

KIC 009007322

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})
009007322-01	OBS	No	312.515774	358.671760	6426.8	8.545	31.4	4.2	1.60	6851	15.05	4.88
009007322-02	OBS	No	590.593846	361.352370	834.4	11.300	39.8	2.1	1.60	6851	4.65	2.09
009007322-03	OBS	No	429.595165	137.269852	590.9	6.000	27.0	-1.0	1.60	6851	3.92	3.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009007322-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
009007322-02	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_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009007322-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_ALT—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.

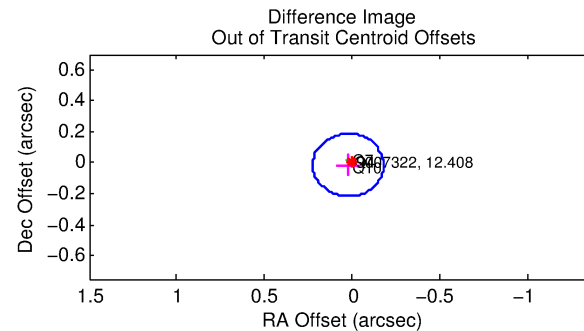
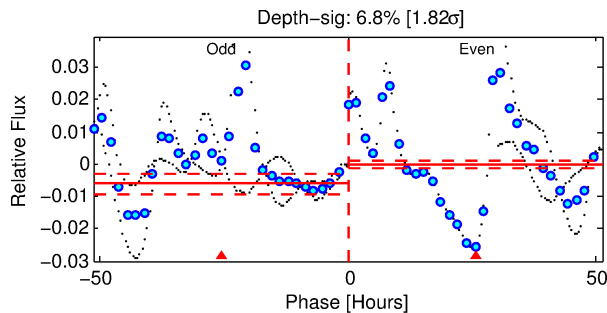
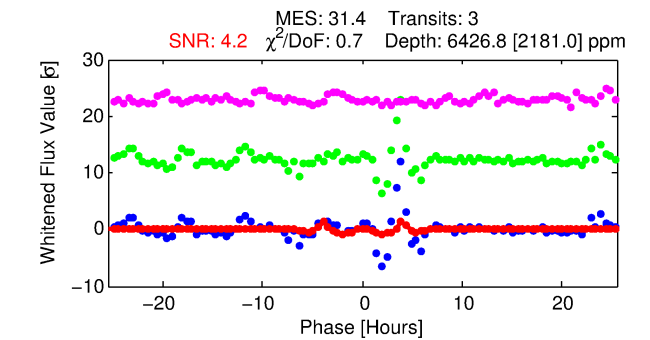
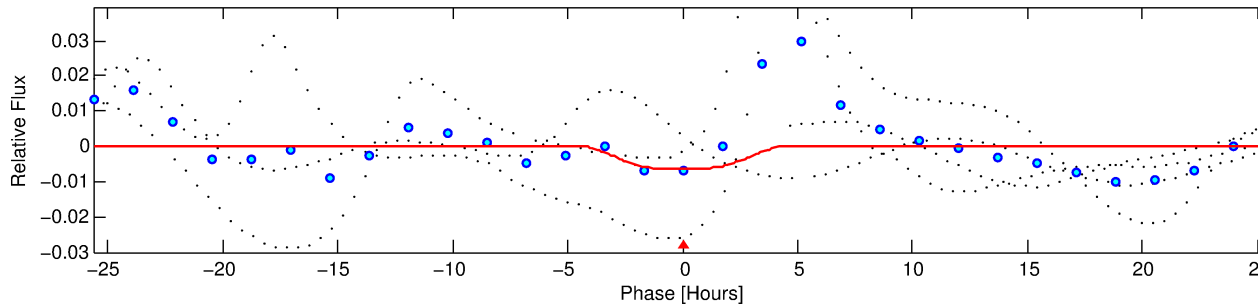
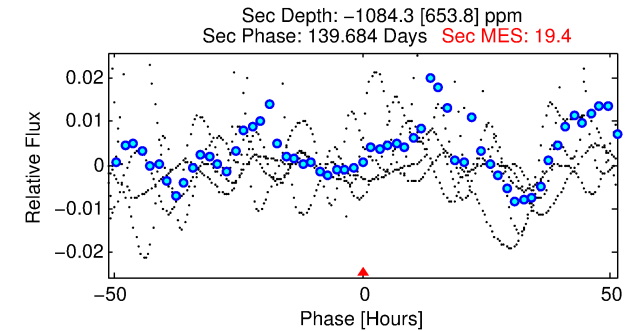
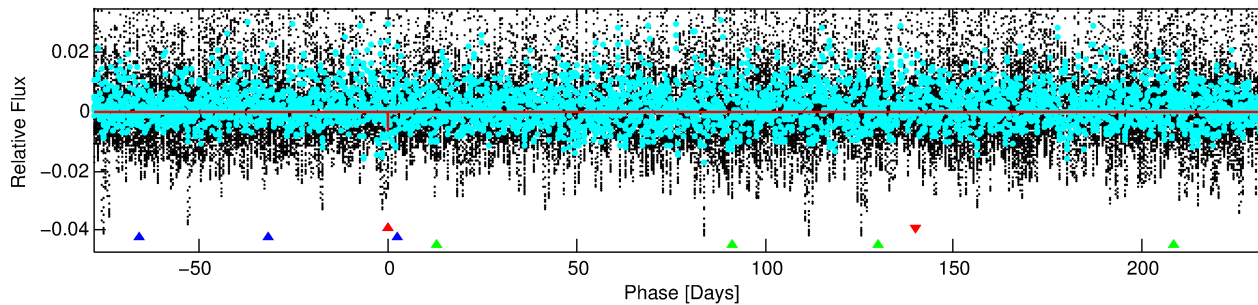
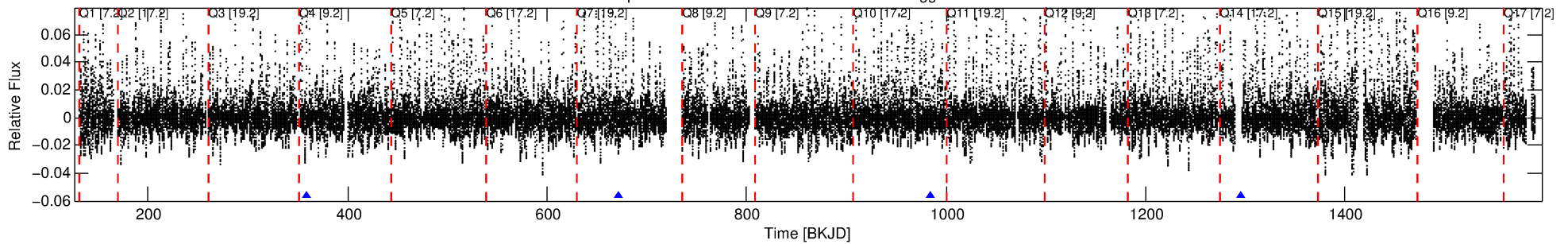
Ephemeris Match Information For 009007322-01

No Significant Match Found

DV One-Page Summary

KIC: 9007322 Candidate: 1 of 3 Period: 312.516 d

Kp: 12.41 R*: 1.60 Rs Teff: 6851.0 K Logg: 4.19 Fe/H: 0.070



DV Fit Results:

Period = 312.51577 [0.00482] d
Epoch = 358.6718 [0.0067] BKJD
Rp/R* = 0.0864 [0.0150]
a/R* = 169.18 [9.53]
b = 0.90 [0.01]
Seff = 4.88 [2.09]
Teq = 379 [41] K
Rp = 15.05 [5.67] Re
a = 1.0154 [0.2785] AU
Ag = N/A
Teffp = N/A

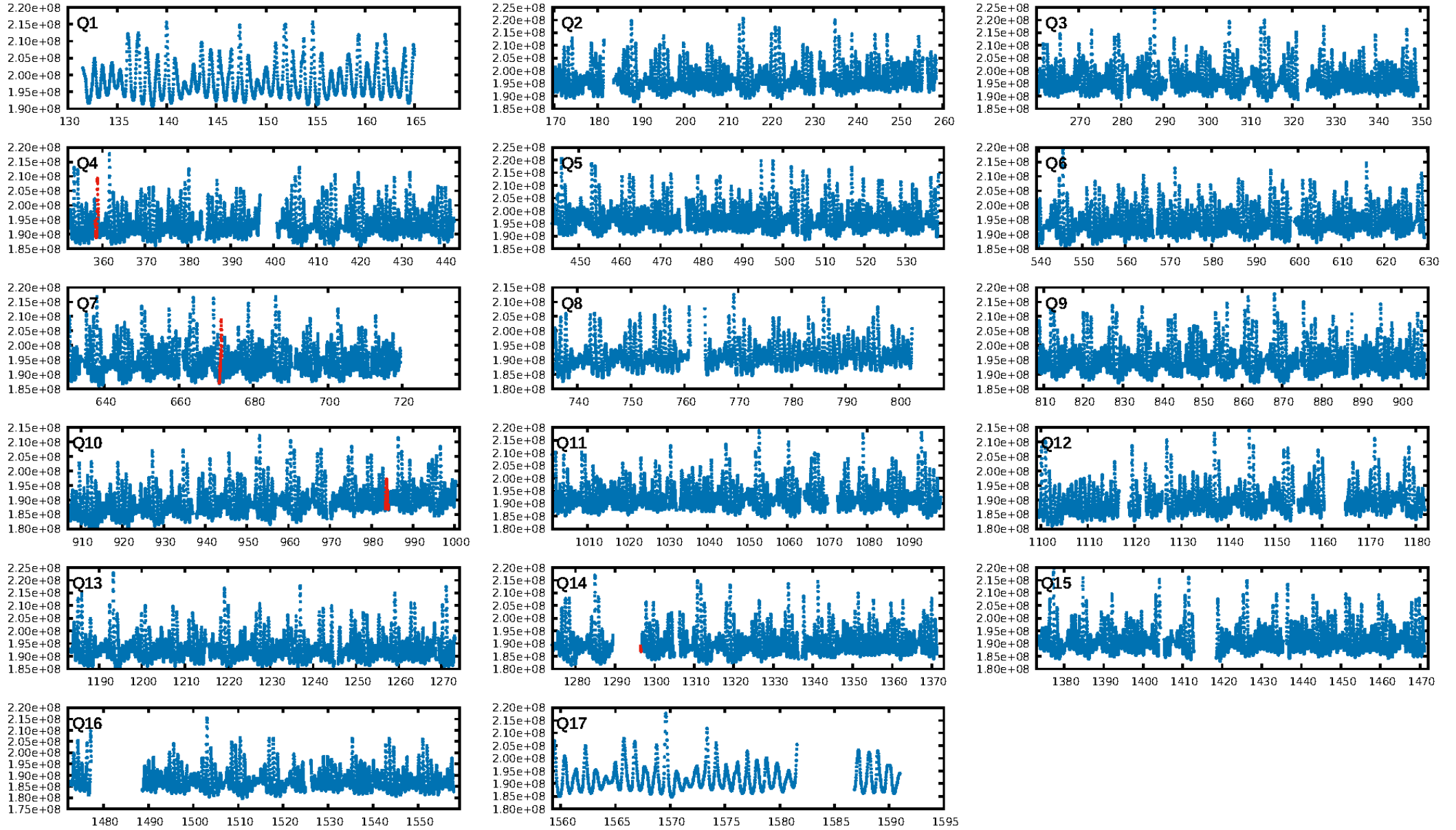
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [269.12σ]
ModelChiSquare2-sig: 68.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1216
Centroid-sig: 4.8%
Centroid-so: 2.388 arcsec [3.37σ]
OotOffset-rm: 0.028 arcsec [0.42σ]
KicOffset-rm: 0.097 arcsec [1.41σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

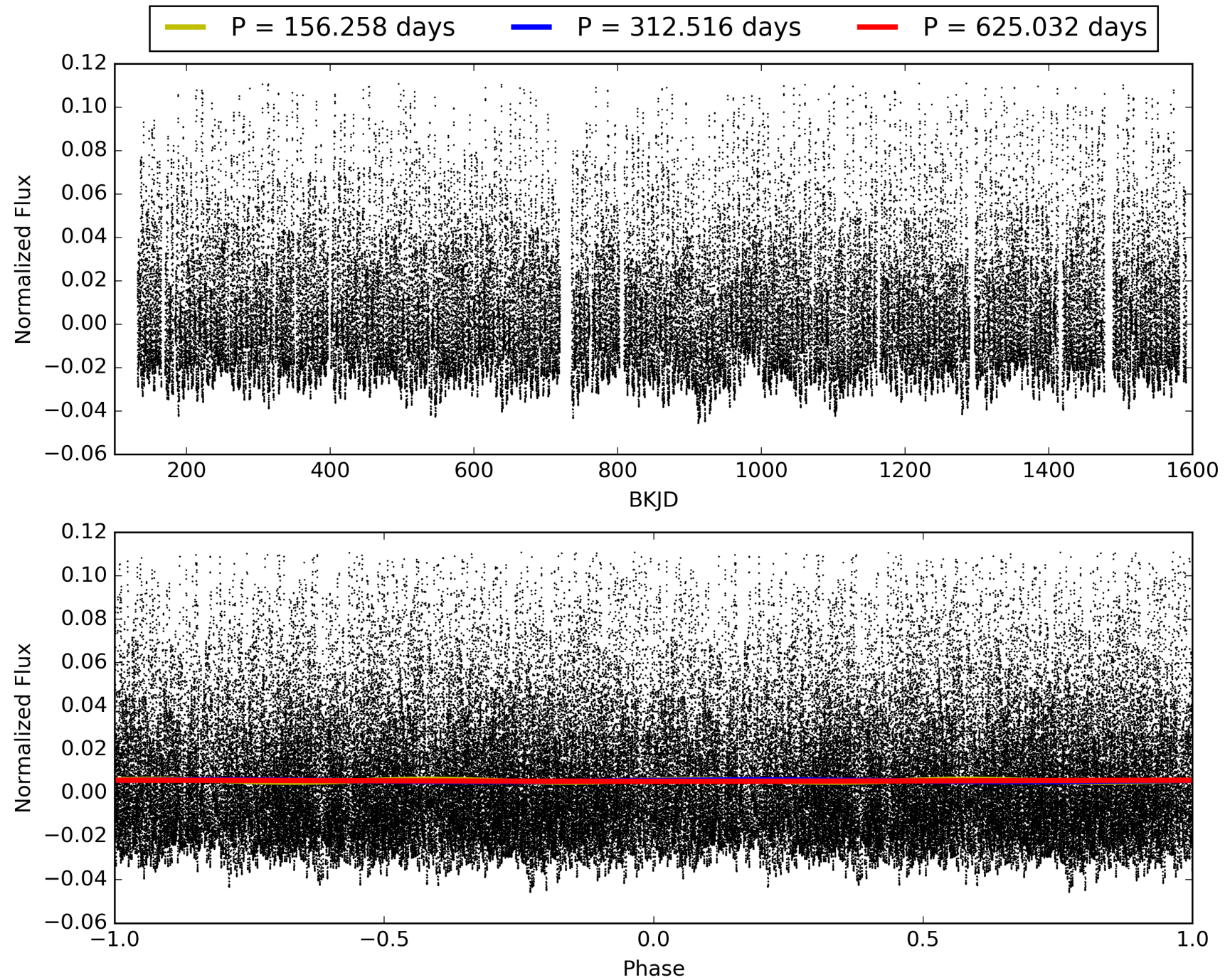
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:05:27 Z

