

KIC 008086729

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})
008086729-01	OBS	No	266.683979	134.401729	202.0	8.937	9.0	4.3	0.63	4191	1.00	0.23
008086729-02	OBS	No	381.641376	182.707412	548.1	4.239	10.2	7.3	0.63	4191	1.58	0.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008086729-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008086729-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

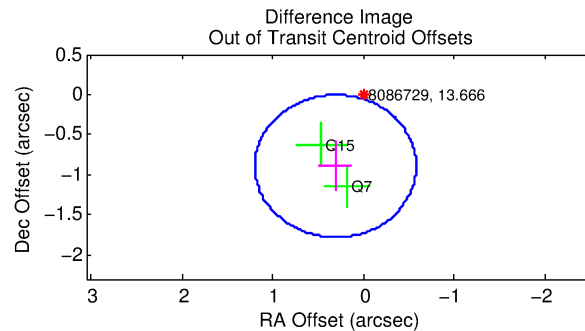
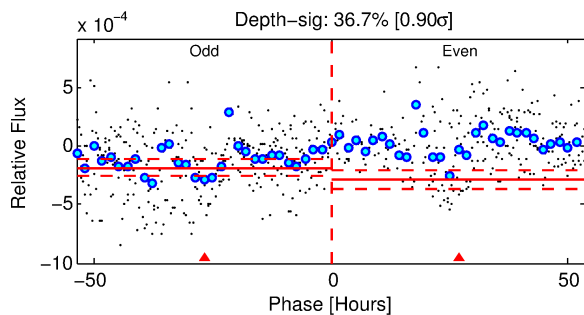
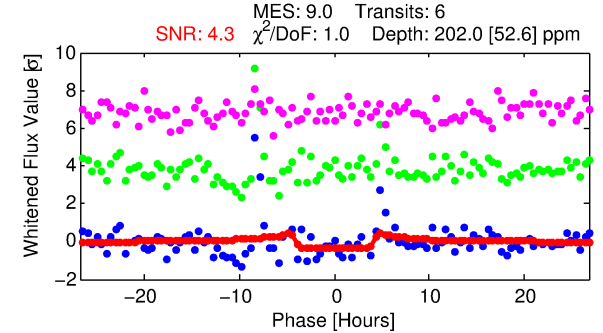
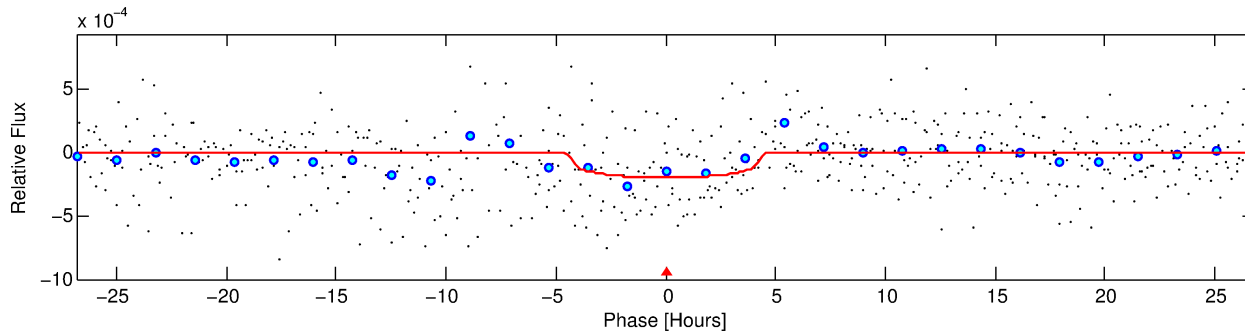
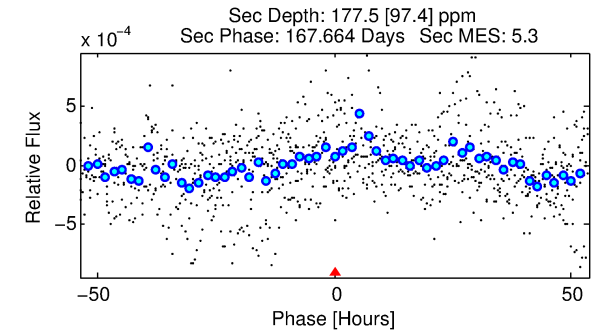
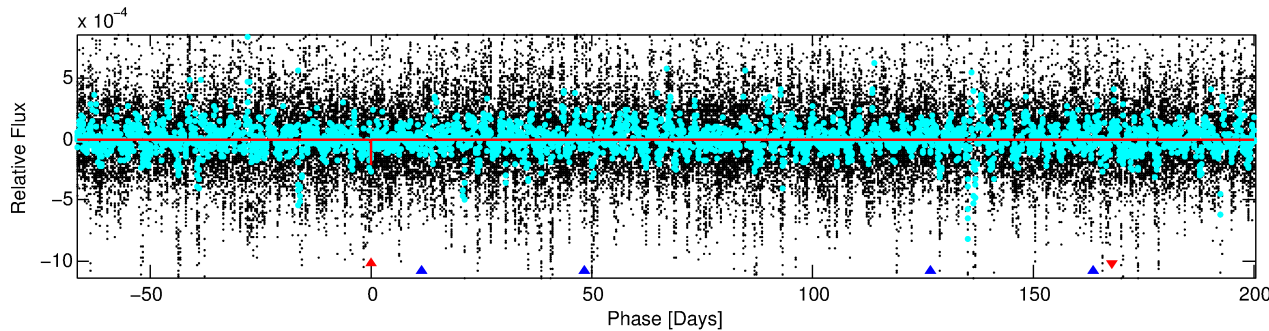
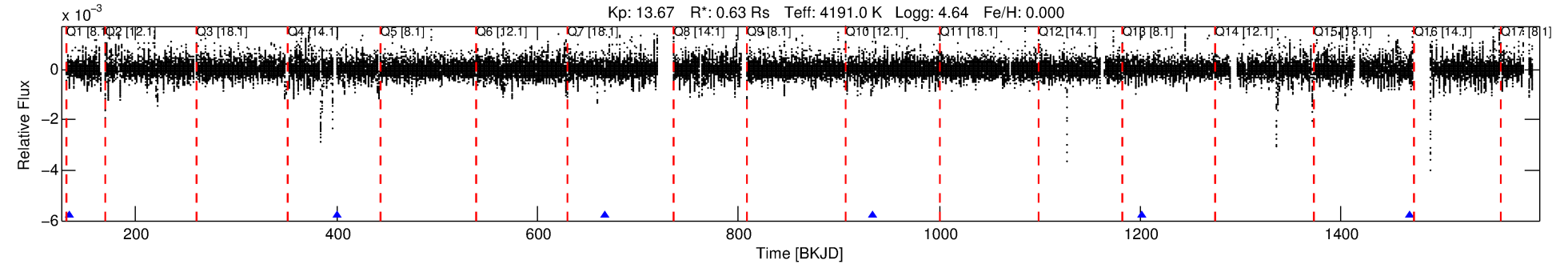
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008086729-01

No Significant Match Found

DV One-Page Summary

KIC: 8086729 Candidate: 1 of 2 Period: 266.684 d



DV Fit Results:

Period = 266.68398 [0.00548] d
Epoch = 134.4017 [0.0178] BKJD
Rp/R* = 0.0146 [0.0109]
a/R* = 143.62 [376.56]
b = 0.80 [1.23]
Seff = 0.23 [0.04]
Teq = 176 [8] K
Rp = 1.01 [0.75] Re
a = 0.6964 [0.0513] AU
Ag = 46842.30 [74505.92] [0.63σ]
Teffp = 4006 [1598] K [2.40σ]

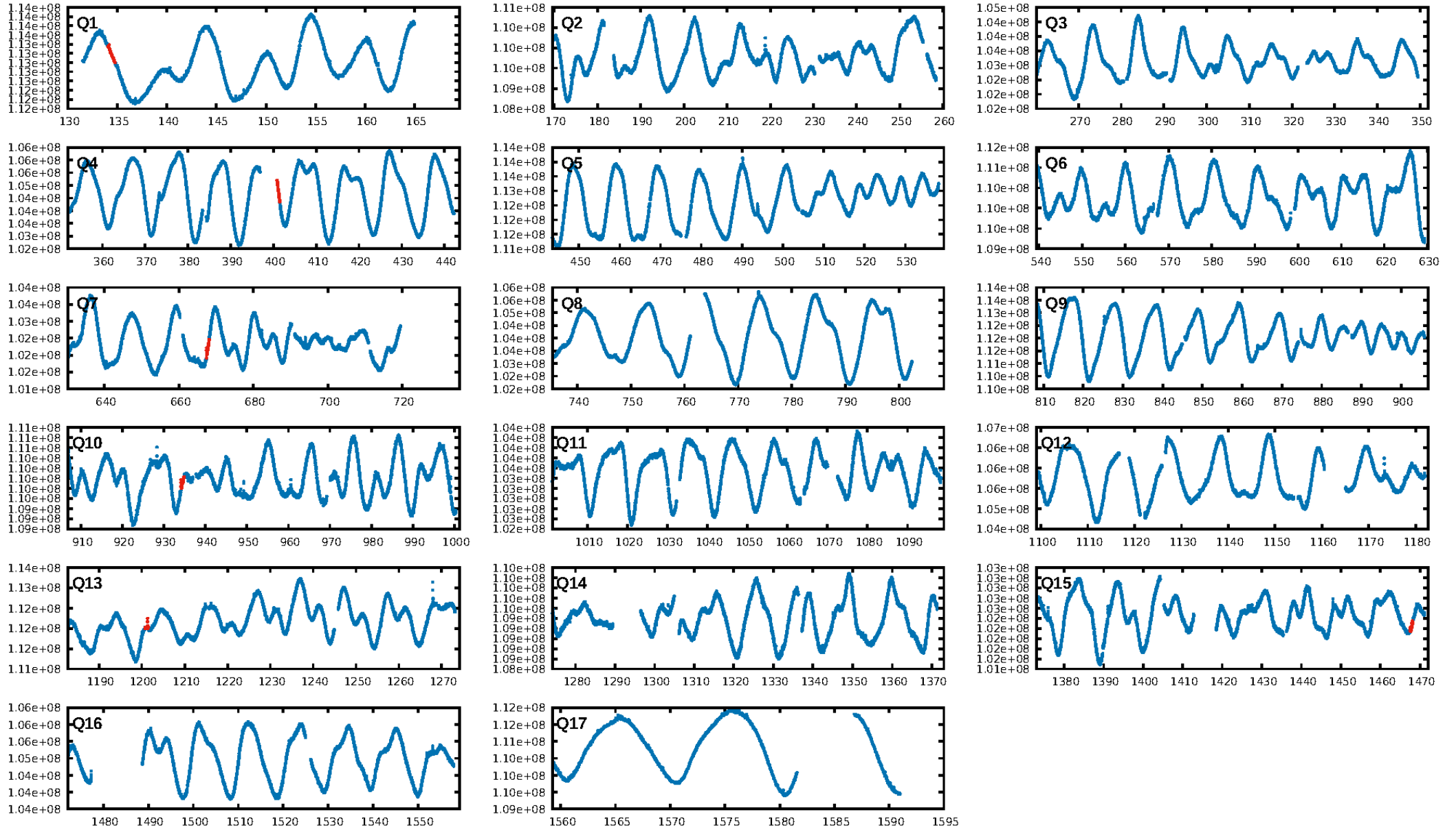
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [278.93σ]
ModelChiSquare2-sig: 37.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.21e-08
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 1.158
Centroid-sig: 30.4%
Centroid-so: 0.601 arcsec [0.30σ]
OotOffset-rm: 0.945 arcsec [3.19σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-rm: 0.748 arcsec [2.44σ]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [4/4]

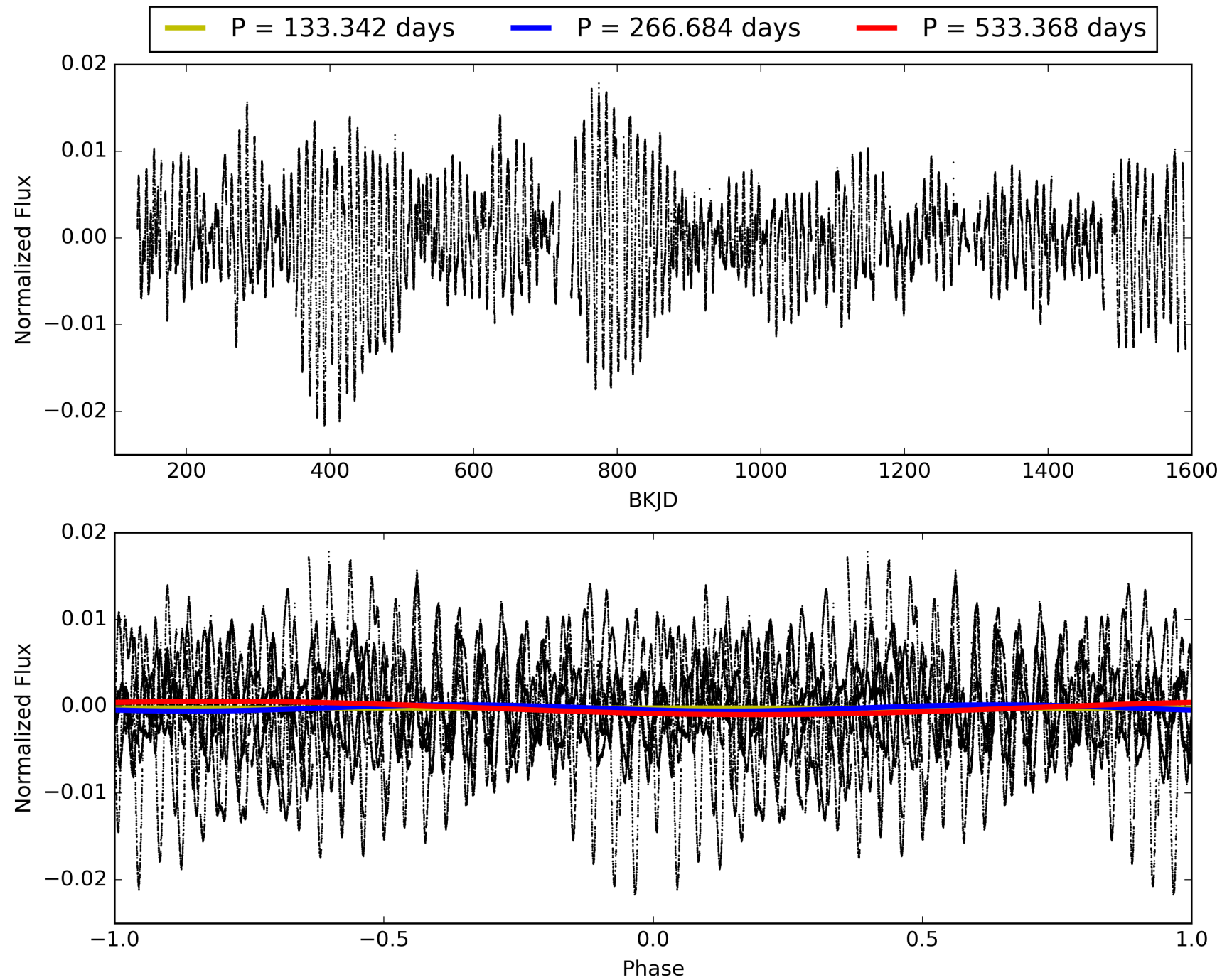
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:08:18 Z

