

KIC 007017274

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})
007017274-01	OBS	3209.01	11.912673	143.153958	117.4	6.163	15.8	15.8	2.33	6337	2.93	563.13
007017274-02	OBS	3209.02	6.770665	133.349821	58.9	6.075	9.9	10.3	2.33	6337	2.10	1196.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007017274-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT
007017274-02	OBS	PC	0.57	0	0	0	0	NO_COMMENT

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

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

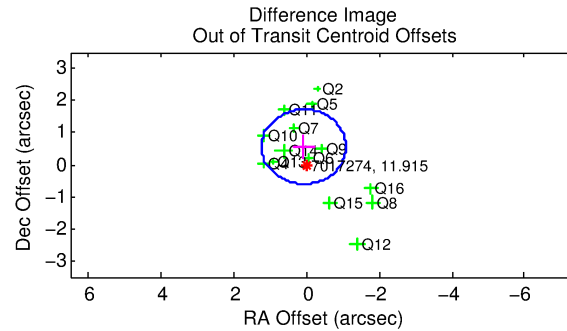
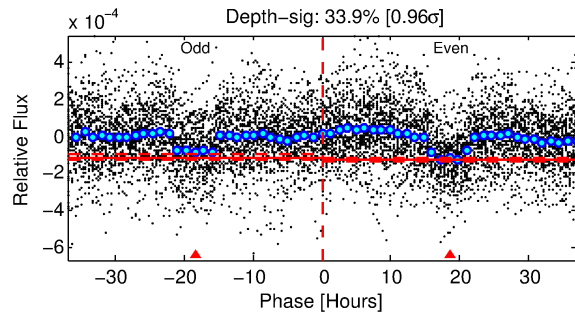
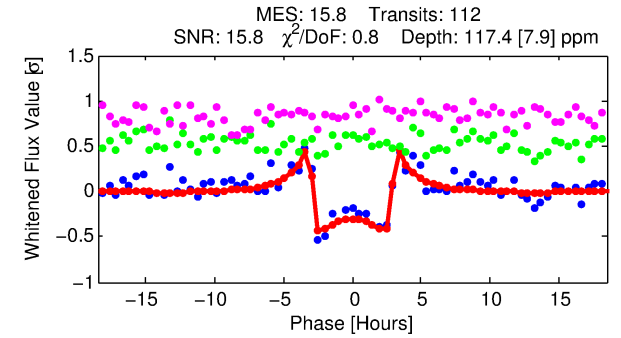
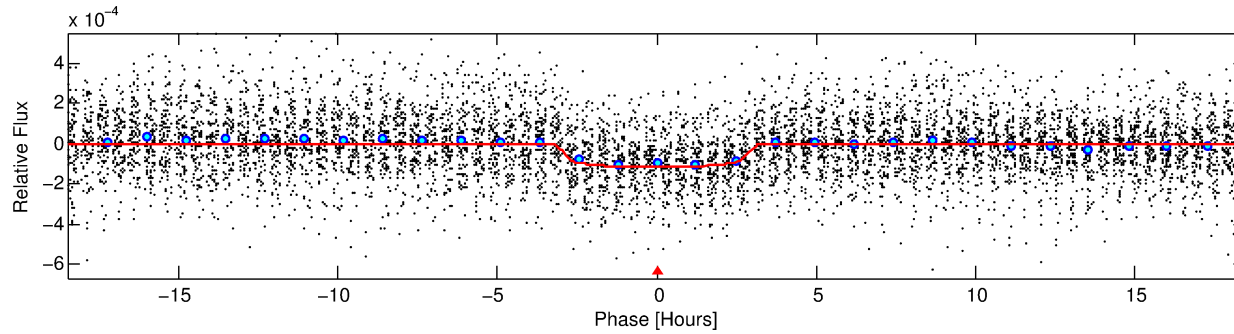
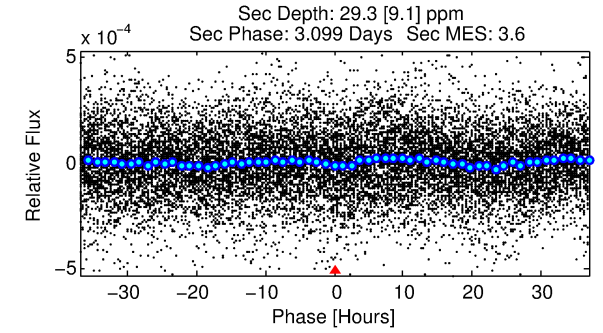
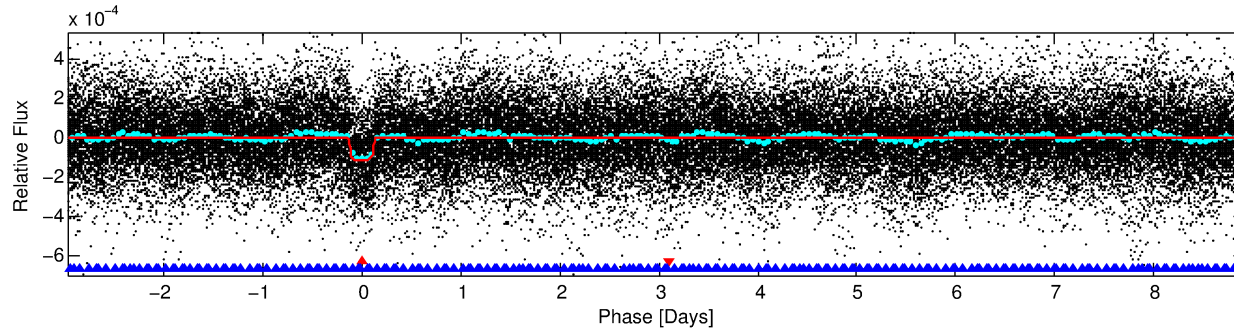
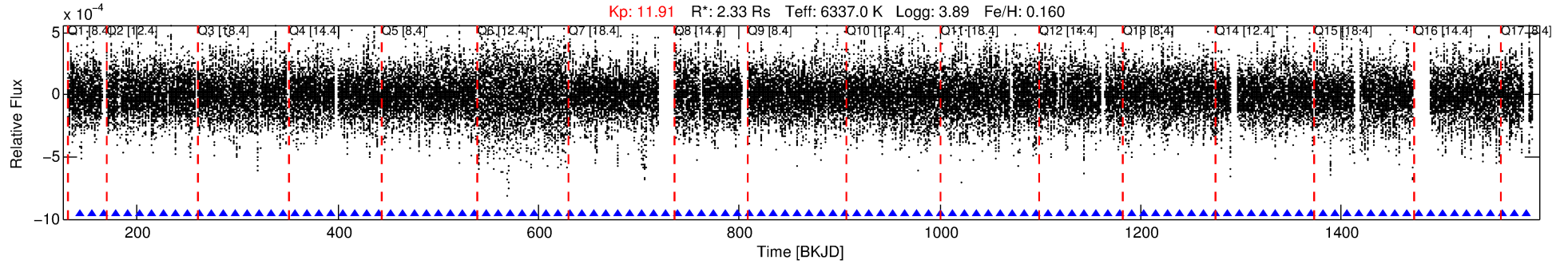
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007017274-01

No Significant Match Found

DV One-Page Summary

KIC: 7017274 Candidate: 1 of 2 Period: 11.913 d
KOI: K03209.01 Corr: 0.986



DV Fit Results:

Period = 11.91267 [0.00005] d
Epoch = 143.1540 [0.0028] BKJD
Rp/R* = 0.0115 [0.0010]
a/R* = 7.31 [2.75]
b = 0.88 [0.10]
Seff = 563.13 [251.82]
Teq = 1242 [139] K
Rp = 2.93 [0.98] Re
a = 0.1183 [0.0343] AU
Ag = 26.27 [14.95] [1.69σ]
Teffp = 4348 [391] K [7.49σ]

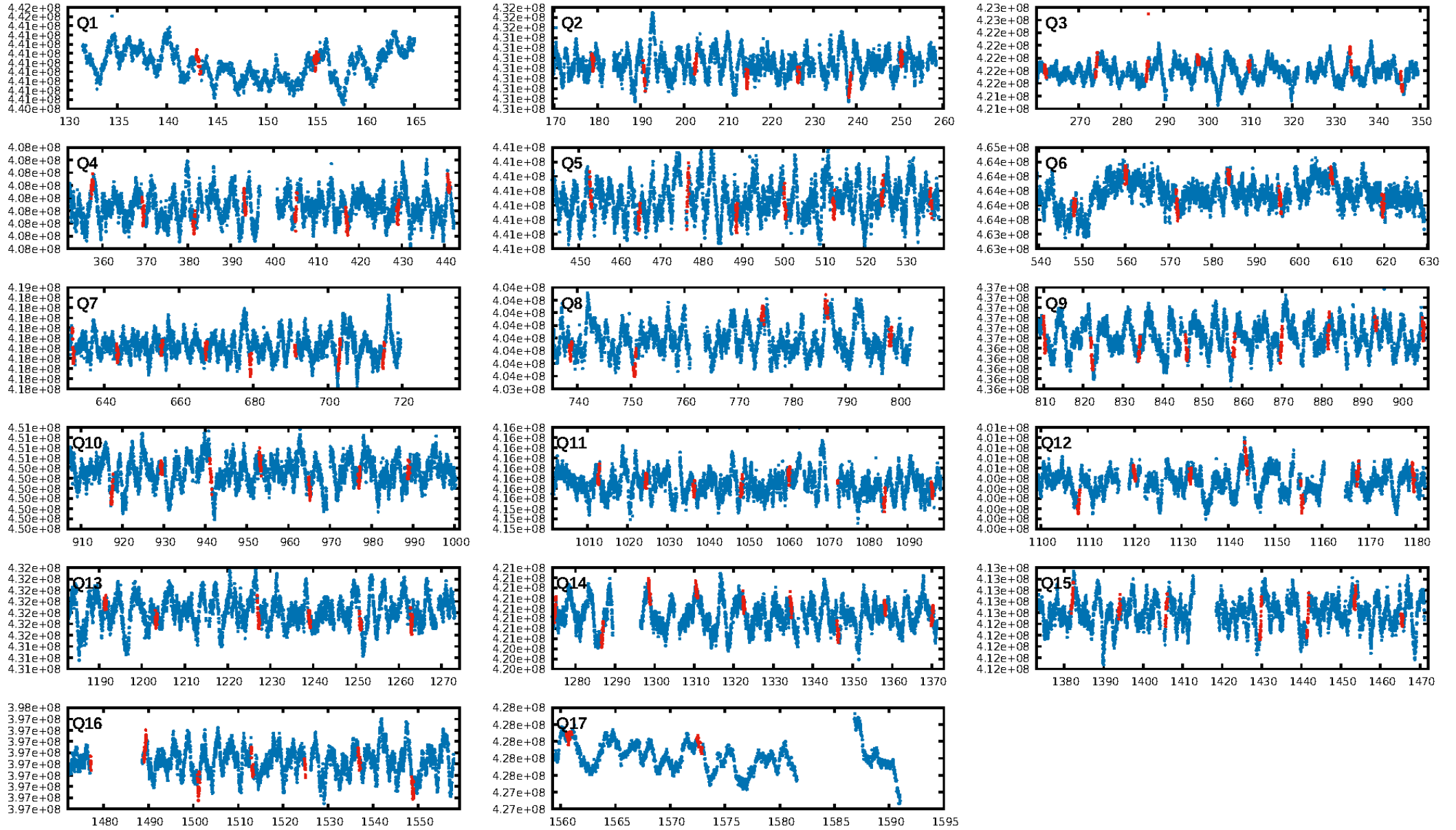
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.26σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.77e-48
RollingBand-fgt: 1.00 [108/108]
GhostDiagnostic-chr: 9.704
Centroid-sig: 34.1%
Centroid-so: 1.374 arcsec [5.49σ]
OotOffset-rm: 0.564 arcsec [1.46σ]
KicOffset-rm: 0.539 arcsec [1.52σ]
OotOffset-st: 4/3/4/3 [14]
KicOffset-st: 4/3/4/3 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 1.00 [17/17]

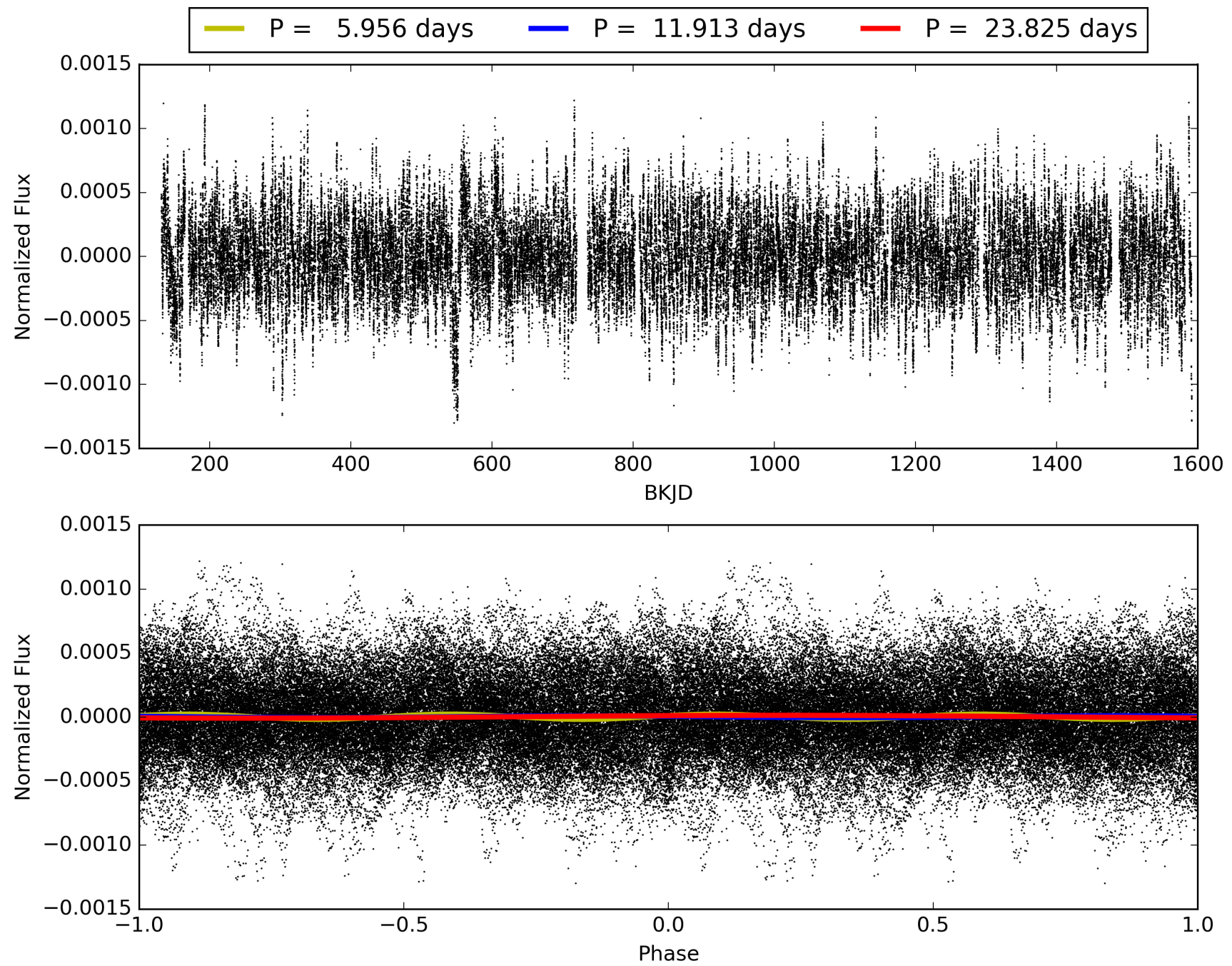
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:54:24 Z

