

KIC 006878288

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})
006878288-01	OBS	No	1.519629	132.531674	190.8	3.907	8.7	8.1	2.58	10906	4.11	63418.11
006878288-02	OBS	No	1.215776	132.307903	1143.4	4.500	8.3	-1.0	2.58	10906	9.01	85387.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006878288-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006878288-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS

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

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

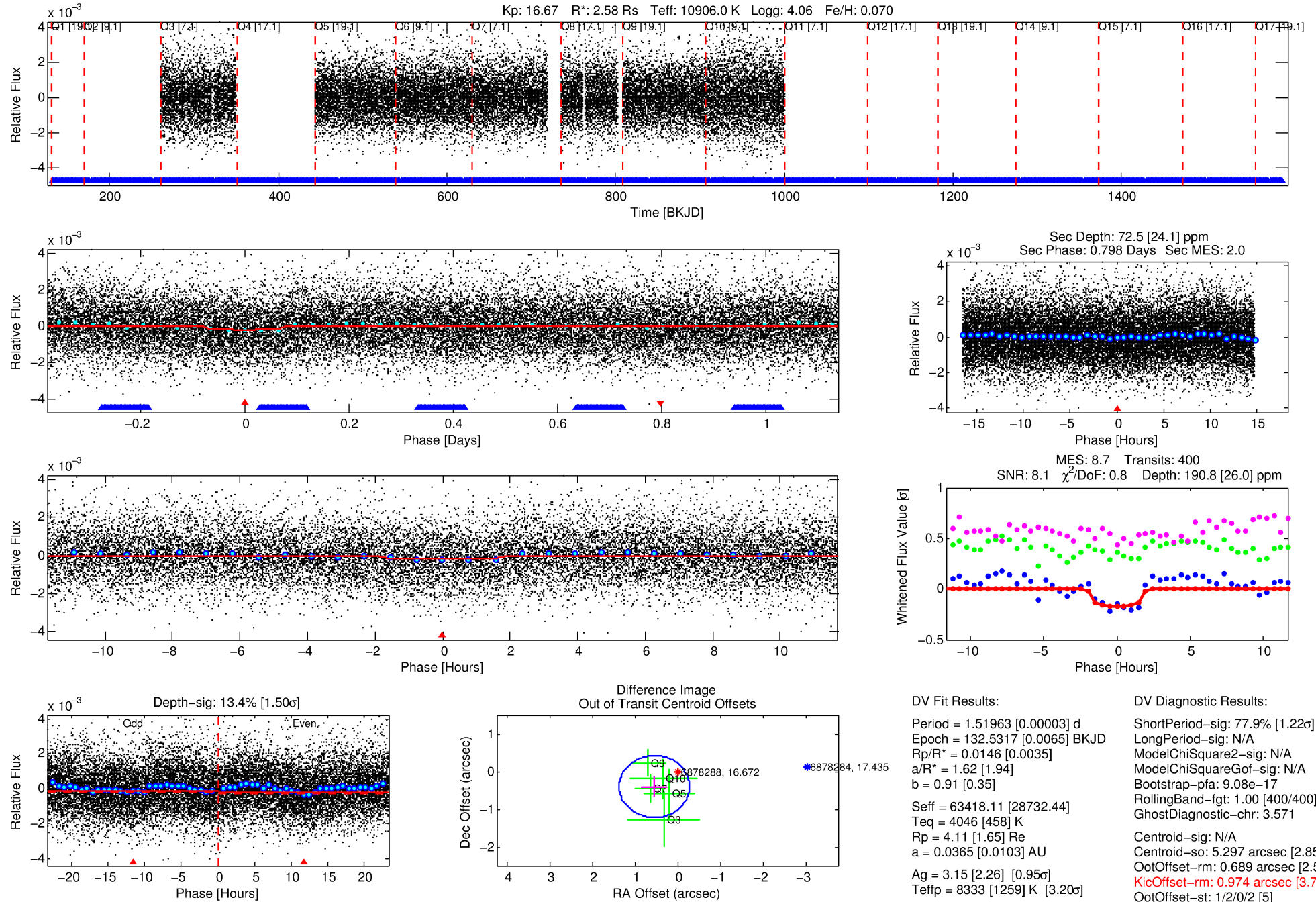
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006878288-01

No Significant Match Found

DV One-Page Summary

KIC: 6878288 Candidate: 1 of 2 Period: 1.520 d



DV Fit Results:

Period = 1.51963 [0.00003] d
 Epoch = 132.5317 [0.0065] BKJD
 Rp/R* = 0.0146 [0.0035]
 a/R* = 1.62 [1.94]
 b = 0.91 [0.35]
 Seff = 63418.11 [28732.44]
 Teq = 4046 [458] K
 Rp = 4.11 [1.65] Re
 a = 0.0365 [0.0103] AU
 Ag = 3.15 [2.26] [0.95 σ]
 Teffp = 8333 [1259] K [3.20 σ]

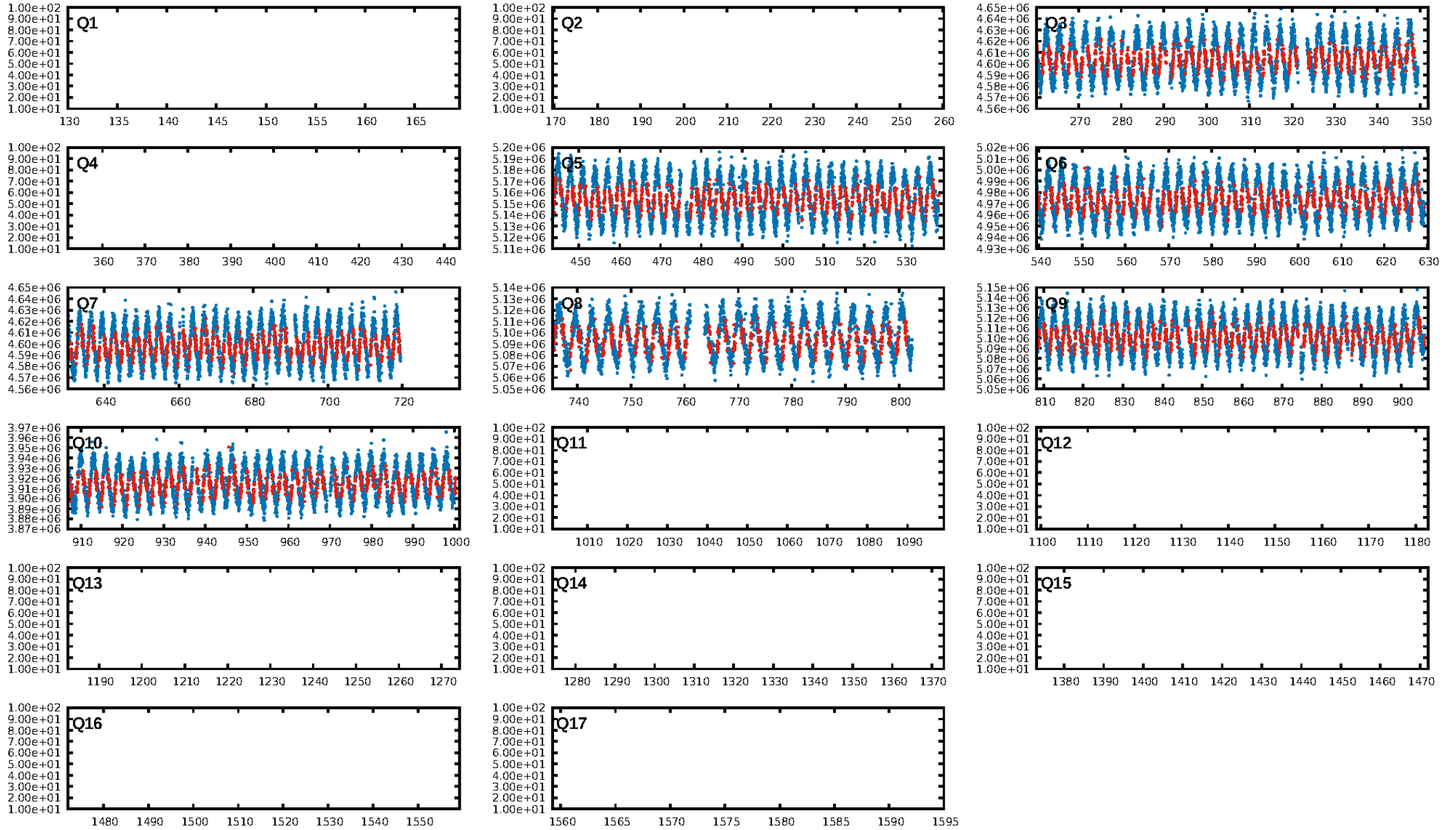
DV Diagnostic Results:

ShortPeriod-sig: 77.9% [1.22 σ]
 LongPeriod-sig: N/A
 ModelChiSquare2-sig: N/A
 ModelChiSquareGof-sig: N/A
 Bootstrap-pfa: 9.08e-17
 RollingBand-fgt: 1.00 [400/400]
 GhostDiagnostic-chr: 3.571
 Centroid-sig: N/A
 Centroid-so: 5.297 arcsec [2.85 σ]
 OotOffset-rm: 0.689 arcsec [2.51 σ]
 OotOffset-st: 1/2/0/2 [5]
 KicOffset-rm: 0.974 arcsec [3.74 σ]
 KicOffset-st: 1/2/0/2 [5]
 DiffImageQuality-fgm: 0.80 [4/5]
 DiffImageOverlap-fno: 1.00 [7/7]

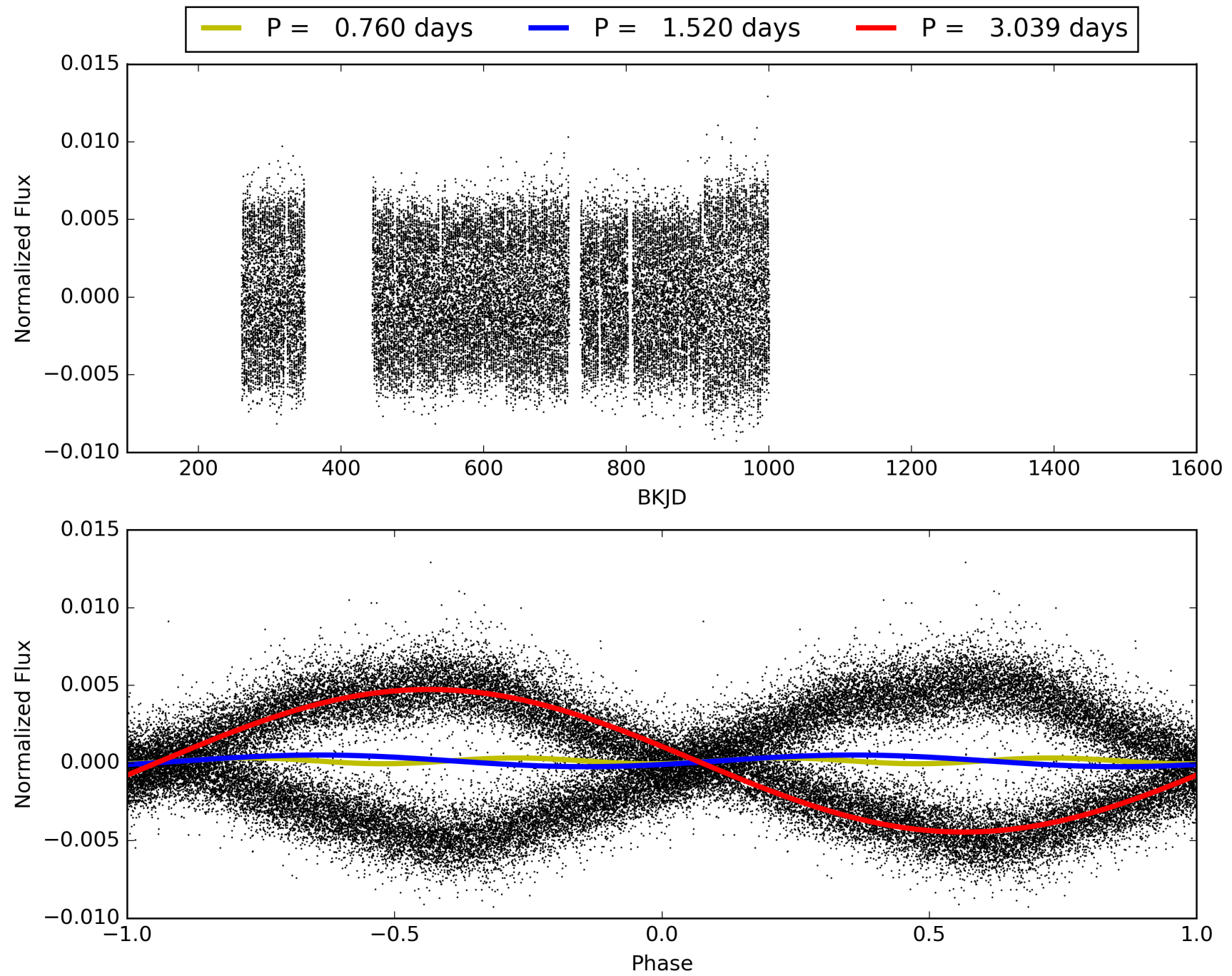
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:59:11 Z

