

KIC 005873209

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})
005873209-01	OBS	No	0.792774	132.219119	14.2	5.322	8.1	5.5	2.17	7751	0.84	37951.81
005873209-02	OBS	No	38.575633	155.137383	301.1	1.439	9.0	8.8	2.17	7751	3.81	213.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005873209-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005873209-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV

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

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

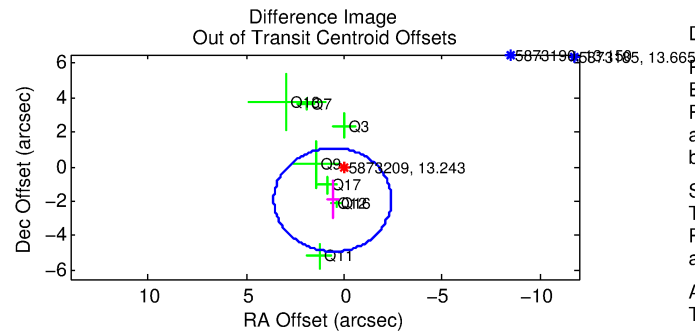
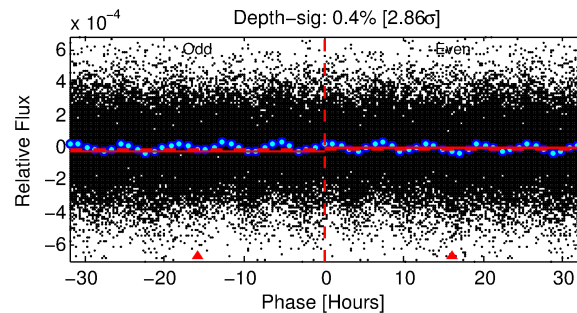
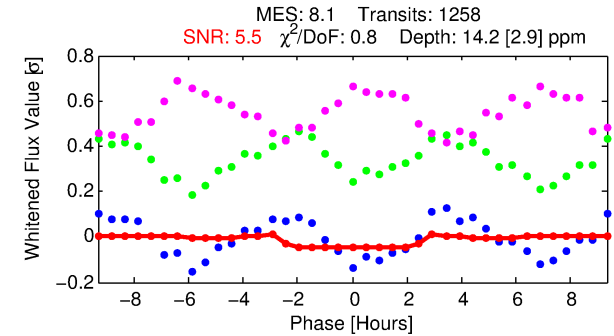
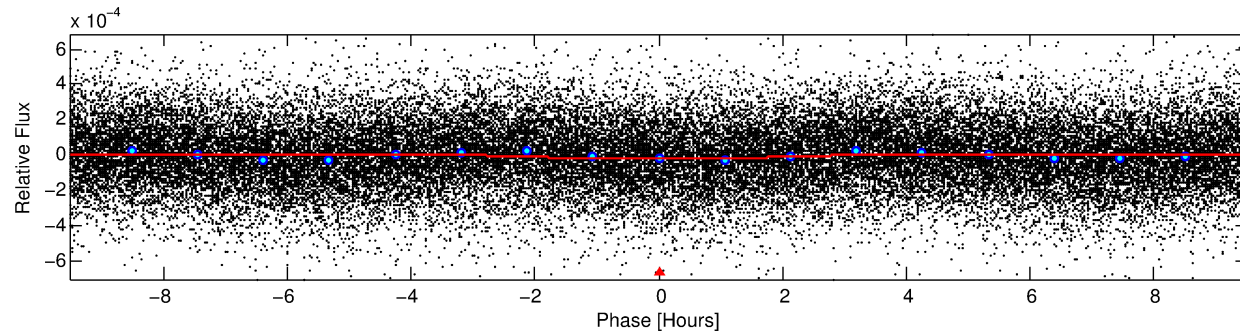
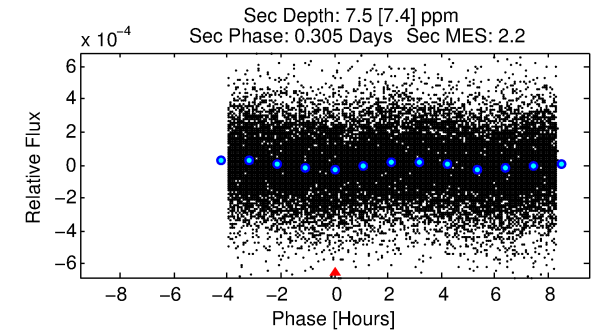
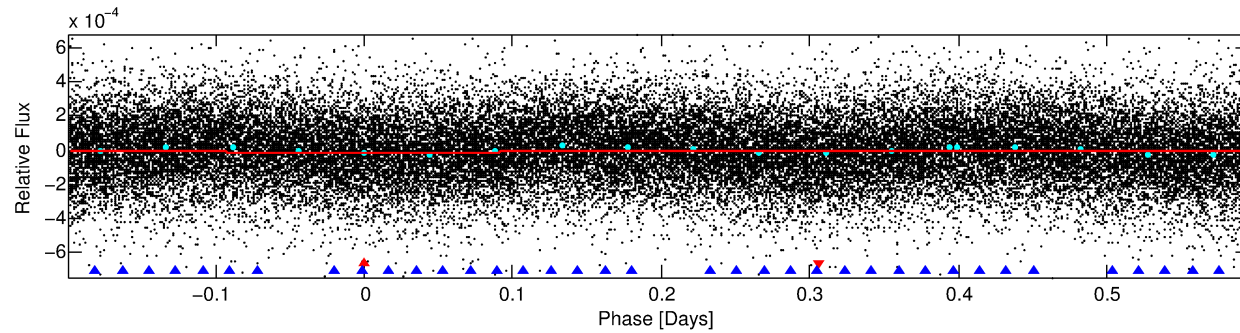
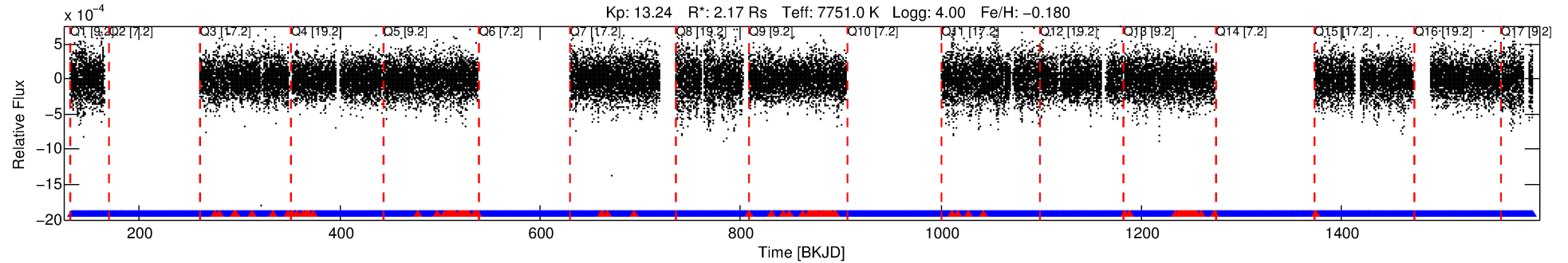
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005873209-01

No Significant Match Found

DV One-Page Summary

KIC: 5873209 Candidate: 1 of 2 Period: 0.793 d



DV Fit Results:

Period = 0.79277 [0.00002] d
Epoch = 132.2191 [0.0063] BKJD
Rp/R* = 0.0036 [0.0023]
a/R* = 1.23 [1.48]
b = 0.51 [5.19]
Seff = 37951.81 [15818.93]
Teq = 3559 [371] K
Rp = 0.85 [0.60] Re
a = 0.0200 [0.0050] AU
Ag = 2.32 [3.89] [0.34σ]
Teffp = 6795 [2779] K [1.15σ]

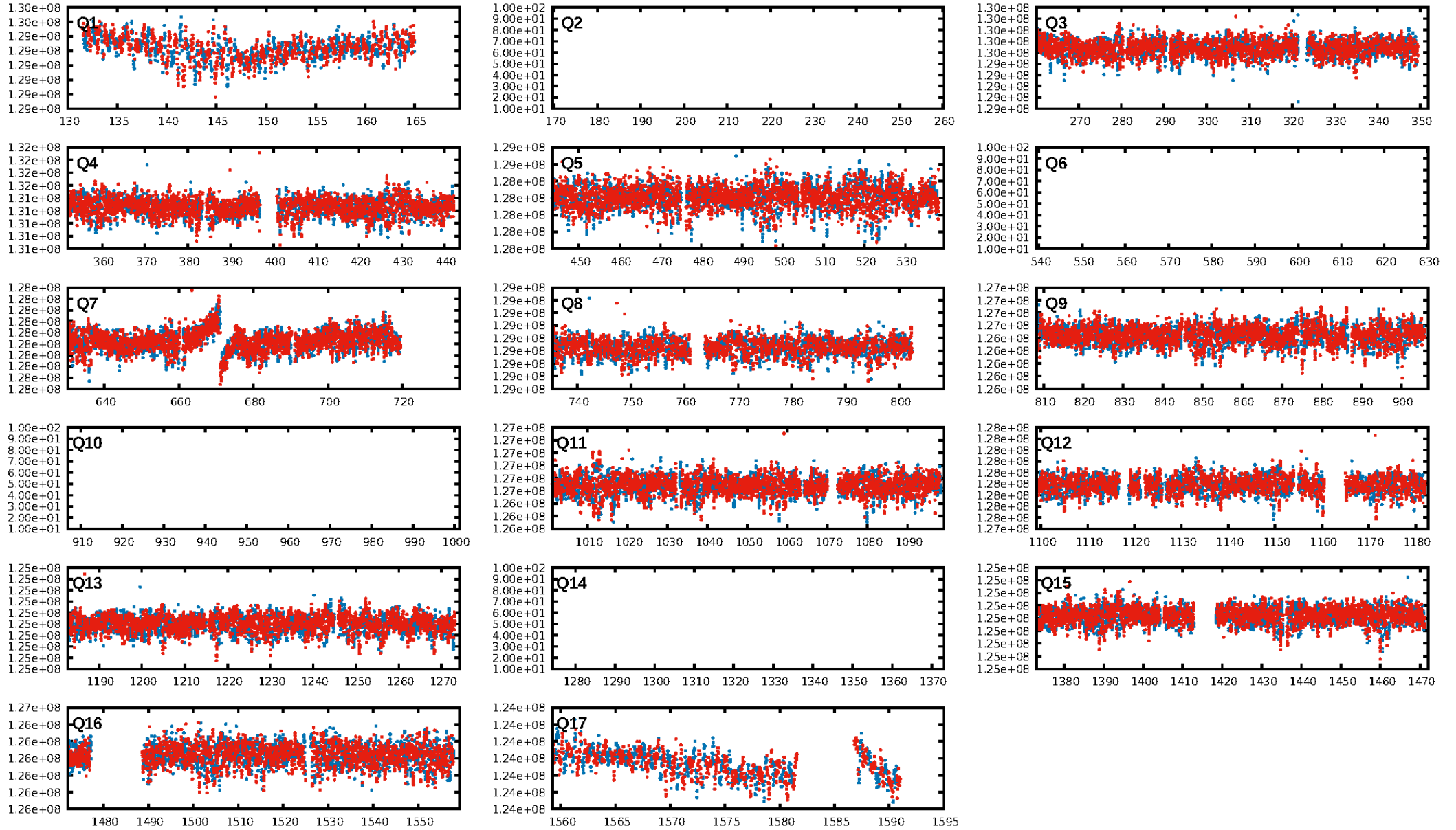
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [164.49σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.08e-09
RollingBand-fgt: 0.91 [1069/1180]
GhostDiagnostic-chr: -0.7177
Centroid-sig: 0.5%
Centroid-so: 2.086 arcsec [1.62σ]
OotOffset-rm: 2.008 arcsec [2.01σ]
OotOffset-st: 0/3/2/3 [8]
KicOffset-rm: 1.931 arcsec [2.04σ]
KicOffset-st: 0/3/2/3 [8]
DiffImageQuality-fgm: 0.62 [5/8]
DiffImageOverlap-fno: 1.00 [13/13]

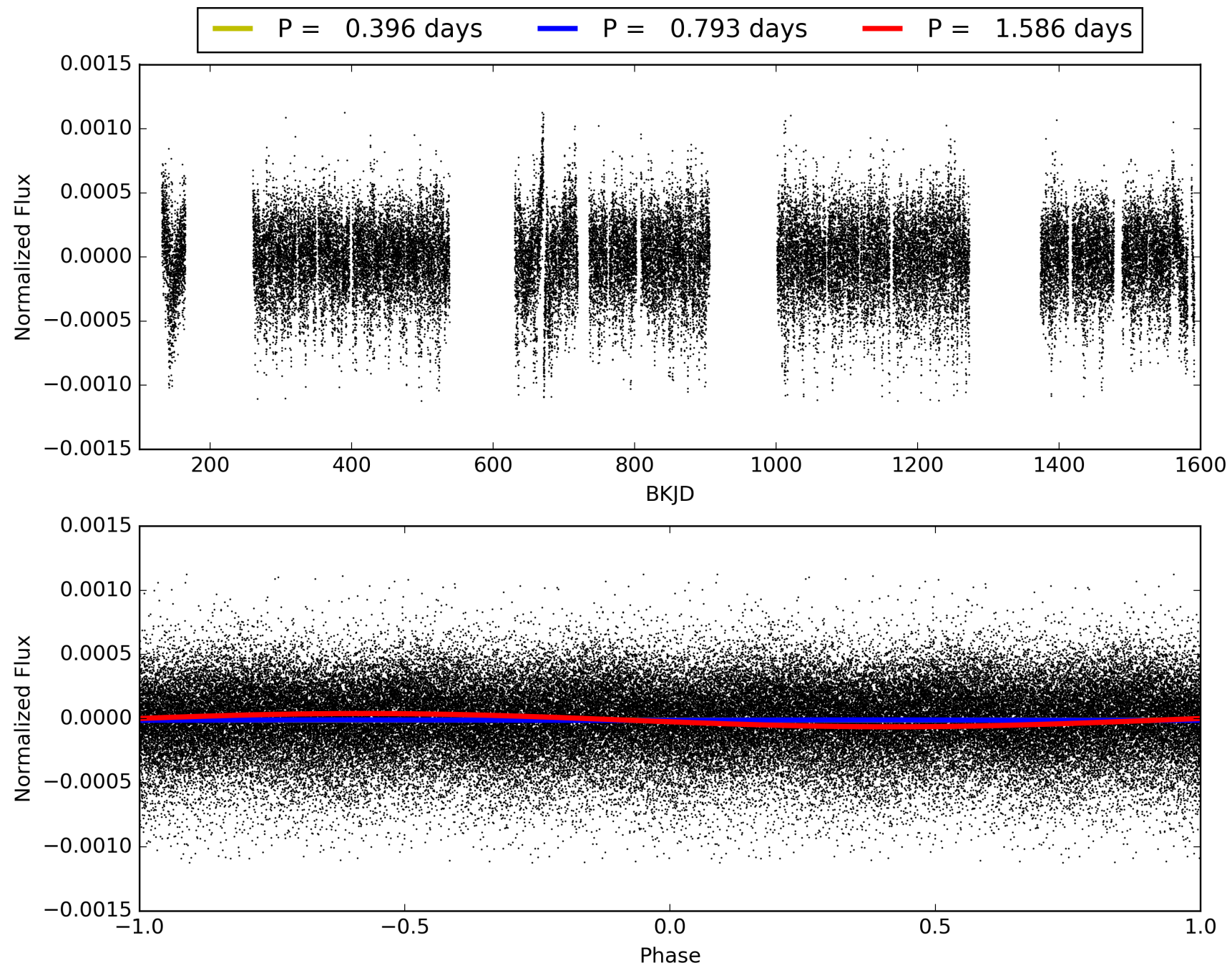
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005873209-01, PDC Light Curves

