

KIC 012506463

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})
012506463-01	OBS	No	388.597672	244.797803	7896.5	24.745	19.8	12.8	1.08	5775	17.41	1.08
012506463-02	OBS	No	438.664068	134.710881	3216.2	10.034	22.5	7.9	1.08	5775	6.05	0.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012506463-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST
012506463-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—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.

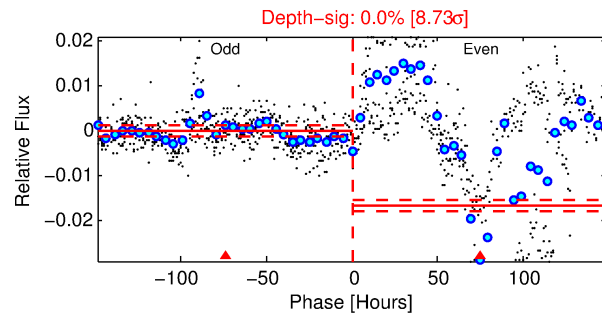
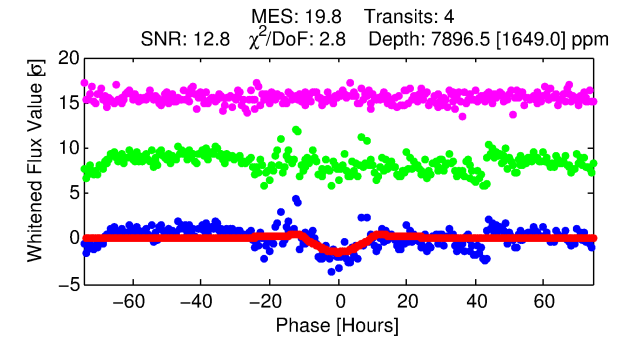
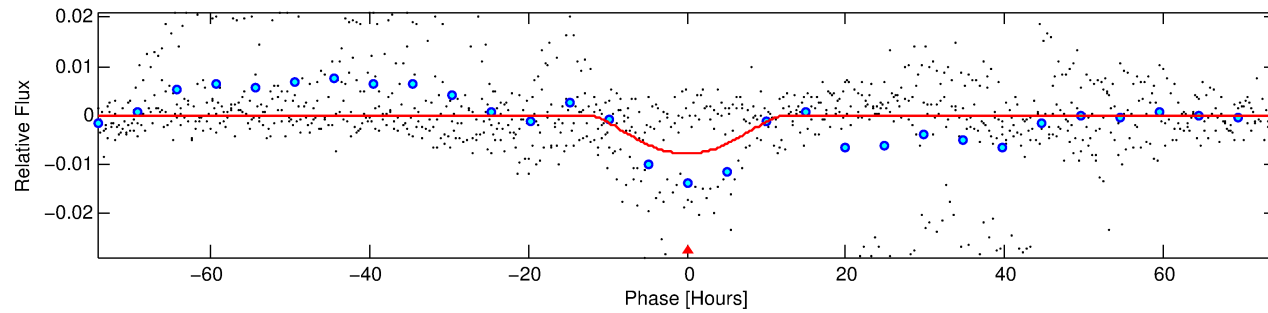
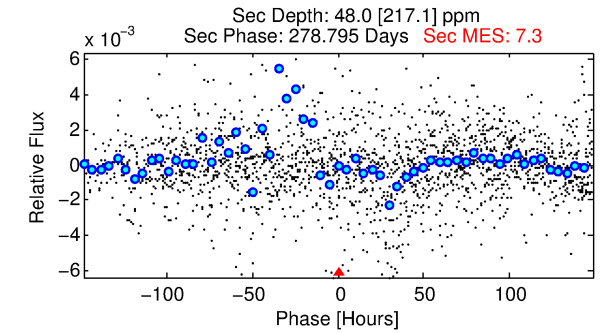
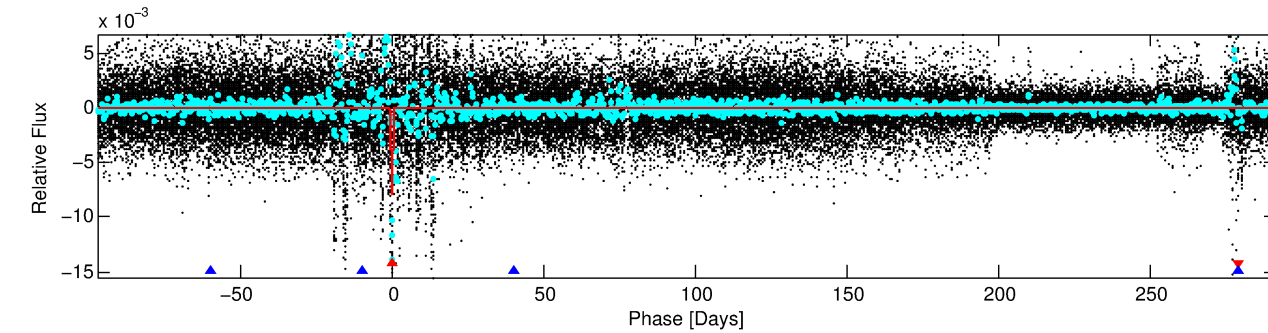
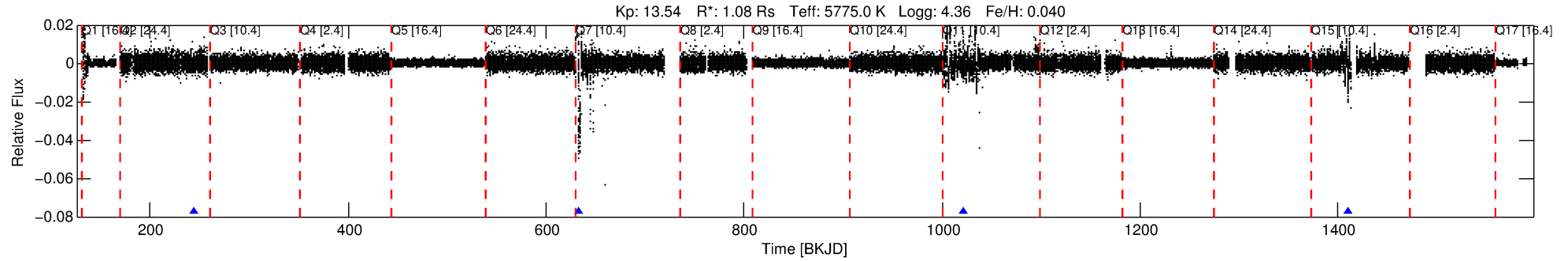
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012506463-01

No Significant Match Found

DV One-Page Summary

KIC: 12506463 Candidate: 1 of 2 Period: 388.598 d



DV Fit Results:

Period = 388.59767 [0.02559] d
Epoch = 244.7978 [0.0499] BKJD
Rp/R* = 0.1479 [0.6408]
a/R* = 67.73 [46.19]
b = 1.00 [0.88]
Seff = 1.08 [0.41]
Teq = 260 [24] K
Rp = 17.41 [75.61] Re
a = 1.0345 [0.2440] AU
Ag = 93.20 [911.81] [0.10σ]
Teffp = 1250 [3056] K [0.32σ]

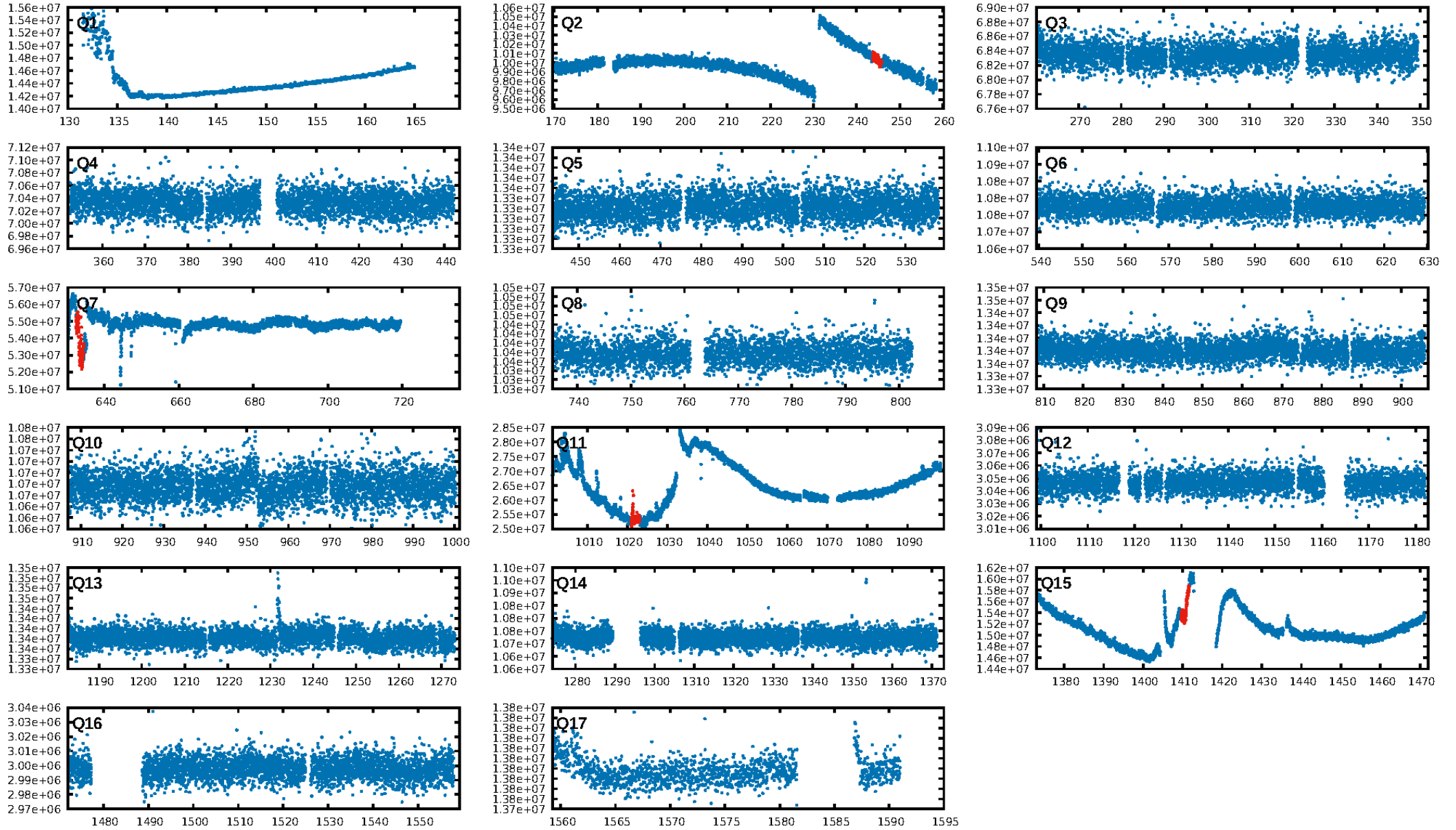
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [45.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 1.13e-14
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.2244
Centroid-sig: 5.9%
Centroid-so: 3.534 arcsec [8.18σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: N/A

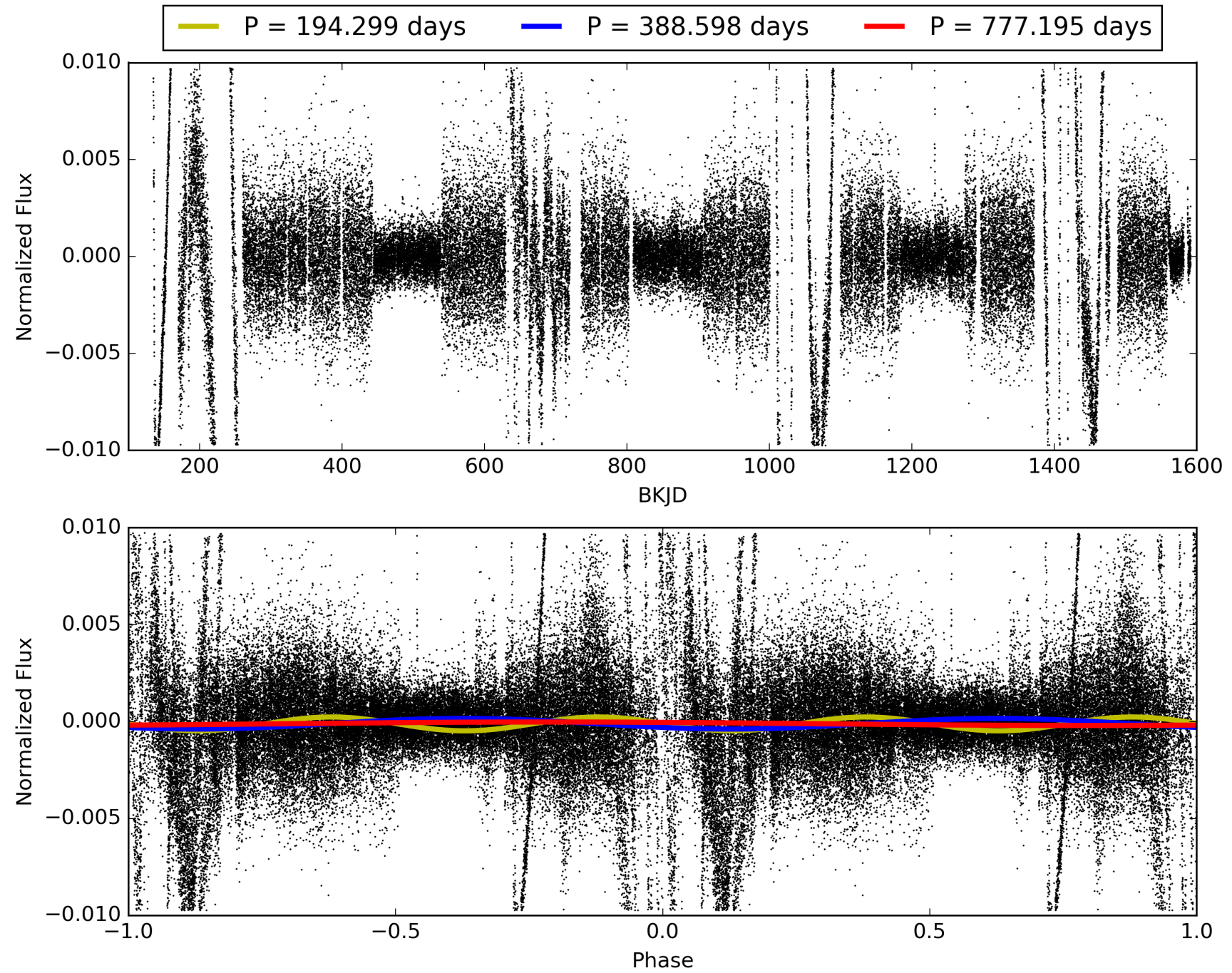
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:36:13 Z