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

TCE 008086729-01, PDC Light Curves

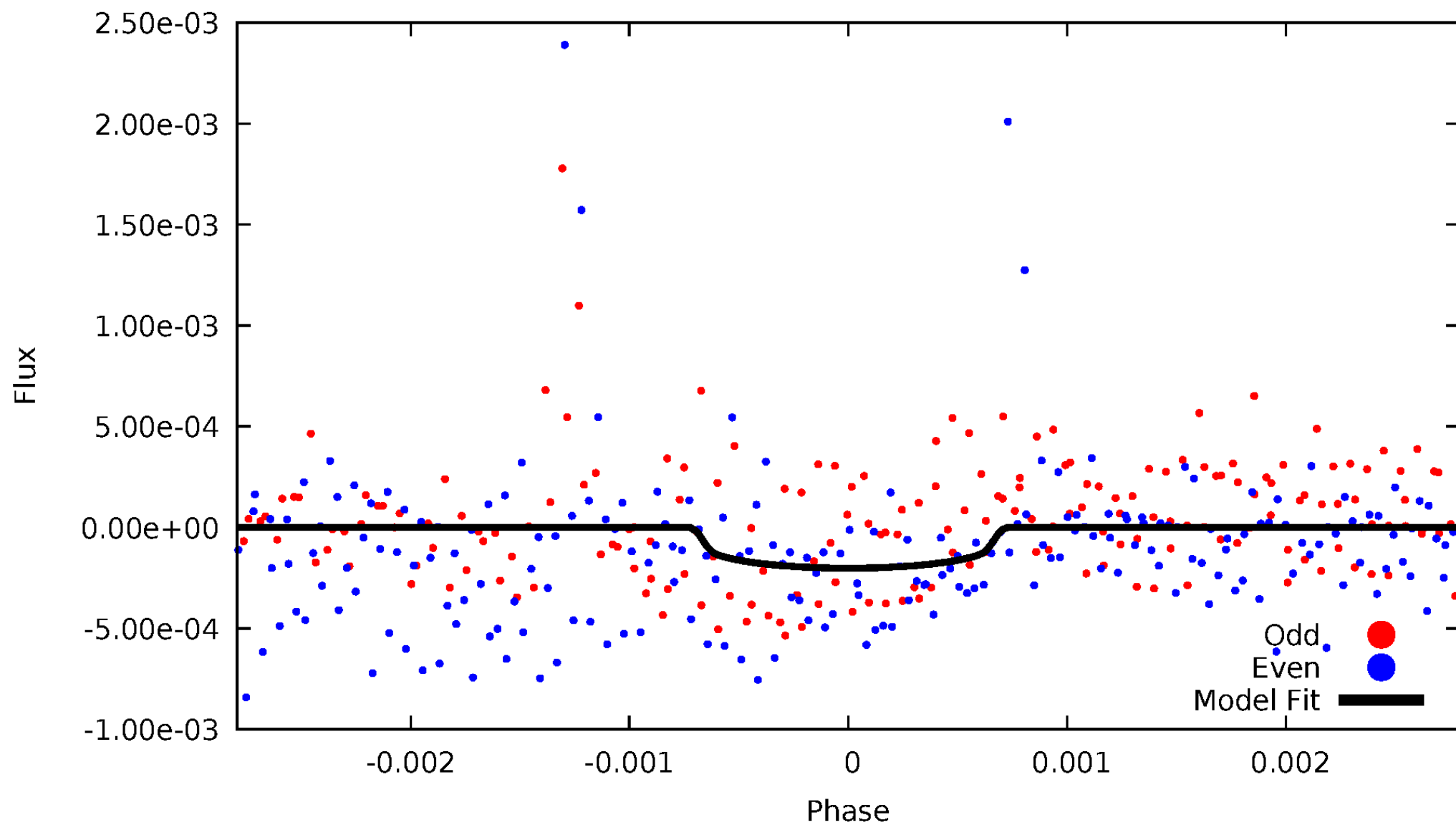


TCE 008086729-01



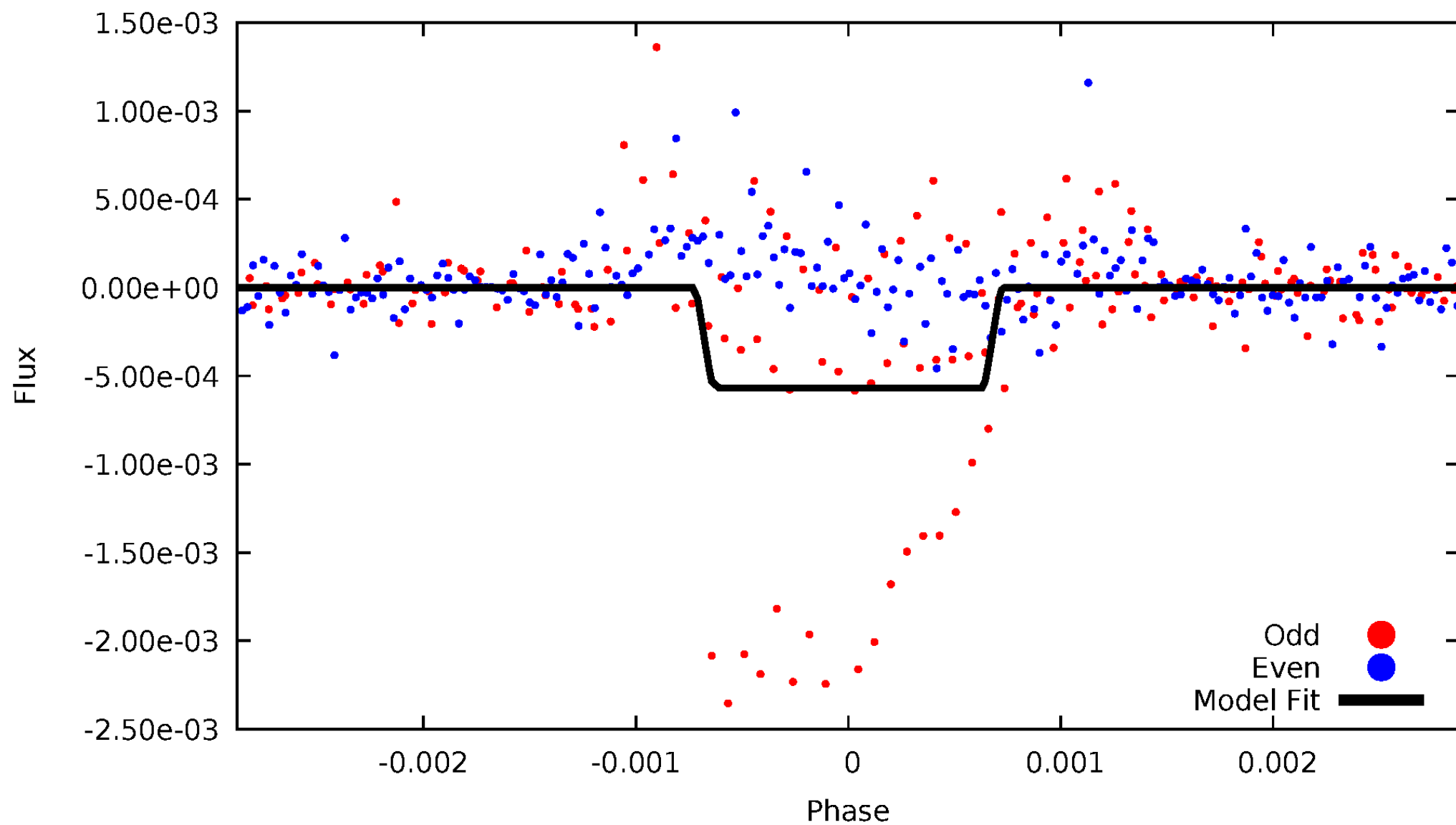
DV Odd/Even

TCE 008086729-01

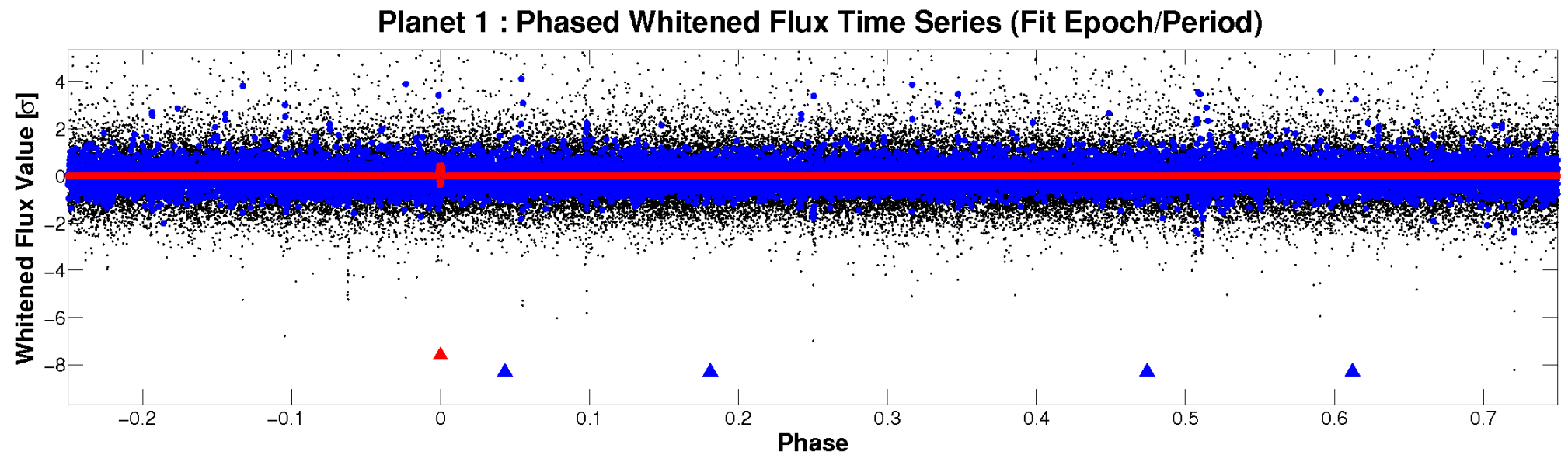
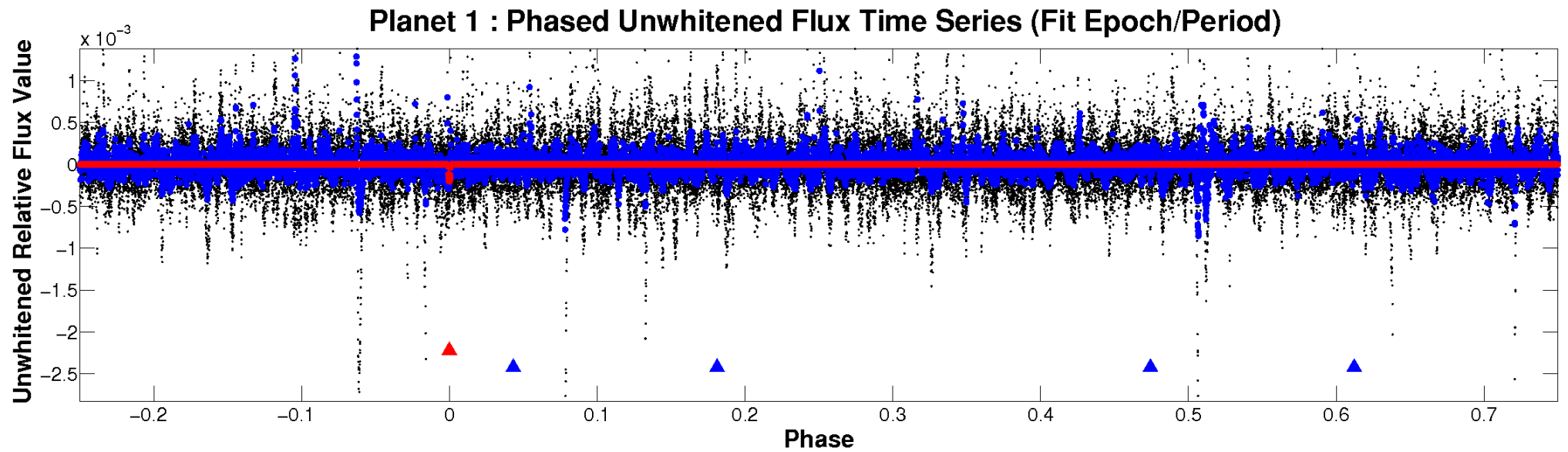


ALT Odd/Even

TCE 008086729-01

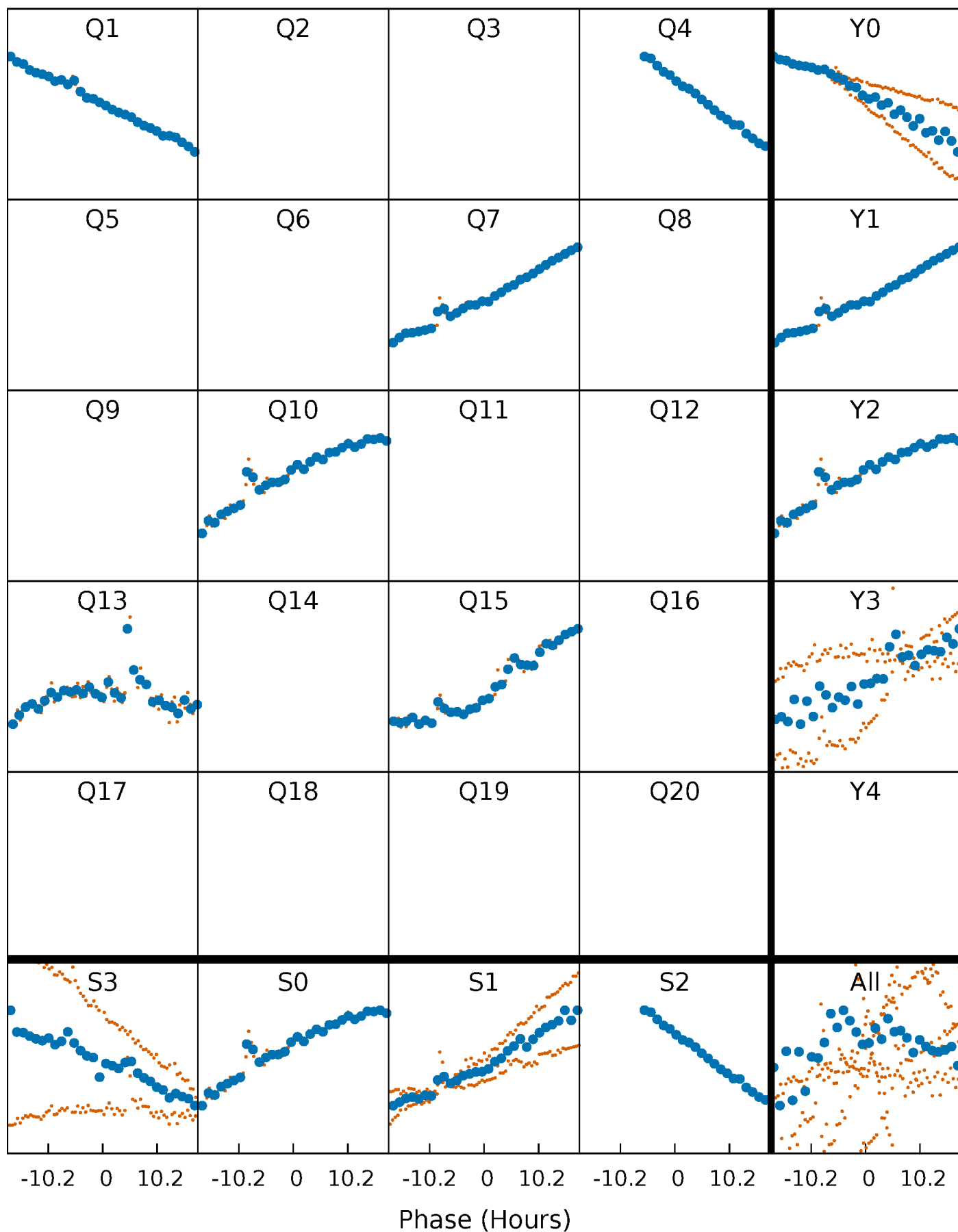


Non-Whitened Vs. Whitened Light Curve



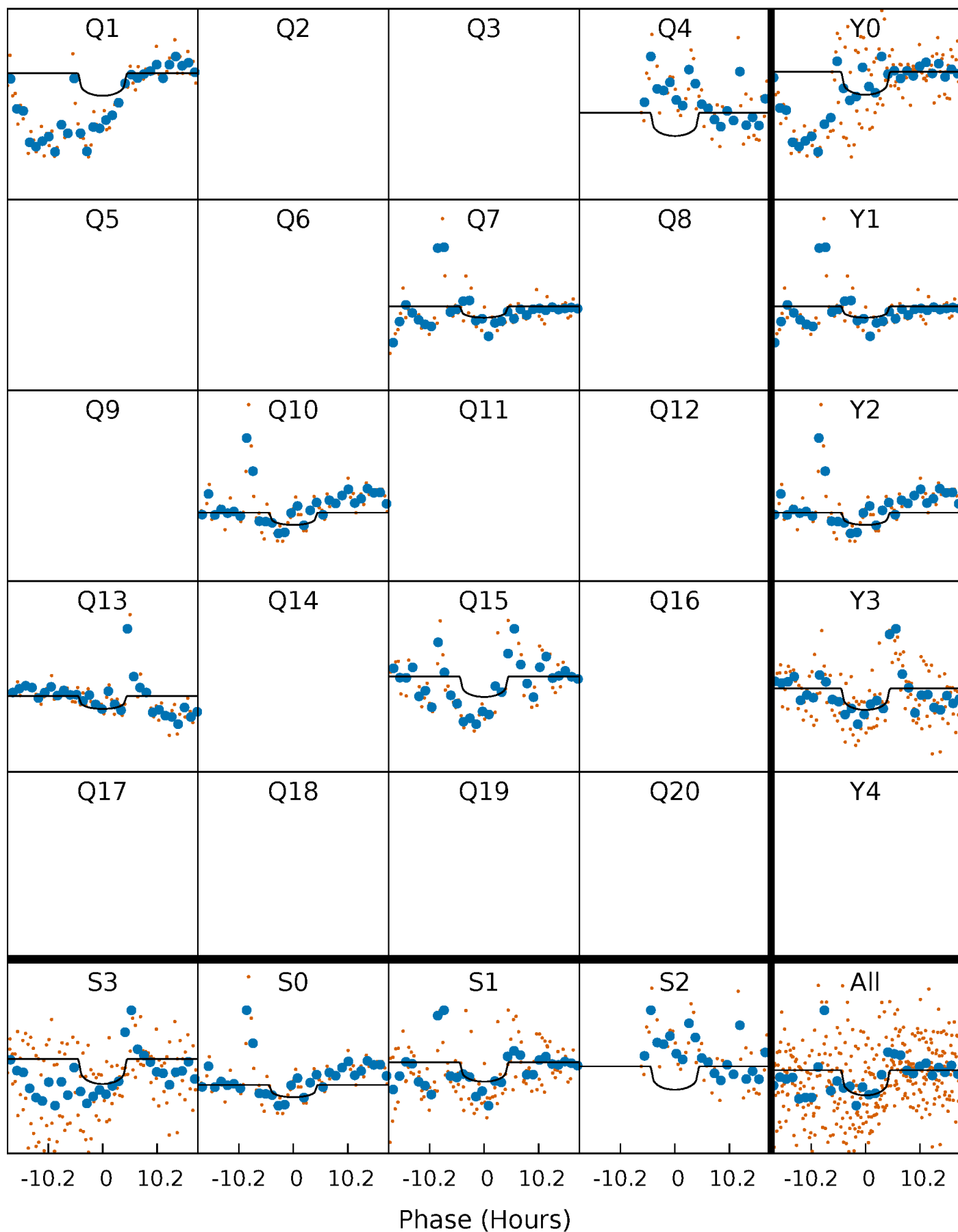
PDC Quarter-Phased Transit Curves

TCE 008086729-01 P=266.683979 Days $T_0=134.401729$ (BKJD)



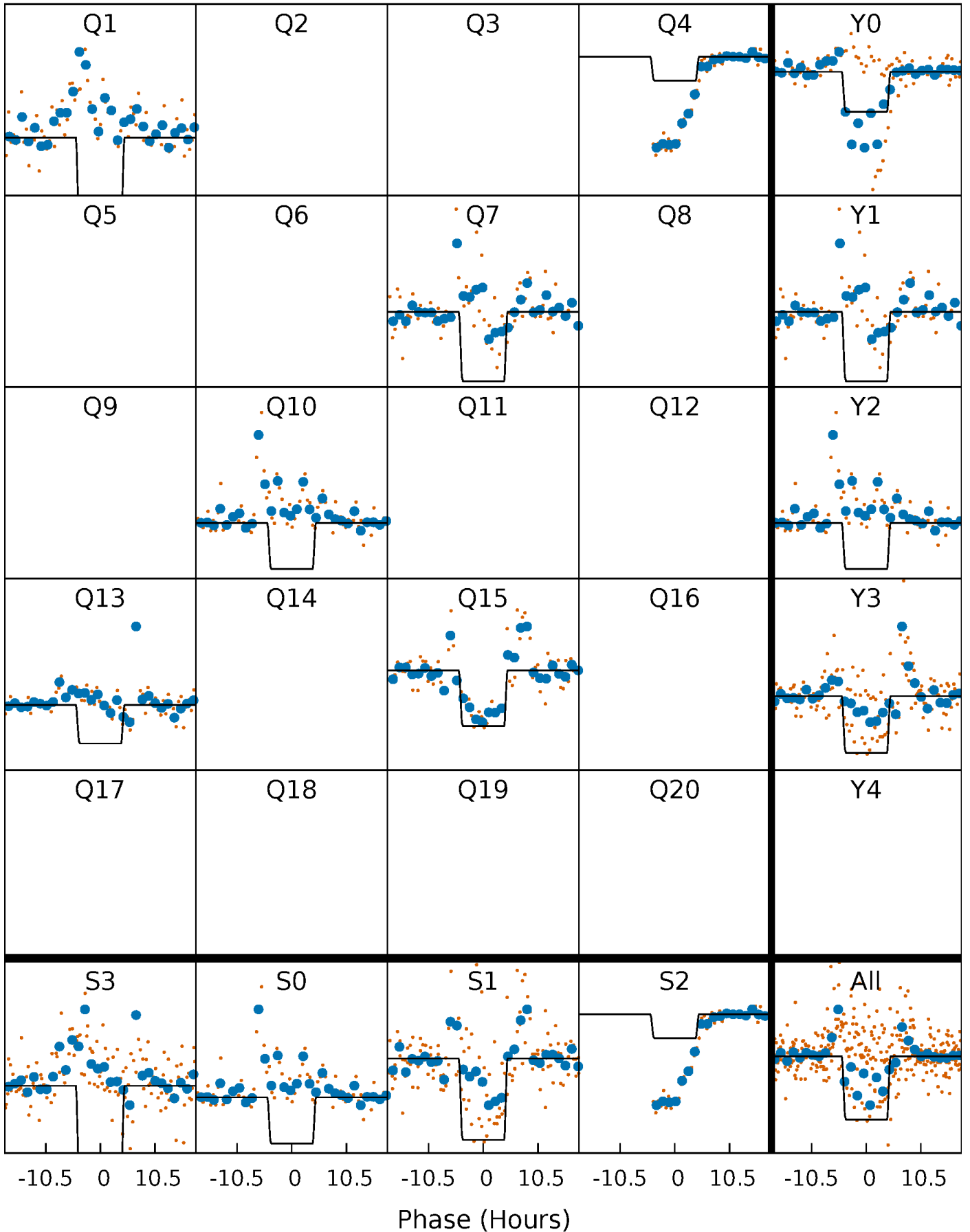
DV Quarter-Phased Transit Curves

TCE 008086729-01 P=266.683979 Days $T_0=134.401729$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

