

KIC 002715695

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})
002715695-01	OBS	3077.01	4.095782	131.620330	391.4	1.676	10.5	11.9	0.74	4791	1.65	124.48
002715695-02	OBS	3077.02	7.558592	137.976711	350.0	2.704	9.0	9.4	0.74	4791	1.70	54.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002715695-01	OBS	PC	1.00	0	0	0	0	CENT_FEW_MEAS
002715695-02	OBS	PC	0.98	0	0	0	0	CENT_KIC_POS

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

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

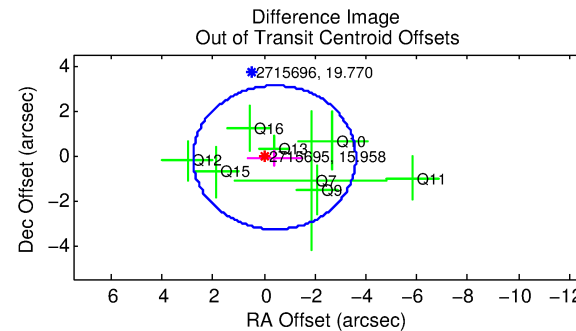
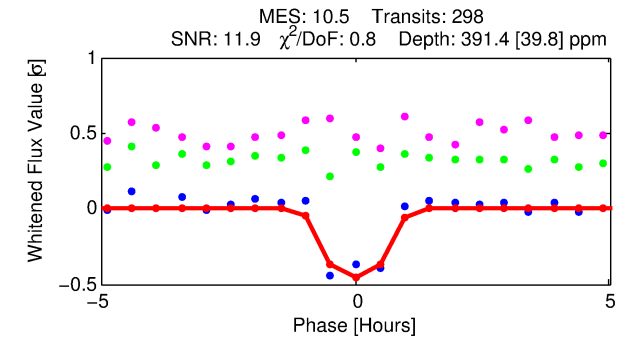
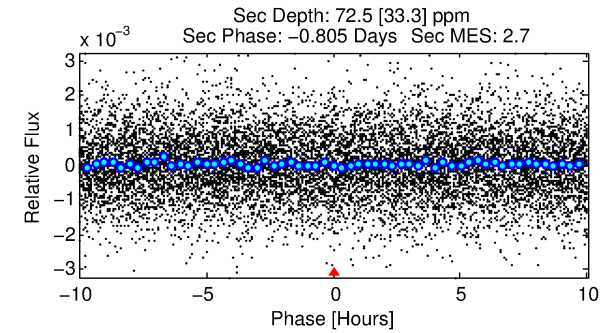
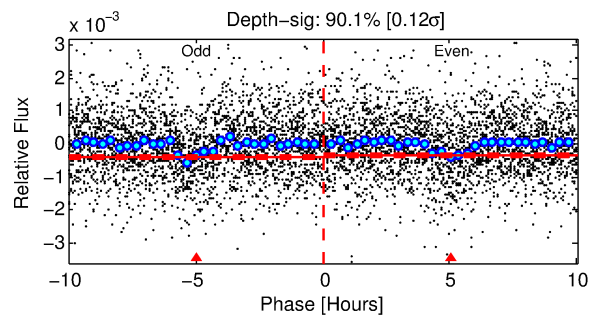
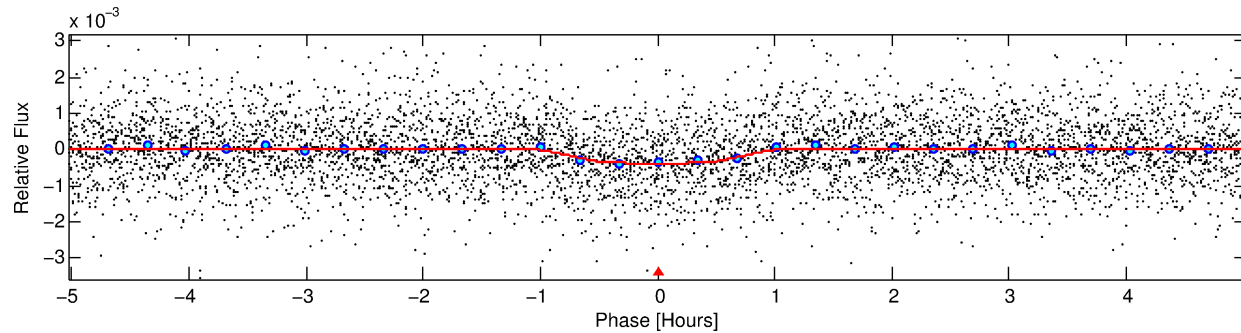
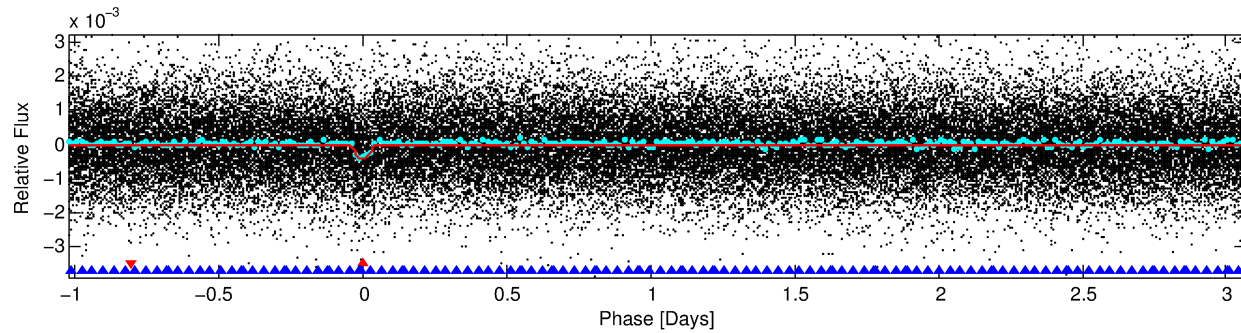
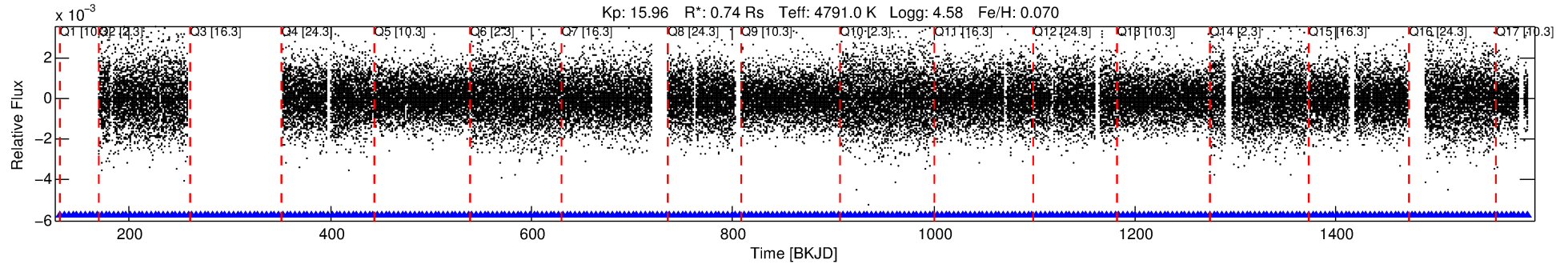
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002715695-01

No Significant Match Found

DV One-Page Summary

KIC: 2715695 Candidate: 1 of 2 Period: 4.096 d
KOI: K03077.01 Corr: 0.992



DV Fit Results:

Period = 4.09578 [0.00002] d
Epoch = 131.6203 [0.0030] BKJD
Rp/R* = 0.0204 [0.0209]
a/R* = 11.98 [41.22]
b = 0.79 [1.67]
Seff = 124.48 [18.39]
Teq = 852 [31] K
Rp = 1.65 [1.70] Re
a = 0.0457 [0.0029] AU
Ag = 30.58 [64.29] [0.46 σ]
Teffp = 3097 [1629] K [1.38 σ]

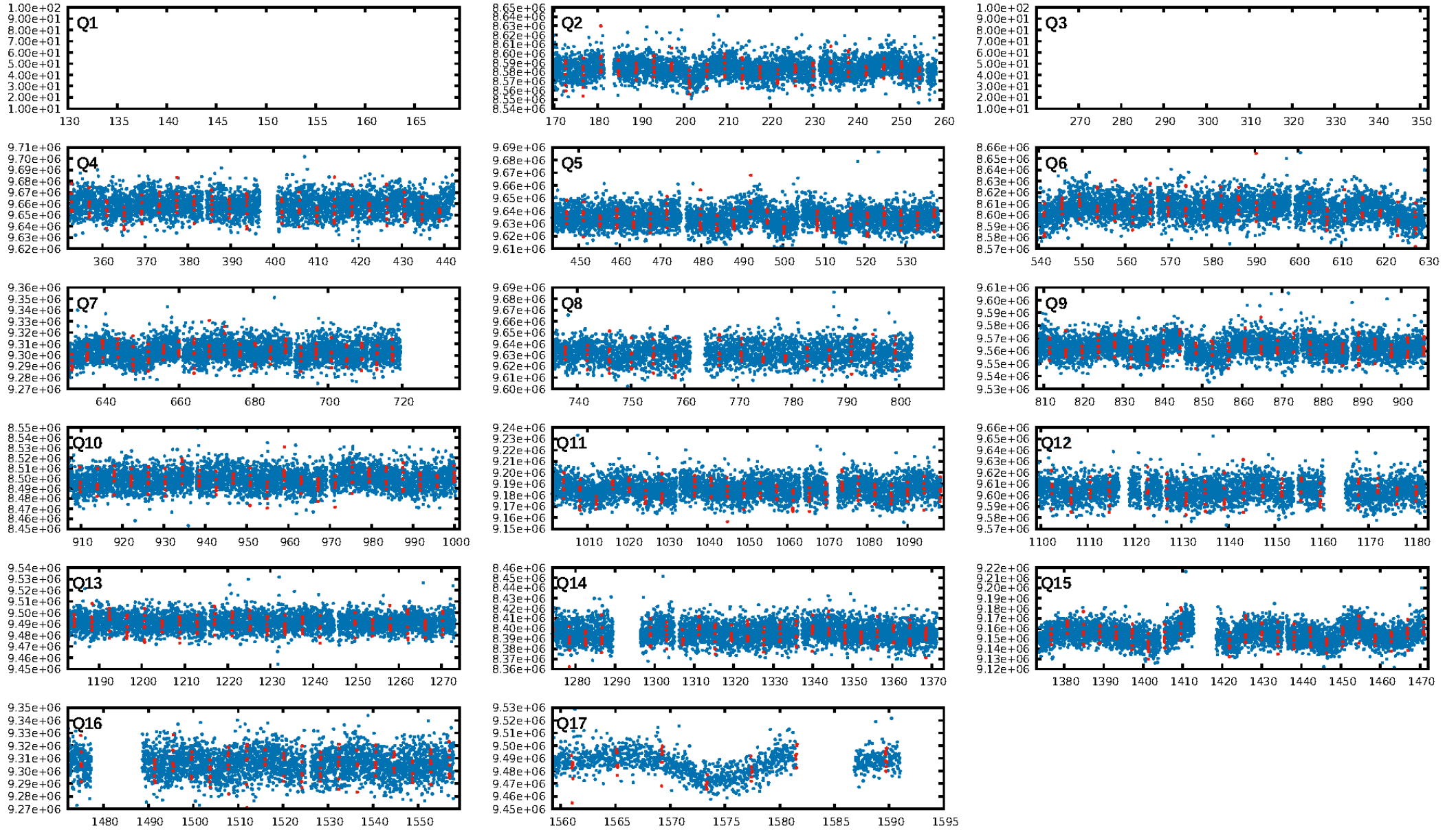
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [26.13 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.06e-25
RollingBand-fgt: 1.00 [291/291]
GhostDiagnostic-chr: 0.9879
Centroid-sig: 5.2%
Centroid-so: 2.487 arcsec [2.06 σ]
OotOffset-rm: 0.425 arcsec [0.40 σ]
KicOffset-rm: 0.689 arcsec [0.86 σ]
OotOffset-st: 1/3/2/2 [8]
KicOffset-st: 1/3/2/2 [8]
DiffImageQuality-fgm: 0.00 [0/8]
DiffImageOverlap-fno: 1.00 [15/15]

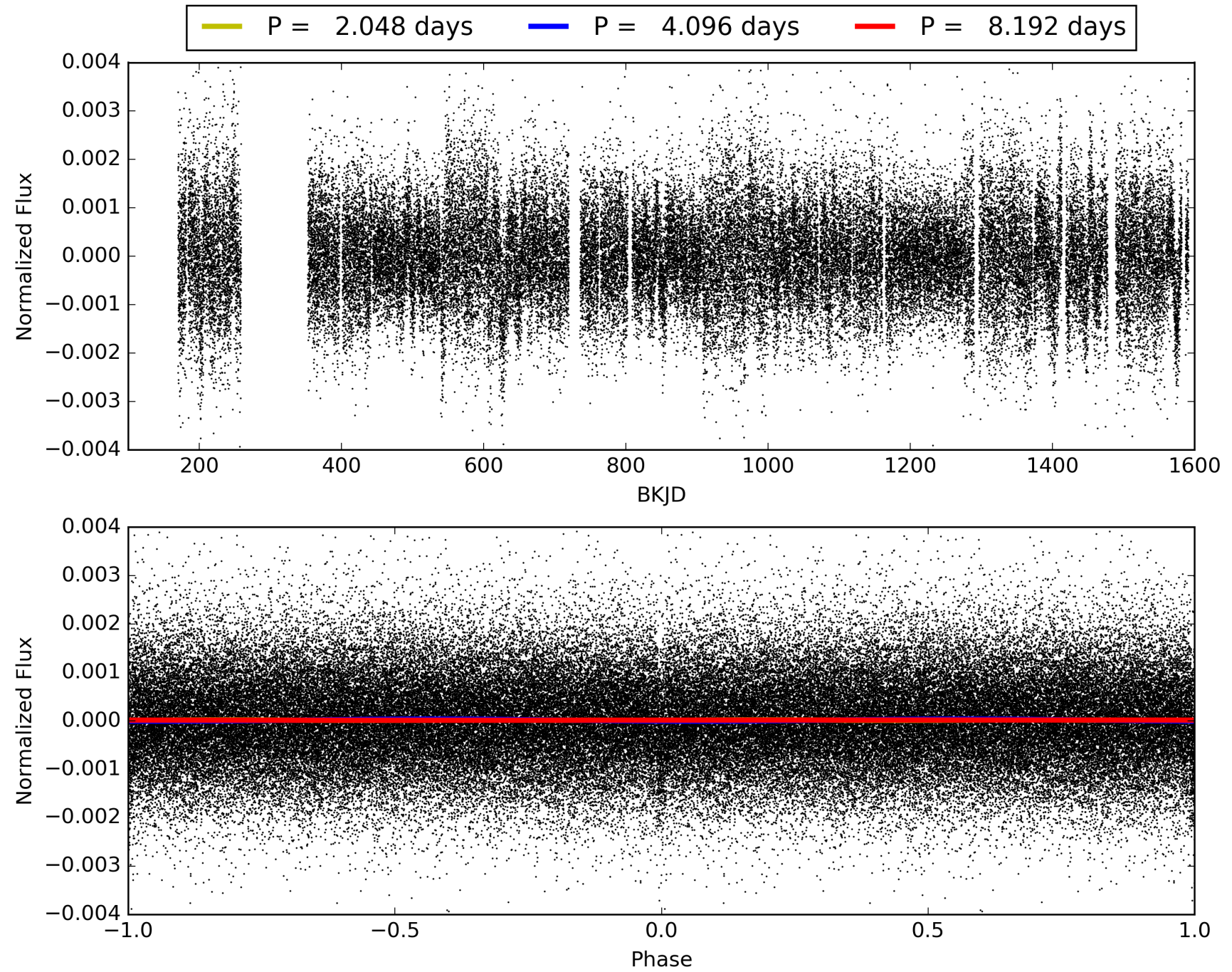
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:55:04 Z