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

TCE 012506463-01, PDC Light Curves

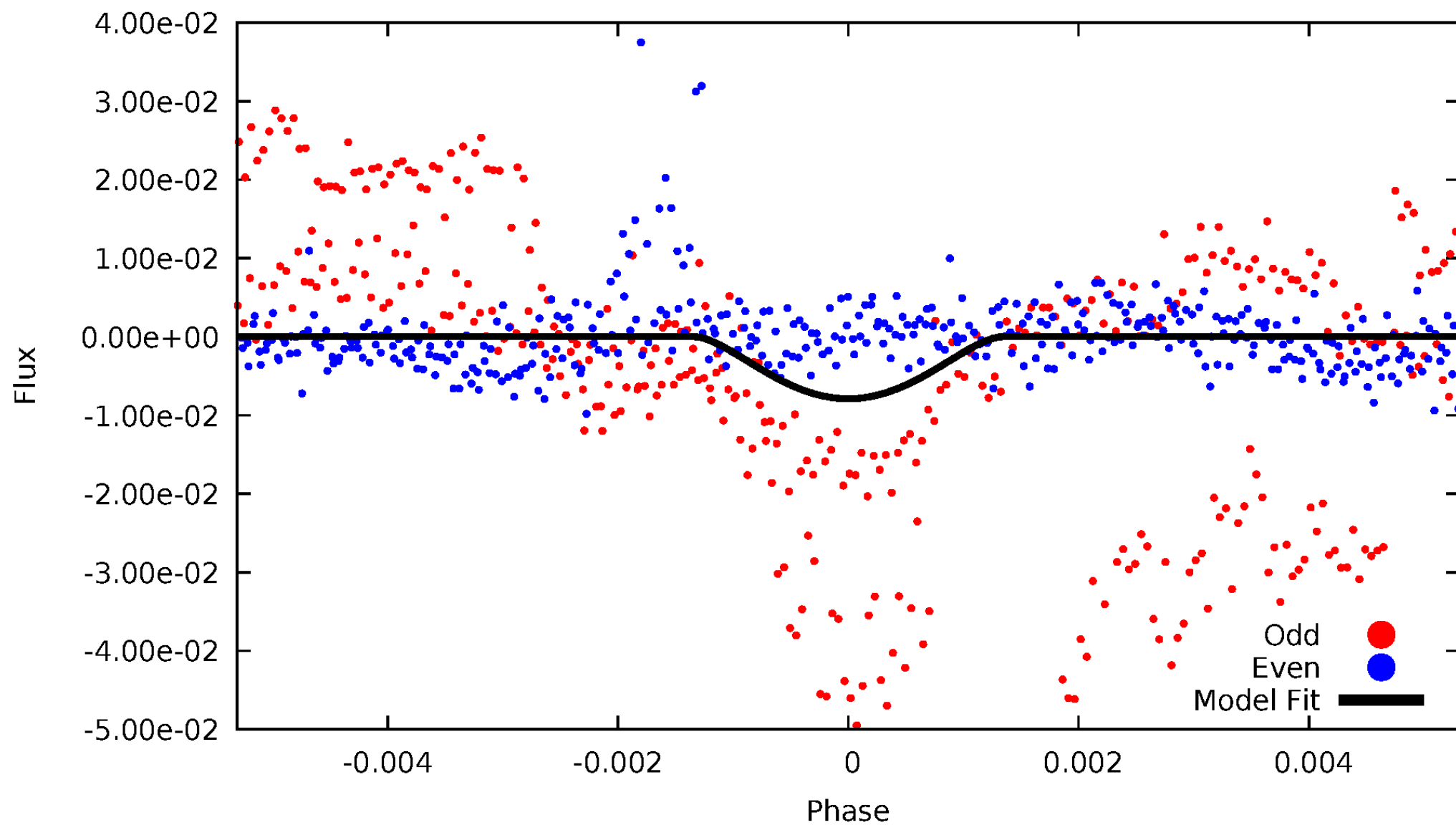


TCE 012506463-01



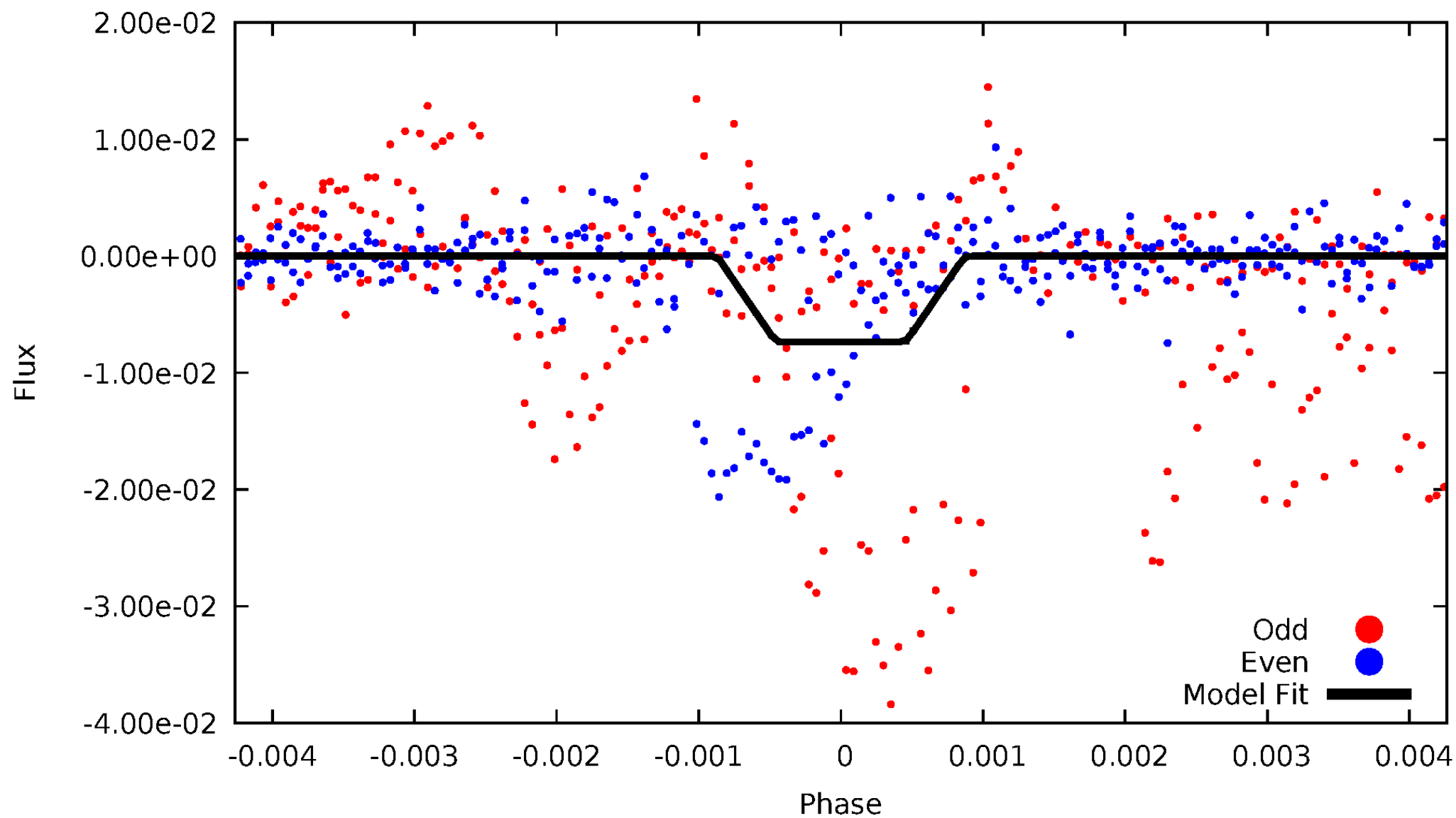
DV Odd/Even

TCE 012506463-01



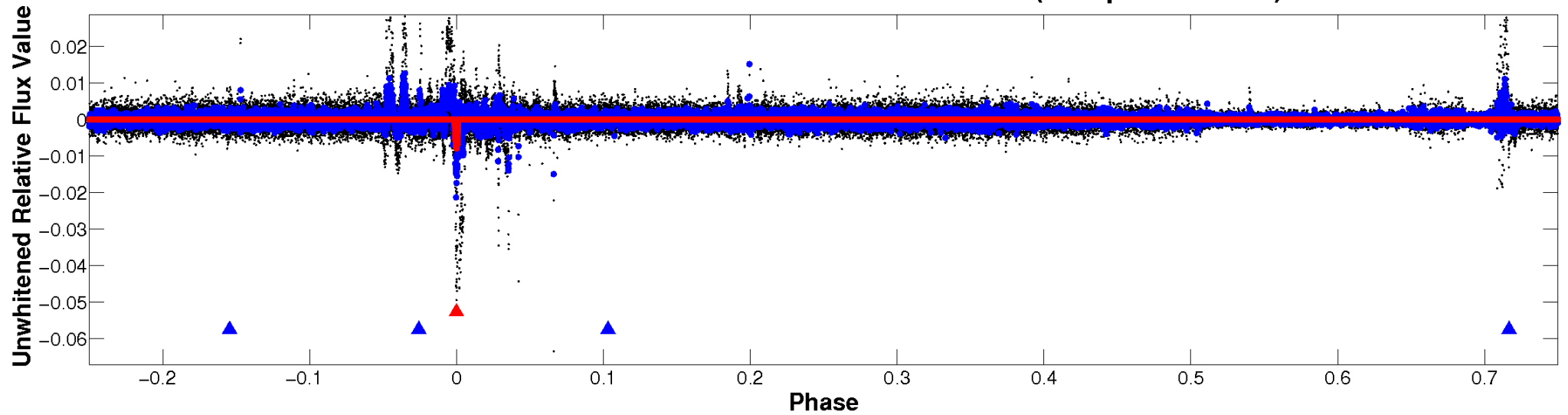
ALT Odd/Even

TCE 012506463-01

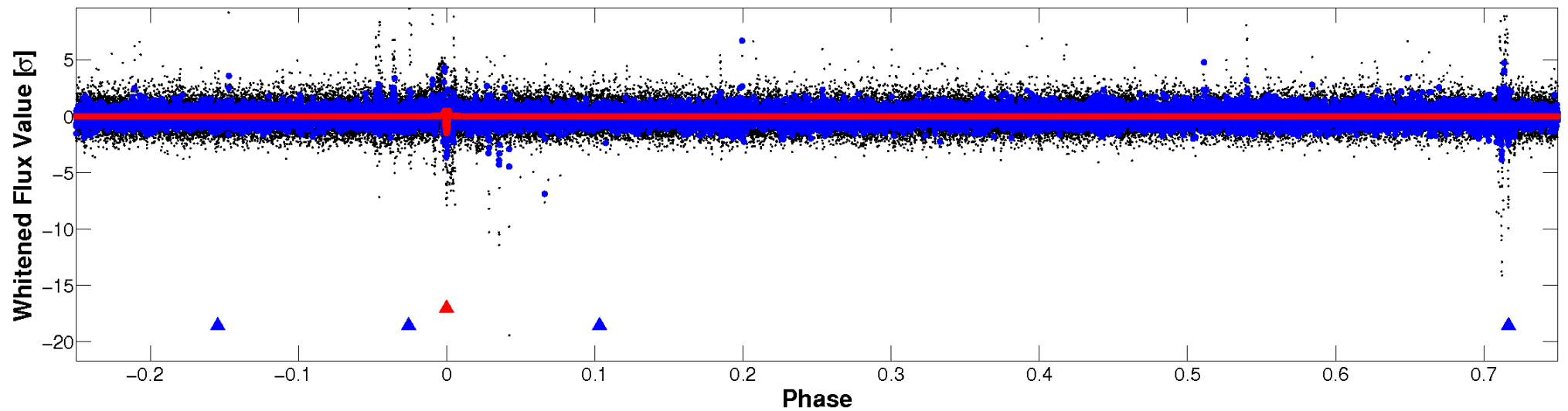


Non-Whitened Vs. Whitened Light Curve

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

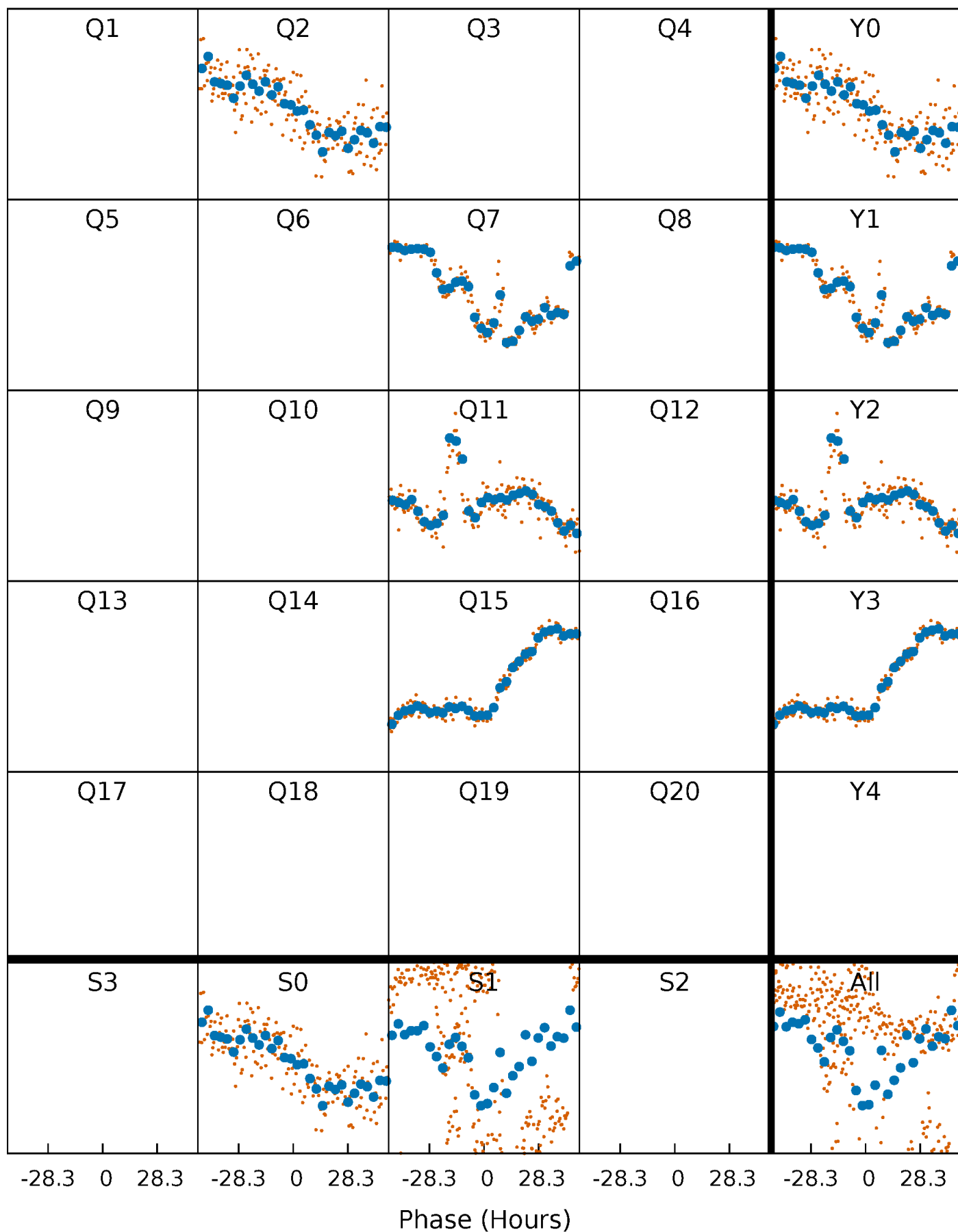


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



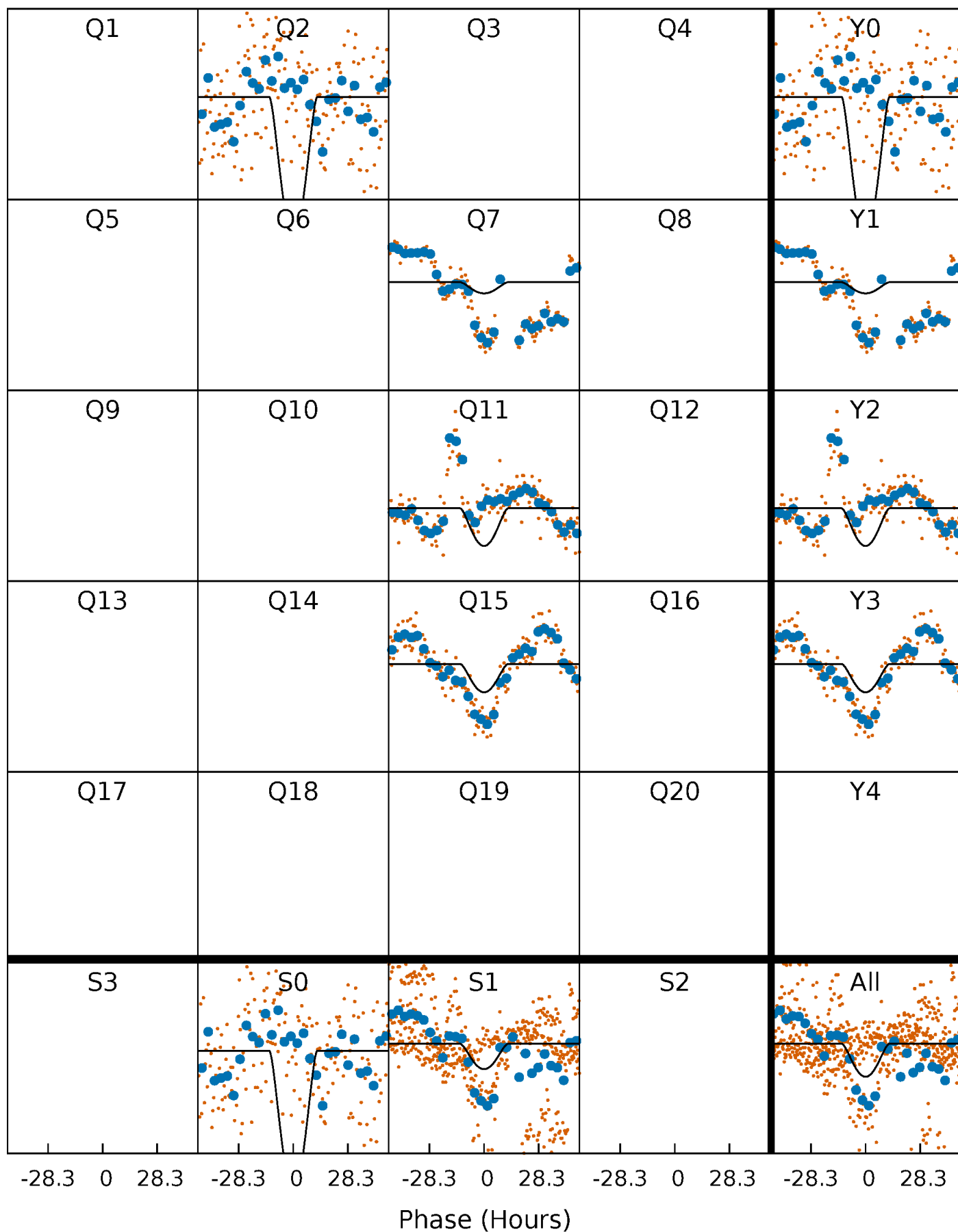
PDC Quarter-Phased Transit Curves

TCE 012506463-01 P=388.597672 Days $T_0=244.797803$ (BKJD)



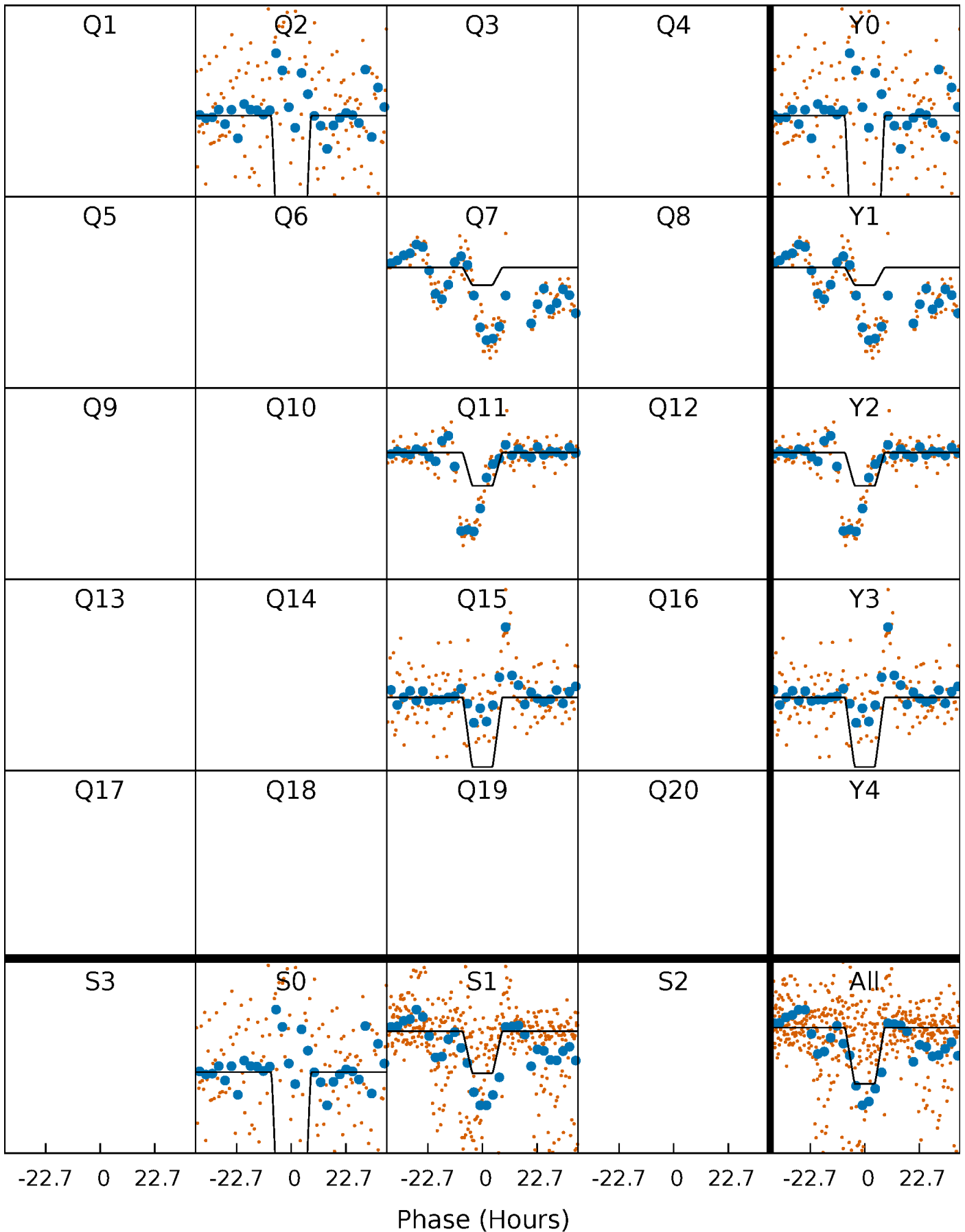
