

KIC 007742408

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})
007742408-01	OBS	3478.01	33.496944	163.759187	168.4	4.693	12.1	13.8	1.69	4928	2.96	37.37
007742408-02	OBS	No	321.549018	350.784017	439.5	3.906	8.1	8.1	1.69	4928	3.67	1.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007742408-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007742408-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

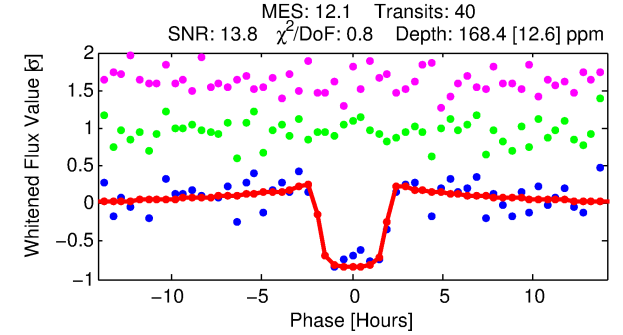
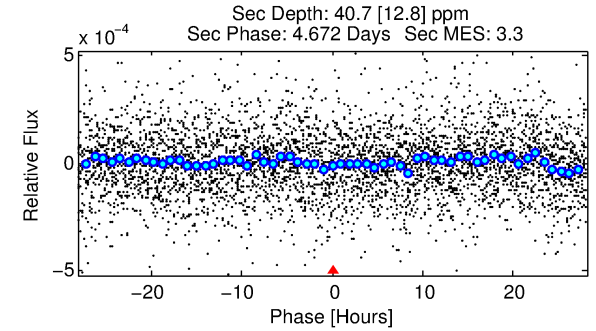
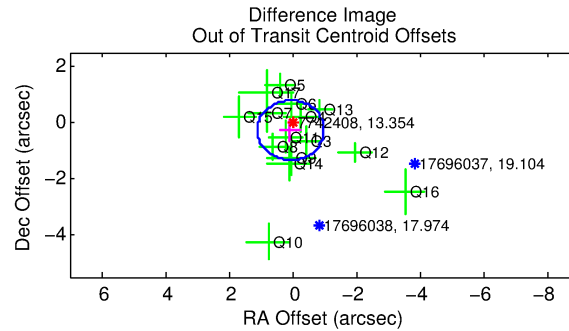
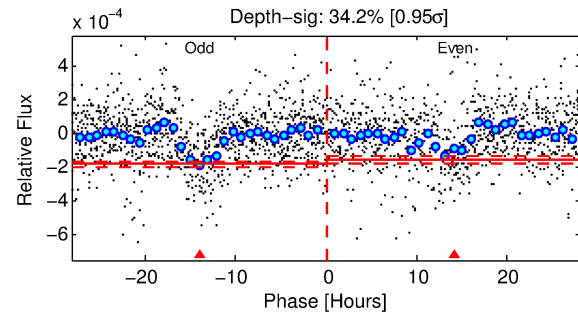
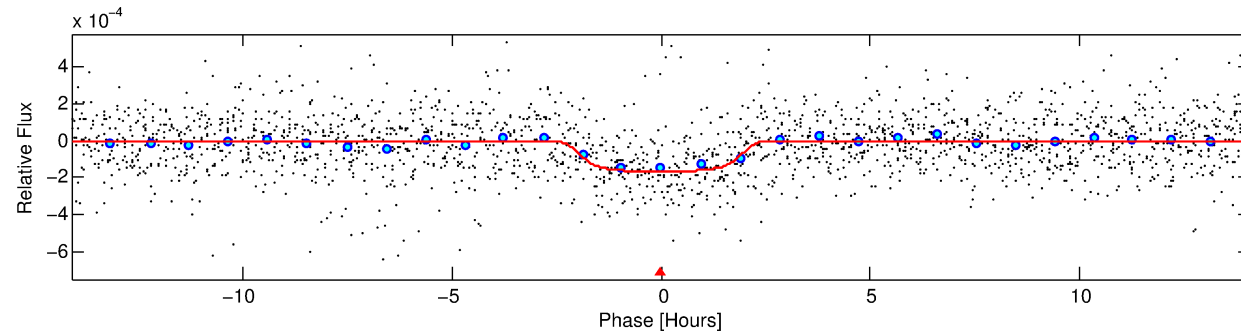
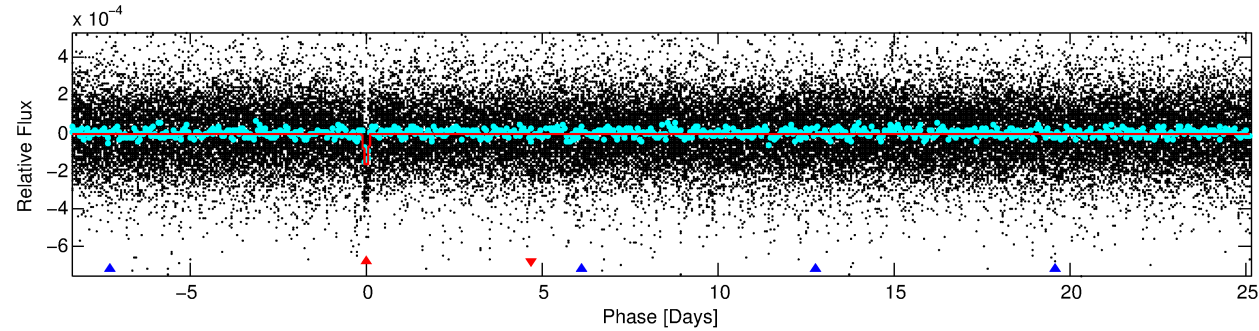
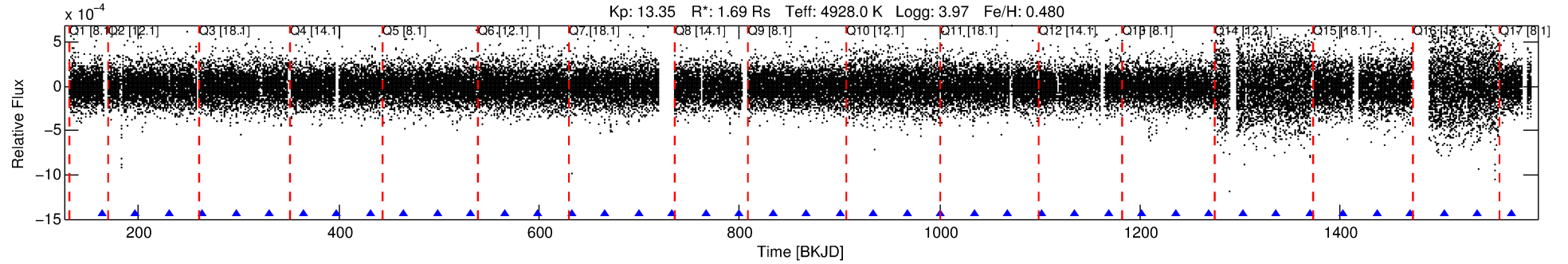
Ephemeris Match Information For 007742408-01

No Significant Match Found

DV One-Page Summary

KIC: 7742408 Candidate: 1 of 2 Period: 33.497 d

KOI: K03478.01 Corr: 0.927



DV Fit Results:

Period = 33.49694 [0.00025] d
Epoch = 163.7592 [0.0058] BKJD
Rp/R* = 0.0161 [0.0014]
a/R* = 18.60 [5.67]
b = 0.96 [0.03]
Seff = 37.37 [37.22]
Teq = 630 [157] K
Rp = 2.96 [1.65] Re
a = 0.2007 [0.1181] AU
Ag = 102.86 [108.16] [0.94σ]
Teffp = 3104 [293] K [7.44σ]

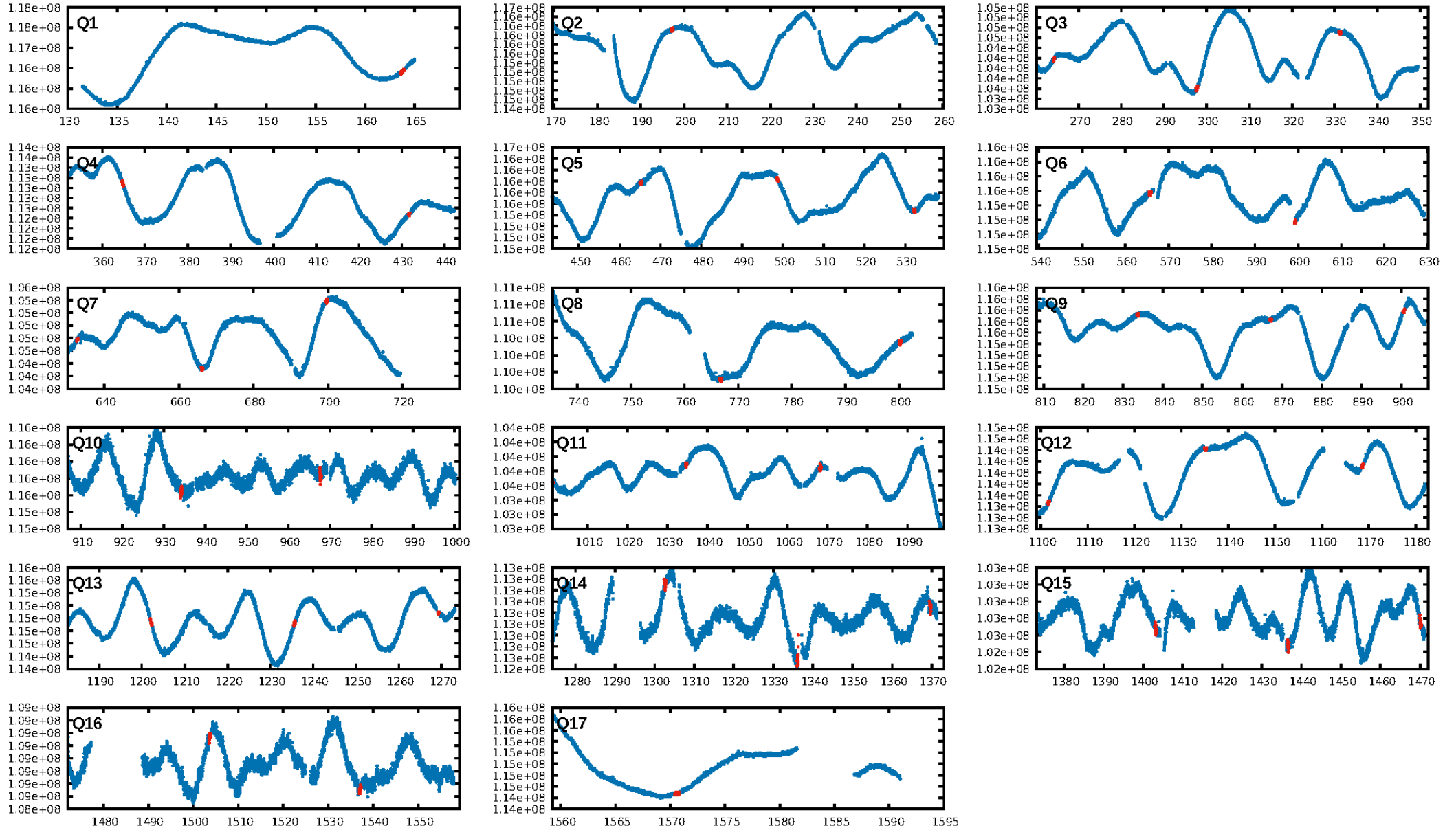
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1132.22σ]
ModelChiSquare2-sig: 93.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.88e-32
RollingBand-fgt: 1.00 [38/38]
GhostDiagnostic-chr: 5.351
Centroid-sig: 0.0%
Centroid-so: 1.785 arcsec [2.50σ]
OotOffset-rm: 0.282 arcsec [0.80σ]
KicOffset-rm: 0.244 arcsec [0.59σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.87 [13/15]
DiffImageOverlap-fno: 1.00 [17/17]

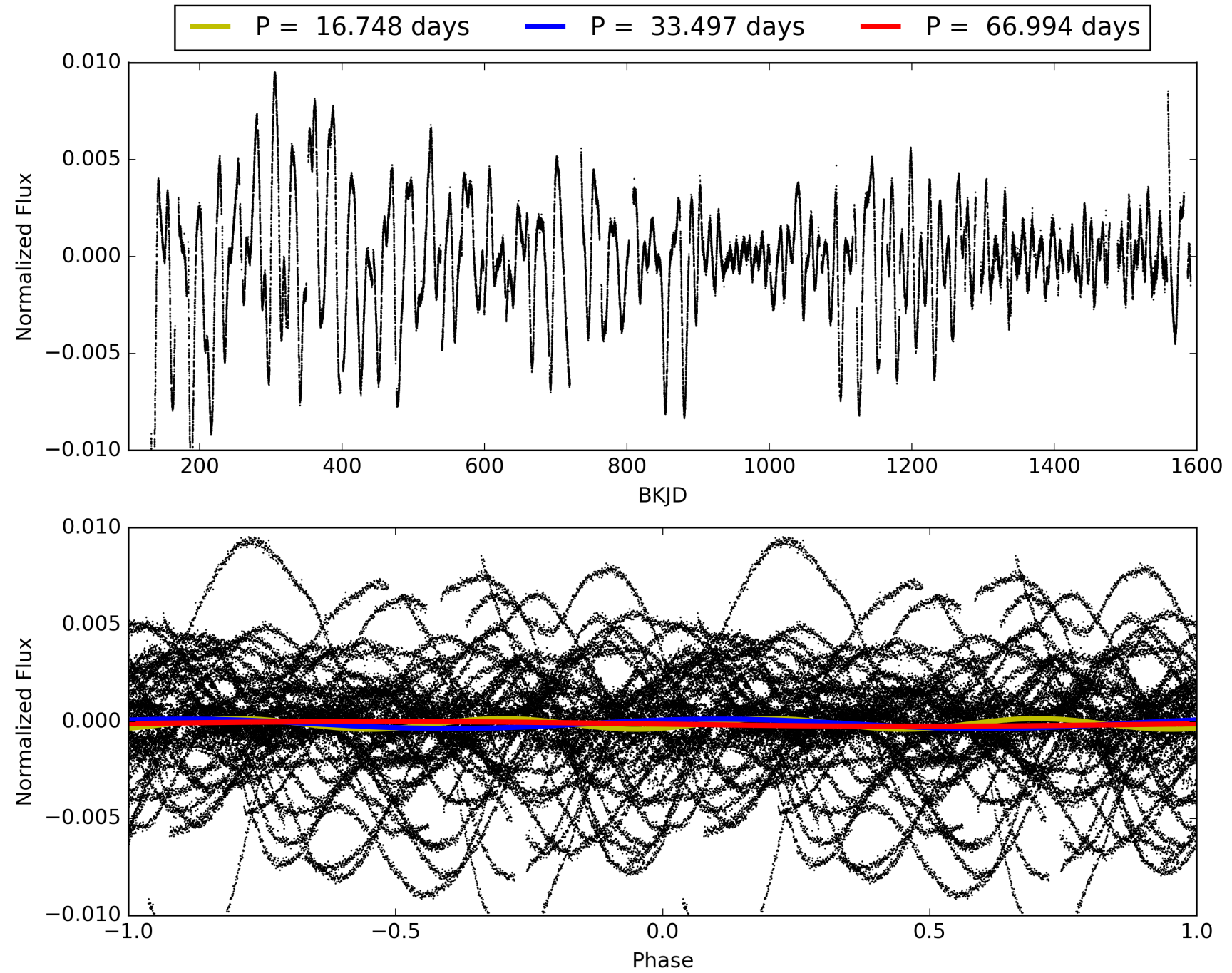
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:48:12 Z

