

KIC 009426817

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})
009426817-01	OBS	No	0.986014	132.536824	10.1	5.996	8.6	4.6	1.11	6365	0.36	4835.70
009426817-02	OBS	No	301.814760	185.111865	334.2	3.390	8.4	8.4	1.11	6365	2.10	2.34
009426817-03	OBS	No	117.828791	168.049531	259.6	2.250	7.8	9.1	1.11	6365	1.92	8.22
009426817-04	OBS	No	213.490075	295.640419	306.9	3.951	8.2	8.9	1.11	6365	2.25	3.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009426817-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009426817-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009426817-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009426817-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

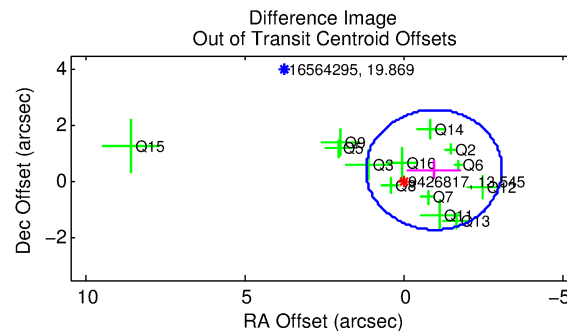
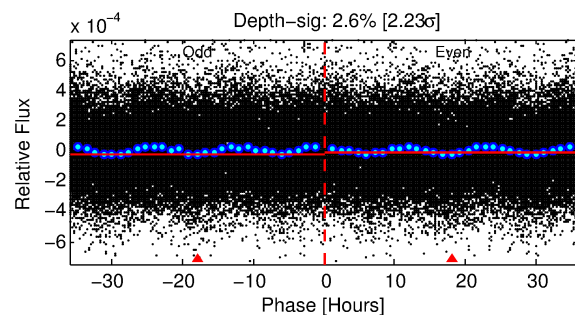
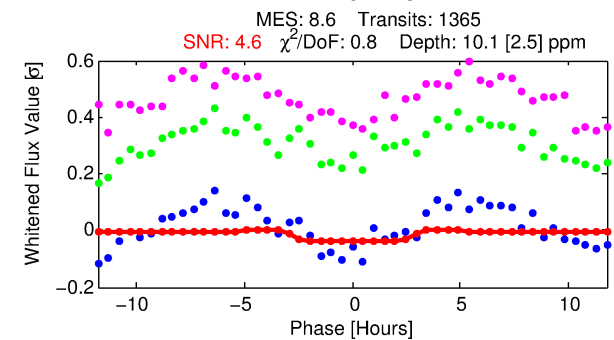
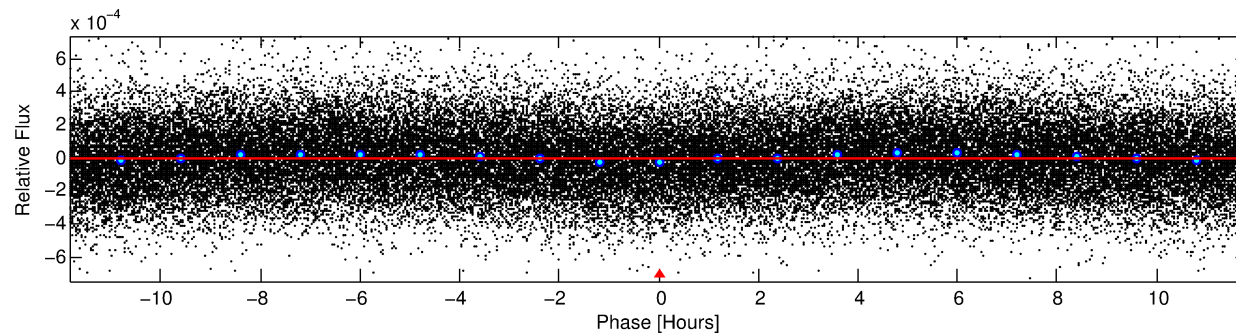
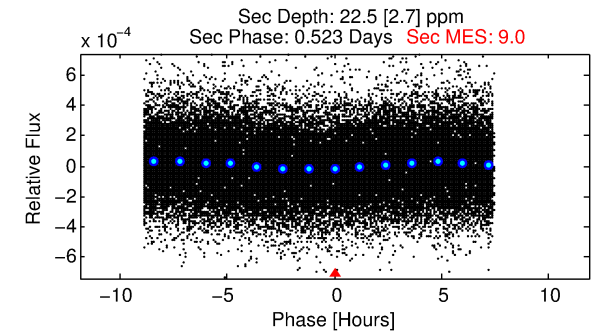
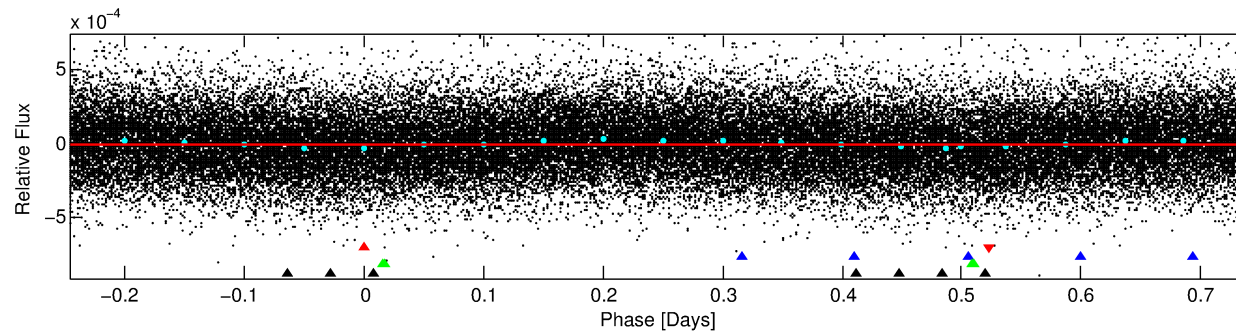
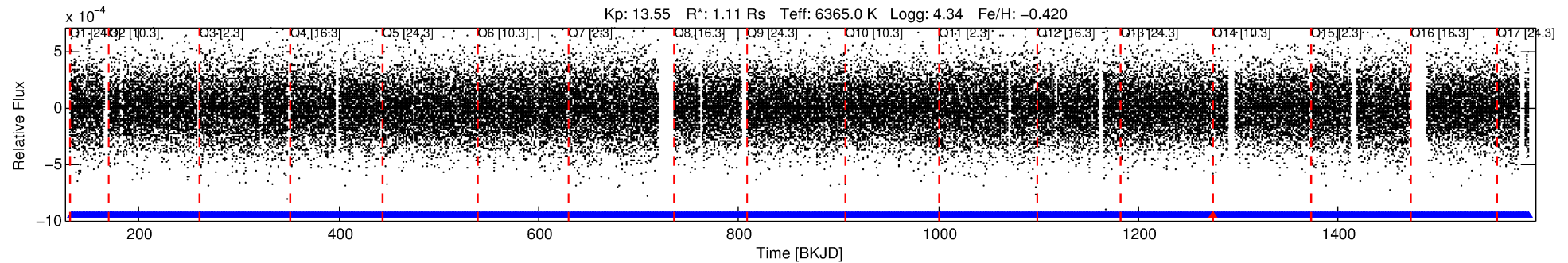
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009426817-01