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

TCE 007017274-01, PDC Light Curves

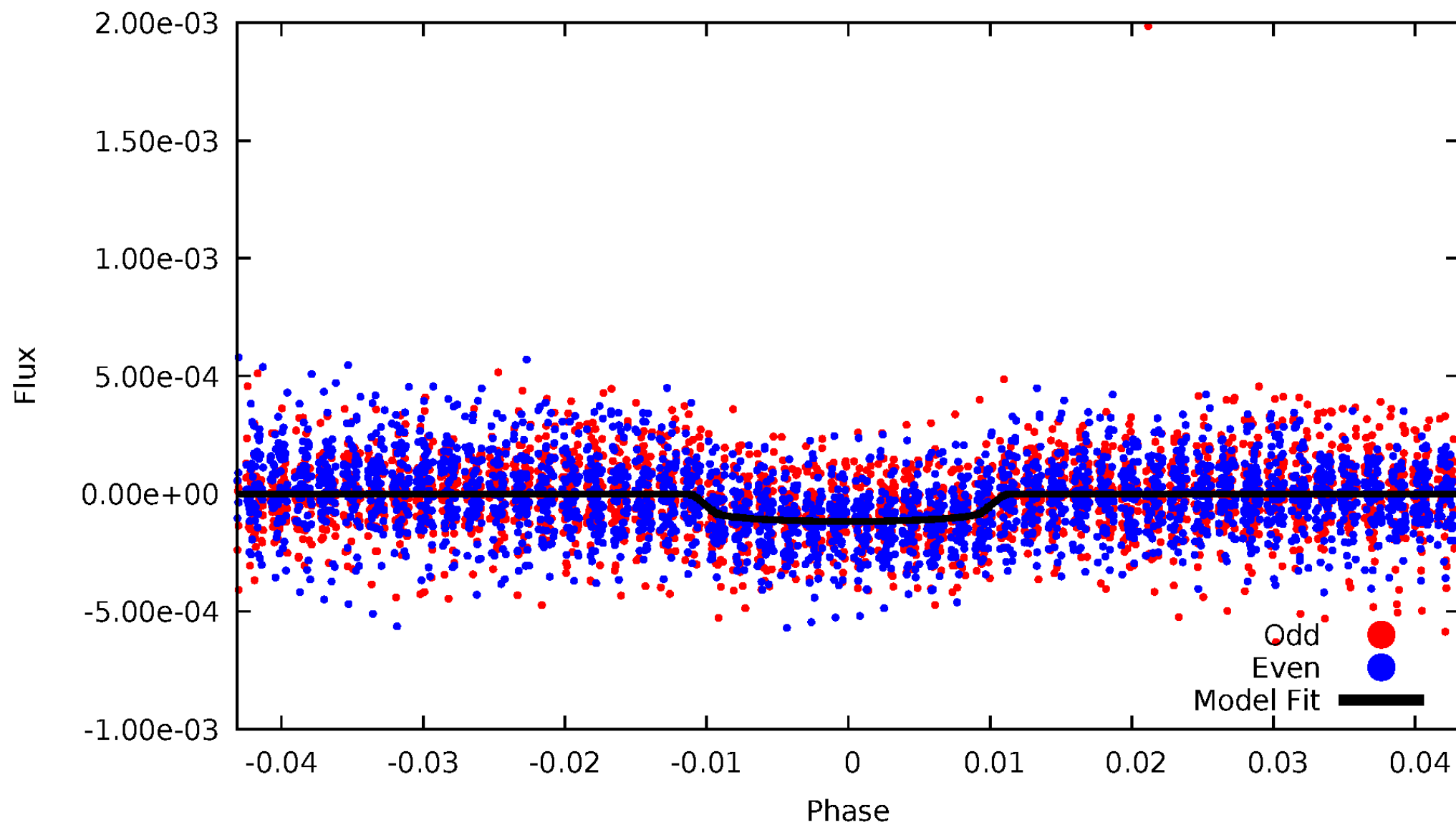


TCE 007017274-01



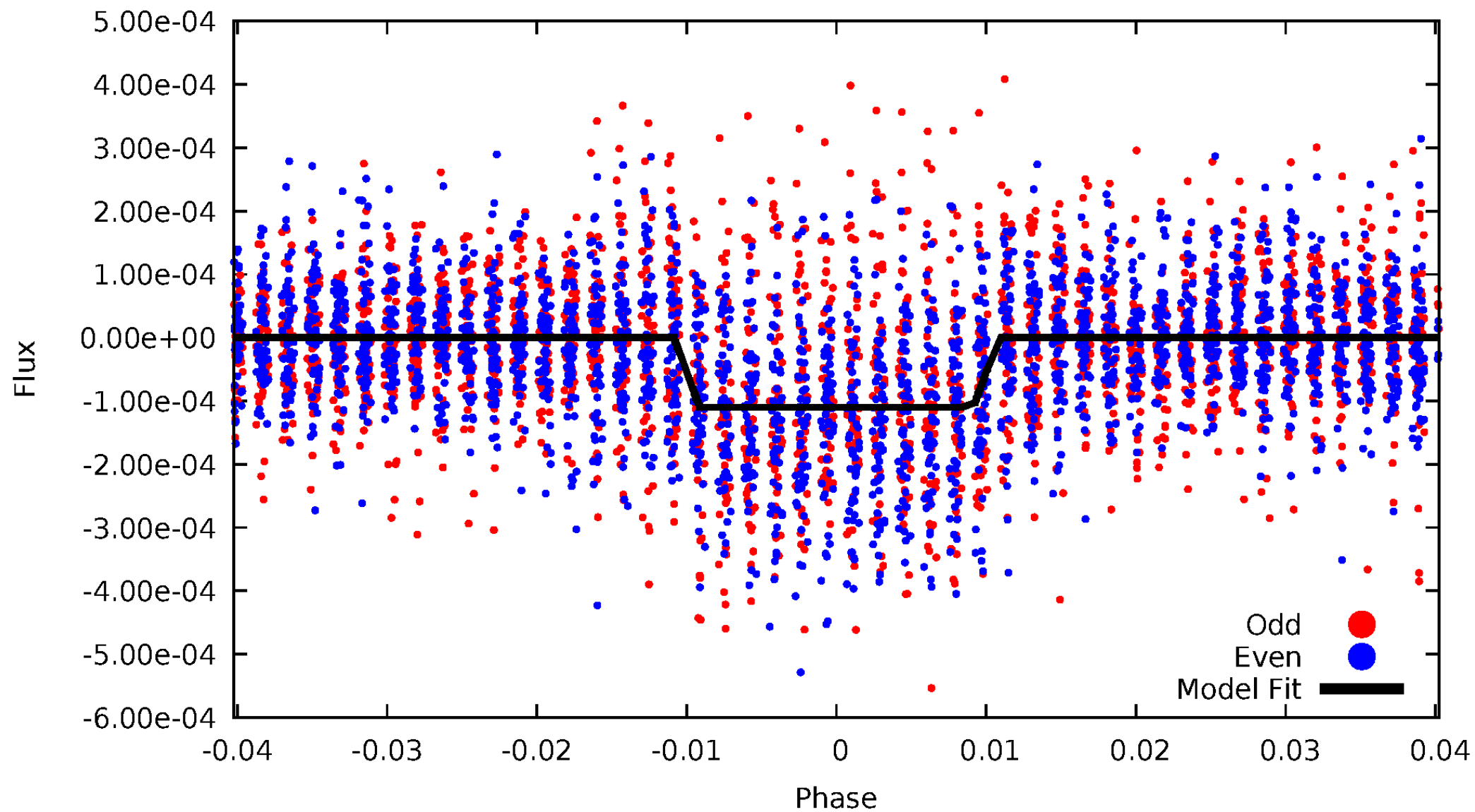
DV Odd/Even

TCE 007017274-01



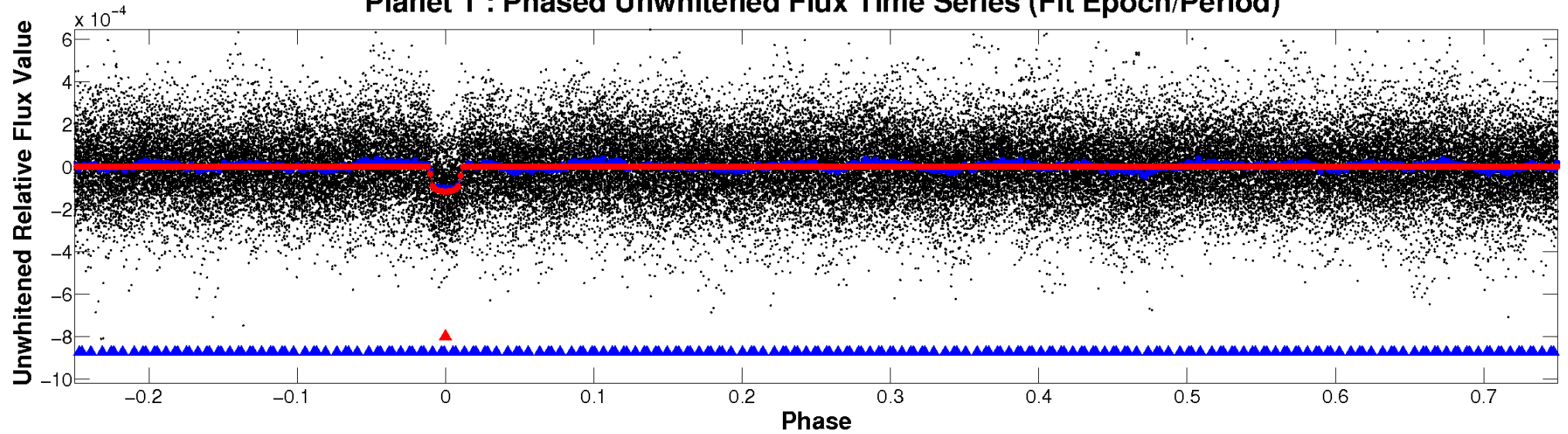
ALT Odd/Even

TCE 007017274-01

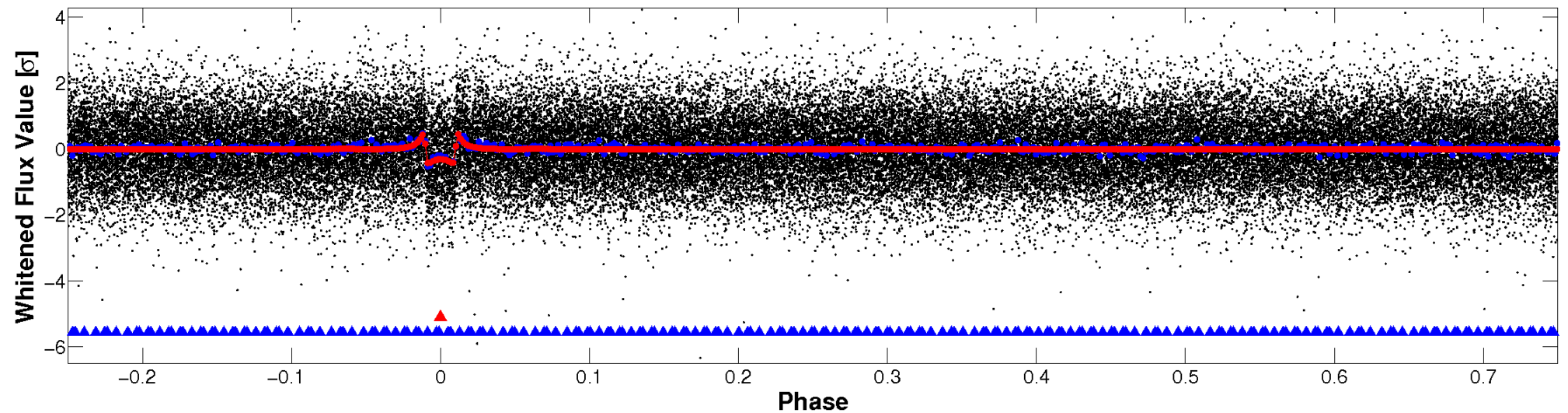


Non-Whitened Vs. Whitened Light Curve

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

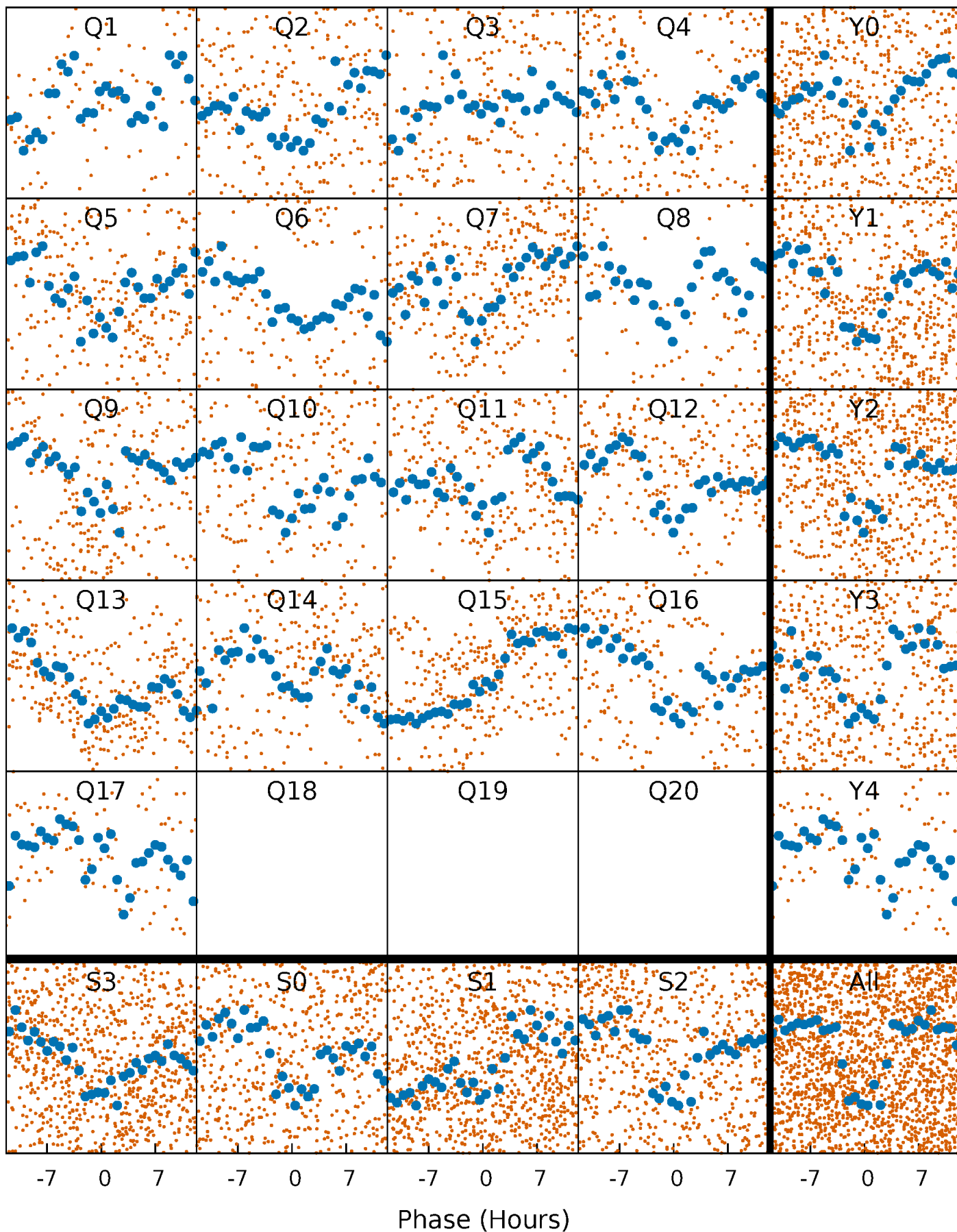


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



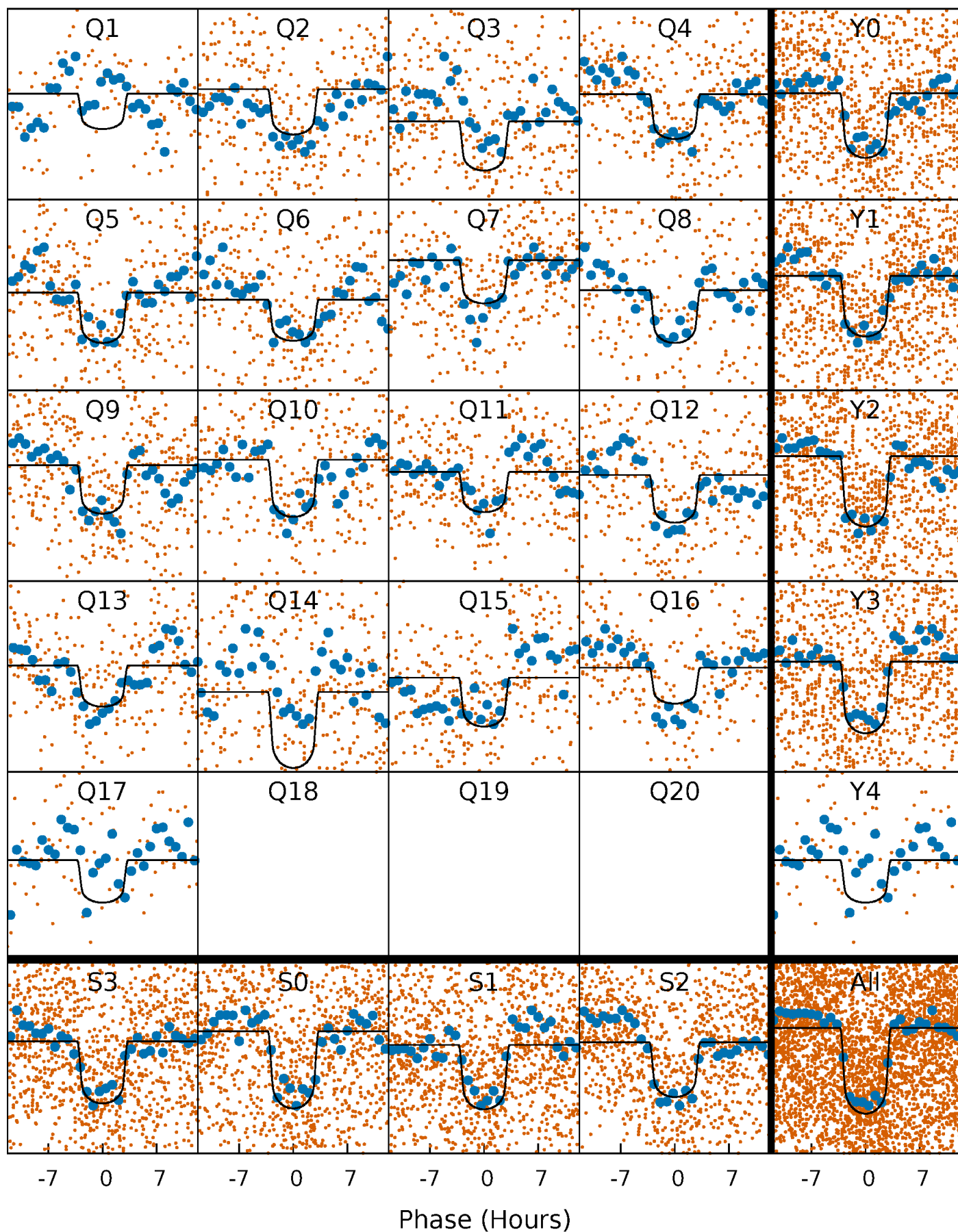
PDC Quarter-Phased Transit Curves

TCE 007017274-01 P= 11.912673 Days $T_0=143.153958$ (BKJD)



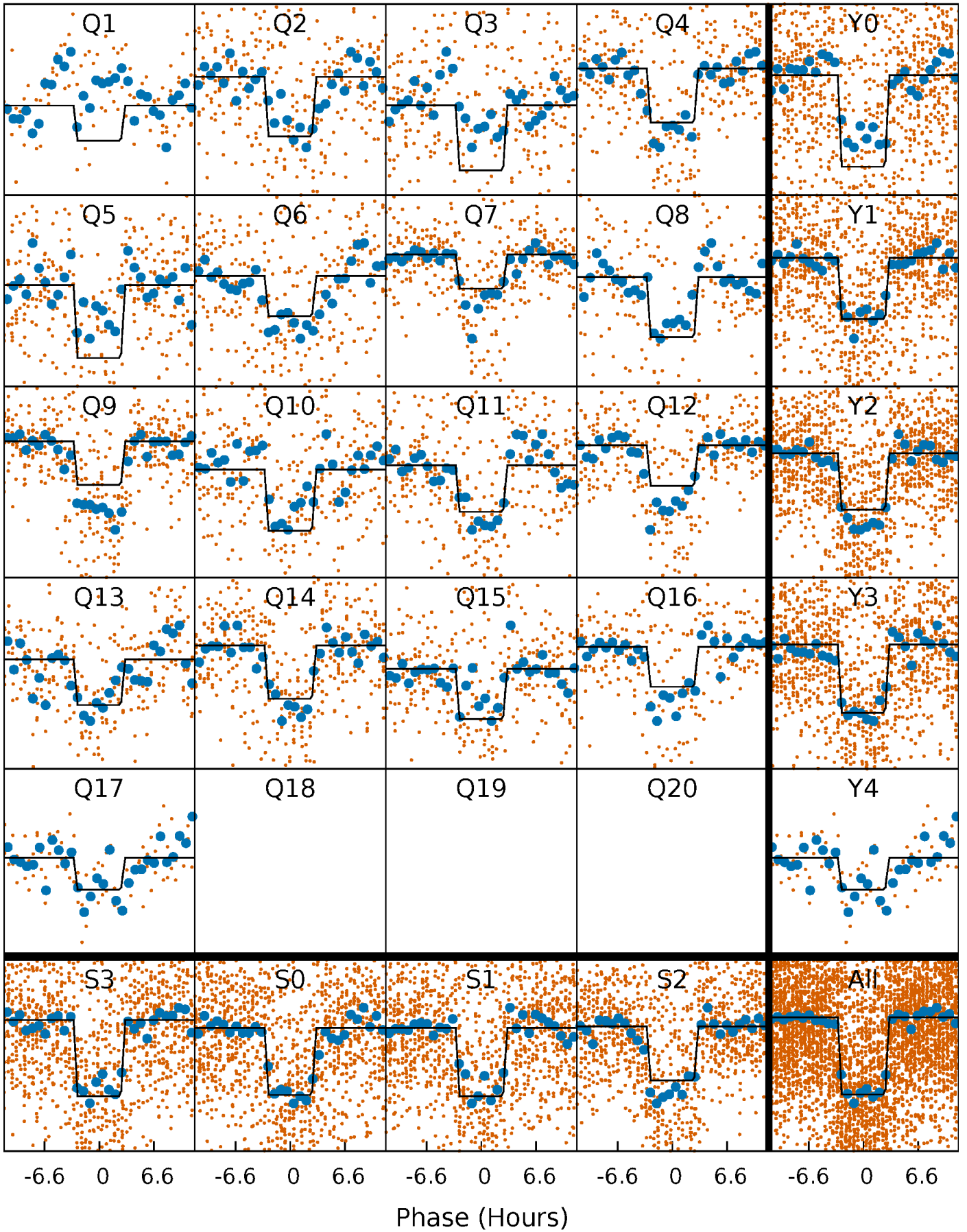
DV Quarter-Phased Transit Curves

TCE 007017274-01 P= 11.912673 Days $T_0=143.153958$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

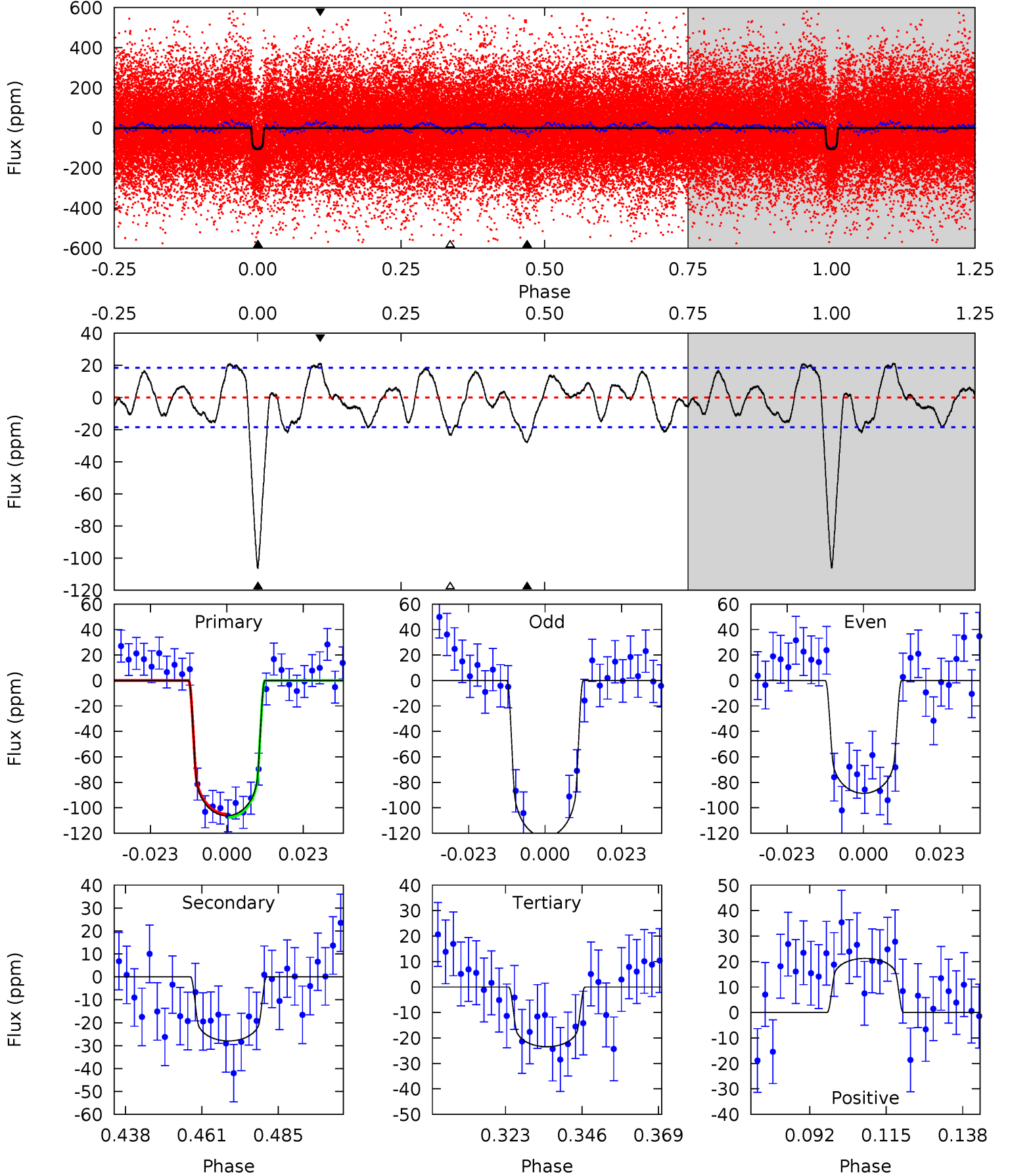
TCE 007017274-01 P= 11.912728 Days $T_0=143.149234$ (BKJD)