DV Quarter-Phased Transit Curves

TCE 012506463-01 P=388.597672 Days $T_0=244.797803$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

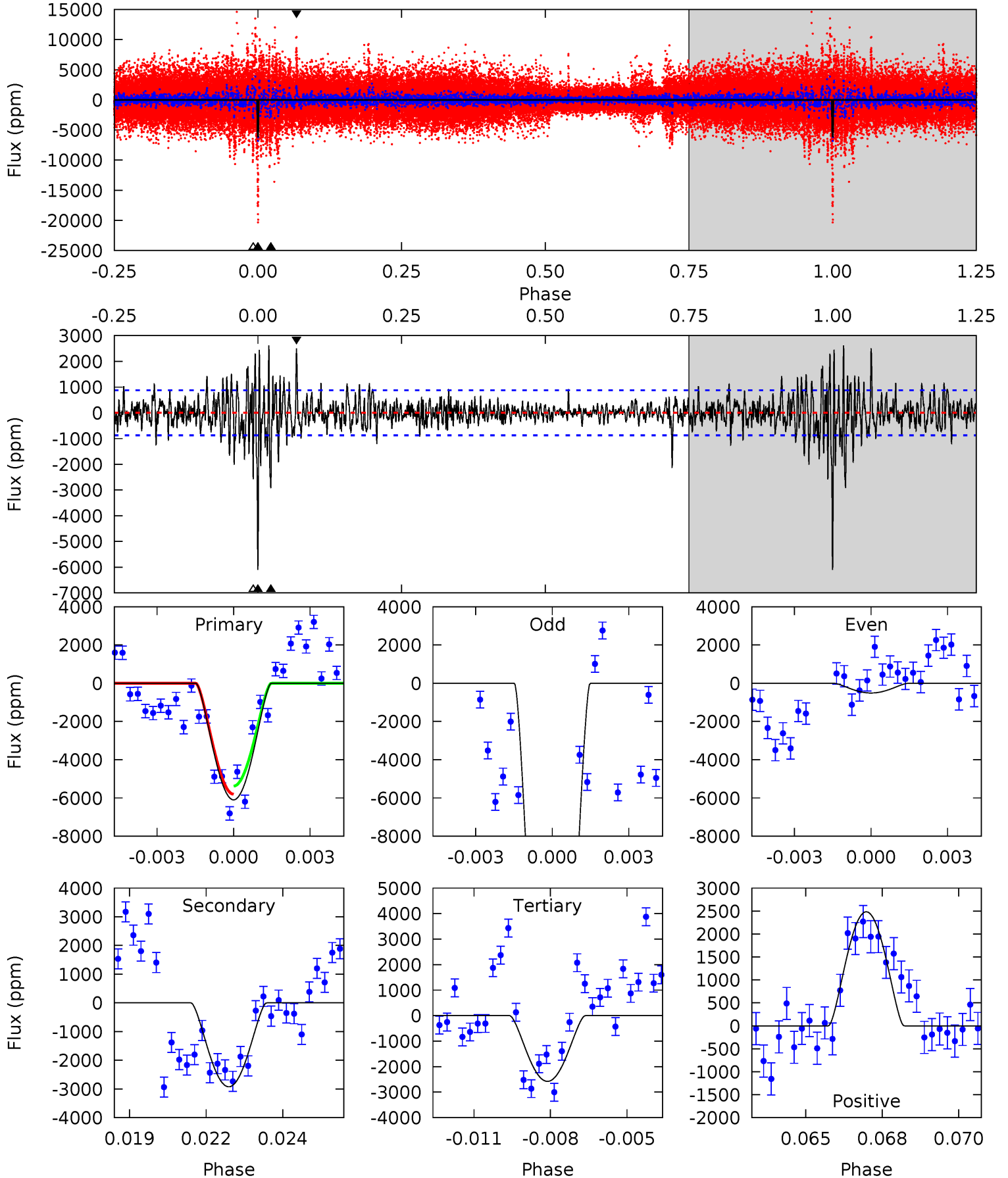
TCE 012506463-01 P=388.625878 Days $T_0=244.660833$ (BKJD)



DV Model-Shift Uniqueness Test

012506463-01, P = 388.597672 Days, E = 244.797803 Days

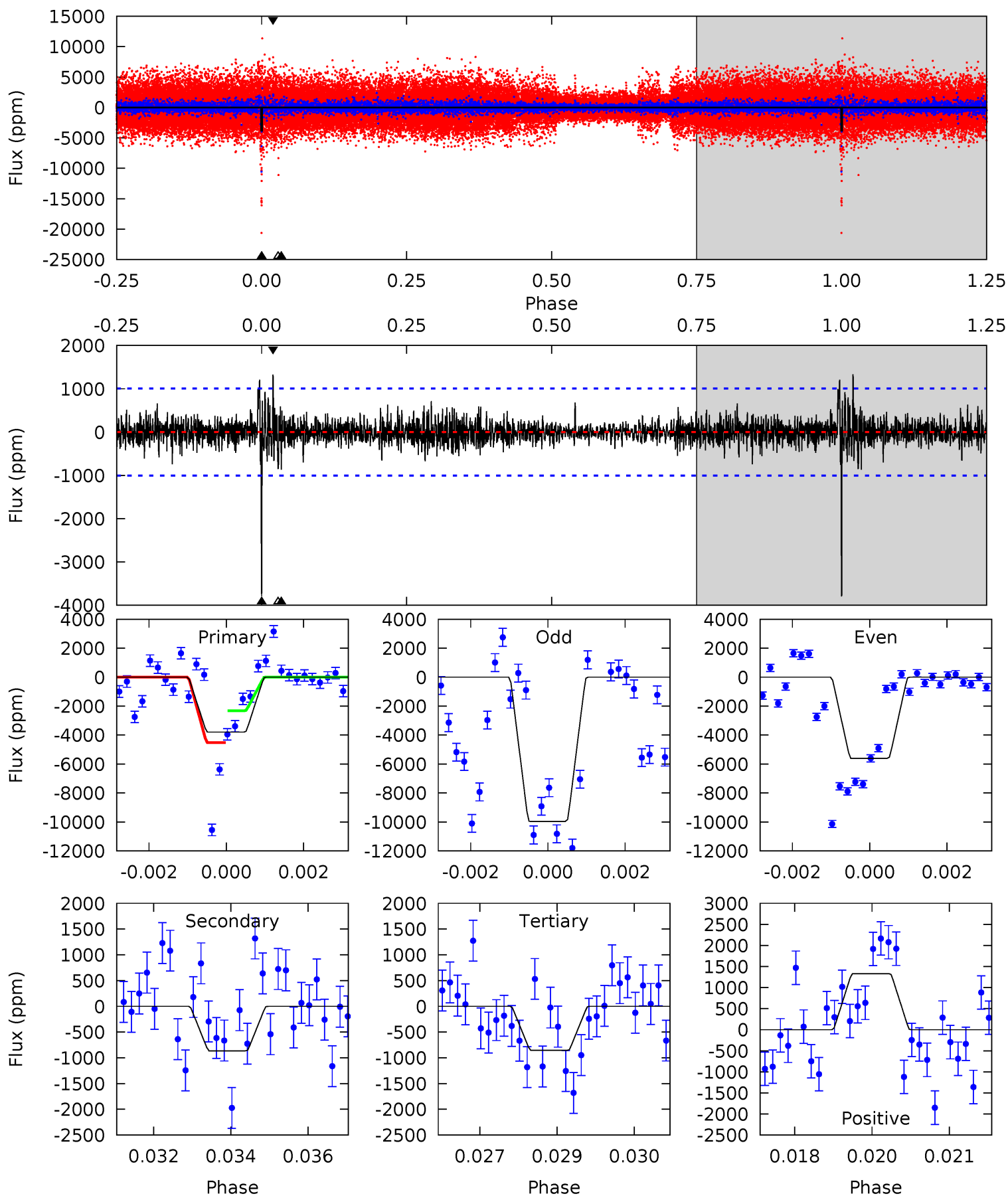
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.6	17.6	15.5	14.9	5.27	3.00	2.77	21.1	21.7	2.09	2.65	69.4	1.65	0.30	1.25



Alt Model-Shift Uniqueness Test

012506463-01, P = 388.625878 Days, E = 244.660833 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	4.59	4.54	7.07	5.35	3.12	1.07	15.6	13.1	0.05	-2.48	12.9	1.42	0.26	5.72