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

TCE 009007322-01, PDC Light Curves

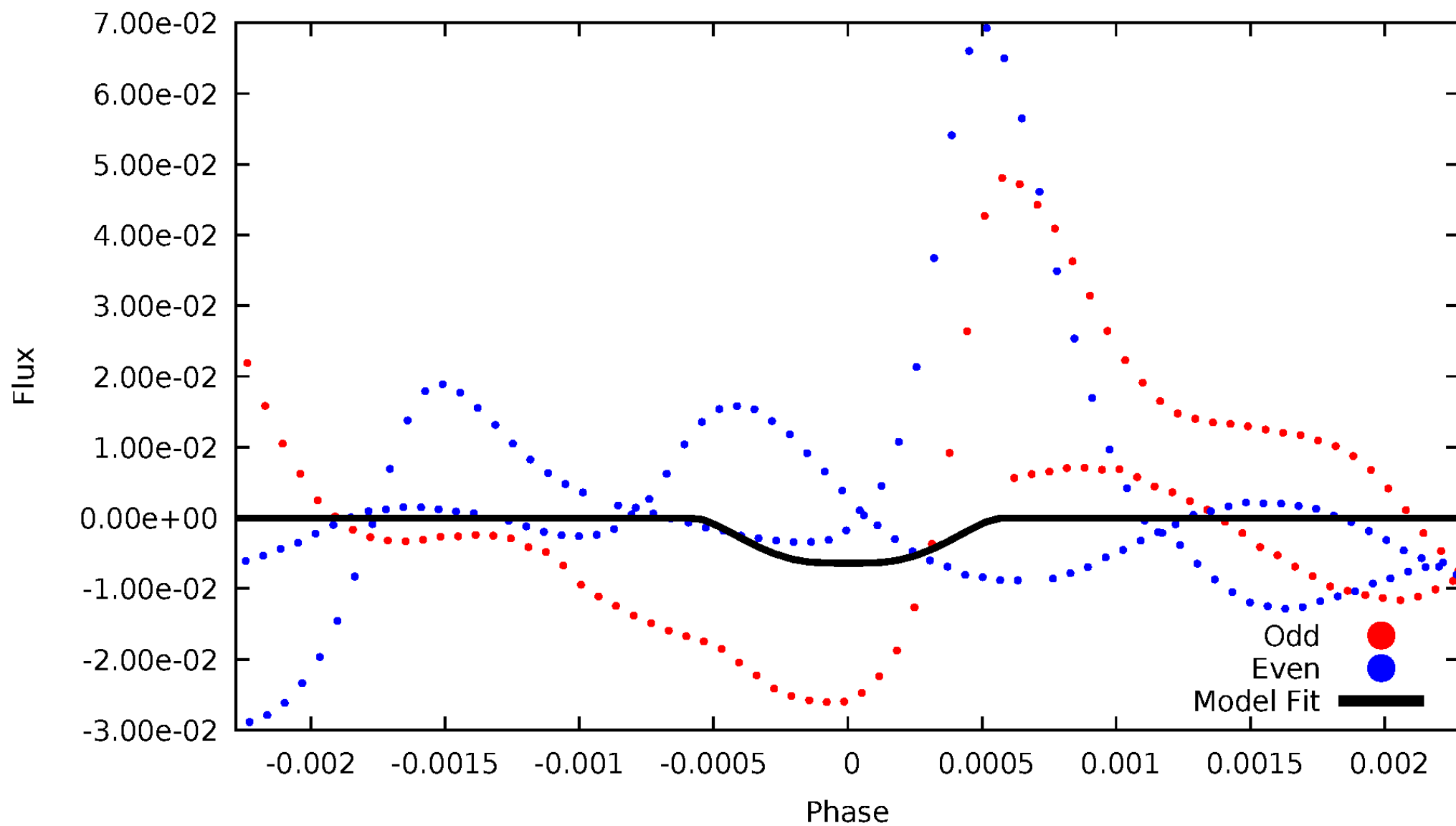


TCE 009007322-01



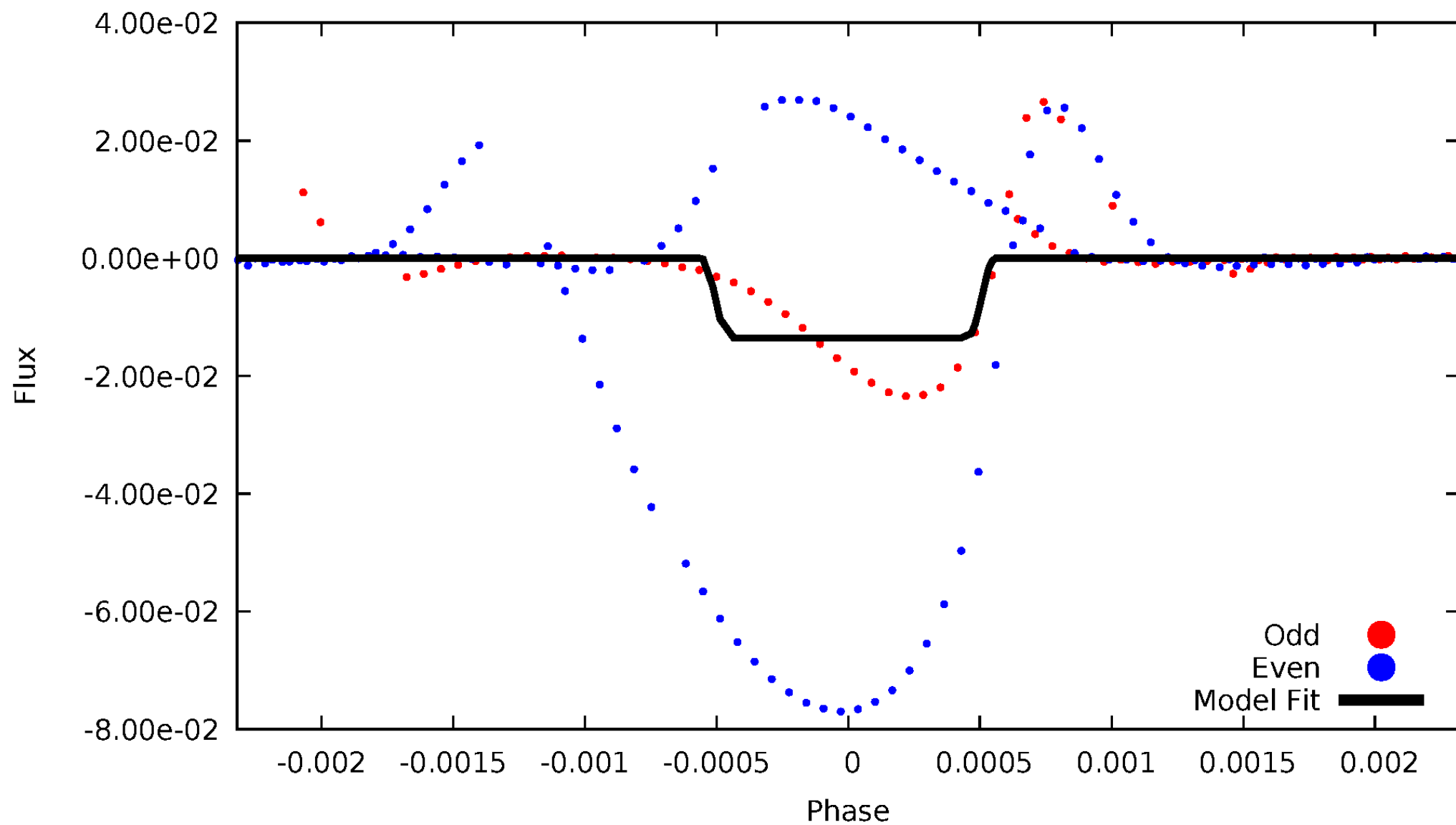
DV Odd/Even

TCE 009007322-01



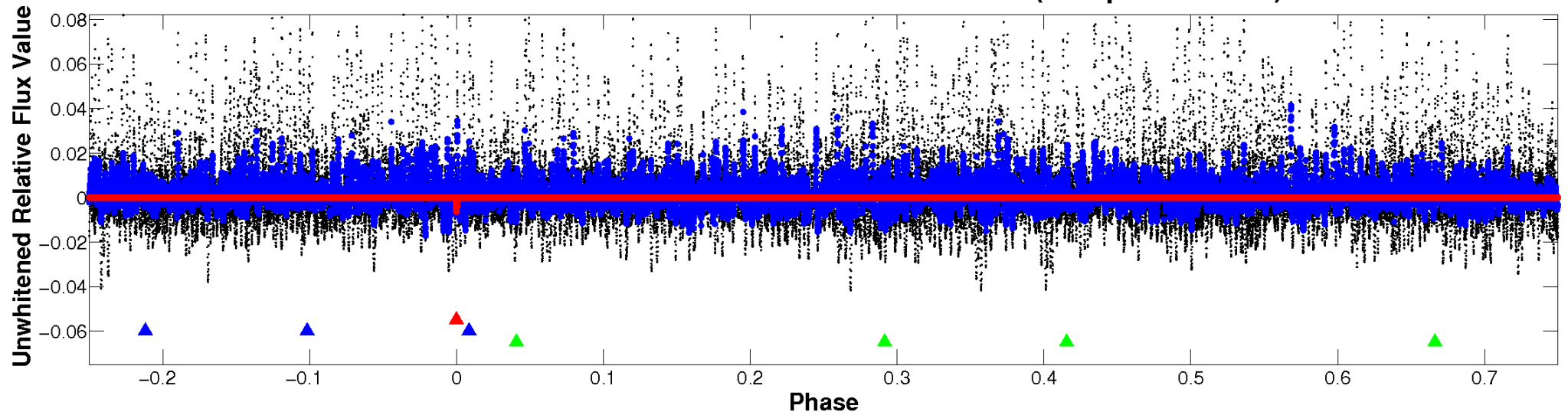
ALT Odd/Even

TCE 009007322-01

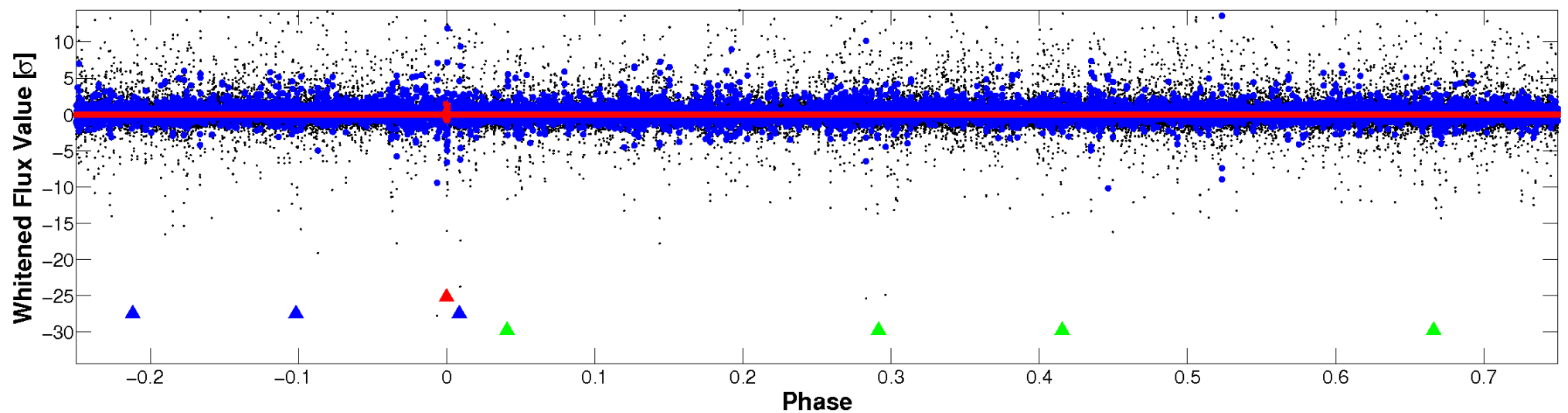


Non-Whitened Vs. Whitened Light Curve

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

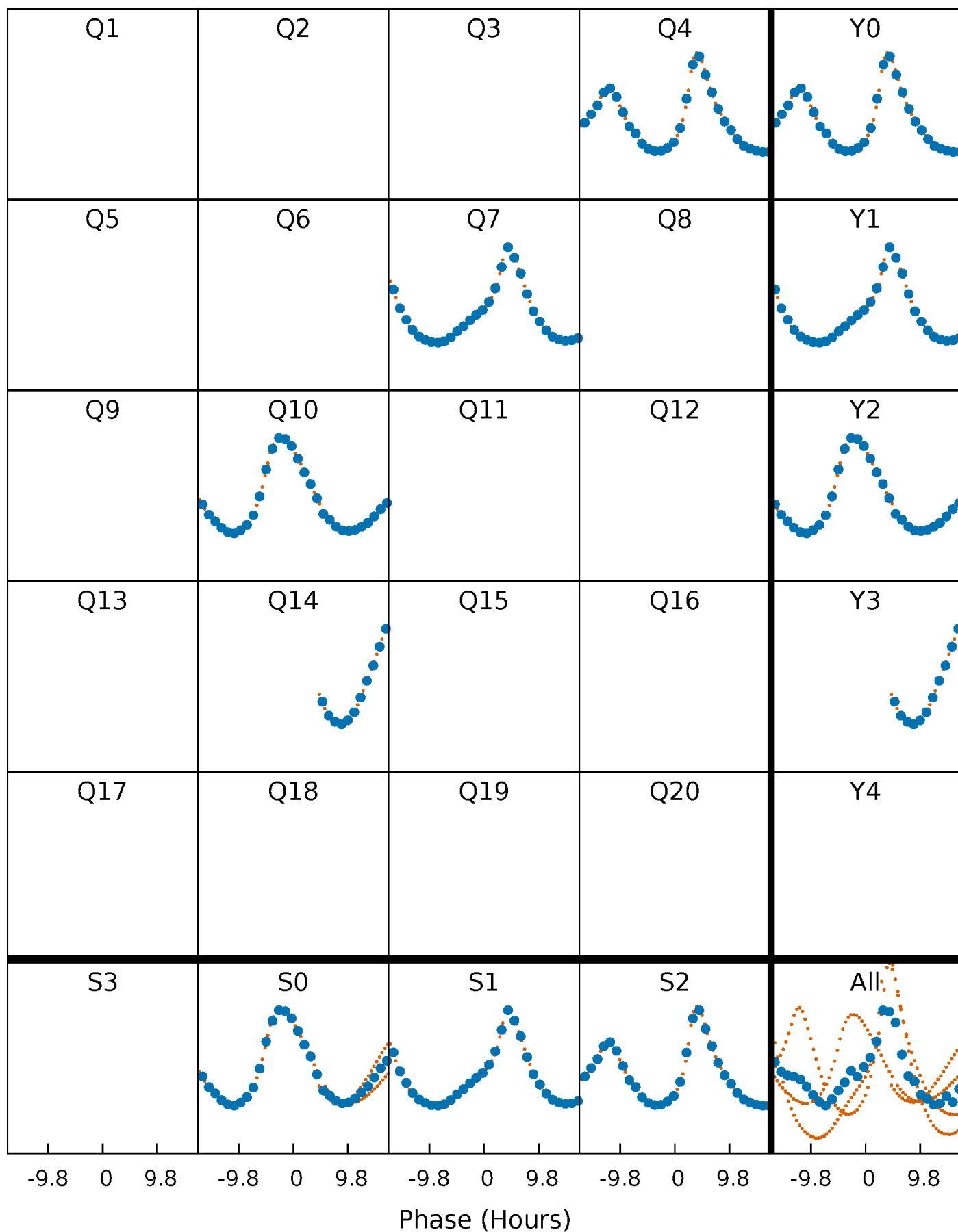


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



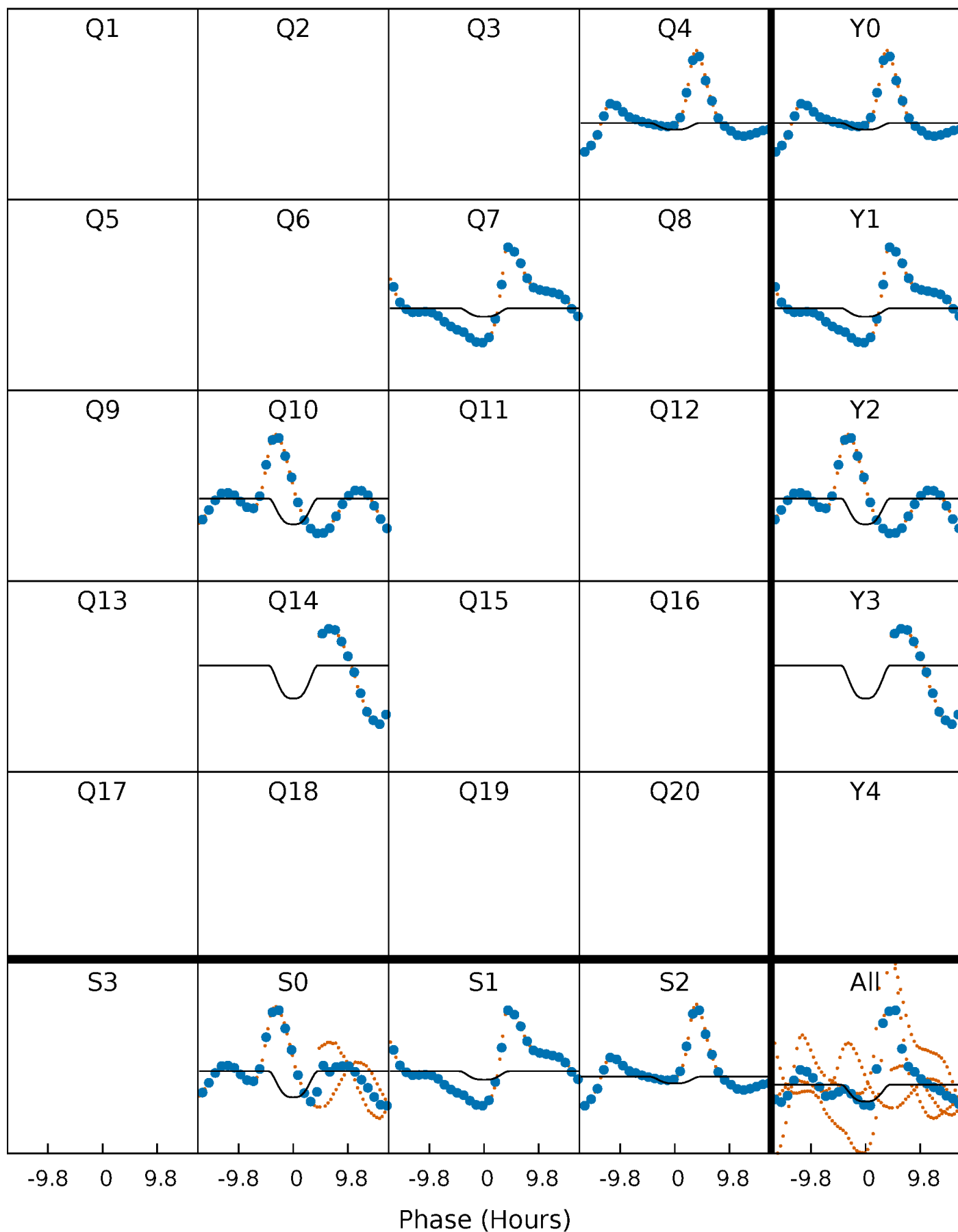
PDC Quarter-Phased Transit Curves

TCE 009007322-01 P=312.515774 Days $T_0=358.671760$ (BKJD)



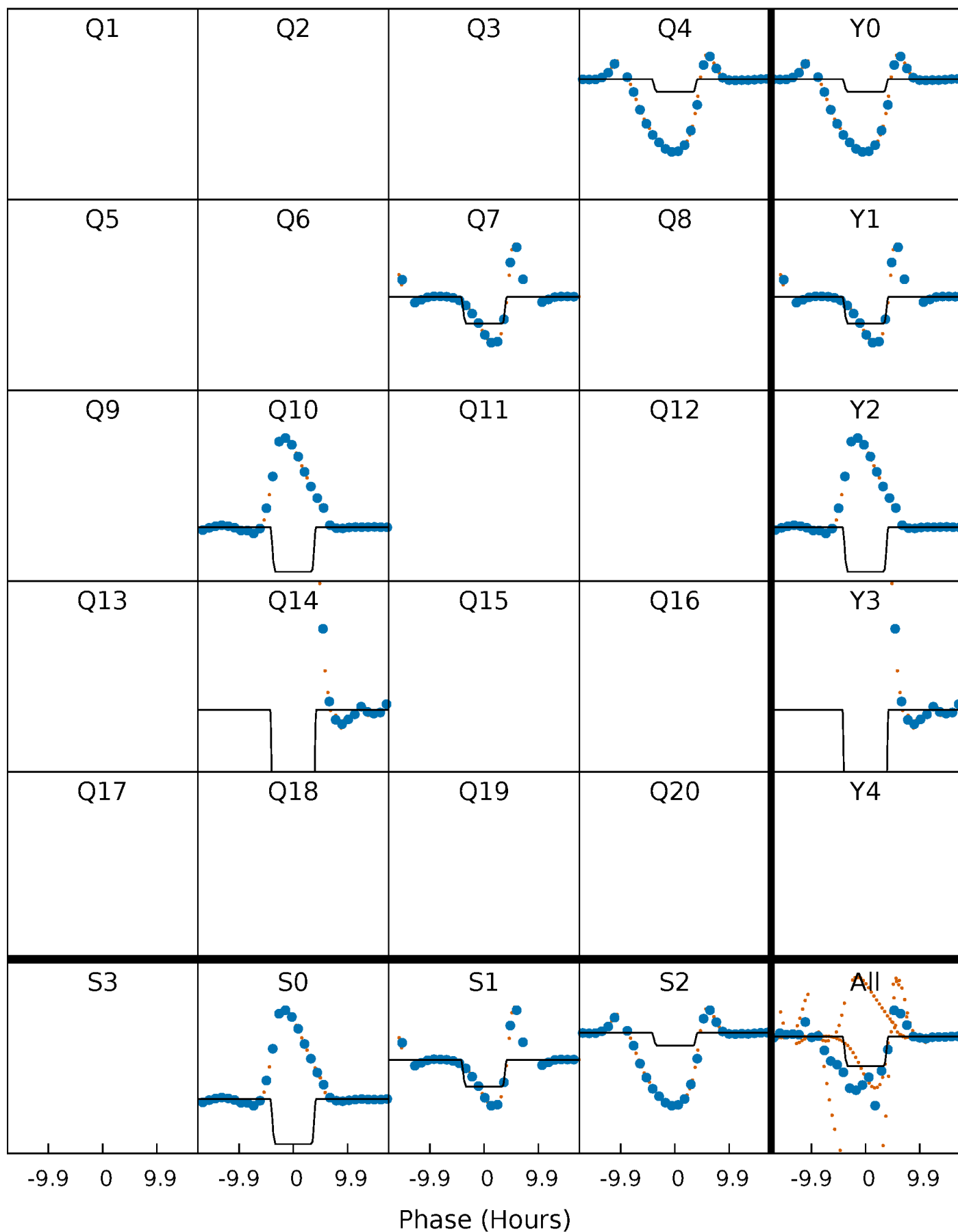
DV Quarter-Phased Transit Curves

TCE 009007322-01 P=312.515774 Days $T_0=358.671760$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

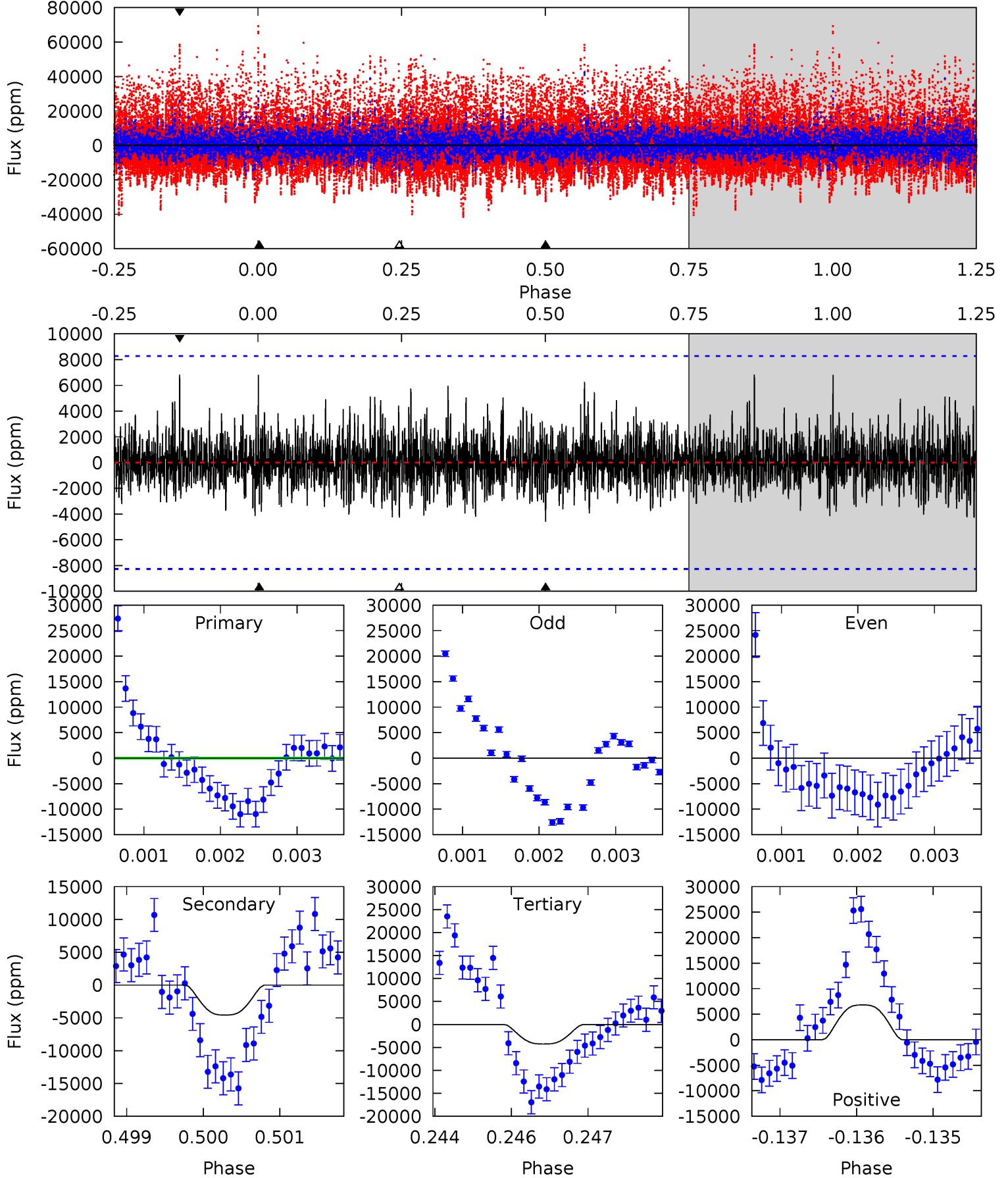
TCE 009007322-01 P=312.538111 Days $T_0=358.597454$ (BKJD)



DV Model-Shift Uniqueness Test

009007322-01, P = 312.515774 Days, E = 46.155986 Days

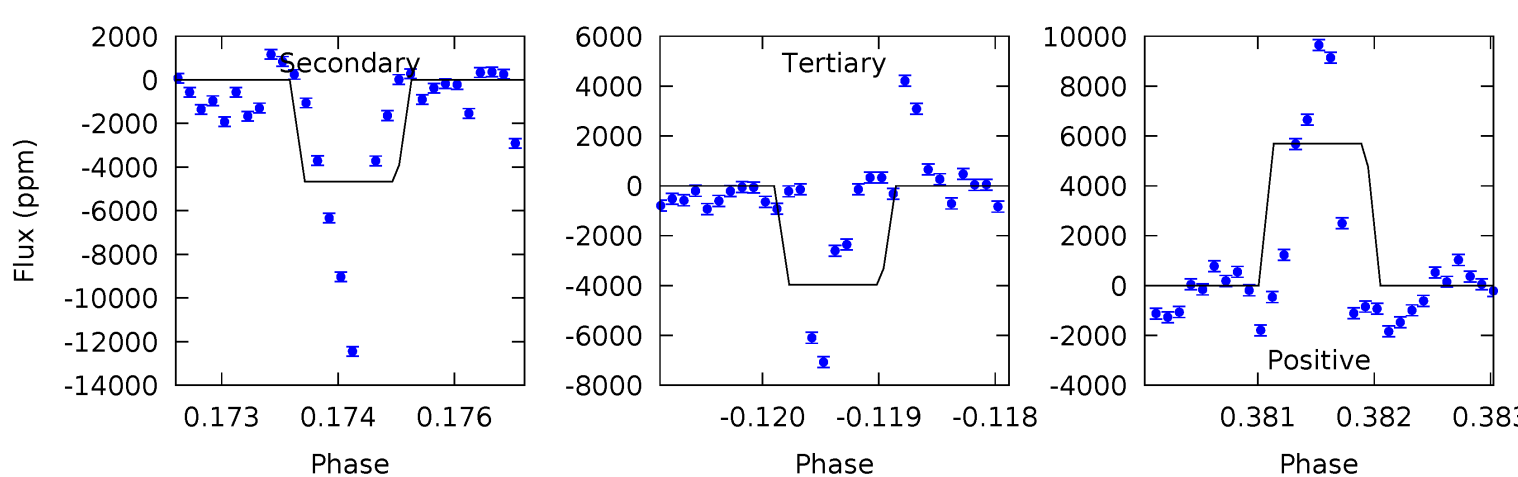
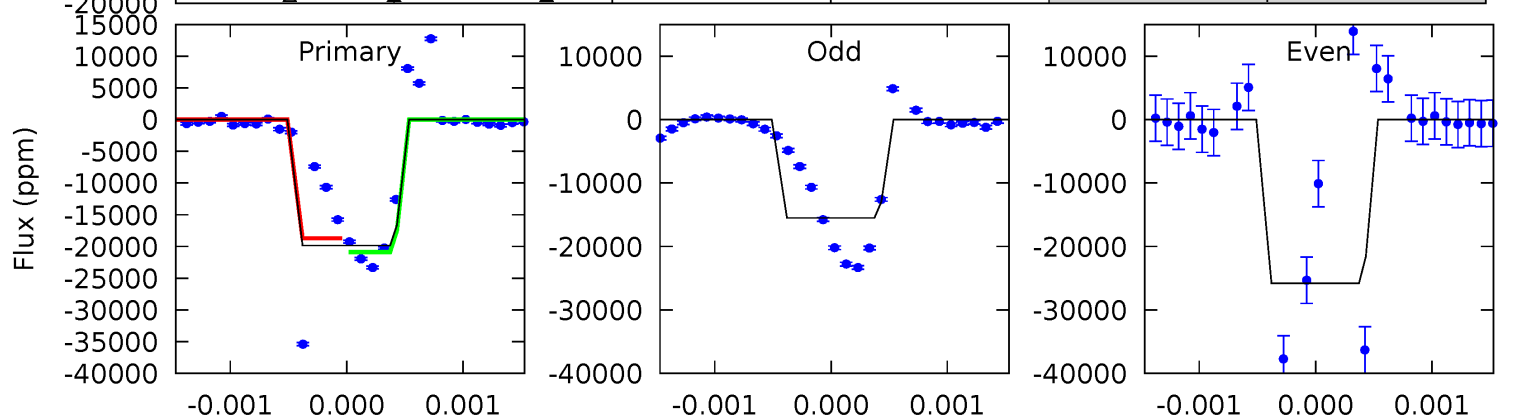
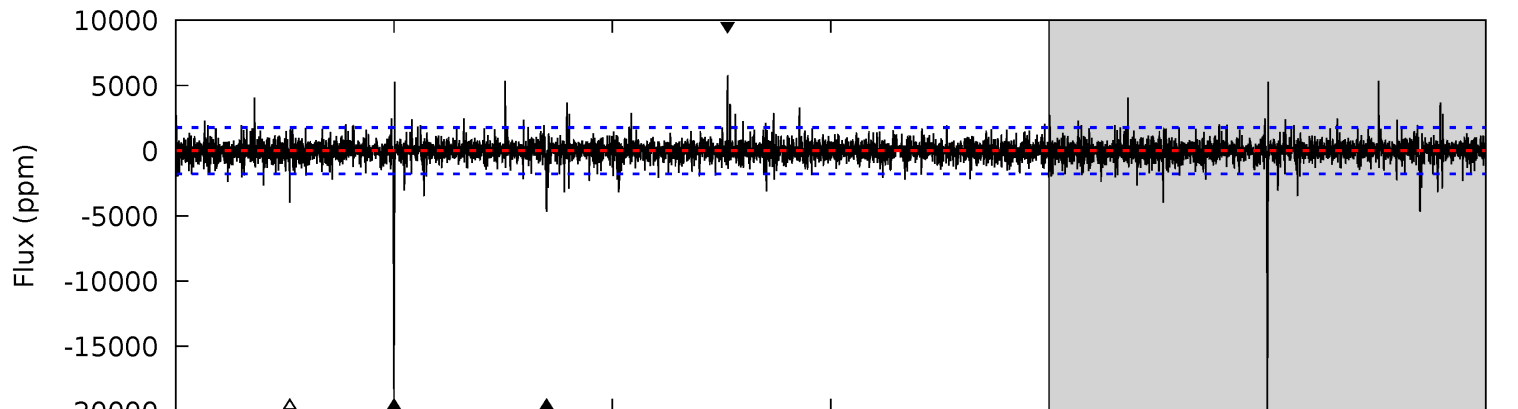
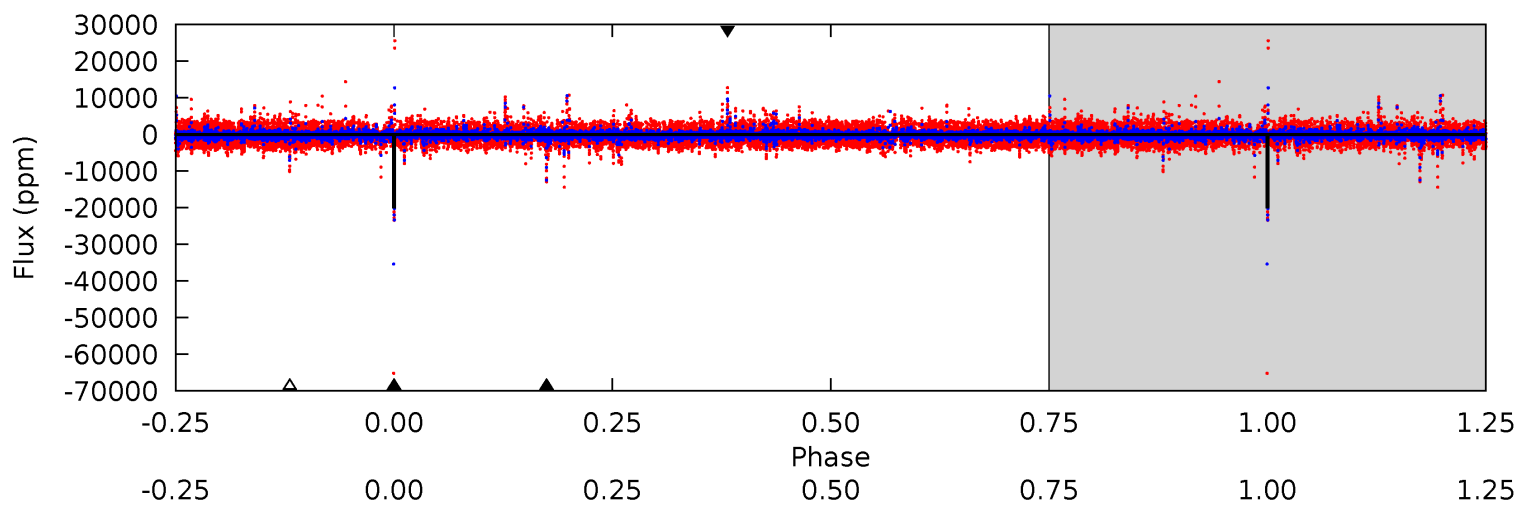
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.79	3.01	2.80	4.48	5.43	3.26	1.01	-1.01	-2.69	0.21	-1.48	3.91	-0.62	0.60	1.62



Alt Model-Shift Uniqueness Test

009007322-01, P = 312.538111 Days, E = 46.059343 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.5	14.2	12.1	17.3	5.43	3.26	1.76	48.4	43.2	2.12	-3.13	14.1	1.38	0.22	0



Stellar Parameters For KIC 009007322

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6851^{+189}_{-307}	$4.187^{+0.112}_{-0.208}$	$0.070^{+0.200}_{-0.350}$	$1.596^{+0.534}_{-0.288}$	$1.428^{+0.208}_{-0.231}$	$0.495^{+0.303}_{-0.250}$
	+3%/-4%	+3%/-5%	+286%/-500%	+33%/-18%	+15%/-16%	+61%/-51%
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 009007322-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4579 ± 1523	$15.35^{+3.81}_{-3.13}$	535^{+37}_{-33}	5966^{+813}_{-709}	10381^{+7522}_{-4631}
Alt.	-4660 ± 328	$20.72^{+4.41}_{-3.53}$	535^{+42}_{-33}	5249^{+386}_{-296}	6114^{+2465}_{-1936}

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

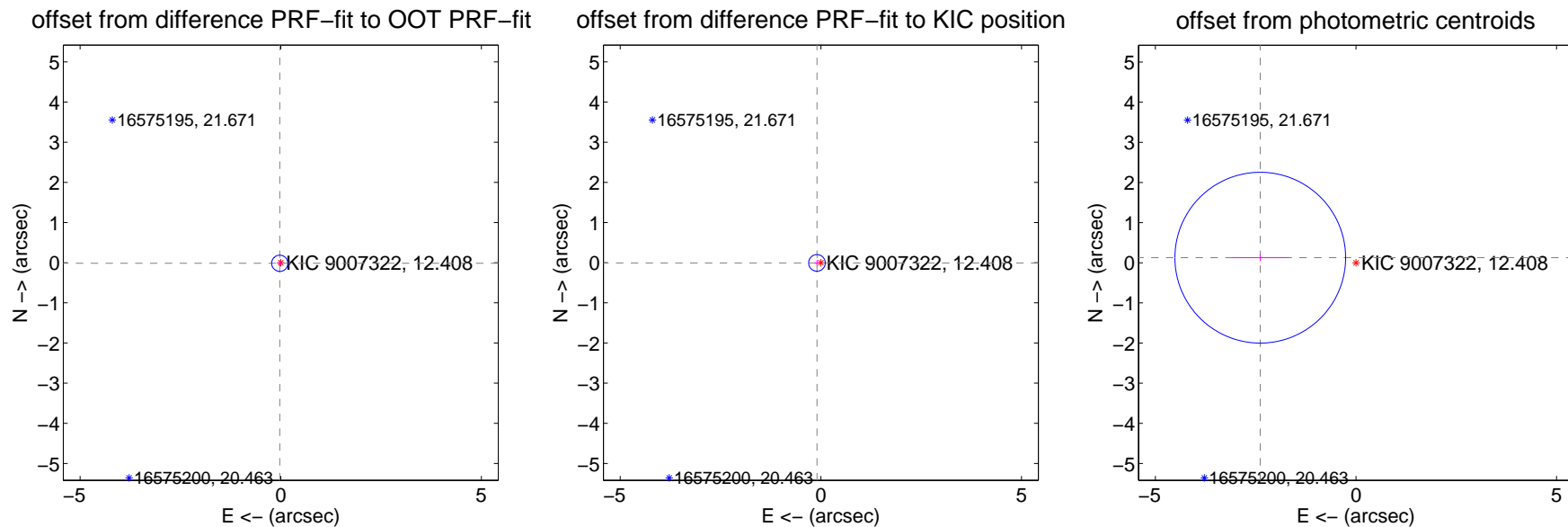
DV Centroid Data

Supplemental centroid analysis for 009007322-01. Kepler magnitude: 12.41. Transit SNR 4.24

