

KIC 001872885

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})
001872885-01	OBS	No	470.267326	269.470645	3718.7	3.287	10.4	7.0	0.61	3847	3.64	0.07
001872885-02	OBS	No	463.745639	245.507007	4615.6	7.128	10.2	6.4	0.61	3847	3.98	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001872885-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
001872885-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

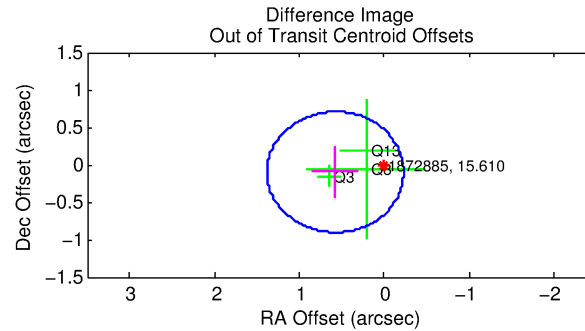
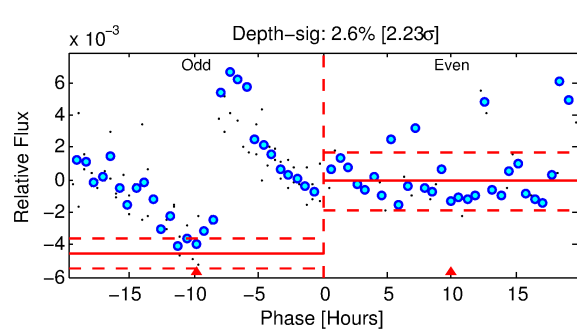
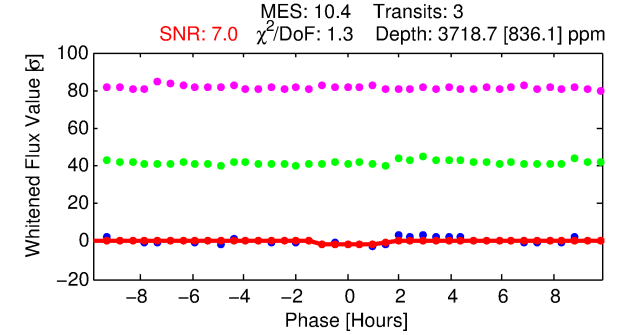
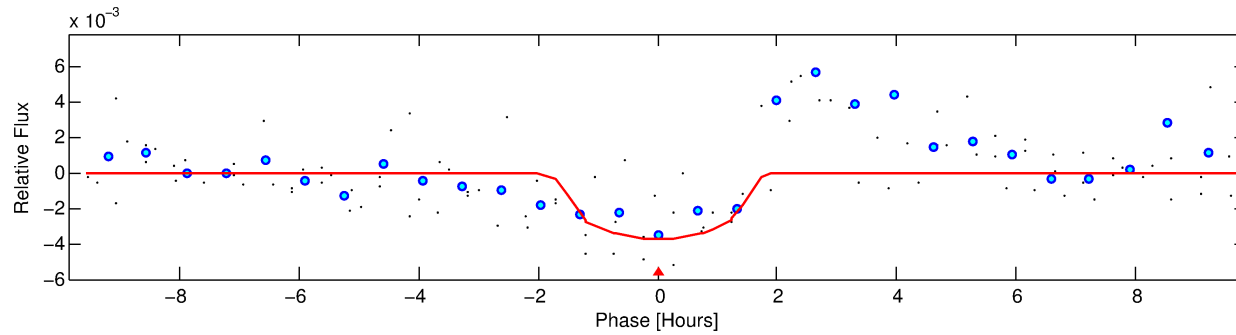
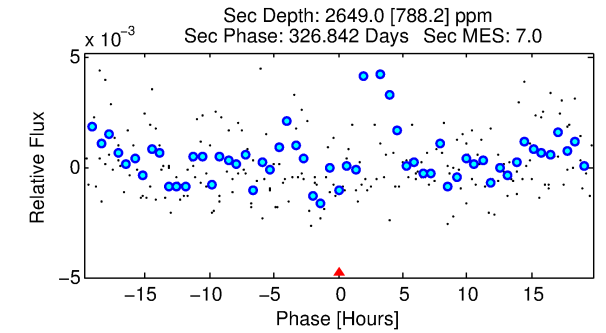
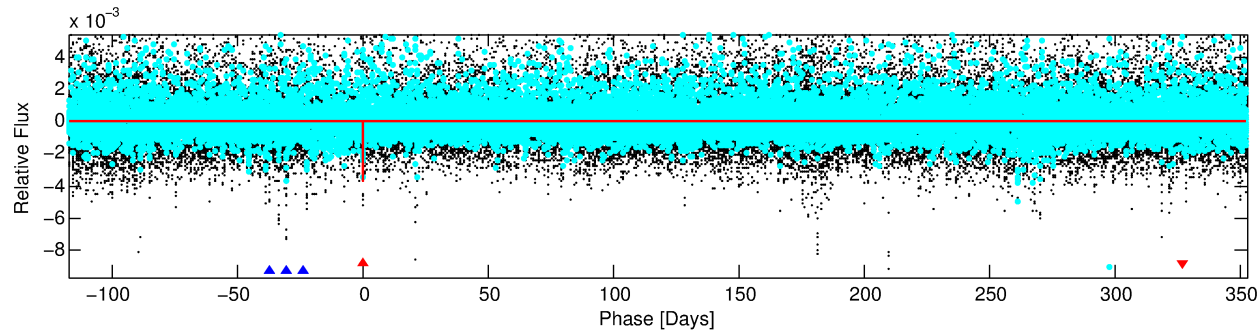
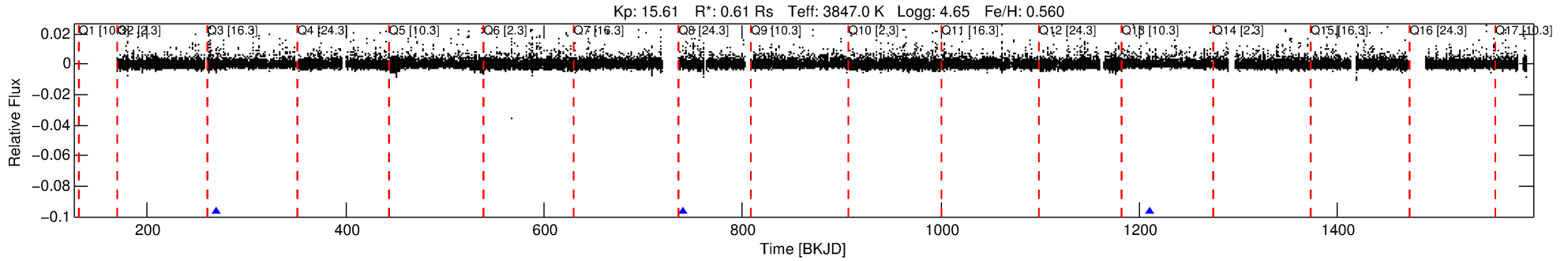
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001872885-01

No Significant Match Found

DV One-Page Summary

KIC: 1872885 Candidate: 1 of 2 Period: 470.267 d



DV Fit Results:

Period = 470.26733 [0.00767] d
 Epoch = 269.4706 [0.0100] BKJD
 Rp/R* = 0.0543 [0.1081]
 a/R* = 1103.33 [6278.32]
 b = 0.30 [17.53]
 Seff = 0.07 [0.01]
 Teq = 133 [7] K
 Rp = 3.64 [7.25] Re
 a = 1.0047 [0.0922] AU
 Ag = 111183.73 [444106.91] [0.2
 Tefp = 3746 [3741] K [0.97σ]

DV Diagnostic Results:

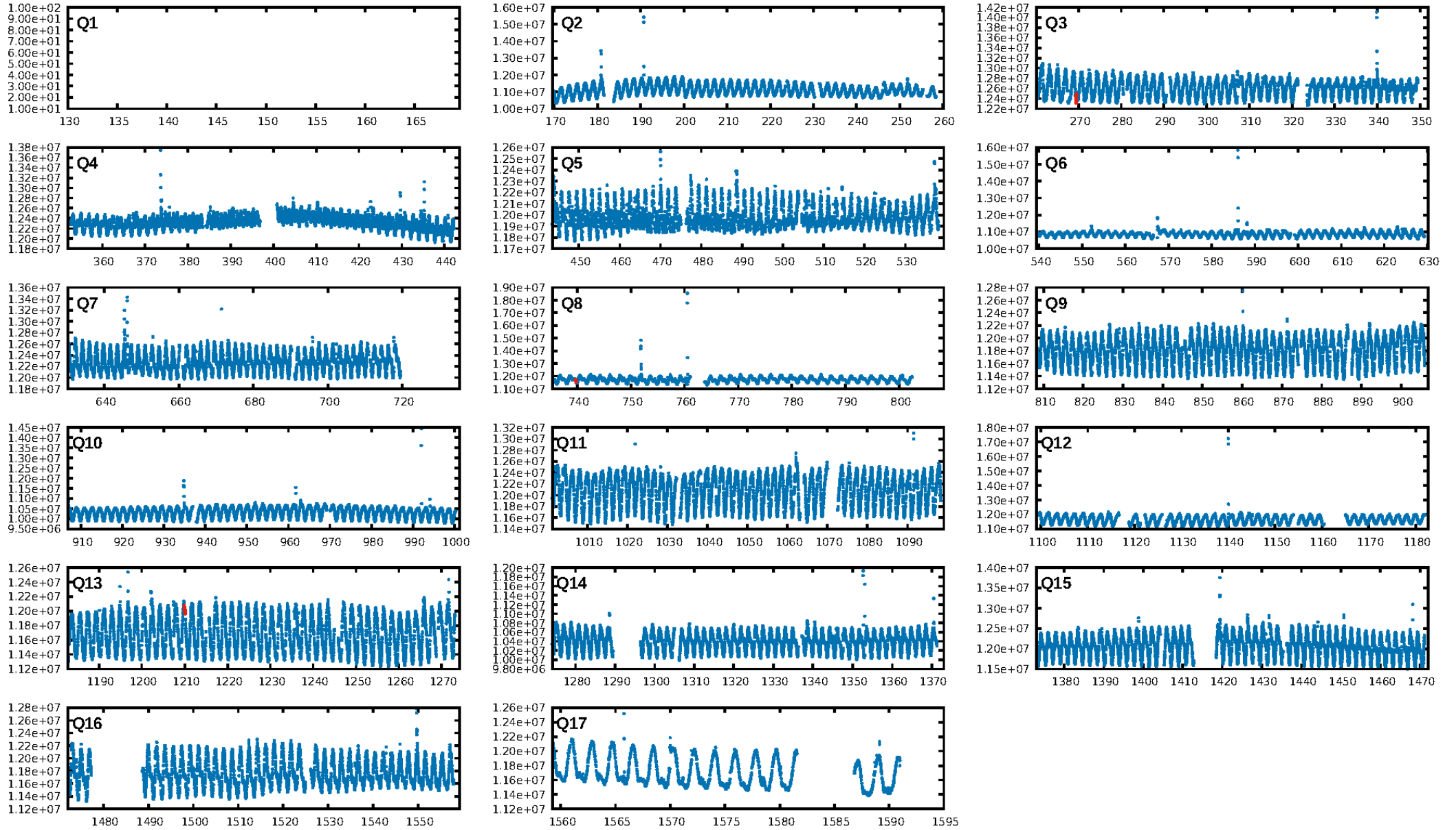
ShortPeriod-sig: 100.0% [19.94σ]
 LongPeriod-sig: N/A
 ModelChiSquare2-sig: 0.1%
 ModelChiSquareGof-sig: 54.4%
 Bootstrap-pfa: 3.01e-08
 RollingBand-fgt: 1.00 [3/3]
 GhostDiagnostic-chr: 5.585

Centroid-sig: 4.6%
 Centroid-so: 1.964 arcsec [1.73σ]
 OotOffset-rm: 0.583 arcsec [2.17σ]
 OotOffset-rm: 0.696 arcsec [2.52σ]
 OotOffset-st: 0/1/1/1 [3]
 KicOffset-st: 0/1/1/1 [3]
 DiffImageQuality-fgm: 0.67 [2/3]
 DiffImageOverlap-fno: 1.00 [3/3]

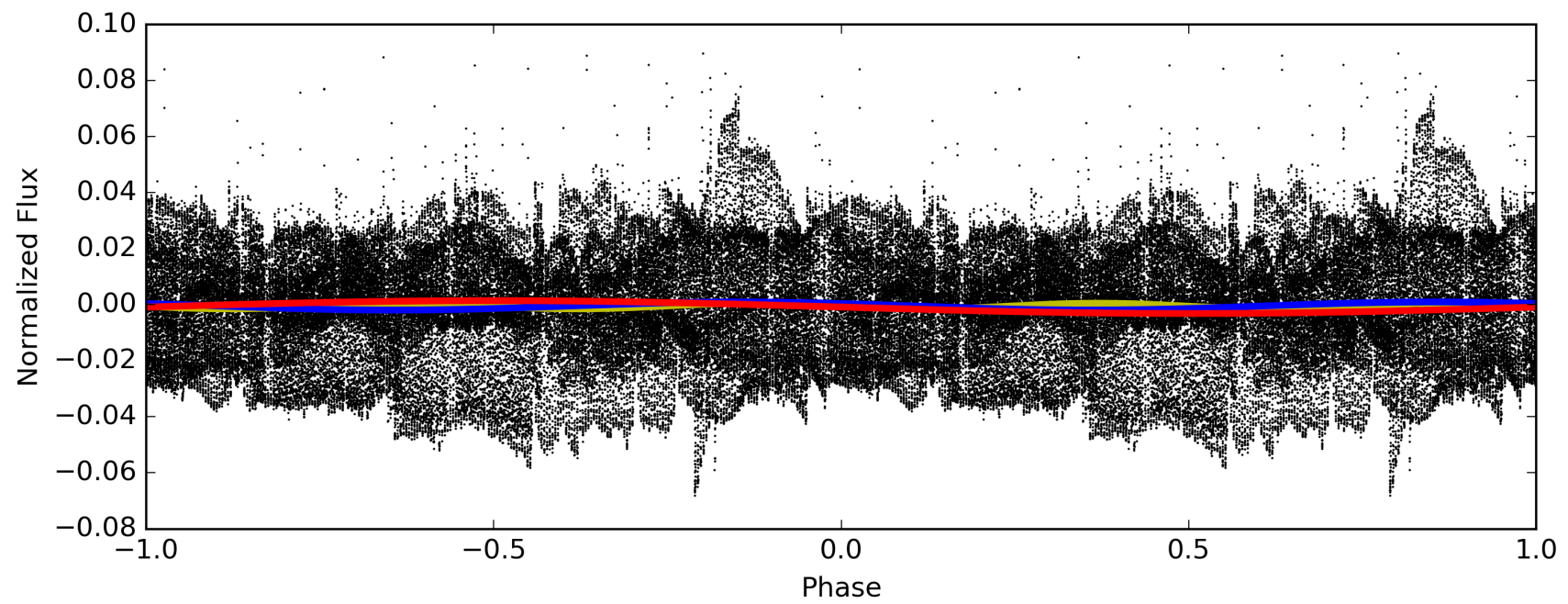
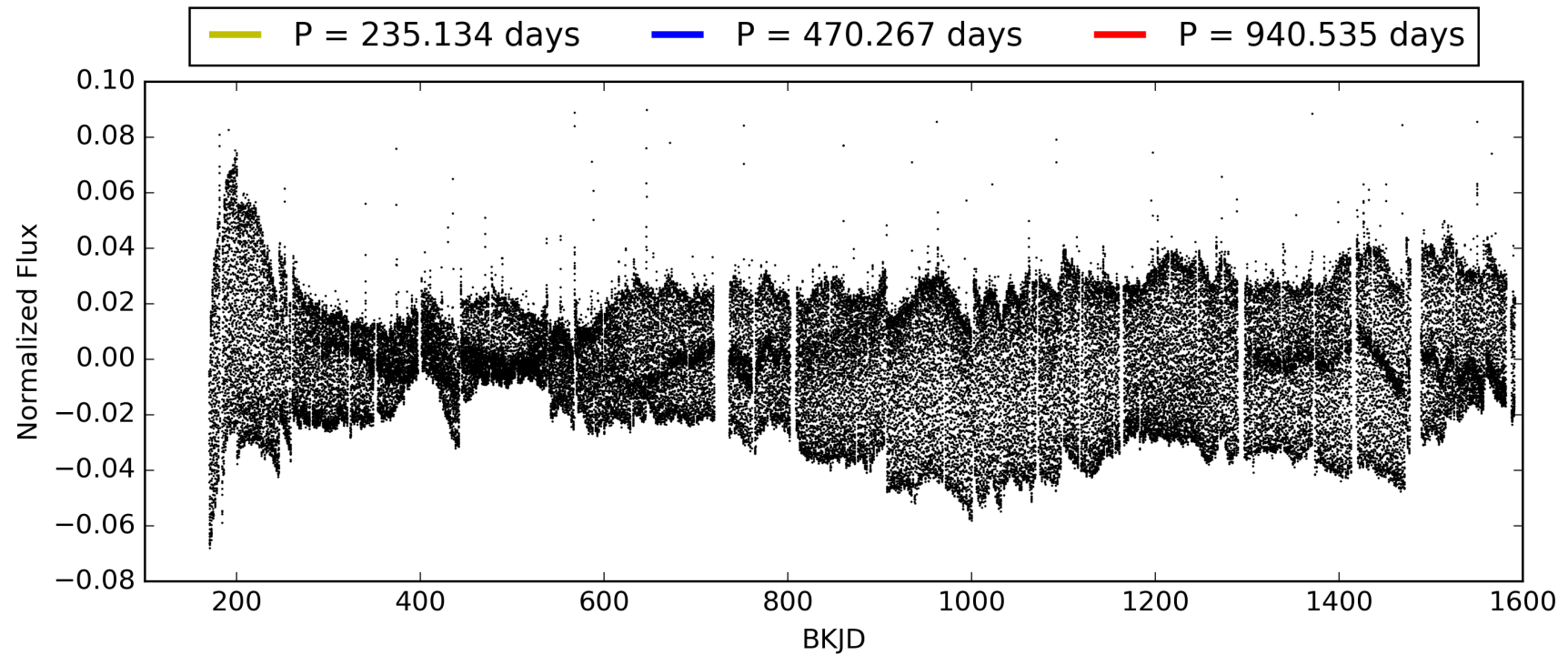
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- **Date Generated:** 30-Jan-2016 09:28:45 Z

