

KIC 007973199

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})
007973199-01	OBS	No	1.638877	132.781873	0.0	8.310	7.5	0.0	1.70	7274	0.00	7377.07
007973199-02	OBS	No	4.376676	134.238567	1207.5	14.917	9.9	10.3	1.70	7274	10.40	1991.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007973199-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
007973199-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

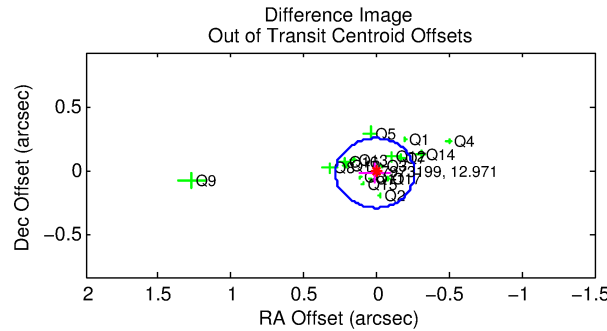
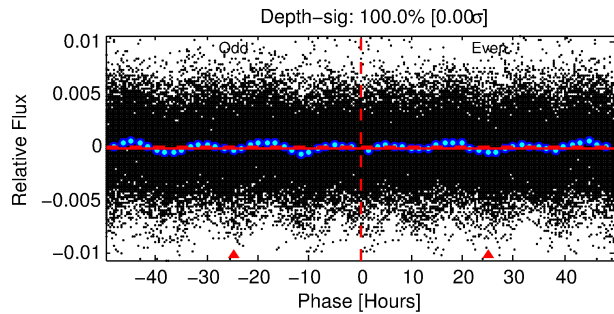
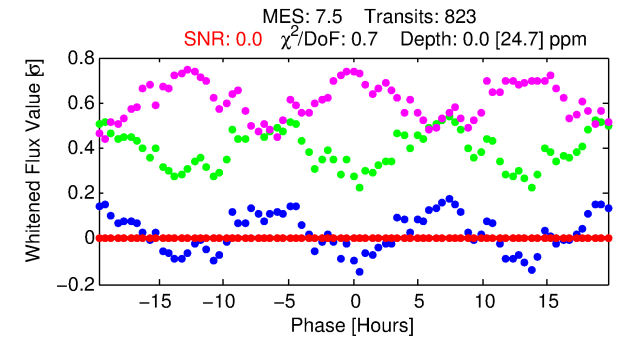
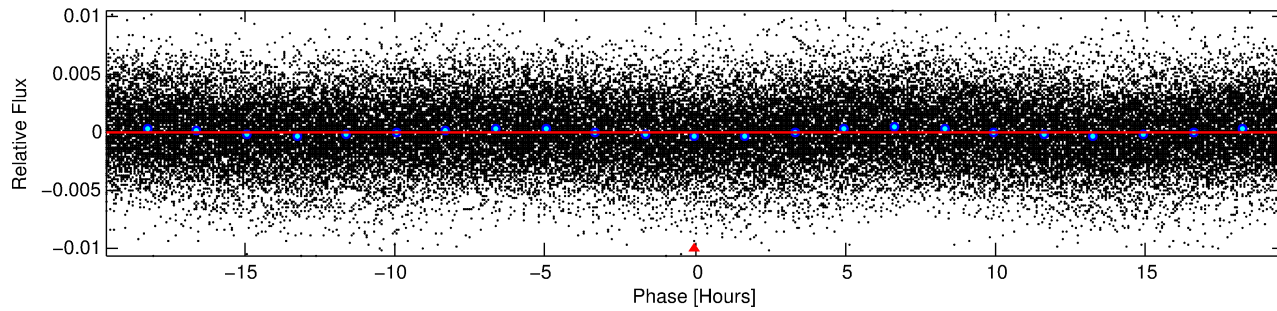
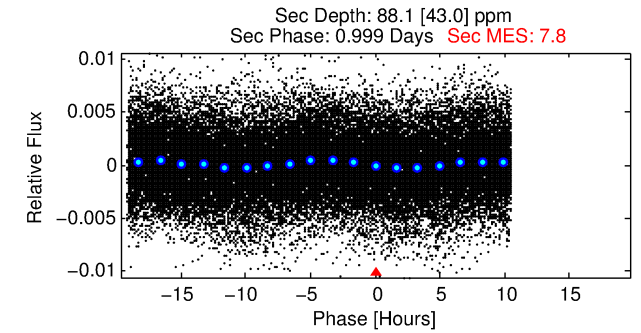
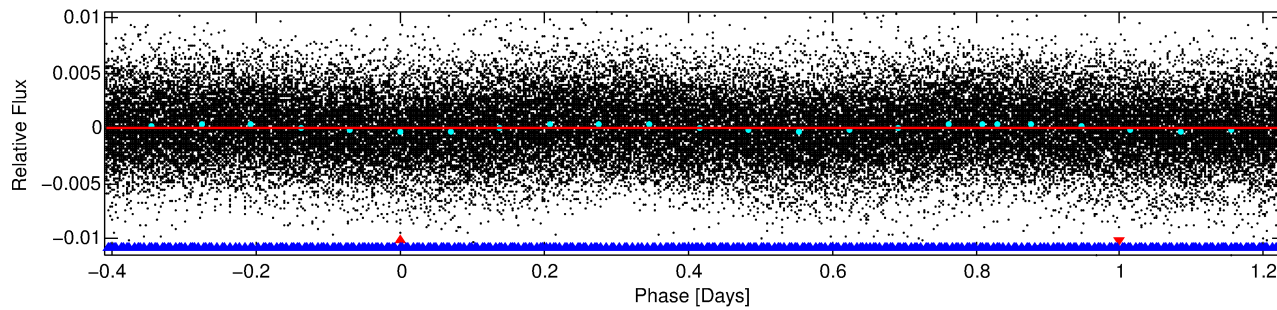
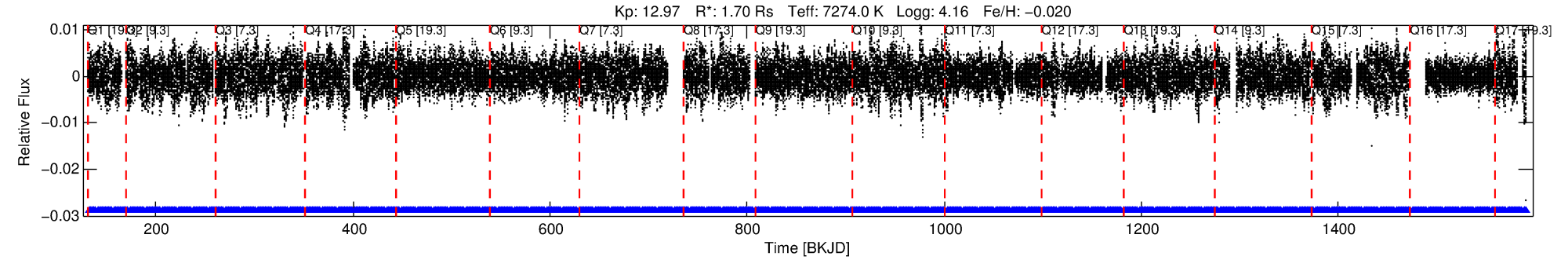
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007973199-01

No Significant Match Found

DV One-Page Summary

KIC: 7973199 Candidate: 1 of 2 Period: 1.639 d



DV Fit Results:

Period = 1.63888 [304.57143] d
Epoch = 132.7819 [55423.2187] BKJD
Rp/R* = 0.0000 [3.6975]
a/R* = 1.29 [25634.70]
b = 0.77 [83000.72]
Seff = 7377.07 [1827957.42]
Teq = 2363 [146393] K
Rp = 0.00 [685.12] Re
a = 0.0313 [3.8792] AU
Ag = 122398263.83 [269225485451623.44] [0.000]
Teff = 384310 [211339435047] K

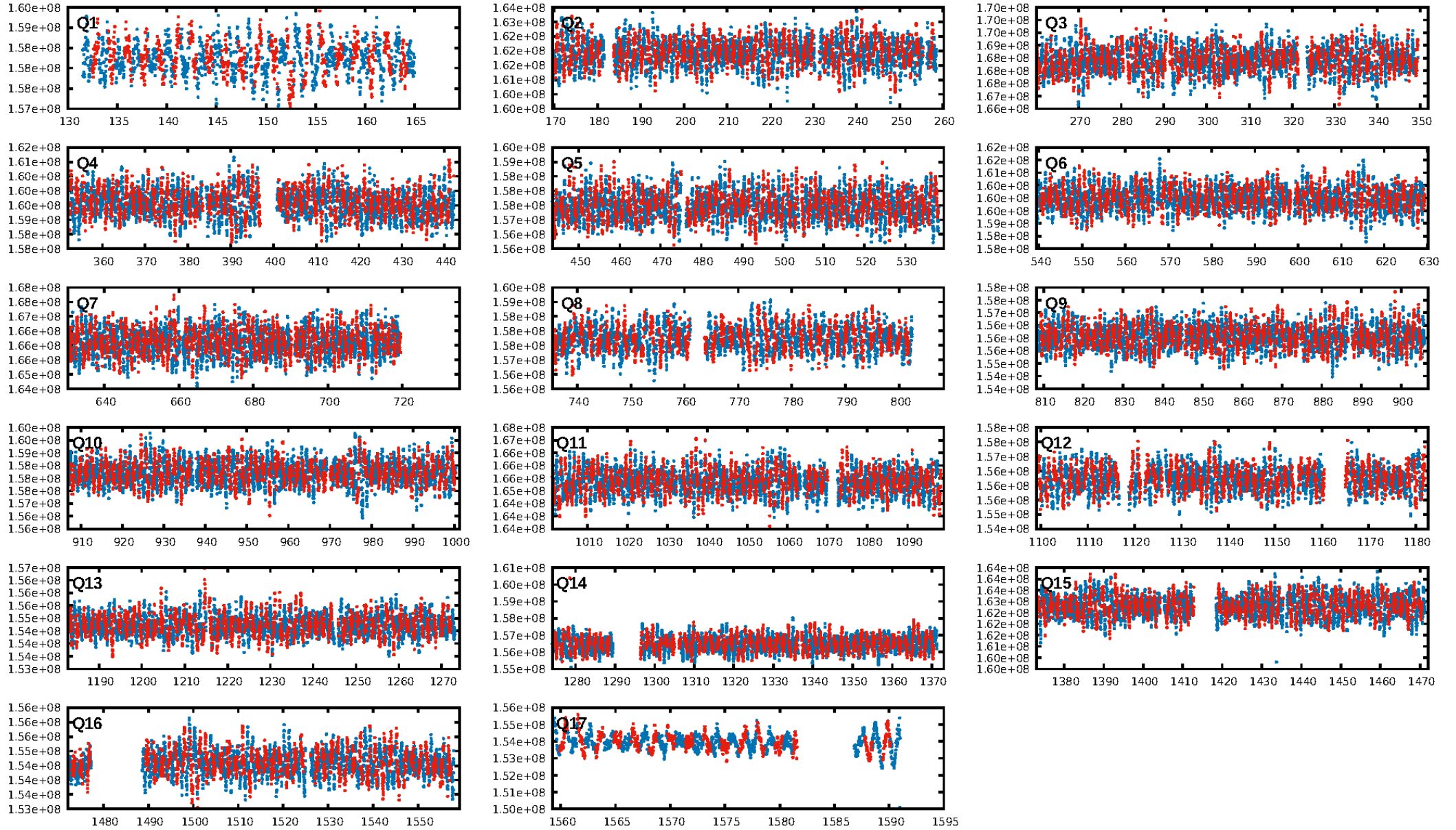
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [3.85σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.78e-07
RollingBand-fgt: 1.00 [787/787]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.018 arcsec [0.20σ]
OotOffset-rm: 0.036 arcsec [0.31σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.53 [9/17]
DiffImageOverlap-fno: 1.00 [17/17]

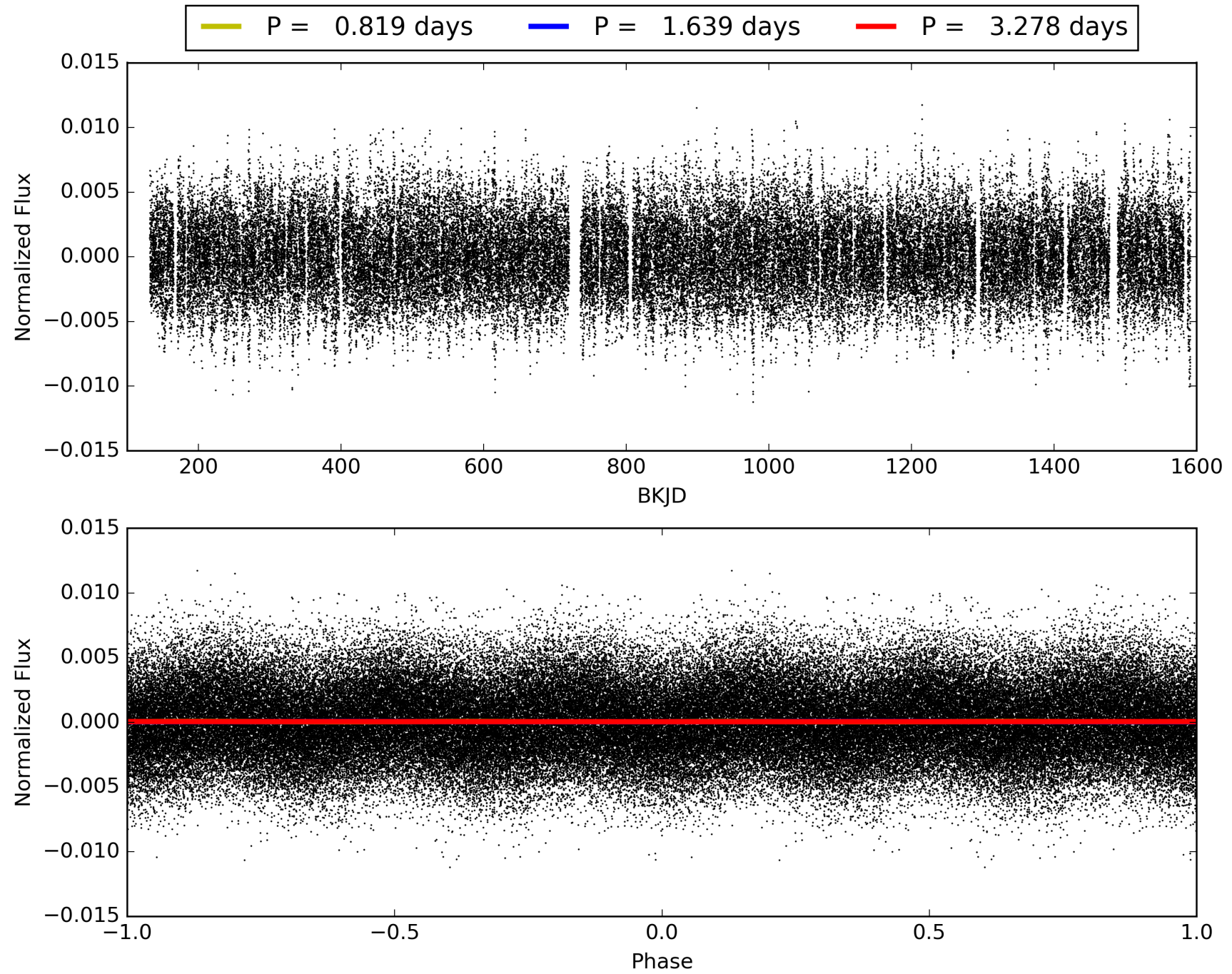
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007973199-01, PDC Light Curves

