

KIC 005802784

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})
005802784-01	OBS	No	293.190684	343.409258	1485.5	2.328	13.4	6.6	0.59	4615	2.43	0.27
005802784-02	OBS	No	315.578001	167.834929	1708.5	6.184	12.8	7.2	0.59	4615	2.52	0.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802784-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005802784-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST

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

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

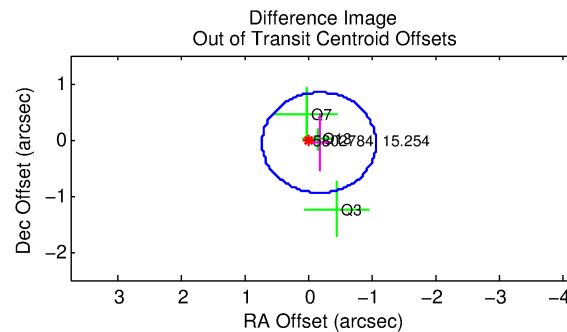
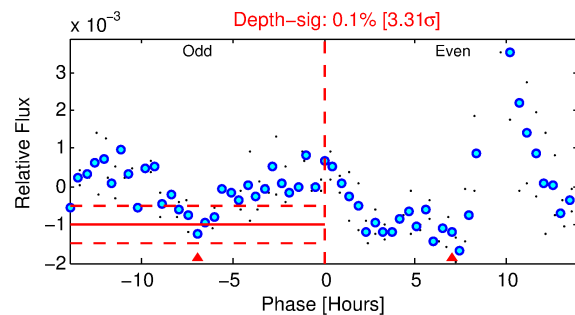
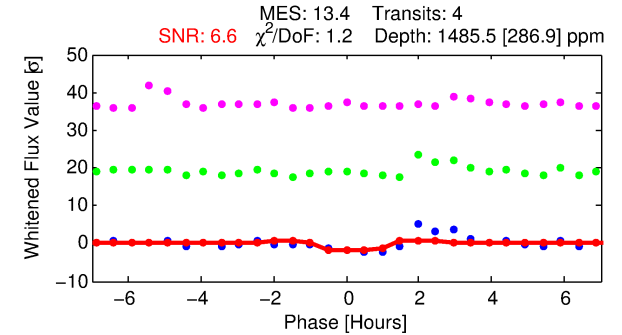
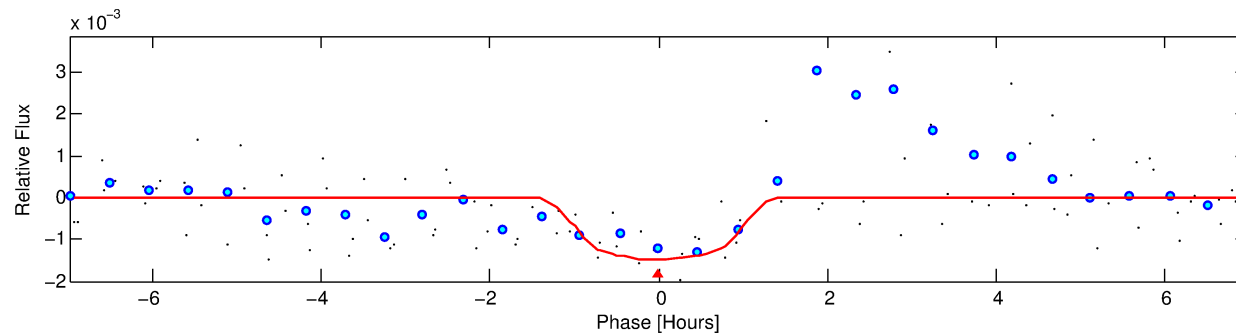
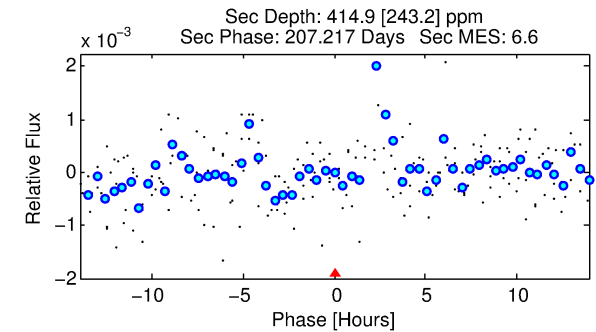
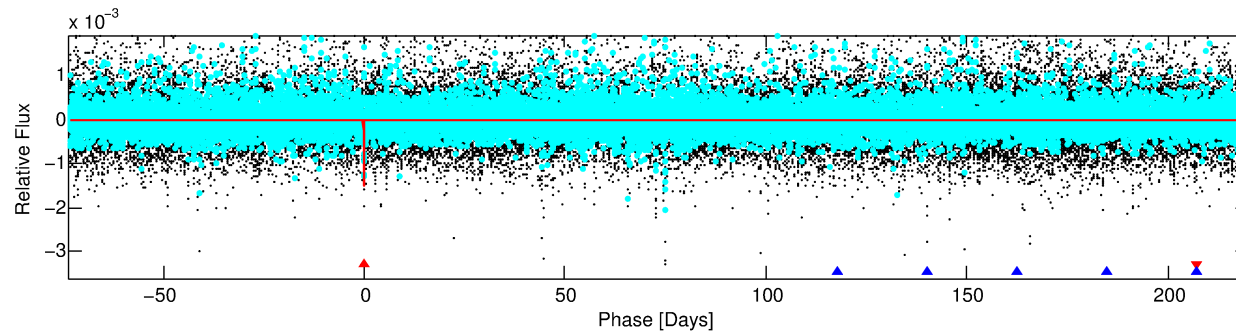
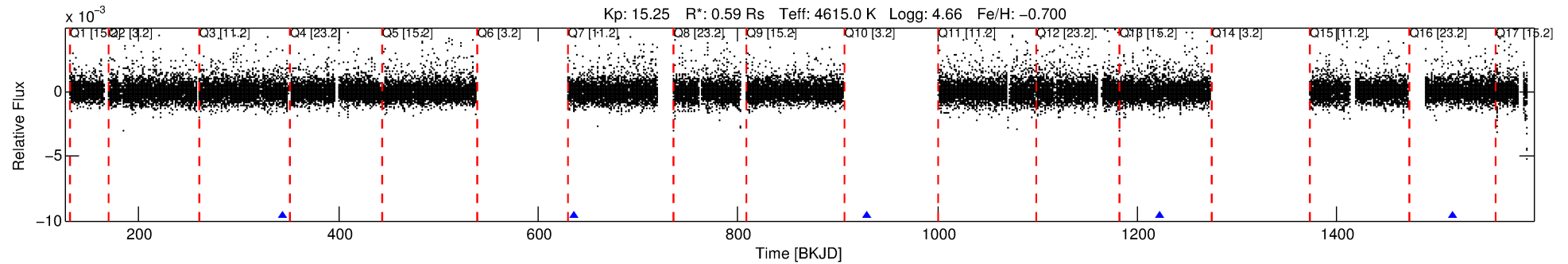
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005802784-01

No Significant Match Found

DV One-Page Summary

KIC: 5802784 Candidate: 1 of 2 Period: 293.191 d



DV Fit Results:

Period = 293.19068 [0.00258] d
Epoch = 343.4093 [0.0073] BKJD
Rp/R* = 0.0378 [0.1150]
a/R* = 731.32 [7446.34]
b = 0.71 [7.43]
Seff = 0.27 [0.05]
Teq = 184 [8] K
Rp = 2.43 [7.39] Re
a = 0.7198 [0.0518] AU
Ag = 20001.77 [122186.22] [0.16 σ]
Teffp = 3386 [5172] K [0.62 σ]

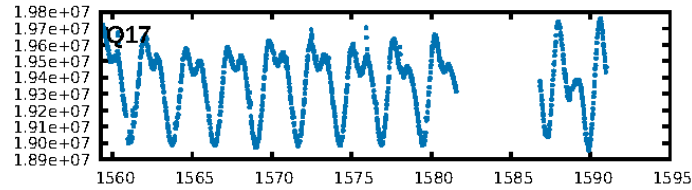
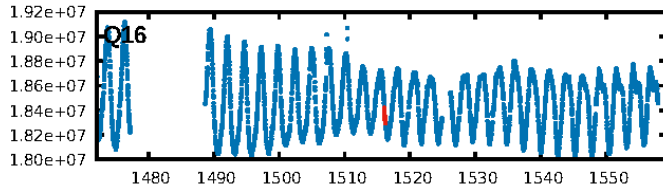
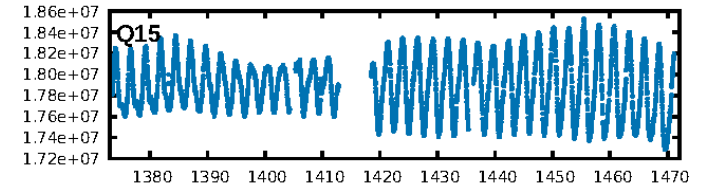
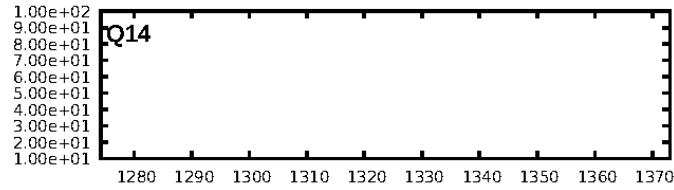
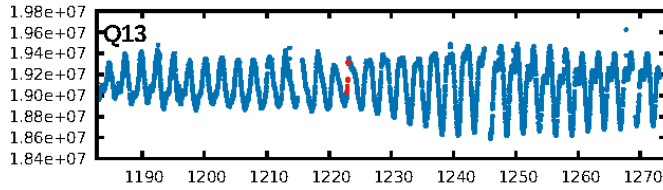
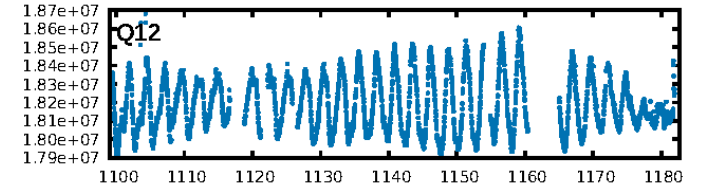
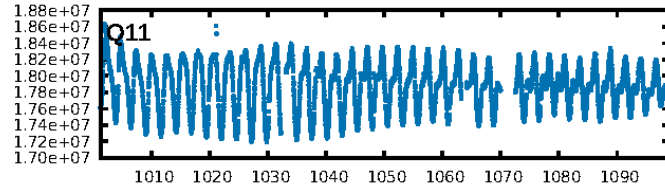
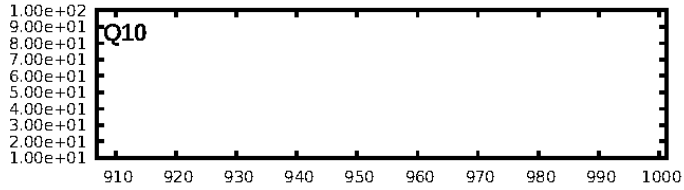
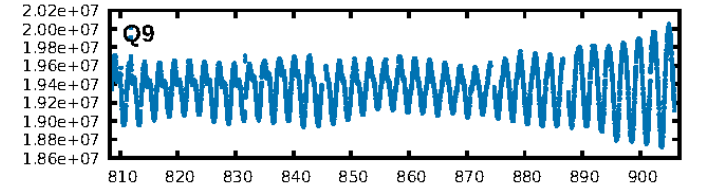
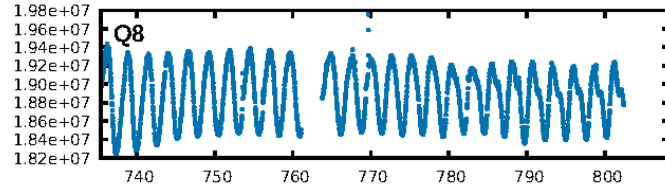
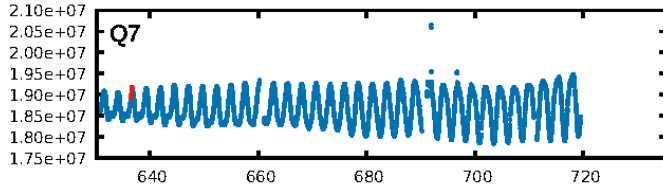
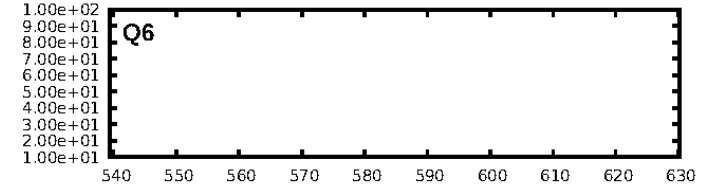
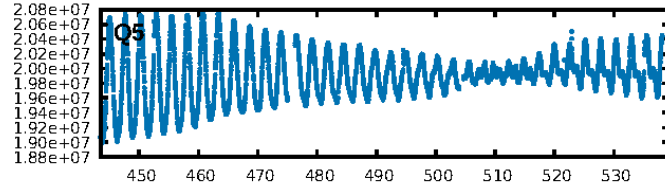
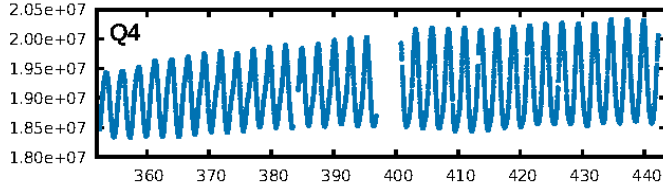
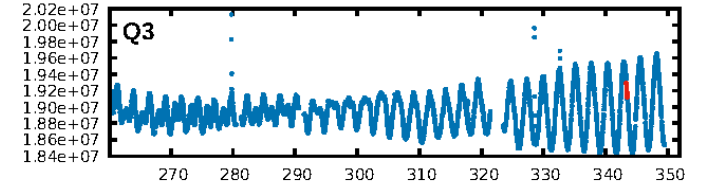
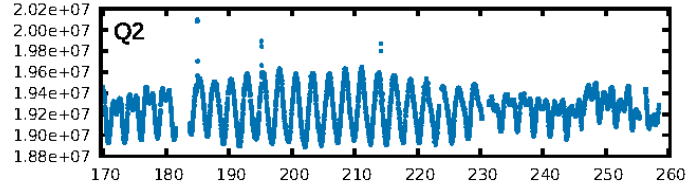
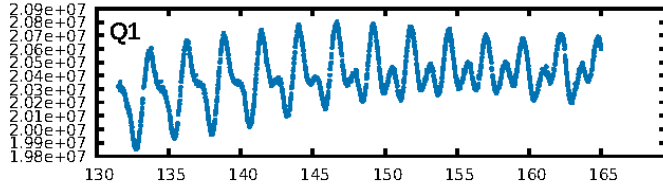
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [81.32 σ]
ModelChiSquare2-sig: 9.9%
ModelChiSquareGof-sig: 86.5%
Bootstrap-pfa: 1.63e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.196
Centroid-sig: 6.8%
Centroid-so: 1.138 arcsec [0.95 σ]
OotOffset-rm: 0.171 arcsec [0.57 σ]
OotOffset-st: 0.2/0/1 [3]
KicOffset-rm: 0.158 arcsec [0.54 σ]
KicOffset-st: 0.2/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

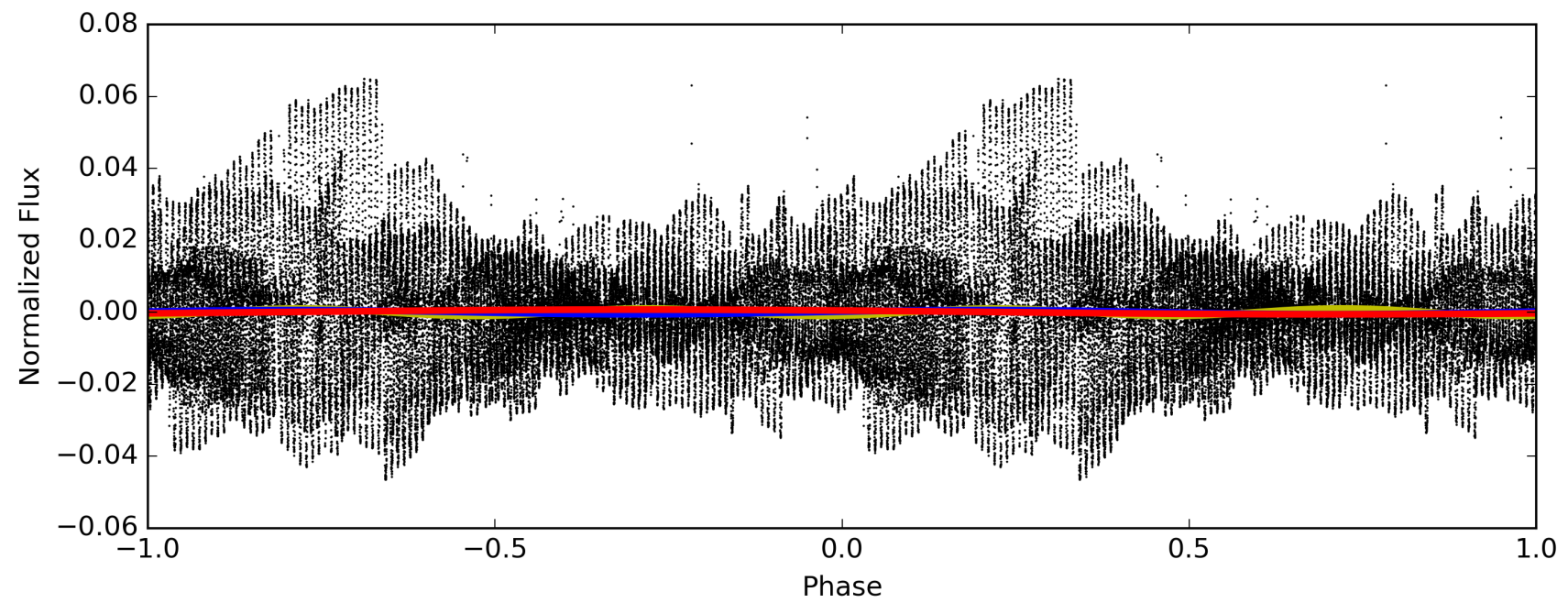
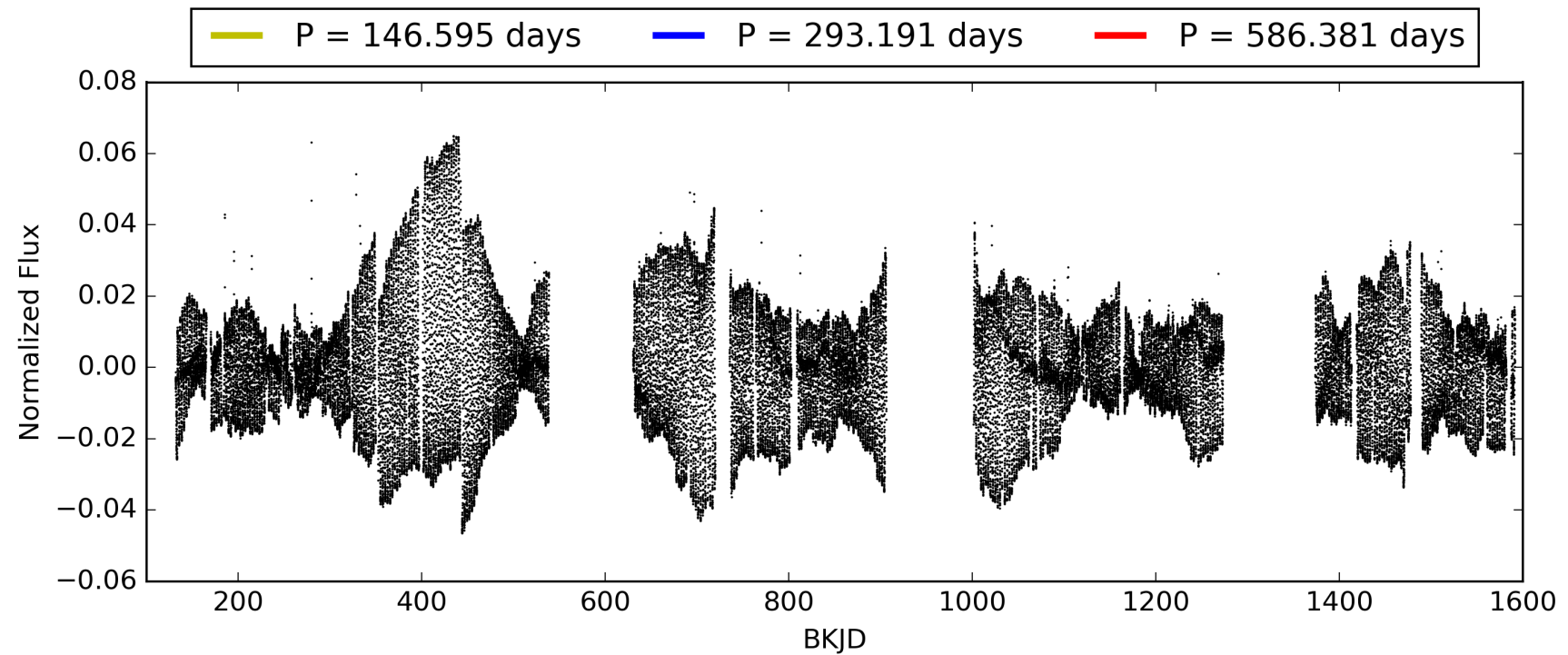
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:54:22 Z