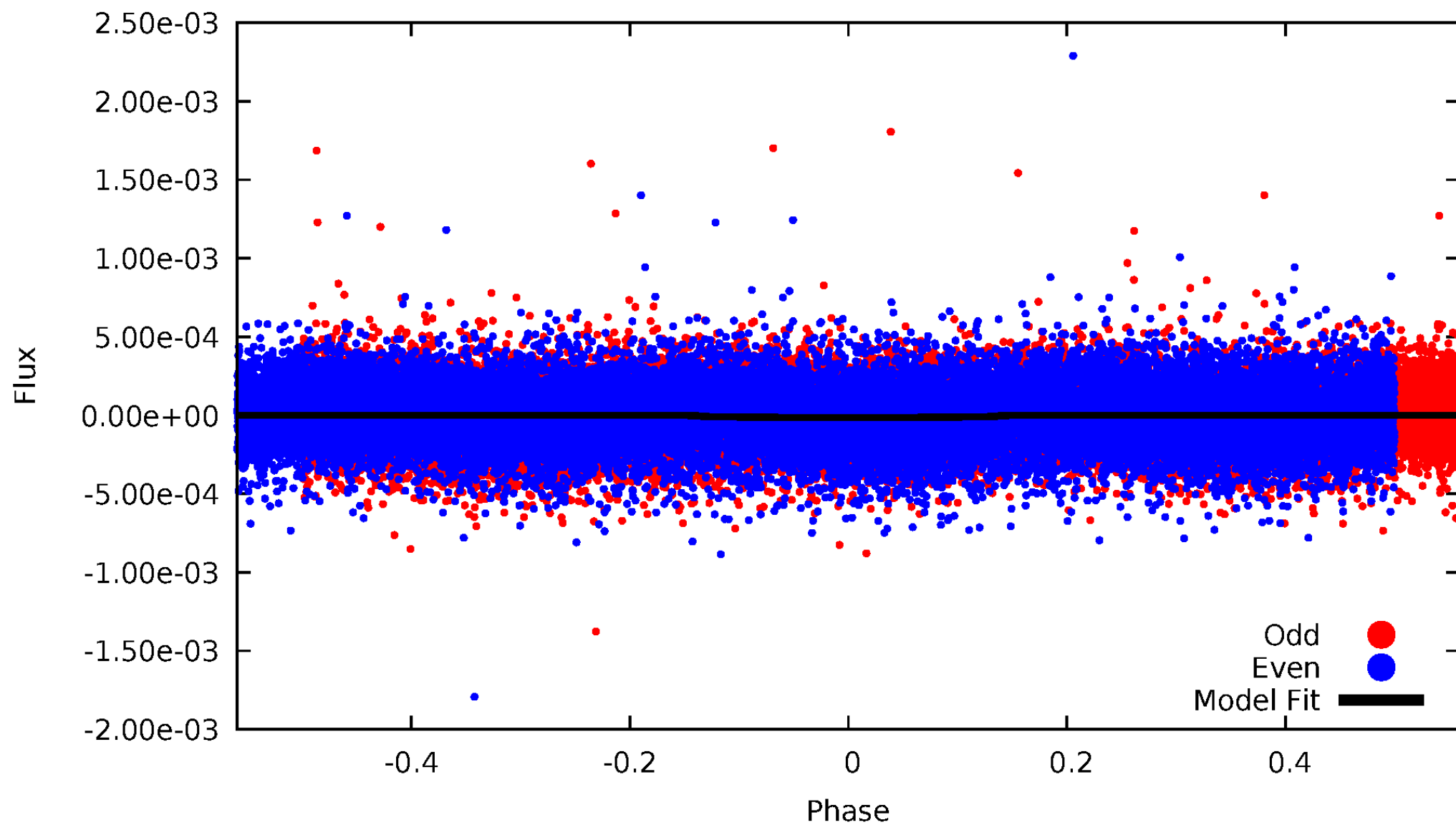


TCE 005873209-01



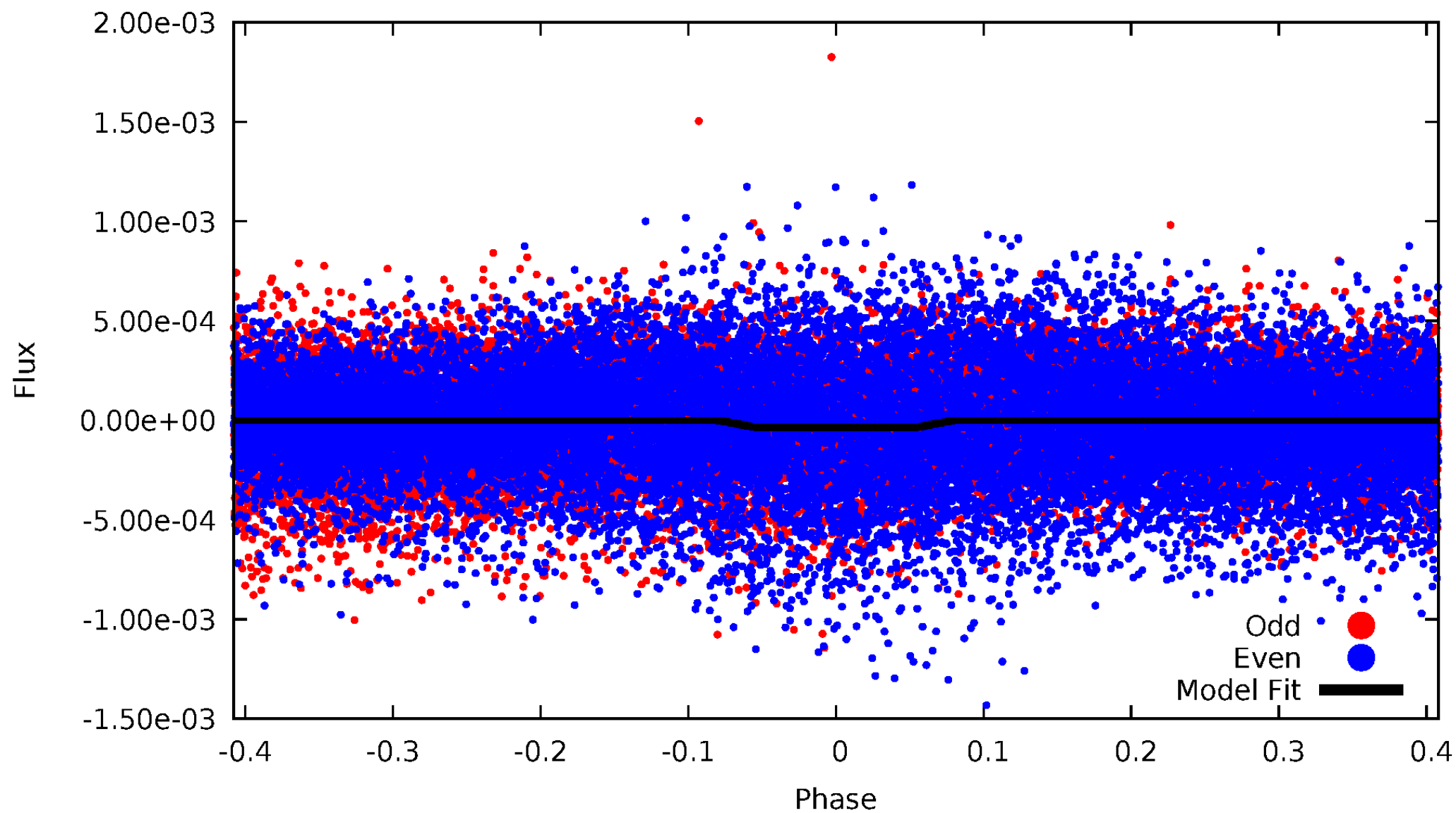
DV Odd/Even

TCE 005873209-01



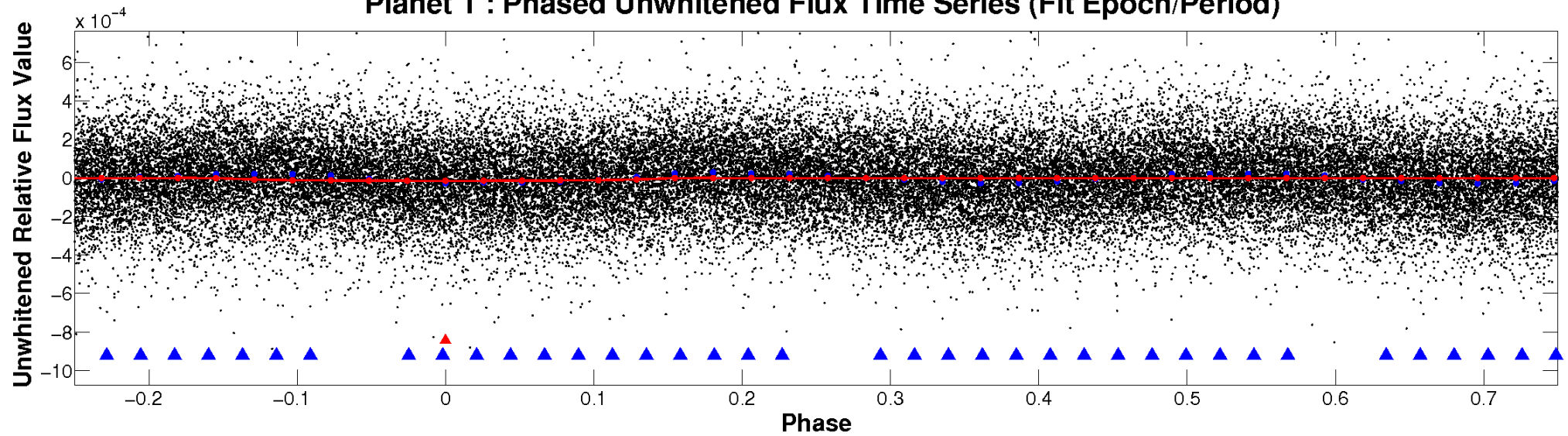
ALT Odd/Even

TCE 005873209-01

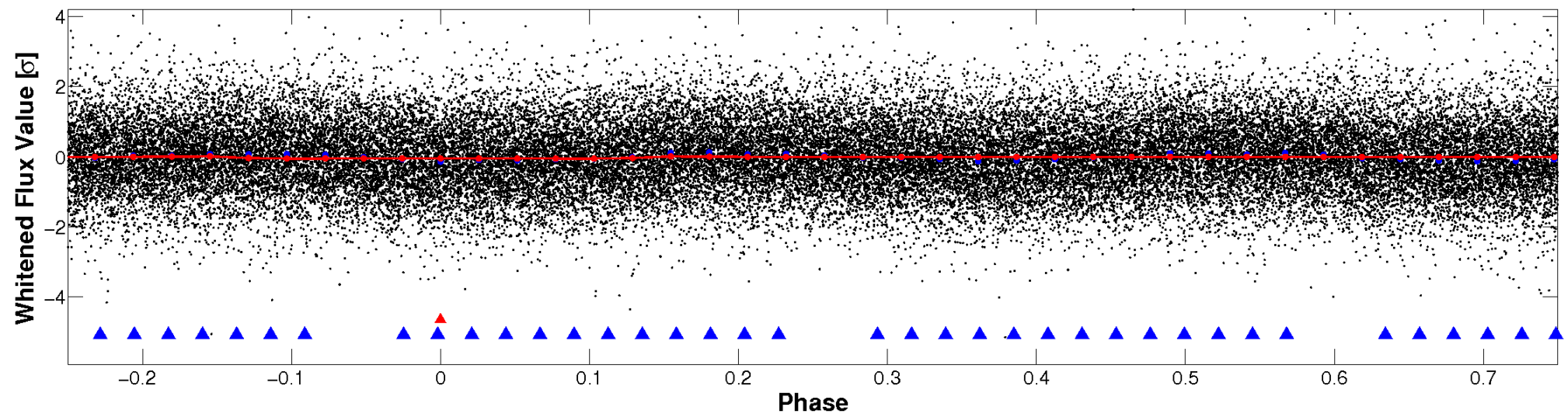


Non-Whitened Vs. Whitened Light Curve

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

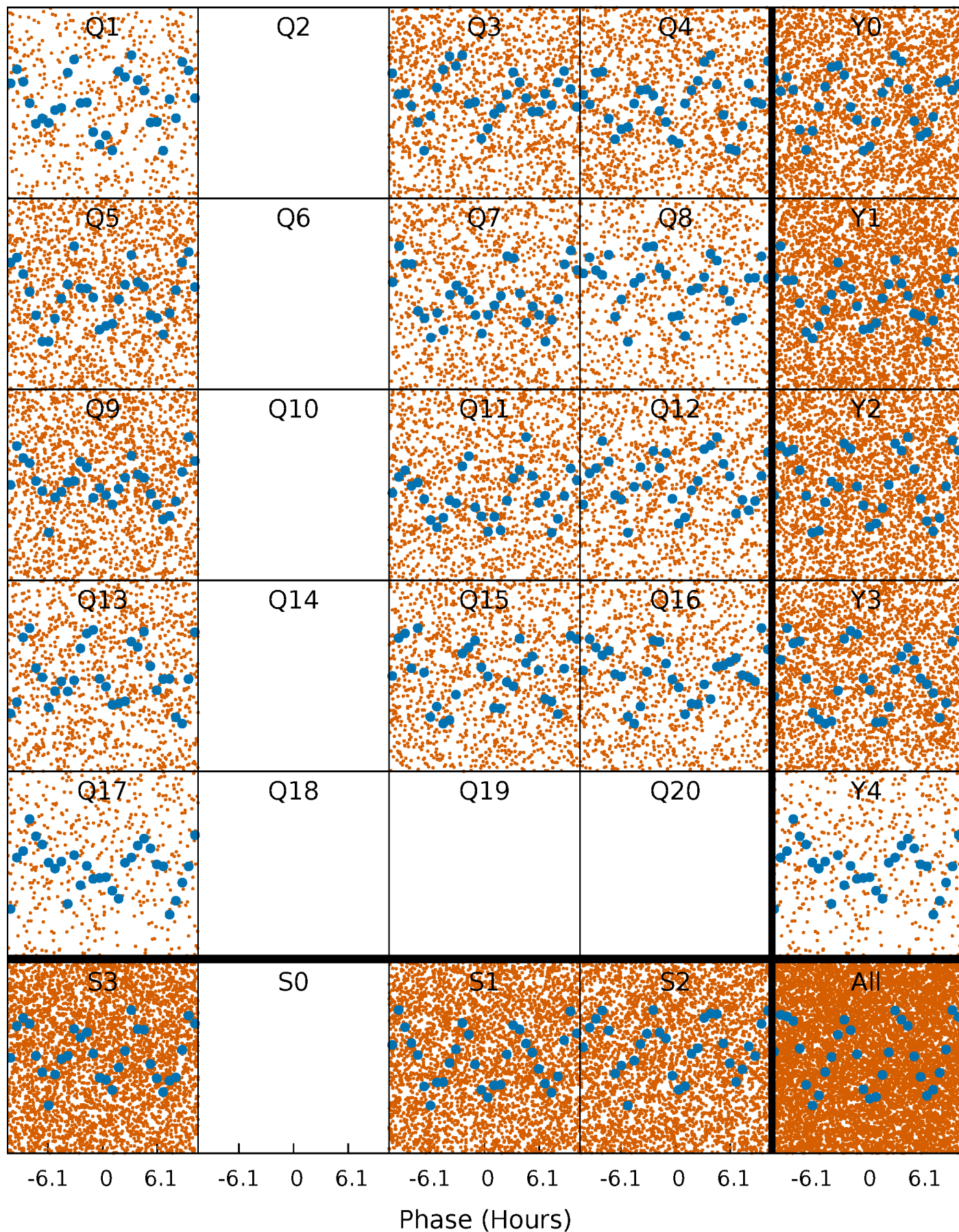


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



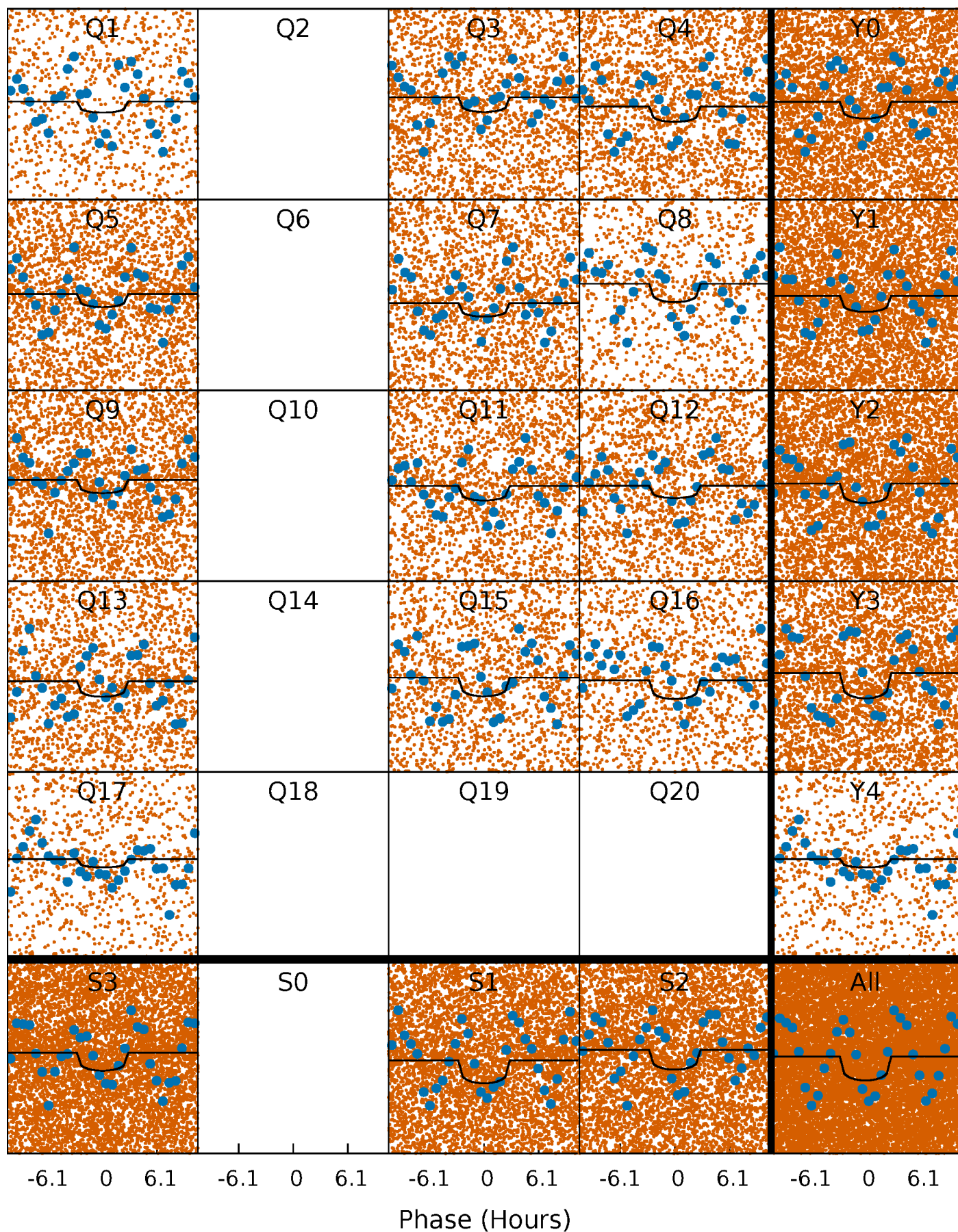
PDC Quarter-Phased Transit Curves

TCE 005873209-01 P= 0.792774 Days $T_0=132.219119$ (BKJD)



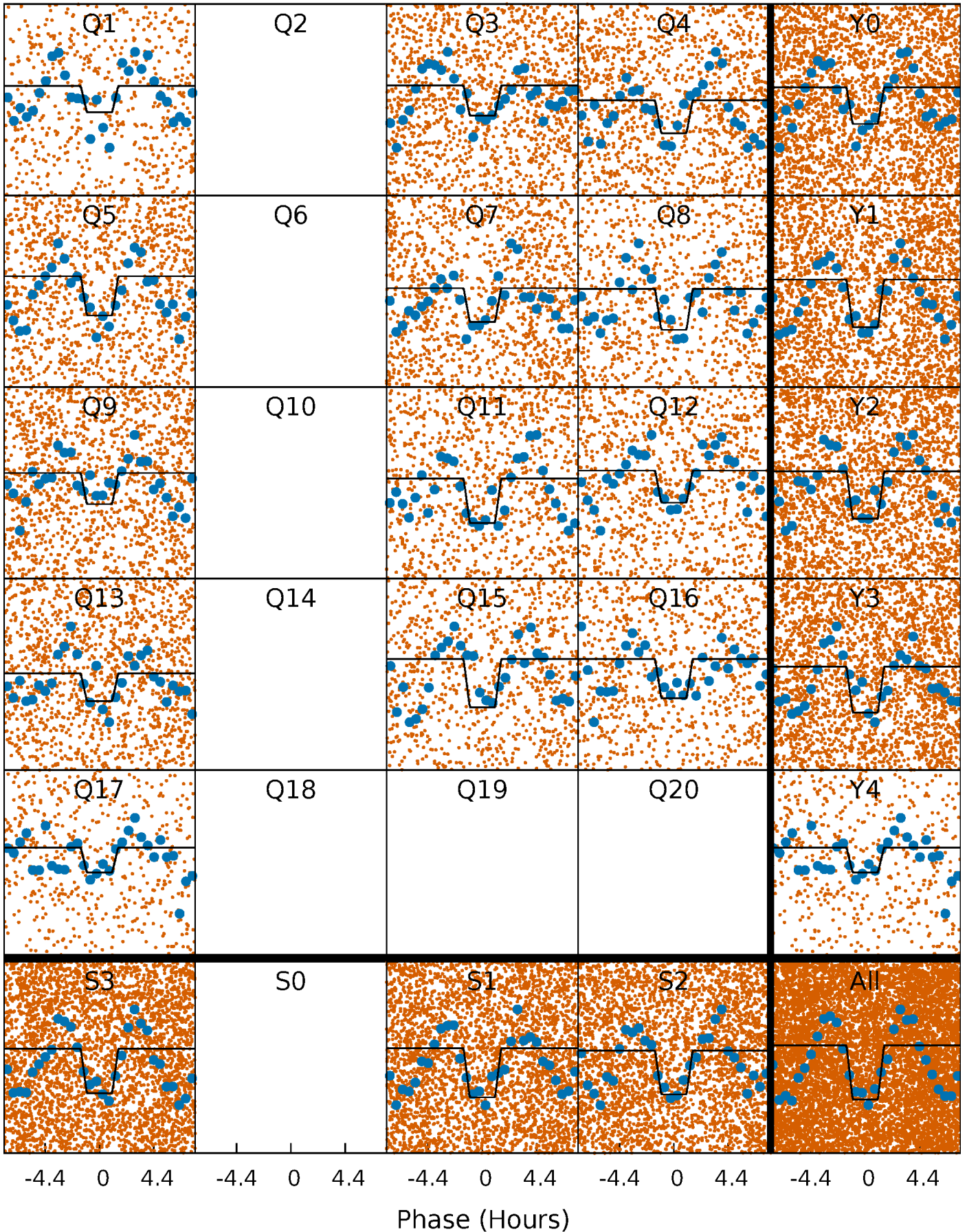
DV Quarter-Phased Transit Curves

TCE 005873209-01 P= 0.792774 Days $T_0=132.219119$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

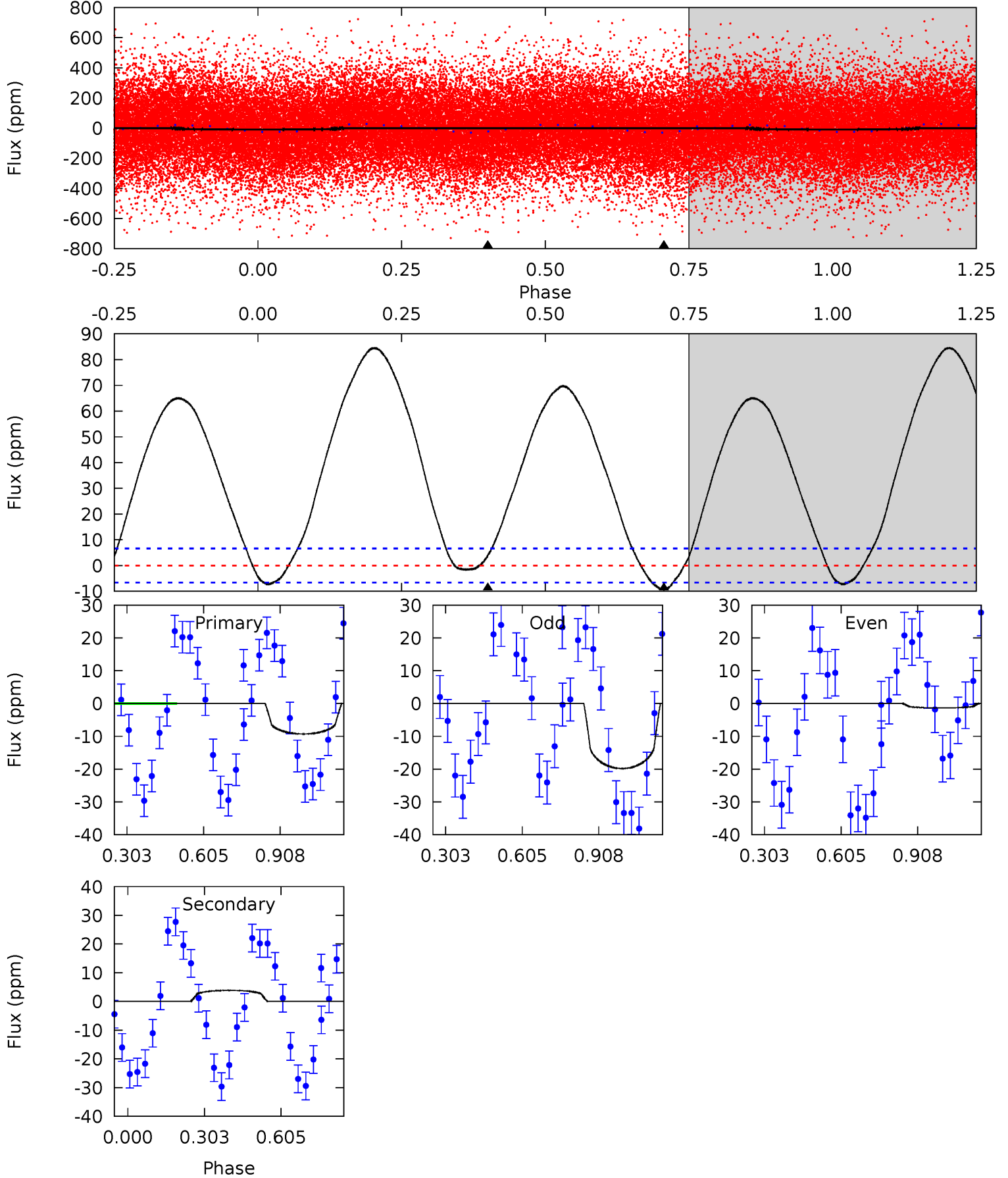
TCE 005873209-01 P= 0.792800 Days $T_0=132.218429$ (BKJD)



