

KIC 003728906

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})
003728906-01	OBS	No	454.674594	511.866890	551.7	3.452	16.7	5.2	1.81	5676	4.36	2.69
003728906-02	OBS	No	569.290304	357.388586	606.8	4.550	14.3	5.4	1.81	5676	4.64	1.99
003728906-03	OBS	No	573.805118	277.145067	684.3	6.793	13.9	5.6	1.81	5676	5.02	1.97
003728906-05	OBS	No	342.023241	152.666540	370.7	3.500	14.1	-1.0	1.81	5676	3.49	3.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003728906-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003728906-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
003728906-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003728906-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

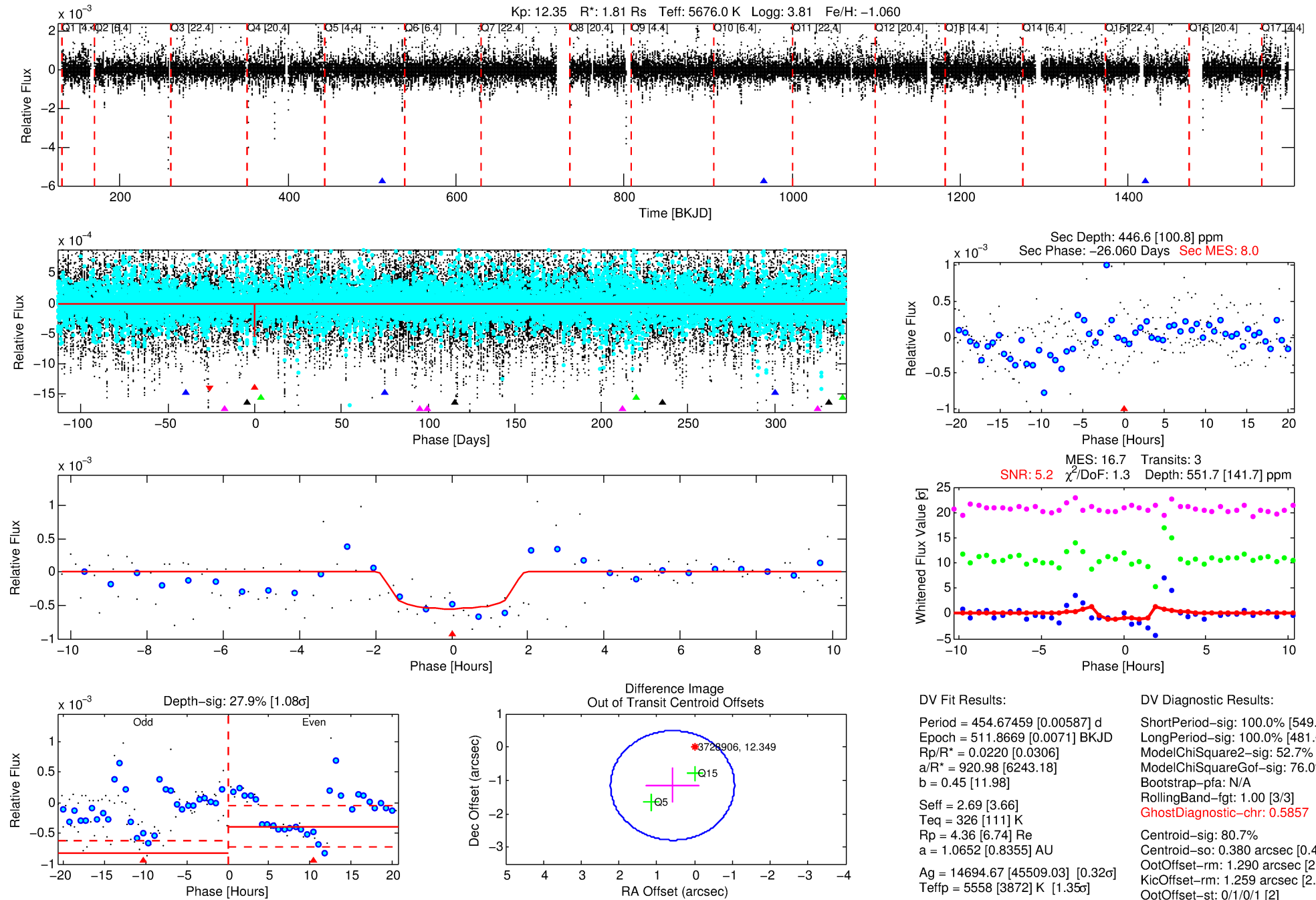
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003728906-01

No Significant Match Found

DV One-Page Summary

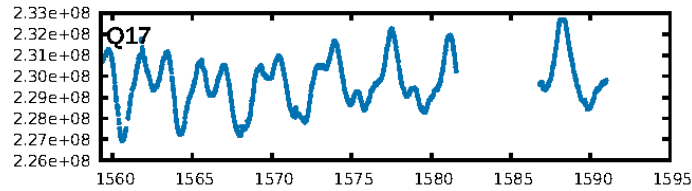
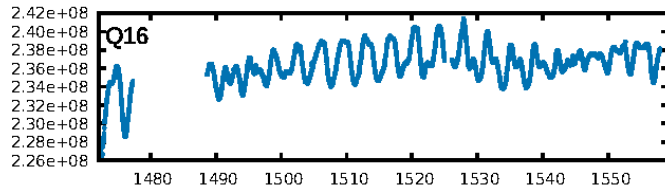
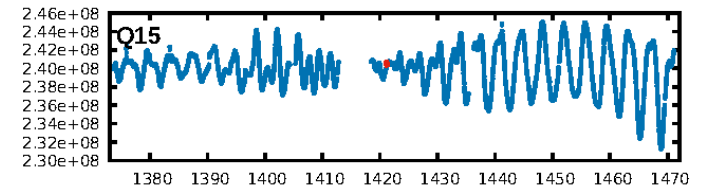
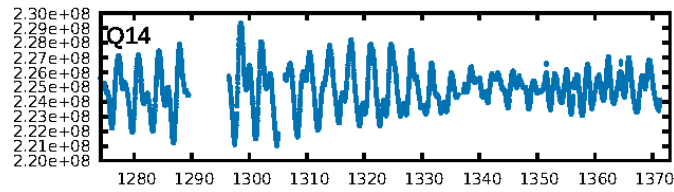
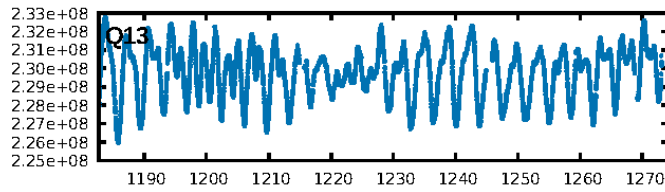
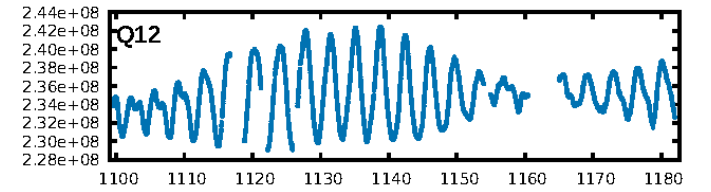
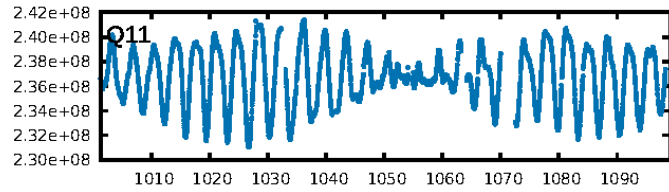
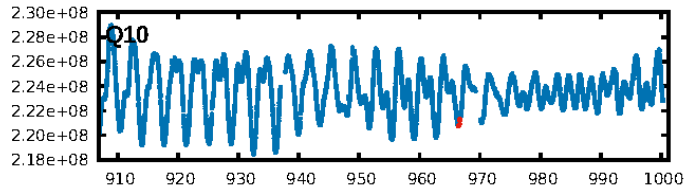
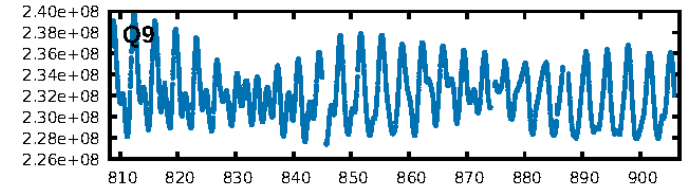
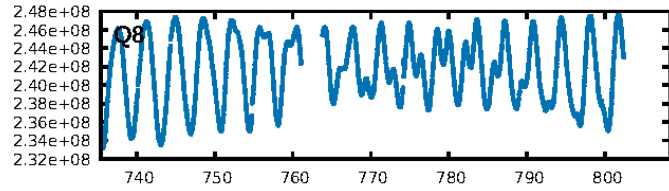
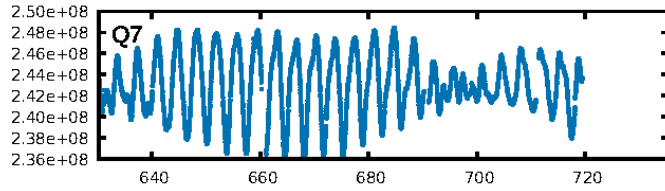
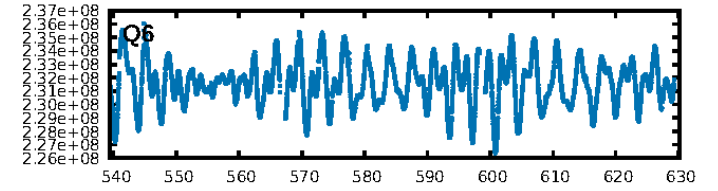
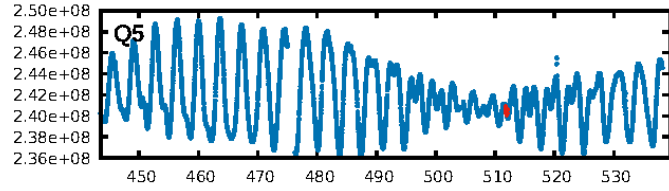
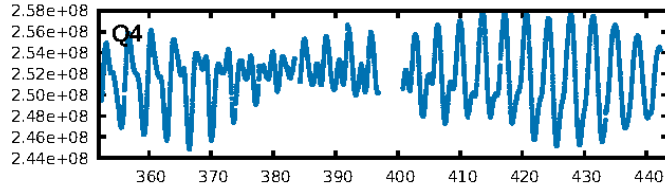
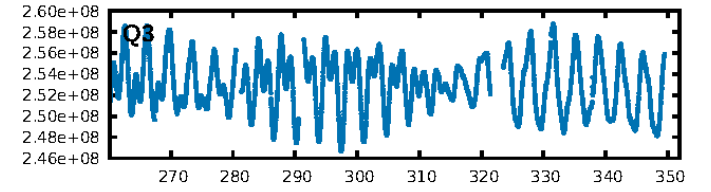
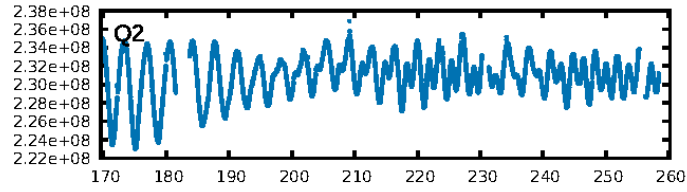
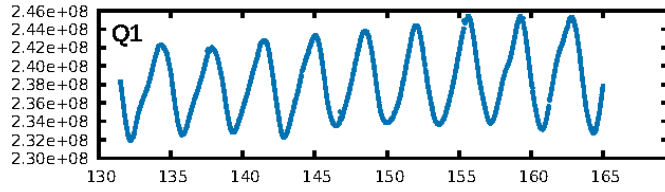
KIC: 3728906 Candidate: 1 of 5 Period: 454.675 d



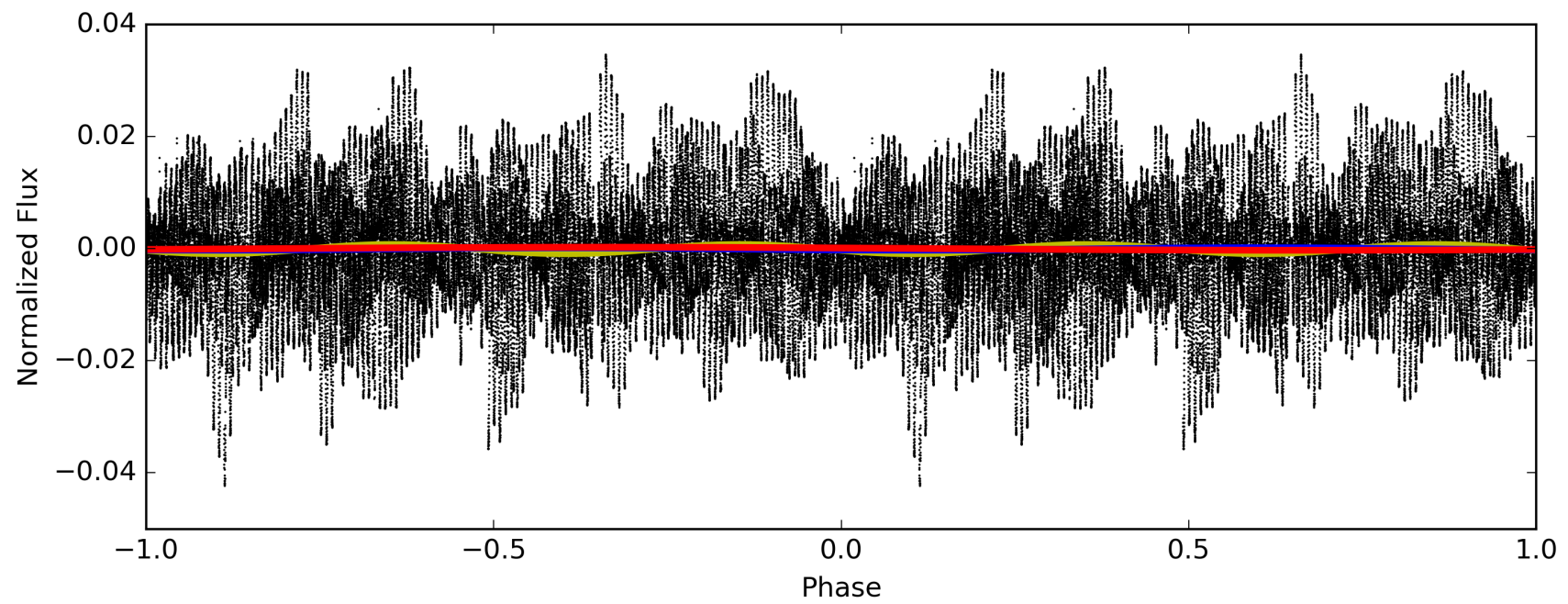
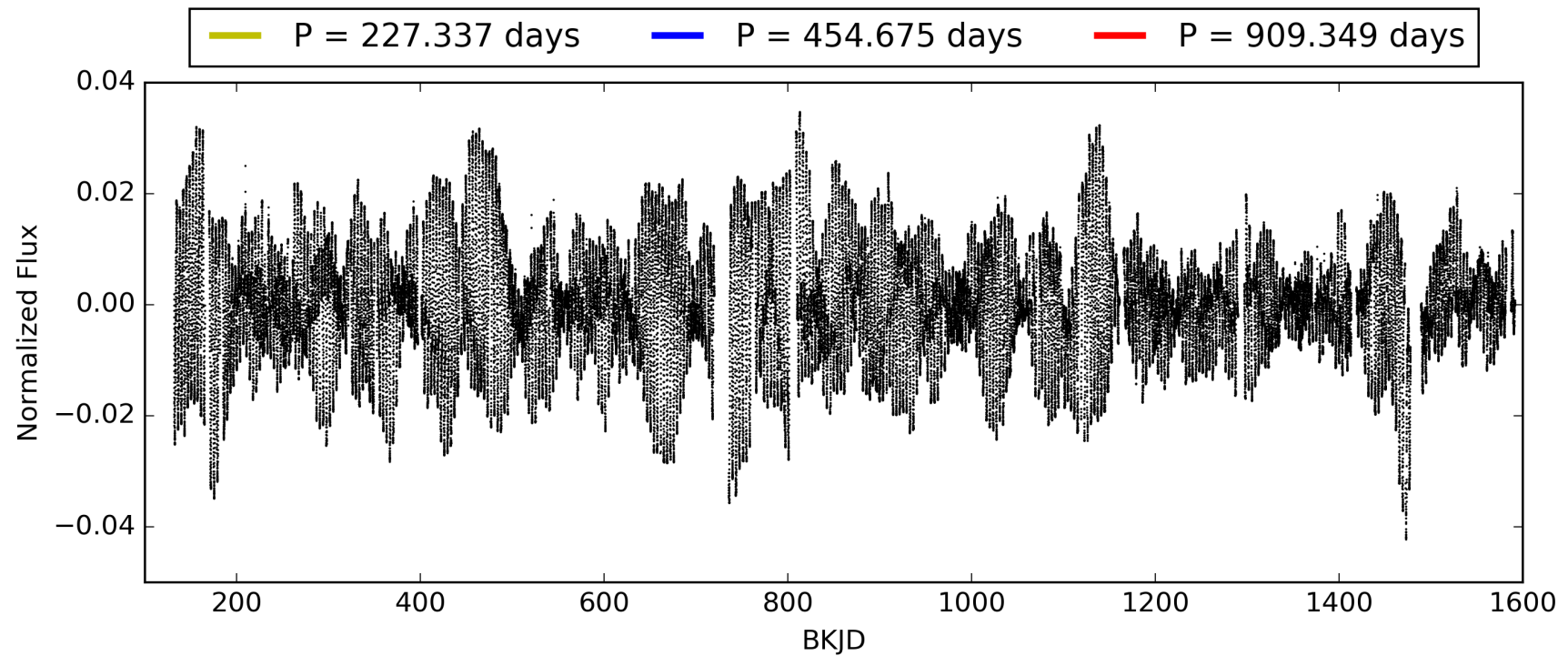
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003728906-01, PDC Light Curves

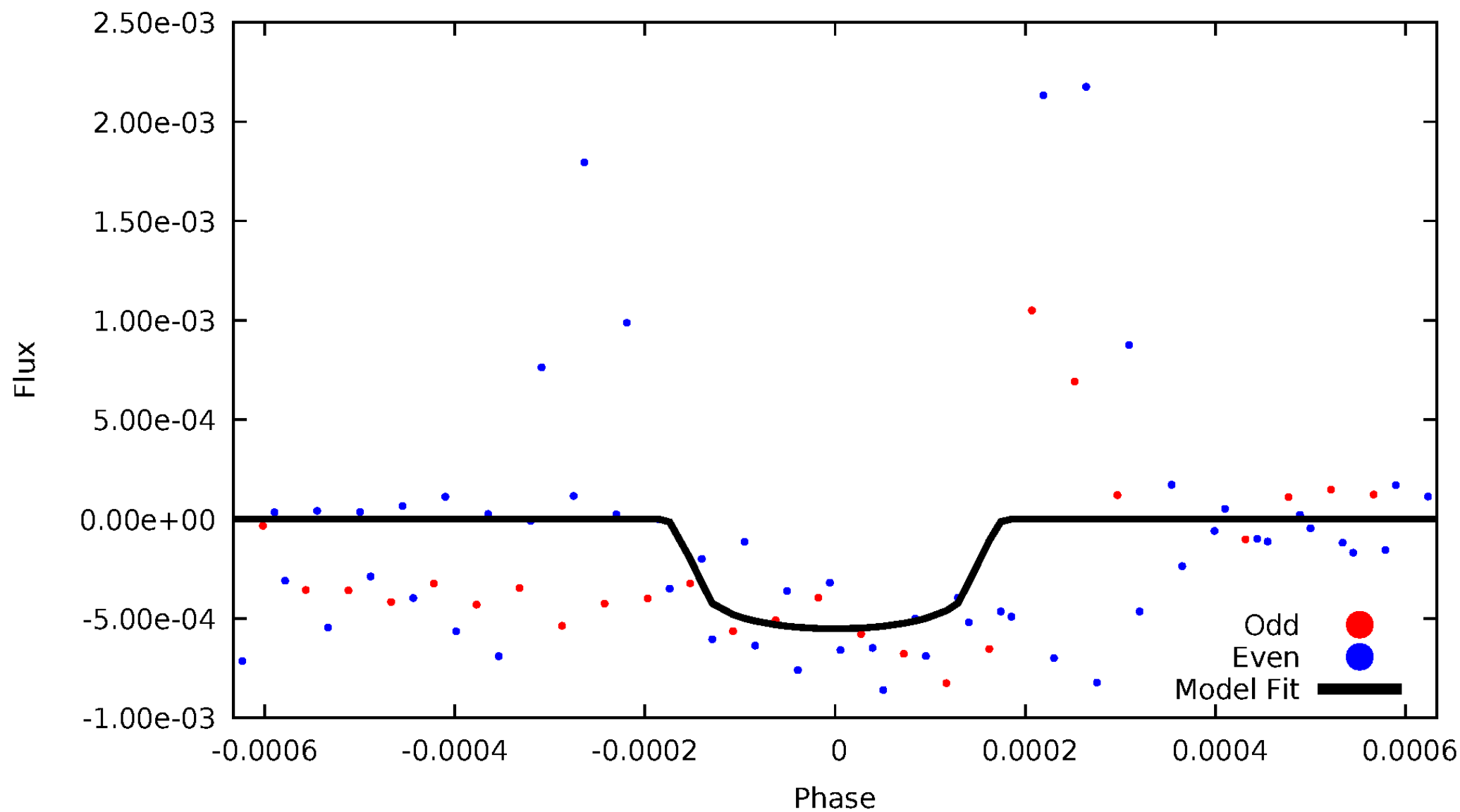


TCE 003728906-01



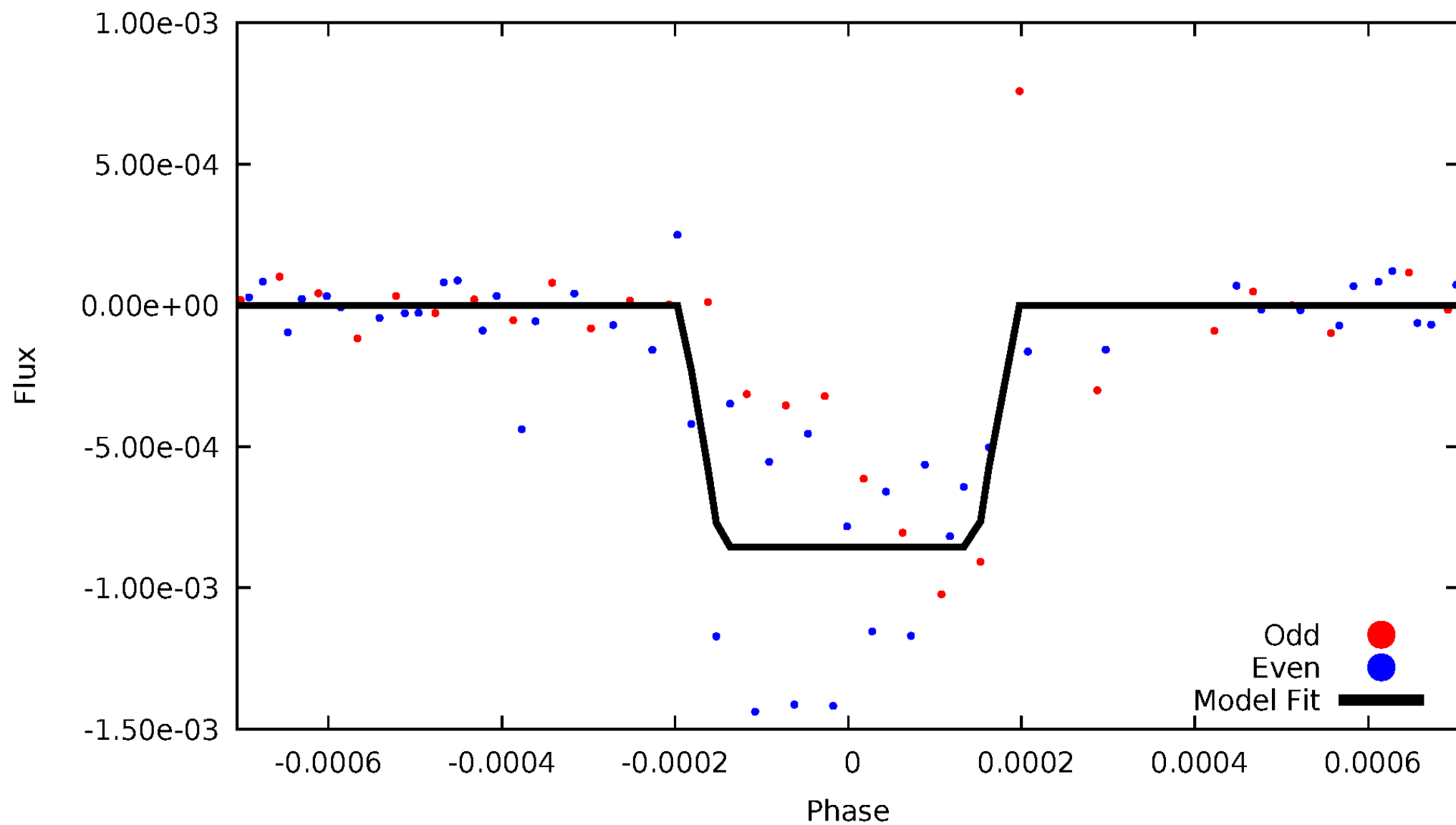
DV Odd/Even

TCE 003728906-01



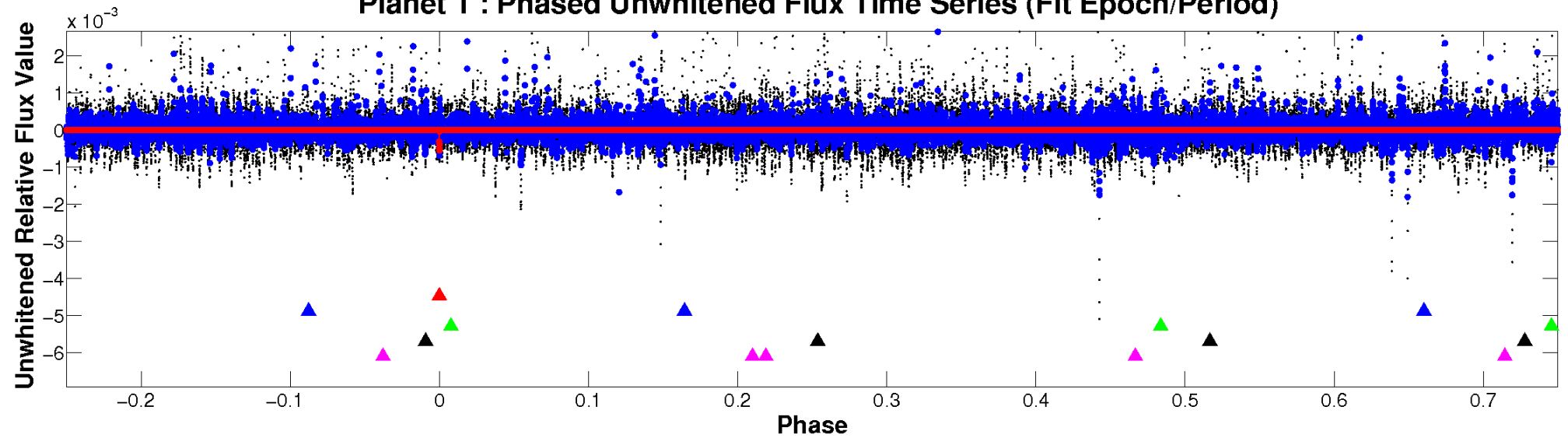
ALT Odd/Even

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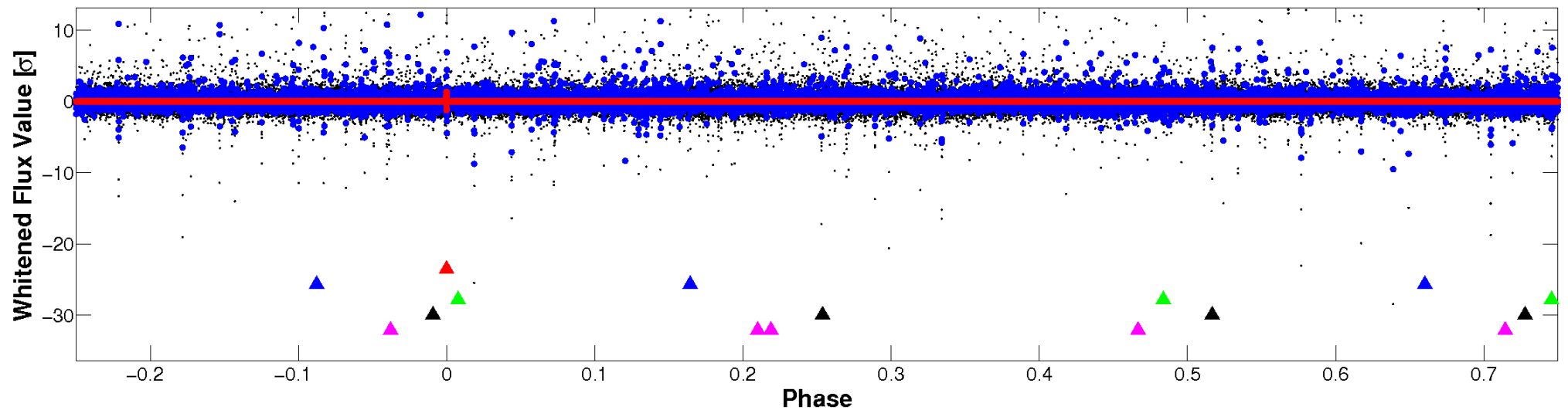


Non-Whitened Vs. Whitened Light Curve

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

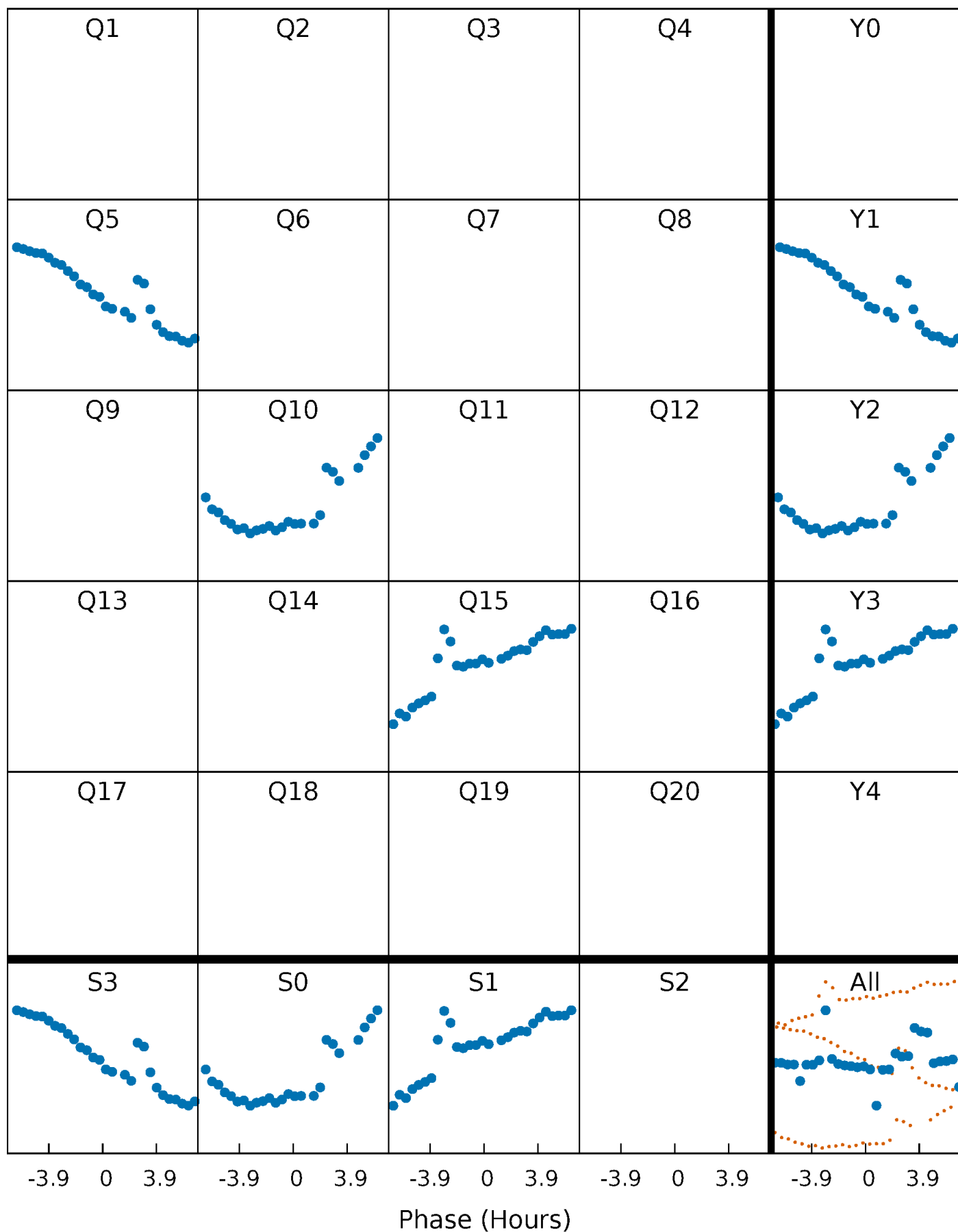


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



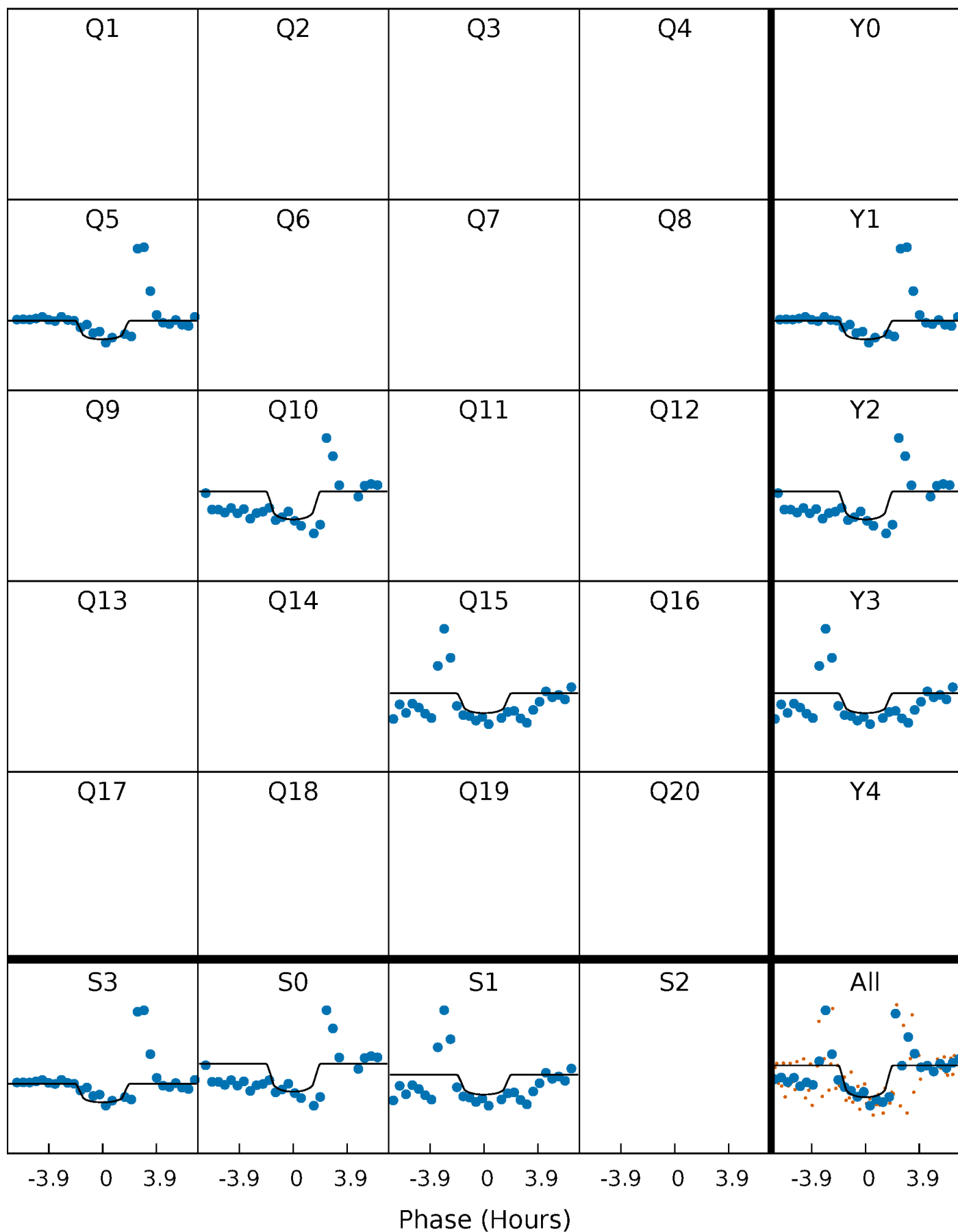
PDC Quarter-Phased Transit Curves

TCE 003728906-01 $P=454.674594$ Days $T_0=511.866890$ (BKJD)