No Significant Match Found

DV One-Page Summary

KIC: 9426817 Candidate: 1 of 4 Period: 0.986 d



DV Fit Results:

Period = 0.98601 [0.00003] d
Epoch = 132.5368 [0.0113] BKJD
Rp/R* = 0.0029 [0.0050]
a/R* = 1.38 [5.94]
b = 0.25 [34.65]
Seff = 4835.70 [1789.04]
Teq = 2126 [197] K
Rp = 0.36 [0.62] Re
a = 0.0194 [0.0047] AU
Ag = 36.39 [124.63] [0.28σ]
Teffp = 8075 [6883] K [0.86σ]

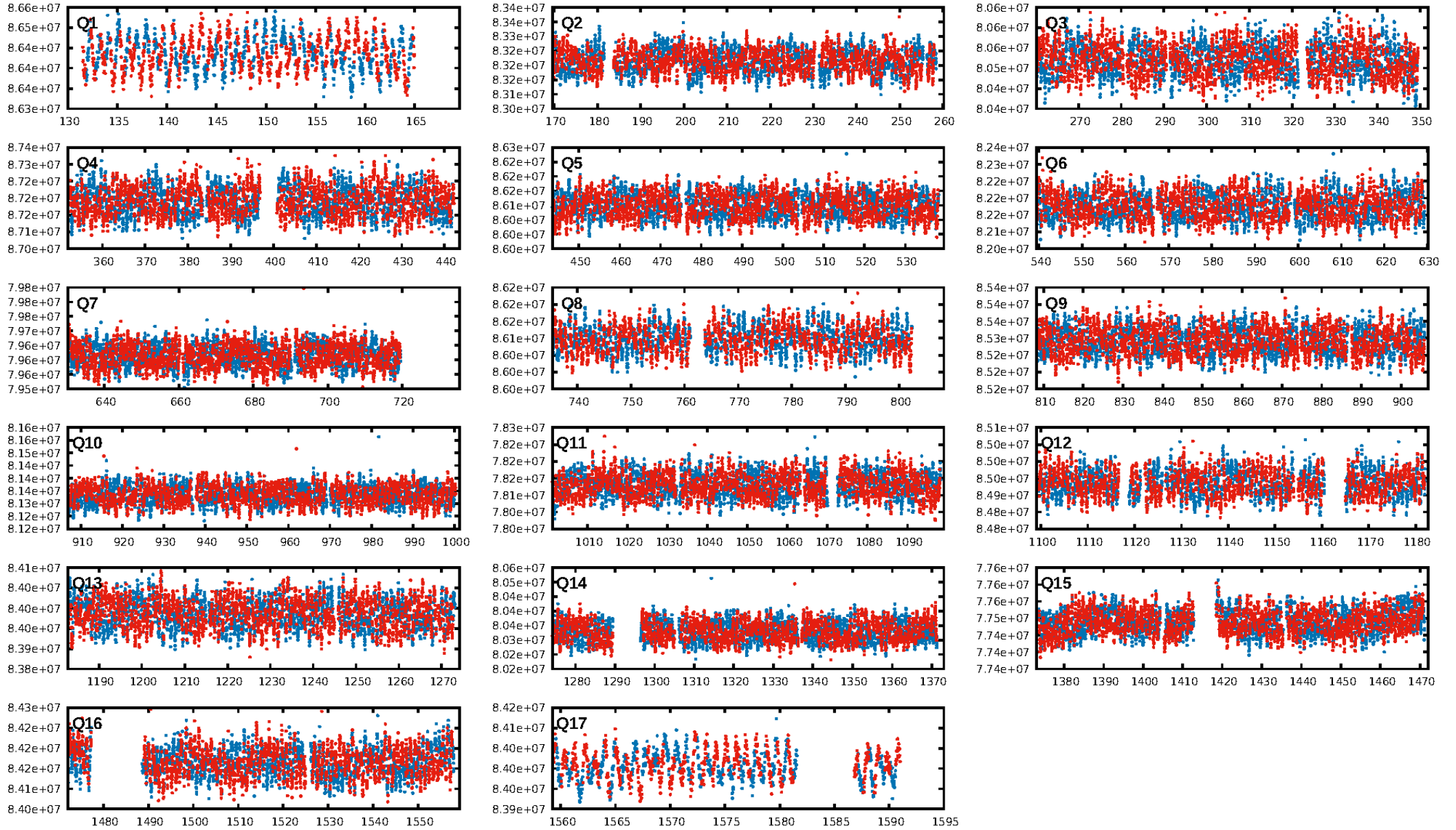
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [437.89σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.67e-10
RollingBand-fgt: 1.00 [1301/1302]
GhostDiagnostic-chr: 1.905
Centroid-sig: 11.2%
Centroid-so: 3.821 arcsec [1.42σ]
OotOffset-rm: 1.032 arcsec [1.45σ]
KicOffset-rm: 0.929 arcsec [1.50σ]
OotOffset-st: 3/4/3/3 [13]
KicOffset-st: 3/4/3/3 [13]
DiffImageQuality-fgm: 0.85 [11/13]
DiffImageOverlap-fno: 1.00 [17/17]