There are 1 quarters with good PRF difference image offsets

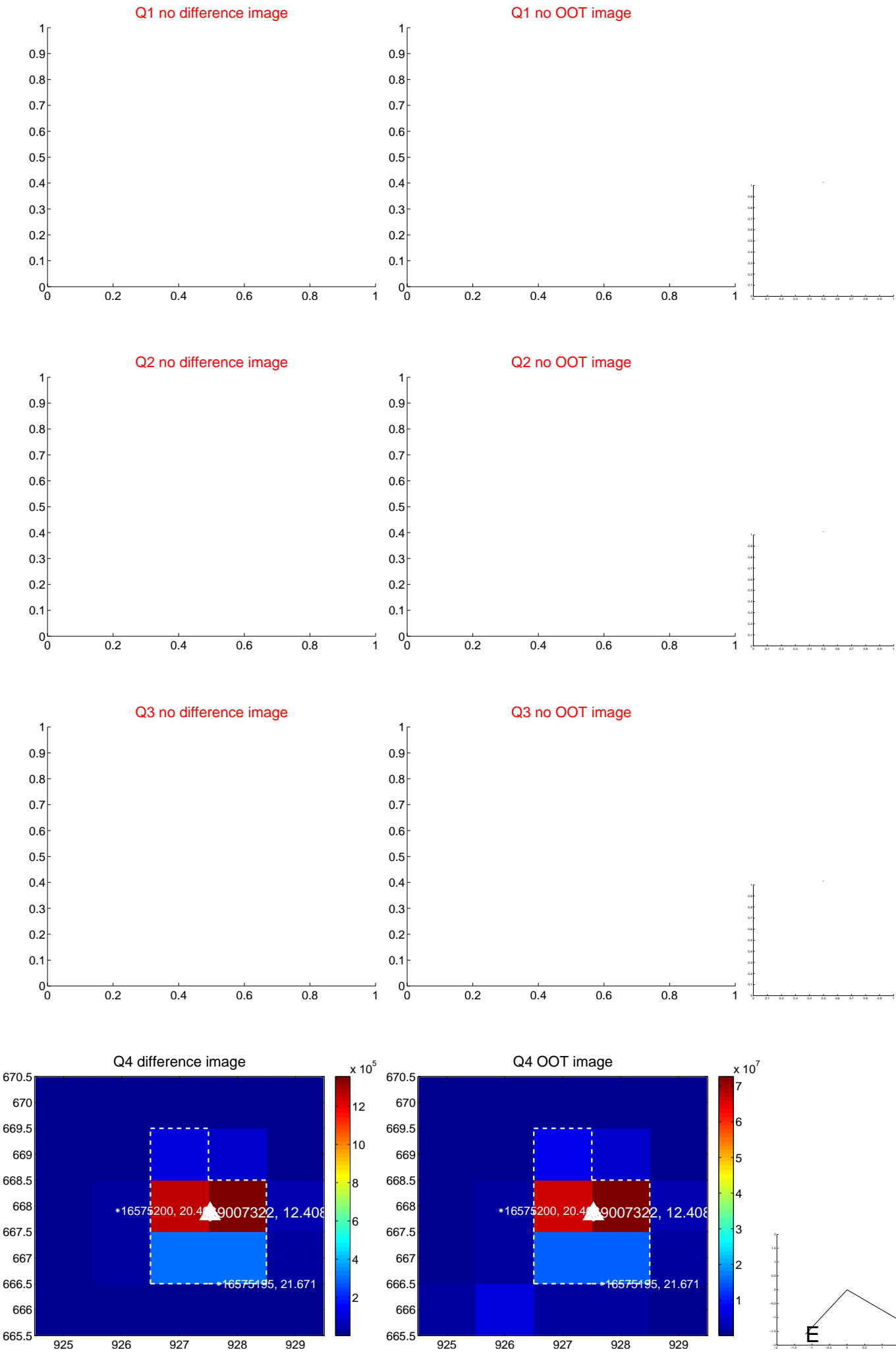
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.028 ± 0.067	0.42	0.024 ± 0.067	-0.015 ± 0.069
PRF-fit source offset from KIC position	0.097 ± 0.069	1.41	0.097 ± 0.069	-0.005 ± 0.074
photometric centroid source offset	2.39 ± 0.71	3.37	2.38 ± 0.71	0.13 ± 0.09

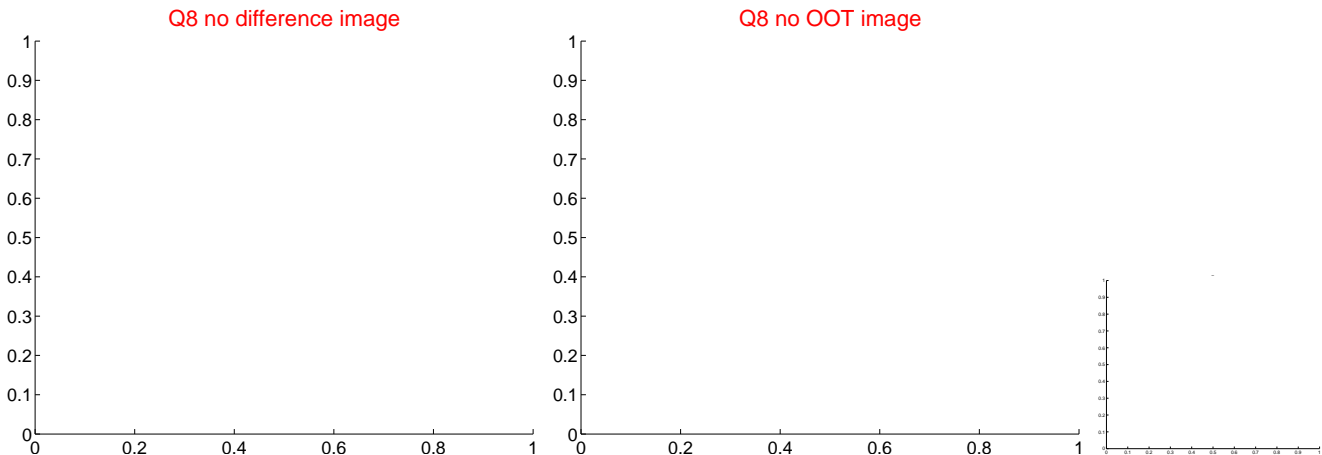
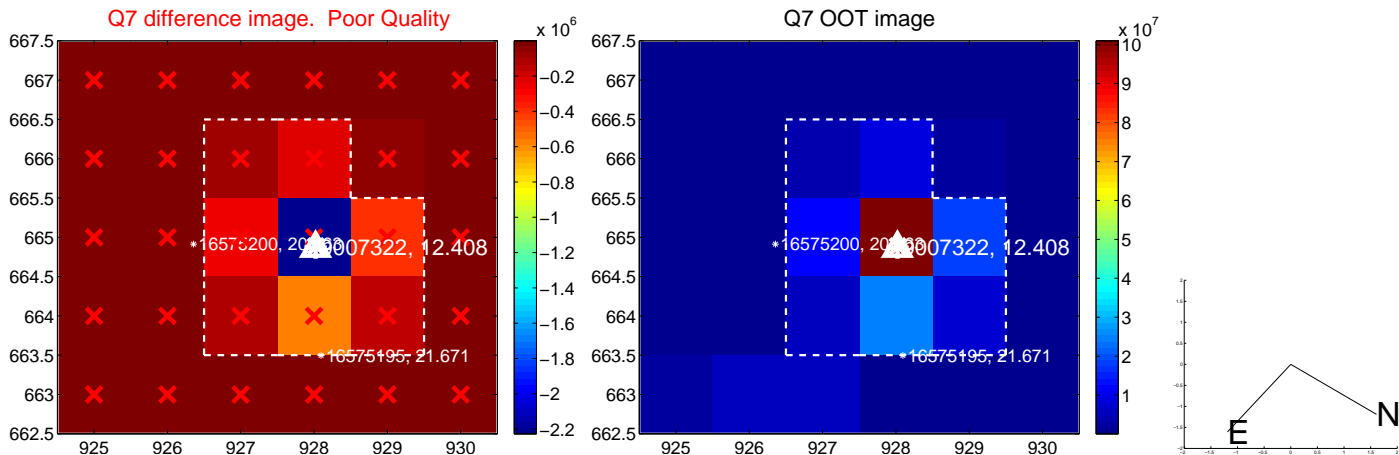
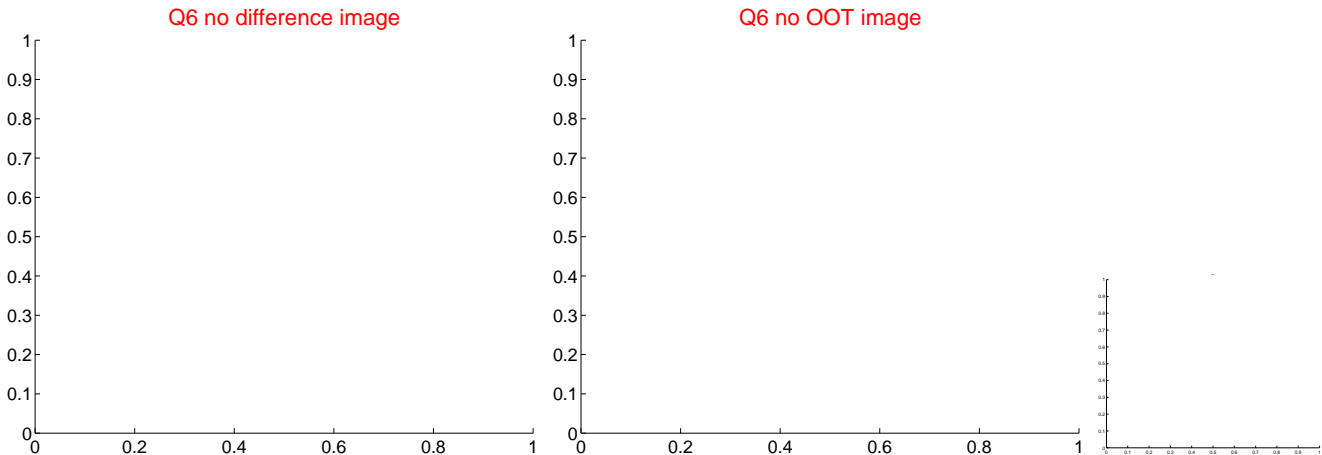
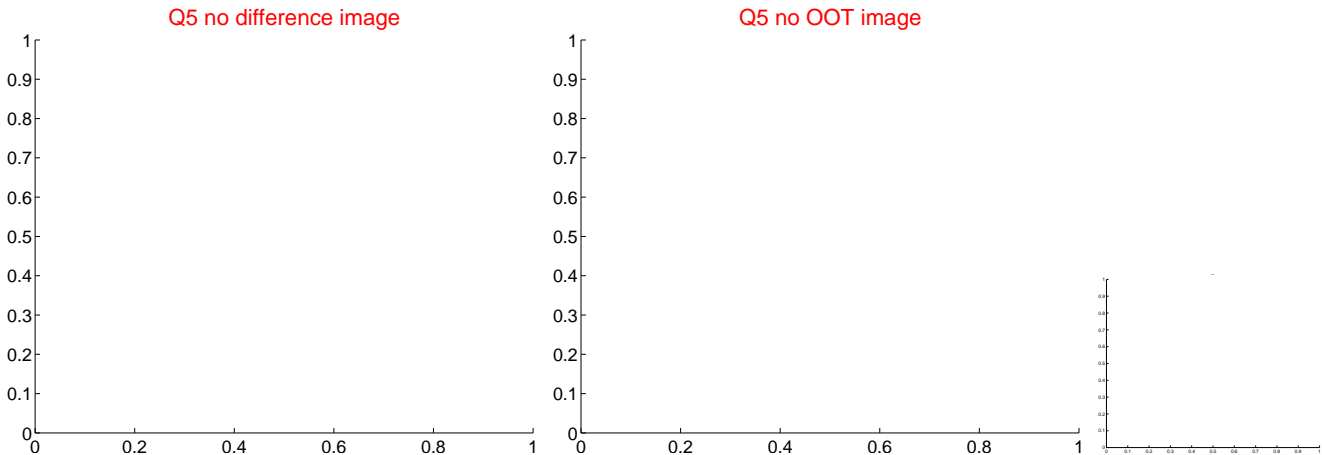


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

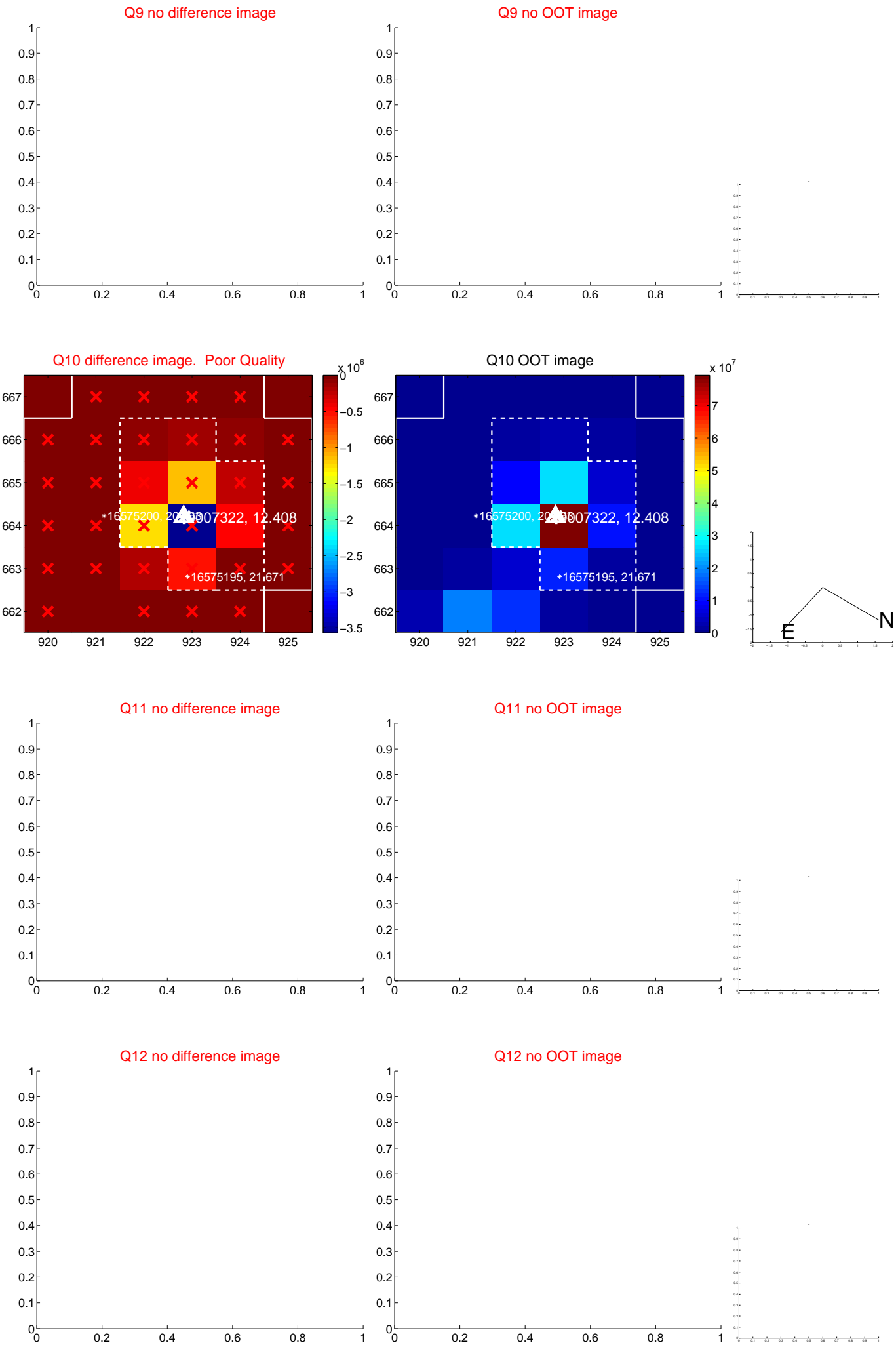
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



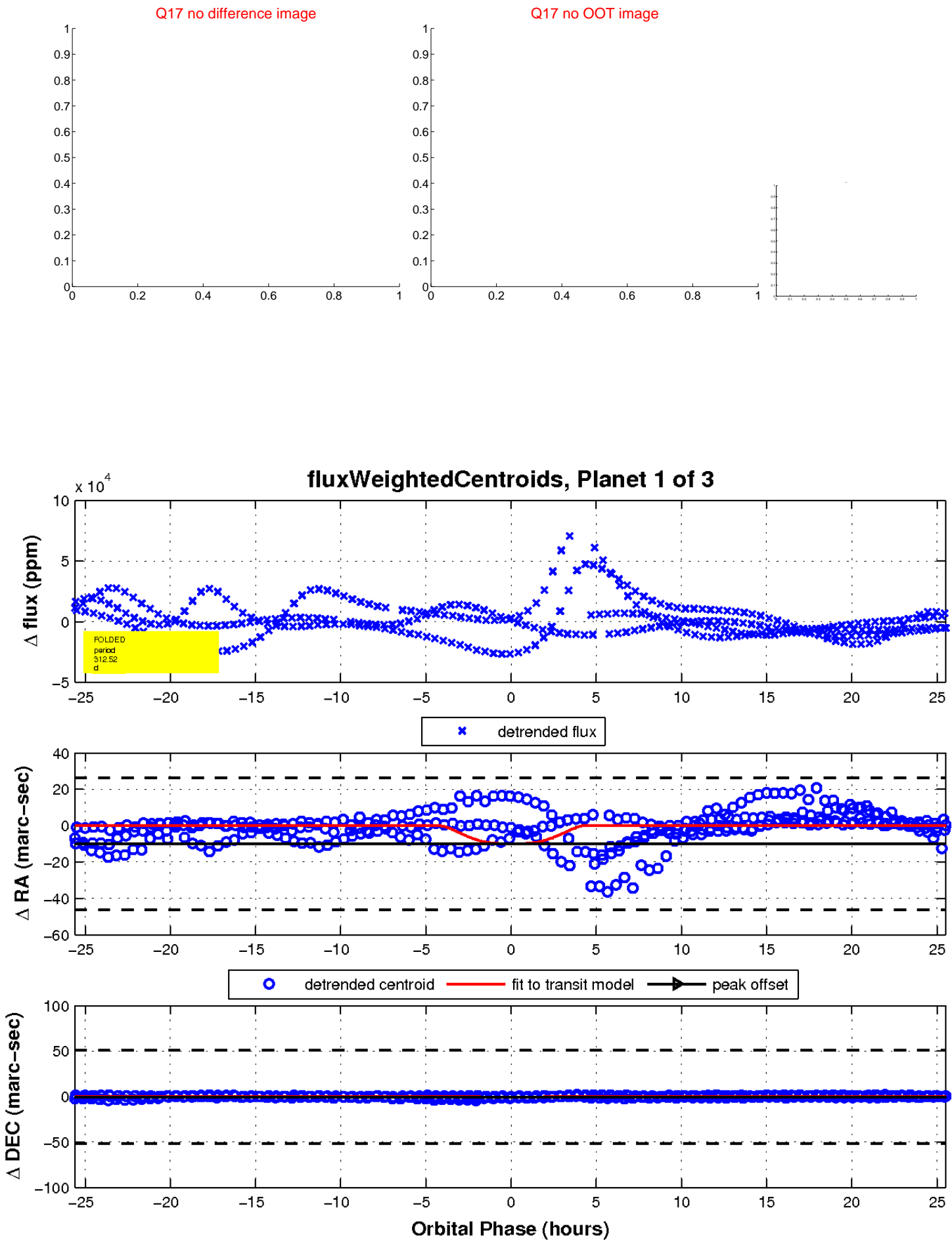
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

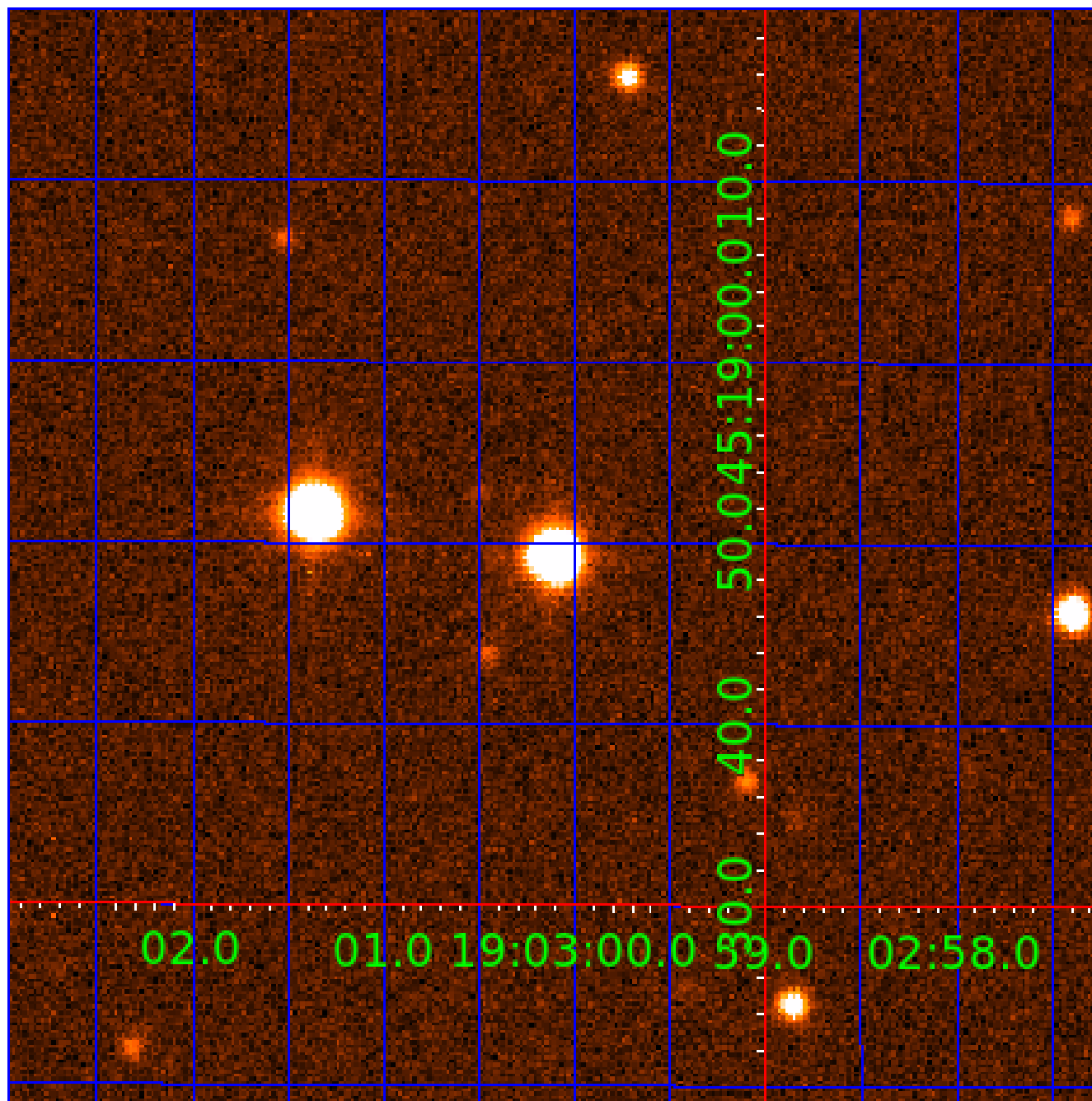


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009007322

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})
009007322-01	OBS	No	312.515774	358.671760	6426.8	8.545	31.4	4.2	1.60	6851	15.05	4.88
009007322-02	OBS	No	590.593846	361.352370	834.4	11.300	39.8	2.1	1.60	6851	4.65	2.09
009007322-03	OBS	No	429.595165	137.269852	590.9	6.000	27.0	-1.0	1.60	6851	3.92	3.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009007322-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
009007322-02	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_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009007322-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