Stellar Parameters For KIC 012506463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5775^{+173}_{-208}	$4.362^{+0.128}_{-0.192}$	$0.040^{+0.250}_{-0.300}$	$1.079^{+0.298}_{-0.174}$	$0.977^{+0.125}_{-0.102}$	$1.095^{+0.652}_{-0.550}$
	+3%/-4%	+3%/-4%	+625%/-750%	+28%/-16%	+13%/-10%	+60%/-50%
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 012506463-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2926 ± 166	$58.25^{+65.10}_{-40.88}$	366^{+28}_{-21}	2721^{+1197}_{-463}	498^{+5271}_{-383}
Alt.	-864 ± 188	$53.92^{+60.81}_{-37.26}$	366^{+27}_{-21}	2368^{+867}_{-358}	167^{+1562}_{-129}

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

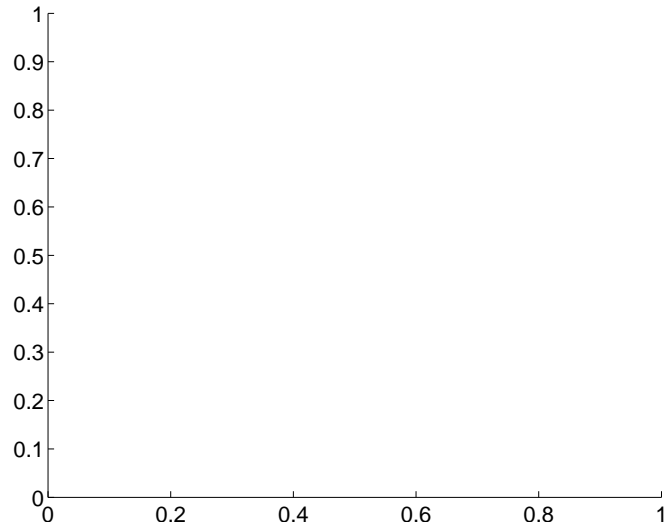
Supplemental centroid analysis for 012506463-01. Kepler magnitude: 13.54. Transit SNR 12.83

There are 0 quarters with good PRF difference image offsets

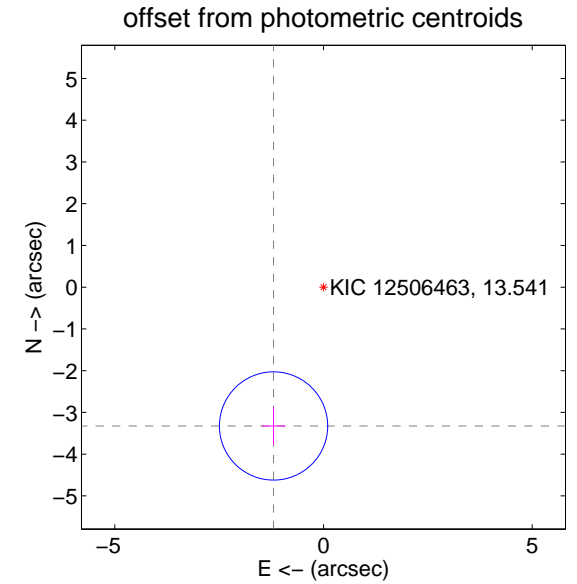
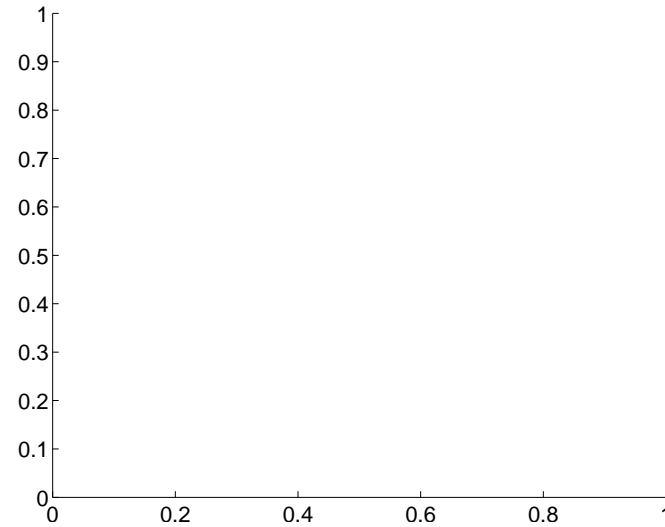
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	3.53 ± 0.43	8.18	1.20 ± 0.29	-3.32 ± 0.45

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC



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.



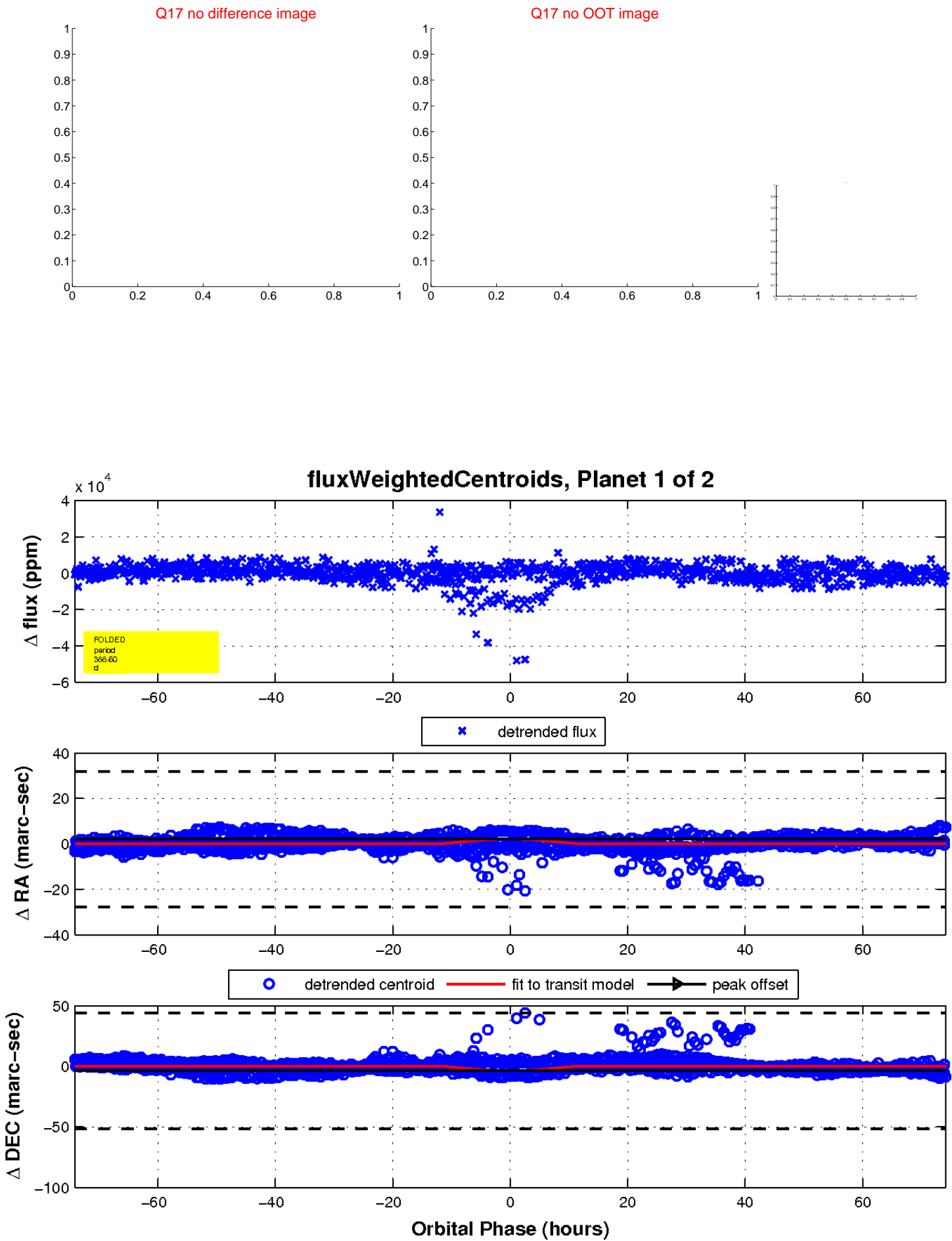
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



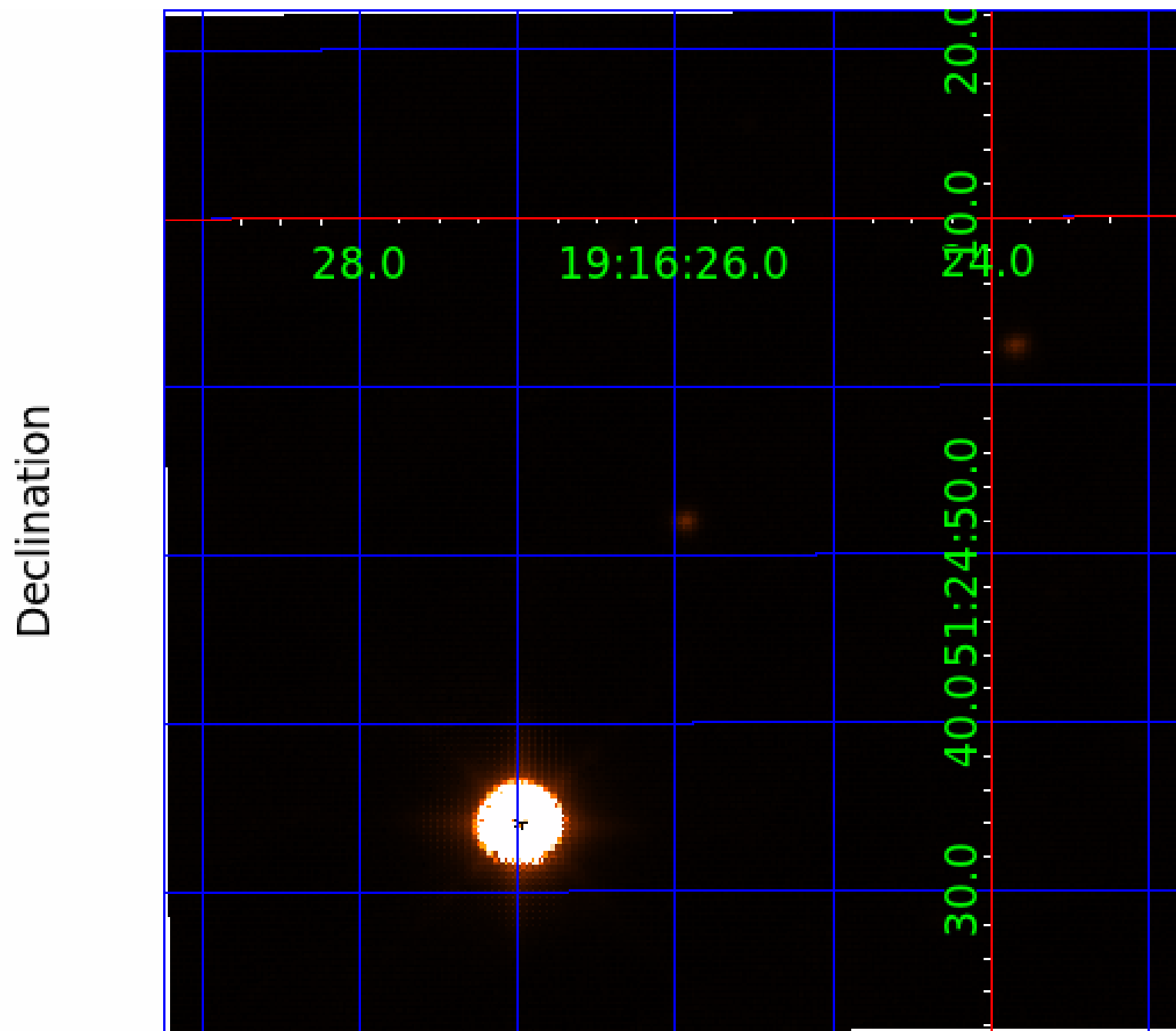
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 012506463

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})
012506463-01	OBS	No	388.597672	244.797803	7896.5	24.745	19.8	12.8	1.08	5775	17.41	1.08
012506463-02	OBS	No	438.664068	134.710881	3216.2	10.034	22.5	7.9	1.08	5775	6.05	0.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012506463-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST
012506463-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—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.

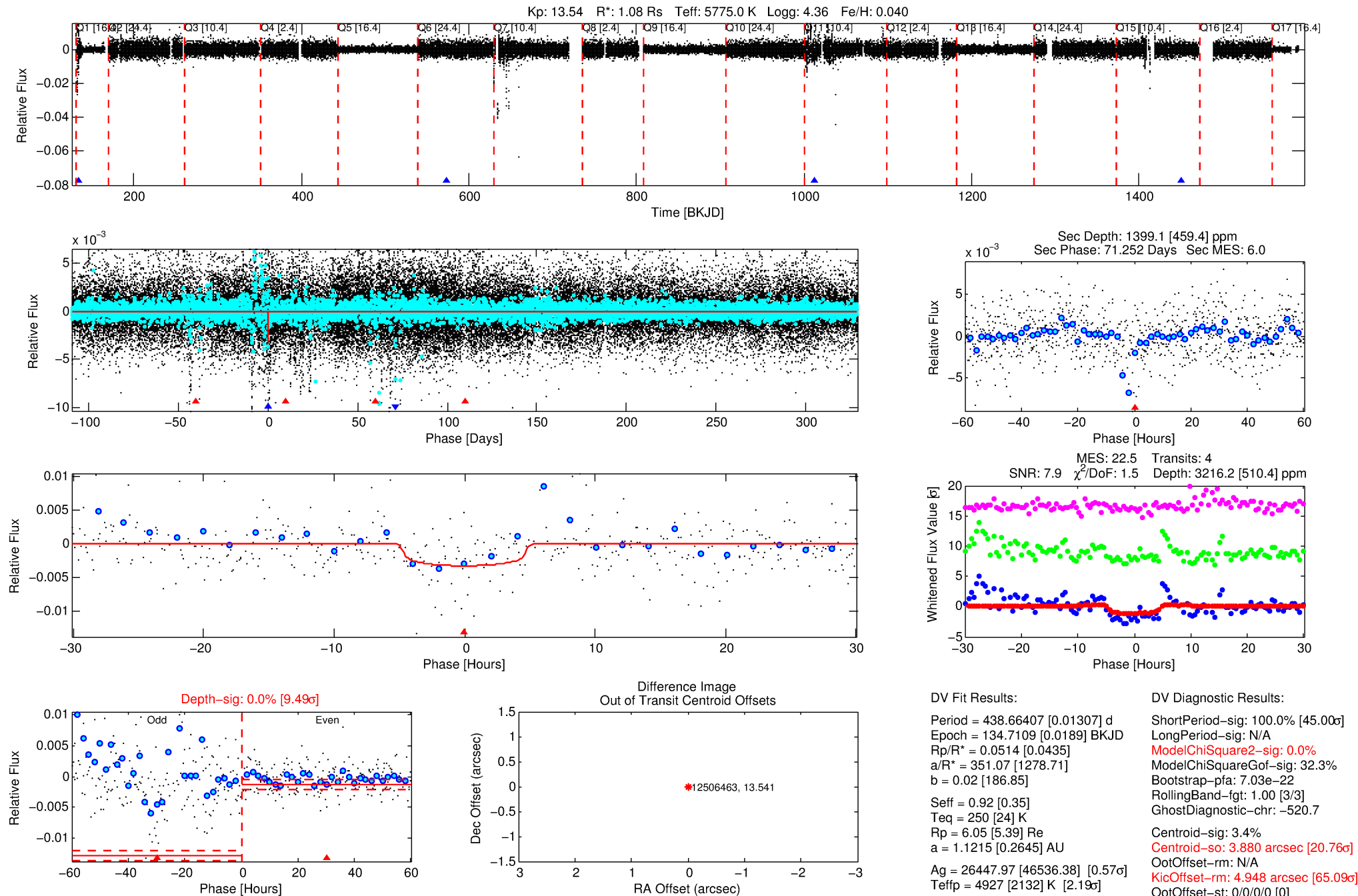
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012506463-02

