

KIC 008308361

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})
008308361-01	OBS	No	607.449706	347.482496	604.6	20.483	11.1	12.2	1.02	6208	2.83	0.67
008308361-02	OBS	No	368.193575	234.841199	1102.6	8.620	8.8	9.8	1.02	6208	3.91	1.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008308361-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008308361-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

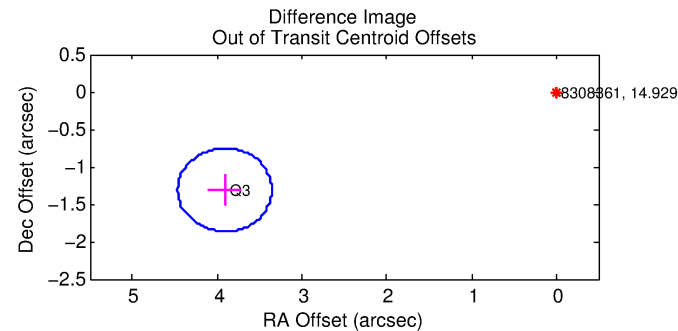
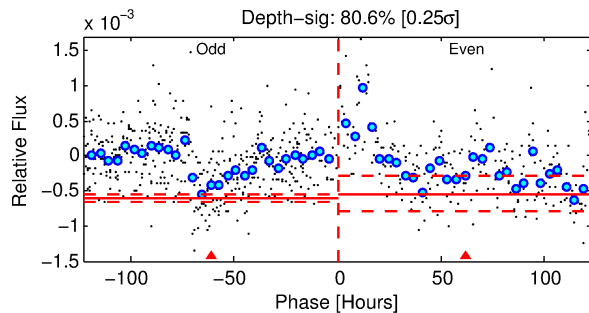
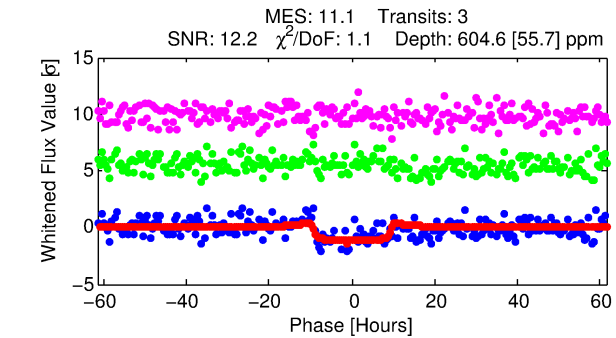
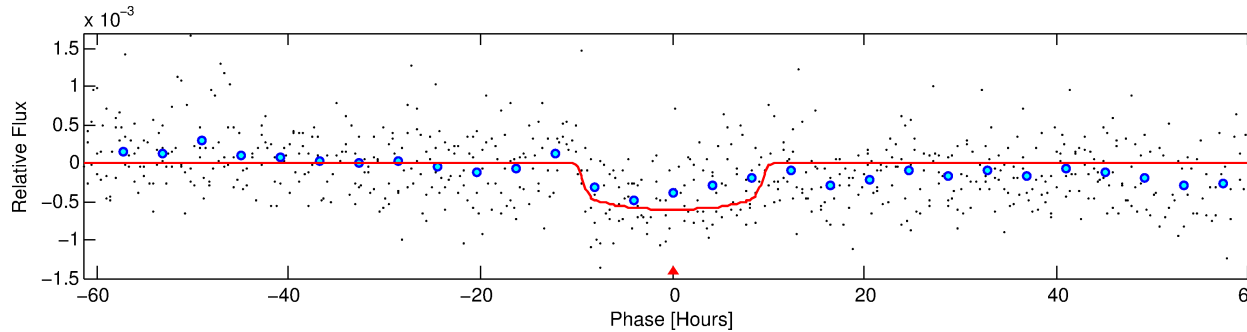
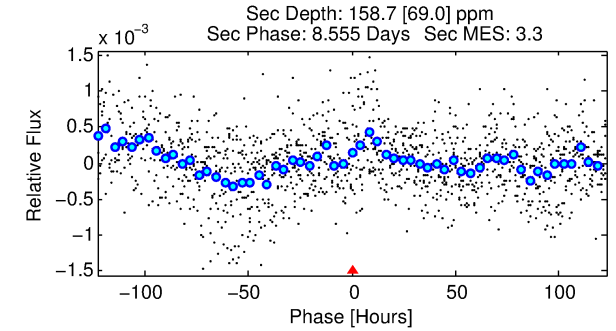
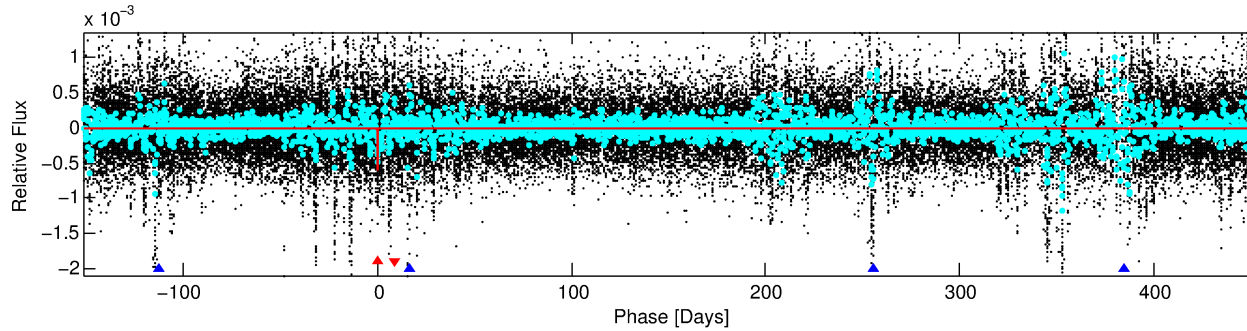
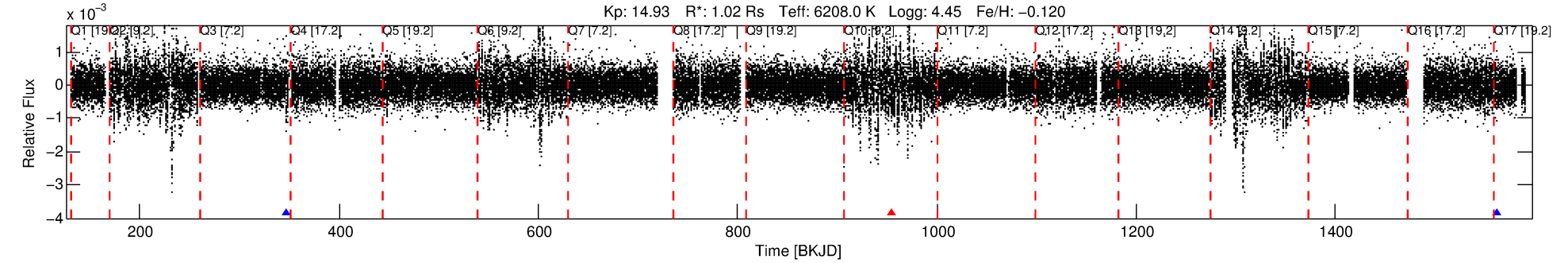
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008308361-01

No Significant Match Found

DV One-Page Summary

KIC: 8308361 Candidate: 1 of 2 Period: 607.450 d



DV Fit Results:

Period = 607.44971 [0.01473] d
Epoch = 347.4825 [0.0194] BKJD
Rp/R* = 0.0254 [0.0027]
a/R* = 134.35 [64.39]
b = 0.84 [0.17]
Seff = 0.67 [0.27]
Teq = 231 [23] K
Rp = 2.83 [0.91] Re
a = 1.4440 [0.3668] AU
Ag = 22672.15 [13810.73] [1.64σ]
Teffp = 4376 [555] K [7.46σ]

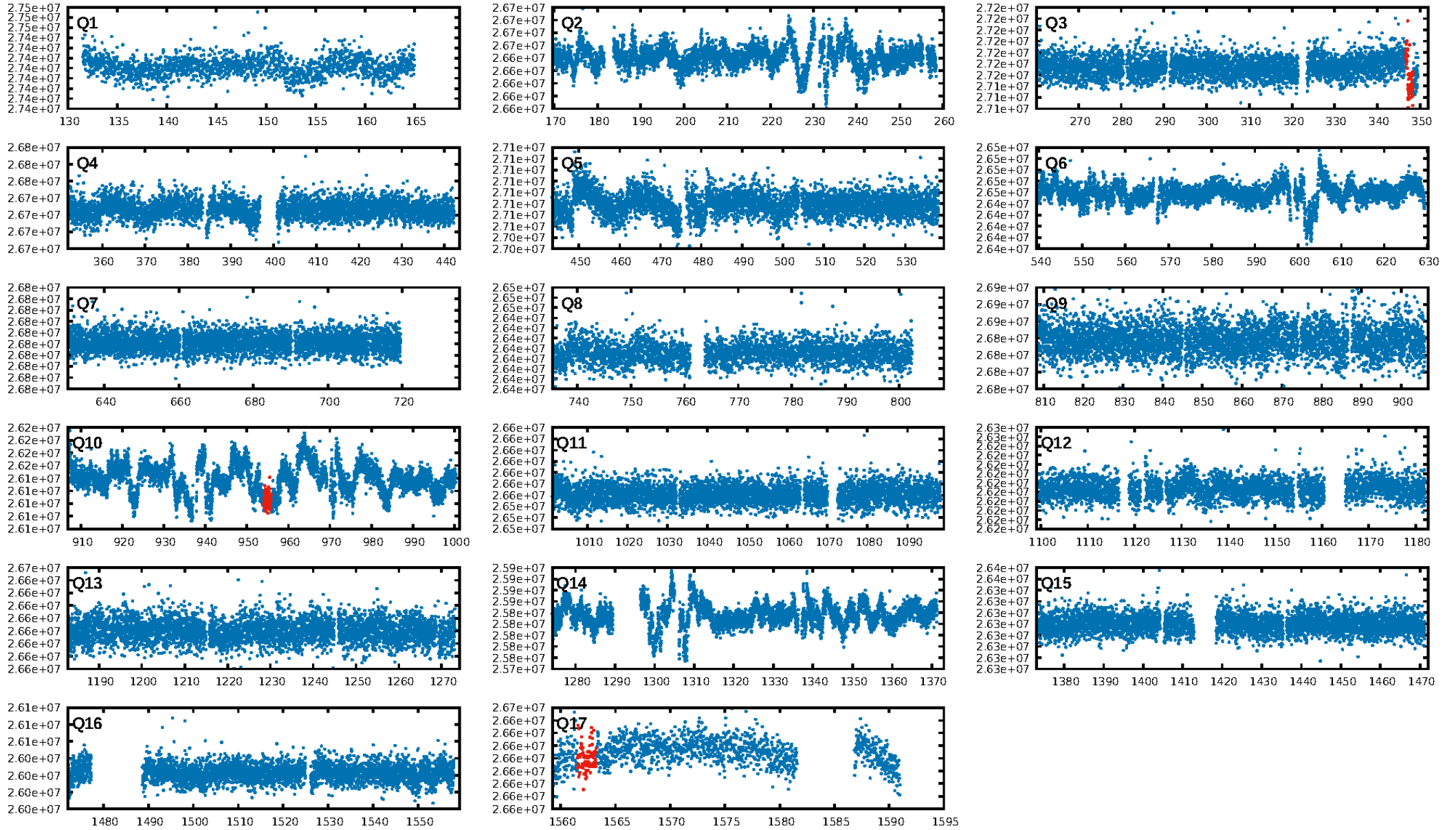
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [258.39σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.29e-12
RollingBand-fgt: 0.50 [1/2]
GhostDiagnostic-chr: 1.29
Centroid-sig: 0.1%
Centroid-so: 2.082 arcsec [2.30σ]
OotOffset-rm: 4.123 arcsec [22.27σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-rm: 4.113 arcsec [22.24σ]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

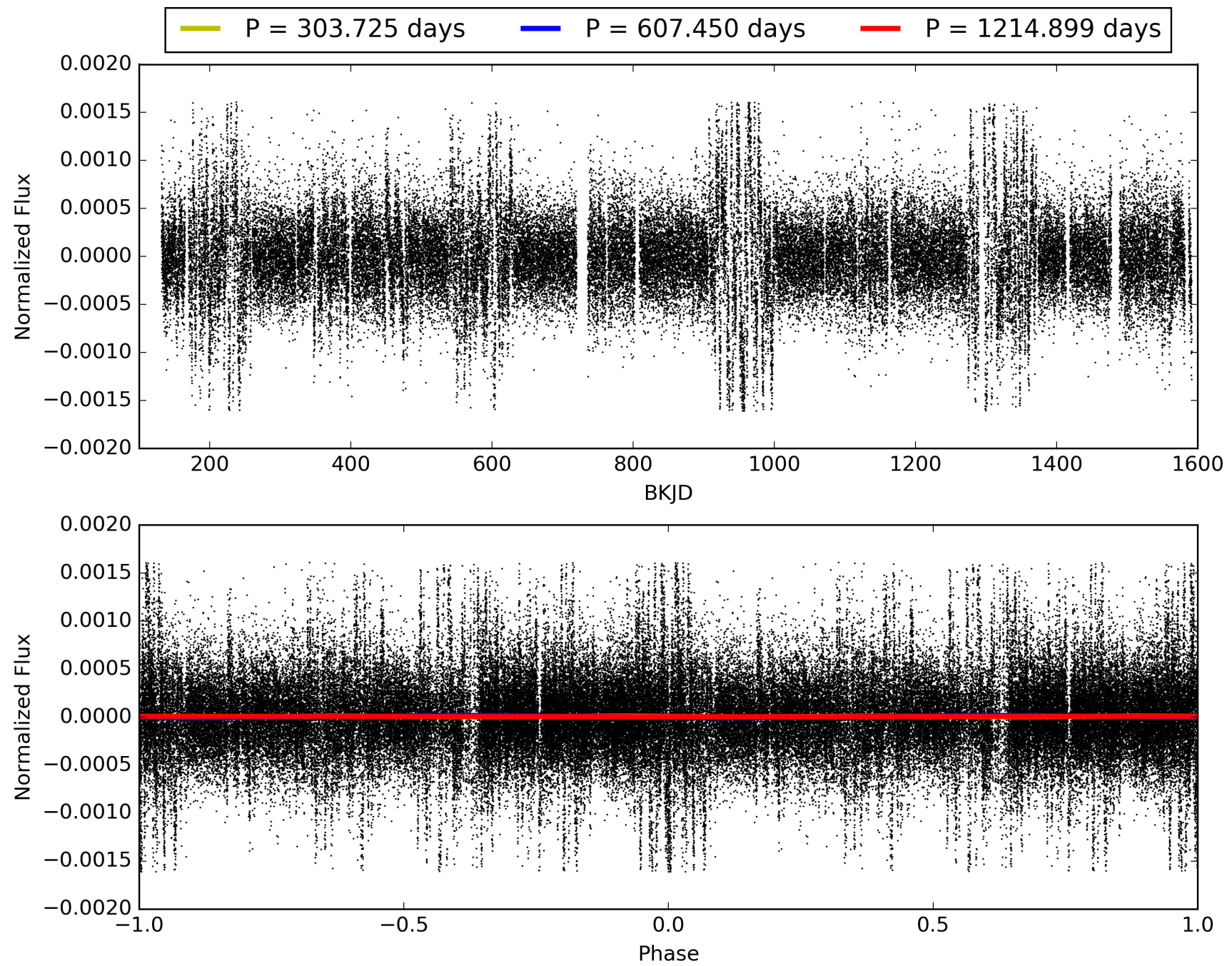
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:37:44 Z