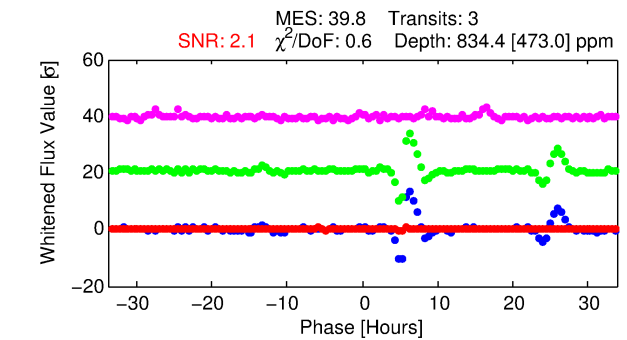
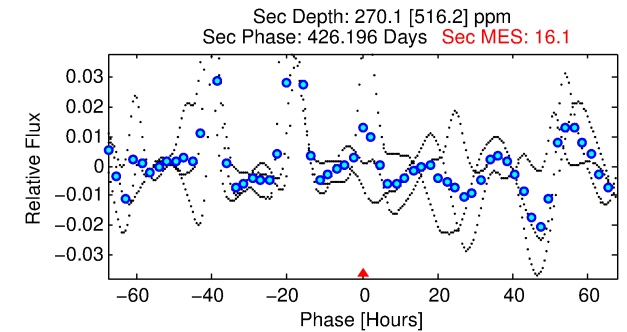
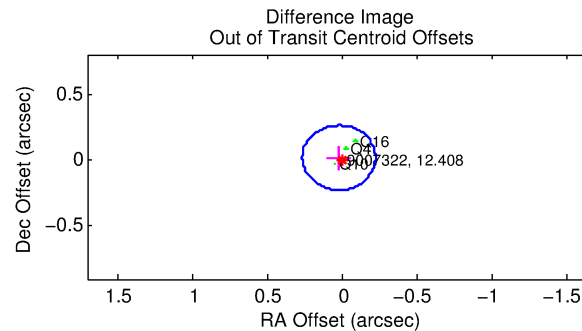
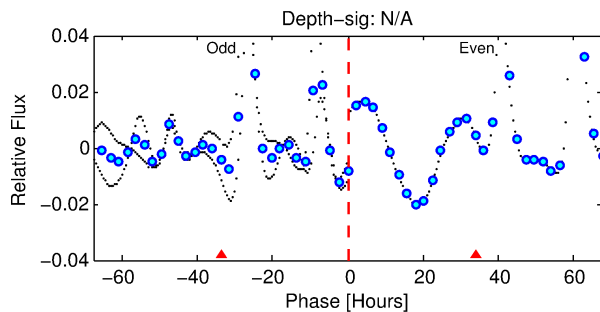
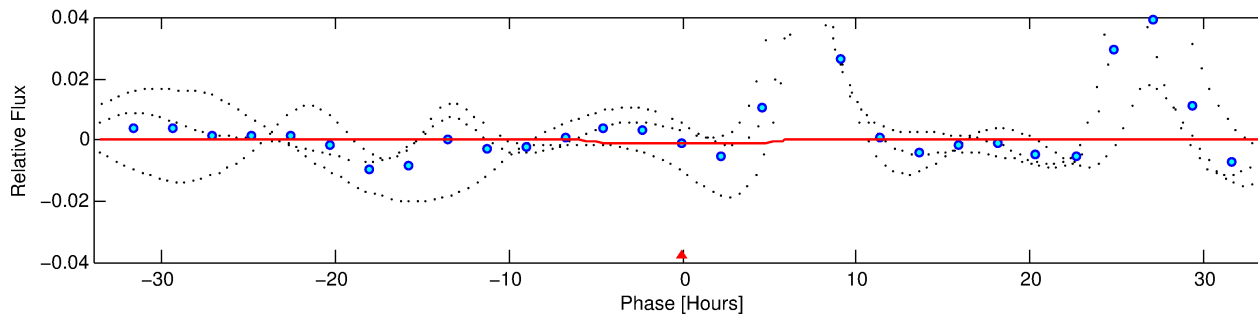
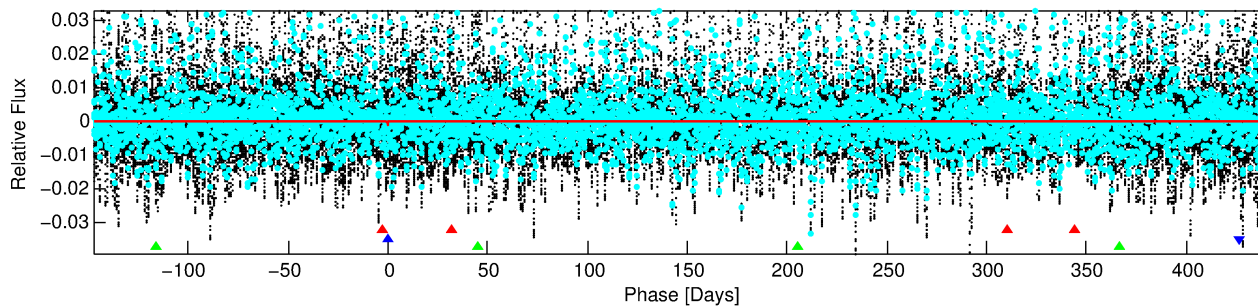
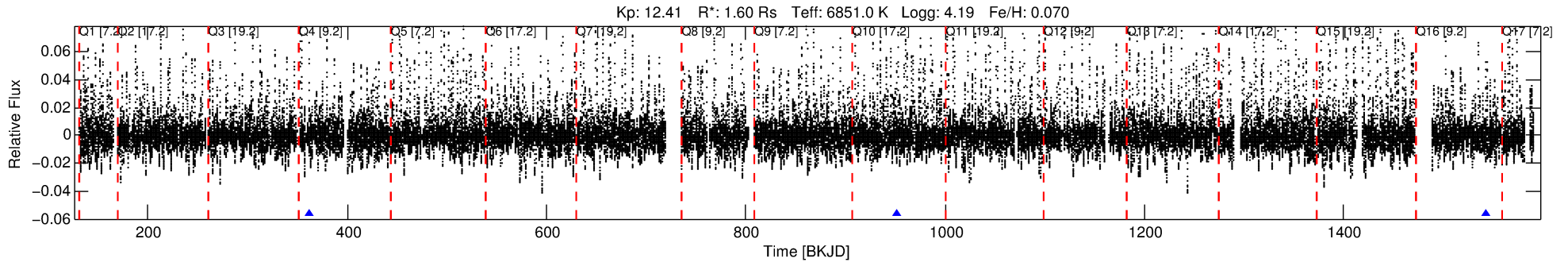
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009007322-02

No Significant Match Found

DV One-Page Summary

KIC: 9007322 Candidate: 2 of 3 Period: 590.594 d



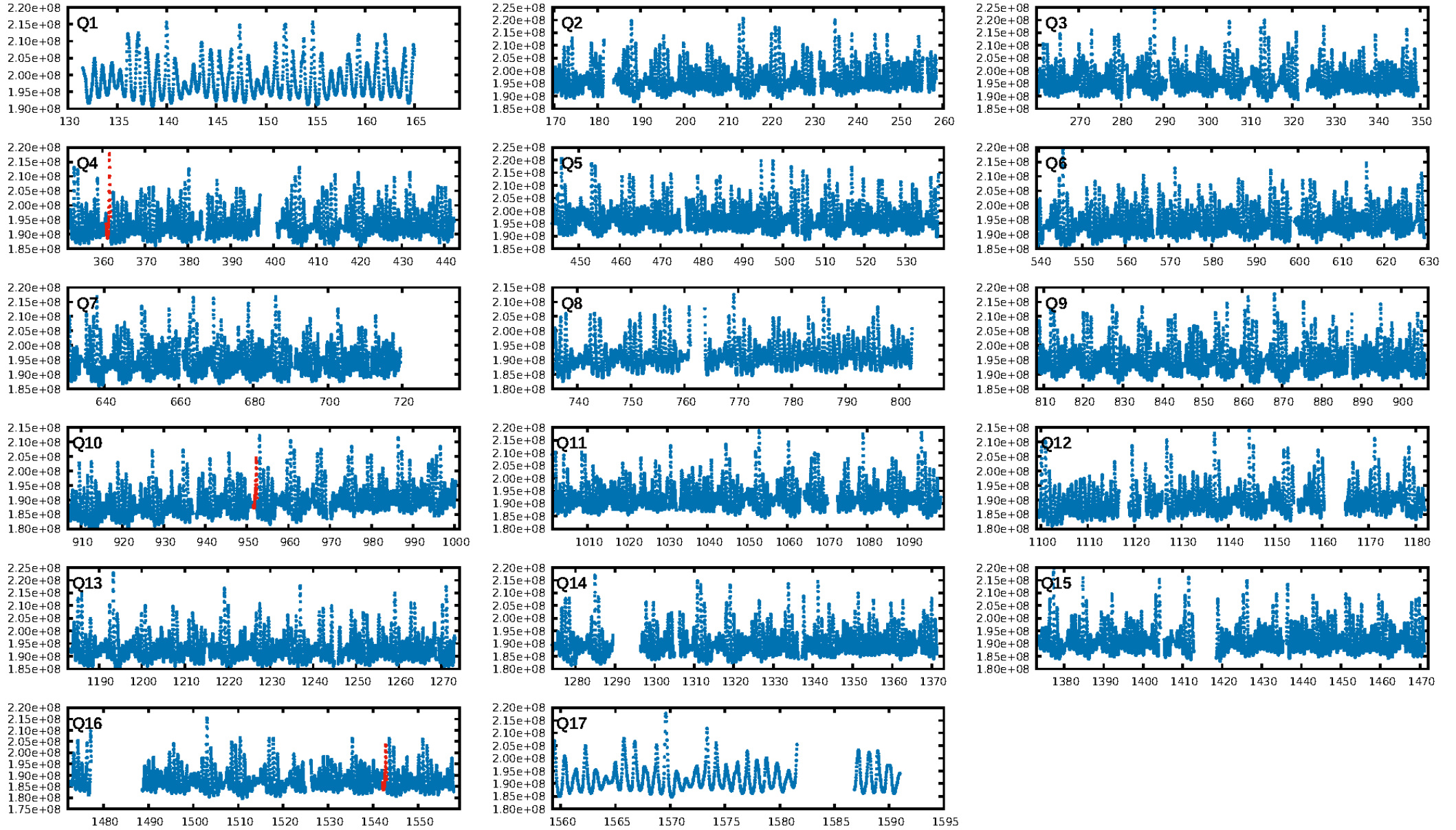
DV Fit Results:

Period = 590.59385 [0.00644] d
Epoch = 361.3524 [0.0090] BKJD
Rp/R* = 0.0267 [0.0154]
a/R* = 409.28 [819.88]
b = 0.06 [34.87]
Seff = 2.09 [0.89]
Teq = 306 [33] K
Rp = 4.65 [3.10] Re
a = 1.5521 [0.4257] AU
Ag = 16571.47 [37569.14] [0.44σ]
Teffp = 5376 [3012] K [1.68σ]

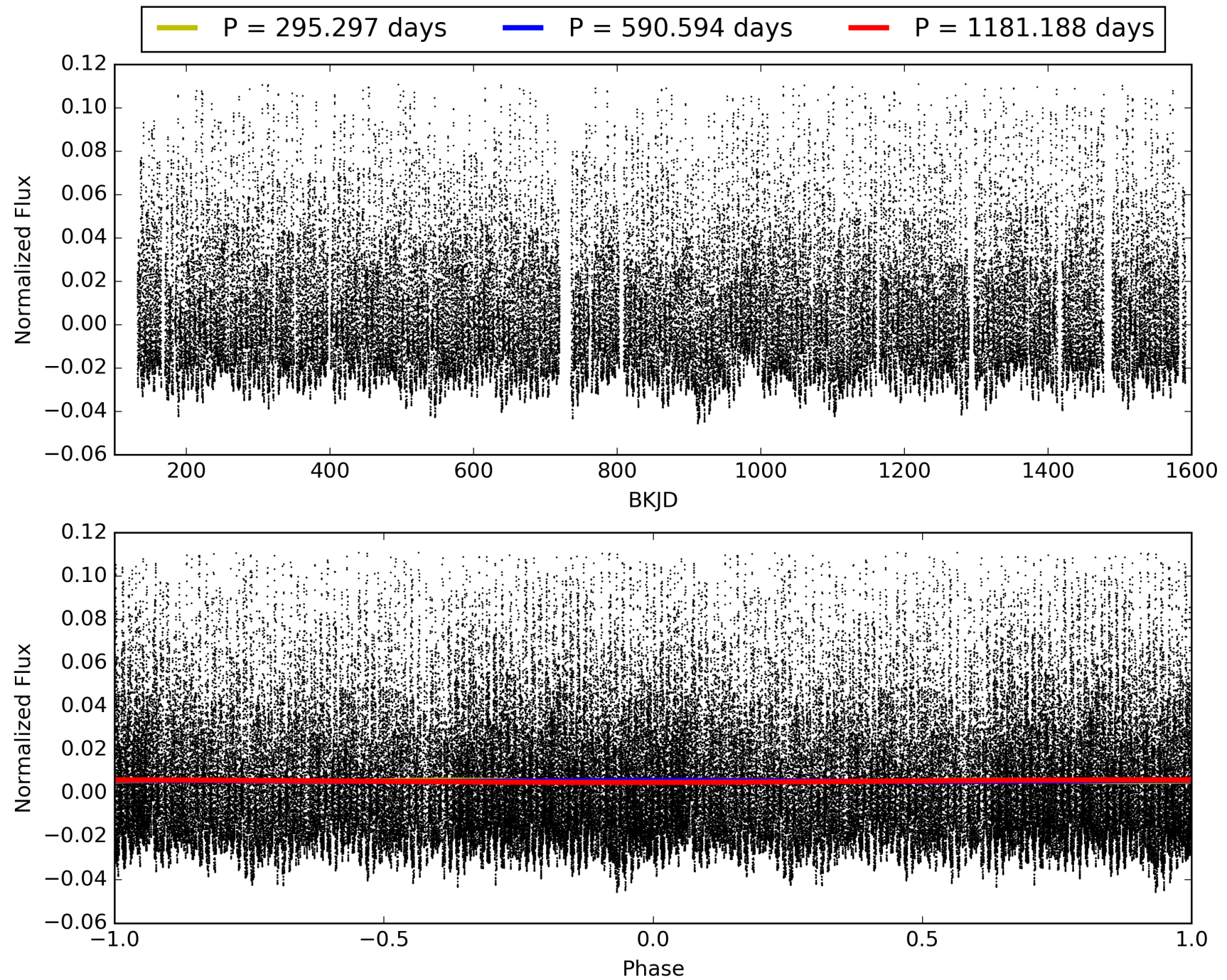
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [302.01σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 67.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -10.36
Centroid-sig: 1.3%
Centroid-so: 0.782 arcsec [0.58σ]
OotOffset-rm: 0.025 arcsec [0.31σ]
KicOffset-rm: 0.104 arcsec [1.09σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 009007322-02, PDC Light Curves