DV Model-Shift Uniqueness Test

005873209-01, P = 0.792774 Days, E = 131.426345 Days

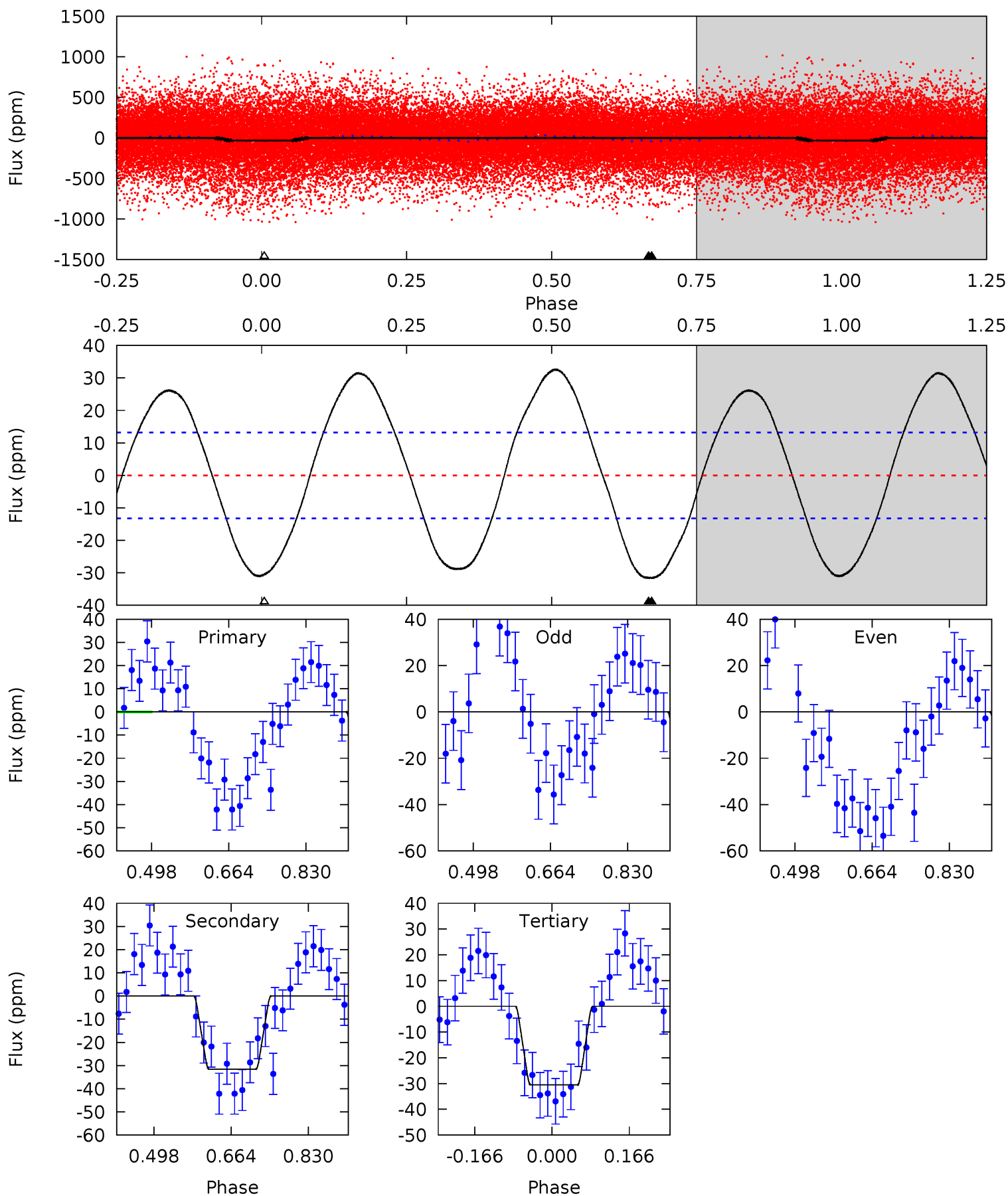
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.06	-2.53	0	0	4.33	1.03	7.07	6.06	6.06	-2.53	-2.53	6.03	1.41	0.90	6.06



Alt Model-Shift Uniqueness Test

005873209-01, P = 0.792800 Days, E = 131.425629 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	10.6	10.3	0	4.46	1.38	7.20	0.36	10.6	0.34	10.6	4.16	2.34	0.51	0.09



Stellar Parameters For KIC 005873209

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7751^{+216}_{-325}	$3.997^{+0.216}_{-0.144}$	$-0.180^{+0.200}_{-0.350}$	$2.171^{+0.503}_{-0.615}$	$1.705^{+0.182}_{-0.312}$	$0.235^{+0.312}_{-0.103}$
	+3%/-4%	+5%/-4%	+111%/-194%	+23%/-28%	+11%/-18%	+133%/-44%
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 005873209-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	4 ± 2	$0.88^{+0.52}_{-0.48}$	4926^{+348}_{-389}	-5790^{+902}_{-2337}	$-1.070^{+0.722}_{-3.622}$
Alt.	-32 ± 3	$1.46^{+0.57}_{-0.57}$	4939^{+333}_{-405}	6990^{+2334}_{-1163}	$3.183^{+5.034}_{-1.506}$

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 $A_{\text{obs}} \gg 1.0$

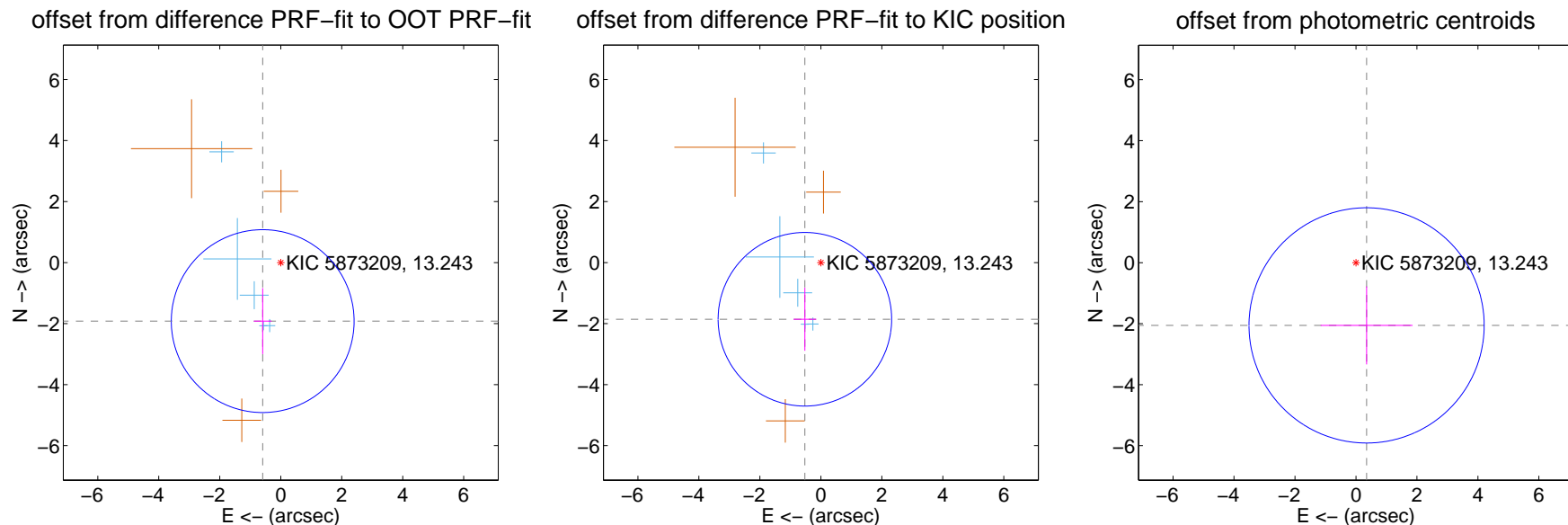
DV Centroid Data

Supplemental centroid analysis for 005873209-01. Kepler magnitude: 13.24. Transit SNR 5.47

There are 5 quarters with good PRF difference image offsets

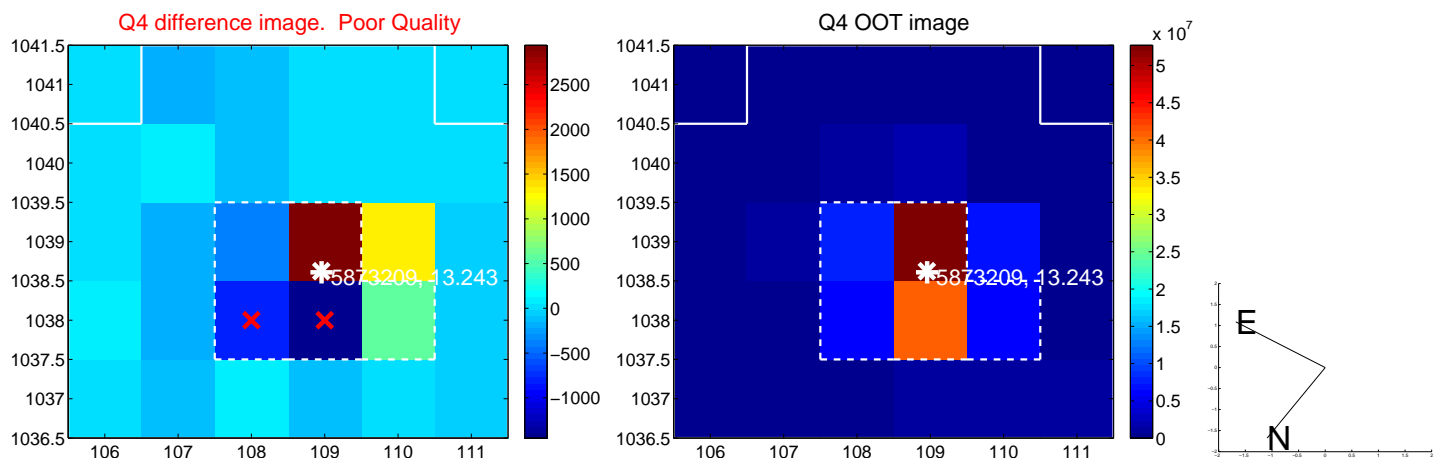
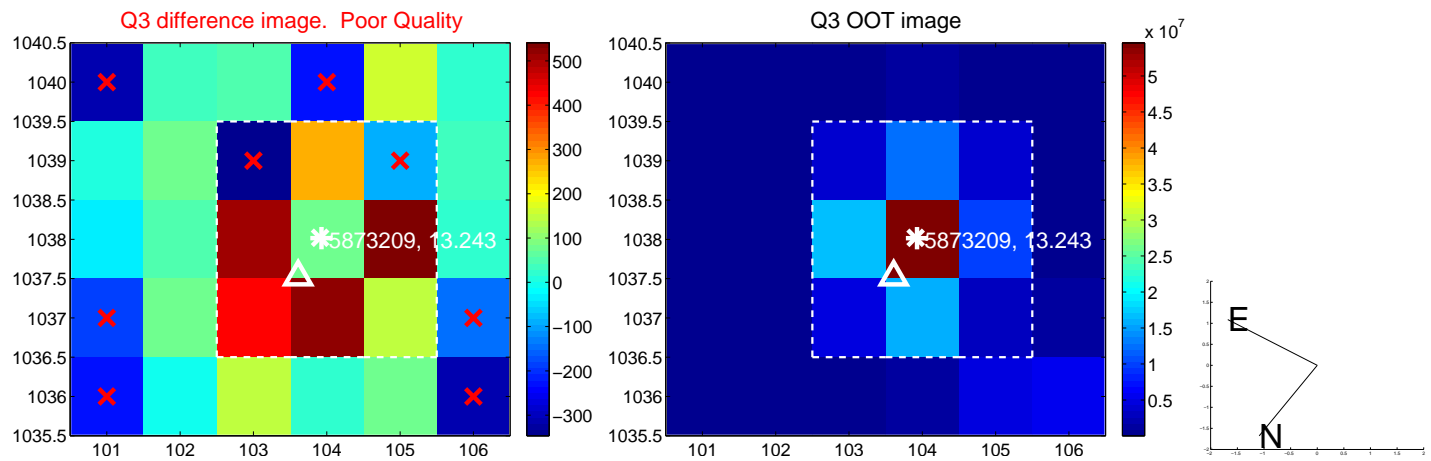
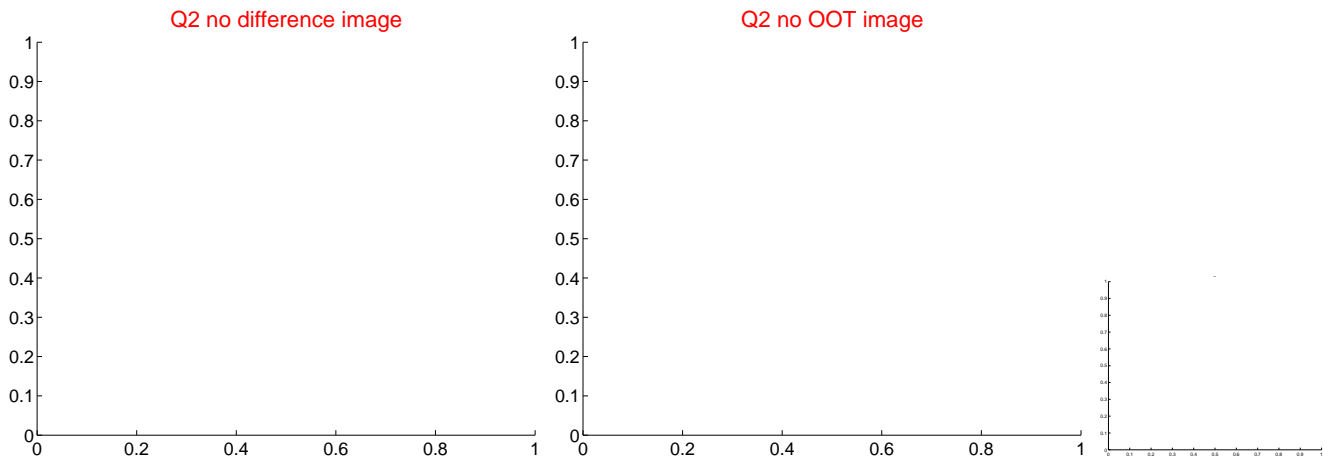
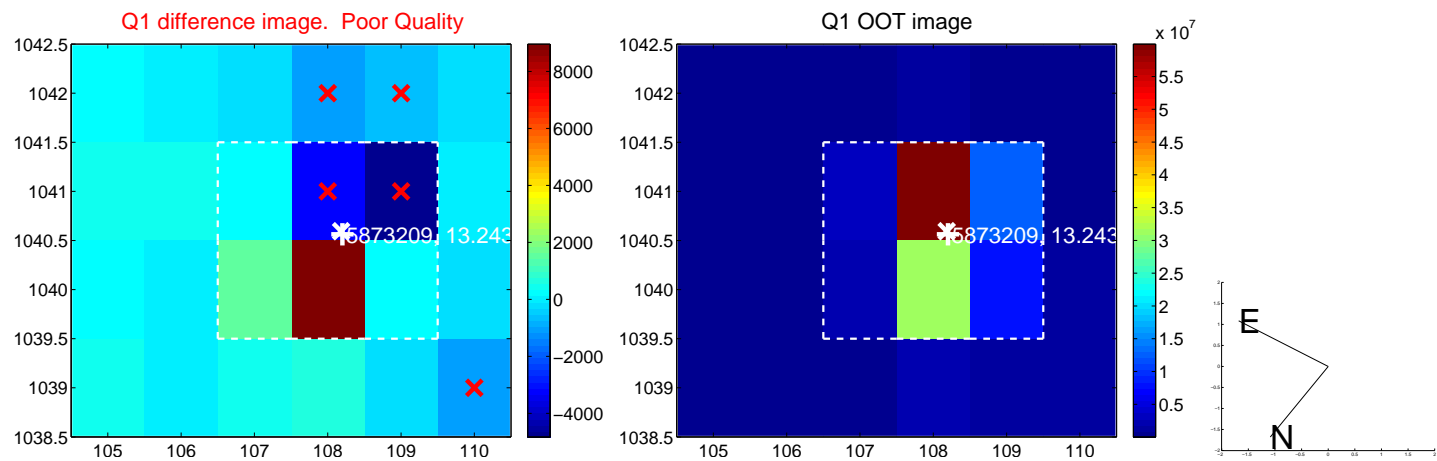
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.008 ± 0.999	2.01	0.592 ± 0.290	-1.919 ± 1.082
PRF-fit source offset from KIC position	1.931 ± 0.949	2.04	0.524 ± 0.371	-1.858 ± 1.035
photometric centroid source offset	2.09 ± 1.29	1.62	-0.35 ± 1.51	-2.06 ± 1.28

