

KIC 006063448

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})
006063448-01	OBS	6659.01	76.018139	139.942821	80498.8	13.455	1858.3	1829.0	1.89	6703	63.90	42.73
006063448-02	OBS	No	76.018245	199.050408	7550.5	9.352	163.6	162.4	1.89	6703	18.64	42.73
006063448-03	OBS	No	0.893646	132.249397	68.8	3.635	14.1	12.0	1.89	6703	1.85	15984.47
006063448-04	OBS	No	0.824210	131.825345	108.4	1.835	7.9	10.0	1.89	6703	2.30	17804.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006063448-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
006063448-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006063448-03	OBS	FP	0.06	1	0	0	0	LPP_DV—LPP_ALT
006063448-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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.

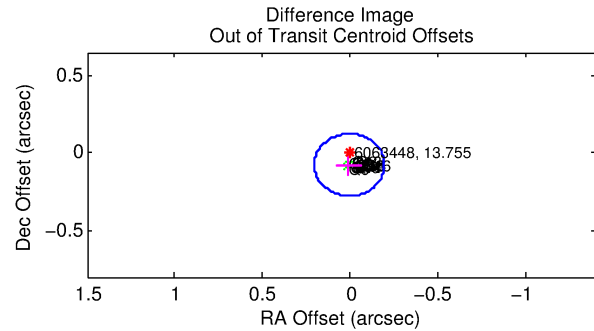
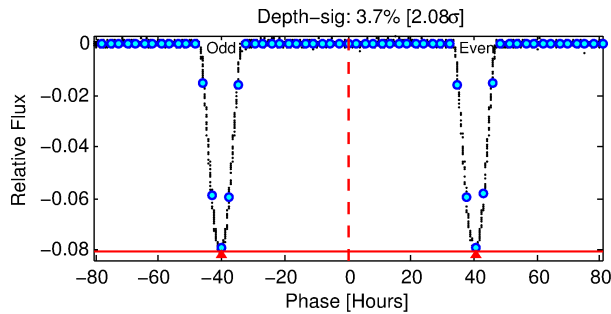
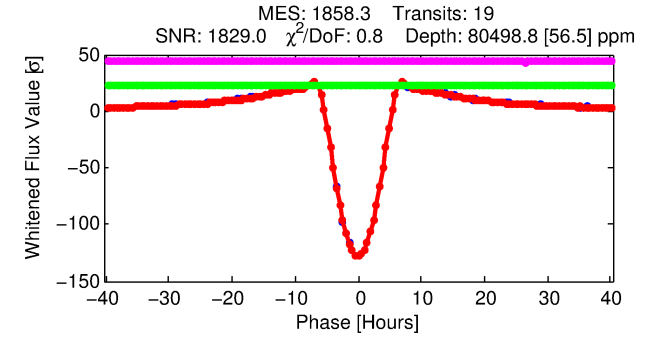
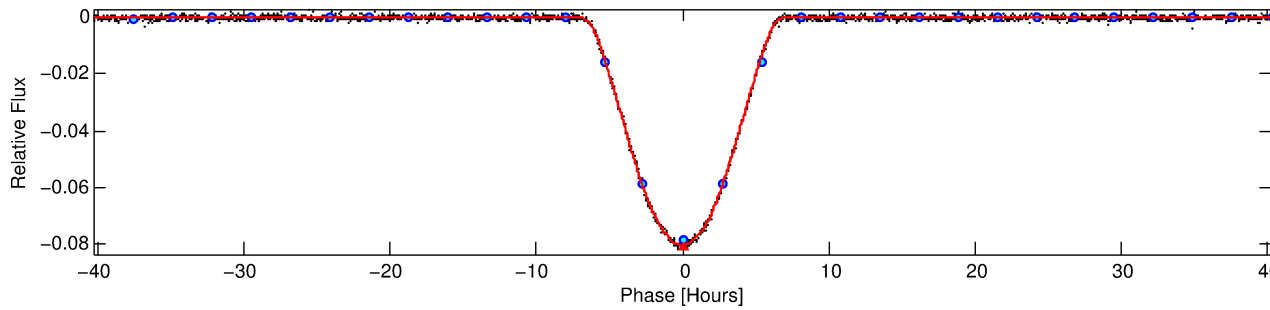
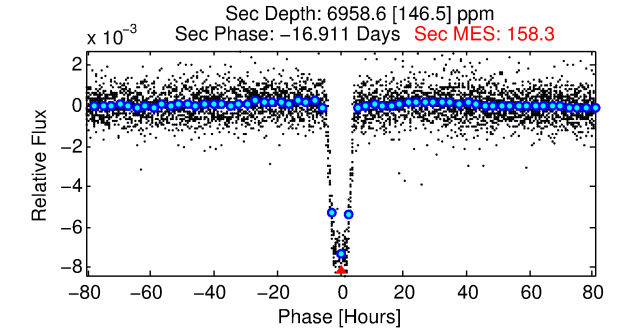
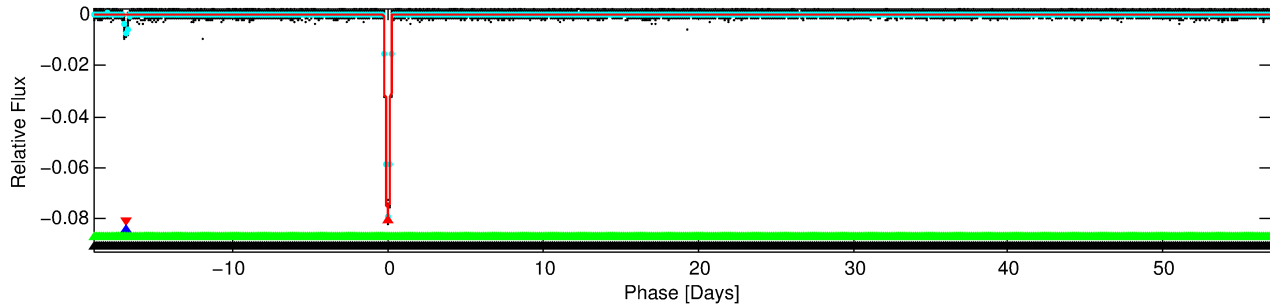
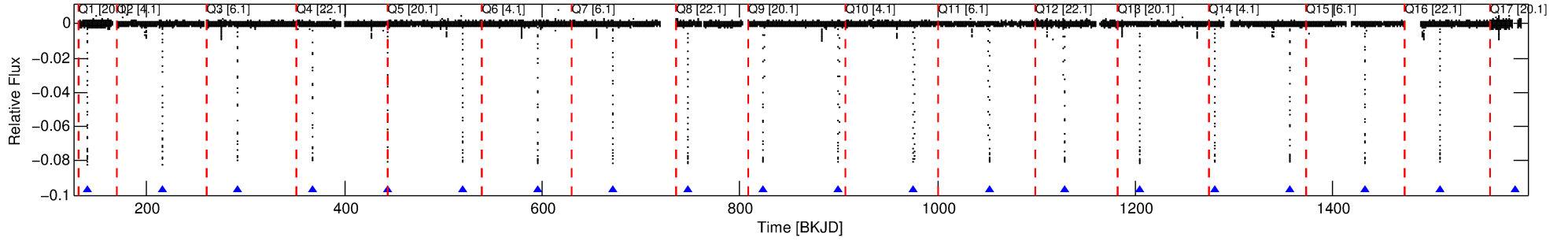
Ephemeris Match Information For 006063448-01

No Significant Match Found

DV One-Page Summary

KIC: 6063448 Candidate: 1 of 4 Period: 76.018 d
KOI: K06659.01 Corr: 0.999

Kp: 13.76 R*: 1.89 Rs Teff: 6703.0 K Logg: 4.02 Fe/H: -0.260



DV Fit Results:

Period = 76.01814 [0.00001] d
Epoch = 139.9428 [0.0001] BKJD
Rp/R* = 0.3095 [0.0014]
a/R* = 45.01 [0.05]
b = 0.79 [0.00]
Seff = 42.73 [22.94]
Teff = 652 [87] K
Rp = 63.90 [22.16] Re
a = 0.3893 [0.1268] AU
Ag = 142.09 [73.09] [1.93σ]
Teffp = 3480 [136] K [17.45σ]

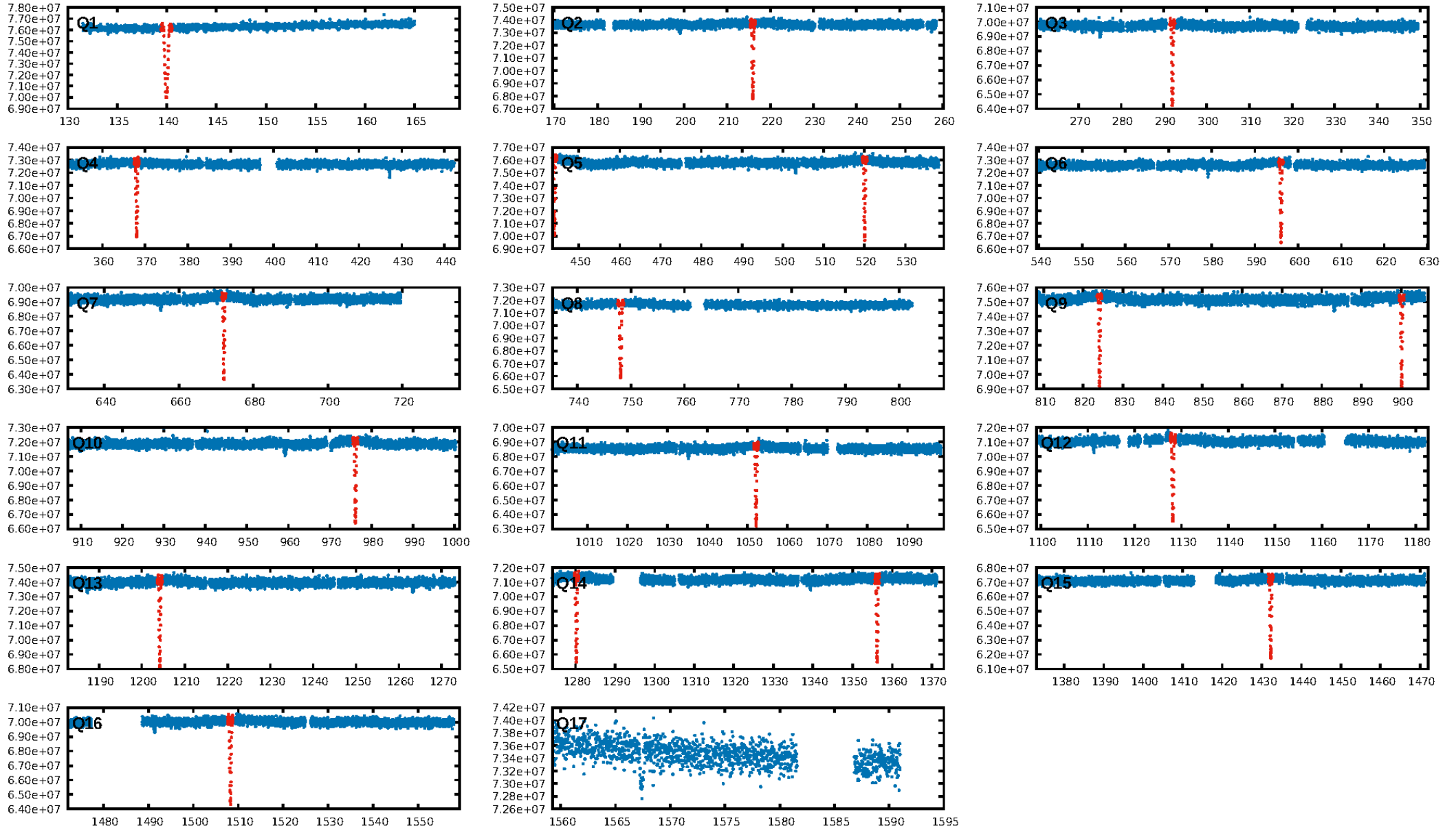
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [129.36σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [18/18]
GhostDiagnostic-chr: 5.586
Centroid-sig: 0.0%
Centroid-so: 0.170 arcsec [69.29σ]
OotOffset-rm: 0.076 arcsec [1.13σ]
OotOffset-st: 4/3/3/4 [14]
KicOffset-rm: 0.091 arcsec [1.36σ]
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DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

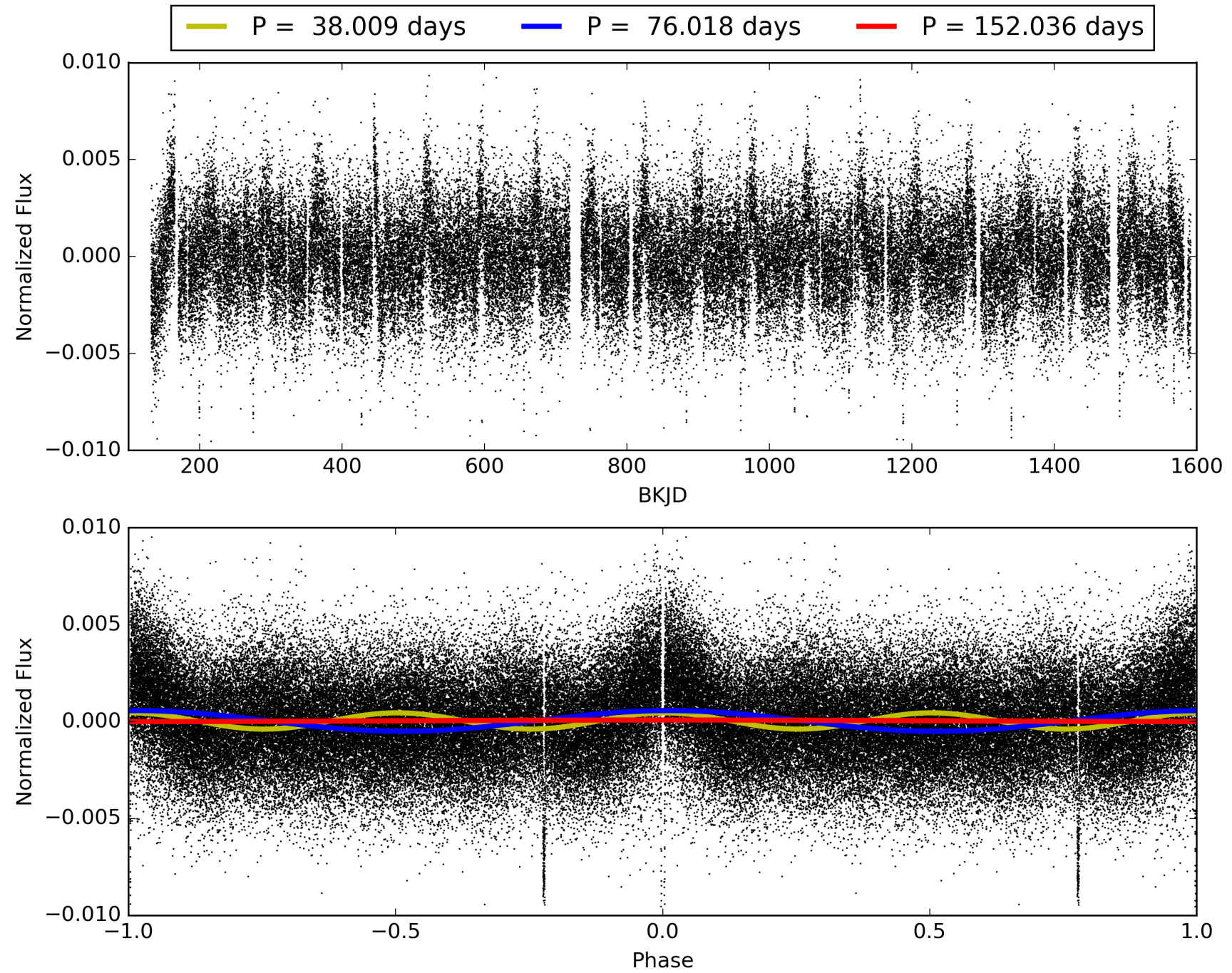
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006063448-01, PDC Light Curves

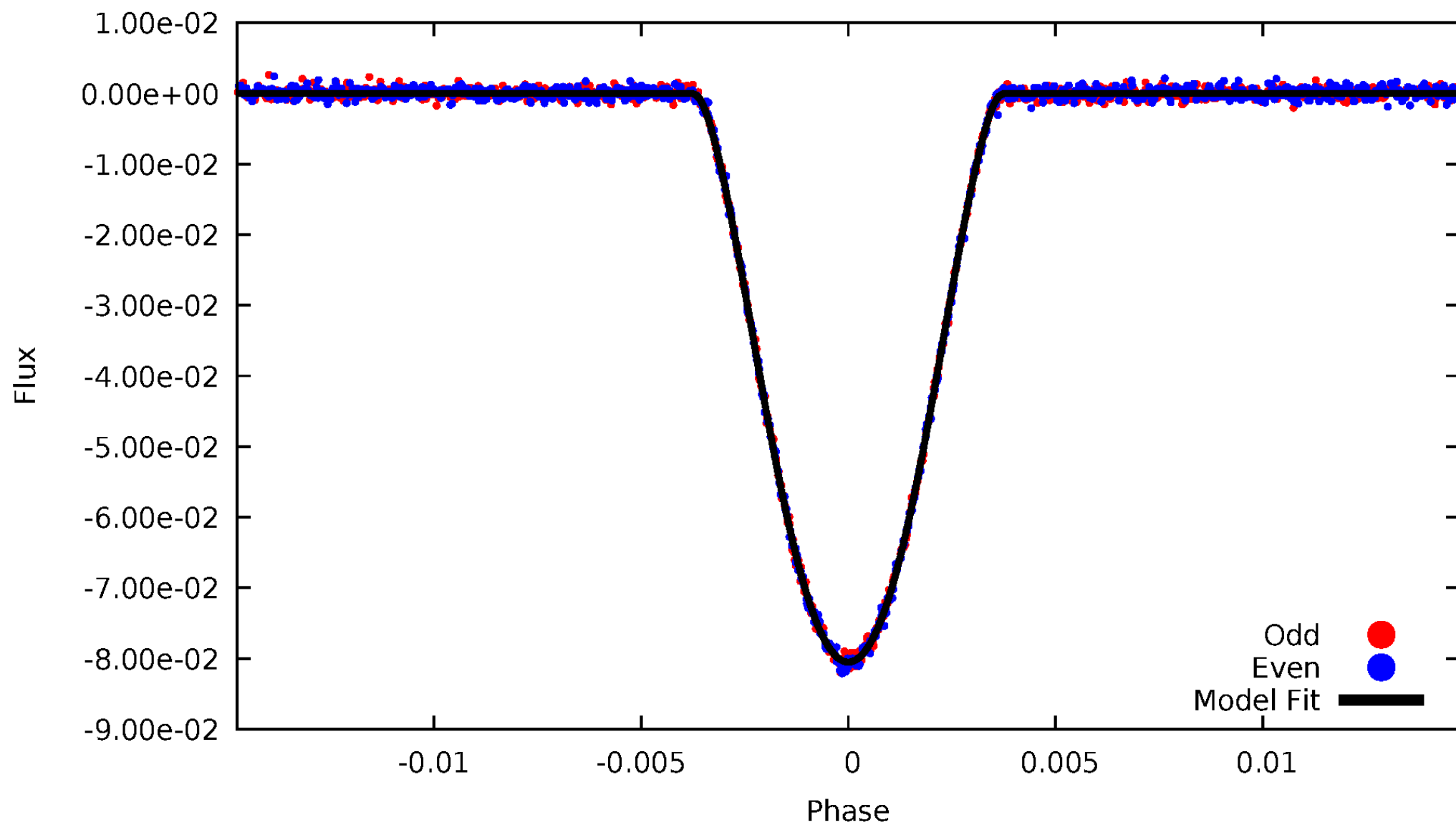


TCE 006063448-01



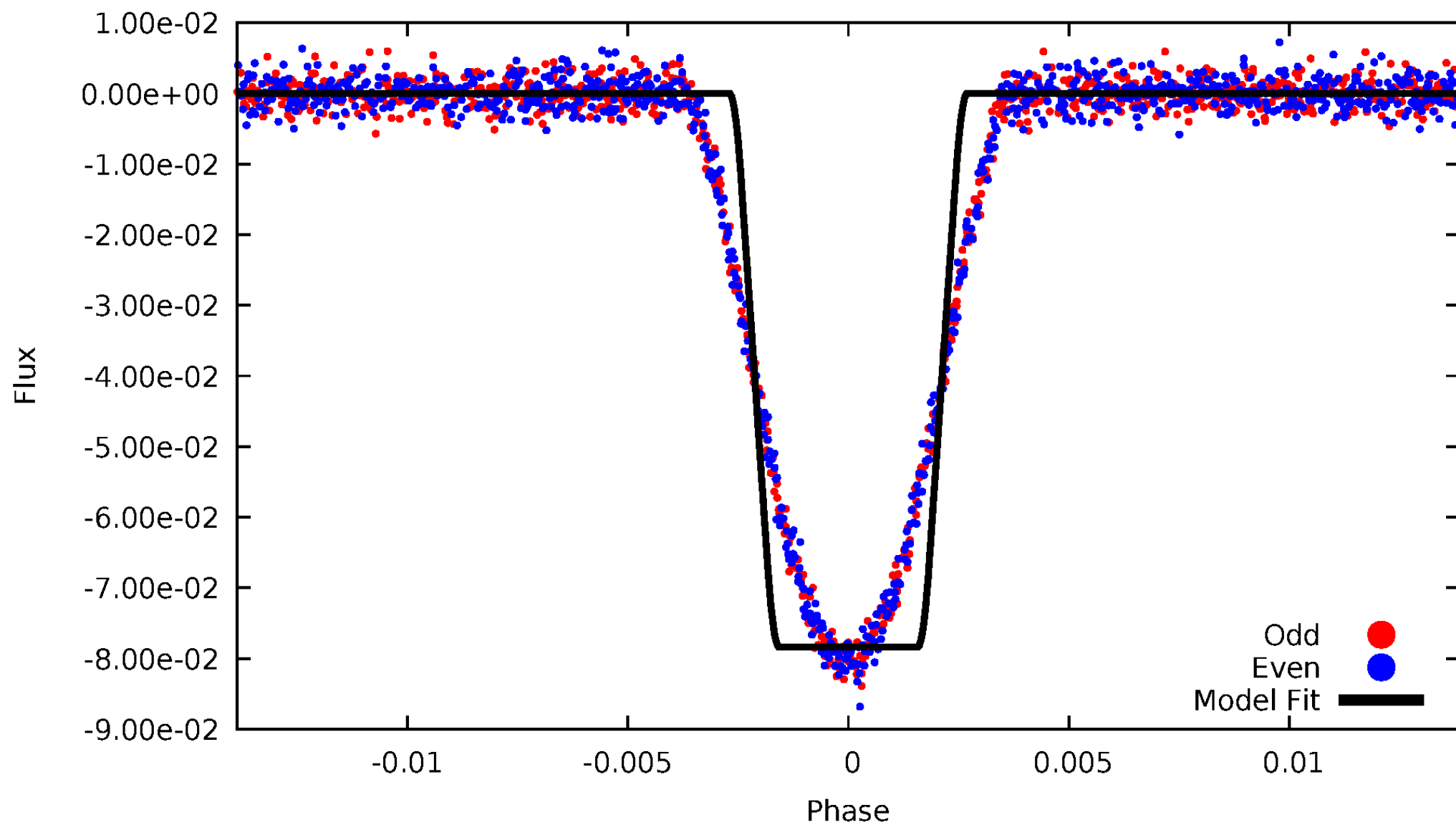
DV Odd/Even

TCE 006063448-01



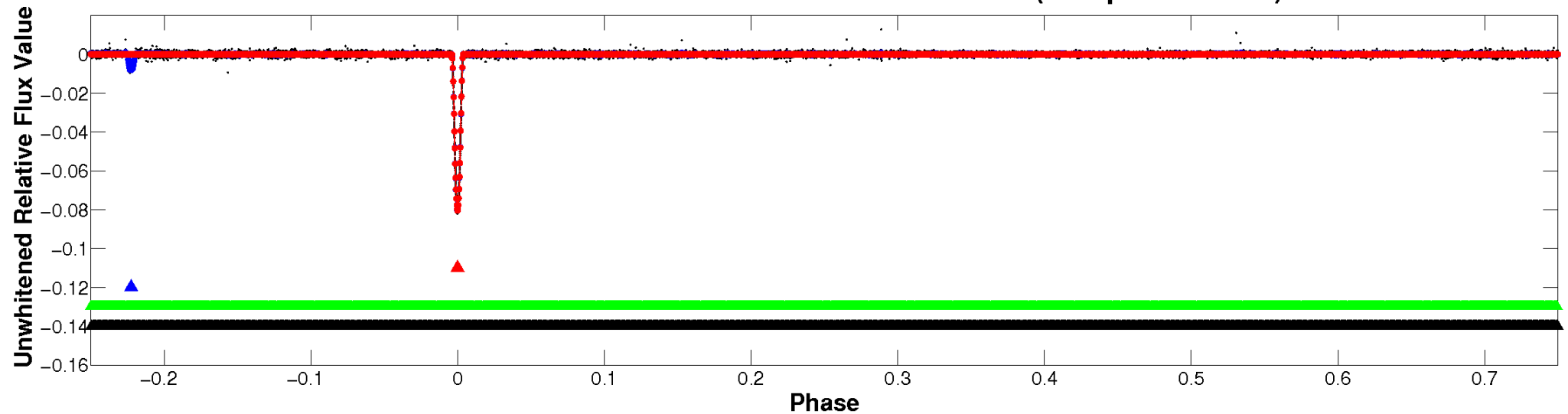
ALT Odd/Even

TCE 006063448-01

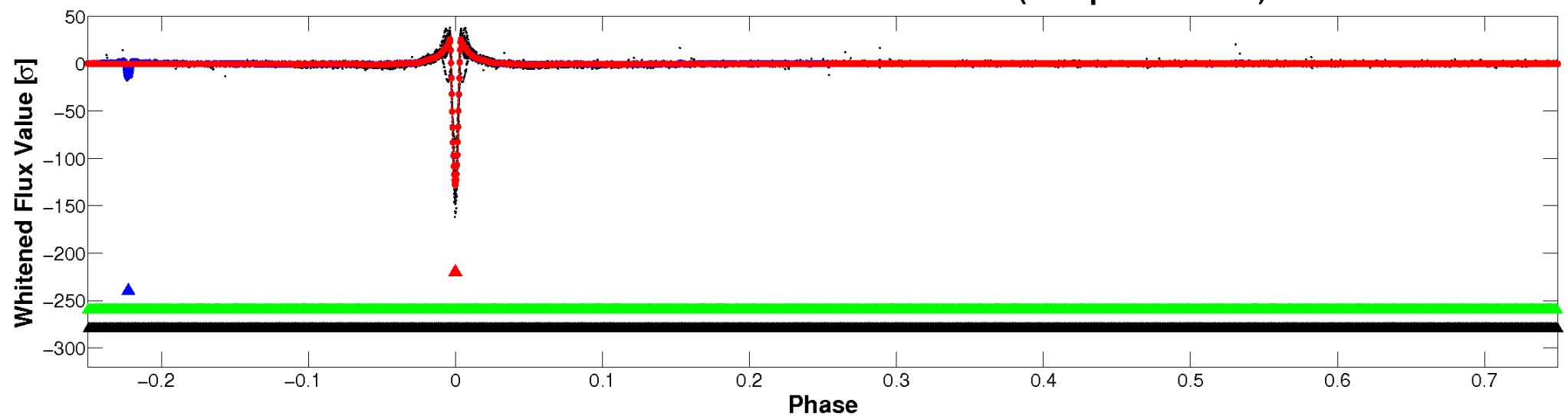


Non-Whitened Vs. Whitened Light Curve

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

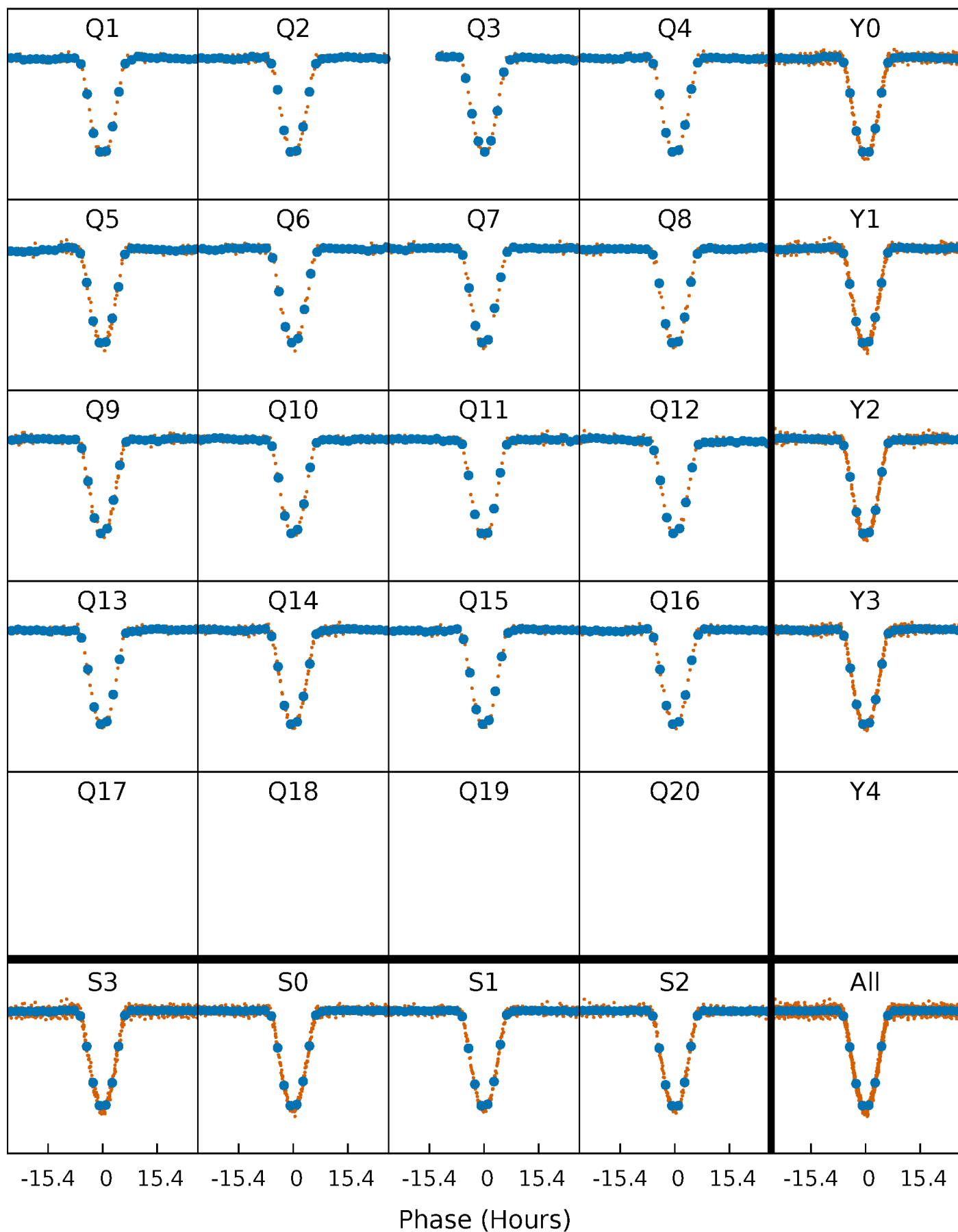


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



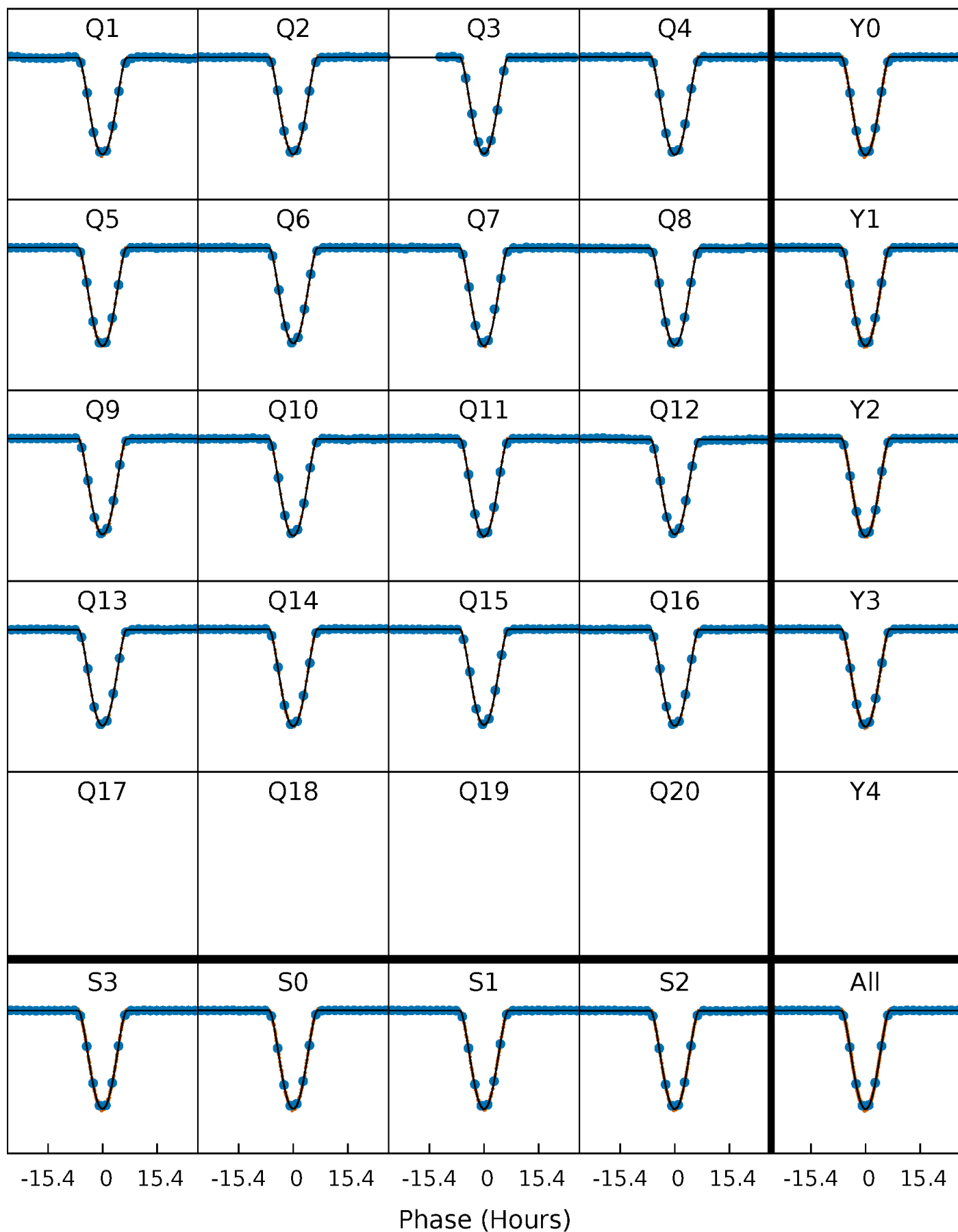
PDC Quarter-Phased Transit Curves

TCE 006063448-01 P= 76.018139 Days $T_0=139.942821$ (BKJD)



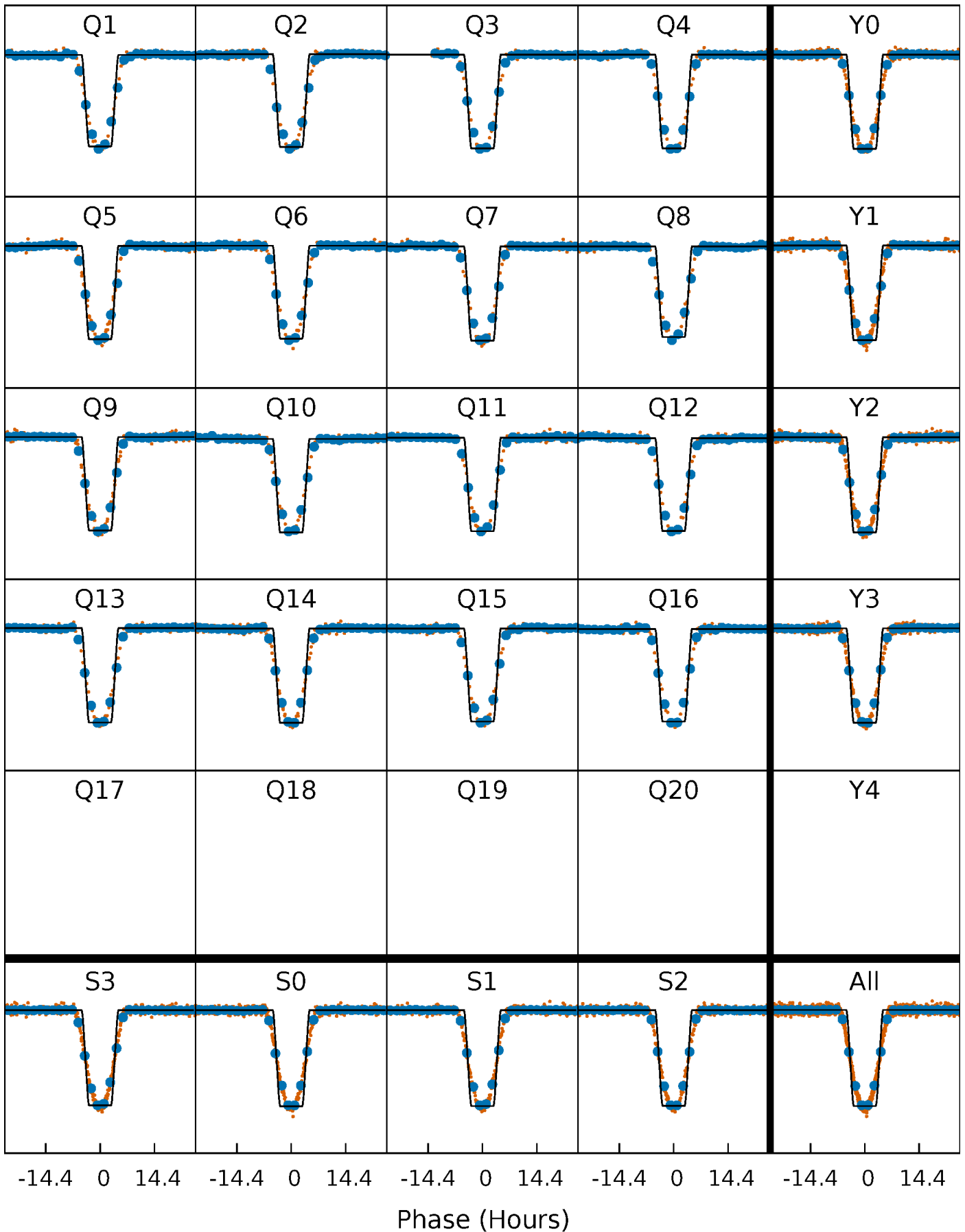
DV Quarter-Phased Transit Curves

TCE 006063448-01 P= 76.018139 Days $T_0=139.942821$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

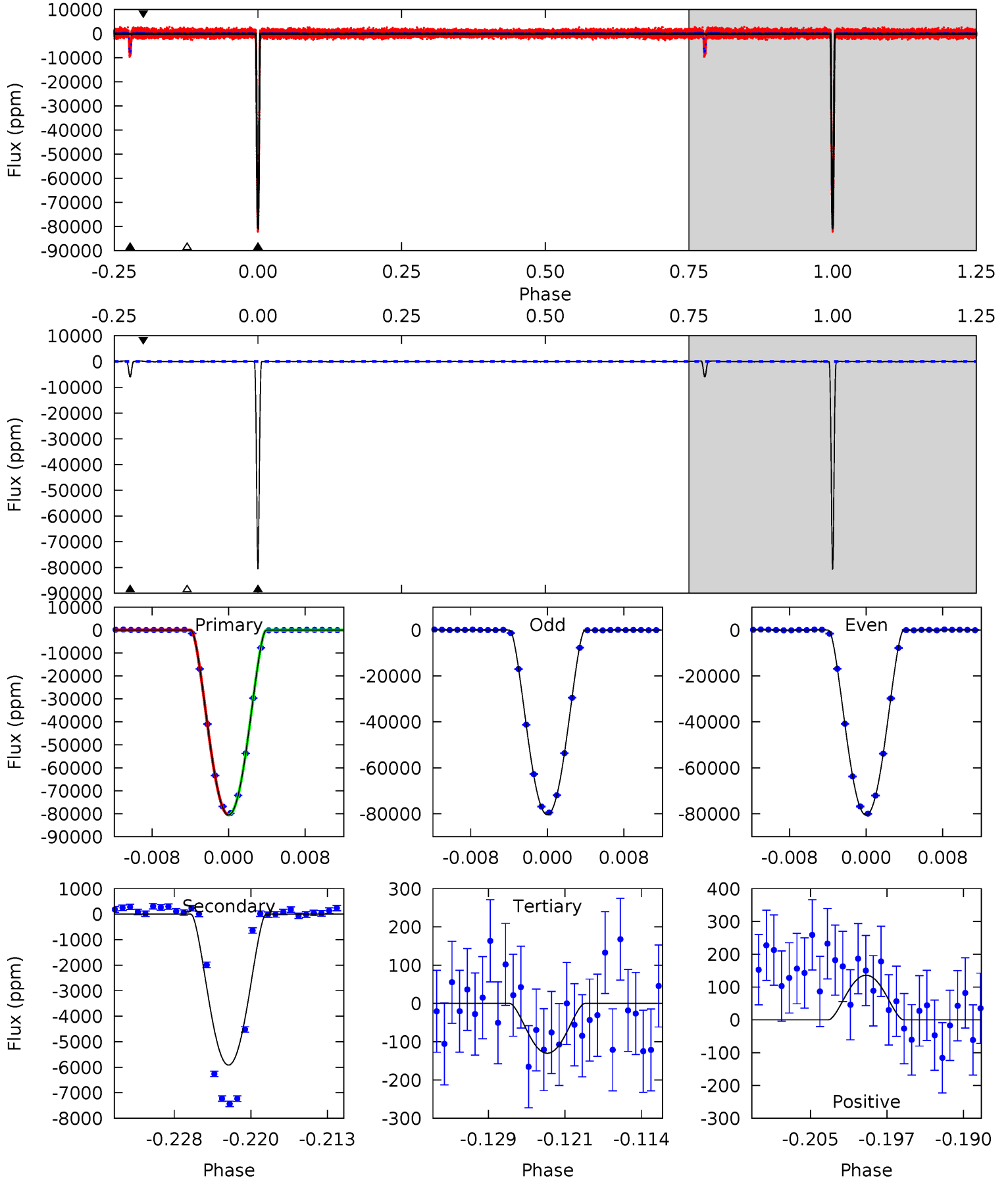
TCE 006063448-01 P= 76.018001 Days $T_0=139.944496$ (BKJD)



