

KIC 004927315

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})
004927315-01	OBS	1663.01	11.769202	138.413408	537.5	3.229	23.5	27.1	1.05	6215	3.27	134.38
004927315-02	OBS	No	11.769012	142.472989	205.0	2.806	10.9	12.1	1.05	6215	1.67	134.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004927315-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
004927315-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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.

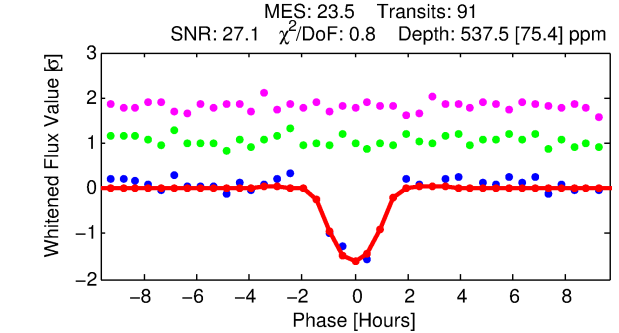
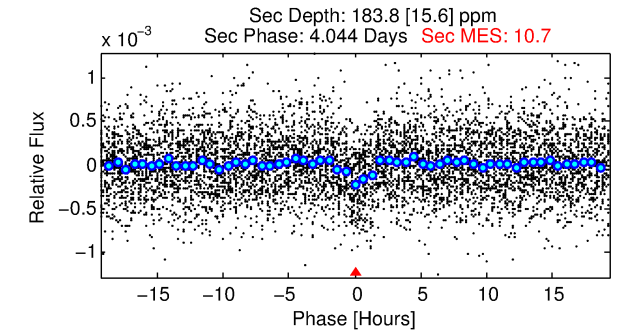
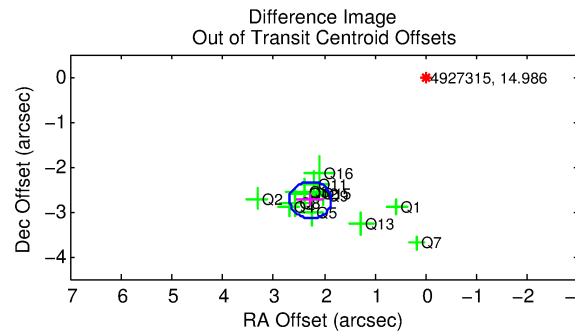
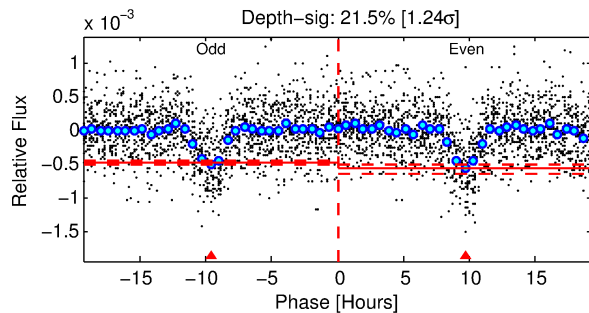
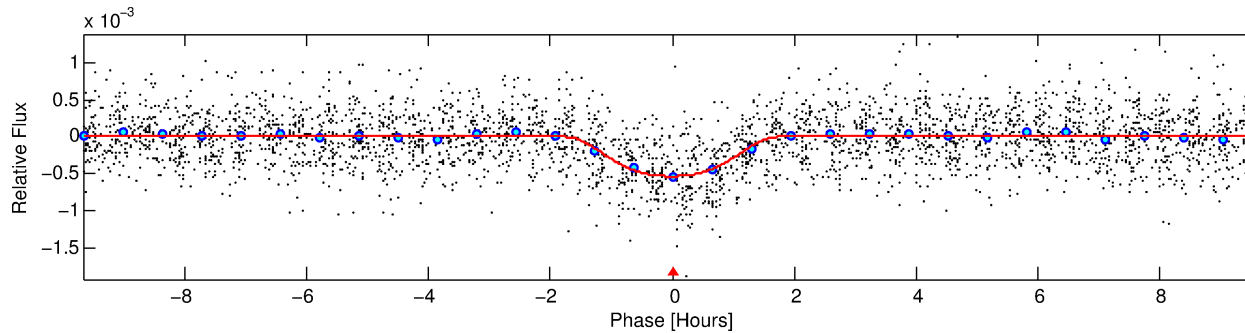
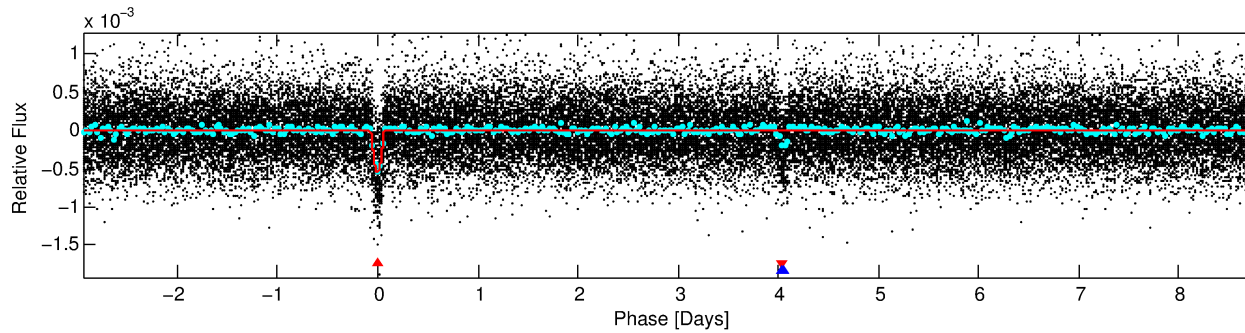
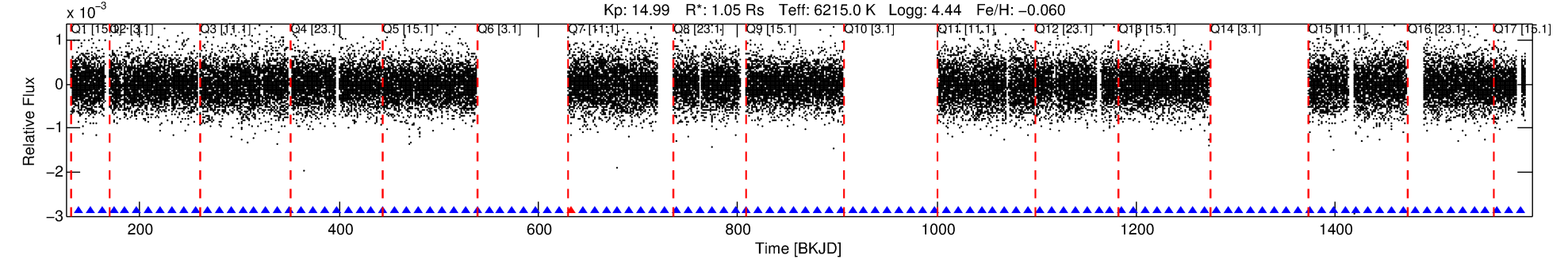
Ephemeris Match Information For 004927315-01

No Significant Match Found

DV One-Page Summary

KIC: 4927315 Candidate: 1 of 2 Period: 11.769 d
KOI: K01663.01 Corr: 0.993

Kp: 14.99 R*: 1.05 Rs Teff: 6215.0 K Logg: 4.44 Fe/H: -0.060



DV Fit Results:

Period = 11.76920 [0.00004] d
Epoch = 138.4134 [0.0028] BKJD
Rp/R* = 0.0284 [0.0040]
a/R* = 9.25 [1.25]
b = 0.97 [0.01]
Seff = 134.38 [56.61]
Teq = 868 [91] K
Rp = 3.27 [1.13] Re
a = 0.1049 [0.0281] AU
Ag = 104.41 [51.13] [2.02σ]
Teffp = 4291 [354] K [9.36σ]

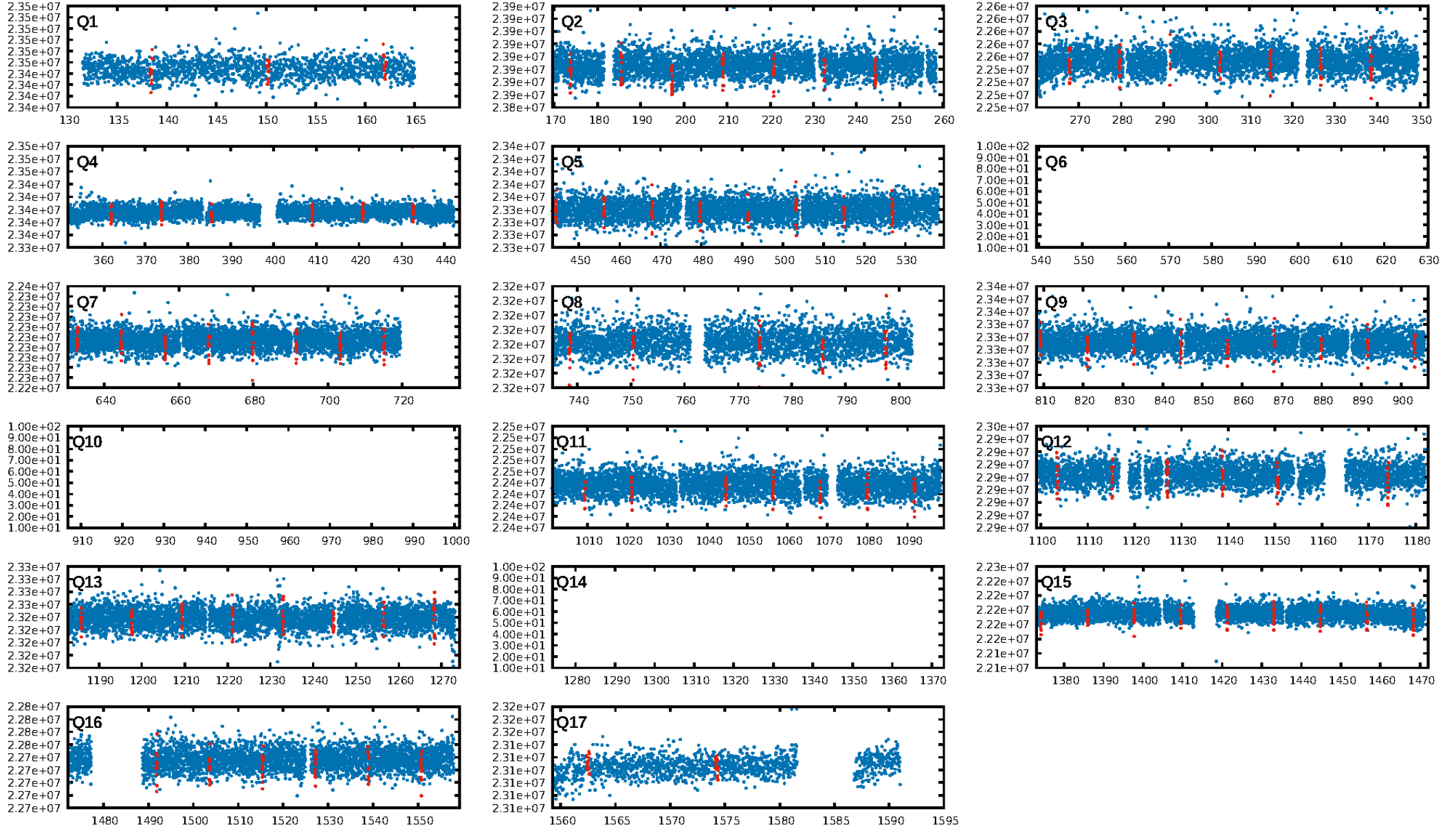
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 6.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.99e-119
RollingBand-fgt: 0.99 [85/86]
GhostDiagnostic-chr: 2.789
Centroid-sig: 0.0%
Centroid-so: 3.699 arcsec [7.46σ]
OotOffset-rm: 3.563 arcsec [26.18σ]
KicOffset-rm: 3.584 arcsec [27.35σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [14/14]

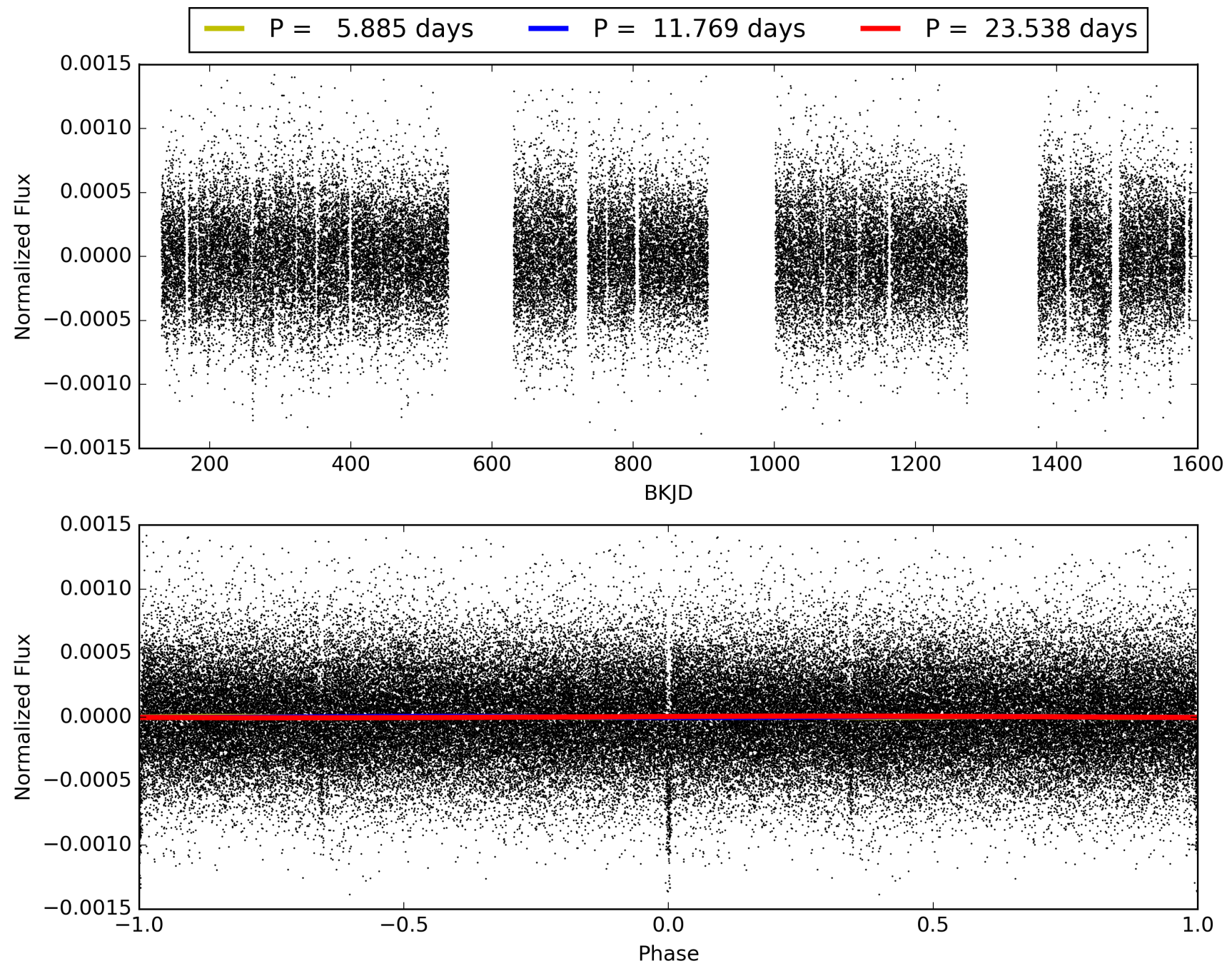
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:48:09 Z

