

KIC 010553769

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})
010553769-01	OBS	No	493.212197	296.184984	2420.9	3.557	12.3	7.0	0.65	5250	3.32	0.26
010553769-02	OBS	No	379.678937	233.791988	2981.0	3.774	11.5	7.5	0.65	5250	3.71	0.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010553769-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010553769-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—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.

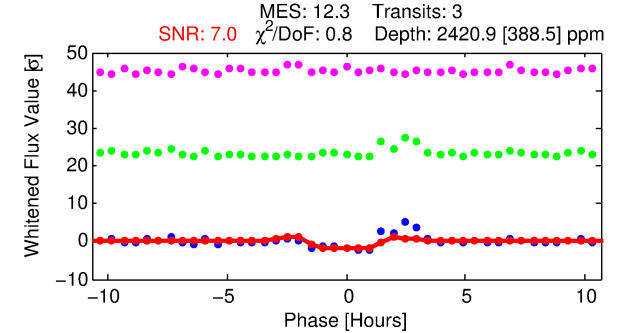
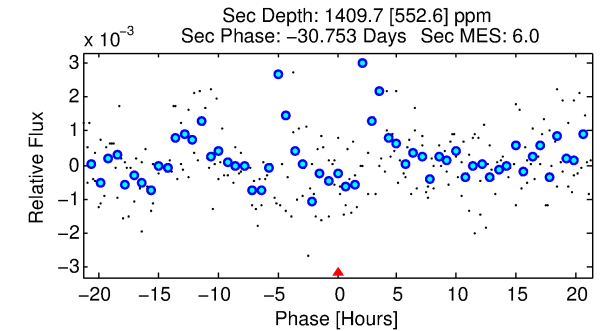
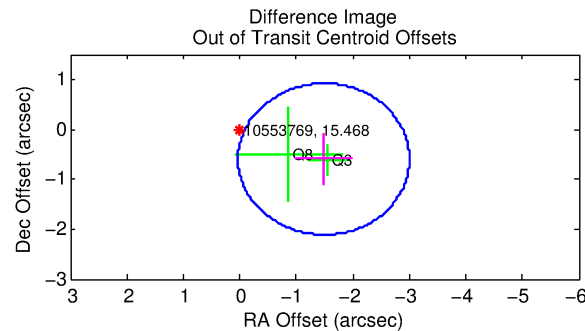
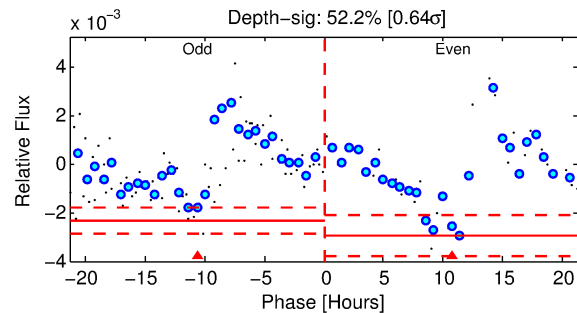
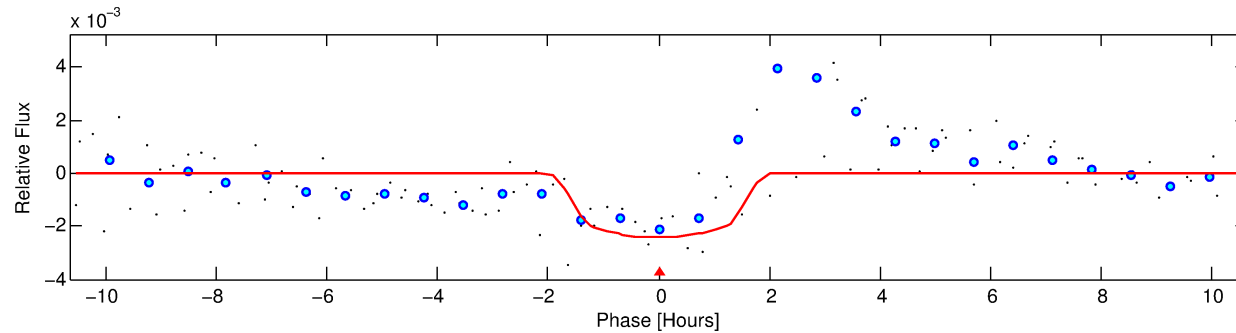
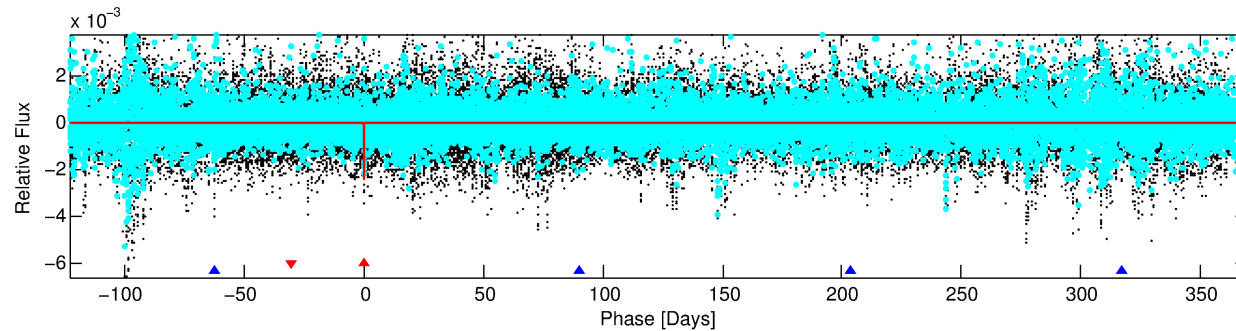
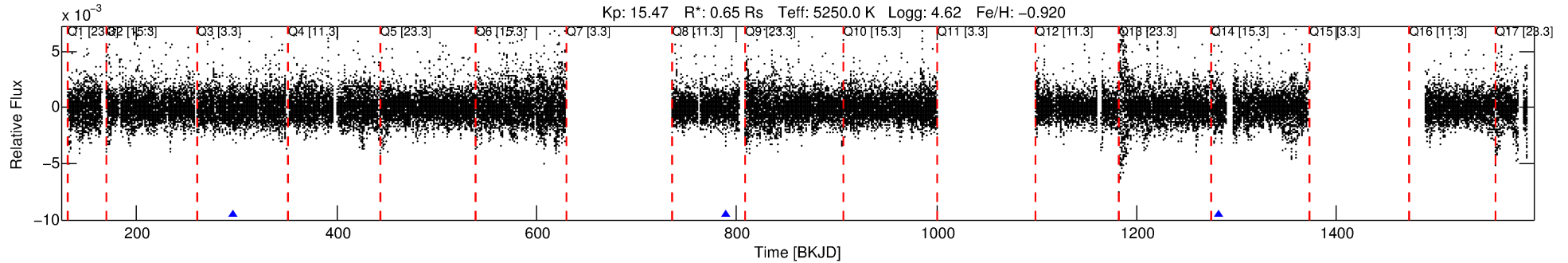
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010553769-01

No Significant Match Found

DV One-Page Summary

KIC: 10553769 Candidate: 1 of 2 Period: 493.212 d



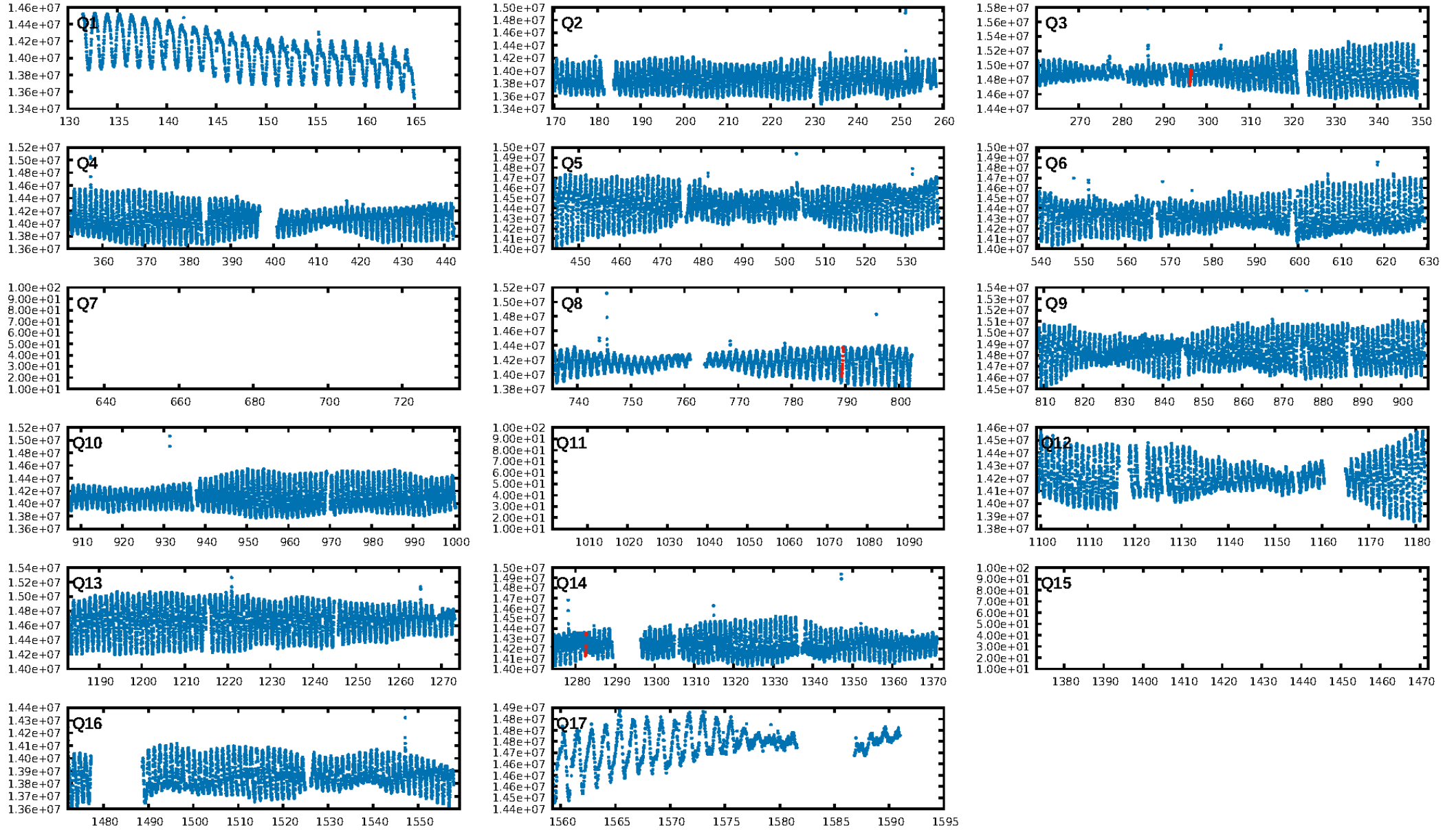
DV Fit Results:

Period = 493.21220 [0.00481] d
Epoch = 296.1850 [0.0073] BKJD
Rp/R* = 0.0470 [0.0414]
a/R* = 904.20 [3378.69]
b = 0.61 [3.93]
Seff = 0.26 [0.04]
Teq = 182 [8] K
Rp = 3.32 [2.94] Re
a = 1.0495 [0.0806] AU
Ag = 77642.97 [140467.11] [0.55 σ]
Teffp = 4693 [2123] K [2.13 σ]

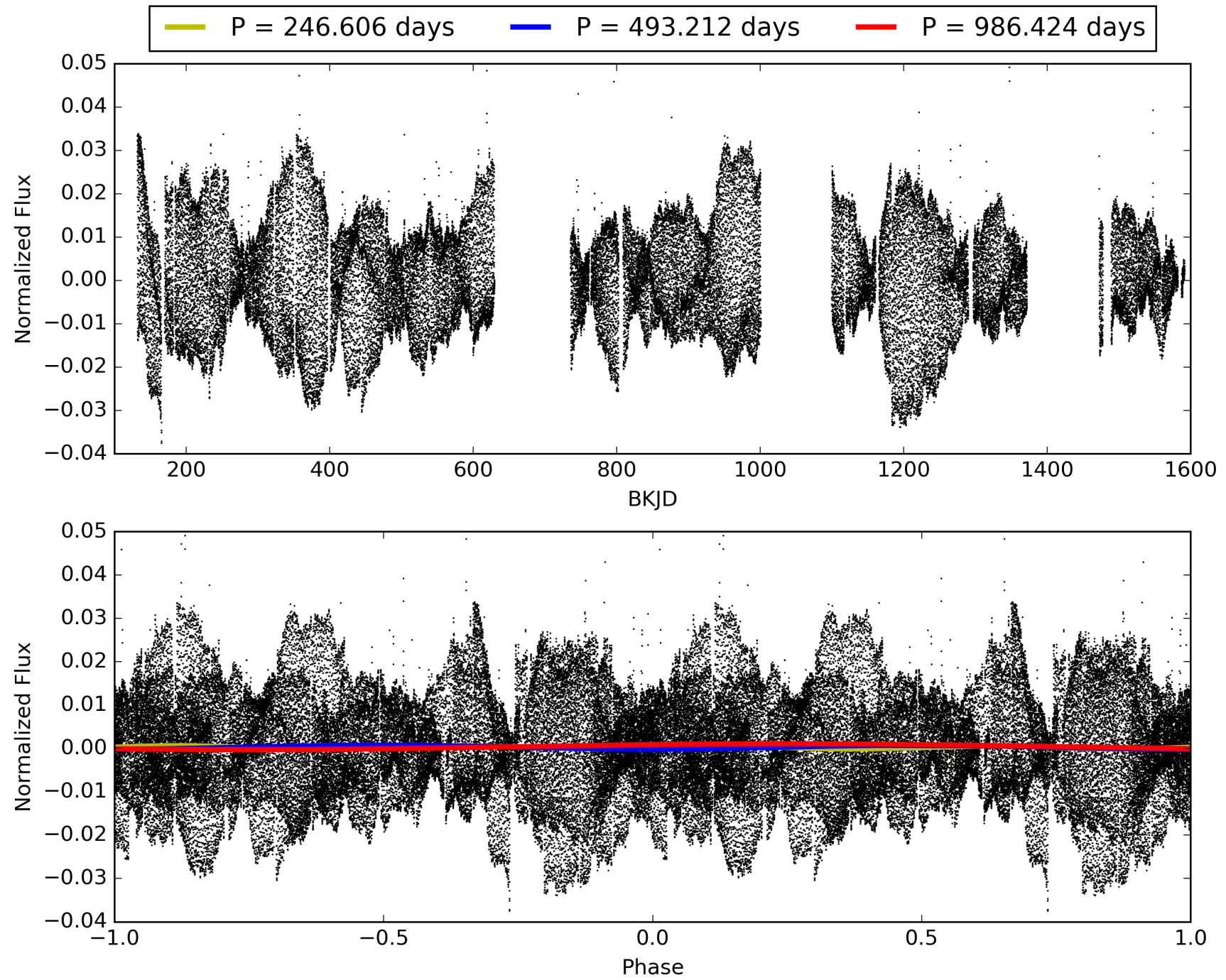
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [525.44 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 49.5%
ModelChiSquareGof-sig: 89.2%
Bootstrap-pfa: 2.64e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.7021
Centroid-sig: 64.5%
Centroid-so: 0.340 arcsec [0.39 σ]
OotOffset-rm: 1.601 arcsec [3.17 σ]
KicOffset-rm: 1.606 arcsec [3.18 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 010553769-01, PDC Light Curves