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

TCE 006878288-01, PDC Light Curves

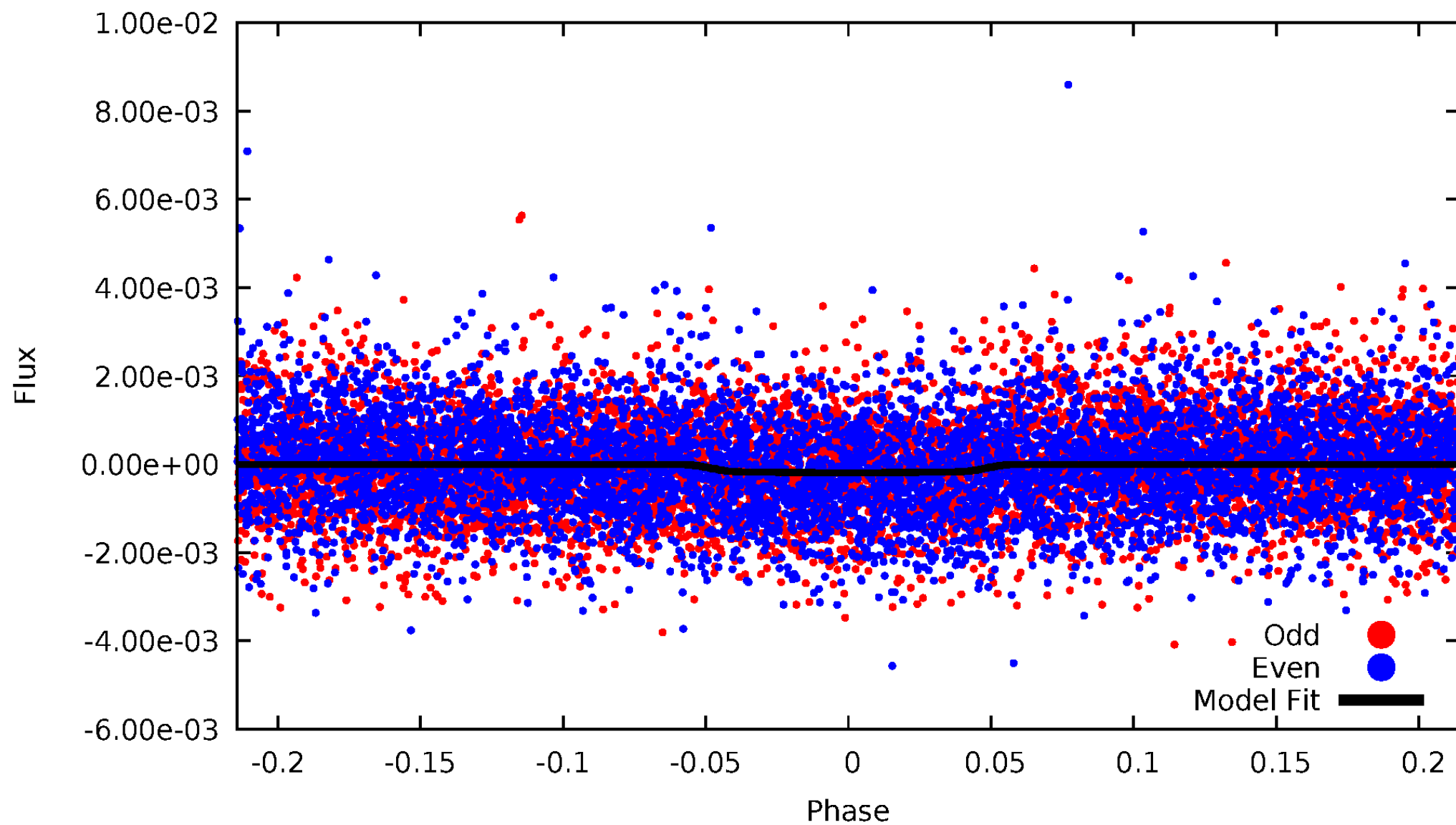


TCE 006878288-01



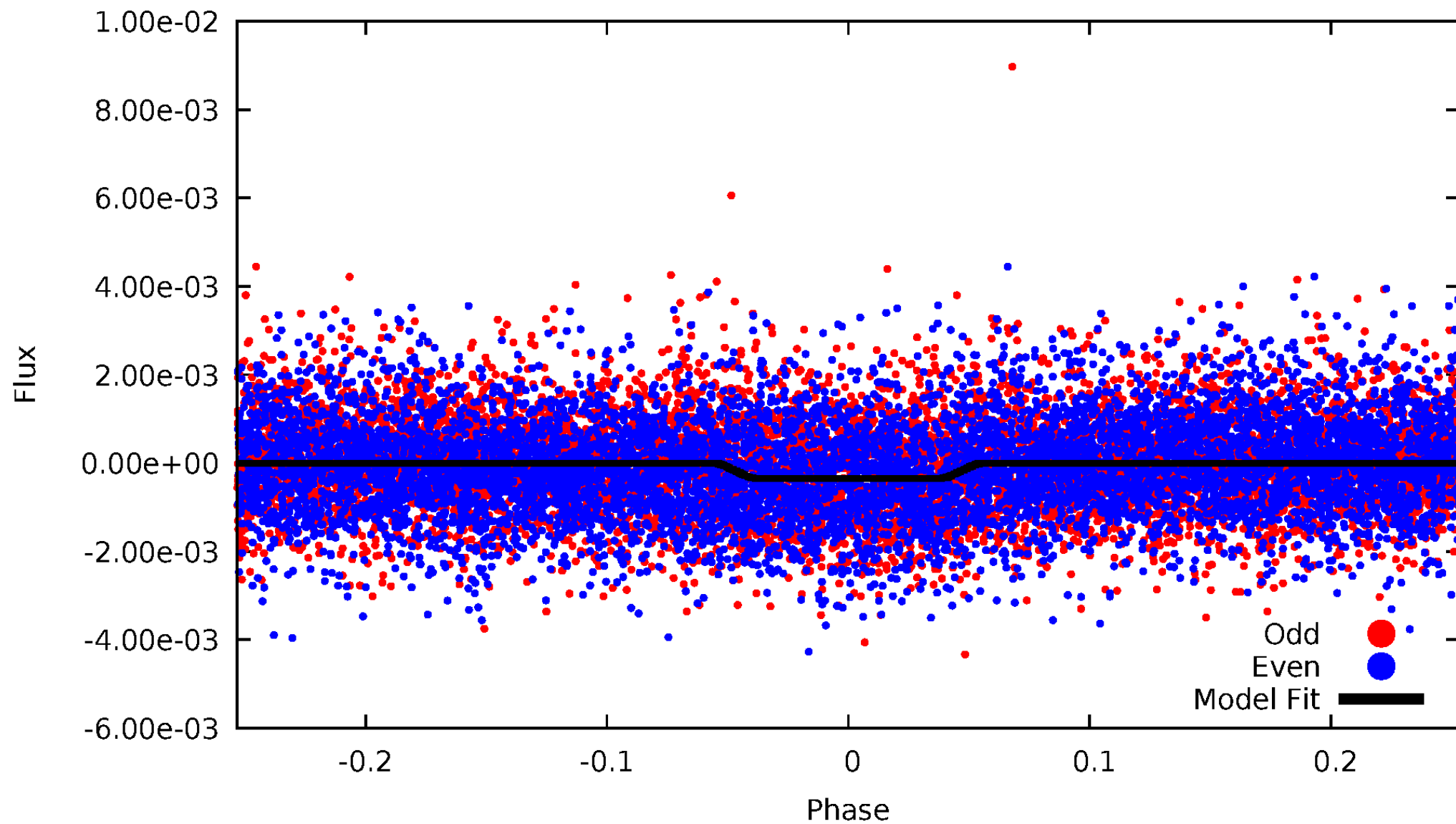
DV Odd/Even

TCE 006878288-01



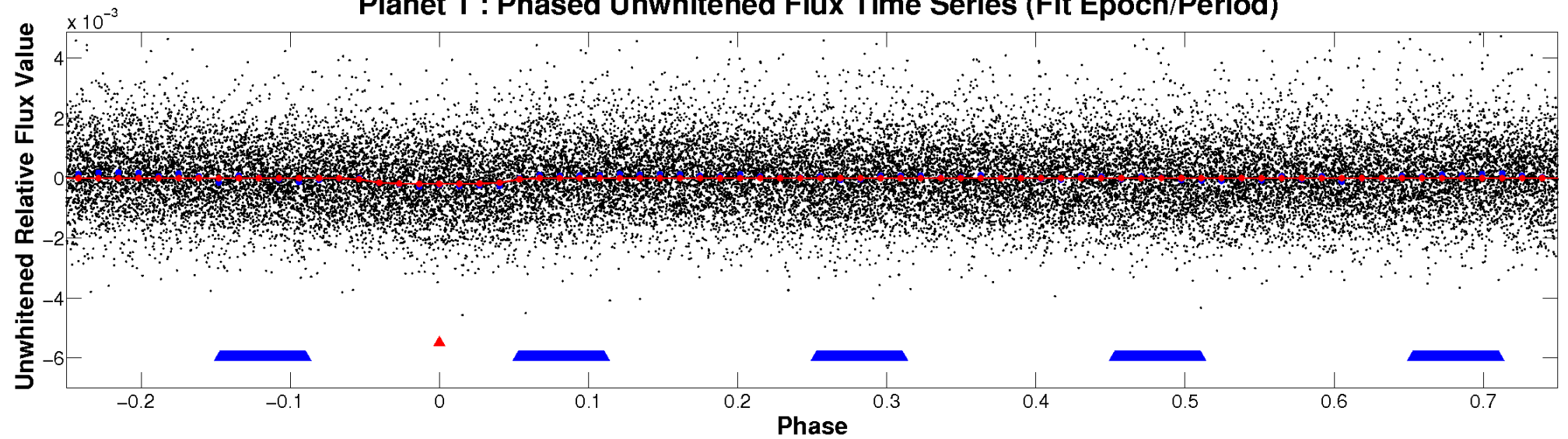
ALT Odd/Even

TCE 006878288-01

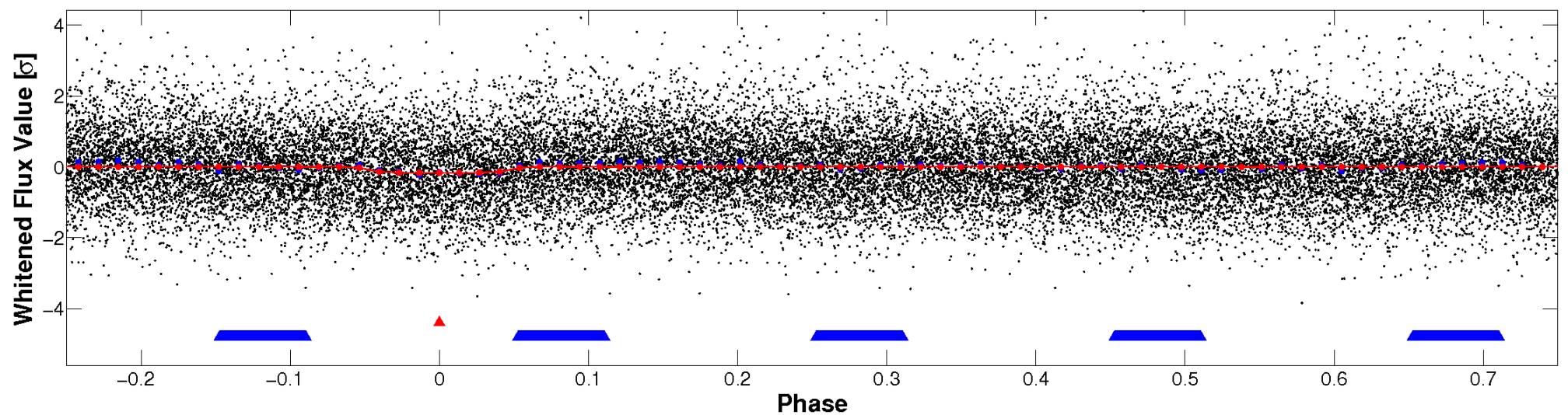


Non-Whitened Vs. Whitened Light Curve

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

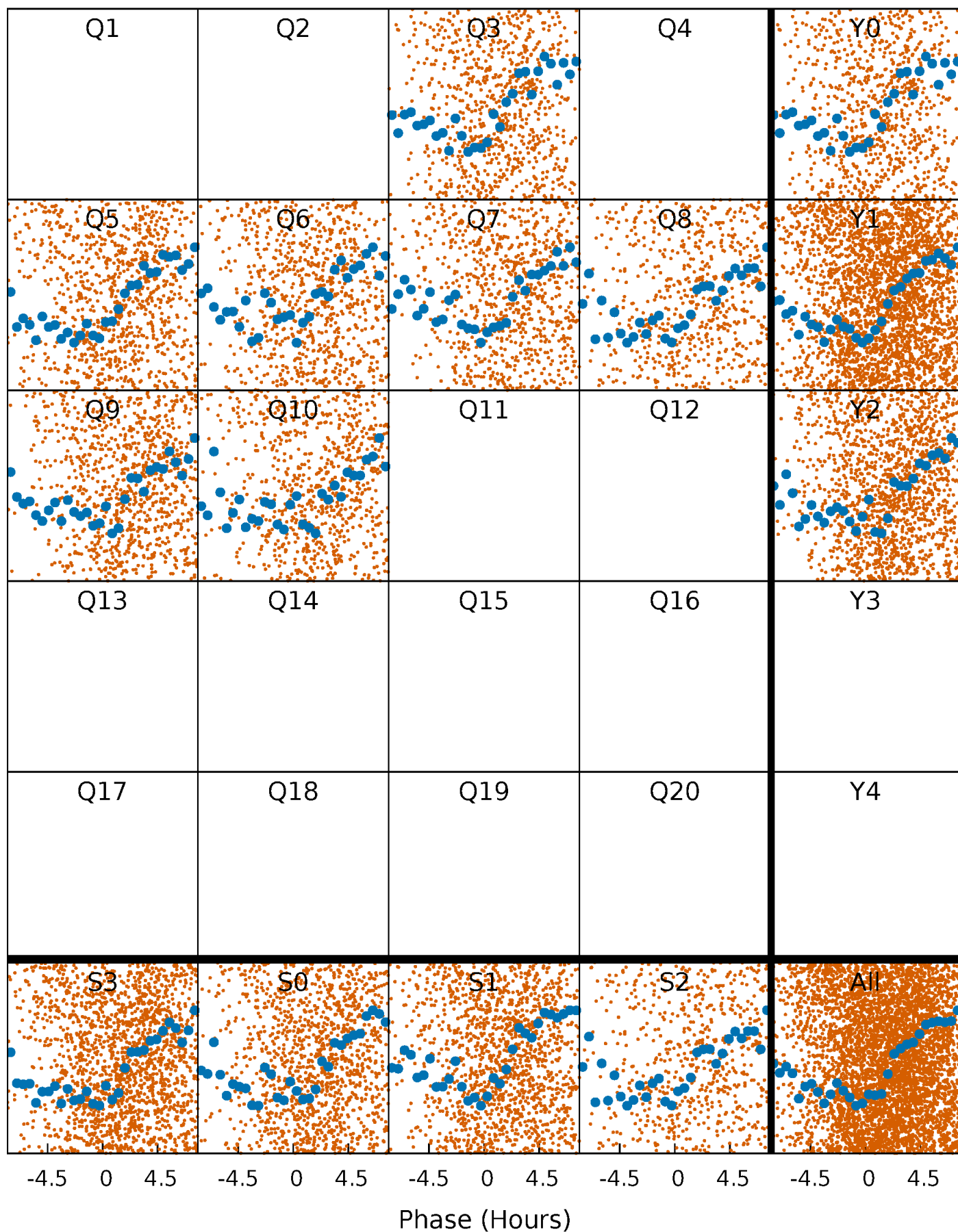


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



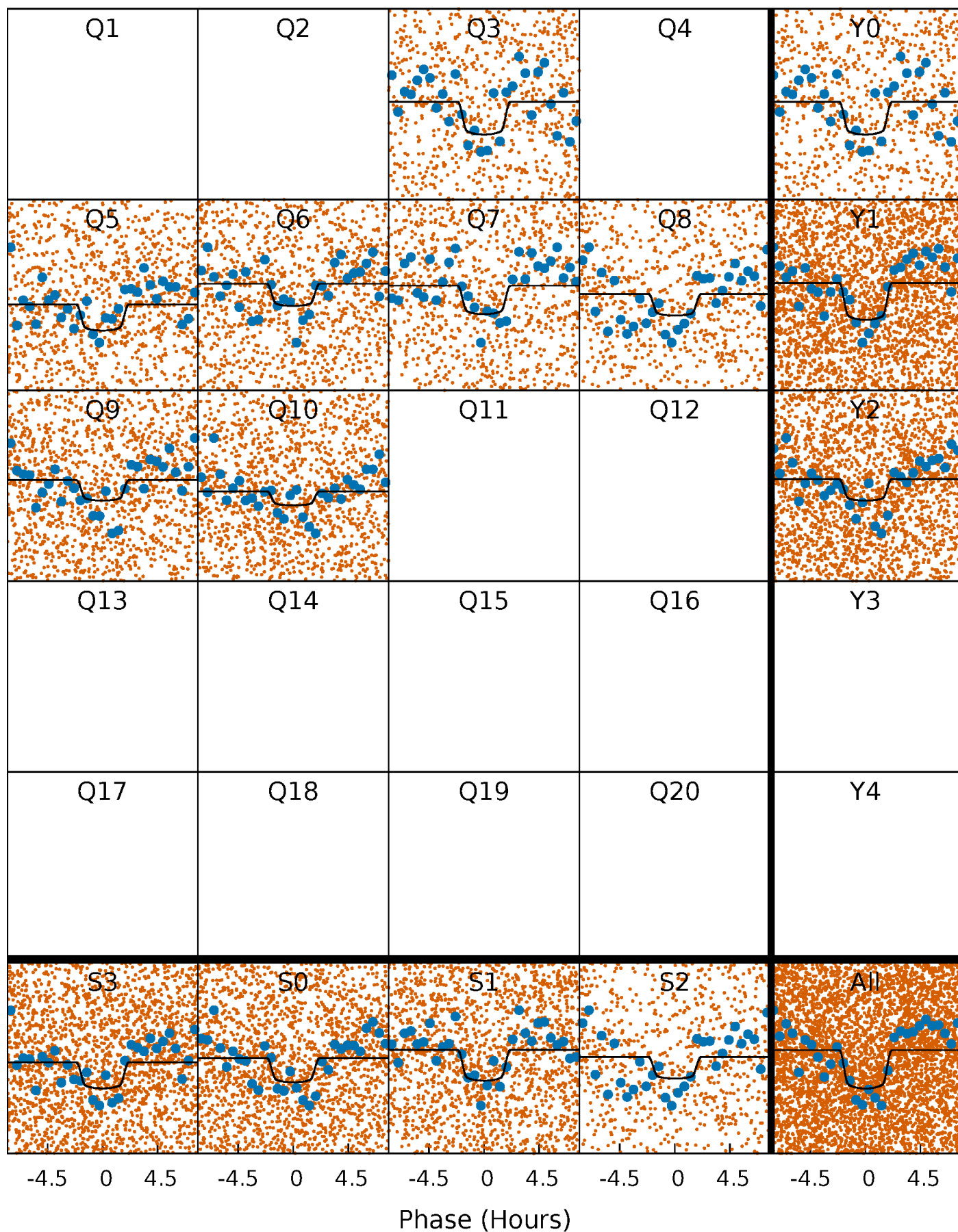
PDC Quarter-Phased Transit Curves

TCE 006878288-01 P= 1.519629 Days $T_0=132.531674$ (BKJD)



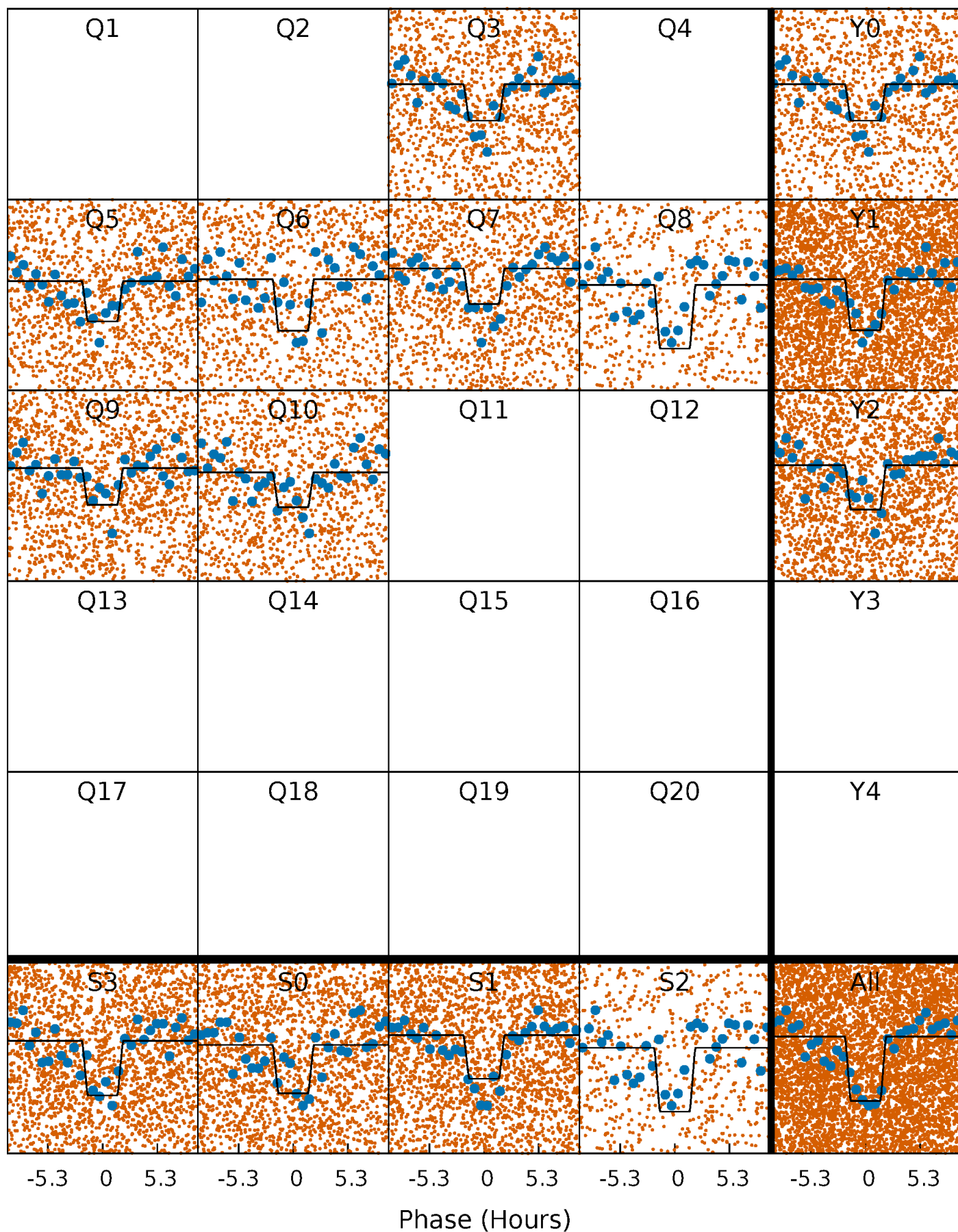
DV Quarter-Phased Transit Curves

TCE 006878288-01 P= 1.519629 Days $T_0=132.531674$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