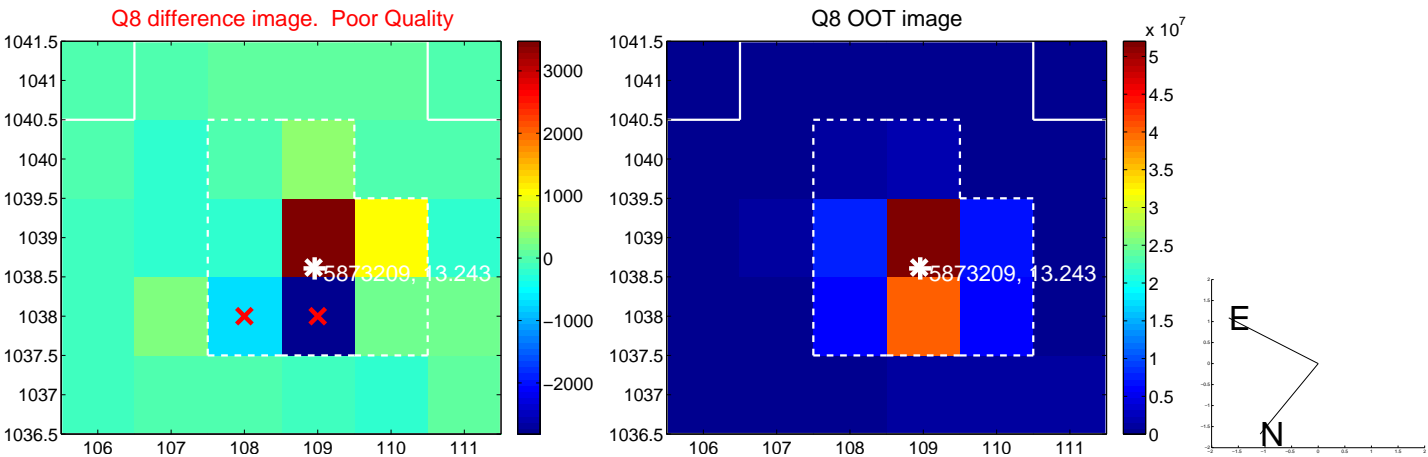
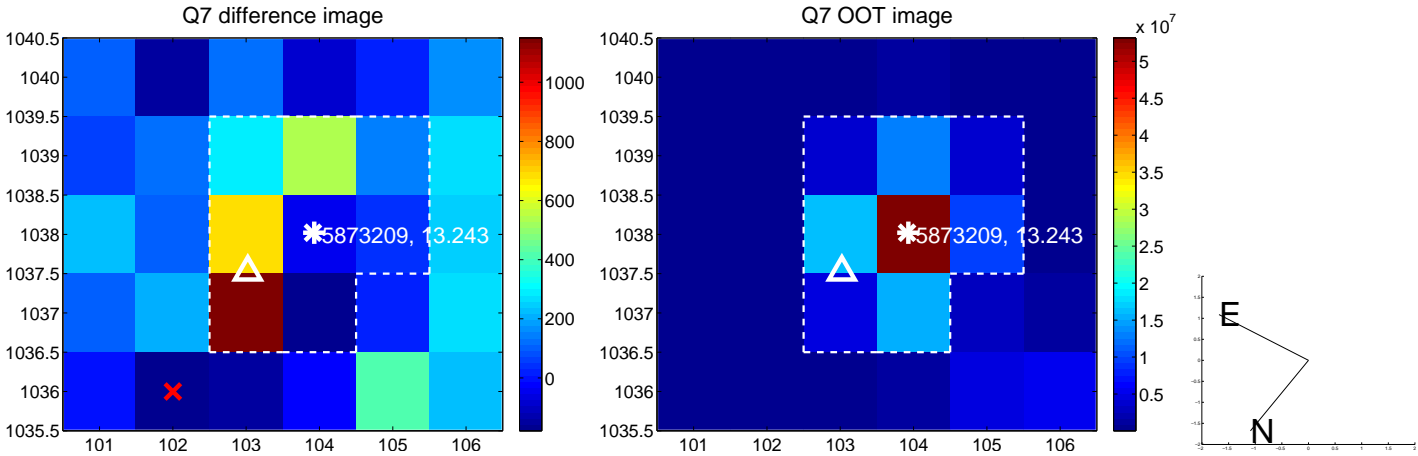
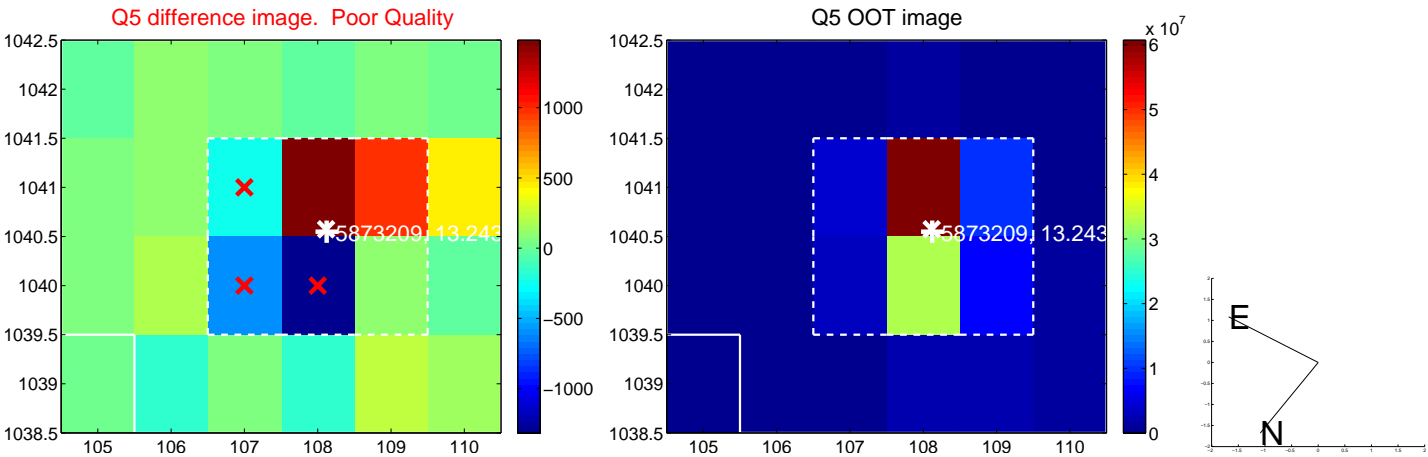


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

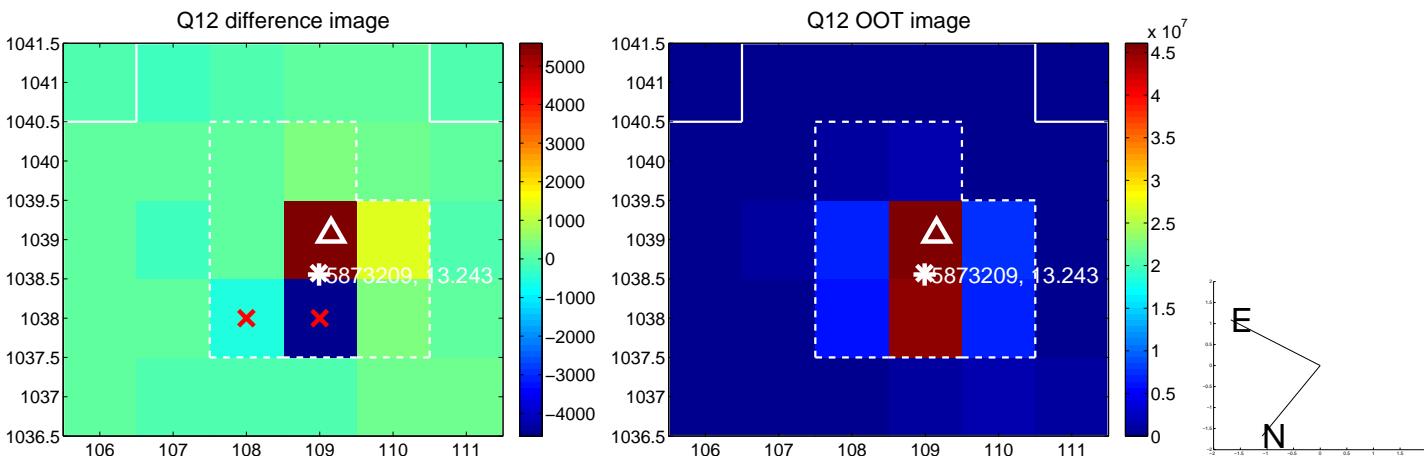
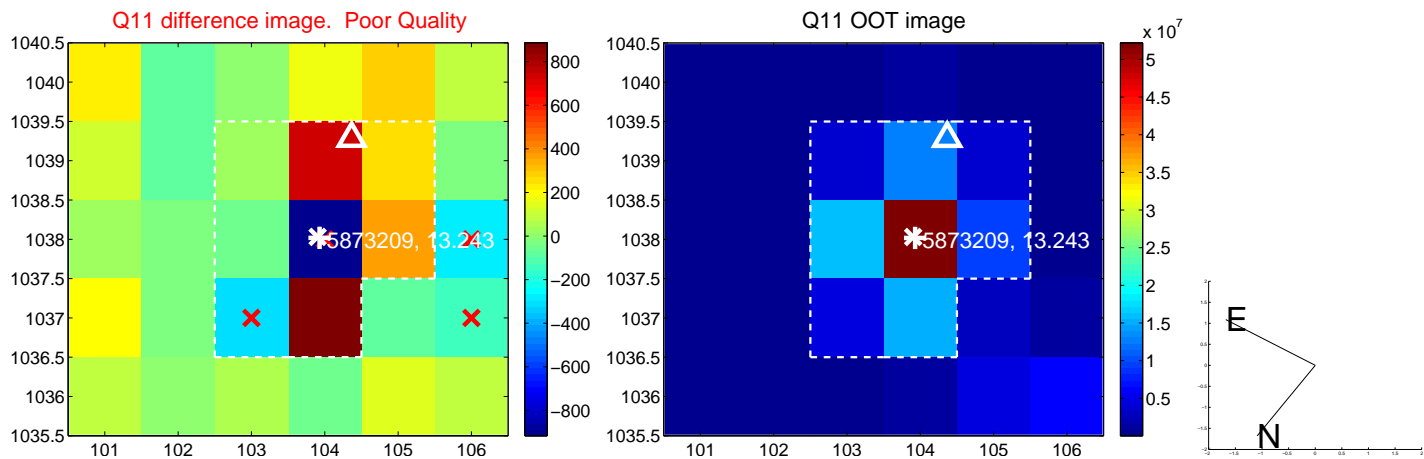
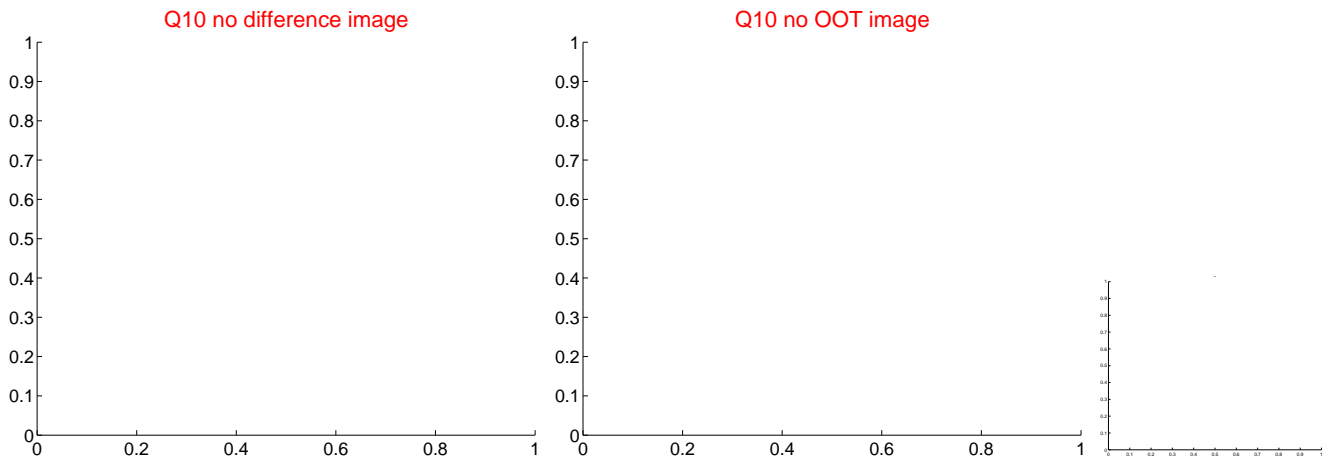
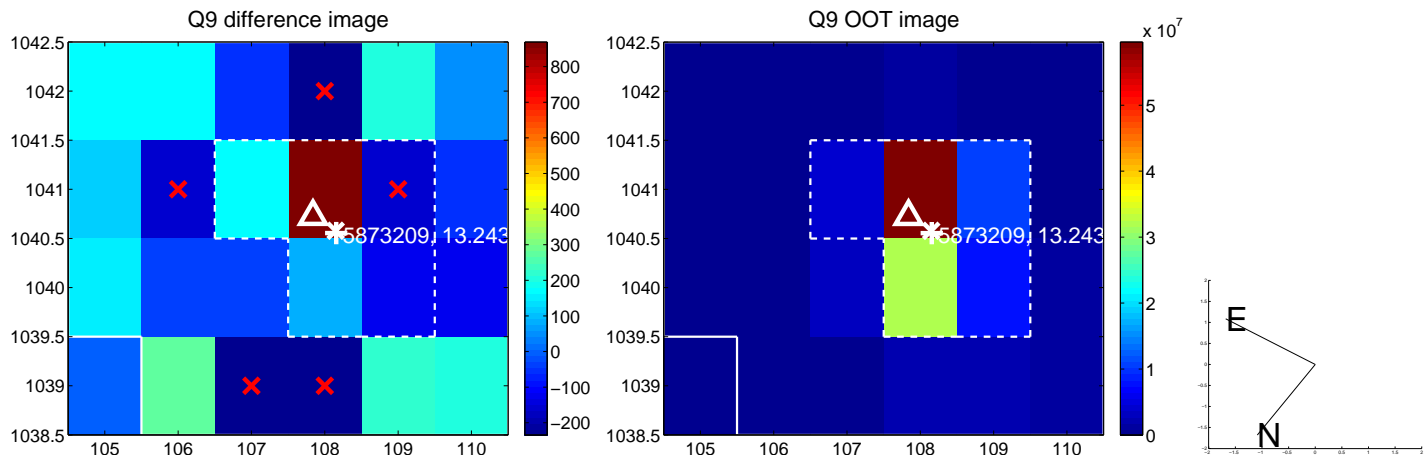
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



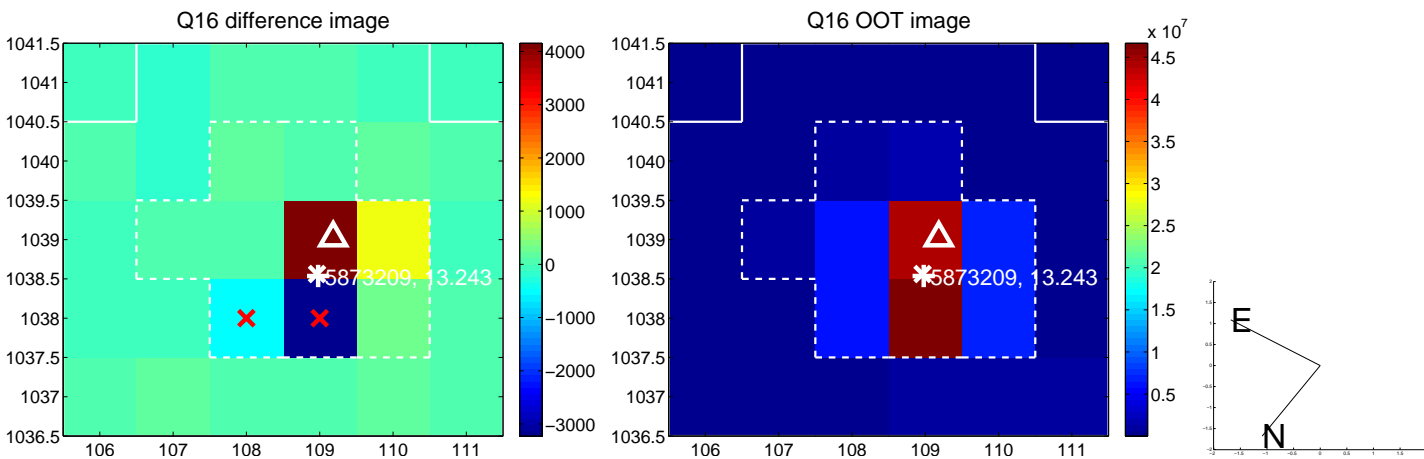
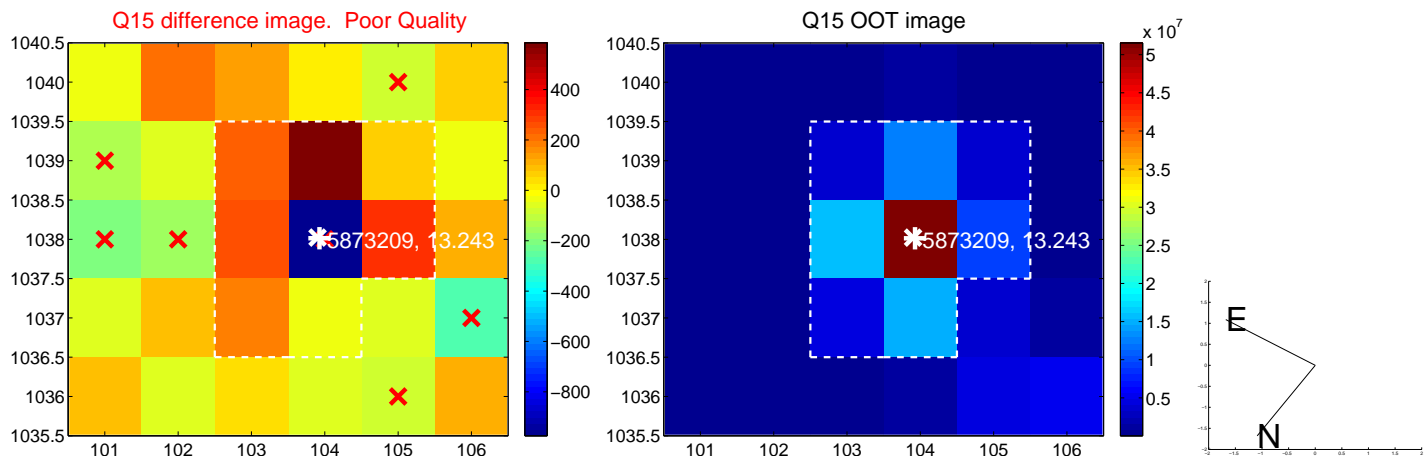
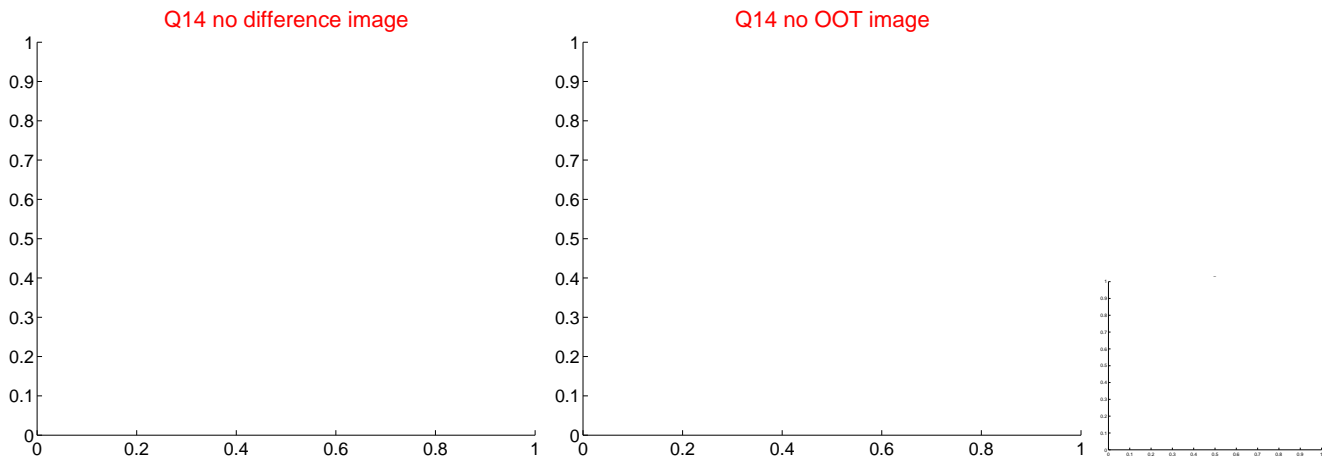
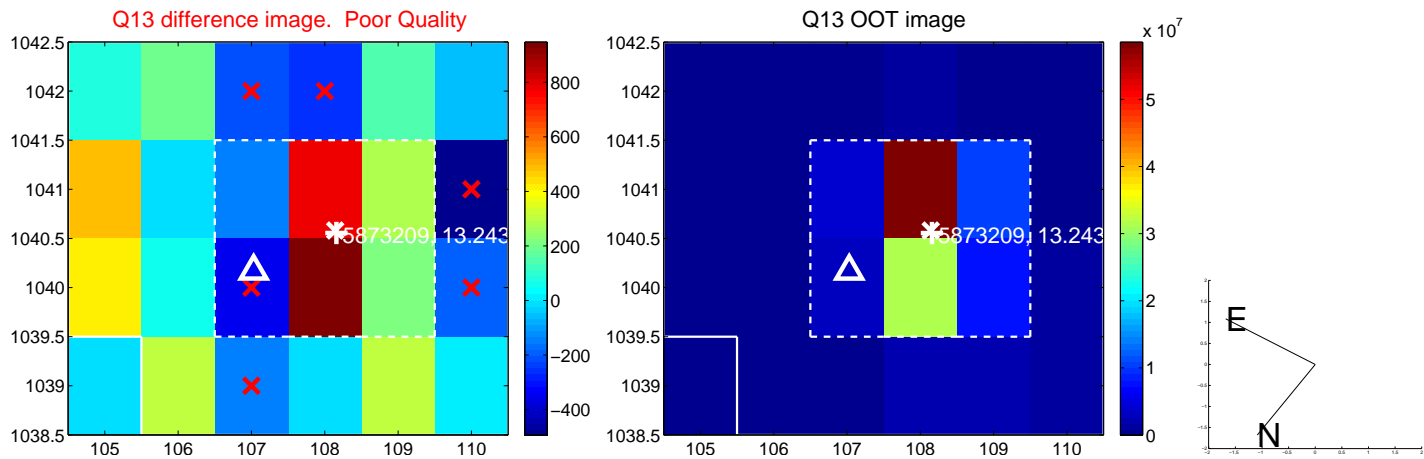
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