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

TCE 002715695-01, PDC Light Curves

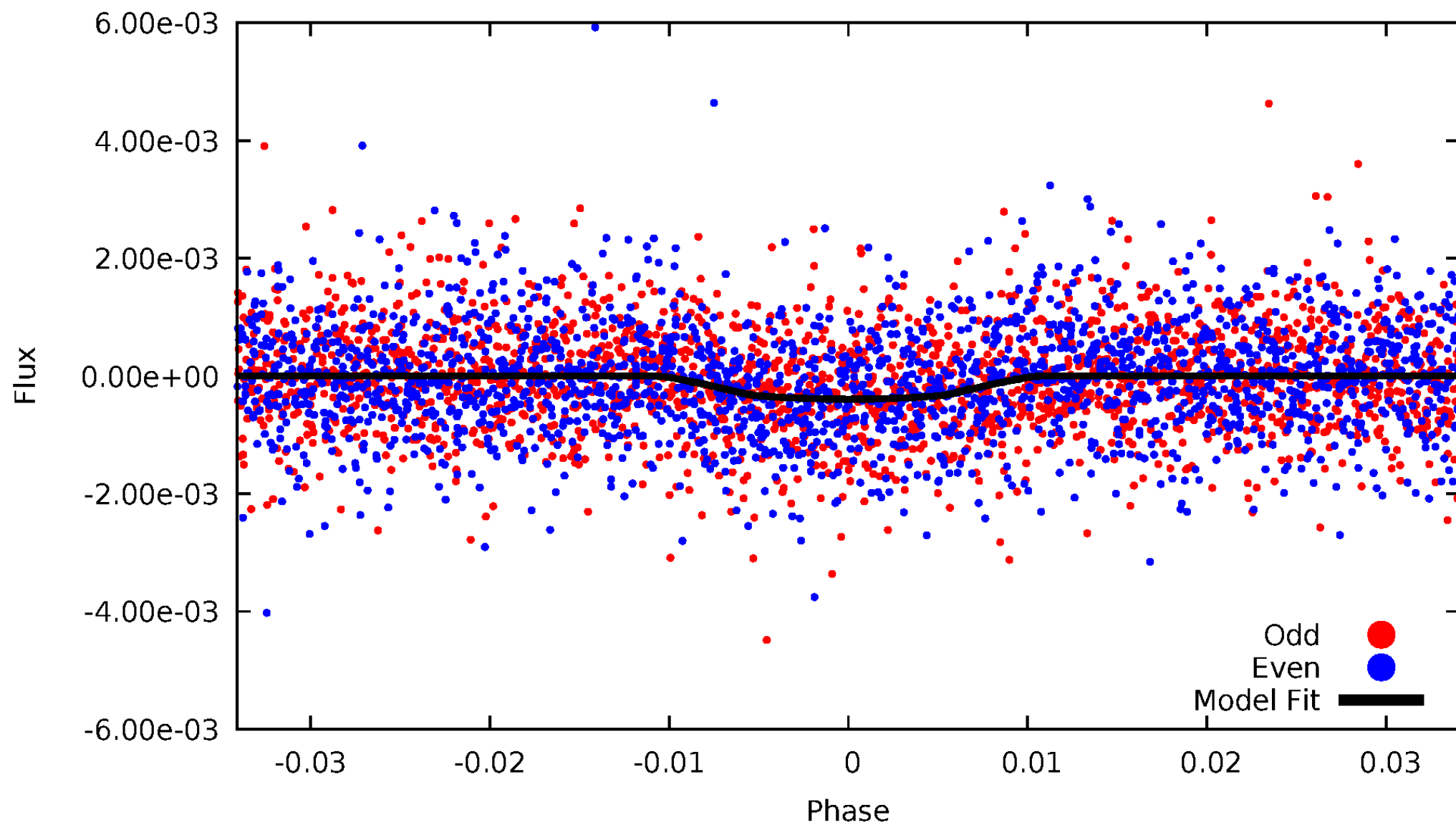


TCE 002715695-01



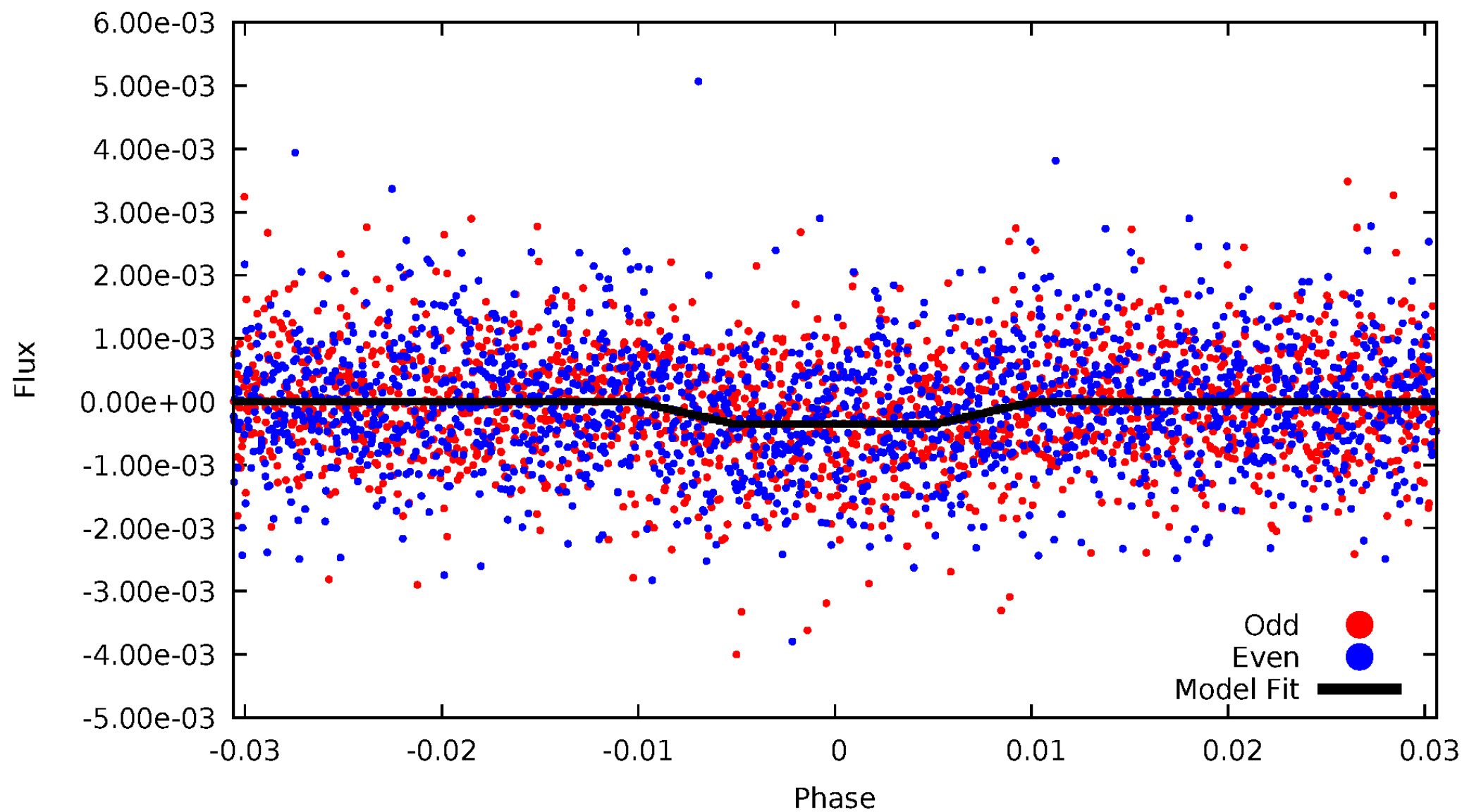
DV Odd/Even

TCE 002715695-01



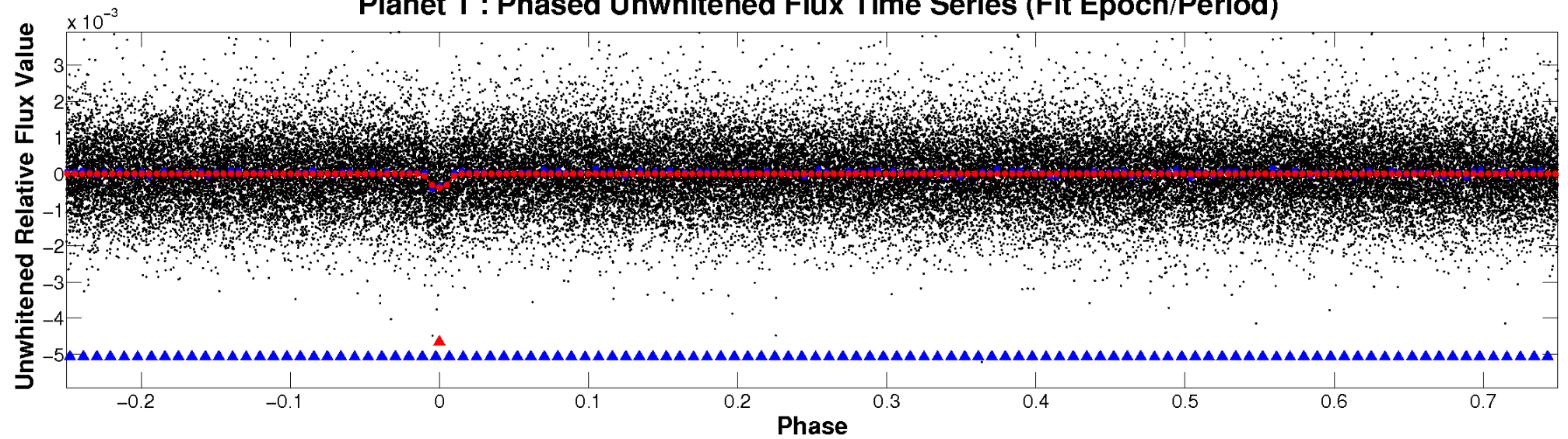
ALT Odd/Even

TCE 002715695-01

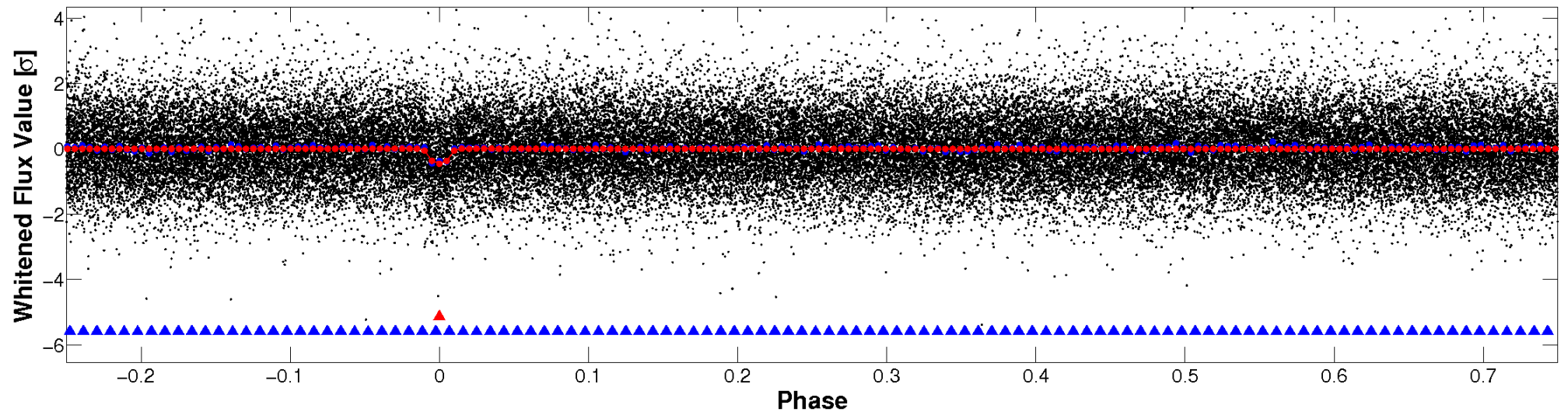


Non-Whitened Vs. Whitened Light Curve

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

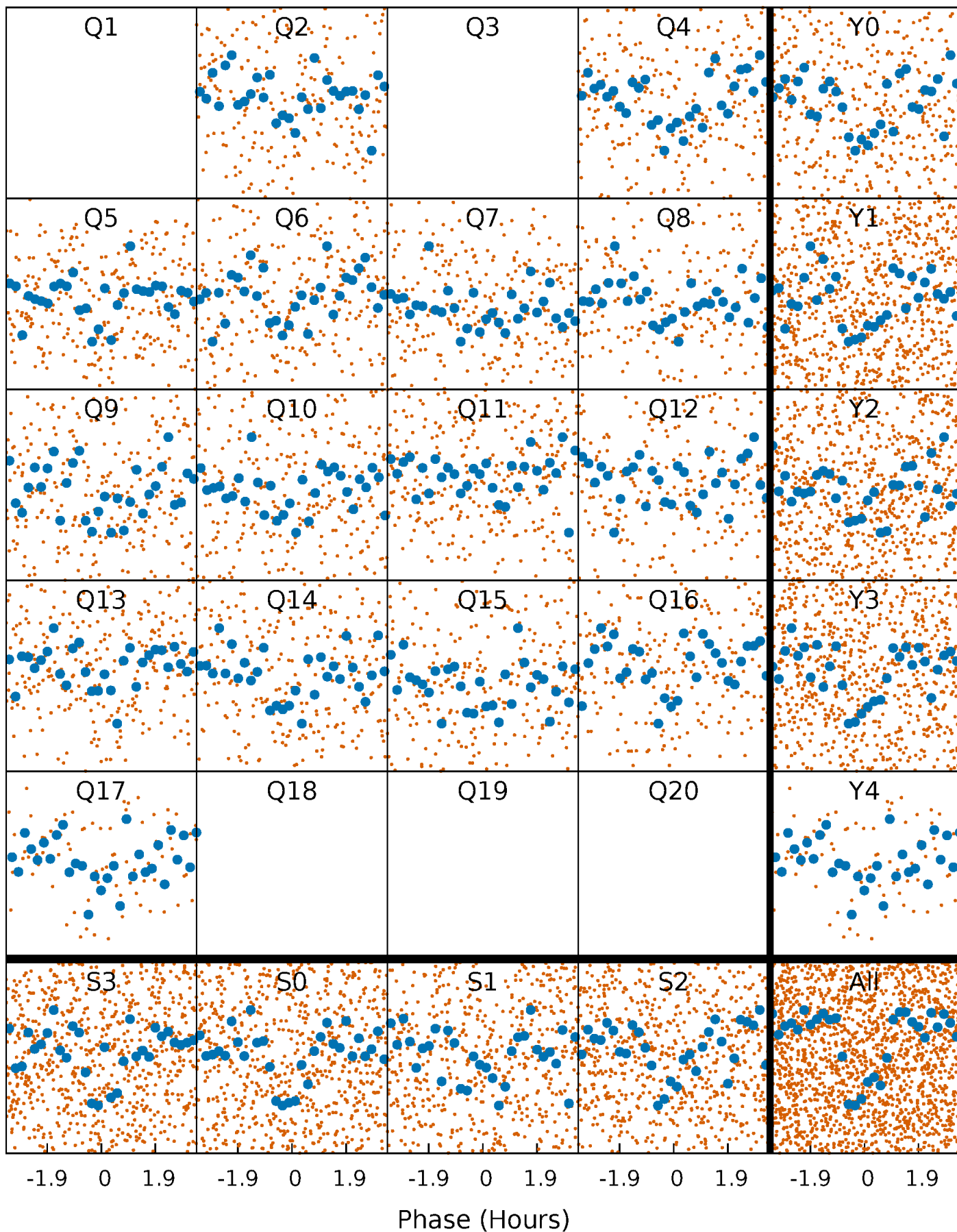


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



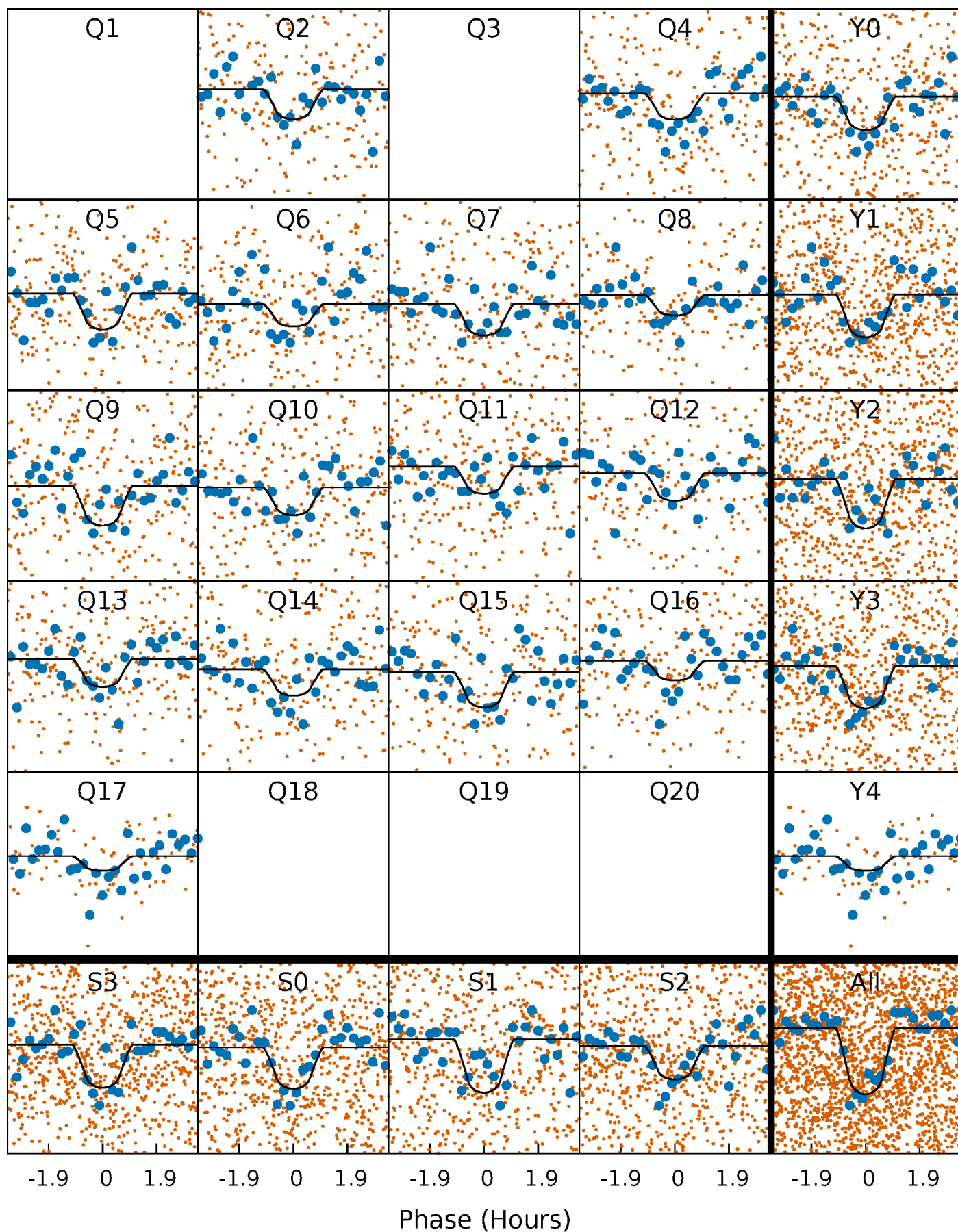
PDC Quarter-Phased Transit Curves

TCE 002715695-01 P= 4.095782 Days $T_0=131.620330$ (BKJD)



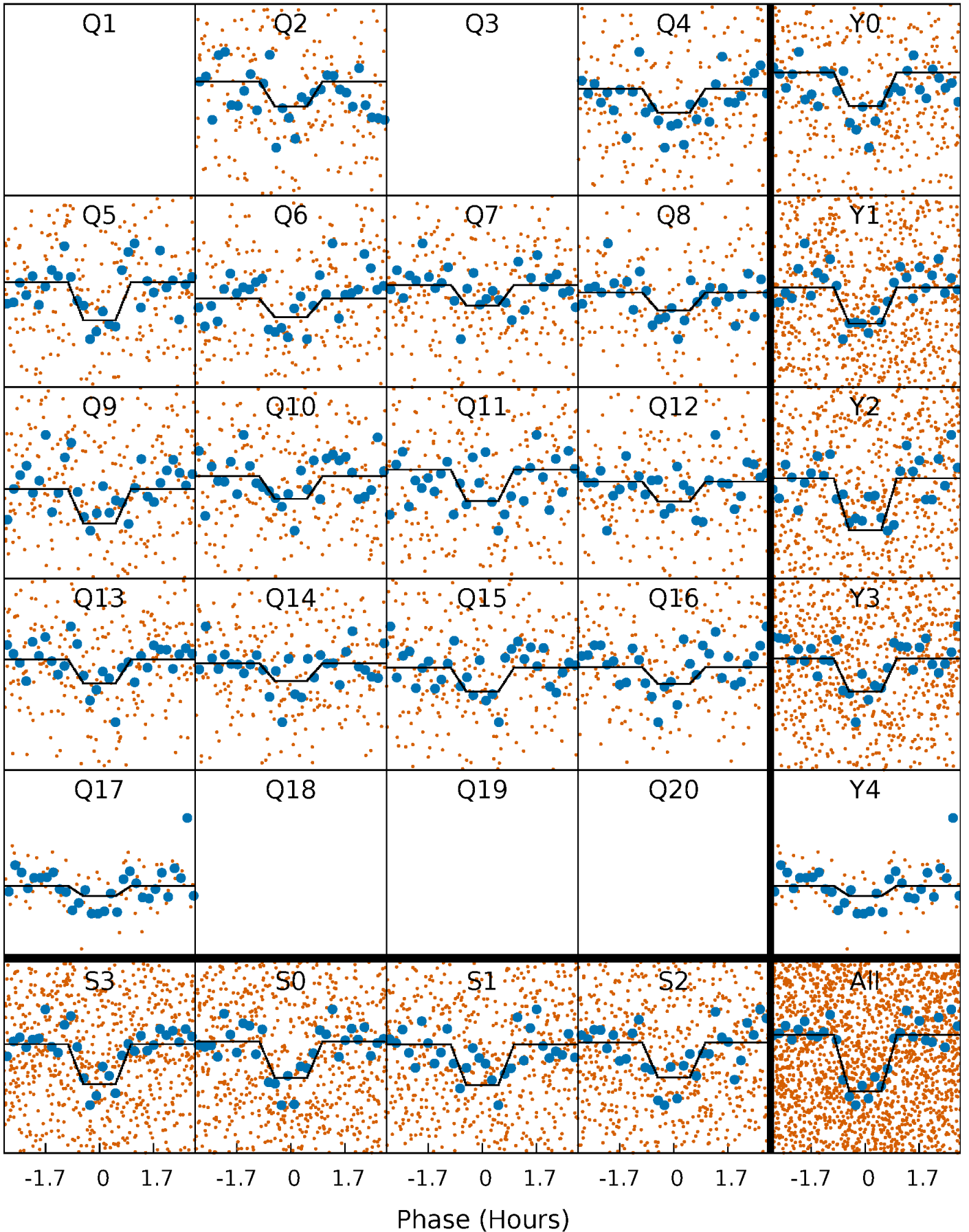
DV Quarter-Phased Transit Curves

TCE 002715695-01 P= 4.095782 Days $T_0=131.620330$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

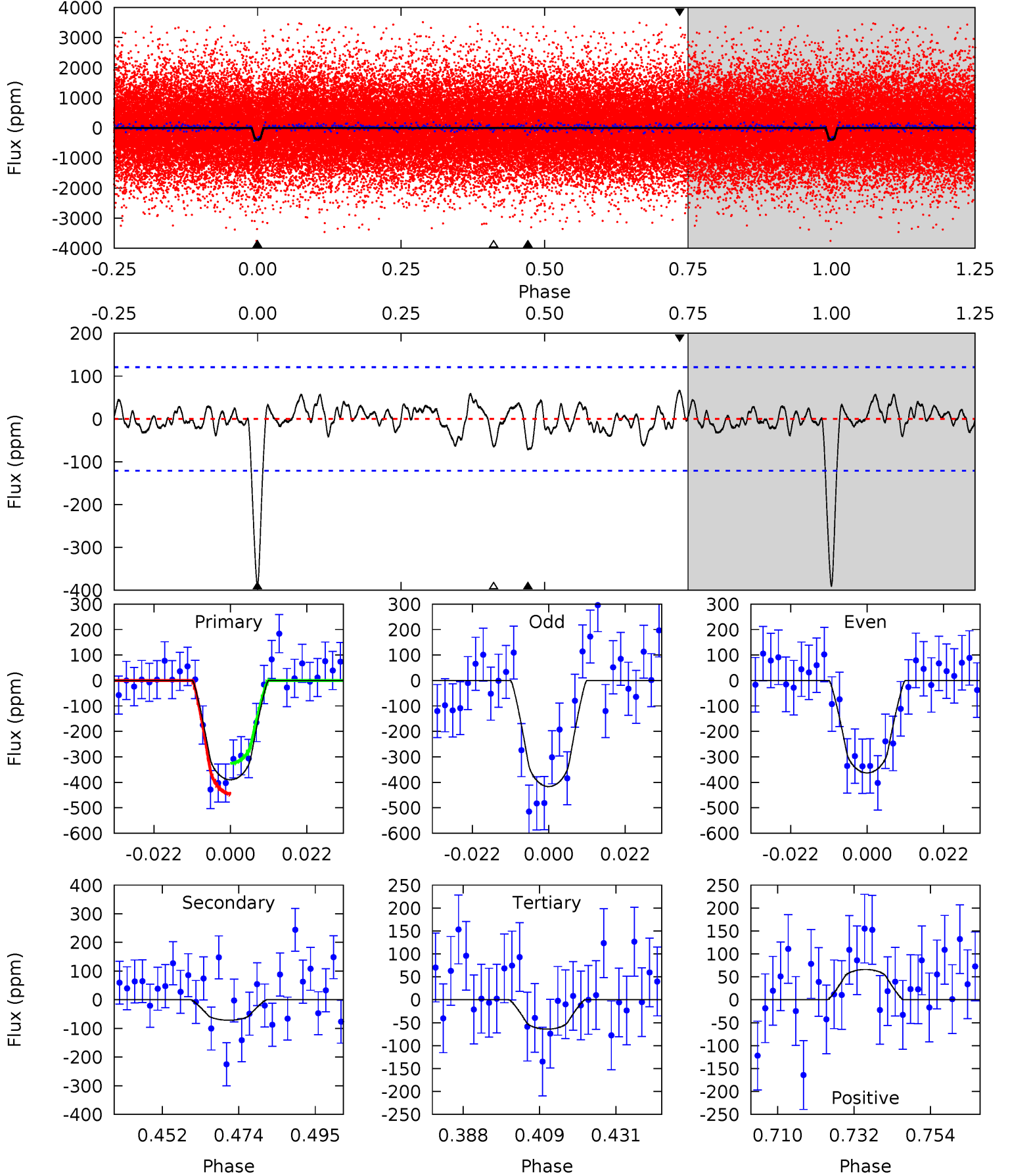
TCE 002715695-01 P= 4.095794 Days $T_0=131.617912$ (BKJD)