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

TCE 001872885-01, PDC Light Curves

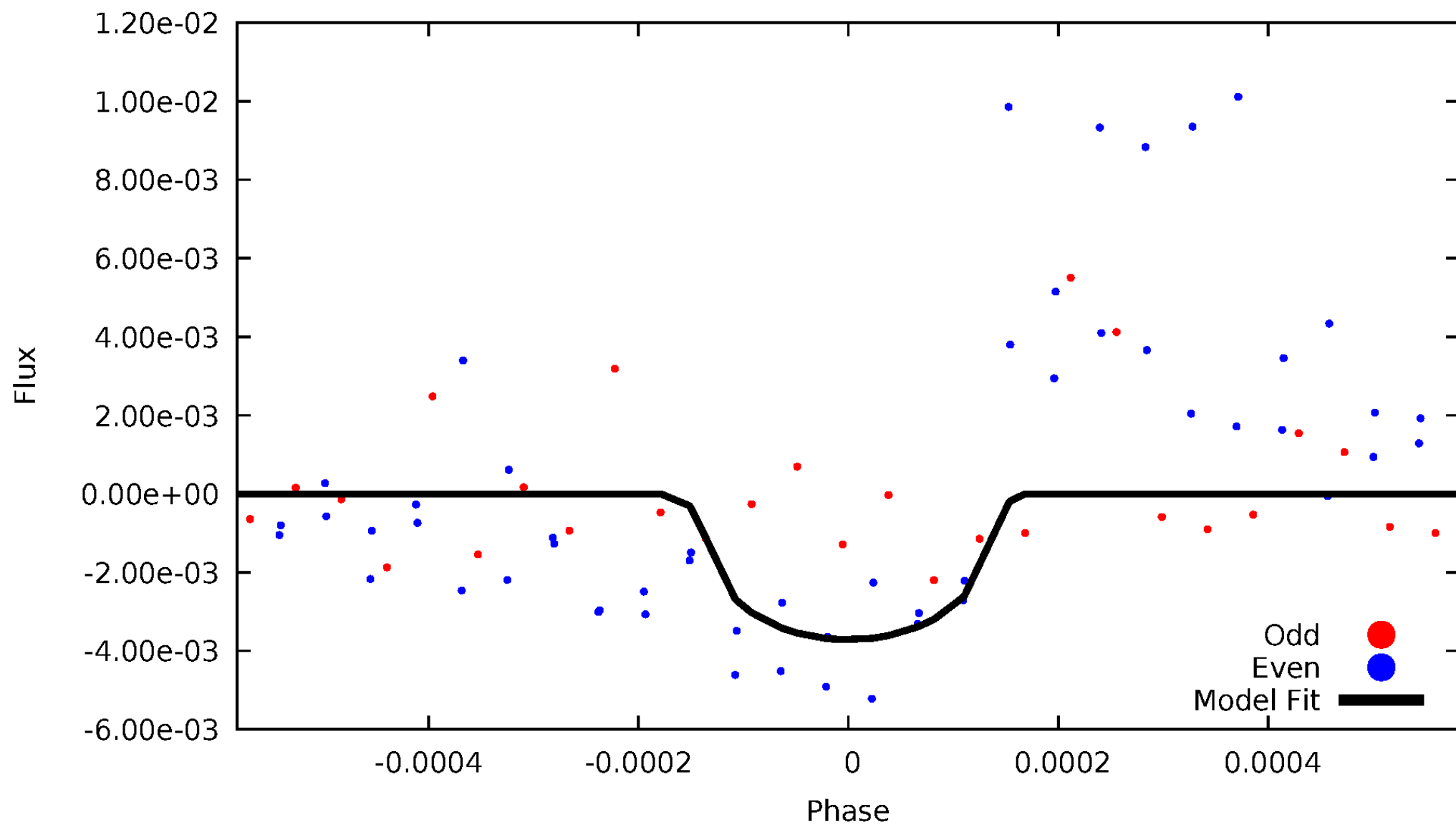


TCE 001872885-01



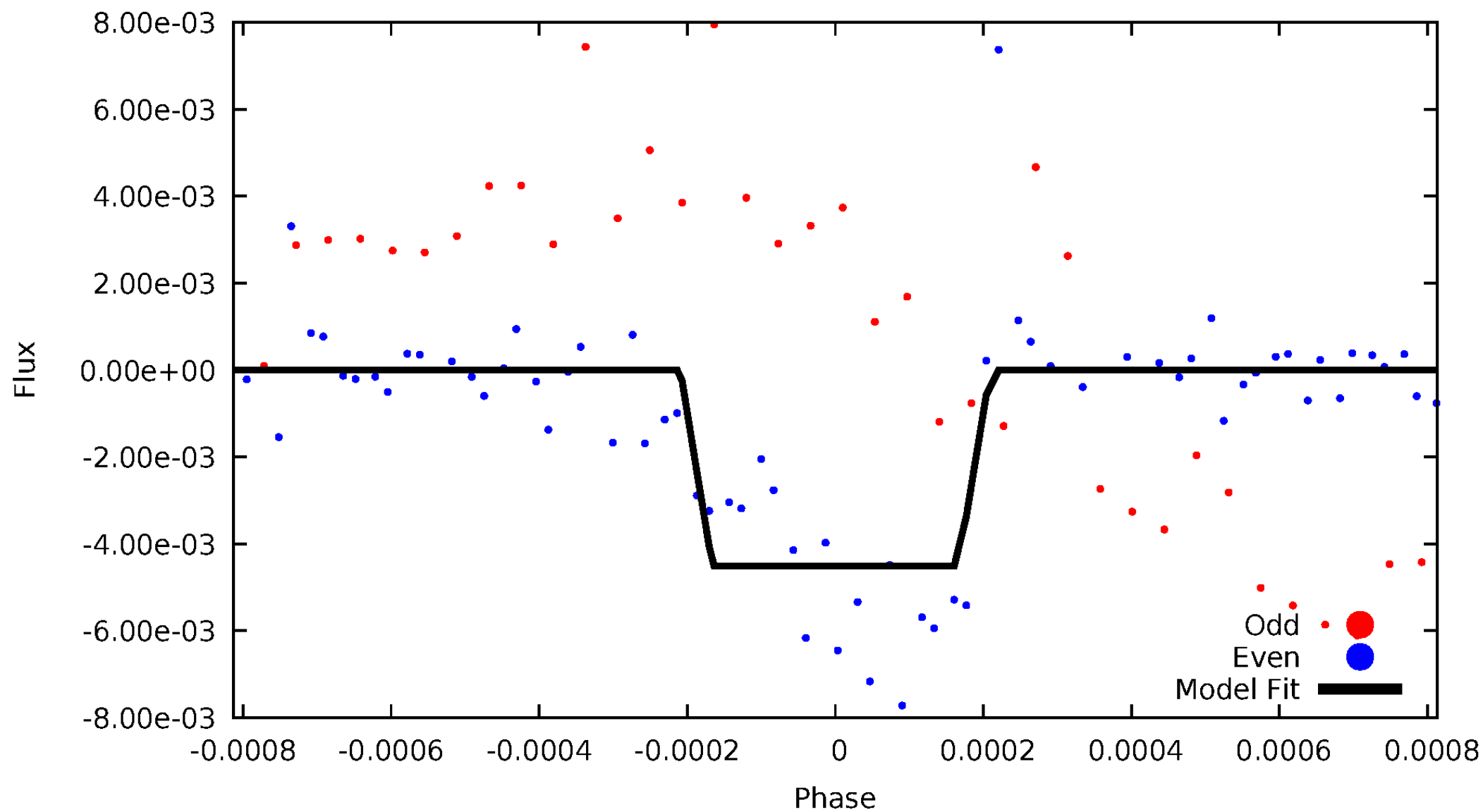
DV Odd/Even

TCE 001872885-01



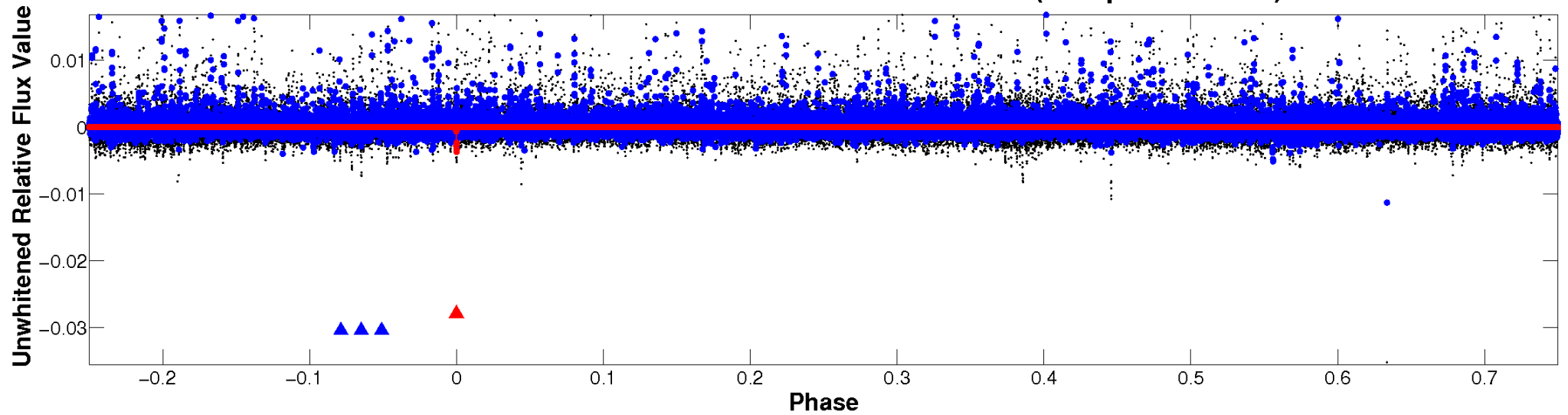
ALT Odd/Even

TCE 001872885-01

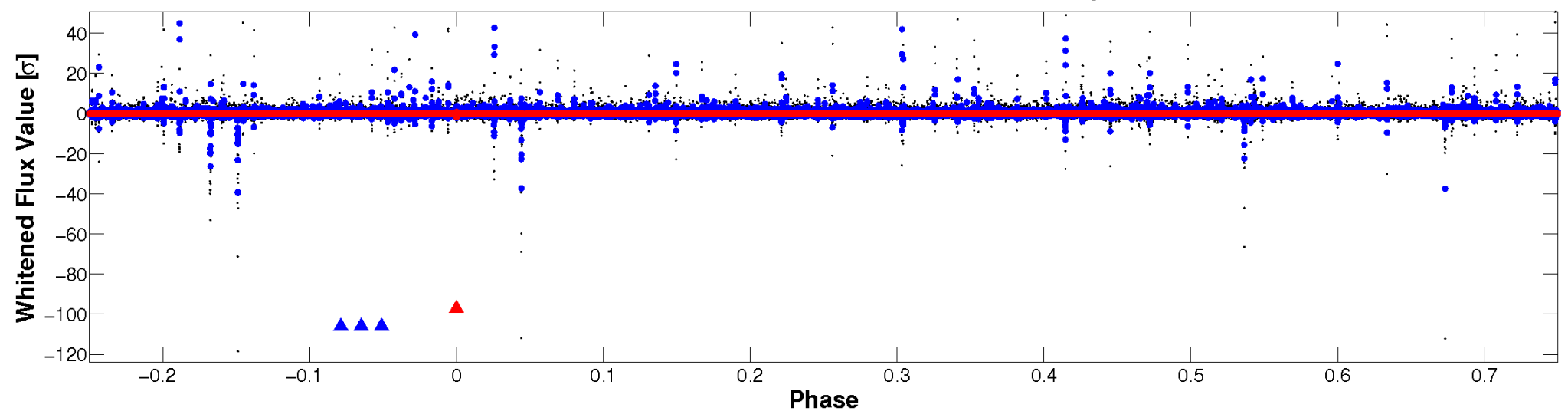


Non-Whitened Vs. Whitened Light Curve

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

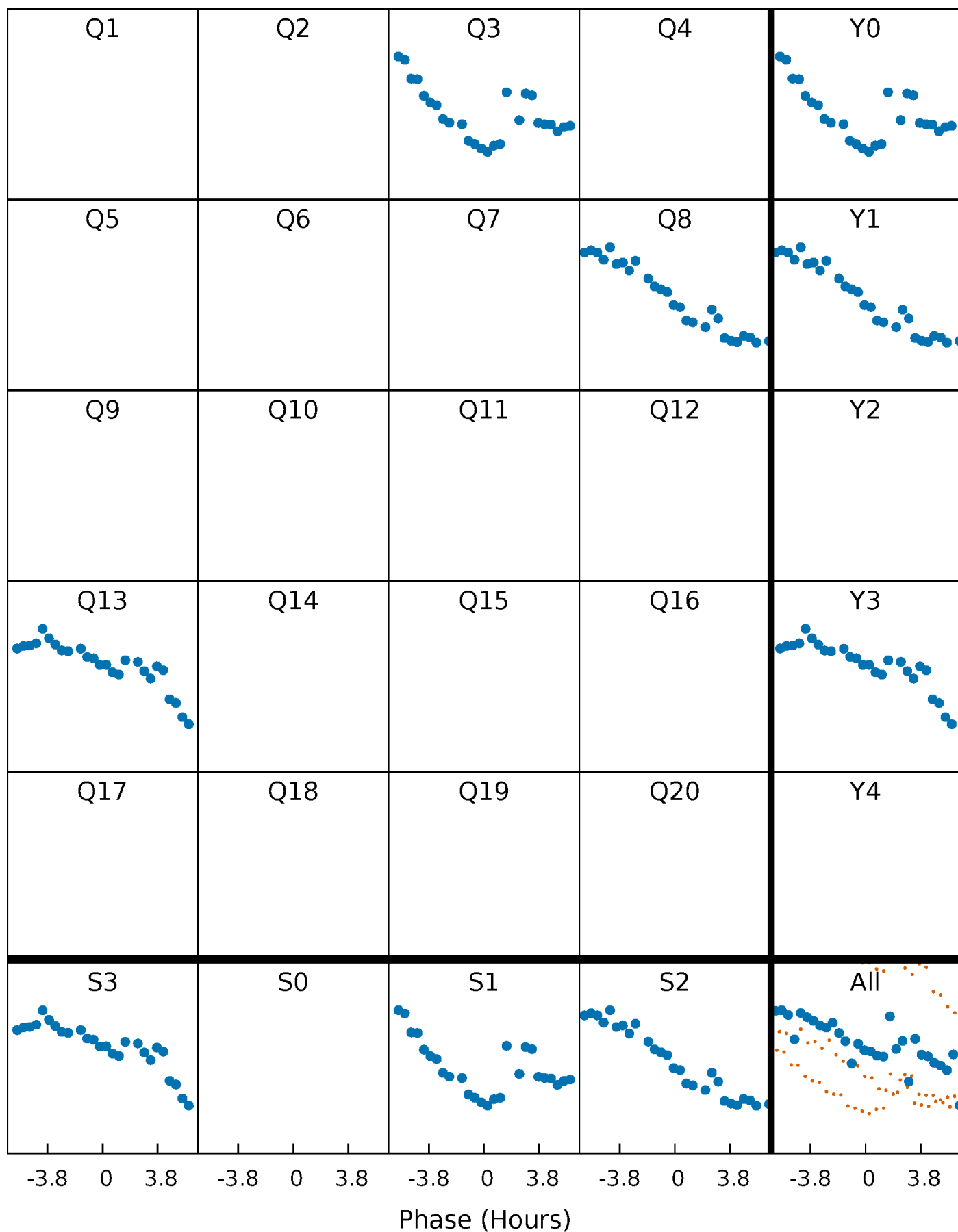


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



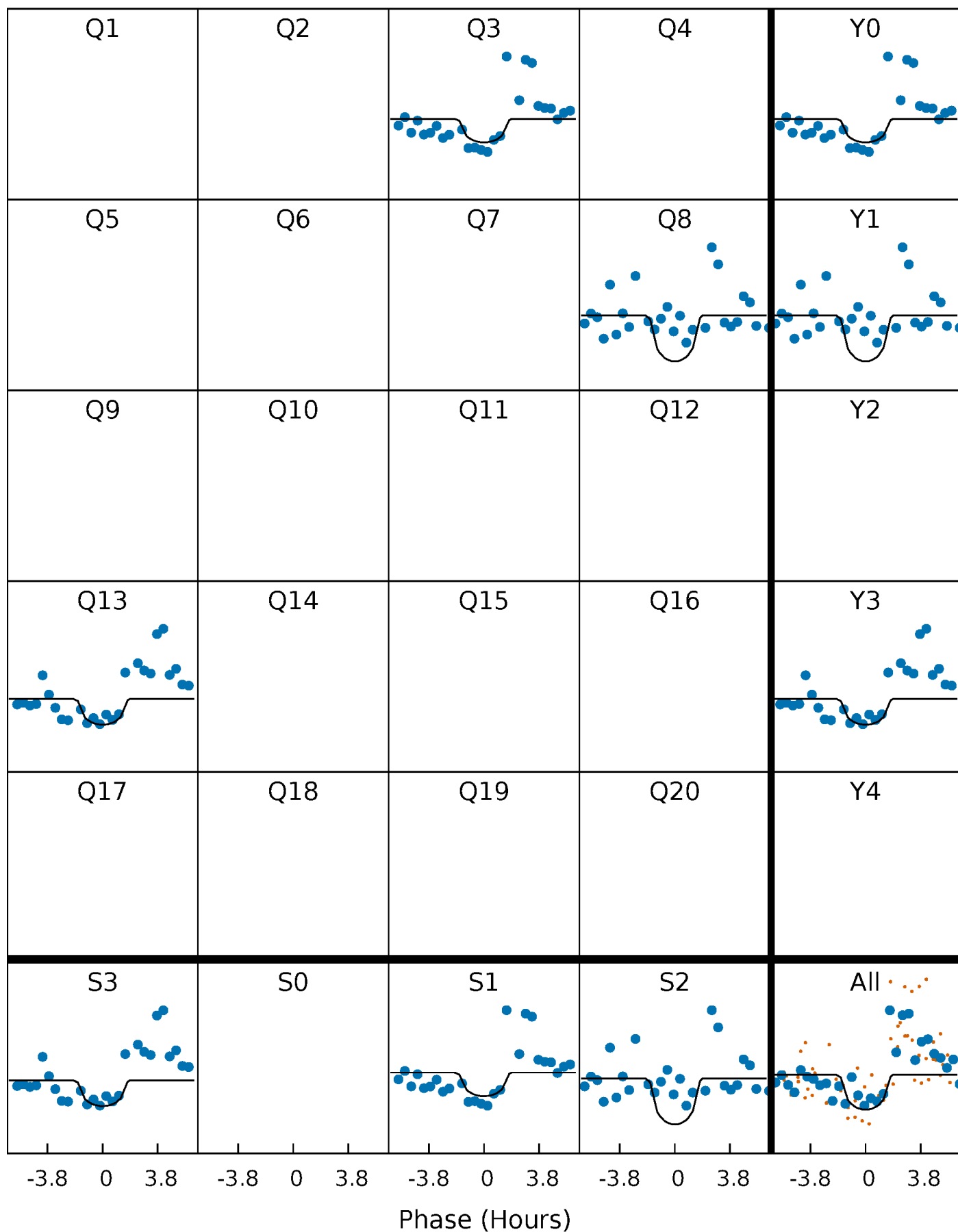
PDC Quarter-Phased Transit Curves

TCE 001872885-01 P=470.267327 Days $T_0=269.470645$ (BKJD)