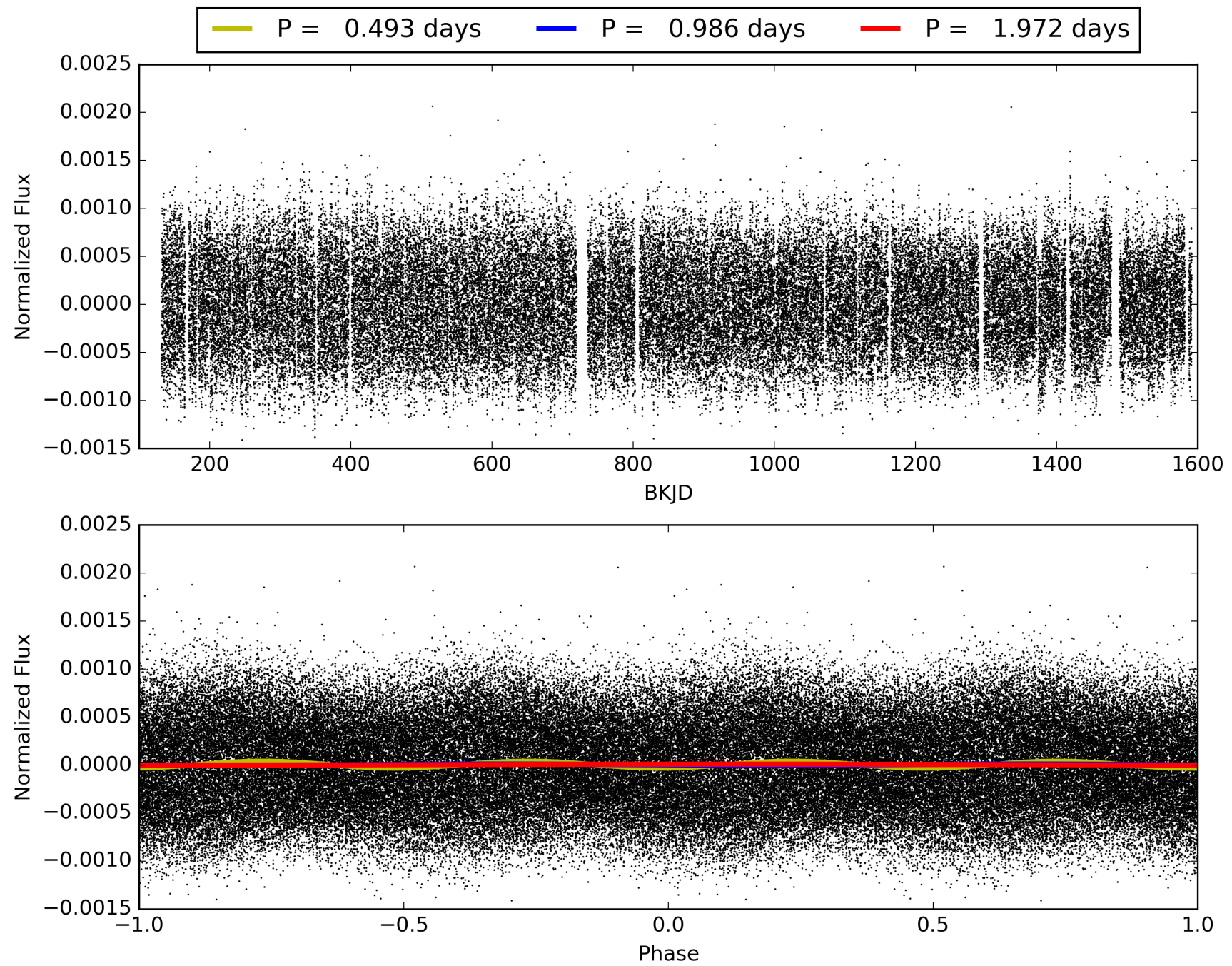
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009426817-01, PDC Light Curves

