

KIC 011546965

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})
011546965-01	OBS	No	379.230695	472.100034	236.5	4.669	12.7	5.4	0.82	5226	1.45	0.48
011546965-02	OBS	No	202.204274	333.575896	298.3	2.176	10.1	7.0	0.82	5226	1.72	1.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011546965-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011546965-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

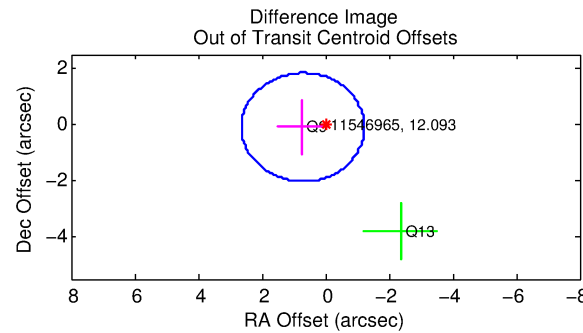
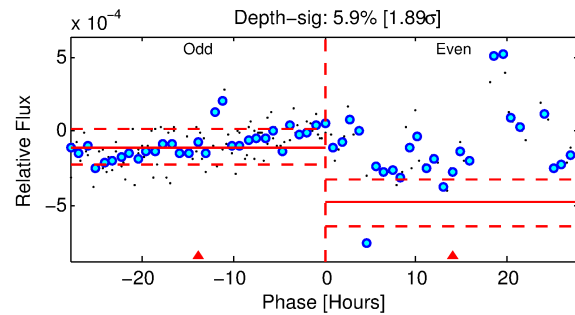
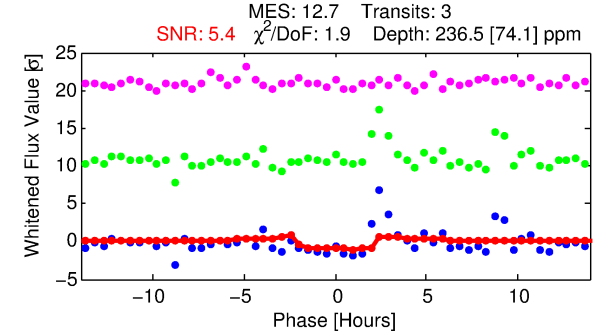
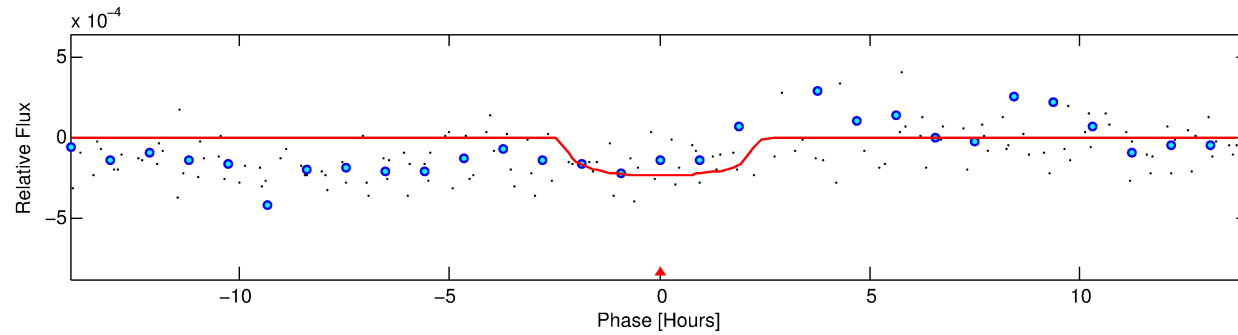
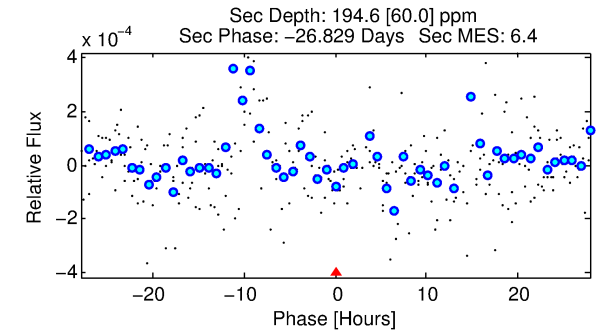
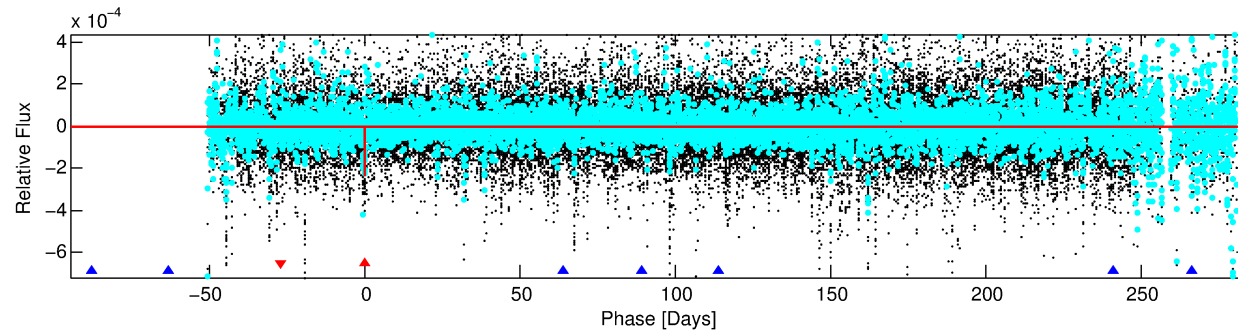
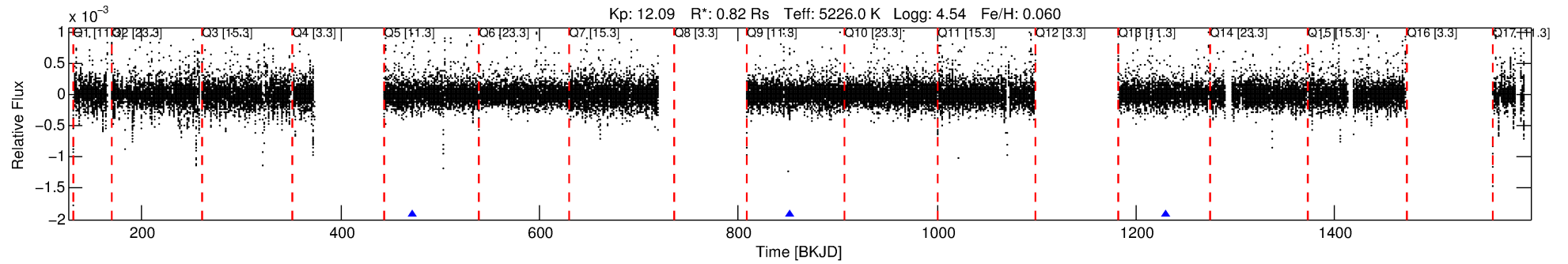
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011546965-01

No Significant Match Found

DV One-Page Summary

KIC: 11546965 Candidate: 1 of 2 Period: 379.231 d



DV Fit Results:

Period = 379.23069 [0.01152] d
Epoch = 472.1000 [0.0146] BKJD
Rp/R* = 0.0161 [0.0205]
a/R* = 358.32 [1761.32]
b = 0.84 [1.81]
Seff = 0.48 [0.11]
Teq = 212 [12] K
Rp = 1.45 [1.86] Re
a = 0.9726 [0.1230] AU
Ag = 48260.72 [123972.64] [0.39 σ]
Teffp = 4863 [3120] K [1.49 σ]

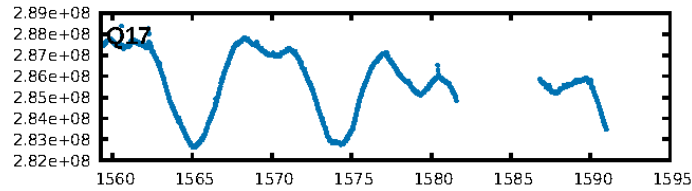
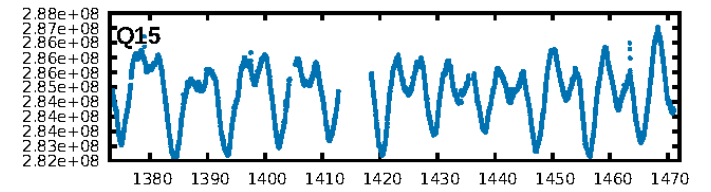
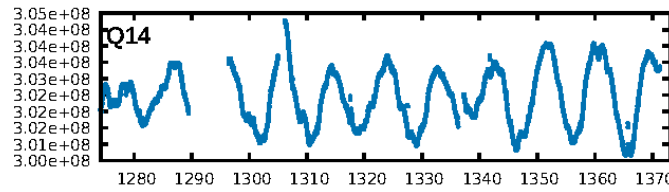
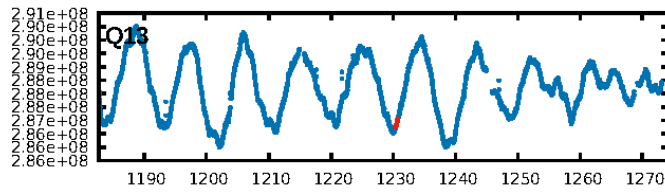
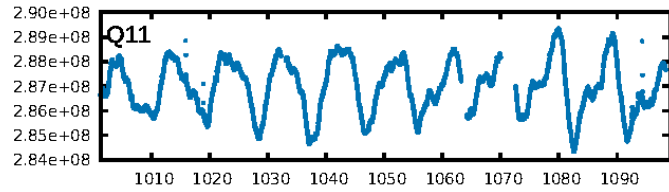
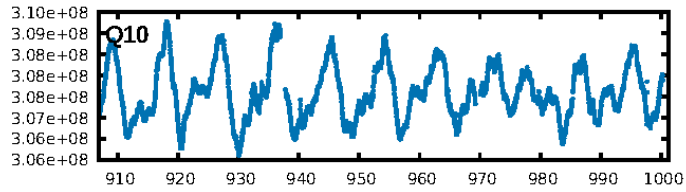
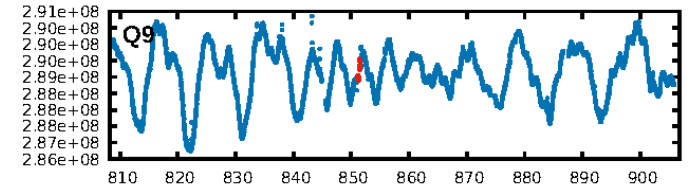
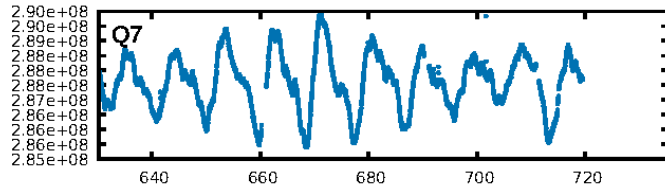
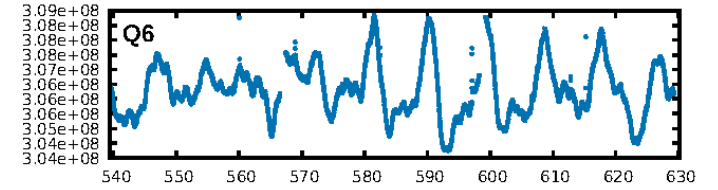
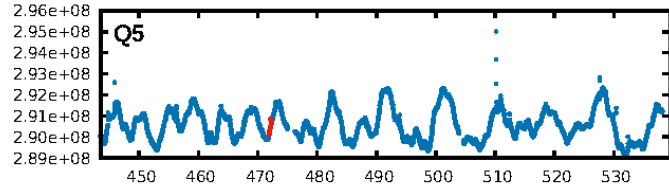
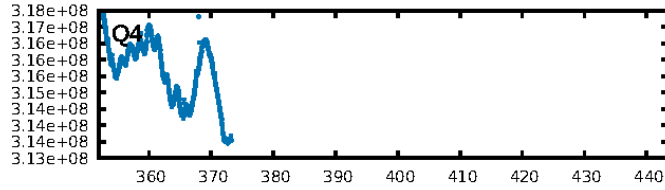
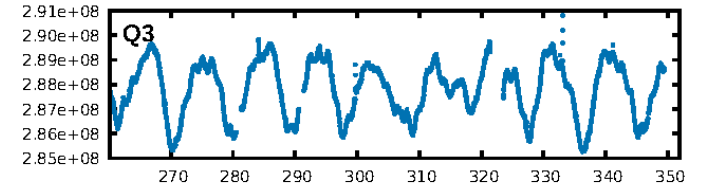
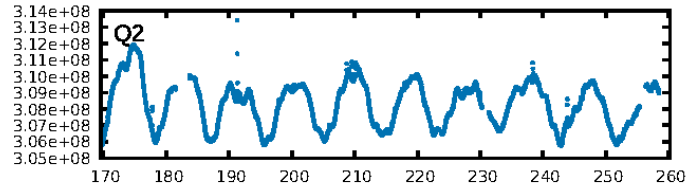
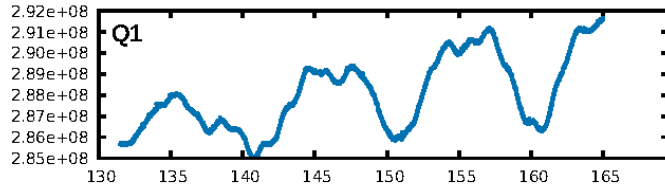
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [824.74 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 31.5%
Bootstrap-pfa: 9.25e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.3513
Centroid-sig: 6.8%
Centroid-so: 1.786 arcsec [1.17 σ]
OotOffset-rm: 0.718 arcsec [1.11 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-rm: 0.777 arcsec [1.07 σ]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

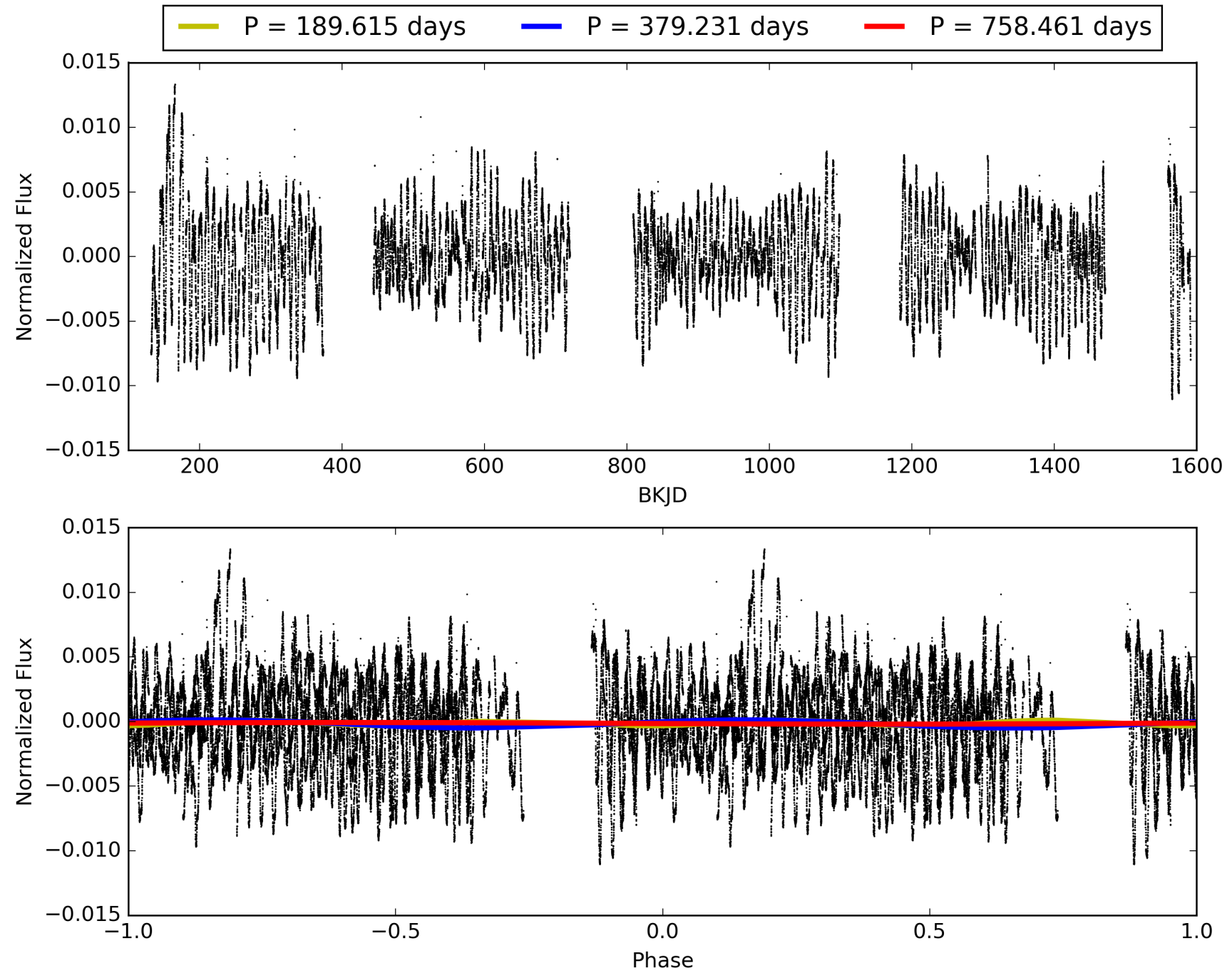
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:42:34 Z