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

TCE 008308361-01, PDC Light Curves

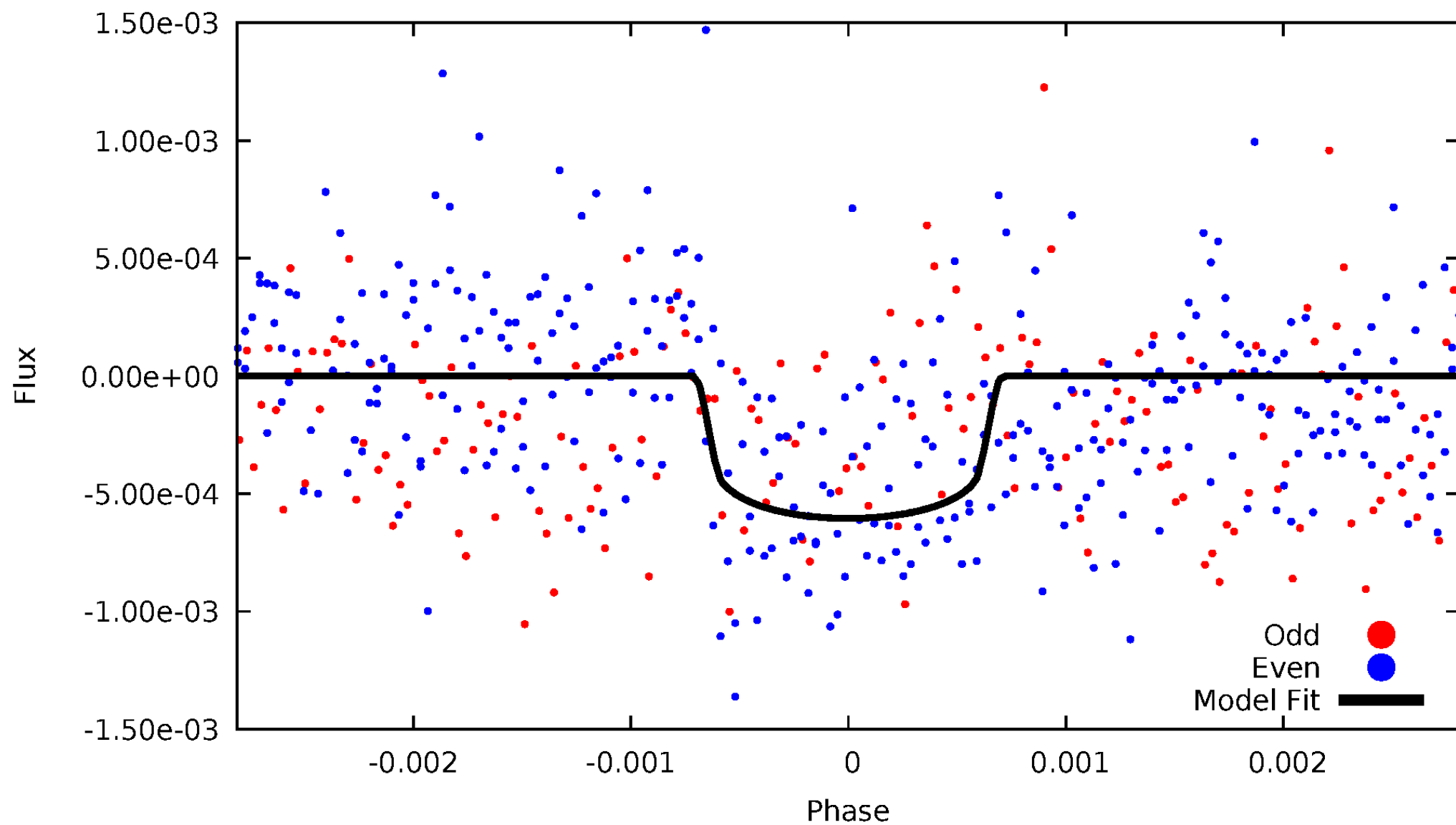


TCE 008308361-01



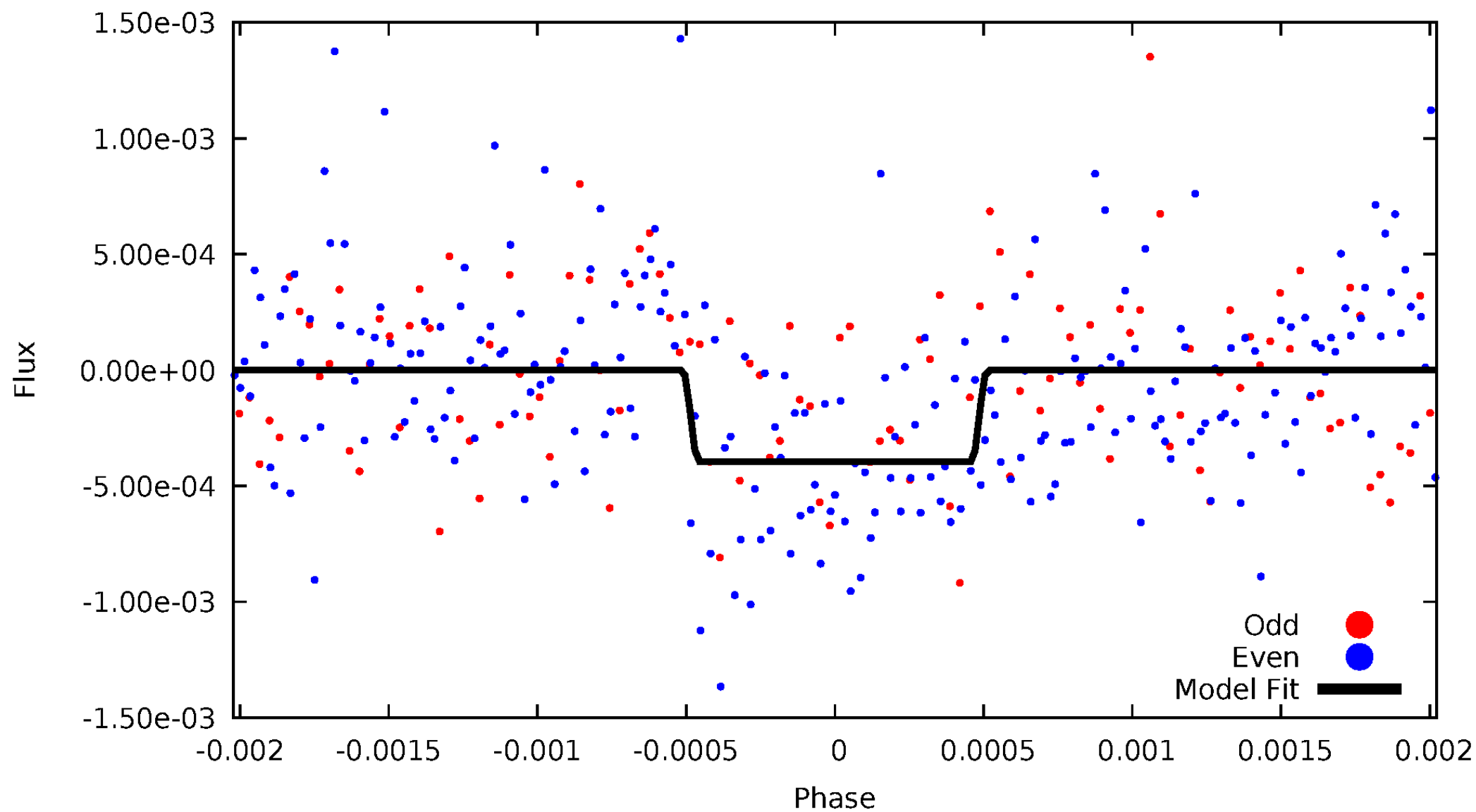
DV Odd/Even

TCE 008308361-01



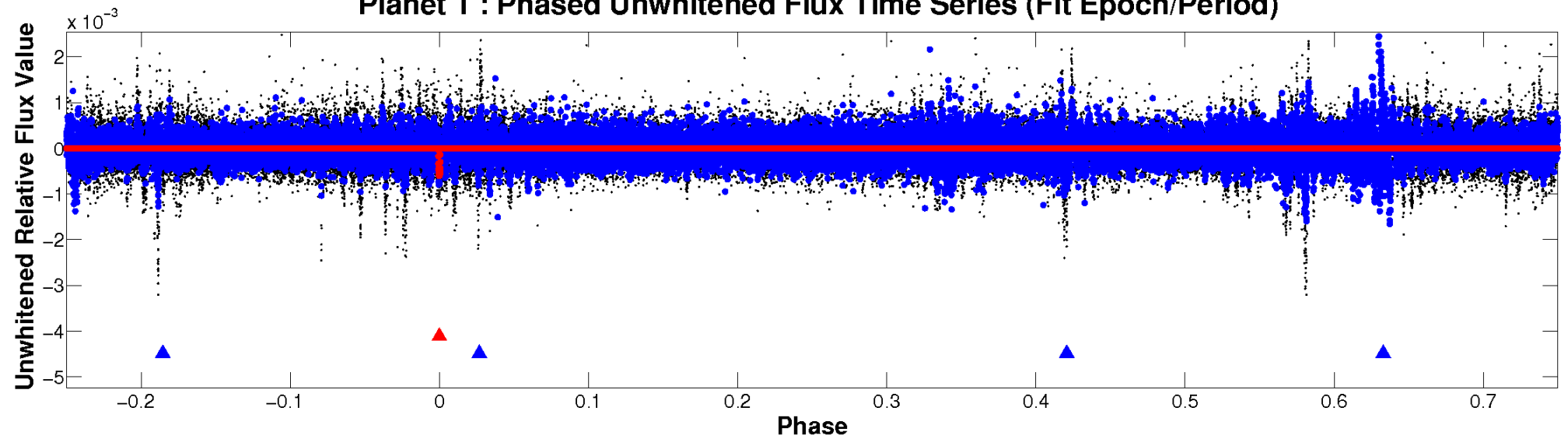
ALT Odd/Even

TCE 008308361-01

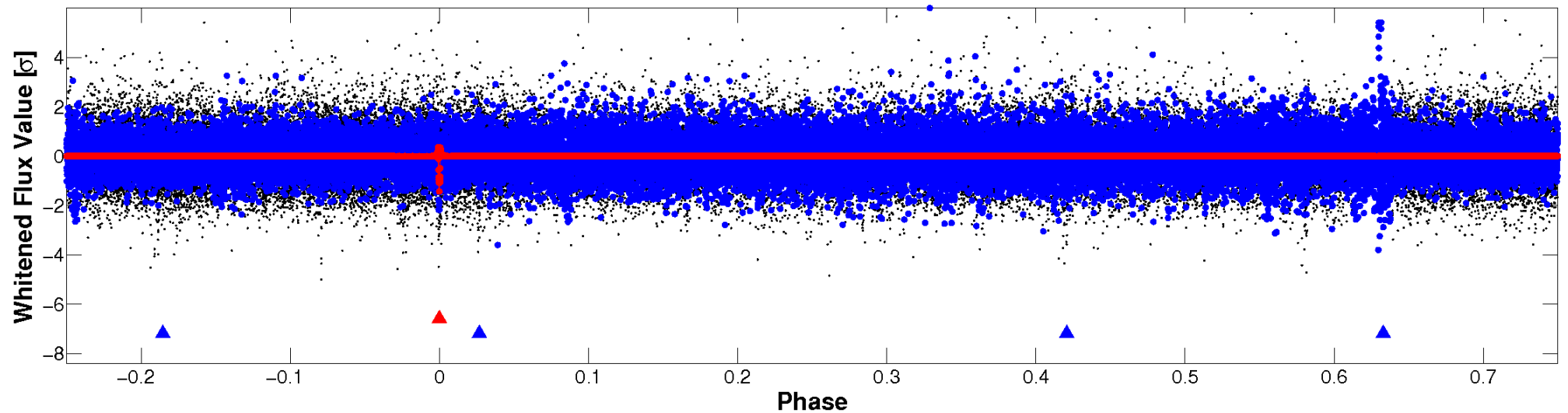


Non-Whitened Vs. Whitened Light Curve

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



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



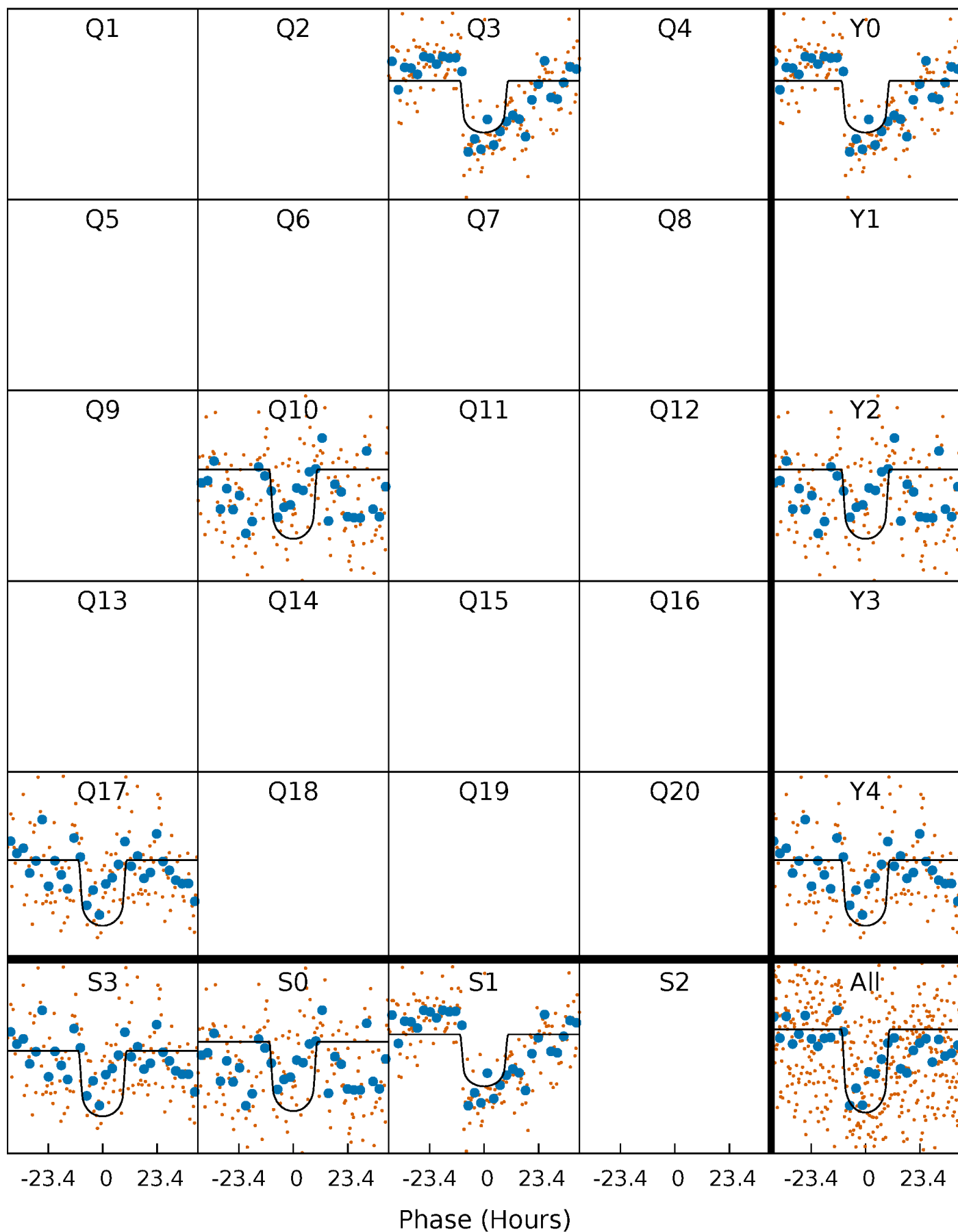
PDC Quarter-Phased Transit Curves

TCE 008308361-01 $P=607.449706$ Days $T_0=347.482496$ (BKJD)



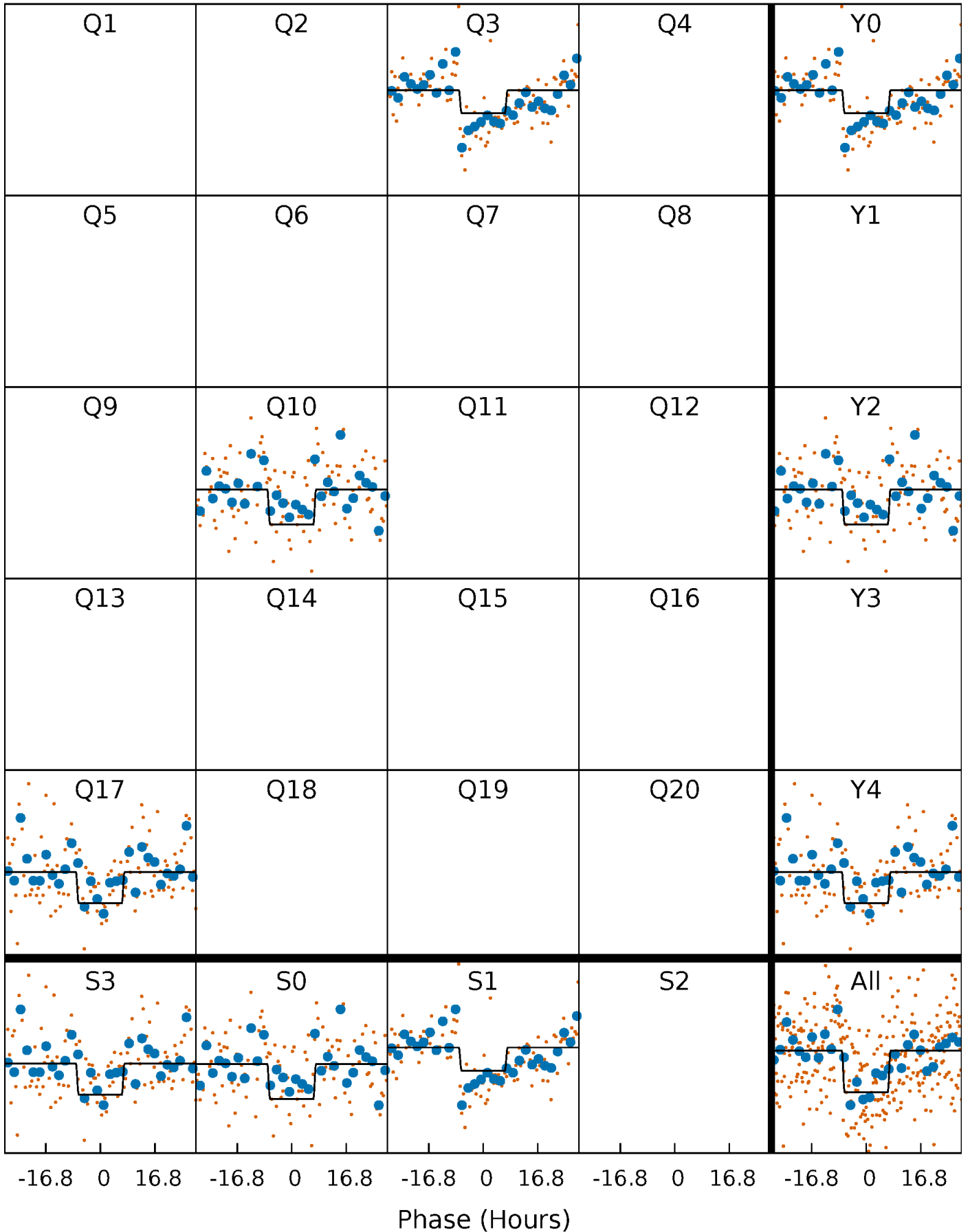
DV Quarter-Phased Transit Curves

TCE 008308361-01 $P=607.449706$ Days $T_0=347.482496$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