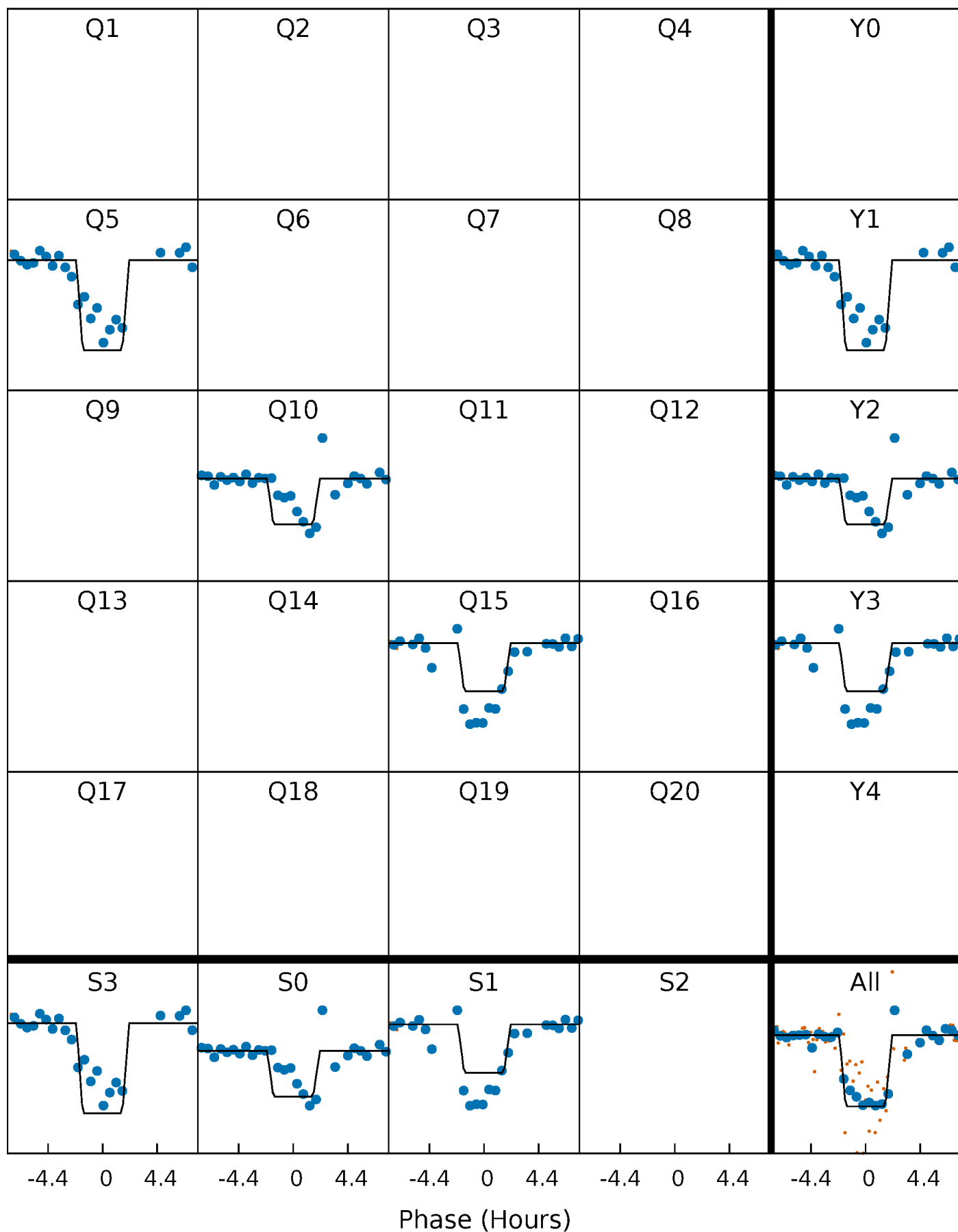
DV Quarter-Phased Transit Curves

TCE 003728906-01 P=454.674594 Days $T_0=511.866890$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

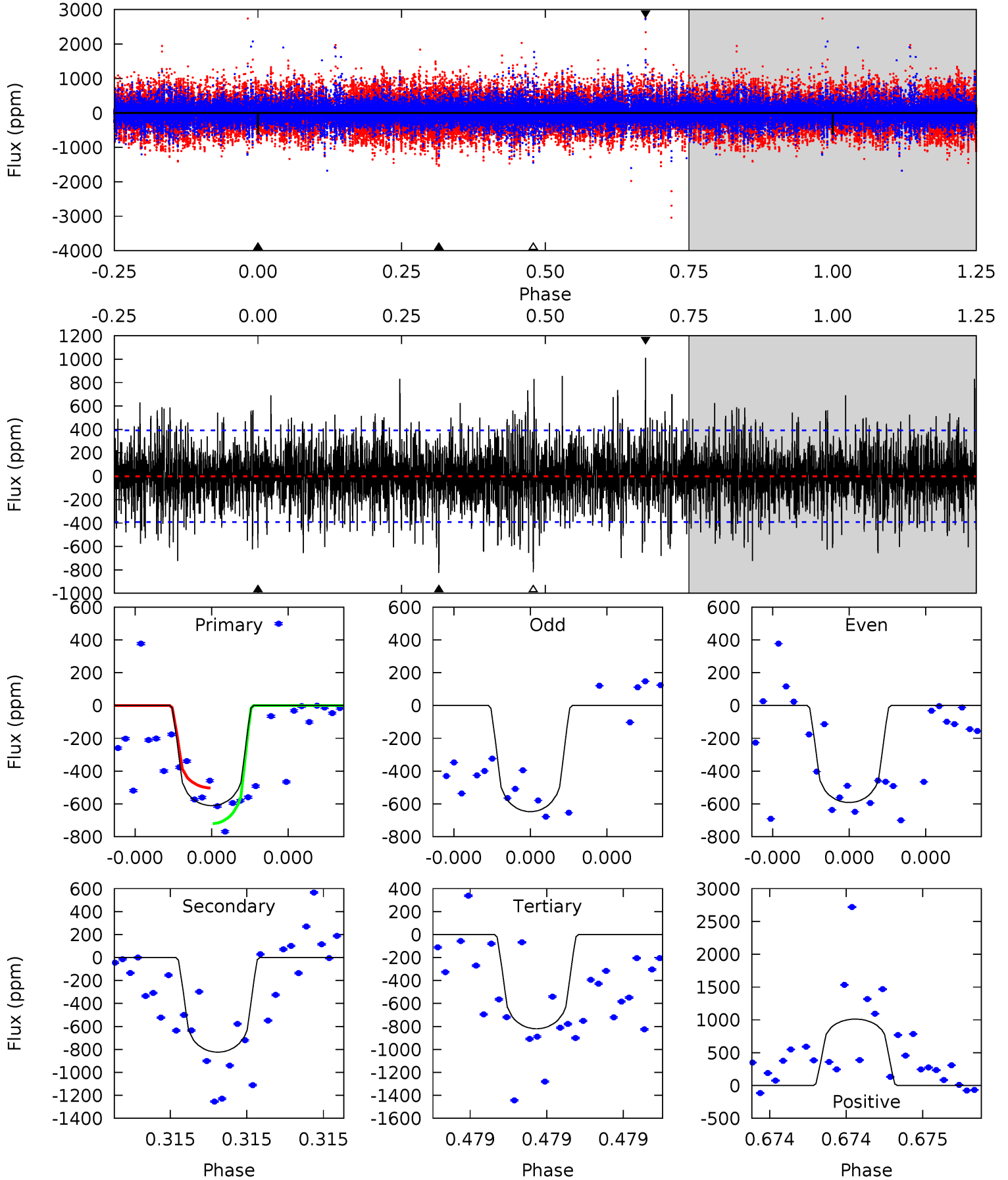
TCE 003728906-01 P=454.660332 Days $T_0=511.885547$ (BKJD)



DV Model-Shift Uniqueness Test

003728906-01, P = 454.674594 Days, E = 57.192296 Days

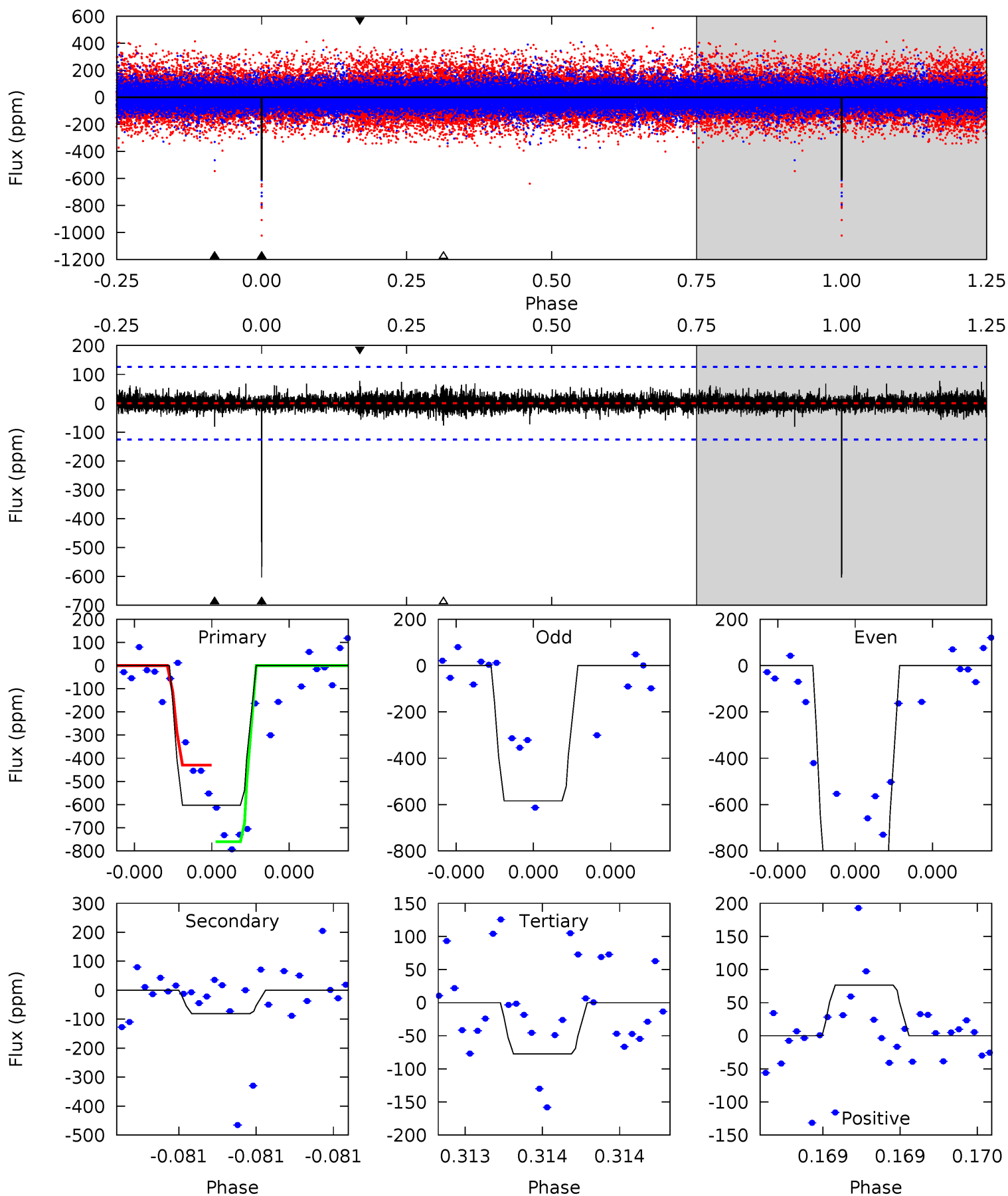
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.80	11.9	11.8	14.6	5.64	3.58	2.64	-3.02	-5.78	0.06	-2.70	0.33	0.94	0.55	1.58



Alt Model-Shift Uniqueness Test

003728906-01, P = 454.660332 Days, E = 57.225215 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.9	3.63	3.46	3.42	5.63	3.57	0.64	23.4	23.5	0.17	0.21	8.91	1.36	0.11	7.41



Stellar Parameters For KIC 003728906

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5676^{+169}_{-169}	$3.814^{+0.832}_{-0.277}$	$-1.060^{+0.350}_{-0.300}$	$1.811^{+0.928}_{-1.237}$	$0.780^{+0.082}_{-0.100}$	$0.185^{+3.207}_{-0.109}$
	+3%/-3%	+22%/-7%	+33%/-28%	+51%/-68%	+11%/-13%	+1734%/-59%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003728906-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-824 ± 69	$5.45^{+5.79}_{-3.55}$	446^{+62}_{-82}	5375^{+3951}_{-1155}	$16991^{+123877}_{-12958}$
Alt.	-81 ± 22	$6.25^{+6.18}_{-4.04}$	446^{+62}_{-87}	3319^{+1371}_{-494}	1218^{+9313}_{-918}

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

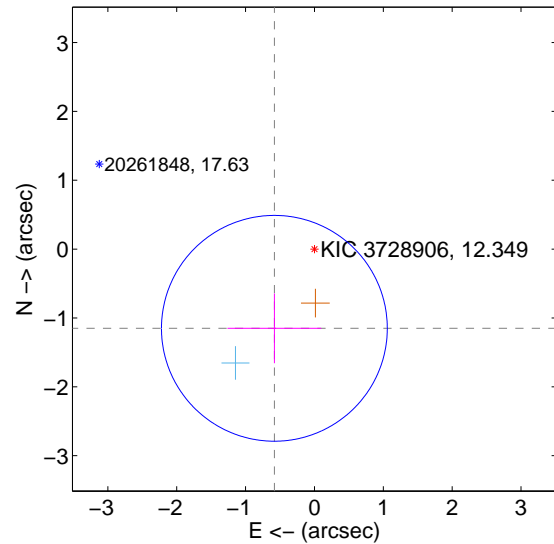
Supplemental centroid analysis for 003728906-01. Kepler magnitude: 12.35. Transit SNR 5.25

There are 1 quarters with good PRF difference image offsets

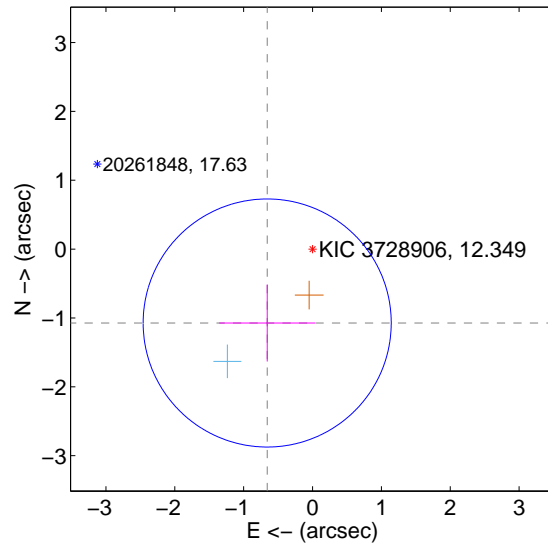
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.290 ± 0.547	2.36	0.582 ± 0.681	-1.151 ± 0.507
PRF-fit source offset from KIC position	1.259 ± 0.601	2.10	0.658 ± 0.697	-1.074 ± 0.560
photometric centroid source offset	0.38 ± 0.79	0.48	0.37 ± 0.79	0.09 ± 0.85

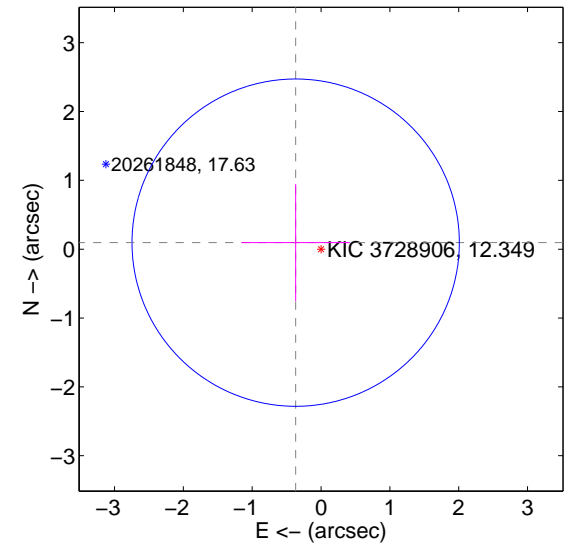
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

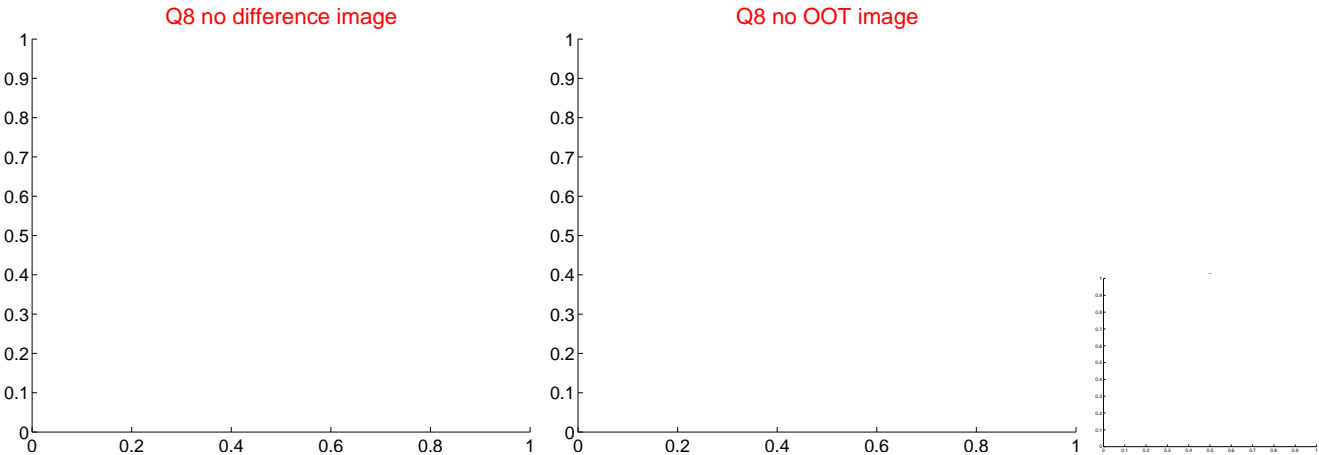
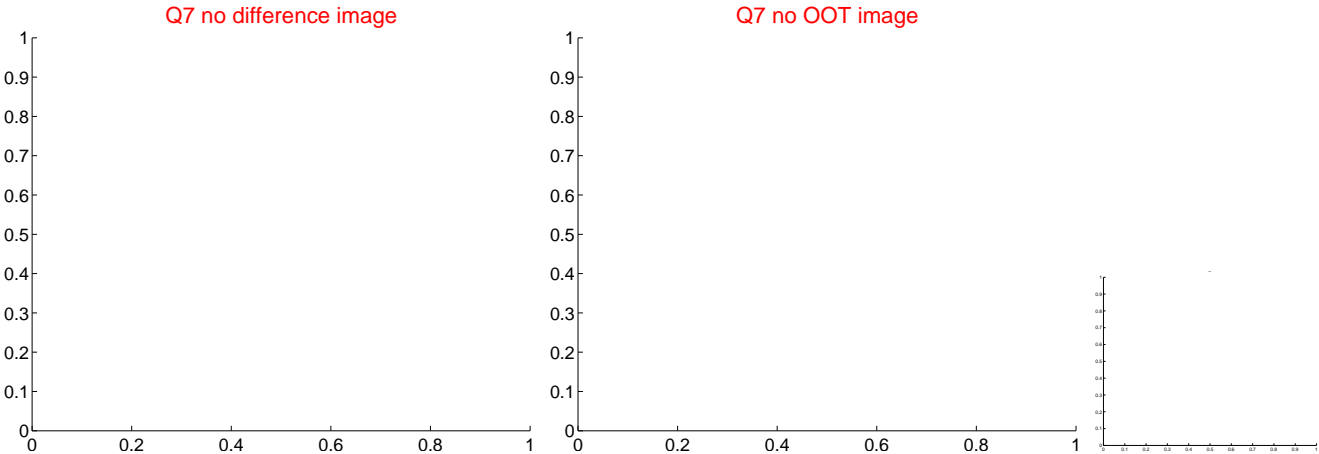
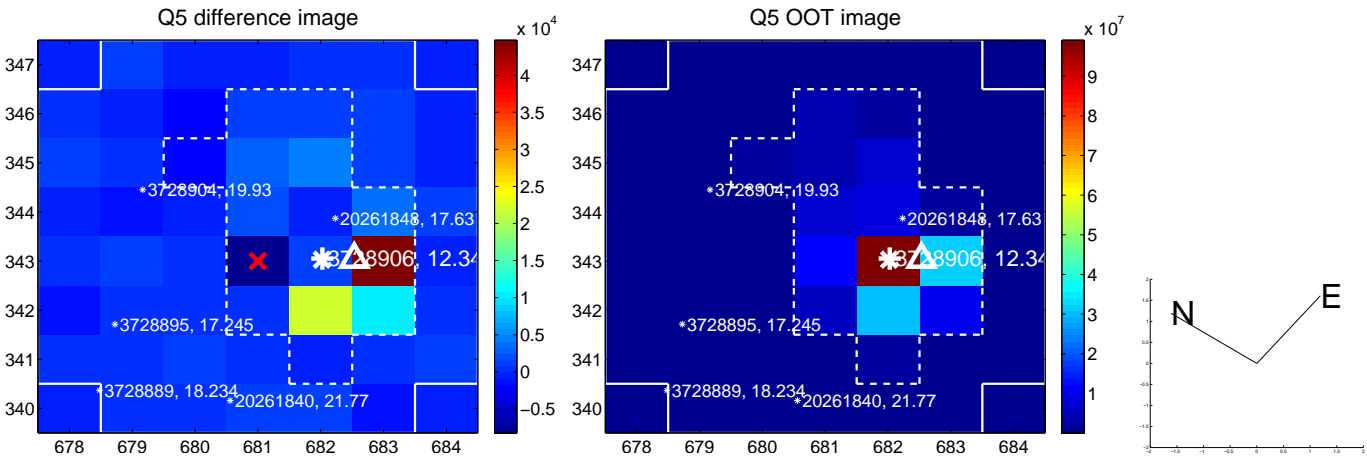


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



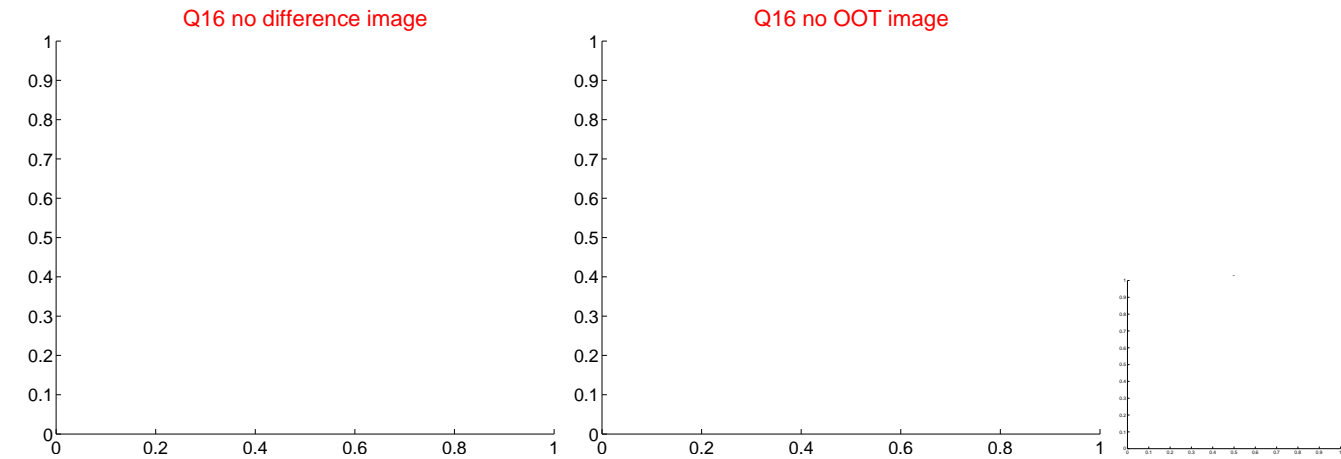
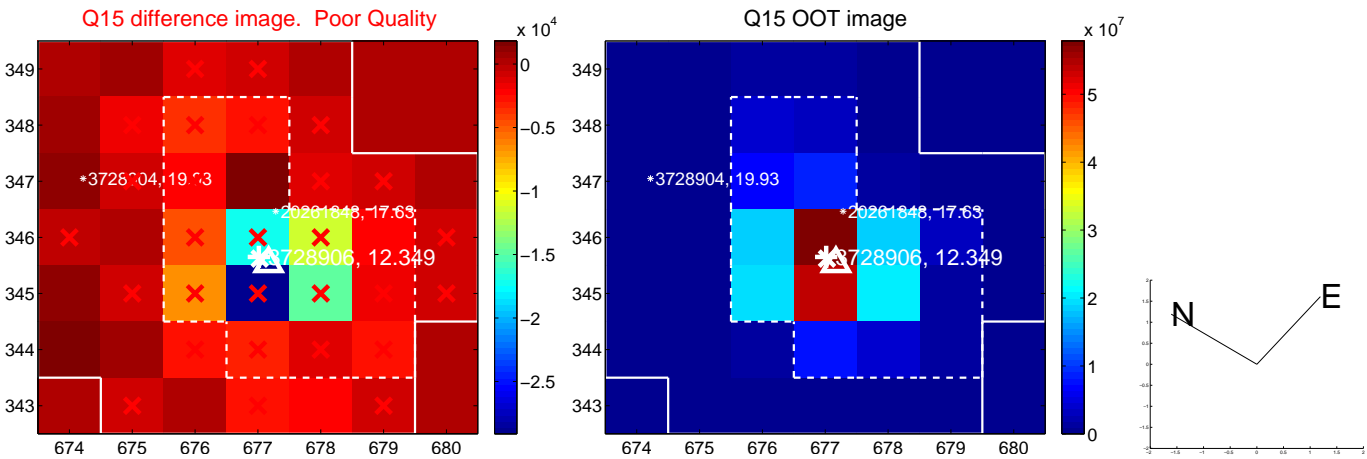
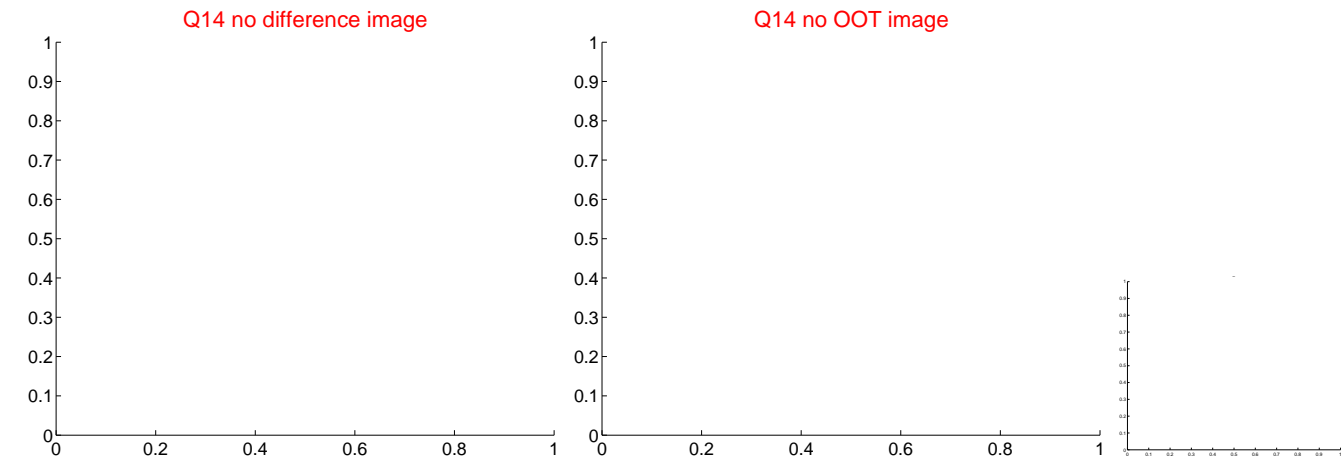
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



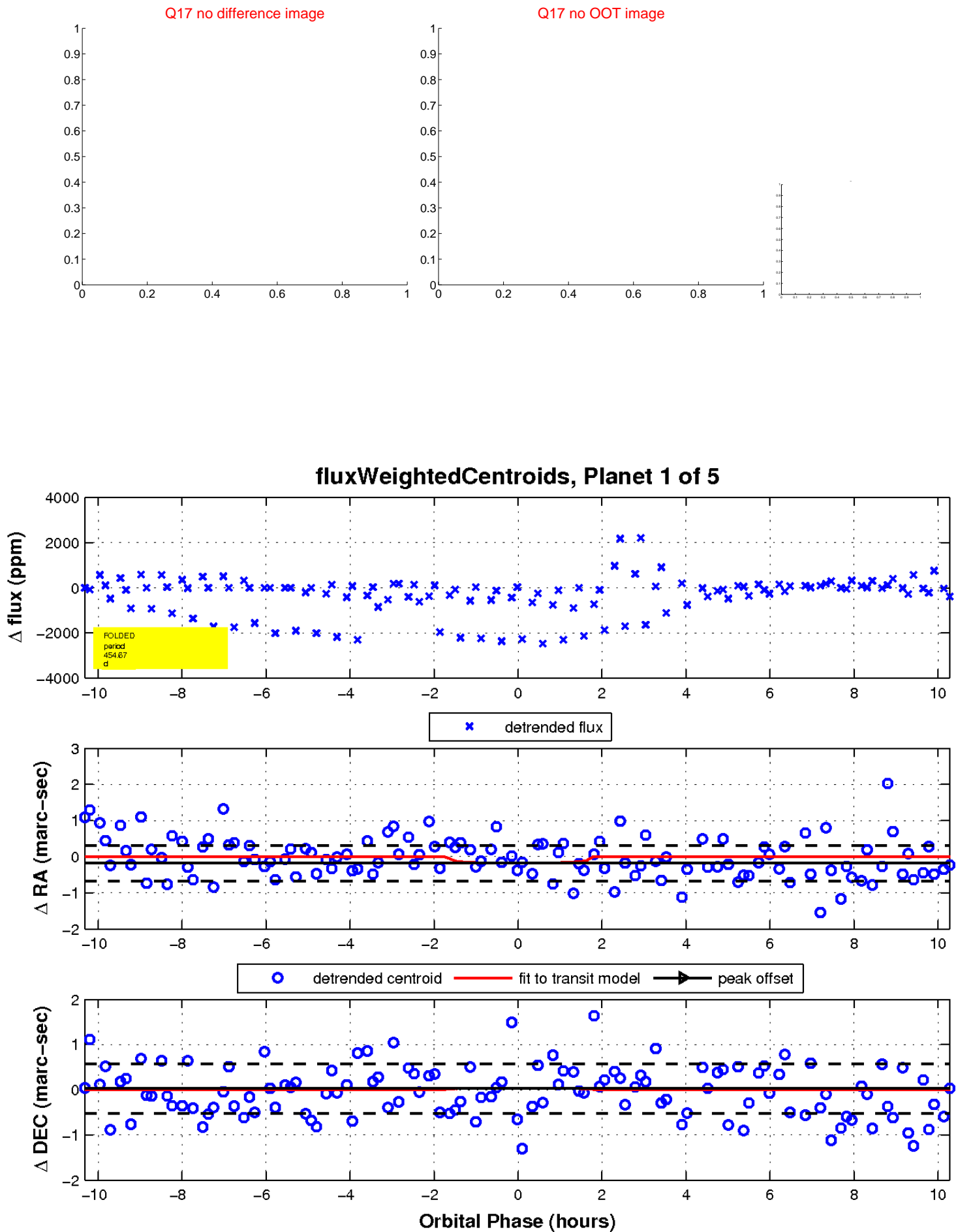
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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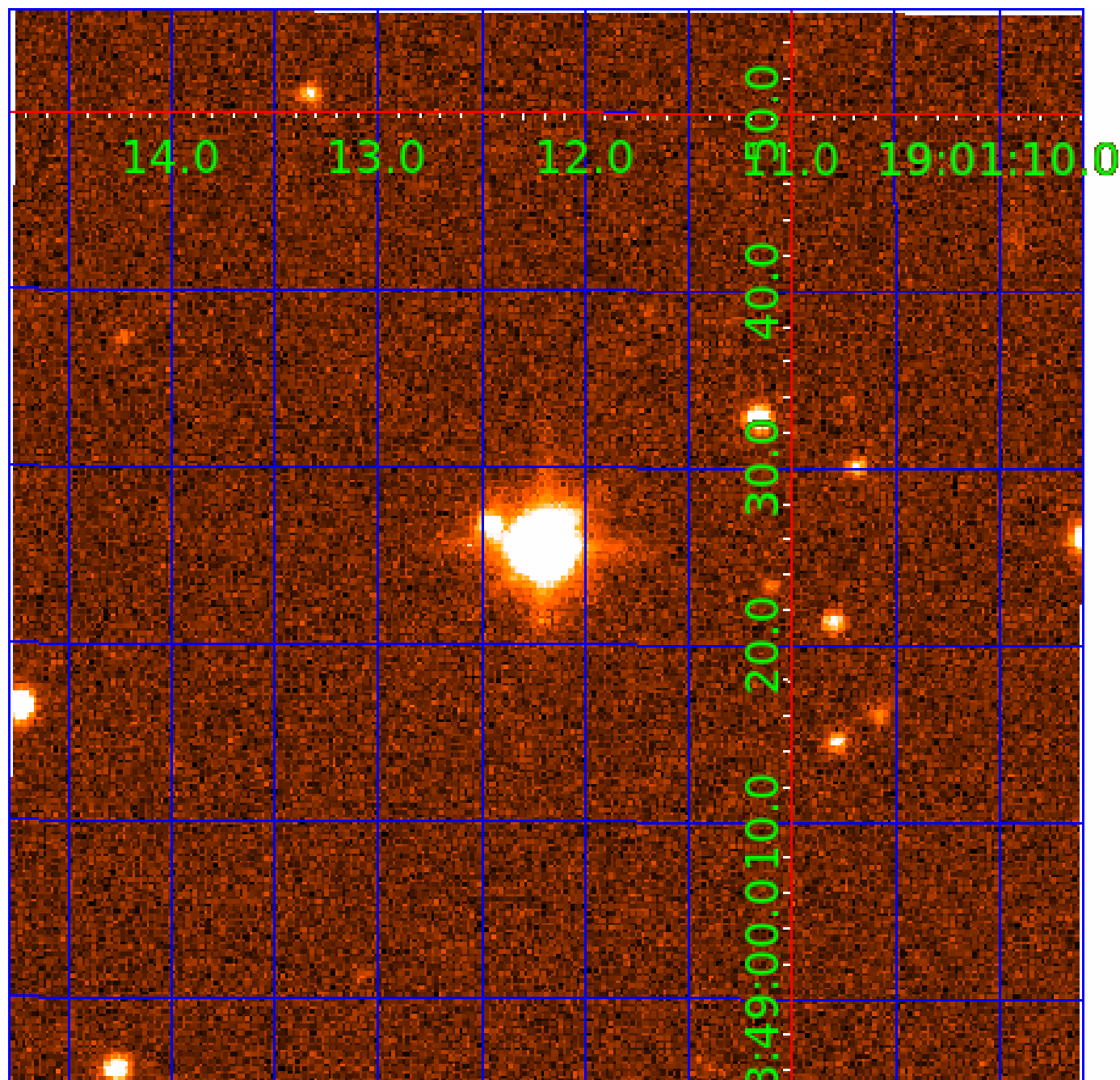


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UKIRT Image

Declination



KIC 003728906

Q1-17 DR25 TCE Parameters

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Robovetter Results

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003728906-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
003728906-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003728906-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