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

TCE 011546965-01, PDC Light Curves

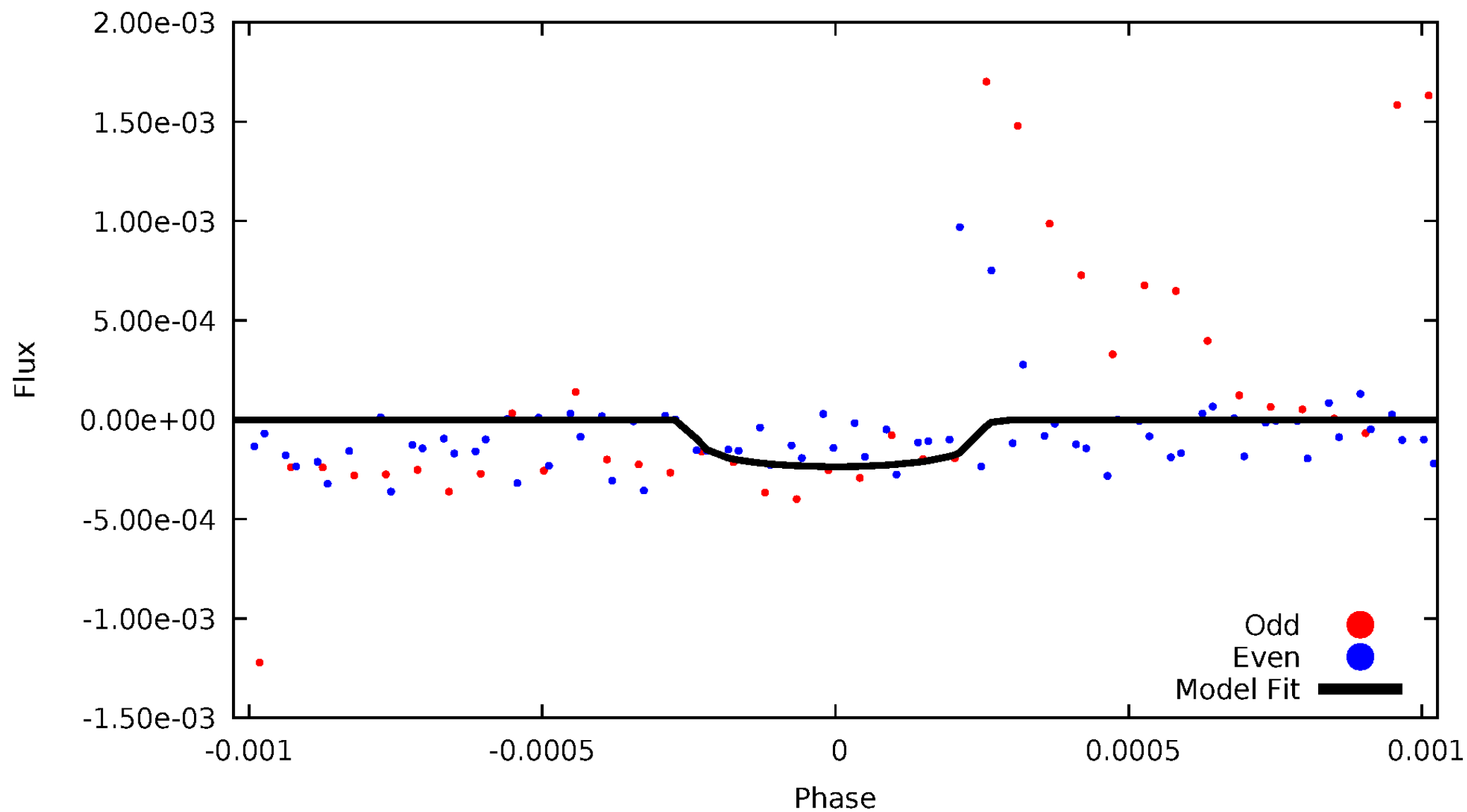


TCE 011546965-01



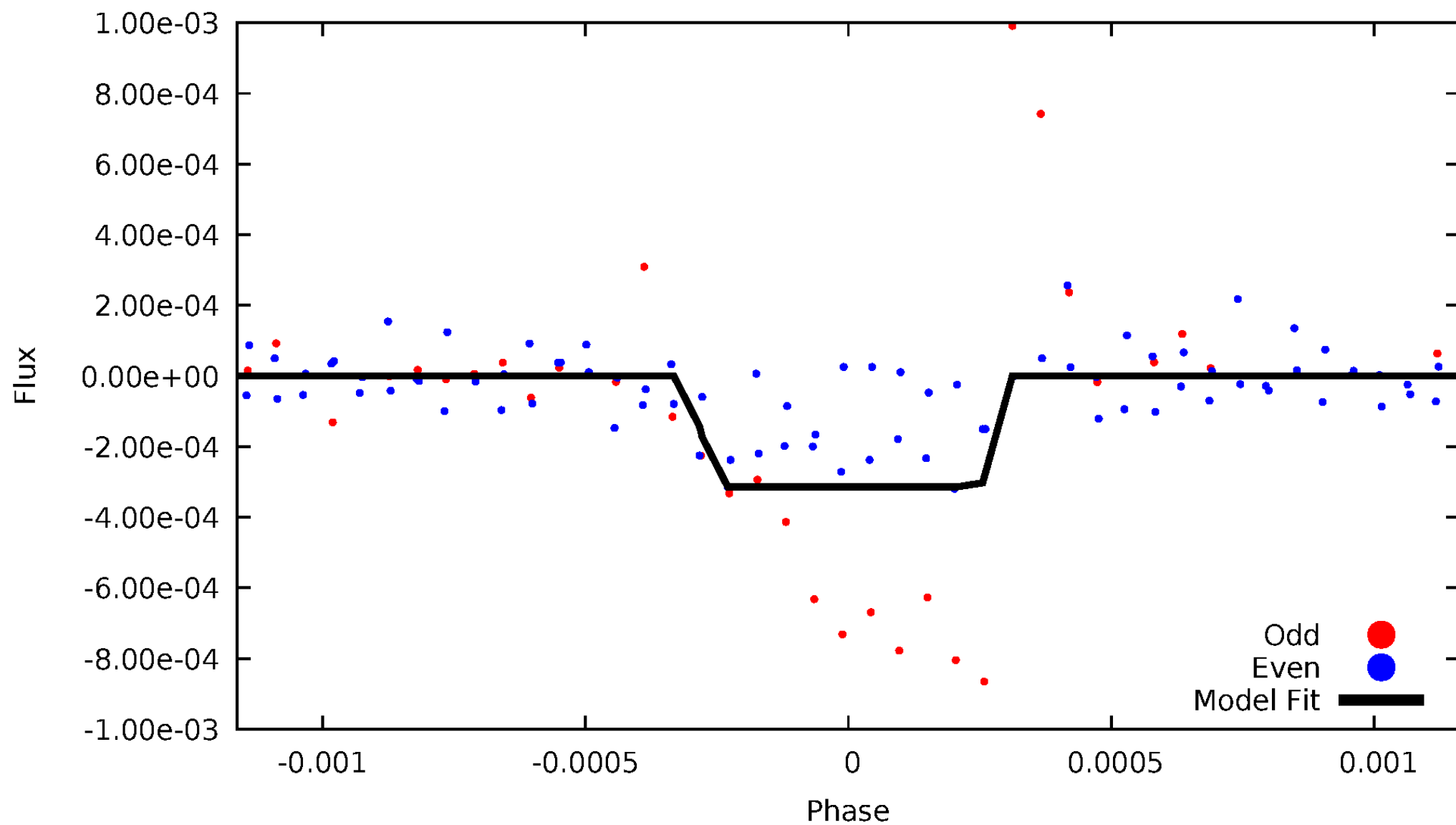
DV Odd/Even

TCE 011546965-01



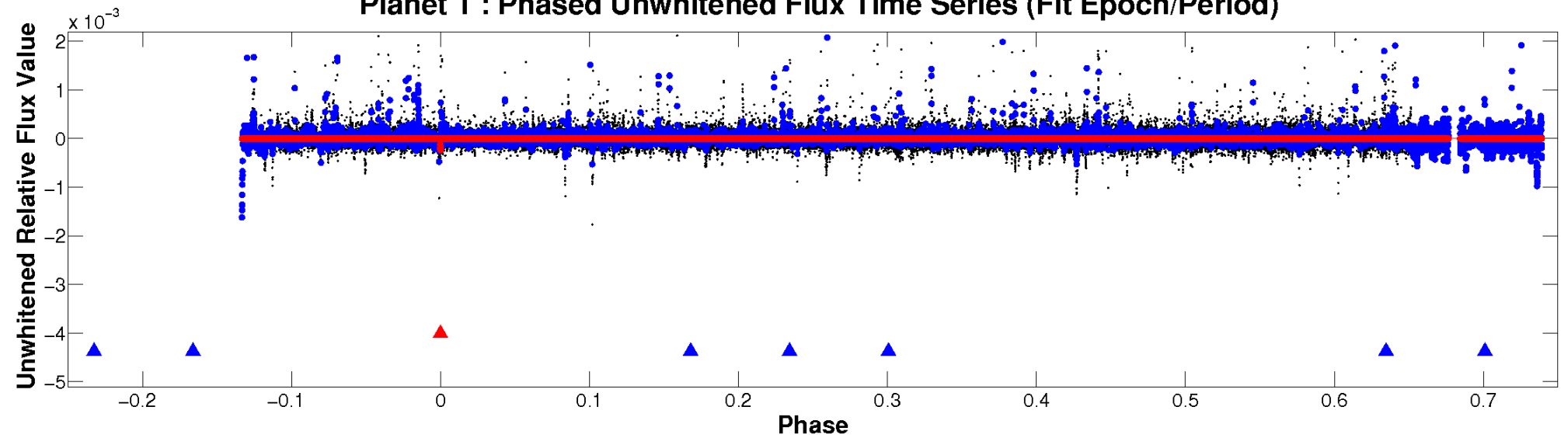
ALT Odd/Even

TCE 011546965-01

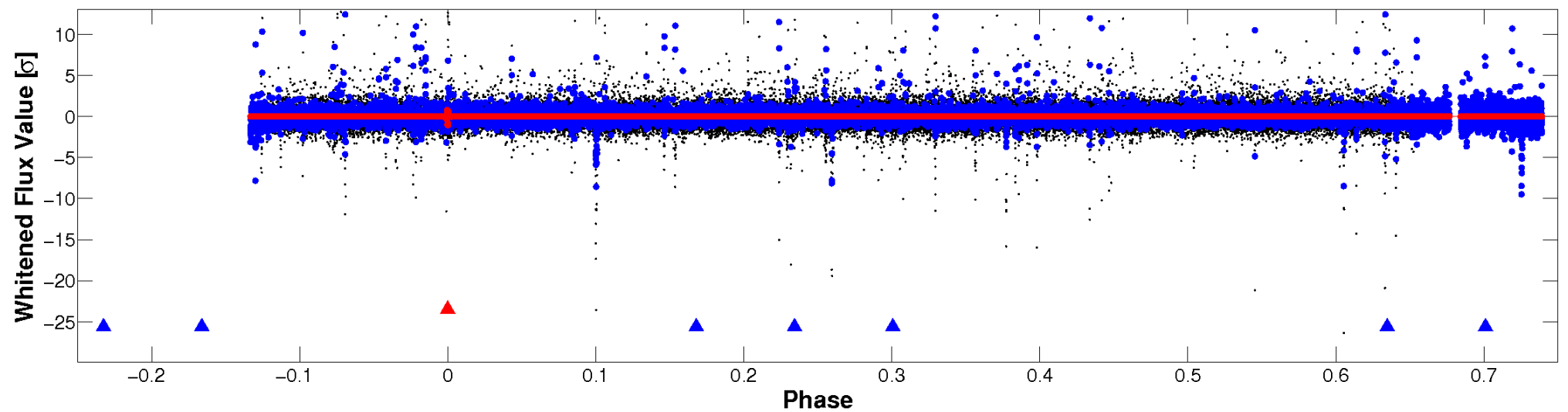


Non-Whitened Vs. Whitened Light Curve

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

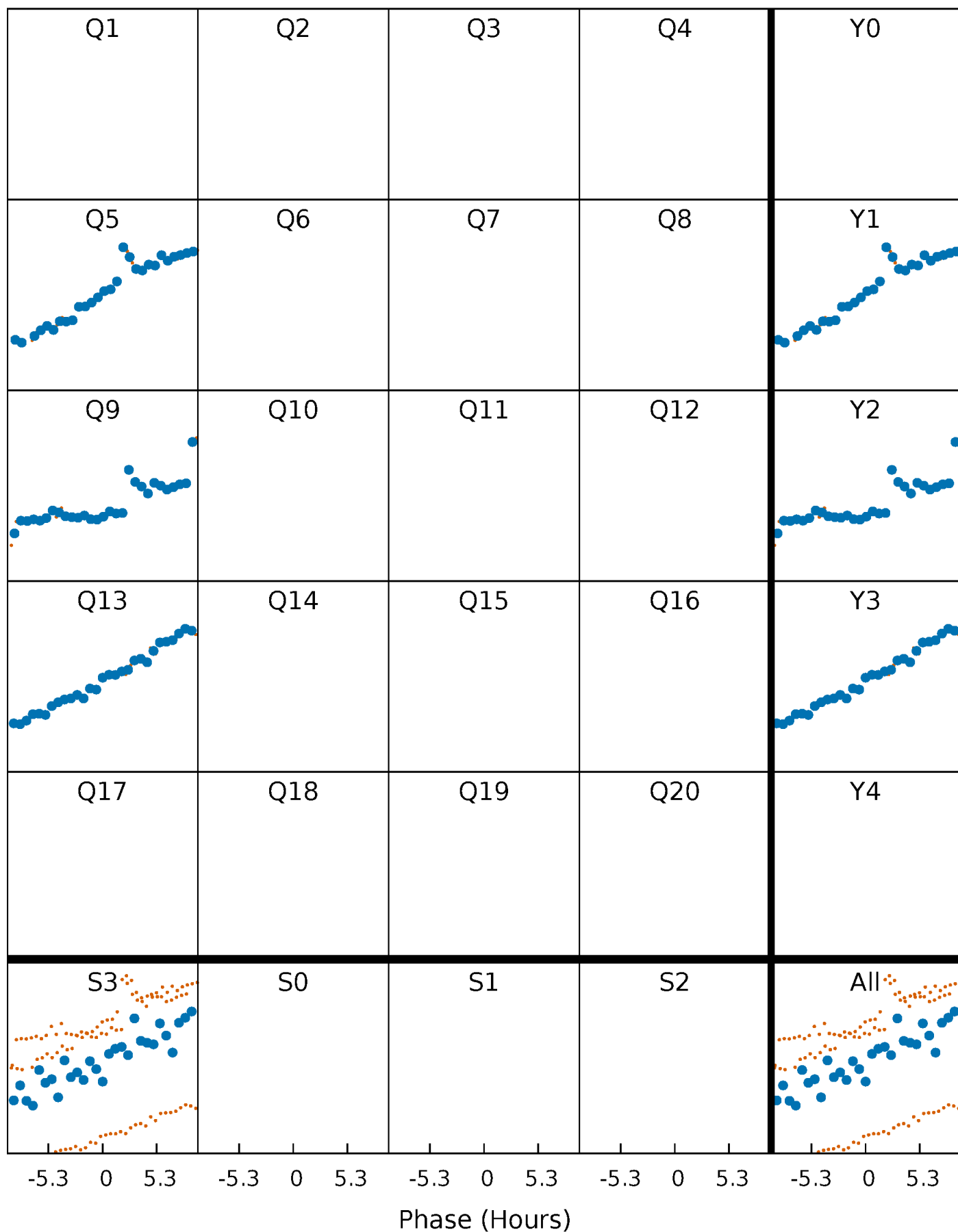


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



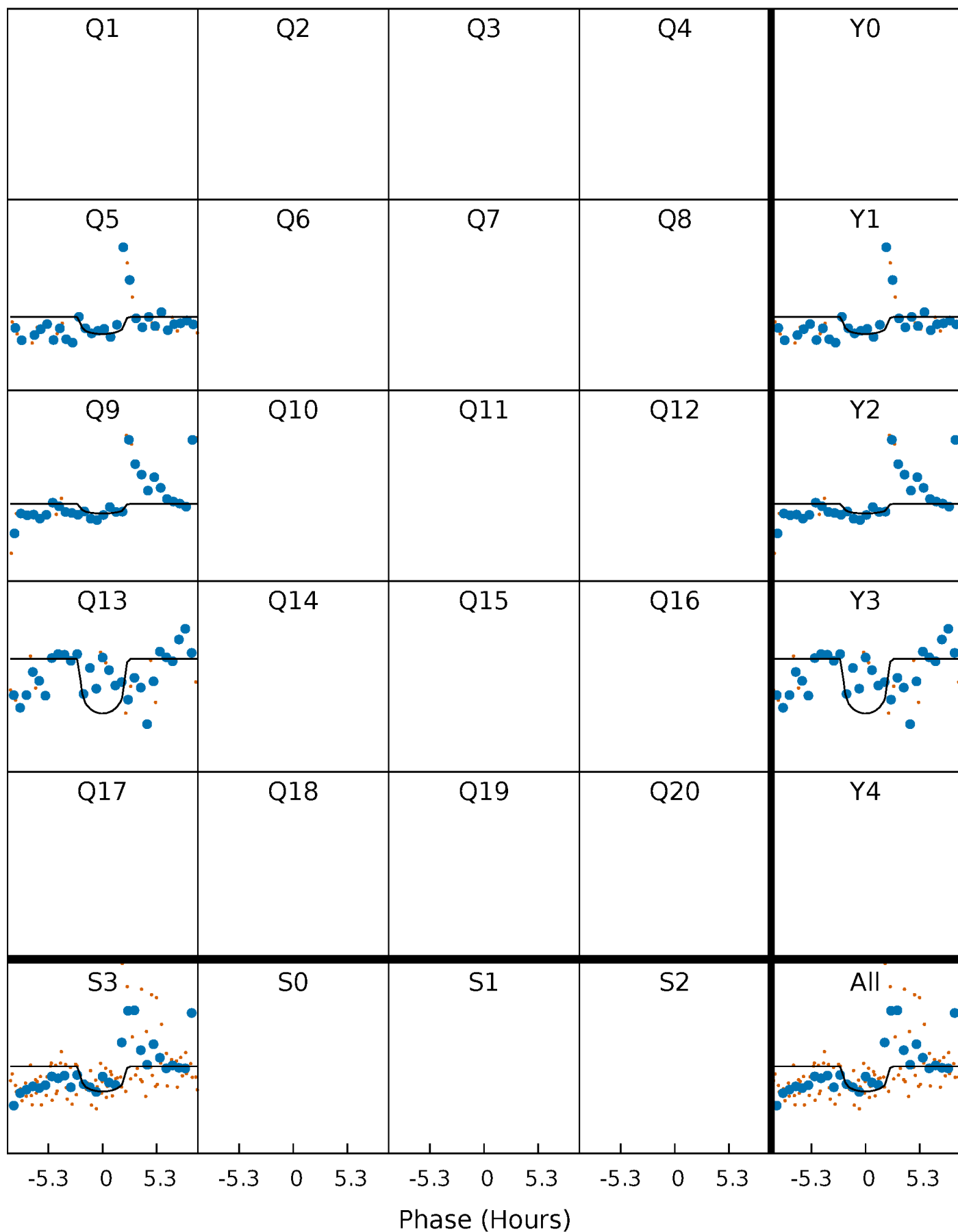
PDC Quarter-Phased Transit Curves

TCE 011546965-01 P=379.230695 Days $T_0=472.100034$ (BKJD)



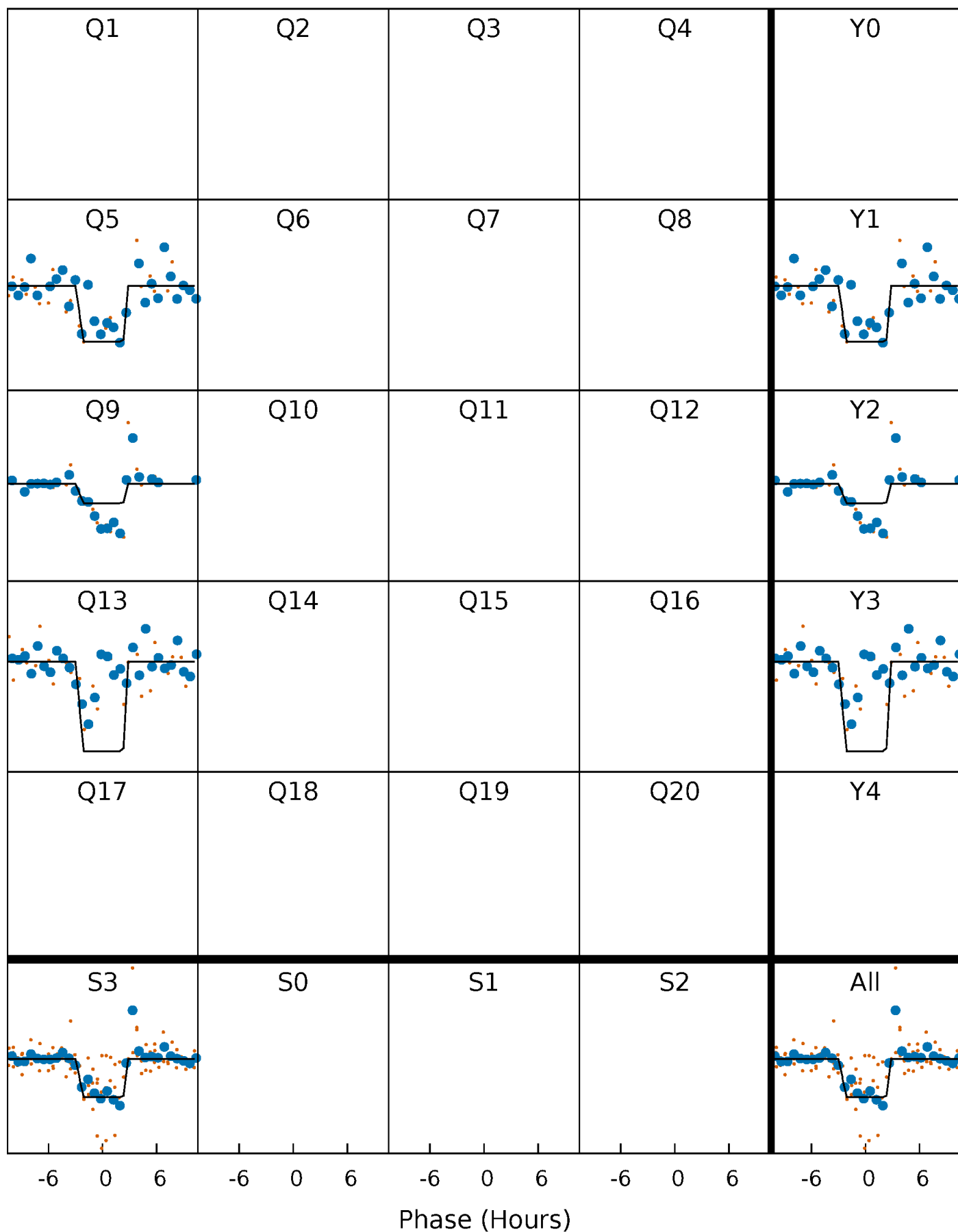
DV Quarter-Phased Transit Curves

TCE 011546965-01 P=379.230695 Days $T_0=472.100034$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

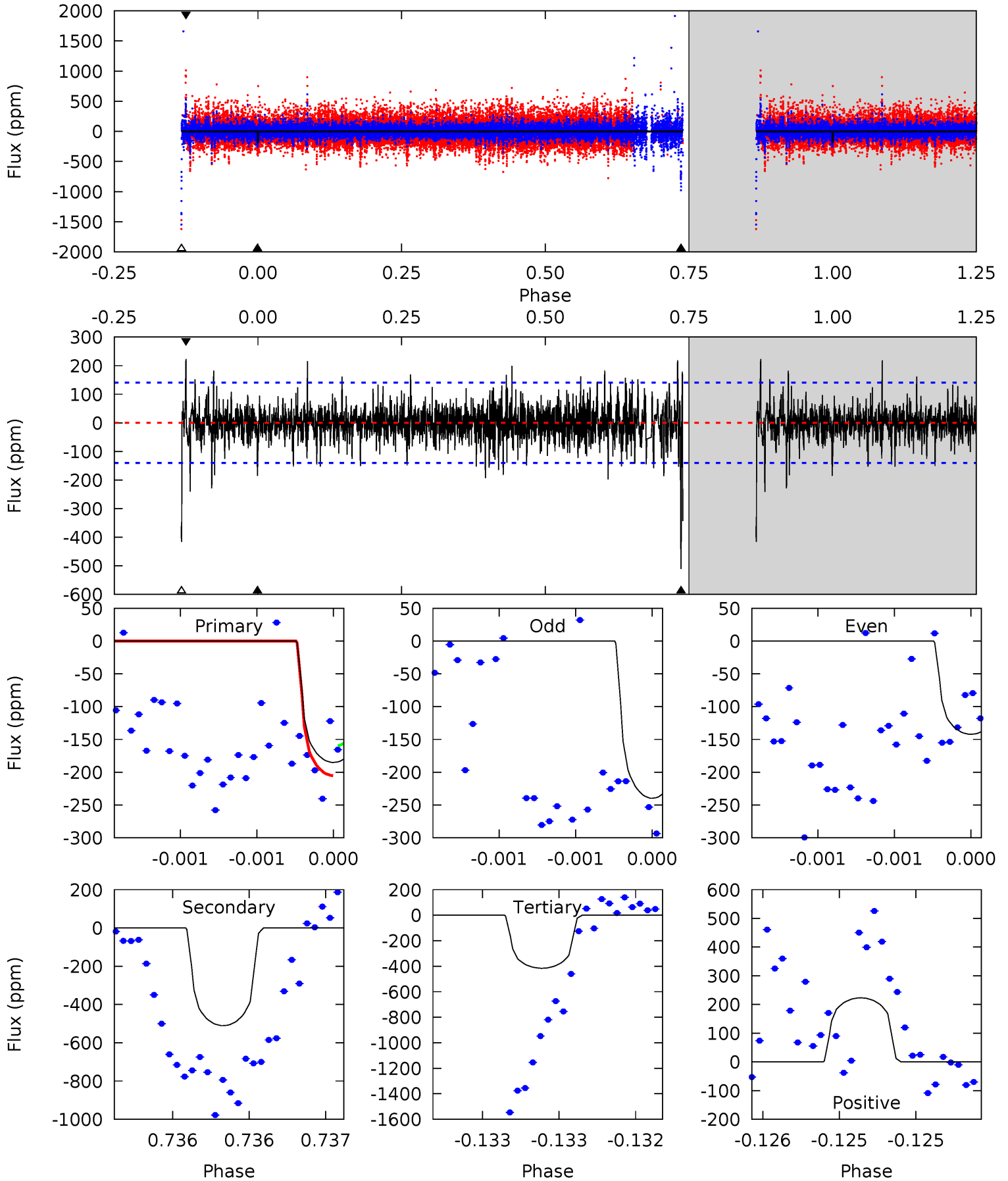
TCE 011546965-01 P=379.246874 Days $T_0=472.063028$ (BKJD)



DV Model-Shift Uniqueness Test