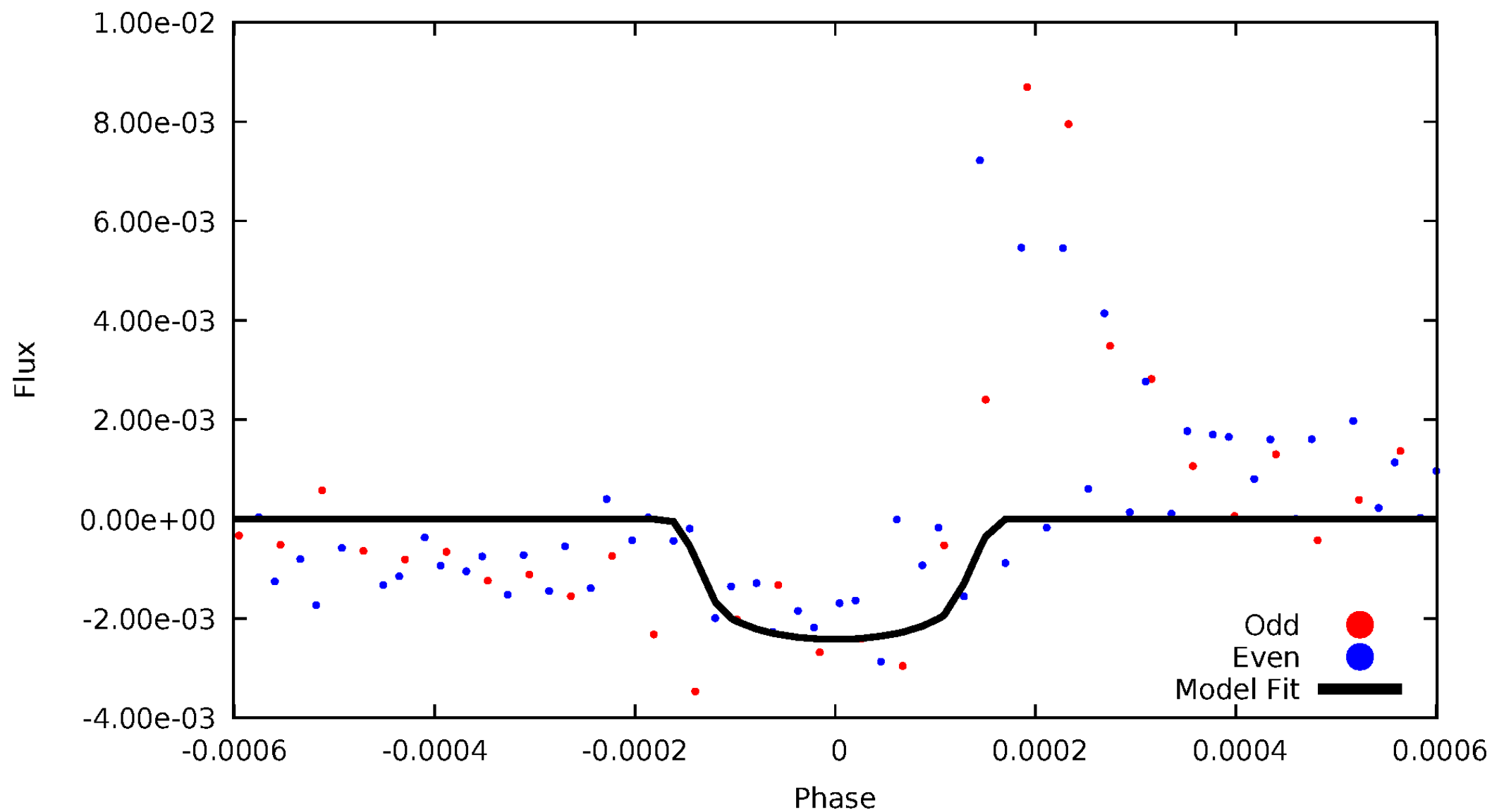


TCE 010553769-01



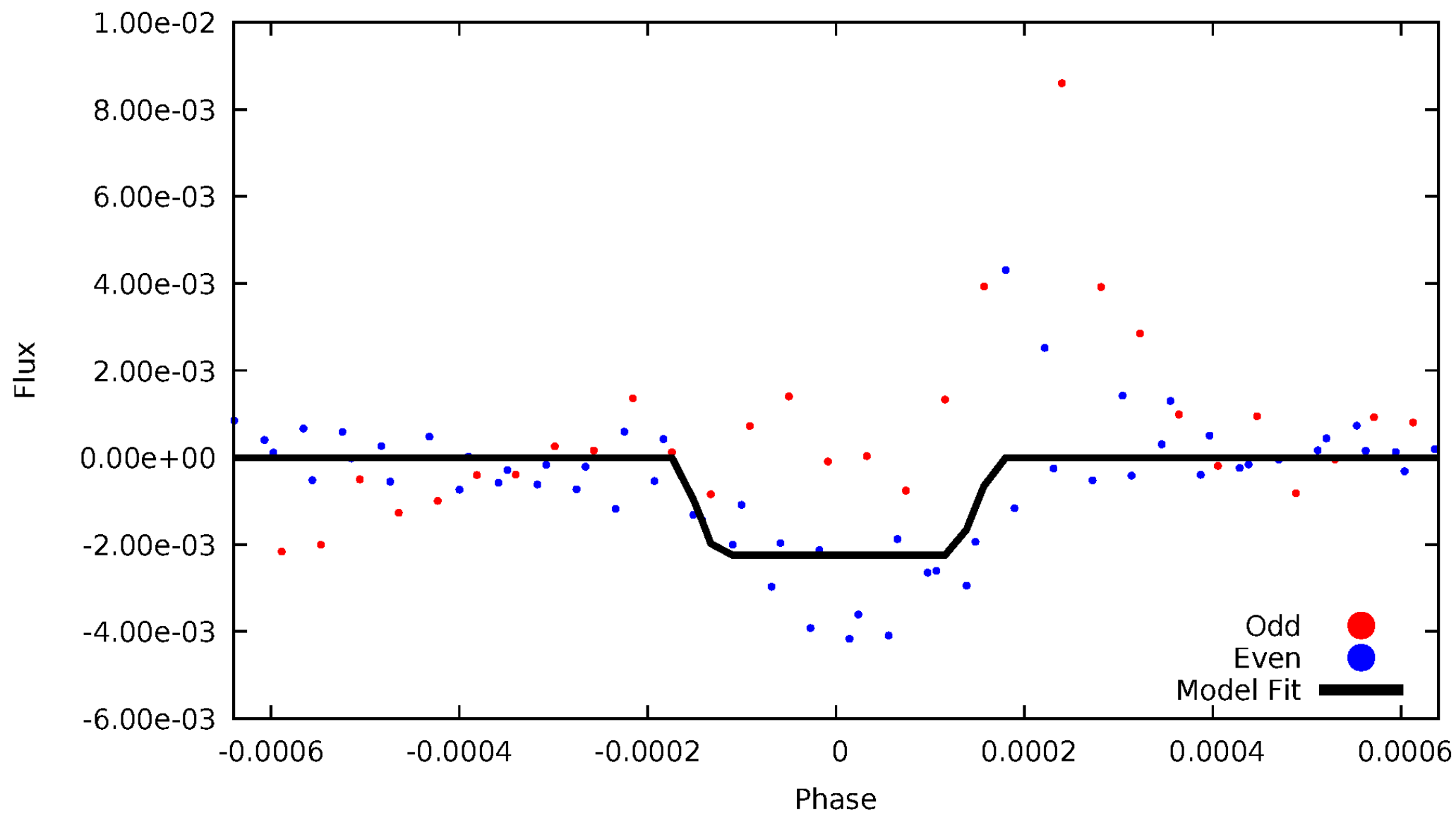
DV Odd/Even

TCE 010553769-01



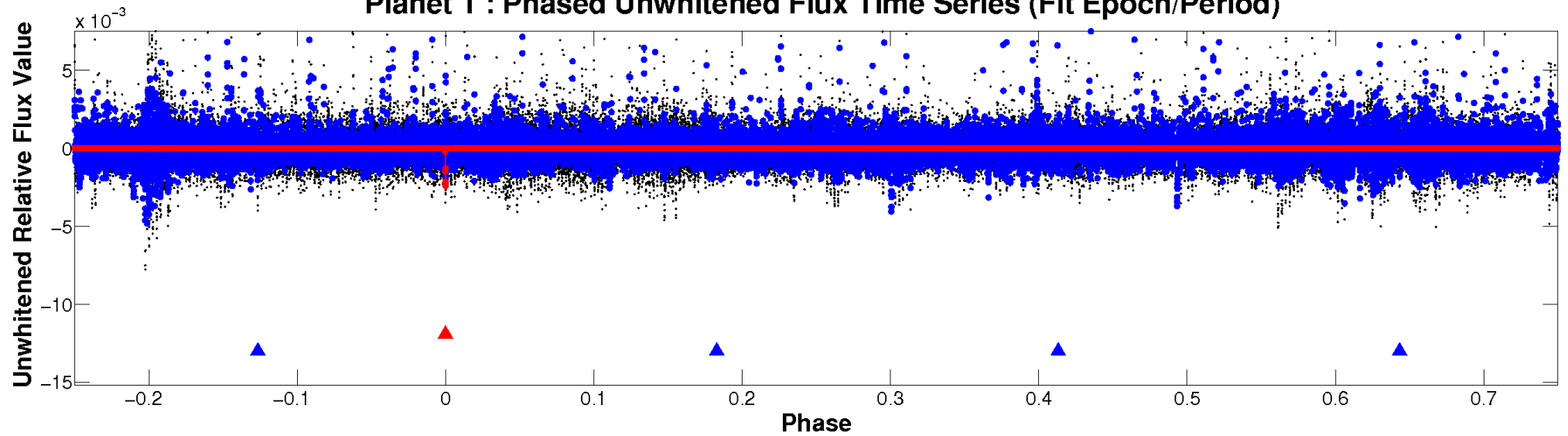
ALT Odd/Even

TCE 010553769-01

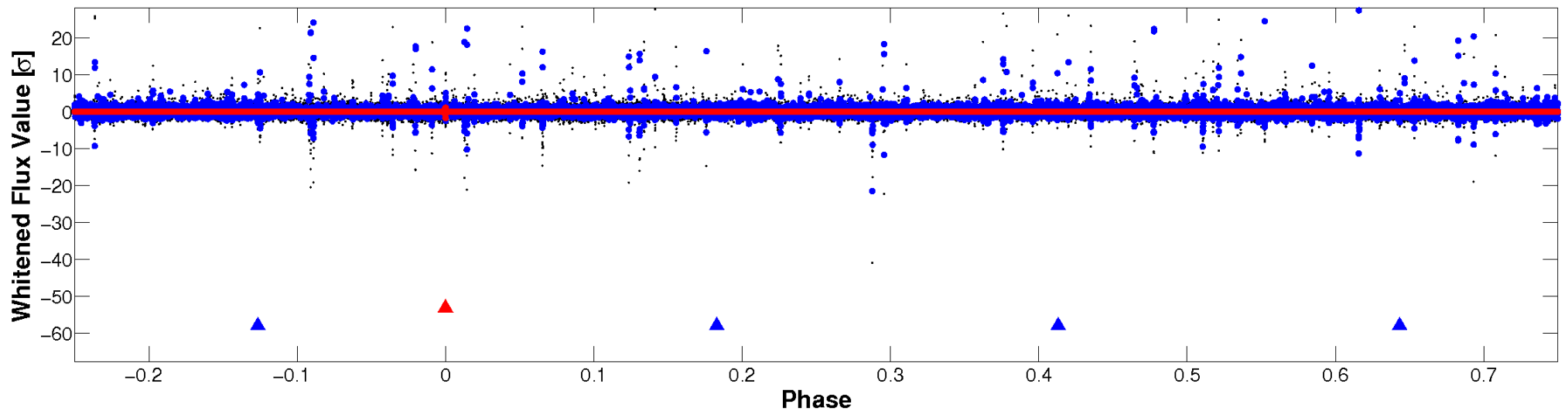


Non-Whitened Vs. Whitened Light Curve

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

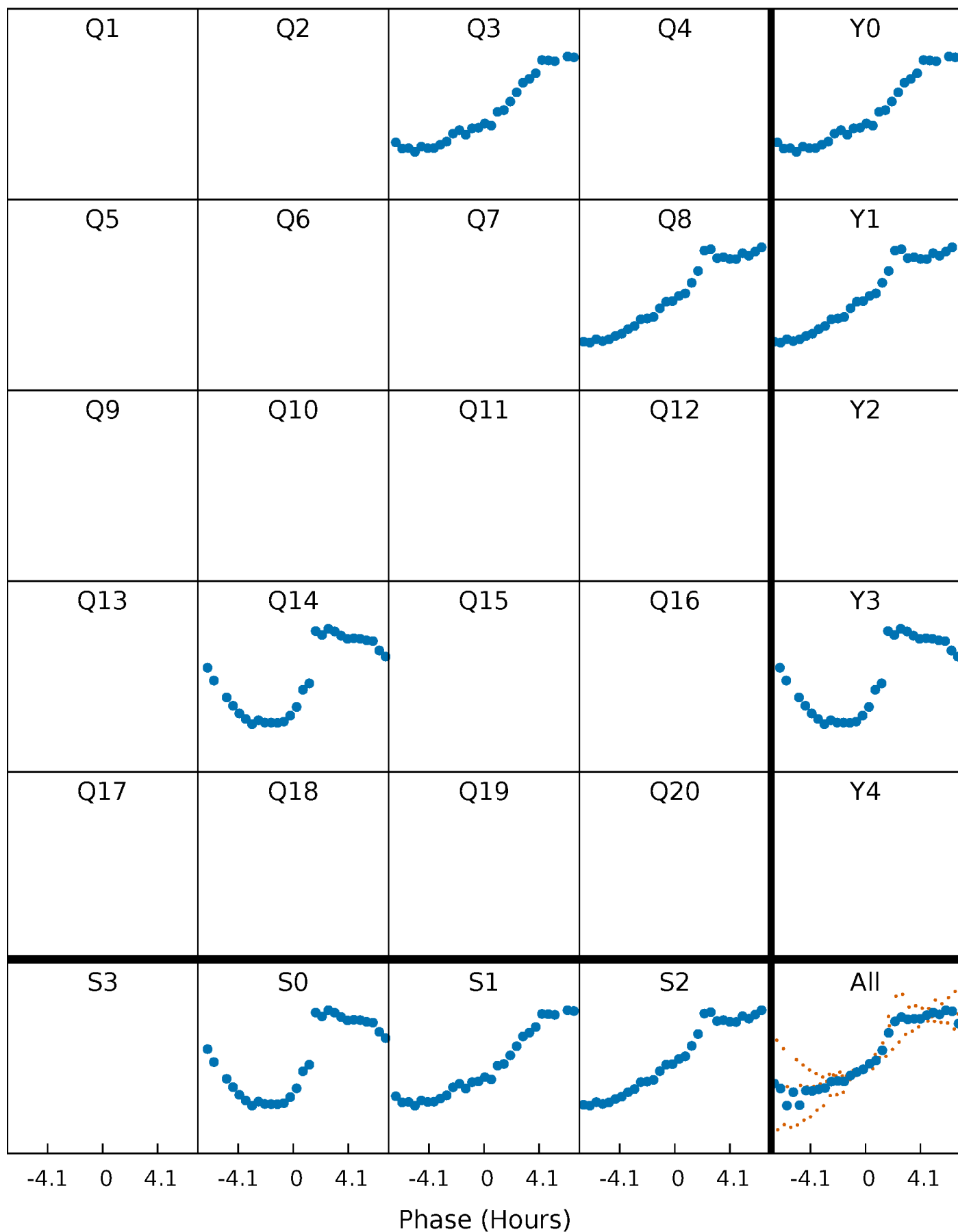


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



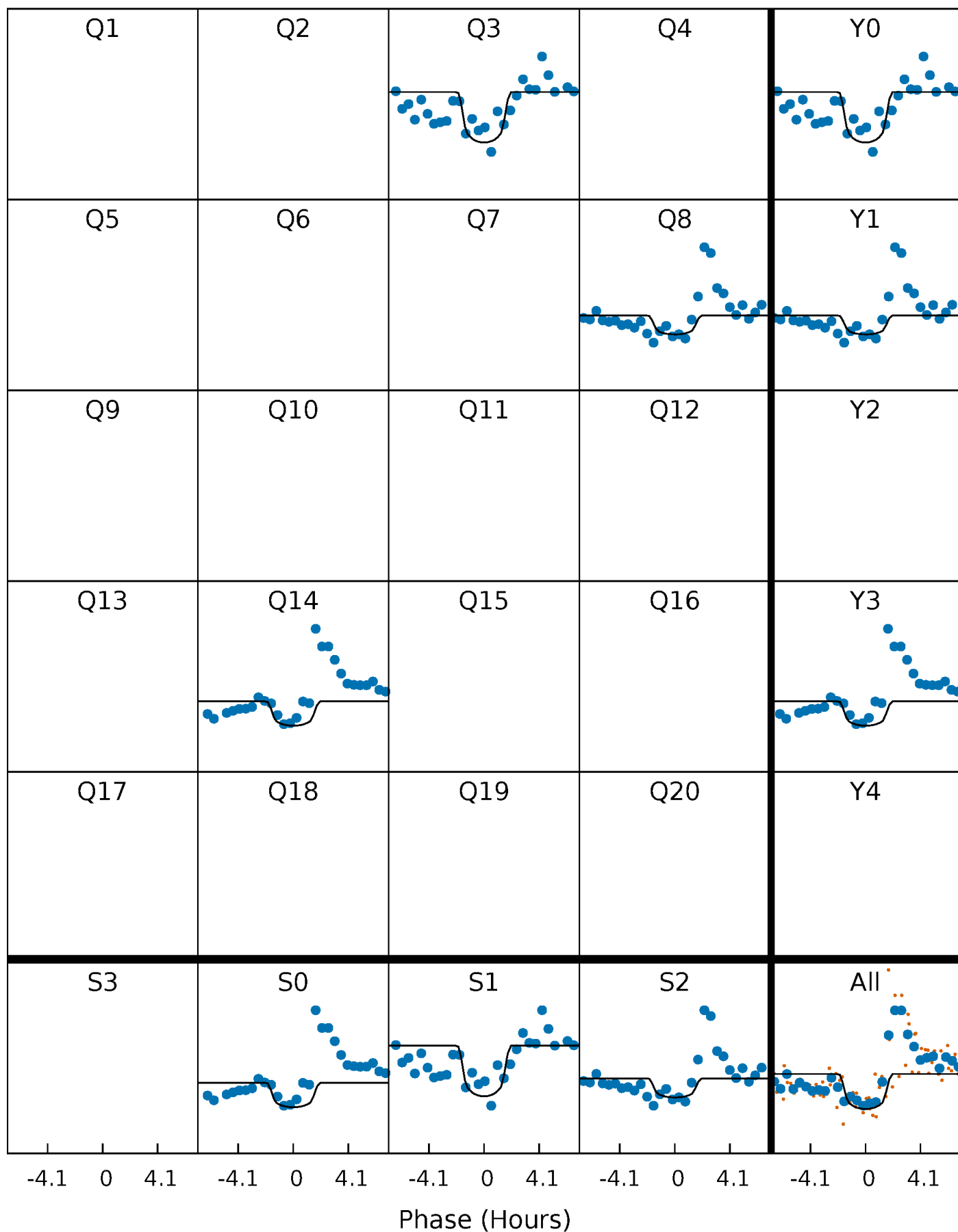
PDC Quarter-Phased Transit Curves

TCE 010553769-01 P=493.212197 Days $T_0=296.184984$ (BKJD)