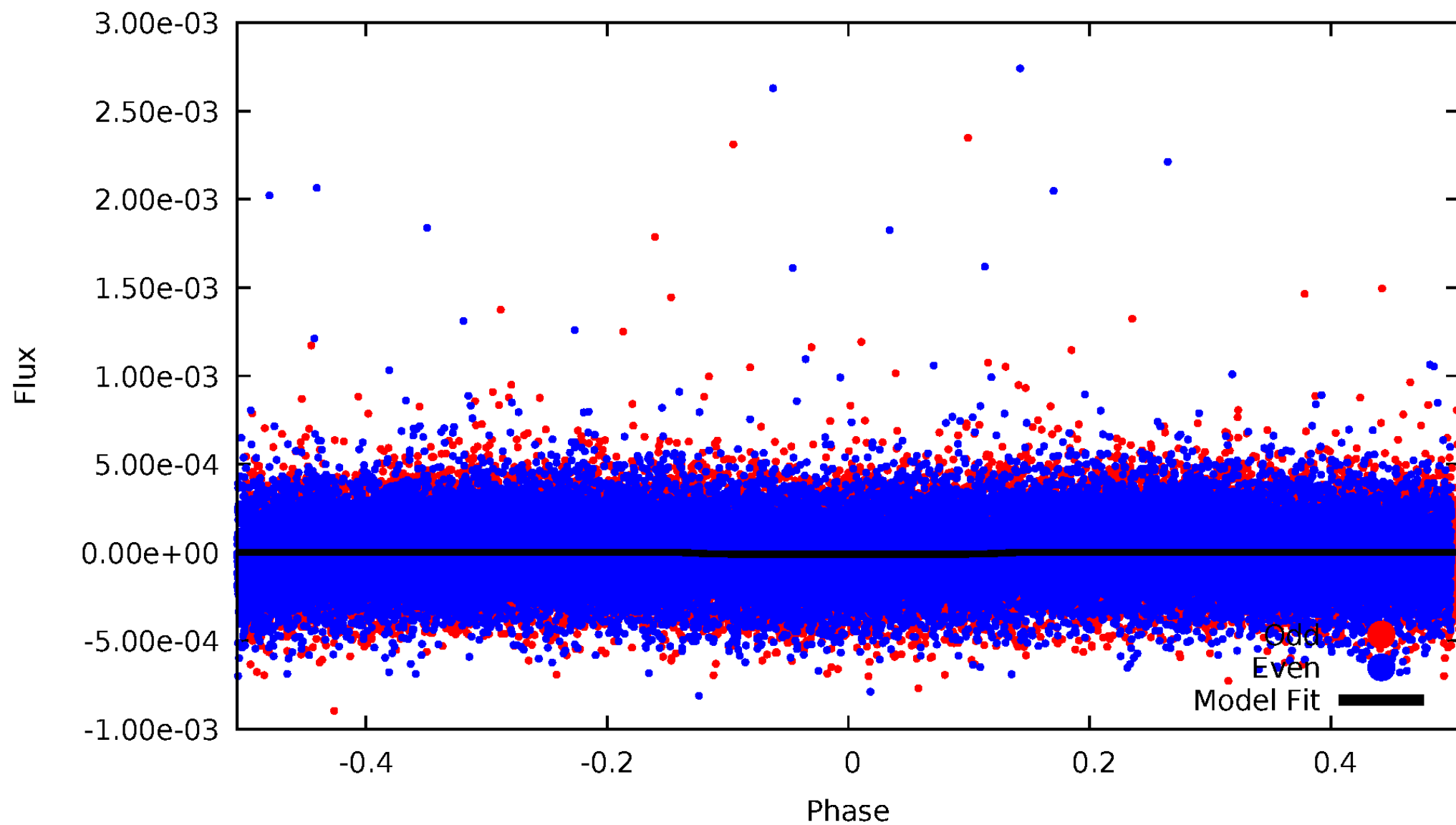


TCE 009426817-01



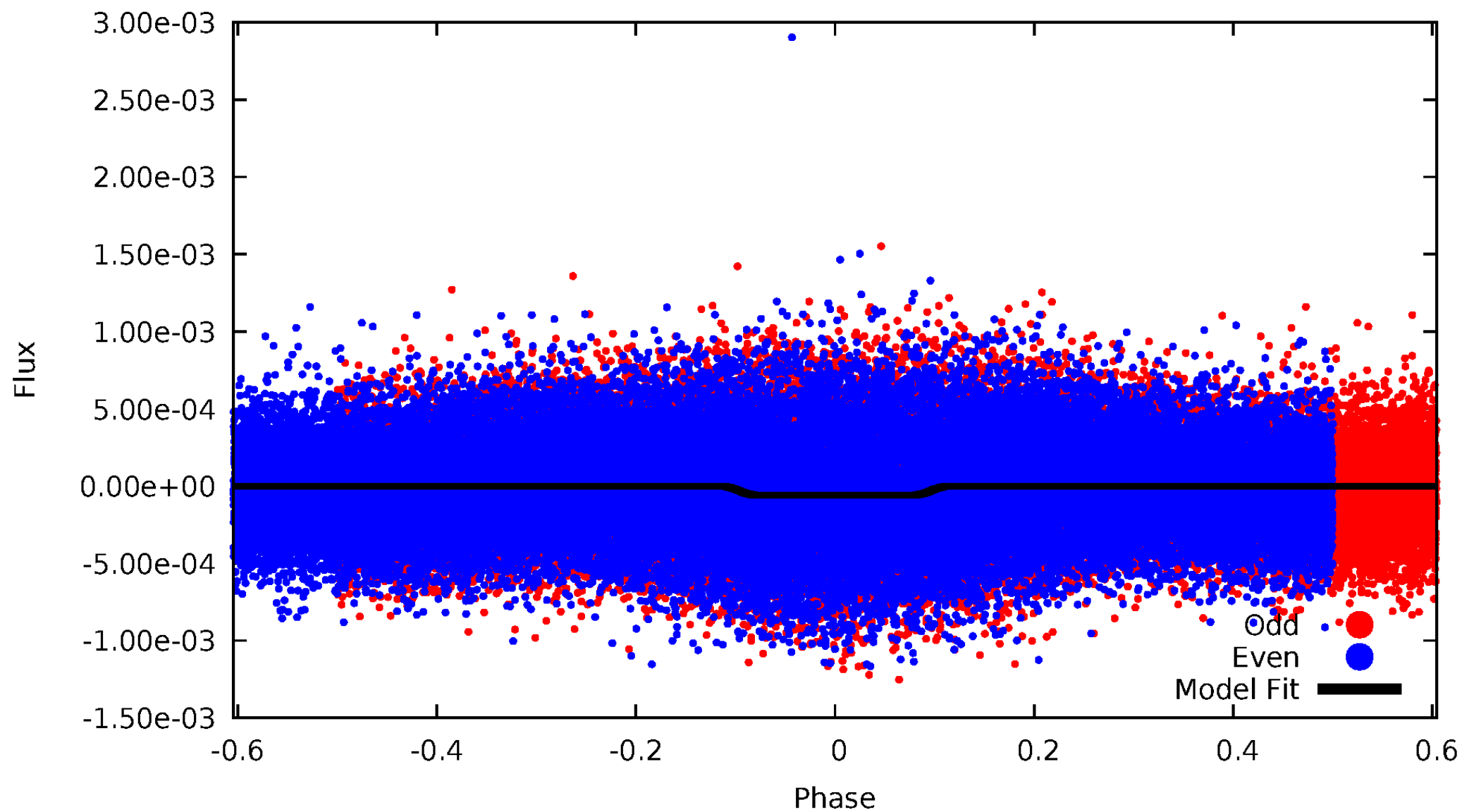
