

KIC 011717716

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})
011717716-01	OBS	No	399.547699	373.675676	262.3	15.723	9.8	6.2	0.62	4178	1.09	0.13
011717716-02	OBS	No	482.597367	526.167866	356.5	5.291	9.9	8.5	0.62	4178	1.35	0.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011717716-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011717716-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—ALL_TRANS_CHASES—MOD_POS_DV—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.

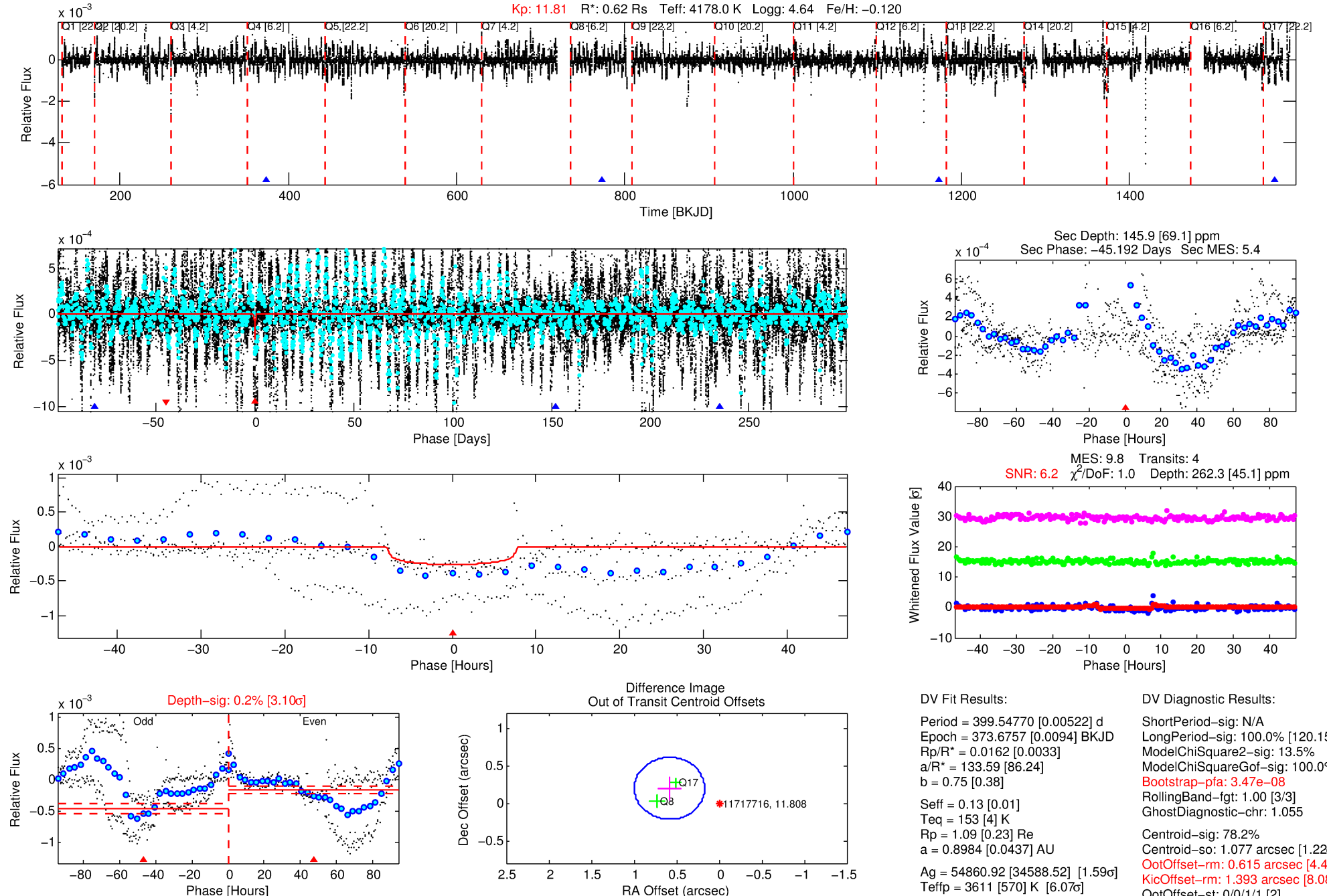
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011717716-01

No Significant Match Found

DV One-Page Summary

KIC: 11717716 Candidate: 1 of 2 Period: 399.548 d



DV Fit Results:

Period = 399.54770 [0.00522] d
Epoch = 373.6757 [0.0094] BKJD
Rp/R* = 0.0162 [0.0033]
a/R* = 133.59 [86.24]
b = 0.75 [0.38]
Seff = 0.13 [0.01]
Teq = 153 [4] K
Rp = 1.09 [0.23] Re
a = 0.8984 [0.0437] AU
Ag = 54860.92 [34588.52] [1.59σ]
Teffp = 3611 [570] K [6.07σ]

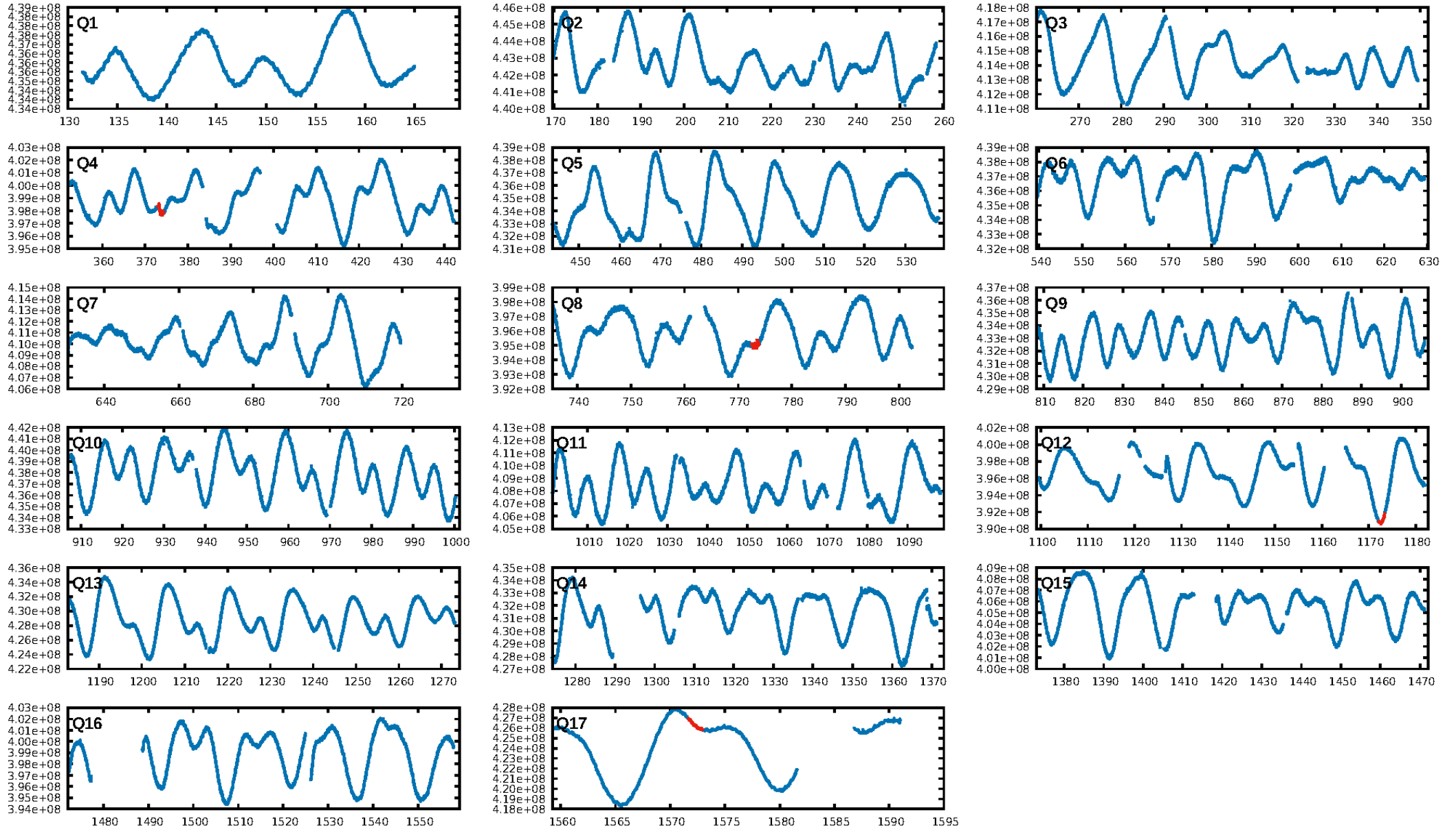
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [120.15σ]
ModelChiSquare2-sig: 13.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.47e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.055
Centroid-sig: 78.2%
Centroid-so: 1.077 arcsec [1.22σ]
OotOffset-rm: 0.615 arcsec [4.48σ]
KicOffset-rm: 1.393 arcsec [8.08σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

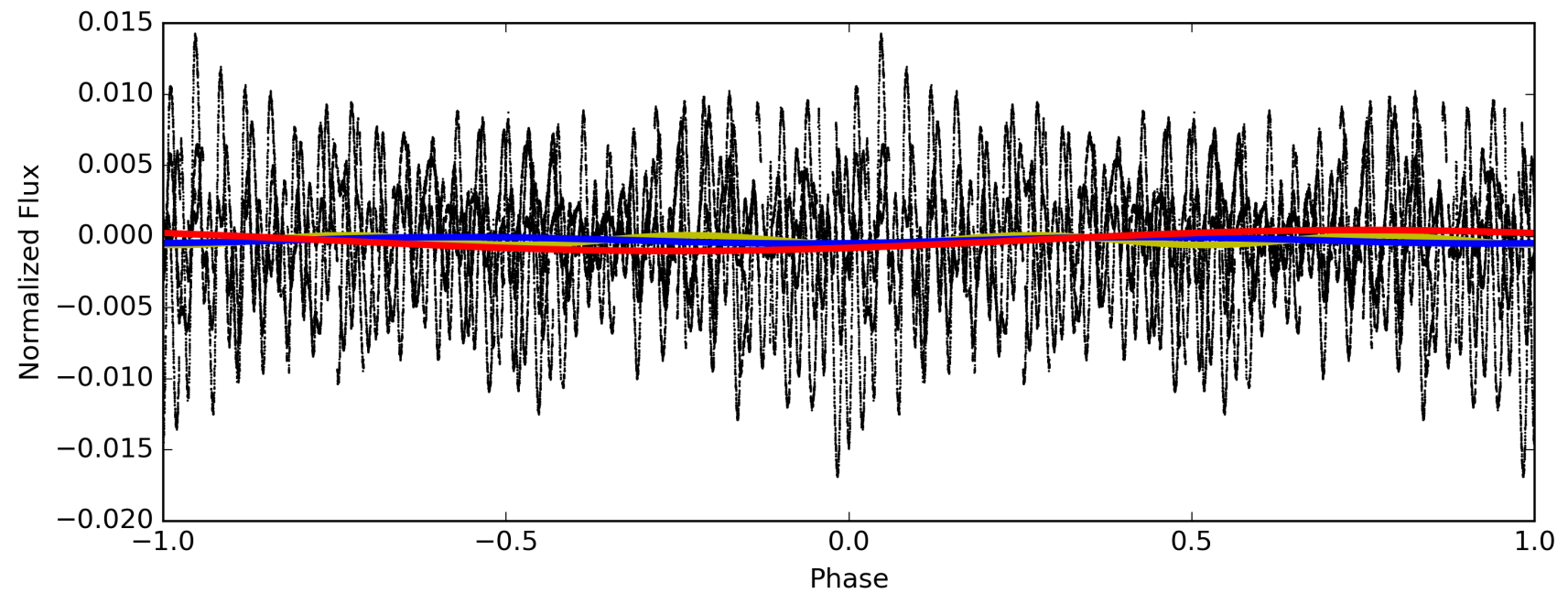
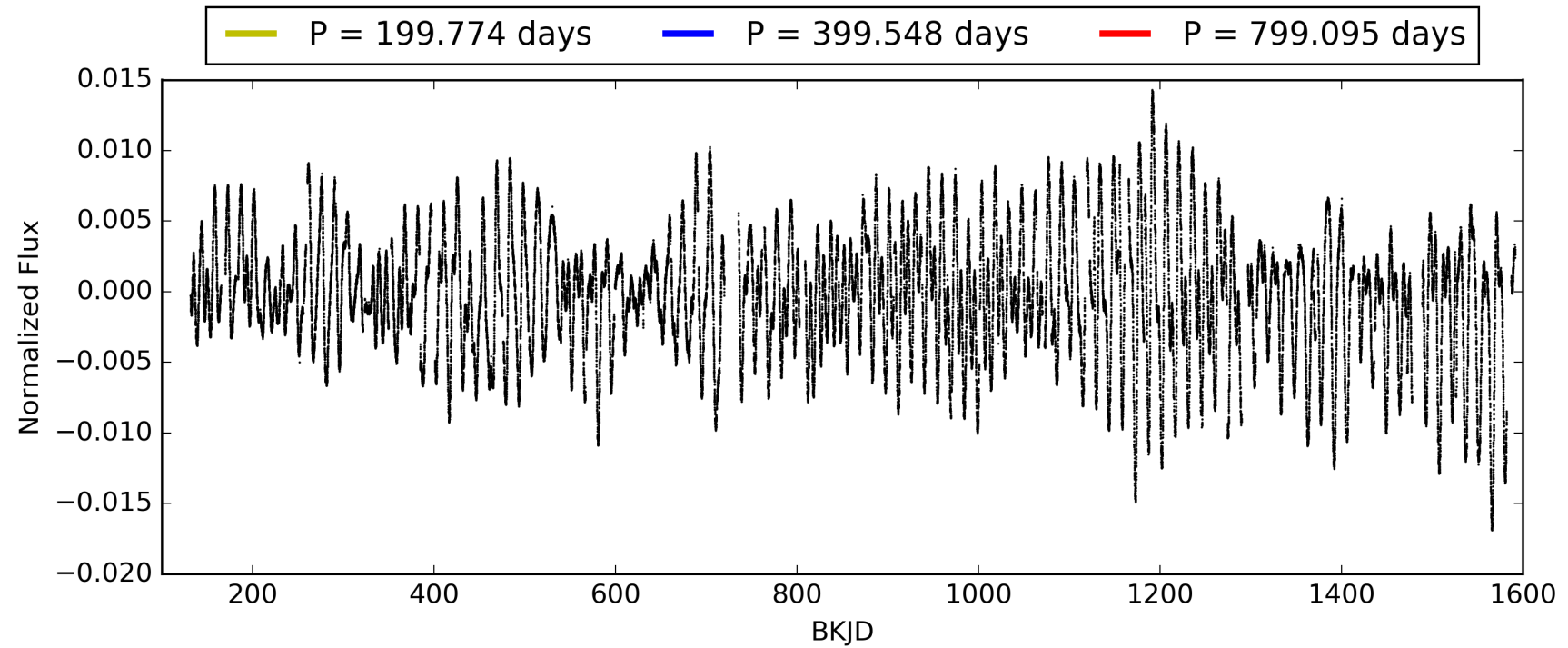
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:44:52 Z