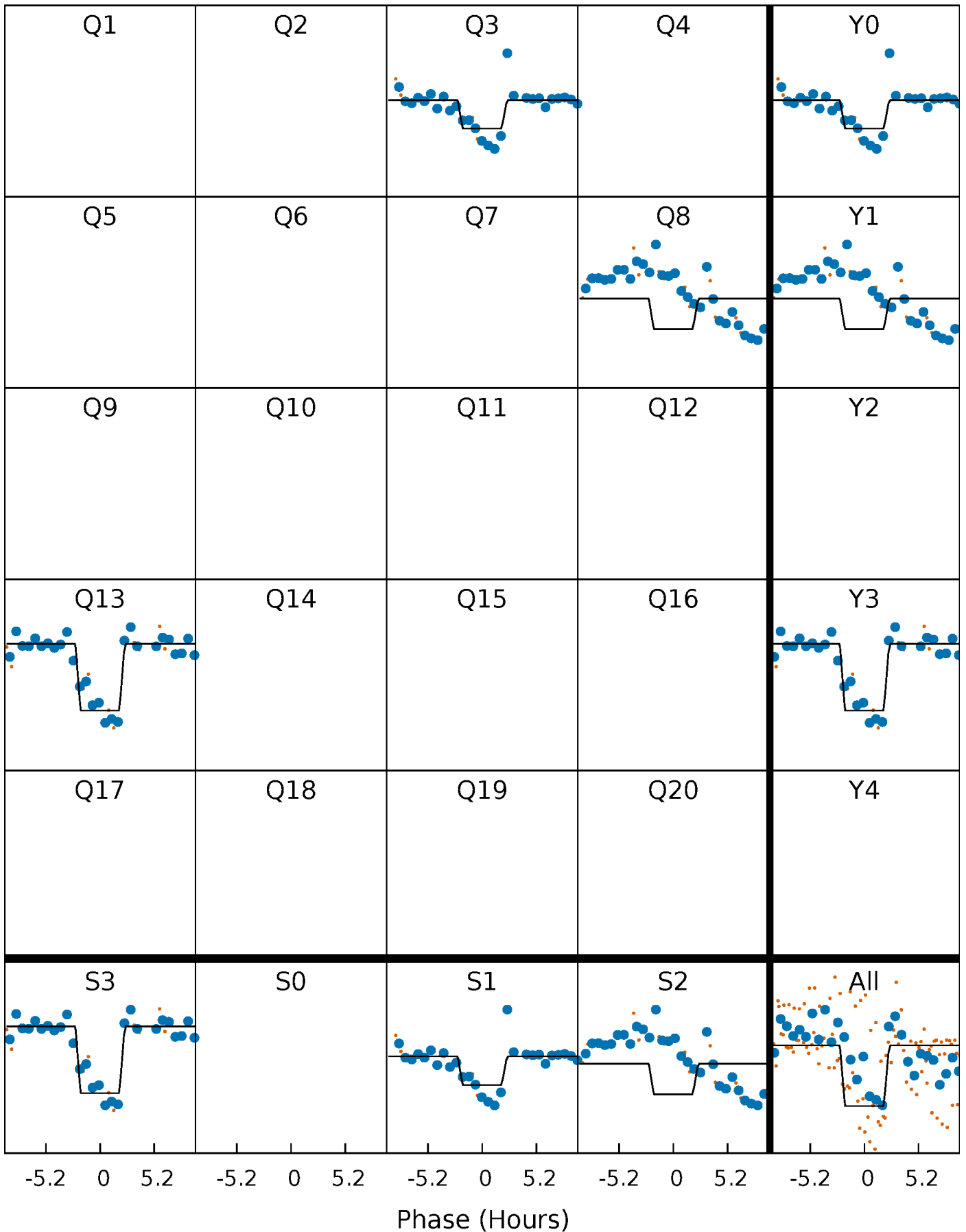
DV Quarter-Phased Transit Curves

TCE 001872885-01 P=470.267327 Days $T_0=269.470645$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

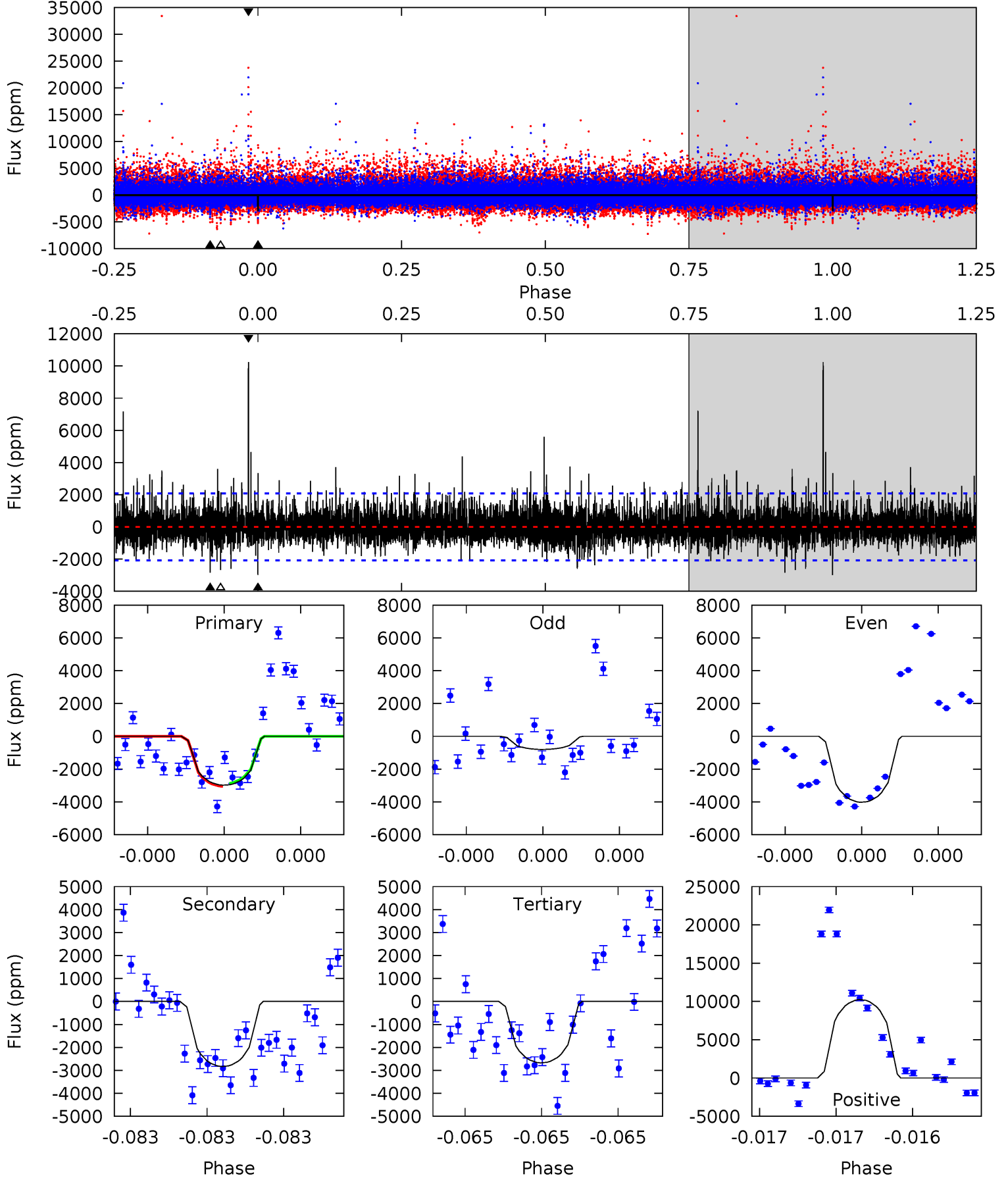
TCE 001872885-01 P=470.271572 Days $T_0=269.438751$ (BKJD)



DV Model-Shift Uniqueness Test

001872885-01, P = 470.267327 Days, E = 269.470645 Days

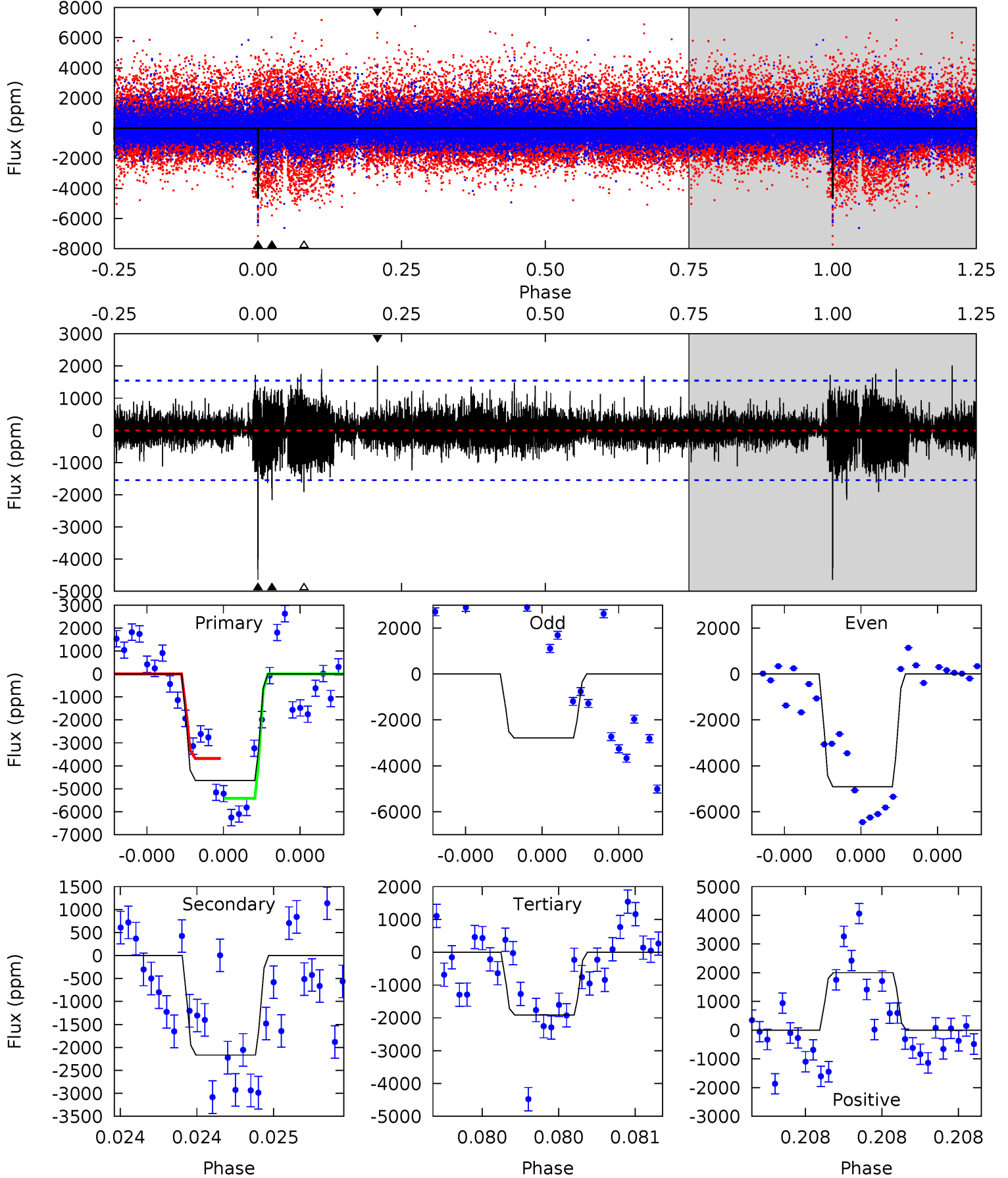
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.08	7.68	7.25	27.8	5.65	3.60	2.02	0.83	-19.7	0.43	-20.1	1.64	0.90	0.77	0.24



Alt Model-Shift Uniqueness Test

001872885-01, P = 470.271572 Days, E = 269.438751 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	7.85	6.93	7.27	5.62	3.55	1.35	9.89	9.55	0.93	0.58	3.65	0.55	0.30	3.15



Stellar Parameters For KIC 001872885

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3847^{+120}_{-147}	$4.648^{+0.067}_{-0.018}$	$0.560^{+0.050}_{-0.300}$	$0.614^{+0.023}_{-0.070}$	$0.612^{+0.035}_{-0.060}$	$3.720^{+1.190}_{-0.266}$
	+3%/-4%	+1%/-0%	+9%/-54%	+4%/-11%	+6%/-10%	+32%/-7%
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 001872885-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2832 ± 369	$6.24^{+6.28}_{-4.14}$	183^{+7}_{-8}	3192^{+1393}_{-562}	$40831^{+319025}_{-30542}$
Alt.	-2166 ± 276	$7.02^{+5.62}_{-4.41}$	184^{+7}_{-9}	2971^{+1135}_{-431}	$24733^{+155527}_{-17088}$

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 $A_{obs} \gg 1.0$

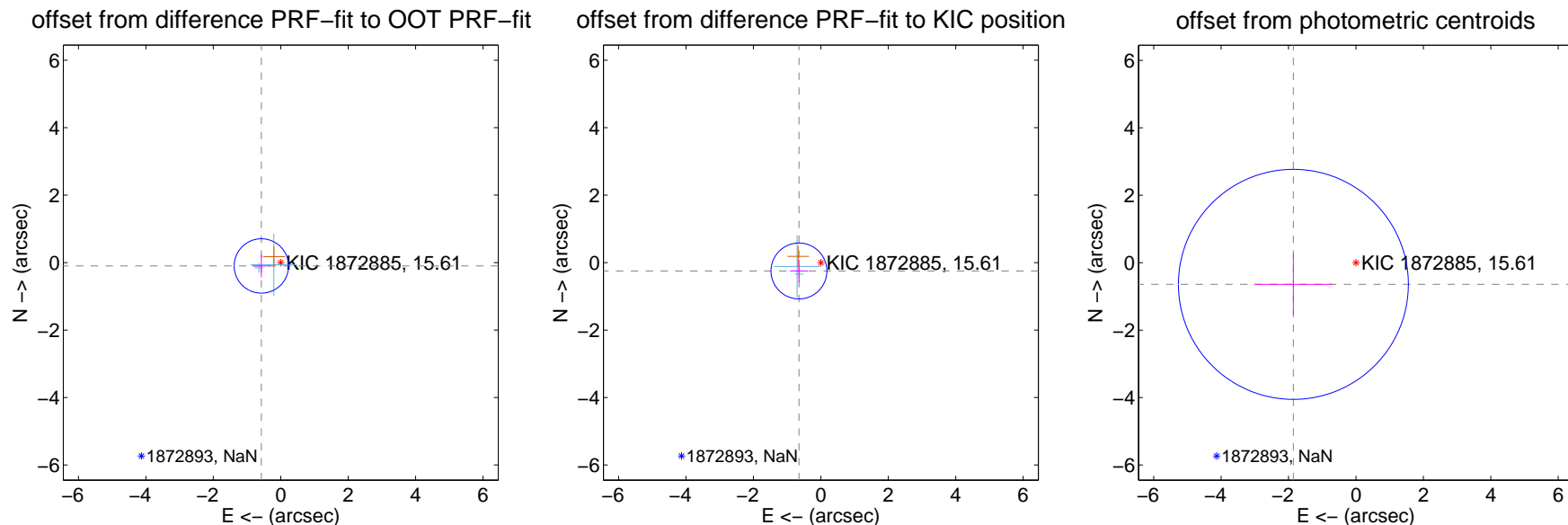
DV Centroid Data

Supplemental centroid analysis for 001872885-01. Kepler magnitude: 15.61. Transit SNR 7.00

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

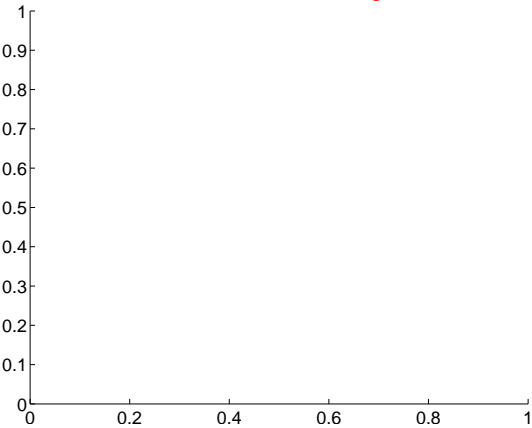
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.583 ± 0.269	2.17	0.575 ± 0.266	-0.100 ± 0.335
PRF-fit source offset from KIC position	0.696 ± 0.276	2.52	0.650 ± 0.266	-0.248 ± 0.335
photometric centroid source offset	1.96 ± 1.14	1.73	1.86 ± 1.16	-0.64 ± 0.90



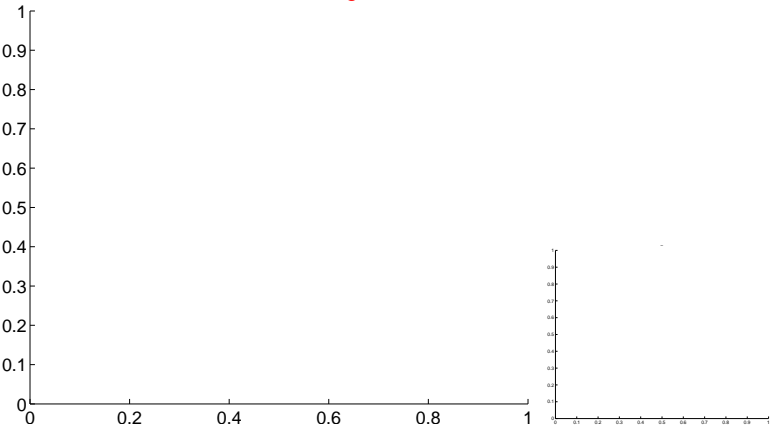
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