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

TCE 004927315-01, PDC Light Curves

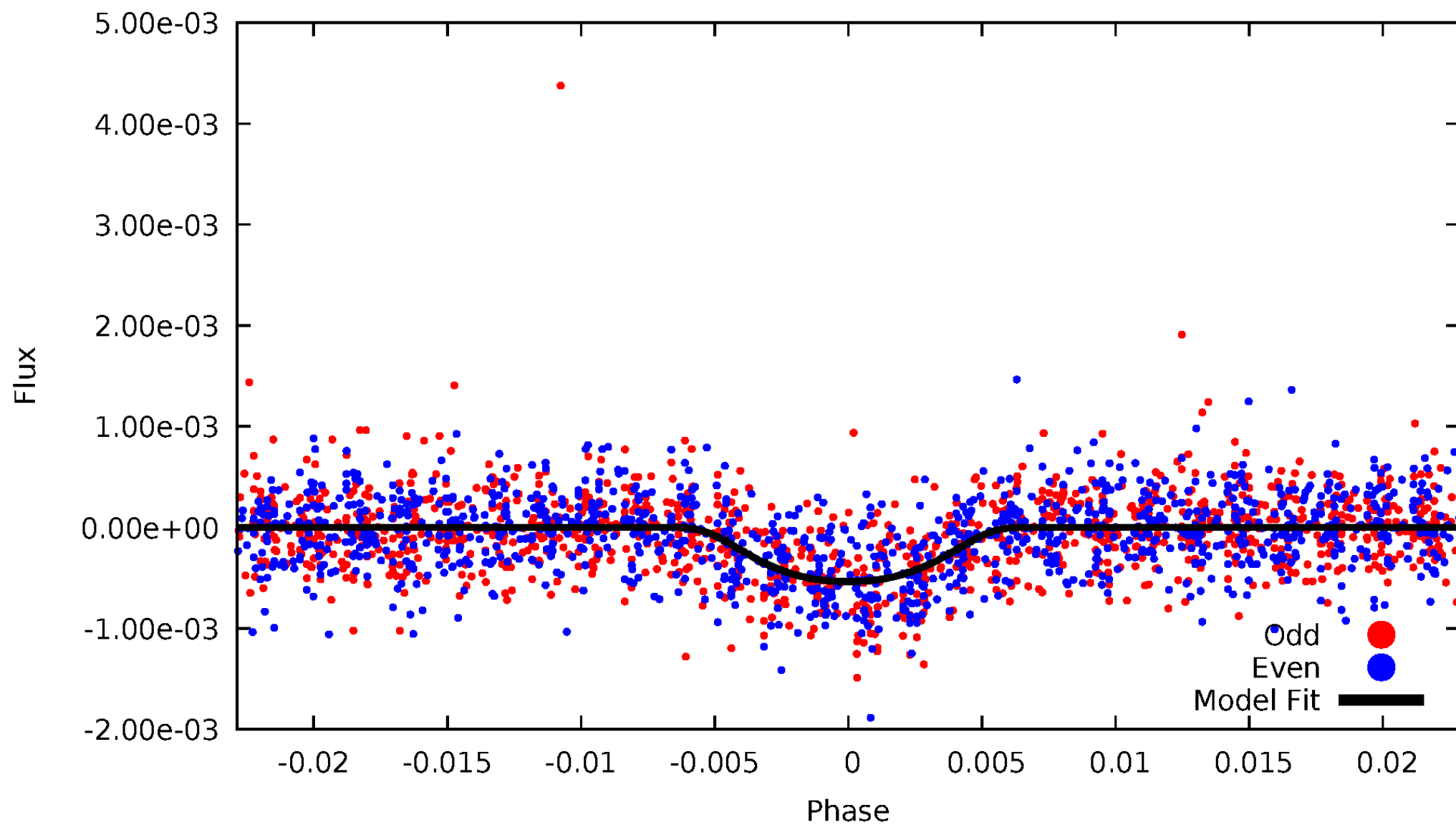


TCE 004927315-01



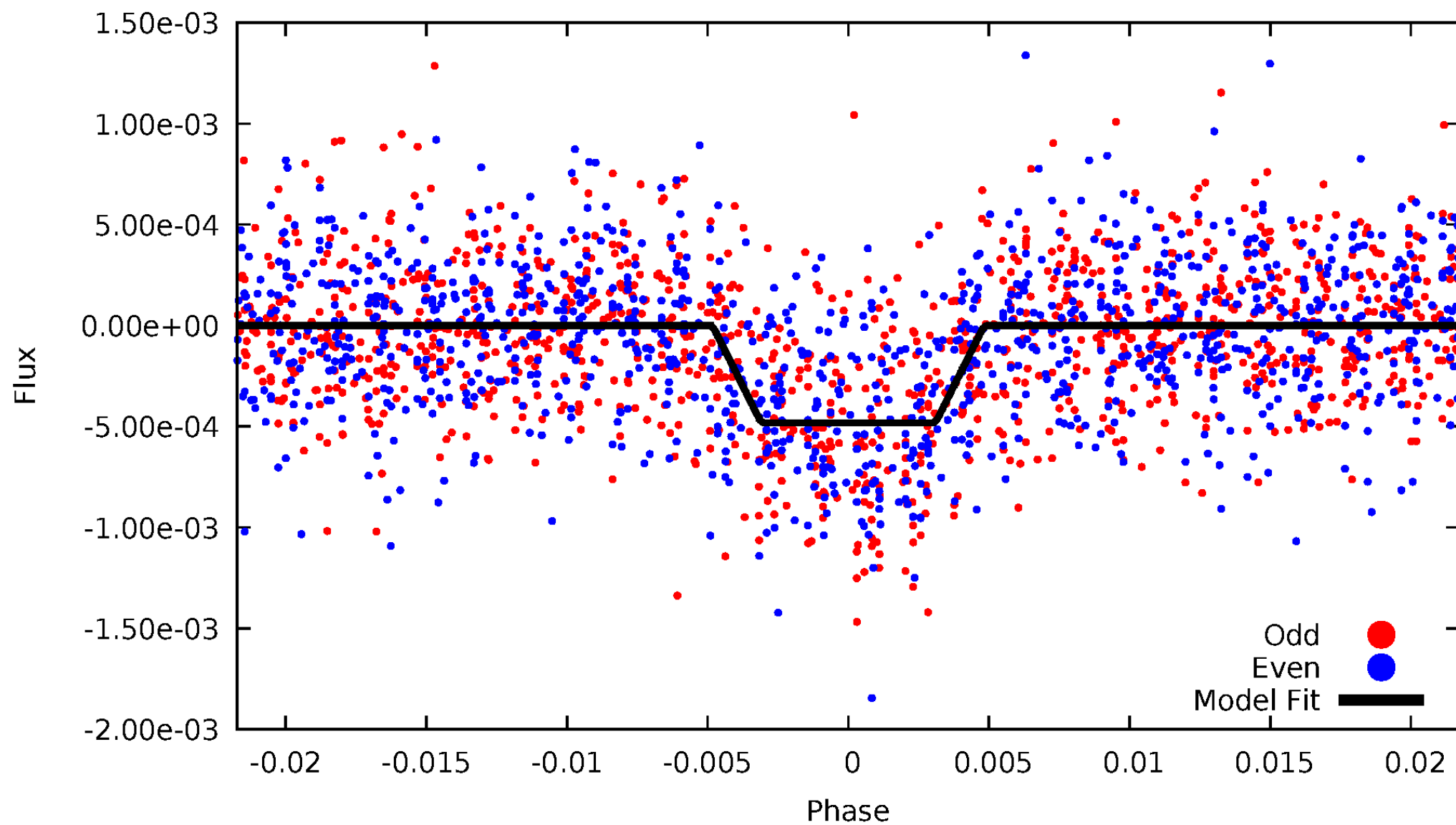
DV Odd/Even

TCE 004927315-01

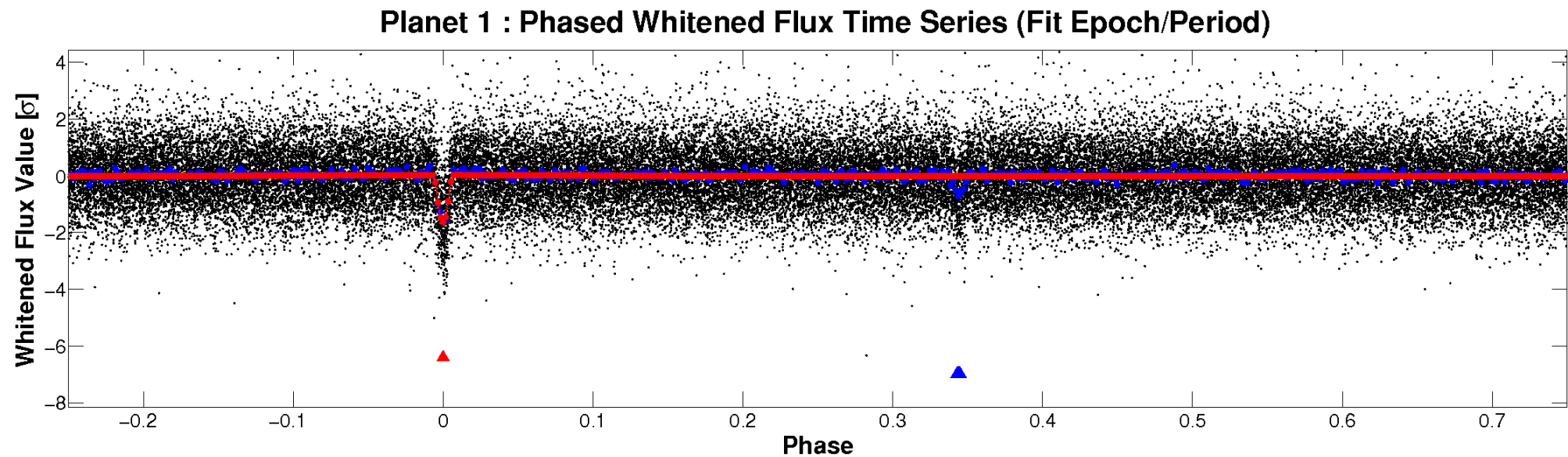
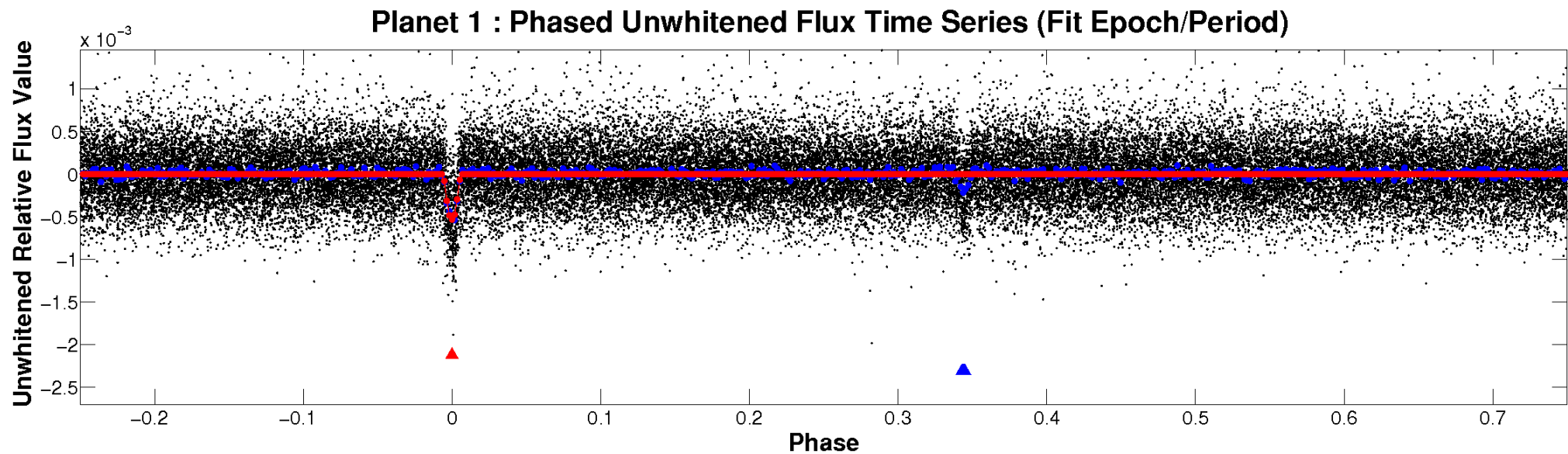


ALT Odd/Even

TCE 004927315-01

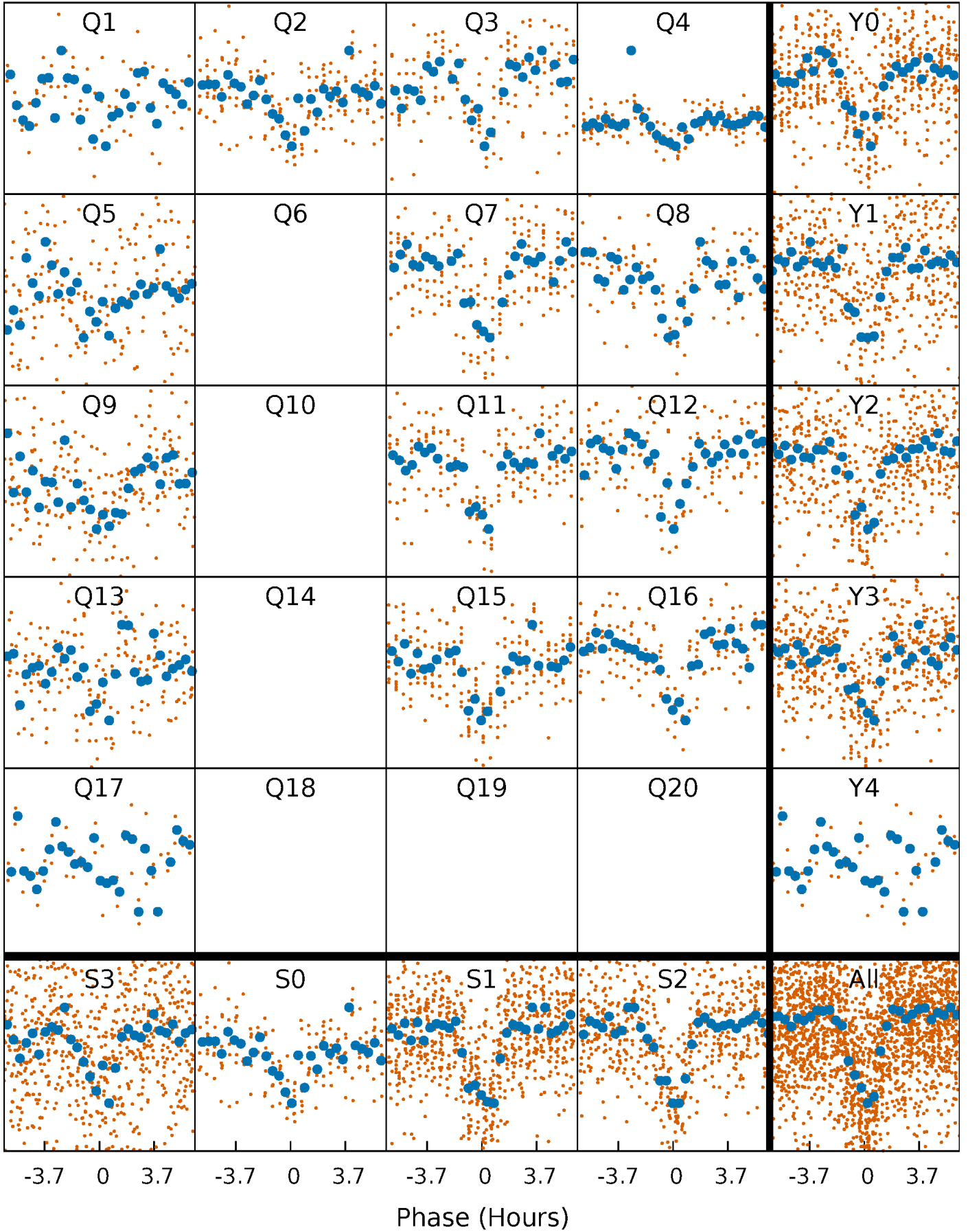


Non-Whitened Vs. Whitened Light Curve



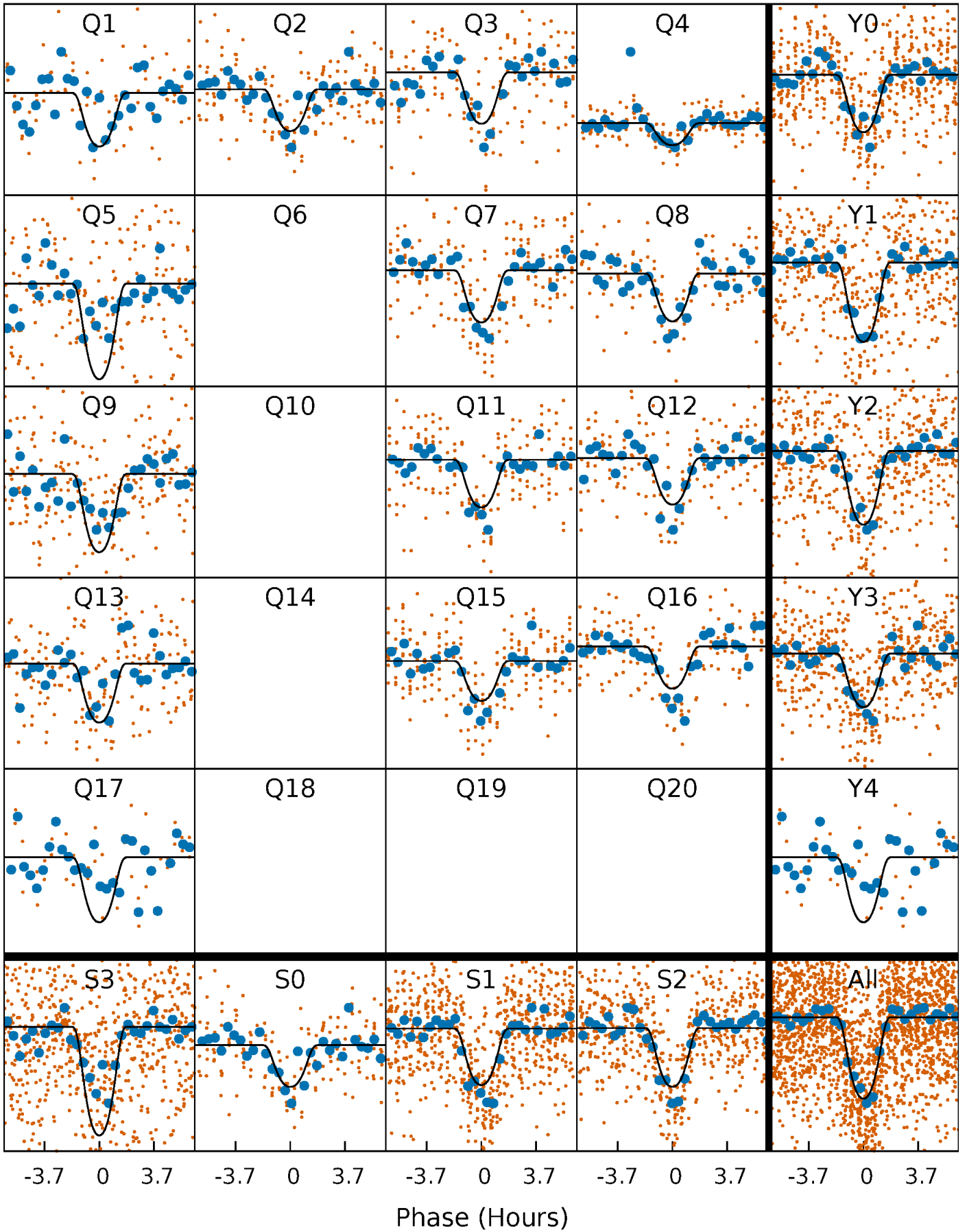
PDC Quarter-Phased Transit Curves

TCE 004927315-01 P= 11.769202 Days $T_0=138.413408$ (BKJD)



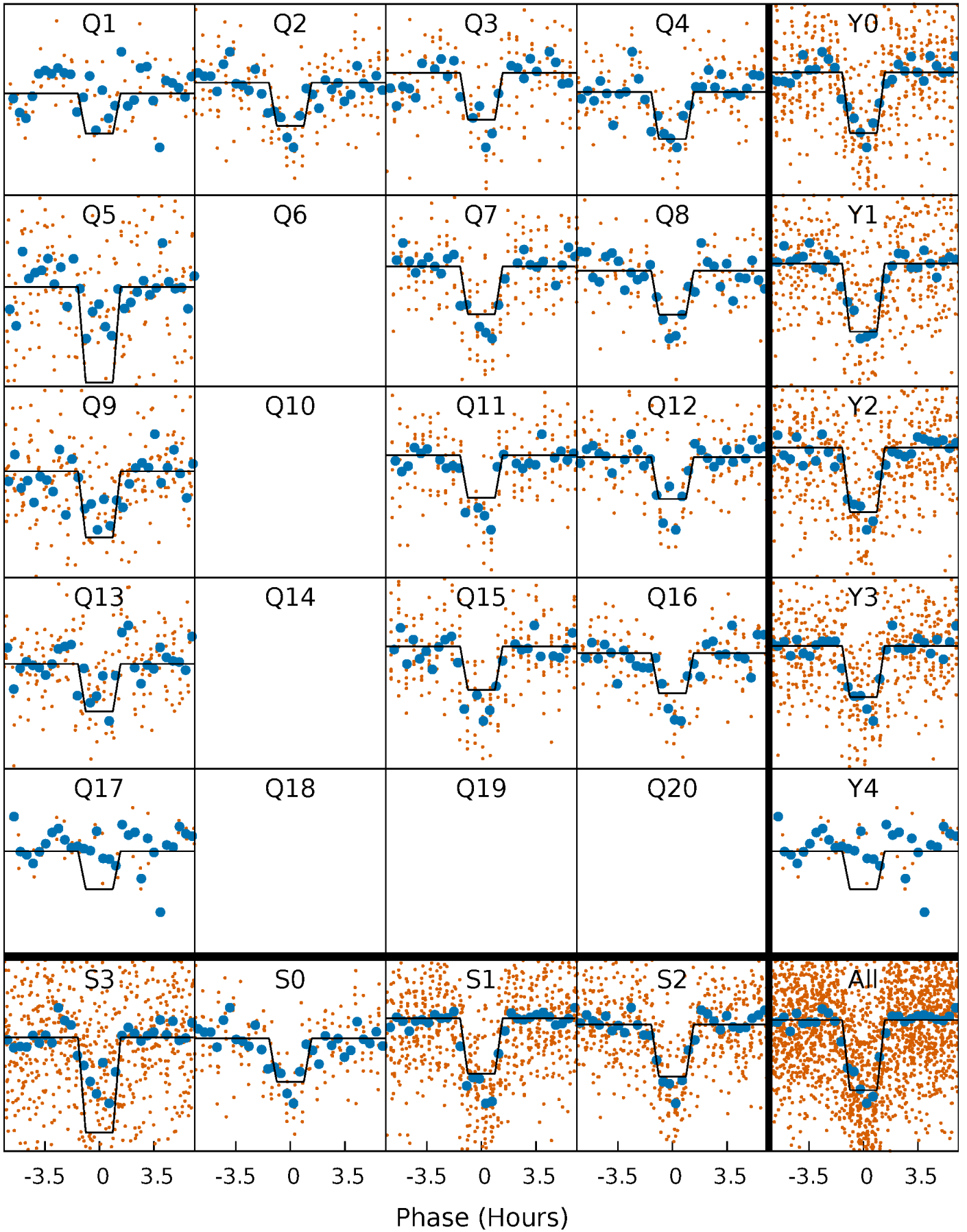
DV Quarter-Phased Transit Curves

TCE 004927315-01 P= 11.769202 Days $T_0=138.413408$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

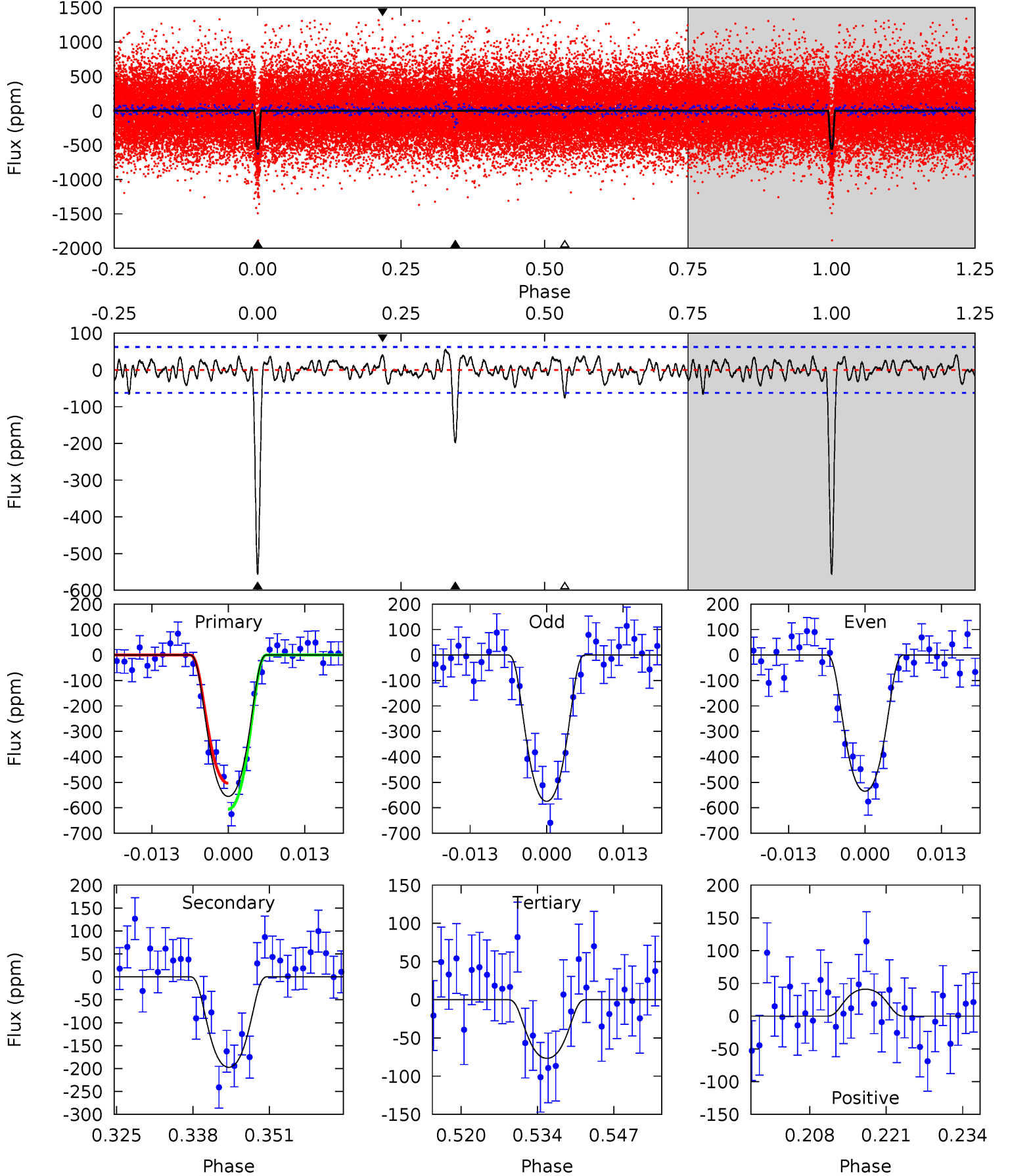
TCE 004927315-01 P= 11.769206 Days $T_0=138.413145$ (BKJD)