DV Model-Shift Uniqueness Test

006063448-01, P = 76.018139 Days, E = 63.924682 Days

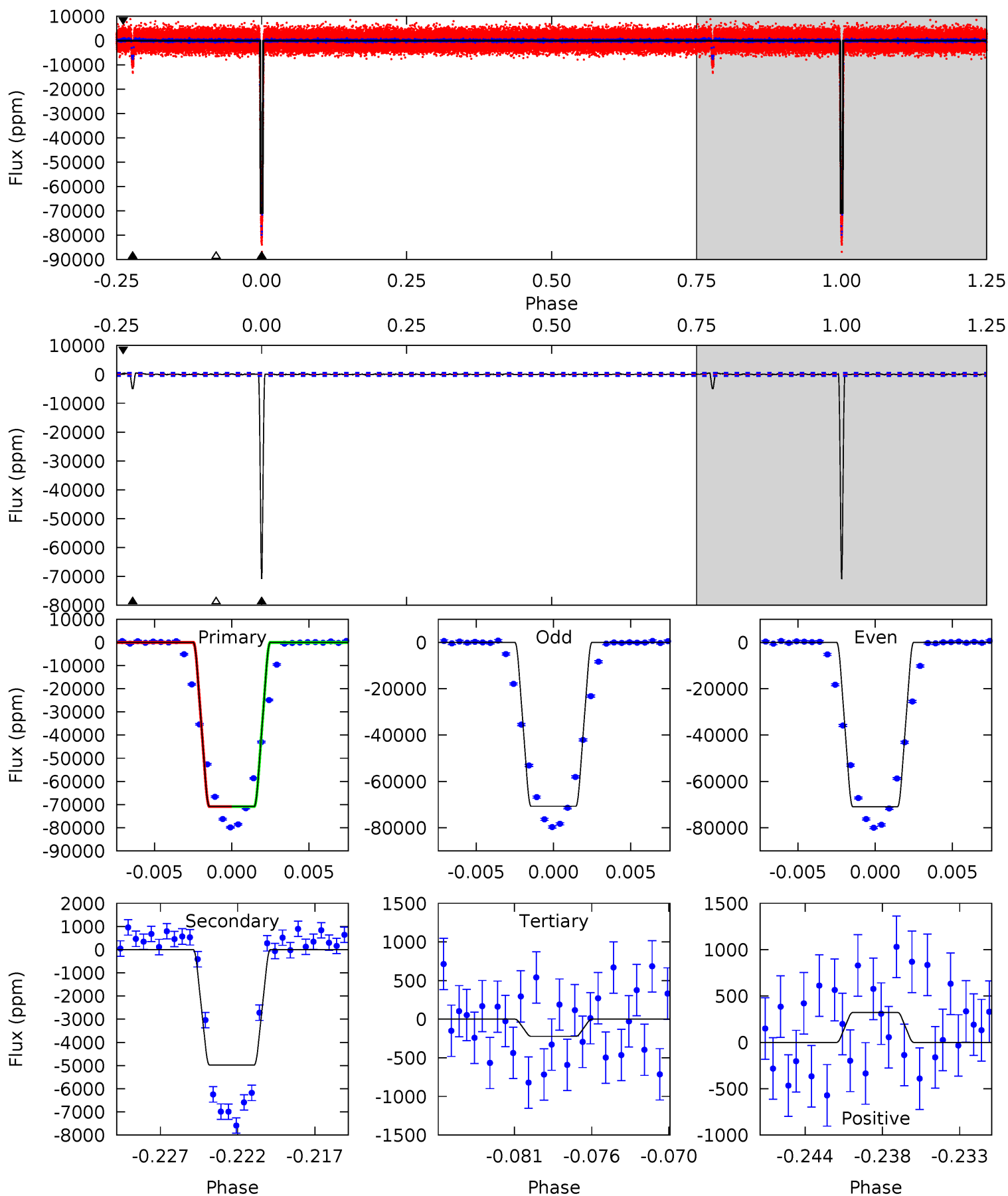
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2971	218.3	4.80	5.02	5.08	2.67	1.96	2966	2966	213.5	213.2	3.31	1.00	0.00	0.16



Alt Model-Shift Uniqueness Test

006063448-01, P = 76.018001 Days, E = 63.926495 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
683.5	48.0	2.14	3.11	5.14	2.78	0.77	681.3	680.3	45.9	44.9	0.93	1.00	0.01	0.02



Stellar Parameters For KIC 006063448

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6703^{+189}_{-260}	$4.018^{+0.299}_{-0.161}$	$-0.260^{+0.250}_{-0.300}$	$1.892^{+0.477}_{-0.656}$	$1.365^{+0.170}_{-0.291}$	$0.284^{+0.568}_{-0.124}$
	+3%/-4%	+7%/-4%	+96%/-115%	+25%/-35%	+12%/-21%	+200%/-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 006063448-01 / KOI 6659.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5916 ± 27	$63.15^{+9.52}_{-10.65}$	901^{+71}_{-81}	3743^{+63}_{-98}	124^{+53}_{-28}
Alt.	-4978 ± 104	$56.92^{+8.82}_{-10.55}$	904^{+72}_{-86}	3761^{+65}_{-91}	128^{+56}_{-31}

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 $A_{obs} \gg 1.0$

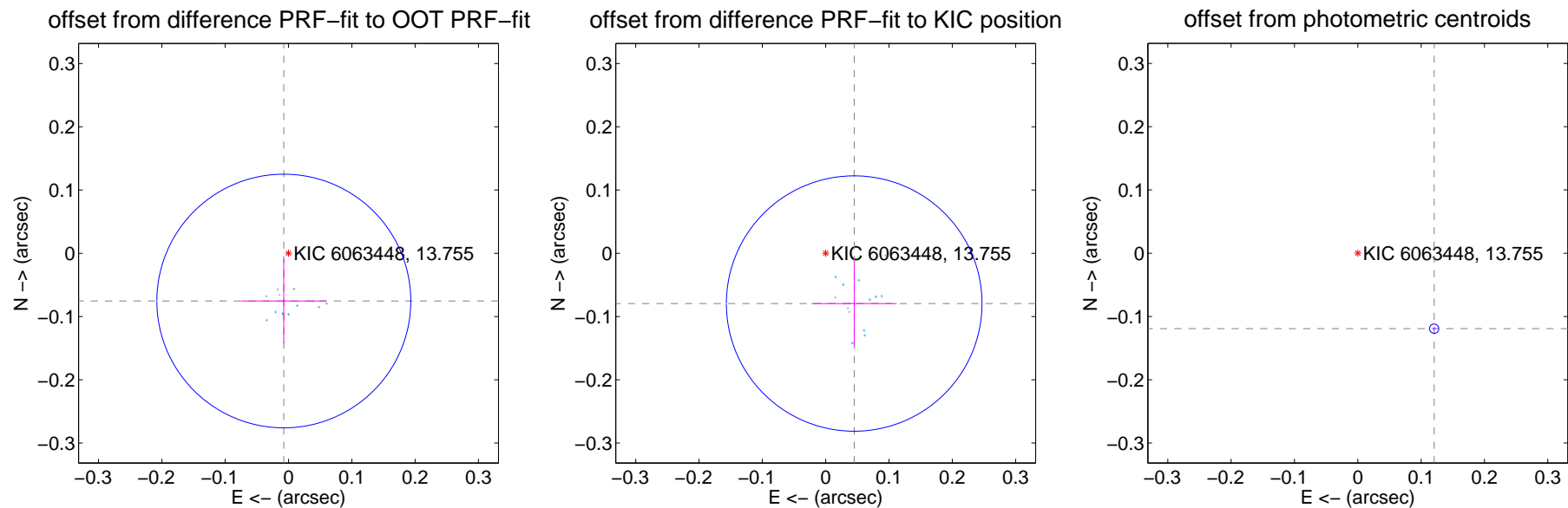
DV Centroid Data

Supplemental centroid analysis for 006063448-01. Kepler magnitude: 13.76. Transit SNR 1828.99

There are 14 quarters with good PRF difference image offsets

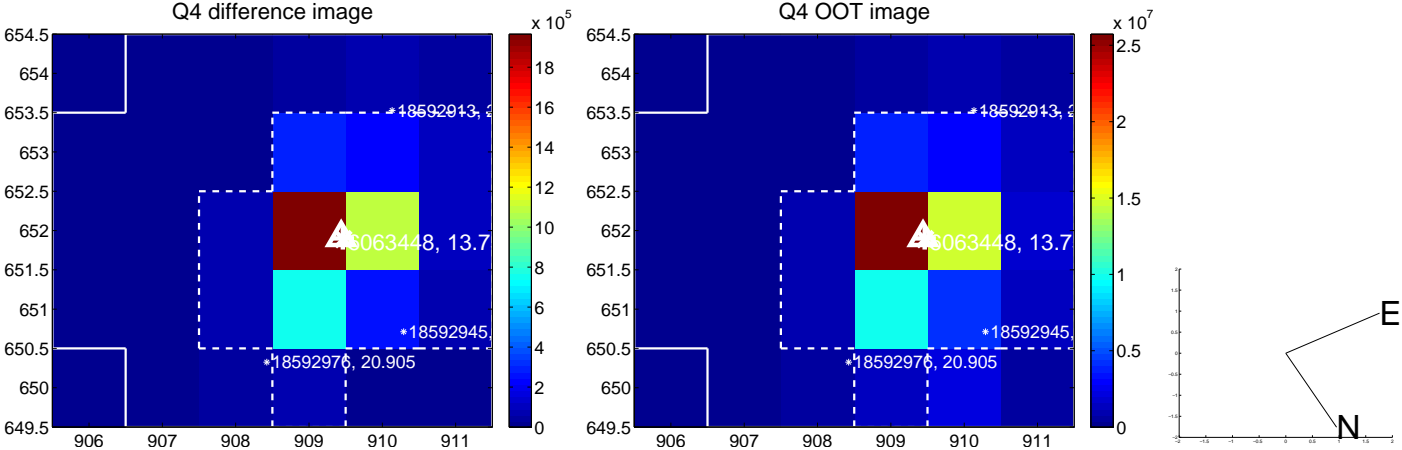
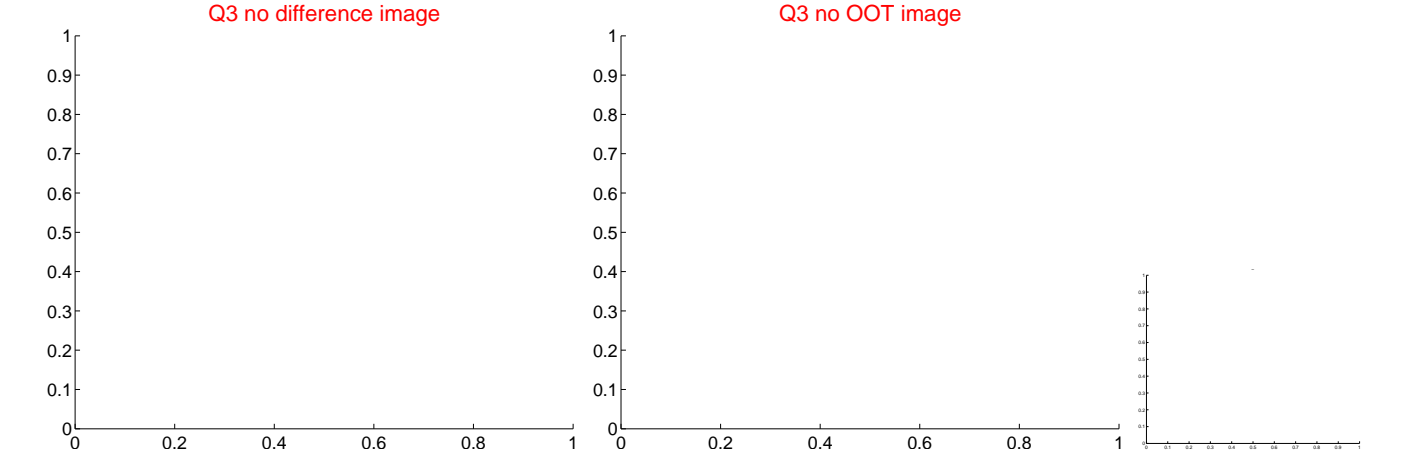
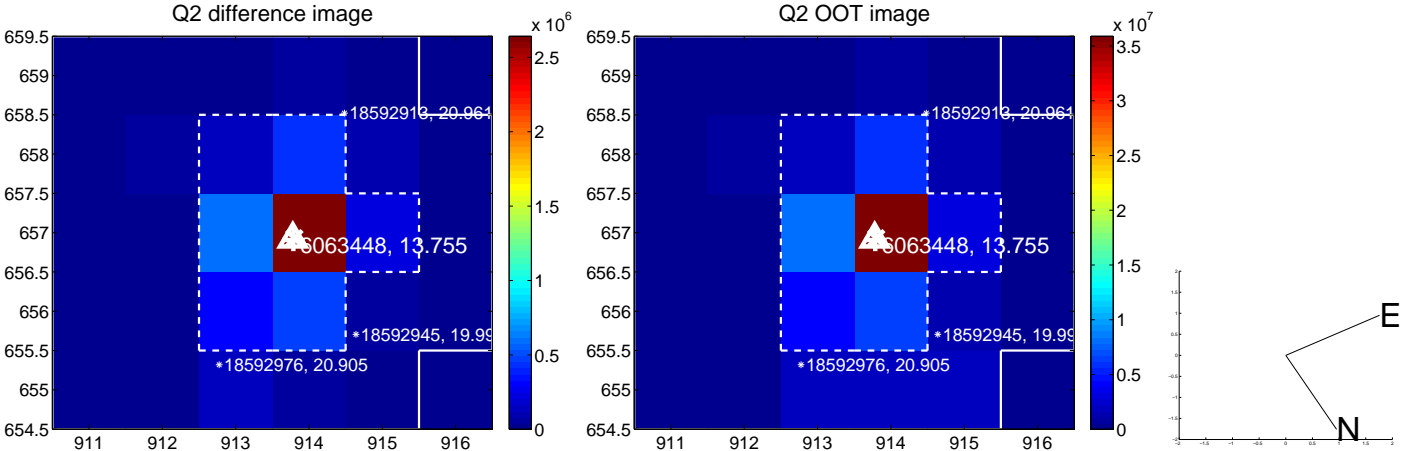
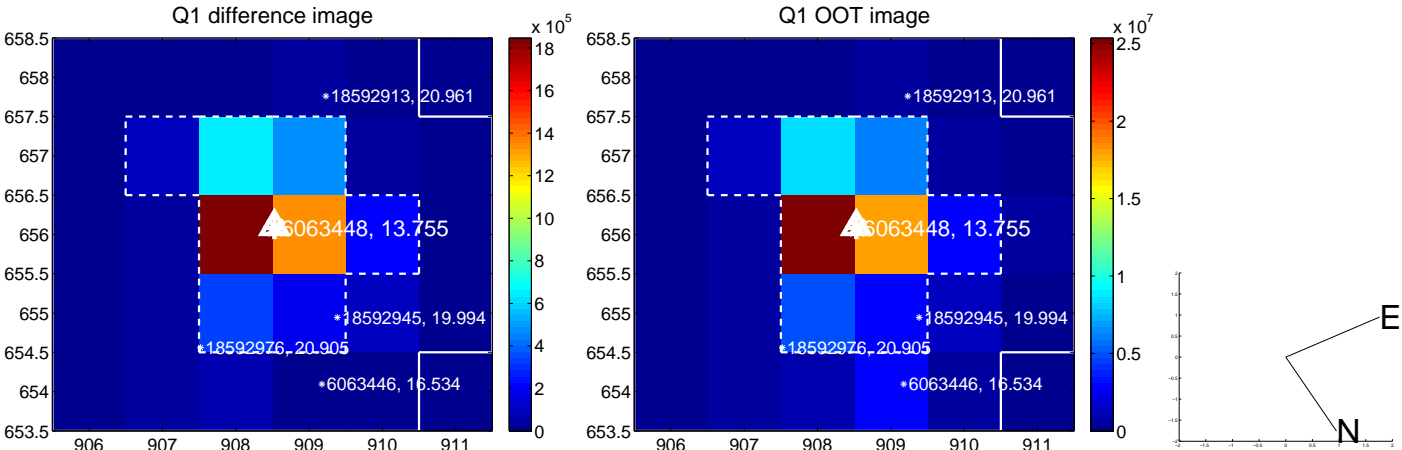
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.076 ± 0.067	1.13	0.007 ± 0.067	-0.075 ± 0.067
PRF-fit source offset from KIC position	0.091 ± 0.067	1.36	-0.045 ± 0.067	-0.079 ± 0.067
photometric centroid source offset	0.17 ± 0.00	69.29	-0.12 ± 0.00	-0.12 ± 0.00

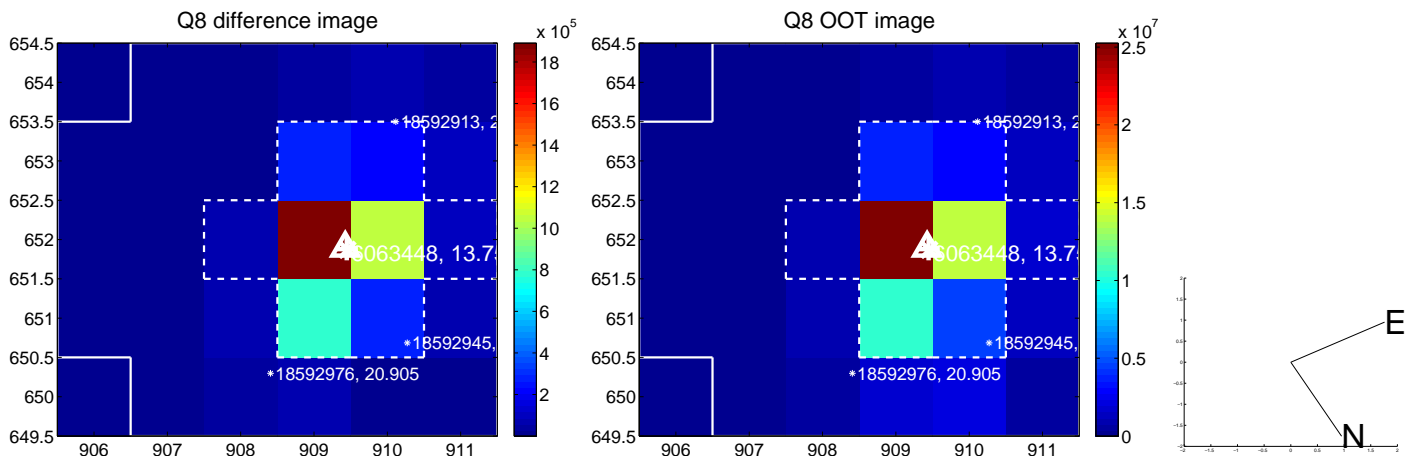
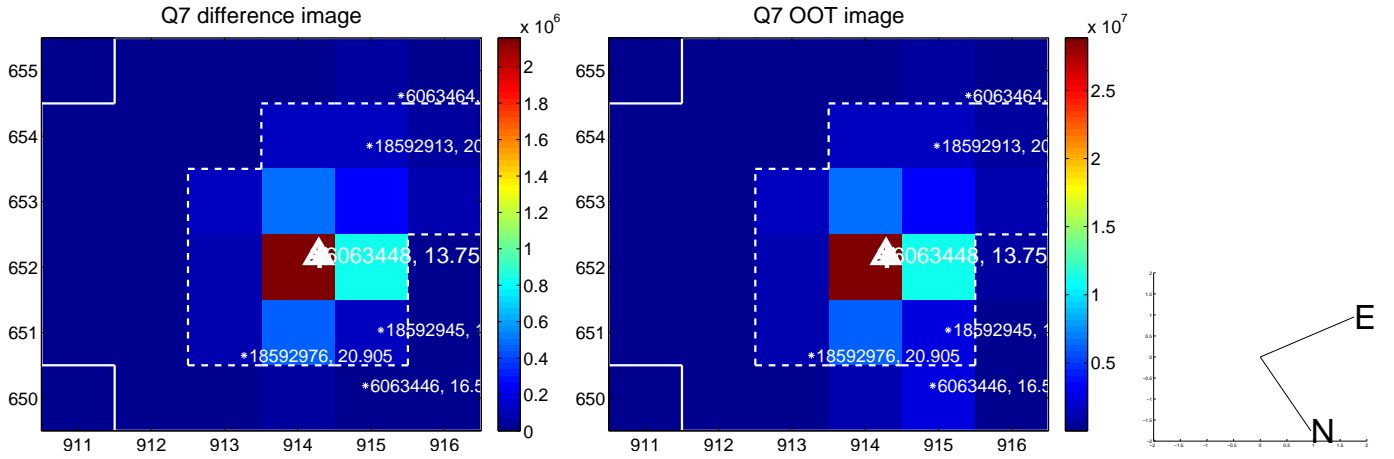
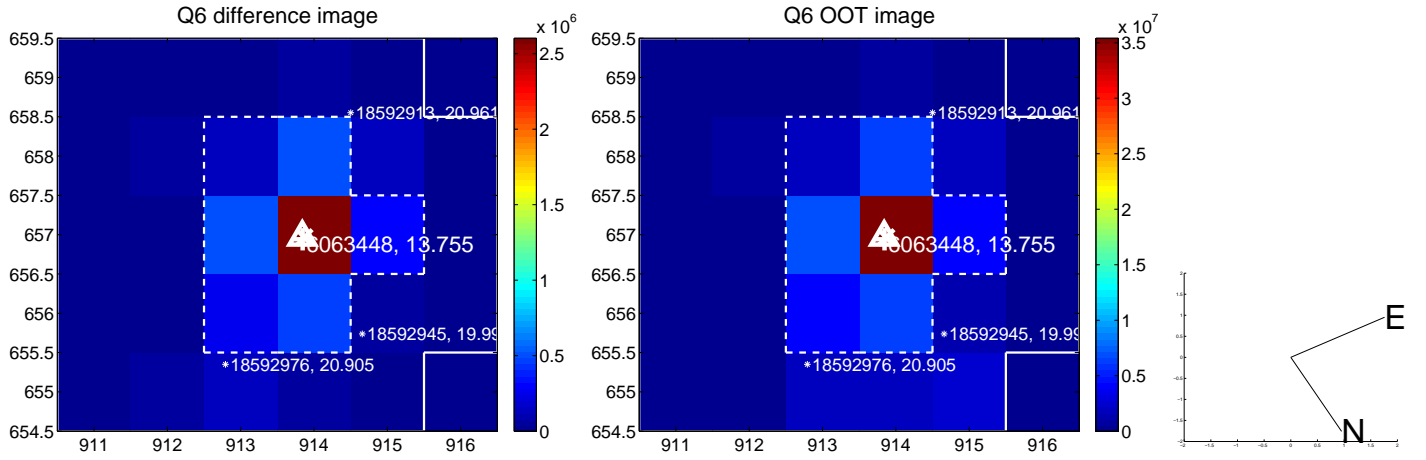
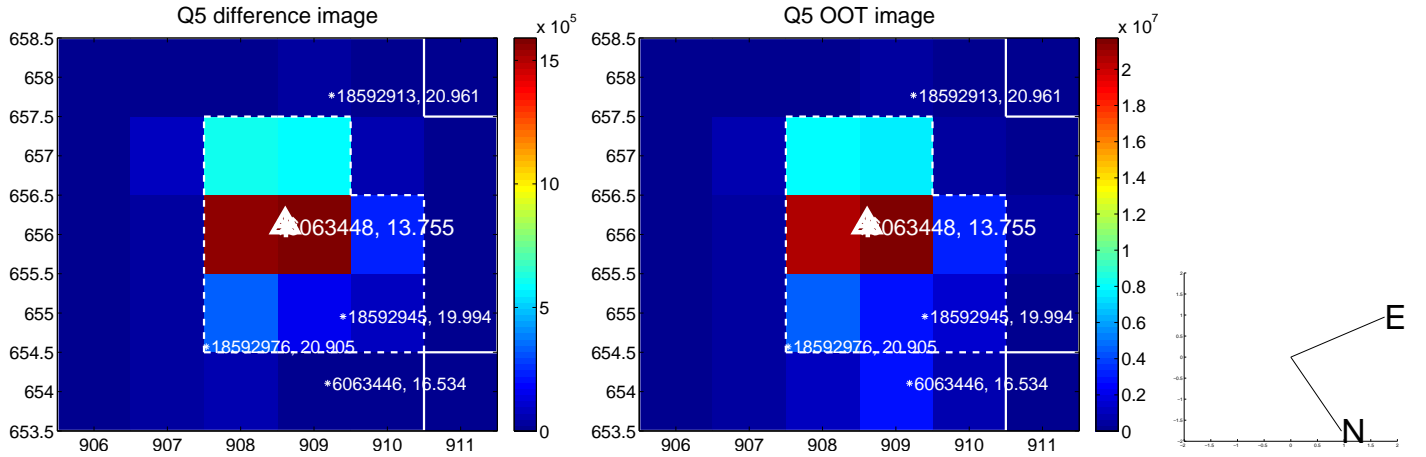


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

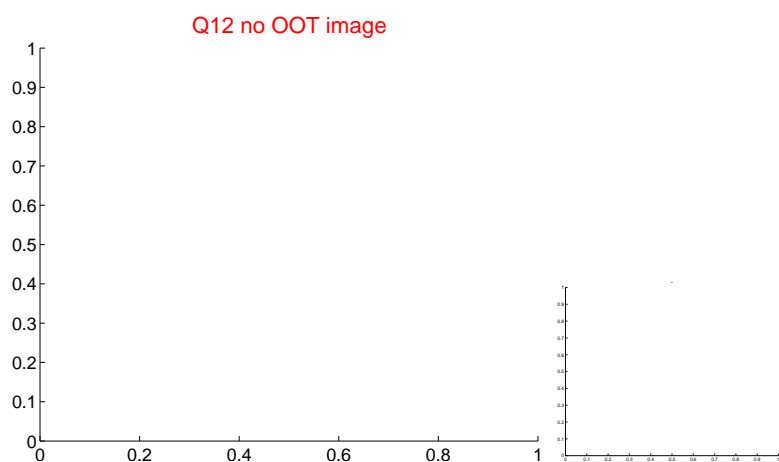
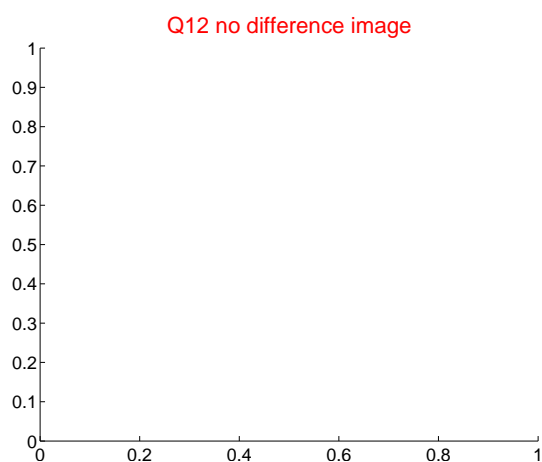
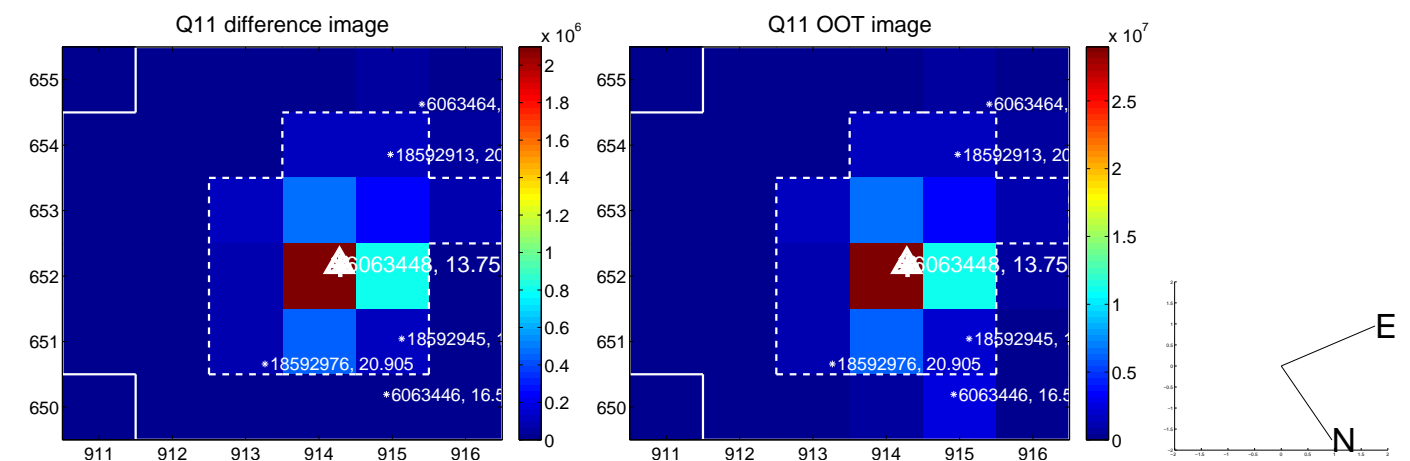
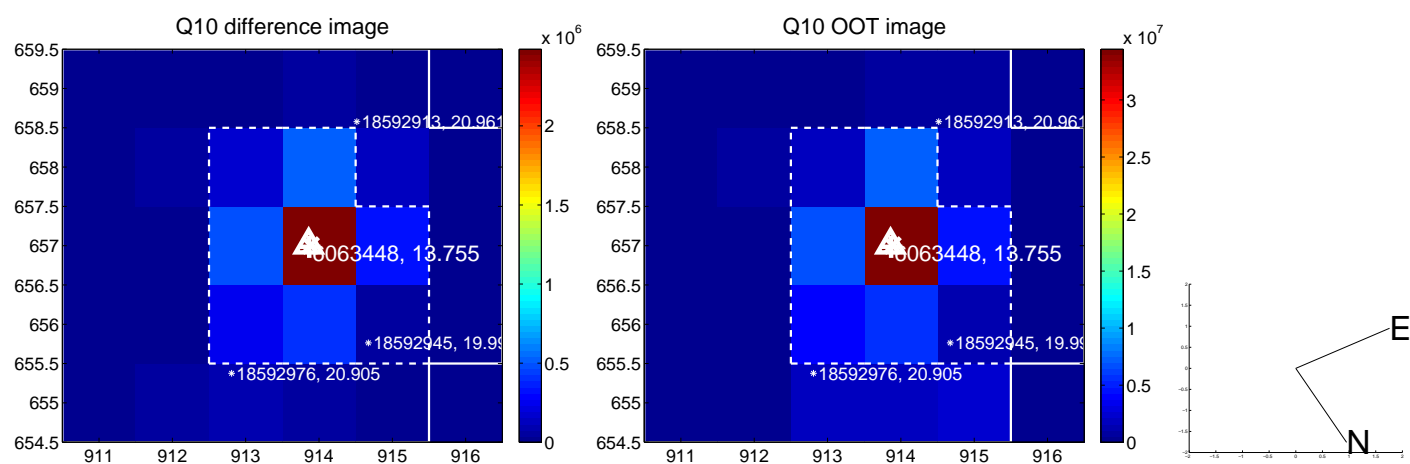
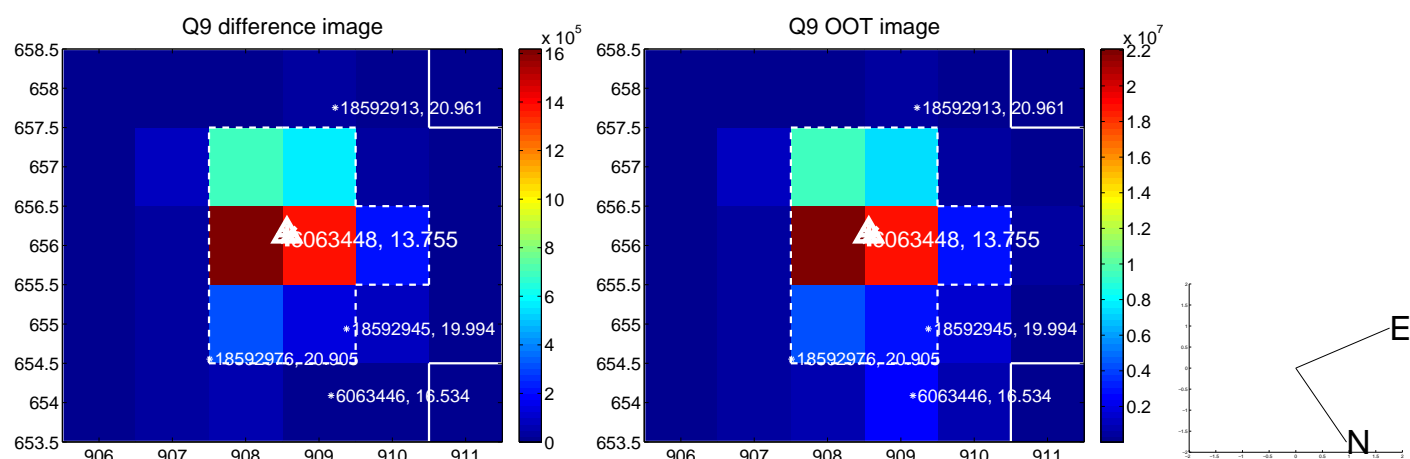
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



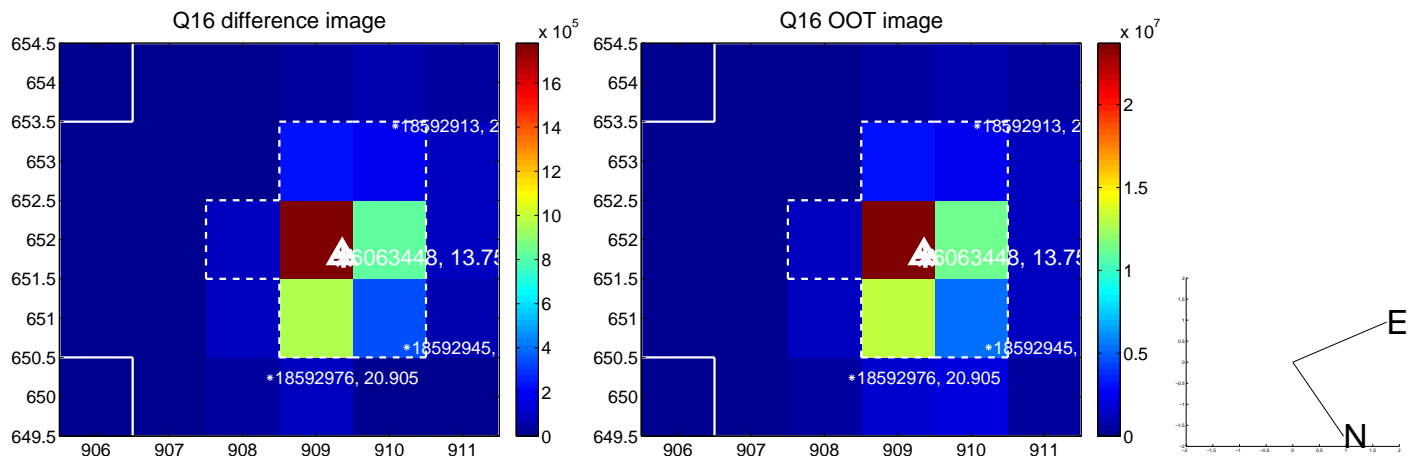
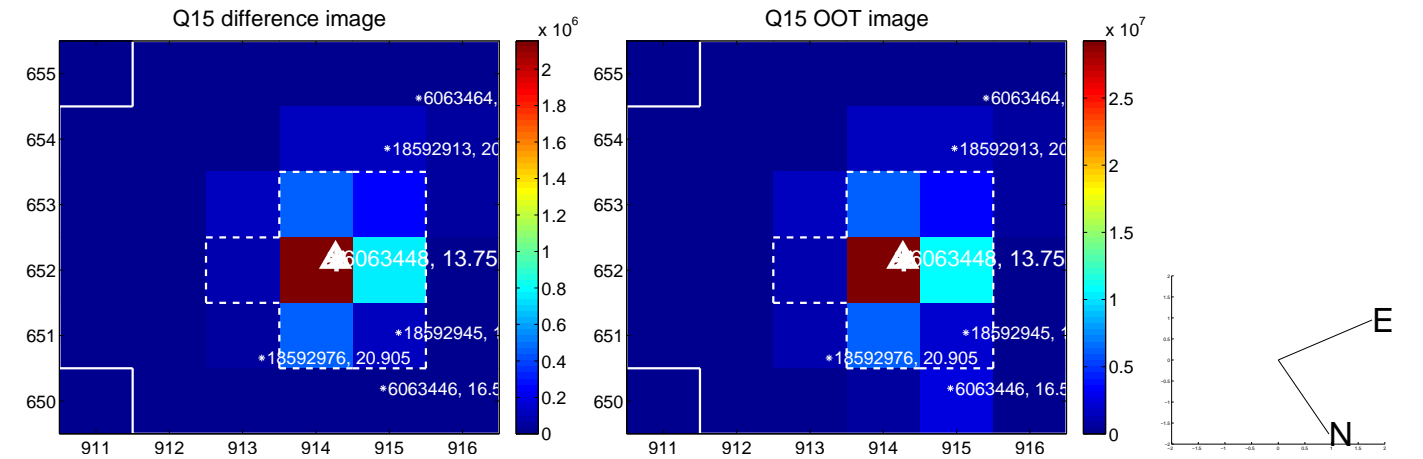
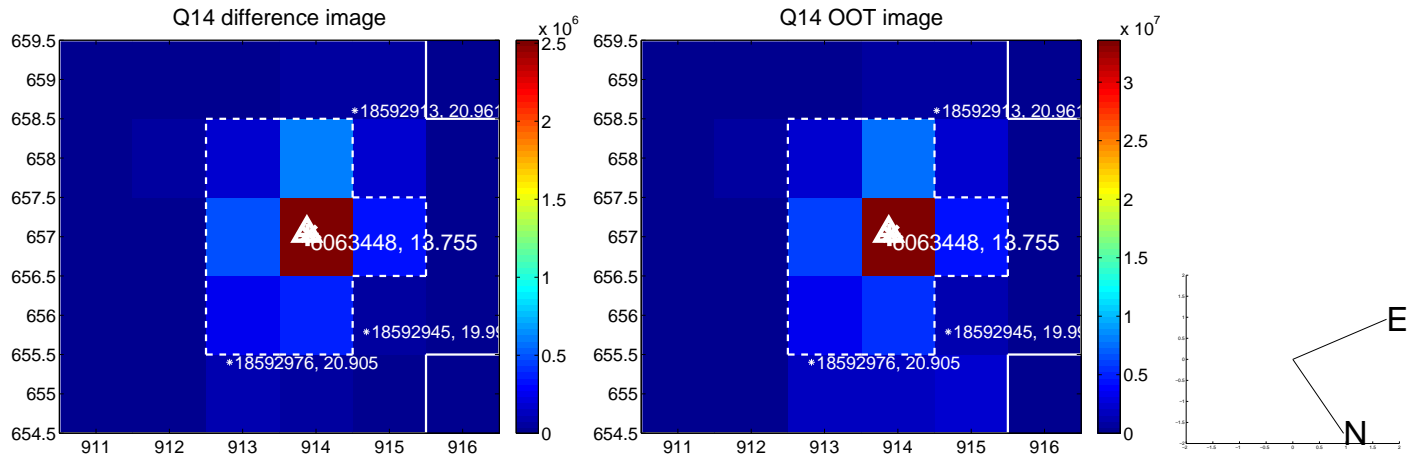
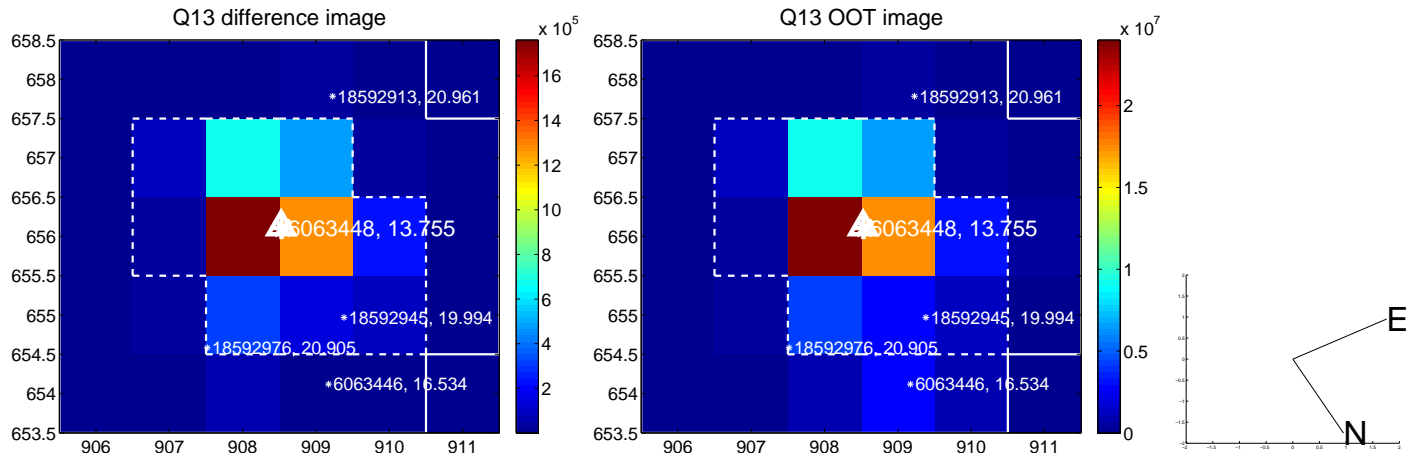
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



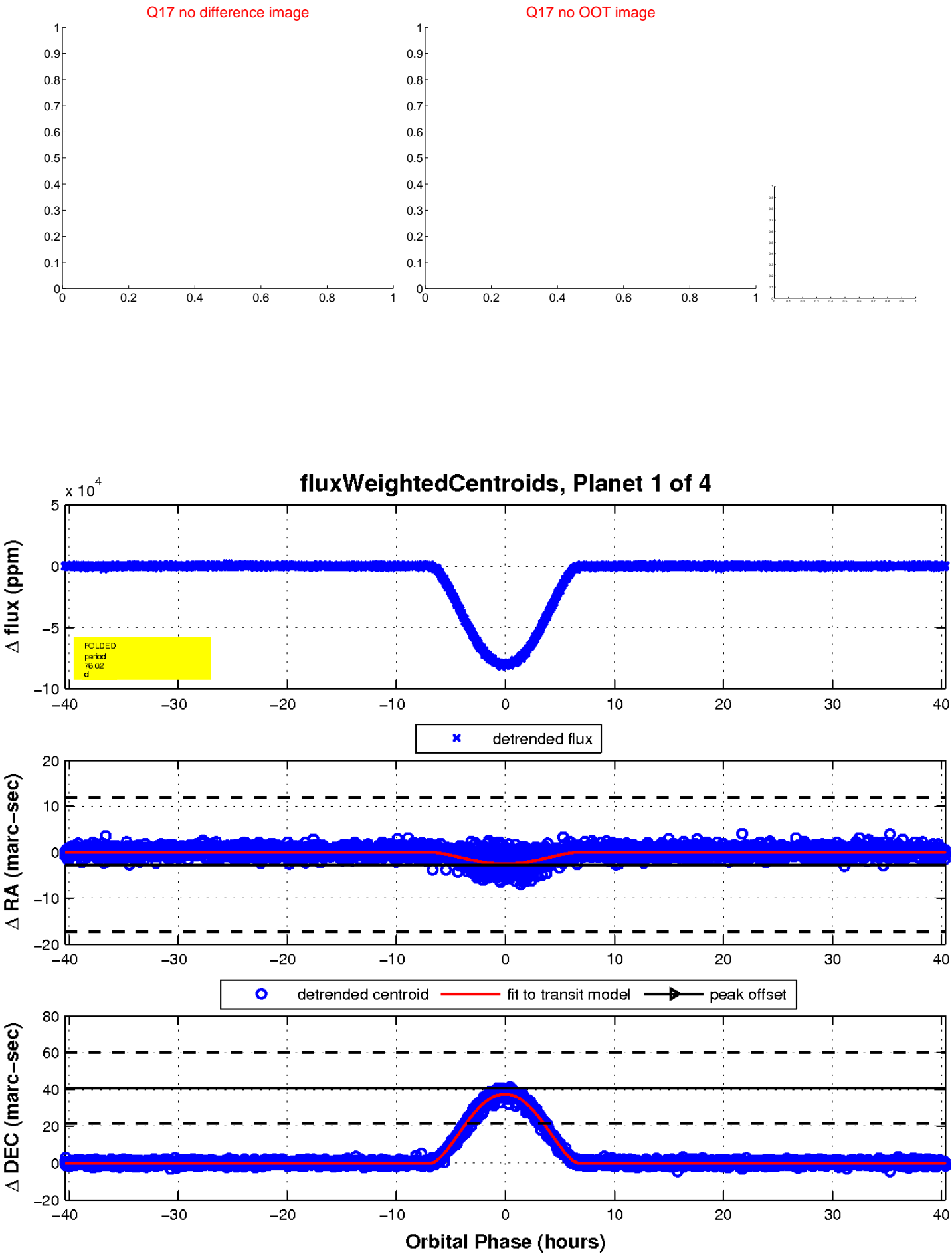
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

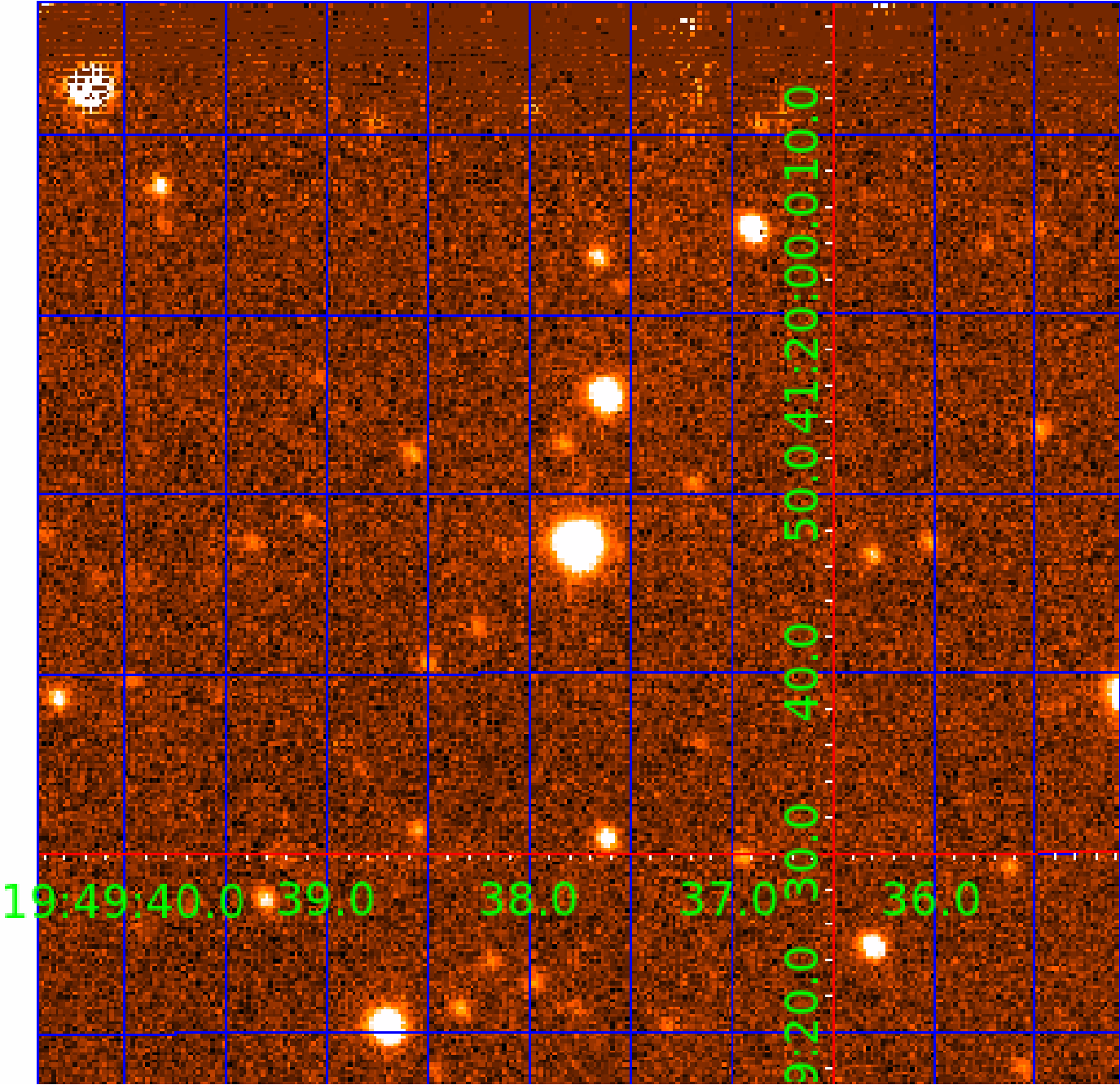


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006063448

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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006063448-03	OBS	No	0.893646	132.249397	68.8	3.635	14.1	12.0	1.89	6703	1.85	15984.47
006063448-04	OBS	No	0.824210	131.825345	108.4	1.835	7.9	10.0	1.89	6703	2.30	17804.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006063448-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
006063448-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006063448-03	OBS	FP	0.06	1	0	0	0	LPP_DV—LPP_ALT
006063448-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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.