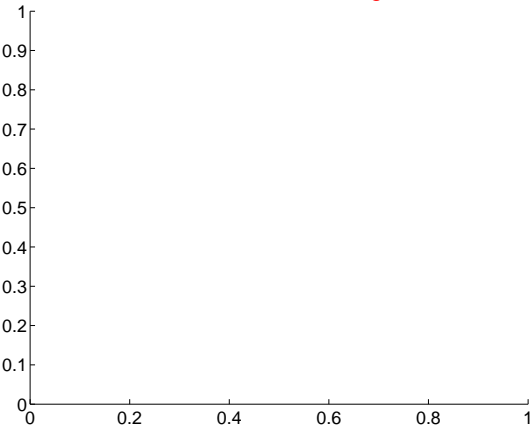
Q1 no difference image



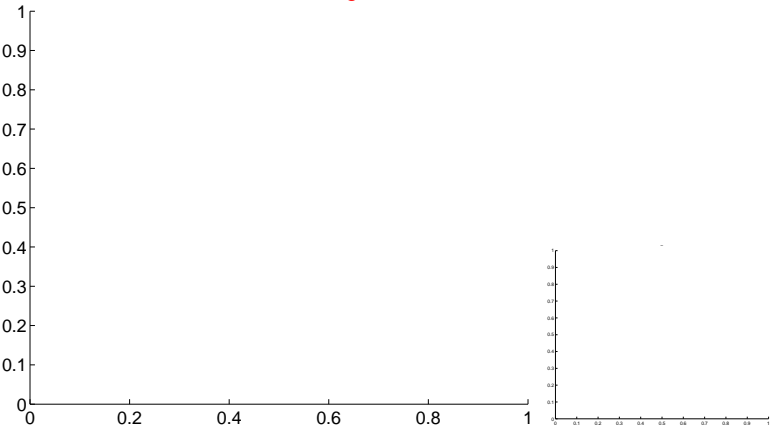
Q1 no OOT image



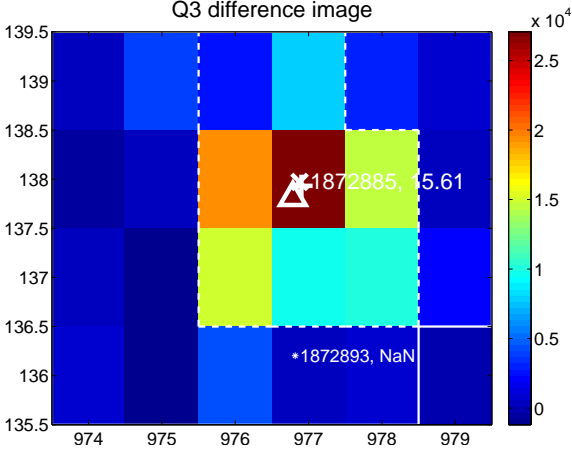
Q2 no difference image



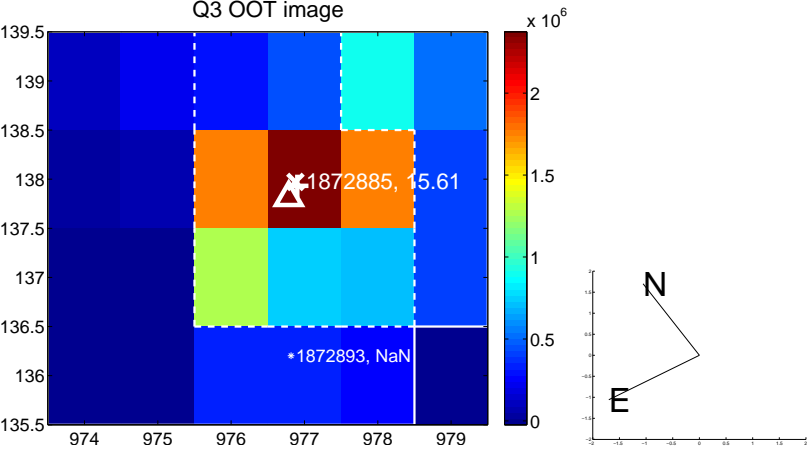
Q2 no OOT image



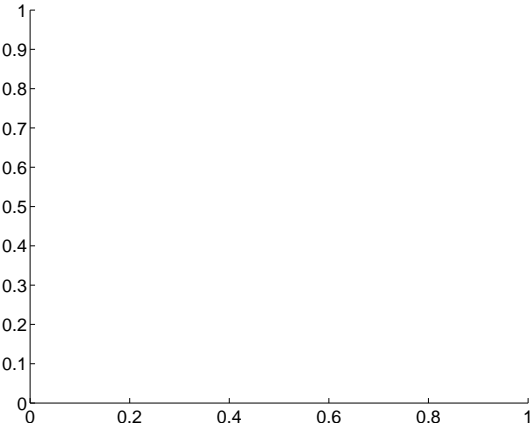
Q3 difference image



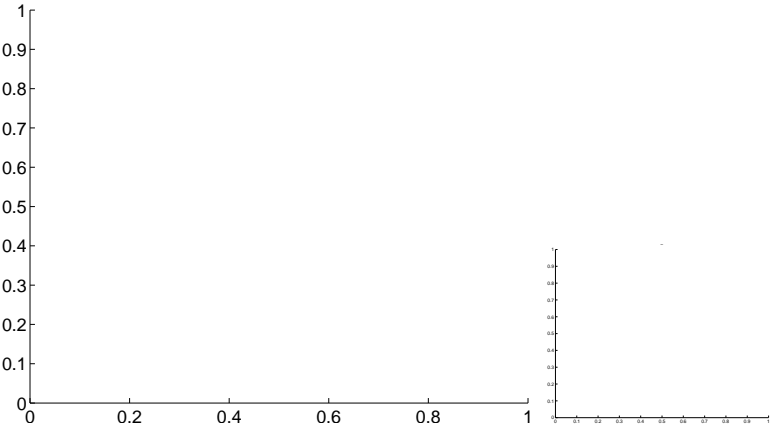
Q3 OOT image



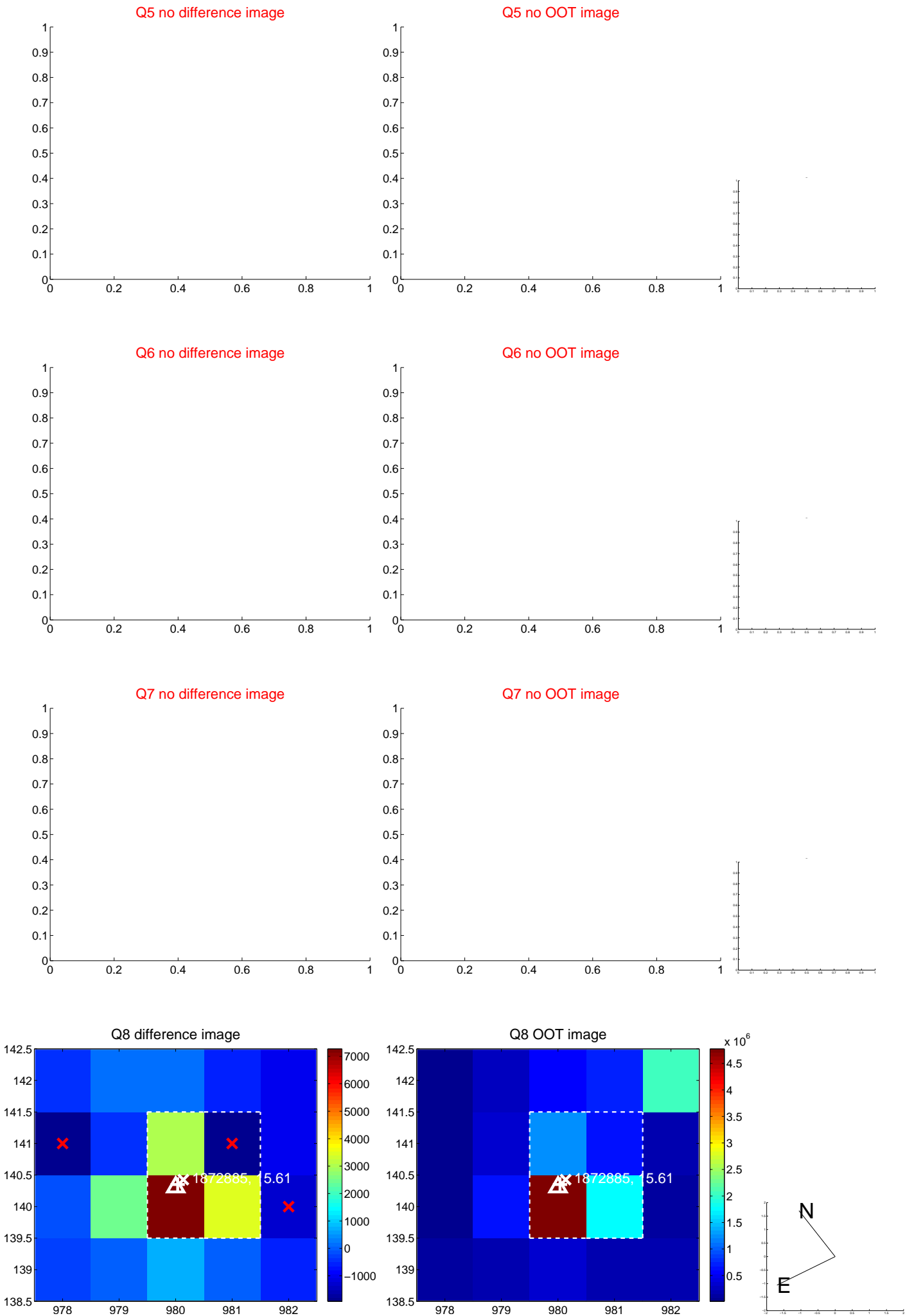
Q4 no difference image



Q4 no OOT image



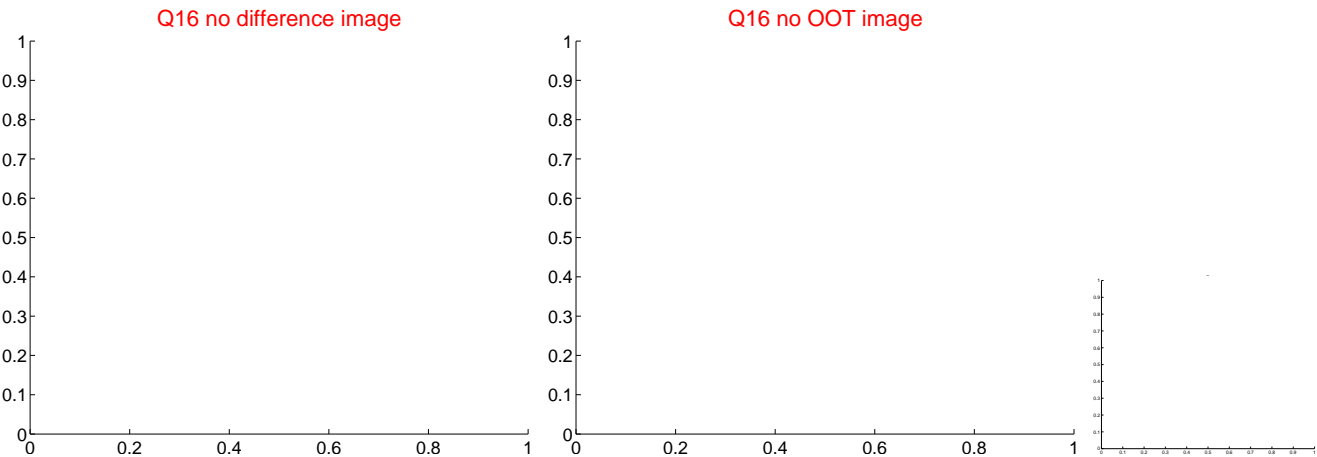
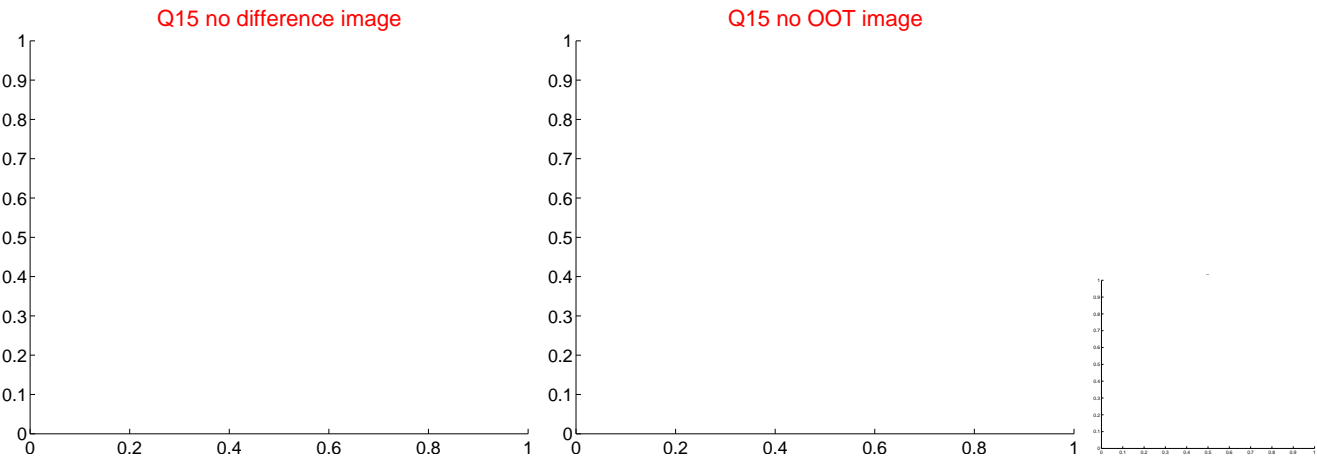
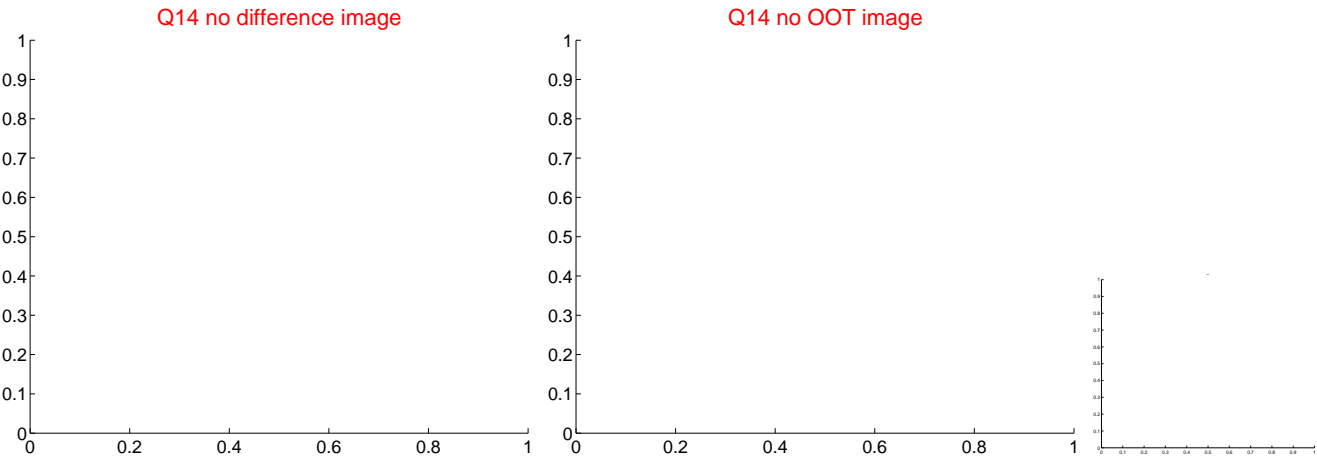
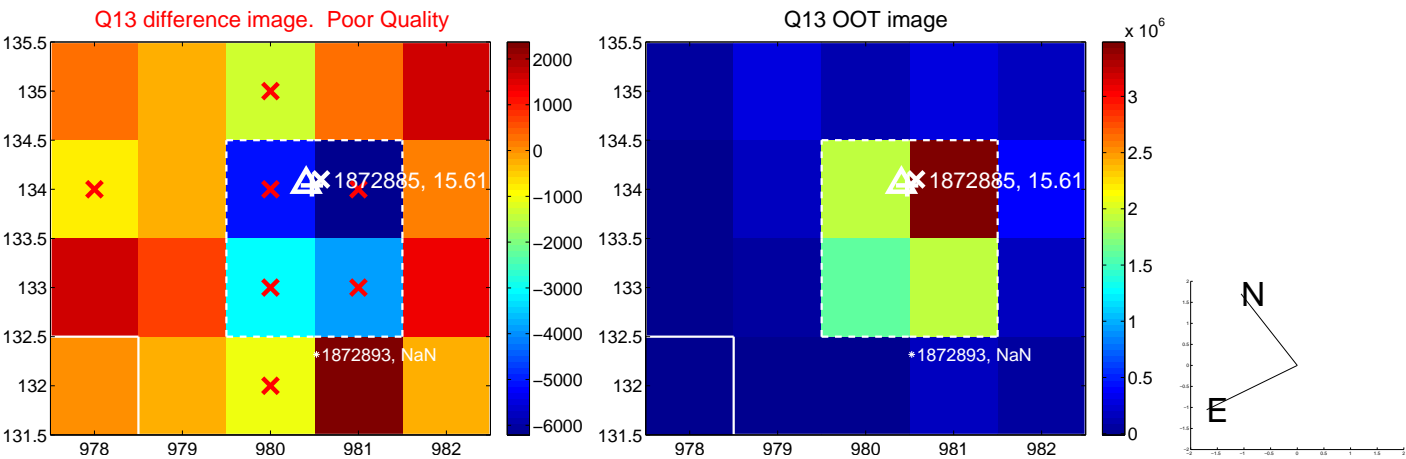
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



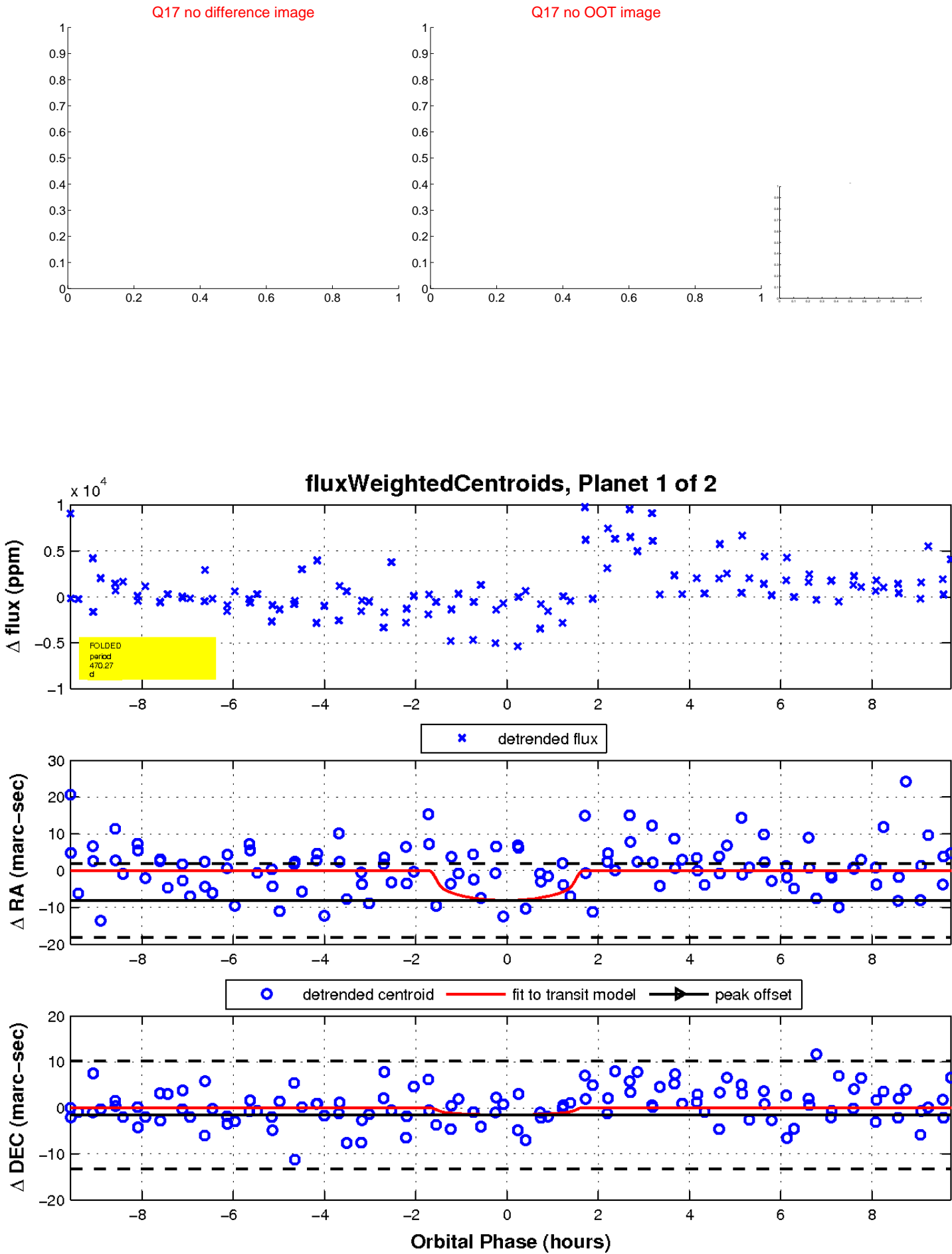
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