011546965-01, P = 379.230695 Days, E = 92.869339 Days

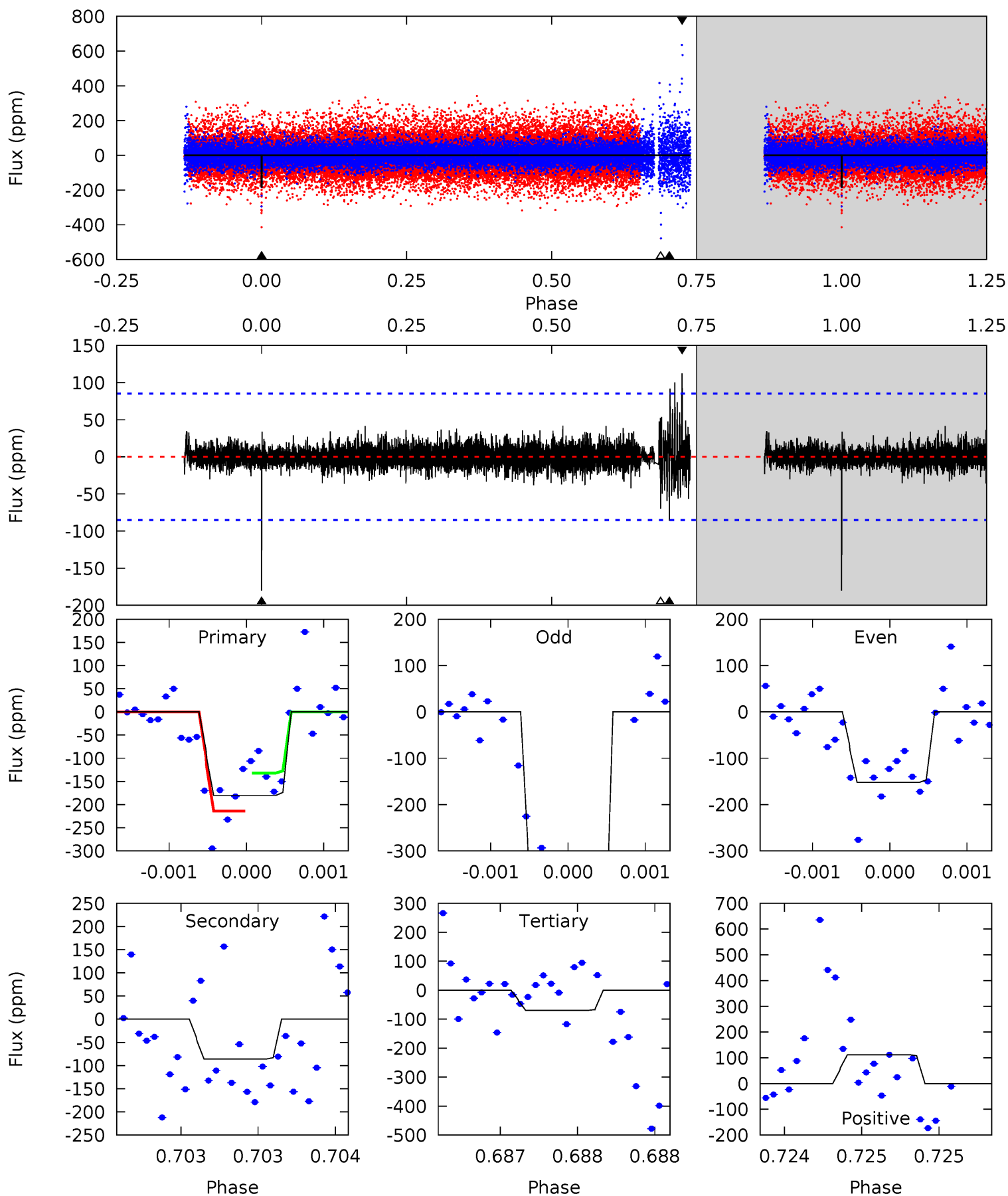
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.32	20.2	16.4	8.83	5.55	3.44	1.83	-9.13	-1.51	3.75	11.4	1.62	1.56	0.30	0.90



Alt Model-Shift Uniqueness Test

011546965-01, P = 379.246874 Days, E = 92.816154 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	5.61	4.54	7.31	5.56	3.46	0.68	7.21	4.44	1.07	-1.70	16.2	1.41	0.38	2.62



Stellar Parameters For KIC 011546965

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5226^{+184}_{-166}	$4.537^{+0.056}_{-0.096}$	$0.060^{+0.250}_{-0.300}$	$0.824^{+0.127}_{-0.074}$	$0.851^{+0.080}_{-0.080}$	$2.145^{+0.485}_{-0.634}$
	+4%/-3%	+1%/-2%	+417%/-500%	+15%/-9%	+9%/-9%	+23%/-30%
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 011546965-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-511 ± 25	$2.09^{+1.59}_{-1.36}$	299^{+14}_{-13}	5232^{+4080}_{-1098}	$61004^{+459071}_{-41357}$
Alt.	-86 ± 15	$2.08^{+1.71}_{-1.29}$	299^{+14}_{-13}	3733^{+1623}_{-649}	10585^{+59735}_{-7469}