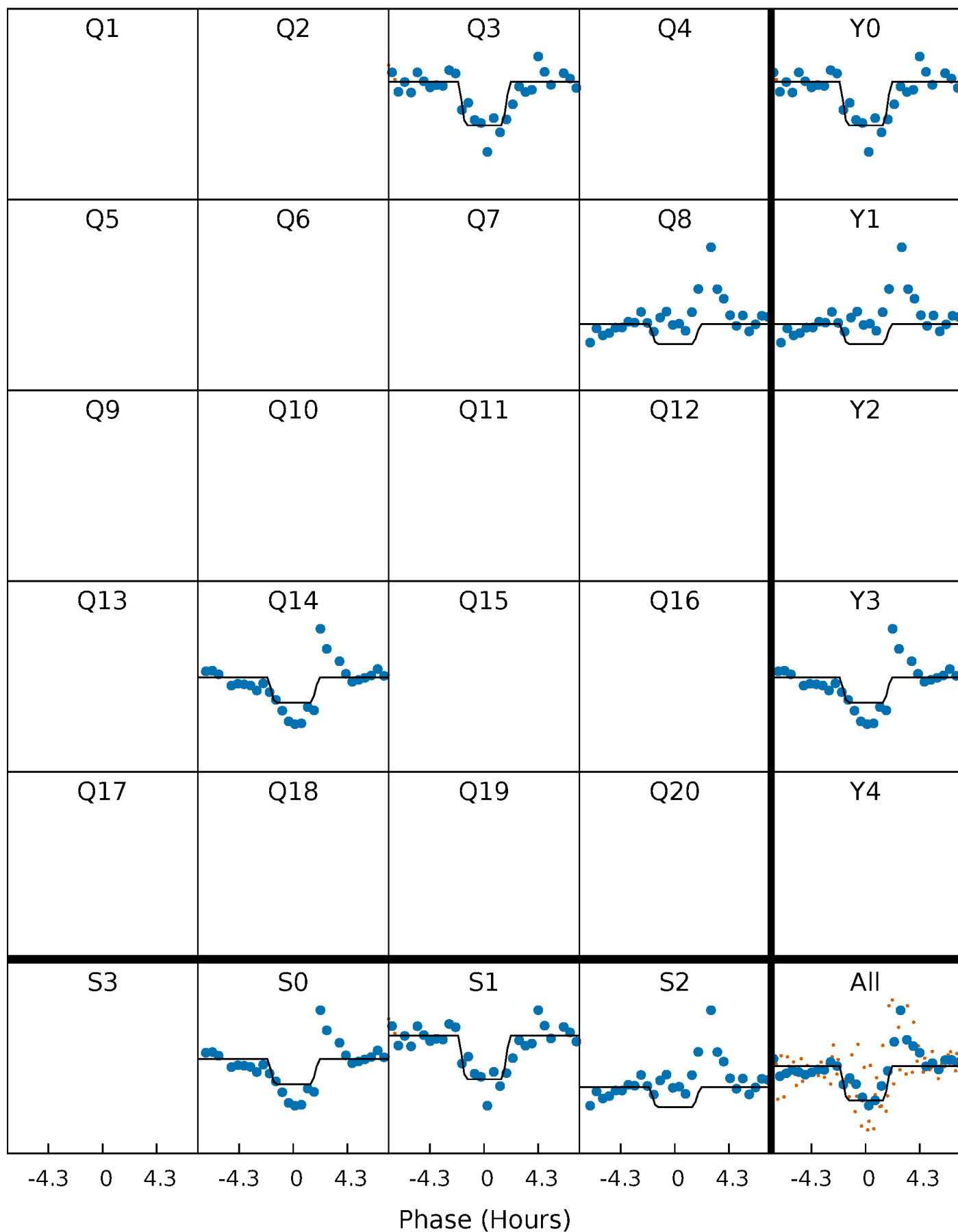
DV Quarter-Phased Transit Curves

TCE 010553769-01 P=493.212197 Days $T_0=296.184984$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

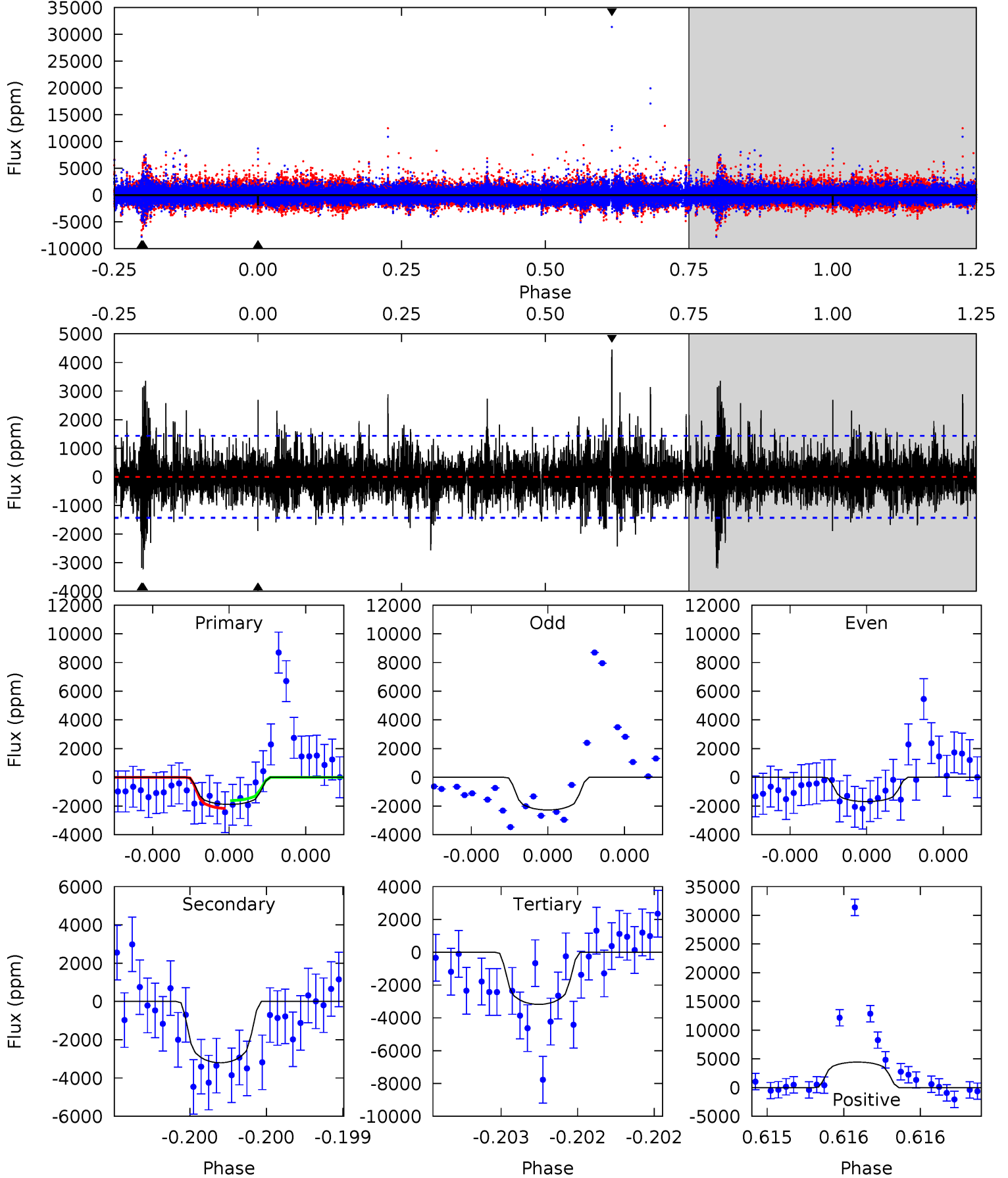
TCE 010553769-01 P=493.198027 Days $T_0=296.195774$ (BKJD)



DV Model-Shift Uniqueness Test

010553769-01, P = 493.212197 Days, E = 296.184984 Days

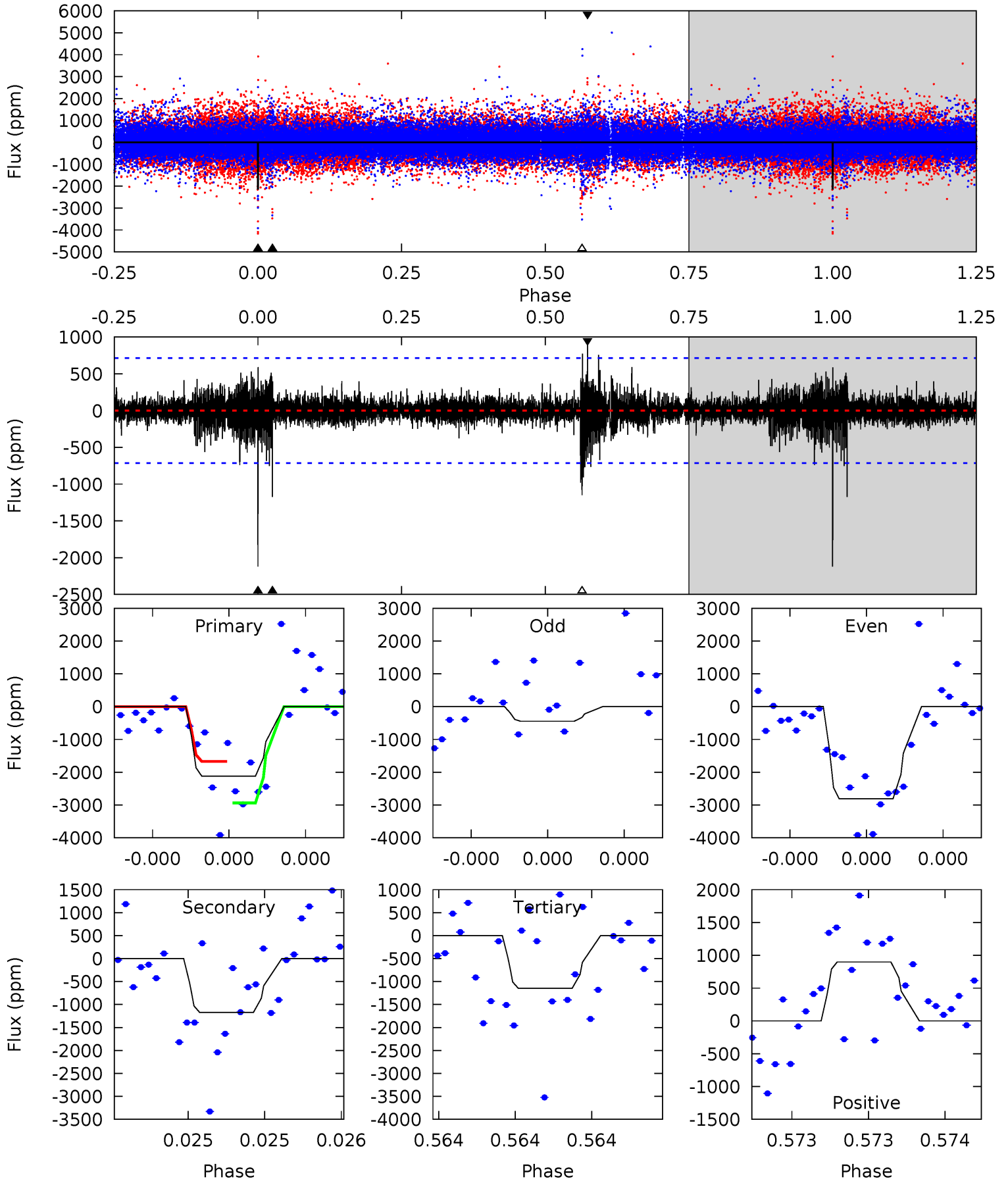
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.46	12.6	12.5	17.5	5.65	3.60	2.36	-5.08	-10.1	0.10	-4.89	0.96	0.89	0.58	1.09



Alt Model-Shift Uniqueness Test

010553769-01, P = 493.198027 Days, E = 296.195774 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.8	9.29	9.11	7.11	5.66	3.61	1.01	7.69	9.68	0.18	2.18	8.61	0.76	0.30	4.90



Stellar Parameters For KIC 010553769

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5250^{+157}_{-157}	$4.618^{+0.066}_{-0.048}$	$-0.920^{+0.350}_{-0.300}$	$0.647^{+0.056}_{-0.056}$	$0.633^{+0.065}_{-0.023}$	$3.293^{+0.887}_{-0.583}$
	+3%/-3%	+1%/-1%	+38%/-33%	+9%/-9%	+10%/-4%	+27%/-18%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010553769-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3205 ± 253	$3.98^{+2.52}_{-2.39}$	254^{+10}_{-10}	5313^{+3293}_{-1004}	$129818^{+630012}_{-83561}$
Alt.	-1172 ± 126	$3.79^{+2.53}_{-2.20}$	254^{+9}_{-10}	4391^{+2049}_{-749}	$52207^{+241729}_{-33972}$

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

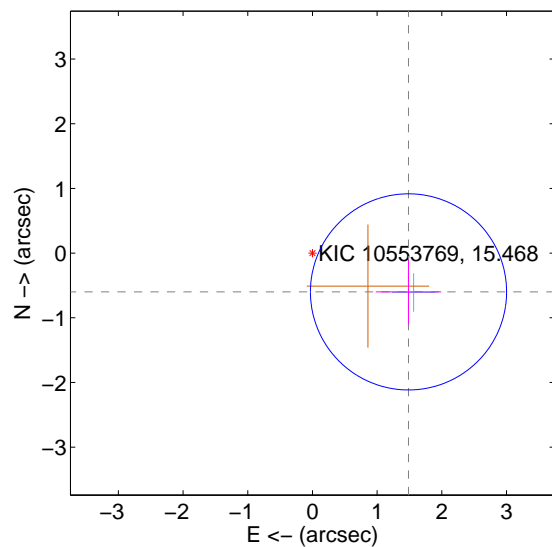
Supplemental centroid analysis for 010553769-01. Kepler magnitude: 15.47. Transit SNR 7.05

There are 1 quarters with good PRF difference image offsets

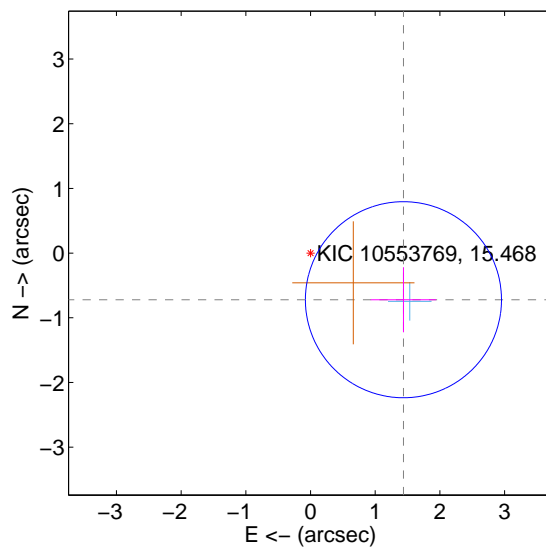
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.601 ± 0.505	3.17	-1.485 ± 0.506	-0.600 ± 0.503
PRF-fit source offset from KIC position	1.606 ± 0.505	3.18	-1.436 ± 0.506	-0.720 ± 0.503
photometric centroid source offset	0.34 ± 0.87	0.39	-0.20 ± 0.96	-0.28 ± 0.82

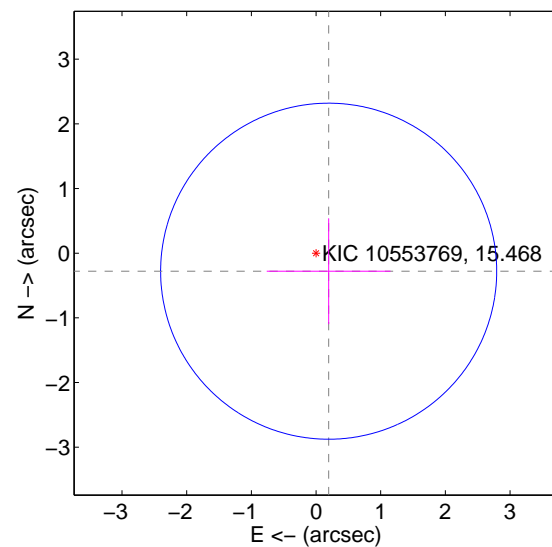
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