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

TCE 005802784-01, PDC Light Curves

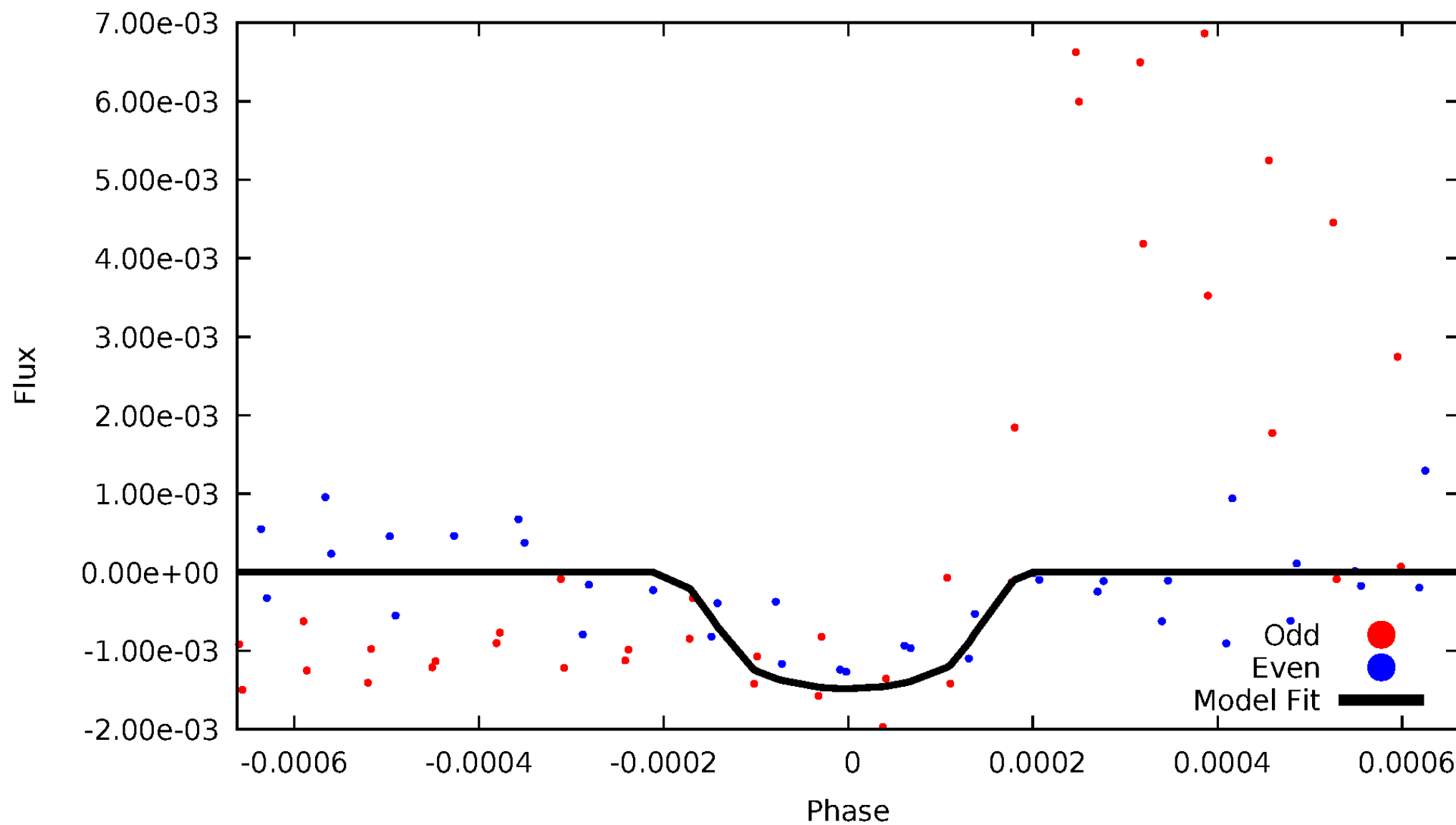


TCE 005802784-01



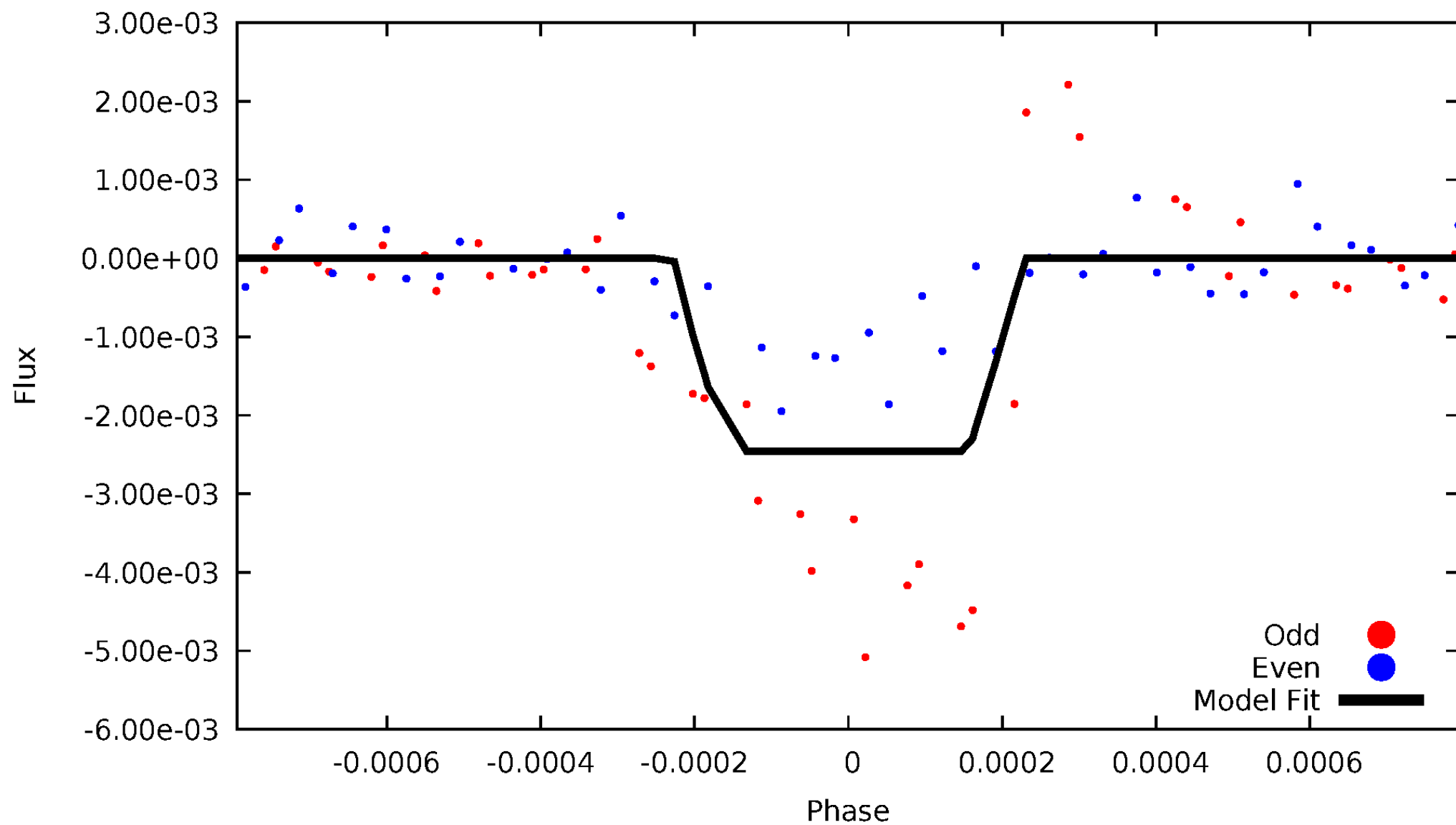
DV Odd/Even

TCE 005802784-01



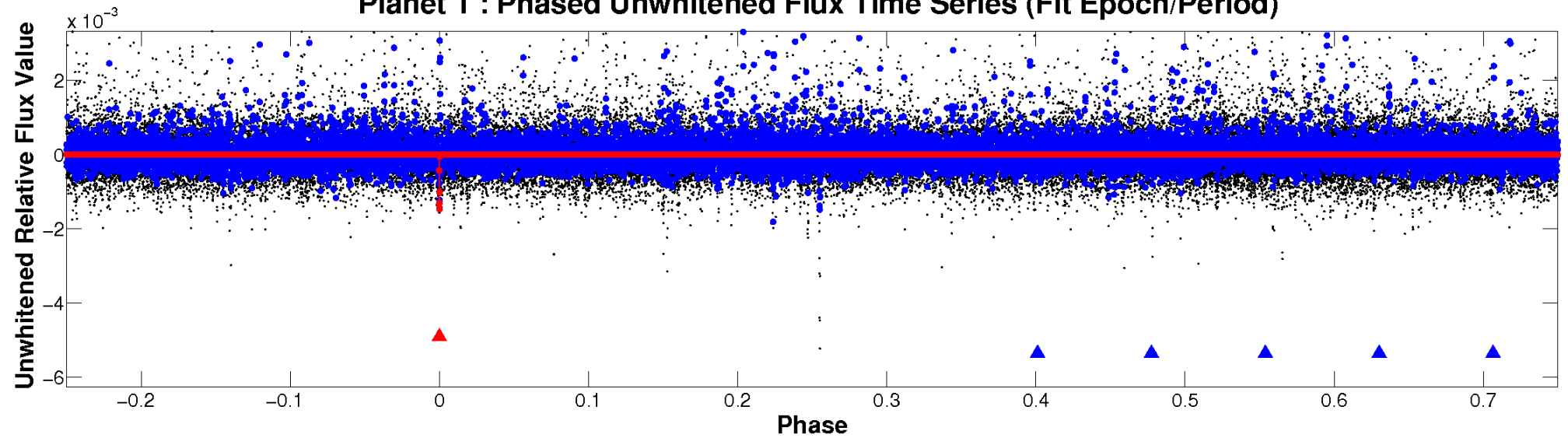
ALT Odd/Even

TCE 005802784-01

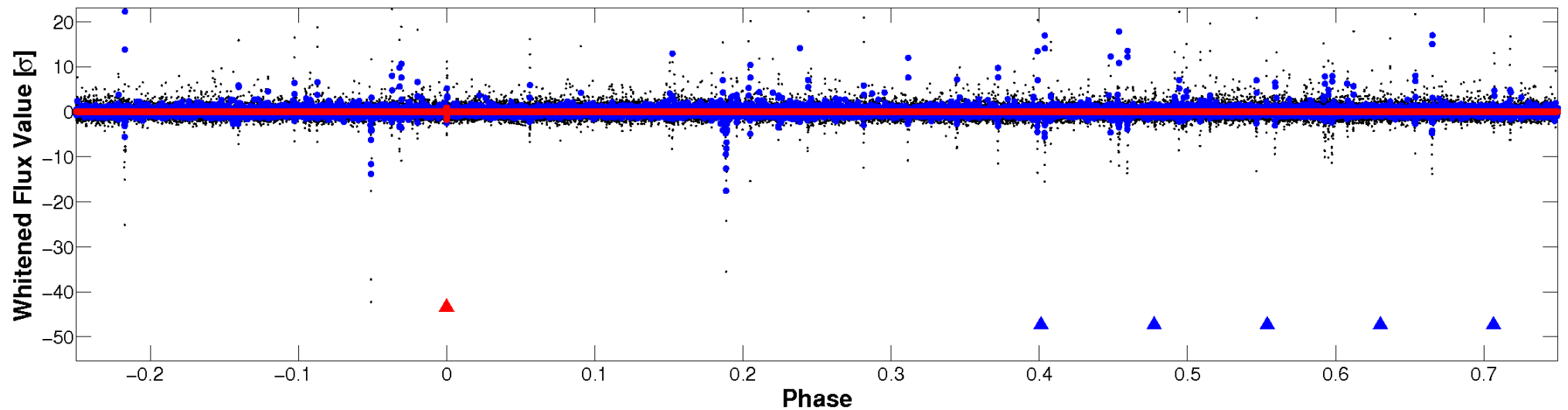


Non-Whitened Vs. Whitened Light Curve

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

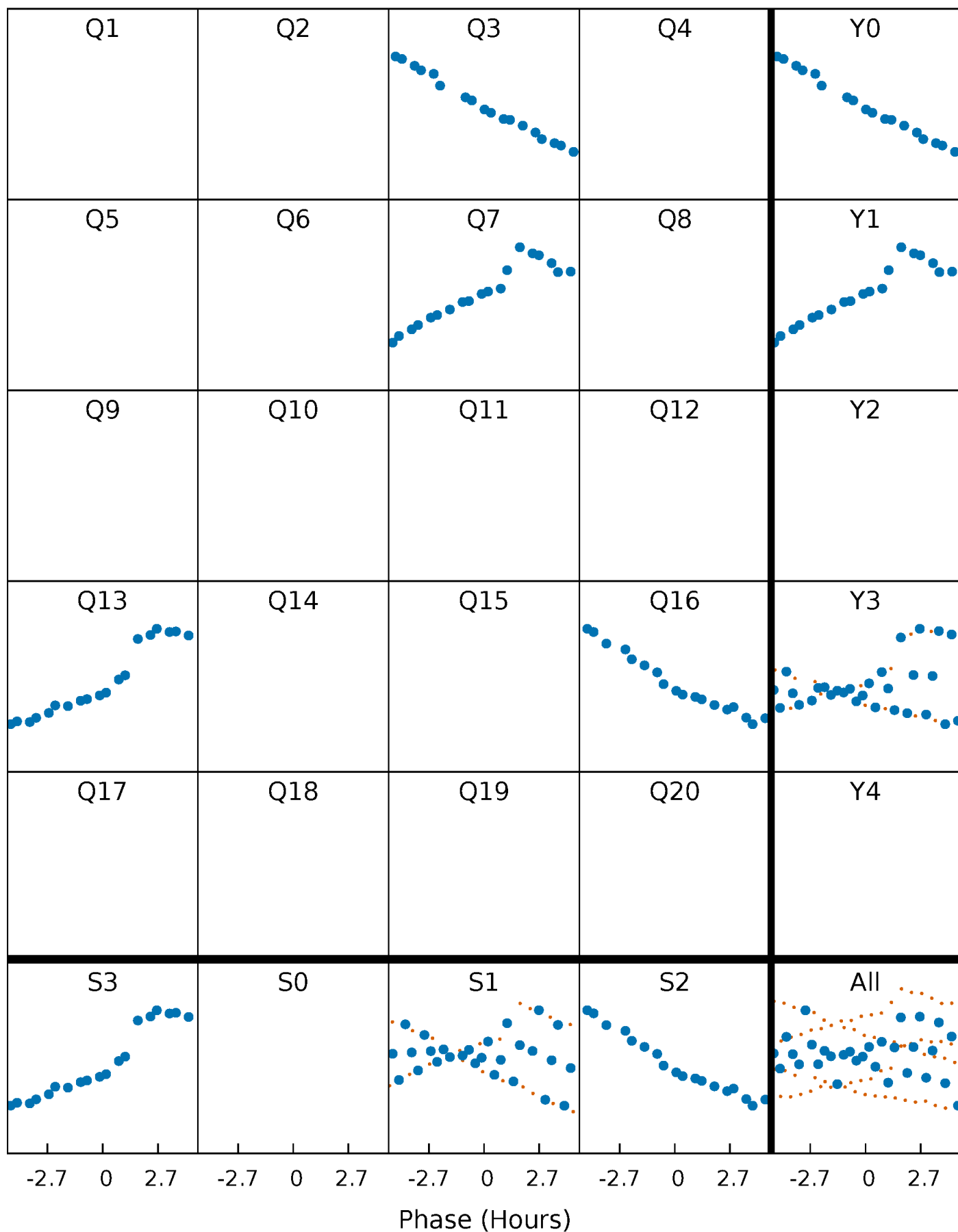


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



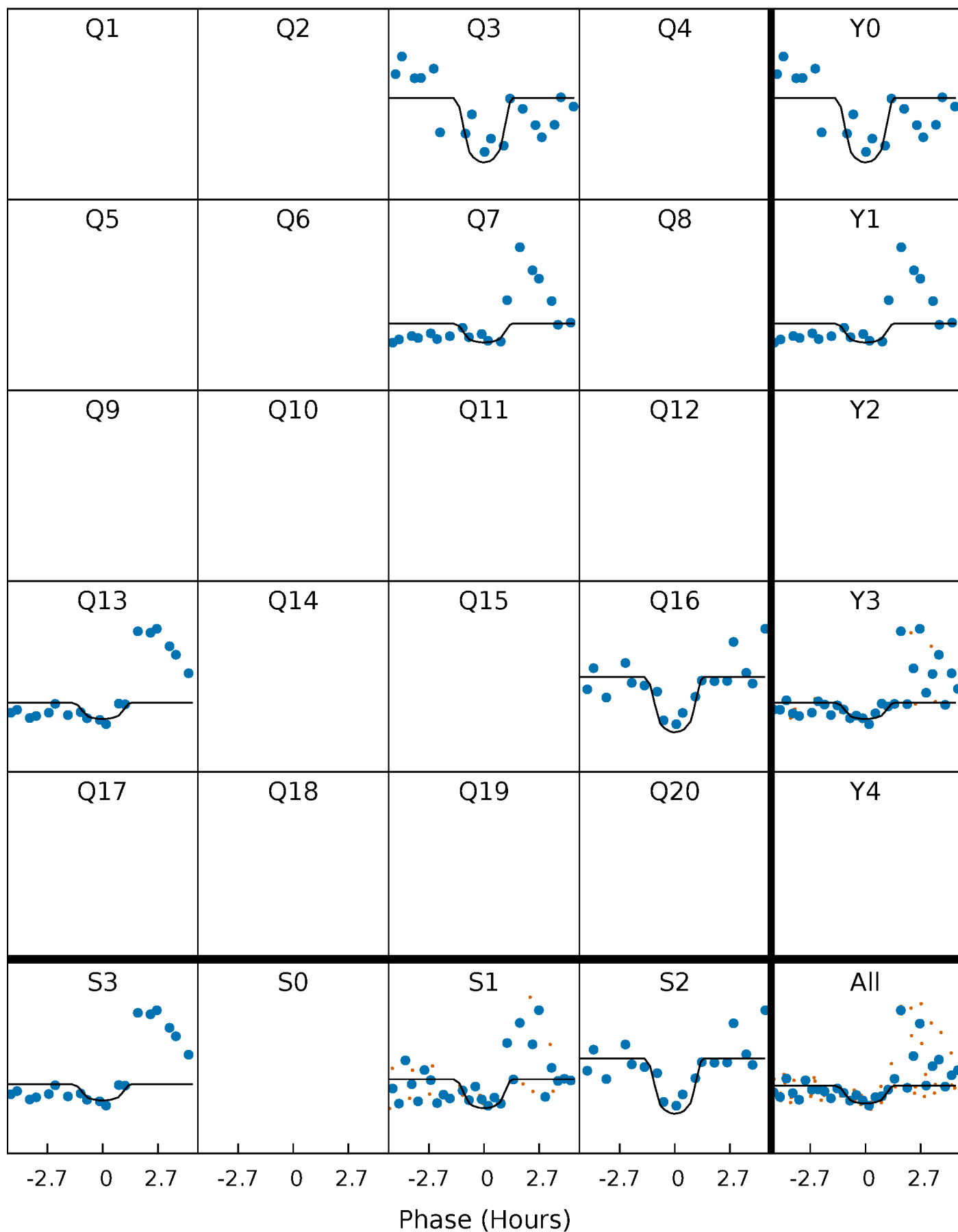
PDC Quarter-Phased Transit Curves

TCE 005802784-01 P=293.190684 Days $T_0=343.409258$ (BKJD)