No Significant Match Found

DV One-Page Summary

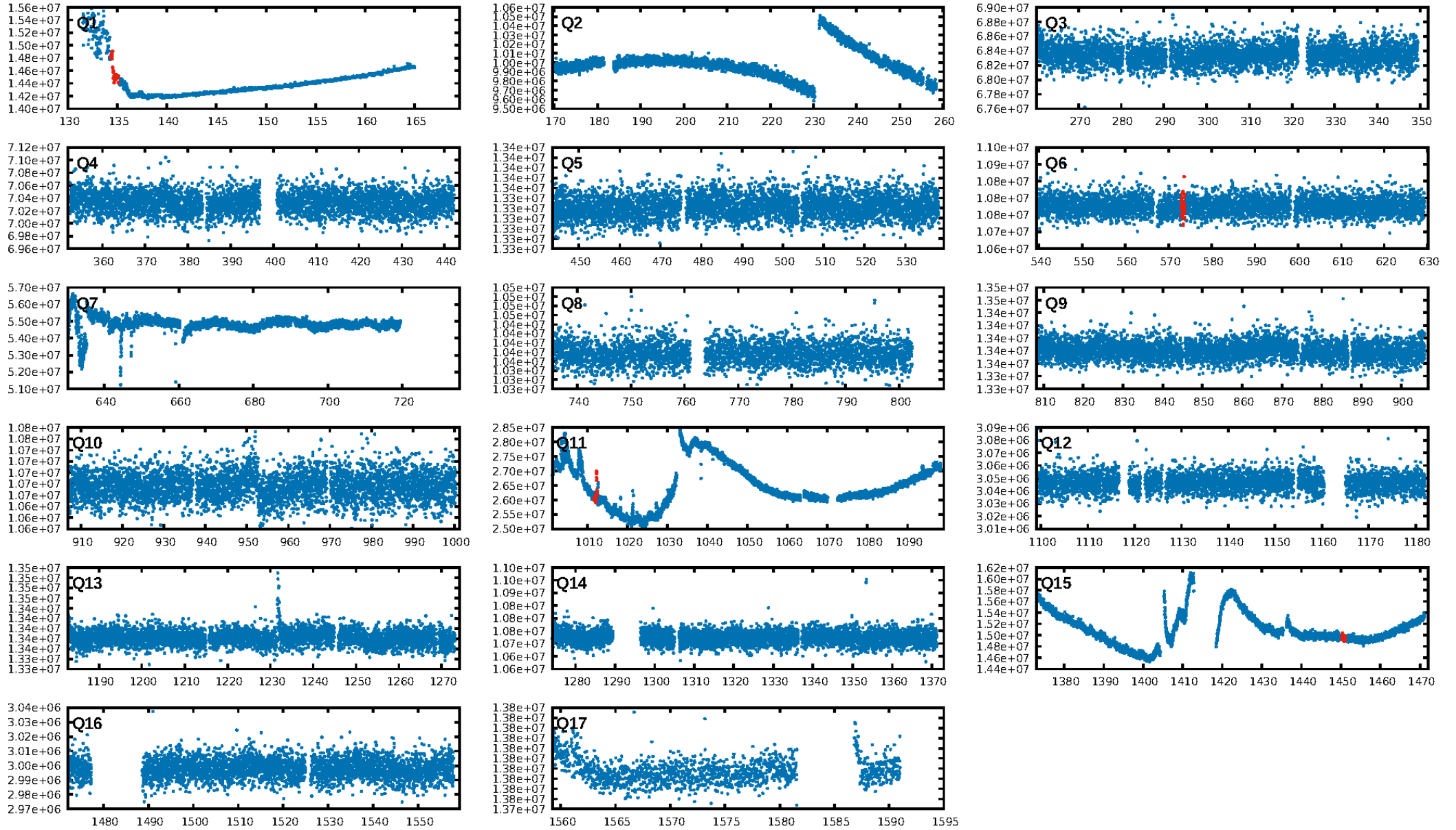
KIC: 12506463 Candidate: 2 of 2 Period: 438.664 d



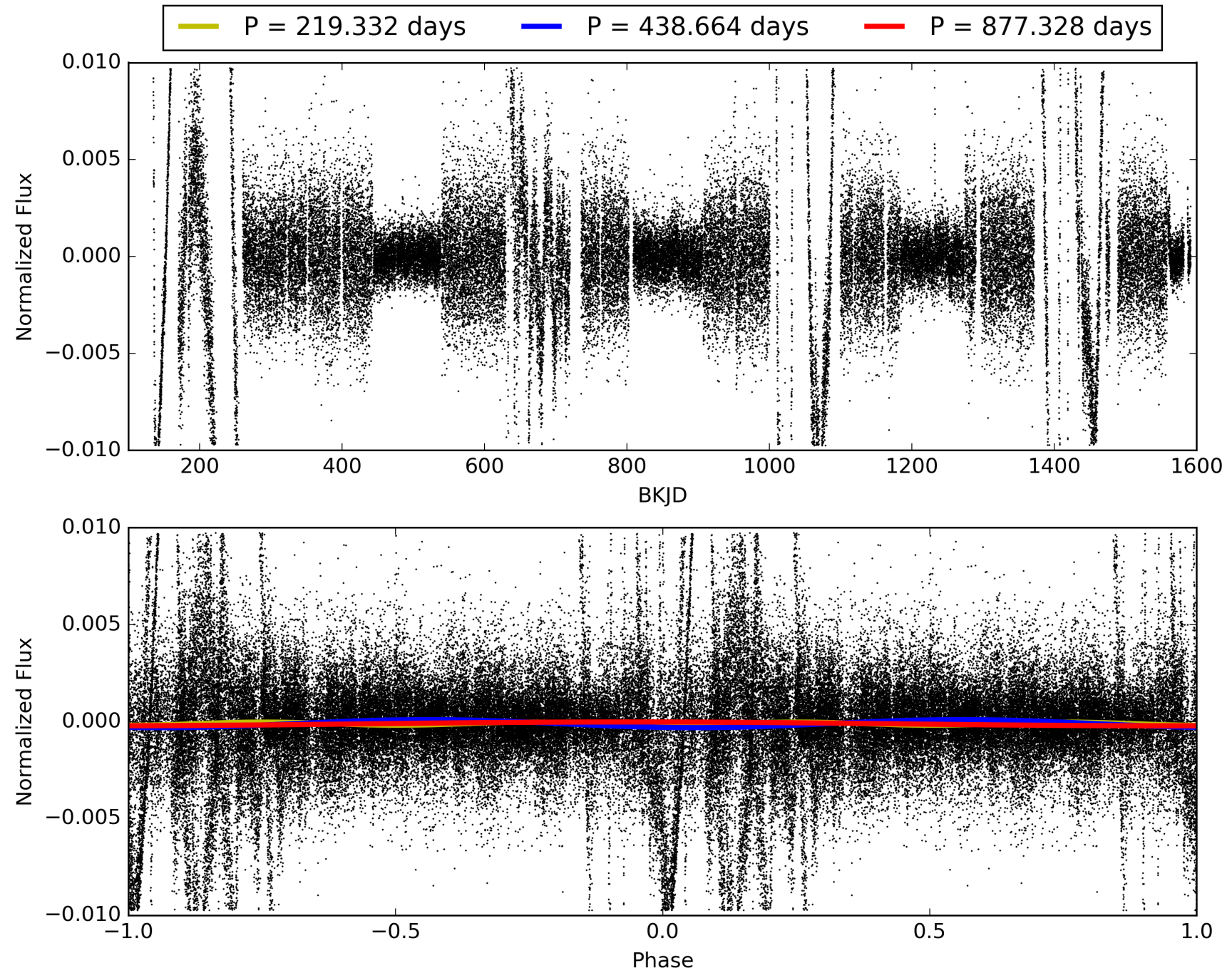
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:36:23 Z