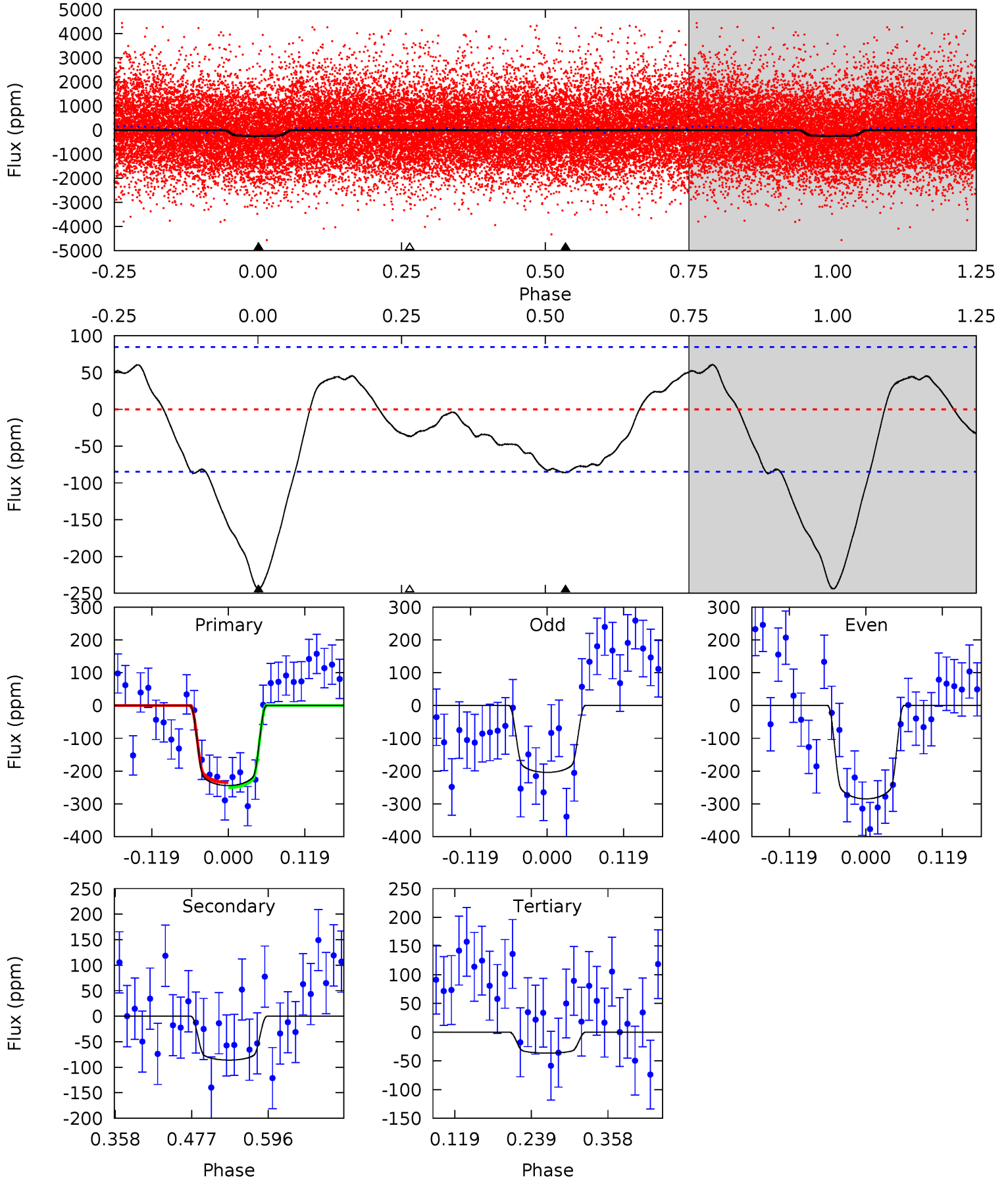
TCE 006878288-01 P= 1.519688 Days $T_0=132.513723$ (BKJD)



DV Model-Shift Uniqueness Test

006878288-01, P = 1.519629 Days, E = 132.531674 Days

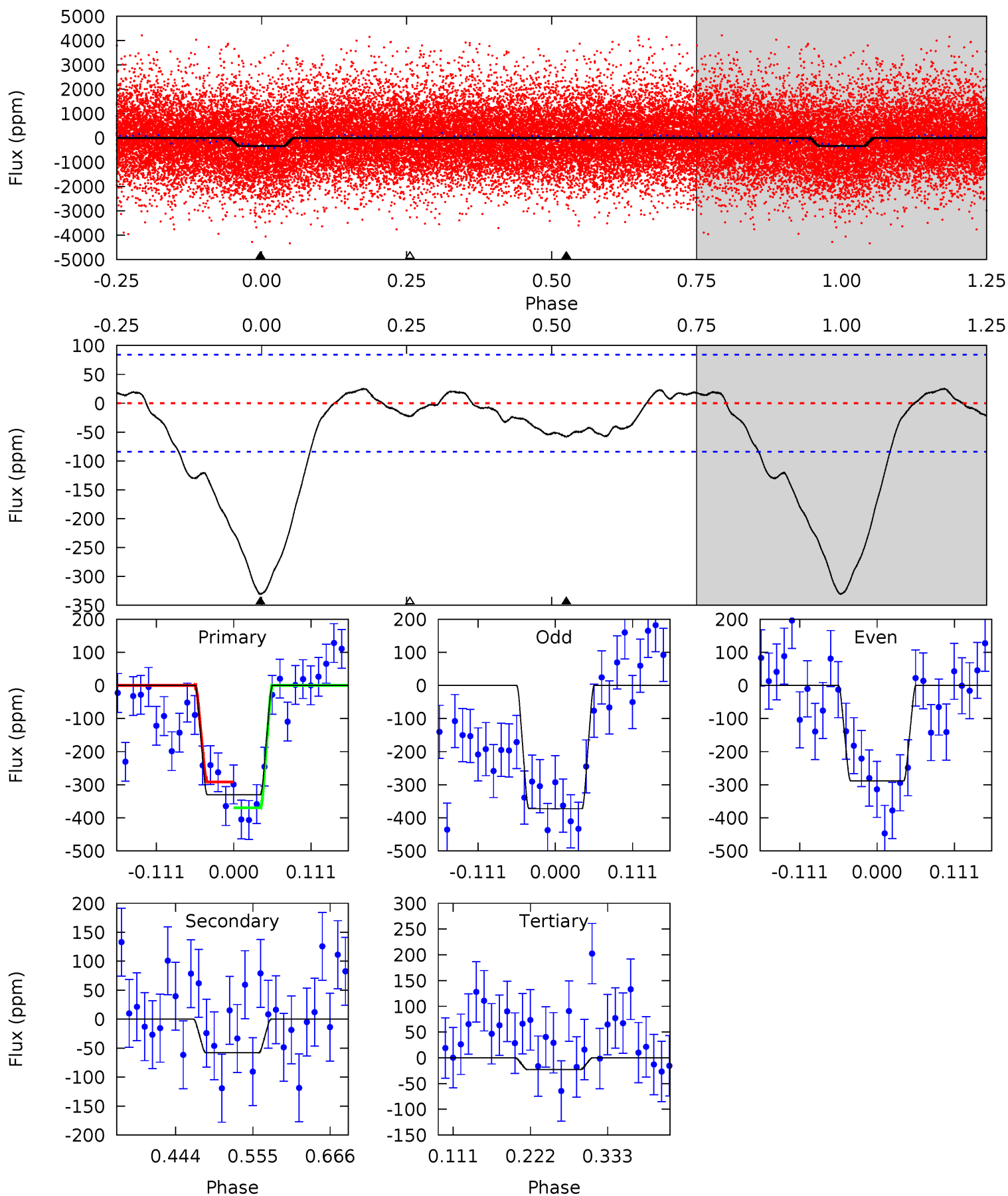
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	4.59	1.95	0	4.53	1.56	1.85	11.1	13.0	2.65	4.59	2.16	0.95	0.20	0.41



Alt Model-Shift Uniqueness Test

006878288-01, P = 1.519688 Days, E = 132.513723 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	3.14	1.23	0	4.54	1.59	1.80	16.7	17.9	1.91	3.14	2.30	0.82	0.07	2.12



Stellar Parameters For KIC 006878288

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	10906^{+304}_{-457}	$4.063^{+0.236}_{-0.193}$	$0.070^{+0.150}_{-0.600}$	$2.585^{+0.831}_{-0.831}$	$2.819^{+0.289}_{-0.674}$	$0.230^{+0.344}_{-0.122}$
	+3%/-4%	+6%/-5%	+214%/-857%	+32%/-32%	+10%/-24%	+150%/-53%
Source	KIC0	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 006878288-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-86 ± 19	$4.01^{+1.28}_{-1.10}$	5583^{+513}_{-442}	7675^{+1716}_{-1104}	$3.846^{+3.547}_{-1.698}$
Alt.	-58 ± 18	$5.11^{+1.39}_{-1.14}$	5645^{+456}_{-513}	5843^{+982}_{-865}	$1.563^{+1.261}_{-0.738}$

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 $A_{obs} \gg 1.0$

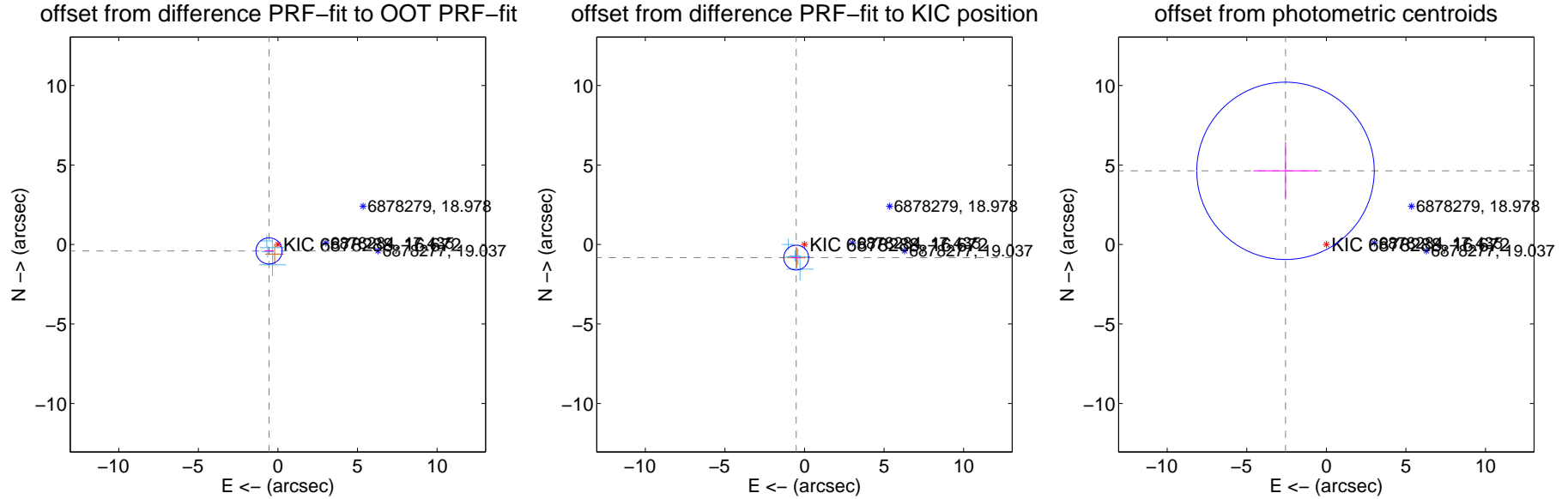
DV Centroid Data

Supplemental centroid analysis for 006878288-01. Kepler magnitude: 16.67. Transit SNR 8.10

There are 4 quarters with good PRF difference image offsets

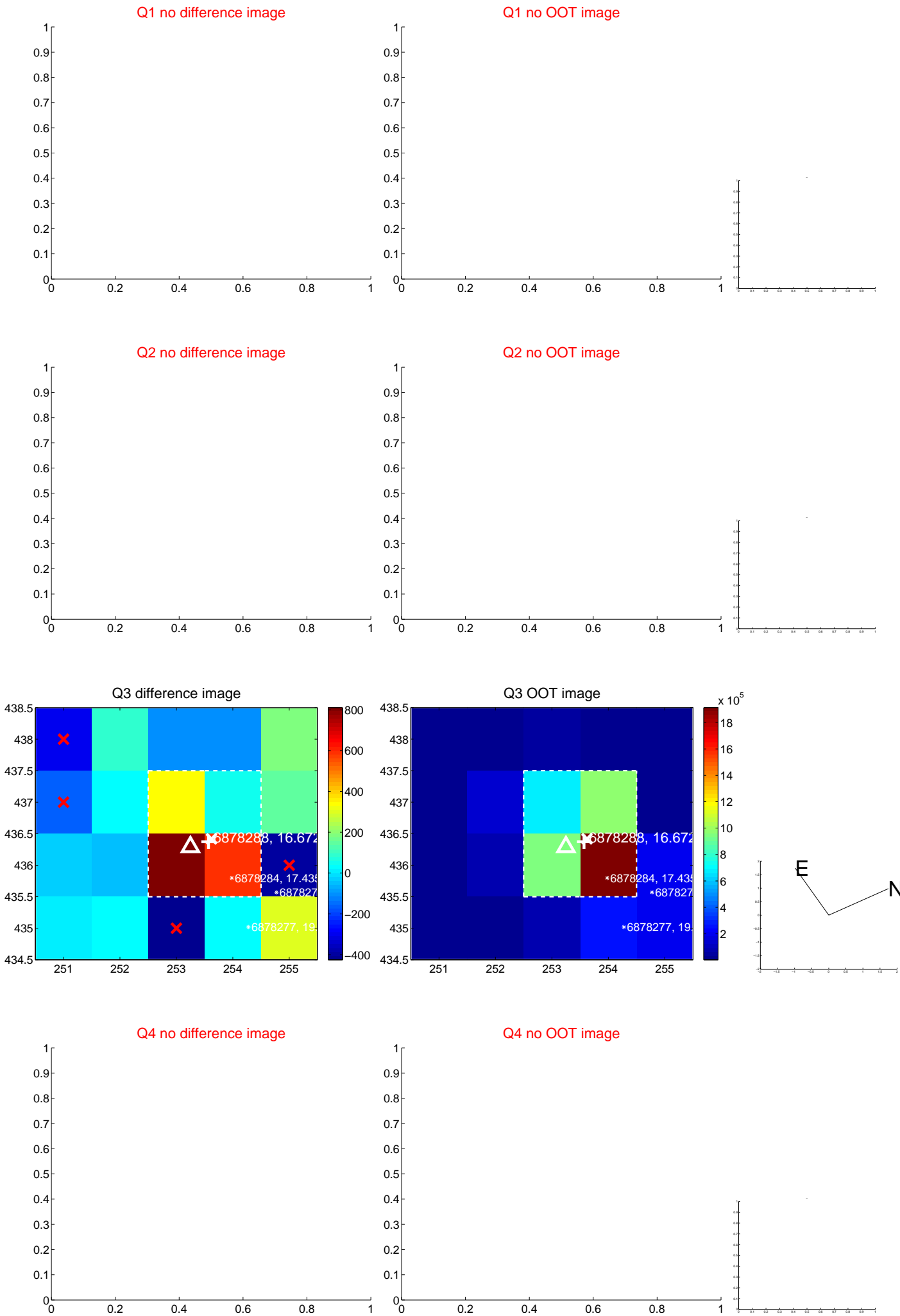
The direct PRF centroid is offset from the target star catalog position by about 0.58 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.689 ± 0.274	2.51	0.559 ± 0.286	-0.402 ± 0.249
PRF-fit source offset from KIC position	0.974 ± 0.260	3.74	0.521 ± 0.286	-0.823 ± 0.249
photometric centroid source offset	5.30 ± 1.86	2.85	2.57 ± 2.02	4.63 ± 1.81

