

KIC 002719755

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})
002719755-01	OBS	No	330.262994	325.874691	399.3	2.551	11.0	4.3	1.53	6058	3.23	3.31
002719755-02	OBS	No	228.268639	221.312083	346.9	2.360	9.8	5.4	1.53	6058	3.21	5.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002719755-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002719755-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

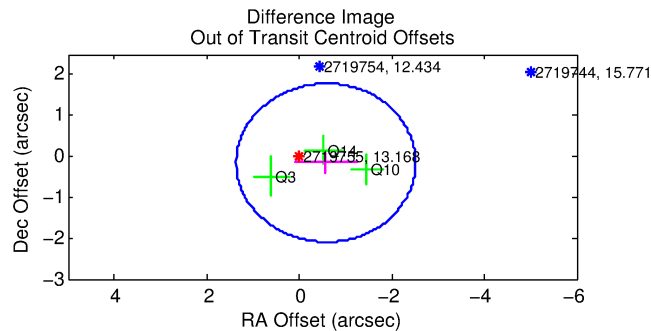
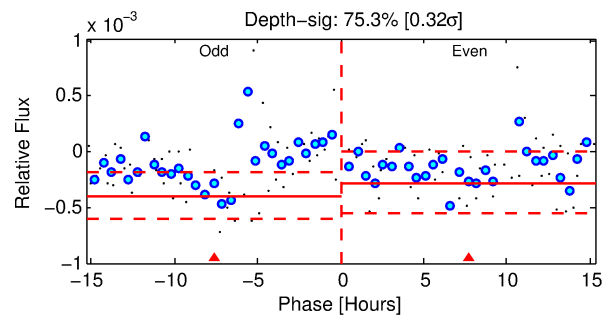
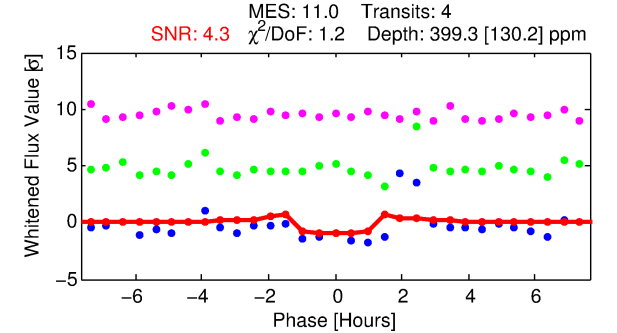
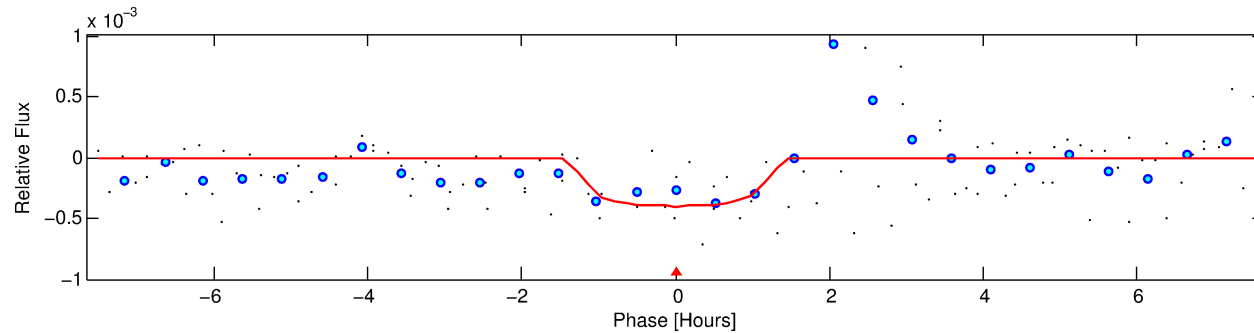
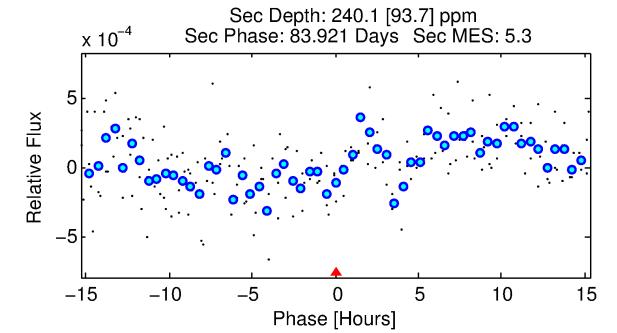
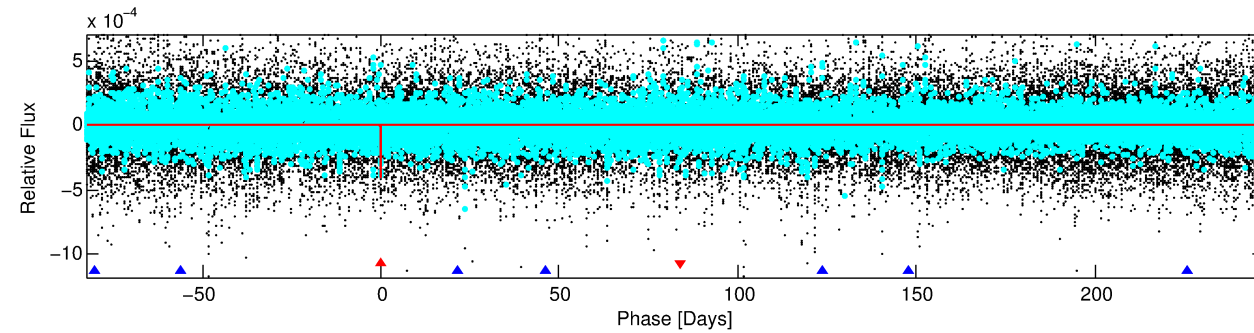
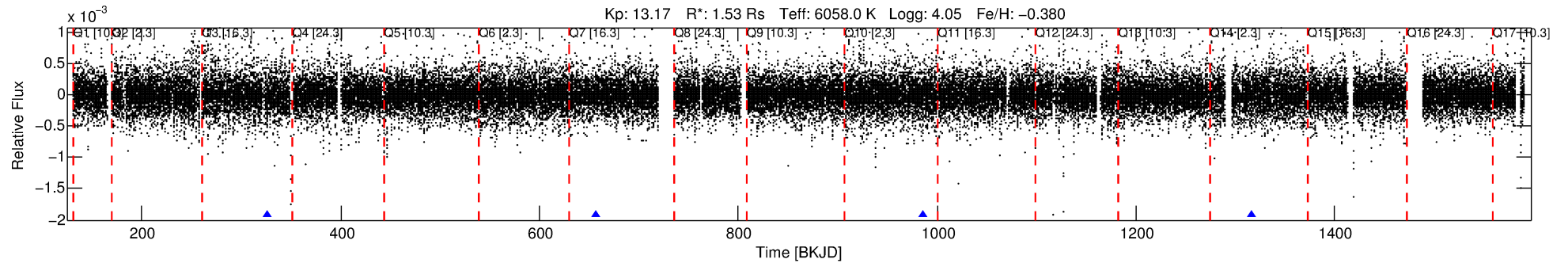
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002719755-01

No Significant Match Found

DV One-Page Summary

KIC: 2719755 Candidate: 1 of 2 Period: 330.263 d



DV Fit Results:

Period = 330.26299 [0.00643] d
Epoch = 325.8747 [0.0105] BKJD
Rp/R* = 0.0193 [0.0354]
a/R* = 786.24 [7090.74]
b = 0.64 [8.43]
Seff = 3.31 [2.10]
Teff = 344 [55] K
Rp = 3.23 [6.04] Re
a = 0.9260 [0.3525] AU
Ag = 10853.61 [40533.89] [0.27 σ]
Teffp = 5426 [4998] K [1.02 σ]

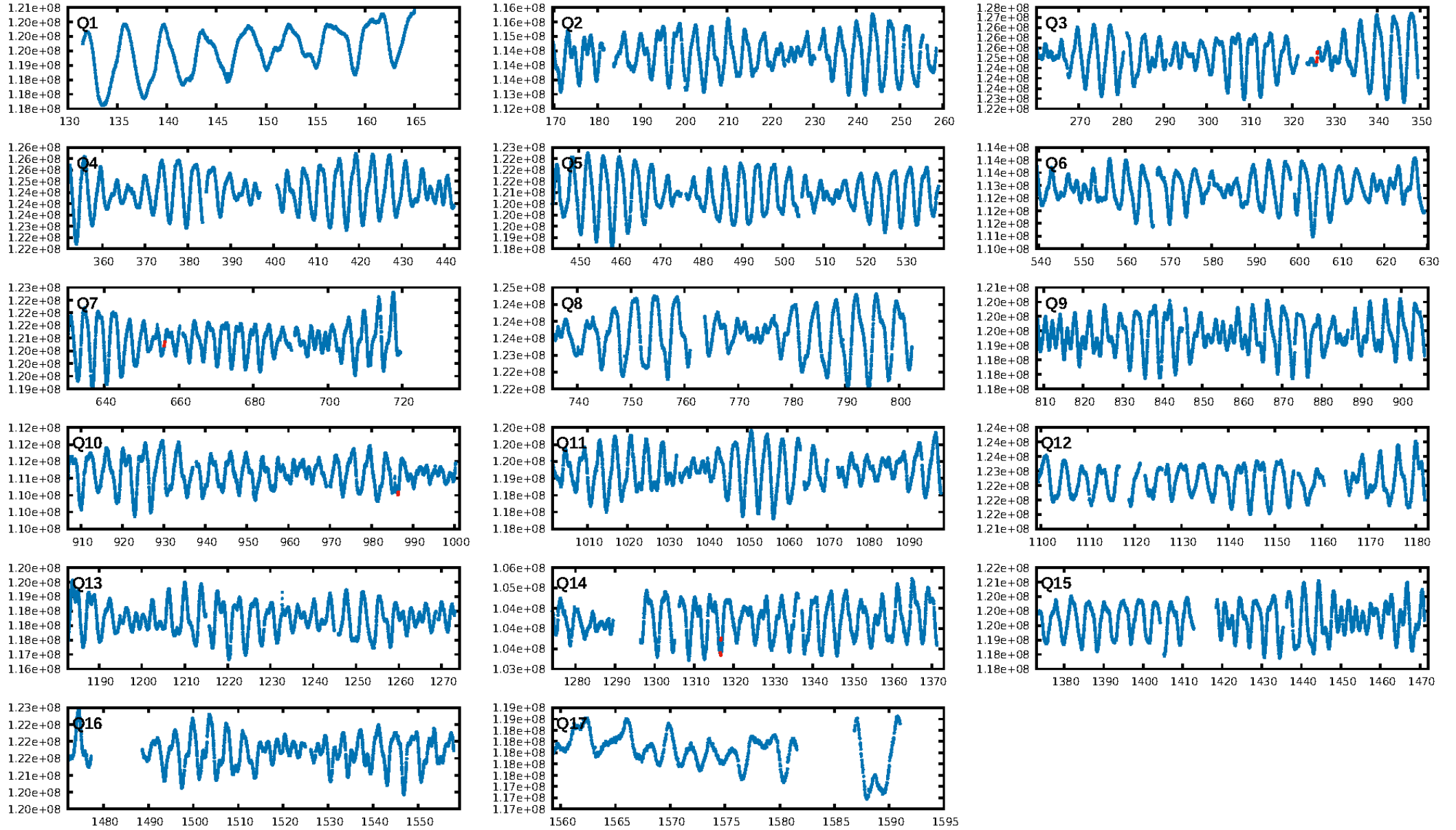
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [704.31 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.9%
ModelChiSquareGof-sig: 72.7%
Bootstrap-pfa: 2.28e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -2.777
Centroid-sig: 25.5%
Centroid-so: 2.948 arcsec [1.08 σ]
OotOffset-rm: 0.596 arcsec [0.92 σ]
KicOffset-rm: 0.597 arcsec [1.02 σ]
OotOffset-st: 2/1/0/0 [3]
KicOffset-st: 2/1/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [4/4]

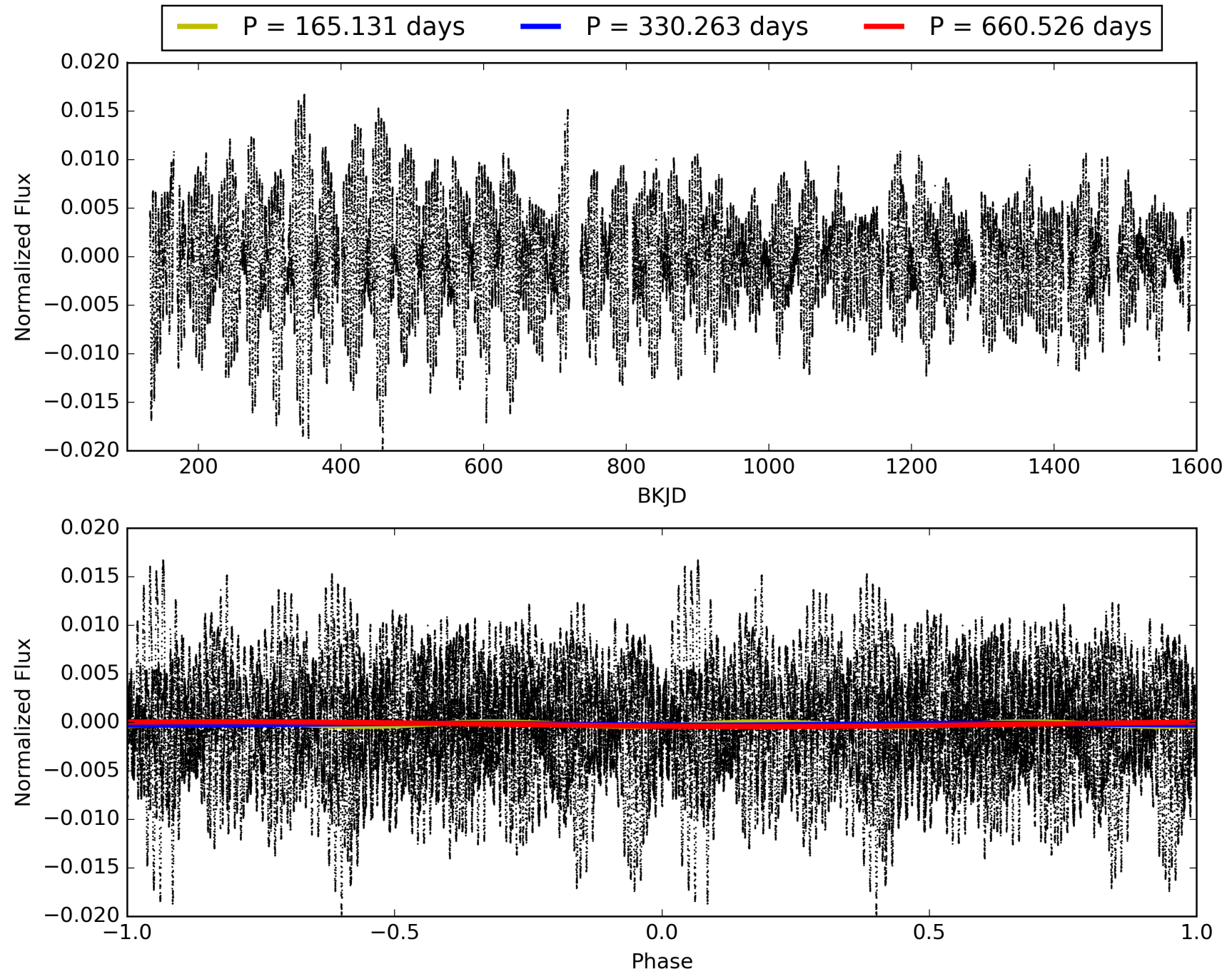
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:28:02 Z