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

TCE 007742408-01, PDC Light Curves

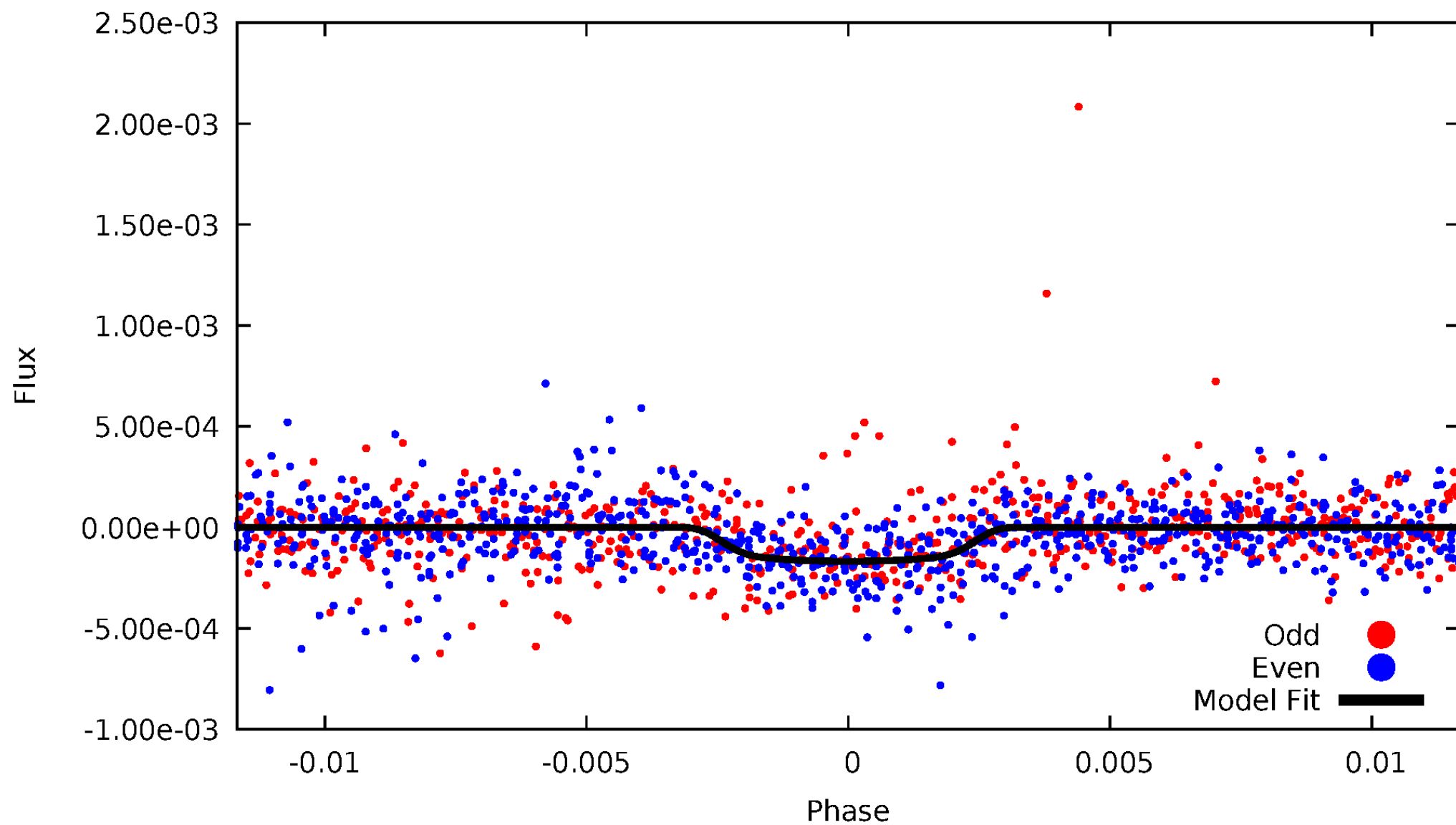


TCE 007742408-01



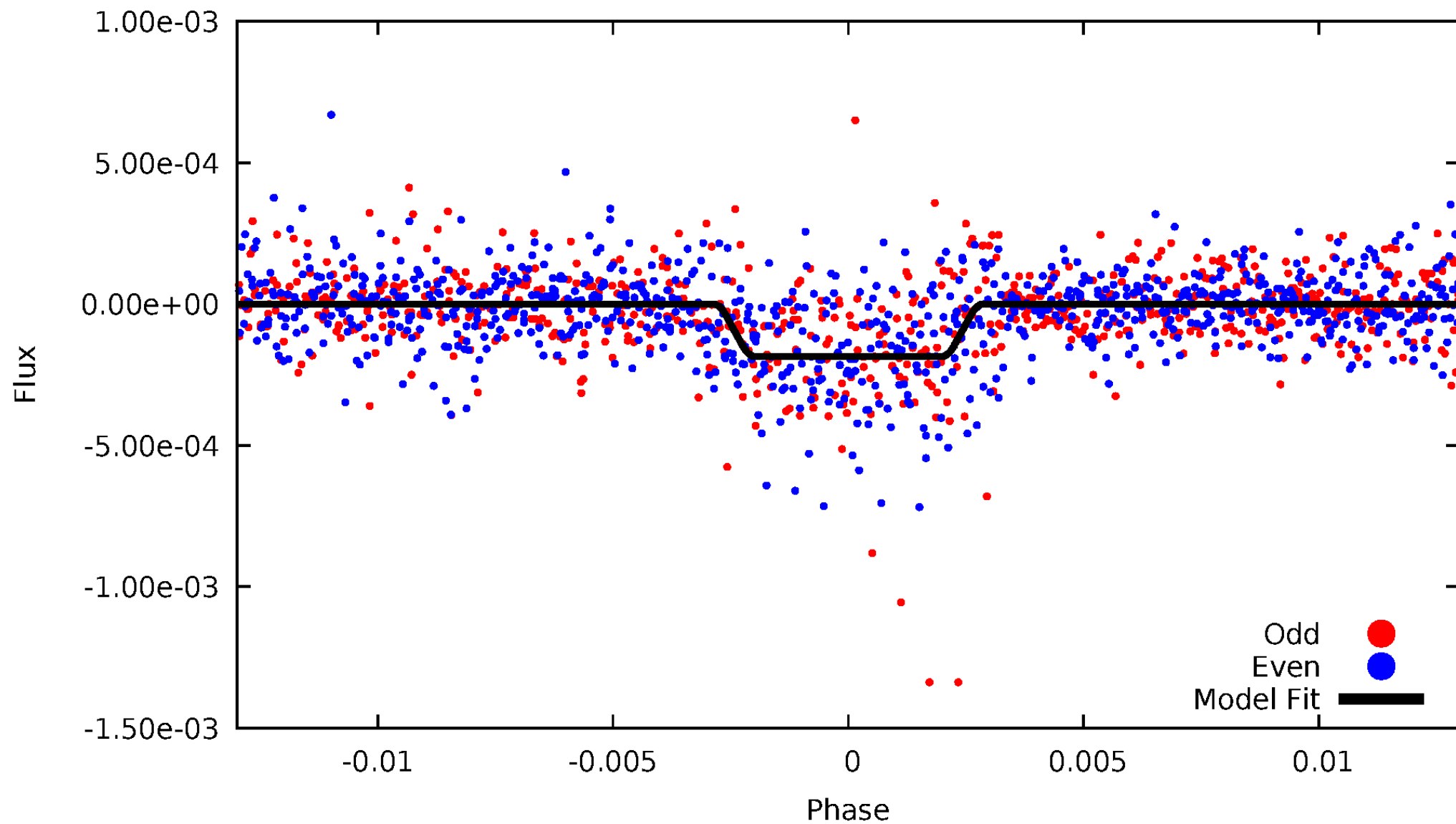
DV Odd/Even

TCE 007742408-01



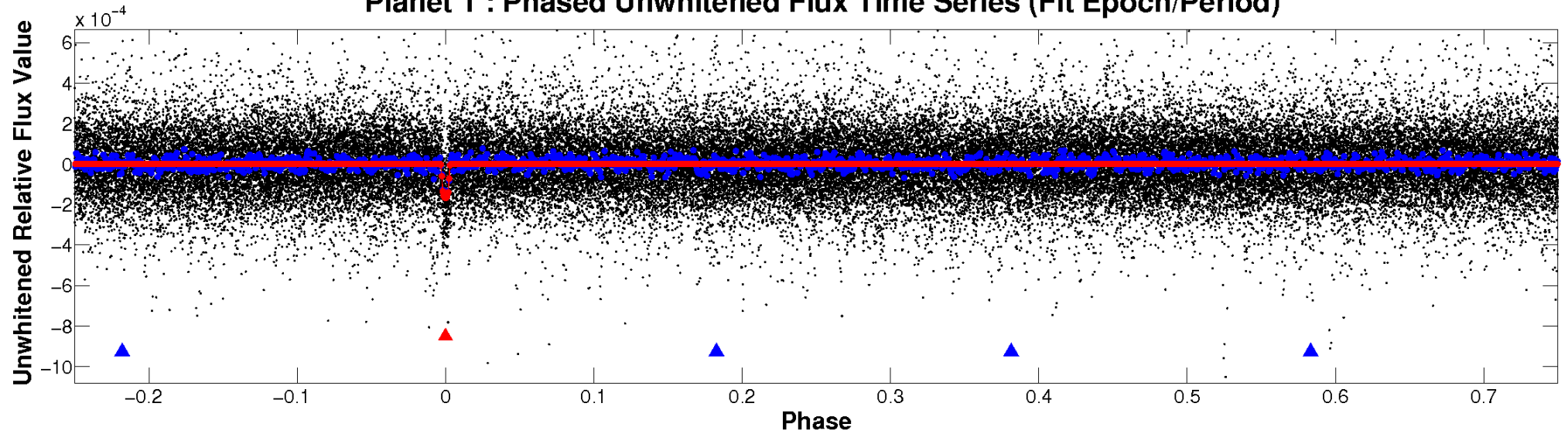
ALT Odd/Even

TCE 007742408-01

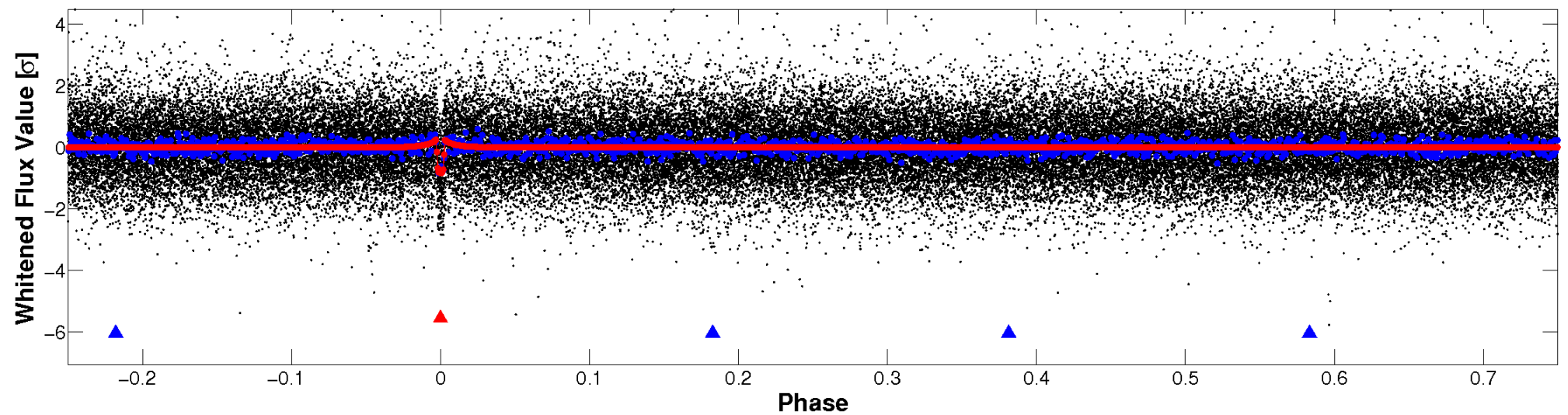


Non-Whitened Vs. Whitened Light Curve

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

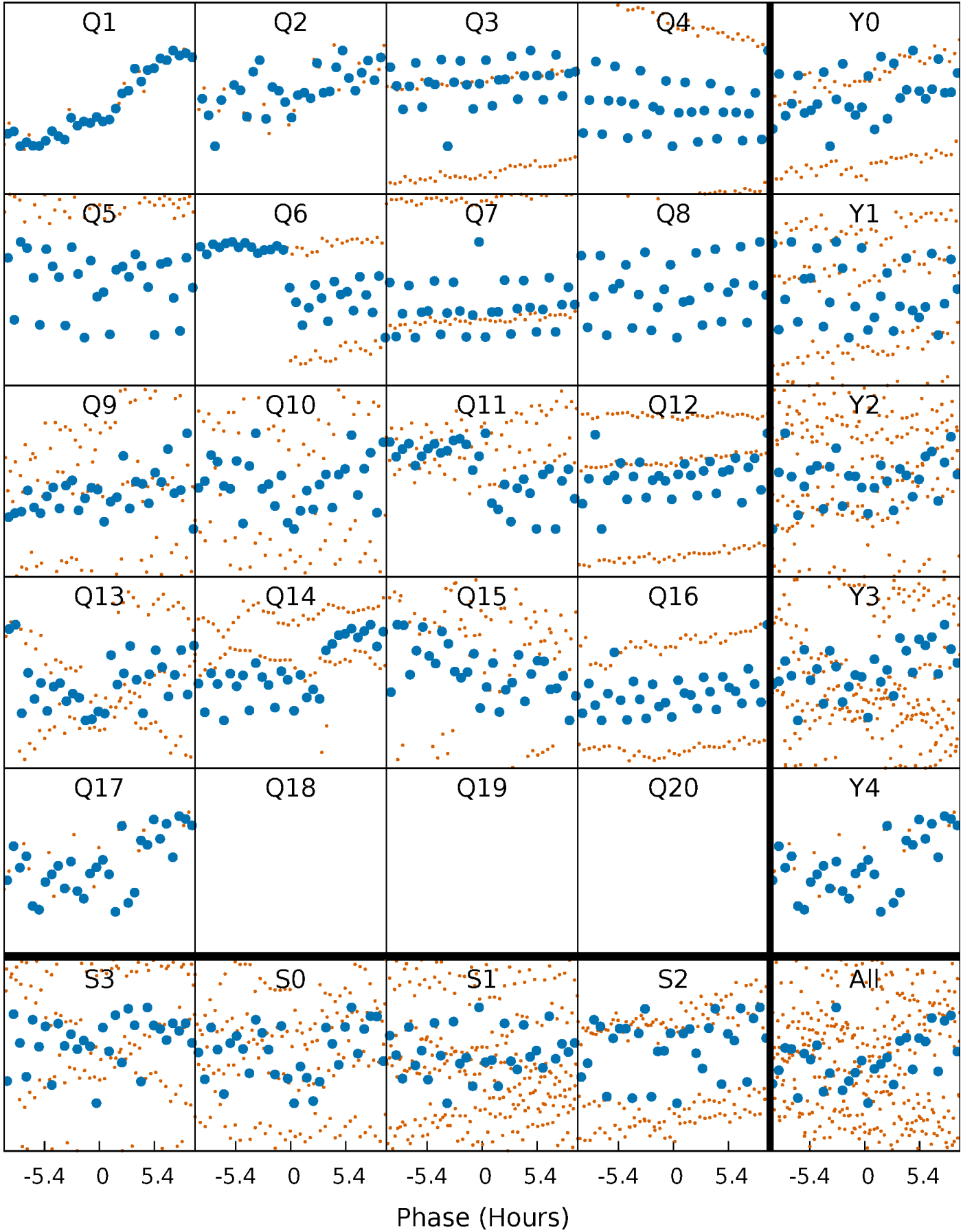


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



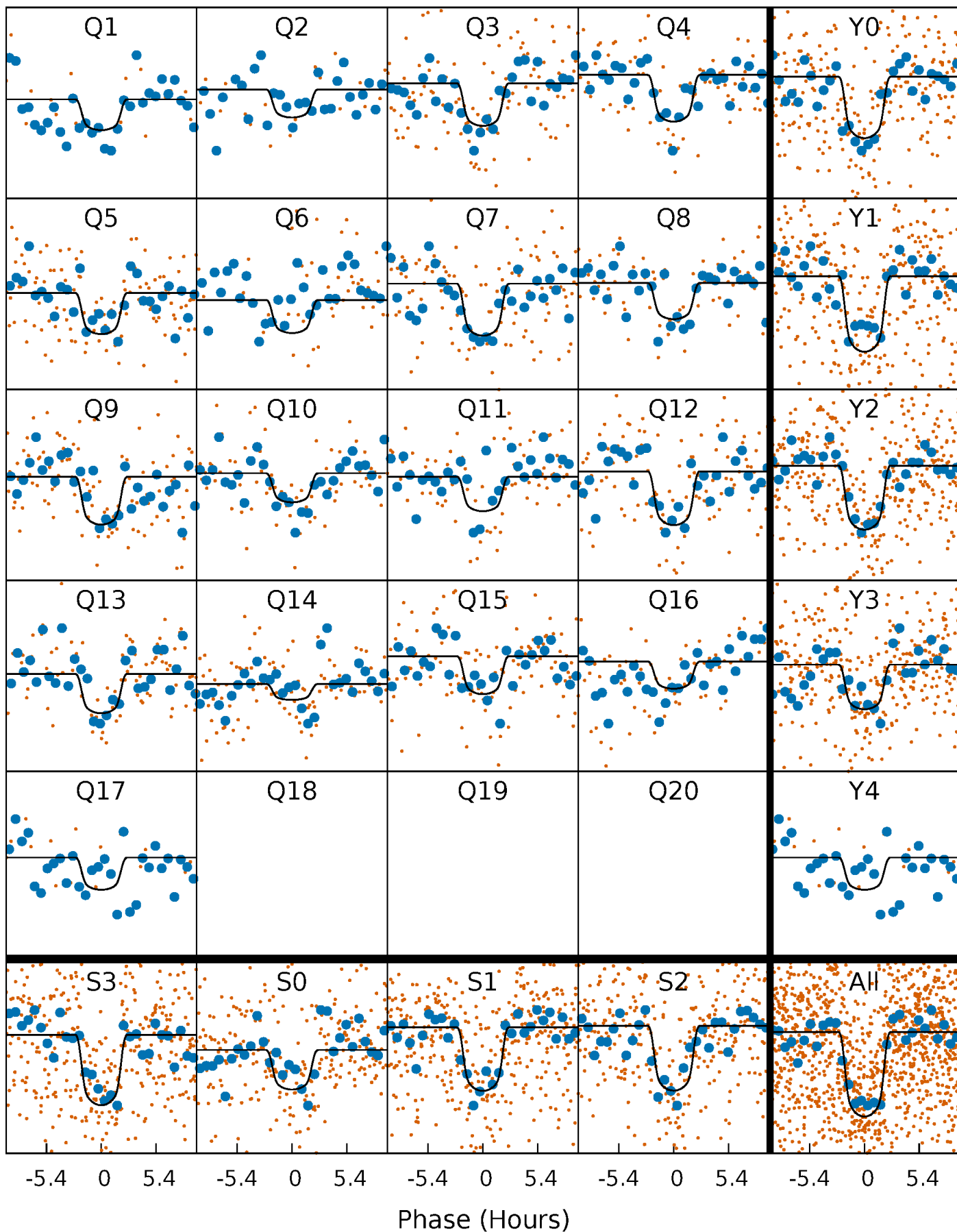
PDC Quarter-Phased Transit Curves

TCE 007742408-01 P= 33.496944 Days $T_0=163.759187$ (BKJD)



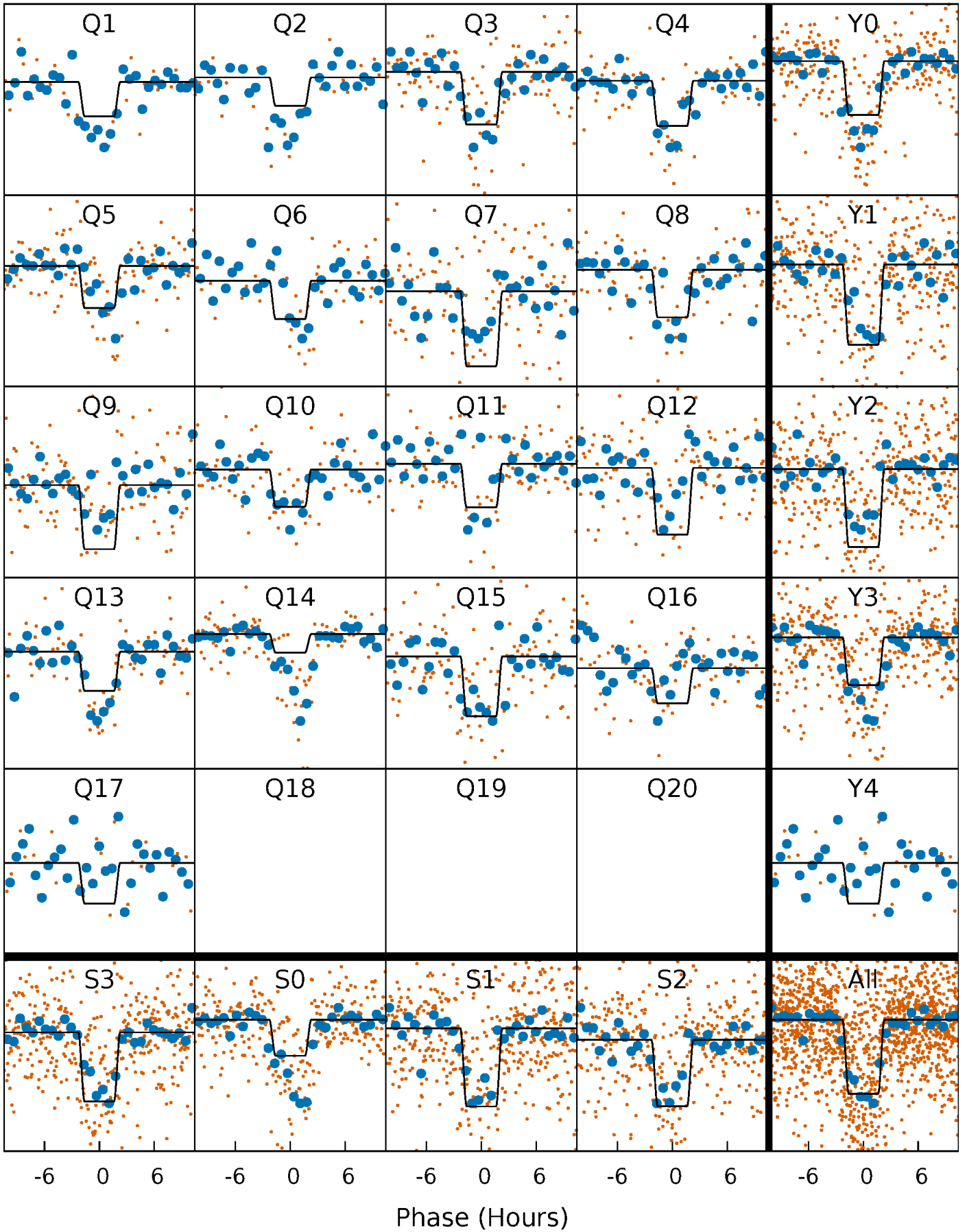
DV Quarter-Phased Transit Curves

TCE 007742408-01 P= 33.496944 Days $T_0=163.759187$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