DV Model-Shift Uniqueness Test

002715695-01, P = 4.095782 Days, E = 131.620330 Days

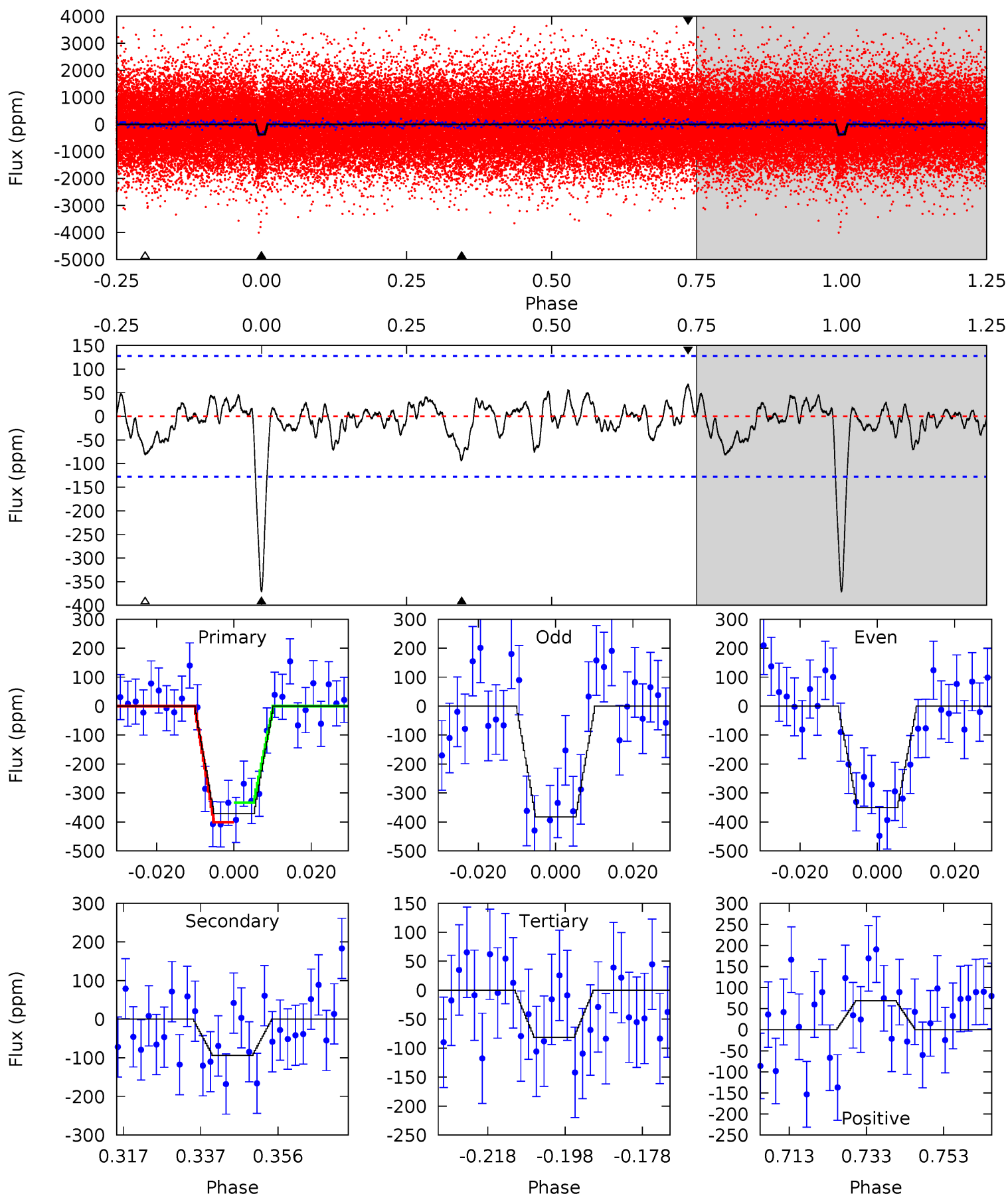
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	2.87	2.59	2.67	4.88	2.30	0.99	13.1	13.1	0.29	0.21	1.09	1.08	0.15	2.41



Alt Model-Shift Uniqueness Test

002715695-01, P = 4.095794 Days, E = 131.617912 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	3.59	3.11	2.63	4.89	2.33	1.07	11.1	11.6	0.48	0.96	0.62	1.16	0.16	1.29



Stellar Parameters For KIC 002715695

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4791^{+143}_{-129}	$4.577^{+0.045}_{-0.036}$	$0.070^{+0.250}_{-0.300}$	$0.742^{+0.054}_{-0.059}$	$0.759^{+0.061}_{-0.061}$	$2.614^{+0.511}_{-0.356}$
	+3%/-3%	+1%/-1%	+357%/-429%	+7%/-8%	+8%/-8%	+20%/-14%
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 002715695-01 / KOI 3077.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-71 ± 25	$2.07^{+1.40}_{-1.29}$	1189^{+38}_{-37}	3229^{+1276}_{-513}	18^{+108}_{-12}
Alt.	-94 ± 26	$1.86^{+1.49}_{-1.25}$	1189^{+36}_{-36}	3480^{+1815}_{-566}	30^{+264}_{-21}

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

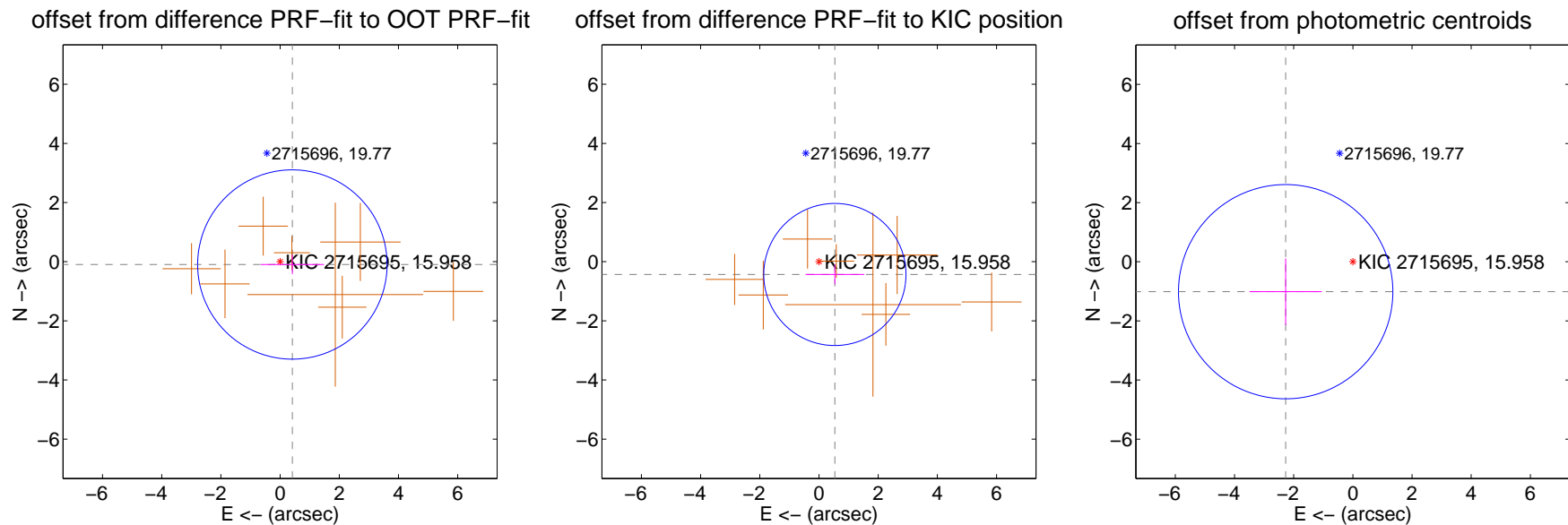
DV Centroid Data

Supplemental centroid analysis for 002715695-01. Kepler magnitude: 15.96. Transit SNR 11.93

There are 0 quarters with good PRF difference image offsets

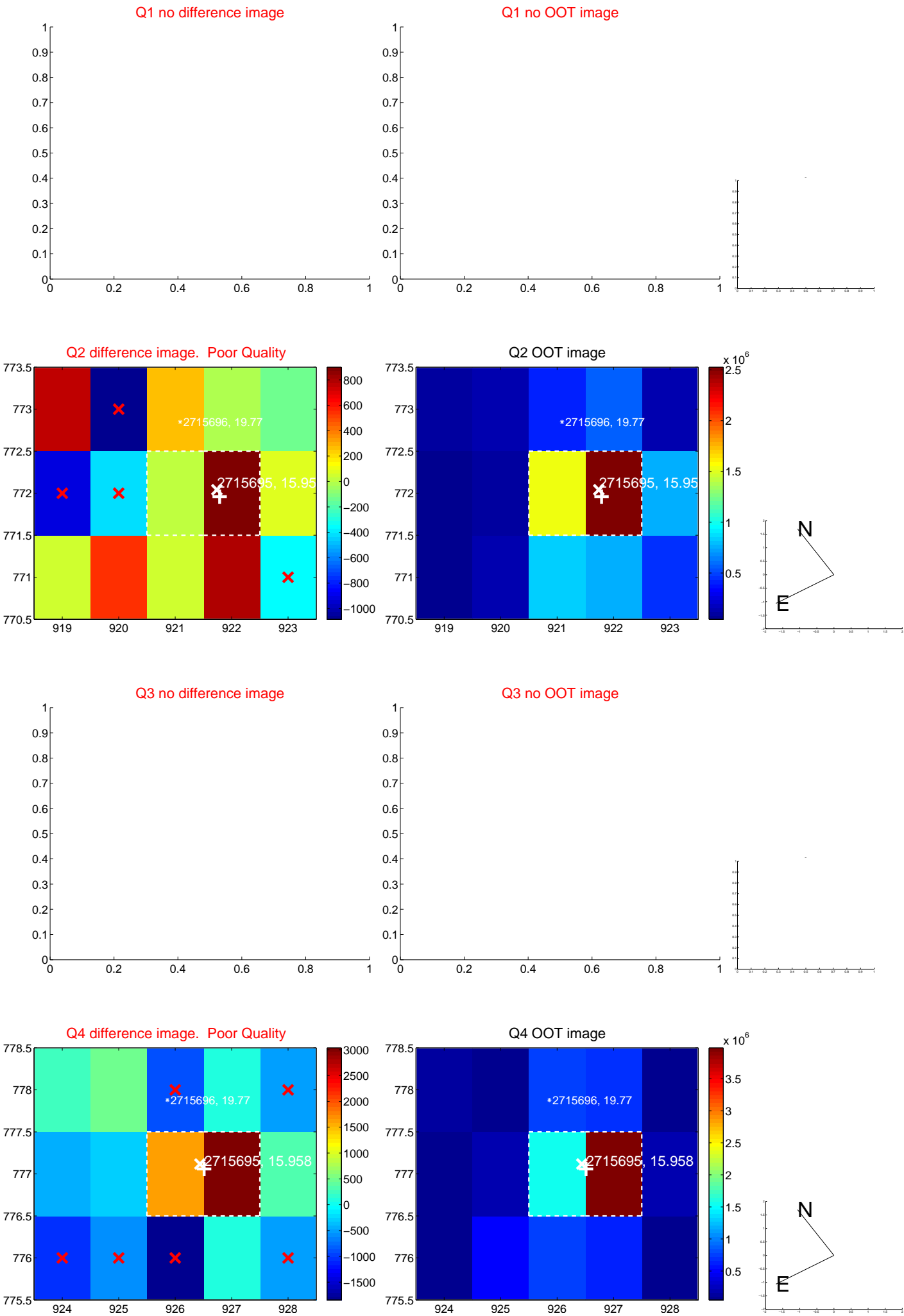
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.425 ± 1.067	0.40	-0.414 ± 1.066	-0.095 ± 0.325
PRF-fit source offset from KIC position	0.689 ± 0.801	0.86	-0.537 ± 0.994	-0.433 ± 0.329
photometric centroid source offset	2.49 ± 1.21	2.06	2.27 ± 1.22	-1.01 ± 1.13

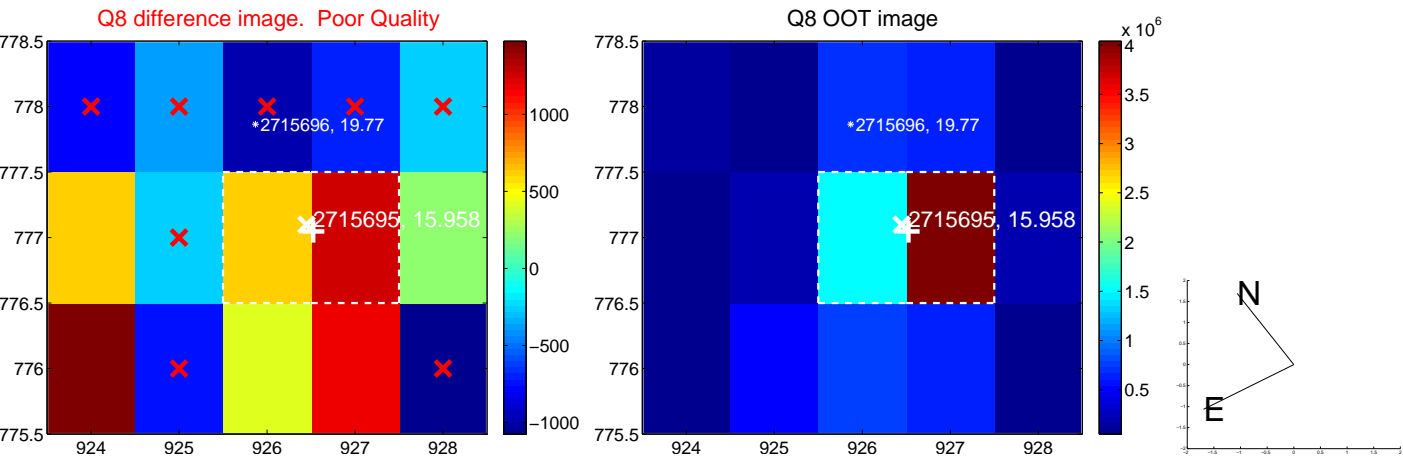
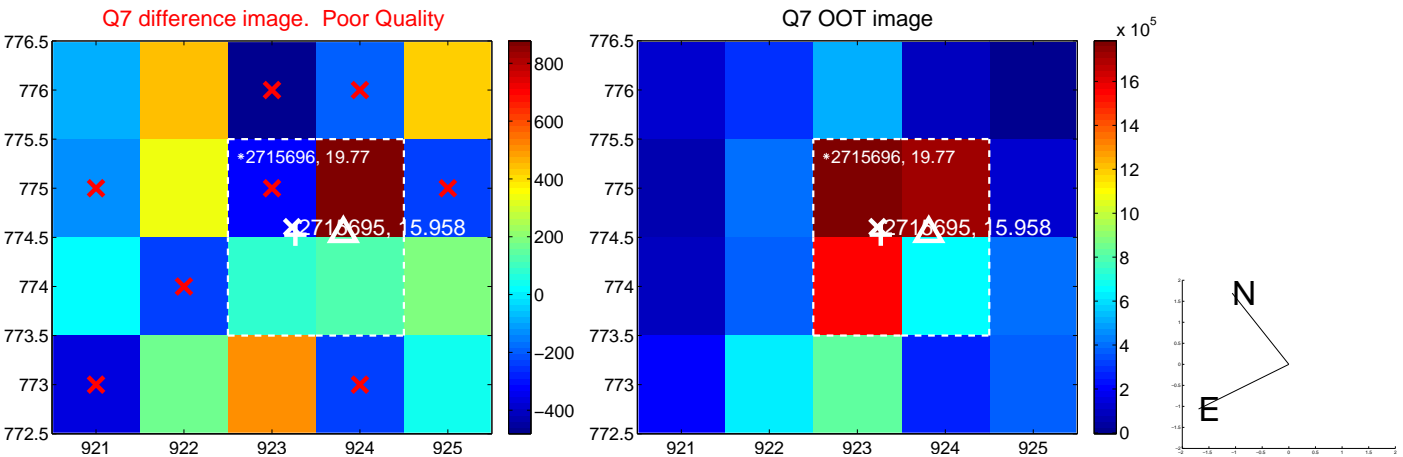
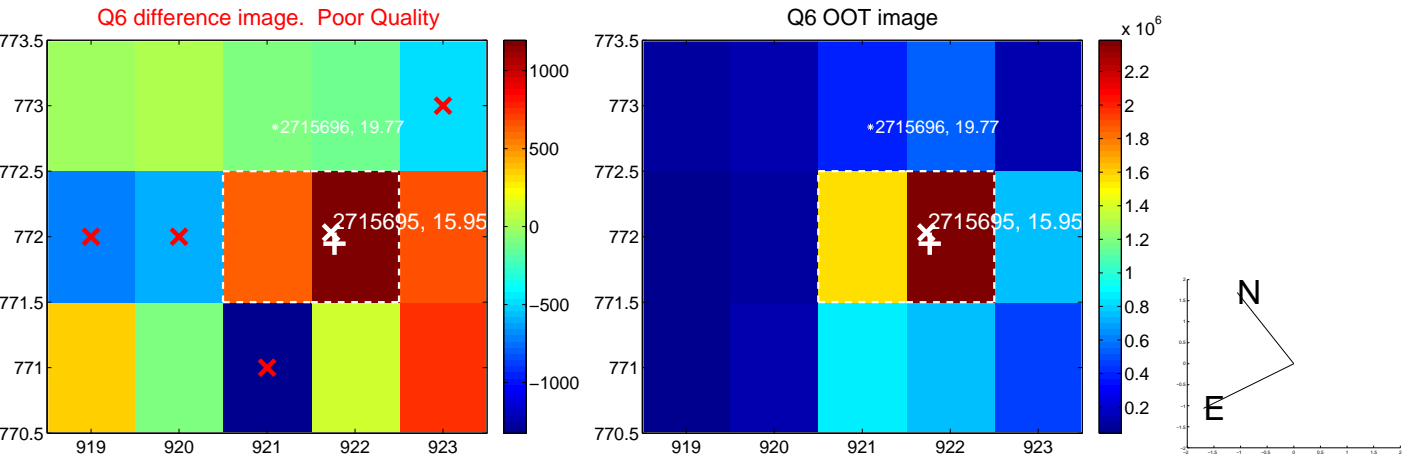
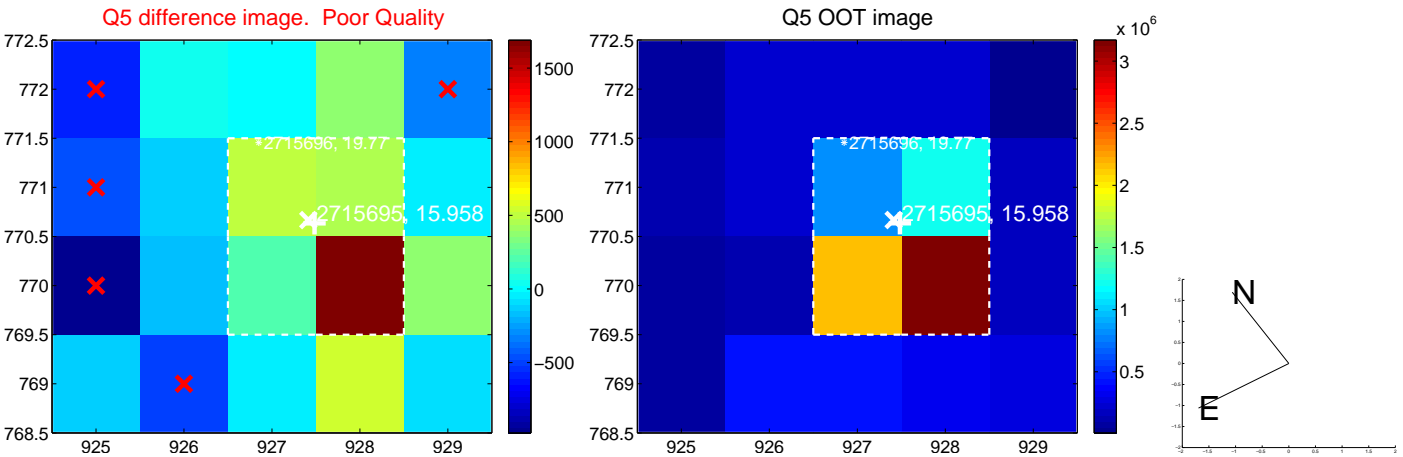