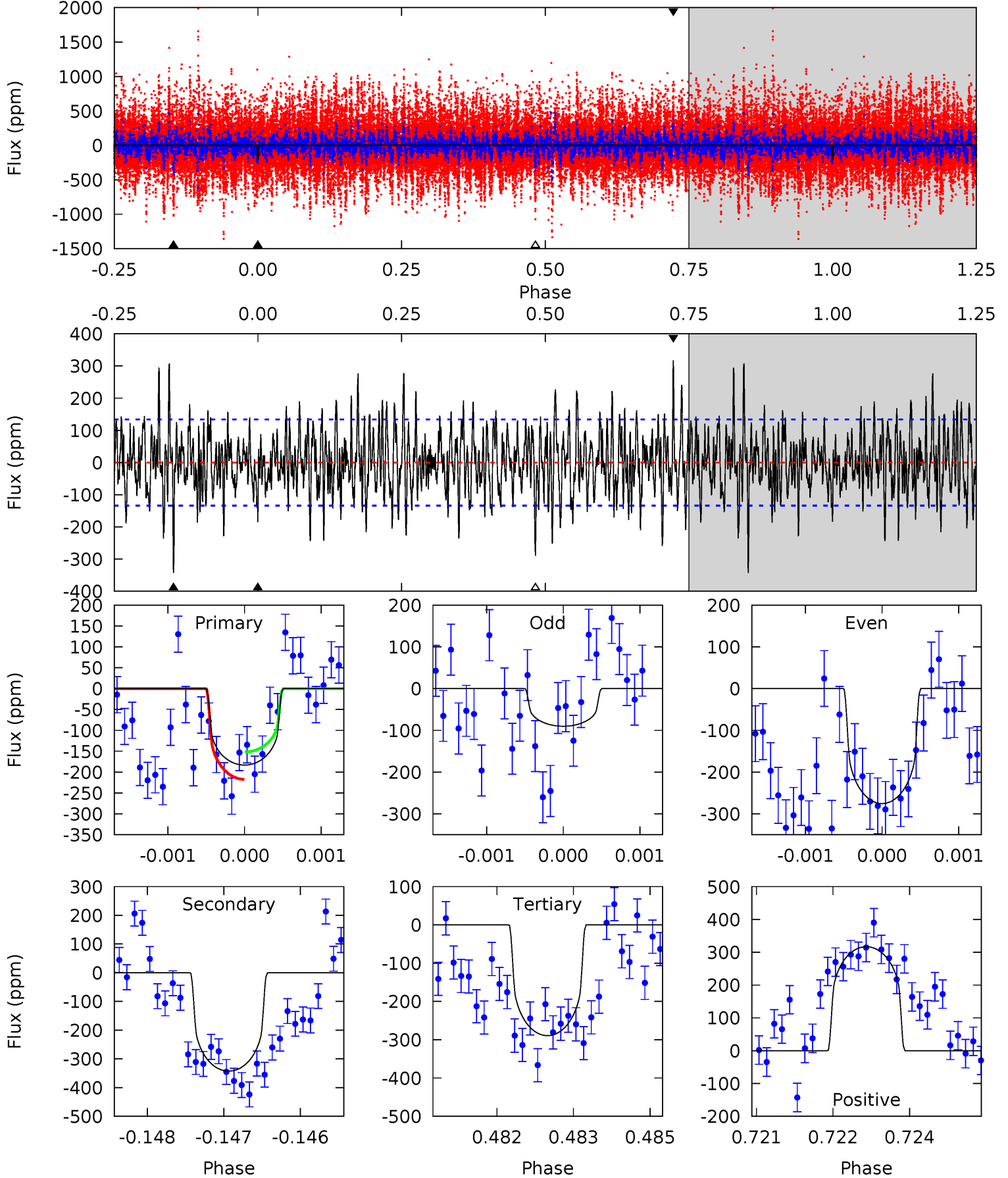
TCE 008086729-01 P=266.685203 Days $T_0=134.310557$ (BKJD)



DV Model-Shift Uniqueness Test

008086729-01, P = 266.683979 Days, E = 134.401729 Days

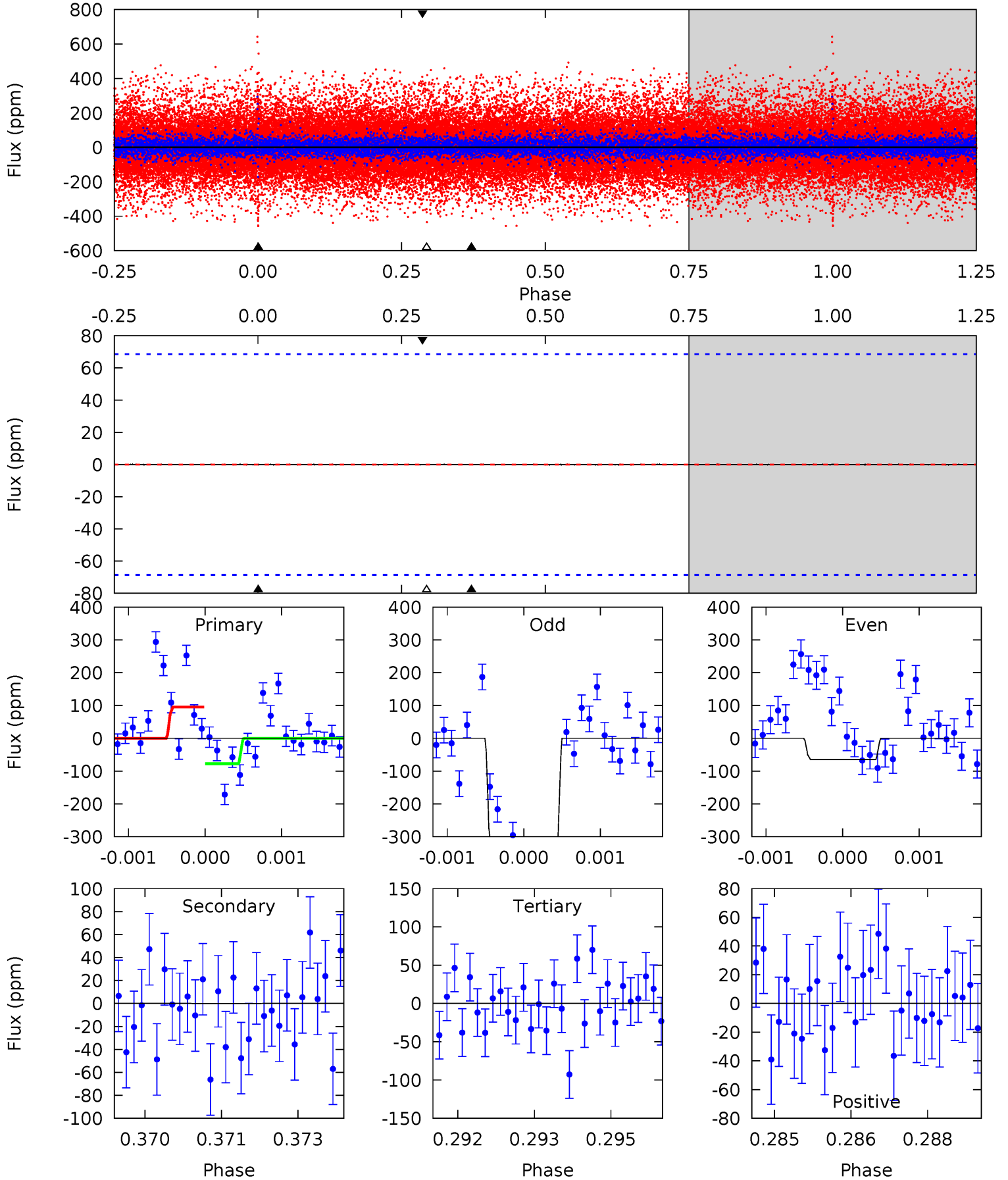
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.37	13.8	11.6	12.7	5.38	3.18	3.44	-4.27	-5.37	2.14	1.04	3.61	0.96	0.48	1.33



Alt Model-Shift Uniqueness Test

008086729-01, P = 266.685203 Days, E = 134.310557 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	5.39	3.19	0.00	0	0	0	0	10.2	-11.0	0.69	0.68



Stellar Parameters For KIC 008086729

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4191^{+132}_{-162}	$4.638^{+0.049}_{-0.025}$	$0.000^{+0.250}_{-0.300}$	$0.632^{+0.040}_{-0.060}$	$0.633^{+0.054}_{-0.059}$	$3.533^{+0.830}_{-0.380}$
	+3%/-4%	+1%/-1%	+inf%/-inf%	+6%/-9%	+9%/-9%	+23%/-11%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008086729-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-343 ± 25	$1.02^{+0.74}_{-0.57}$	245^{+8}_{-10}	4541^{+2010}_{-832}	$87335^{+375370}_{-58243}$
Alt.	-0 ± 13	$1.62^{+0.78}_{-0.76}$	244^{+9}_{-10}	-1680^{+4131}_{-767}	$-43.947^{+1617.009}_{-1432.123}$

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

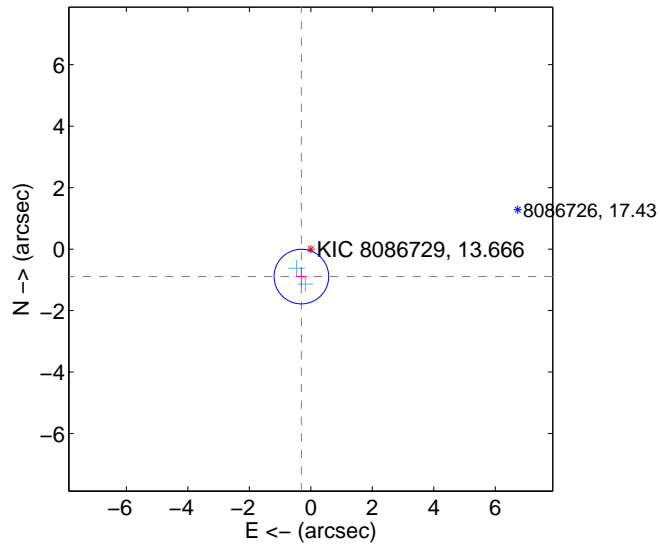
Supplemental centroid analysis for 008086729-01. Kepler magnitude: 13.67. Transit SNR 4.33

There are 2 quarters with good PRF difference image offsets

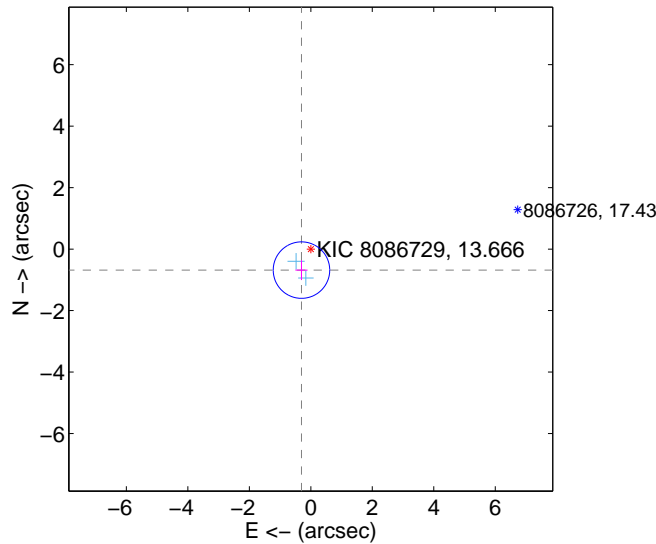
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.945 ± 0.296	3.19	0.307 ± 0.179	-0.894 ± 0.307
PRF-fit source offset from KIC position	0.748 ± 0.306	2.44	0.304 ± 0.197	-0.683 ± 0.323
photometric centroid source offset	0.60 ± 1.99	0.30	0.35 ± 1.11	-0.48 ± 2.32

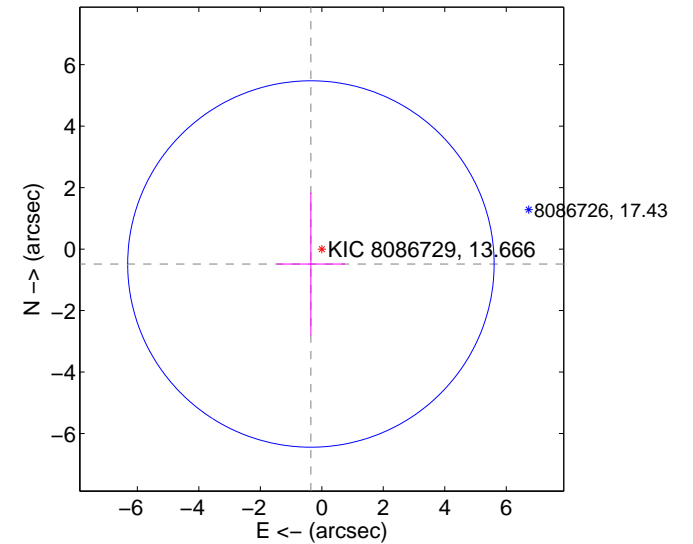
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

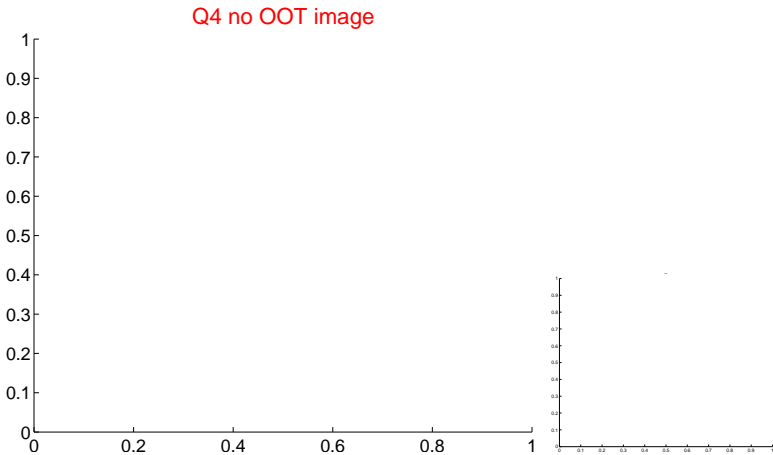
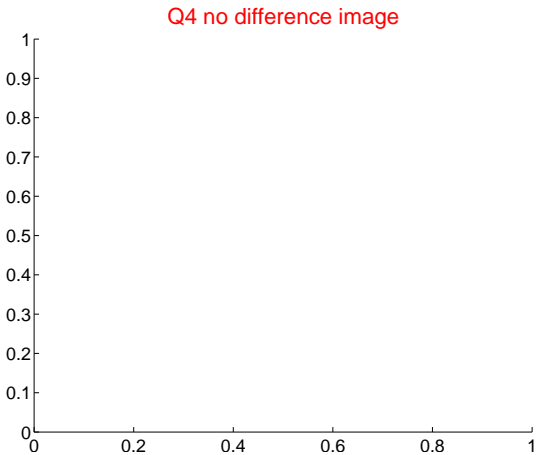
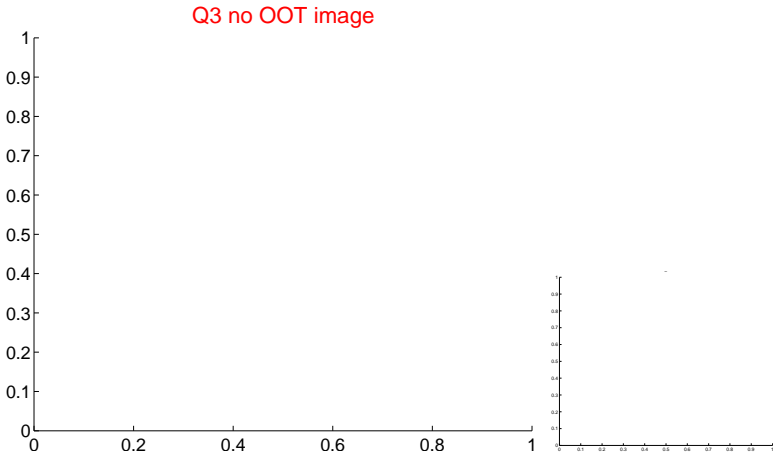
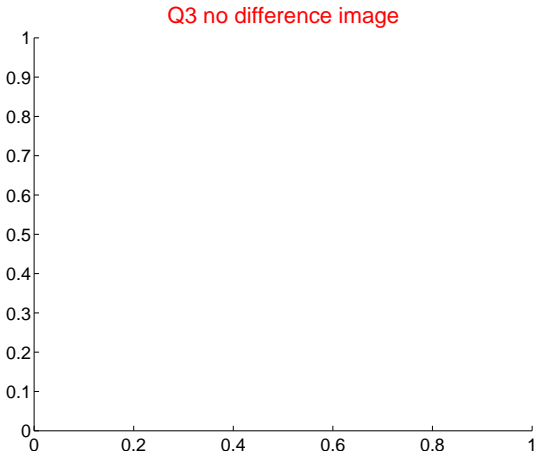
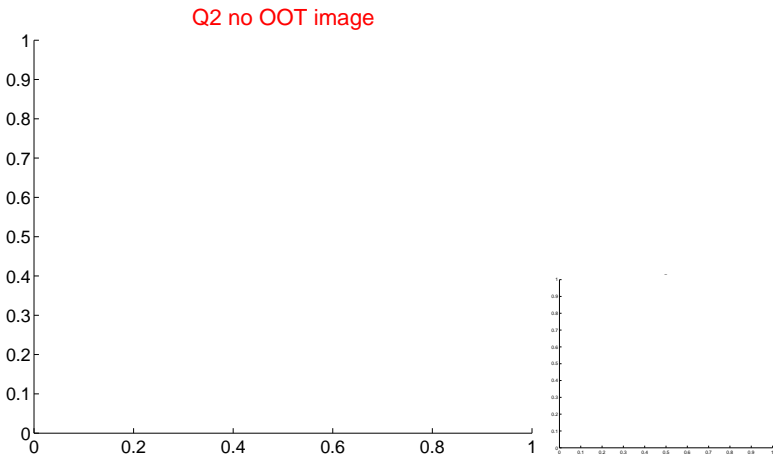
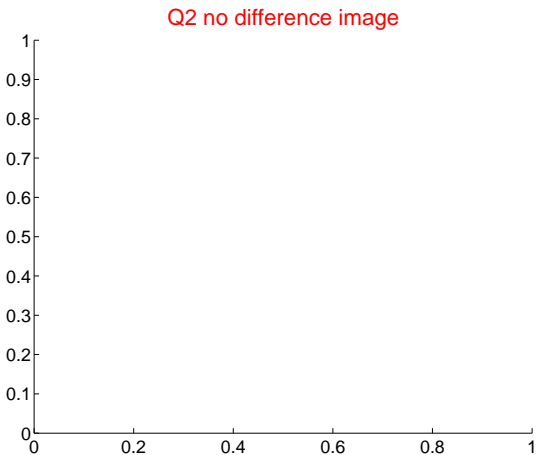
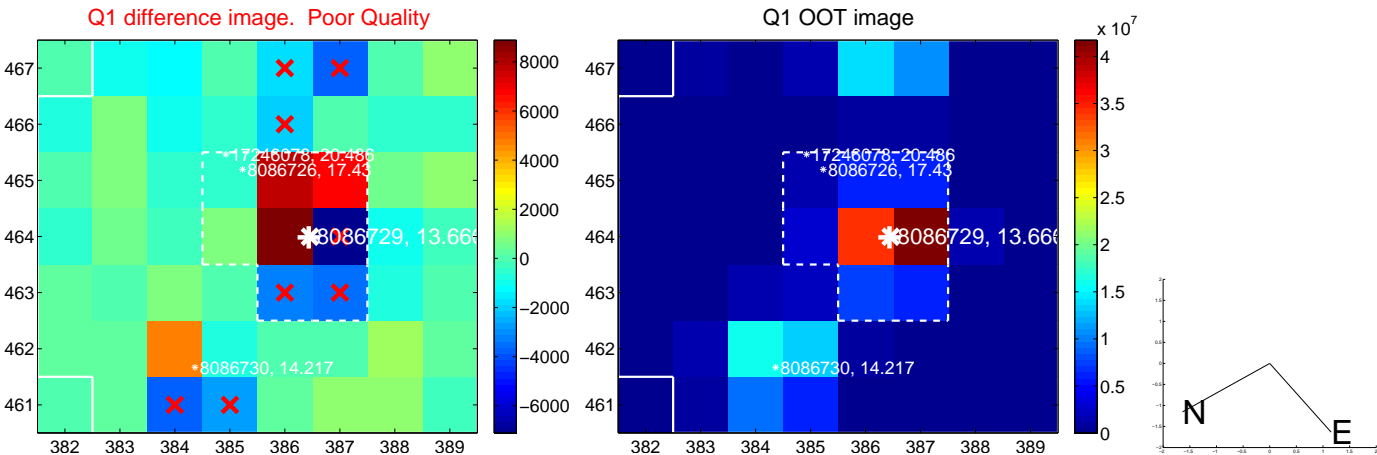