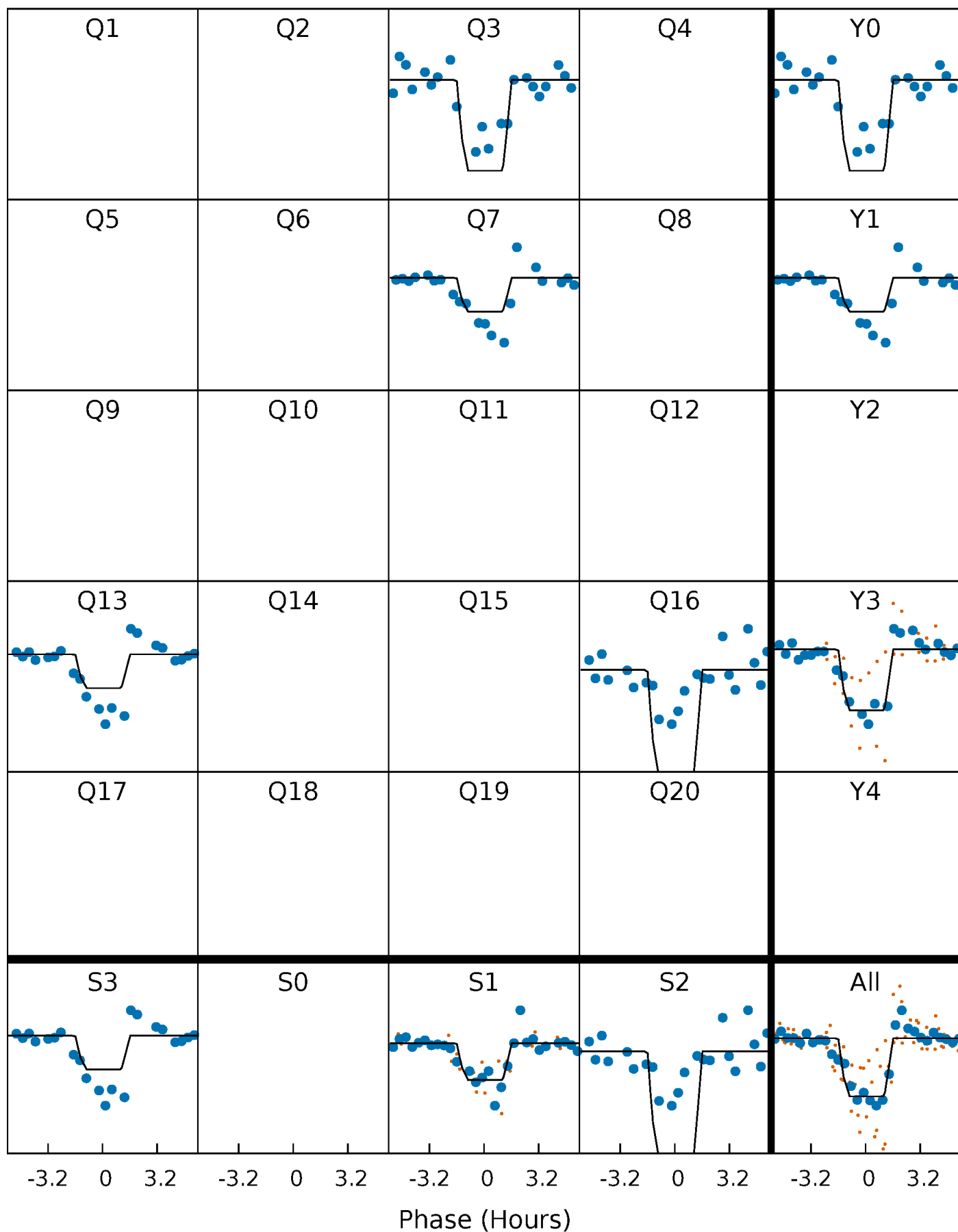
DV Quarter-Phased Transit Curves

TCE 005802784-01 $P=293.190684$ Days $T_0=343.409258$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

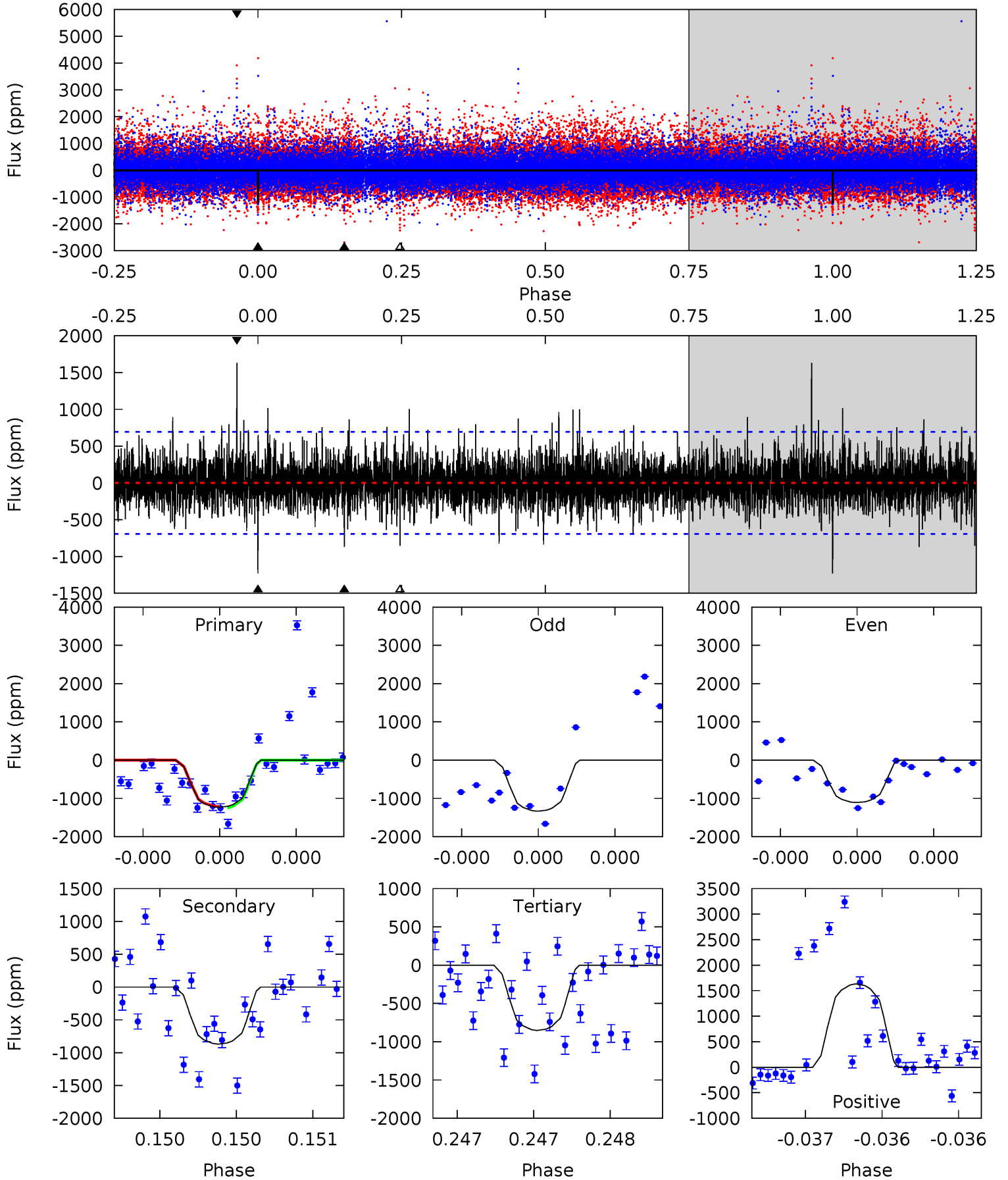
TCE 005802784-01 P=293.198170 Days $T_0=343.391251$ (BKJD)



DV Model-Shift Uniqueness Test

005802784-01, P = 293.190684 Days, E = 50.218574 Days

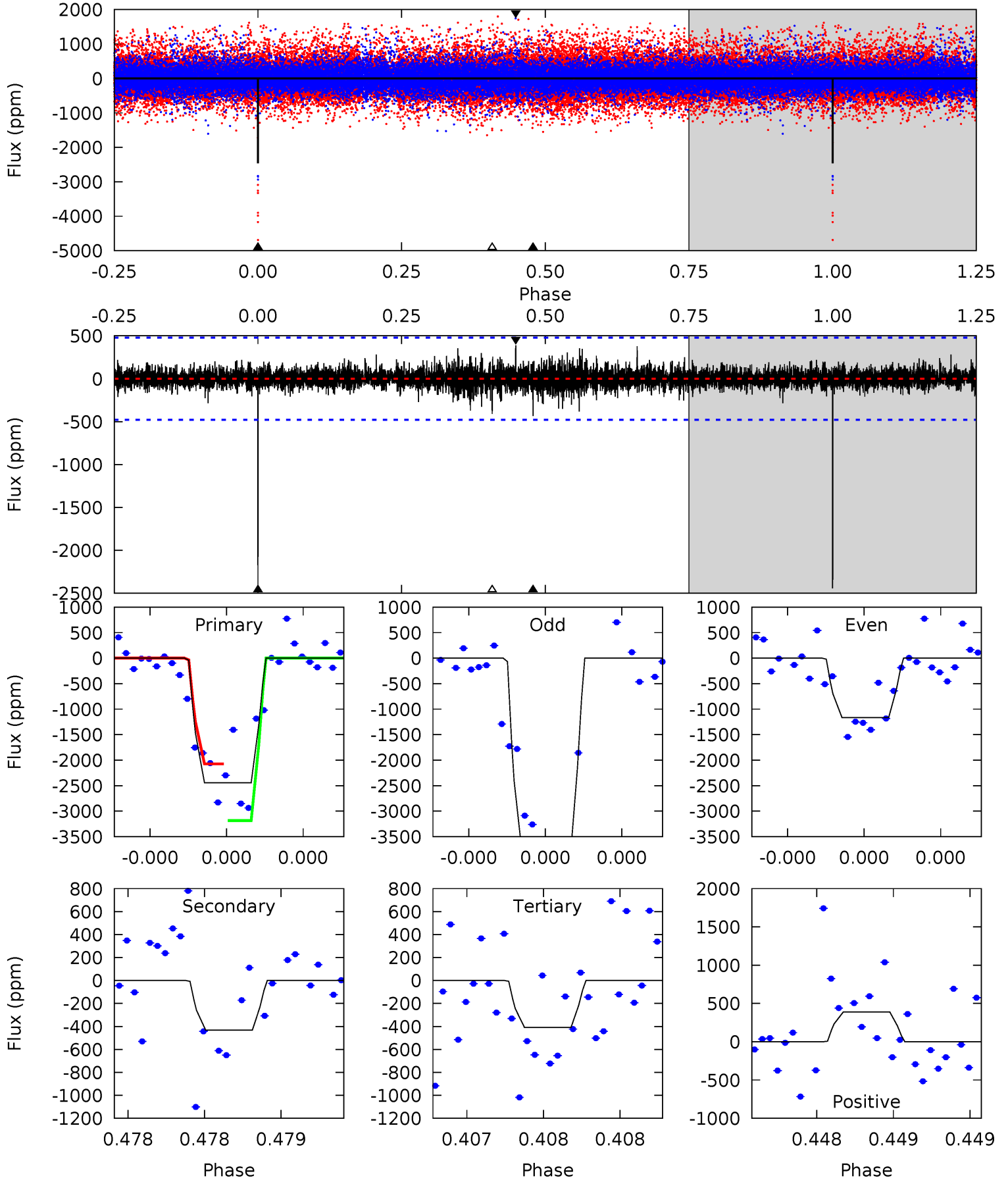
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.97	7.05	6.91	13.2	5.63	3.56	1.71	3.06	-3.26	0.14	-6.18	0.69	1.03	0.57	0.15



Alt Model-Shift Uniqueness Test

005802784-01, P = 293.198170 Days, E = 50.193081 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.5	5.06	4.77	4.53	5.59	3.50	0.85	23.8	24.0	0.30	0.53	16.8	0.97	0.14	6.01



Stellar Parameters For KIC 005802784

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4615^{+124}_{-152}	$4.660^{+0.056}_{-0.028}$	$-0.700^{+0.300}_{-0.300}$	$0.589^{+0.046}_{-0.051}$	$0.579^{+0.055}_{-0.032}$	$3.985^{+0.998}_{-0.511}$
	+3%/-3%	+1%/-1%	+43%/-43%	+8%/-9%	+9%/-6%	+25%/-13%
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 005802784-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-869 ± 123	$5.95^{+5.80}_{-4.09}$	256^{+9}_{-10}	3113^{+1438}_{-516}	6995^{+61500}_{-5207}
Alt.	-433 ± 86	$6.22^{+6.12}_{-4.27}$	256^{+8}_{-10}	2795^{+1241}_{-440}	3296^{+31727}_{-2516}

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 $A_{obs} \gg 1.0$

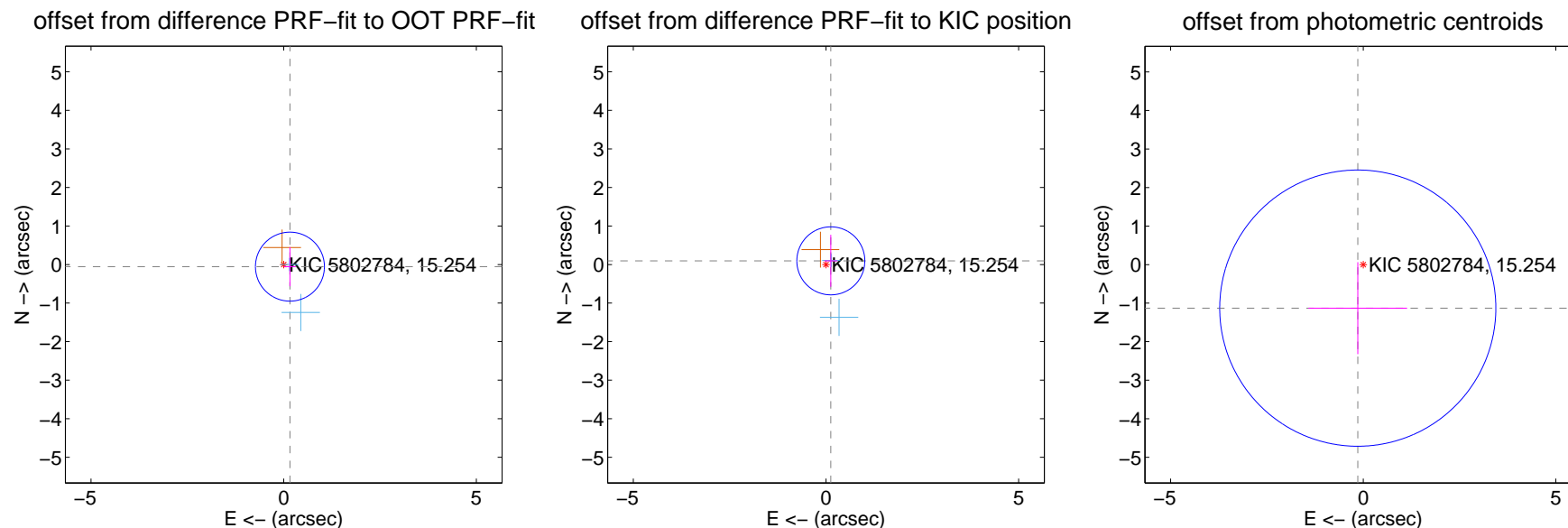
DV Centroid Data

Supplemental centroid analysis for 005802784-01. Kepler magnitude: 15.25. Transit SNR 6.64