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

TCE 011717716-01, PDC Light Curves

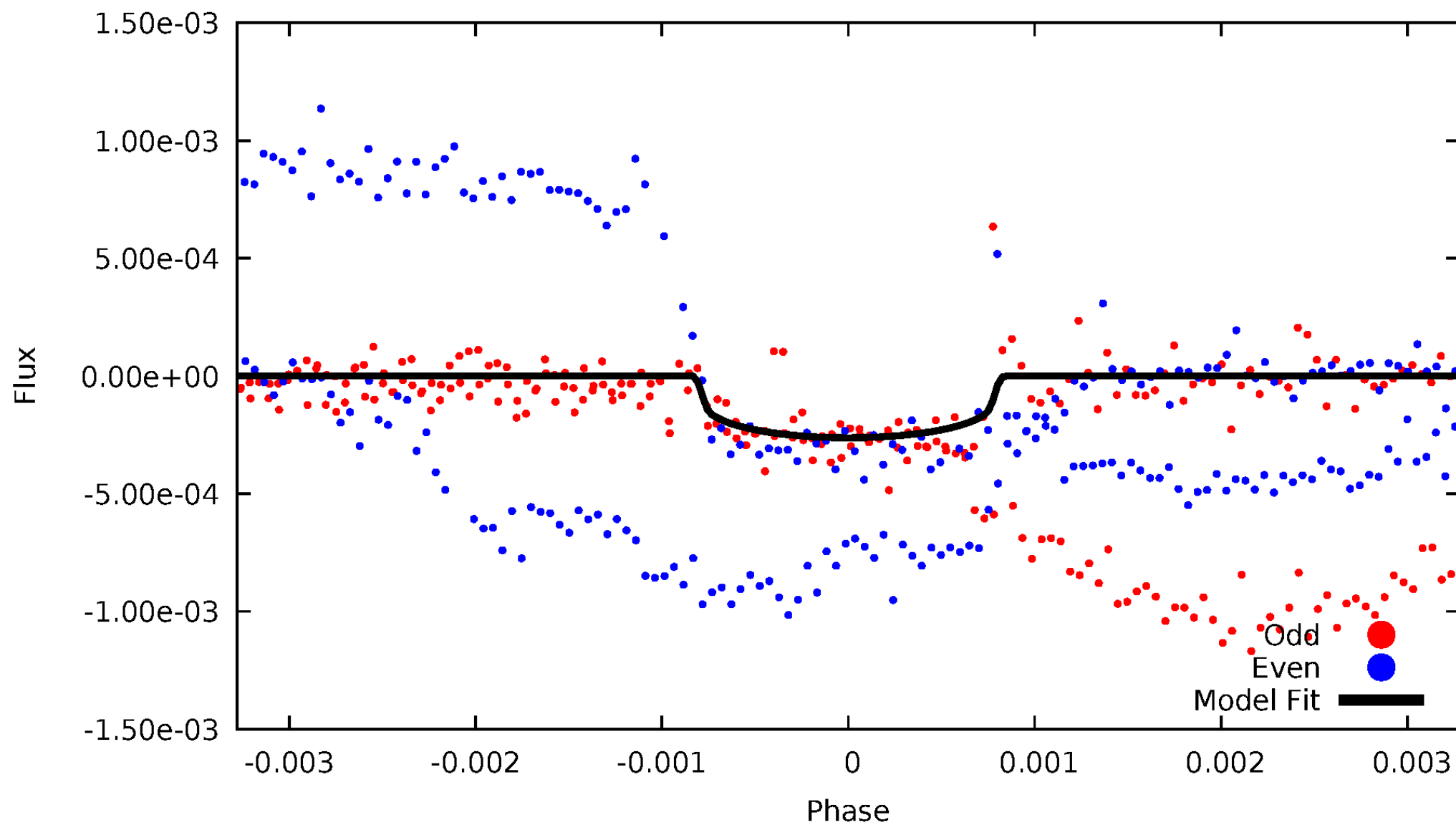


TCE 011717716-01



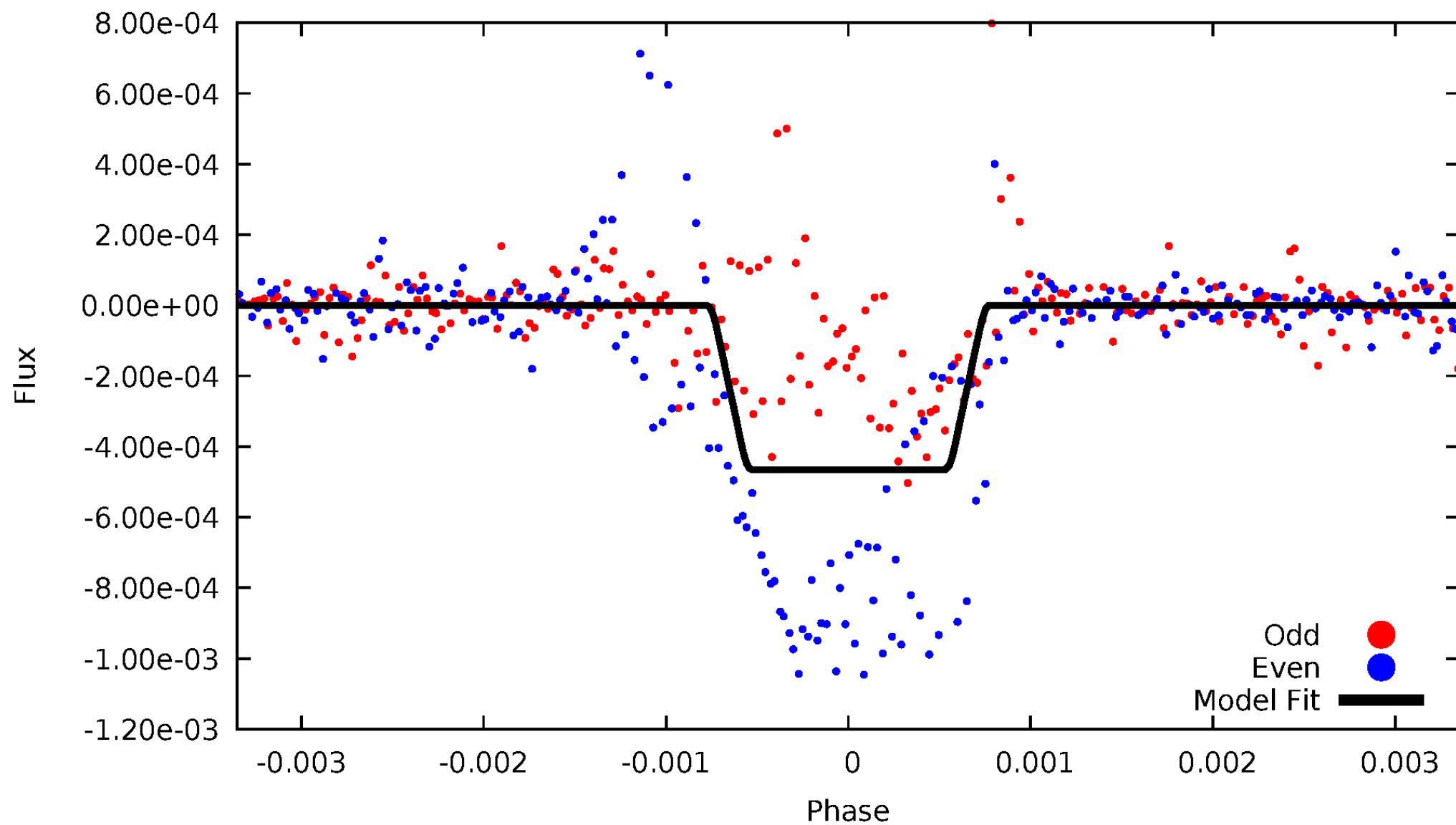
DV Odd/Even

TCE 011717716-01



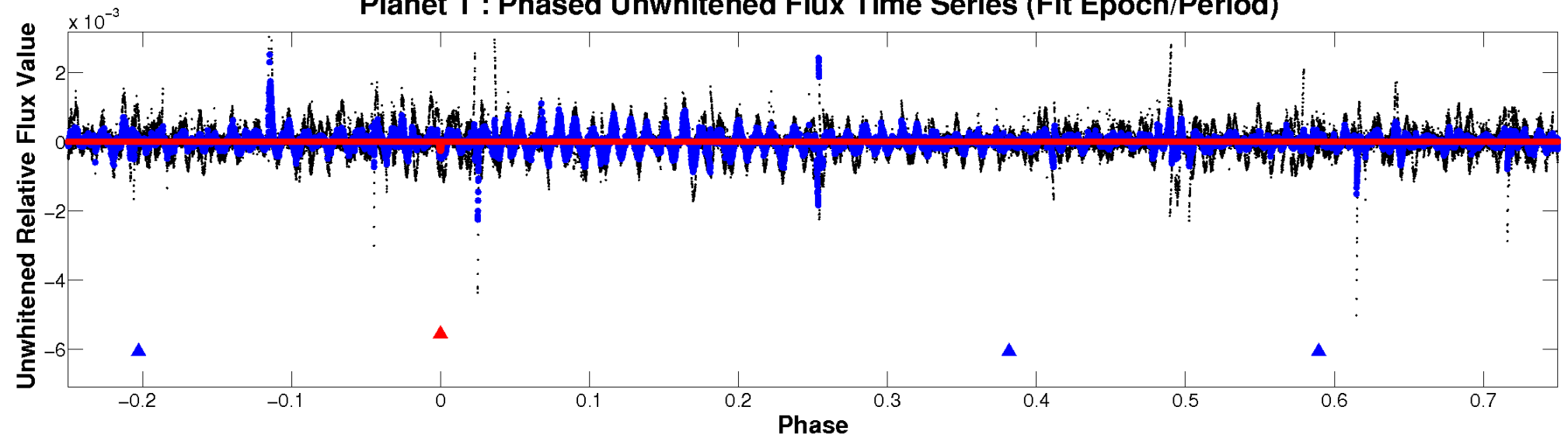
ALT Odd/Even

TCE 011717716-01

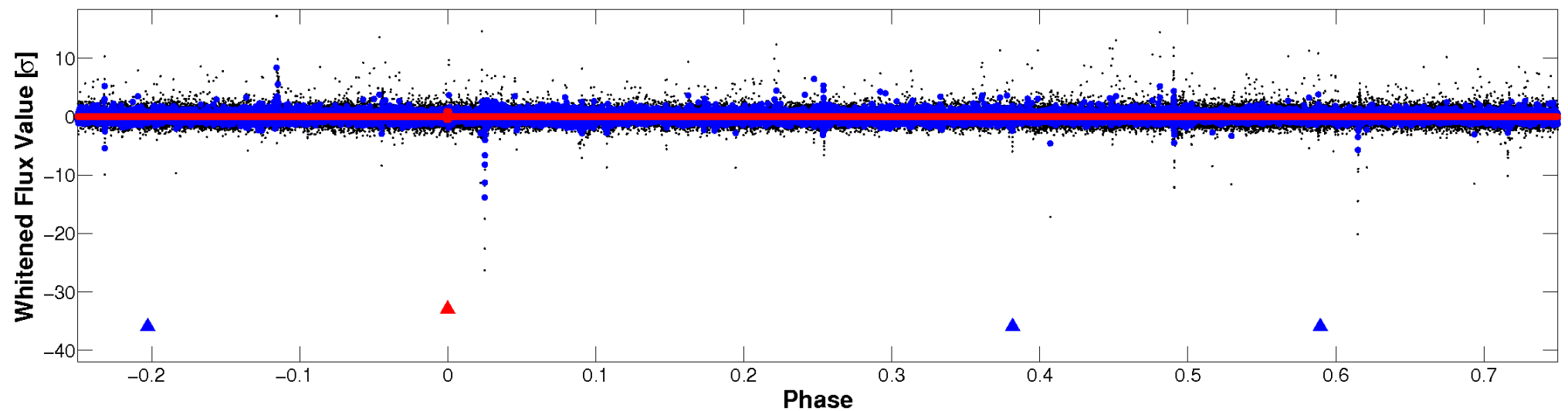


Non-Whitened Vs. Whitened Light Curve

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

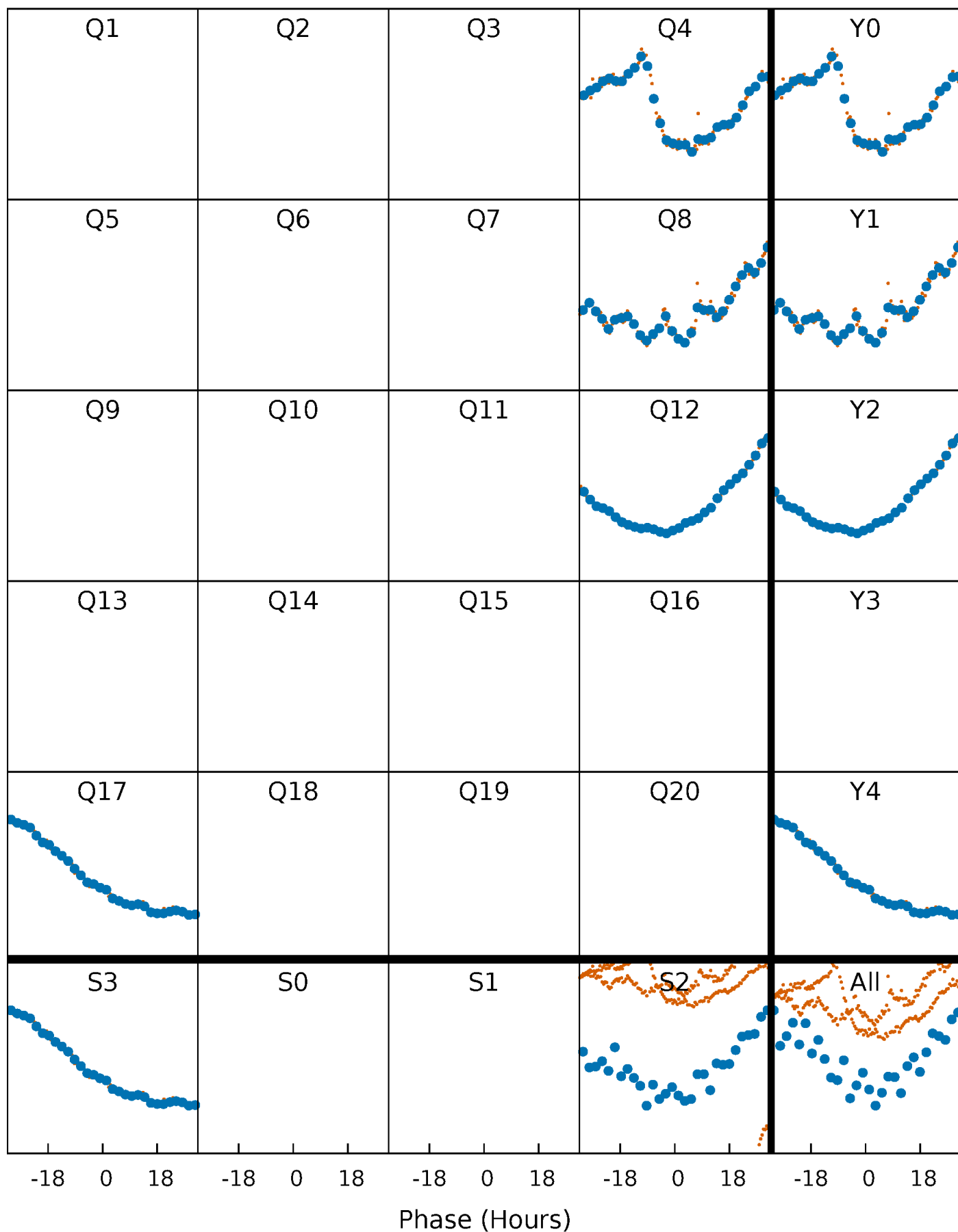


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



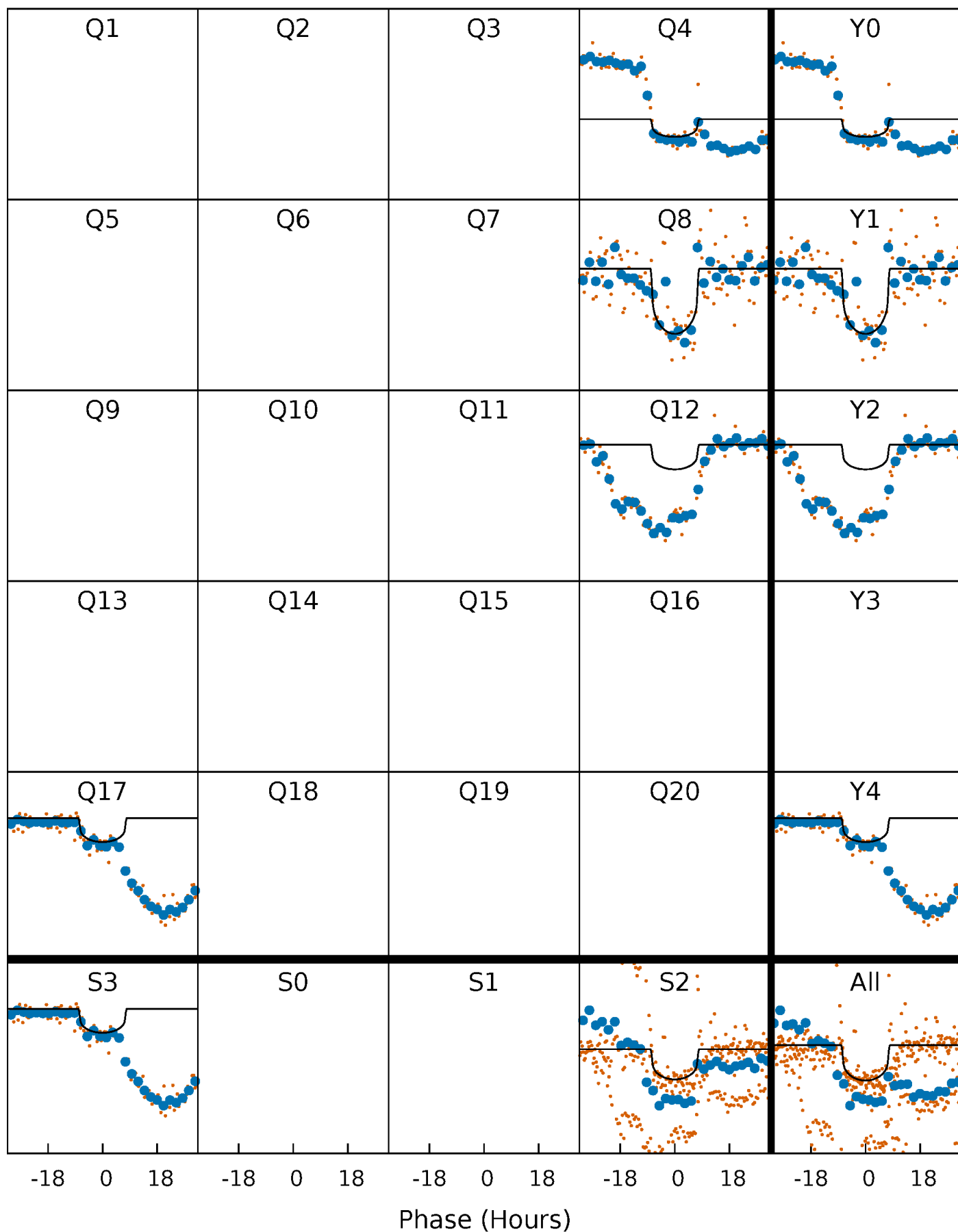
PDC Quarter-Phased Transit Curves

TCE 011717716-01 P=399.547699 Days $T_0=373.675676$ (BKJD)