DV Model-Shift Uniqueness Test

007017274-01, $P = 11.912673$ Days, $E = 131.241285$ Days

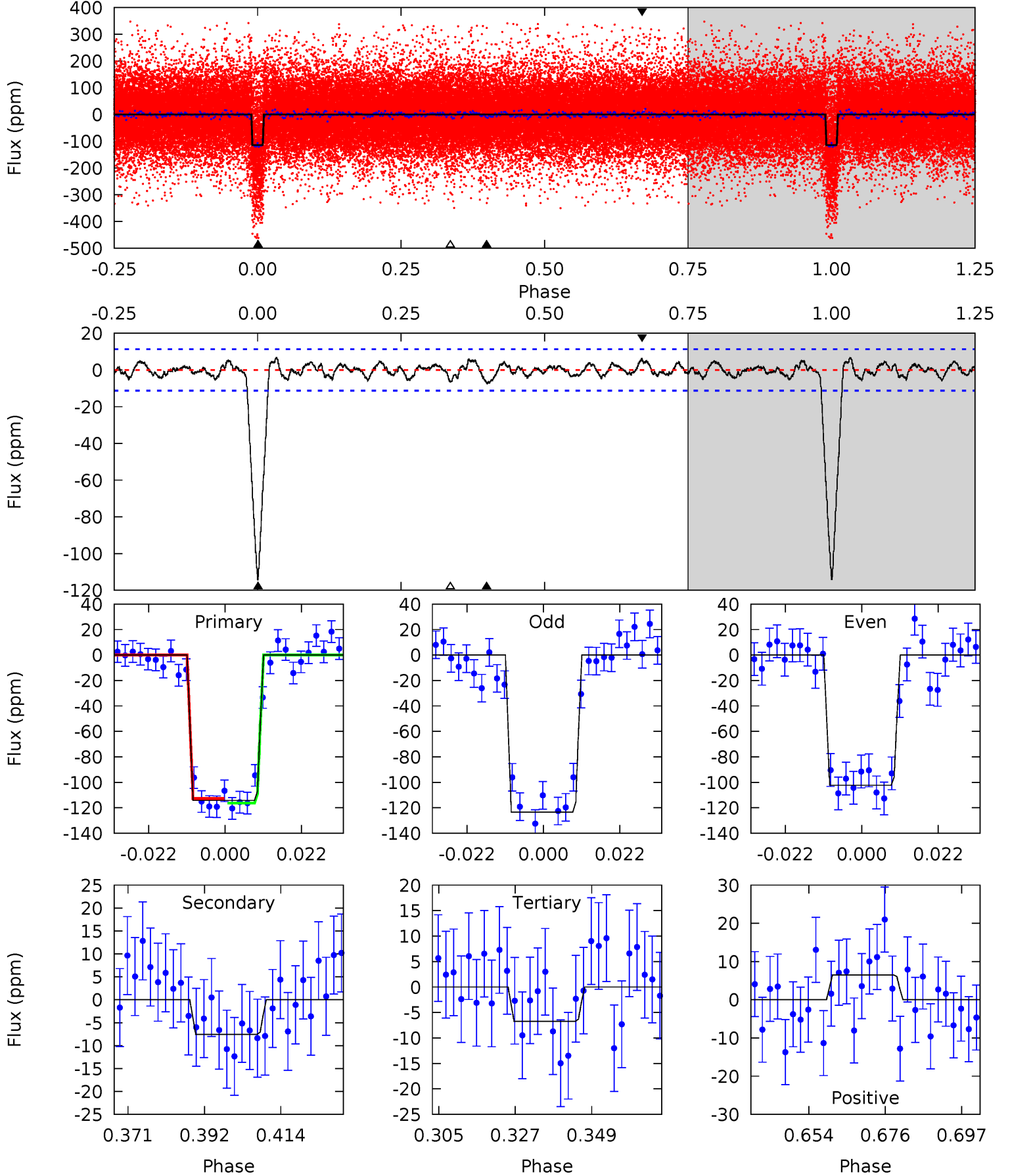
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.0	7.36	6.17	5.59	4.86	2.27	2.80	21.8	22.4	1.19	1.77	4.50	0.95	0.17	0.34



Alt Model-Shift Uniqueness Test

007017274-01, P = 11.912728 Days, E = 131.236506 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.3	3.25	2.90	2.79	4.87	2.29	1.11	46.4	46.5	0.35	0.46	4.56	0.94	0.06	0.79



Stellar Parameters For KIC 007017274

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6337^{+76}_{-82}	$3.893^{+0.253}_{-0.136}$	$0.160^{+0.150}_{-0.150}$	$2.335^{+0.503}_{-0.755}$	$1.556^{+0.167}_{-0.272}$	$0.172^{+0.308}_{-0.061}$
	+1%/-1%	+6%/-3%	+94%/-94%	+22%/-32%	+11%/-17%	+179%/-35%
Source	SPE90	FLK73	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 007017274-01 / KOI 3209.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-28 ± 4	$2.88^{+0.45}_{-0.54}$	1729^{+103}_{-144}	4478^{+213}_{-181}	26^{+12}_{-7}
Alt.	-8 ± 2	$2.60^{+0.47}_{-0.46}$	1728^{+101}_{-133}	3647^{+218}_{-246}	$8.449^{+4.876}_{-3.218}$

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

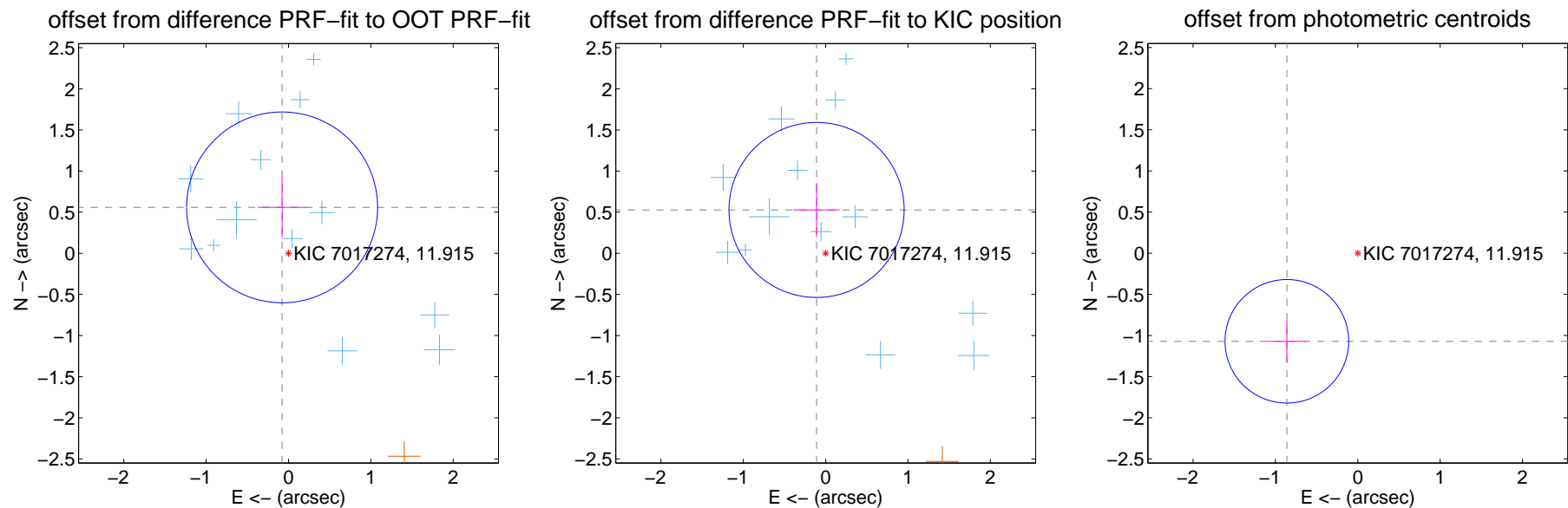
DV Centroid Data

Supplemental centroid analysis for 007017274-01. **Kepler magnitude: 11.91.** Transit SNR 15.78

There are 13 quarters with good PRF difference image offsets

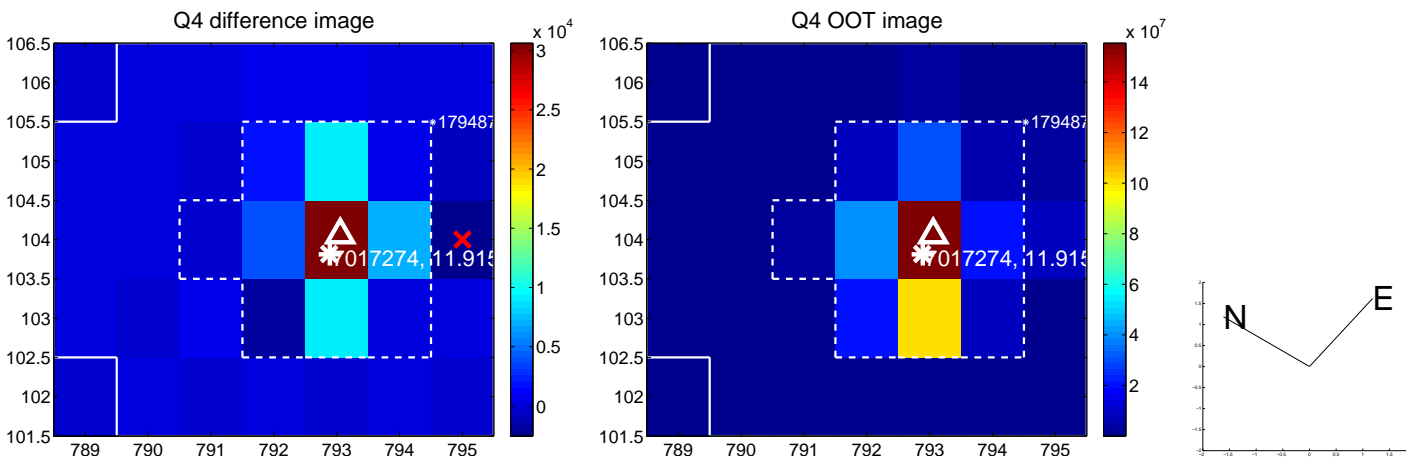
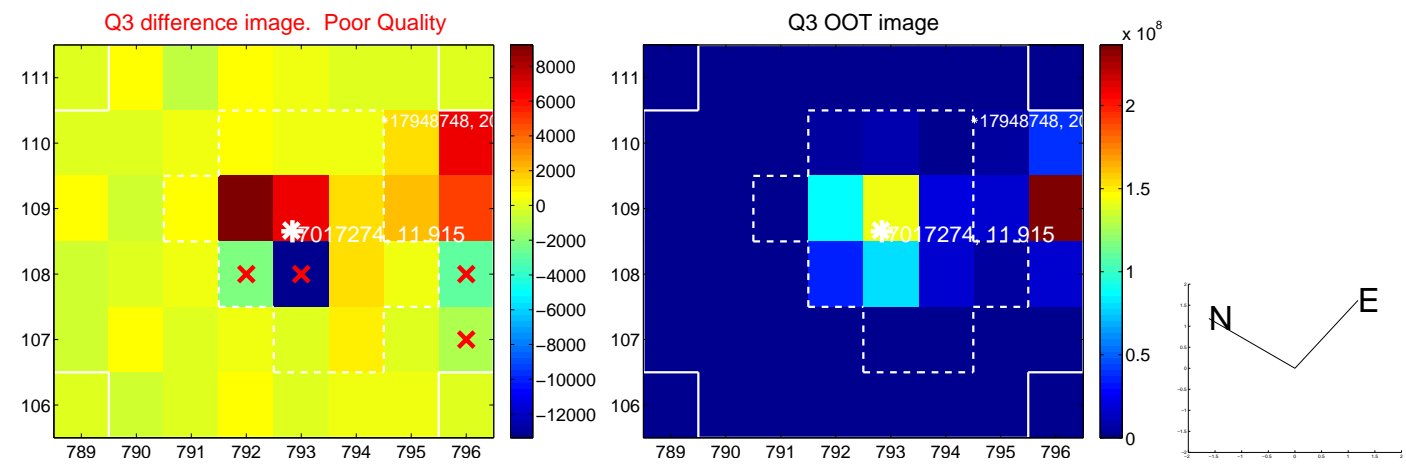
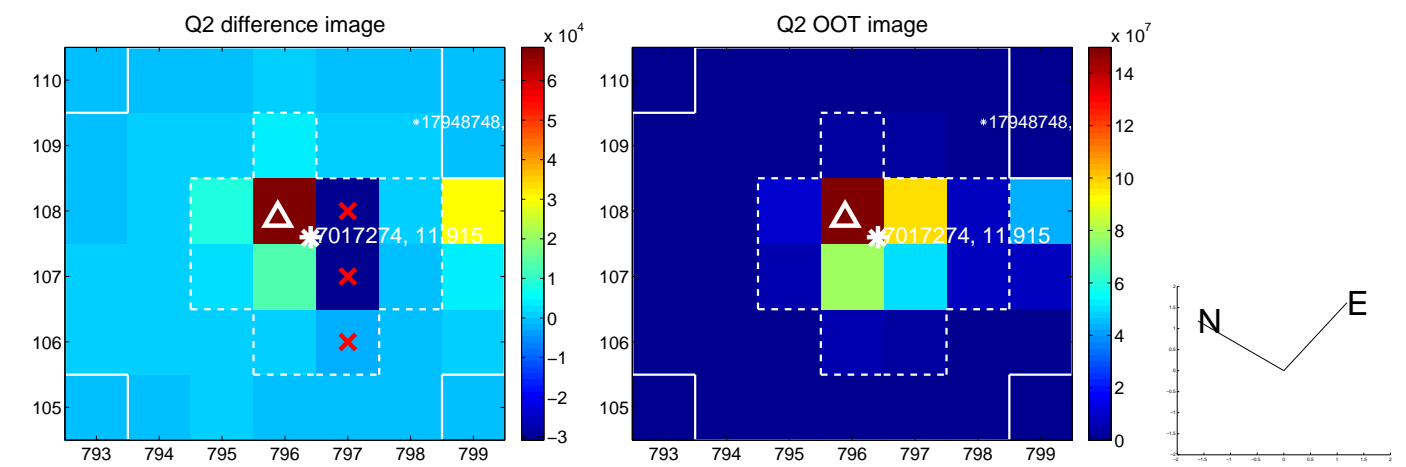
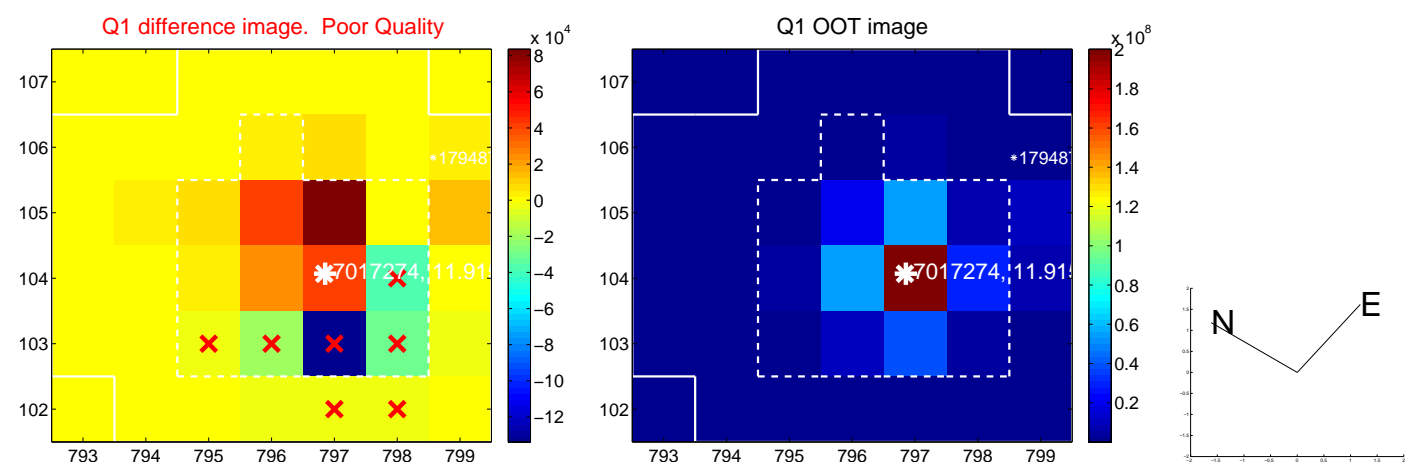
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.564 ± 0.387	1.46	0.078 ± 0.296	0.558 ± 0.367
PRF-fit source offset from KIC position	0.539 ± 0.355	1.52	0.111 ± 0.280	0.527 ± 0.329
photometric centroid source offset	1.37 ± 0.25	5.49	0.86 ± 0.24	-1.07 ± 0.26

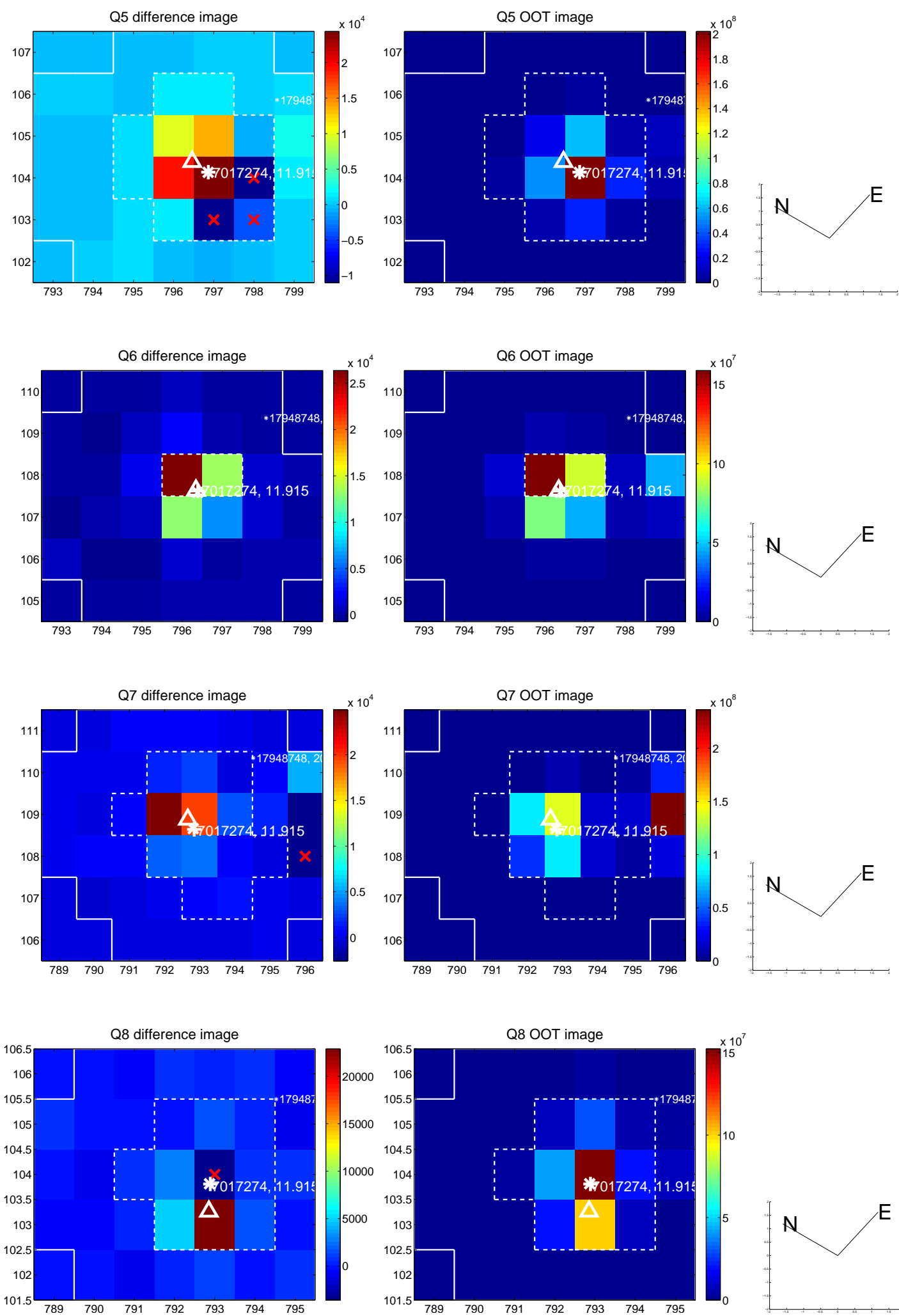


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

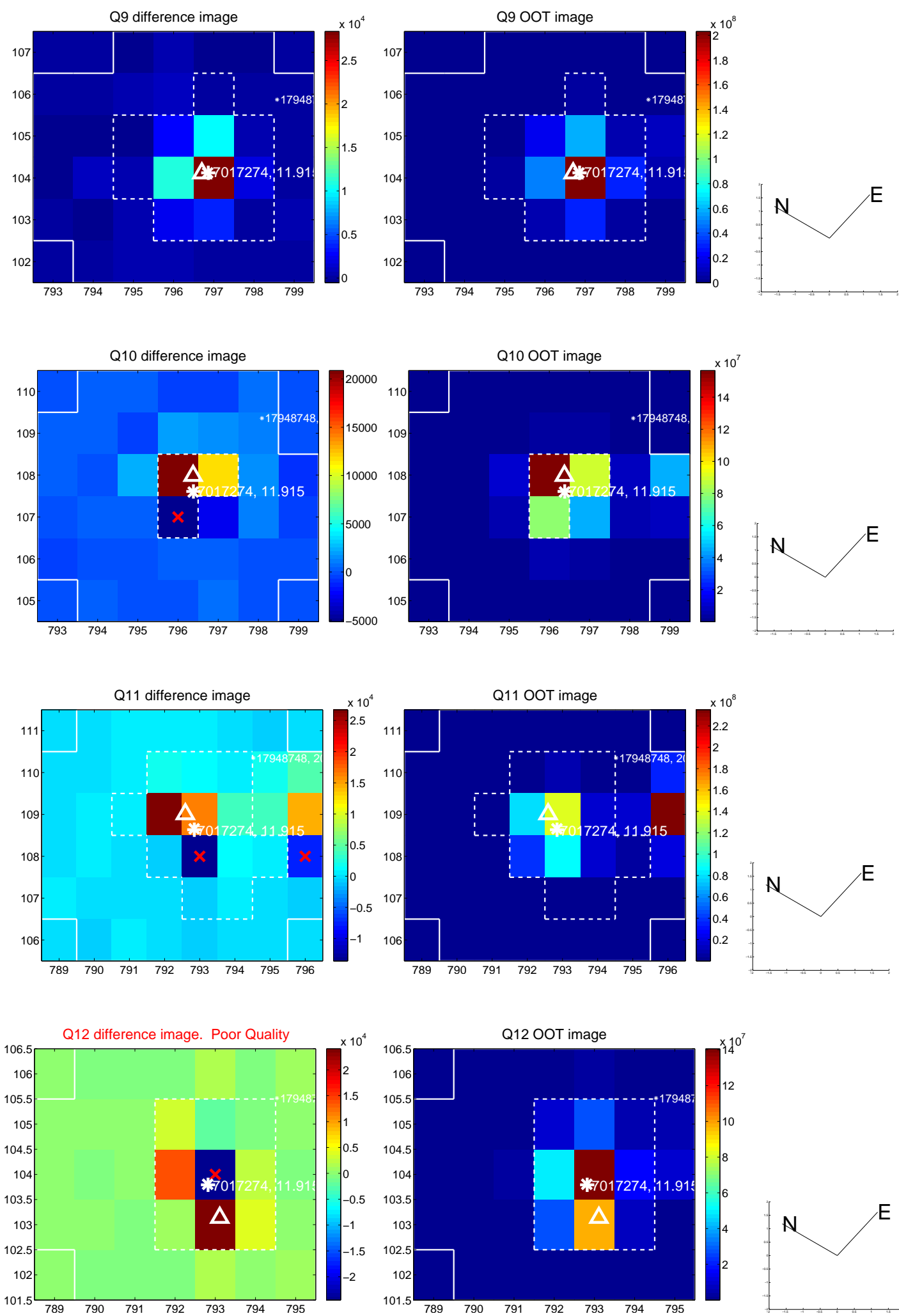
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