offset from photometric centroids

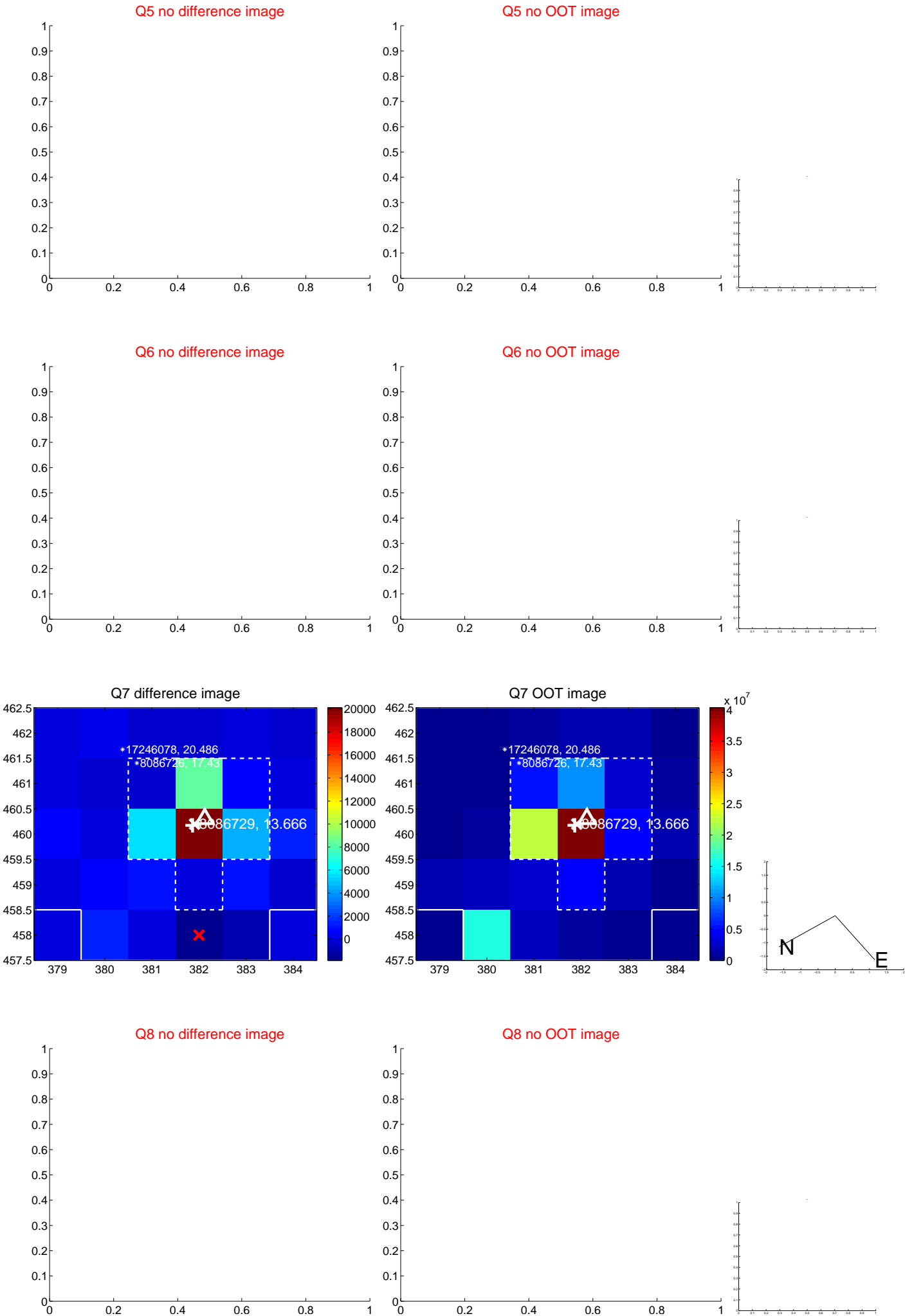


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

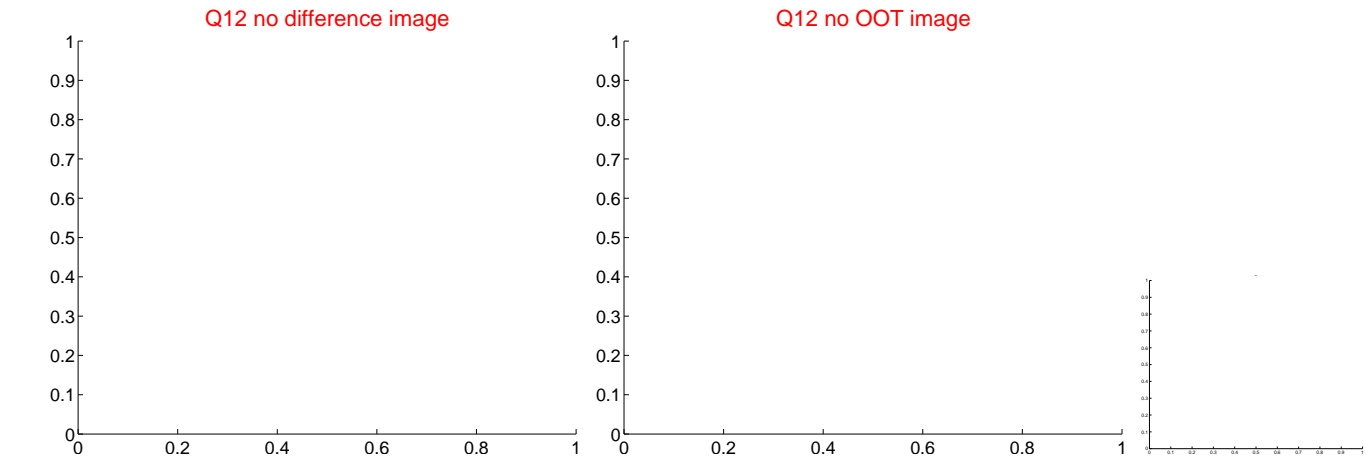
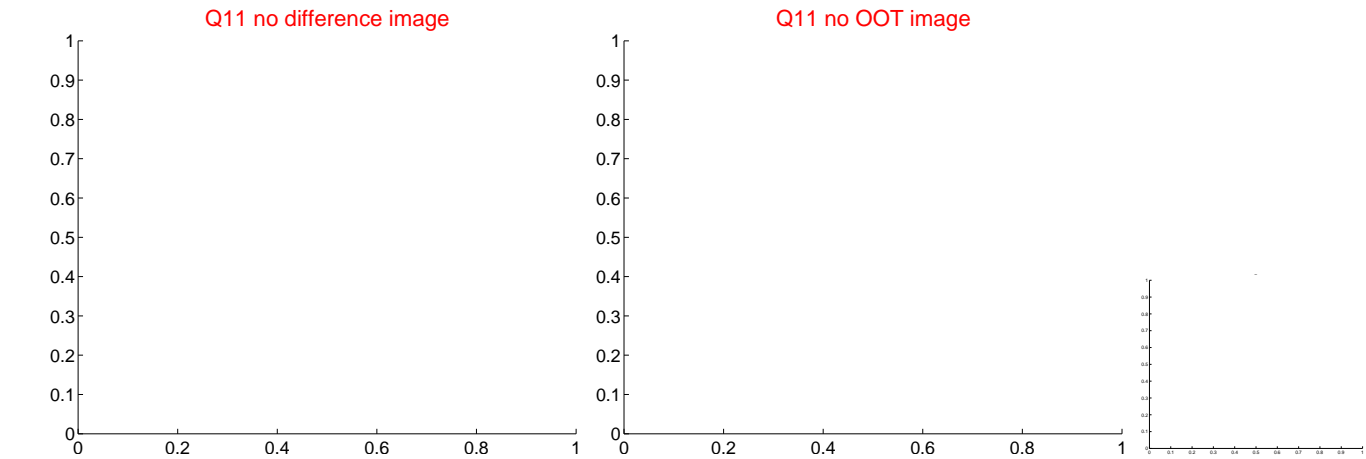
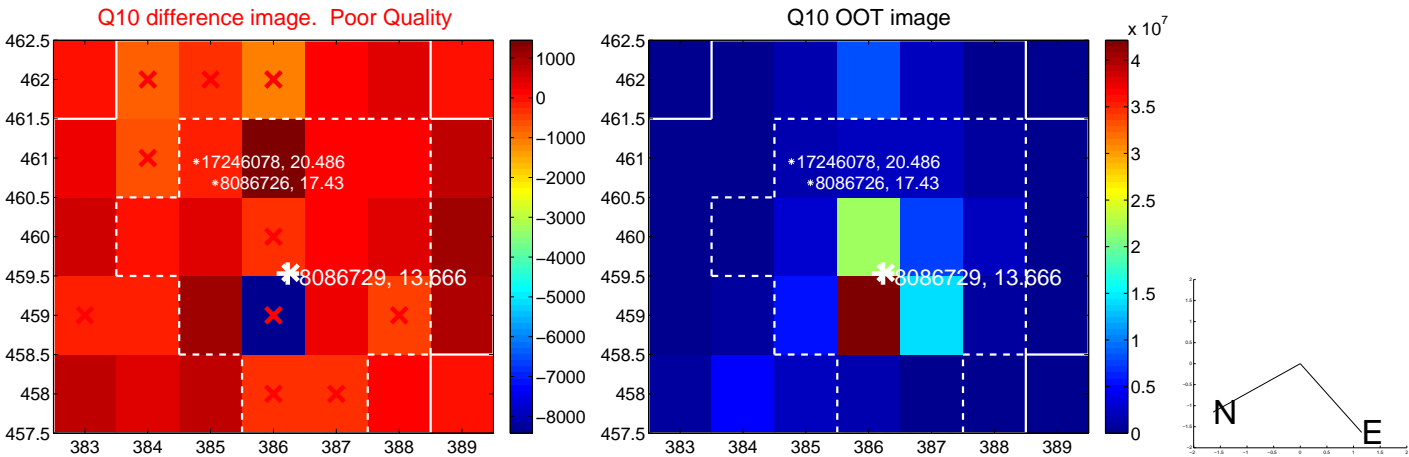
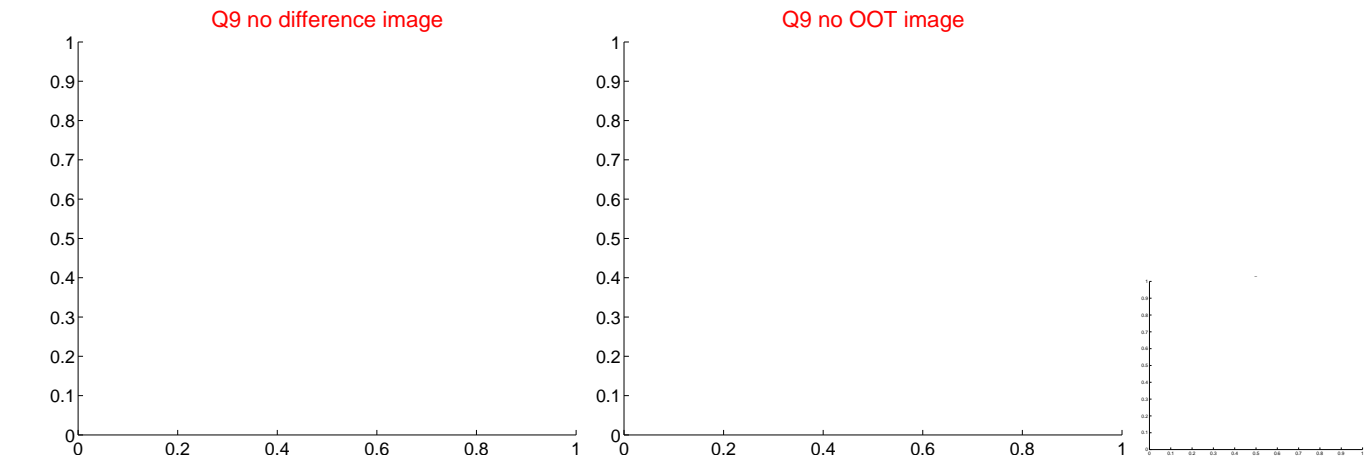
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



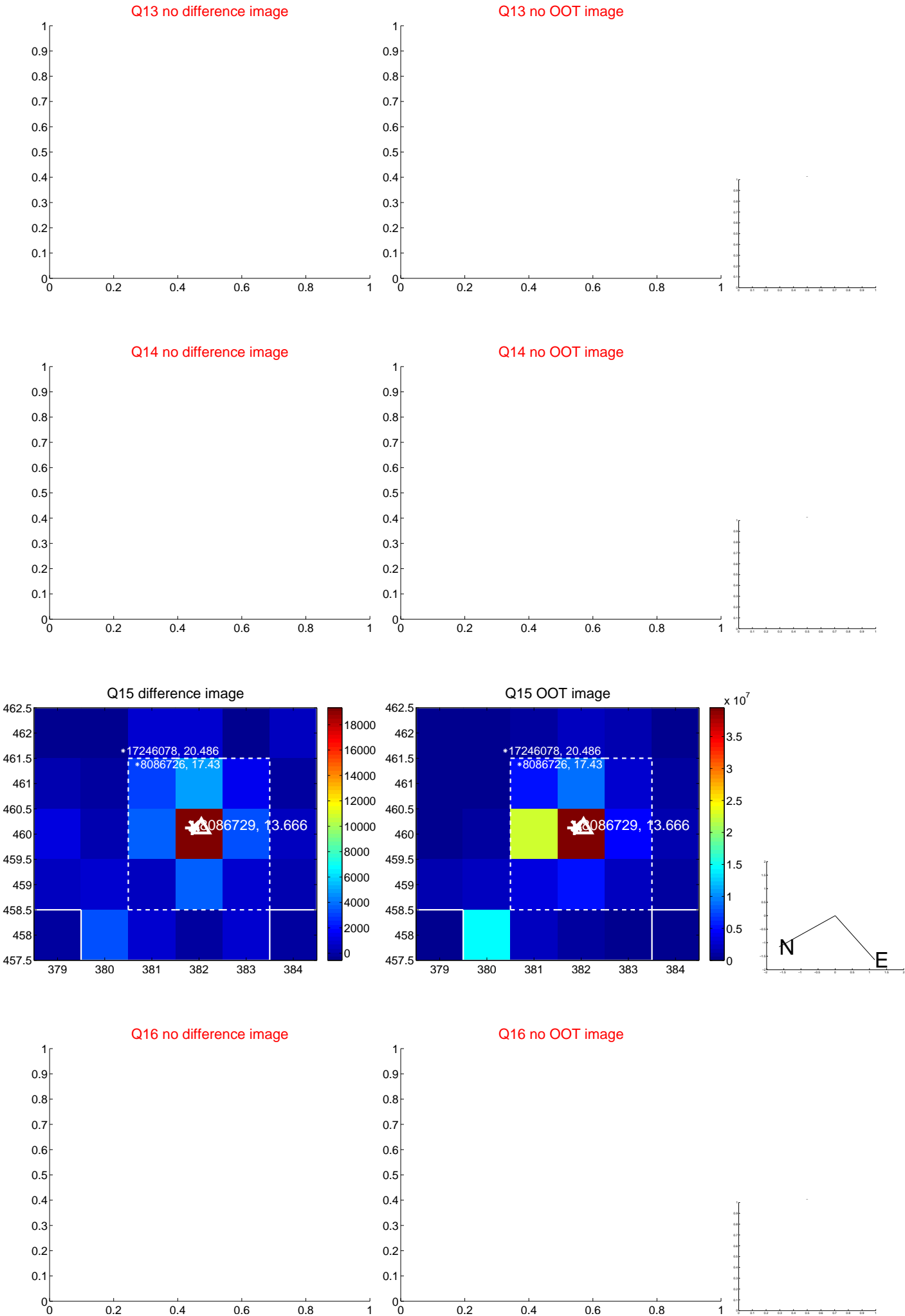
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



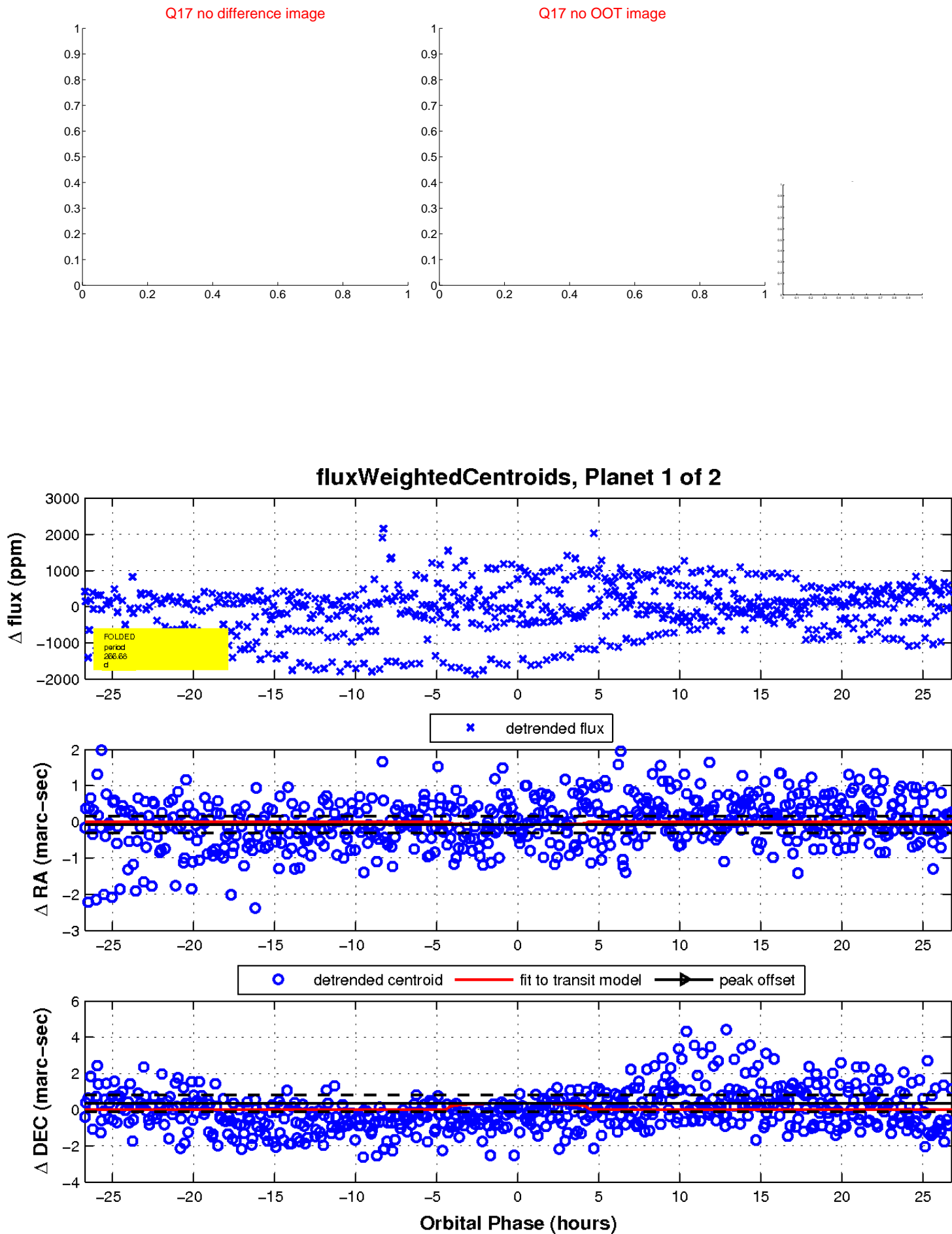
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

