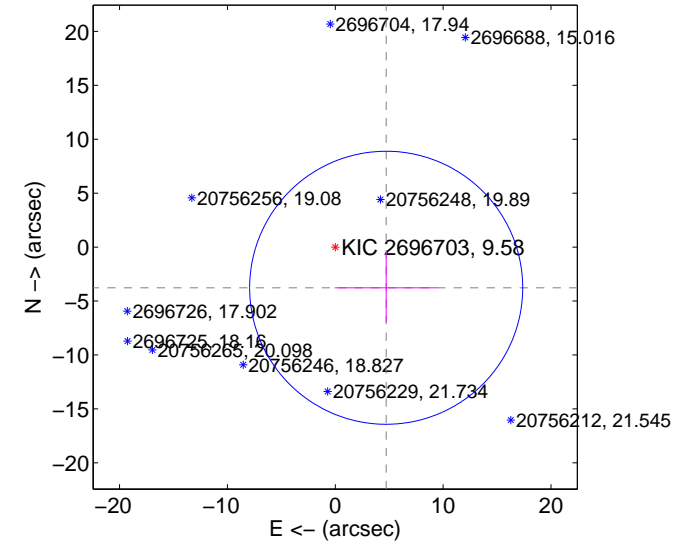
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

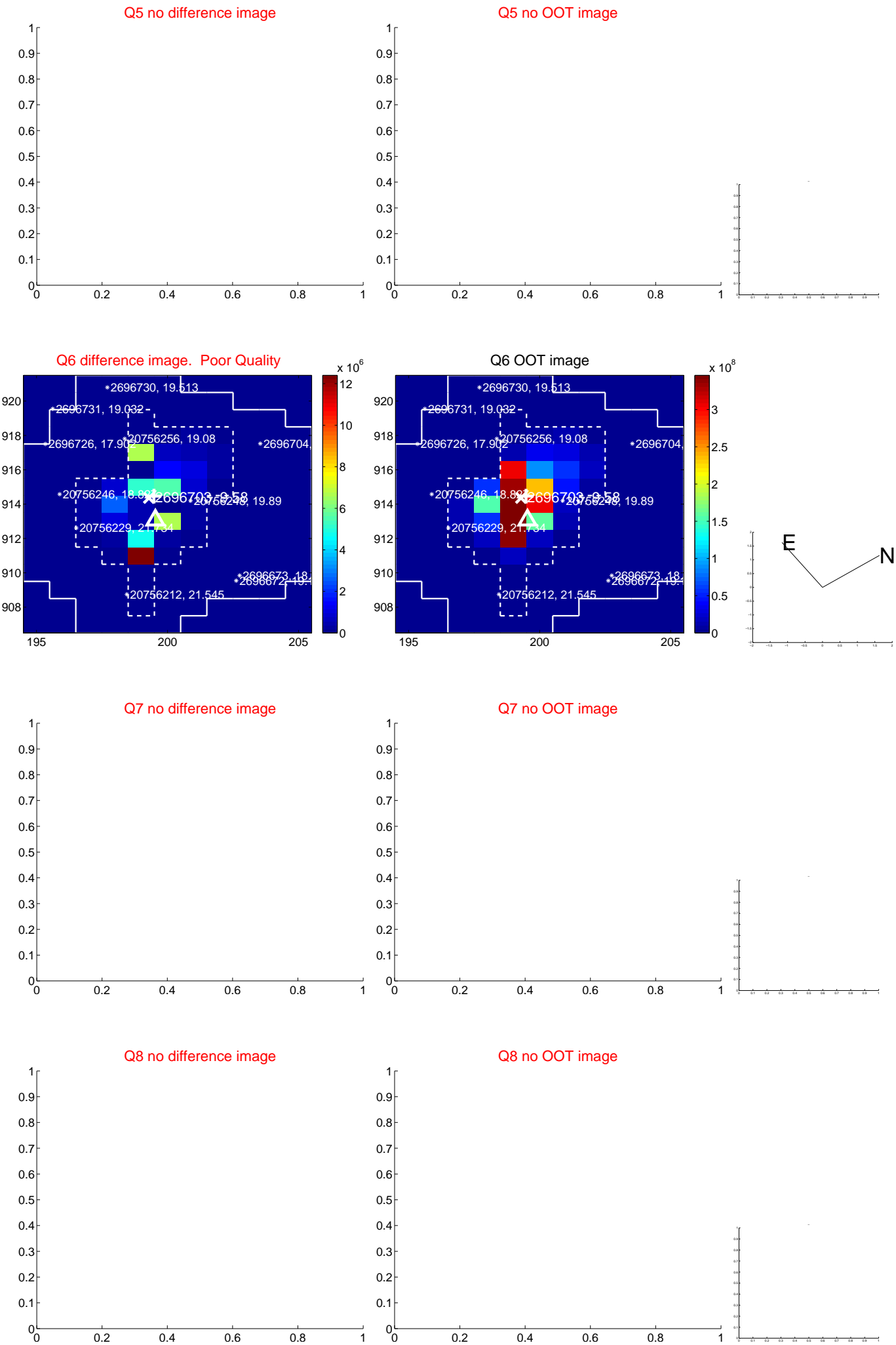


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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