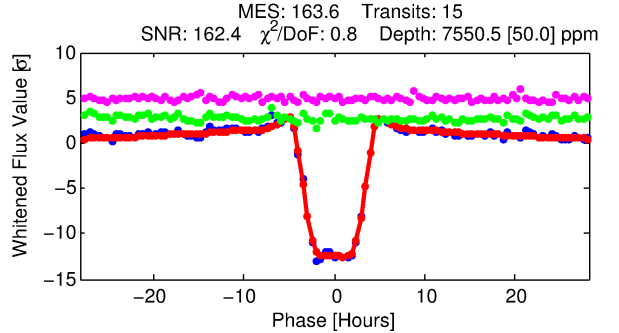
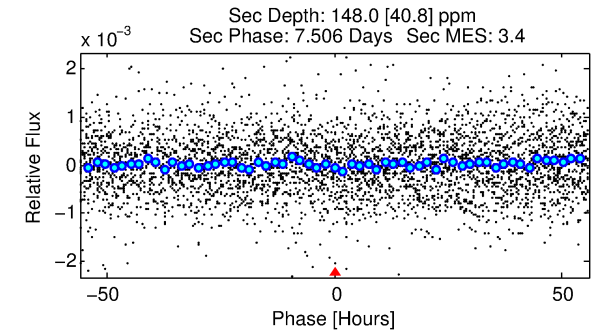
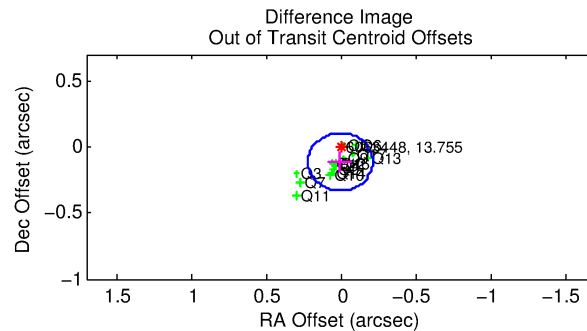
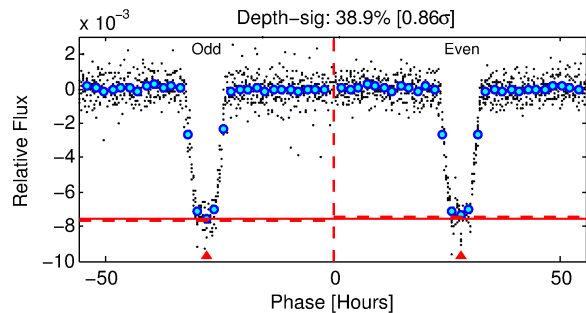
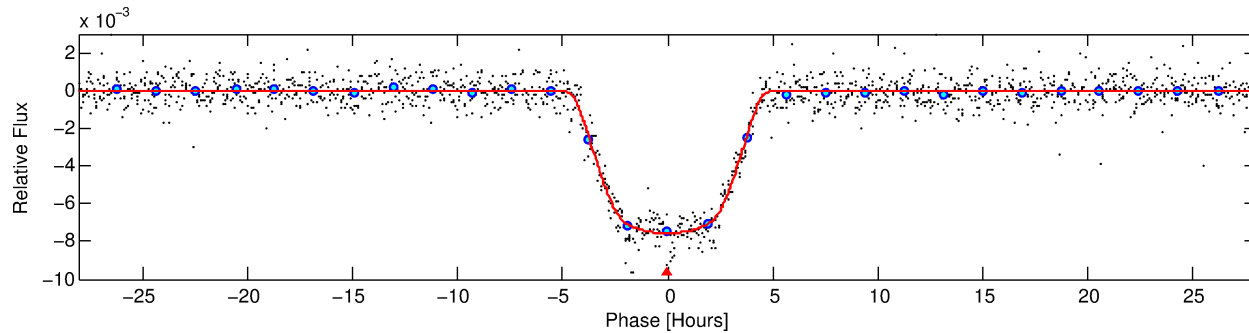
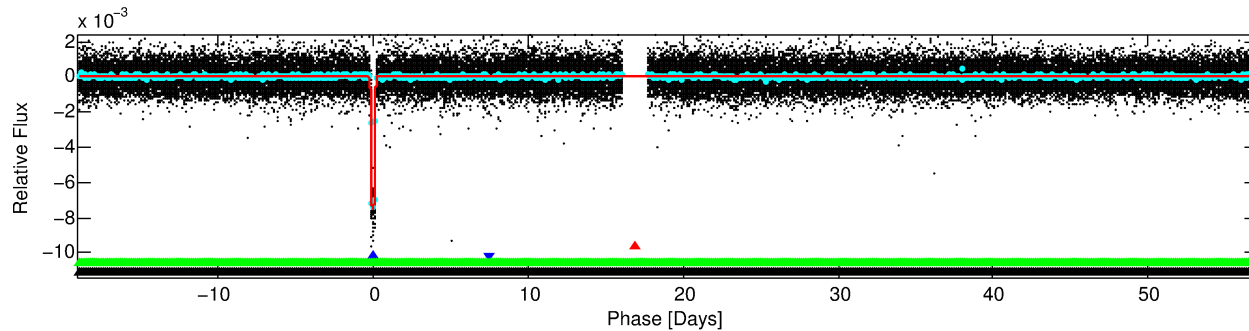
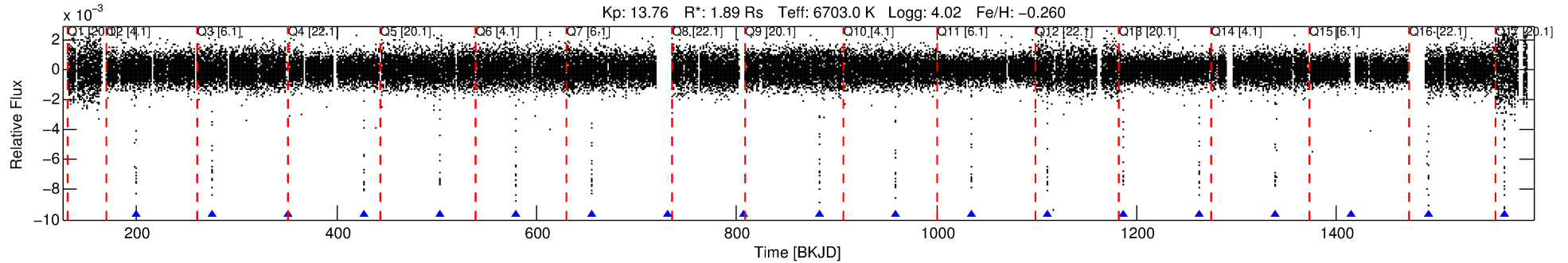
Ephemeris Match Information For 006063448-02

No Significant Match Found

DV One-Page Summary

KIC: 6063448 Candidate: 2 of 4 Period: 76.018 d
KOI: K06659 Corr: No Ephemeris Match

Kp: 13.76 R*: 1.89 Rs Teff: 6703.0 K Logg: 4.02 Fe/H: -0.260



DV Fit Results:

Period = 76.01824 [0.00010] d
Epoch = 199.0504 [0.0011] BKJD
Rp/R* = 0.0903 [0.0005]
a/R* = 42.29 [0.63]
b = 0.85 [0.00]
Seff = 42.73 [22.94]
Teq = 652 [87] K
Rp = 18.64 [6.46] Re
a = 0.3893 [0.1268] AU
Ag = 35.52 [20.72] [1.67σ]
Teffp = 2461 [195] K [8.47σ]

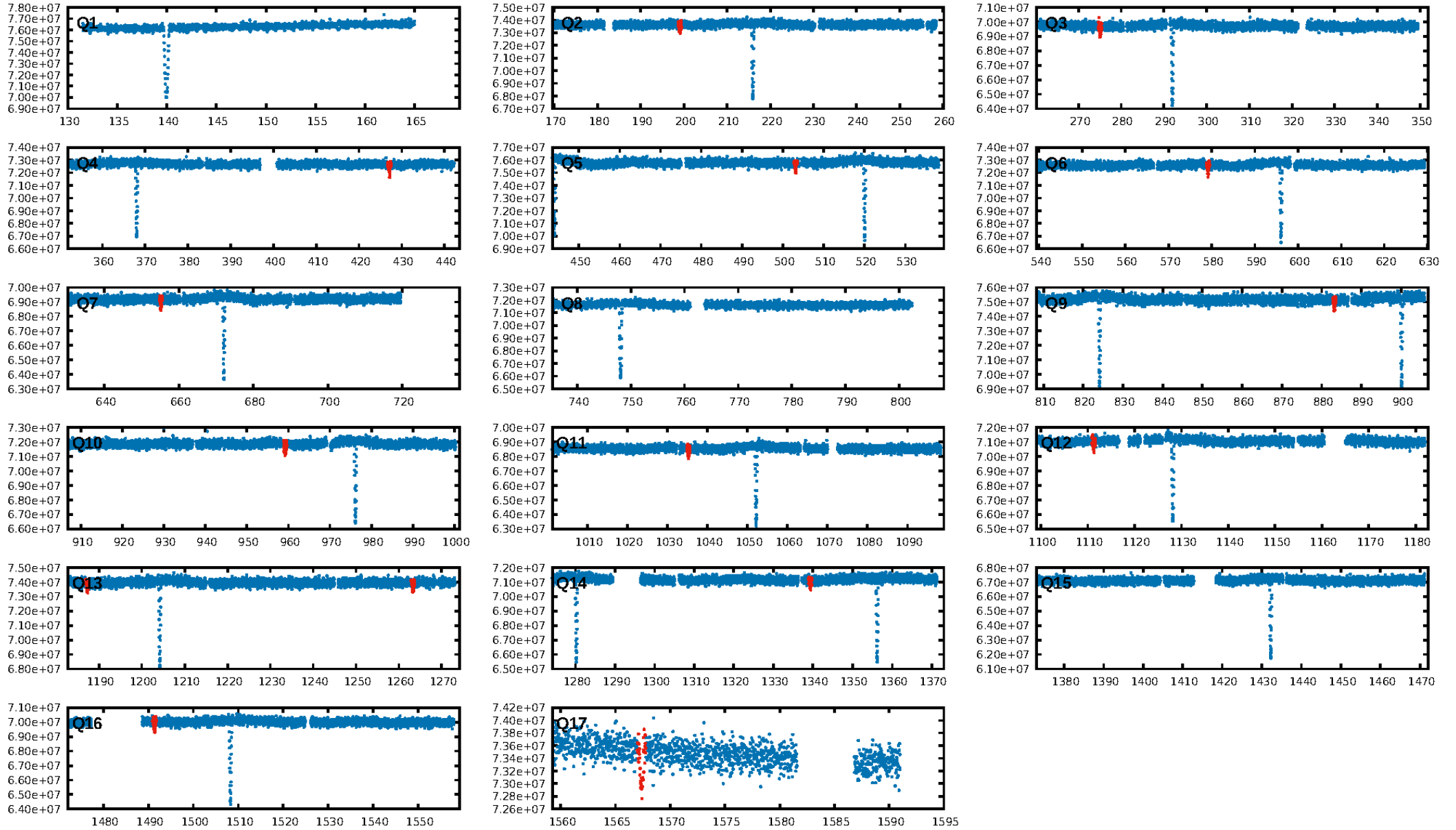
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00e]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 90.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [14/14]
GhostDiagnostic-chr: 3.403
Centroid-sig: 0.0%
Centroid-so: 0.135 arcsec [4.63σ]
OotOffset-rm: 0.114 arcsec [1.57σ]
KicOffset-rm: 0.124 arcsec [1.72σ]
OotOffset-st: 4/3/3/4 [14]
KicOffset-st: 4/3/3/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
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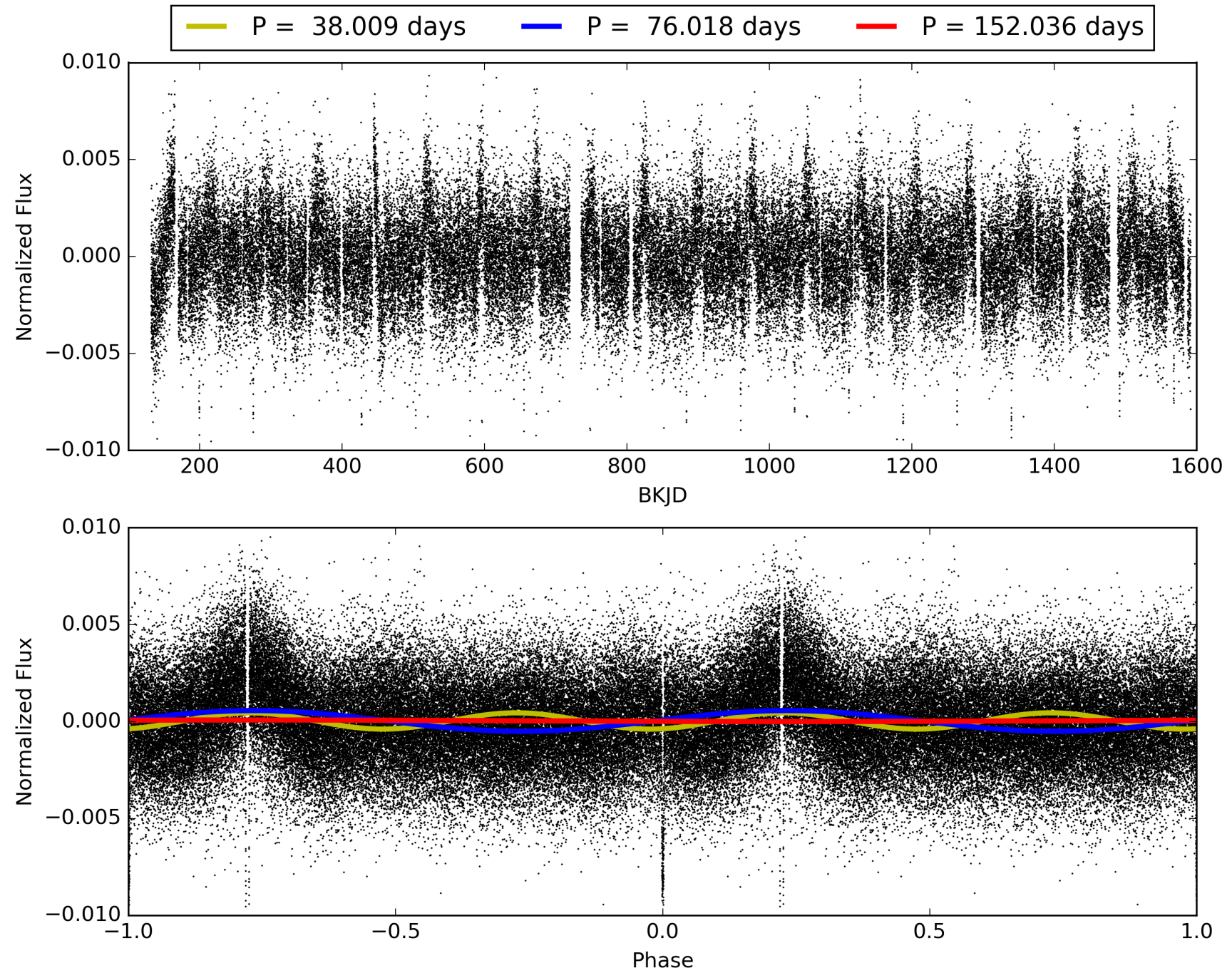
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 06:52:37 Z

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

TCE 006063448-02, PDC Light Curves

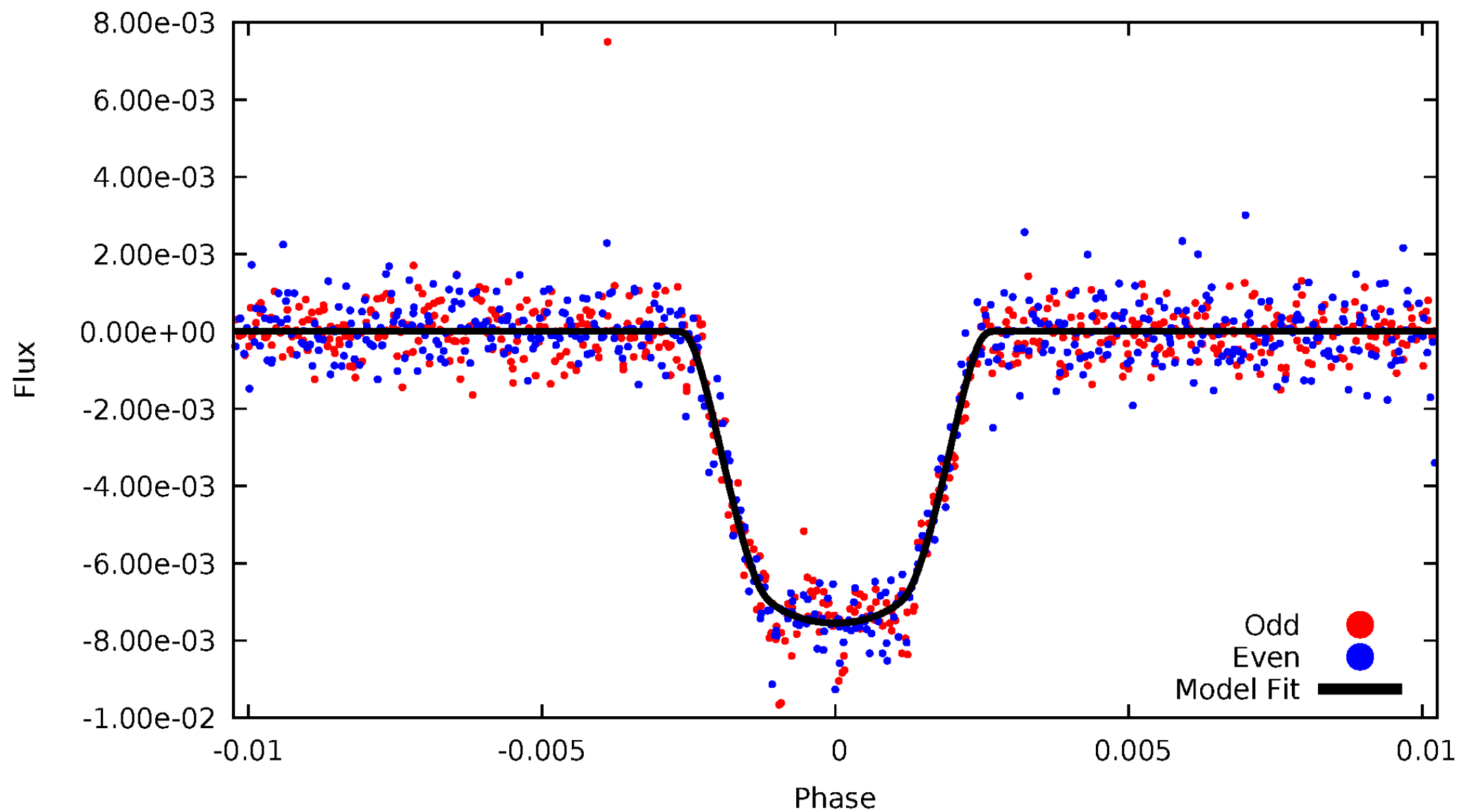


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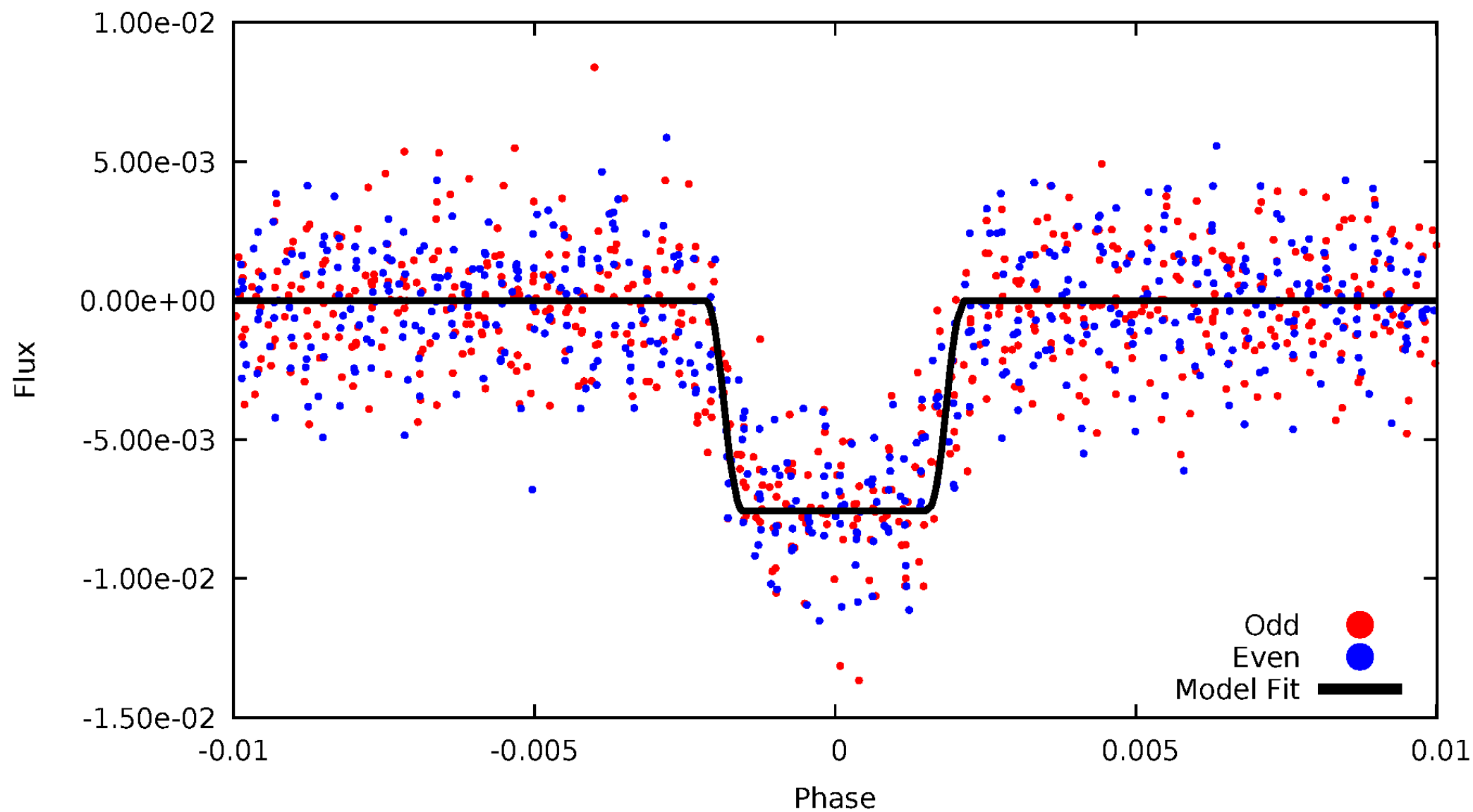
DV Odd/Even

TCE 006063448-02



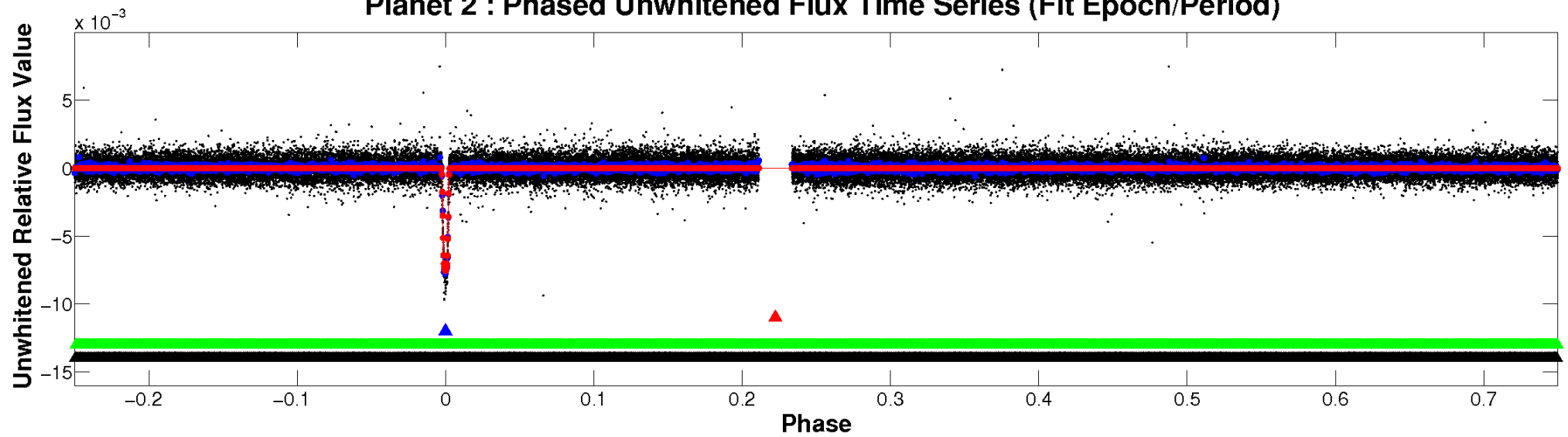
ALT Odd/Even

TCE 006063448-02

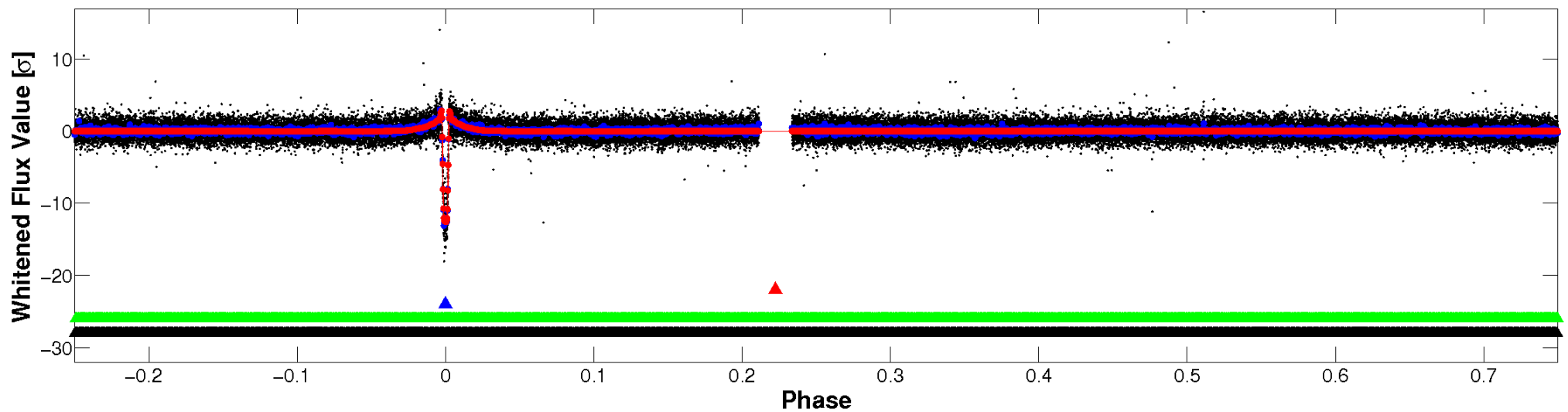


Non-Whitened Vs. Whitened Light Curve

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

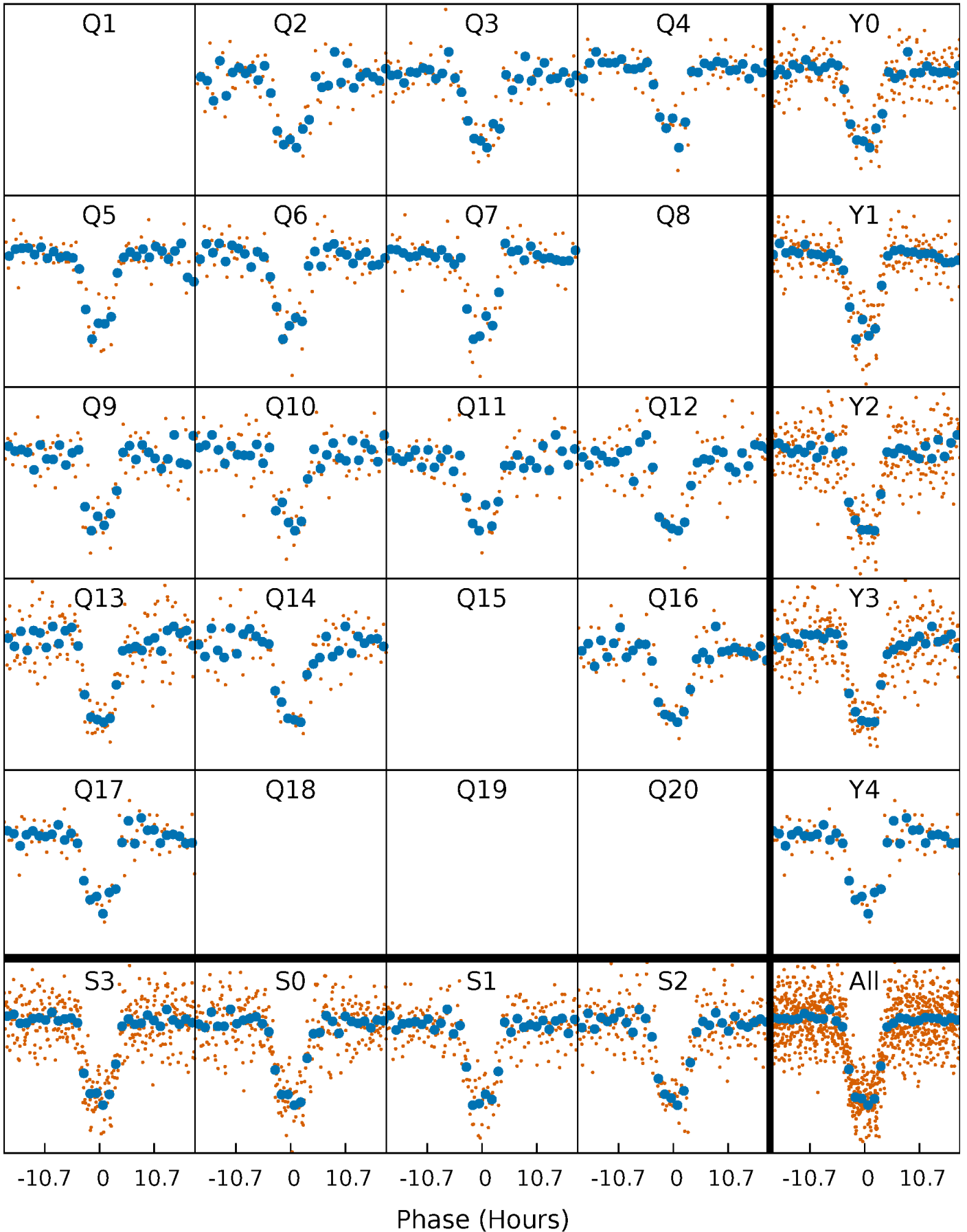


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



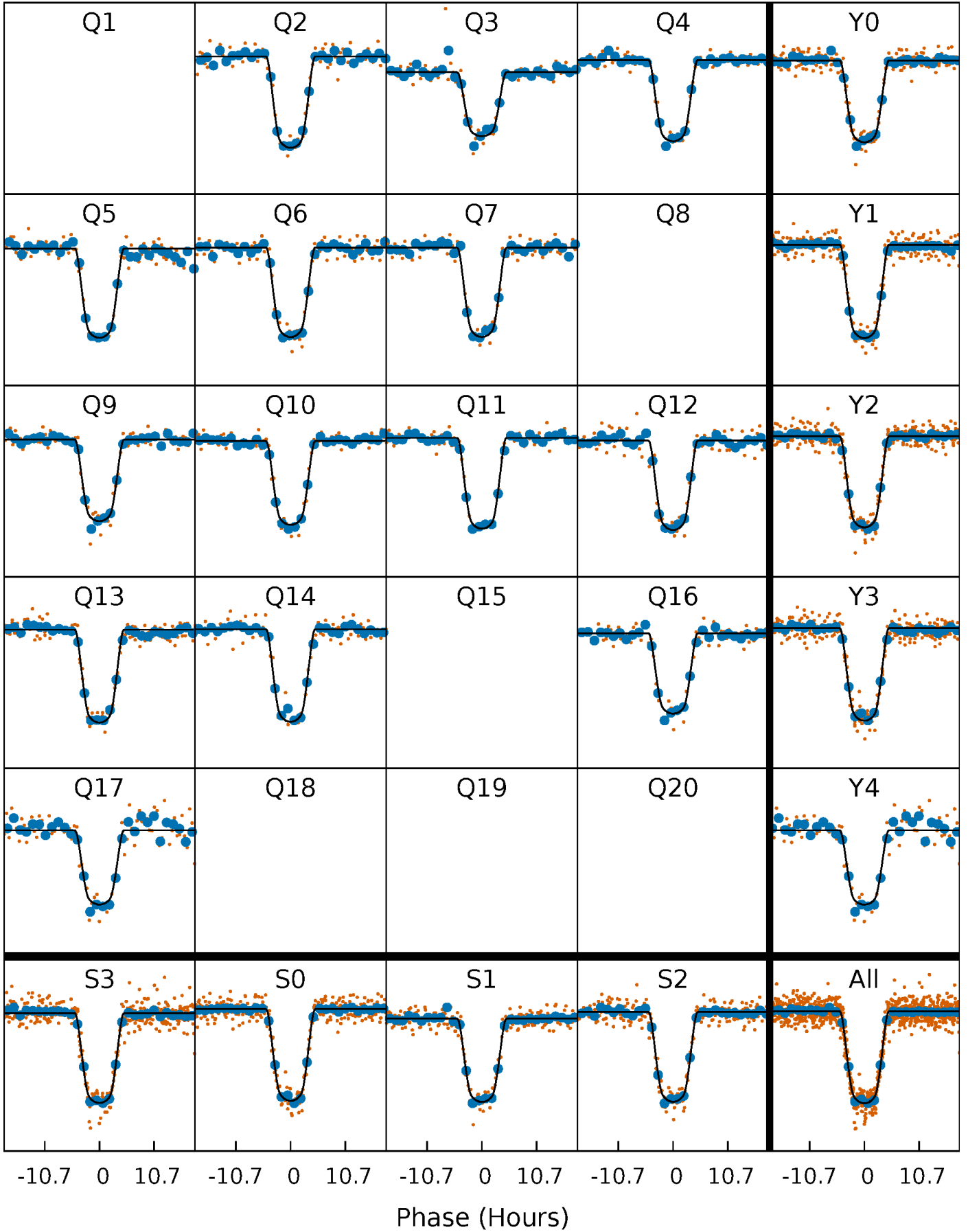
PDC Quarter-Phased Transit Curves

TCE 006063448-02 P= 76.018245 Days $T_0=199.050408$ (BKJD)



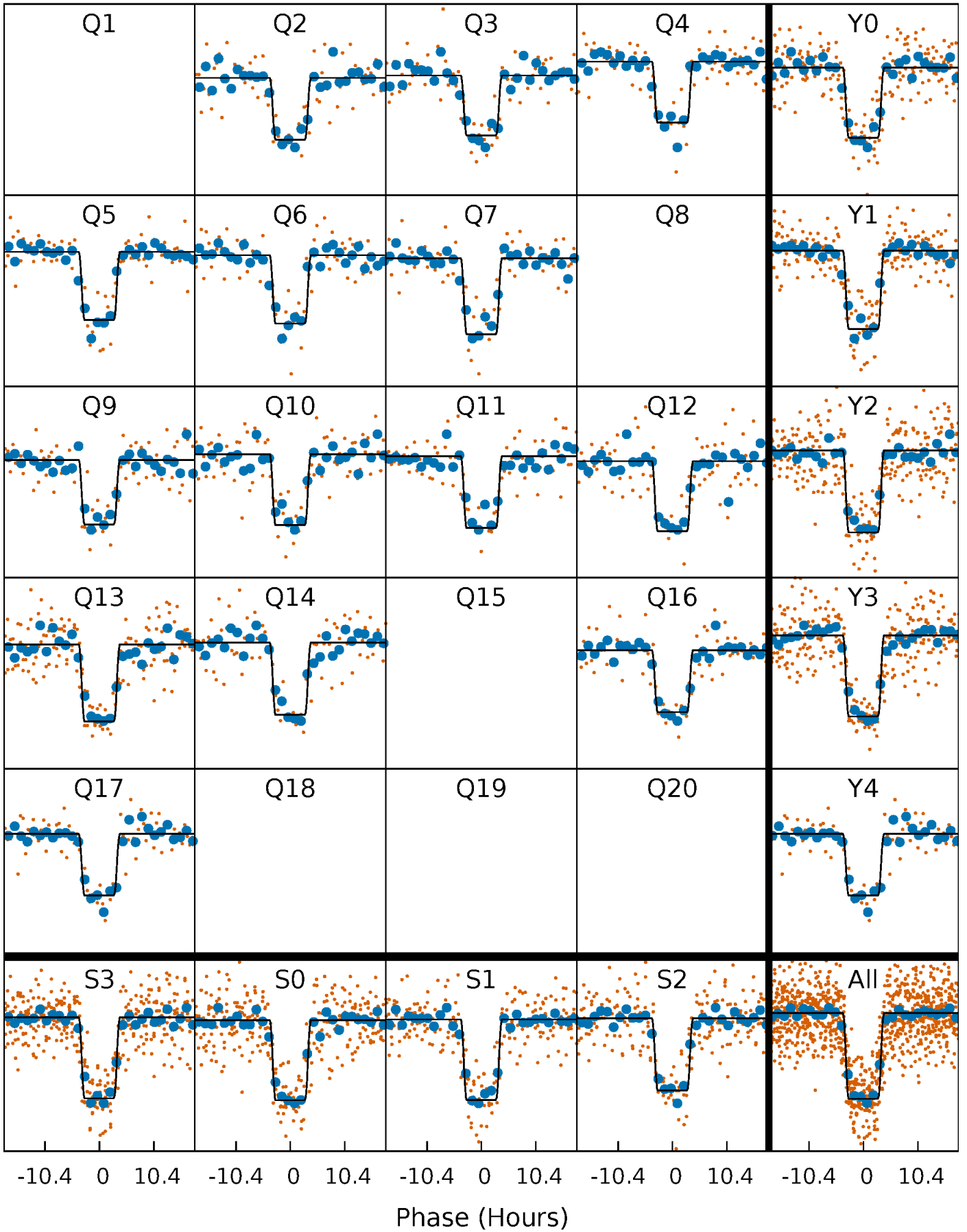
DV Quarter-Phased Transit Curves

TCE 006063448-02 P= 76.018245 Days $T_0=199.050408$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