DV Model-Shift Uniqueness Test

004927315-01, P = 11.769202 Days, E = 126.644206 Days

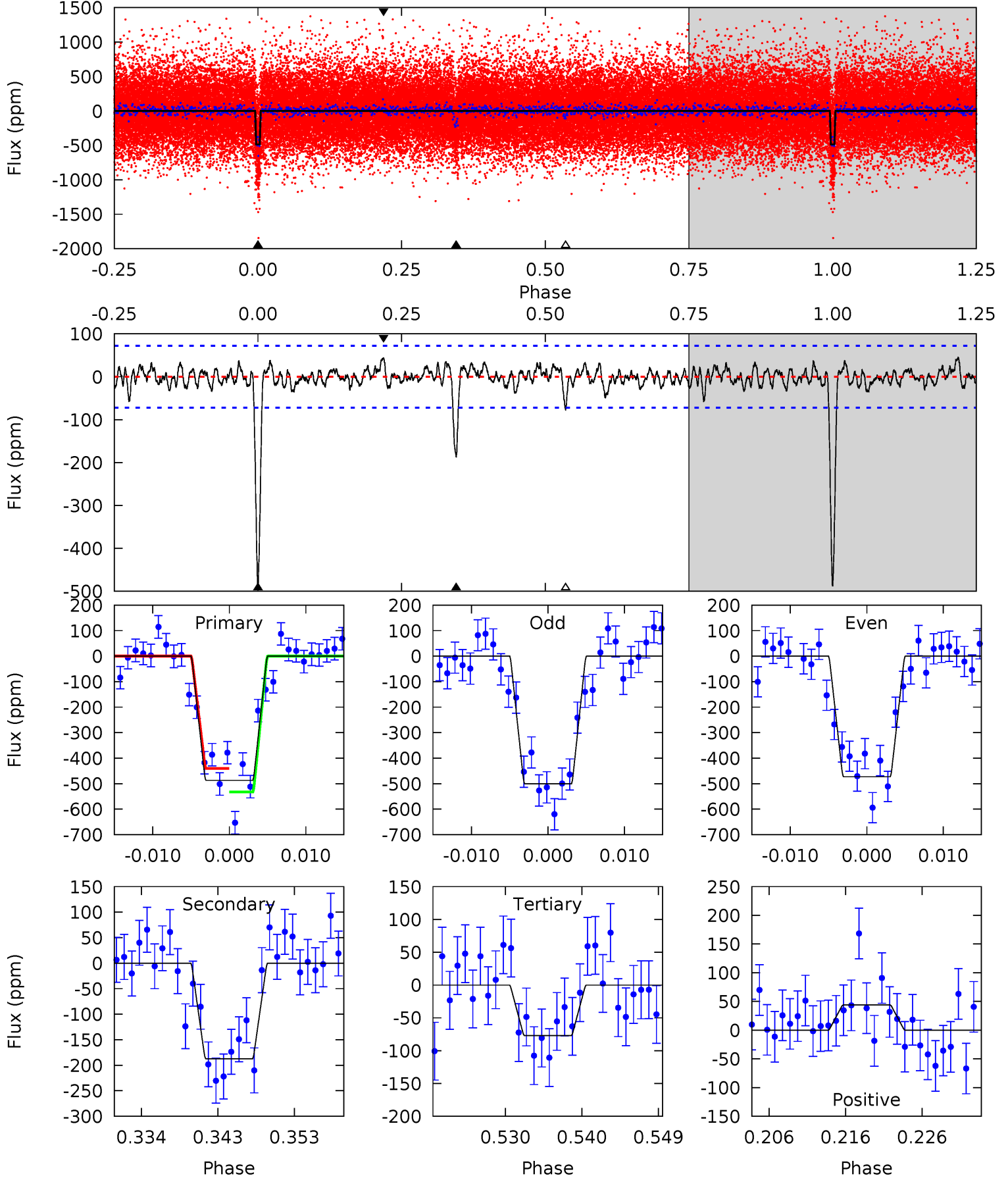
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.3	15.7	6.11	3.28	4.98	2.48	1.49	38.2	41.0	9.63	12.5	1.58	0.96	0.09	4.07



Alt Model-Shift Uniqueness Test

004927315-01, P = 11.769206 Days, E = 126.643939 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.0	13.1	5.39	3.07	5.03	2.58	1.15	28.6	31.0	7.70	10.0	0.98	0.97	0.08	3.23



Stellar Parameters For KIC 004927315

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6215^{+172}_{-237}	$4.440^{+0.067}_{-0.216}$	$-0.060^{+0.250}_{-0.350}$	$1.052^{+0.332}_{-0.133}$	$1.111^{+0.153}_{-0.153}$	$1.345^{+0.388}_{-0.716}$
	+3%/-4%	+2%/-5%	+417%/-583%	+32%/-13%	+14%/-14%	+29%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004927315-01 / KOI 1663.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-197 ± 13	$3.43^{+0.74}_{-0.59}$	1237^{+92}_{-65}	4529^{+325}_{-263}	102^{+43}_{-33}
Alt.	-187 ± 14	$2.63^{+0.67}_{-0.52}$	1234^{+94}_{-62}	4991^{+468}_{-371}	162^{+89}_{-58}

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

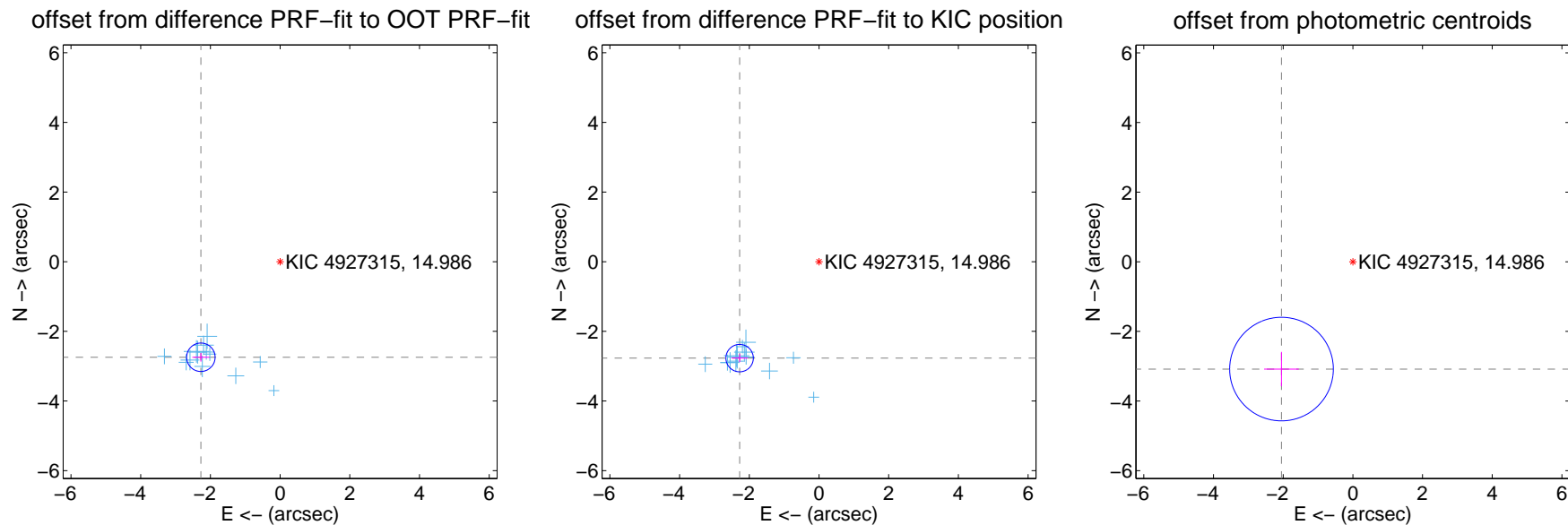
DV Centroid Data

Supplemental centroid analysis for 004927315-01. Kepler magnitude: 14.99. Transit SNR 27.06

There are 13 quarters with good PRF difference image offsets

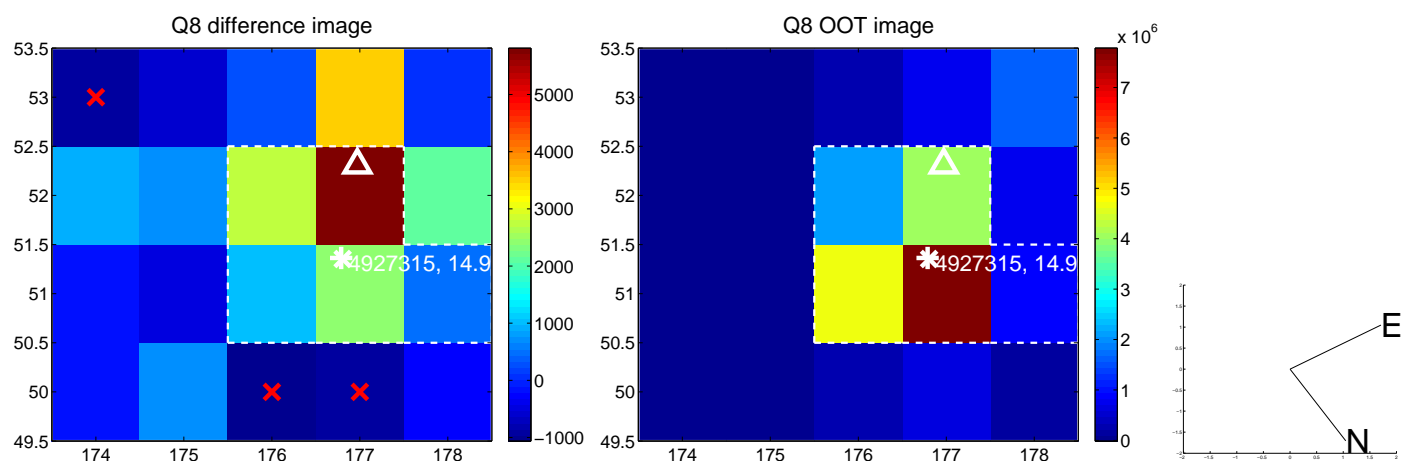
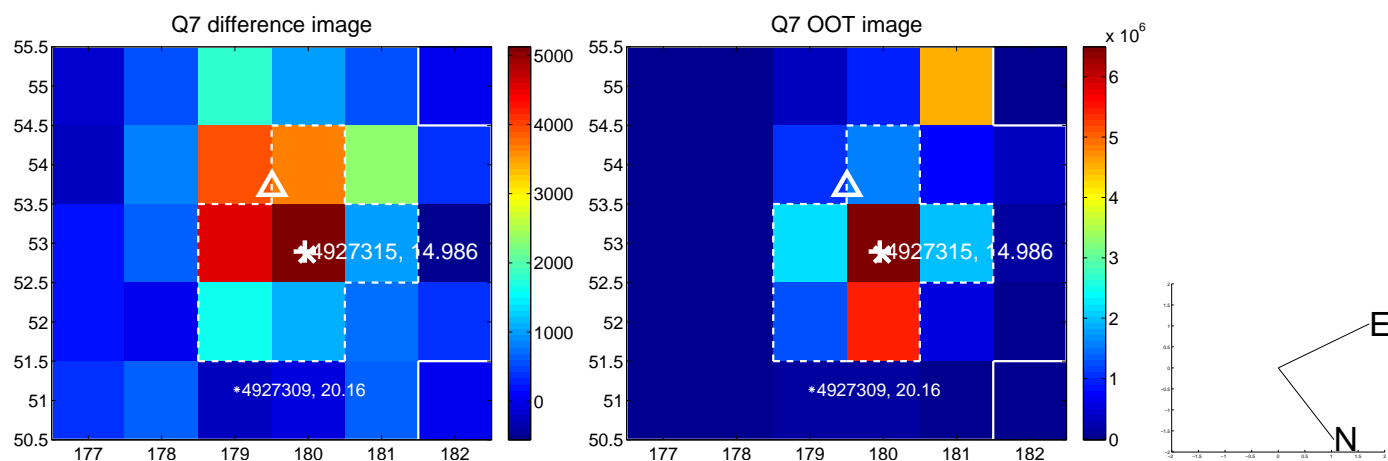
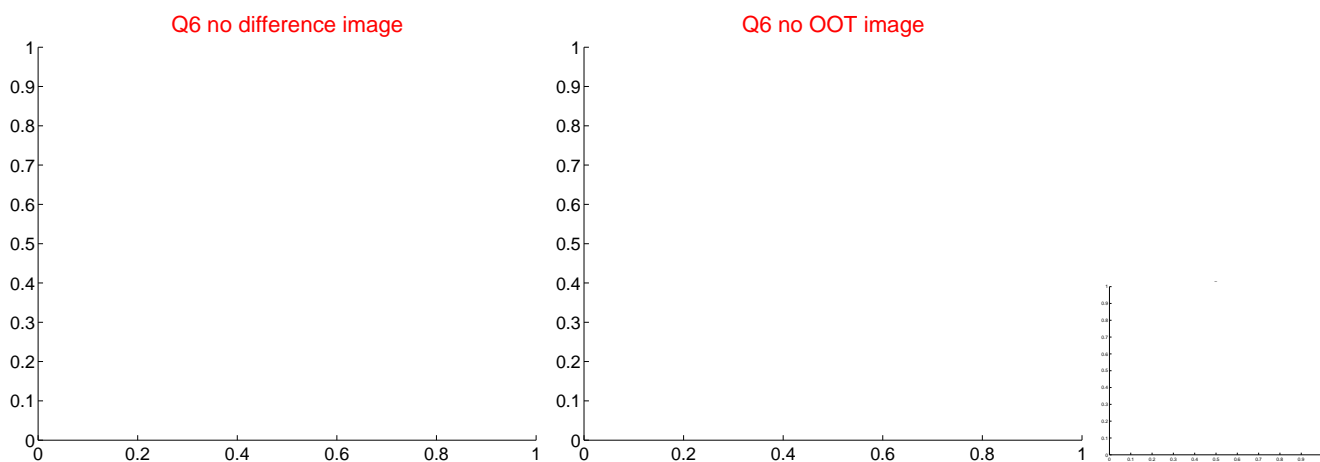
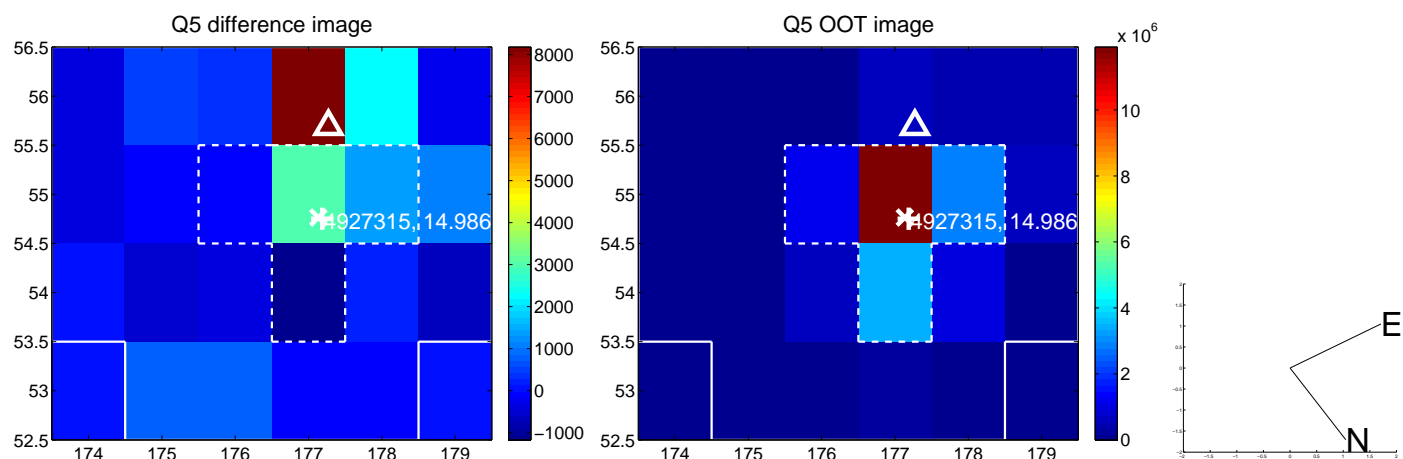
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.563 ± 0.136	26.18	2.273 ± 0.243	-2.743 ± 0.123
PRF-fit source offset from KIC position	3.584 ± 0.131	27.35	2.277 ± 0.235	-2.768 ± 0.118
photometric centroid source offset	3.70 ± 0.50	7.46	2.05 ± 0.50	-3.08 ± 0.49

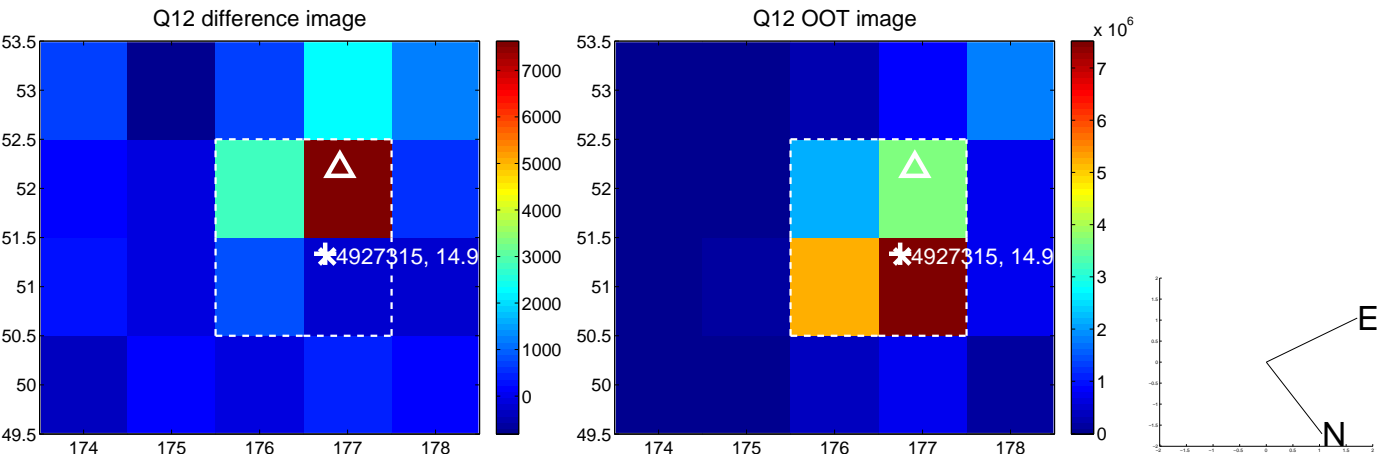
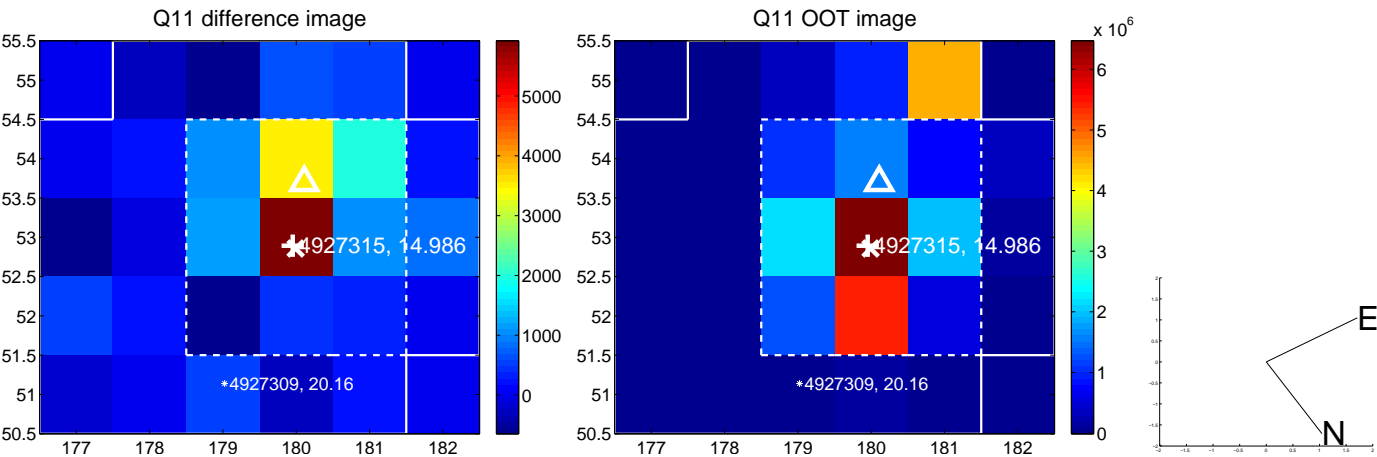
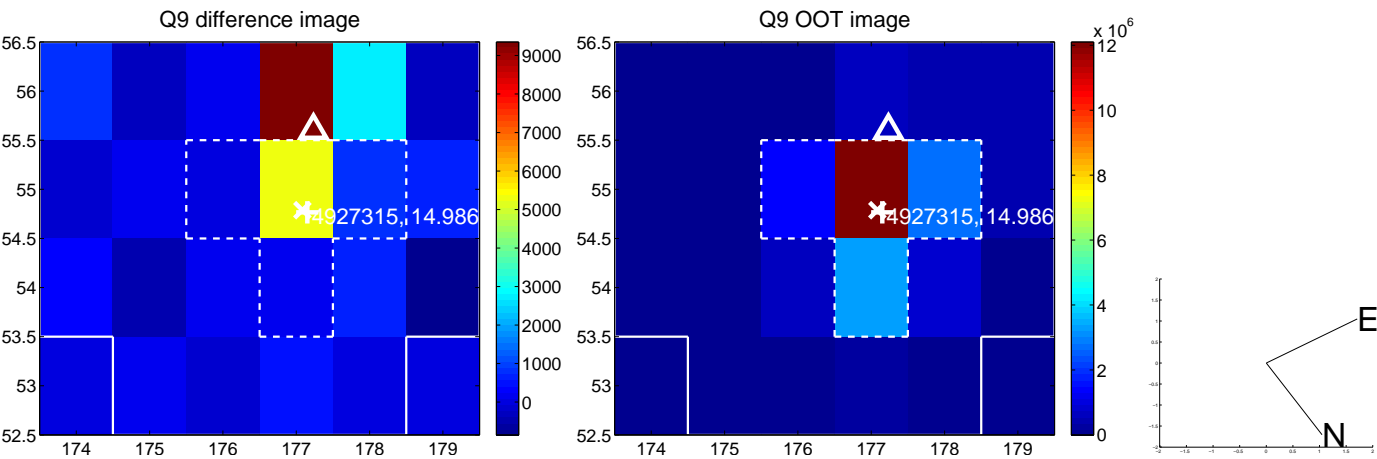