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 $A_{obs} \gg 1.0$

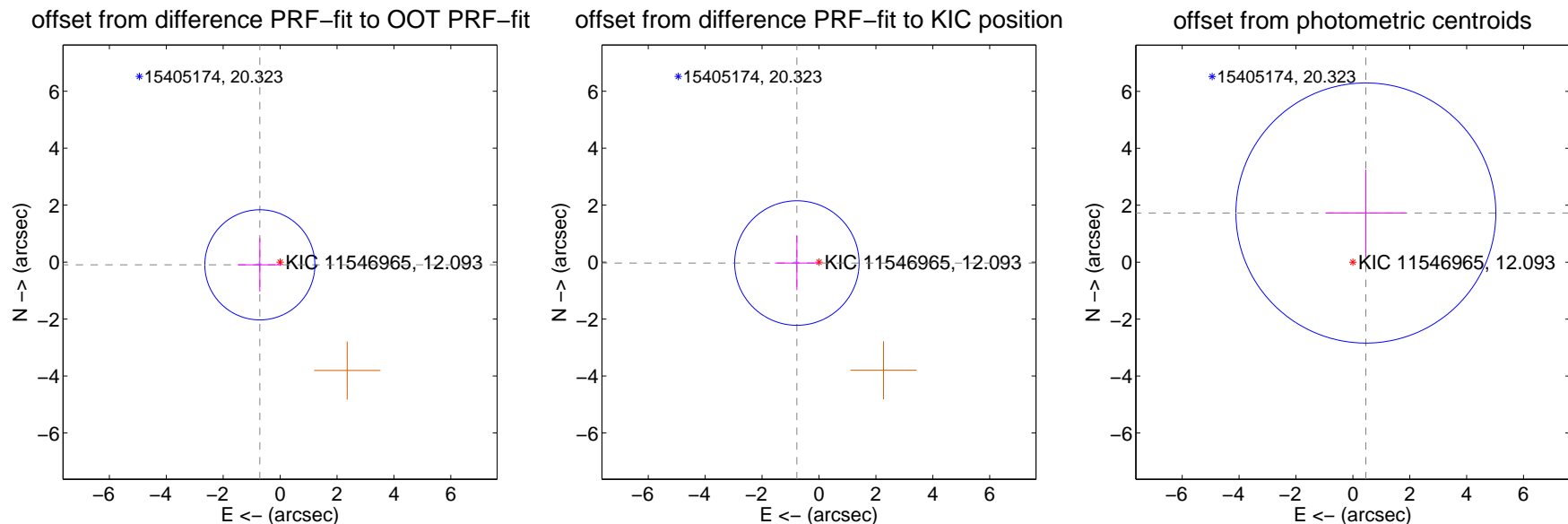
DV Centroid Data

Supplemental centroid analysis for 011546965-01. Kepler magnitude: 12.09. Transit SNR 5.45

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	0.718 ± 0.645	1.11	0.712 ± 0.777	-0.096 ± 0.938
PRF-fit source offset from KIC position	0.777 ± 0.729	1.07	0.777 ± 0.770	-0.033 ± 0.951
photometric centroid source offset	1.79 ± 1.52	1.17	-0.46 ± 1.42	1.73 ± 1.53

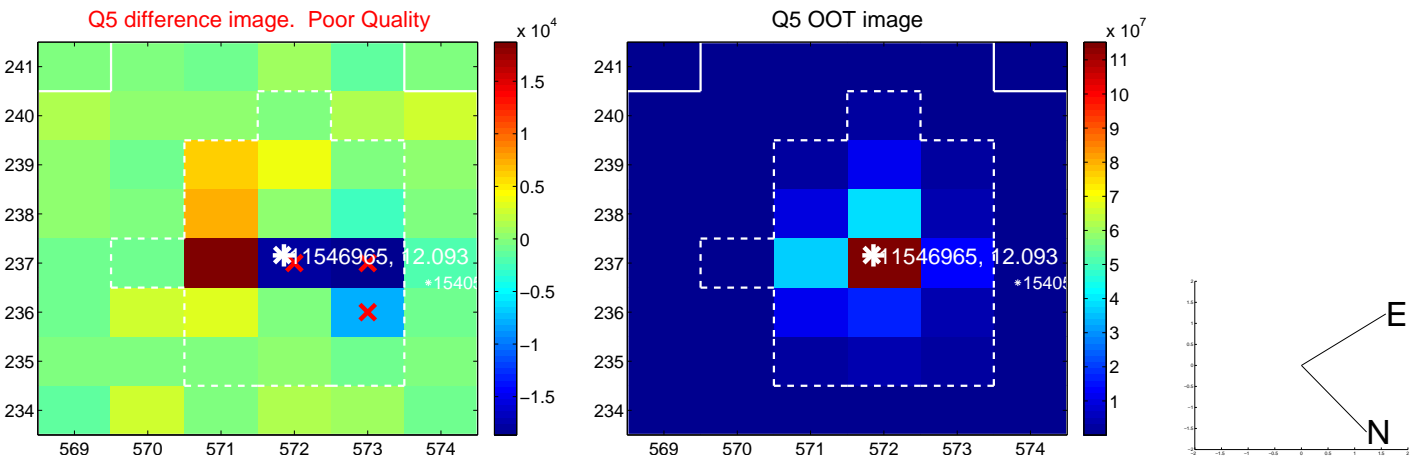


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

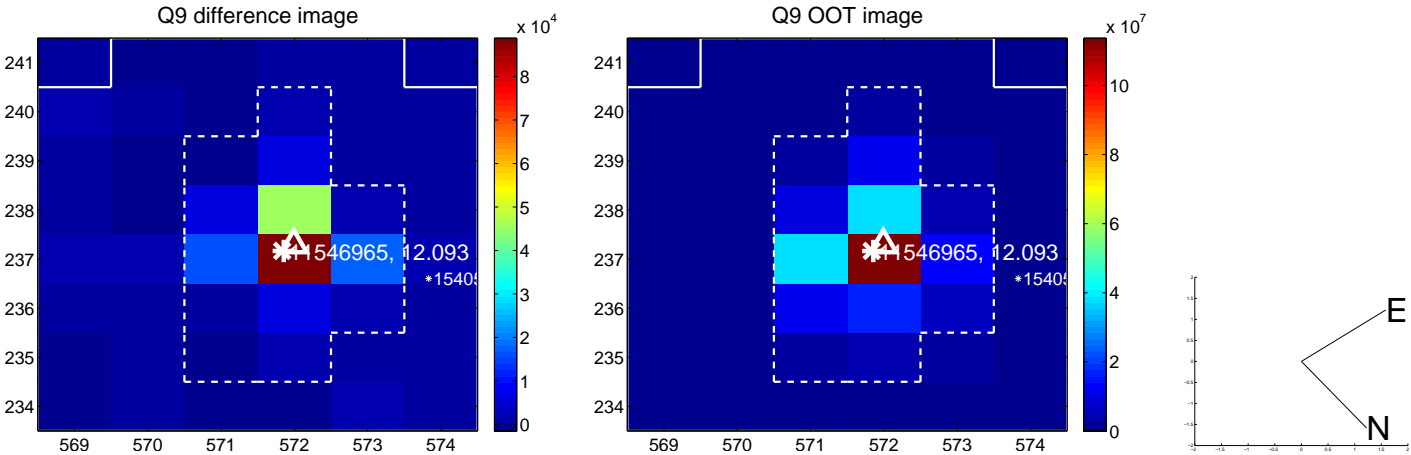
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



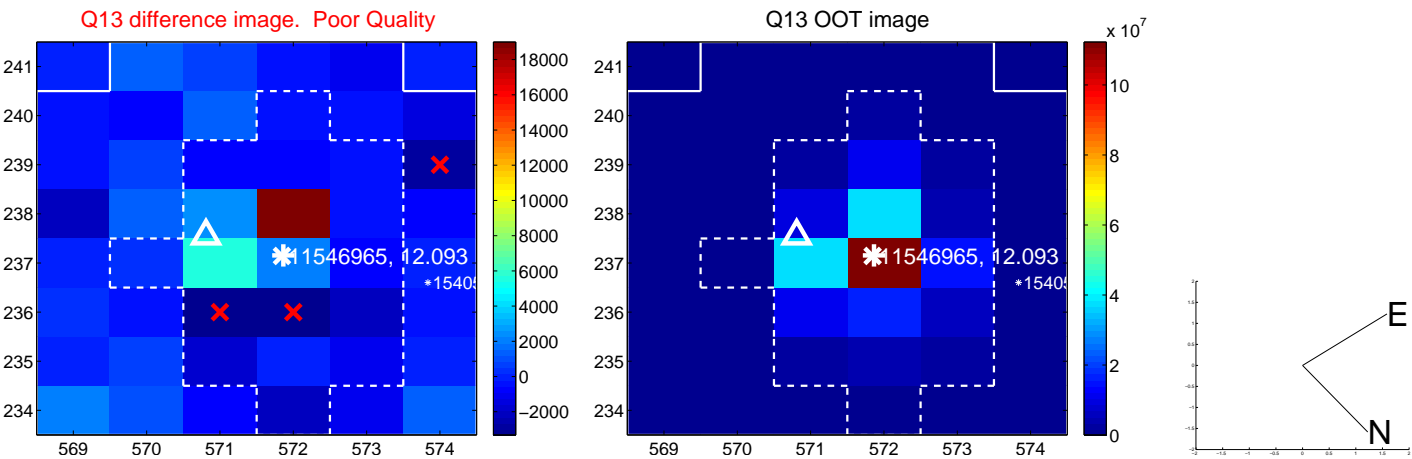
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



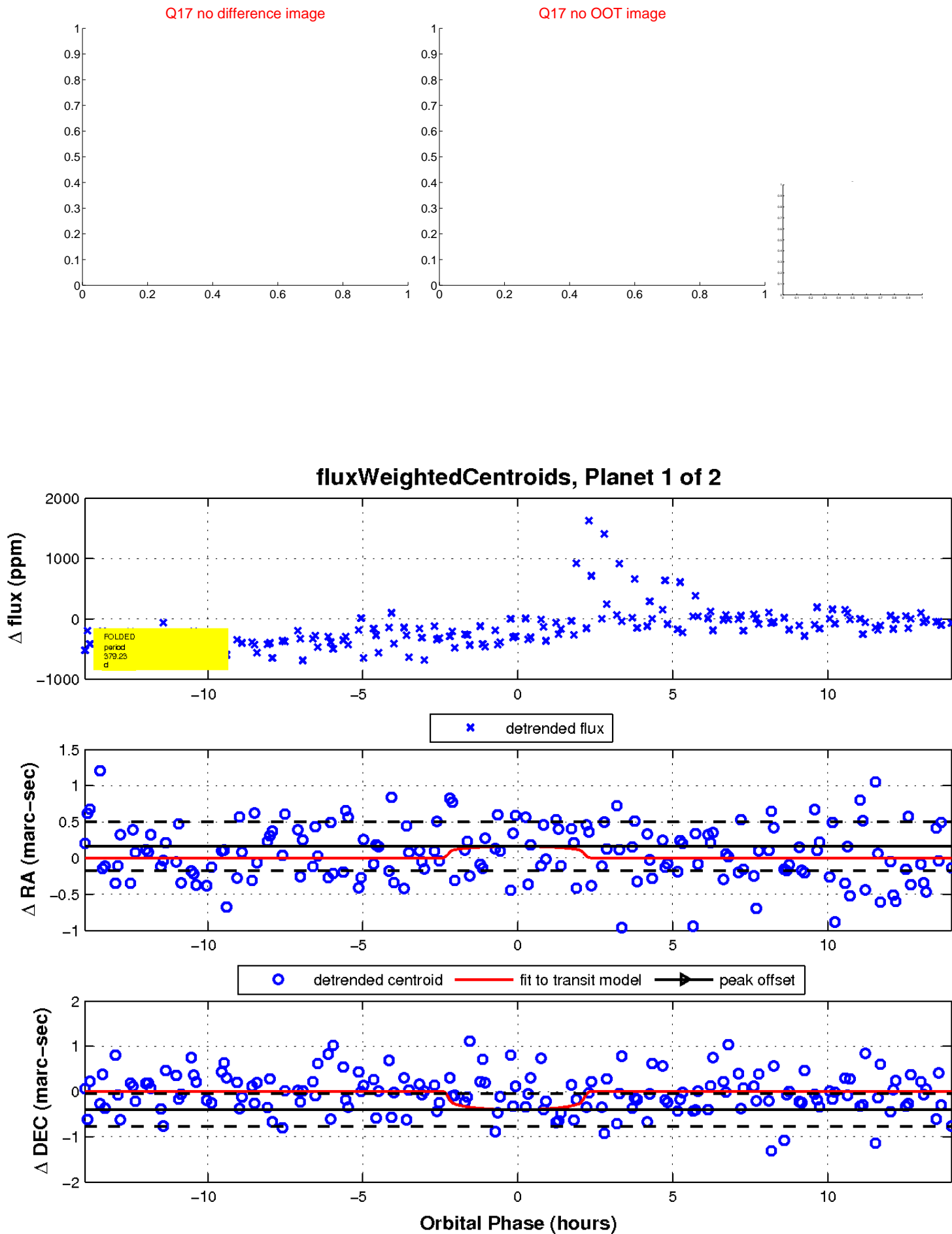
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



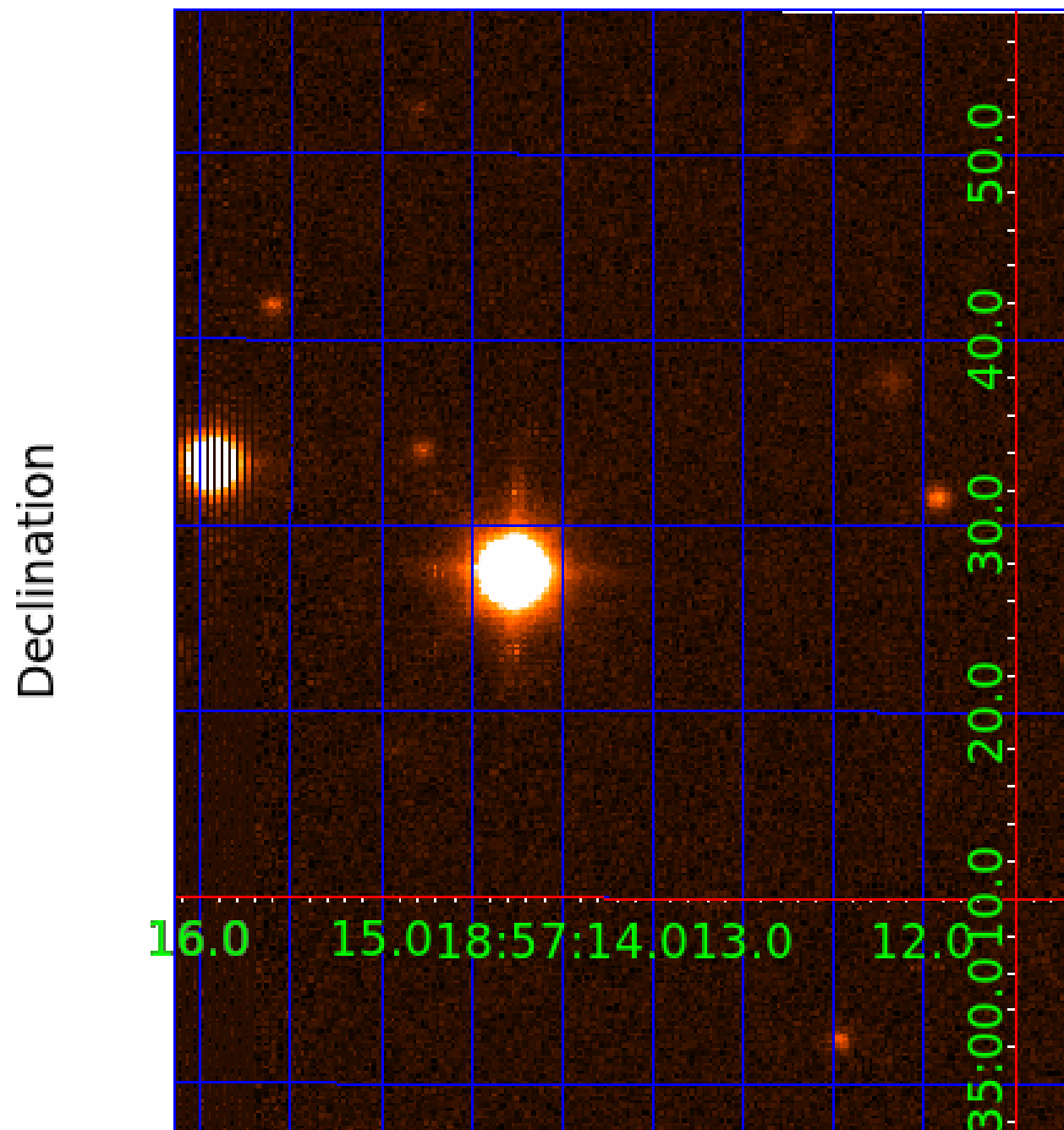
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011546965

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})
011546965-01	OBS	No	379.230695	472.100034	236.5	4.669	12.7	5.4	0.82	5226	1.45	0.48
011546965-02	OBS	No	202.204274	333.575896	298.3	2.176	10.1	7.0	0.82	5226	1.72	1.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011546965-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011546965-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