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

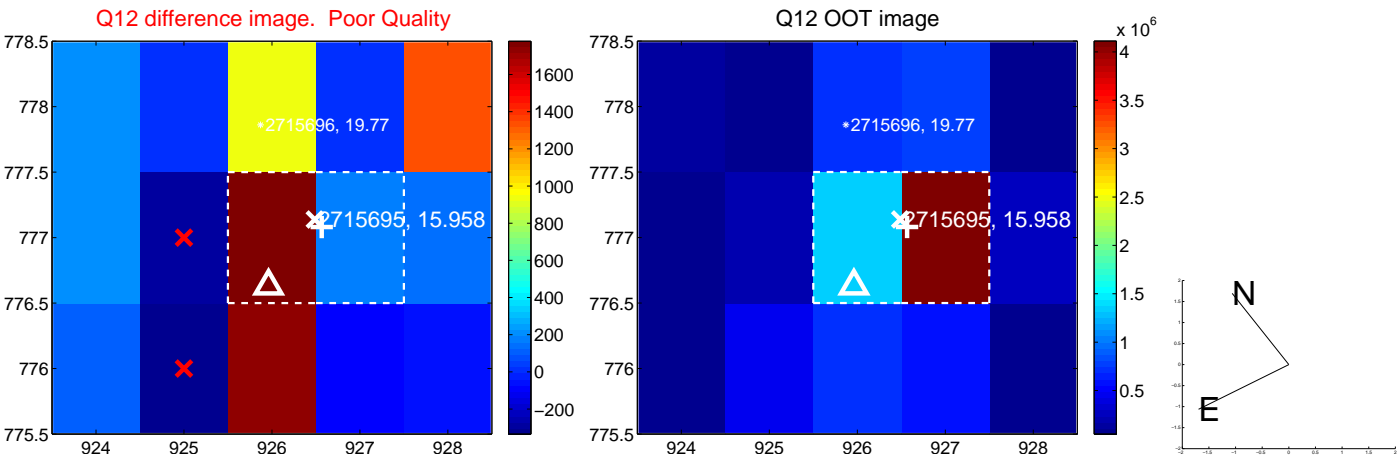
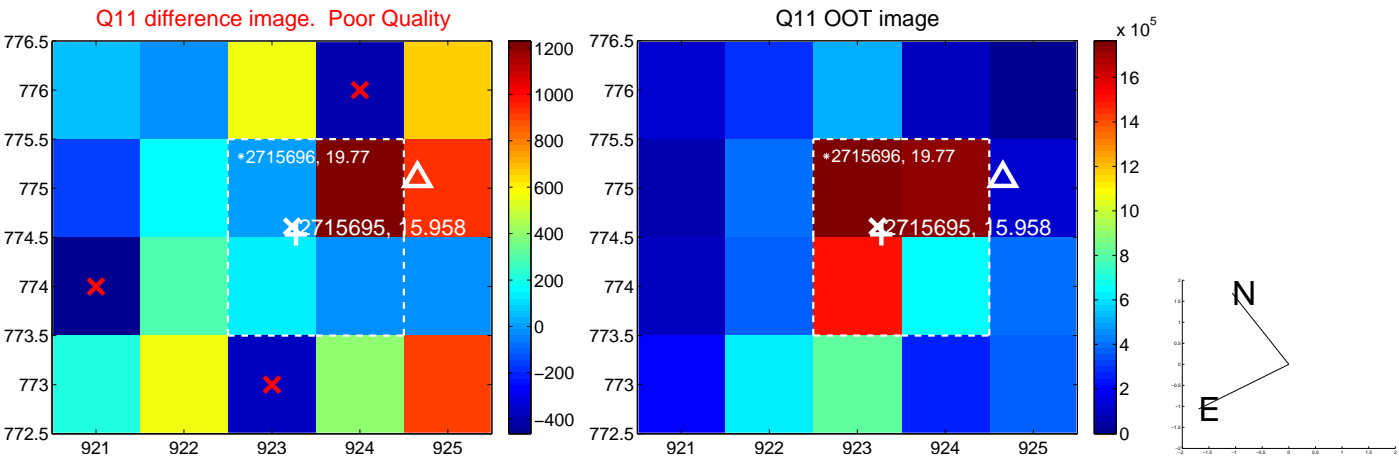
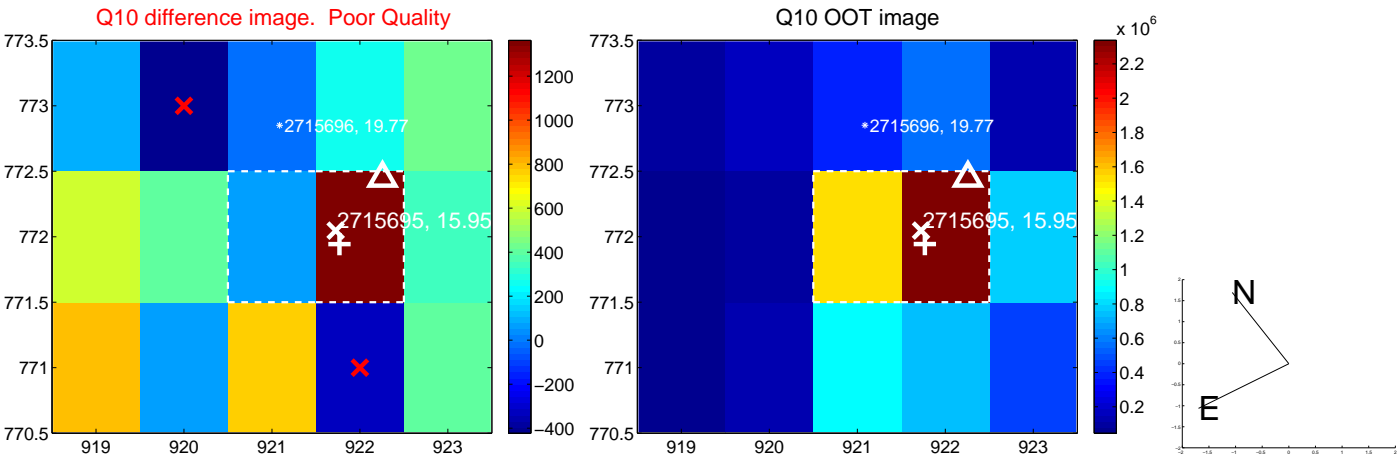
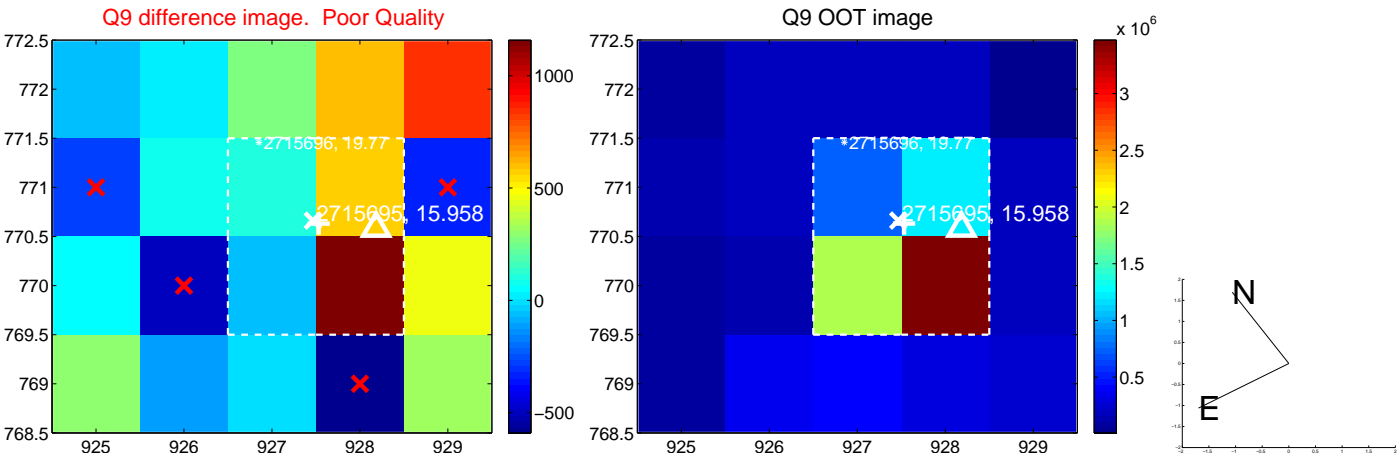
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



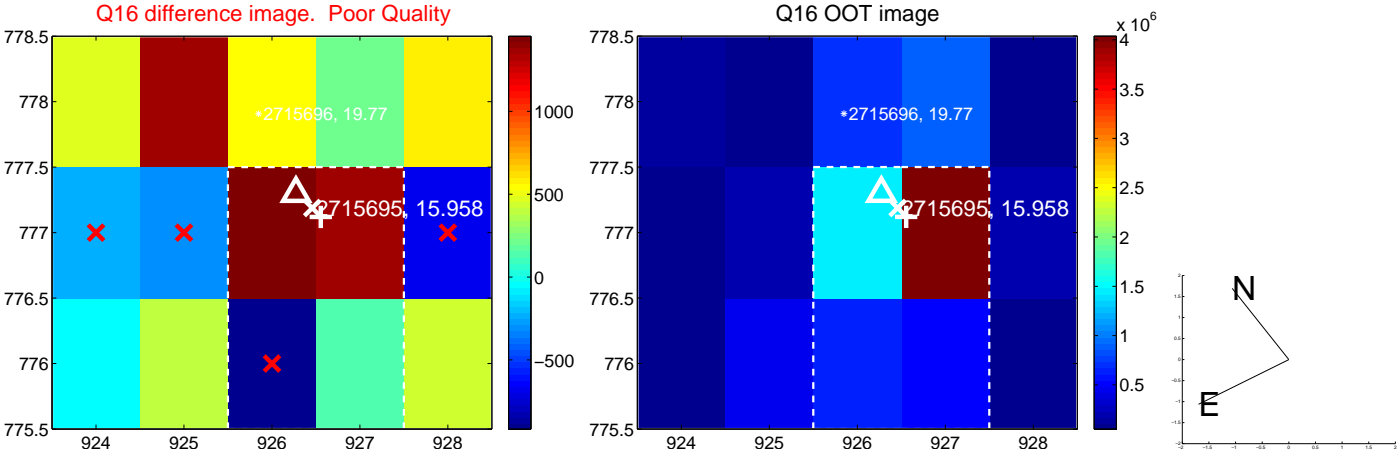
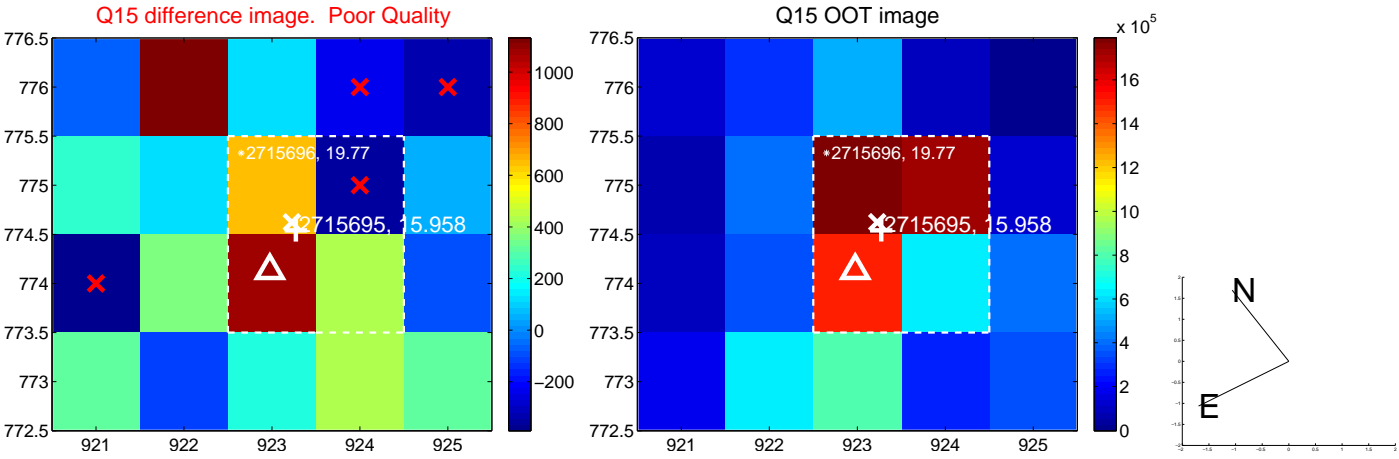
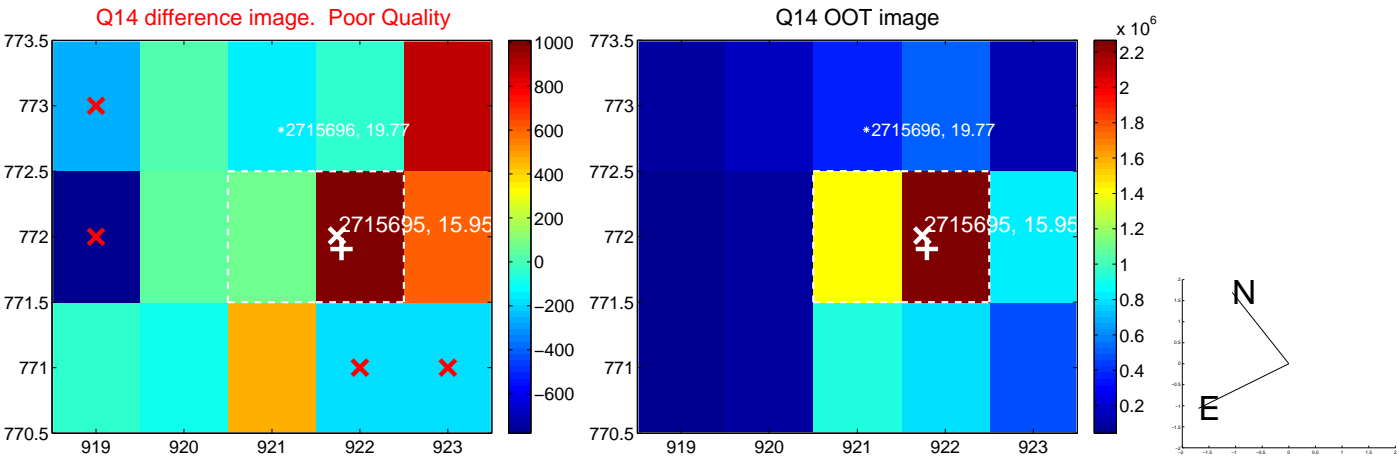
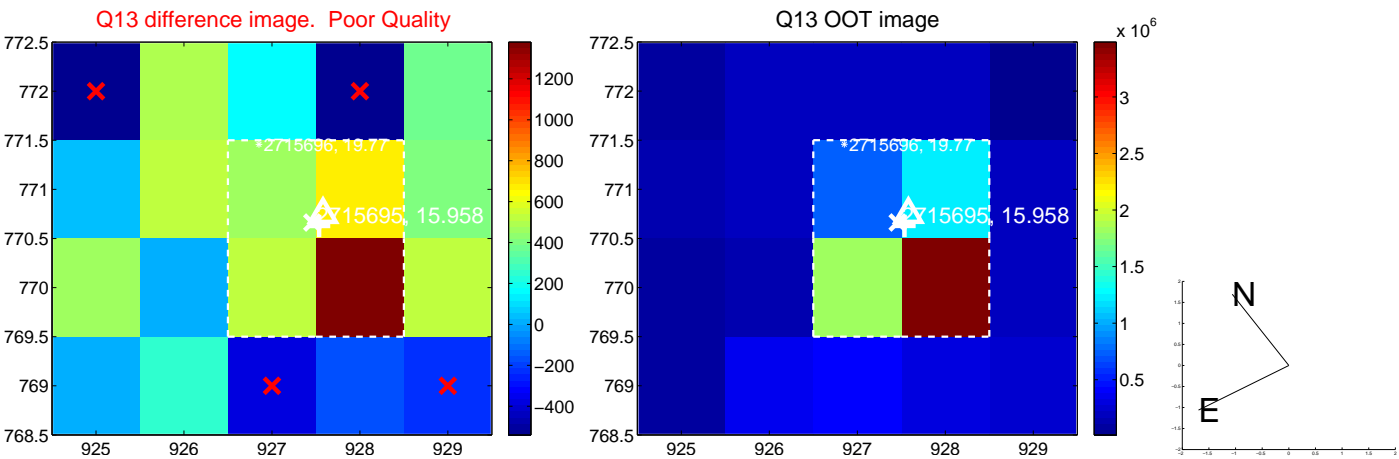
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



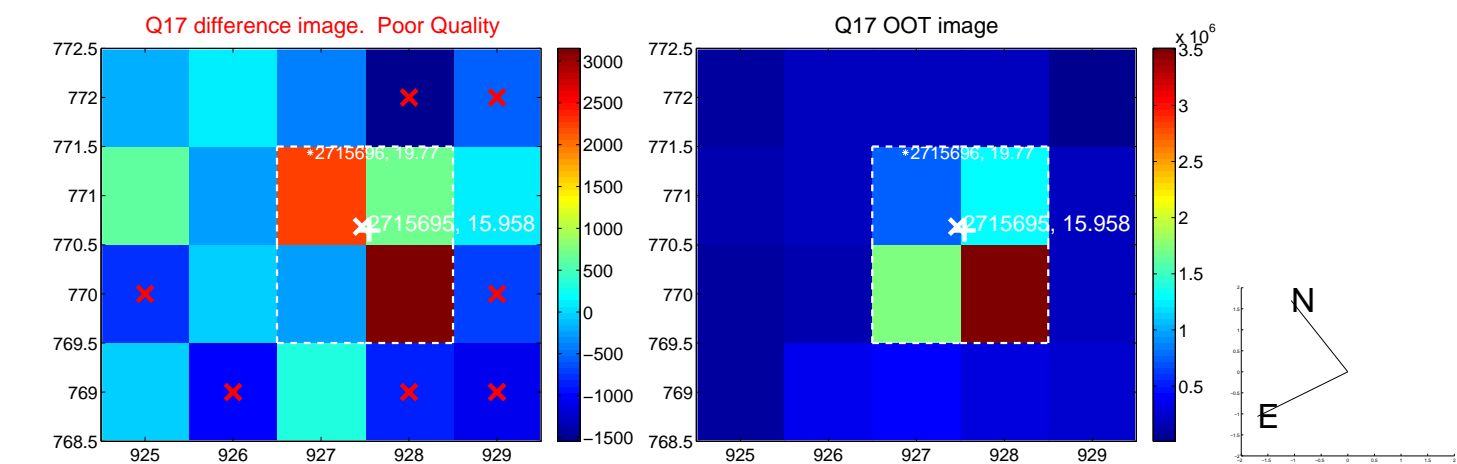
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



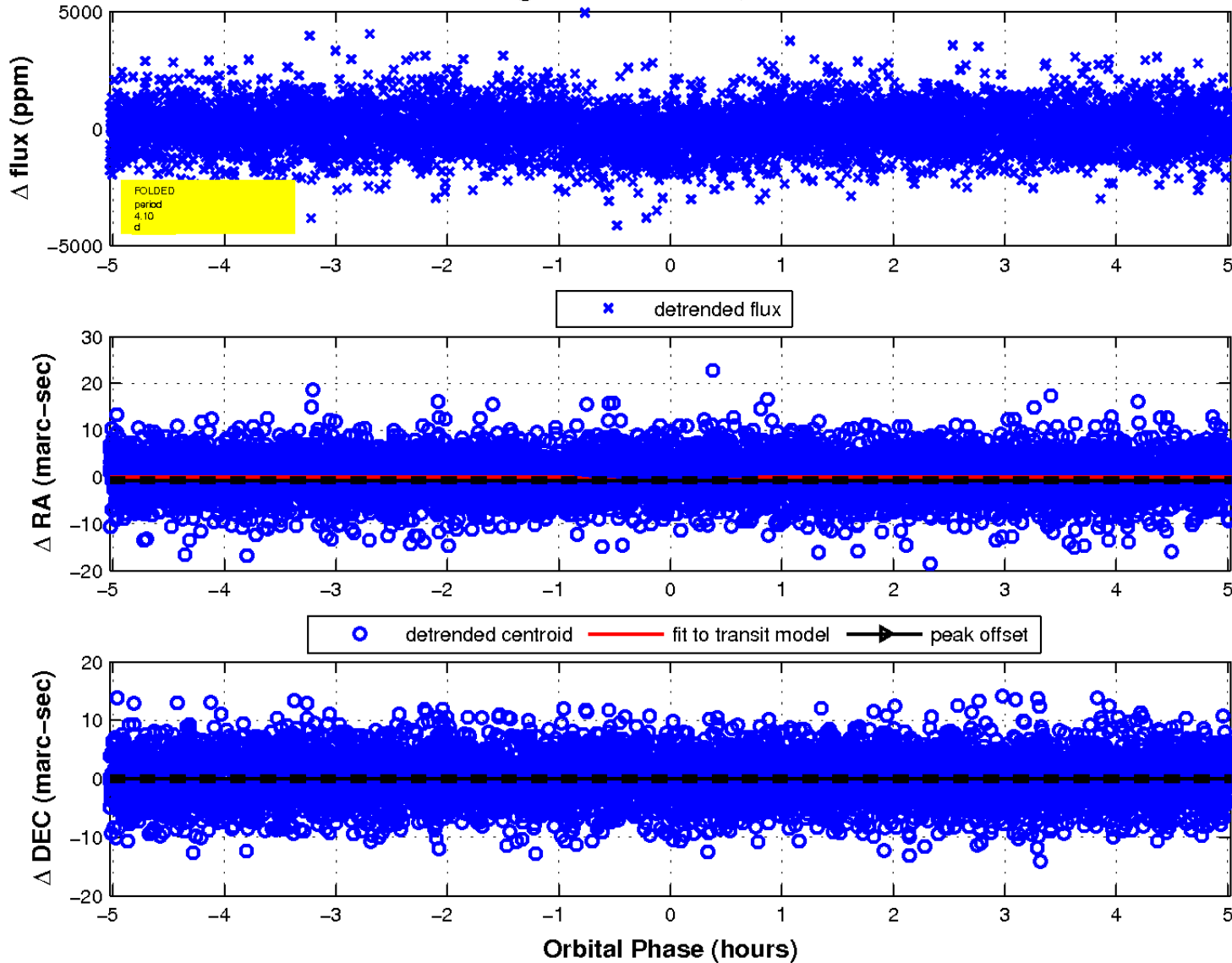
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

