

KIC 007748220

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})
007748220-01	OBS	No	1.308837	132.425320	21.9	4.979	7.4	8.2	1.96	6632	1.08	9746.16
007748220-02	OBS	No	524.835757	157.917980	350.7	14.623	9.6	6.4	1.96	6632	3.87	3.30
007748220-03	OBS	No	223.466657	339.032223	287.8	13.054	8.7	6.1	1.96	6632	3.55	10.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007748220-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
007748220-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007748220-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

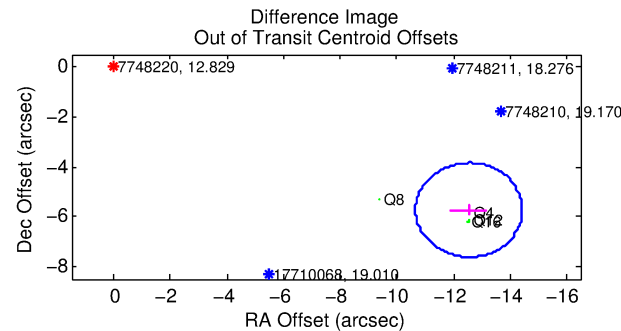
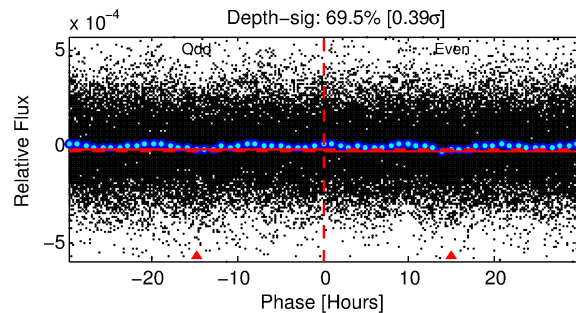
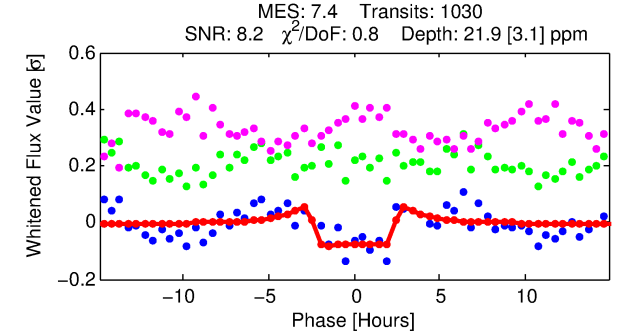
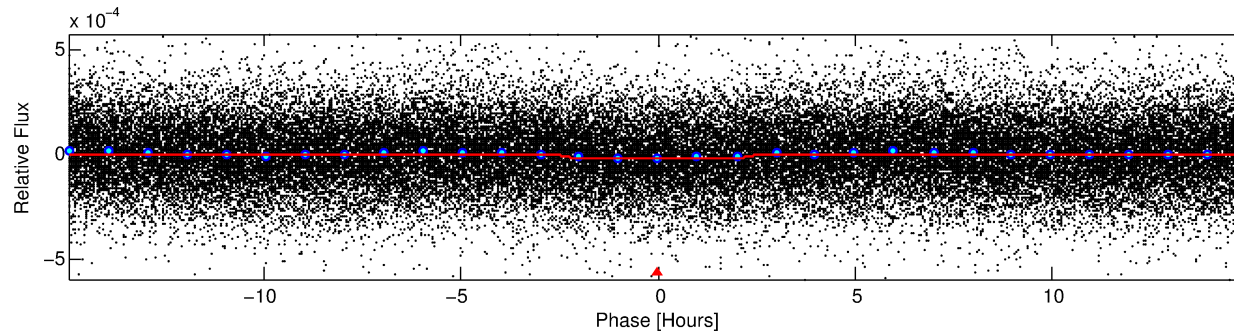
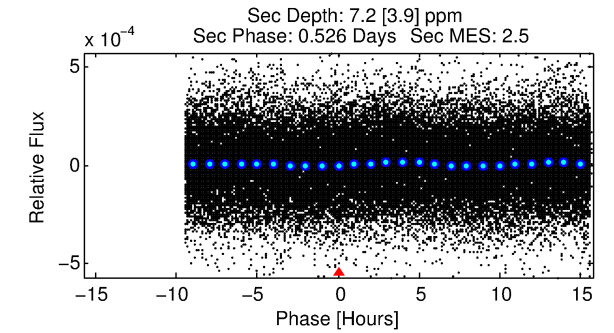
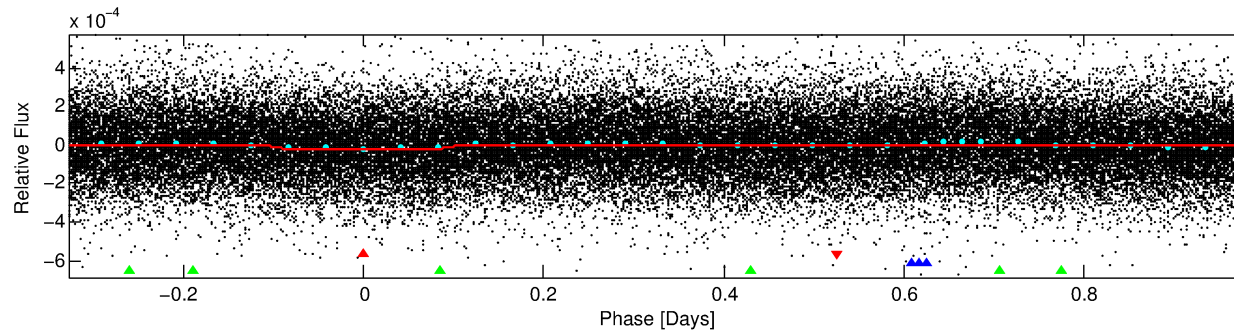
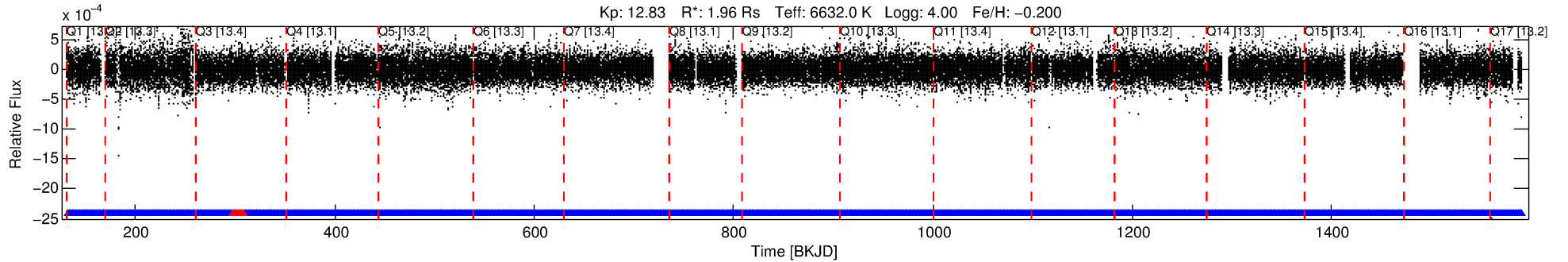
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007748220-01

No Significant Match Found

DV One-Page Summary

KIC: 7748220 Candidate: 1 of 3 Period: 1.309 d



DV Fit Results:

Period = 1.30884 [0.00001] d
Epoch = 132.4253 [0.0037] BKJD
Rp/R* = 0.0051 [0.0014]
a/R* = 1.27 [0.79]
b = 0.91 [0.30]
Seff = 9746.15 [5293.05]
Teq = 2534 [344] K
Rp = 1.08 [0.49] Re
a = 0.0261 [0.0086] AU
Ag = 2.30 [2.19] [0.60σ]
Teff = 4826 [970] K [2.23σ]

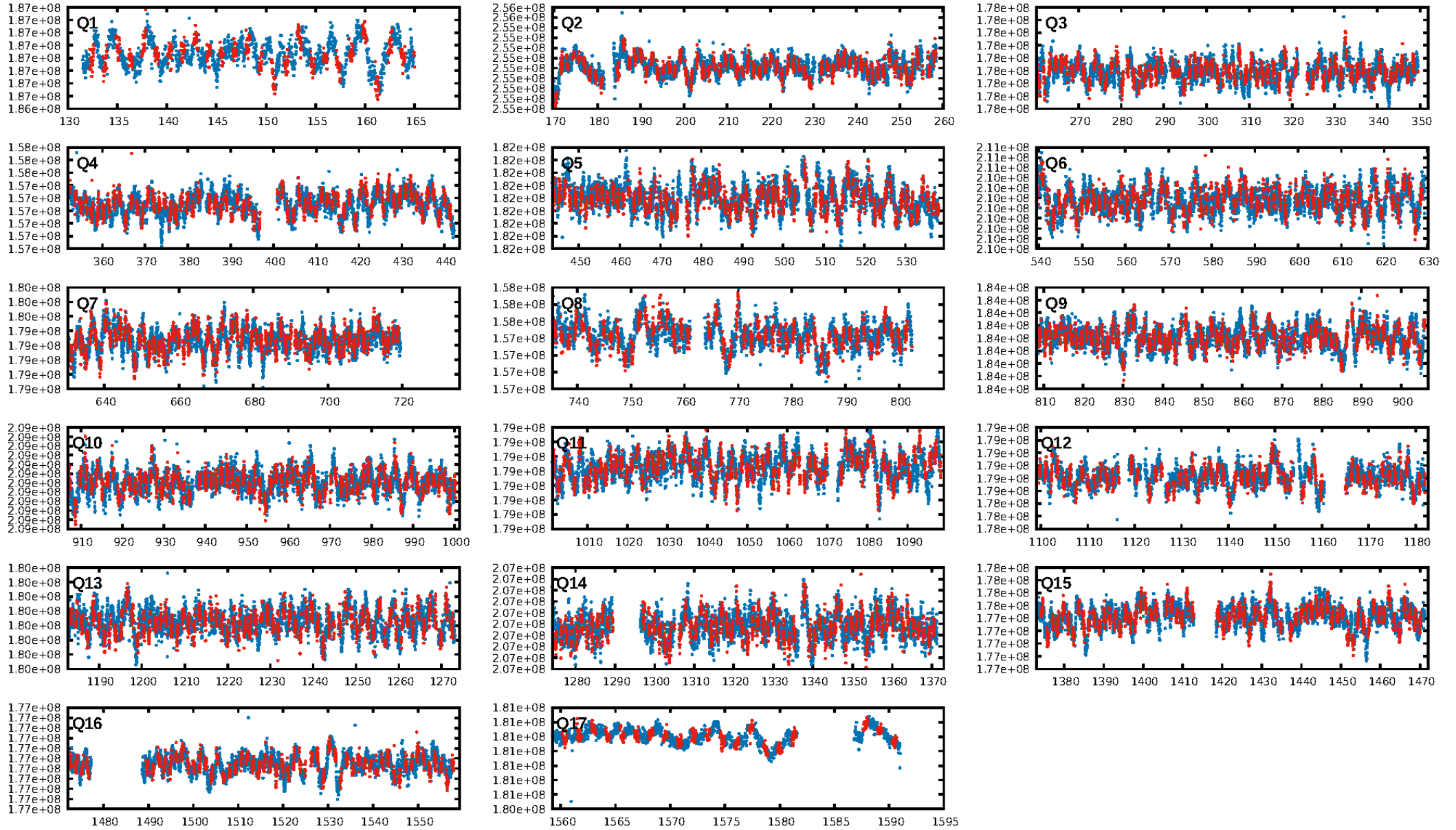
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [381.62σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 3.09e-09
RollingBand-fgt: 0.99 [978/985]
GhostDiagnostic-chr: -0.8721
Centroid-sig: N/A
Centroid-so: 4.348 arcsec [2.87σ]
OotOffset-rm: 13.800 arcsec [21.94σ]
KicOffset-rm: 10.121 arcsec [102.13σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [17/17]

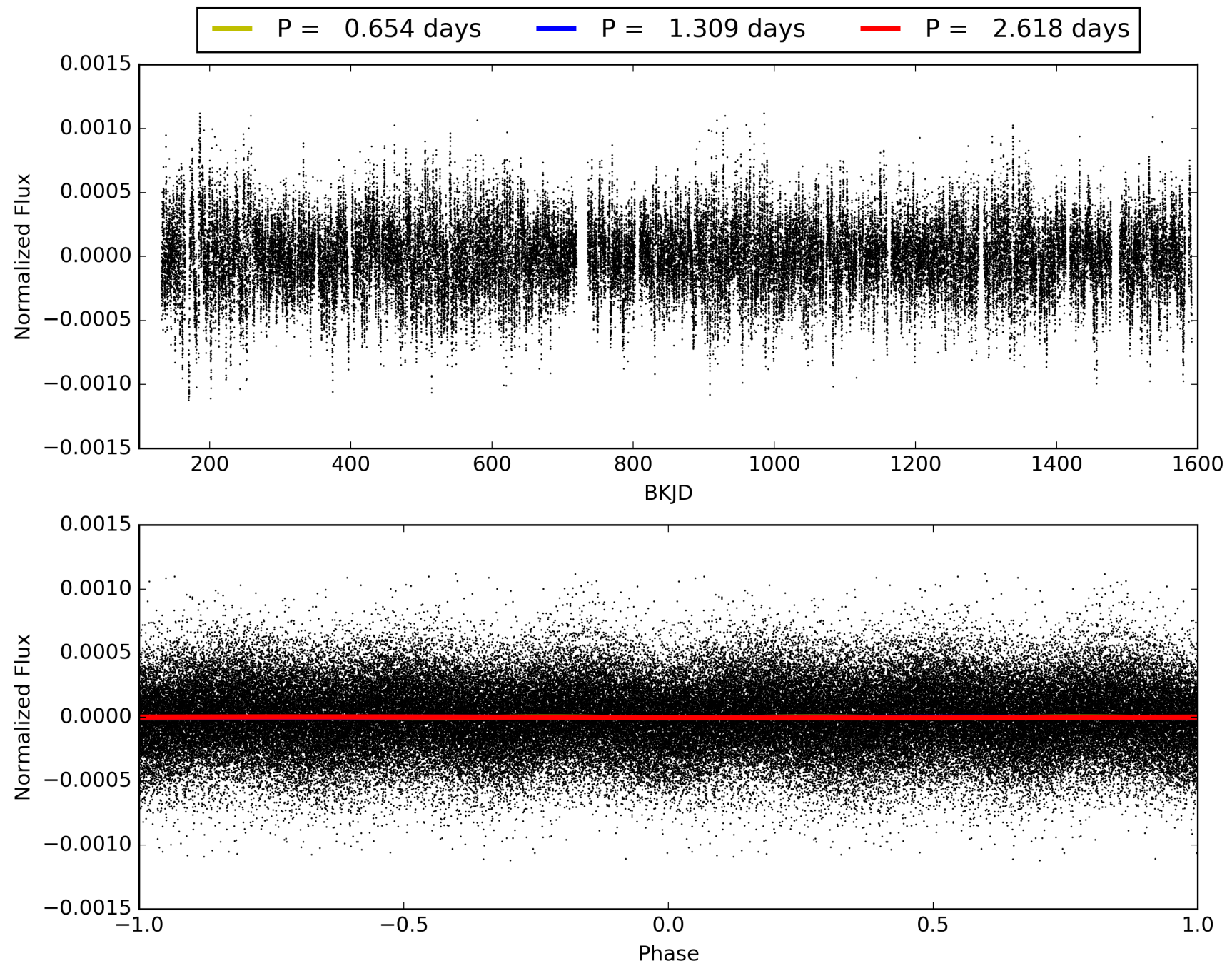
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007748220-01, PDC Light Curves

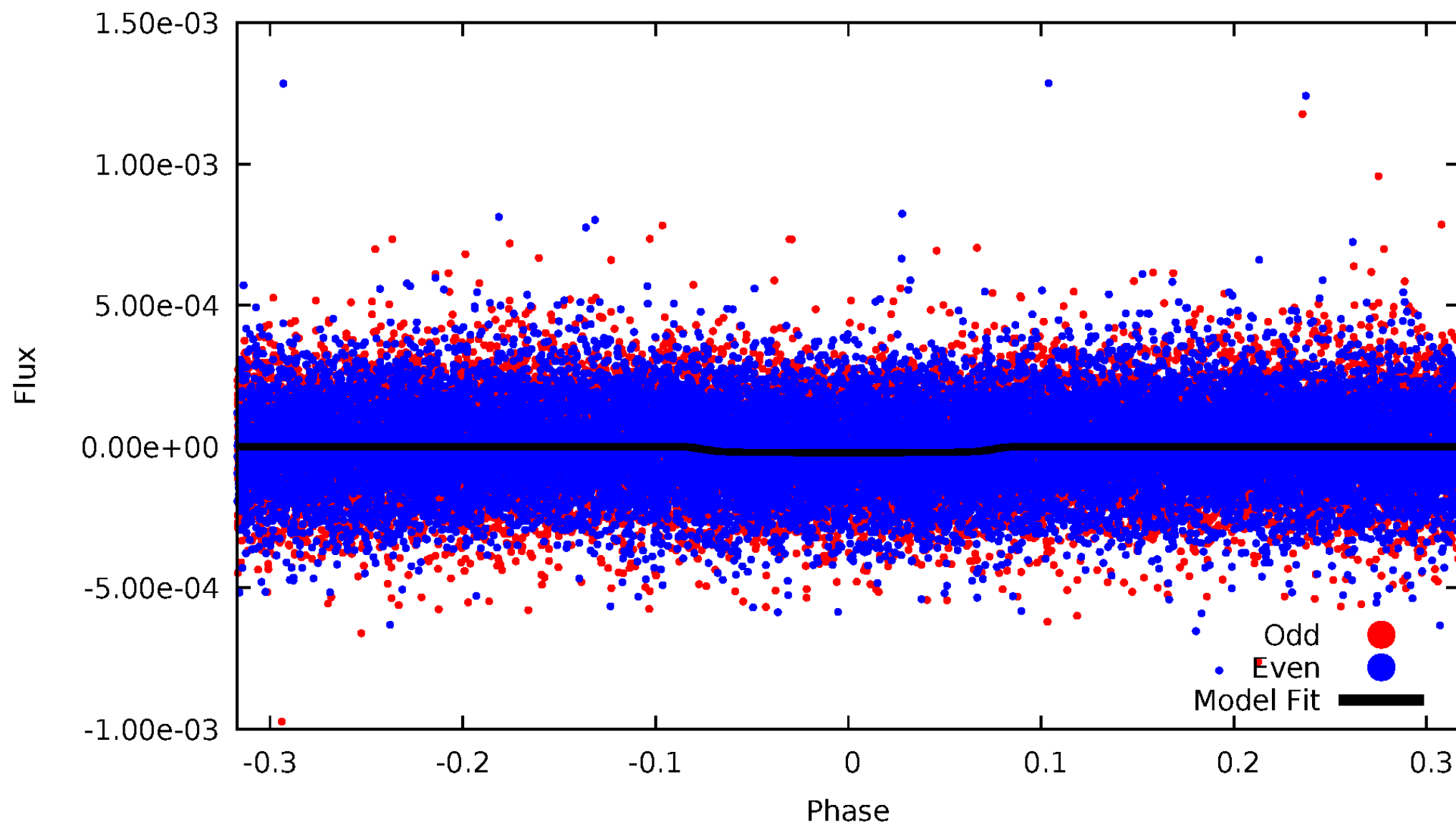


TCE 007748220-01



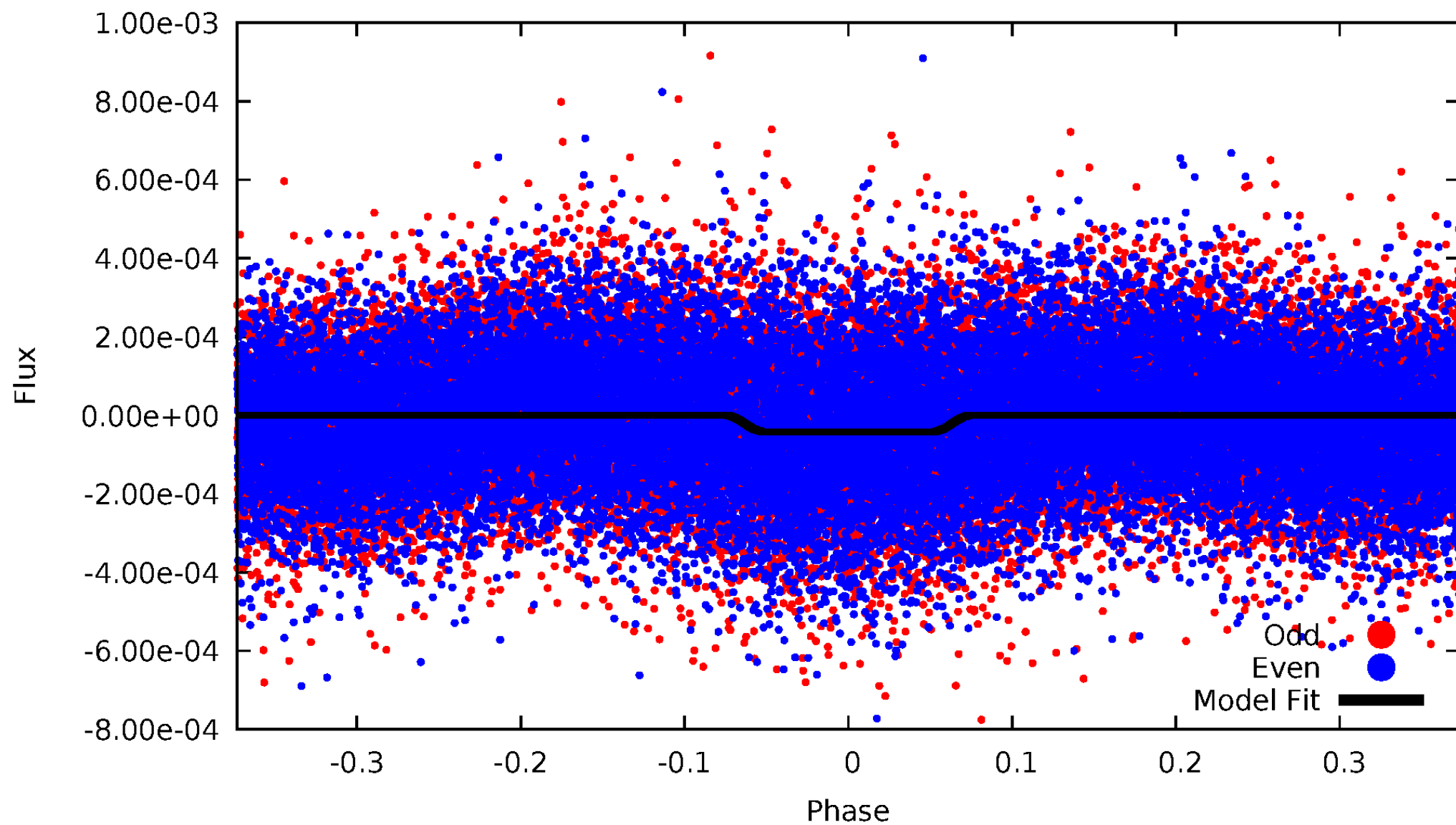
DV Odd/Even

TCE 007748220-01



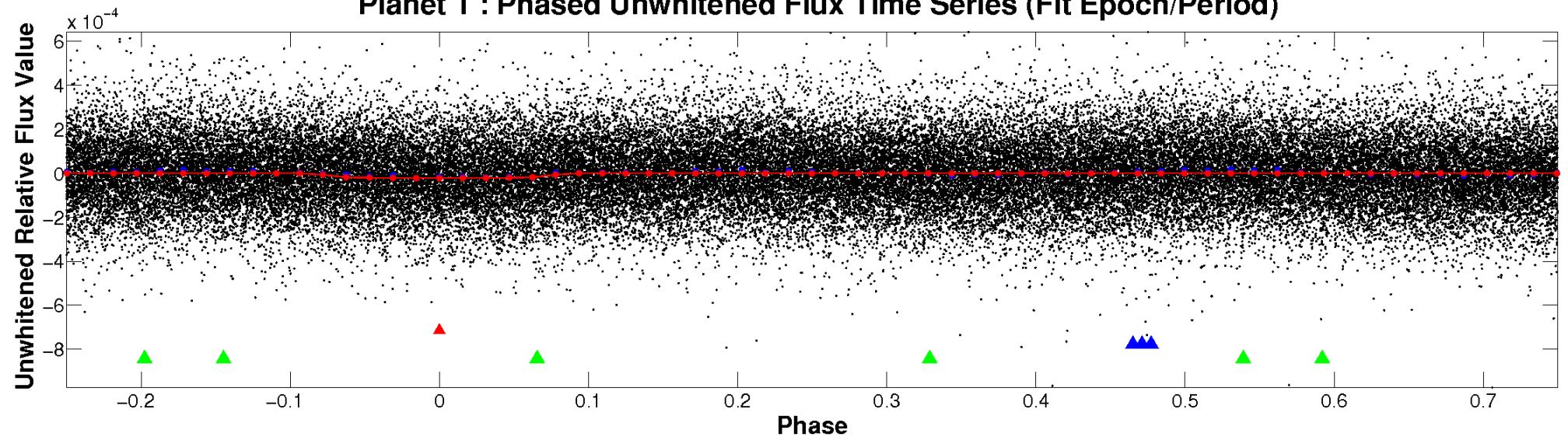
ALT Odd/Even

TCE 007748220-01

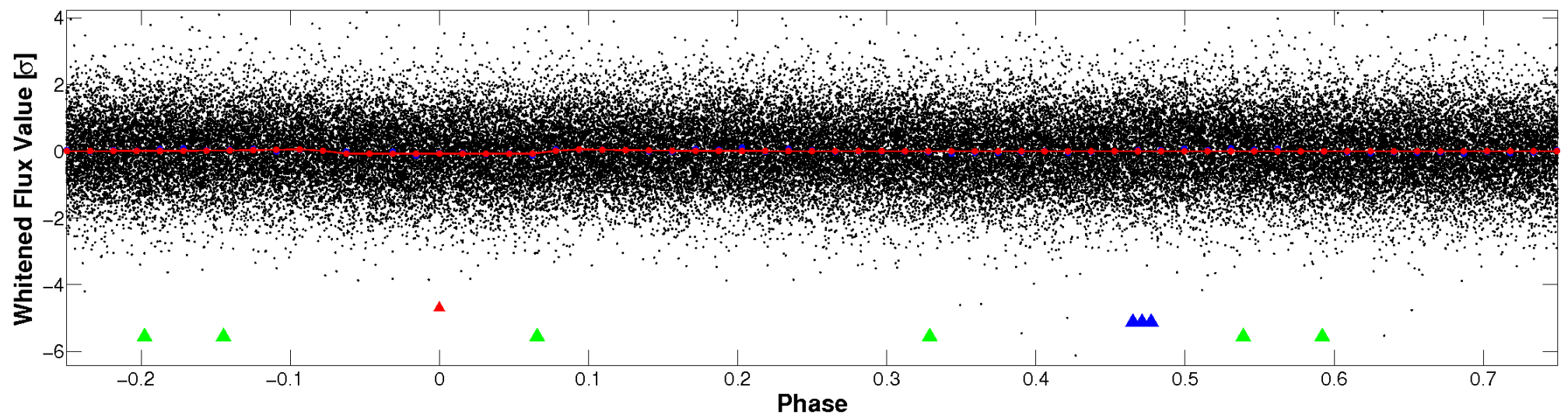


Non-Whitened Vs. Whitened Light Curve

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

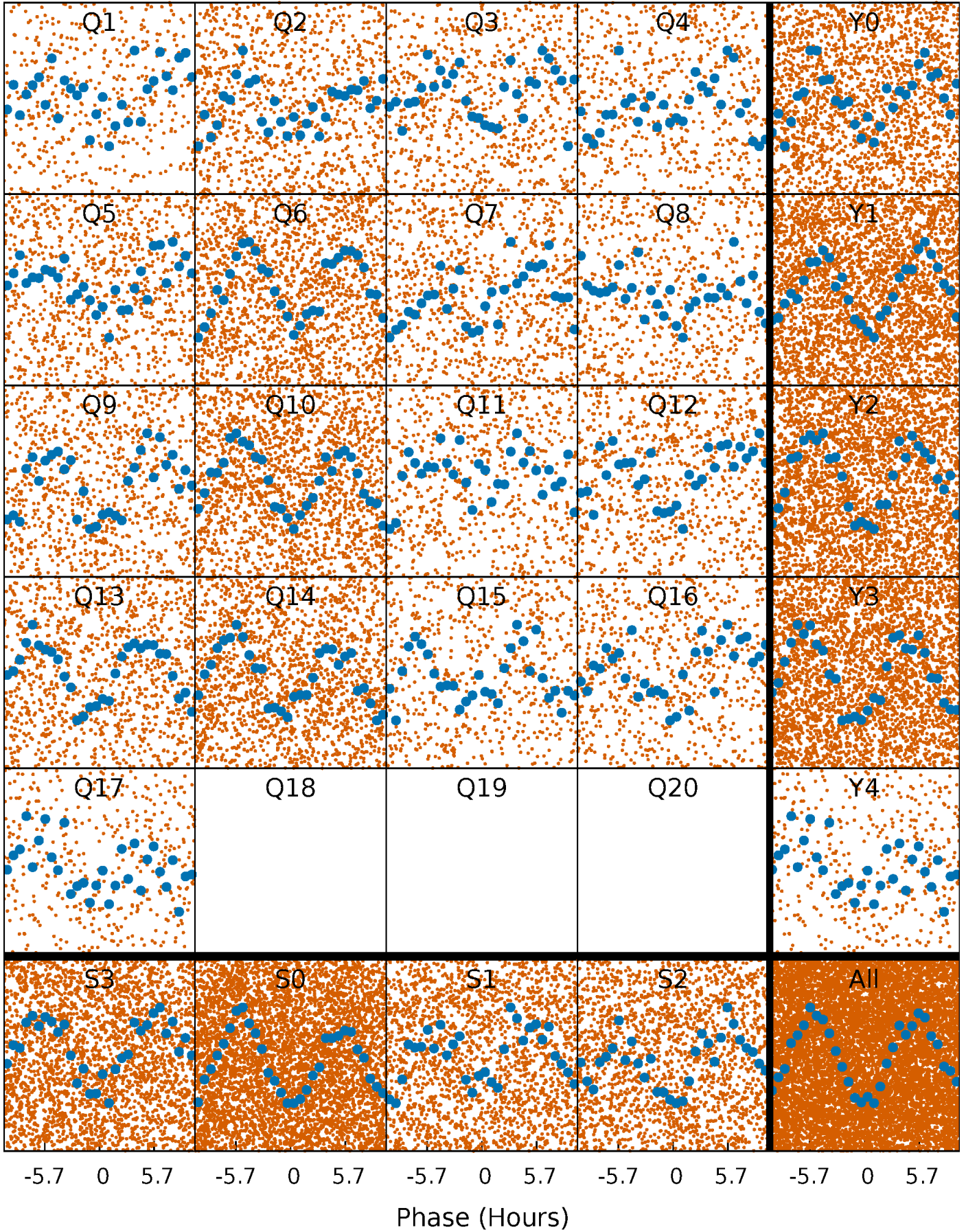


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



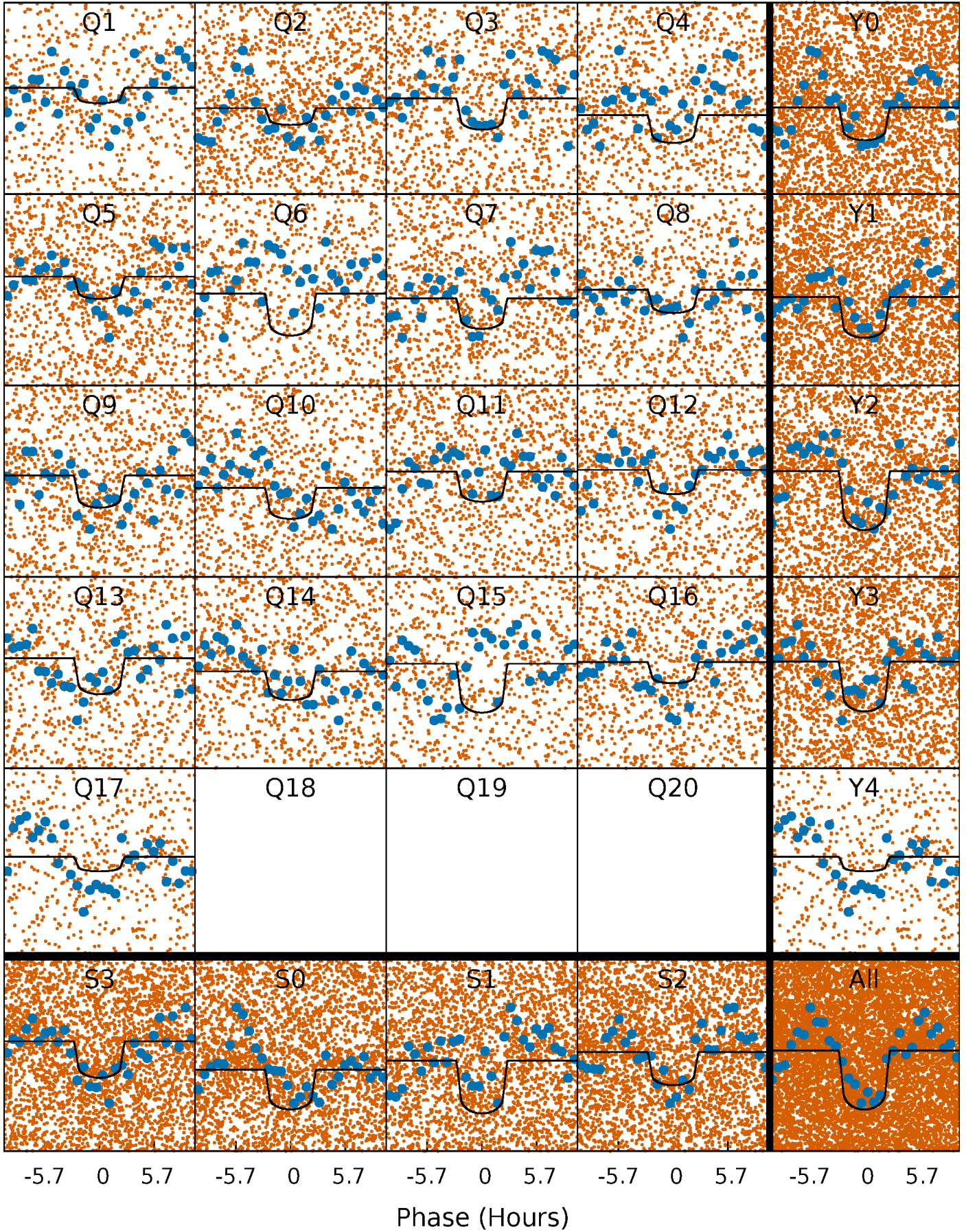
PDC Quarter-Phased Transit Curves

TCE 007748220-01 P= 1.308837 Days $T_0=132.425320$ (BKJD)