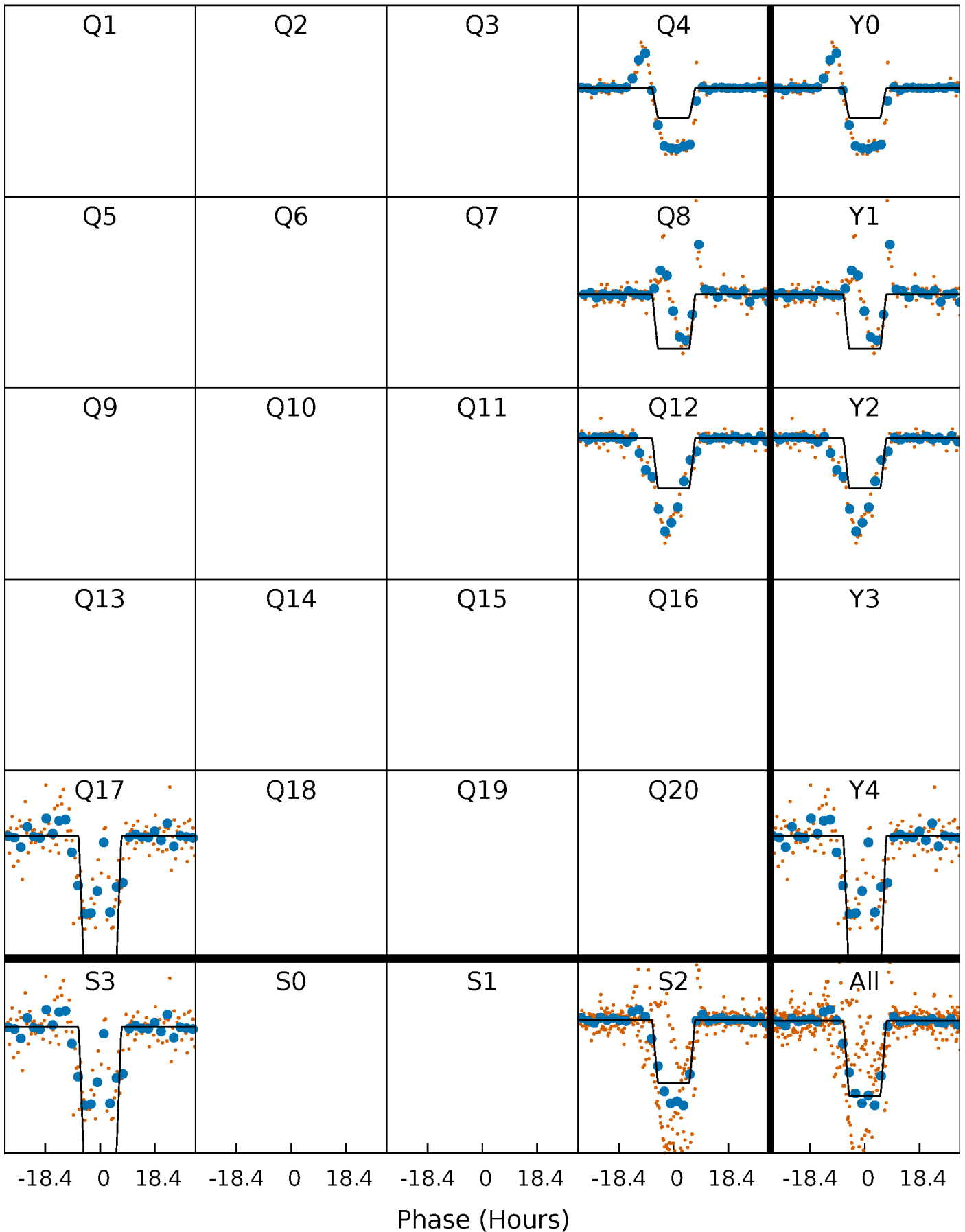
DV Quarter-Phased Transit Curves

TCE 011717716-01 P=399.547699 Days $T_0=373.675676$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

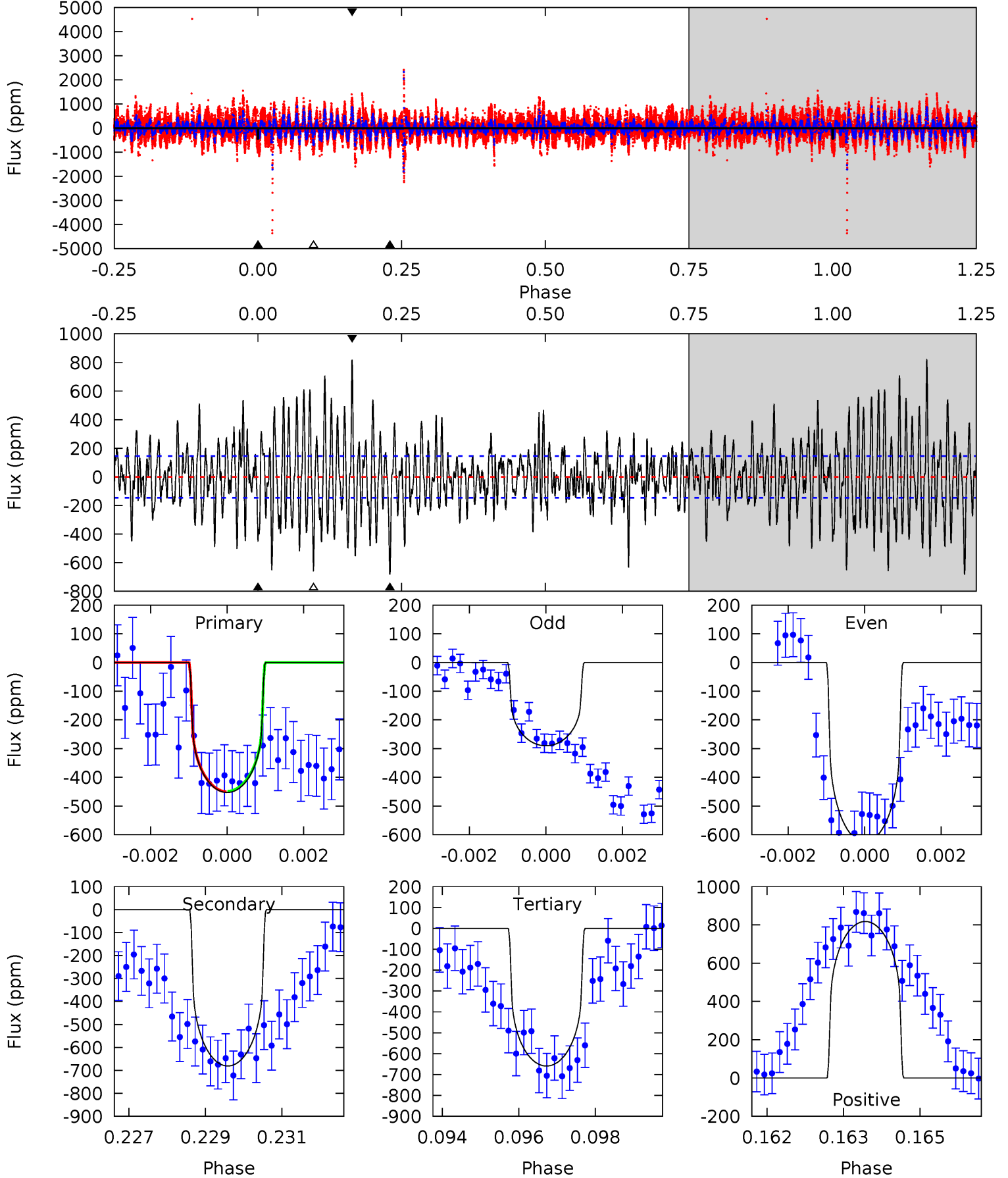
TCE 011717716-01 P=399.544210 Days $T_0=373.674955$ (BKJD)



DV Model-Shift Uniqueness Test

011717716-01, P = 399.547699 Days, E = 373.675676 Days

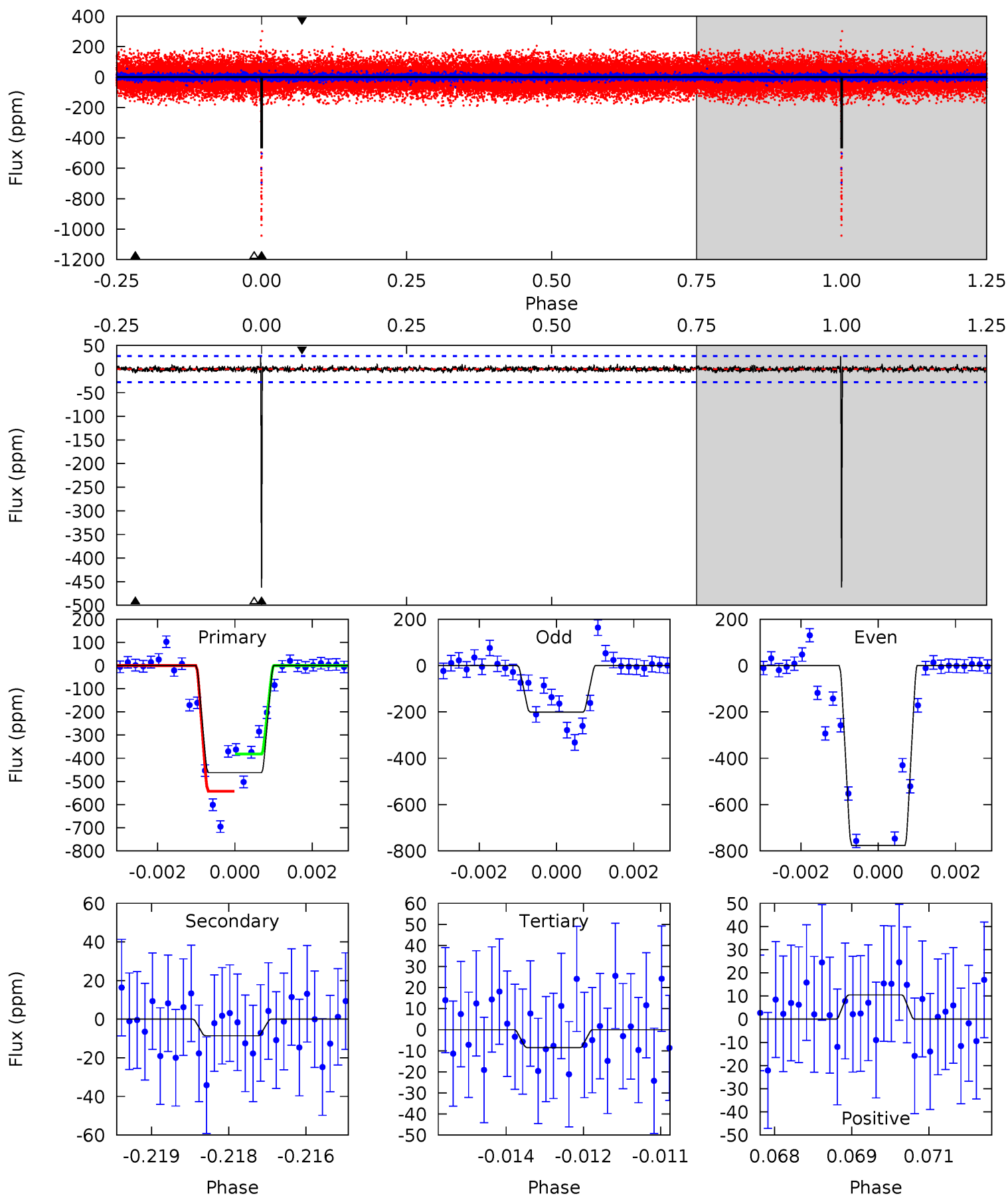
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	25.0	24.2	30.1	5.36	3.14	6.94	-7.58	-13.4	0.80	-5.03	5.40	1.36	0.55	0.03



Alt Model-Shift Uniqueness Test

011717716-01, P = 399.544210 Days, E = 373.674955 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
89.7	1.66	1.65	2.03	5.37	3.17	0.48	88.1	87.7	0.01	-0.37	63.4	1.10	0.05	15.1



Stellar Parameters For KIC 011717716

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4178^{+74}_{-83}	$4.641^{+0.038}_{-0.013}$	$-0.120^{+0.150}_{-0.150}$	$0.616^{+0.021}_{-0.036}$	$0.606^{+0.036}_{-0.027}$	$3.649^{+0.569}_{-0.220}$
	+2%/-2%	+1%/-0%	+125%/-125%	+3%/-6%	+6%/-4%	+16%/-6%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 011717716-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-681 ± 27	$1.07^{+0.21}_{-0.22}$	212^{+4}_{-5}	5050^{+540}_{-355}	$267403^{+151275}_{-81722}$
Alt.	-9 ± 5	$1.44^{+0.23}_{-0.23}$	212^{+4}_{-5}	2354^{+173}_{-241}	1896^{+1564}_{-1179}

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

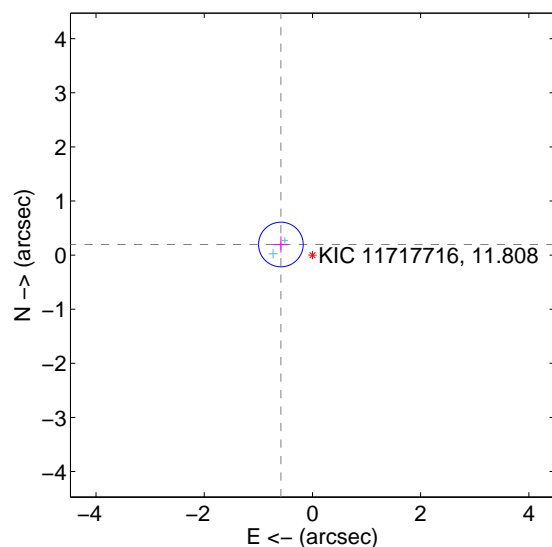
Supplemental centroid analysis for 011717716-01. **Kepler magnitude: 11.81.** Transit SNR 6.16

There are 2 quarters with good PRF difference image offsets

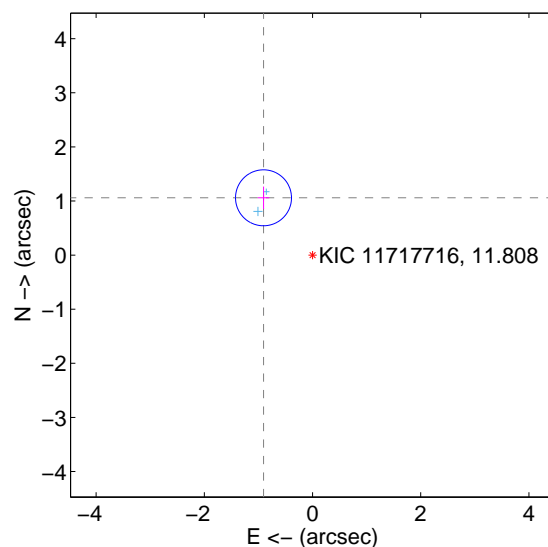
The direct PRF centroid is offset from the target star catalog position by about 0.96 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.615 ± 0.137	4.48	0.583 ± 0.136	0.196 ± 0.149
PRF-fit source offset from KIC position	1.393 ± 0.172	8.08	0.906 ± 0.108	1.059 ± 0.207
photometric centroid source offset	1.08 ± 0.88	1.22	0.14 ± 0.43	1.07 ± 0.89

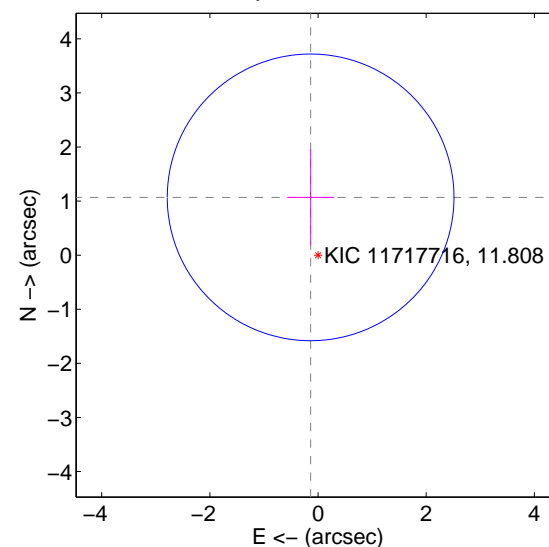
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



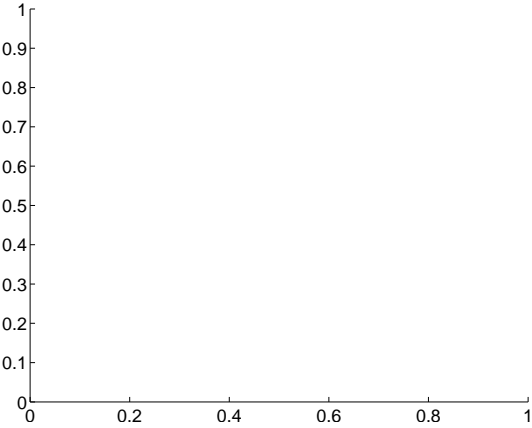
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