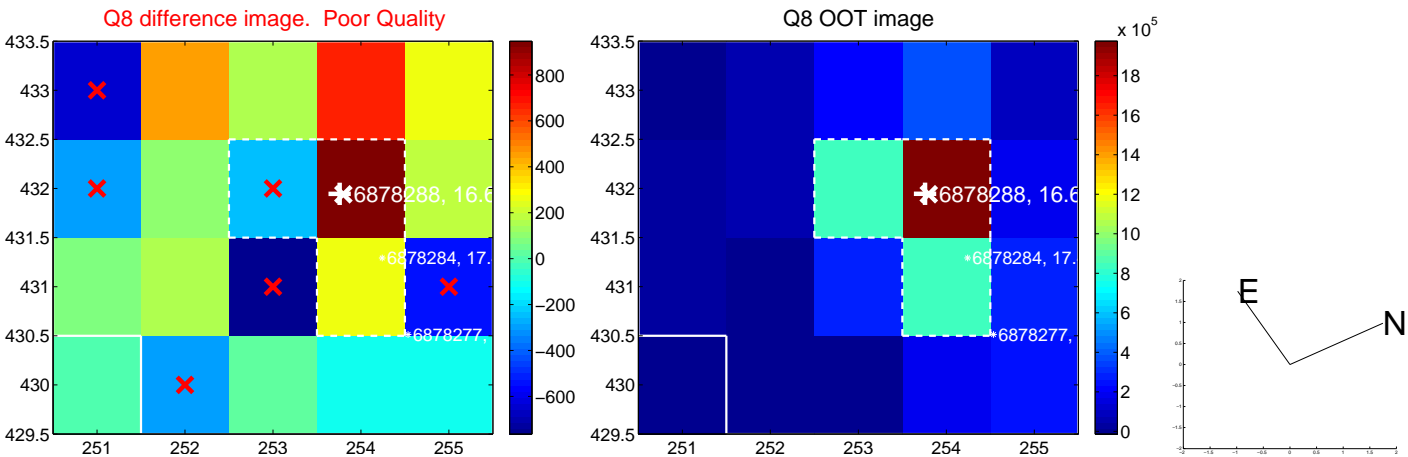
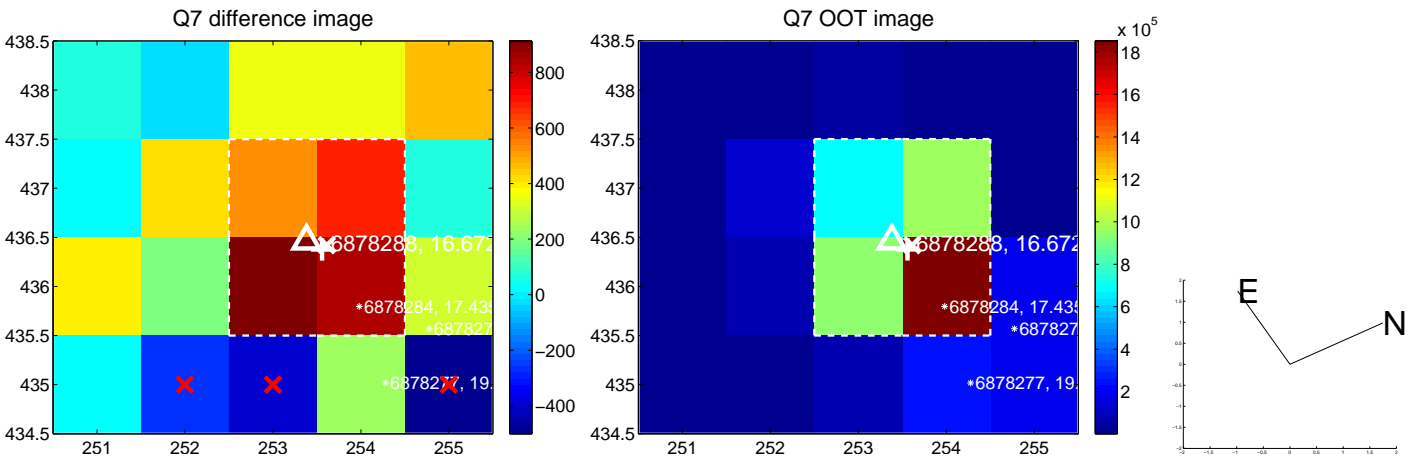
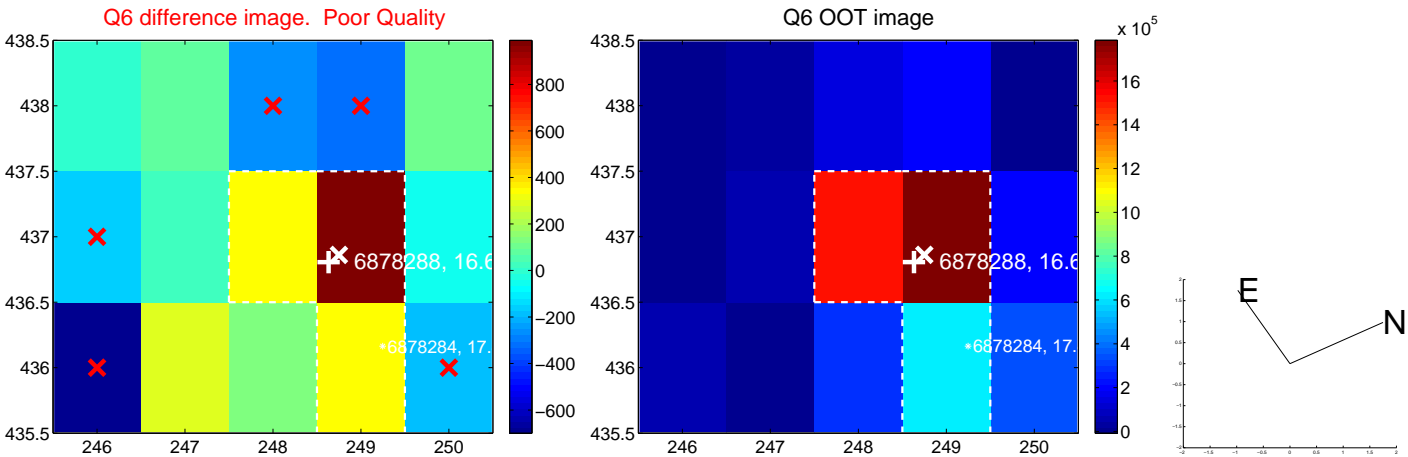
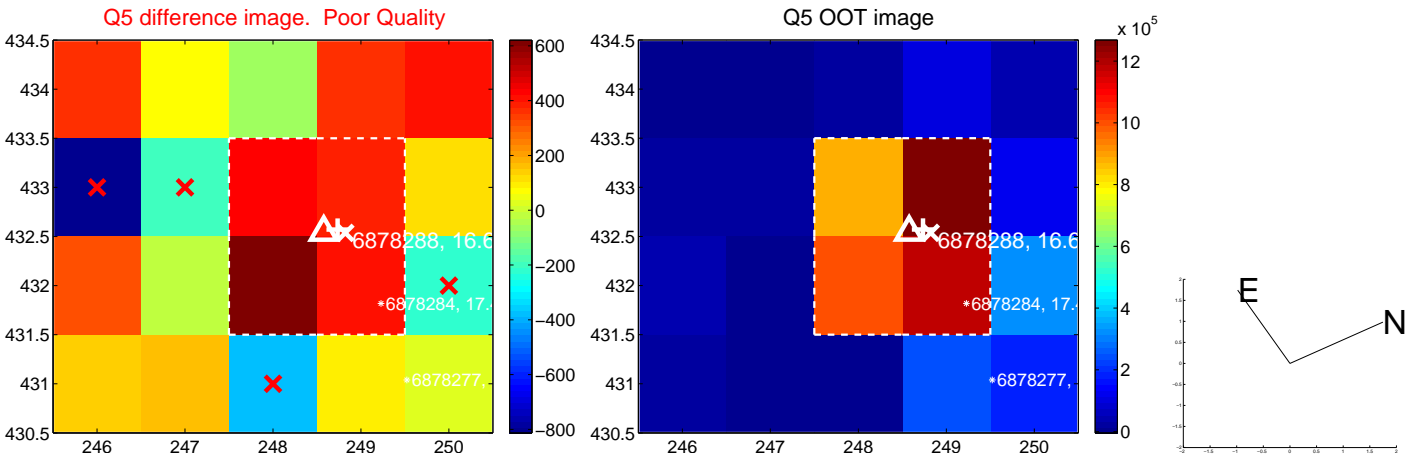


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

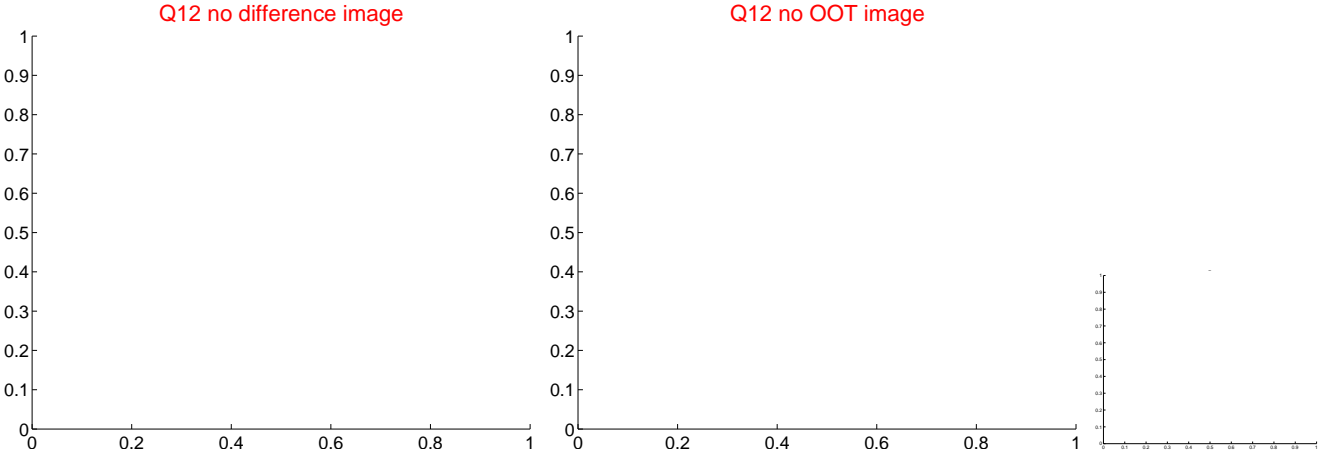
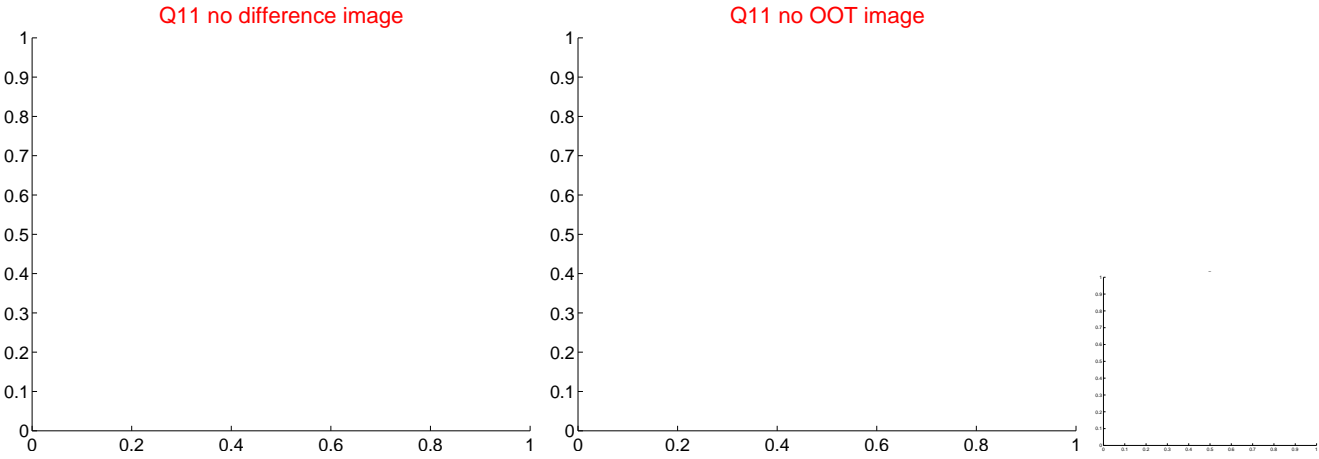
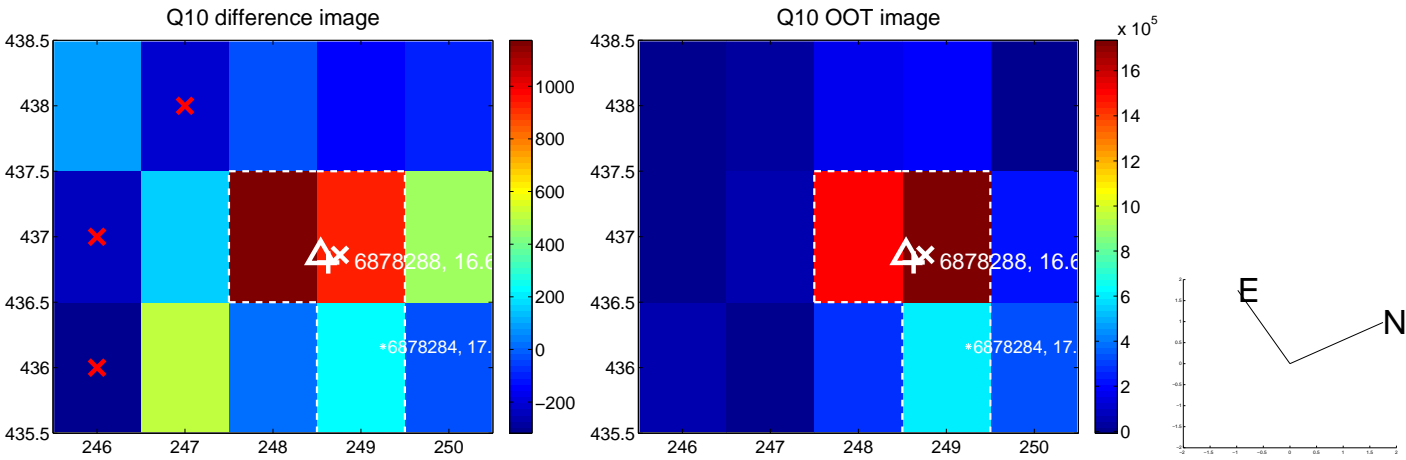
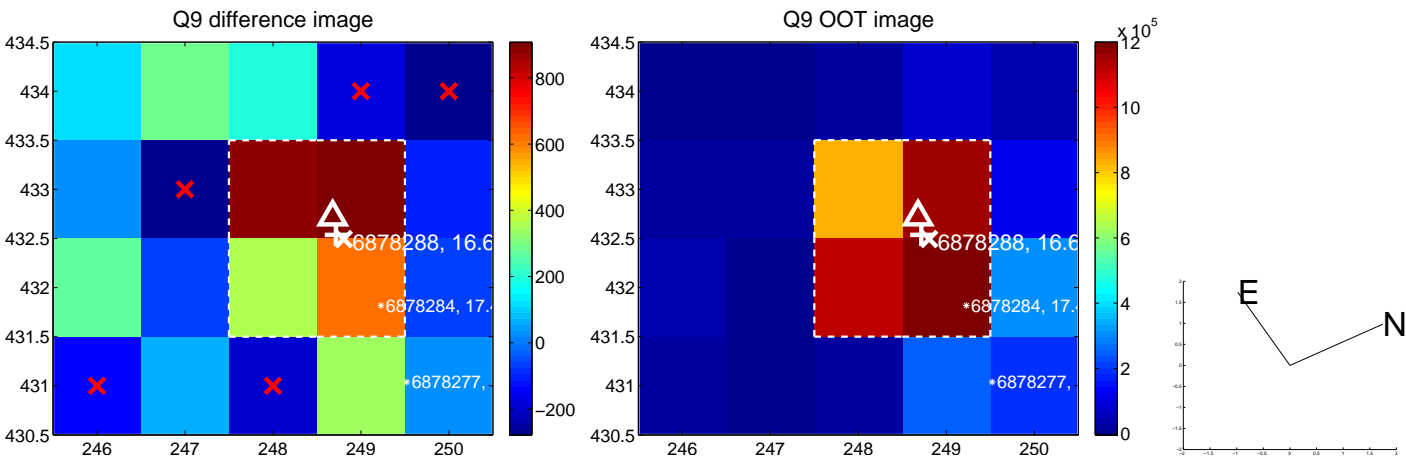
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



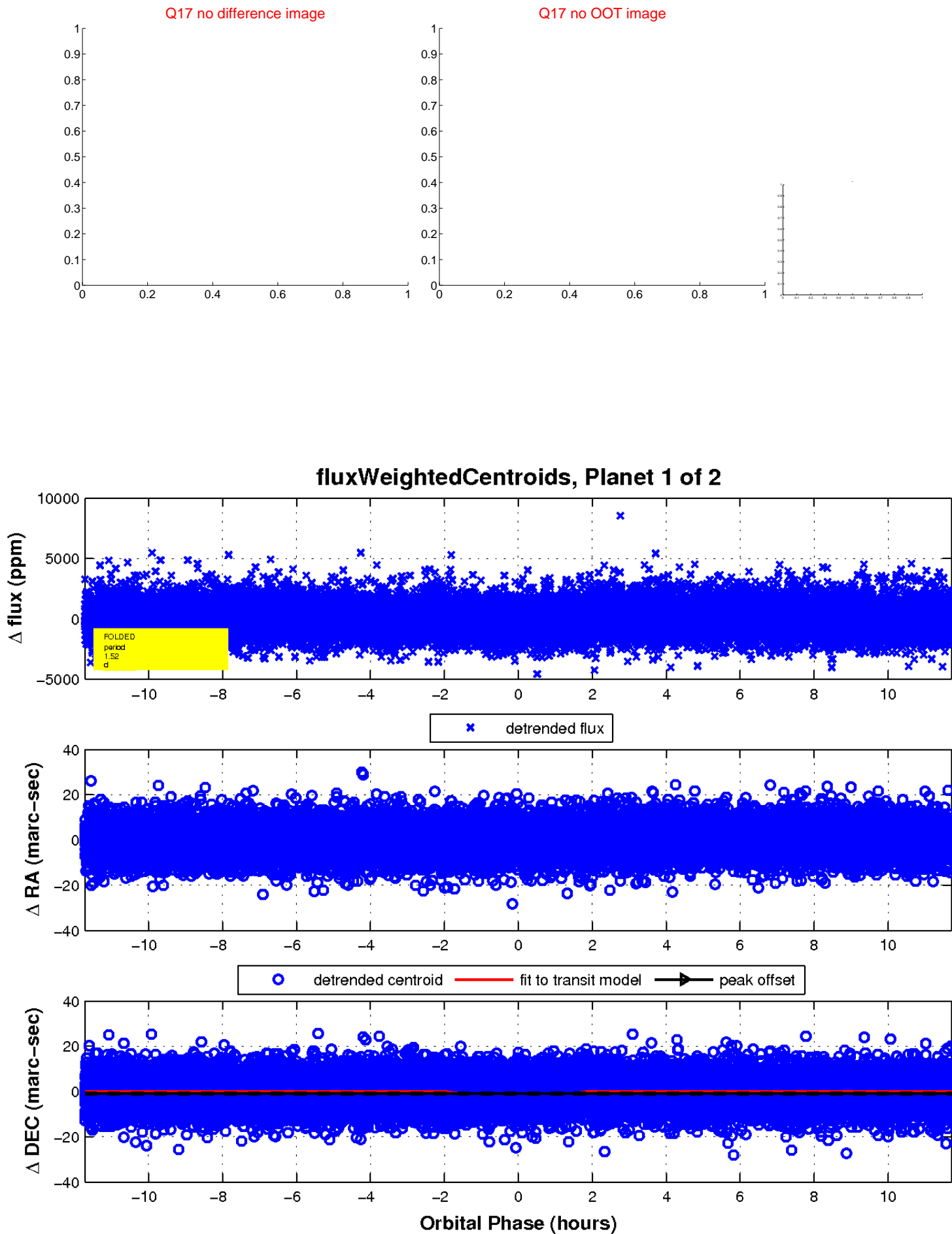
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