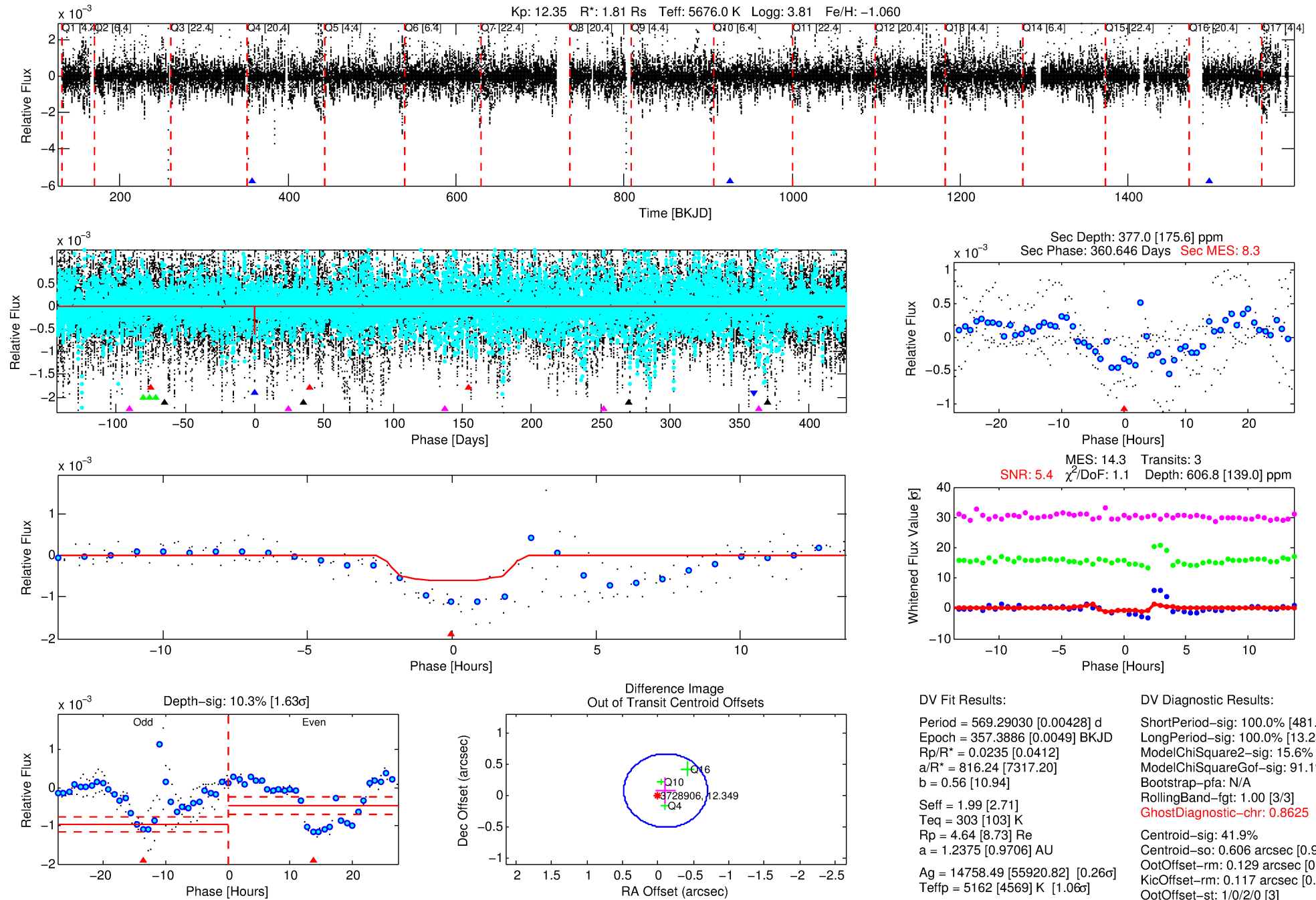
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003728906-02

No Significant Match Found

DV One-Page Summary

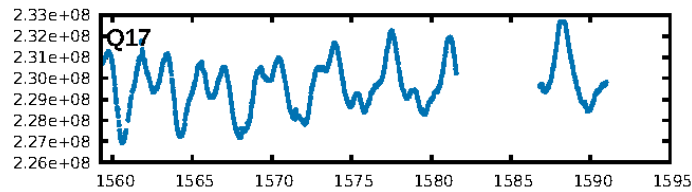
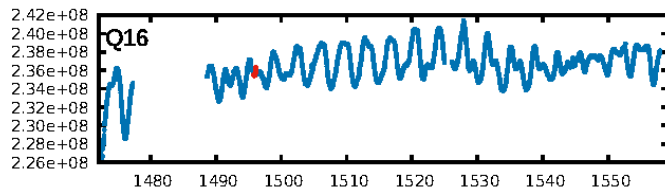
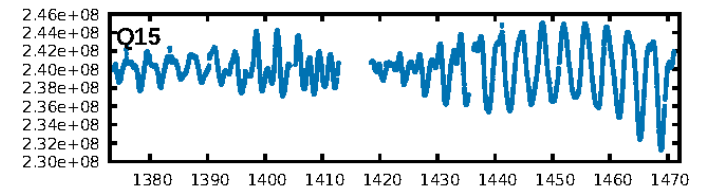
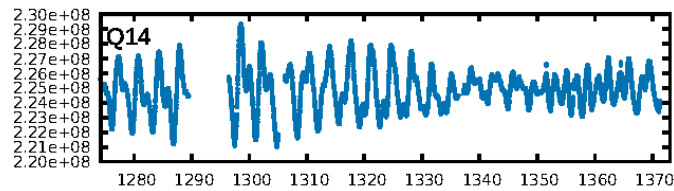
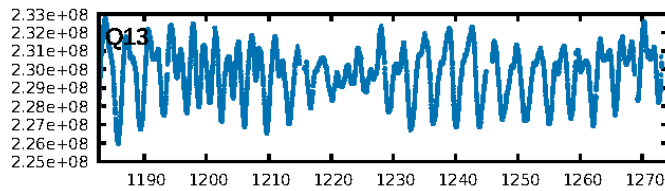
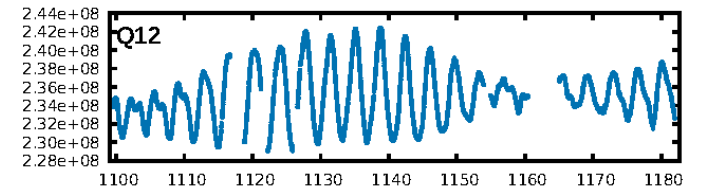
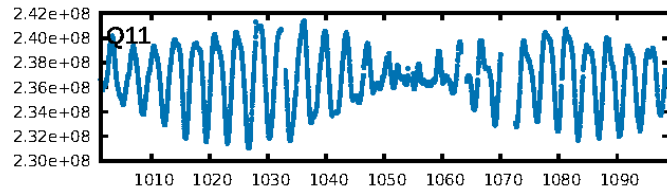
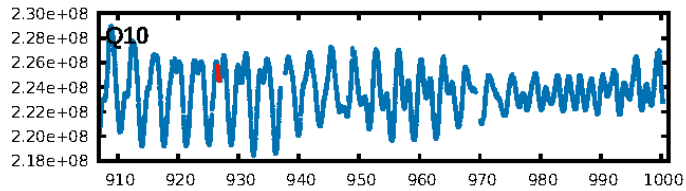
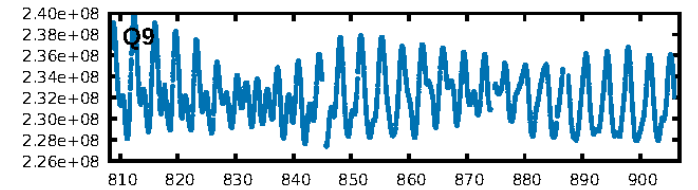
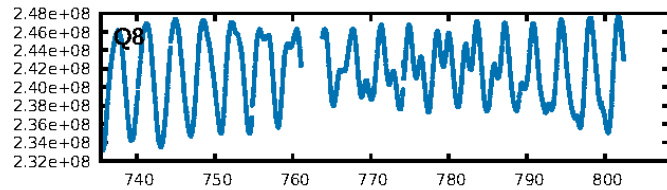
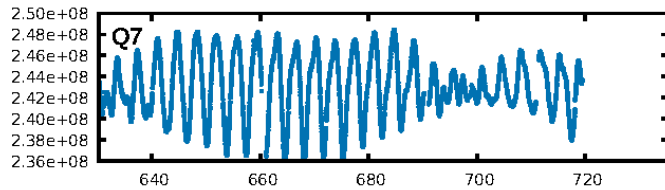
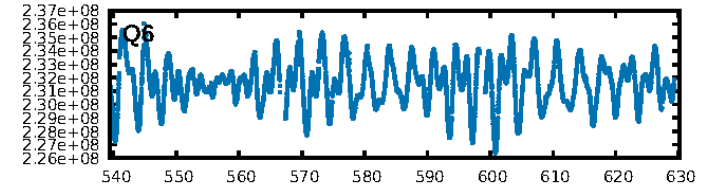
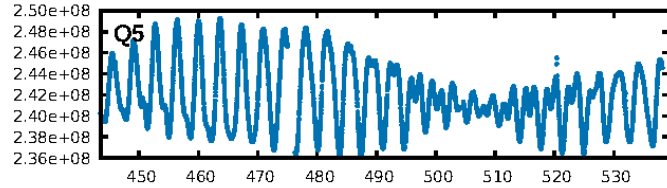
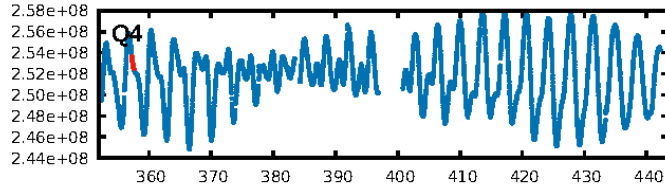
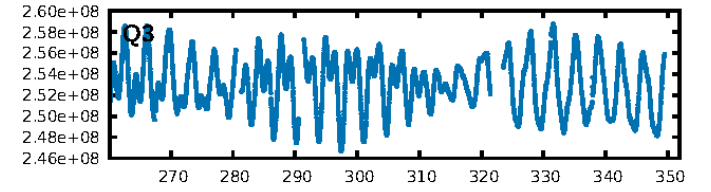
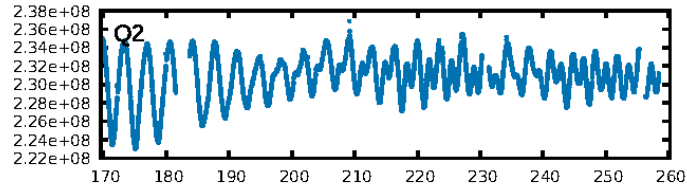
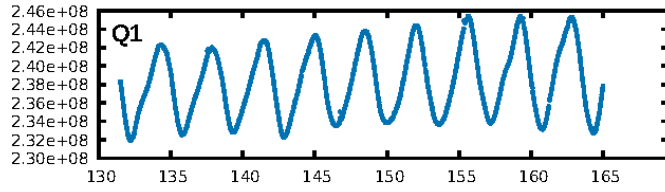
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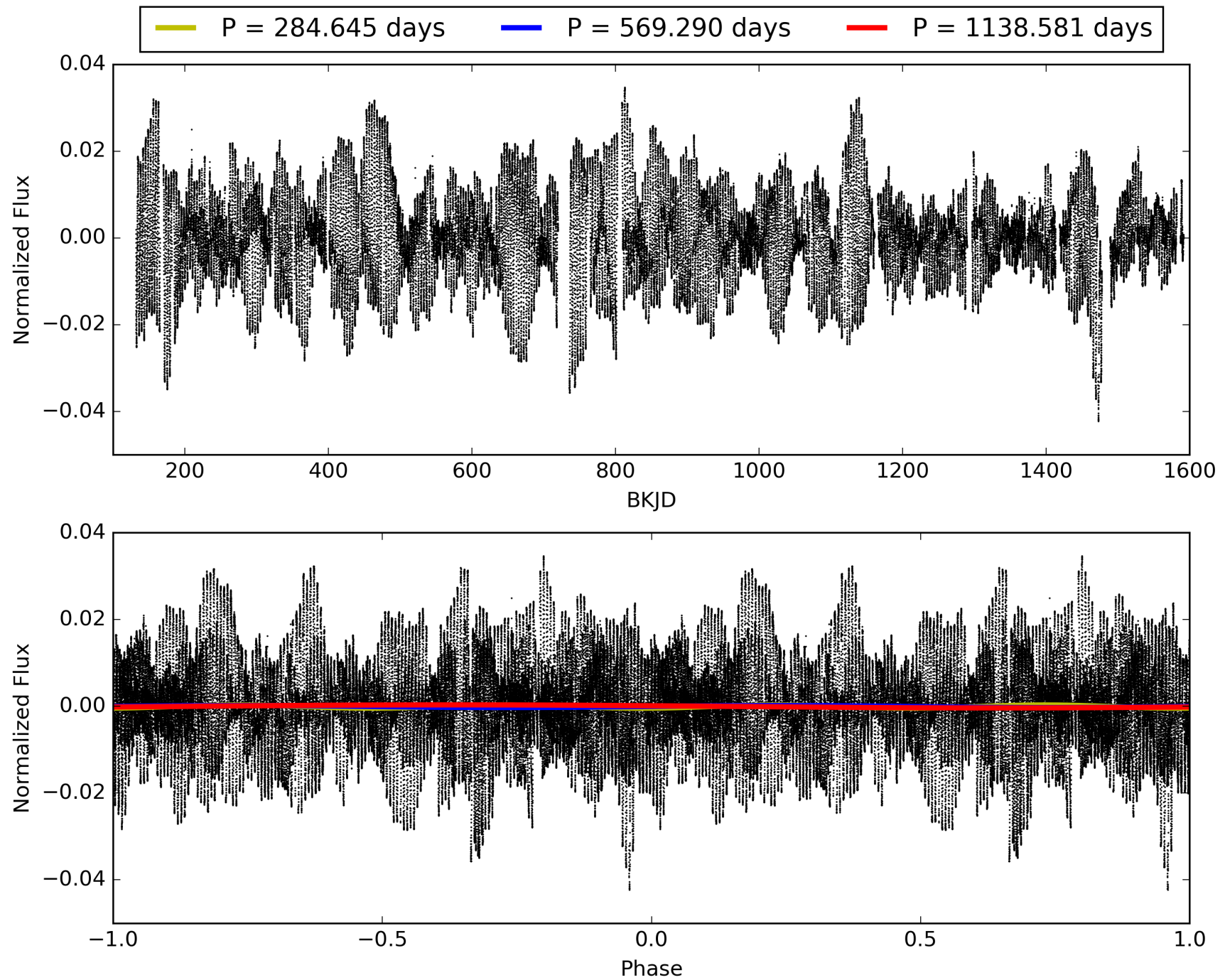
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003728906-02, PDC Light Curves

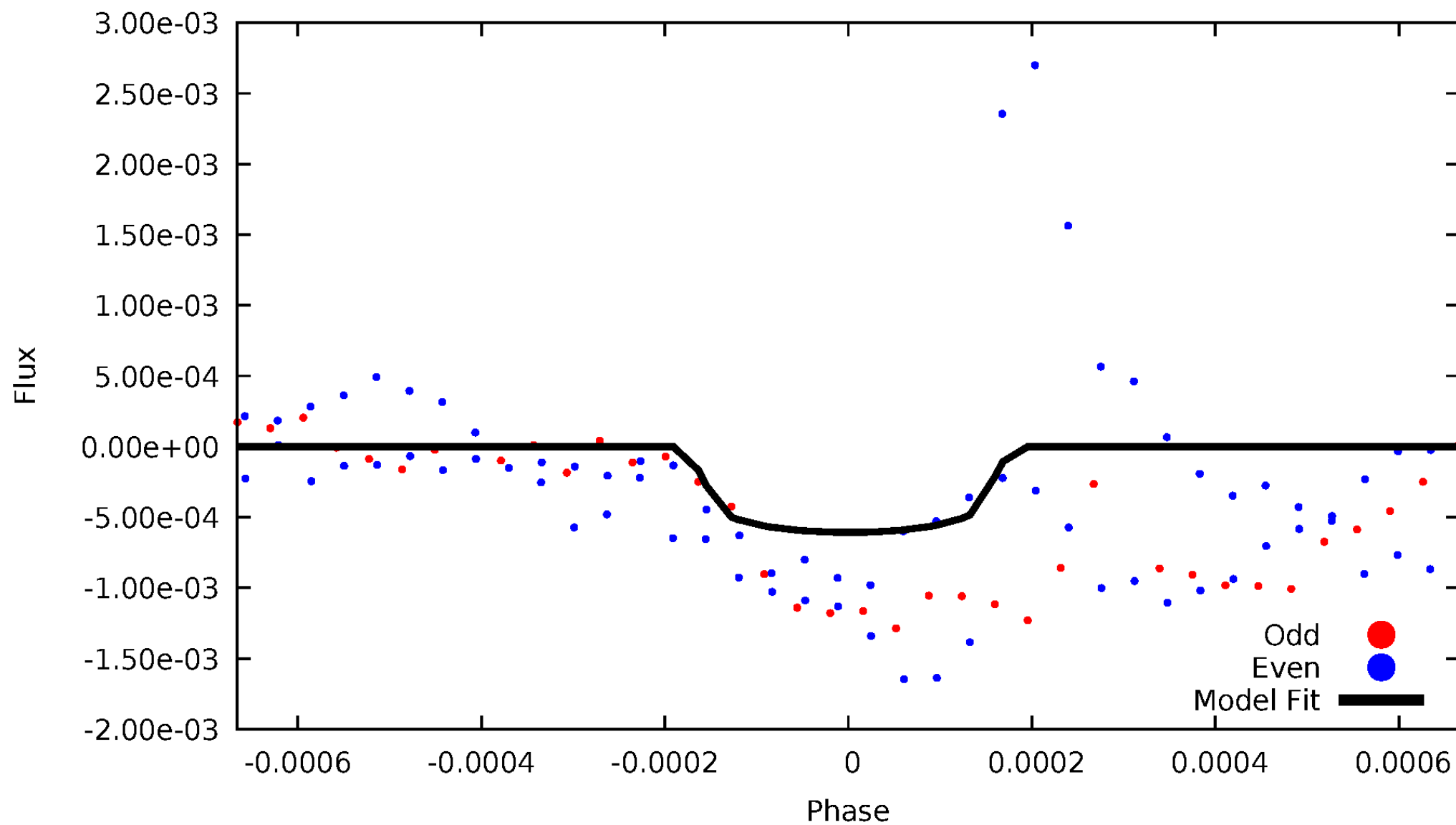


TCE 003728906-02



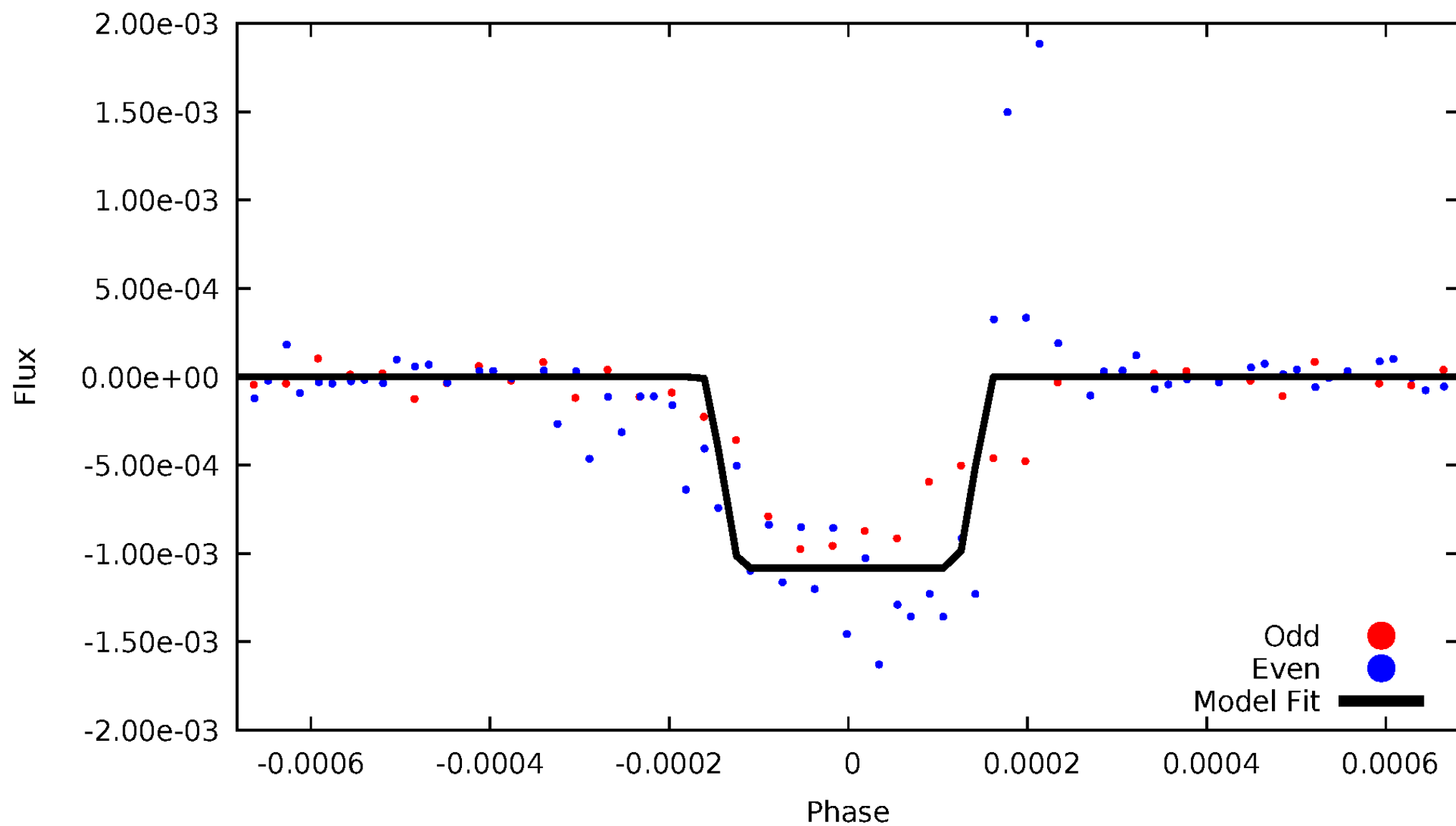
DV Odd/Even

TCE 003728906-02



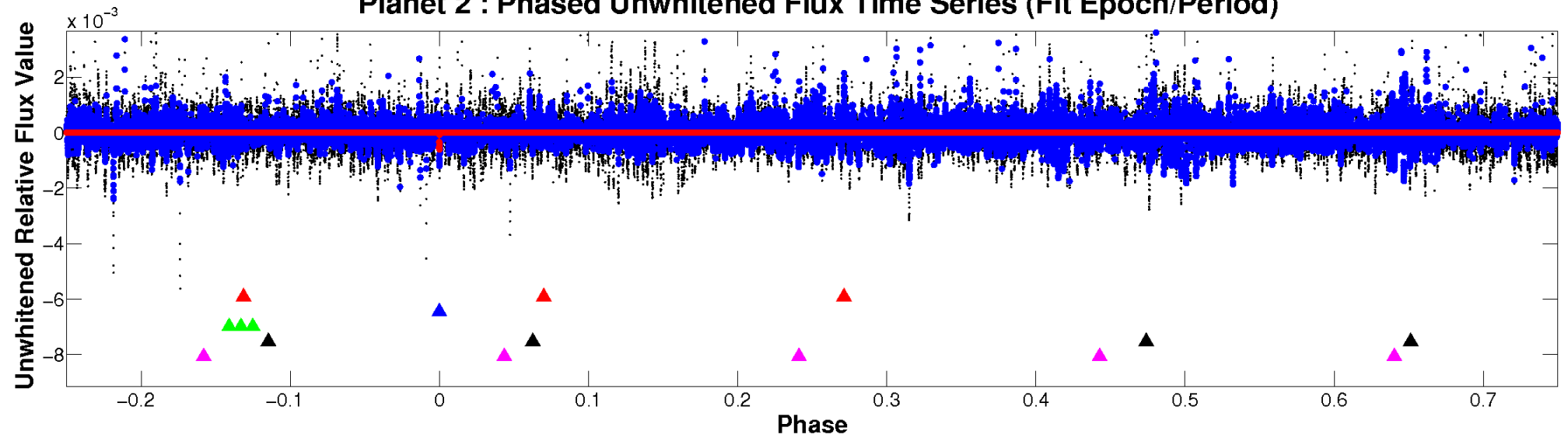
ALT Odd/Even

TCE 003728906-02

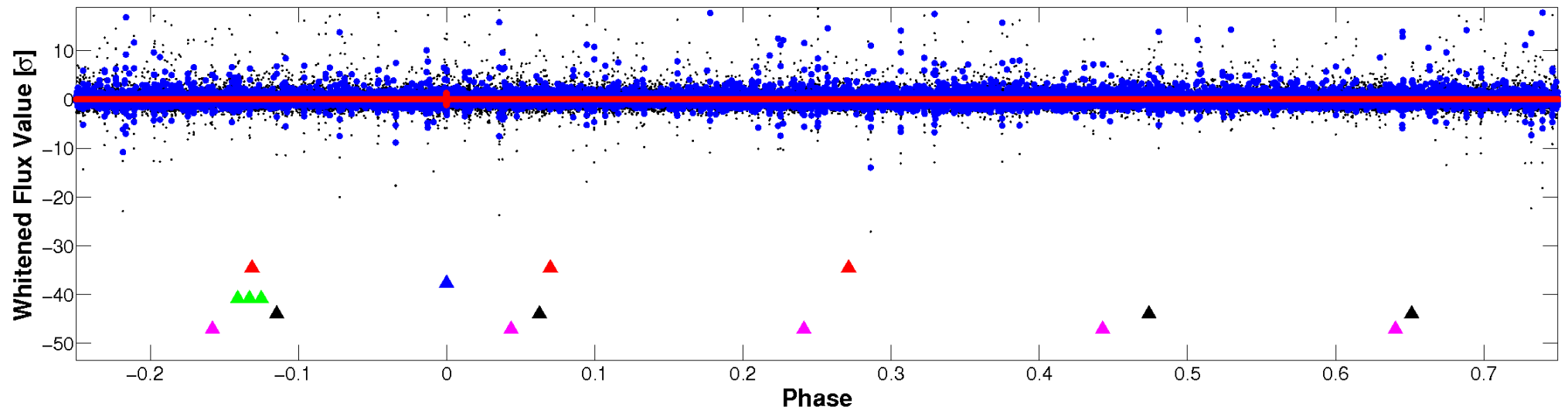


Non-Whitened Vs. Whitened Light Curve

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

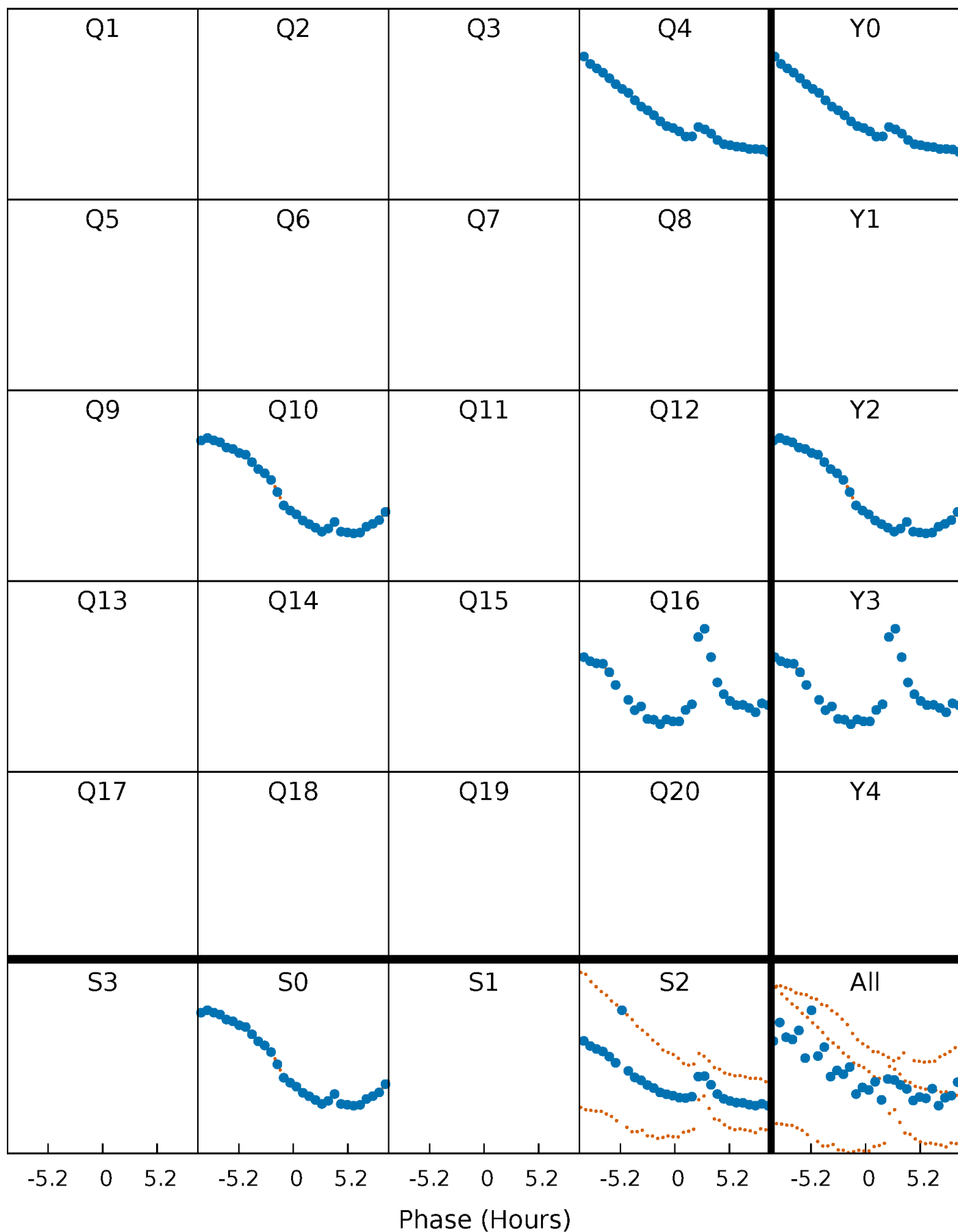


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



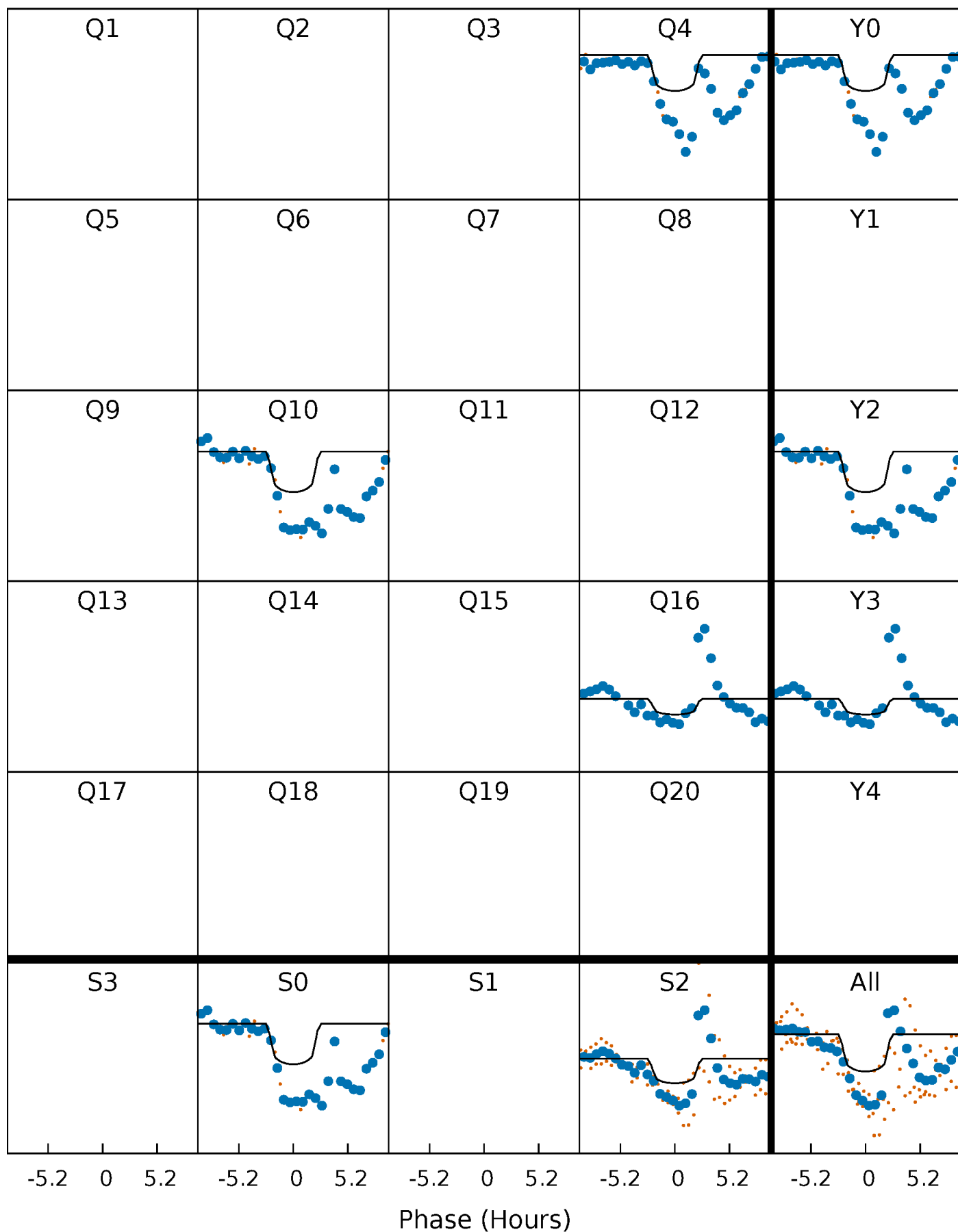
PDC Quarter-Phased Transit Curves

TCE 003728906-02 P=569.290304 Days $T_0=357.388586$ (BKJD)



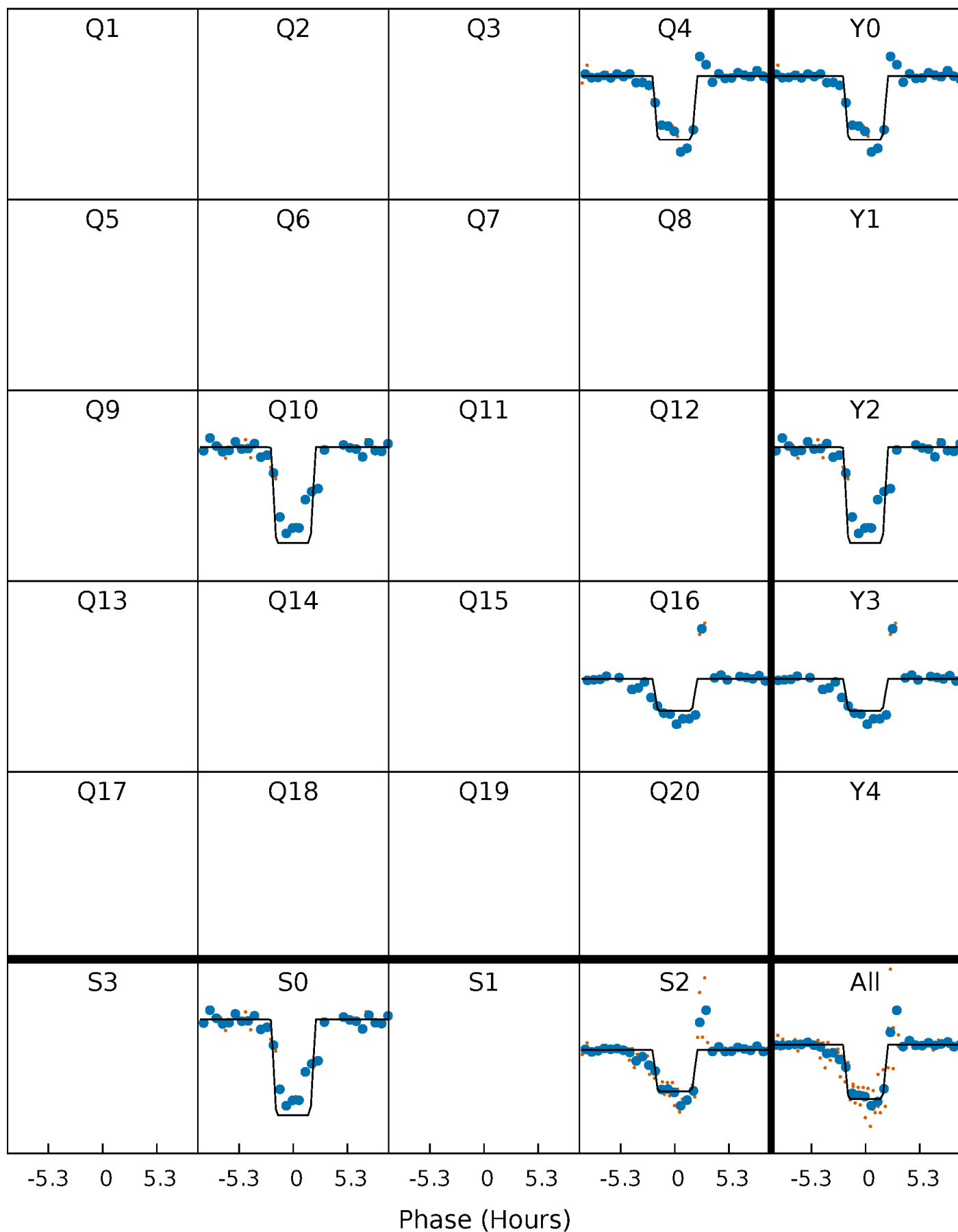
DV Quarter-Phased Transit Curves

TCE 003728906-02 $P=569.290304$ Days $T_0=357.388586$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