DV Odd/Even

TCE 009426817-01

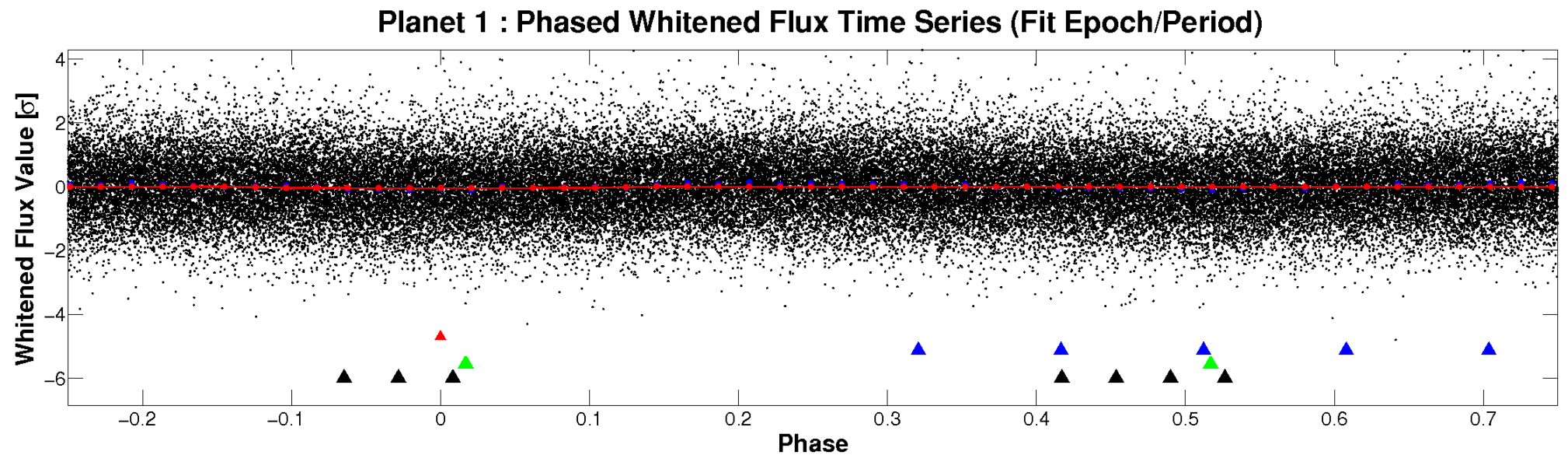
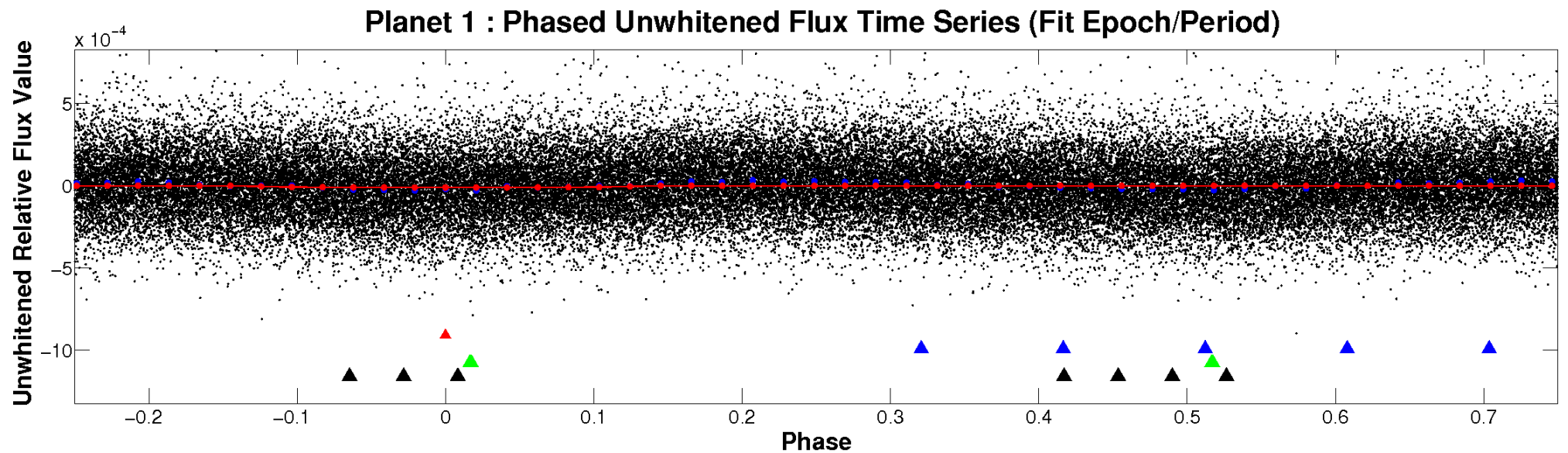