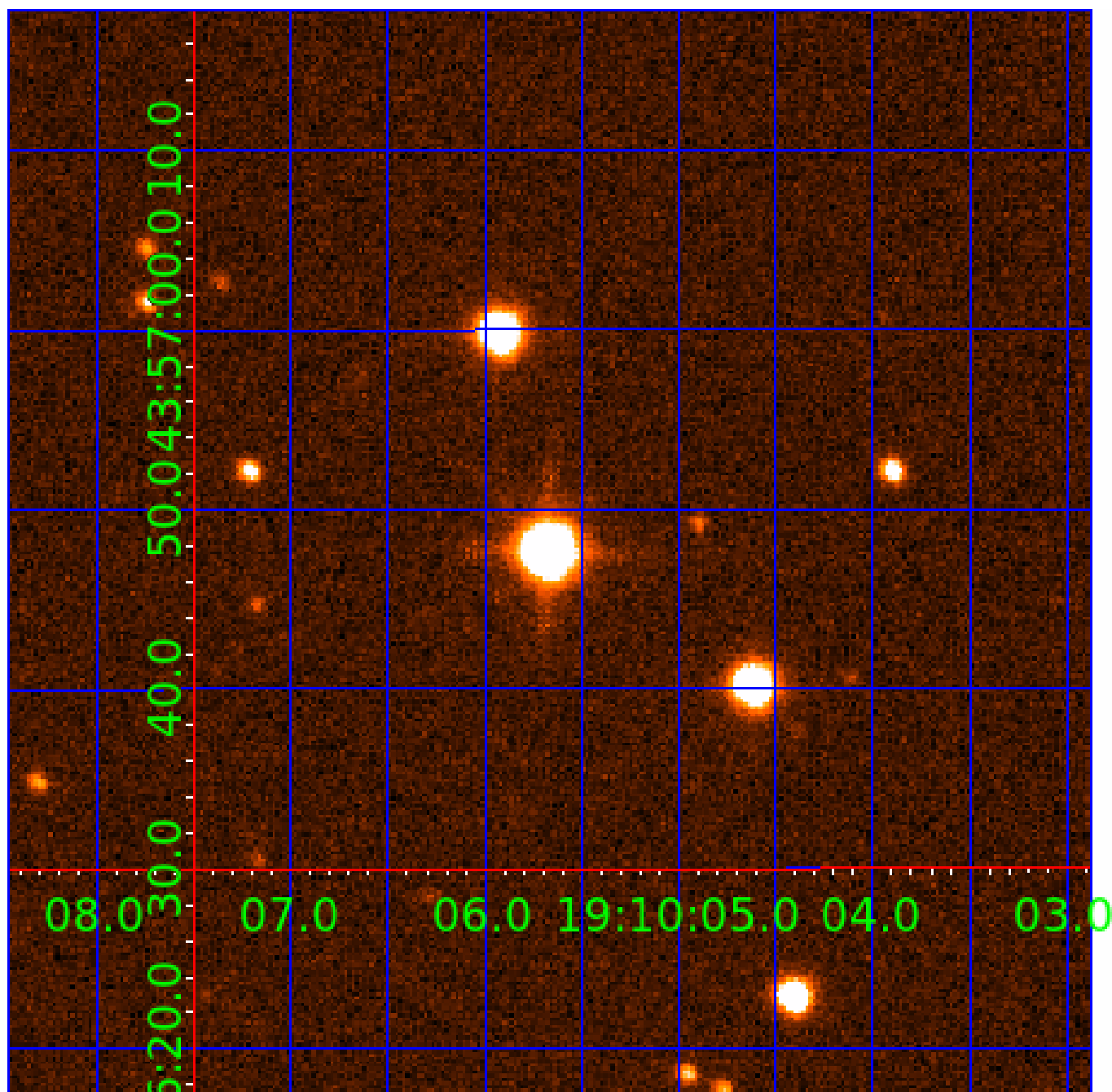


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008086729

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})
008086729-01	OBS	No	266.683979	134.401729	202.0	8.937	9.0	4.3	0.63	4191	1.00	0.23
008086729-02	OBS	No	381.641376	182.707412	548.1	4.239	10.2	7.3	0.63	4191	1.58	0.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008086729-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008086729-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

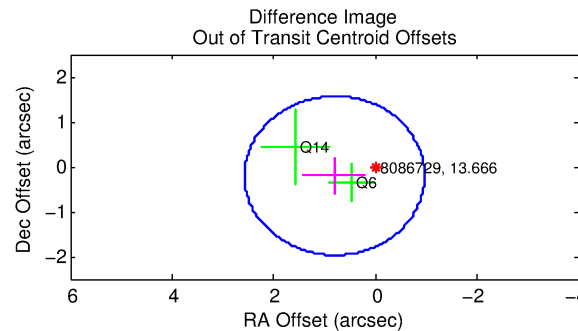
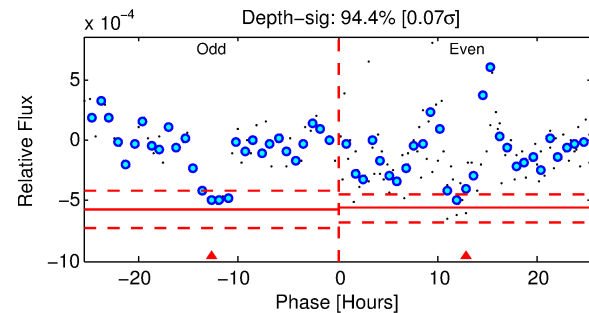
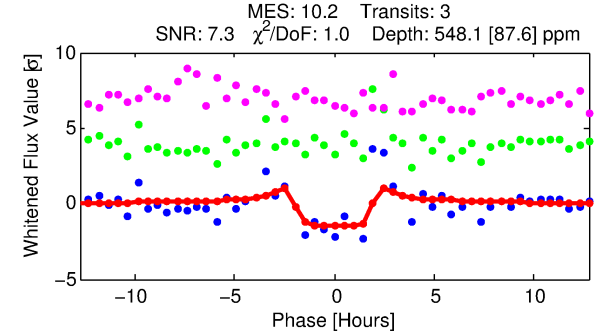
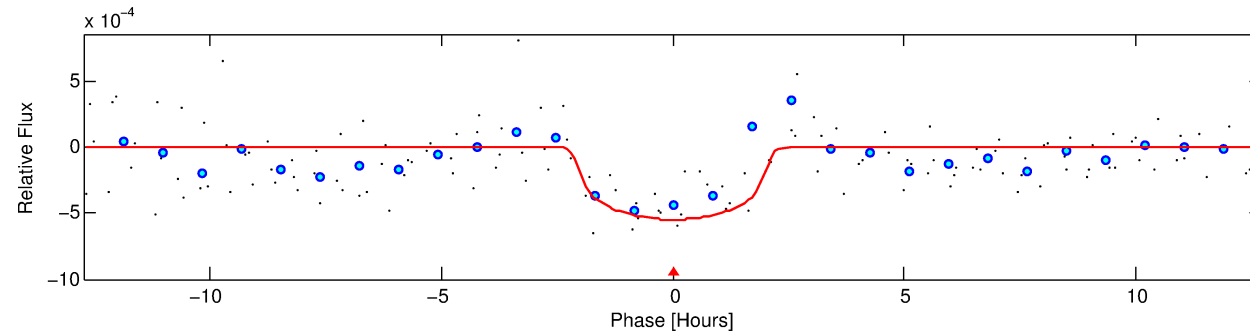
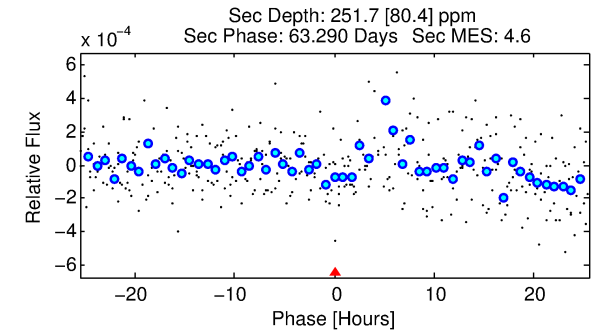
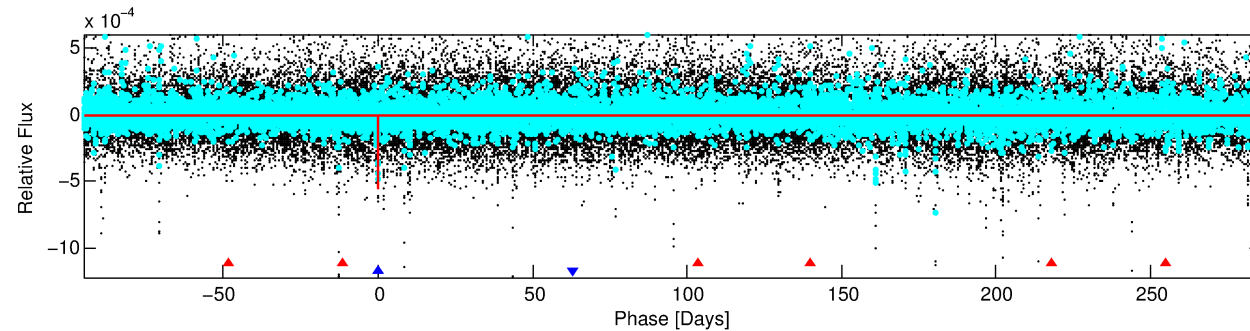
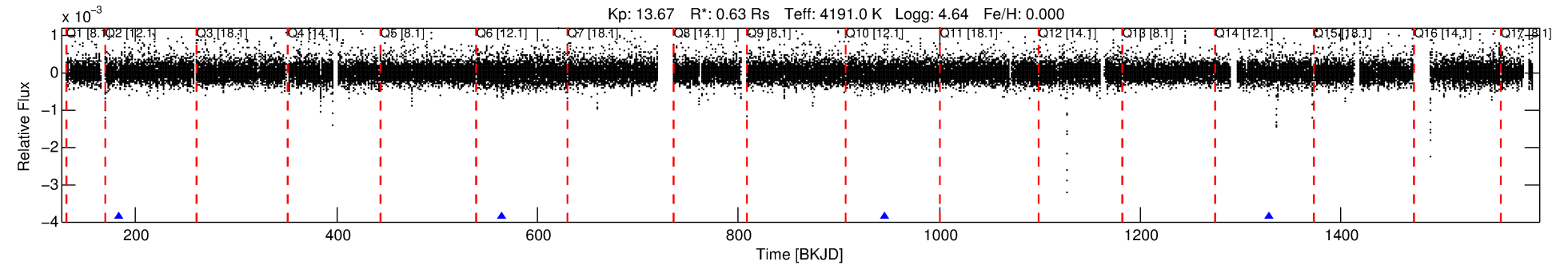
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008086729-02

No Significant Match Found

DV One-Page Summary

KIC: 8086729 Candidate: 2 of 2 Period: 381.641 d



DV Fit Results:

Period = 381.64138 [0.00494] d
Epoch = 182.7074 [0.0104] BKJD
Rp/R* = 0.0229 [0.0220]
a/R* = 512.61 [1634.32]
b = 0.70 [2.37]
Seff = 0.14 [0.03]
Teq = 156 [7] K
Rp = 1.58 [1.52] Re
a = 0.8843 [0.0651] AU
Ag = 43359.20 [84382.76] [0.51σ]
Teffp = 3487 [1700] K [1.96σ]

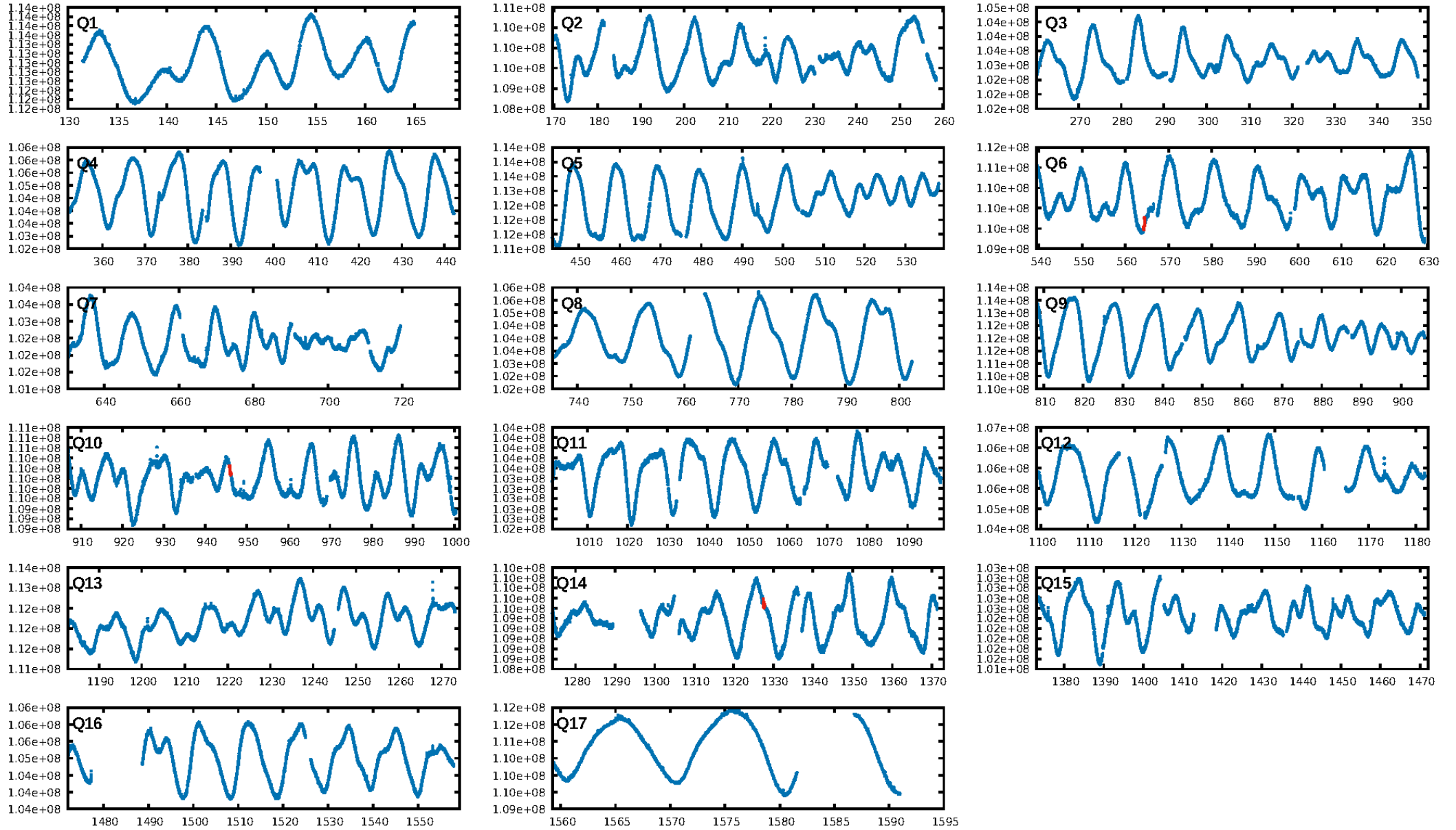
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [278.93σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 67.2%
ModelChiSquareGof-sig: 98.0%
Bootstrap-pfa: 6.00e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.757
Centroid-sig: 64.1%
Centroid-so: 1.622 arcsec [1.48σ]
OotOffset-rm: 0.830 arcsec [1.41σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-rm: 0.772 arcsec [1.27σ]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

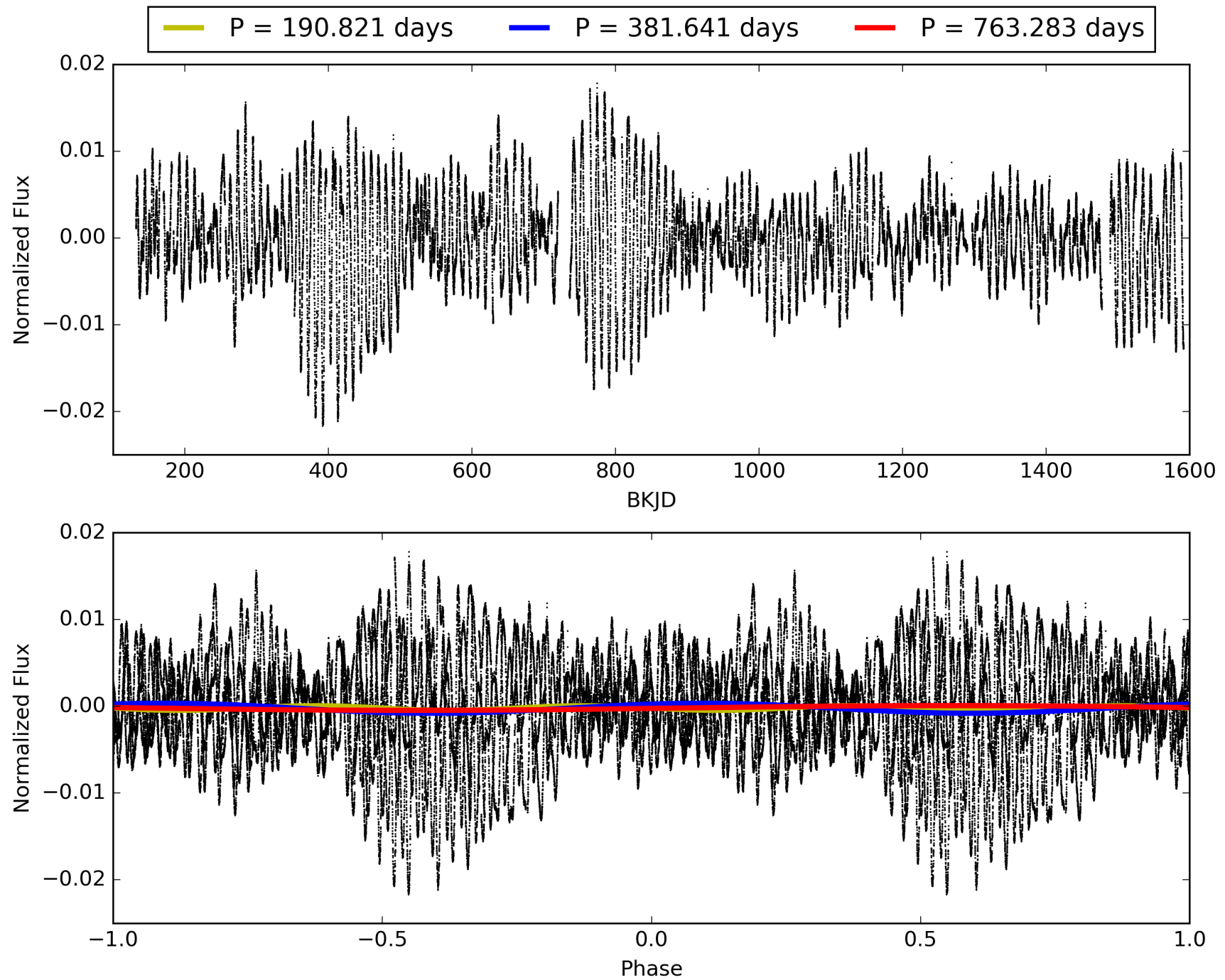
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:08:33 Z