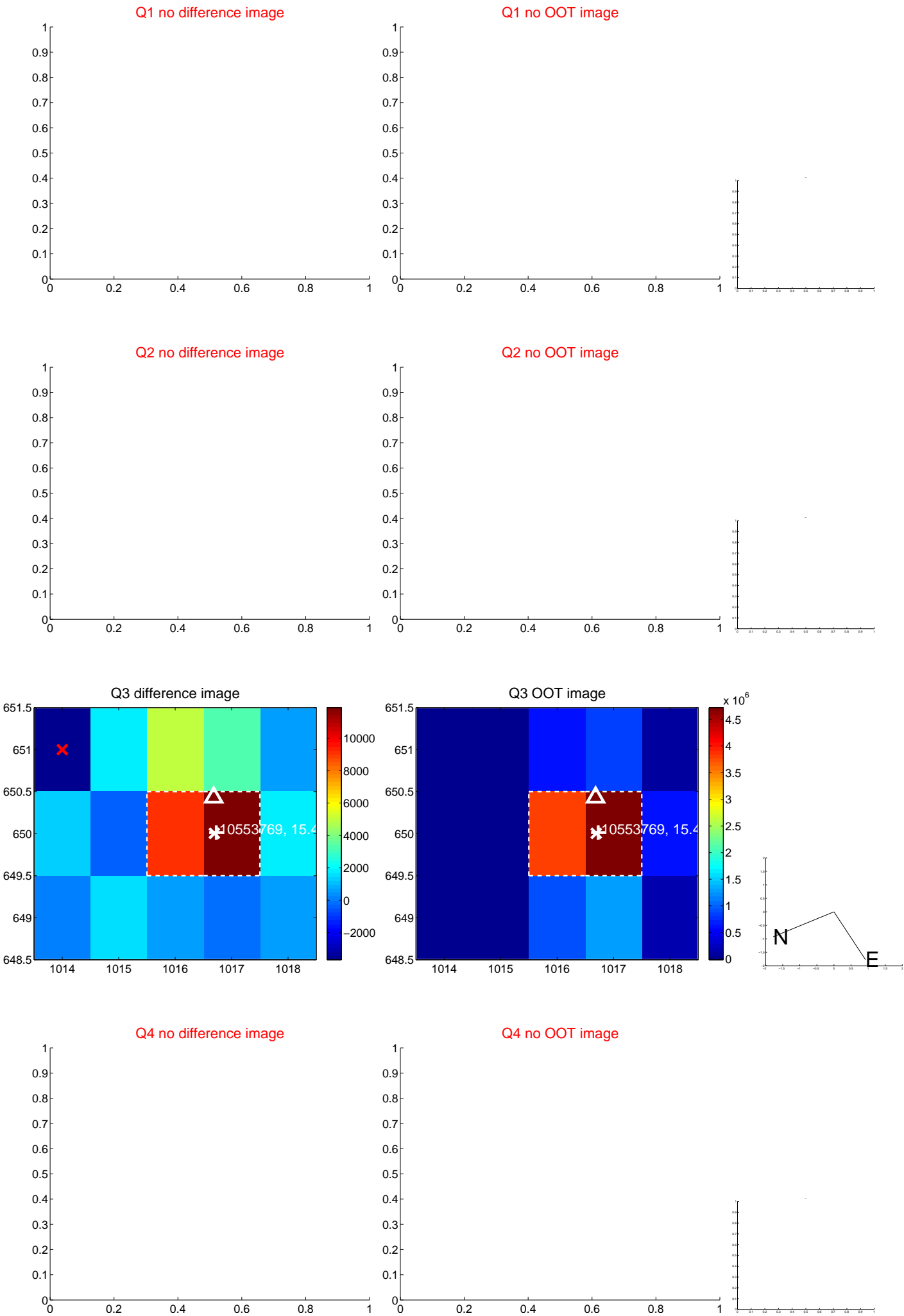


offset from photometric centroids

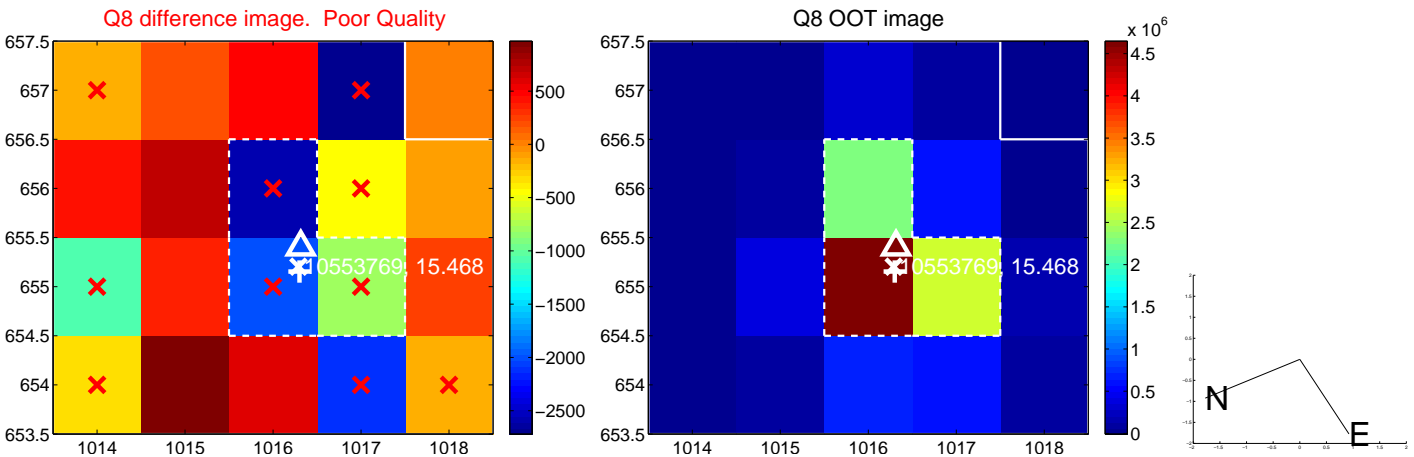
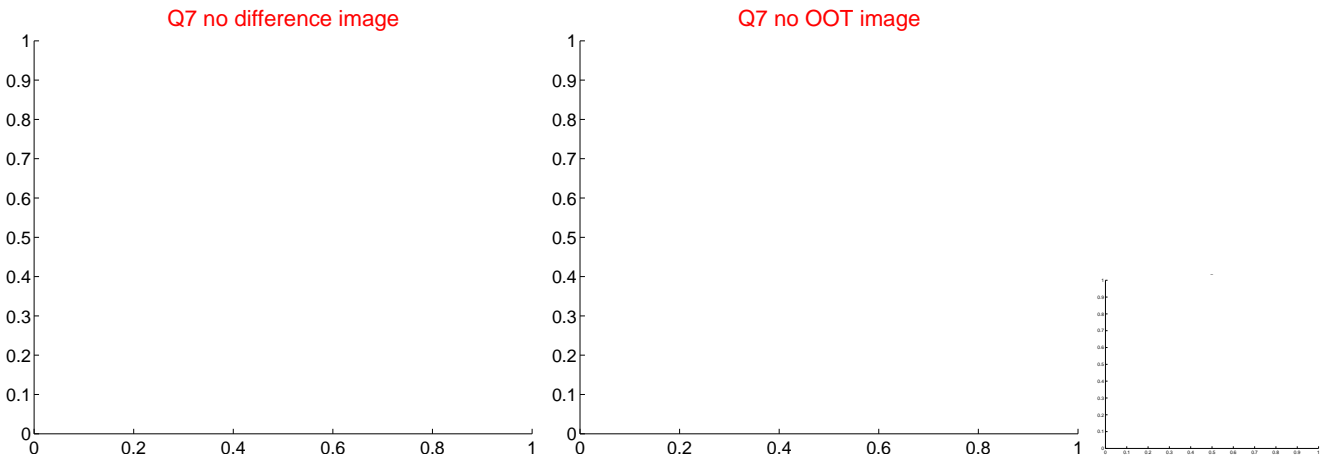
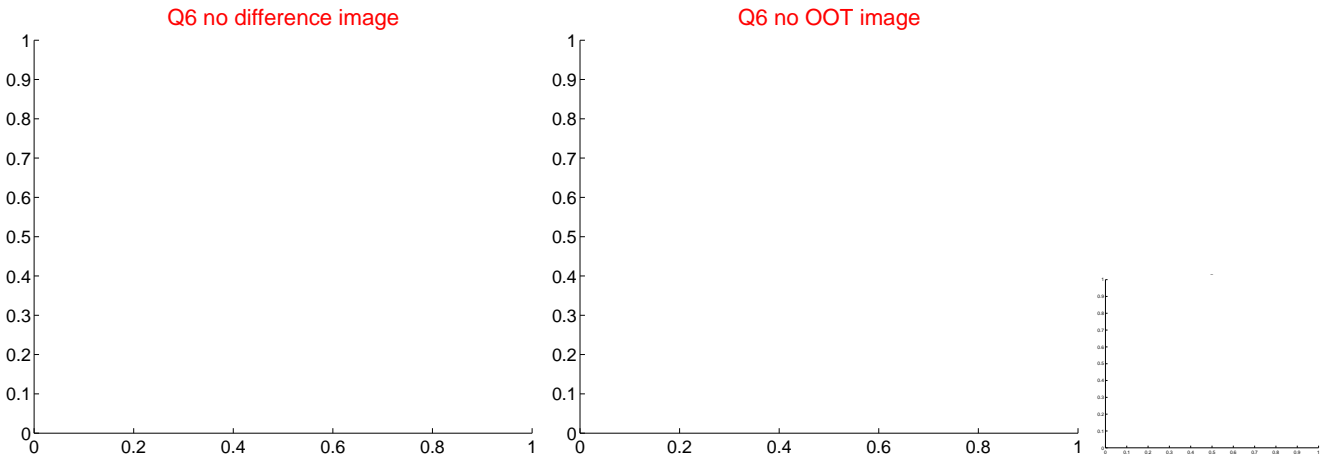
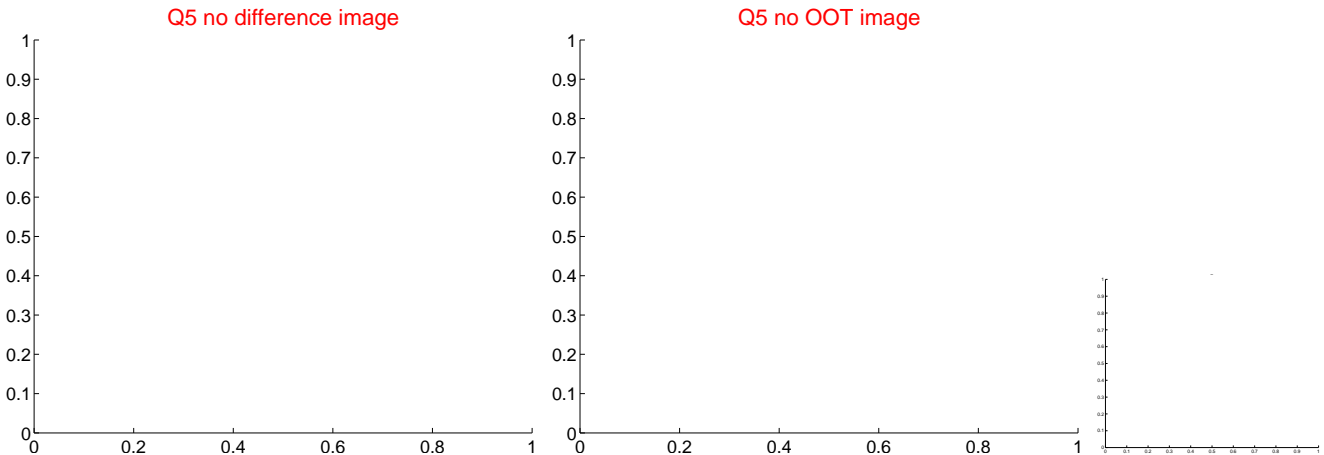


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



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



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



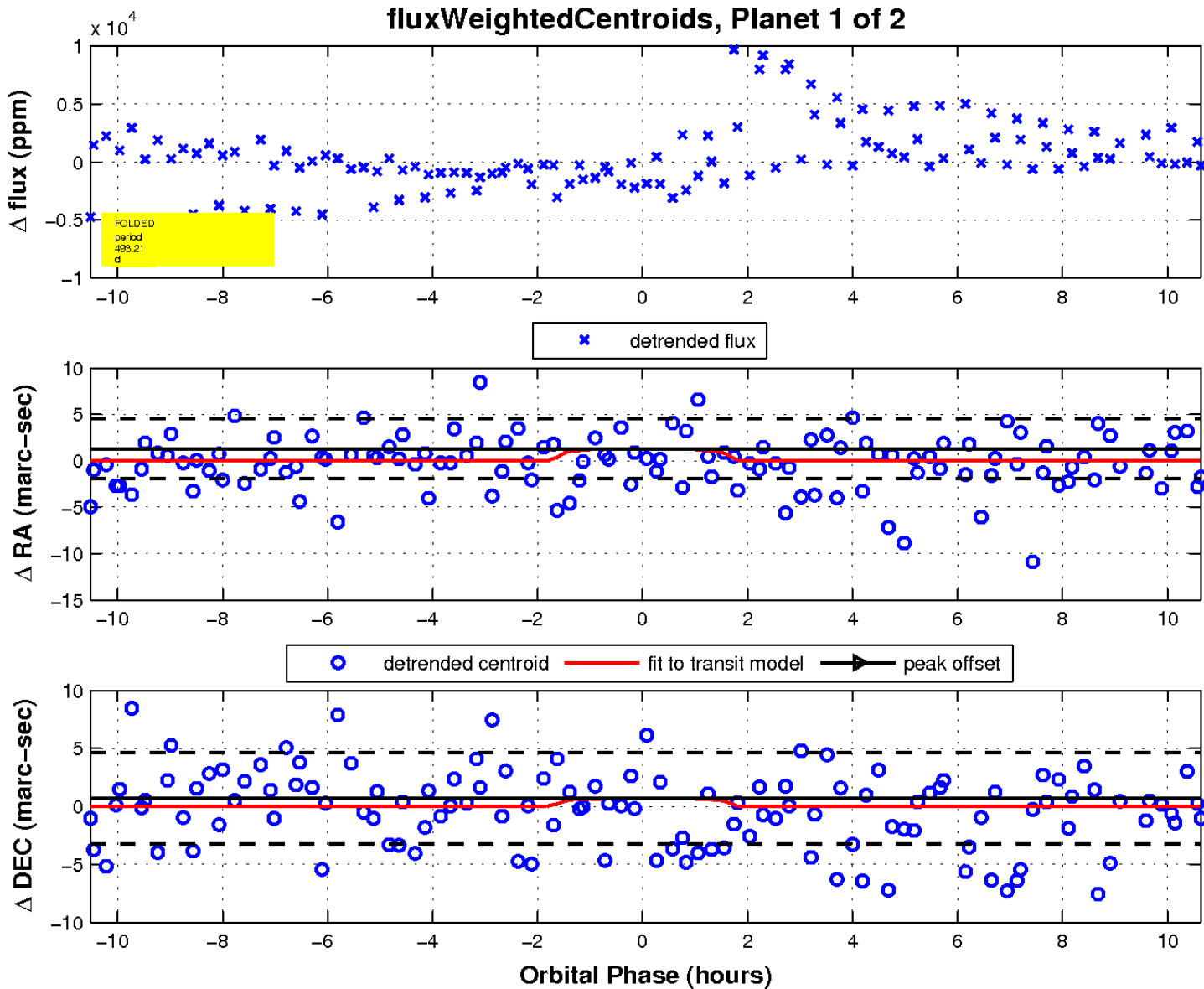
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