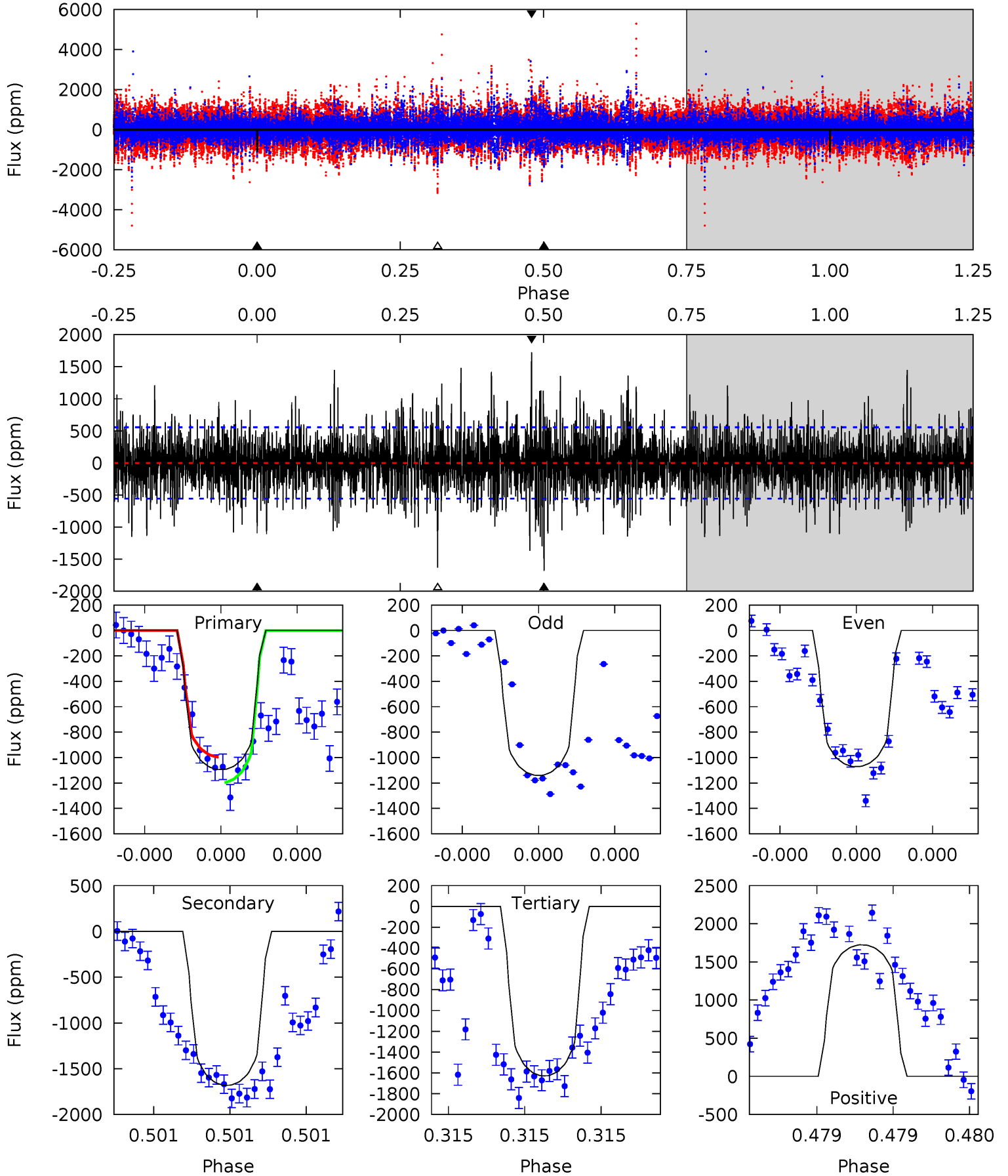
TCE 003728906-02 P=569.285793 Days $T_0=357.391887$ (BKJD)



DV Model-Shift Uniqueness Test

003728906-02, P = 569.290304 Days, E = 357.388586 Days

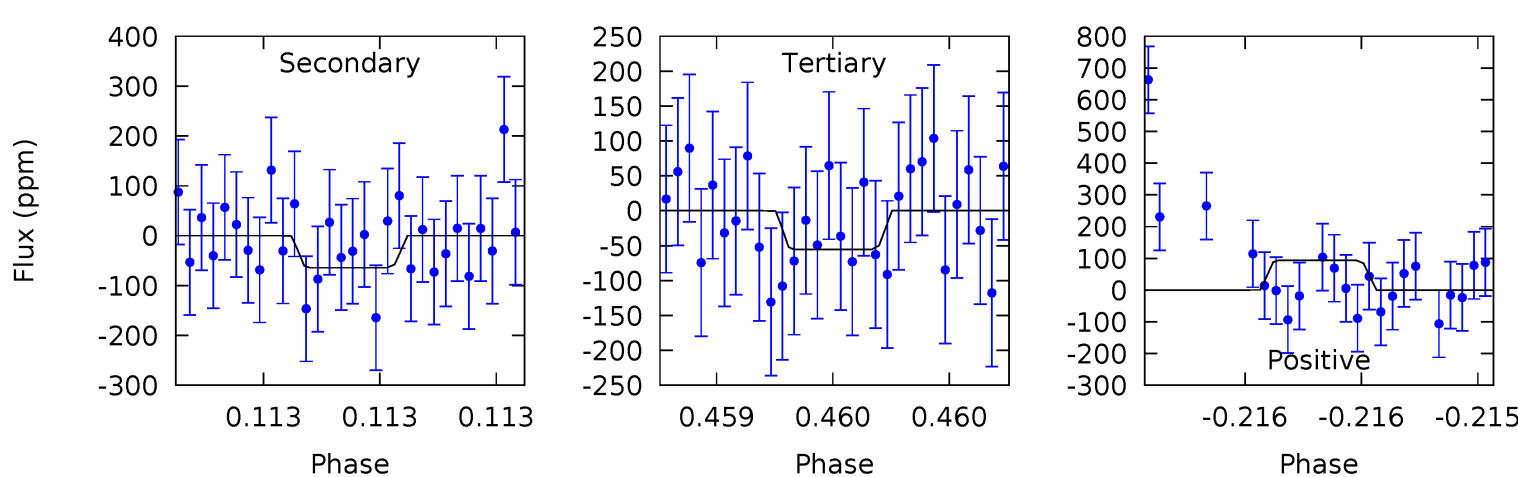
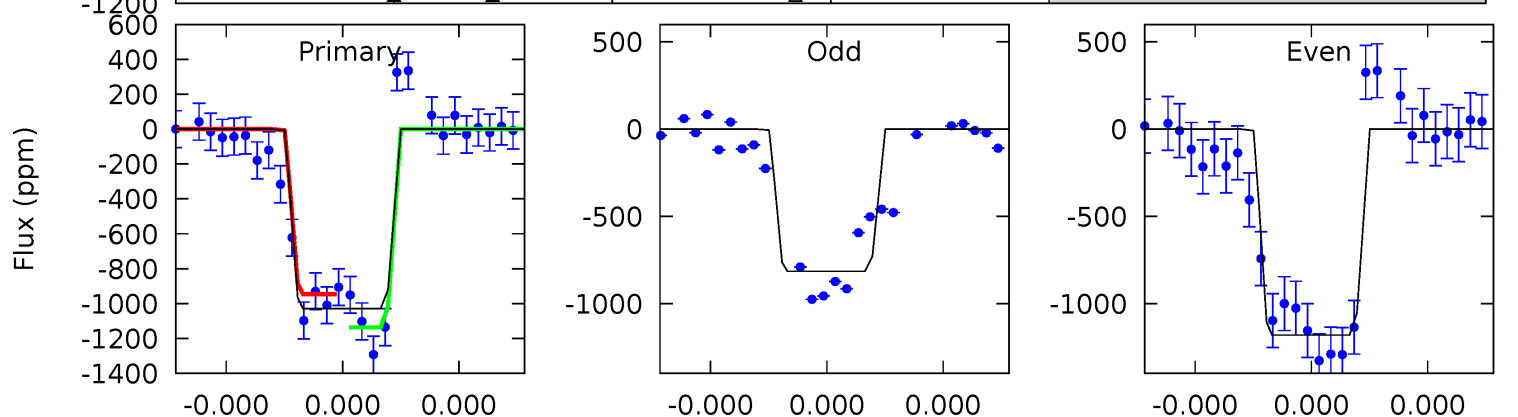
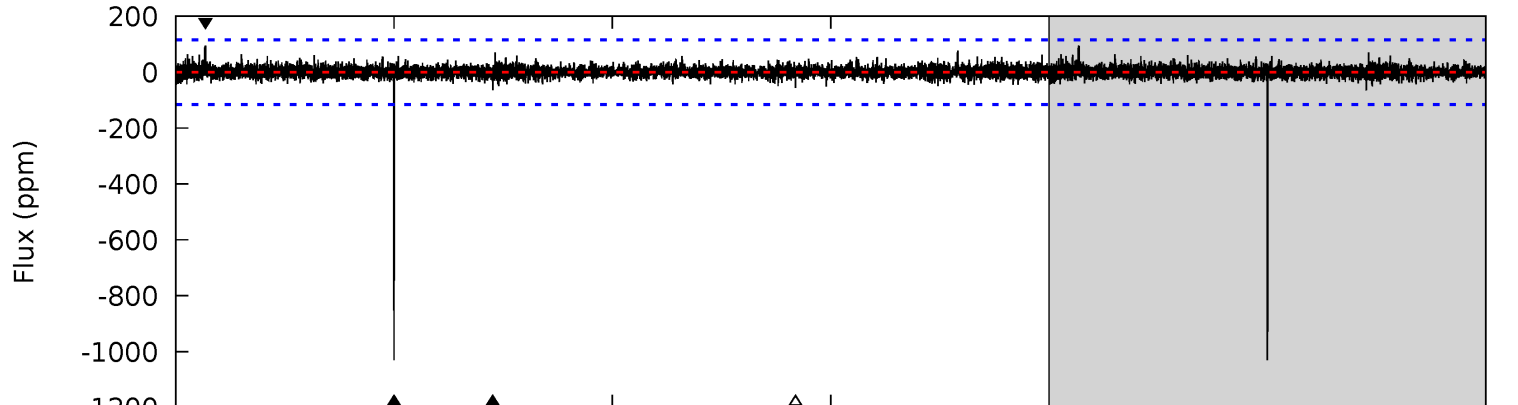
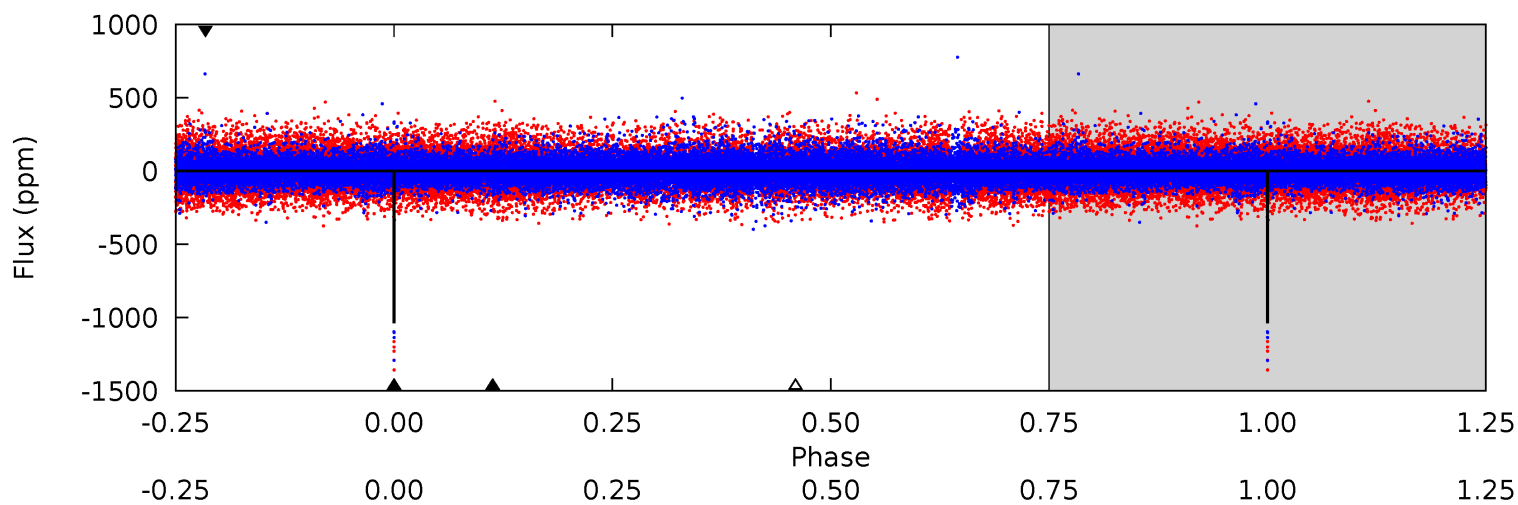
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	17.0	16.5	17.5	5.64	3.59	3.25	-5.42	-6.38	0.53	-0.43	0.30	0.94	0.51	1.02



Alt Model-Shift Uniqueness Test

003728906-02, P = 569.285793 Days, E = 357.391887 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.1	3.14	2.70	4.58	5.65	3.60	0.61	47.4	45.6	0.44	-1.44	9.25	1.08	0.08	0



Stellar Parameters For KIC 003728906

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5676^{+169}_{-169}	$3.814^{+0.832}_{-0.277}$	$-1.060^{+0.350}_{-0.300}$	$1.811^{+0.928}_{-1.237}$	$0.780^{+0.082}_{-0.100}$	$0.185^{+3.207}_{-0.109}$
	+3%/-3%	+22%/-7%	+33%/-28%	+51%/-68%	+11%/-13%	+1734%/-59%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003728906-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1681 ± 99	$6.66^{+7.30}_{-4.89}$	411^{+63}_{-73}	5780^{+6325}_{-1336}	$32620^{+377591}_{-25455}$
Alt.	-64 ± 21	$7.68^{+8.14}_{-5.14}$	414^{+56}_{-74}	3024^{+1195}_{-452}	861^{+6246}_{-660}

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

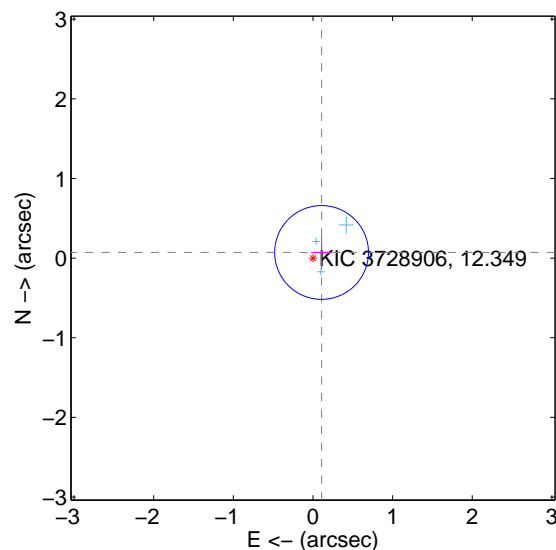
Supplemental centroid analysis for 003728906-02. Kepler magnitude: 12.35. Transit SNR 5.41

There are 3 quarters with good PRF difference image offsets

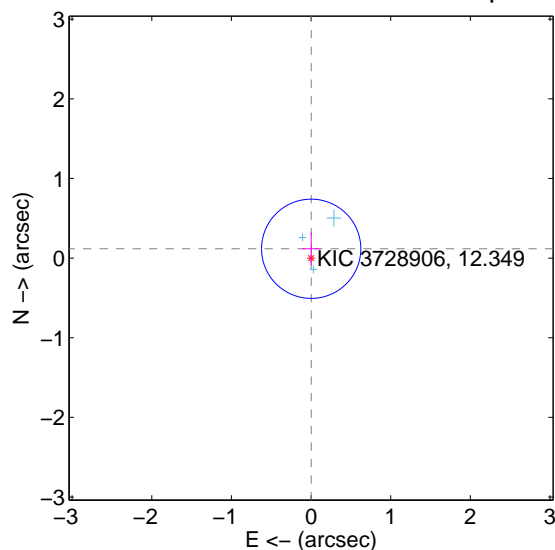
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.129 ± 0.196	0.66	-0.108 ± 0.132	0.071 ± 0.200
PRF-fit source offset from KIC position	0.117 ± 0.208	0.56	-0.002 ± 0.116	0.117 ± 0.208
photometric centroid source offset	0.61 ± 0.64	0.94	-0.56 ± 0.64	0.24 ± 0.63

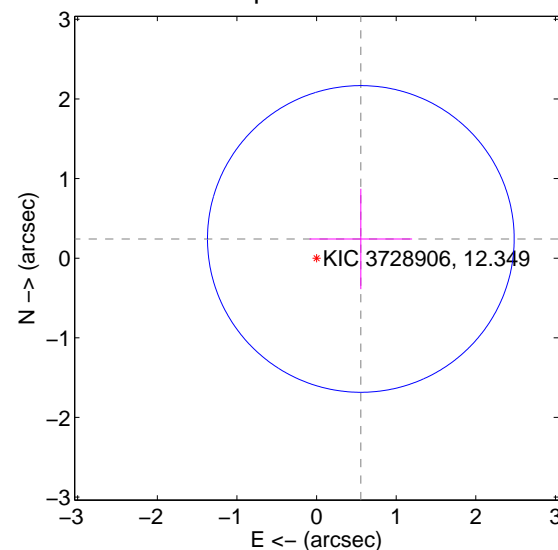
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

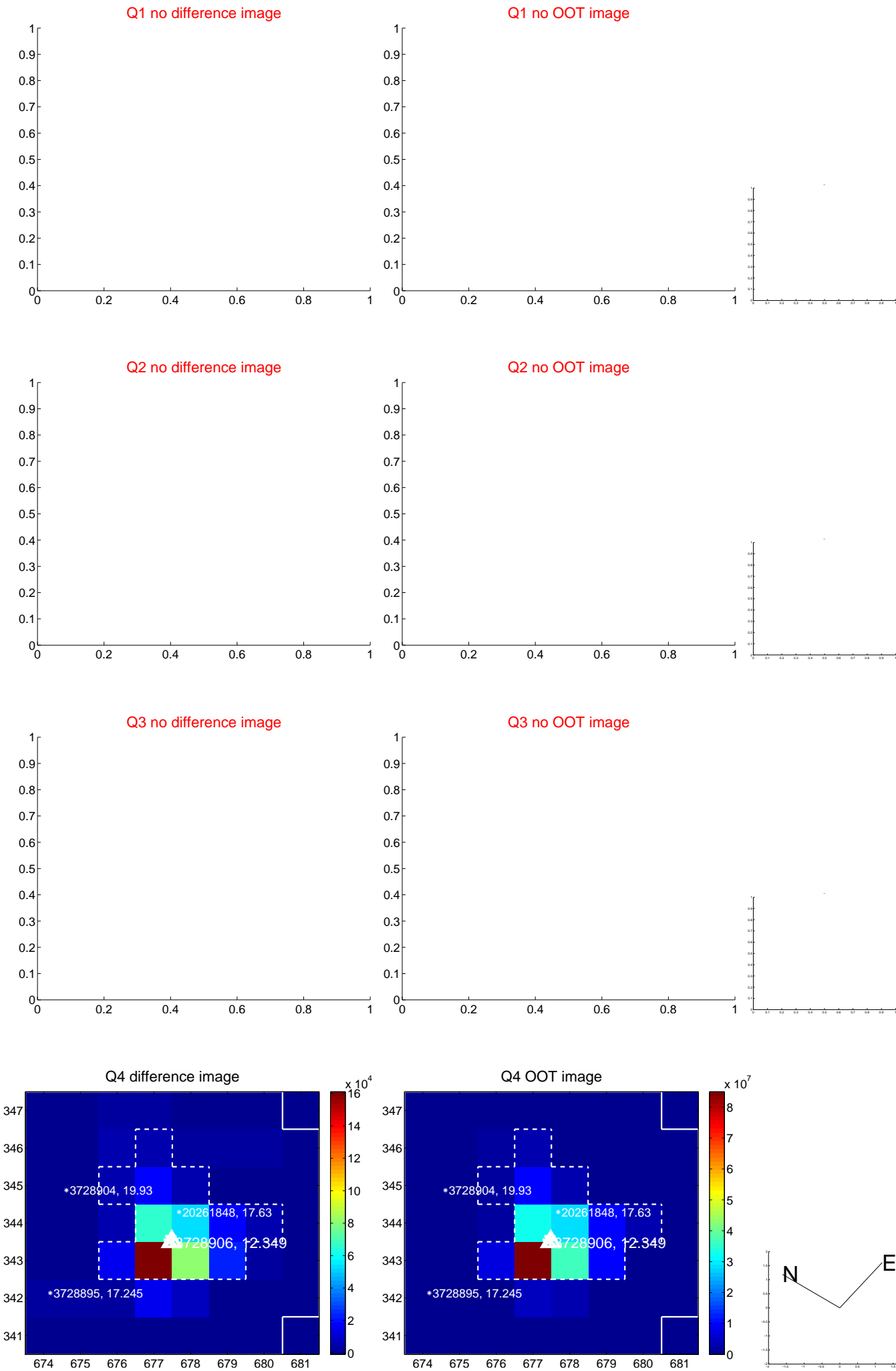


offset from photometric centroids



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.

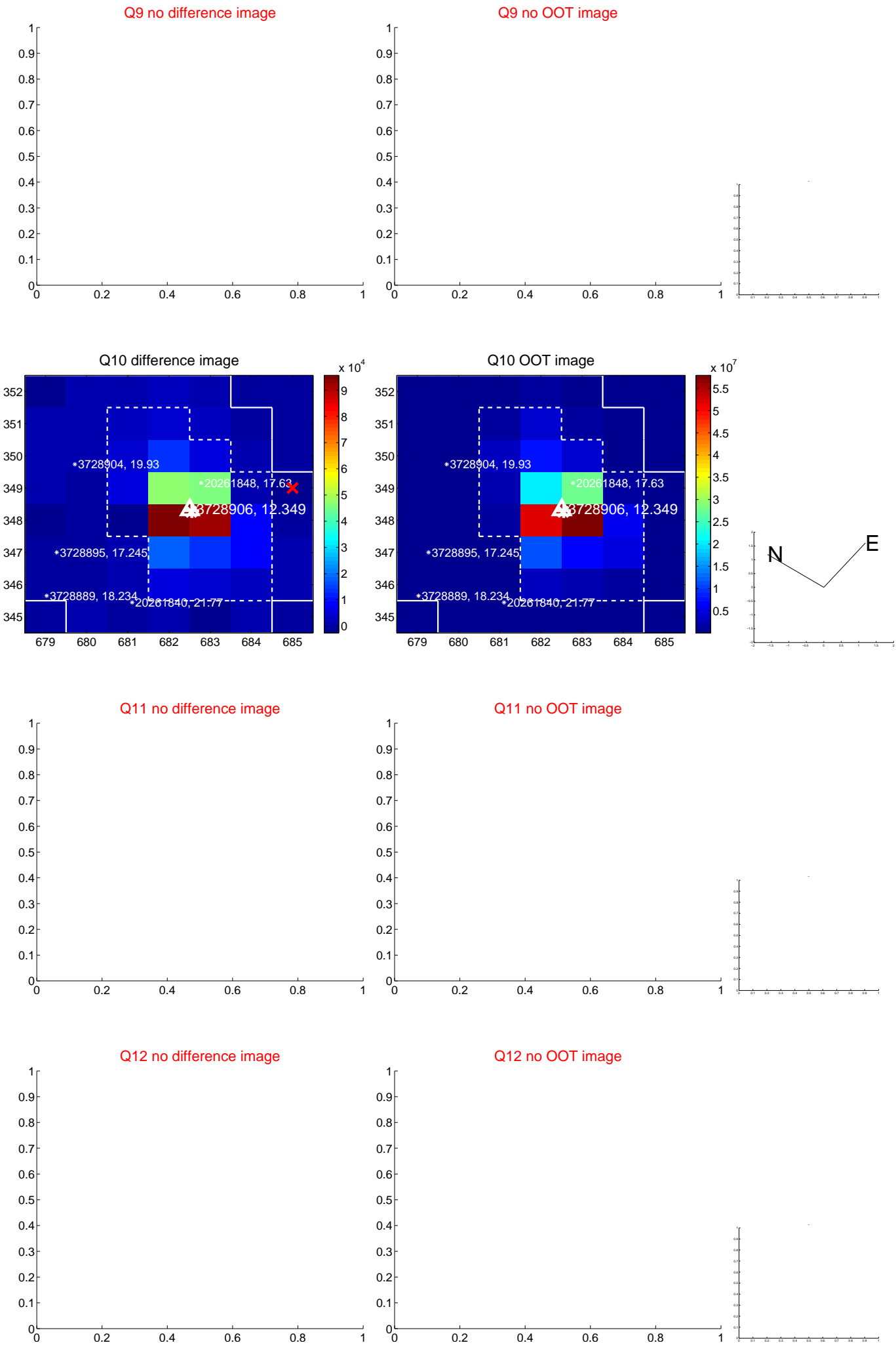
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



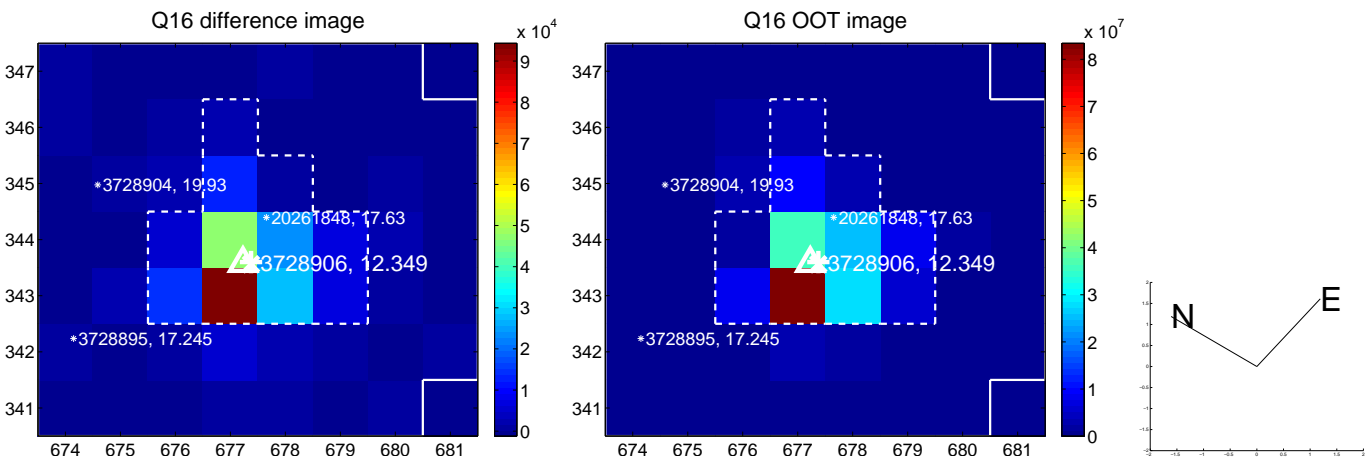
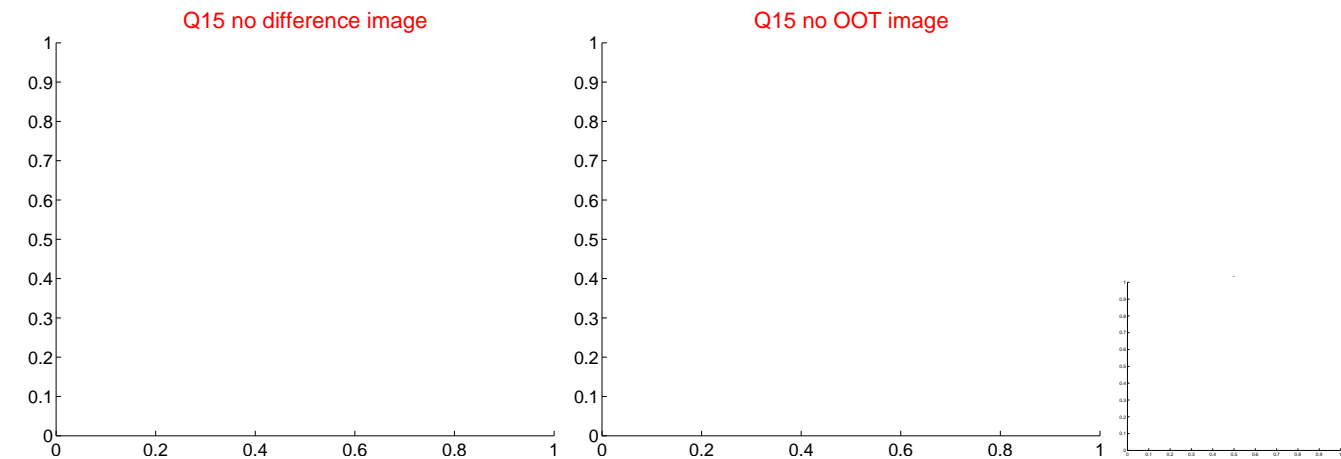
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



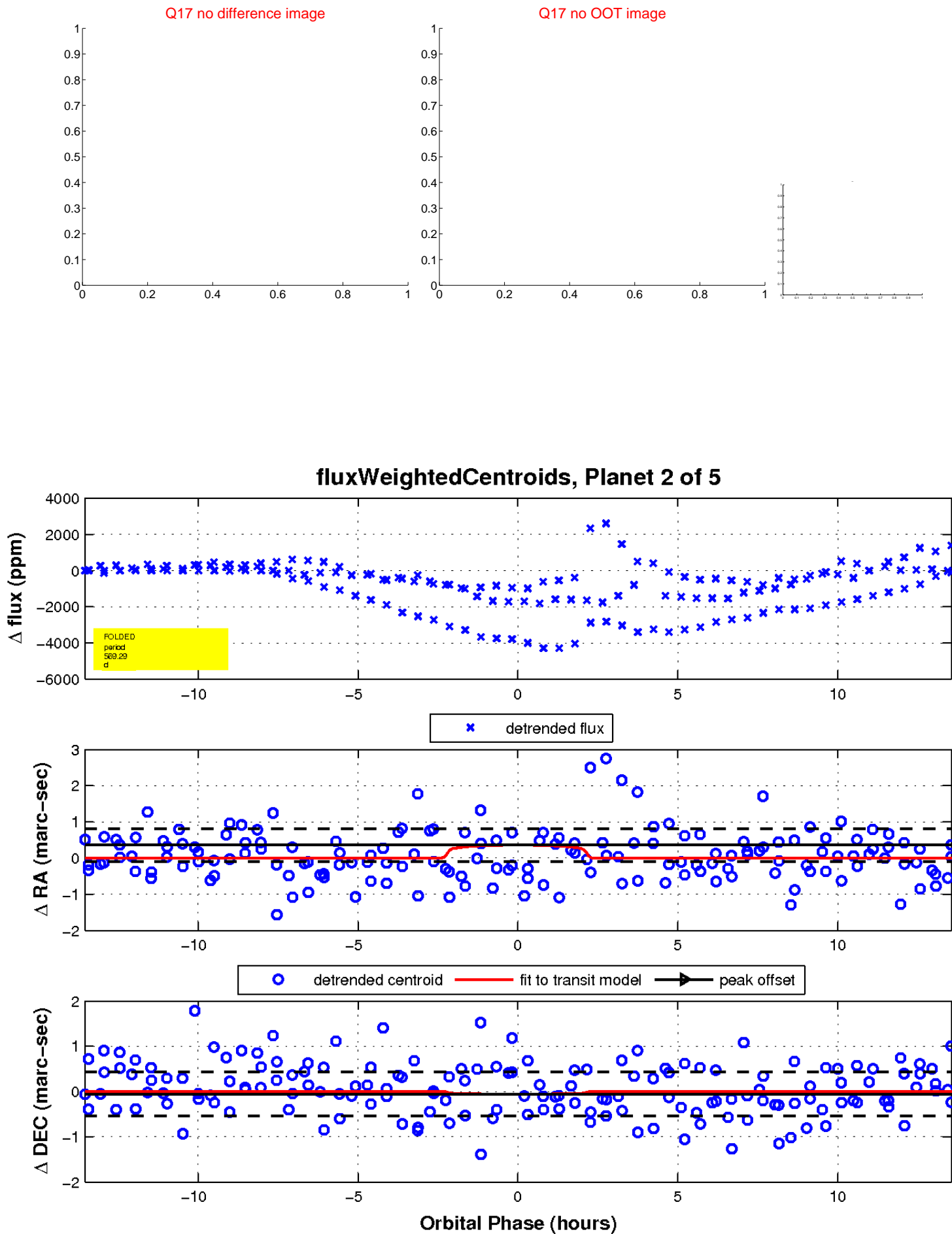
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

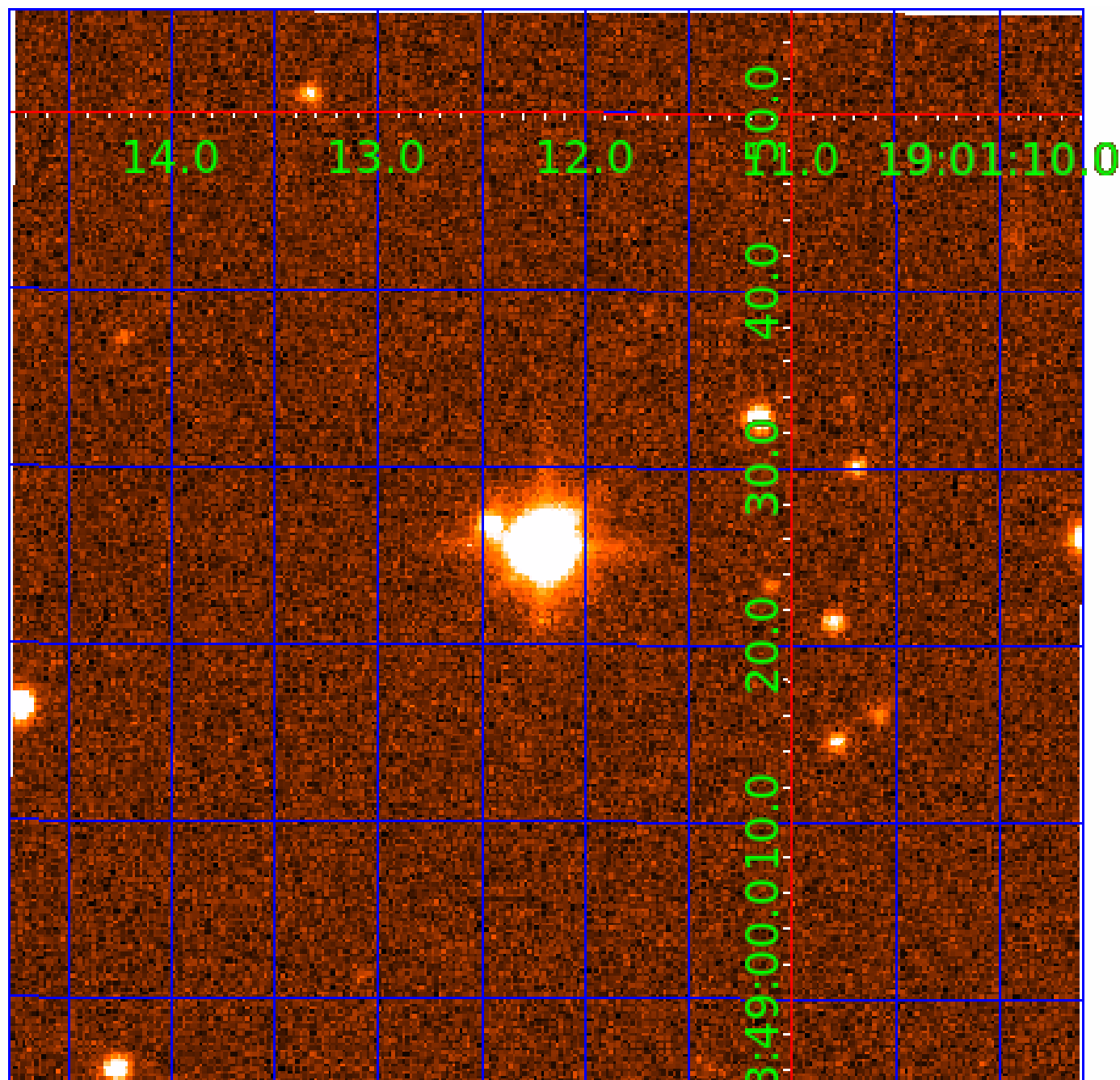


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003728906

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})
003728906-01	OBS	No	454.674594	511.866890	551.7	3.452	16.7	5.2	1.81	5676	4.36	2.69
003728906-02	OBS	No	569.290304	357.388586	606.8	4.550	14.3	5.4	1.81	5676	4.64	1.99
003728906-03	OBS	No	573.805118	277.145067	684.3	6.793	13.9	5.6	1.81	5676	5.02	1.97
003728906-05	OBS	No	342.023241	152.666540	370.7	3.500	14.1	-1.0	1.81	5676	3.49	3.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003728906-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003728906-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
003728906-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003728906-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