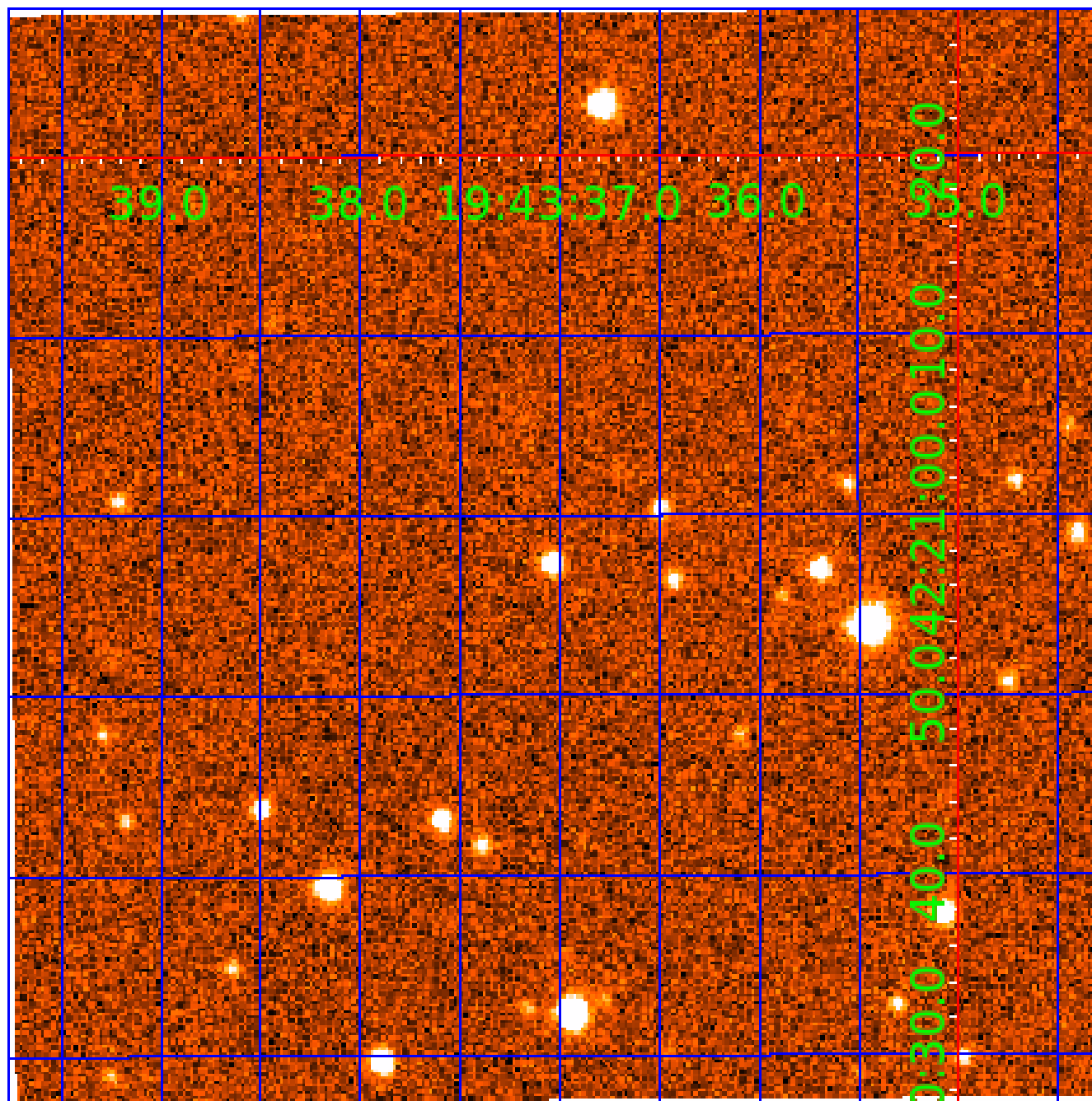


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006878288

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})
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006878288-02	OBS	No	1.215776	132.307903	1143.4	4.500	8.3	-1.0	2.58	10906	9.01	85387.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006878288-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006878288-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS

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

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

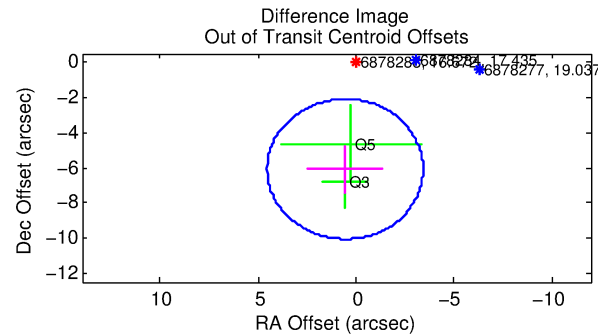
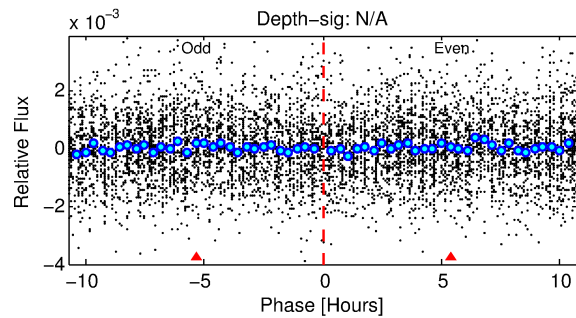
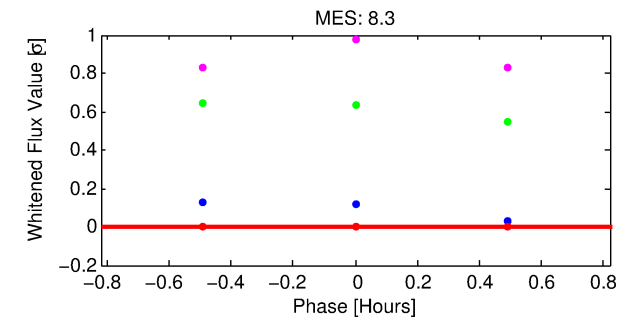
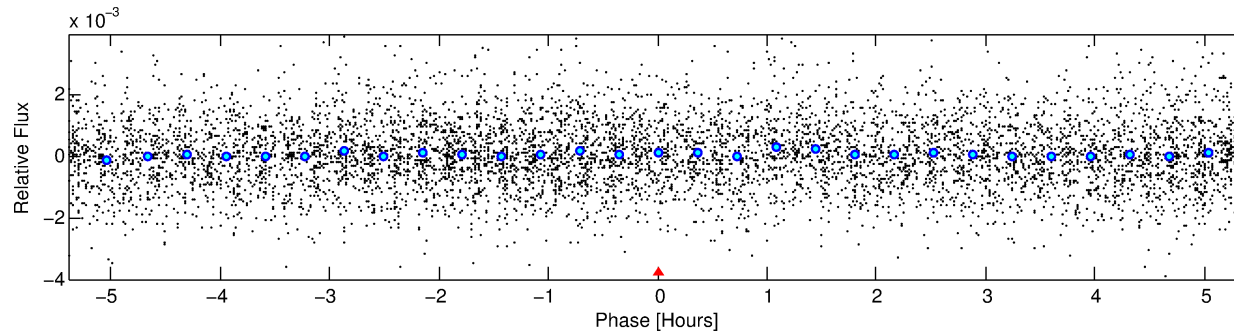
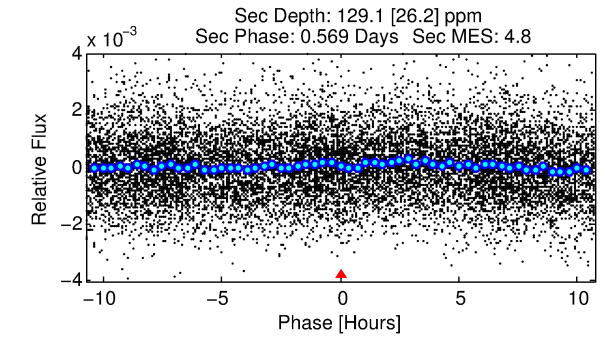
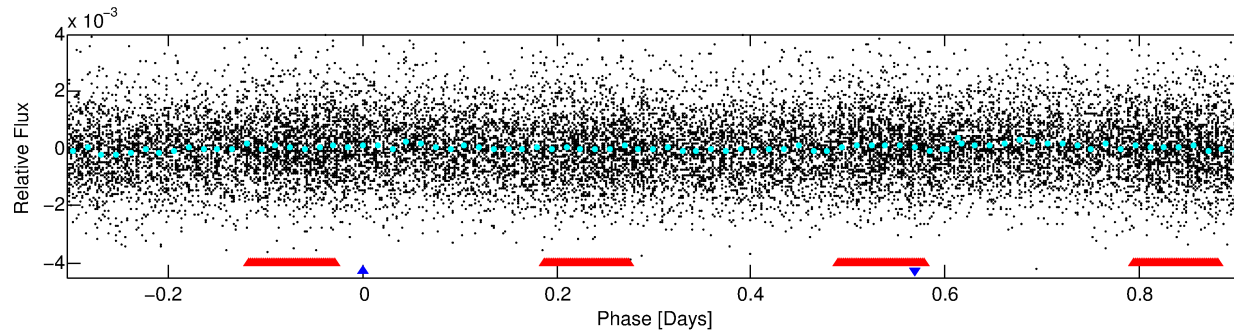
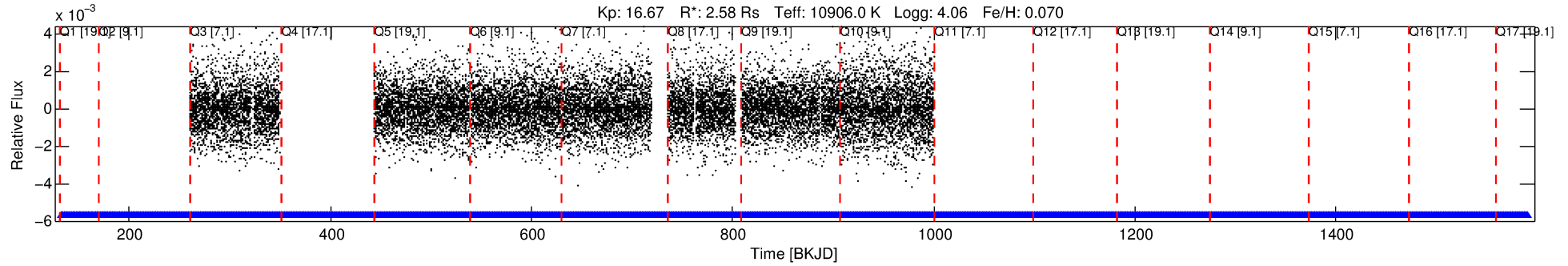
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006878288-02

No Significant Match Found

DV One-Page Summary

KIC: 6878288 Candidate: 2 of 2 Period: 1.216 d



TPS TCE Results:

Period = 1.21578 d
Epoch = 132.3079 BKJD

DV fit results are unavailable

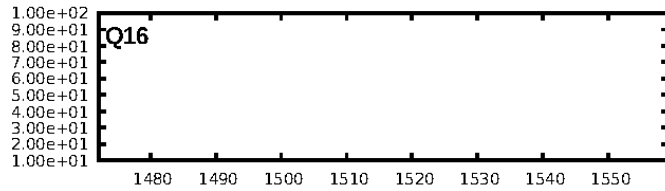
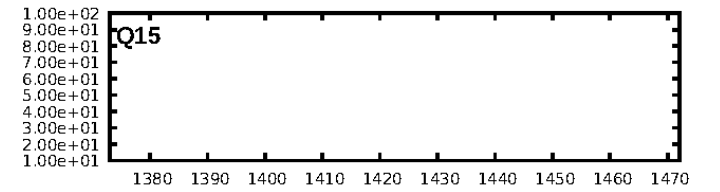
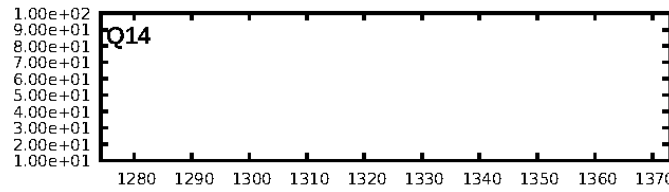
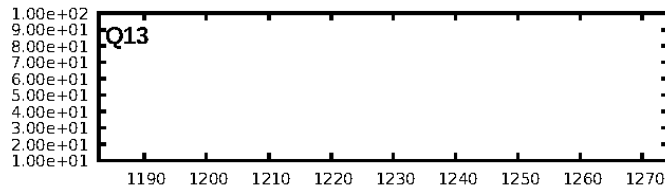
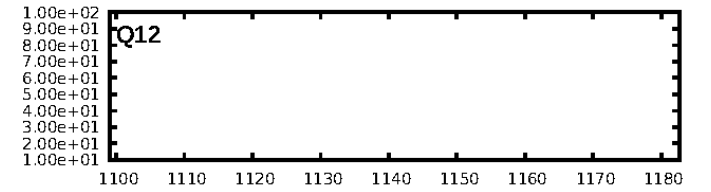
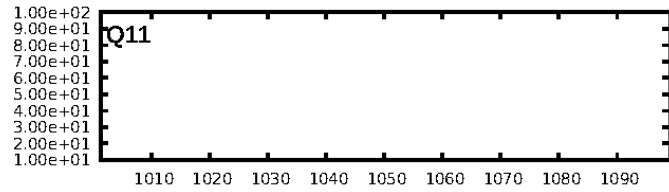
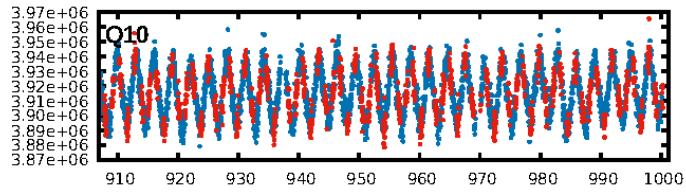
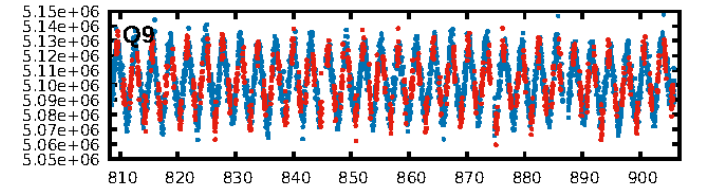
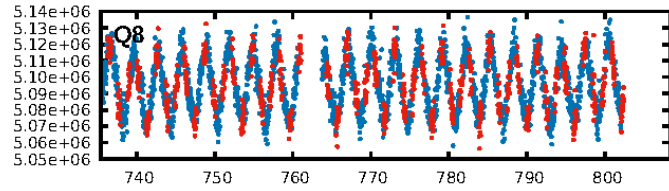
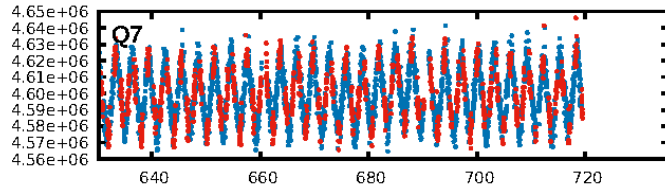
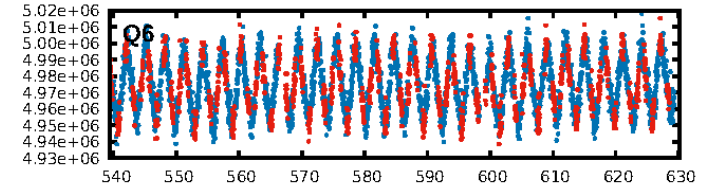
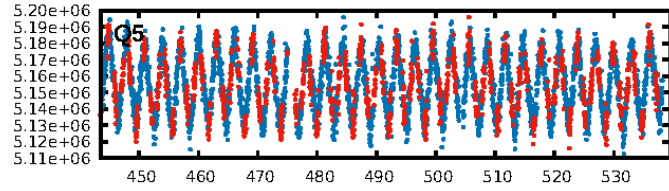
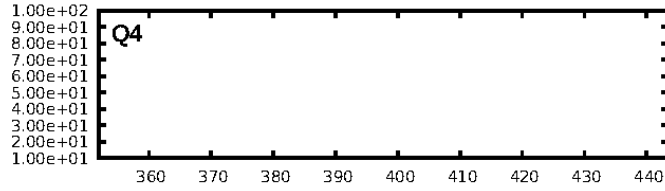
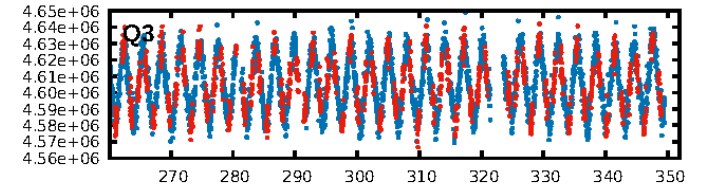
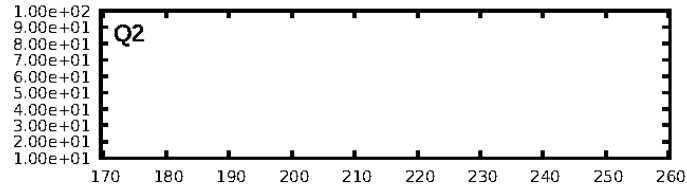
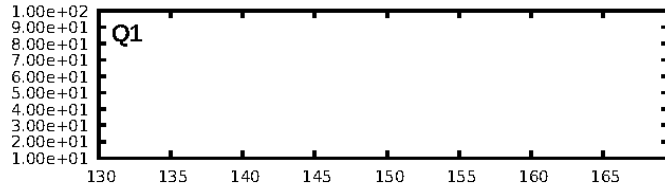
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 77.9% [1.22σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.23e-15
RollingBand-fgt: 1.00 [390/390]
GhostDiagnostic-chr: 5.725
Centroid-sig: N/A
Centroid-so: 1.253 arcsec [0.51σ]
OotOffset-rm: 6.101 arcsec [4.59σ]
KicOffset-rm: 6.363 arcsec [4.79σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [7/7]