There are 2 quarters with good PRF difference image offsets

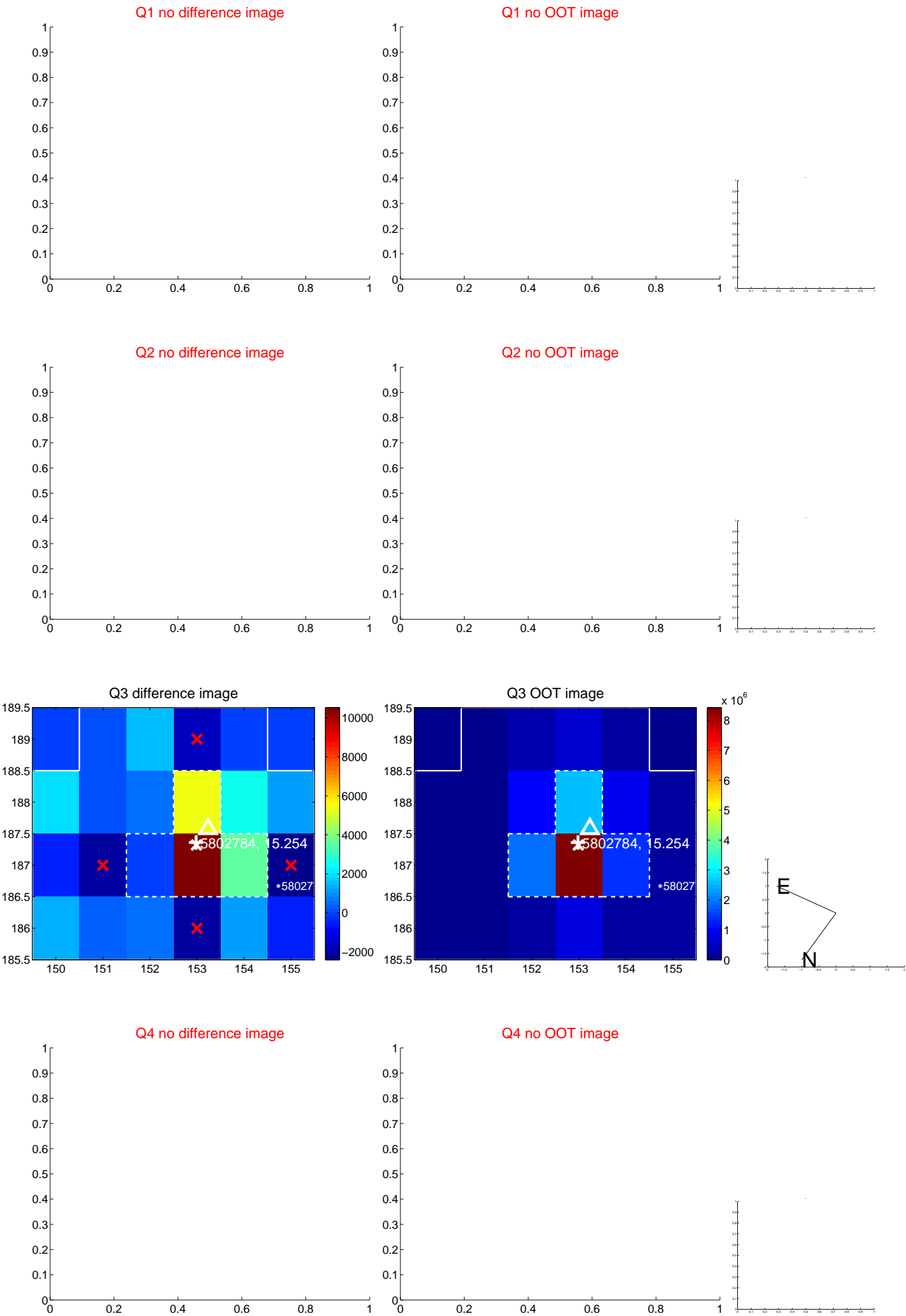
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.171 ± 0.298	0.57	-0.162 ± 0.153	-0.055 ± 0.508
PRF-fit source offset from KIC position	0.158 ± 0.294	0.54	-0.126 ± 0.170	0.096 ± 0.674
photometric centroid source offset	1.14 ± 1.19	0.95	0.14 ± 1.28	-1.13 ± 1.19



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



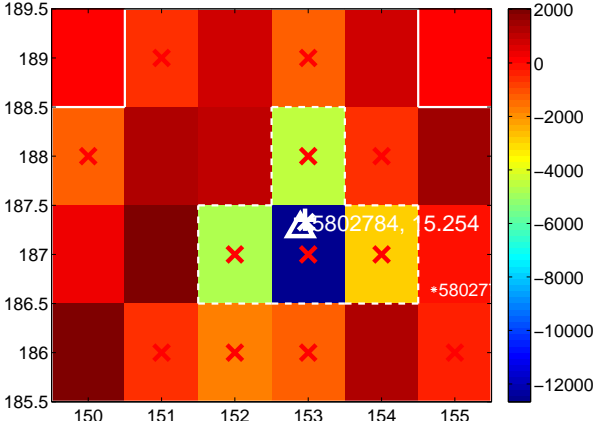
Q6 no difference image



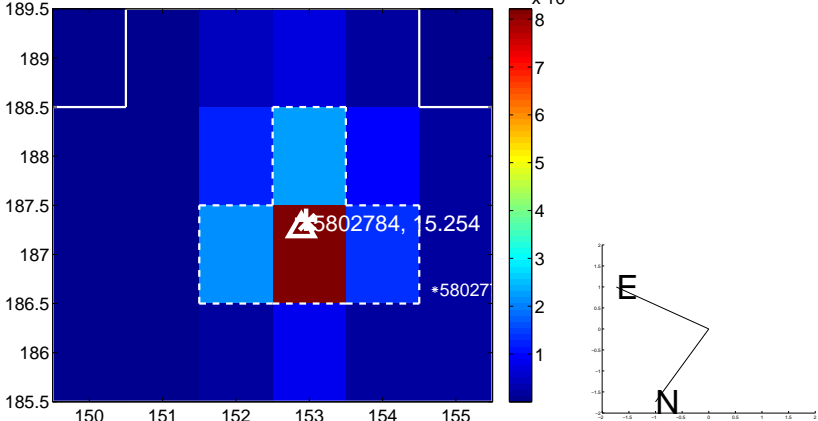
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image



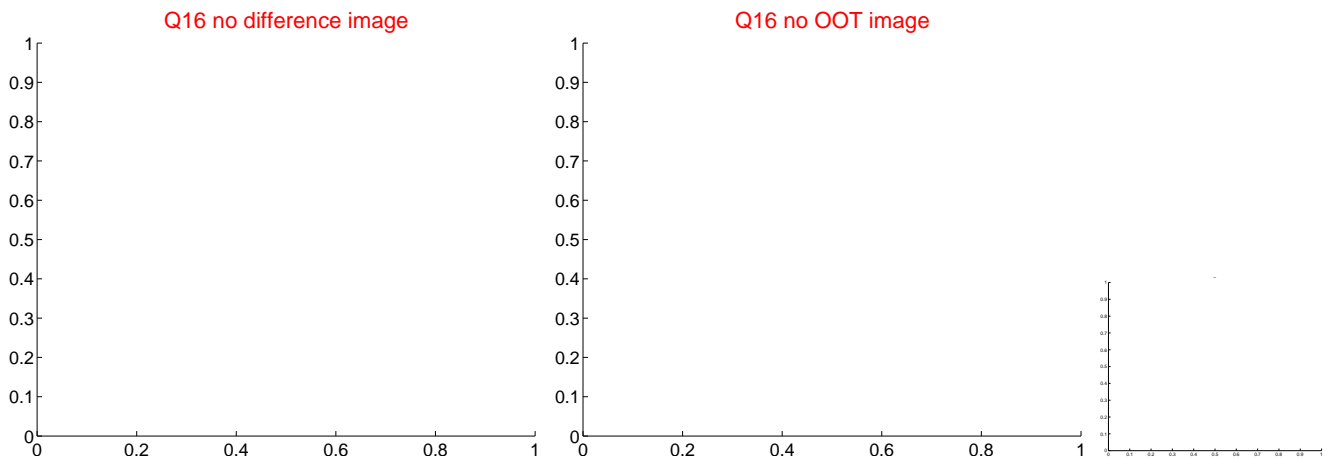
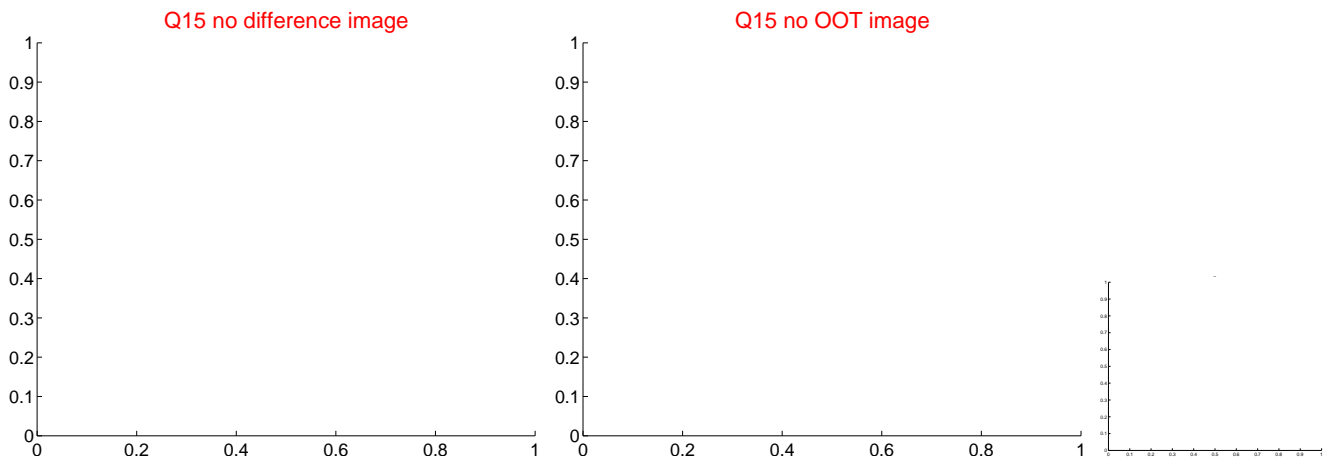
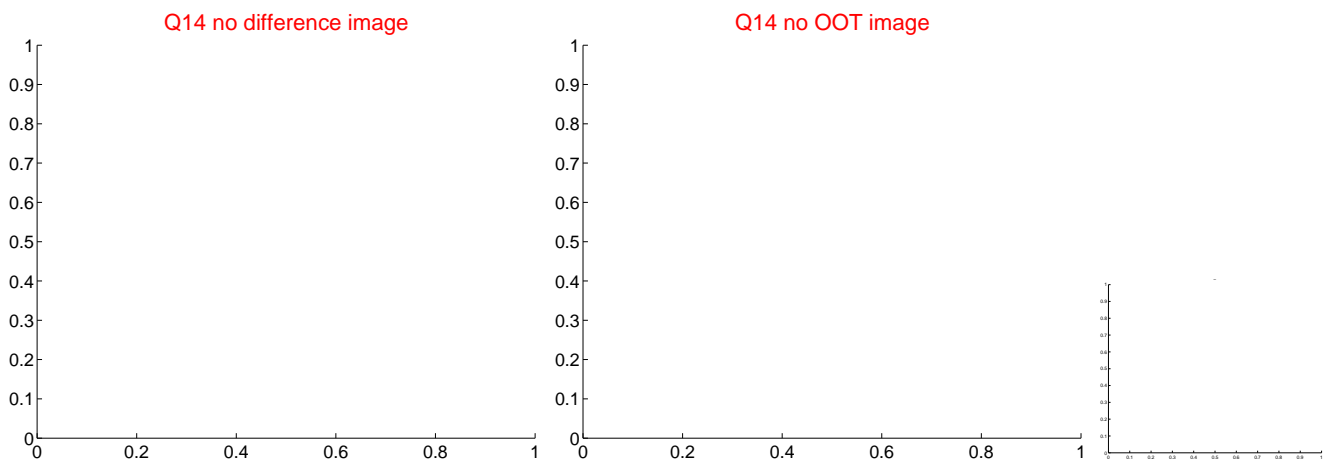
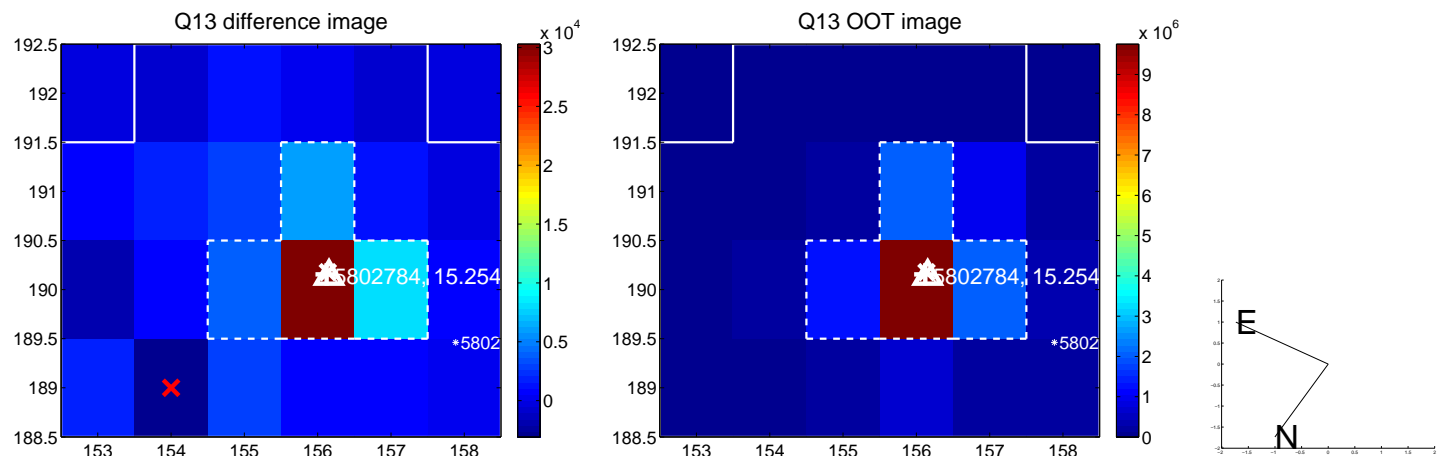
Q8 no OOT image



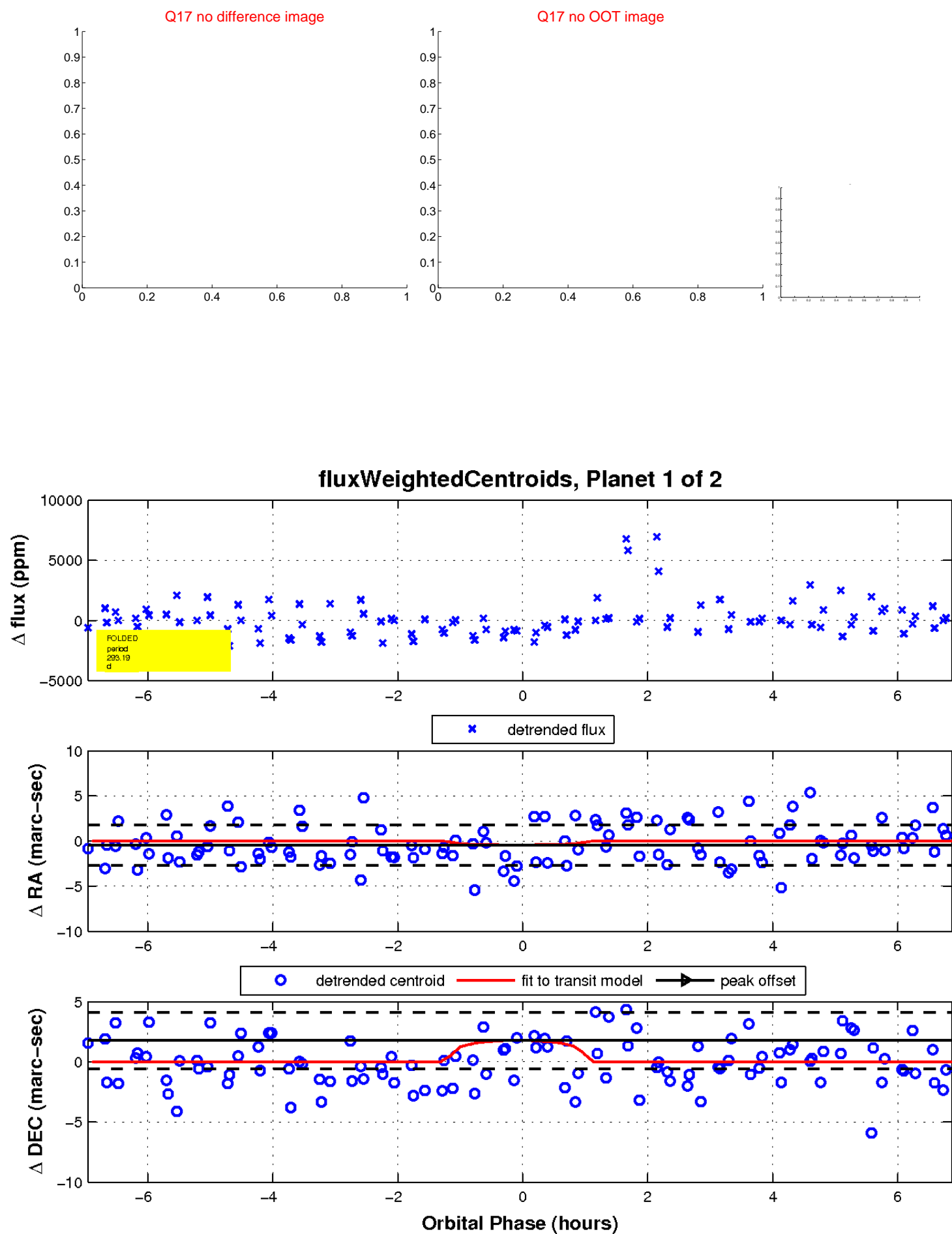
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

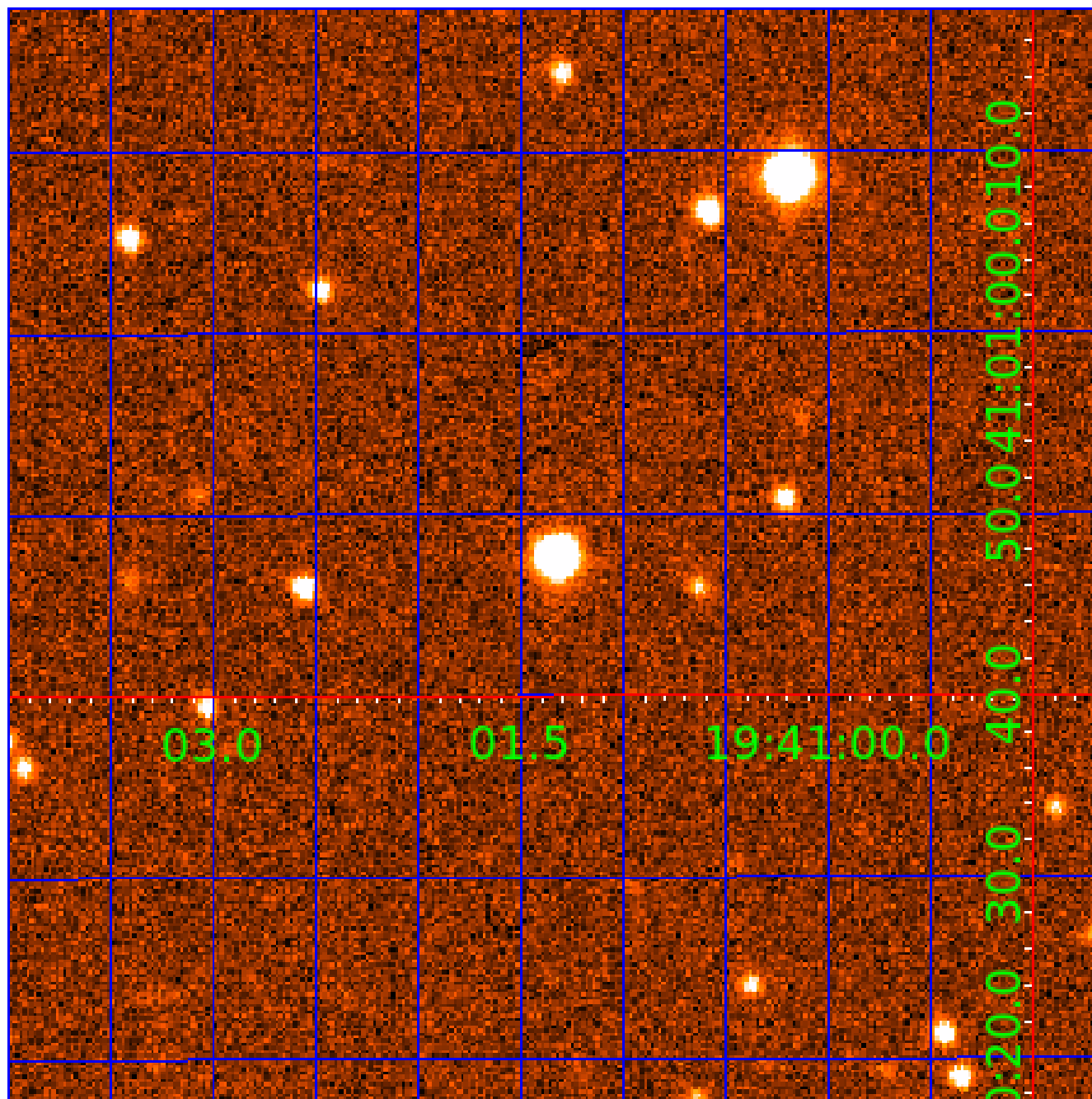


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005802784

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})
005802784-01	OBS	No	293.190684	343.409258	1485.5	2.328	13.4	6.6	0.59	4615	2.43	0.27
005802784-02	OBS	No	315.578001	167.834929	1708.5	6.184	12.8	7.2	0.59	4615	2.52	0.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802784-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005802784-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST