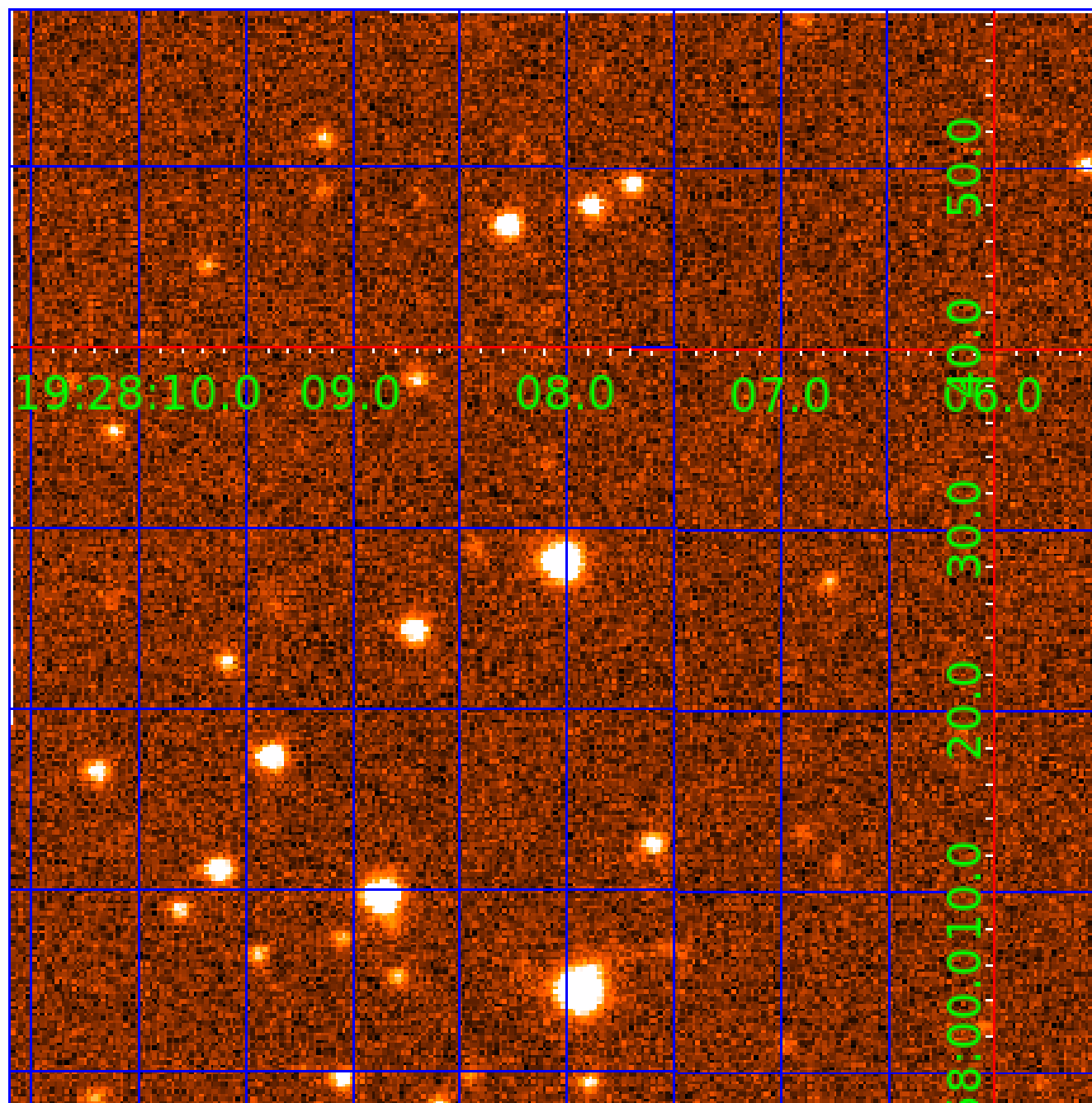


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 002715695

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})
002715695-01	OBS	3077.01	4.095782	131.620330	391.4	1.676	10.5	11.9	0.74	4791	1.65	124.48
002715695-02	OBS	3077.02	7.558592	137.976711	350.0	2.704	9.0	9.4	0.74	4791	1.70	54.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002715695-01	OBS	PC	1.00	0	0	0	0	CENT_FEW_MEAS
002715695-02	OBS	PC	0.98	0	0	0	0	CENT_KIC_POS

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

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

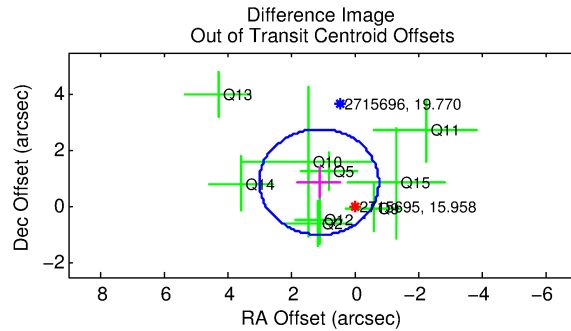
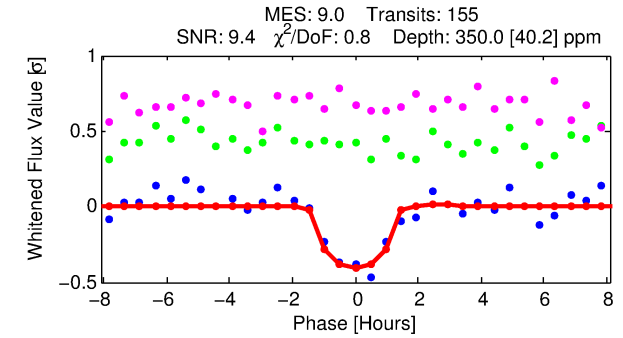
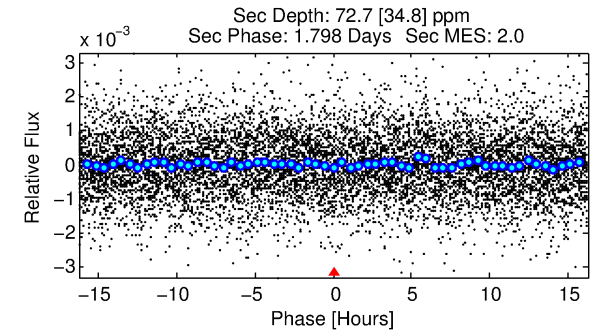
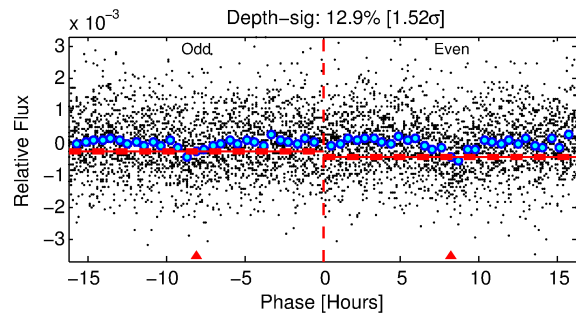
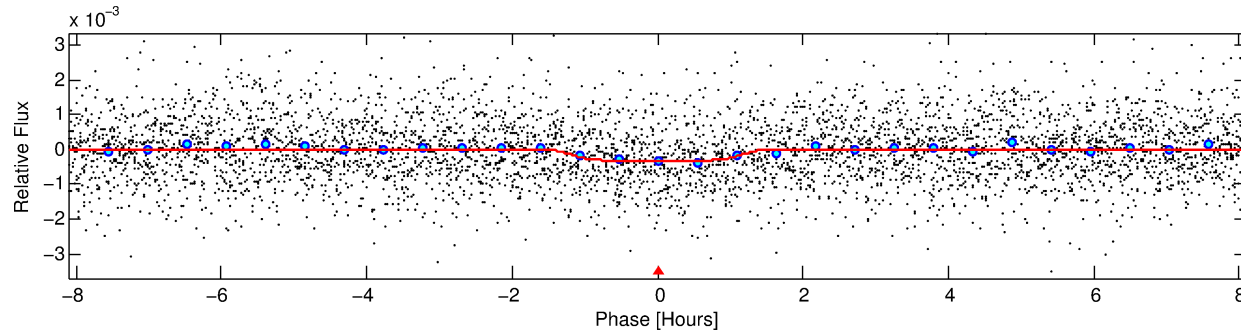
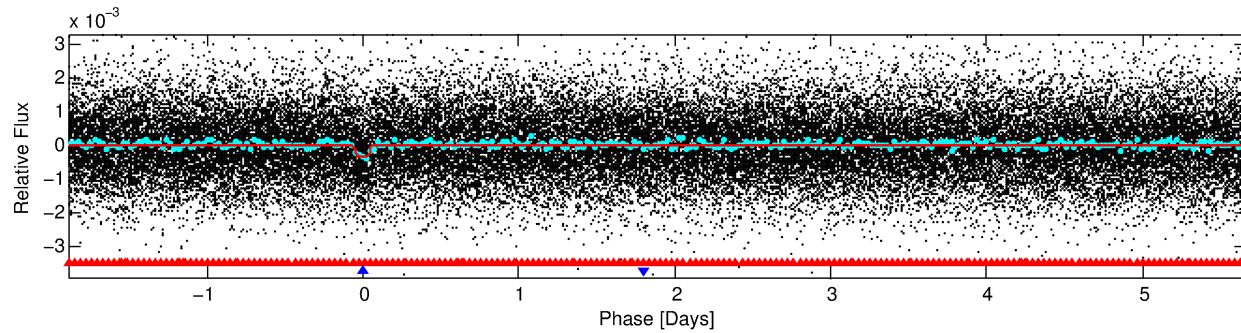
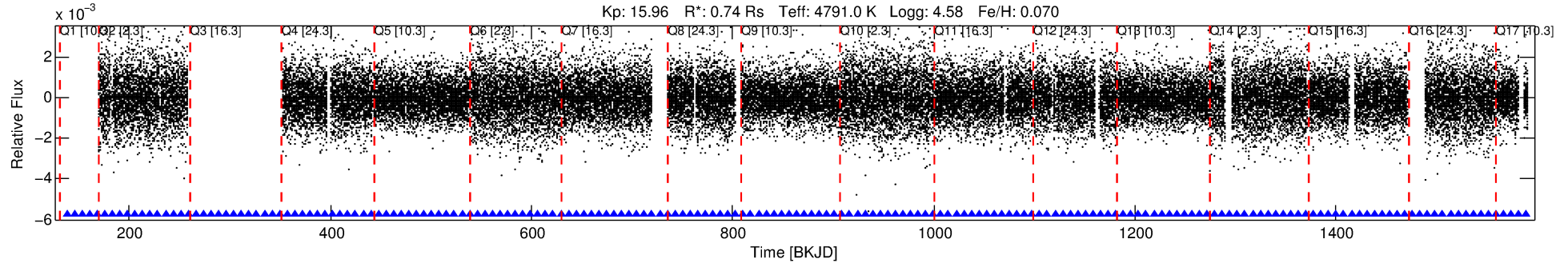
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002715695-02

No Significant Match Found

DV One-Page Summary

KIC: 2715695 Candidate: 2 of 2 Period: 7.559 d
KOI: K03077.02 Corr: 0.911



DV Fit Results:

Period = 7.55859 [0.00007] d
Epoch = 137.9767 [0.0073] BKJD
Rp/R* = 0.0210 [0.0144]
a/R* = 10.38 [26.70]
b = 0.90 [0.57]
Seff = 54.99 [8.13]
Teff = 694 [26] K
Rp = 1.70 [1.18] Re
a = 0.0687 [0.0043] AU
Ag = 65.21 [95.00] [0.68 σ]
Teffp = 3051 [1113] K [2.12 σ]

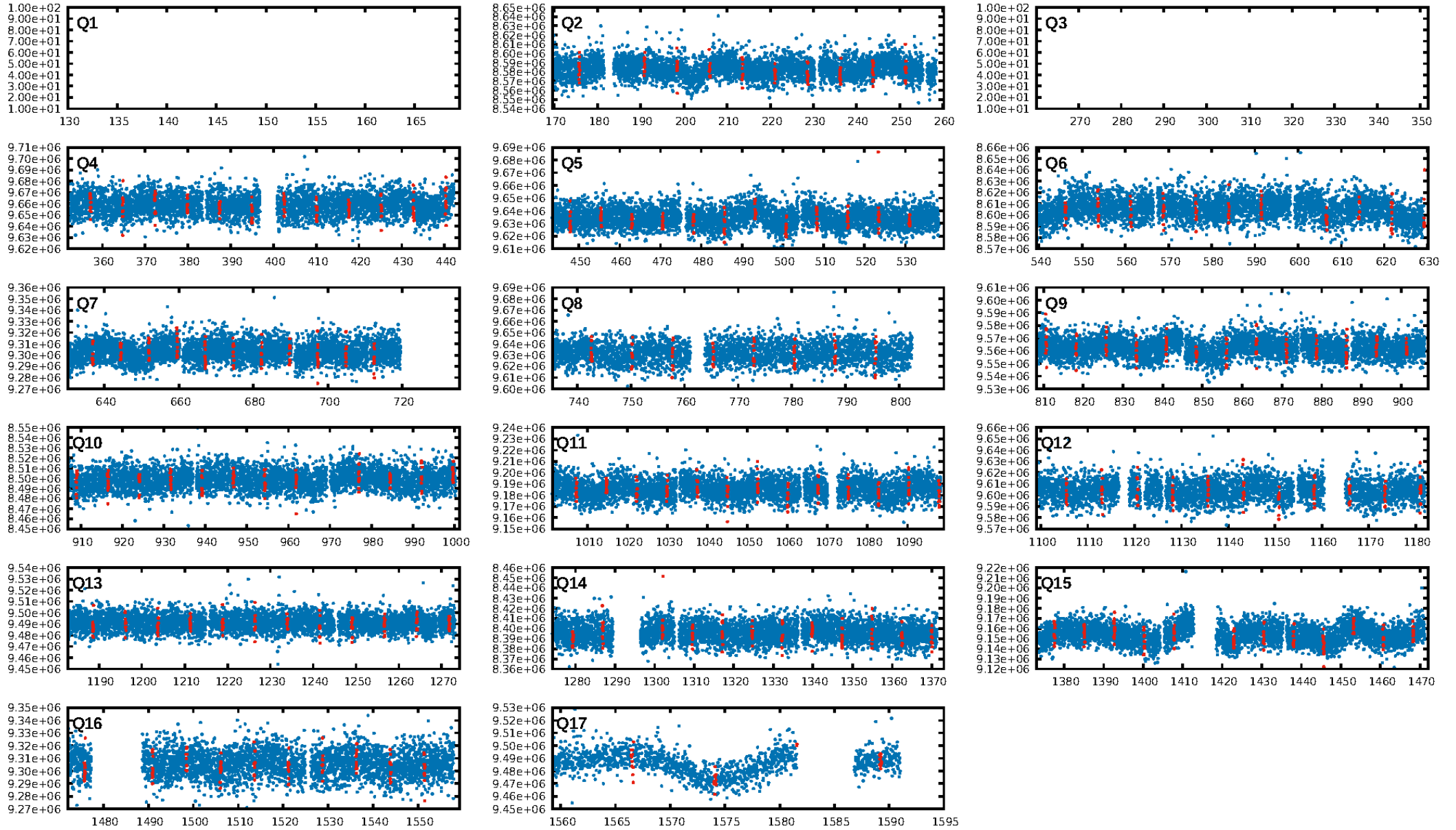
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [26.13 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.01e-19
RollingBand-fgt: 1.00 [152/152]
GhostDiagnostic-chr: 2.425
Centroid-sig: 0.0%
Centroid-so: 3.845 arcsec [2.66 σ]
OotOffset-rm: 1.418 arcsec [2.26 σ]
KicOffset-rm: 1.108 arcsec [1.66 σ]
OotOffset-st: 3/2/1/3 [9]
KicOffset-st: 3/2/1/3 [9]
DiffImageQuality-fgm: 0.22 [2/9]
DiffImageOverlap-fno: 1.00 [15/15]

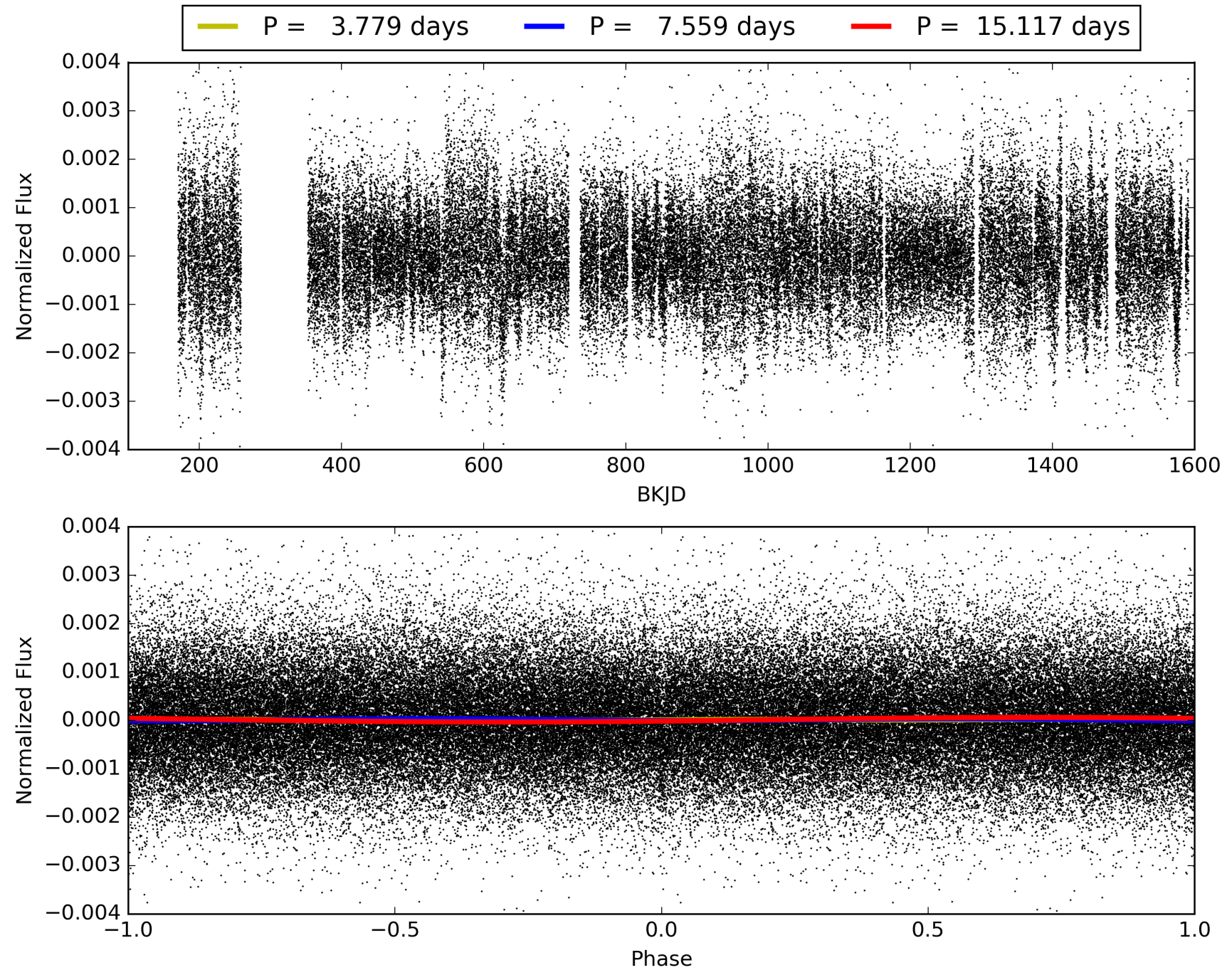
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:55:10 Z