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

TCE 008086729-02, PDC Light Curves

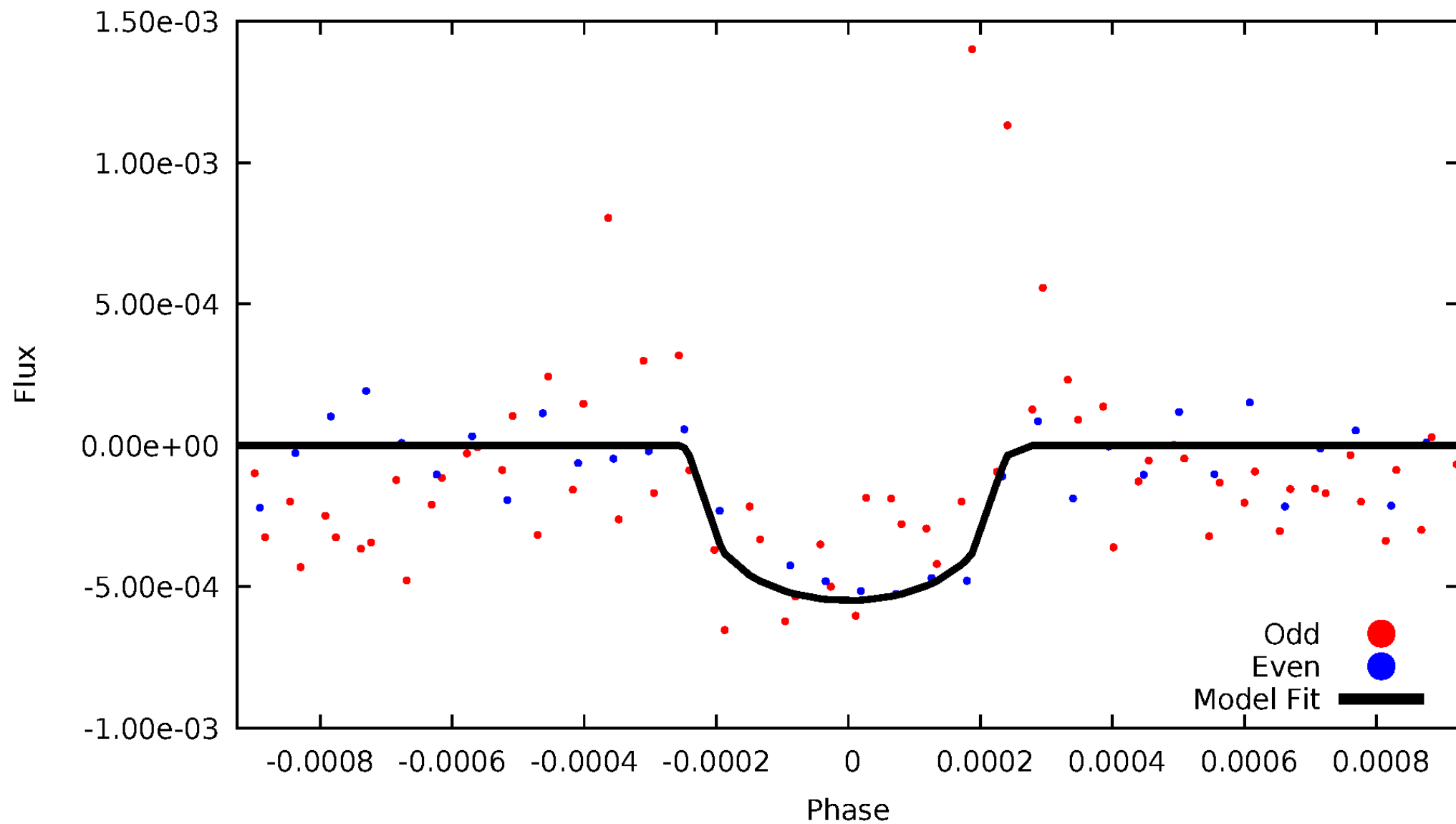


TCE 008086729-02



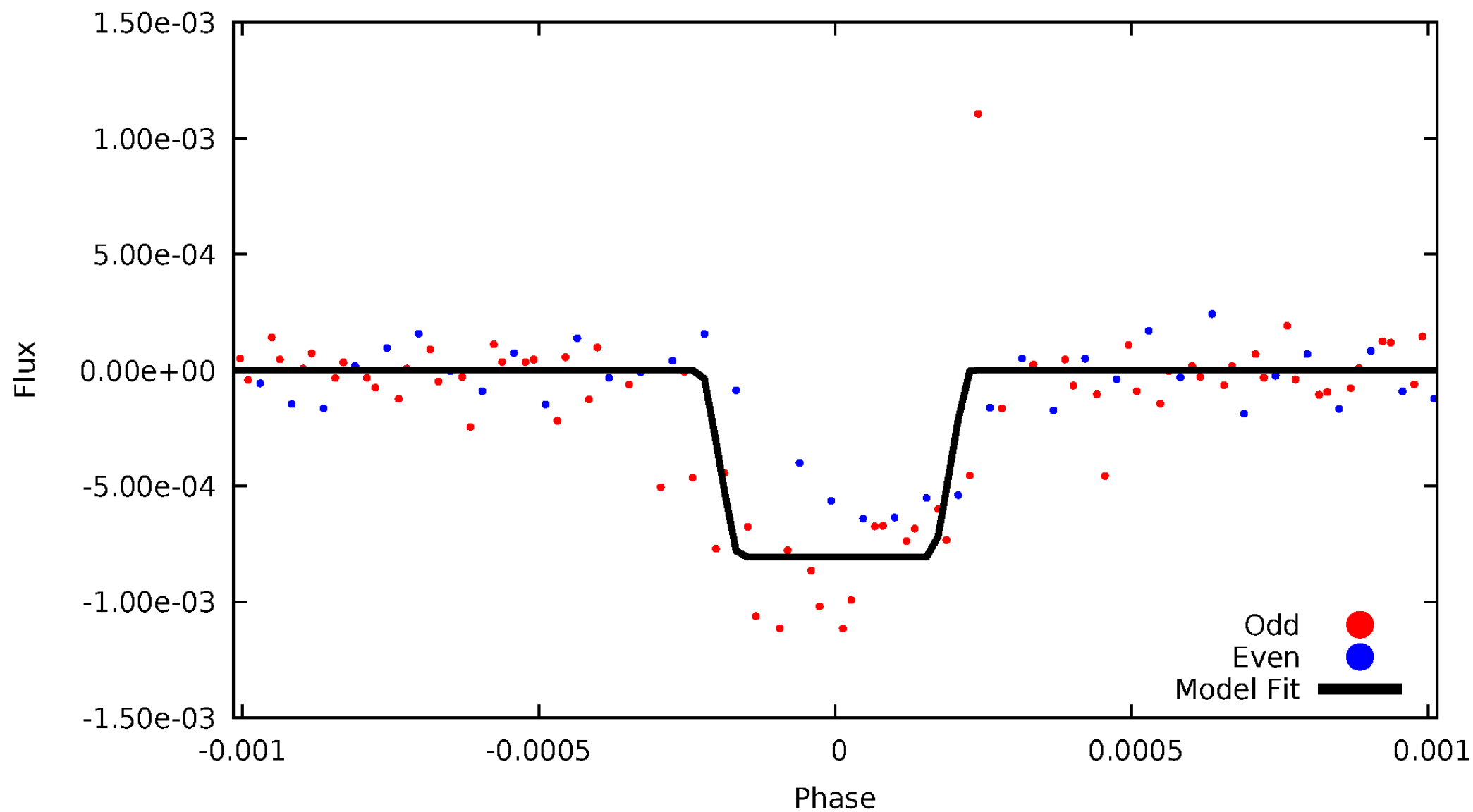
DV Odd/Even

TCE 008086729-02



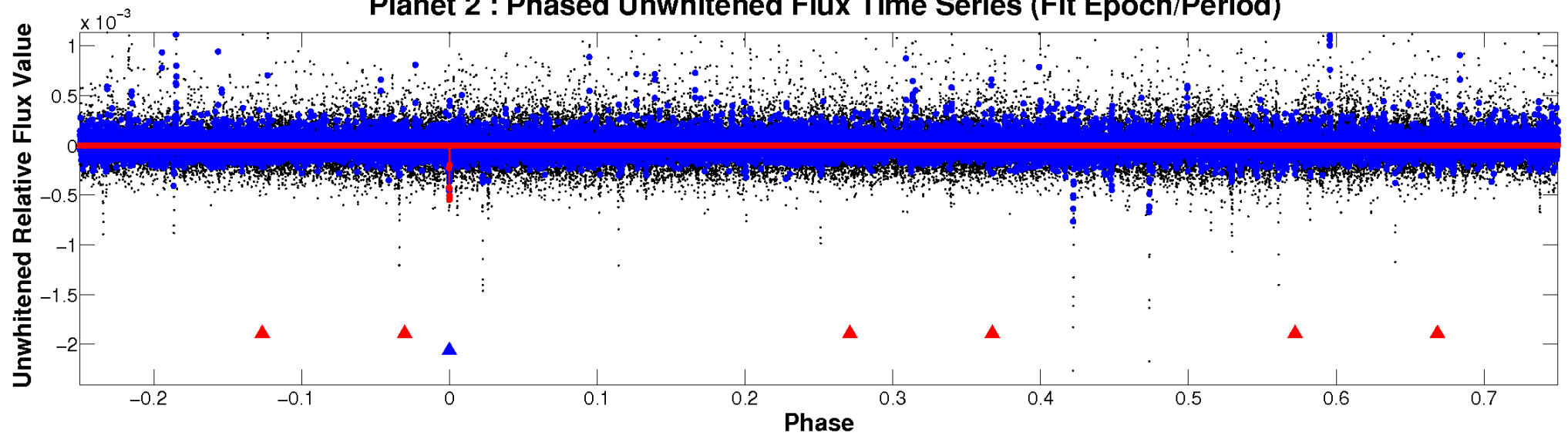
ALT Odd/Even

TCE 008086729-02

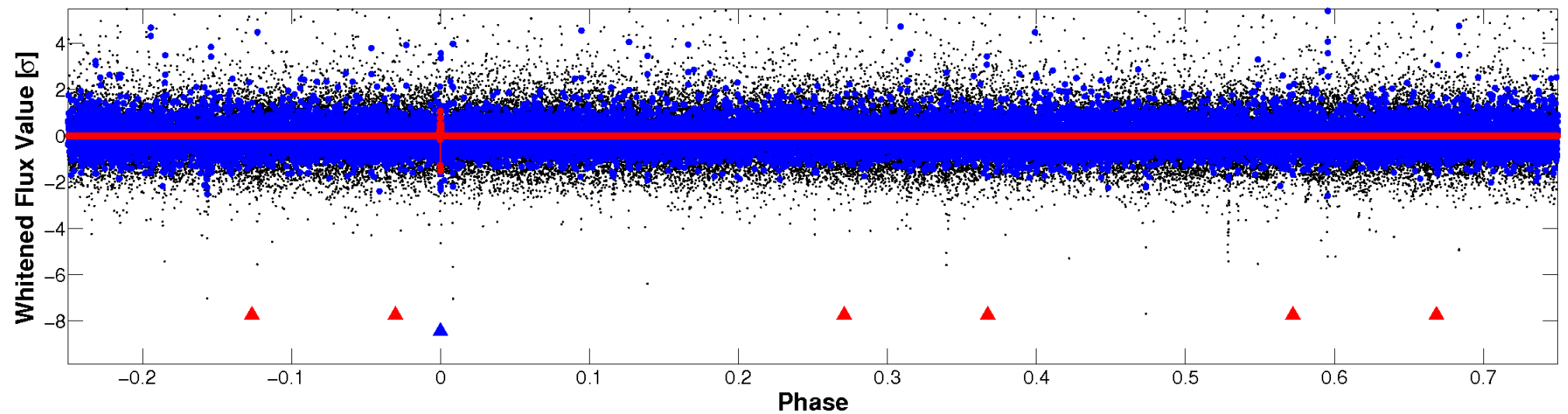


Non-Whitened Vs. Whitened Light Curve

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

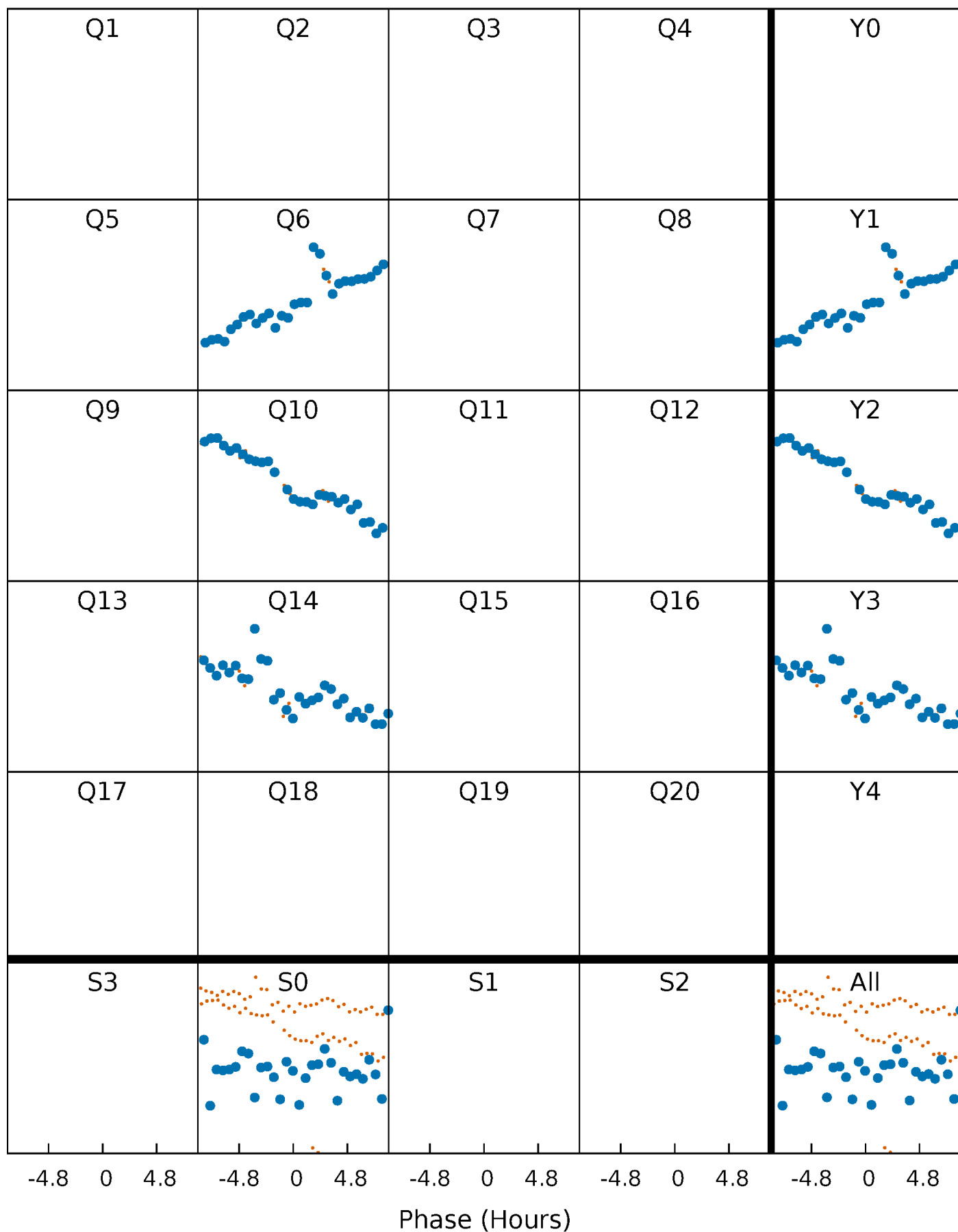


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



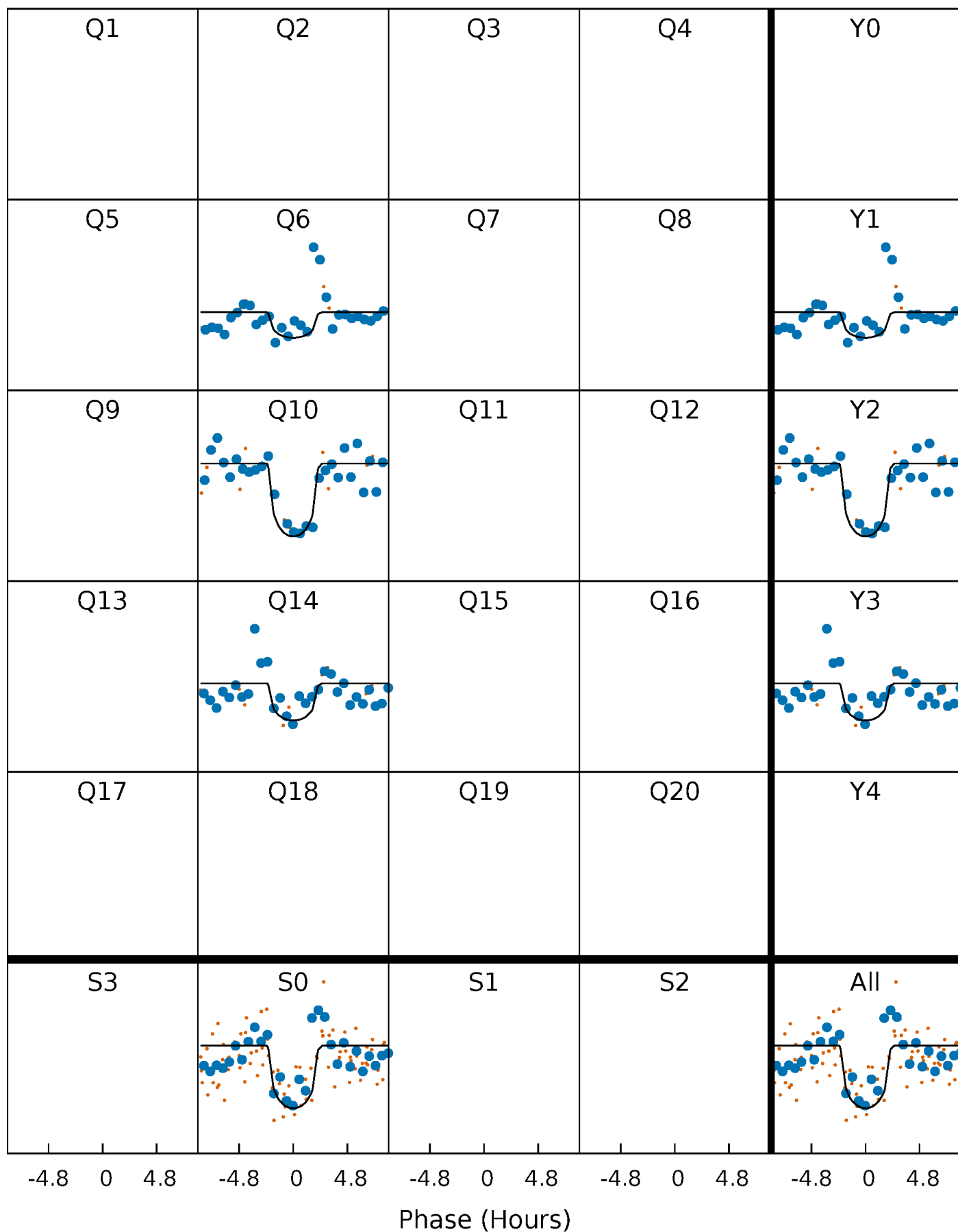
PDC Quarter-Phased Transit Curves

TCE 008086729-02 P=381.641376 Days $T_0=182.707412$ (BKJD)



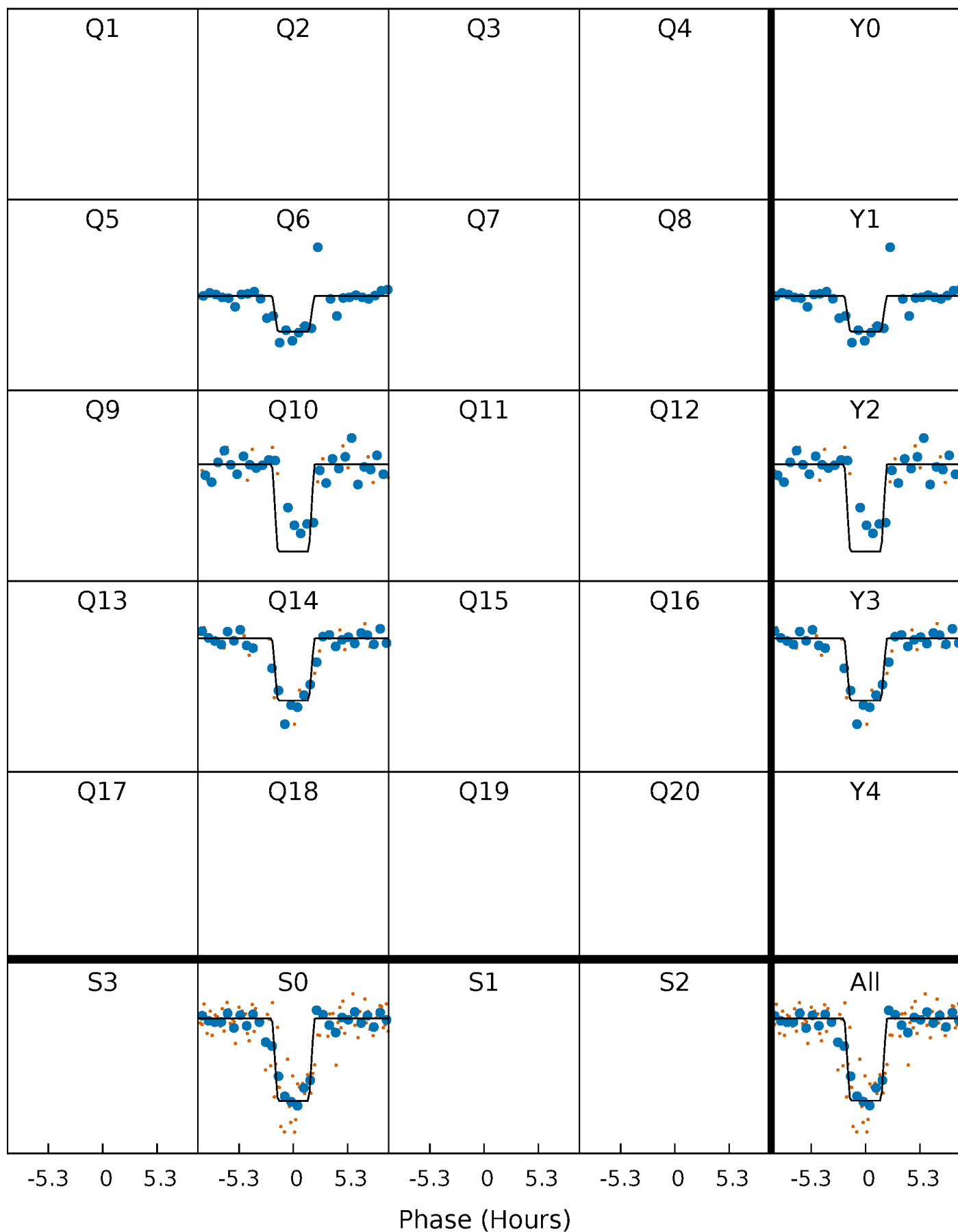
DV Quarter-Phased Transit Curves

TCE 008086729-02 P=381.641376 Days $T_0=182.707412$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