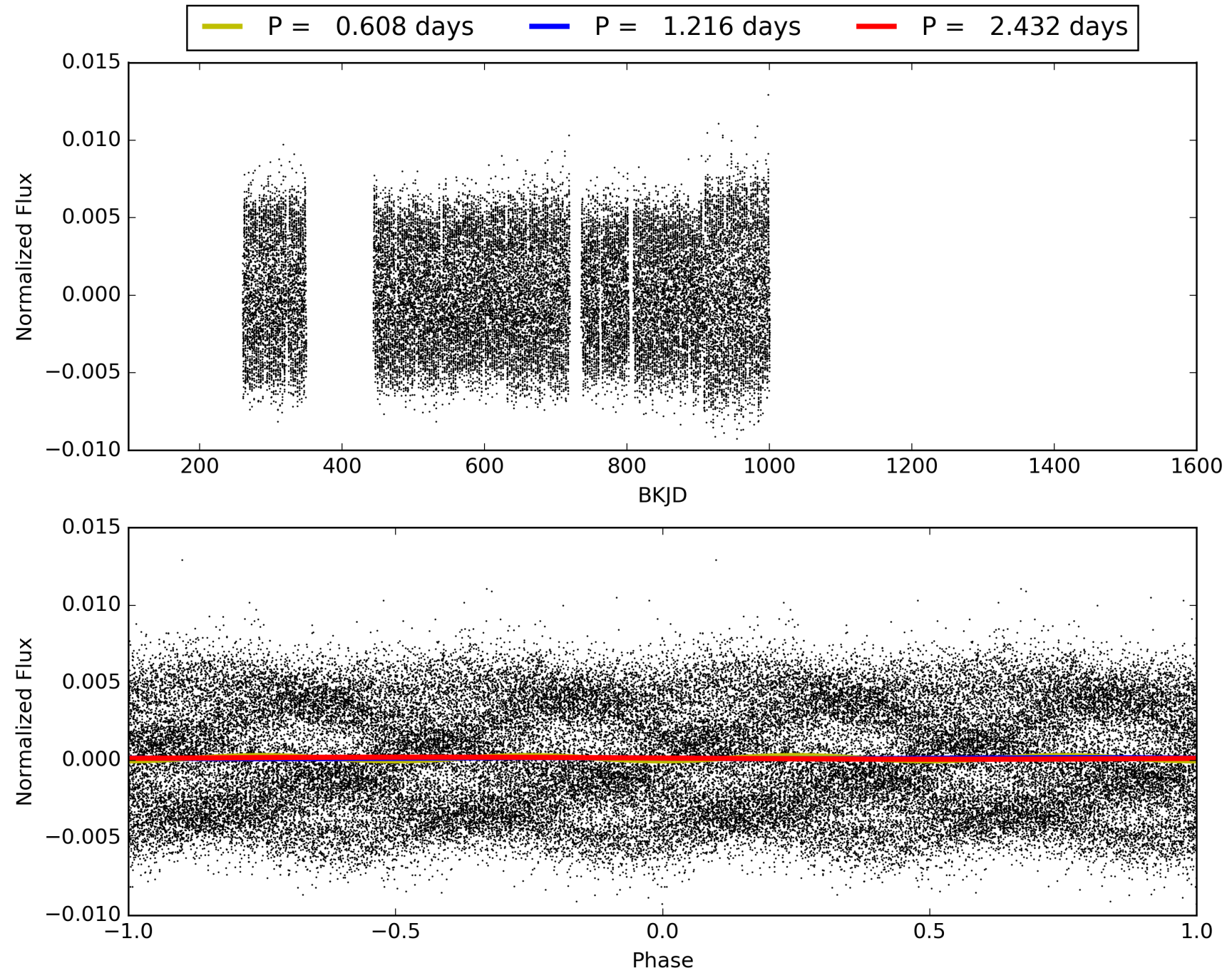
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:59:18 Z