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

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

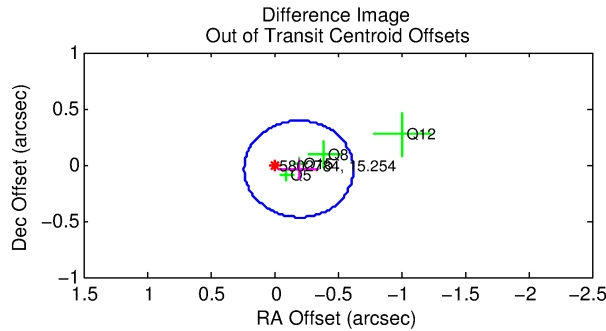
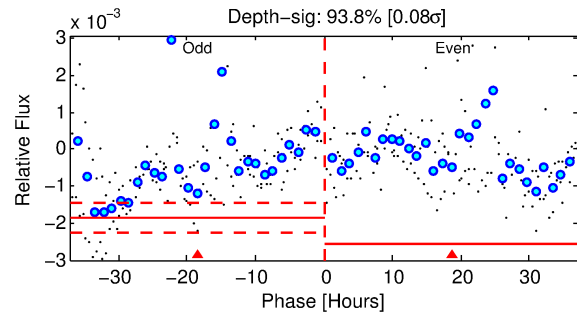
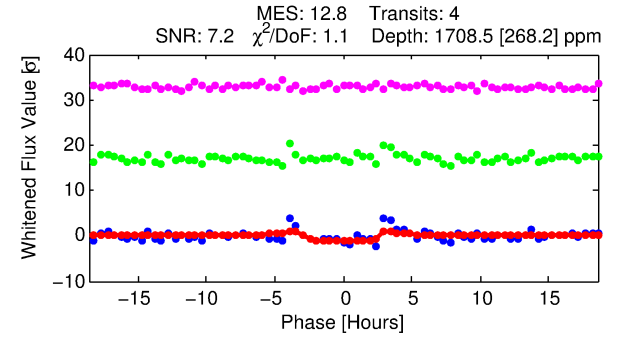
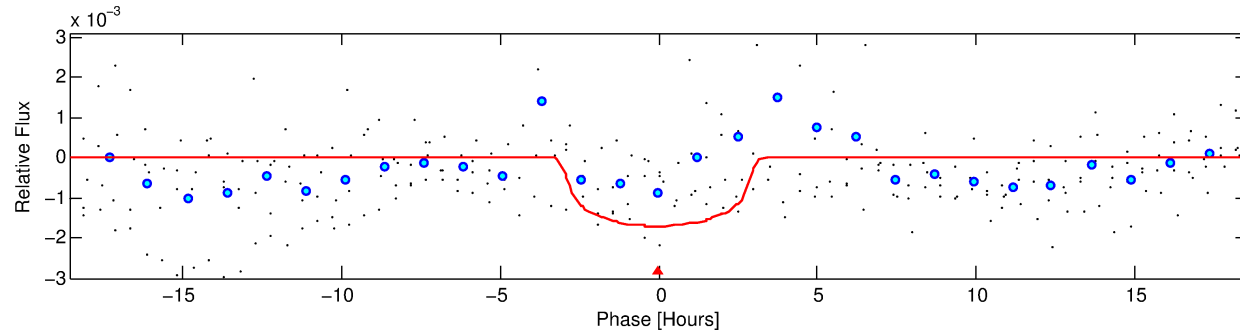
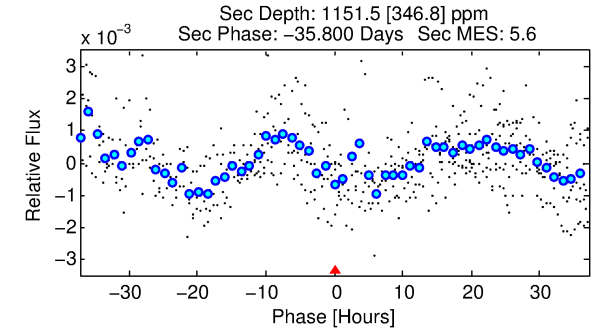
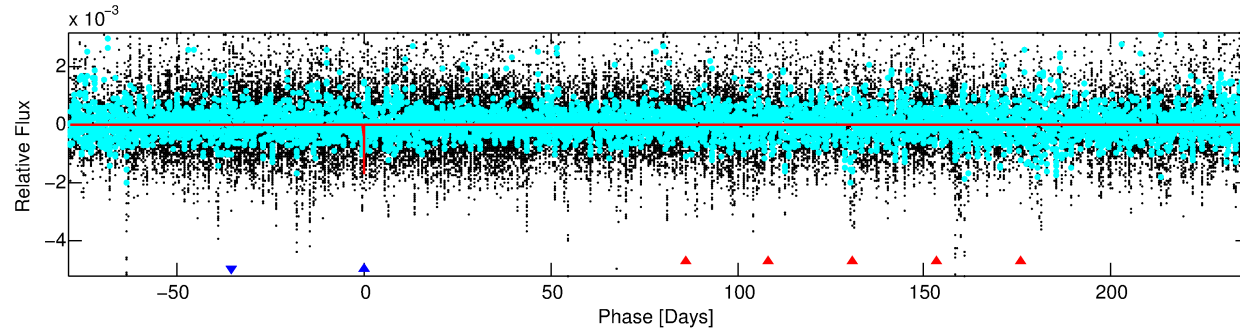
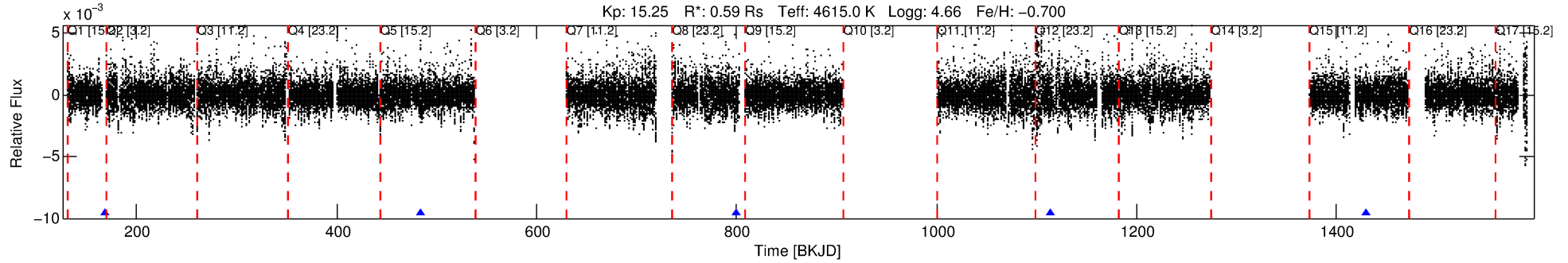
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005802784-02

No Significant Match Found

DV One-Page Summary

KIC: 5802784 Candidate: 2 of 2 Period: 315.578 d



DV Fit Results:

Period = 315.57800 [0.00381] d
Epoch = 167.8349 [0.0114] BKJD
Rp/R* = 0.0393 [0.0344]
a/R* = 325.06 [942.36]
b = 0.62 [2.94]
Seff = 0.25 [0.04]
Teq = 180 [8] K
Rp = 2.52 [2.22] Re
a = 0.7560 [0.0544] AU
Ag = 56820.75 [101148.21] [0.56 σ]
Teffp = 4290 [1911] K [2.15 σ]

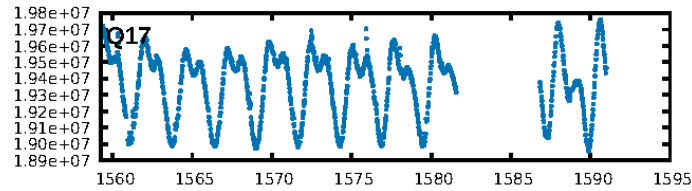
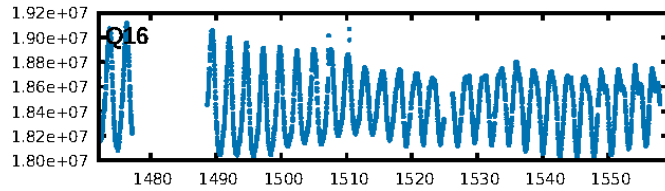
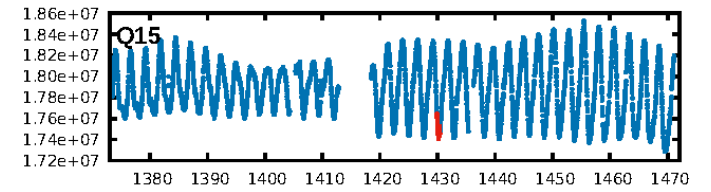
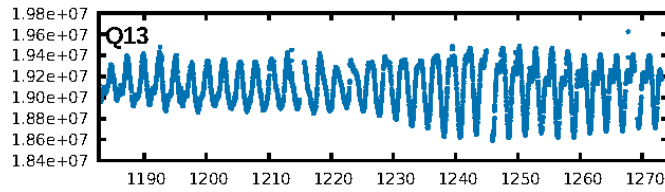
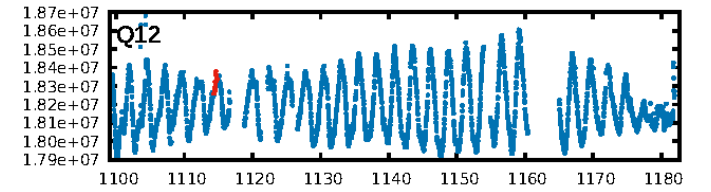
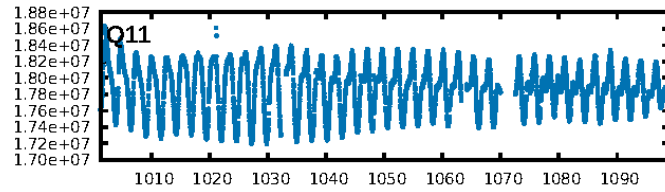
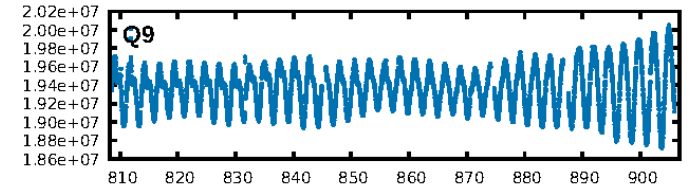
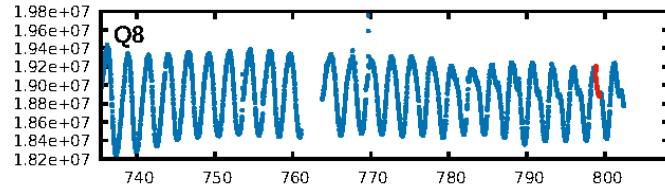
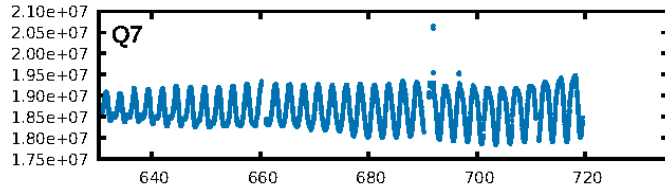
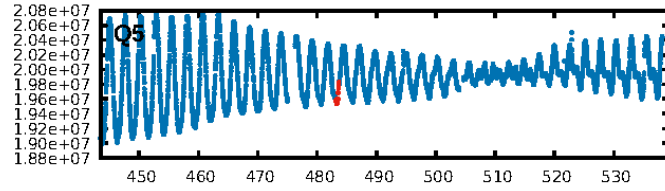
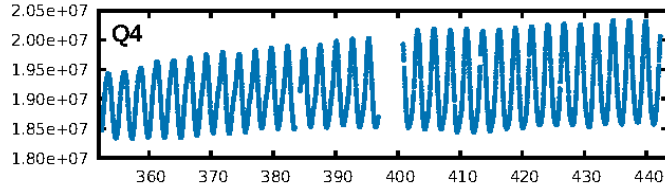
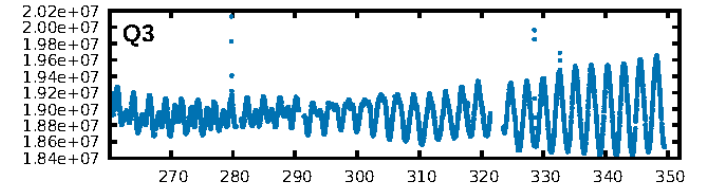
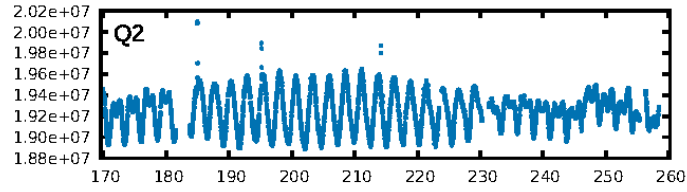
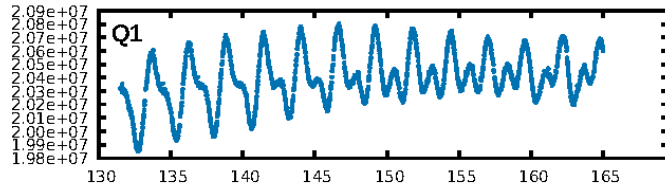
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [81.32 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 73.3%
ModelChiSquareGof-sig: 93.8%
Bootstrap-pfa: 2.24e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.2189
Centroid-sig: 17.4%
Centroid-so: 0.582 arcsec [0.88 σ]
OotOffset-rm: 0.198 arcsec [1.39 σ]
OotOffset-st: 0/1/2/1 [4]
KicOffset-rm: 0.170 arcsec [1.57 σ]
KicOffset-st: 0/1/2/1 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

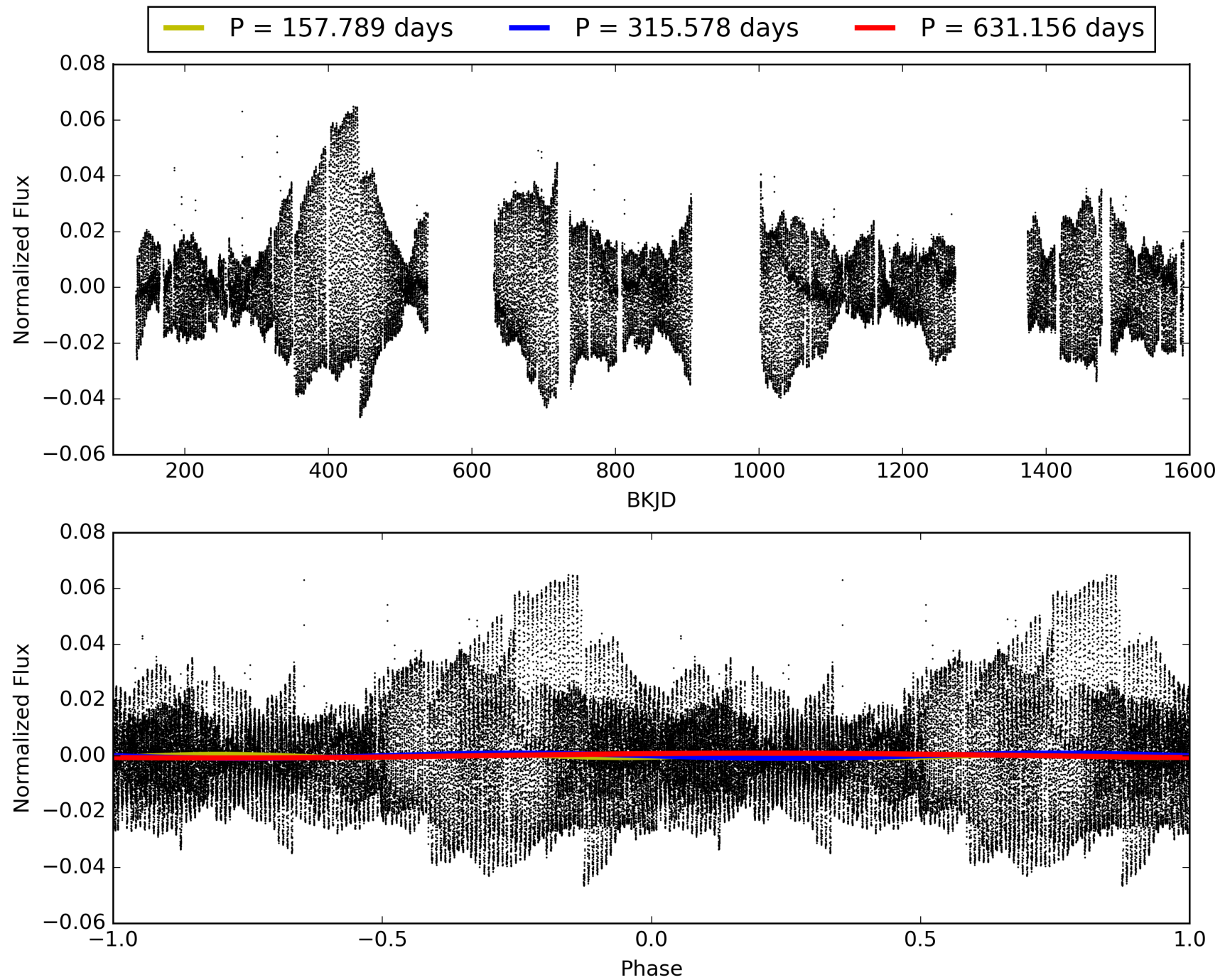
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:54:33 Z