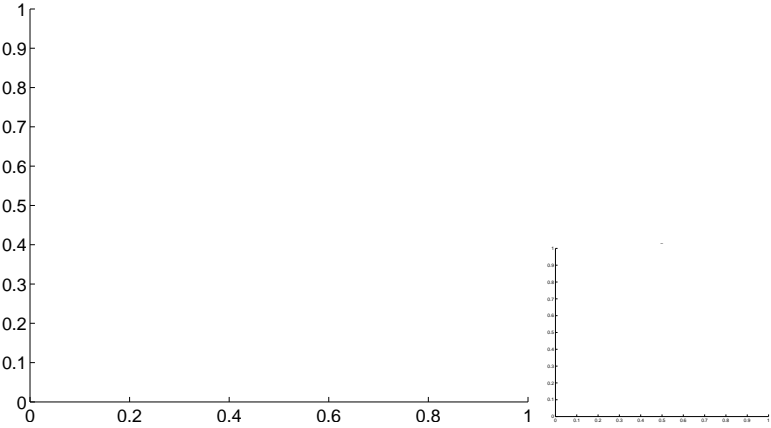


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

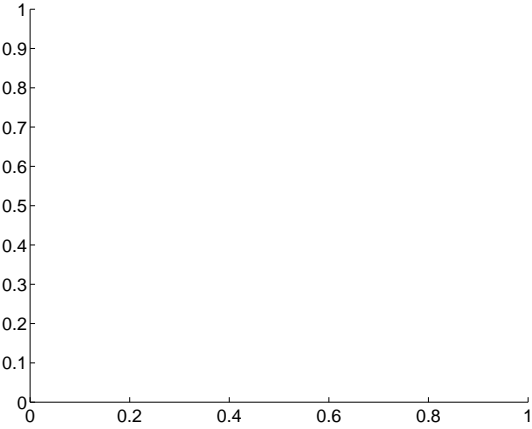
Q5 no difference image



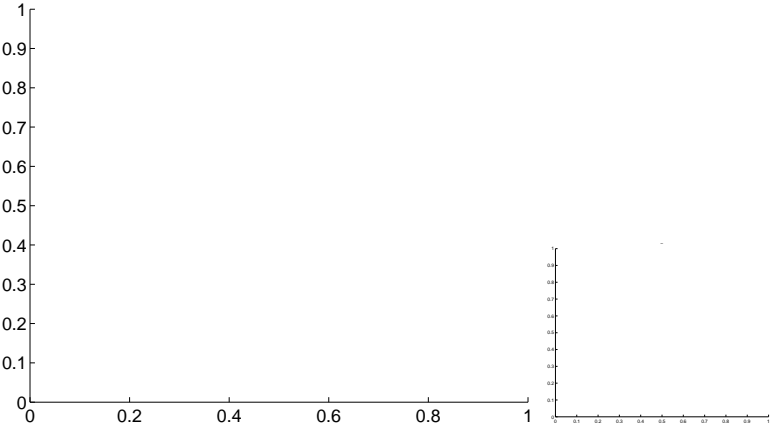
Q5 no OOT image



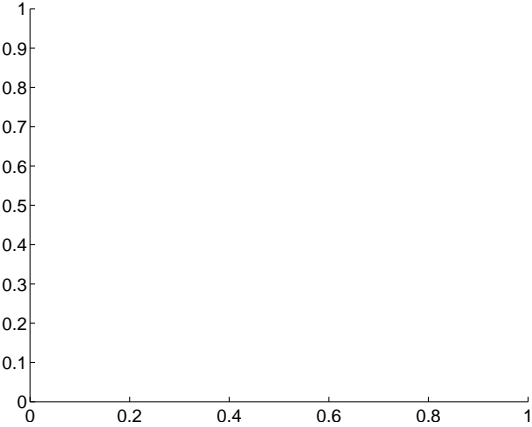
Q6 no difference image



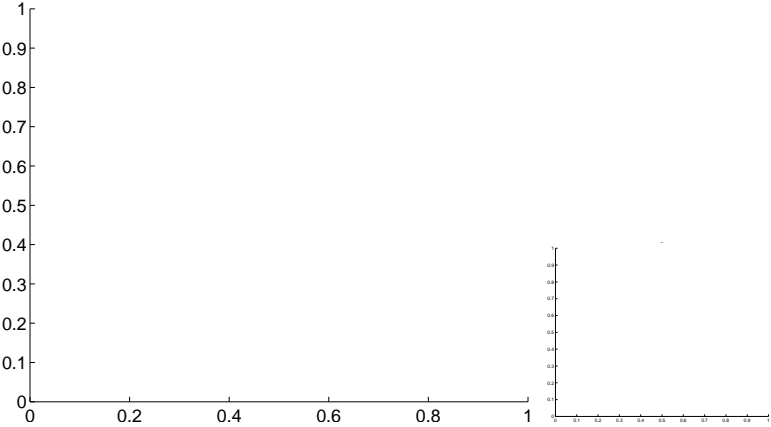
Q6 no OOT image



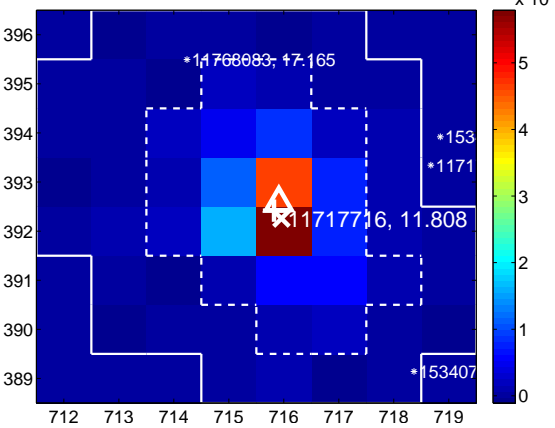
Q7 no difference image



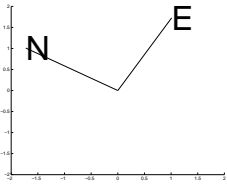
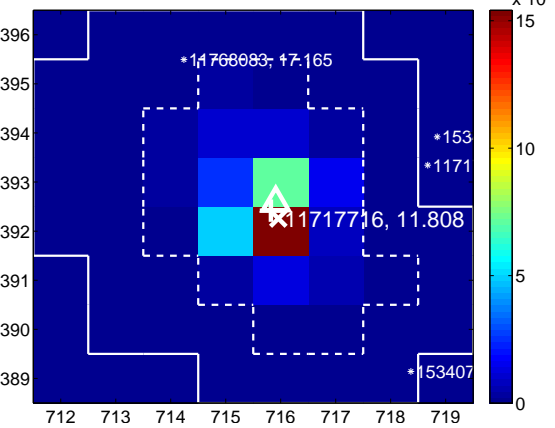
Q7 no OOT image



Q8 difference image



Q8 OOT image



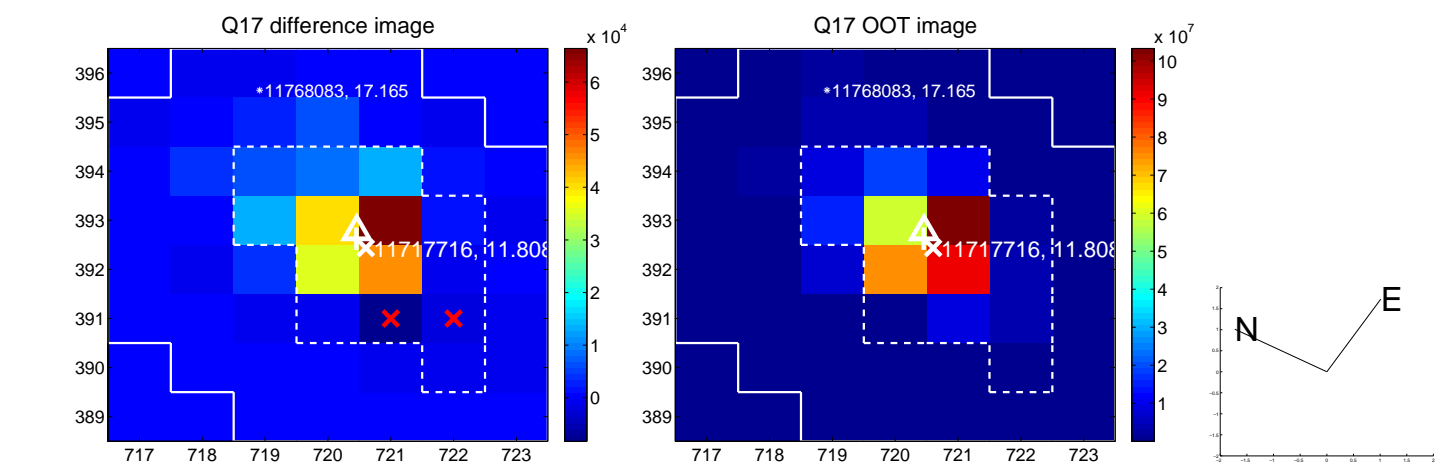
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



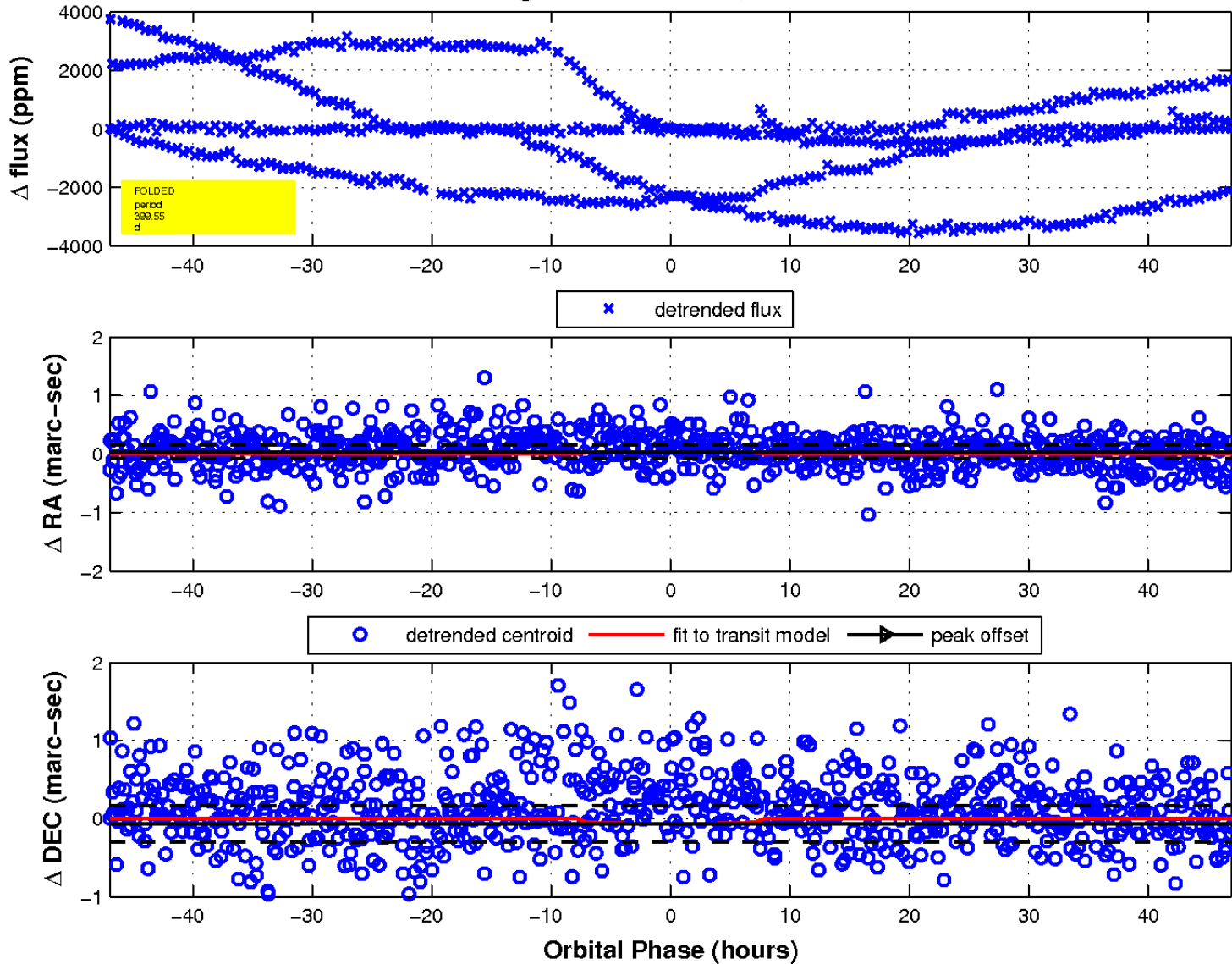
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



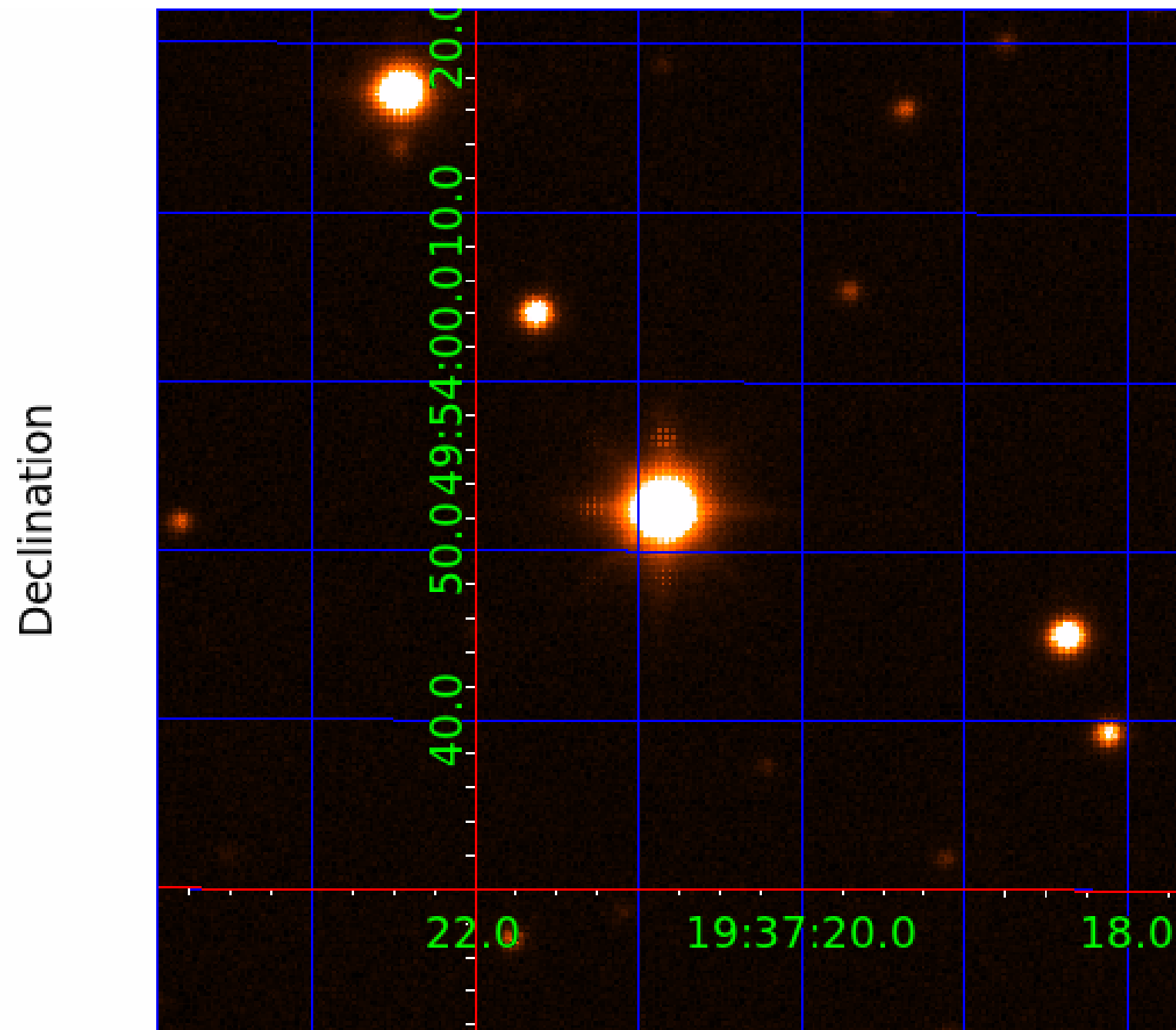
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 011717716

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})
011717716-01	OBS	No	399.547699	373.675676	262.3	15.723	9.8	6.2	0.62	4178	1.09	0.13
011717716-02	OBS	No	482.597367	526.167866	356.5	5.291	9.9	8.5	0.62	4178	1.35	0.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011717716-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011717716-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—ALL_TRANS_CHASES—MOD_POS_DV—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.

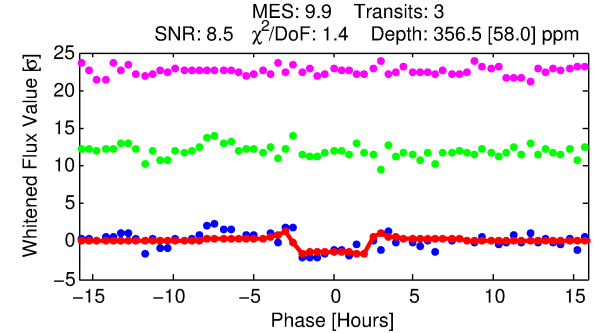
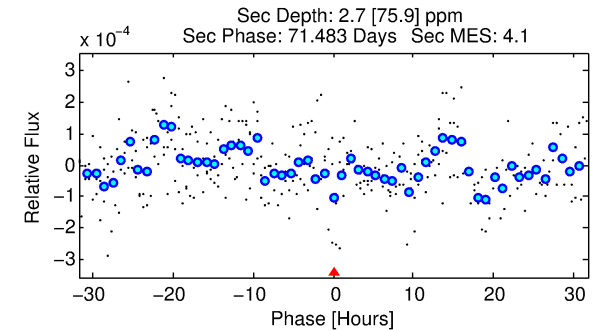
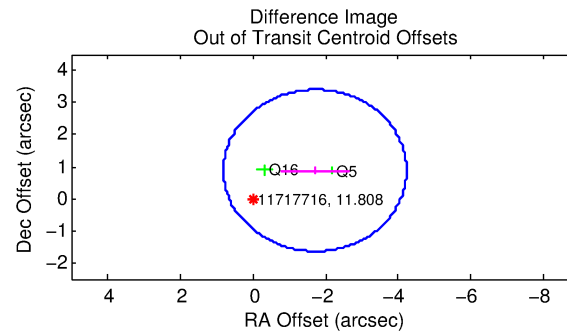
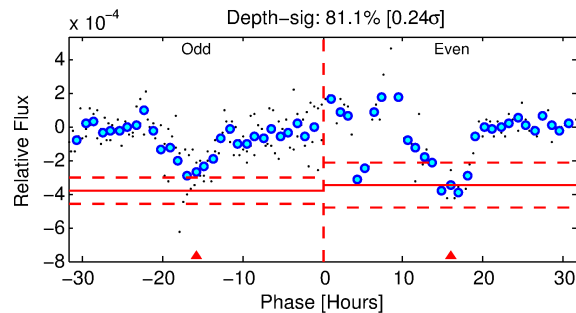
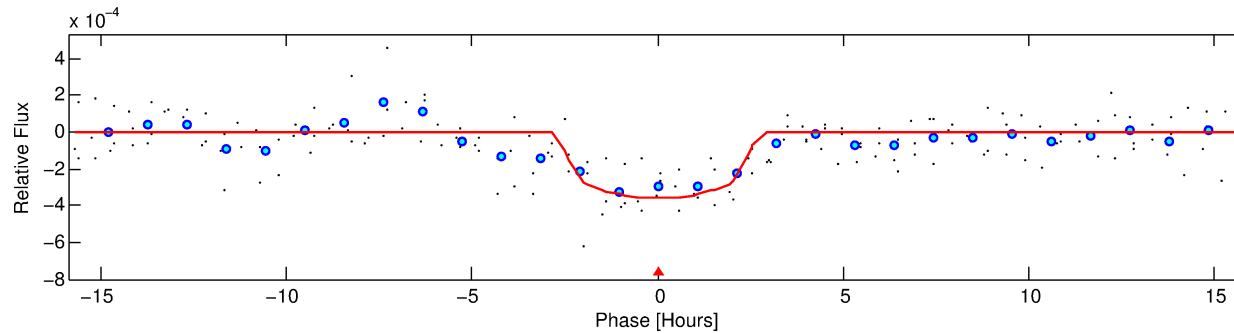
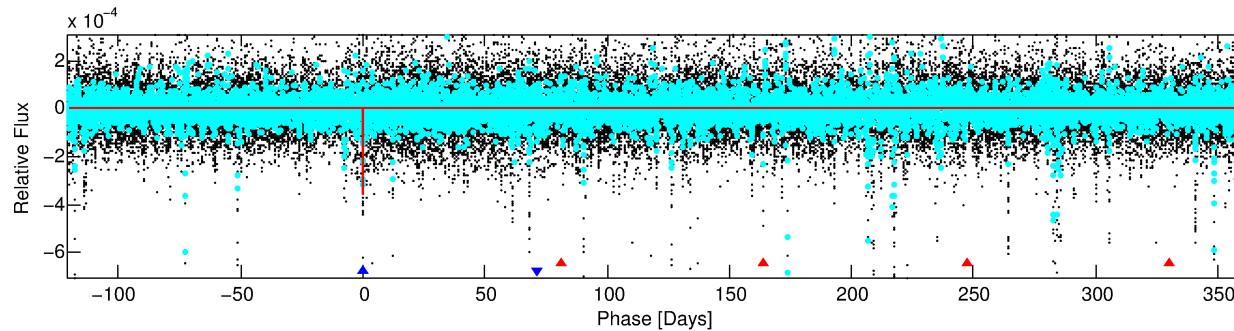
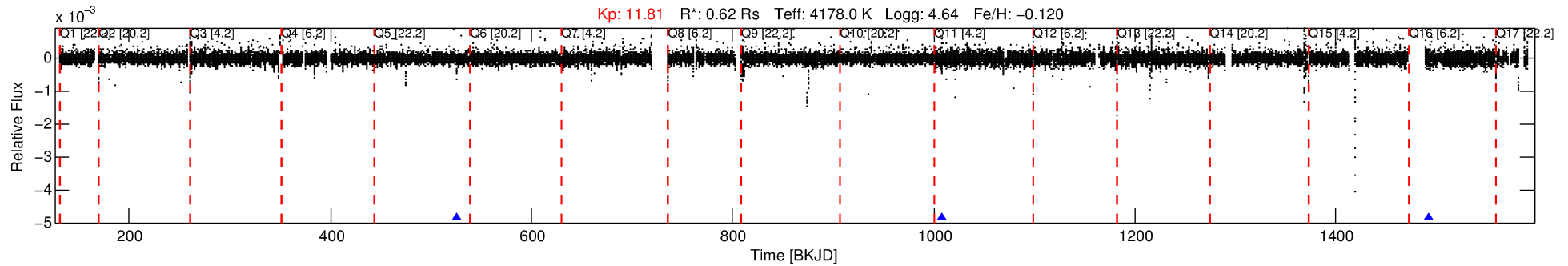
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011717716-02