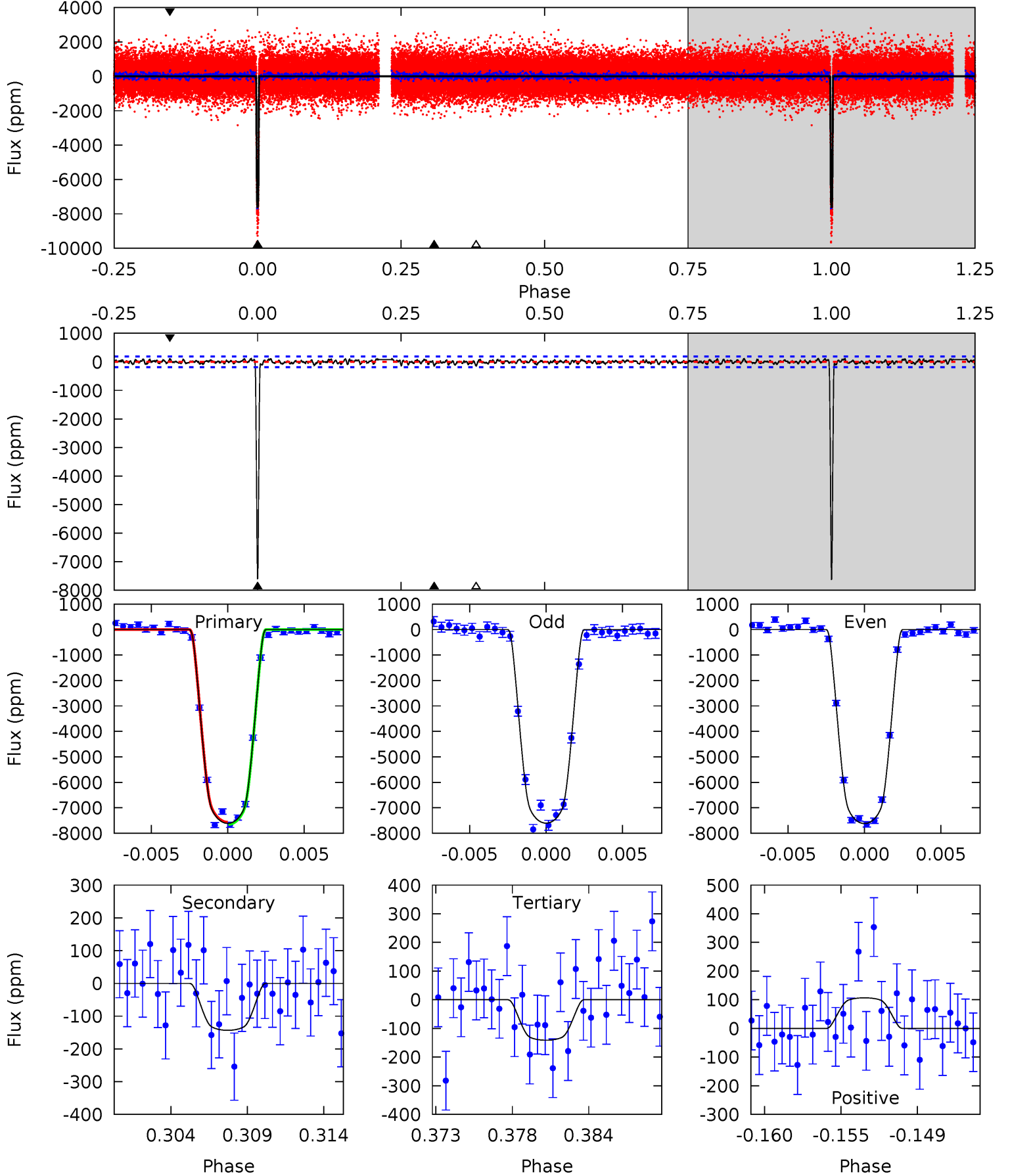
TCE 006063448-02 P= 76.017340 Days $T_0=199.060403$ (BKJD)



DV Model-Shift Uniqueness Test

006063448-02, P = 76.018245 Days, E = 123.032163 Days

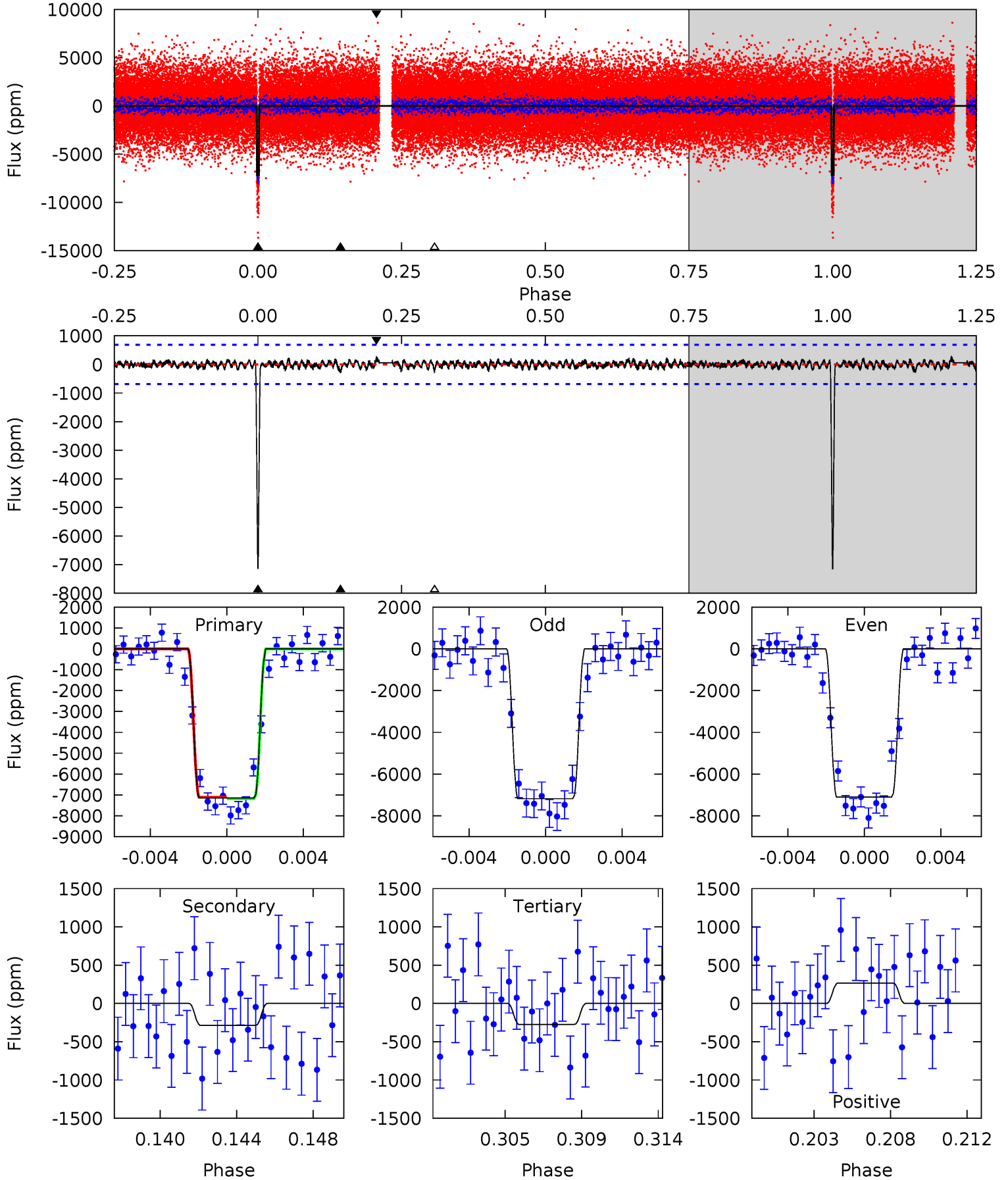
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
209.3	3.94	3.88	2.94	5.15	2.79	1.17	205.4	206.4	0.06	1.01	0.22	1.01	0.01	1.18



Alt Model-Shift Uniqueness Test

006063448-02, P = 76.017340 Days, E = 123.043063 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.1	2.17	2.08	2.02	5.19	2.86	0.58	52.0	52.0	0.09	0.15	0.27	1.01	0.04	0.25



Stellar Parameters For KIC 006063448

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6703^{+189}_{-260}	$4.018^{+0.299}_{-0.161}$	$-0.260^{+0.250}_{-0.300}$	$1.892^{+0.477}_{-0.656}$	$1.365^{+0.170}_{-0.291}$	$0.284^{+0.568}_{-0.124}$
	+3%/-4%	+7%/-4%	+96%/-115%	+25%/-35%	+12%/-21%	+200%/-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 006063448-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-143 ± 36	$18.23^{+2.81}_{-3.43}$	895^{+73}_{-85}	3058^{+121}_{-128}	36^{+20}_{-12}
Alt.	-286 ± 132	$17.84^{+2.56}_{-3.33}$	898^{+72}_{-81}	3424^{+242}_{-319}	75^{+52}_{-37}

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

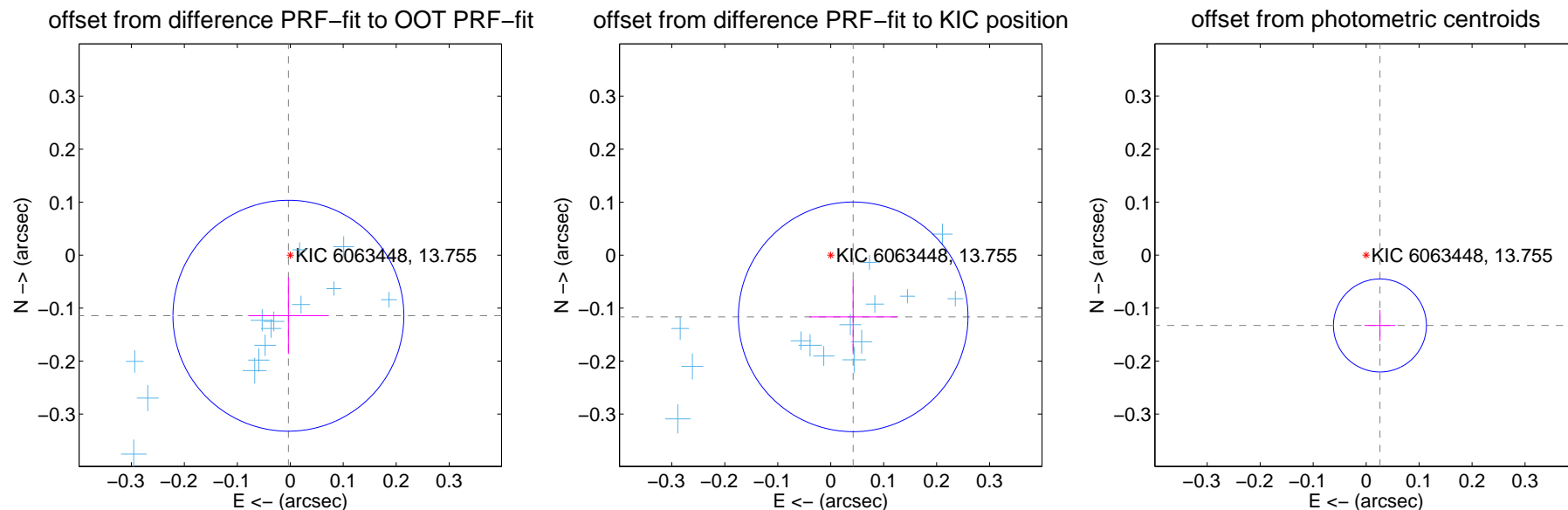
DV Centroid Data

Supplemental centroid analysis for 006063448-02. Kepler magnitude: 13.76. Transit SNR 162.43

There are 14 quarters with good PRF difference image offsets

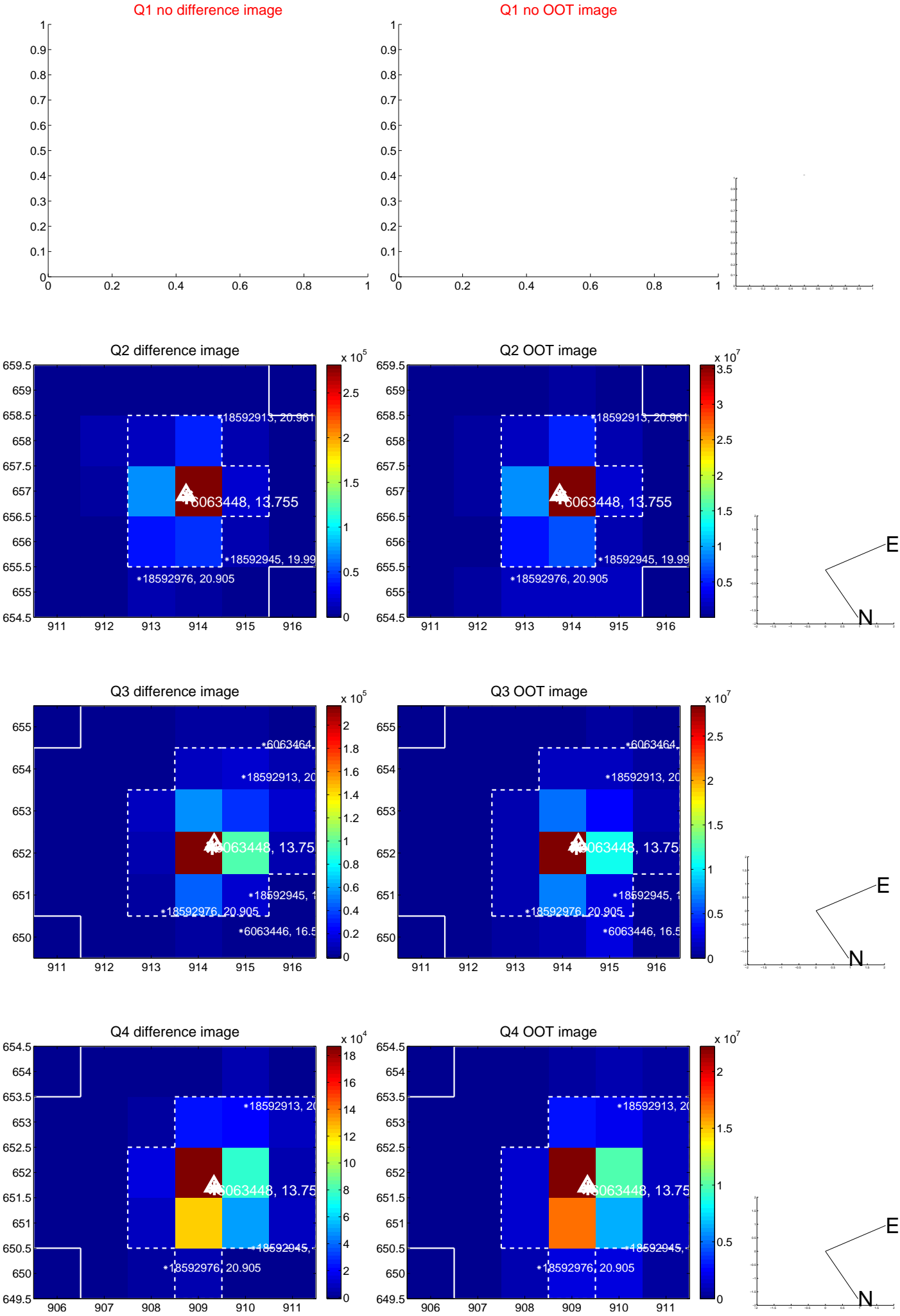
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.114 ± 0.073	1.57	0.004 ± 0.076	-0.114 ± 0.072
PRF-fit source offset from KIC position	0.124 ± 0.072	1.72	-0.042 ± 0.083	-0.116 ± 0.071
photometric centroid source offset	0.14 ± 0.03	4.63	-0.03 ± 0.03	-0.13 ± 0.03

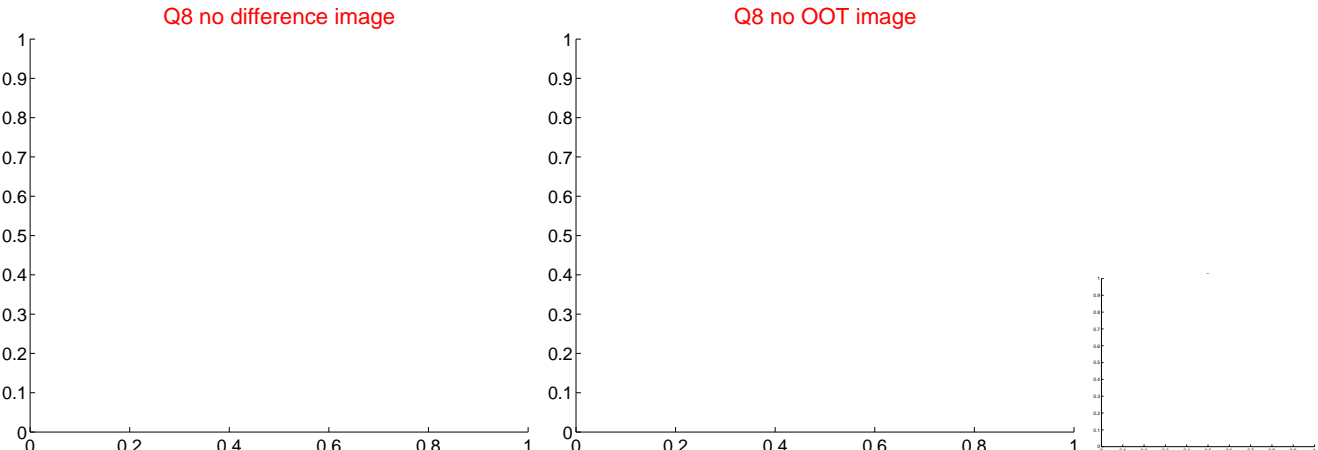
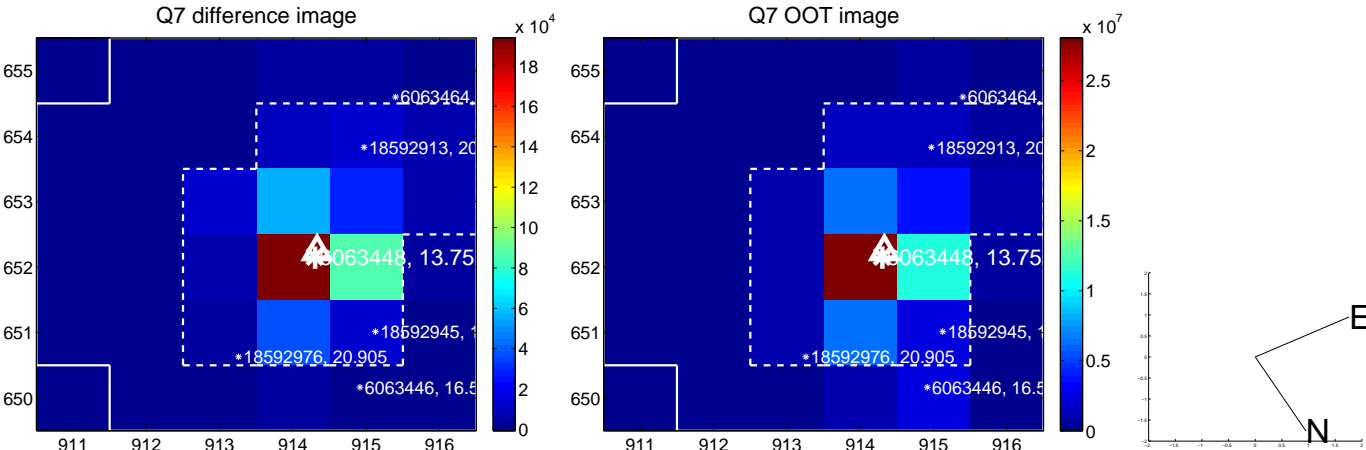
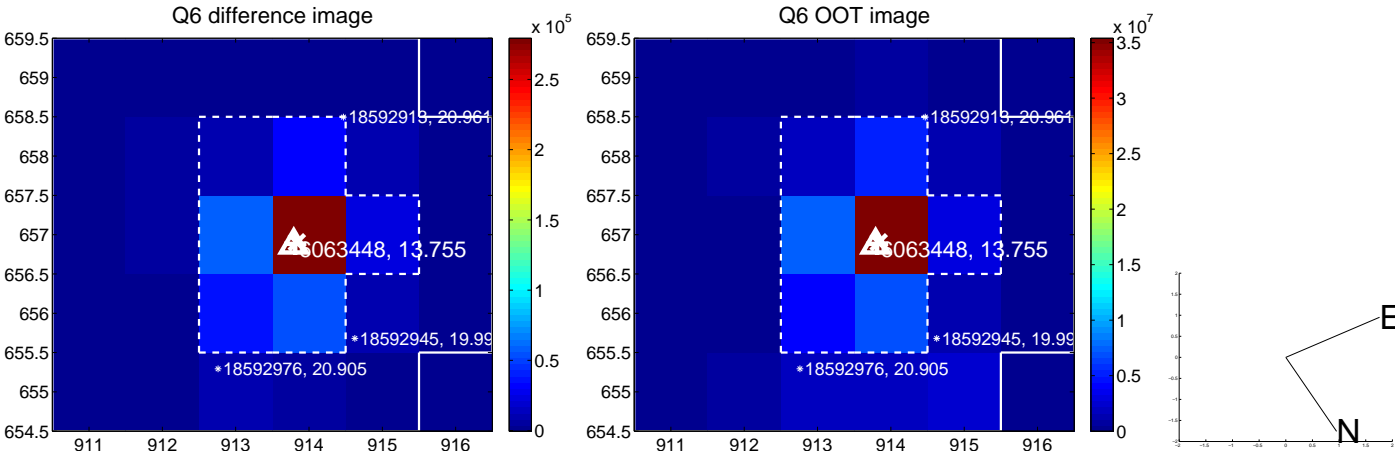
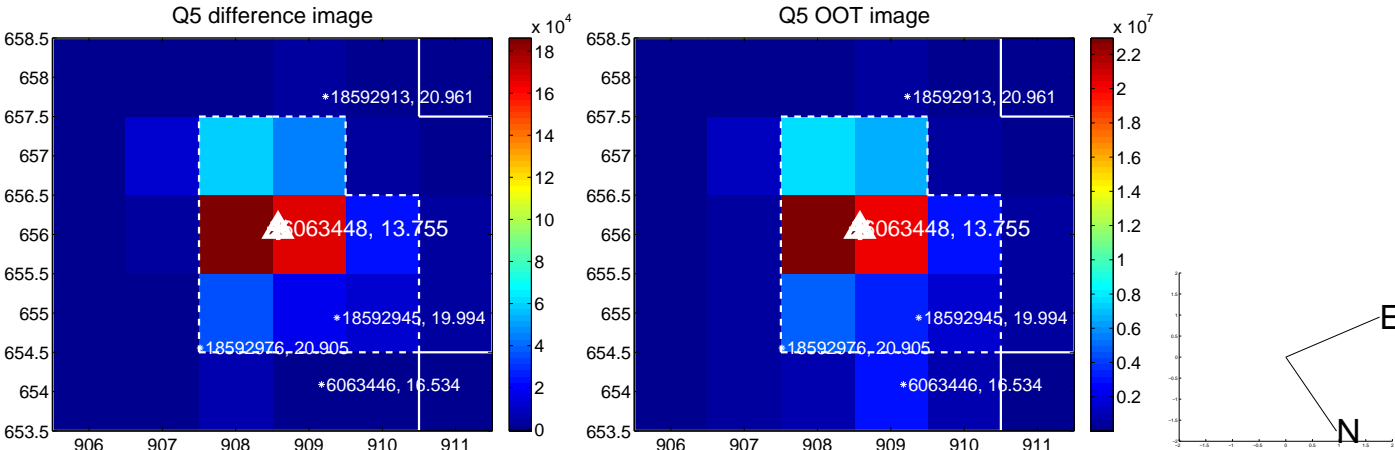


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

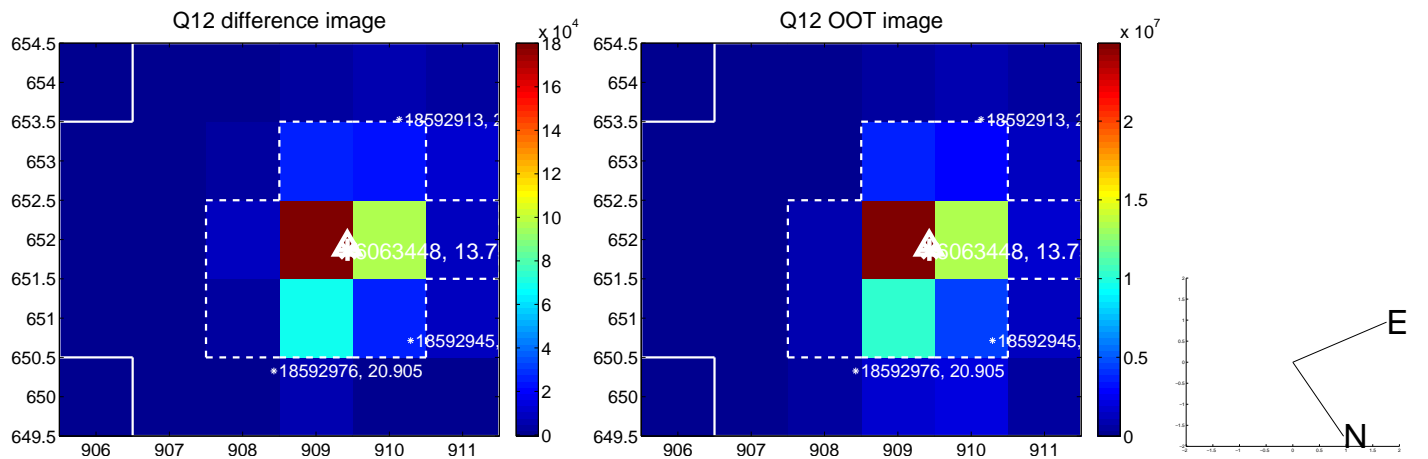
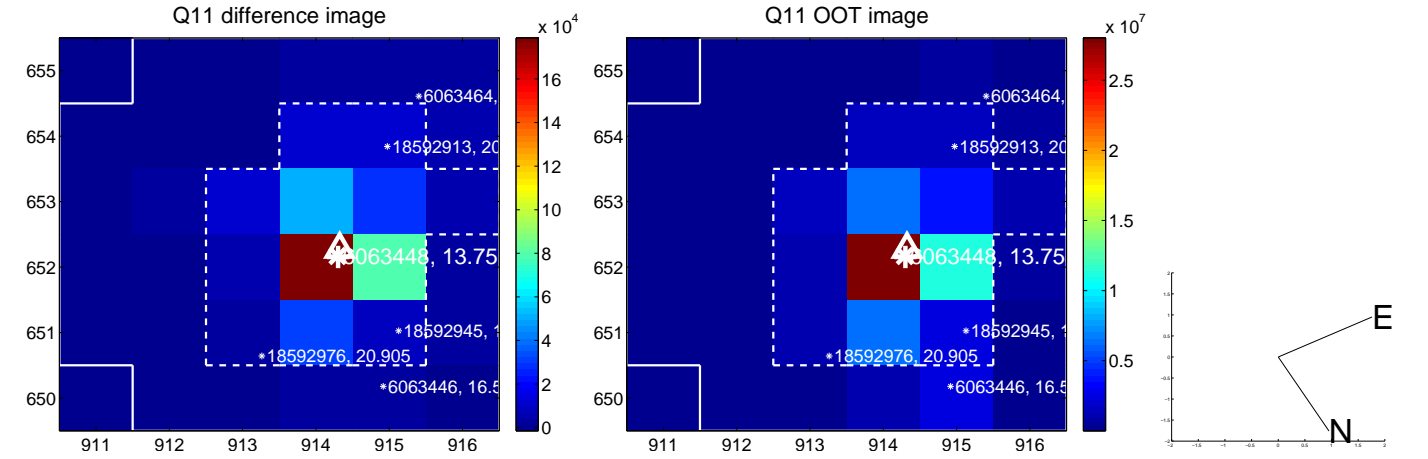
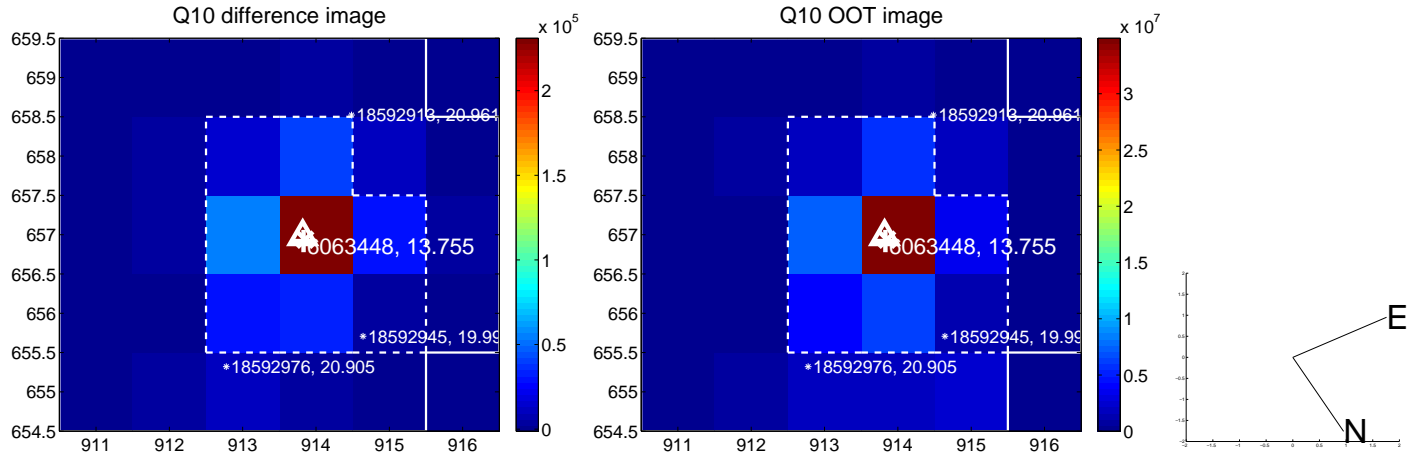
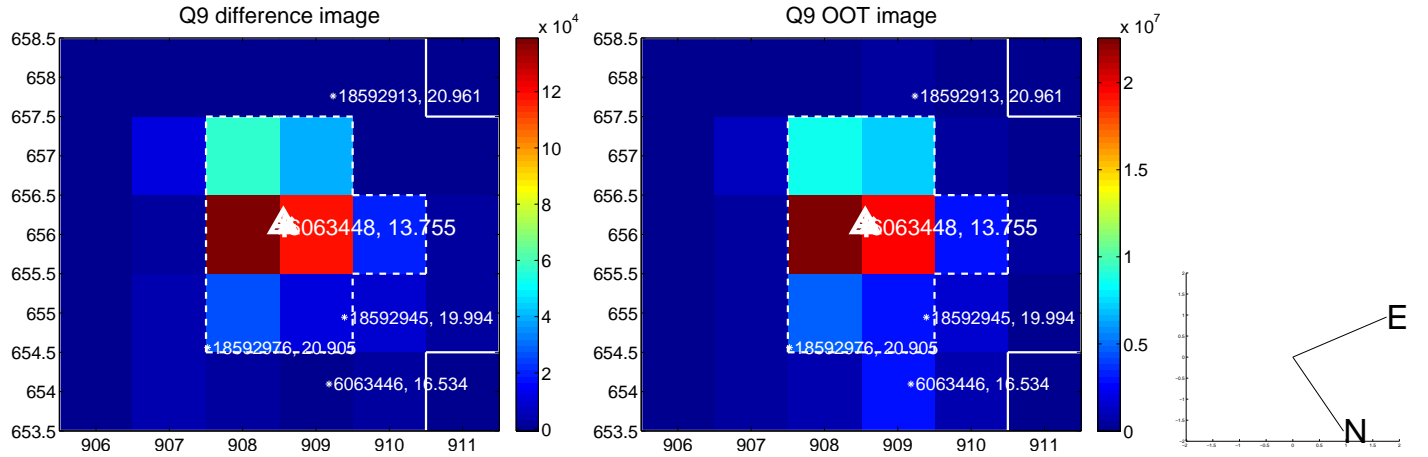
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



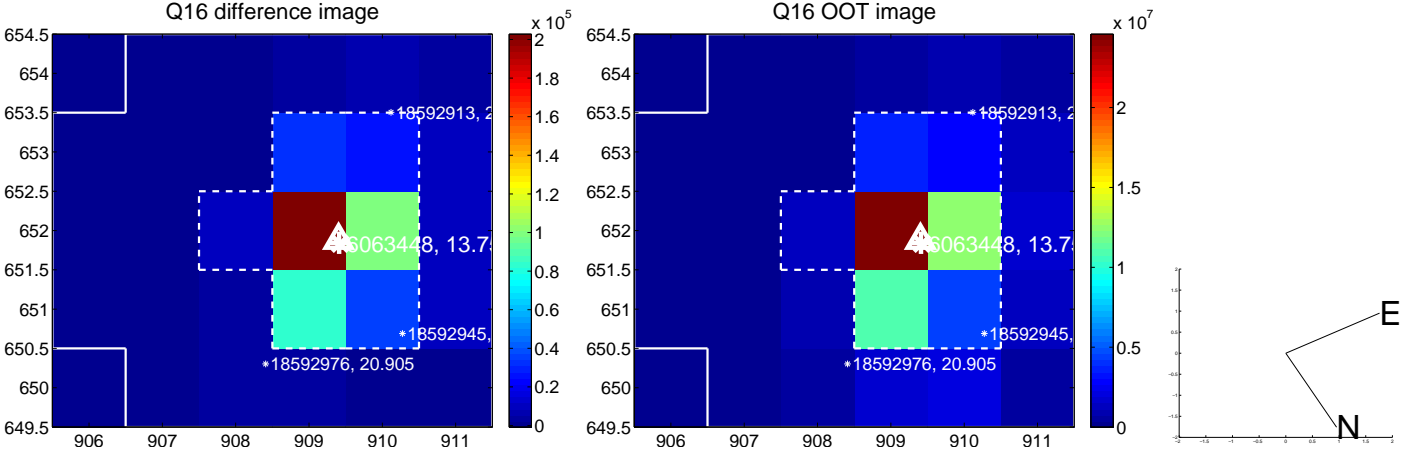
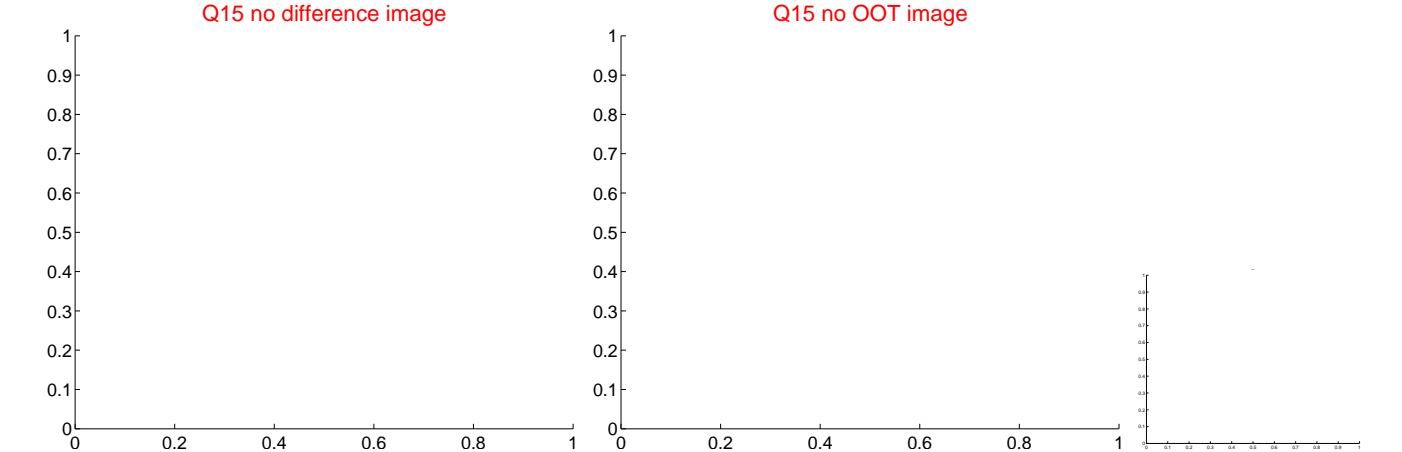
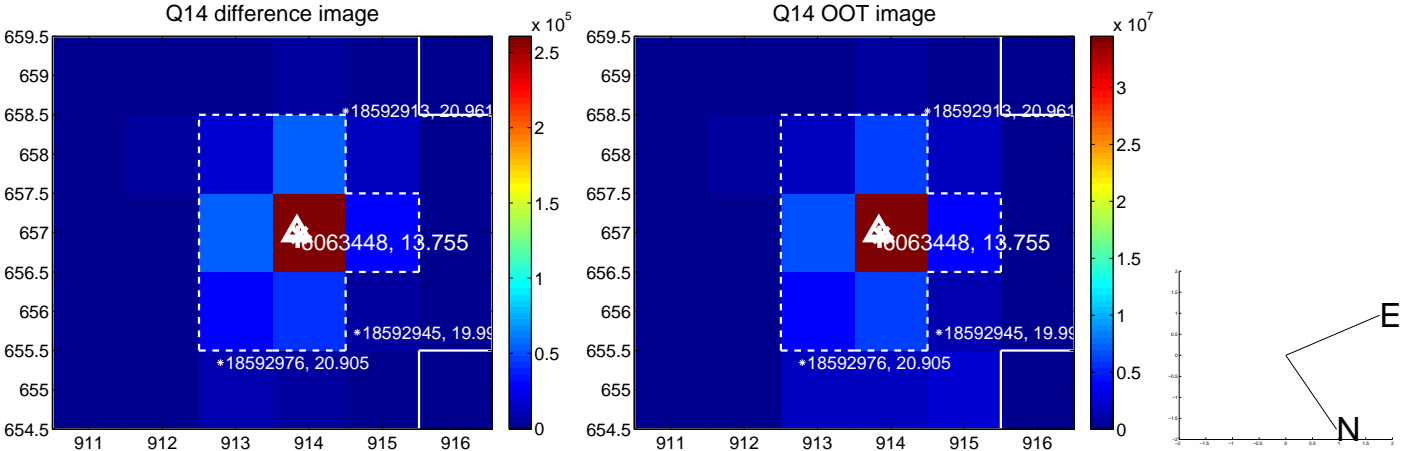
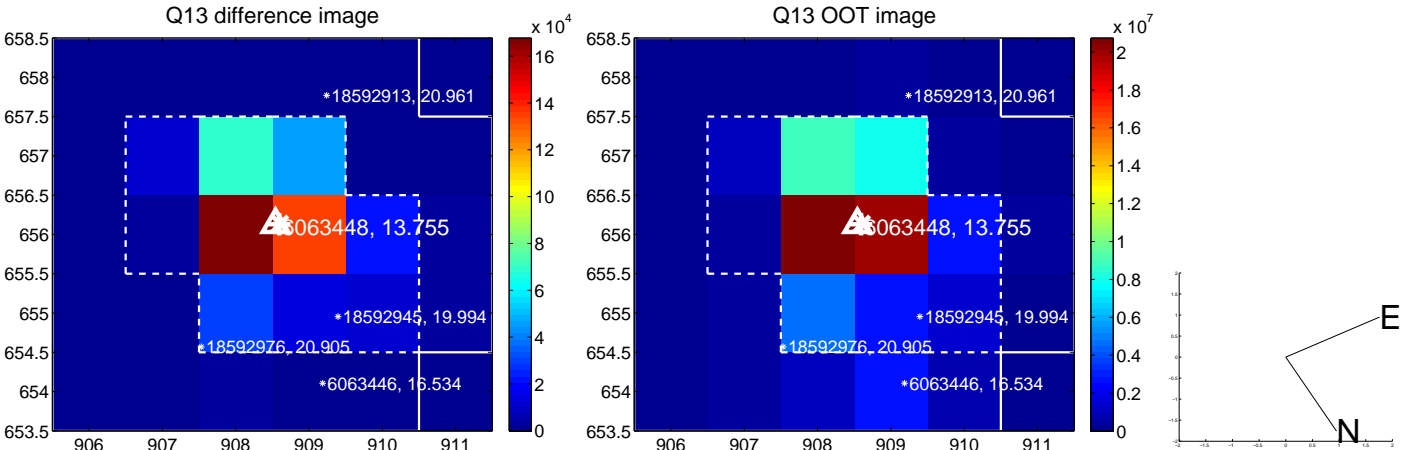
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



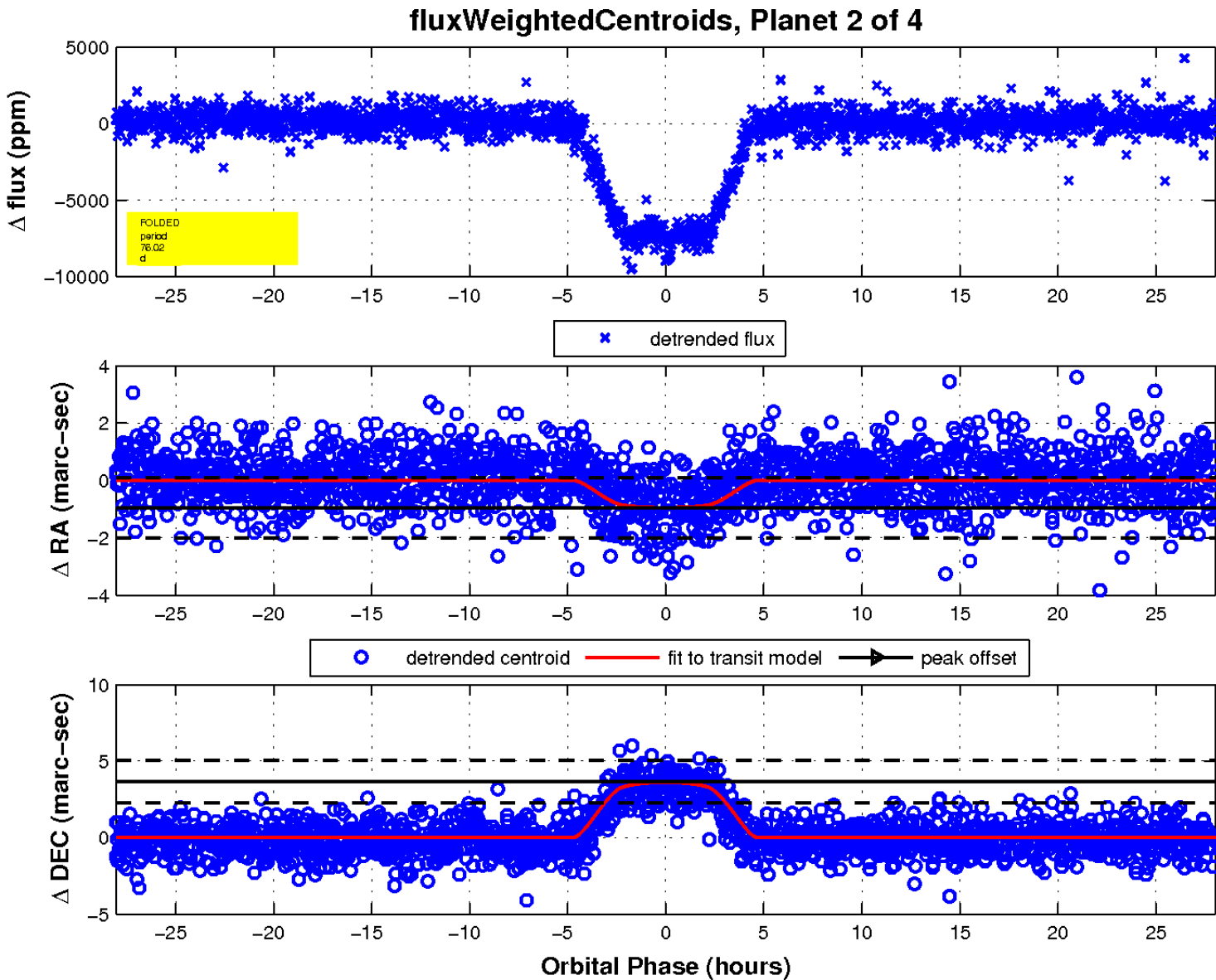
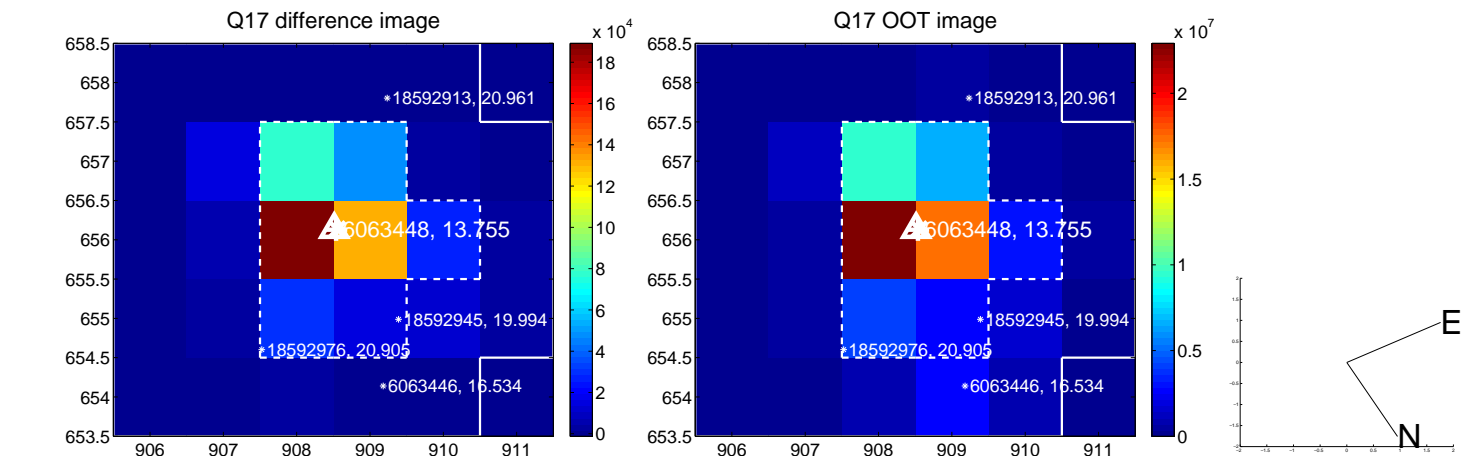
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