ALT Odd/Even

TCE 009426817-01

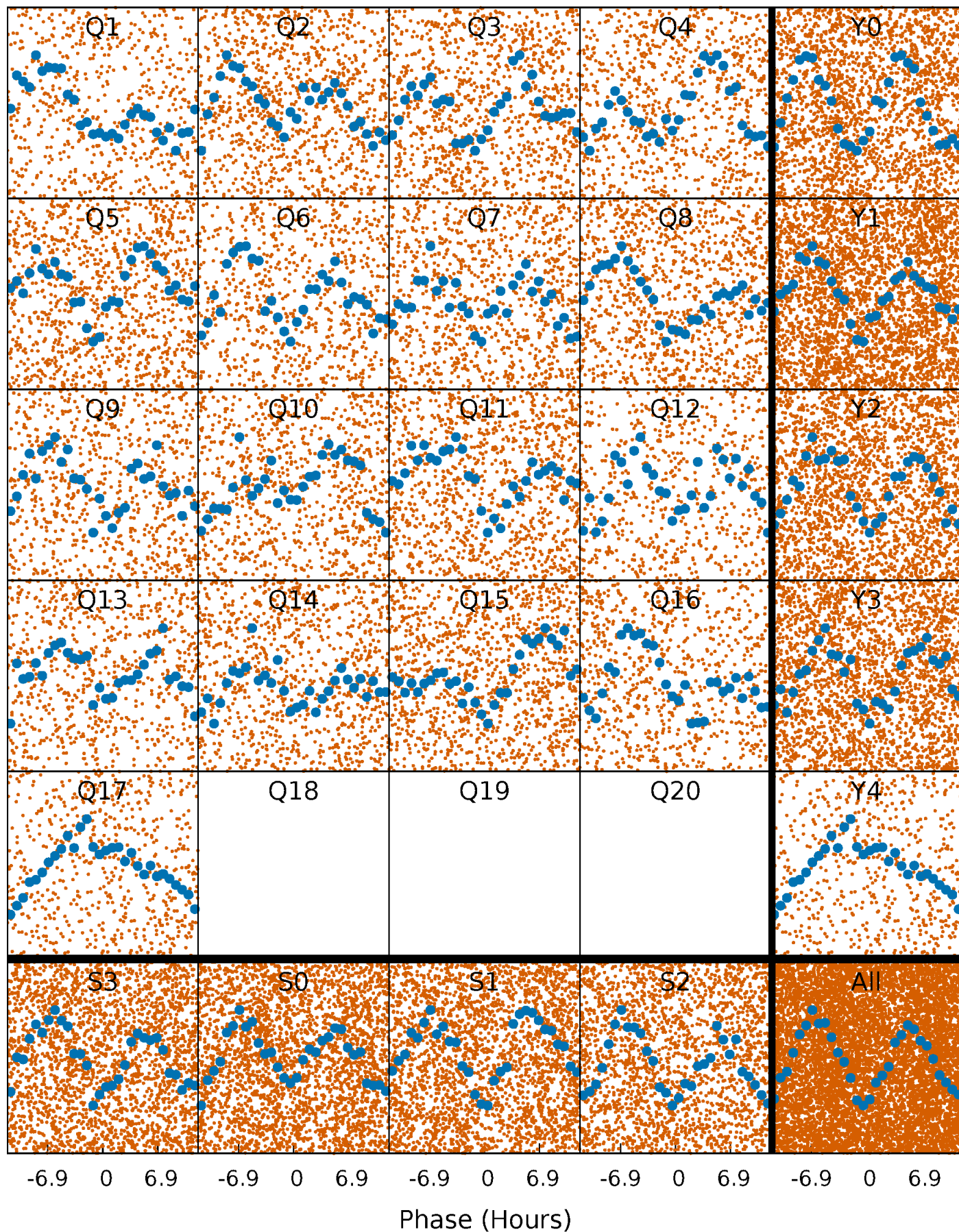


Non-Whitened Vs. Whitened Light Curve



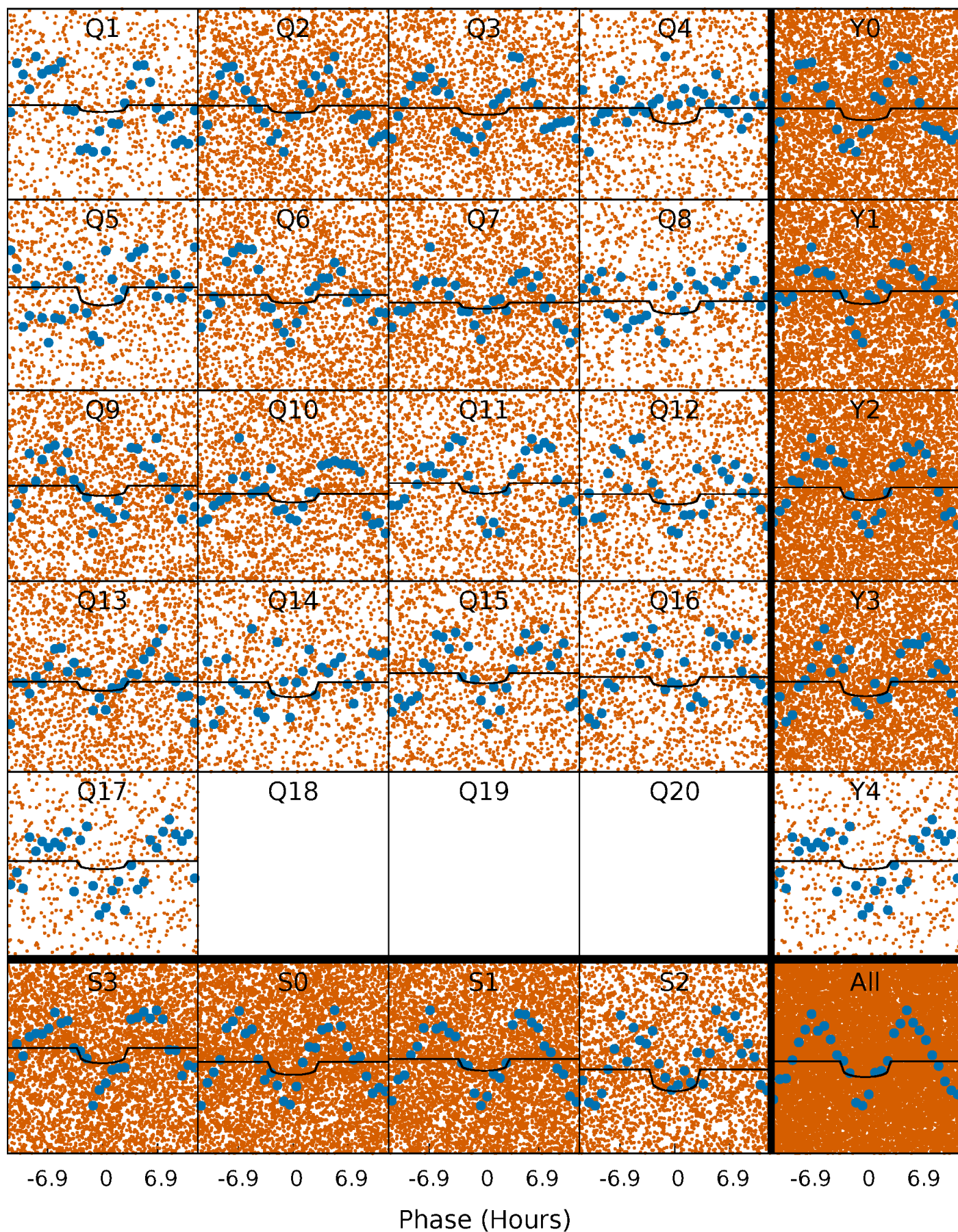
PDC Quarter-Phased Transit Curves

TCE 009426817-01 P= 0.986014 Days $T_0=132.536824$ (BKJD)