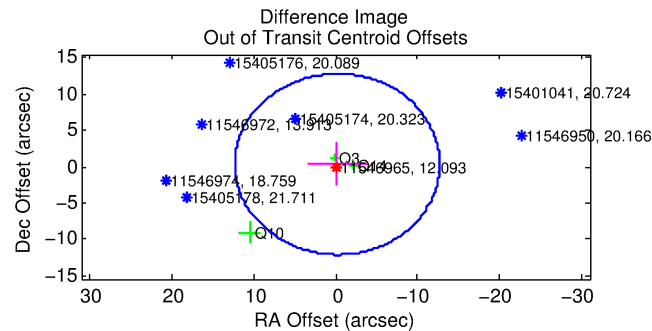
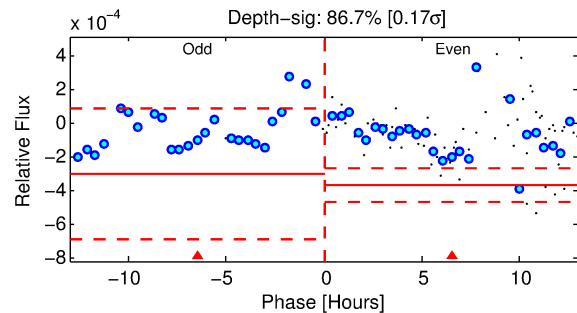
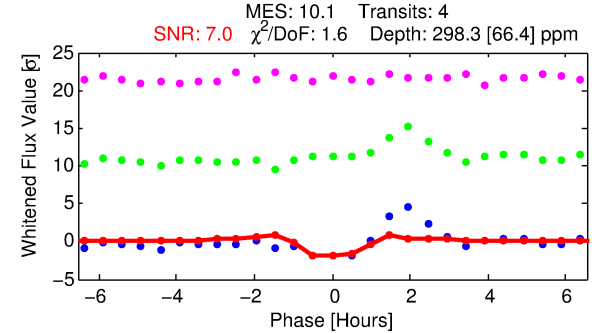
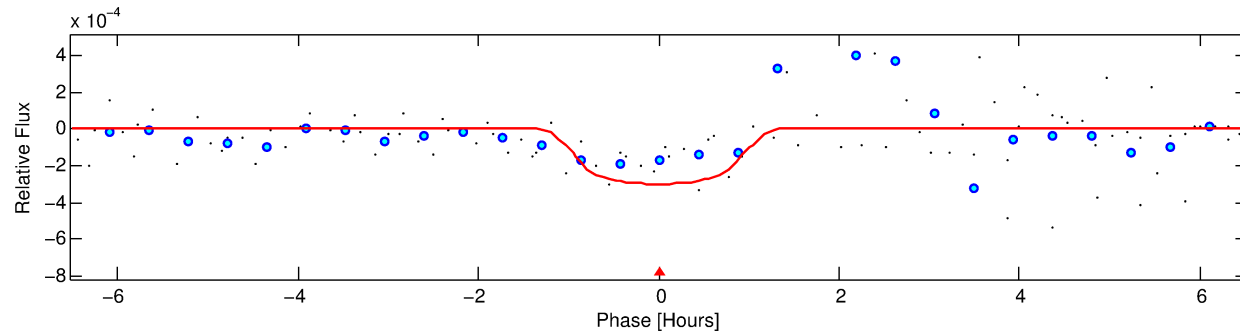
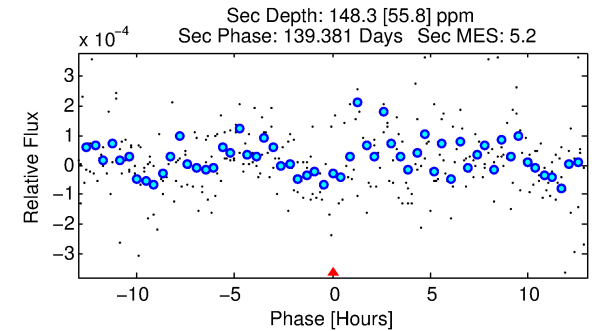
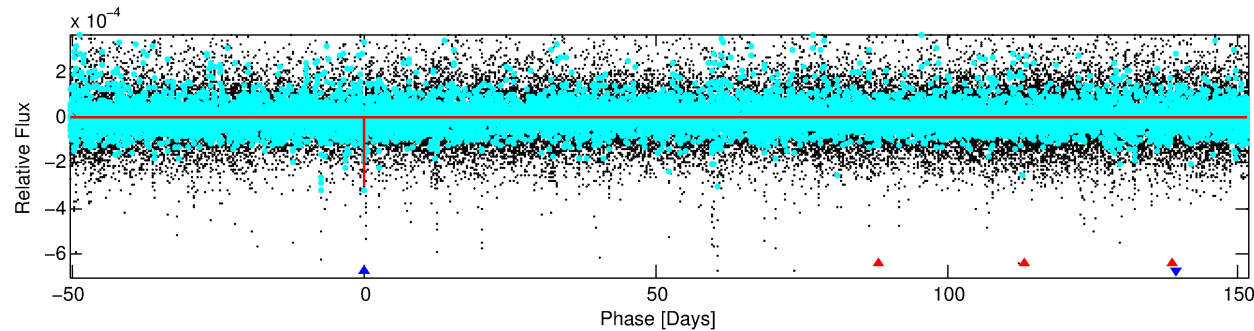
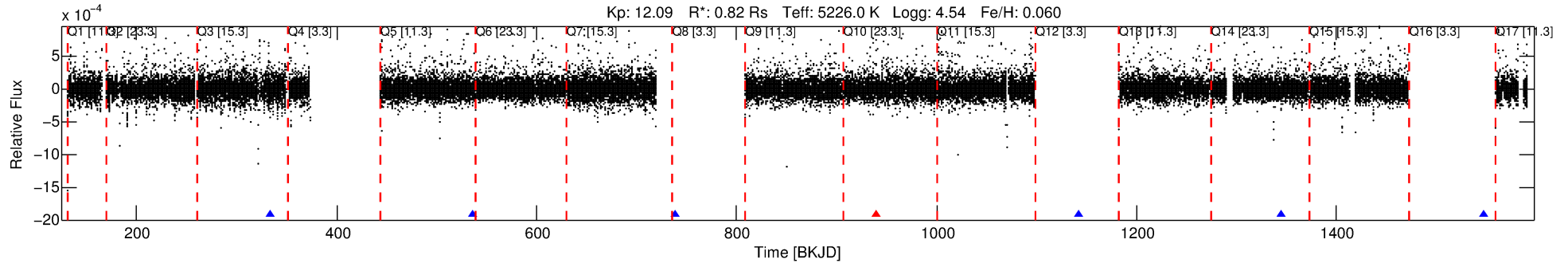
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011546965-02

No Significant Match Found

DV One-Page Summary

KIC: 11546965 Candidate: 2 of 2 Period: 202.204 d



DV Fit Results:

Period = 202.20427 [0.00214] d
Epoch = 333.5759 [0.0072] BKJD
Rp/R* = 0.0191 [0.0194]
a/R* = 344.63 [1426.44]
b = 0.90 [0.93]
Seff = 1.11 [0.25]
Teff = 262 [15] K
Rp = 1.72 [1.76] Re
a = 0.6395 [0.0809] AU
Ag = 11309.37 [23444.17] [0.48 σ]
Teffp = 4173 [2159] K [1.81 σ]

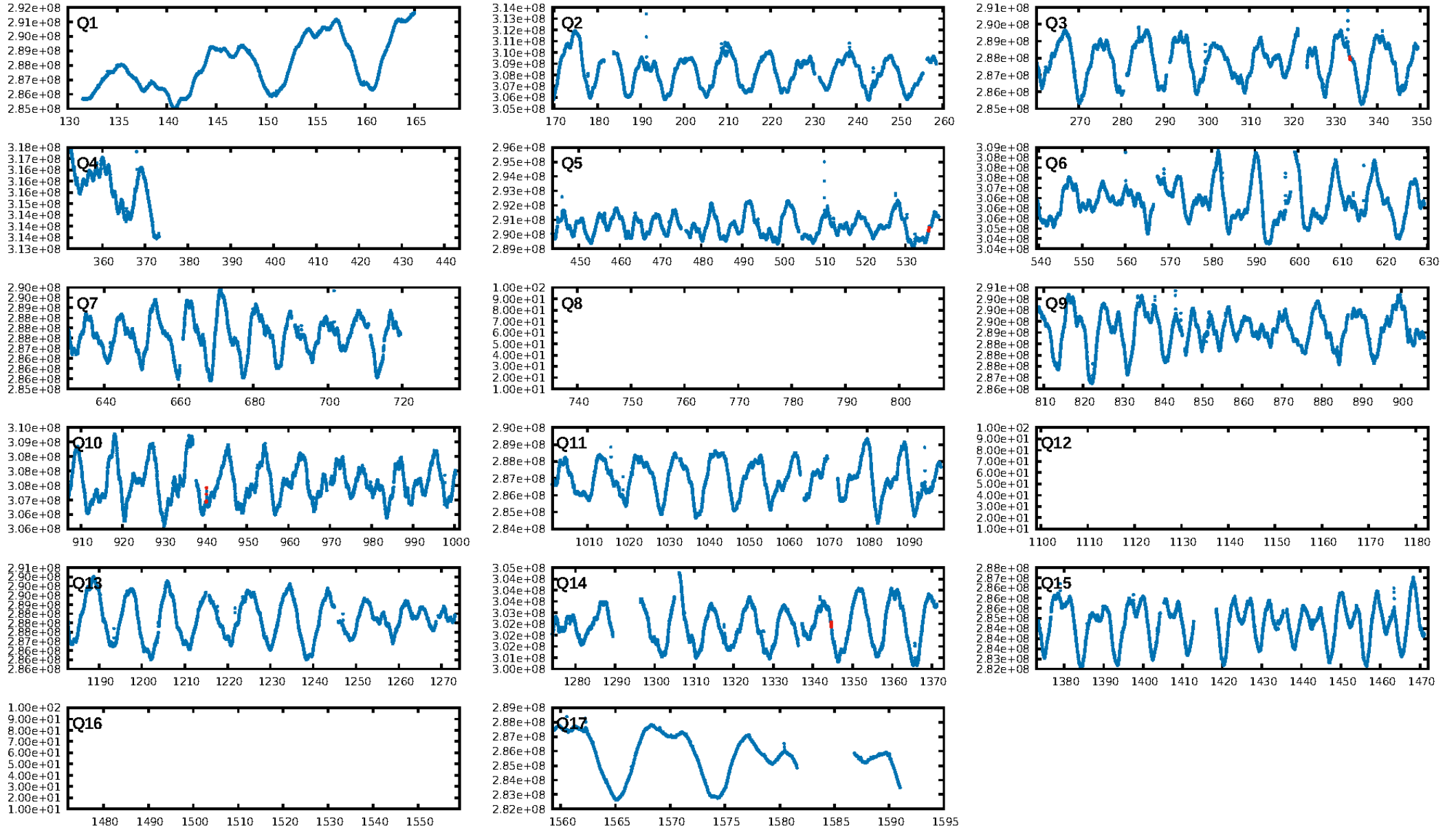
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [824.74 σ]
ModelChiSquare2-sig: 10.1%
ModelChiSquareGof-sig: 53.7%
Bootstrap-pfa: 5.21e-11
RollingBand-fgt: 0.75 [3/4]
GhostDiagnostic-chr: -6.054
Centroid-sig: 26.8%
Centroid-so: 1.344 arcsec [1.02 σ]
OotOffset-rm: 0.387 arcsec [0.09 σ]
KicOffset-rm: 0.382 arcsec [0.10 σ]
OotOffset-st: 2/1/0/0 [3]
KicOffset-st: 2/1/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [4/4]

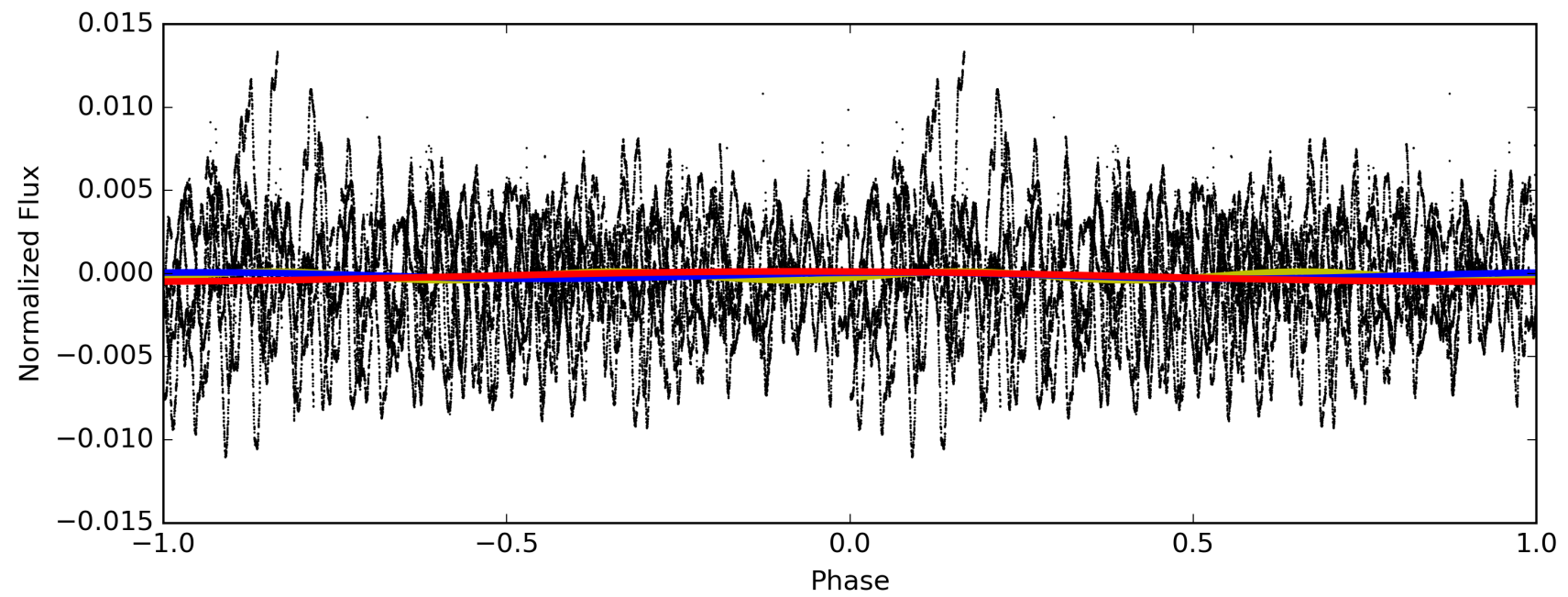
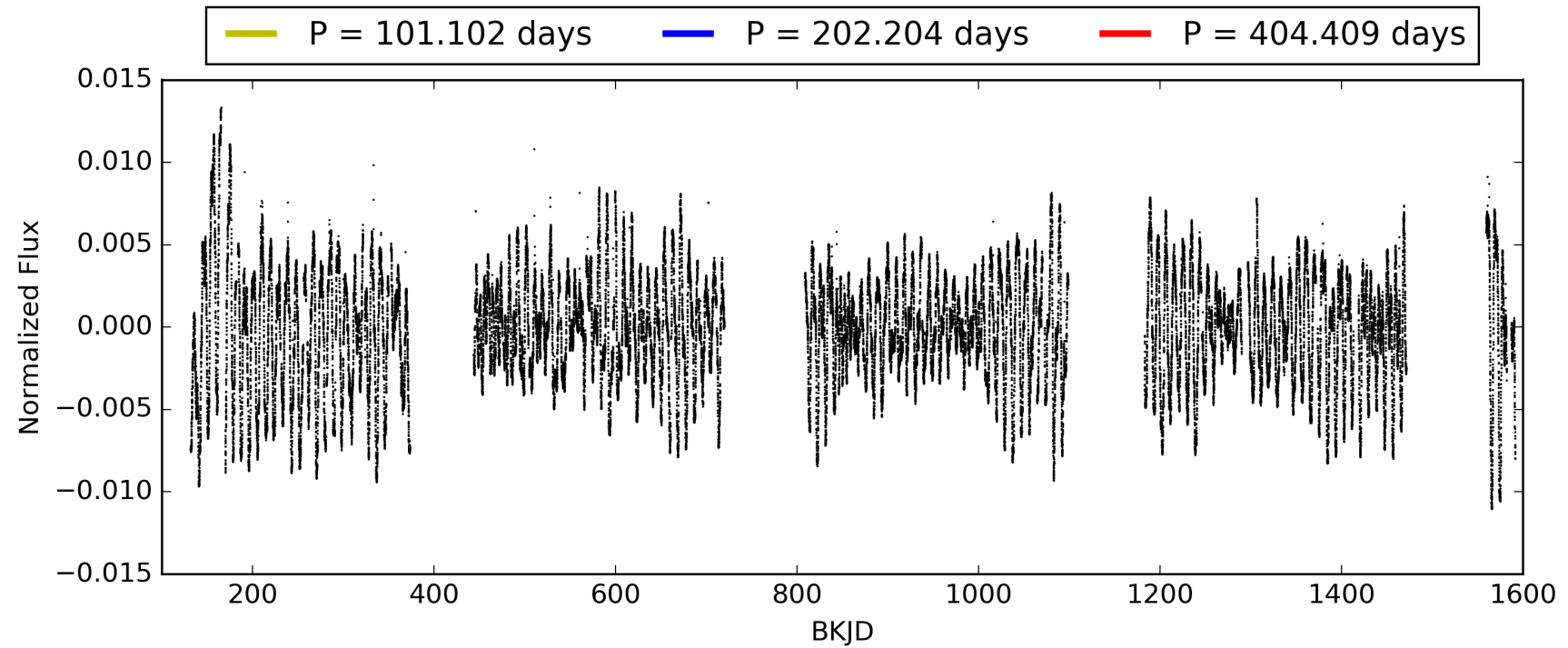
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:42:47 Z