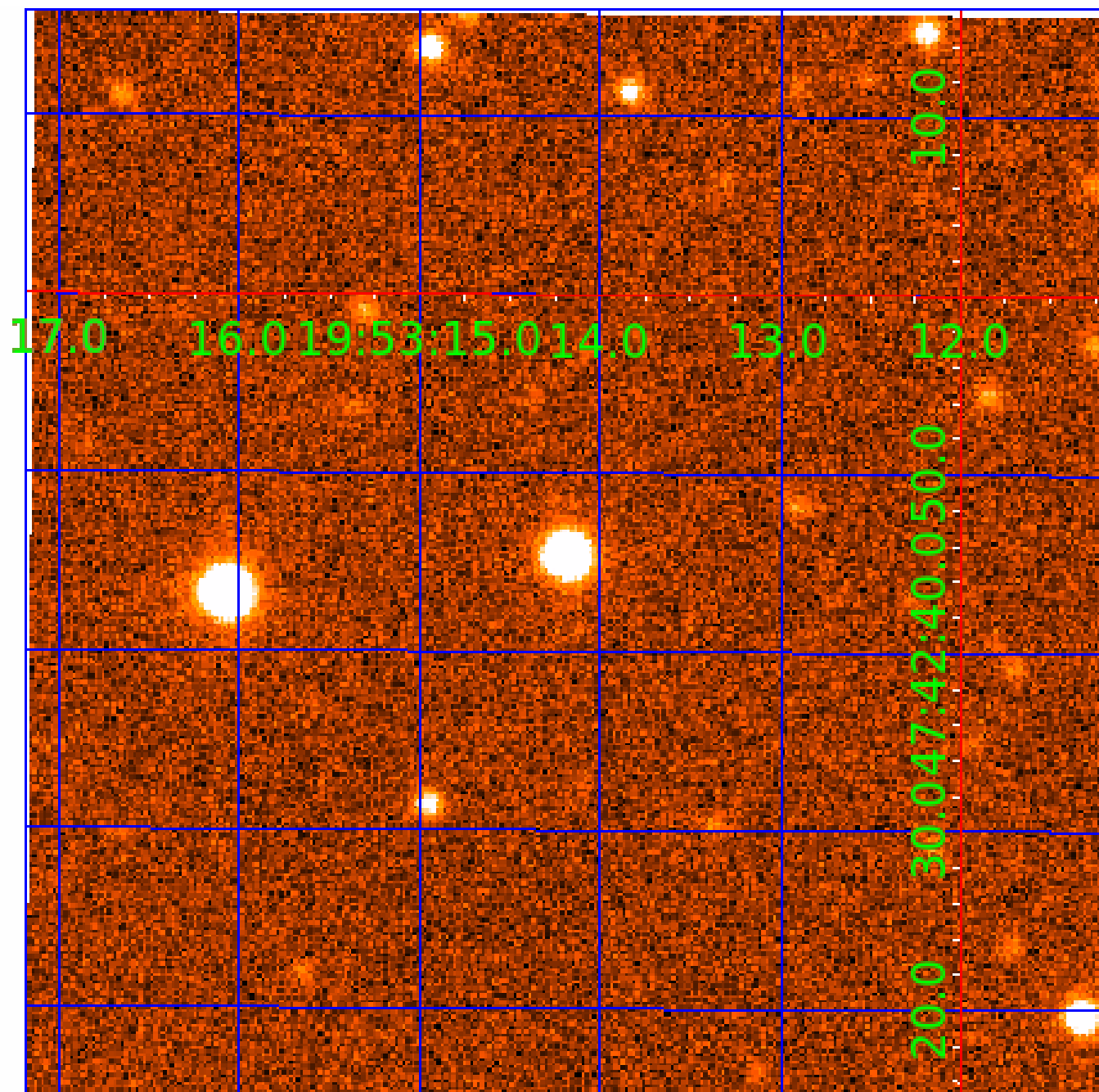
Q17 no difference image

Q17 no OOT image



UKIRT Image

Declination



KIC 010553769

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})
010553769-01	OBS	No	493.212197	296.184984	2420.9	3.557	12.3	7.0	0.65	5250	3.32	0.26
010553769-02	OBS	No	379.678937	233.791988	2981.0	3.774	11.5	7.5	0.65	5250	3.71	0.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010553769-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
010553769-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—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.

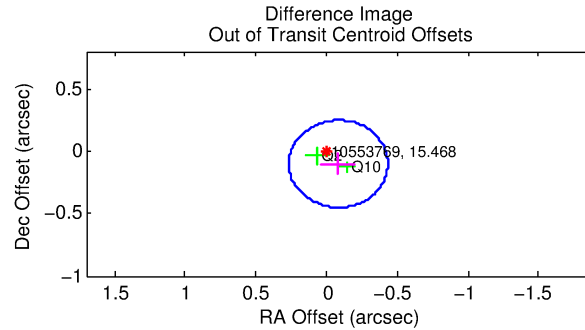
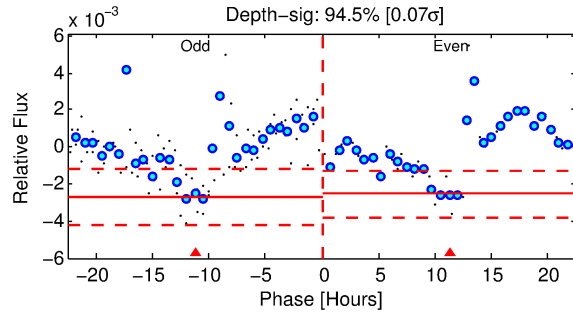
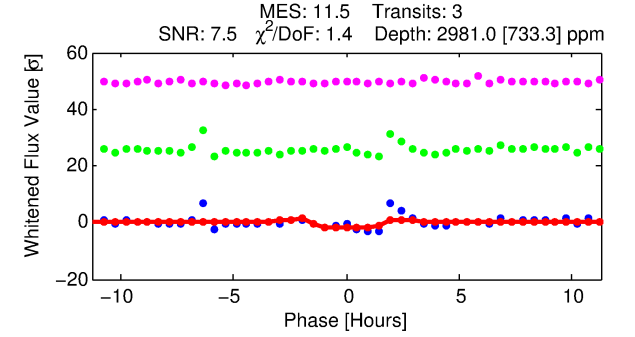
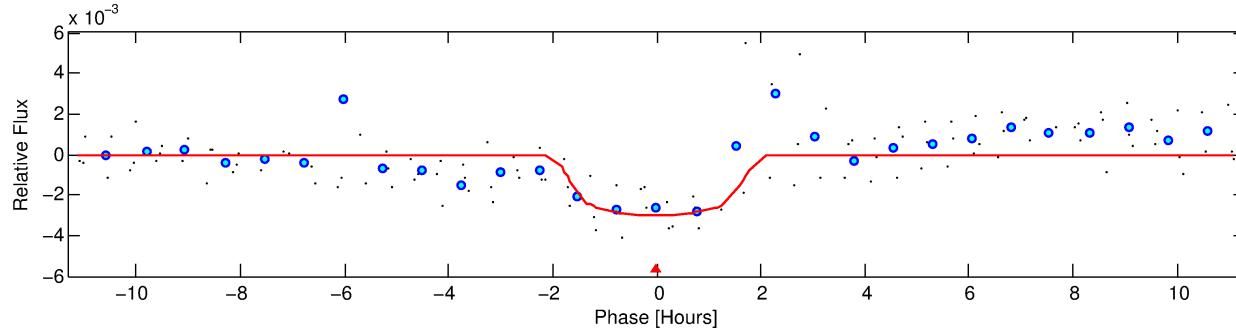
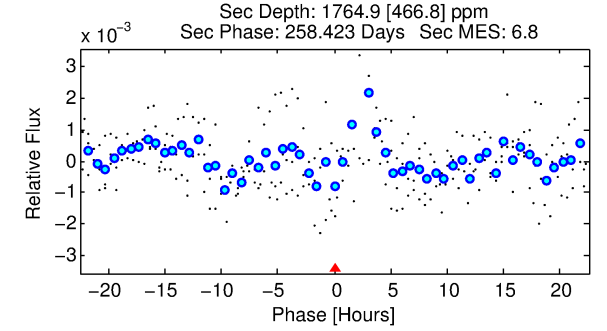
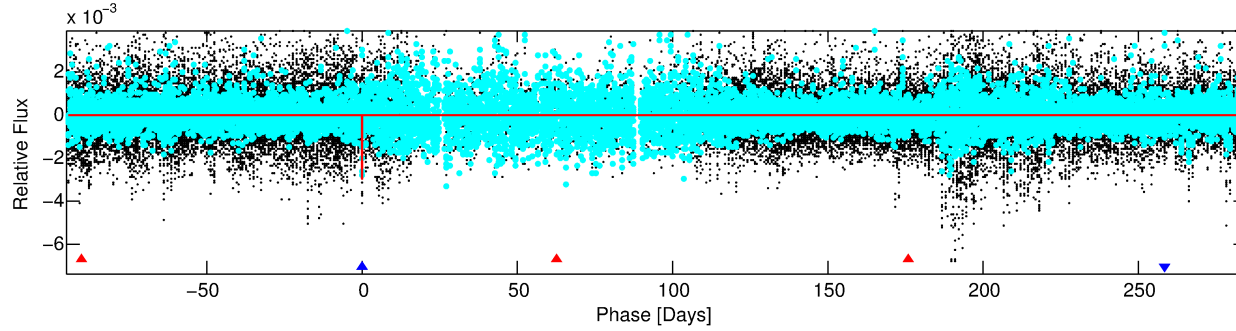
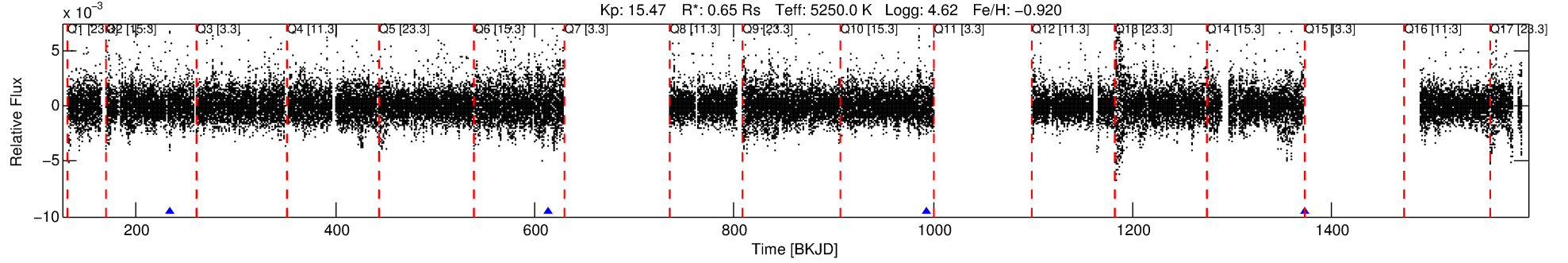
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010553769-02

No Significant Match Found

DV One-Page Summary

KIC: 10553769 Candidate: 2 of 2 Period: 379.679 d



DV Fit Results:

Period = 379.67894 [0.00503] d
Epoch = 233.7920 [0.0070] BKJD
Rp/R* = 0.0526 [0.3398]
a/R* = 642.79 [17806.40]
b = 0.64 [26.00]
Seff = 0.37 [0.06]
Teq = 198 [8] K
Rp = 3.71 [23.99] Re
a = 0.8815 [0.0677] AU
Ag = 54787.60 [708478.98] [0.08 σ]
Teffp = 4694 [15173] K [0.30 σ]

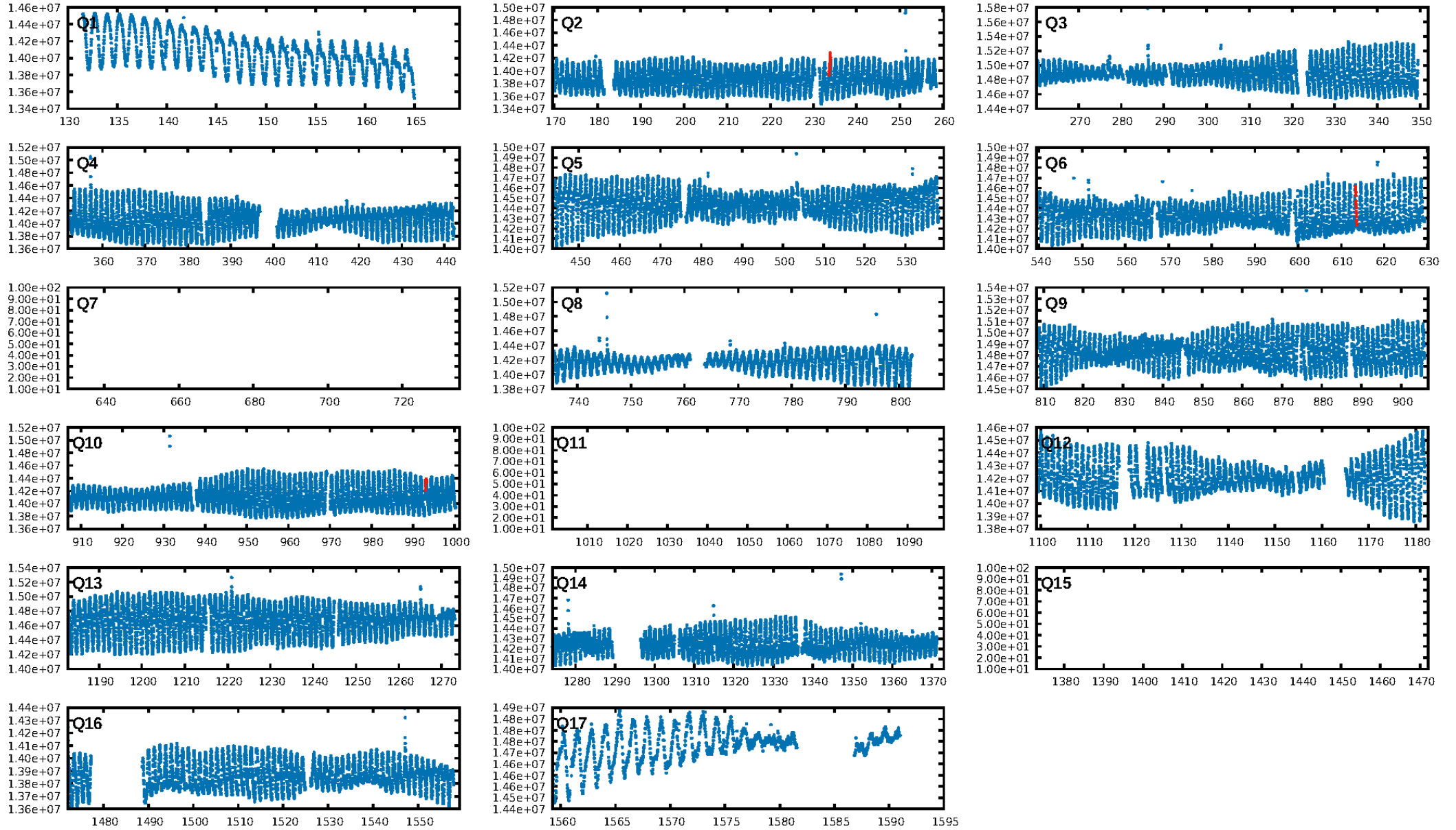
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [525.44 σ]
ModelChiSquare2-sig: 2.9%
ModelChiSquareGof-sig: 63.7%
Bootstrap-pfa: 4.34e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.101
Centroid-sig: 59.8%
Centroid-so: 0.275 arcsec [0.34 σ]
OotOffset-rm: 0.132 arcsec [1.13 σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-rm: 0.127 arcsec [1.00 σ]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

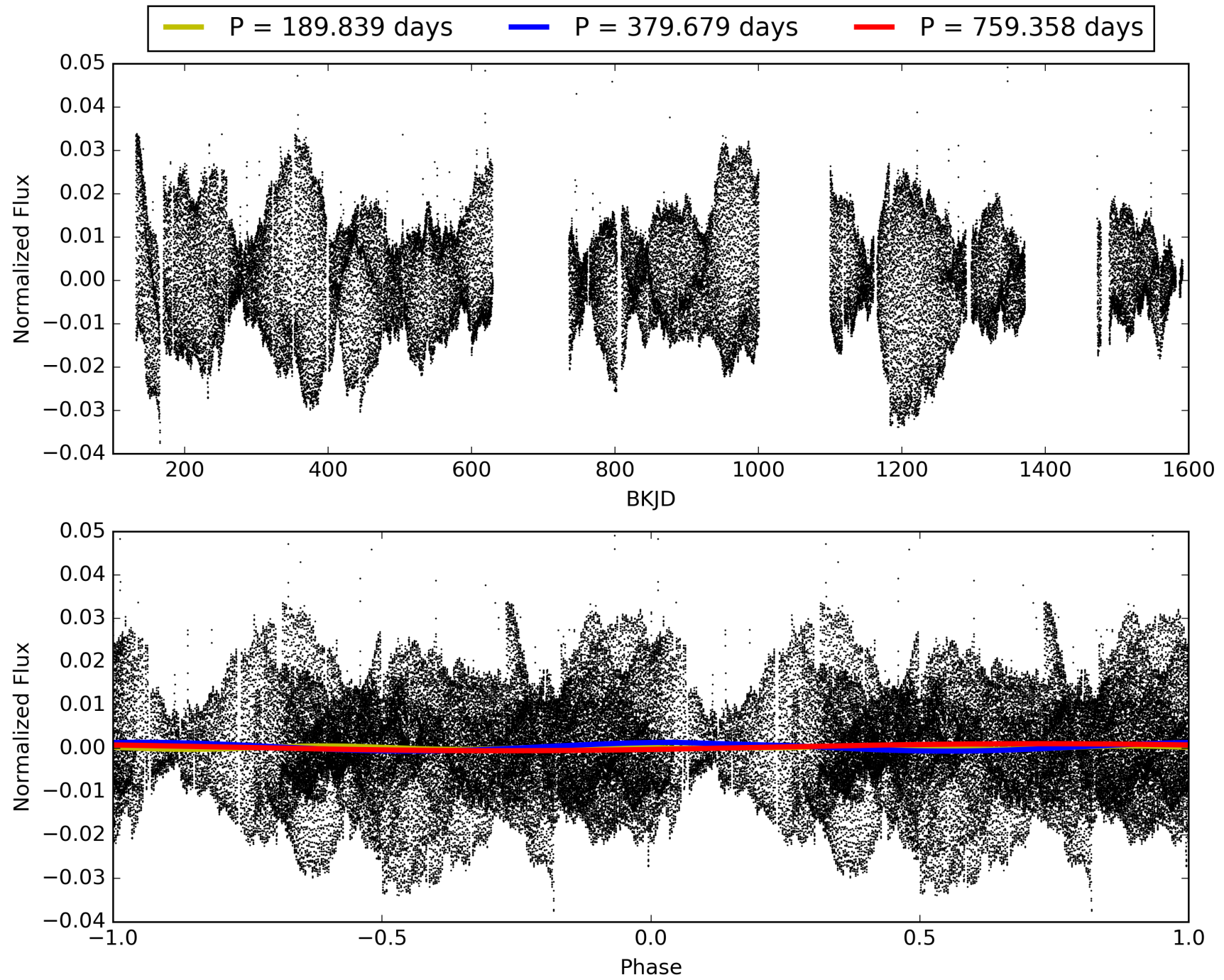
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:05:00 Z