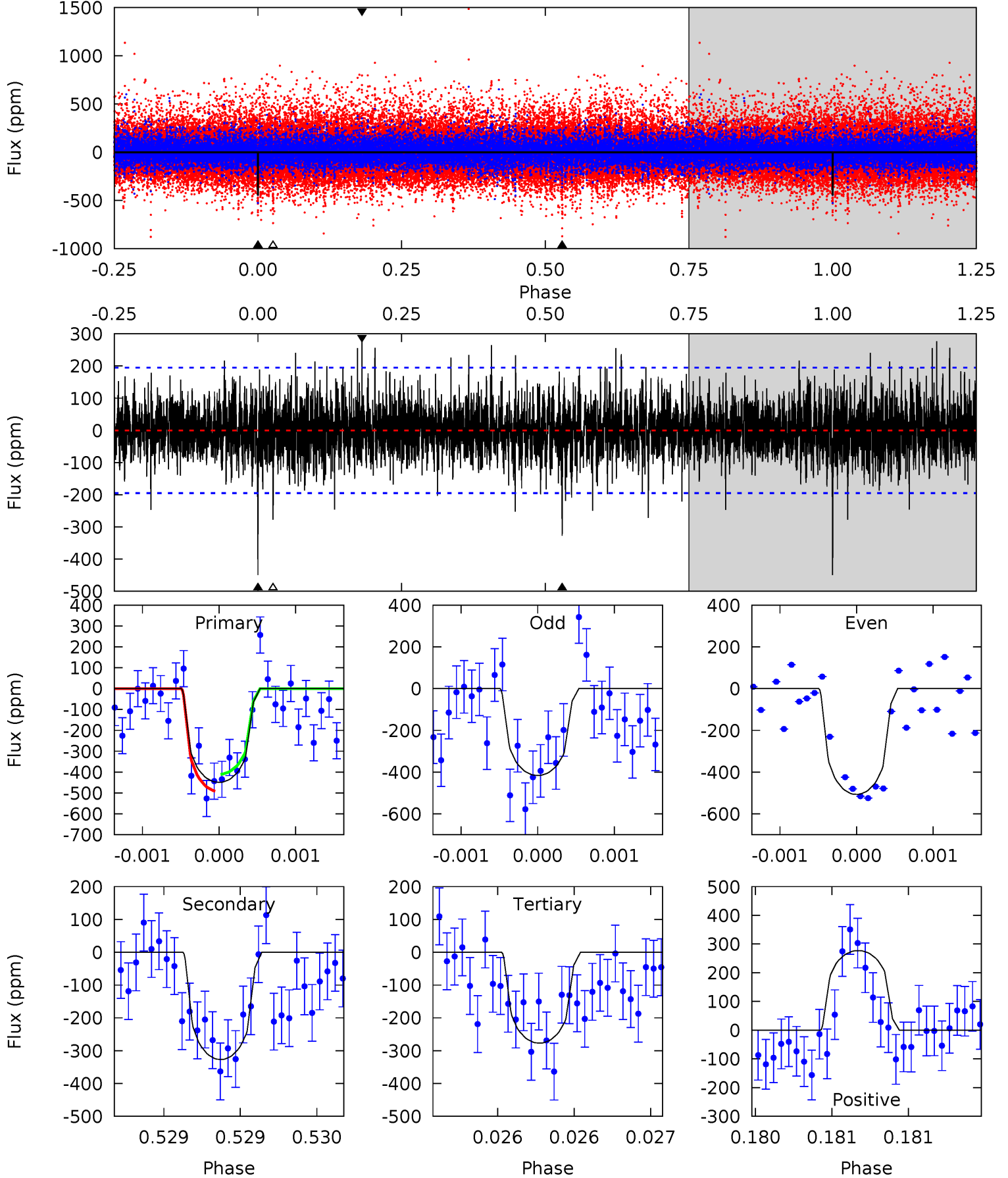
TCE 008086729-02 P=381.651223 Days $T_0=182.677147$ (BKJD)



DV Model-Shift Uniqueness Test

008086729-02, P = 381.641376 Days, E = 182.707412 Days

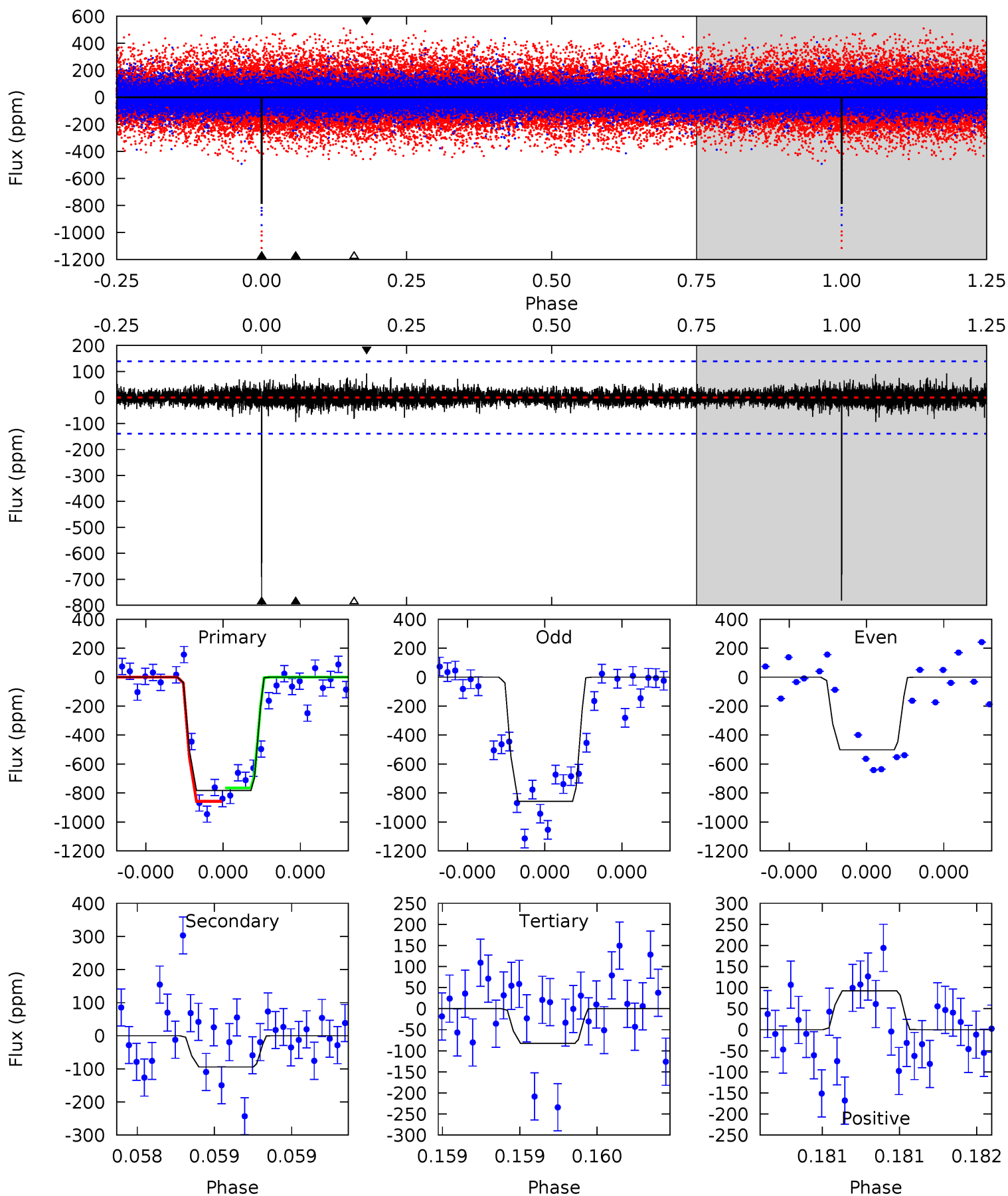
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	9.34	7.91	7.92	5.57	3.47	1.73	4.92	4.92	1.43	1.42	1.18	0.95	0.38	1.15



Alt Model-Shift Uniqueness Test

008086729-02, P = 381.651223 Days, E = 182.677147 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.4	3.79	3.31	3.72	5.60	3.52	0.66	28.1	27.7	0.48	0.07	6.83	0.86	0.11	1.81



Stellar Parameters For KIC 008086729

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4191^{+132}_{-162}	$4.638^{+0.049}_{-0.025}$	$0.000^{+0.250}_{-0.300}$	$0.632^{+0.040}_{-0.060}$	$0.633^{+0.054}_{-0.059}$	$3.533^{+0.830}_{-0.380}$
	+3%/-4%	+1%/-1%	+inf%/-inf%	+6%/-9%	+9%/-9%	+23%/-11%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008086729-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-327 ± 35	$1.79^{+1.53}_{-1.14}$	217^{+8}_{-9}	3682^{+1828}_{-652}	$44682^{+291499}_{-31839}$
Alt.	-94 ± 25	$2.19^{+1.30}_{-1.26}$	217^{+8}_{-9}	2872^{+808}_{-362}	8908^{+37432}_{-5821}

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 $A_{obs} \gg 1.0$

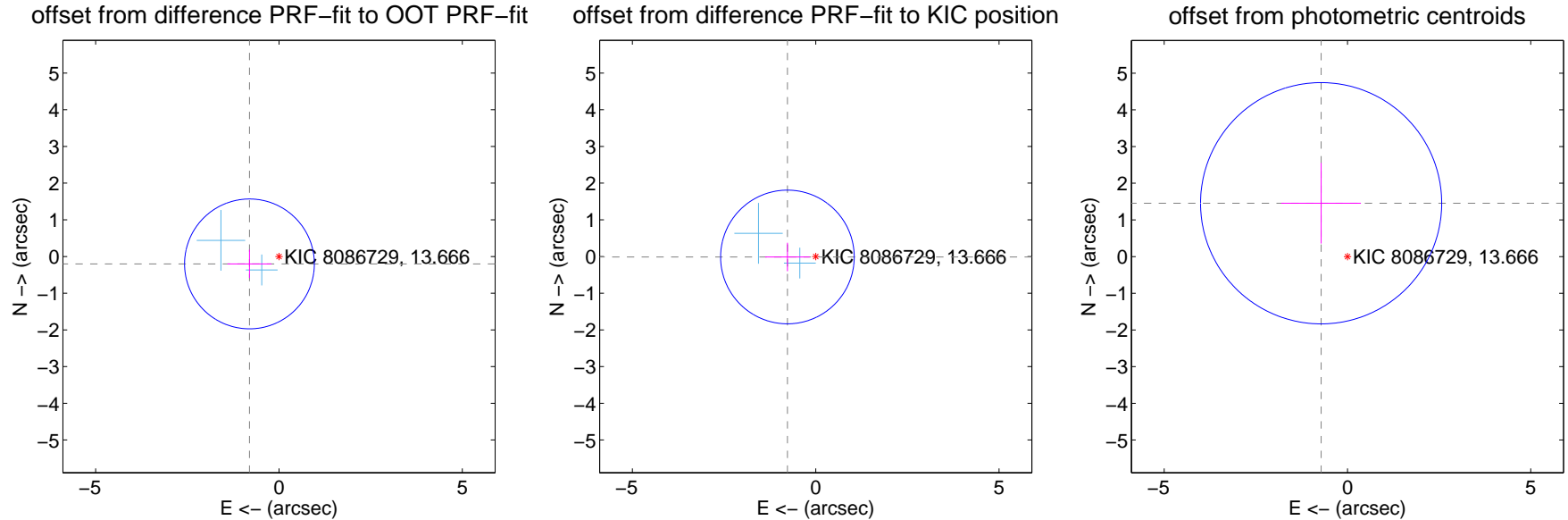
DV Centroid Data

Supplemental centroid analysis for 008086729-02. Kepler magnitude: 13.67. Transit SNR 7.32

There are 2 quarters with good PRF difference image offsets

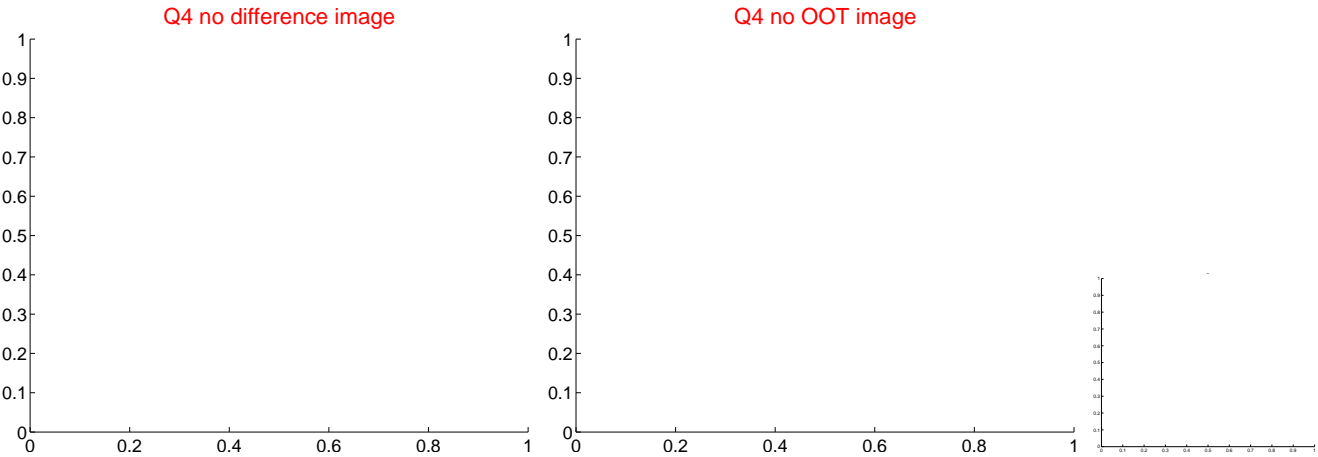
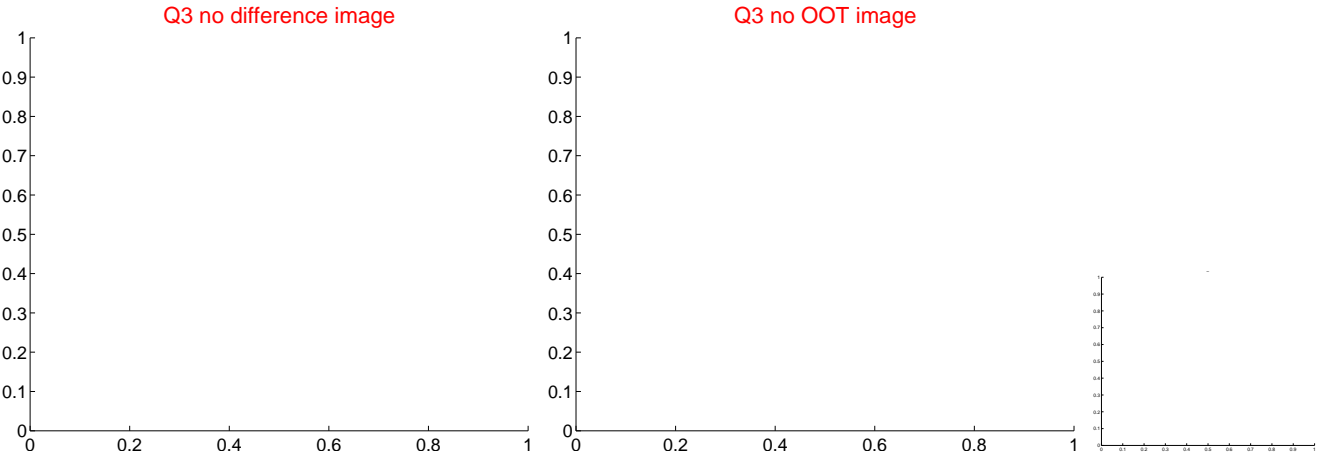
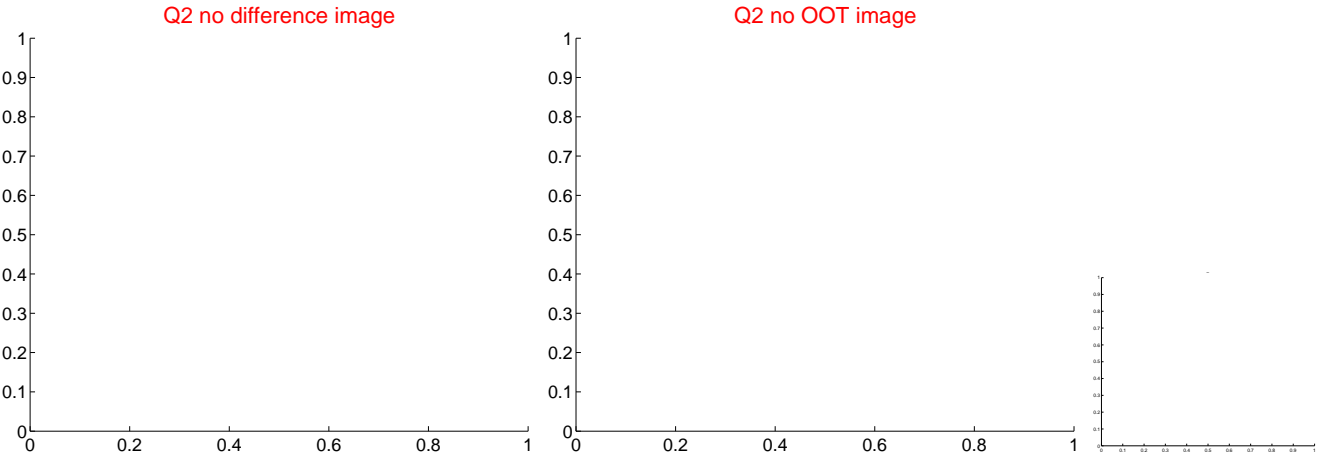
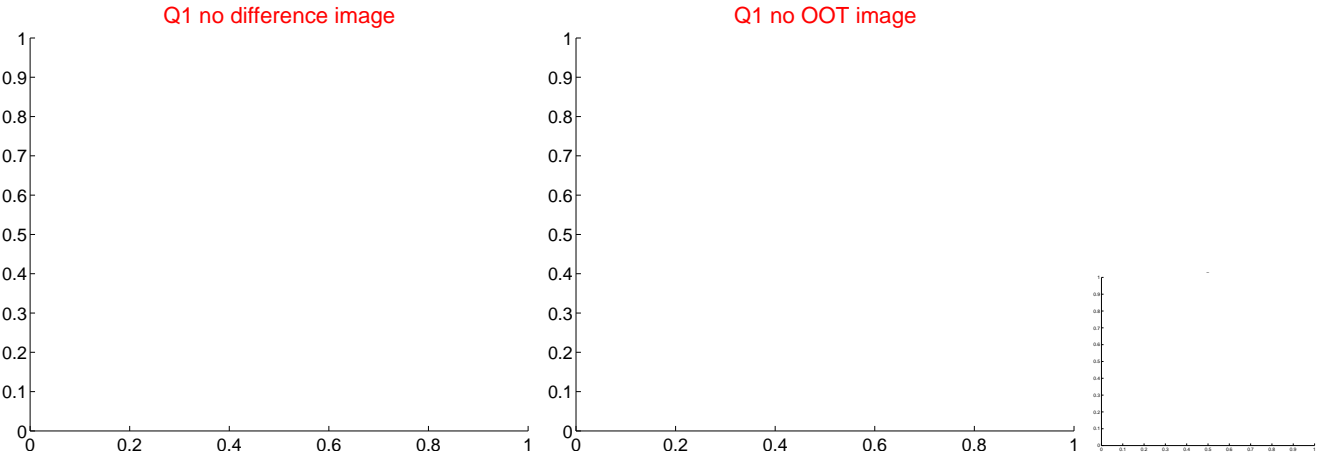
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.830 ± 0.590	1.41	0.805 ± 0.600	-0.201 ± 0.387
PRF-fit source offset from KIC position	0.772 ± 0.607	1.27	0.772 ± 0.607	-0.013 ± 0.388
photometric centroid source offset	1.62 ± 1.10	1.48	0.72 ± 1.09	1.45 ± 1.10