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

TCE 002719755-01, PDC Light Curves

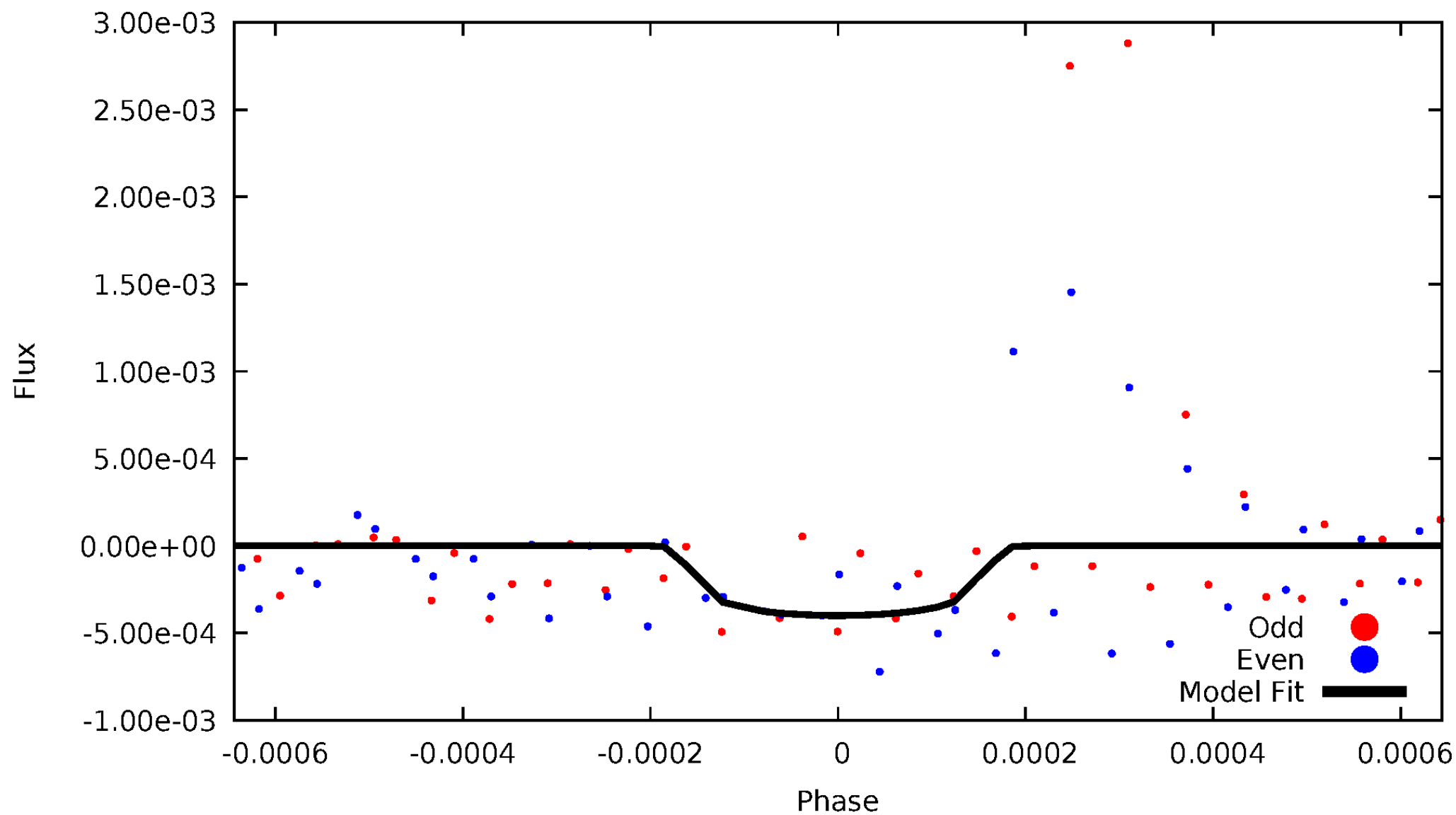


TCE 002719755-01



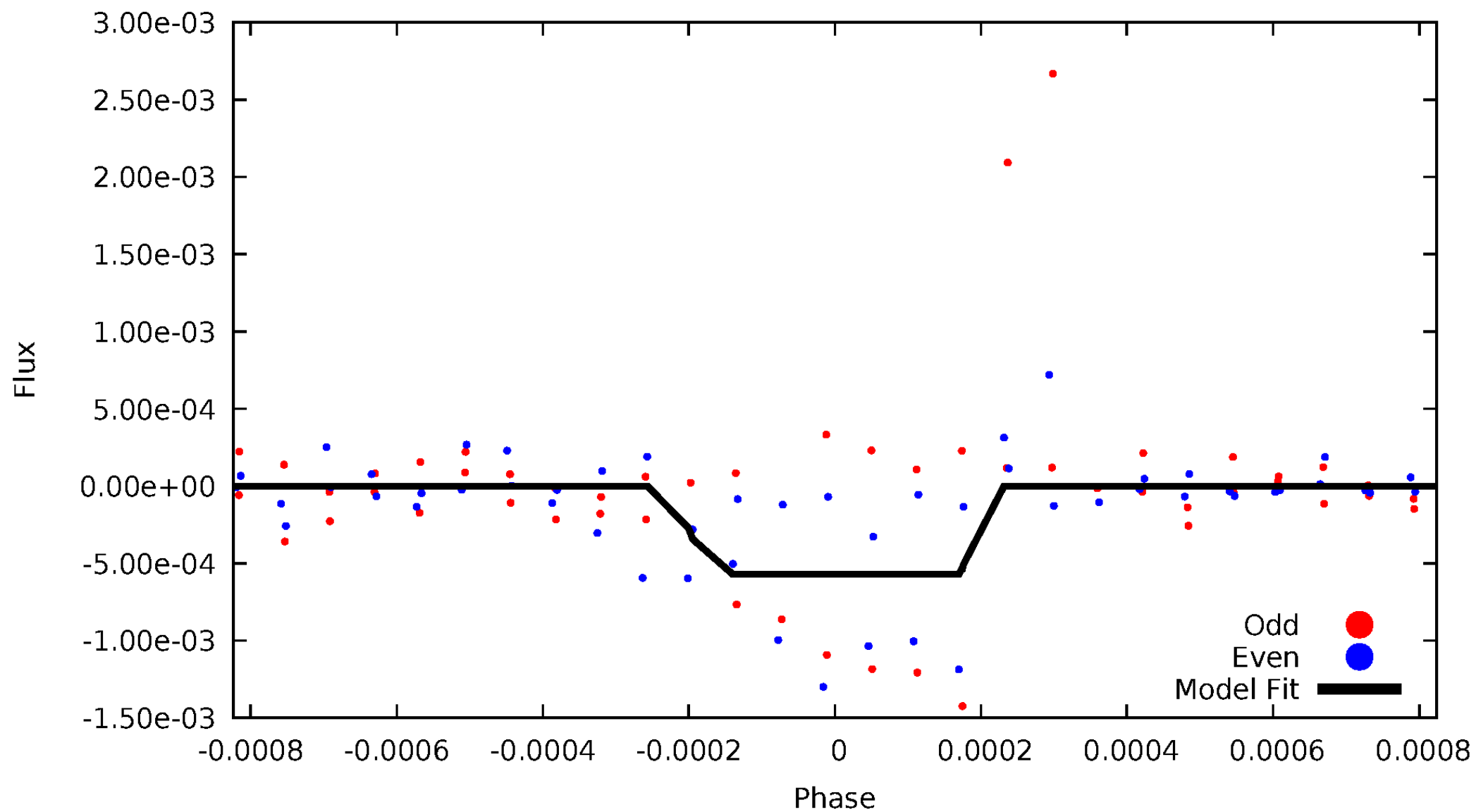
DV Odd/Even

TCE 002719755-01



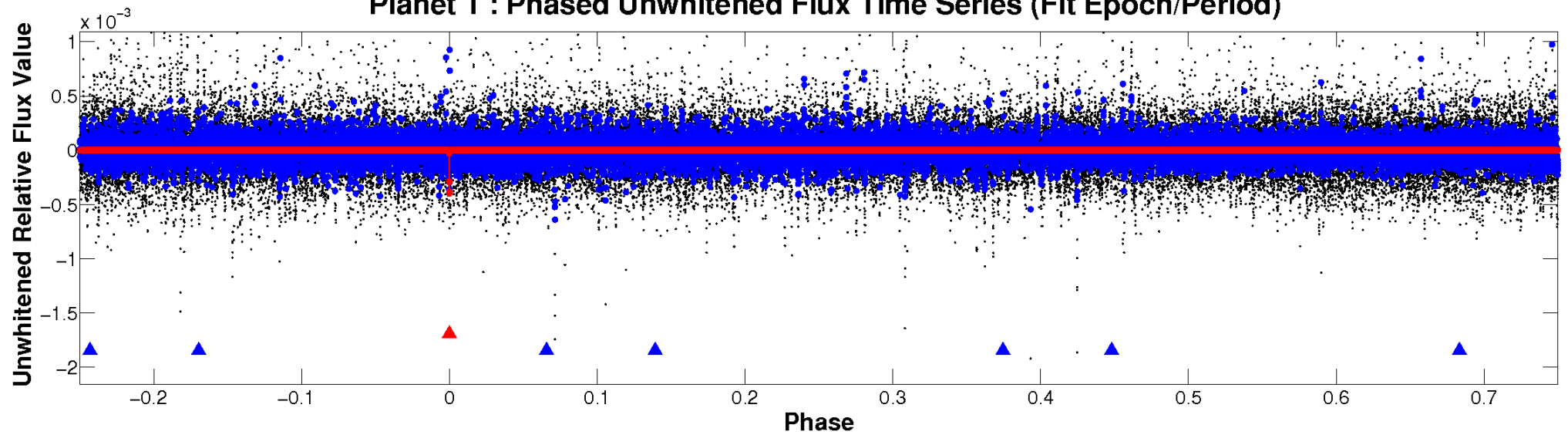
ALT Odd/Even

TCE 002719755-01

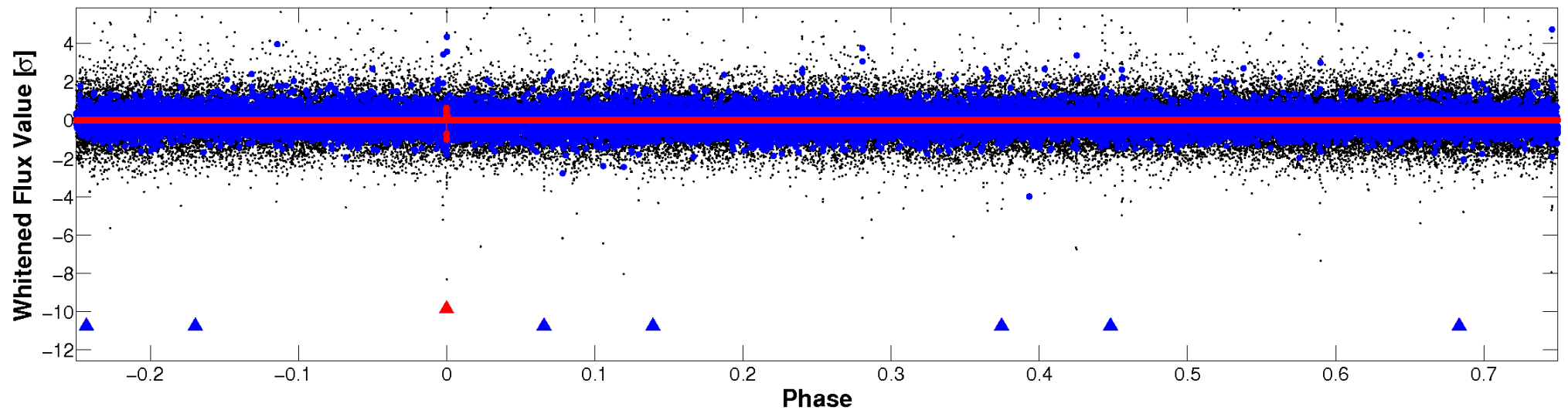


Non-Whitened Vs. Whitened Light Curve

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

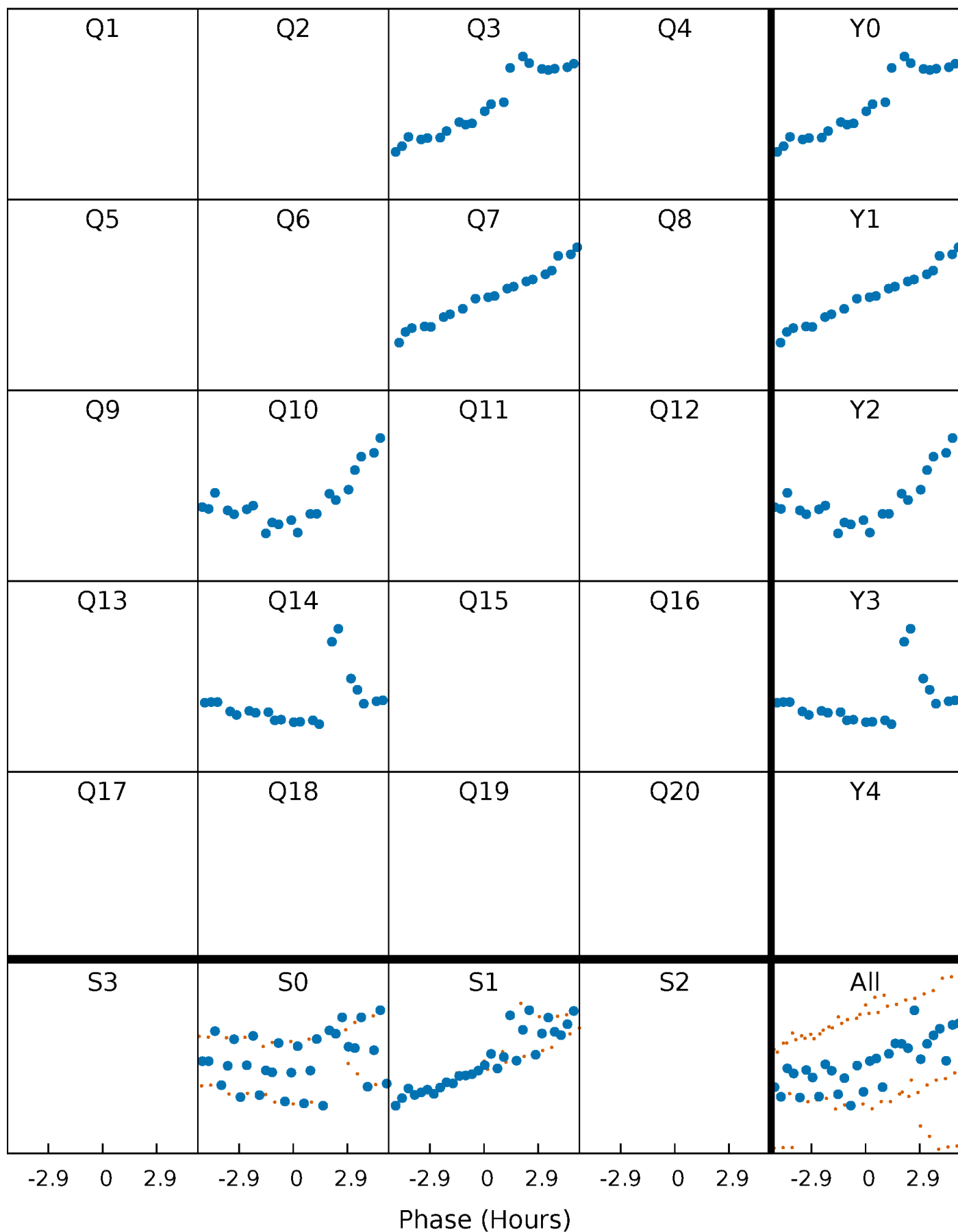


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



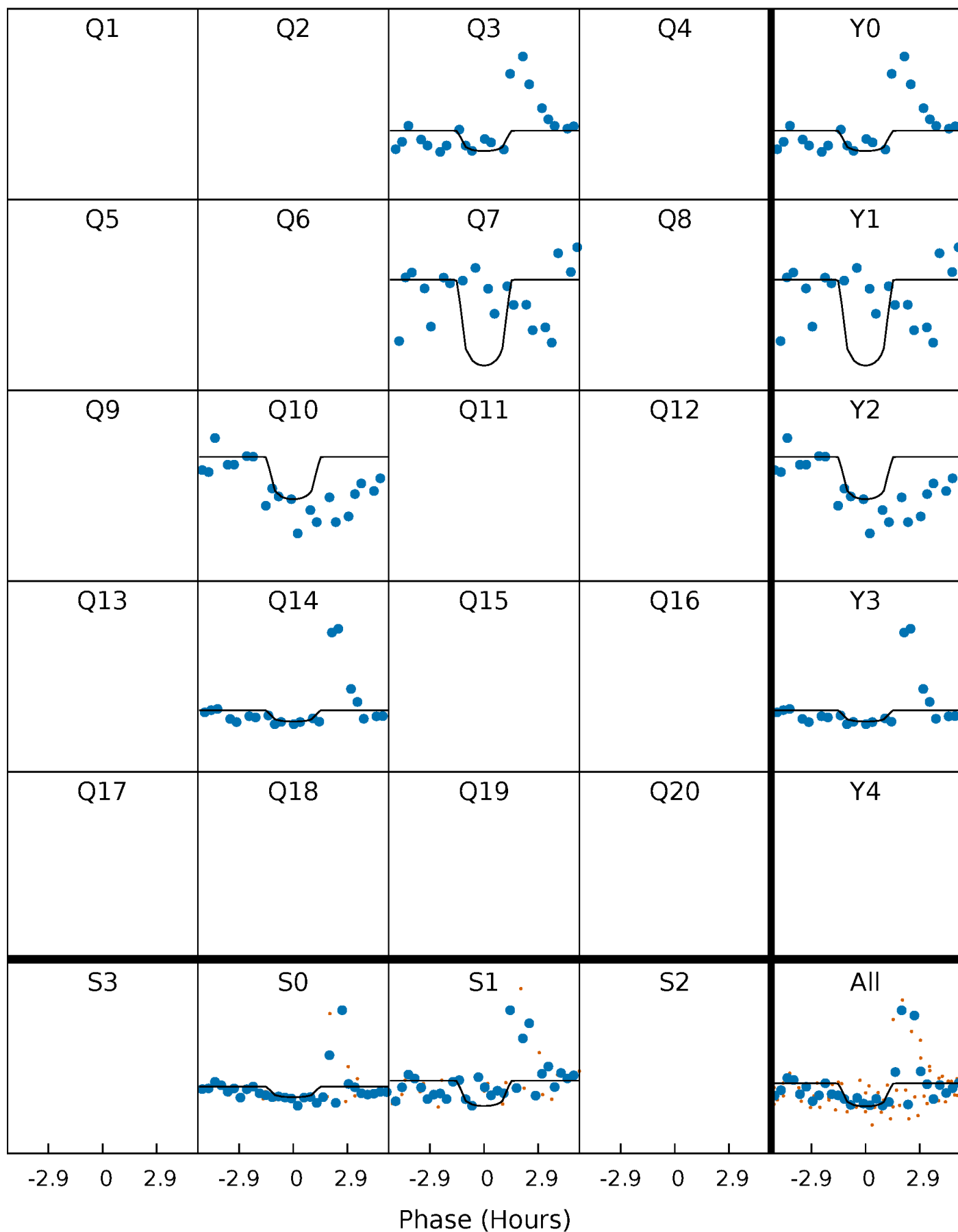
PDC Quarter-Phased Transit Curves

TCE 002719755-01 P=330.262994 Days $T_0=325.874691$ (BKJD)



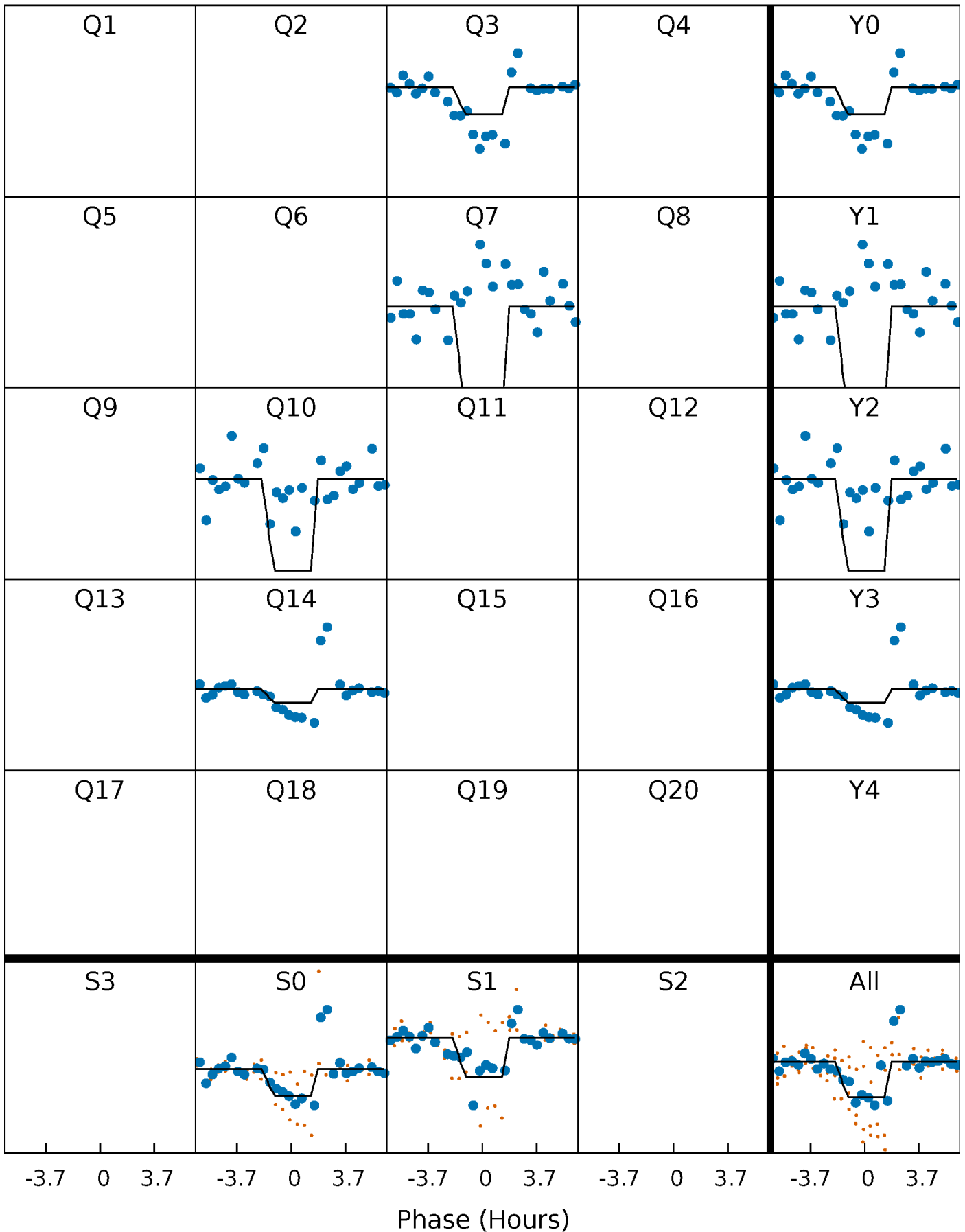
DV Quarter-Phased Transit Curves

TCE 002719755-01 P=330.262994 Days $T_0=325.874691$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