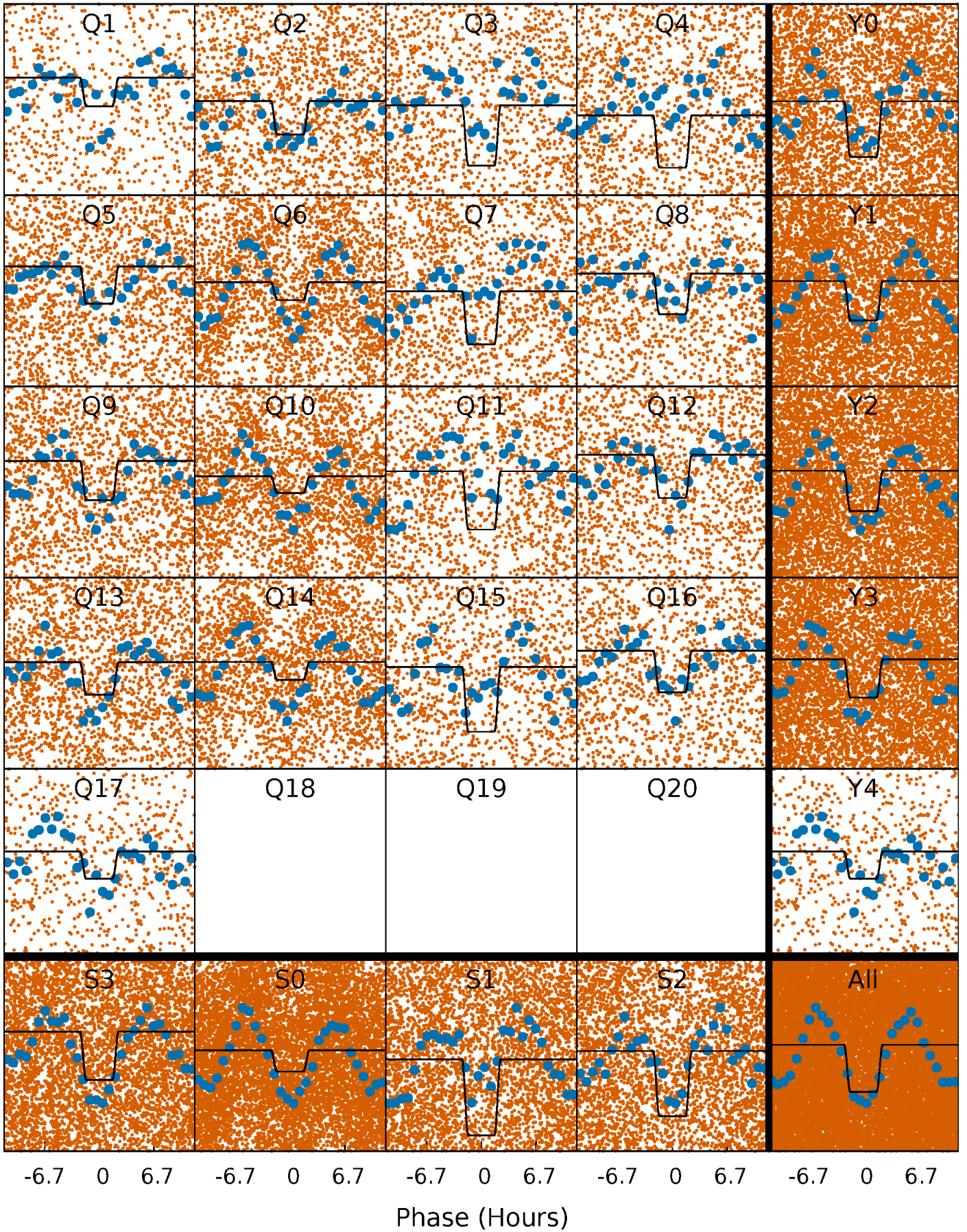
DV Quarter-Phased Transit Curves

TCE 007748220-01 P= 1.308837 Days $T_0=132.425320$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

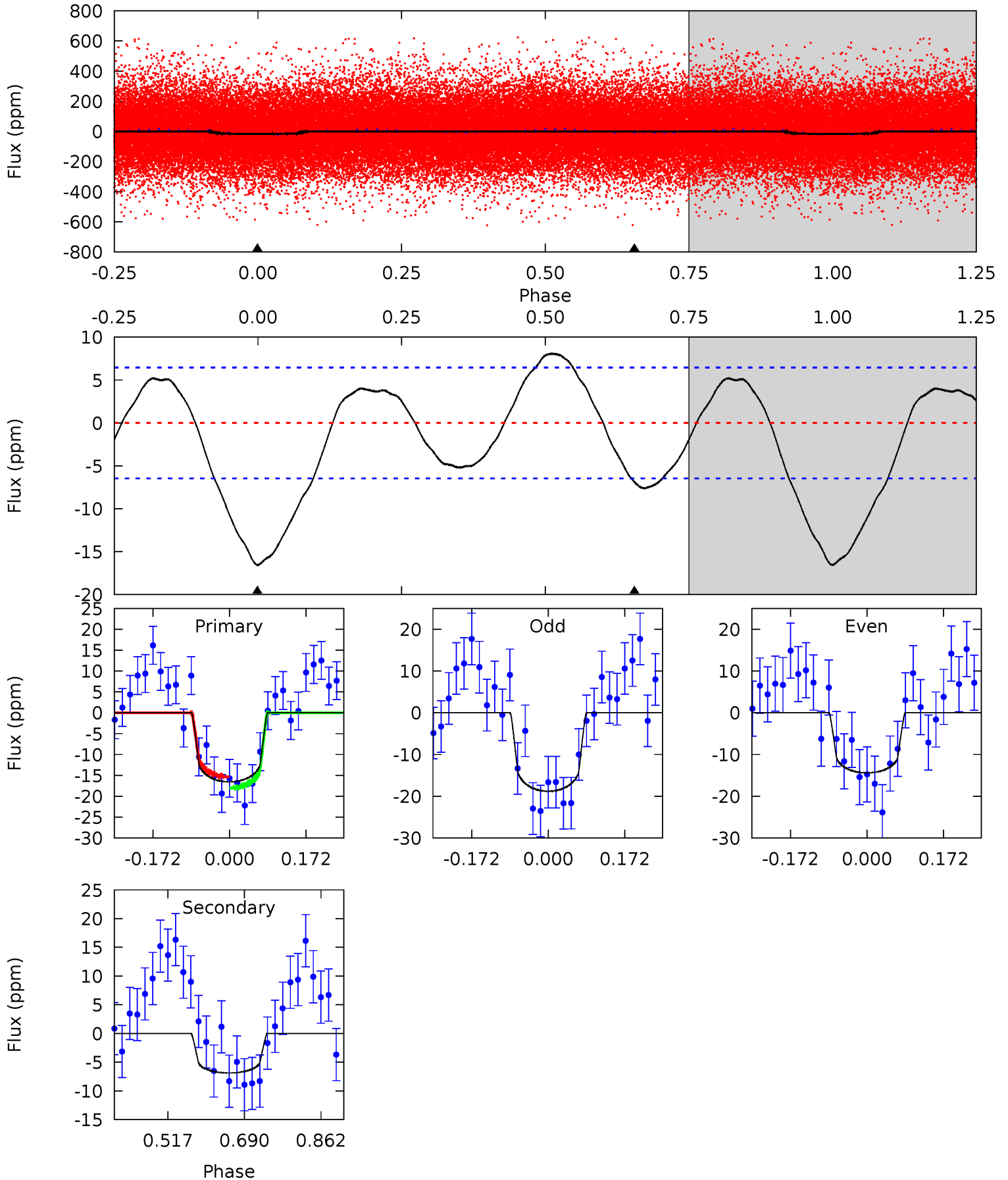
TCE 007748220-01 P= 1.308789 Days $T_0=132.454820$ (BKJD)



DV Model-Shift Uniqueness Test

007748220-01, P = 1.308837 Days, E = 131.116483 Days

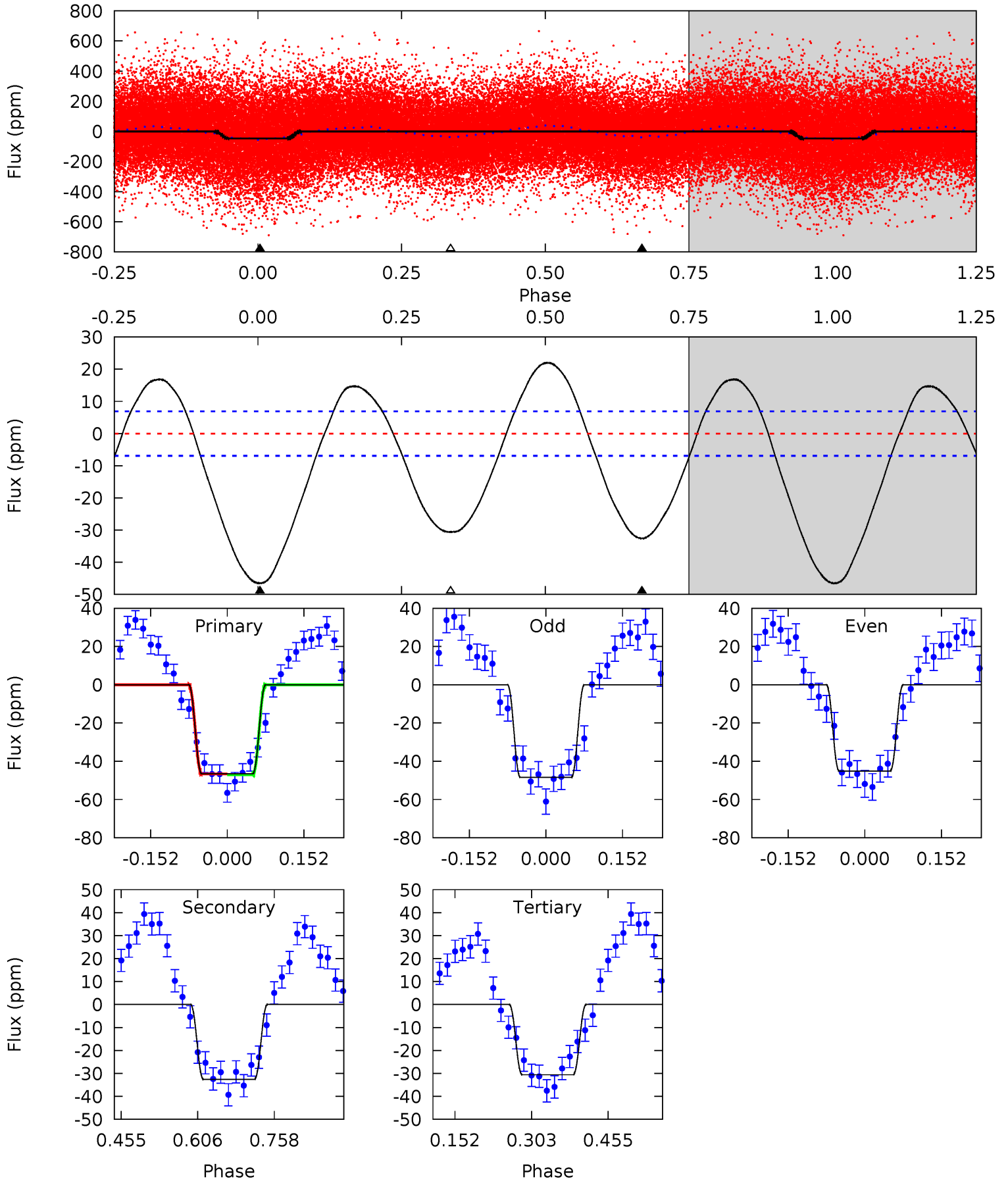
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	4.74	0	0	4.45	1.36	2.56	11.4	11.4	4.74	4.74	1.55	1.28	0.33	0.94



Alt Model-Shift Uniqueness Test

007748220-01, P = 1.308789 Days, E = 131.146031 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.1	21.1	19.8	0	4.48	1.43	11.8	10.3	30.1	1.31	21.1	1.10	1.04	0.32	0.14



Stellar Parameters For KIC 007748220

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6632^{+163}_{-233}	$3.996^{+0.306}_{-0.165}$	$-0.200^{+0.250}_{-0.300}$	$1.958^{+0.499}_{-0.686}$	$1.390^{+0.198}_{-0.297}$	$0.261^{+0.621}_{-0.117}$
	+2%/-4%	+8%/-4%	+125%/-150%	+25%/-35%	+14%/-21%	+238%/-45%
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 007748220-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7 ± 1	$1.04^{+0.40}_{-0.35}$	3502^{+276}_{-326}	4716^{+825}_{-621}	$2.306^{+2.809}_{-1.136}$
Alt.	-33 ± 2	$1.33^{+0.42}_{-0.37}$	3496^{+261}_{-320}	6091^{+898}_{-595}	$6.856^{+6.162}_{-2.805}$

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

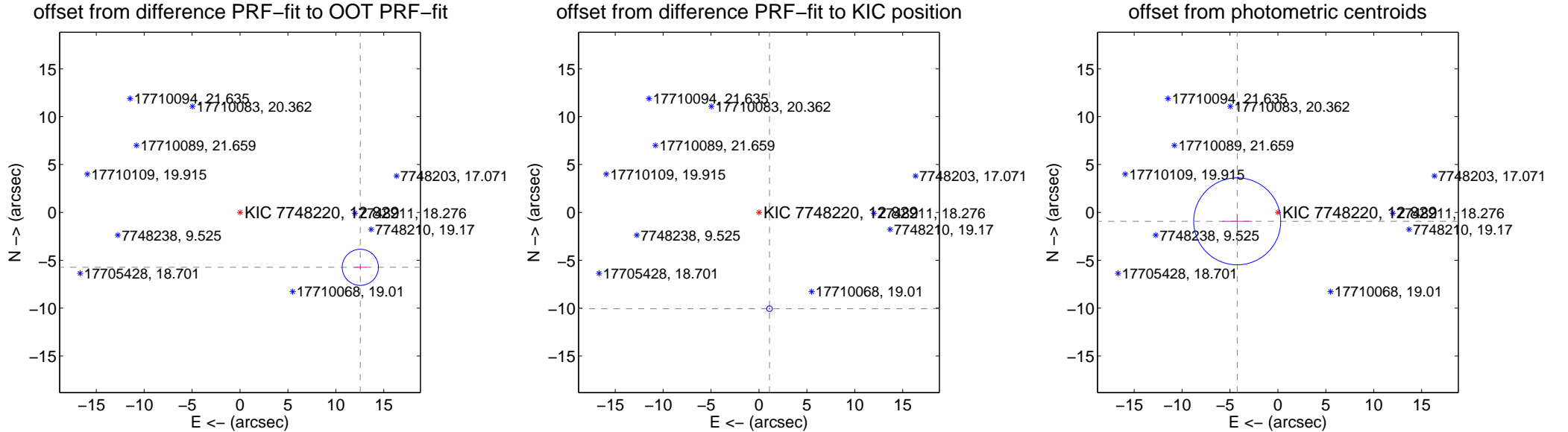
DV Centroid Data

Supplemental centroid analysis for 007748220-01. Kepler magnitude: 12.83. Transit SNR 8.16

There are 4 quarters with good PRF difference image offsets

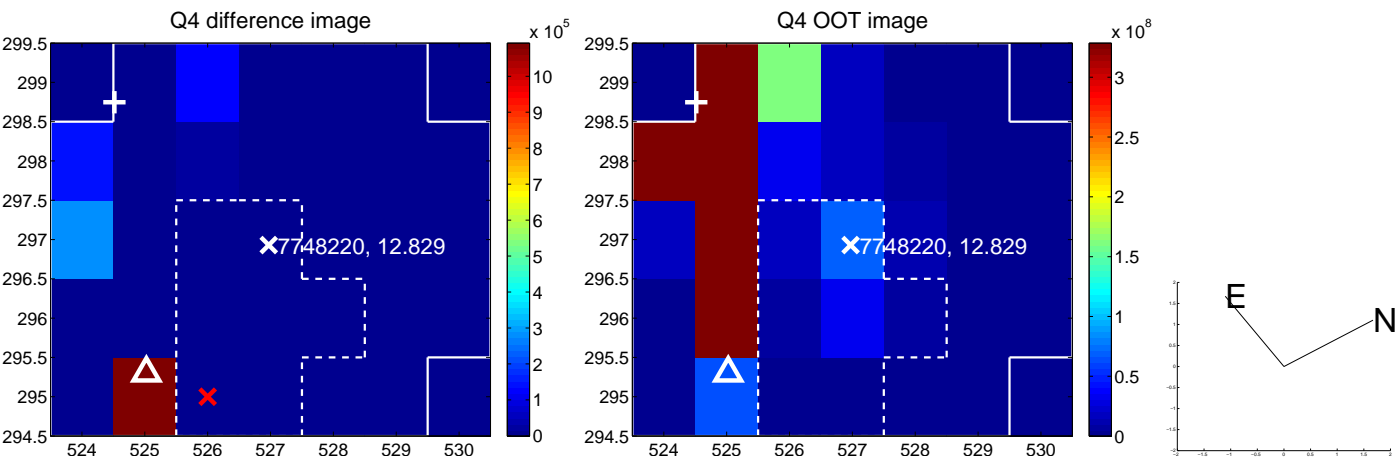
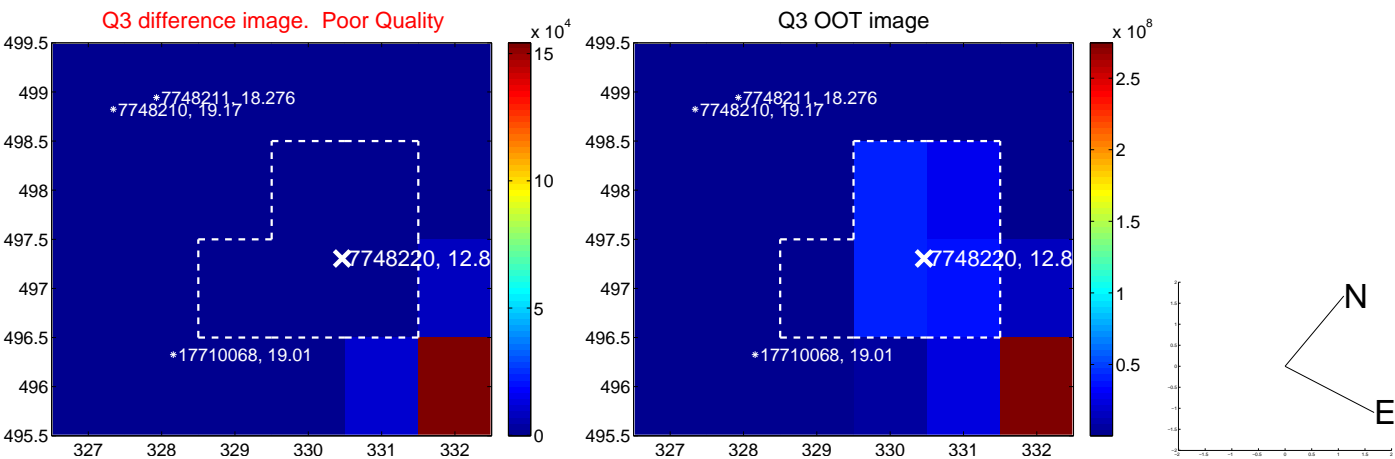
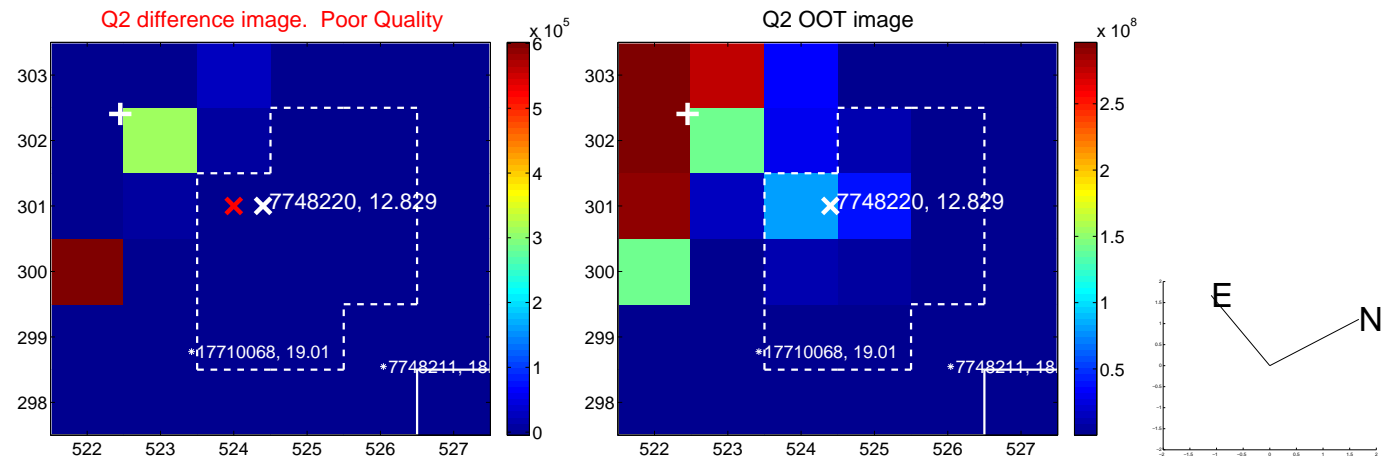
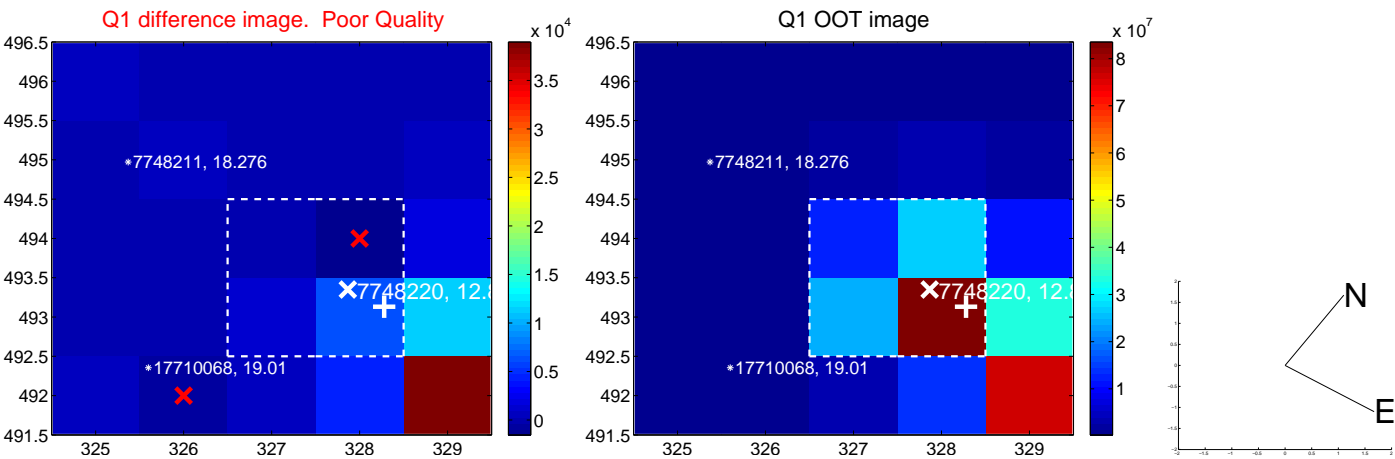
The OOT PRF centroid is offset from the target star catalog position by about 12.14 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	13.800 ± 0.629	21.94	-12.551 ± 0.626	-5.736 ± 0.171
PRF-fit source offset from KIC position	10.121 ± 0.099	102.13	-1.102 ± 0.070	-10.061 ± 0.099
photometric centroid source offset	4.35 ± 1.51	2.87	4.25 ± 1.54	-0.93 ± 0.78