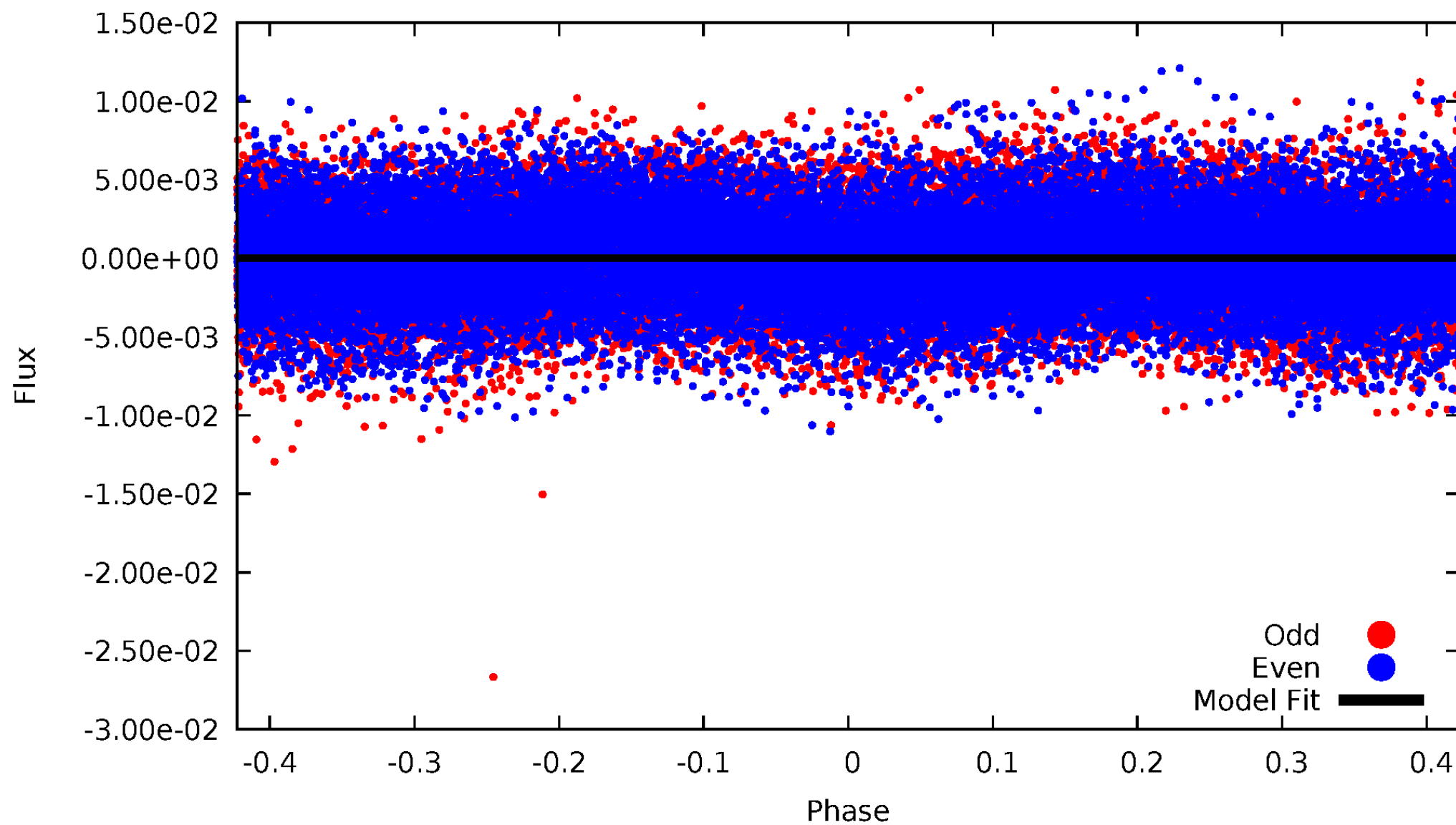


TCE 007973199-01



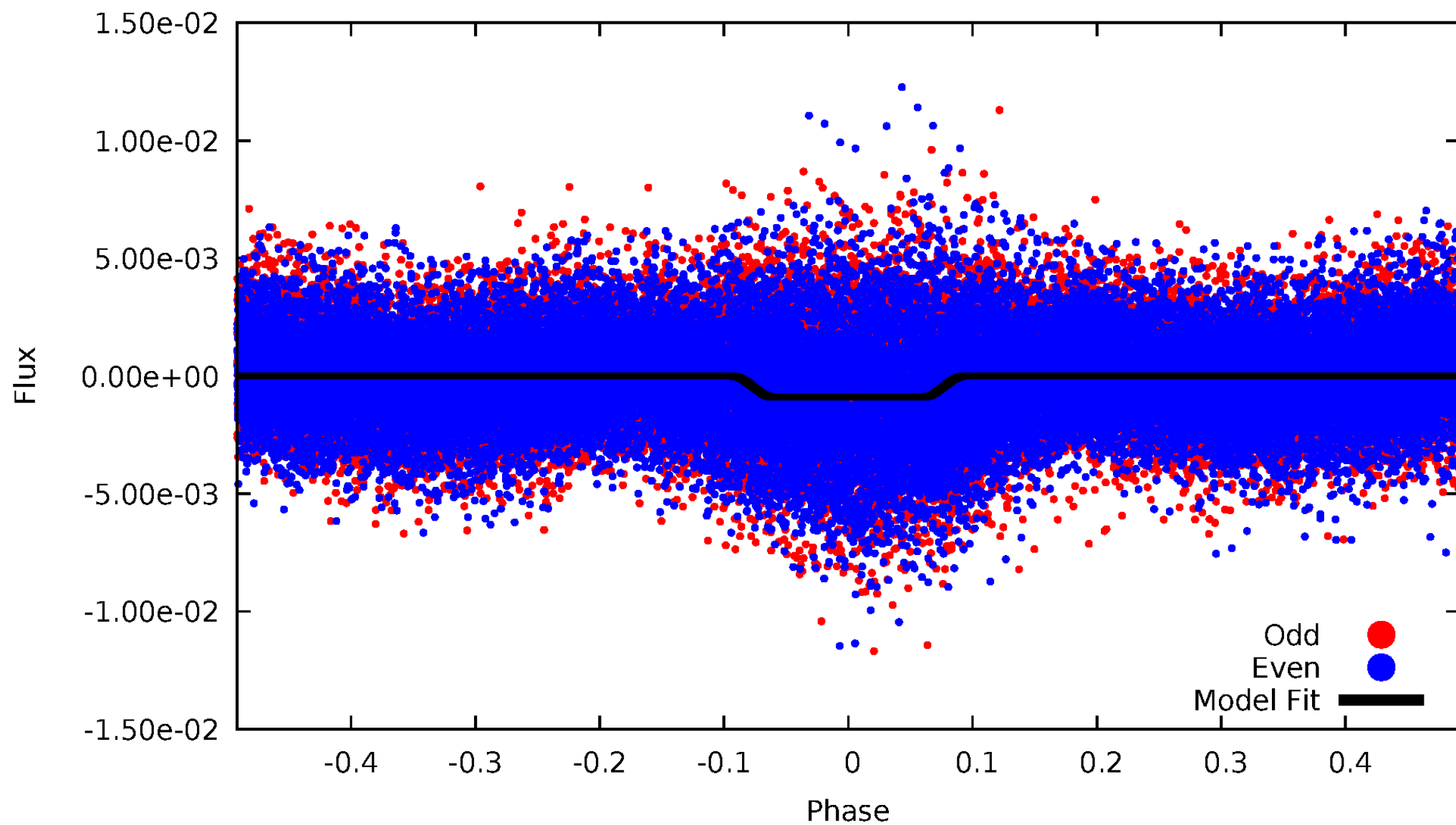
DV Odd/Even

TCE 007973199-01



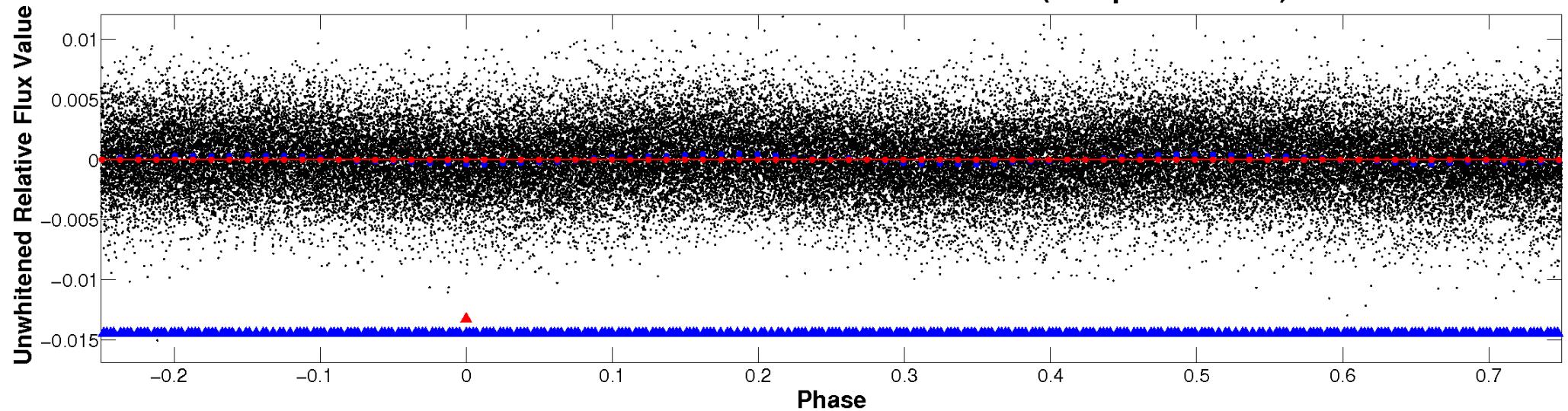
ALT Odd/Even

TCE 007973199-01

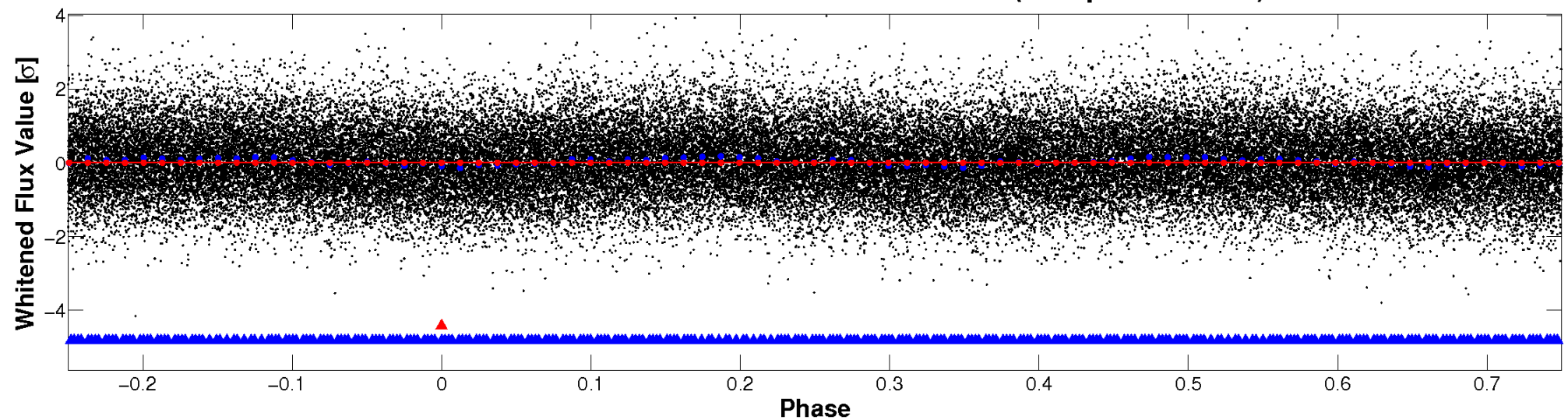


Non-Whitened Vs. Whitened Light Curve

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

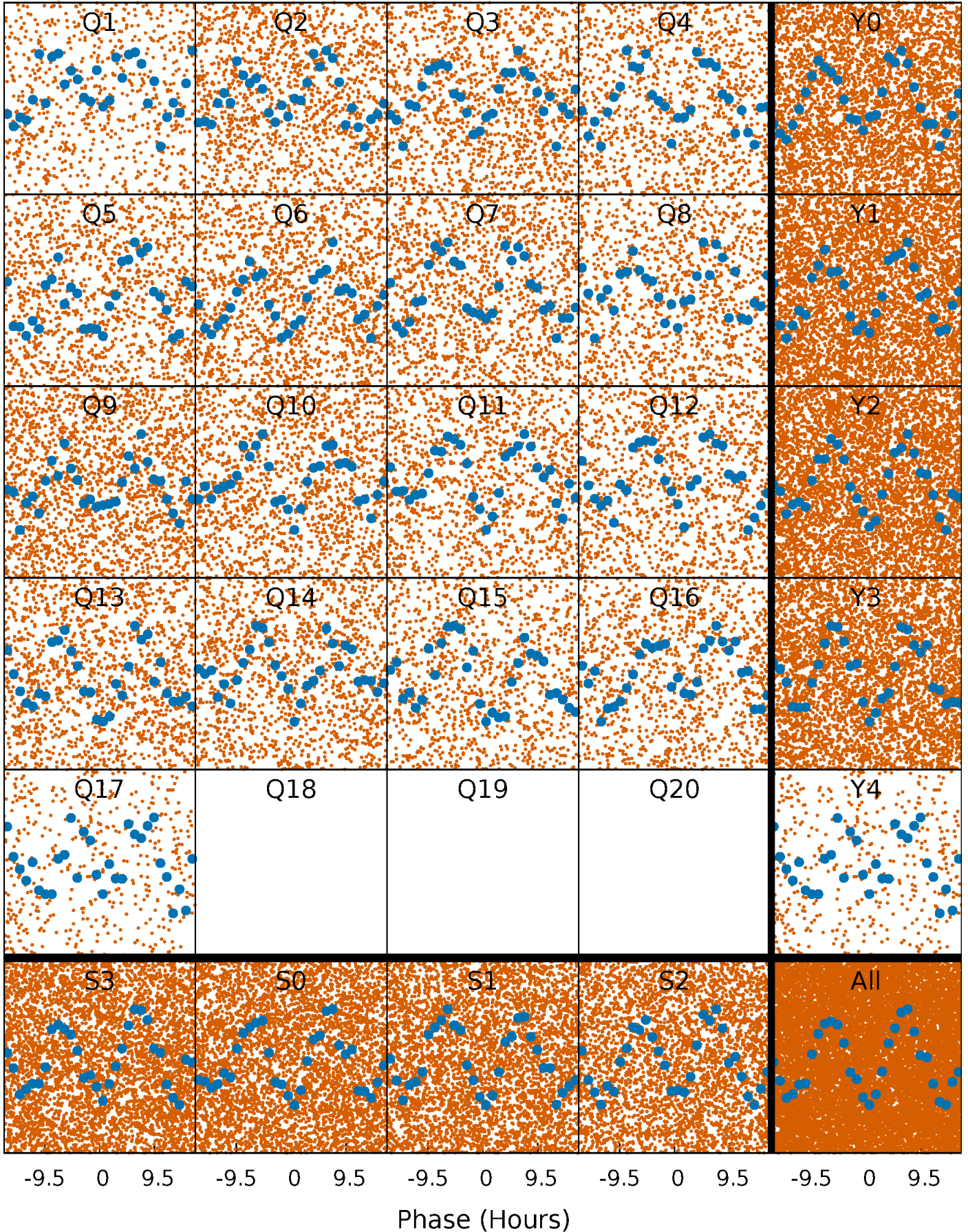


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



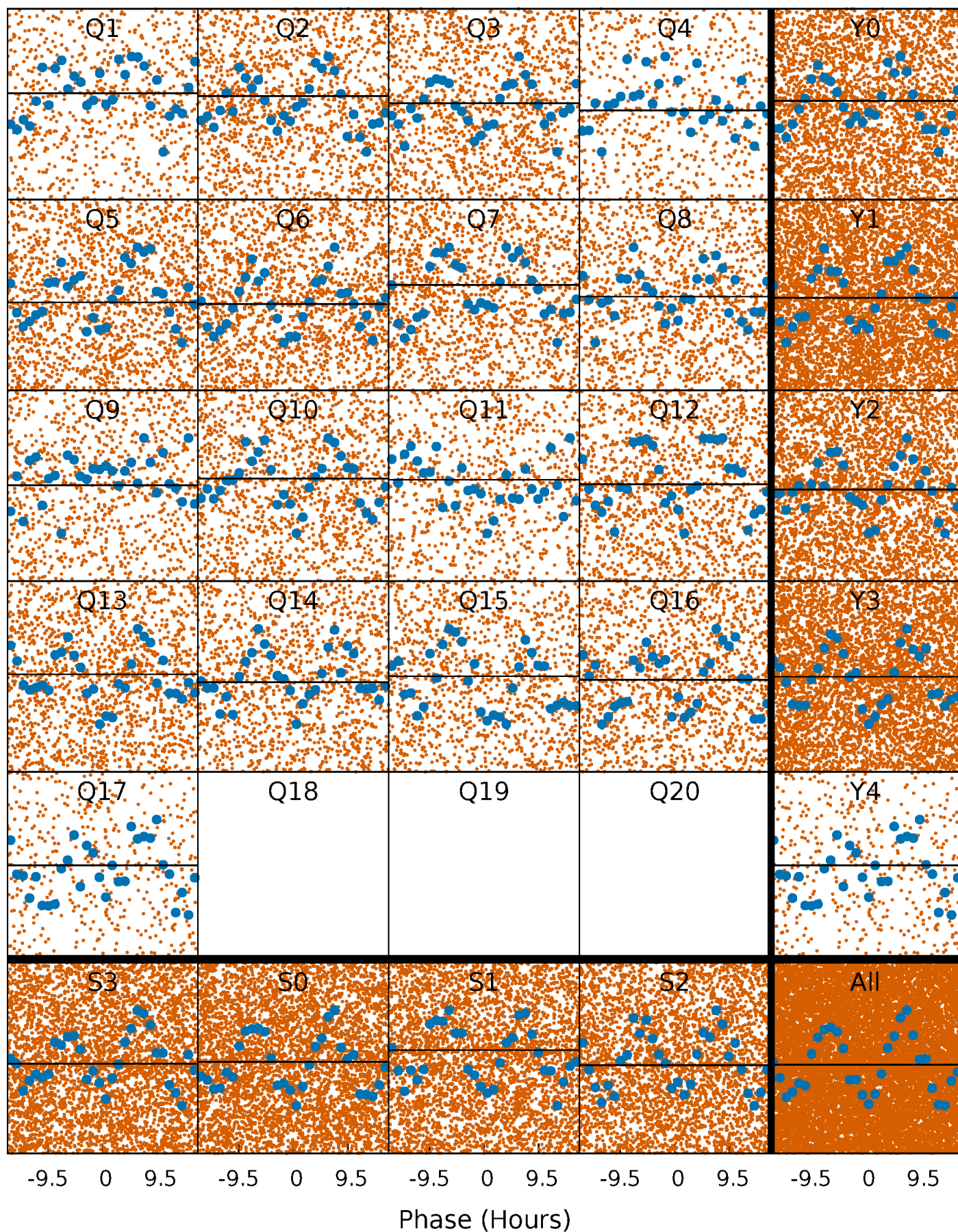
PDC Quarter-Phased Transit Curves

TCE 007973199-01 P= 1.638877 Days $T_0=132.781873$ (BKJD)



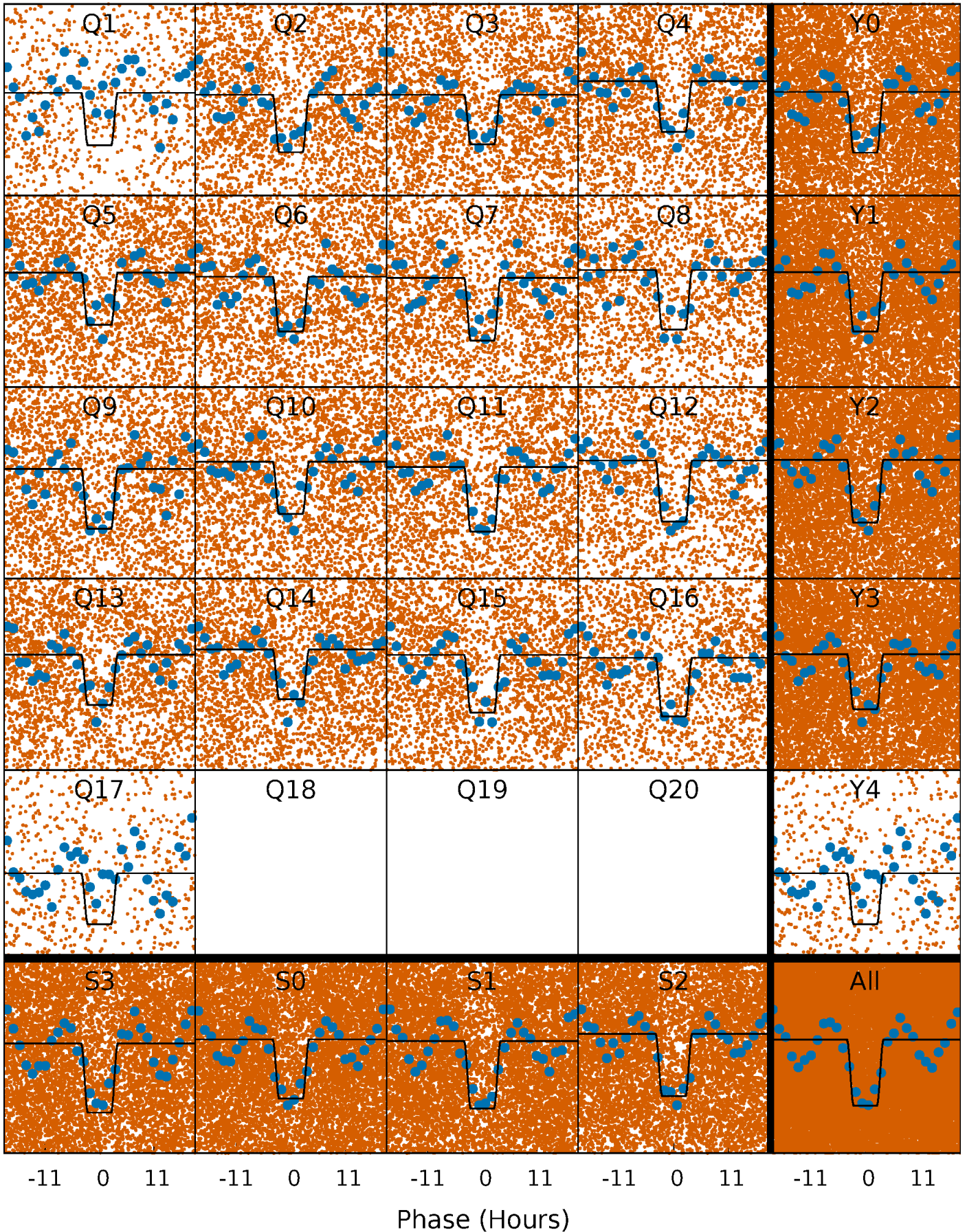
DV Quarter-Phased Transit Curves

TCE 007973199-01 P= 1.638877 Days $T_0=132.781873$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

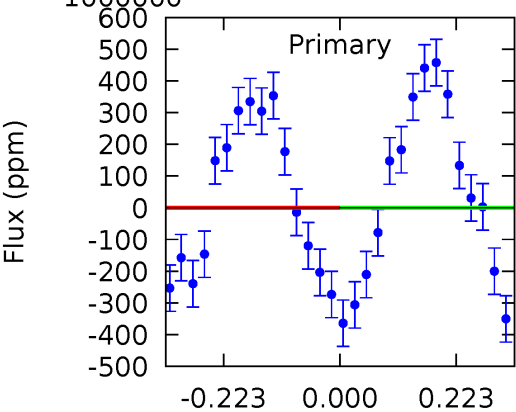
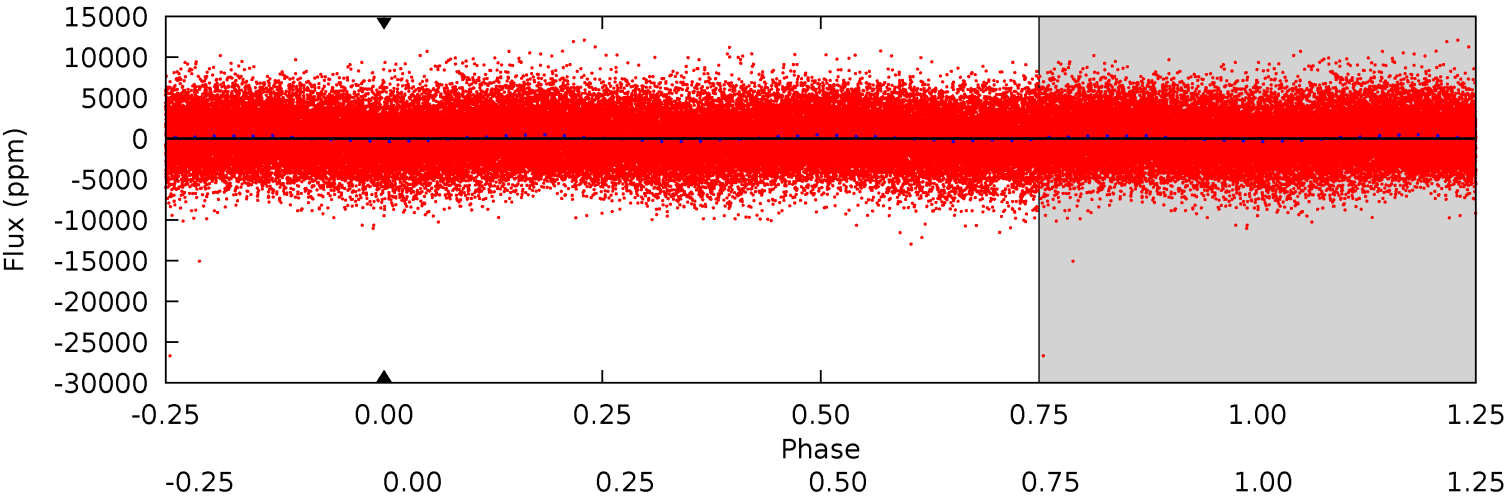
TCE 007973199-01 P= 1.638997 Days $T_0=132.737880$ (BKJD)