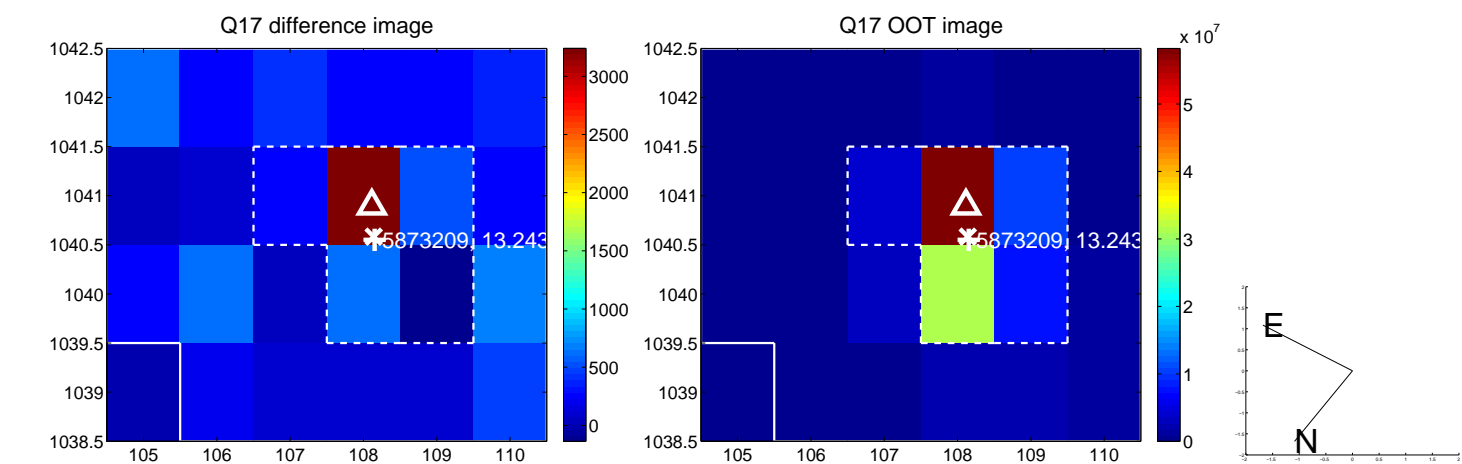
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



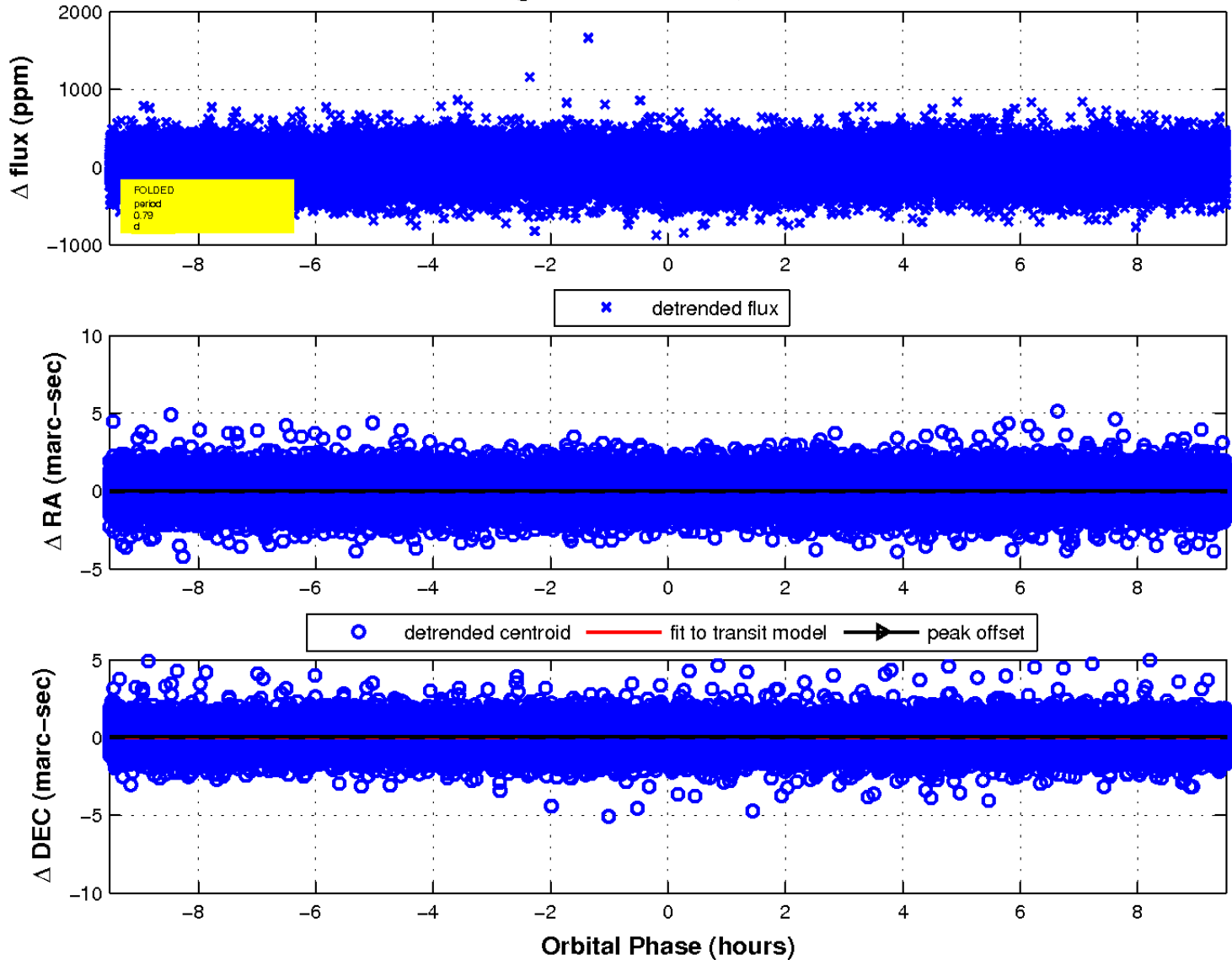
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

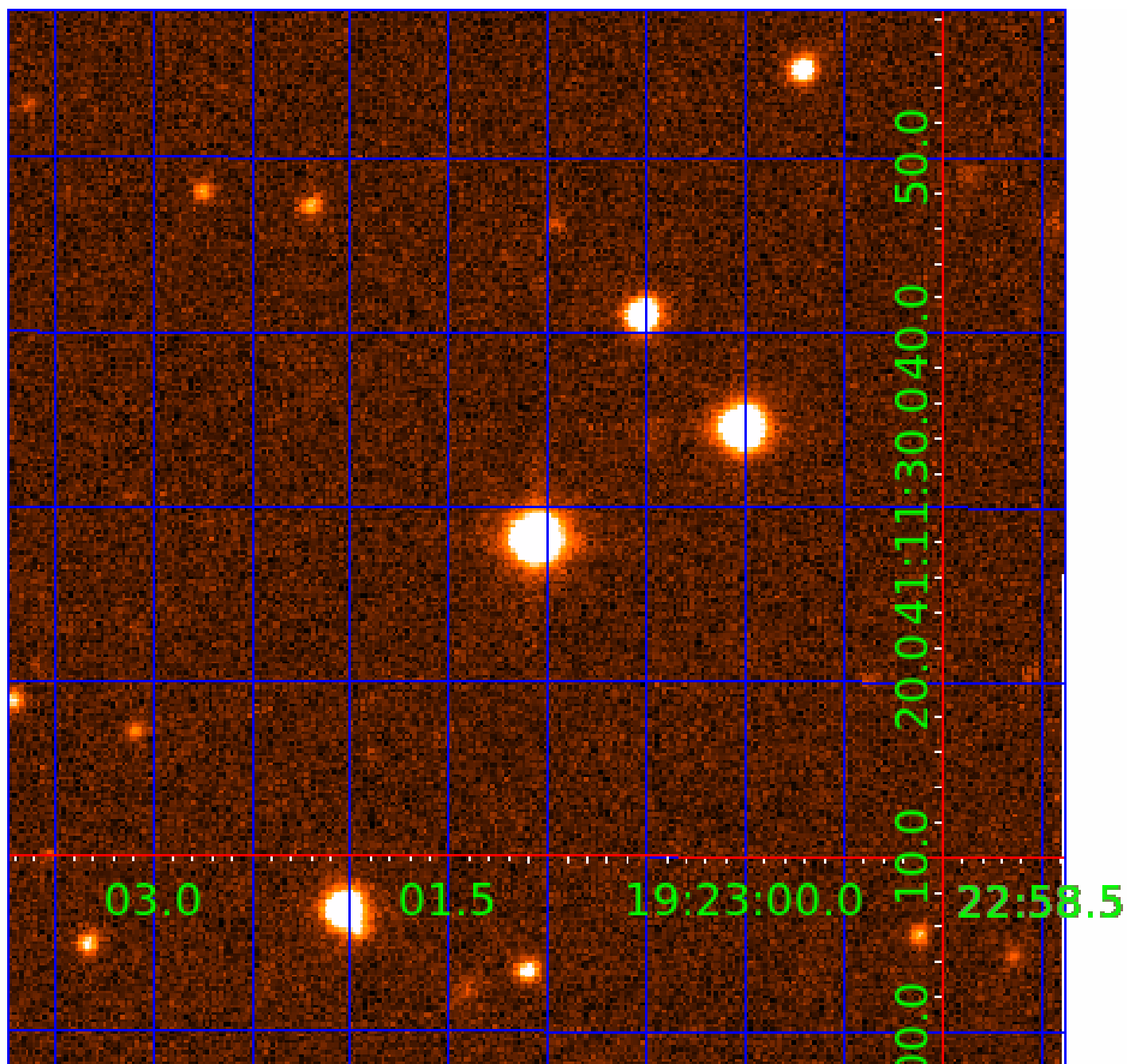


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005873209

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})
005873209-01	OBS	No	0.792774	132.219119	14.2	5.322	8.1	5.5	2.17	7751	0.84	37951.81
005873209-02	OBS	No	38.575633	155.137383	301.1	1.439	9.0	8.8	2.17	7751	3.81	213.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005873209-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005873209-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV

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

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

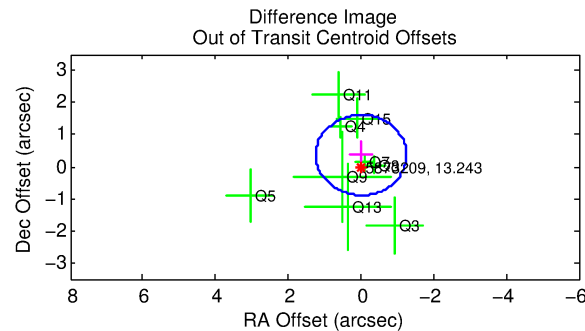
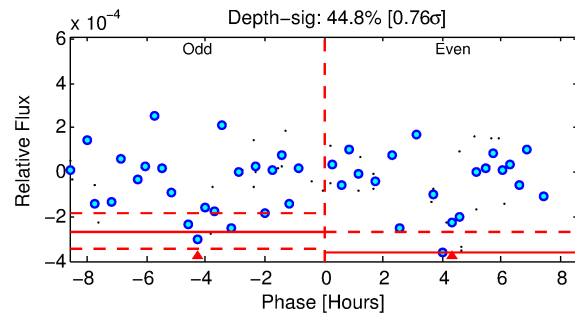
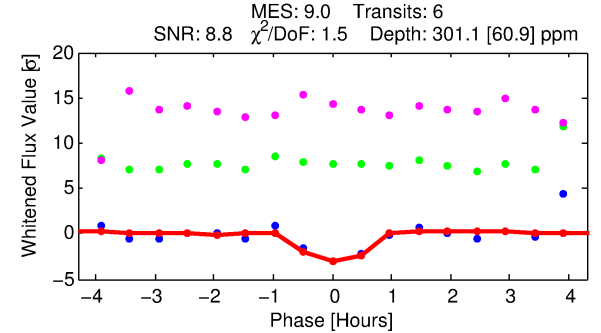
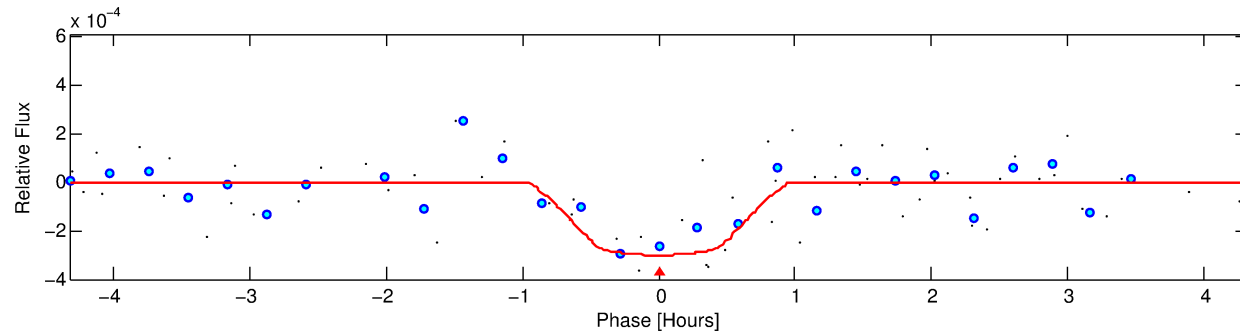
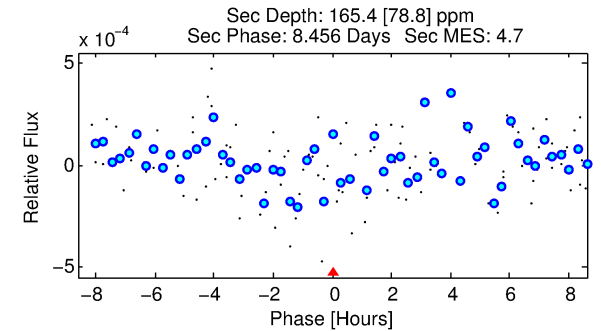
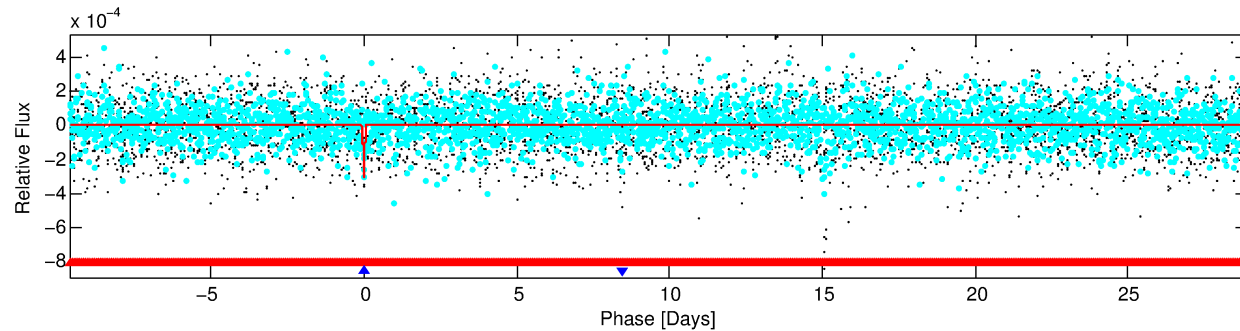
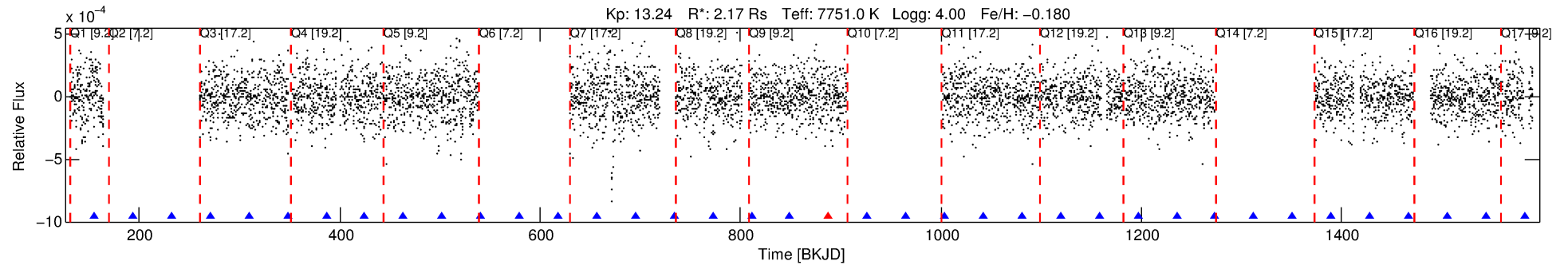
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005873209-02

No Significant Match Found

DV One-Page Summary

KIC: 5873209 Candidate: 2 of 2 Period: 38.576 d



DV Fit Results:

Period = 38.57563 [0.00083] d
Epoch = 155.1374 [0.0099] BKJD
Rp/R* = 0.0161 [0.0335]
a/R* = 207.93 [2354.81]
b = 0.04 [310.98]
Seff = 213.64 [89.05]
Teq = 975 [102] K
Rp = 3.80 [8.01] Re
a = 0.2671 [0.0671] AU
Ag = 448.37 [1889.68] [0.24σ]
Teffp = 6936 [7284] K [0.82σ]

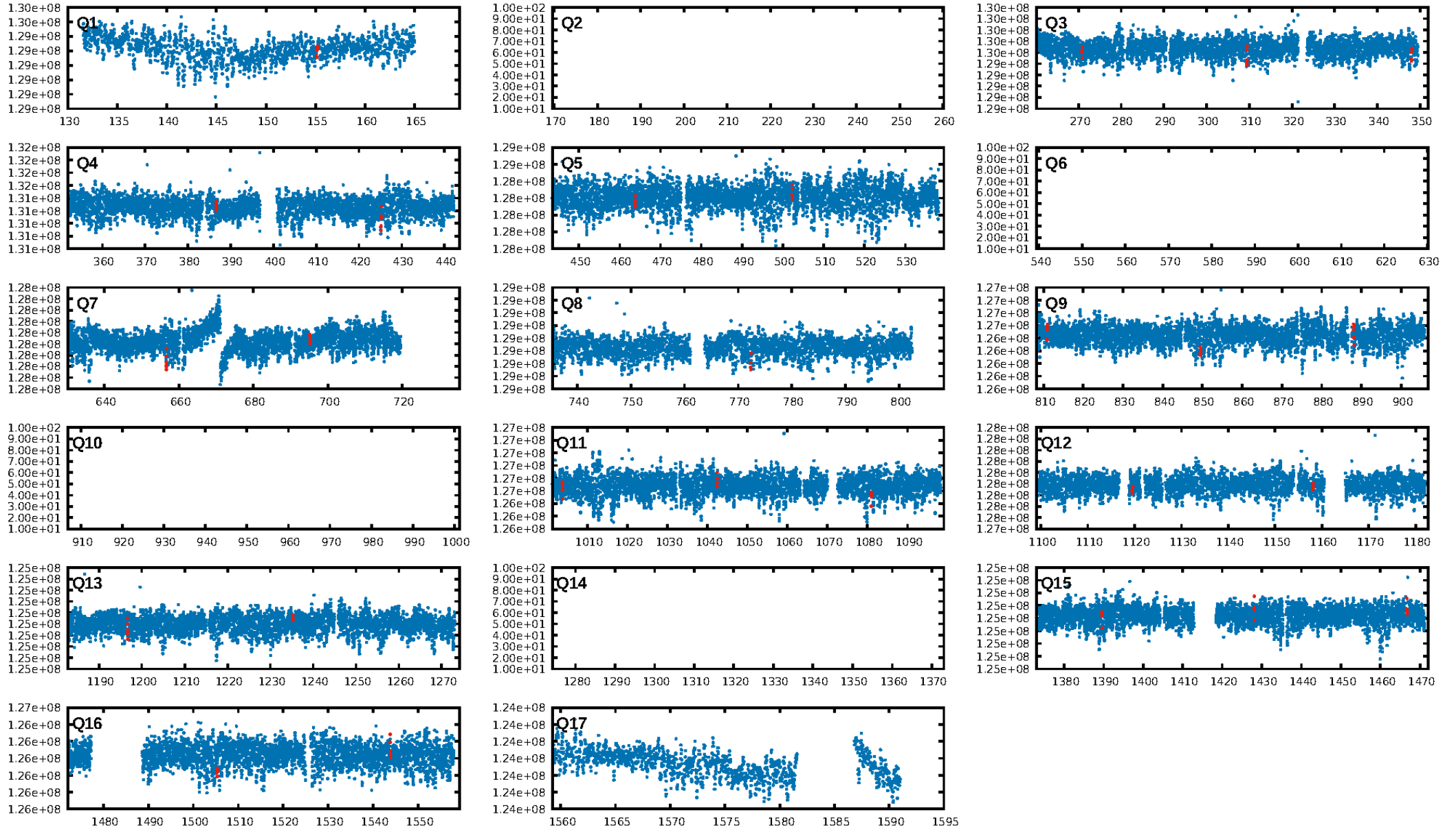
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [164.49σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 9.0%
ModelChiSquareGof-sig: 92.6%
Bootstrap-pfa: 5.99e-09
RollingBand-fgt: 0.83 [5/6]
GhostDiagnostic-chr: 3.902
Centroid-sig: 72.5%
Centroid-so: 0.142 arcsec [0.18σ]
OotOffset-rm: 0.361 arcsec [0.87σ]
KicOffset-rm: 0.358 arcsec [0.84σ]
OotOffset-st: 0/4/2/3 [9]
KicOffset-st: 0/4/2/3 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.42 [5/12]