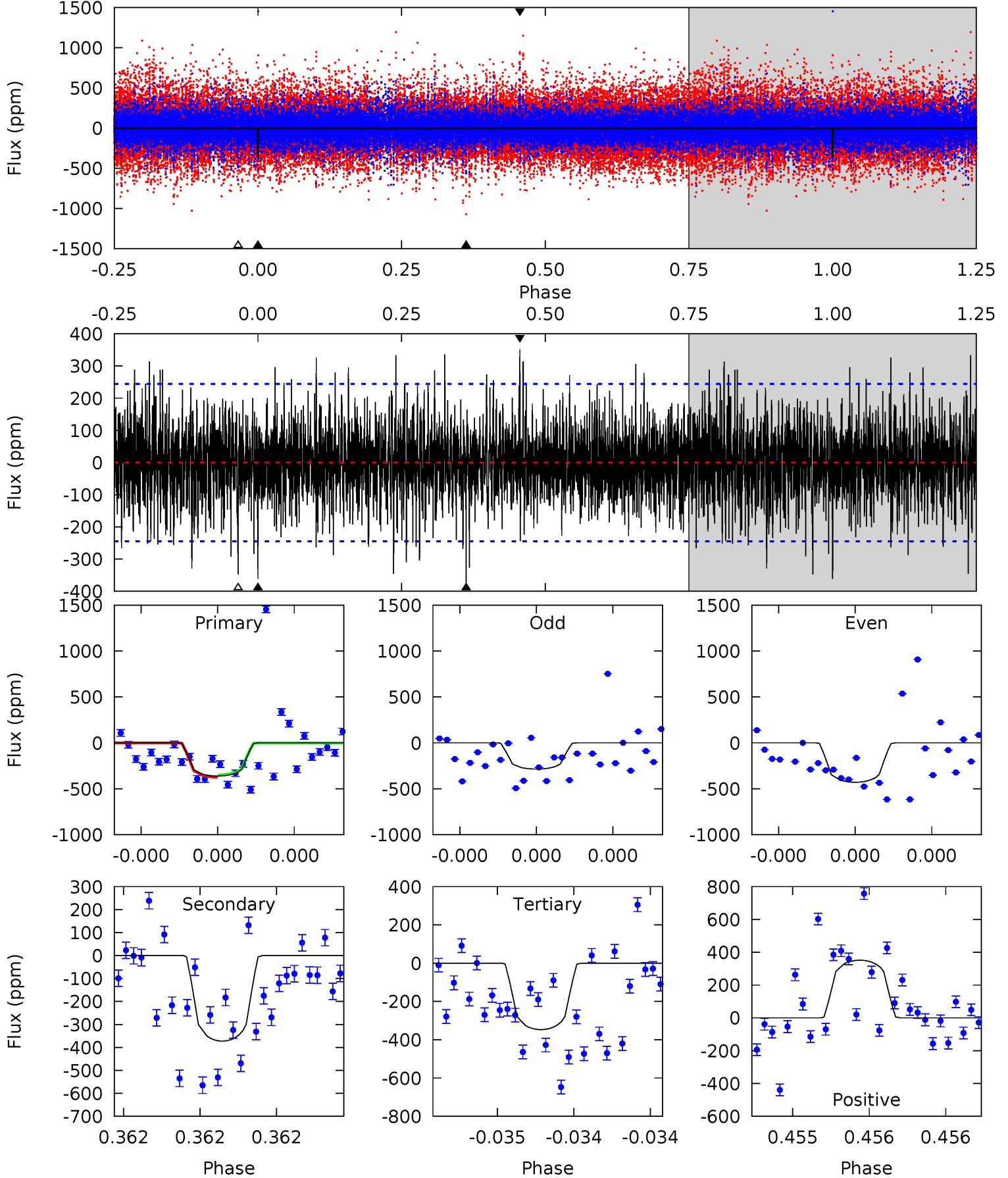
TCE 002719755-01 P=330.269072 Days $T_0=325.859948$ (BKJD)



DV Model-Shift Uniqueness Test

002719755-01, P = 330.262994 Days, E = 325.874691 Days

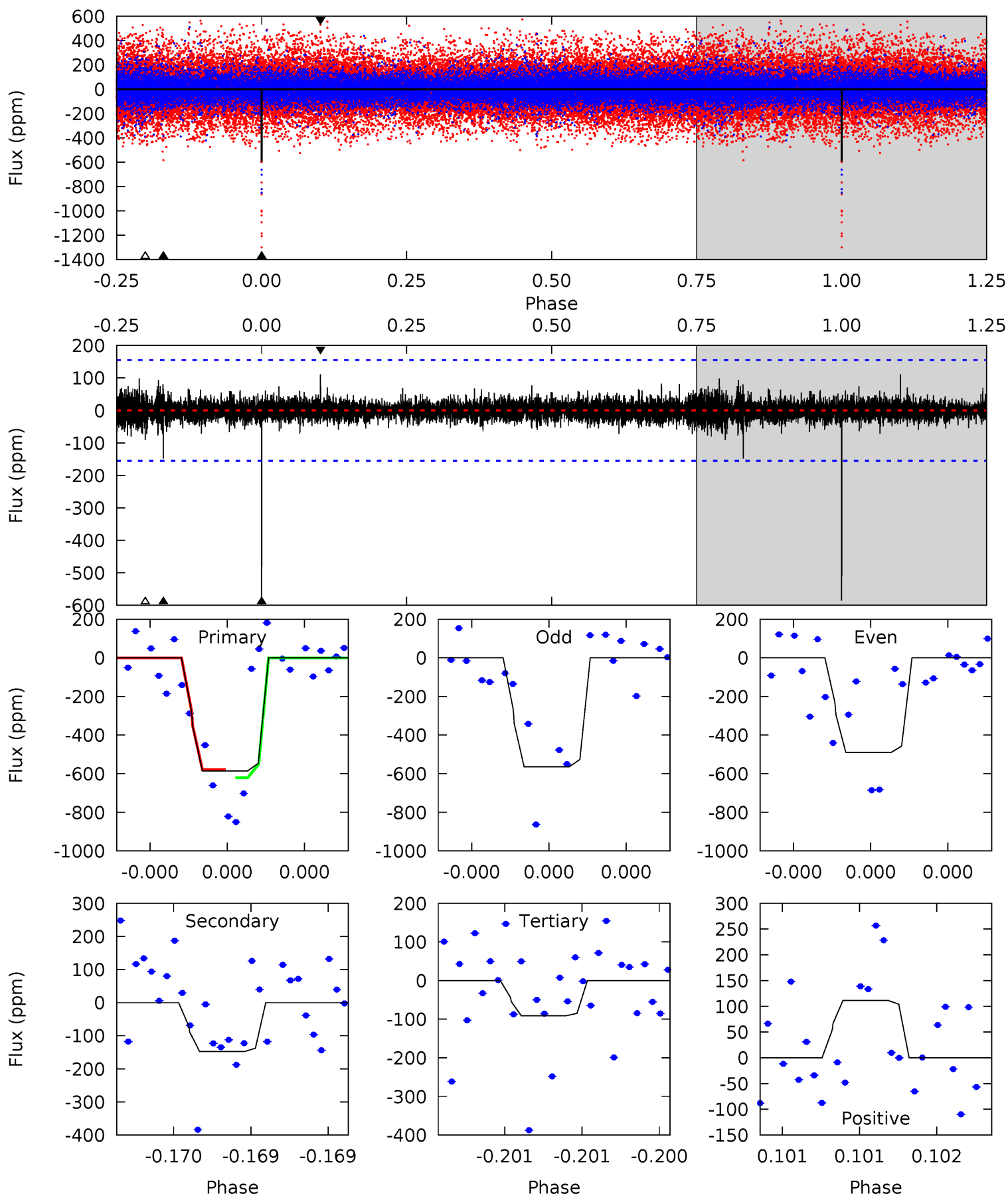
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.30	8.56	7.97	8.07	5.61	3.54	1.90	0.33	0.23	0.59	0.49	1.61	0.89	0.49	0.27



Alt Model-Shift Uniqueness Test

002719755-01, P = 330.269072 Days, E = 325.859948 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.1	5.33	3.28	4.02	5.60	3.52	0.65	17.8	17.1	2.05	1.30	1.40	0.88	0.16	0.73



Stellar Parameters For KIC 002719755

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6058^{+182}_{-182}	$4.054^{+0.371}_{-0.159}$	$-0.380^{+0.300}_{-0.300}$	$1.533^{+0.387}_{-0.581}$	$0.972^{+0.138}_{-0.124}$	$0.380^{+1.075}_{-0.167}$
	+3%/-3%	+9%/-4%	+79%/-79%	+25%/-38%	+14%/-13%	+283%/-44%
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 002719755-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-373 ± 44	$5.32^{+5.18}_{-3.71}$	474^{+39}_{-53}	4695^{+3781}_{-988}	6376^{+59974}_{-4801}
Alt.	-148 ± 28	$5.40^{+5.19}_{-3.58}$	474^{+37}_{-45}	3926^{+2130}_{-715}	2352^{+18648}_{-1757}

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

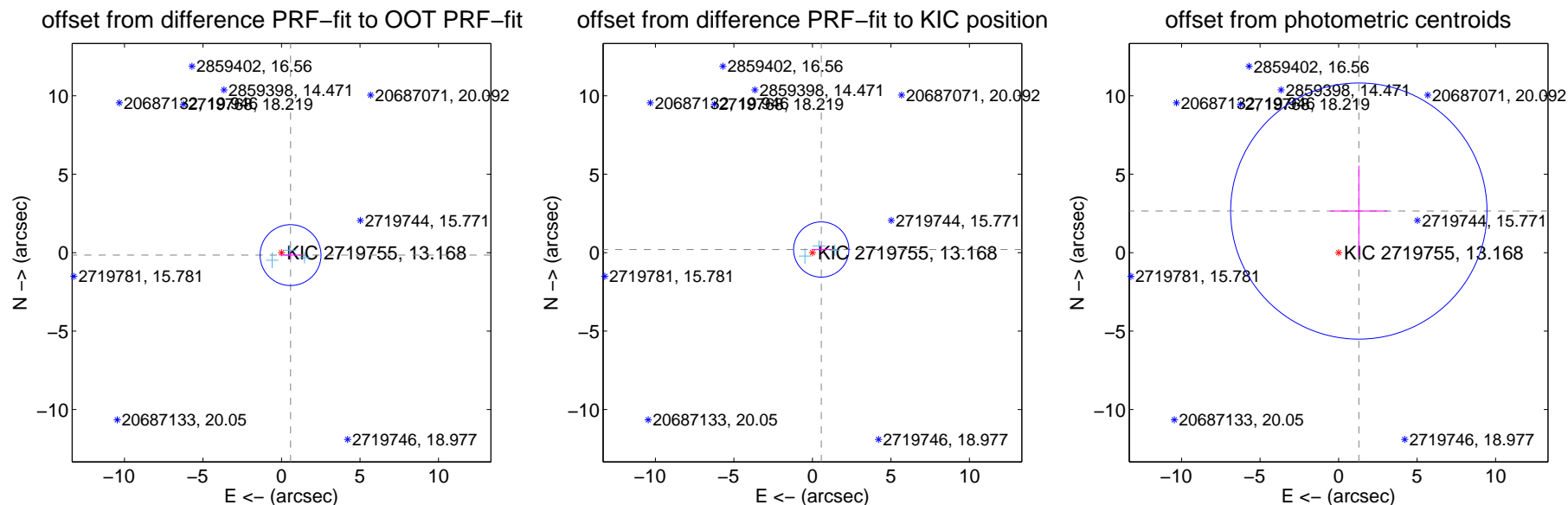
DV Centroid Data

Supplemental centroid analysis for 002719755-01. Kepler magnitude: 13.17. Transit SNR 4.33

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.596 ± 0.646	0.92	-0.575 ± 0.667	-0.156 ± 0.237
PRF-fit source offset from KIC position	0.597 ± 0.586	1.02	-0.562 ± 0.618	0.200 ± 0.199
photometric centroid source offset	2.95 ± 2.72	1.08	-1.29 ± 1.81	2.65 ± 2.89



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.

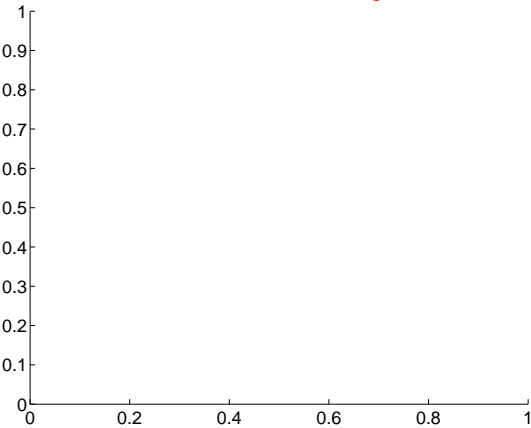
Q1 no difference image



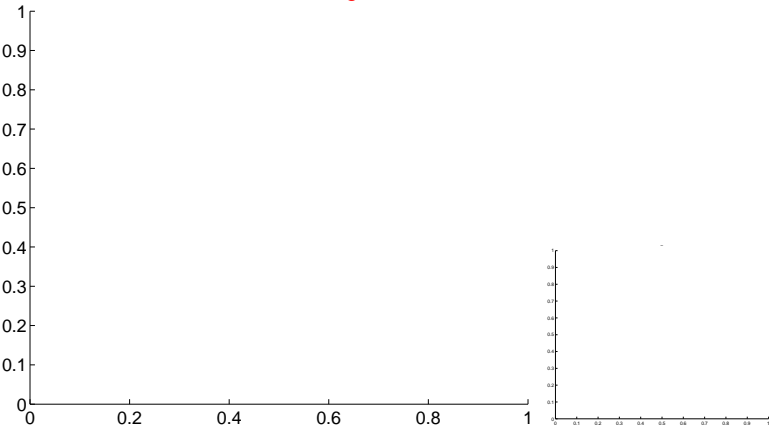
Q1 no OOT image



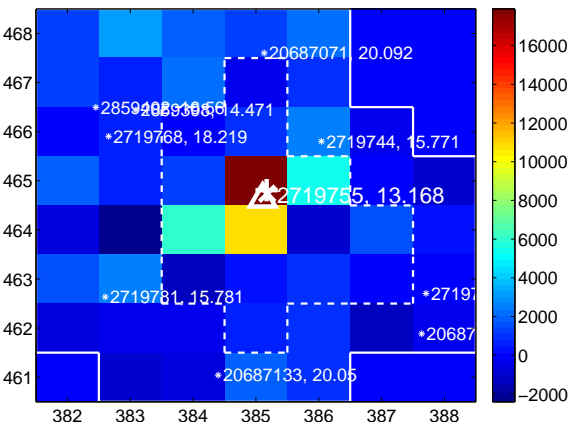
Q2 no difference image



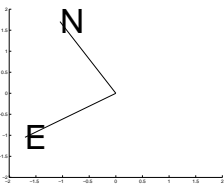
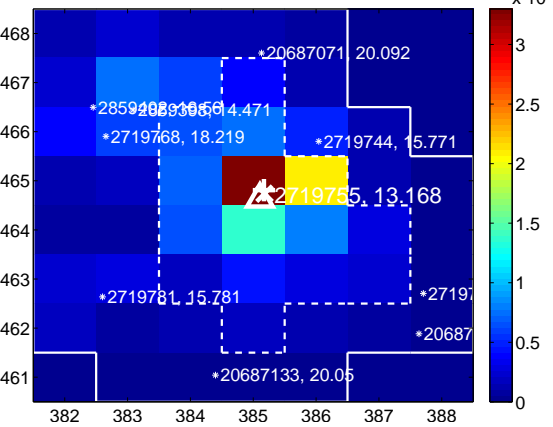
Q2 no OOT image