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

TCE 006878288-02, PDC Light Curves

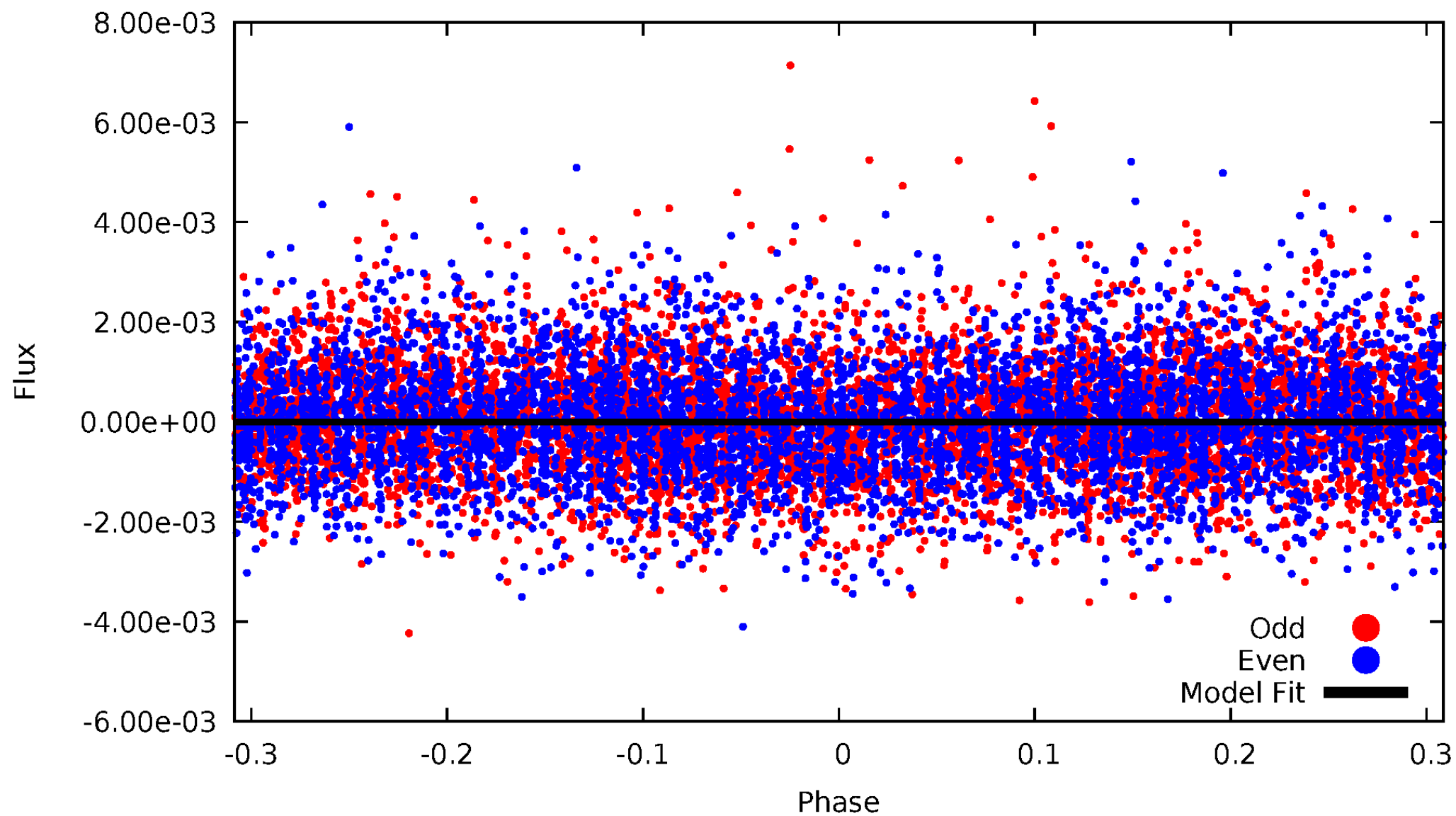


TCE 006878288-02



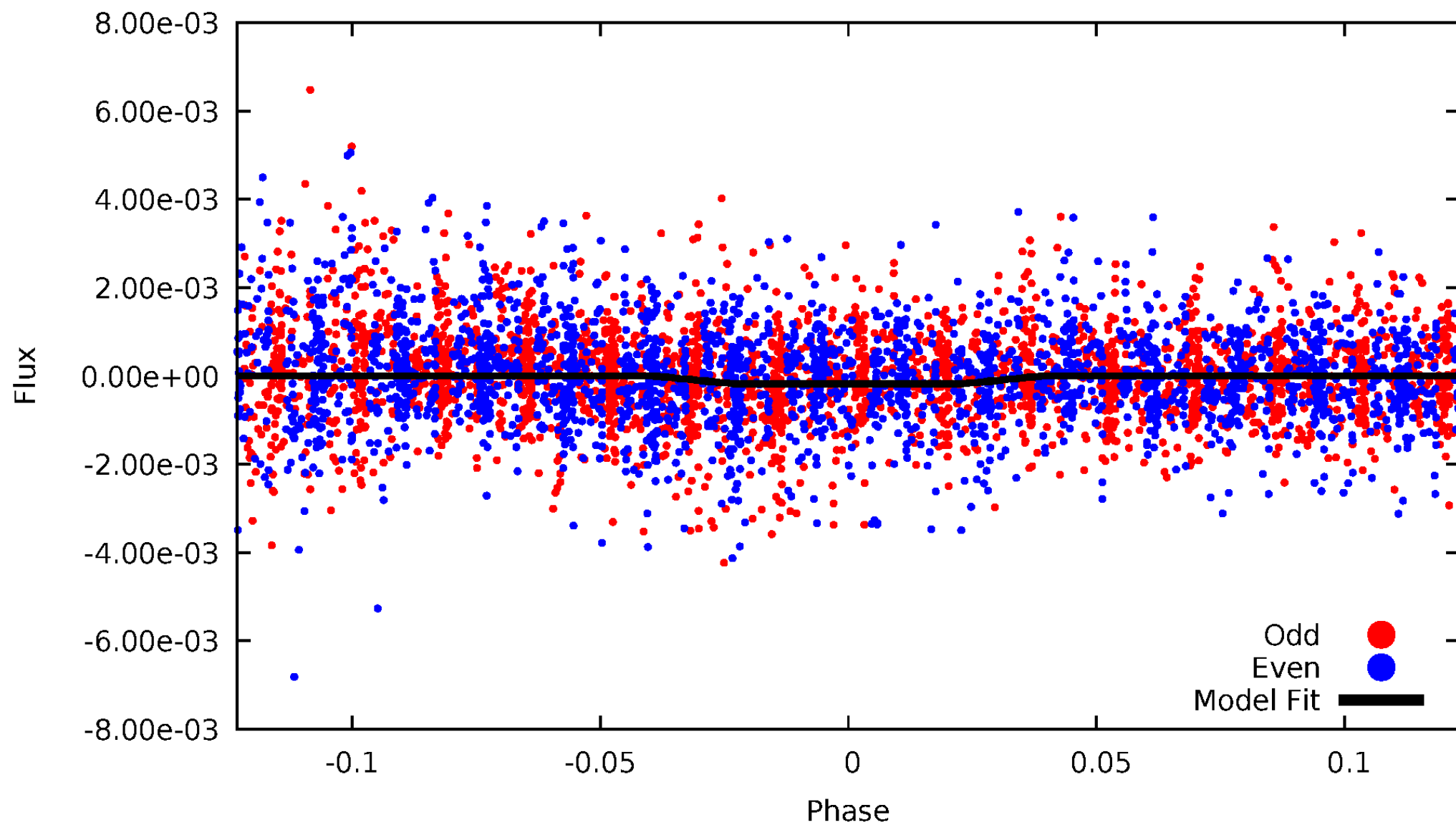
DV Odd/Even

TCE 006878288-02



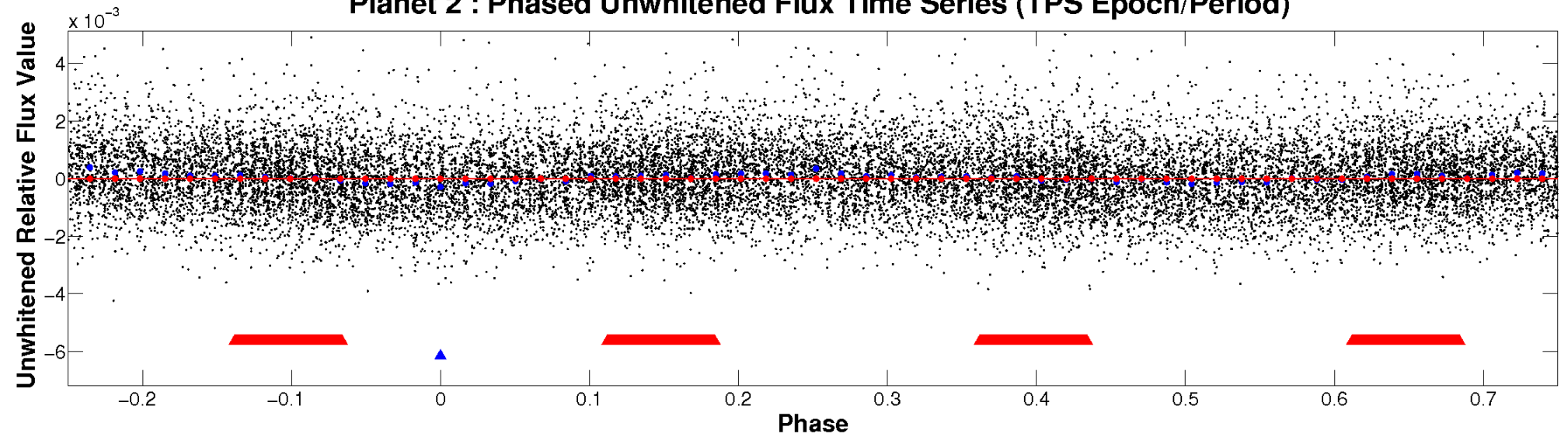
ALT Odd/Even

TCE 006878288-02

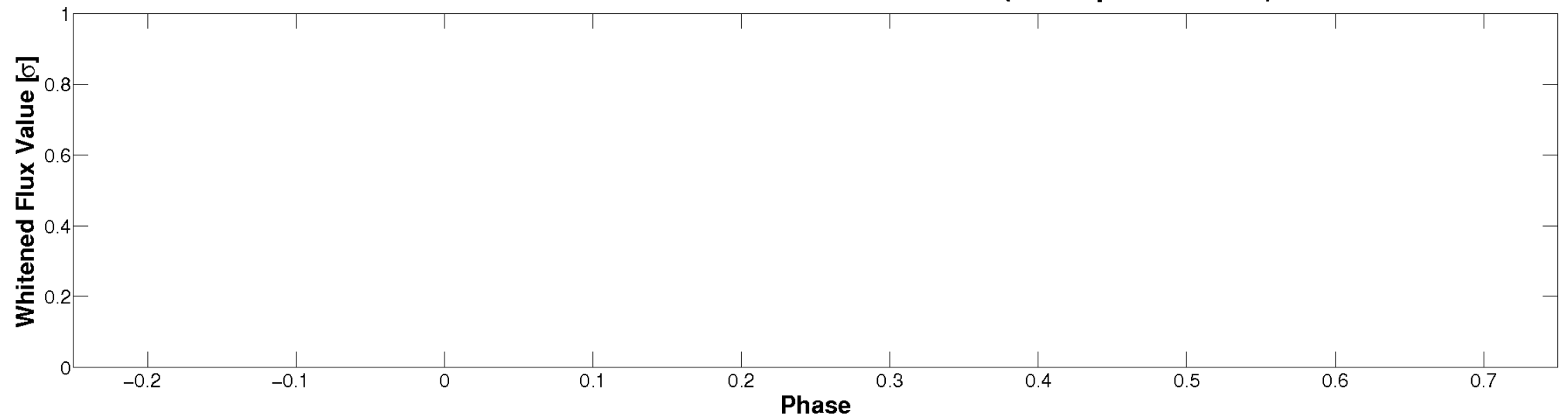


Non-Whitened Vs. Whitened Light Curve

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

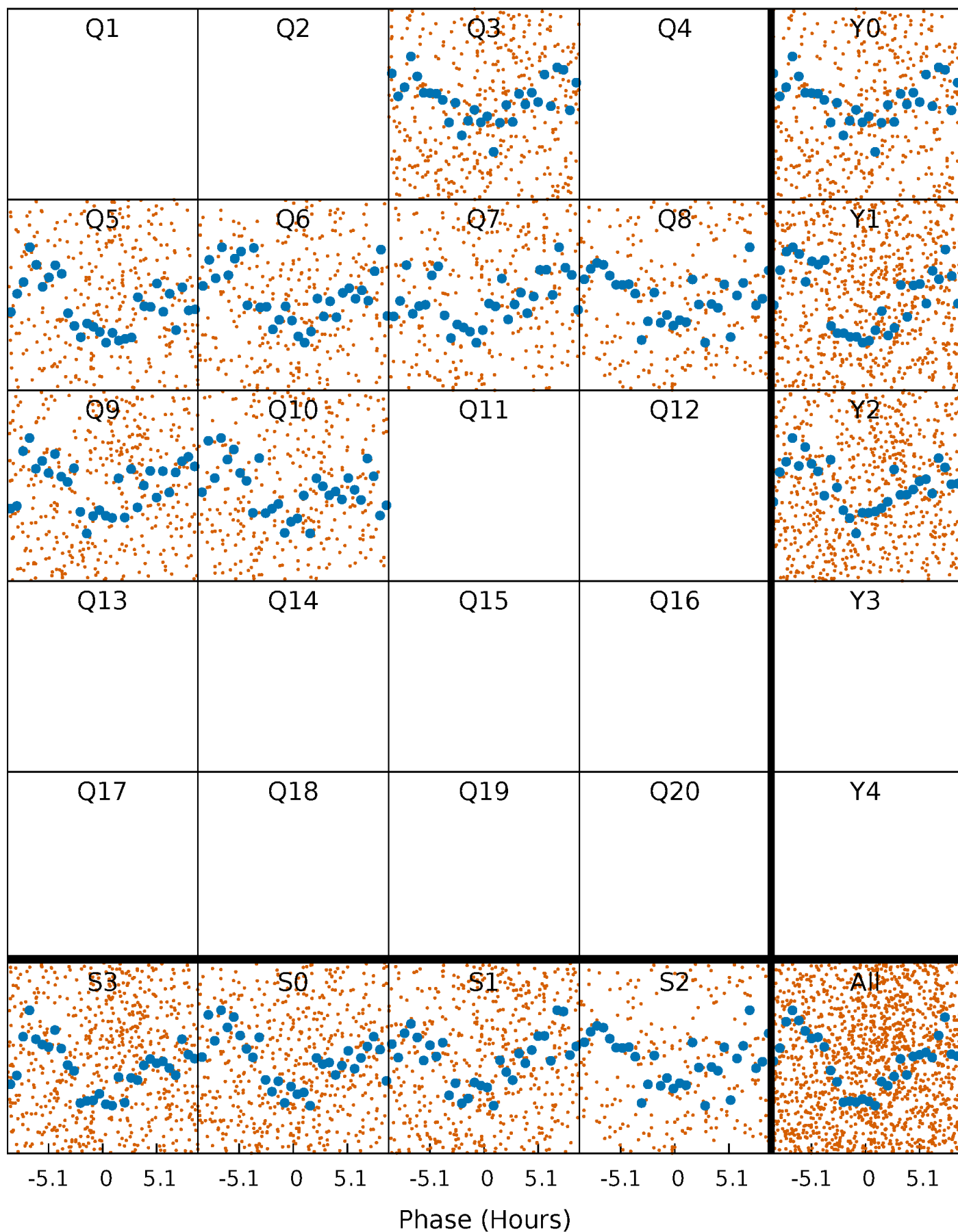


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



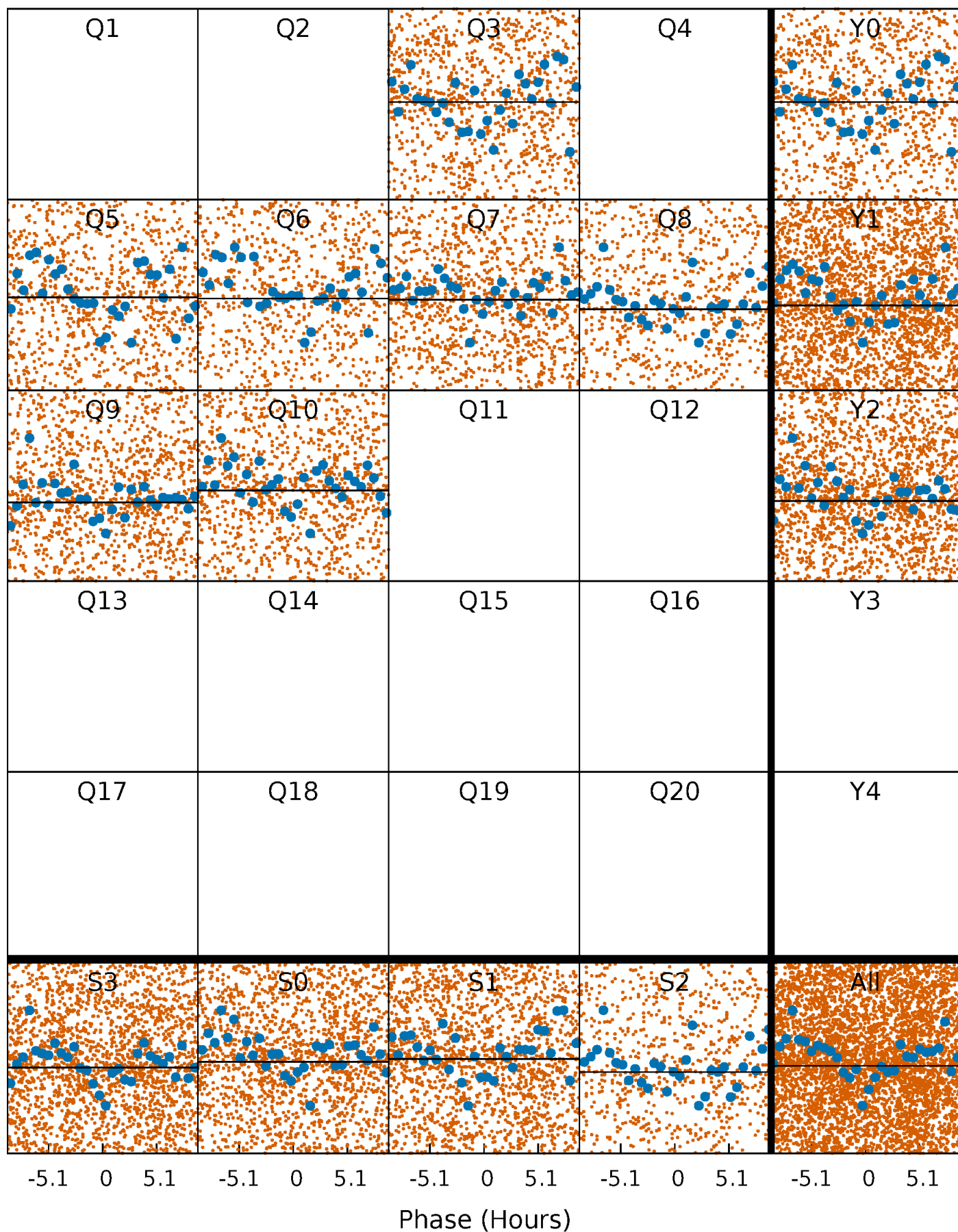
PDC Quarter-Phased Transit Curves

TCE 006878288-02 $P = 1.215776$ Days $T_0 = 132.307903$ (BKJD)



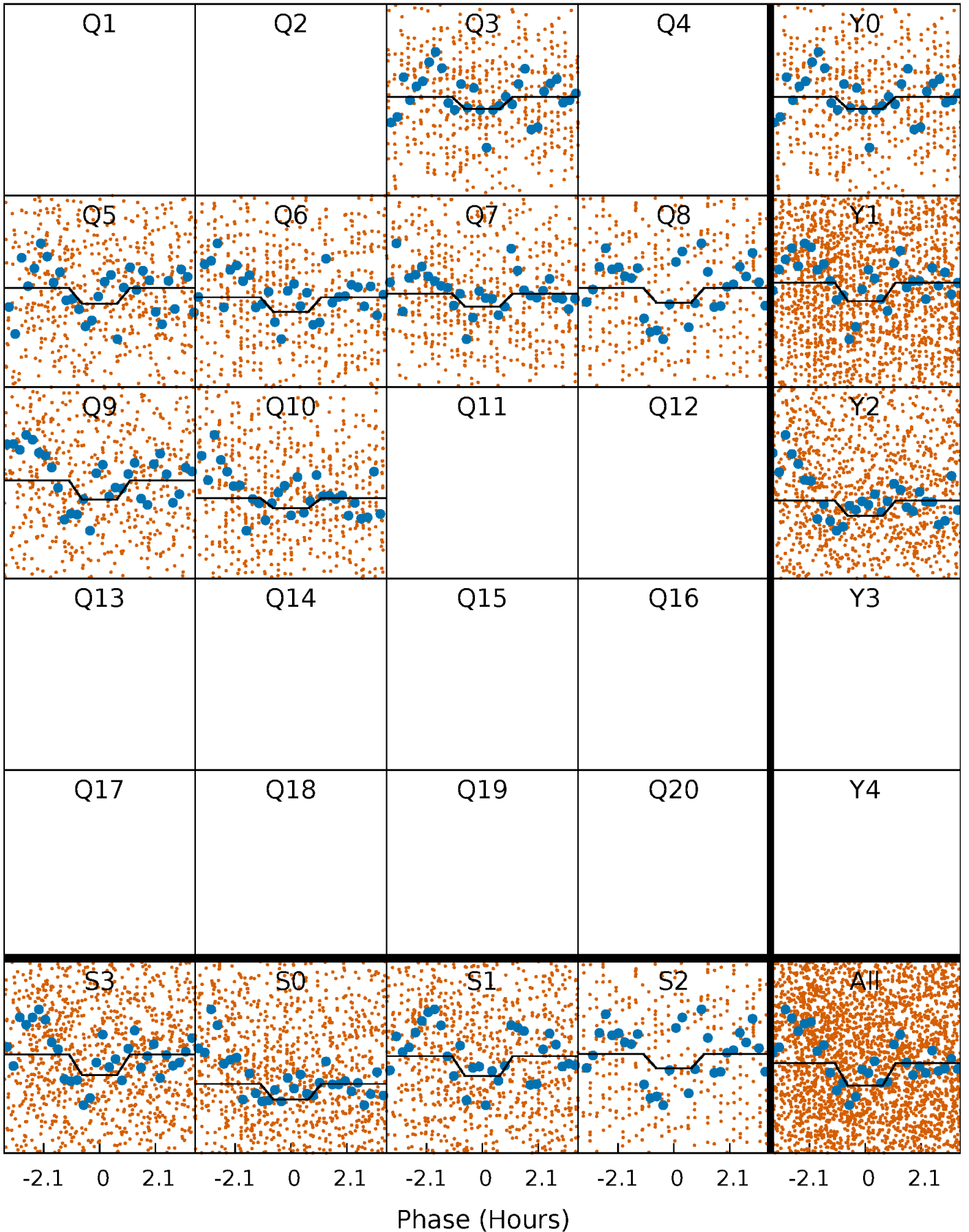
DV Quarter-Phased Transit Curves

TCE 006878288-02 P= 1.215776 Days $T_0=132.307903$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

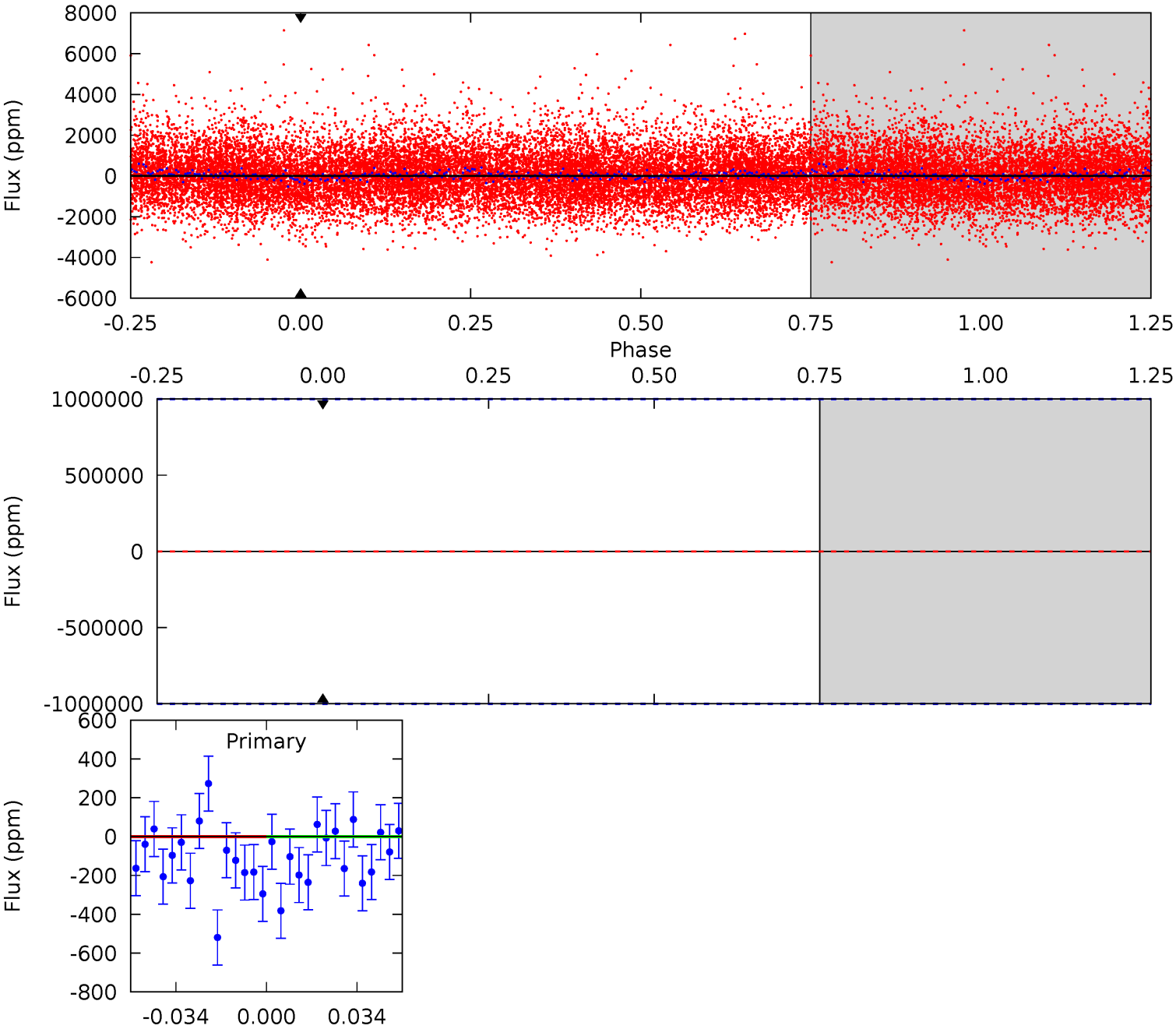
TCE 006878288-02 P= 1.215776 Days $T_0=132.561285$ (BKJD)



DV Model-Shift Uniqueness Test

006878288-02, P = 1.215776 Days, E = 132.307903 Days

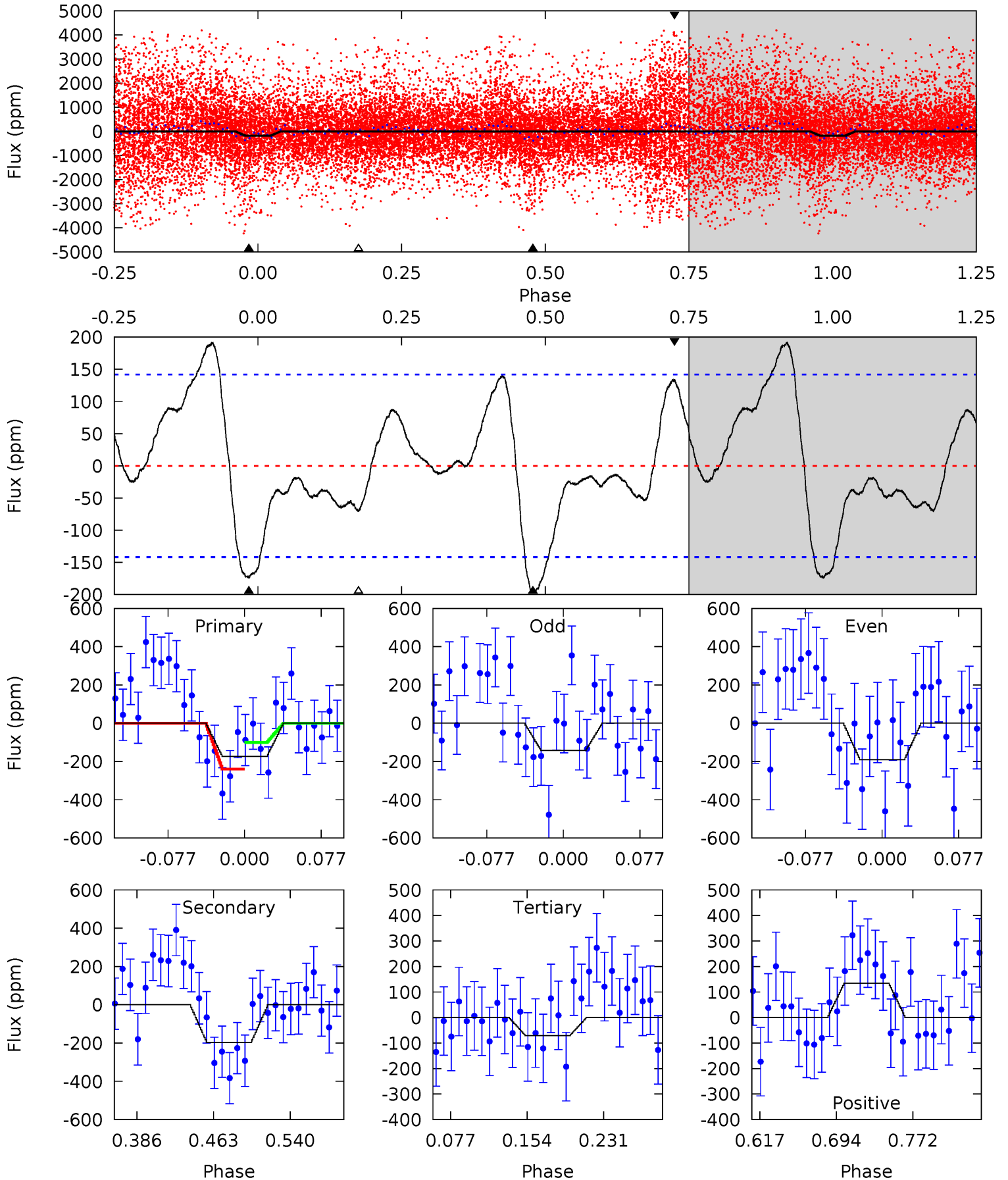
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

006878288-02, P = 1.215776 Days, E = 132.561285 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.66	6.40	2.29	4.39	4.62	1.77	1.91	3.37	1.27	4.10	2.01	0.79	4.32	0.49	2.25



Stellar Parameters For KIC 006878288

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	10906^{+304}_{-457}	$4.063^{+0.236}_{-0.193}$	$0.070^{+0.150}_{-0.600}$	$2.585^{+0.831}_{-0.831}$	$2.819^{+0.289}_{-0.674}$	$0.230^{+0.344}_{-0.122}$
	+3%/-4%	+6%/-5%	+214%/-857%	+32%/-32%	+10%/-24%	+150%/-53%
Source	KIC0	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 006878288-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$21.66^{+23.62}_{-15.31}$	6082^{+510}_{-550}	7559^{+87806}_{-79311}	$2.135^{+234.999}_{-156.008}$
Alt.	-196 ± 31	$20.37^{+21.01}_{-14.60}$	6028^{+549}_{-496}	-3430^{+11354}_{-1027}	$0.240^{+2.955}_{-0.181}$