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

TCE 002715695-02, PDC Light Curves

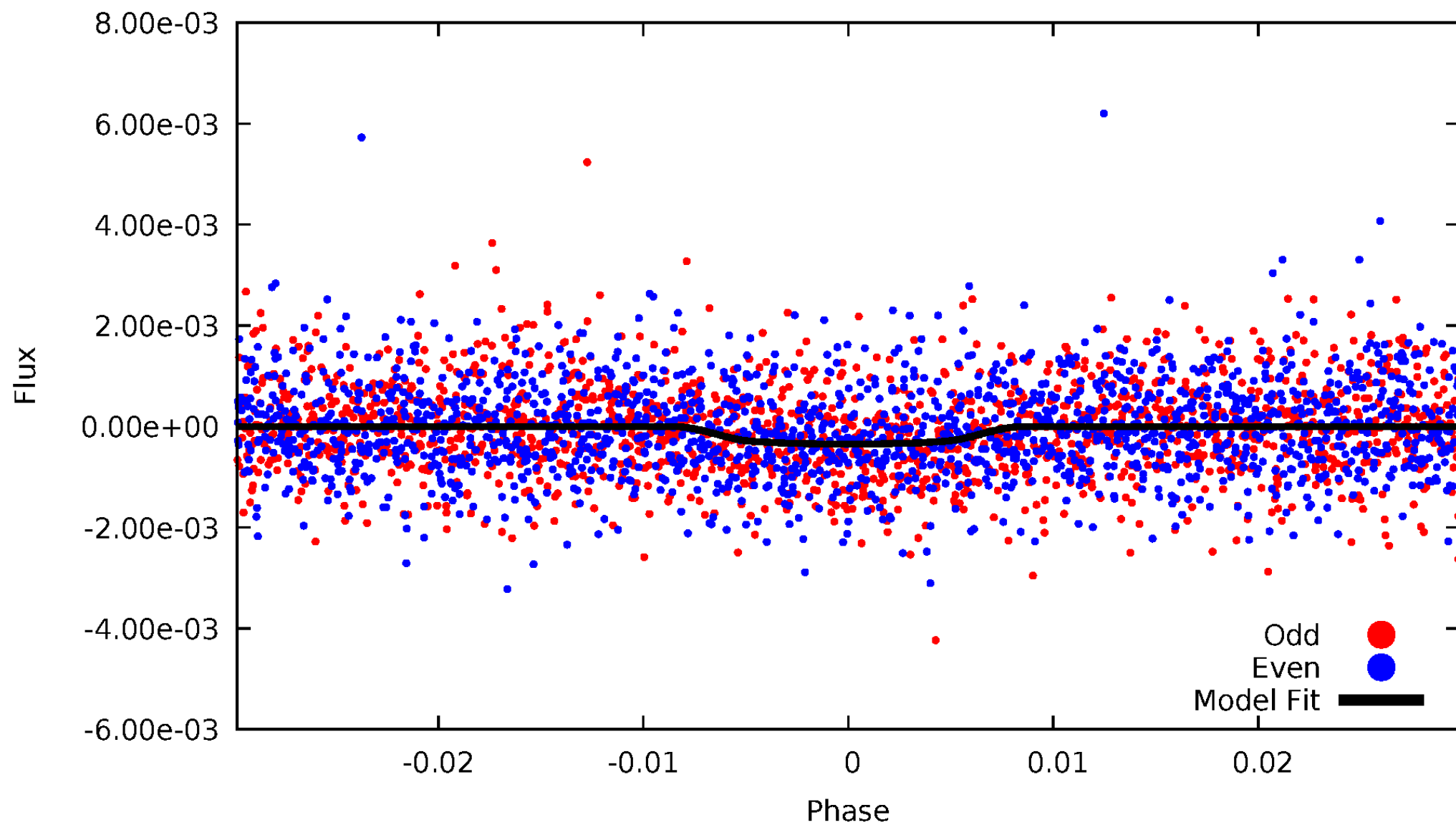


TCE 002715695-02



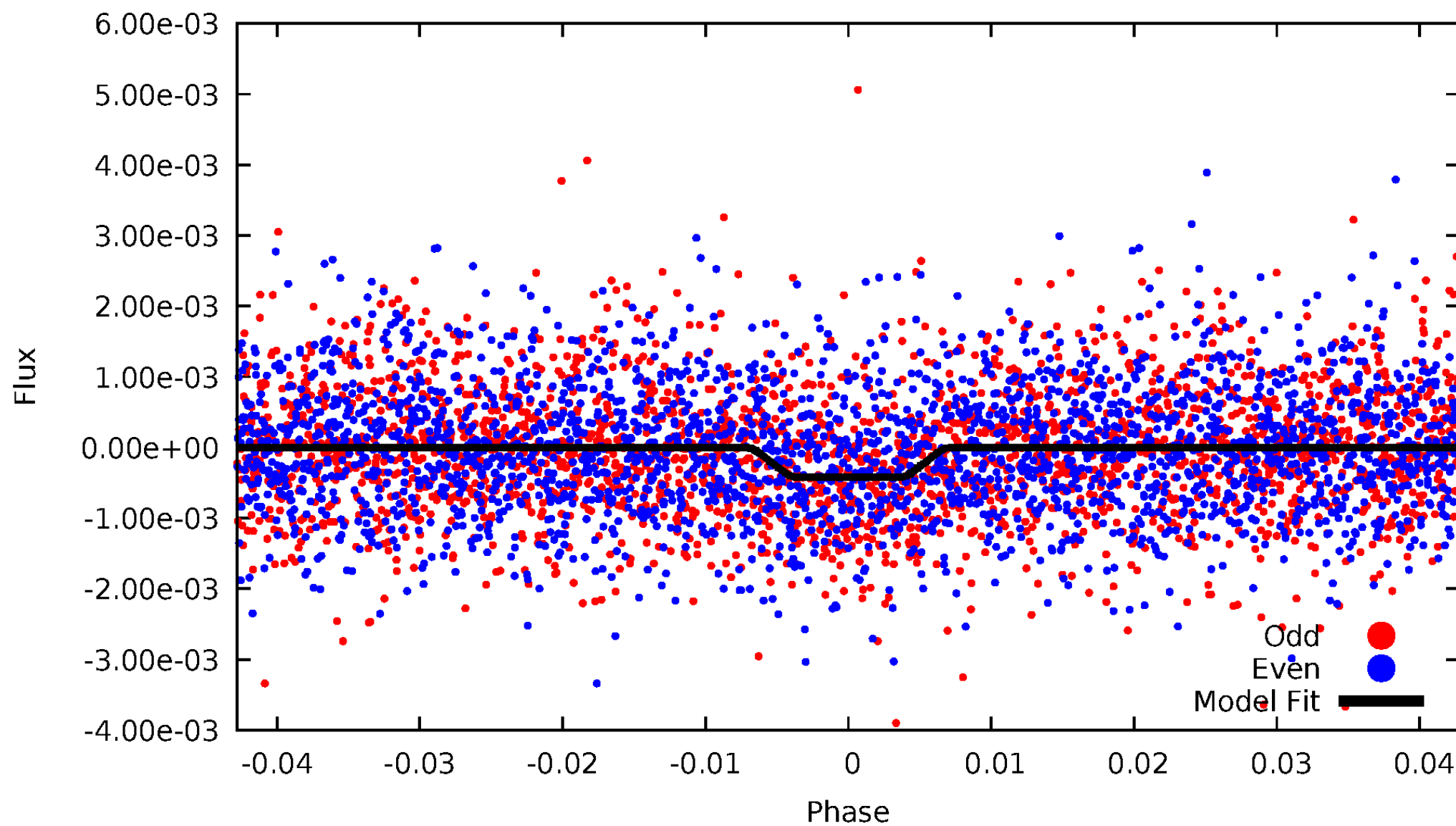
DV Odd/Even

TCE 002715695-02



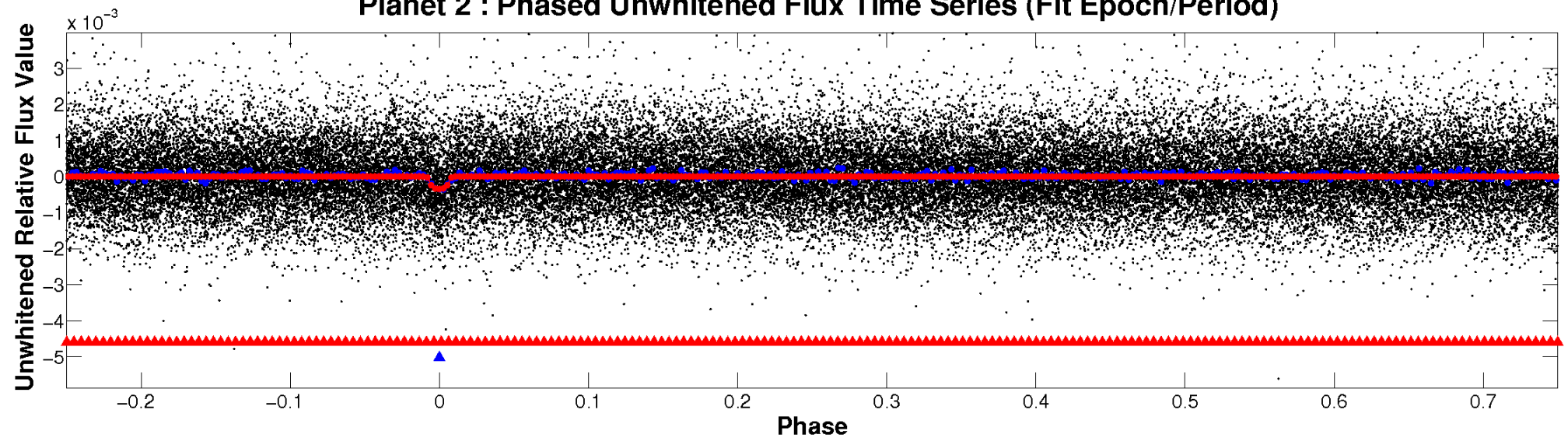
ALT Odd/Even

TCE 002715695-02

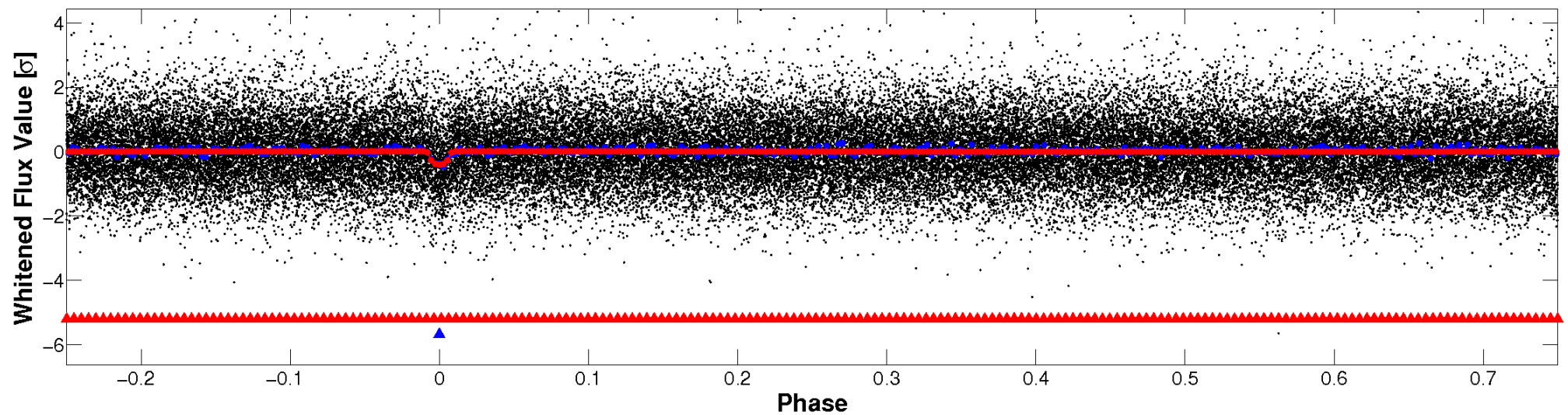


Non-Whitened Vs. Whitened Light Curve

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

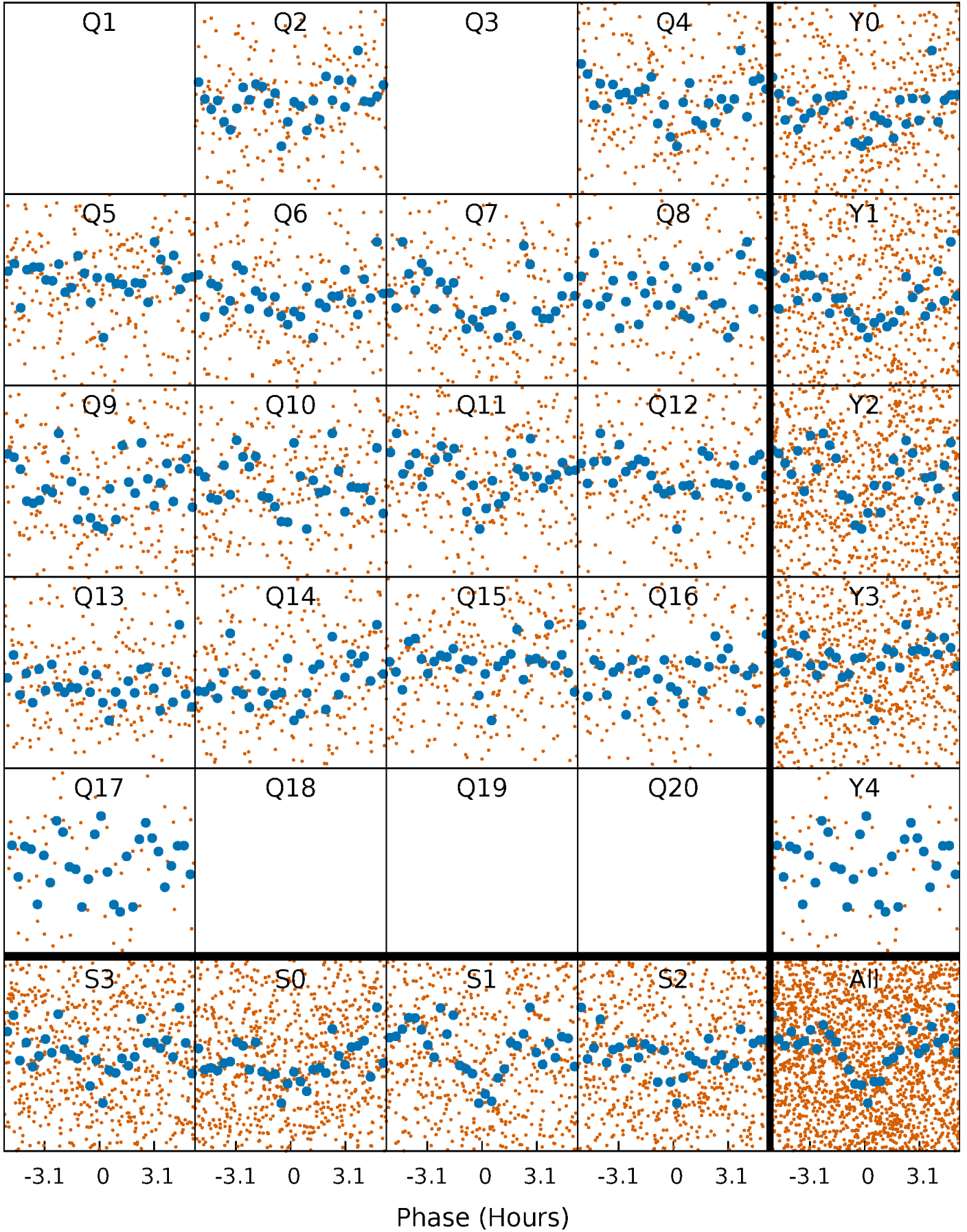


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



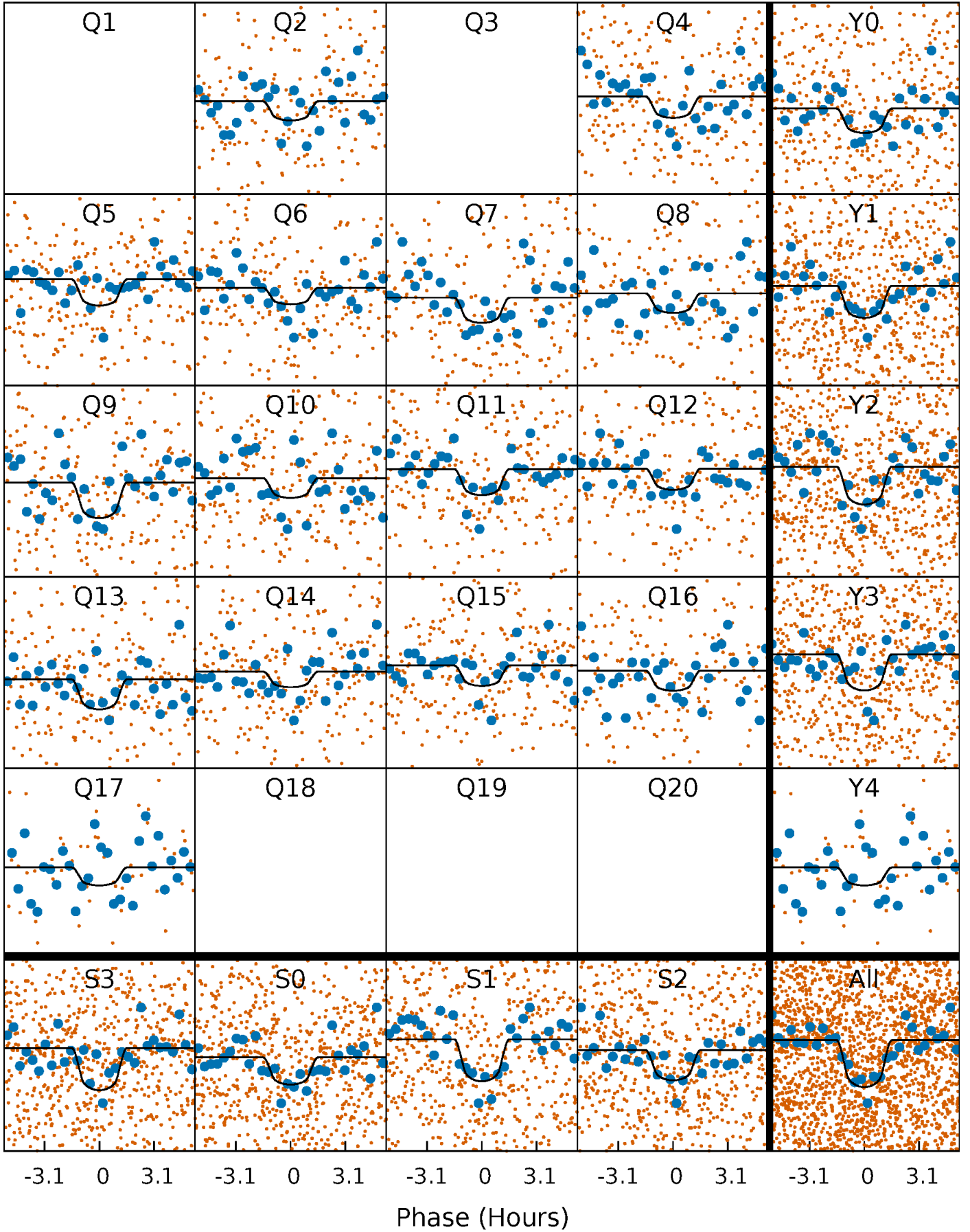
PDC Quarter-Phased Transit Curves

TCE 002715695-02 P= 7.558592 Days $T_0=137.976711$ (BKJD)



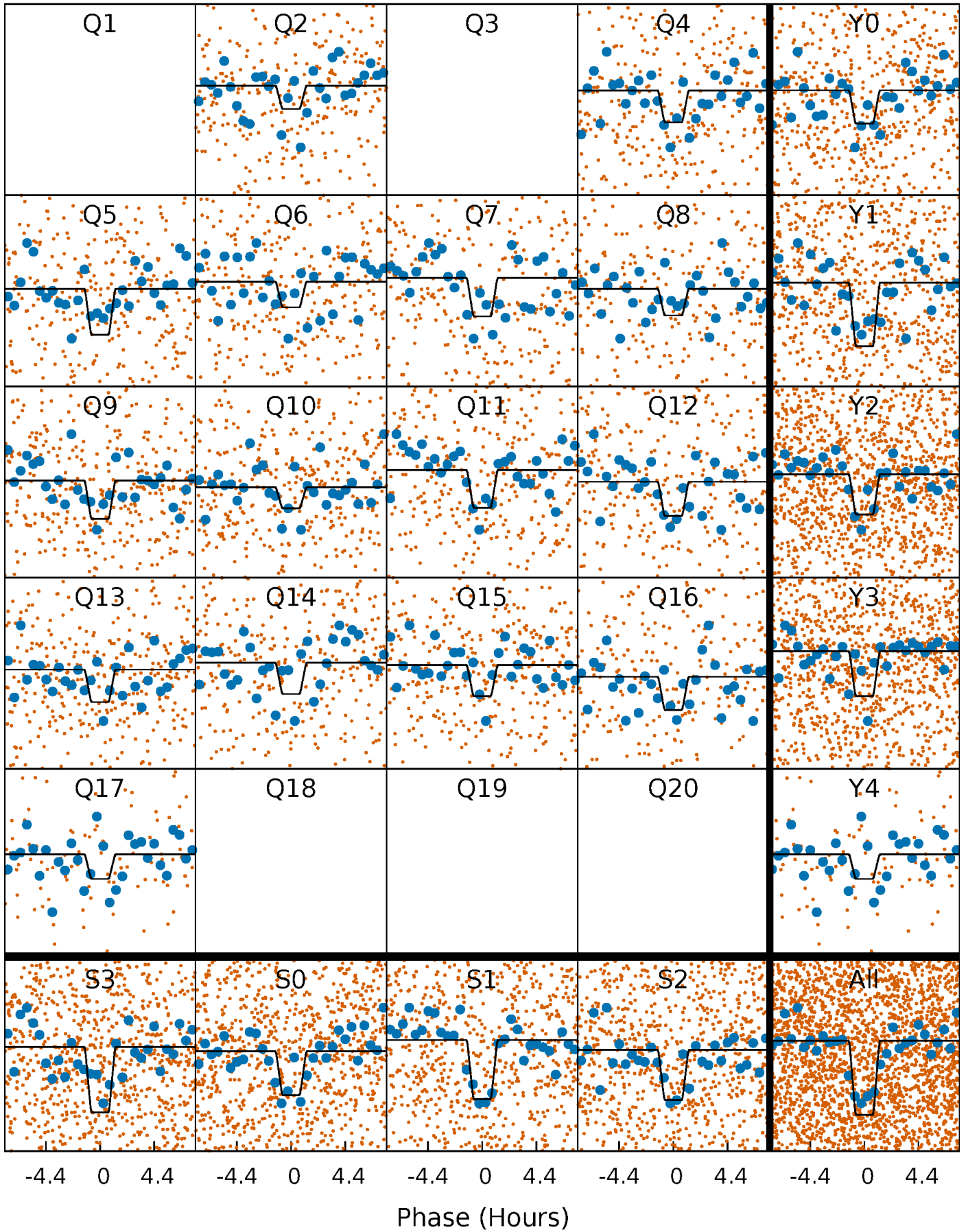
DV Quarter-Phased Transit Curves

TCE 002715695-02 P= 7.558592 Days $T_0=137.976711$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

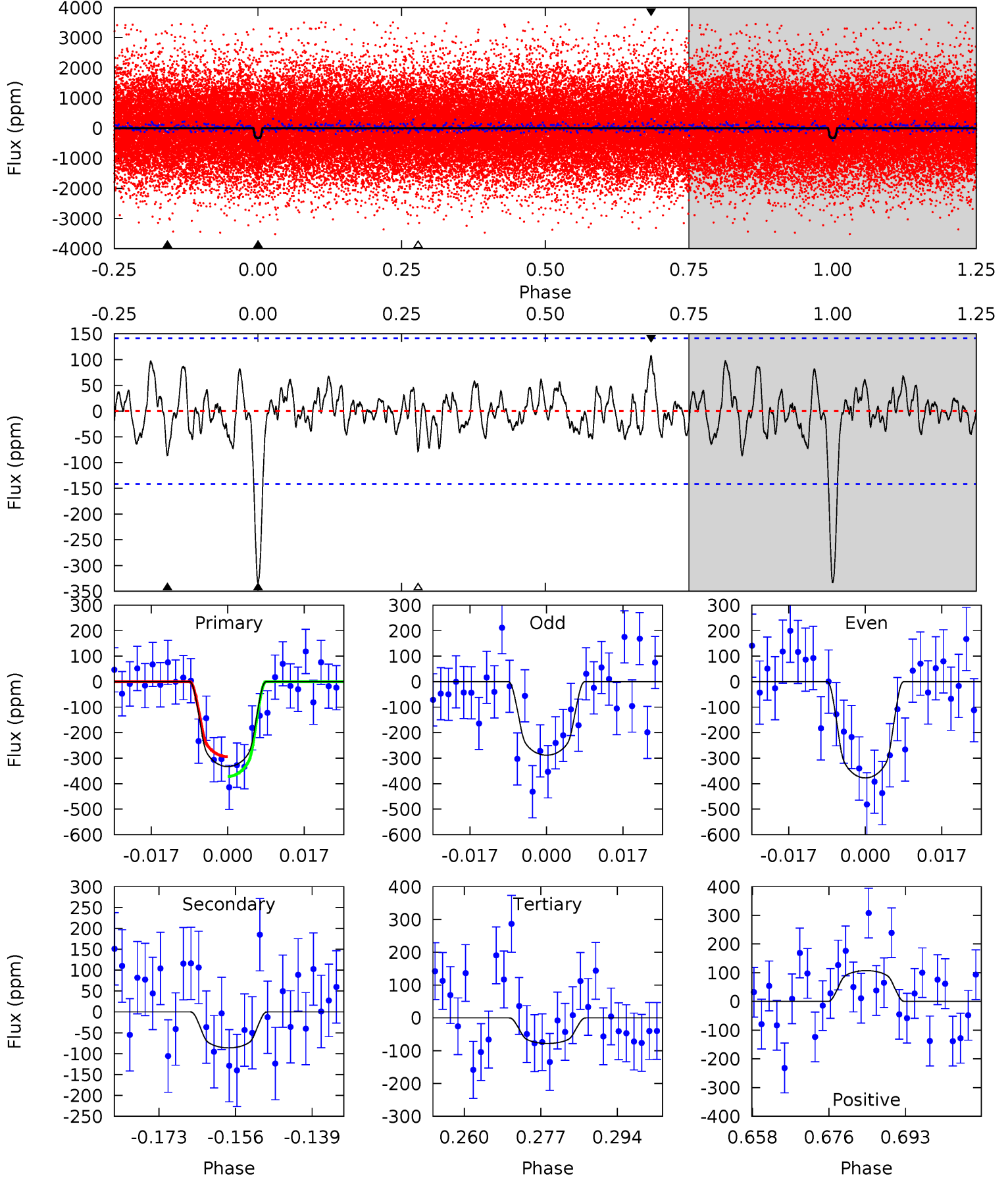
TCE 002715695-02 P= 7.558599 Days $T_0=137.982840$ (BKJD)