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

TCE 010553769-02, PDC Light Curves

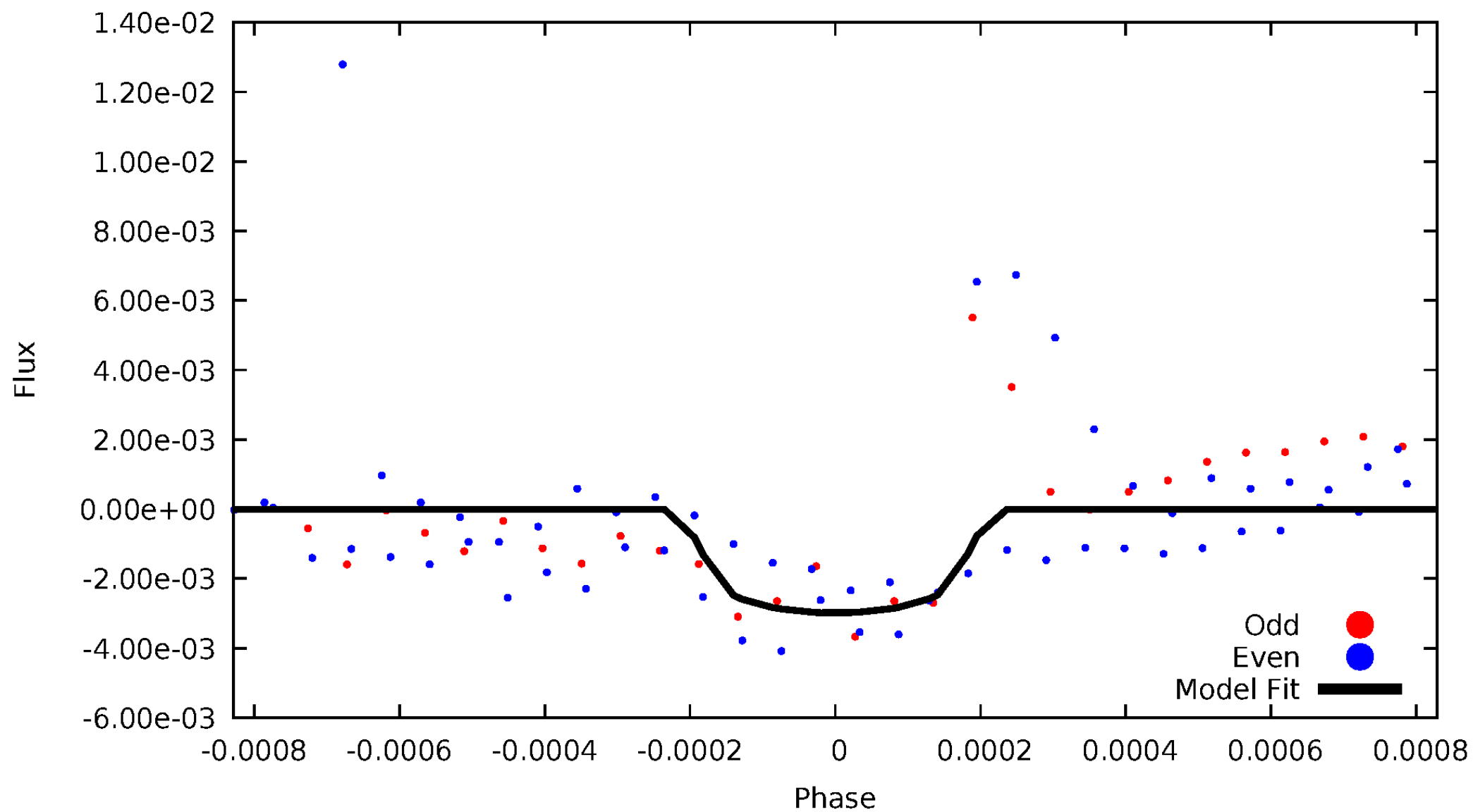


TCE 010553769-02



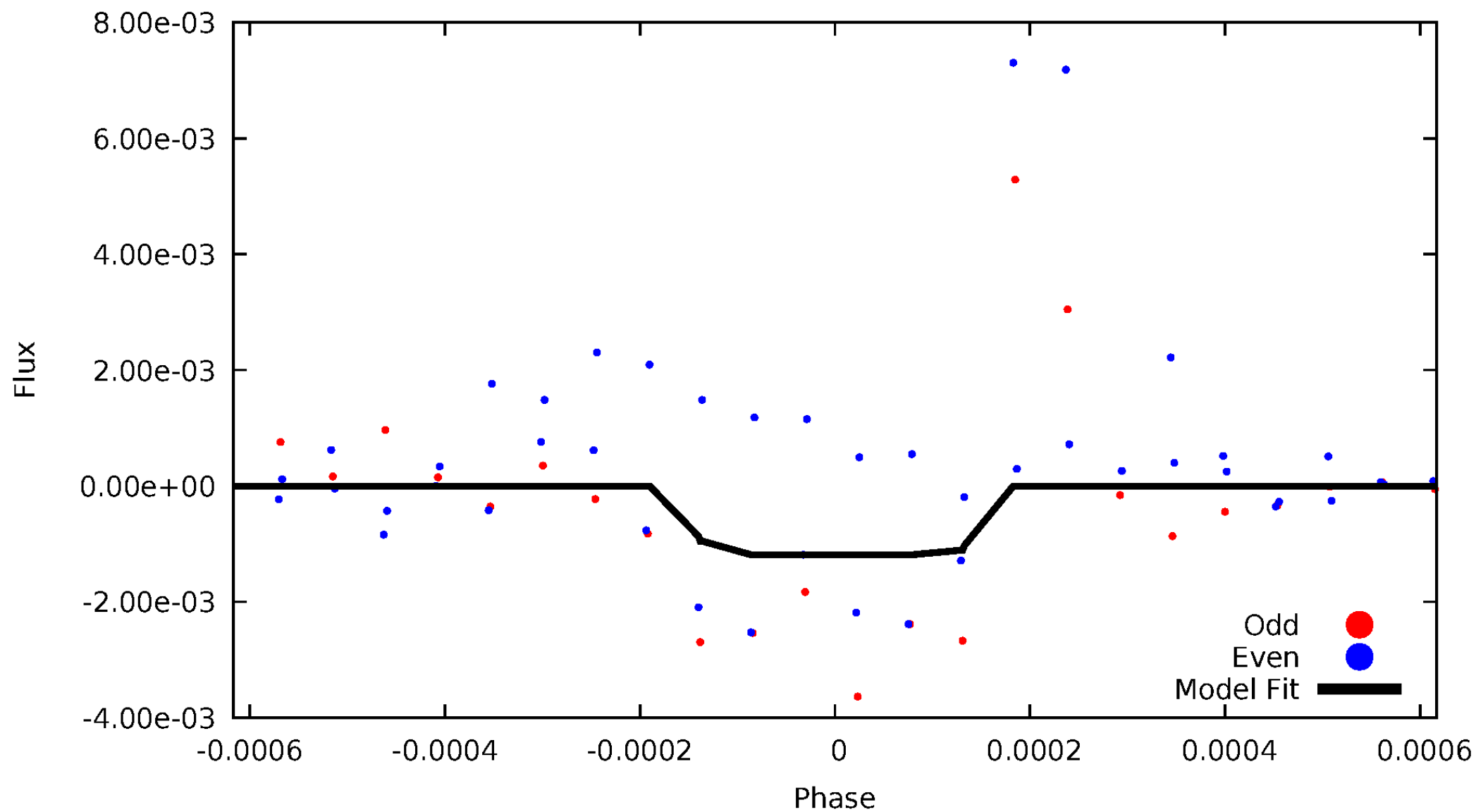
DV Odd/Even

TCE 010553769-02



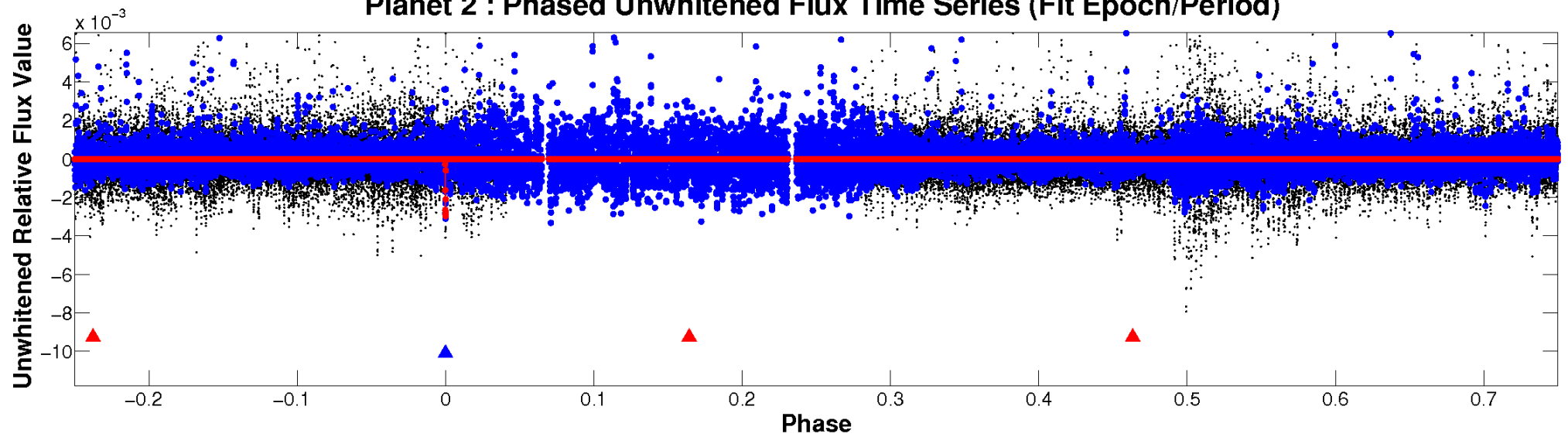
ALT Odd/Even

TCE 010553769-02

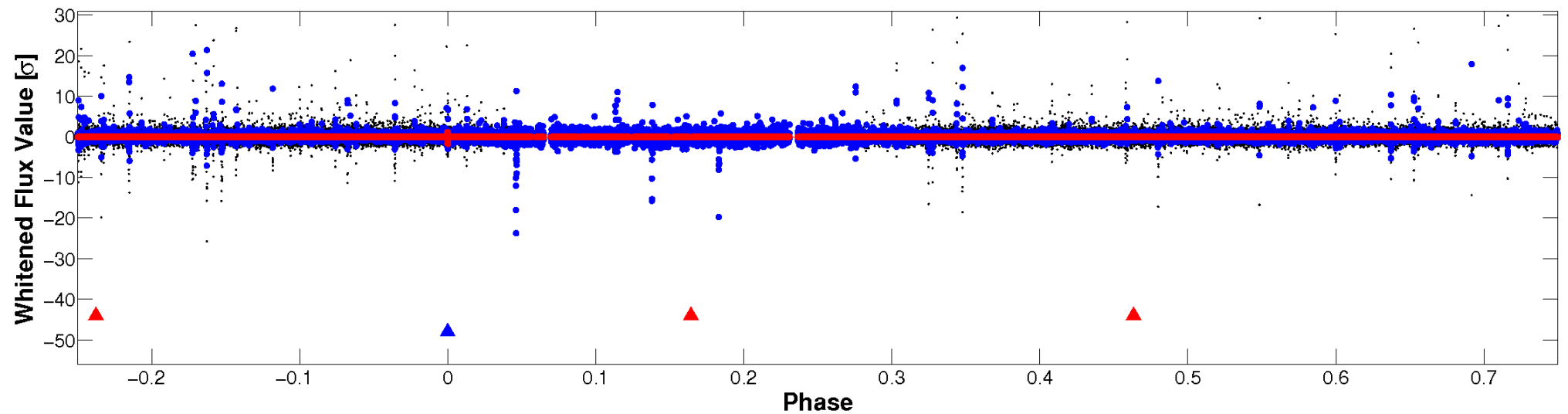


Non-Whitened Vs. Whitened Light Curve

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

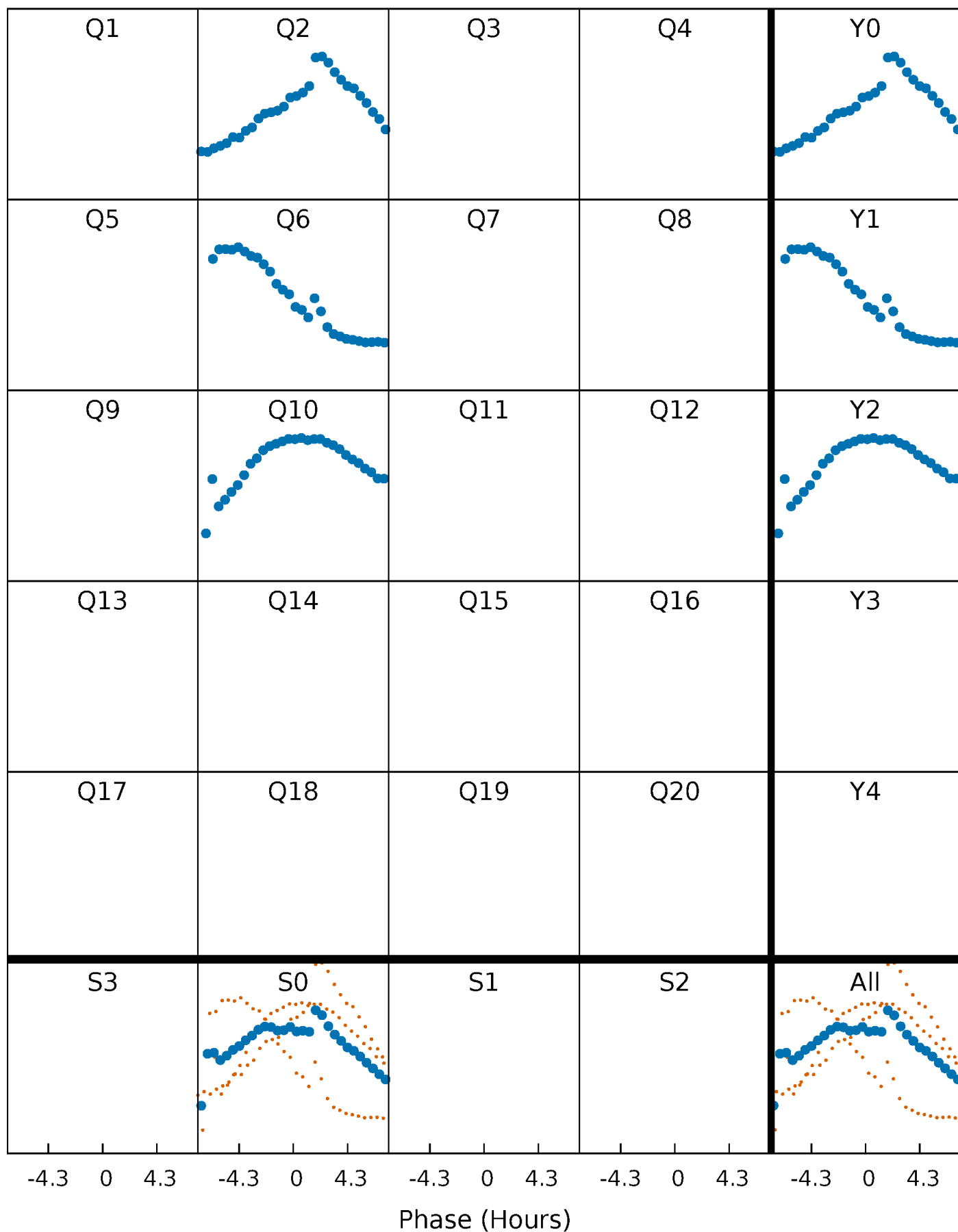


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



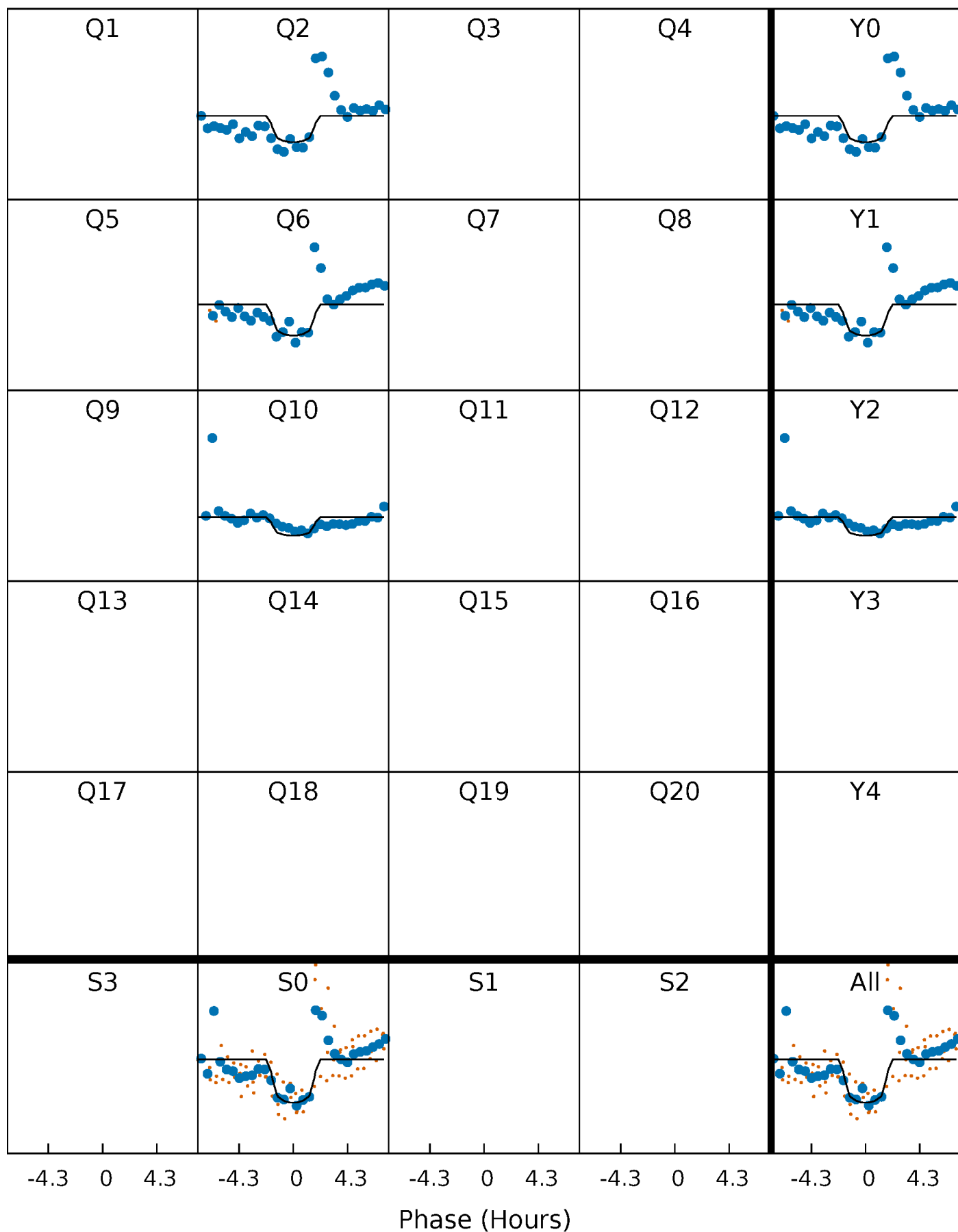
PDC Quarter-Phased Transit Curves

TCE 010553769-02 P=379.678937 Days $T_0=233.791988$ (BKJD)



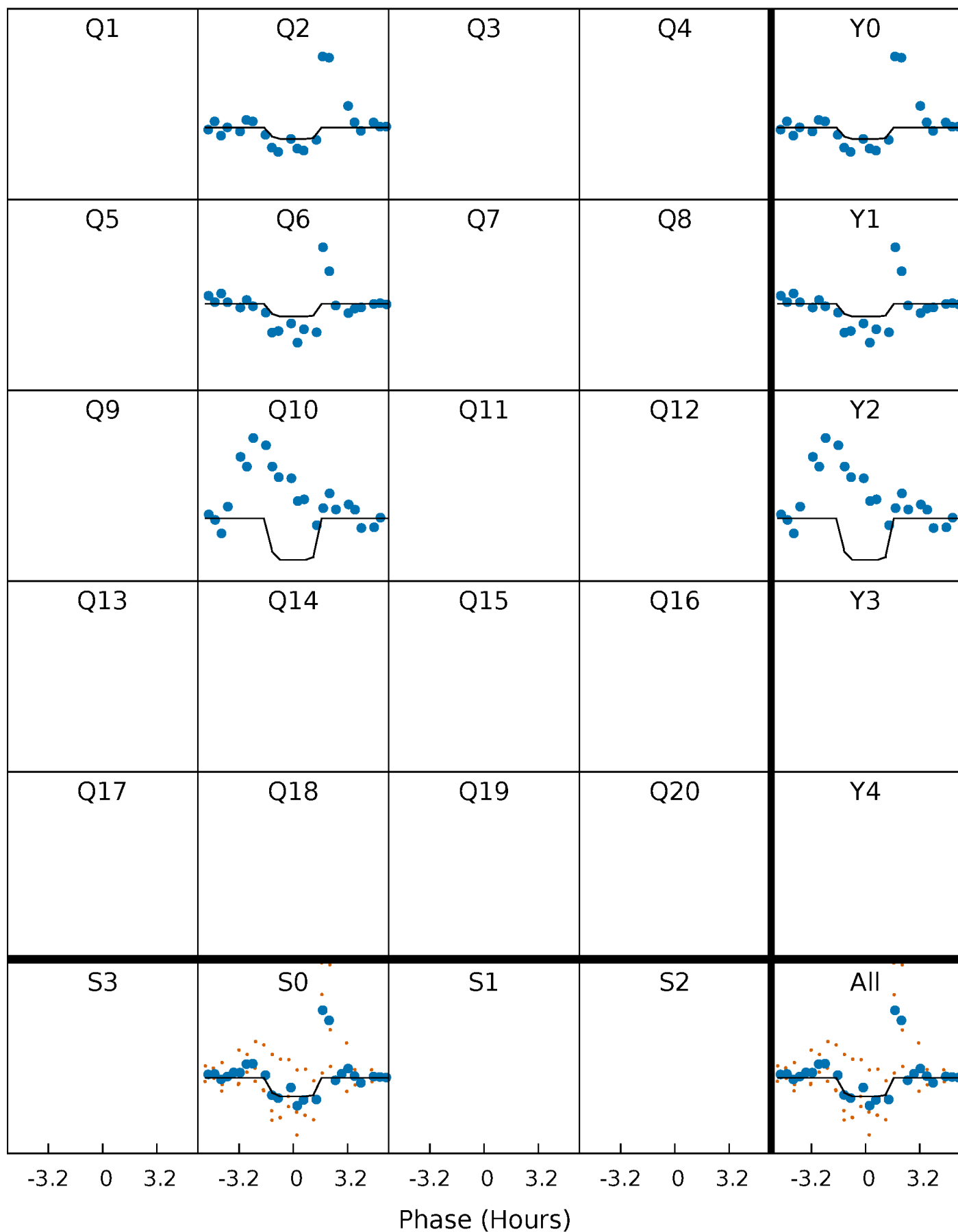
DV Quarter-Phased Transit Curves

TCE 010553769-02 P=379.678937 Days $T_0=233.791988$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

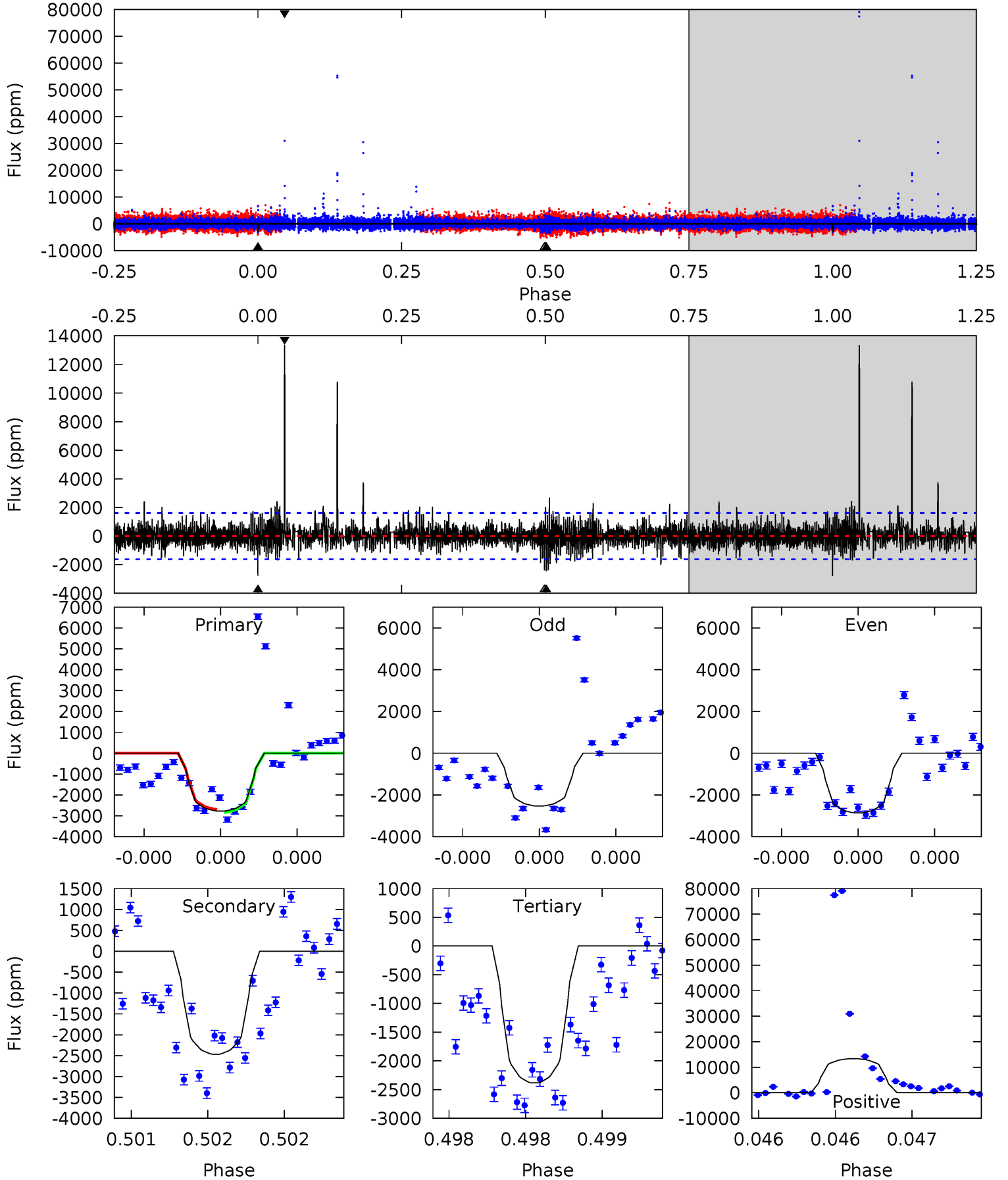
TCE 010553769-02 $P=379.675978$ Days $T_0=233.796513$ (BKJD)



DV Model-Shift Uniqueness Test