DV Model-Shift Uniqueness Test

007973199-01, P = 1.638877 Days, E = 131.142996 Days

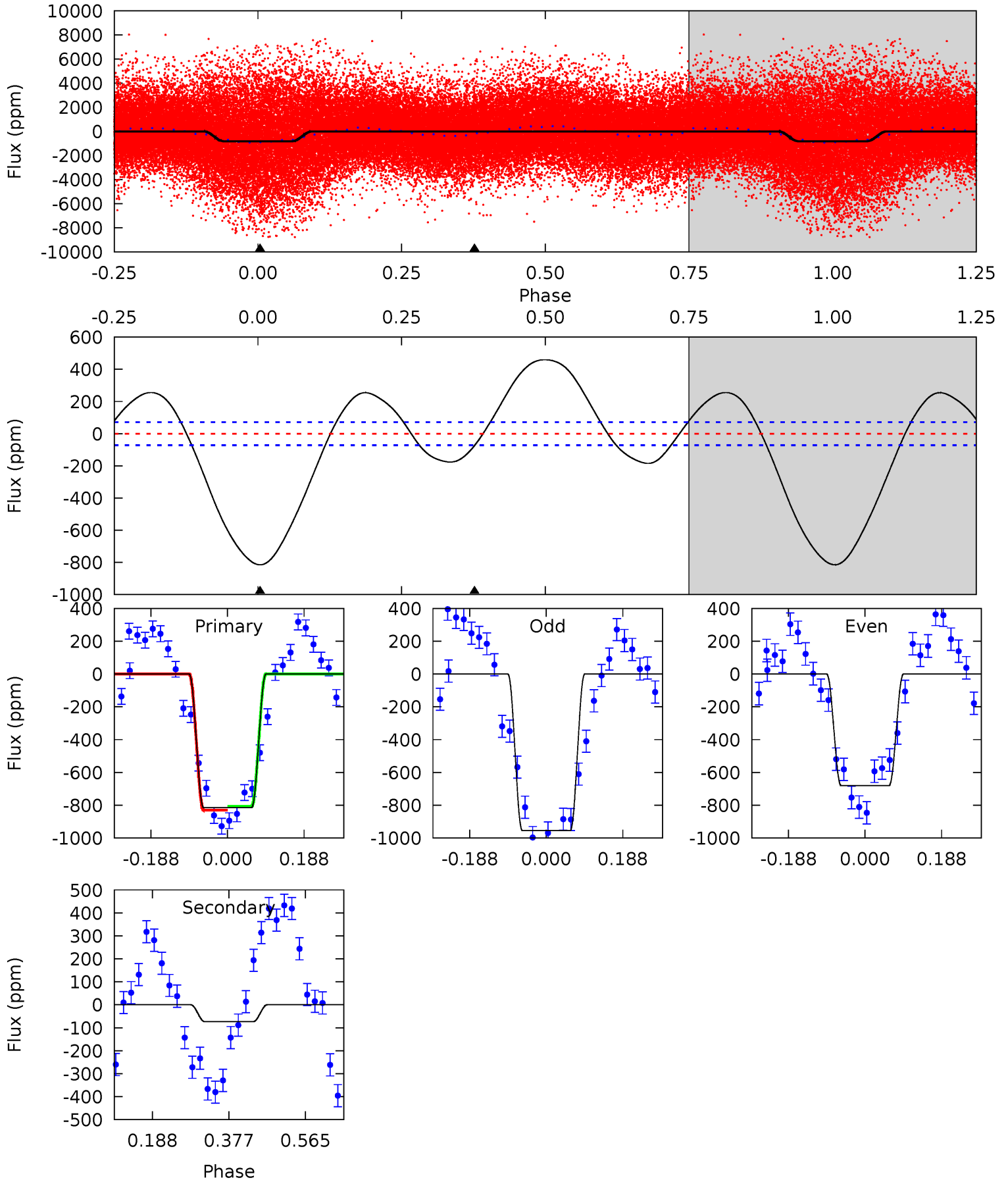
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007973199-01, P = 1.638997 Days, E = 131.098883 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.5	4.58	0	0	4.43	1.32	9.39	50.5	50.5	4.58	4.58	8.55	1.09	0.36	0.75



Stellar Parameters For KIC 007973199

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7274^{+230}_{-316}	$4.161^{+0.109}_{-0.202}$	$-0.020^{+0.200}_{-0.350}$	$1.698^{+0.563}_{-0.303}$	$1.523^{+0.212}_{-0.236}$	$0.438^{+0.266}_{-0.222}$
	+3%/-4%	+3%/-5%	+1000%/-1750%	+33%/-18%	+14%/-15%	+61%/-51%
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 007973199-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$474.85^{+496.41}_{-353.04}$	679^{+372}_{-165}	1727^{+1894}_{-5193}	$0.531^{+310.626}_{-279.873}$
Alt.	-74 ± 16	$478.57^{+551.20}_{-340.11}$	664^{+363}_{-148}	-1496^{+3197}_{-315}	$0.091^{+1.429}_{-0.080}$

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 $A_{obs} \gg 1.0$

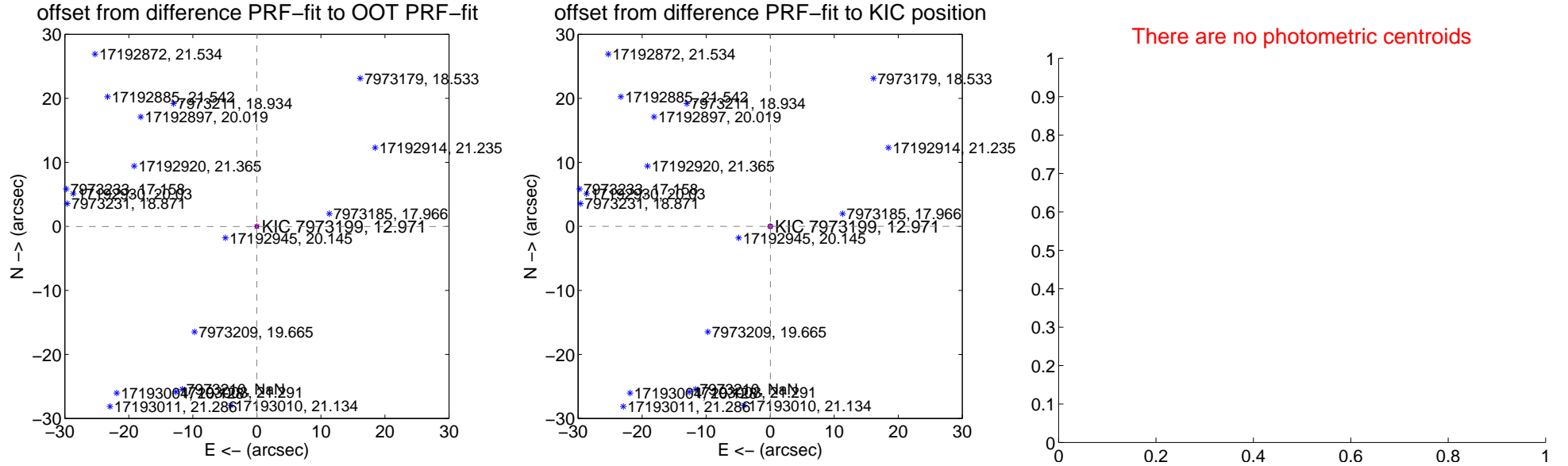
DV Centroid Data

Supplemental centroid analysis for 007973199-01. Kepler magnitude: 12.97. Transit SNR 0.00

There are 9 quarters with good PRF difference image offsets

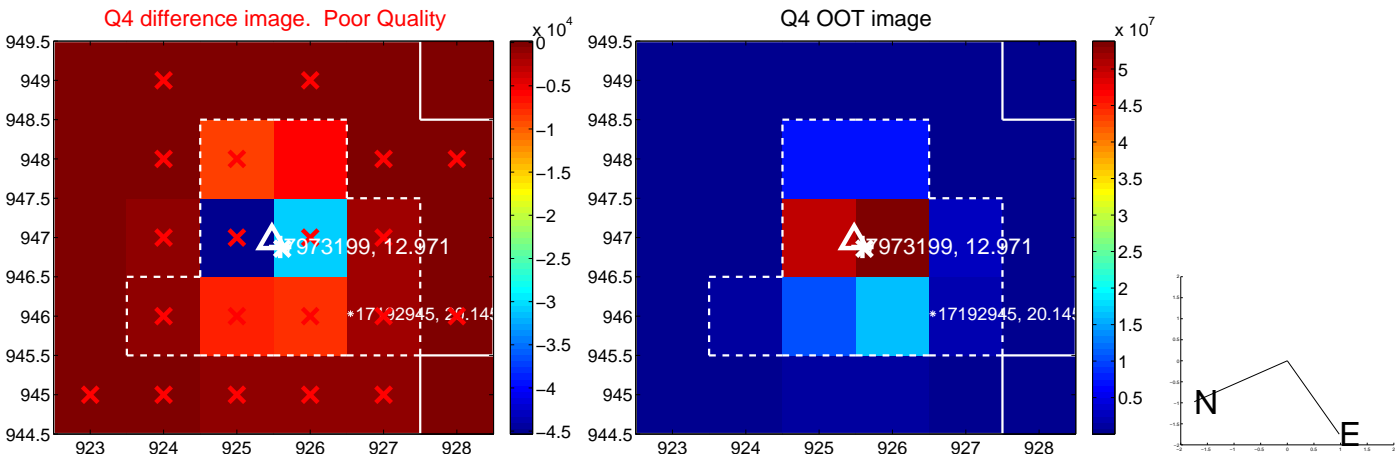
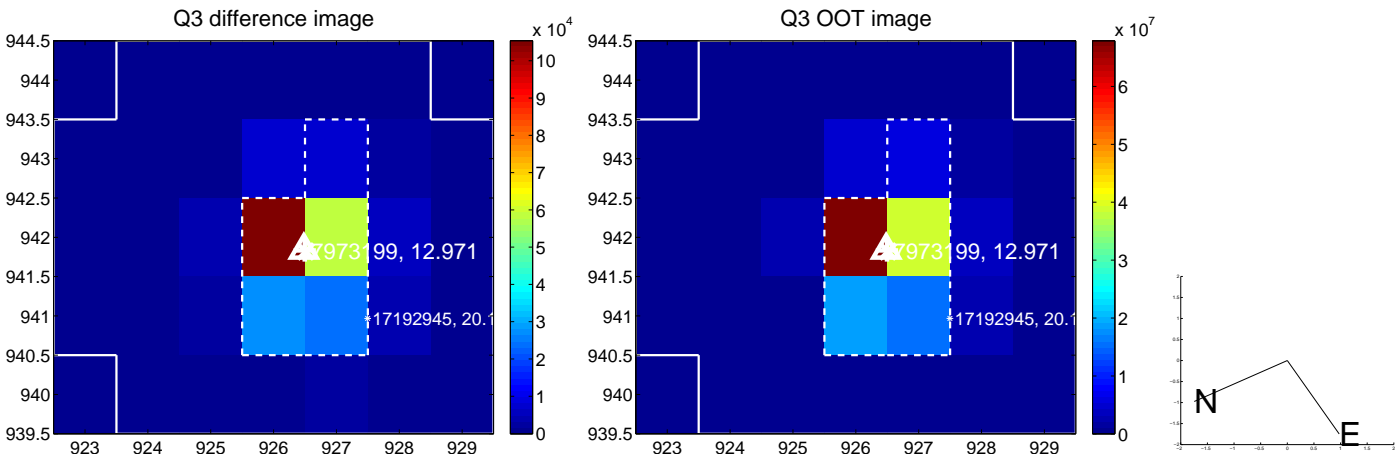
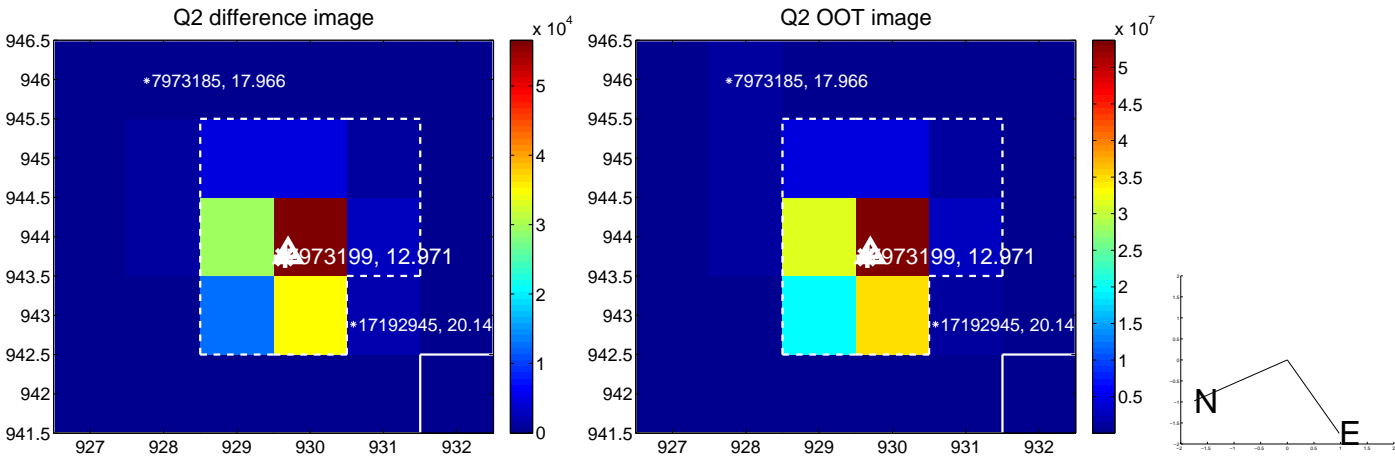
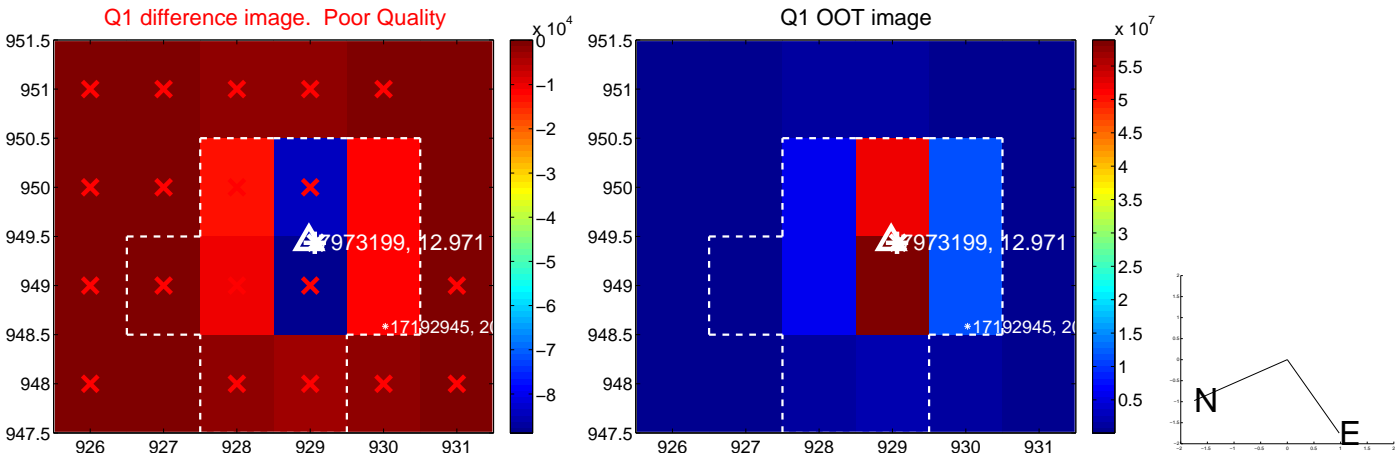
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.018 ± 0.090	0.20	0.010 ± 0.107	-0.015 ± 0.074
PRF-fit source offset from KIC position	0.036 ± 0.116	0.31	-0.036 ± 0.115	0.006 ± 0.077
photometric centroid source offset	—	—	—	—

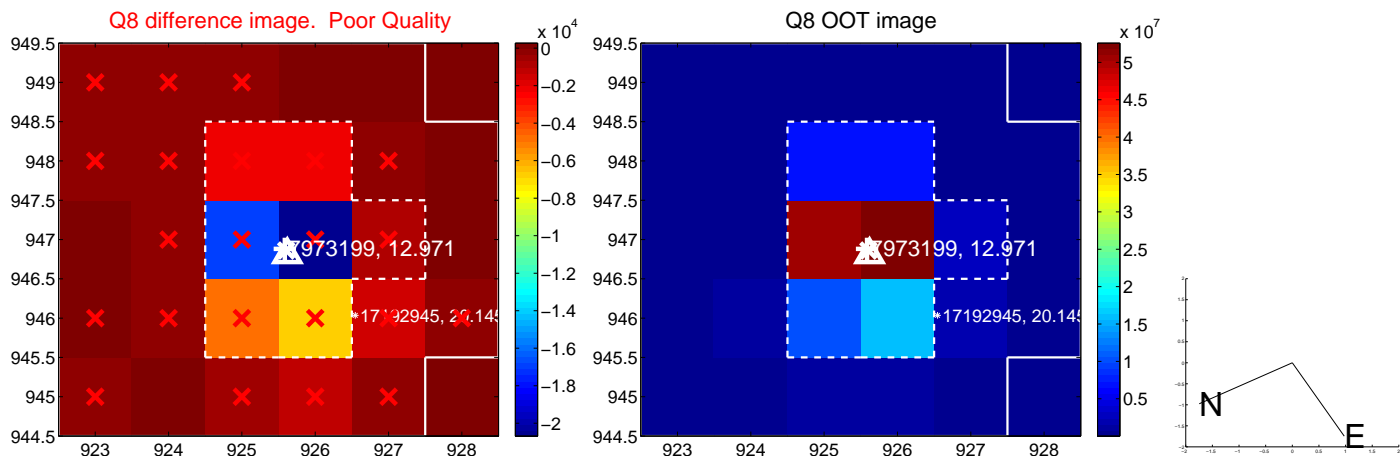
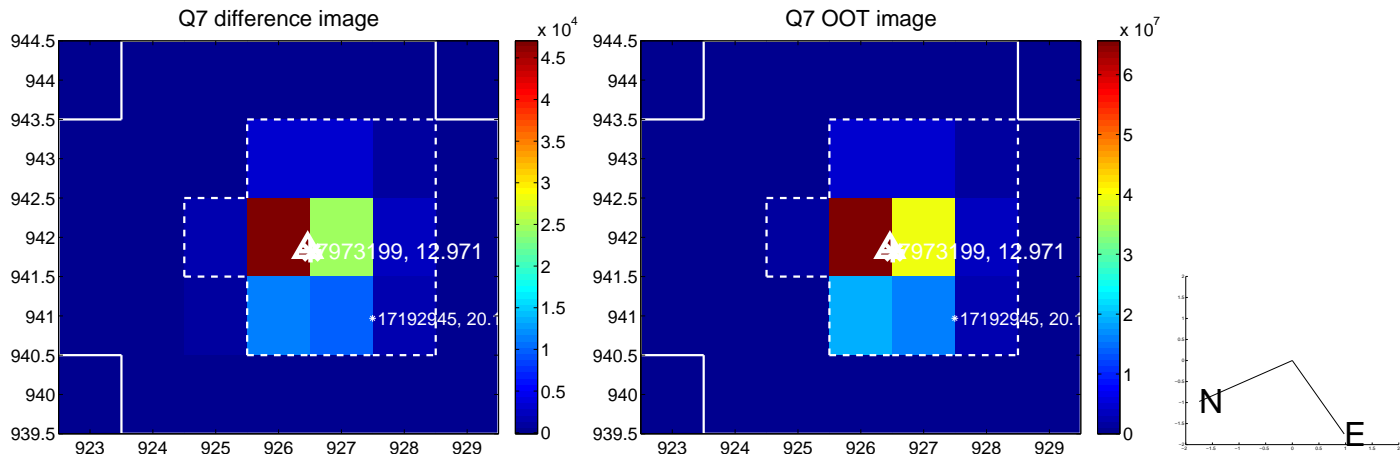
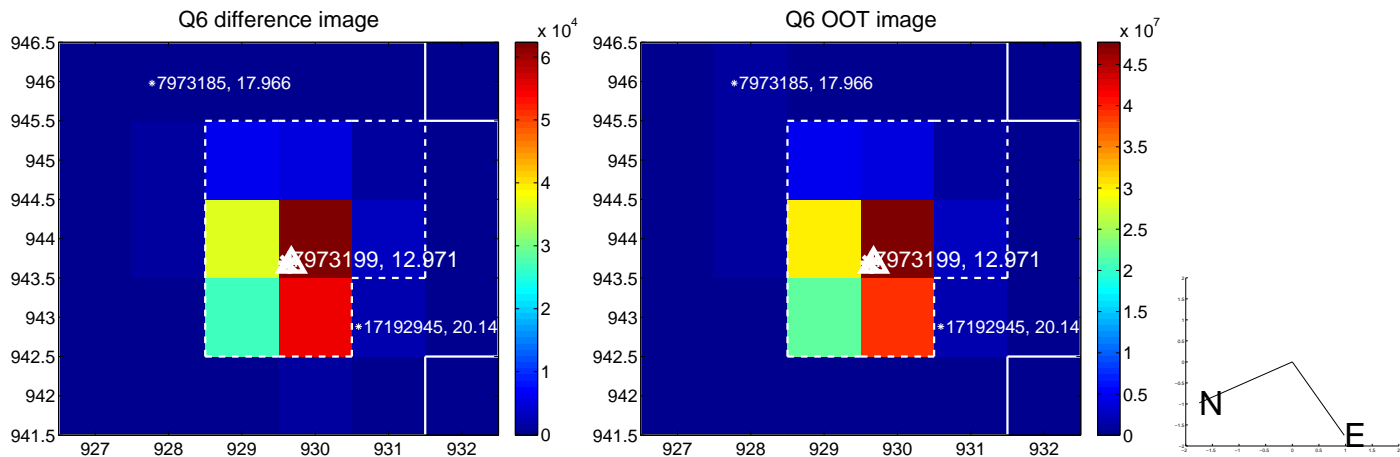
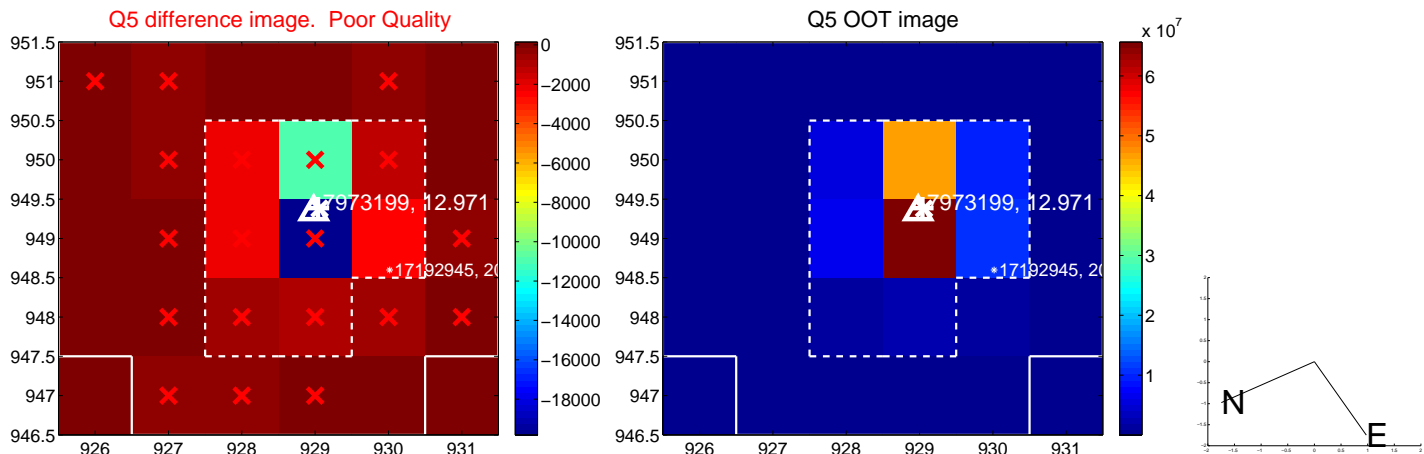