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

TCE 012506463-02, PDC Light Curves

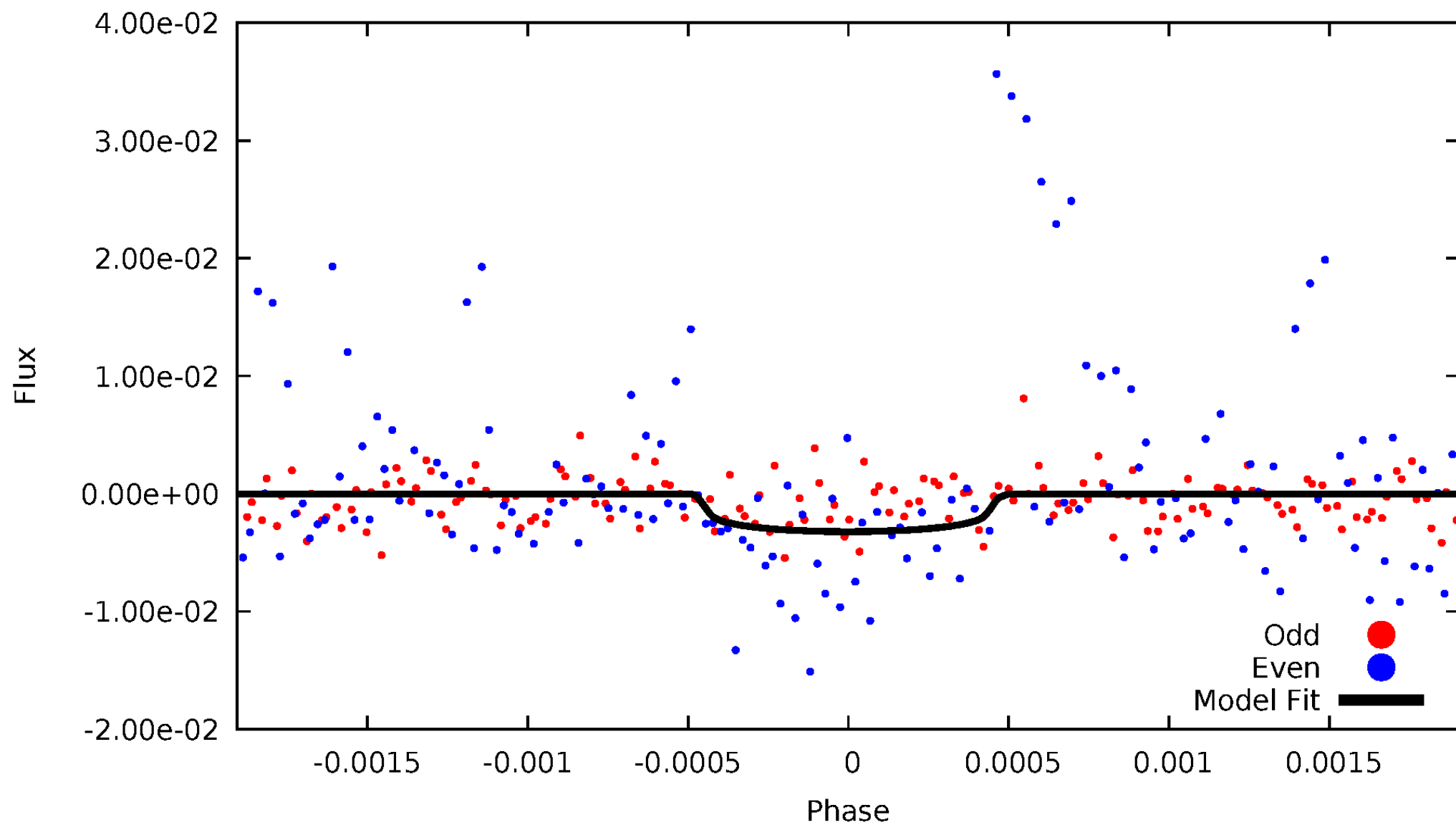


TCE 012506463-02



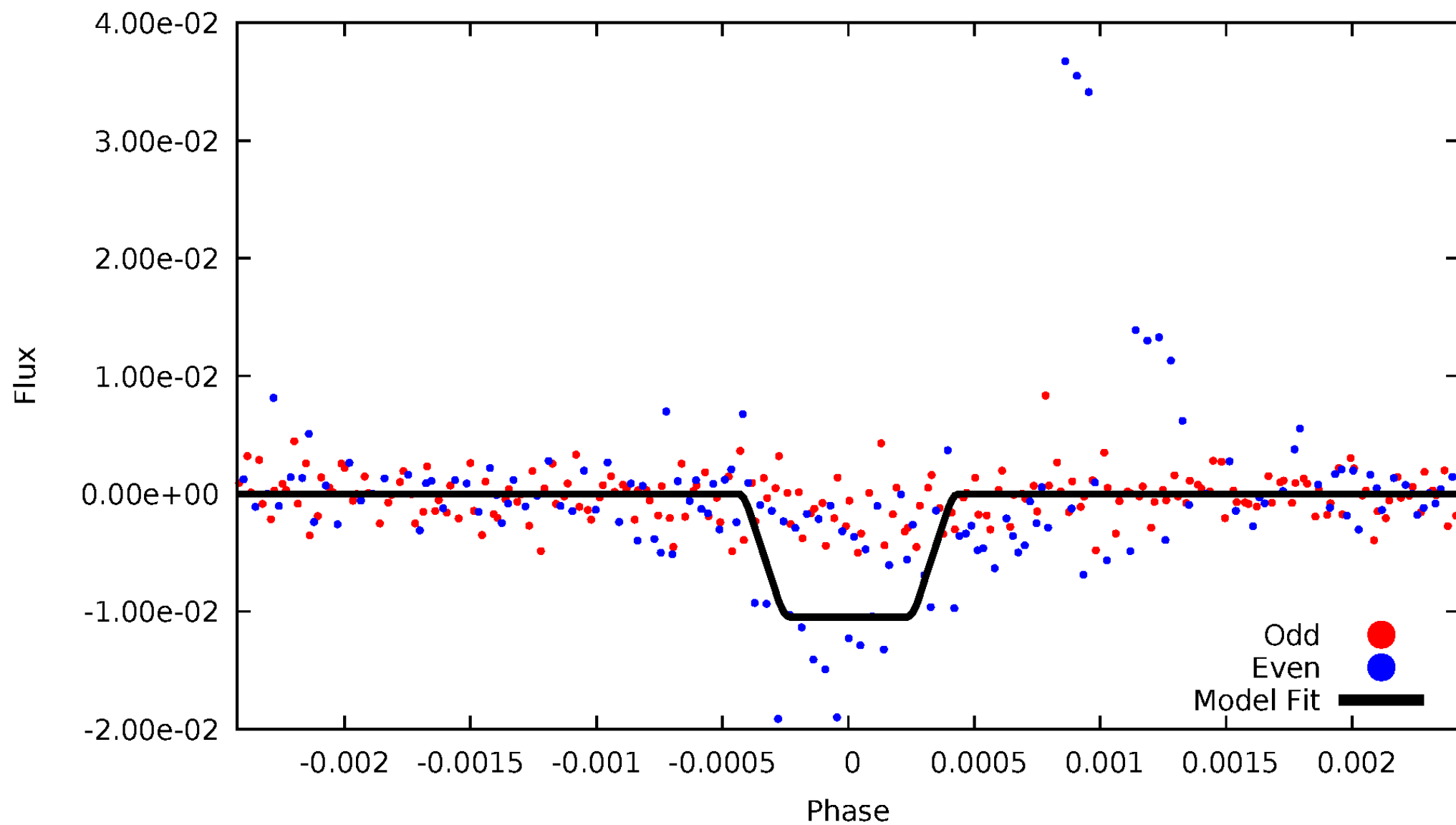
DV Odd/Even

TCE 012506463-02



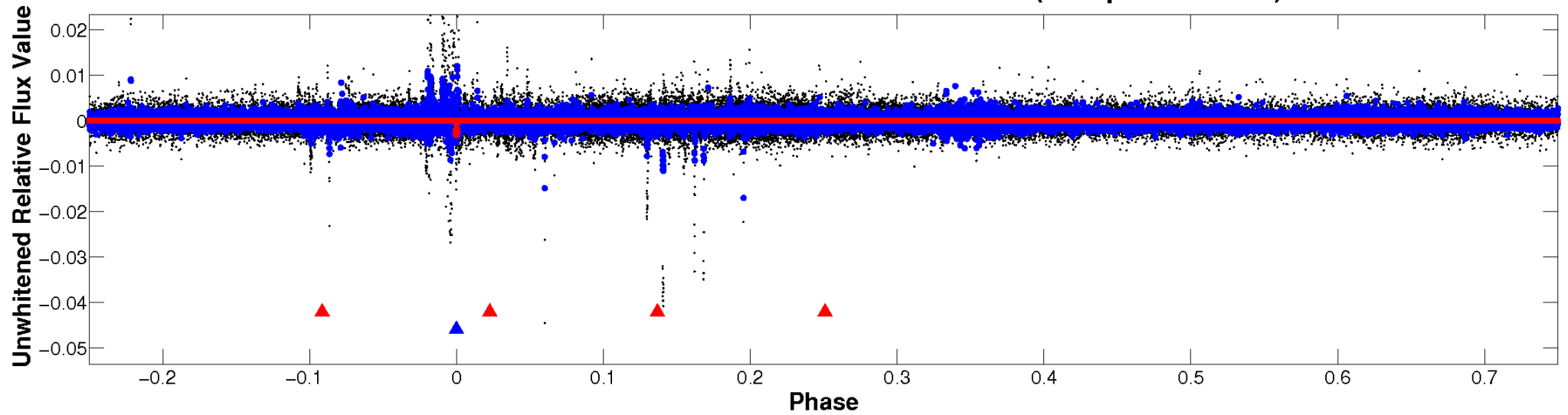
ALT Odd/Even

TCE 012506463-02

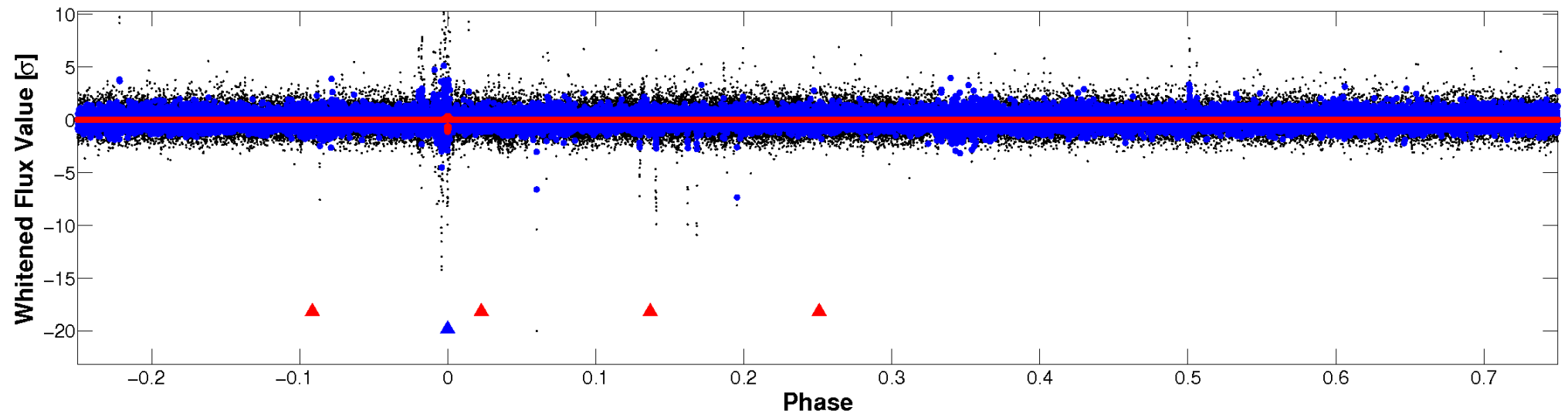


Non-Whitened Vs. Whitened Light Curve

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

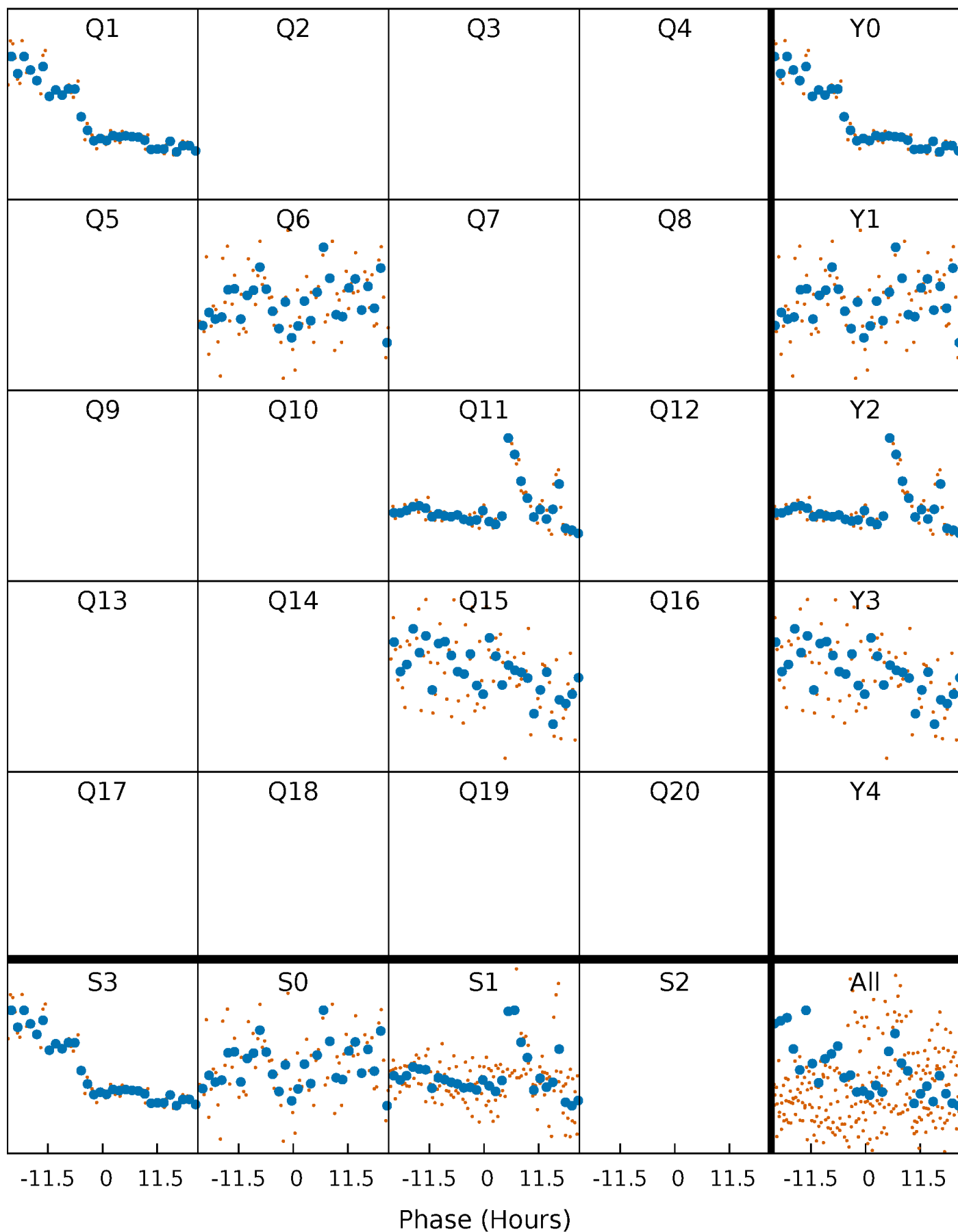


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



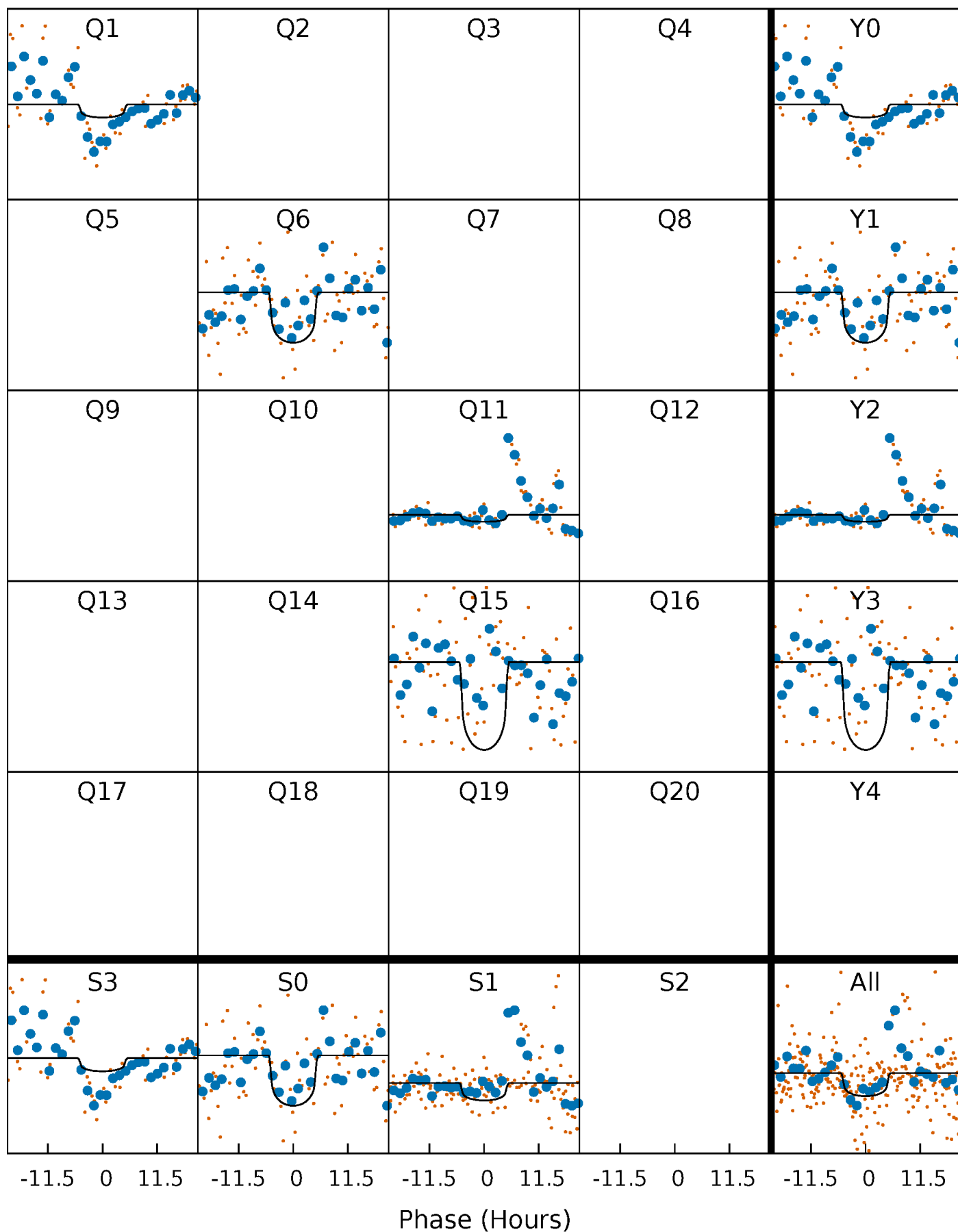
PDC Quarter-Phased Transit Curves

TCE 012506463-02 P=438.664068 Days $T_0=134.710881$ (BKJD)



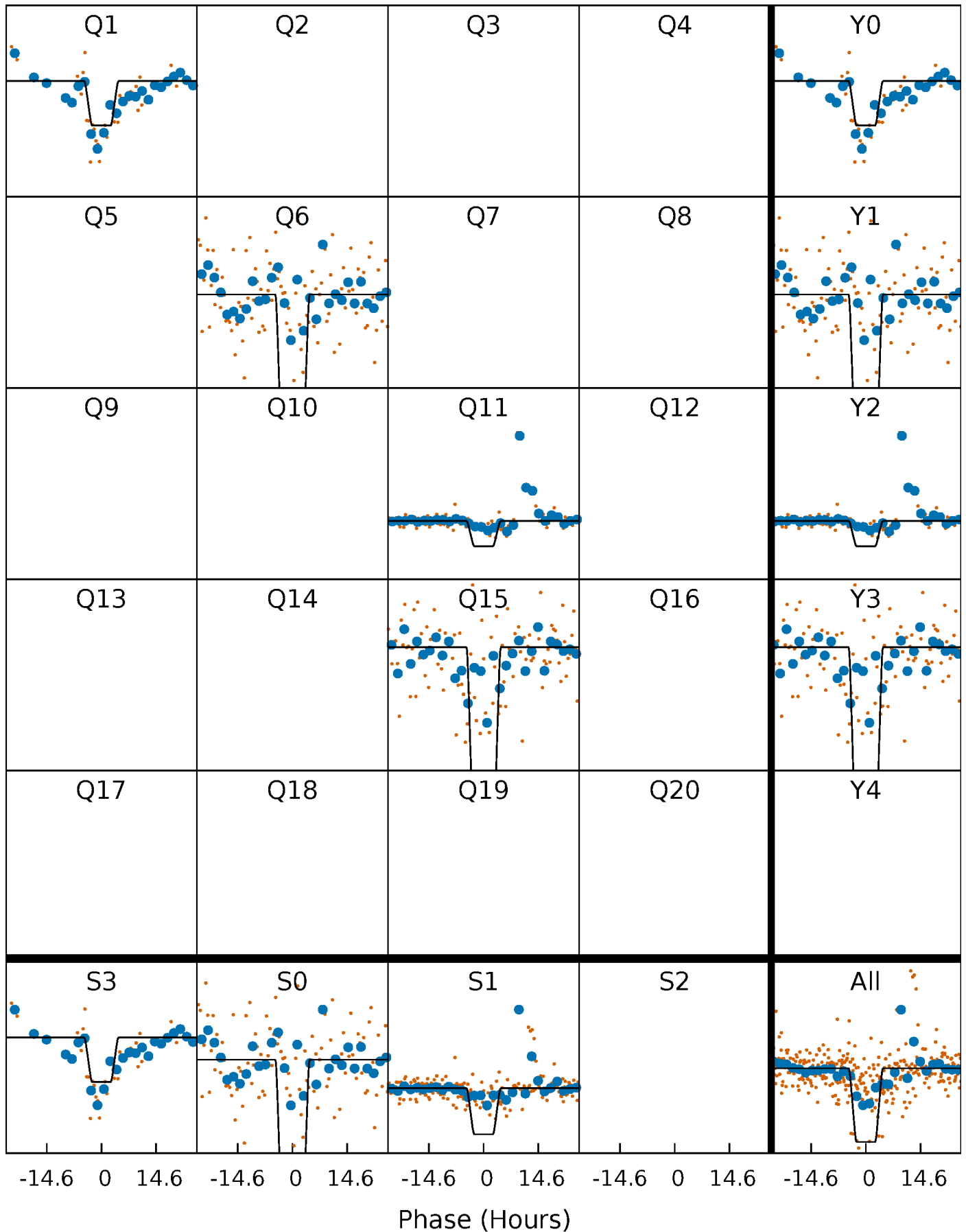
DV Quarter-Phased Transit Curves

TCE 012506463-02 $P=438.664068$ Days $T_0=134.710881$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