010553769-02, P = 379.678937 Days, E = 233.791988 Days

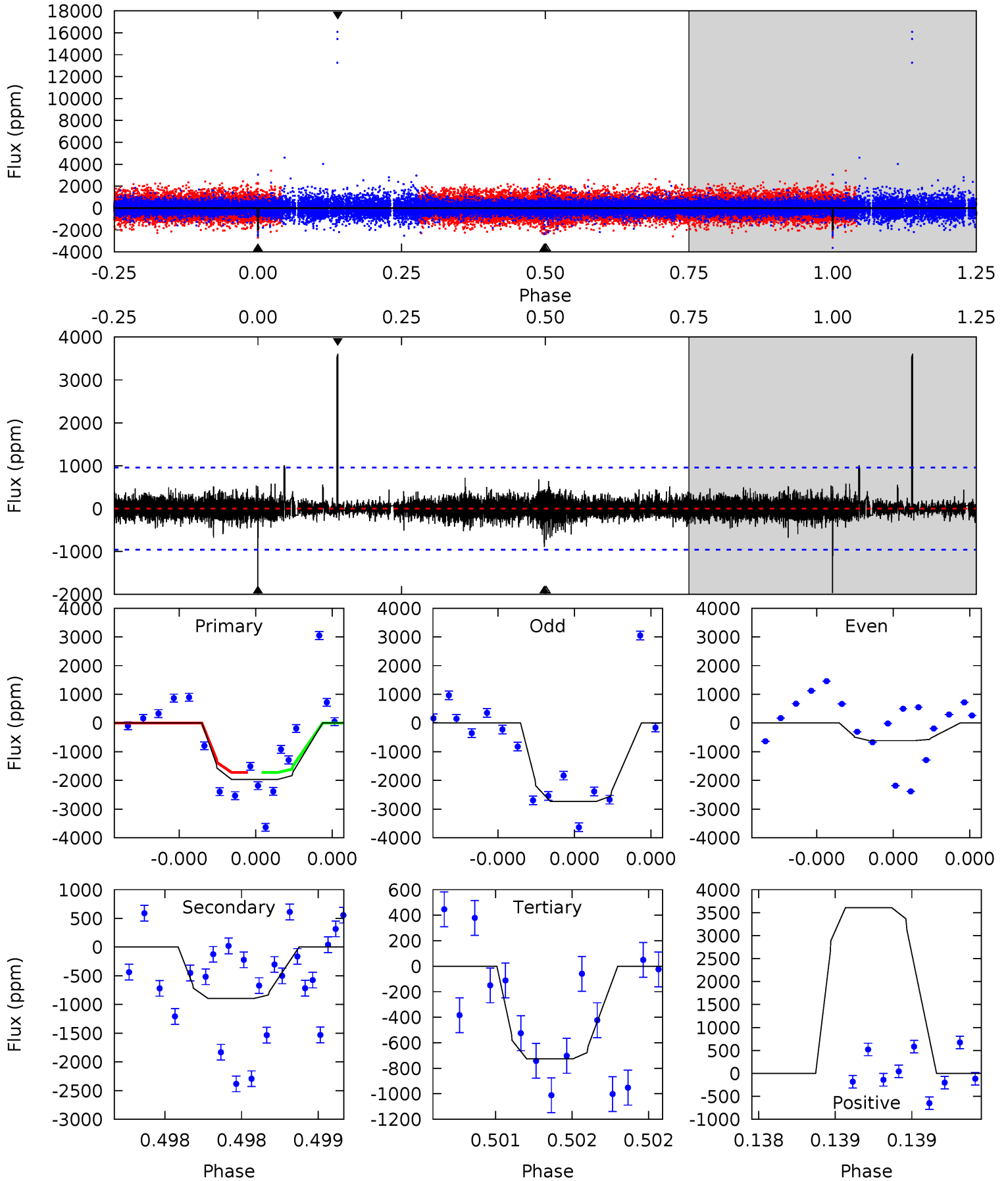
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.60	8.54	8.26	46.3	5.60	3.52	2.12	1.34	-36.7	0.28	-37.7	0.52	1.04	0.83	0.25



Alt Model-Shift Uniqueness Test

010553769-02, P = 379.675978 Days, E = 233.796513 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	5.30	4.30	21.4	5.68	3.64	0.86	7.35	-9.74	1.00	-16.1	7.32	0.65	0.65	0.01



Stellar Parameters For KIC 010553769

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5250^{+157}_{-157}	$4.618^{+0.066}_{-0.048}$	$-0.920^{+0.350}_{-0.300}$	$0.647^{+0.056}_{-0.056}$	$0.633^{+0.065}_{-0.023}$	$3.293^{+0.887}_{-0.583}$
	+3%/-3%	+1%/-1%	+38%/-33%	+9%/-9%	+10%/-4%	+27%/-18%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010553769-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2464 ± 288	$17.72^{+16.62}_{-12.48}$	276^{+11}_{-10}	2992^{+1365}_{-486}	3420^{+33466}_{-2528}
Alt.	-894 ± 169	$17.45^{+17.52}_{-12.54}$	276^{+9}_{-10}	2609^{+1213}_{-402}	1222^{+14467}_{-932}