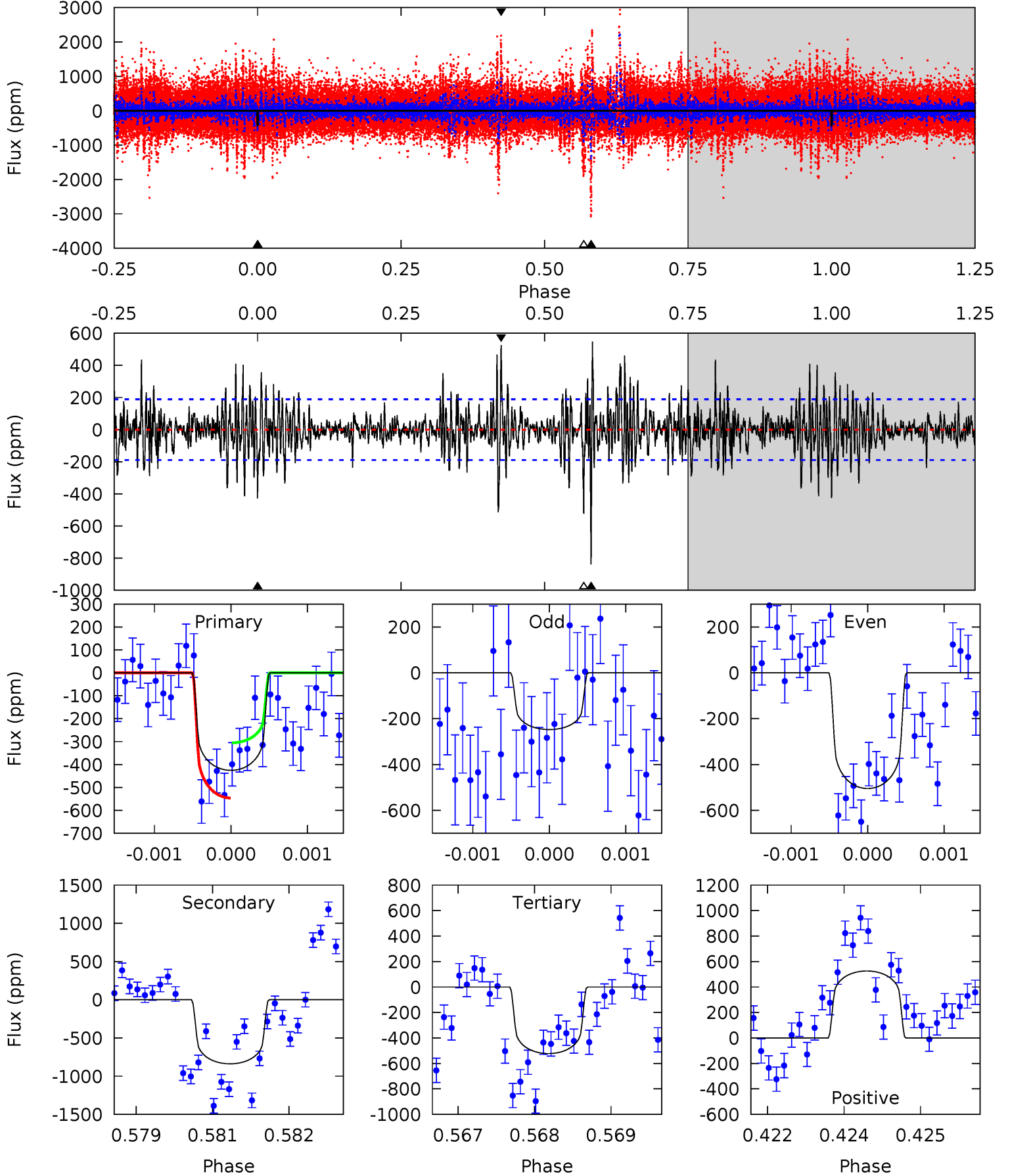
TCE 008308361-01 P=607.435249 Days $T_0=347.400012$ (BKJD)



DV Model-Shift Uniqueness Test

008308361-01, P = 607.449706 Days, E = 347.482496 Days

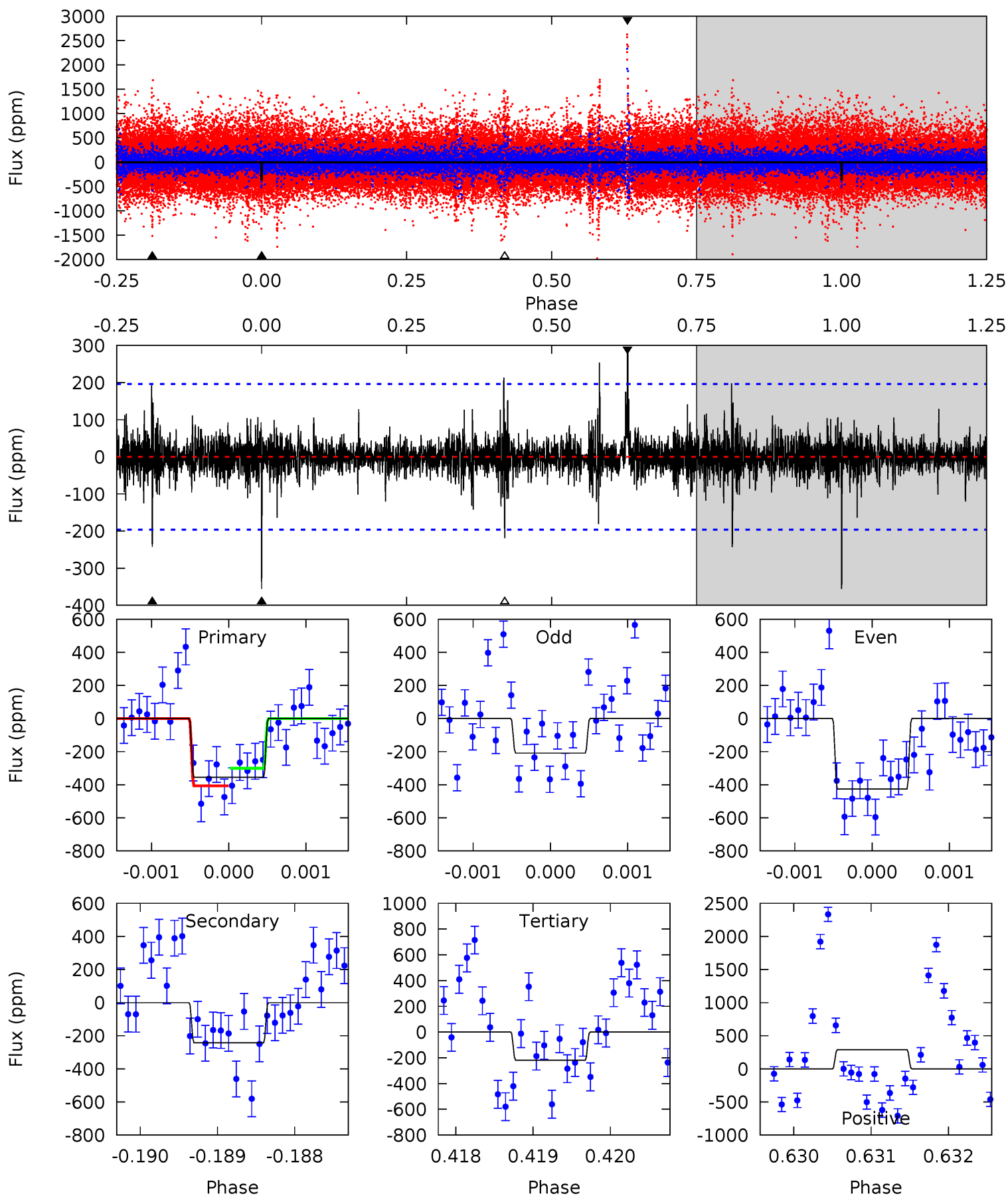
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	23.9	14.9	15.0	5.39	3.19	3.18	-2.77	-2.86	8.99	8.90	3.48	1.50	0.40	3.46



Alt Model-Shift Uniqueness Test

008308361-01, P = 607.435249 Days, E = 347.400012 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.87	6.74	6.09	8.03	5.45	3.29	0.95	3.77	1.83	0.64	-1.30	2.84	1.58	0.45	1.47



Stellar Parameters For KIC 008308361

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6208^{+172}_{-237}	$4.454^{+0.054}_{-0.202}$	$-0.120^{+0.250}_{-0.300}$	$1.024^{+0.309}_{-0.111}$	$1.086^{+0.153}_{-0.153}$	$1.423^{+0.399}_{-0.744}$
	+3%/-4%	+1%/-5%	+208%/-250%	+30%/-11%	+14%/-14%	+28%/-52%
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 008308361-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-838 ± 35	$2.92^{+0.58}_{-0.43}$	329^{+23}_{-17}	6663^{+479}_{-467}	110390^{+37758}_{-31836}
Alt.	-243 ± 36	$2.32^{+0.47}_{-0.39}$	330^{+21}_{-16}	5510^{+461}_{-380}	50215^{+22145}_{-15384}

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 $A_{obs} \gg 1.0$

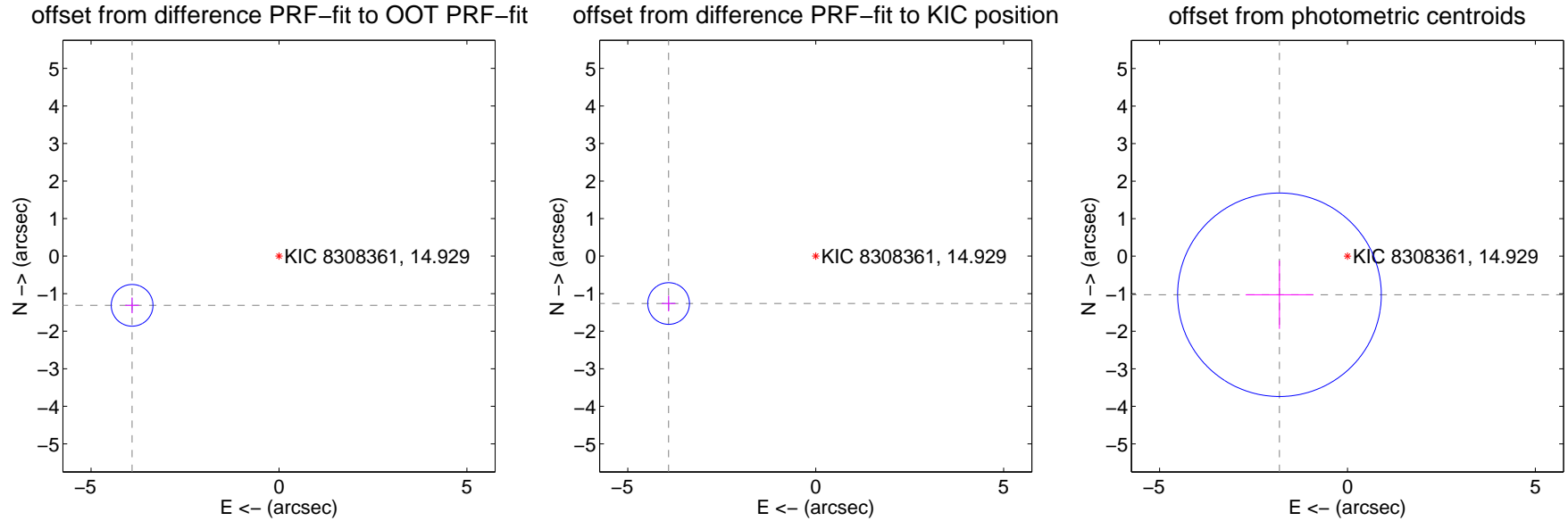
DV Centroid Data

Supplemental centroid analysis for 008308361-01. Kepler magnitude: 14.93. Transit SNR 12.18

There are 1 quarters with good PRF difference image offsets

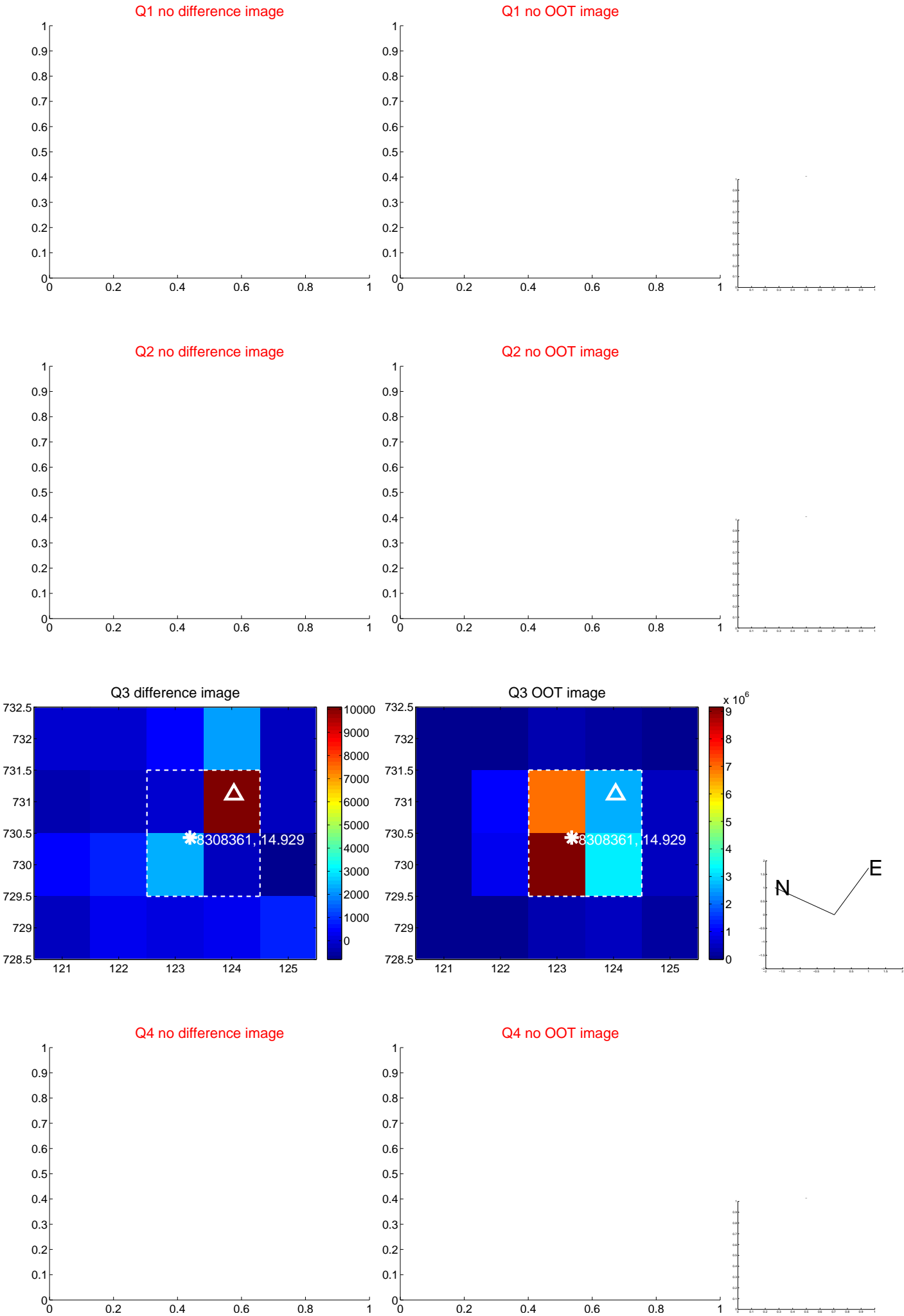
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.123 ± 0.185	22.27	3.909 ± 0.182	-1.311 ± 0.209
PRF-fit source offset from KIC position	4.113 ± 0.185	22.24	3.915 ± 0.182	-1.262 ± 0.209
photometric centroid source offset	2.08 ± 0.90	2.30	1.81 ± 0.90	-1.03 ± 0.91