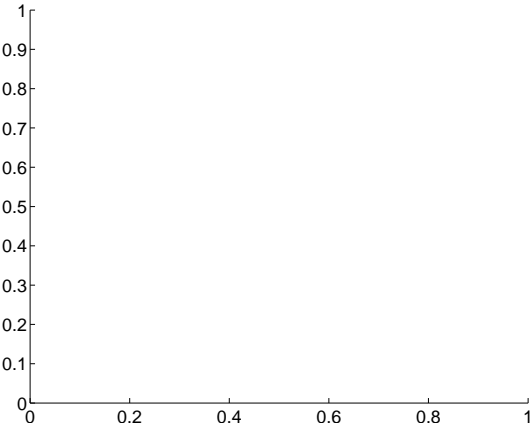
Q3 difference image



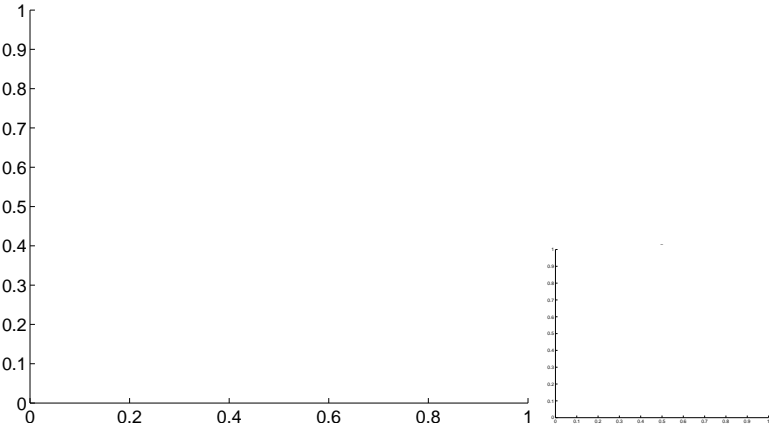
Q3 OOT image



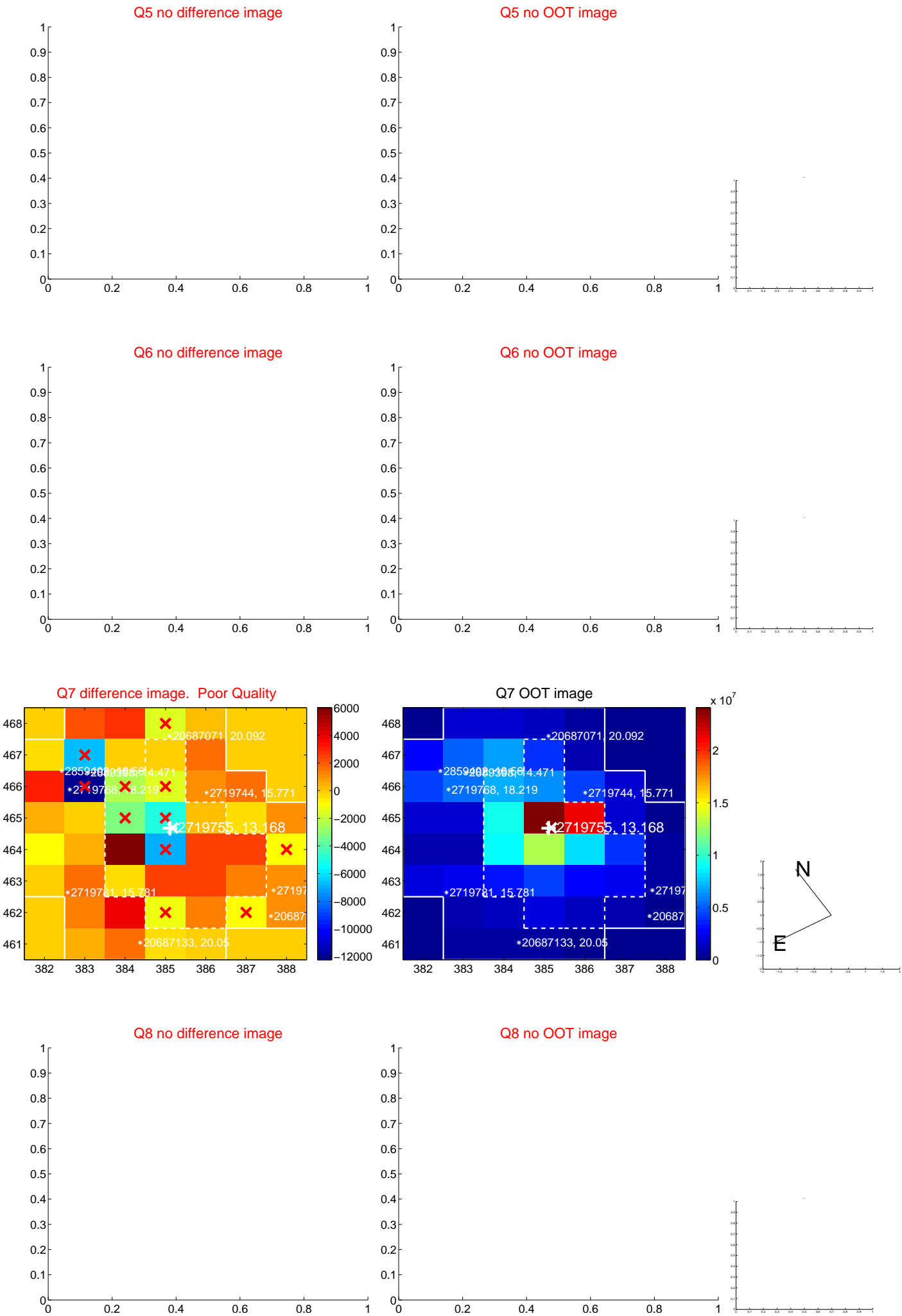
Q4 no difference image



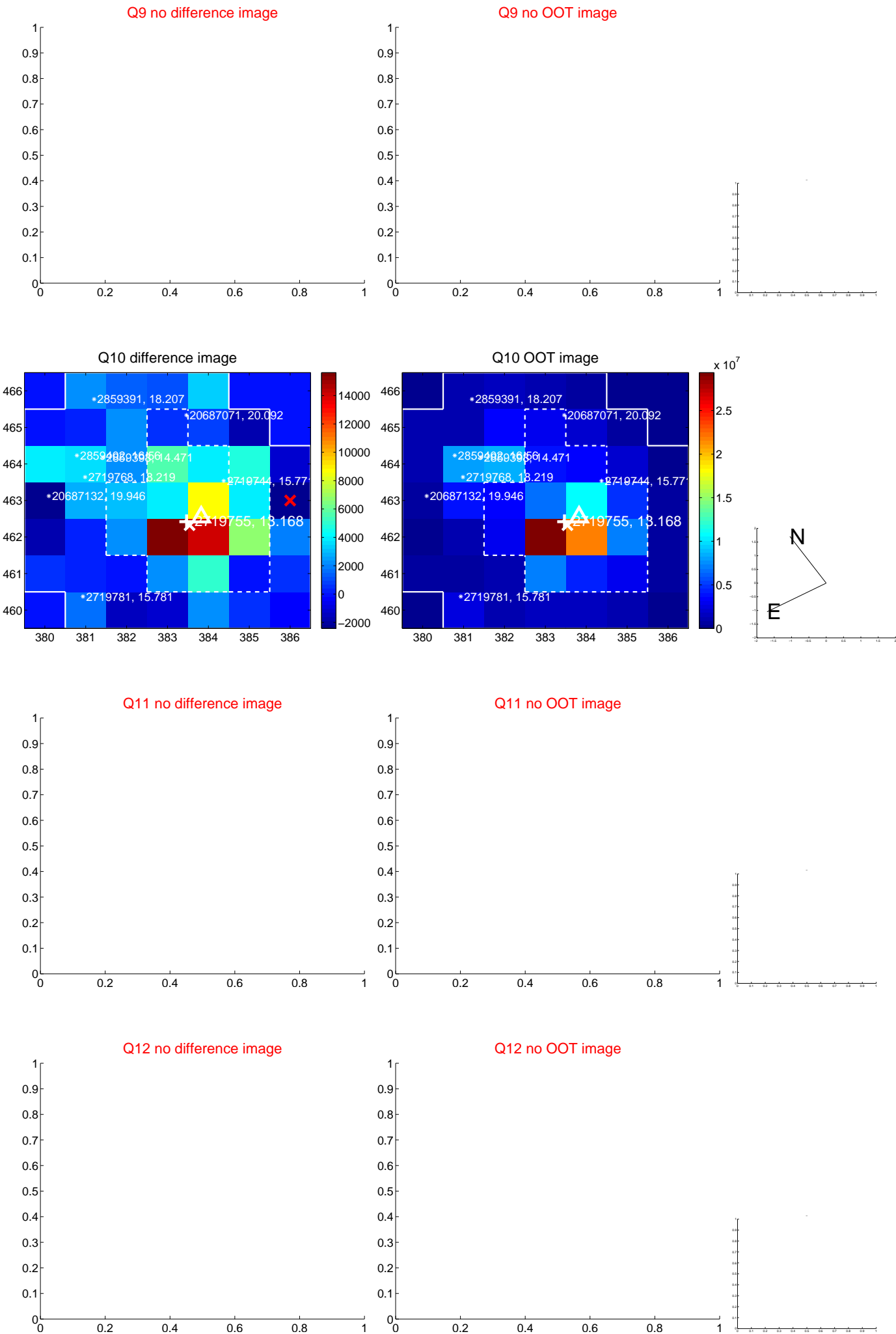
Q4 no OOT image



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.

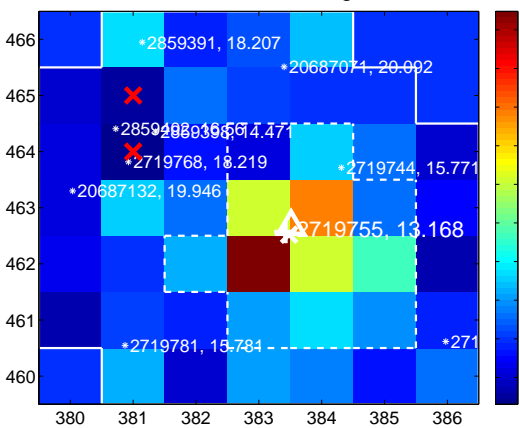
Q13 no difference image



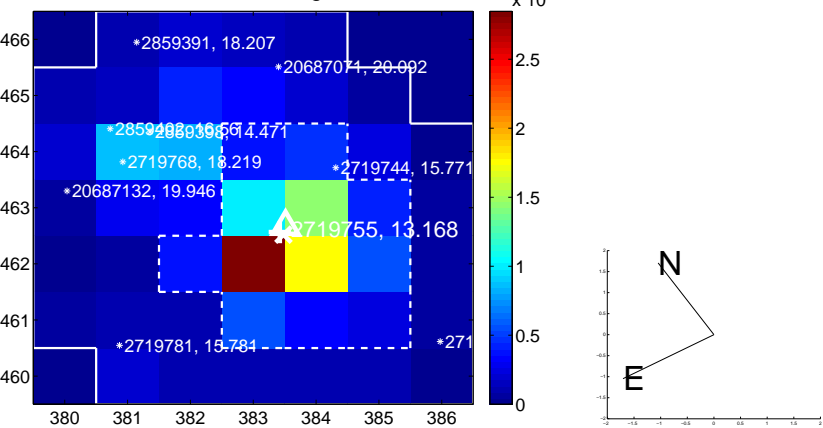
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



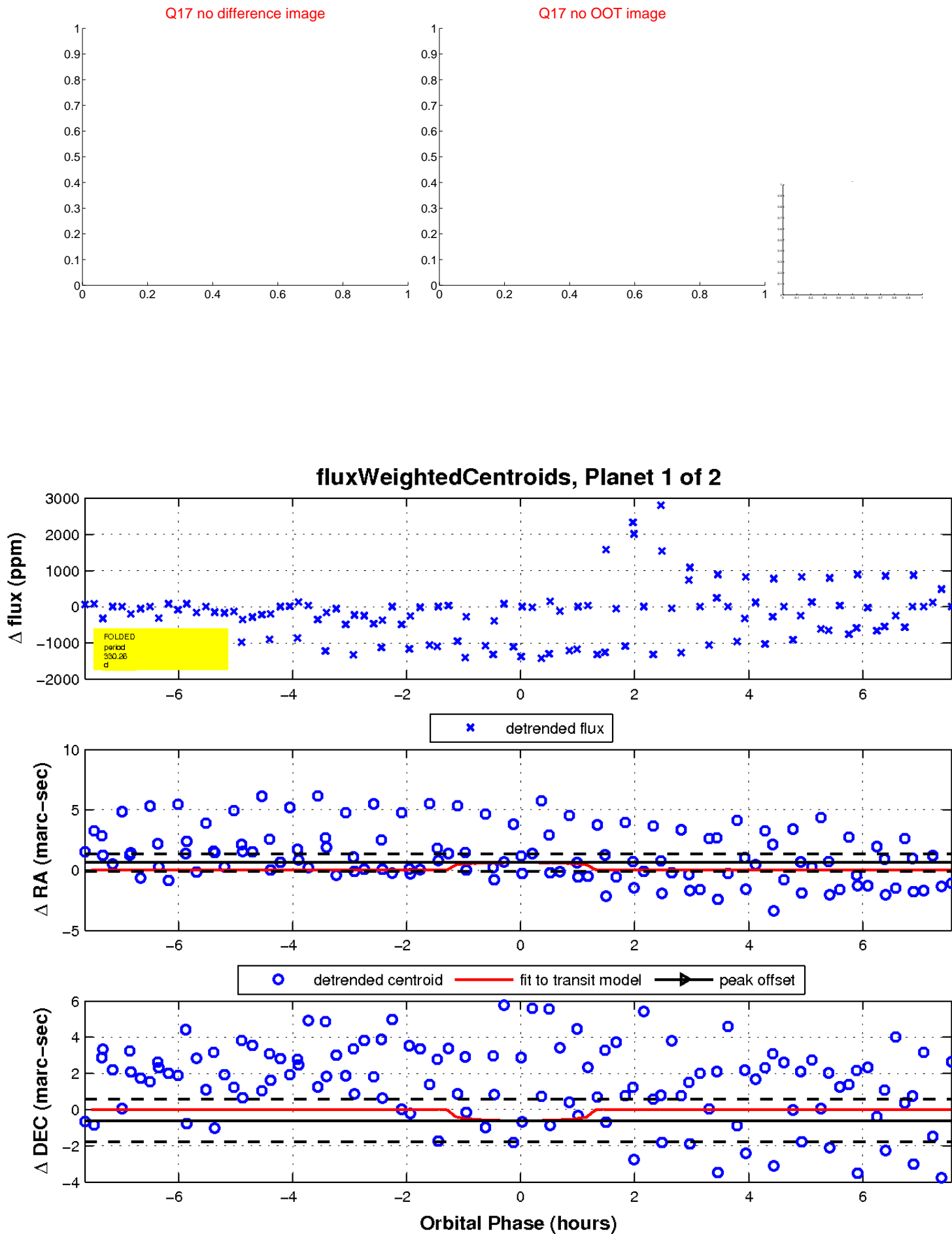
Q16 no difference image



Q16 no OOT image

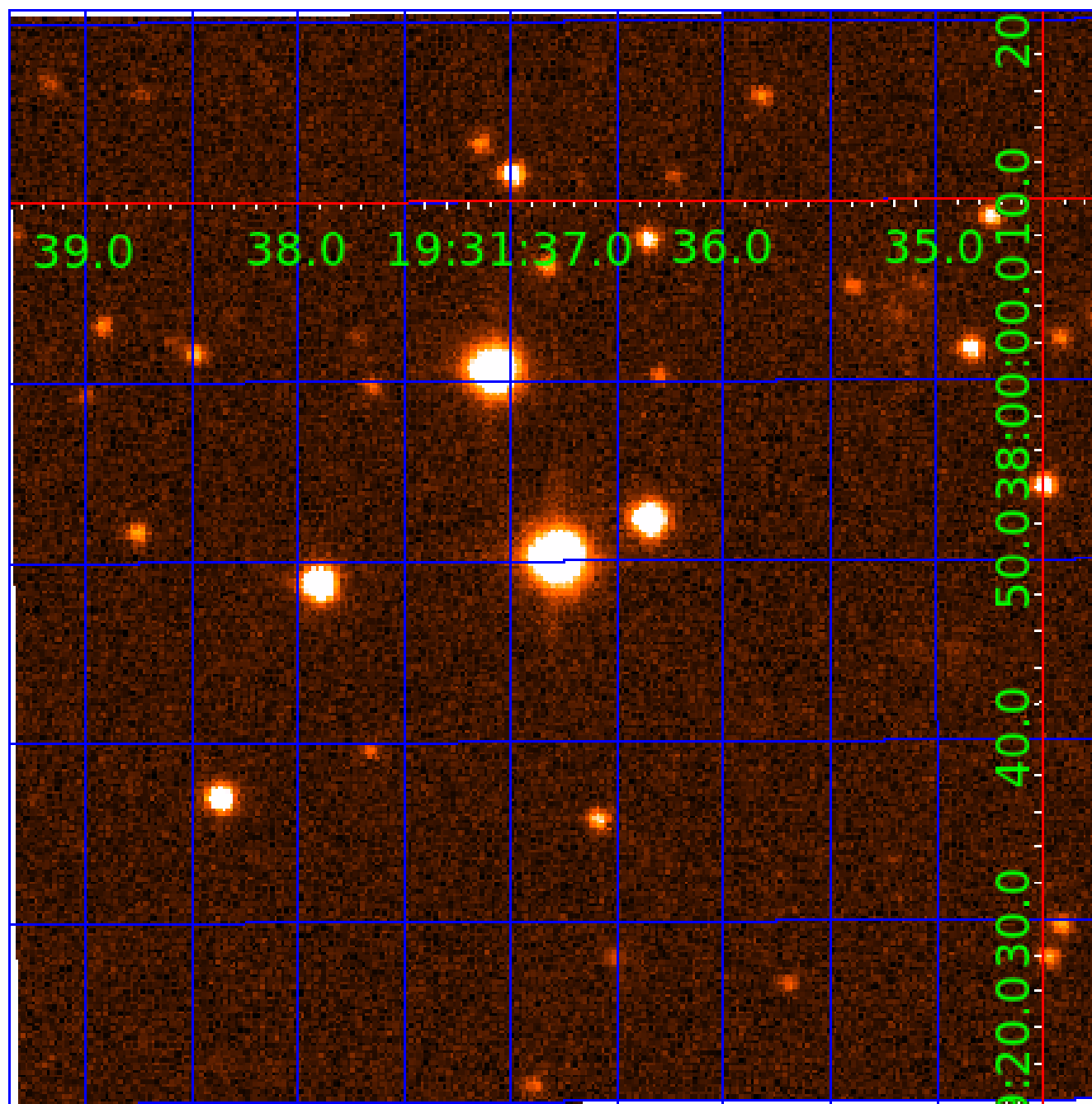


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002719755

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})
002719755-01	OBS	No	330.262994	325.874691	399.3	2.551	11.0	4.3	1.53	6058	3.23	3.31
002719755-02	OBS	No	228.268639	221.312083	346.9	2.360	9.8	5.4	1.53	6058	3.21	5.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002719755-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002719755-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