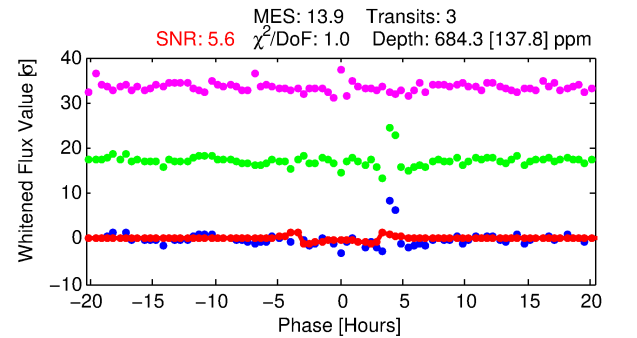
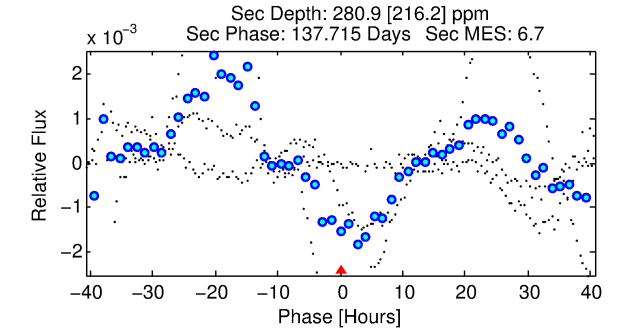
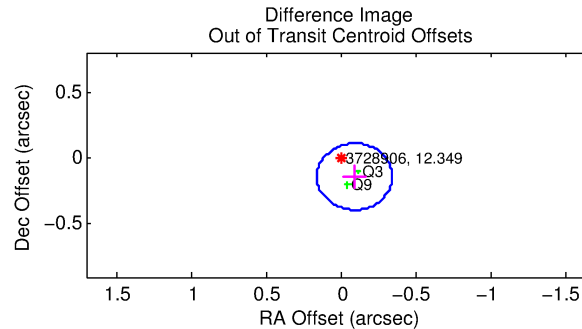
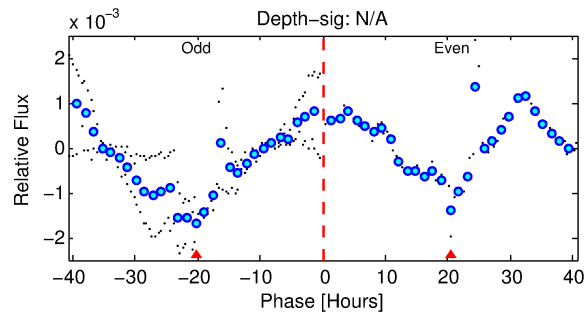
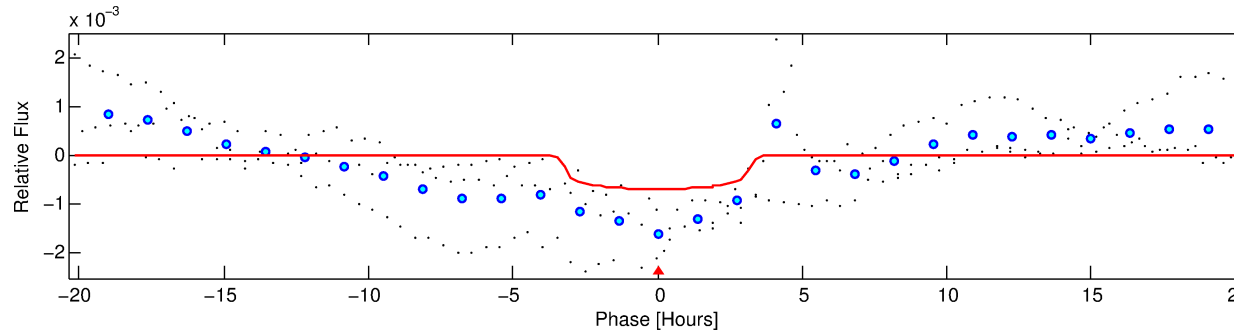
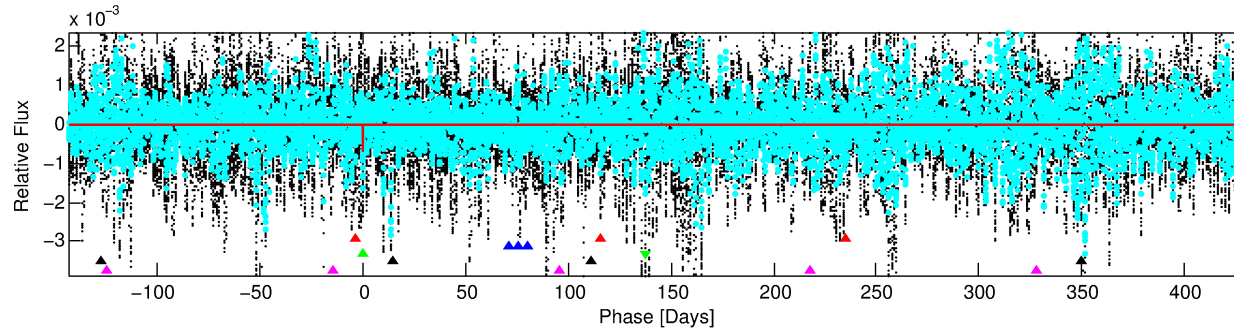
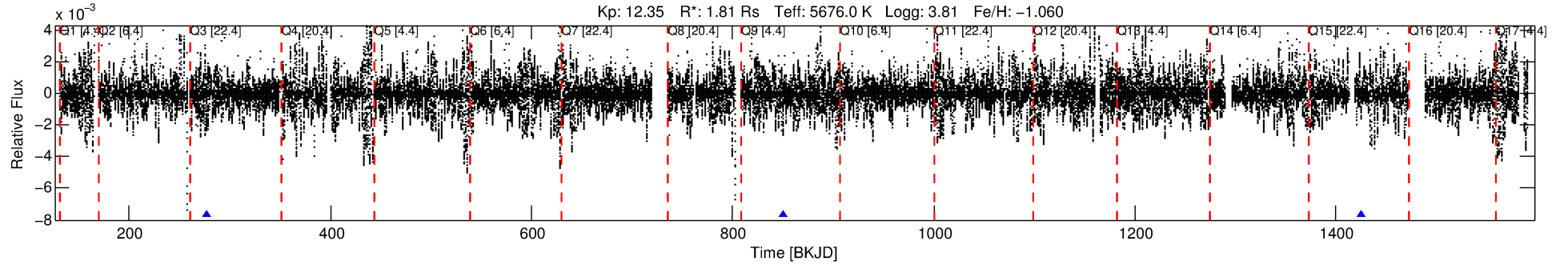
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003728906-03

No Significant Match Found

DV One-Page Summary

KIC: 3728906 Candidate: 3 of 5 Period: 573.805 d



DV Fit Results:

Period = 573.80512 [0.00522] d
Epoch = 277.1451 [0.0064] BKJD
Rp/R* = 0.0254 [0.0073]
a/R* = 506.26 [610.07]
b = 0.66 [1.04]
Seff = 1.97 [2.68]
Teq = 302 [103] K
Rp = 5.02 [3.71] Re
a = 1.2440 [0.9757] AU
Ag = 9505.94 [15784.69] [0.60σ]
Teffp = 4612 [1114] K [3.85σ]

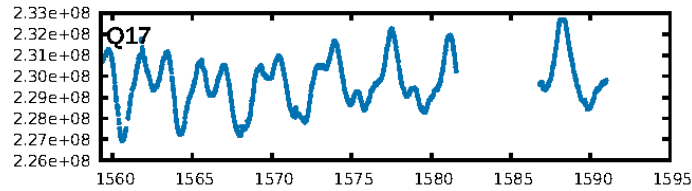
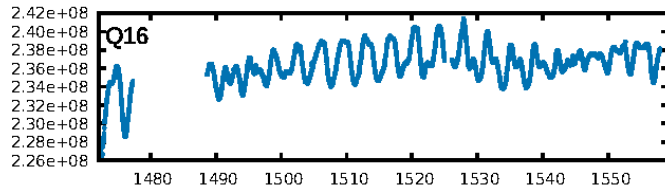
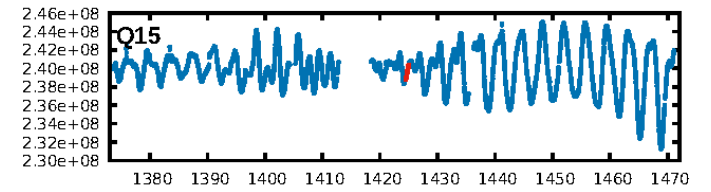
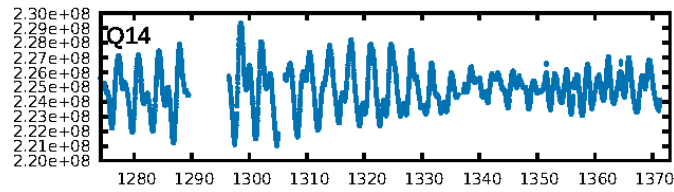
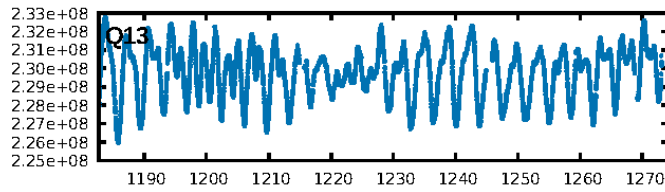
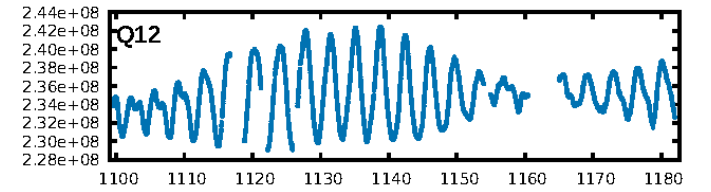
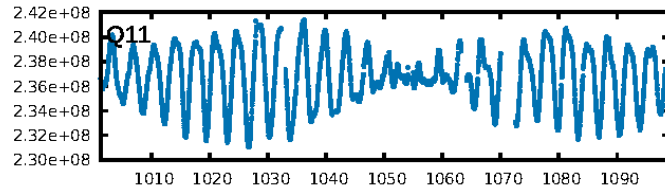
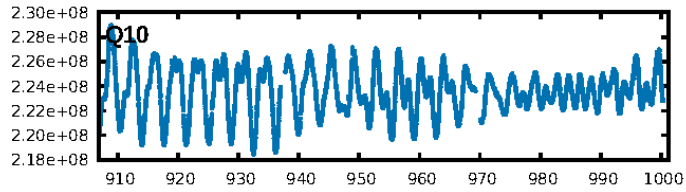
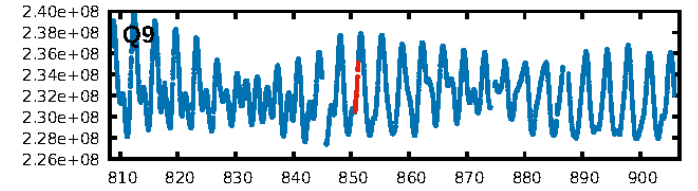
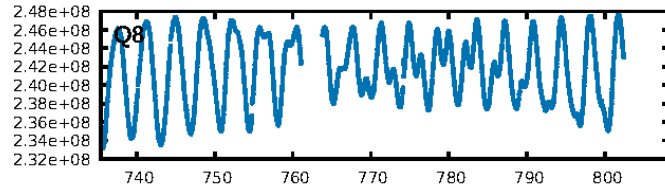
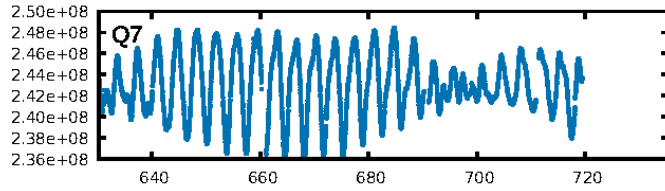
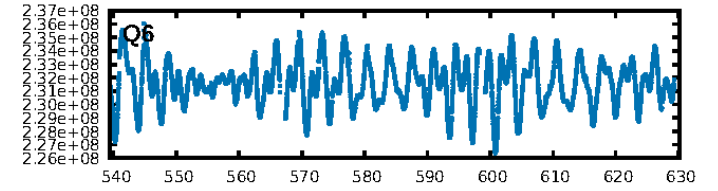
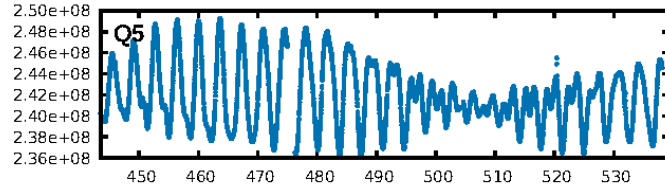
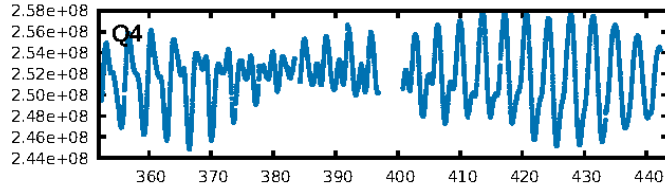
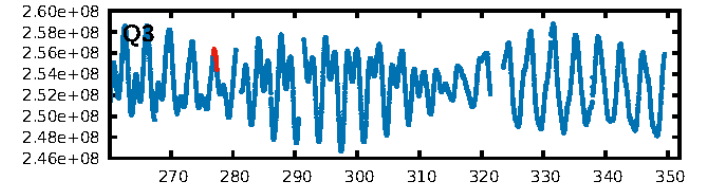
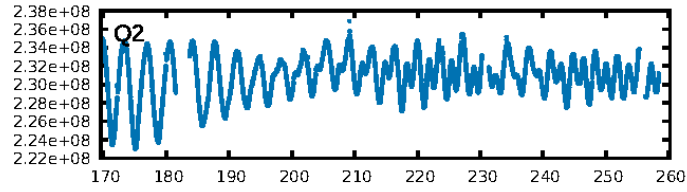
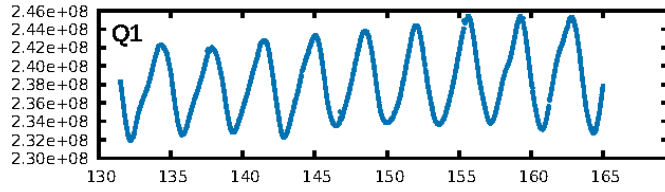
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.25σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 40.8%
ModelChiSquareGof-sig: 96.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4181
Centroid-sig: 20.0%
Centroid-so: 0.647 arcsec [1.18σ]
OotOffset-rm: 0.169 arcsec [2.01σ]
KicOffset-rm: 0.089 arcsec [0.75σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

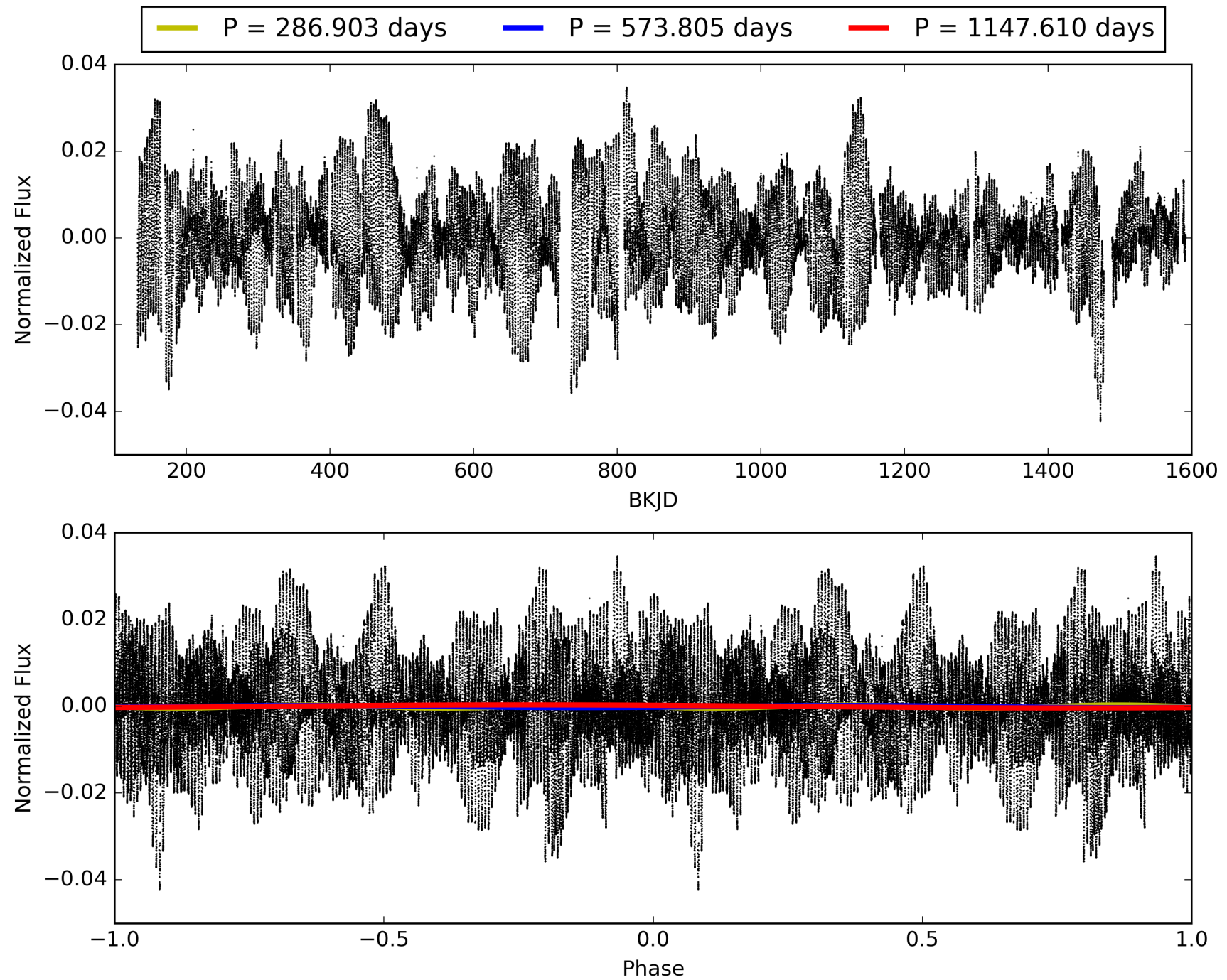
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:44:34 Z

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

TCE 003728906-03, PDC Light Curves

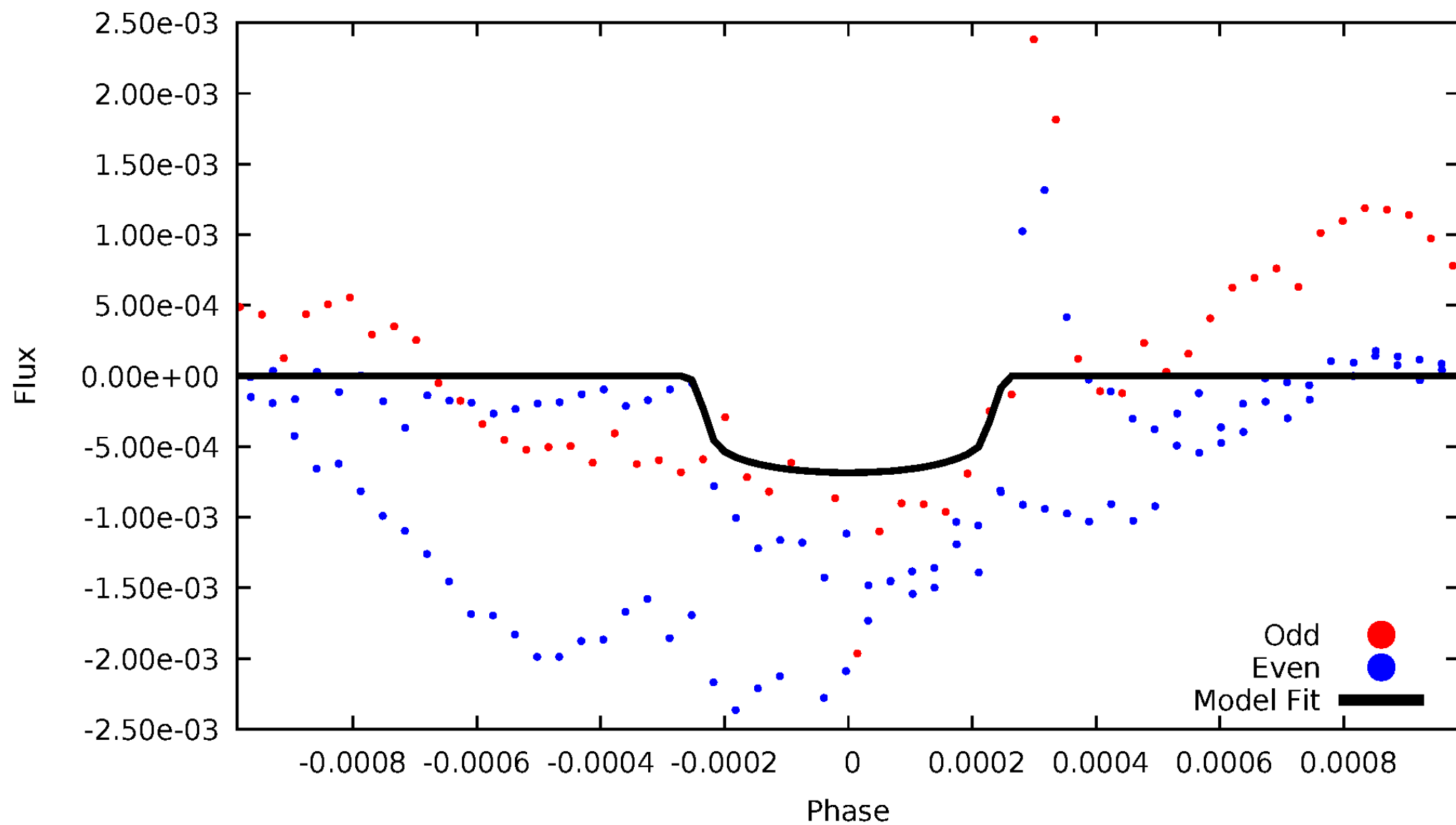


TCE 003728906-03



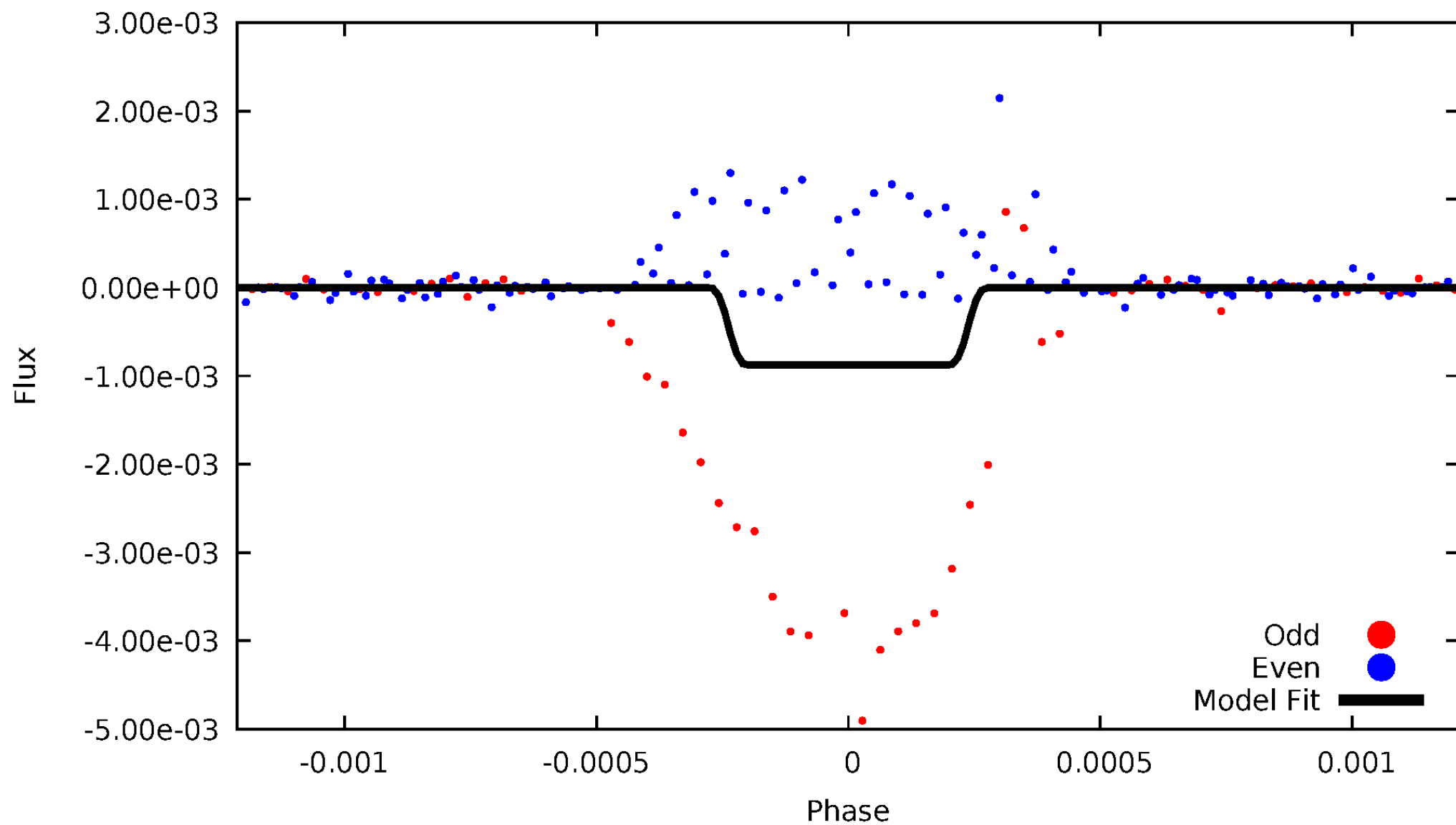
DV Odd/Even

TCE 003728906-03



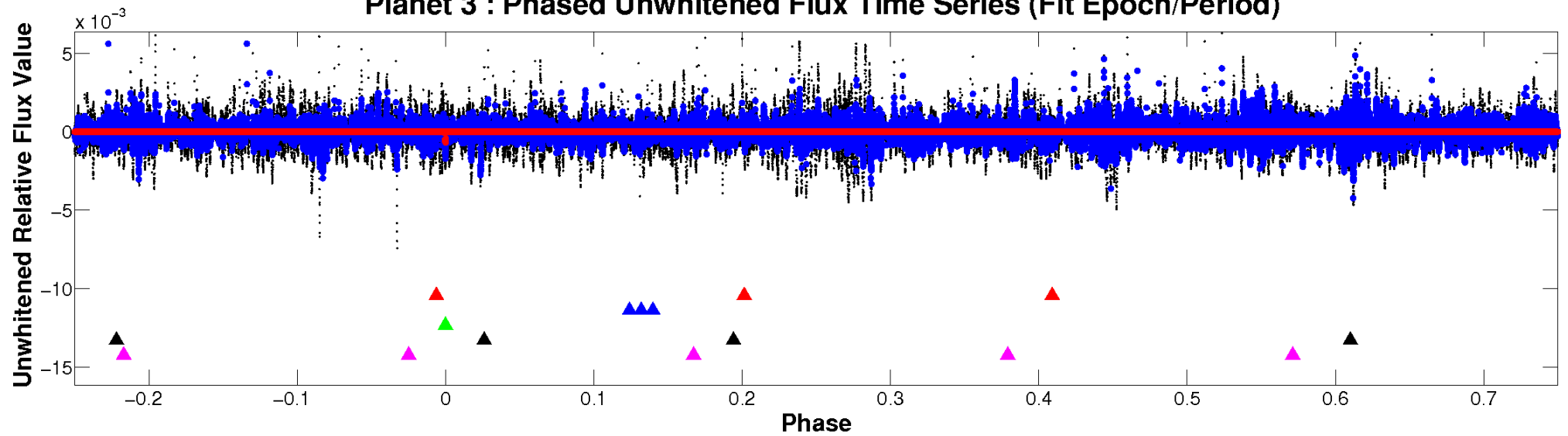
ALT Odd/Even

TCE 003728906-03

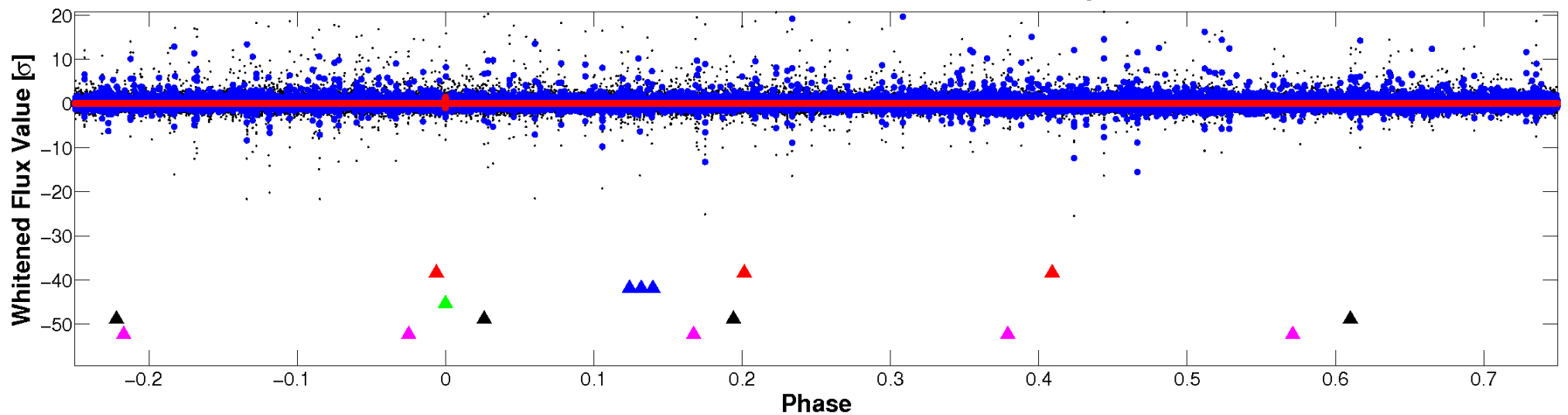


Non-Whitened Vs. Whitened Light Curve

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

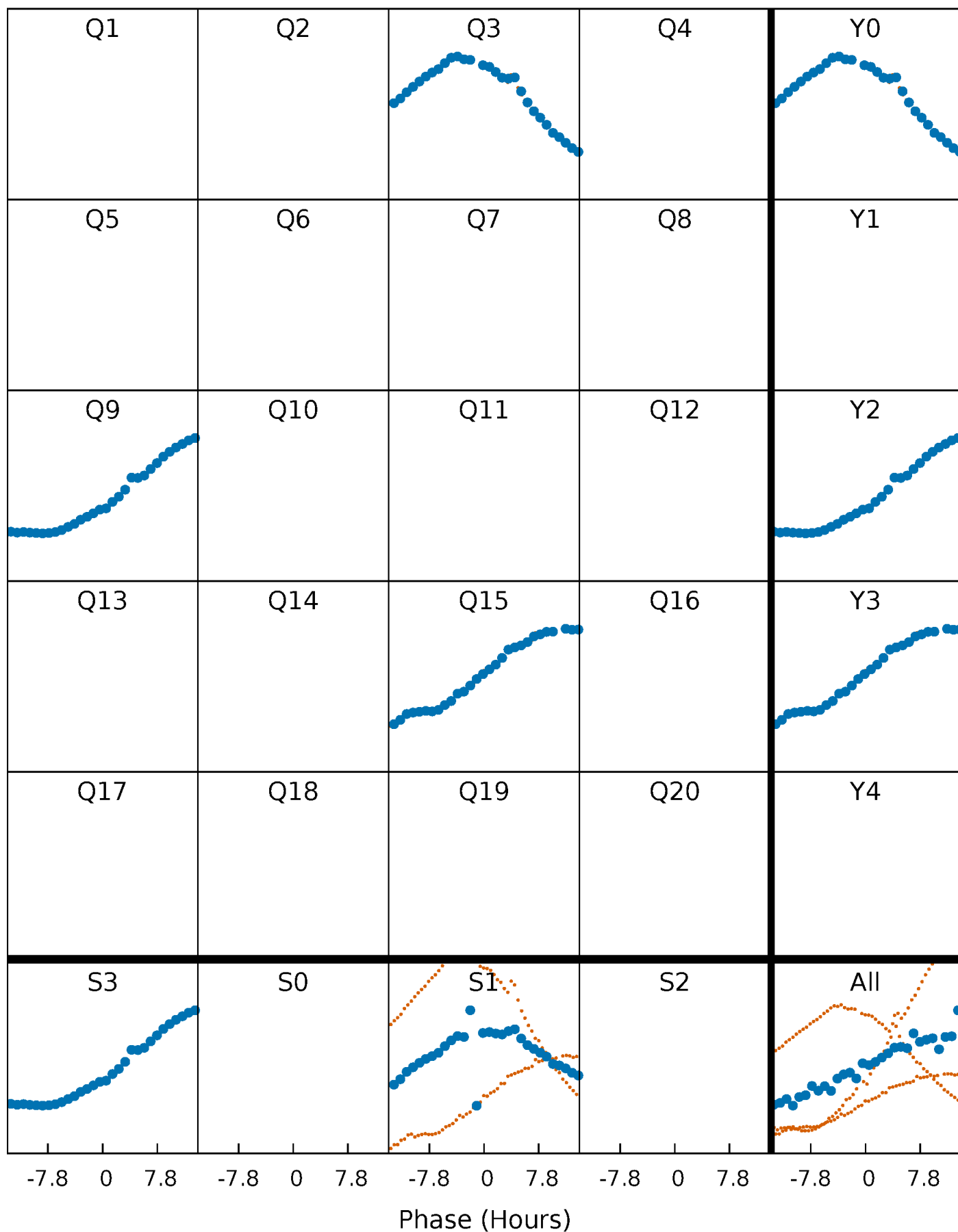


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



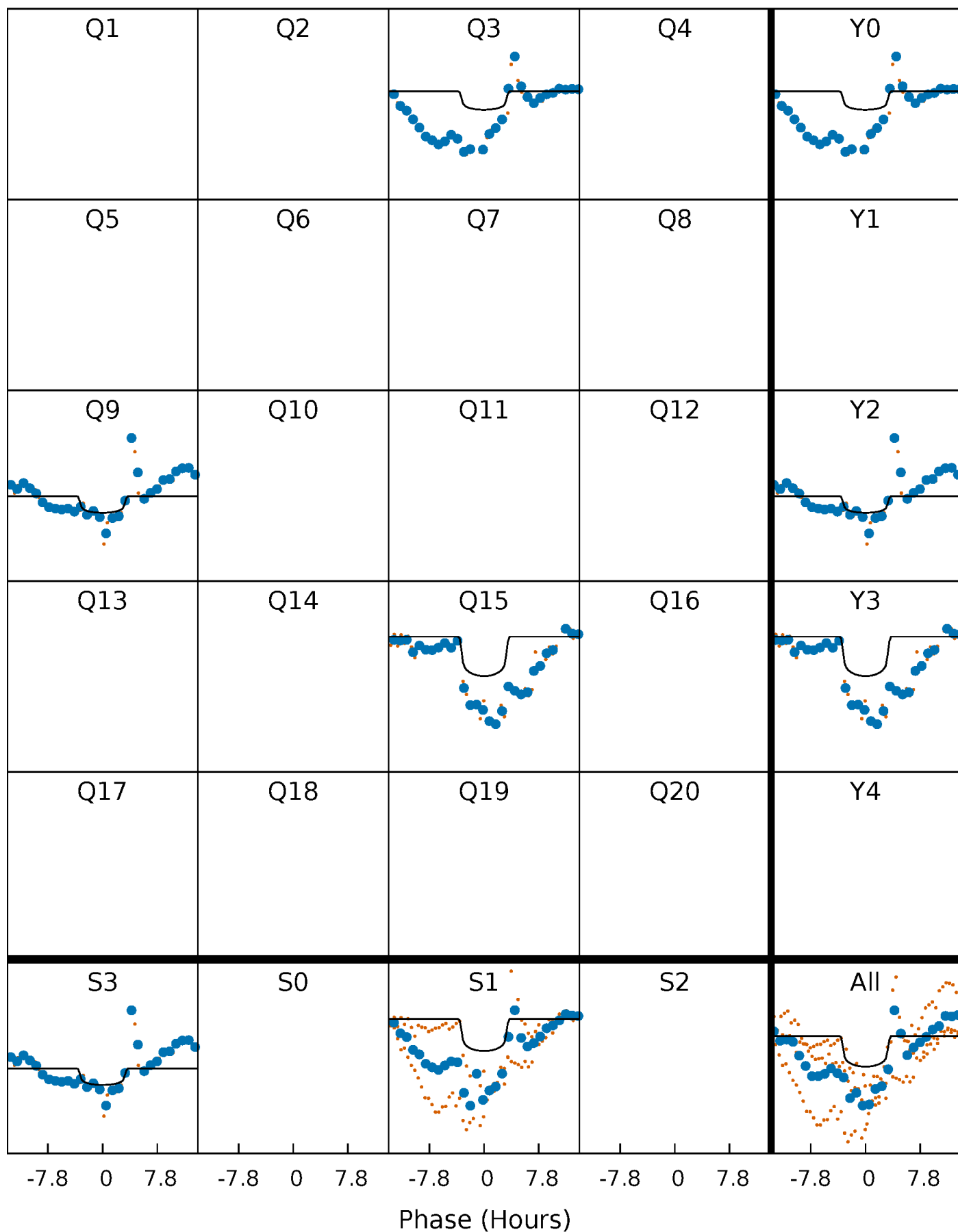
PDC Quarter-Phased Transit Curves

TCE 003728906-03 P=573.805118 Days $T_0=277.145067$ (BKJD)