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

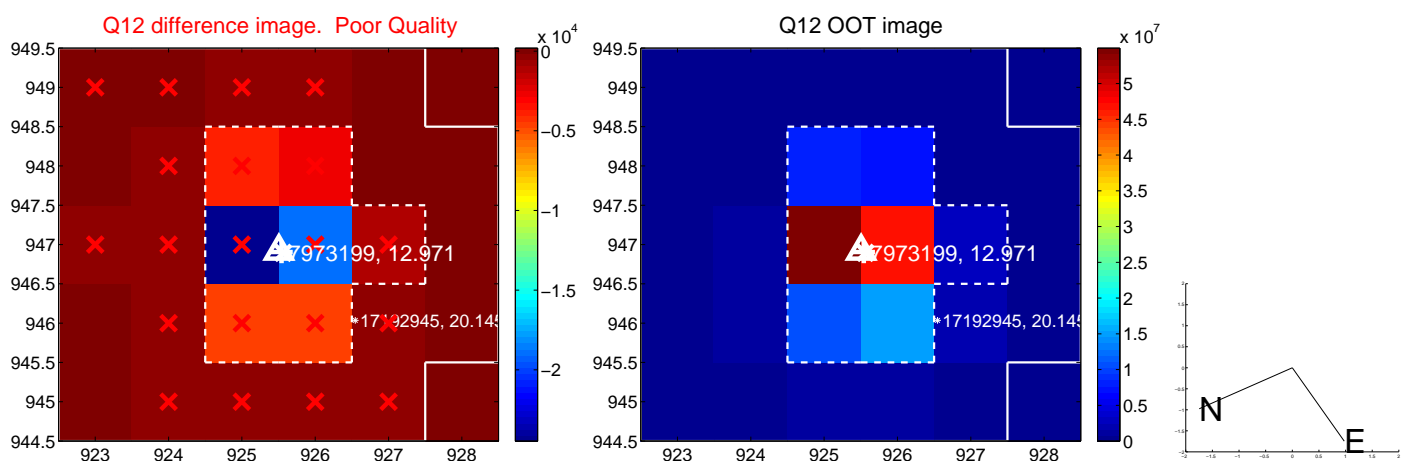
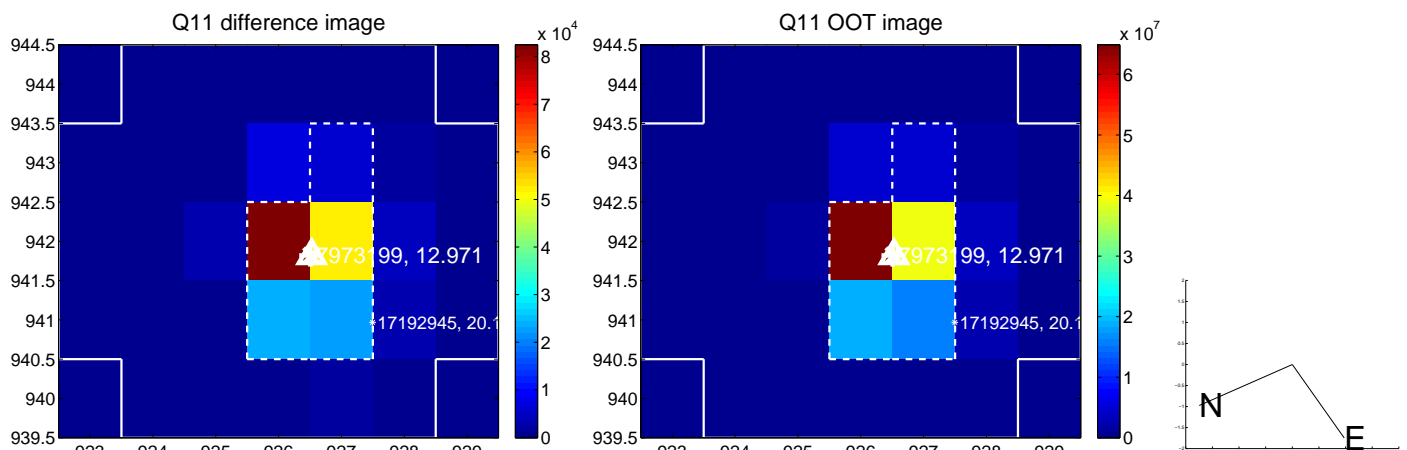
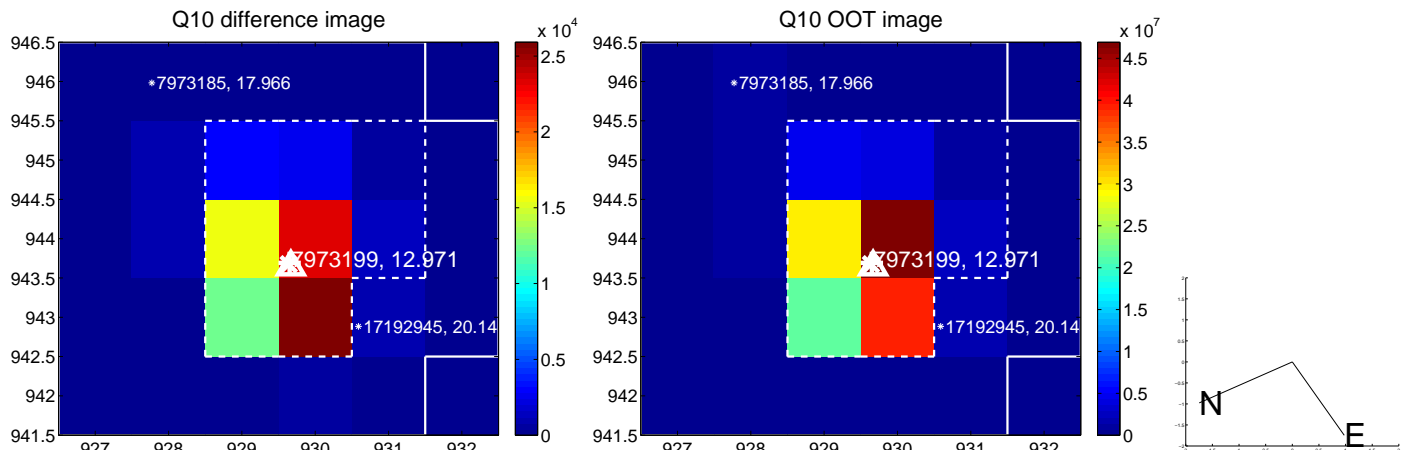
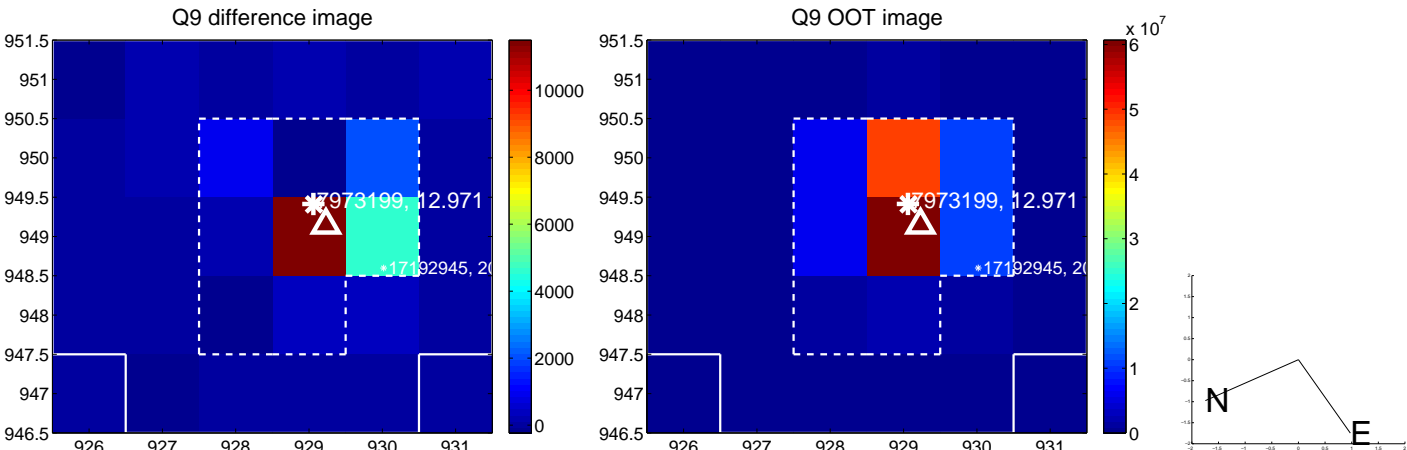
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



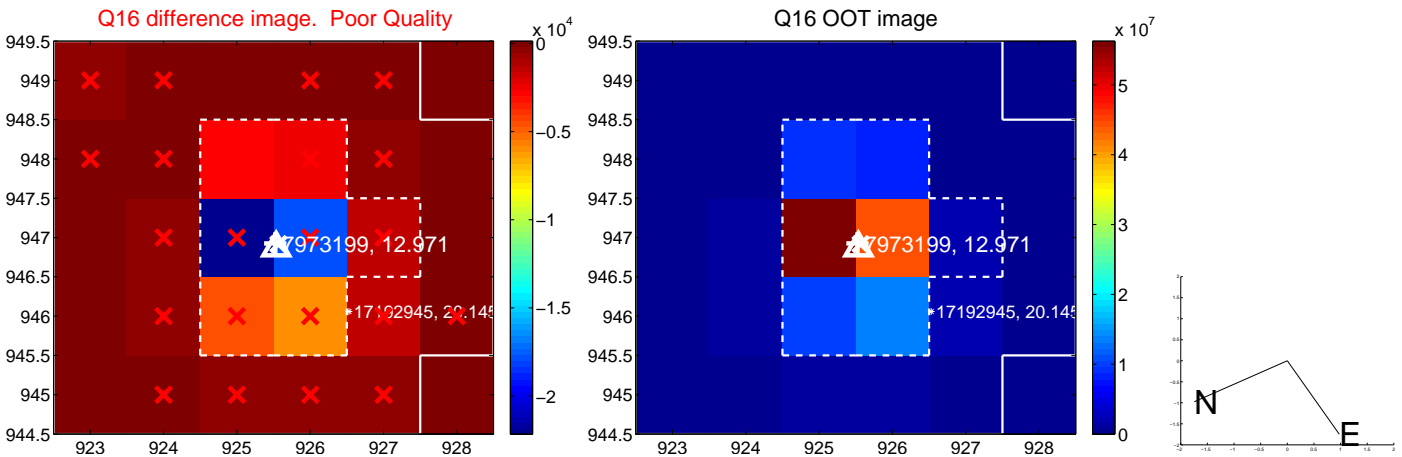
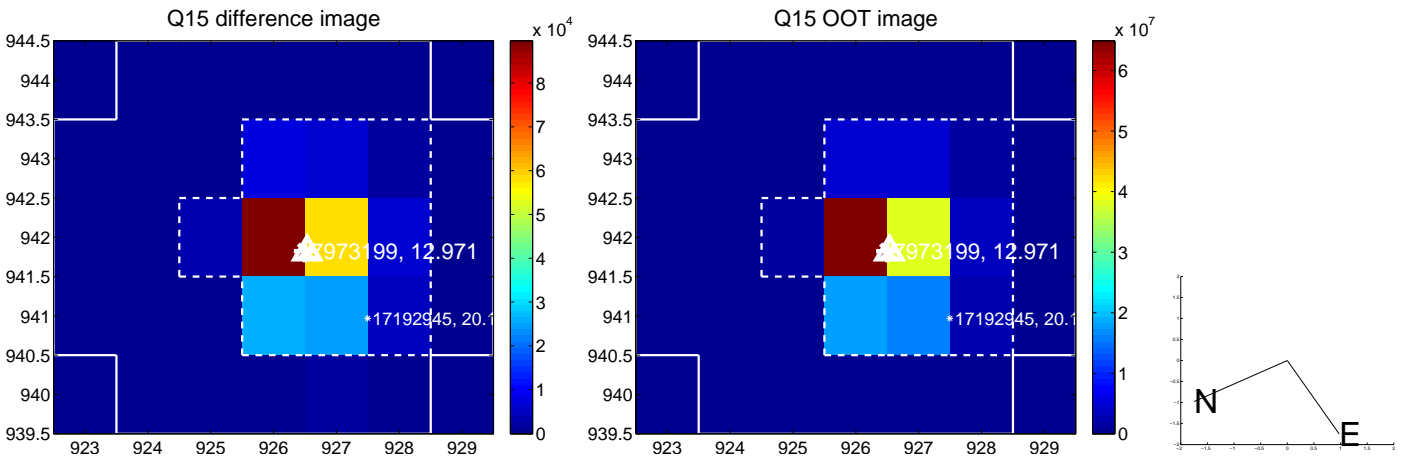
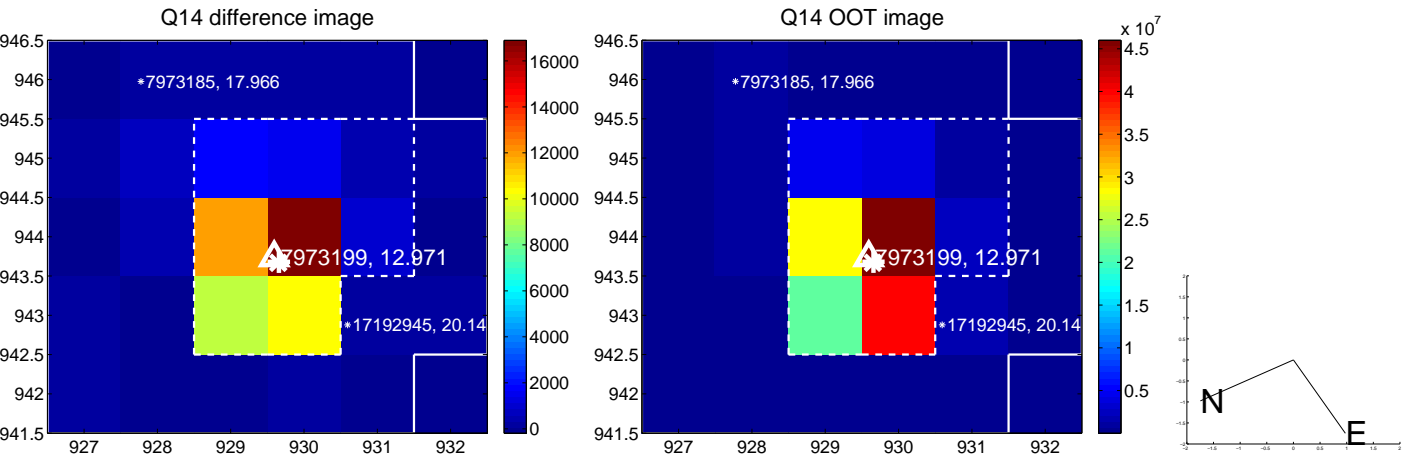
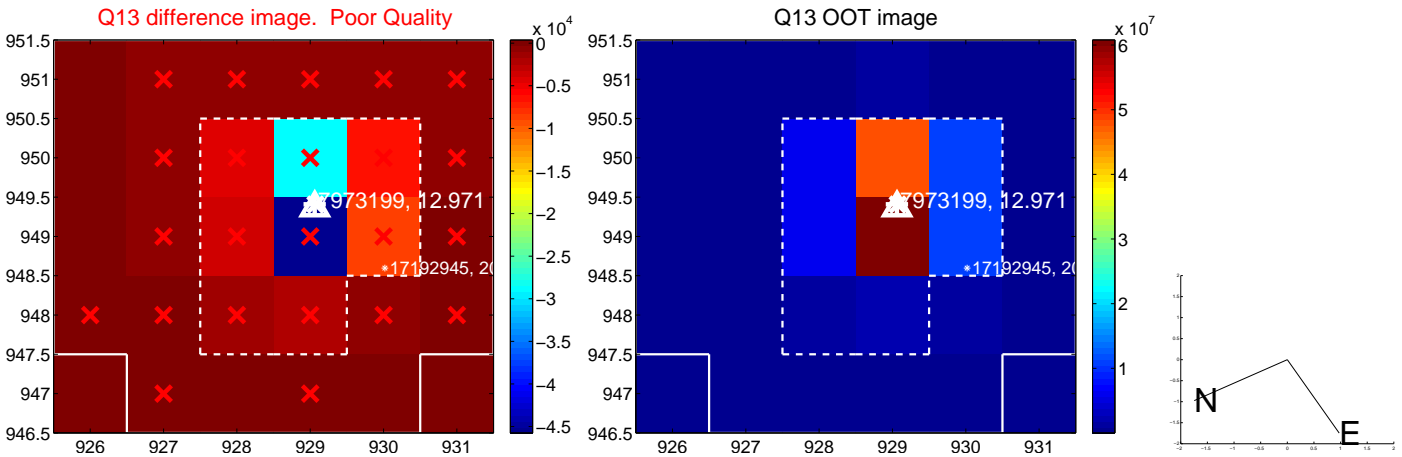
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



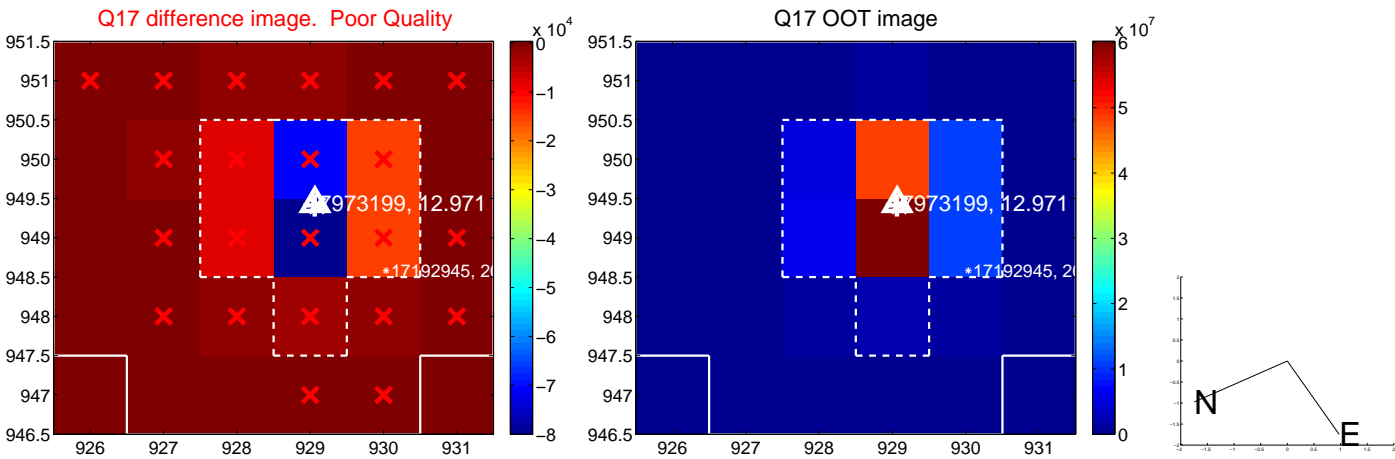
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