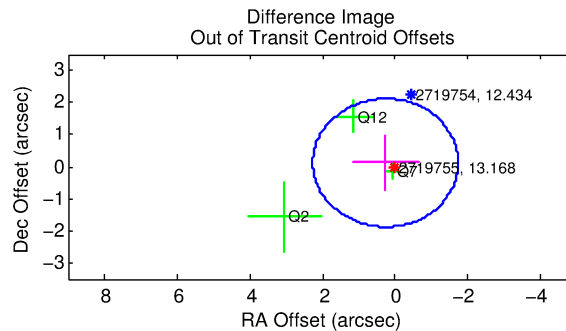
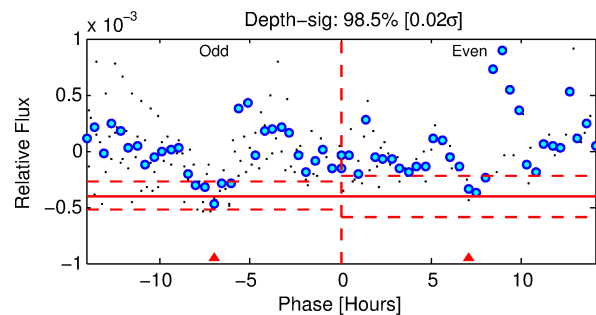
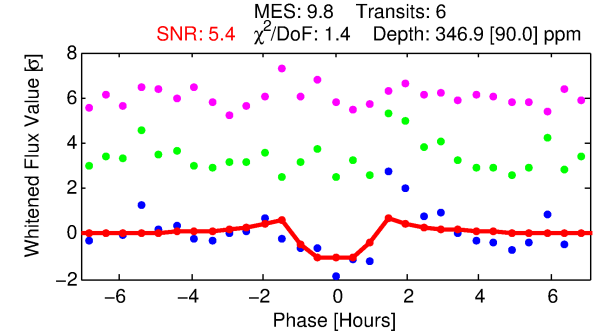
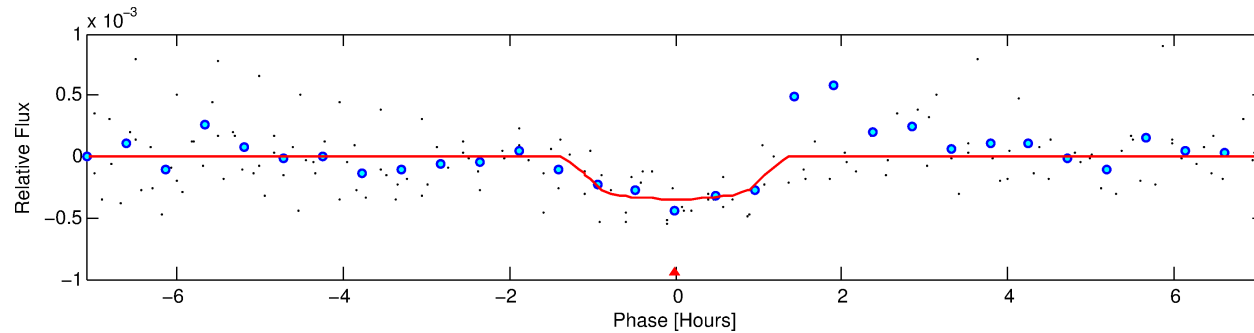
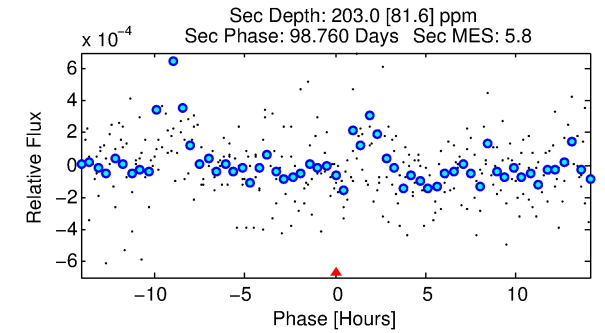
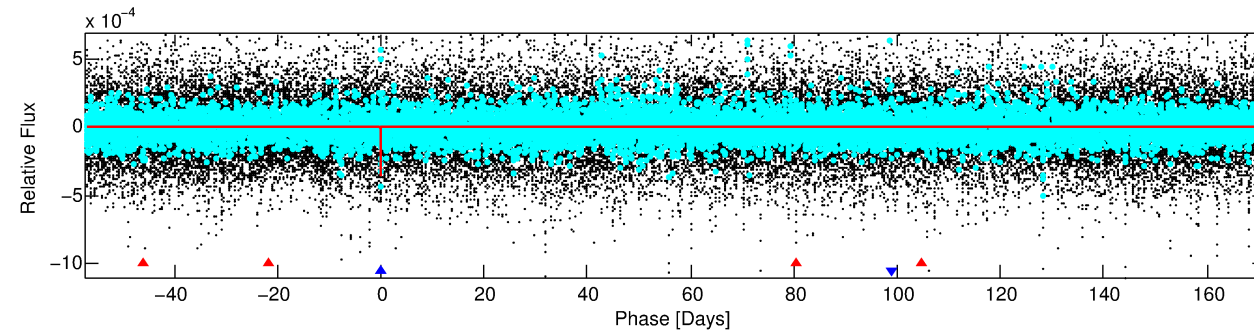
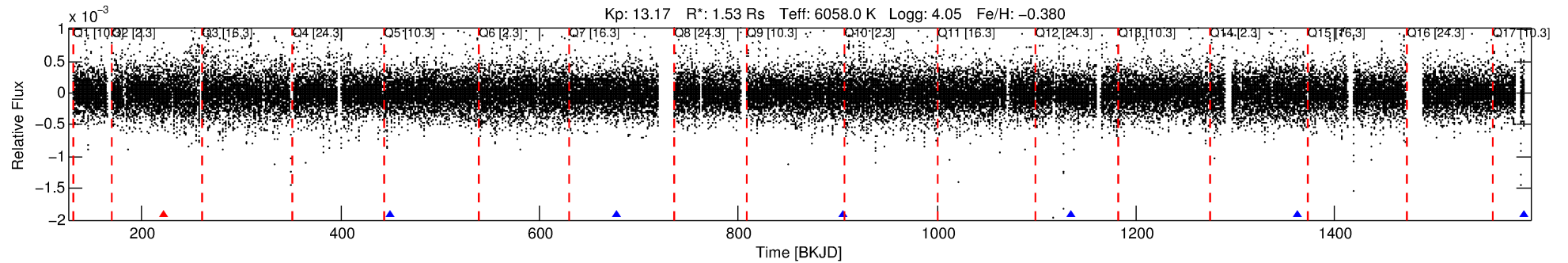
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002719755-02

No Significant Match Found

DV One-Page Summary

KIC: 2719755 Candidate: 2 of 2 Period: 228.269 d



DV Fit Results:

Period = 228.26864 [0.00222] d
Epoch = 221.3121 [0.0092] BKJD
Rp/R* = 0.0192 [0.0198]
a/R* = 434.19 [2286.40]
b = 0.83 [1.95]
Seff = 5.41 [3.43]
Teq = 389 [62] K
Rp = 3.21 [3.52] Re
a = 0.7239 [0.2756] AU
Ag = 5677.29 [12427.38] [0.46 σ]
Teffp = 5220 [2743] K [1.76 σ]

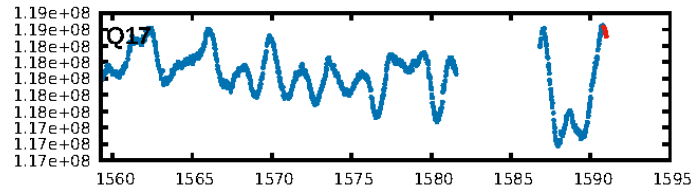
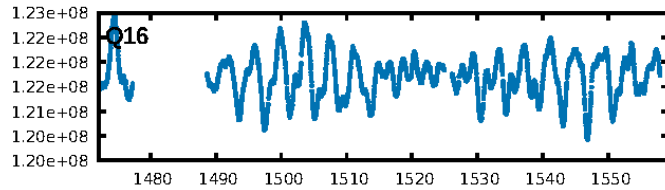
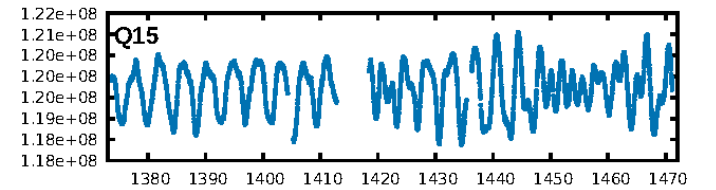
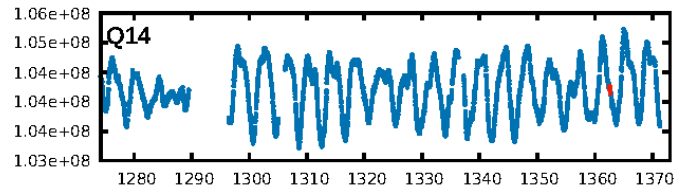
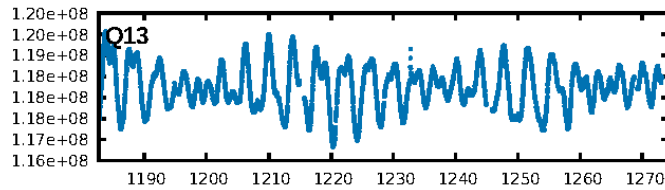
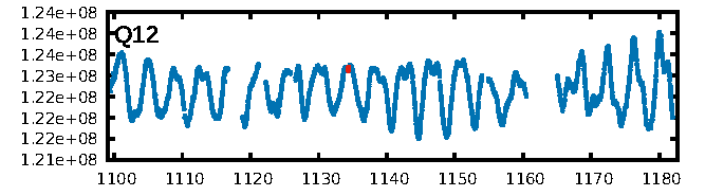
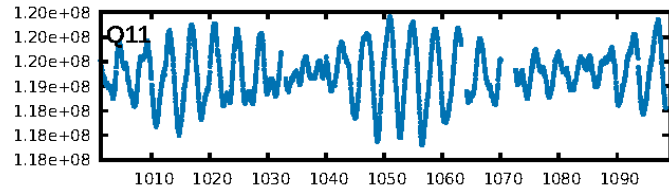
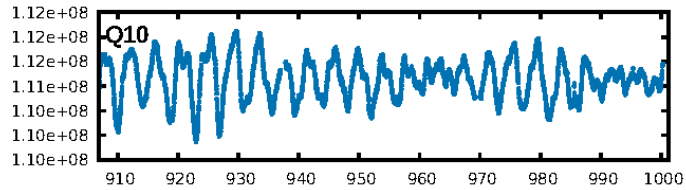
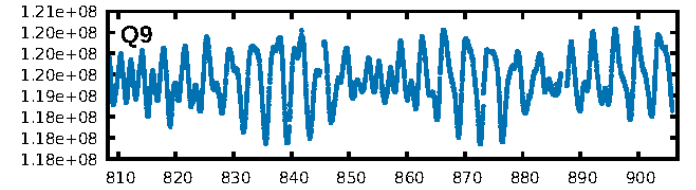
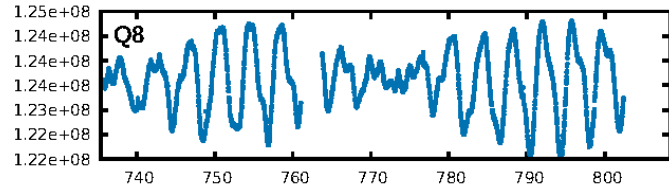
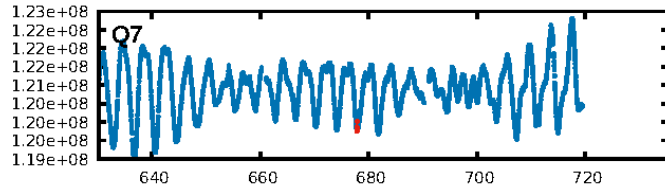
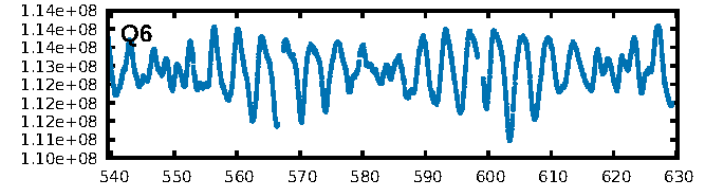
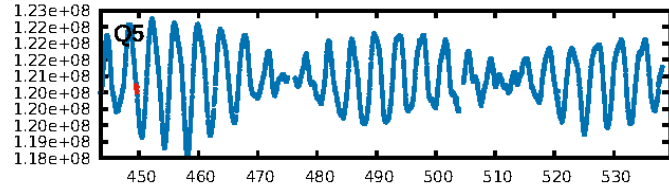
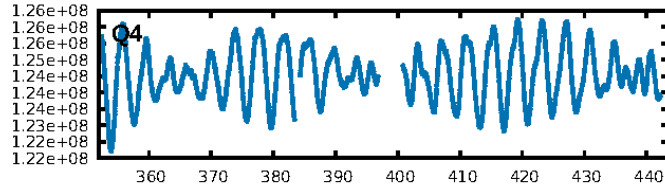
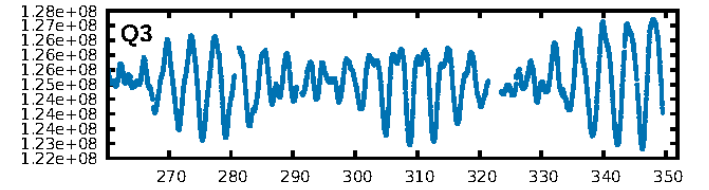
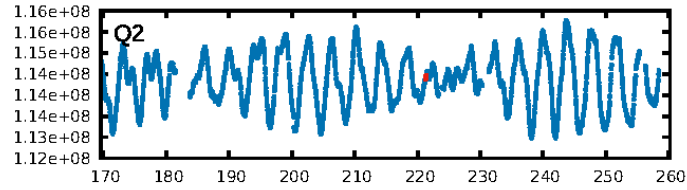
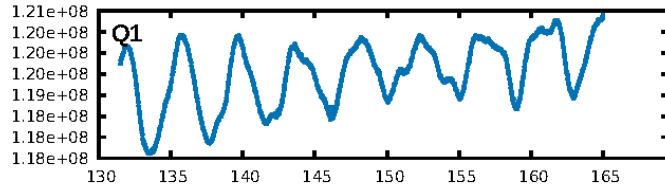
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [704.31 σ]
ModelChiSquare2-sig: 1.2%
ModelChiSquareGof-sig: 59.6%
Bootstrap-pfa: 4.30e-11
RollingBand-fgt: 0.80 [4/5]
GhostDiagnostic-chr: -2.856
Centroid-sig: 4.8%
Centroid-so: 2.215 arcsec [0.95 σ]
OotOffset-rm: 0.291 arcsec [0.44 σ]
KicOffset-rm: 0.462 arcsec [0.94 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [5/5]

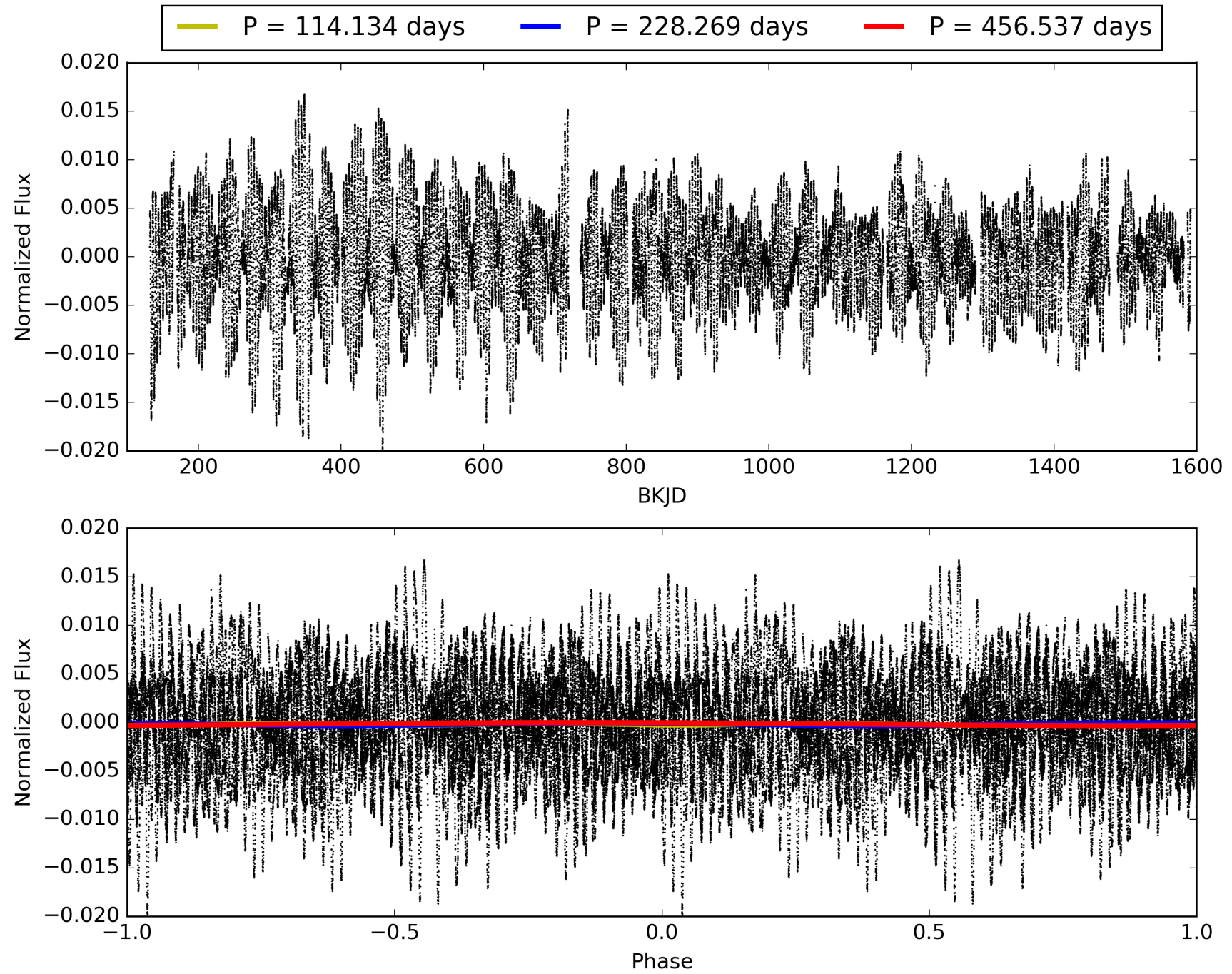
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:28:18 Z