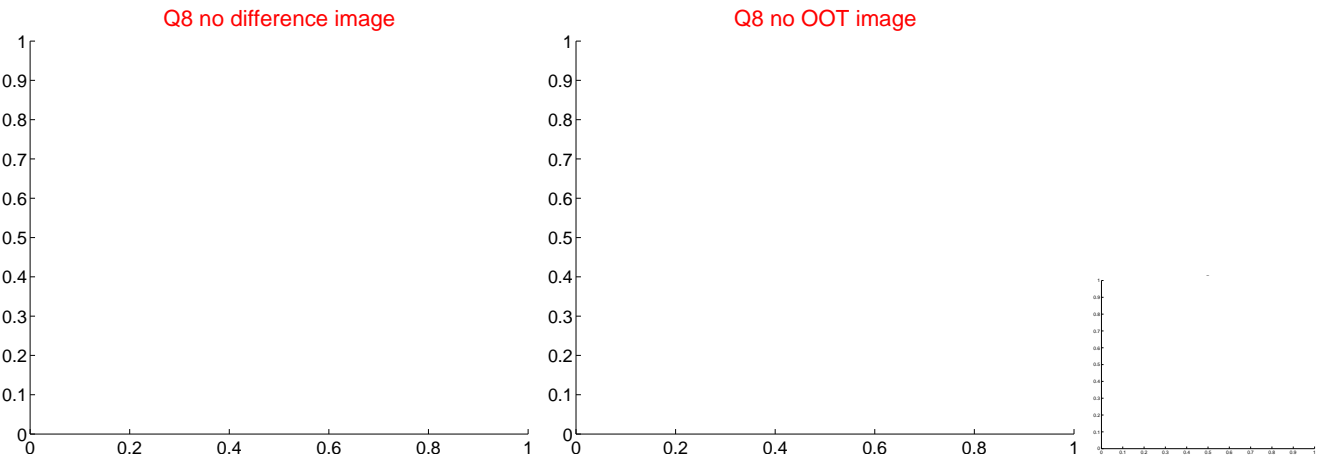


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

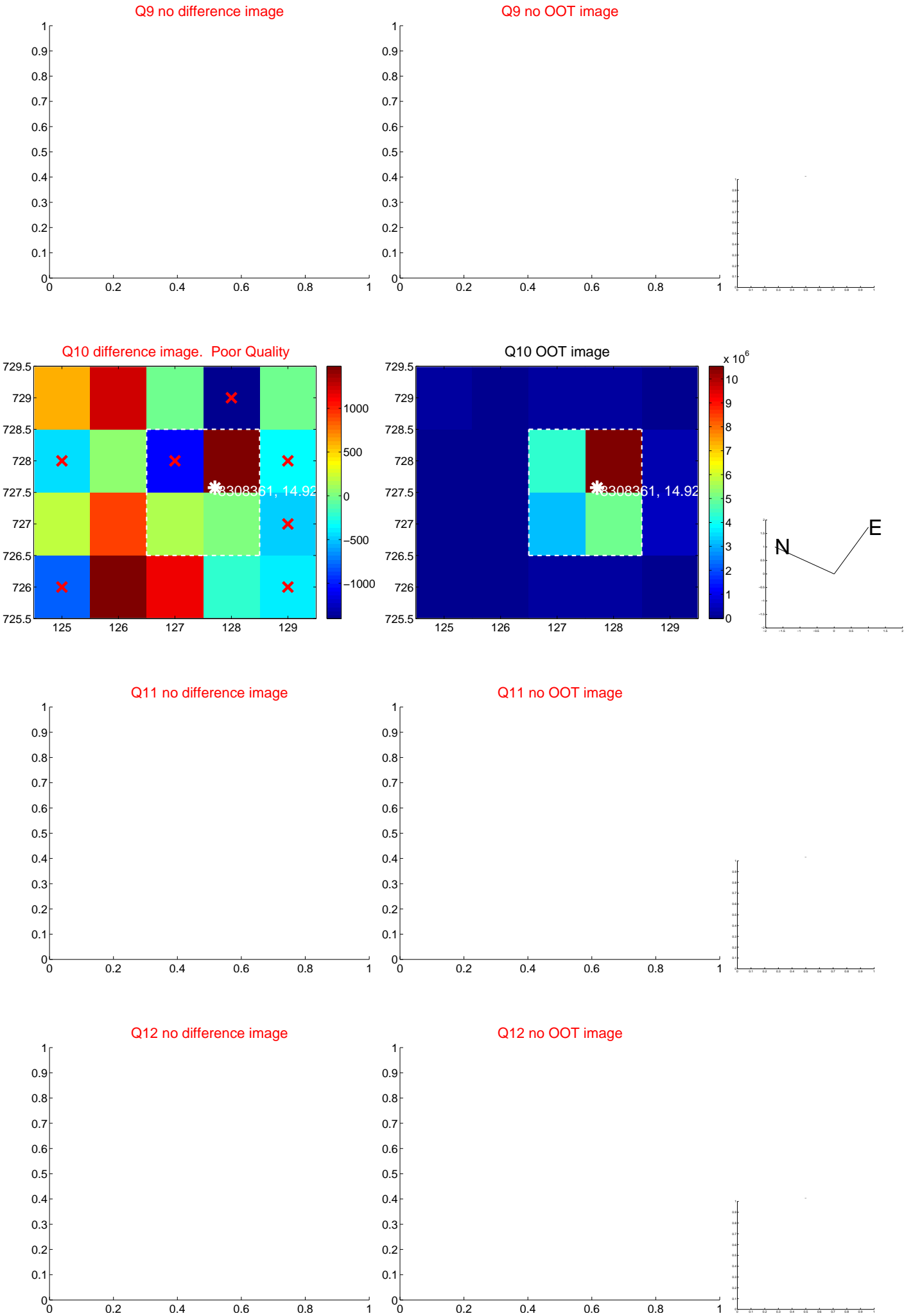
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



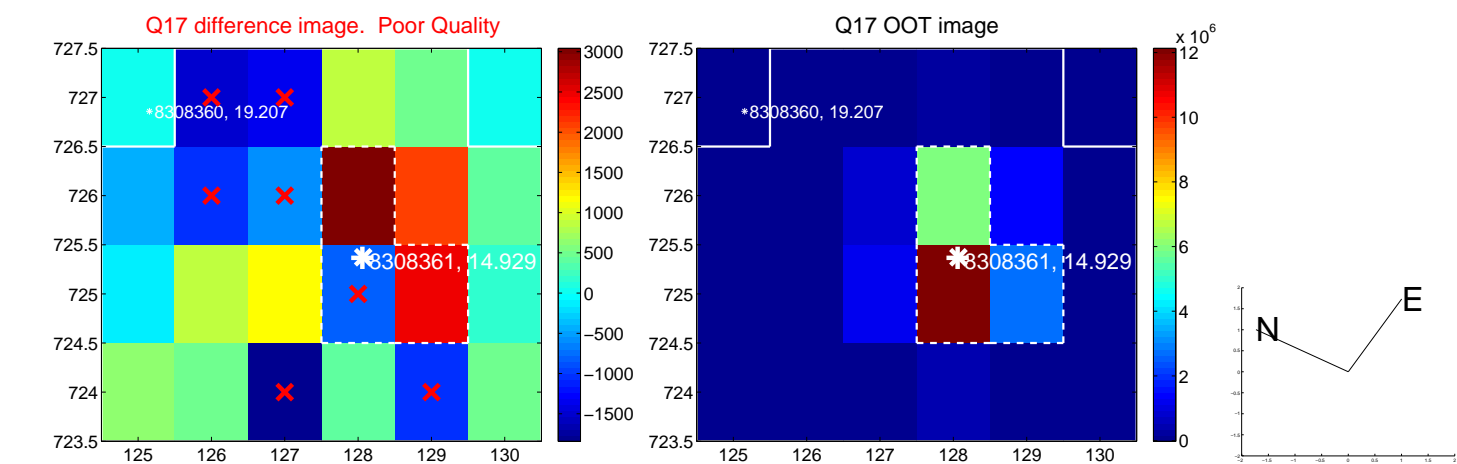
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



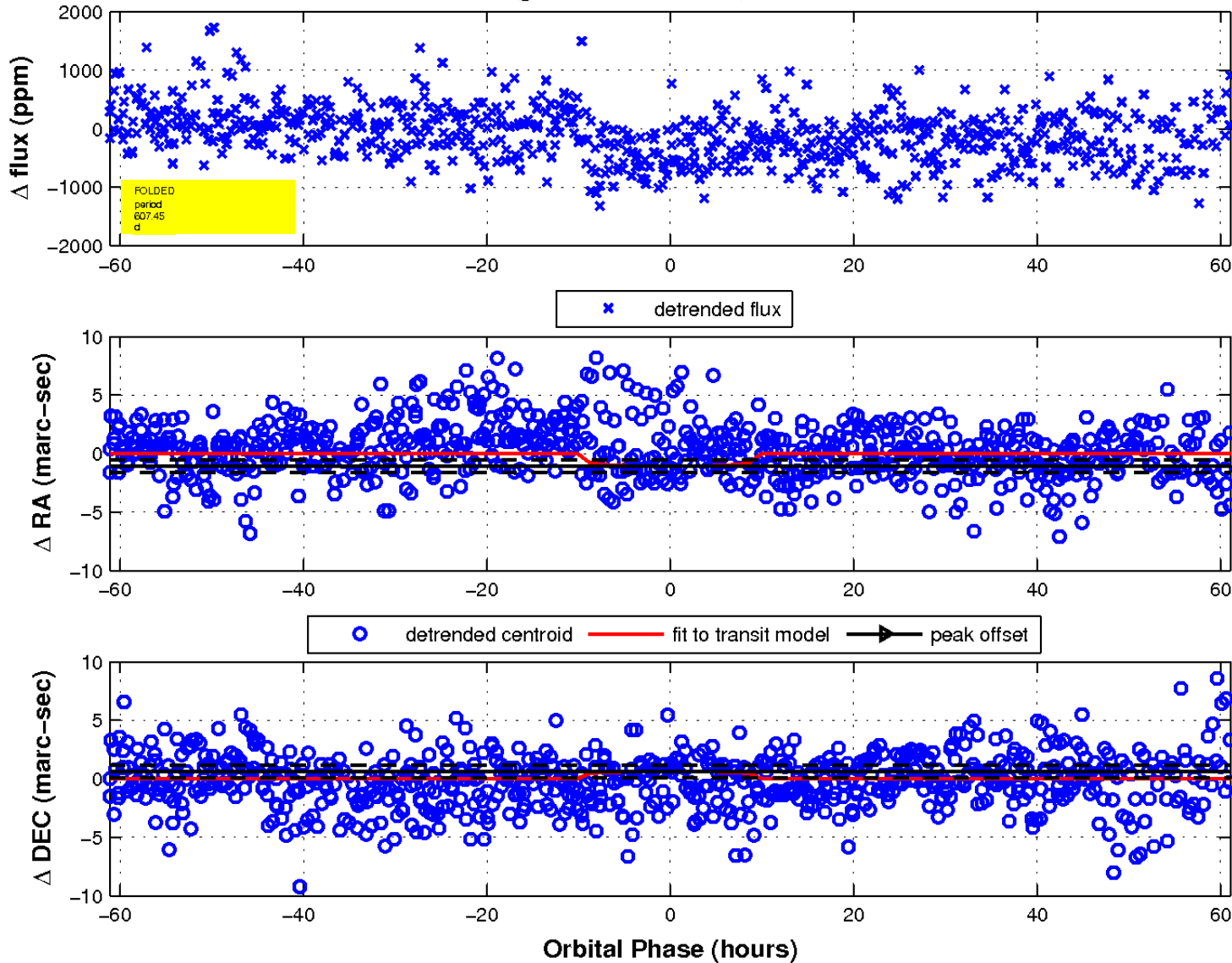
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

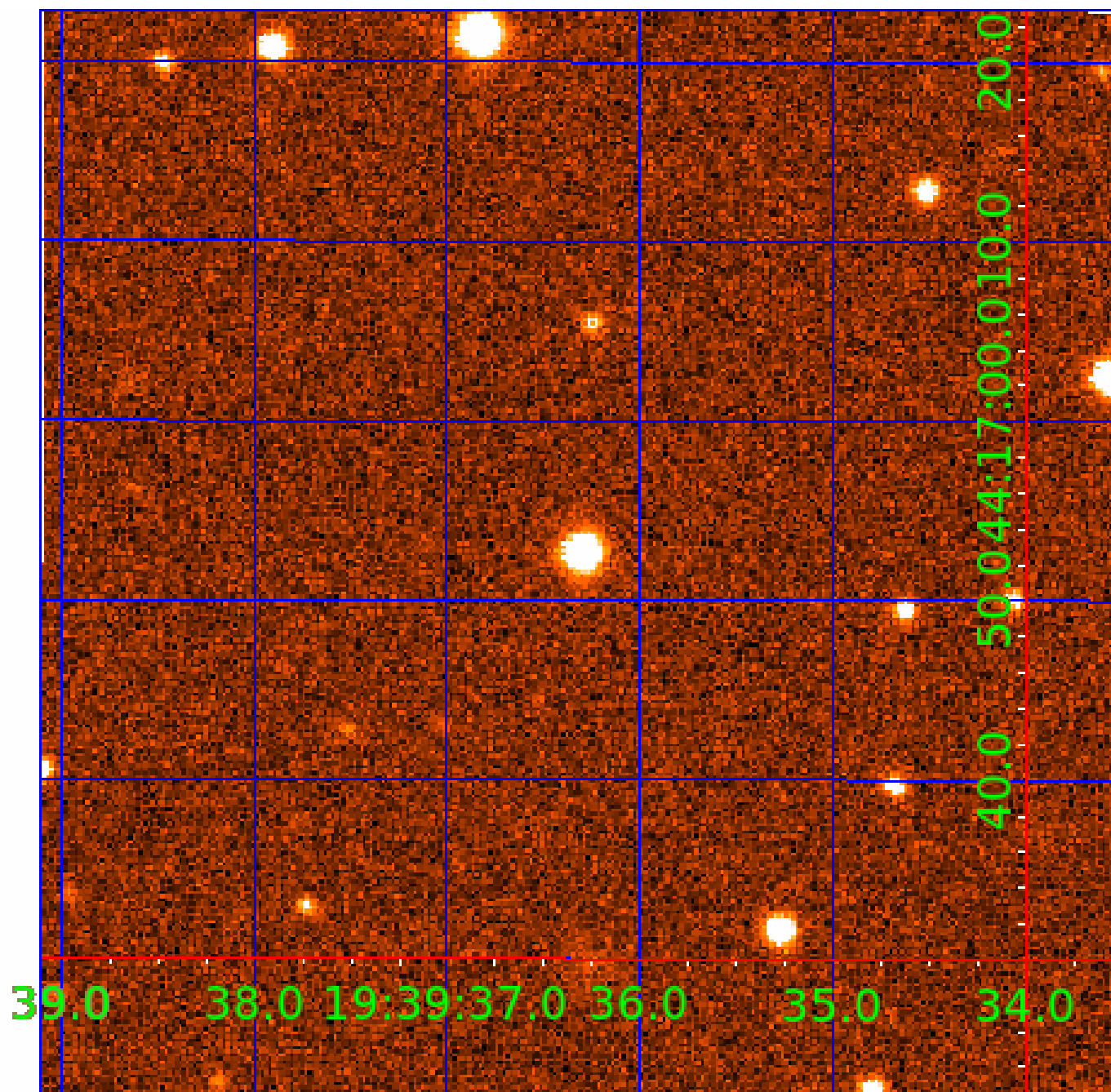


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008308361

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})
008308361-01	OBS	No	607.449706	347.482496	604.6	20.483	11.1	12.2	1.02	6208	2.83	0.67
008308361-02	OBS	No	368.193575	234.841199	1102.6	8.620	8.8	9.8	1.02	6208	3.91	1.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008308361-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008308361-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

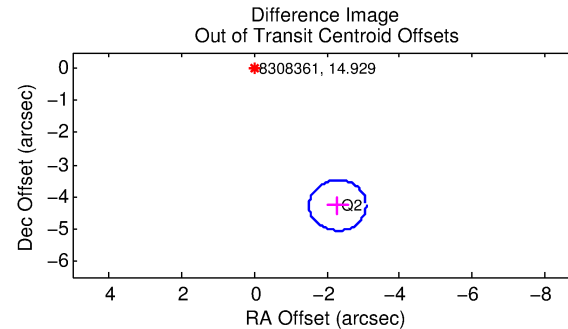
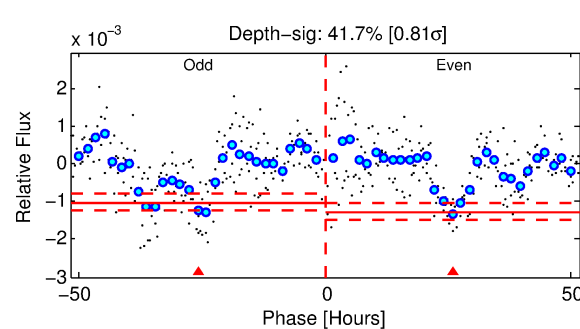
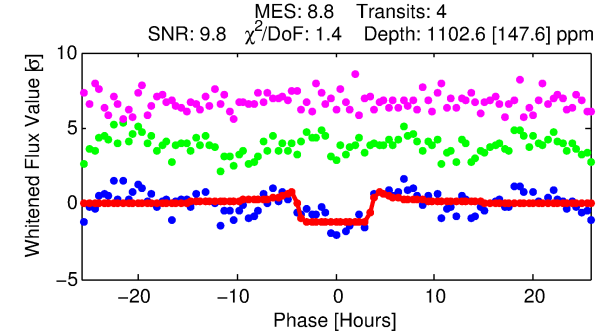
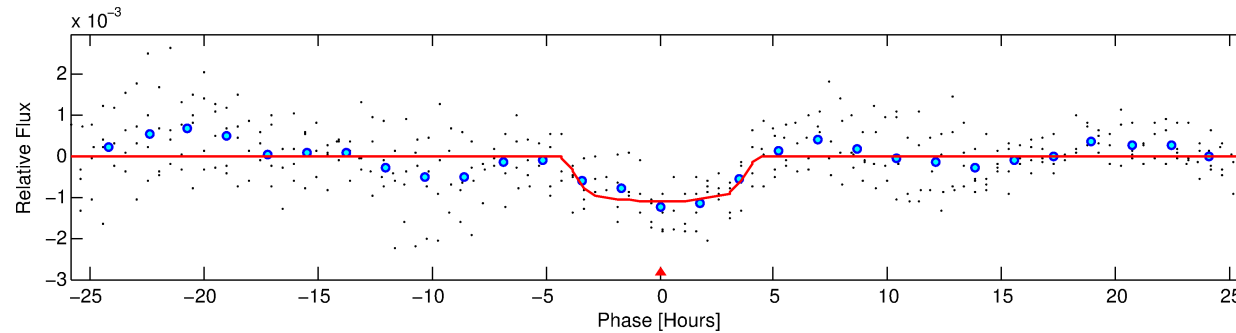
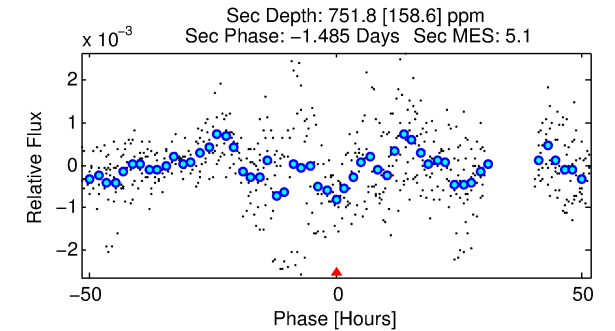
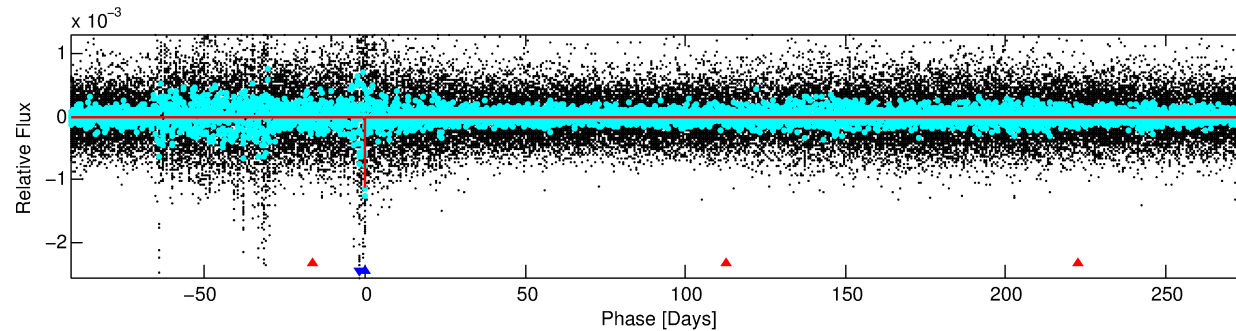
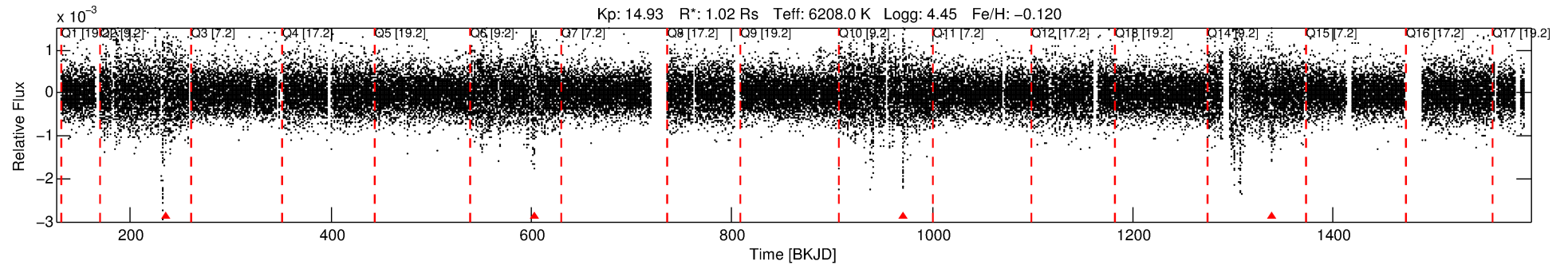
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008308361-02