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

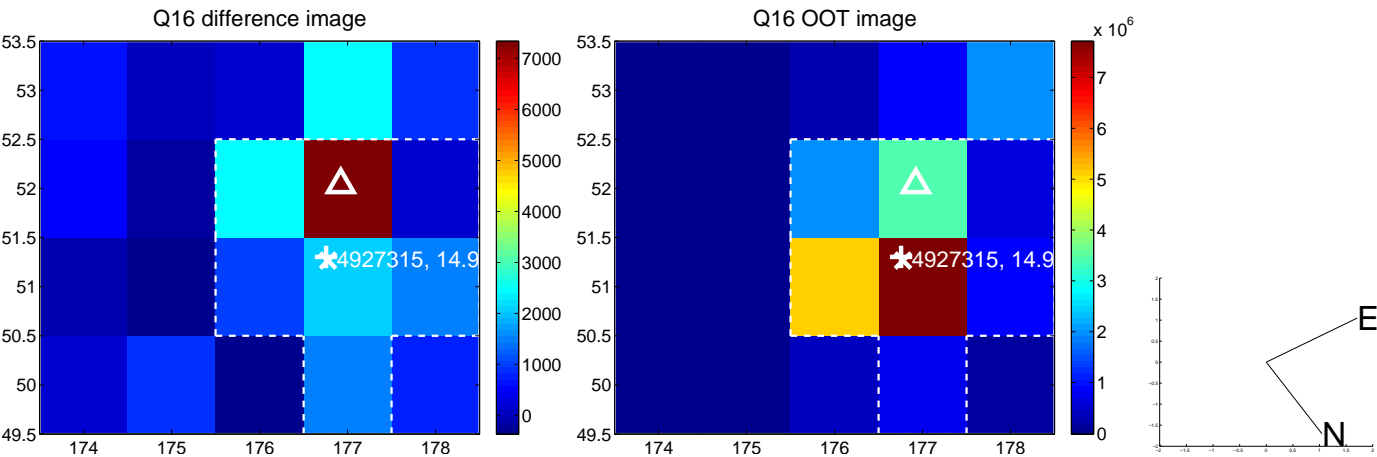
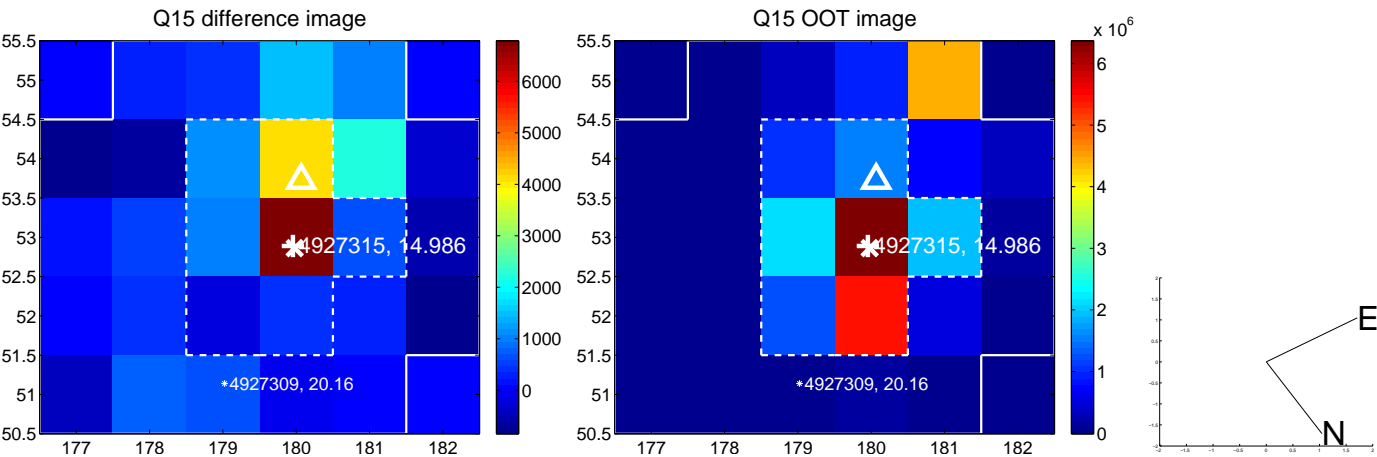
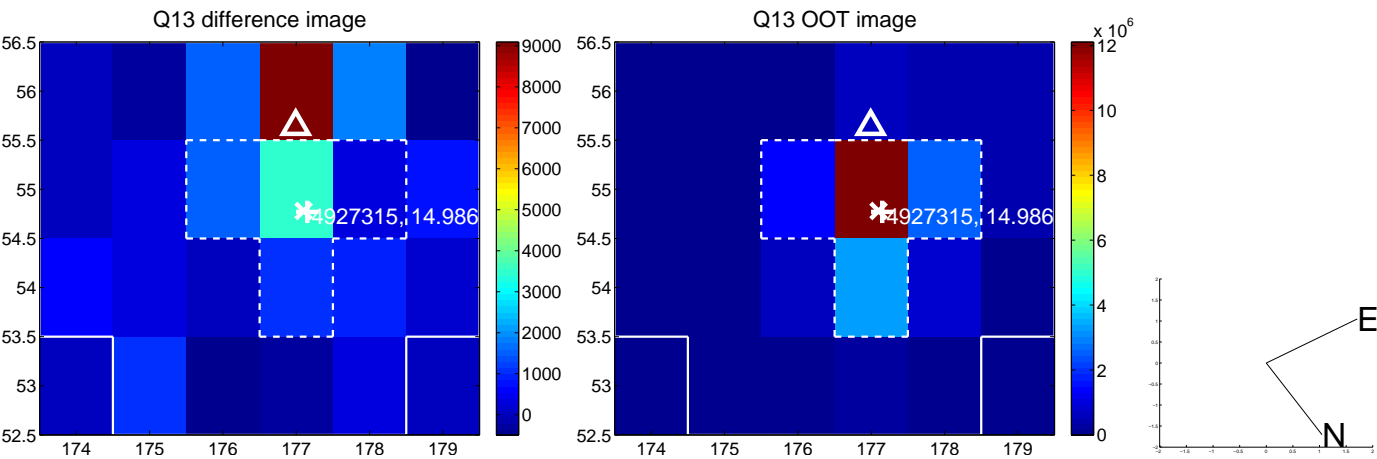
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



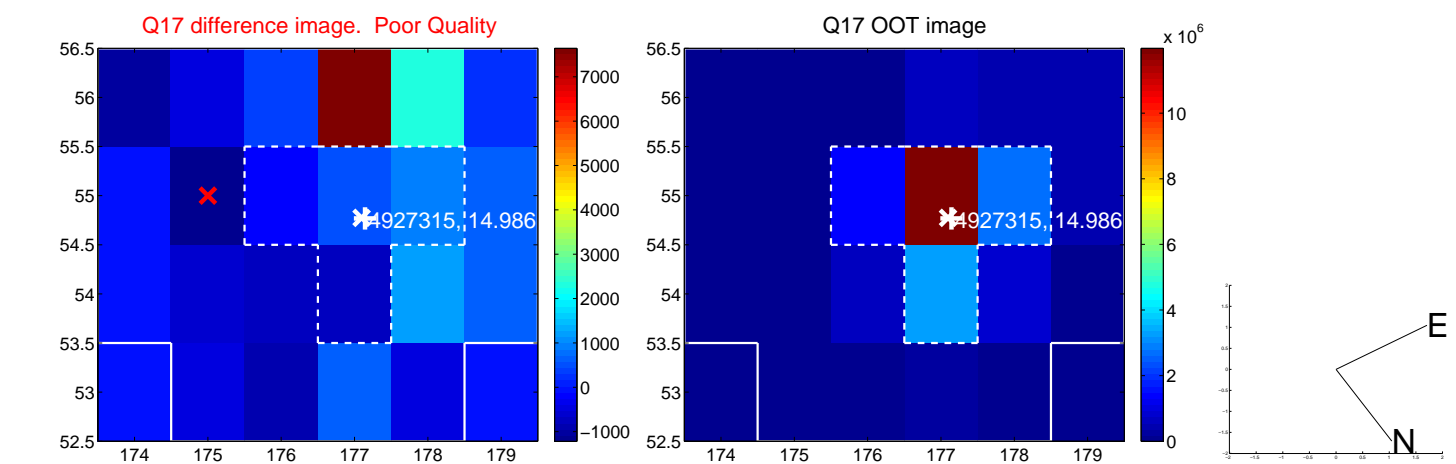
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



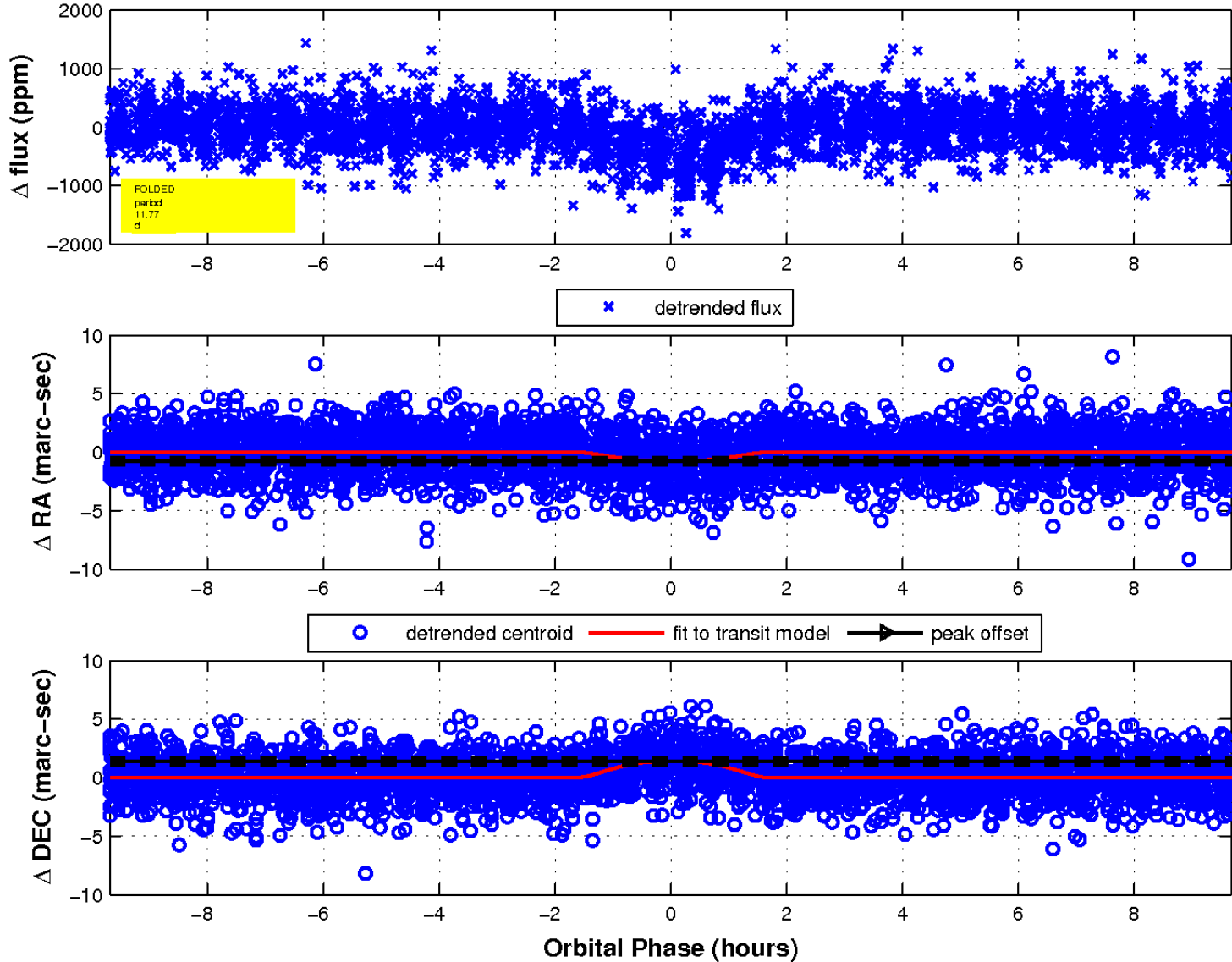
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

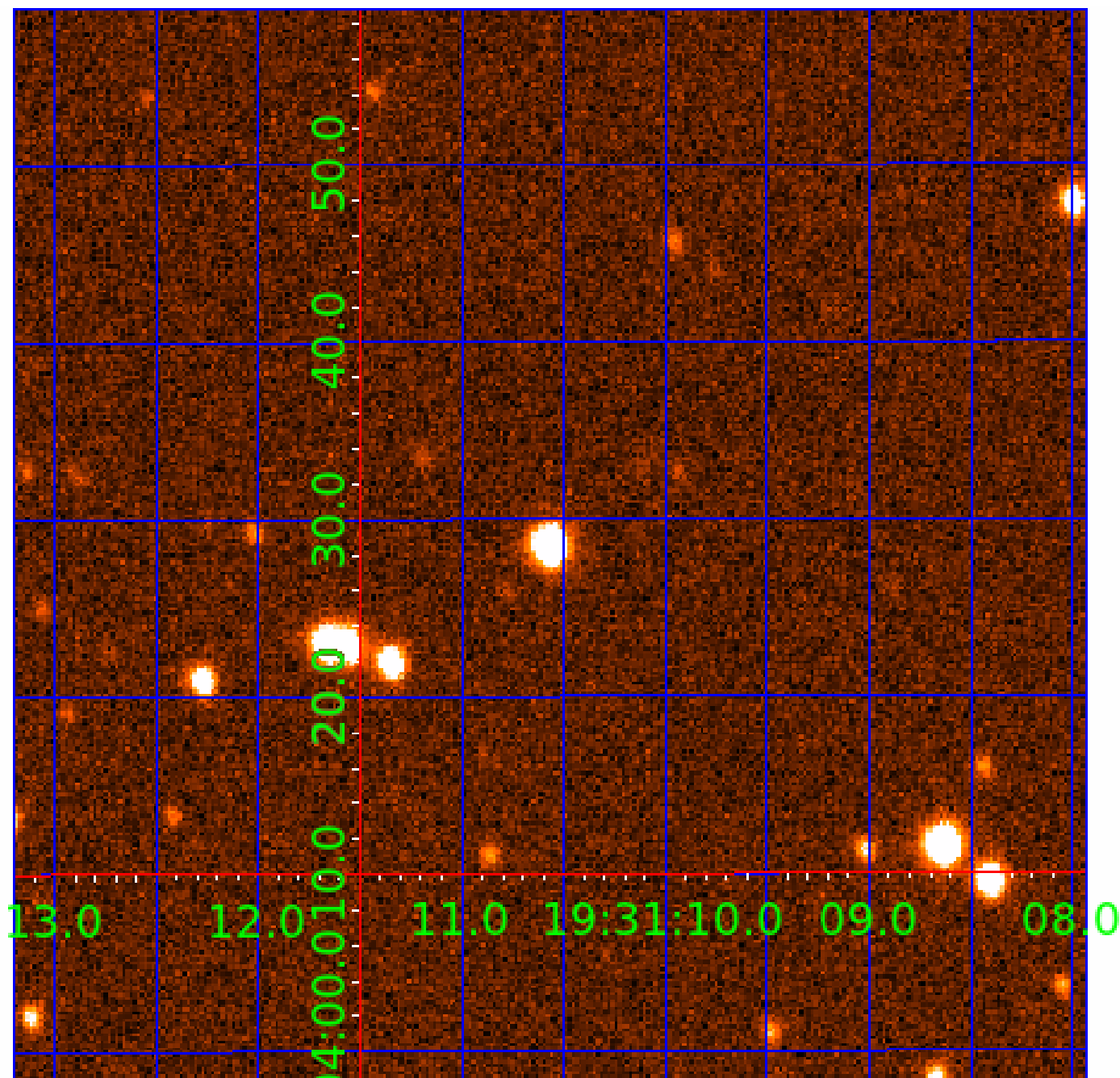


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 004927315

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})
004927315-01	OBS	1663.01	11.769202	138.413408	537.5	3.229	23.5	27.1	1.05	6215	3.27	134.38
004927315-02	OBS	No	11.769012	142.472989	205.0	2.806	10.9	12.1	1.05	6215	1.67	134.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004927315-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
004927315-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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.

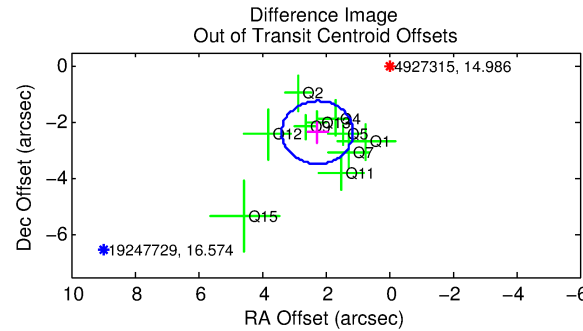
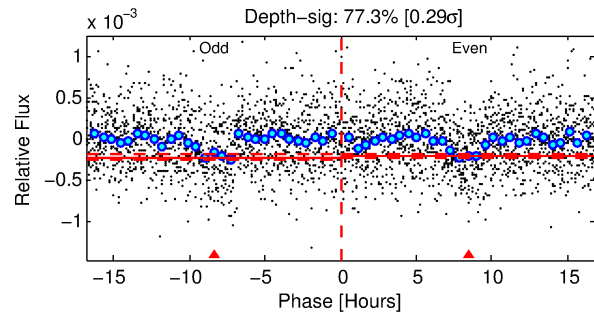
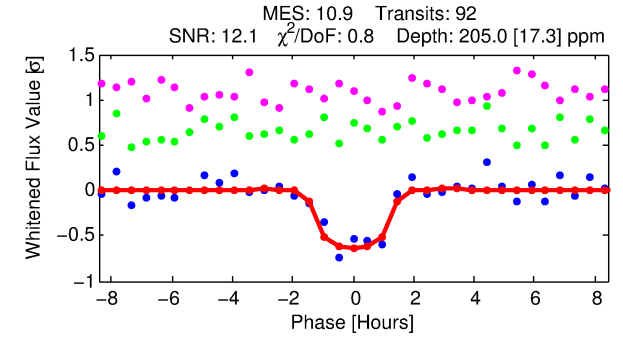
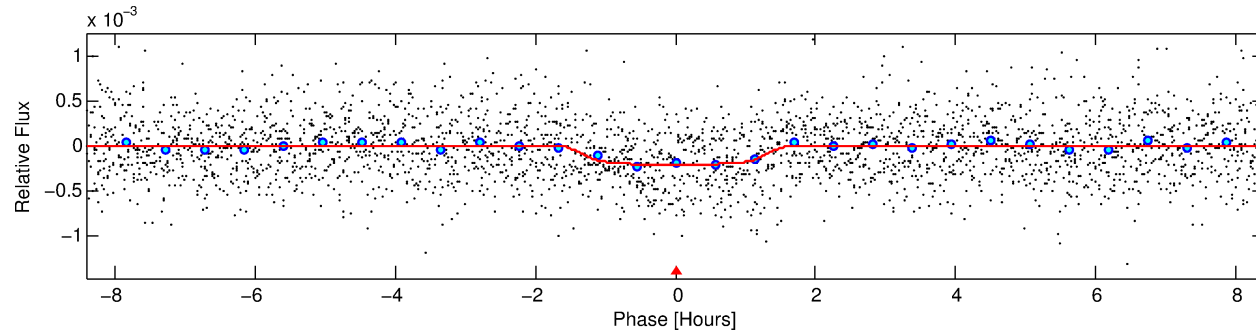
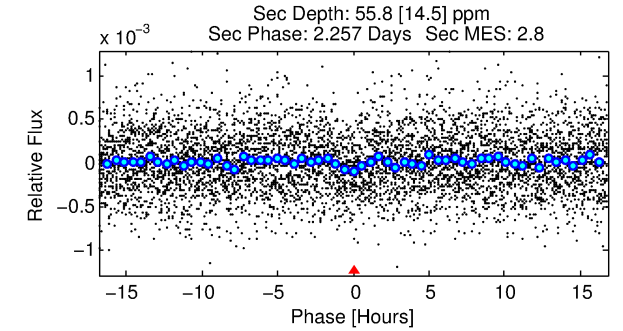
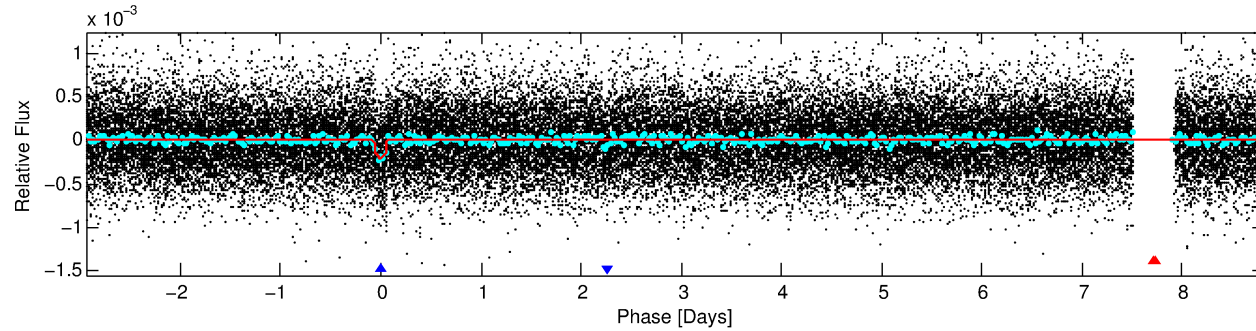
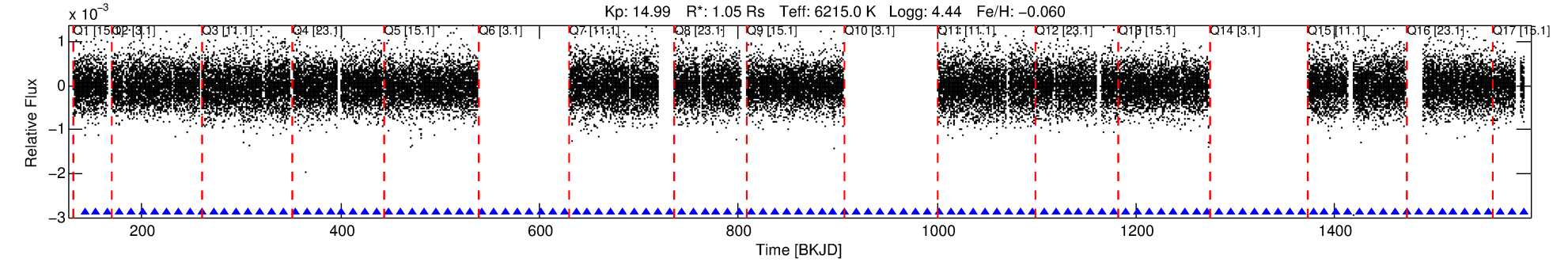
Ephemeris Match Information For 004927315-02