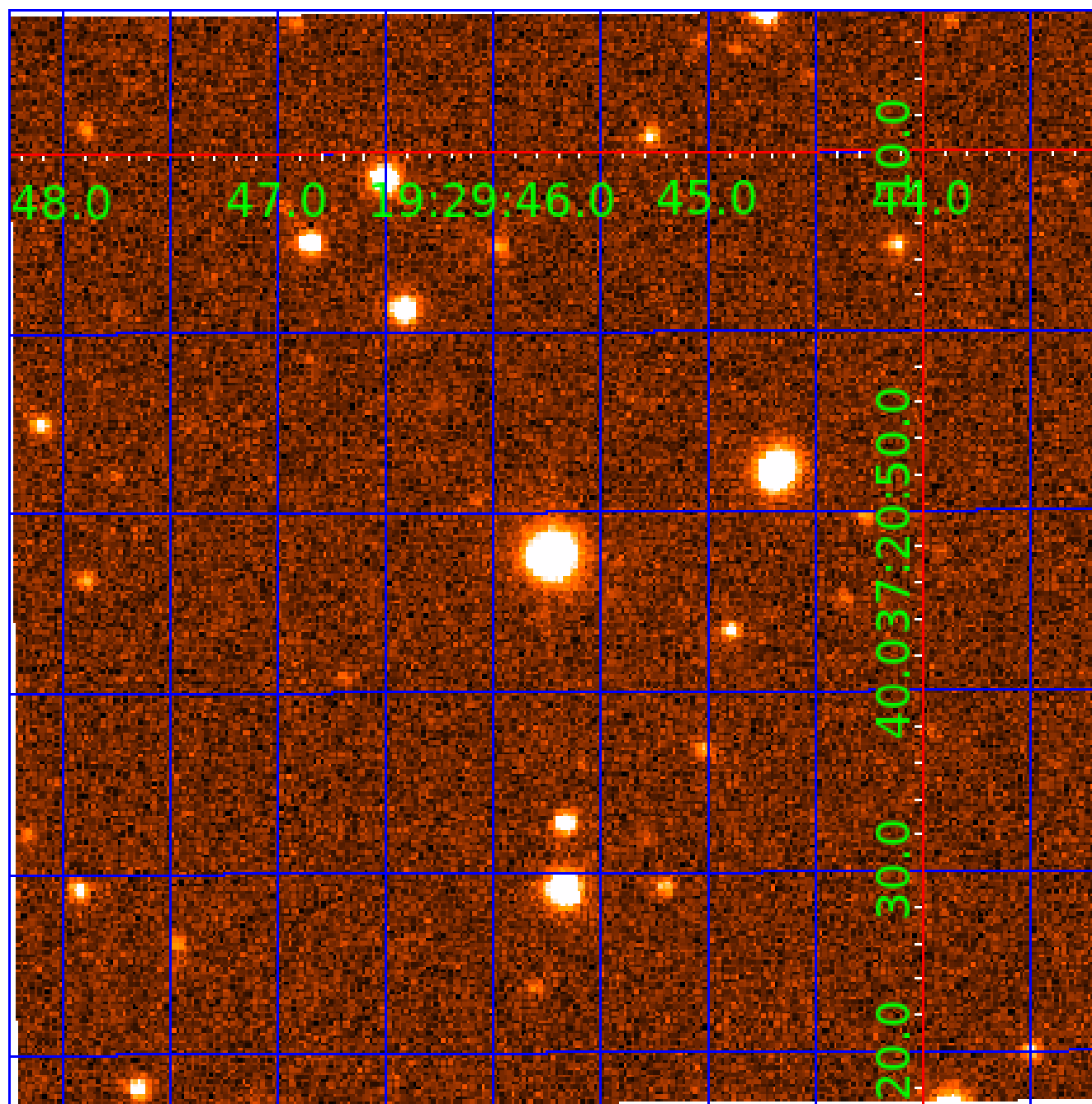


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 001872885

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})
001872885-01	OBS	No	470.267326	269.470645	3718.7	3.287	10.4	7.0	0.61	3847	3.64	0.07
001872885-02	OBS	No	463.745639	245.507007	4615.6	7.128	10.2	6.4	0.61	3847	3.98	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001872885-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
001872885-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

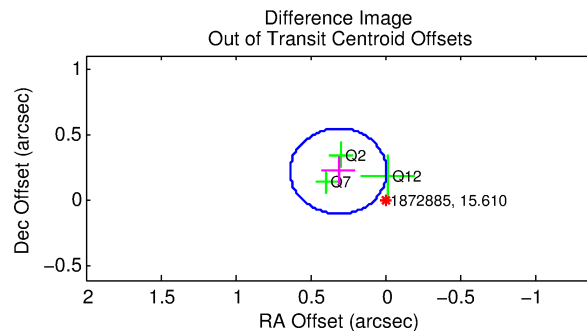
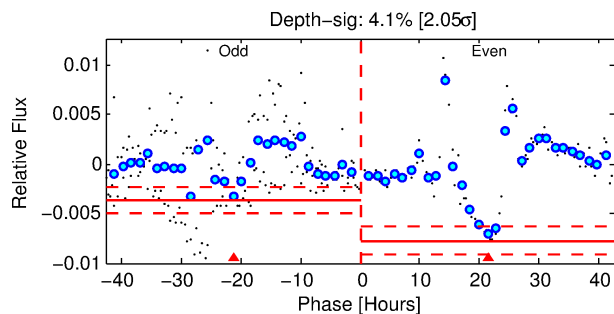
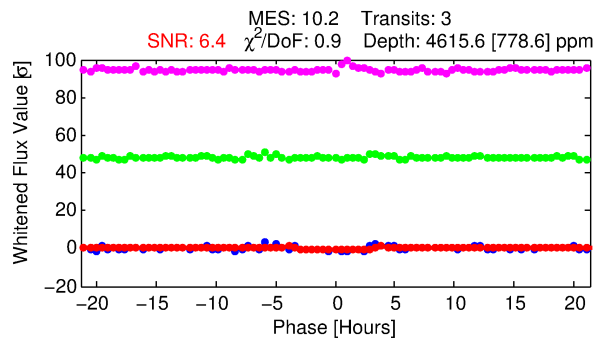
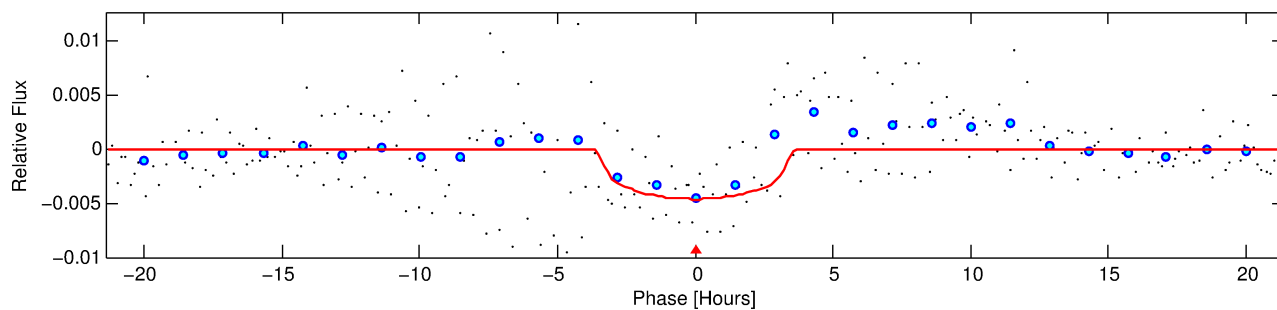
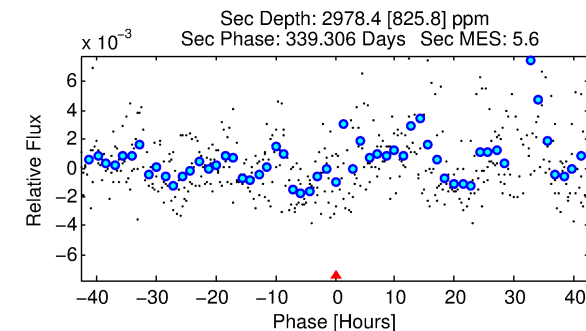
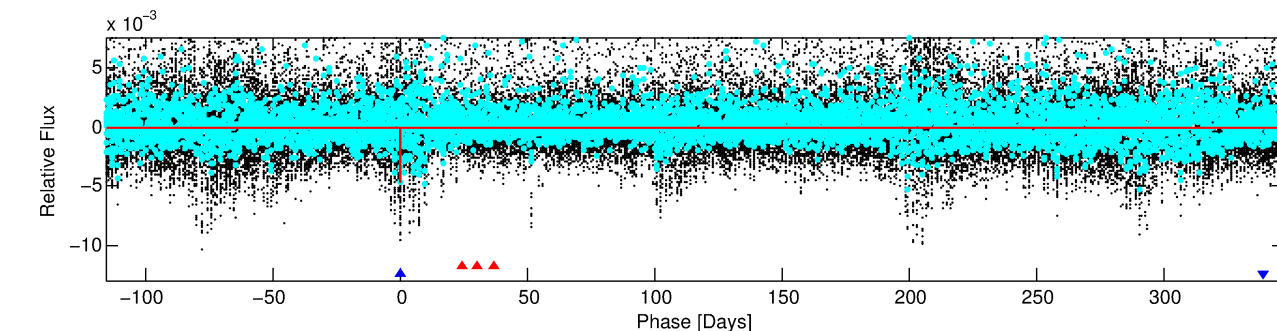
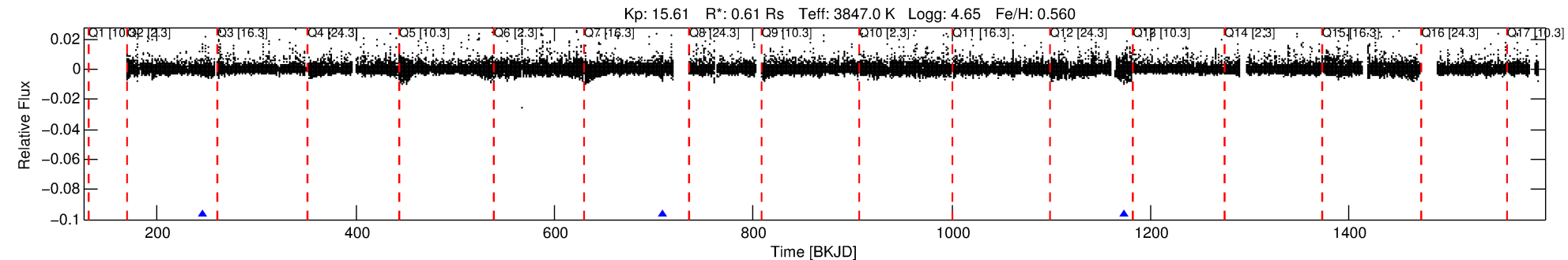
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001872885-02

No Significant Match Found

DV One-Page Summary

KIC: 1872885 Candidate: 2 of 2 Period: 463.746 d



DV Fit Results:

Period = 463.74564 [0.00746] d
Epoch = 245.5070 [0.0088] BKJD
Rp/R* = 0.0594 [0.0371]
a/R* = 526.51 [918.14]
b = 0.01 [287.40]
Seff = 0.07 [0.01]
Teq = 133 [7] K
Rp = 3.98 [2.52] Re
a = 0.9954 [0.0913] AU
Ag = 102534.14 [131718.49] [0.78σ]
Teff = 3688 [1187] K [2.99σ]

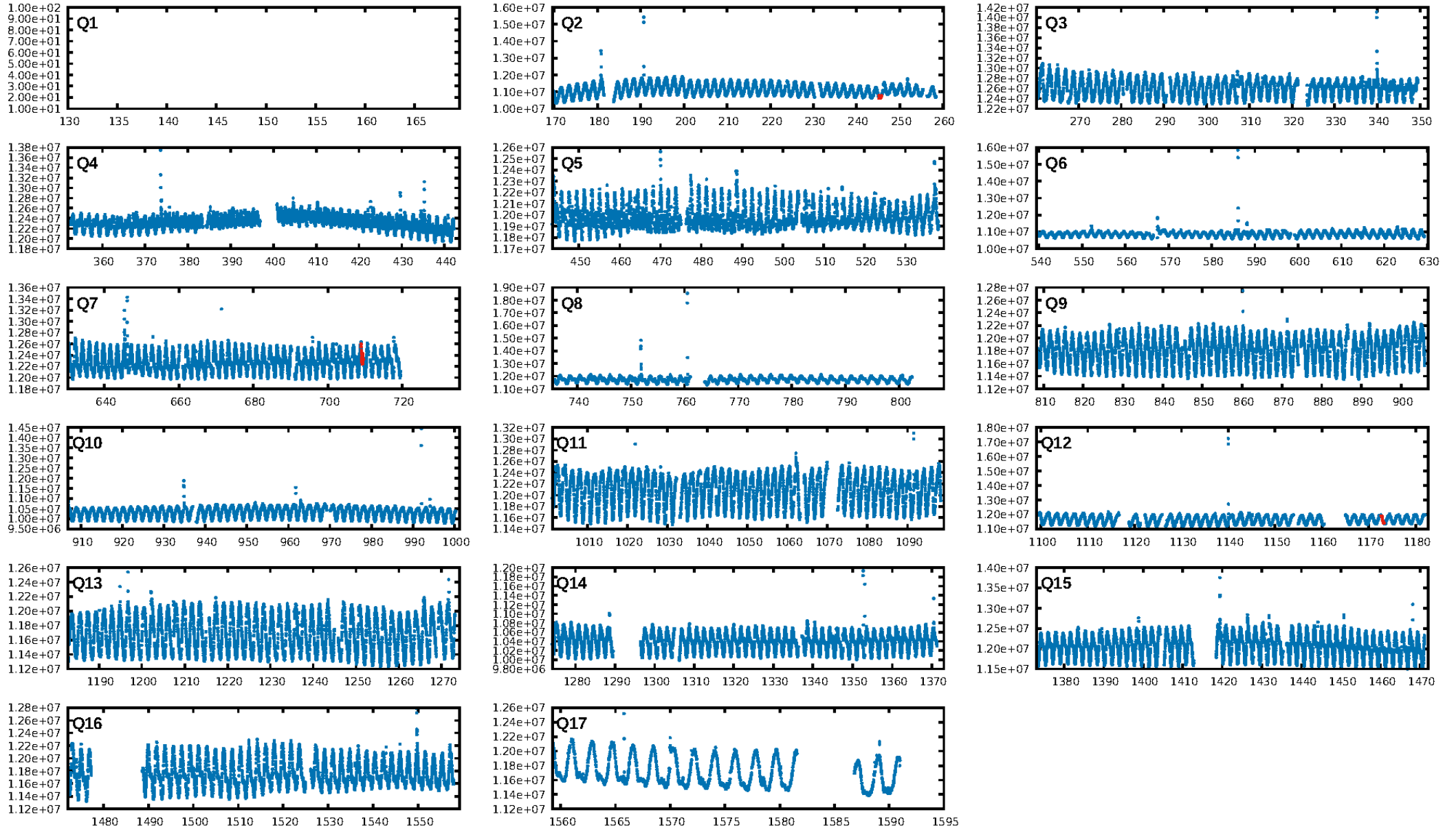
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [19.94σ]
ModelChiSquare2-sig: 7.8%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 3.77e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.697
Centroid-sig: 20.1%
Centroid-so: 1.566 arcsec [2.00σ]
OotOffset-rm: 0.384 arcsec [3.57σ]
KicOffset-rm: 0.577 arcsec [6.09σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

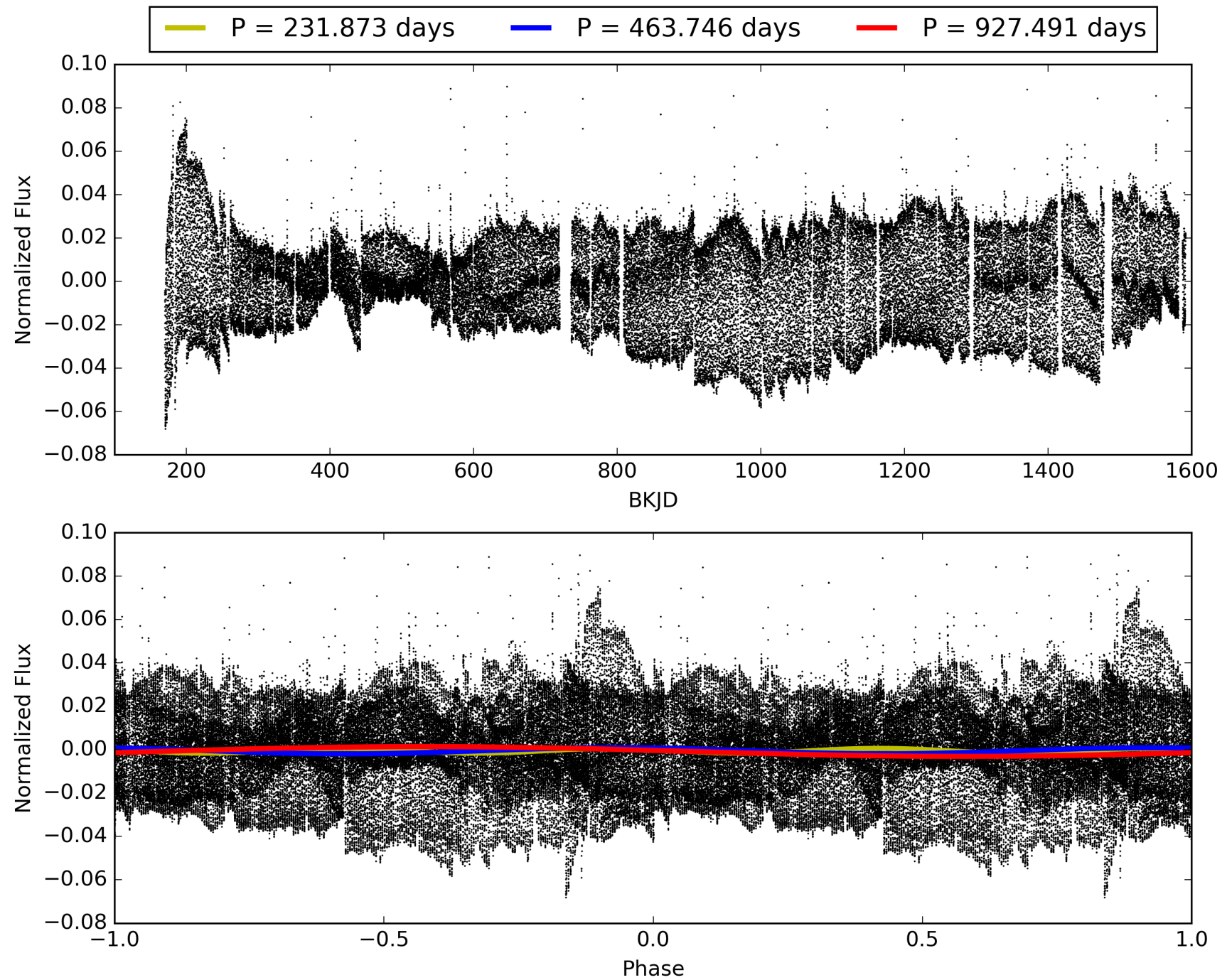
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 09:28:57 Z