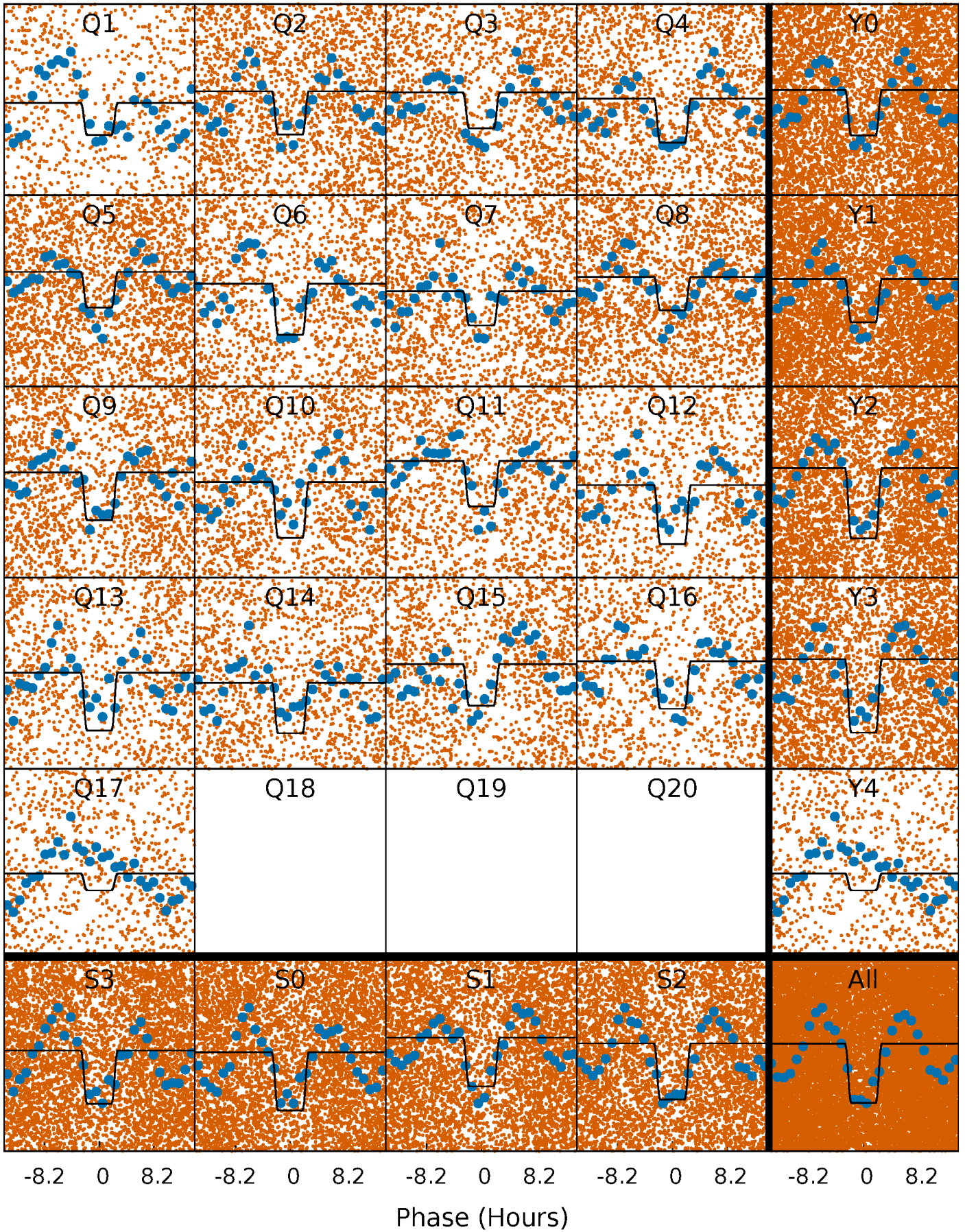
DV Quarter-Phased Transit Curves

TCE 009426817-01 P= 0.986014 Days $T_0=132.536824$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