DV Model-Shift Uniqueness Test

002715695-02, P = 7.558592 Days, E = 137.976711 Days

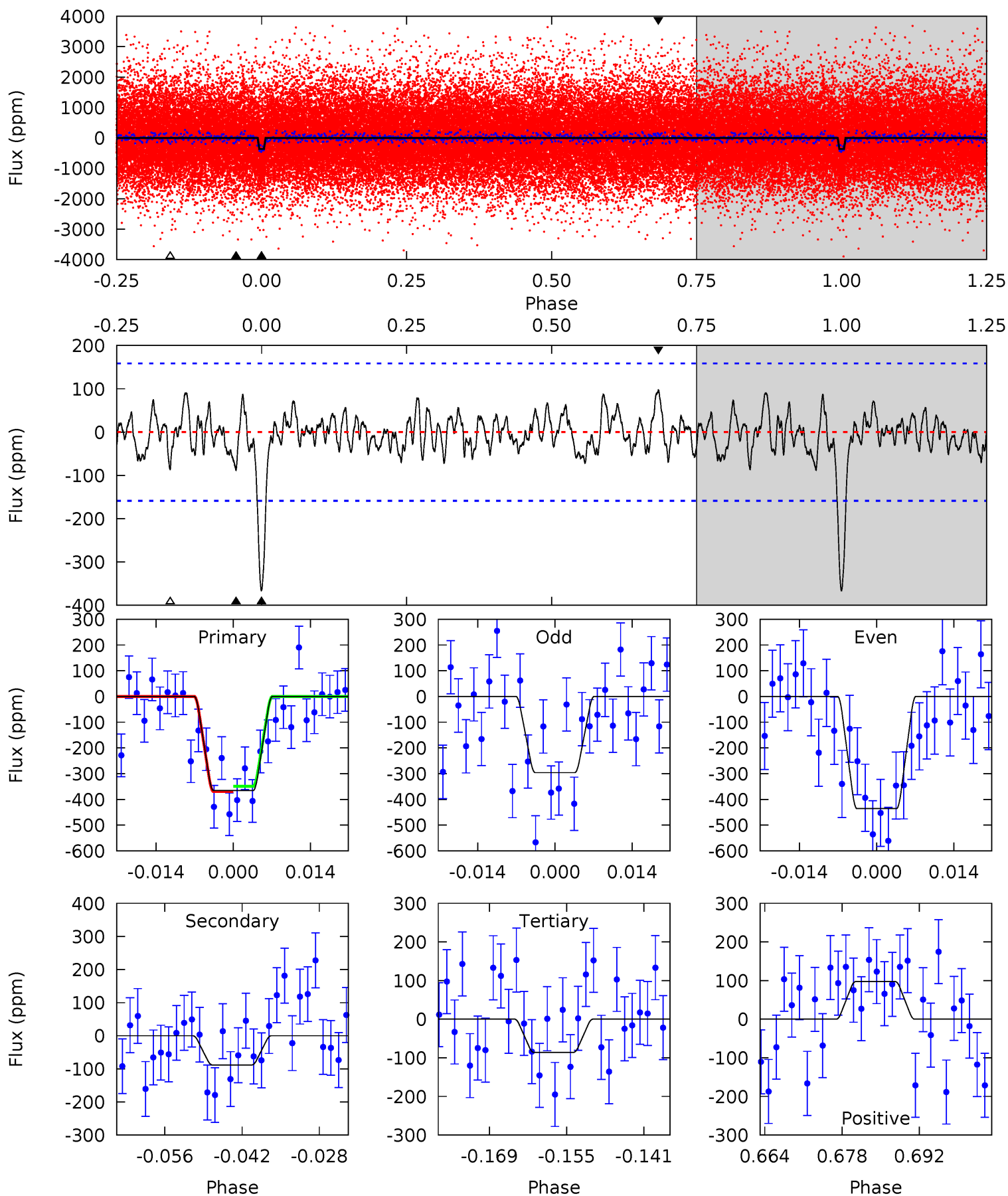
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	2.99	2.71	3.73	4.92	2.38	1.15	8.85	7.83	0.28	-0.74	1.55	0.95	0.24	1.35



Alt Model-Shift Uniqueness Test

002715695-02, P = 7.558599 Days, E = 137.982840 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	2.75	2.69	3.04	4.96	2.45	1.08	8.75	8.39	0.07	-0.29	2.19	0.87	0.21	0.32



Stellar Parameters For KIC 002715695

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4791^{+143}_{-129}	$4.577^{+0.045}_{-0.036}$	$0.070^{+0.250}_{-0.300}$	$0.742^{+0.054}_{-0.059}$	$0.759^{+0.061}_{-0.061}$	$2.614^{+0.511}_{-0.356}$
	+3%/-3%	+1%/-1%	+357%/-429%	+7%/-8%	+8%/-8%	+20%/-14%
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 002715695-02 / KOI 3077.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-86 ± 29	$1.73^{+1.07}_{-0.97}$	970^{+35}_{-30}	3521^{+1224}_{-525}	72^{+320}_{-47}
Alt.	-88 ± 32	$1.77^{+1.09}_{-1.00}$	968^{+32}_{-32}	3482^{+1332}_{-486}	68^{+336}_{-43}

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 $A_{obs} \gg 1.0$

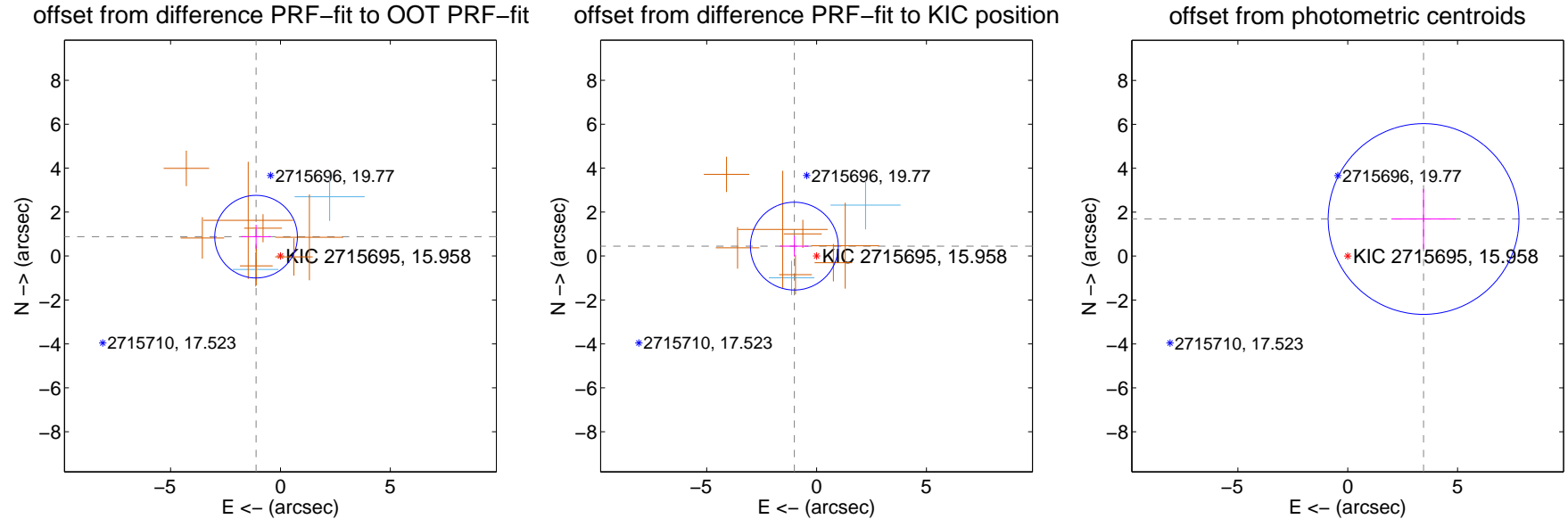
DV Centroid Data

Supplemental centroid analysis for 002715695-02. Kepler magnitude: 15.96. Transit SNR 9.43

There are 2 quarters with good PRF difference image offsets

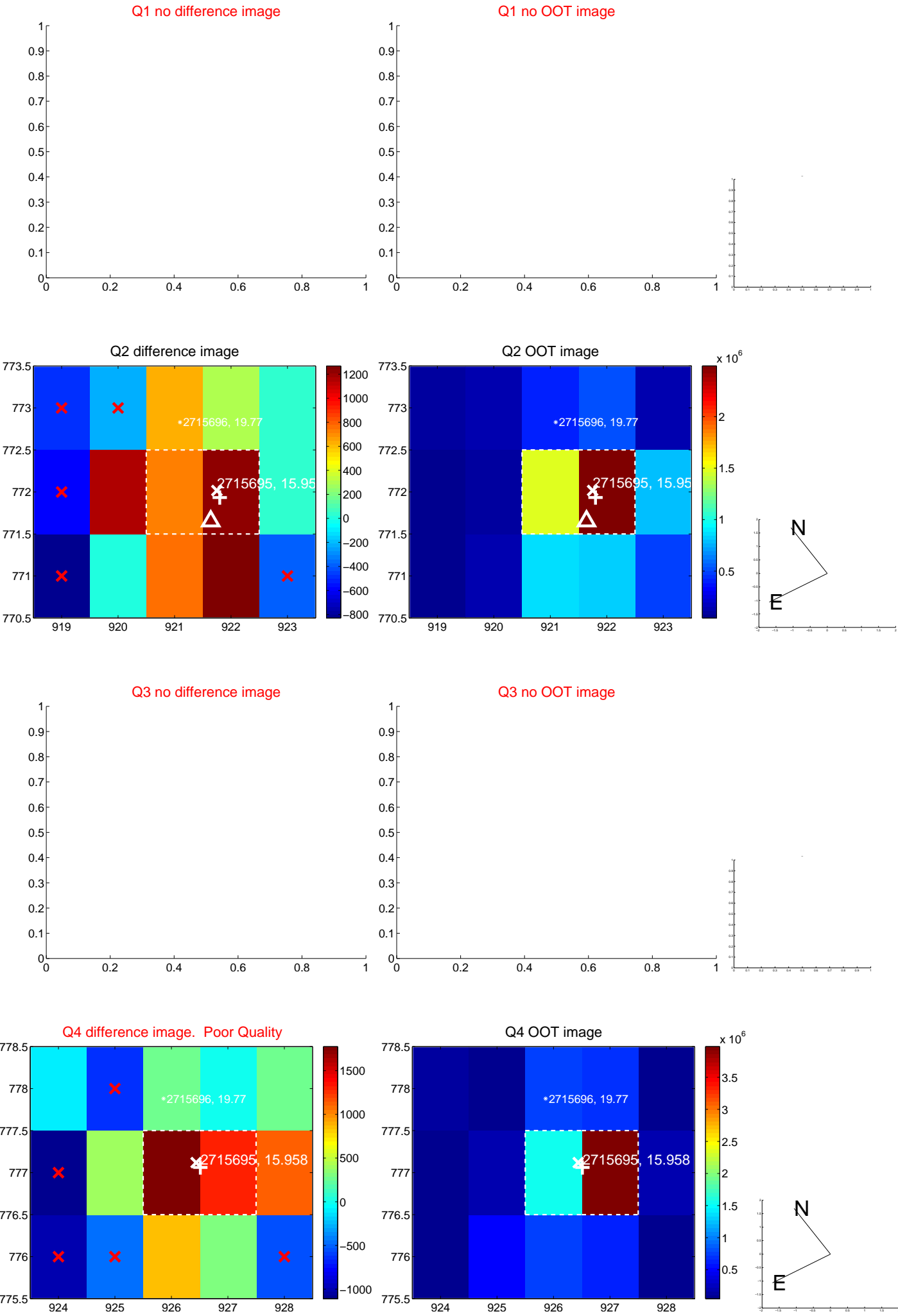
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.418 ± 0.627	2.26	1.110 ± 0.675	0.882 ± 0.543
PRF-fit source offset from KIC position	1.108 ± 0.666	1.66	1.012 ± 0.649	0.451 ± 0.473
photometric centroid source offset	3.85 ± 1.45	2.66	-3.45 ± 1.47	1.69 ± 1.37

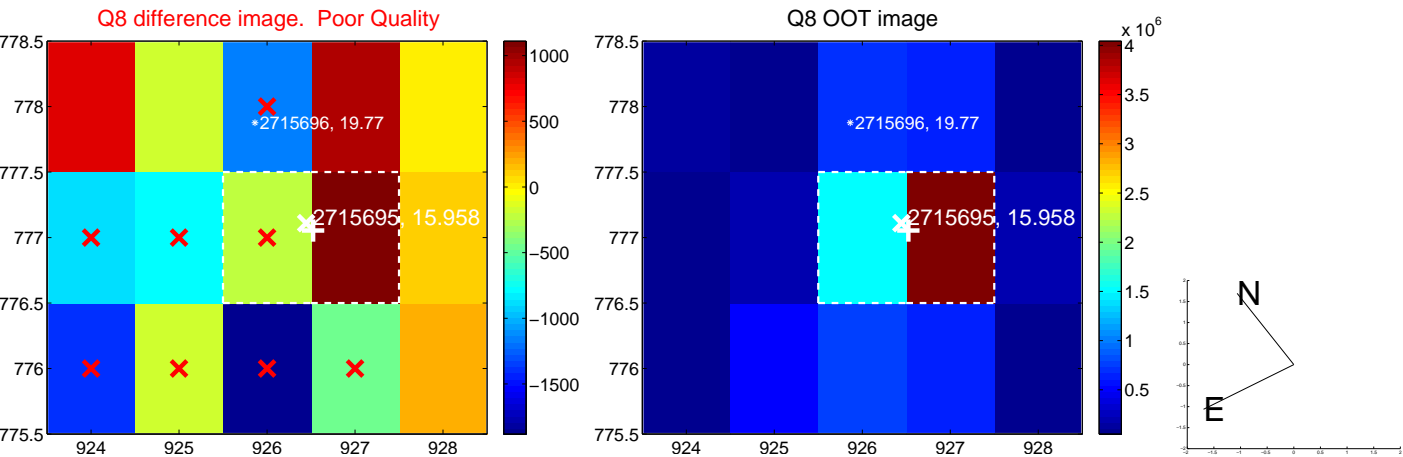
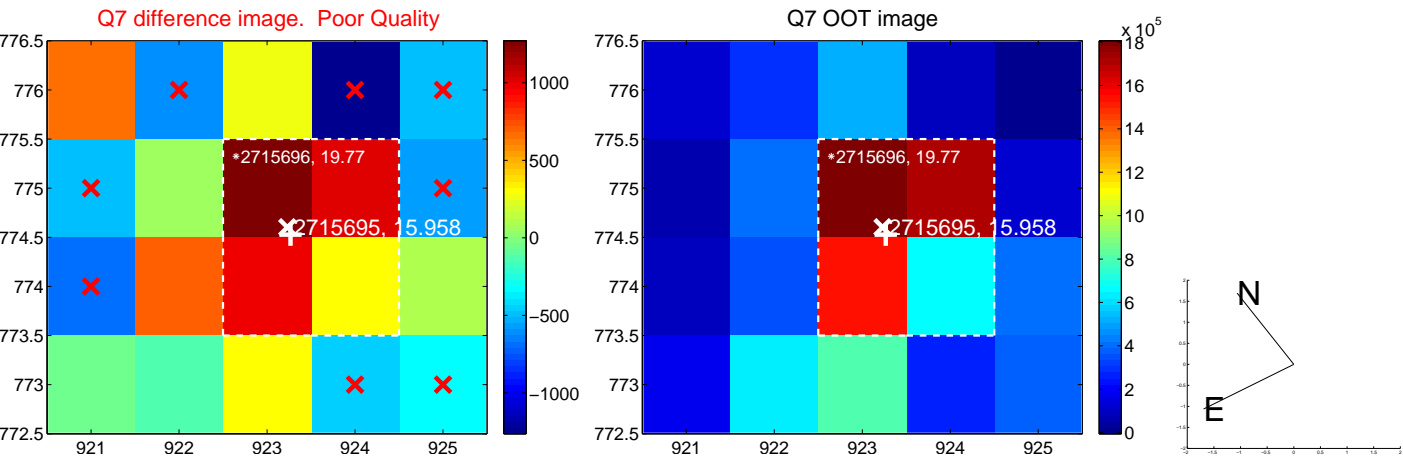
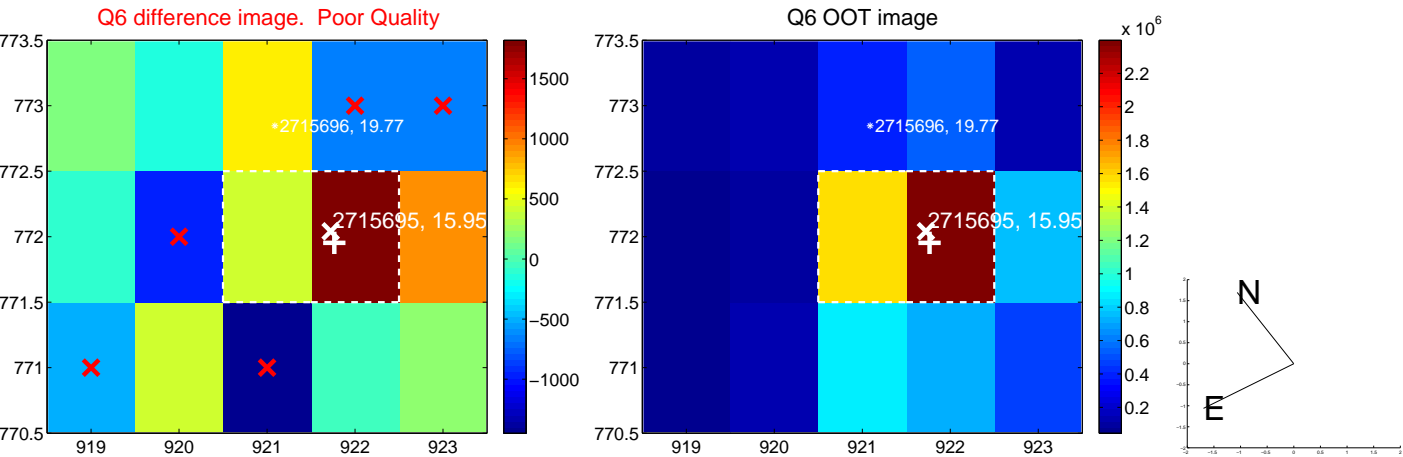
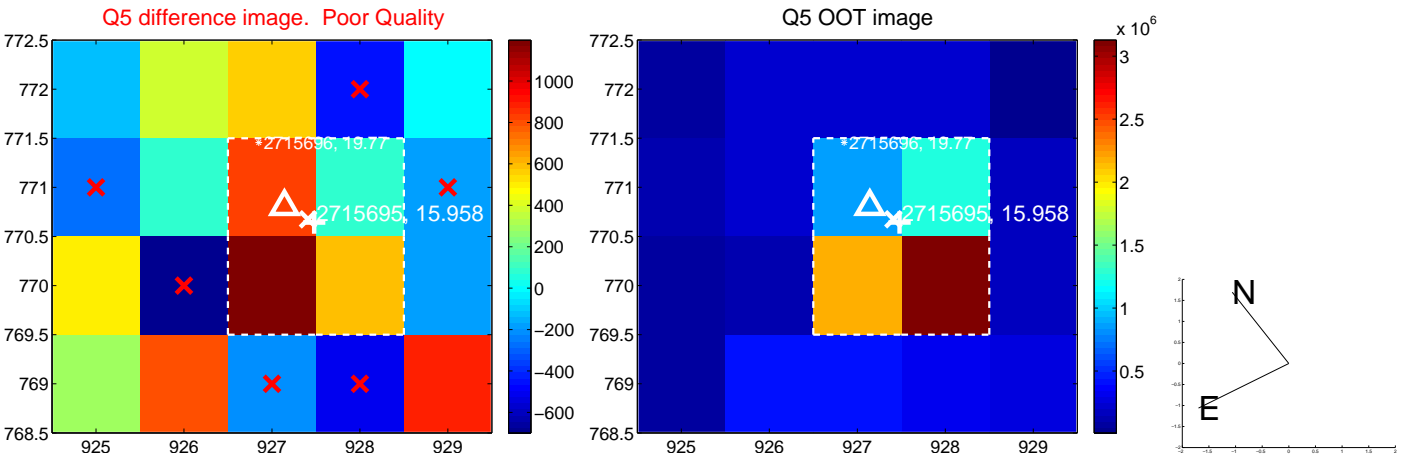