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

TCE 001872885-02, PDC Light Curves

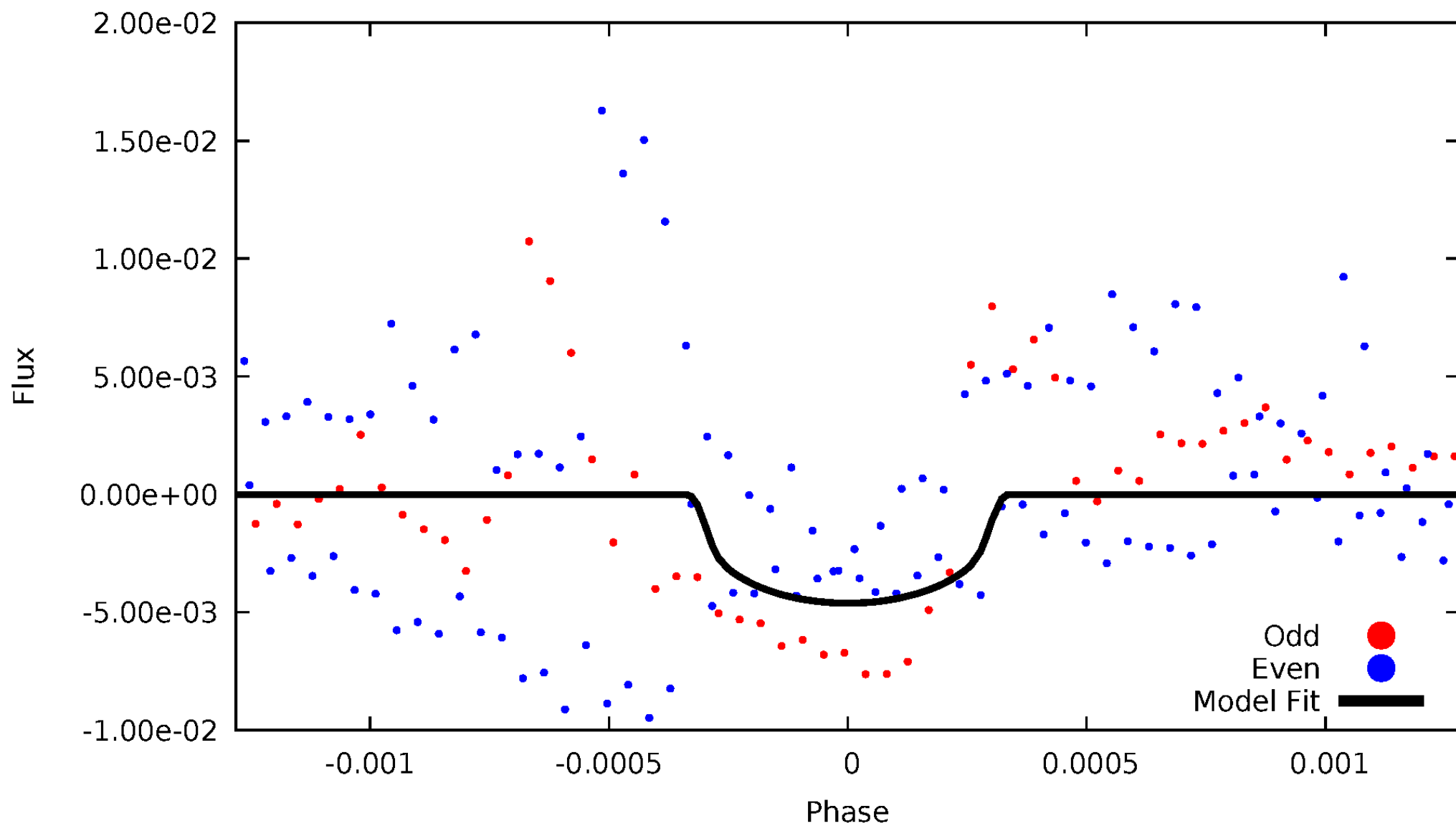


TCE 001872885-02



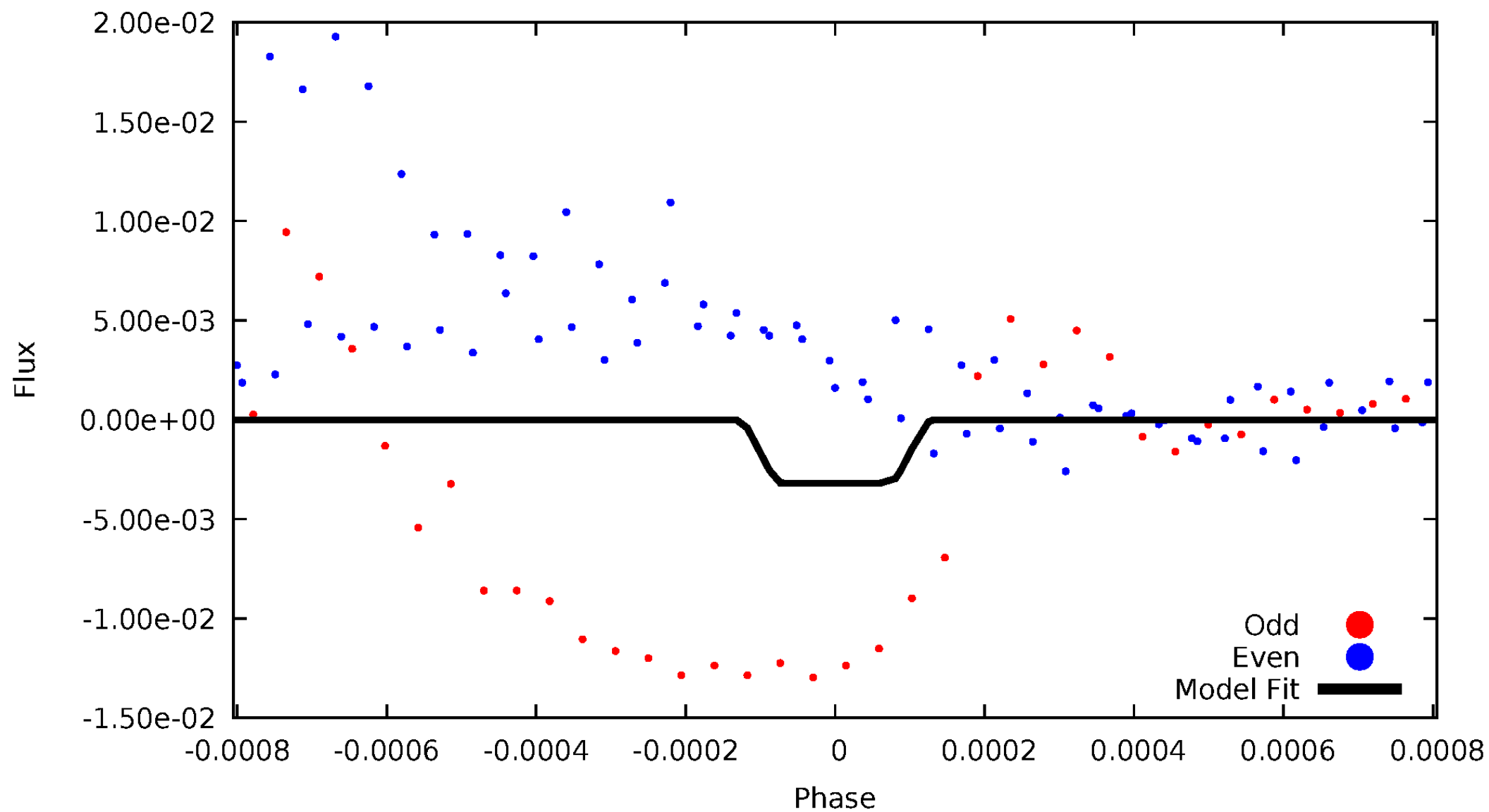
DV Odd/Even

TCE 001872885-02



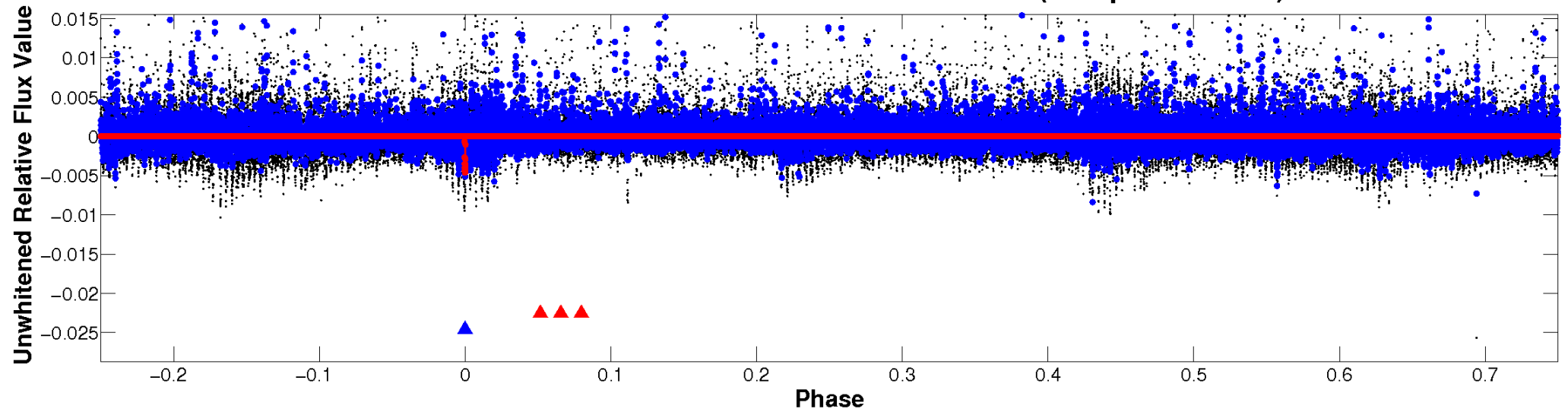
ALT Odd/Even

TCE 001872885-02

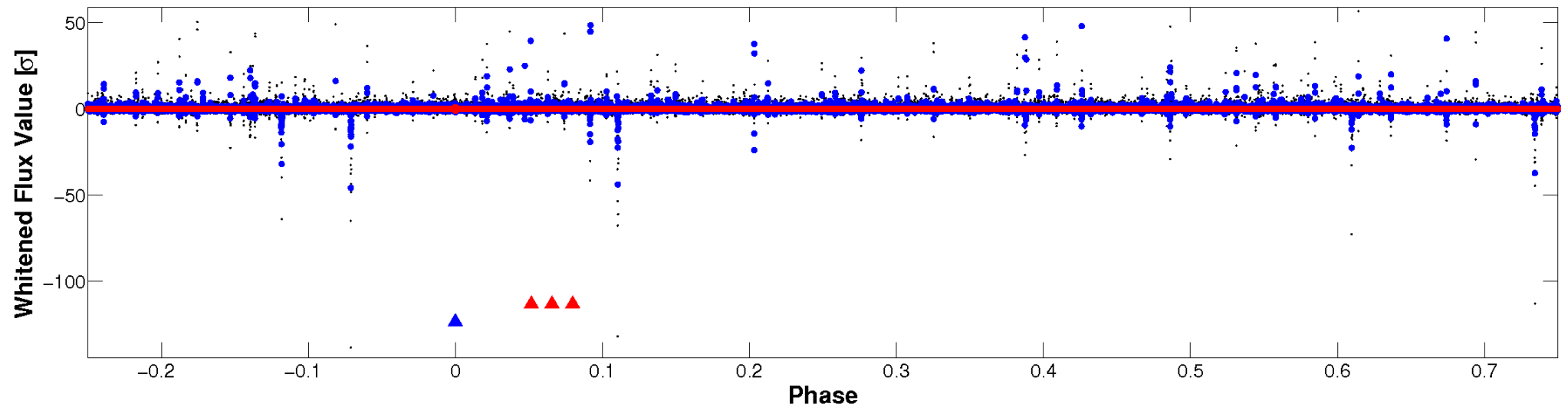


Non-Whitened Vs. Whitened Light Curve

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

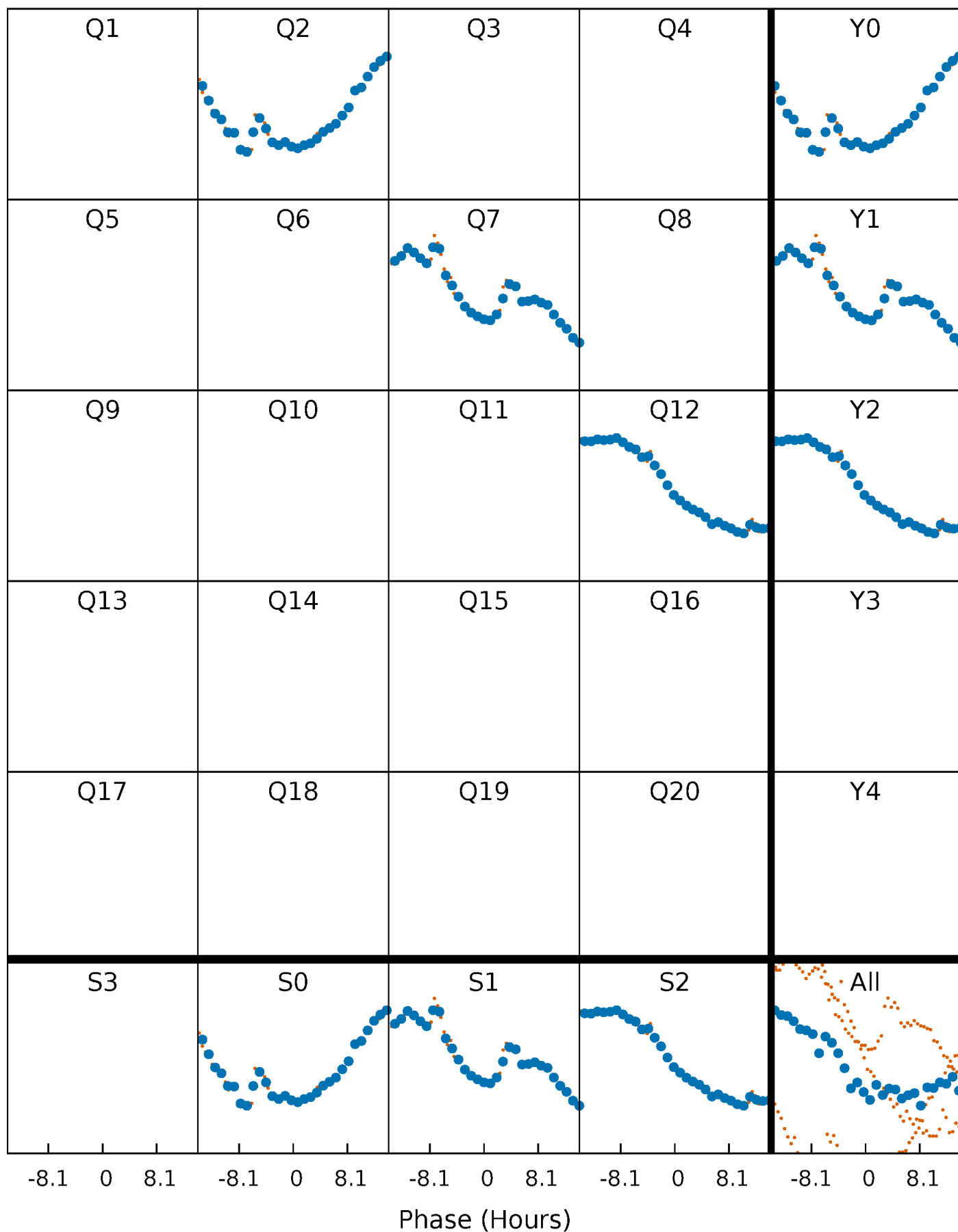


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



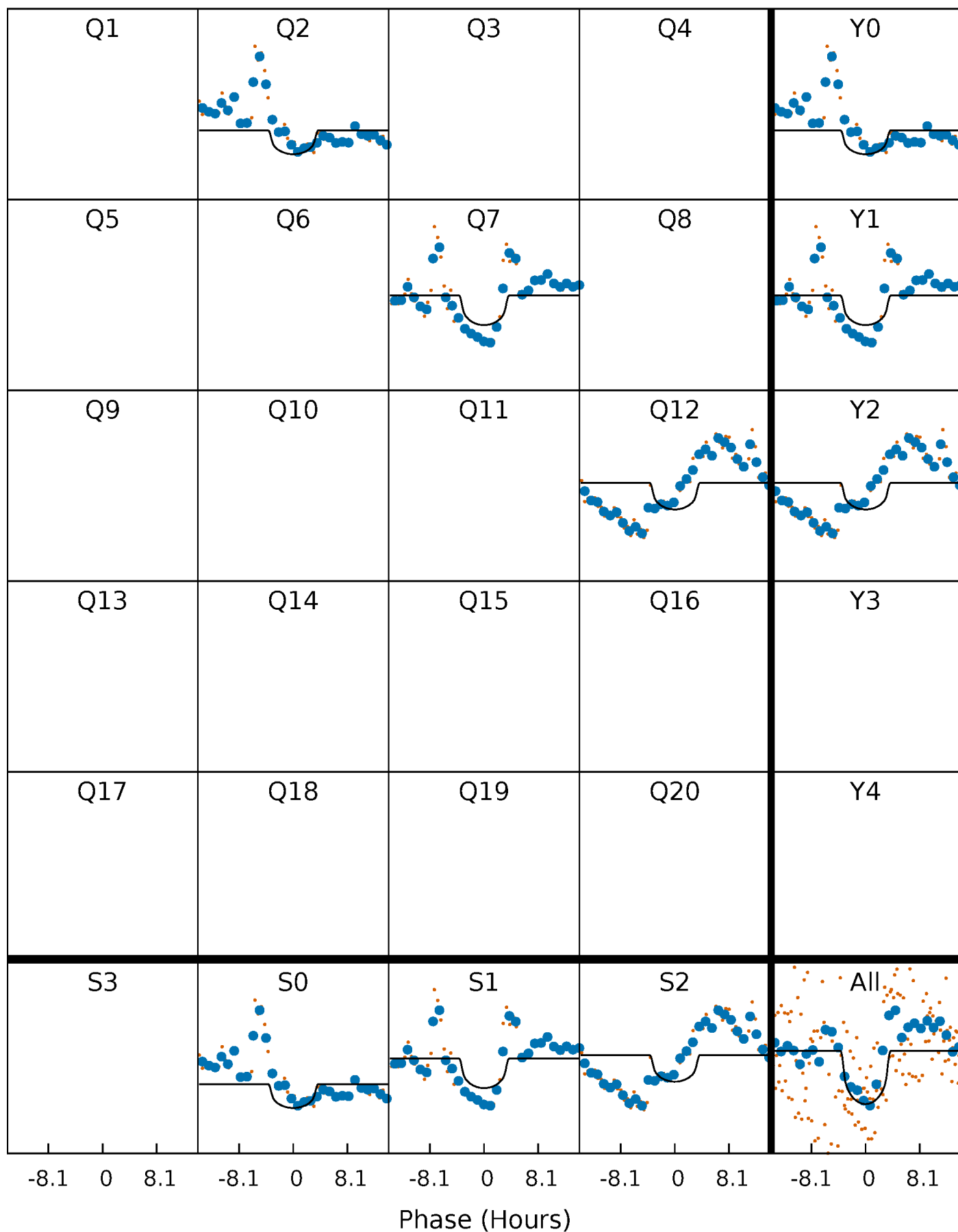
PDC Quarter-Phased Transit Curves

TCE 001872885-02 $P=463.745639$ Days $T_0=245.507007$ (BKJD)