No Significant Match Found

DV One-Page Summary

KIC: 8308361 Candidate: 2 of 2 Period: 368.194 d



DV Fit Results:

Period = 368.19357 [0.00610] d
Epoch = 234.8412 [0.0124] BKJD
Rp/R* = 0.0350 [0.0038]
a/R* = 182.60 [70.13]
b = 0.87 [0.11]
Seff = 1.30 [0.52]
Teq = 273 [27] K
Rp = 3.91 [1.25] Re
a = 1.0342 [0.2627] AU
Ag = 28977.32 [13836.76] [2.09σ]
Teff = 5497 [465] K [11.21σ]

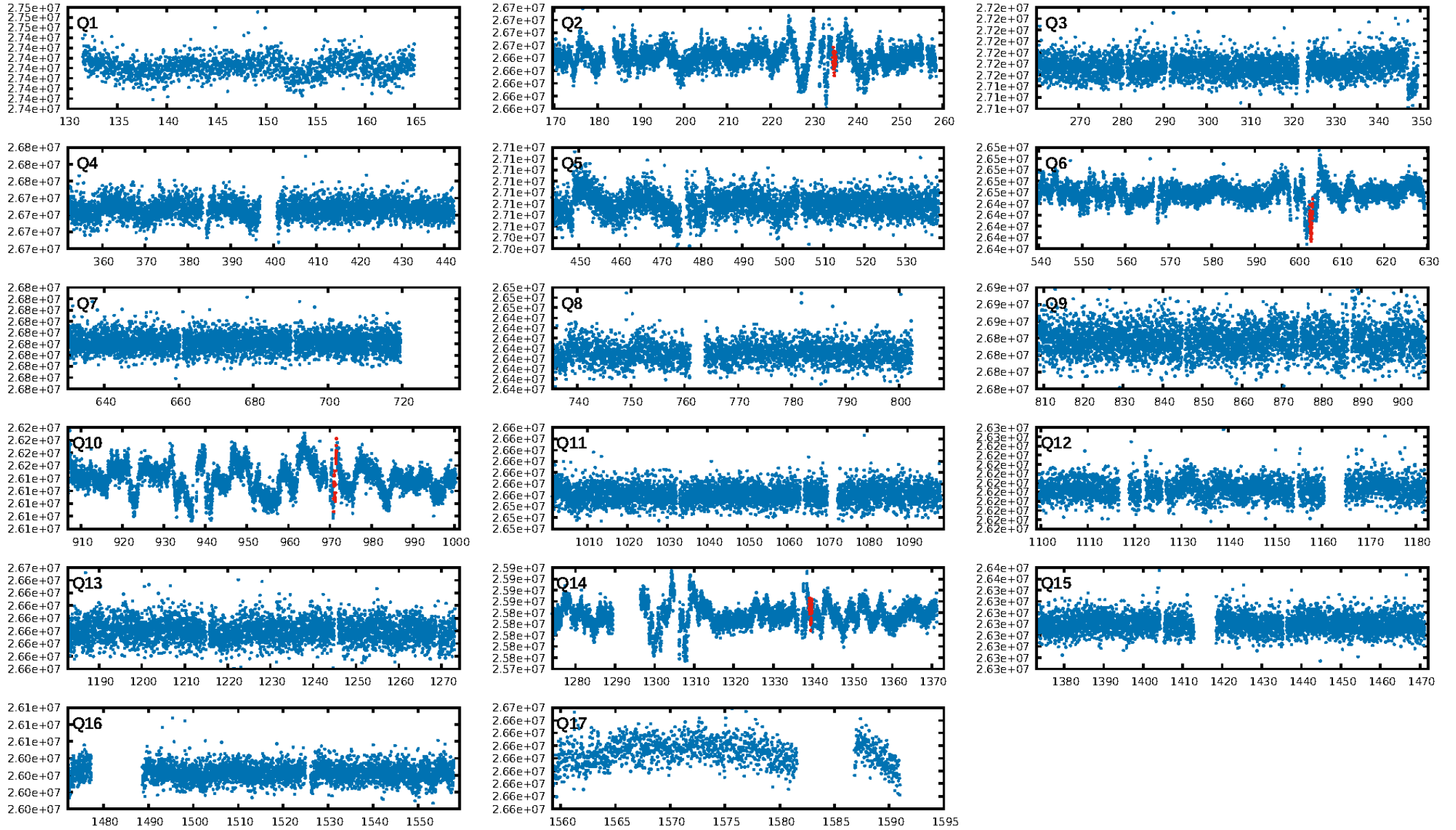
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [258.39σ]
ModelChiSquare2-sig: 24.2%
ModelChiSquareGoF-sig: 84.0%
Bootstrap-pfa: 7.83e-11
RollingBand-fgt: 0.00 [0/4]
GhostDiagnostic-chr: 5.9
Centroid-sig: 0.0%
Centroid-so: 7.440 arcsec [4.21σ]
OotOffset-rm: 4.847 arcsec [18.52σ]
KicOffset-rm: 4.795 arcsec [18.32σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
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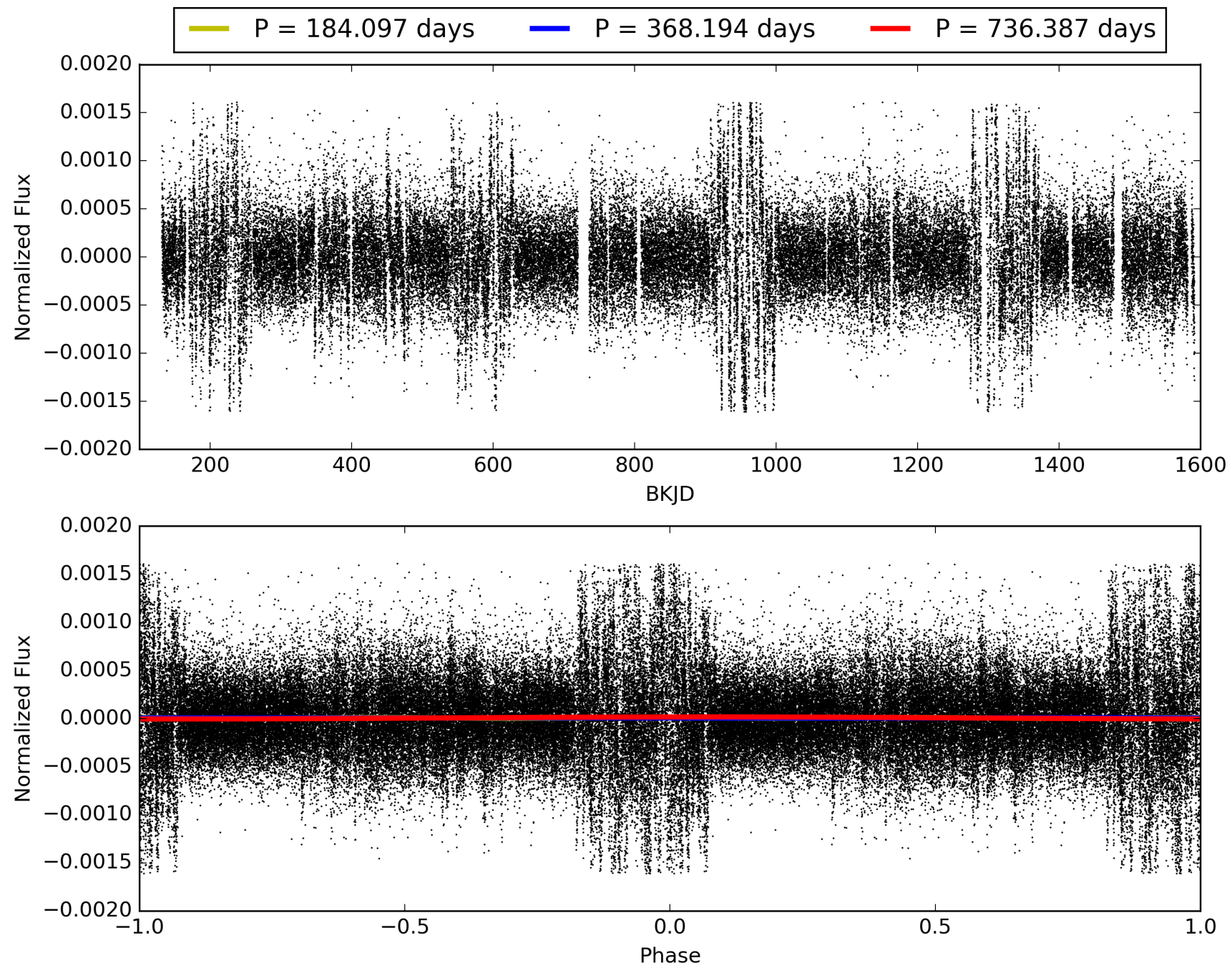
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:37:55 Z