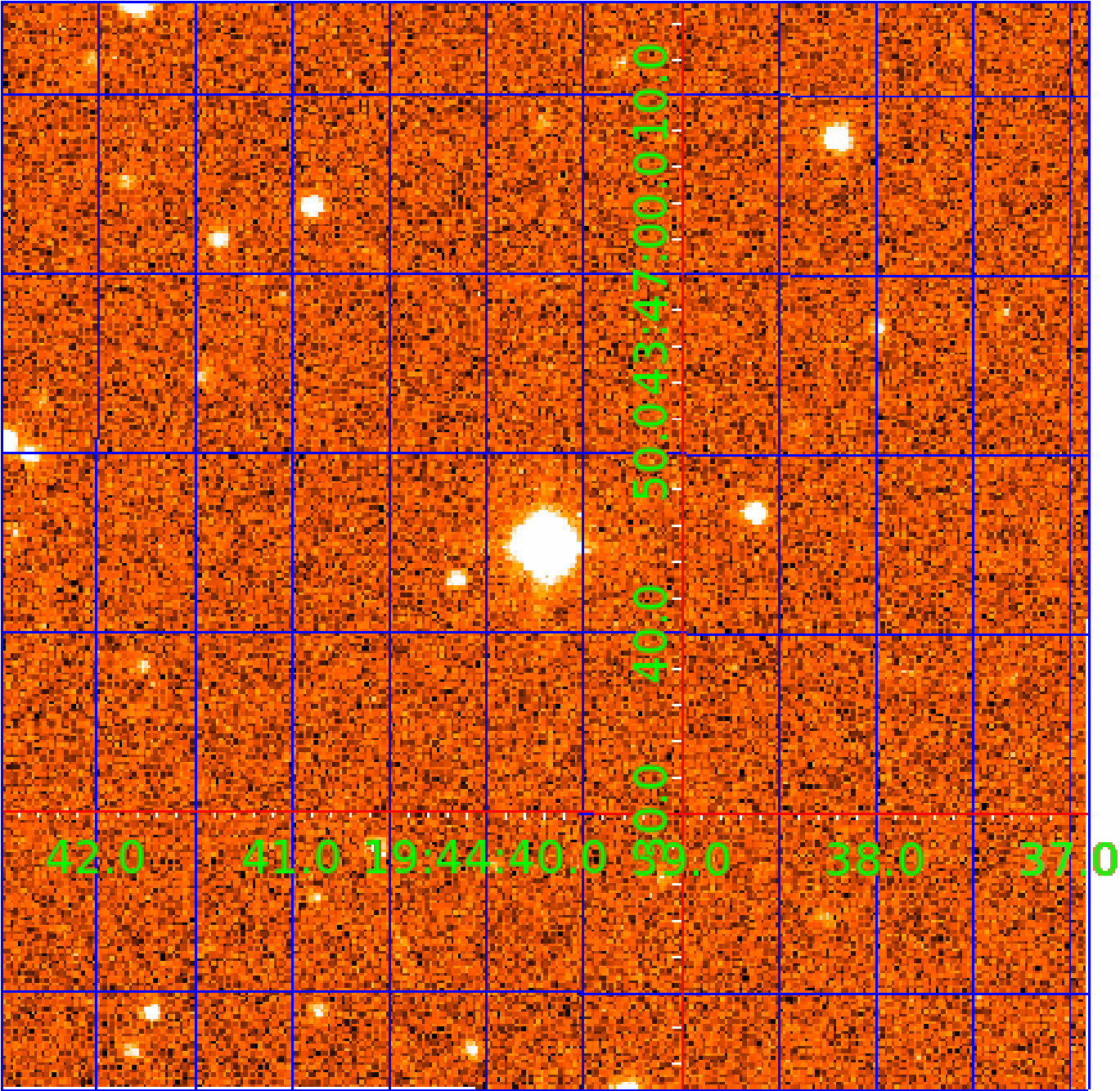
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 007973199

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})
007973199-01	OBS	No	1.638877	132.781873	0.0	8.310	7.5	0.0	1.70	7274	0.00	7377.07
007973199-02	OBS	No	4.376676	134.238567	1207.5	14.917	9.9	10.3	1.70	7274	10.40	1991.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007973199-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
007973199-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

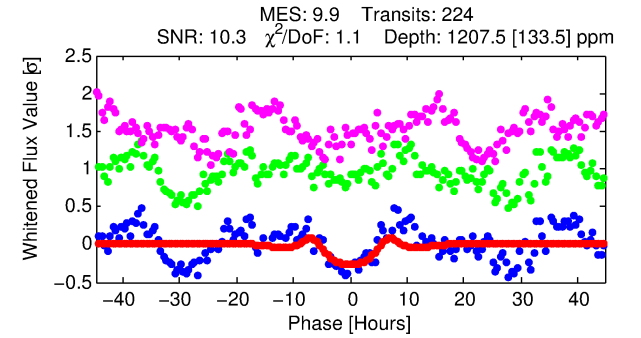
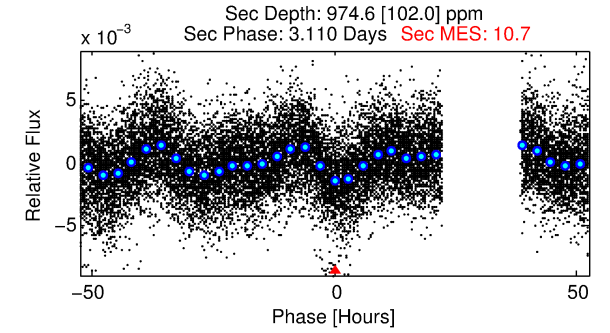
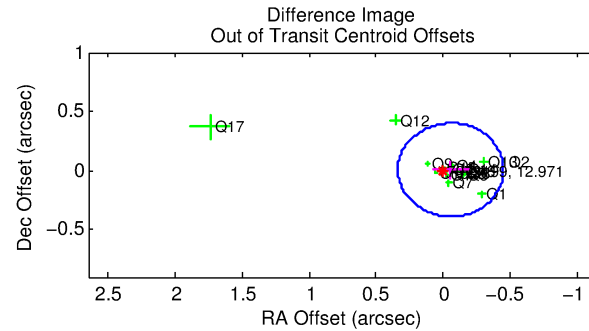
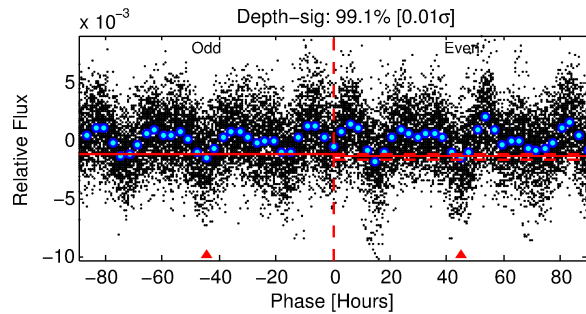
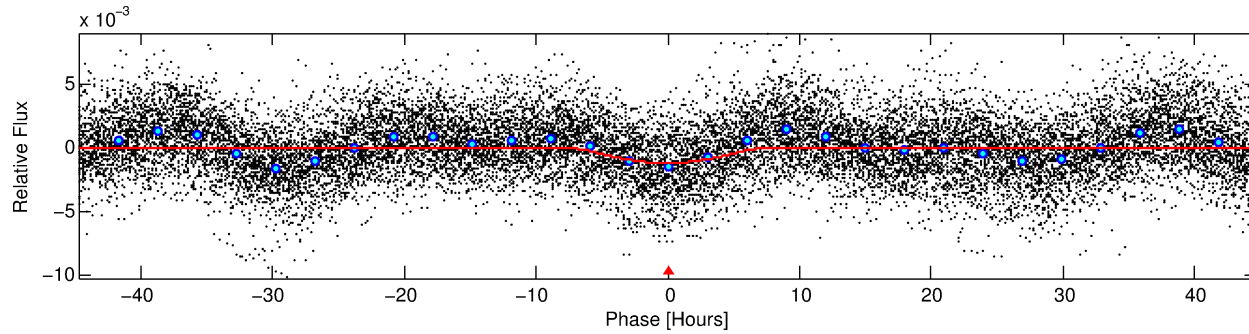
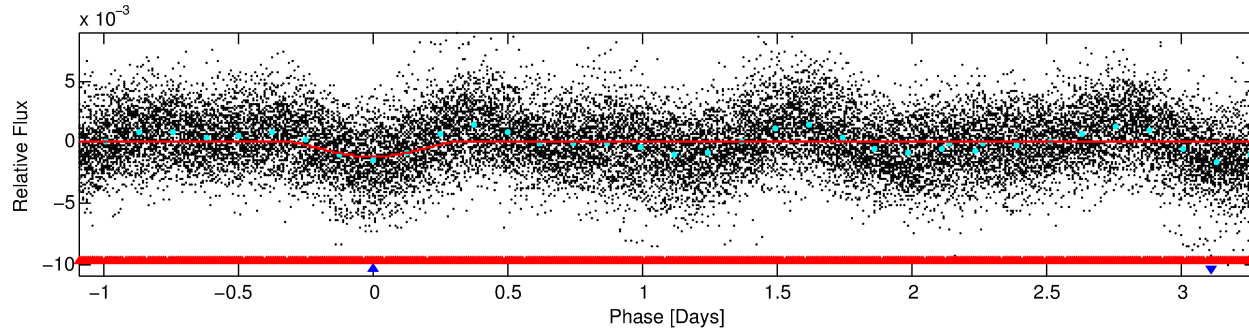
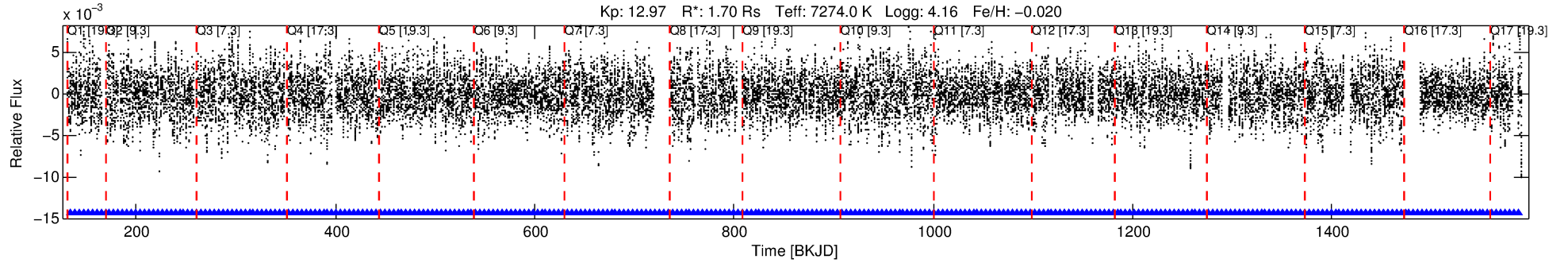
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007973199-02

No Significant Match Found

DV One-Page Summary

KIC: 7973199 Candidate: 2 of 2 Period: 4.377 d



DV Fit Results:

Period = 4.37668 [0.00013] d
Epoch = 134.2386 [0.0258] BKJD
Rp/R* = 0.0561 [0.0591]
a/R* = 1.29 [0.07]
b = 1.00 [0.09]
Seff = 1991.07 [833.42]
Teq = 1703 [178] K
Rp = 10.40 [11.48] Re
a = 0.0603 [0.0163] AU
Ag = 17.99 [38.55] [0.44 σ]
Teffp = 5424 [2869] K [1.29 σ]

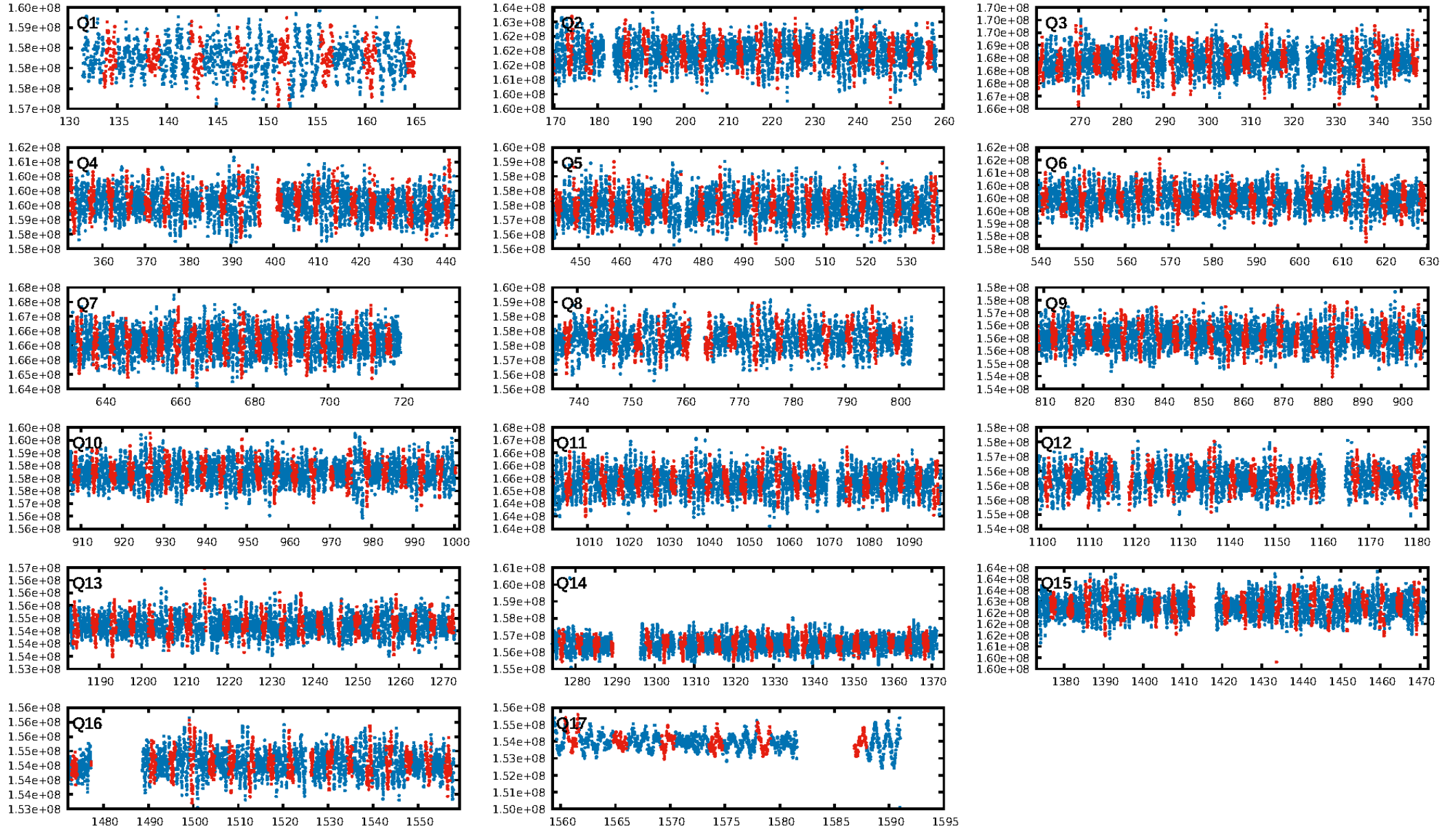
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.85 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.19e-12
RollingBand-fgt: 1.00 [213/213]
GhostDiagnostic-chr: 0.9958
Centroid-sig: 0.0%
Centroid-so: 0.127 arcsec [6.56 σ]
OotOffset-rm: 0.057 arcsec [0.43 σ]
KicOffset-rm: 0.117 arcsec [0.92 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 0.00 [0/17]

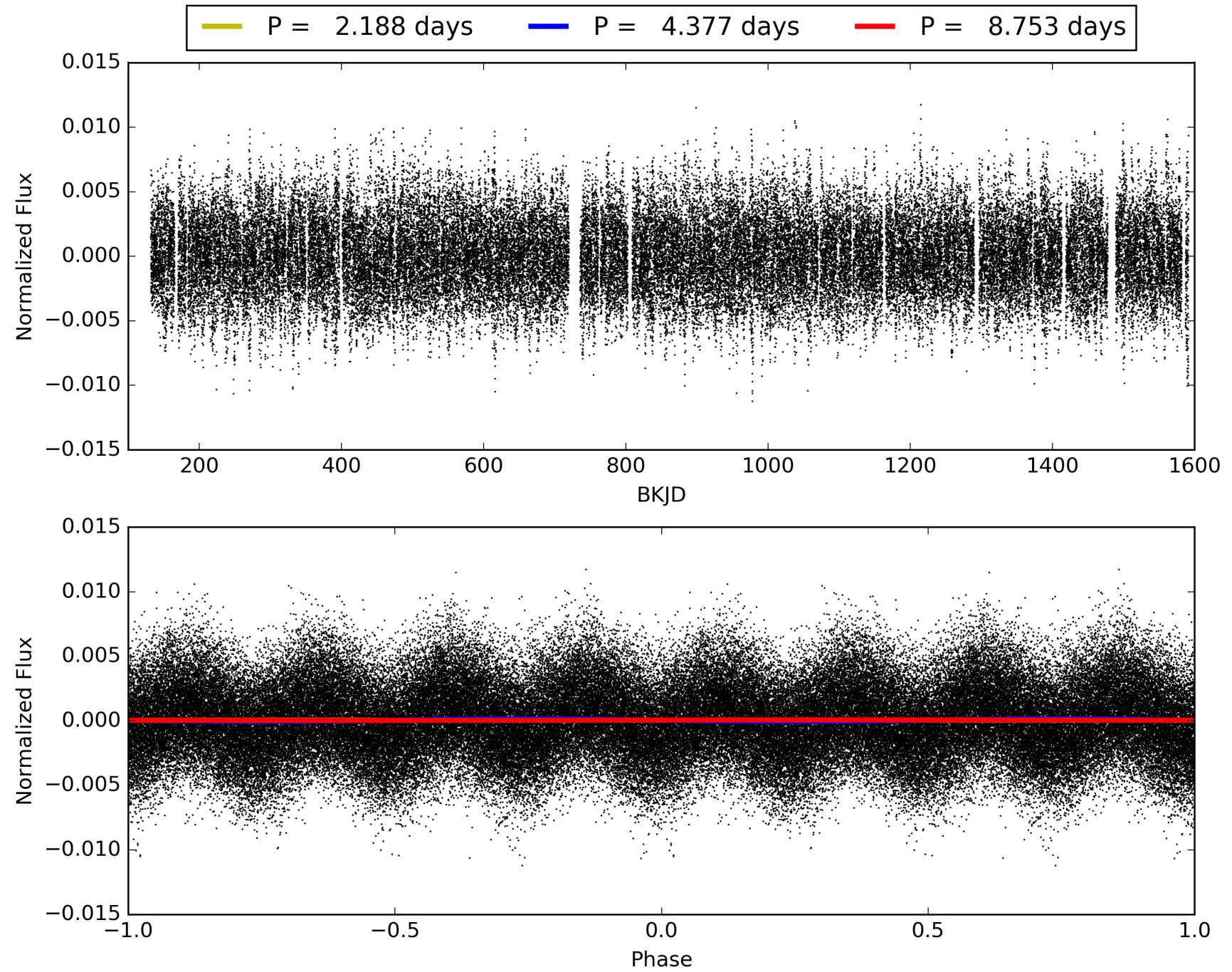
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:45:55 Z