No Significant Match Found

DV One-Page Summary

KIC: 4927315 Candidate: 2 of 2 Period: 11.769 d

KOI: K01663 Corr: No Ephemeris Match



DV Fit Results:

Period = 11.76901 [0.00008] d
Epoch = 142.4730 [0.0052] BKJD
Rp/R* = 0.0146 [0.0122]
a/R* = 19.74 [85.02]
b = 0.81 [1.90]
Seff = 134.38 [56.61]
Teff = 868 [91] K
Rp = 1.67 [1.50] Re
a = 0.1049 [0.0281] AU
Ag = 120.77 [210.20] [0.57σ]
Teffp = 4450 [1894] K [1.89σ]

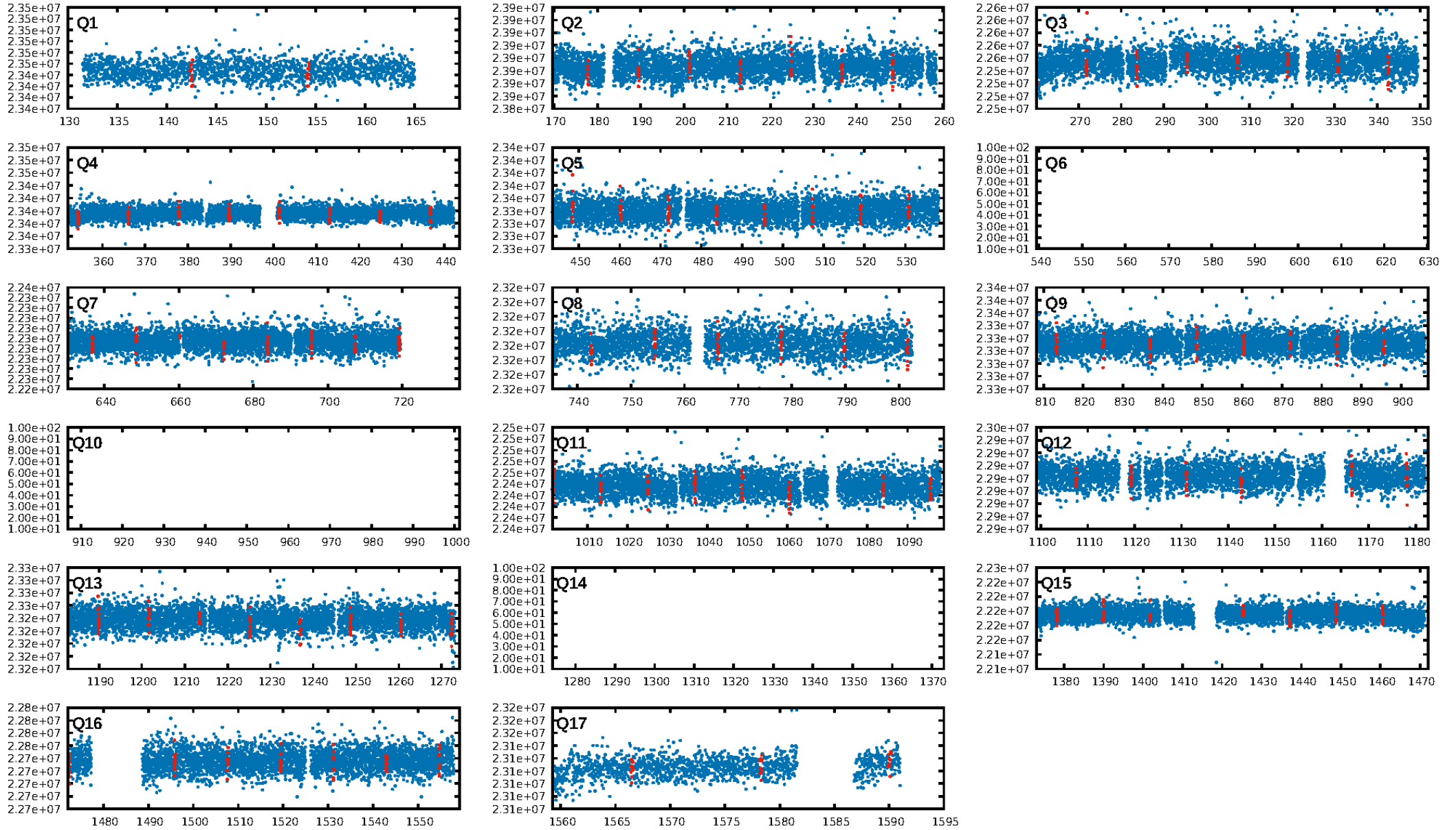
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 99.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.60e-27
RollingBand-fgt: 1.00 [87/87]
GhostDiagnostic-chr: 1.114
Centroid-sig: 0.1%
Centroid-so: 3.178 arcsec [2.82σ]
OotOffset-rm: 3.260 arcsec [8.73σ]
KicOffset-rm: 3.255 arcsec [6.78σ]
OotOffset-st: 1/3/2/4 [10]
KicOffset-st: 1/3/2/4 [10]
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DiffImageOverlap-fno: 1.00 [14/14]

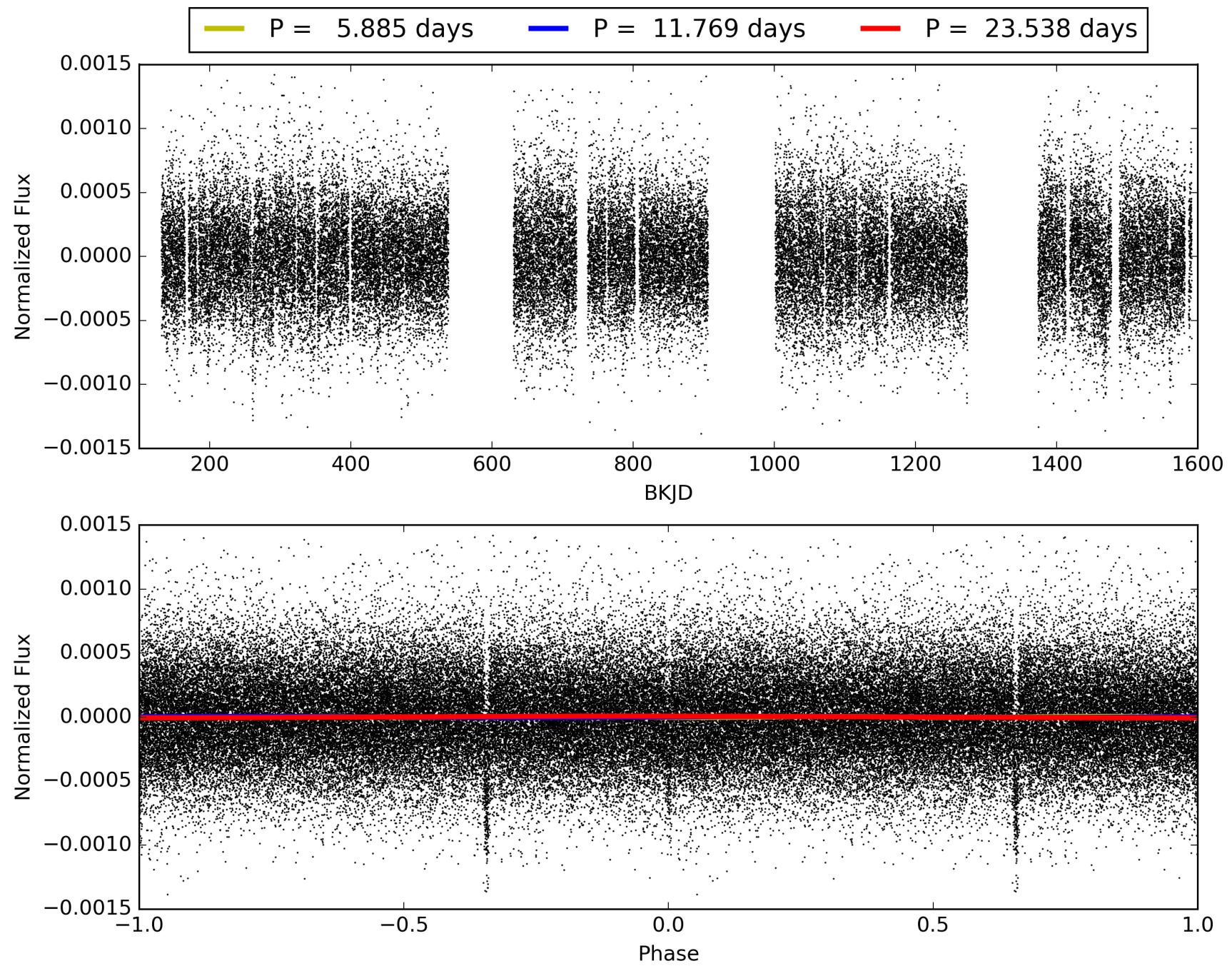
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004927315-02, PDC Light Curves

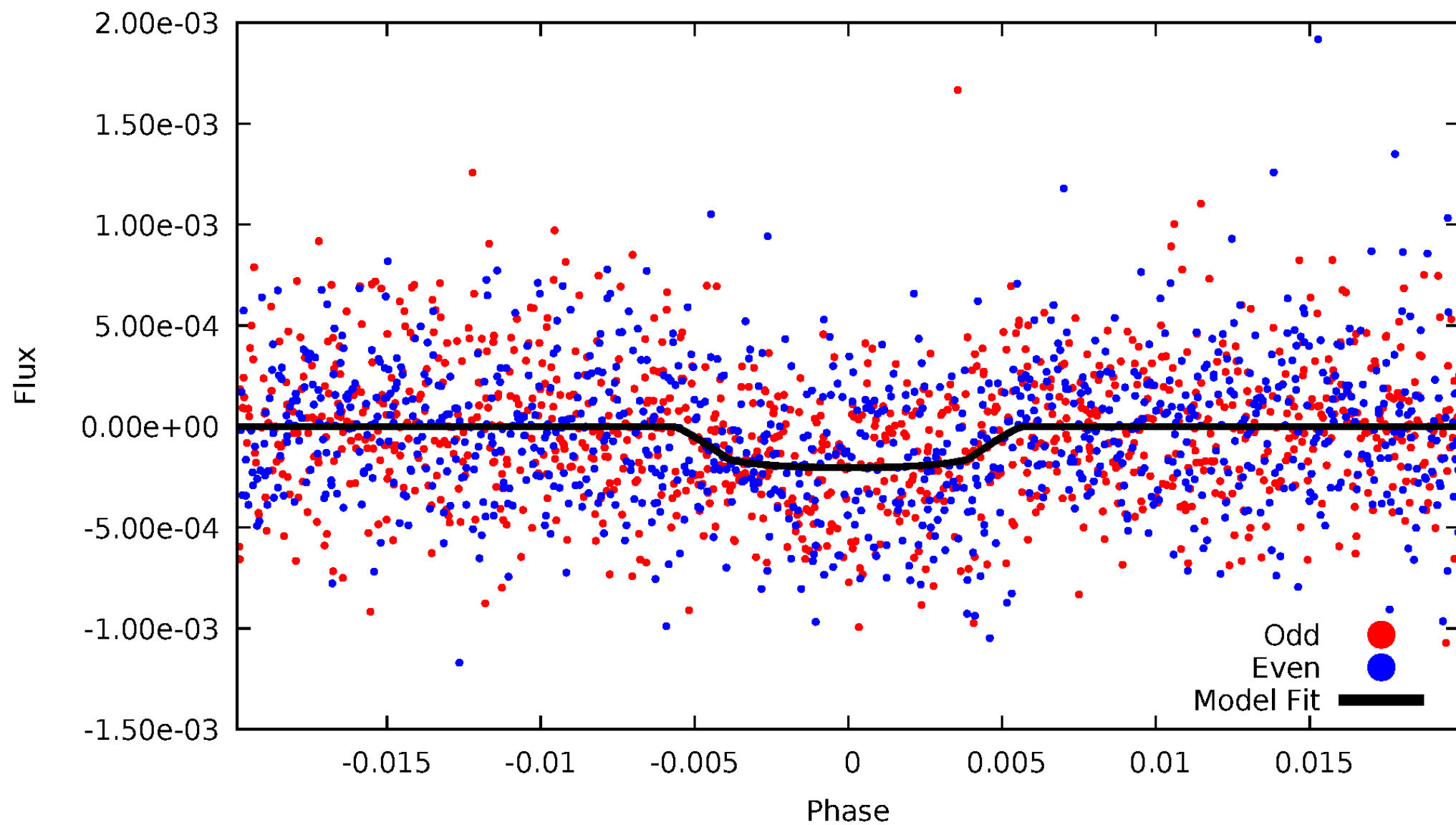


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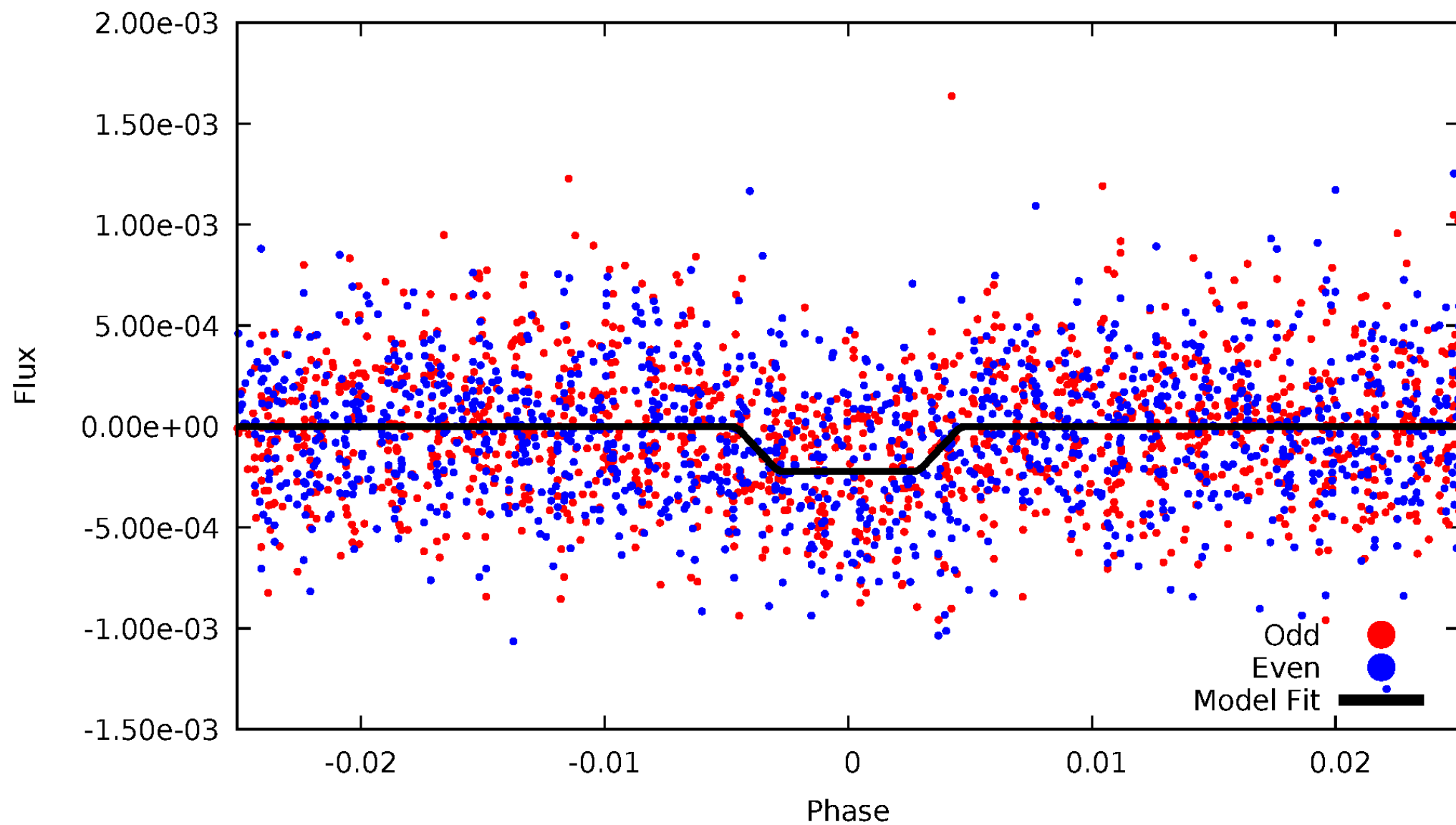
DV Odd/Even