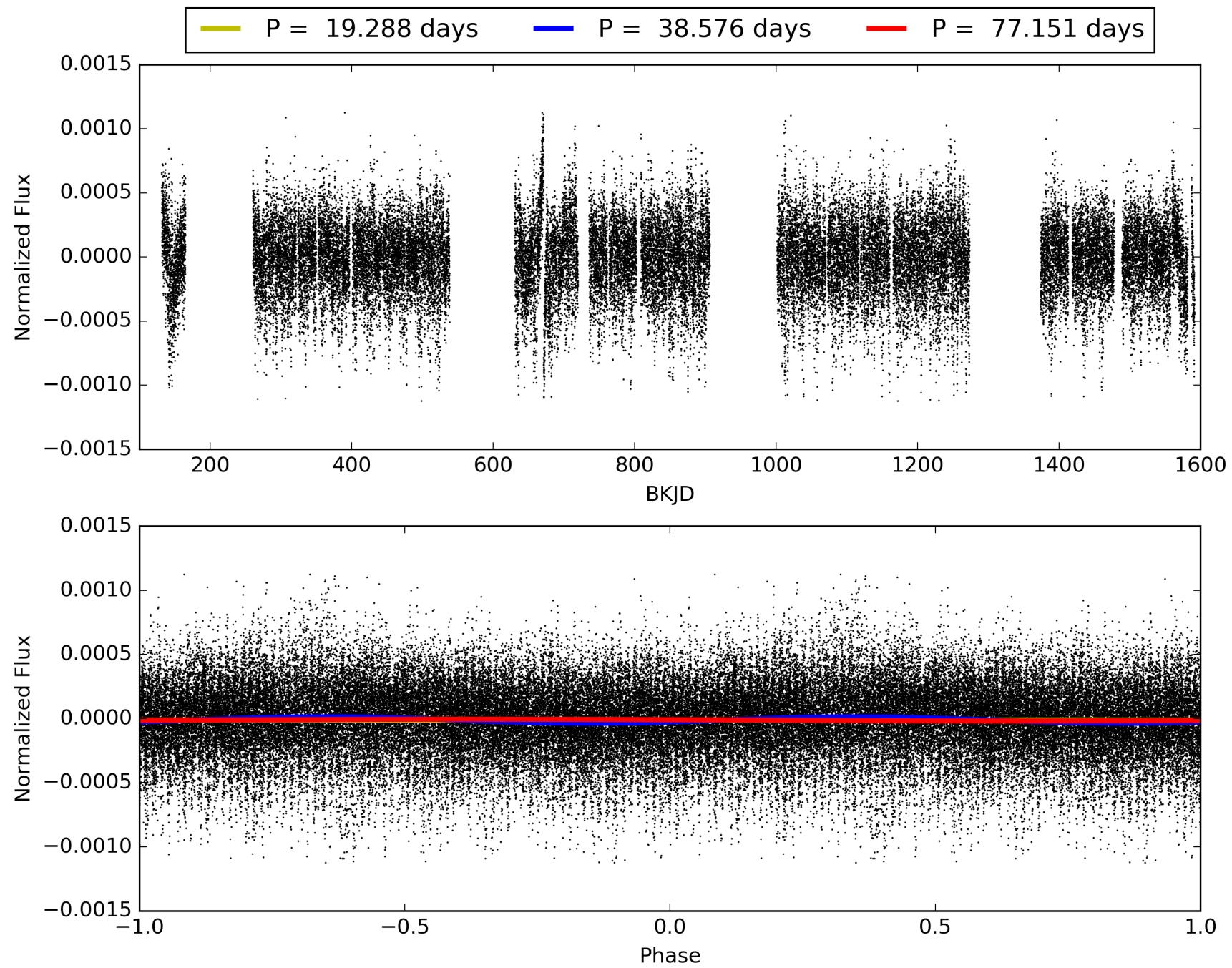
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:42:08 Z

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

TCE 005873209-02, PDC Light Curves

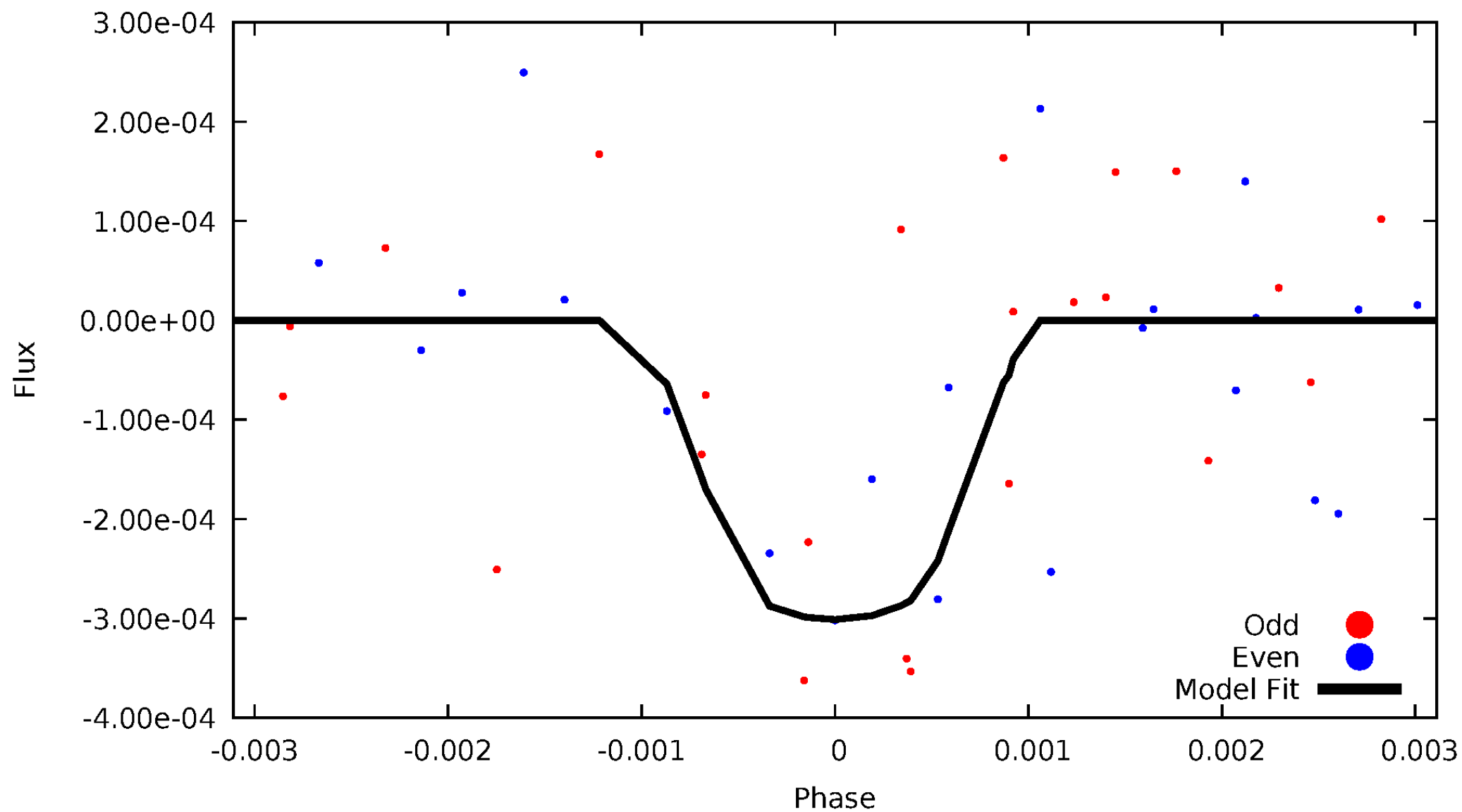


TCE 005873209-02



DV Odd/Even

TCE 005873209-02

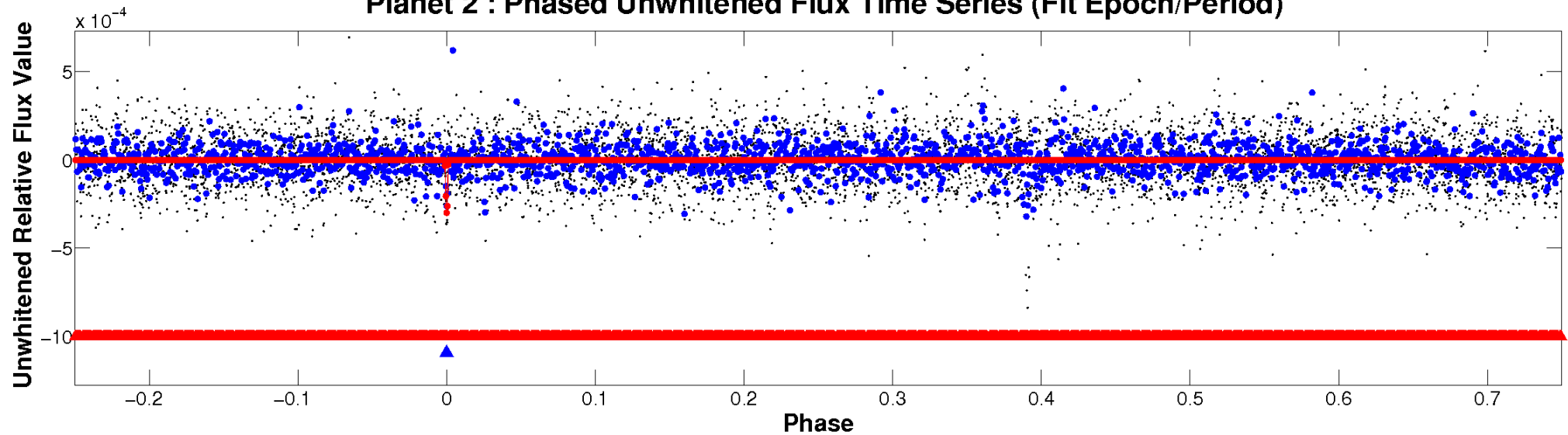


ALT Odd/Even

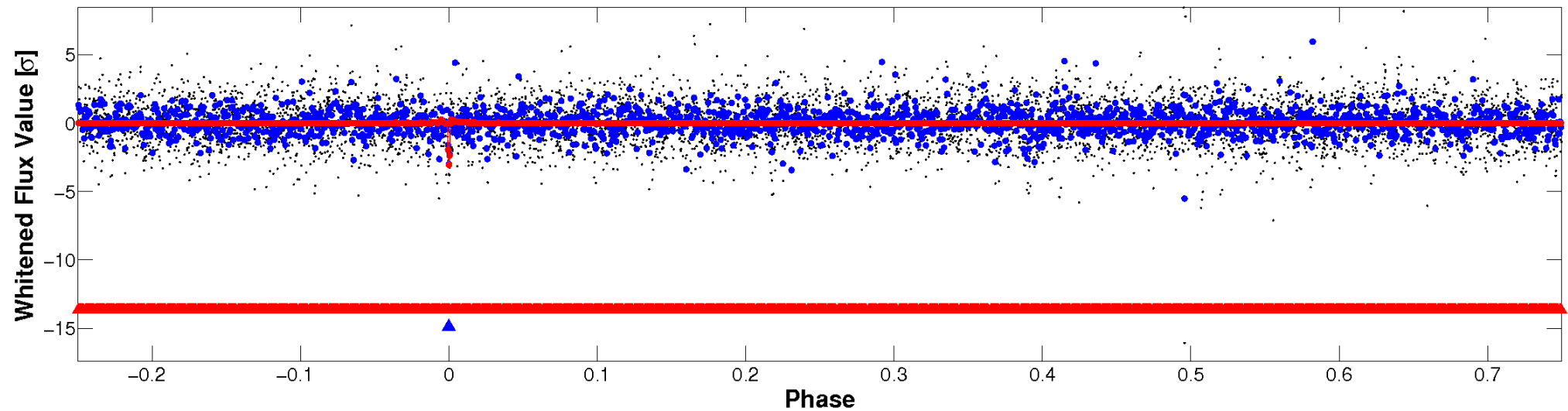
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

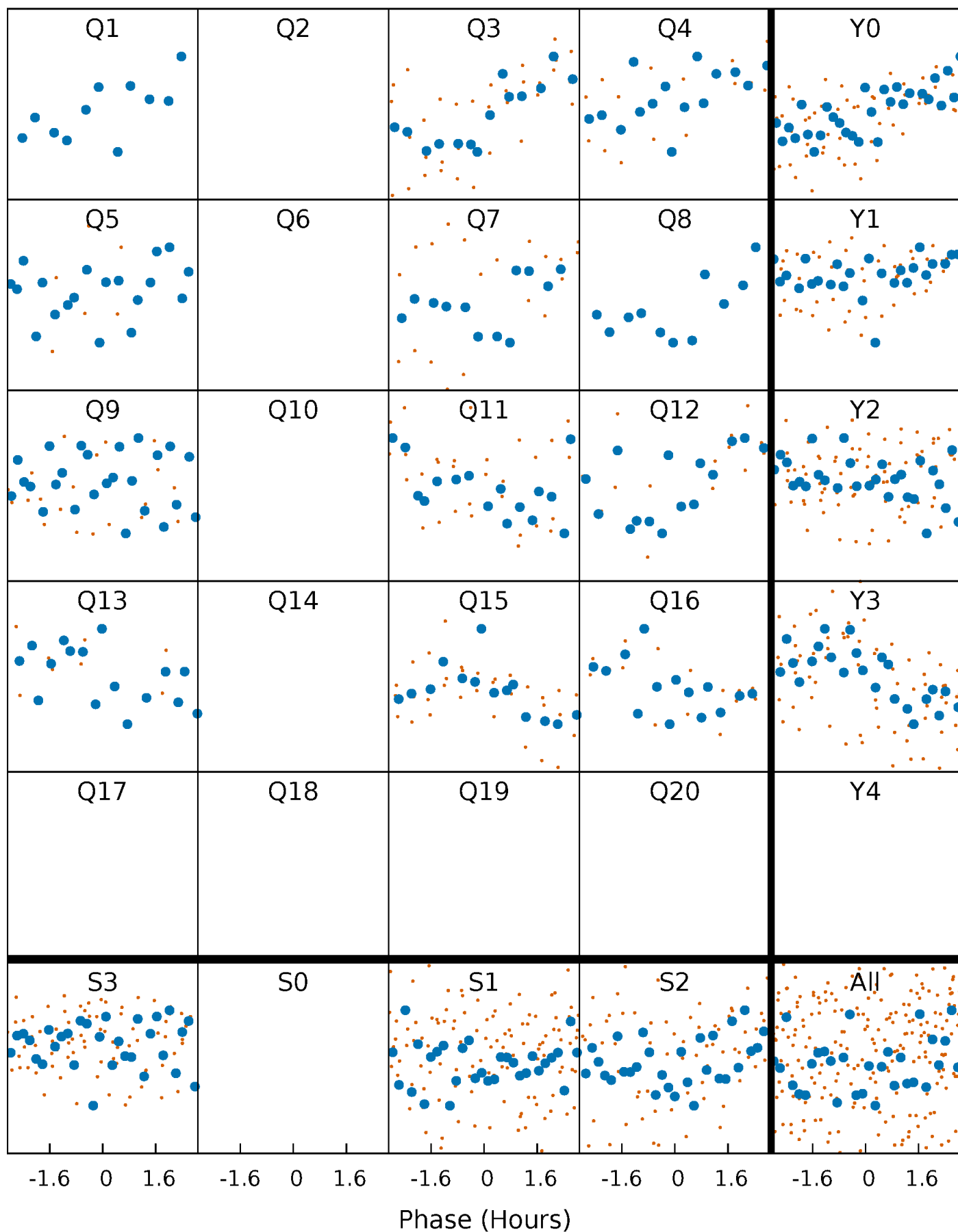


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



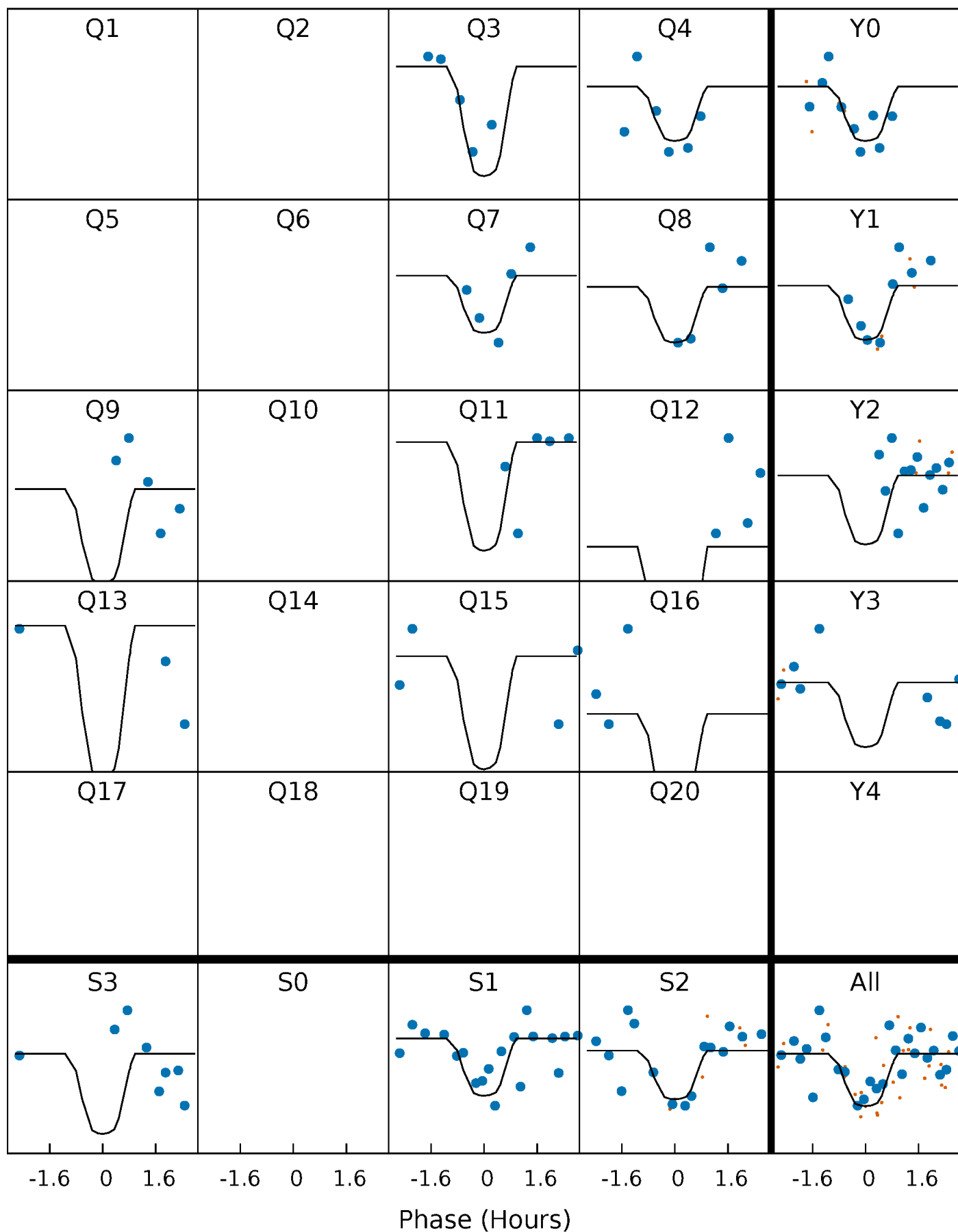
PDC Quarter-Phased Transit Curves

TCE 005873209-02 P= 38.575633 Days $T_0=155.137383$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 005873209-02 P= 38.575633 Days $T_0=155.137383$ (BKJD)