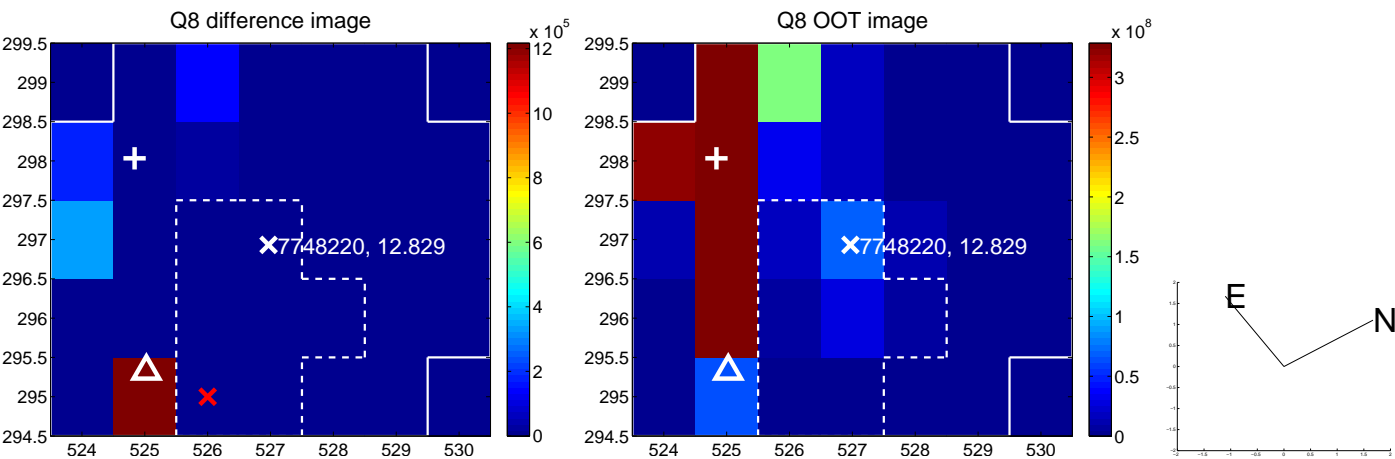
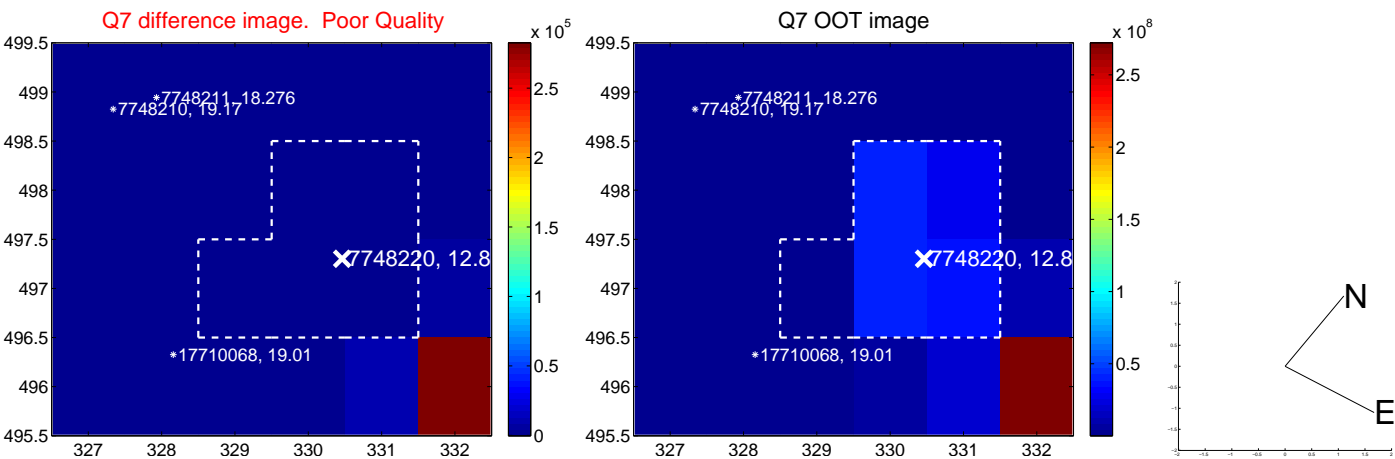
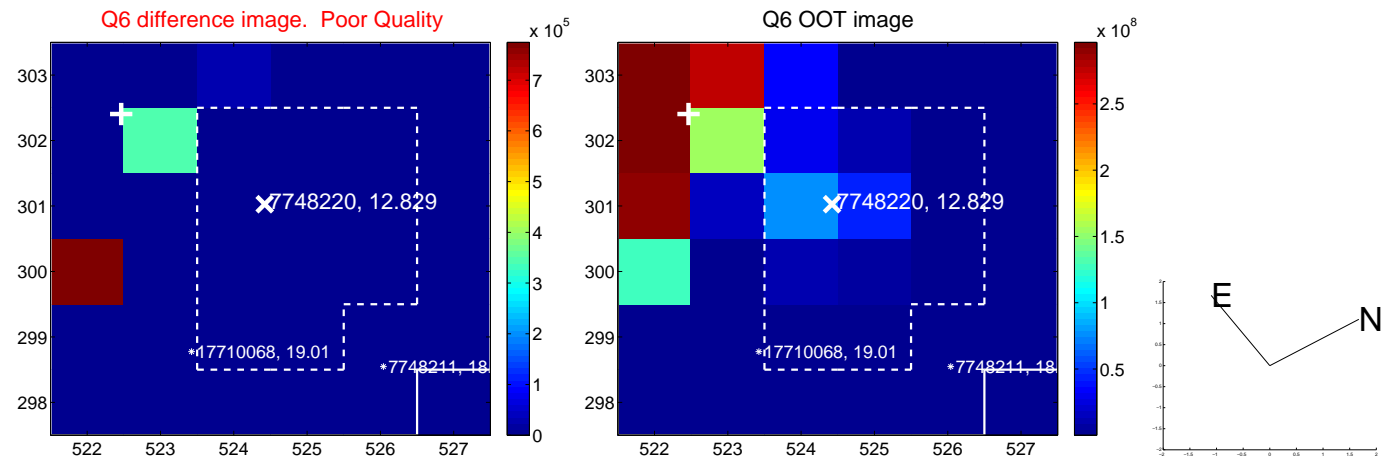
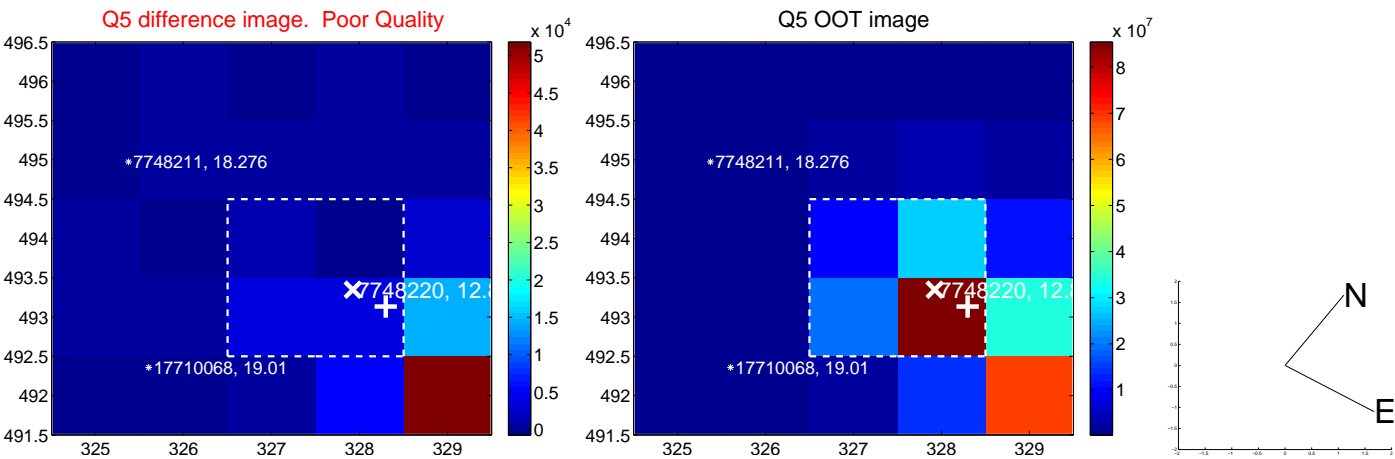


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

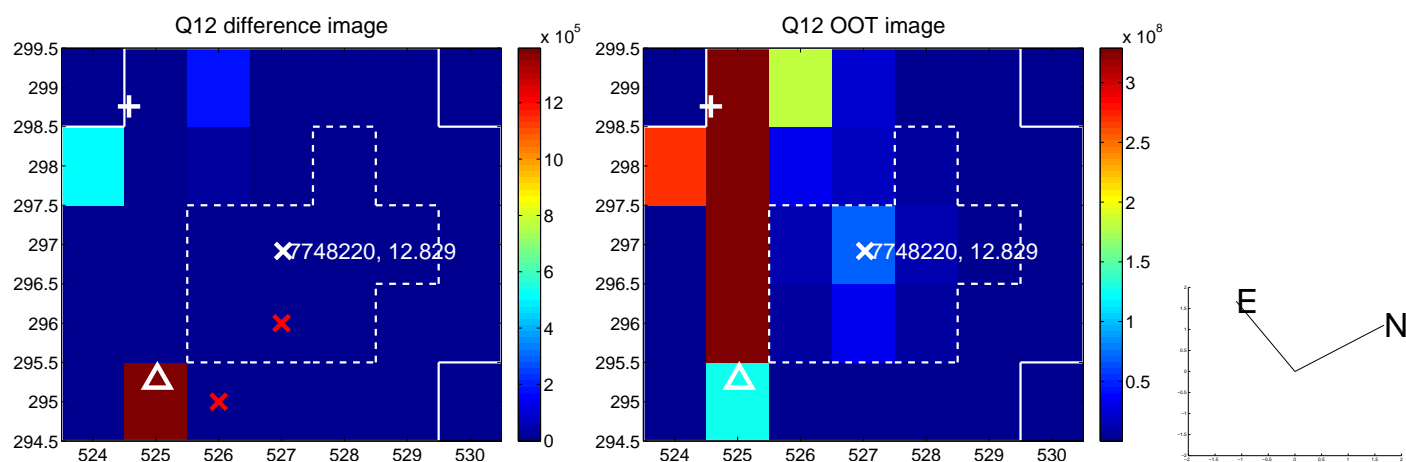
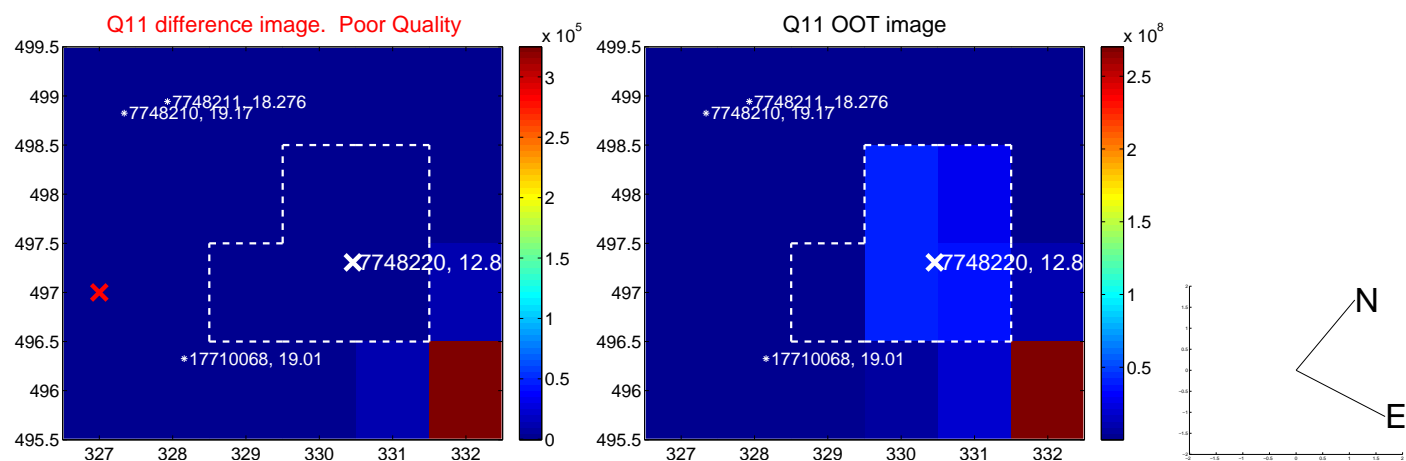
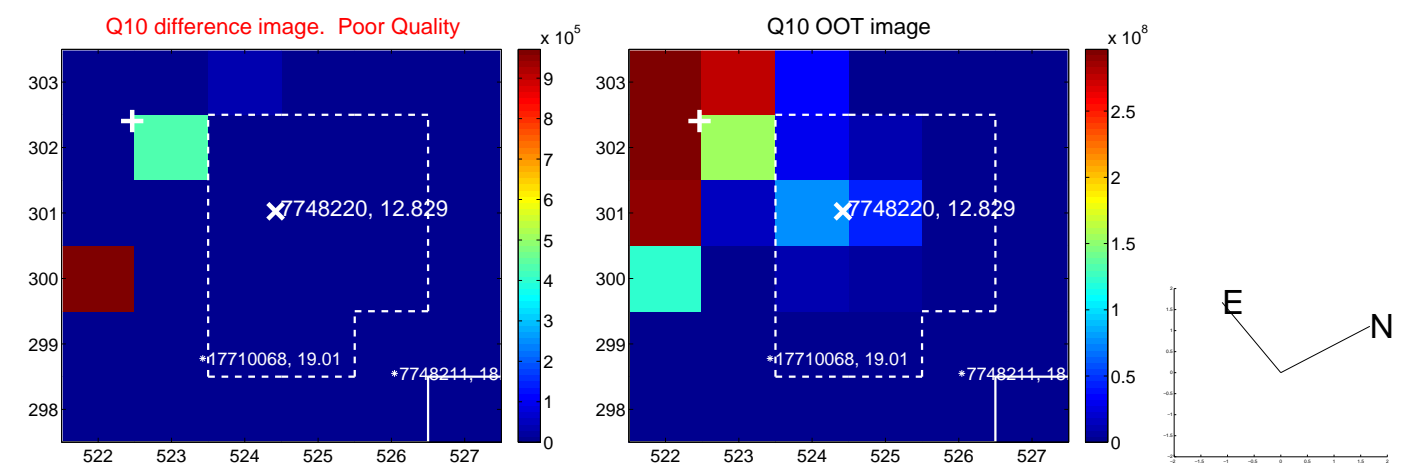
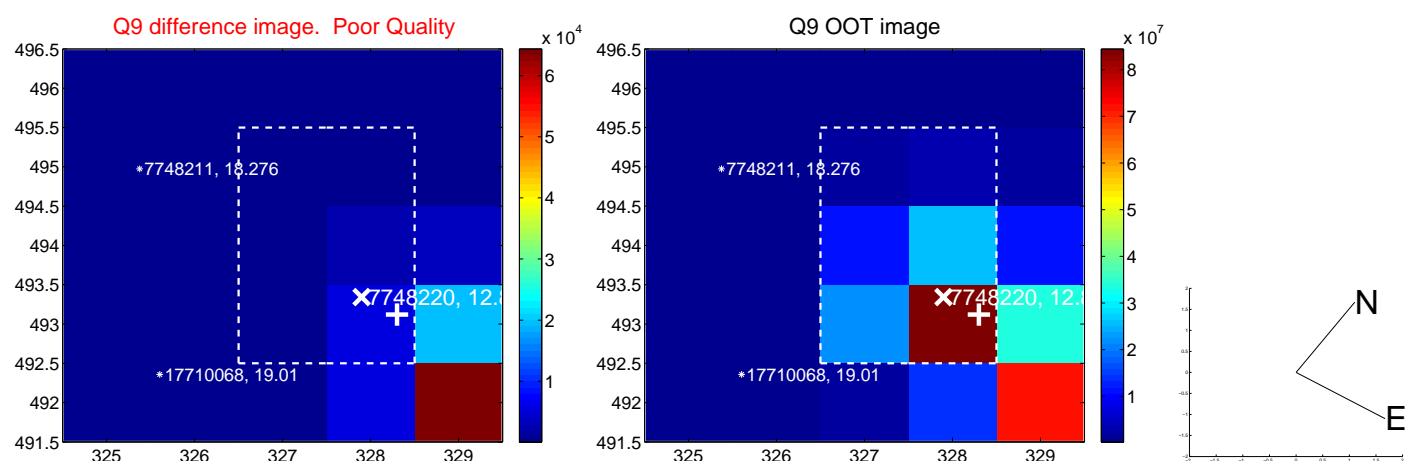
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



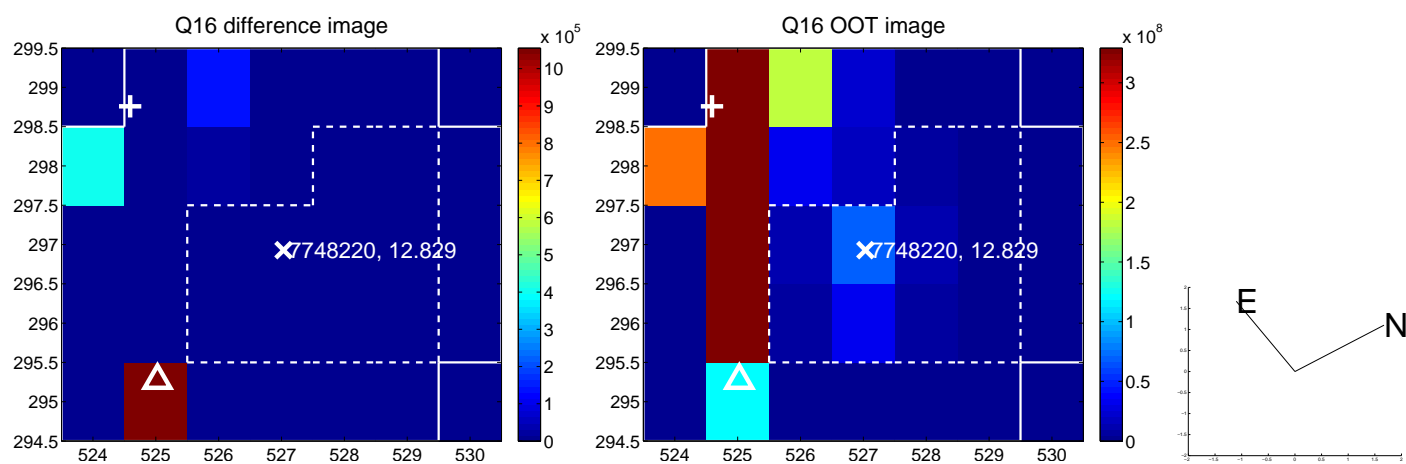
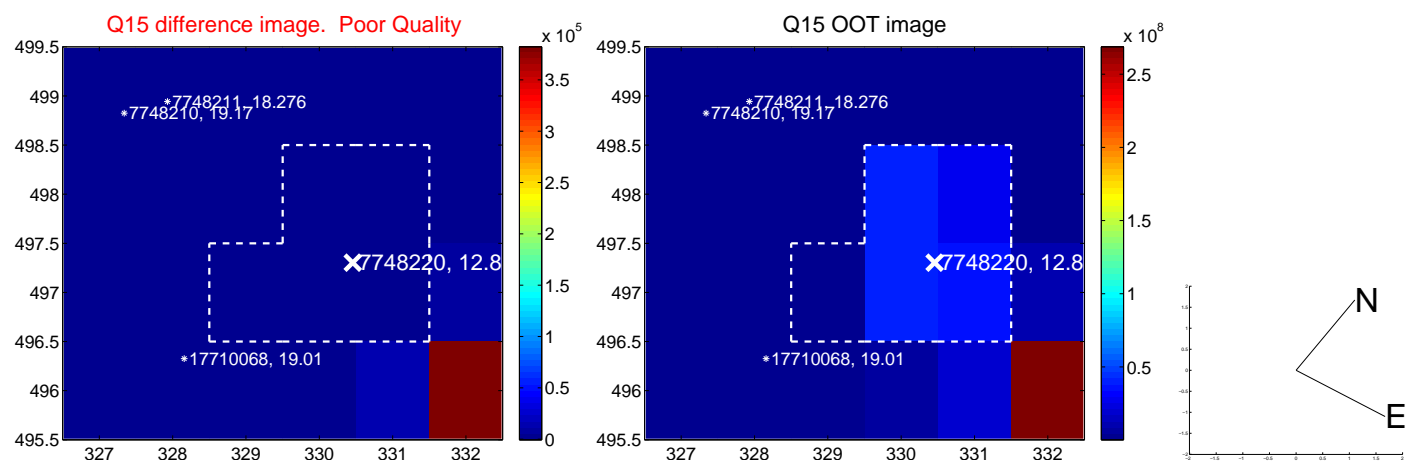
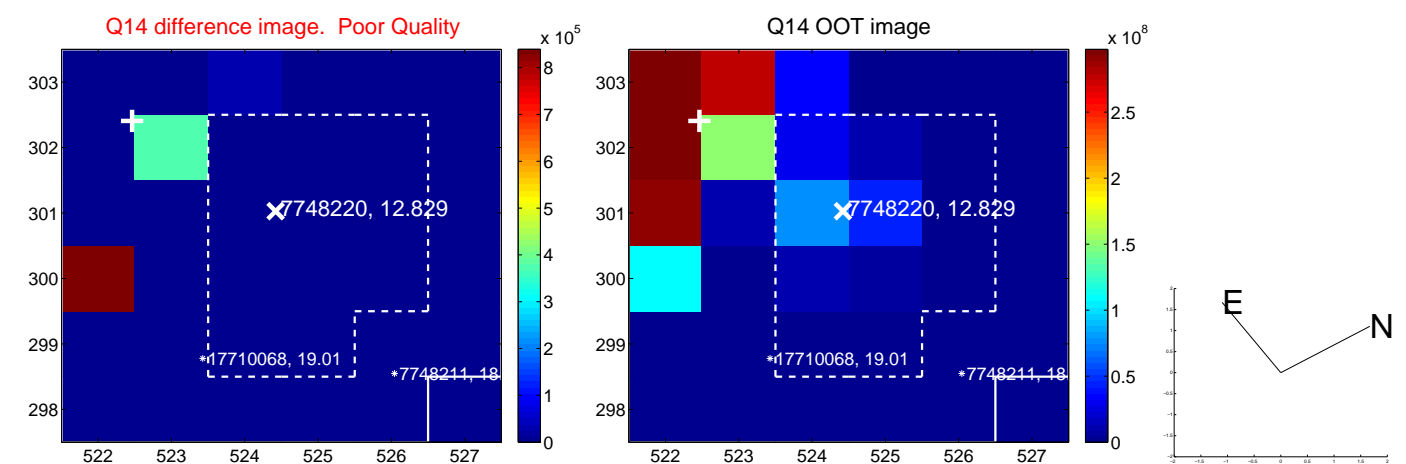
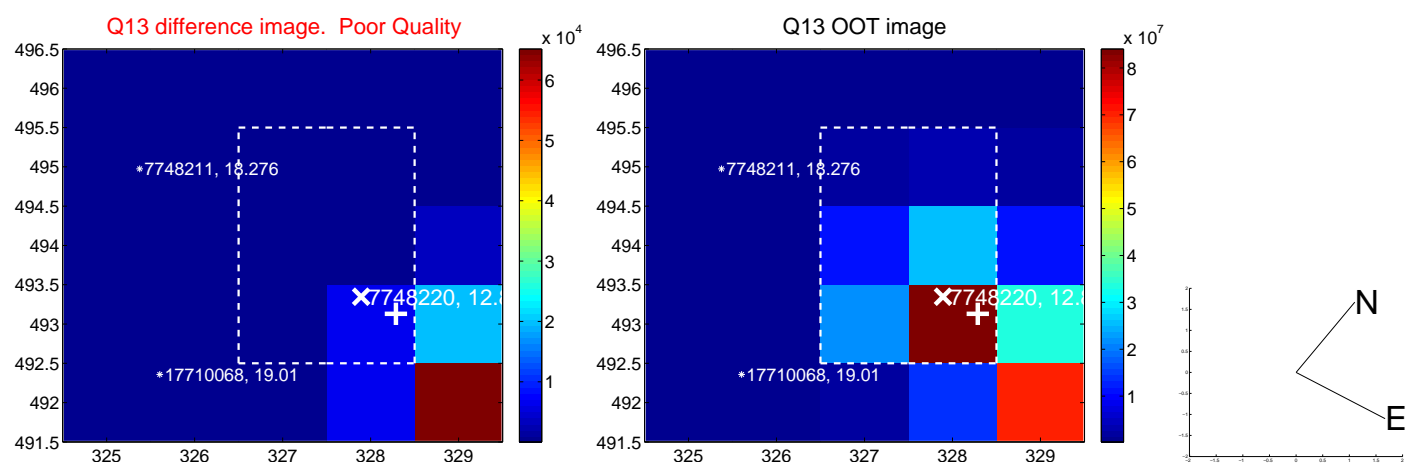
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



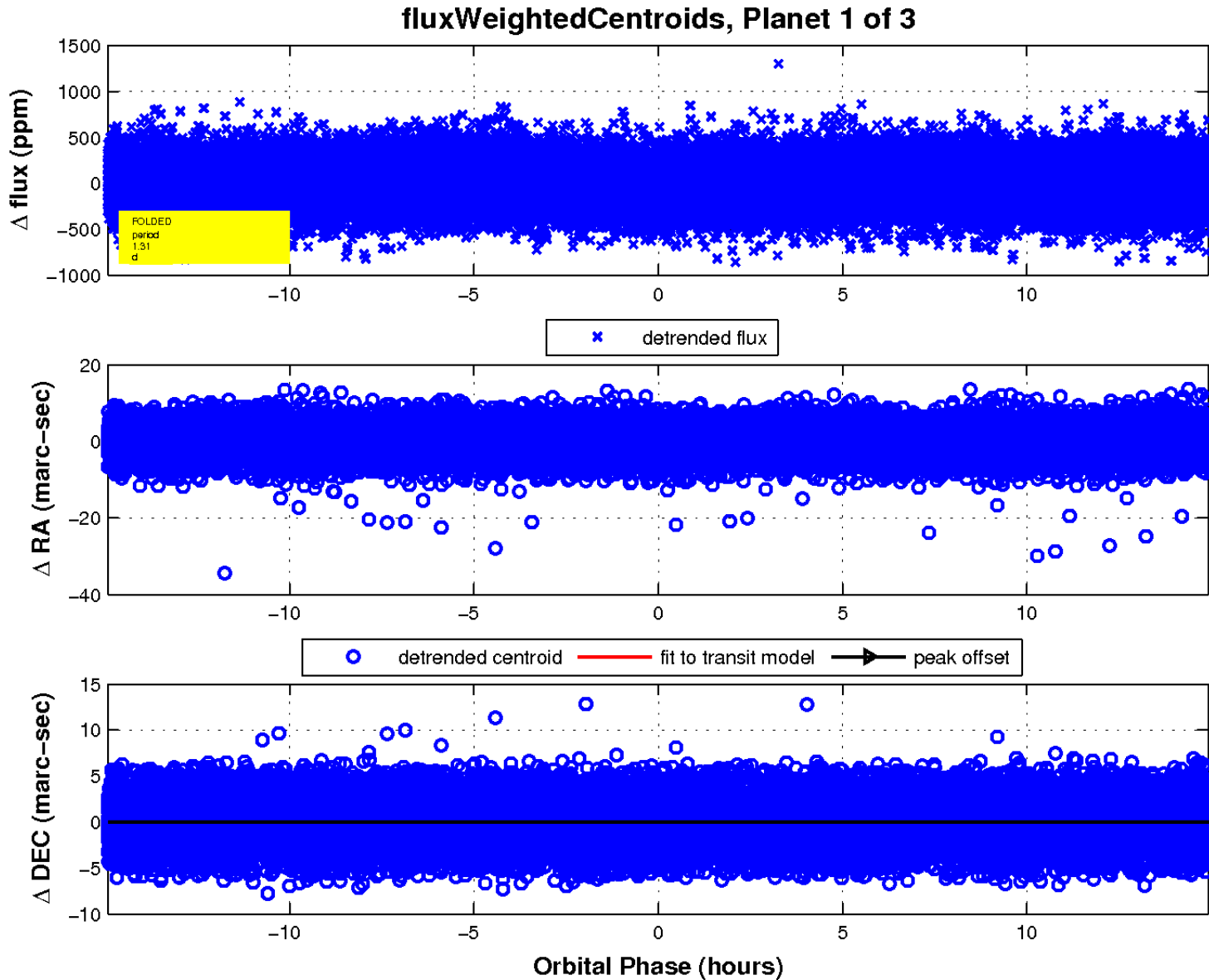
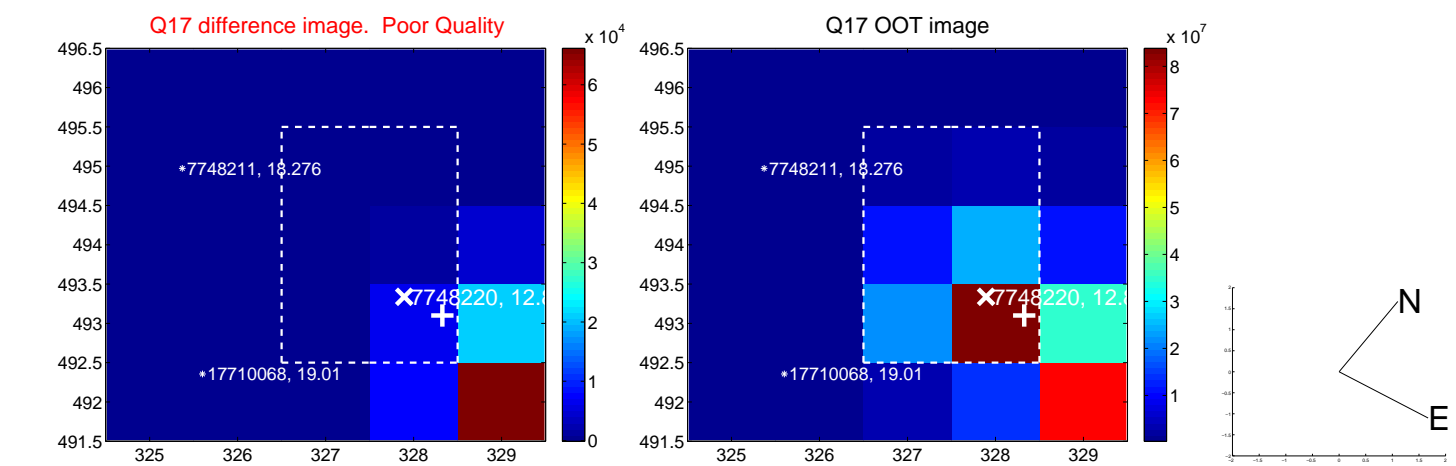
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

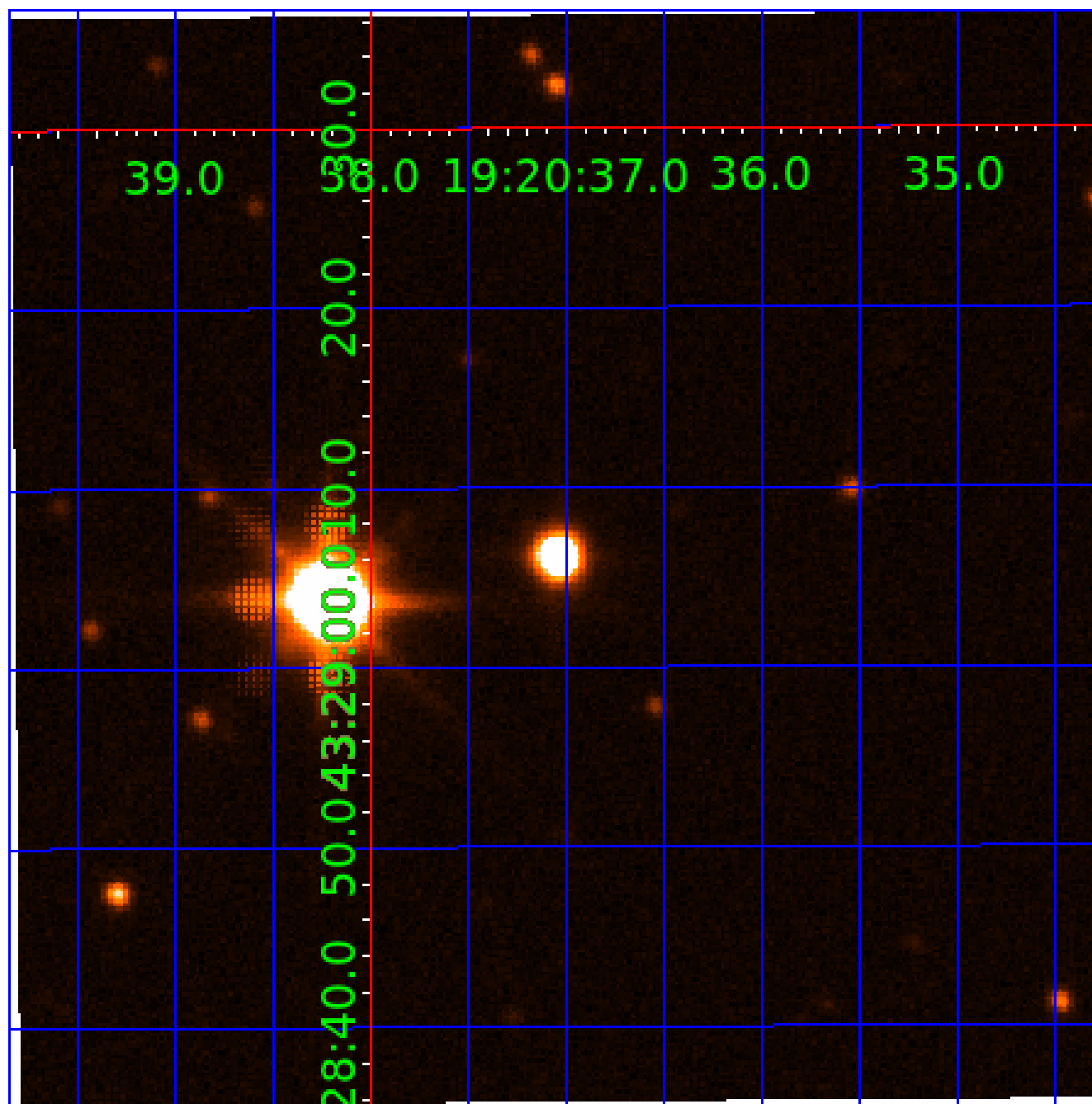


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007748220

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})
007748220-01	OBS	No	1.308837	132.425320	21.9	4.979	7.4	8.2	1.96	6632	1.08	9746.16
007748220-02	OBS	No	524.835757	157.917980	350.7	14.623	9.6	6.4	1.96	6632	3.87	3.30
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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007748220-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007748220-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