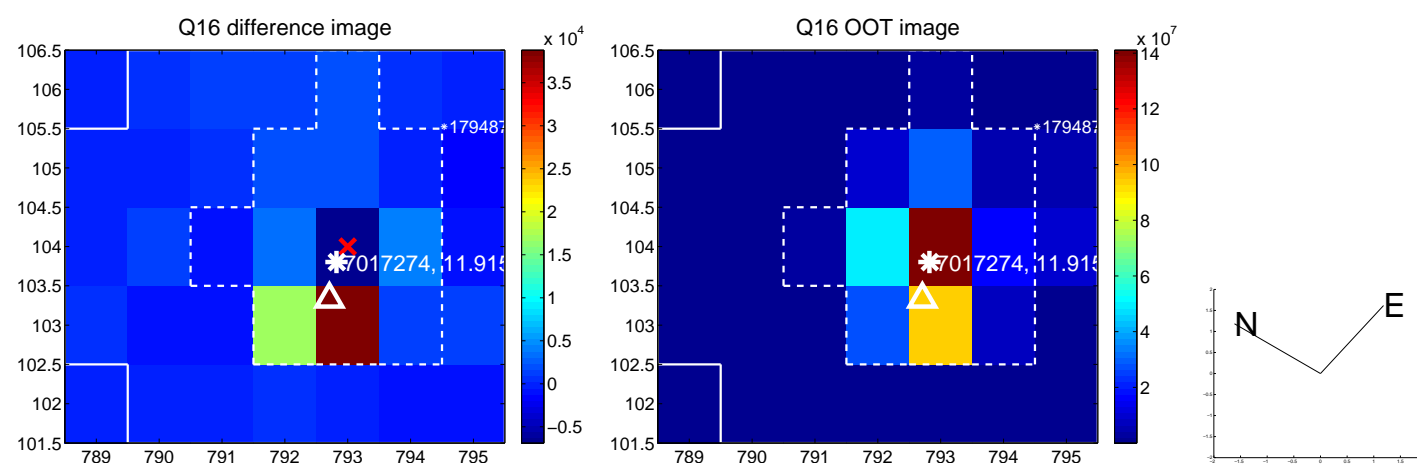
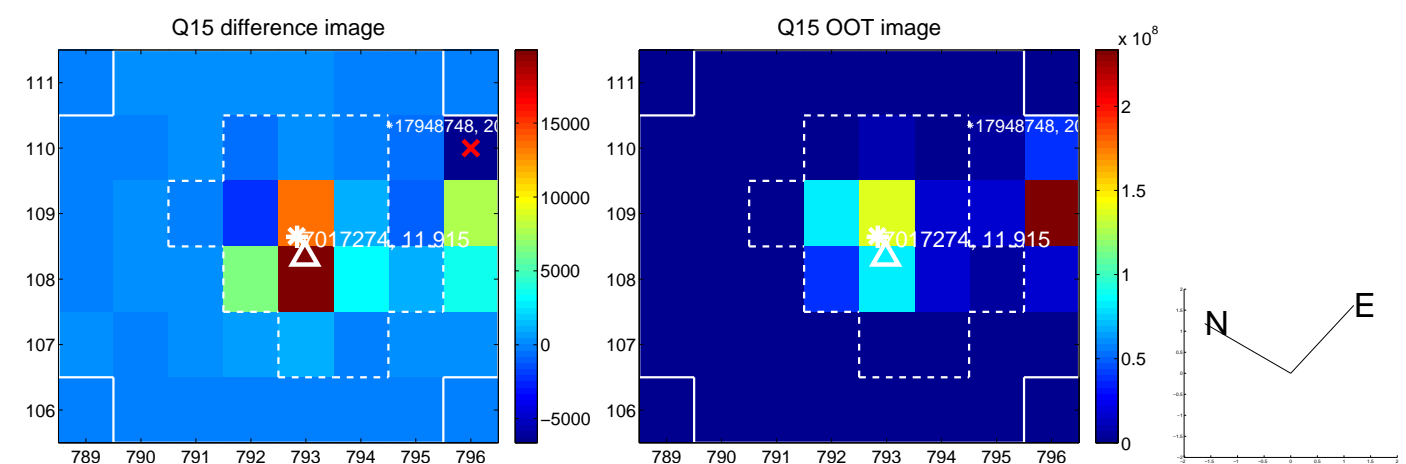
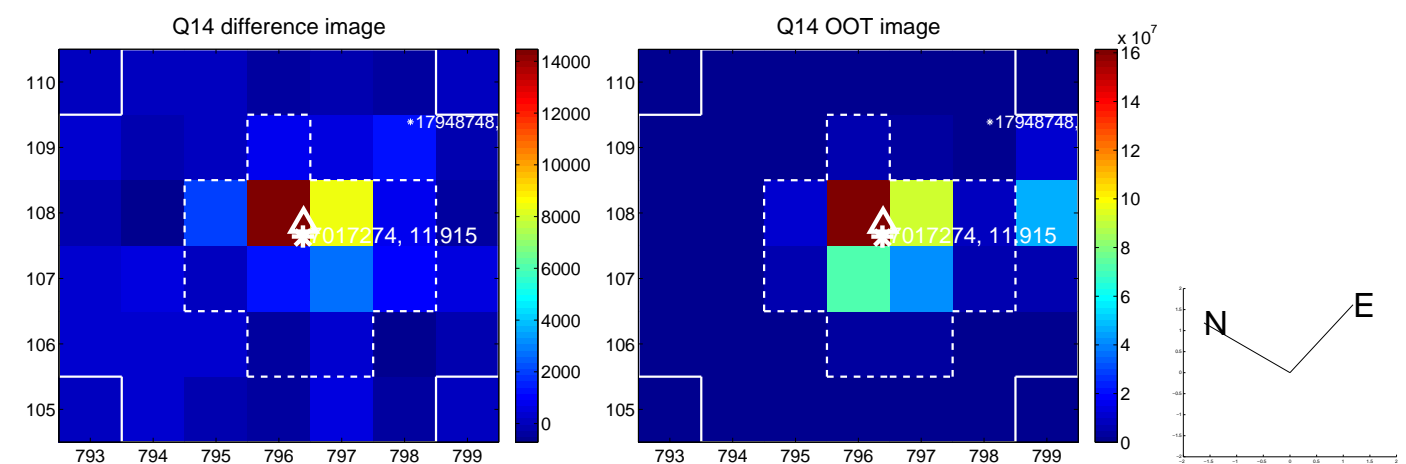
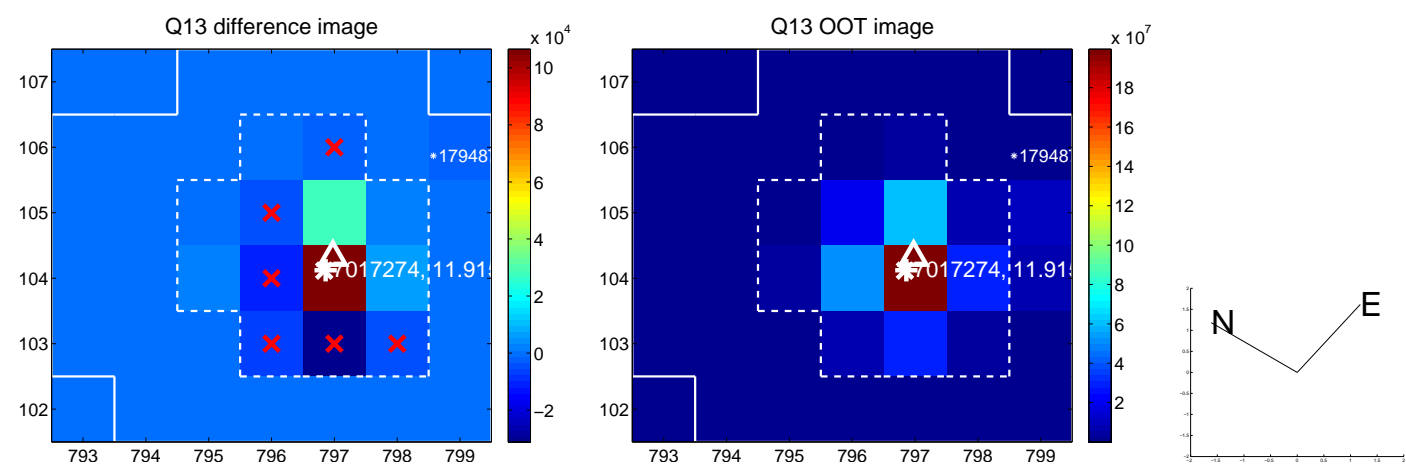
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



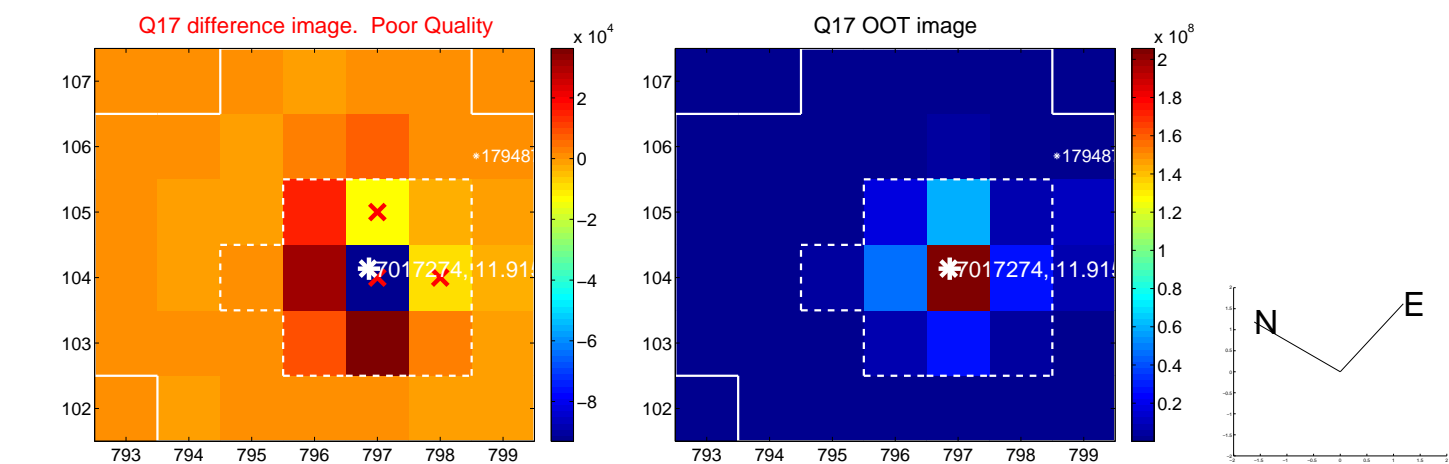
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



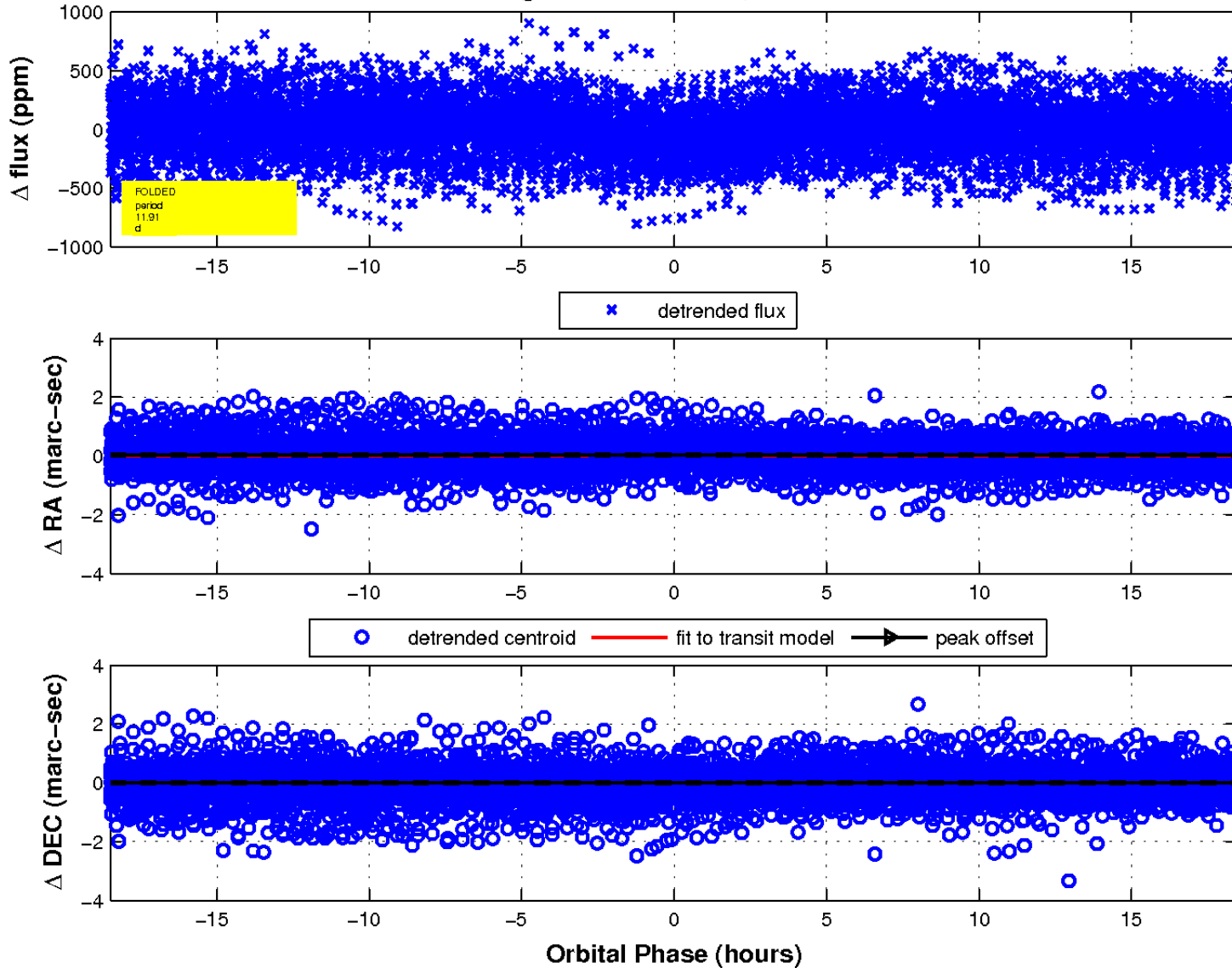
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



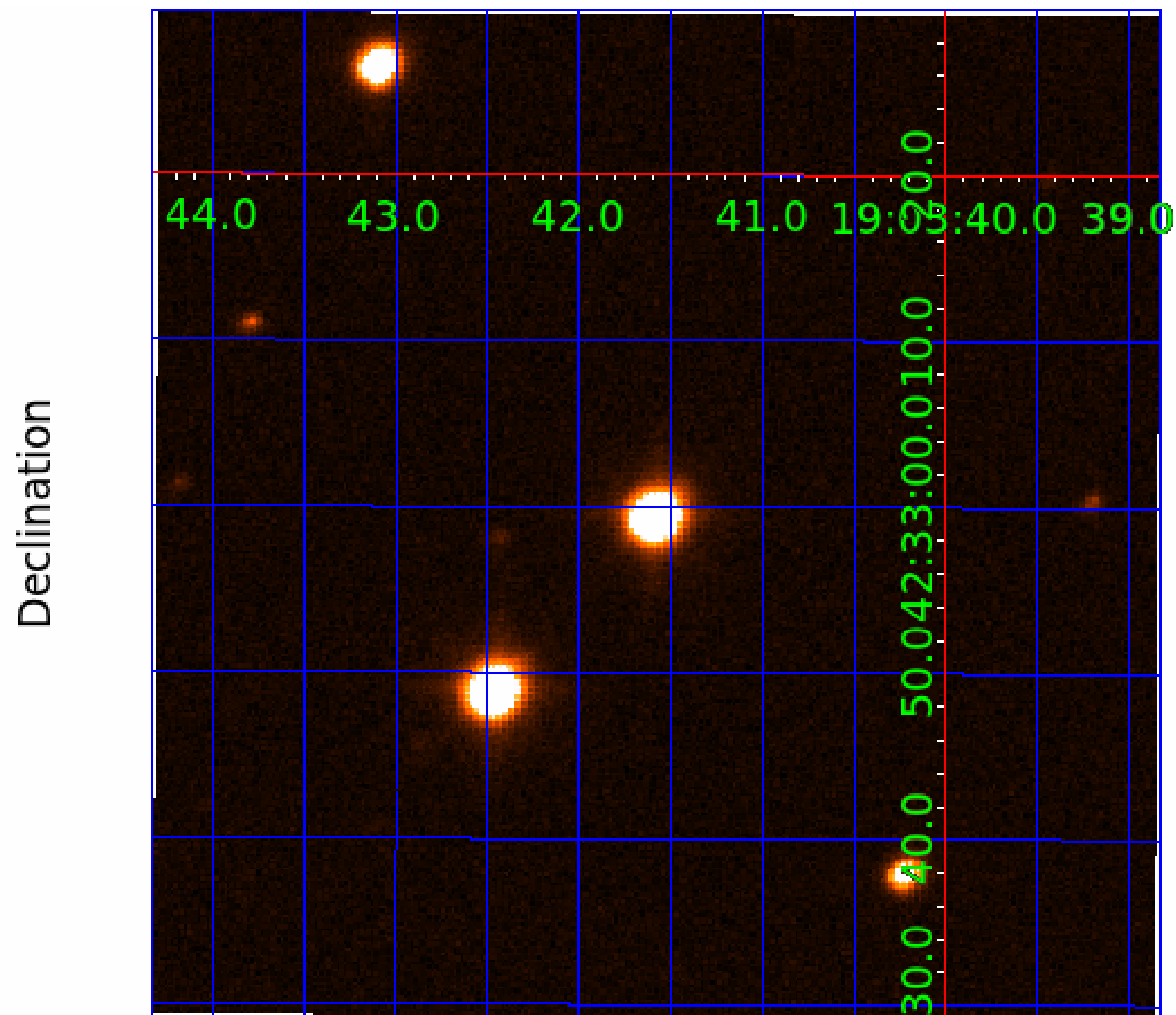
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 007017274

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})
007017274-01	OBS	3209.01	11.912673	143.153958	117.4	6.163	15.8	15.8	2.33	6337	2.93	563.13
007017274-02	OBS	3209.02	6.770665	133.349821	58.9	6.075	9.9	10.3	2.33	6337	2.10	1196.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007017274-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT
007017274-02	OBS	PC	0.57	0	0	0	0	NO_COMMENT

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.