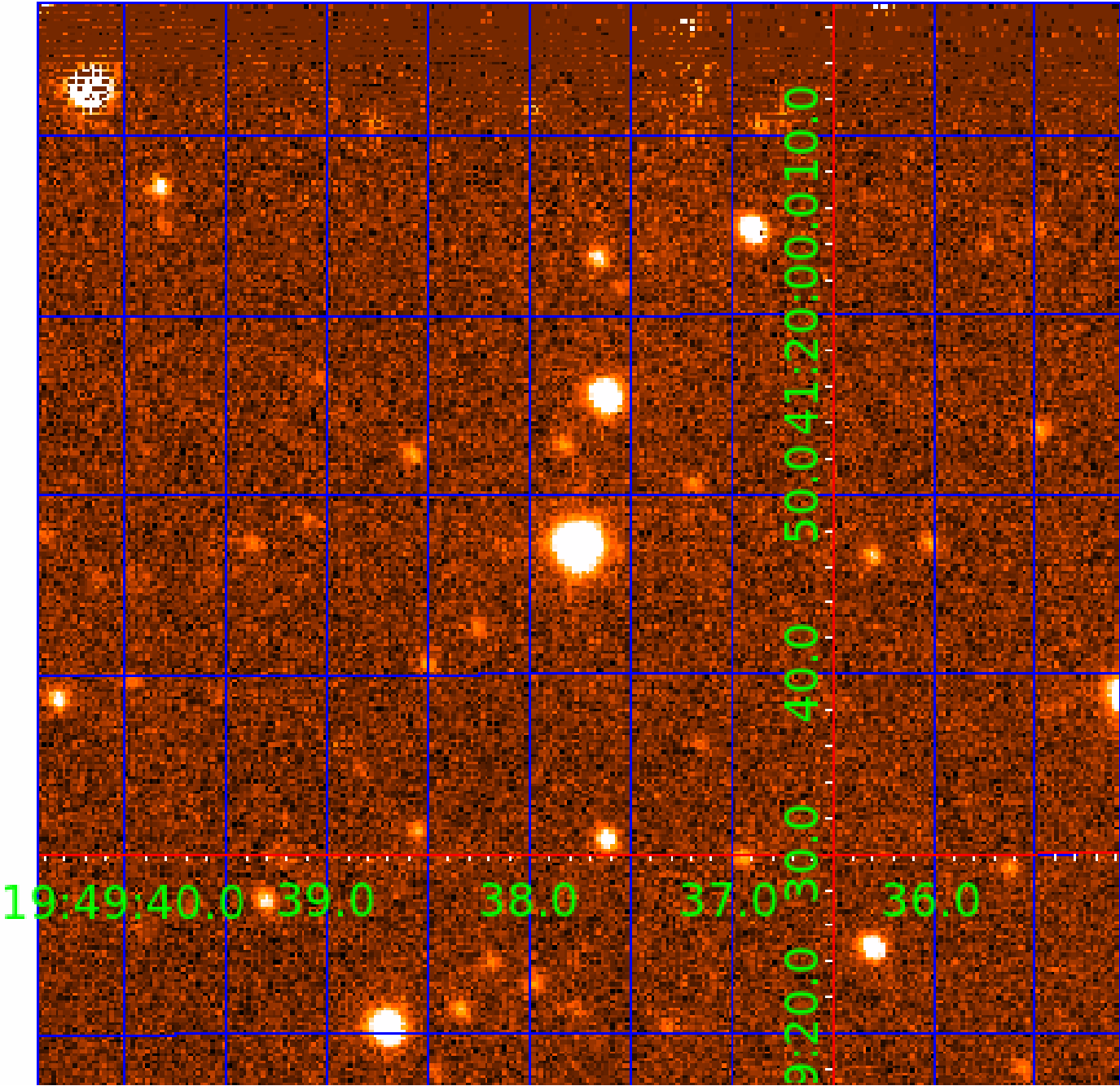


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006063448

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})
006063448-01	OBS	6659.01	76.018139	139.942821	80498.8	13.455	1858.3	1829.0	1.89	6703	63.90	42.73
006063448-02	OBS	No	76.018245	199.050408	7550.5	9.352	163.6	162.4	1.89	6703	18.64	42.73
006063448-03	OBS	No	0.893646	132.249397	68.8	3.635	14.1	12.0	1.89	6703	1.85	15984.47
006063448-04	OBS	No	0.824210	131.825345	108.4	1.835	7.9	10.0	1.89	6703	2.30	17804.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006063448-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
006063448-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006063448-03	OBS	FP	0.06	1	0	0	0	LPP_DV—LPP_ALT
006063448-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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 006063448-03

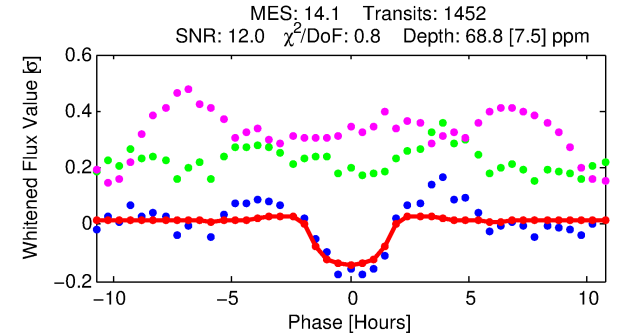
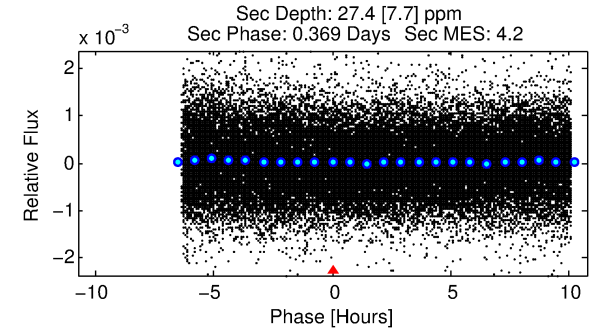
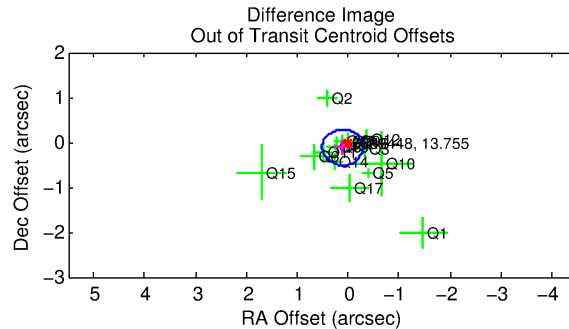
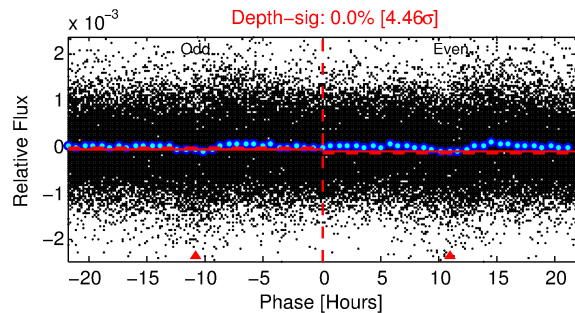
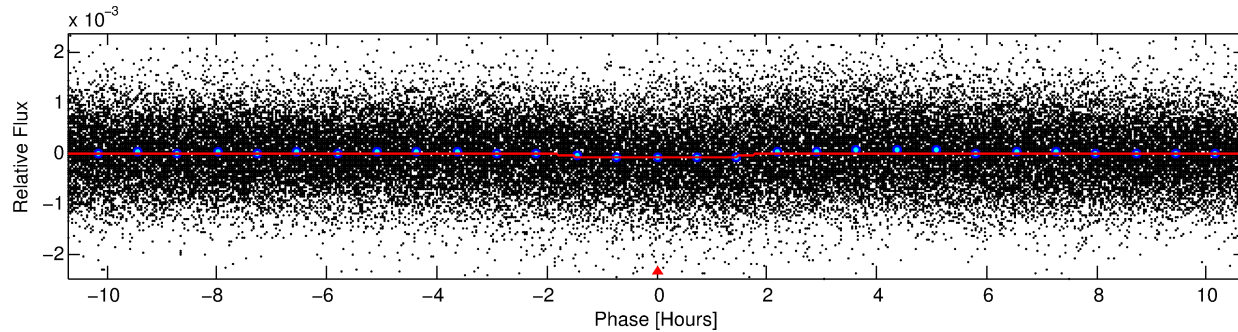
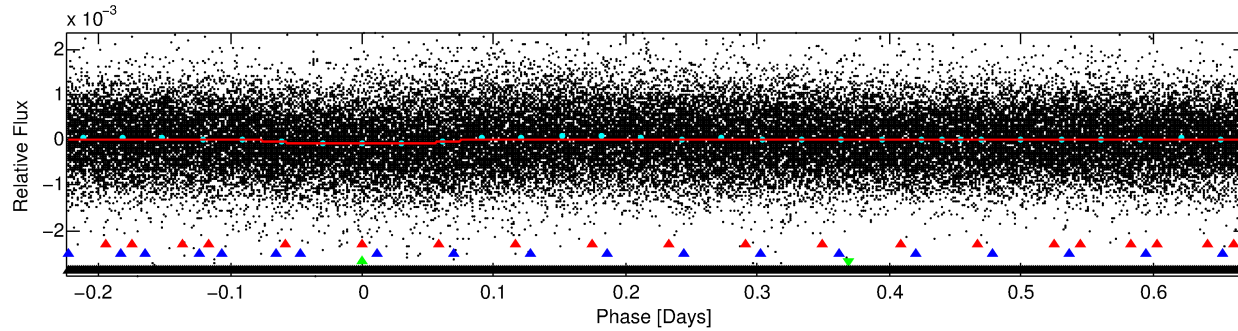
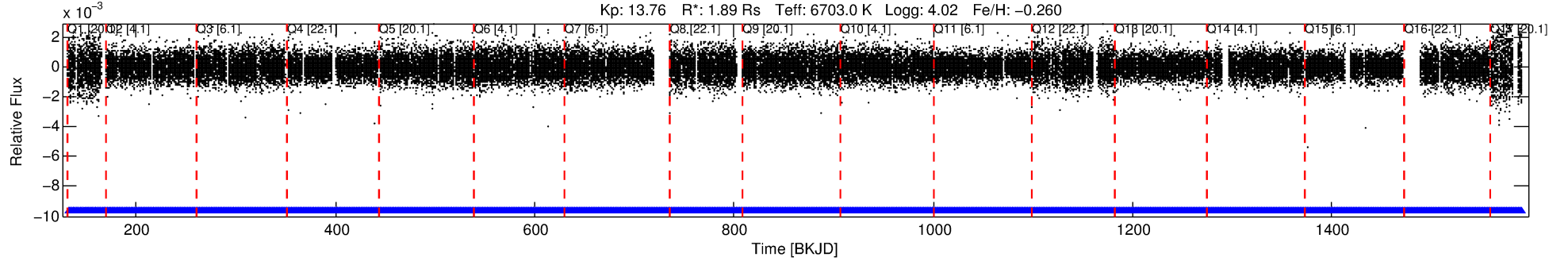
No Significant Match Found

DV One-Page Summary

KIC: 6063448 Candidate: 3 of 4 Period: 0.894 d

KOI: K06659 Corr: No Ephemeris Match

Kp: 13.76 R*: 1.89 Rs Teff: 6703.0 K Logg: 4.02 Fe/H: -0.260



DV Fit Results:

Period = 0.89365 [0.00001] d
Epoch = 132.2494 [0.0037] BKJD
Rp/R* = 0.0089 [0.0047]
a/R* = 1.25 [1.40]
b = 0.91 [0.59]
Seff = 15984.47 [8580.65]
Teq = 2867 [385] K
Rp = 1.85 [1.16] Re
a = 0.0201 [0.0066] AU
Ag = 1.79 [2.16] [0.37σ]
Teffp = 5130 [1410] K [1.55σ]

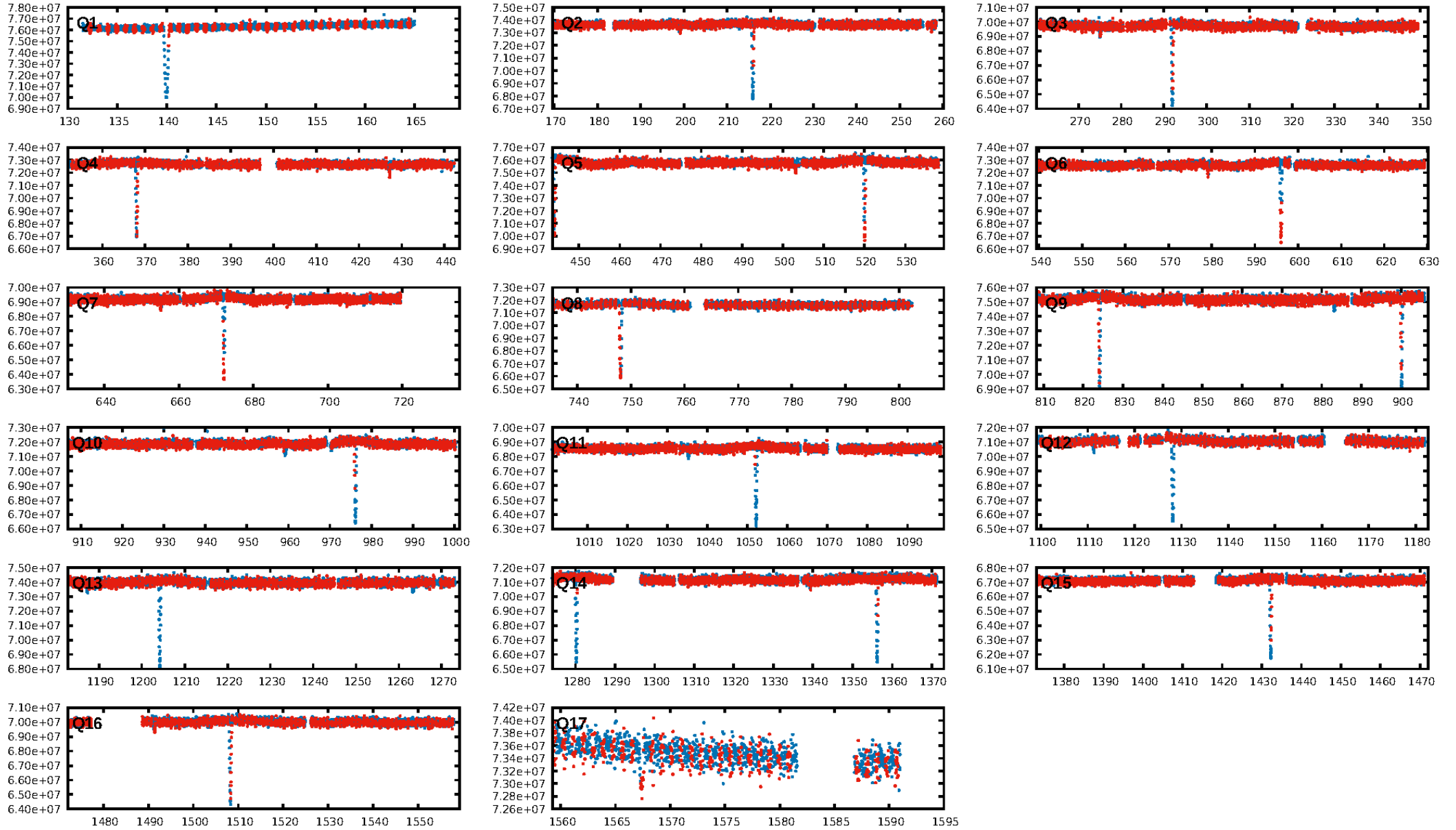
DV Diagnostic Results:

ShortPeriod-sig: 31.8% [0.41σ]
LongPeriod-sig: 100.0% [129.36σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.29e-50
RollingBand-fgt: 1.00 [1388/1388]
GhostDiagnostic-chr: 1.099
Centroid-sig: 0.0%
Centroid-so: 1.541 arcsec [3.70σ]
OotOffset-rm: 0.160 arcsec [1.20σ]
KicOffset-rm: 0.142 arcsec [1.09σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 0.94 [16/17]

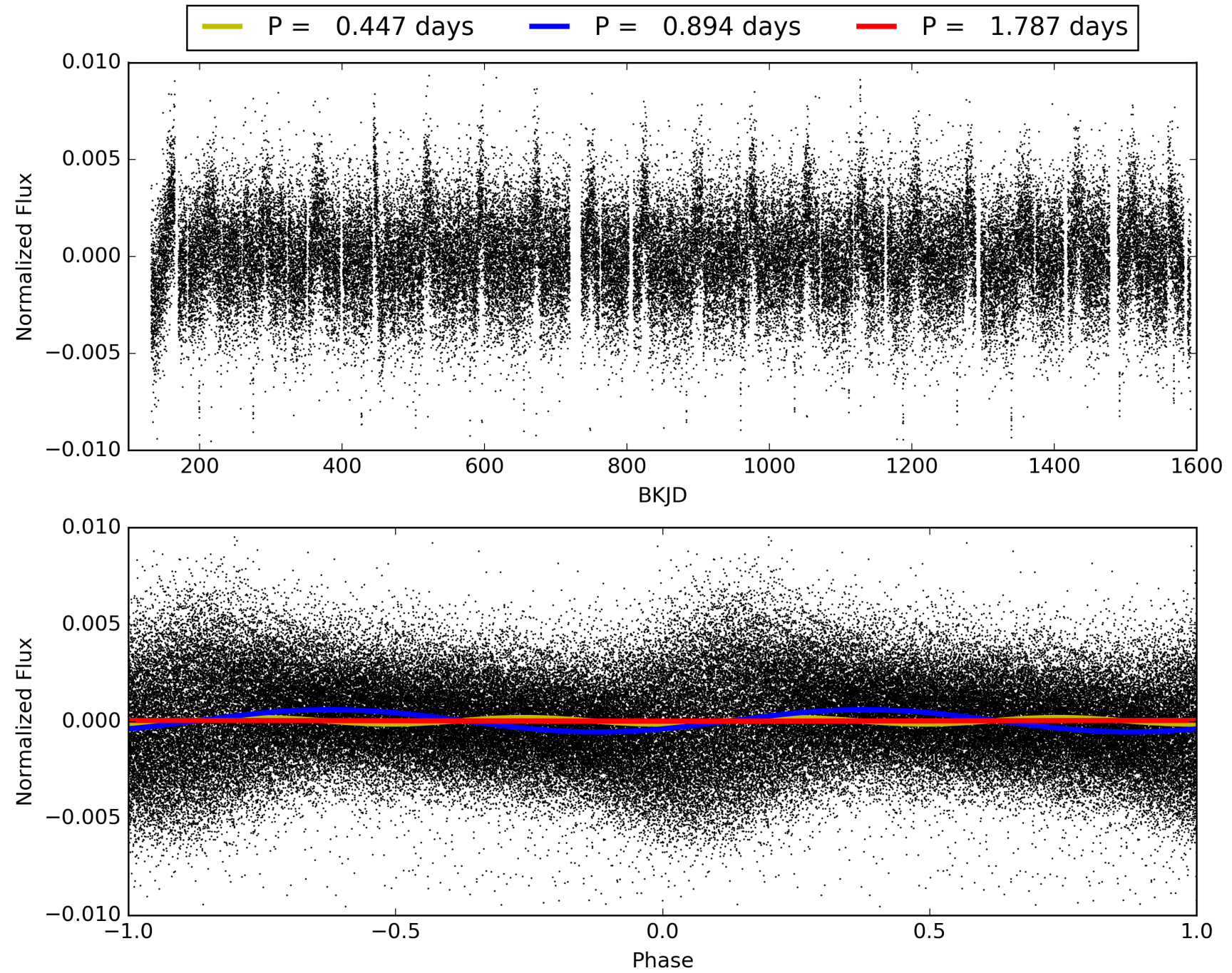
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 06:52:45 Z

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

TCE 006063448-03, PDC Light Curves

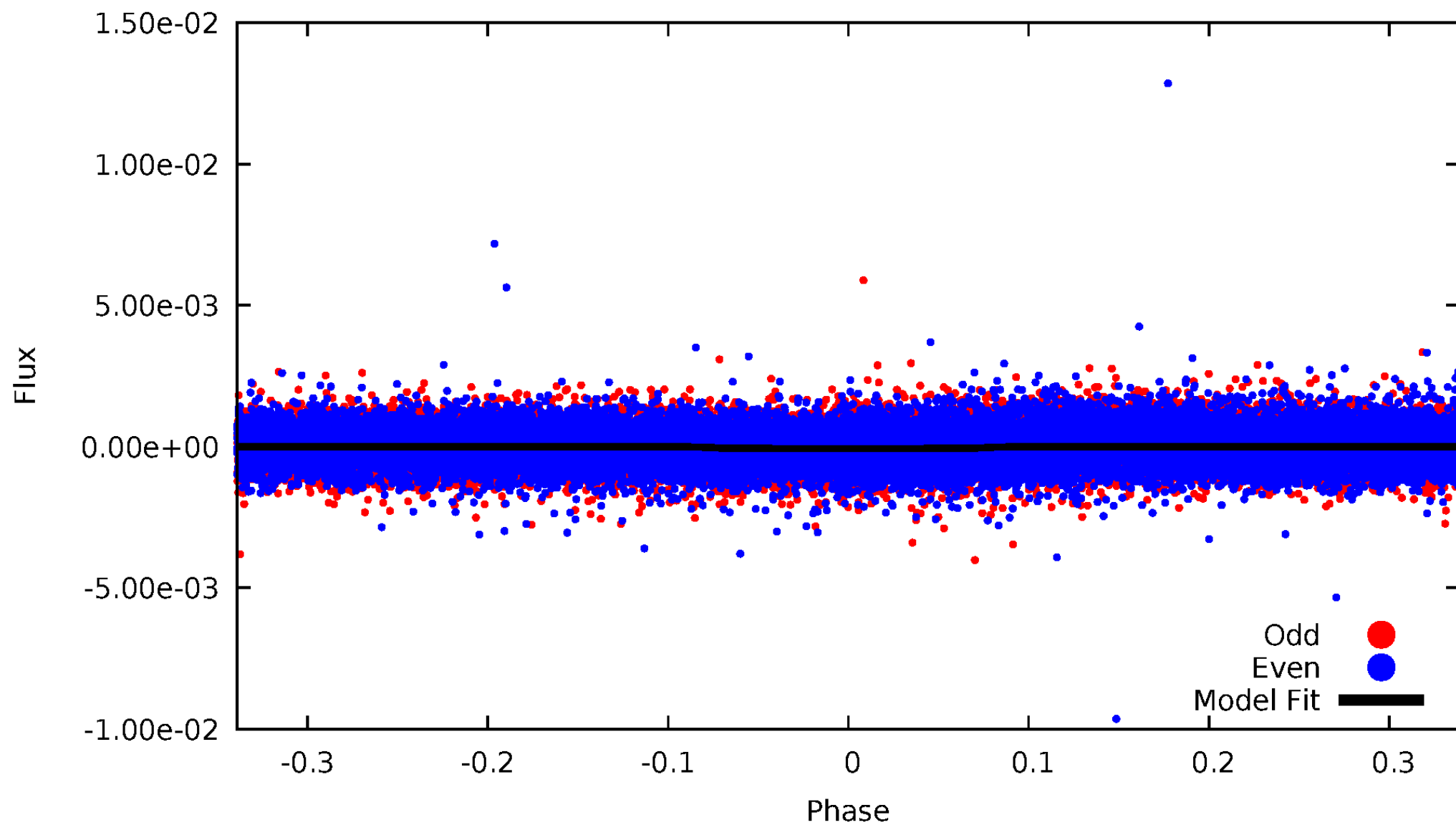


TCE 006063448-03



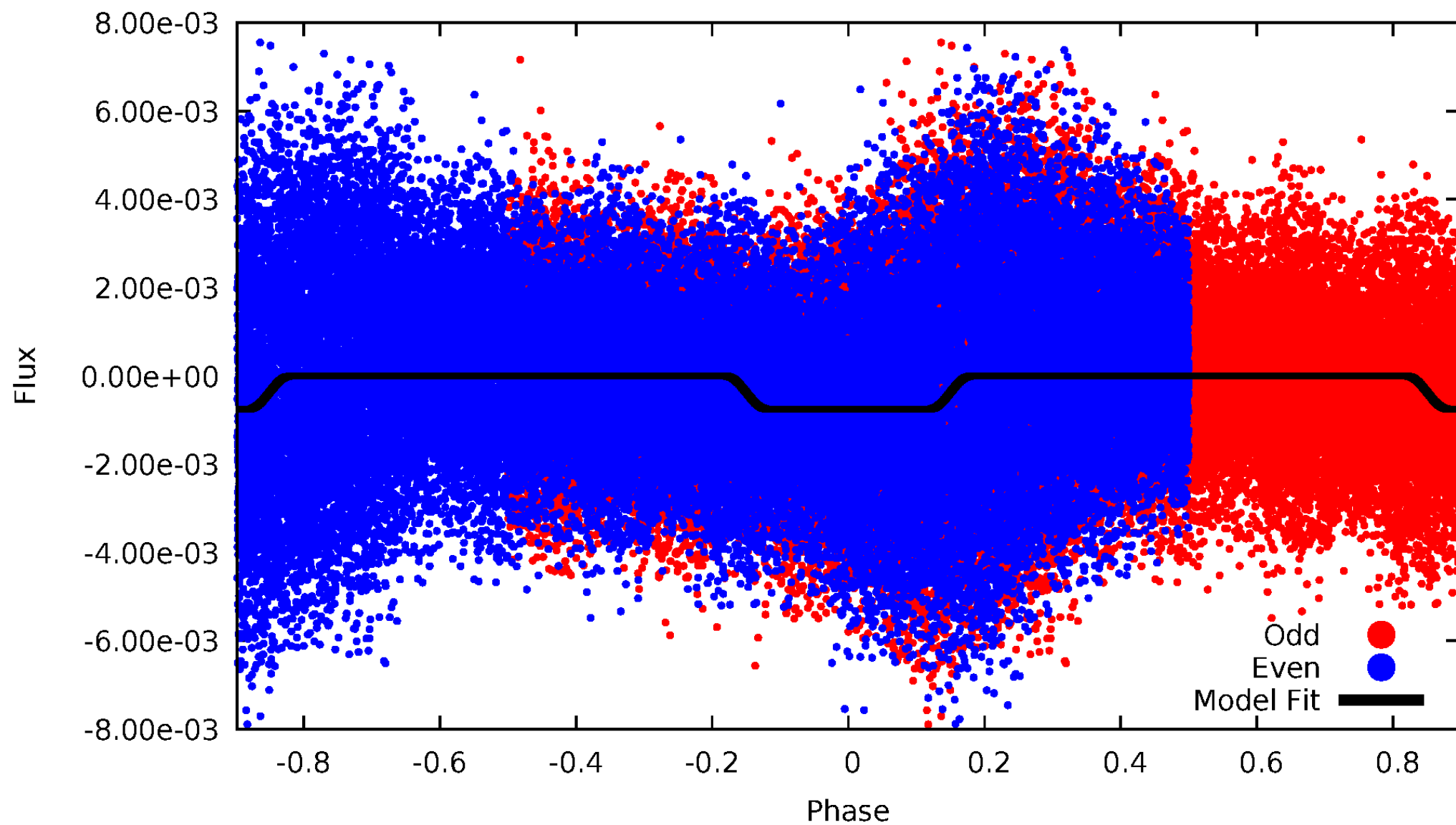
DV Odd/Even

TCE 006063448-03

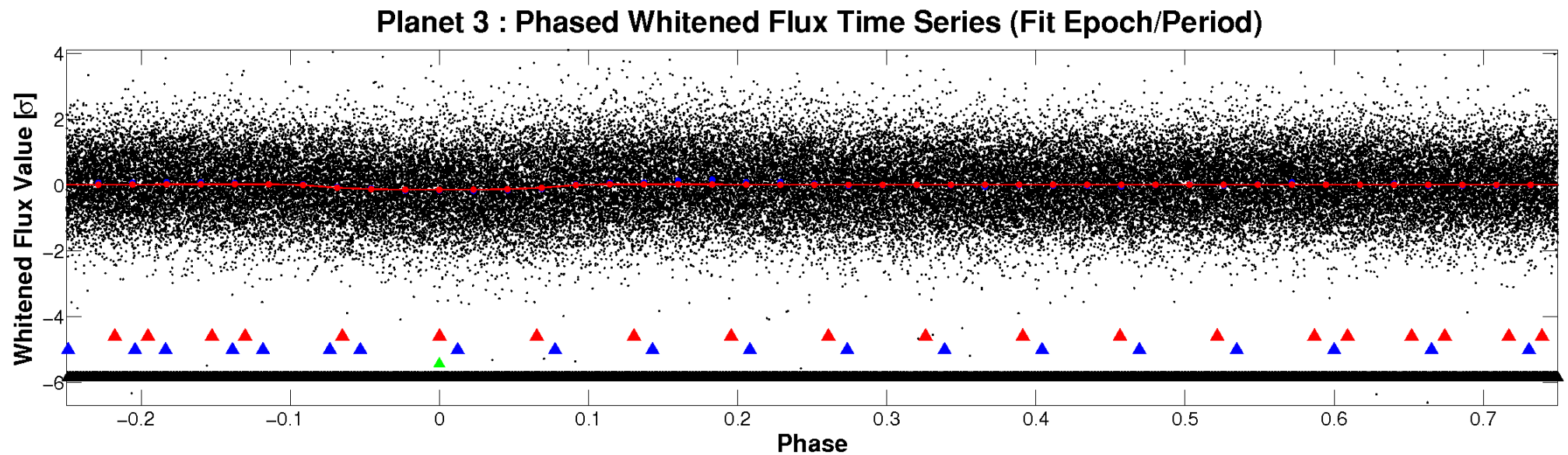
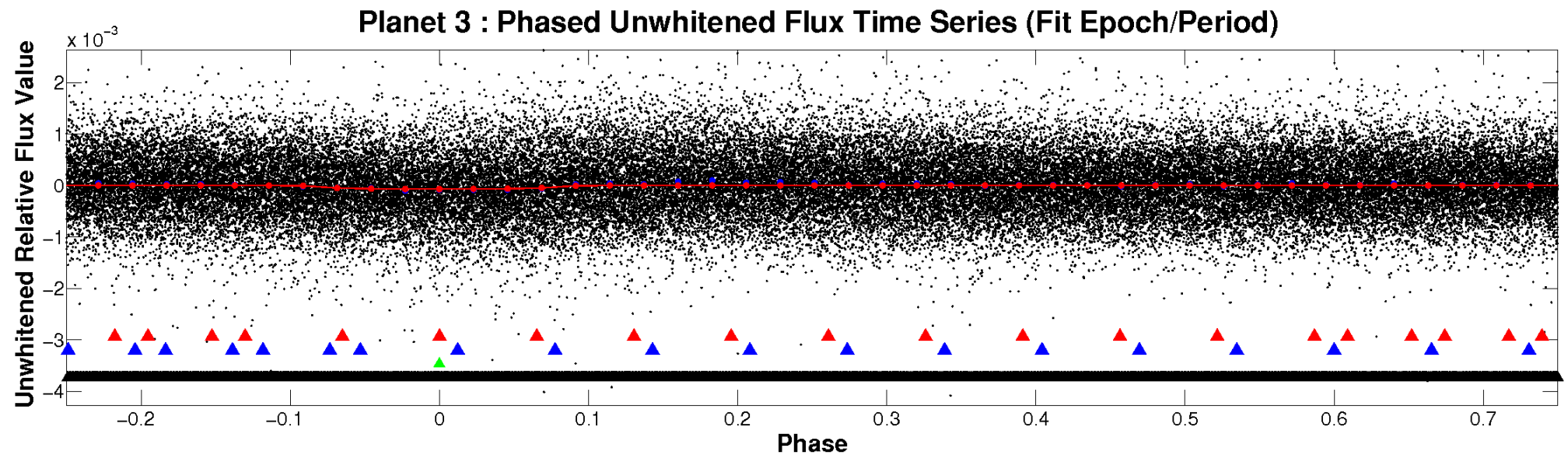


ALT Odd/Even

TCE 006063448-03

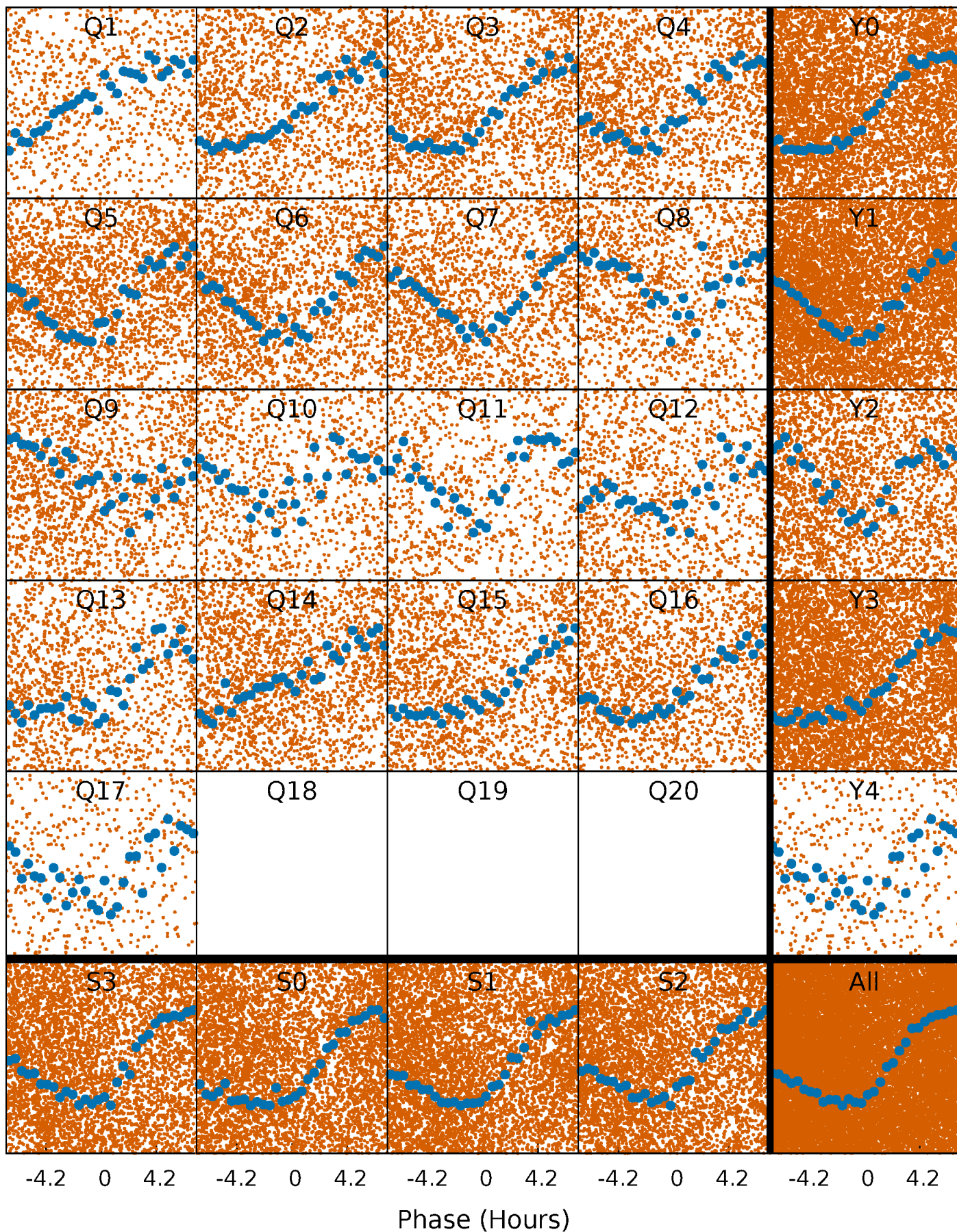


Non-Whitened Vs. Whitened Light Curve



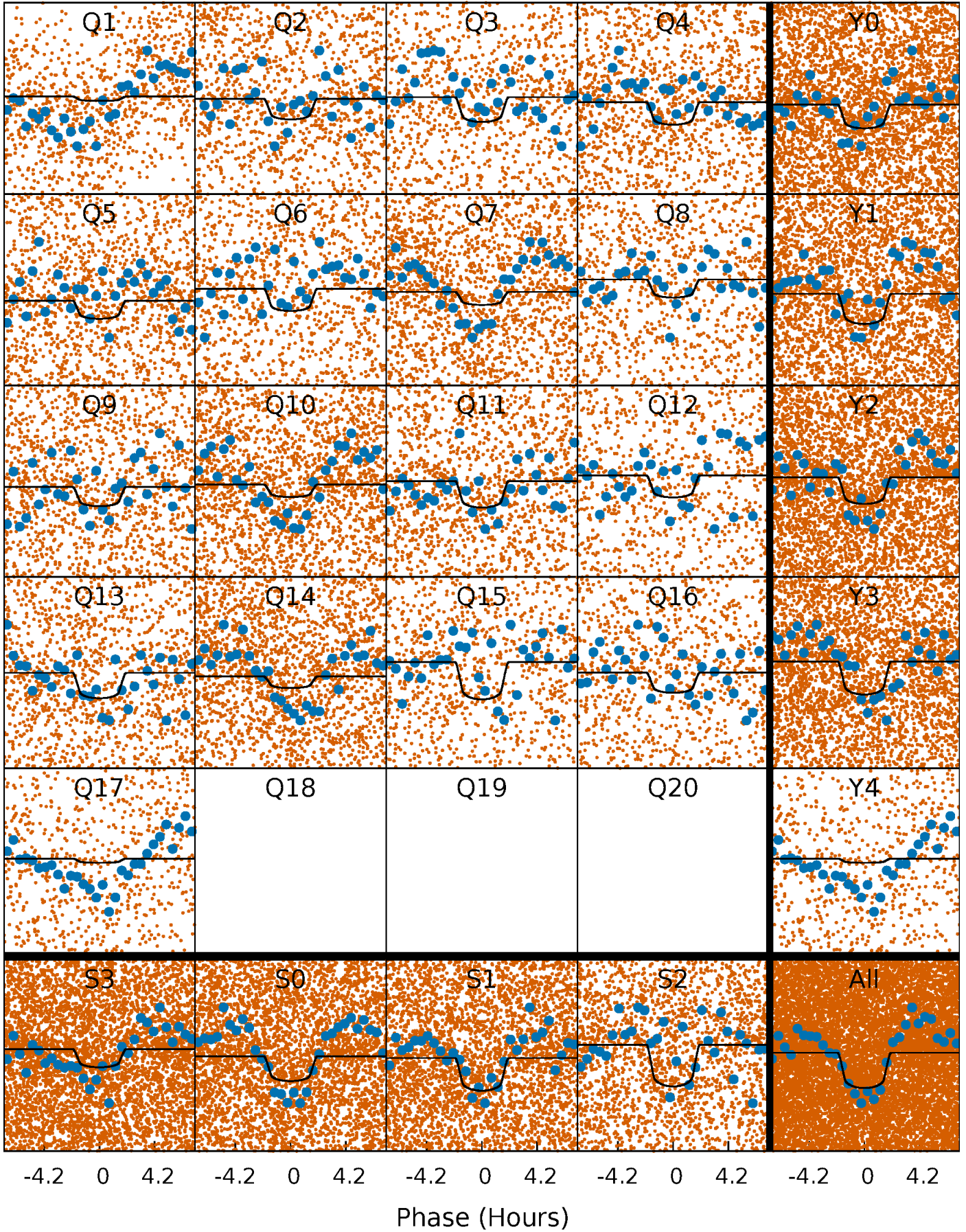
PDC Quarter-Phased Transit Curves

TCE 006063448-03 P= 0.893646 Days $T_0=132.249397$ (BKJD)



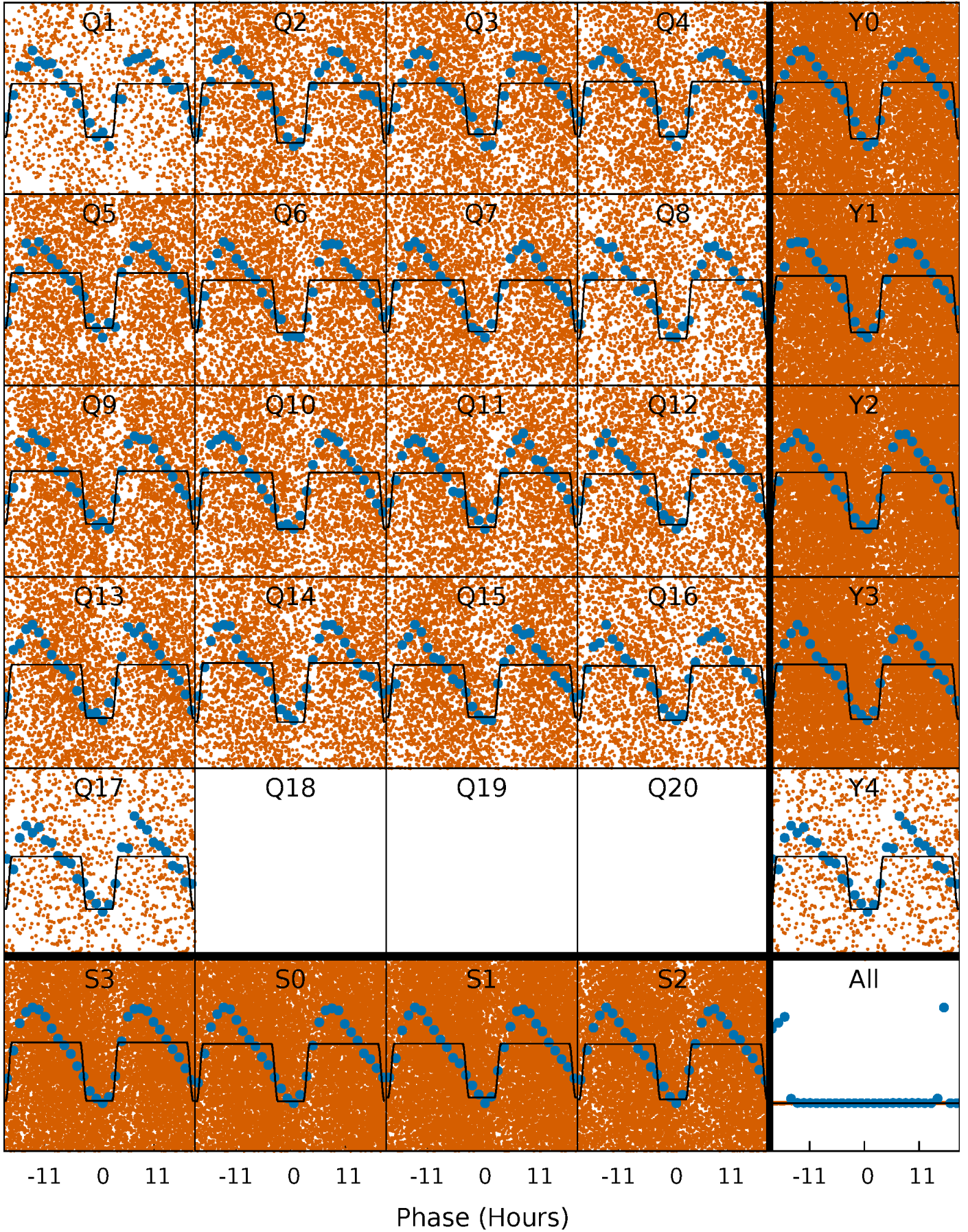
DV Quarter-Phased Transit Curves

TCE 006063448-03 P= 0.893646 Days $T_0=132.249397$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