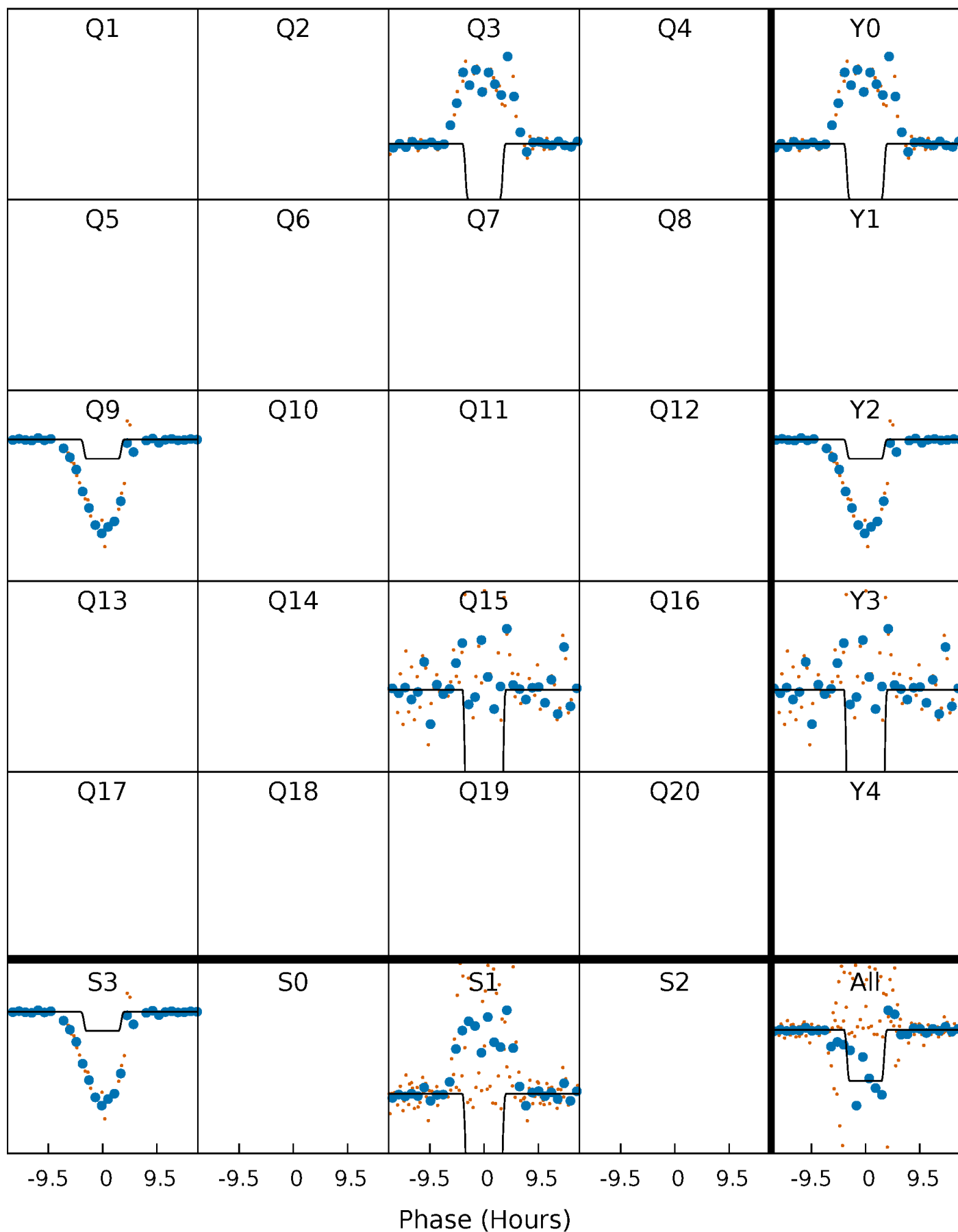
DV Quarter-Phased Transit Curves

TCE 003728906-03 $P=573.805118$ Days $T_0=277.145067$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

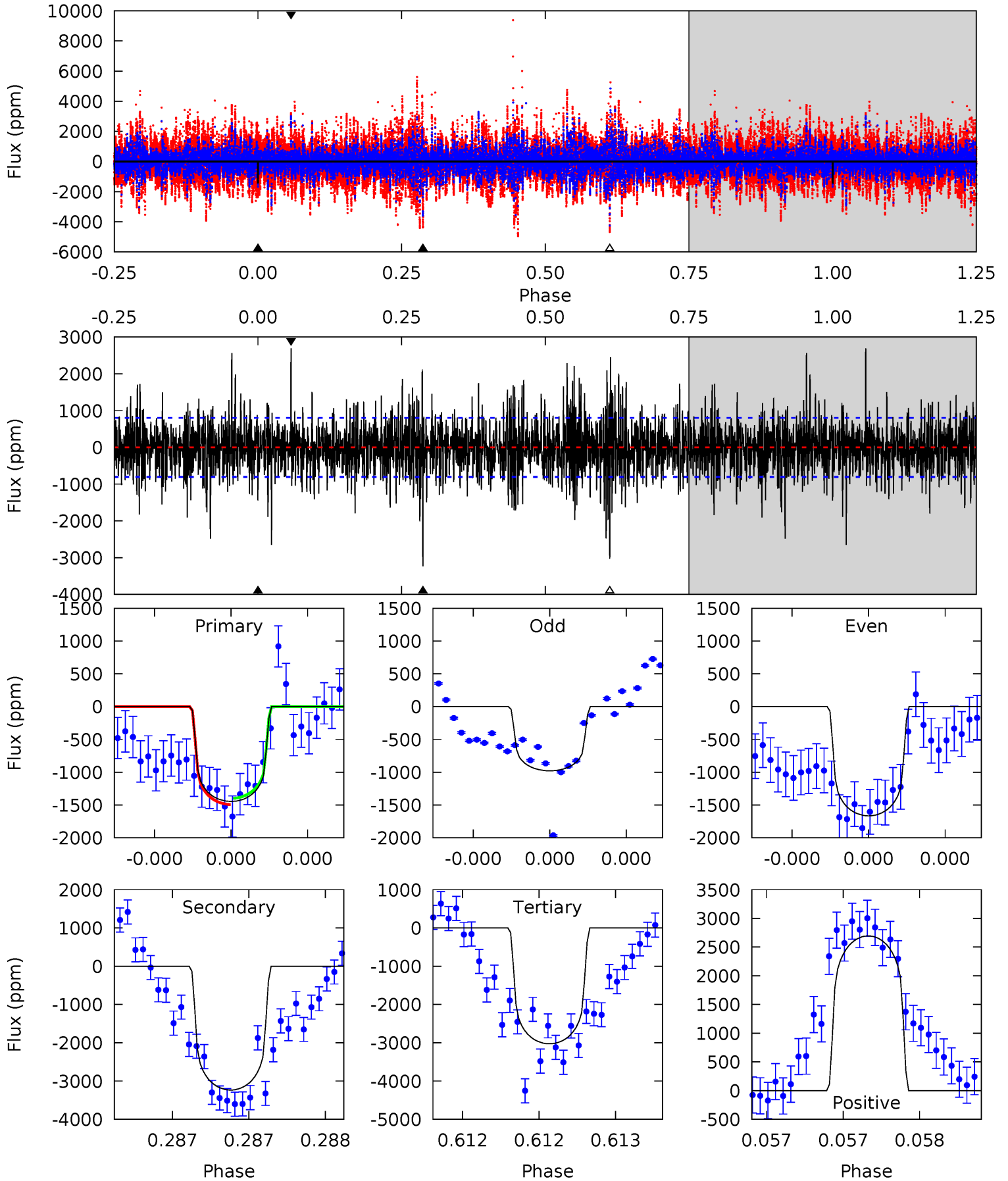
TCE 003728906-03 P=573.808421 Days $T_0=277.134195$ (BKJD)



DV Model-Shift Uniqueness Test

003728906-03, P = 573.805118 Days, E = 277.145067 Days

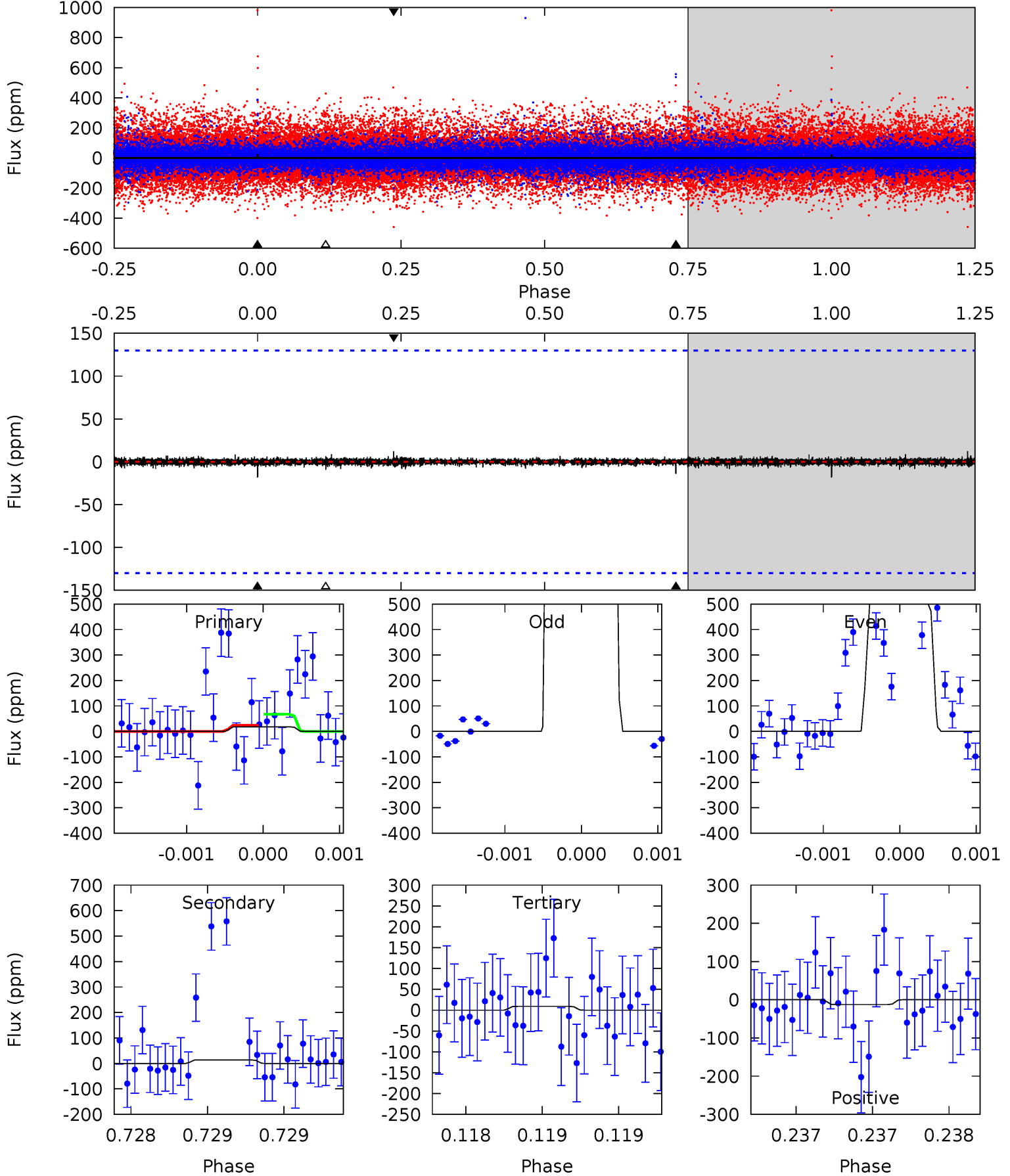
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	22.5	21.0	18.7	5.57	3.48	4.08	-11.0	-8.68	1.45	3.75	2.19	1.03	0.45	0.33



Alt Model-Shift Uniqueness Test

003728906-03, P = 573.808421 Days, E = 277.134195 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.77	0.59	0.39	0.53	5.56	3.46	0.07	0.38	0.24	0.20	0.06	90.2	-19.8	0.41	0



Stellar Parameters For KIC 003728906

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5676^{+169}_{-169}	$3.814^{+0.832}_{-0.277}$	$-1.060^{+0.350}_{-0.300}$	$1.811^{+0.928}_{-1.237}$	$0.780^{+0.082}_{-0.100}$	$0.185^{+3.207}_{-0.109}$
	+3%/-3%	+22%/-7%	+33%/-28%	+51%/-68%	+11%/-13%	+1734%/-59%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003728906-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3235 ± 144	$4.65^{+1.92}_{-2.01}$	415^{+57}_{-77}	8961^{+2316}_{-1317}	$127913^{+269408}_{-64291}$
Alt.	-14 ± 23	$5.46^{+2.23}_{-2.21}$	414^{+59}_{-78}	2771^{+484}_{-5376}	366^{+1211}_{-617}

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

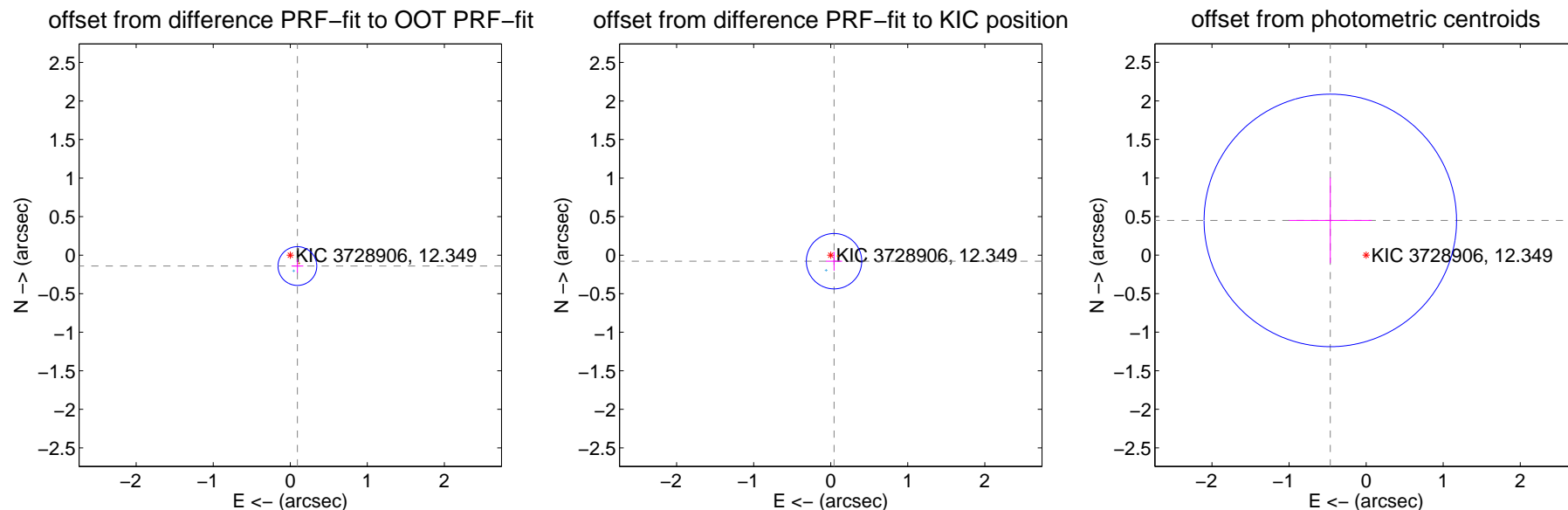
DV Centroid Data

Supplemental centroid analysis for 003728906-03. Kepler magnitude: 12.35. Transit SNR 5.64

There are 1 quarters with good PRF difference image offsets

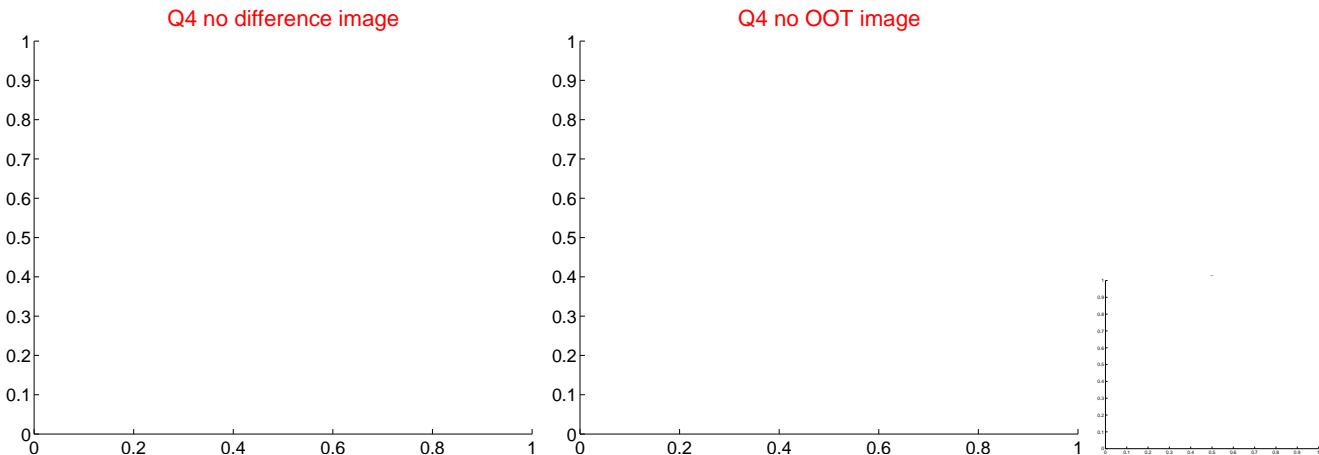
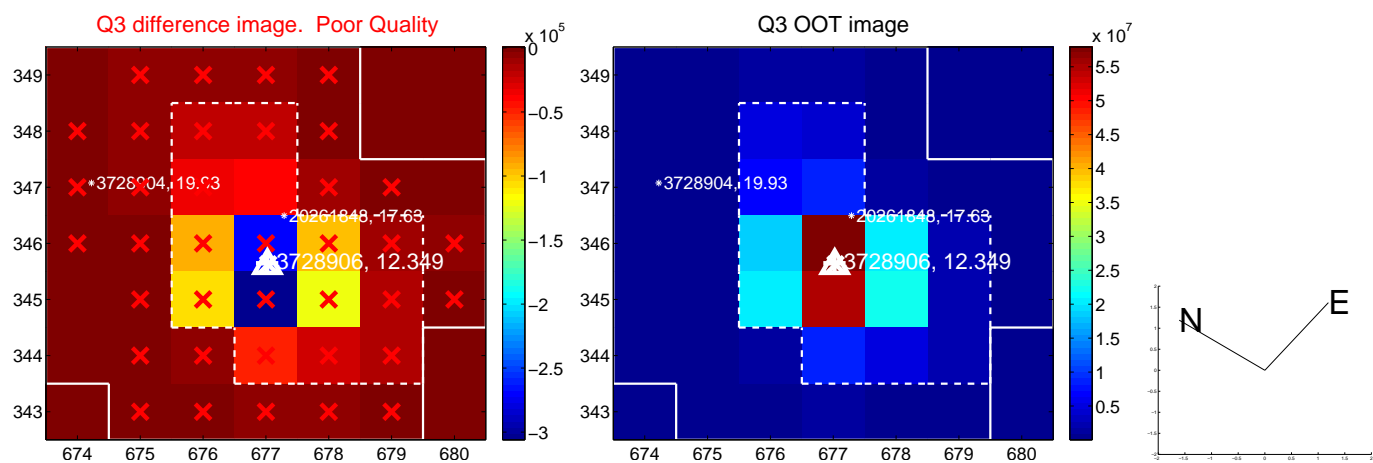
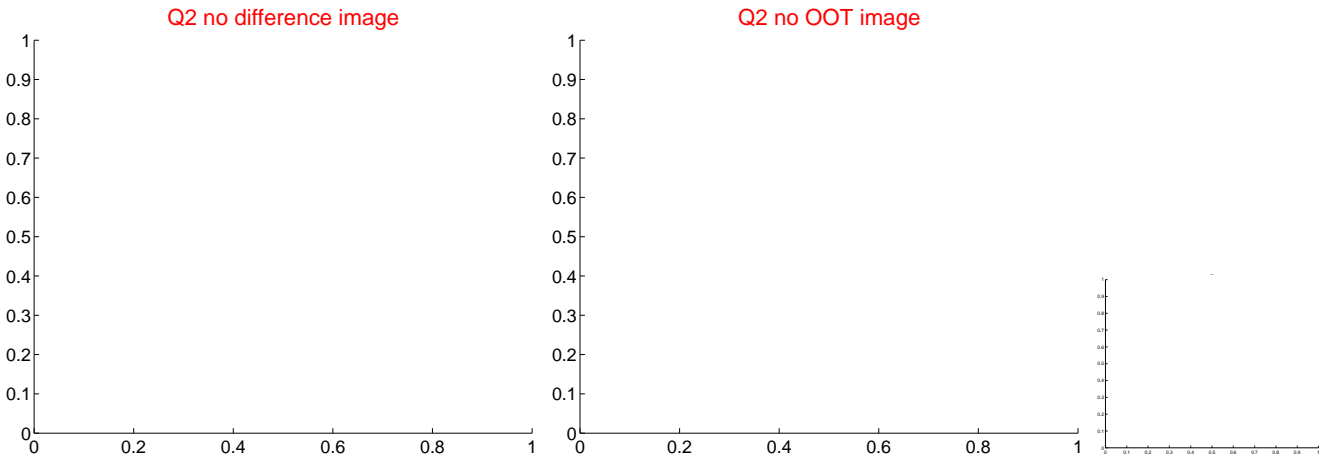
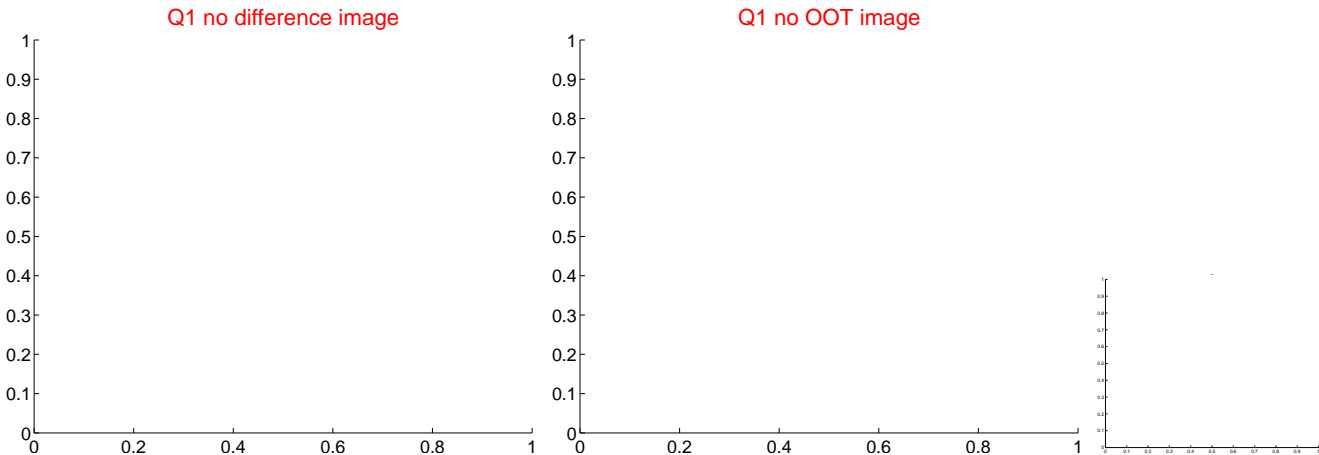
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.169 ± 0.084	2.01	-0.092 ± 0.077	-0.141 ± 0.087
PRF-fit source offset from KIC position	0.089 ± 0.120	0.75	-0.043 ± 0.106	-0.078 ± 0.124
photometric centroid source offset	0.65 ± 0.55	1.18	0.46 ± 0.54	0.45 ± 0.55



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.

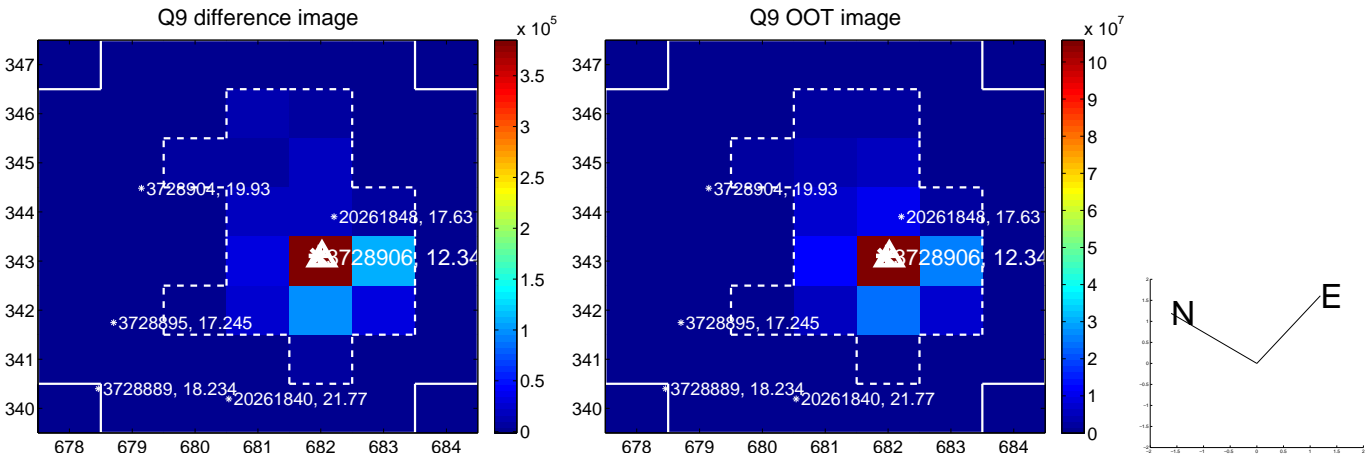
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



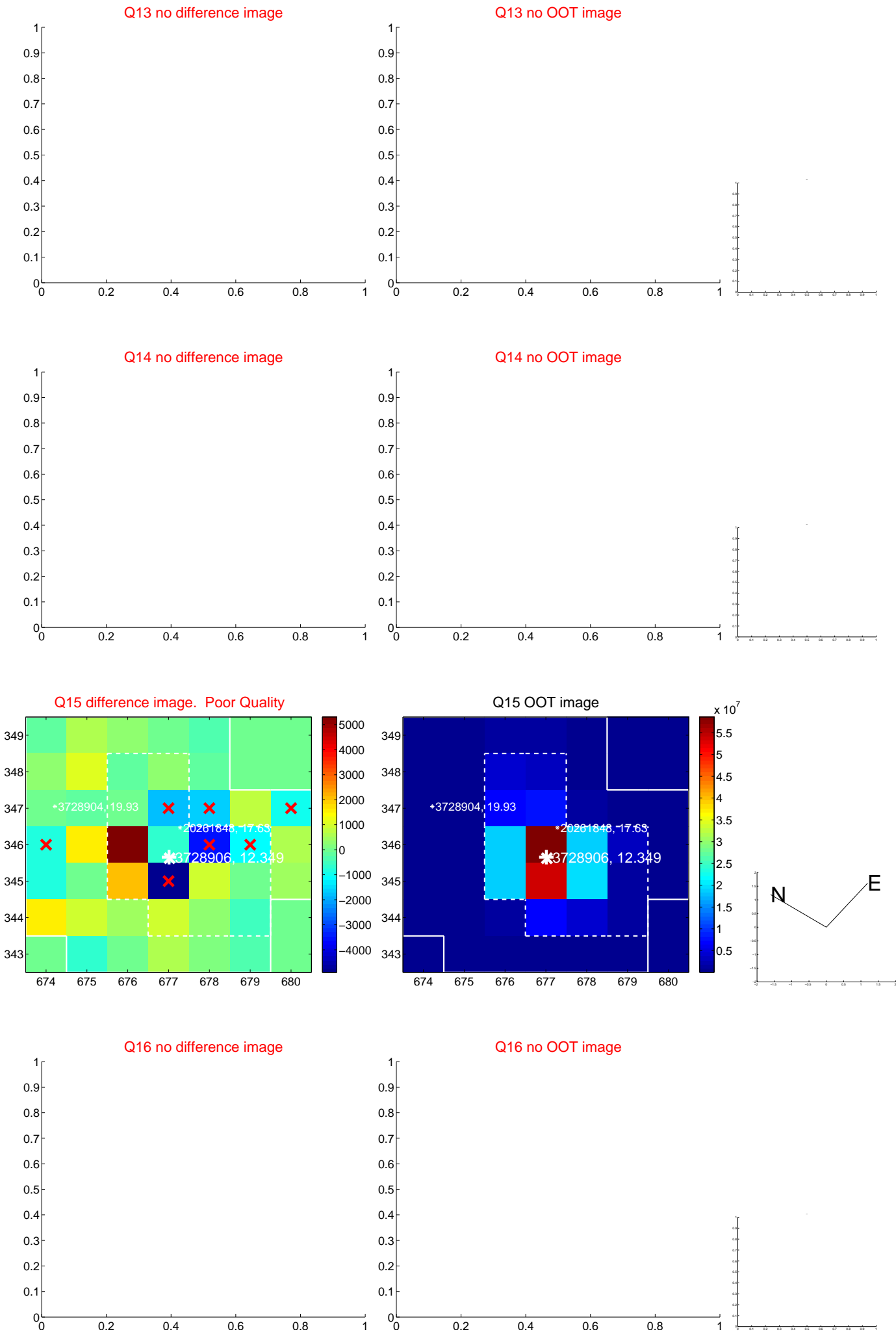
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



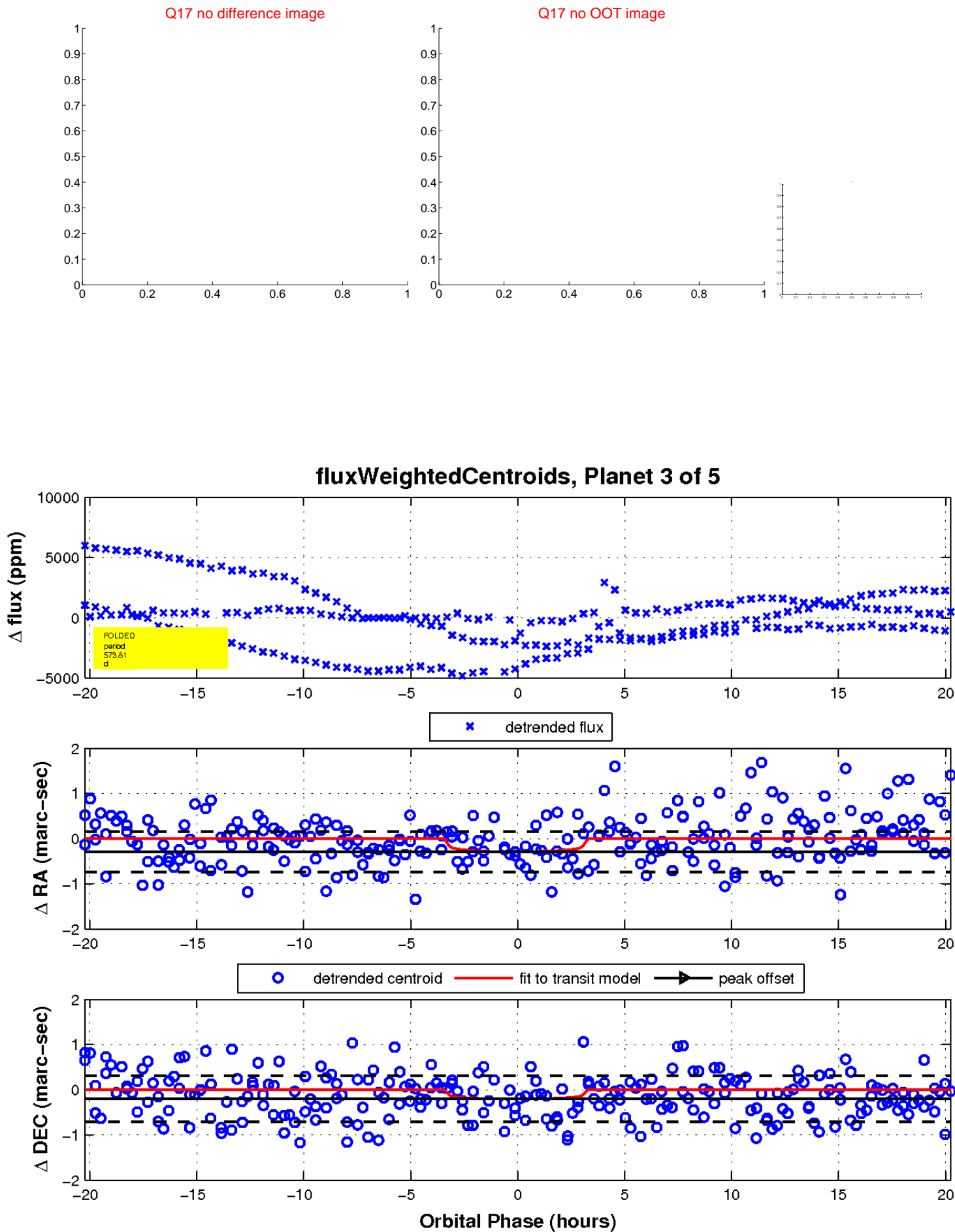
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

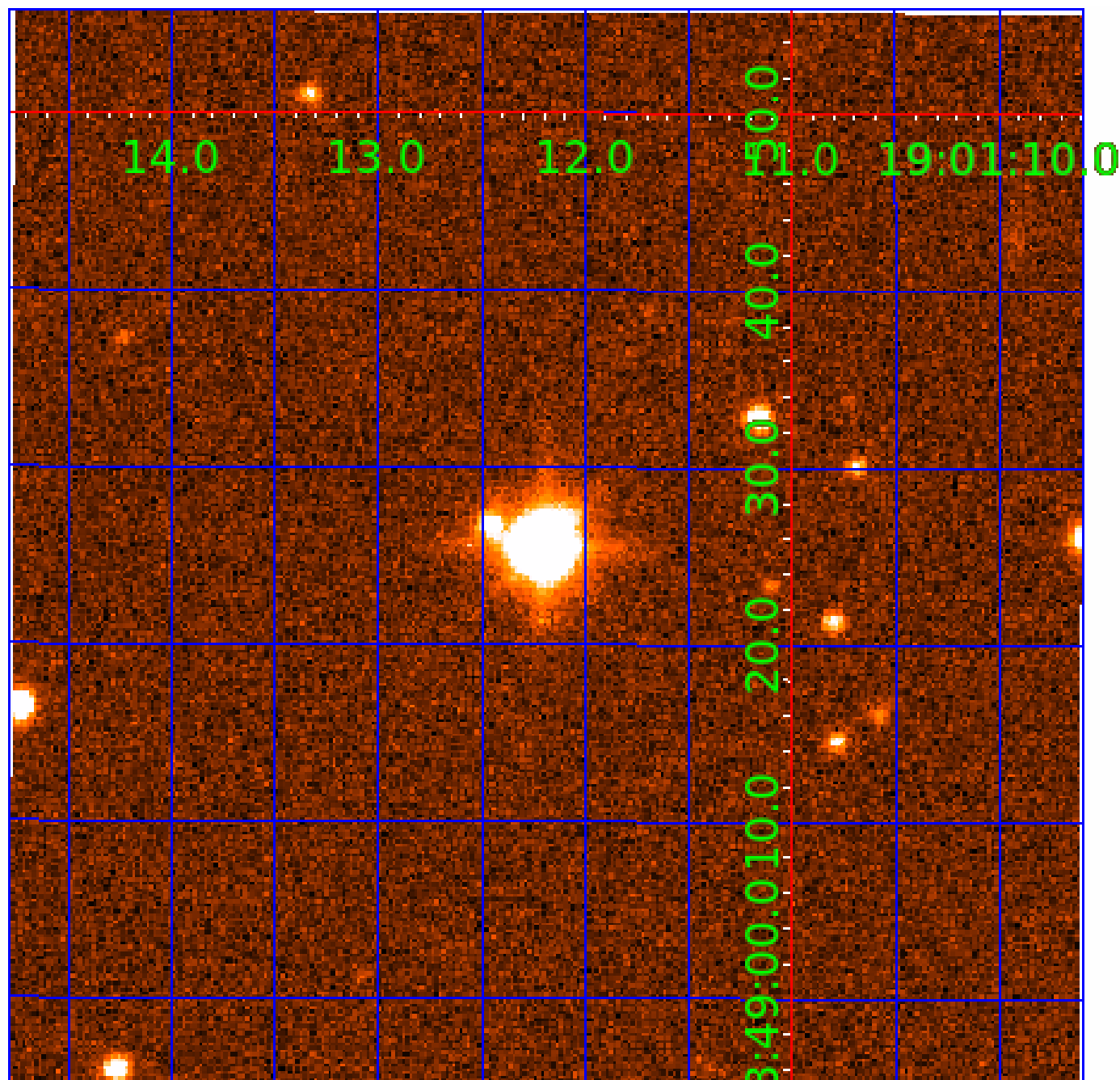


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003728906

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})
003728906-01	OBS	No	454.674594	511.866890	551.7	3.452	16.7	5.2	1.81	5676	4.36	2.69
003728906-02	OBS	No	569.290304	357.388586	606.8	4.550	14.3	5.4	1.81	5676	4.64	1.99
003728906-03	OBS	No	573.805118	277.145067	684.3	6.793	13.9	5.6	1.81	5676	5.02	1.97
003728906-05	OBS	No	342.023241	152.666540	370.7	3.500	14.1	-1.0	1.81	5676	3.49	3.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003728906-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003728906-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
003728906-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003728906-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