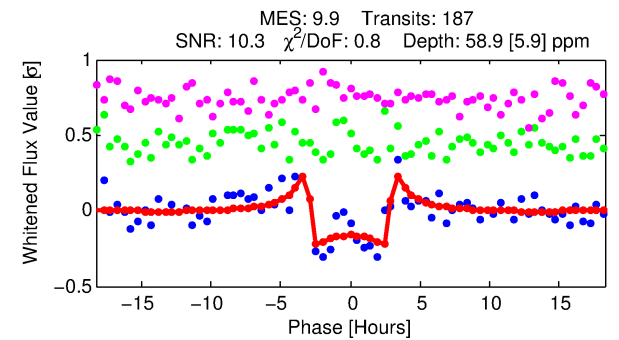
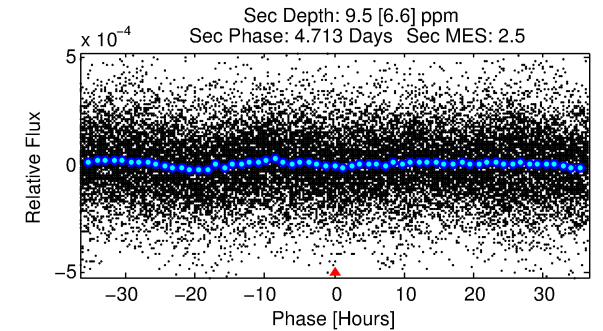
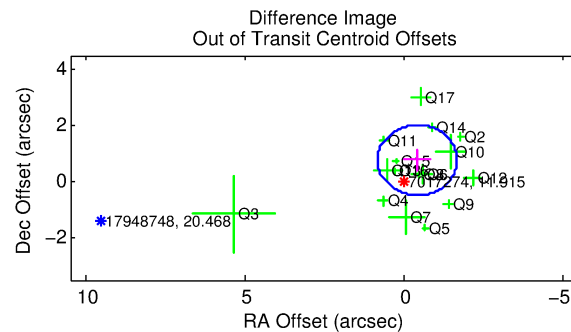
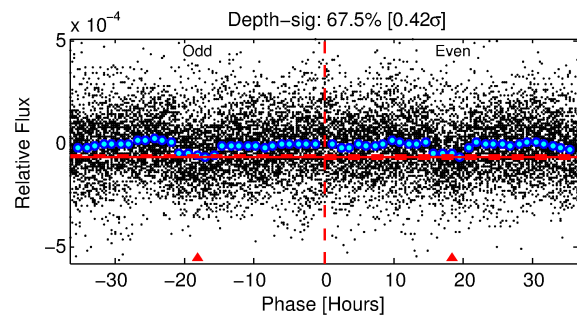
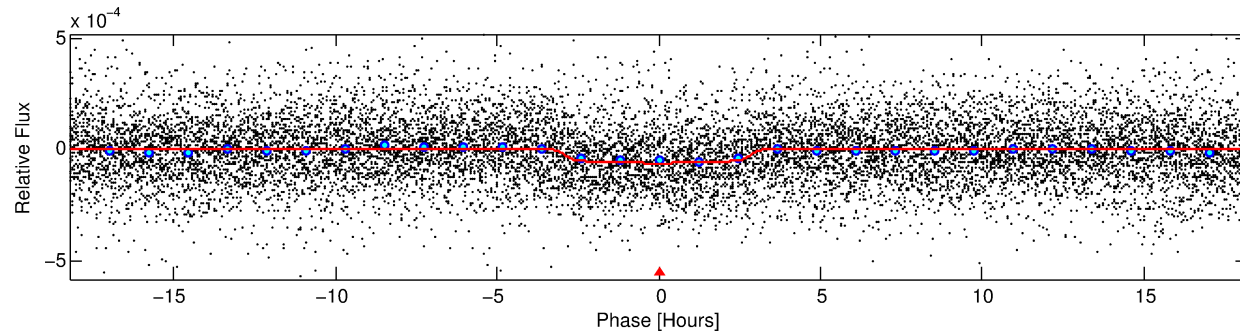
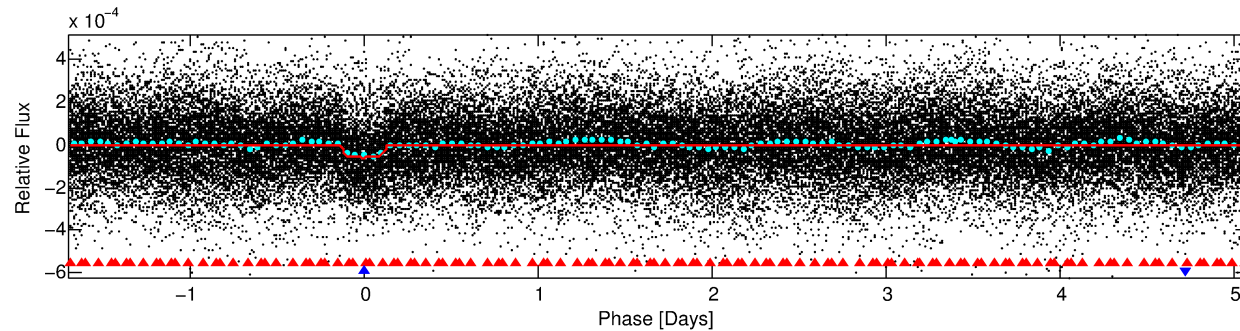
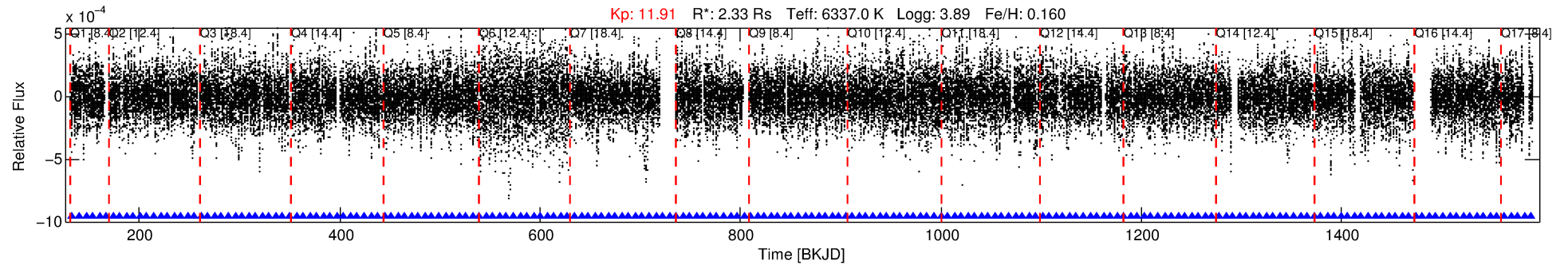
Ephemeris Match Information For 007017274-02

No Significant Match Found

DV One-Page Summary

KIC: 7017274 Candidate: 2 of 2 Period: 6.771 d

KOI: K03209 Corr: No Ephemeris Match



DV Fit Results:

Period = 6.77066 [0.00003] d
Epoch = 133.3498 [0.0036] BKJD
Rp/R* = 0.0082 [0.0012]
a/R* = 4.04 [2.79]
b = 0.90 [0.16]
Seff = 1196.13 [534.89]
Teq = 1500 [168] K
Rp = 2.10 [0.75] Re
a = 0.0812 [0.0235] AU
Ag = 7.79 [6.82] [0.99 σ]
Teffp = 3873 [733] K [3.16 σ]

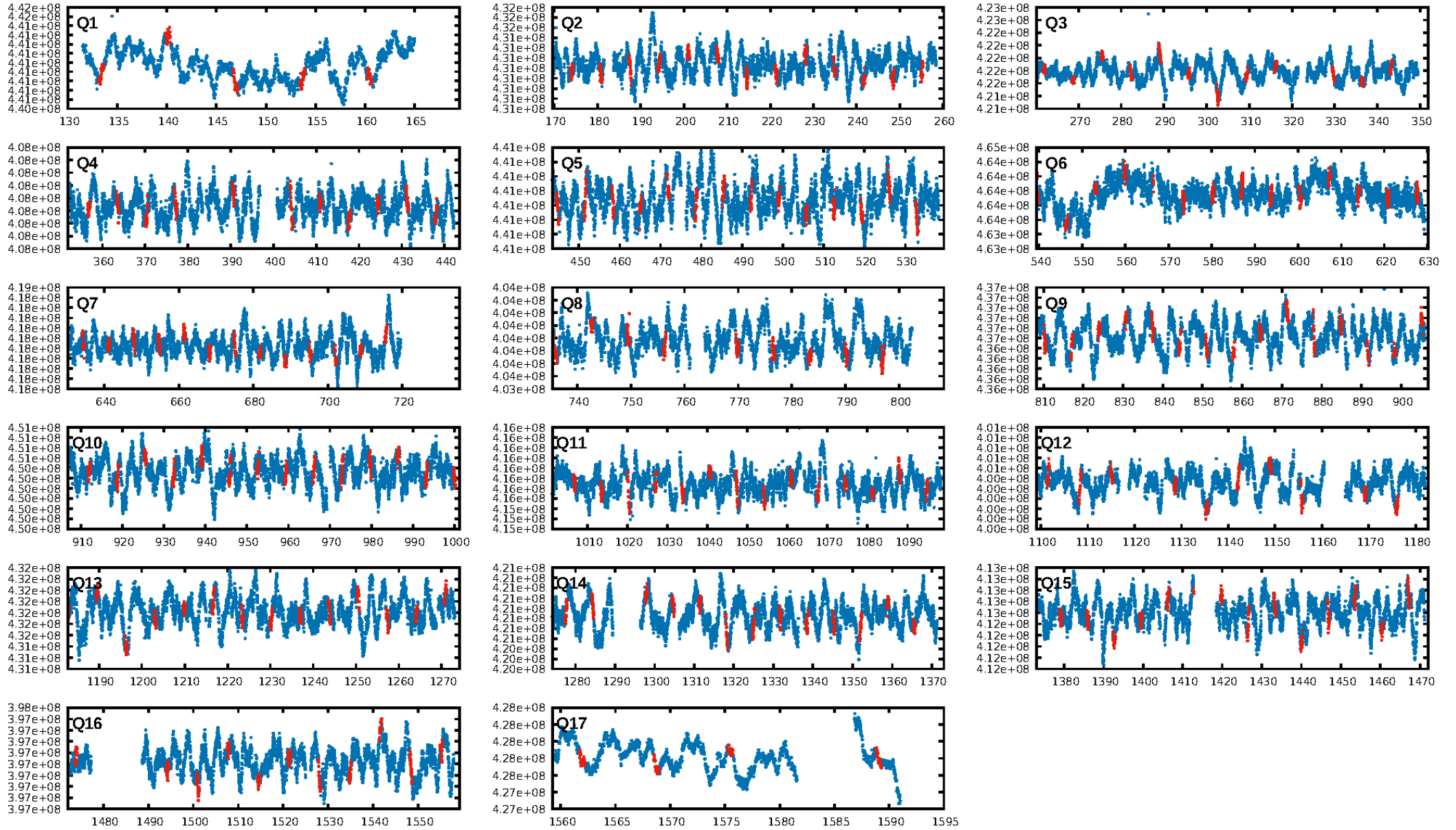
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [14.26 σ]
ModelChiSquare2-sig: 99.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.90e-20
RollingBand-fgt: 1.00 [178/178]
GhostDiagnostic-chr: 5.008
Centroid-sig: 46.0%
Centroid-so: 1.319 arcsec [3.63 σ]
OotOffset-rm: 0.872 arcsec [2.09 σ]
KicOffset-rm: 0.829 arcsec [2.03 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 1.00 [17/17]

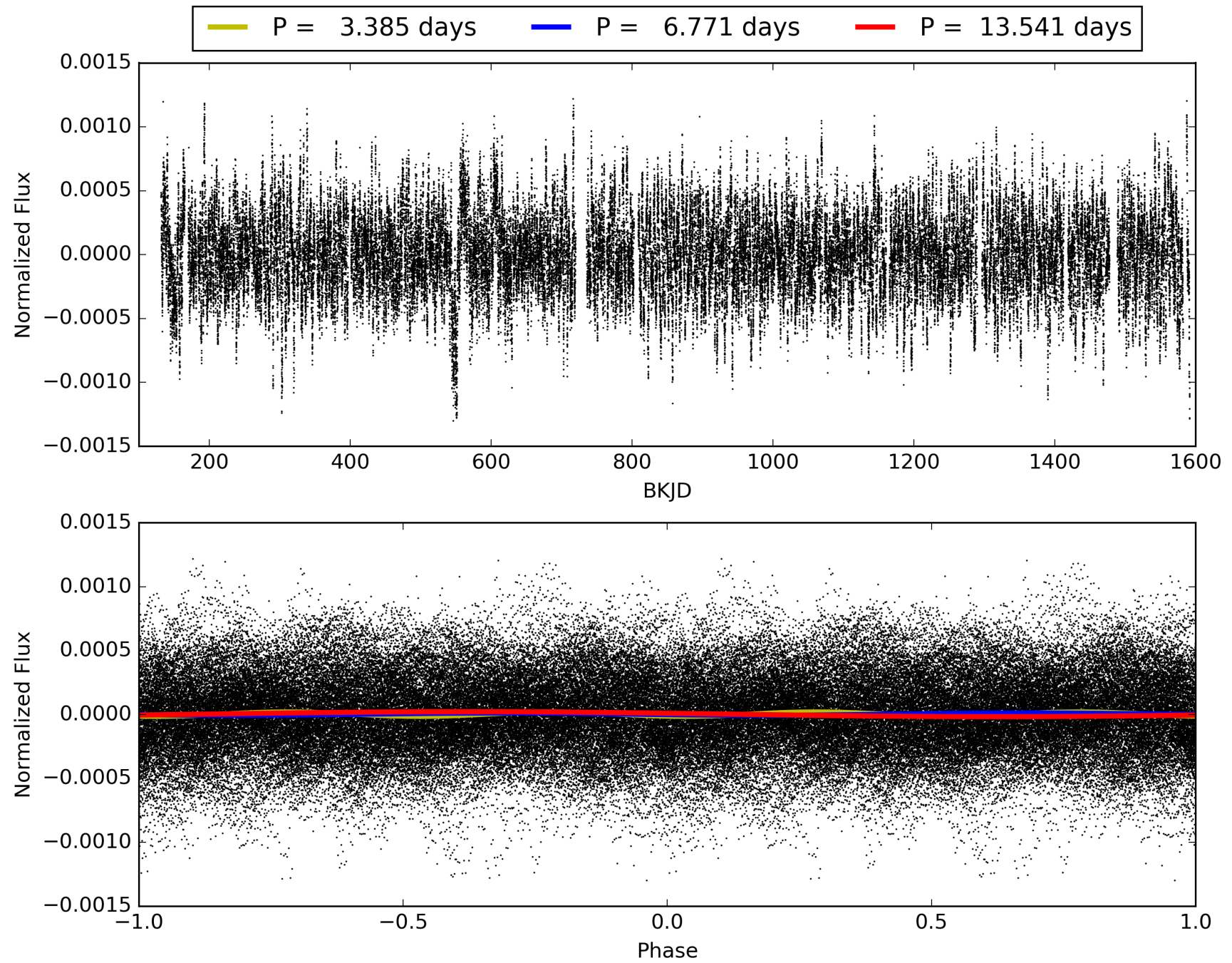
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TCE 007017274-02, PDC Light Curves