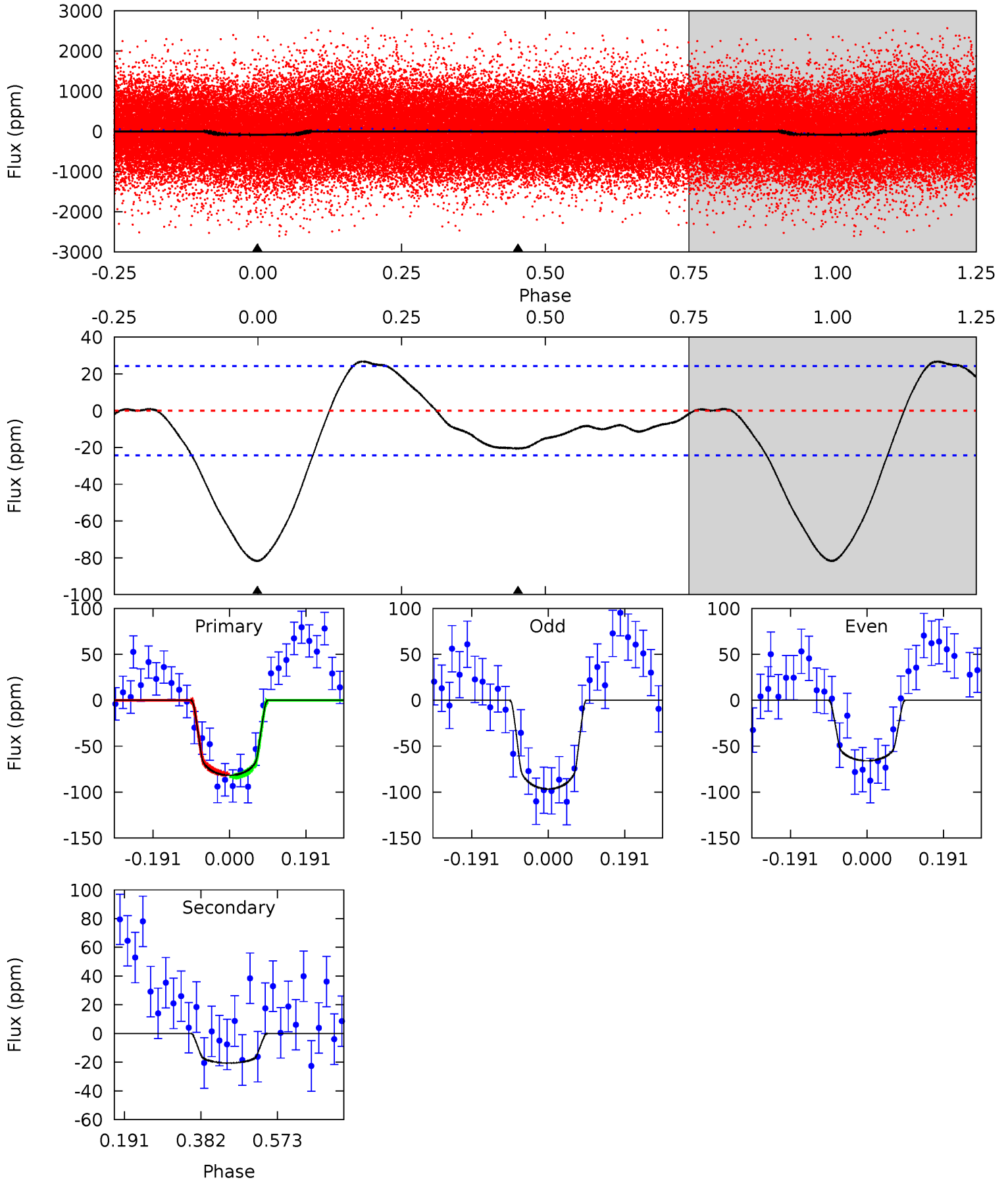
TCE 006063448-03 P= 0.893700 Days $T_0=132.141757$ (BKJD)



DV Model-Shift Uniqueness Test

006063448-03, P = 0.893646 Days, E = 131.355751 Days

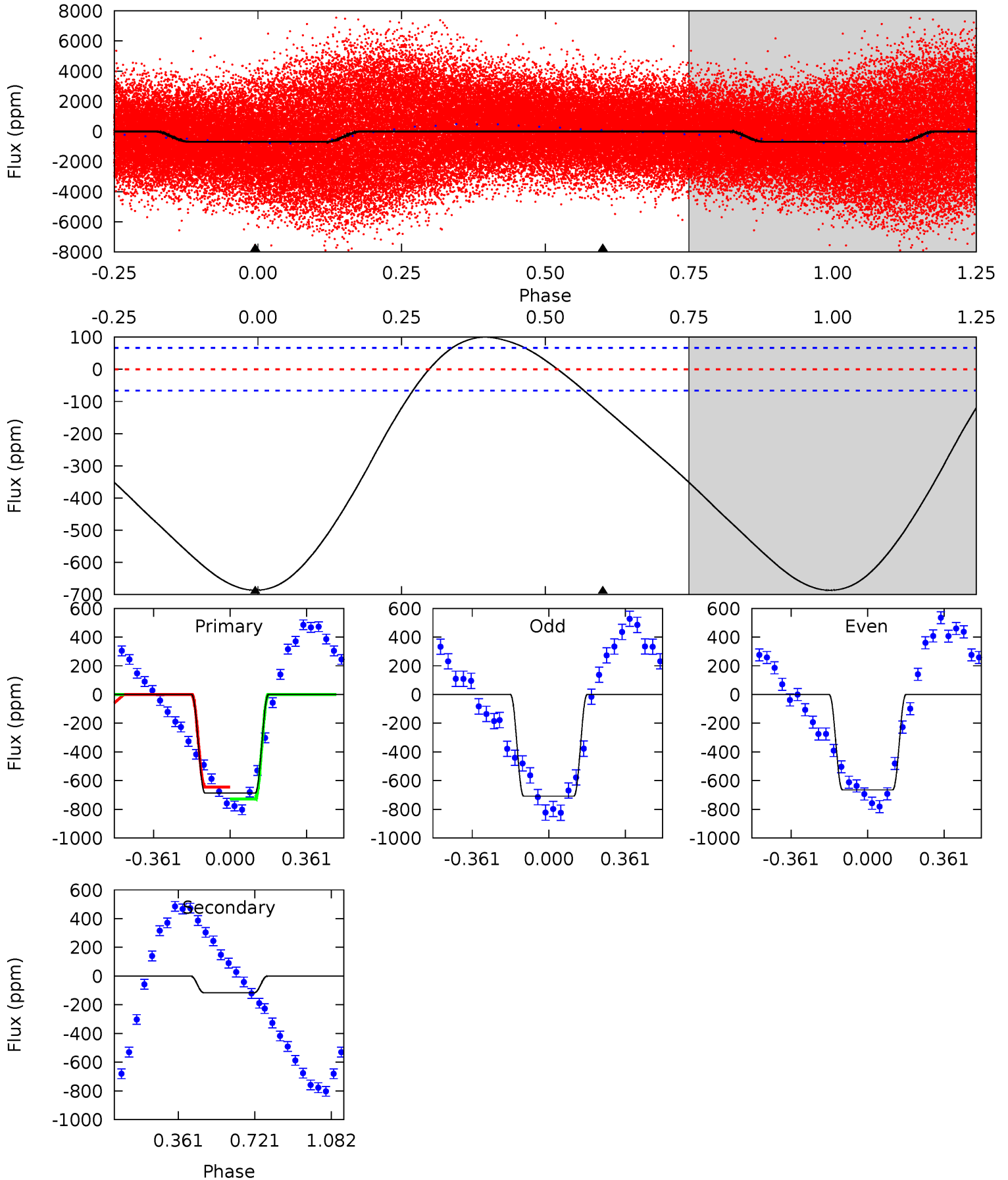
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	3.76	0	0	4.43	1.31	2.43	14.9	14.9	3.76	3.76	2.85	1.15	0.25	0.27



Alt Model-Shift Uniqueness Test

006063448-03, P = 0.893700 Days, E = 131.248057 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.4	7.52	0	0	4.29	0.91	4.00	44.4	44.4	7.52	7.52	1.42	0.99	0.13	2.89



Stellar Parameters For KIC 006063448

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6703^{+189}_{-260}	$4.018^{+0.299}_{-0.161}$	$-0.260^{+0.250}_{-0.300}$	$1.892^{+0.477}_{-0.656}$	$1.365^{+0.170}_{-0.291}$	$0.284^{+0.568}_{-0.124}$
	+3%/-4%	+7%/-4%	+96%/-115%	+25%/-35%	+12%/-21%	+200%/-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 006063448-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-21 ± 5	$1.84^{+1.04}_{-0.86}$	3965^{+303}_{-365}	4498^{+1683}_{-1040}	$1.308^{+3.445}_{-0.801}$
Alt.	-116 ± 15	$5.52^{+1.35}_{-1.38}$	3959^{+318}_{-374}	4029^{+476}_{-450}	$0.842^{+0.623}_{-0.307}$

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 $A_{obs} \gg 1.0$

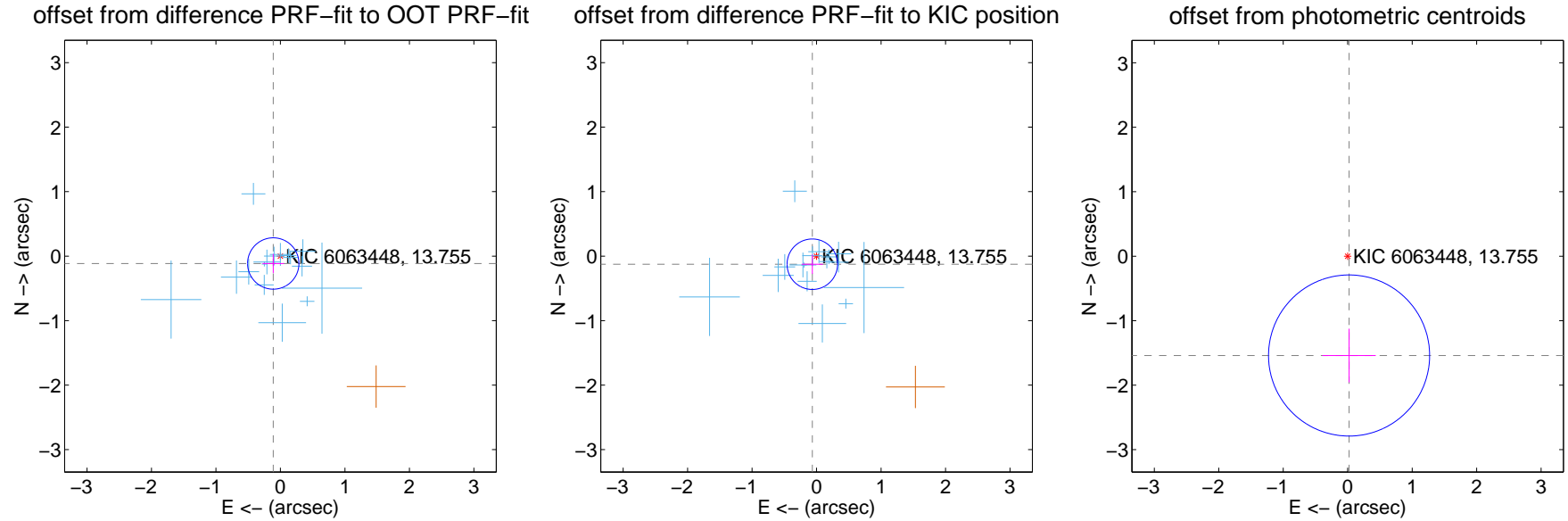
DV Centroid Data

Supplemental centroid analysis for 006063448-03. Kepler magnitude: 13.76. Transit SNR 12.05

There are 16 quarters with good PRF difference image offsets

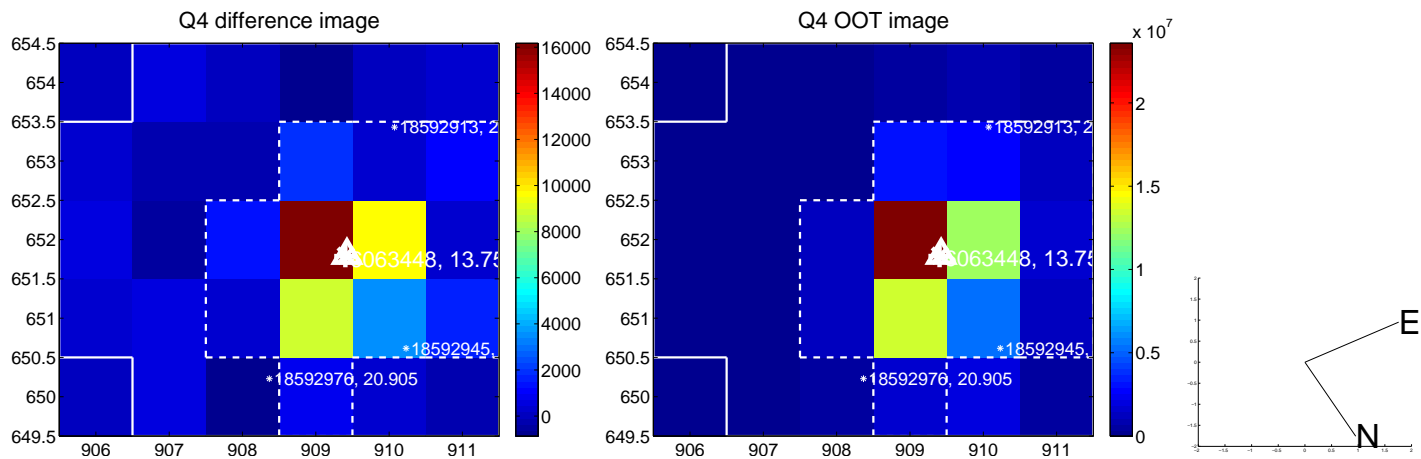
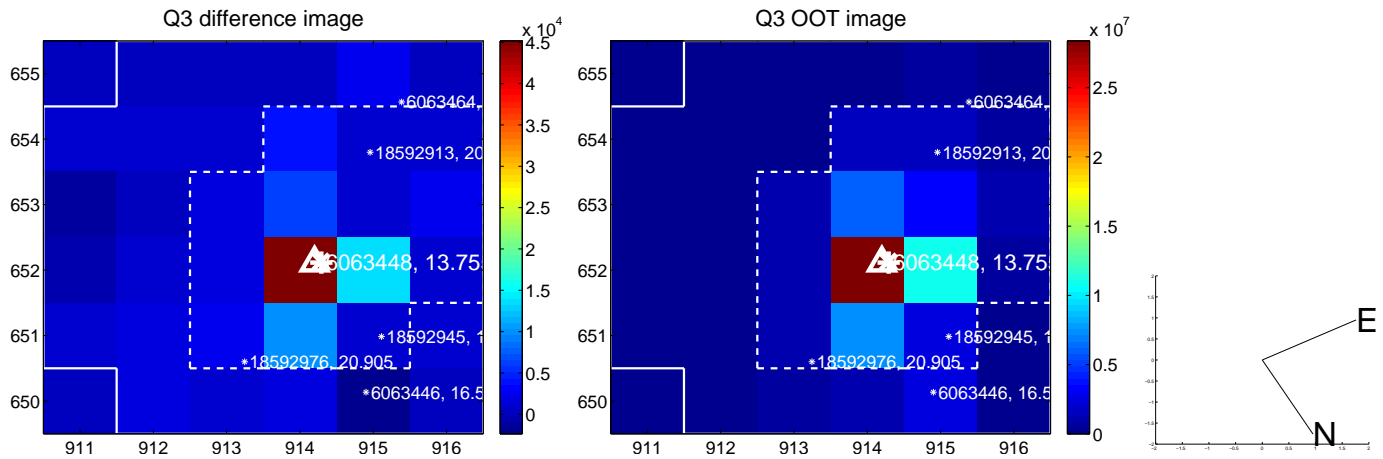
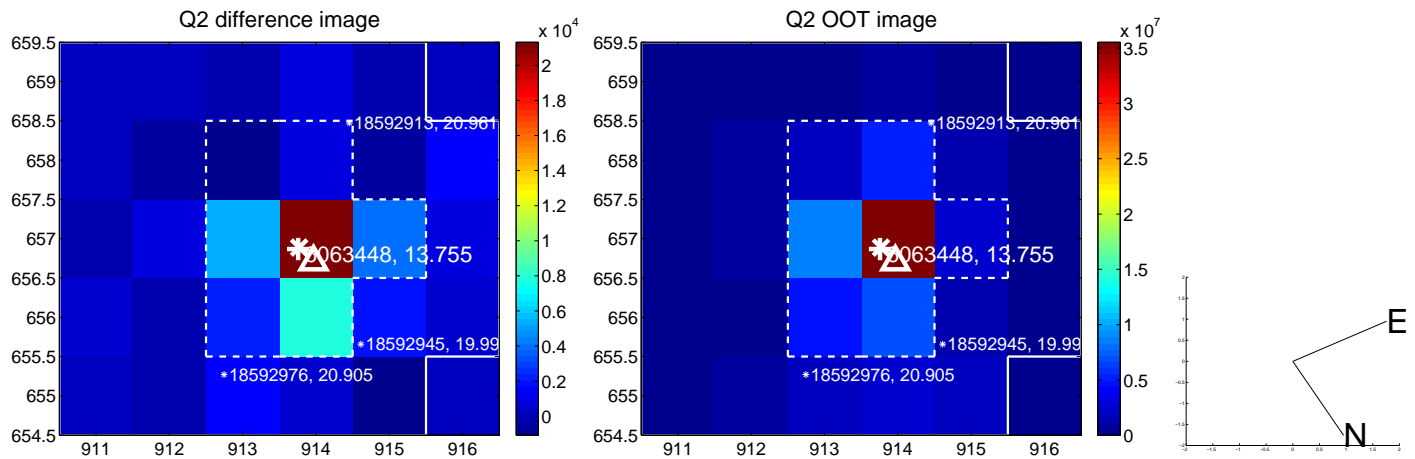
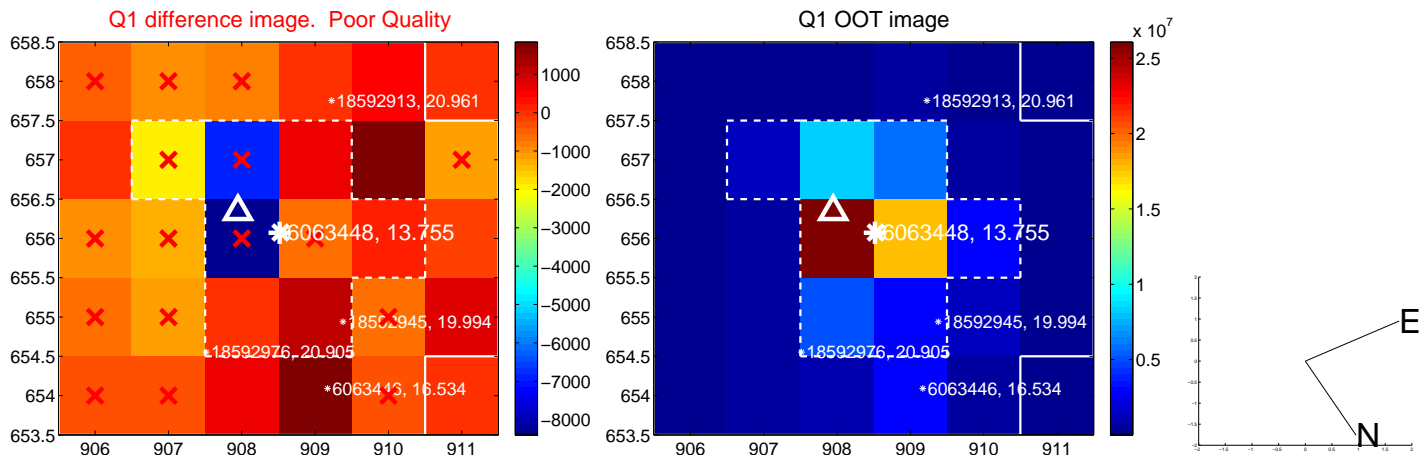
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.160 ± 0.133	1.20	0.112 ± 0.166	-0.114 ± 0.149
PRF-fit source offset from KIC position	0.142 ± 0.131	1.09	0.066 ± 0.165	-0.126 ± 0.150
photometric centroid source offset	1.54 ± 0.42	3.70	-0.02 ± 0.41	-1.54 ± 0.42

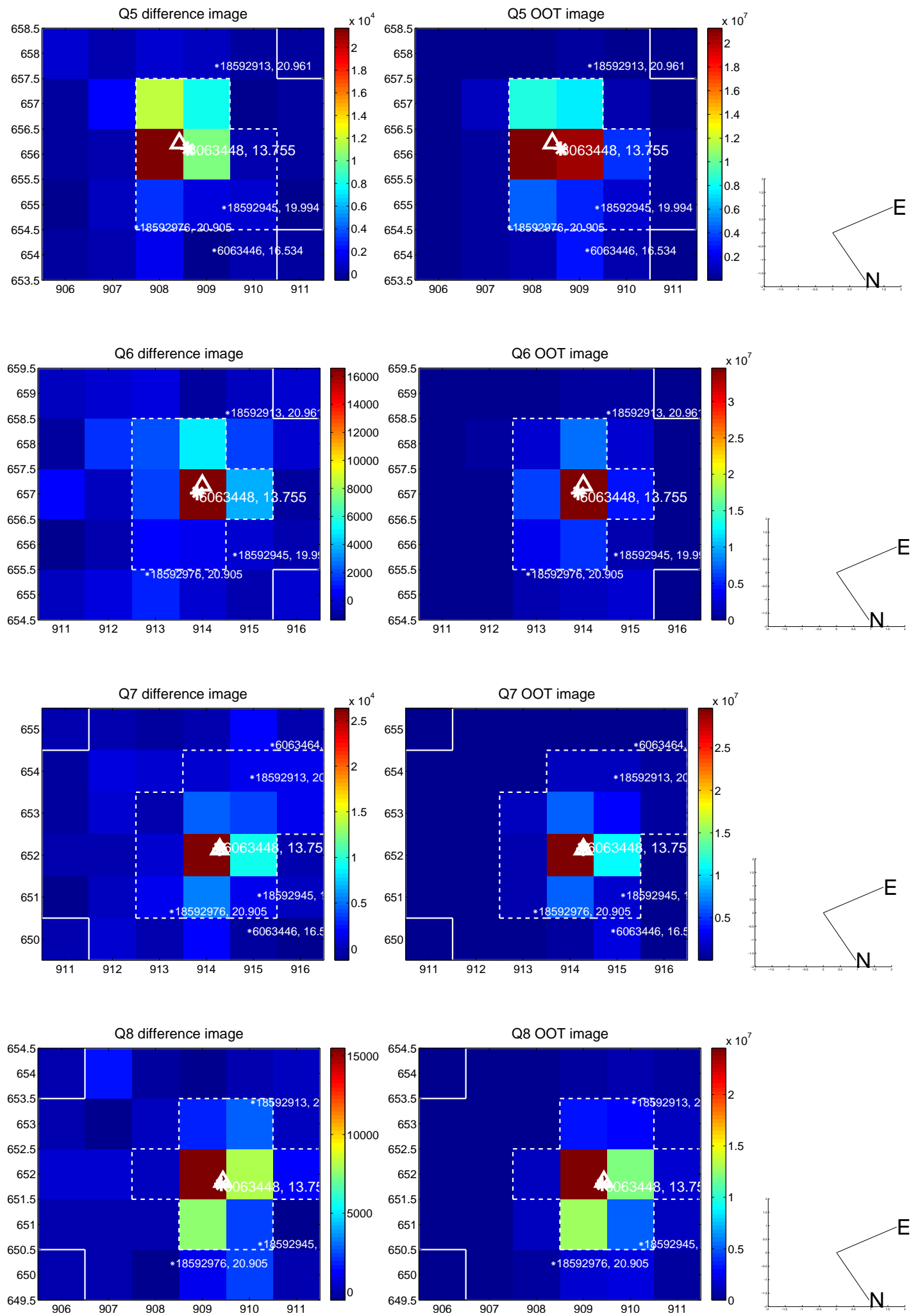


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

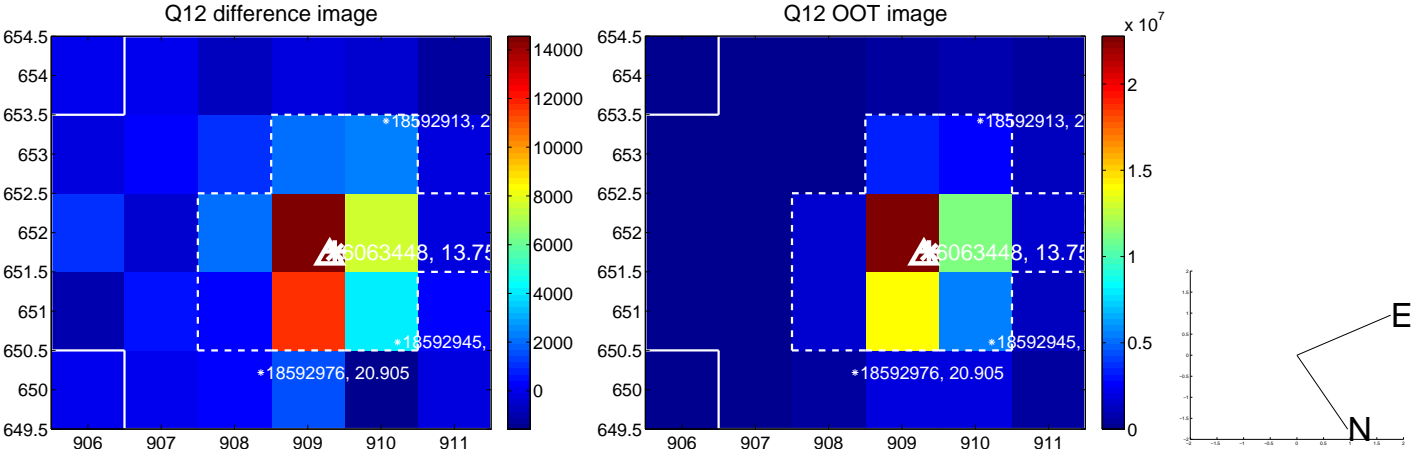
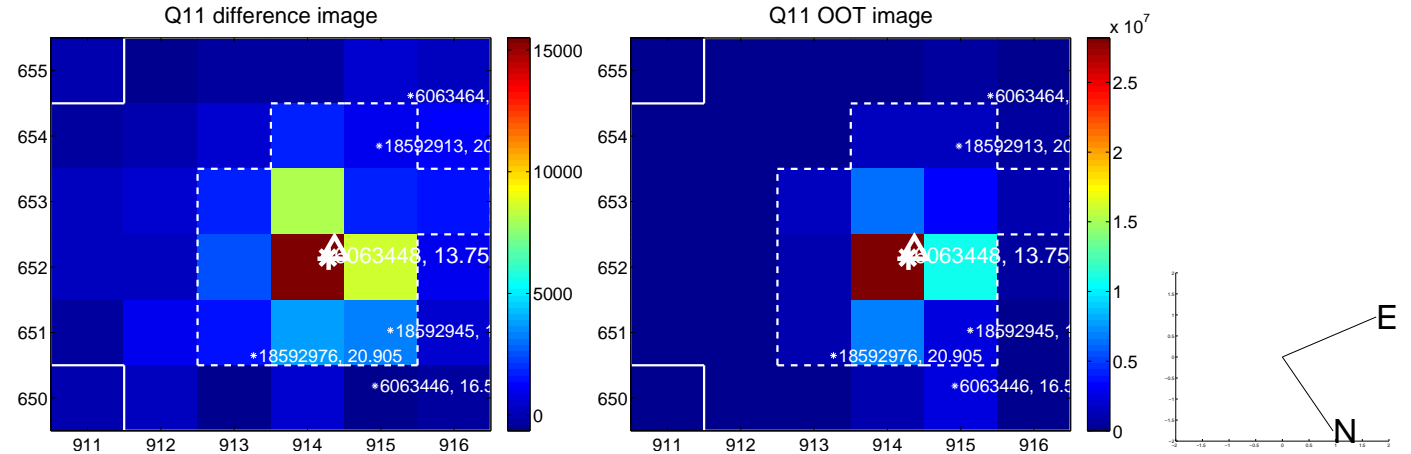
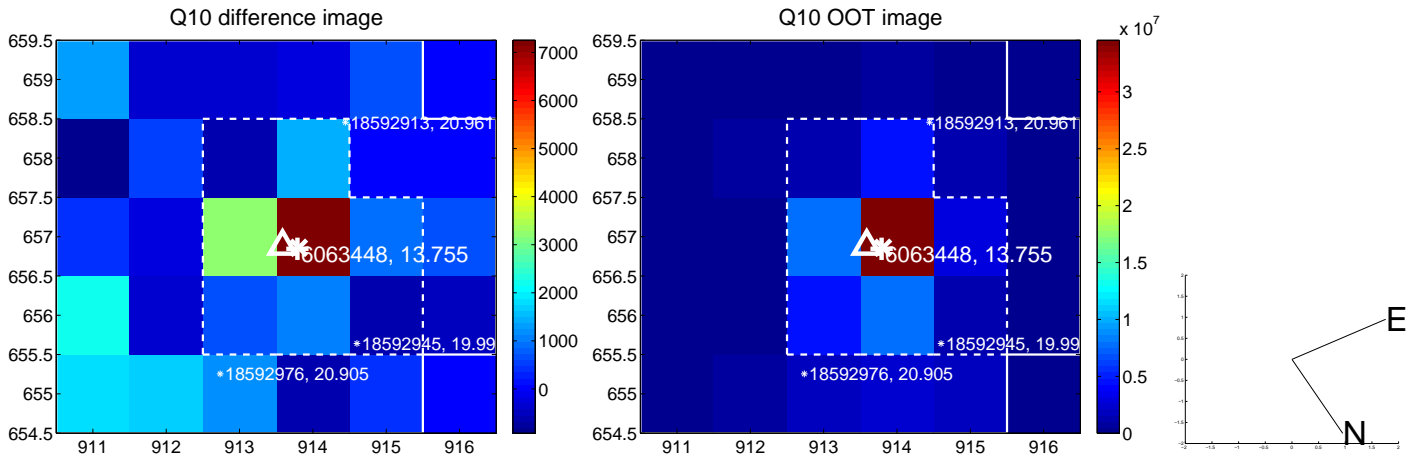
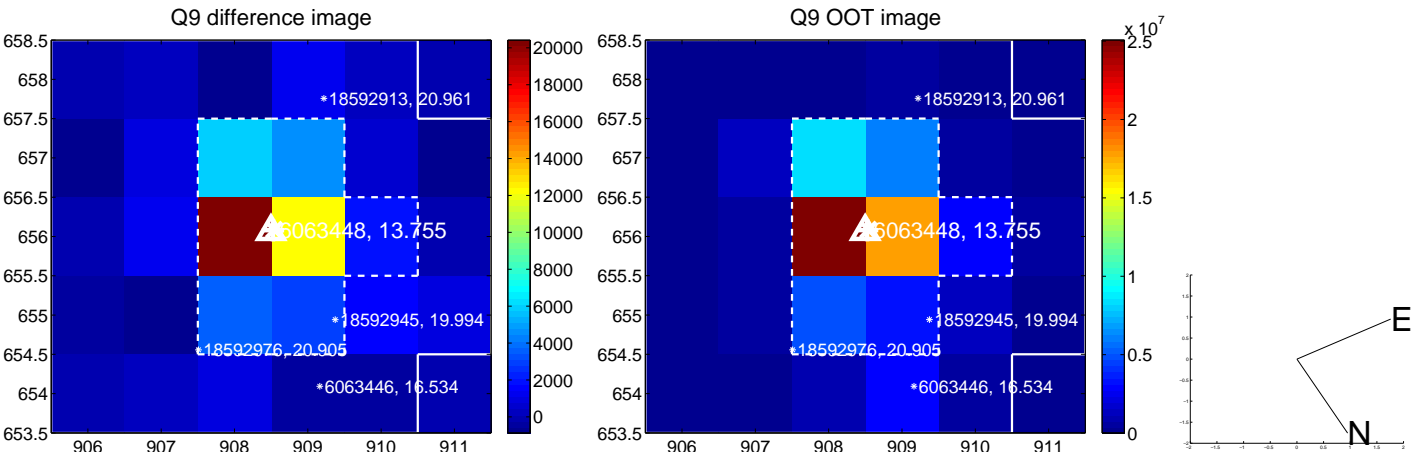
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



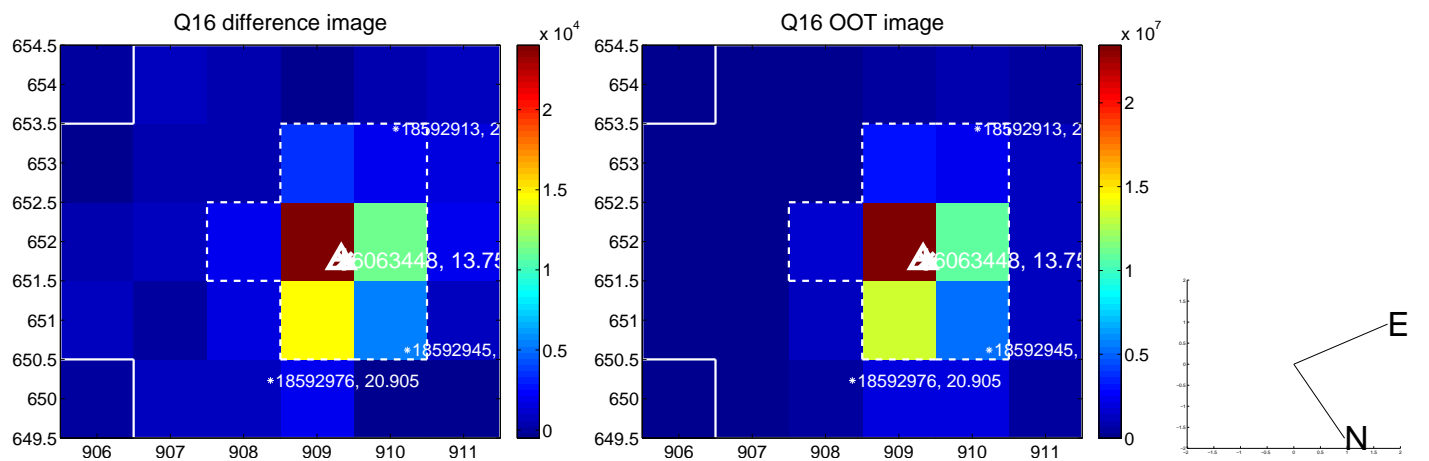
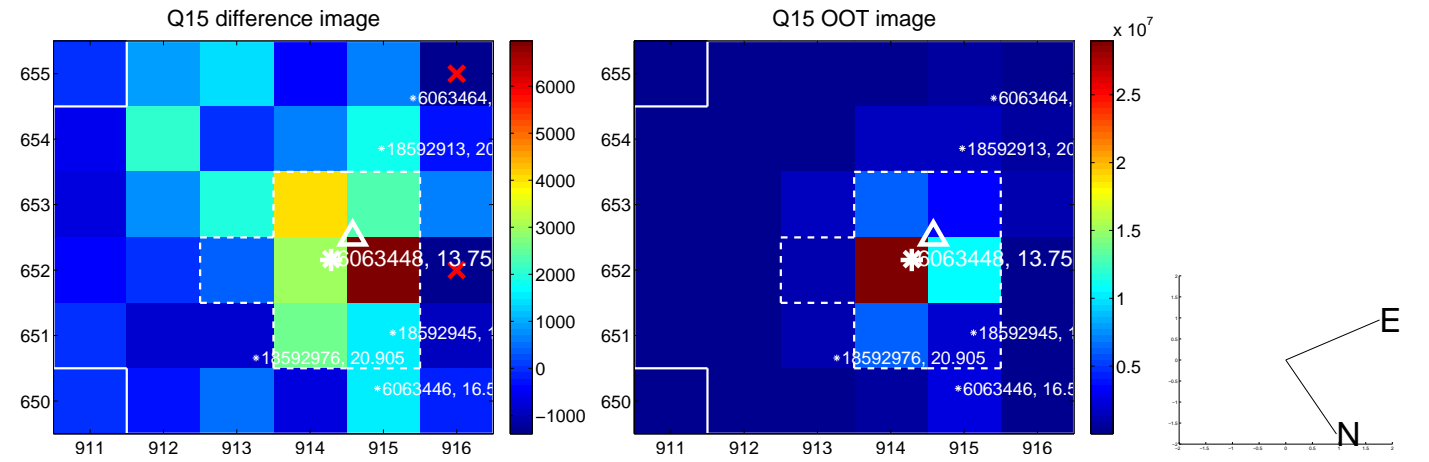
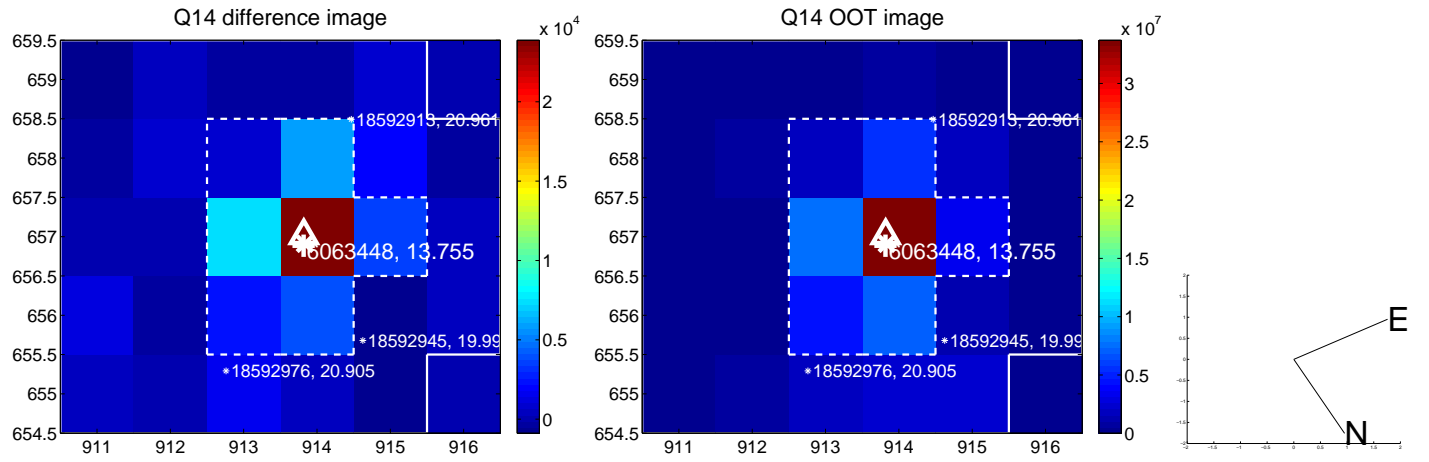
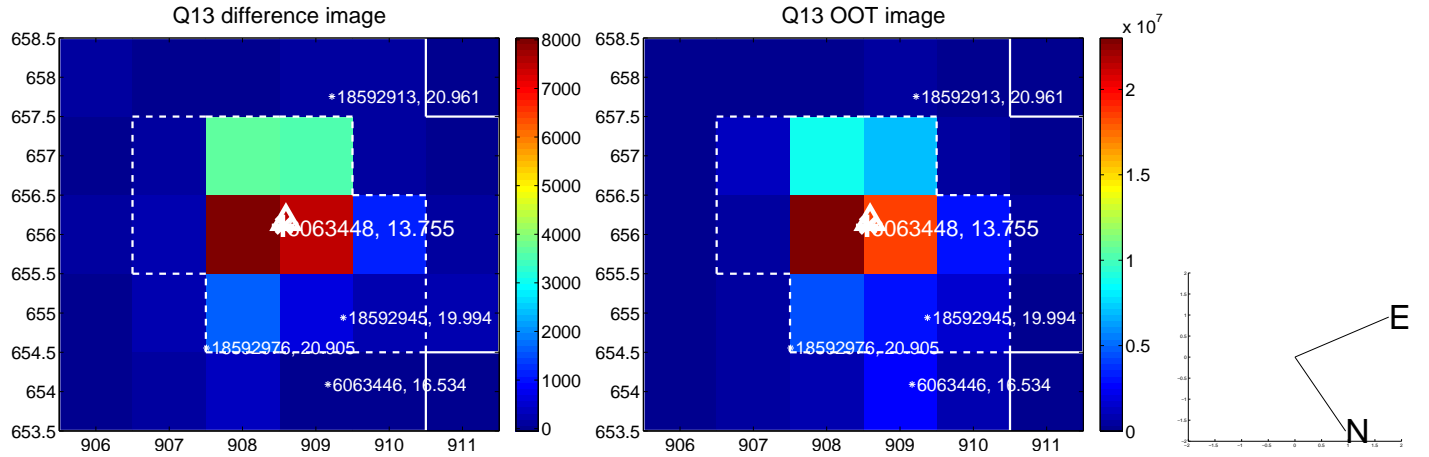
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



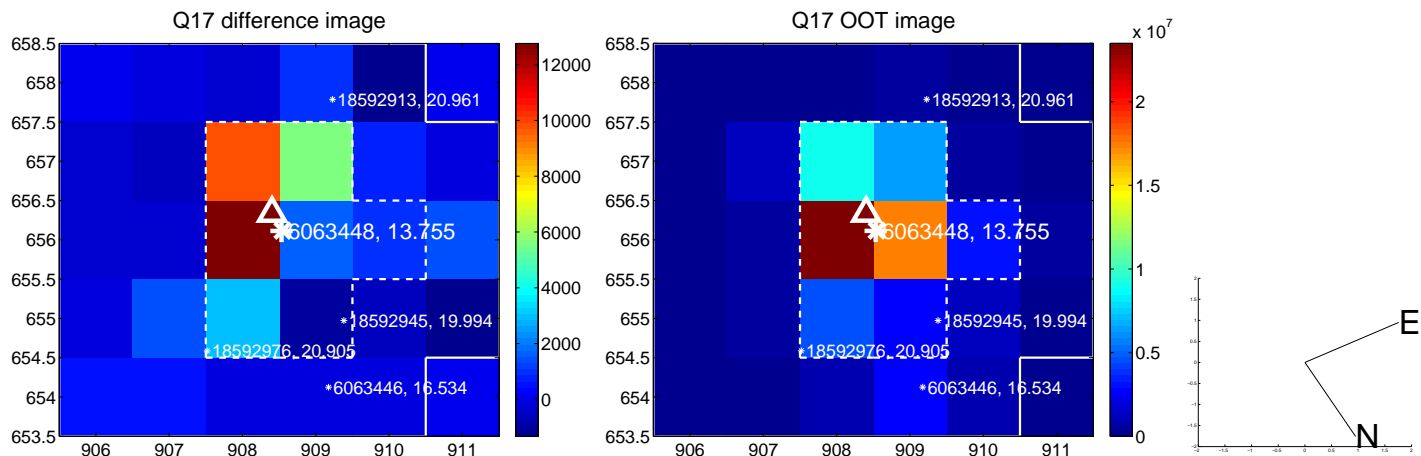
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