No Significant Match Found

DV One-Page Summary

KIC: 11717716 Candidate: 2 of 2 Period: 482.597 d



DV Fit Results:

Period = 482.59737 [0.00461] d
Epoch = 526.1679 [0.0063] BKJD
Rp/R* = 0.0201 [0.0189]
a/R* = 390.95 [1449.31]
b = 0.85 [1.21]
Seff = 0.10 [0.01]
Teq = 143 [4] K
Rp = 1.35 [1.27] Re
a = 1.0189 [0.0496] AU
Ag = 848.13 [23782.67] [0.04 σ]
Teffp = 1196 [8383] K [0.13 σ]

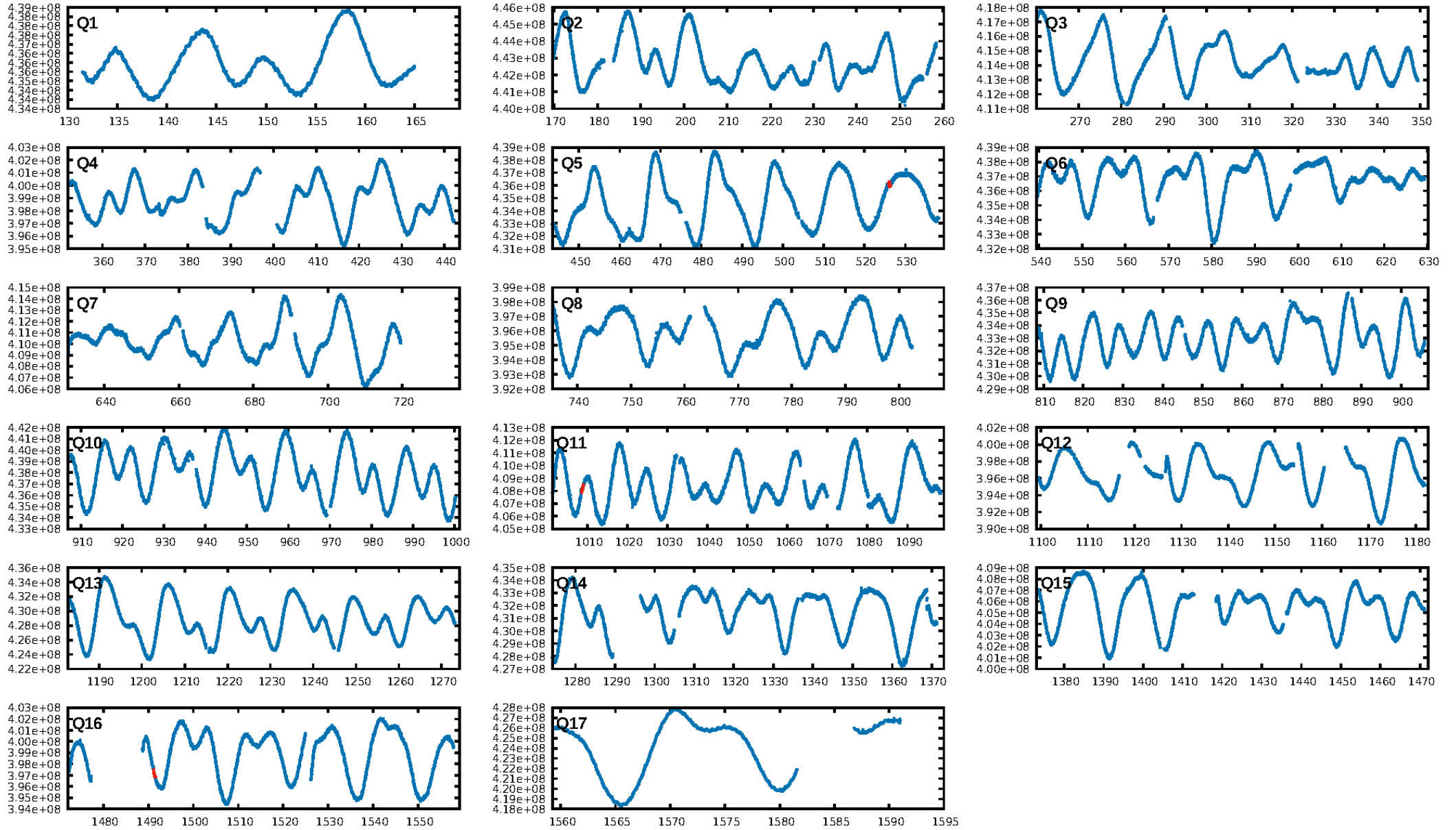
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [120.15 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.7%
ModelChiSquareGof-sig: 91.0%
Bootstrap-pfa: 2.21e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.249
Centroid-sig: 0.4%
Centroid-so: 1.116 arcsec [1.88 σ]
OotOffset-rm: 1.926 arcsec [2.29 σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-rm: **2.225 arcsec [3.56 σ]**
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

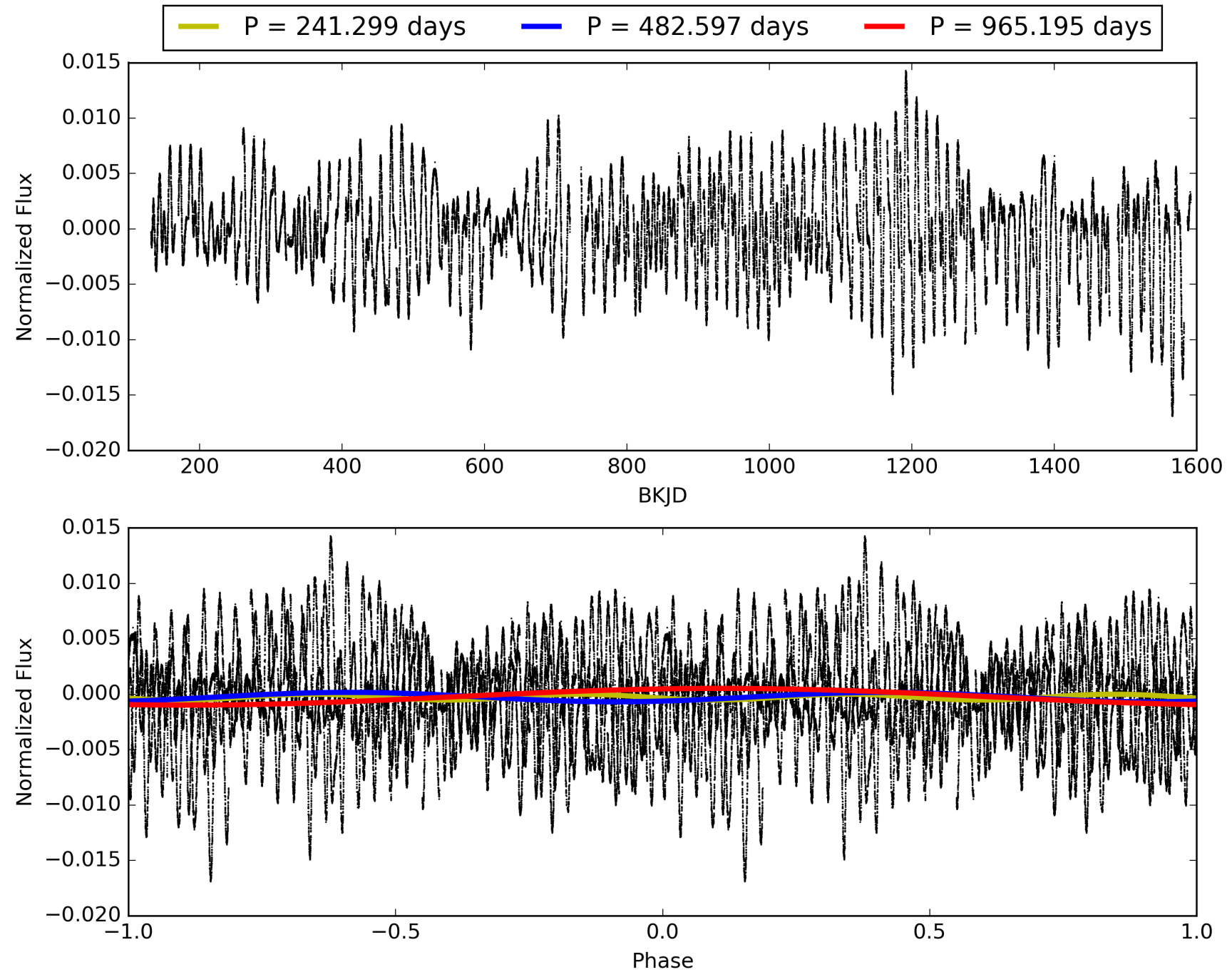
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:45:06 Z