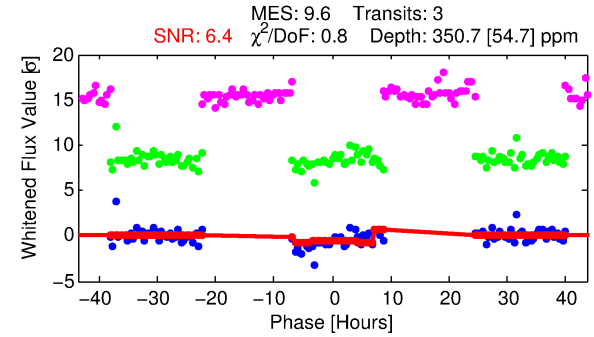
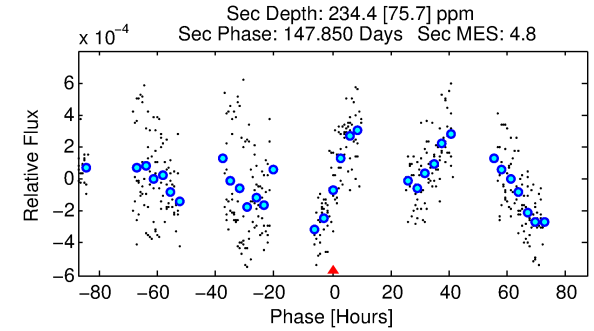
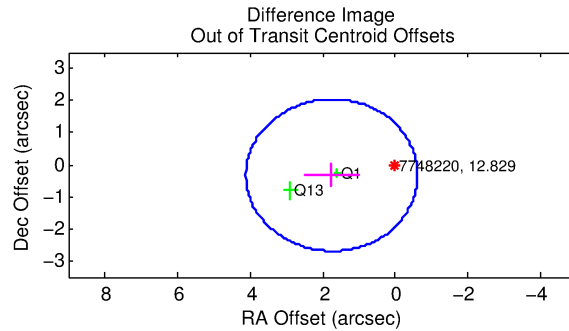
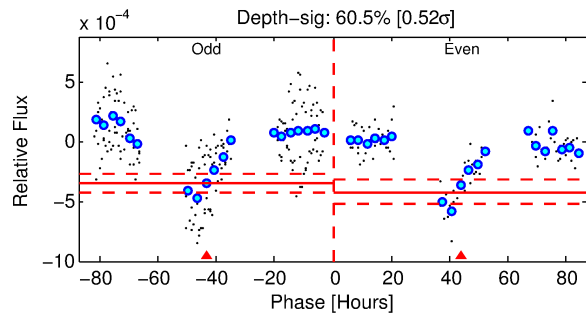
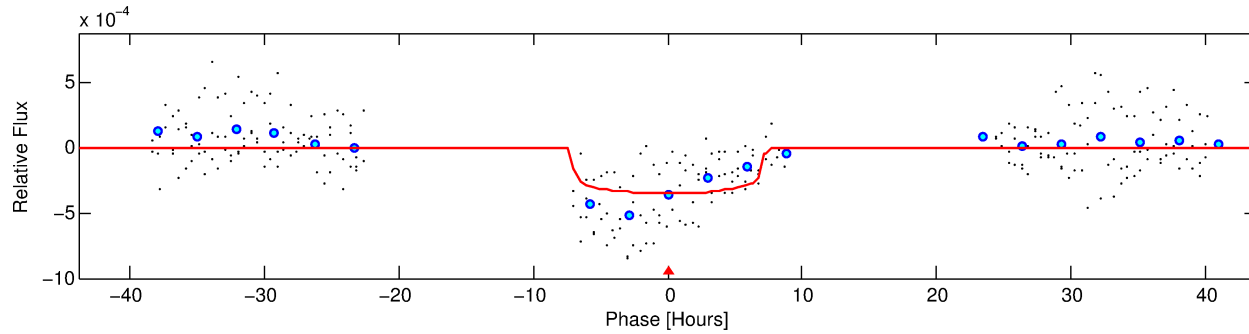
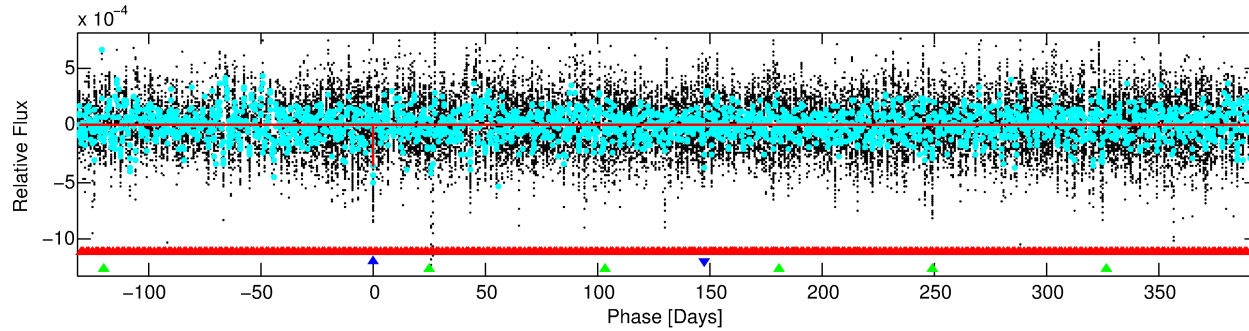
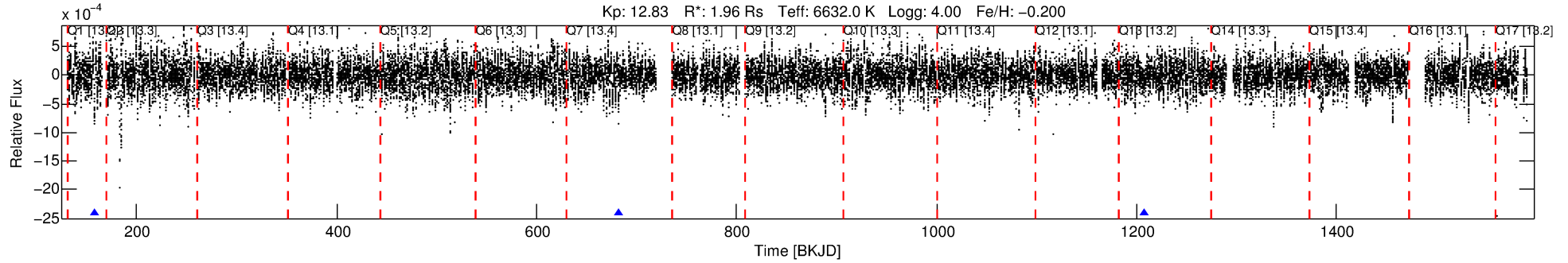
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007748220-02

No Significant Match Found

DV One-Page Summary

KIC: 7748220 Candidate: 2 of 3 Period: 524.836 d



DV Fit Results:

Period = 524.83576 [0.01063] d
Epoch = 157.9180 [0.0124] BKJD
Rp/R* = 0.0181 [0.0051]
a/R* = 219.51 [320.85]
b = 0.63 [1.41]
Seff = 3.30 [1.79]
Teq = 344 [47] K
Rp = 3.87 [1.74] Re
a = 1.4199 [0.4703] AU
Ag = 17398.41 [14553.00] [1.20 σ]
Teffp = 6101 [1017] K [5.66 σ]

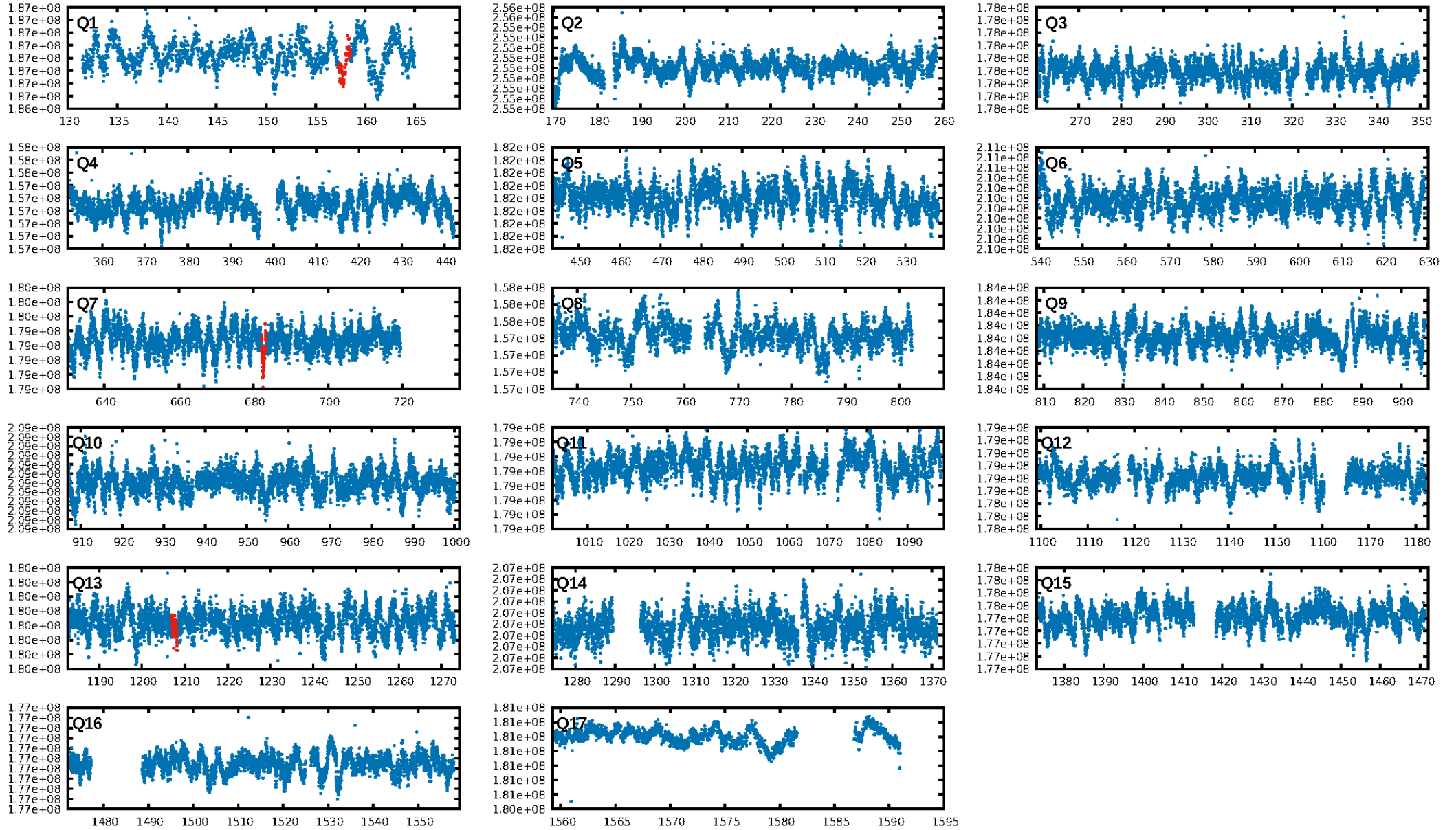
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [368.99 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 91.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.28e-12
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -4.608
Centroid-sig: N/A
Centroid-so: 4.759 arcsec [3.50 σ]
OotOffset-rm: 1.779 arcsec [2.25 σ]
KicOffset-rm: 3.565 arcsec [4.92 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/3]

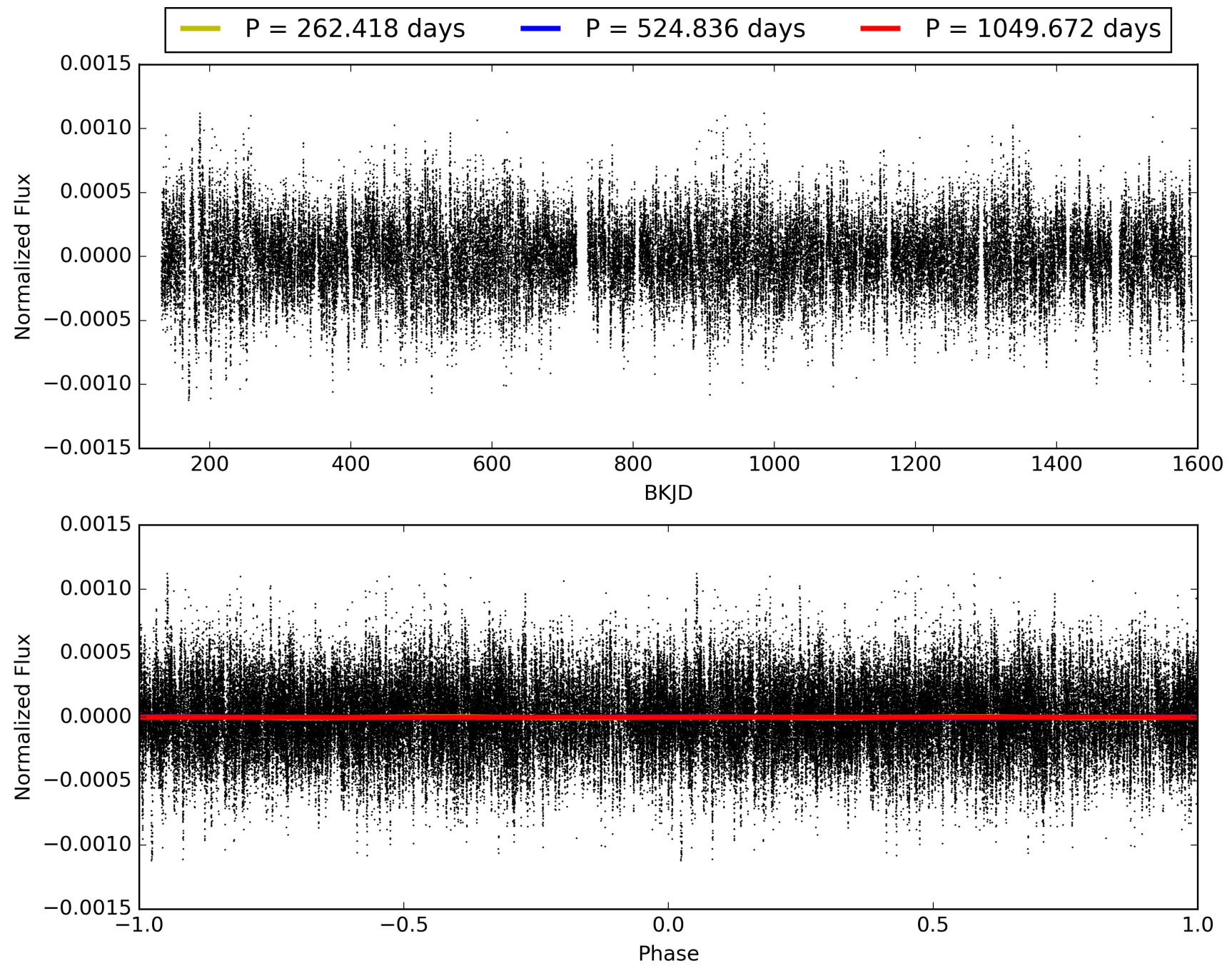
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007748220-02, PDC Light Curves

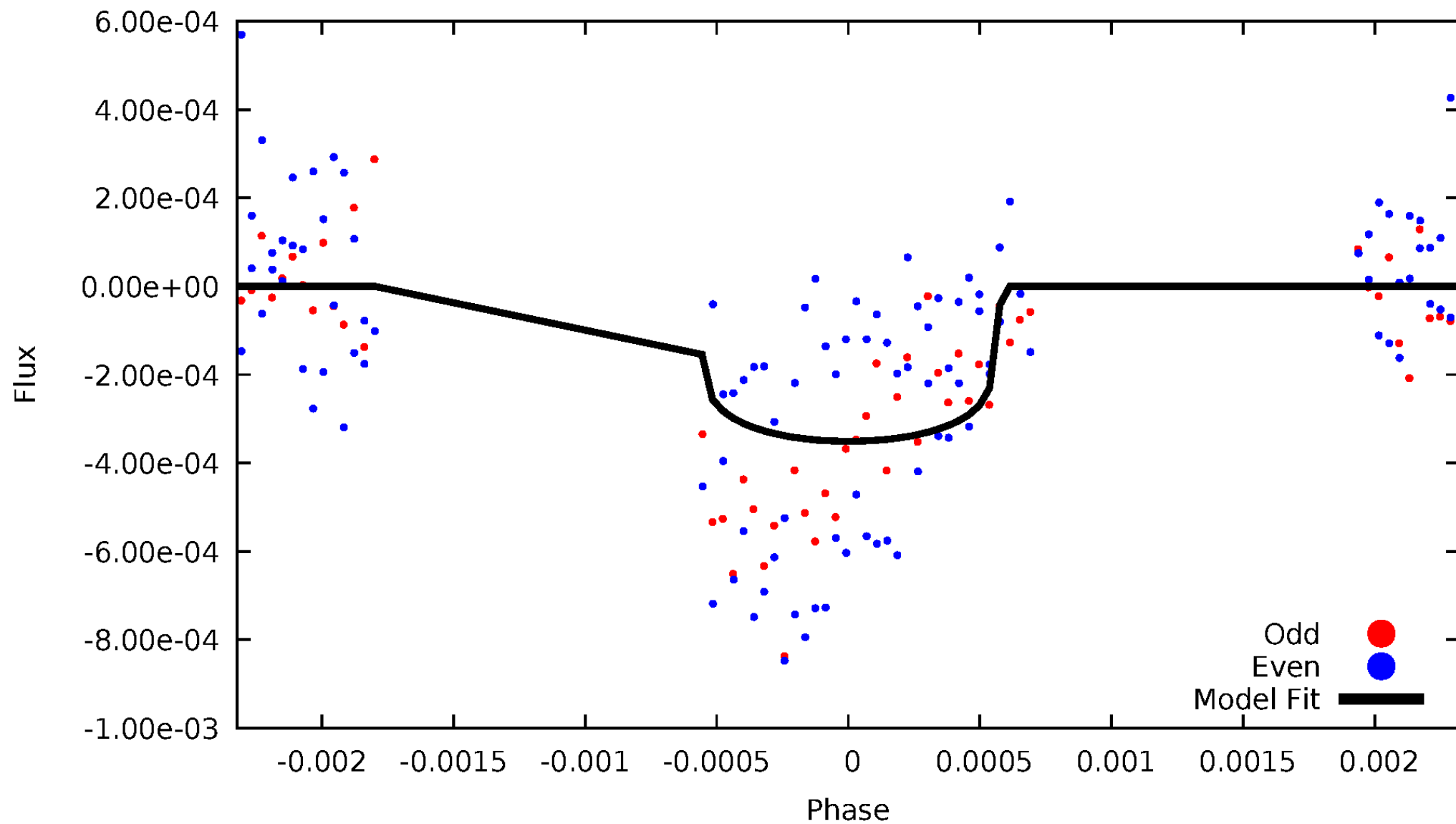


TCE 007748220-02



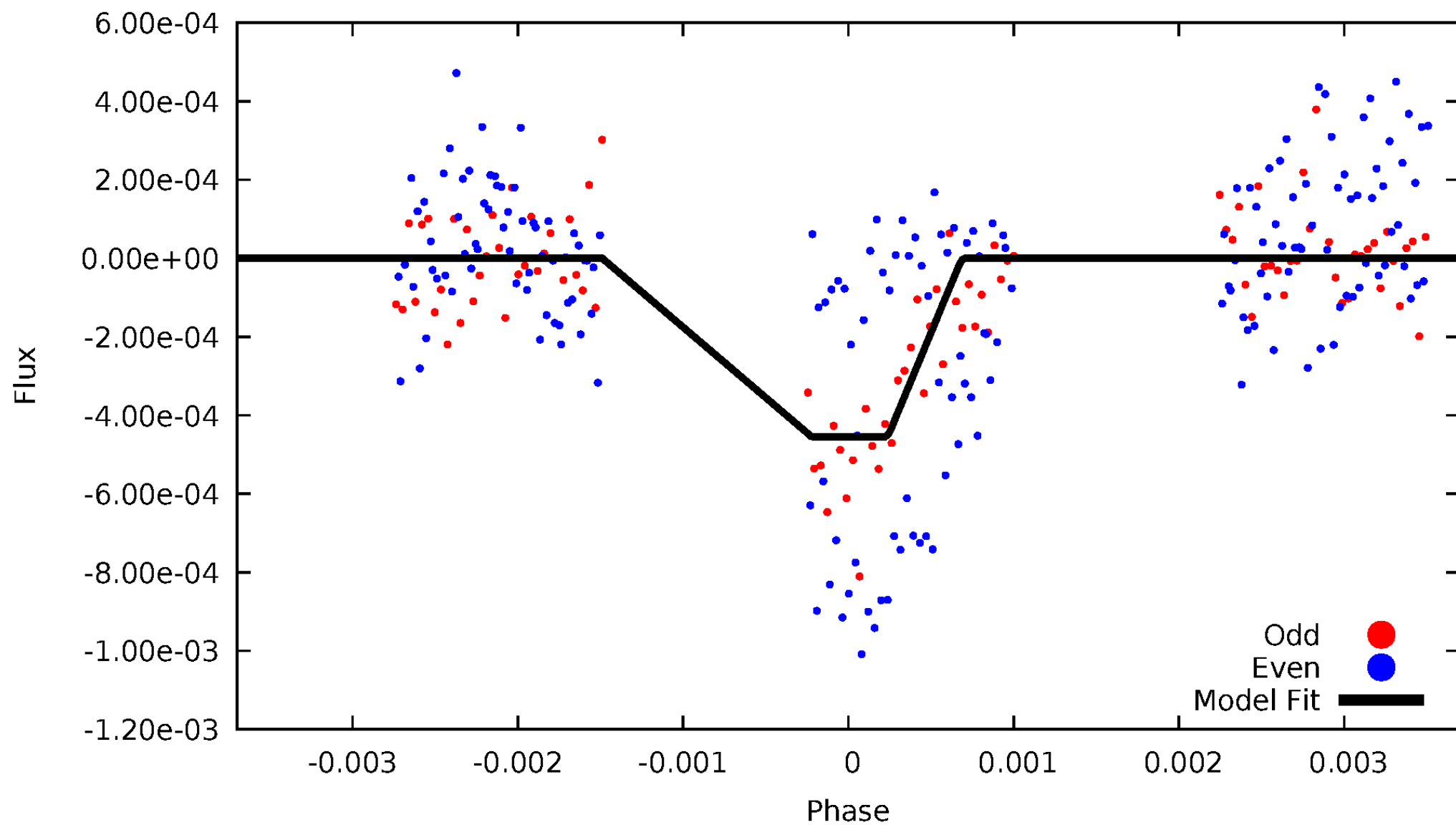
DV Odd/Even

TCE 007748220-02



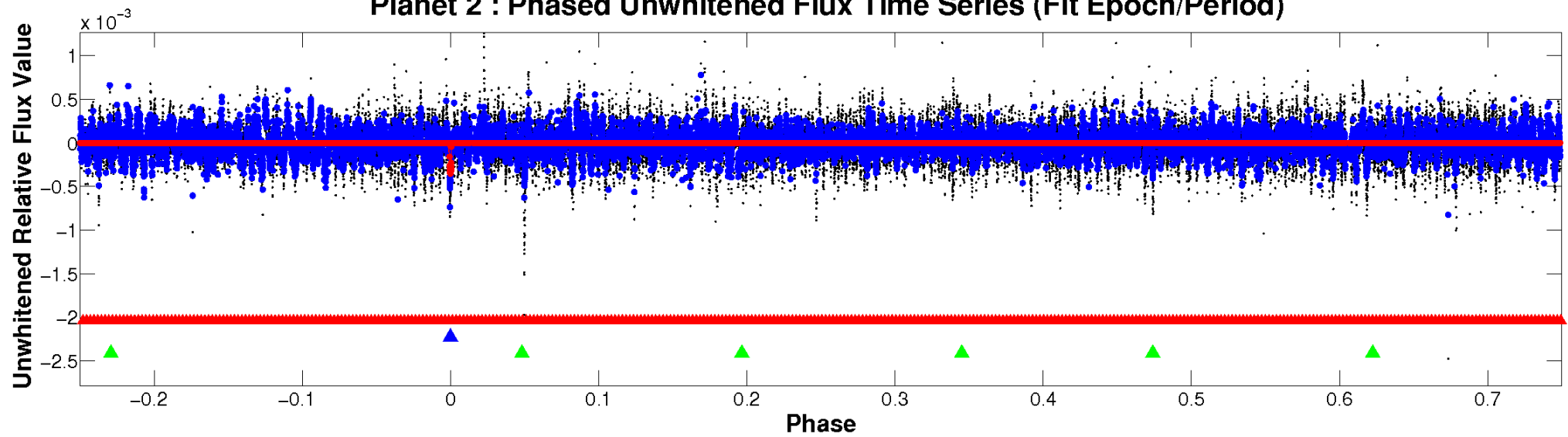
ALT Odd/Even

TCE 007748220-02

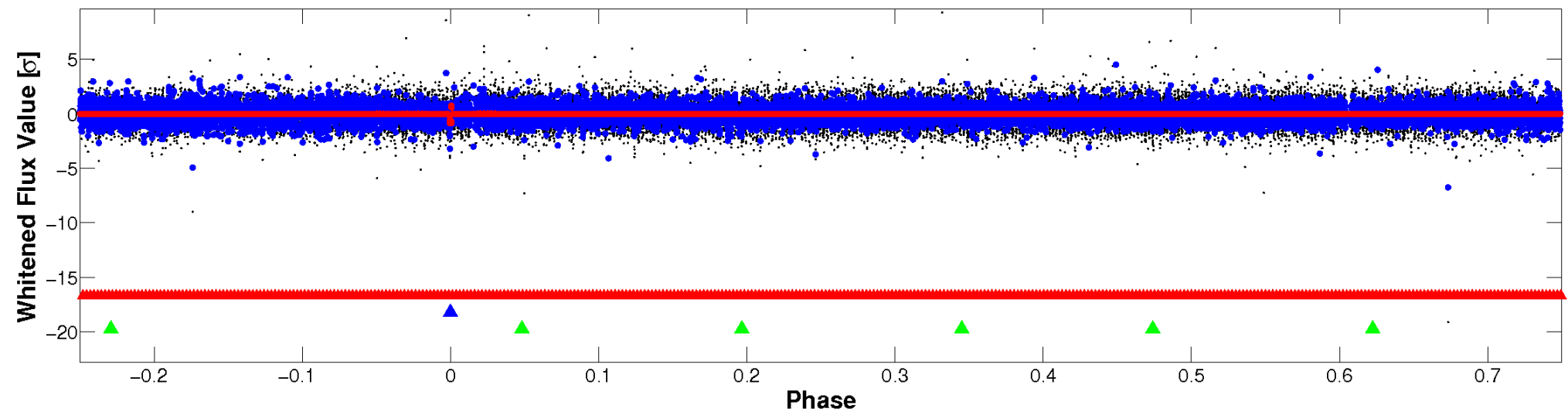


Non-Whitened Vs. Whitened Light Curve

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

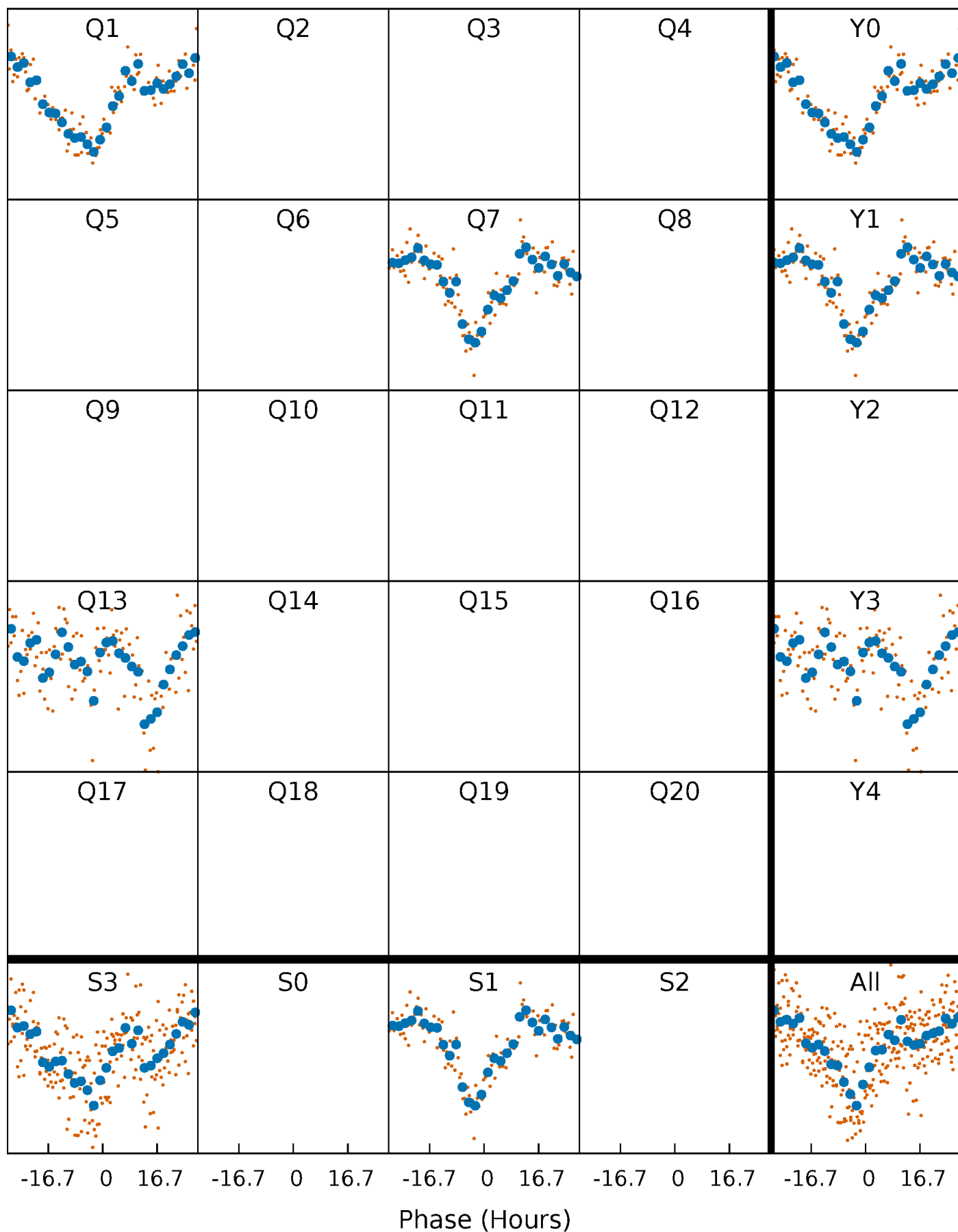


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



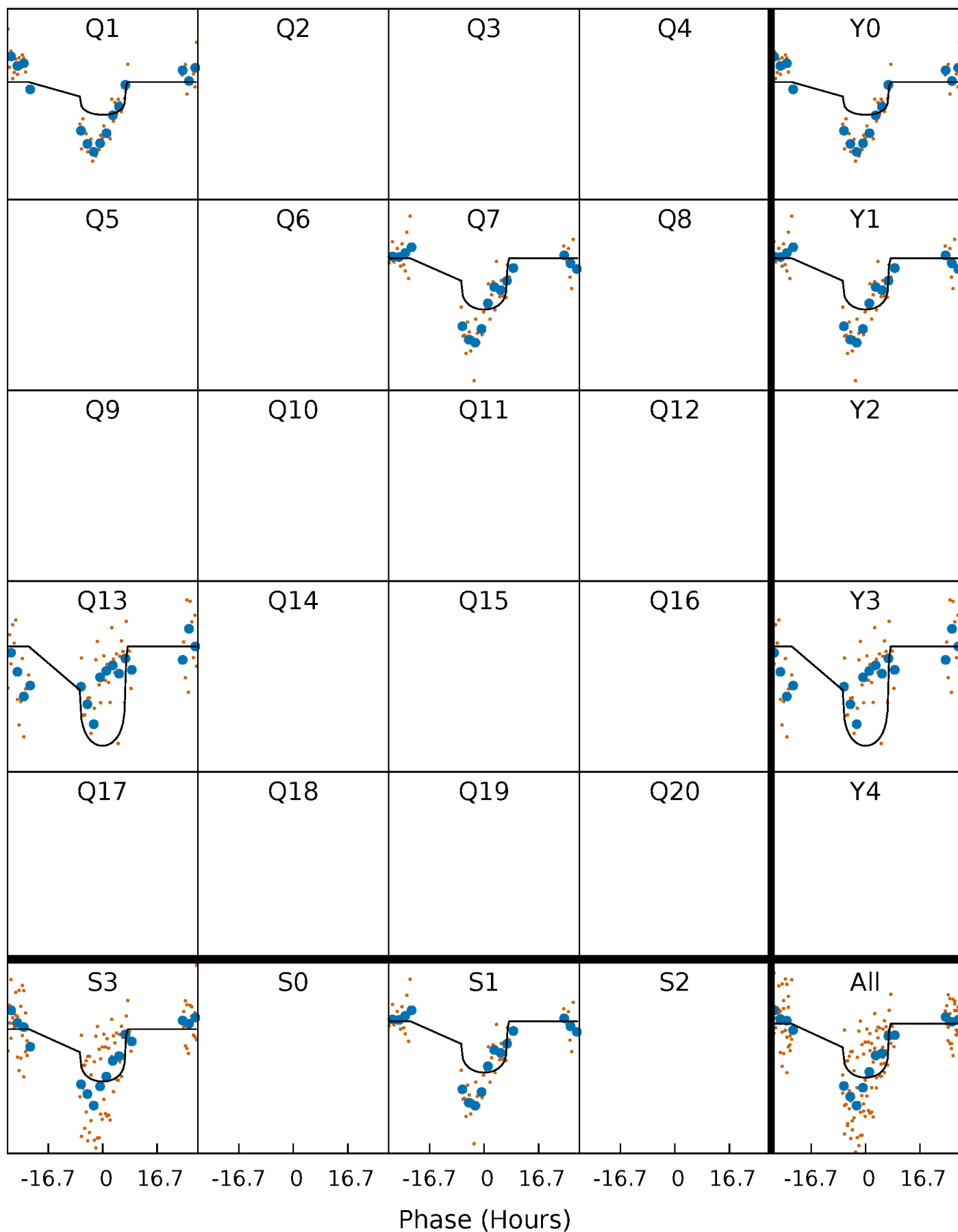
PDC Quarter-Phased Transit Curves

TCE 007748220-02 $P=524.835757$ Days $T_0=157.917980$ (BKJD)