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

TCE 002719755-02, PDC Light Curves

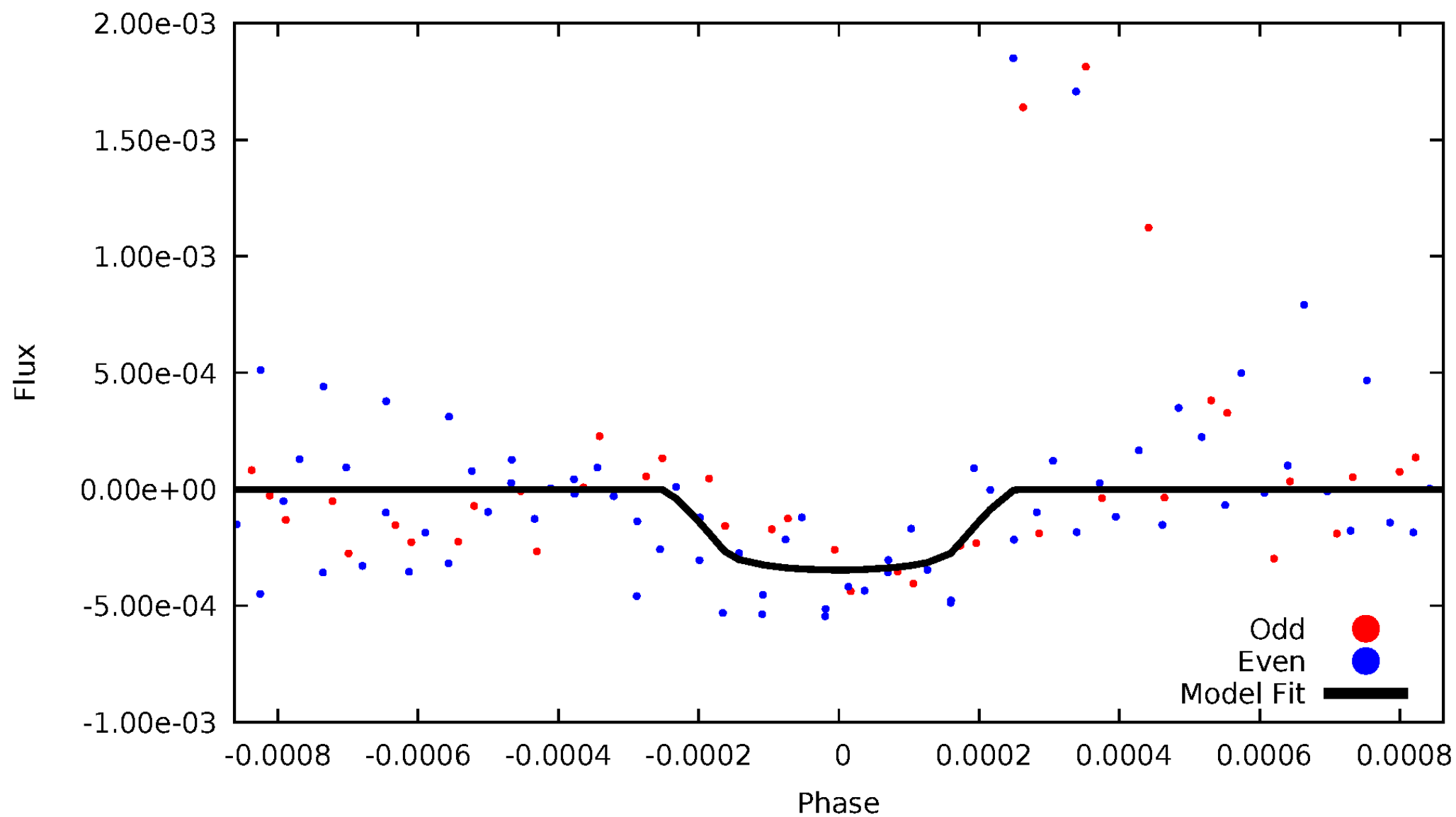


TCE 002719755-02



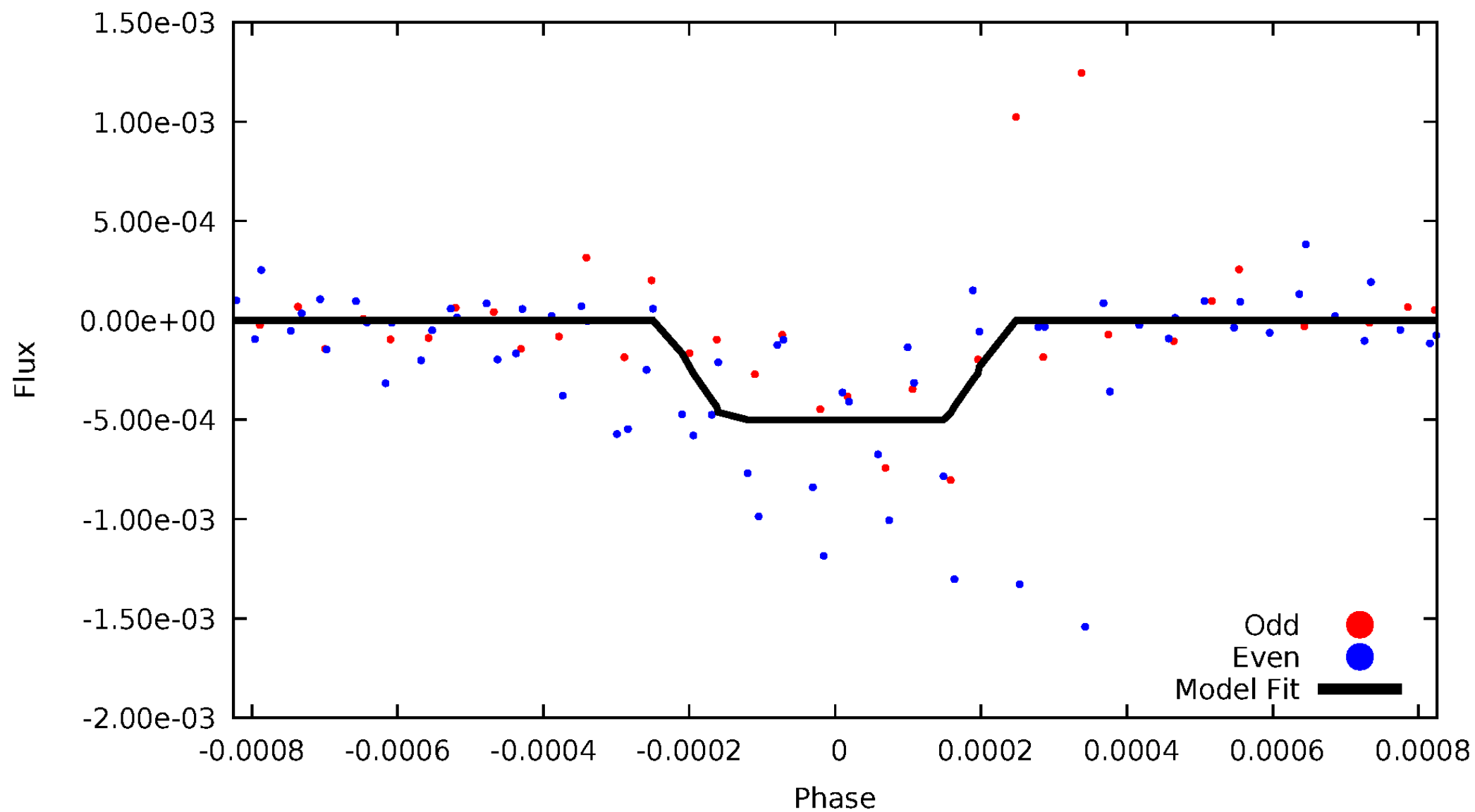
DV Odd/Even

TCE 002719755-02



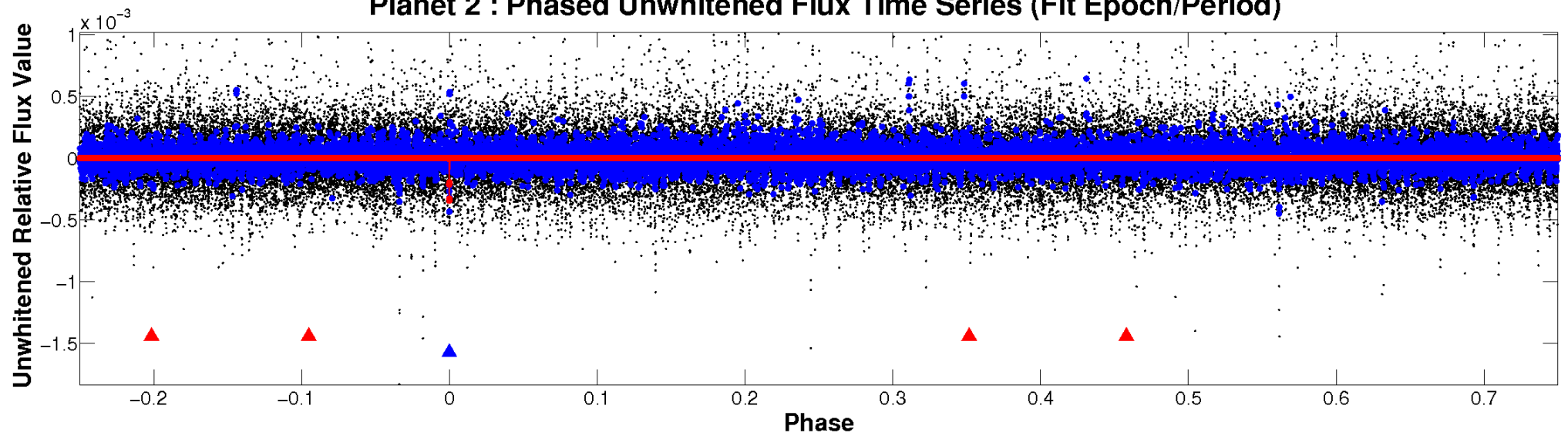
ALT Odd/Even

TCE 002719755-02

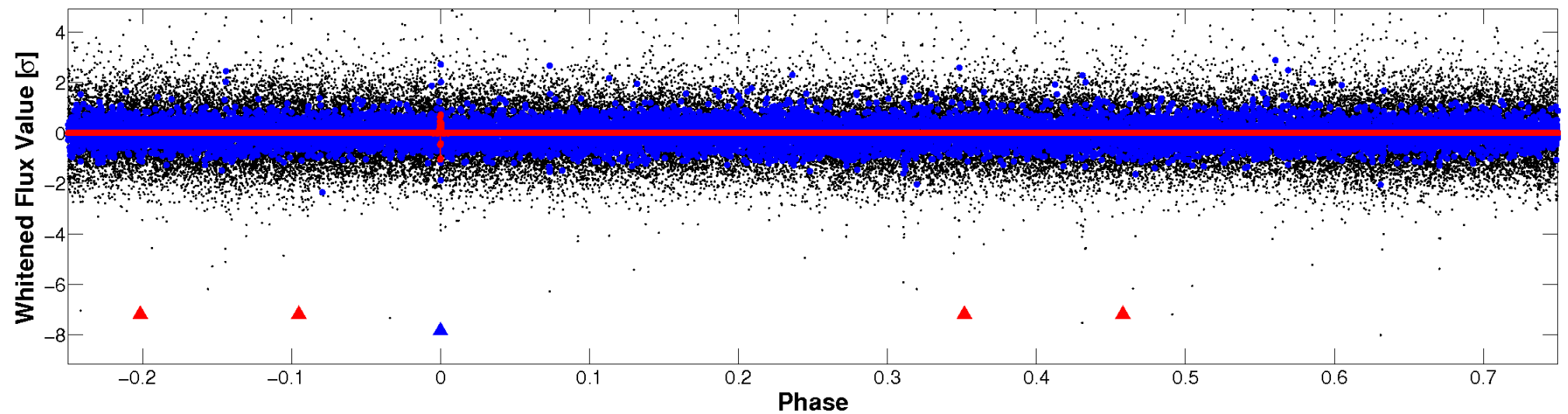


Non-Whitened Vs. Whitened Light Curve

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

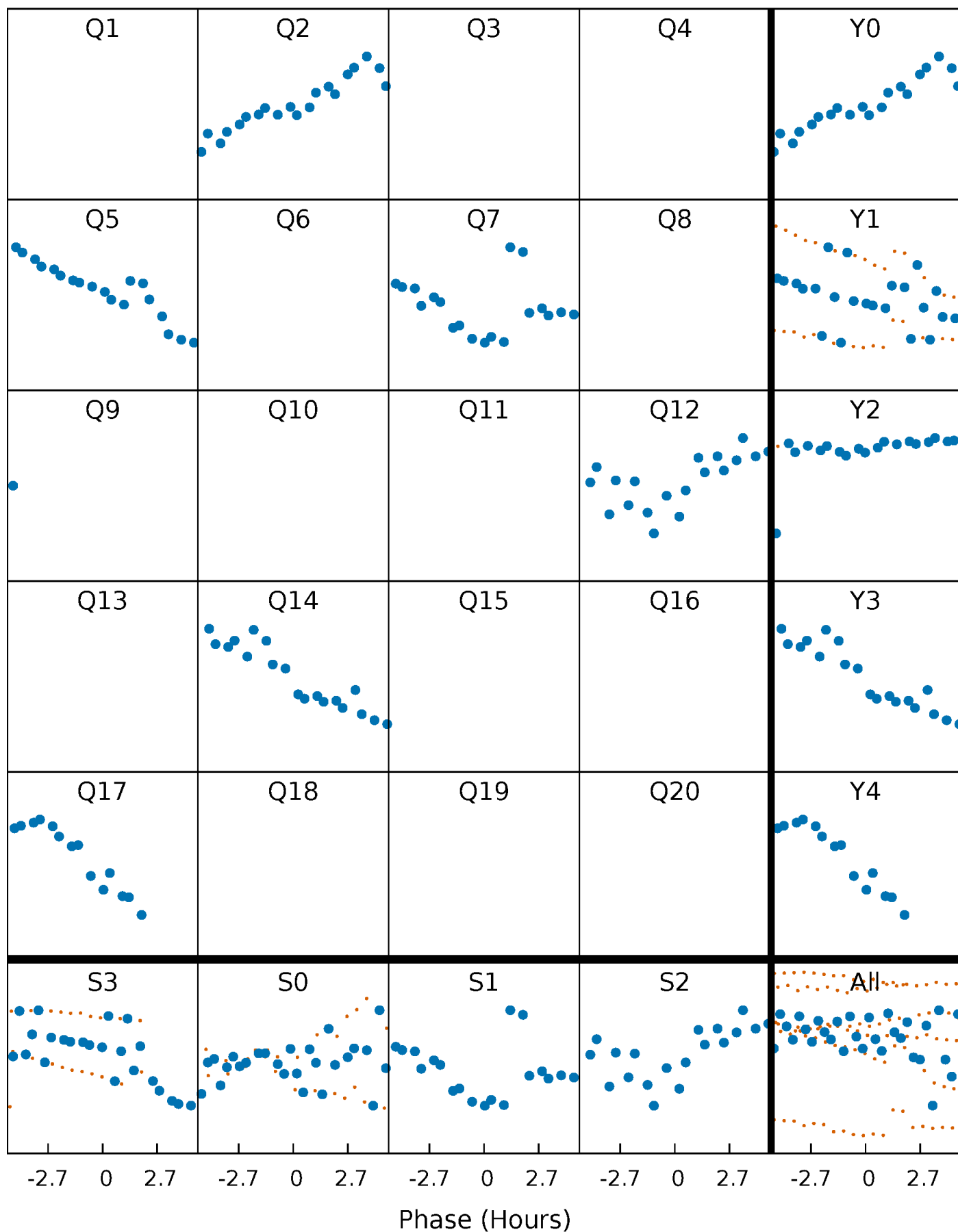


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



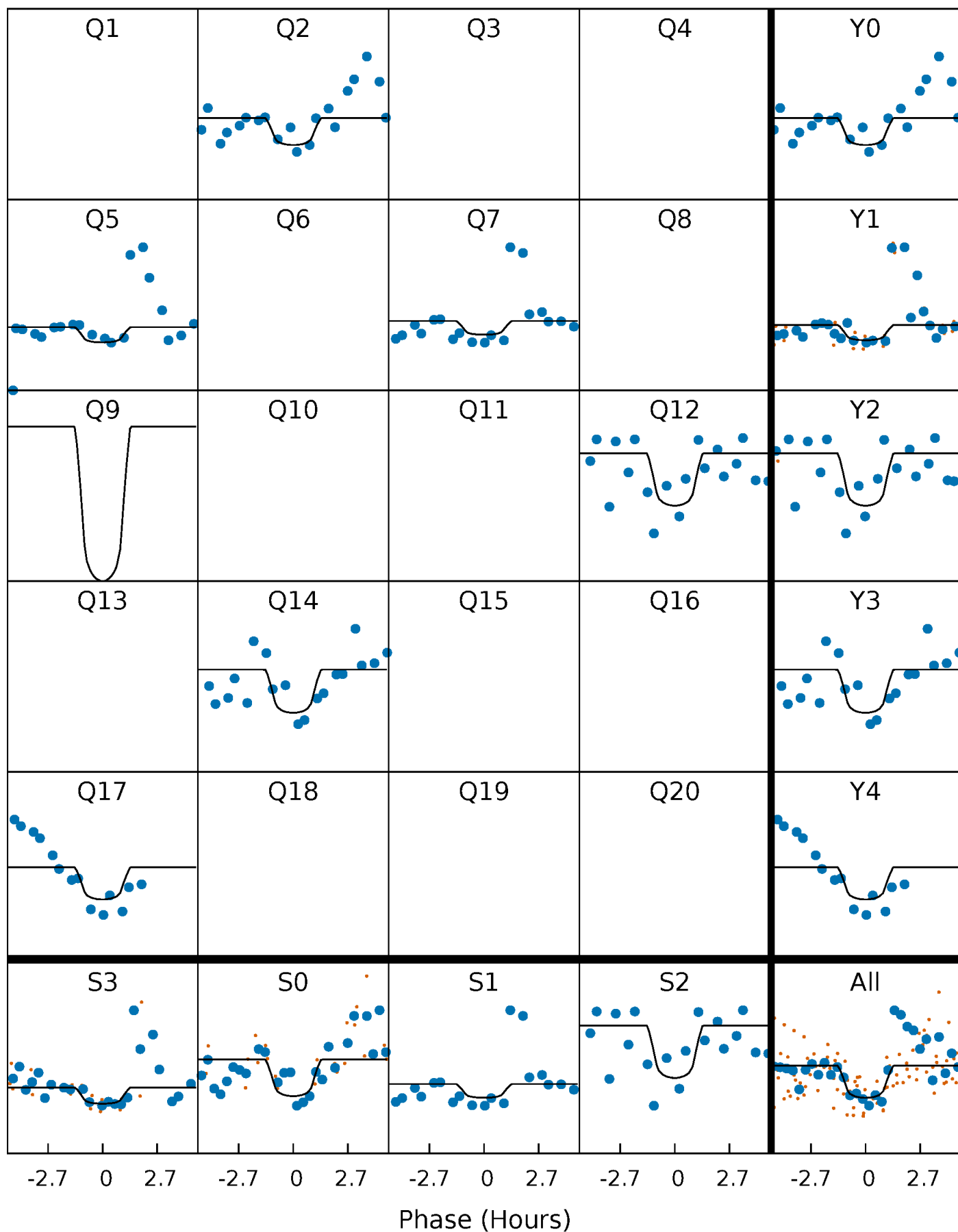
PDC Quarter-Phased Transit Curves

TCE 002719755-02 P=228.268639 Days $T_0=221.312083$ (BKJD)