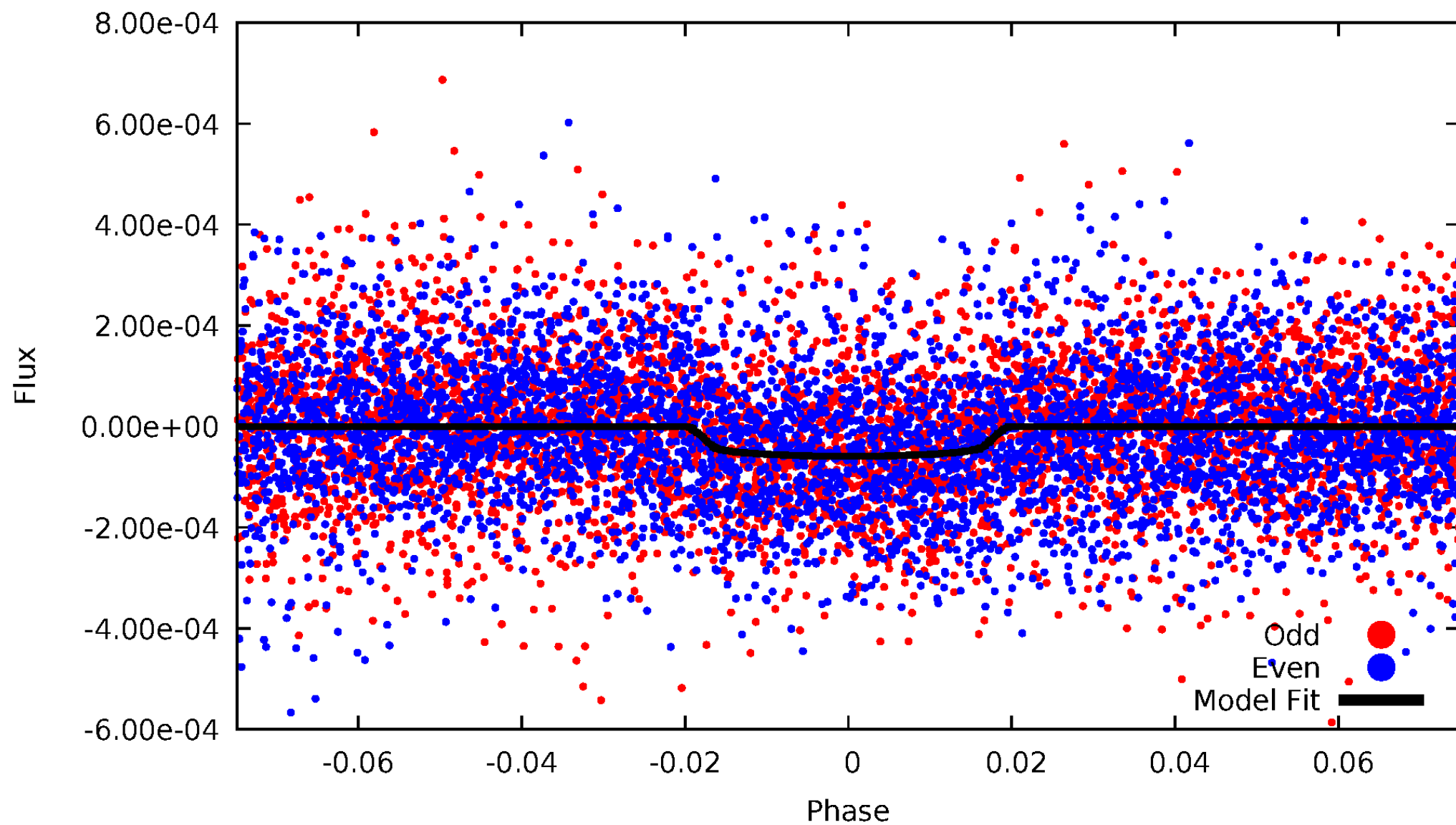


TCE 007017274-02



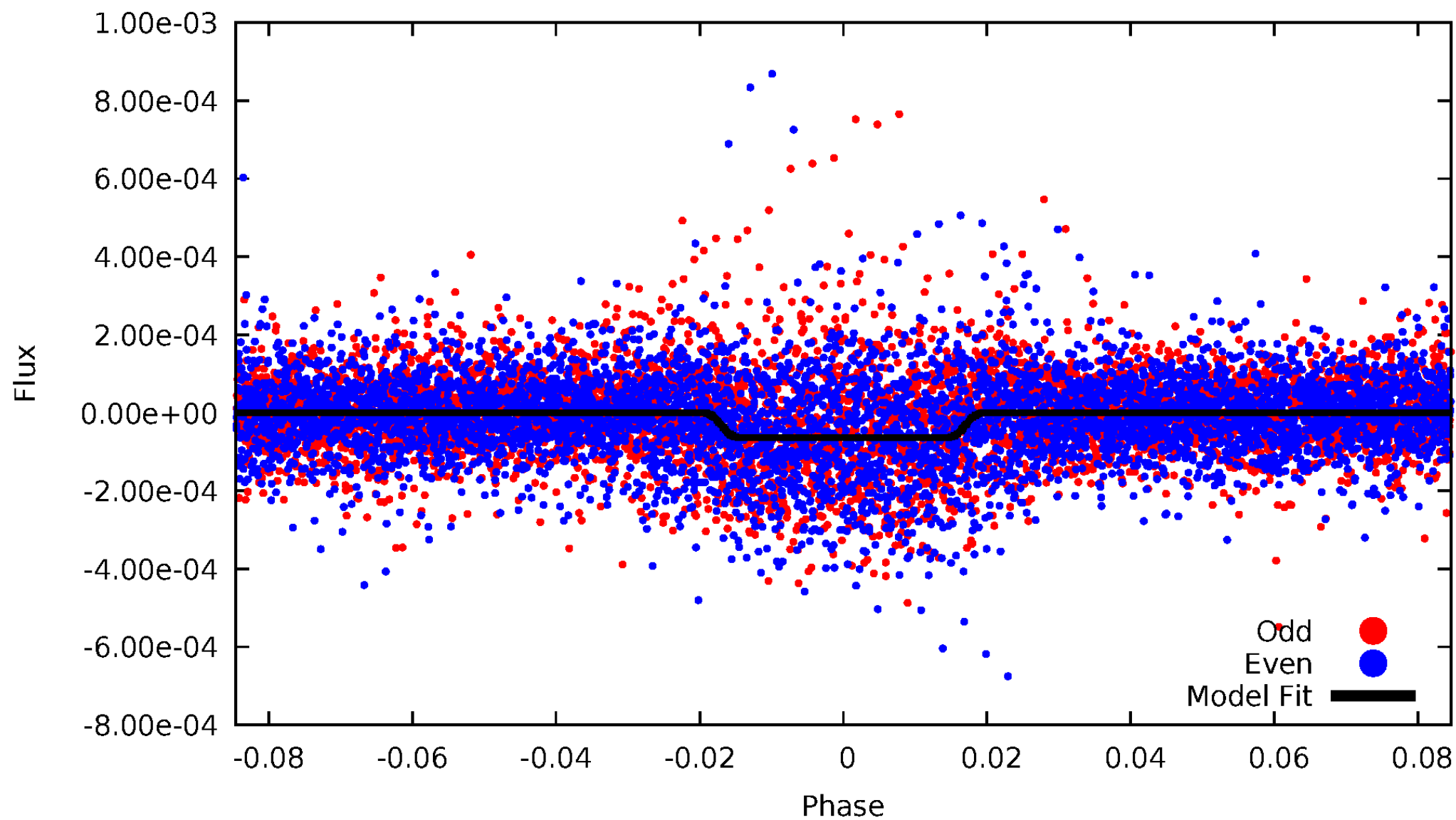
DV Odd/Even

TCE 007017274-02



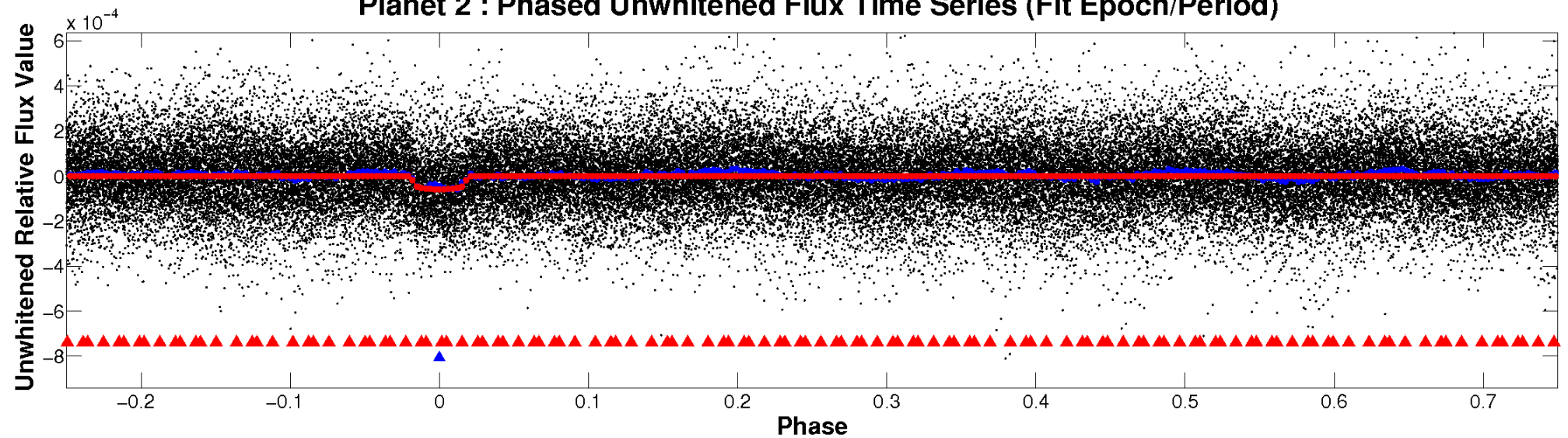
ALT Odd/Even

TCE 007017274-02

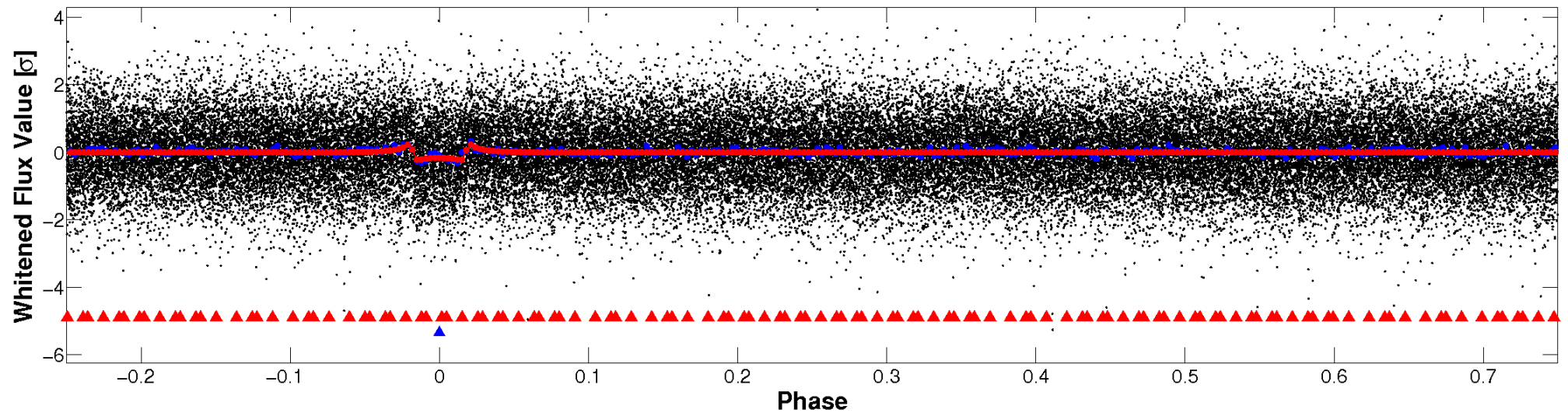


Non-Whitened Vs. Whitened Light Curve

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

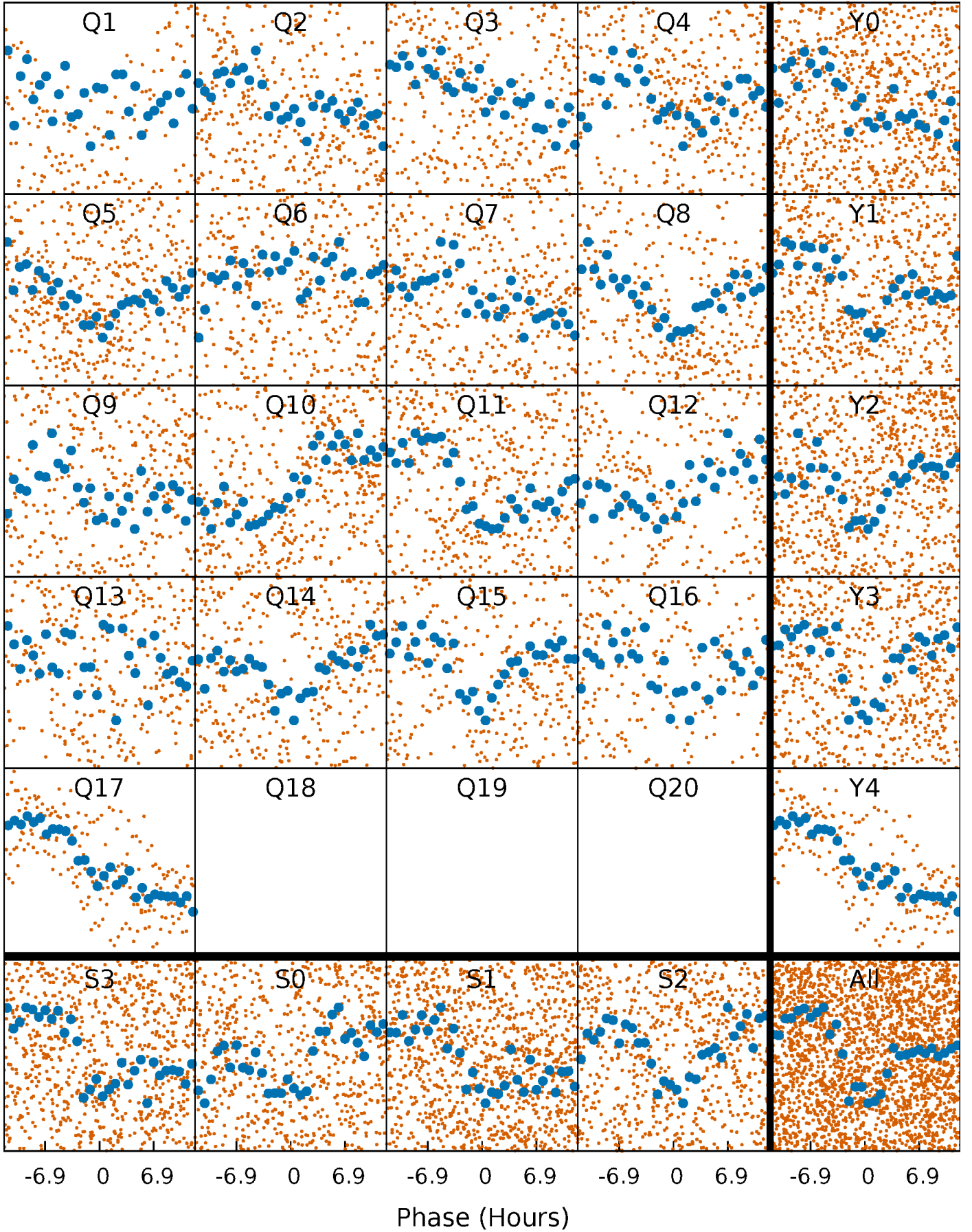


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



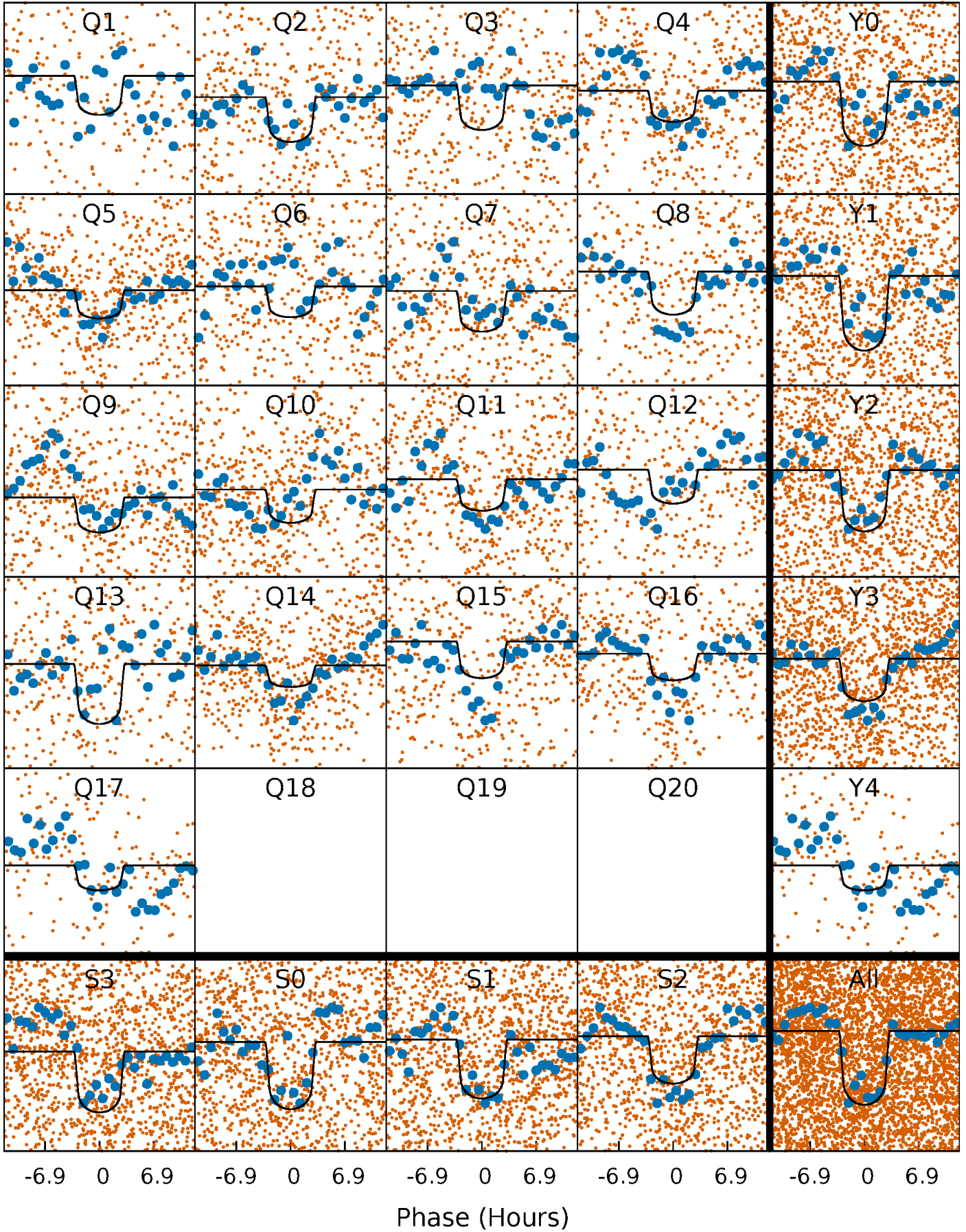
PDC Quarter-Phased Transit Curves

TCE 007017274-02 P= 6.770665 Days $T_0=133.349821$ (BKJD)



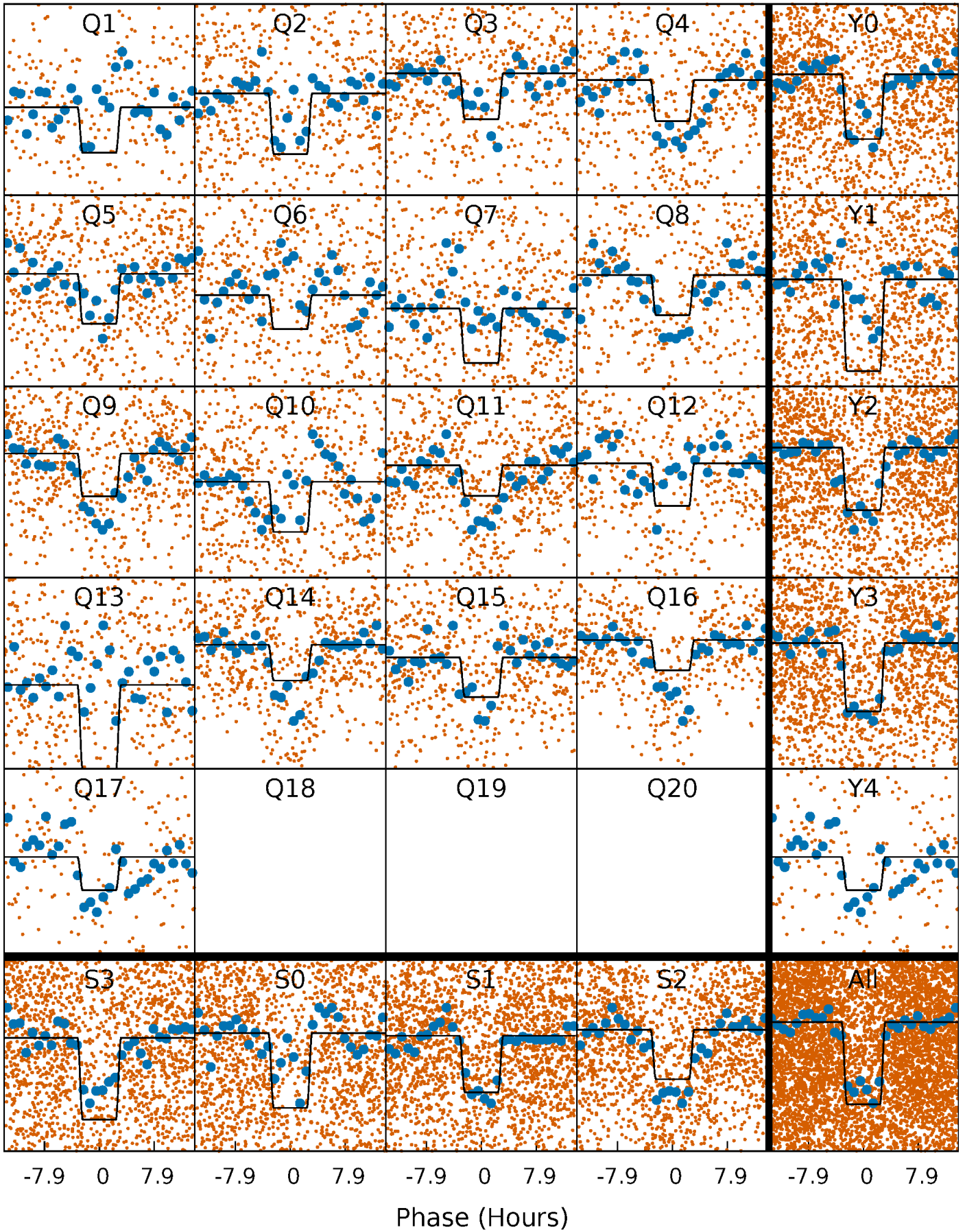
DV Quarter-Phased Transit Curves

TCE 007017274-02 P= 6.770665 Days $T_0=133.349821$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

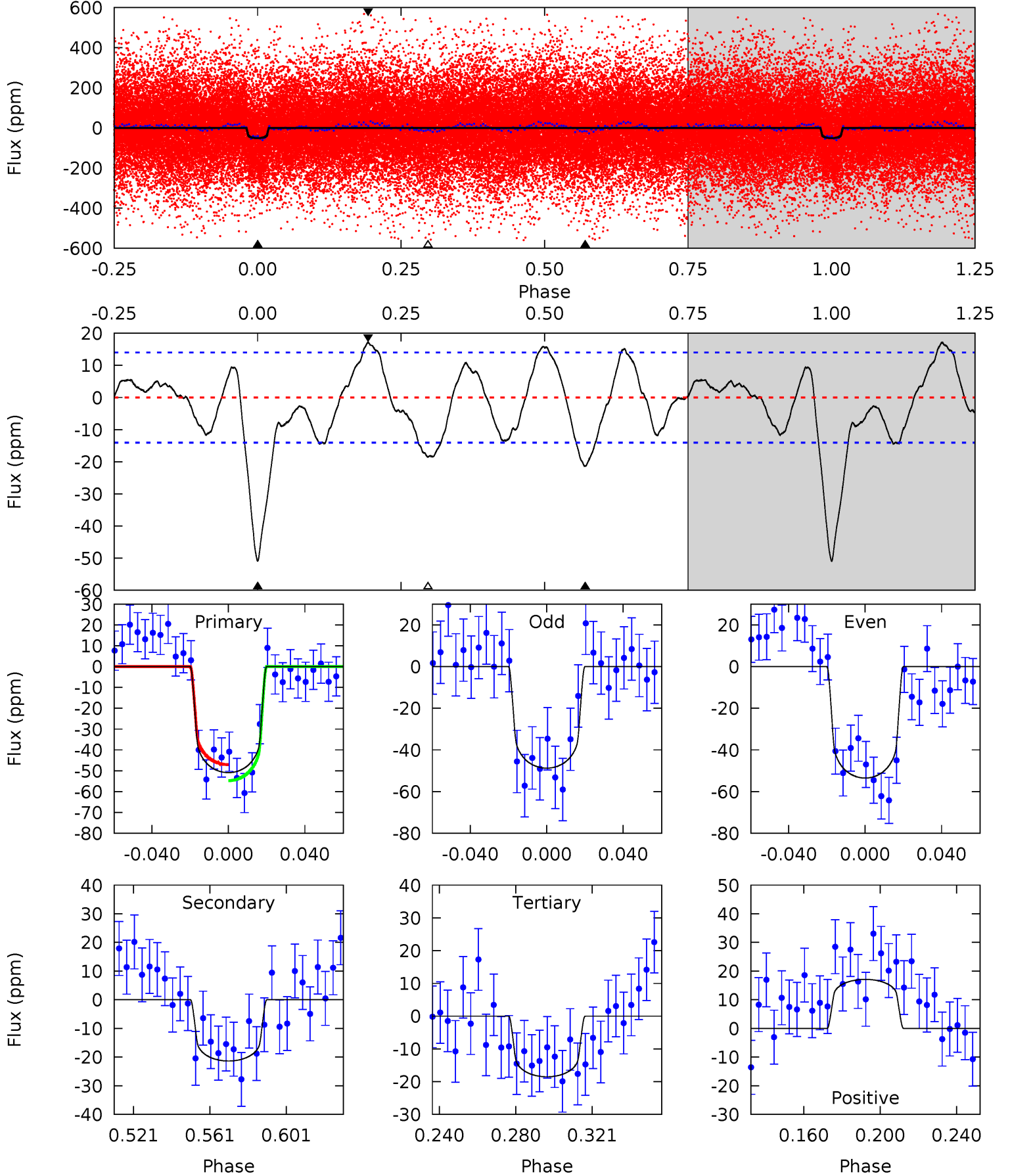
TCE 007017274-02 P= 6.770739 Days $T_0=133.334521$ (BKJD)



DV Model-Shift Uniqueness Test

007017274-02, P = 6.770665 Days, E = 126.579156 Days

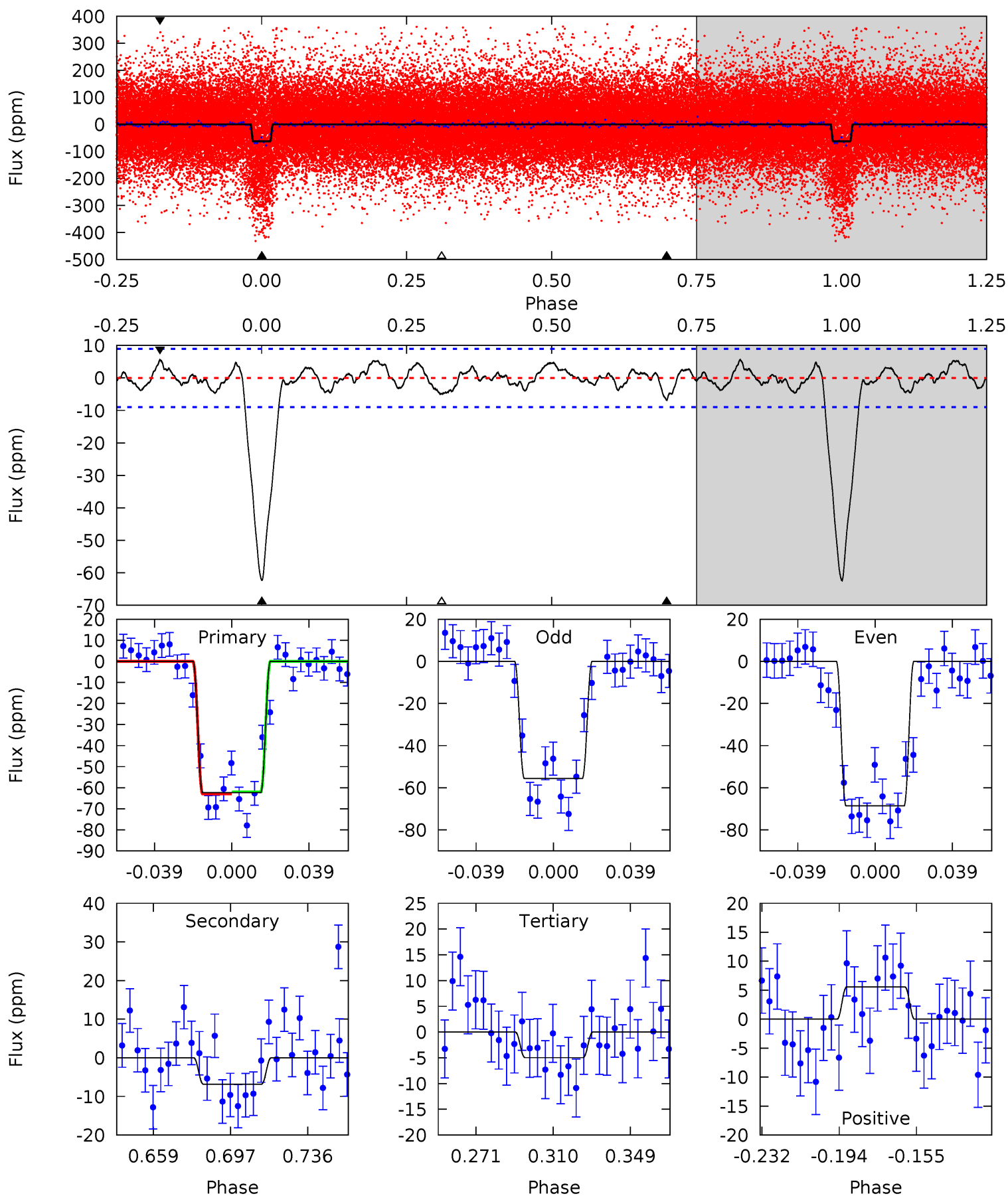
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	7.23	6.27	5.79	4.75	2.05	2.98	11.0	11.4	0.96	1.44	0.80	0.92	0.25	1.31