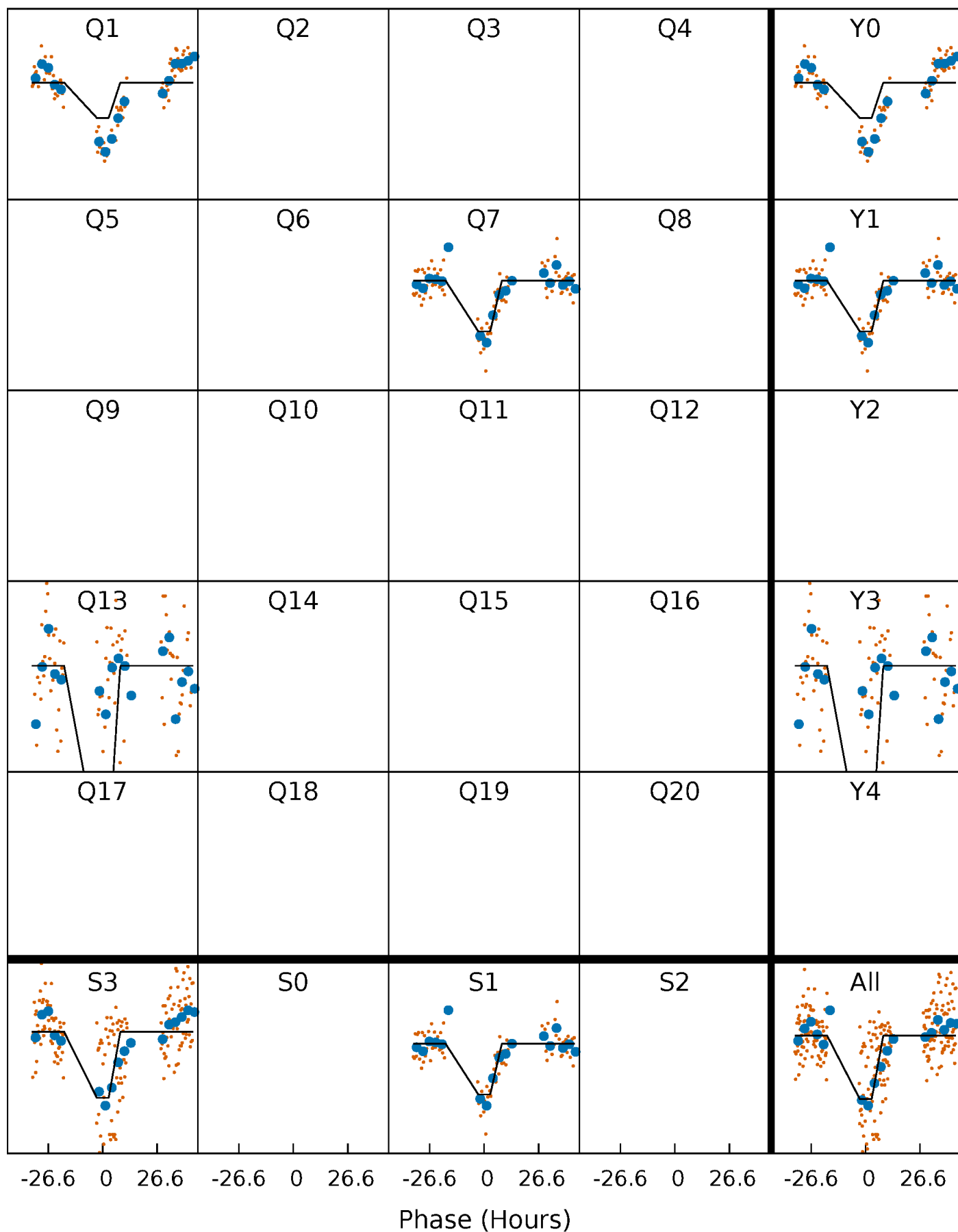
DV Quarter-Phased Transit Curves

TCE 007748220-02 P=524.835757 Days $T_0=157.917980$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

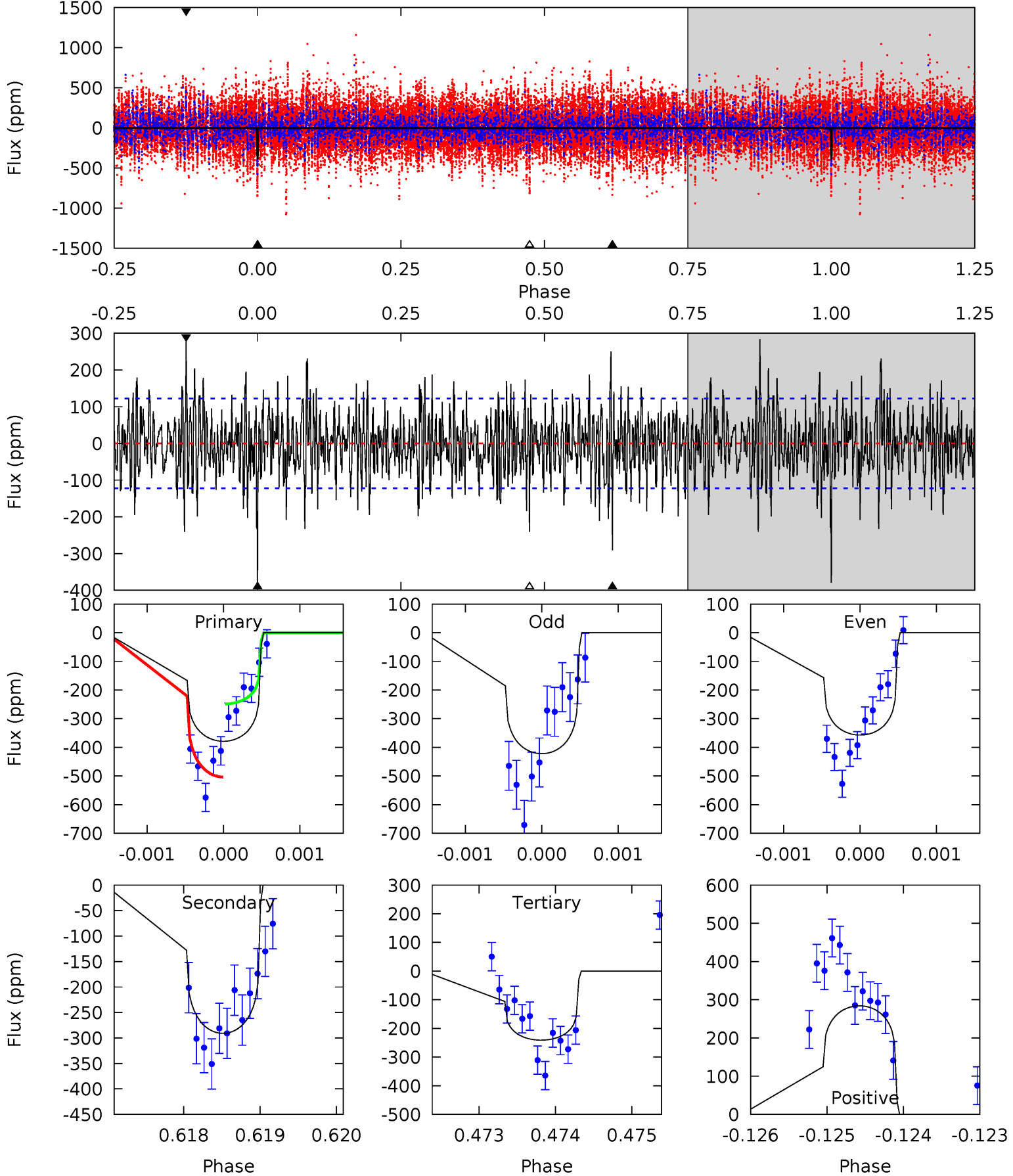
TCE 007748220-02 P=524.842800 Days $T_0=157.748185$ (BKJD)



DV Model-Shift Uniqueness Test

007748220-02, P = 524.835757 Days, E = 157.917980 Days

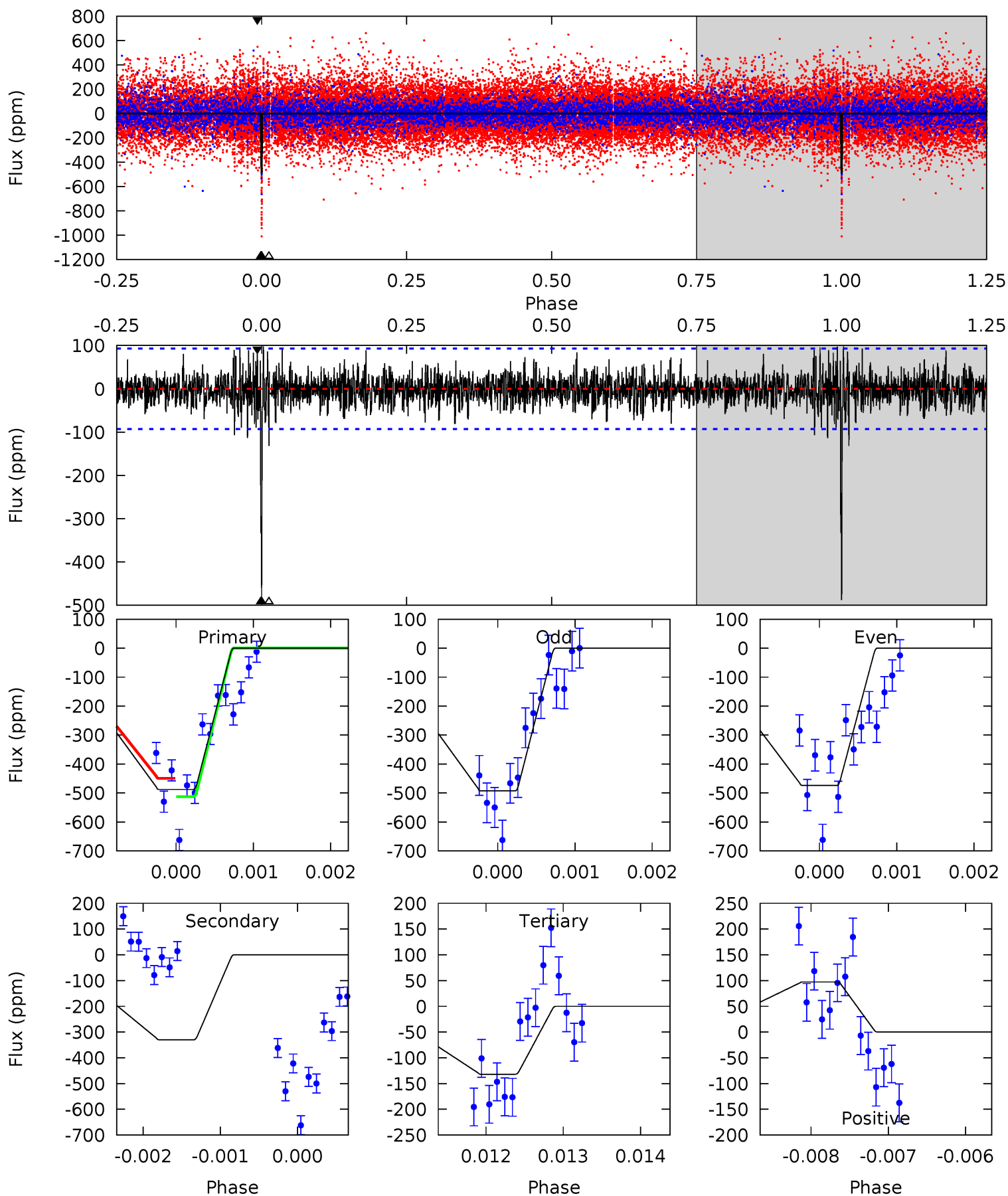
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.8	12.9	10.7	12.6	5.42	3.25	3.28	6.12	4.21	2.21	0.30	1.35	0.90	0.43	5.65



Alt Model-Shift Uniqueness Test

007748220-02, P = 524.842800 Days, E = 157.748185 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.6	19.4	7.74	5.71	5.46	3.31	1.50	20.9	22.9	11.6	13.6	0.52	0.97	0.17	1.60



Stellar Parameters For KIC 007748220

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6632^{+163}_{-233}	$3.996^{+0.306}_{-0.165}$	$-0.200^{+0.250}_{-0.300}$	$1.958^{+0.499}_{-0.686}$	$1.390^{+0.198}_{-0.297}$	$0.261^{+0.621}_{-0.117}$
	+2%/-4%	+8%/-4%	+125%/-150%	+25%/-35%	+14%/-21%	+238%/-45%
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 007748220-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-291 ± 23	$3.74^{+1.37}_{-1.21}$	473^{+39}_{-43}	6340^{+1320}_{-731}	22379^{+26425}_{-10028}
Alt.	-330 ± 17	$4.32^{+1.37}_{-1.24}$	475^{+37}_{-44}	6133^{+963}_{-642}	19341^{+18011}_{-7764}

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

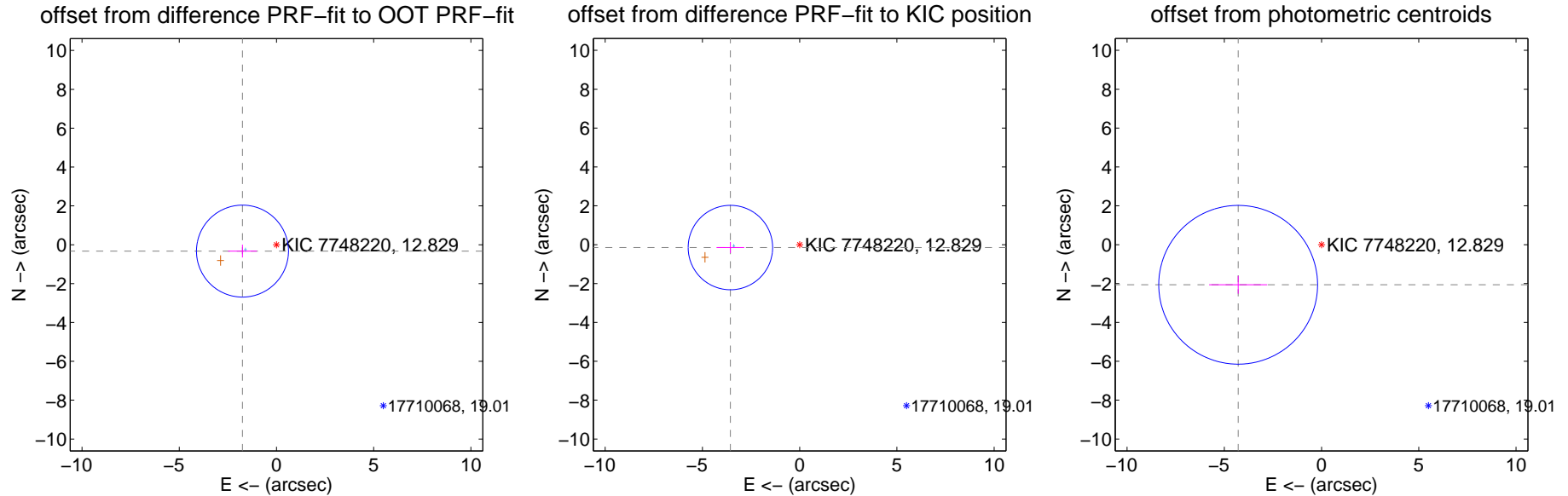
DV Centroid Data

Supplemental centroid analysis for 007748220-02. Kepler magnitude: 12.83. Transit SNR 6.38

There are 1 quarters with good PRF difference image offsets

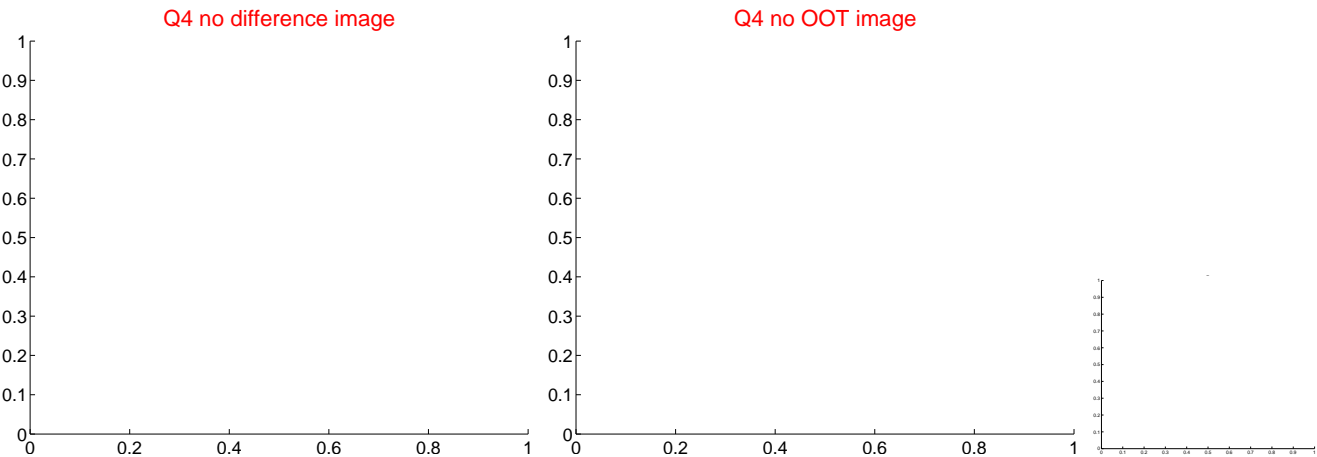
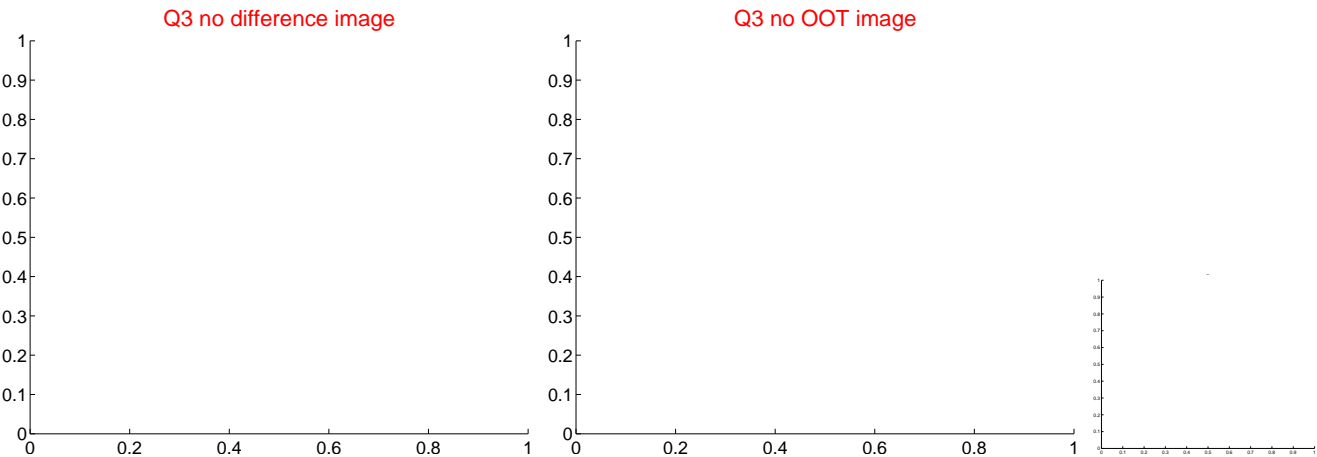
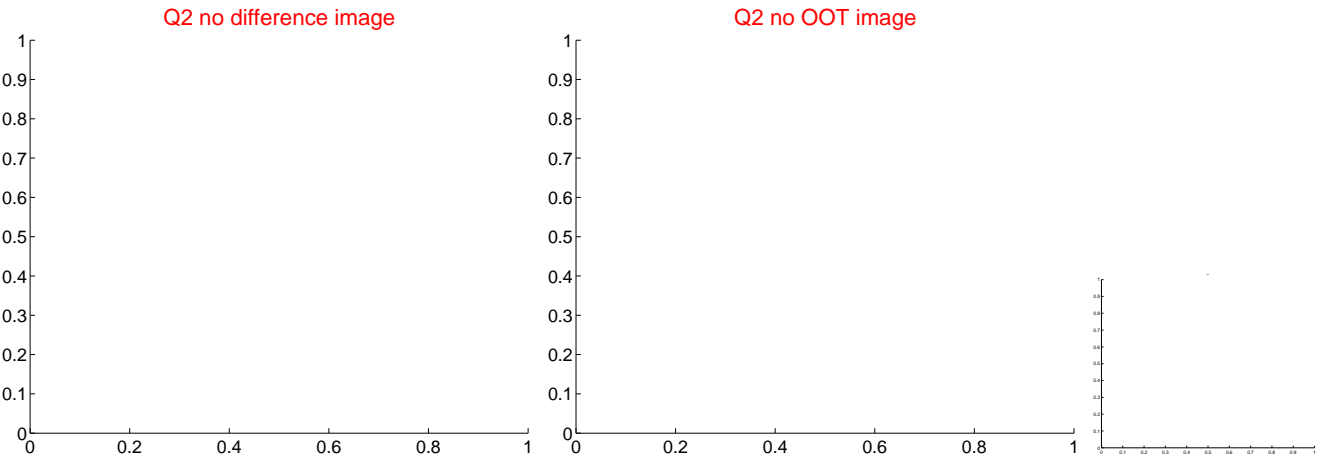
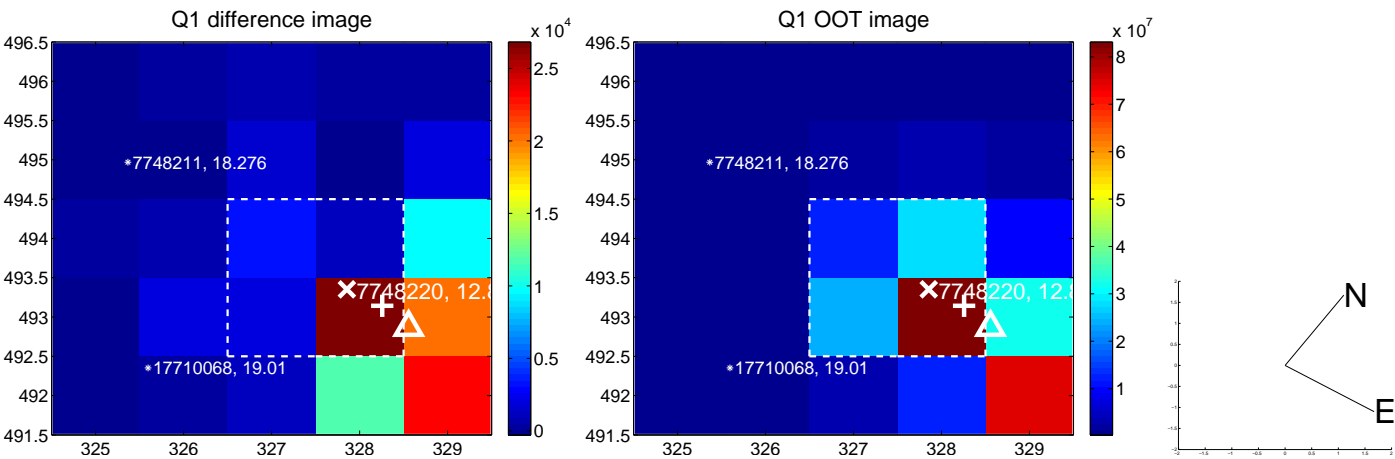
The direct PRF centroid is offset from the target star catalog position by about 2.00 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.779 ± 0.789	2.25	1.748 ± 0.742	-0.328 ± 0.328
PRF-fit source offset from KIC position	3.565 ± 0.724	4.92	3.562 ± 0.713	-0.148 ± 0.285
photometric centroid source offset	4.76 ± 1.36	3.50	4.29 ± 1.49	-2.06 ± 0.46