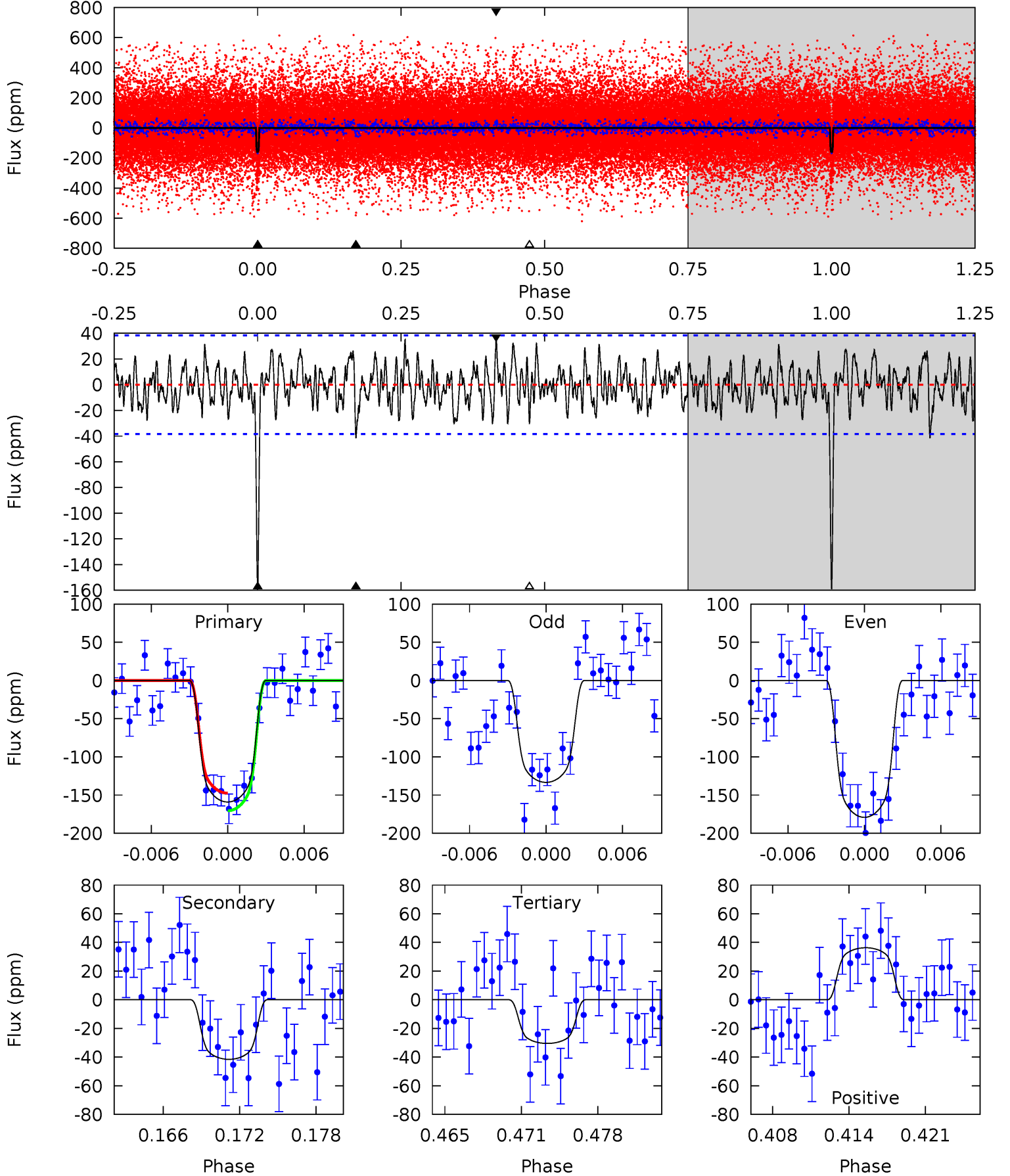
TCE 007742408-01 P= 33.497250 Days $T_0=163.756295$ (BKJD)



DV Model-Shift Uniqueness Test

007742408-01, P = 33.496944 Days, E = 130.262243 Days

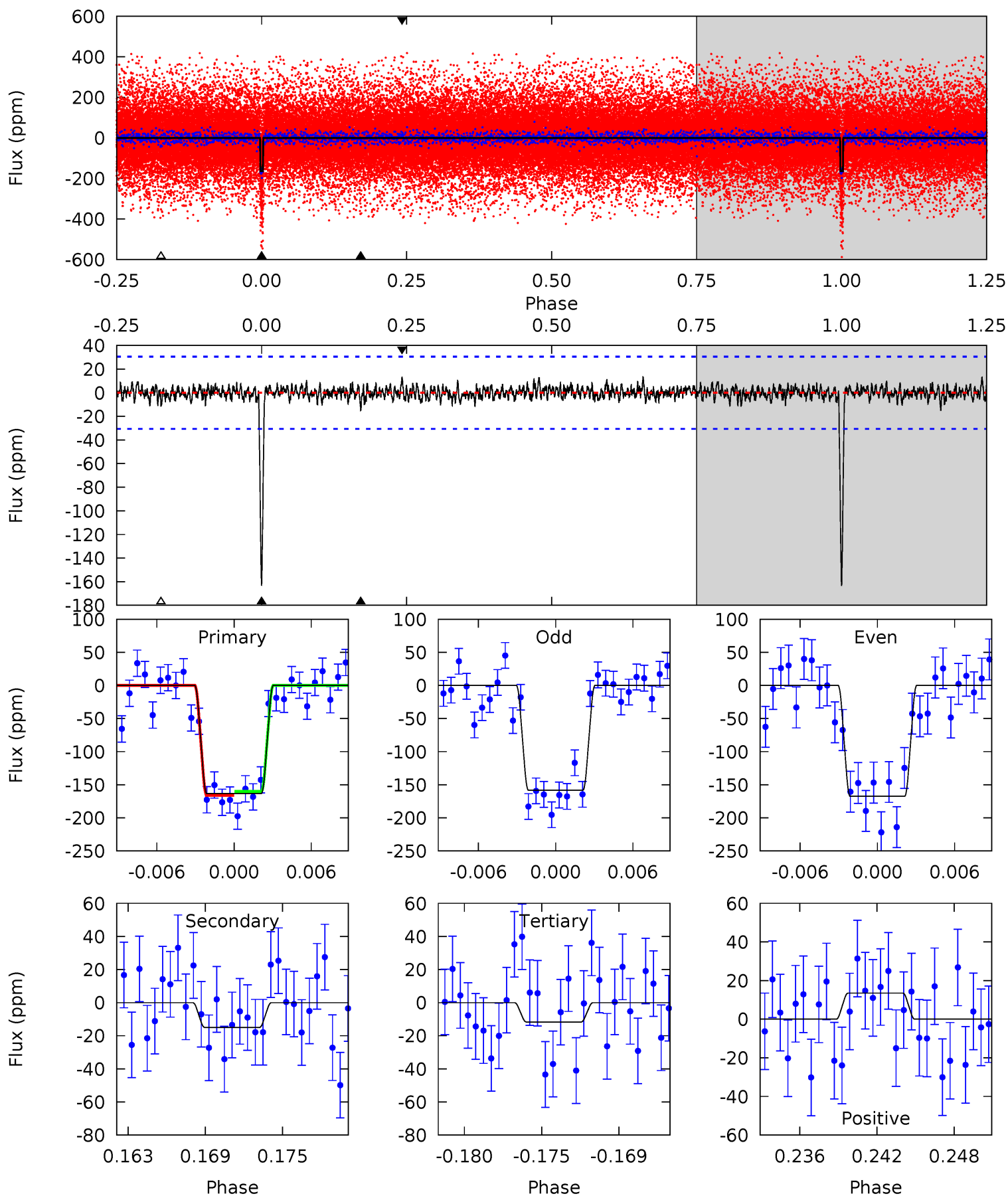
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	5.53	4.06	4.83	5.11	2.73	1.67	17.1	16.3	1.48	0.70	3.04	0.88	0.19	1.54



Alt Model-Shift Uniqueness Test

007742408-01, $P = 33.497250$ Days, $E = 130.259045$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.4	2.52	1.97	2.27	5.14	2.77	0.65	25.5	25.2	0.56	0.25	0.77	1.09	0.08	0.52



Stellar Parameters For KIC 007742408

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4928^{+148}_{-133}	$3.966^{+0.598}_{-0.322}$	$0.480^{+0.050}_{-0.300}$	$1.688^{+0.931}_{-0.838}$	$0.962^{+0.201}_{-0.146}$	$0.281^{+2.155}_{-0.194}$
	+3%/-3%	+15%/-8%	+10%/-62%	+55%/-50%	+21%/-15%	+766%/-69%
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 007742408-01 / KOI 3478.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-42 ± 8	$2.83^{+0.96}_{-0.81}$	864^{+129}_{-134}	3530^{+159}_{-165}	111^{+118}_{-48}
Alt.	-15 ± 6	$2.46^{+0.83}_{-0.71}$	876^{+127}_{-126}	3174^{+223}_{-234}	54^{+63}_{-28}

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

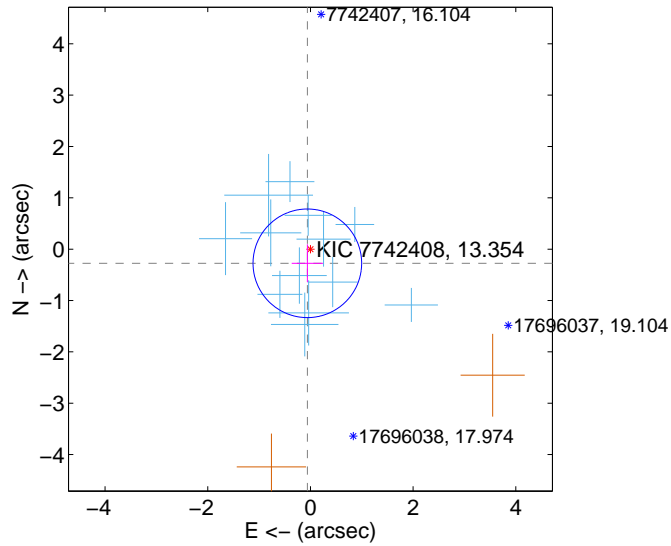
Supplemental centroid analysis for 007742408-01. Kepler magnitude: 13.35. Transit SNR 13.83

There are 13 quarters with good PRF difference image offsets

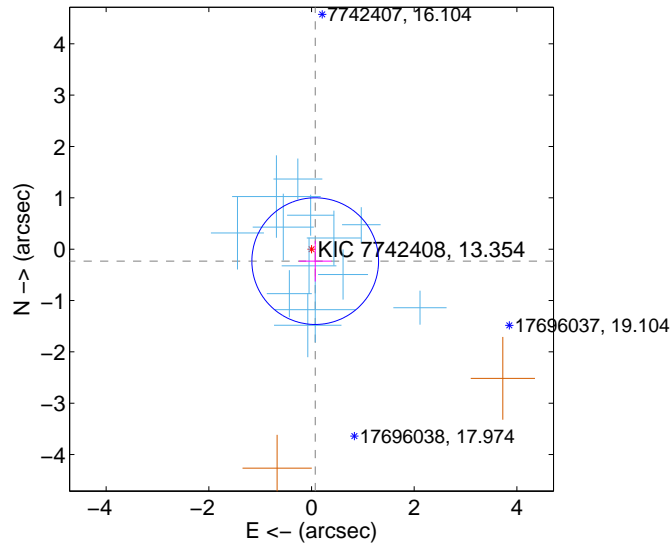
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.282 ± 0.352	0.80	0.060 ± 0.304	-0.275 ± 0.369
PRF-fit source offset from KIC position	0.244 ± 0.411	0.59	-0.072 ± 0.316	-0.233 ± 0.398
photometric centroid source offset	1.79 ± 0.71	2.50	0.26 ± 0.65	-1.77 ± 0.72

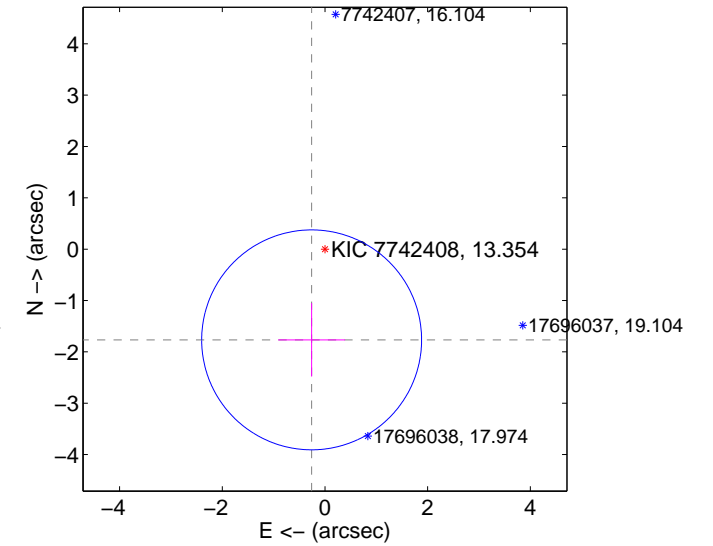
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

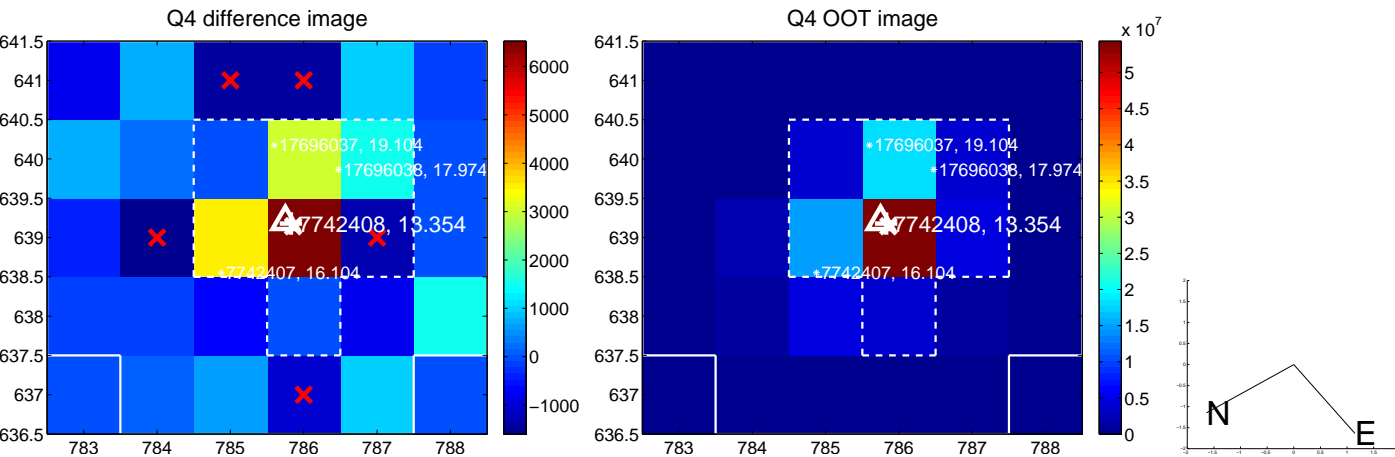
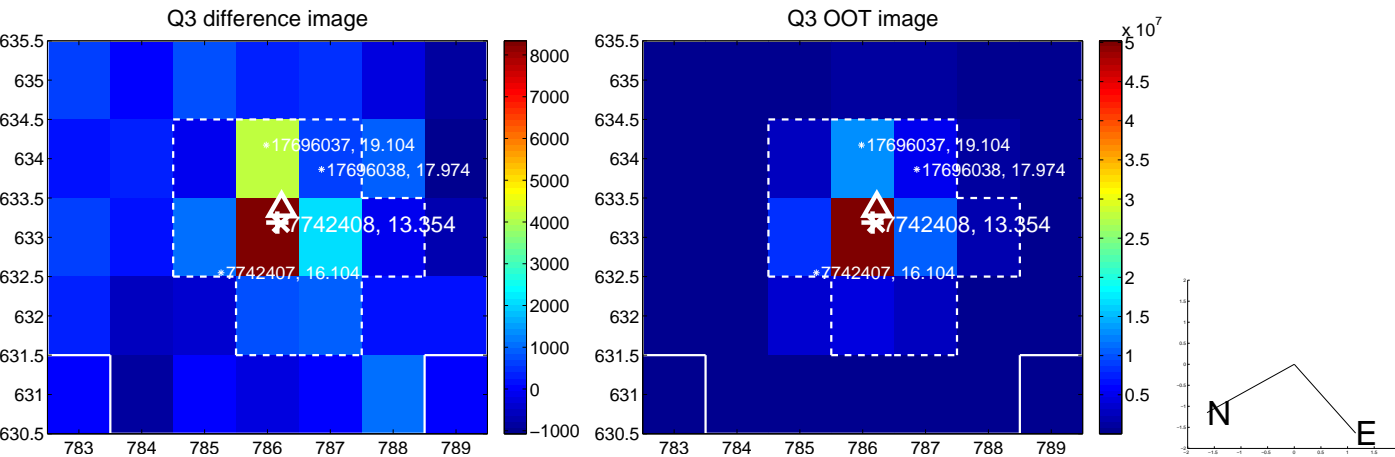
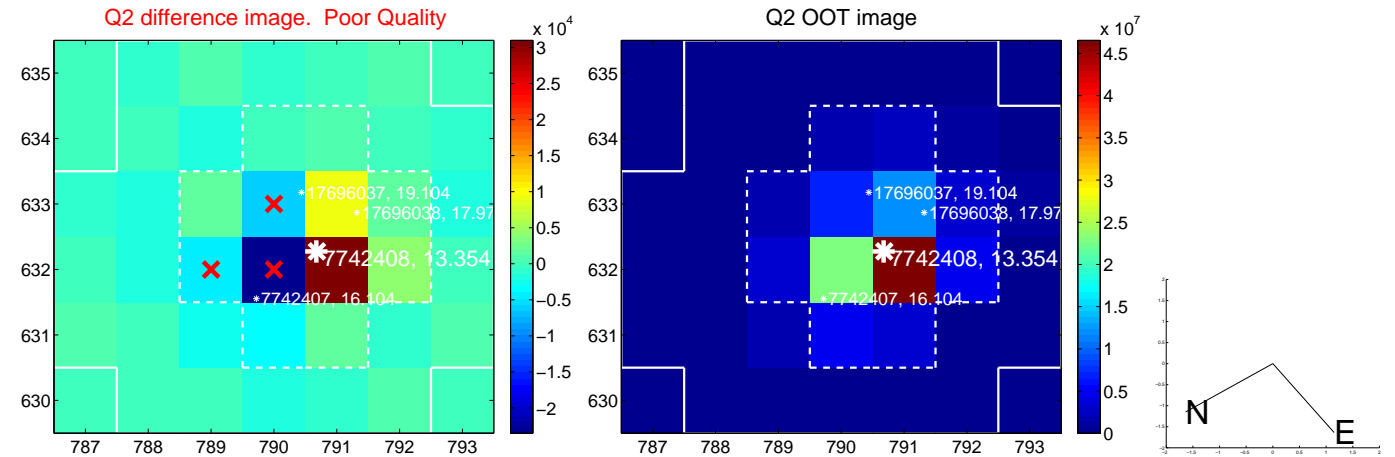
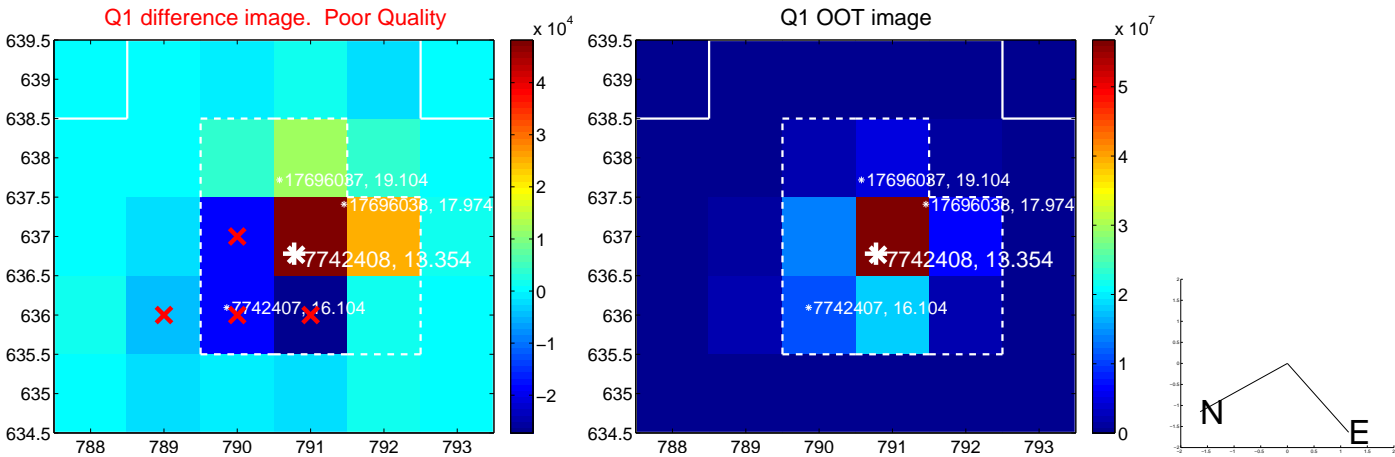