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

TCE 011717716-02, PDC Light Curves

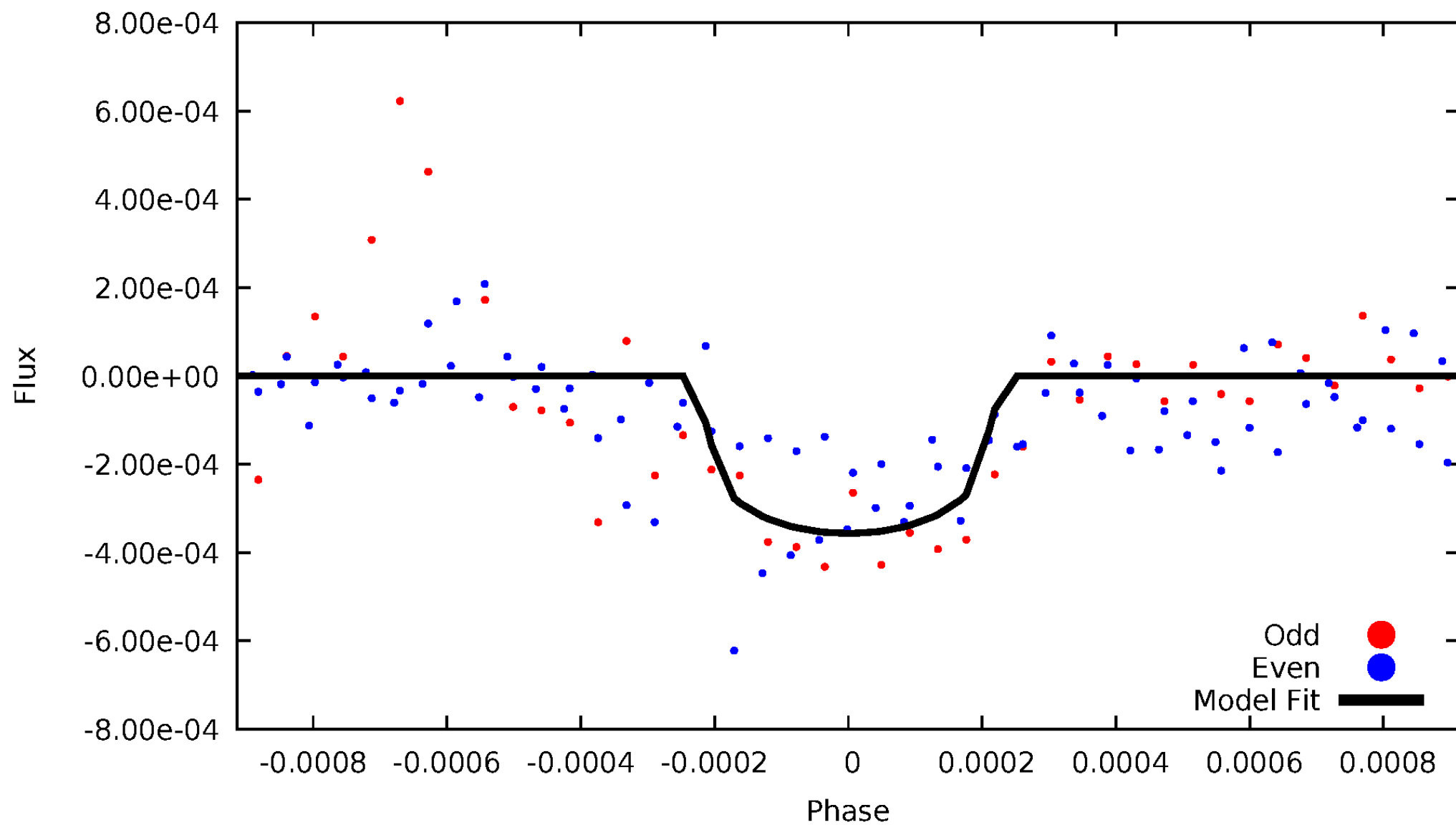


TCE 011717716-02



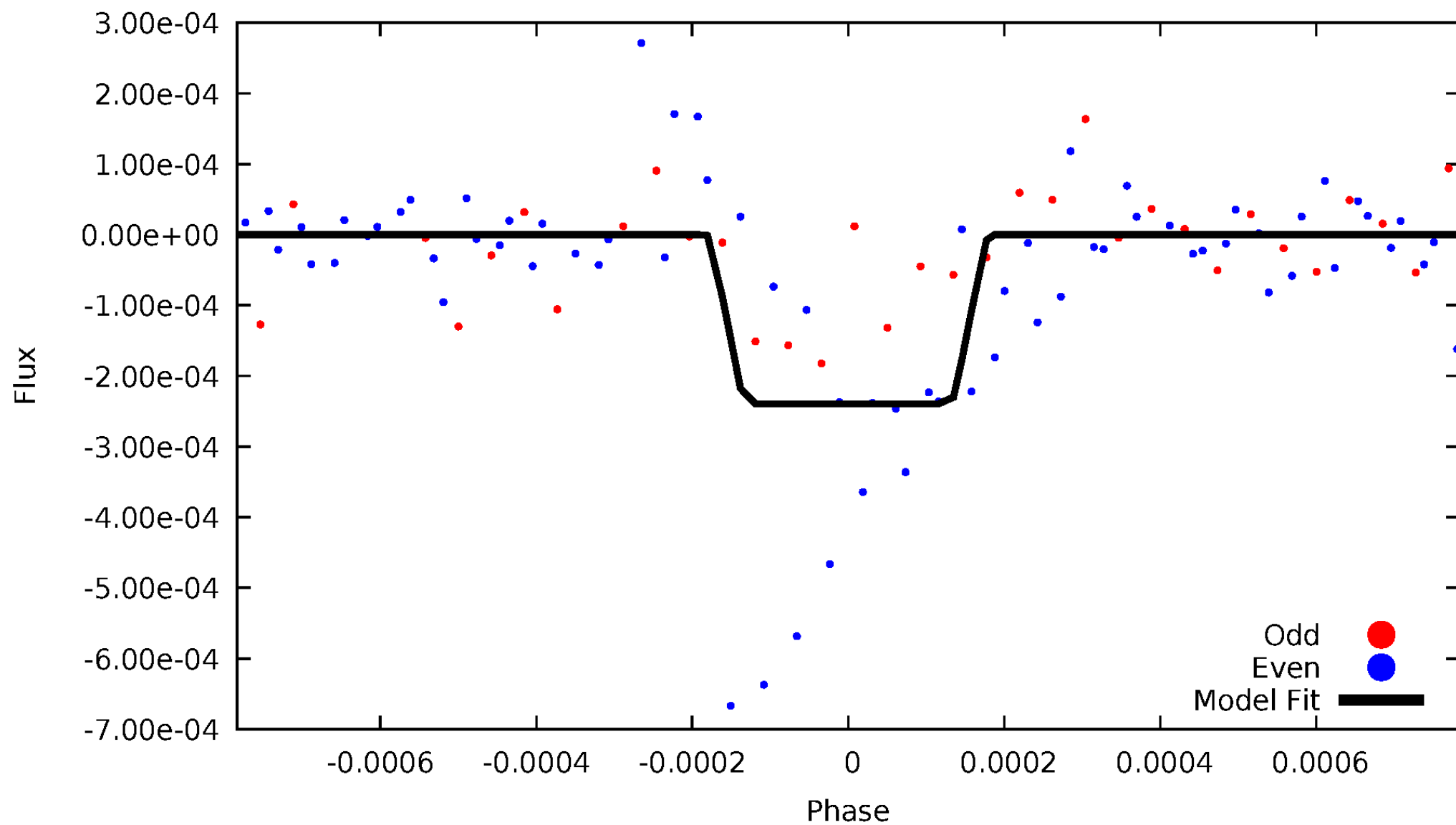
DV Odd/Even

TCE 011717716-02



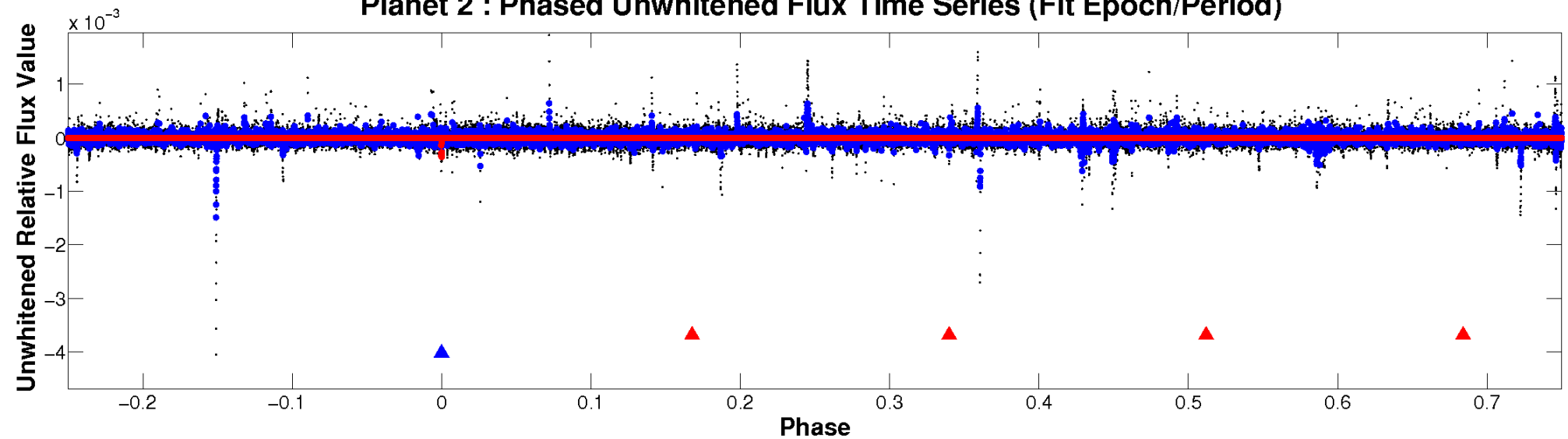
ALT Odd/Even

TCE 011717716-02

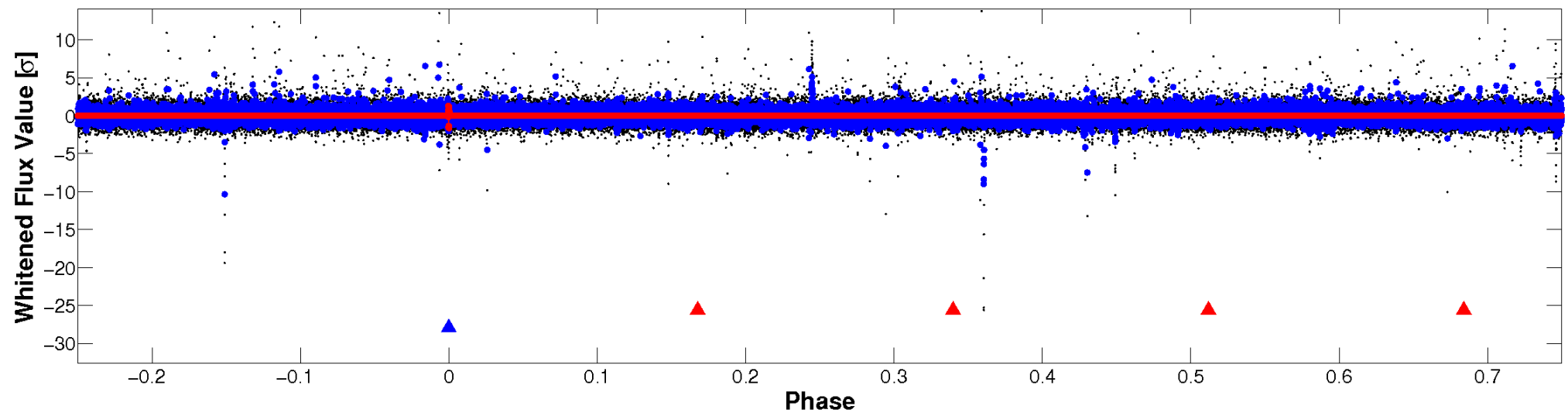


Non-Whitened Vs. Whitened Light Curve

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

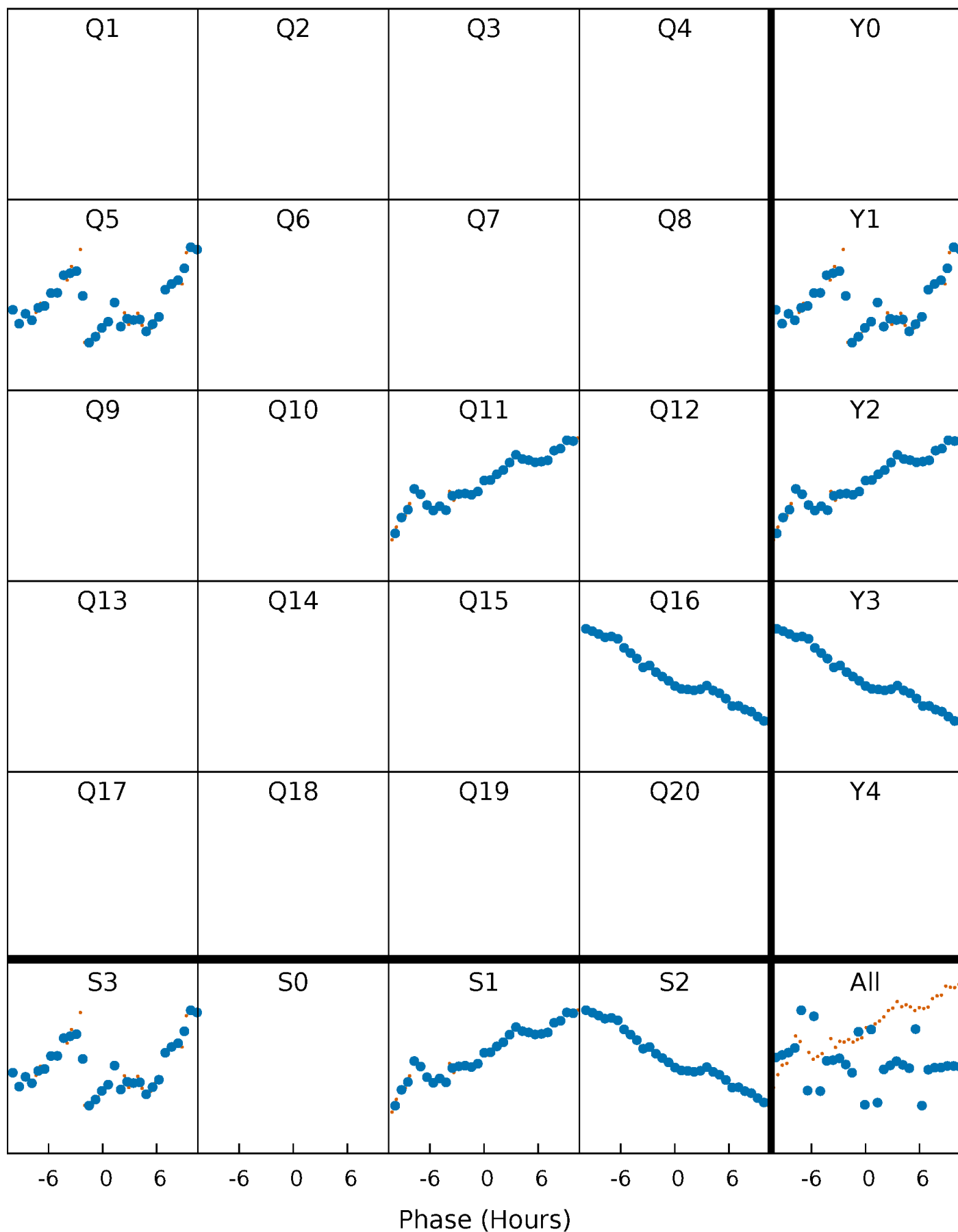


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



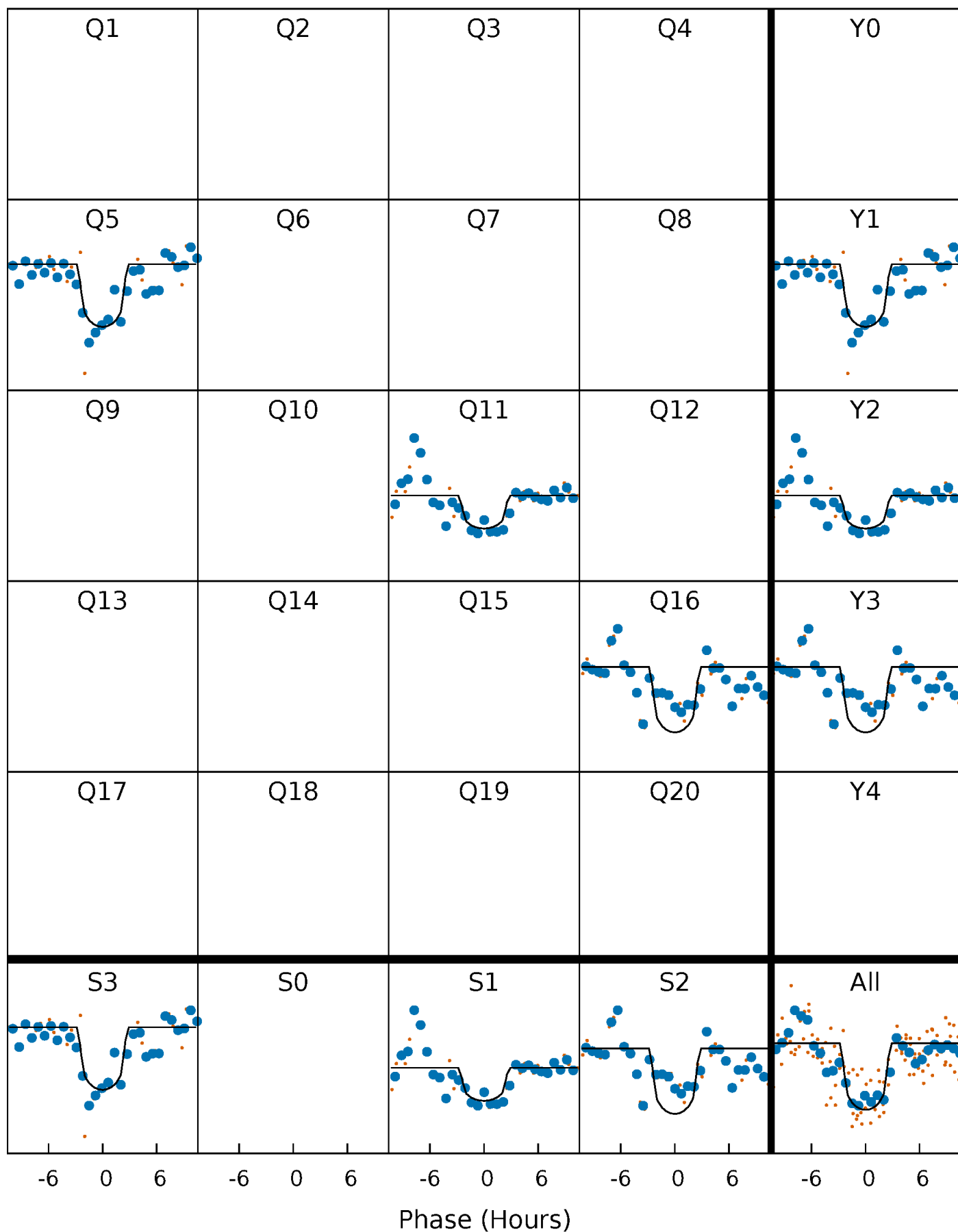
PDC Quarter-Phased Transit Curves

TCE 011717716-02 P=482.597367 Days $T_0=526.167866$ (BKJD)



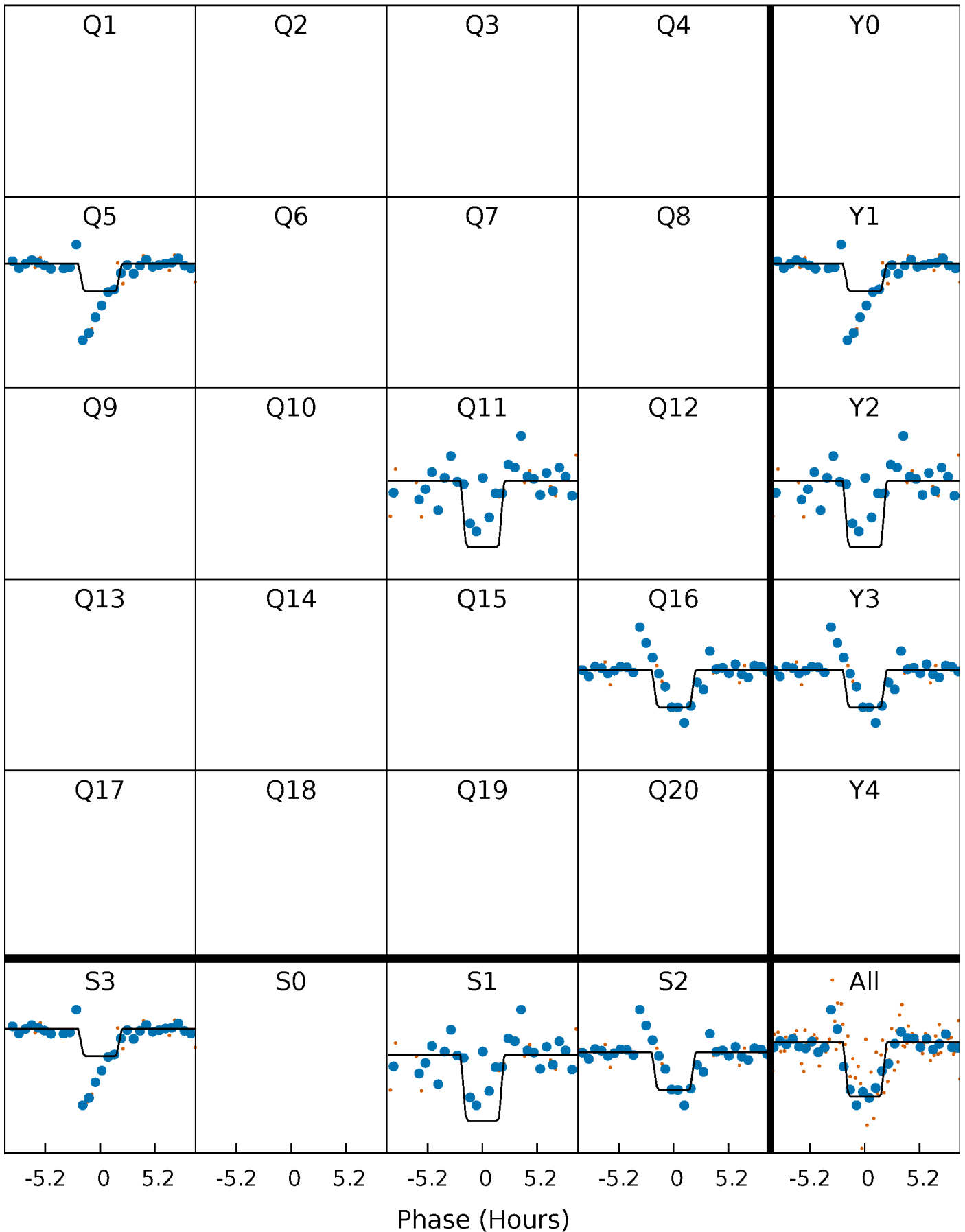
DV Quarter-Phased Transit Curves

TCE 011717716-02 P=482.597367 Days $T_0=526.167866$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

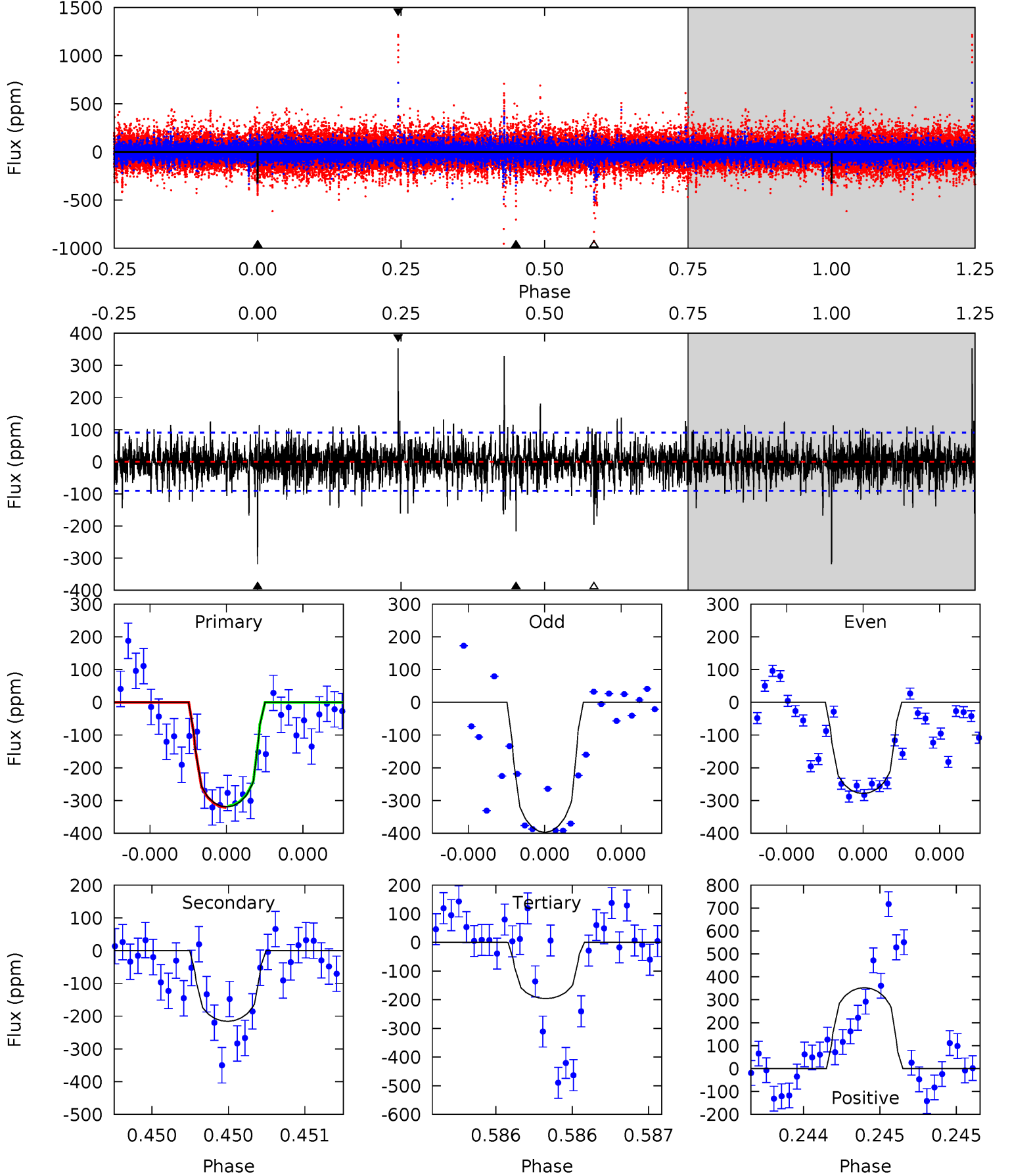
TCE 011717716-02 P=482.606631 Days $T_0=526.158180$ (BKJD)