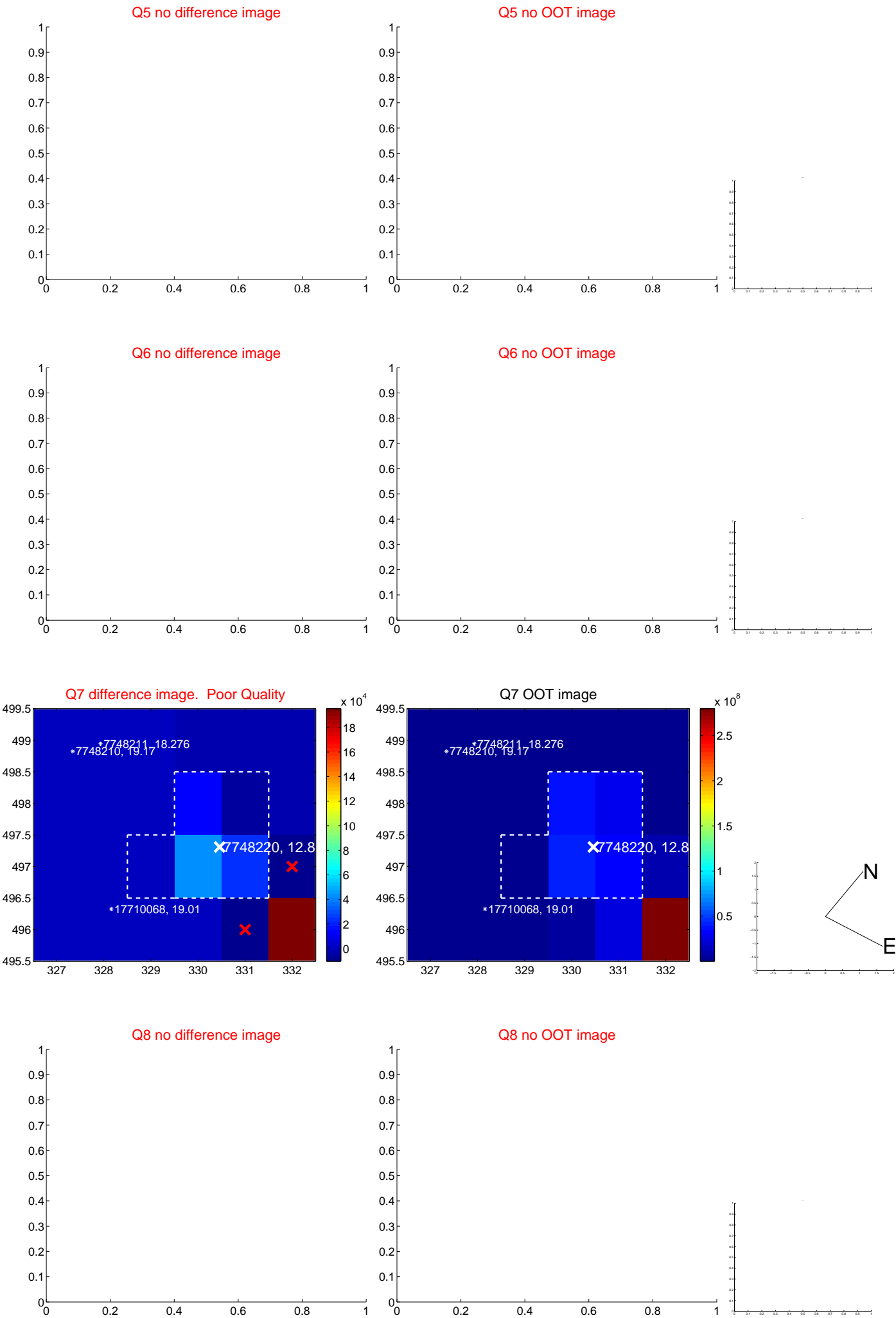


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



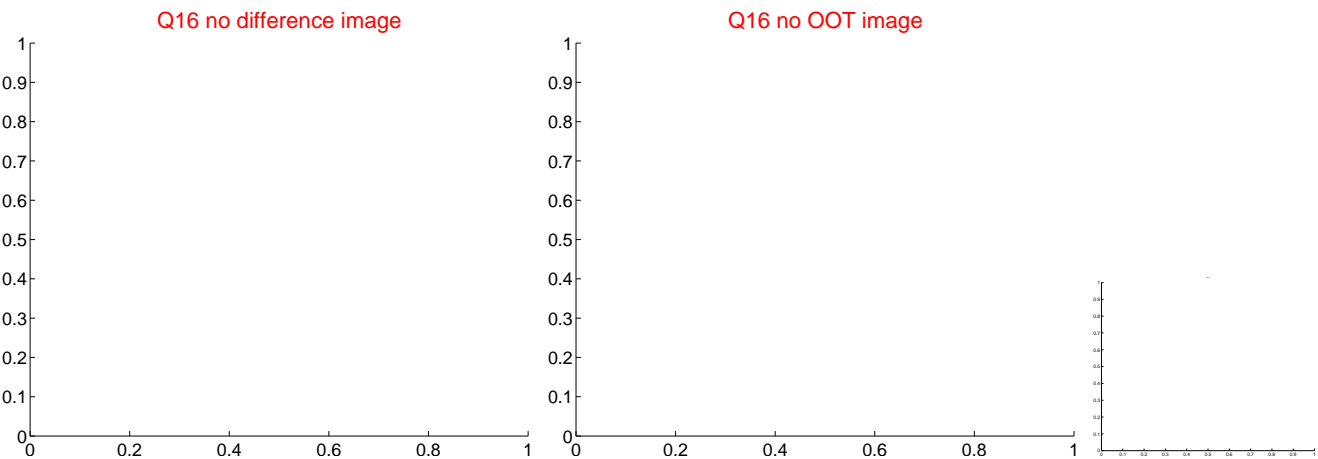
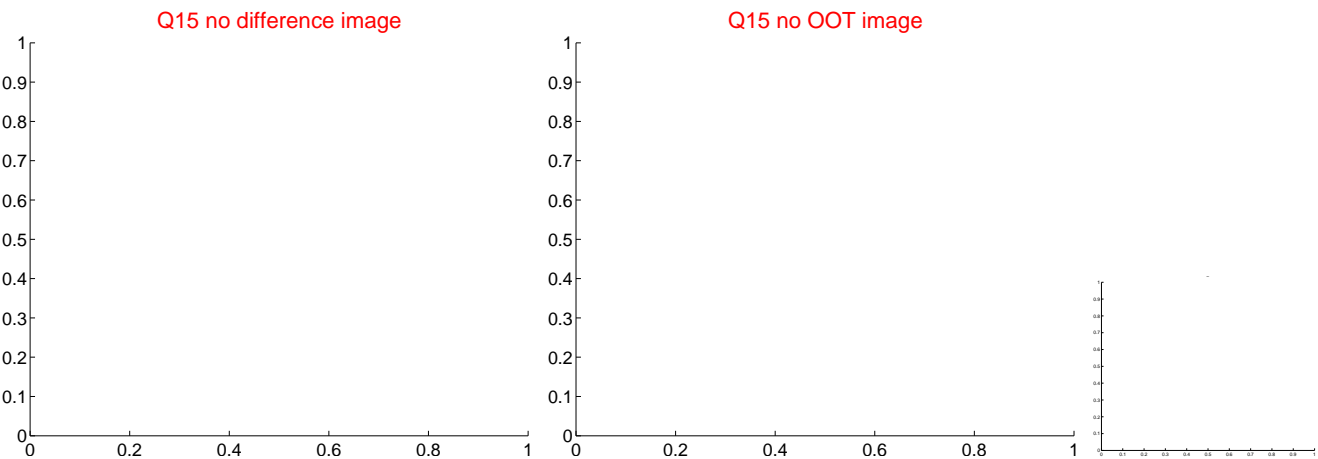
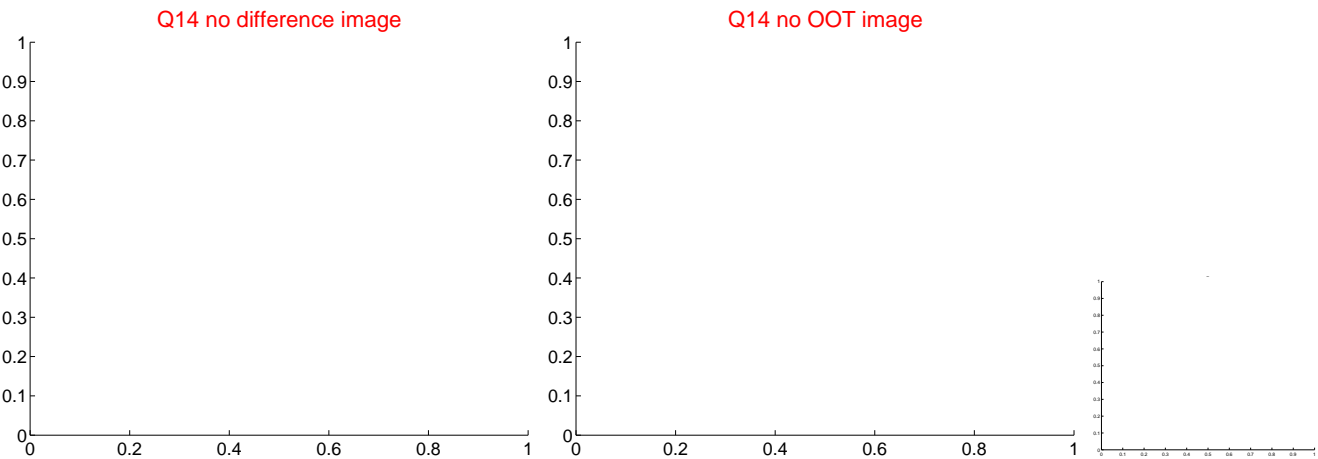
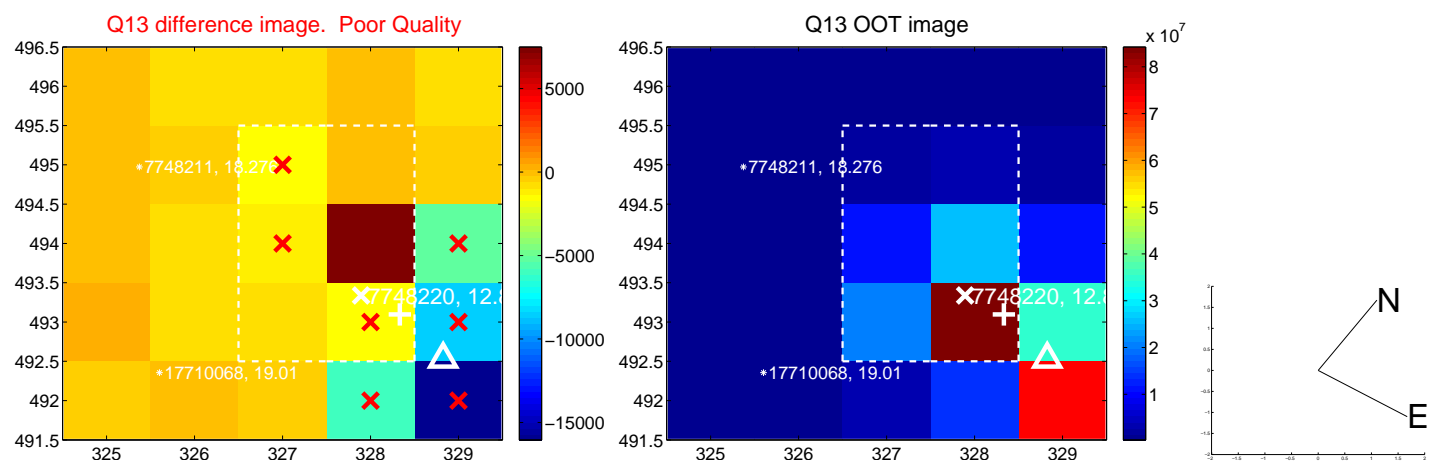
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



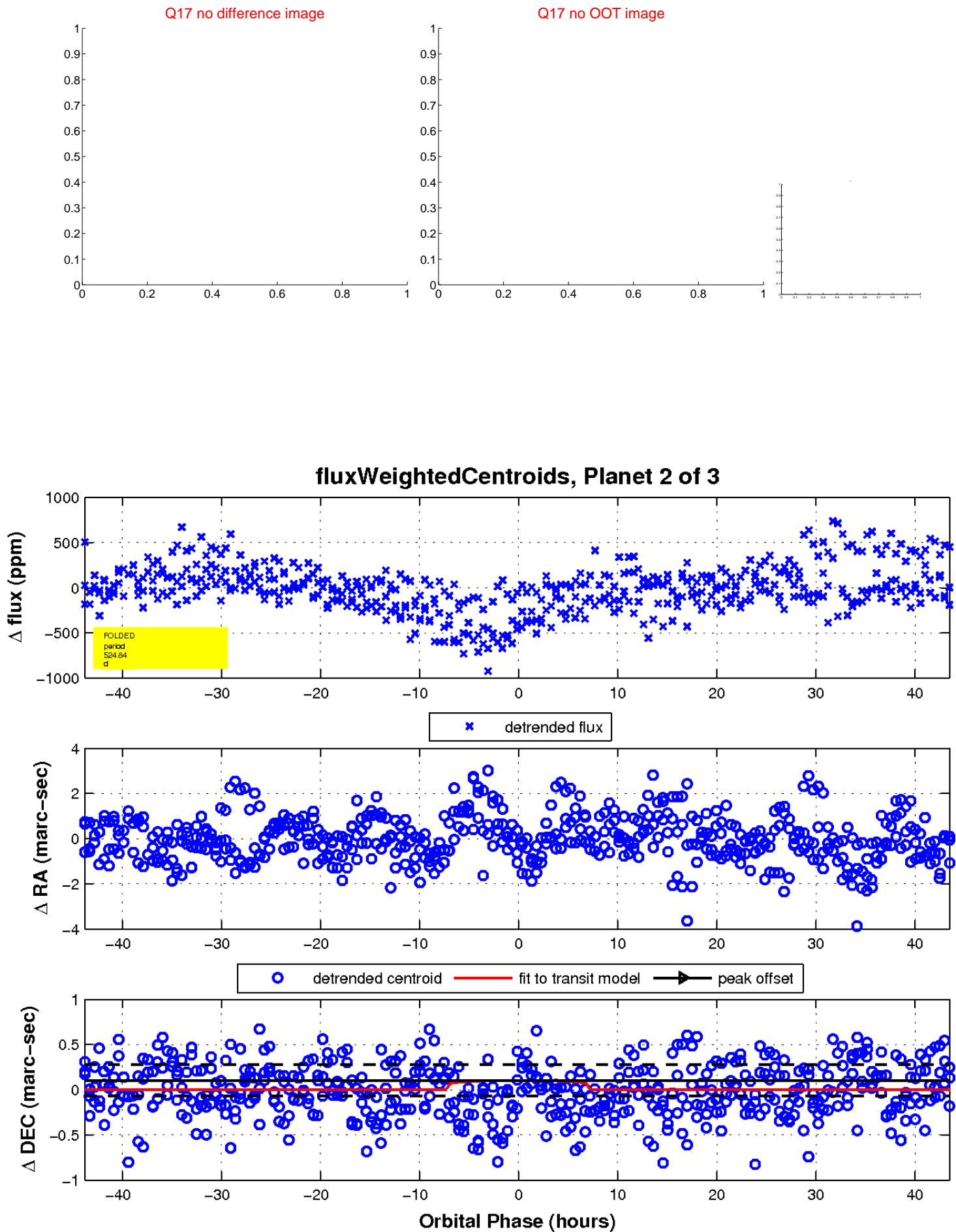
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

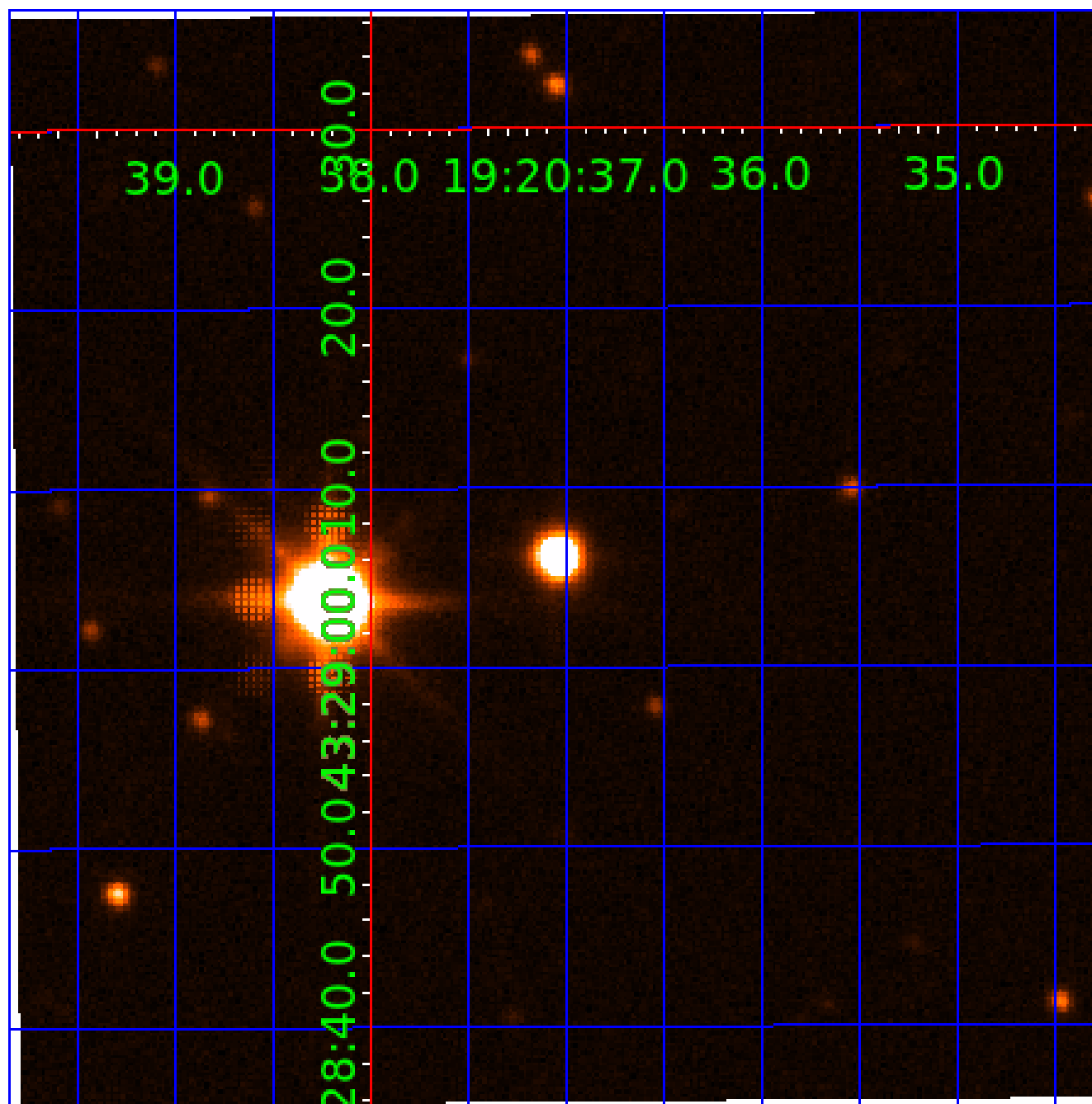


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007748220

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})
007748220-01	OBS	No	1.308837	132.425320	21.9	4.979	7.4	8.2	1.96	6632	1.08	9746.16
007748220-02	OBS	No	524.835757	157.917980	350.7	14.623	9.6	6.4	1.96	6632	3.87	3.30
007748220-03	OBS	No	223.466657	339.032223	287.8	13.054	8.7	6.1	1.96	6632	3.55	10.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007748220-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
007748220-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007748220-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

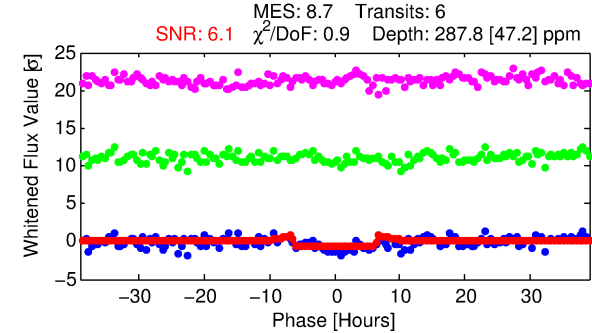
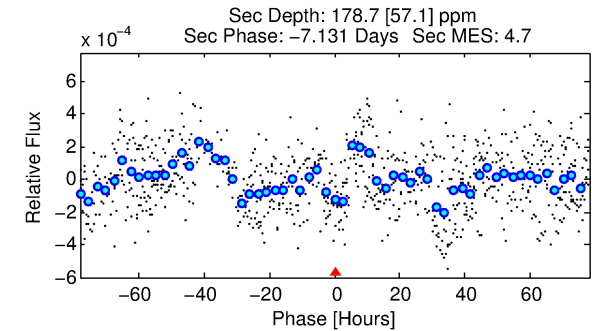
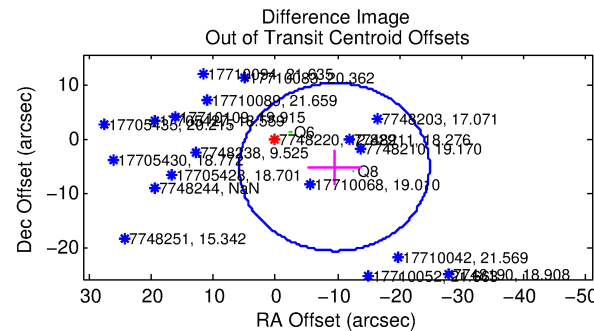
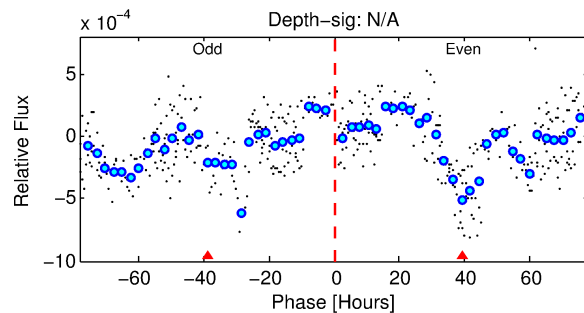
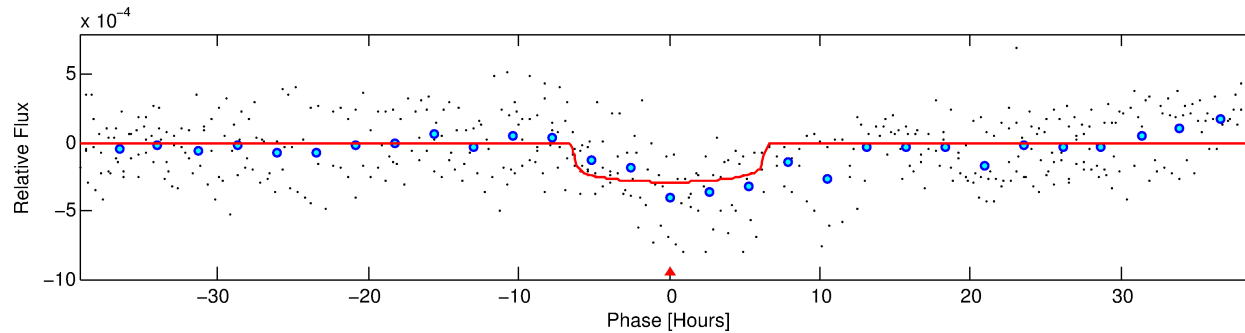
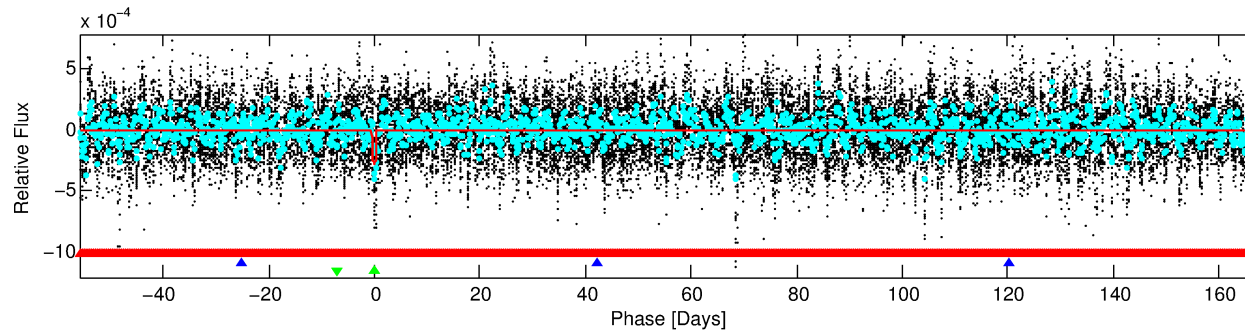
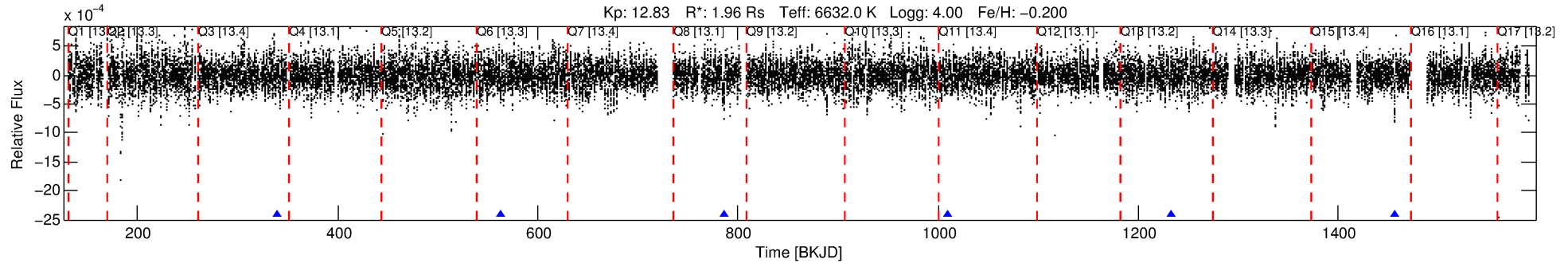
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007748220-03

No Significant Match Found

DV One-Page Summary

KIC: 7748220 Candidate: 3 of 3 Period: 223.467 d



DV Fit Results:

Period = 223.4666 [0.00348] d
Epoch = 339.0322 [0.0123] BKJD
Rp/R* = 0.0166 [0.0055]
a/R* = 97.53 [172.05]
b = 0.69 [1.34]
Seff = 10.29 [5.59]
Teq = 457 [62] K
Rp = 3.55 [1.72] Re
a = 0.8036 [0.2662] AU
Ag = 5043.56 [4571.75] [1.10σ]
Teffp = 5950 [1119] K [4.90σ]

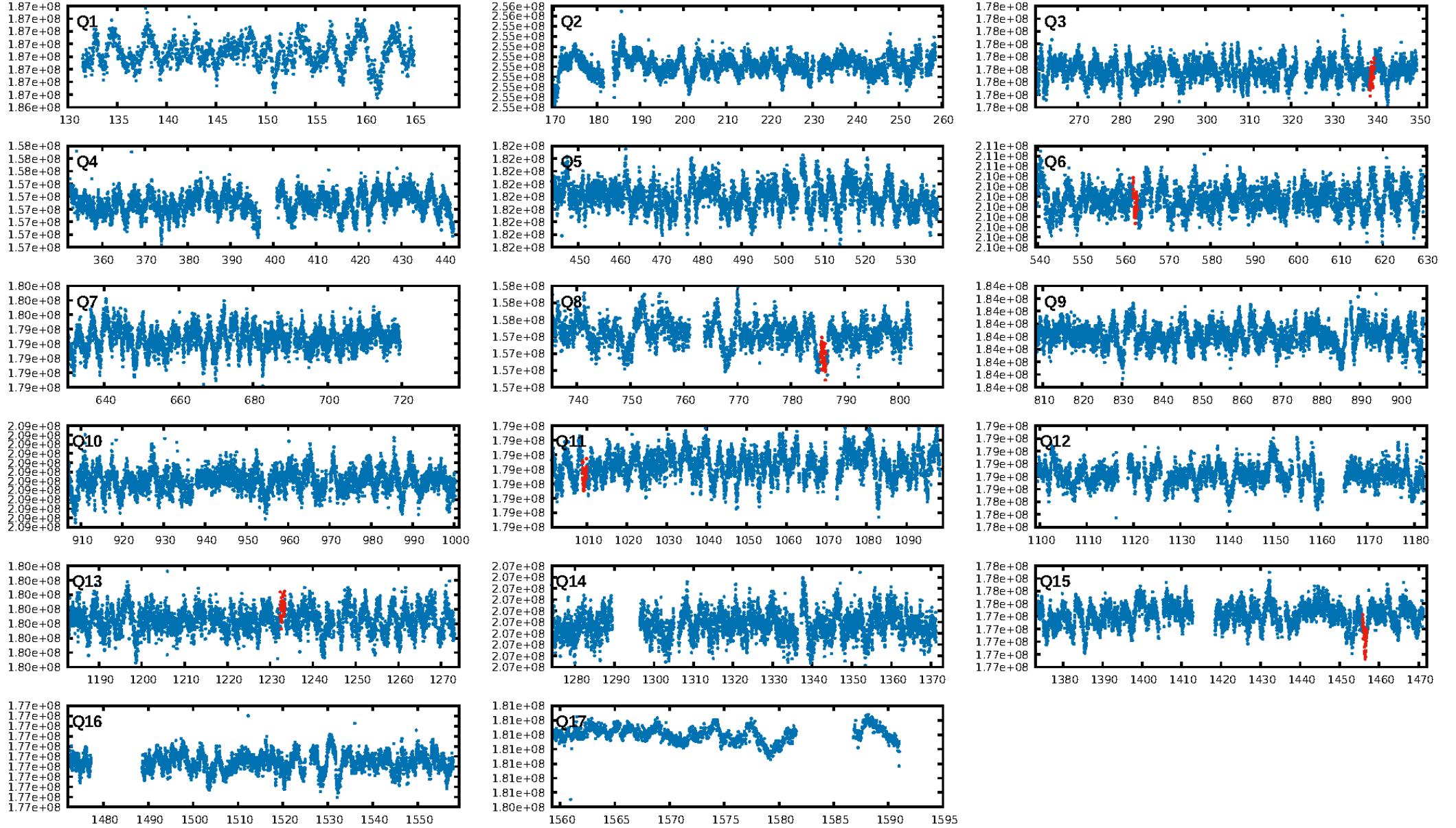
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [381.62σ]
LongPeriod-sig: 100.0% [368.99σ]
ModelChiSquare2-sig: 15.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.62e-11
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.7422
Centroid-sig: N/A
Centroid-so: 3.799 arcsec [2.77σ]
OotOffset-rm: 10.794 arcsec [2.12σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-rm: 8.930 arcsec [3.70σ]
KicOffset-st: 1/2/1/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 0.00 [0/6]