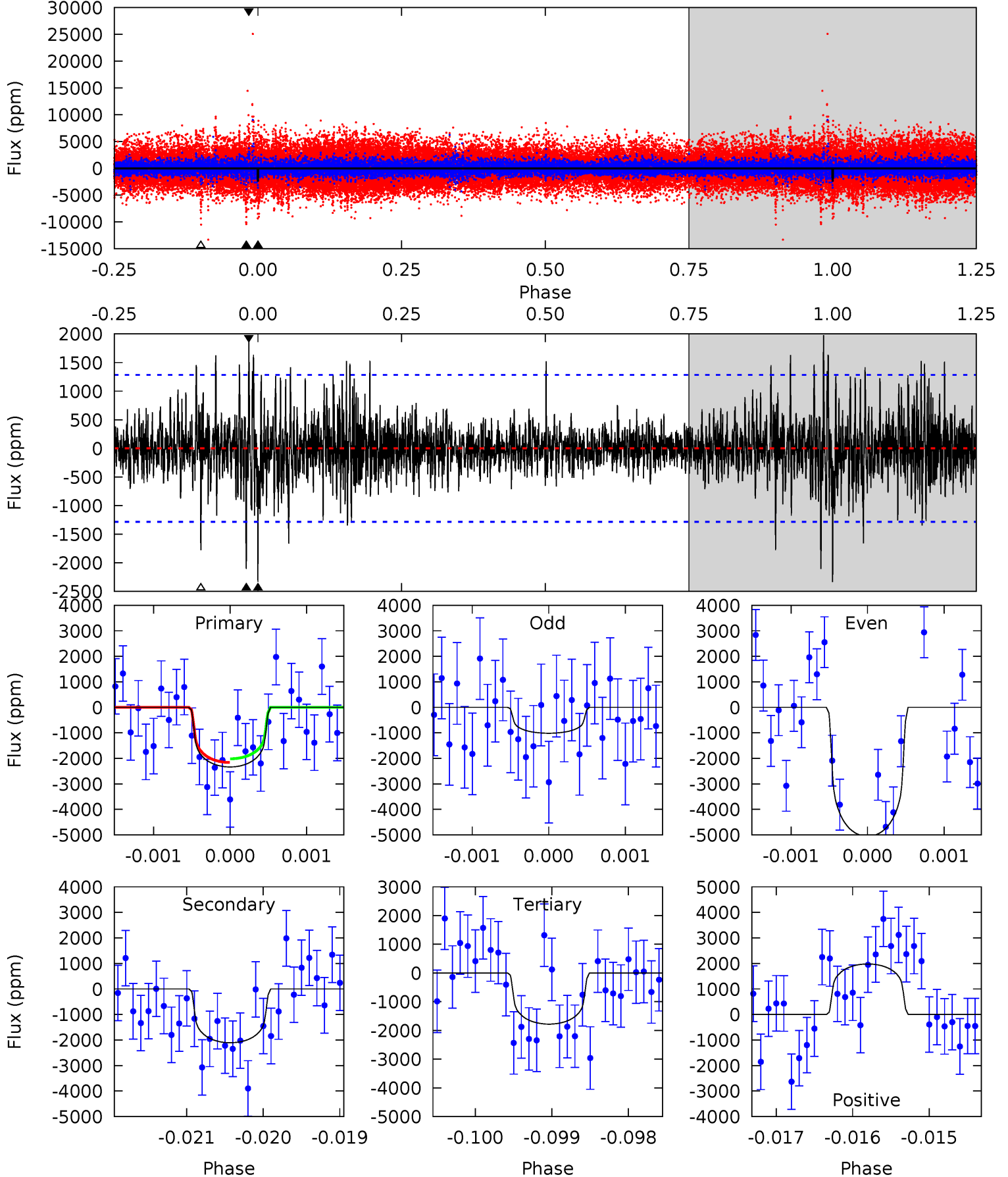
TCE 012506463-02 P=438.592743 Days $T_0=134.678879$ (BKJD)



DV Model-Shift Uniqueness Test

012506463-02, P = 438.664068 Days, E = 134.710881 Days

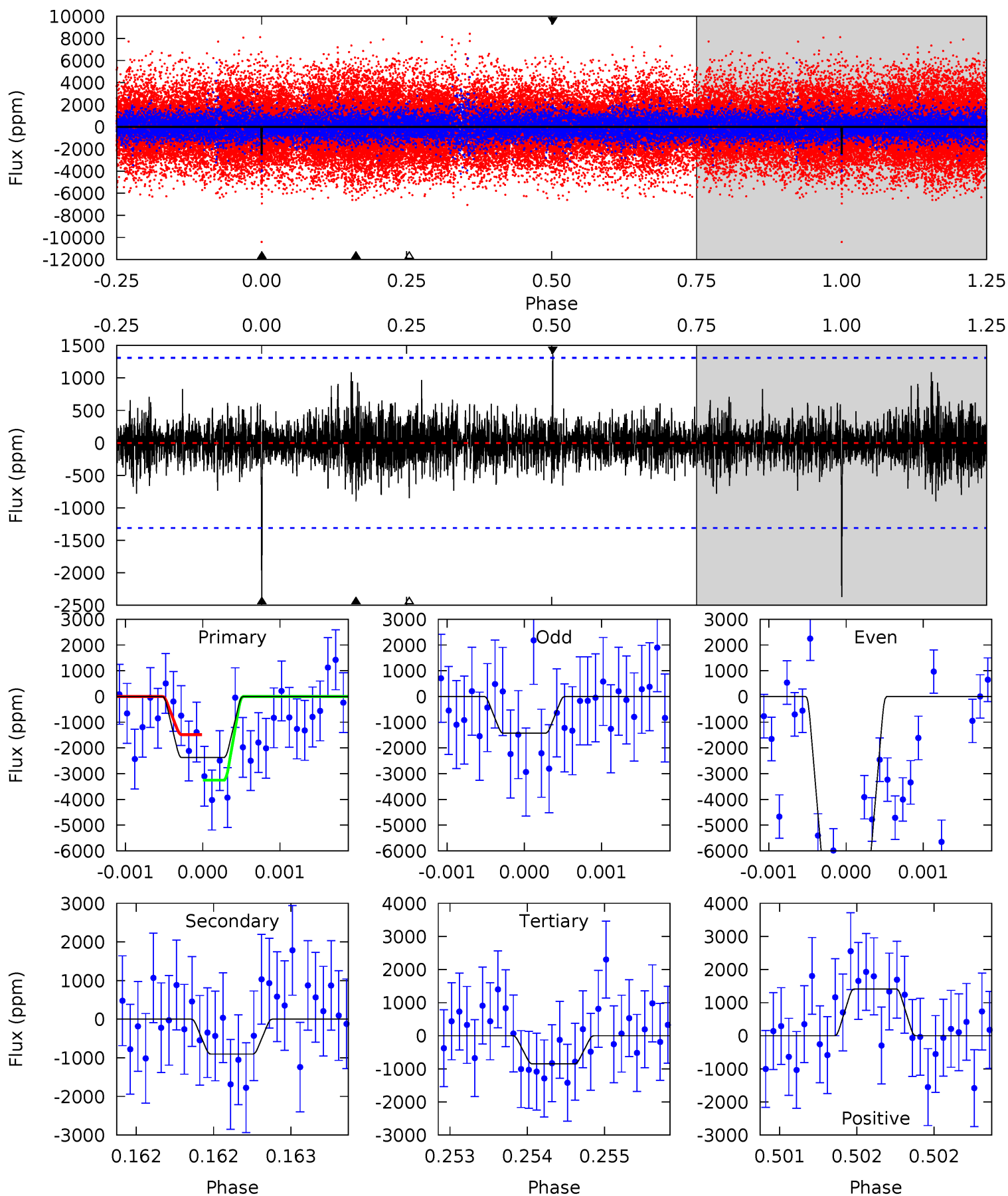
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.94	8.96	7.58	8.42	5.46	3.31	1.54	2.37	1.52	1.39	0.54	8.29	1.73	0.46	0.31



Alt Model-Shift Uniqueness Test

012506463-02, P = 438.592743 Days, E = 134.678879 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.93	3.77	3.55	5.90	5.48	3.34	0.94	6.38	4.03	0.22	-2.13	12.0	2.11	0.37	3.74



Stellar Parameters For KIC 012506463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5775^{+173}_{-208}	$4.362^{+0.128}_{-0.192}$	$0.040^{+0.250}_{-0.300}$	$1.079^{+0.298}_{-0.174}$	$0.977^{+0.125}_{-0.102}$	$1.095^{+0.652}_{-0.550}$
	+3%/-4%	+3%/-4%	+625%/-750%	+28%/-16%	+13%/-10%	+60%/-50%
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 012506463-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2106 ± 235	$6.71^{+5.38}_{-4.09}$	351^{+27}_{-22}	5291^{+3229}_{-1117}	$31769^{+186083}_{-21568}$
Alt.	-902 ± 239	$11.84^{+5.53}_{-4.84}$	348^{+29}_{-19}	3593^{+750}_{-422}	4301^{+8569}_{-2484}

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

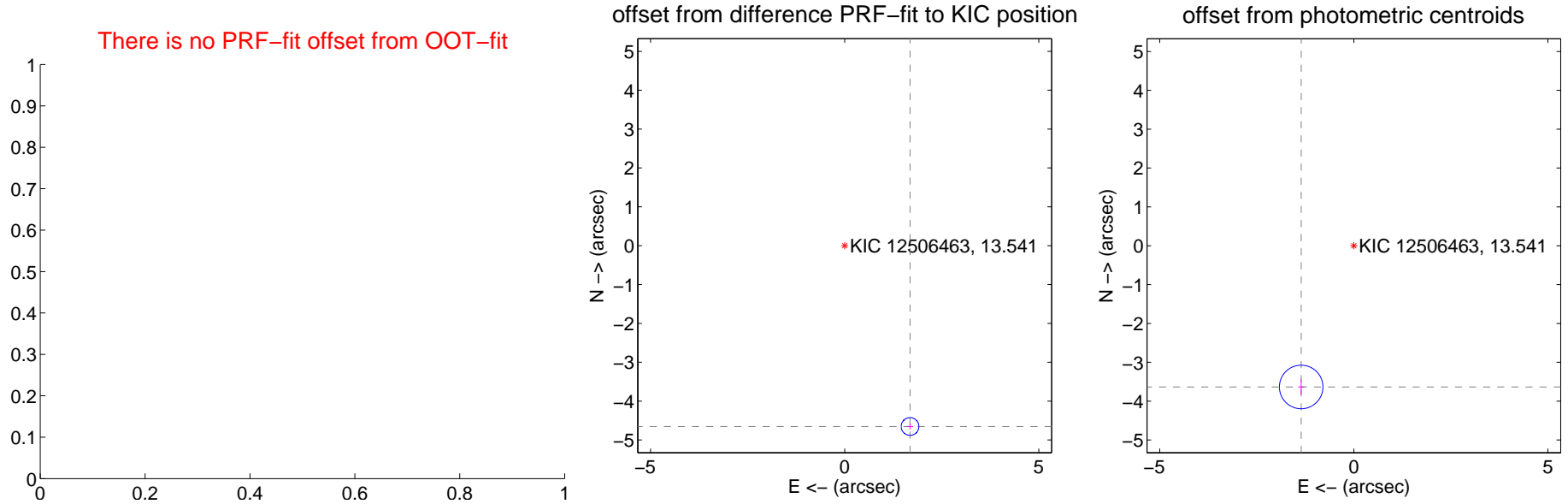
DV Centroid Data

Supplemental centroid analysis for 012506463-02. Kepler magnitude: 13.54. Transit SNR 7.93