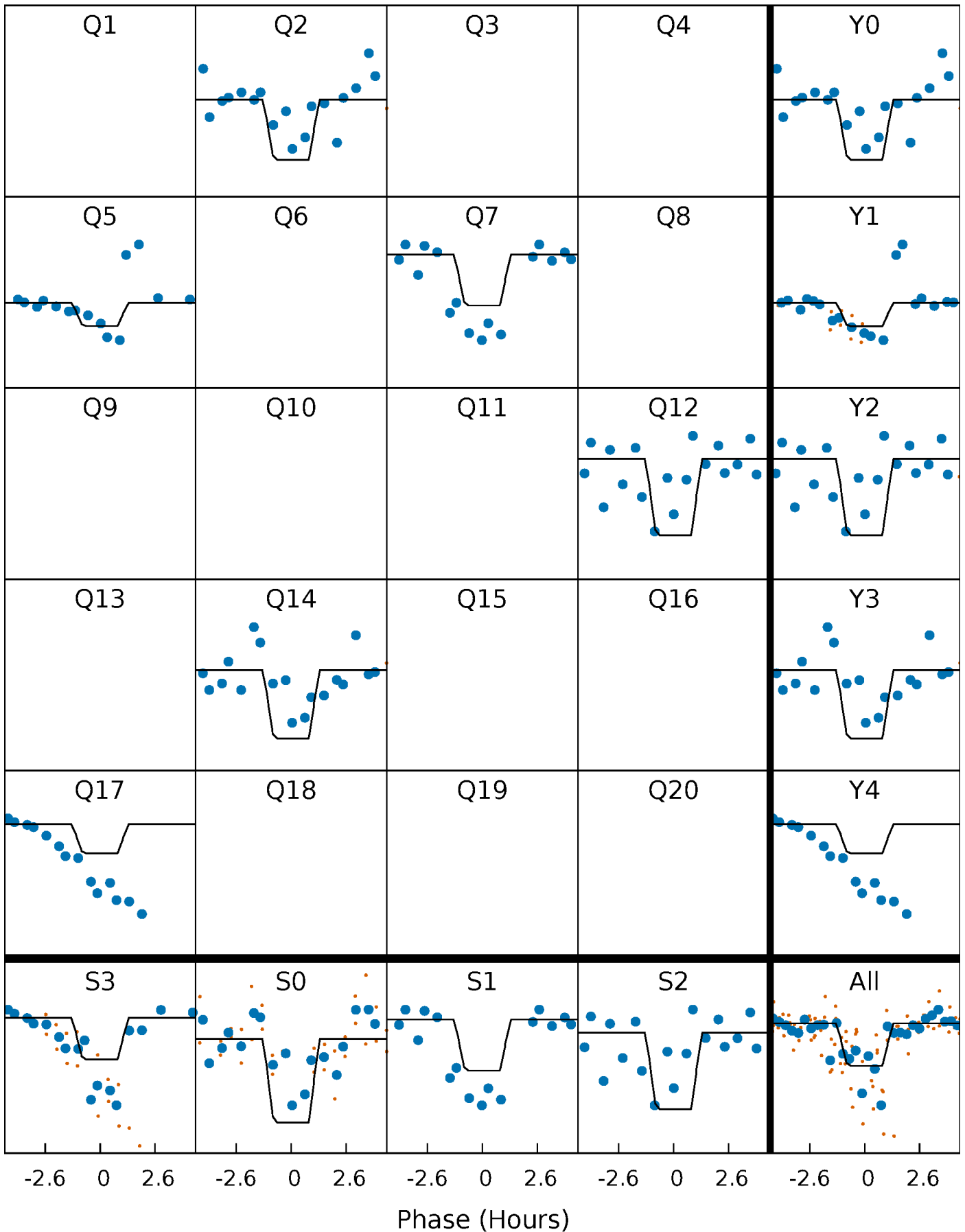
DV Quarter-Phased Transit Curves

TCE 002719755-02 P=228.268639 Days $T_0=221.312083$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

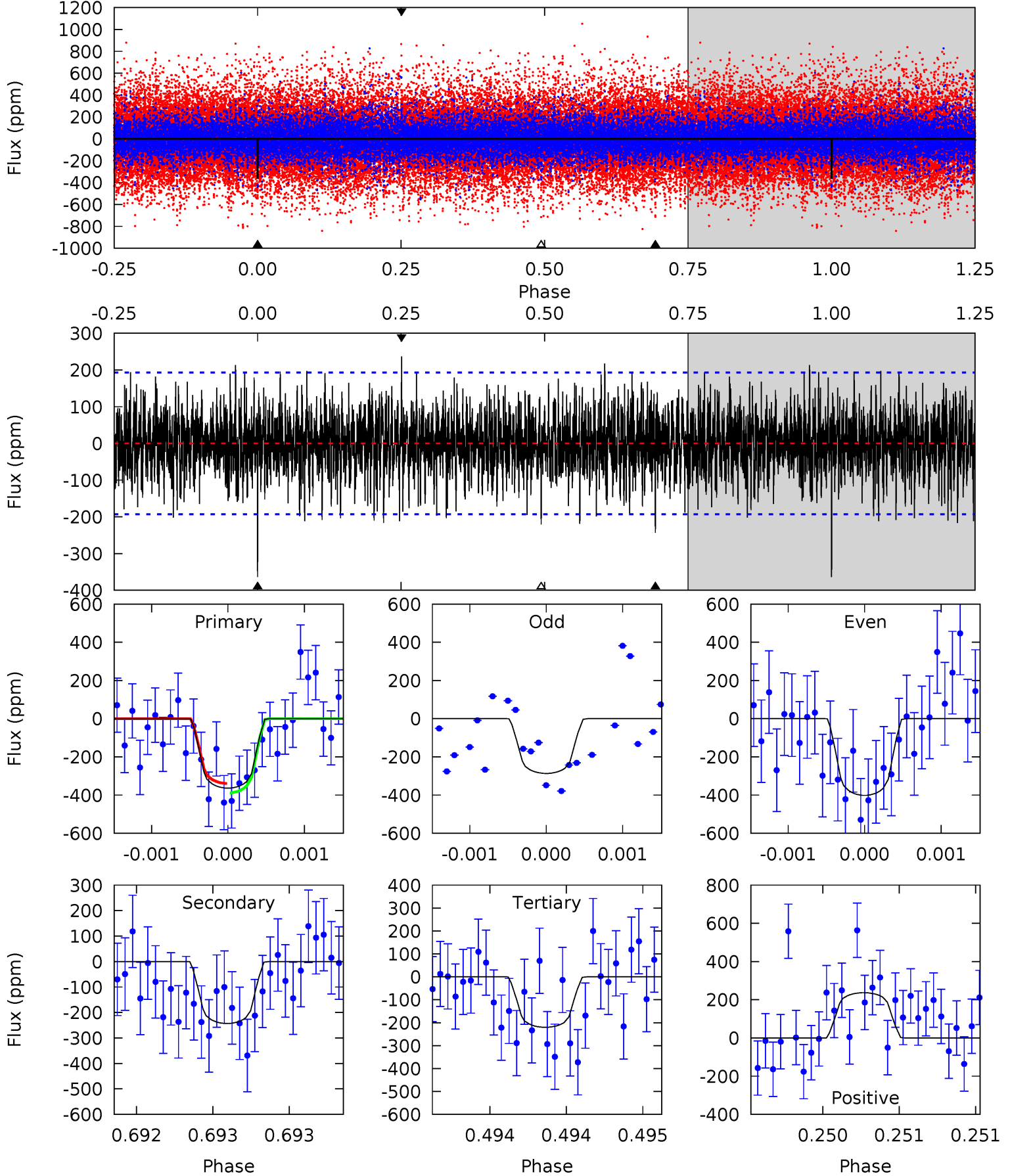
TCE 002719755-02 P=228.267817 Days $T_0=221.316240$ (BKJD)



DV Model-Shift Uniqueness Test

002719755-02, P = 228.268639 Days, E = 221.312083 Days

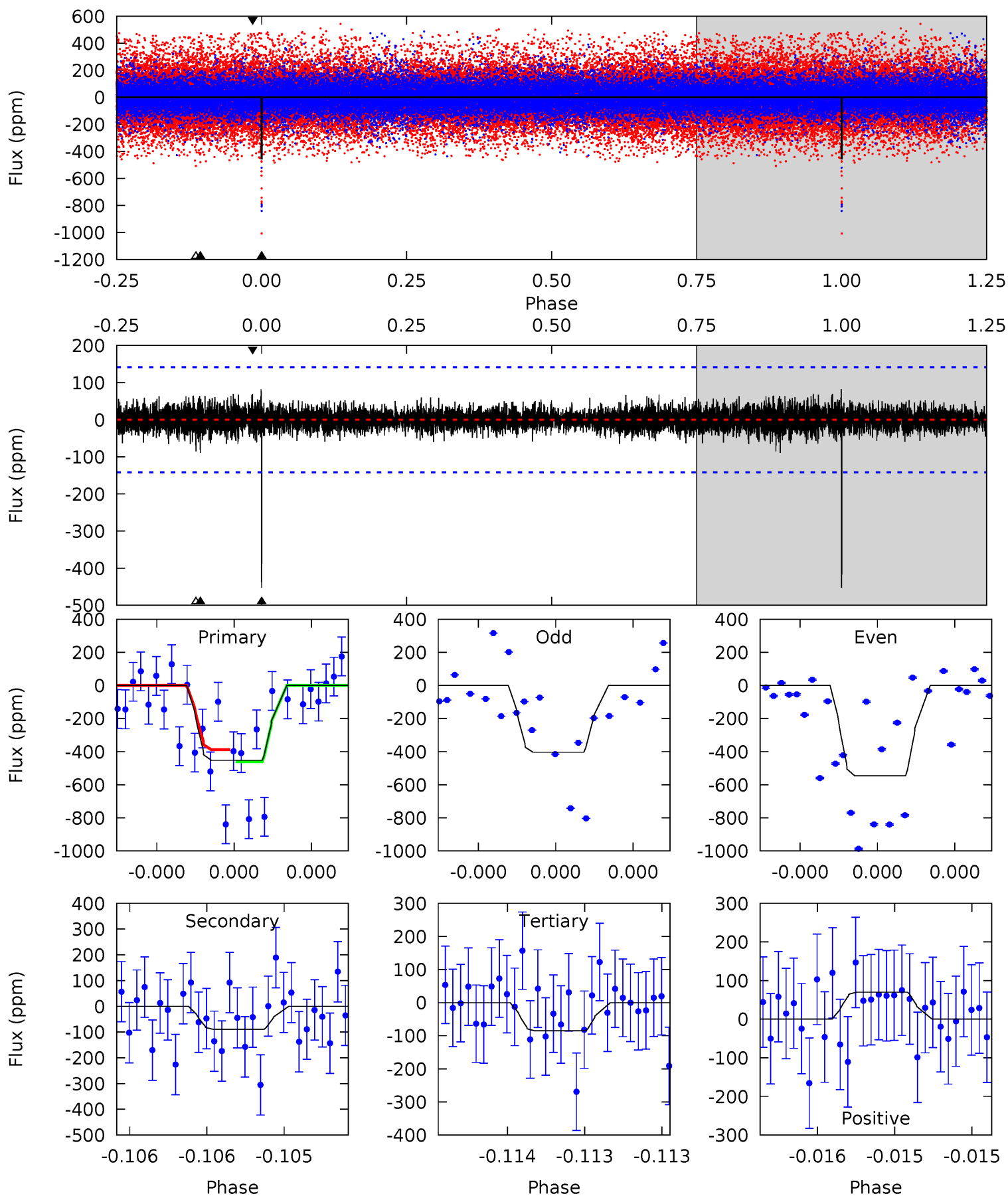
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	7.02	6.35	6.84	5.57	3.47	1.84	4.14	3.66	0.67	0.18	1.55	1.14	0.39	0.71



Alt Model-Shift Uniqueness Test

002719755-02, P = 228.267817 Days, E = 221.316240 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	3.53	3.38	2.77	5.61	3.54	0.72	14.6	15.2	0.15	0.76	2.83	1.32	0.15	0



Stellar Parameters For KIC 002719755

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6058^{+182}_{-182}	$4.054^{+0.371}_{-0.159}$	$-0.380^{+0.300}_{-0.300}$	$1.533^{+0.387}_{-0.581}$	$0.972^{+0.138}_{-0.124}$	$0.380^{+1.075}_{-0.167}$
	+3%/-3%	+9%/-4%	+79%/-79%	+25%/-38%	+14%/-13%	+283%/-44%
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 002719755-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-243 ± 35	$3.74^{+3.08}_{-2.46}$	538^{+44}_{-61}	5038^{+3422}_{-1069}	4980^{+40421}_{-3506}
Alt.	-89 ± 25	$3.98^{+3.05}_{-2.41}$	534^{+41}_{-56}	4010^{+1829}_{-667}	1582^{+8972}_{-1080}

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 $A_{obs} \gg 1.0$

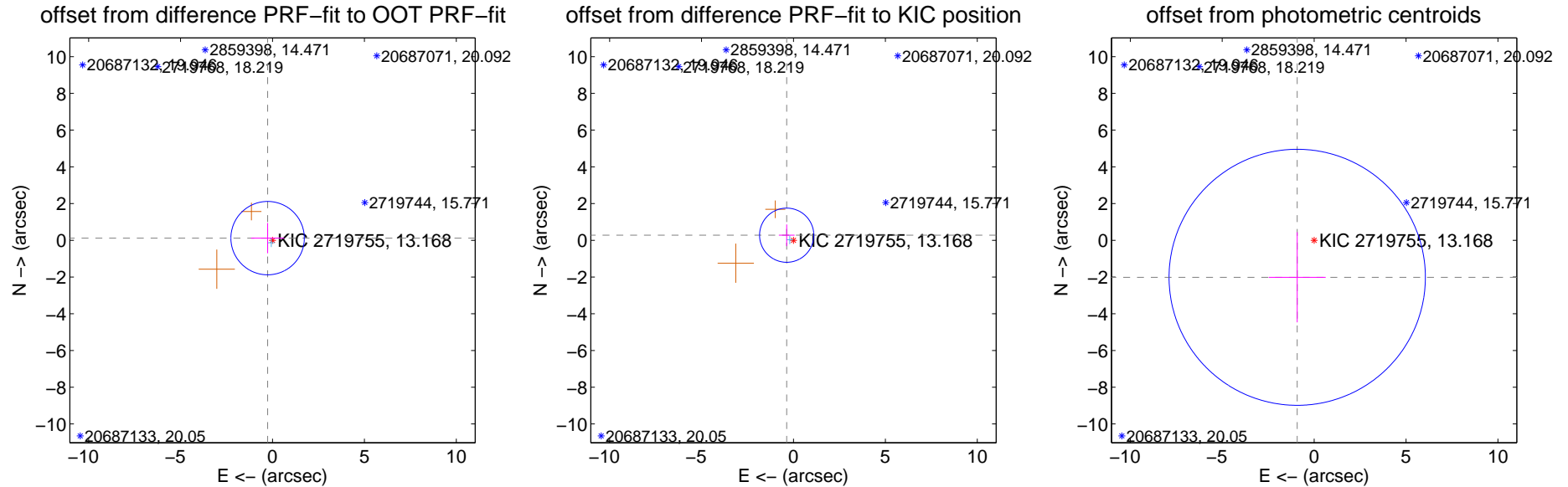
DV Centroid Data

Supplemental centroid analysis for 002719755-02. Kepler magnitude: 13.17. Transit SNR 5.44

There are 1 quarters with good PRF difference image offsets

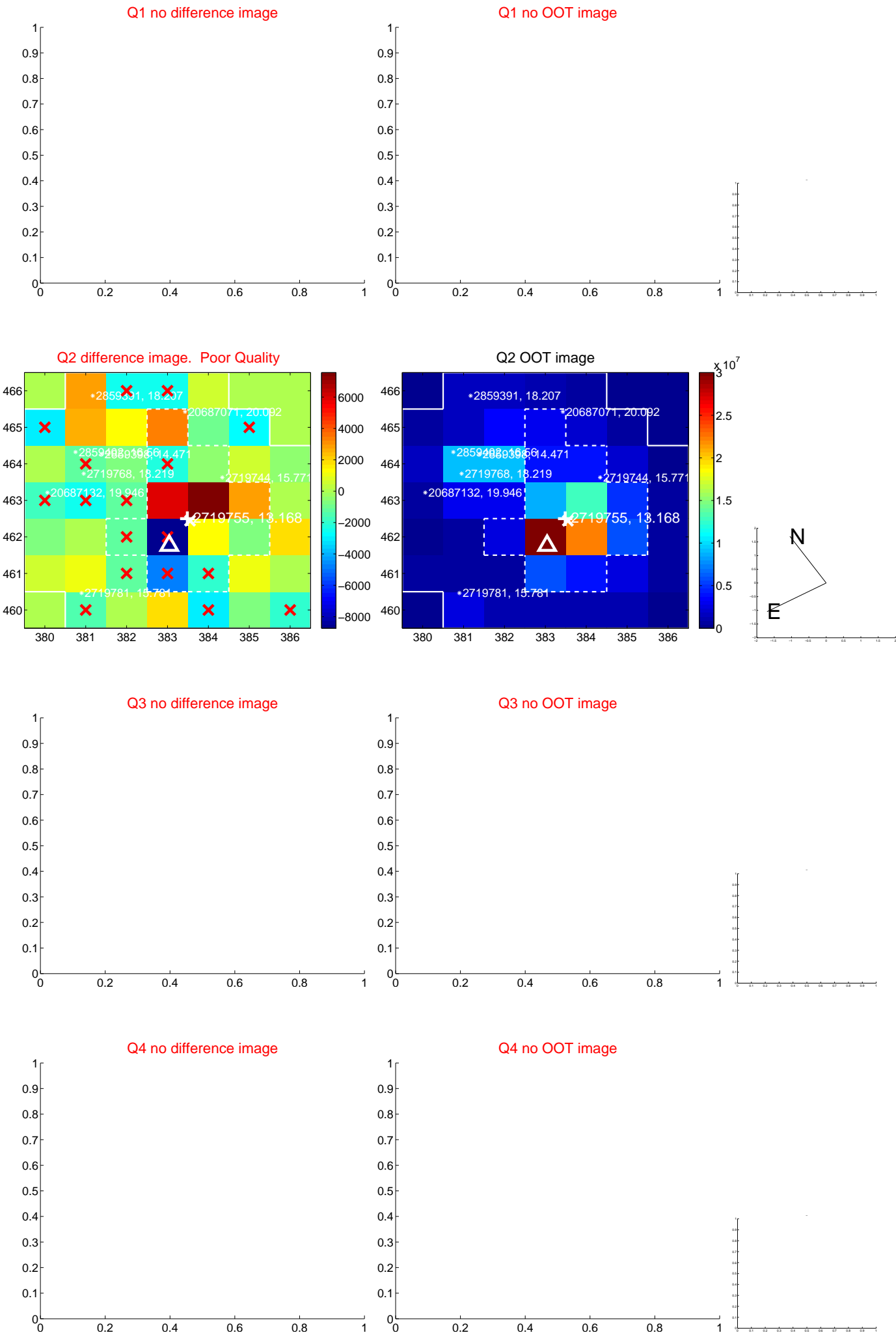
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.291 ± 0.666	0.44	0.266 ± 0.901	0.118 ± 0.824
PRF-fit source offset from KIC position	0.462 ± 0.492	0.94	0.369 ± 0.429	0.278 ± 0.586
photometric centroid source offset	2.22 ± 2.32	0.95	0.92 ± 1.55	-2.02 ± 2.45