DV Model-Shift Uniqueness Test

011717716-02, $P = 482.597367$ Days, $E = 43.570499$ Days

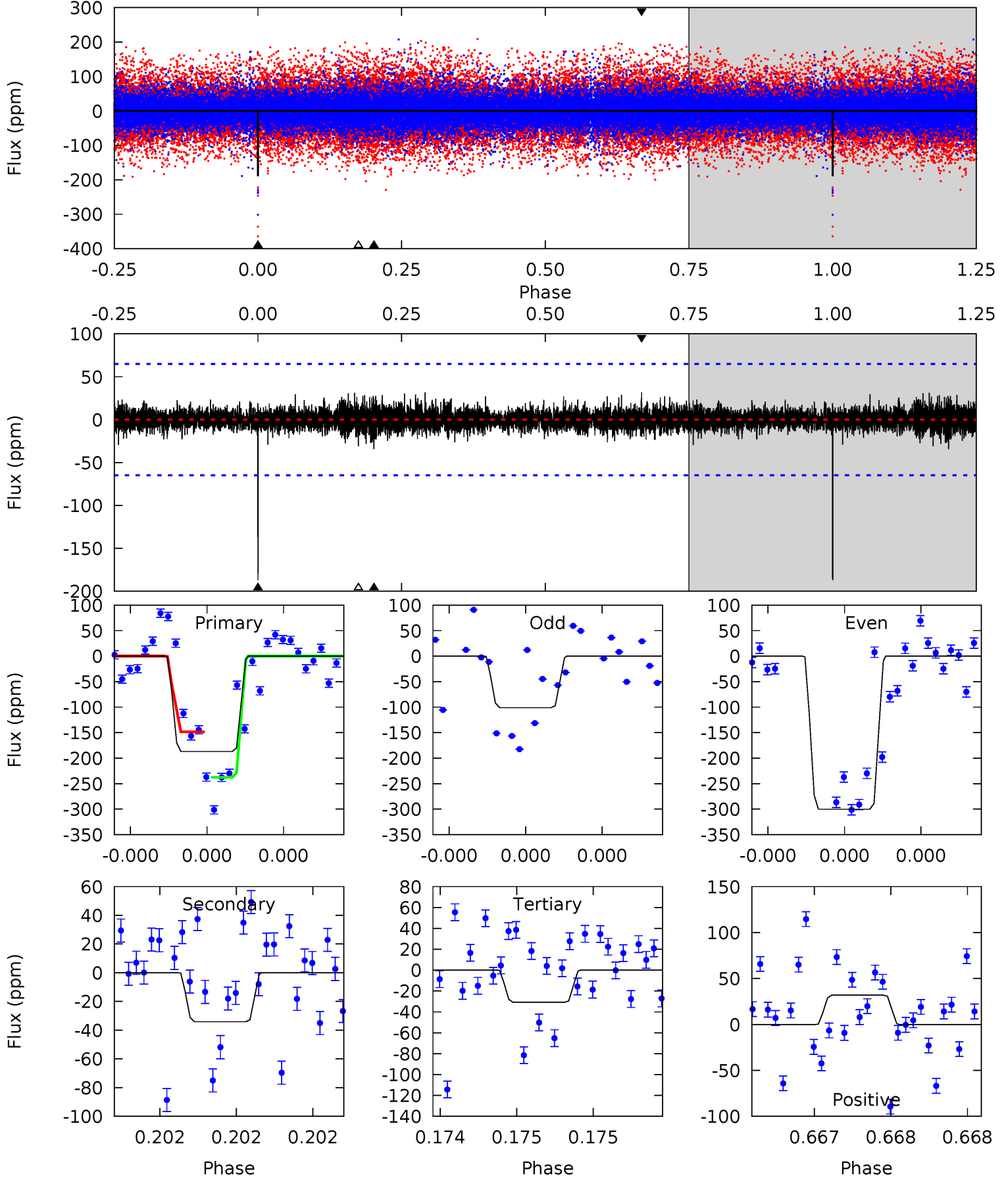
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.6	13.2	12.0	21.6	5.57	3.48	2.26	7.57	-2.05	1.23	-8.39	3.11	0.86	0.52	0.11



Alt Model-Shift Uniqueness Test

011717716-02, $P = 482.606631$ Days, $E = 43.551549$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	2.97	2.68	2.77	5.64	3.58	0.57	13.6	13.5	0.29	0.19	9.71	1.27	0.15	3.71



Stellar Parameters For KIC 011717716

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4178^{+74}_{-83}	$4.641^{+0.038}_{-0.013}$	$-0.120^{+0.150}_{-0.150}$	$0.616^{+0.021}_{-0.036}$	$0.606^{+0.036}_{-0.027}$	$3.649^{+0.569}_{-0.220}$
	+2%/-2%	+1%/-0%	+125%/-125%	+3%/-6%	+6%/-4%	+16%/-6%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 011717716-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-216 ± 16	$1.56^{+1.07}_{-0.96}$	199^{+4}_{-4}	3568^{+1478}_{-530}	$50659^{+273694}_{-32792}$
Alt.	-34 ± 11	$1.26^{+1.14}_{-0.80}$	199^{+4}_{-4}	2855^{+1044}_{-431}	11446^{+76674}_{-8256}

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 $A_{obs} \gg 1.0$

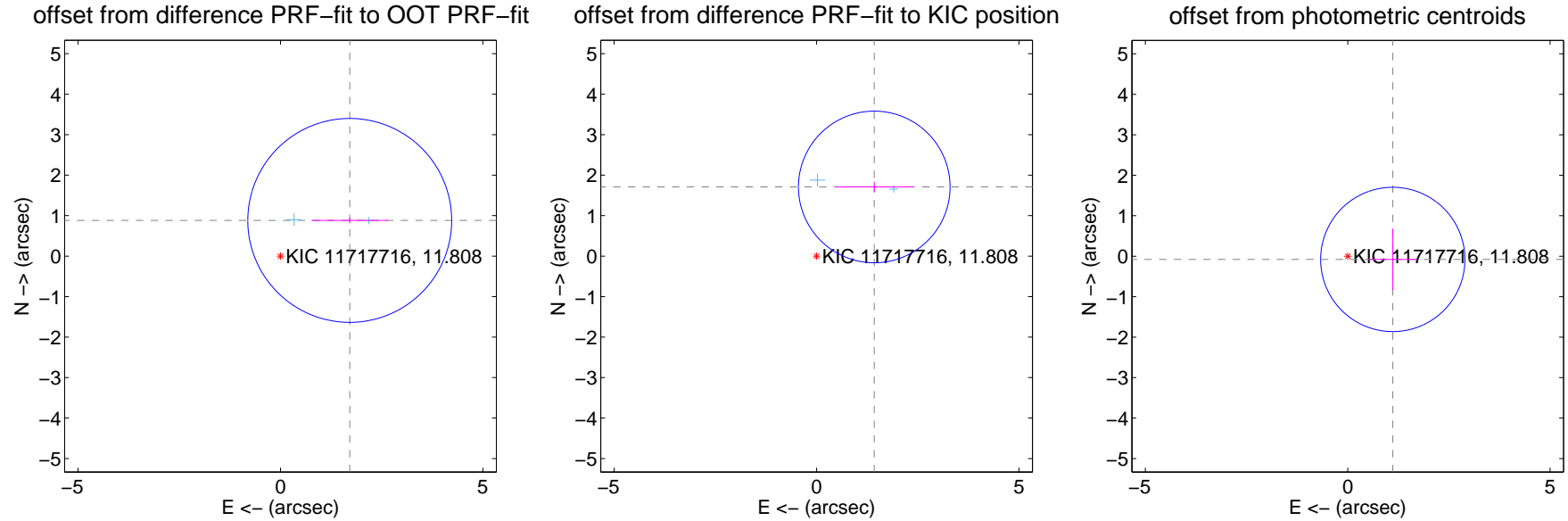
DV Centroid Data

Supplemental centroid analysis for 011717716-02. **Kepler magnitude: 11.81.** Transit SNR 8.49

There are 2 quarters with good PRF difference image offsets

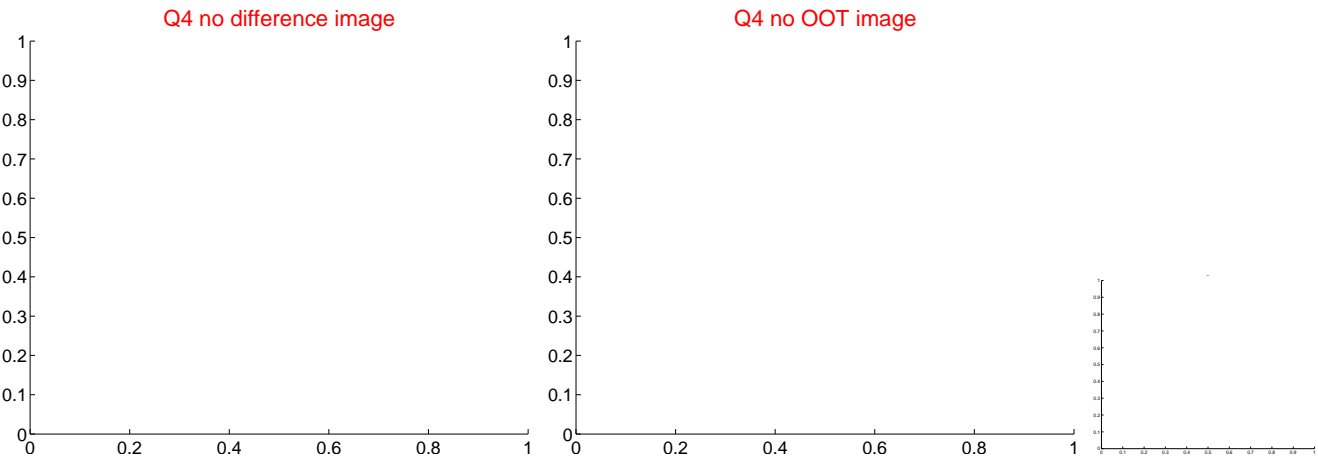
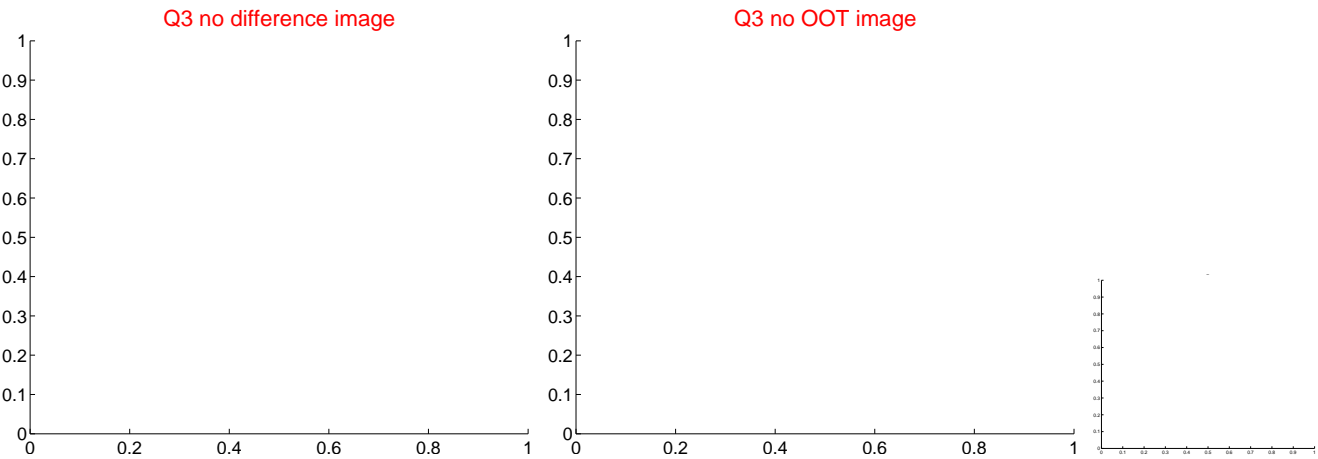
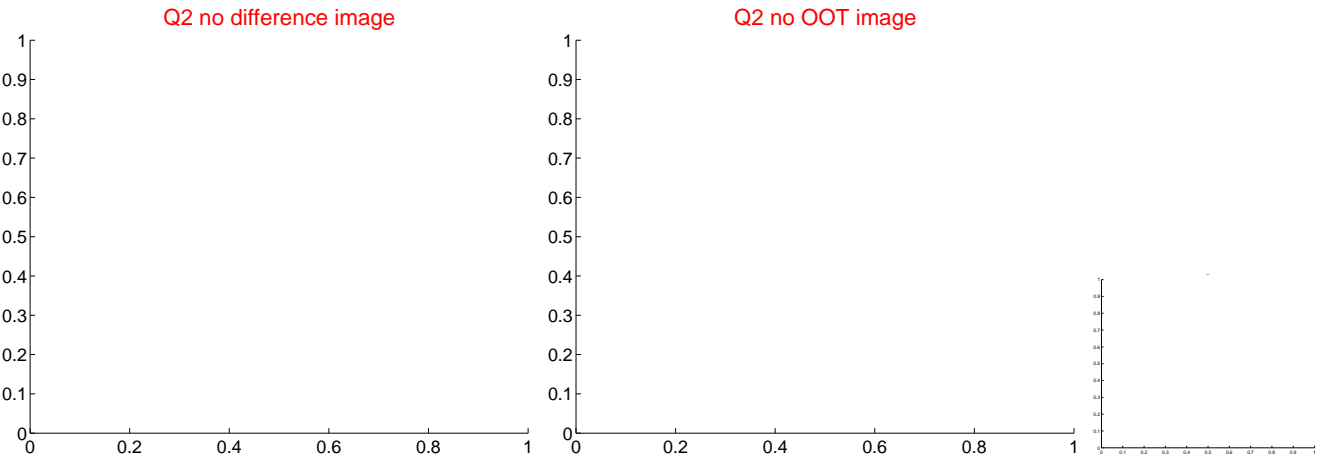
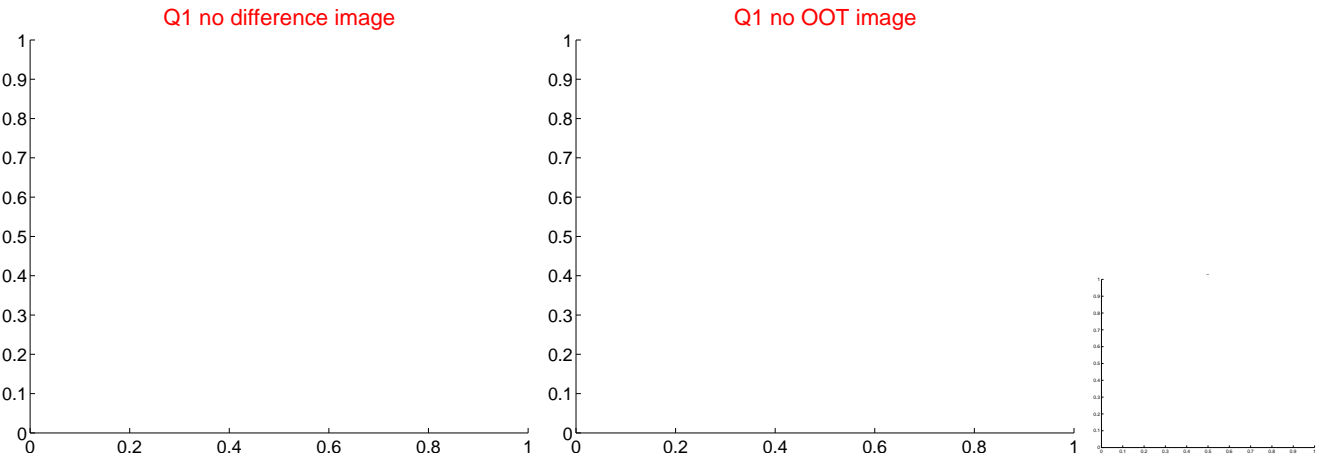
The direct PRF centroid is offset from the target star catalog position by about 1.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.926 ± 0.840	2.29	-1.712 ± 0.944	0.882 ± 0.068
PRF-fit source offset from KIC position	2.225 ± 0.624	3.56	-1.425 ± 0.963	1.709 ± 0.129
photometric centroid source offset	1.12 ± 0.59	1.88	-1.11 ± 0.59	-0.08 ± 0.76