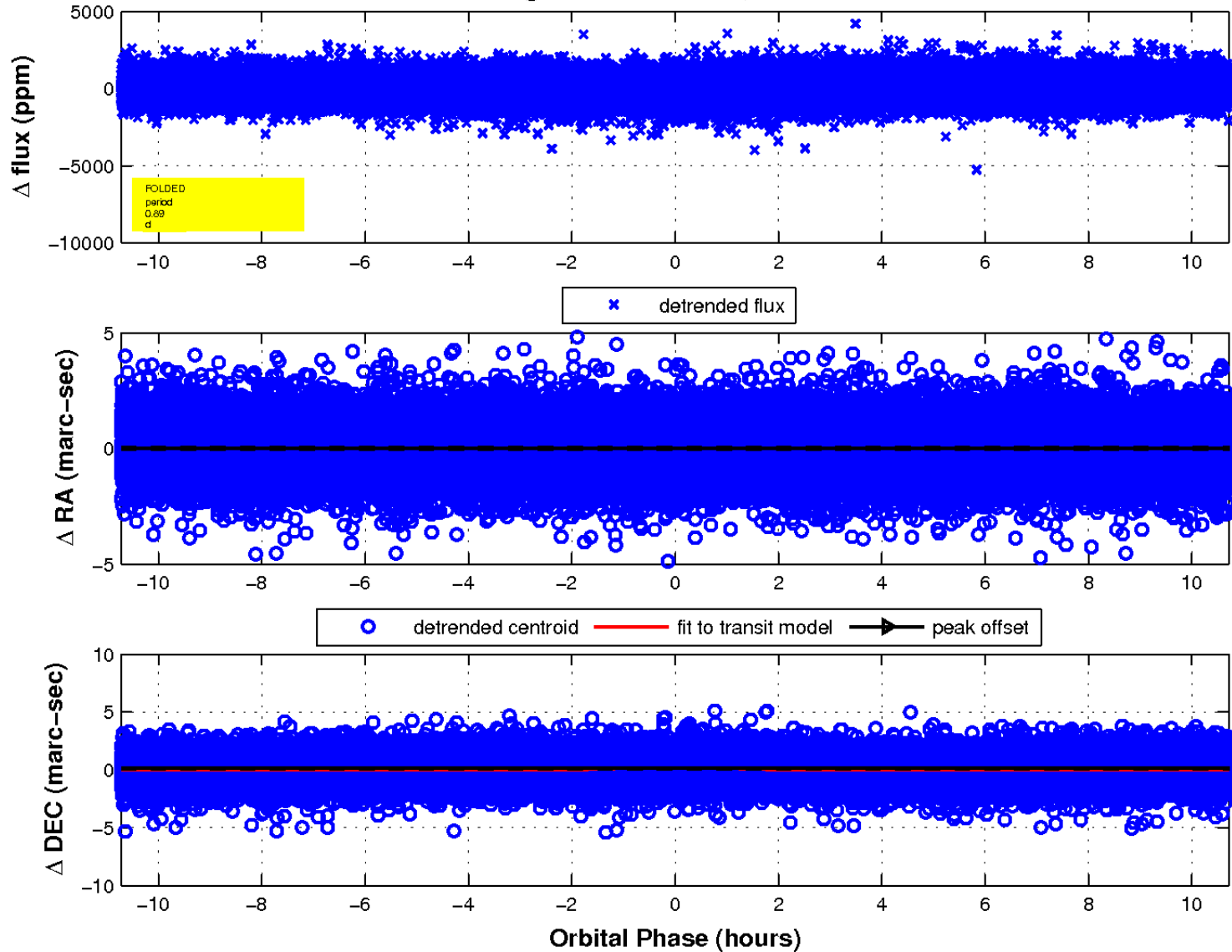
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

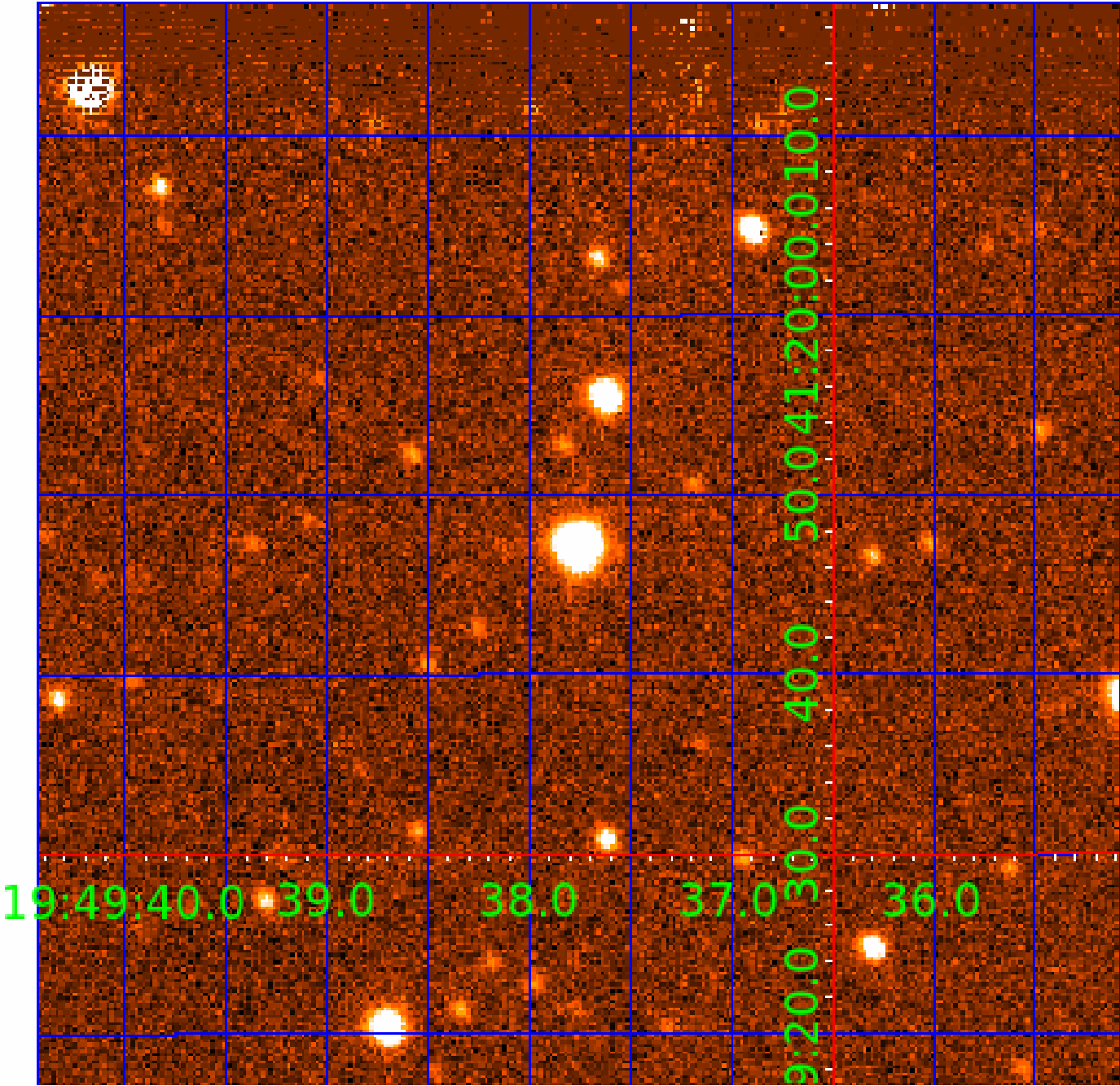


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 006063448

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})
006063448-01	OBS	6659.01	76.018139	139.942821	80498.8	13.455	1858.3	1829.0	1.89	6703	63.90	42.73
006063448-02	OBS	No	76.018245	199.050408	7550.5	9.352	163.6	162.4	1.89	6703	18.64	42.73
006063448-03	OBS	No	0.893646	132.249397	68.8	3.635	14.1	12.0	1.89	6703	1.85	15984.47
006063448-04	OBS	No	0.824210	131.825345	108.4	1.835	7.9	10.0	1.89	6703	2.30	17804.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006063448-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
006063448-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006063448-03	OBS	FP	0.06	1	0	0	0	LPP_DV—LPP_ALT
006063448-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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.

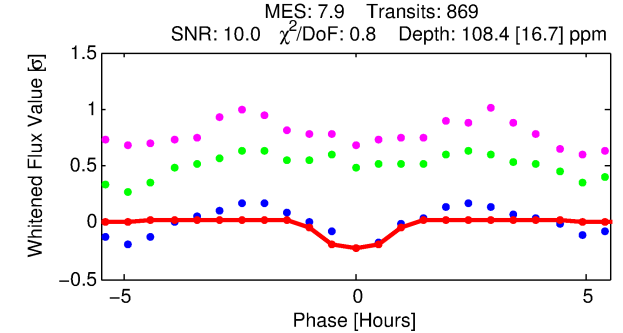
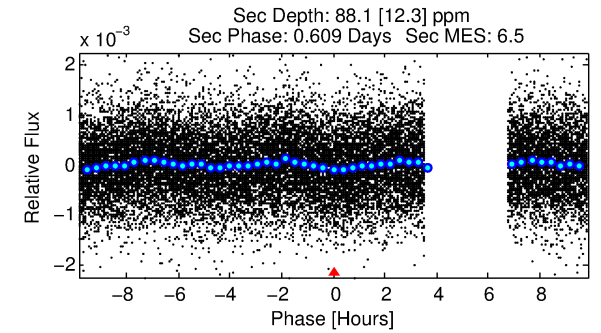
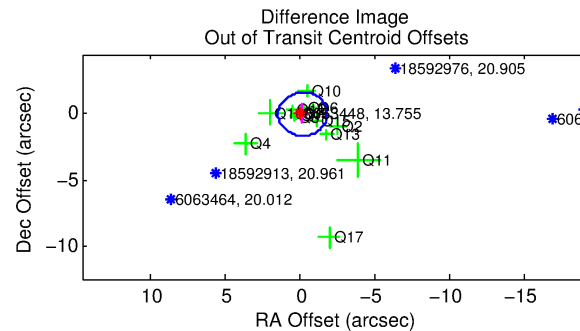
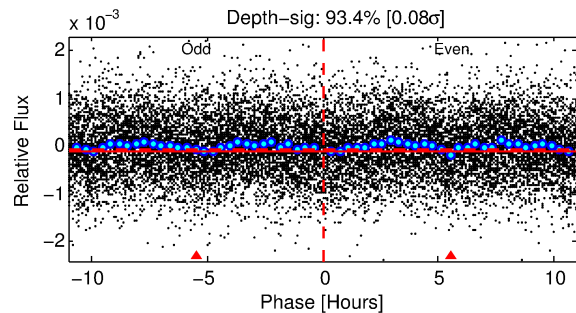
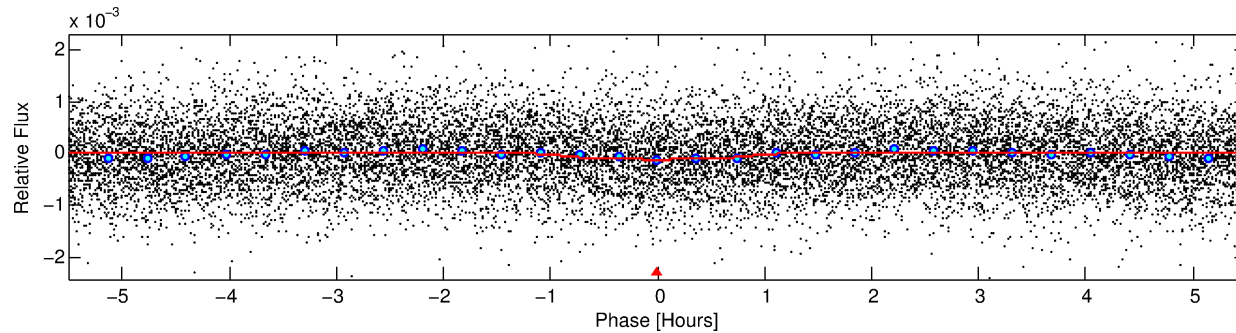
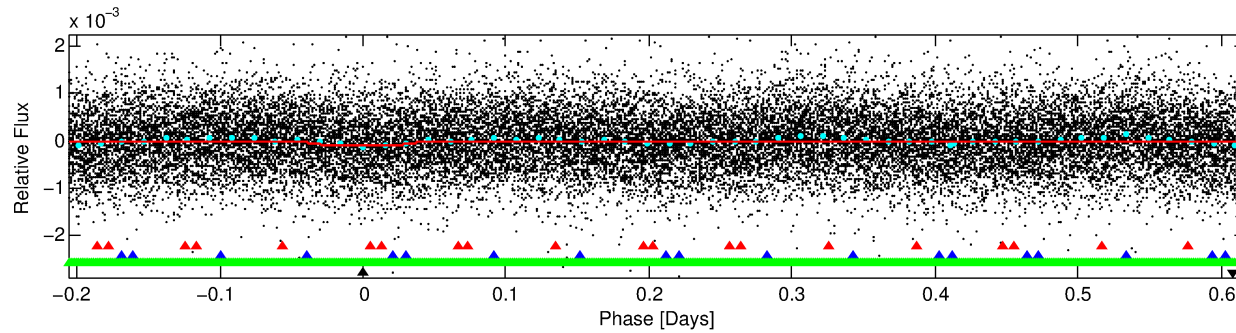
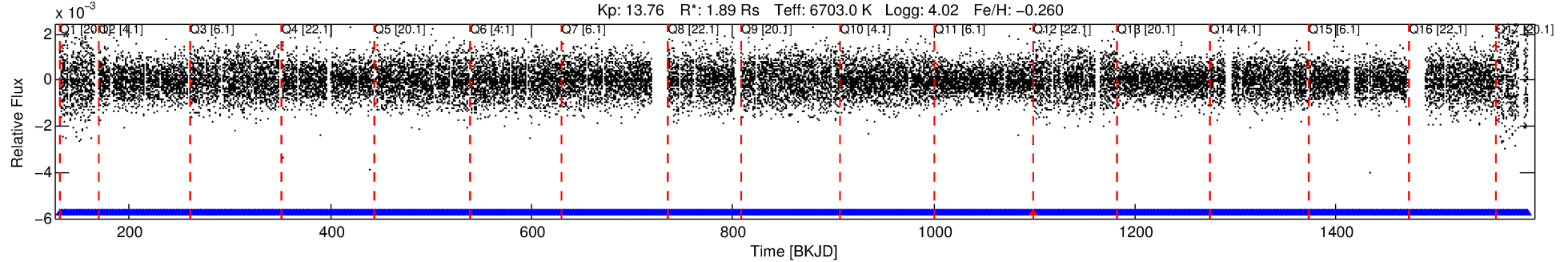
Ephemeris Match Information For 006063448-04

No Significant Match Found

DV One-Page Summary

KIC: 6063448 Candidate: 4 of 4 Period: 0.824 d
KOI: K06659 Corr: No Ephemeris Match

Kp: 13.76 R*: 1.89 Rs Teff: 6703.0 K Logg: 4.02 Fe/H: -0.260



DV Fit Results:

Period = 0.82421 [0.00001] d
Epoch = 131.8253 [0.0029] BKJD
Rp/R* = 0.0111 [0.0090]
a/R* = 1.84 [6.26]
b = 0.90 [1.03]
Seff = 17804.69 [9557.77]
Teff = 2946 [395] K
Rp = 2.30 [2.03] Re
a = 0.0191 [0.0062] AU
Ag = 3.33 [5.70] [0.41σ]
Teffp = 6154 [2518] K [1.26σ]

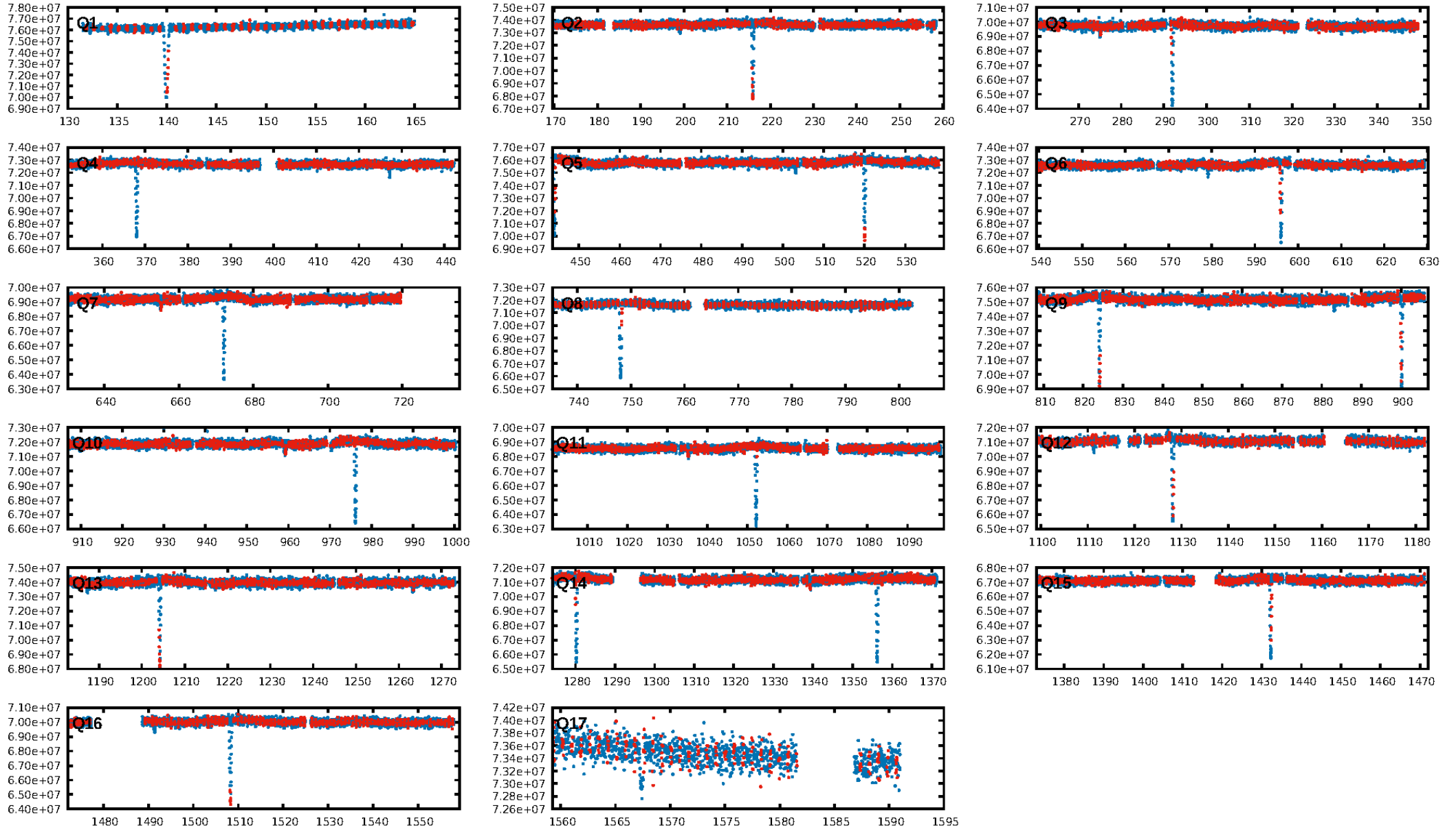
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 31.8% [0.41σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.47e-19
RollingBand-fgt: 1.00 [830/831]
GhostDiagnostic-chr: 0.5022
Centroid-sig: 0.0%
Centroid-so: 1.157 arcsec [3.28σ]
OotOffset-rm: 0.227 arcsec [0.42σ]
KicOffset-rm: 0.271 arcsec [0.52σ]
OotOffset-st: 4/3/4/3 [14]
KicOffset-st: 4/3/4/3 [14]
DiffImageQuality-fgm: 0.21 [3/14]
DiffImageOverlap-fno: 1.00 [17/17]

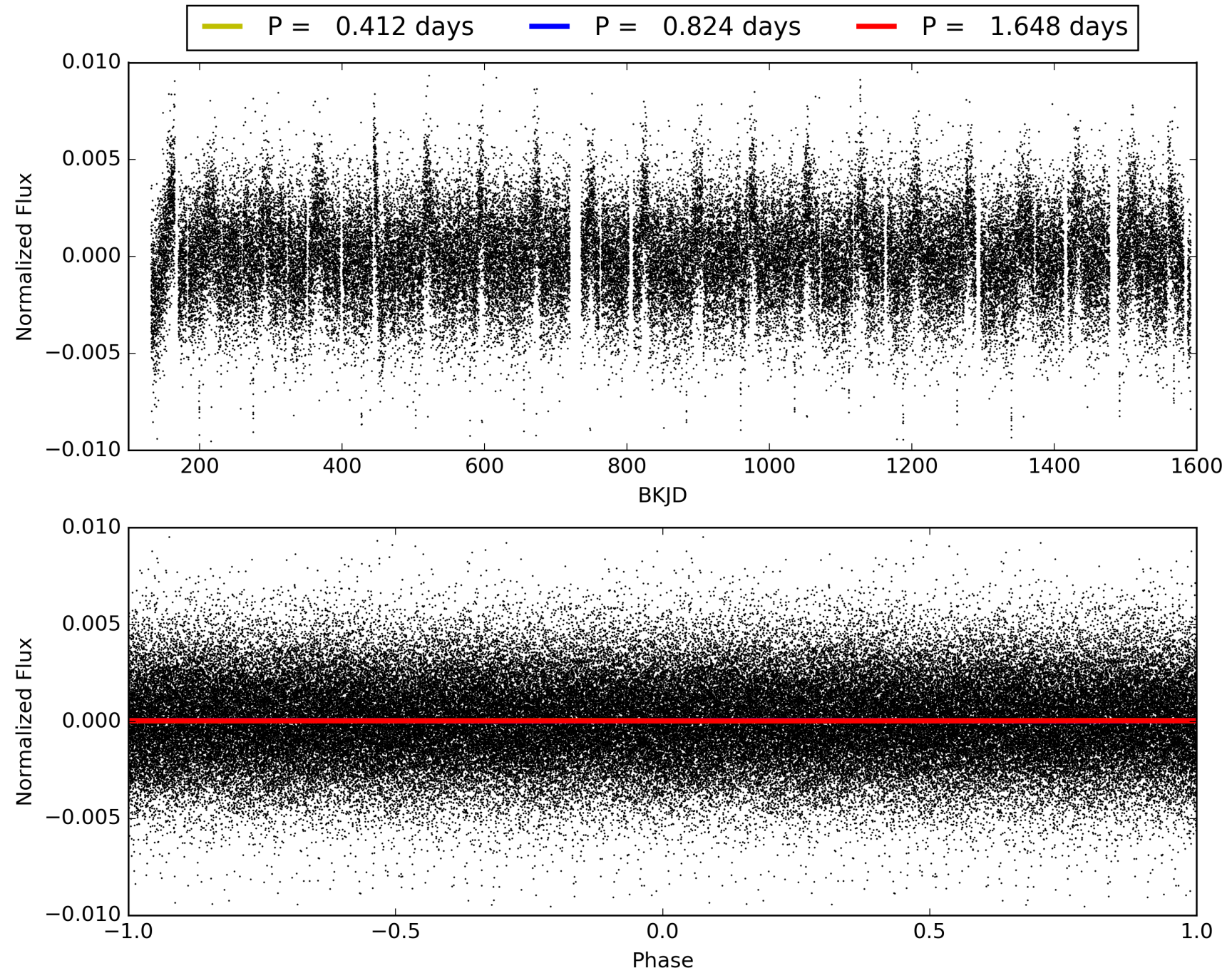
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 06:52:56 Z

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

TCE 006063448-04, PDC Light Curves

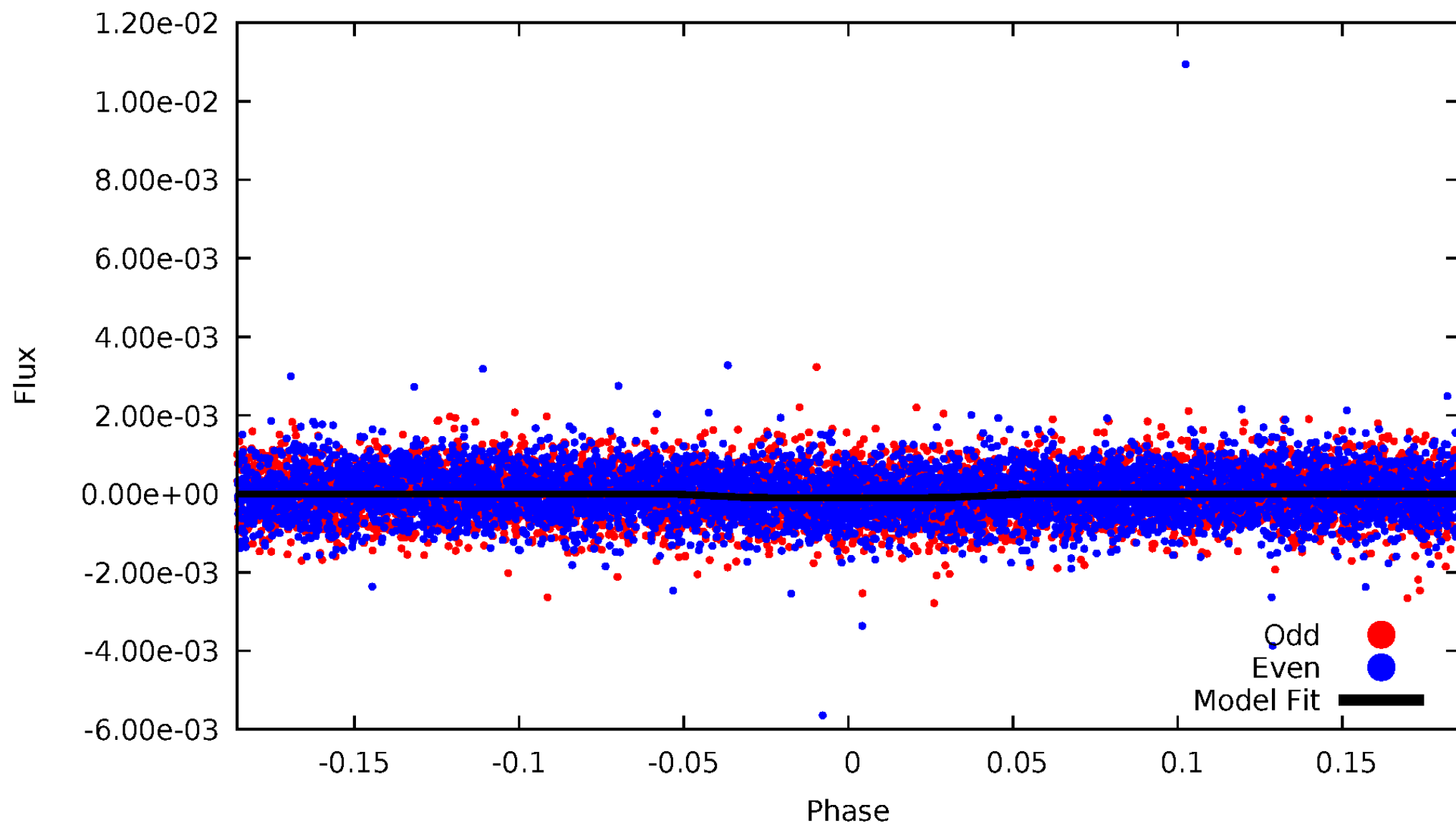


TCE 006063448-04



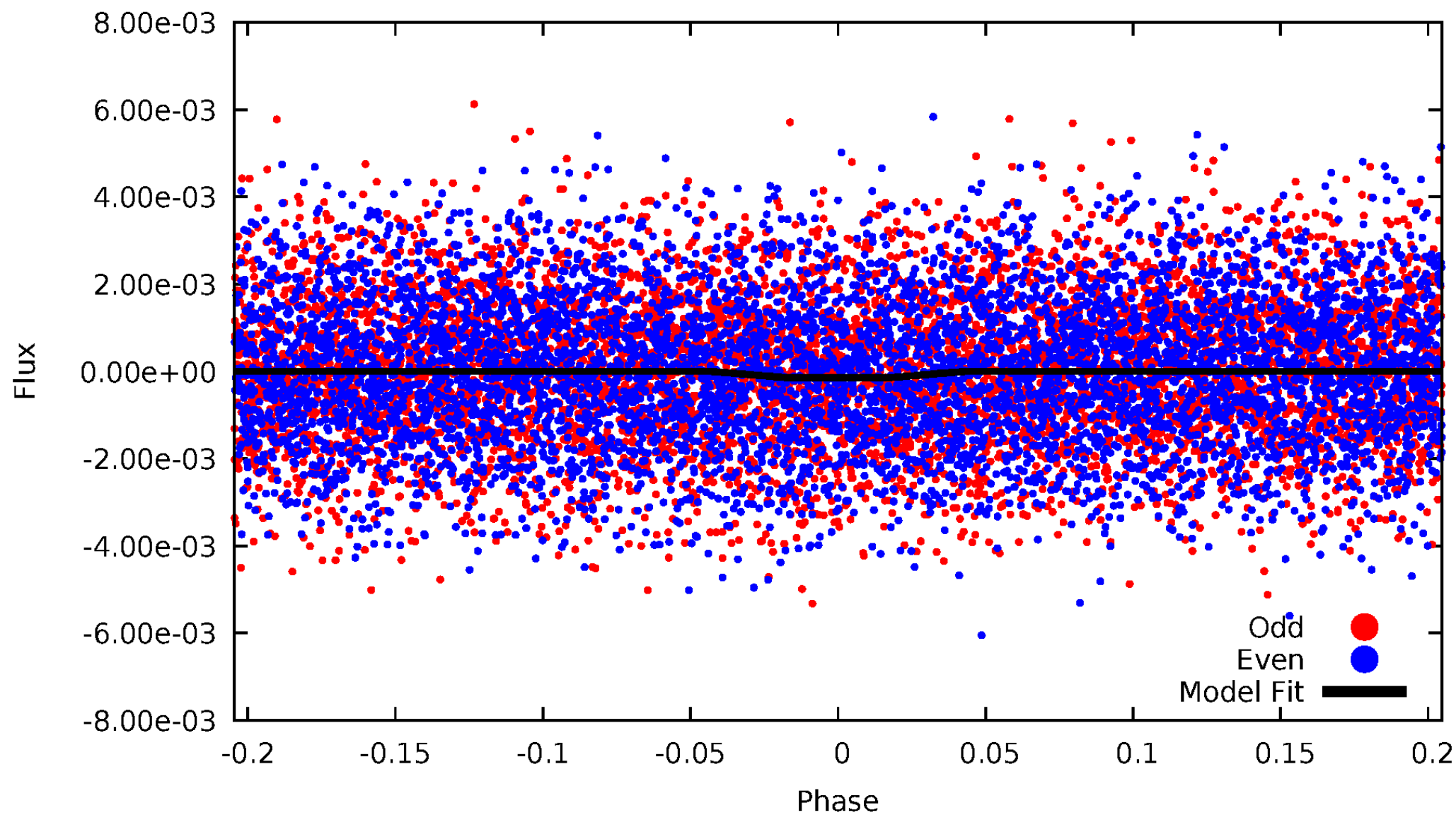
DV Odd/Even

TCE 006063448-04



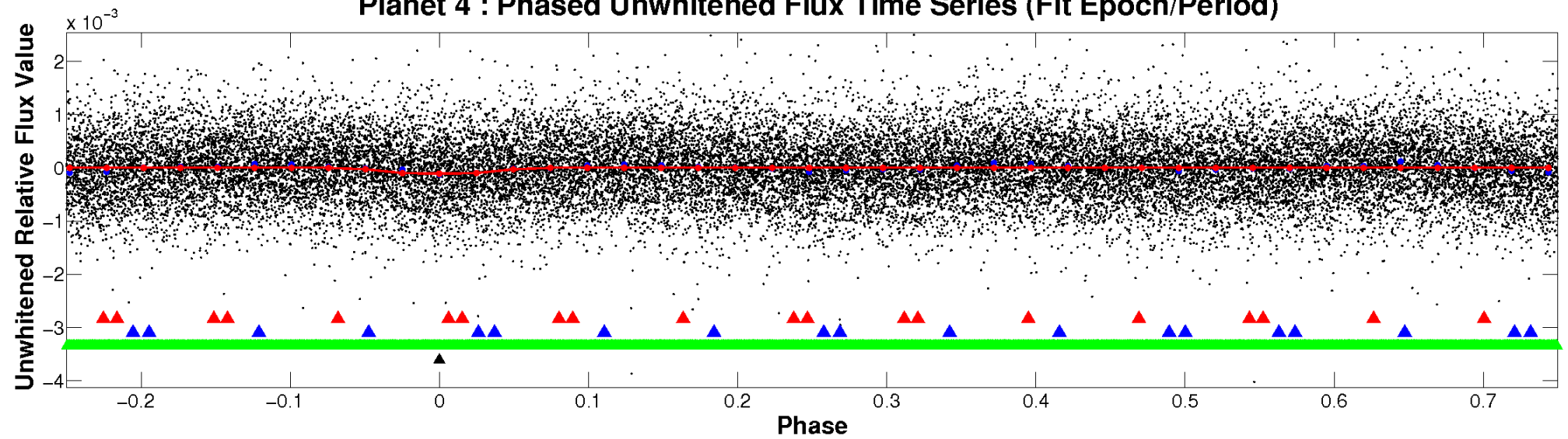
ALT Odd/Even

TCE 006063448-04

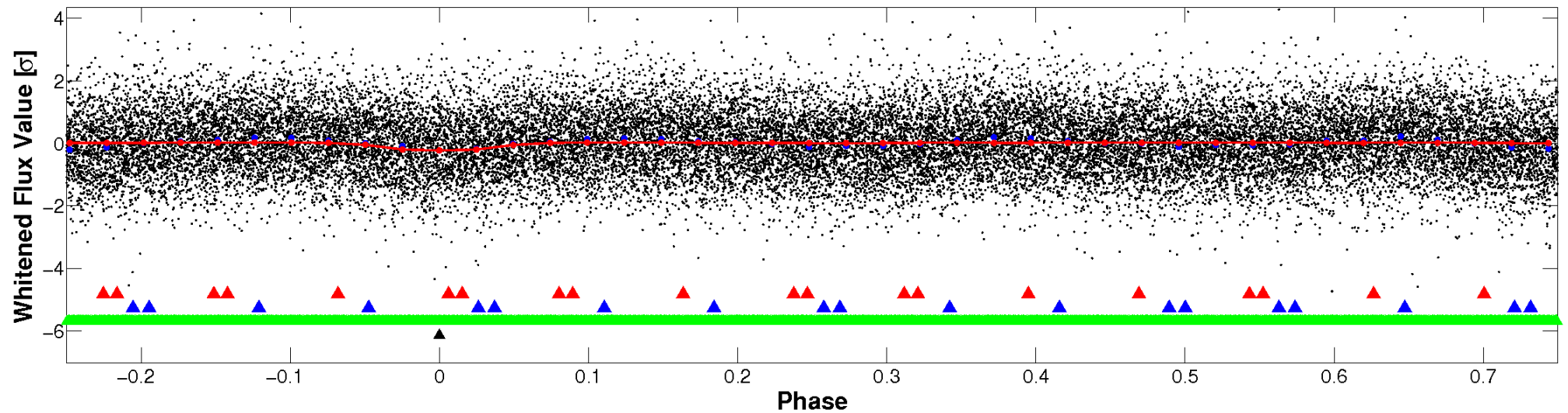


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

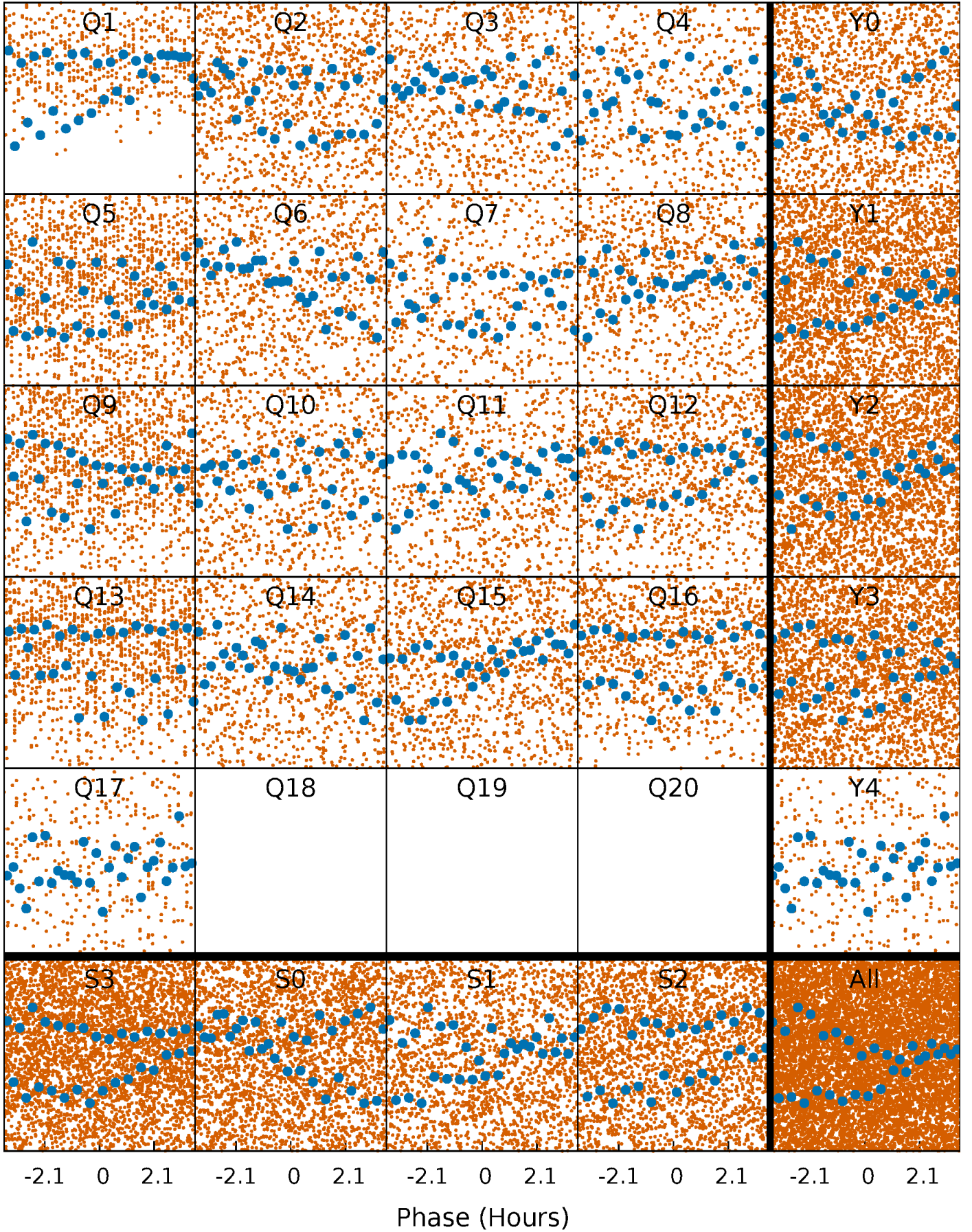


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



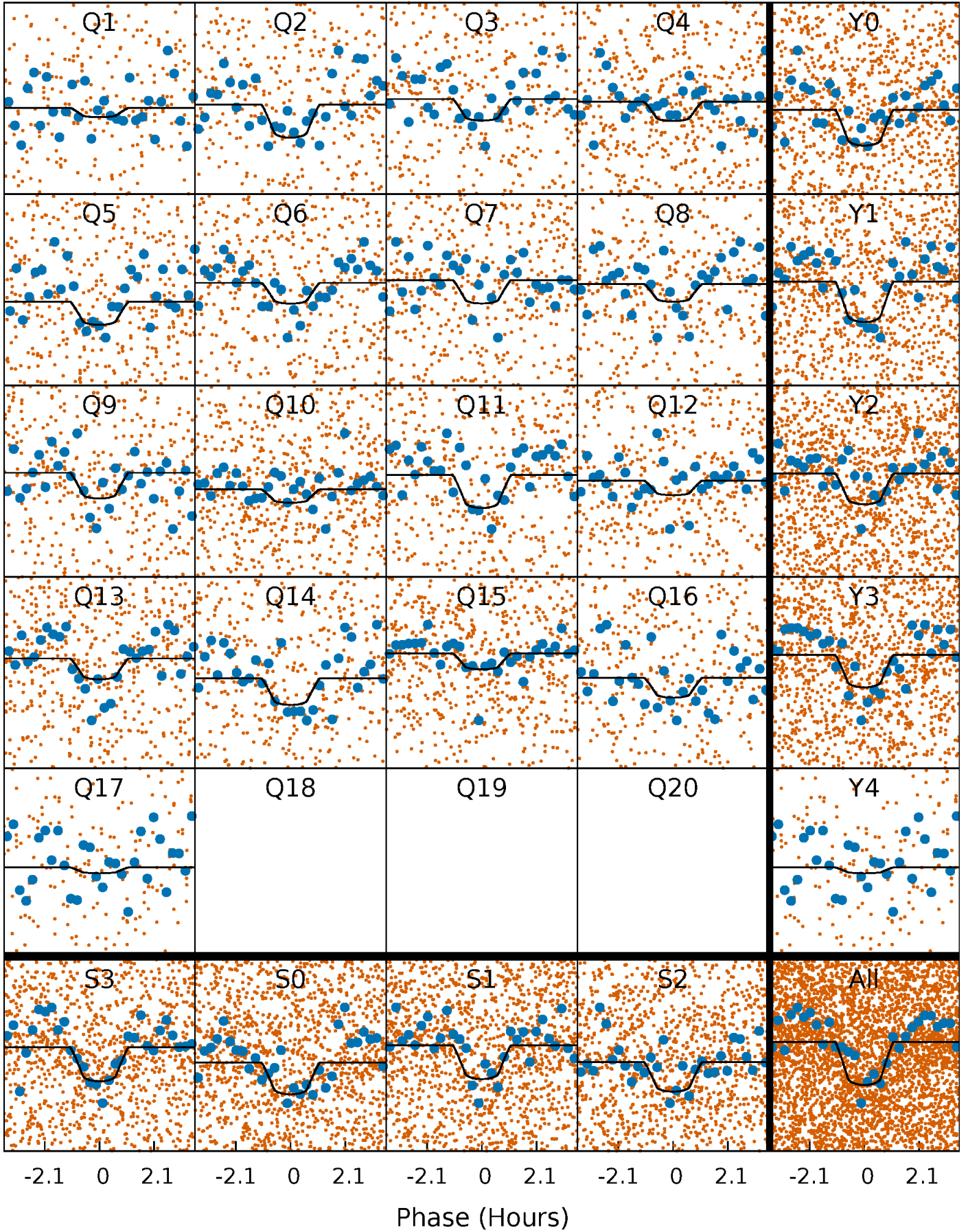
PDC Quarter-Phased Transit Curves

TCE 006063448-04 P= 0.824210 Days $T_0=131.825345$ (BKJD)



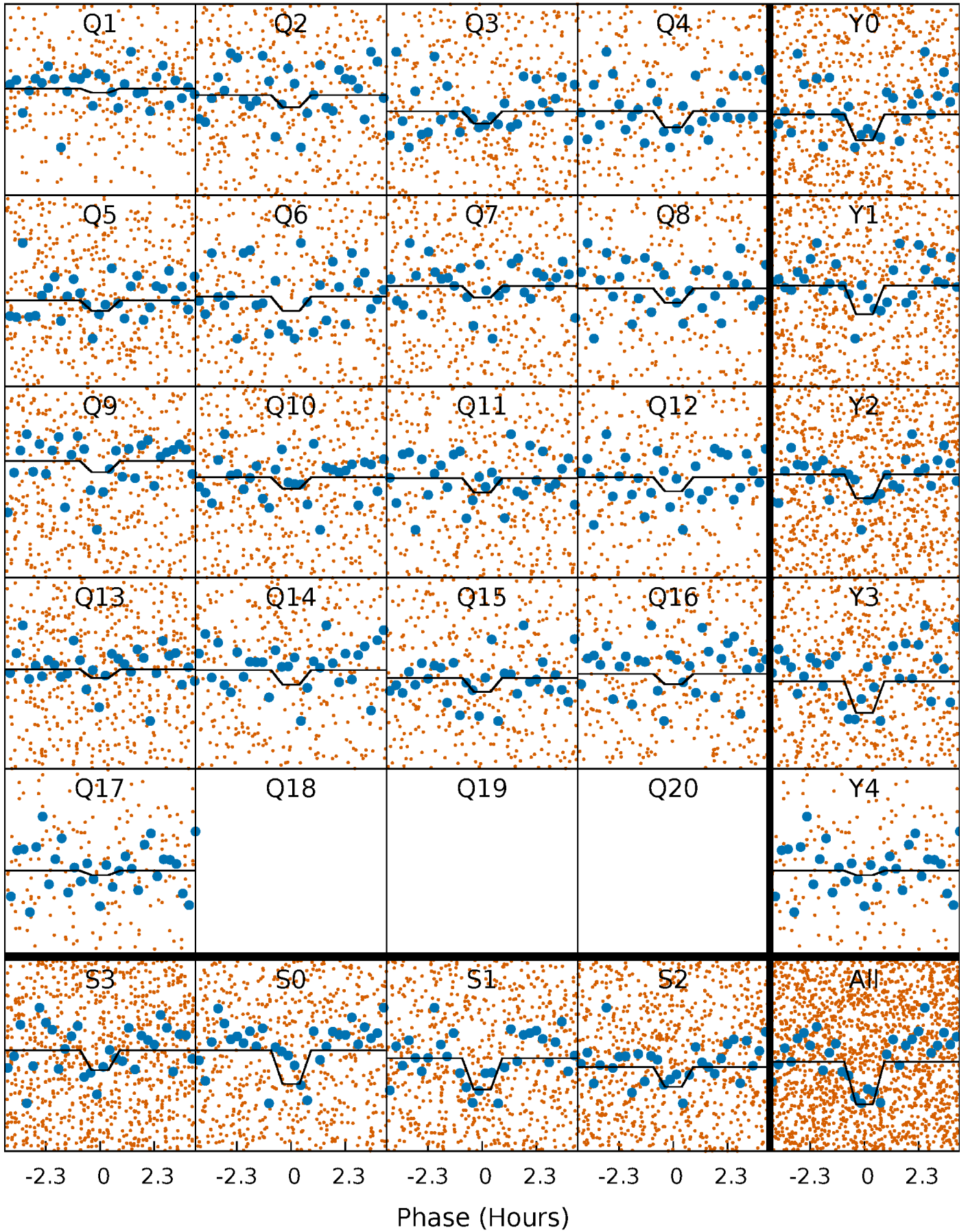
DV Quarter-Phased Transit Curves

TCE 006063448-04 P= 0.824210 Days $T_0=131.825345$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