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

TCE 005802784-02, PDC Light Curves

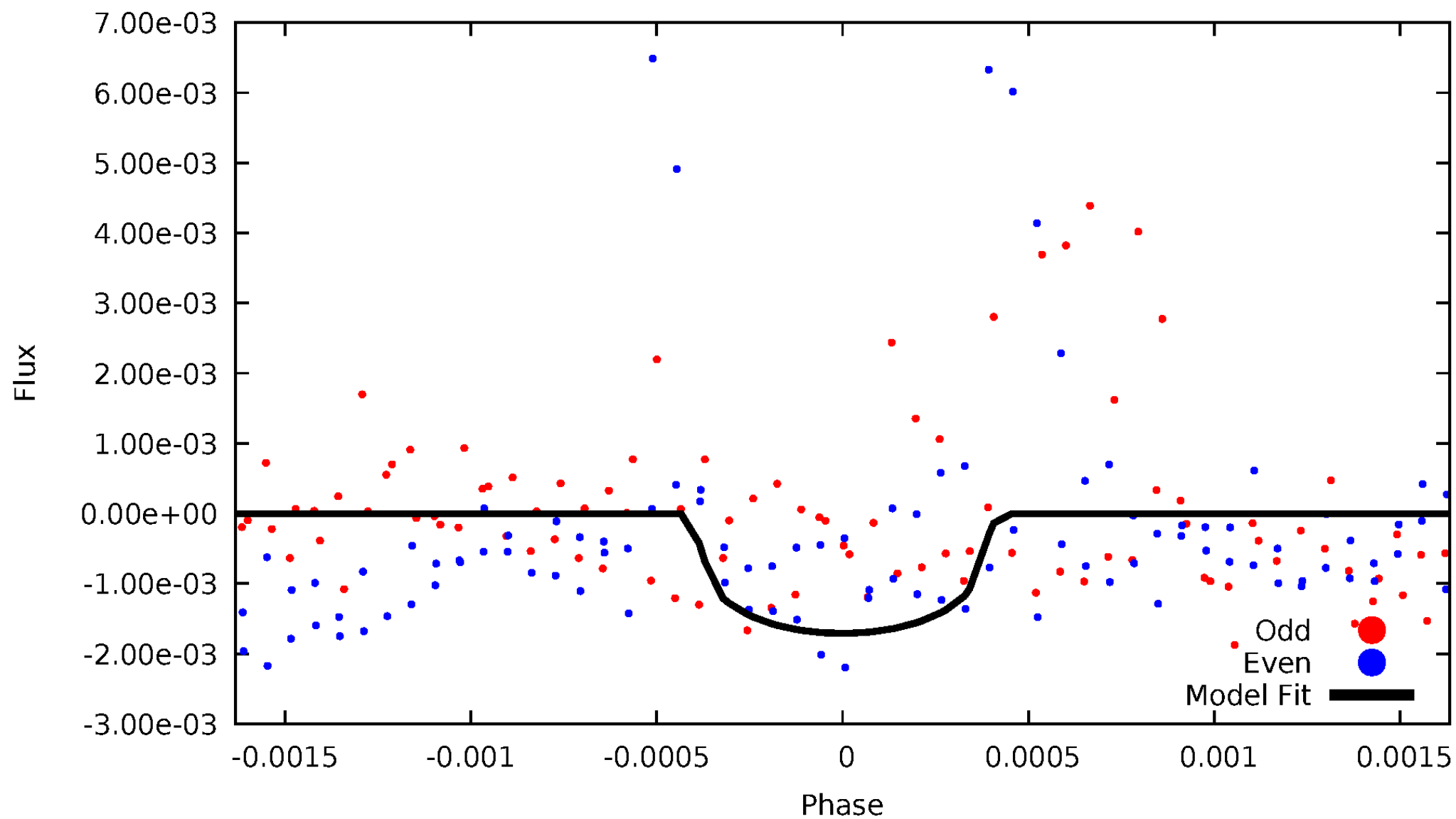


TCE 005802784-02



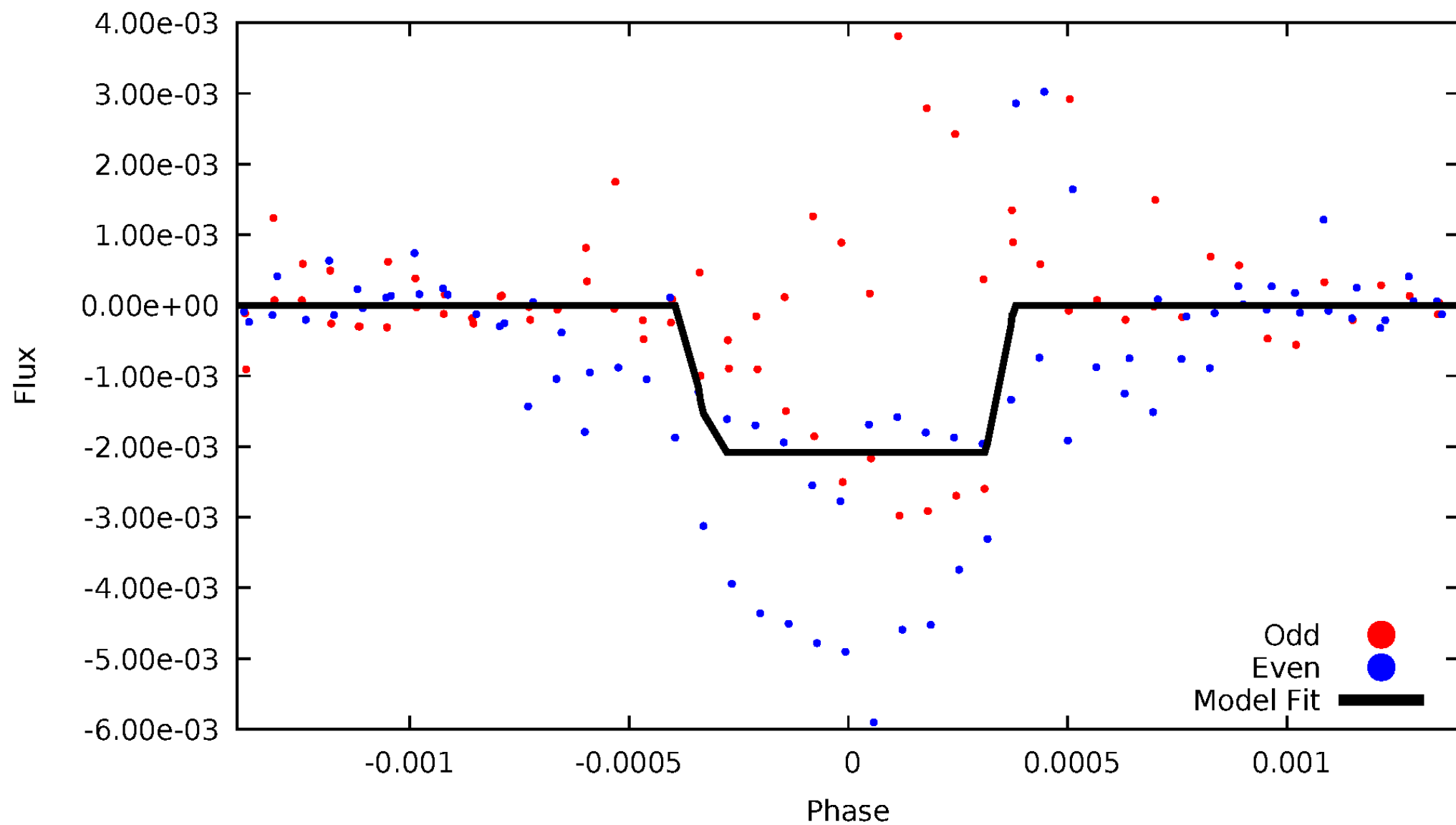
DV Odd/Even

TCE 005802784-02



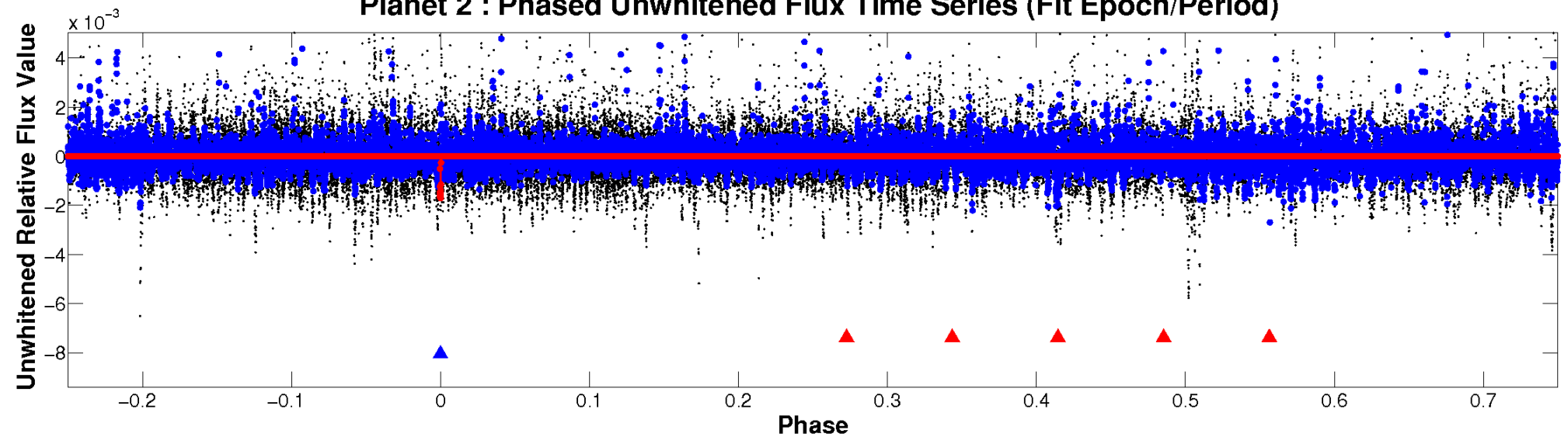
ALT Odd/Even

TCE 005802784-02

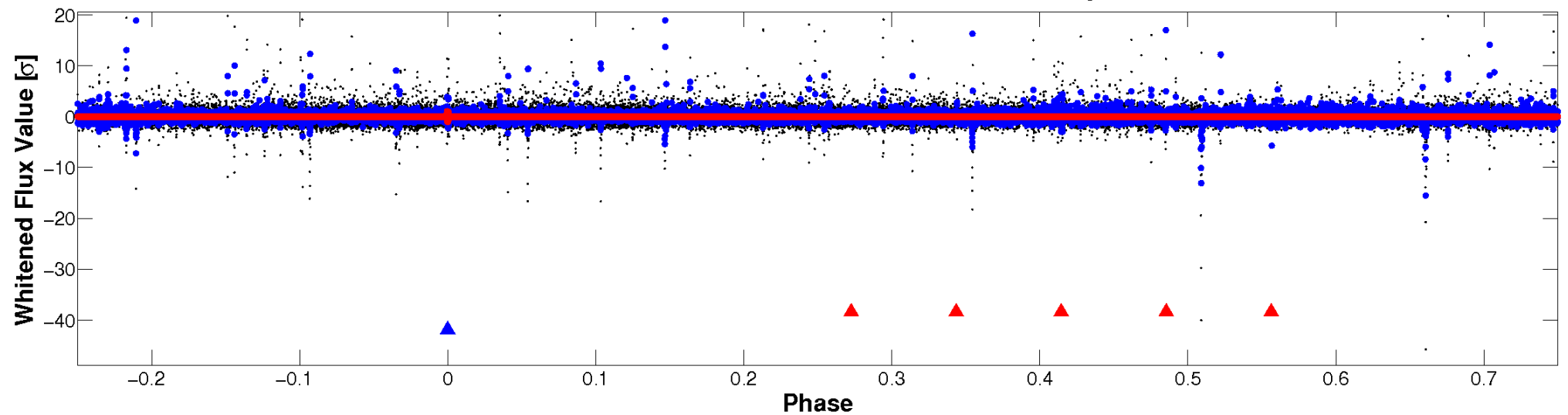


Non-Whitened Vs. Whitened Light Curve

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

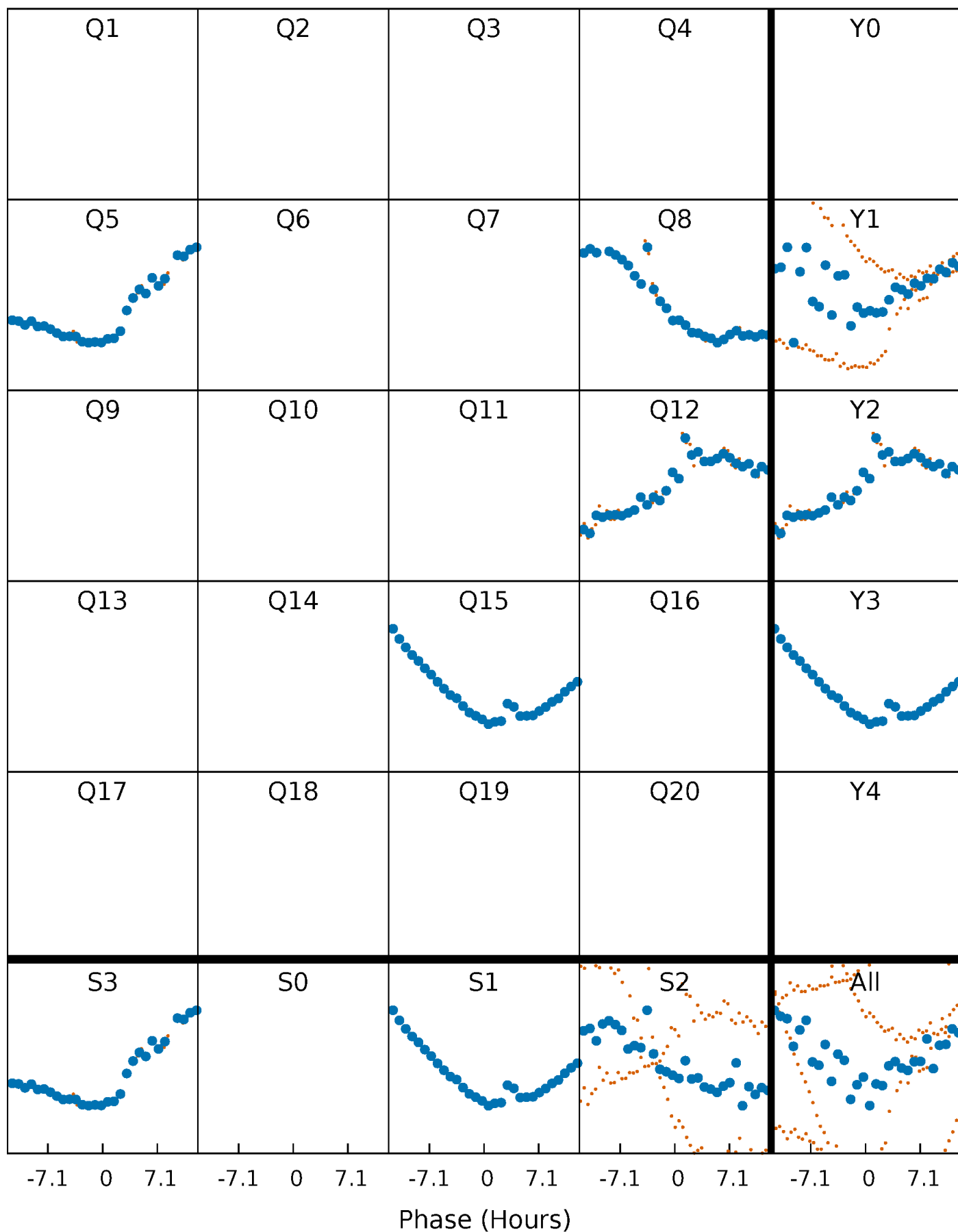


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



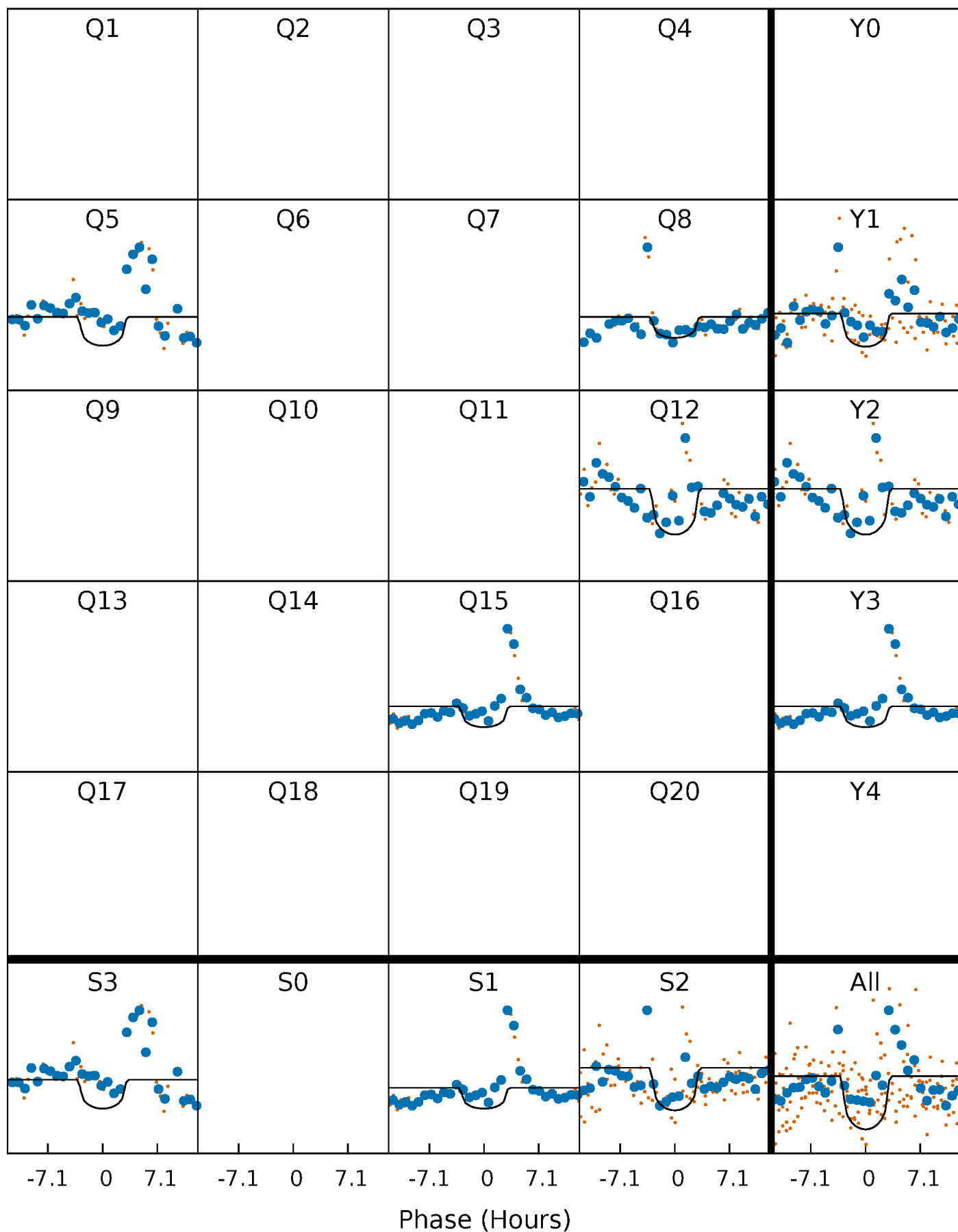
PDC Quarter-Phased Transit Curves

TCE 005802784-02 P=315.578001 Days $T_0=167.834929$ (BKJD)