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 $A_{obs} \gg 1.0$

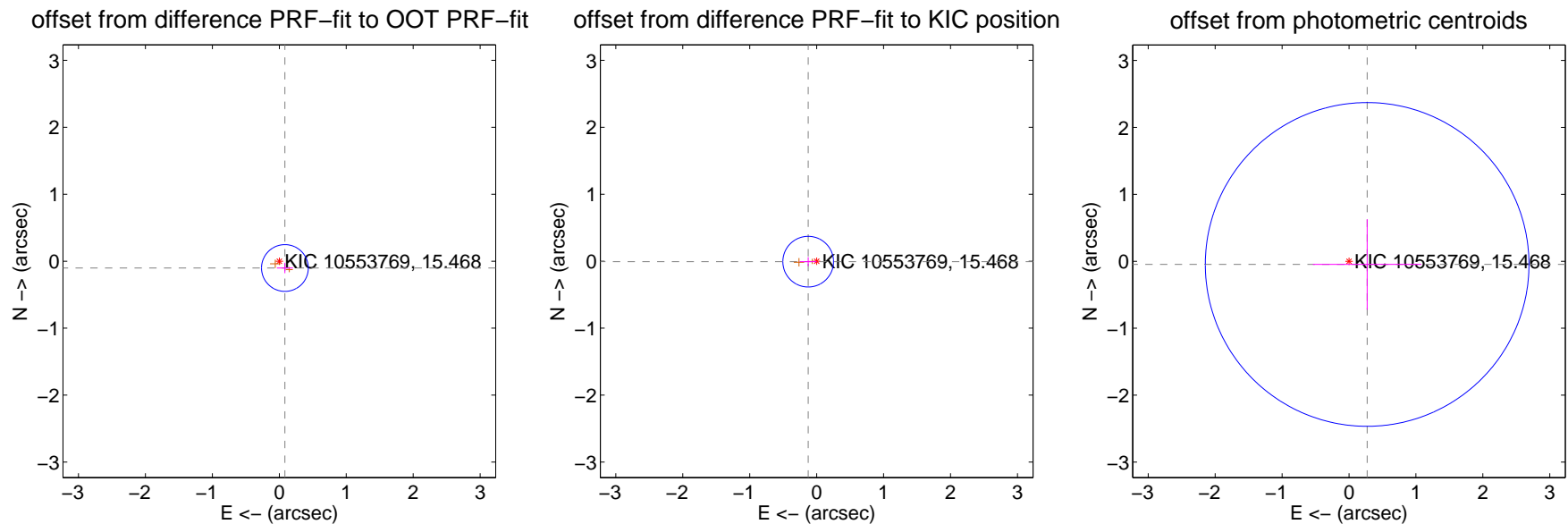
DV Centroid Data

Supplemental centroid analysis for 010553769-02. Kepler magnitude: 15.47. Transit SNR 7.46

There are 0 quarters with good PRF difference image offsets

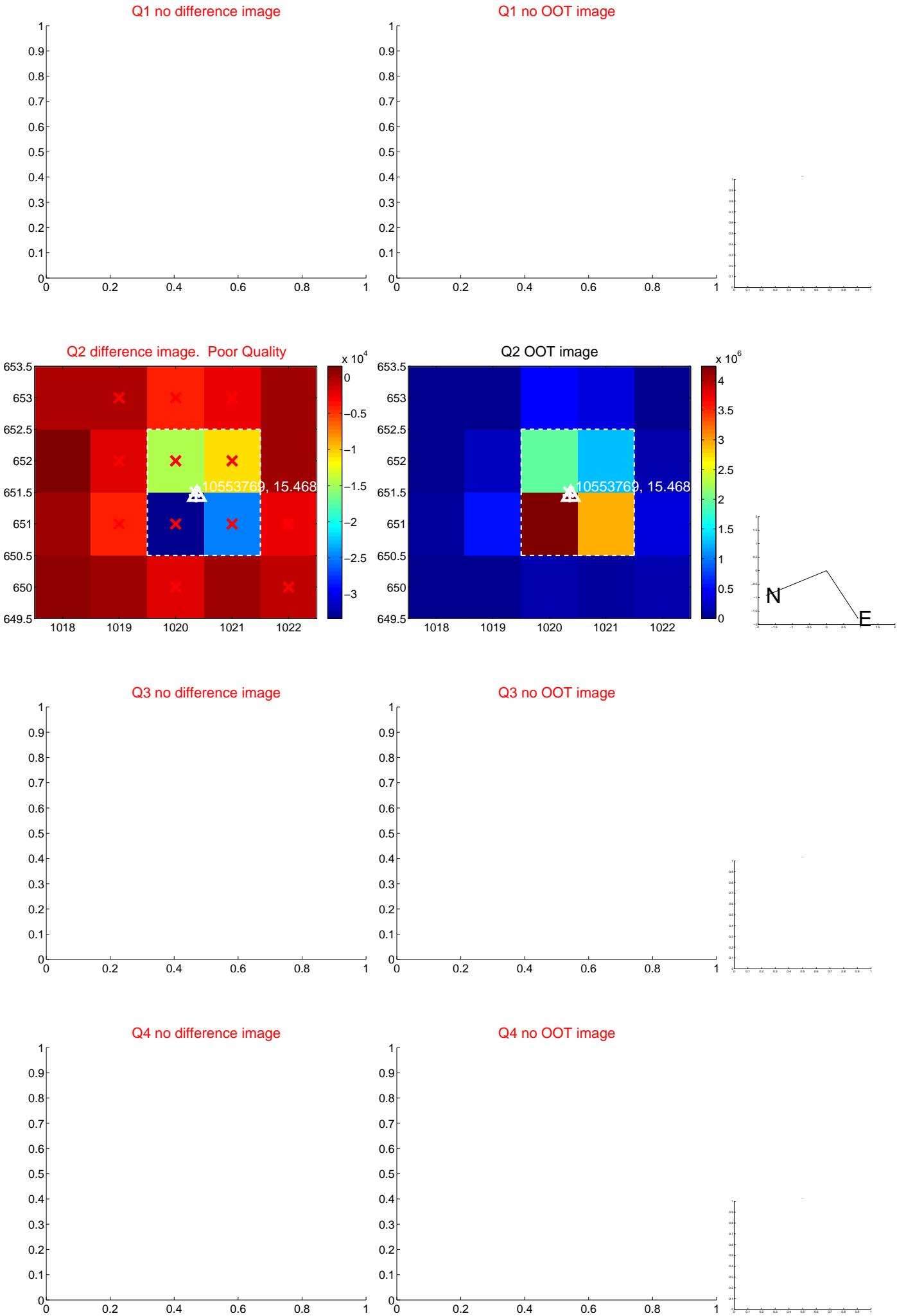
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.132 ± 0.116	1.13	-0.084 ± 0.120	-0.102 ± 0.078
PRF-fit source offset from KIC position	0.127 ± 0.126	1.00	0.126 ± 0.126	-0.007 ± 0.067
photometric centroid source offset	0.28 ± 0.81	0.34	-0.27 ± 0.81	-0.05 ± 0.67

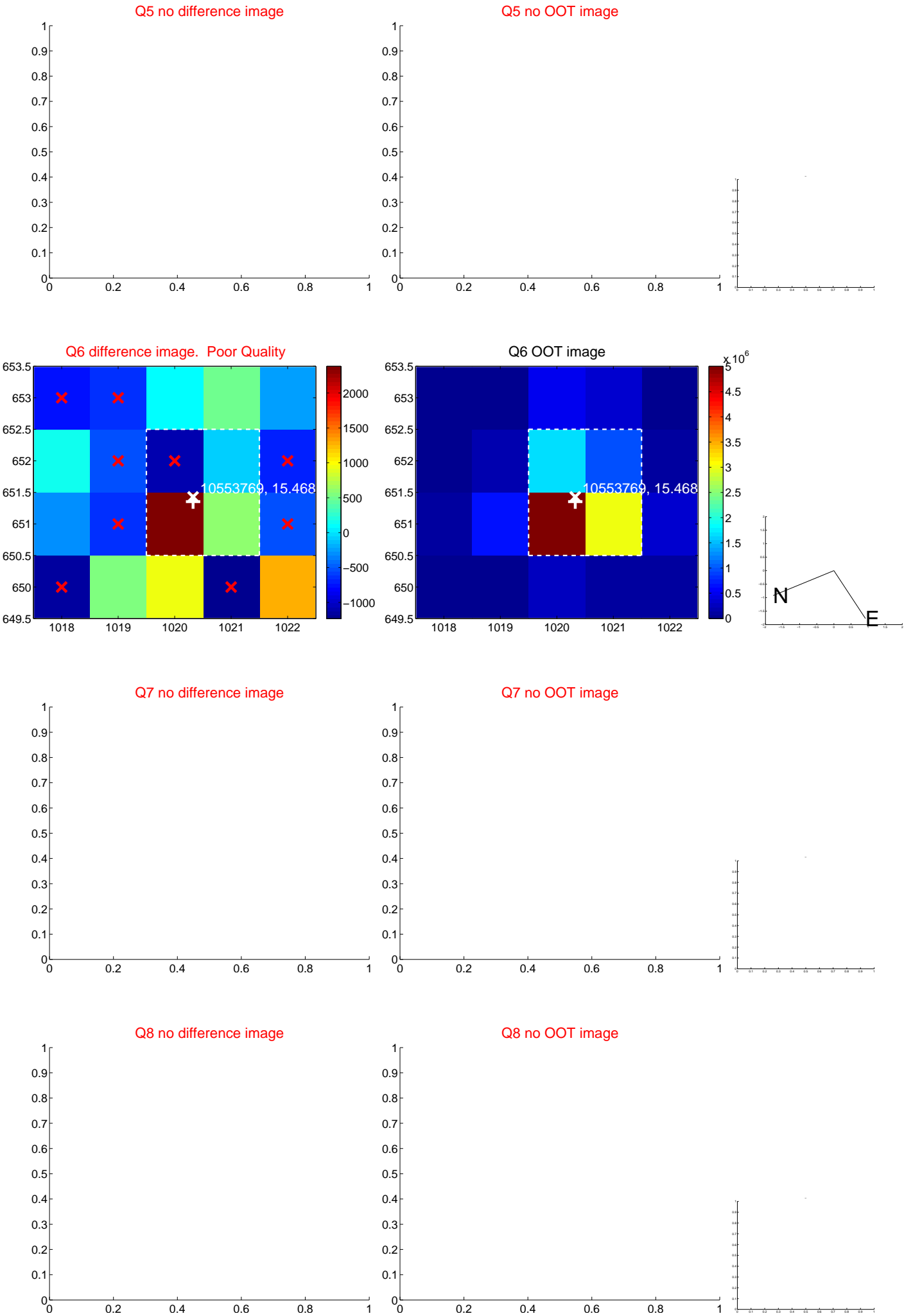


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

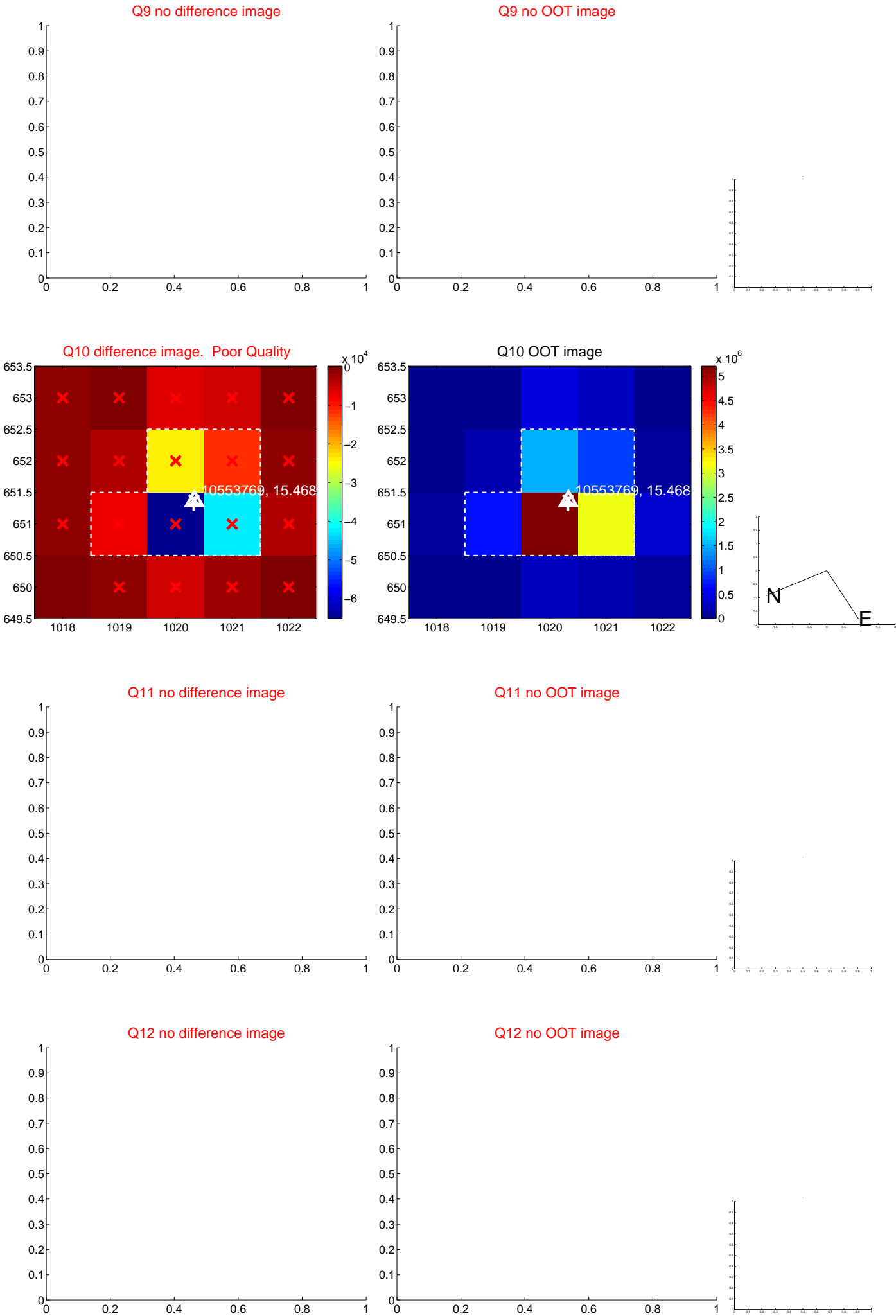
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



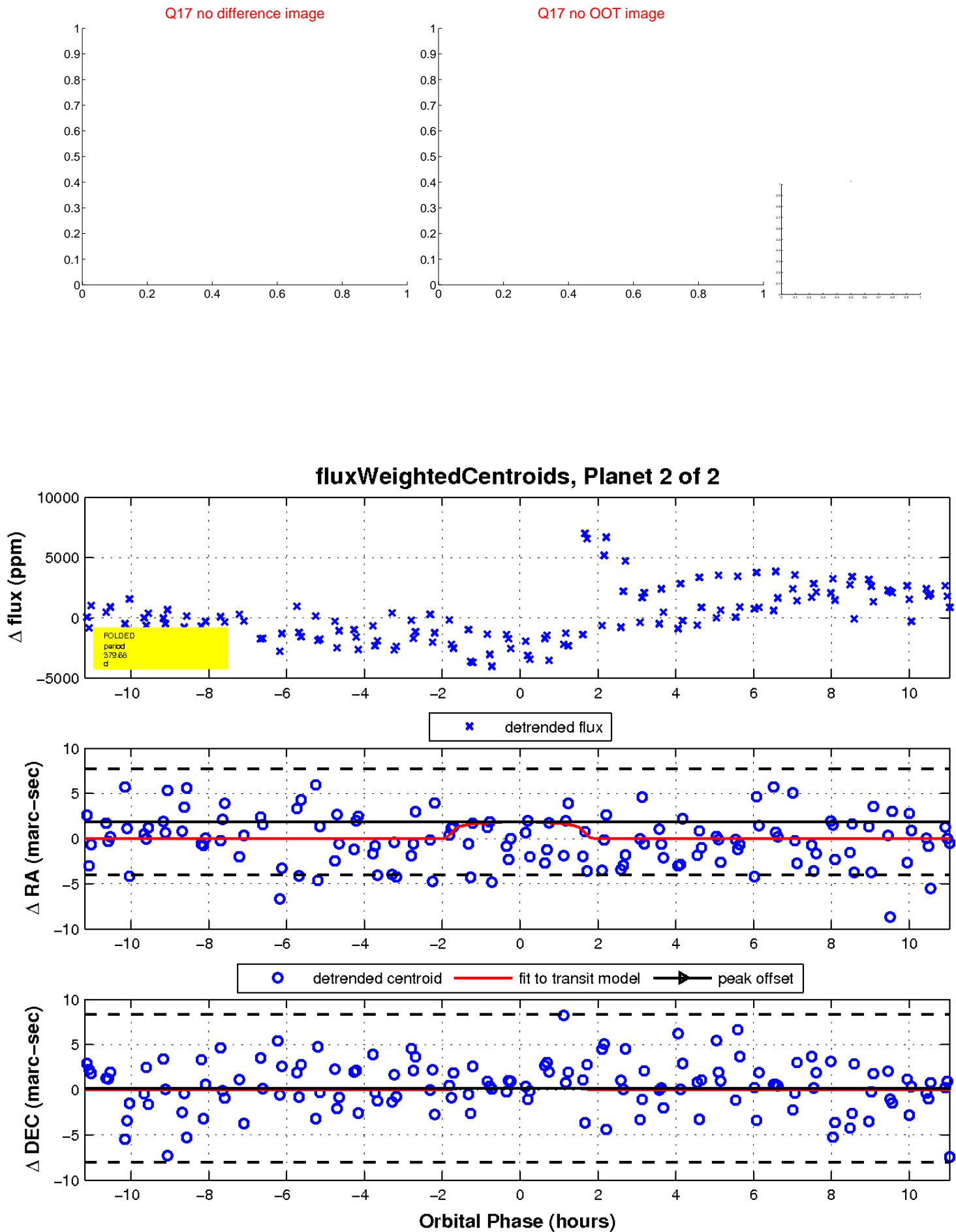
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