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

TCE 007973199-02, PDC Light Curves

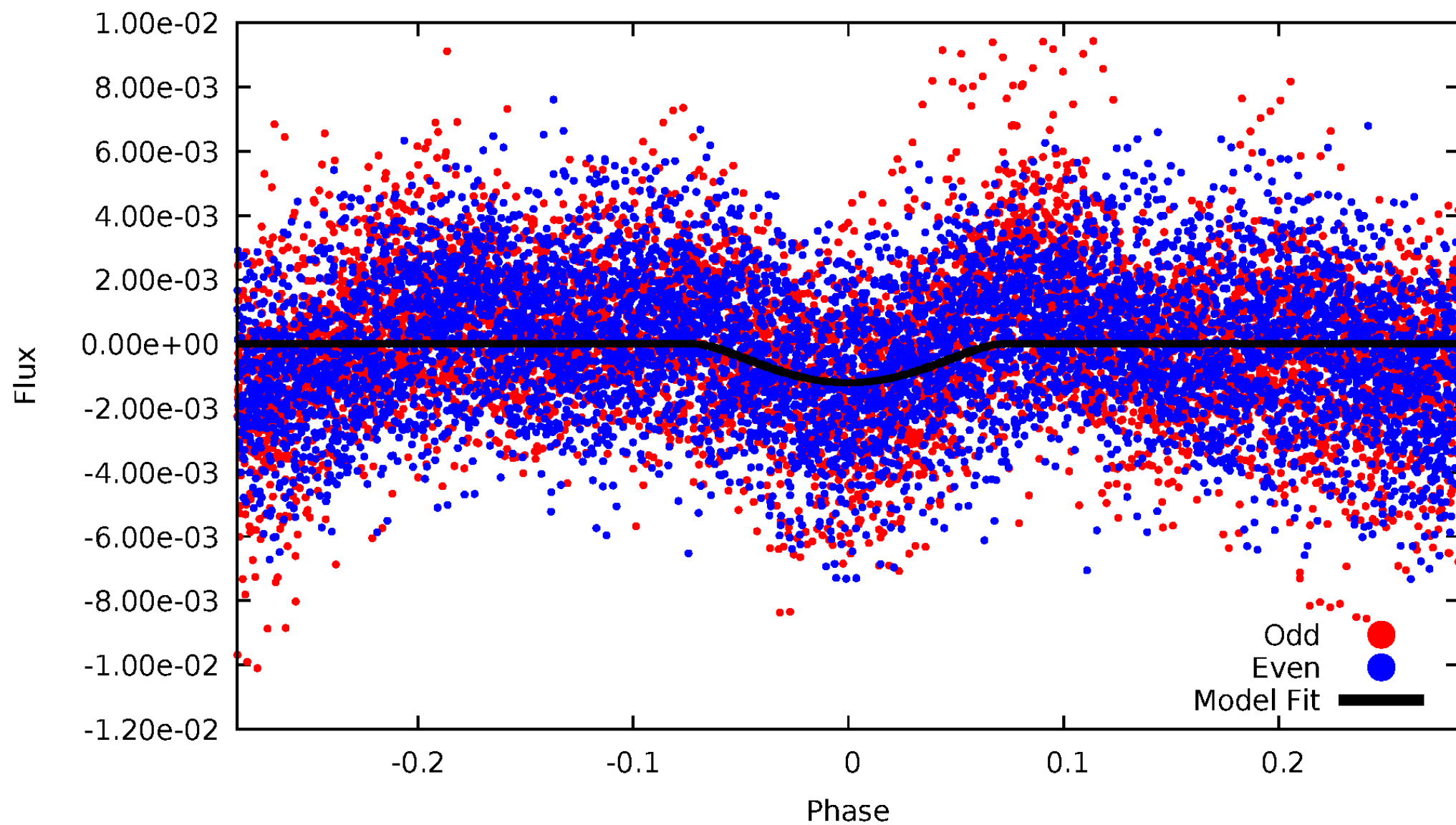


TCE 007973199-02



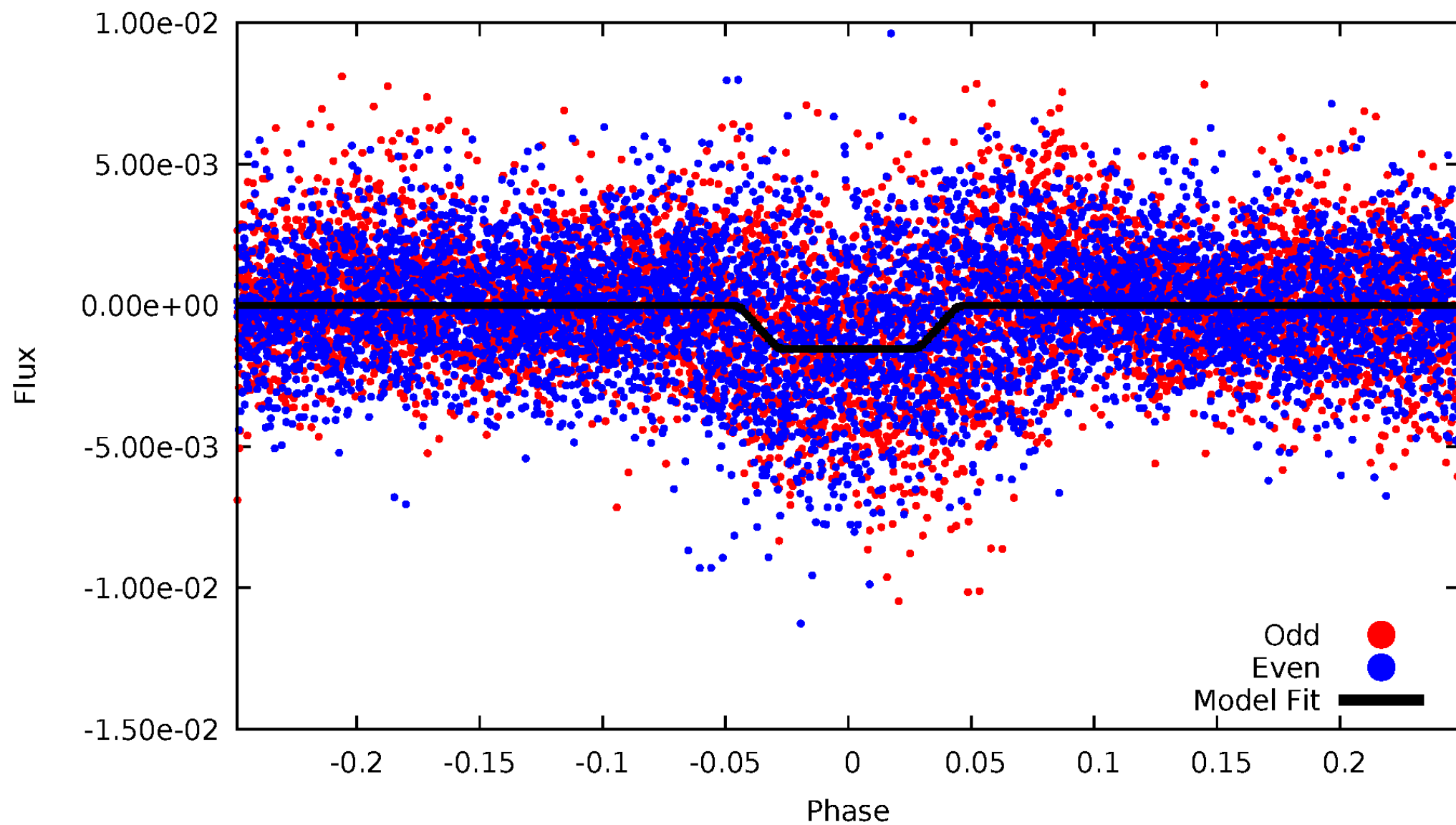
DV Odd/Even

TCE 007973199-02



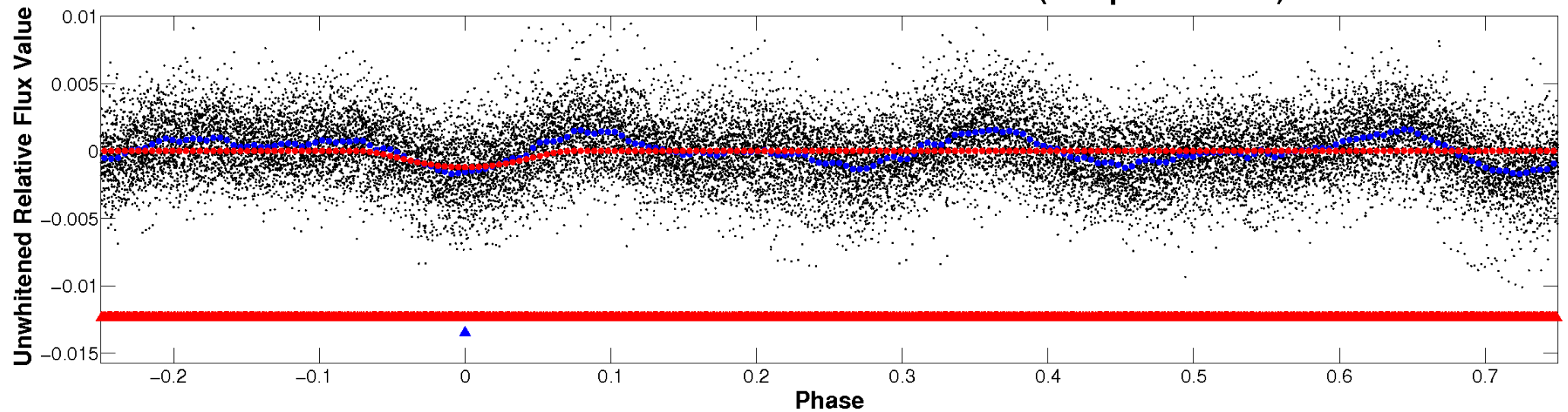
ALT Odd/Even

TCE 007973199-02

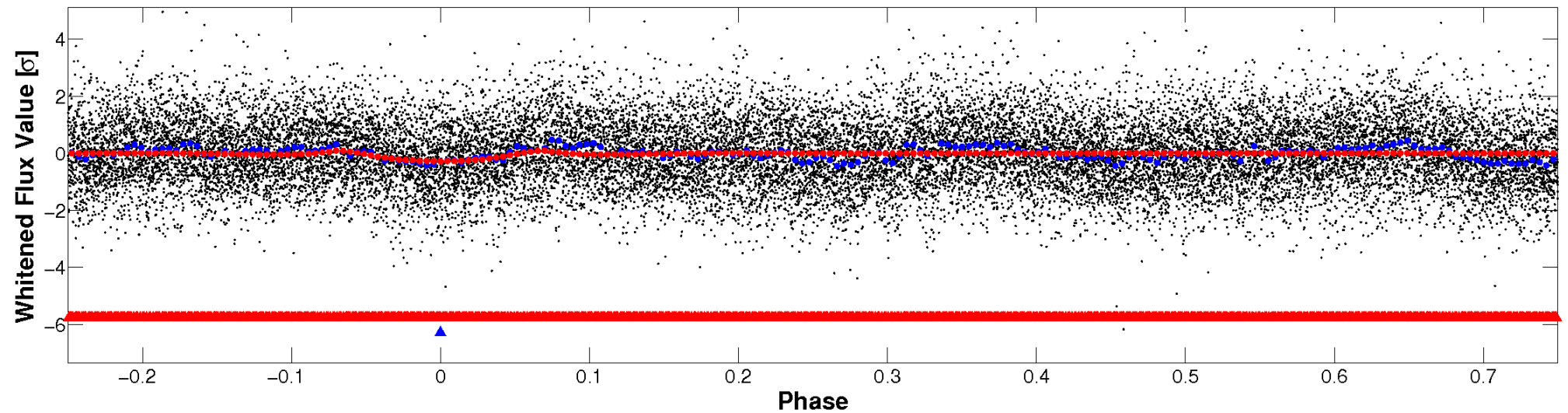


Non-Whitened Vs. Whitened Light Curve

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

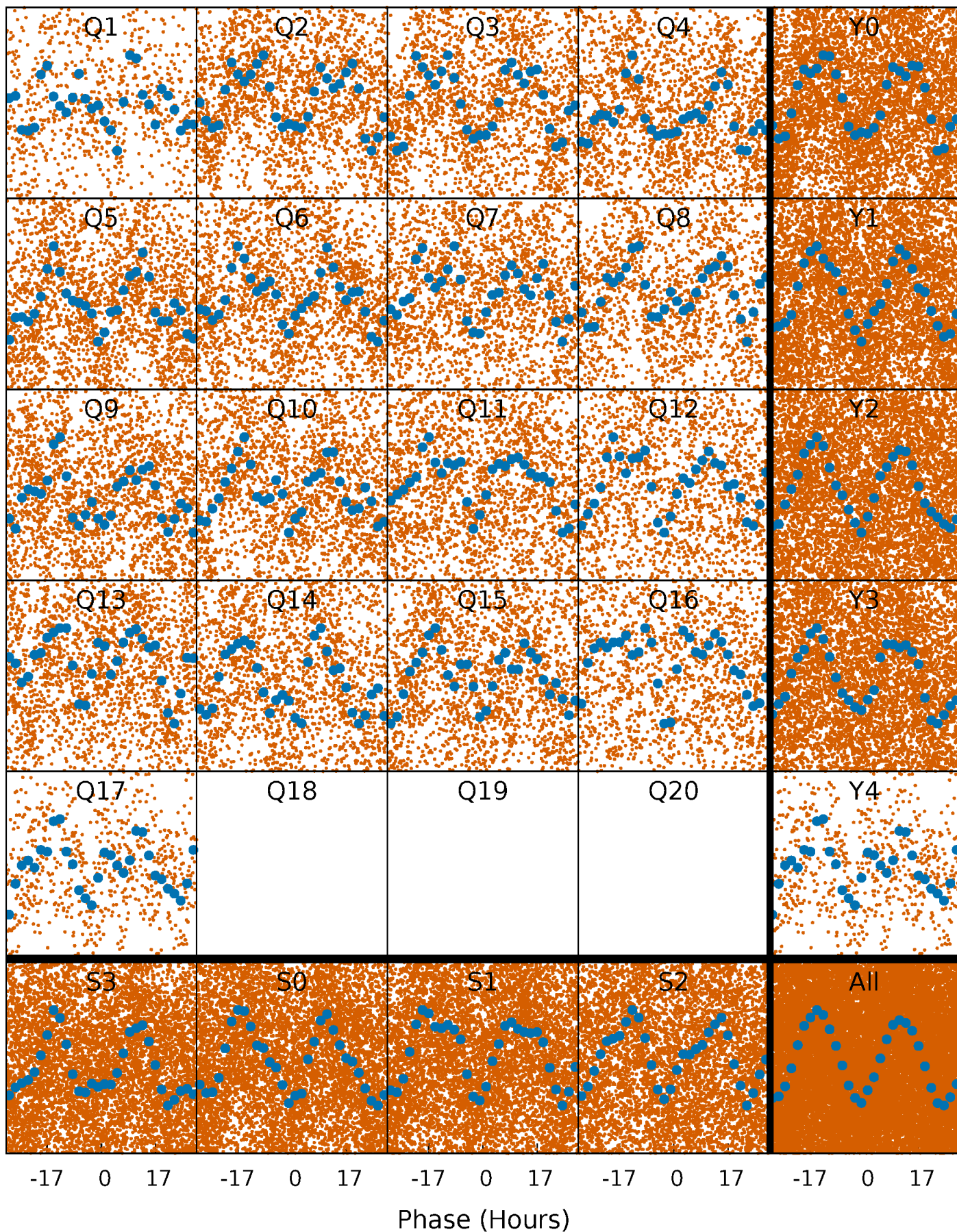


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



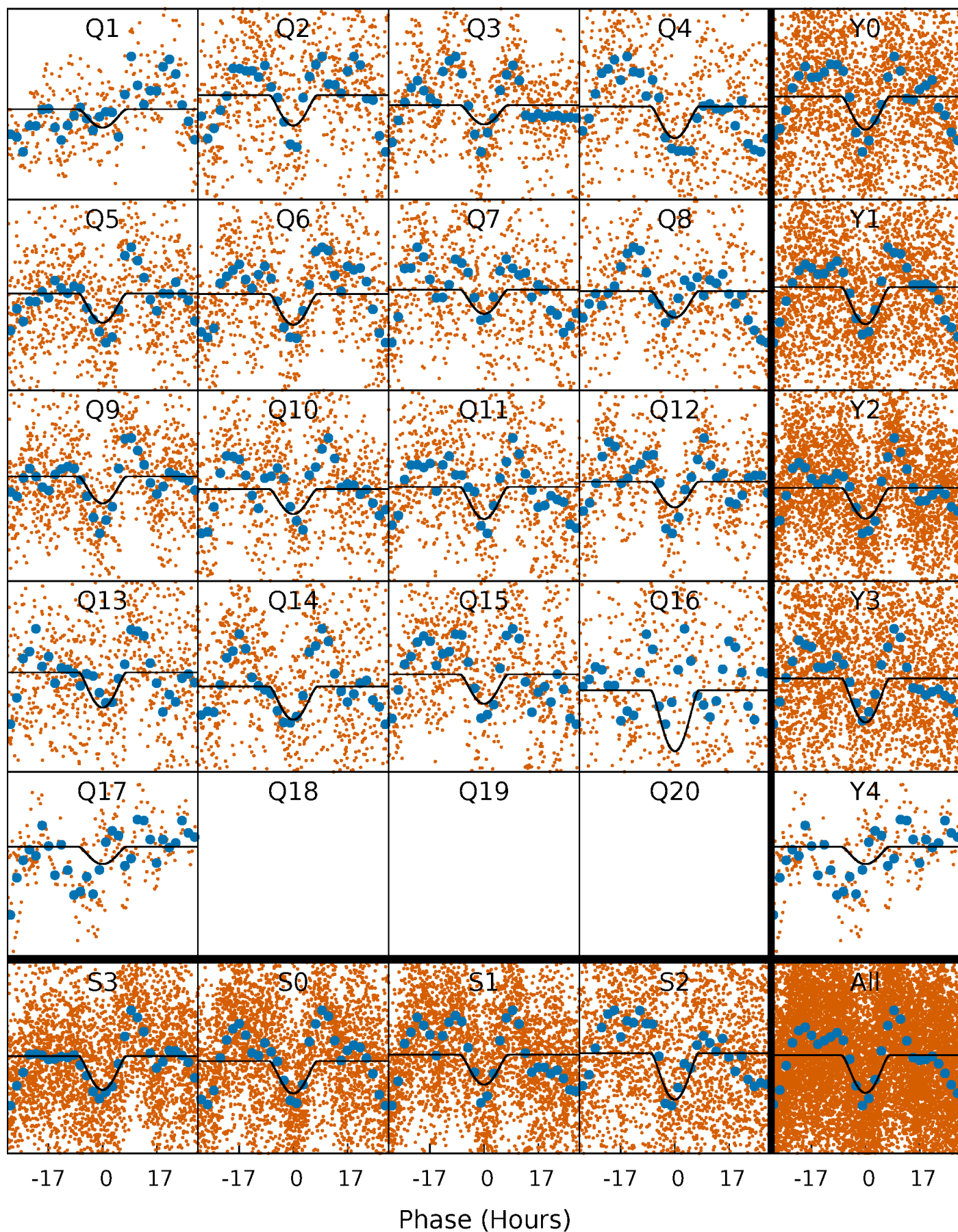
PDC Quarter-Phased Transit Curves

TCE 007973199-02 P= 4.376676 Days $T_0=134.238567$ (BKJD)



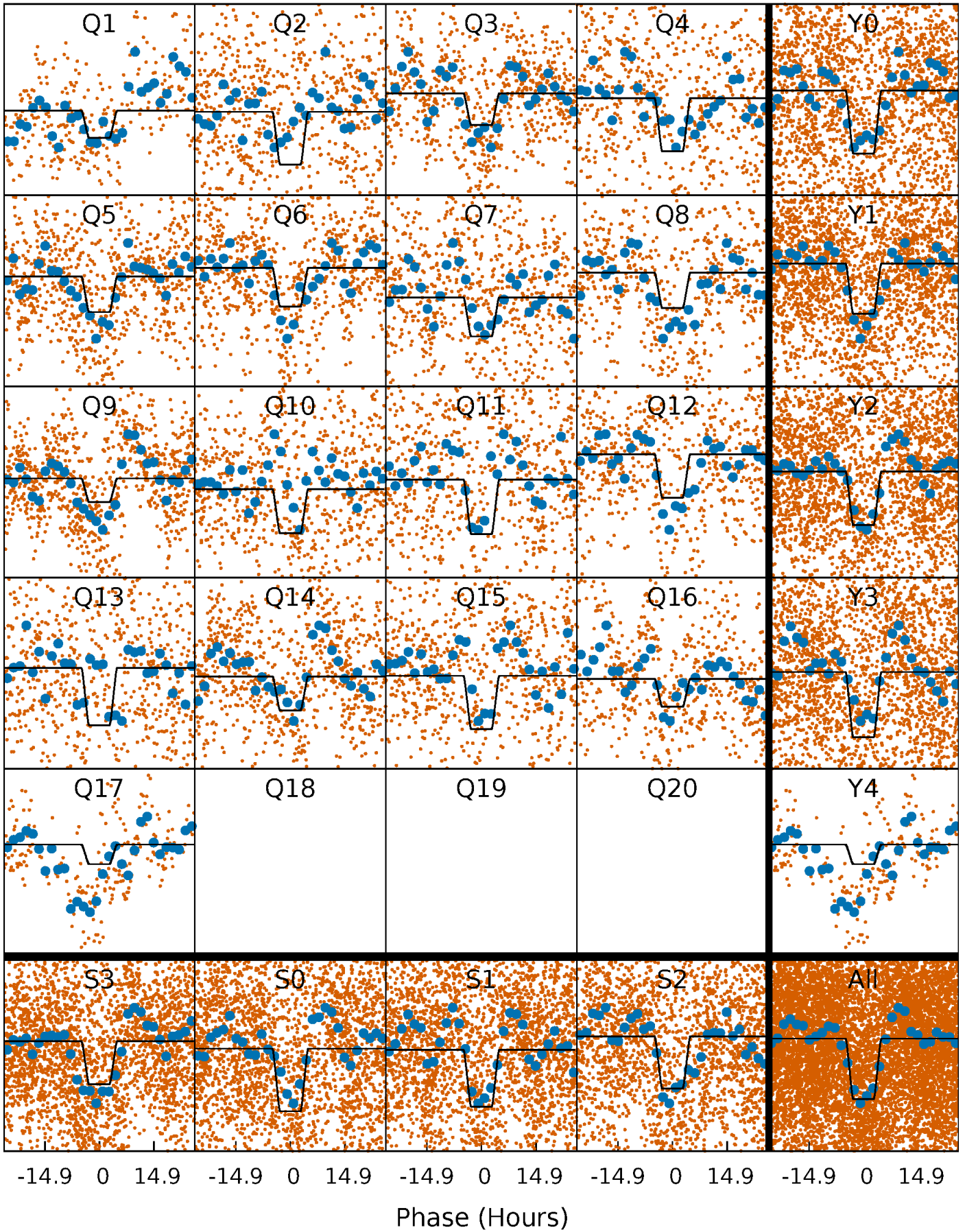
DV Quarter-Phased Transit Curves

TCE 007973199-02 $P = 4.376676$ Days $T_0 = 134.238567$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