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

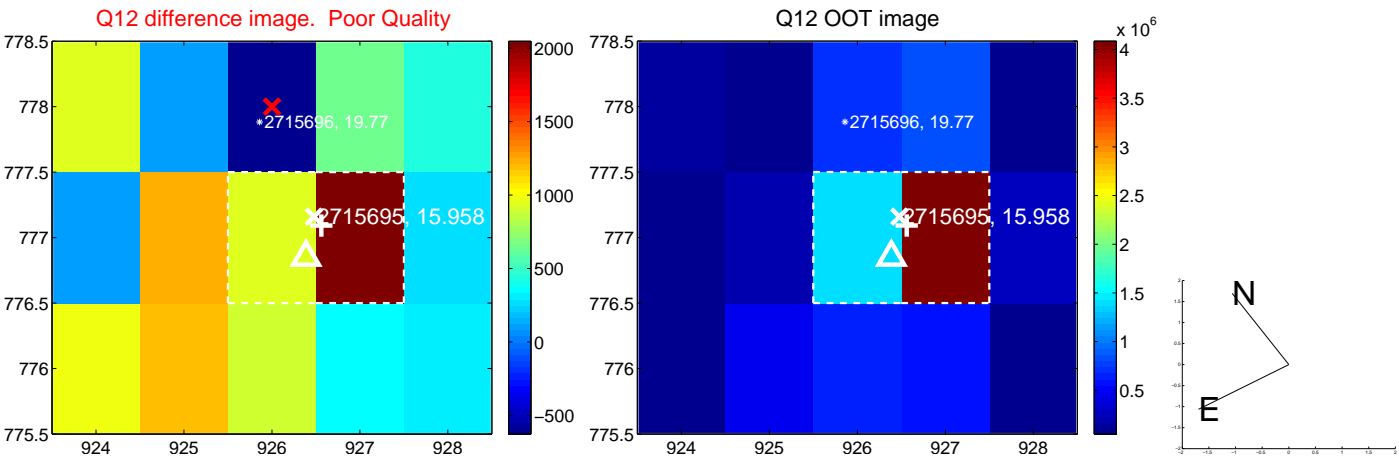
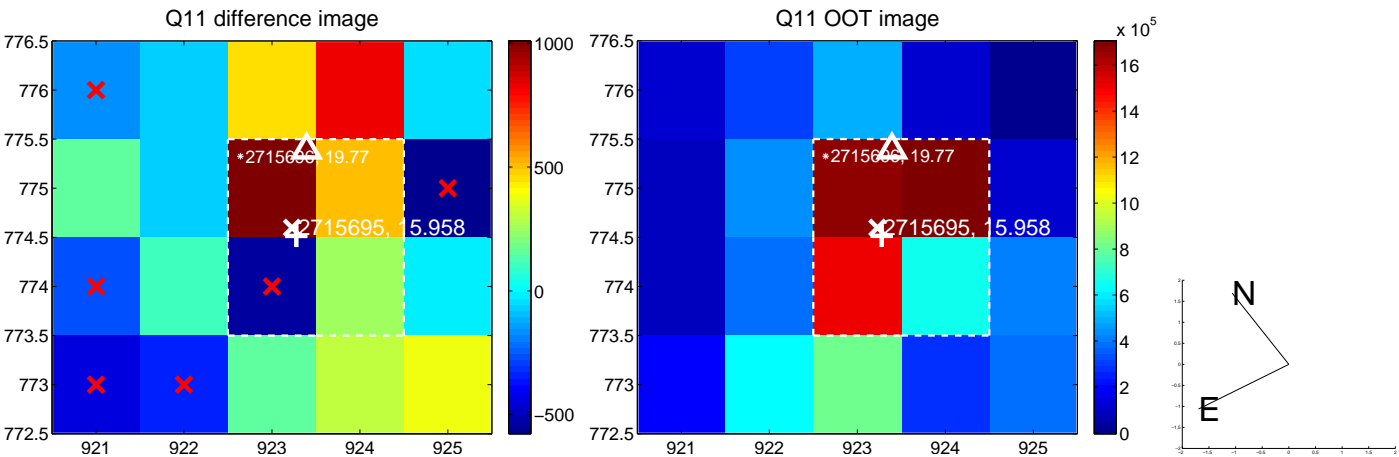
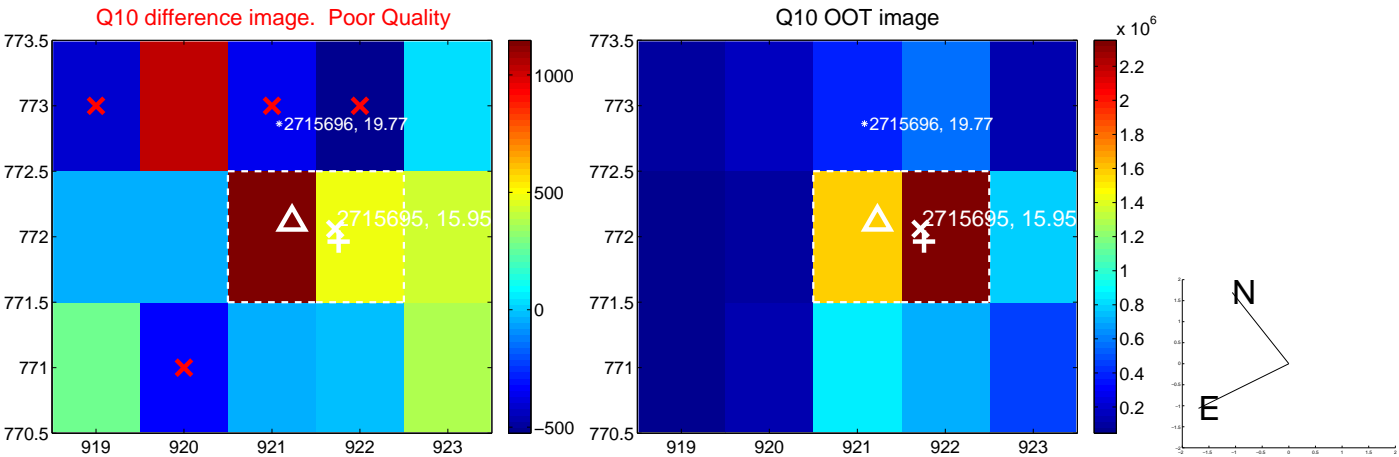
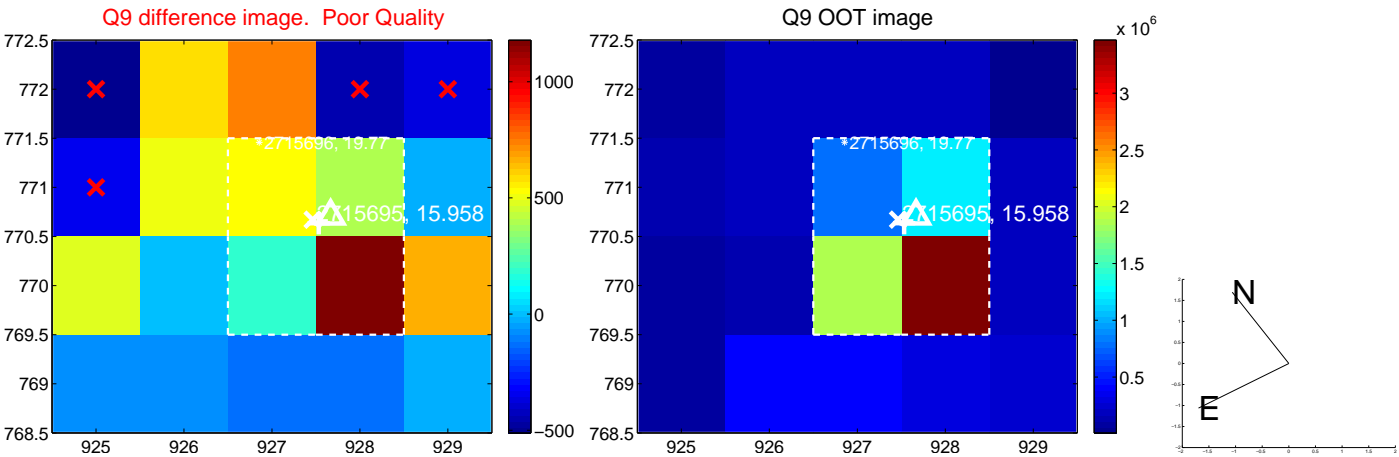
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



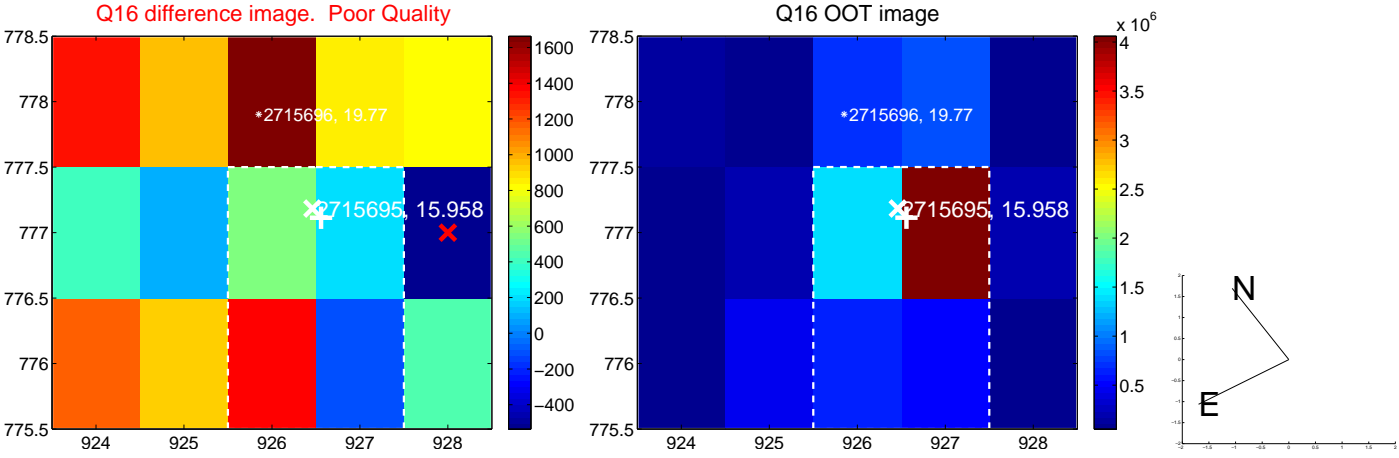
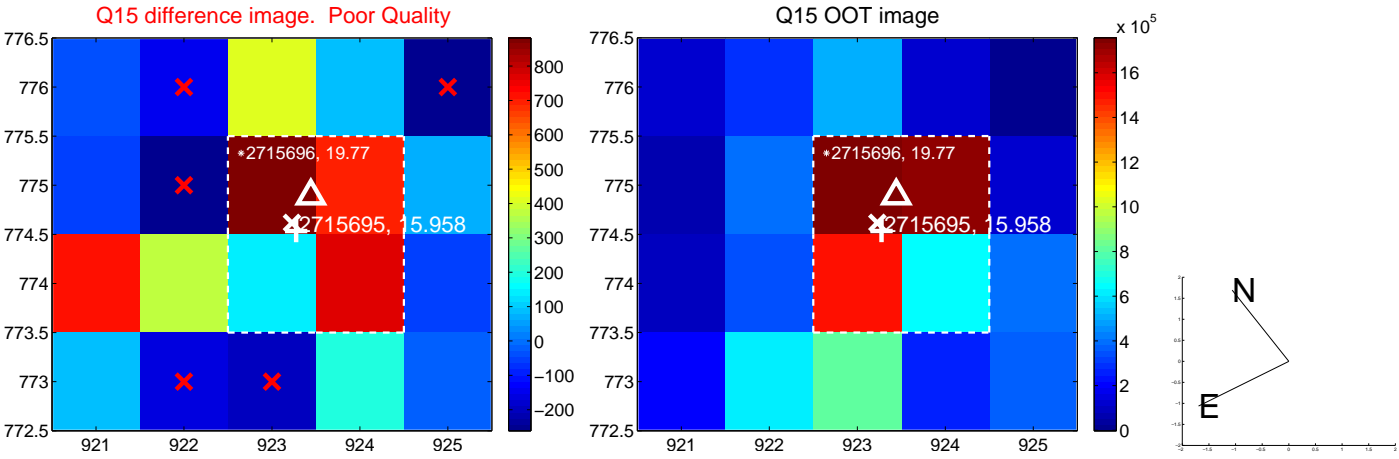
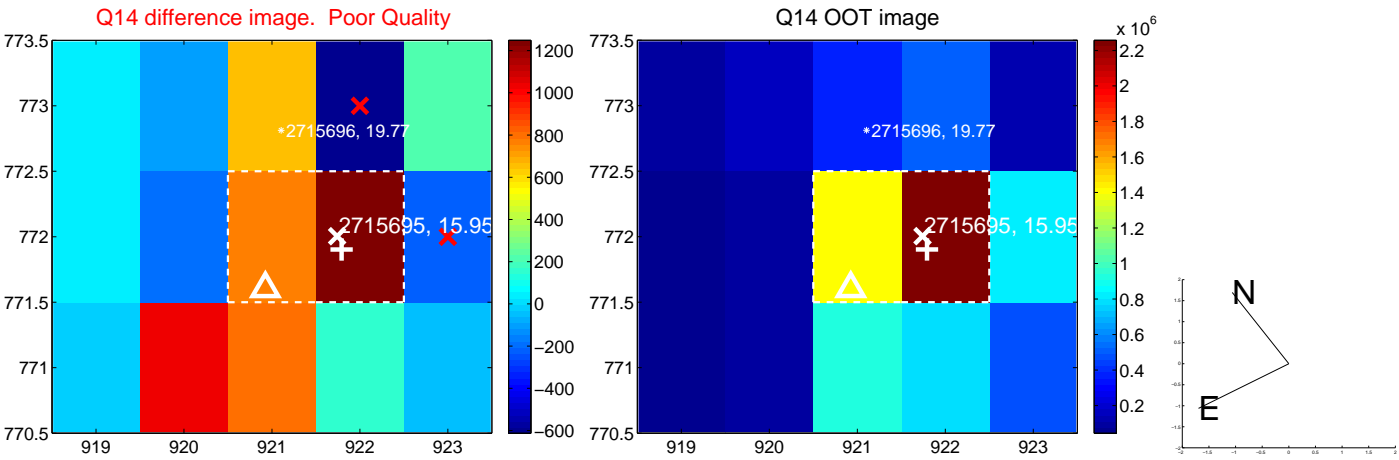
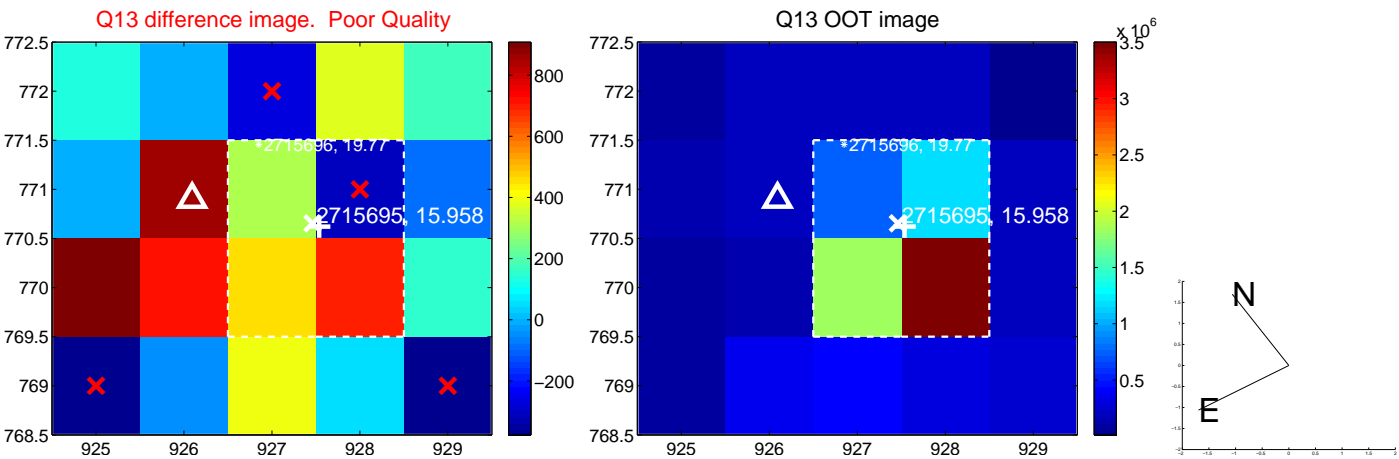
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



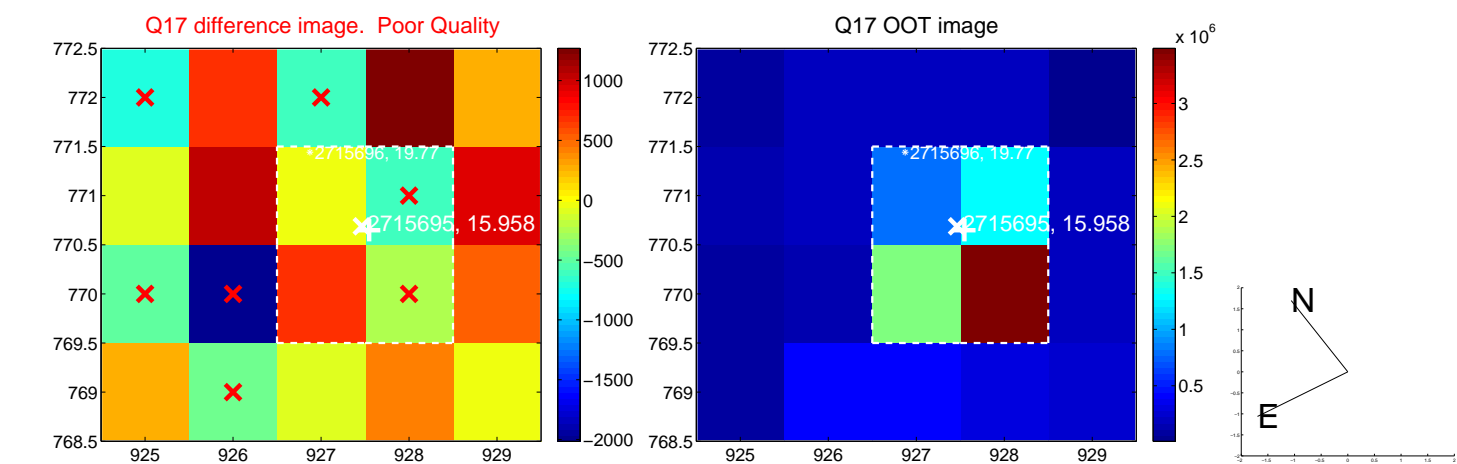
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



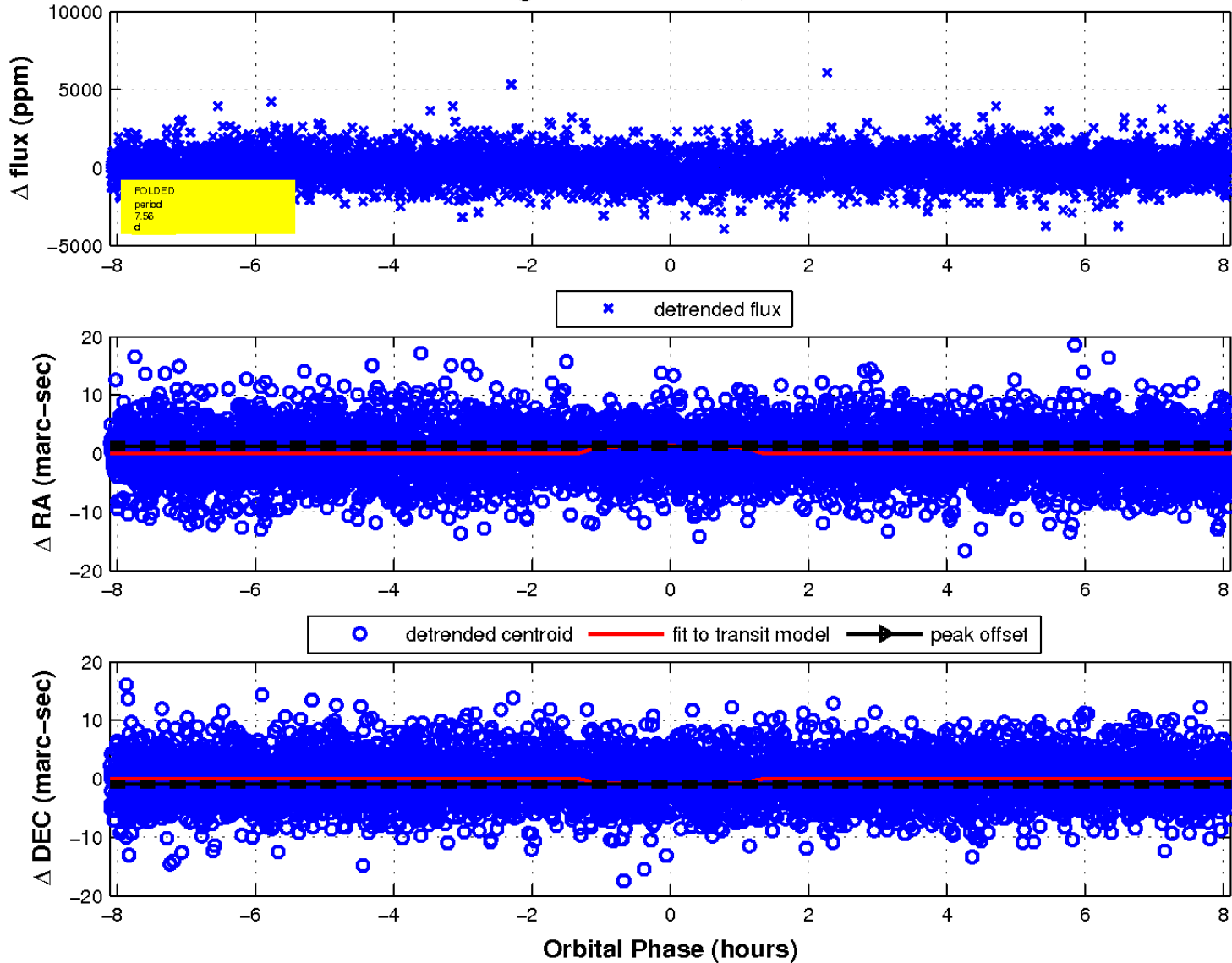
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