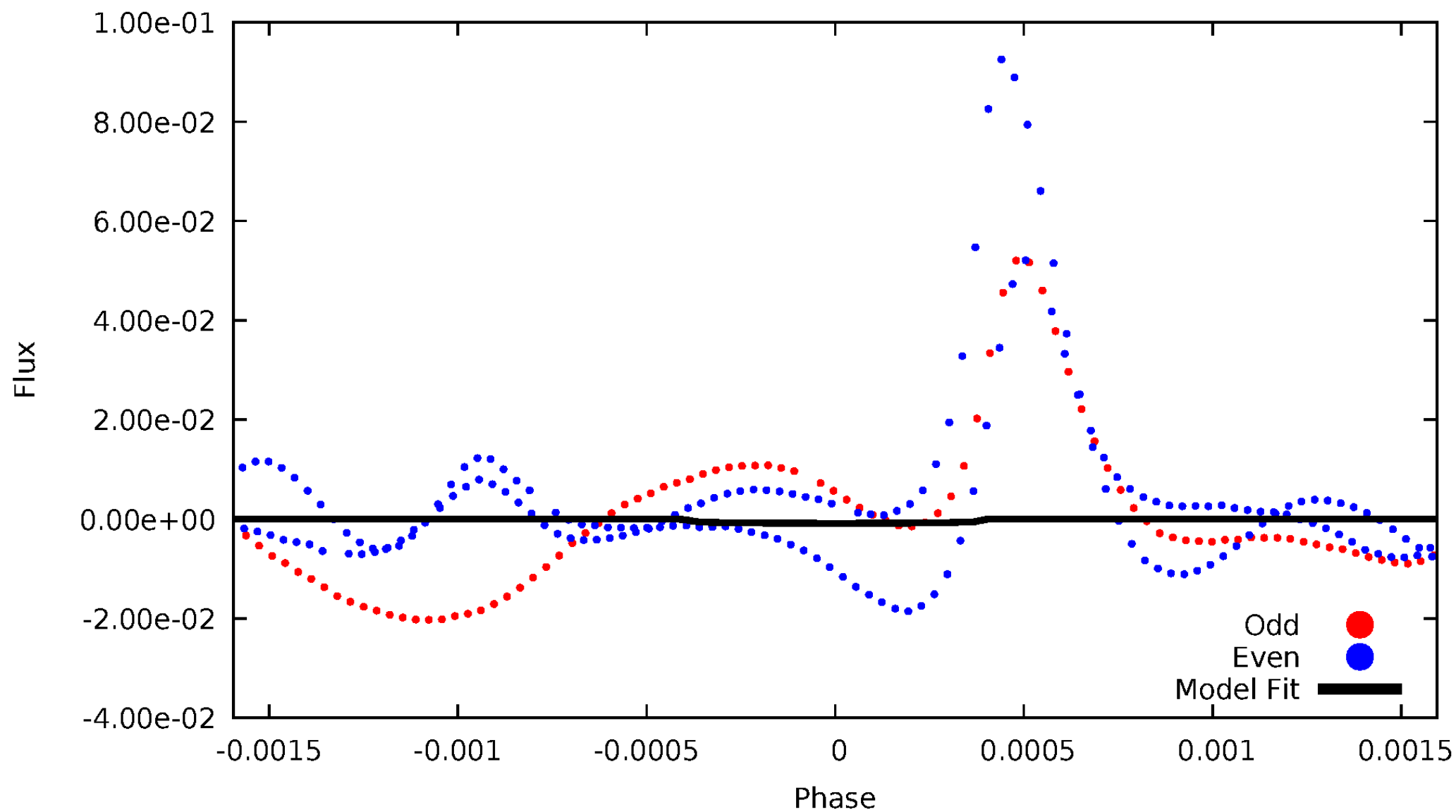


TCE 009007322-02



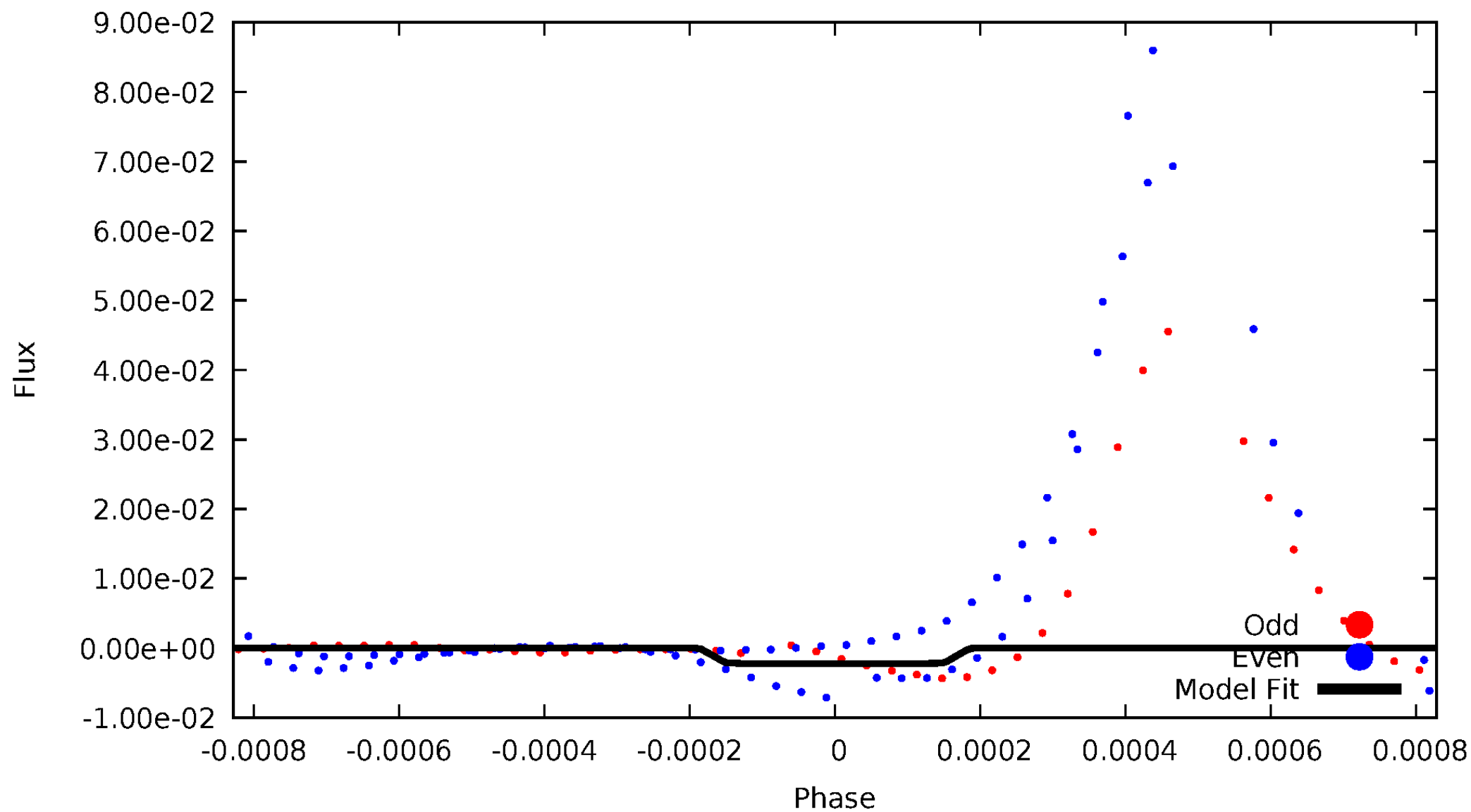
DV Odd/Even

TCE 009007322-02



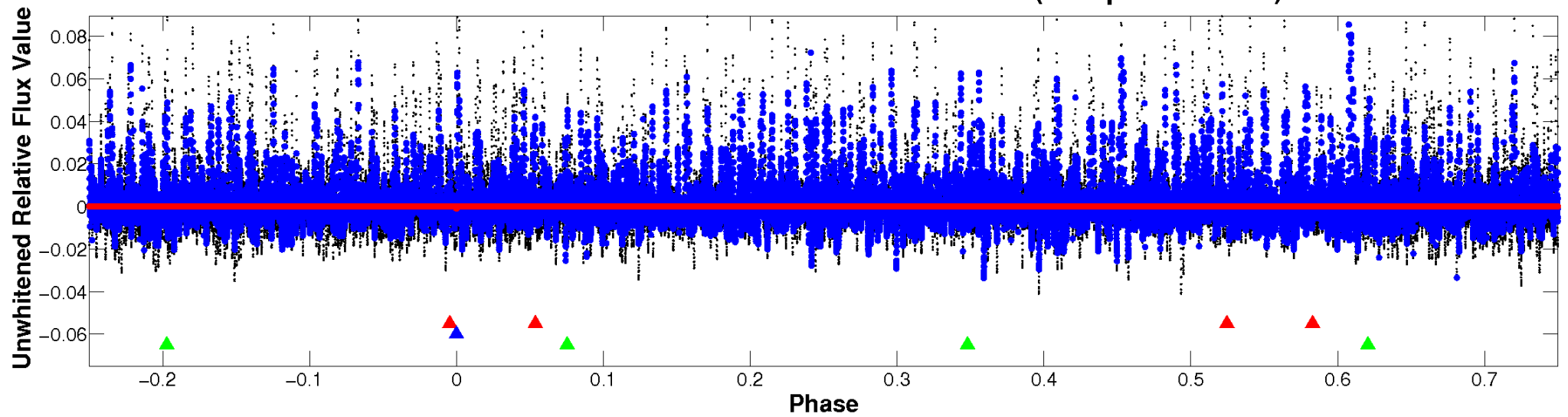
ALT Odd/Even

TCE 009007322-02

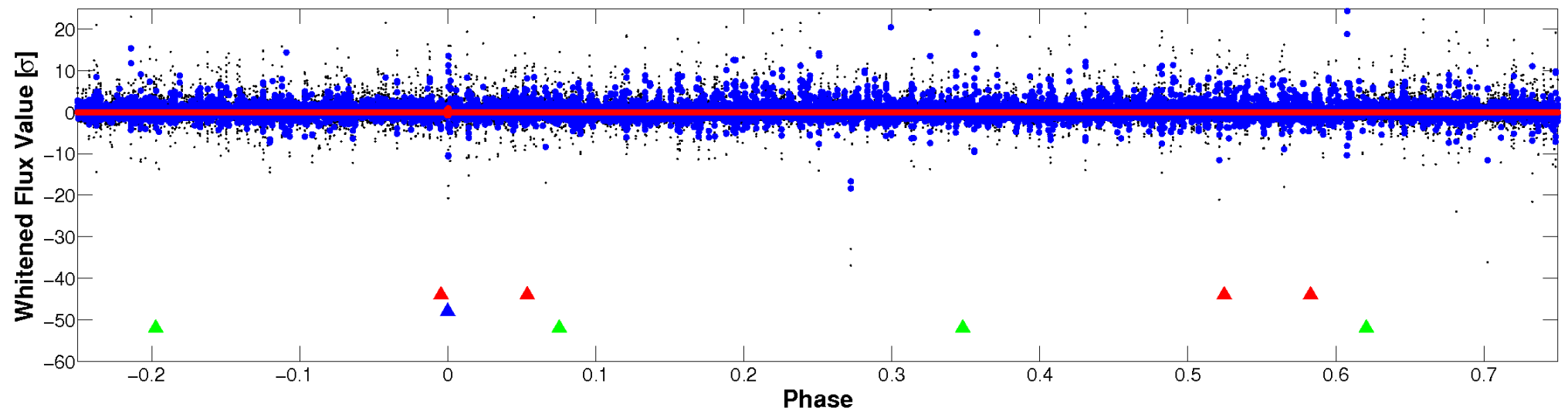


Non-Whitened Vs. Whitened Light Curve

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

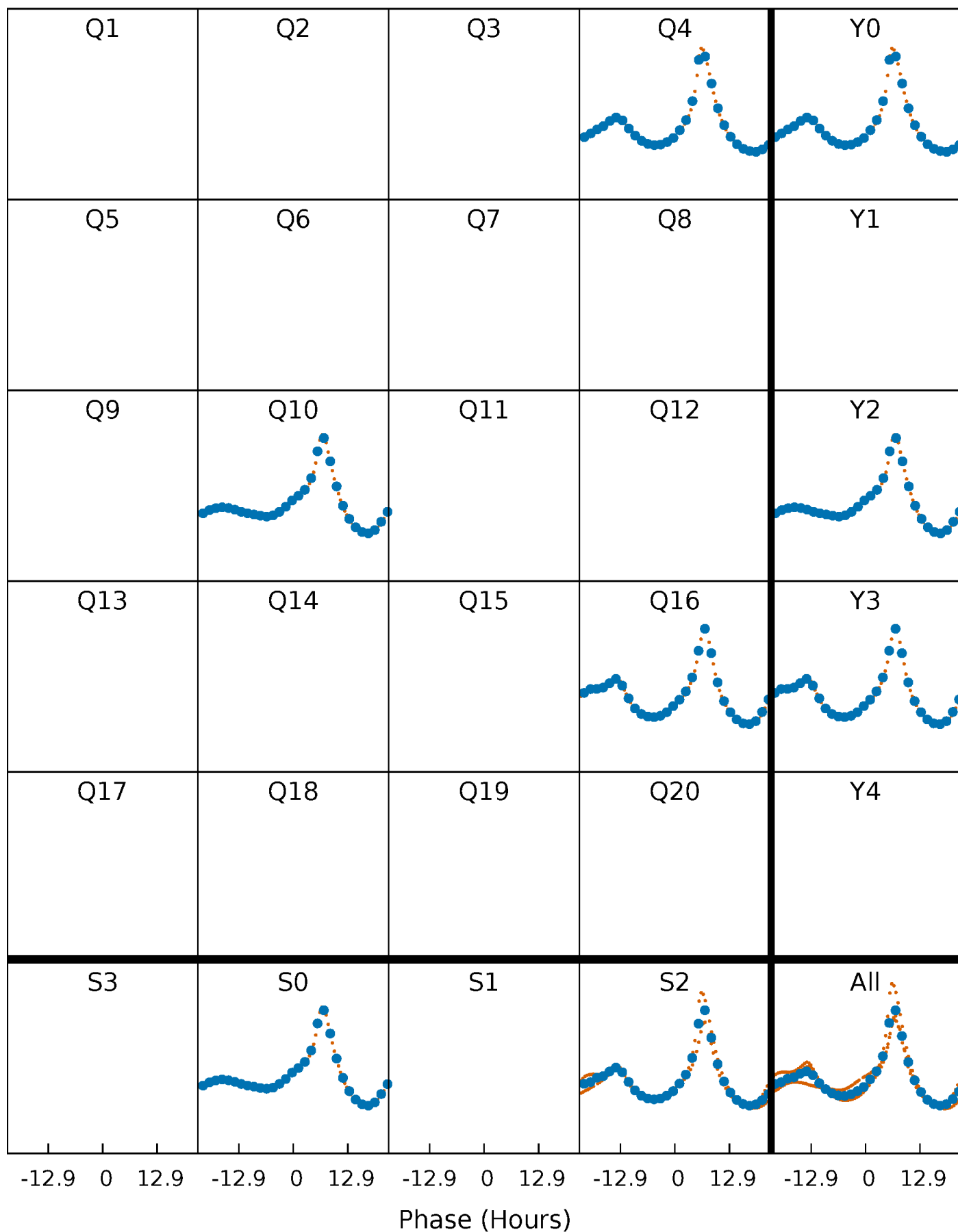


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



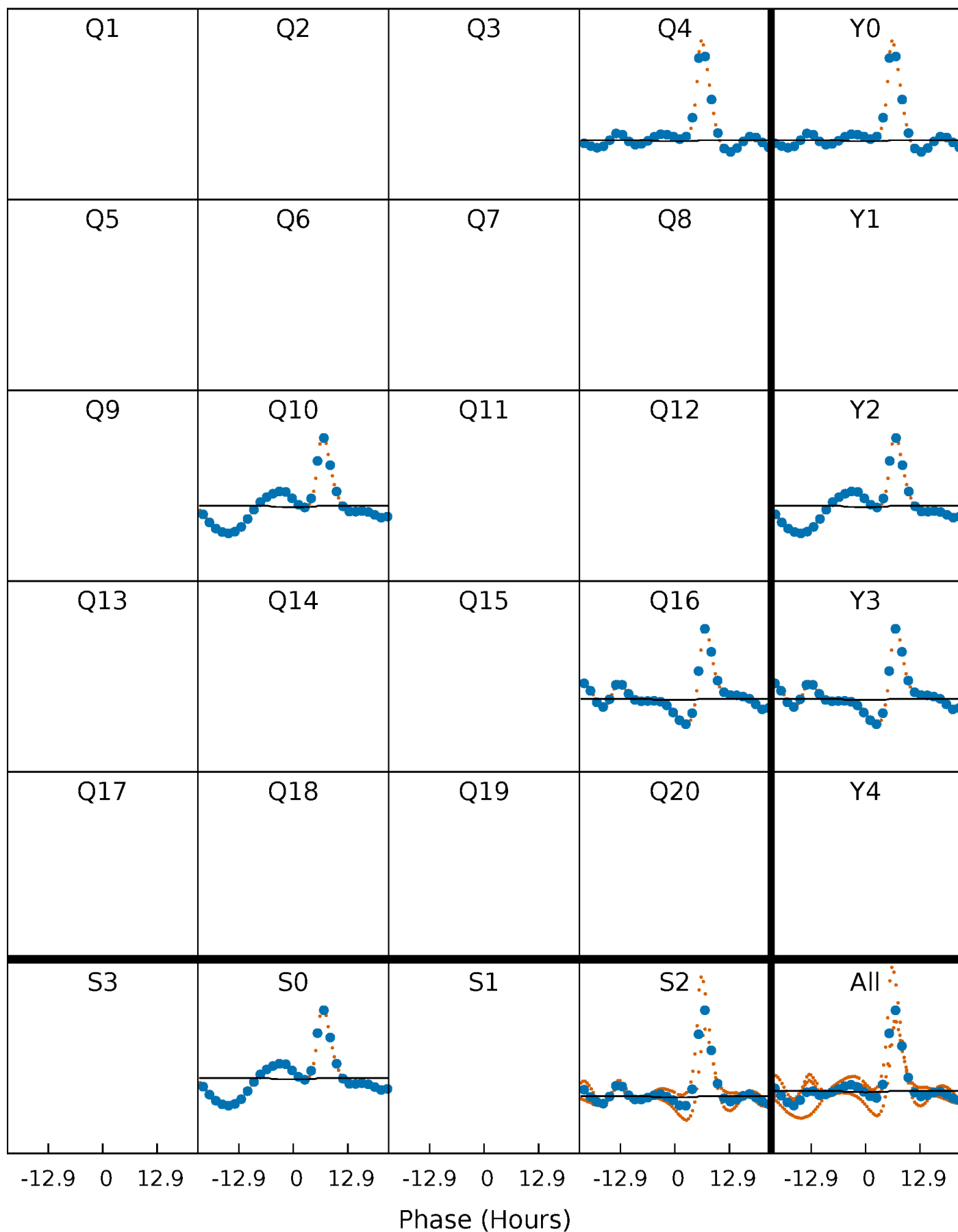
PDC Quarter-Phased Transit Curves

TCE 009007322-02 P=590.593846 Days $T_0=361.352370$ (BKJD)



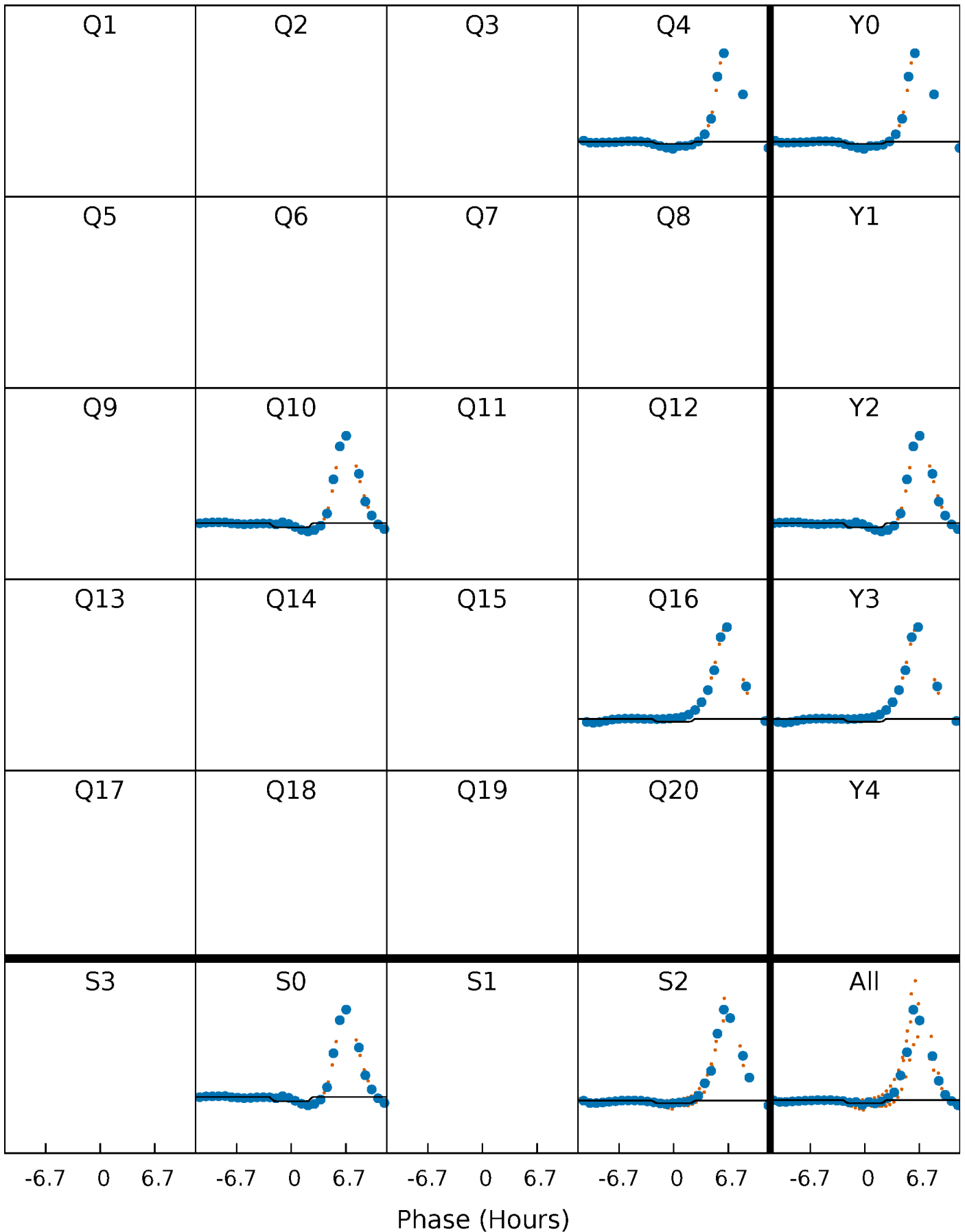
DV Quarter-Phased Transit Curves

TCE 009007322-02 $P=590.593846$ Days $T_0=361.352370$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

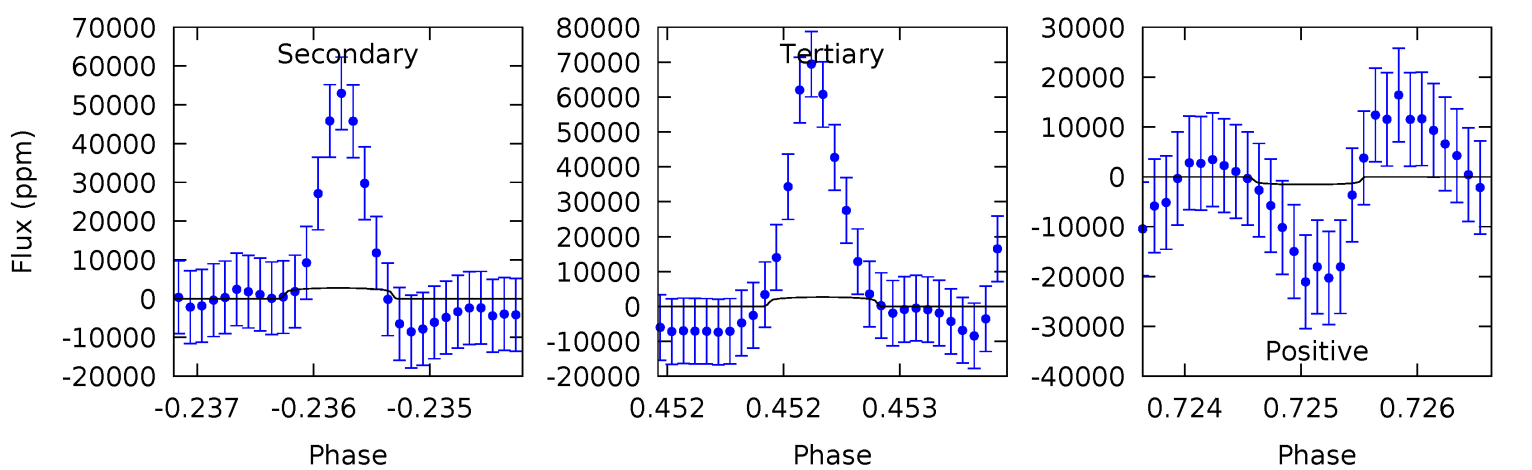
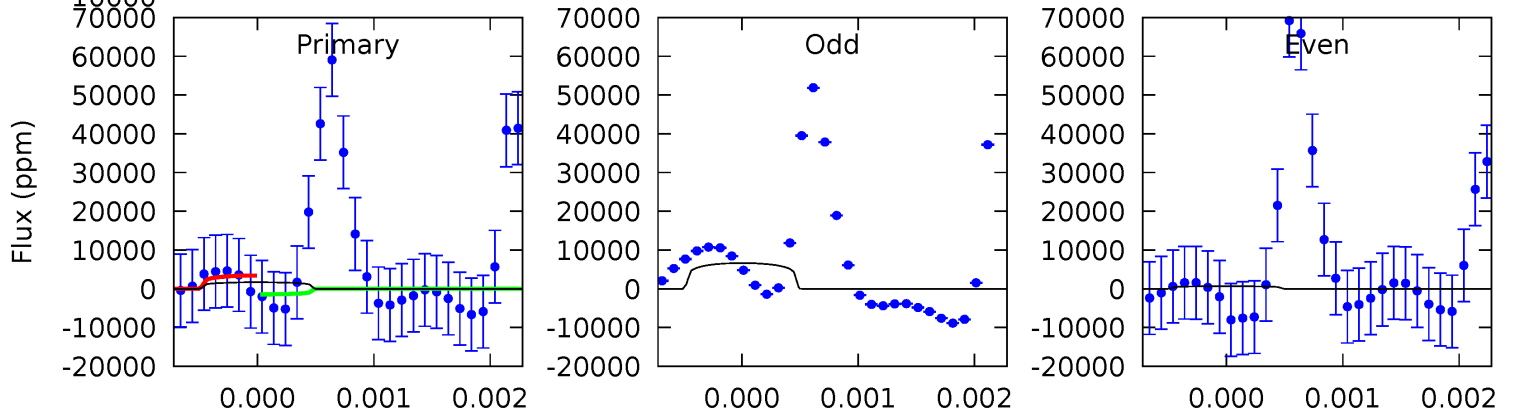
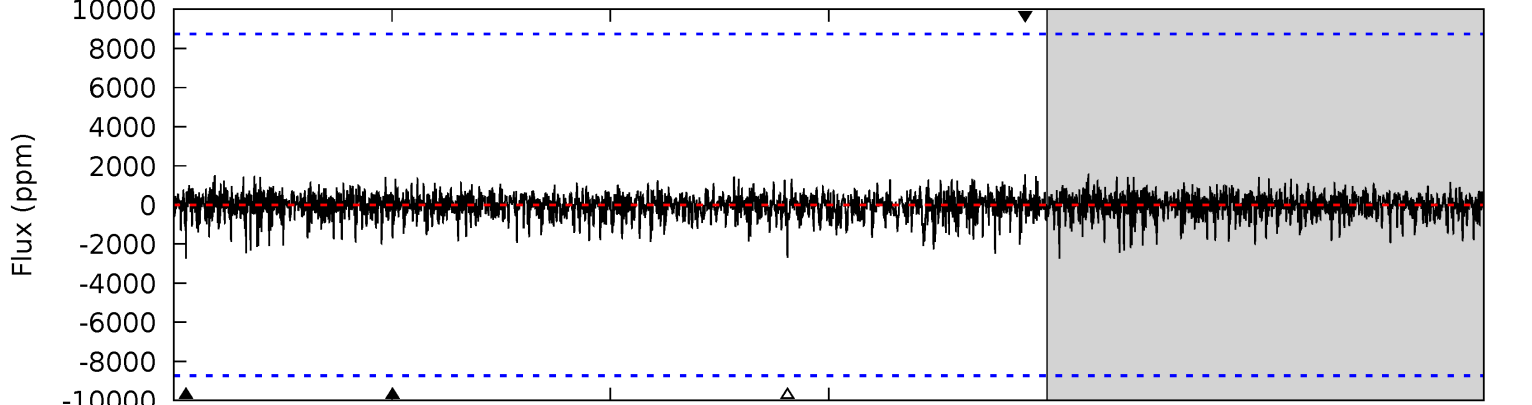
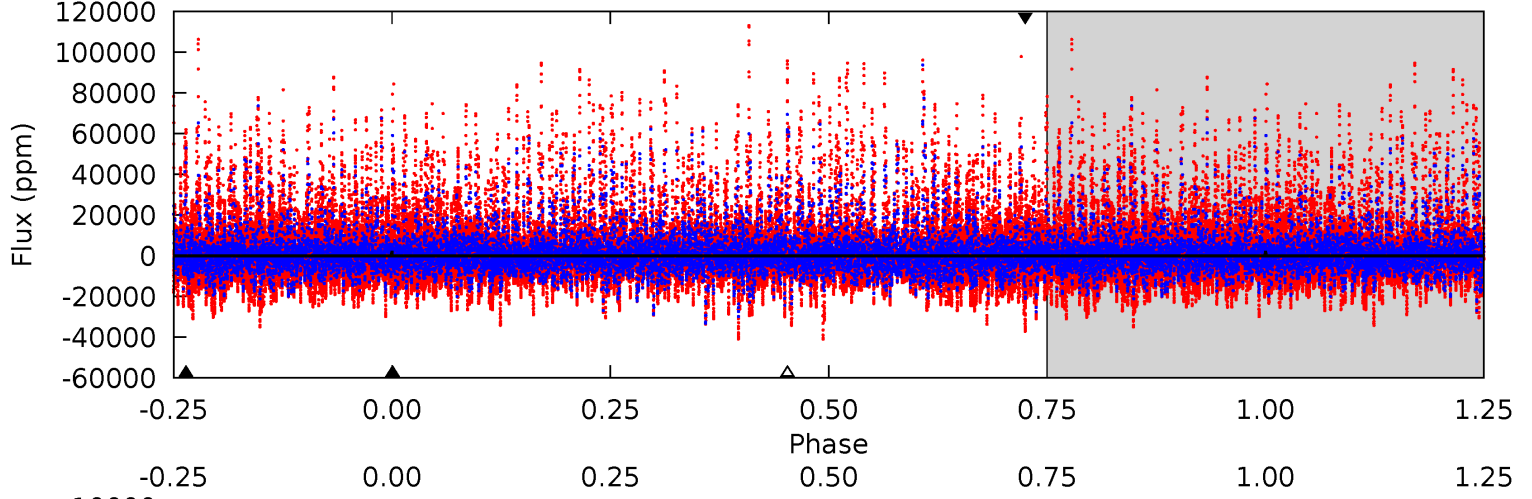
TCE 009007322-02 P=590.604807 Days $T_0=361.353766$ (BKJD)



DV Model-Shift Uniqueness Test

009007322-02, P = 590.593846 Days, E = 361.352370 Days

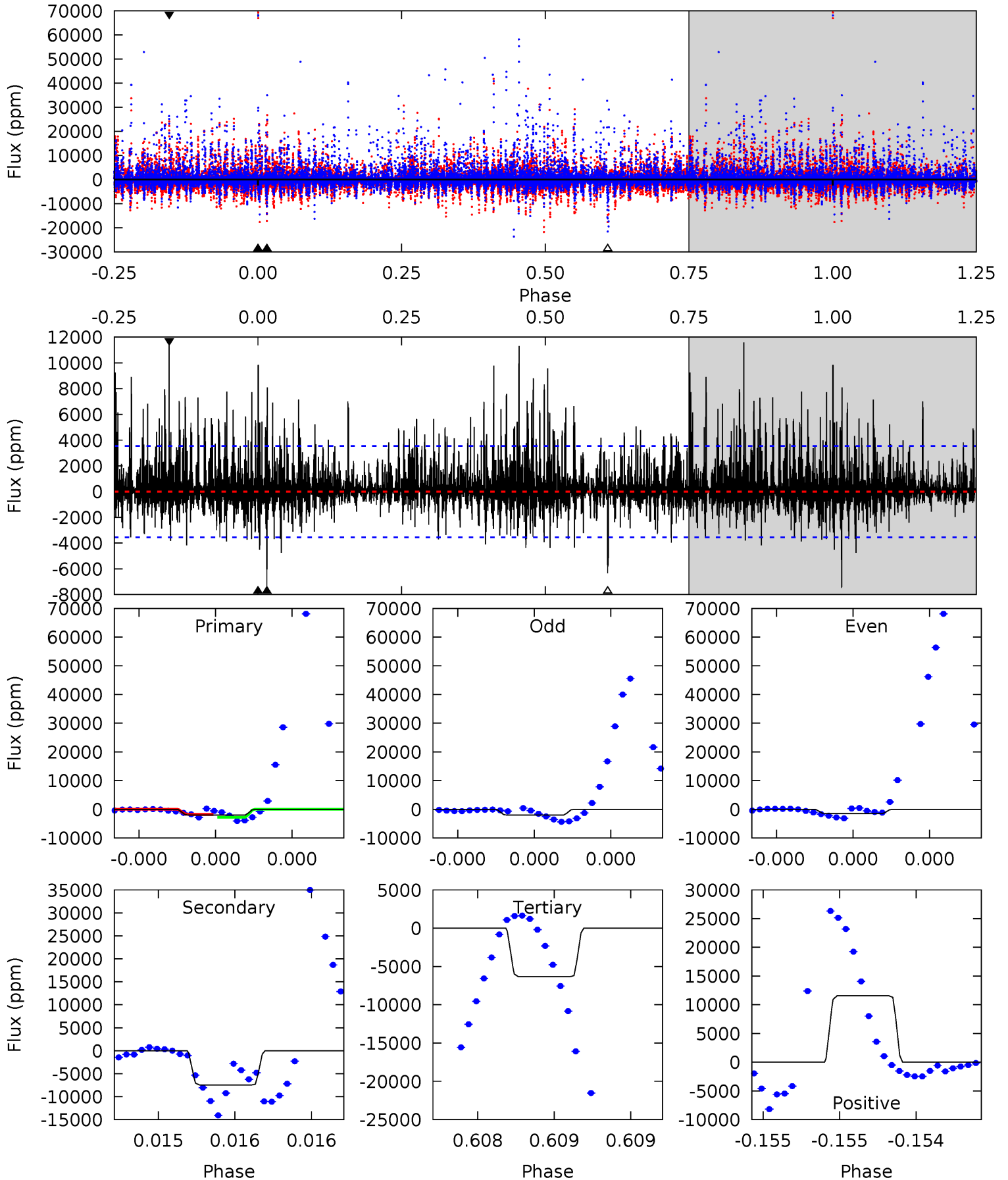
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.06	1.73	1.68	0.98	5.49	3.34	0.35	-0.62	0.08	0.05	0.75	1.72	0.29	0.36	0.62



Alt Model-Shift Uniqueness Test

009007322-02, P = 590.604807 Days, E = 361.353766 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.22	11.9	10.1	18.4	5.62	3.55	2.14	-6.83	-15.1	1.80	-6.50	0.33	0.99	0.61	0.84



Stellar Parameters For KIC 009007322

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6851^{+189}_{-307}	$4.187^{+0.112}_{-0.208}$	$0.070^{+0.200}_{-0.350}$	$1.596^{+0.534}_{-0.288}$	$1.428^{+0.208}_{-0.231}$	$0.495^{+0.303}_{-0.250}$
	+3%/-4%	+3%/-5%	+286%/-500%	+33%/-18%	+15%/-16%	+61%/-51%
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 009007322-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2750 ± 1592	$4.74^{+2.83}_{-2.38}$	432^{+37}_{-29}	10303^{+11165}_{-3596}	$145605^{+548411}_{-107845}$
Alt.	-7478 ± 631	$8.29^{+3.44}_{-2.78}$	432^{+36}_{-28}	9961^{+3911}_{-1772}	$140231^{+178253}_{-65774}$

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 $A_{obs} \gg 1.0$

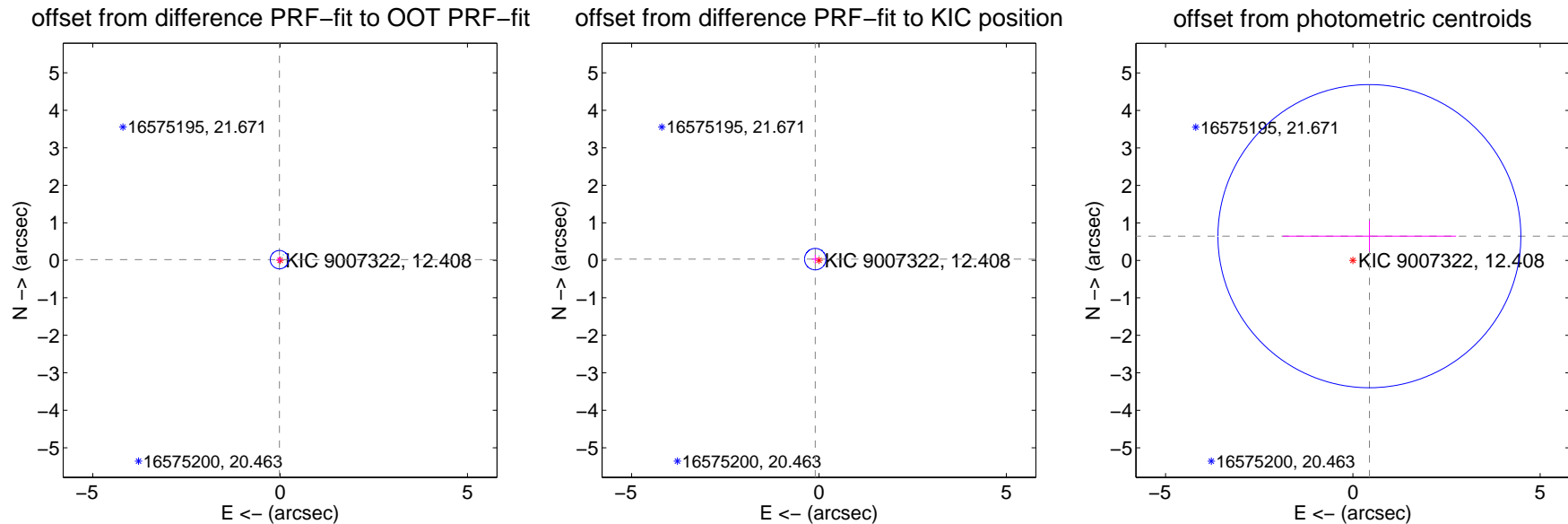
DV Centroid Data

Supplemental centroid analysis for 009007322-02. Kepler magnitude: 12.41. Transit SNR 2.10

There are 2 quarters with good PRF difference image offsets

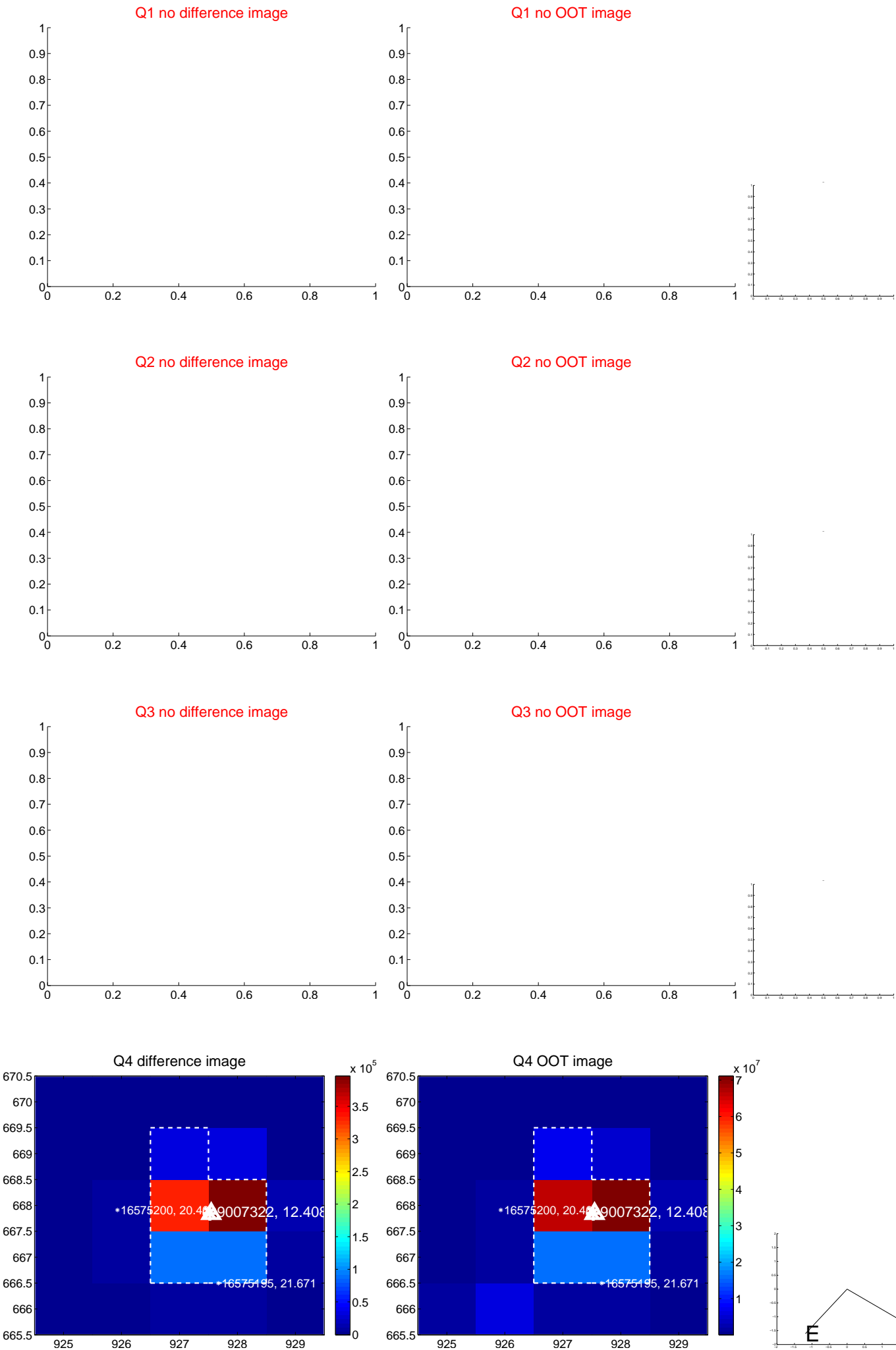
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.025 ± 0.082	0.31	0.018 ± 0.076	0.017 ± 0.087
PRF-fit source offset from KIC position	0.104 ± 0.095	1.09	0.100 ± 0.093	0.031 ± 0.113
photometric centroid source offset	0.78 ± 1.35	0.58	-0.44 ± 2.31	0.65 ± 0.41