Alt Model-Shift Uniqueness Test

007017274-02, P = 6.770739 Days, E = 126.563782 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.1	3.63	2.64	2.96	4.76	2.07	1.28	30.5	30.2	0.99	0.67	3.47	1.03	0.08	0.25



Stellar Parameters For KIC 007017274

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6337^{+76}_{-82}	$3.893^{+0.253}_{-0.136}$	$0.160^{+0.150}_{-0.150}$	$2.335^{+0.503}_{-0.755}$	$1.556^{+0.167}_{-0.272}$	$0.172^{+0.308}_{-0.061}$
	+1%/-1%	+6%/-3%	+94%/-94%	+22%/-32%	+11%/-17%	+179%/-35%
Source	SPE90	FLK73	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 007017274-02 / KOI 3209.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-21 ± 3	$2.04^{+0.45}_{-0.44}$	2090^{+124}_{-168}	4860^{+410}_{-326}	19^{+11}_{-7}
Alt.	-7 ± 2	$1.96^{+0.45}_{-0.39}$	2088^{+118}_{-160}	3908^{+330}_{-289}	$6.220^{+3.875}_{-2.390}$

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

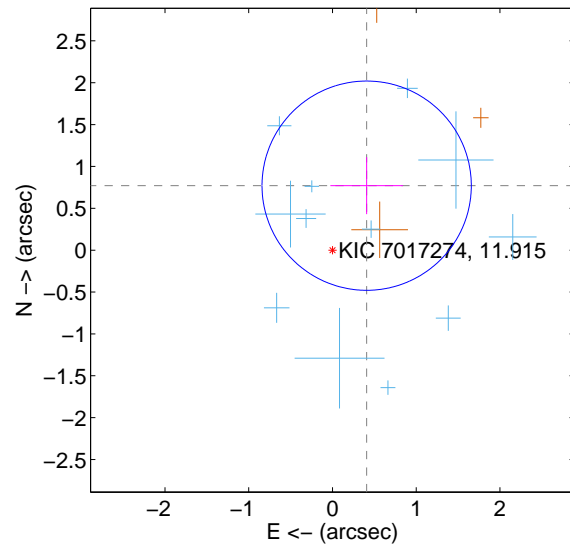
Supplemental centroid analysis for 007017274-02. **Kepler magnitude: 11.91.** Transit SNR 10.30

There are 12 quarters with good PRF difference image offsets

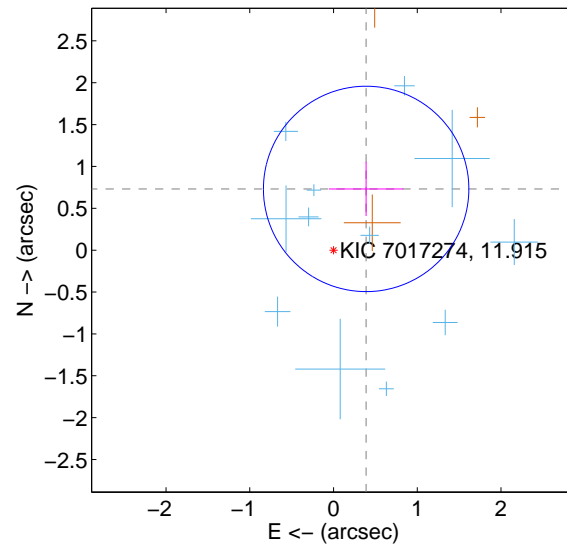
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.872 ± 0.417	2.09	-0.408 ± 0.433	0.770 ± 0.341
PRF-fit source offset from KIC position	0.829 ± 0.409	2.03	-0.390 ± 0.445	0.732 ± 0.323
photometric centroid source offset	1.32 ± 0.36	3.63	1.00 ± 0.35	-0.86 ± 0.38

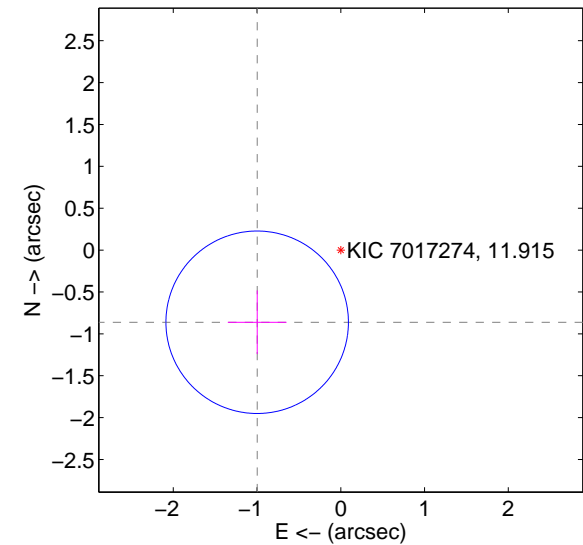
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

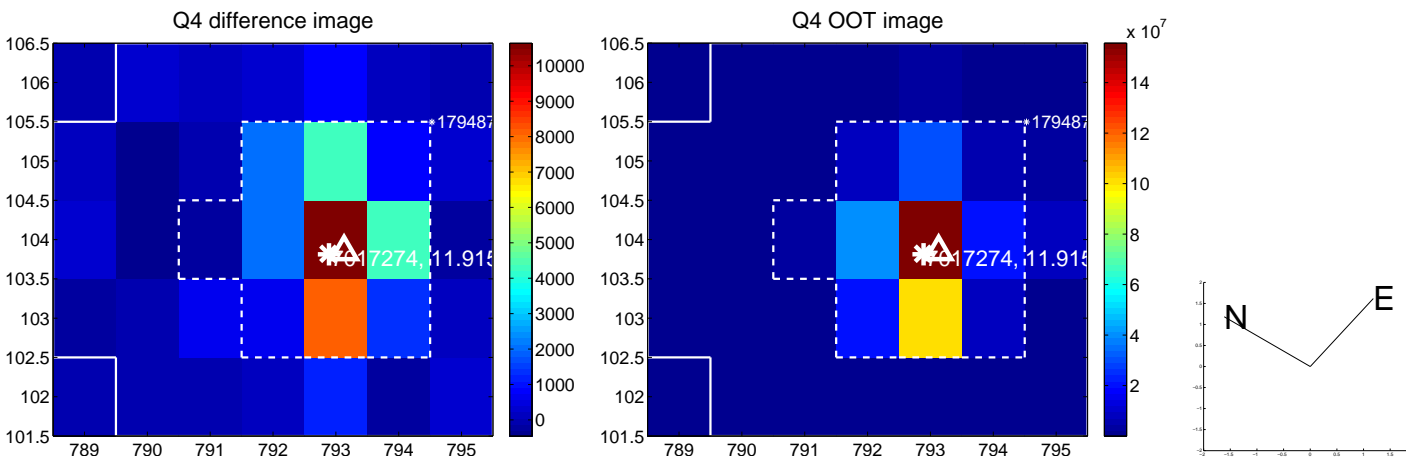
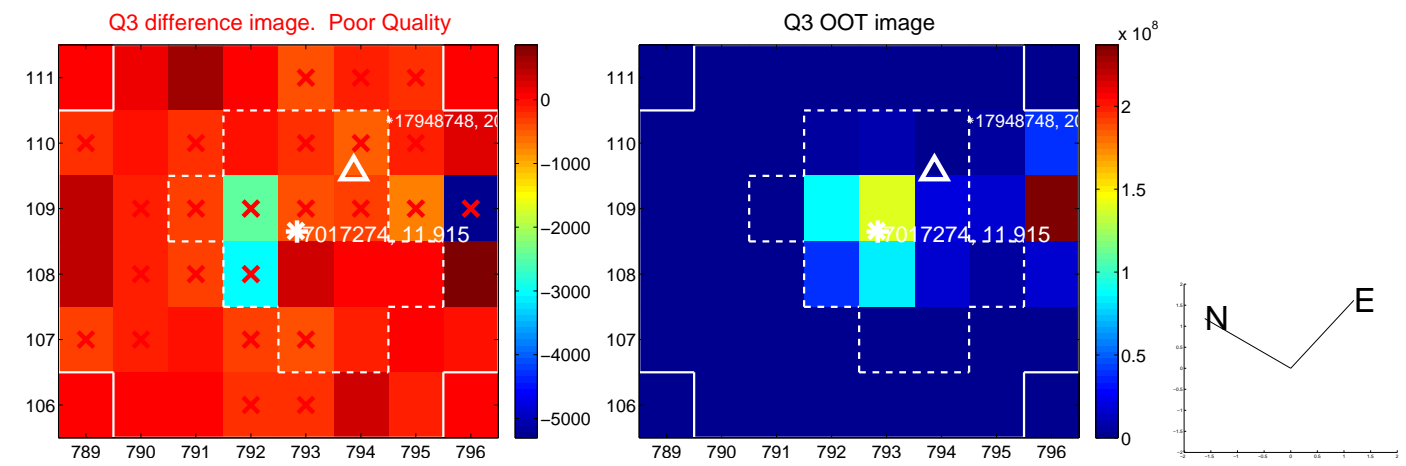
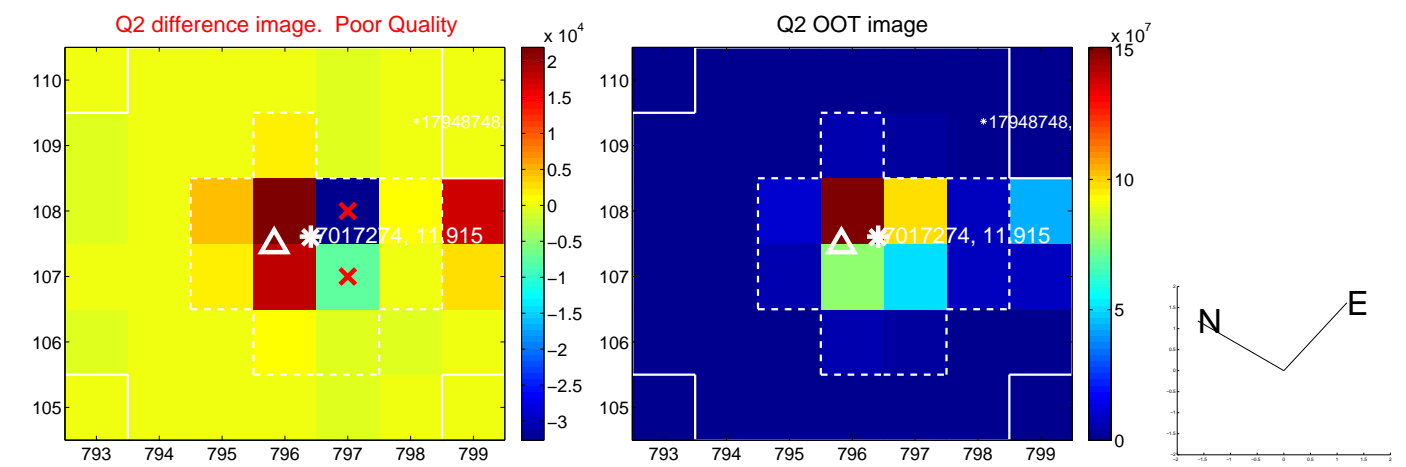
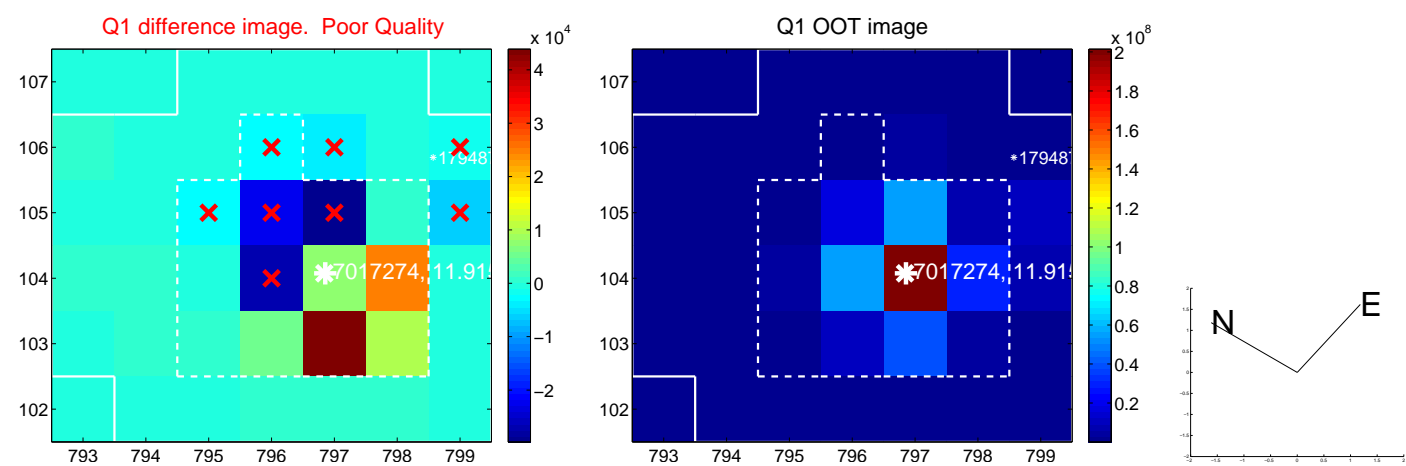


offset from photometric centroids

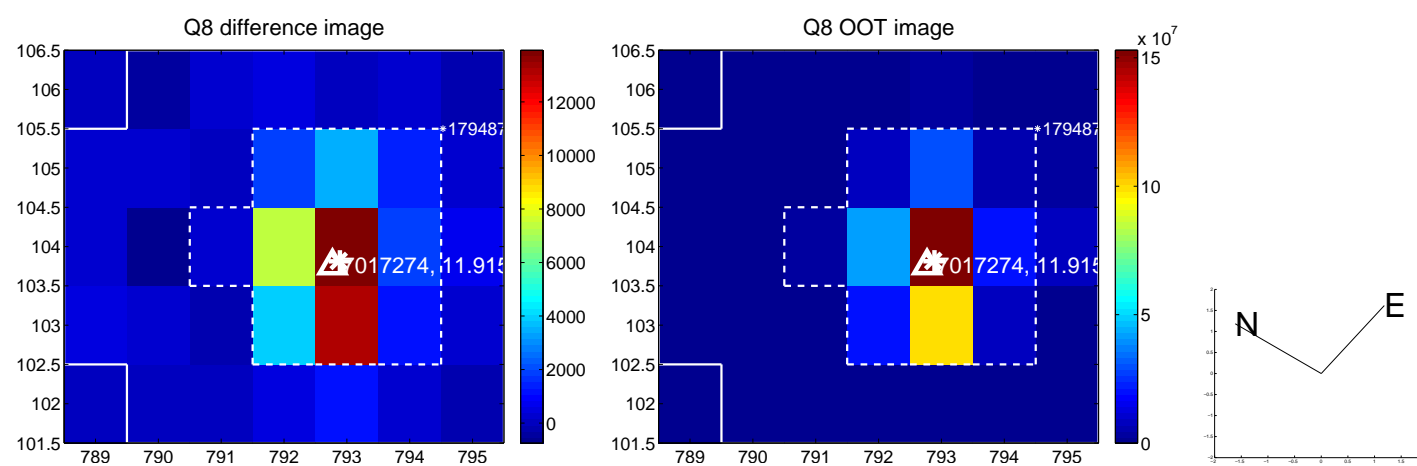
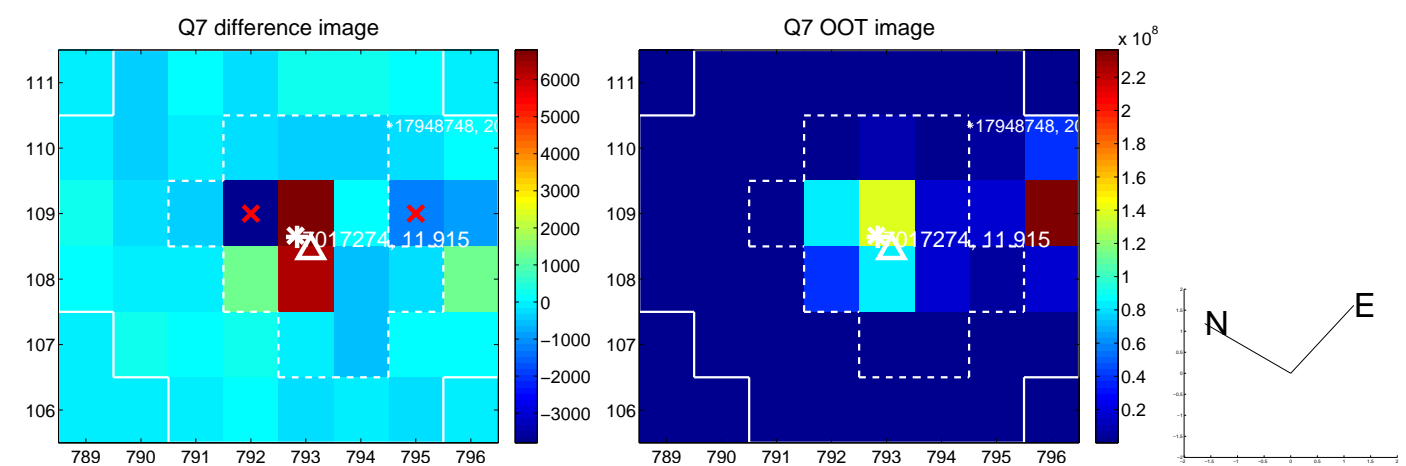
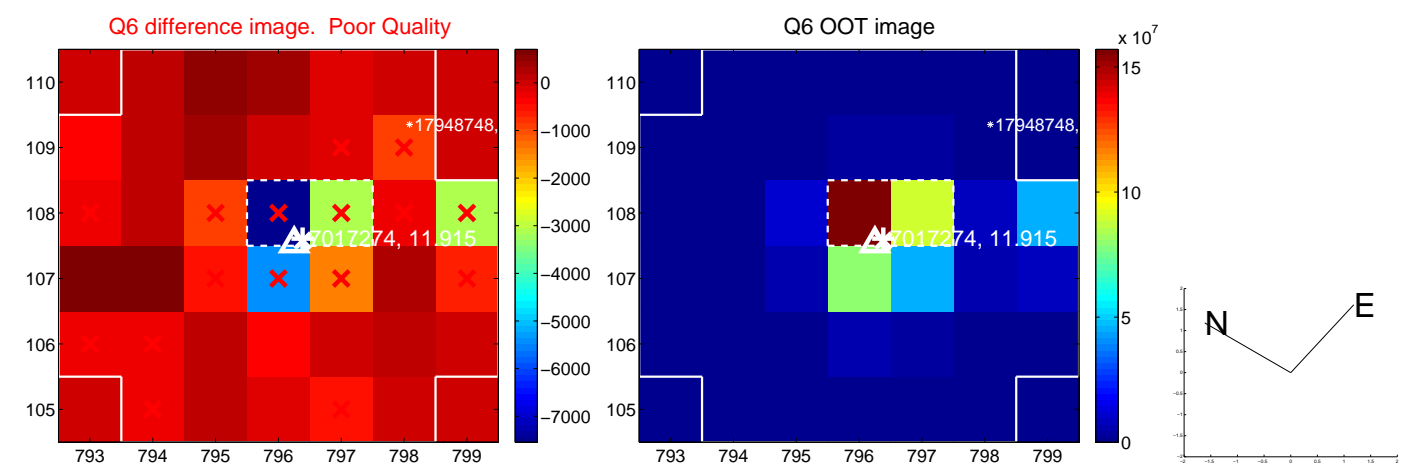
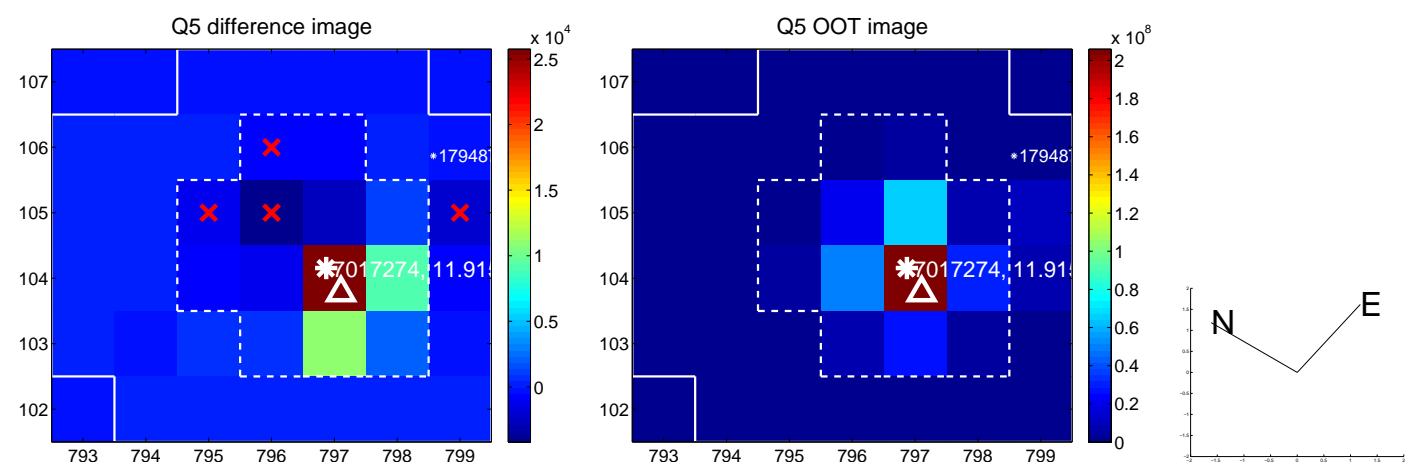