offset from photometric centroids

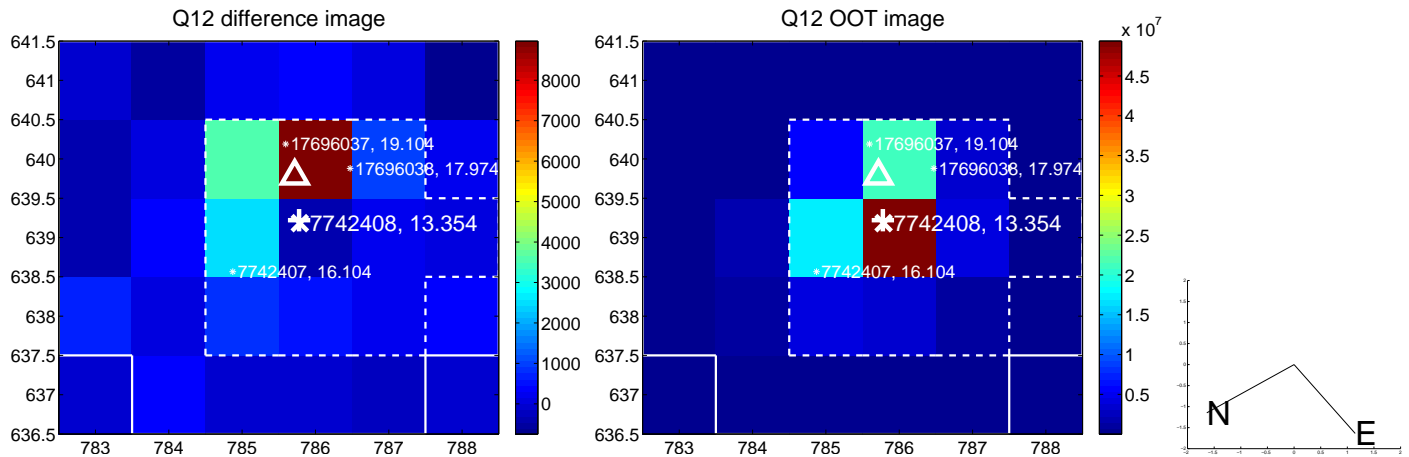
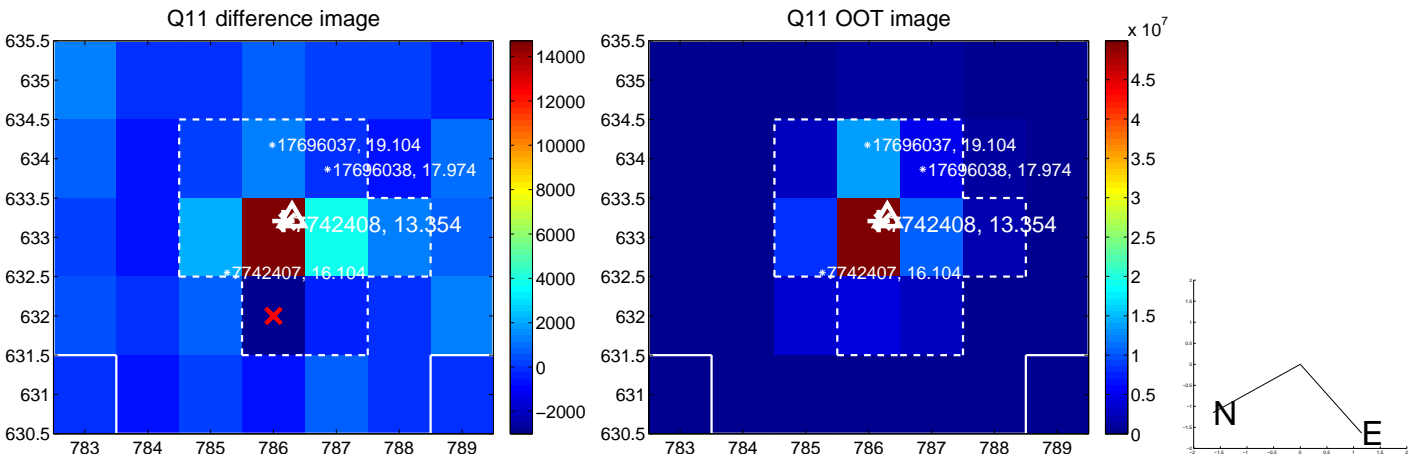
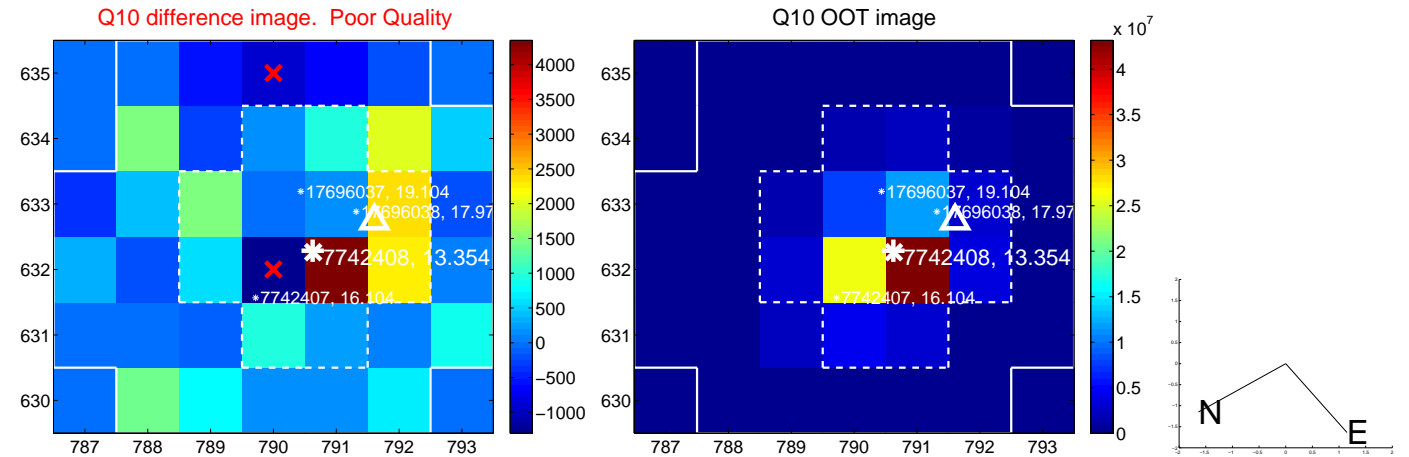
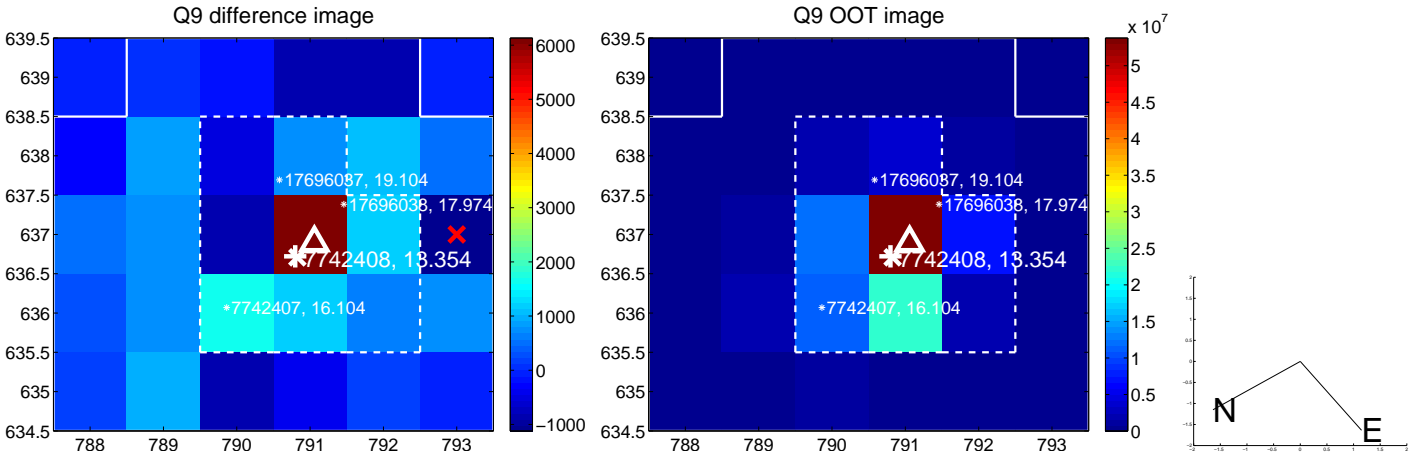


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

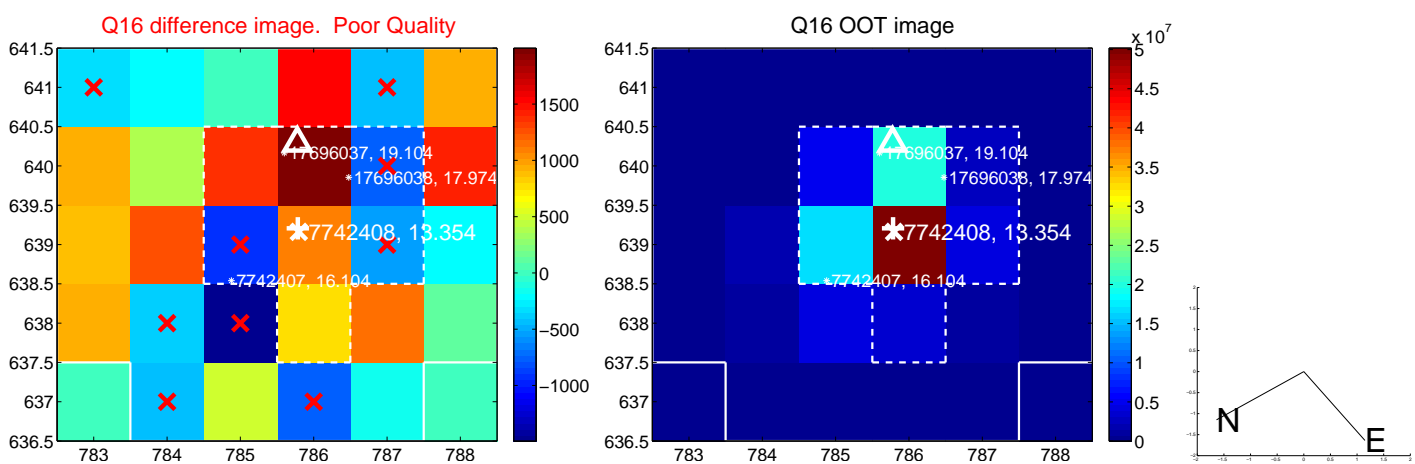
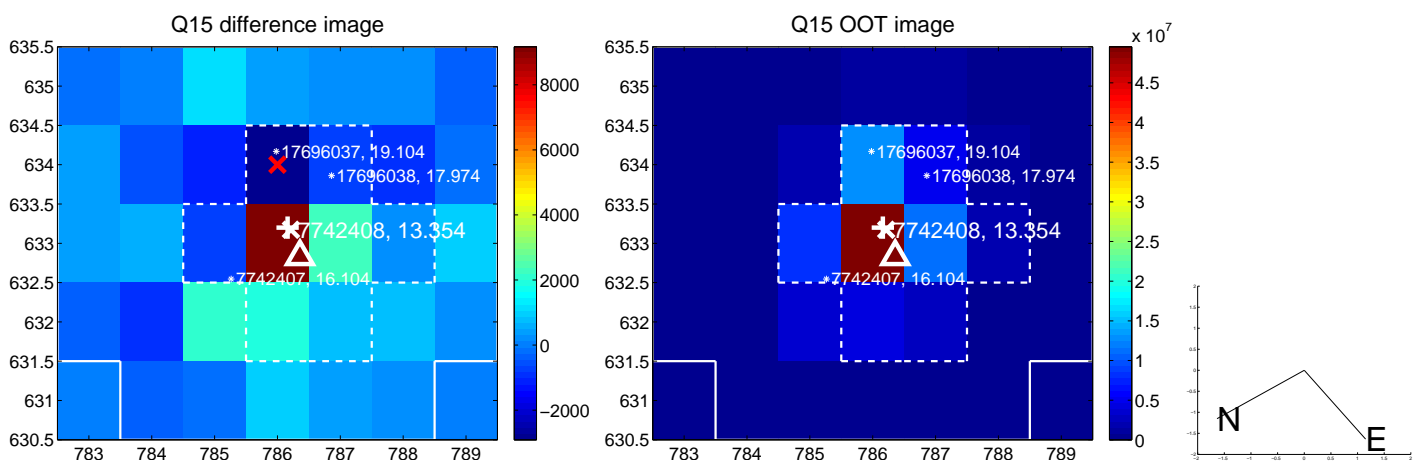
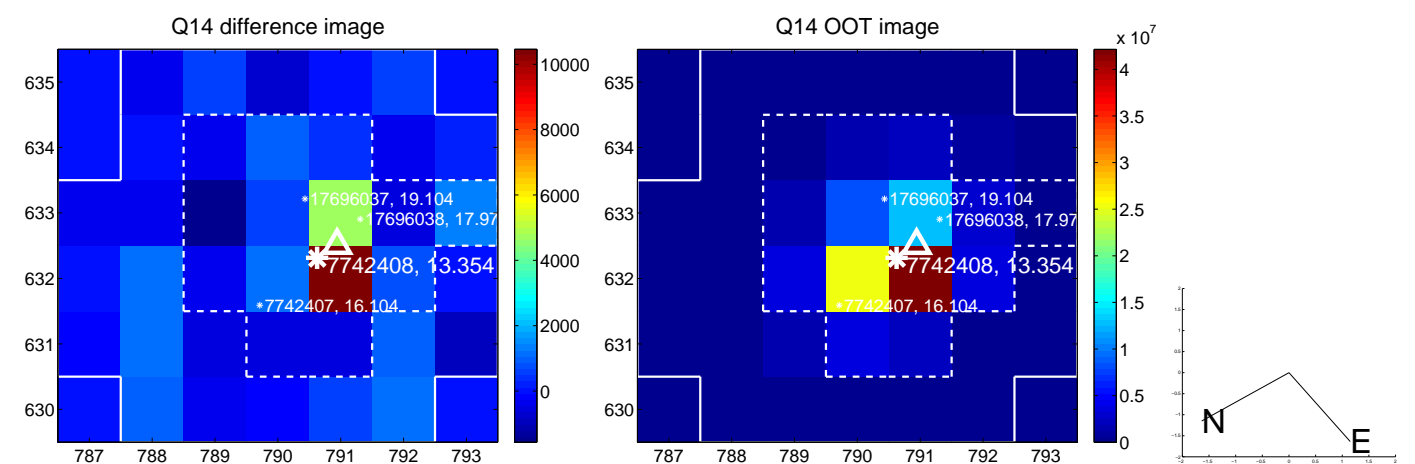
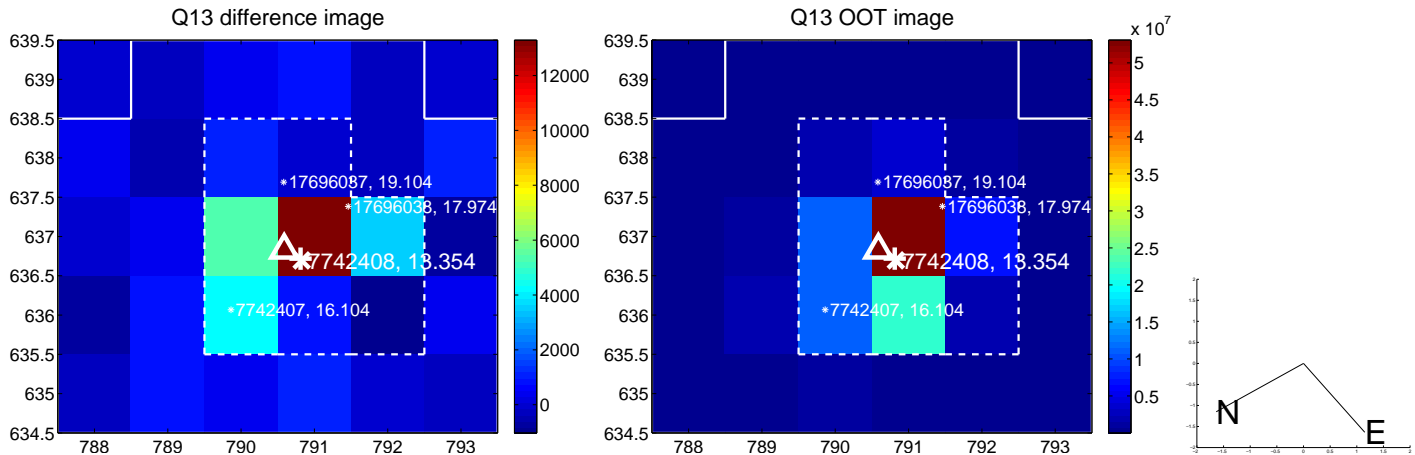
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