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

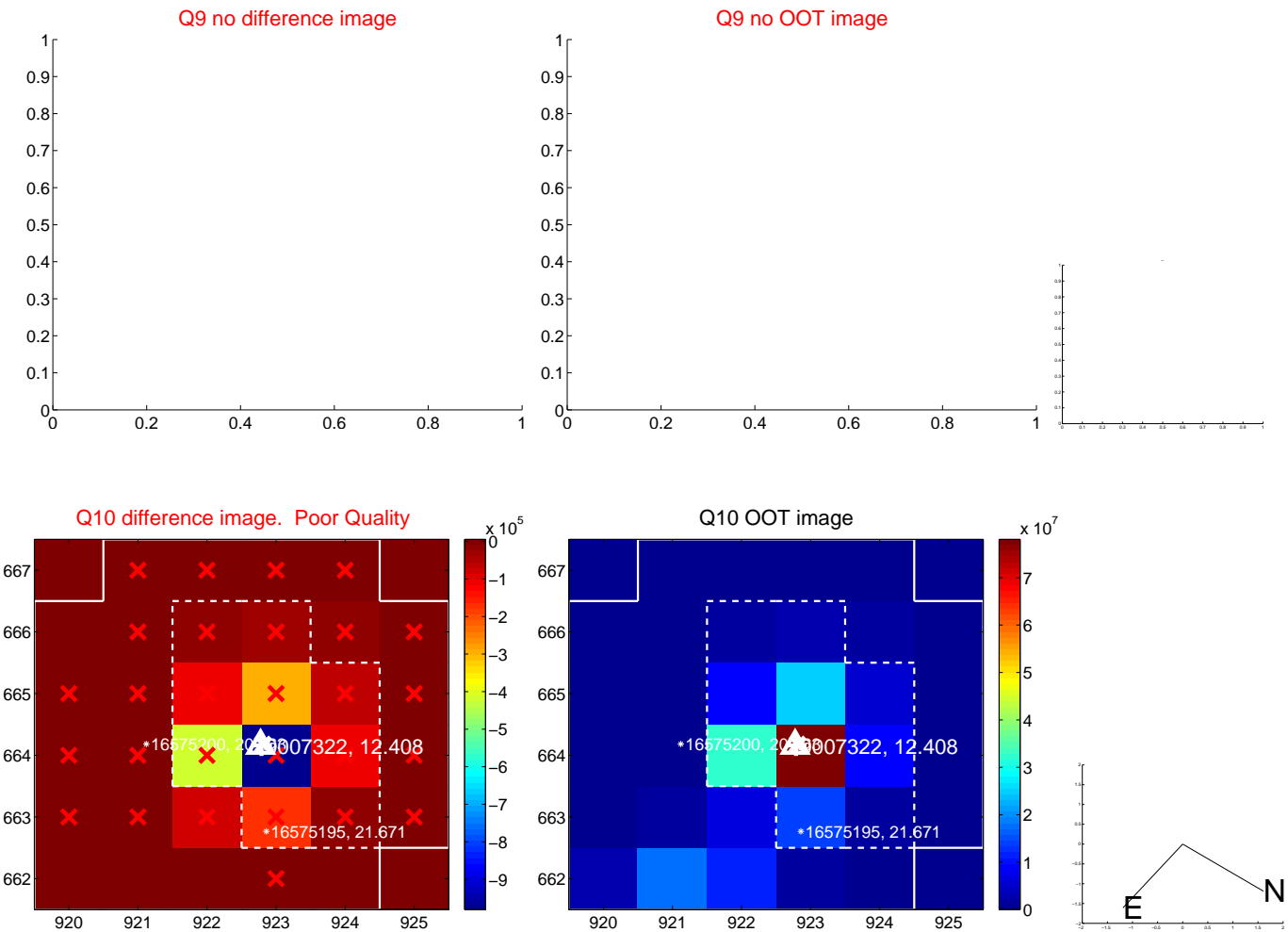
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



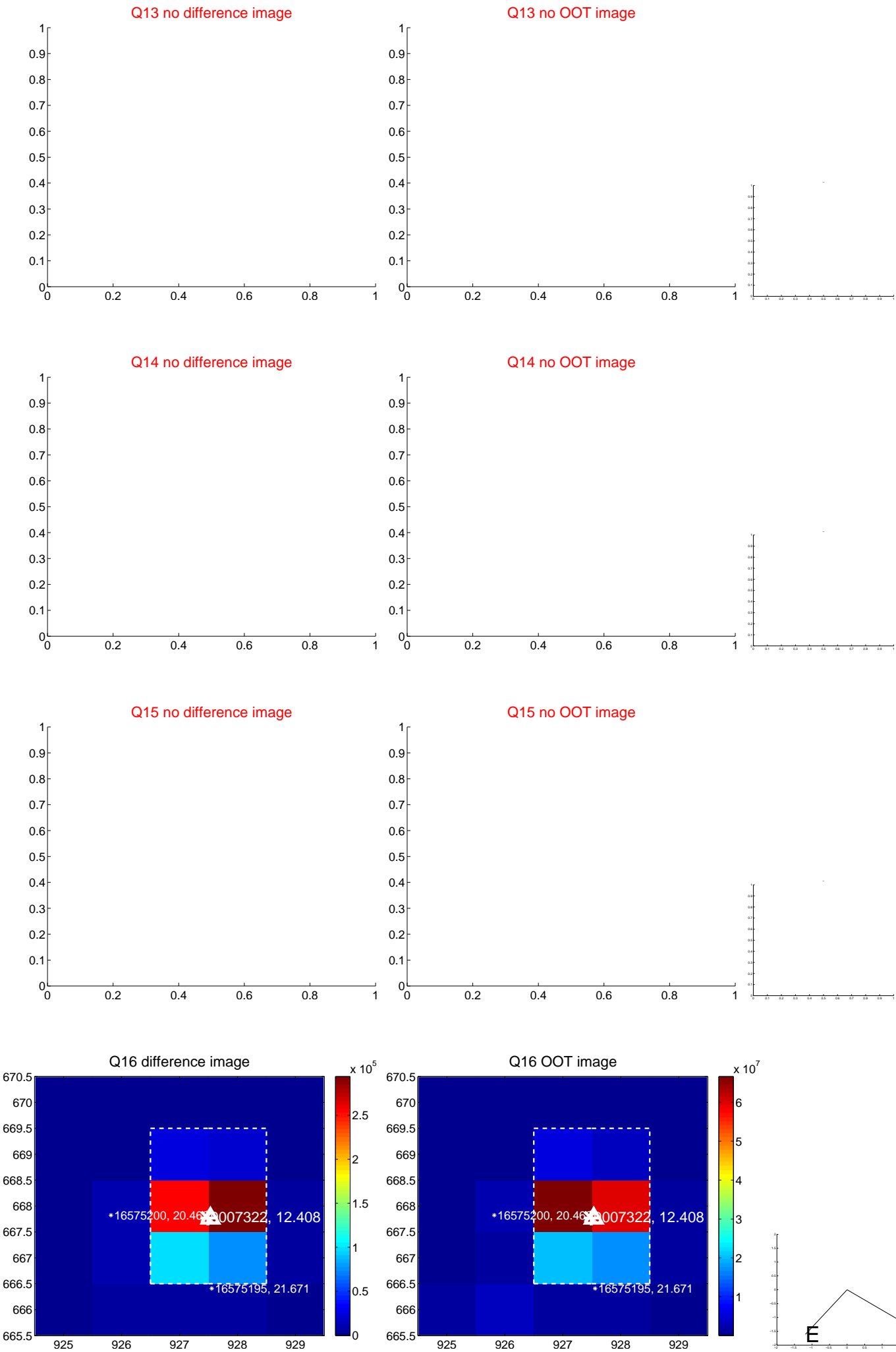
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



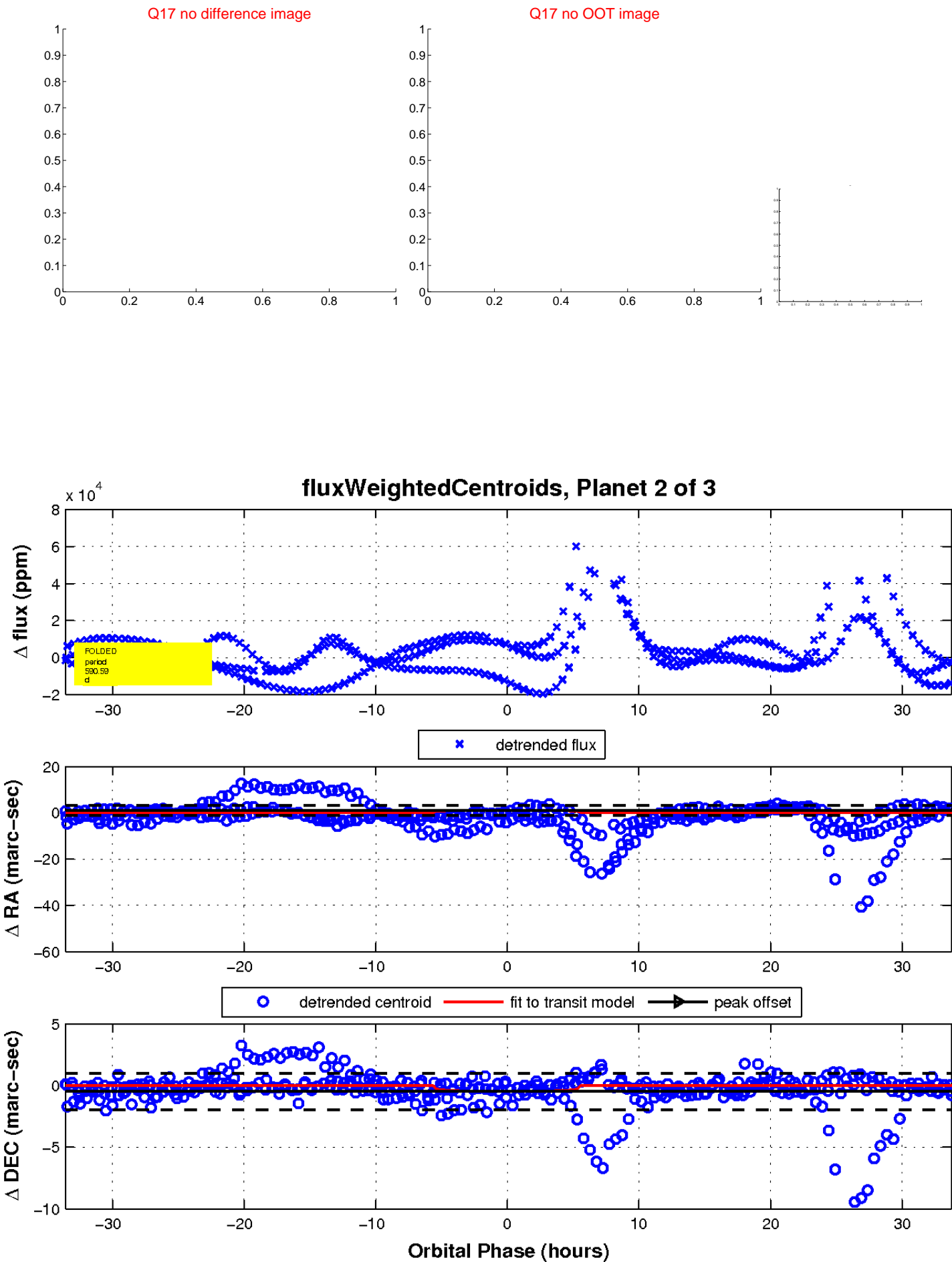
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

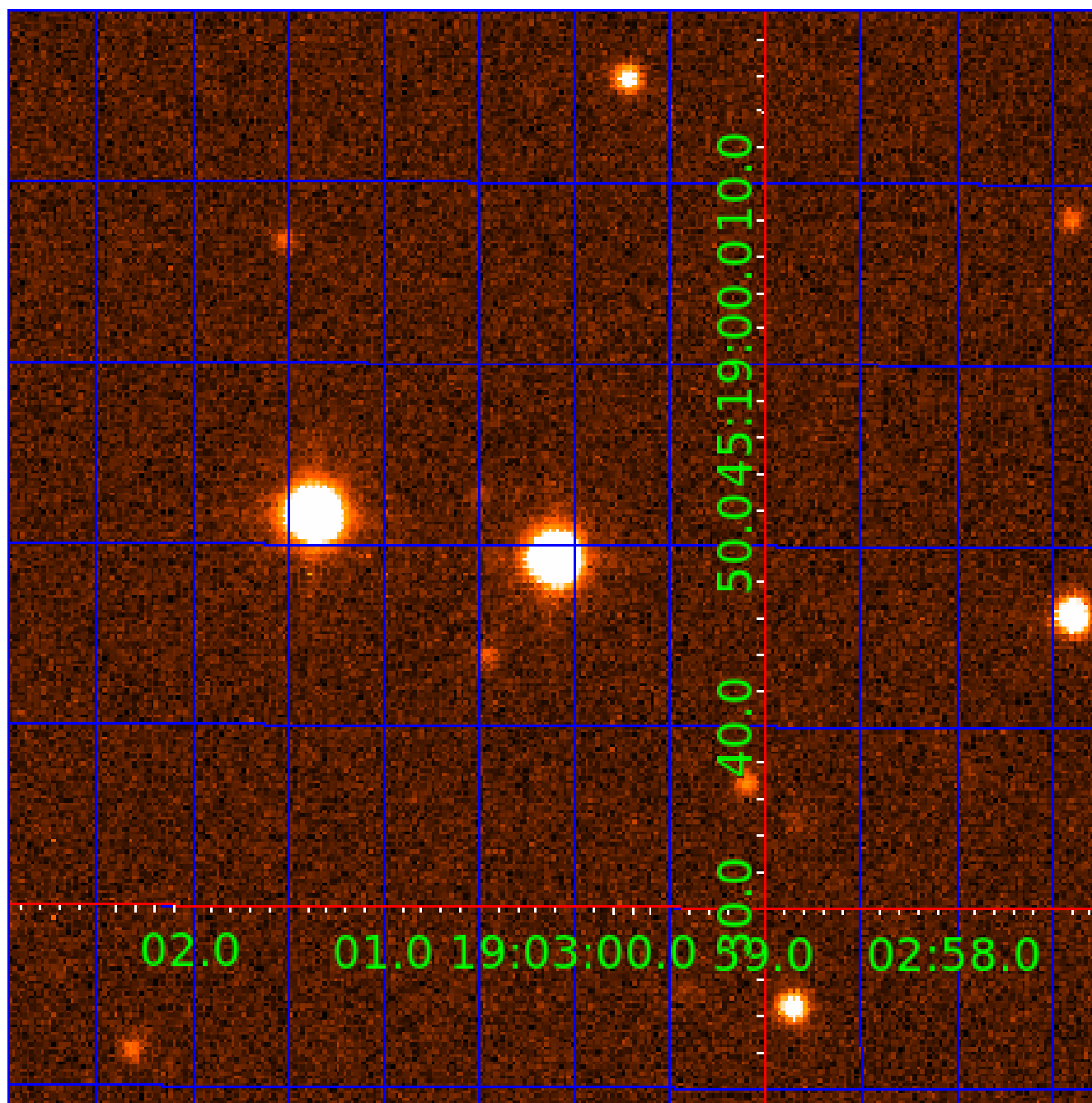


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009007322

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})
009007322-01	OBS	No	312.515774	358.671760	6426.8	8.545	31.4	4.2	1.60	6851	15.05	4.88
009007322-02	OBS	No	590.593846	361.352370	834.4	11.300	39.8	2.1	1.60	6851	4.65	2.09
009007322-03	OBS	No	429.595165	137.269852	590.9	6.000	27.0	-1.0	1.60	6851	3.92	3.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009007322-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS—HALO_GHOST
009007322-02	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_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009007322-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

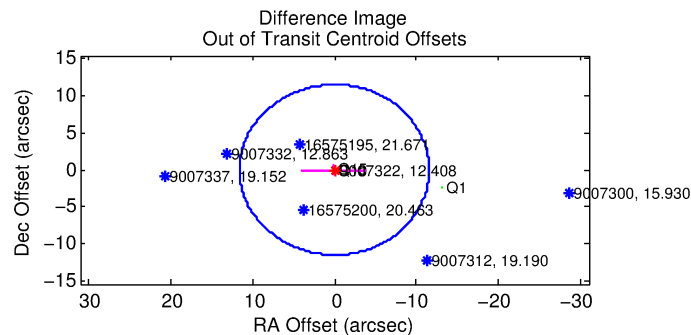
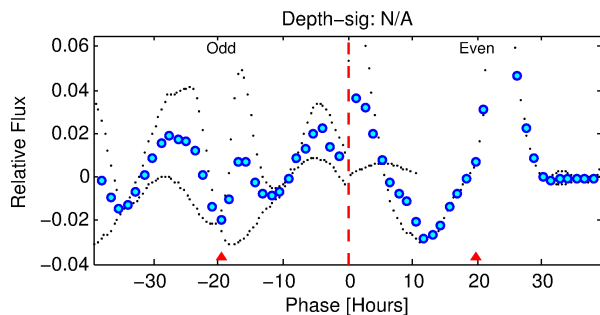
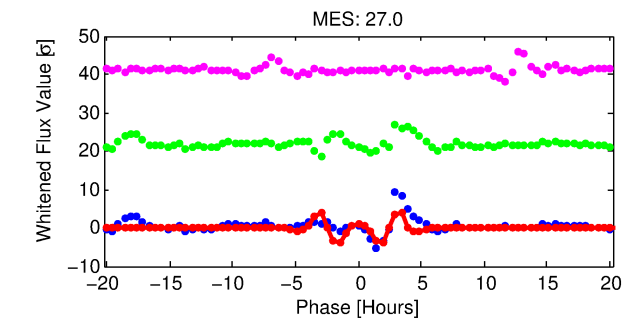
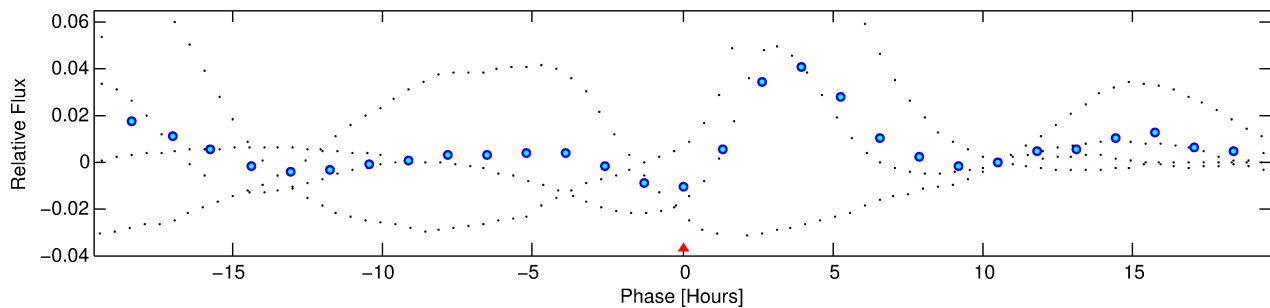
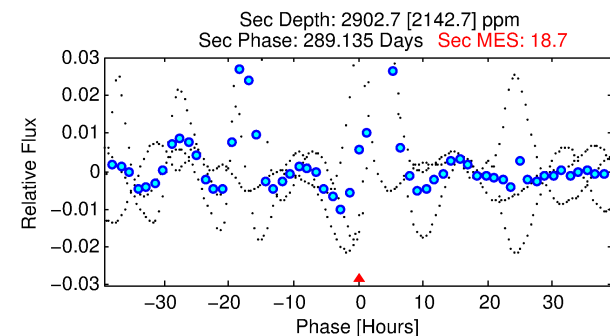
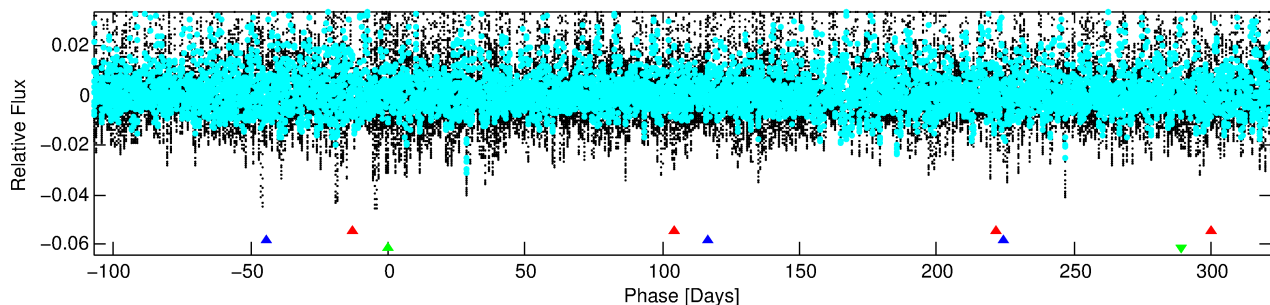
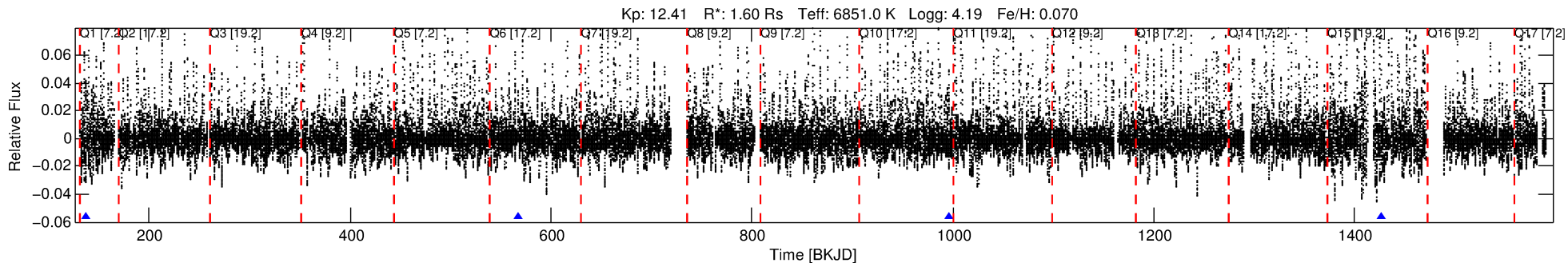
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009007322-03

No Significant Match Found

DV One-Page Summary

KIC: 9007322 Candidate: 3 of 3 Period: 429.595 d



TPS TCE Results:

Period = 429.59517 d
Epoch = 137.2699 BKJD

DV fit results are unavailable

DV Diagnostic Results:

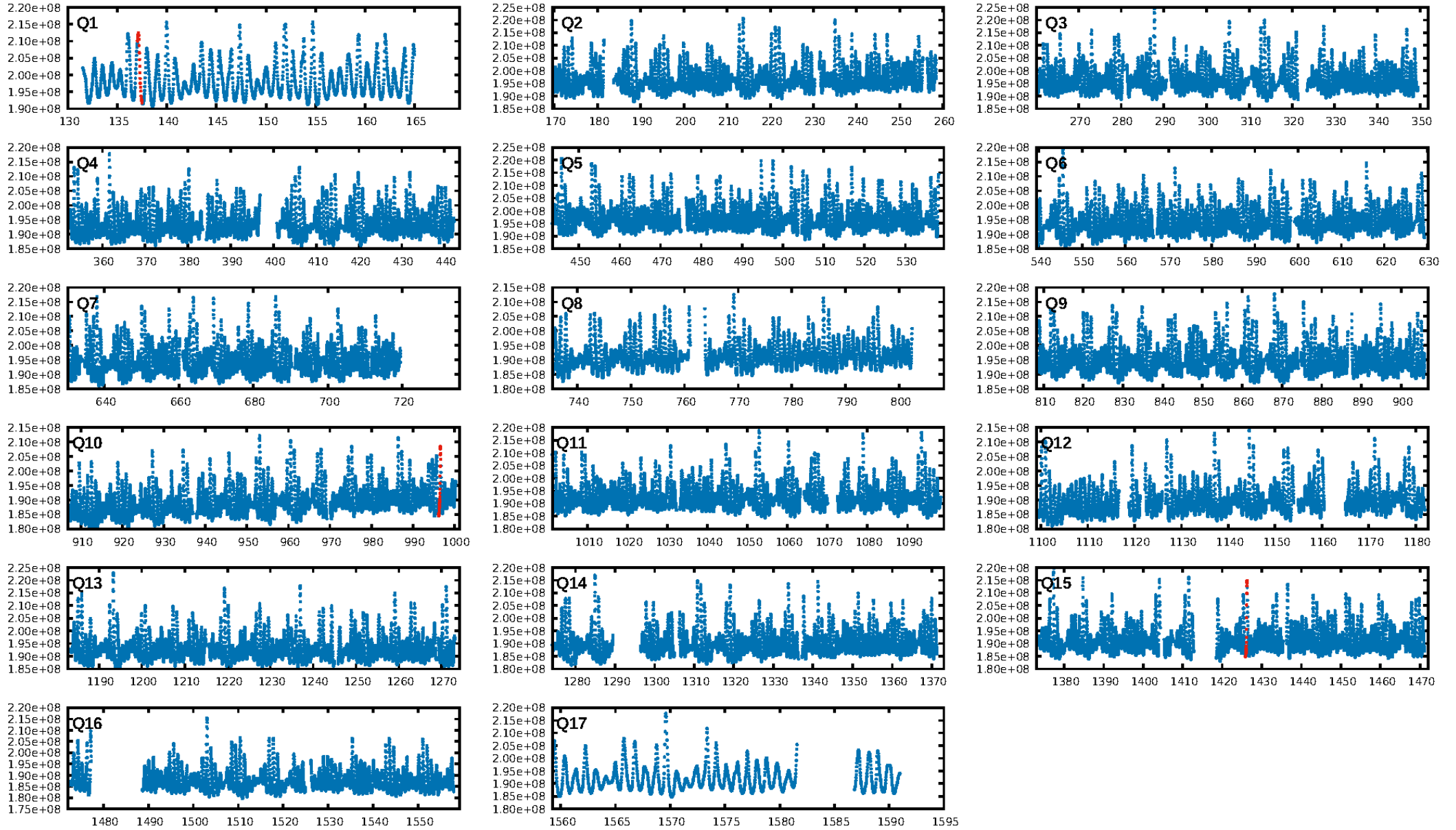
ShortPeriod-sig: 100.0% [269.12σ]
LongPeriod-sig: 100.0% [302.01σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.7167