TCE 004927315-02



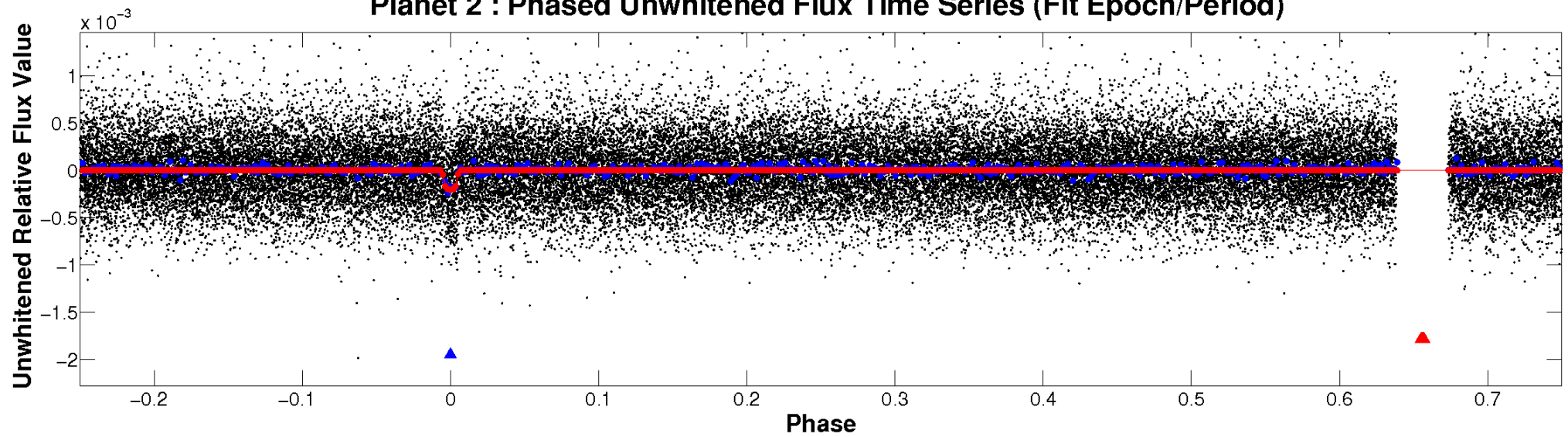
ALT Odd/Even

TCE 004927315-02

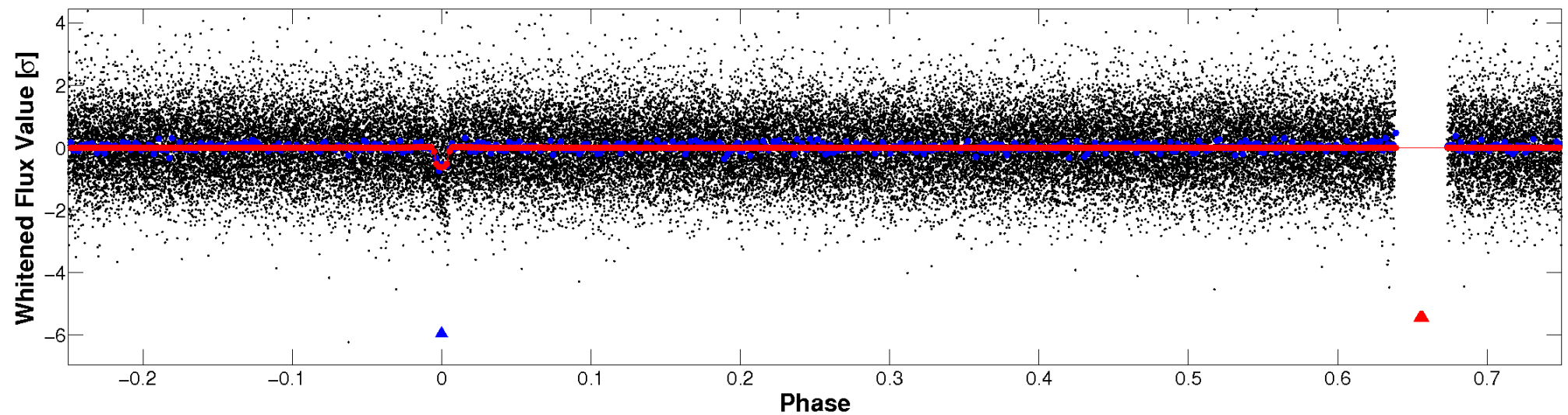


Non-Whitened Vs. Whitened Light Curve

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

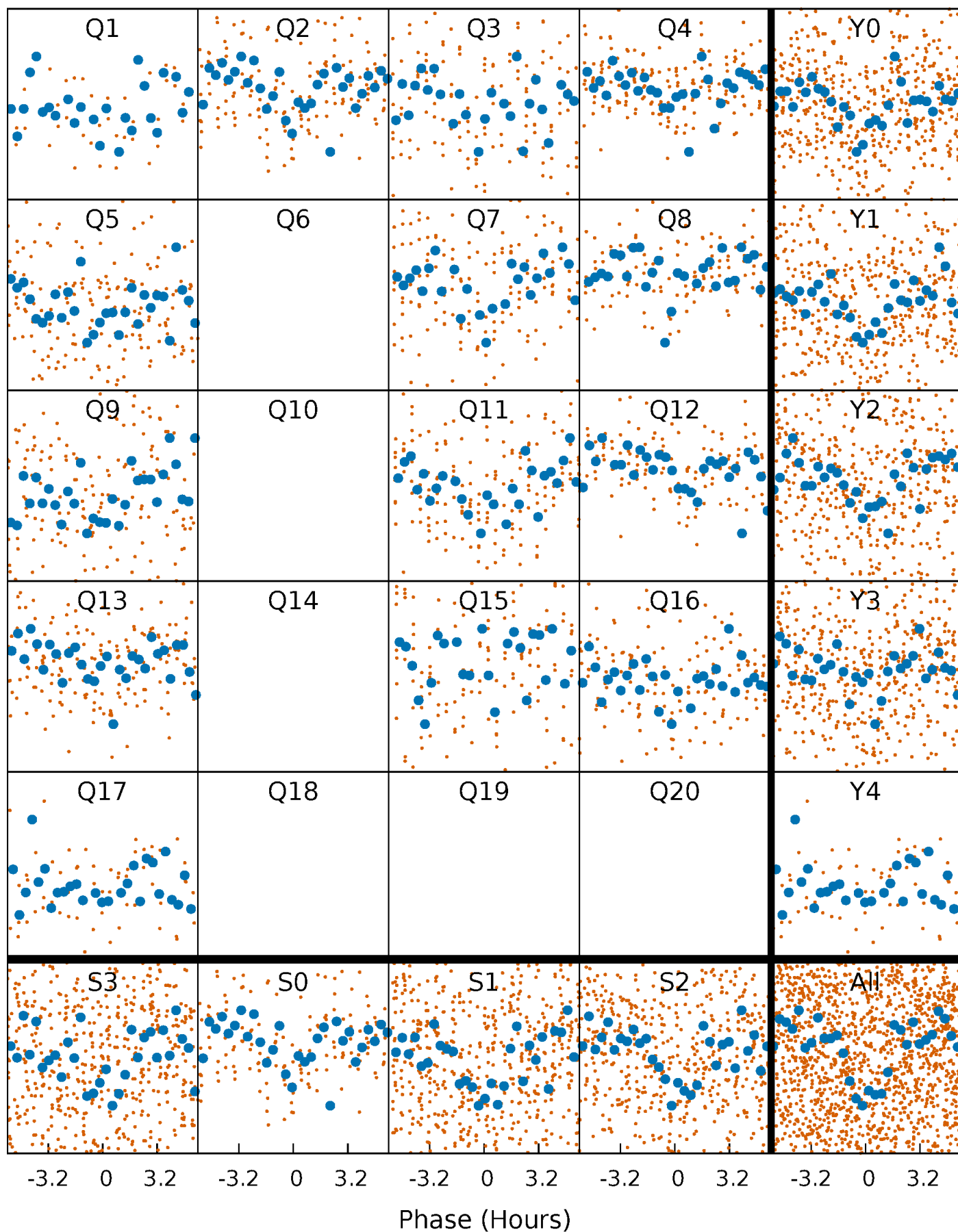


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



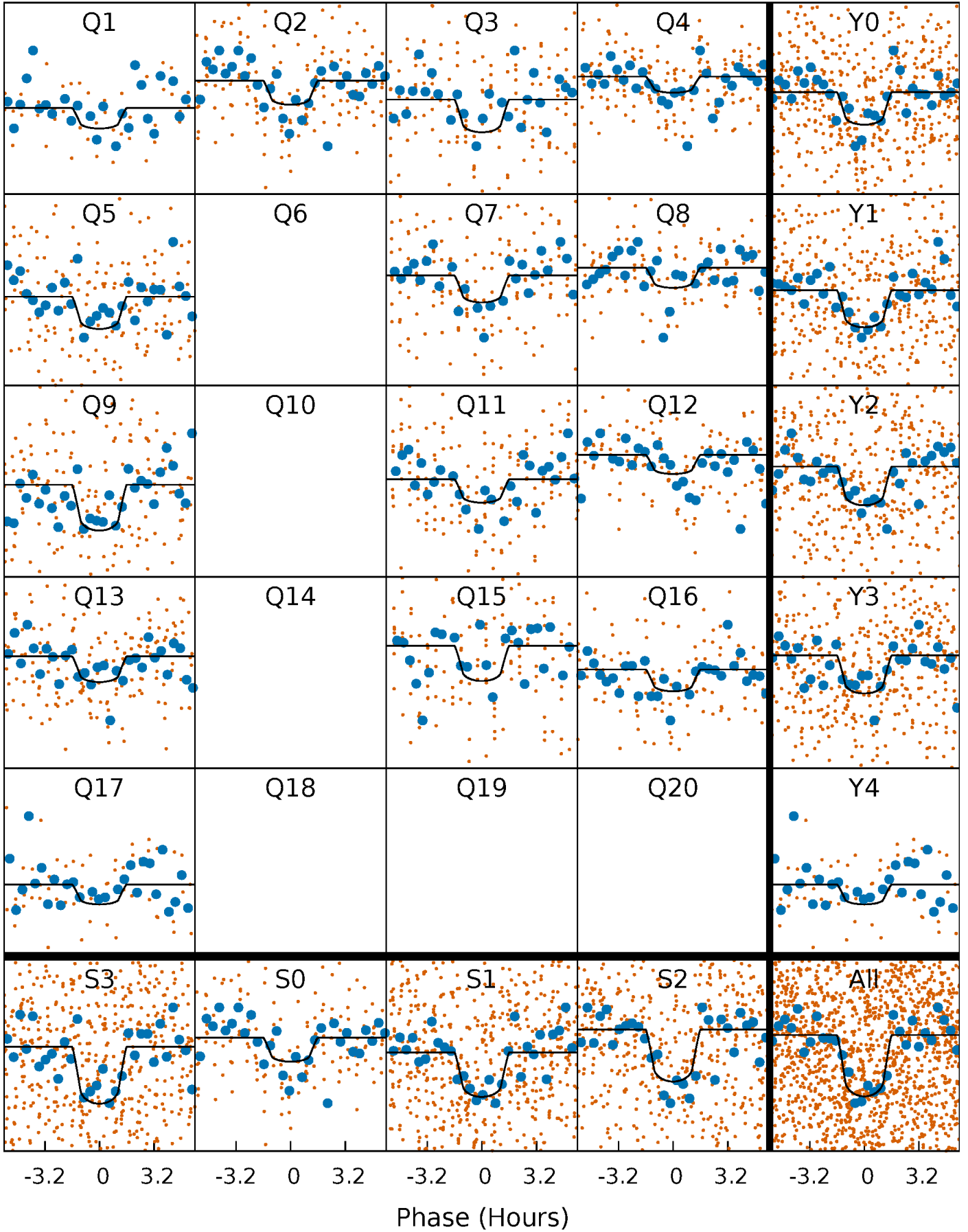
PDC Quarter-Phased Transit Curves

TCE 004927315-02 P= 11.769012 Days $T_0=142.472989$ (BKJD)



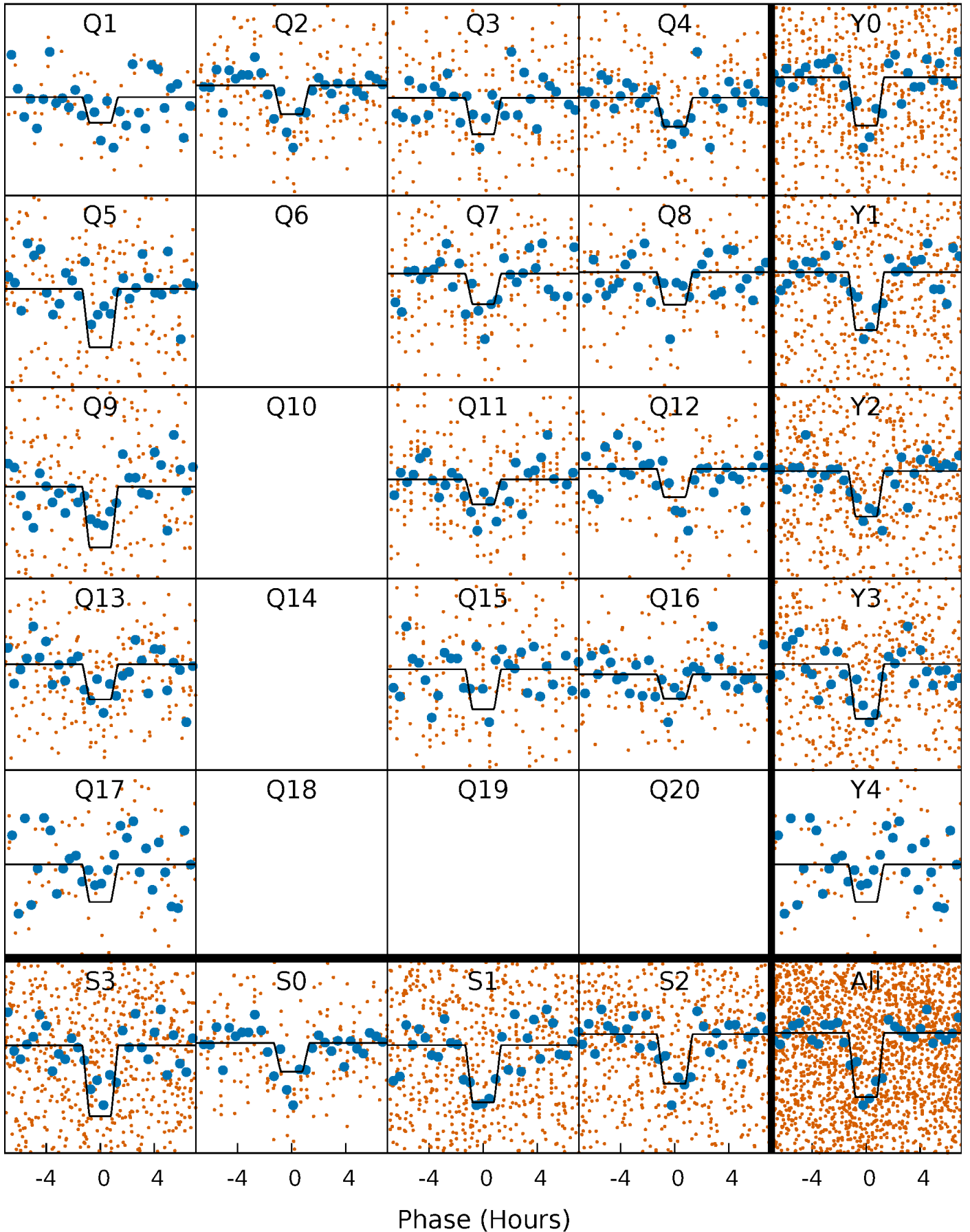
DV Quarter-Phased Transit Curves

TCE 004927315-02 P= 11.769012 Days $T_0=142.472989$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

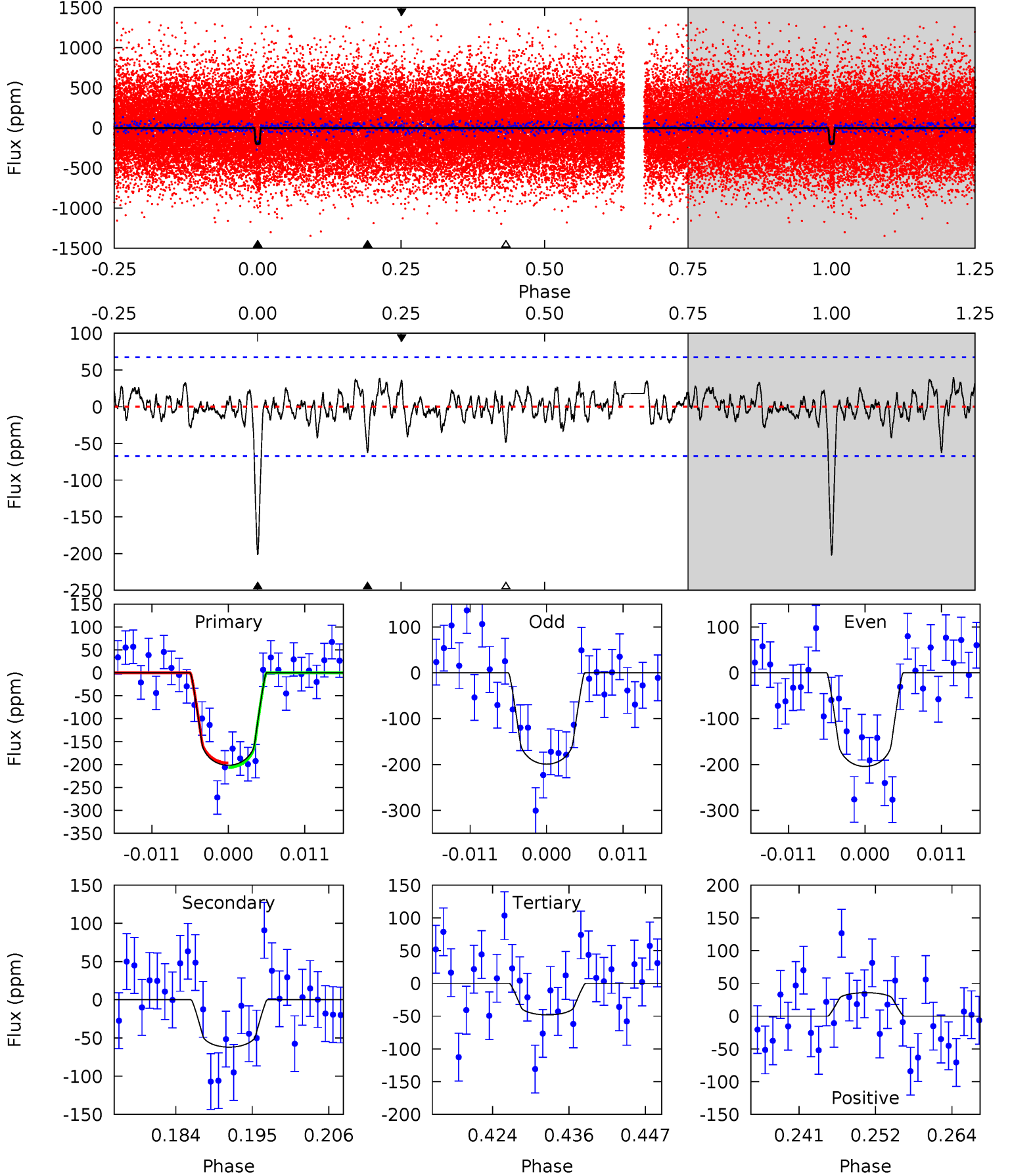
TCE 004927315-02 P= 11.769206 Days $T_0=142.462868$ (BKJD)



DV Model-Shift Uniqueness Test

004927315-02, P = 11.769012 Days, E = 130.703977 Days

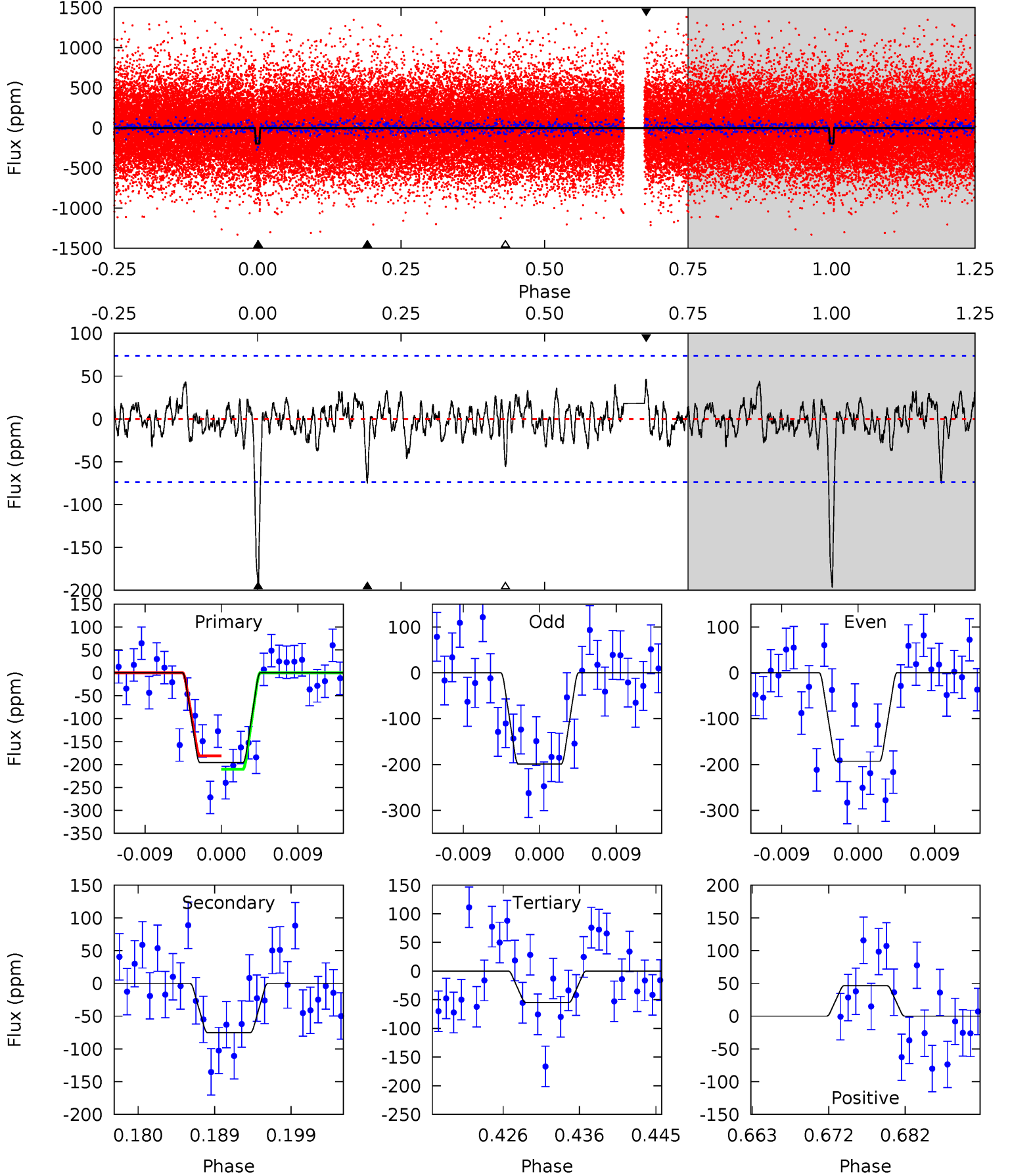
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	4.60	3.57	2.65	5.00	2.53	1.07	11.4	12.3	1.03	1.95	0.19	0.99	0.16	0.36



Alt Model-Shift Uniqueness Test

004927315-02, P = 11.769206 Days, E = 130.693662 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	5.12	3.75	3.18	5.04	2.59	1.04	9.64	10.2	1.37	1.95	0.21	0.96	0.19	0.99