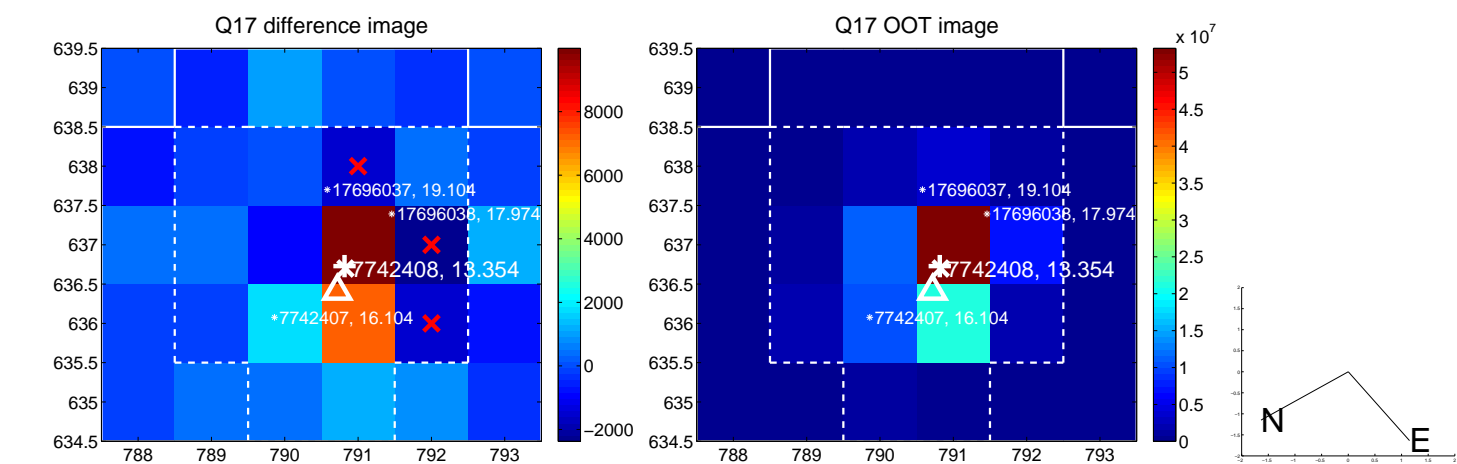
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



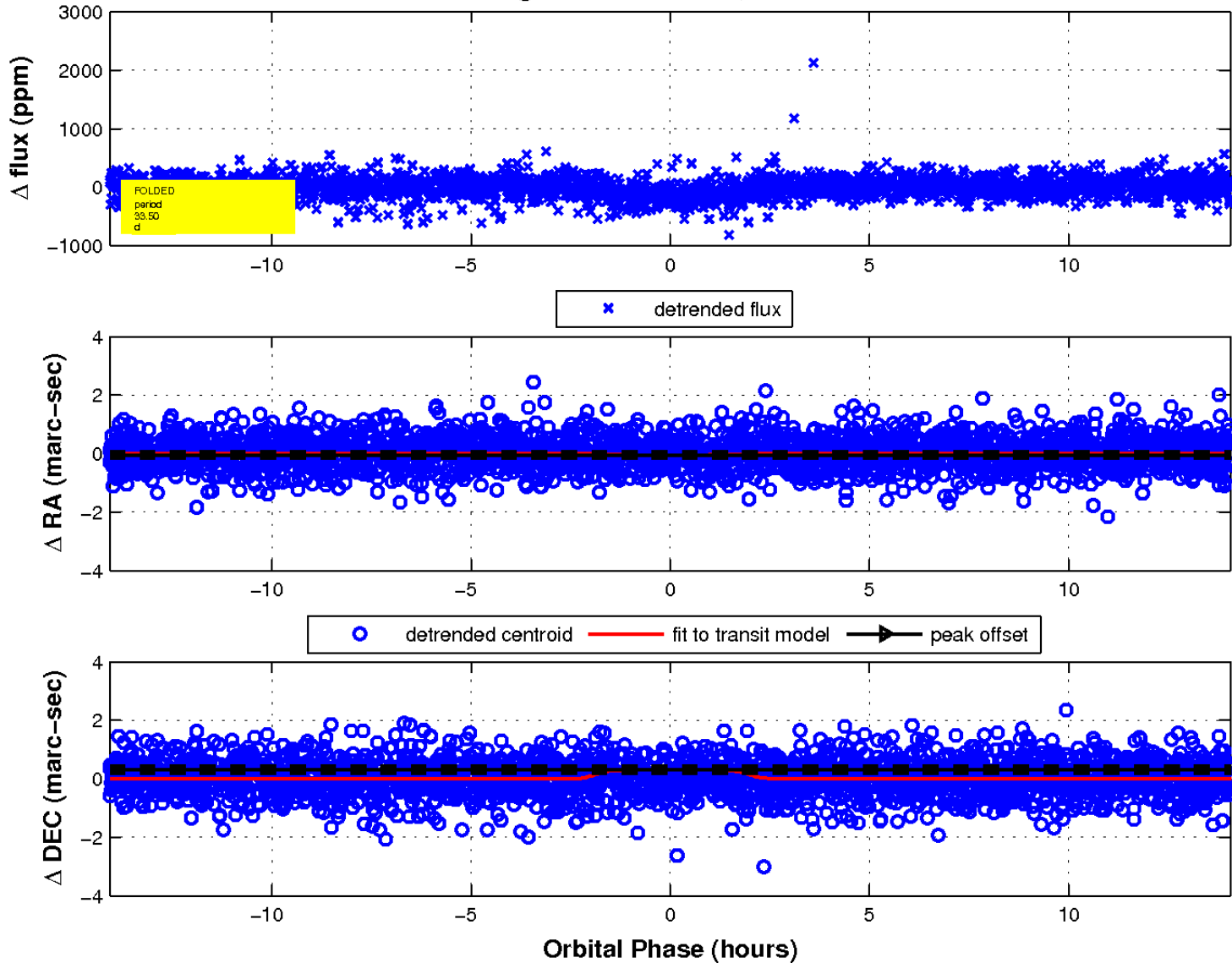
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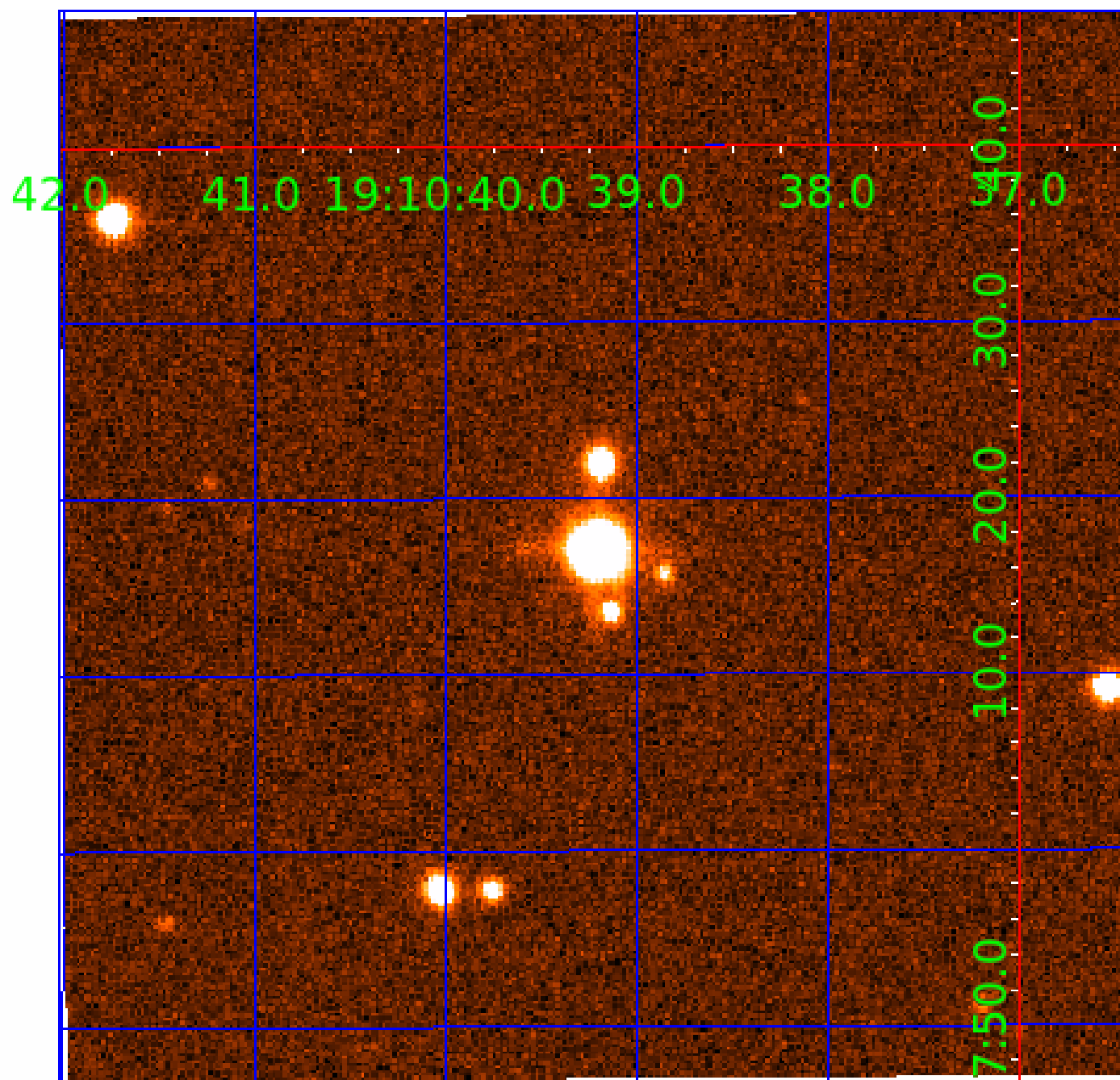


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 007742408

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007742408-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007742408-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

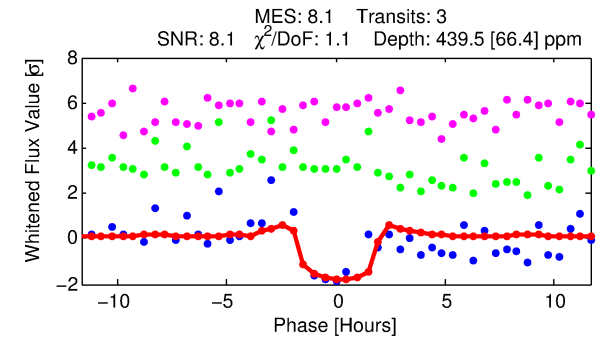
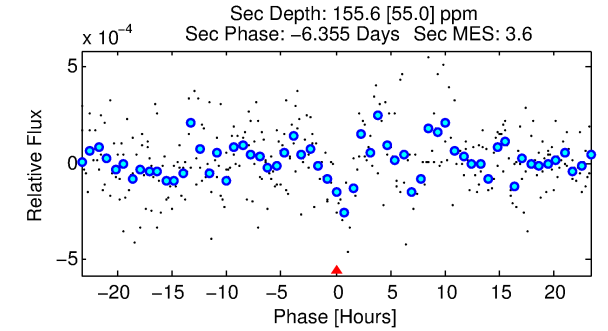
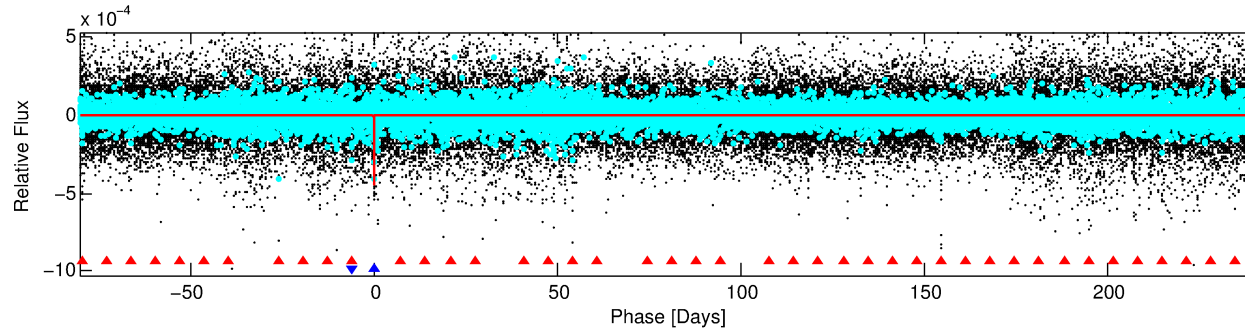
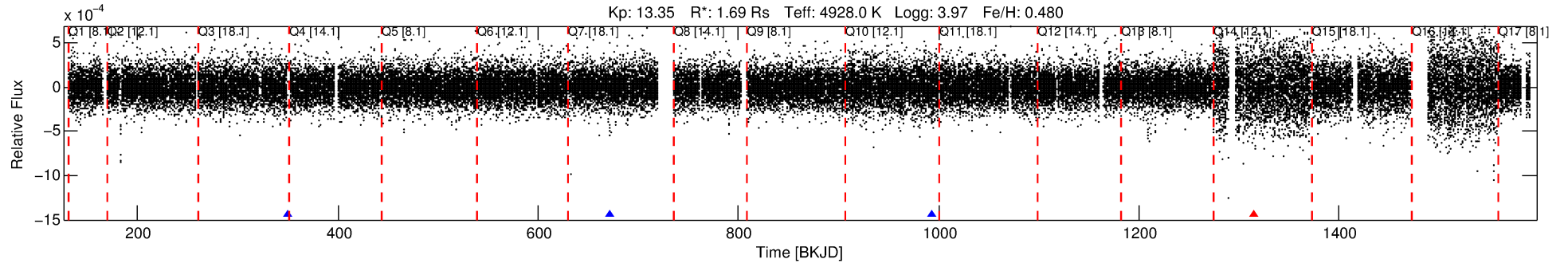
Ephemeris Match Information For 007742408-02

No Significant Match Found

DV One-Page Summary

KIC: 7742408 Candidate: 2 of 2 Period: 321.549 d

KOI: K03478 Corr: No Ephemeris Match

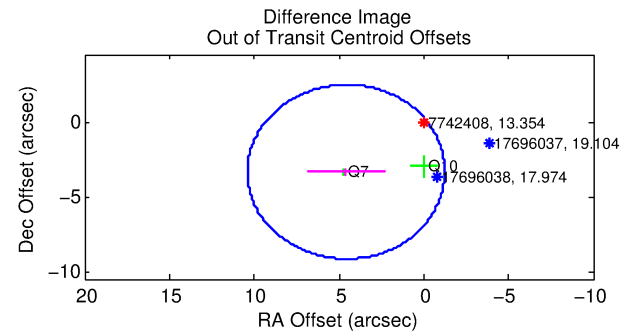
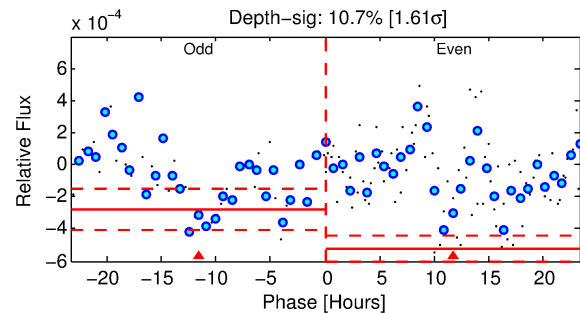
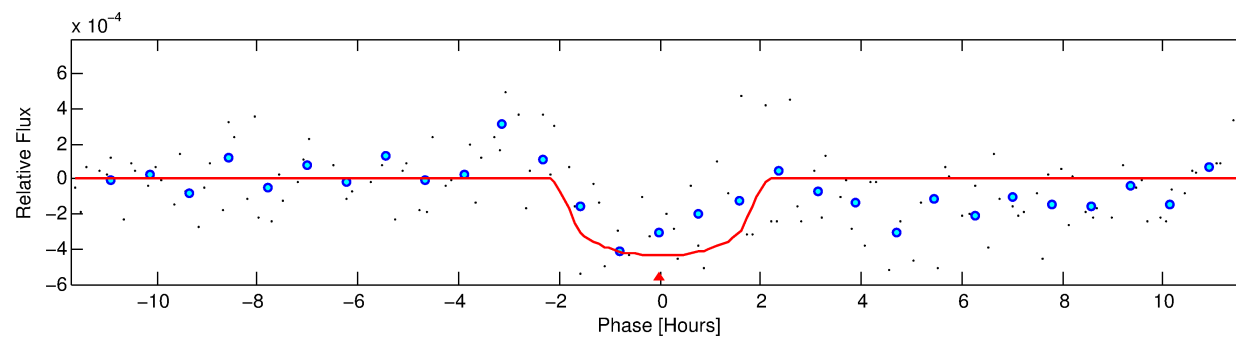


DV Fit Results:

Period = 321.54902 [0.00648] d
Epoch = 350.7840 [0.0131] BKJD
Rp/R* = 0.0199 [0.0390]
a/R* = 507.97 [3167.91]
b = 0.62 [6.30]
Seff = 1.83 [1.82]
Teq = 297 [74] K
Rp = 3.67 [7.46] Re
a = 0.9067 [0.5332] AU
Ag = 5220.12 [21129.10] [0.25σ]
Teffp = 3898 [3827] K [0.94σ]

DV Diagnostic Results:

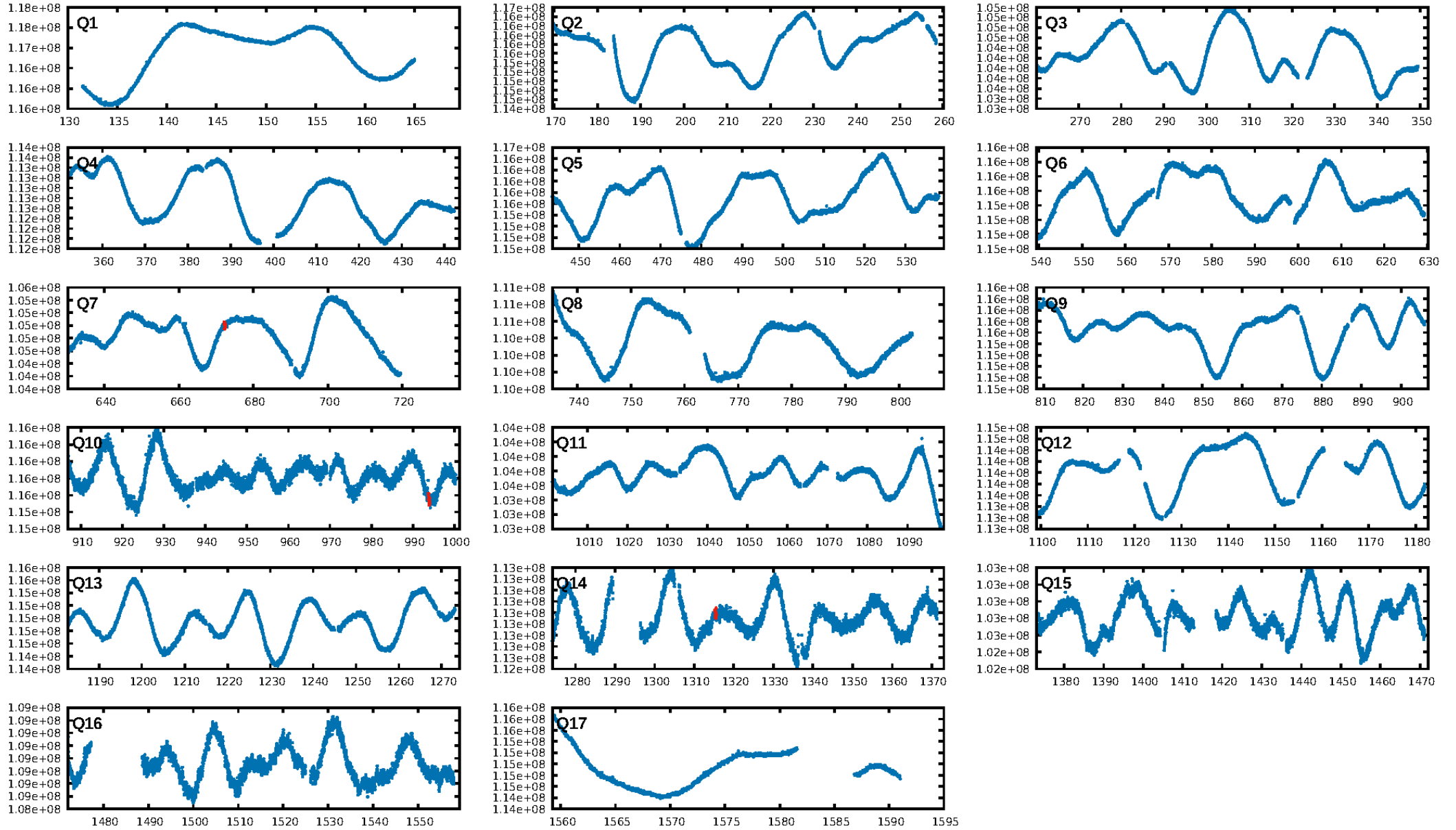
ShortPeriod-sig: 100.0% [1132.22σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 8.4%
ModelChiSquareGof-sig: 88.2%
Bootstrap-pfa: 2.91e-11
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: 0.8637
Centroid-sig: 10.8%
Centroid-so: 1.738 arcsec [1.54σ]
OotOffset-rm: 5.671 arcsec [2.92σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: **5.432 arcsec [5.62σ]**
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]



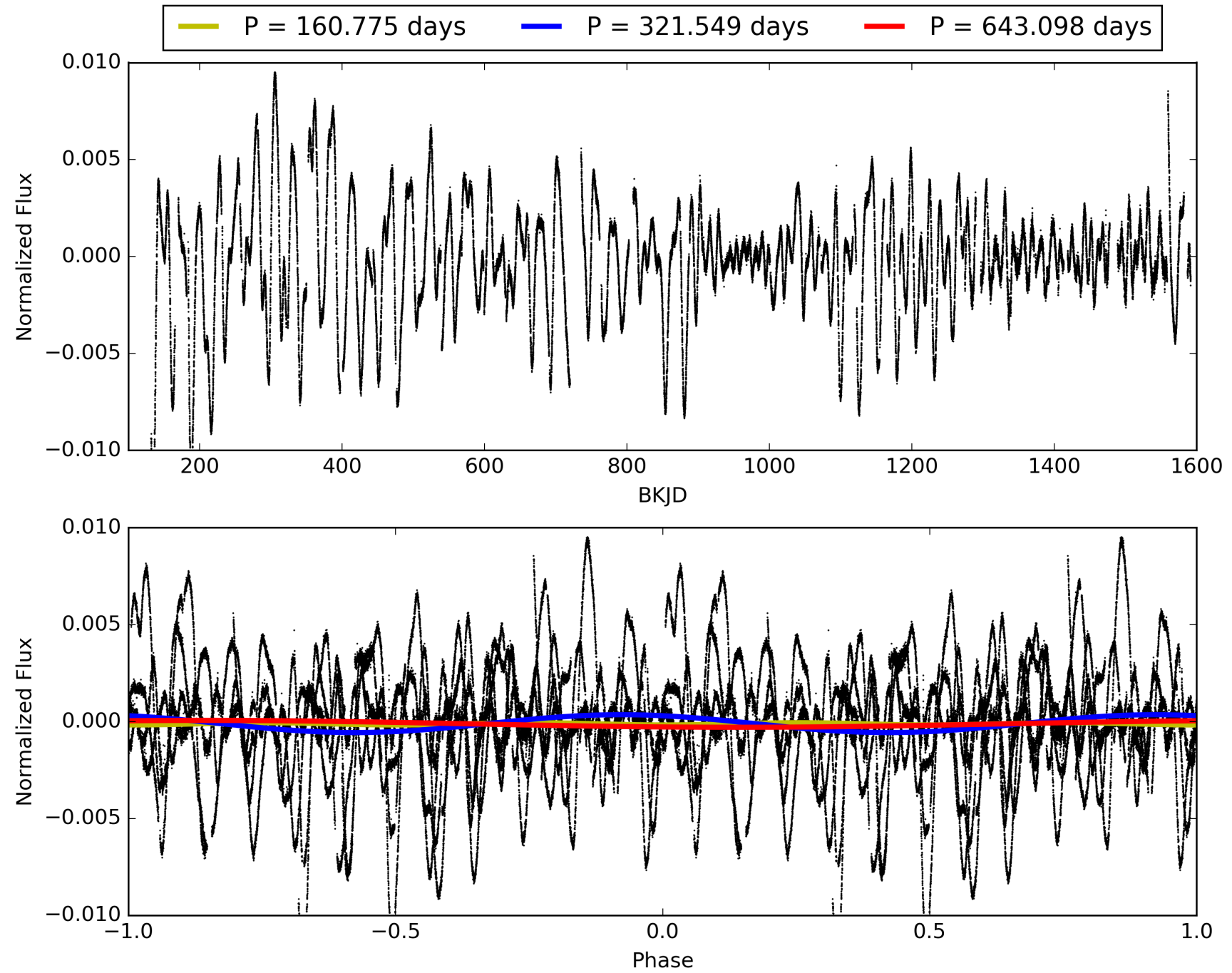
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:48:31 Z