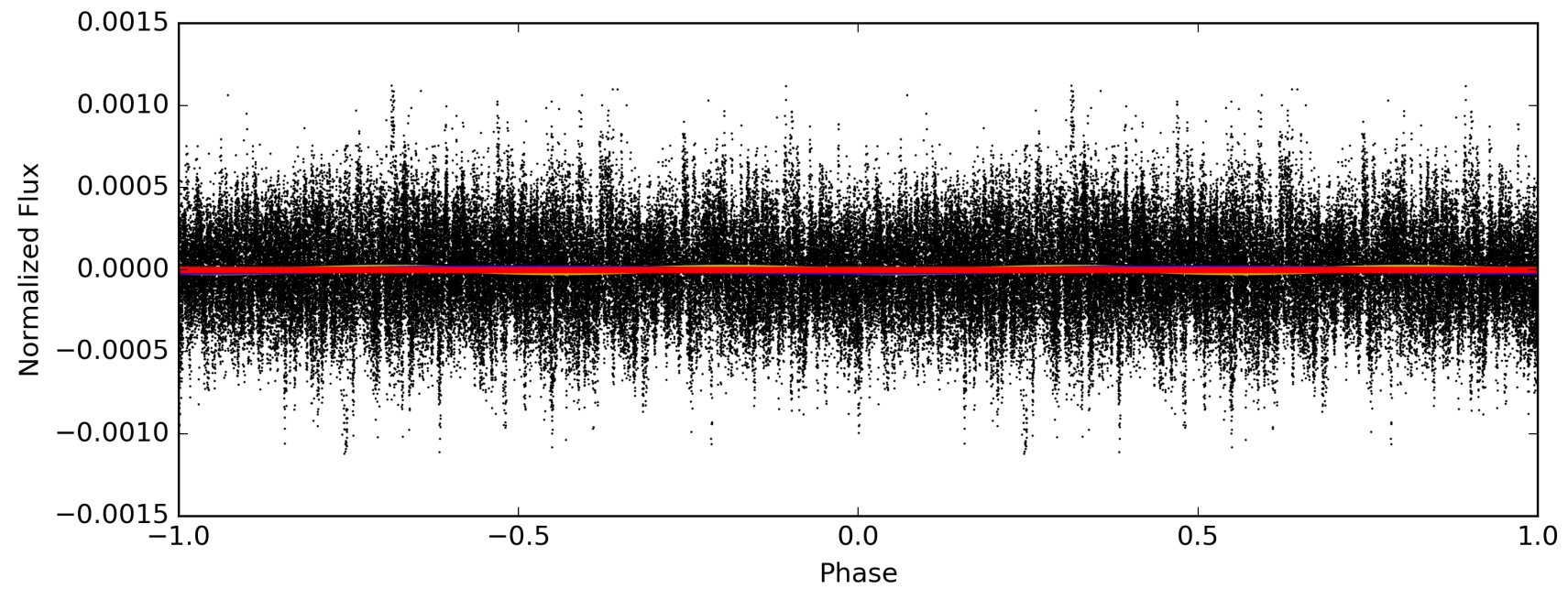
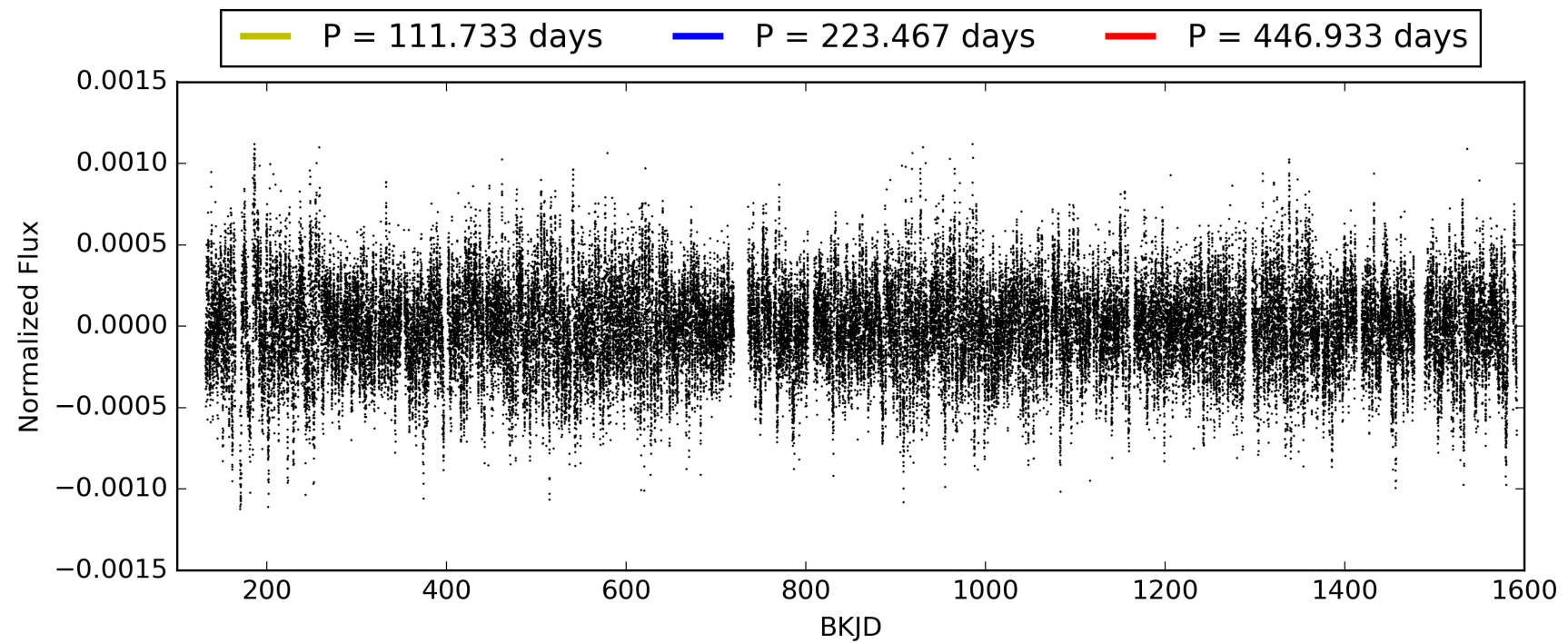
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:12:23 Z

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

TCE 007748220-03, PDC Light Curves

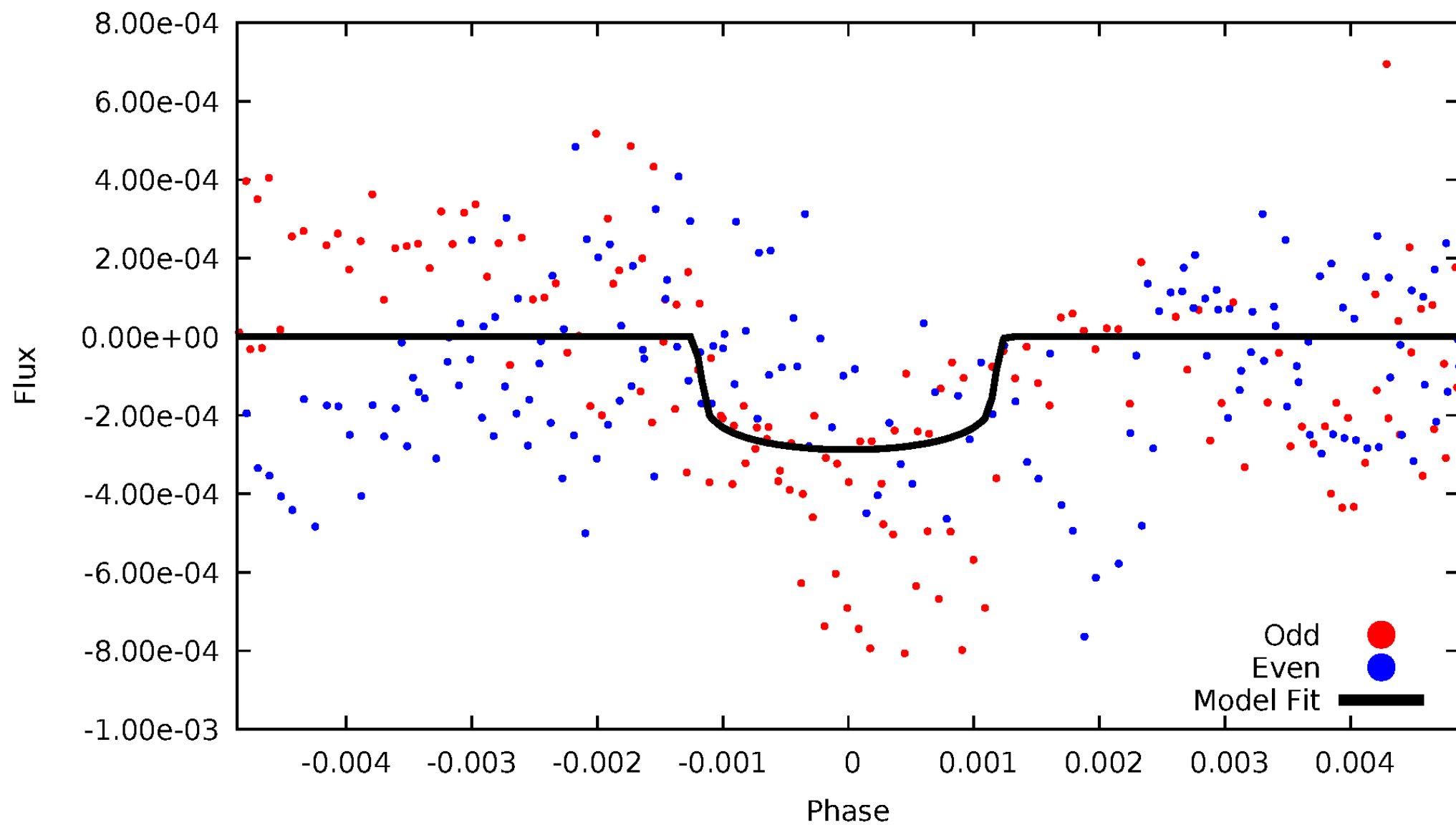


TCE 007748220-03



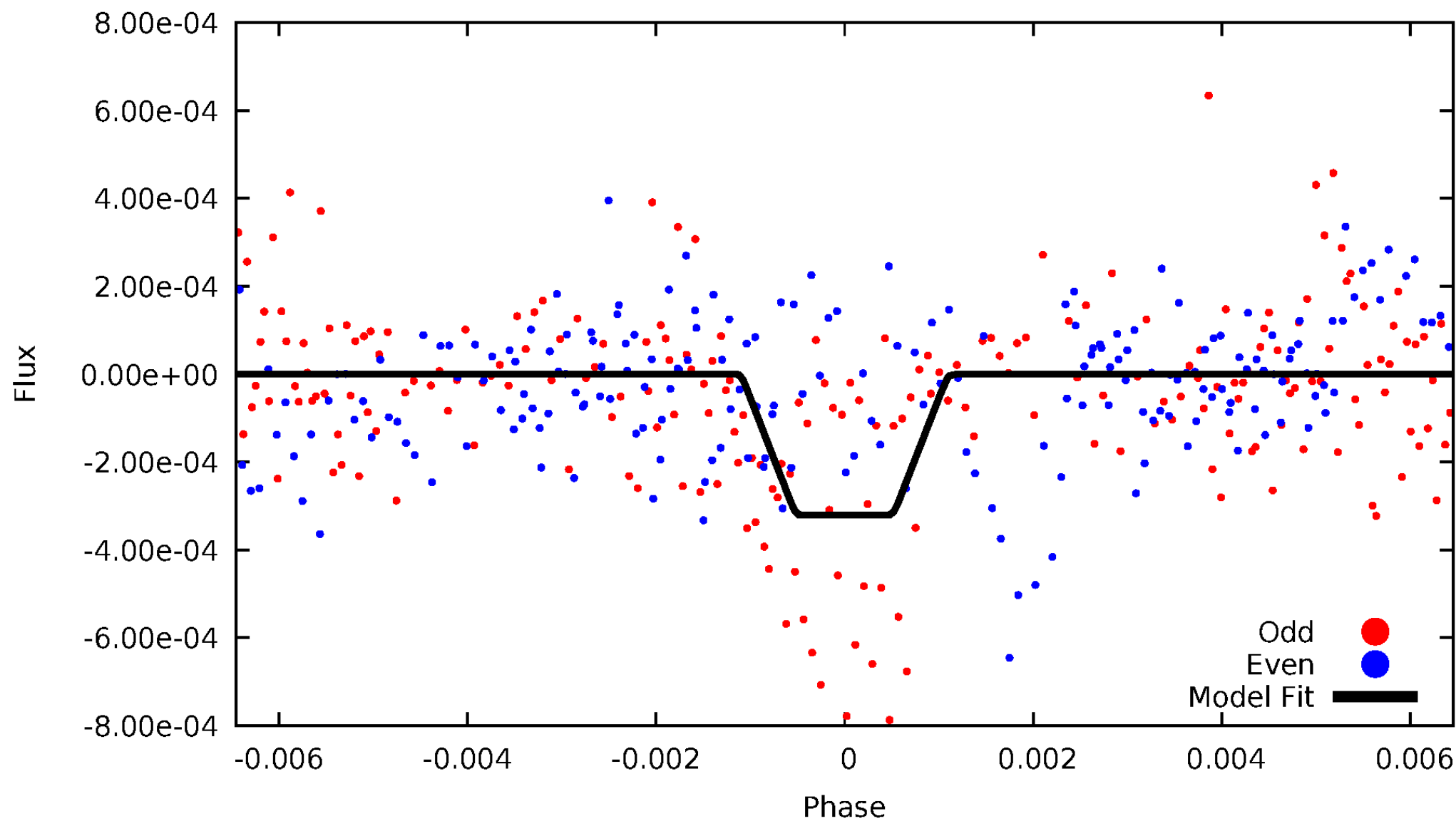
DV Odd/Even

TCE 007748220-03



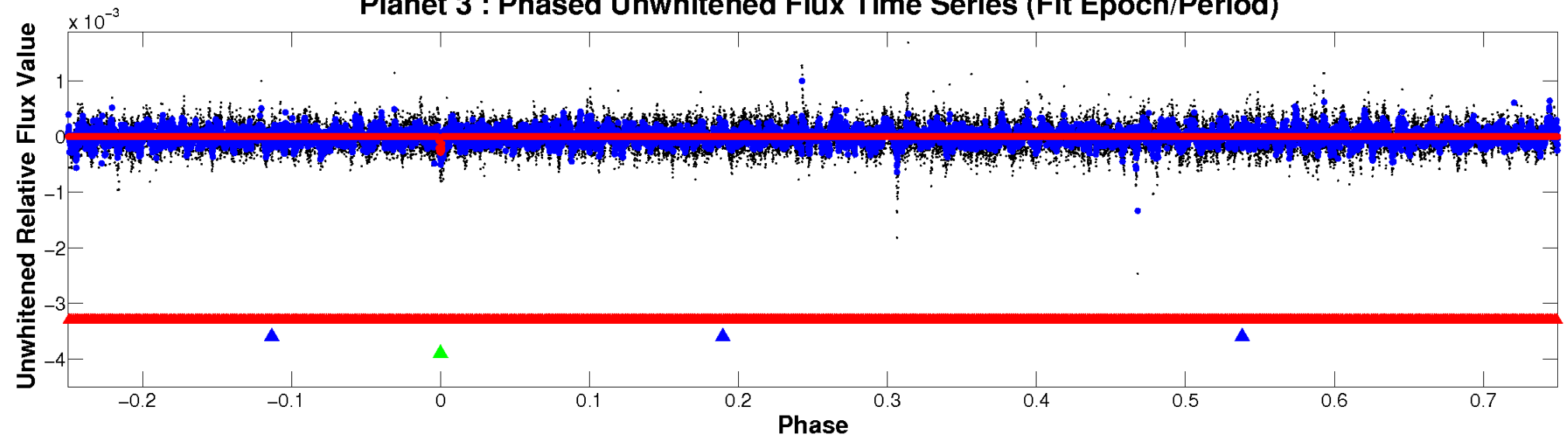
ALT Odd/Even

TCE 007748220-03

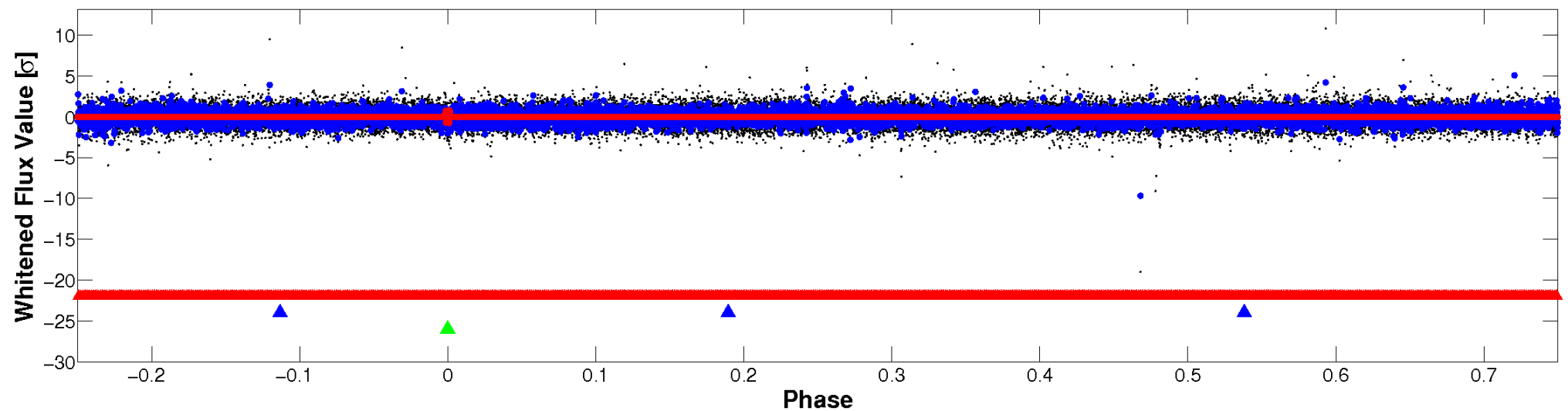


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

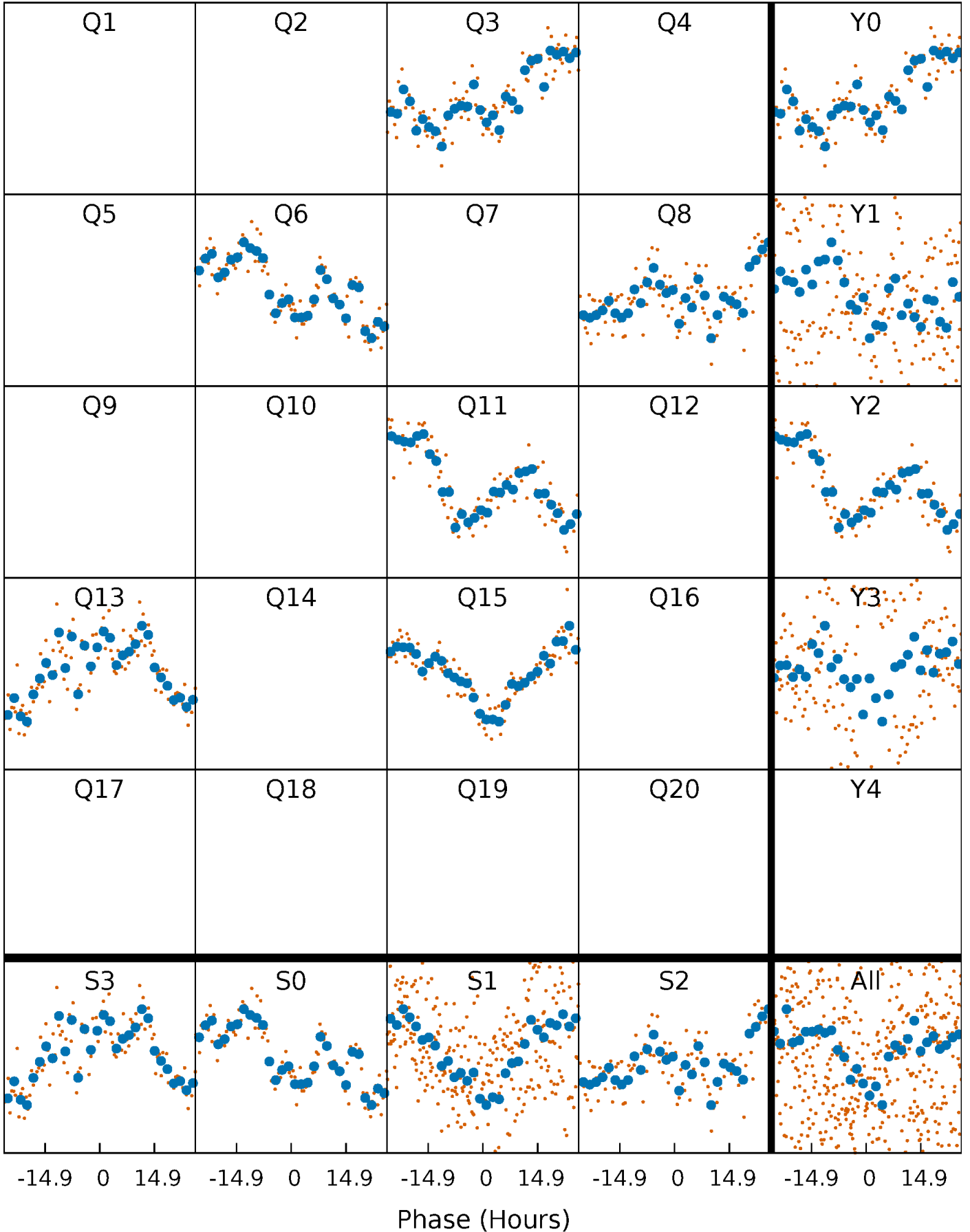


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



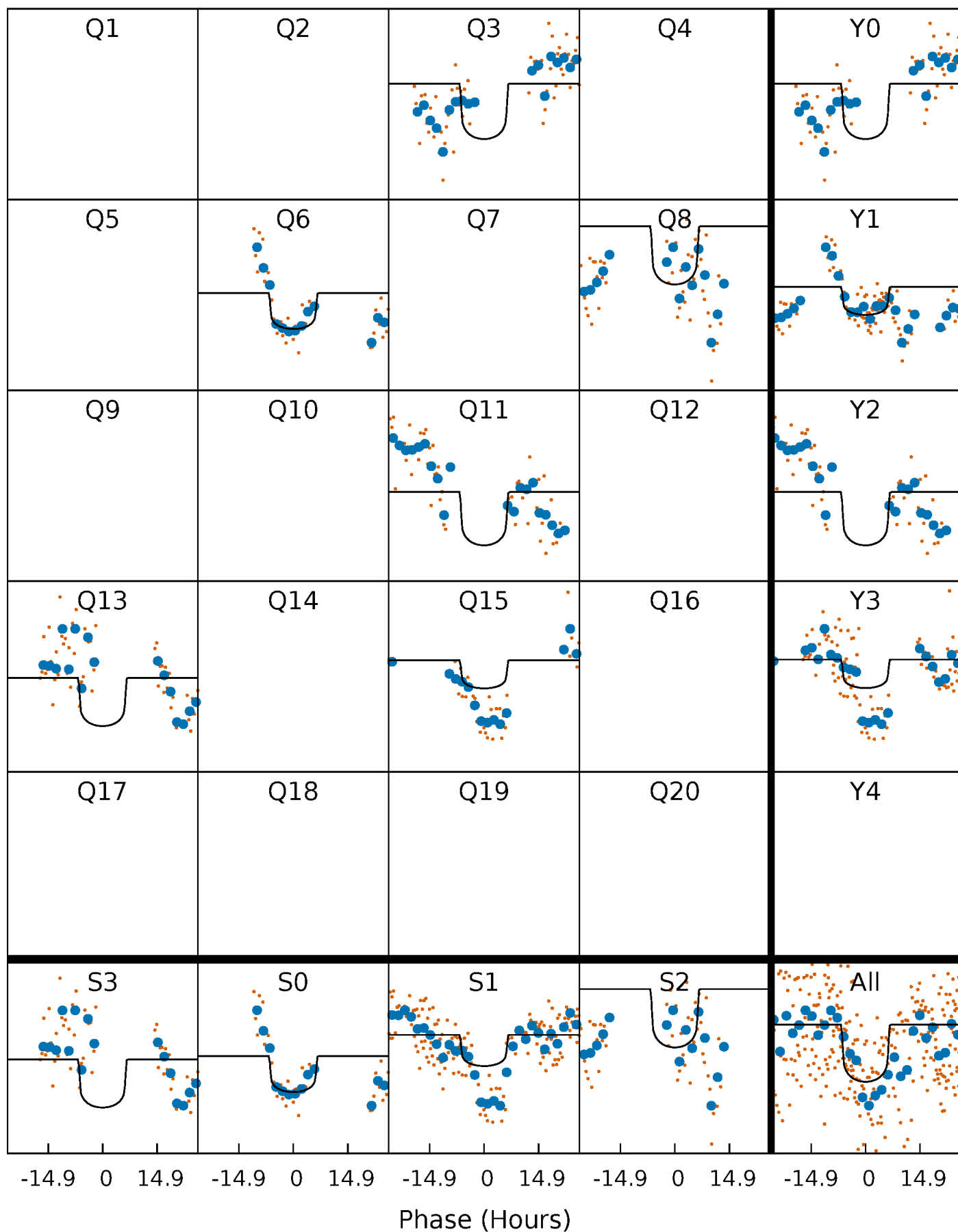
PDC Quarter-Phased Transit Curves

TCE 007748220-03 P=223.466657 Days $T_0=339.032223$ (BKJD)



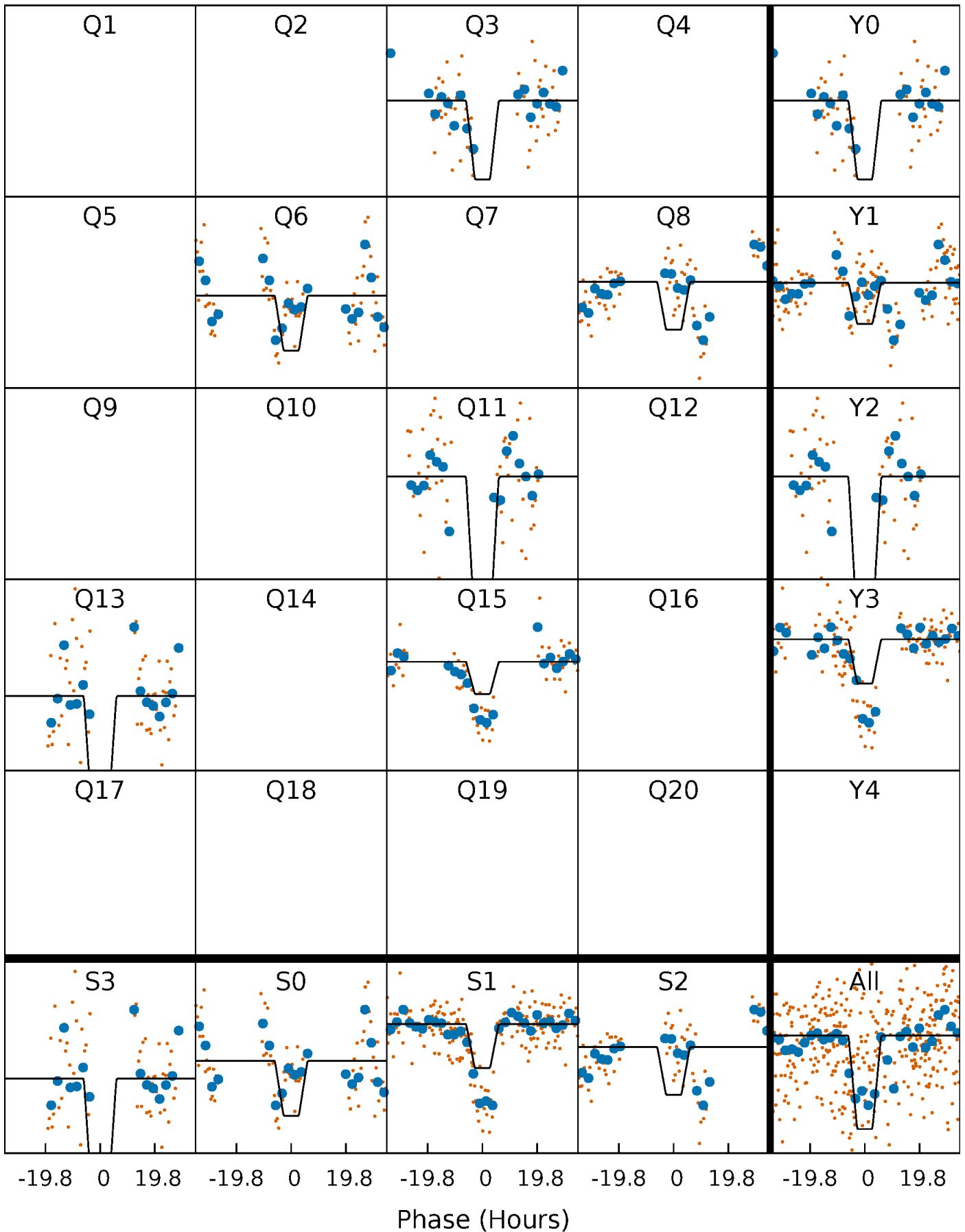
DV Quarter-Phased Transit Curves

TCE 007748220-03 $P=223.466657$ Days $T_0=339.032223$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

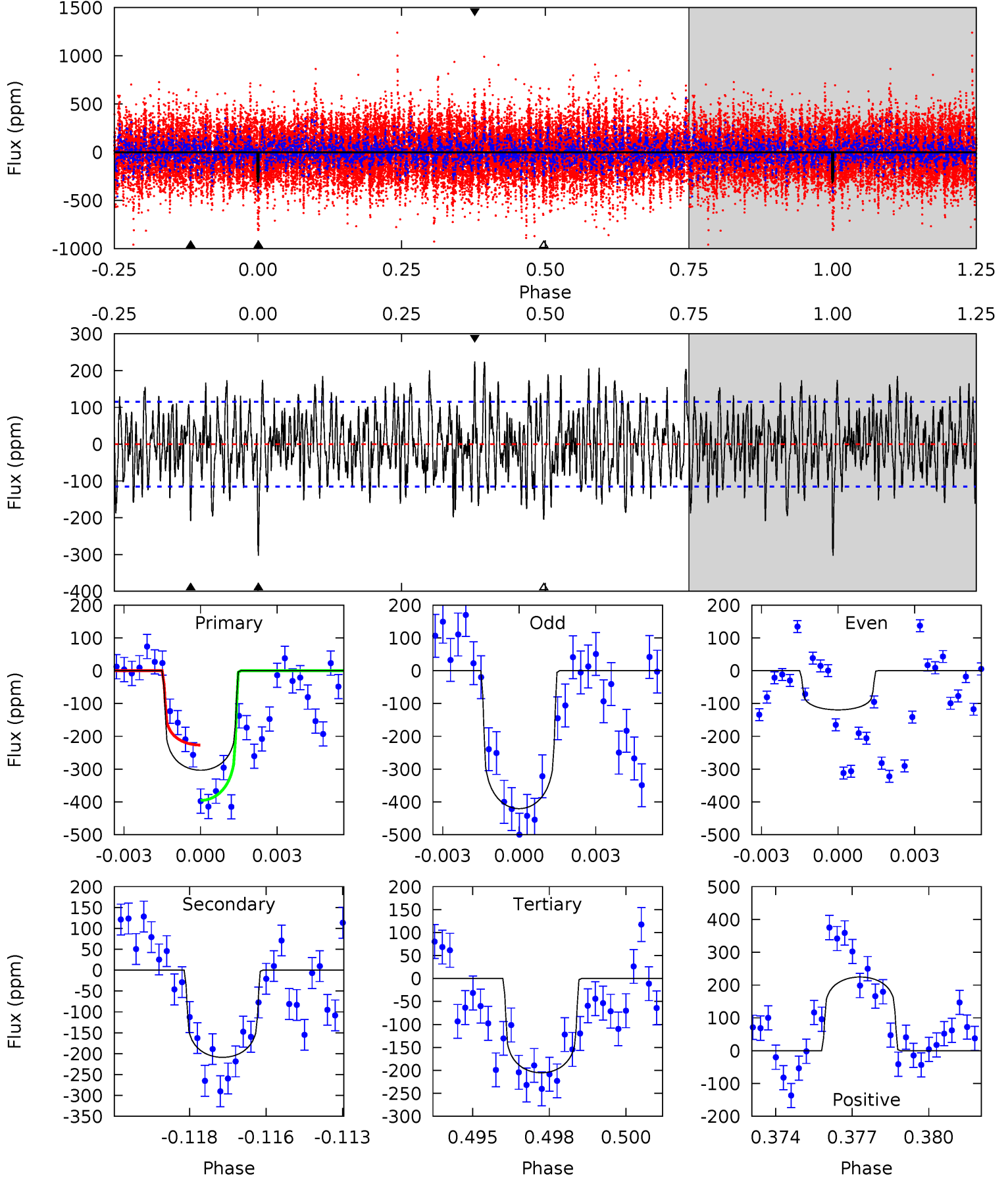
TCE 007748220-03 P=223.488657 Days $T_0=339.017649$ (BKJD)