Stellar Parameters For KIC 004927315

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6215^{+172}_{-237}	$4.440^{+0.067}_{-0.216}$	$-0.060^{+0.250}_{-0.350}$	$1.052^{+0.332}_{-0.133}$	$1.111^{+0.153}_{-0.153}$	$1.345^{+0.388}_{-0.716}$
	+3%/-4%	+2%/-5%	+417%/-583%	+32%/-13%	+14%/-14%	+29%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004927315-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-62 ± 13	$1.98^{+1.38}_{-1.25}$	1236^{+94}_{-68}	4470^{+2587}_{-807}	95^{+559}_{-65}
Alt.	-75 ± 15	$1.94^{+1.60}_{-1.22}$	1236^{+91}_{-66}	4661^{+2790}_{-910}	118^{+677}_{-83}

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

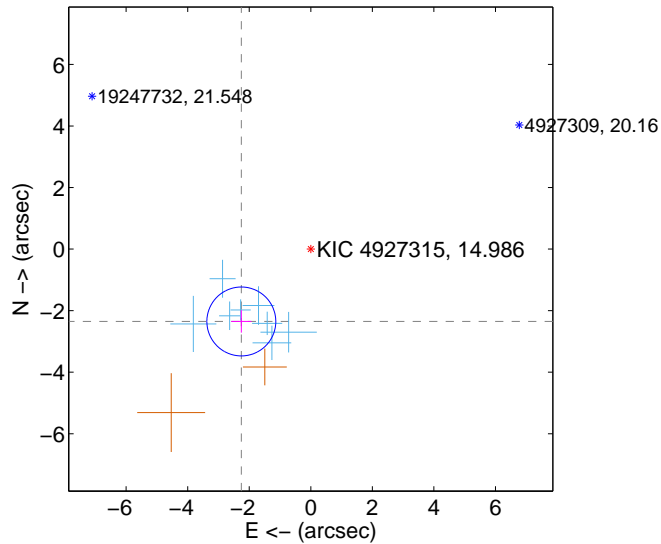
Supplemental centroid analysis for 004927315-02. Kepler magnitude: 14.99. Transit SNR 12.12

There are 8 quarters with good PRF difference image offsets

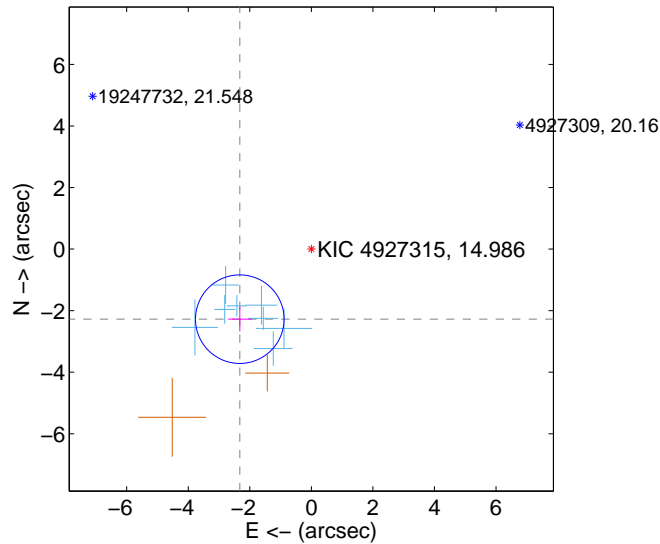
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.260 ± 0.373	8.73	2.257 ± 0.328	-2.352 ± 0.364
PRF-fit source offset from KIC position	3.255 ± 0.480	6.78	2.326 ± 0.383	-2.277 ± 0.402
photometric centroid source offset	3.18 ± 1.13	2.82	1.90 ± 1.13	-2.55 ± 1.12

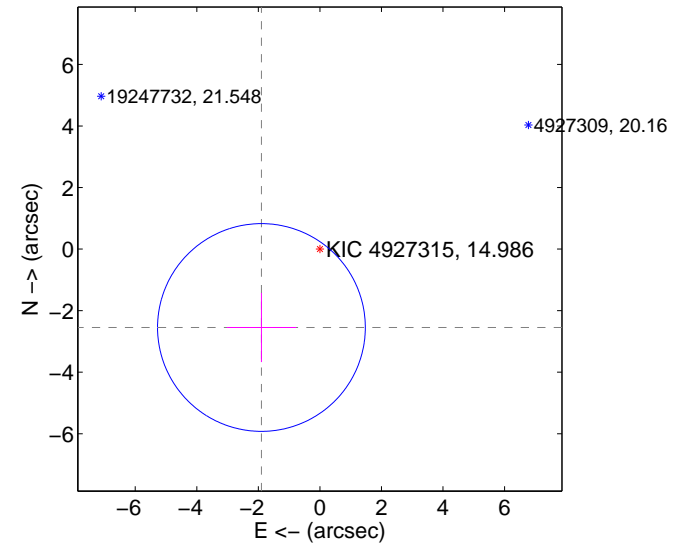
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

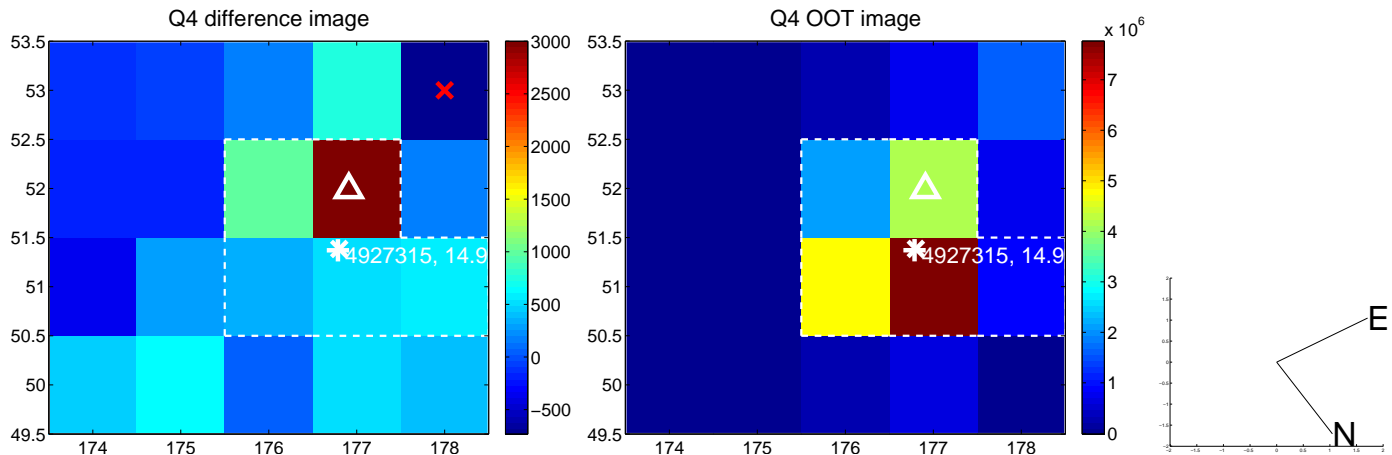
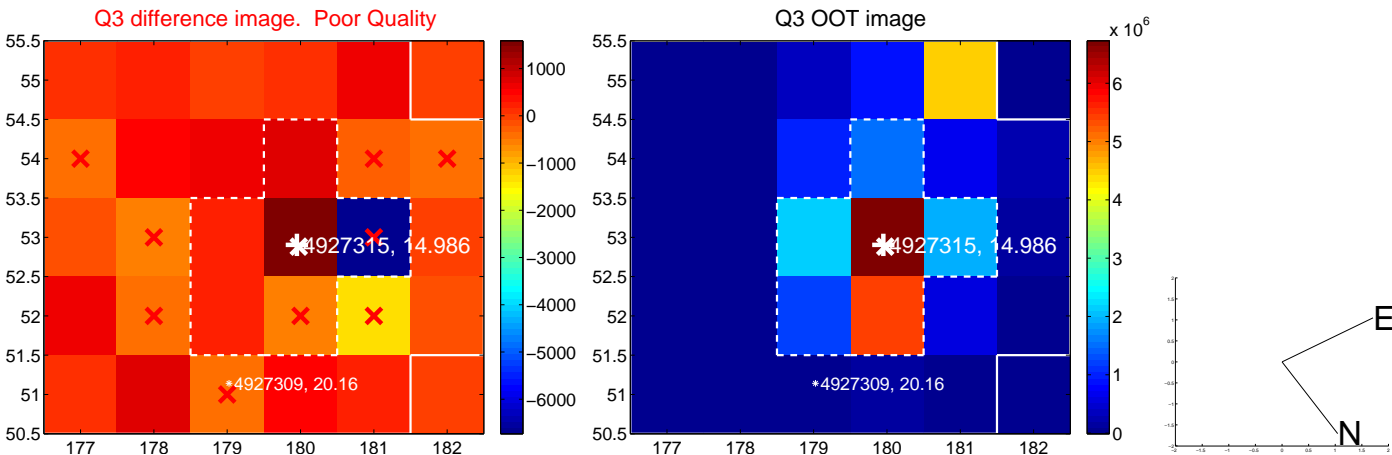
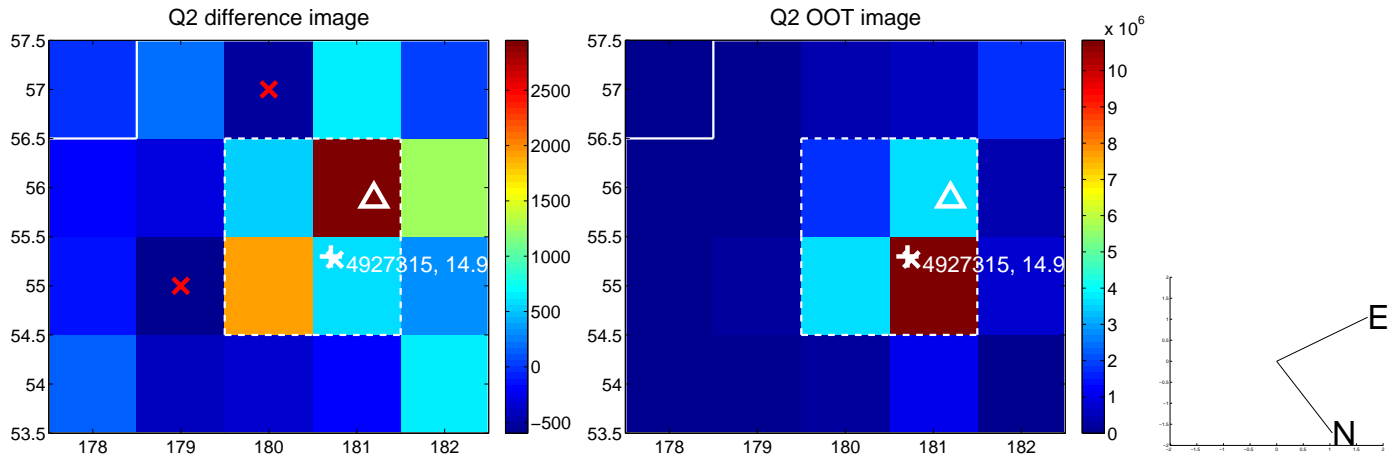
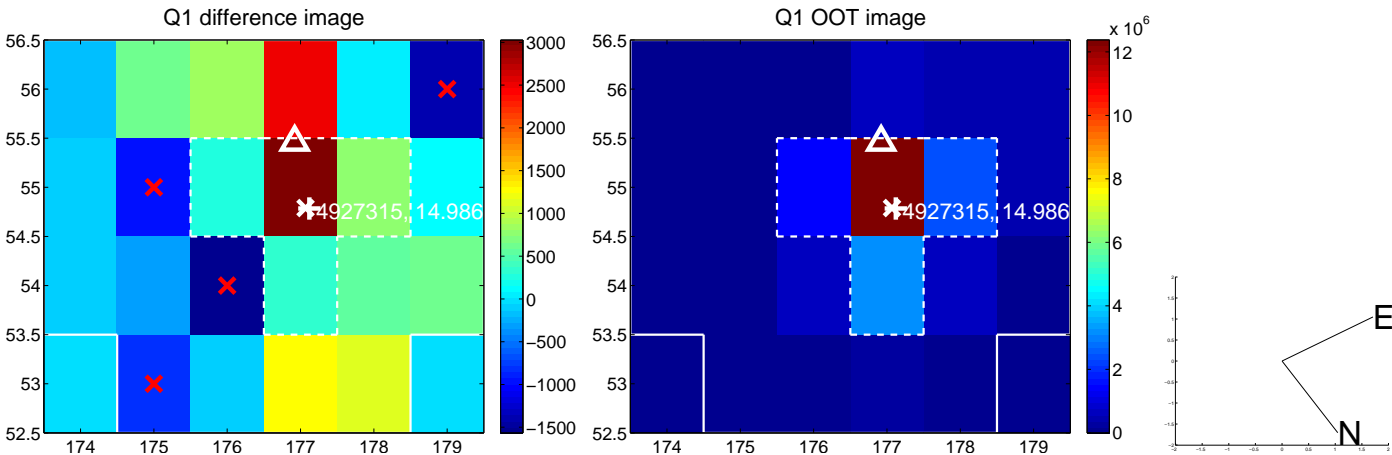


offset from photometric centroids

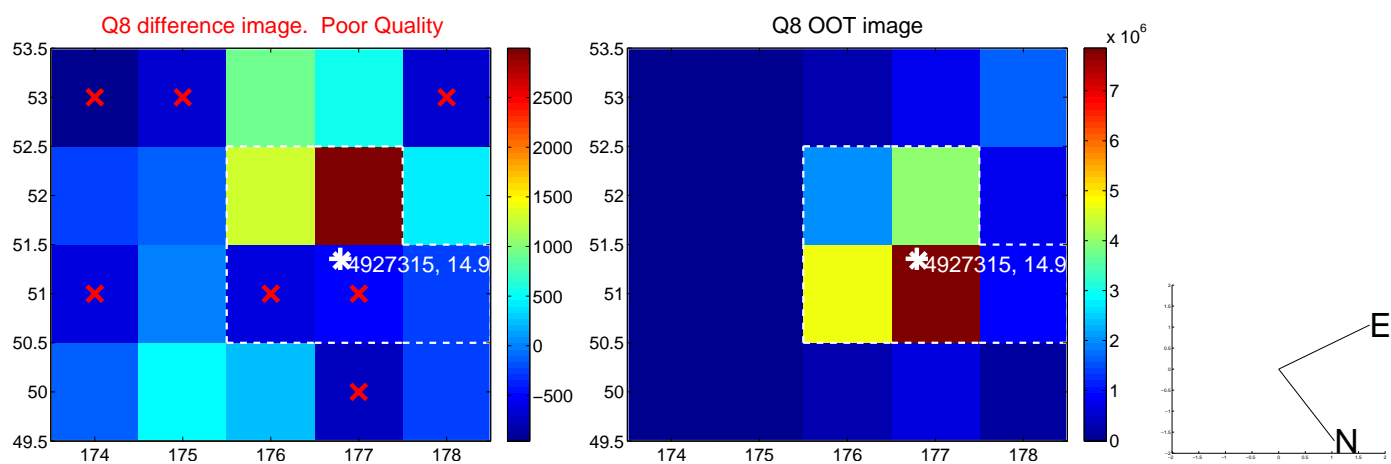
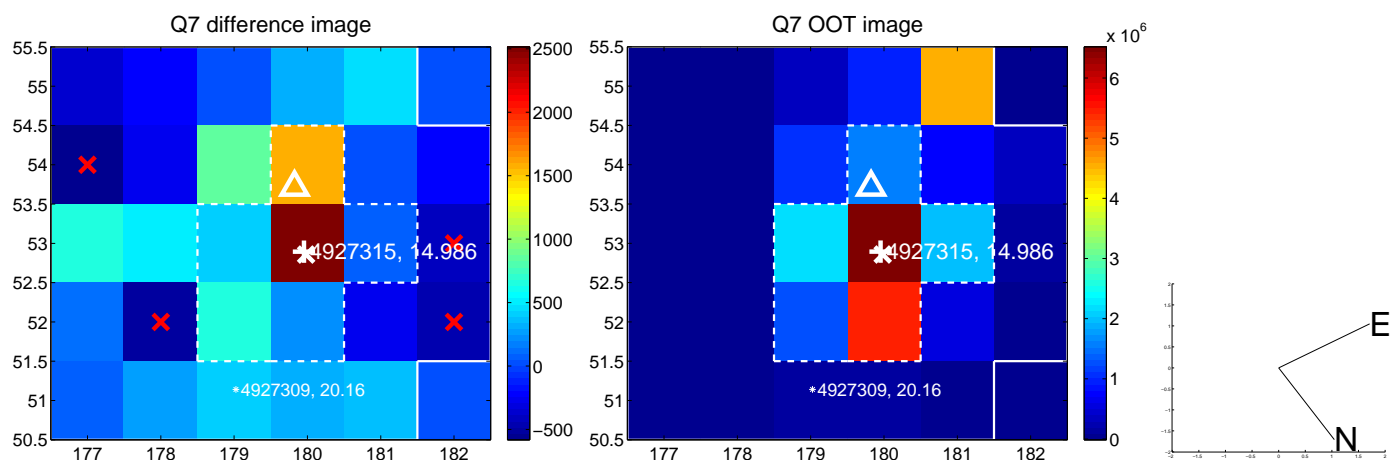
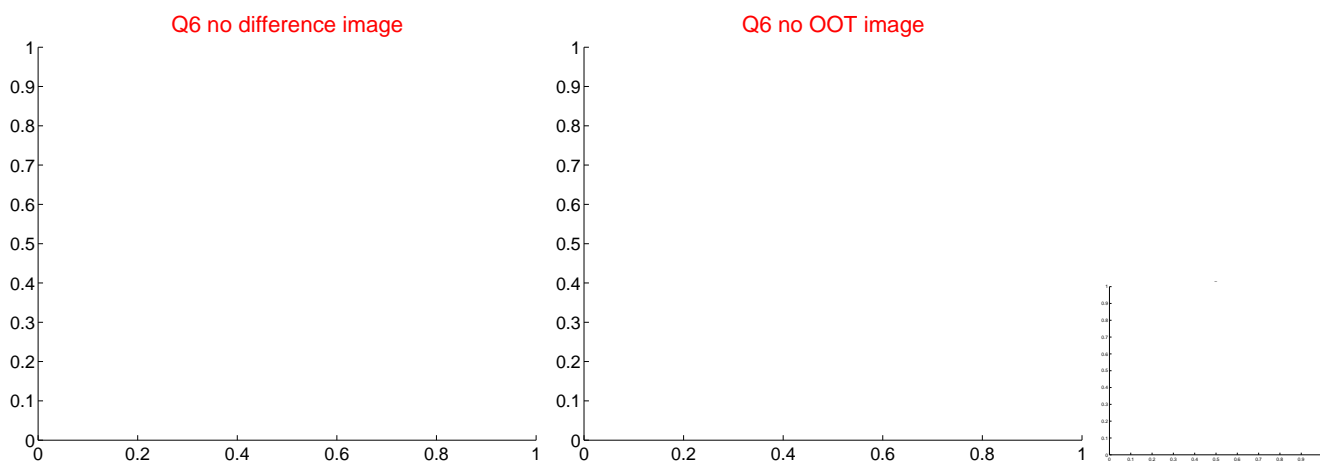
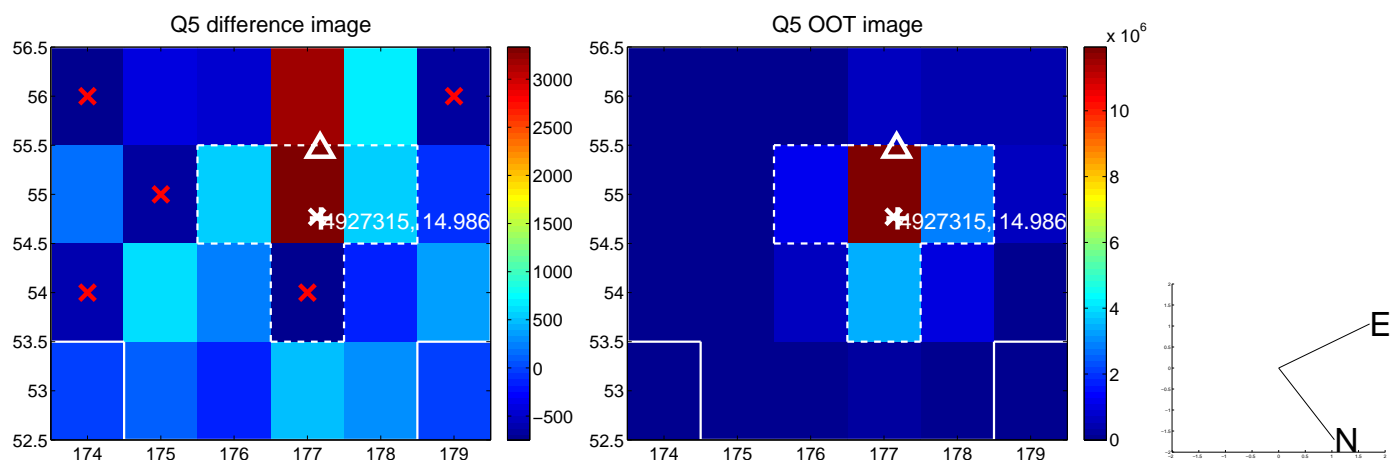