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

TCE 011546965-02, PDC Light Curves

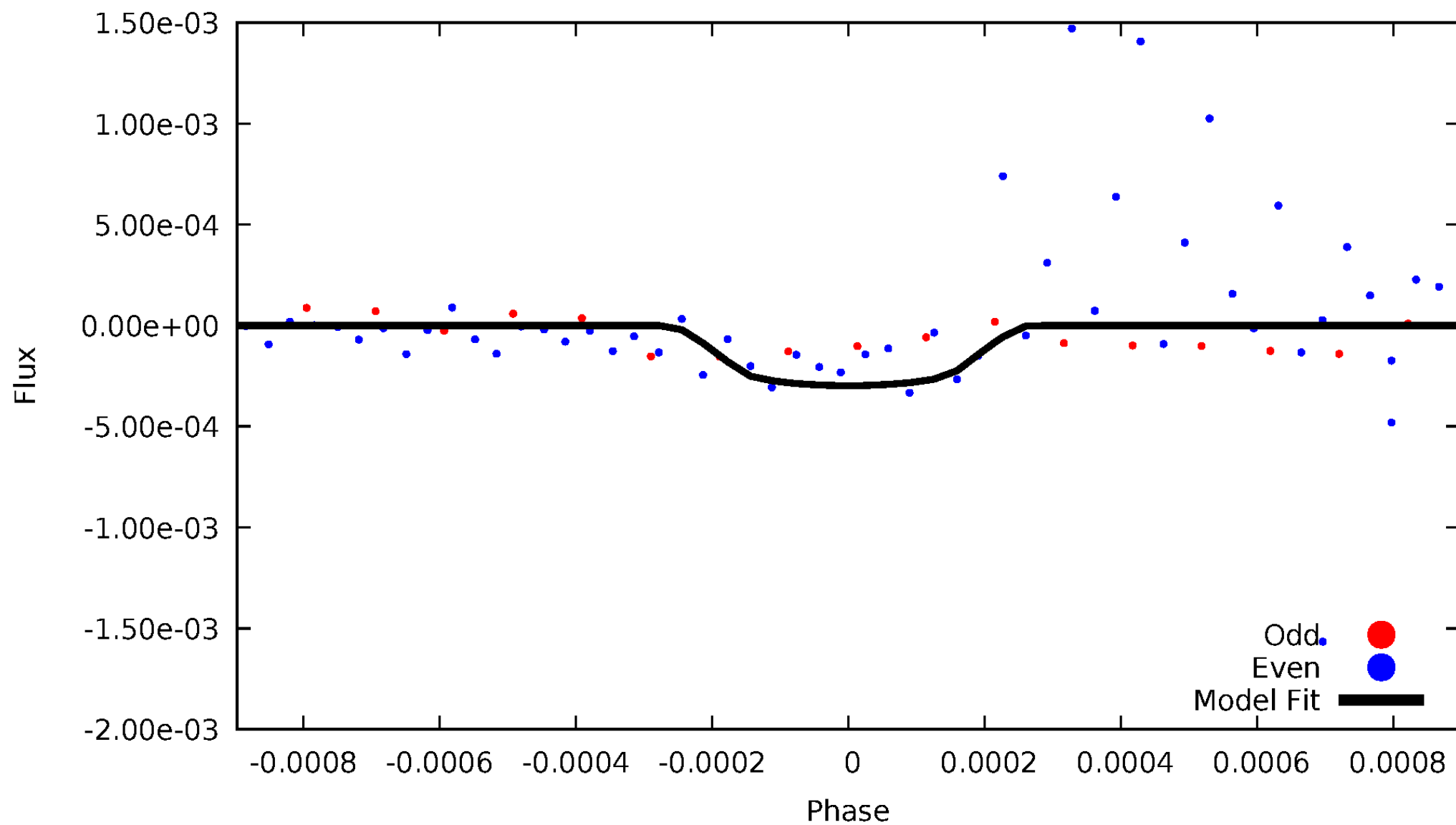


TCE 011546965-02



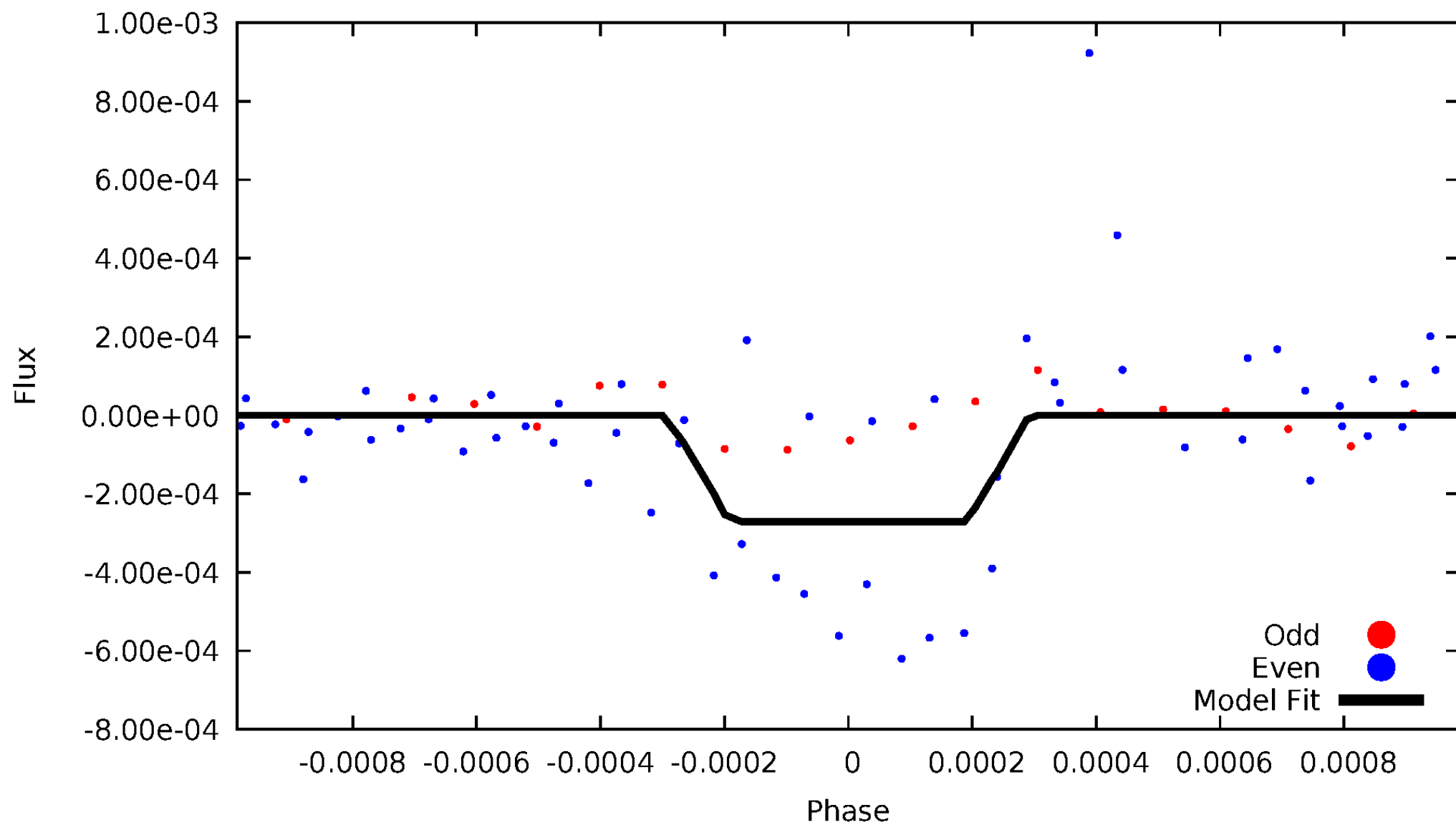
DV Odd/Even

TCE 011546965-02



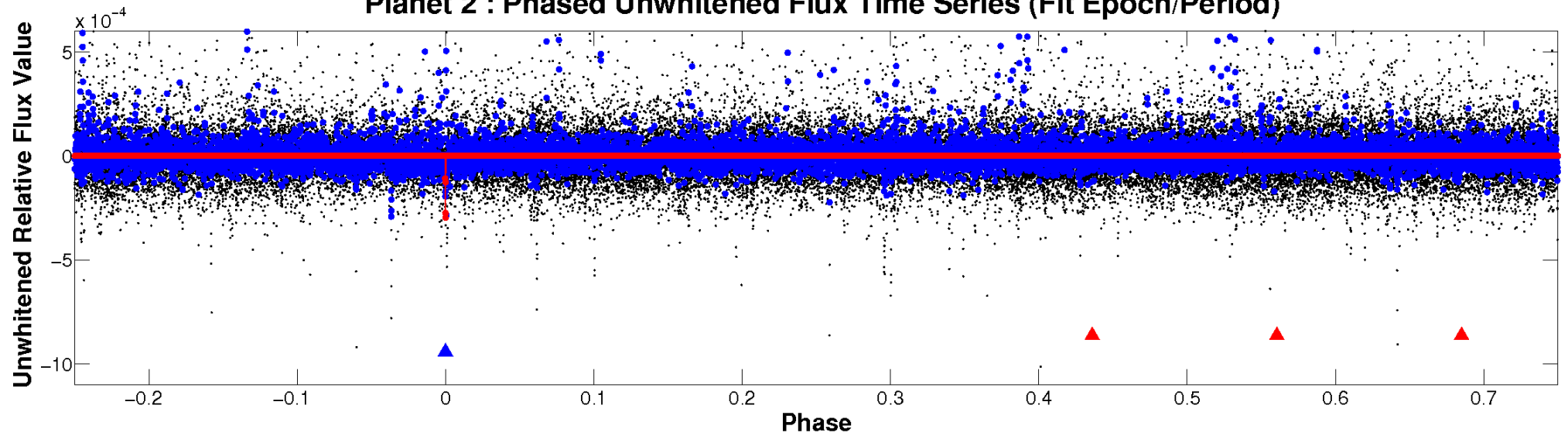
ALT Odd/Even

TCE 011546965-02

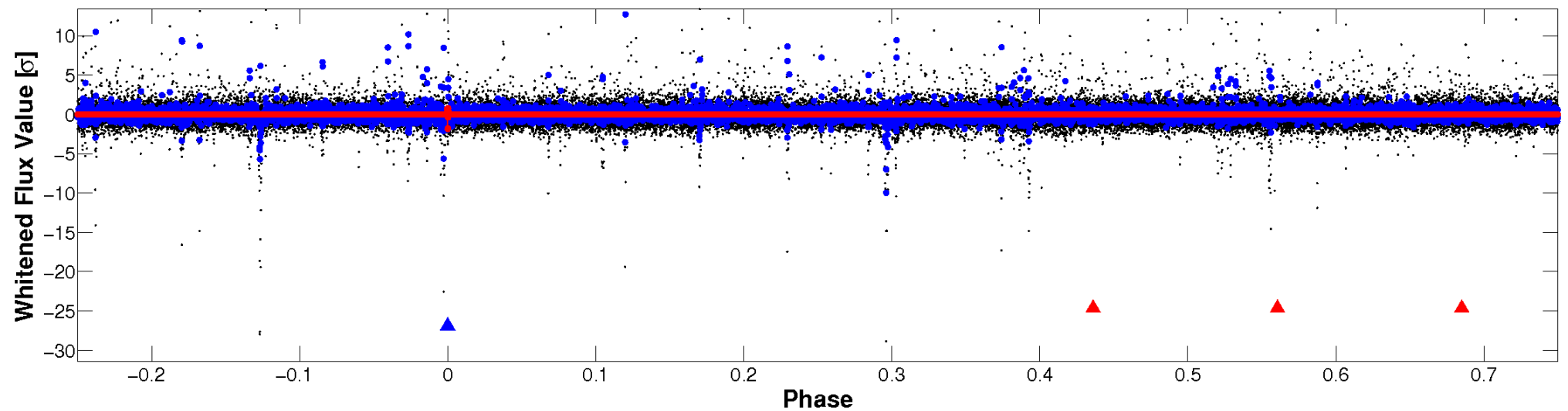


Non-Whitened Vs. Whitened Light Curve

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

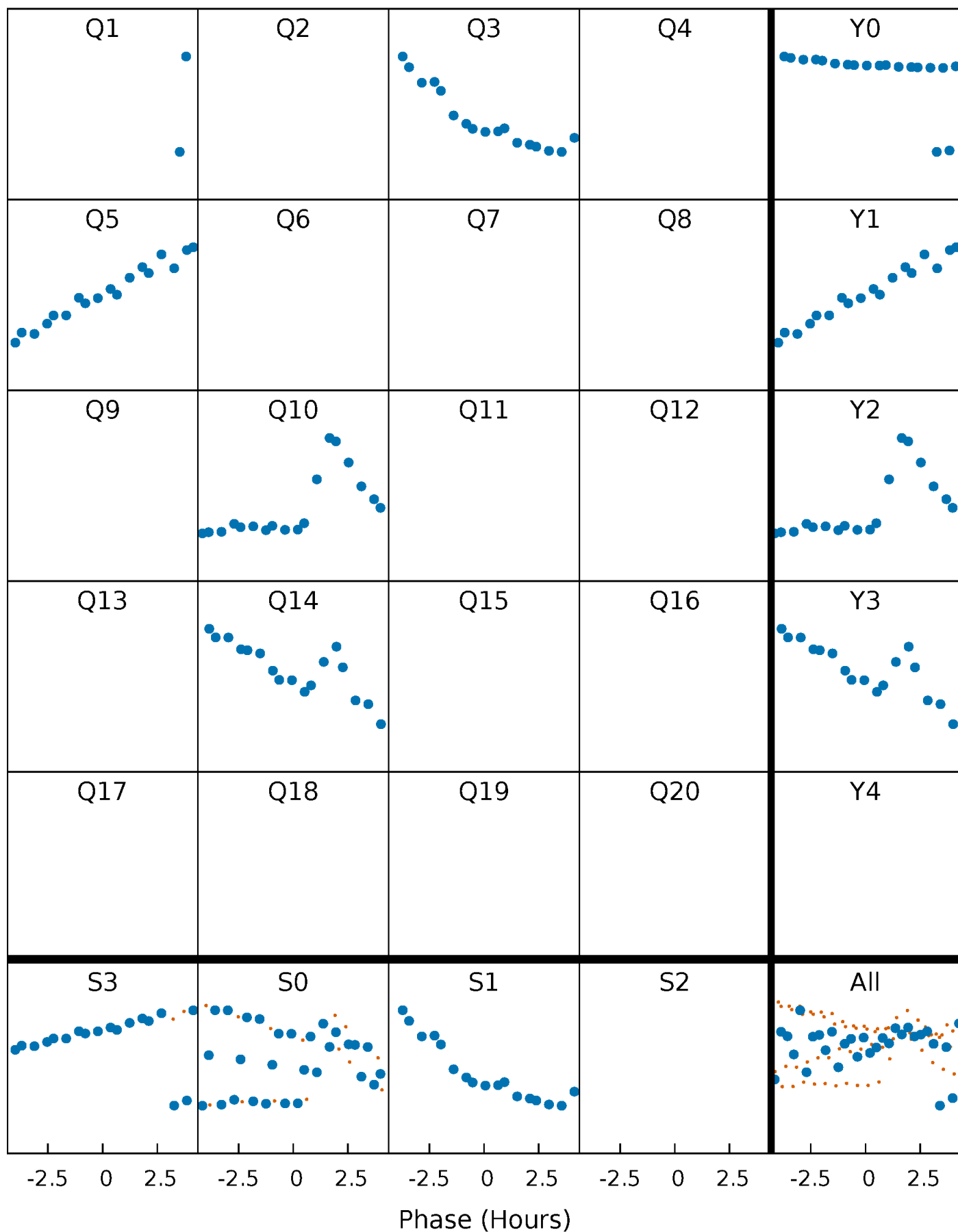


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



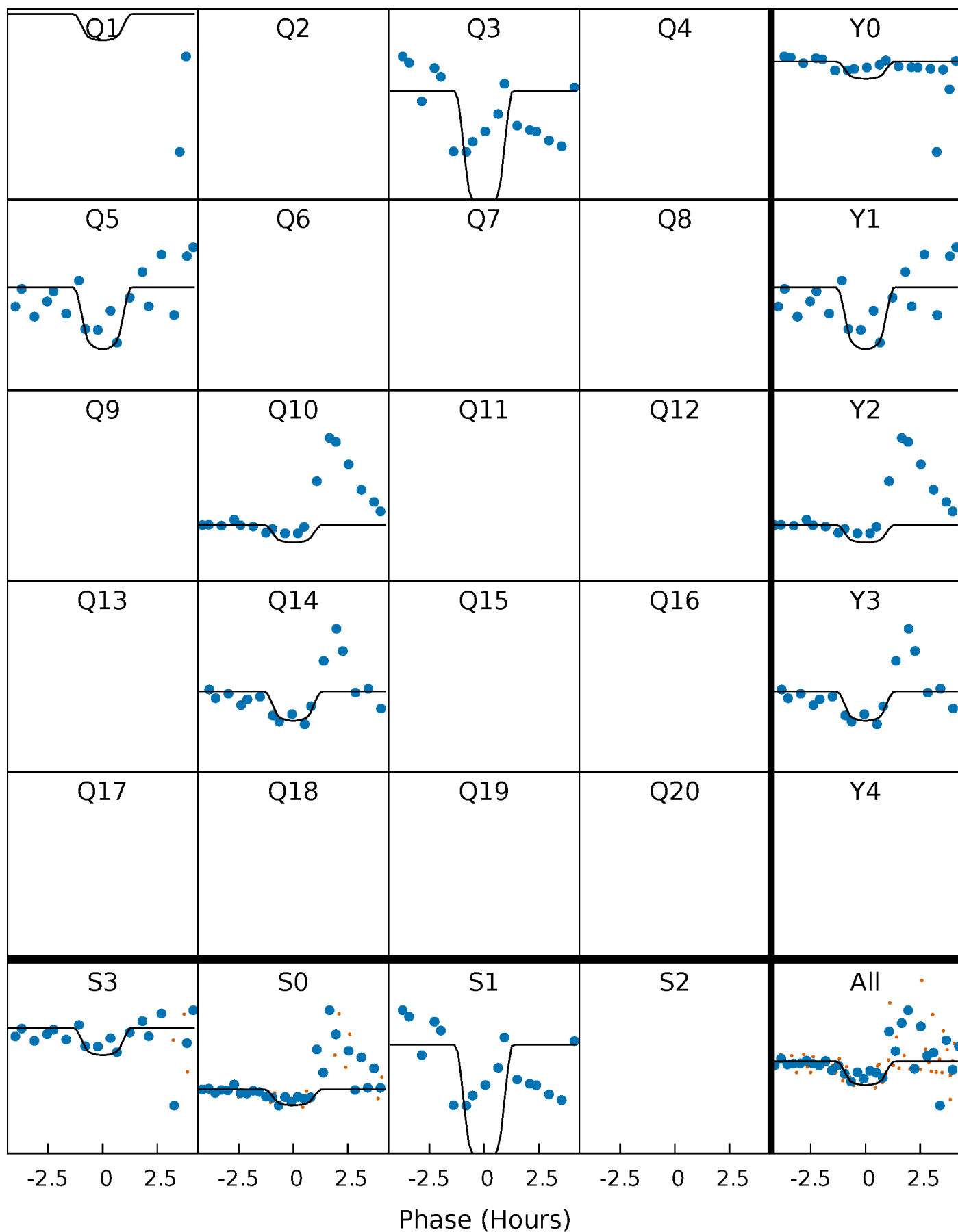
PDC Quarter-Phased Transit Curves

TCE 011546965-02 P=202.204274 Days $T_0=333.575896$ (BKJD)



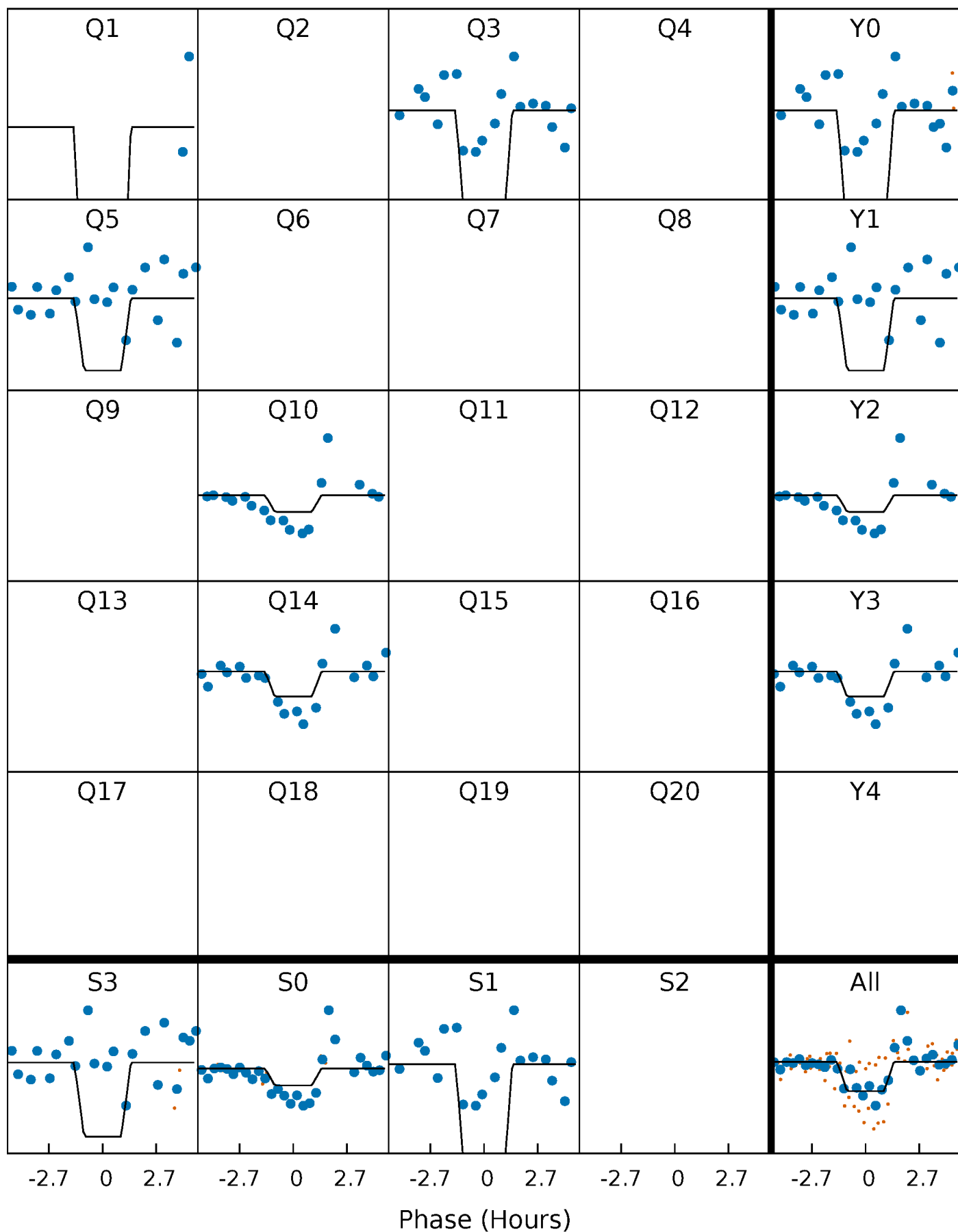
DV Quarter-Phased Transit Curves

TCE 011546965-02 P=202.204274 Days $T_0=333.575896$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

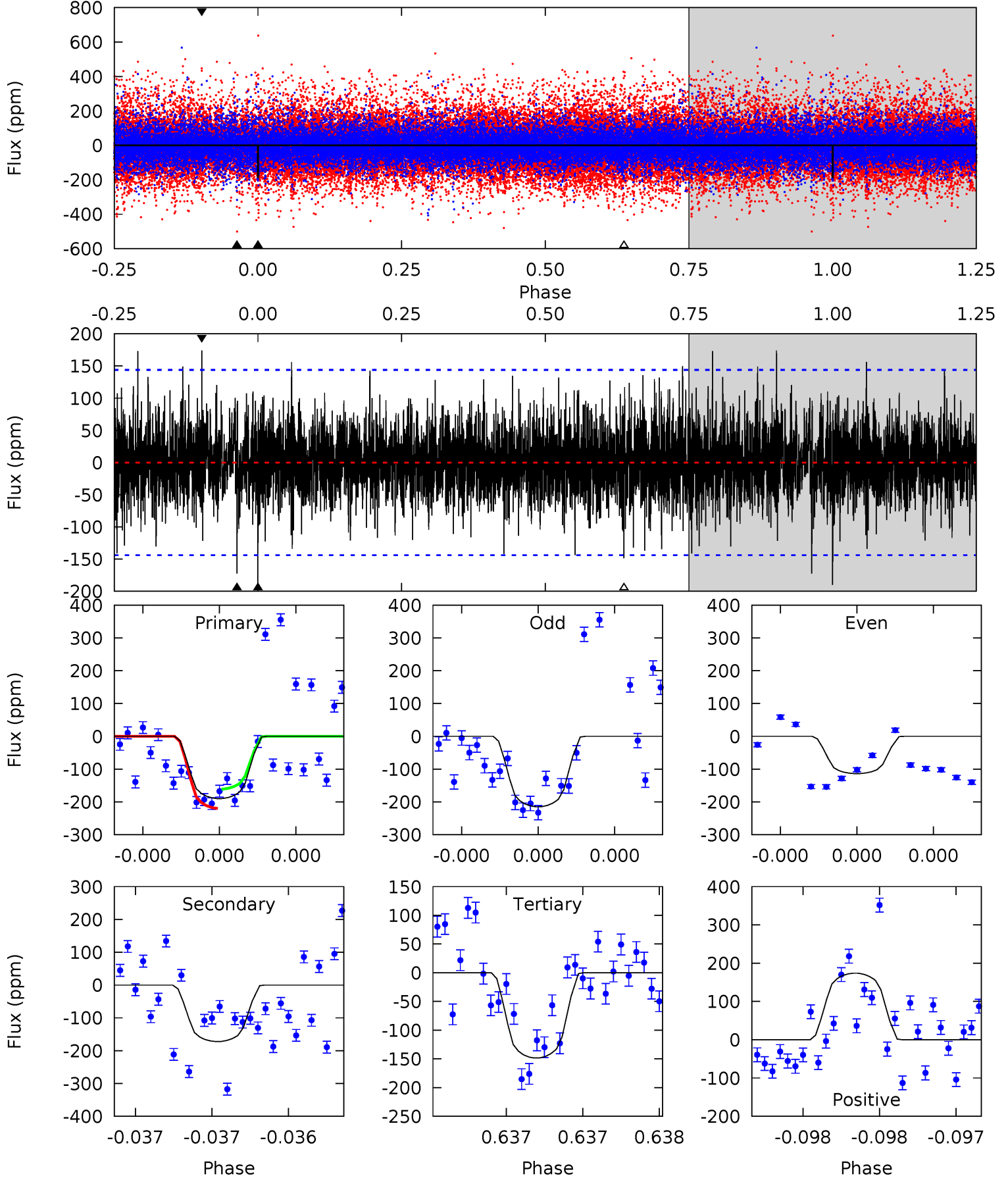
TCE 011546965-02 P=202.206273 Days $T_0=333.557576$ (BKJD)



DV Model-Shift Uniqueness Test

011546965-02, P = 202.204274 Days, E = 131.371622 Days

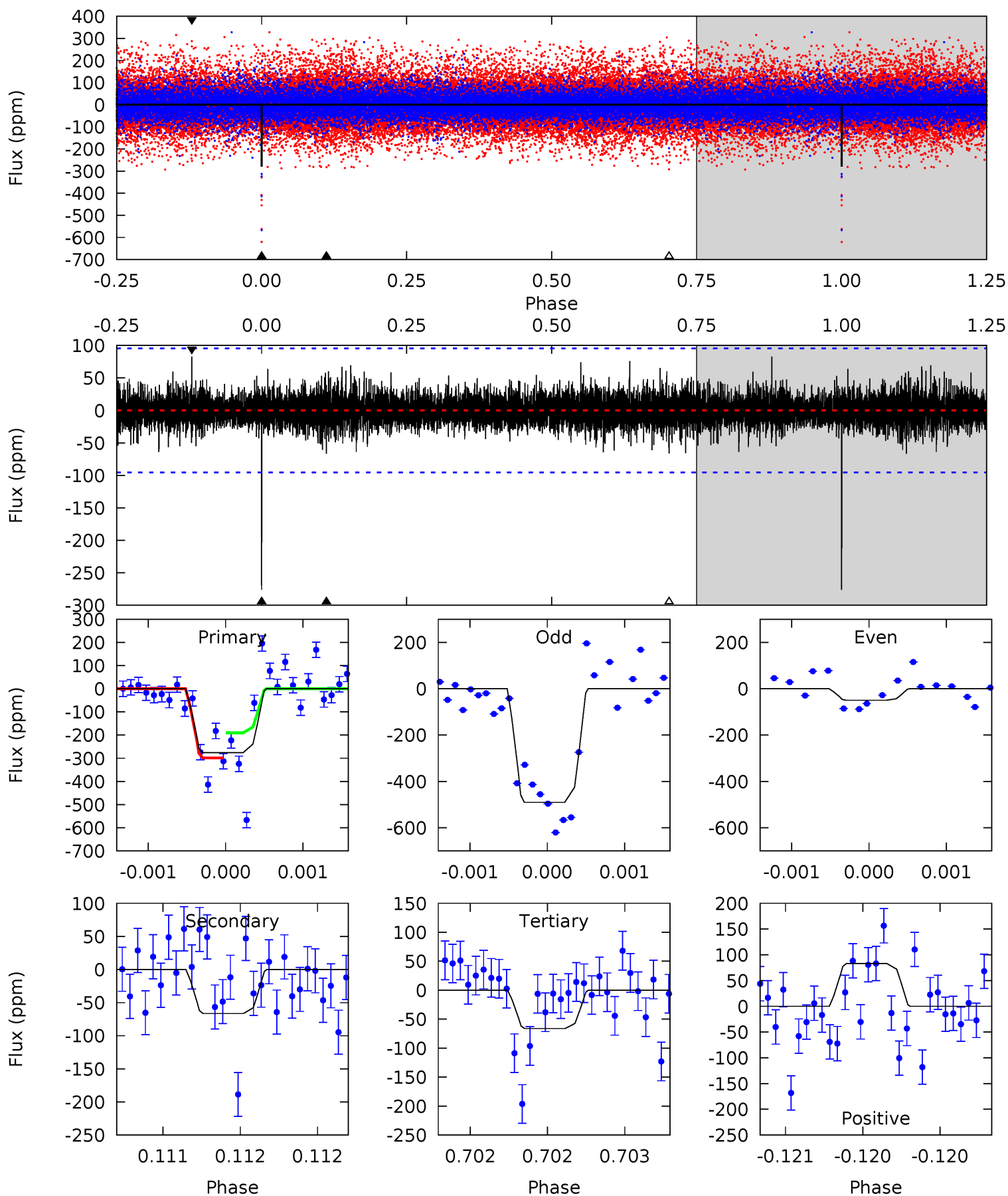
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.37	6.68	5.76	6.75	5.58	3.50	1.51	1.61	0.62	0.92	-0.07	1.55	1.09	0.48	1.14



Alt Model-Shift Uniqueness Test