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

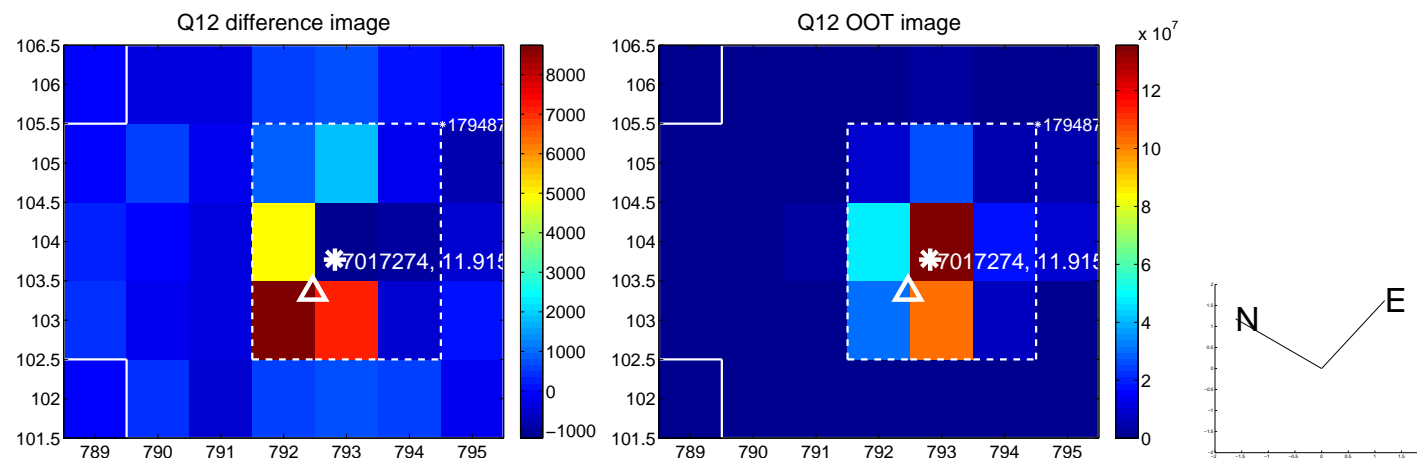
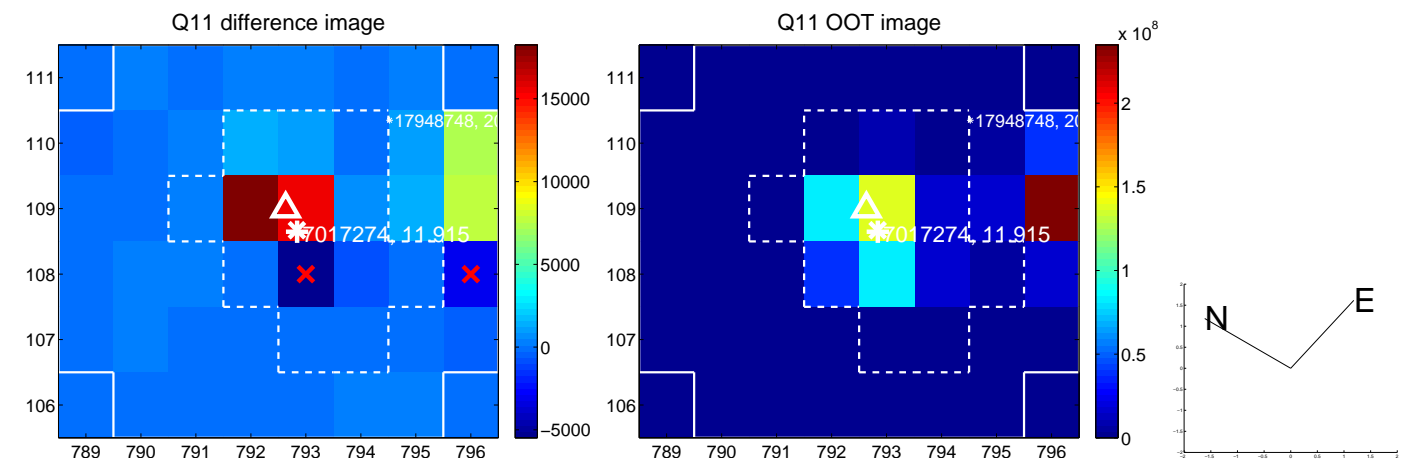
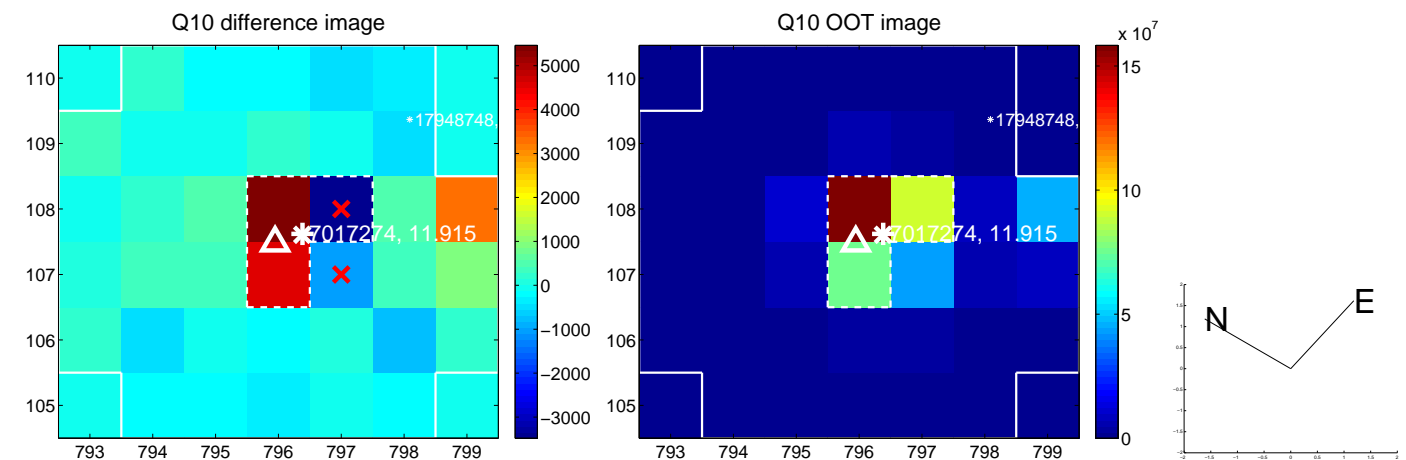
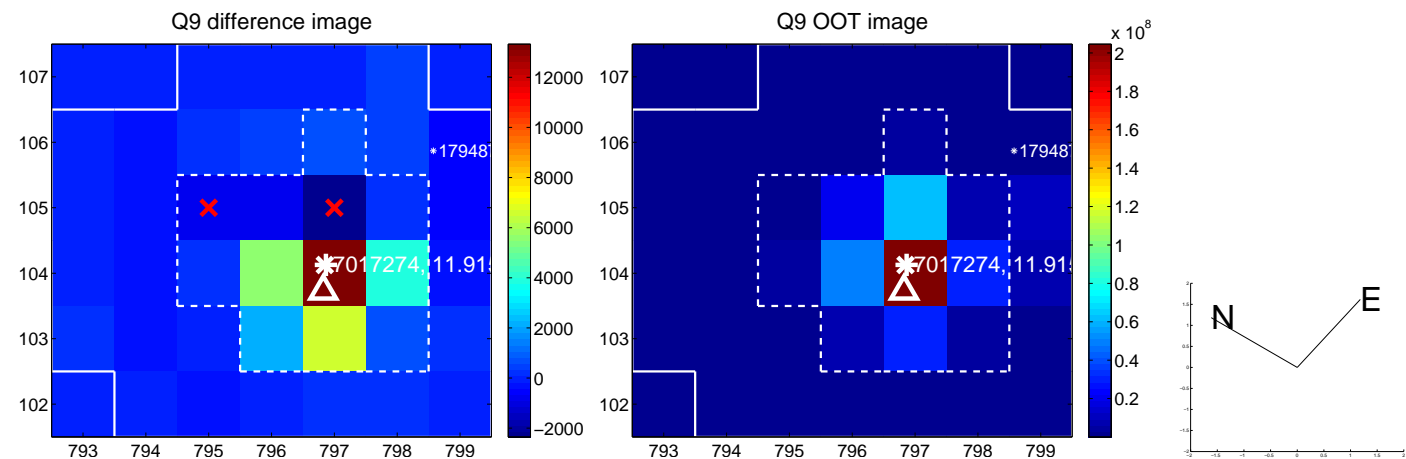
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



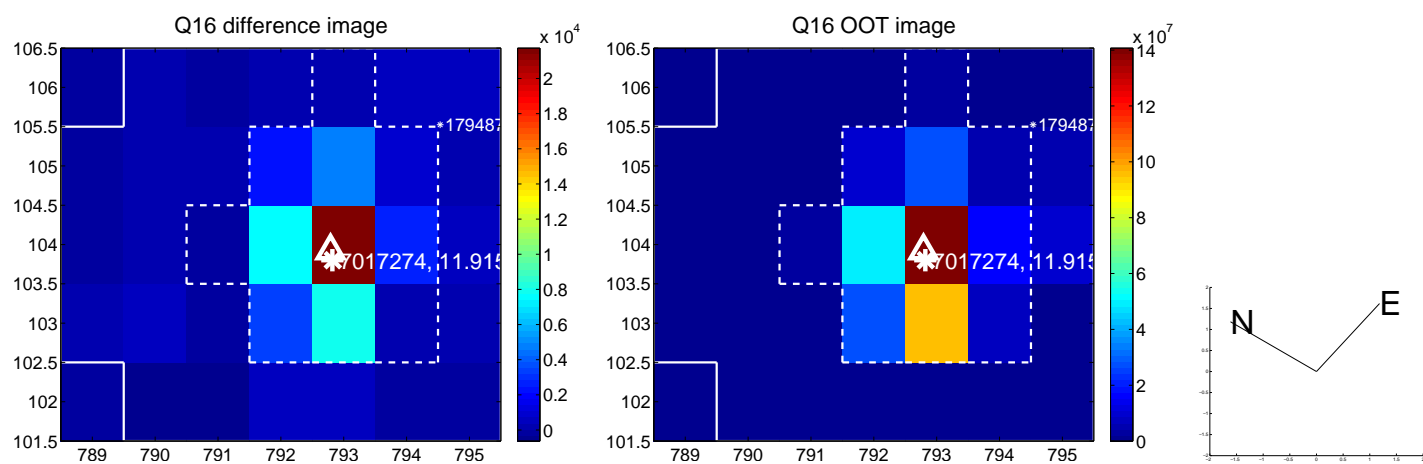
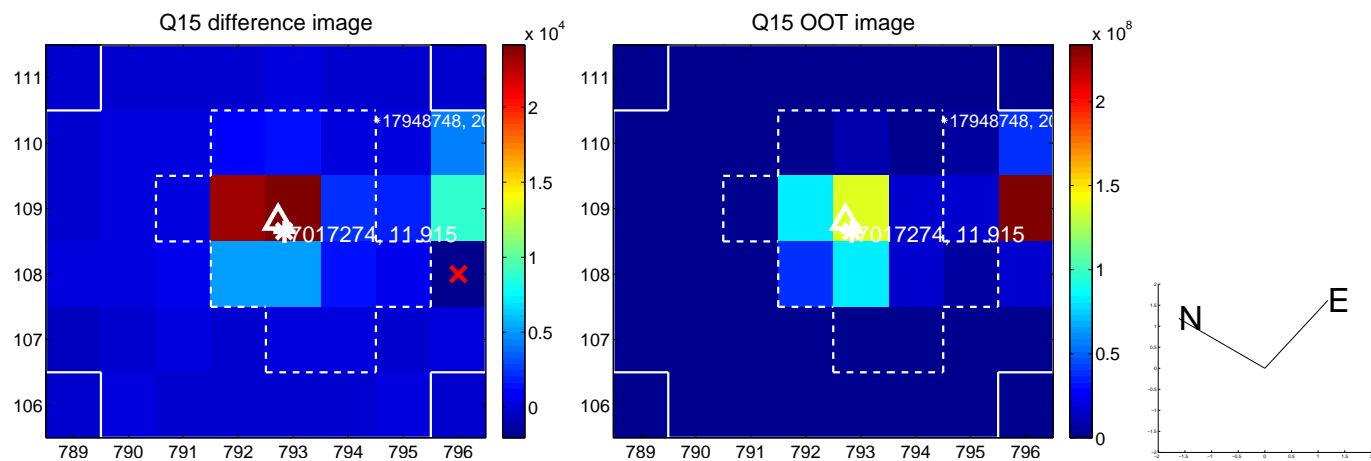
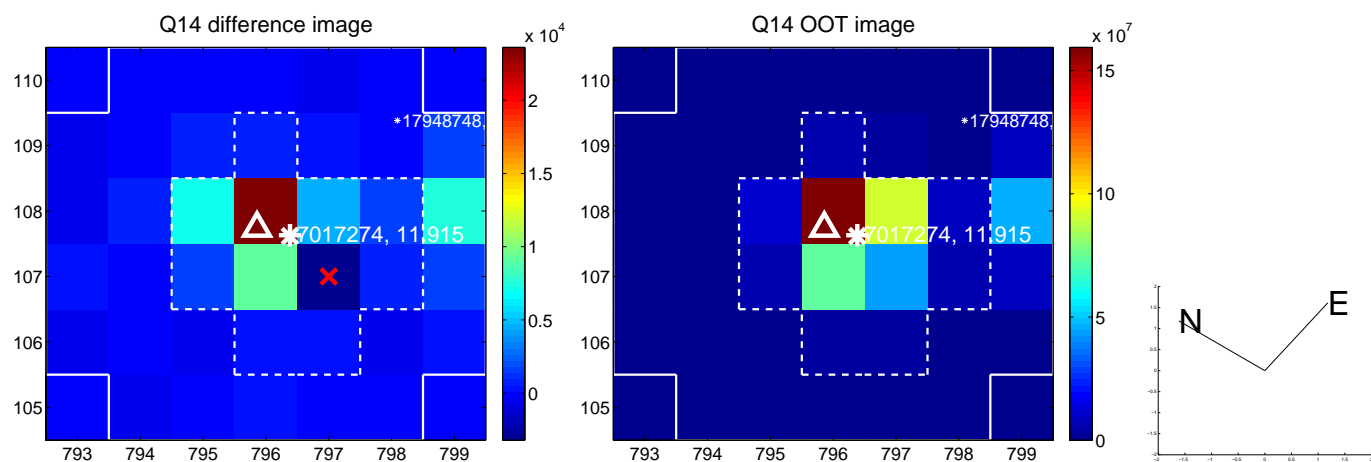
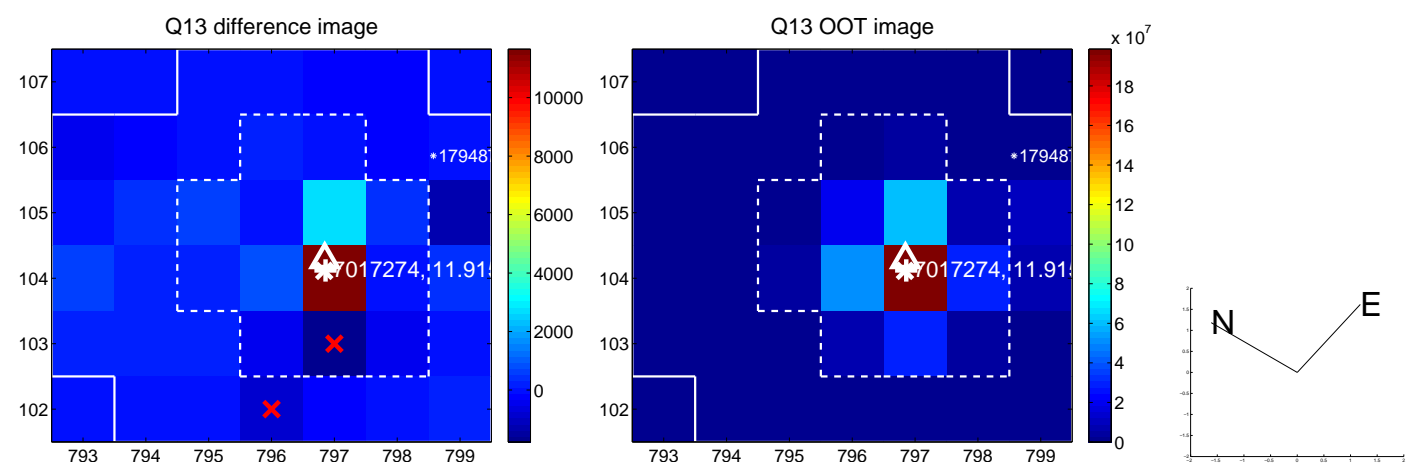
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



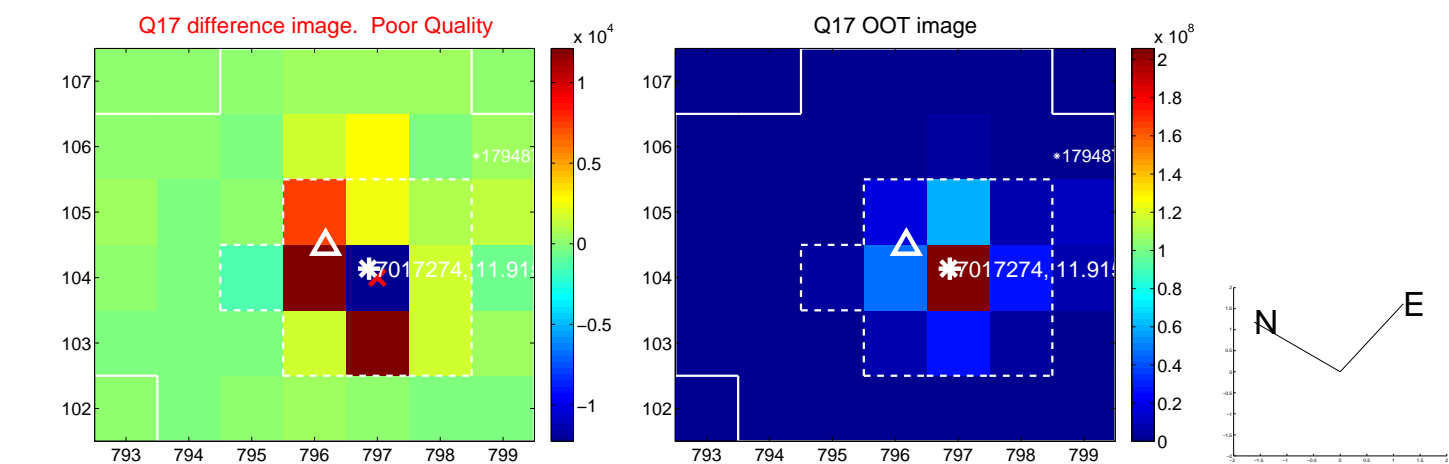
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



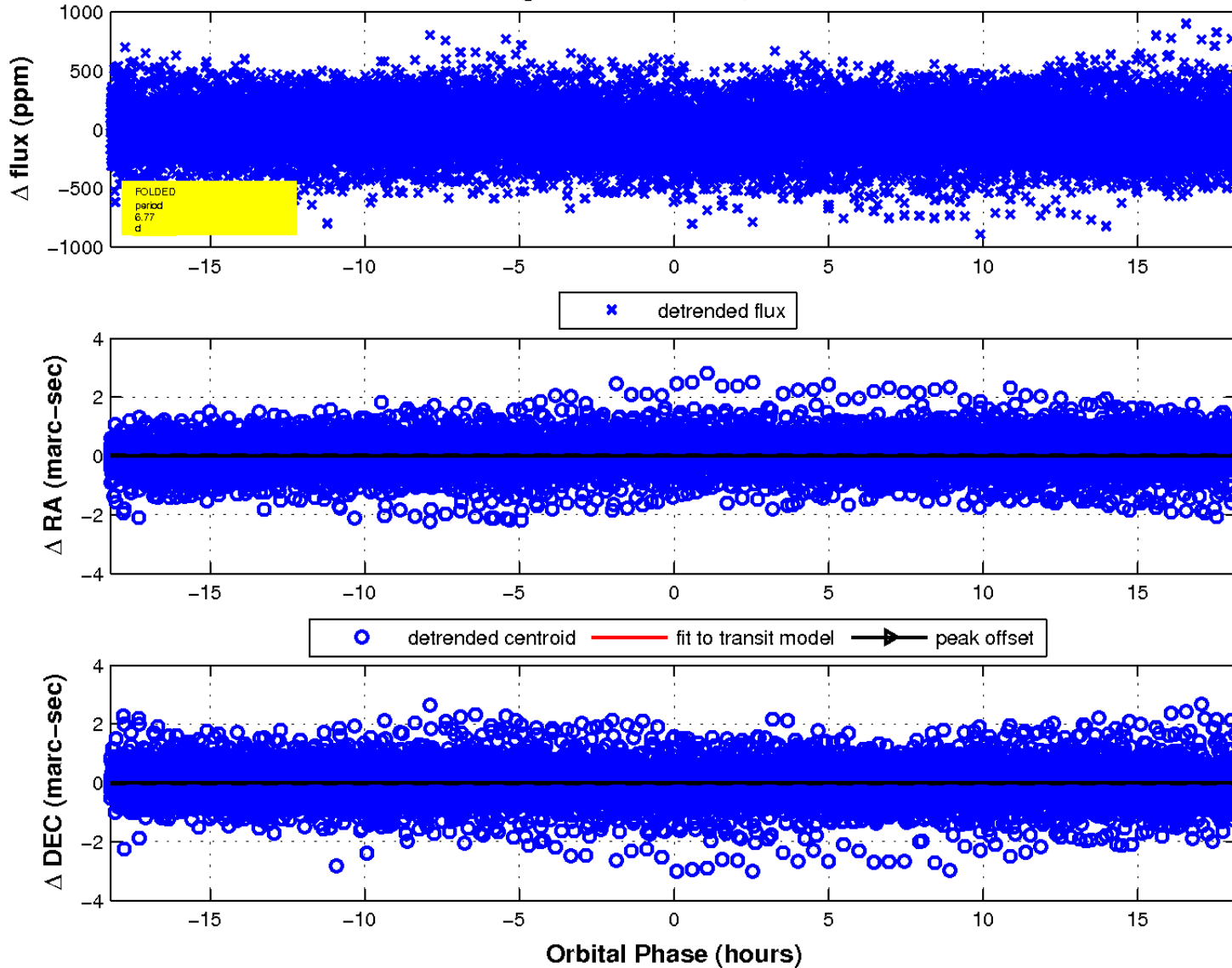
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