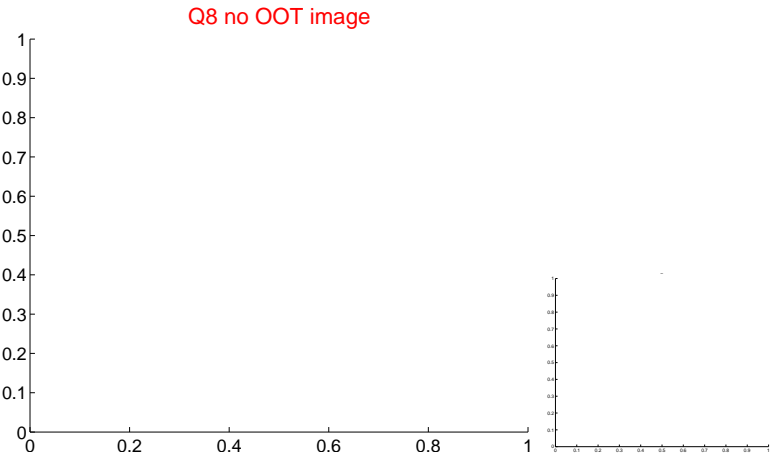
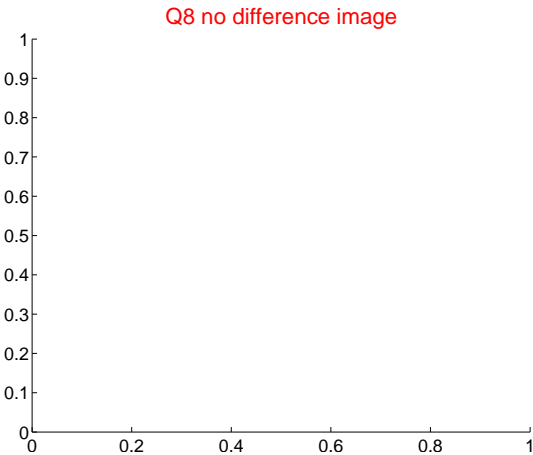
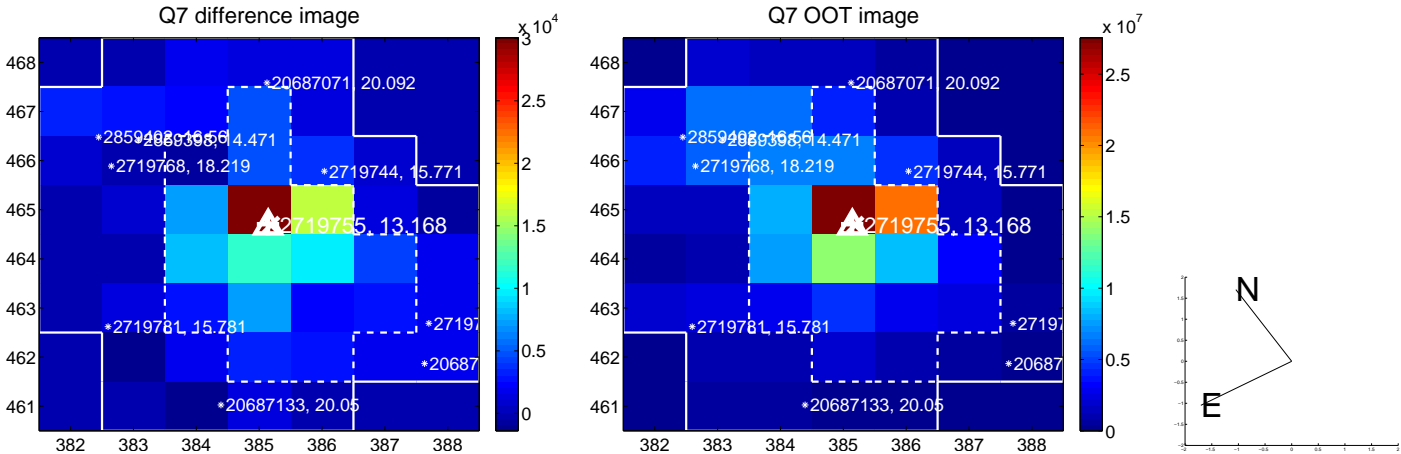
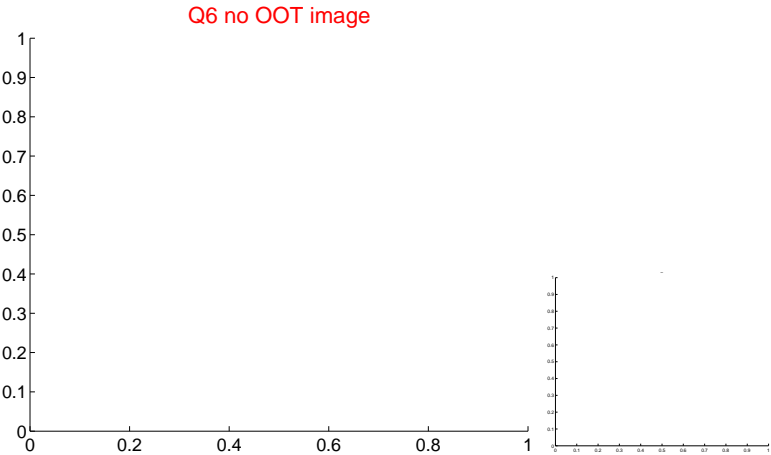
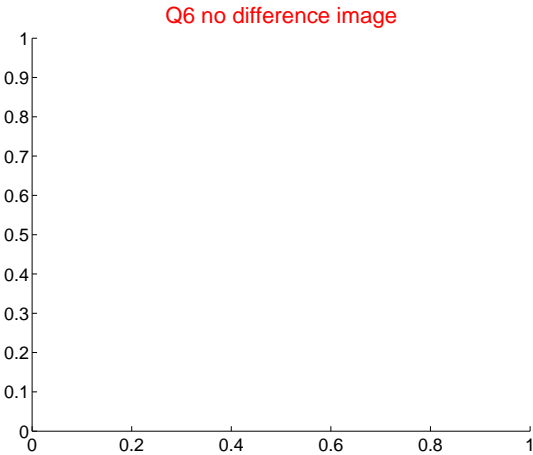
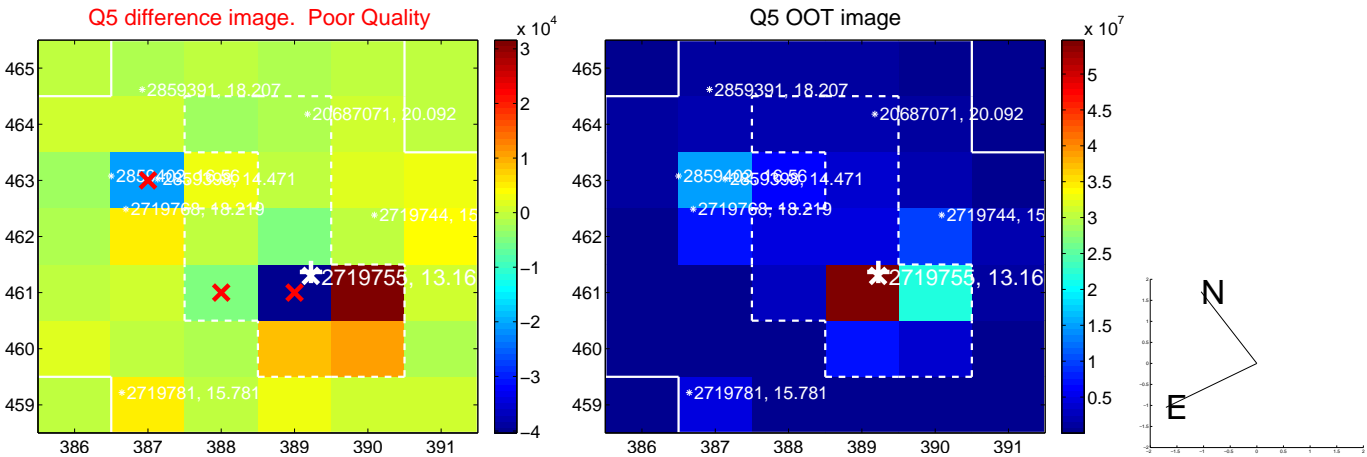


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

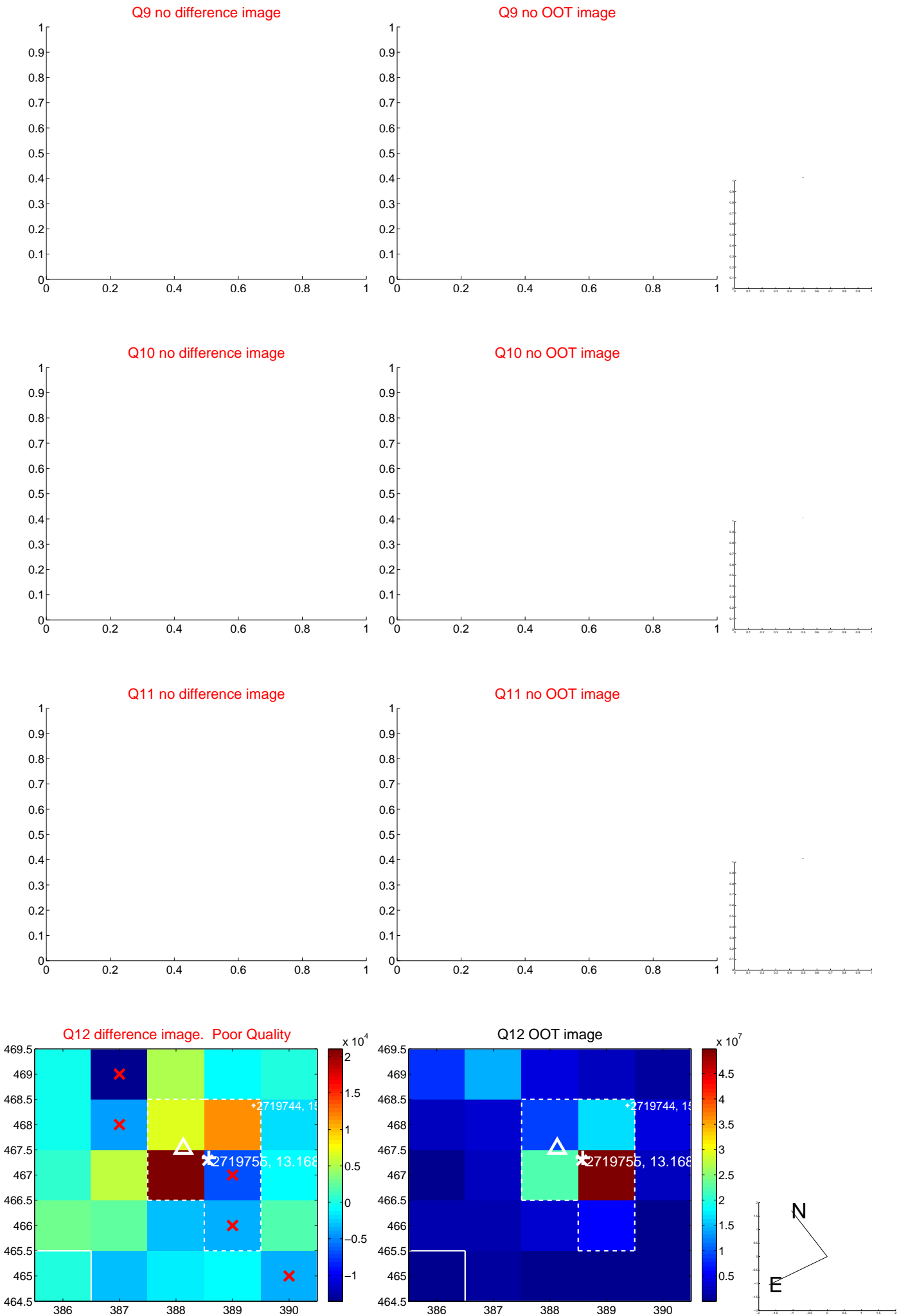
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



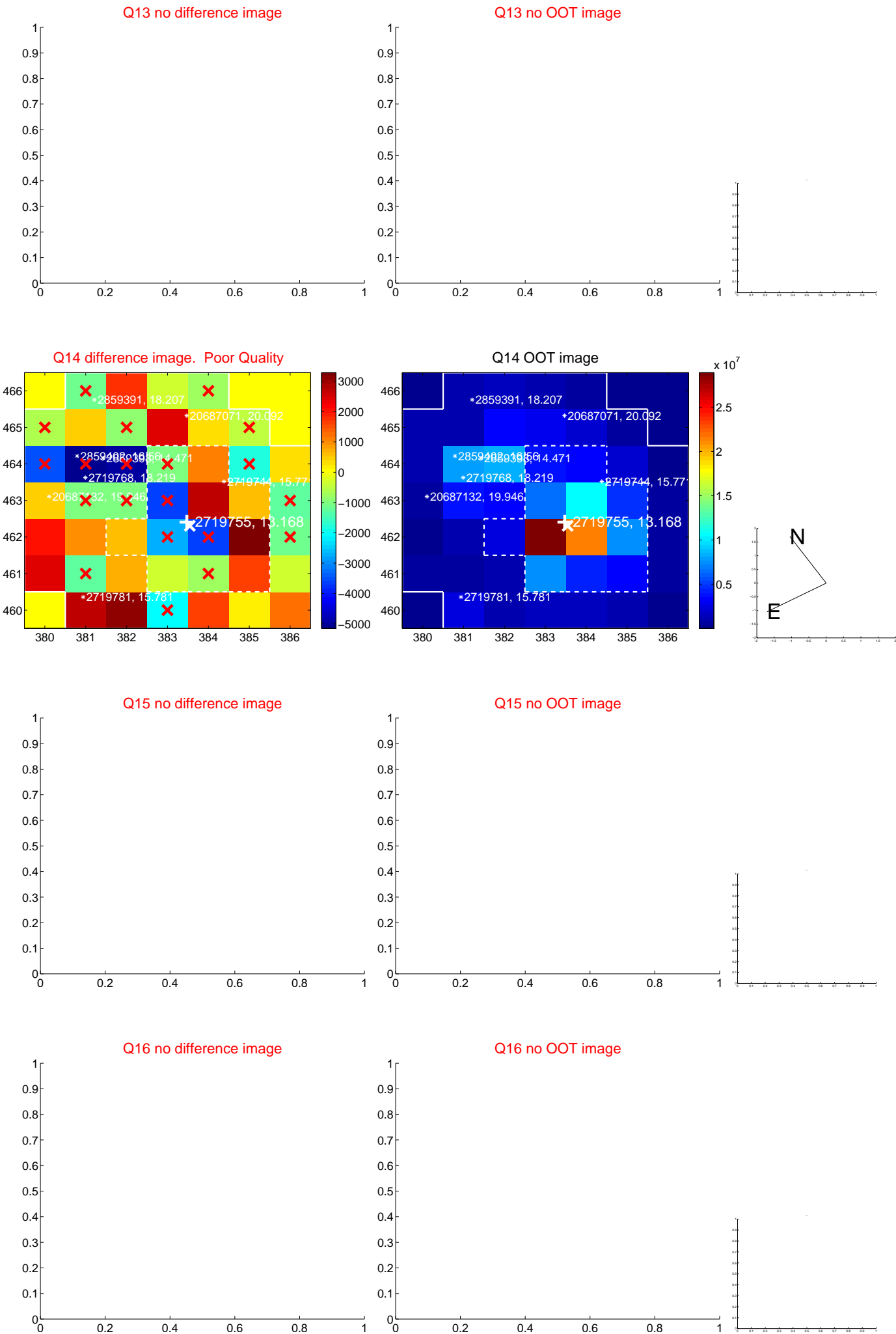
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



Q14 difference image. Poor Quality

Row	380	381	382	383	384	385	386
466							
465							
464							
463							
462							
461							
460							

Q14 OOT image

Row	380	381	382	383	384	385	386
466							
465							
464							
463							
462							
461							
460							

N

E

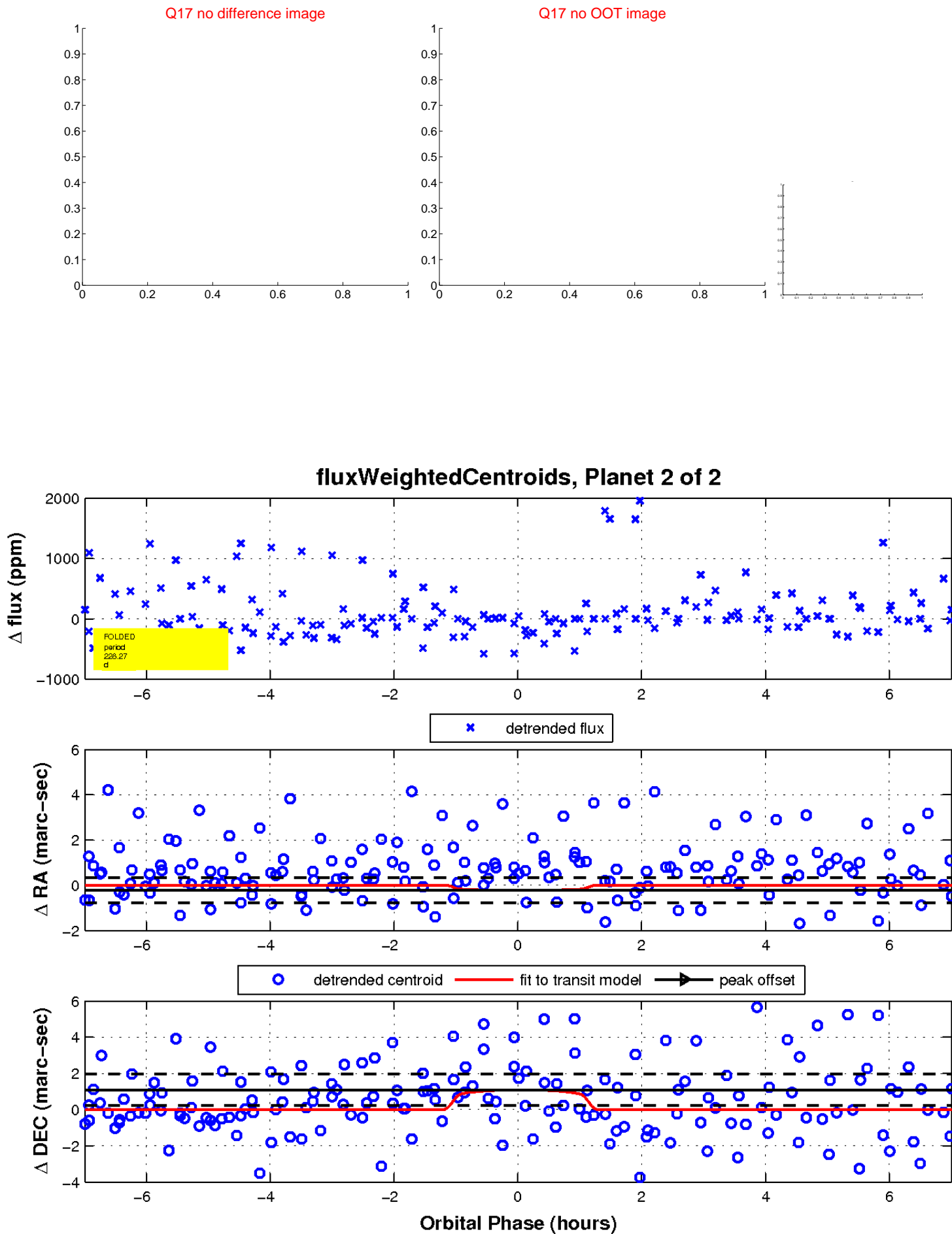
Q15 no difference image

Q15 no OOT image

Q16 no difference image

Q16 no OOT image

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



UKIRT Image

Declination