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

TCE 008308361-02, PDC Light Curves

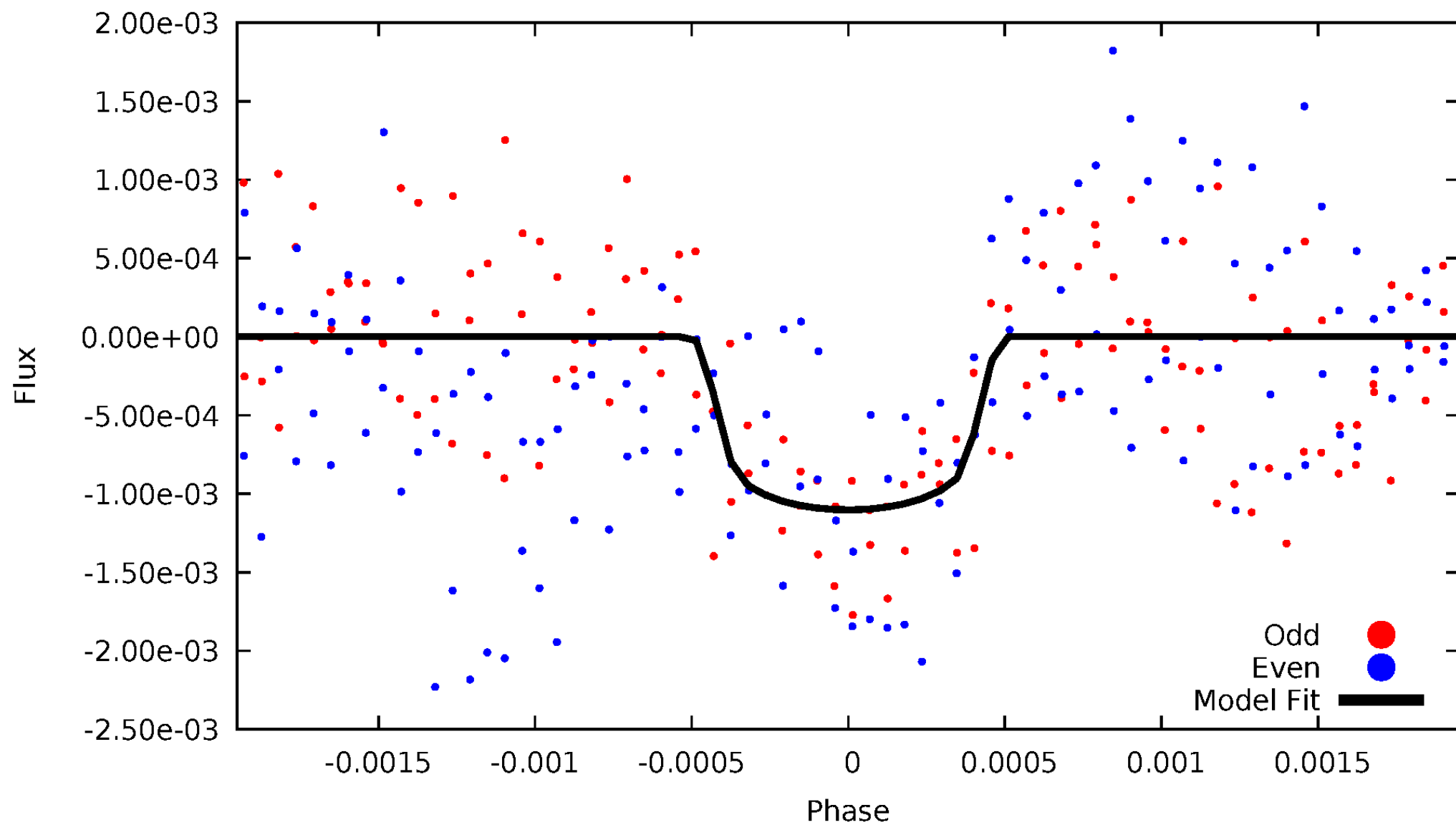


TCE 008308361-02



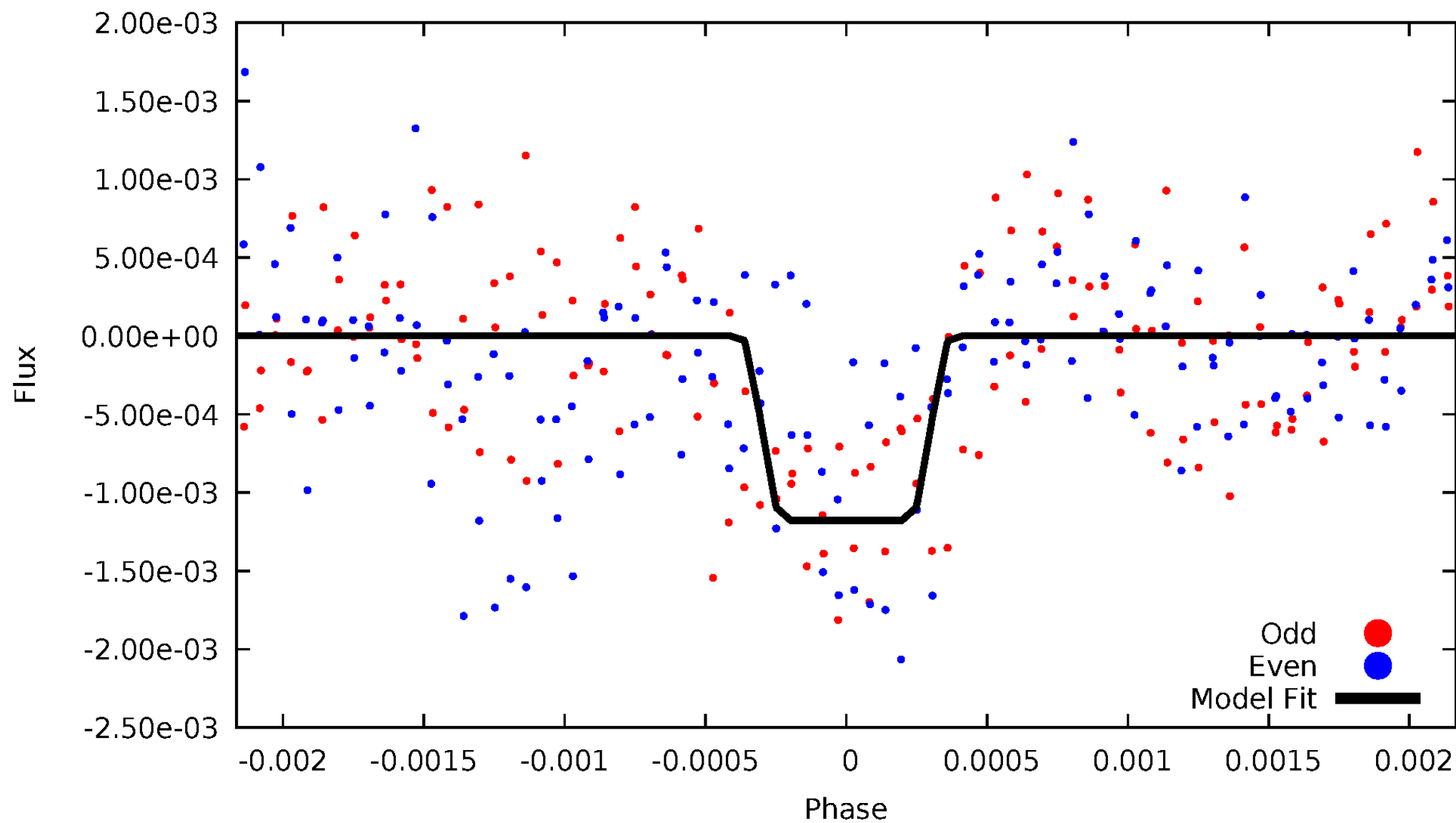
DV Odd/Even

TCE 008308361-02



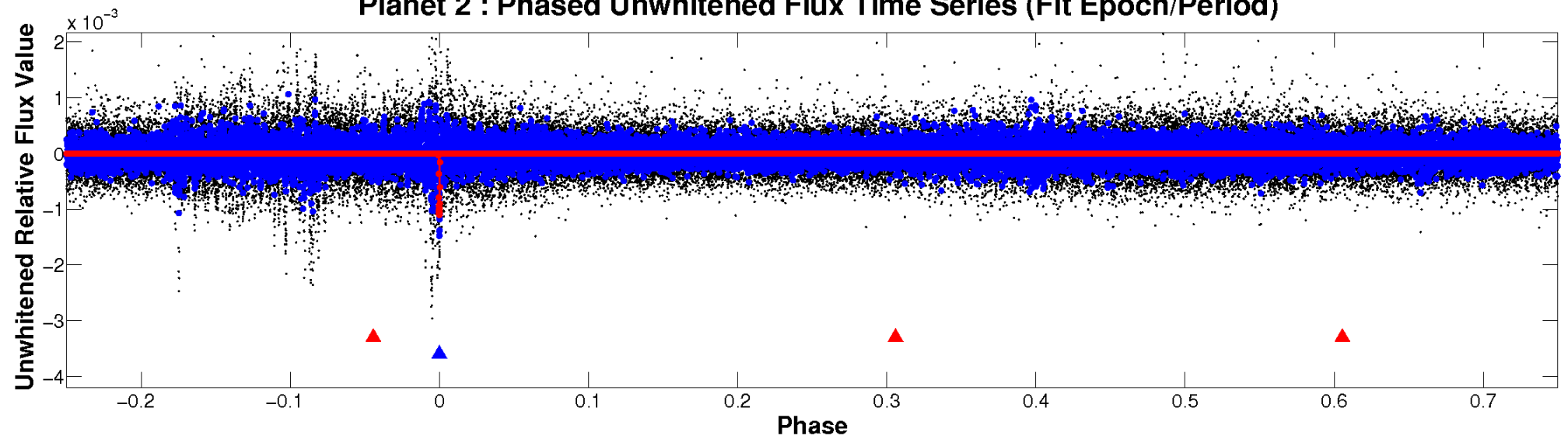
ALT Odd/Even

TCE 008308361-02

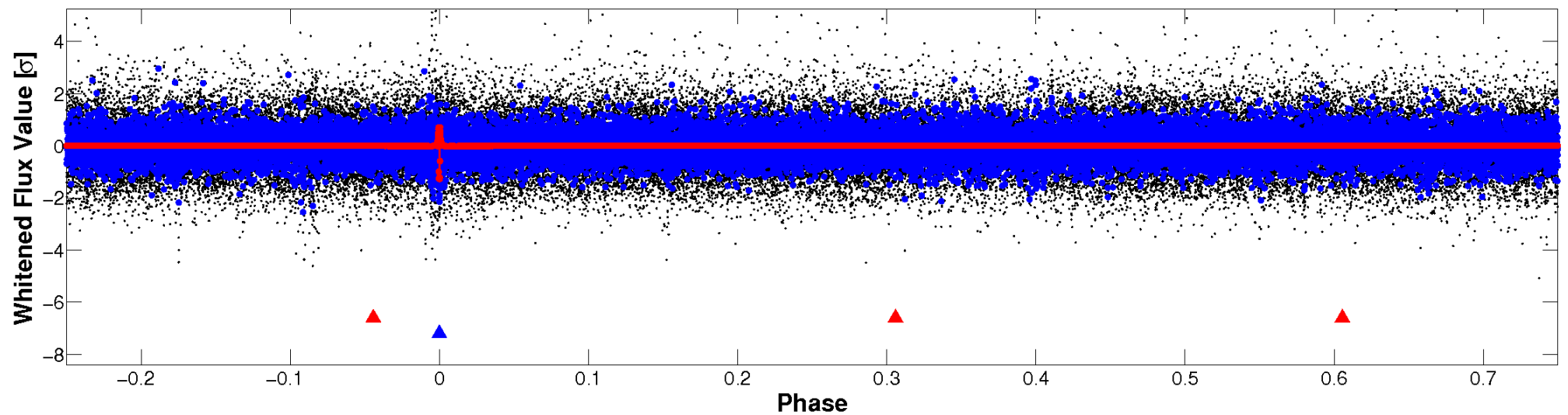


Non-Whitened Vs. Whitened Light Curve

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

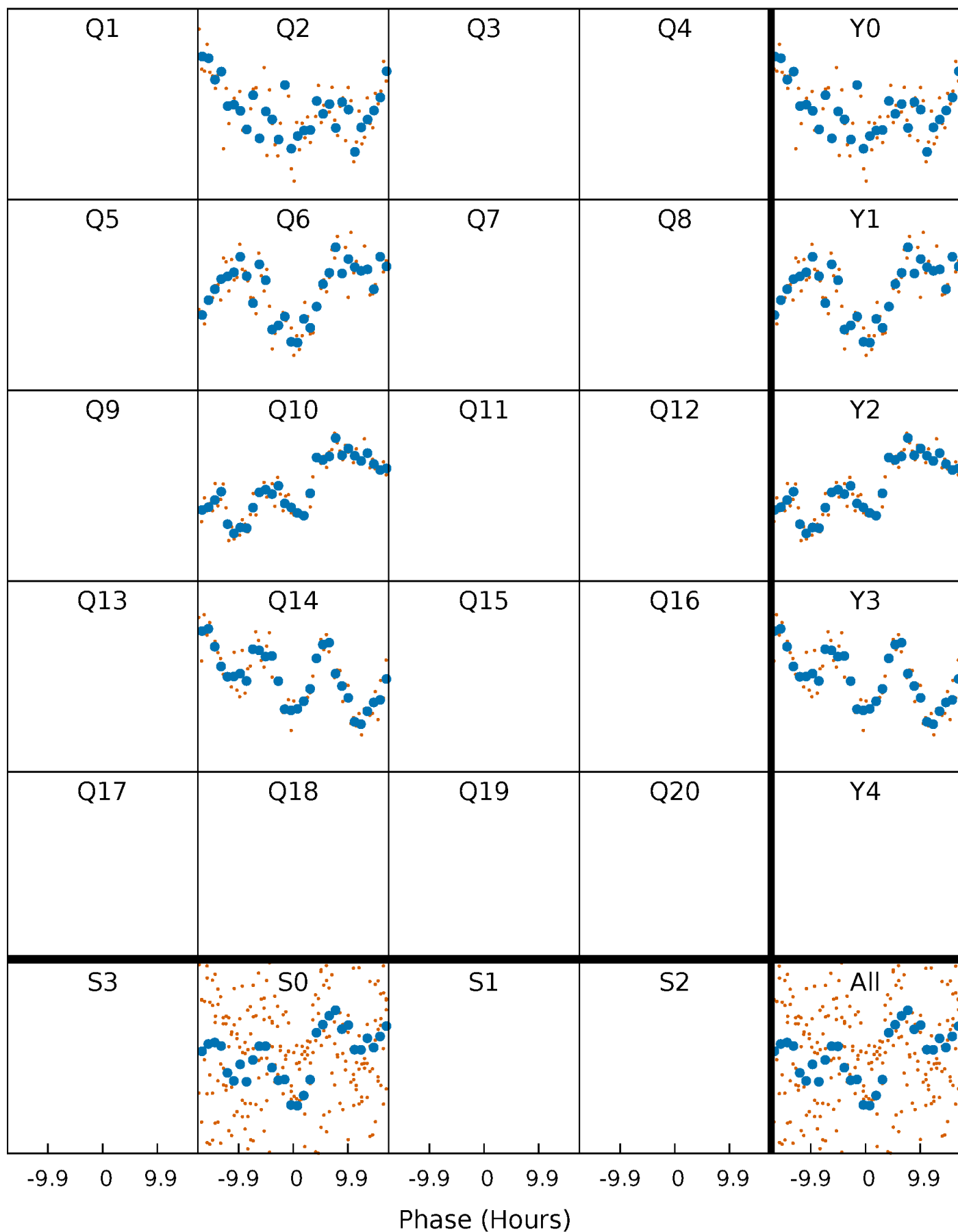


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



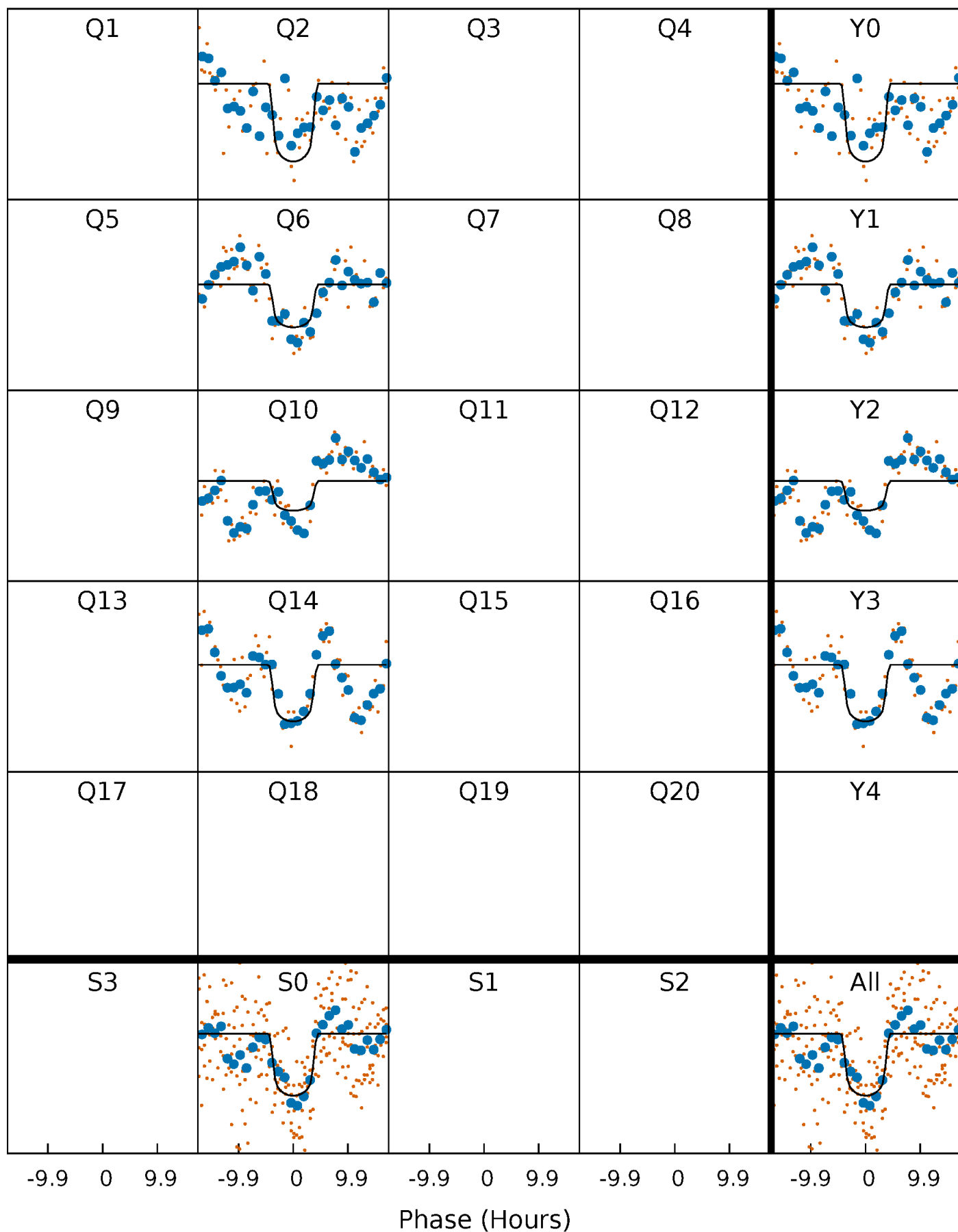
PDC Quarter-Phased Transit Curves

TCE 008308361-02 $P=368.193575$ Days $T_0=234.841199$ (BKJD)



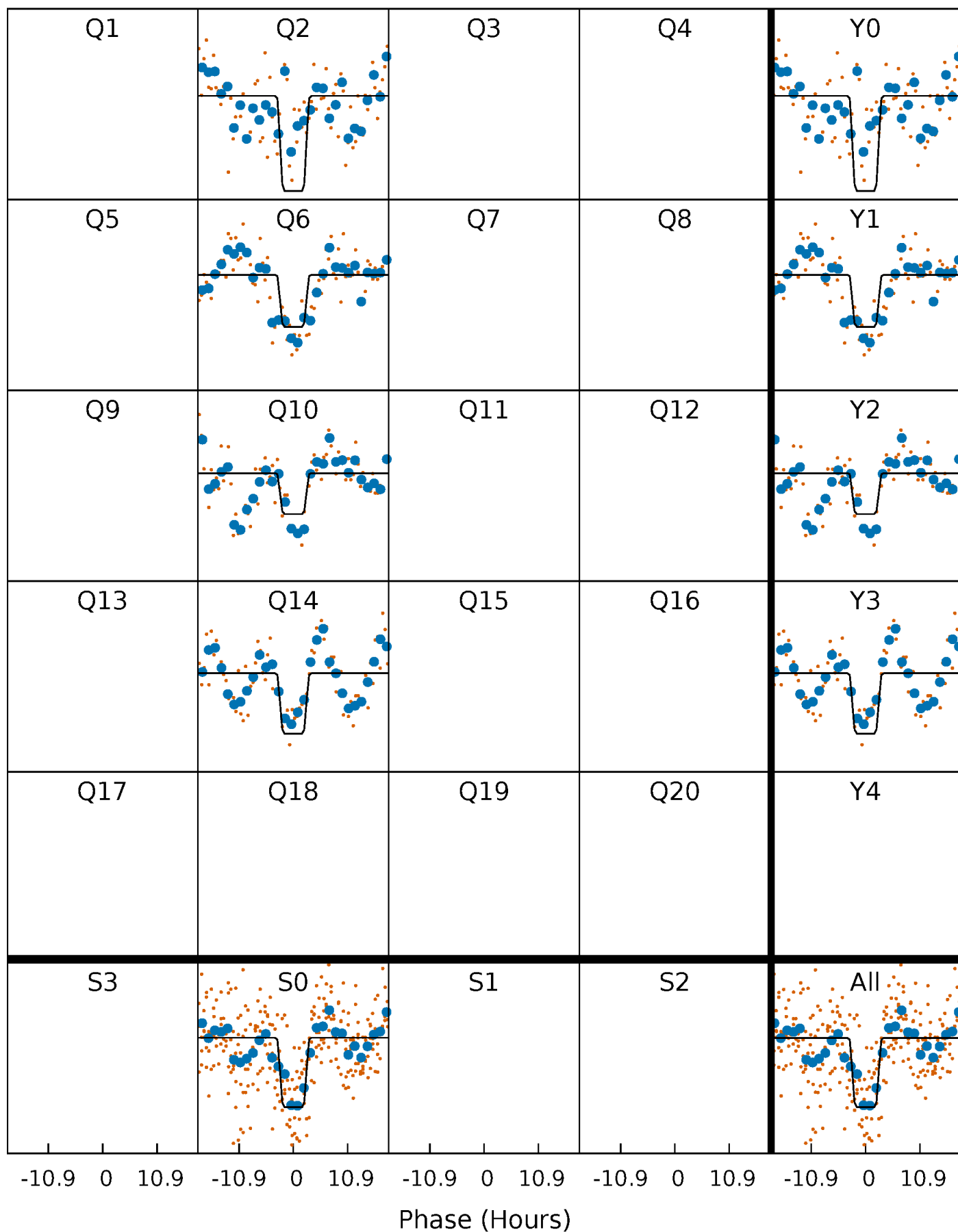
DV Quarter-Phased Transit Curves

TCE 008308361-02 P=368.193575 Days $T_0=234.841199$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