011546965-02, P = 202.206273 Days, E = 131.351303 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	3.86	3.84	4.83	5.55	3.44	0.96	12.2	11.2	0.02	-0.96	11.2	1.00	0.23	3.07



Stellar Parameters For KIC 011546965

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5226^{+184}_{-166}	$4.537^{+0.056}_{-0.096}$	$0.060^{+0.250}_{-0.300}$	$0.824^{+0.127}_{-0.074}$	$0.851^{+0.080}_{-0.080}$	$2.145^{+0.485}_{-0.634}$
	+4%/-3%	+1%/-2%	+417%/-500%	+15%/-9%	+9%/-9%	+23%/-30%
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 011546965-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-172 ± 26	$2.13^{+1.63}_{-1.36}$	368^{+18}_{-14}	4146^{+2269}_{-759}	8244^{+54963}_{-5570}
Alt.	-66 ± 17	$1.99^{+1.57}_{-1.21}$	368^{+18}_{-15}	3618^{+1587}_{-611}	3805^{+22722}_{-2698}

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 $A_{obs} \gg 1.0$

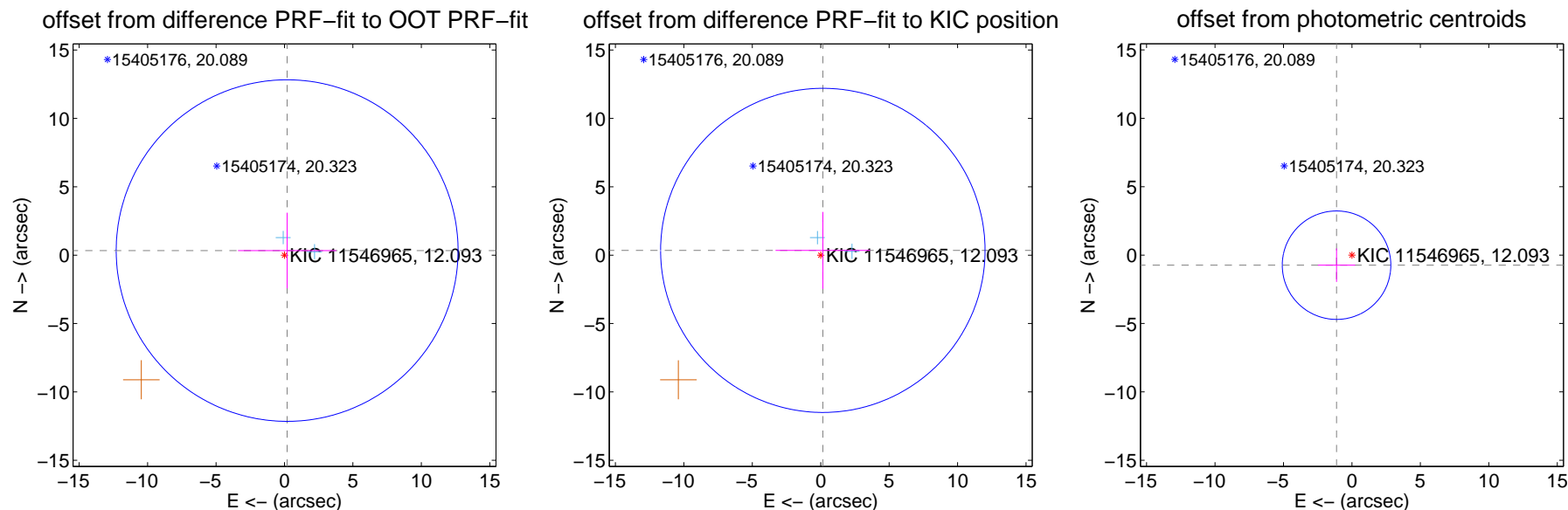
DV Centroid Data

Supplemental centroid analysis for 011546965-02. Kepler magnitude: 12.09. Transit SNR 6.96

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.387 ± 4.162	0.09	-0.195 ± 3.590	0.335 ± 2.766
PRF-fit source offset from KIC position	0.382 ± 3.950	0.10	-0.154 ± 3.455	0.349 ± 2.816
photometric centroid source offset	1.34 ± 1.32	1.02	1.12 ± 1.36	-0.74 ± 1.23



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.