DV Model-Shift Uniqueness Test

007748220-03, P = 223.466657 Days, E = 115.565566 Days

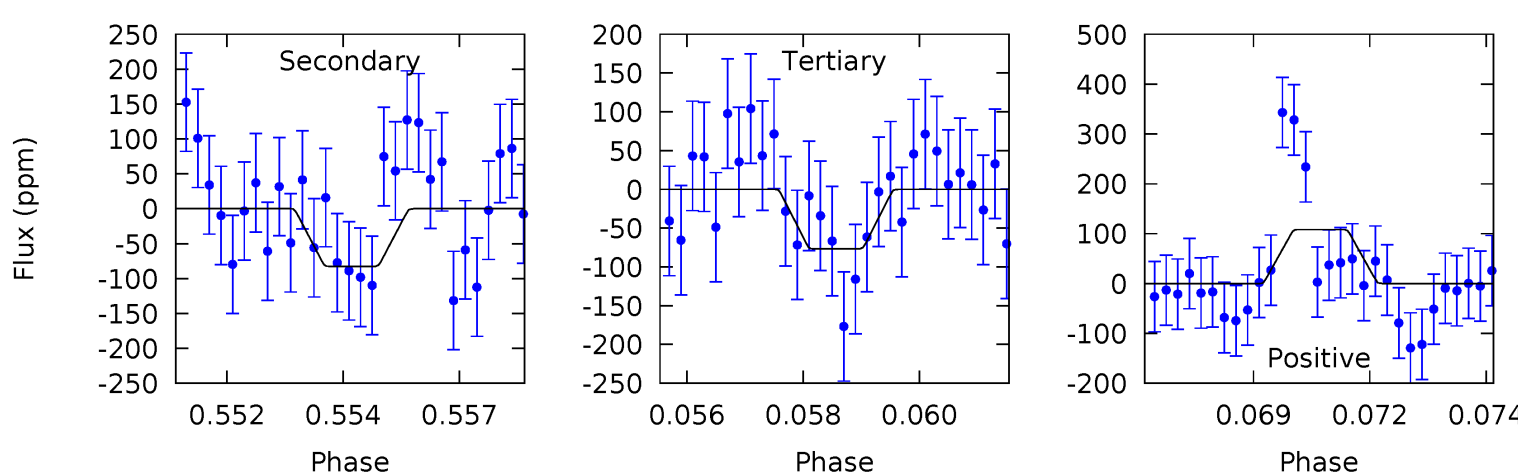
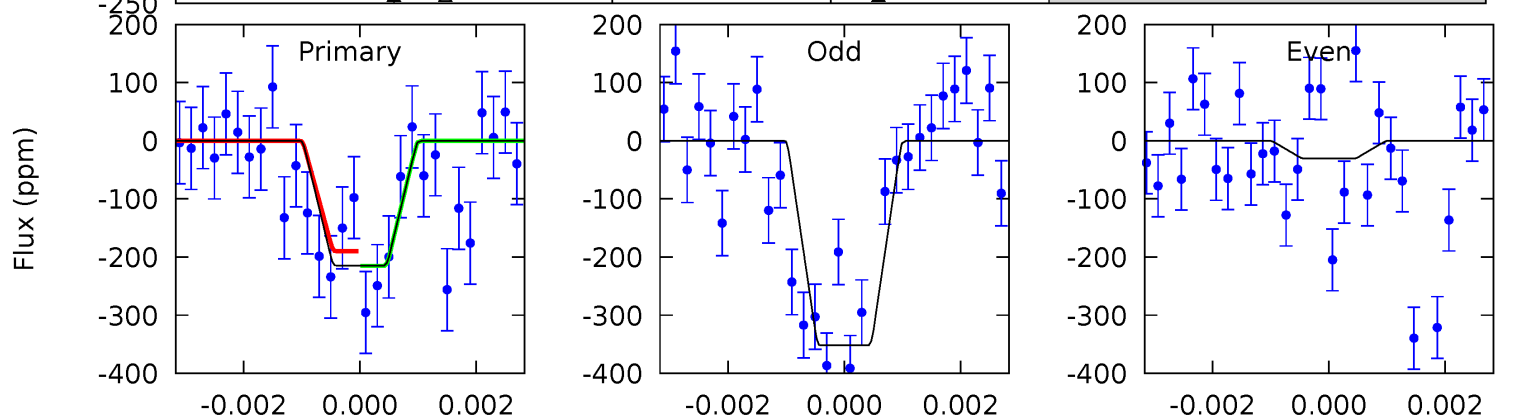
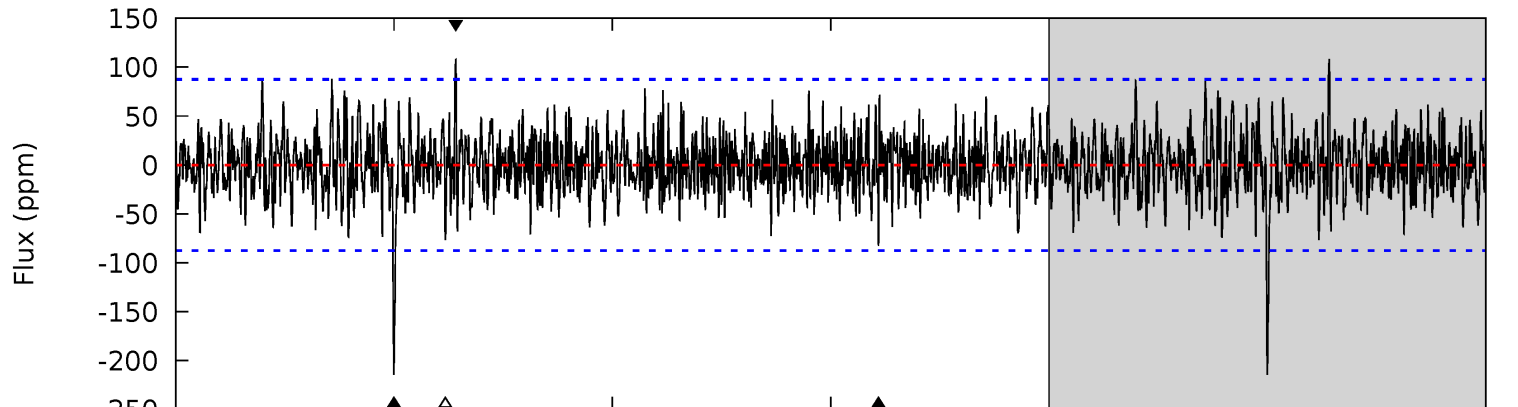
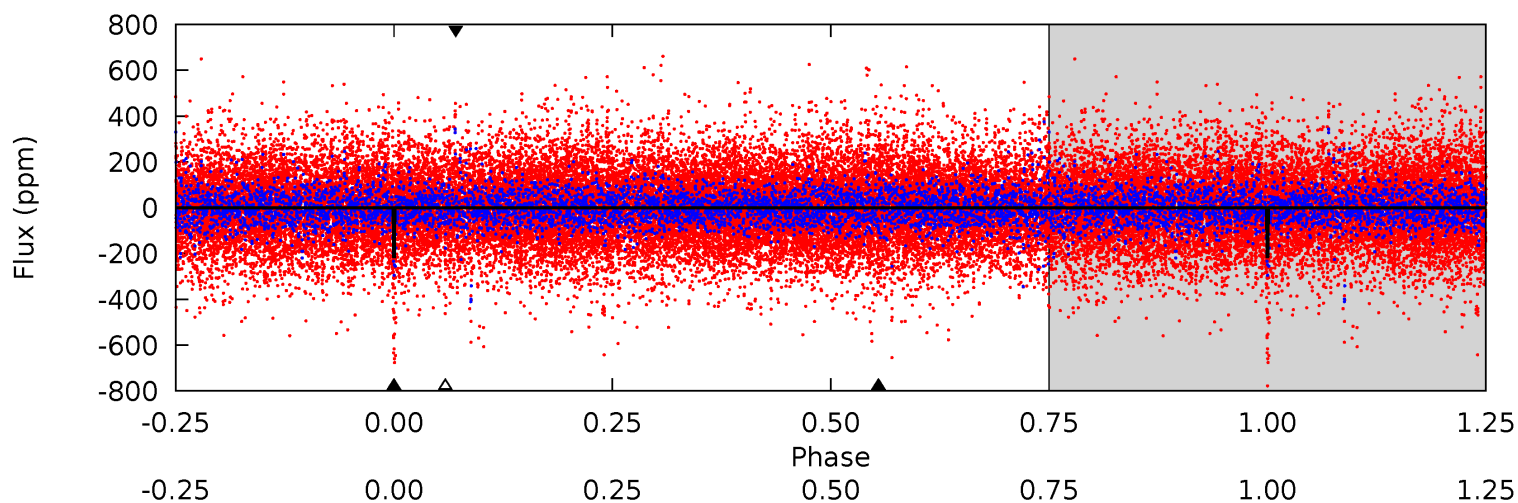
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	9.59	9.42	10.3	5.29	3.02	3.47	4.50	3.62	0.16	-0.72	6.87	1.08	0.43	3.87



Alt Model-Shift Uniqueness Test

007748220-03, $P = 223.488657$ Days, $E = 115.528992$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	4.99	4.64	6.55	5.31	3.06	1.55	8.36	6.44	0.36	-1.56	9.71	1.62	0.34	0.76



Stellar Parameters For KIC 007748220

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6632^{+163}_{-233}	$3.996^{+0.306}_{-0.165}$	$-0.200^{+0.250}_{-0.300}$	$1.958^{+0.499}_{-0.686}$	$1.390^{+0.198}_{-0.297}$	$0.261^{+0.621}_{-0.117}$
	+2%/-4%	+8%/-4%	+125%/-150%	+25%/-35%	+14%/-21%	+238%/-45%
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 007748220-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-209 ± 22	$3.43^{+1.38}_{-1.22}$	631^{+48}_{-62}	6120^{+1537}_{-817}	6308^{+8652}_{-3127}
Alt.	-82 ± 17	$3.78^{+1.27}_{-1.35}$	631^{+53}_{-56}	4788^{+838}_{-495}	2096^{+2831}_{-1029}

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

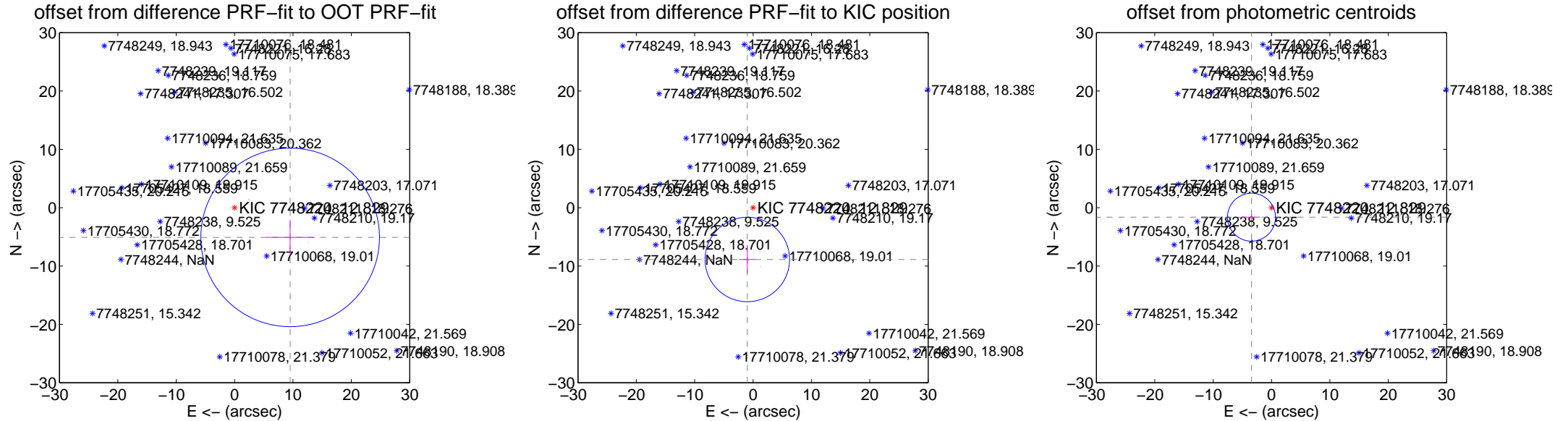
DV Centroid Data

Supplemental centroid analysis for 007748220-03. Kepler magnitude: 12.83. Transit SNR 6.10

There are 2 quarters with good PRF difference image offsets

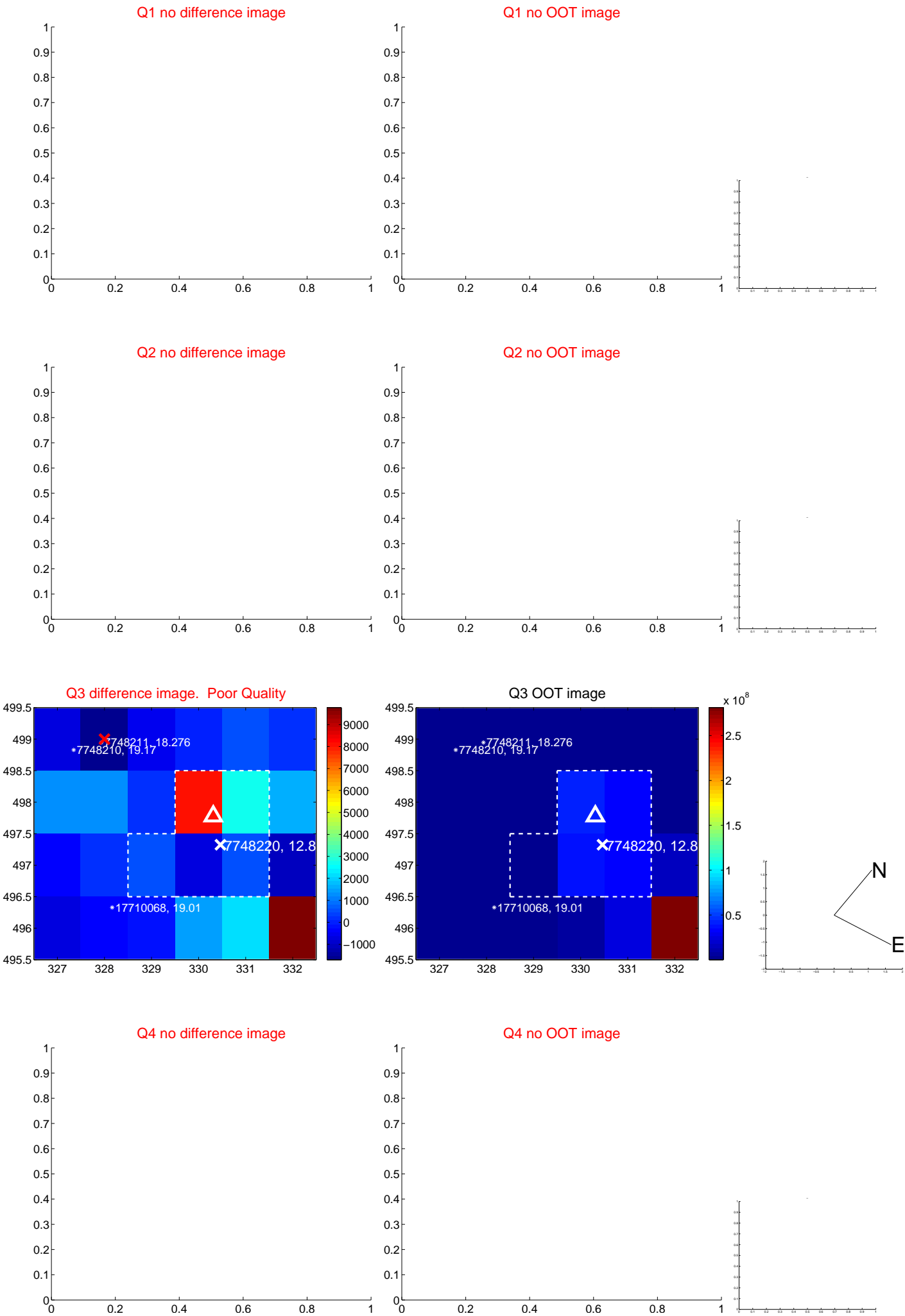
The OOT PRF centroid is offset from the target star catalog position by about 12.16 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.794 ± 5.100	2.12	-9.519 ± 4.181	-5.090 ± 2.997
PRF-fit source offset from KIC position	8.930 ± 2.412	3.70	0.981 ± 1.392	-8.876 ± 2.422
photometric centroid source offset	3.80 ± 1.37	2.77	3.43 ± 1.49	-1.63 ± 0.56

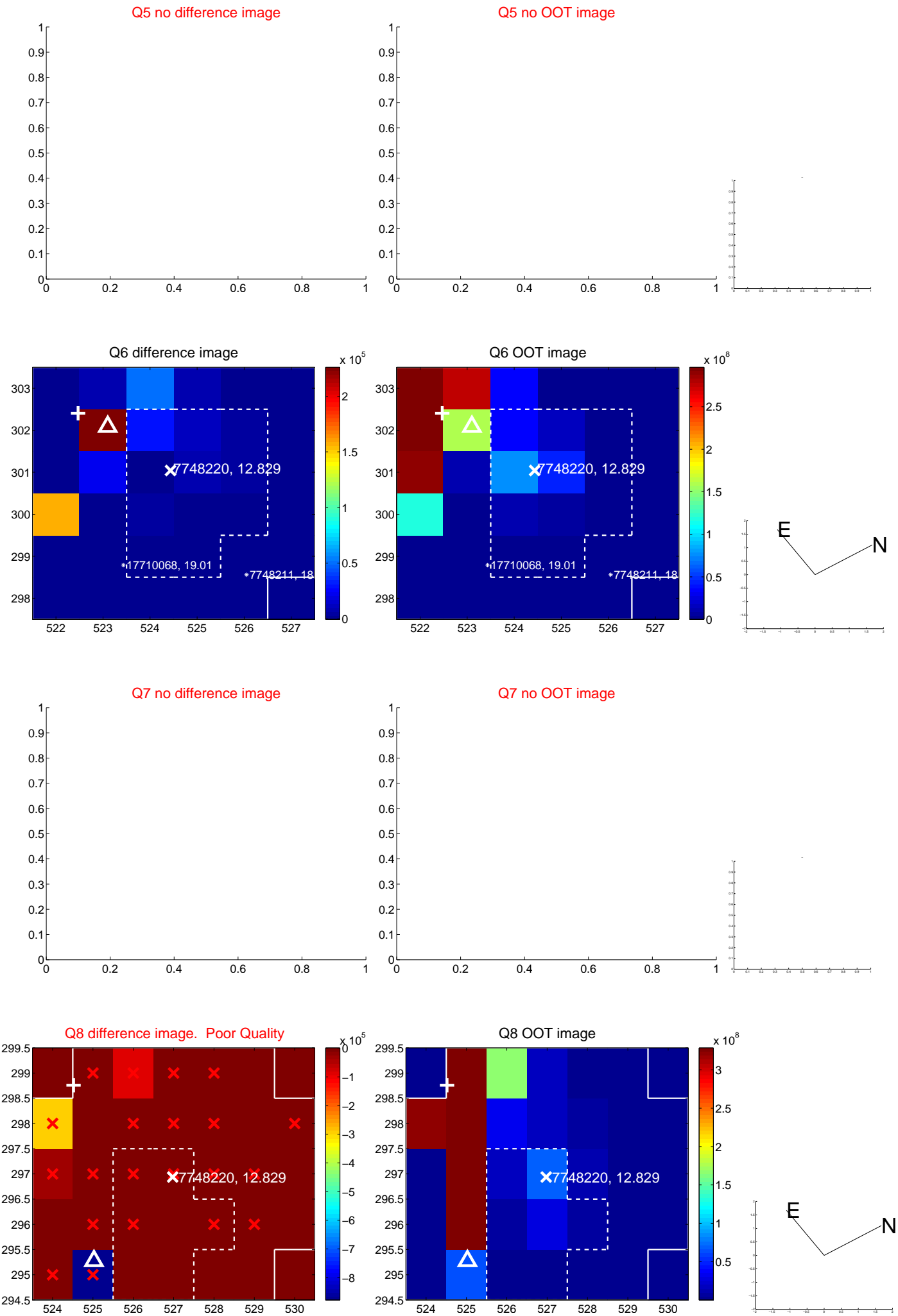


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

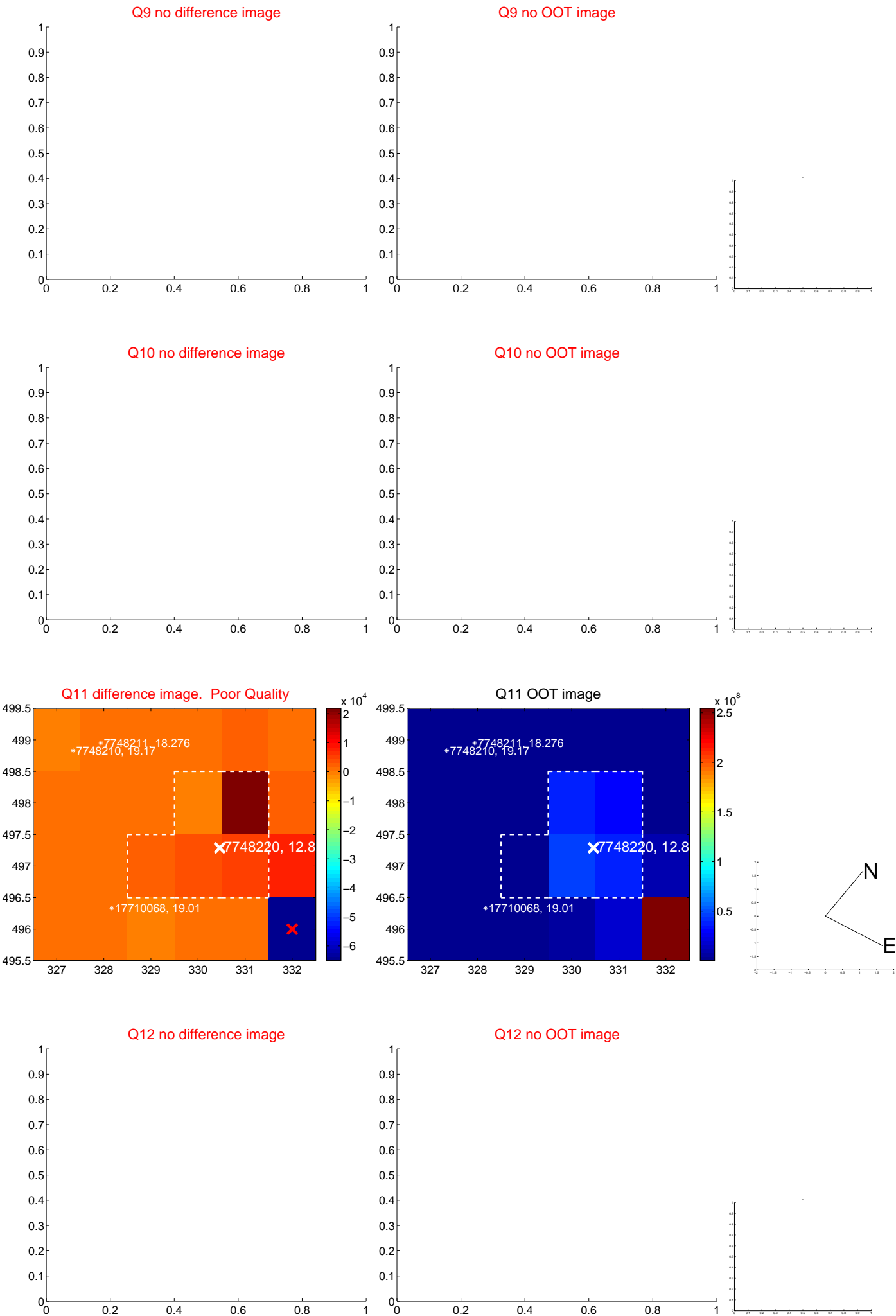
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



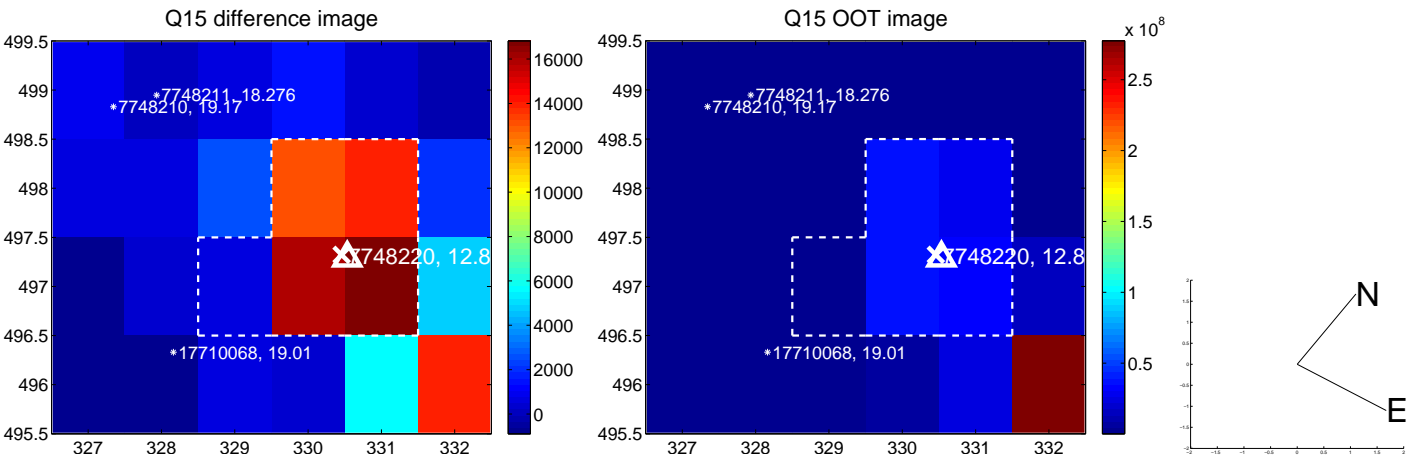
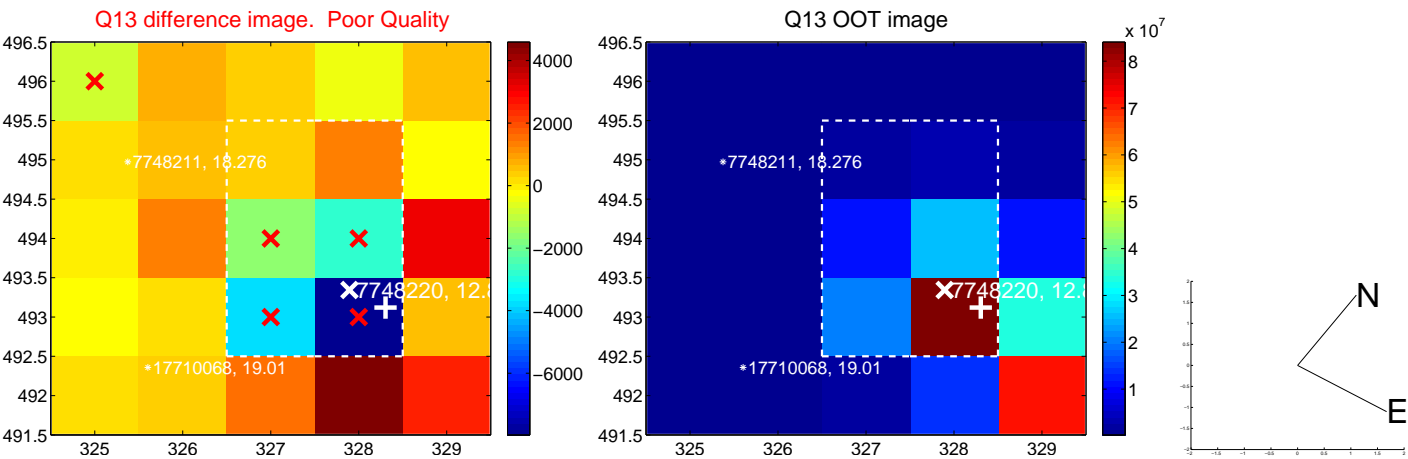
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



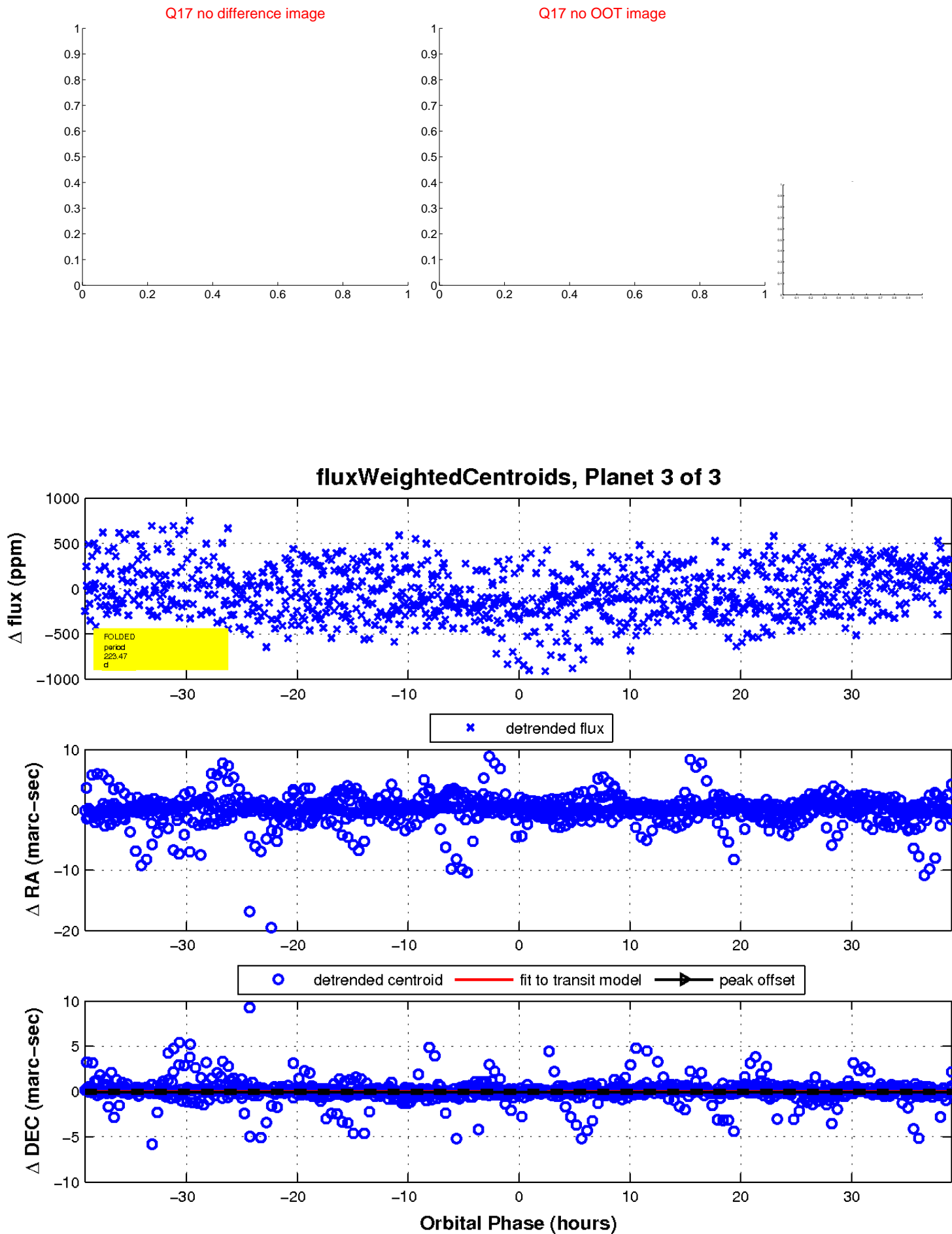
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