Centroid-sig: 2.6%
Centroid-so: 0.492 arcsec [3.39σ]
OotOffset-rm: 0.025 arcsec [0.01σ]
KicOffset-rm: 0.102 arcsec [1.48σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

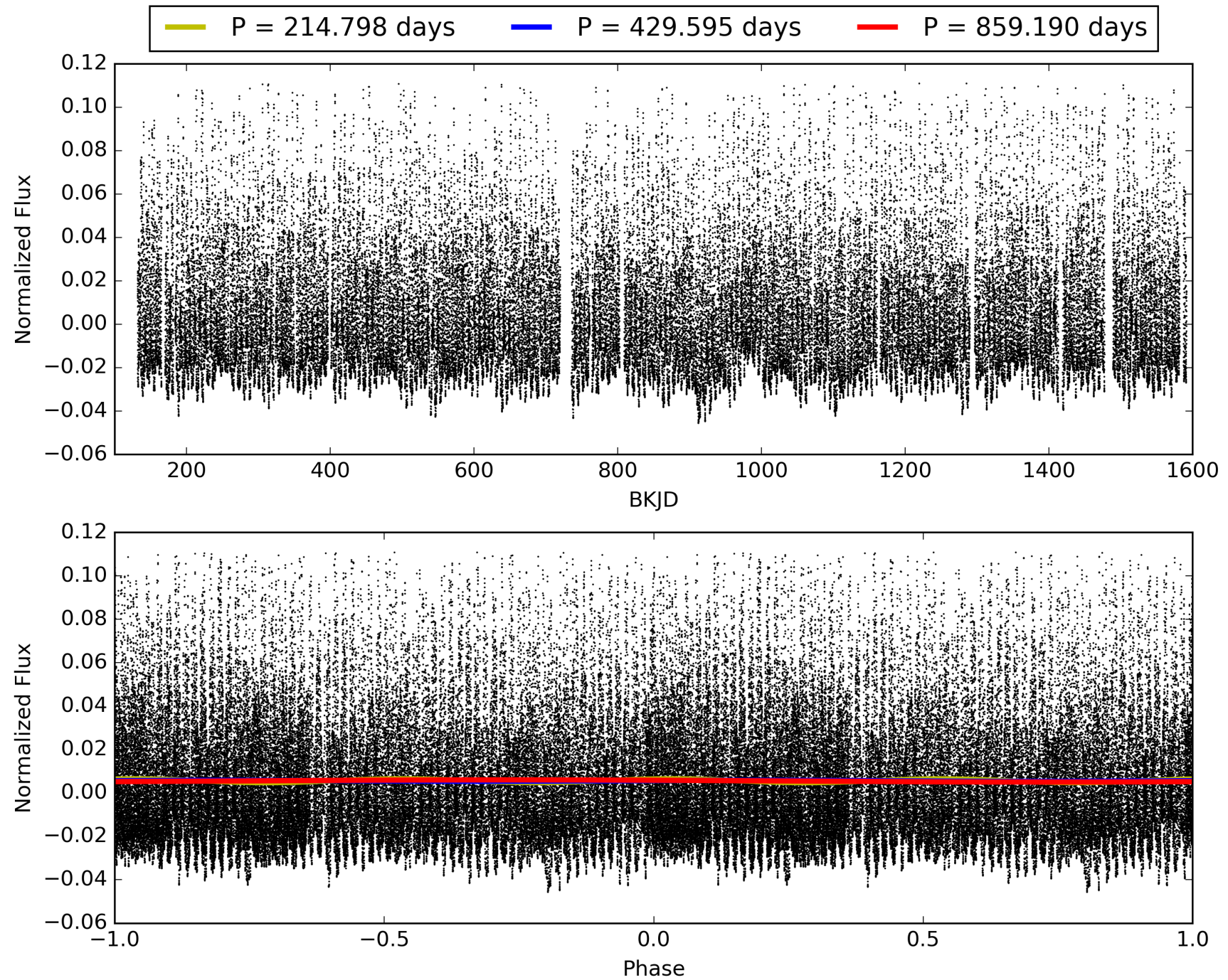
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:05:50 Z

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

TCE 009007322-03, PDC Light Curves

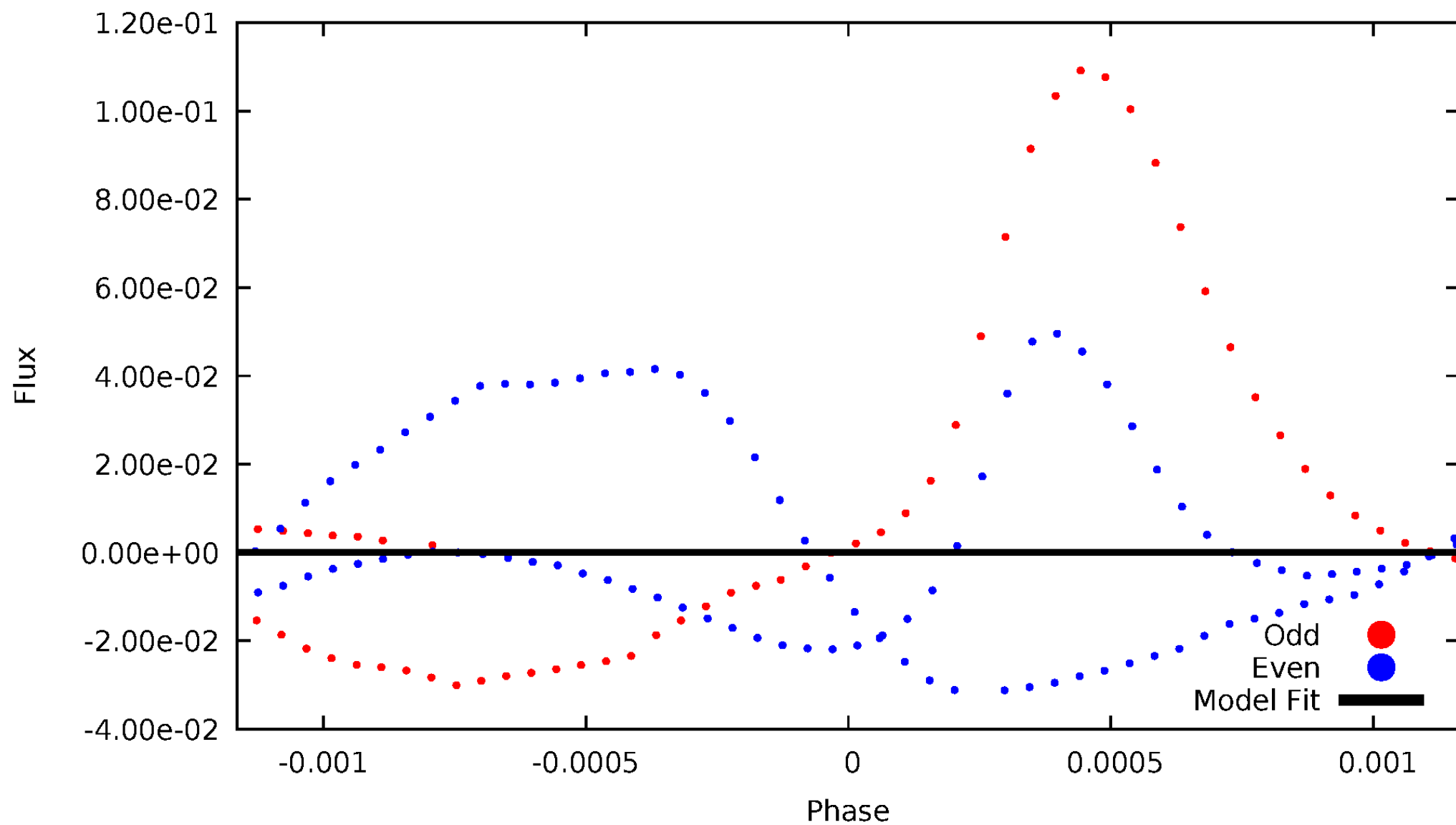


TCE 009007322-03



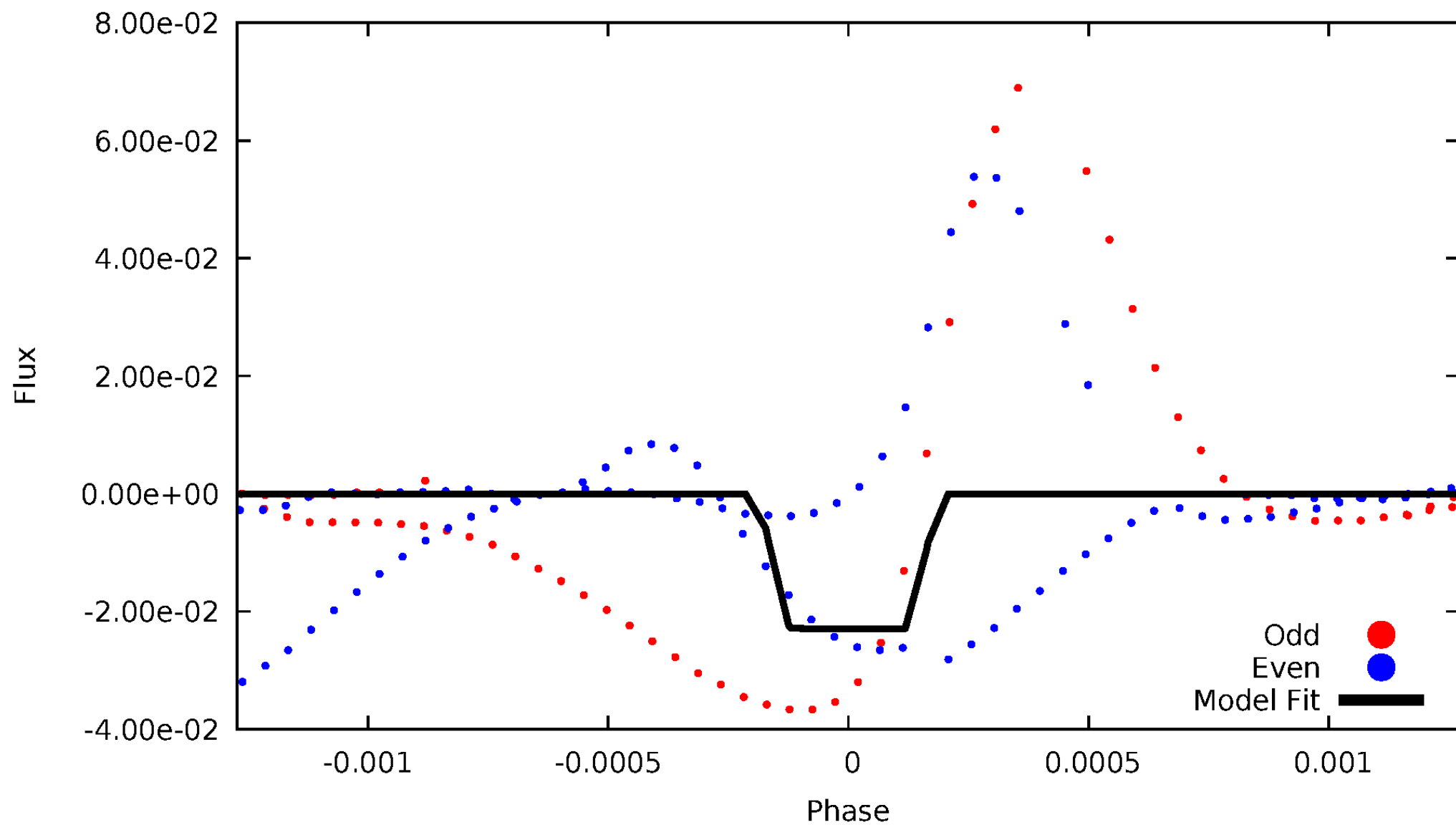
DV Odd/Even

TCE 009007322-03



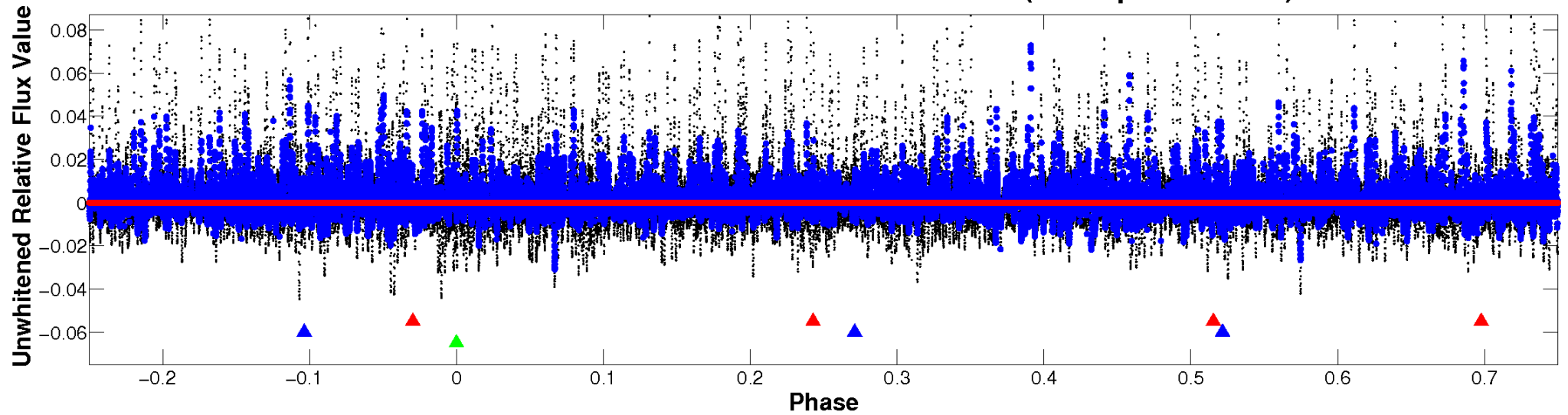
ALT Odd/Even

TCE 009007322-03

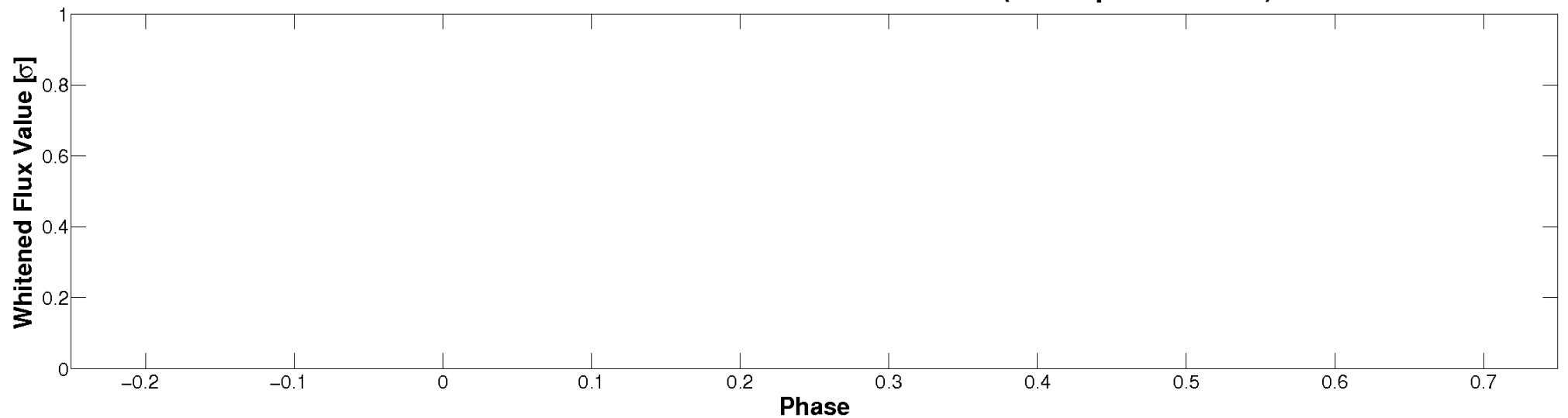


Non-Whitened Vs. Whitened Light Curve

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

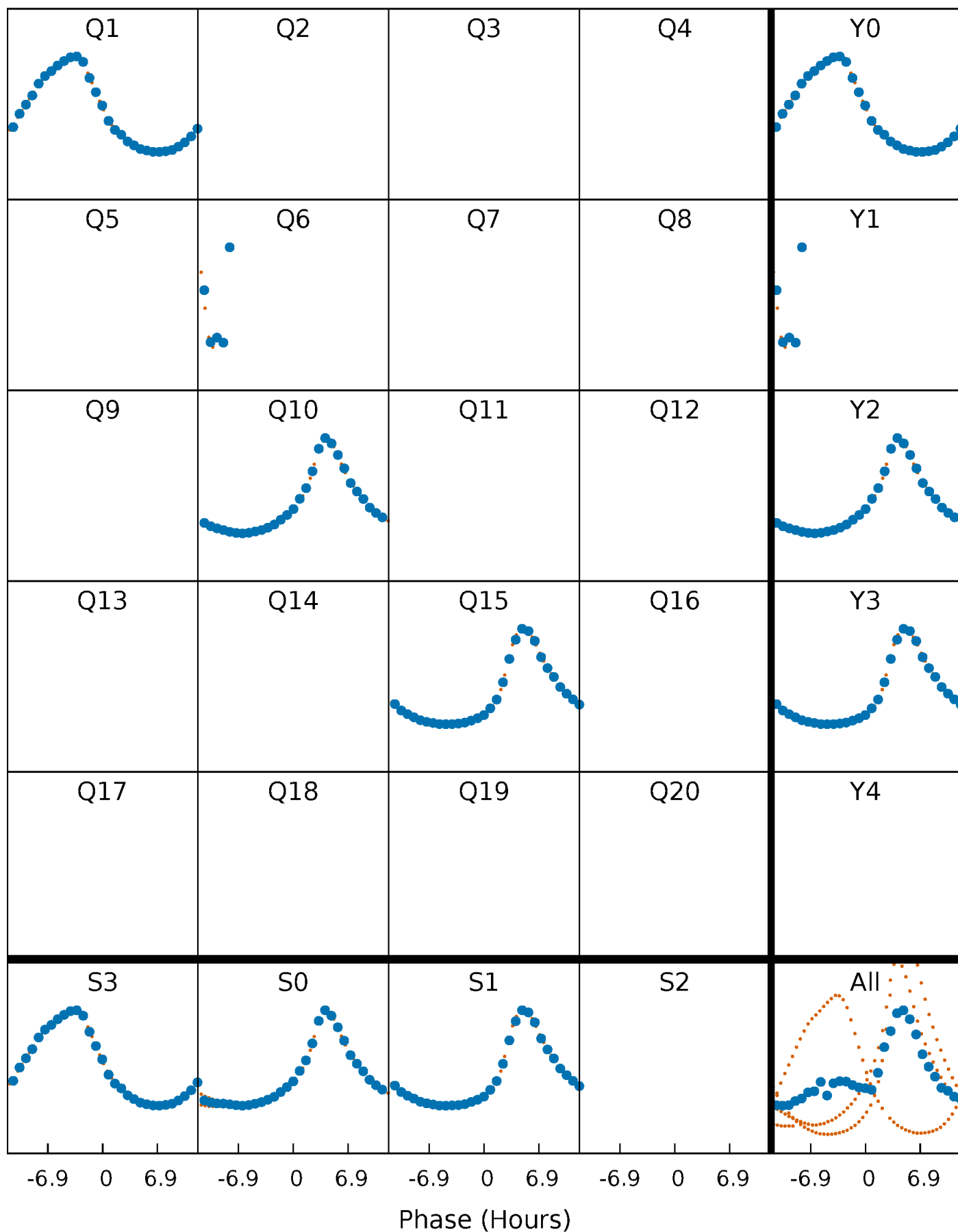


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



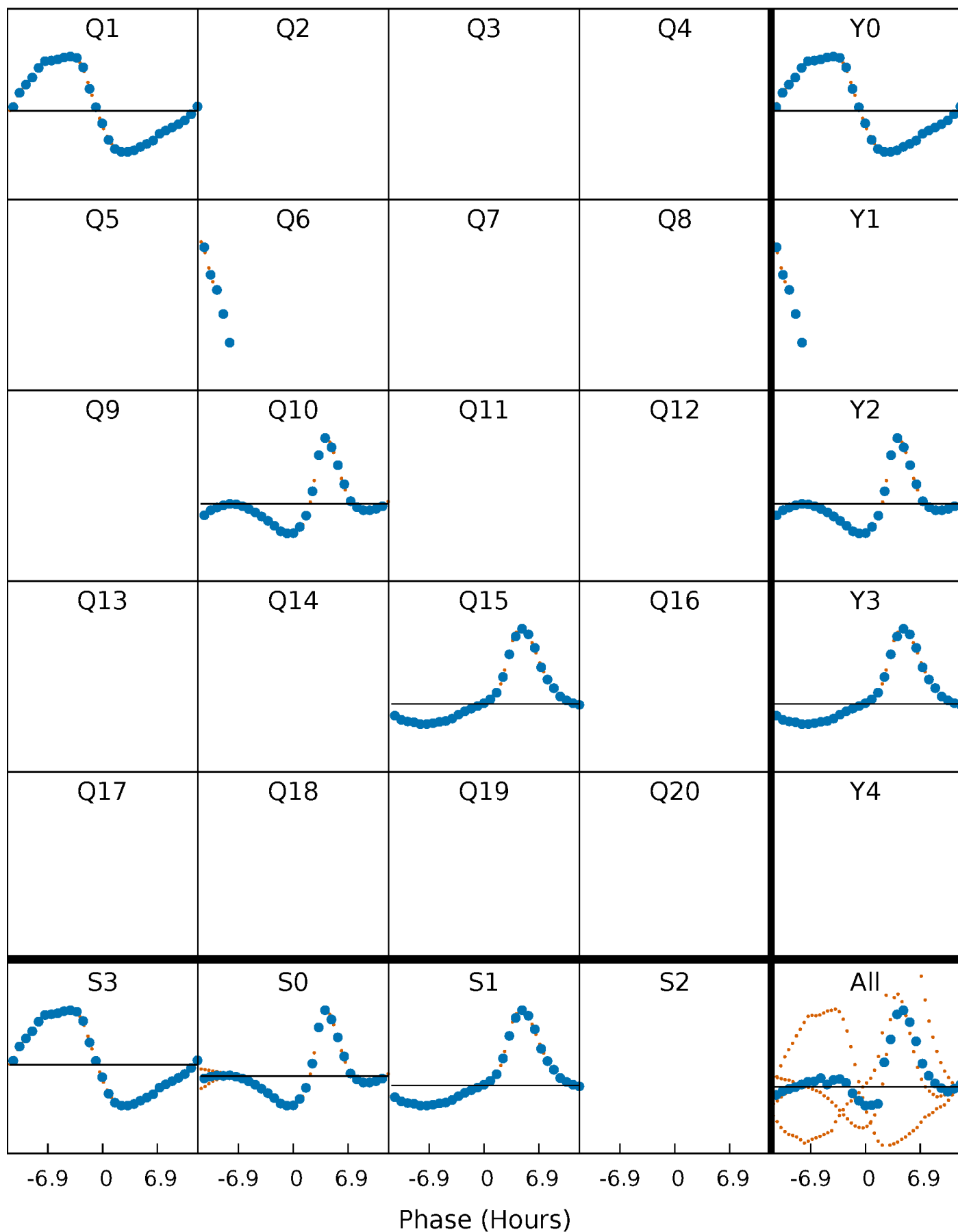
PDC Quarter-Phased Transit Curves

TCE 009007322-03 $P=429.595165$ Days $T_0=137.269852$ (BKJD)



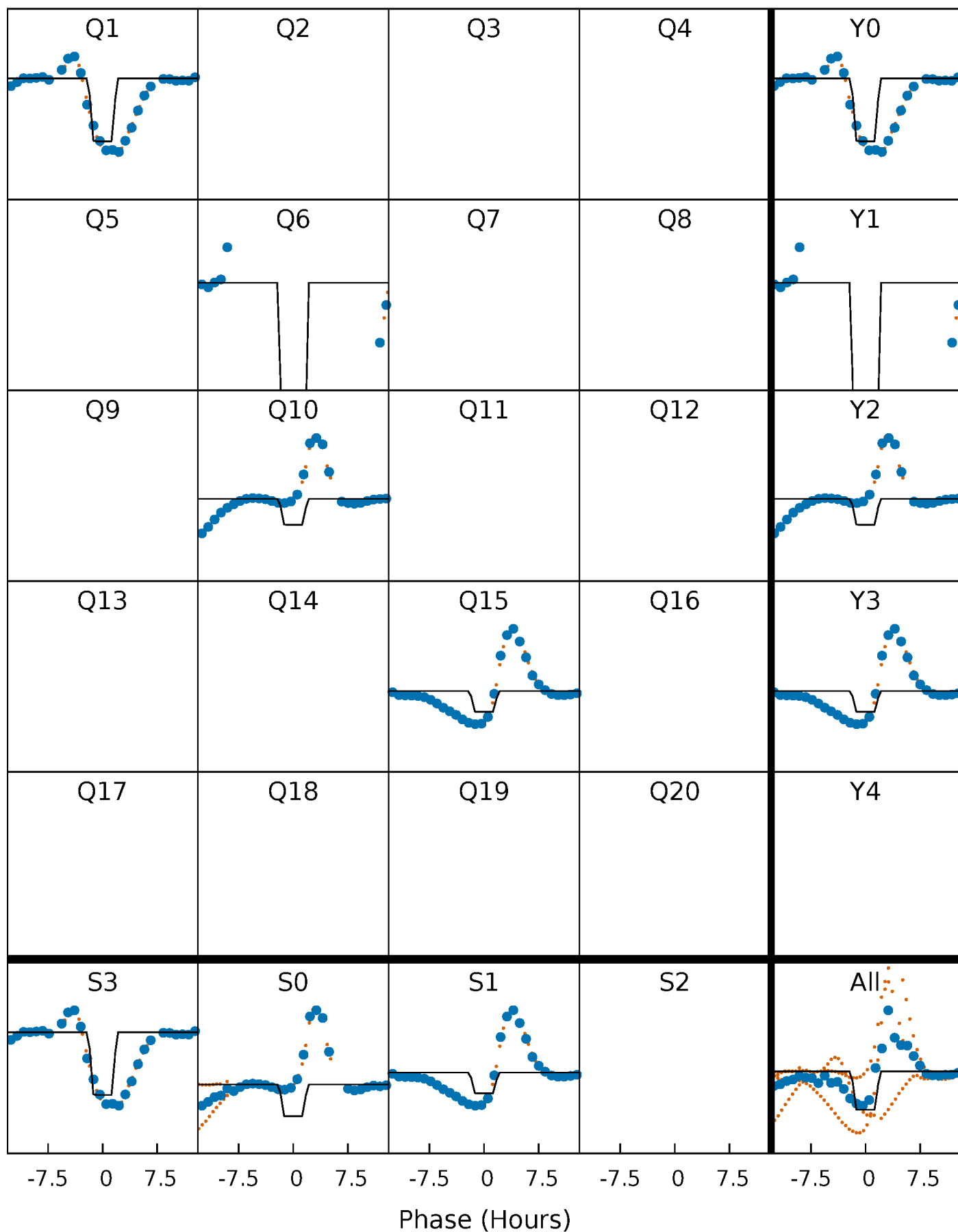
DV Quarter-Phased Transit Curves

TCE 009007322-03 $P=429.595165$ Days $T_0=137.269852$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