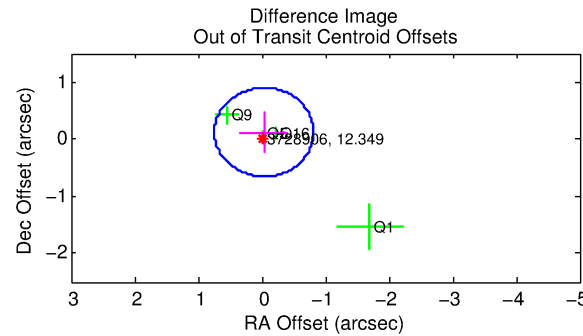
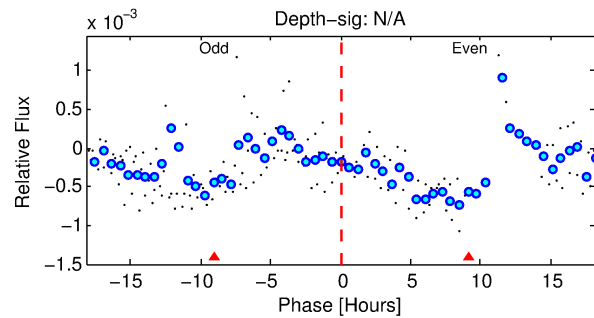
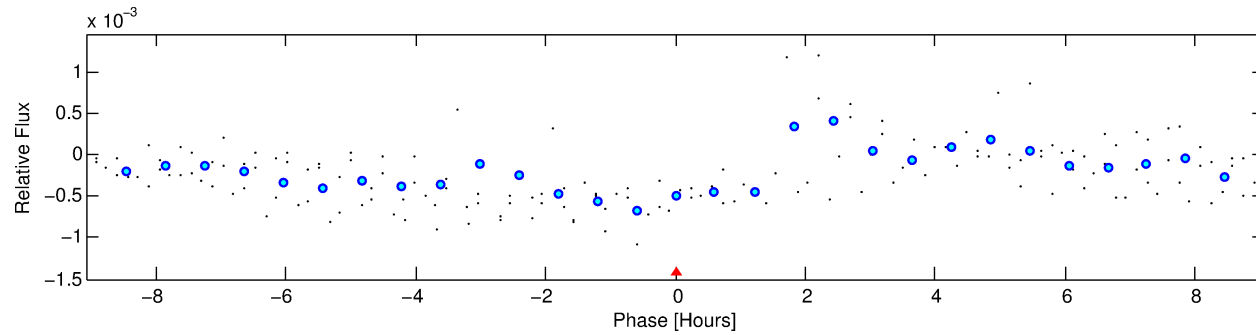
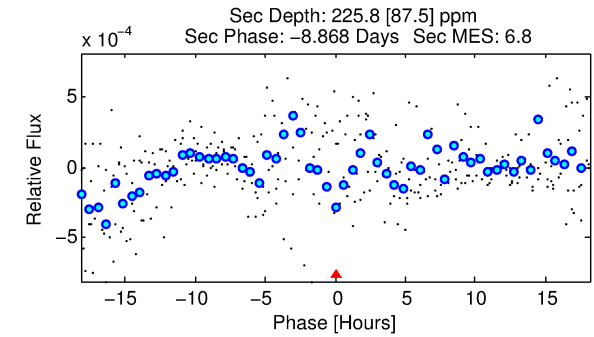
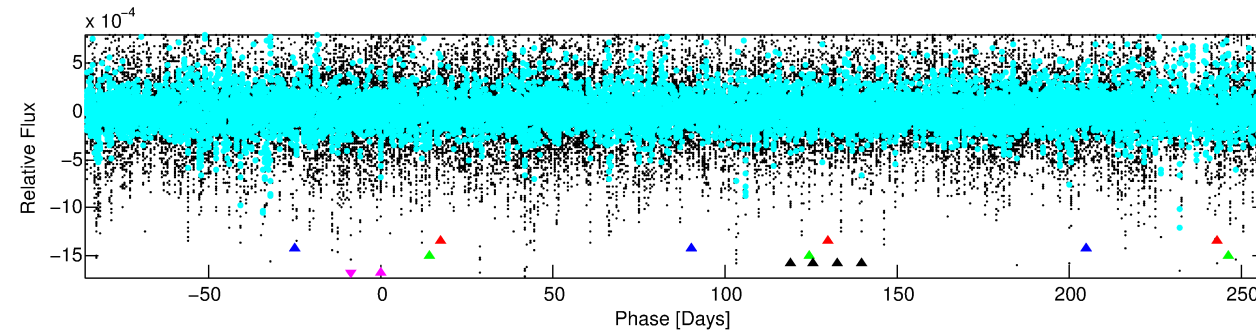
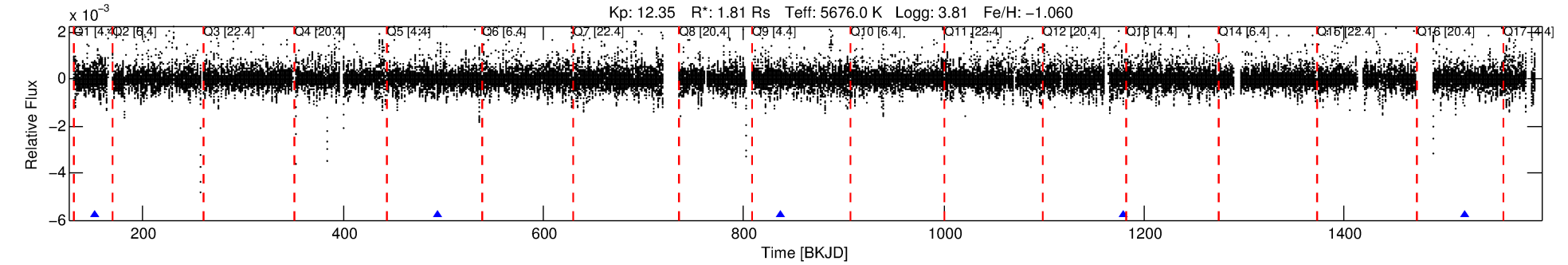
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003728906-05

No Significant Match Found

DV One-Page Summary

KIC: 3728906 Candidate: 5 of 5 Period: 342.023 d



TPS TCE Results:

Period = 342.02324 d
Epoch = 152.6665 BKJD

DV fit results are unavailable

DV Diagnostic Results:

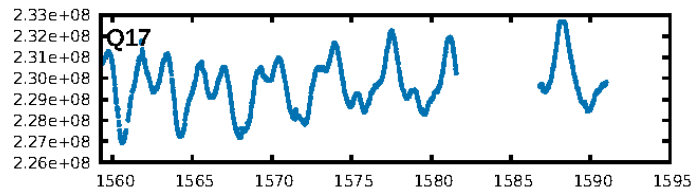
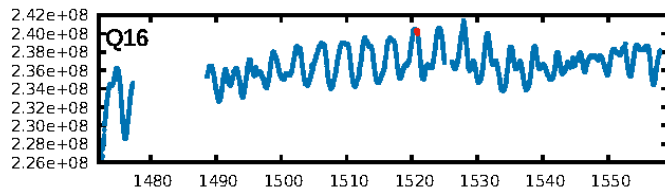
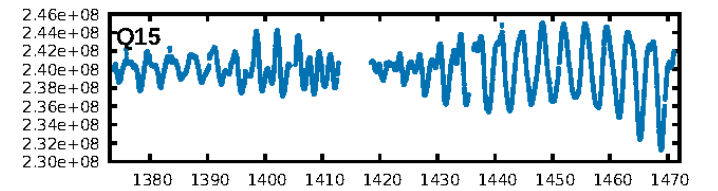
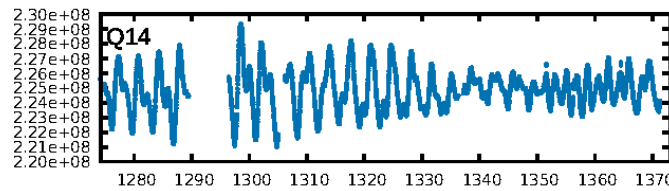
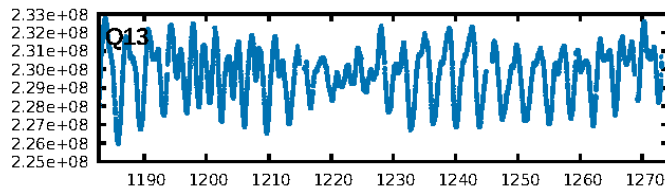
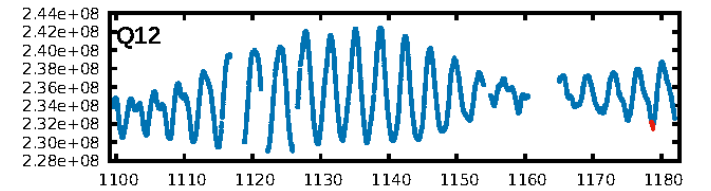
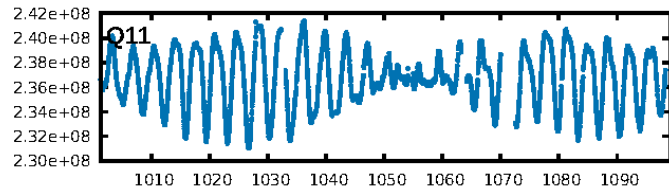
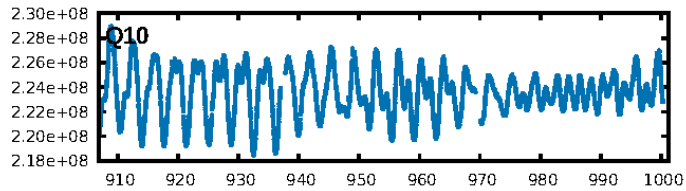
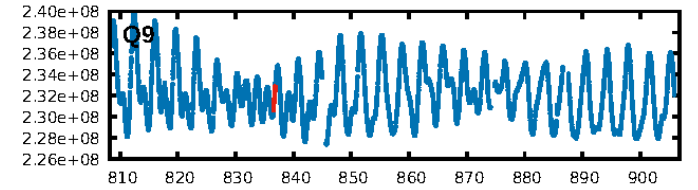
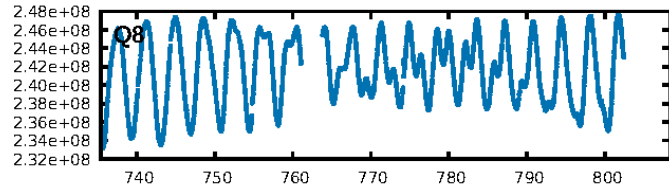
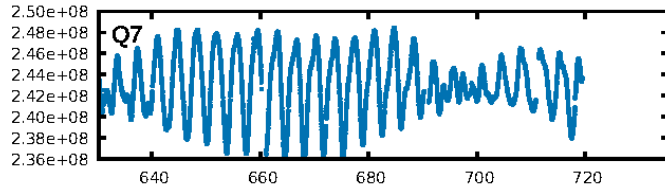
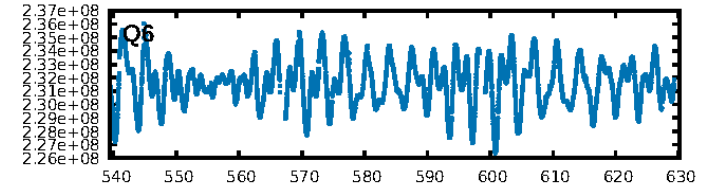
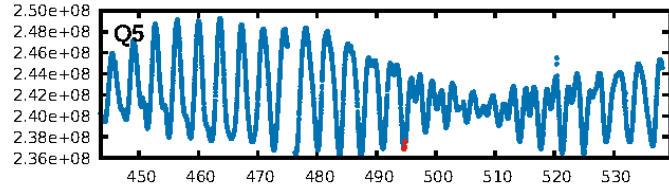
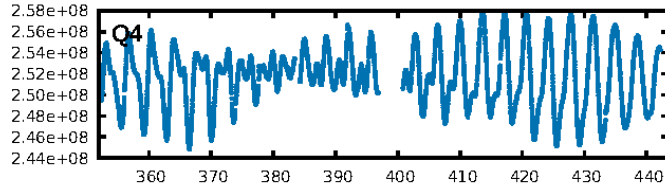
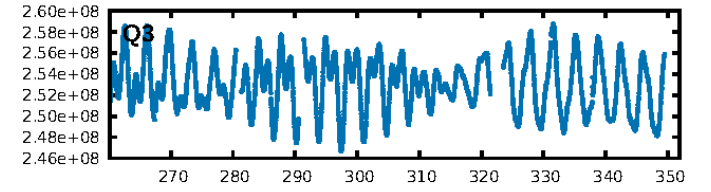
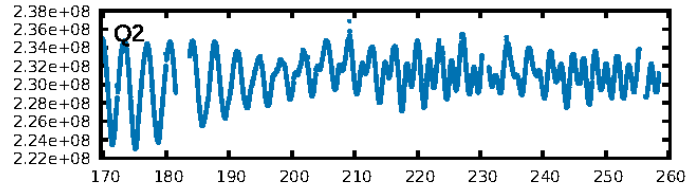
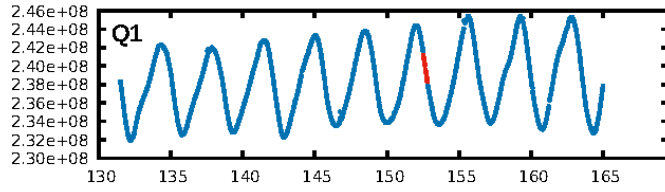
ShortPeriod-sig: 100.0% [28.55 σ]
LongPeriod-sig: 100.0% [549.95 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 5.777

Centroid-sig: 18.2%
Centroid-so: 0.773 arcsec [1.36 σ]
OotOffset-rm: 0.127 arcsec [0.49 σ]
KicOffset-rm: 0.177 arcsec [0.36 σ]
OotOffset-st: 0/0/1/3 [4]
KicOffset-st: 0/0/1/3 [4]
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DiffImageOverlap-fno: 1.00 [4/4]

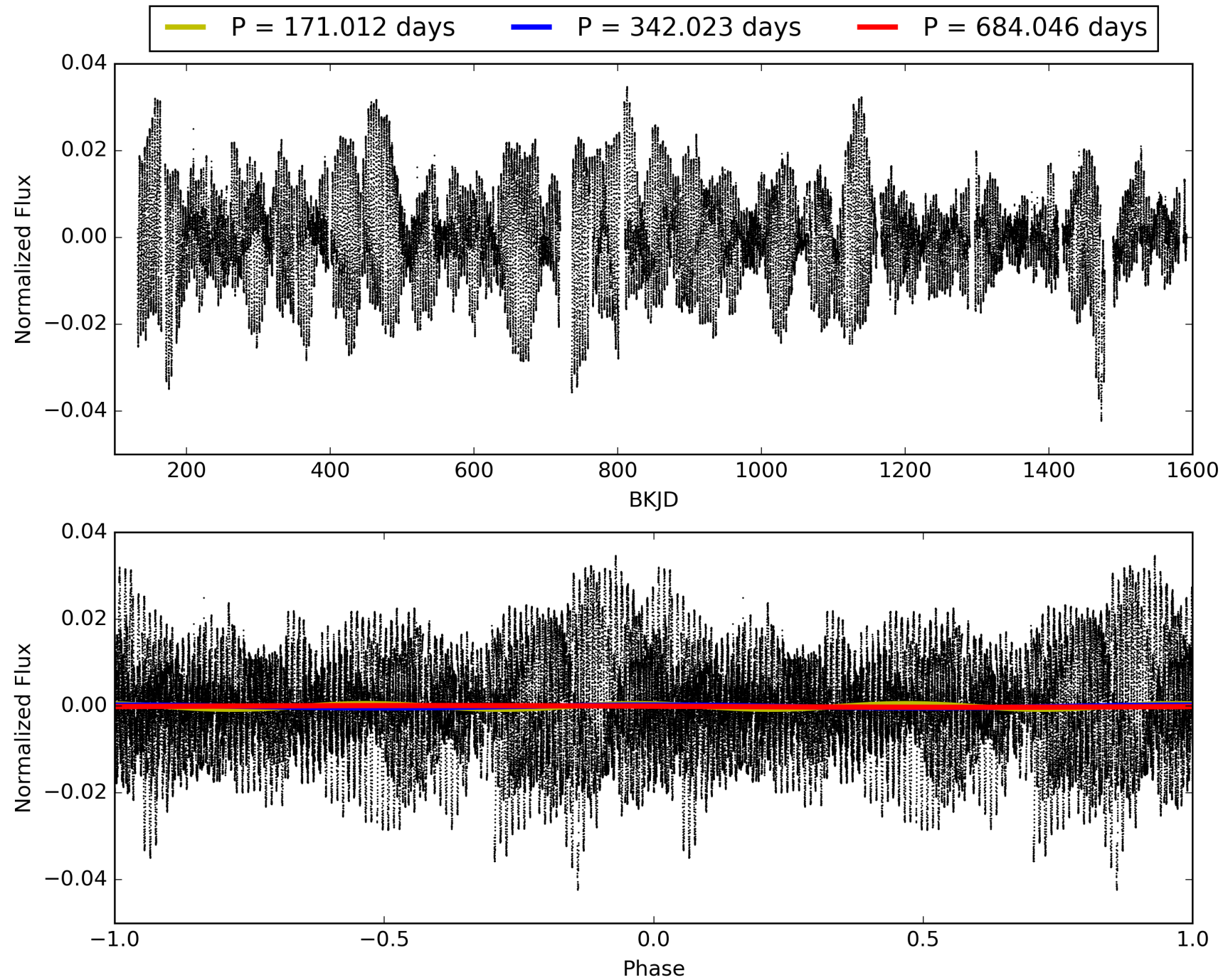
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:45:04 Z

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

TCE 003728906-05, PDC Light Curves

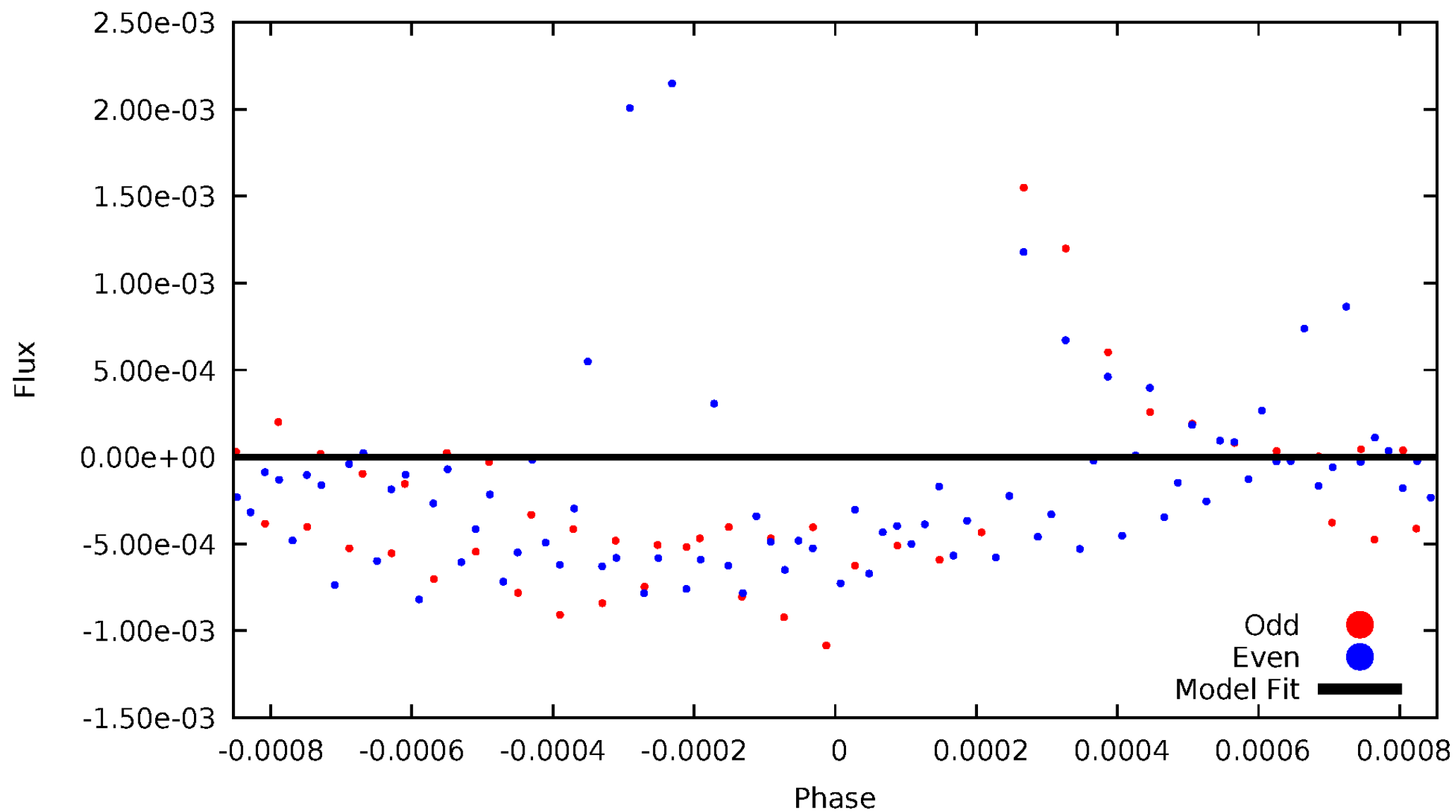


TCE 003728906-05



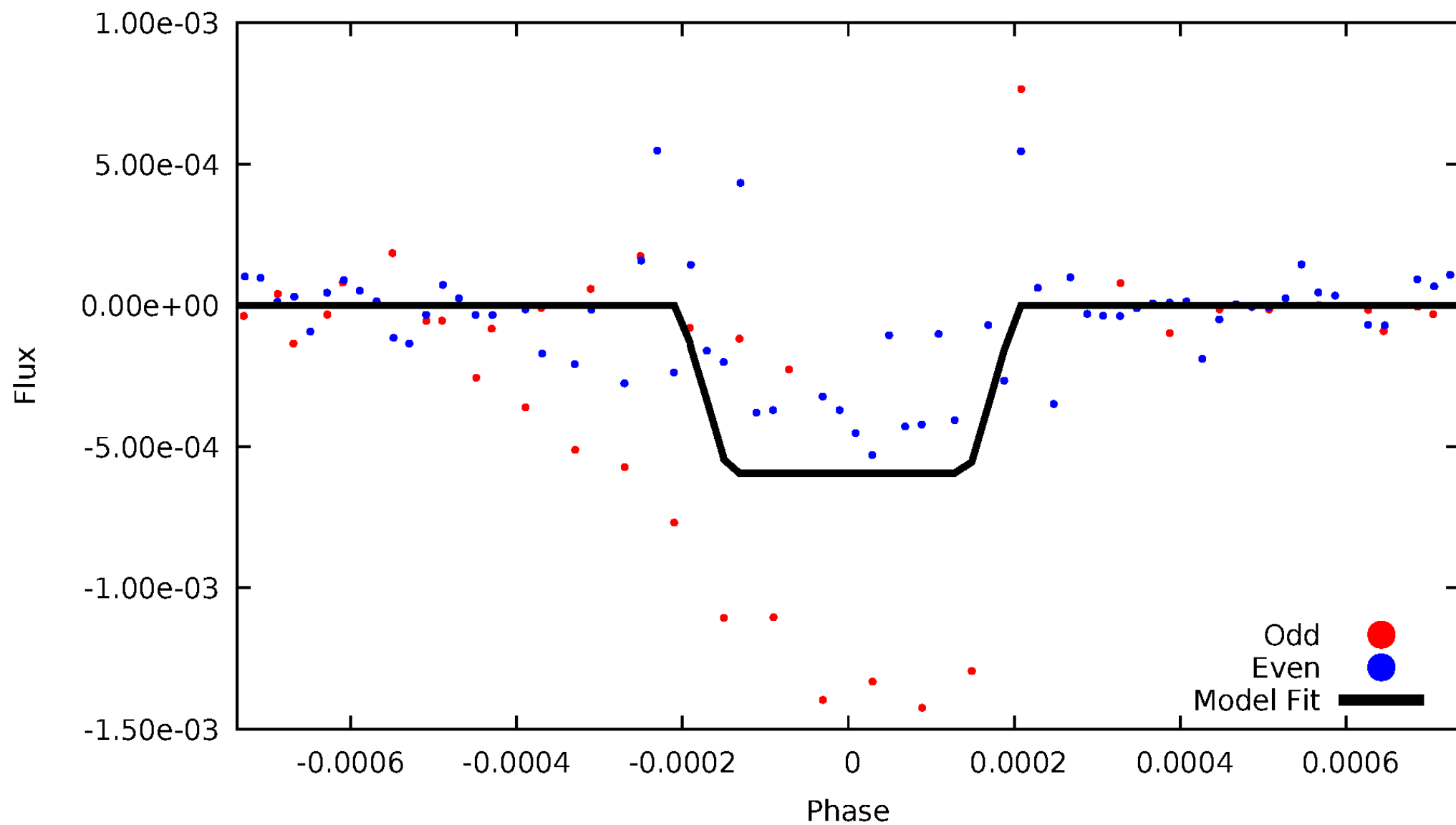
DV Odd/Even

TCE 003728906-05



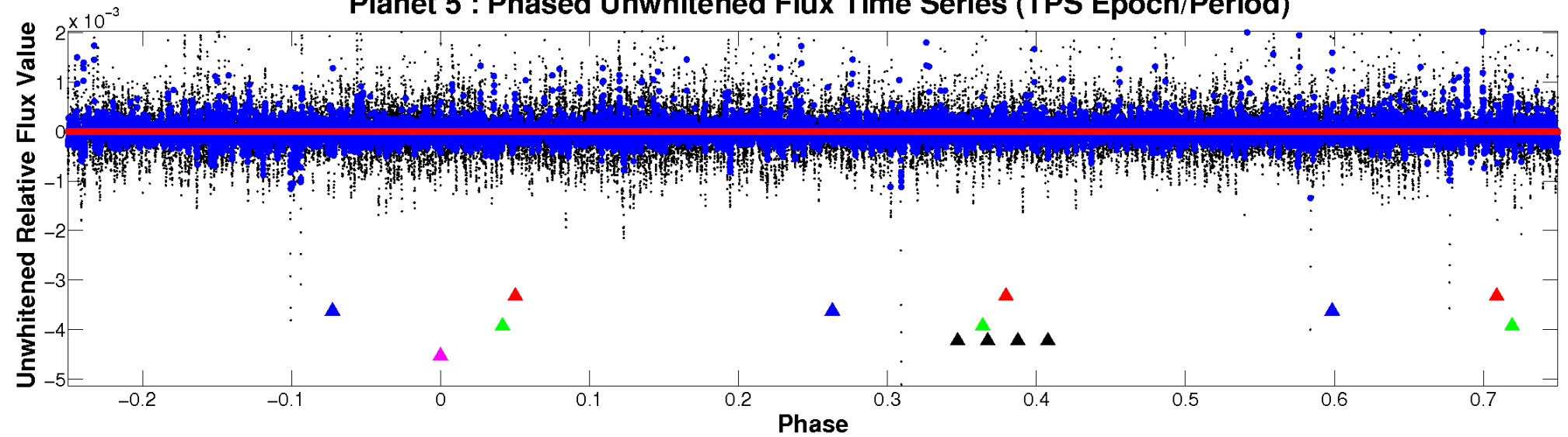
ALT Odd/Even

TCE 003728906-05



Non-Whitened Vs. Whitened Light Curve

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

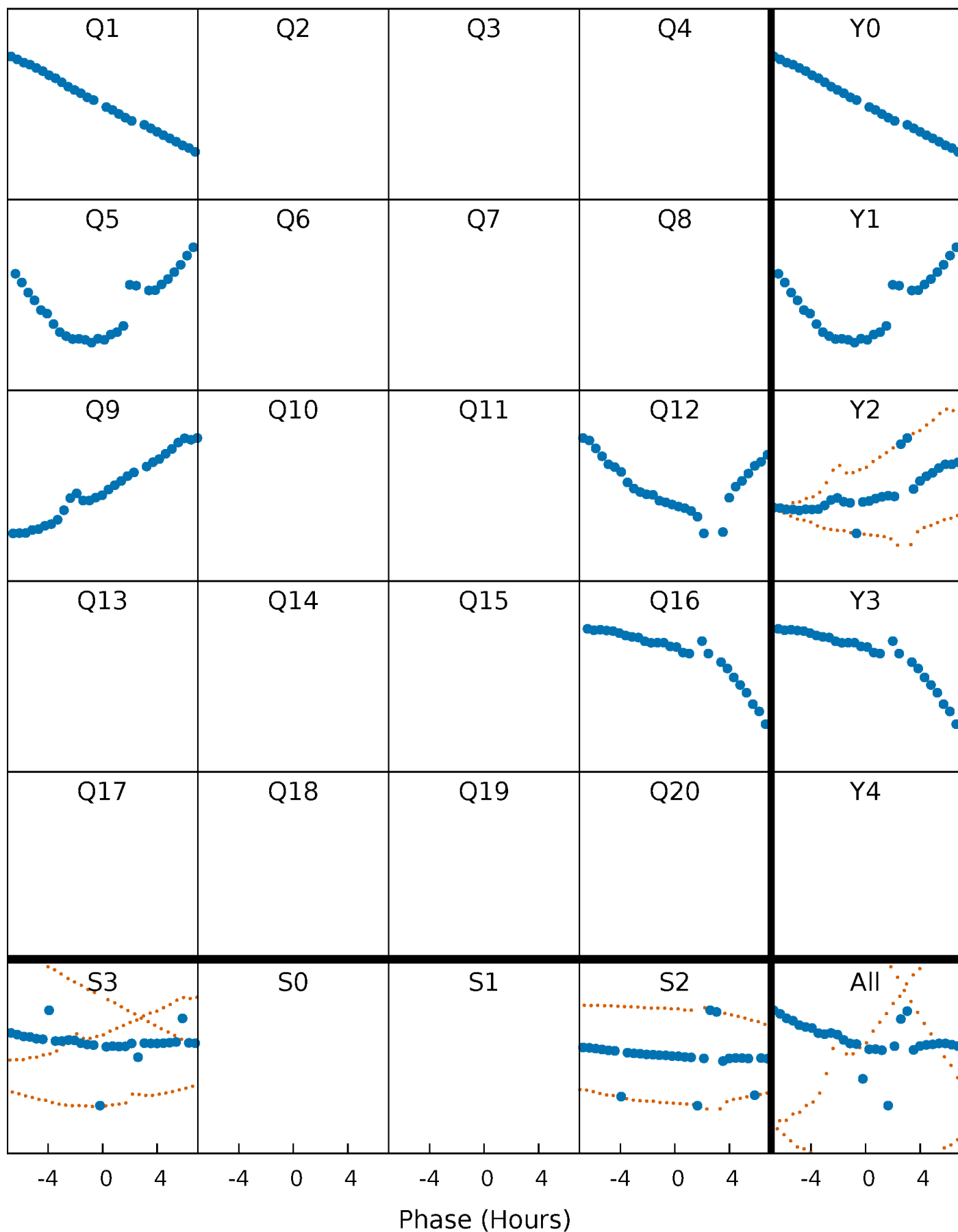


Planet 5 : Phased Whitened Flux Time Series (TPS Epoch/Period)



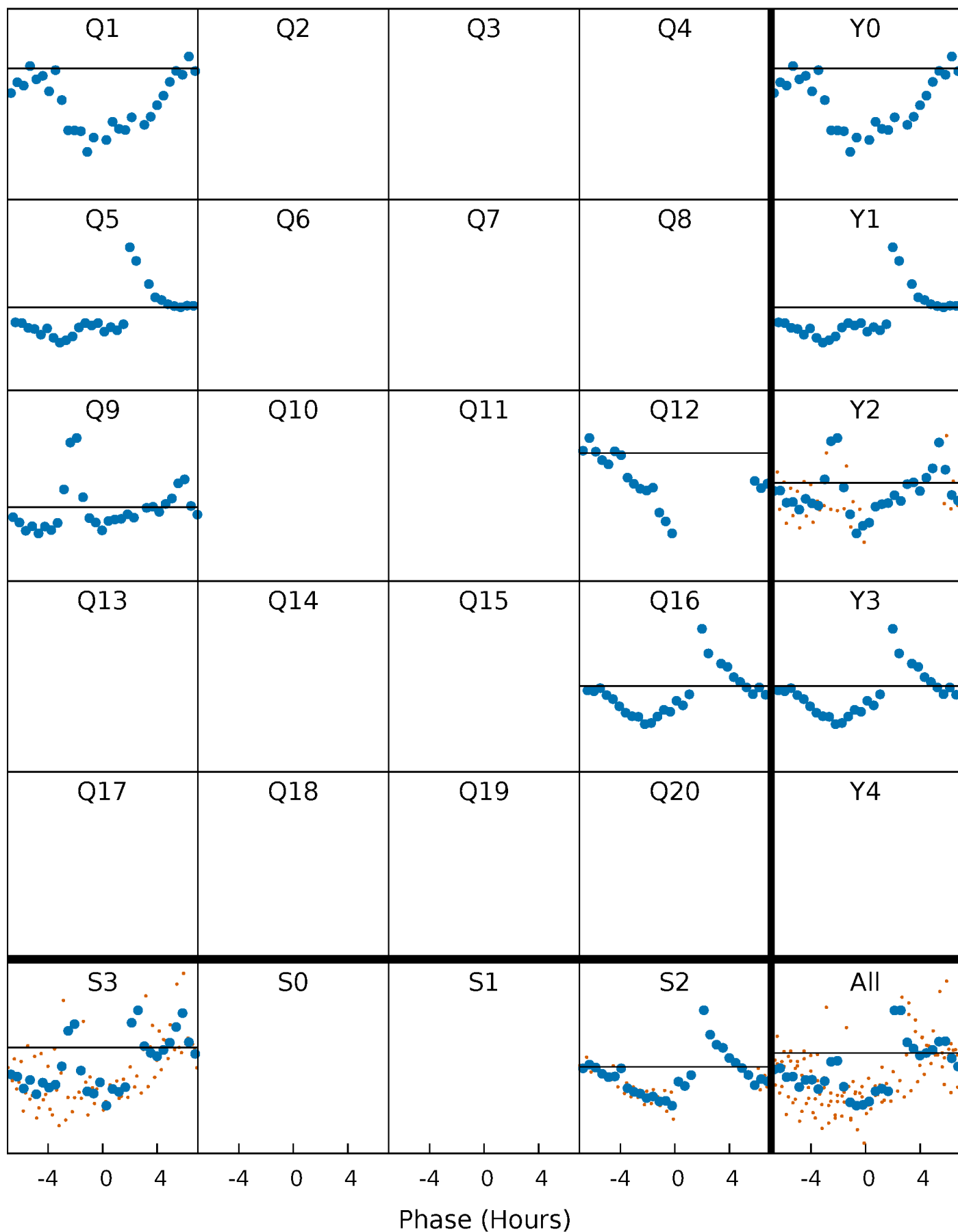
PDC Quarter-Phased Transit Curves

TCE 003728906-05 $P=342.023241$ Days $T_0=152.666540$ (BKJD)