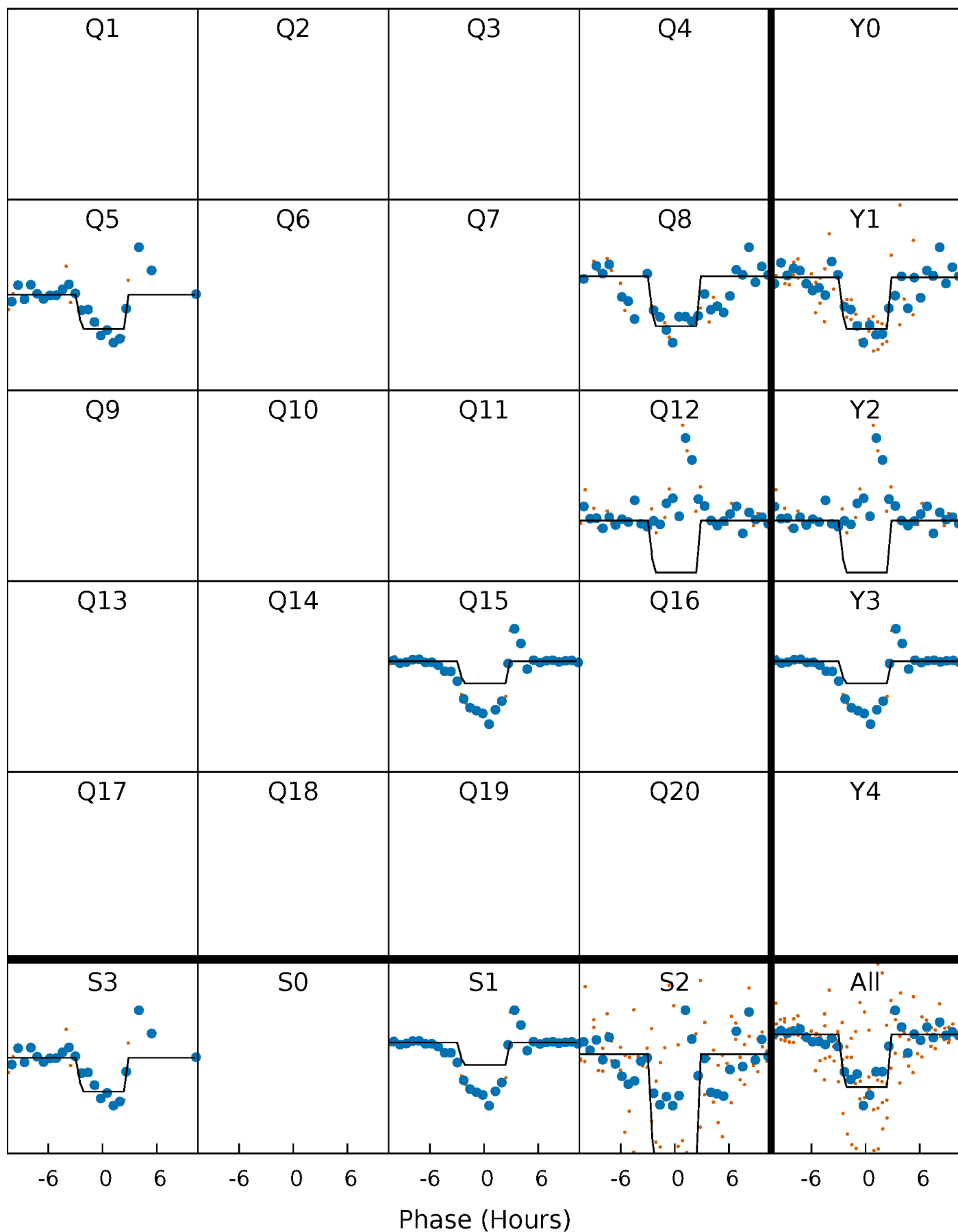
DV Quarter-Phased Transit Curves

TCE 005802784-02 $P=315.578001$ Days $T_0=167.834929$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

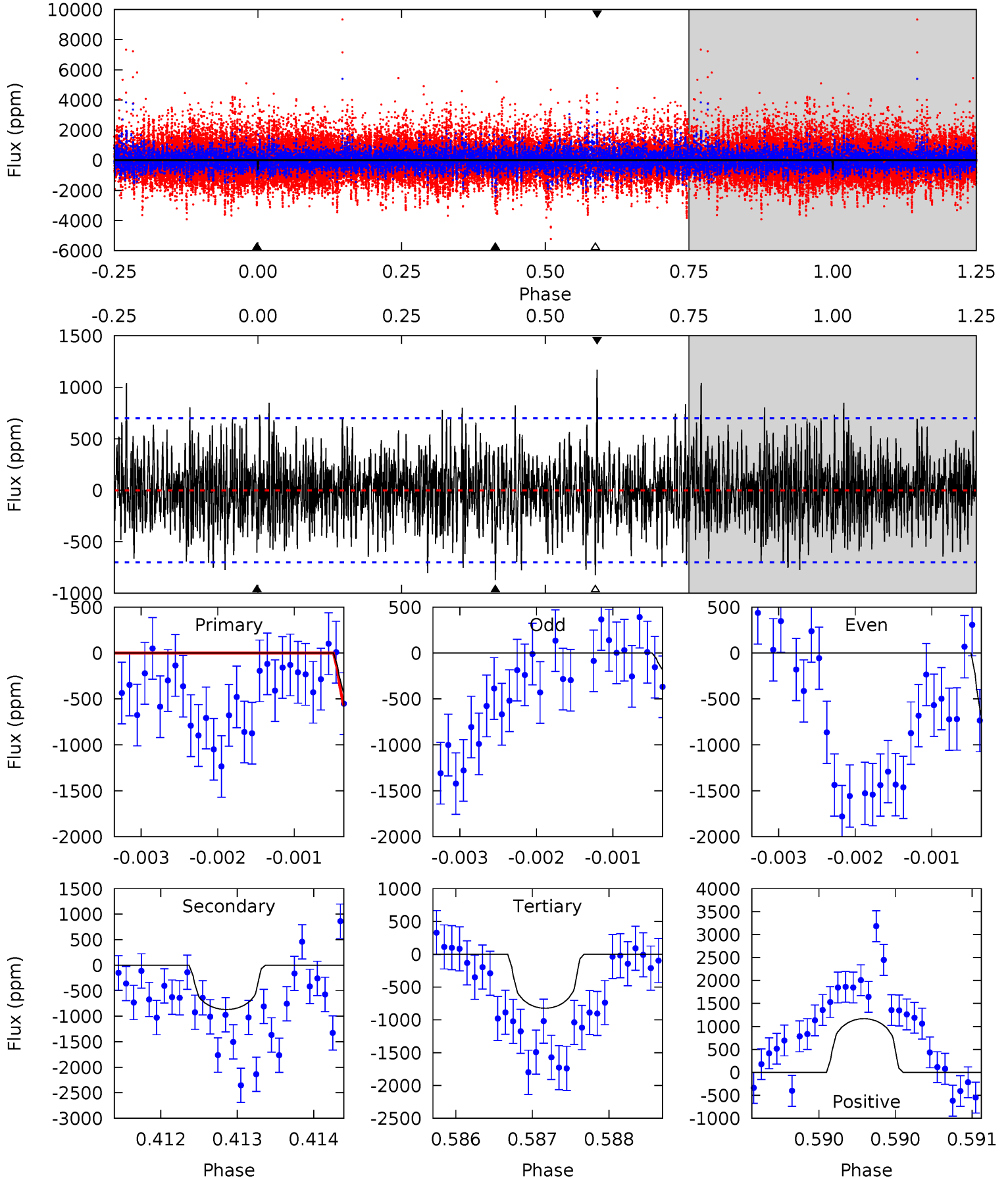
TCE 005802784-02 P=315.575901 Days $T_0=167.846980$ (BKJD)



DV Model-Shift Uniqueness Test

005802784-02, P = 315.578001 Days, E = 167.834929 Days

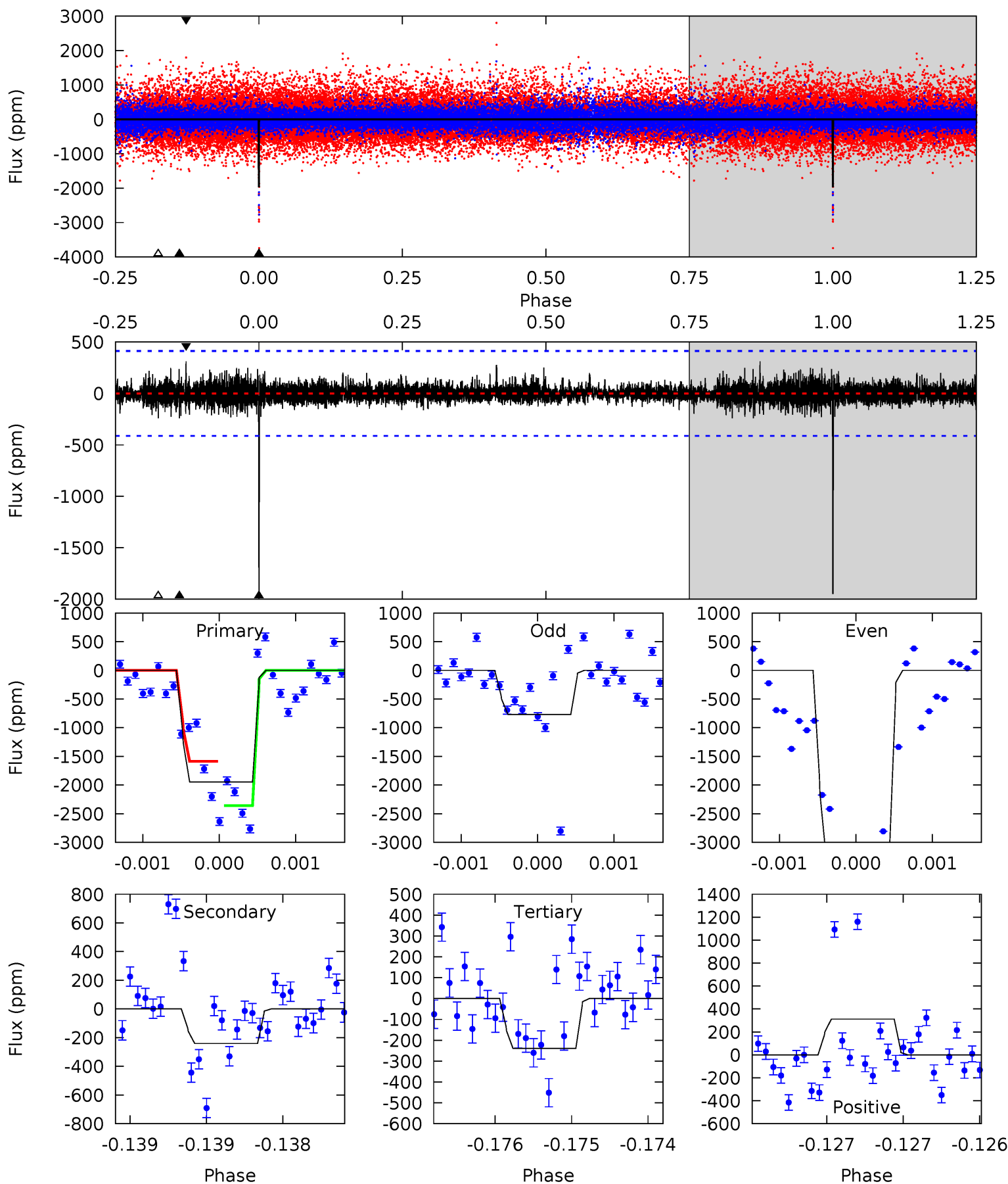
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.64	6.80	6.44	9.15	5.47	3.32	2.05	-1.80	-4.51	0.36	-2.35	2.28	2.29	0.57	0.77



Alt Model-Shift Uniqueness Test

005802784-02, P = 315.575901 Days, E = 167.846980 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.0	3.21	3.20	4.15	5.51	3.38	0.74	22.8	21.8	0.02	-0.94	20.7	0.92	0.14	0



Stellar Parameters For KIC 005802784

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4615^{+124}_{-152}	$4.660^{+0.056}_{-0.028}$	$-0.700^{+0.300}_{-0.300}$	$0.589^{+0.046}_{-0.051}$	$0.579^{+0.055}_{-0.032}$	$3.985^{+0.998}_{-0.511}$
	+3%/-3%	+1%/-1%	+43%/-43%	+8%/-9%	+9%/-6%	+25%/-13%
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 005802784-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-869 ± 128	$2.80^{+2.06}_{-1.67}$	249^{+8}_{-8}	3966^{+1757}_{-655}	$34267^{+180805}_{-22609}$
Alt.	-241 ± 75	$3.09^{+2.16}_{-1.86}$	250^{+8}_{-10}	3115^{+1123}_{-426}	7775^{+41979}_{-5138}

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

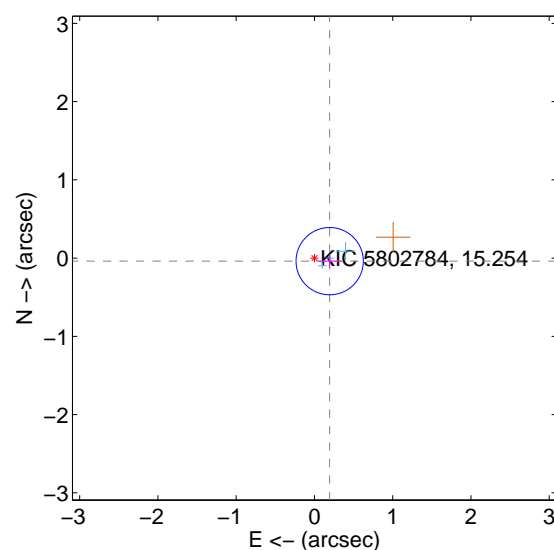
Supplemental centroid analysis for 005802784-02. Kepler magnitude: 15.25. Transit SNR 7.21

There are 3 quarters with good PRF difference image offsets

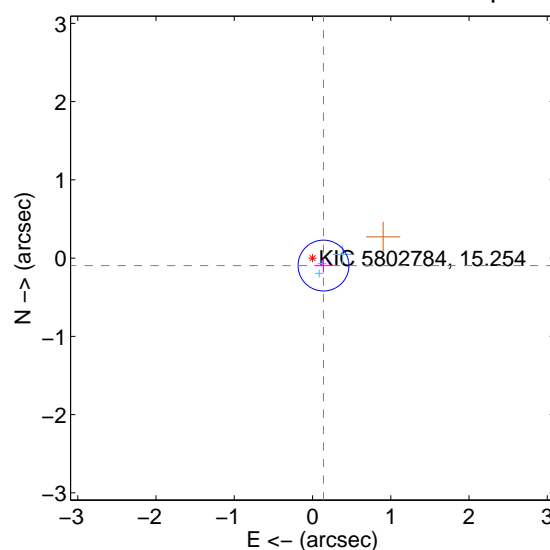
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.198 ± 0.143	1.39	-0.195 ± 0.156	-0.039 ± 0.088
PRF-fit source offset from KIC position	0.170 ± 0.108	1.57	-0.140 ± 0.116	-0.095 ± 0.090
photometric centroid source offset	0.58 ± 0.67	0.88	-0.23 ± 0.69	-0.53 ± 0.66

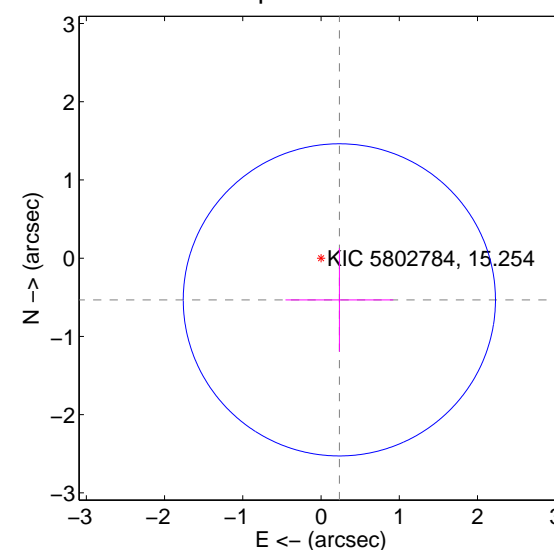
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

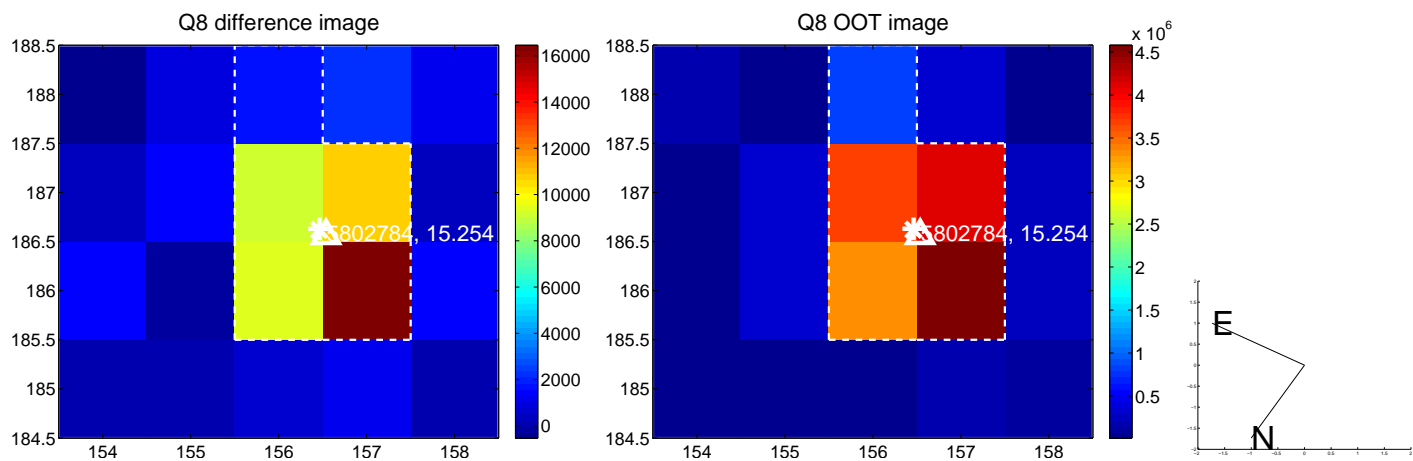
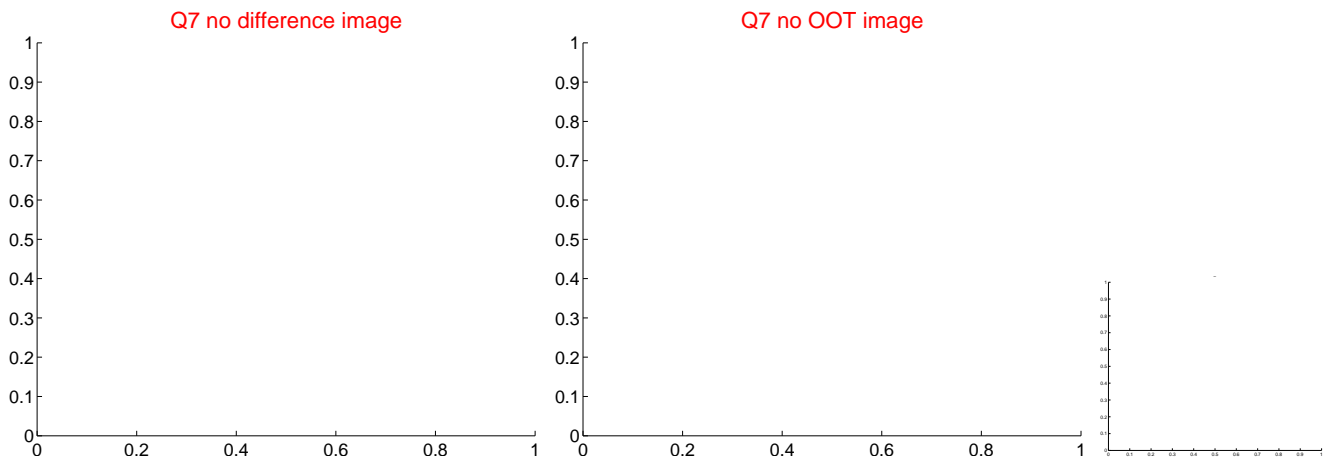
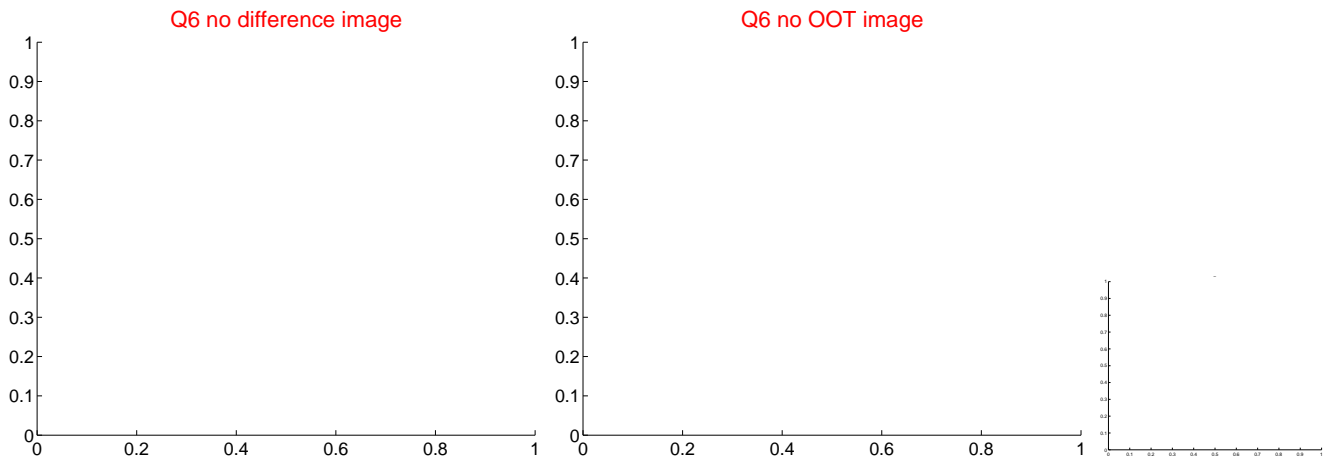
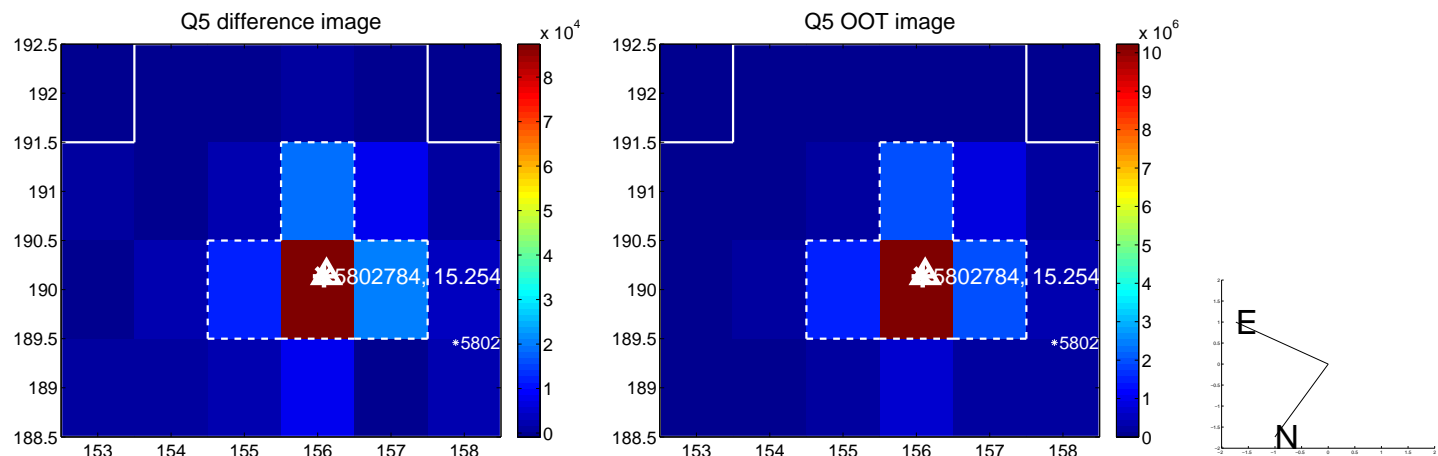