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

TCE 007742408-02, PDC Light Curves

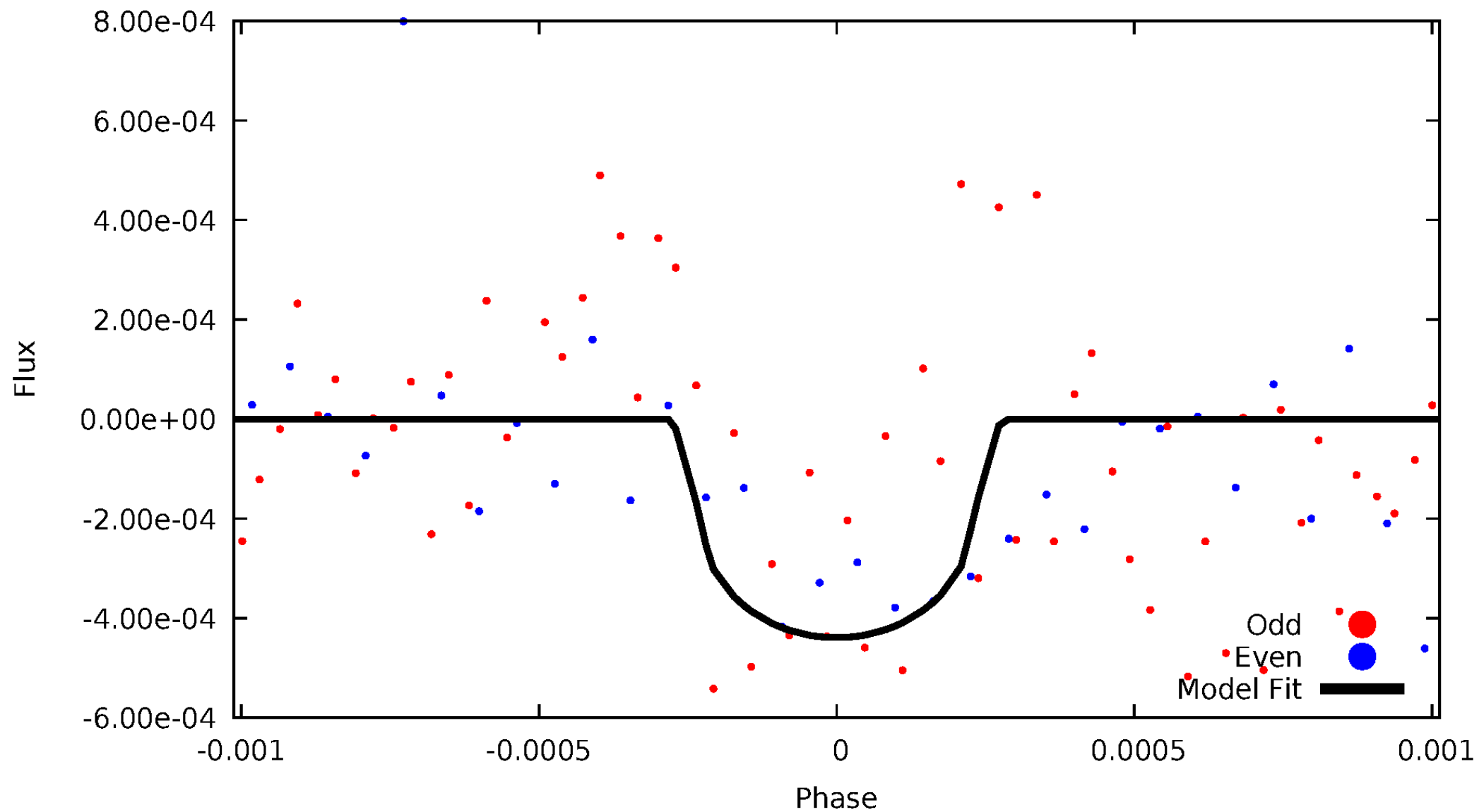


TCE 007742408-02



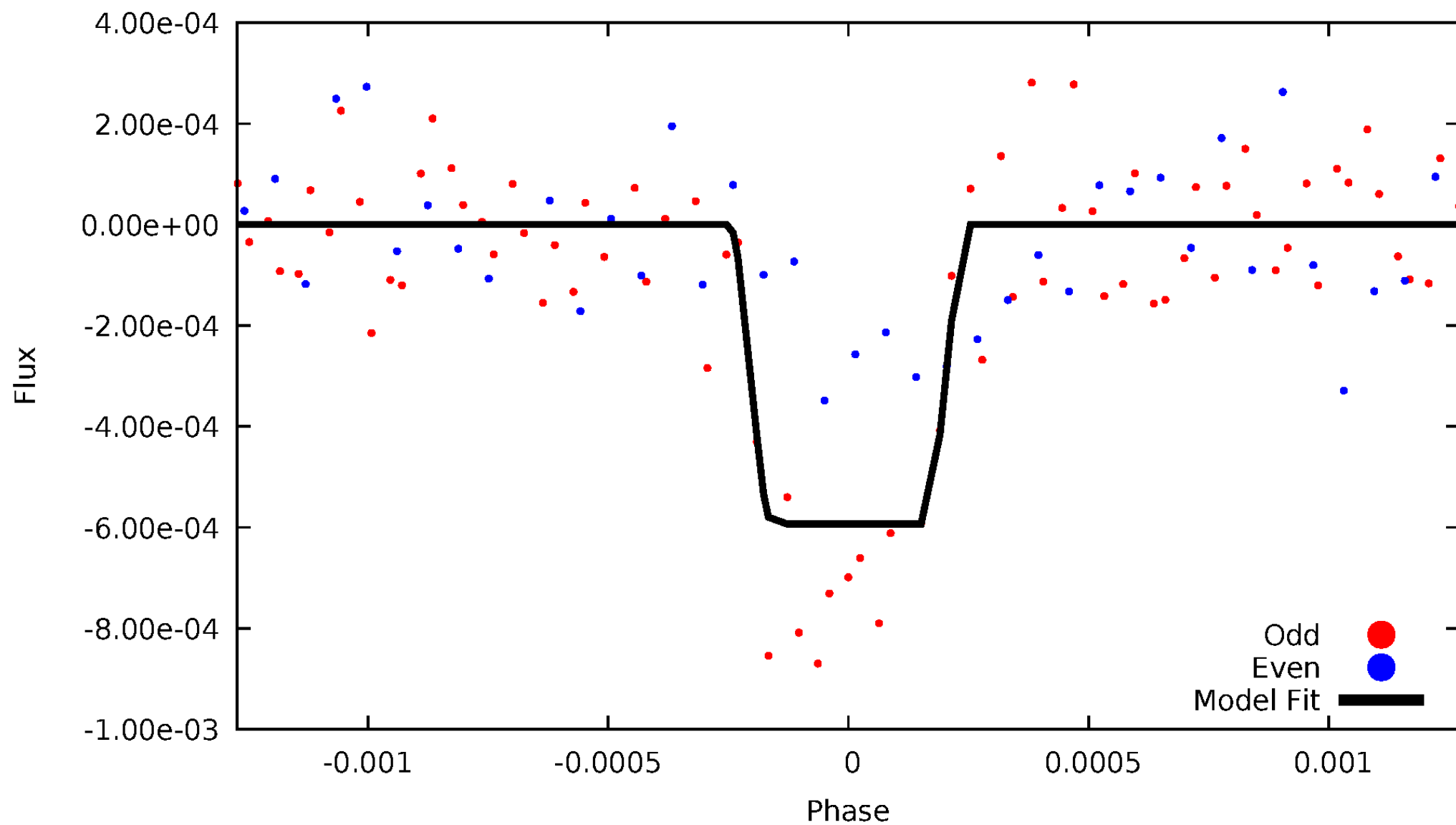
DV Odd/Even

TCE 007742408-02



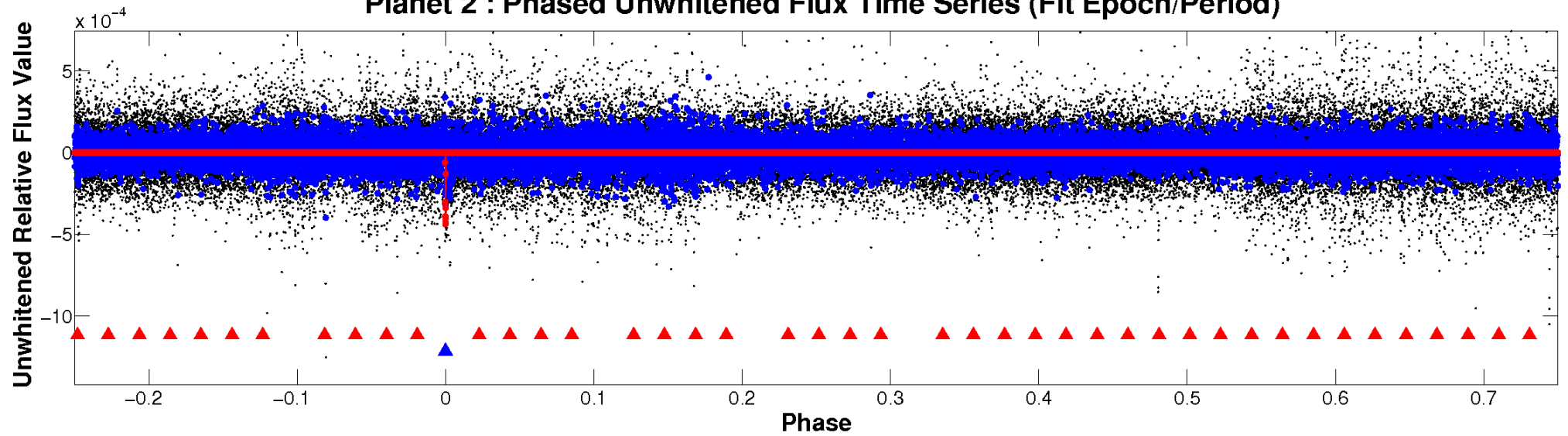
ALT Odd/Even

TCE 007742408-02

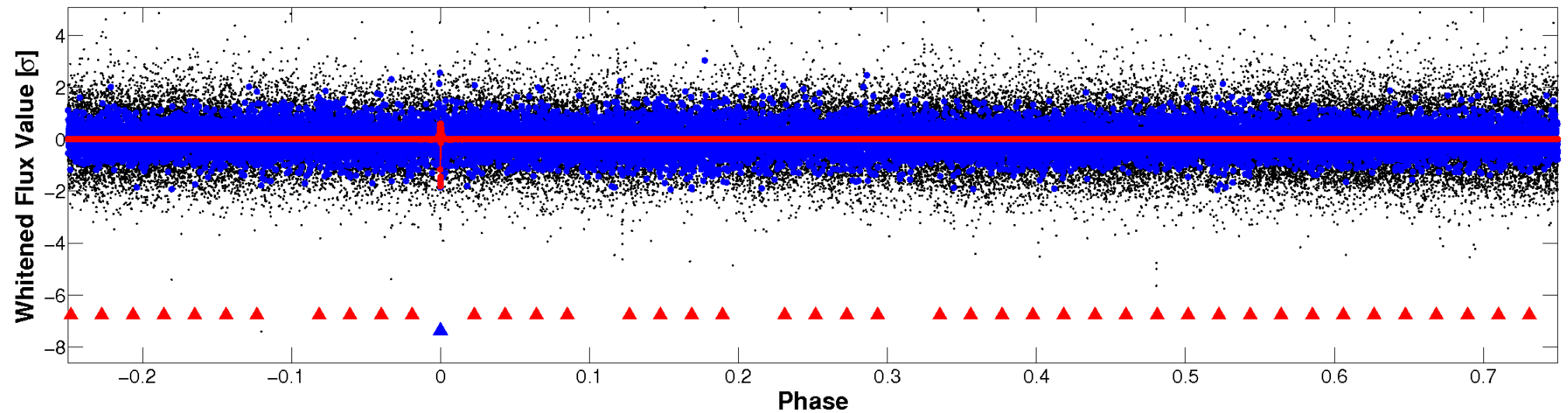


Non-Whitened Vs. Whitened Light Curve

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

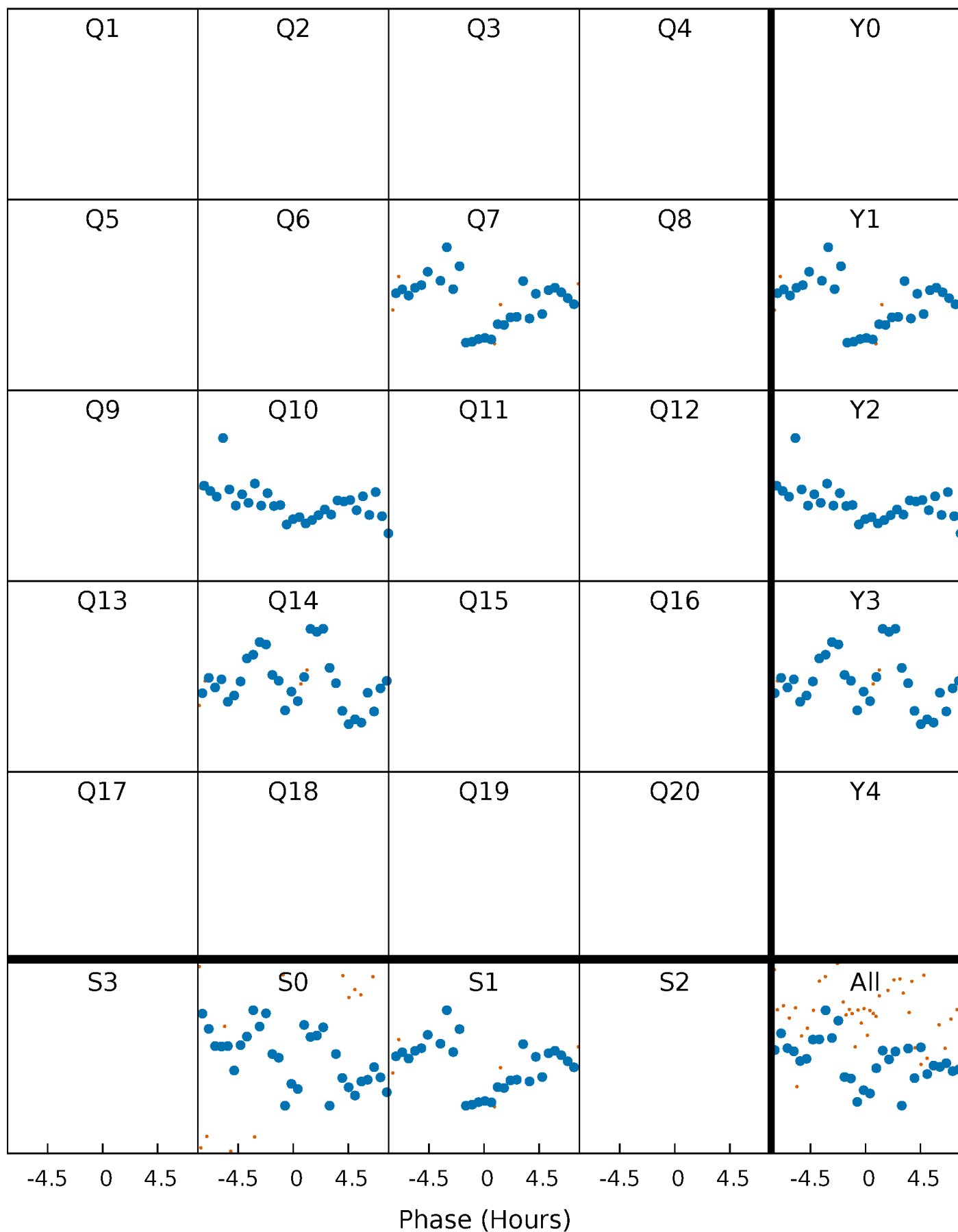


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



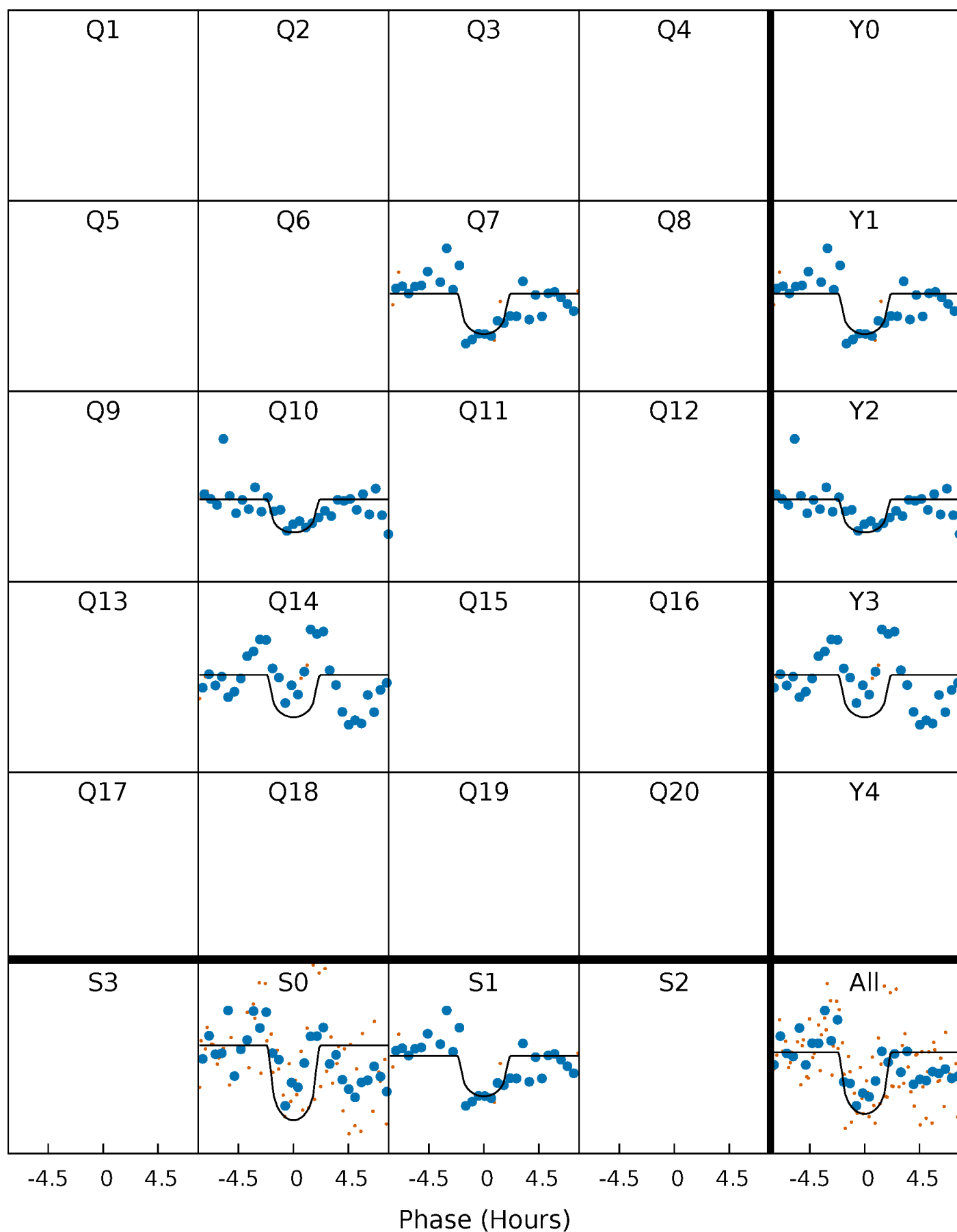
PDC Quarter-Phased Transit Curves

TCE 007742408-02 P=321.549018 Days $T_0=350.784017$ (BKJD)



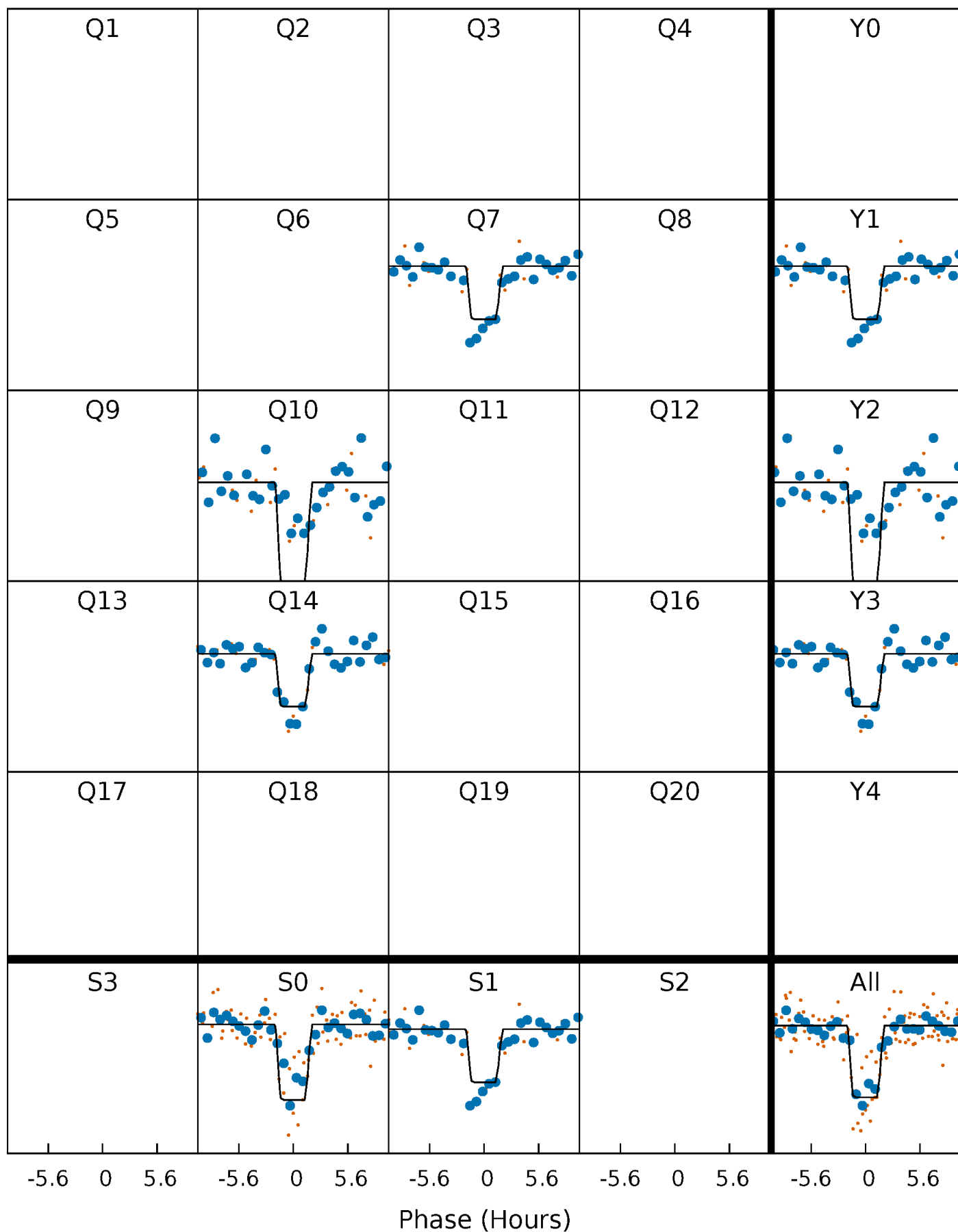
DV Quarter-Phased Transit Curves

TCE 007742408-02 P=321.549018 Days $T_0=350.784017$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

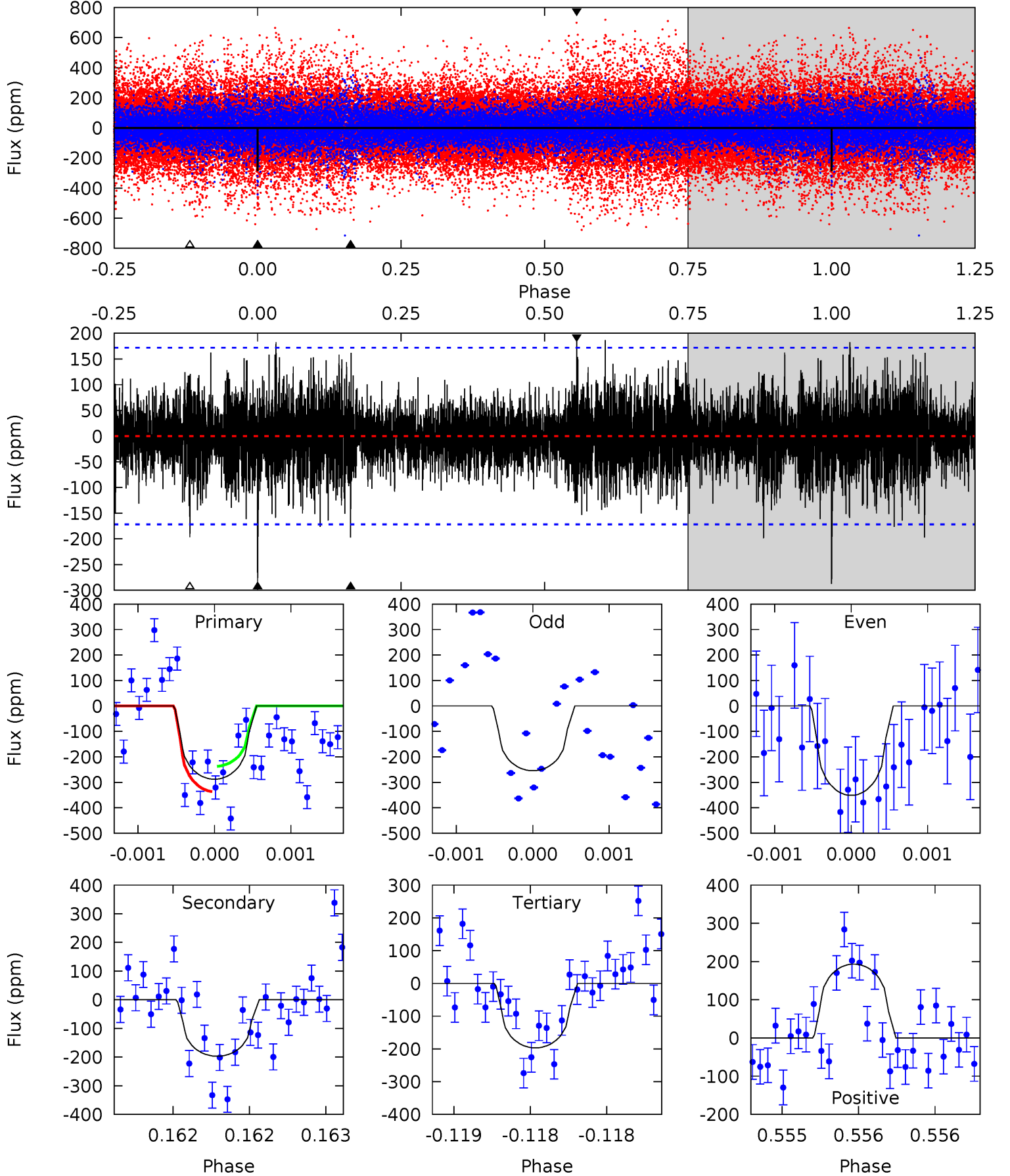
TCE 007742408-02 P=321.548236 Days $T_0=350.771764$ (BKJD)



DV Model-Shift Uniqueness Test

007742408-02, P = 321.549018 Days, E = 29.234999 Days

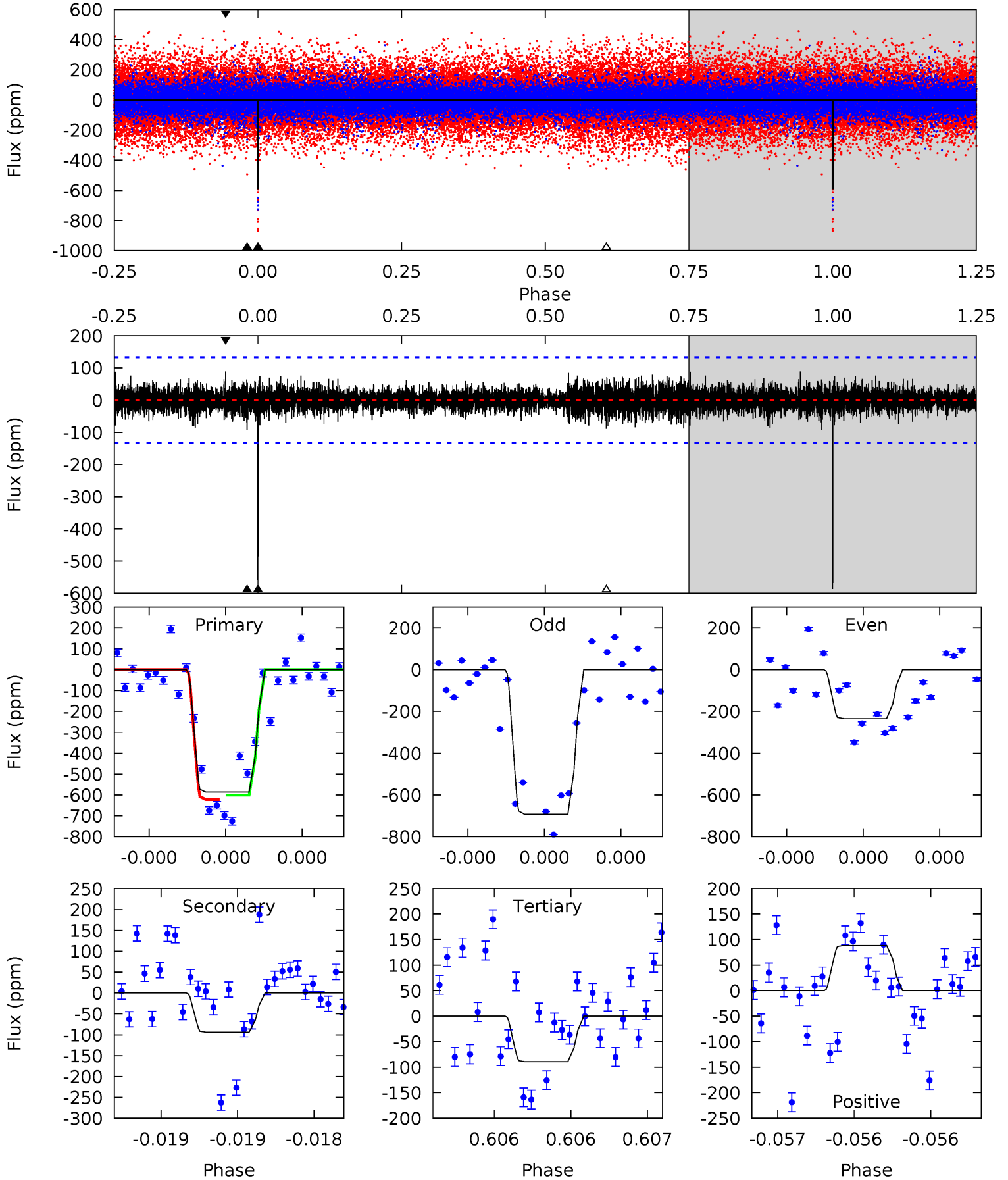
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.31	6.38	6.37	6.26	5.56	3.47	1.48	2.94	3.05	0.00	0.12	1.50	0.81	0.40	1.61



Alt Model-Shift Uniqueness Test

007742408-02, $P = 321.548236$ Days, $E = 29.223528$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.6	3.92	3.73	3.71	5.58	3.48	0.87	20.8	20.9	0.19	0.21	9.81	0.79	0.13	0.43