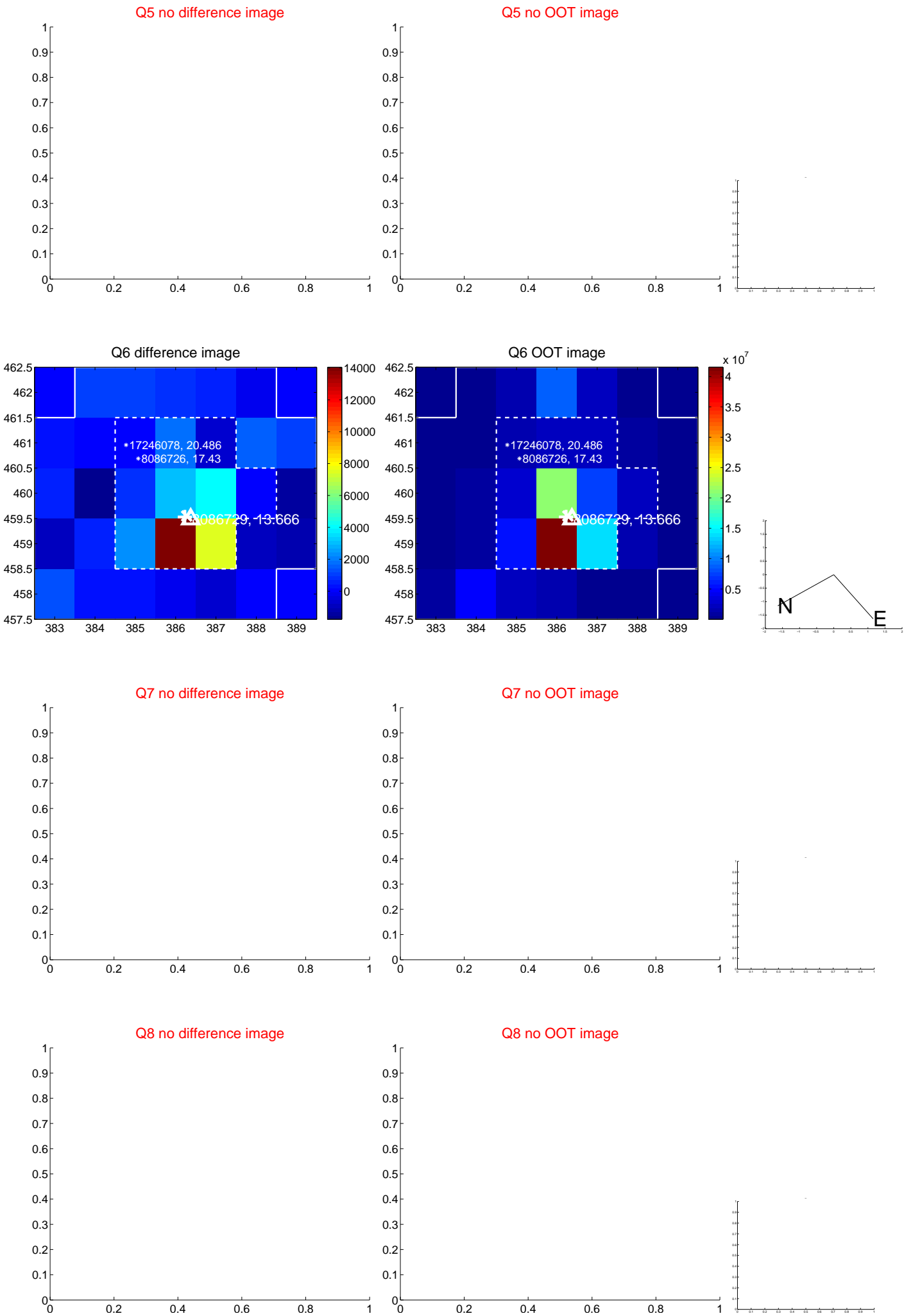


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

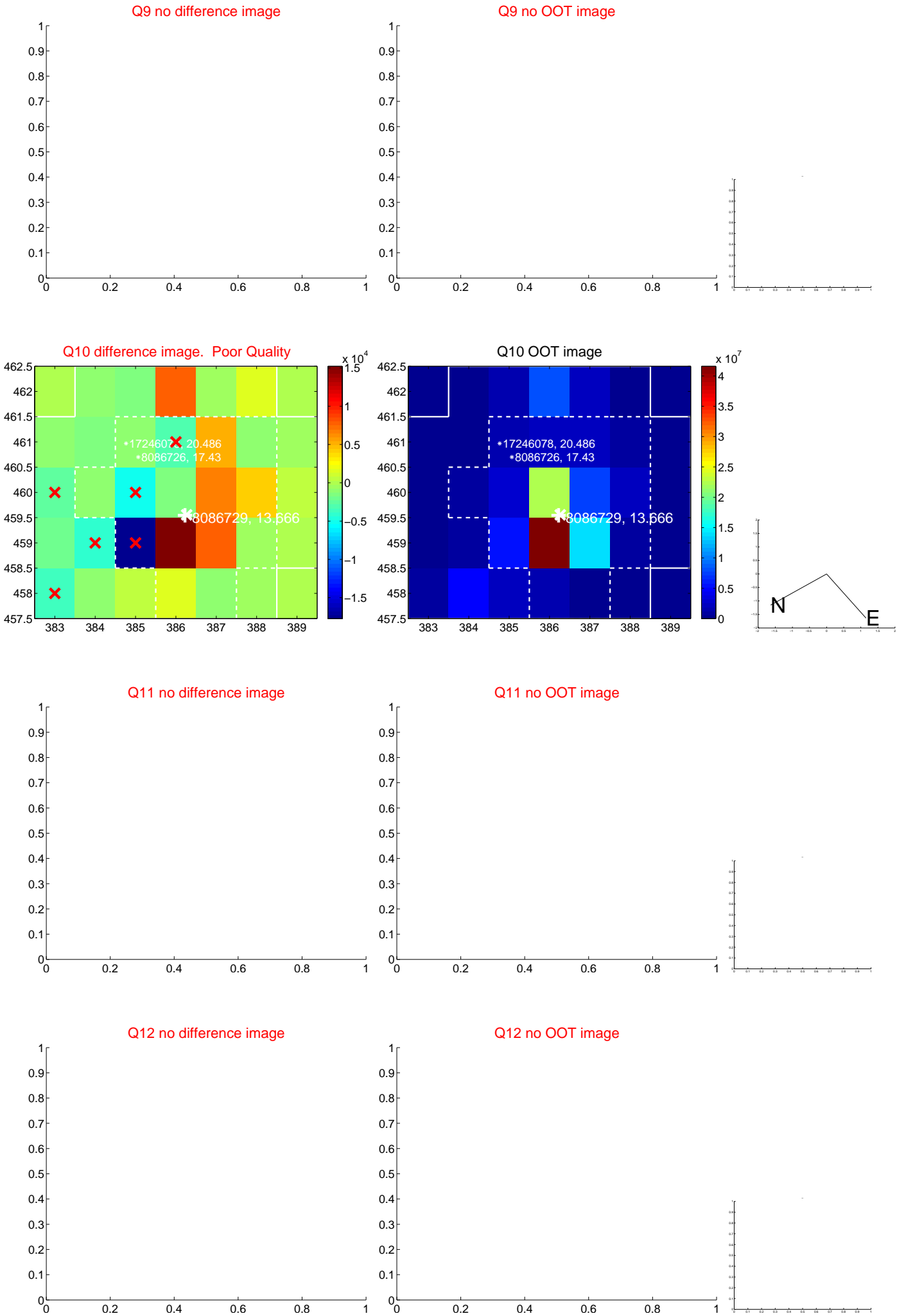
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

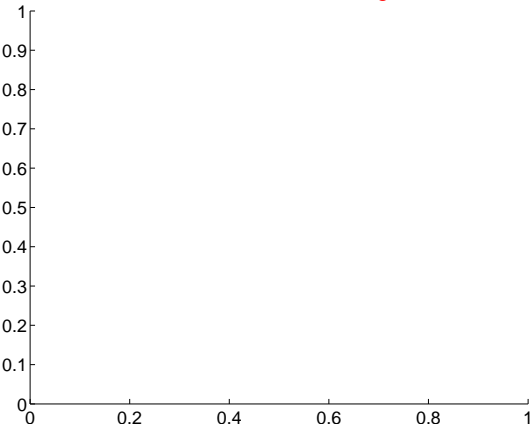


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

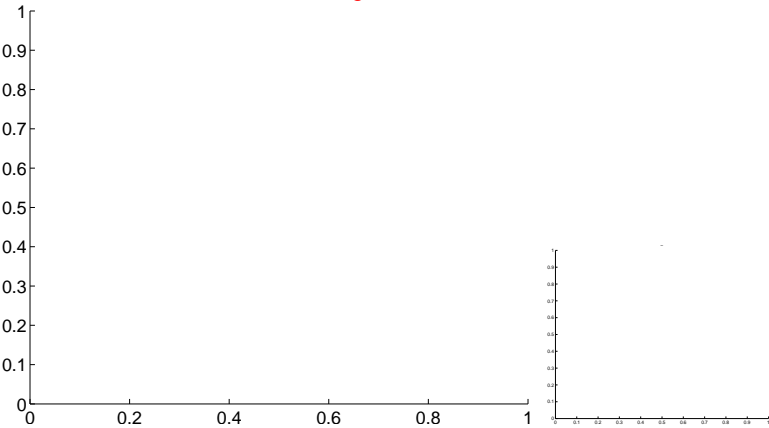


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

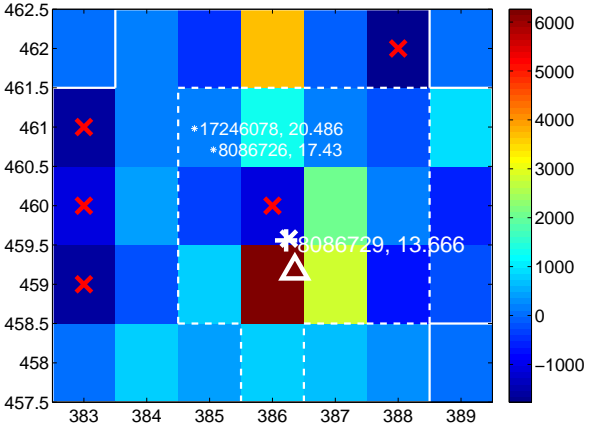
Q13 no difference image



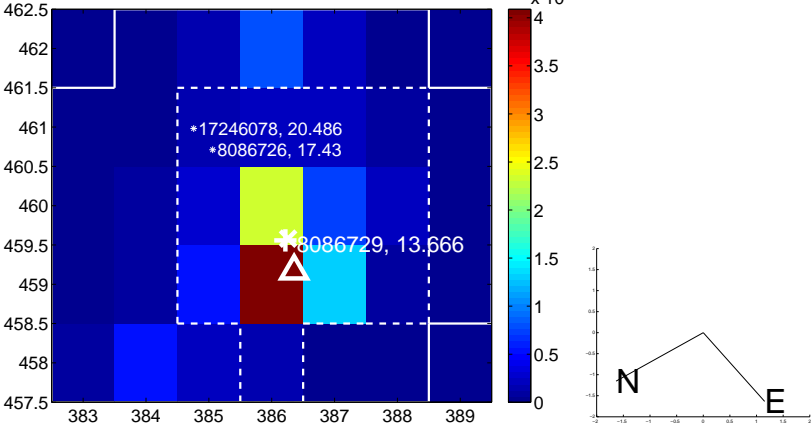
Q13 no OOT image



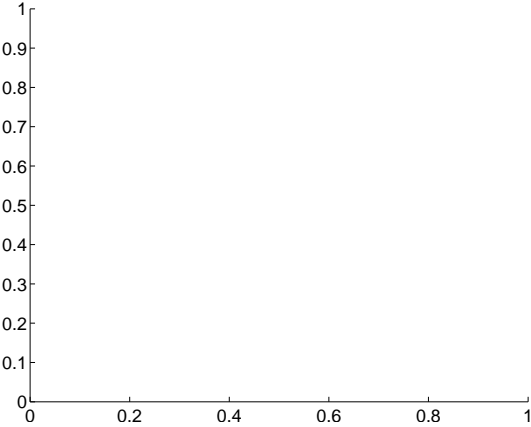
Q14 difference image



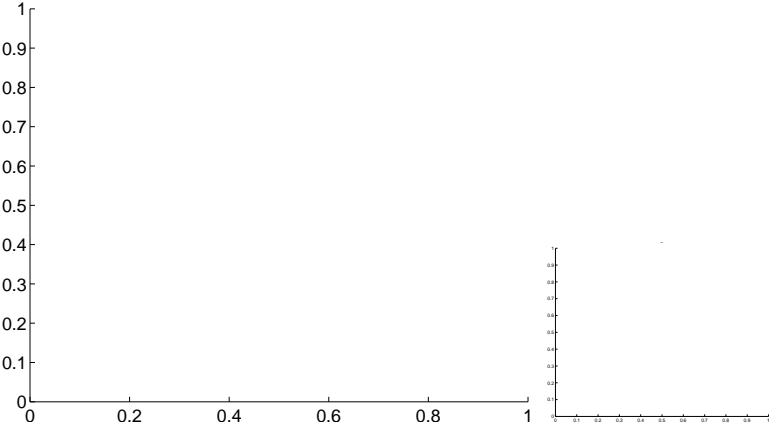
Q14 OOT image



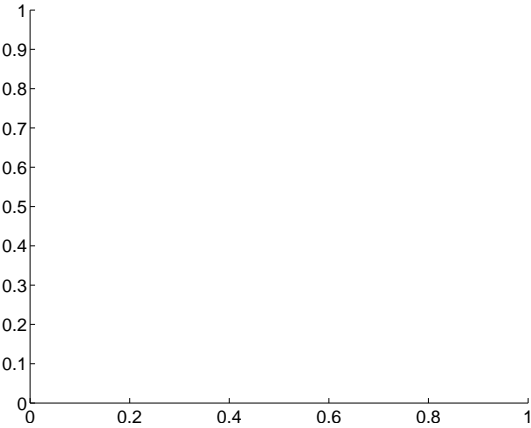
Q15 no difference image



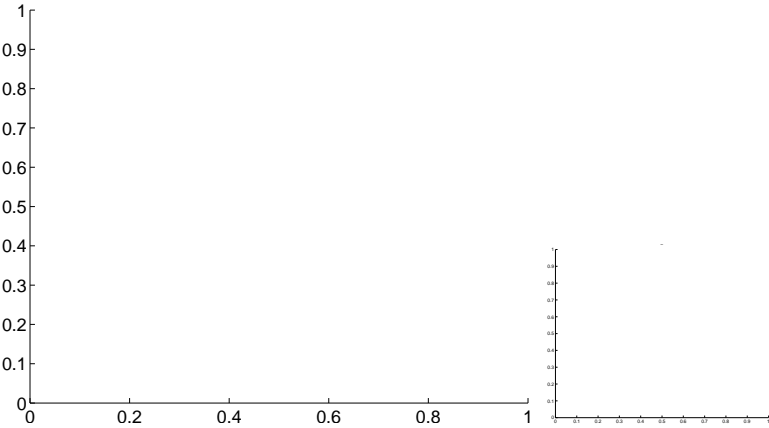
Q15 no OOT image



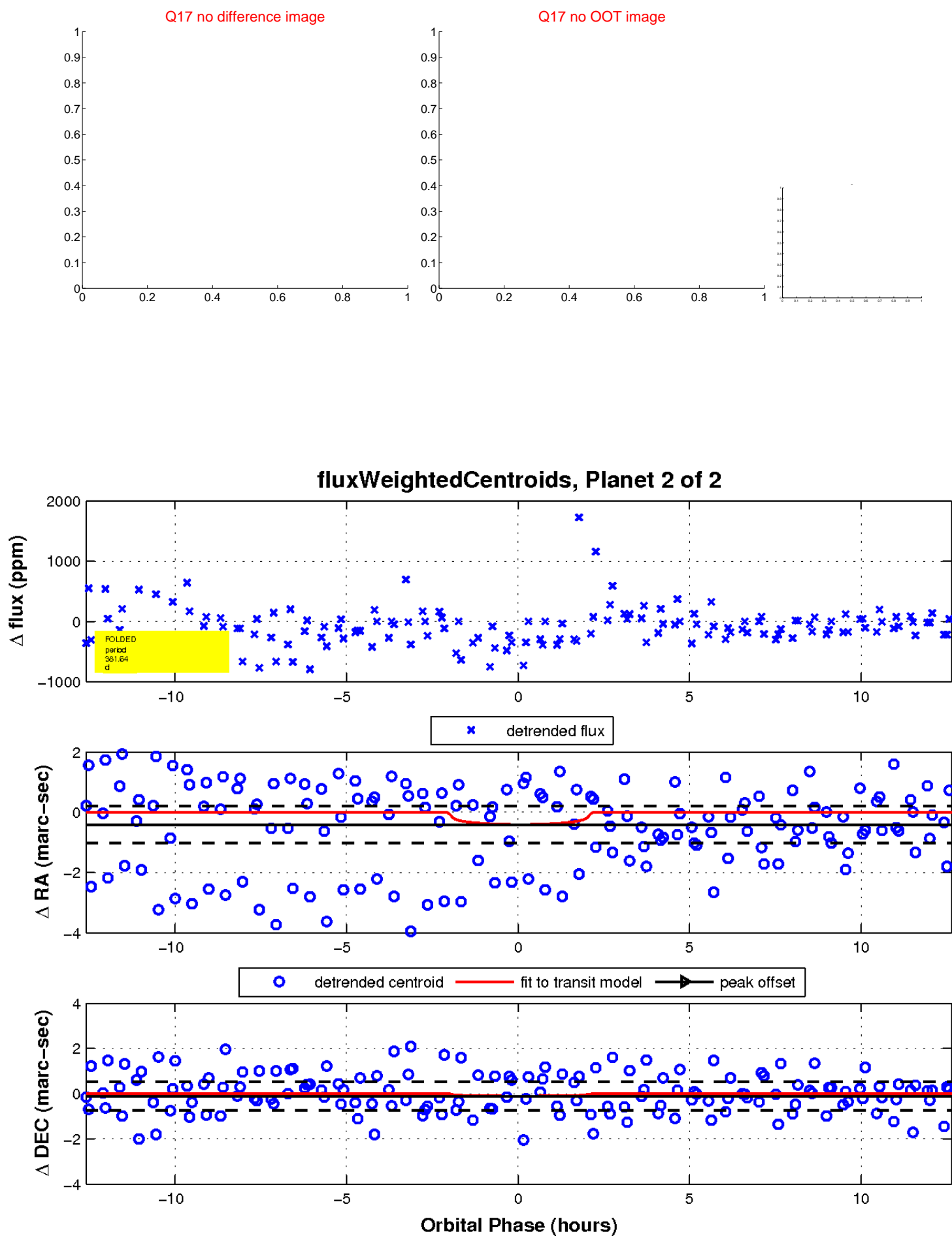
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