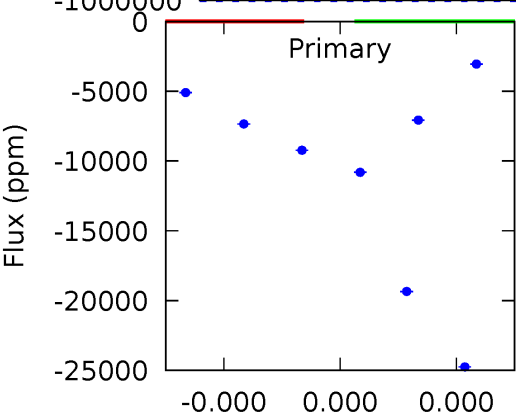
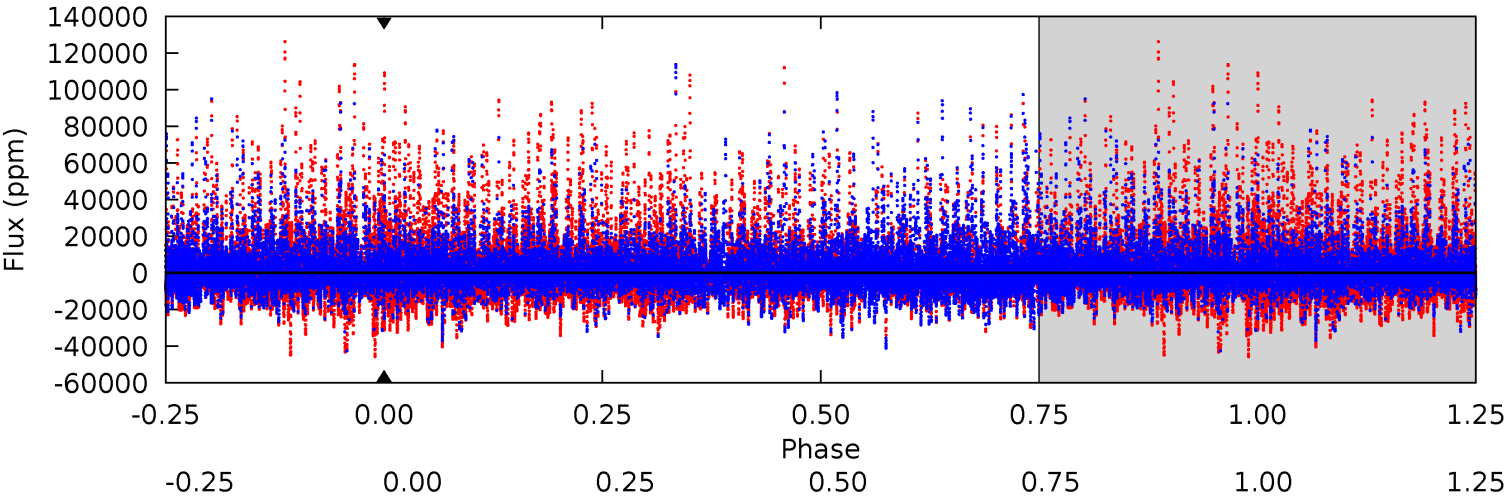
TCE 009007322-03 $P=429.595165$ Days $T_0=137.308132$ (BKJD)



DV Model-Shift Uniqueness Test

009007322-03, P = 429.595165 Days, E = 137.269852 Days

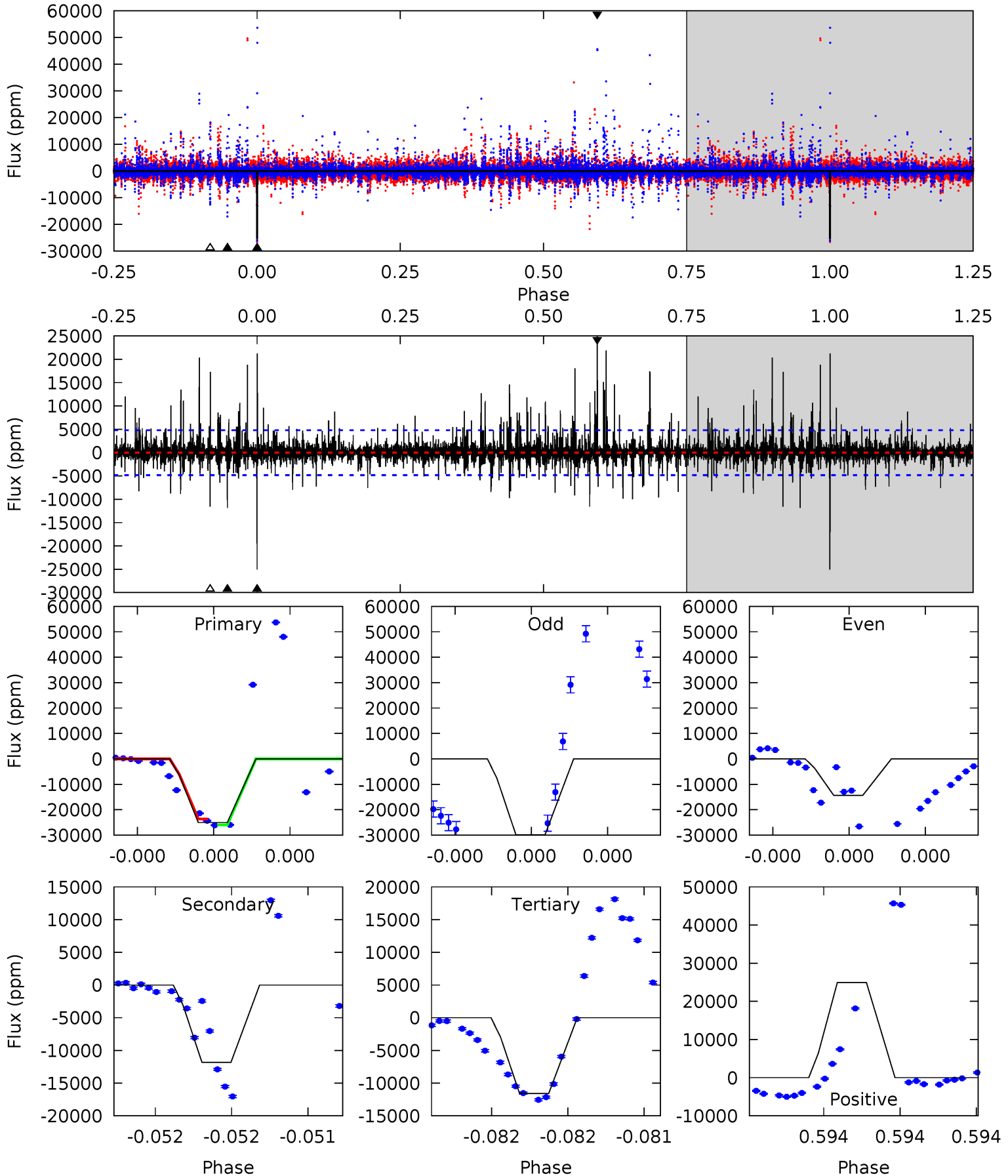
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009007322-03, P = 429.595165 Days, E = 137.308132 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.2	13.8	13.5	29.1	5.62	3.55	1.55	15.7	0.11	0.25	-15.3	11.7	0.70	0.50	0



Stellar Parameters For KIC 009007322

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6851^{+189}_{-307}	$4.187^{+0.112}_{-0.208}$	$0.070^{+0.200}_{-0.350}$	$1.596^{+0.534}_{-0.288}$	$1.428^{+0.208}_{-0.231}$	$0.495^{+0.303}_{-0.250}$
	+3%/-4%	+3%/-5%	+286%/-500%	+33%/-18%	+15%/-16%	+61%/-51%
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 009007322-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$13.43^{+14.78}_{-9.22}$	480^{+39}_{-31}	5813^{+26075}_{-33687}	$15087^{+872753}_{-784660}$
Alt.	-11808 ± 857	$28.55^{+17.66}_{-14.85}$	478^{+40}_{-29}	5592^{+2926}_{-991}	12272^{+42803}_{-7504}

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 $A_{obs} \gg 1.0$

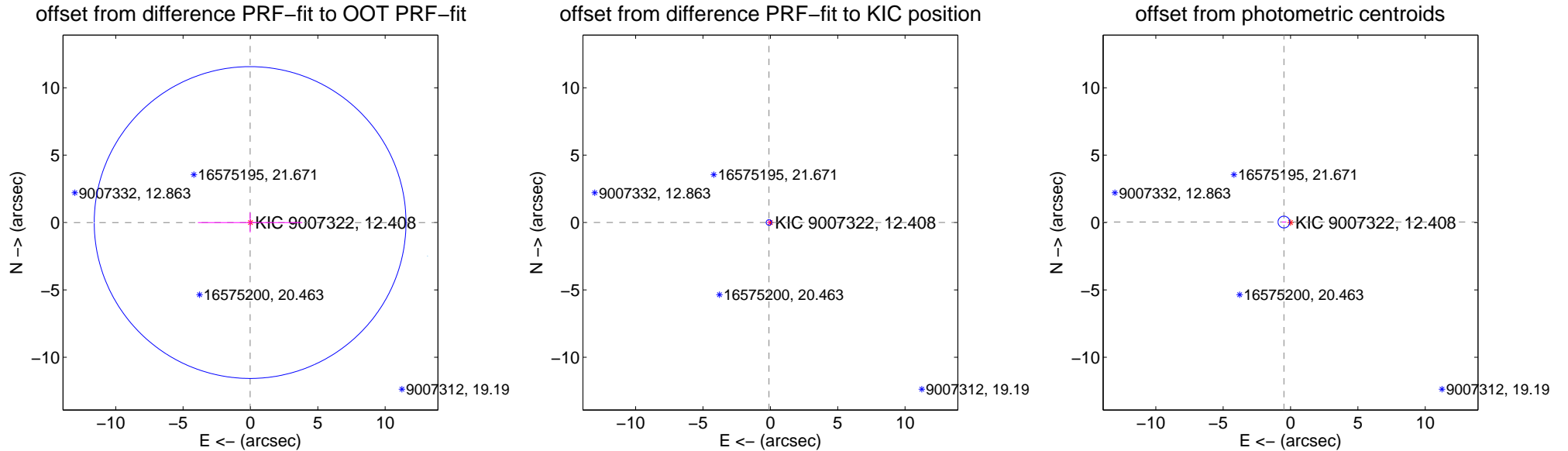
DV Centroid Data

Supplemental centroid analysis for 009007322-03. Kepler magnitude: 12.41. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

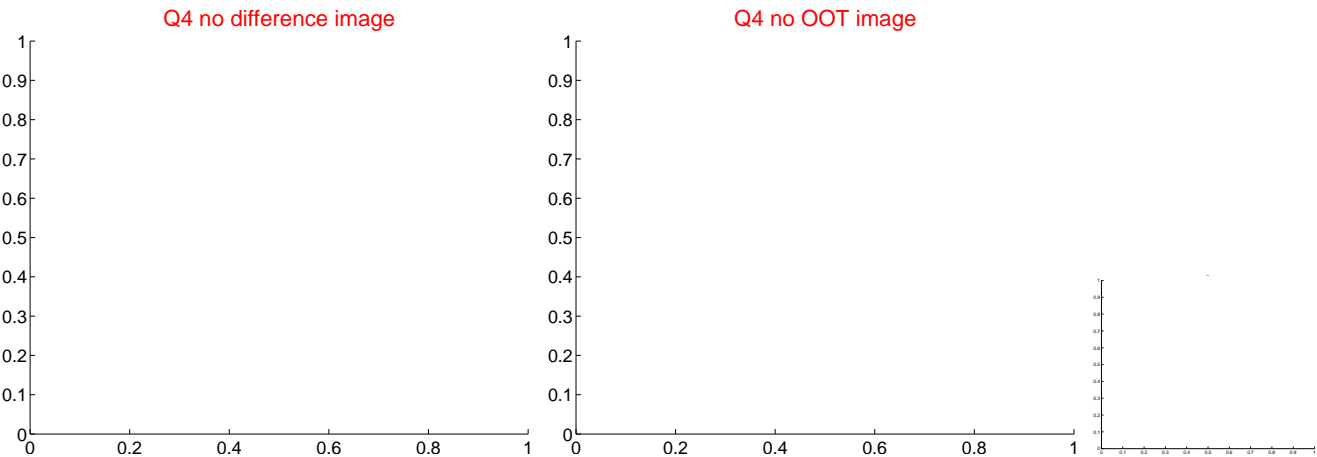
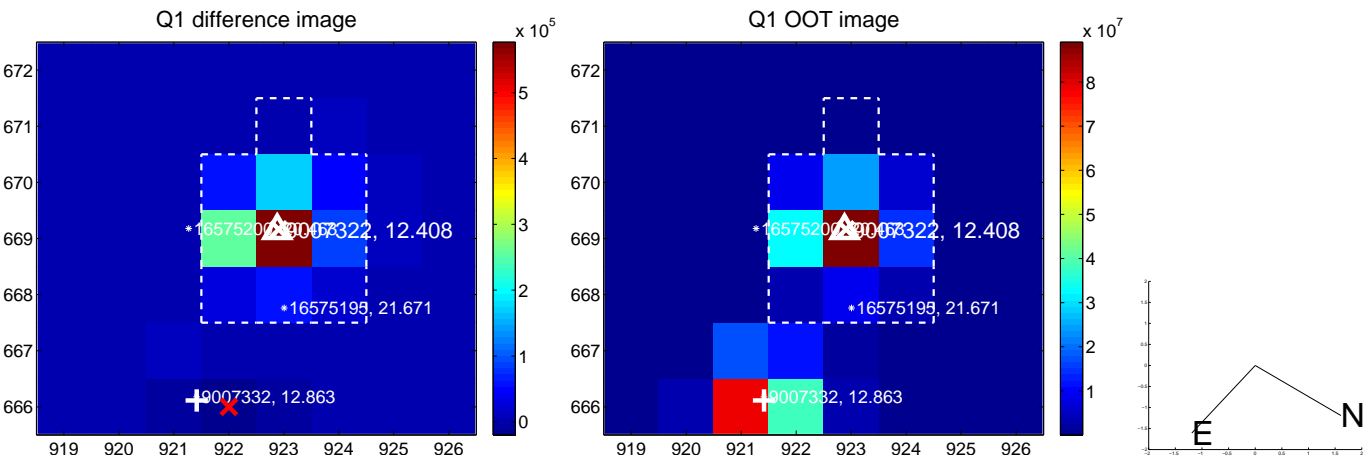
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.025 ± 3.856	0.01	0.025 ± 3.874	-0.001 ± 0.734
PRF-fit source offset from KIC position	0.102 ± 0.069	1.48	0.102 ± 0.069	0.001 ± 0.073
photometric centroid source offset	0.49 ± 0.15	3.39	0.49 ± 0.15	0.04 ± 0.03



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

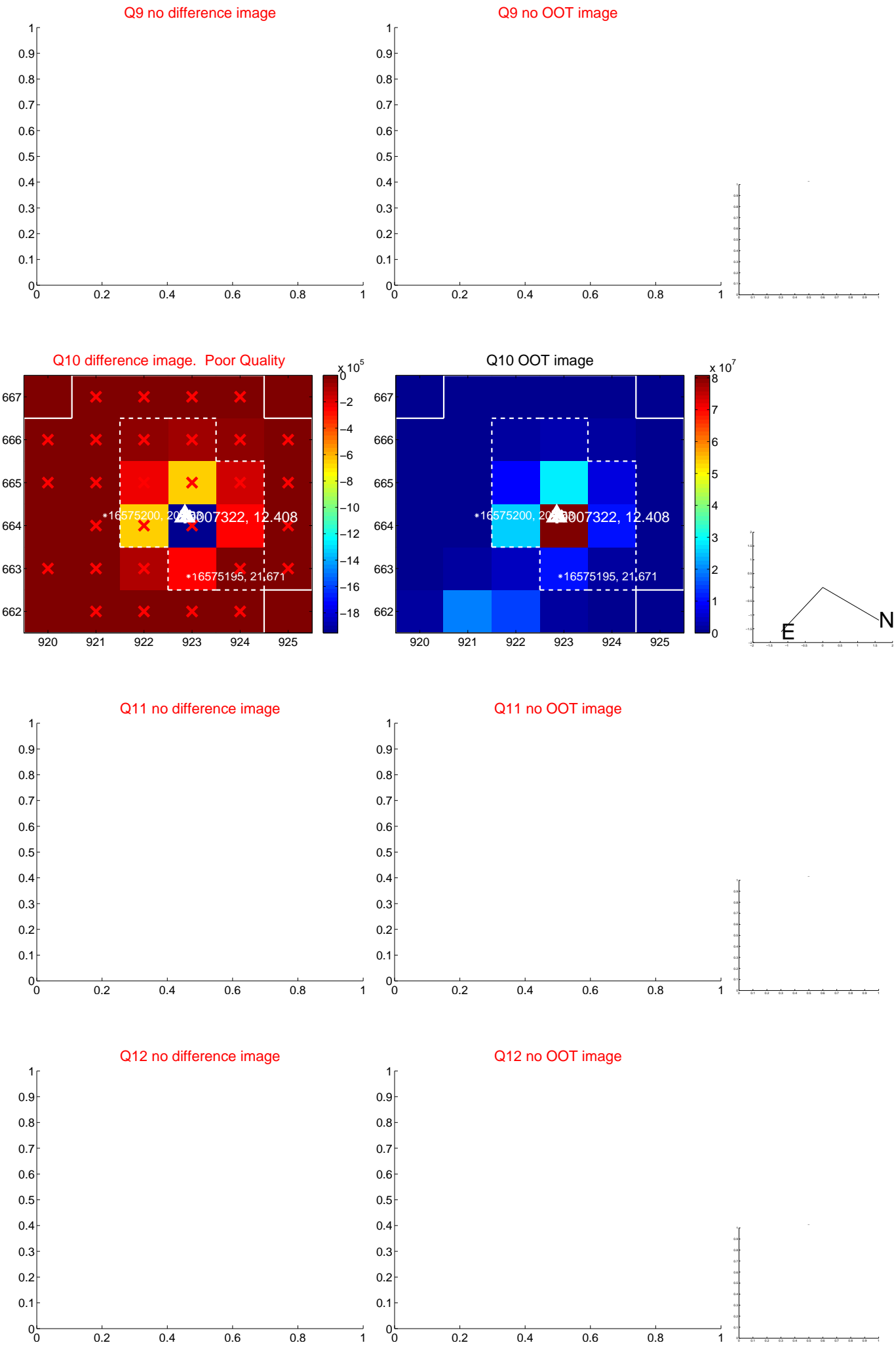
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



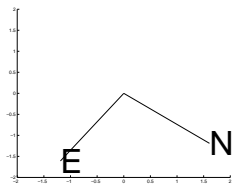
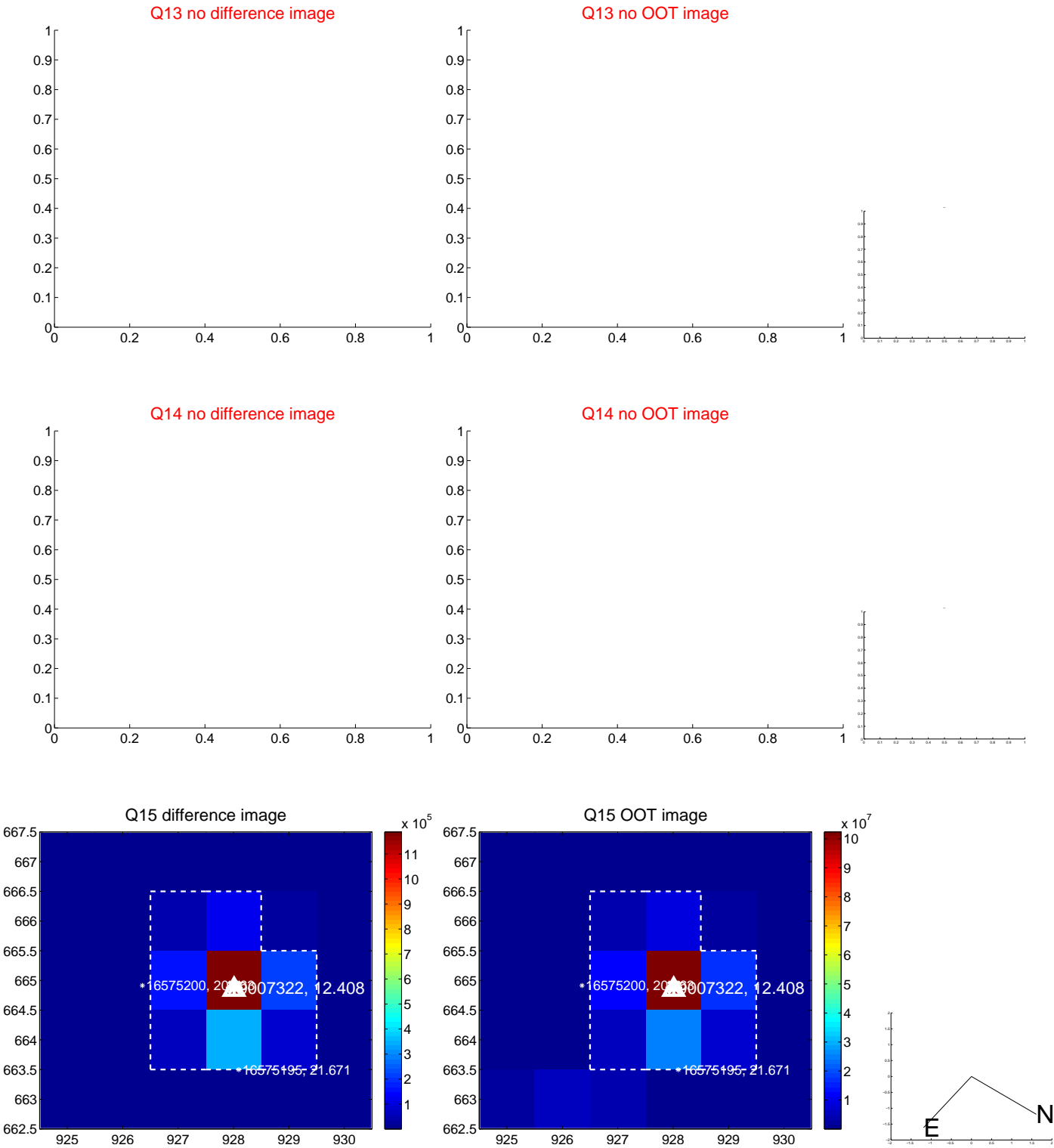
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



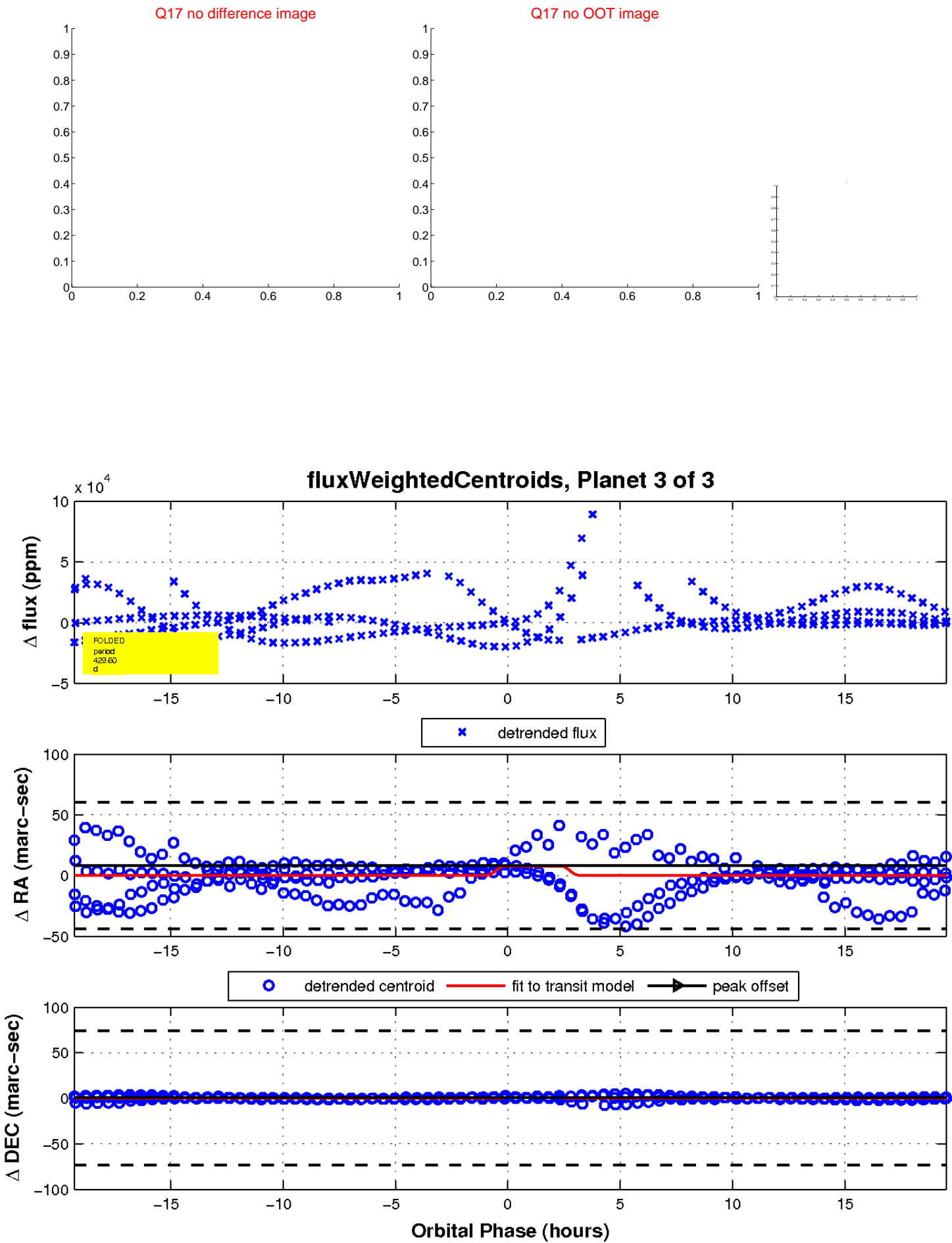
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