Stellar Parameters For KIC 007742408

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4928^{+148}_{-133}	$3.966^{+0.598}_{-0.322}$	$0.480^{+0.050}_{-0.300}$	$1.688^{+0.931}_{-0.838}$	$0.962^{+0.201}_{-0.146}$	$0.281^{+2.155}_{-0.194}$
	+3%/-3%	+15%/-8%	+10%/-62%	+55%/-50%	+21%/-15%	+766%/-69%
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 007742408-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-197 ± 31	$5.81^{+6.40}_{-4.04}$	410^{+61}_{-58}	3581^{+2171}_{-650}	2706^{+26436}_{-2113}
Alt.	-94 ± 24	$6.64^{+6.82}_{-4.71}$	411^{+58}_{-66}	3057^{+1515}_{-487}	997^{+9476}_{-770}

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

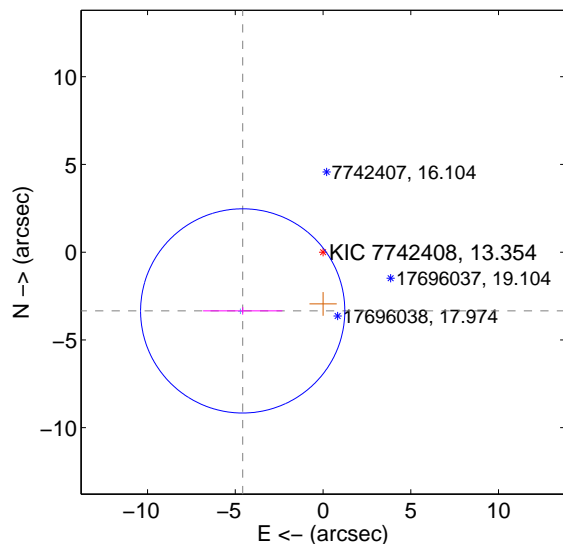
Supplemental centroid analysis for 007742408-02. Kepler magnitude: 13.35. Transit SNR 8.09

There are 1 quarters with good PRF difference image offsets

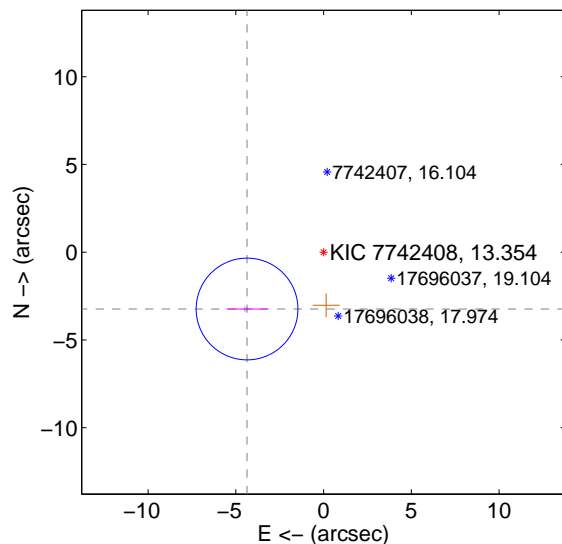
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.671 ± 1.939	2.92	4.578 ± 2.255	-3.347 ± 0.212
PRF-fit source offset from KIC position	5.432 ± 0.966	5.62	4.361 ± 1.161	-3.238 ± 0.087
photometric centroid source offset	1.74 ± 1.13	1.54	1.69 ± 1.13	-0.40 ± 1.10

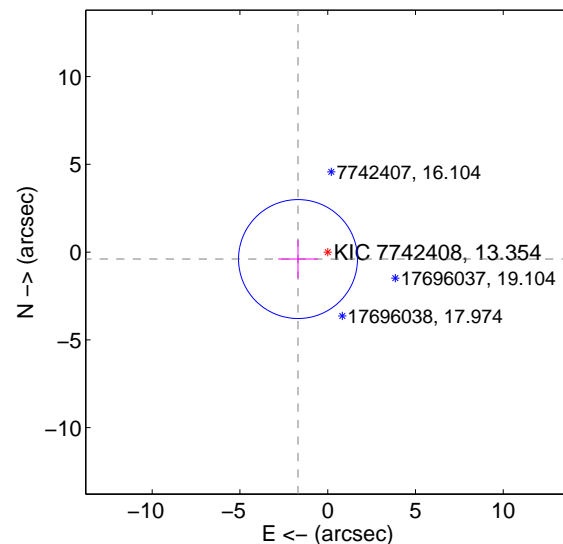
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

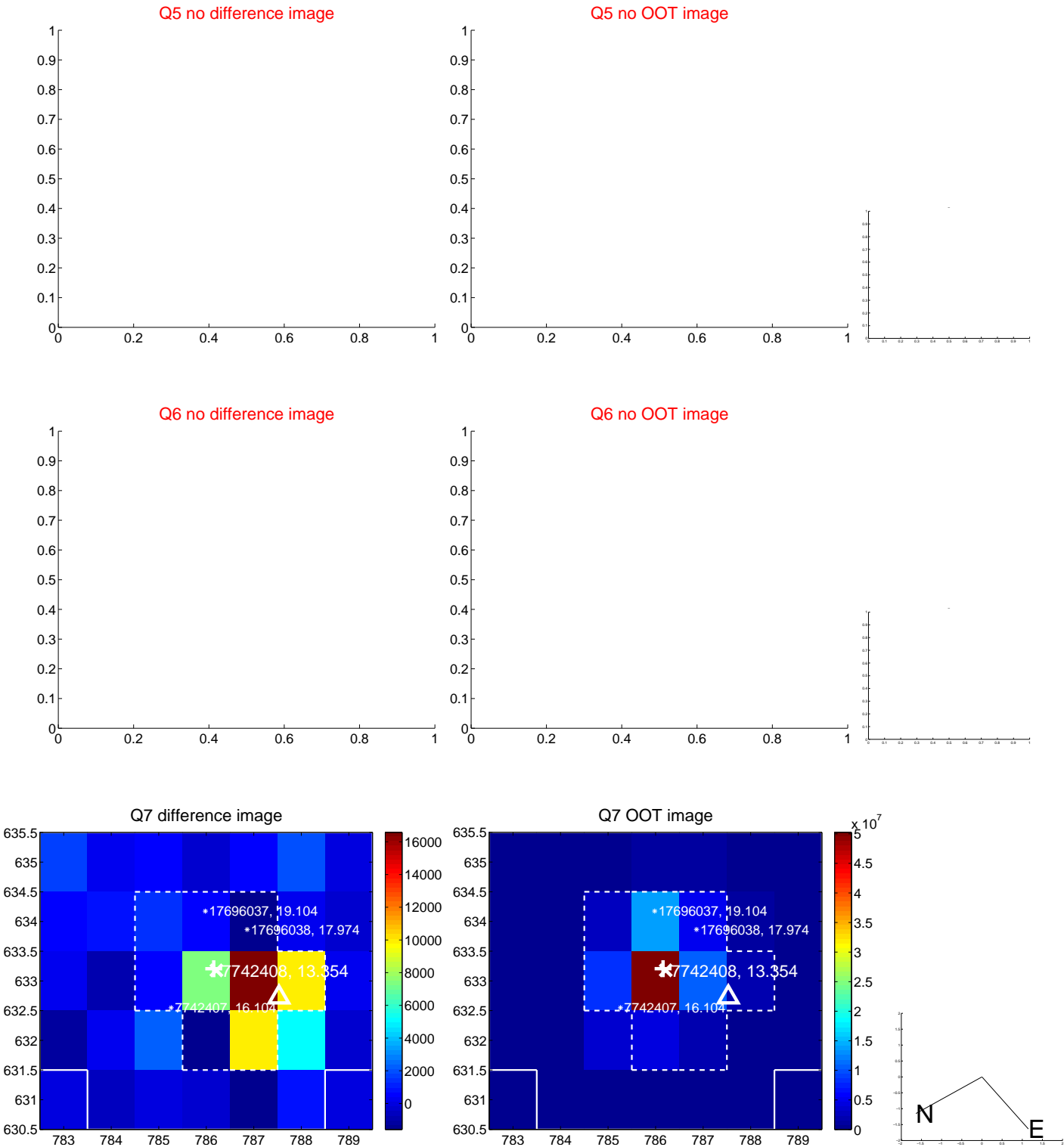


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

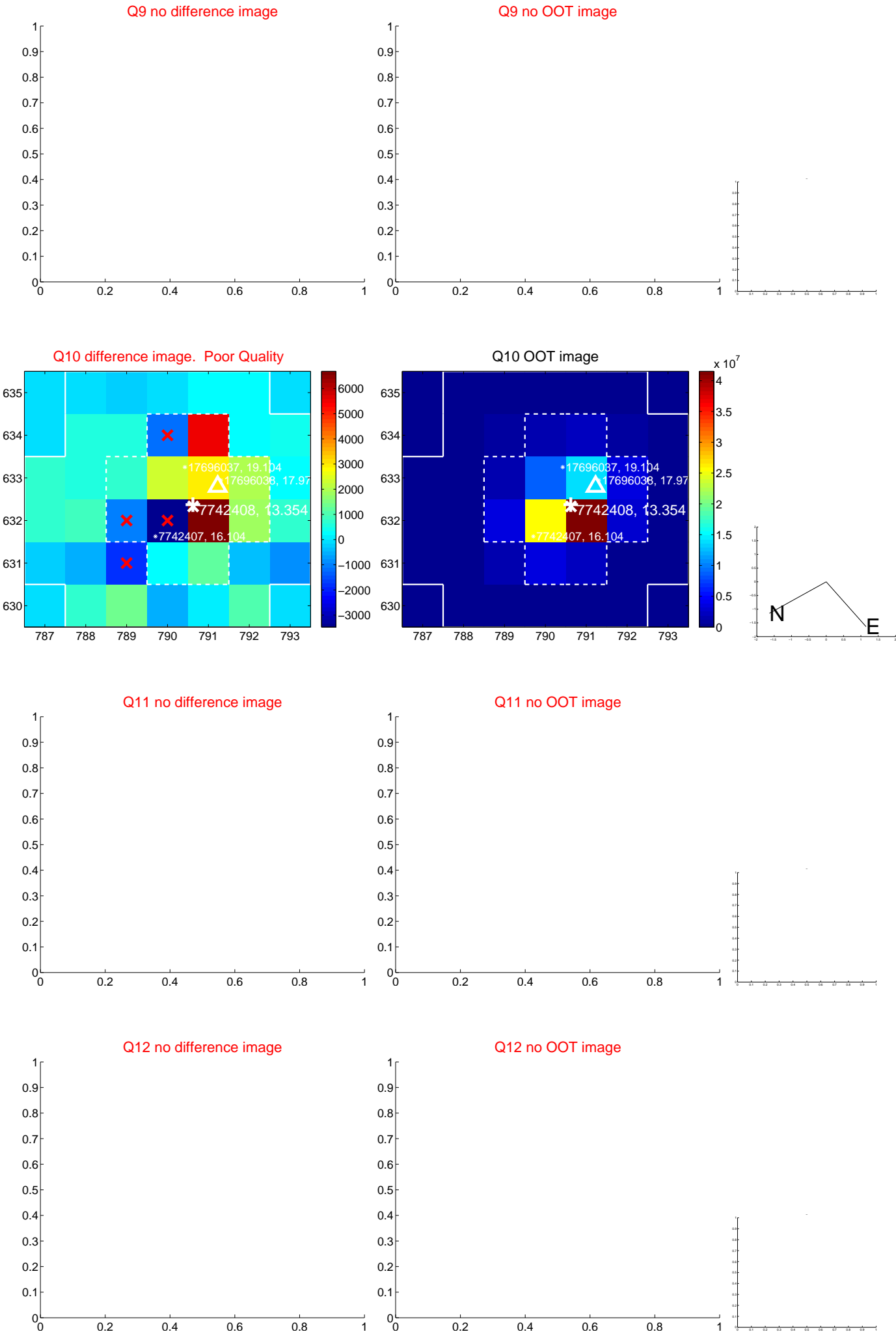
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



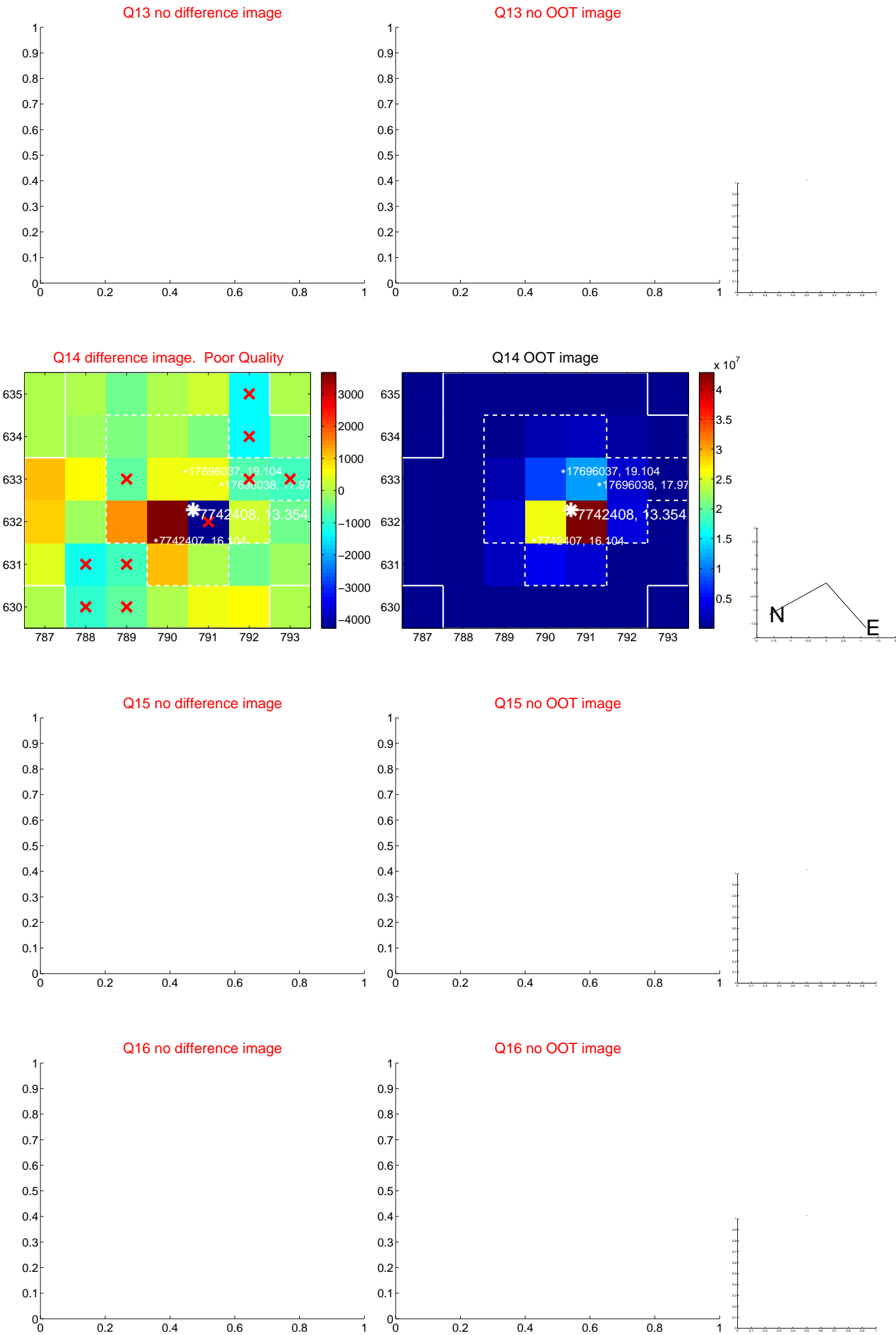
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



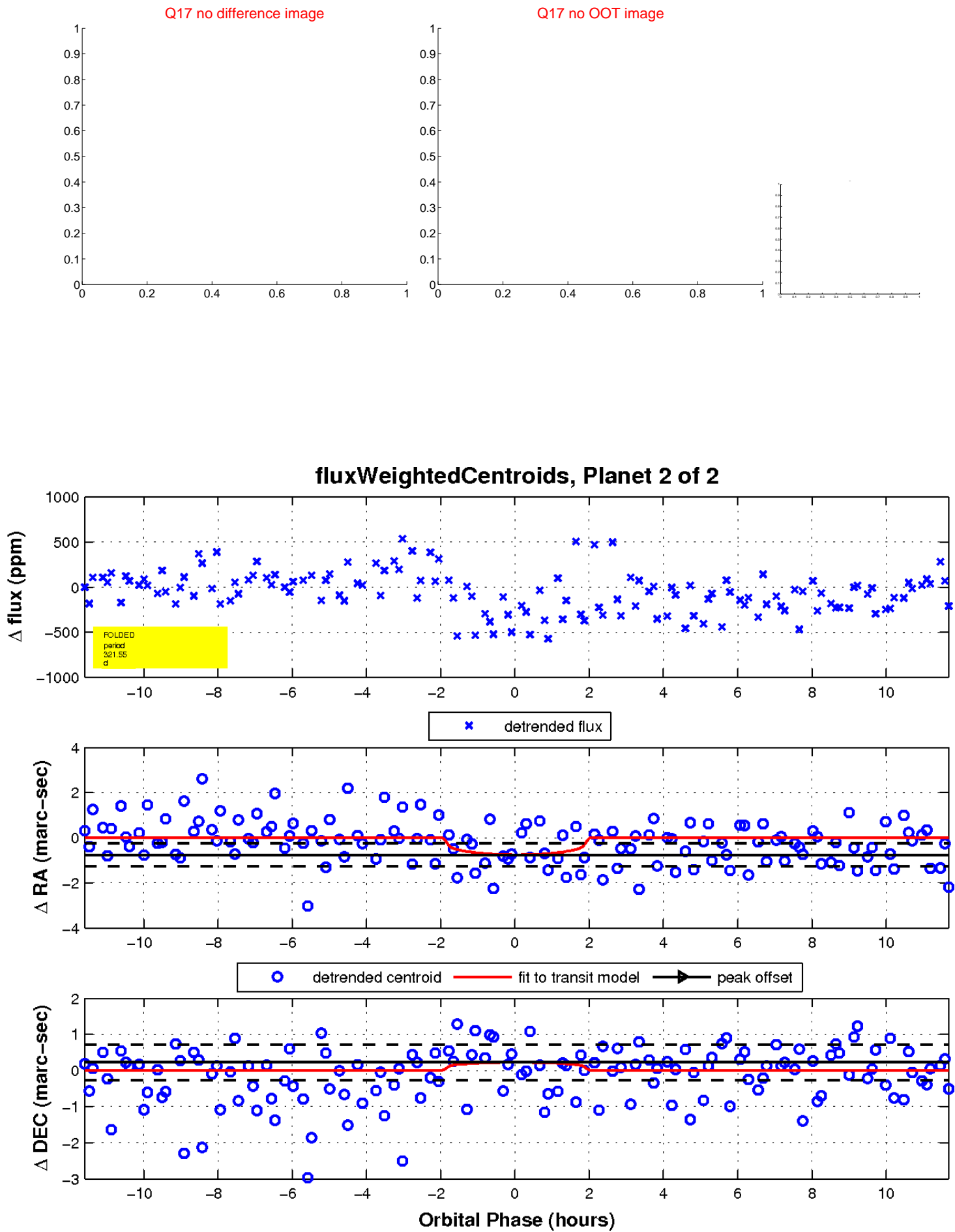
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