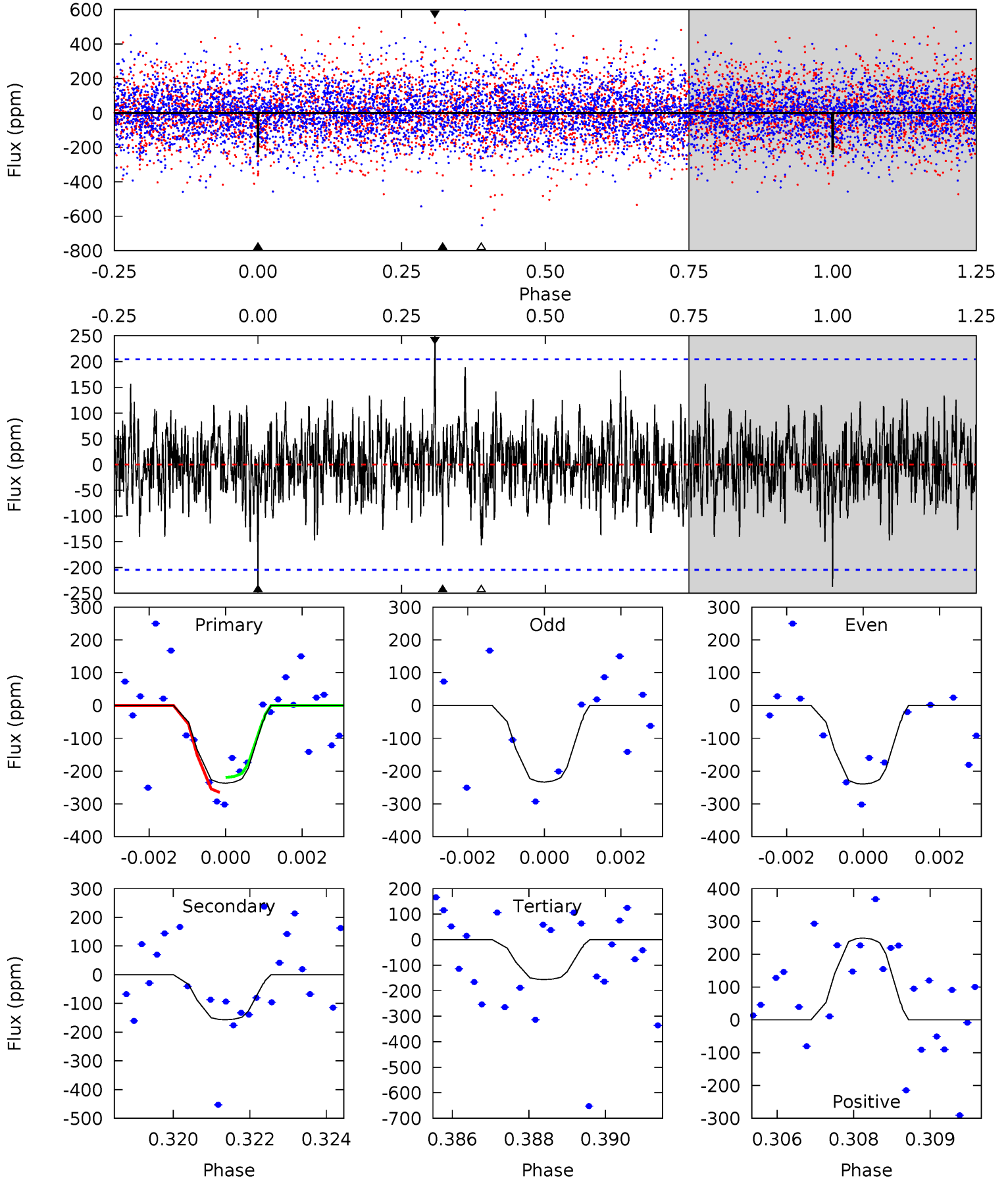


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

005873209-02, $P = 38.575633$ Days, $E = 116.561750$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.20	4.10	4.10	6.53	5.35	3.12	1.35	2.11	-0.33	0.01	-2.43	0.08	0.76	0.51	0.57



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 005873209

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7751^{+216}_{-325}	$3.997^{+0.216}_{-0.144}$	$-0.180^{+0.200}_{-0.350}$	$2.171^{+0.503}_{-0.615}$	$1.705^{+0.182}_{-0.312}$	$0.235^{+0.312}_{-0.103}$
	+3%/-4%	+5%/-4%	+111%/-194%	+23%/-28%	+11%/-18%	+133%/-44%
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 005873209-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-157 ± 38	$7.38^{+6.27}_{-5.05}$	1339^{+92}_{-104}	4802^{+3960}_{-988}	111^{+1010}_{-80}
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{\text{obs}} \gg 1.0$

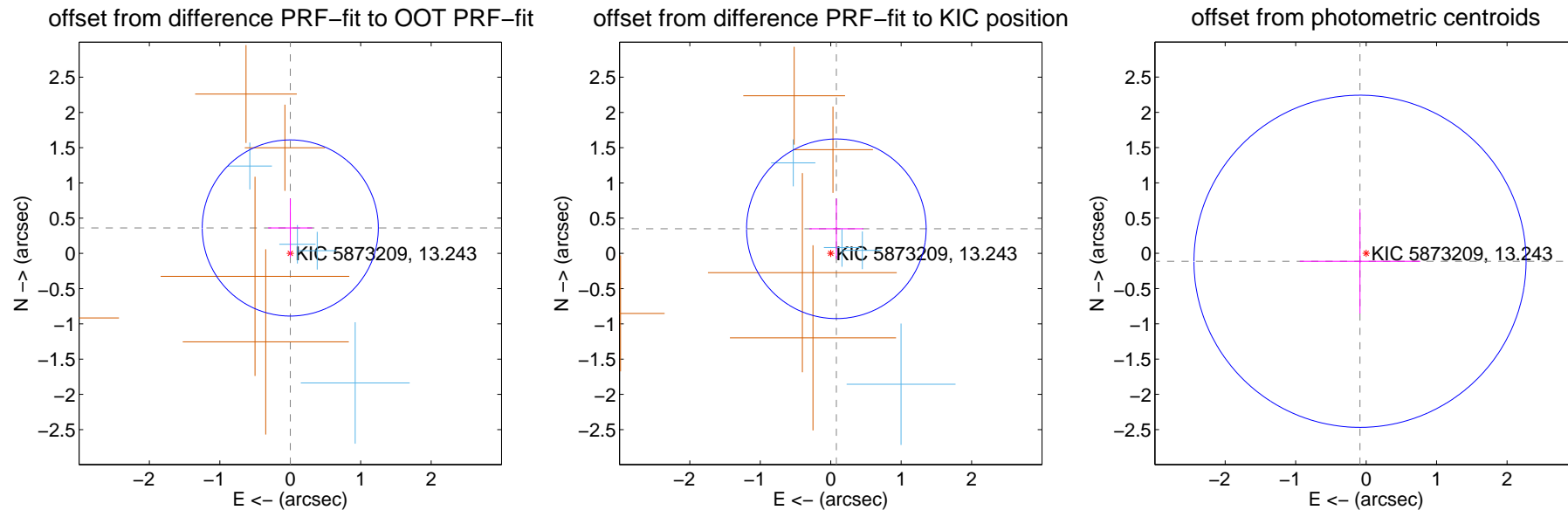
DV Centroid Data

Supplemental centroid analysis for 005873209-02. Kepler magnitude: 13.24. Transit SNR 8.81

There are 4 quarters with good PRF difference image offsets

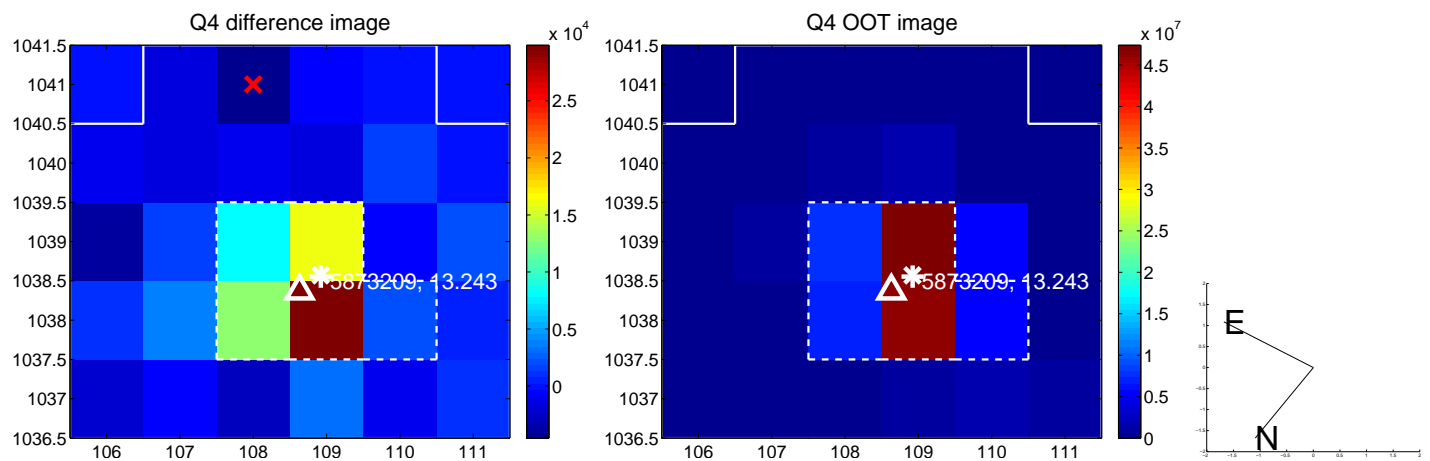
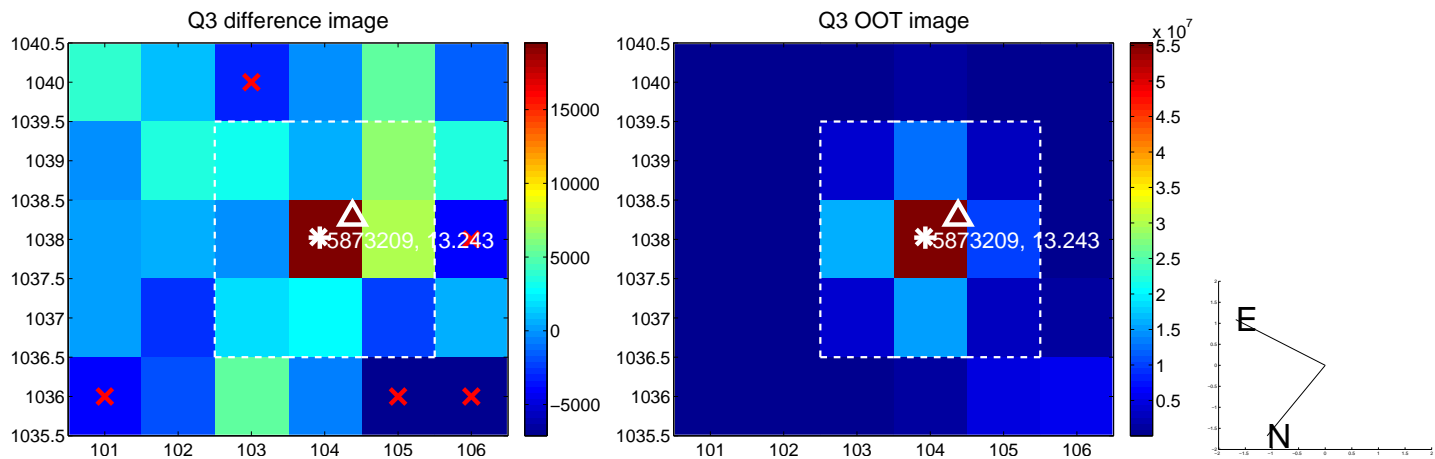
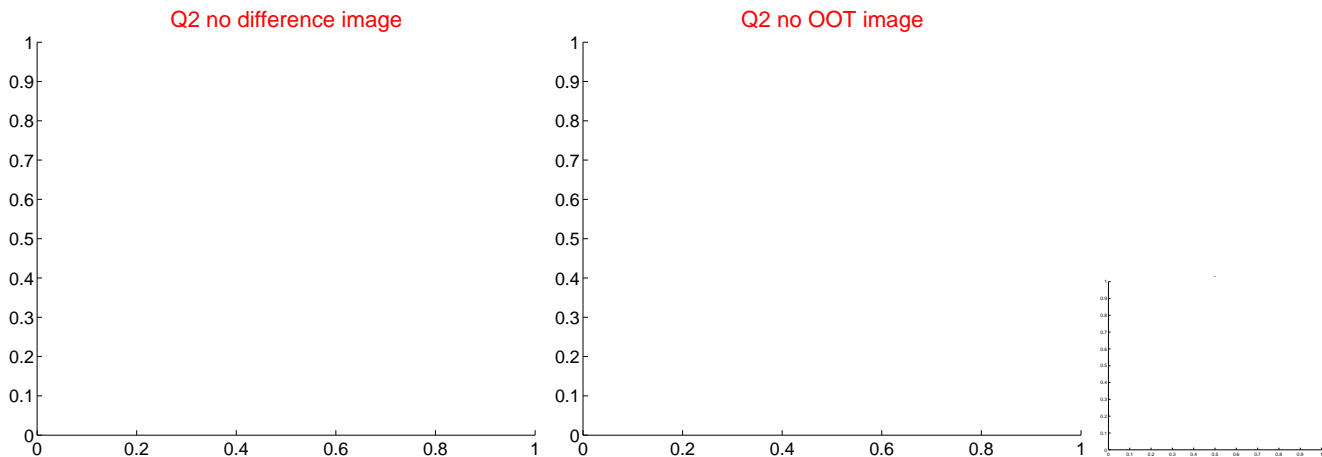
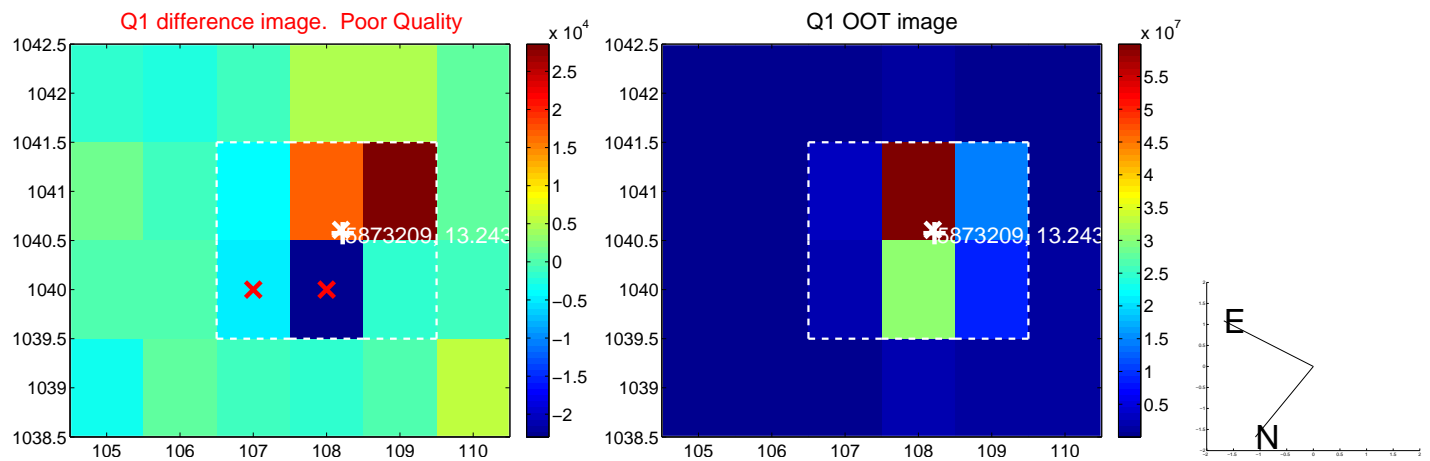
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.361 ± 0.416	0.87	-0.000 ± 0.313	0.361 ± 0.416
PRF-fit source offset from KIC position	0.358 ± 0.425	0.84	-0.080 ± 0.383	0.349 ± 0.428
photometric centroid source offset	0.14 ± 0.79	0.18	0.09 ± 0.85	-0.11 ± 0.74

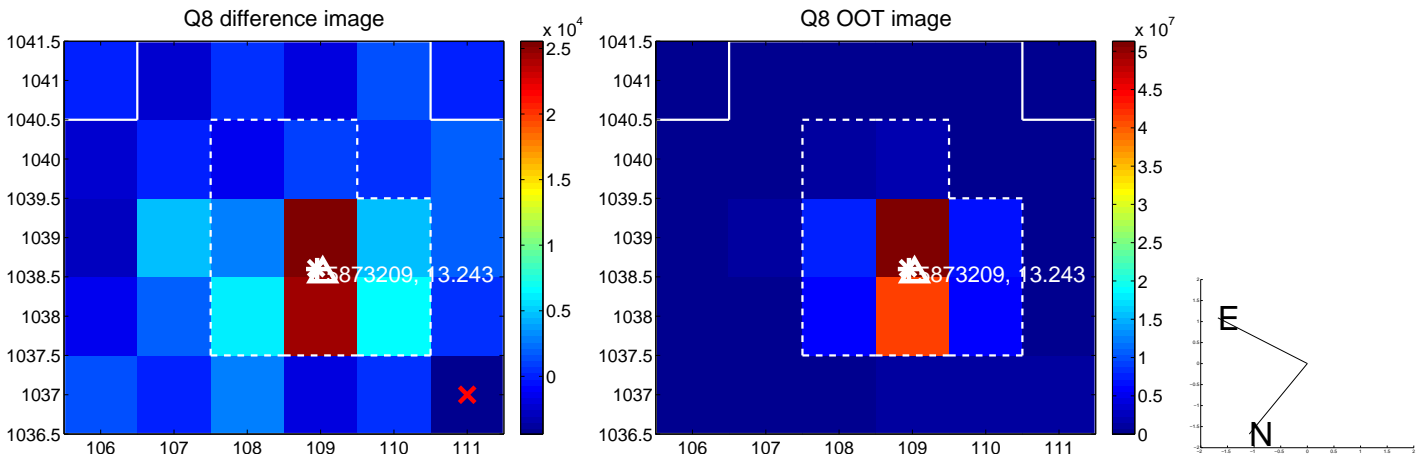
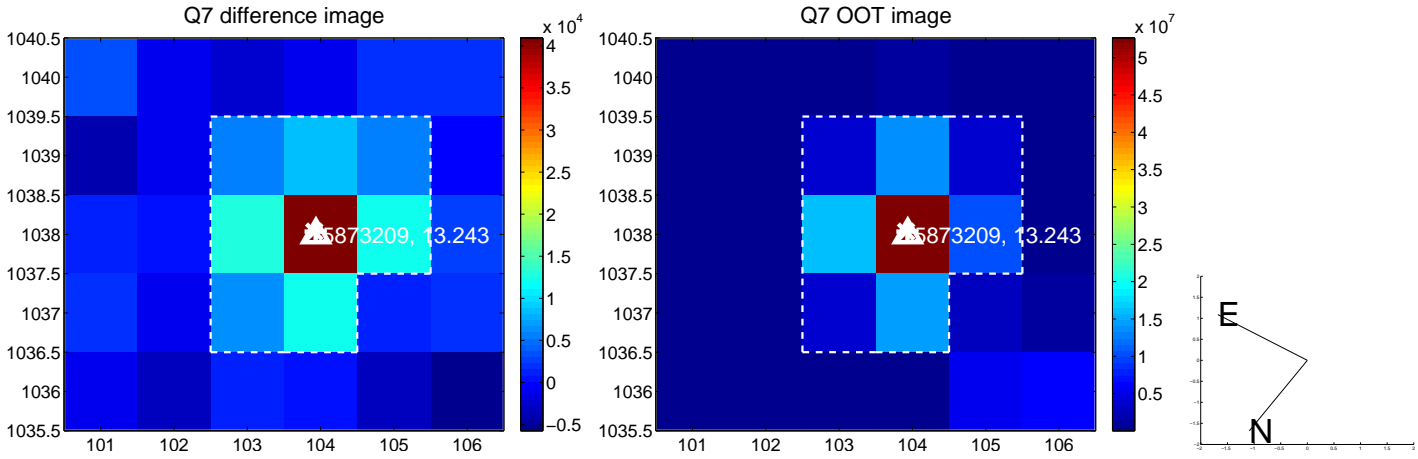
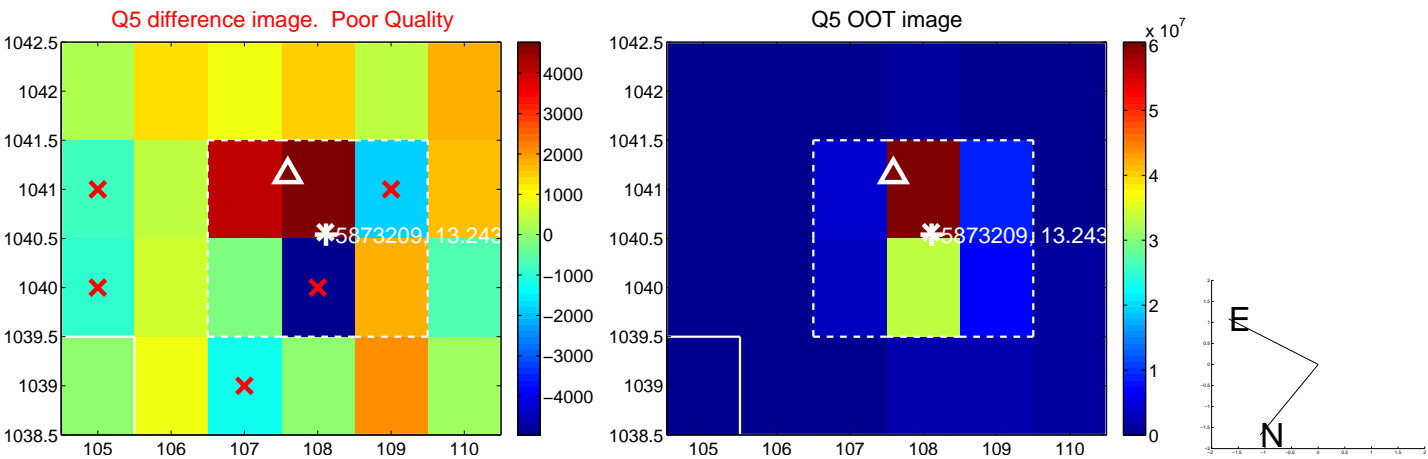