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 $A_{obs} \gg 1.0$

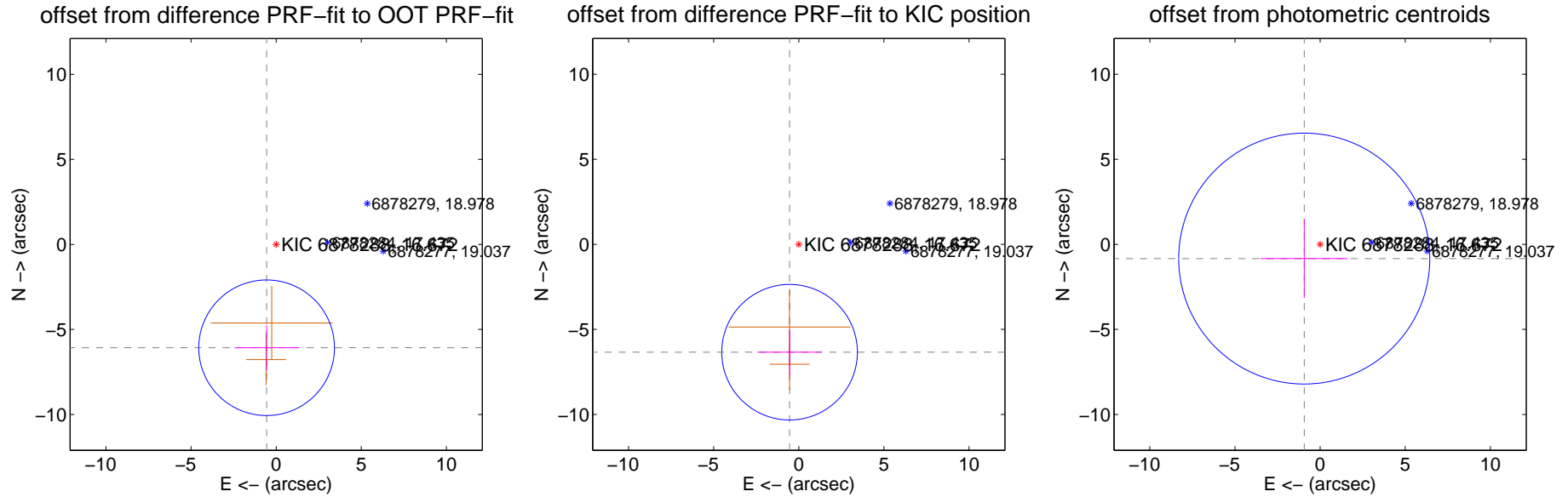
DV Centroid Data

Supplemental centroid analysis for 006878288-02. Kepler magnitude: 16.67. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

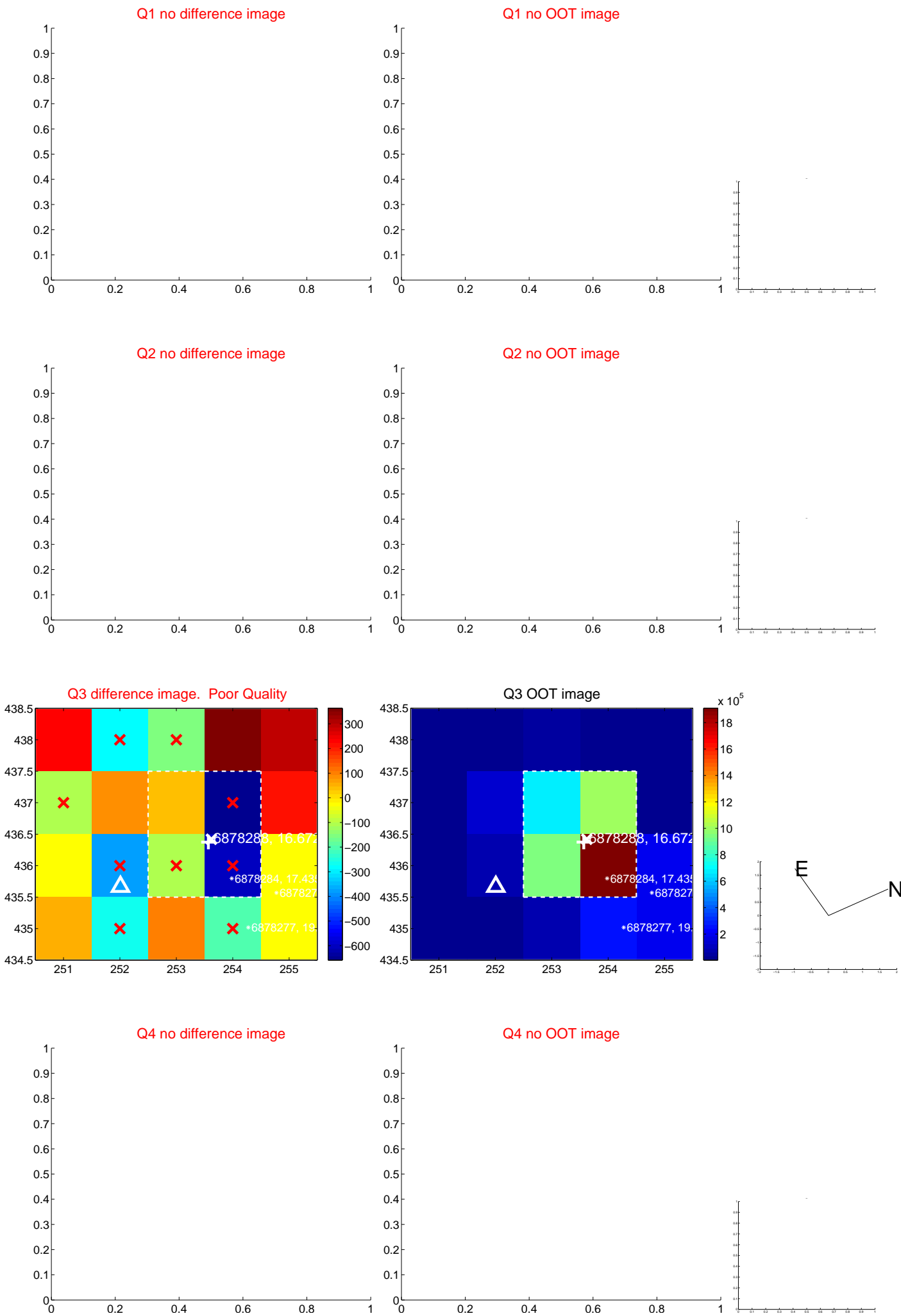
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.101 ± 1.328	4.59	0.561 ± 1.883	-6.075 ± 1.322
PRF-fit source offset from KIC position	6.363 ± 1.327	4.79	0.542 ± 1.883	-6.339 ± 1.322
photometric centroid source offset	1.25 ± 2.46	0.51	0.93 ± 2.56	-0.84 ± 2.32

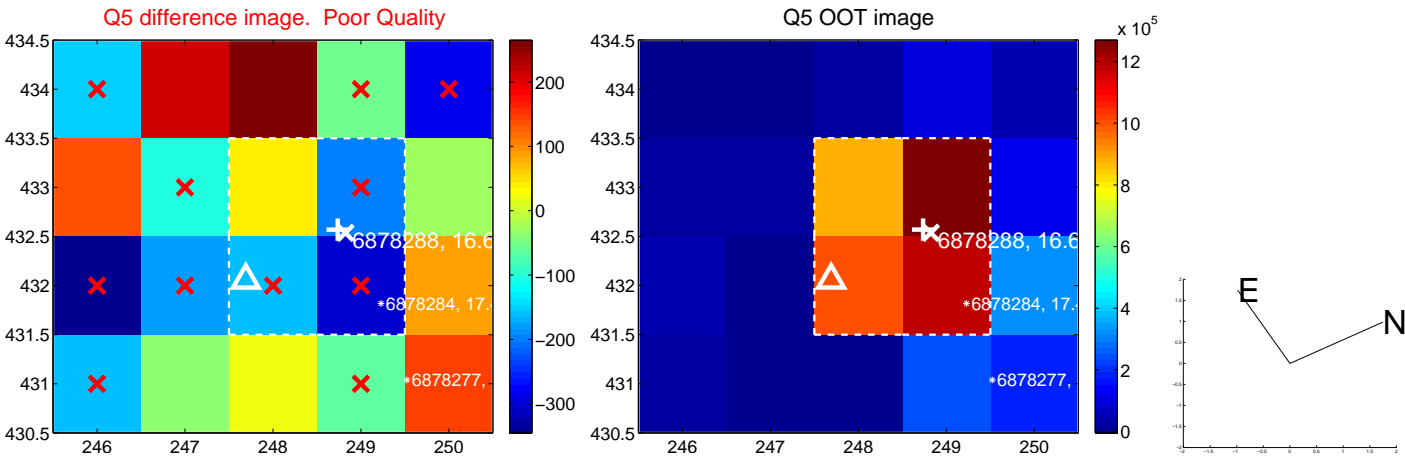


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

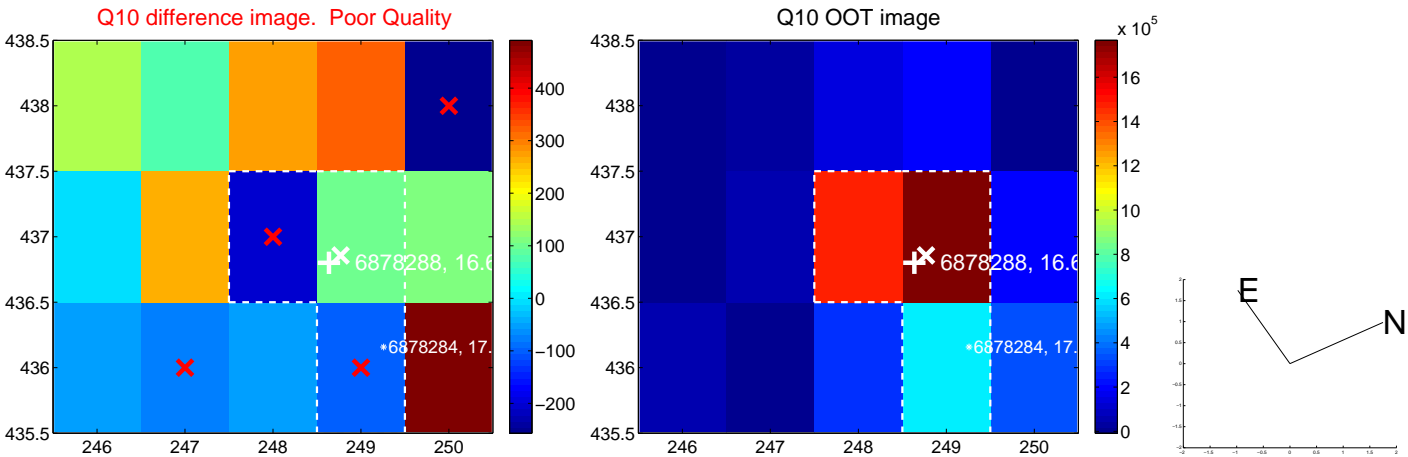
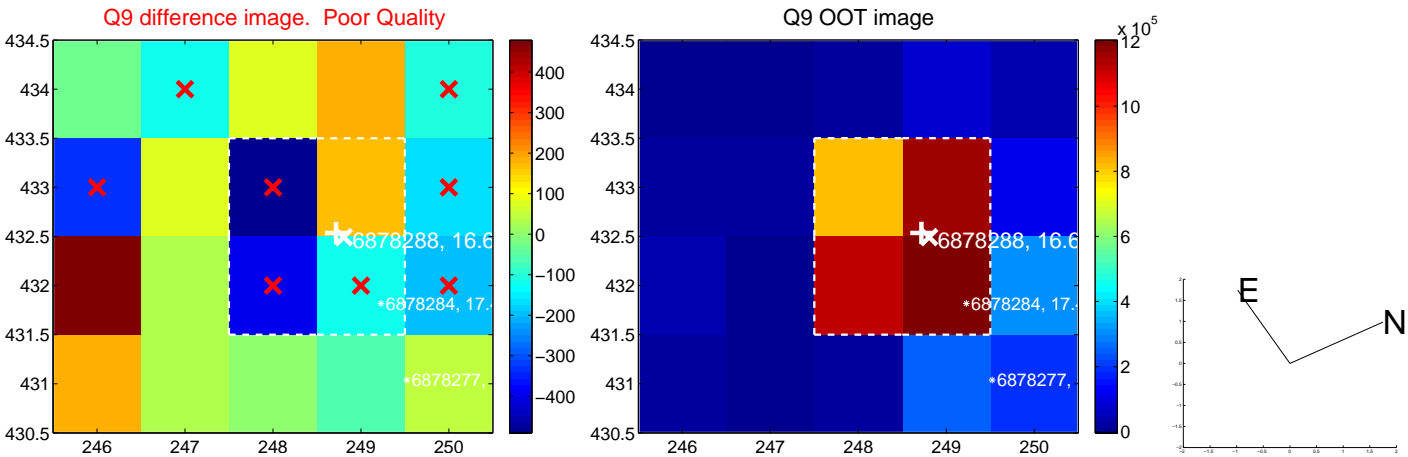
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



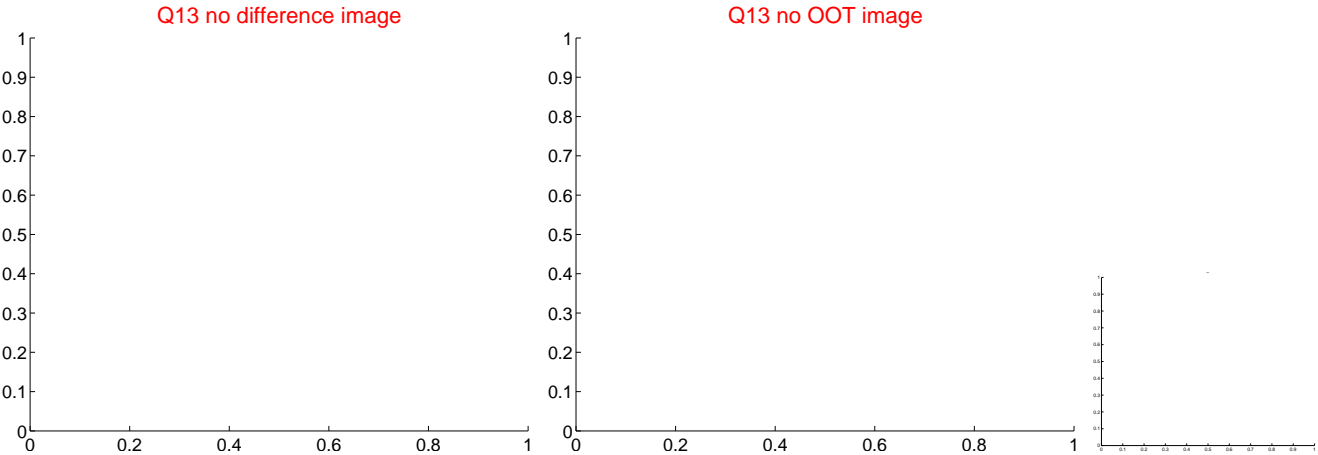
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



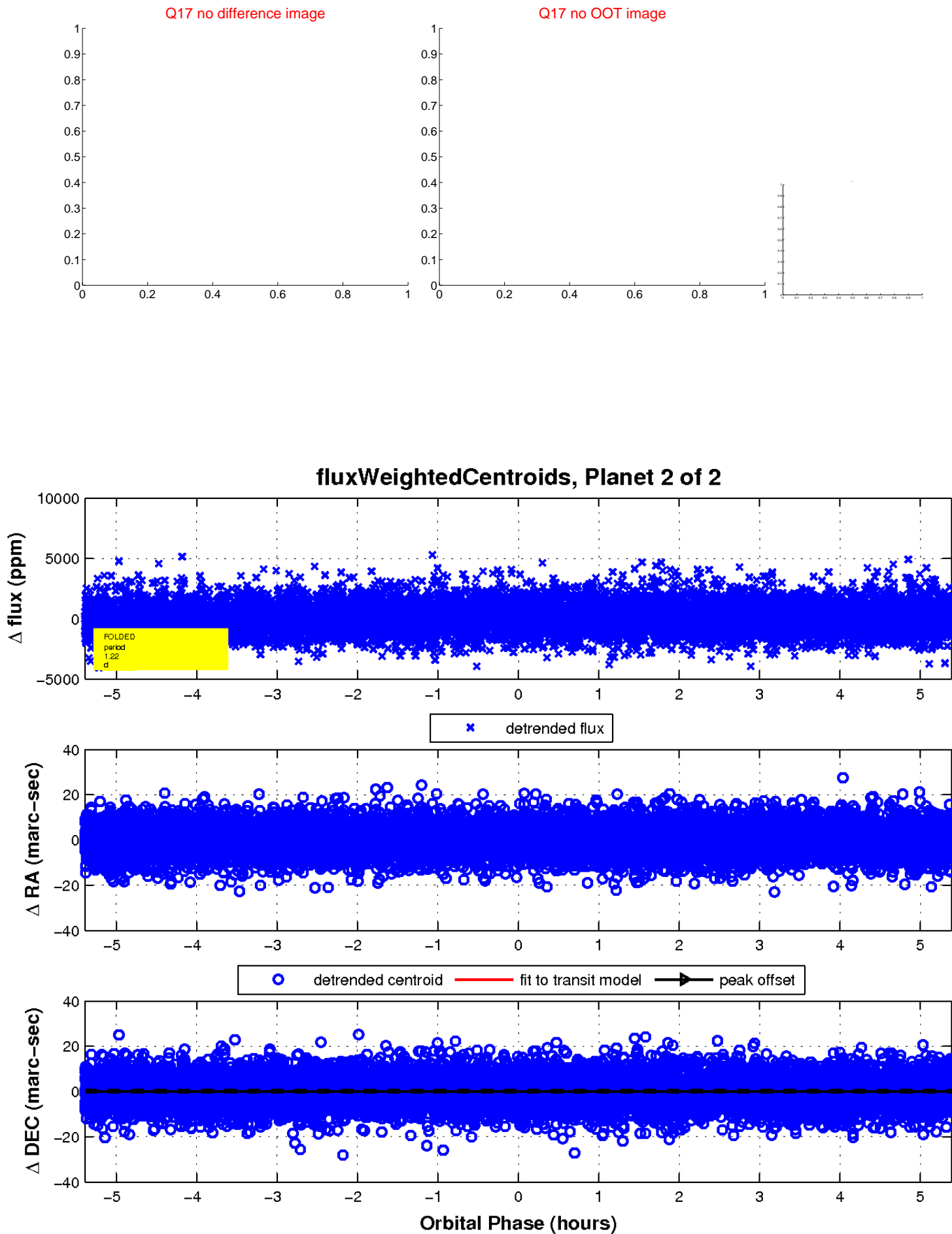
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

Declination