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

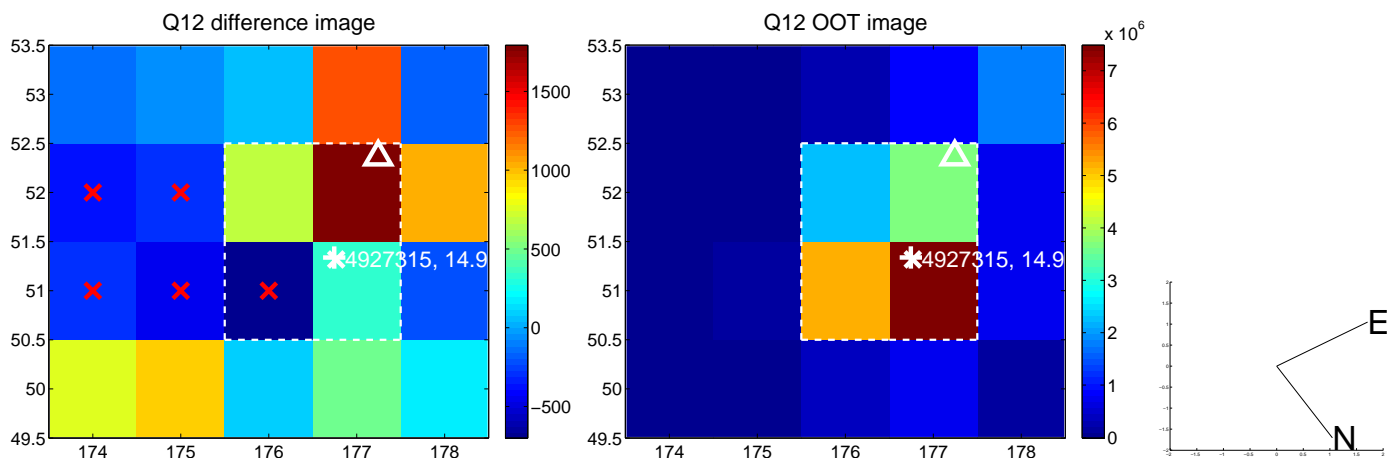
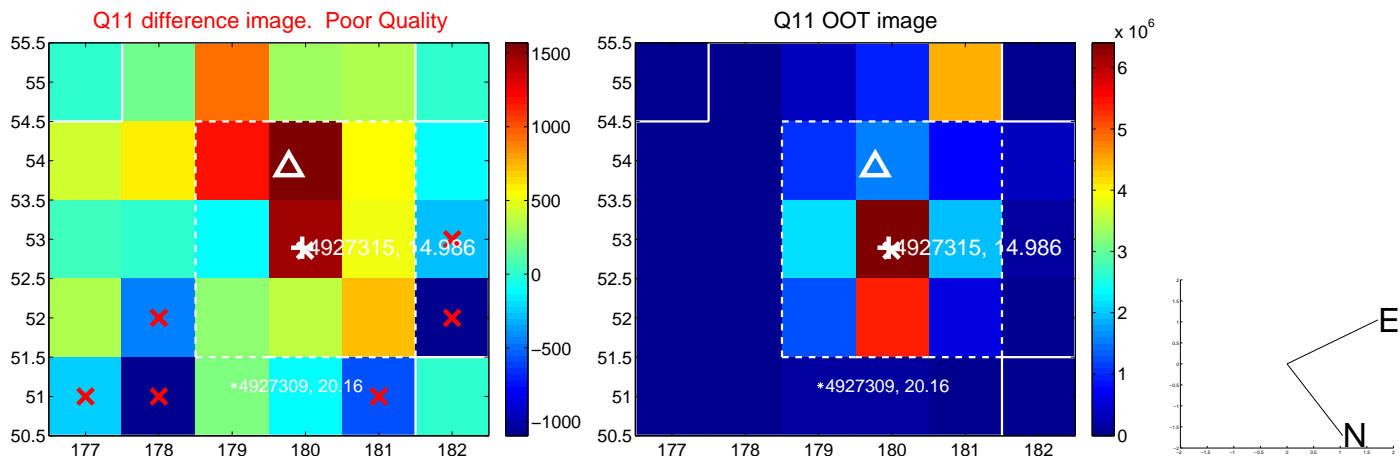
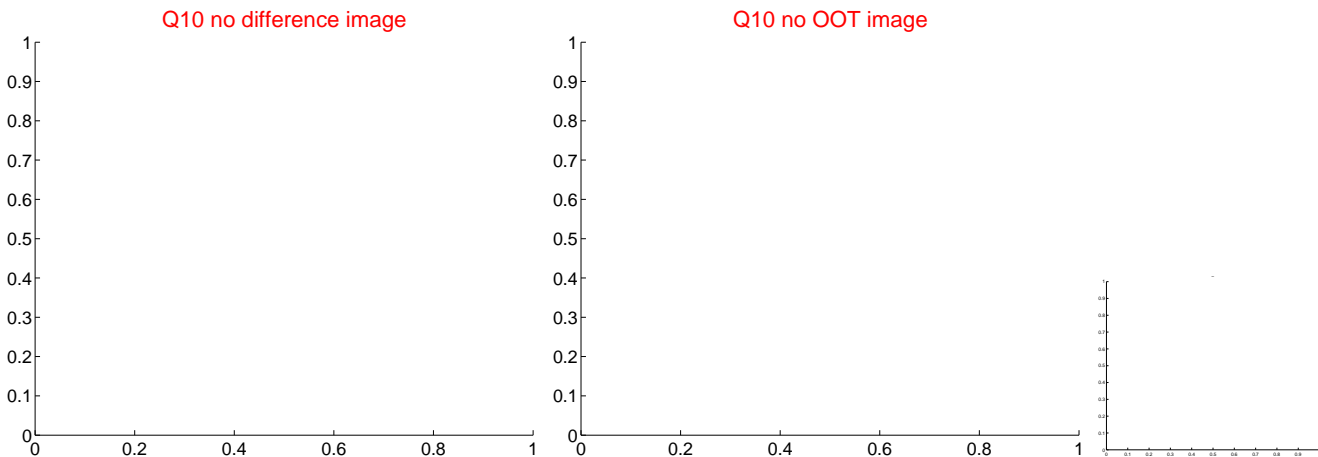
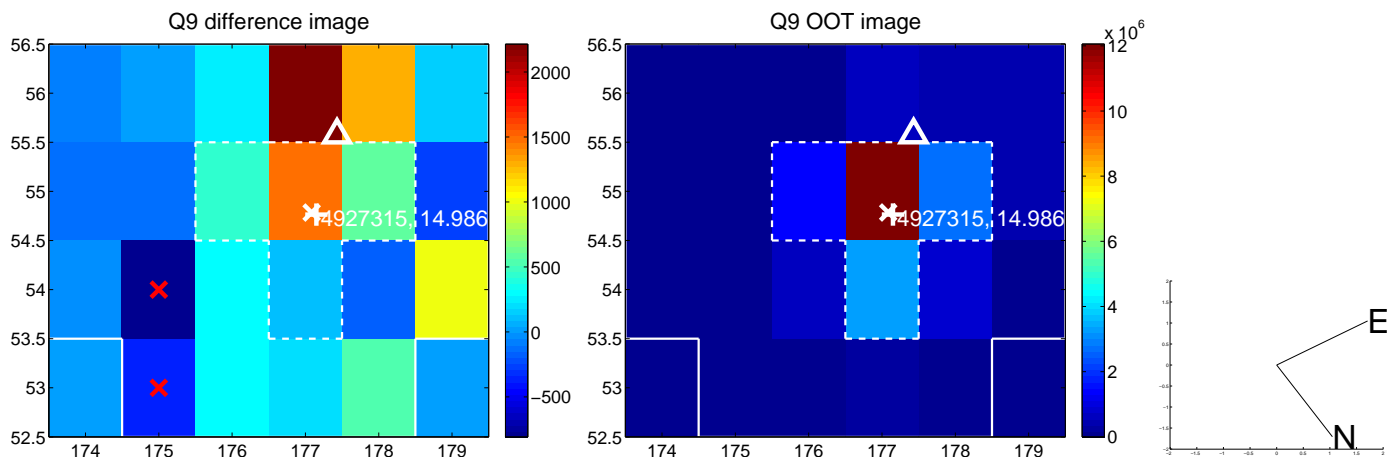
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



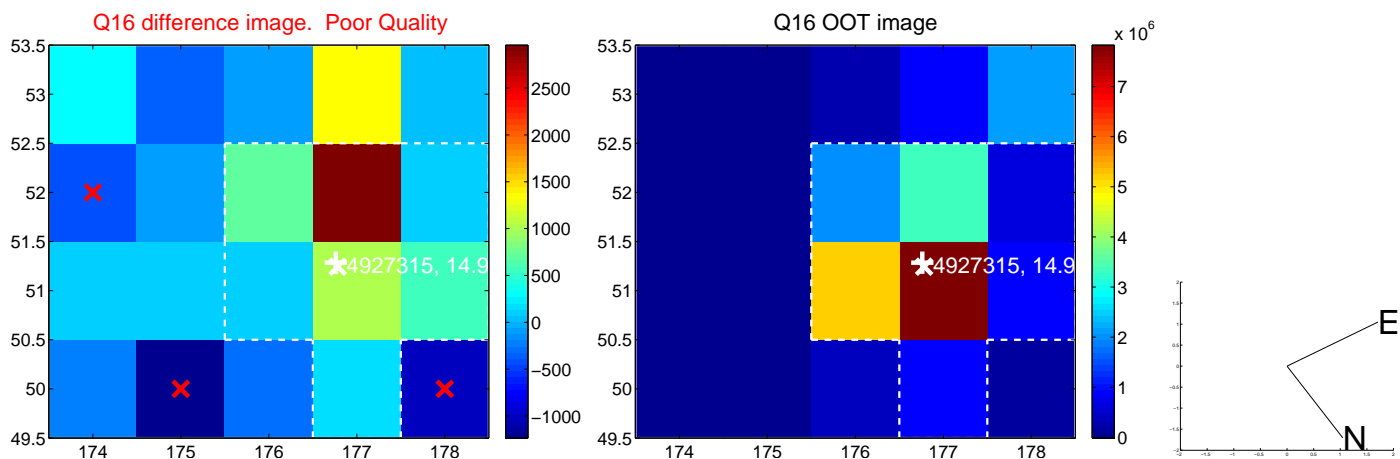
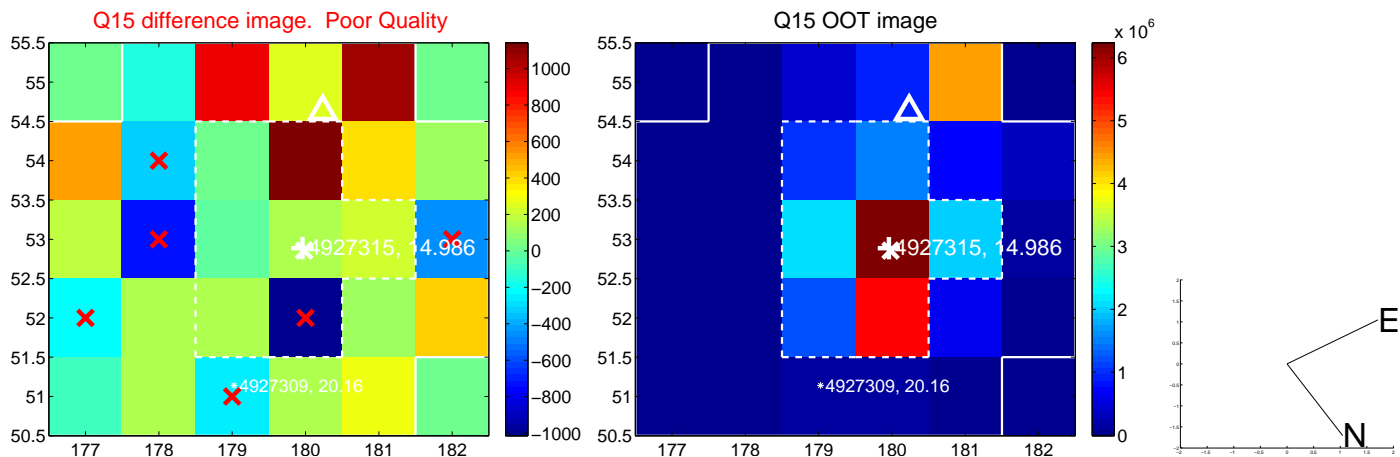
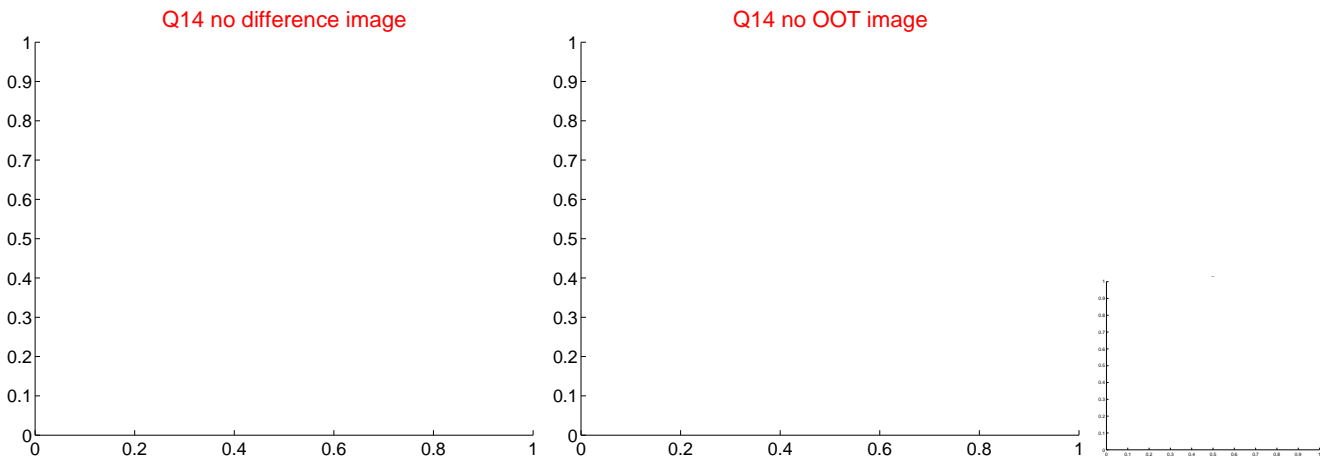
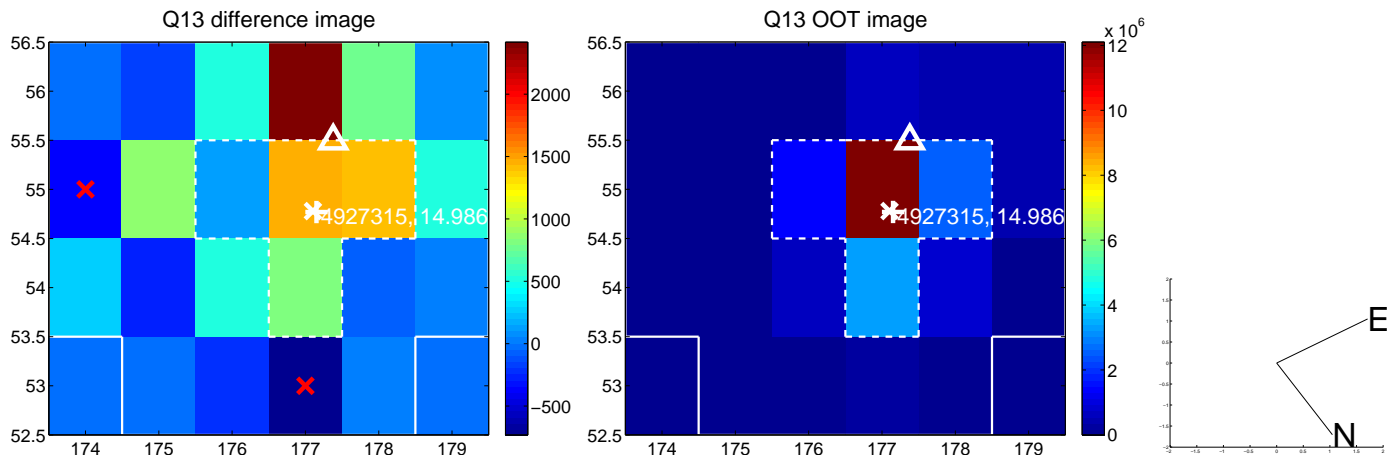
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



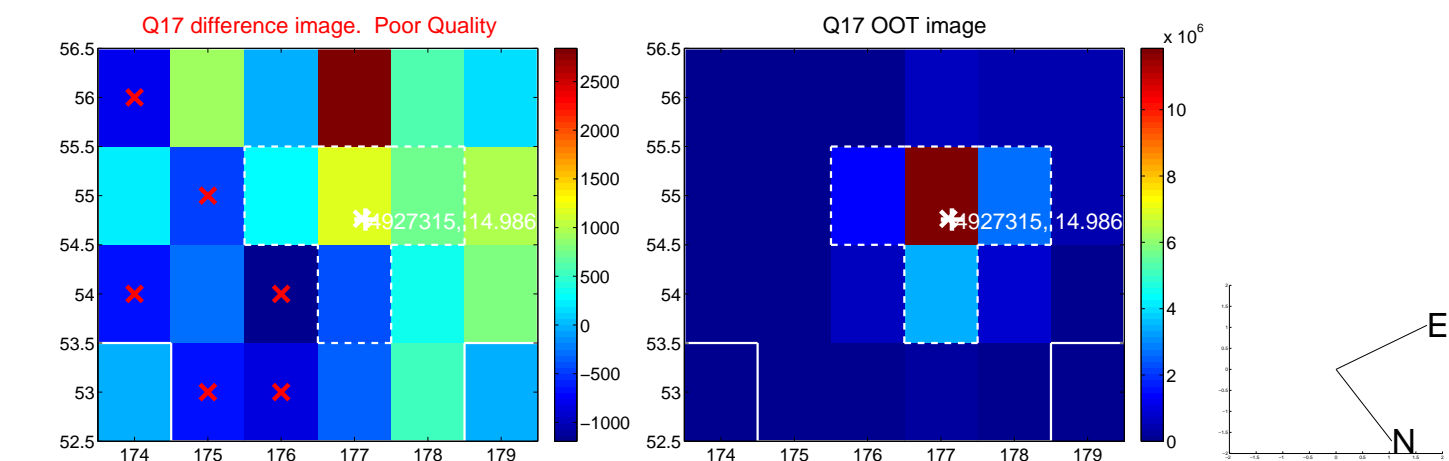
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



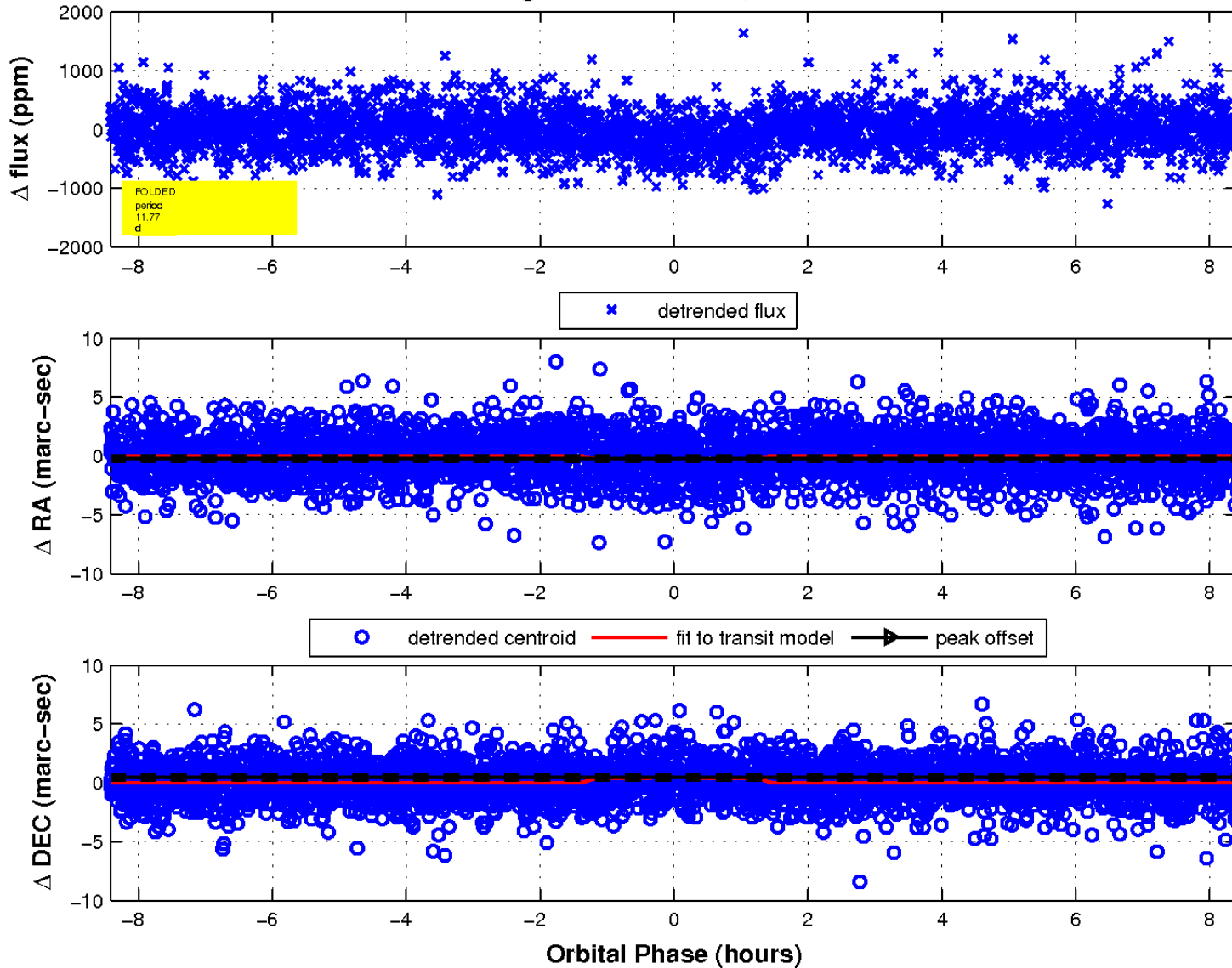
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