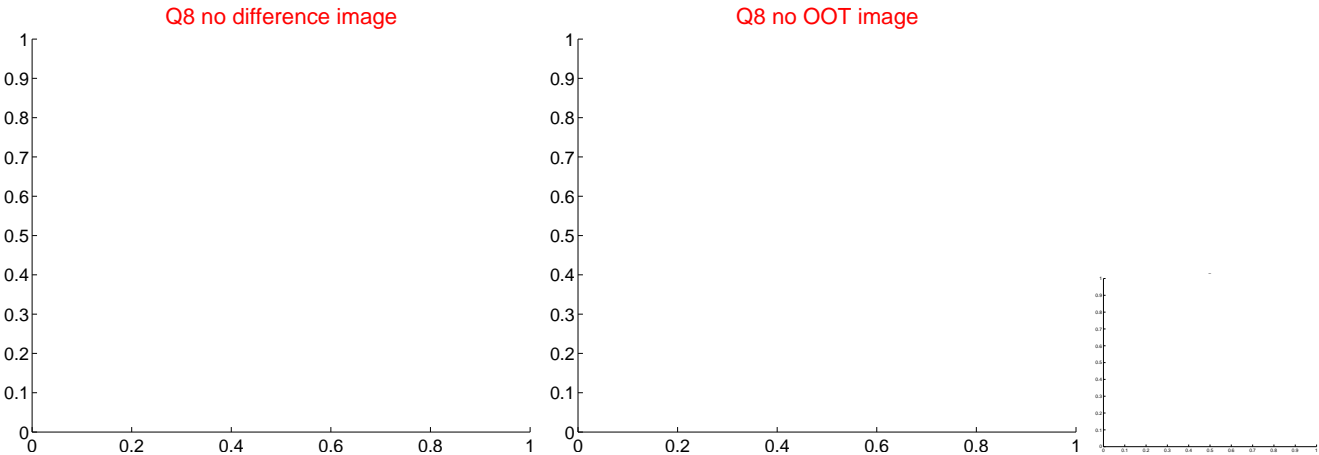
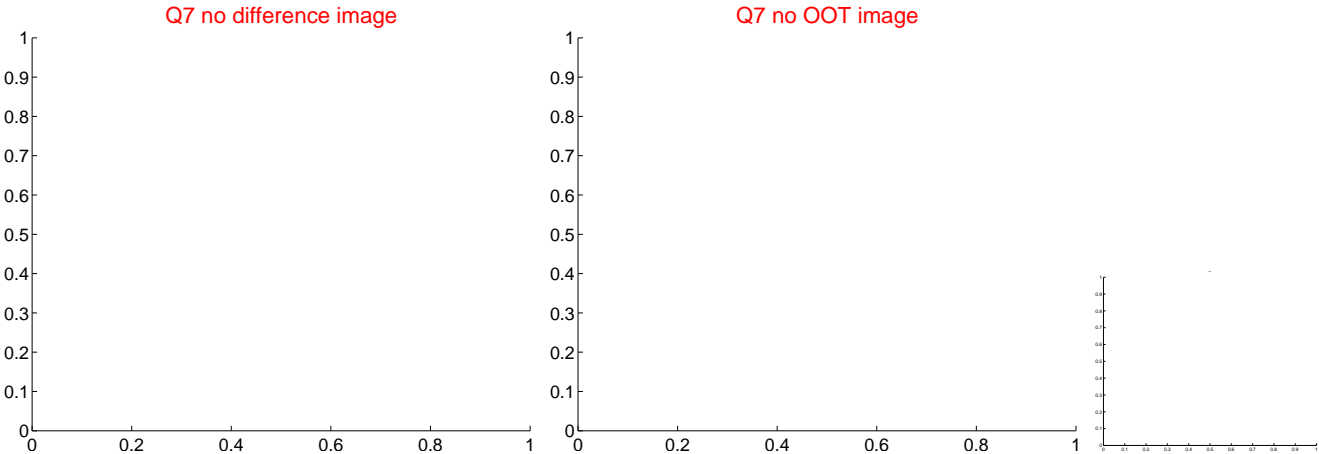
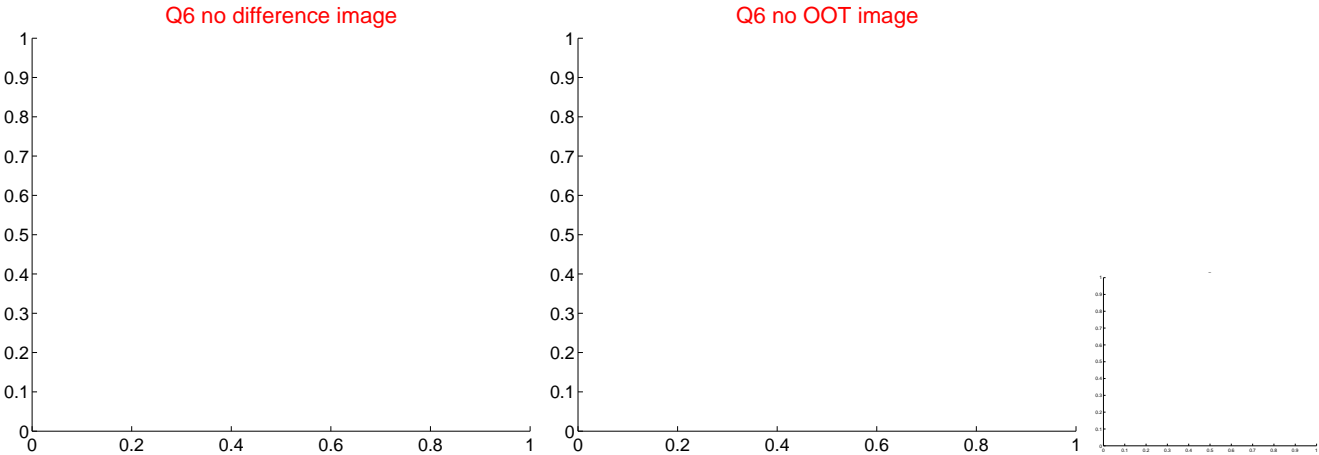
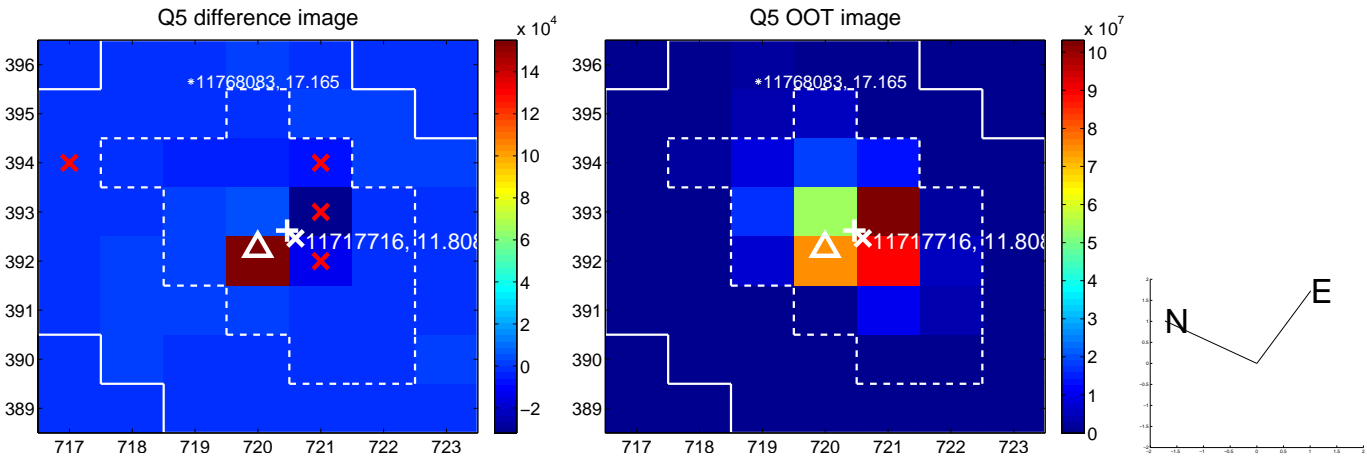


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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



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

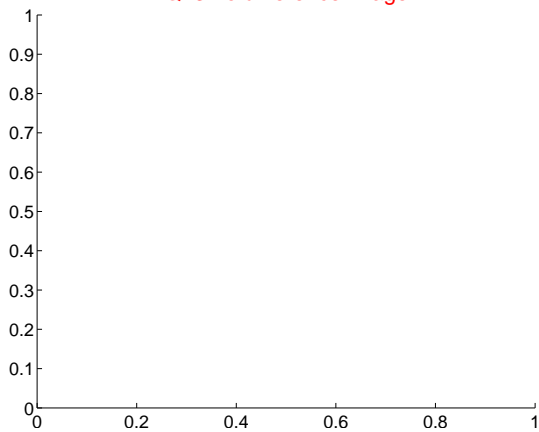


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

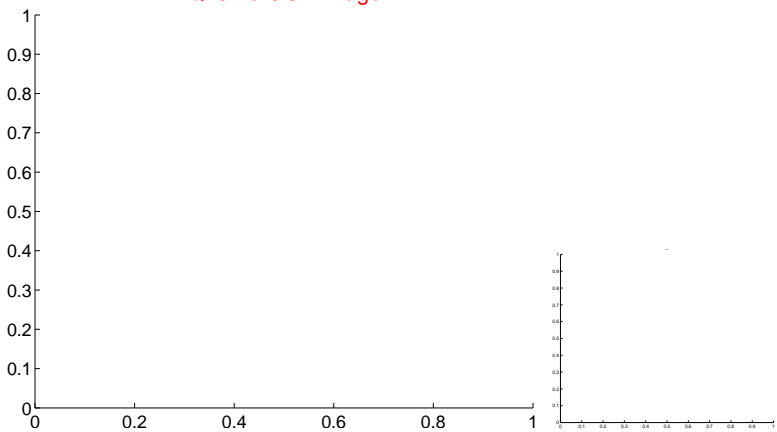


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

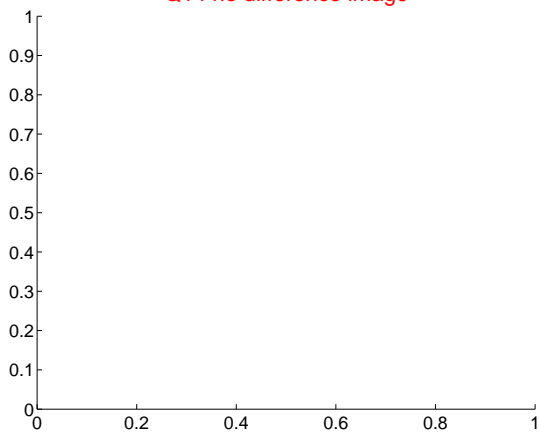
Q13 no difference image



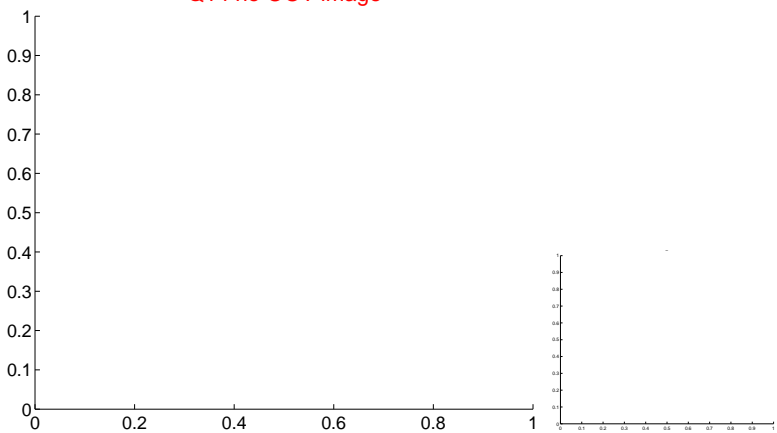
Q13 no OOT image



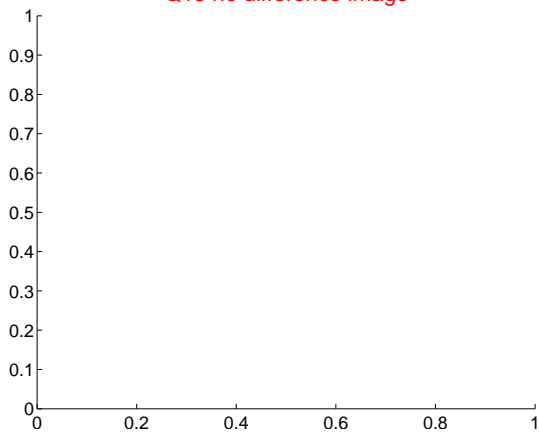
Q14 no difference image



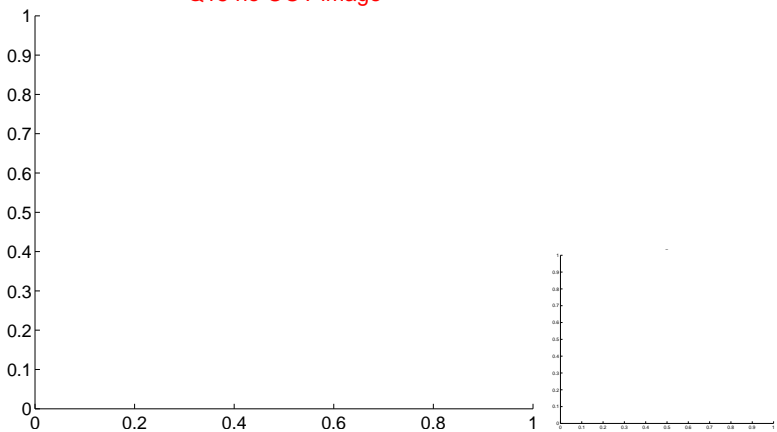
Q14 no OOT image



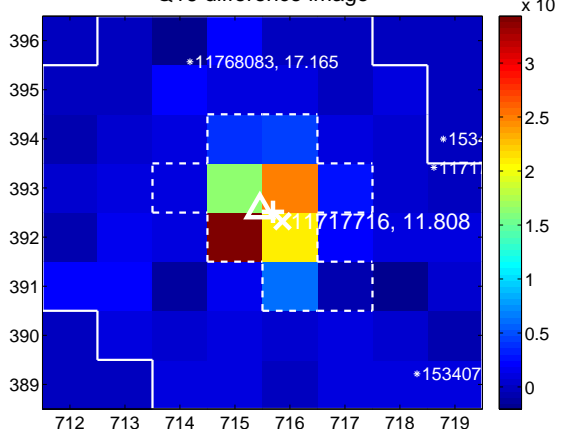
Q15 no difference image



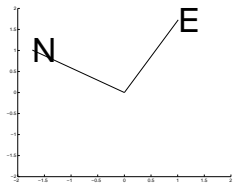
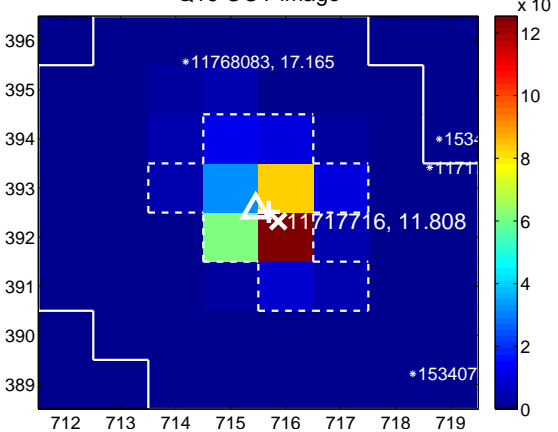
Q15 no OOT image



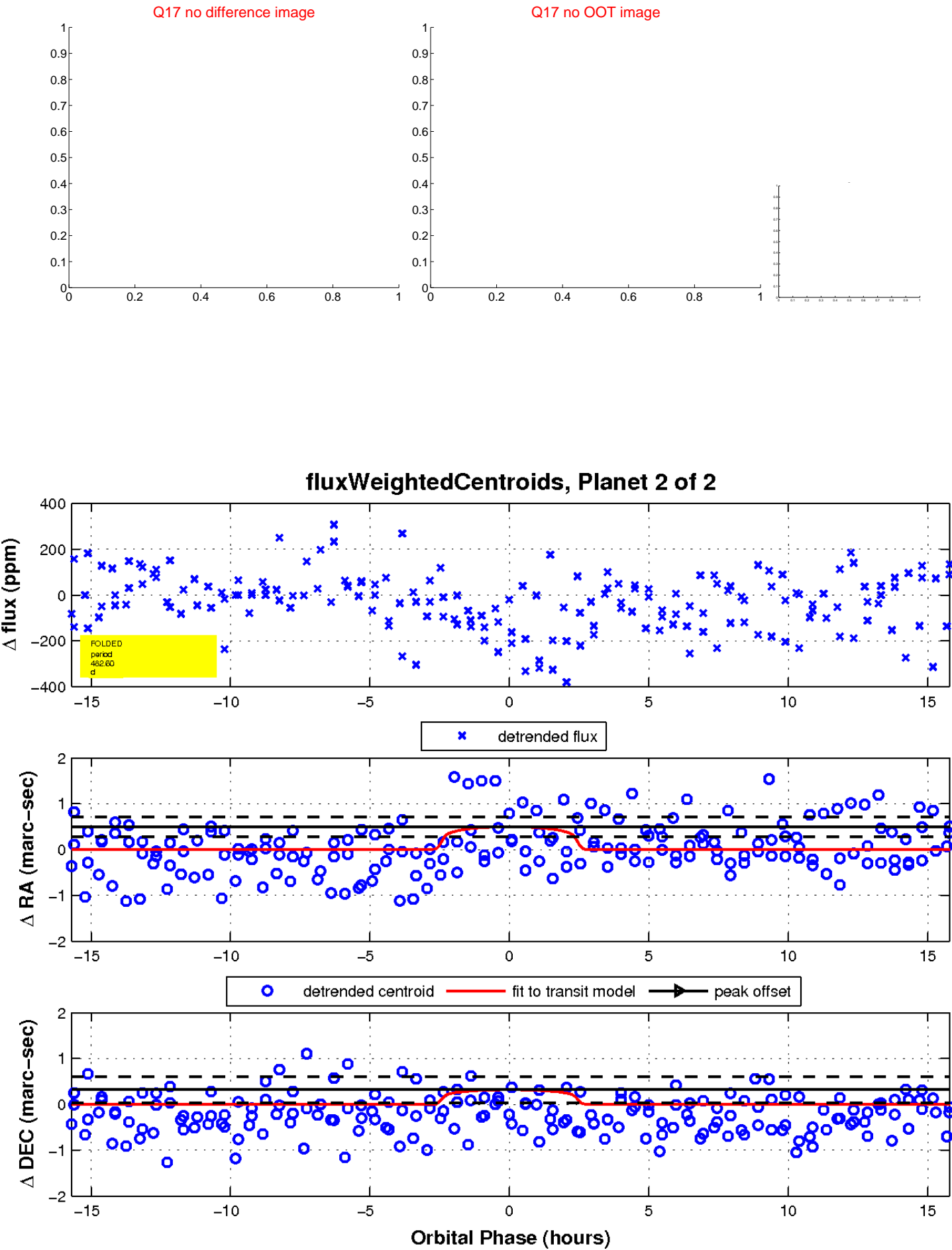
Q16 difference image



Q16 OOT image



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



UKIRT Image