Q1 no difference image



Q1 no OOT image



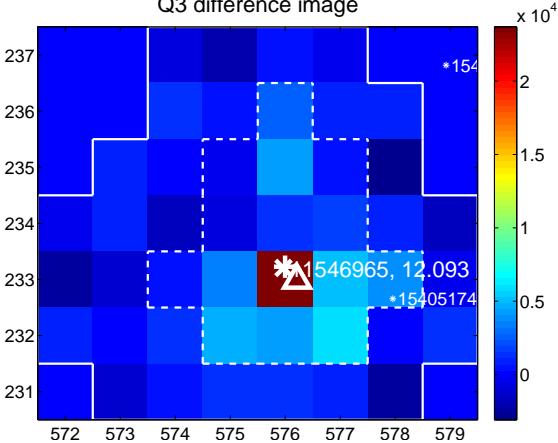
Q2 no difference image



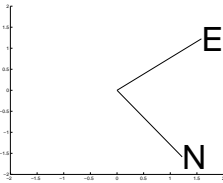
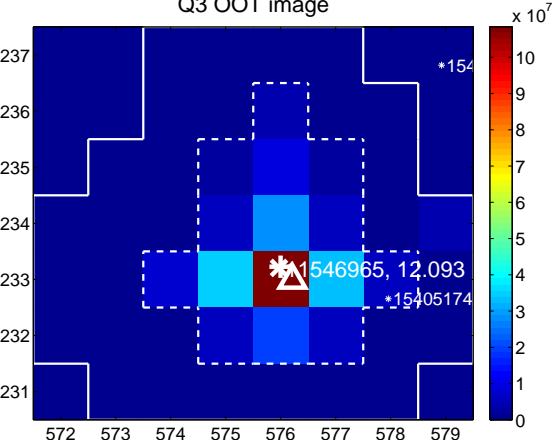
Q2 no OOT image



Q3 difference image



Q3 OOT image



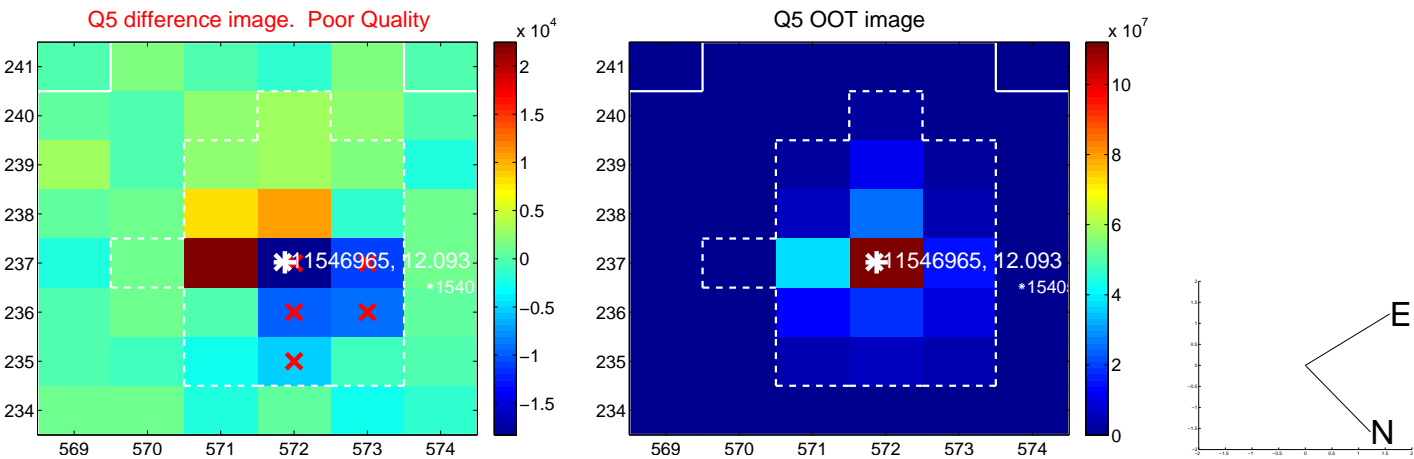
Q4 no difference image



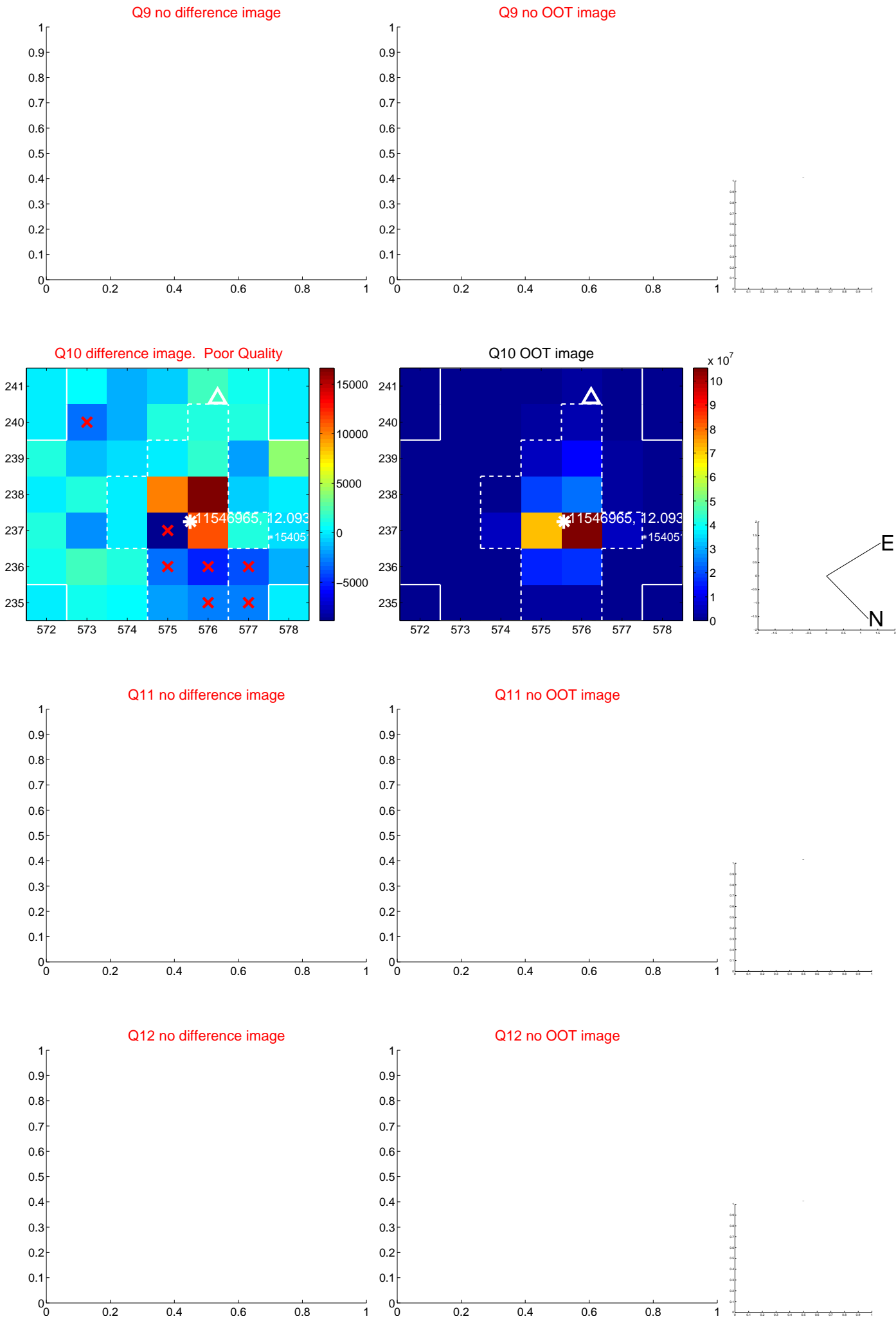
Q4 no OOT image



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



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



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

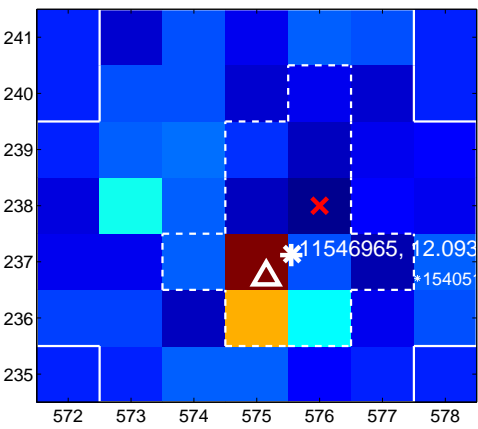
Q13 no difference image



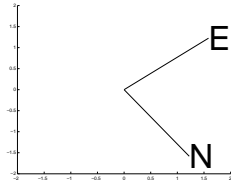
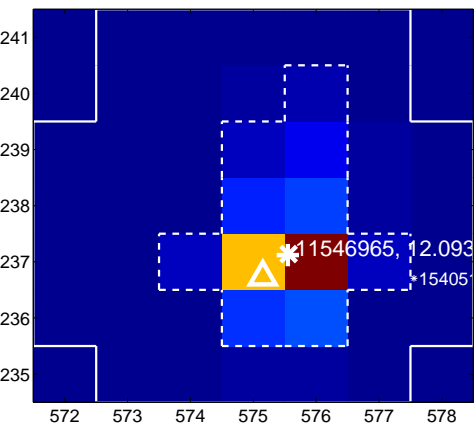
Q13 no OOT image



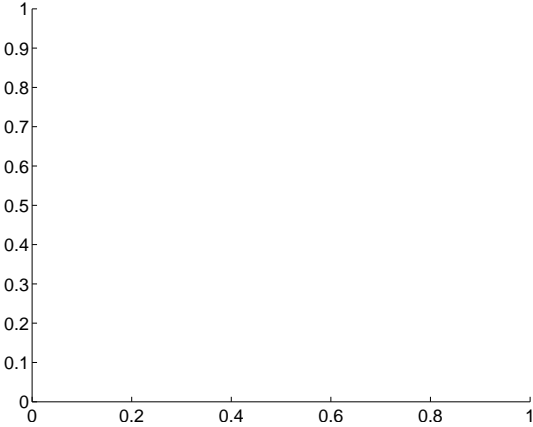
Q14 difference image



Q14 OOT image



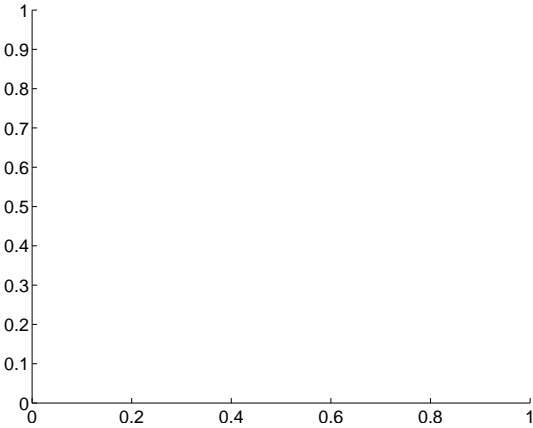
Q15 no difference image



Q15 no OOT image



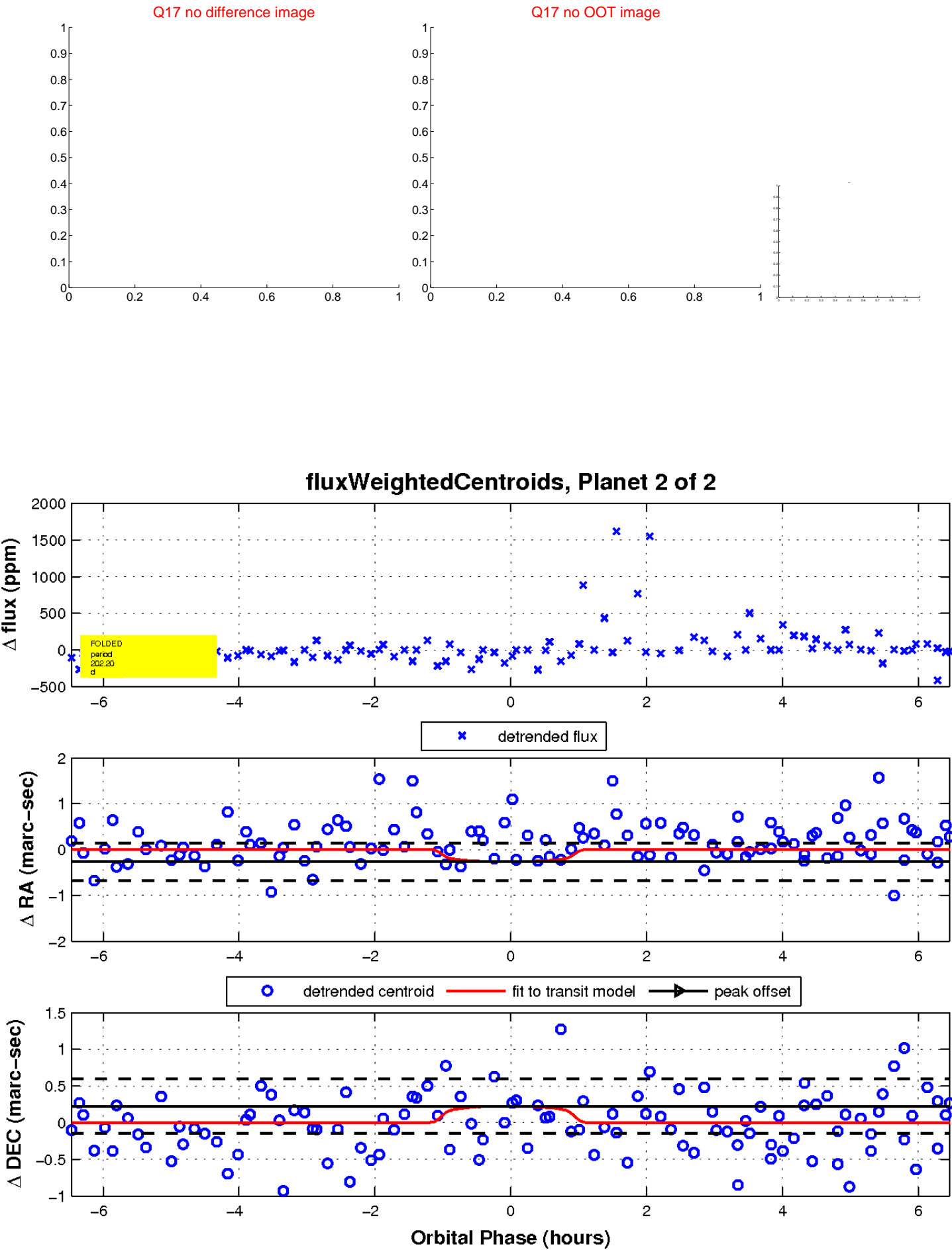
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