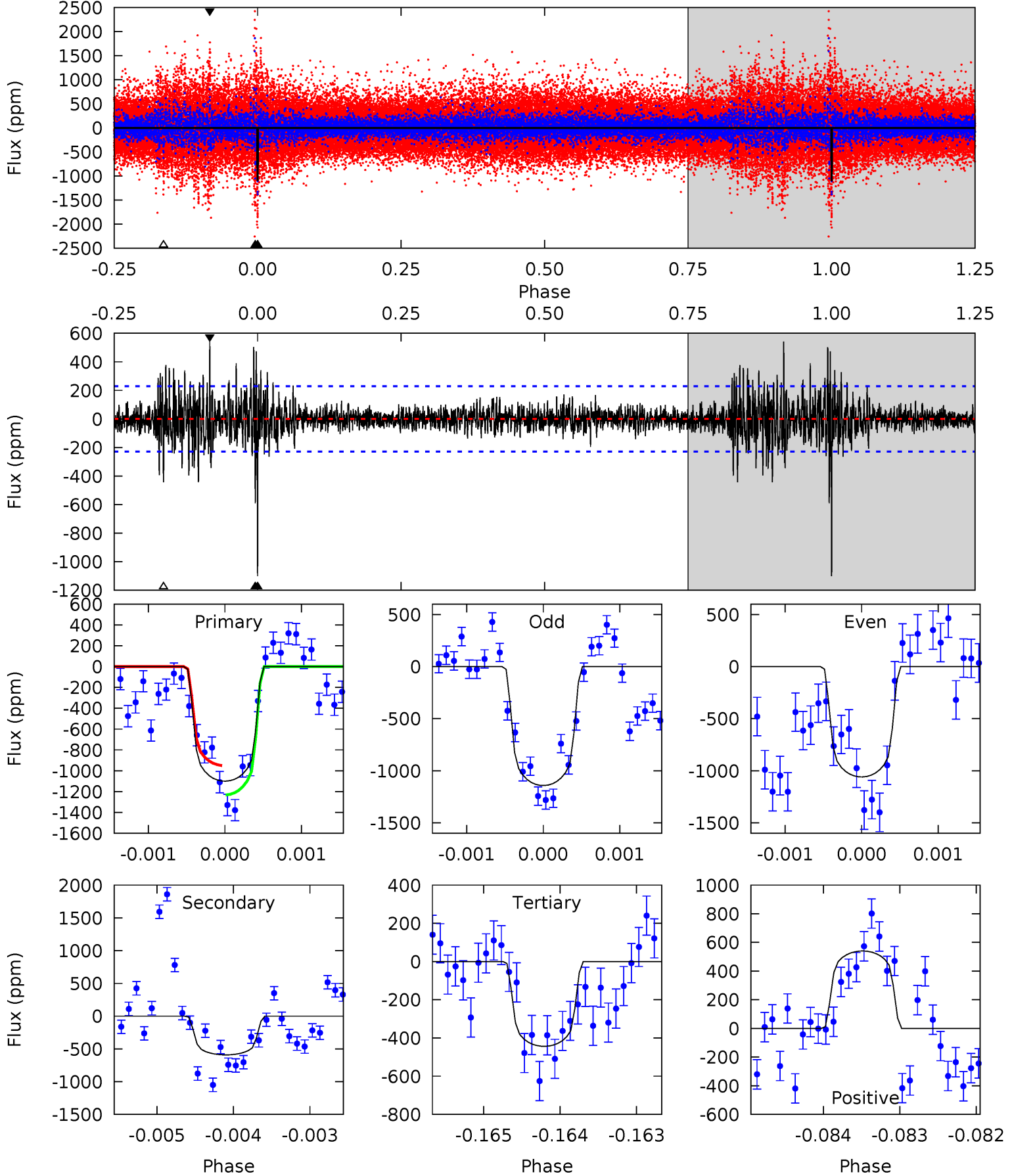
TCE 008308361-02 P=368.192318 Days $T_0=234.858350$ (BKJD)



DV Model-Shift Uniqueness Test

008308361-02, P = 368.193575 Days, E = 234.841199 Days

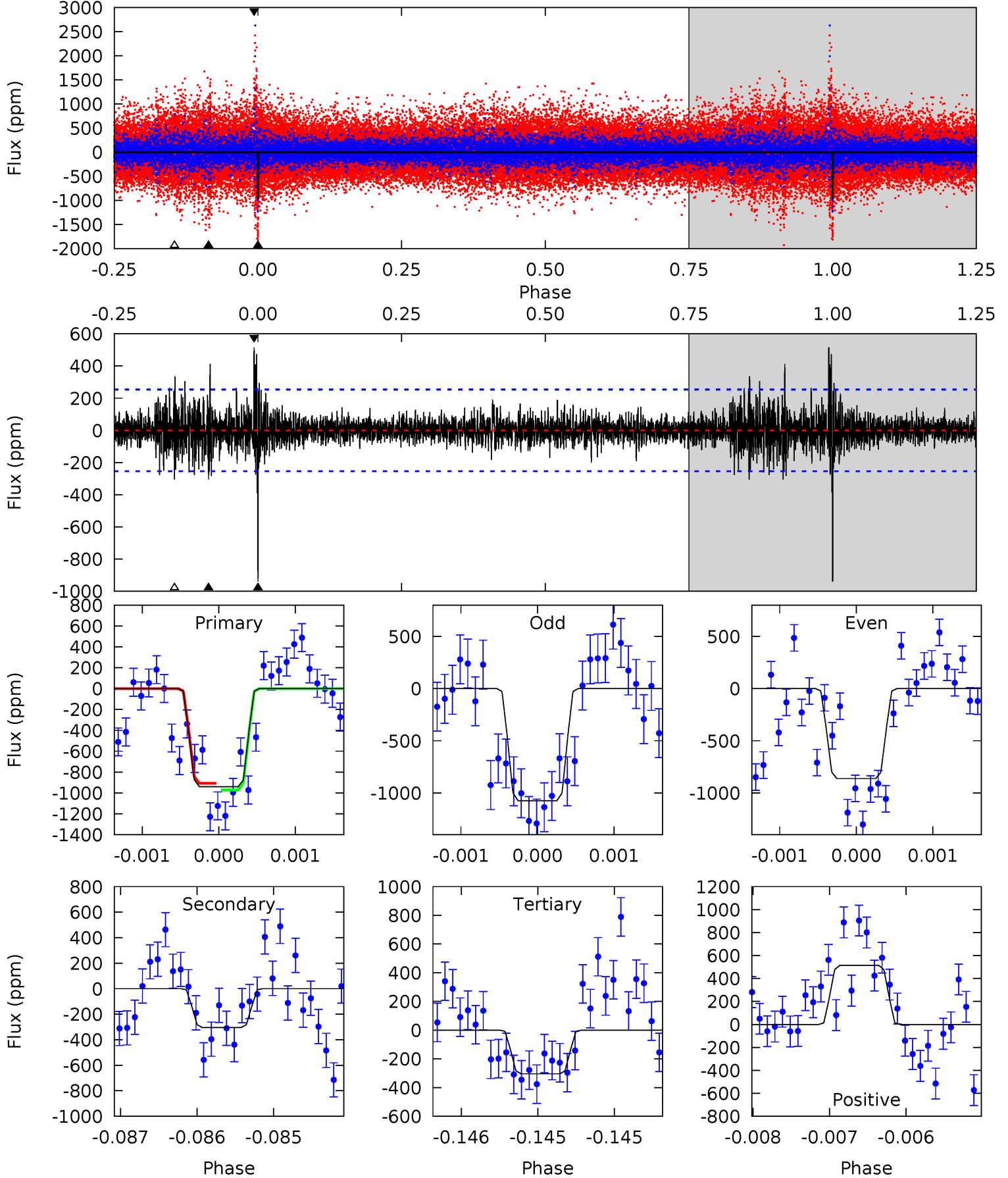
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.2	14.1	10.6	12.9	5.45	3.29	1.91	15.6	13.3	3.52	1.21	0.97	0.97	0.33	3.32



Alt Model-Shift Uniqueness Test

008308361-02, P = 368.192318 Days, E = 234.858350 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.3	6.59	6.58	11.1	5.50	3.36	1.37	13.8	9.19	0.00	-4.55	2.32	0.90	0.35	0.70



Stellar Parameters For KIC 008308361

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6208^{+172}_{-237}	$4.454^{+0.054}_{-0.202}$	$-0.120^{+0.250}_{-0.300}$	$1.024^{+0.309}_{-0.111}$	$1.086^{+0.153}_{-0.153}$	$1.423^{+0.399}_{-0.744}$
	+3%/-4%	+1%/-5%	+208%/-250%	+30%/-11%	+14%/-14%	+28%/-52%
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 008308361-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-591 ± 42	$4.09^{+0.74}_{-0.57}$	388^{+28}_{-22}	5198^{+349}_{-294}	20425^{+7406}_{-5562}
Alt.	-304 ± 46	$4.00^{+0.69}_{-0.56}$	388^{+25}_{-20}	4570^{+289}_{-247}	11011^{+3939}_{-3174}

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 $A_{obs} \gg 1.0$

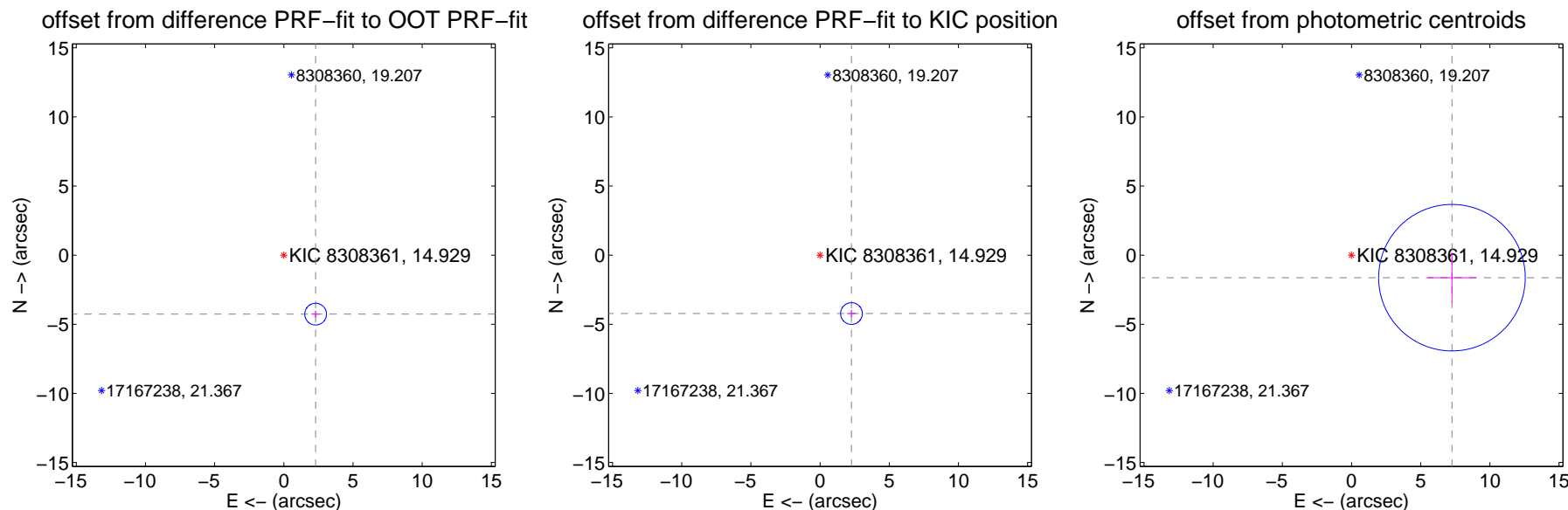
DV Centroid Data

Supplemental centroid analysis for 008308361-02. Kepler magnitude: 14.93. Transit SNR 9.82

There are 1 quarters with good PRF difference image offsets

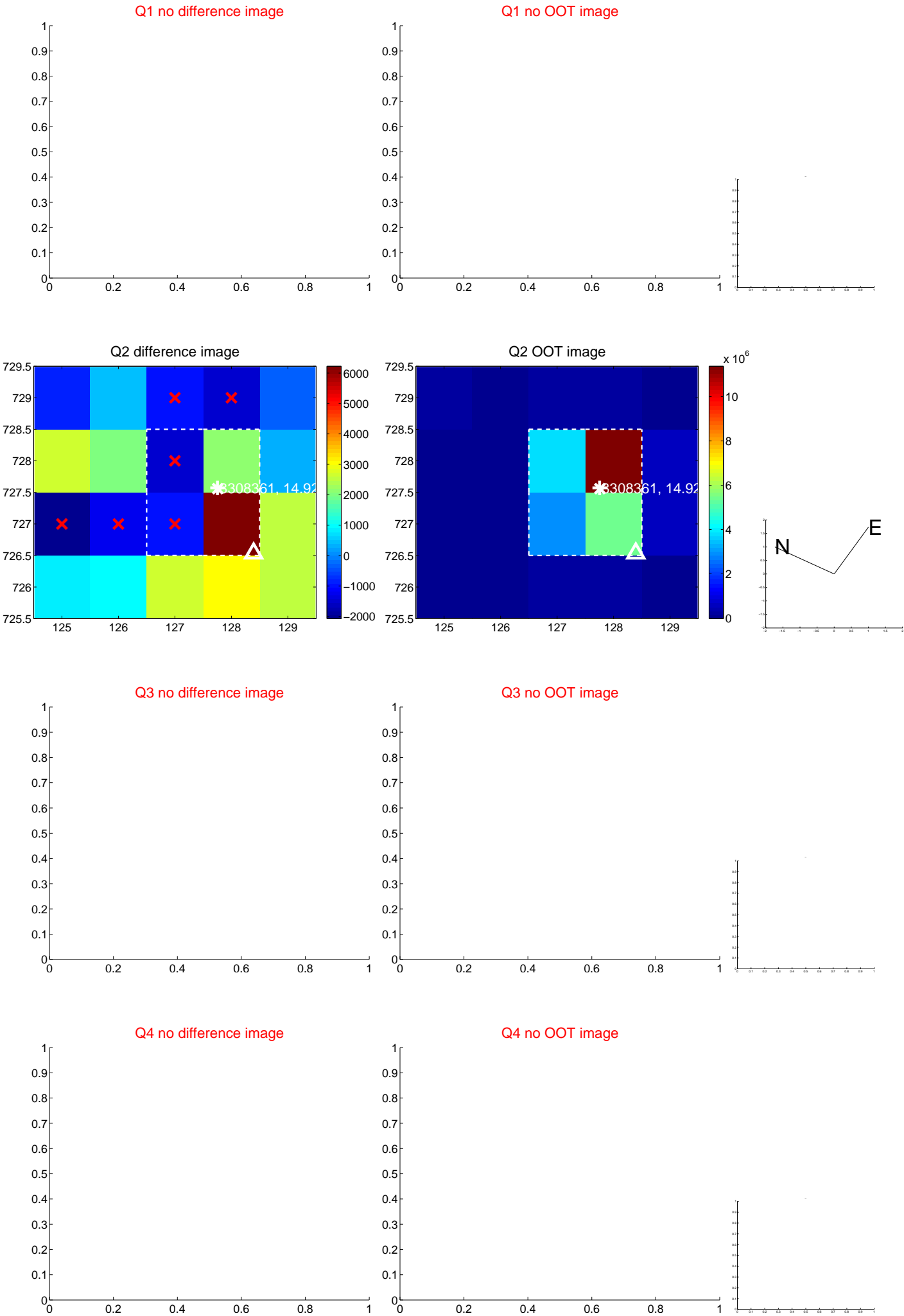
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.847 ± 0.262	18.52	-2.298 ± 0.298	-4.268 ± 0.250
PRF-fit source offset from KIC position	4.795 ± 0.262	18.32	-2.269 ± 0.298	-4.224 ± 0.250
photometric centroid source offset	7.44 ± 1.77	4.21	-7.26 ± 1.76	-1.63 ± 1.82