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

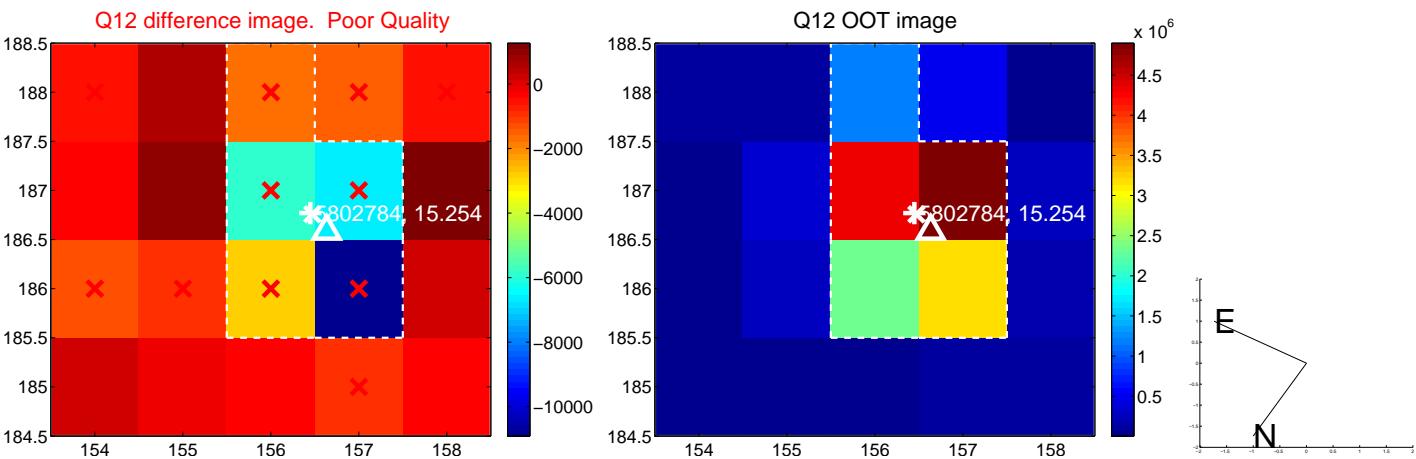
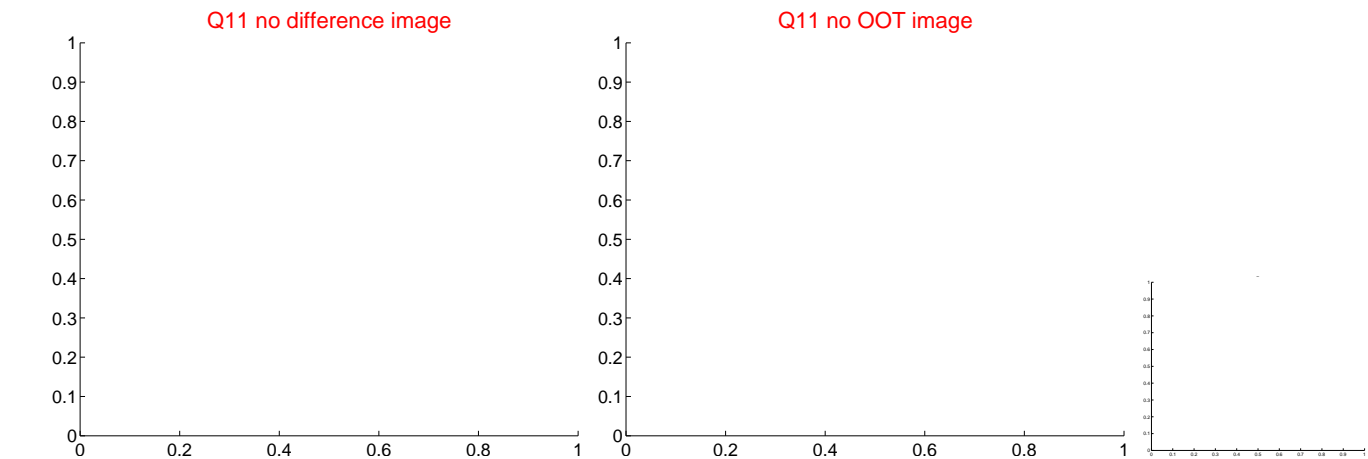
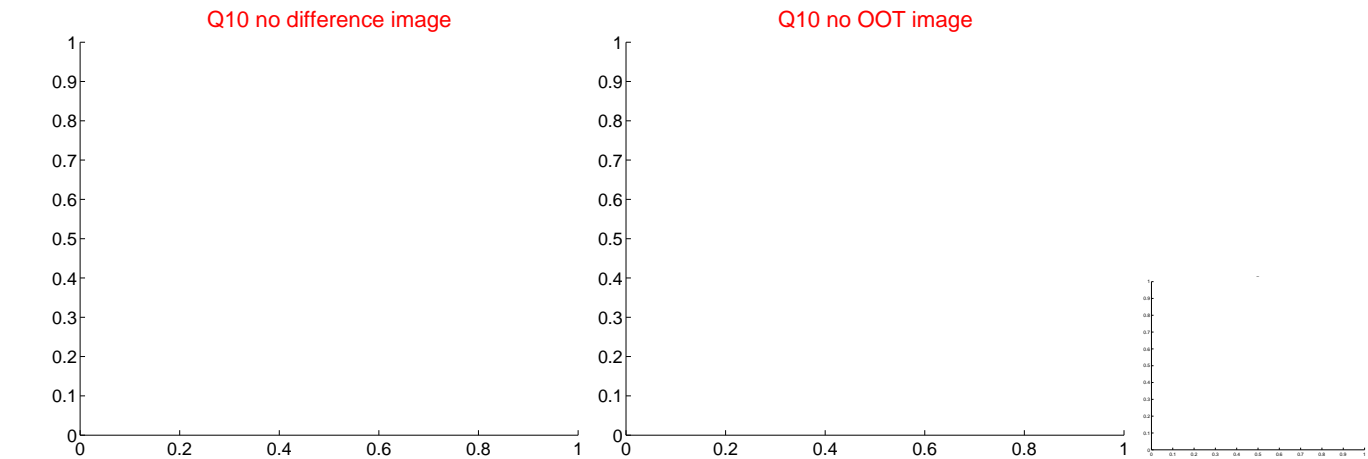
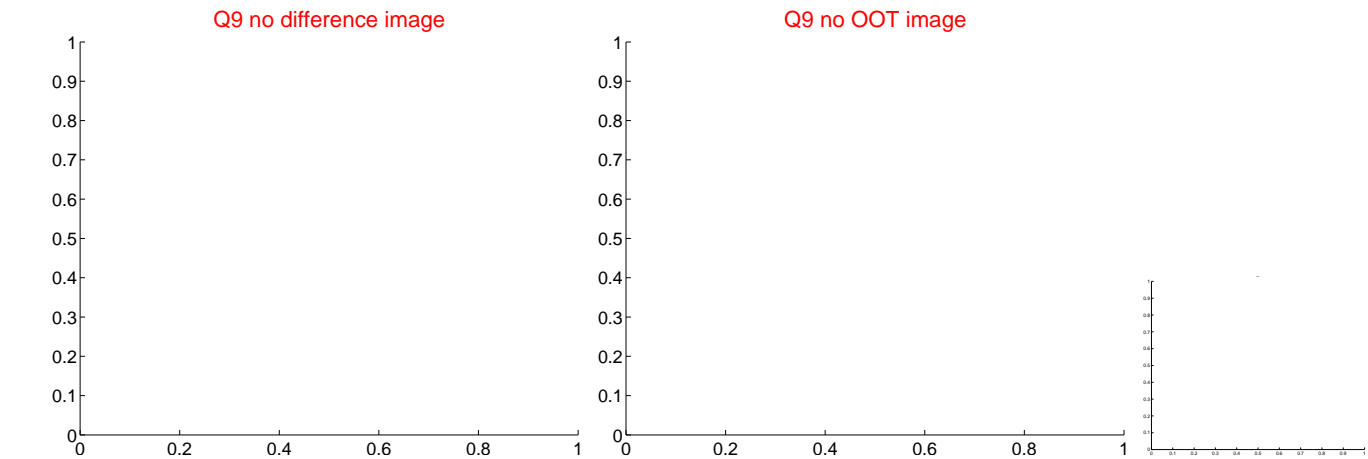
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



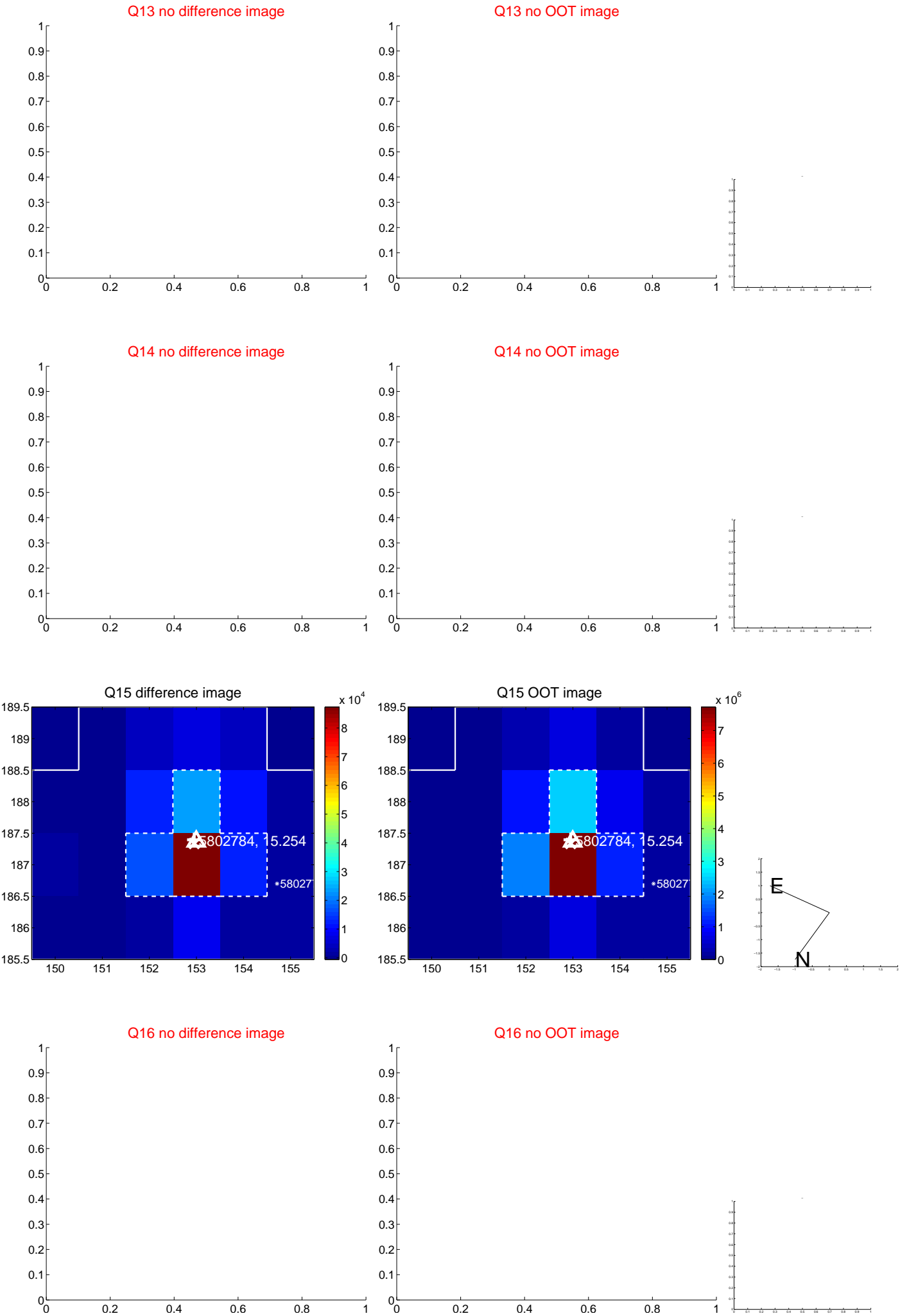
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



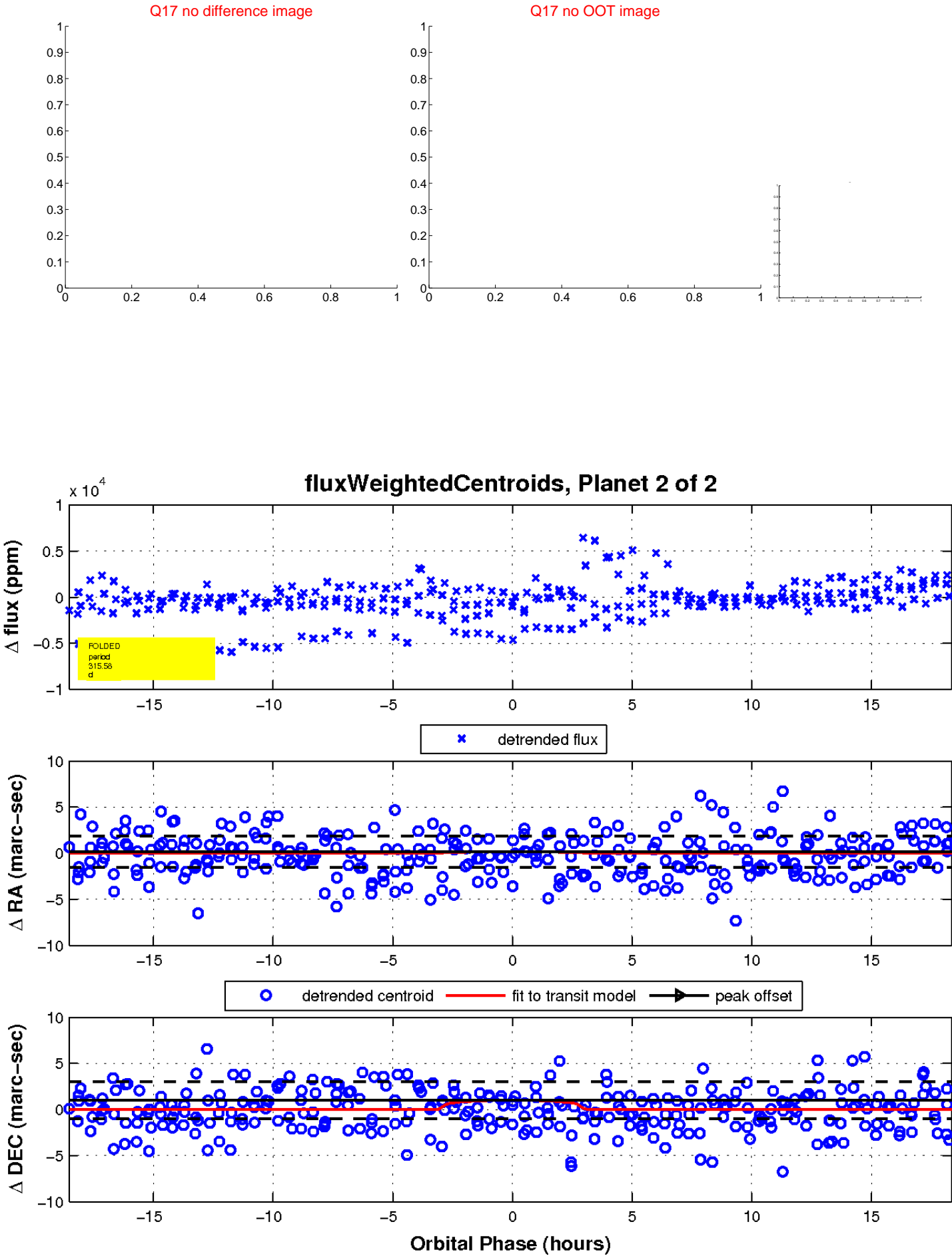
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



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



UKIRT Image

Declination