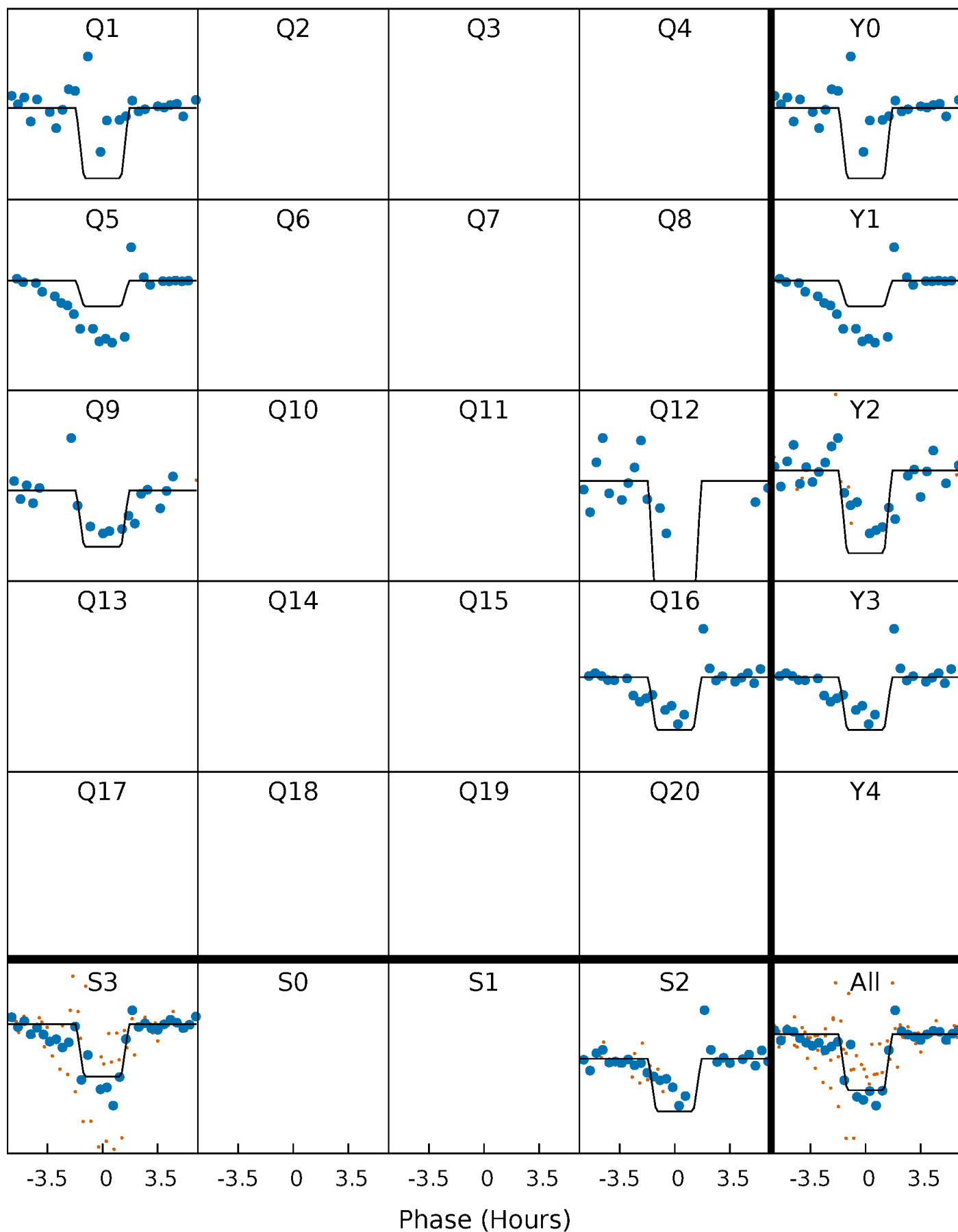
DV Quarter-Phased Transit Curves

TCE 003728906-05 $P=342.023241$ Days $T_0=152.666540$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

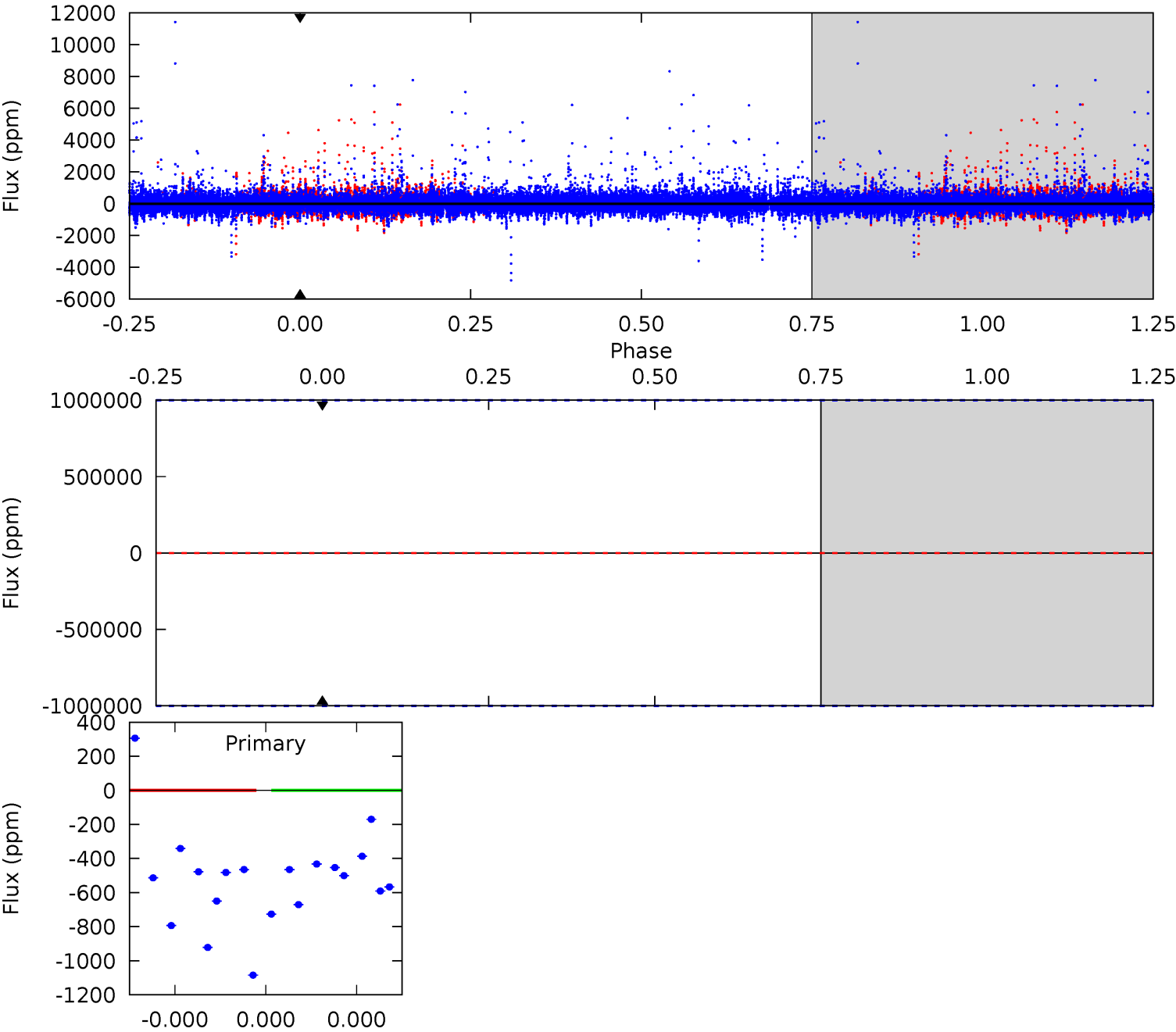
TCE 003728906-05 $P=342.023241$ Days $T_0=152.686672$ (BKJD)



DV Model-Shift Uniqueness Test

003728906-05, P = 342.023241 Days, E = 152.666540 Days

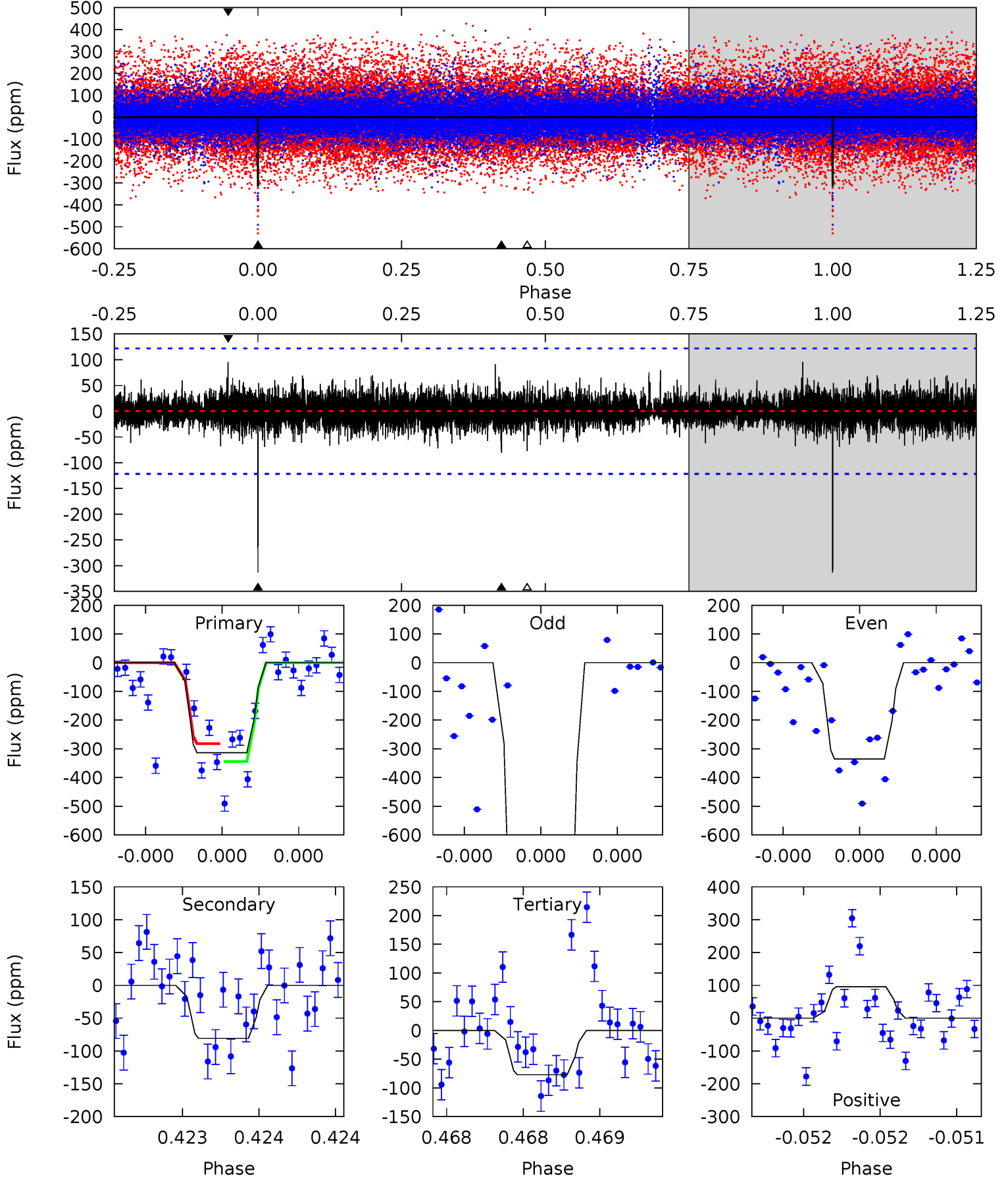
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003728906-05, P = 342.023241 Days, E = 152.686672 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	3.73	3.55	4.39	5.61	3.54	0.79	10.9	10.0	0.18	-0.67	22.3	1.22	0.23	1.46



Stellar Parameters For KIC 003728906

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5676^{+169}_{-169}	$3.814^{+0.832}_{-0.277}$	$-1.060^{+0.350}_{-0.300}$	$1.811^{+0.928}_{-1.237}$	$0.780^{+0.082}_{-0.100}$	$0.185^{+3.207}_{-0.109}$
	+3%/-3%	+22%/-7%	+33%/-28%	+51%/-68%	+11%/-13%	+1734%/-59%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003728906-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$13.01^{+15.58}_{-9.03}$	488^{+71}_{-89}	4335^{+16315}_{-20899}	$3336^{+521973}_{-371099}$
Alt.	-81 ± 22	$13.76^{+15.92}_{-9.56}$	494^{+71}_{-89}	2699^{+1036}_{-412}	180^{+1615}_{-143}

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 $A_{obs} \gg 1.0$

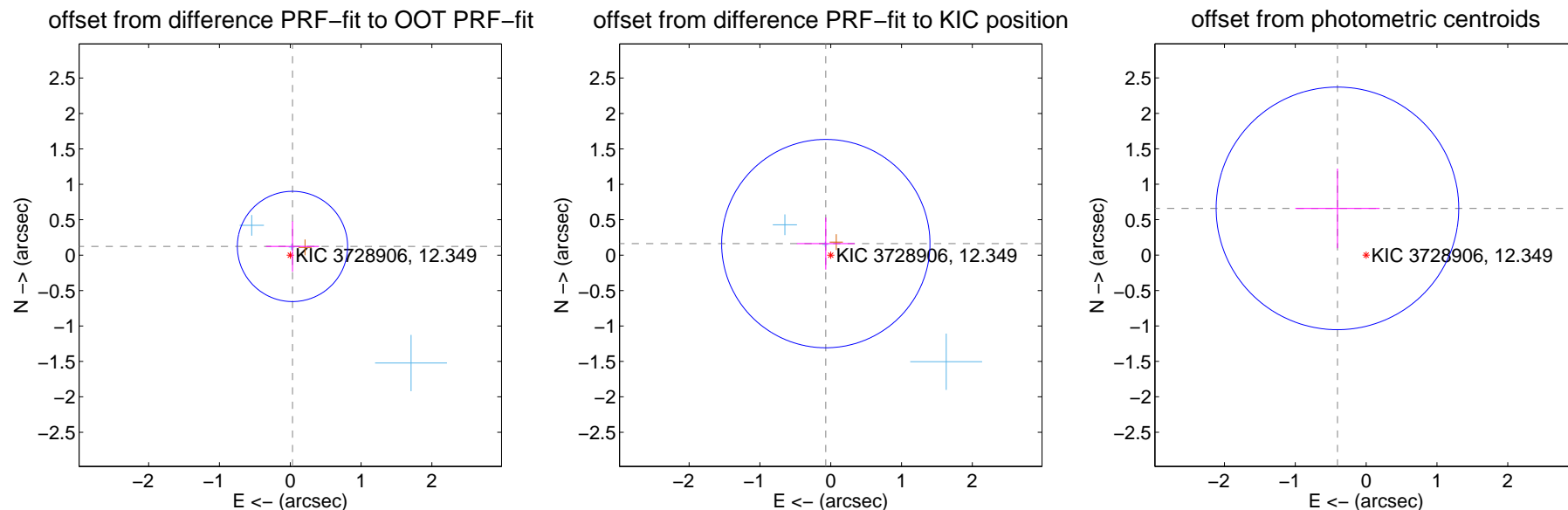
DV Centroid Data

Supplemental centroid analysis for 003728906-05. Kepler magnitude: 12.35. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

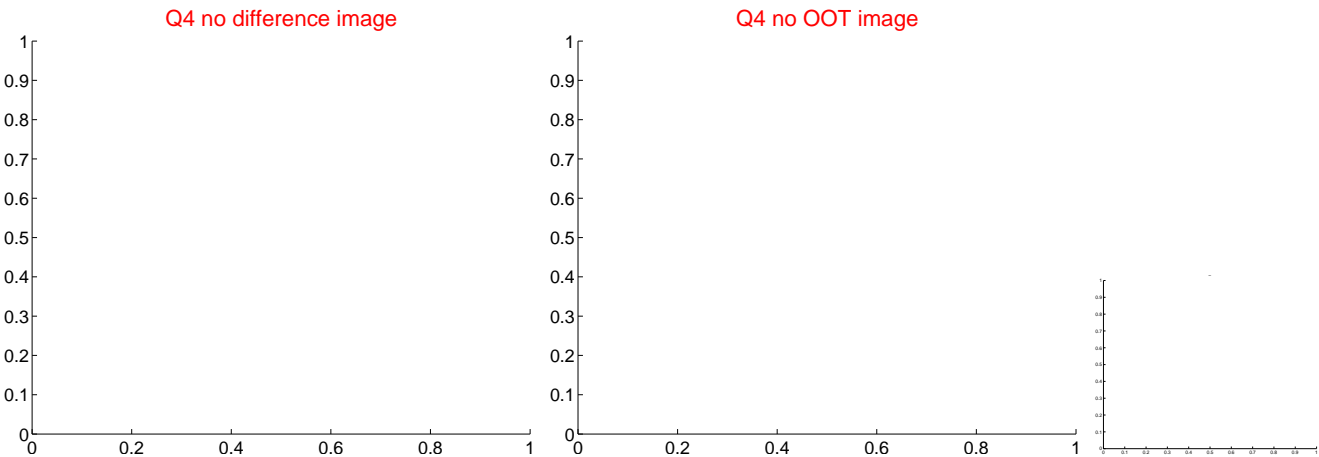
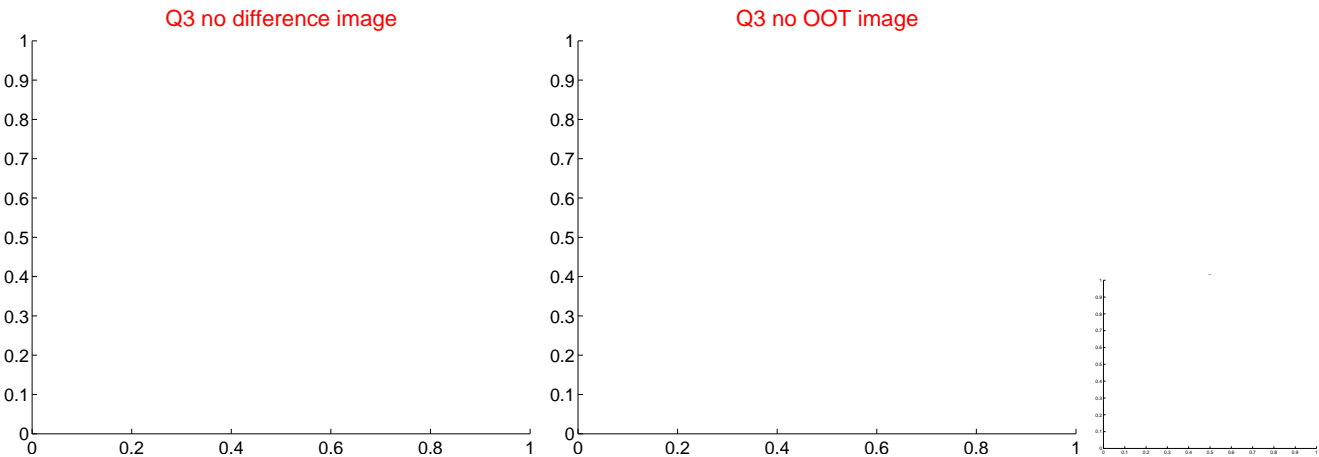
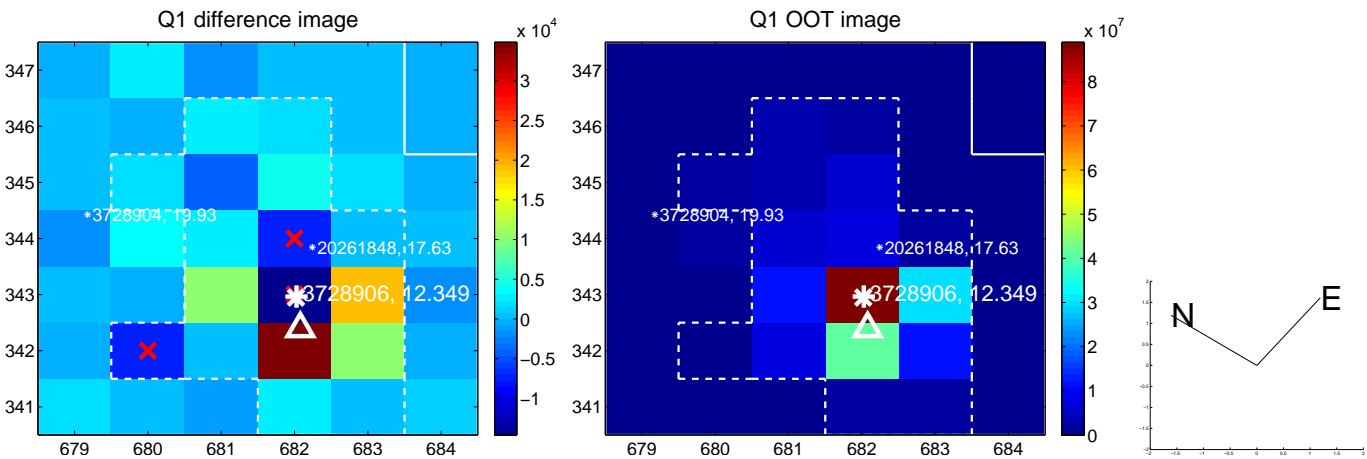
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.127 ± 0.259	0.49	-0.031 ± 0.374	0.123 ± 0.356
PRF-fit source offset from KIC position	0.177 ± 0.490	0.36	0.069 ± 0.408	0.163 ± 0.368
photometric centroid source offset	0.77 ± 0.57	1.36	0.40 ± 0.60	0.66 ± 0.56

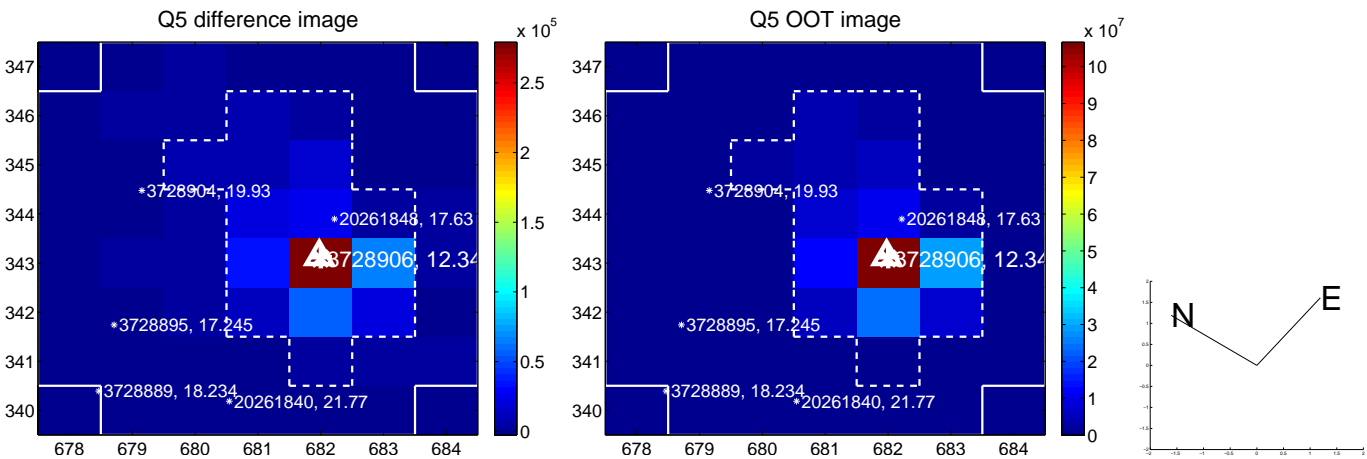


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

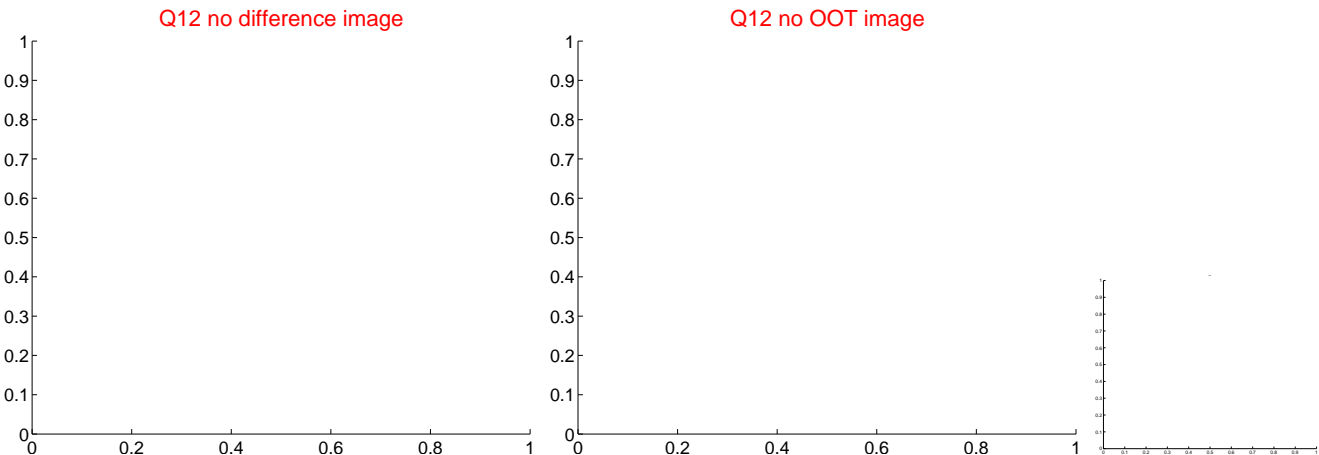
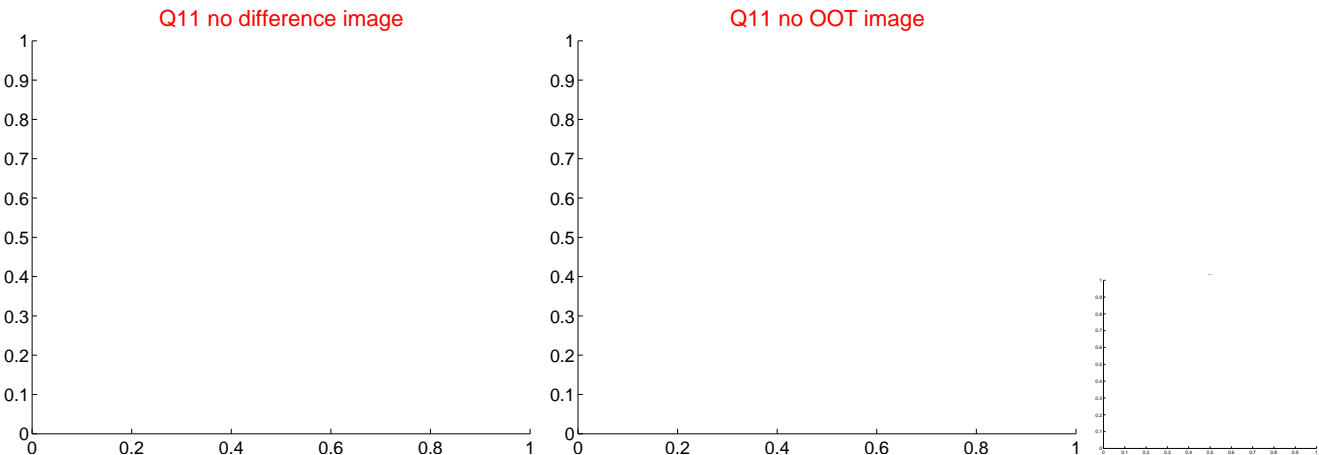
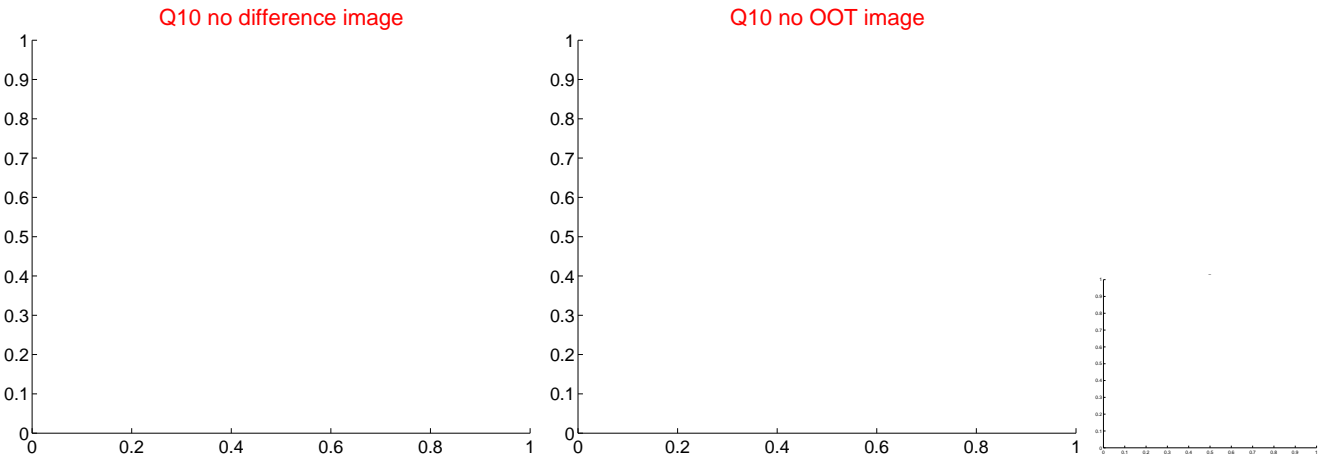
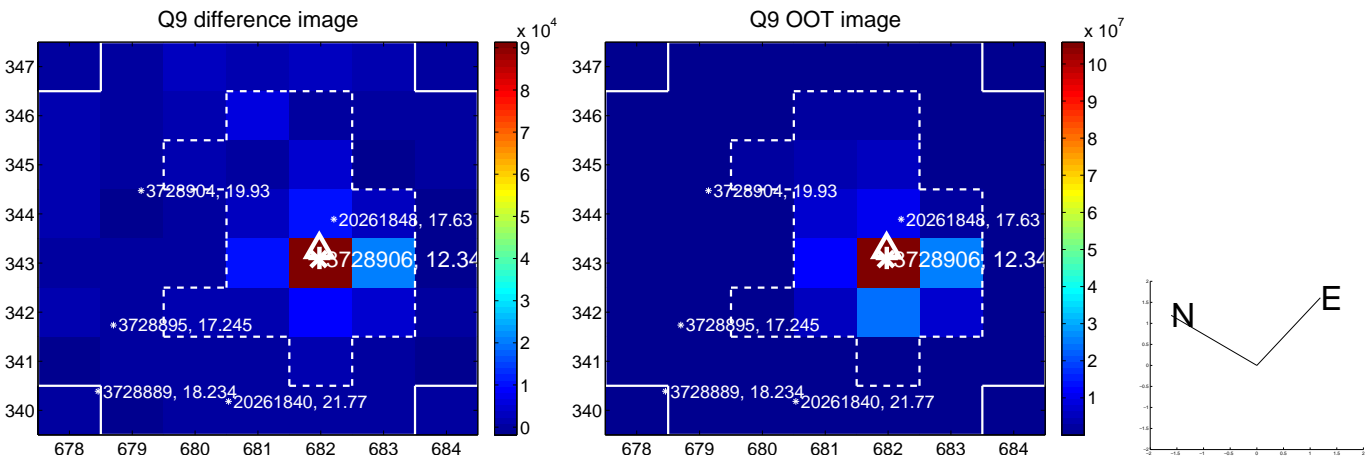
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



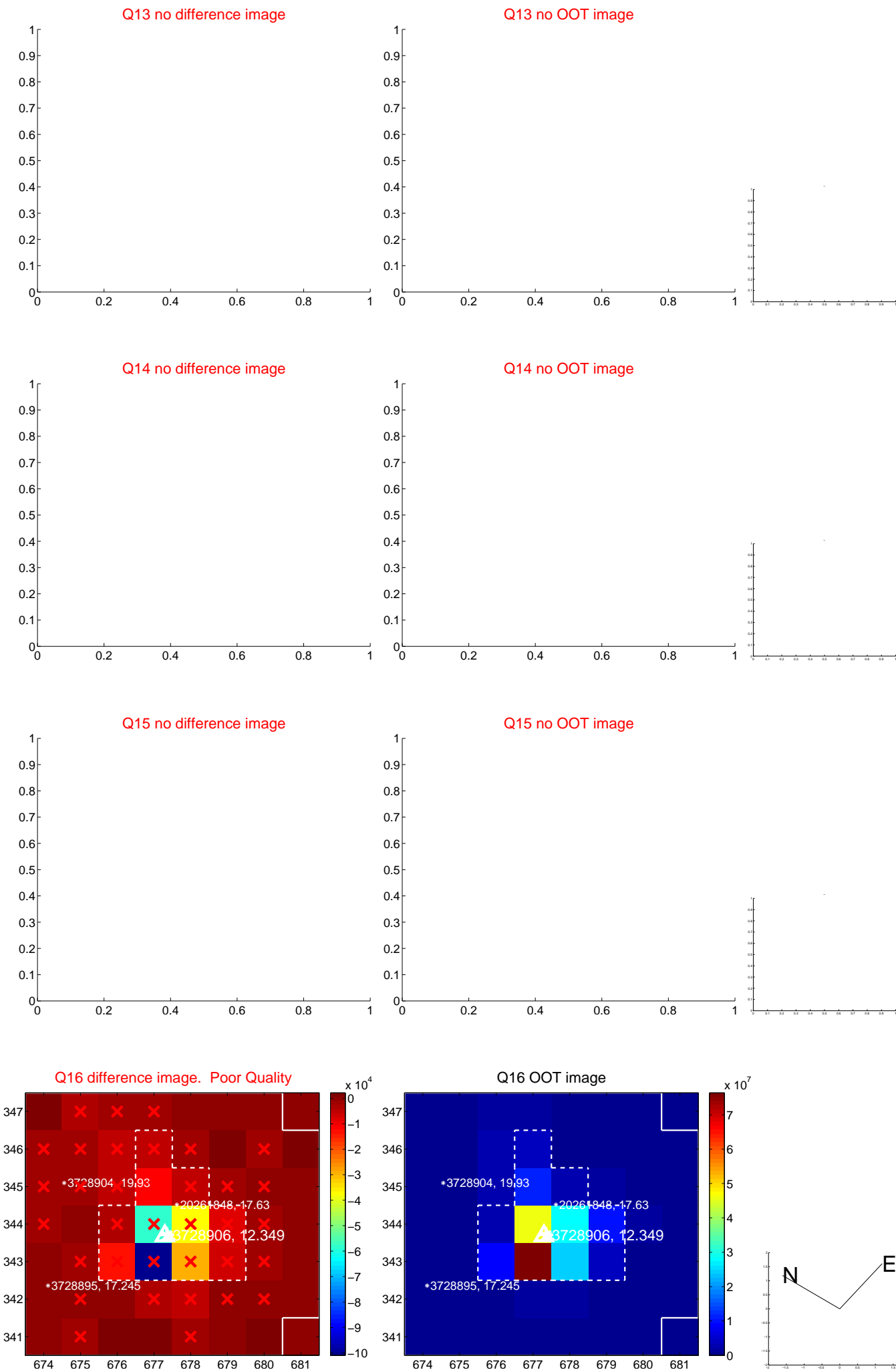
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



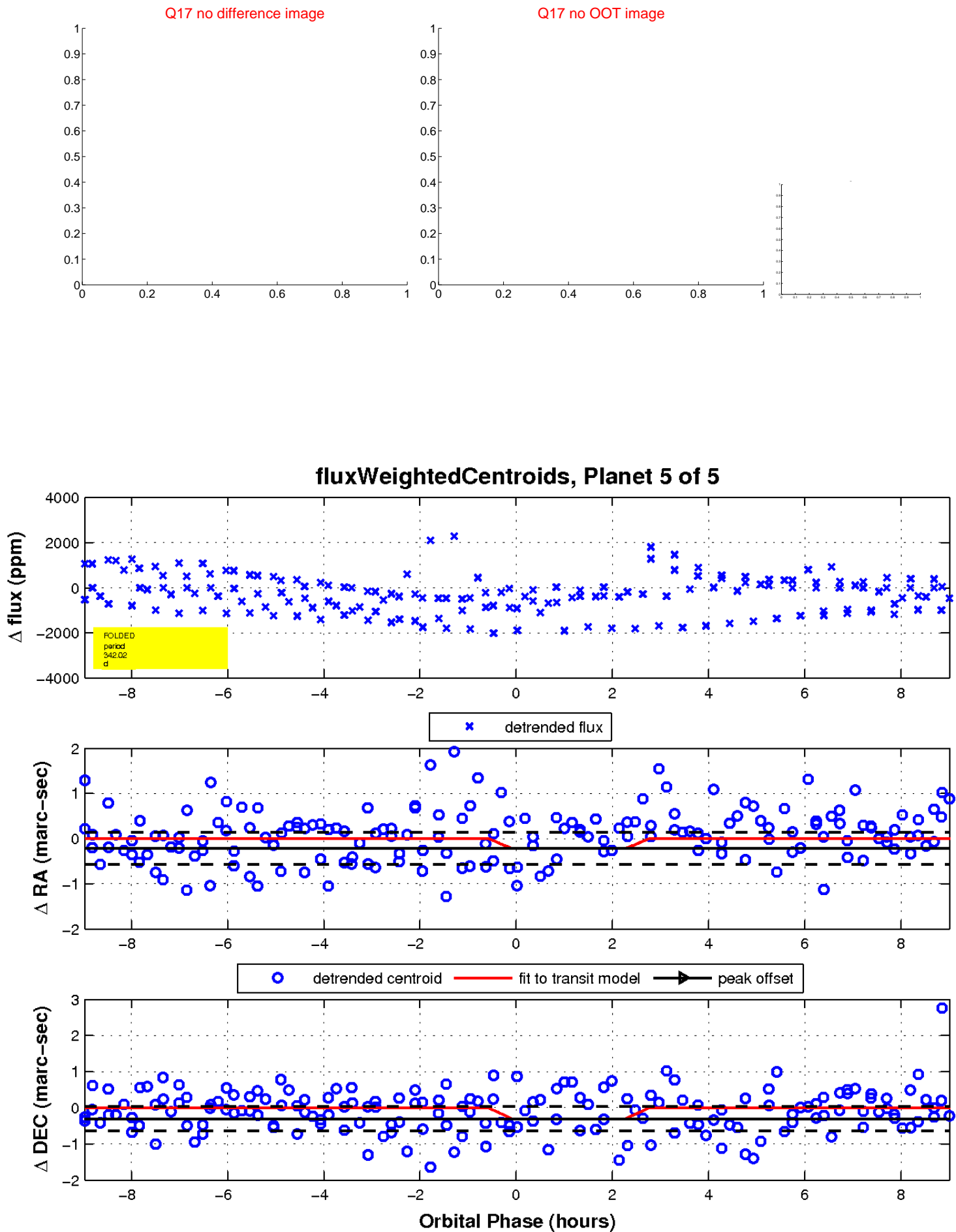
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