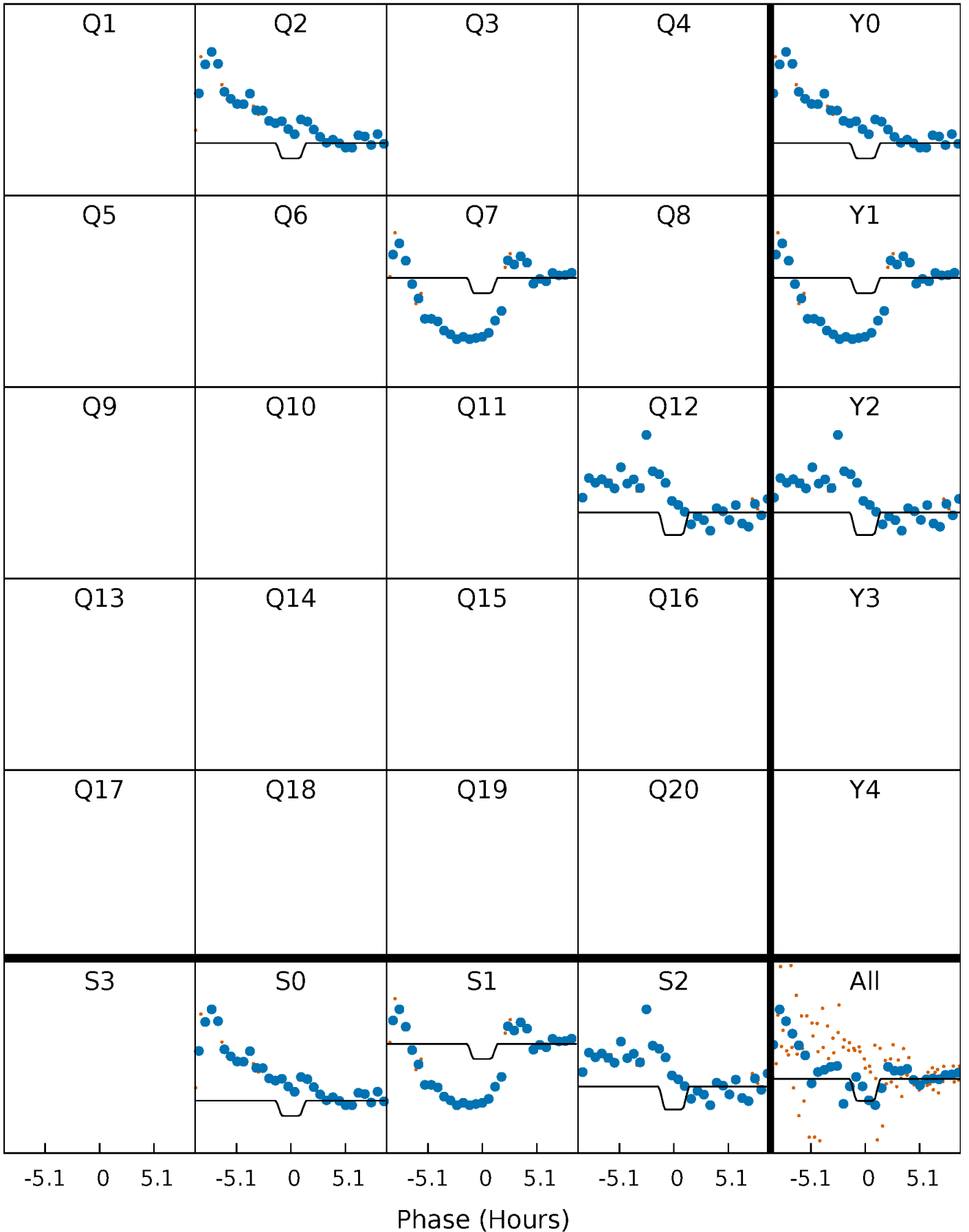
DV Quarter-Phased Transit Curves

TCE 001872885-02 P=463.745639 Days $T_0=245.507007$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

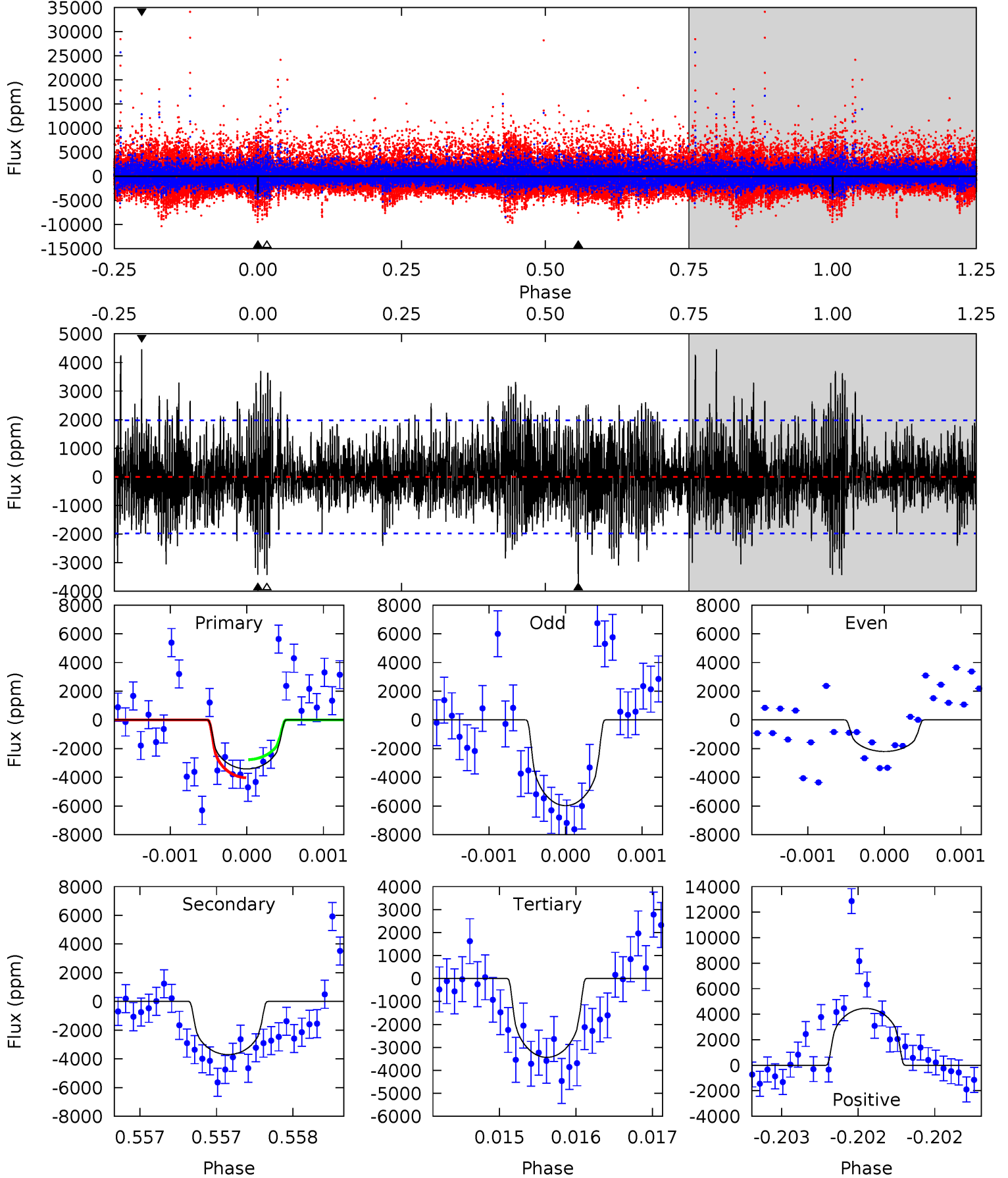
TCE 001872885-02 $P=463.664721$ Days $T_0=245.619031$ (BKJD)



DV Model-Shift Uniqueness Test

001872885-02, $P = 463.745639$ Days, $E = 245.507007$ Days

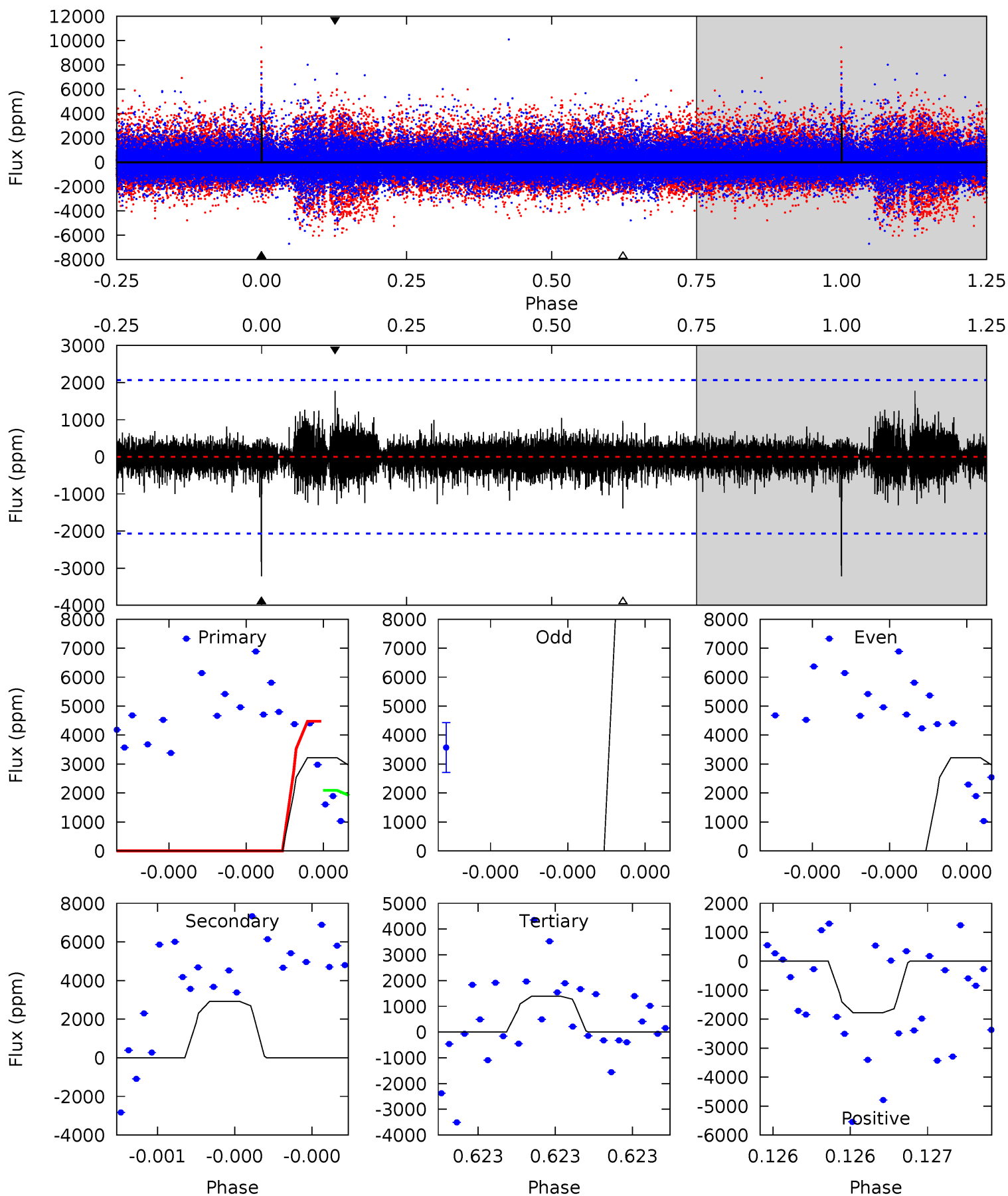
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.56	10.4	9.60	12.5	5.52	3.41	2.67	-0.04	-2.90	0.75	-2.11	2.57	1.51	0.55	1.78



Alt Model-Shift Uniqueness Test

001872885-02, P = 463.664721 Days, E = 245.619031 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.86	8.06	3.82	4.90	5.69	3.66	0.73	5.04	3.96	4.24	3.16	13.5	-0.92	0.36	3.31



Stellar Parameters For KIC 001872885

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3847^{+120}_{-147}	$4.648^{+0.067}_{-0.018}$	$0.560^{+0.050}_{-0.300}$	$0.614^{+0.023}_{-0.070}$	$0.612^{+0.035}_{-0.060}$	$3.720^{+1.190}_{-0.266}$
	+3%/-4%	+1%/-0%	+9%/-54%	+4%/-11%	+6%/-10%	+32%/-7%
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 001872885-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3701 ± 358	$4.09^{+2.37}_{-2.31}$	184^{+7}_{-8}	3826^{+1406}_{-531}	$120145^{+486308}_{-71265}$
Alt.	-2927 ± 363	$3.74^{+2.55}_{-2.07}$	185^{+6}_{-8}	3756^{+1336}_{-546}	$112215^{+464062}_{-72352}$

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

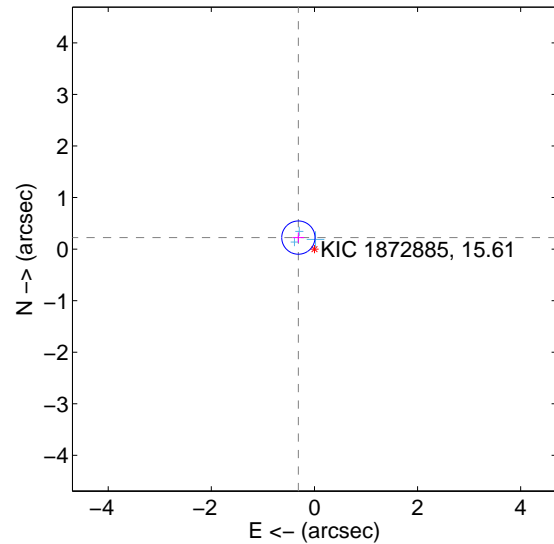
Supplemental centroid analysis for 001872885-02. Kepler magnitude: 15.61. Transit SNR 6.44

There are 3 quarters with good PRF difference image offsets

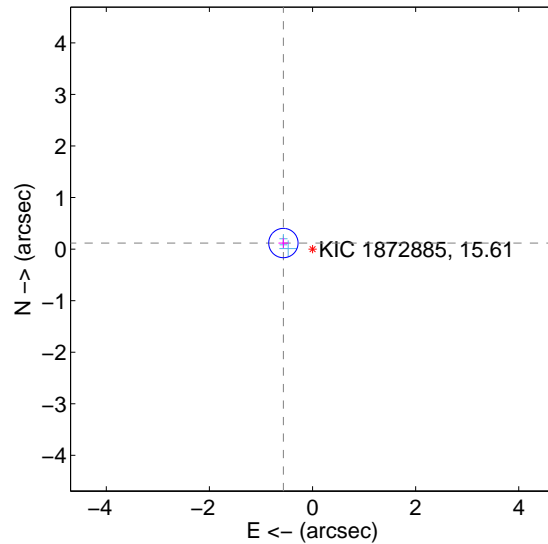
The direct PRF centroid is offset from the target star catalog position by about 0.52 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.384 ± 0.108	3.57	0.312 ± 0.111	0.223 ± 0.100
PRF-fit source offset from KIC position	0.577 ± 0.095	6.09	0.565 ± 0.095	0.118 ± 0.095
photometric centroid source offset	1.57 ± 0.78	2.00	0.75 ± 1.16	-1.37 ± 0.63

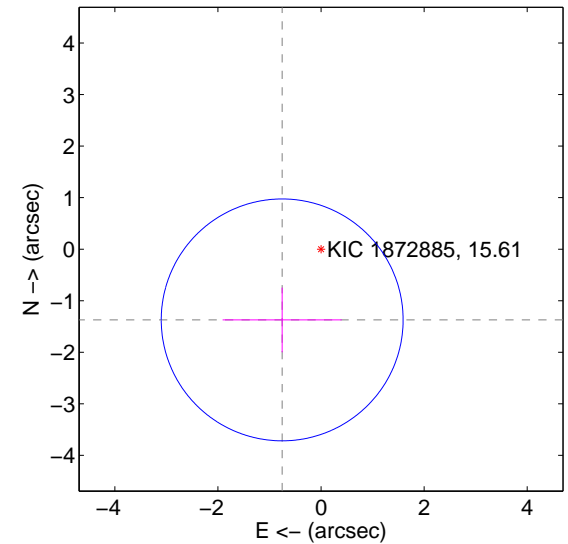
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