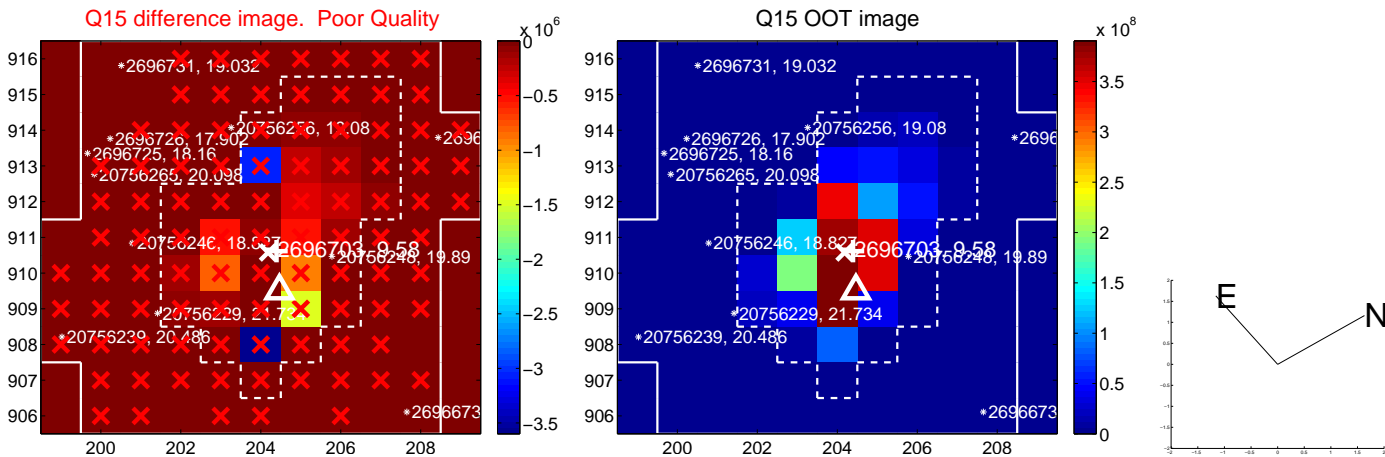
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



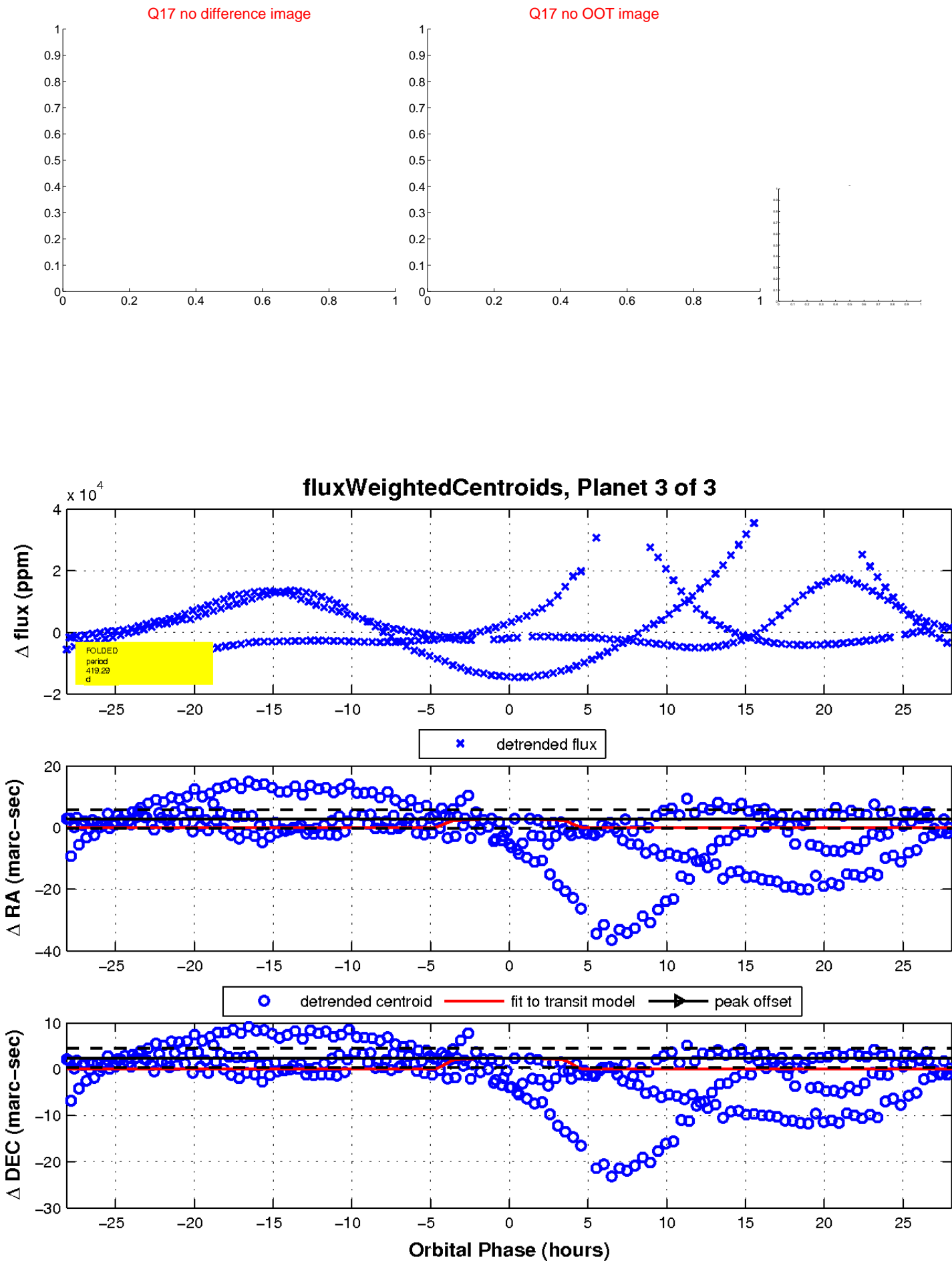
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