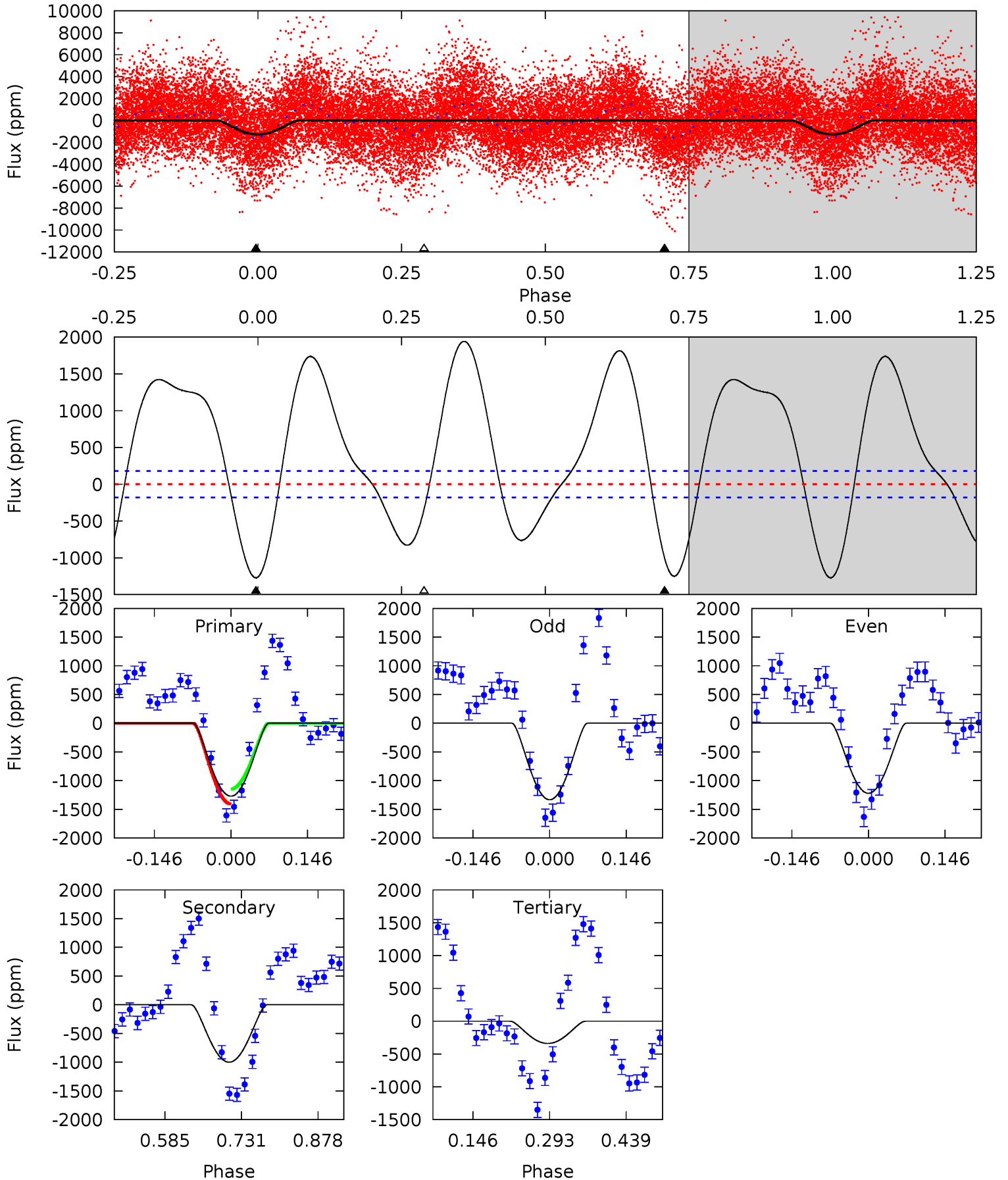
TCE 007973199-02 P= 4.376753 Days $T_0=134.198639$ (BKJD)



DV Model-Shift Uniqueness Test

007973199-02, P = 4.376676 Days, E = 129.861891 Days

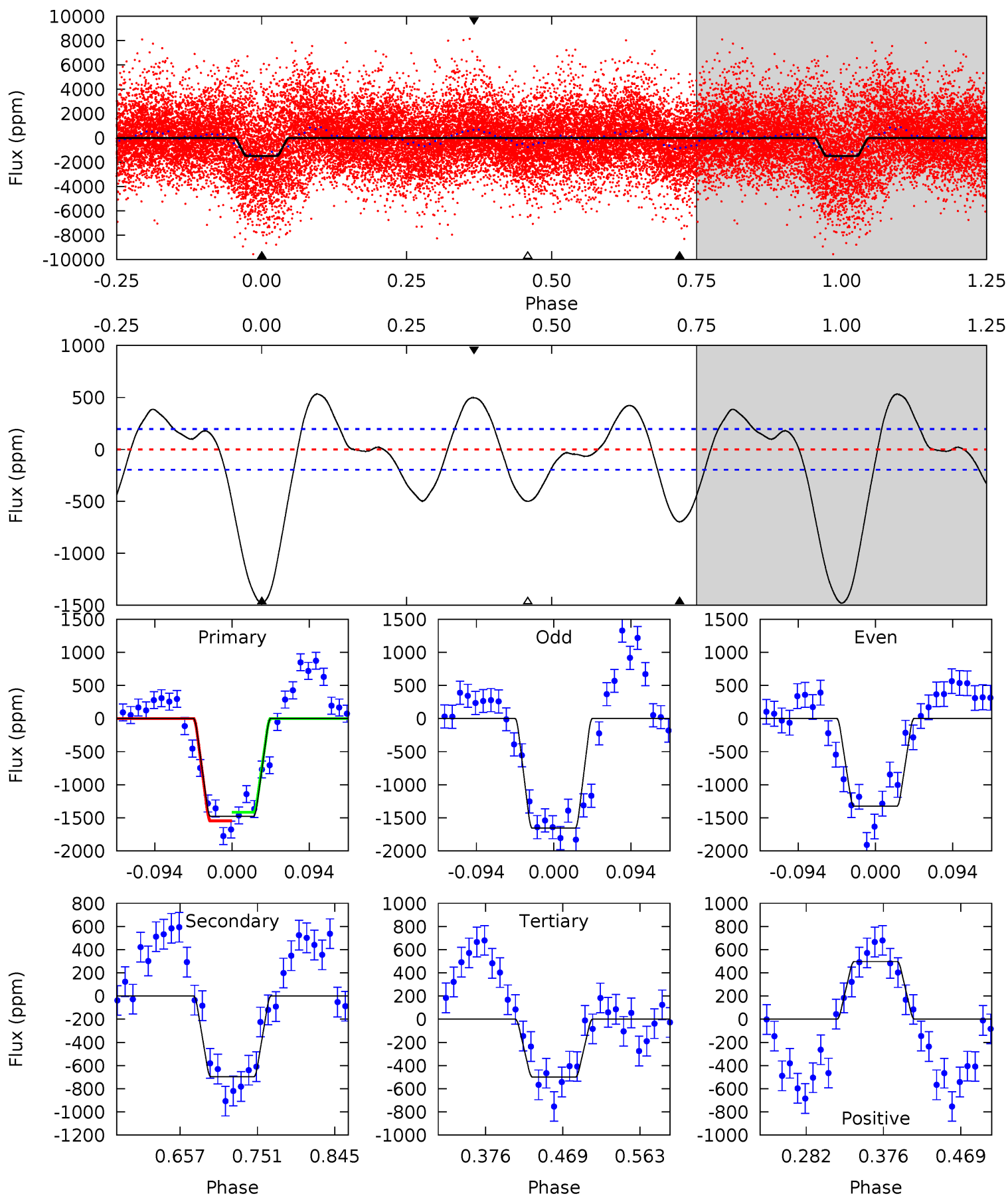
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.6	24.9	8.44	0	4.48	1.45	20.1	23.2	31.6	16.4	24.9	1.40	0.57	0.60	3.28



Alt Model-Shift Uniqueness Test

007973199-02, P = 4.376753 Days, E = 129.821886 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.7	16.3	11.7	11.7	4.58	1.68	6.63	23.0	23.0	4.63	4.68	3.92	1.06	0.26	1.51



Stellar Parameters For KIC 007973199

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7274^{+230}_{-316}	$4.161^{+0.109}_{-0.202}$	$-0.020^{+0.200}_{-0.350}$	$1.698^{+0.563}_{-0.303}$	$1.523^{+0.212}_{-0.236}$	$0.438^{+0.266}_{-0.222}$
	+3%/-4%	+3%/-5%	+1000%/-1750%	+33%/-18%	+14%/-15%	+61%/-51%
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 007973199-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1000 ± 40	$14.12^{+11.22}_{-8.60}$	2389^{+201}_{-143}	4774^{+2705}_{-920}	10^{+53}_{-7}
Alt.	-697 ± 43	$10.72^{+10.77}_{-7.30}$	2404^{+197}_{-153}	5015^{+4253}_{-1215}	12^{+110}_{-9}

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 $A_{obs} \gg 1.0$

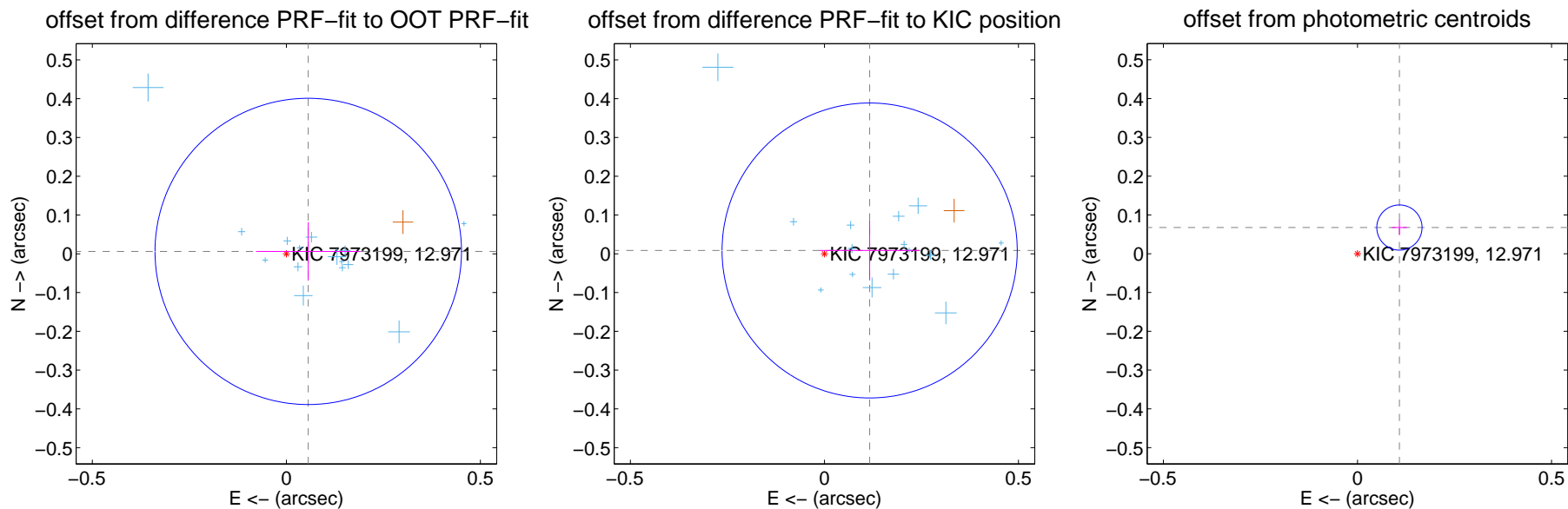
DV Centroid Data

Supplemental centroid analysis for 007973199-02. Kepler magnitude: 12.97. Transit SNR 10.31

There are 16 quarters with good PRF difference image offsets

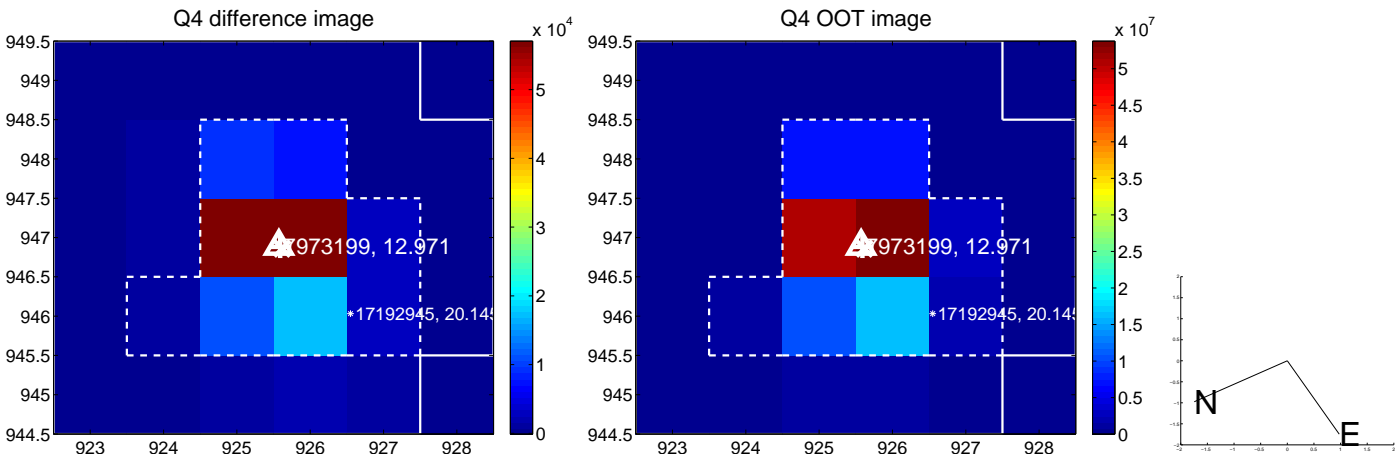
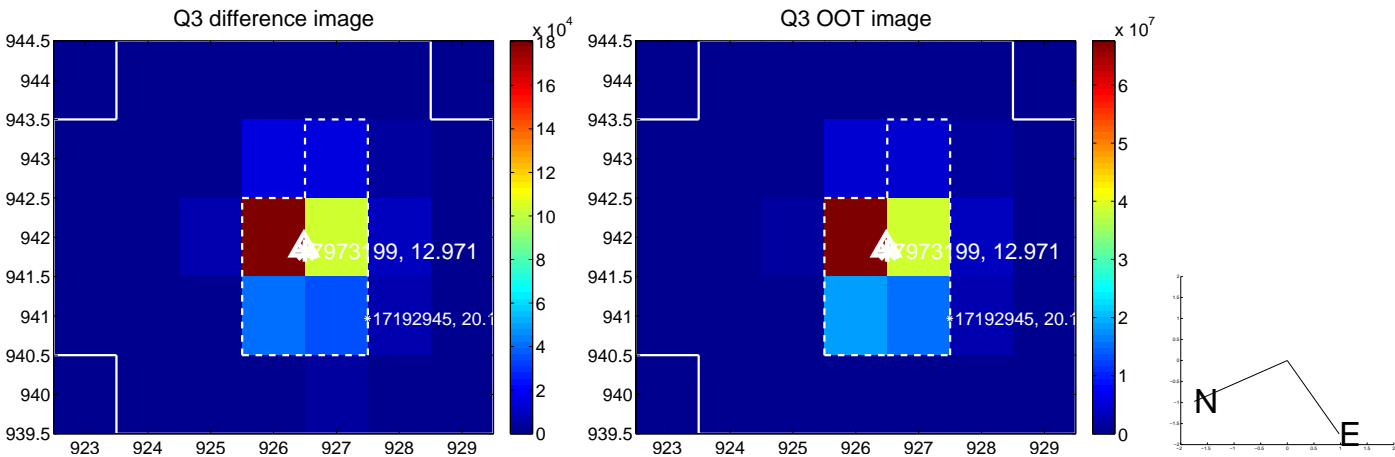
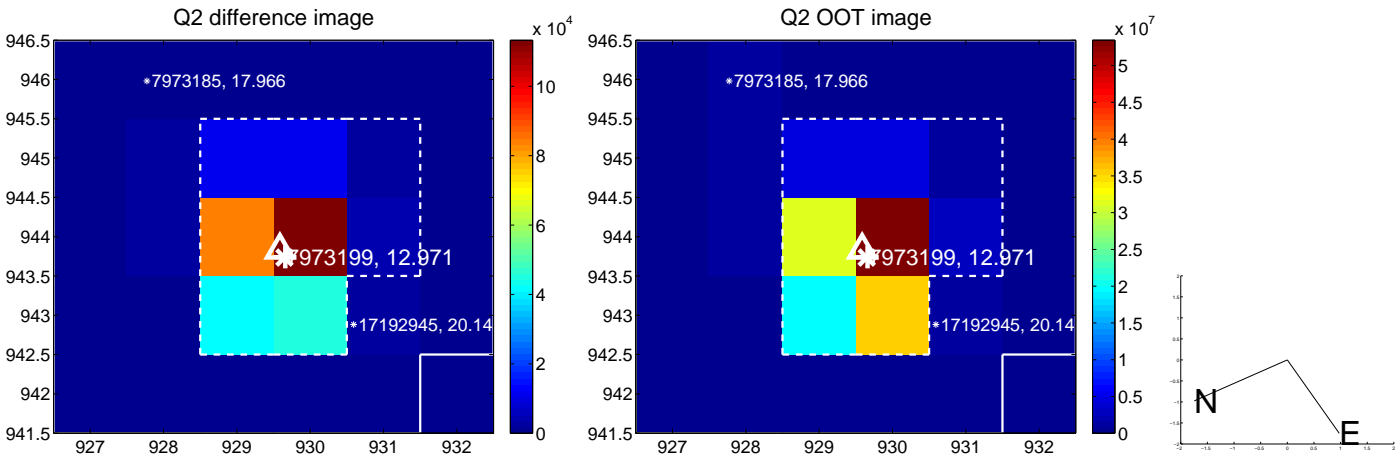
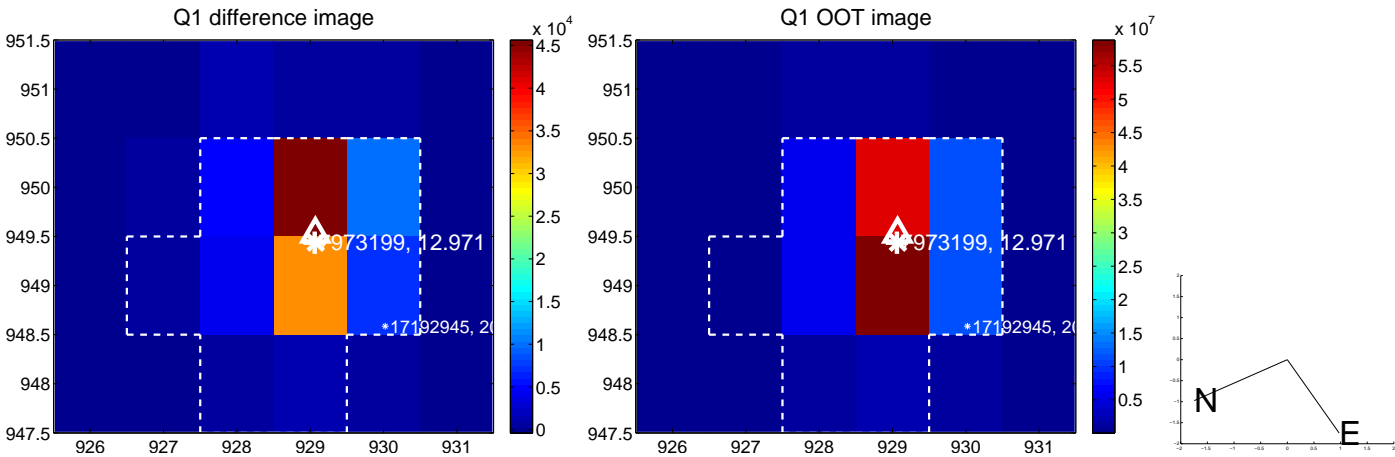
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.057 ± 0.132	0.43	-0.056 ± 0.134	0.006 ± 0.075
PRF-fit source offset from KIC position	0.117 ± 0.127	0.92	-0.117 ± 0.129	0.009 ± 0.077
photometric centroid source offset	0.13 ± 0.02	6.56	-0.11 ± 0.02	0.07 ± 0.02