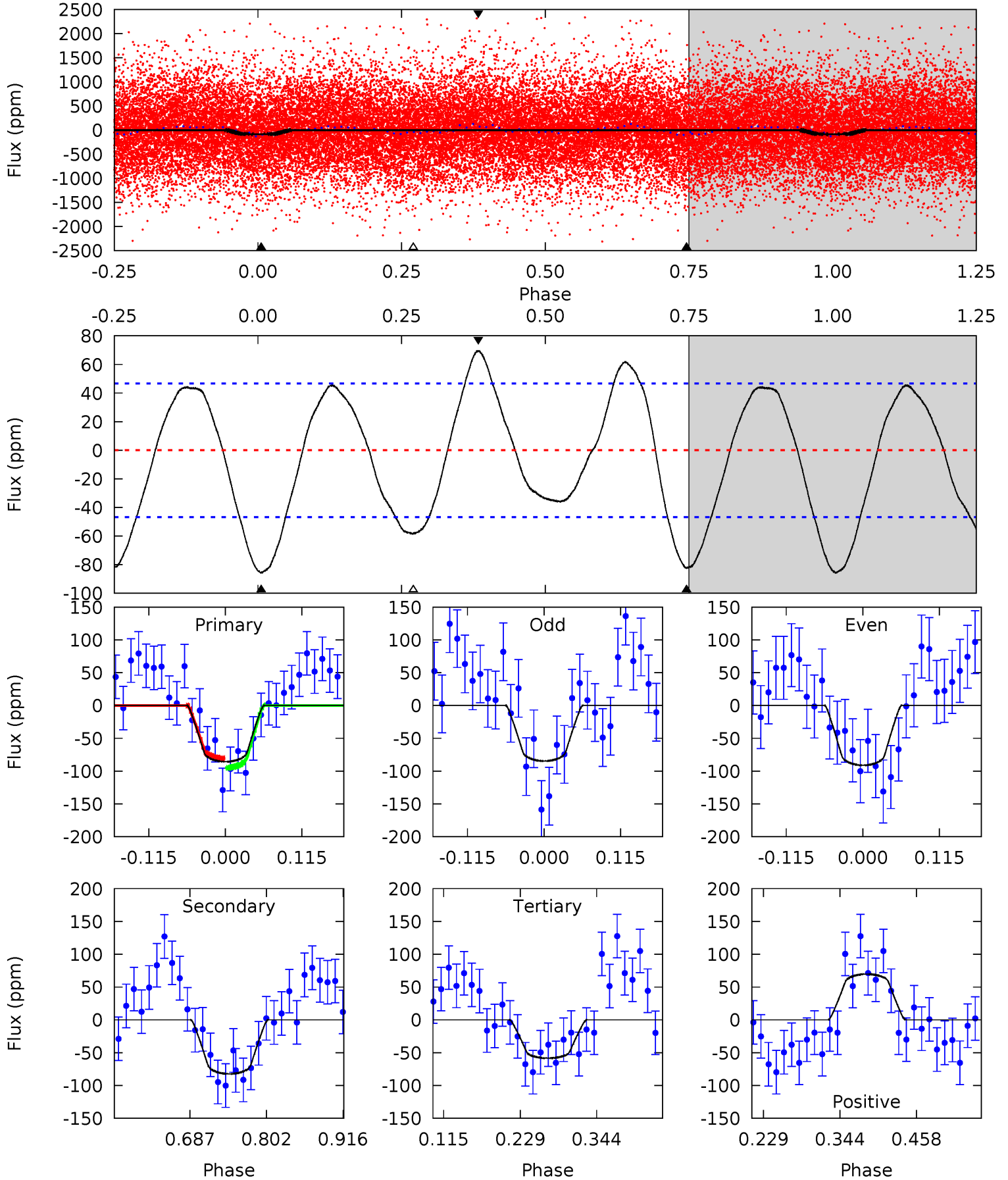
TCE 006063448-04 P= 0.824216 Days $T_0=131.825518$ (BKJD)



DV Model-Shift Uniqueness Test

006063448-04, P = 0.824210 Days, E = 131.001135 Days

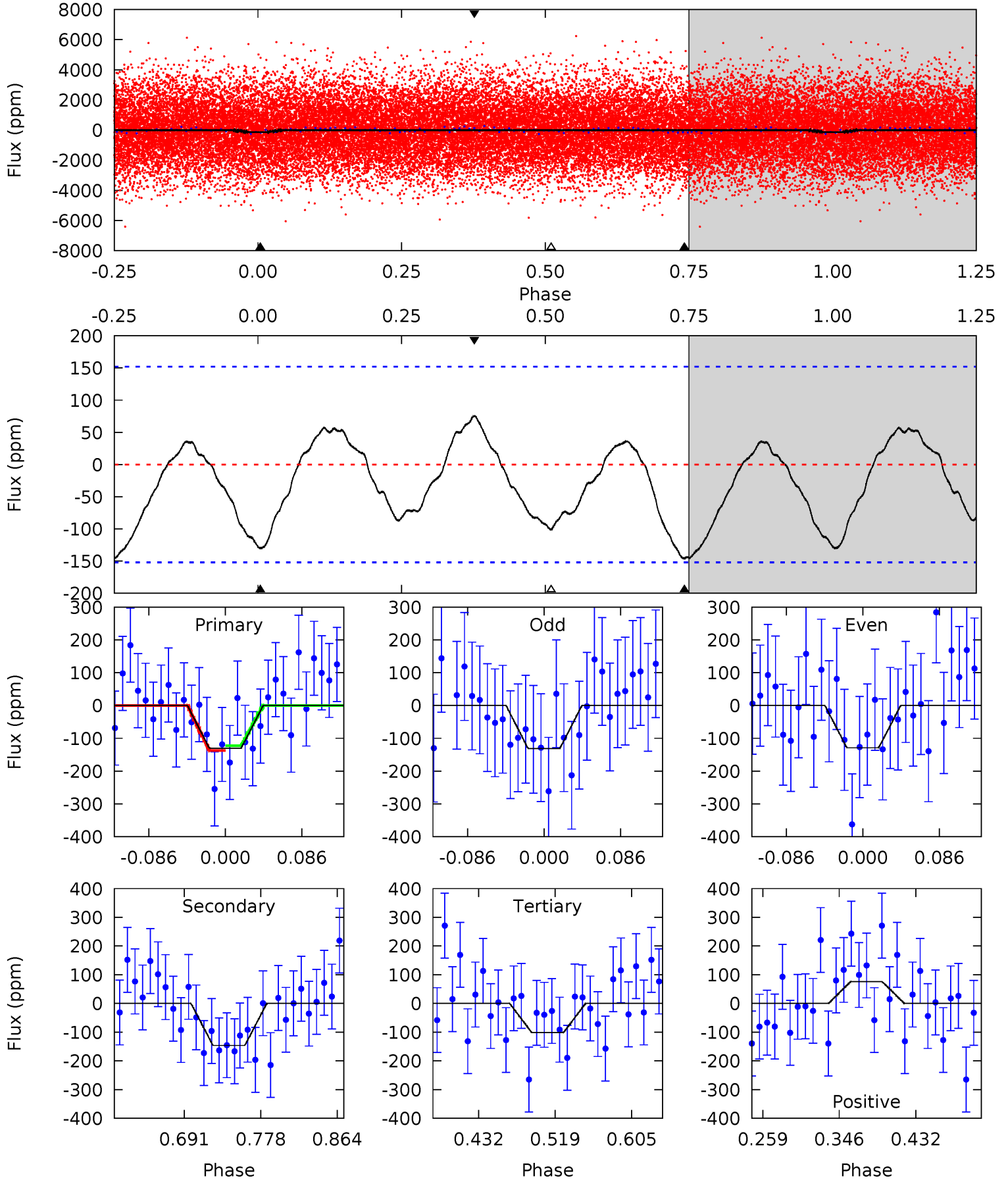
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.33	8.00	5.67	6.77	4.54	1.58	3.66	2.65	1.56	2.33	1.24	0.31	0.90	0.45	0.69



Alt Model-Shift Uniqueness Test

006063448-04, P = 0.824216 Days, E = 131.001302 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.93	4.42	3.06	2.29	4.60	1.71	1.49	0.87	1.64	1.36	2.13	0.03	0.70	0.34	0.22



Stellar Parameters For KIC 006063448

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6703^{+189}_{-260}	$4.018^{+0.299}_{-0.161}$	$-0.260^{+0.250}_{-0.300}$	$1.892^{+0.477}_{-0.656}$	$1.365^{+0.170}_{-0.291}$	$0.284^{+0.568}_{-0.124}$
	+3%/-4%	+7%/-4%	+96%/-115%	+25%/-35%	+12%/-21%	+200%/-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 006063448-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-82 ± 10	$2.47^{+1.85}_{-1.57}$	4080^{+306}_{-393}	5569^{+4505}_{-1397}	$2.787^{+17.684}_{-1.924}$
Alt.	-146 ± 33	$2.52^{+1.83}_{-1.63}$	4061^{+312}_{-374}	6324^{+6470}_{-1516}	$4.464^{+32.145}_{-2.963}$

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 $A_{obs} \gg 1.0$

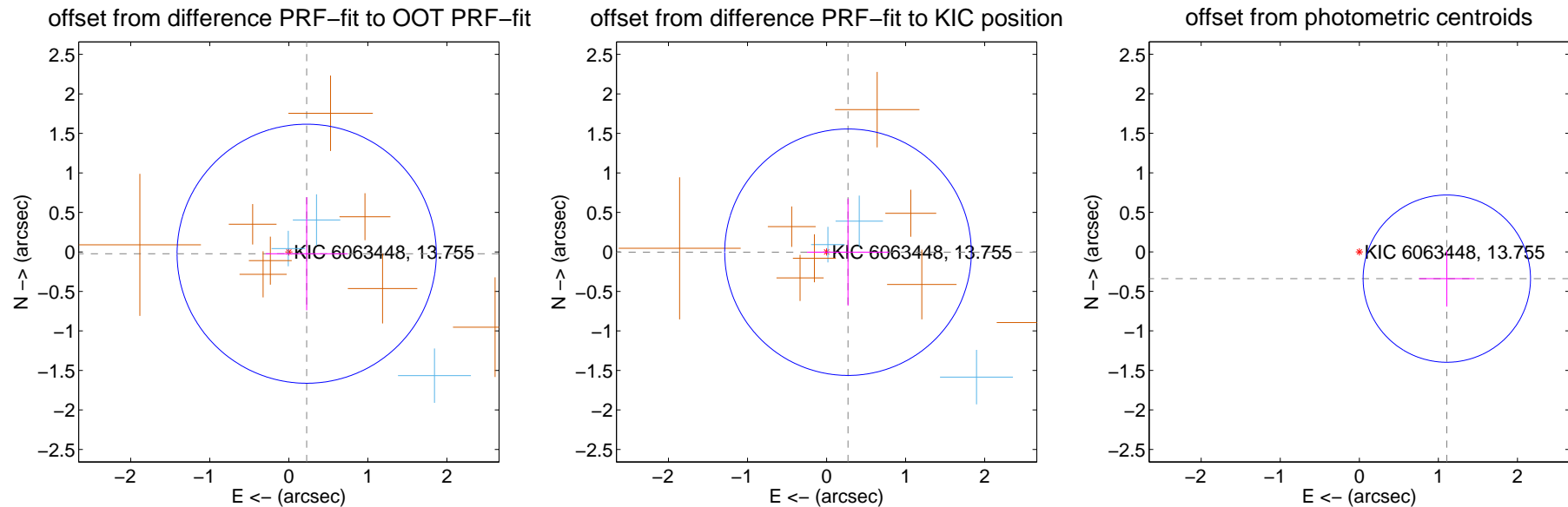
DV Centroid Data

Supplemental centroid analysis for 006063448-04. Kepler magnitude: 13.76. Transit SNR 9.99

There are 3 quarters with good PRF difference image offsets

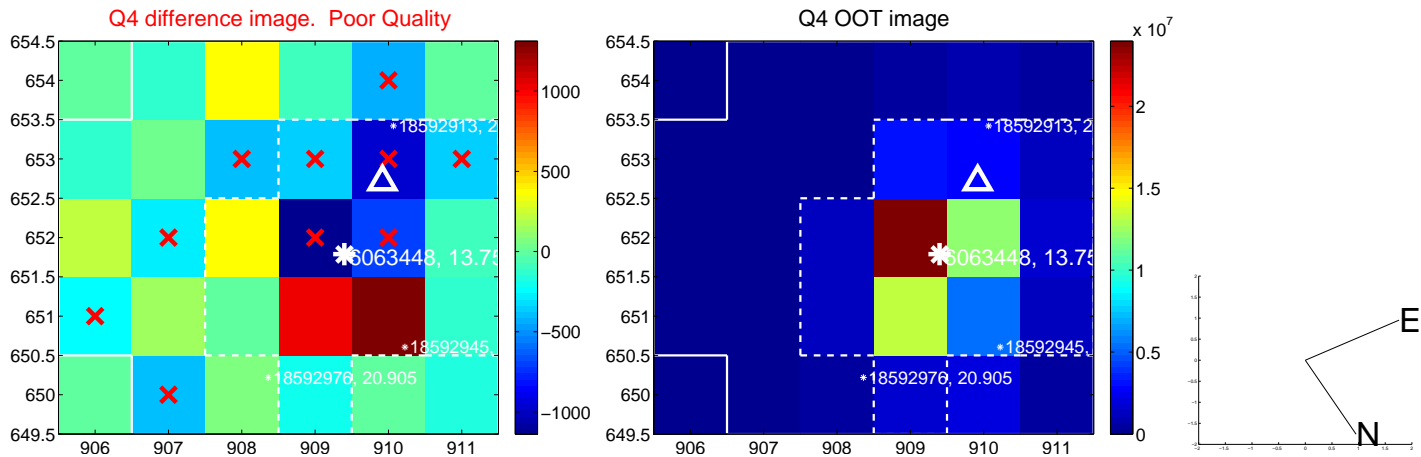
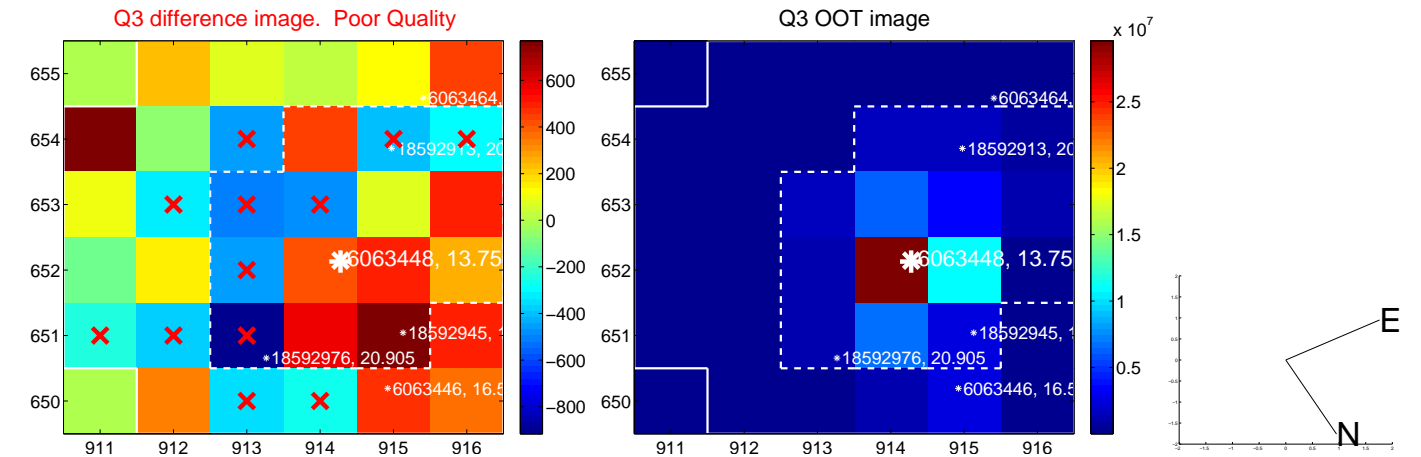
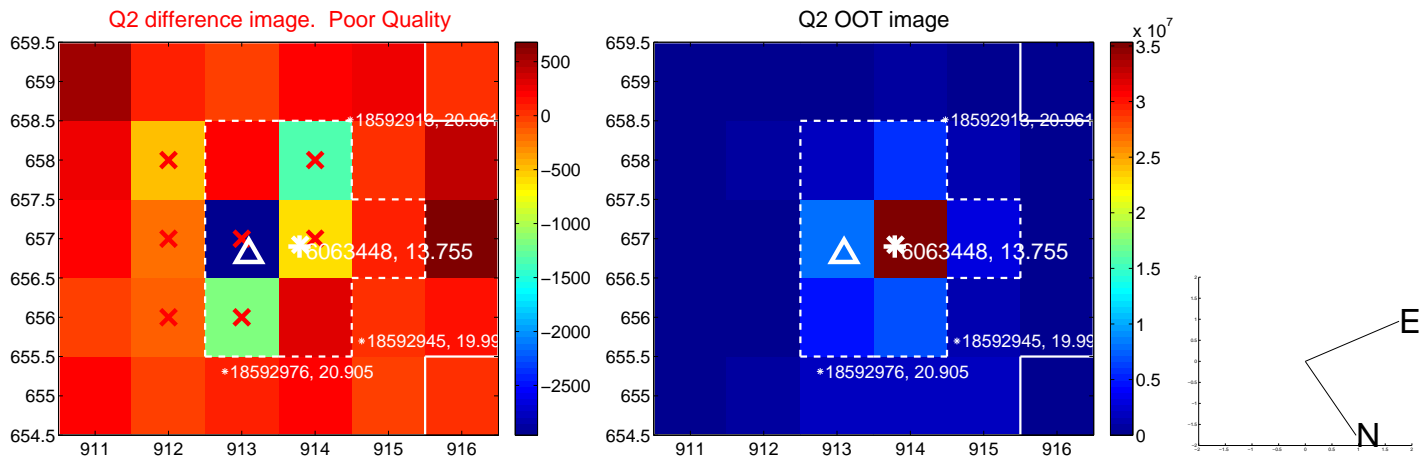
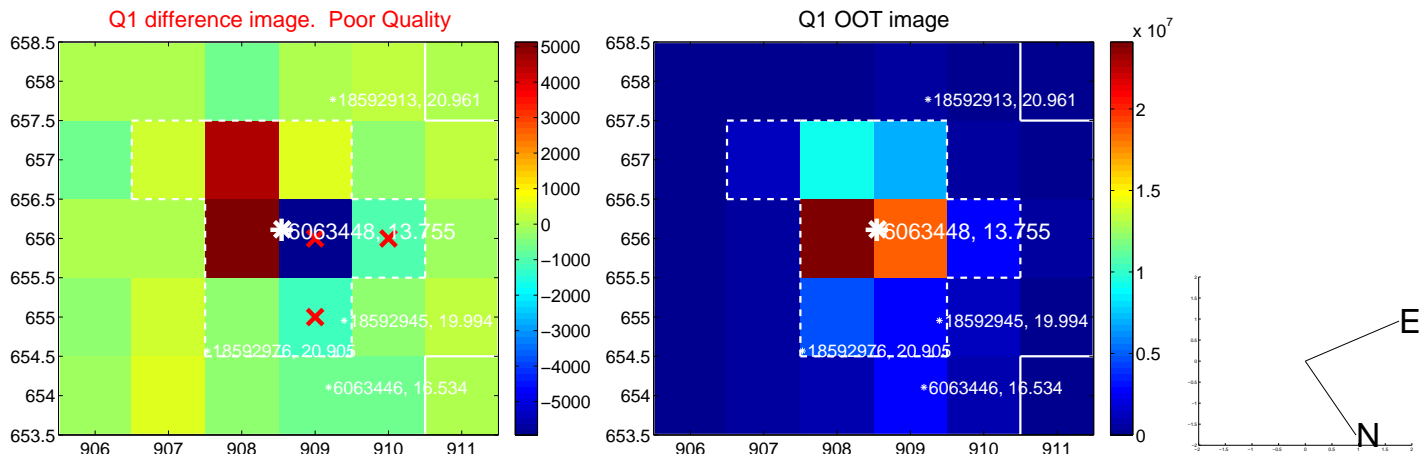
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.227 ± 0.546	0.42	-0.226 ± 0.519	-0.023 ± 0.716
PRF-fit source offset from KIC position	0.271 ± 0.520	0.52	-0.271 ± 0.517	-0.004 ± 0.677
photometric centroid source offset	1.16 ± 0.35	3.28	-1.11 ± 0.35	-0.34 ± 0.35

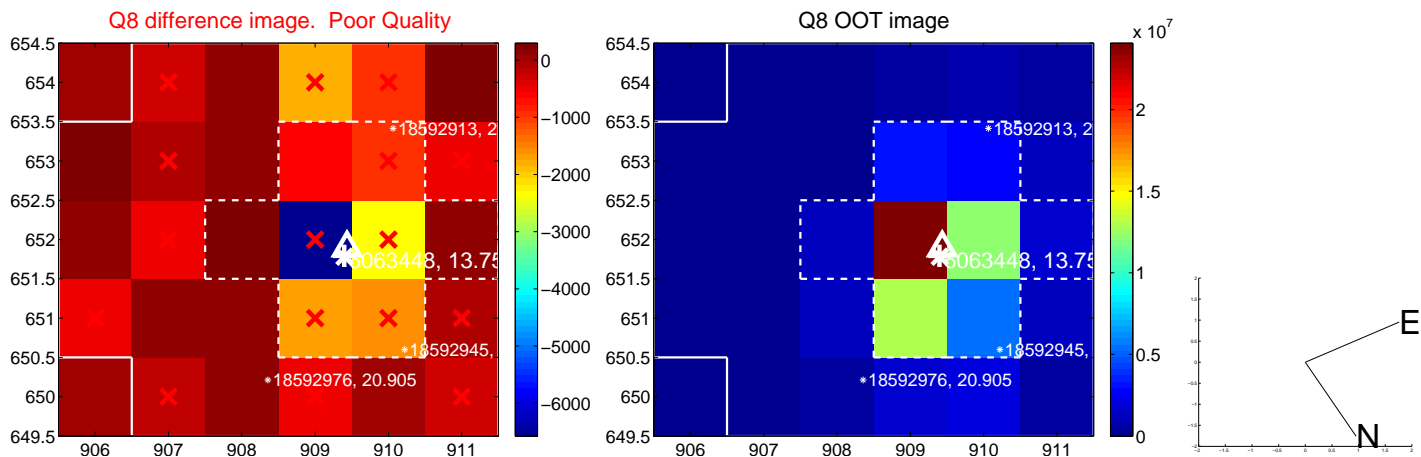
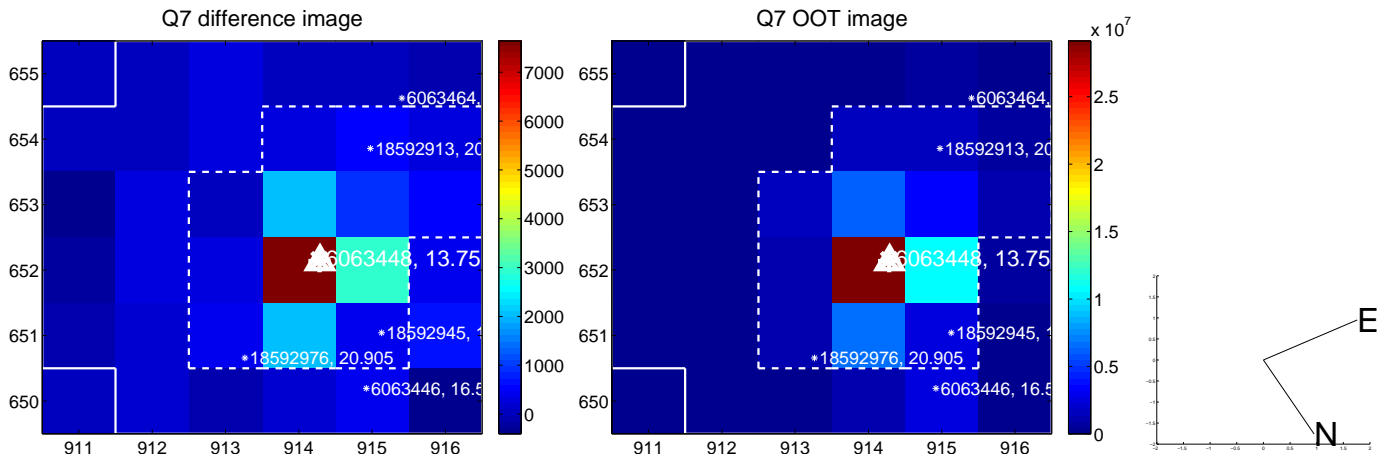
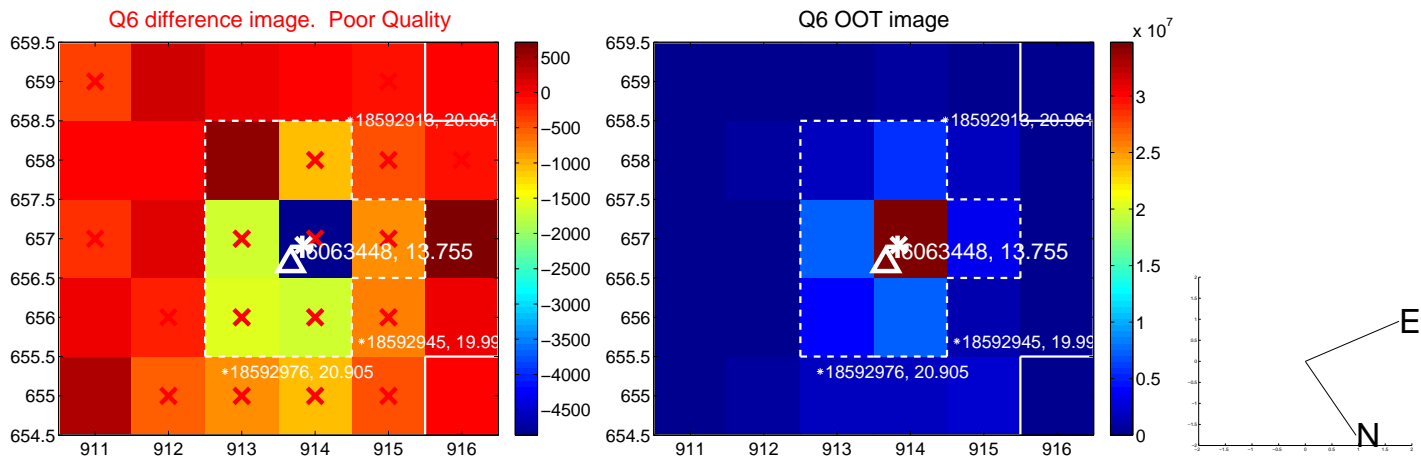
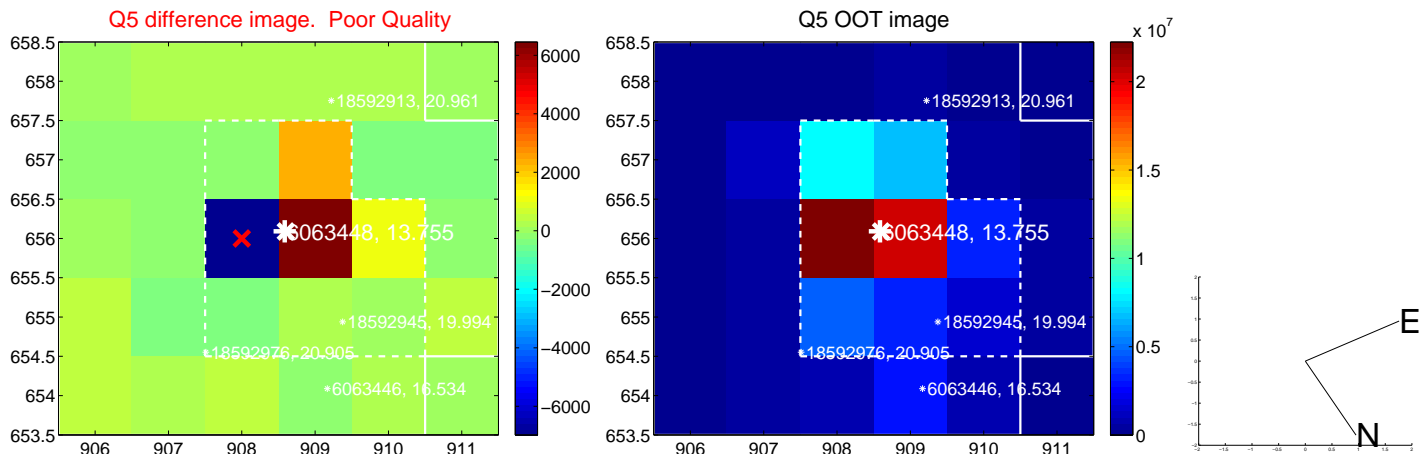


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

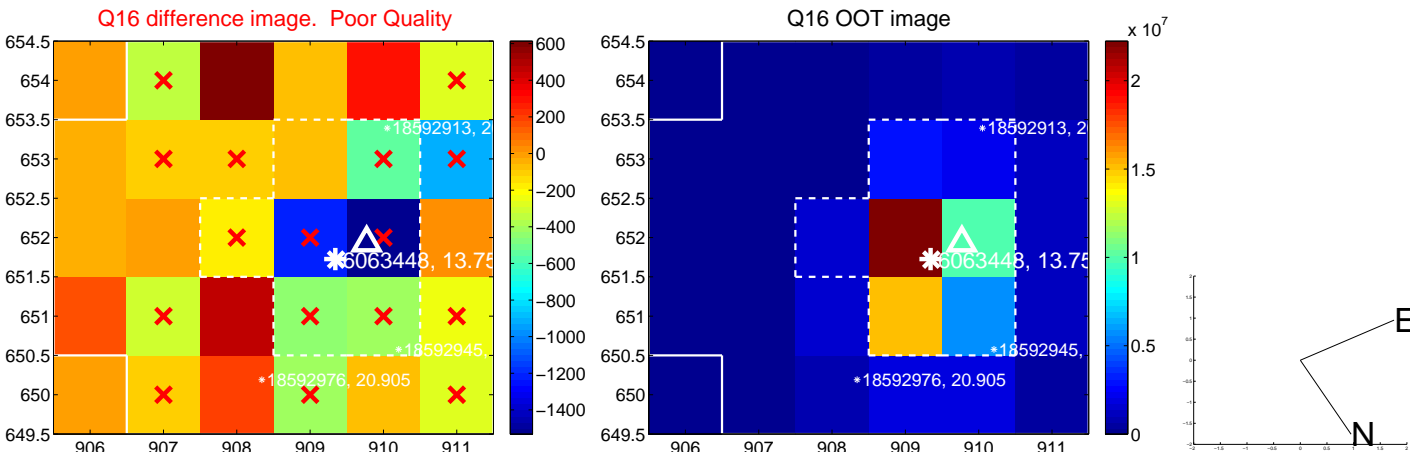
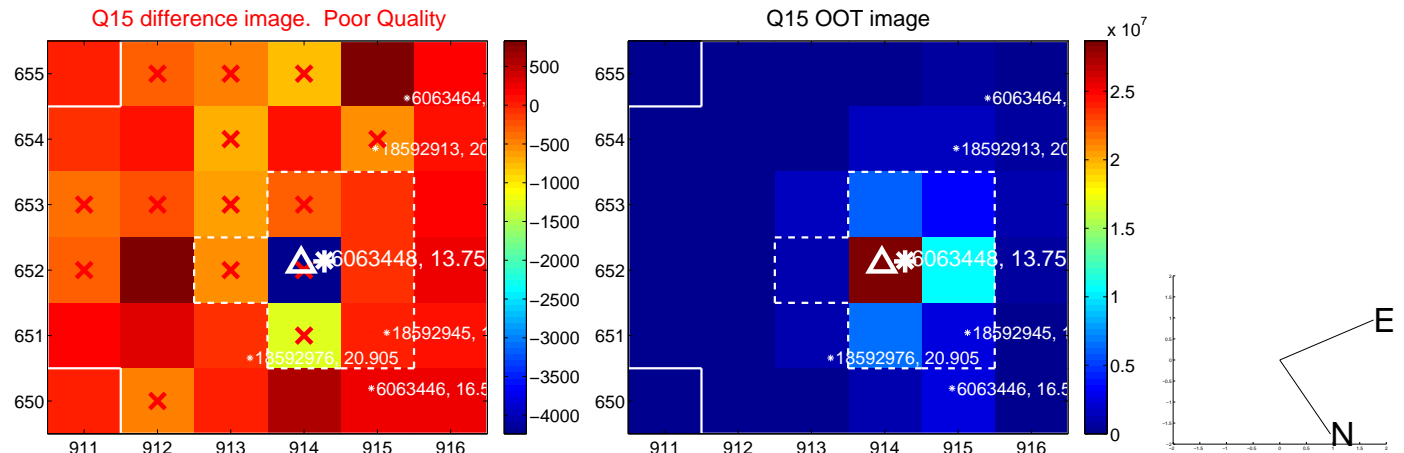
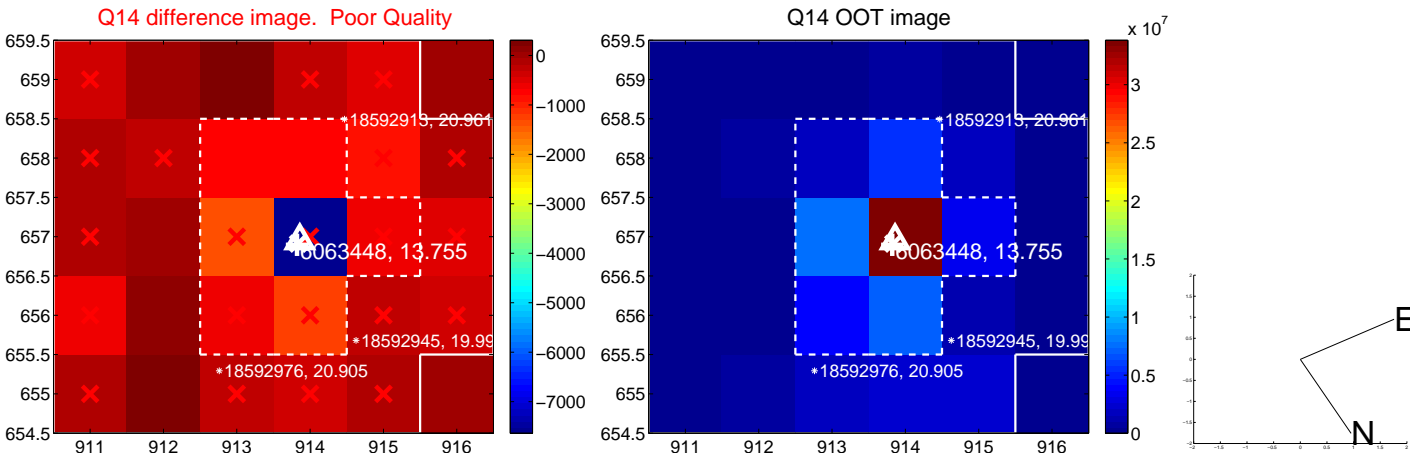
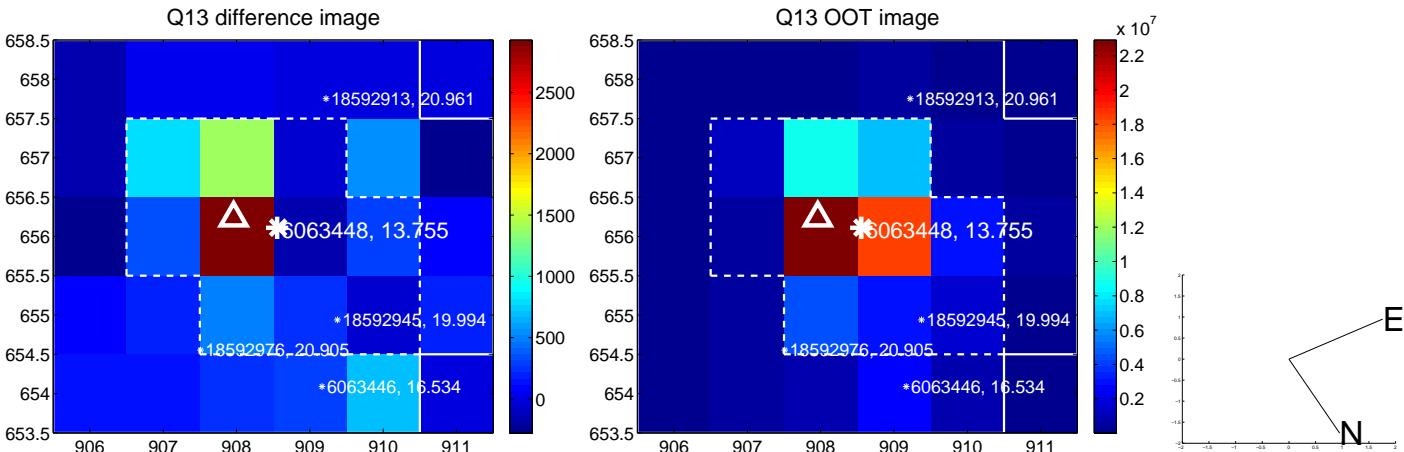
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



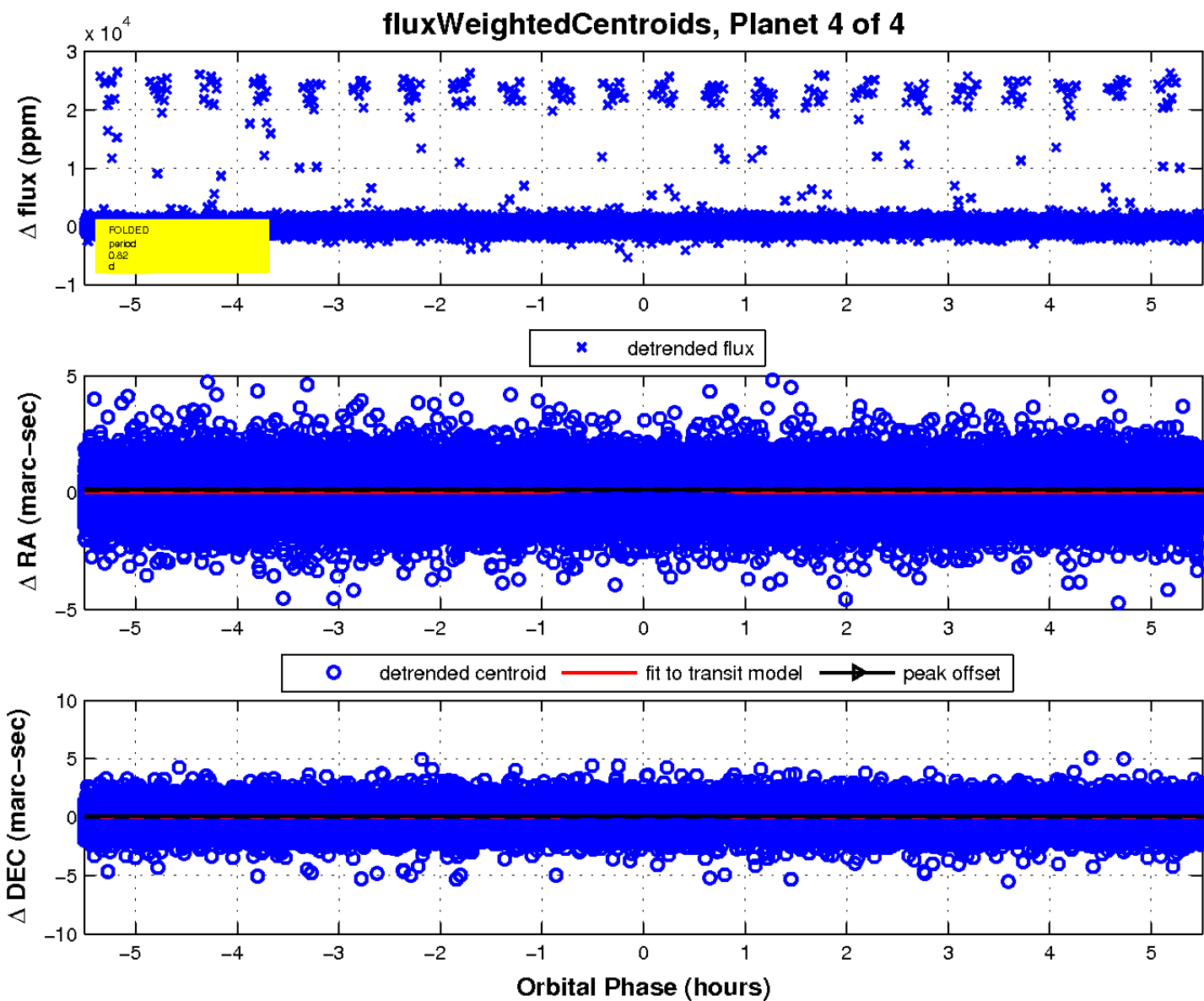
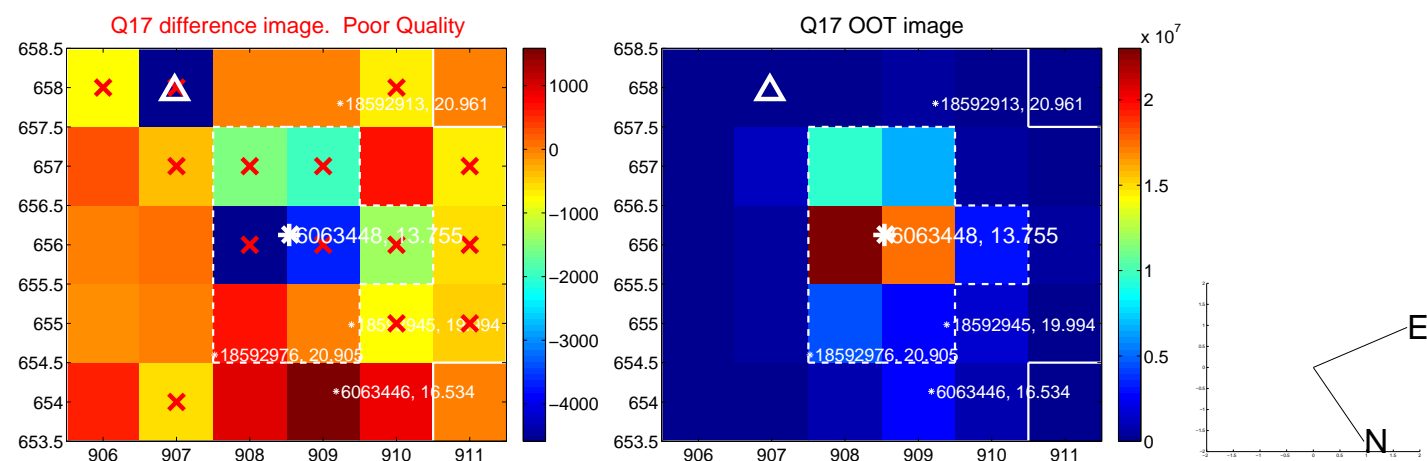
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