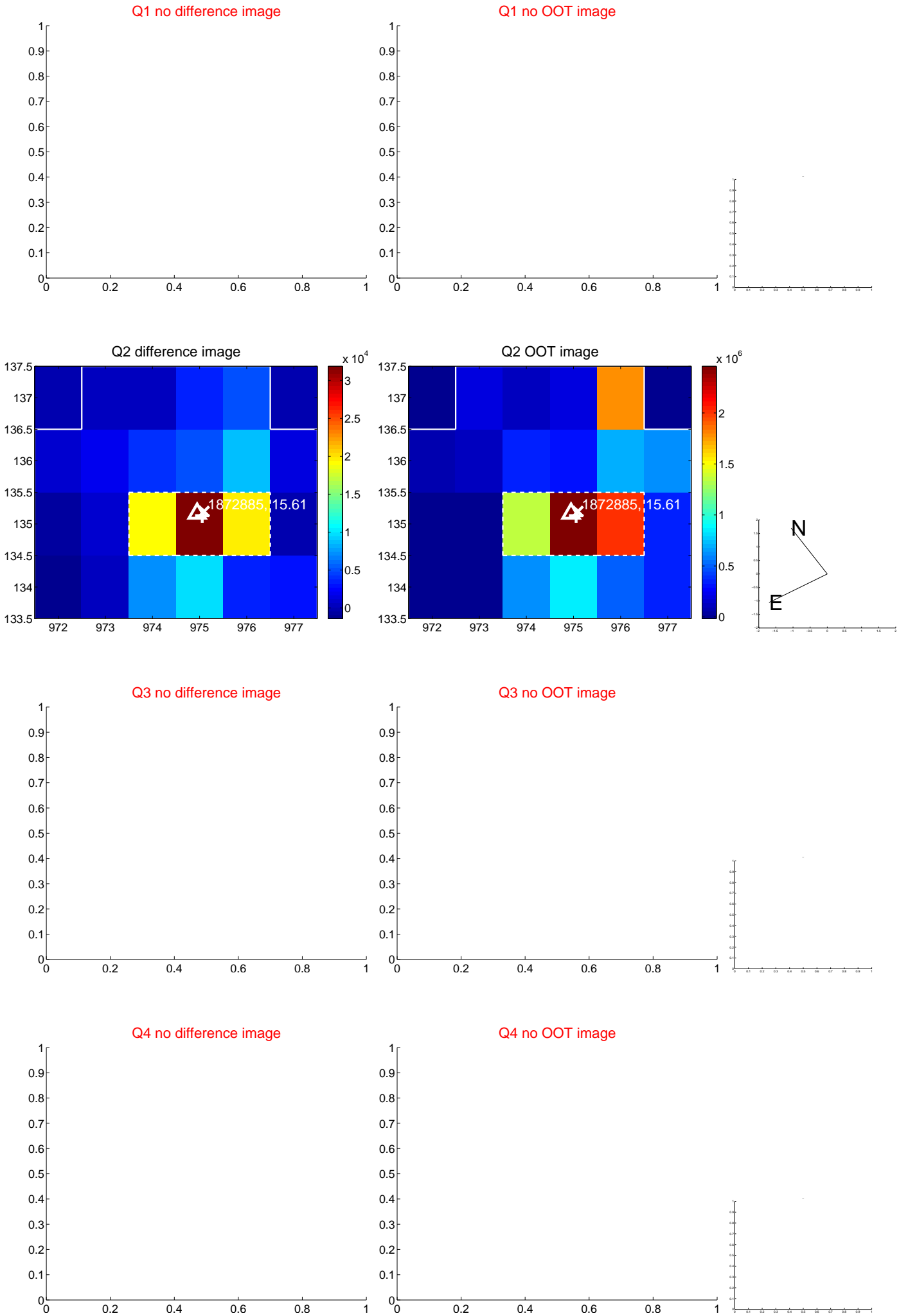


offset from photometric centroids



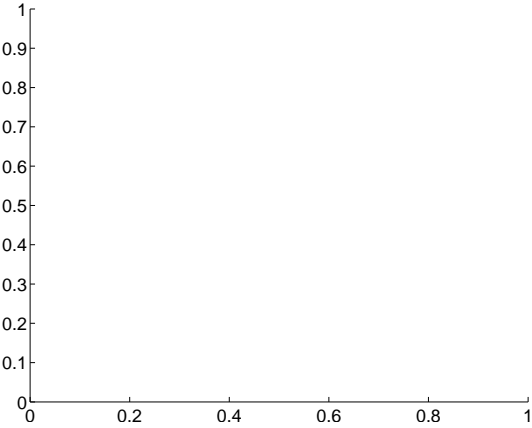
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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

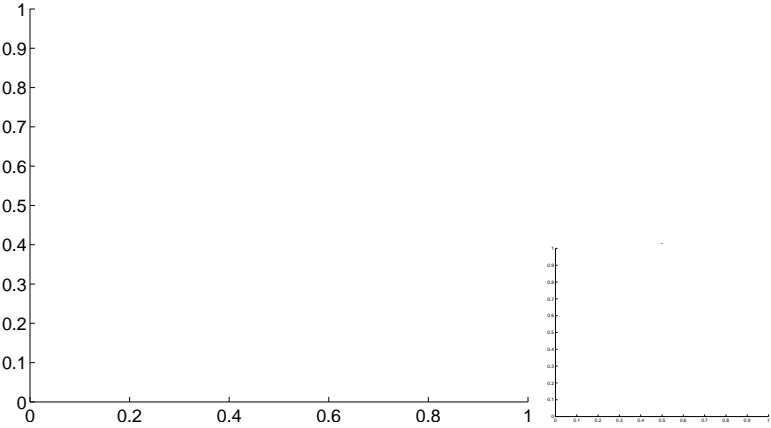


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

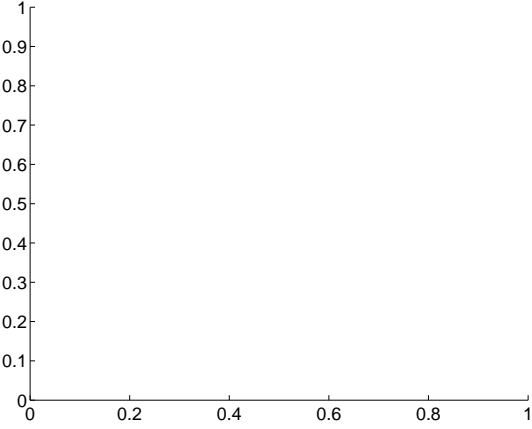
Q5 no difference image



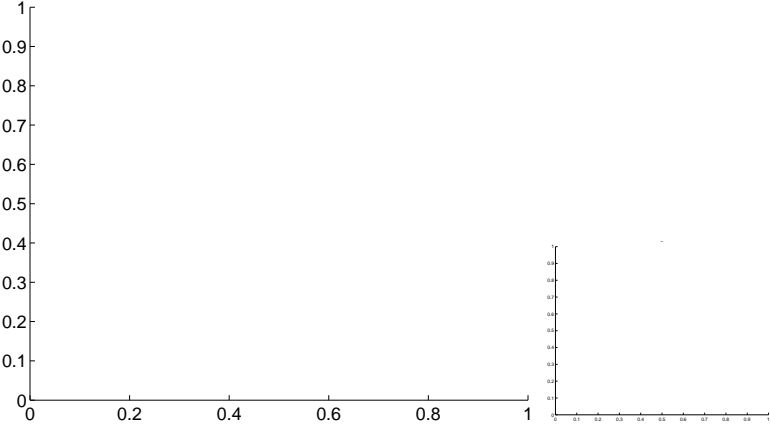
Q5 no OOT image



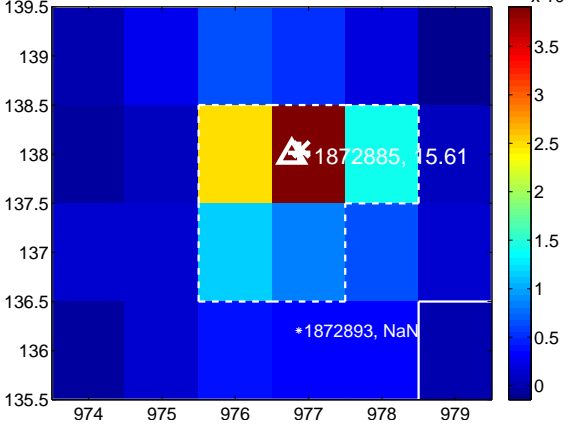
Q6 no difference image



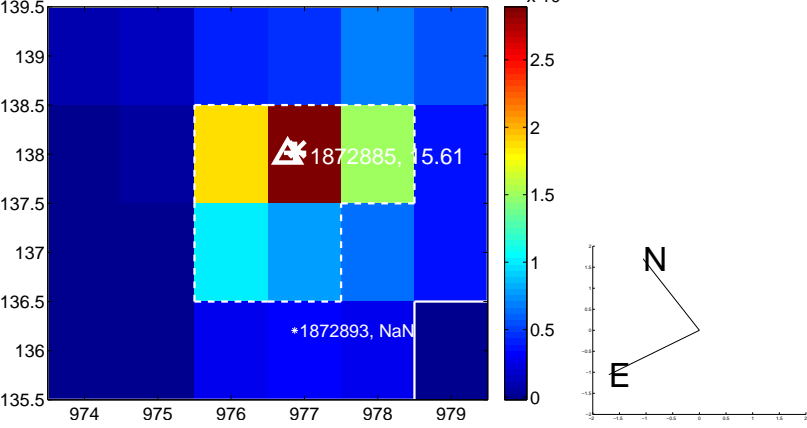
Q6 no OOT image



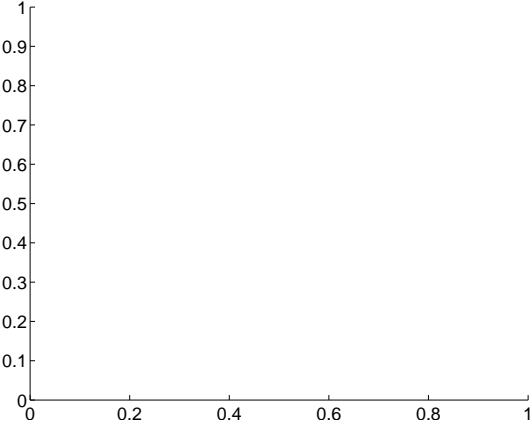
Q7 difference image



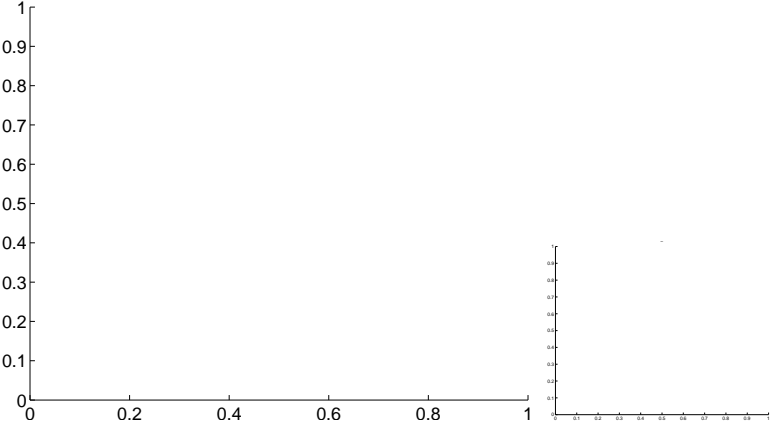
Q7 OOT image



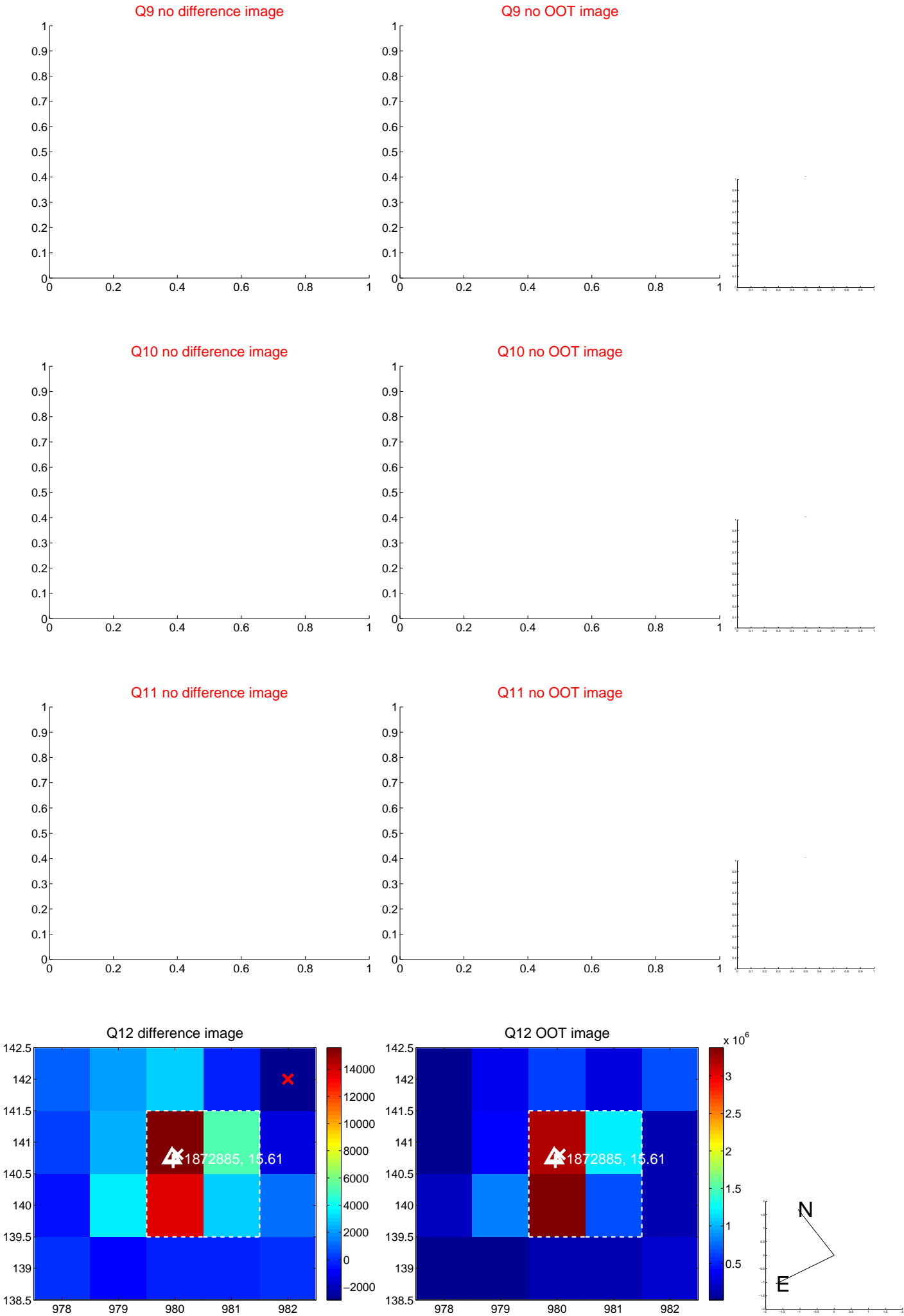
Q8 no difference image



Q8 no OOT image



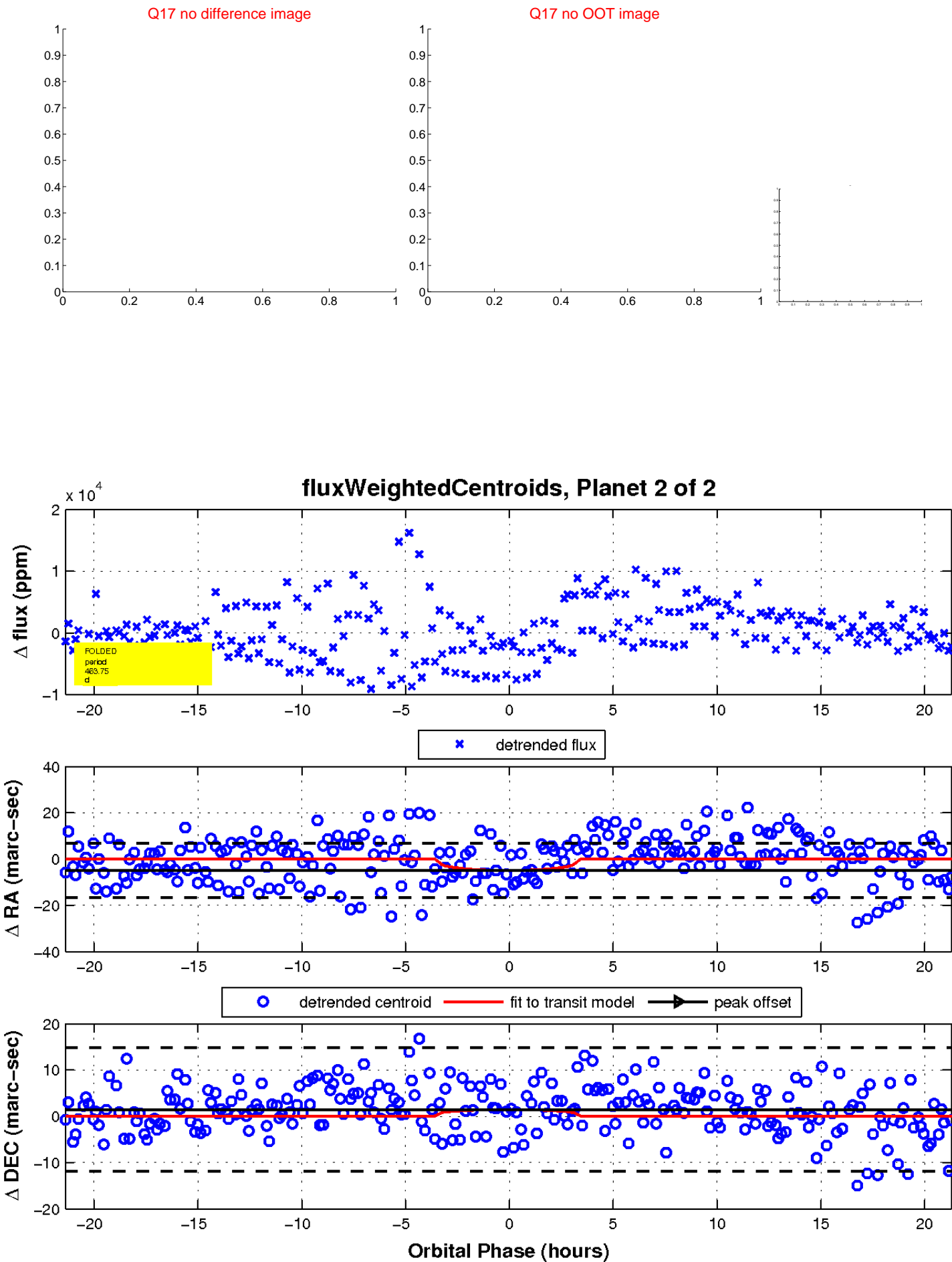
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