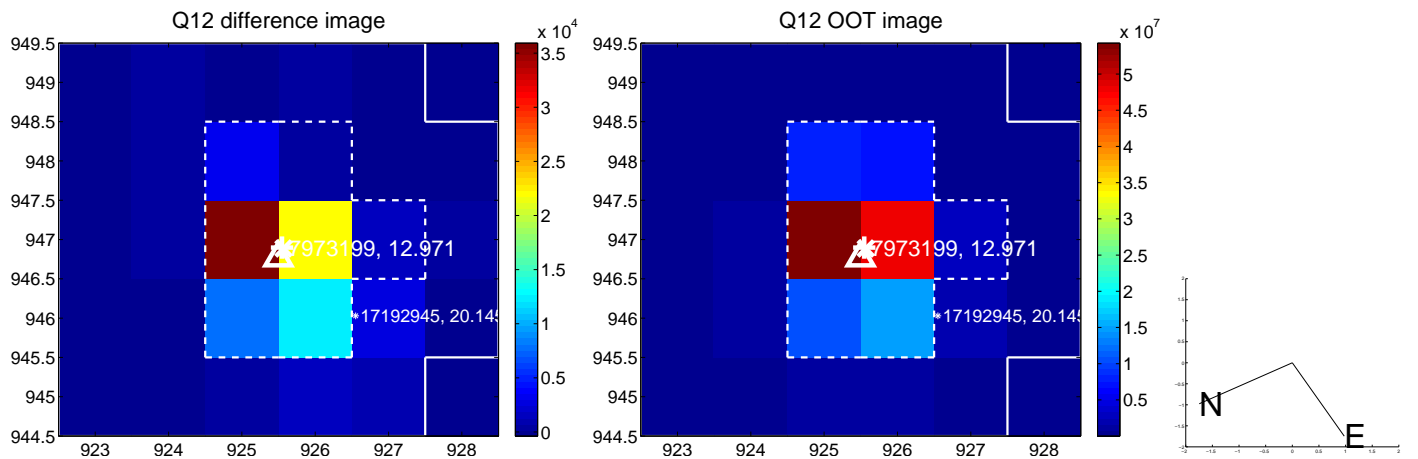
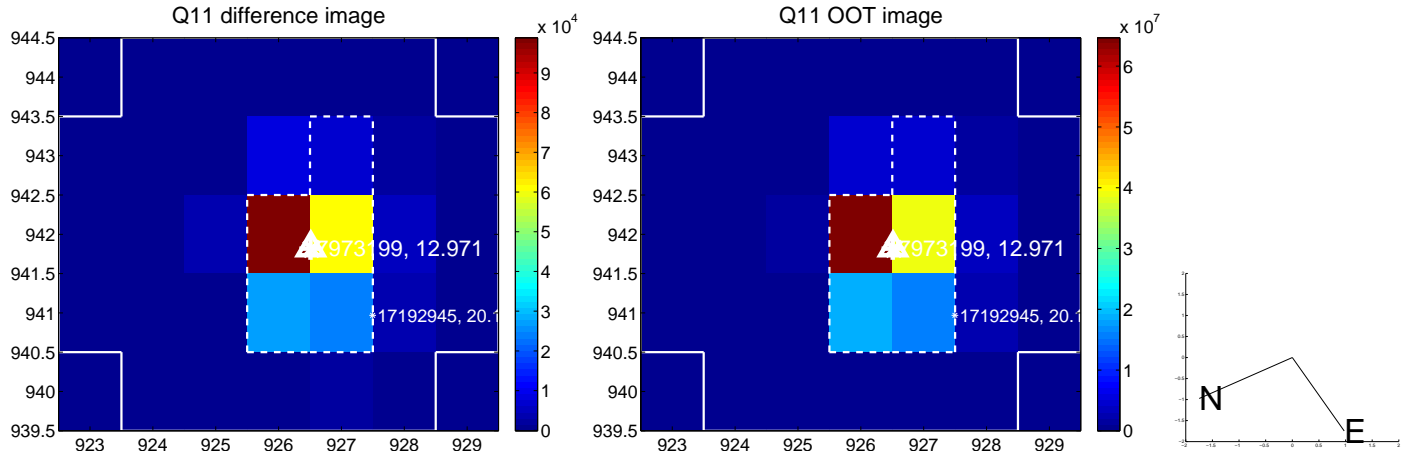
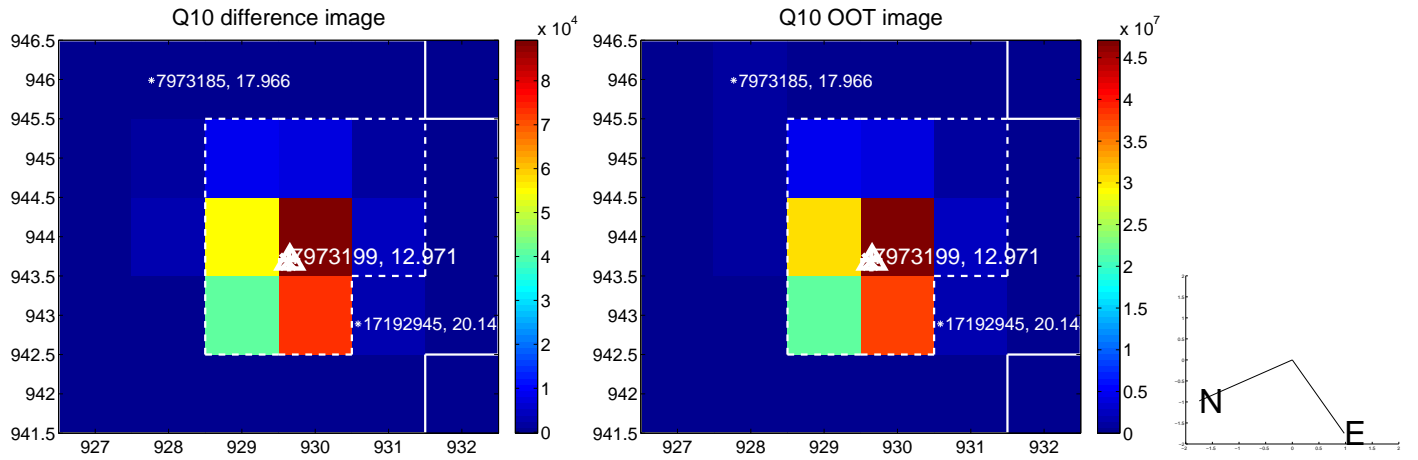
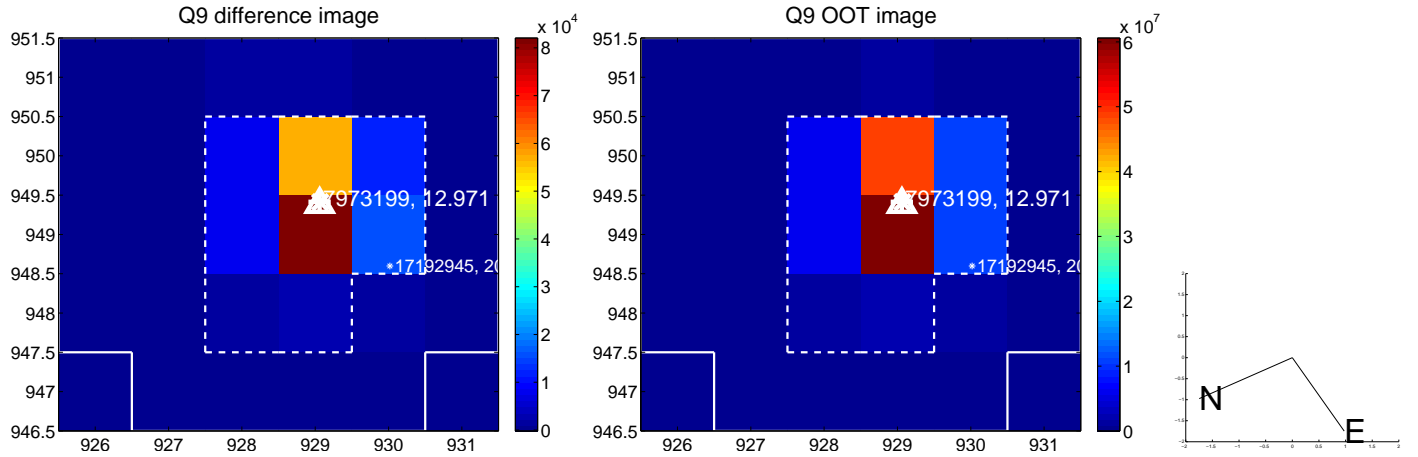


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

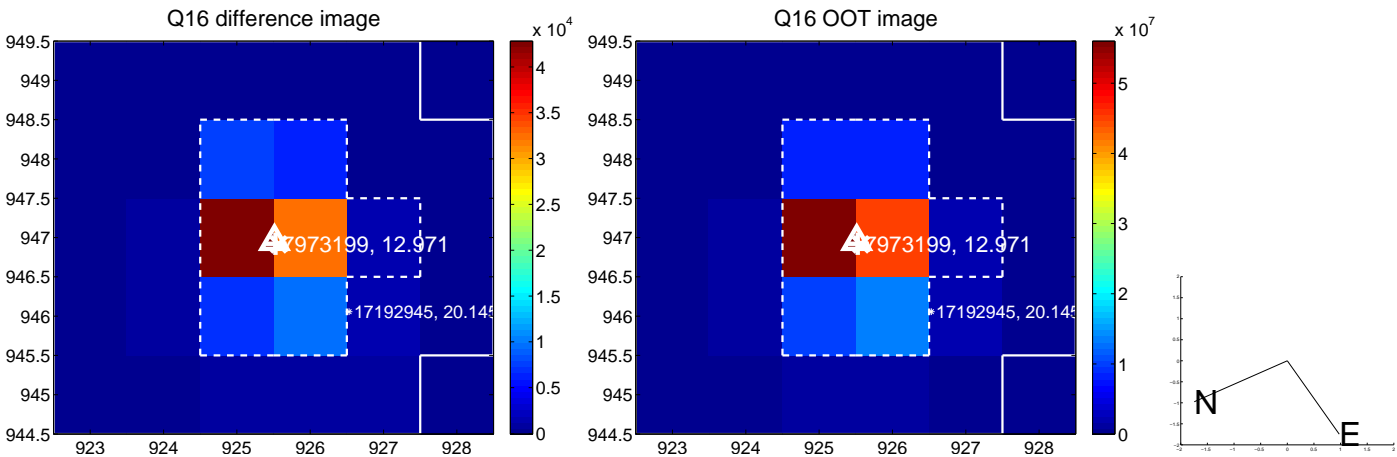
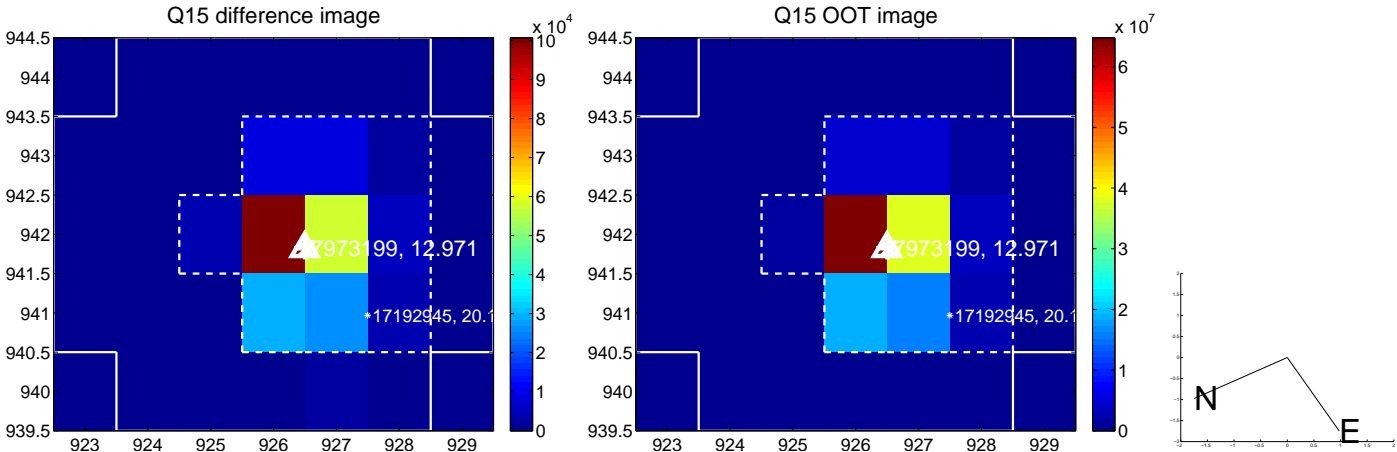
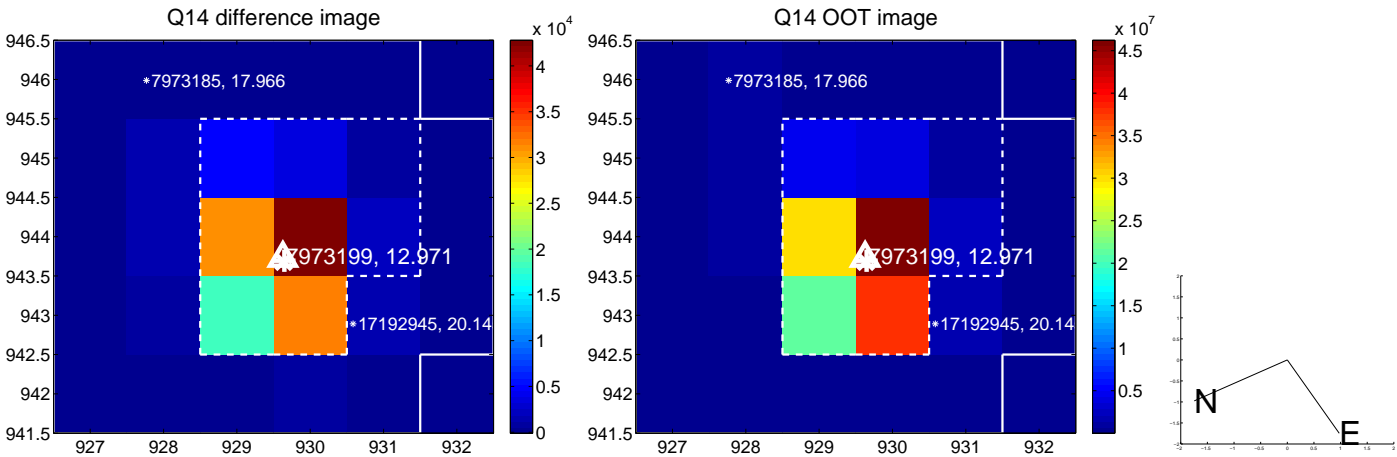
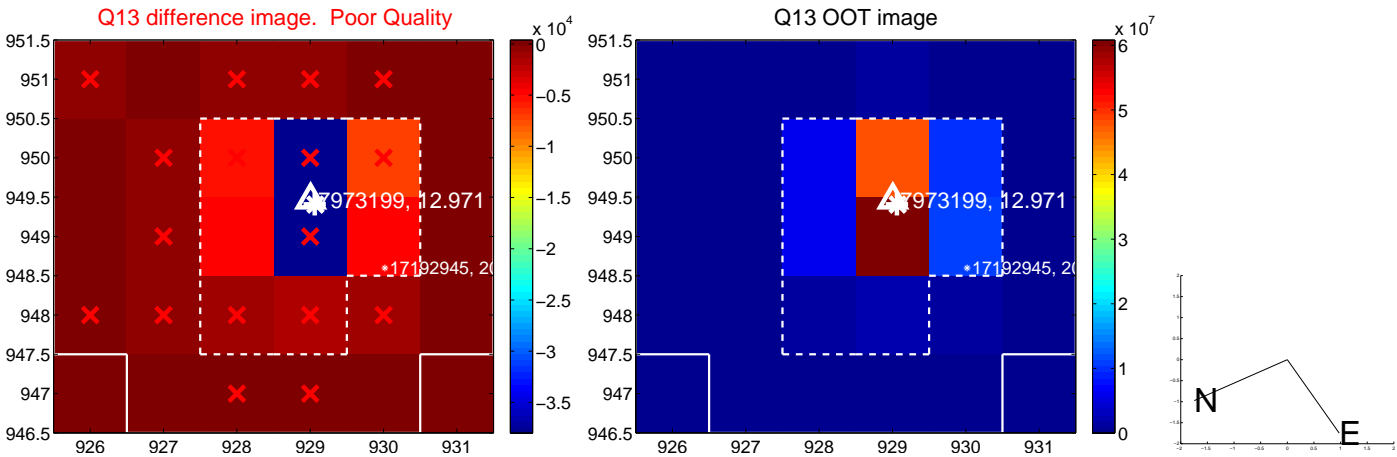
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



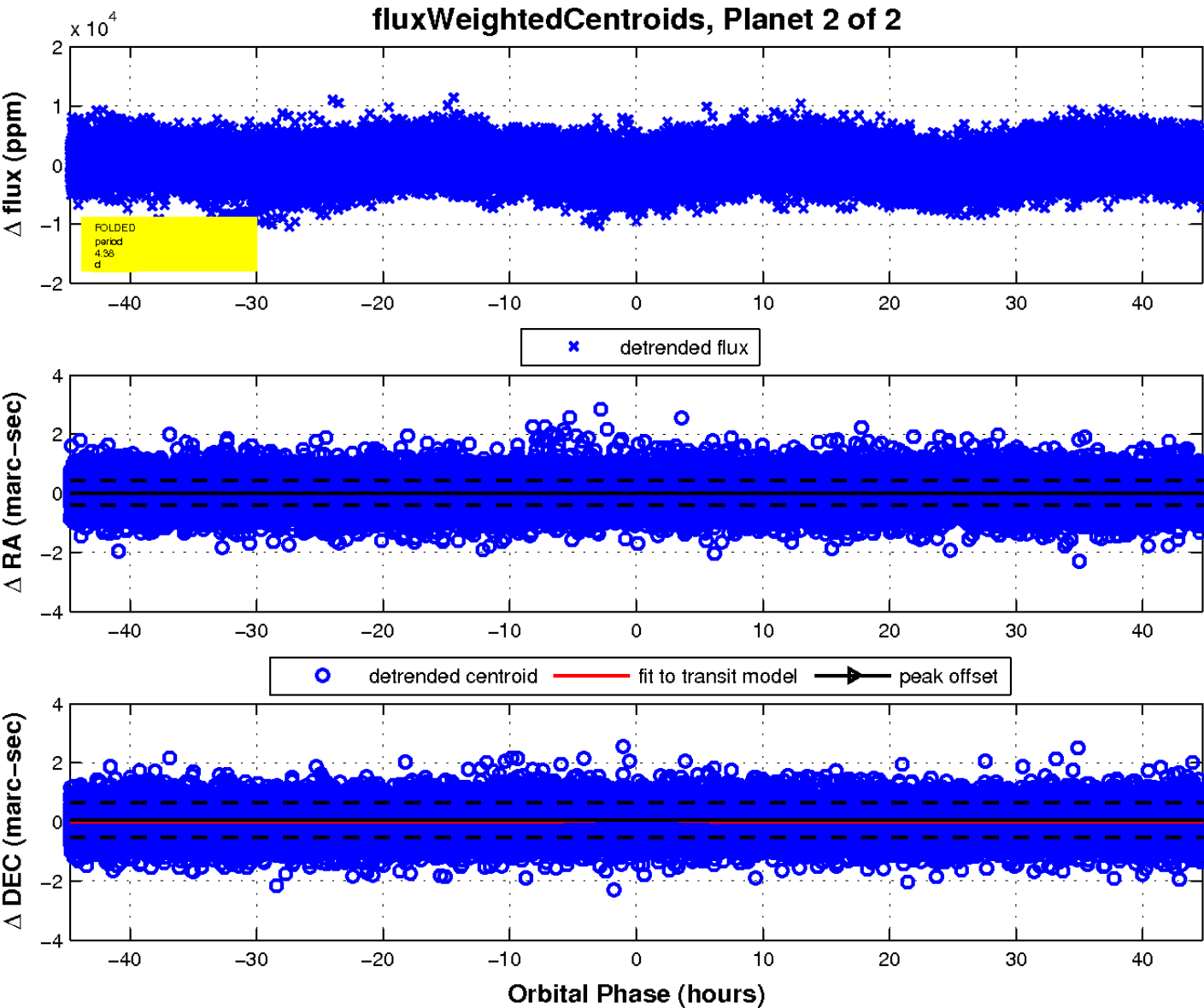
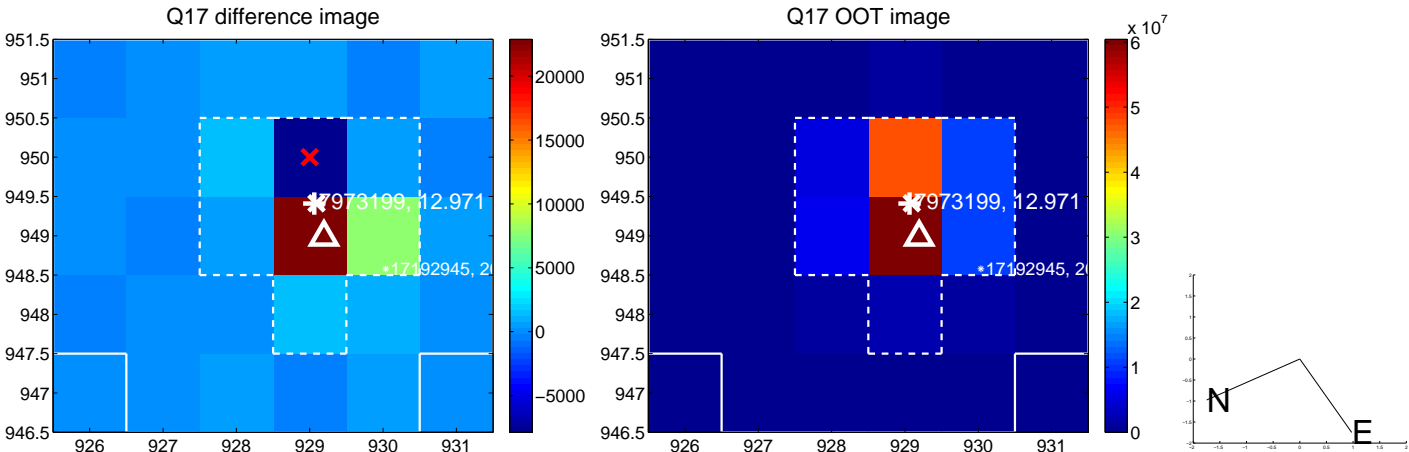
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