There are 0 quarters with good PRF difference image offsets

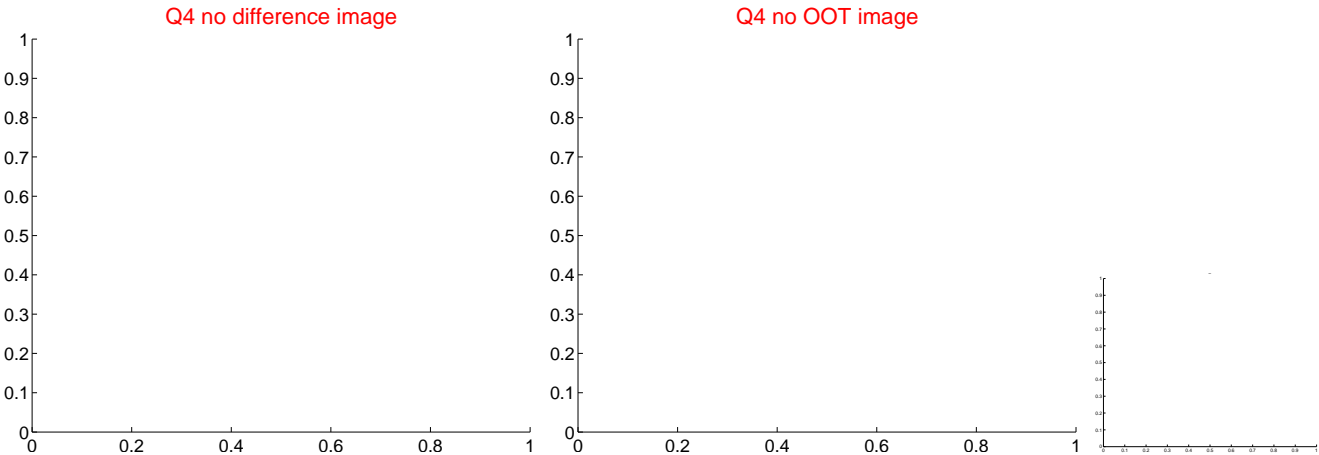
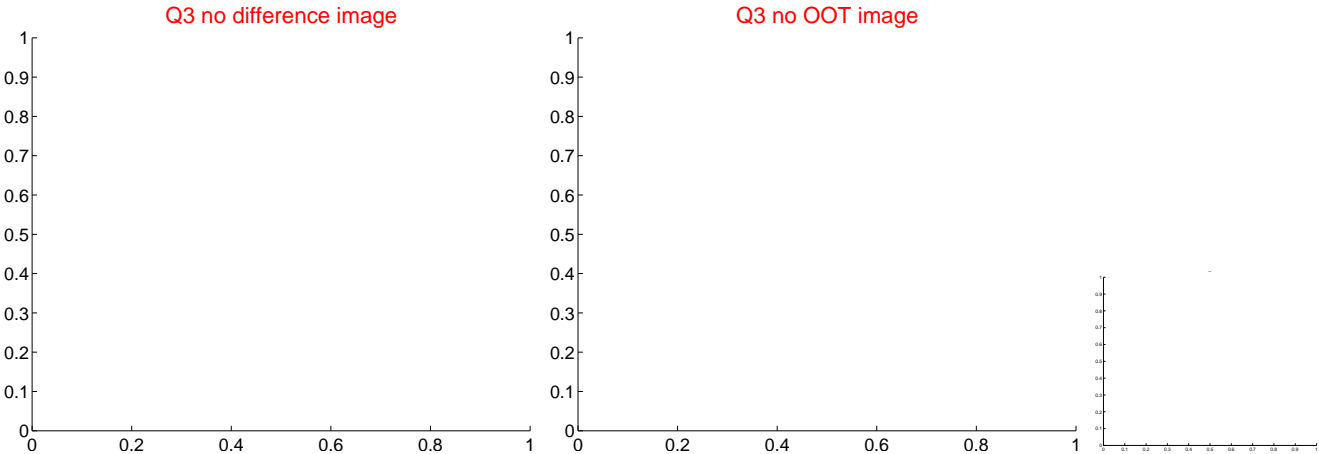
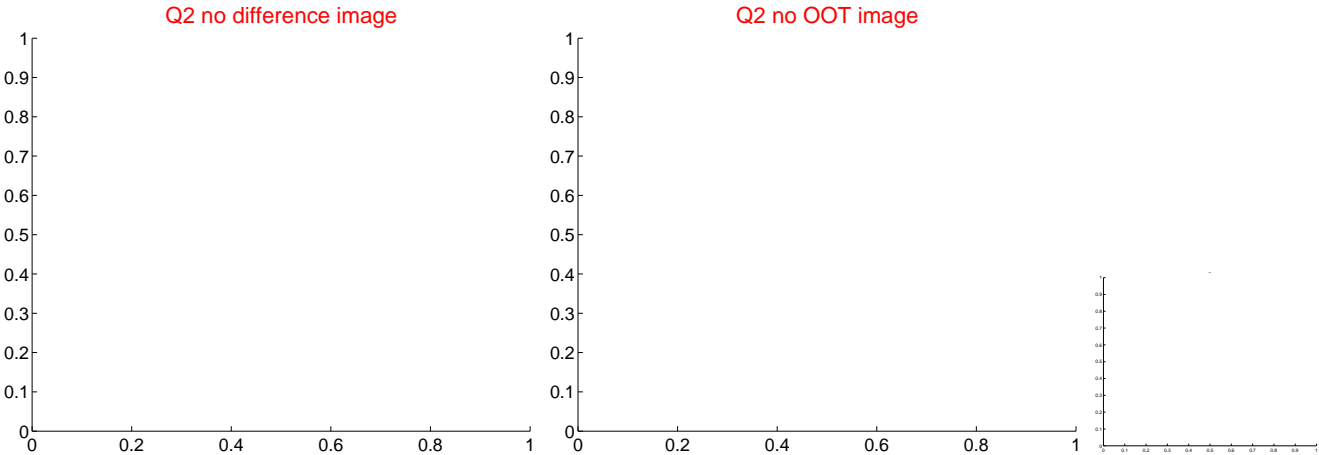
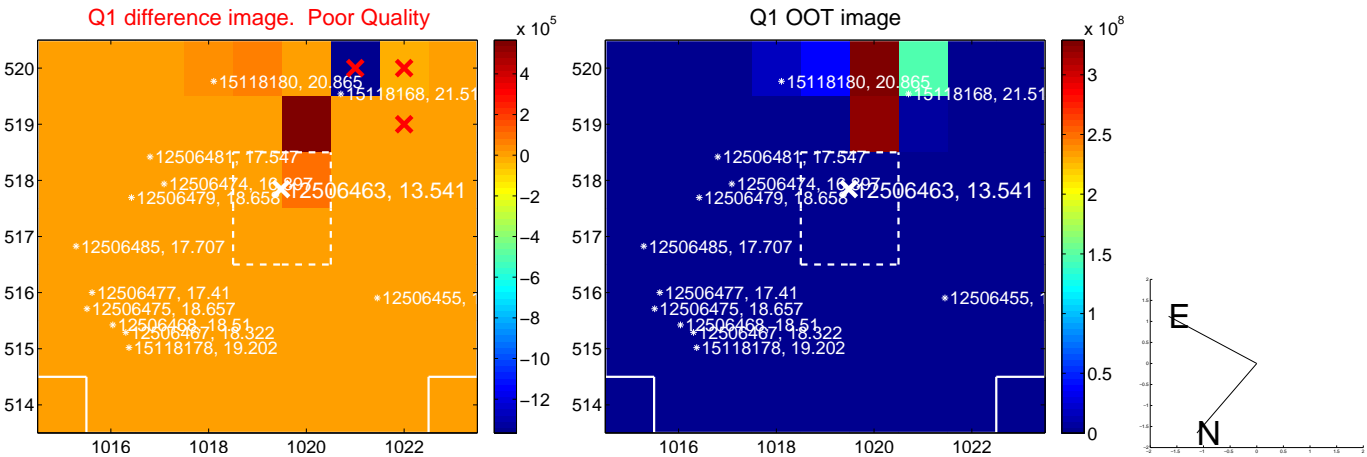
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	4.948 ± 0.076	65.09	-1.683 ± 0.078	-4.653 ± 0.076
photometric centroid source offset	3.88 ± 0.19	20.76	1.36 ± 0.08	-3.63 ± 0.20

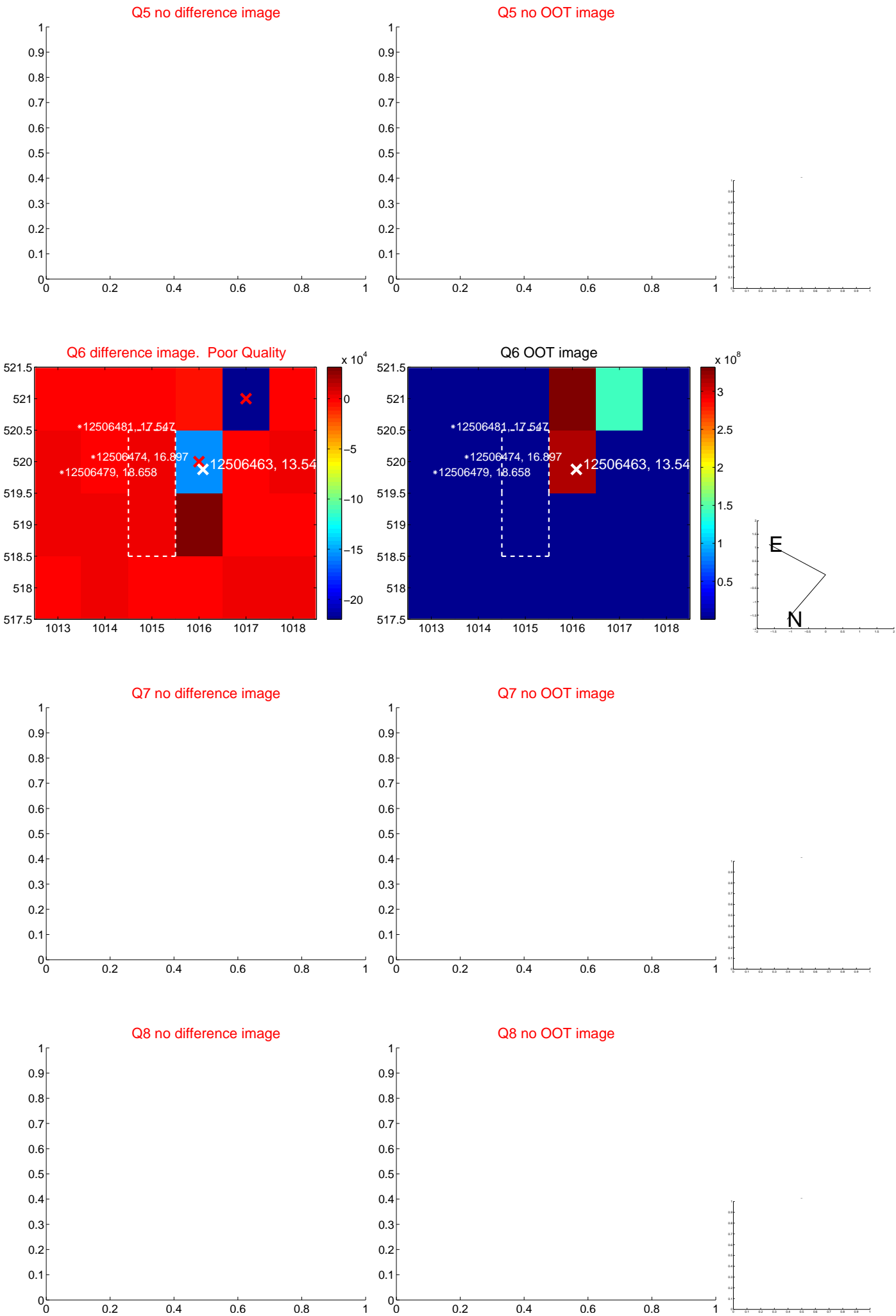


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

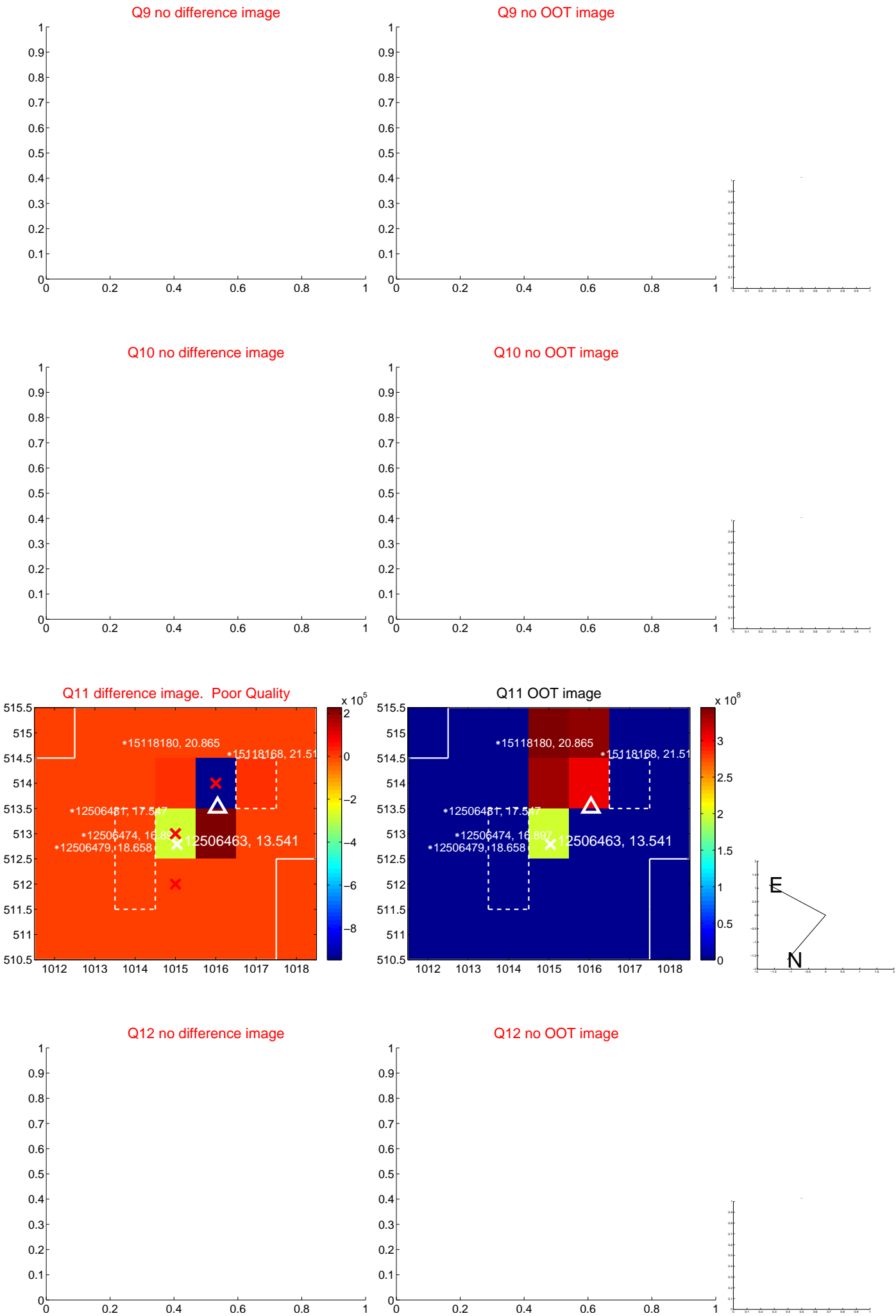
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



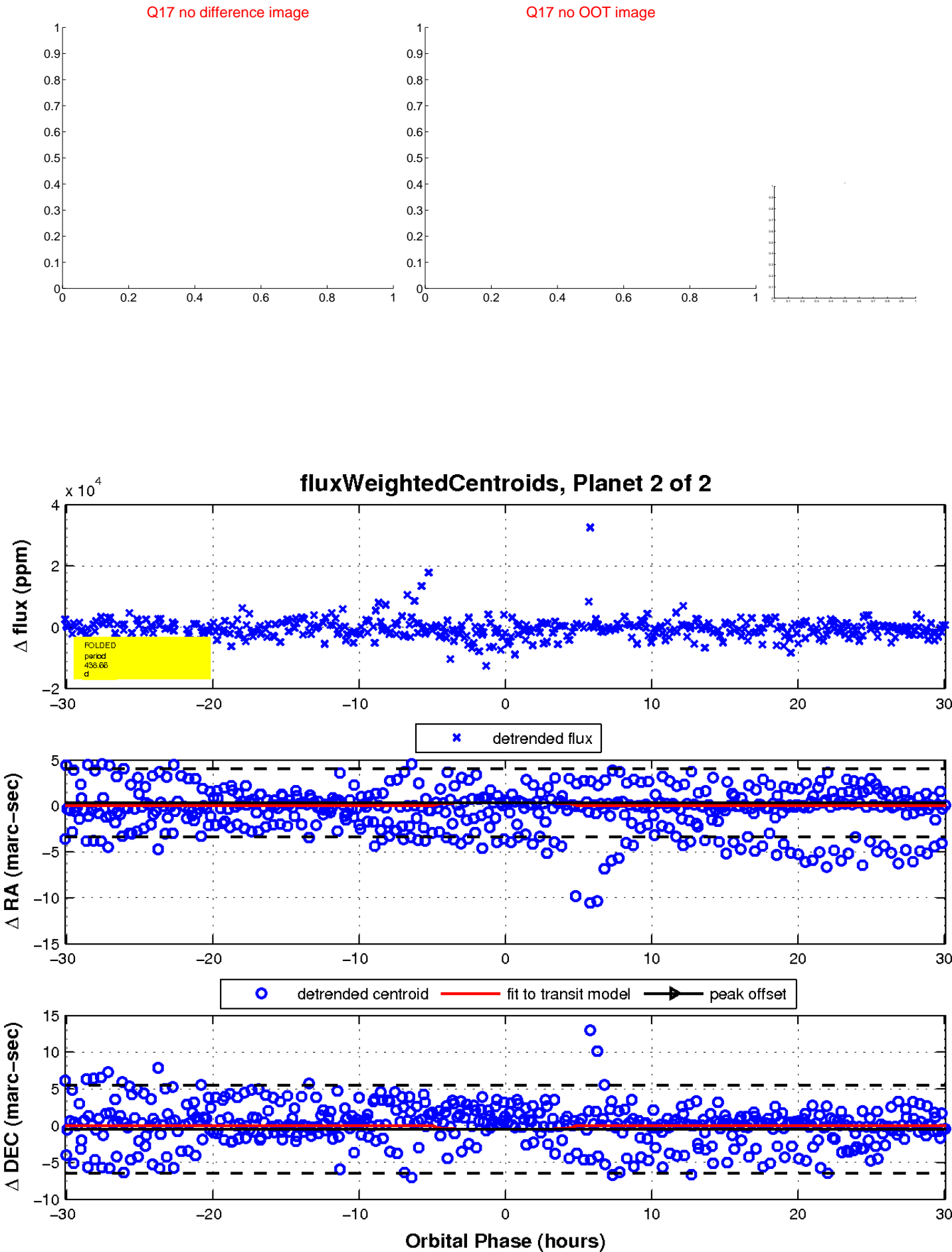
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