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

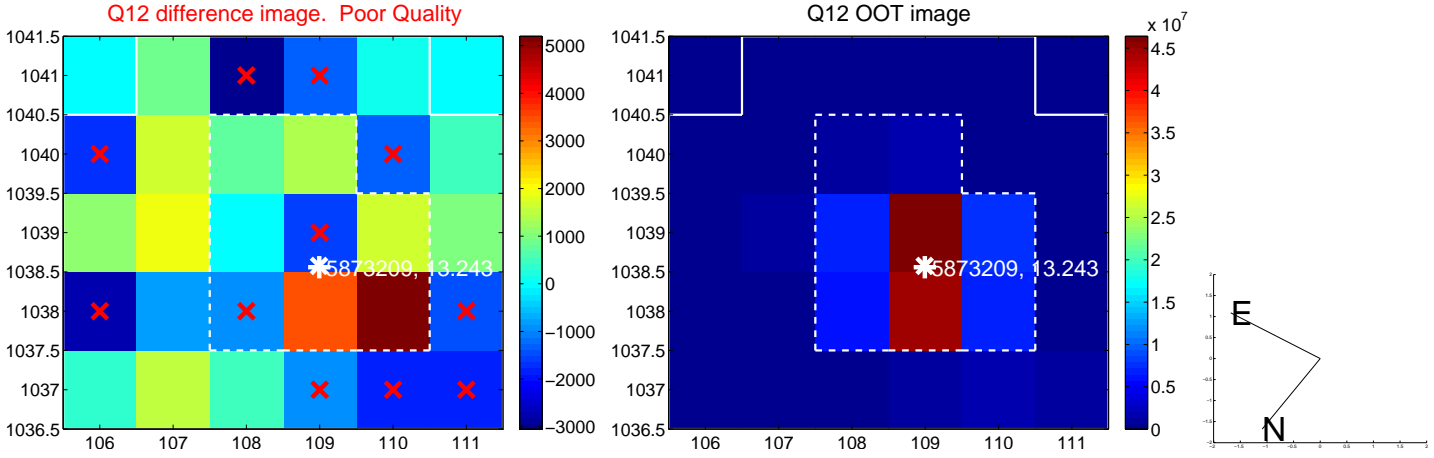
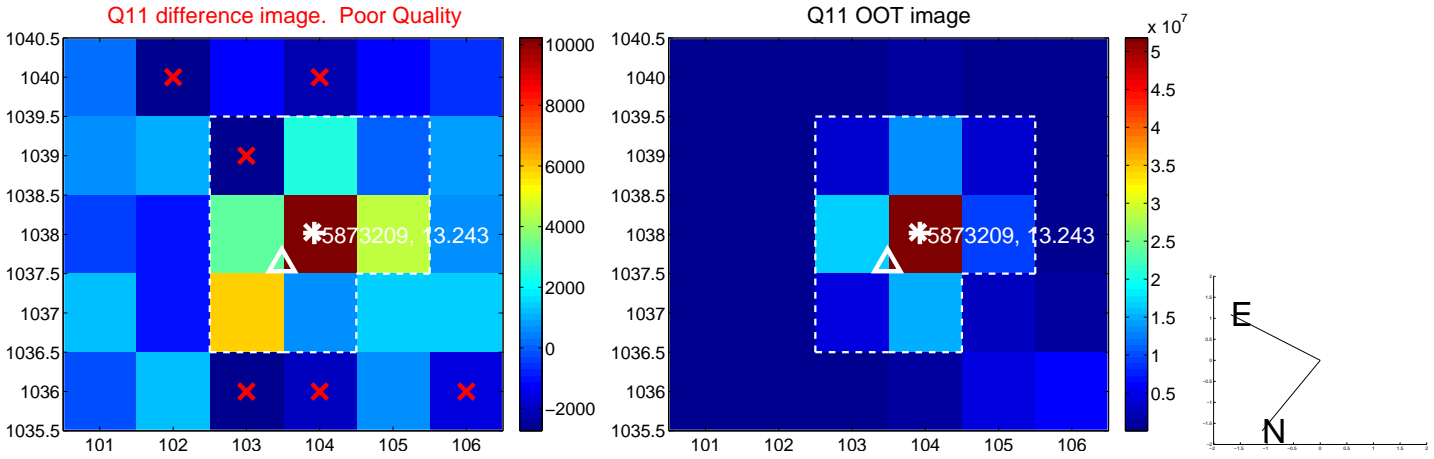
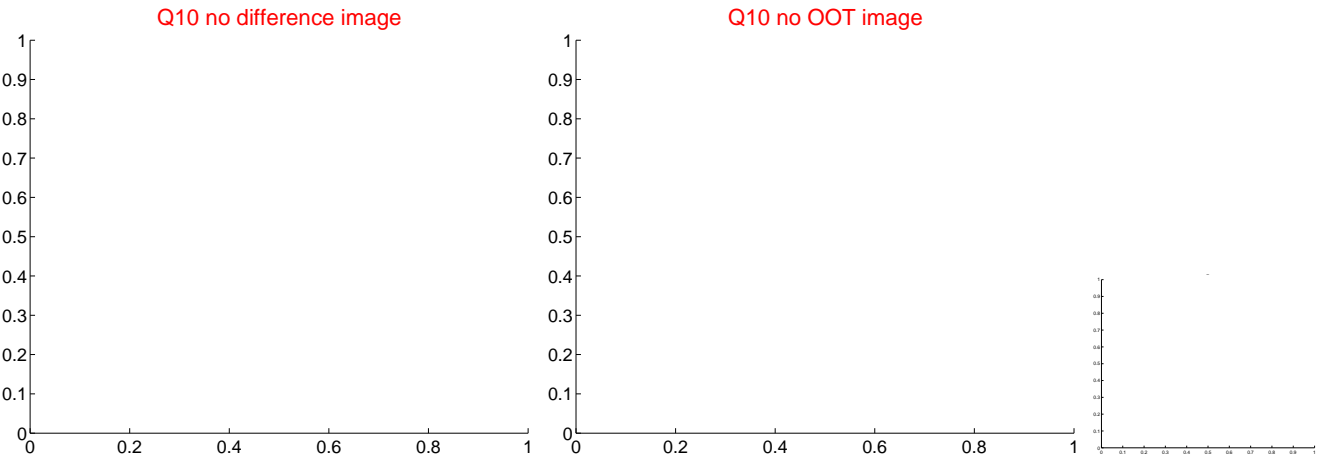
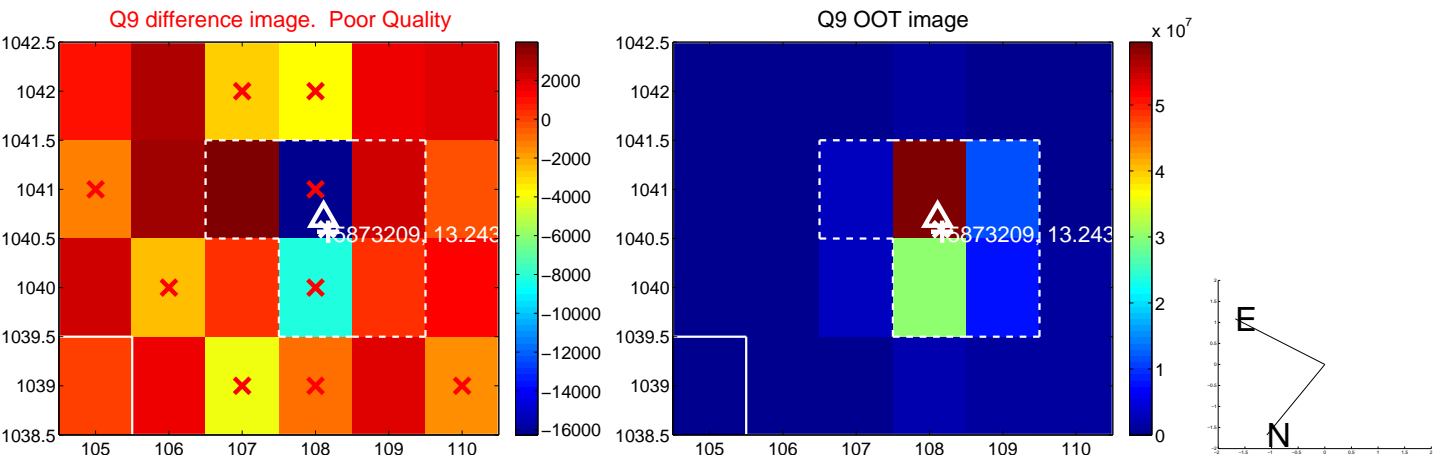
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



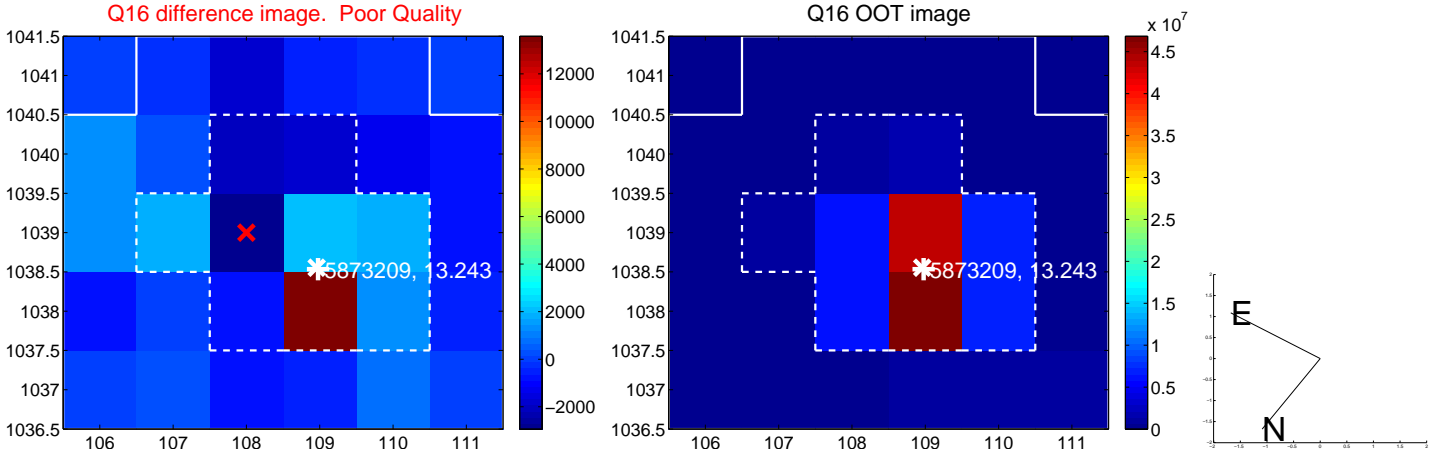
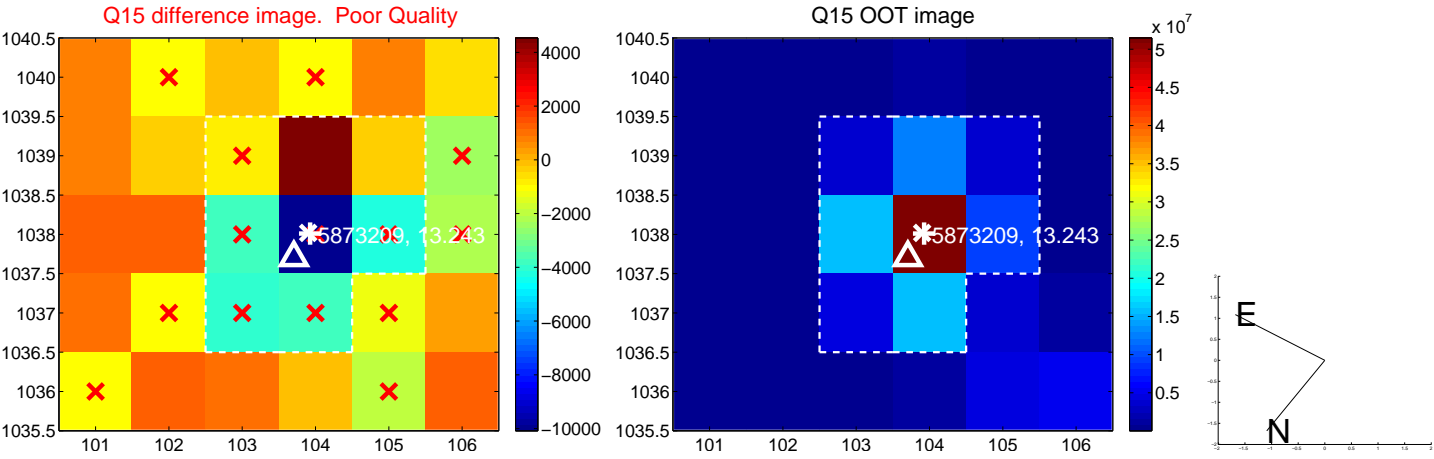
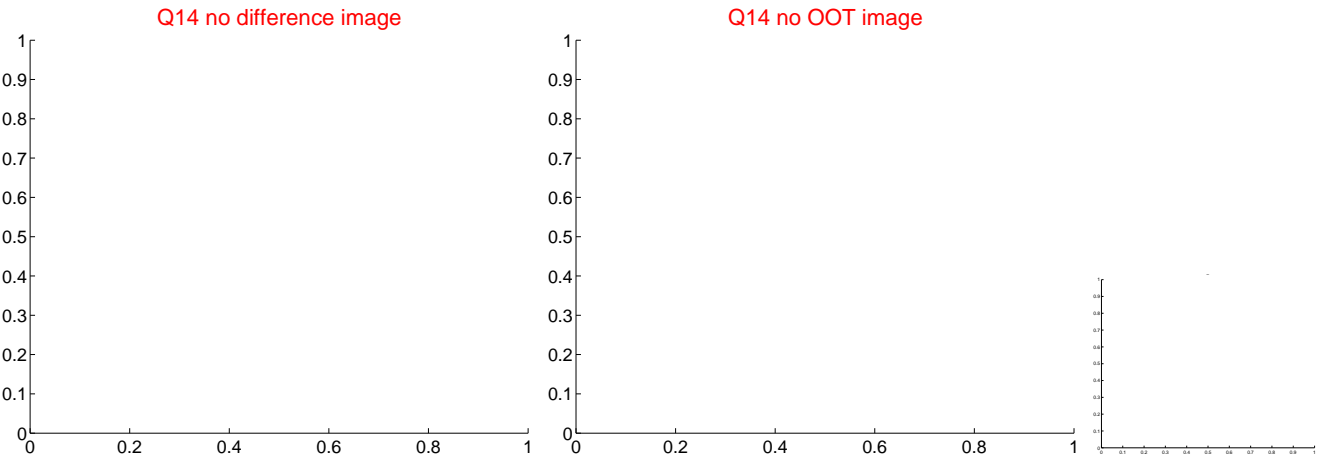
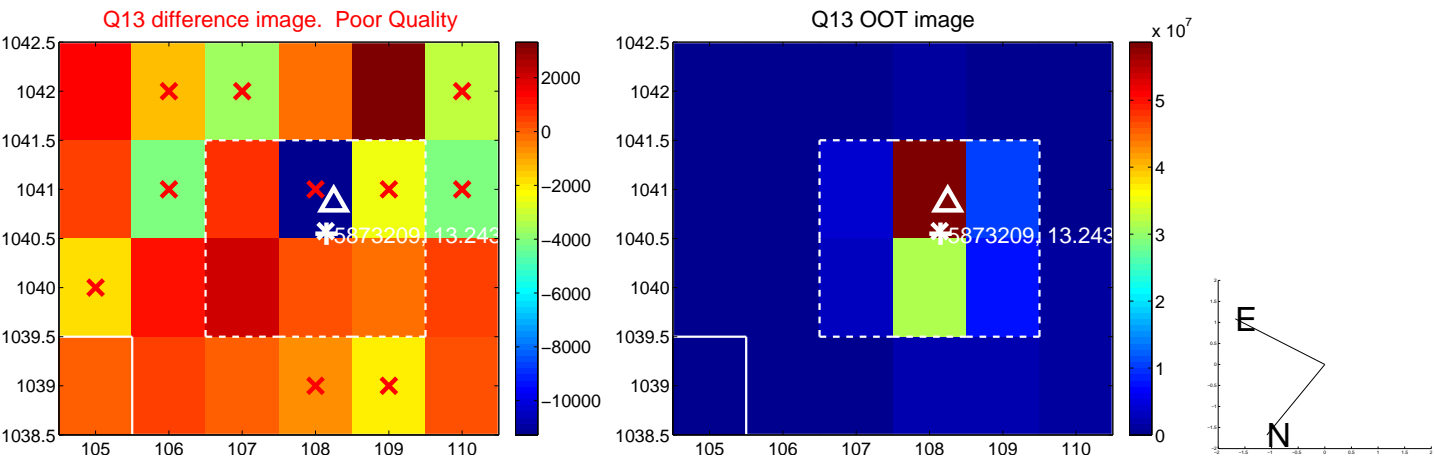
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



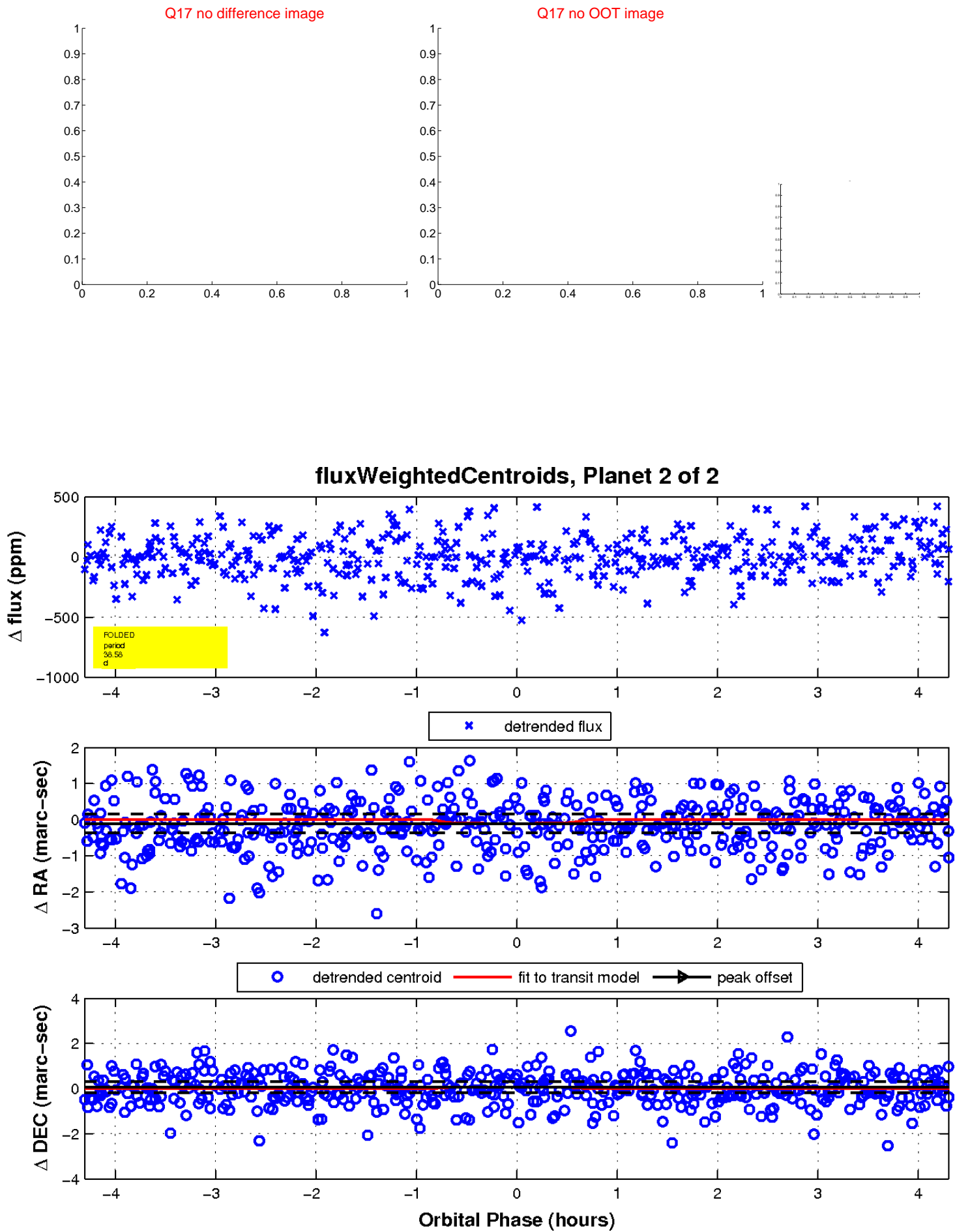
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