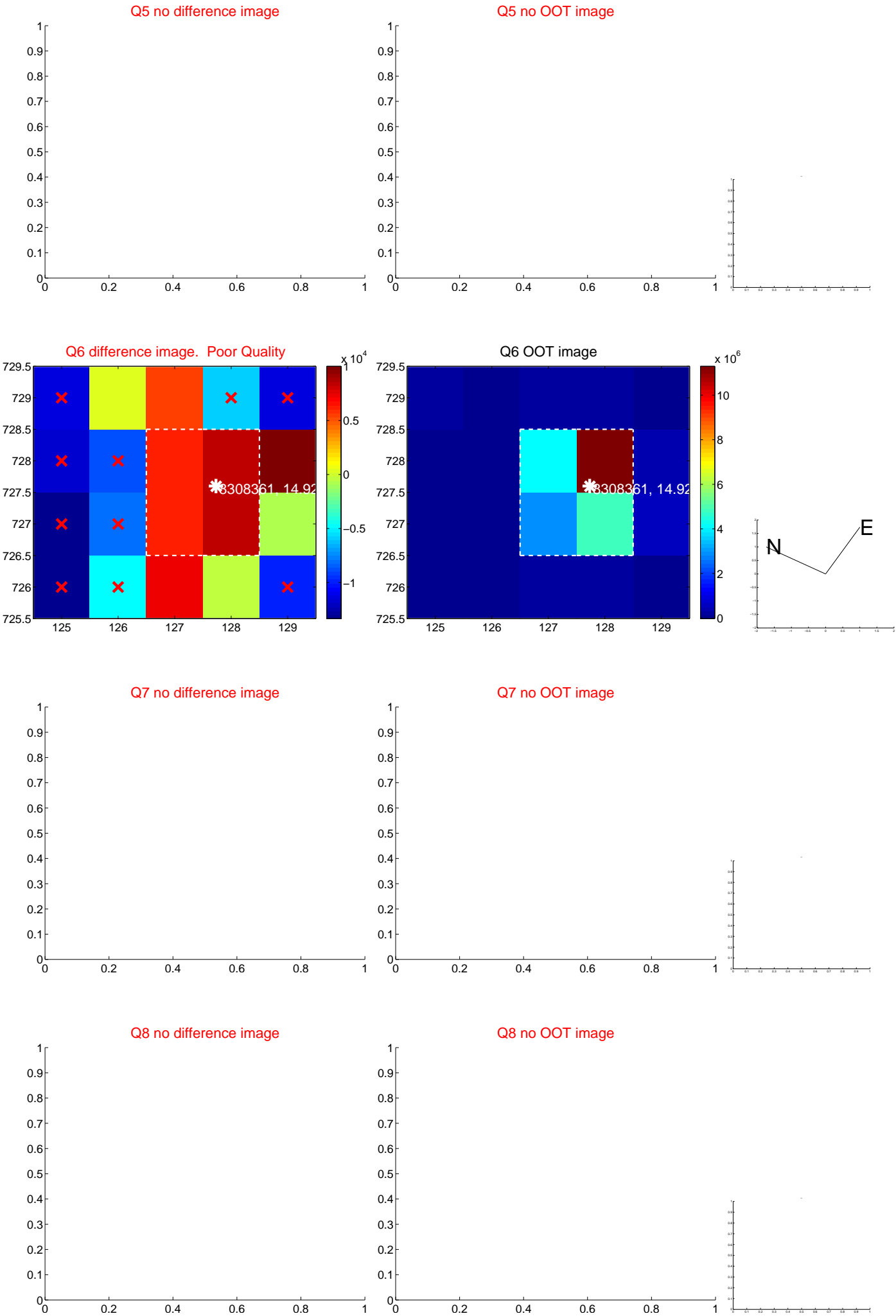


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

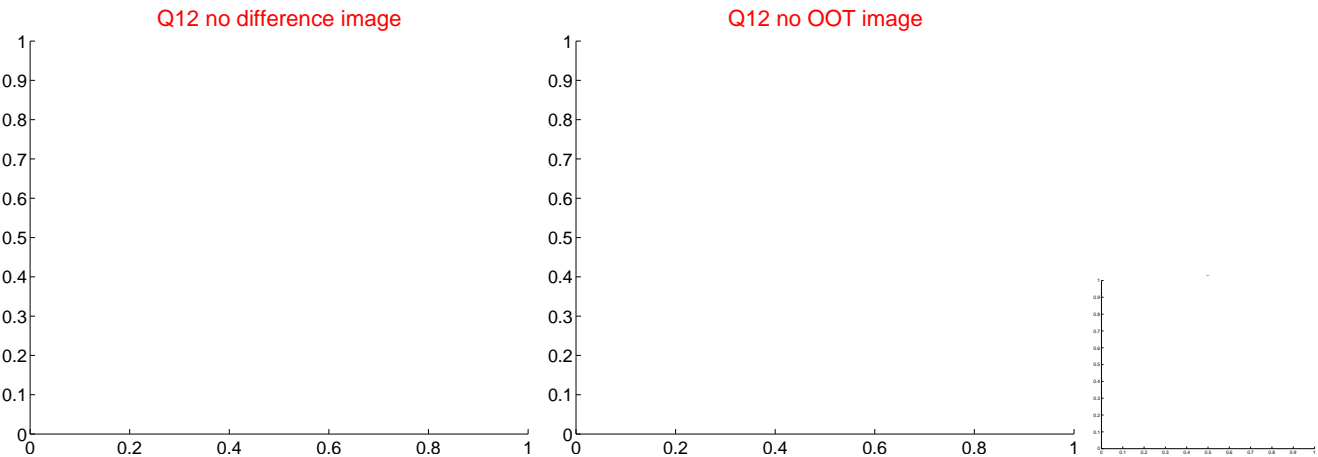
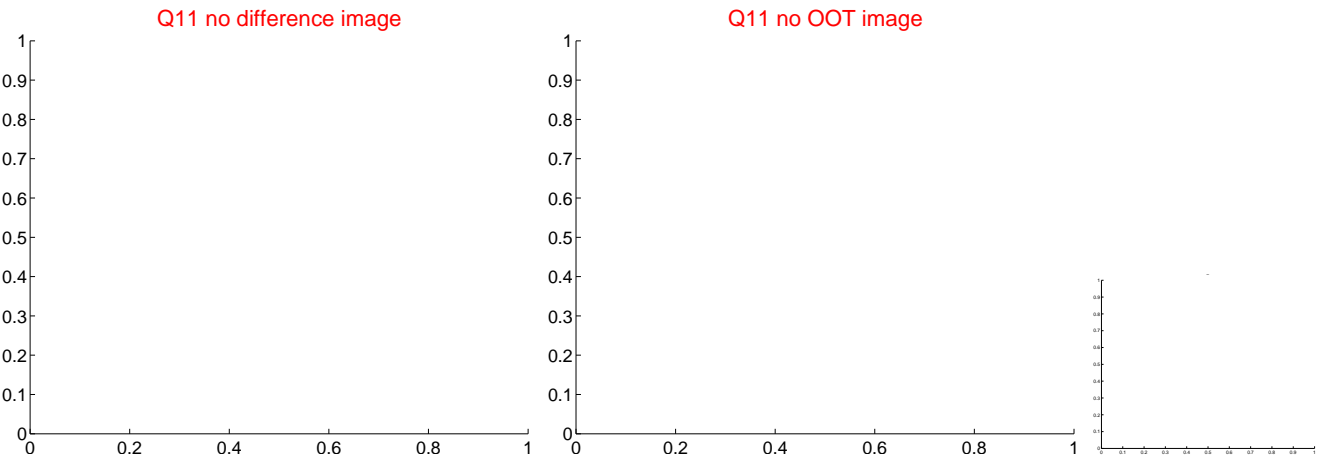
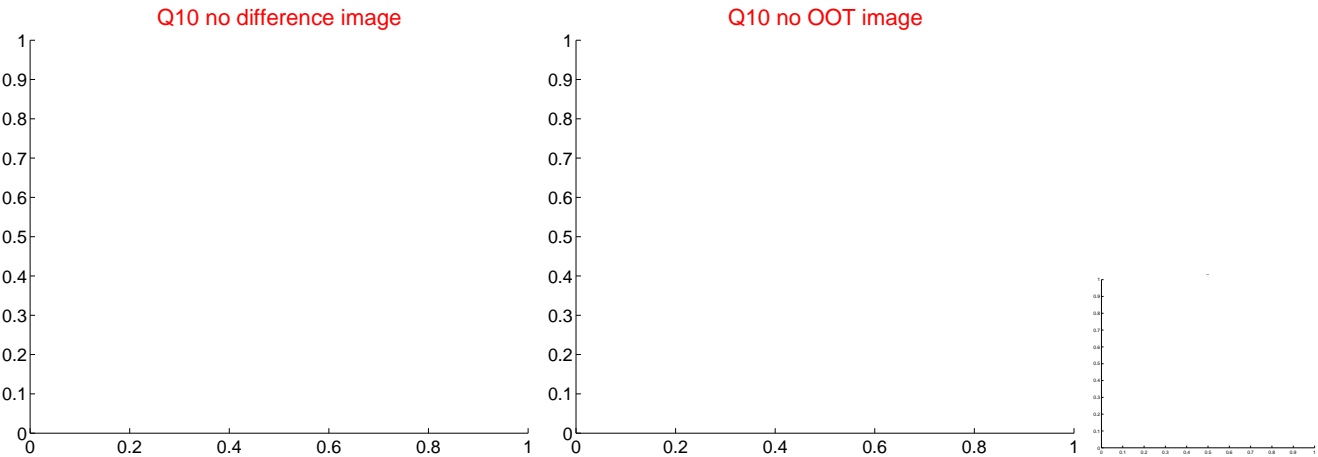
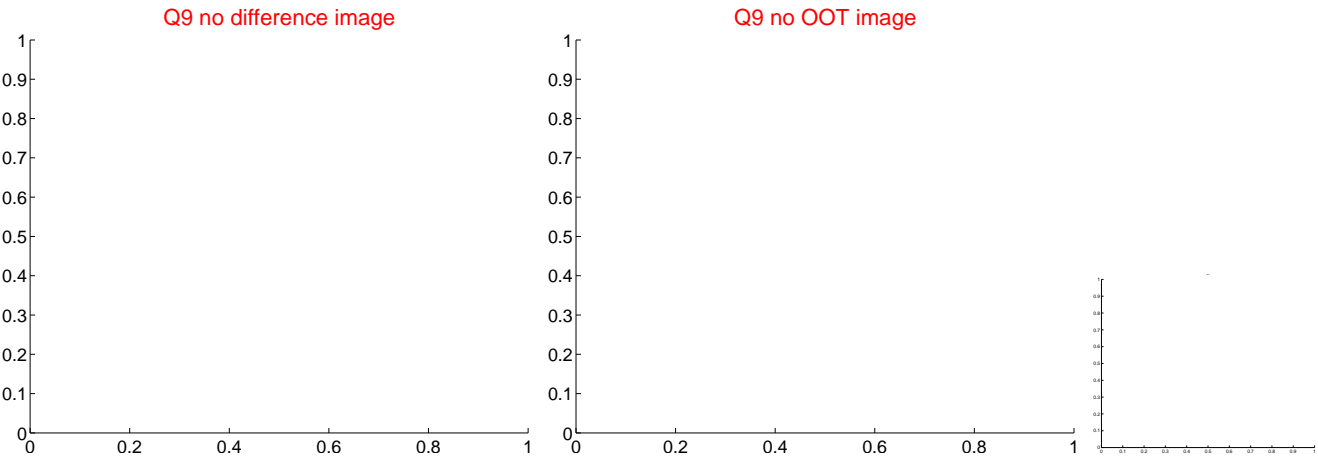
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



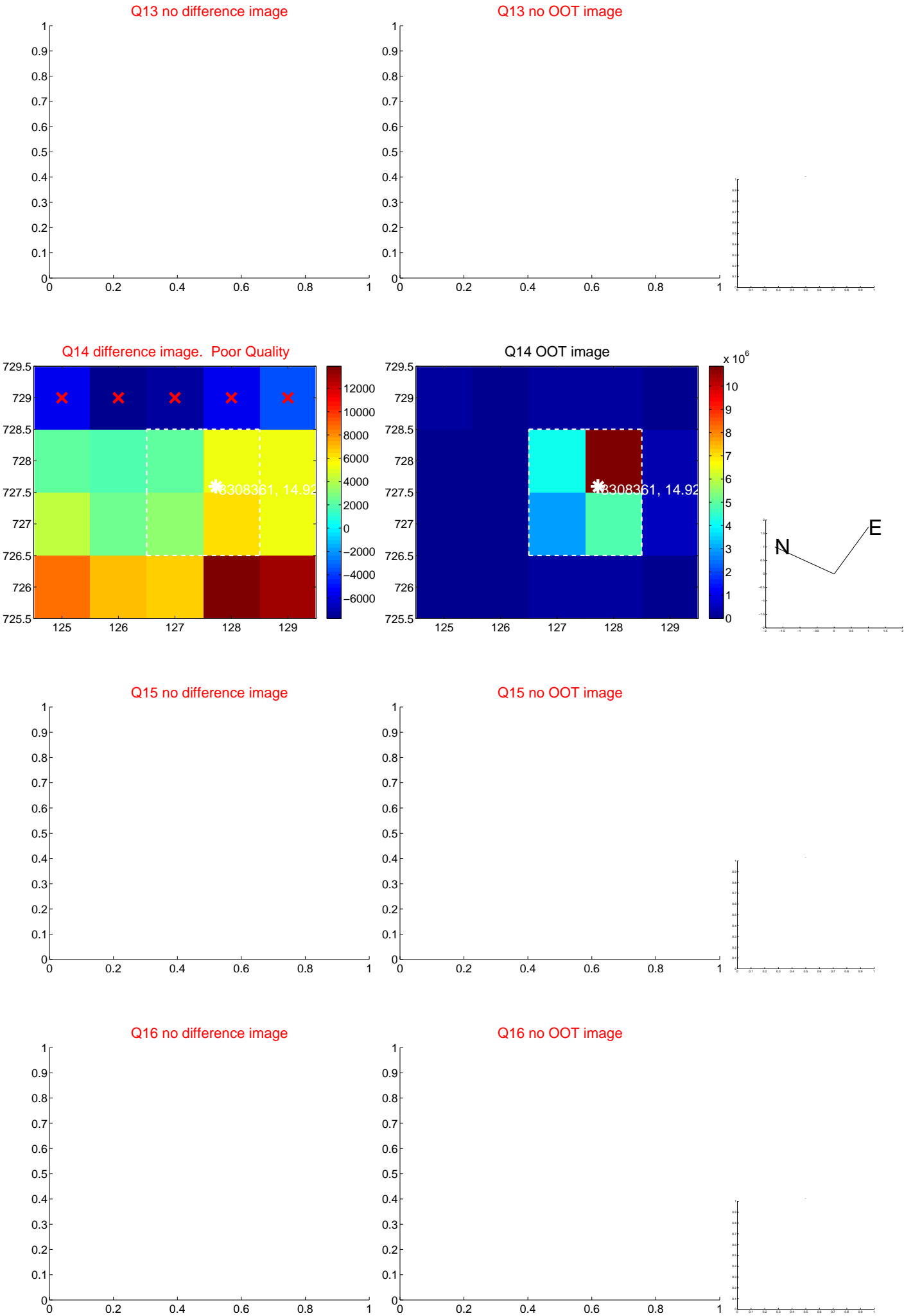
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



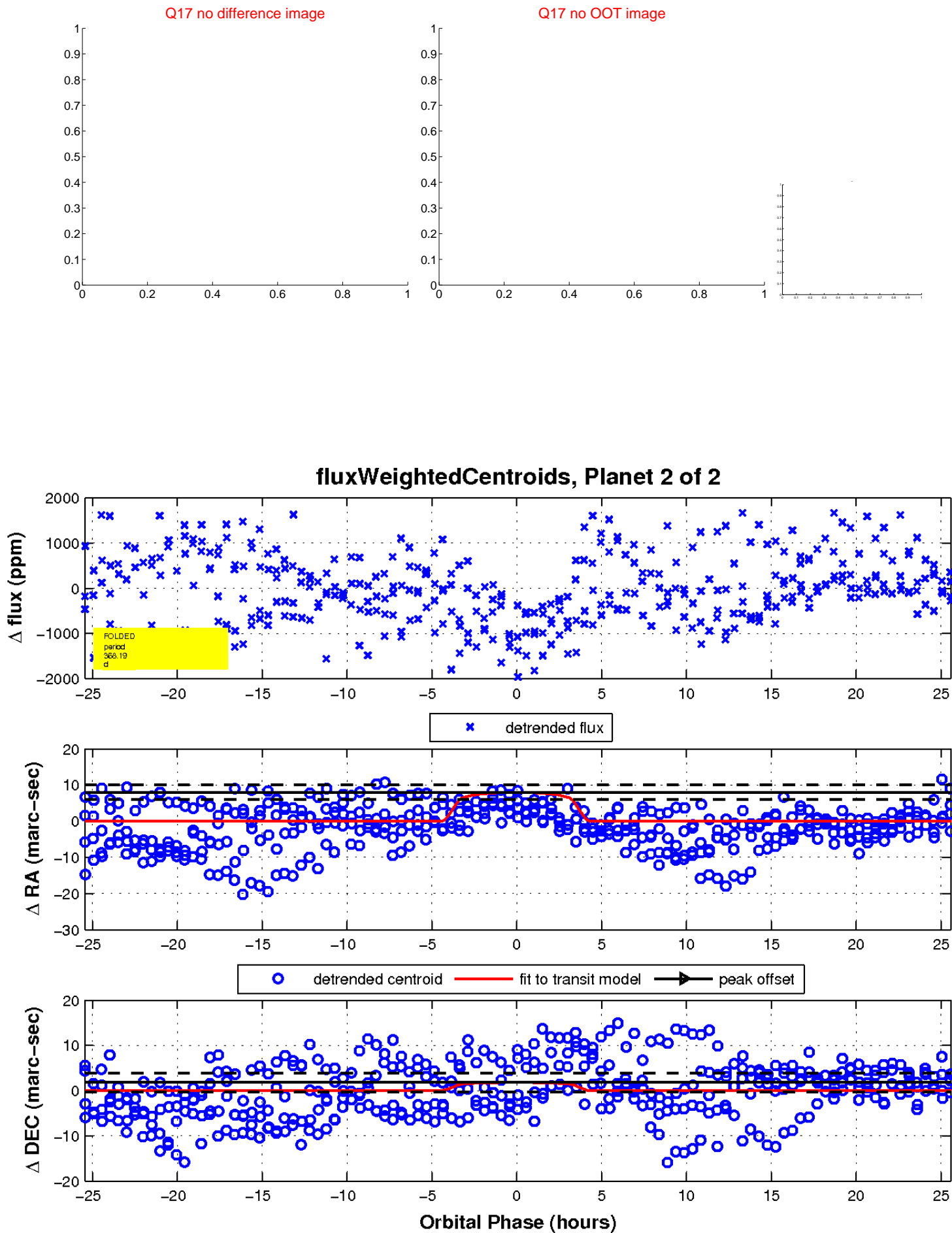
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