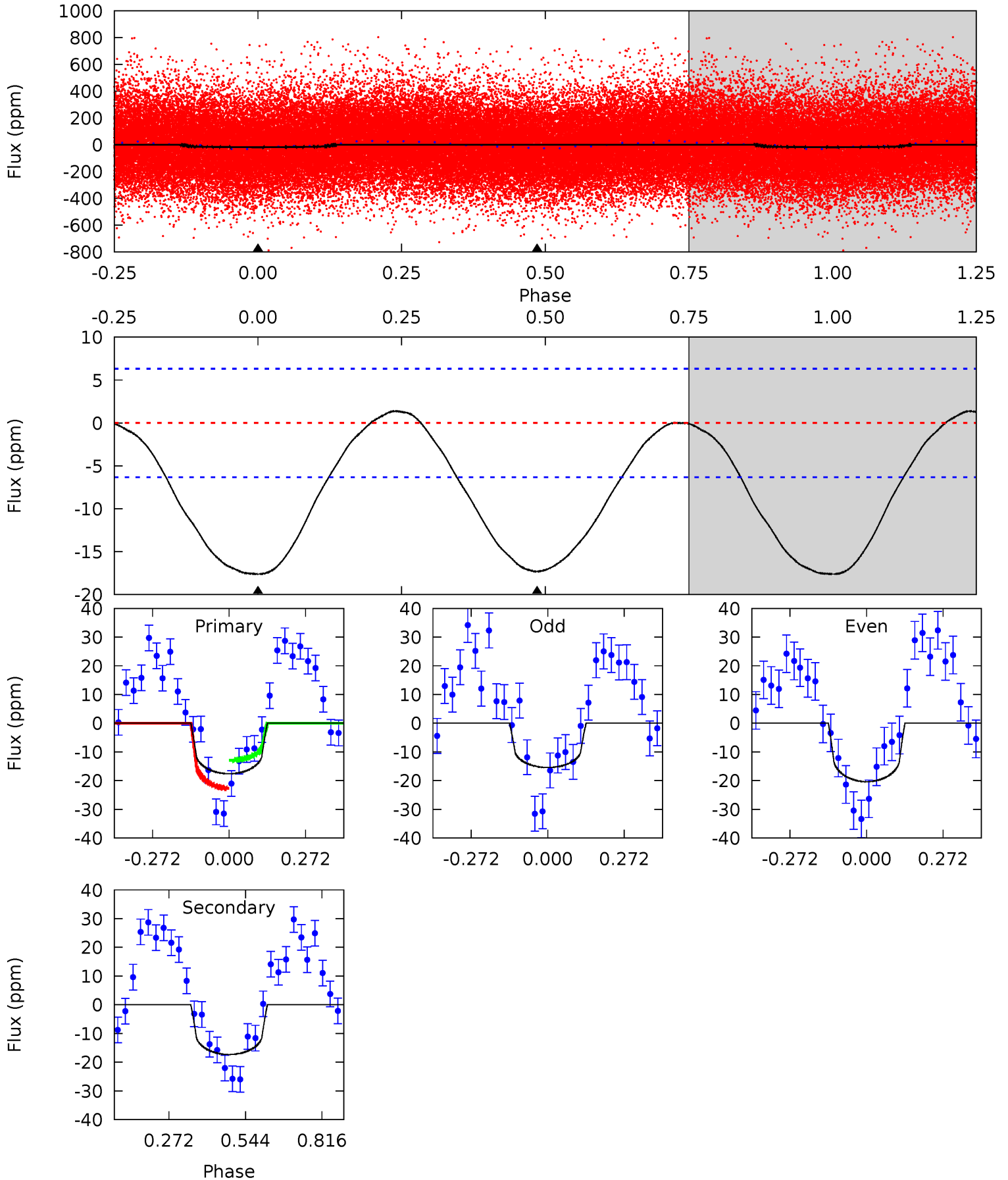
TCE 009426817-01 P= 0.986118 Days $T_0=132.458778$ (BKJD)



DV Model-Shift Uniqueness Test

009426817-01, P = 0.986014 Days, E = 130.564796 Days

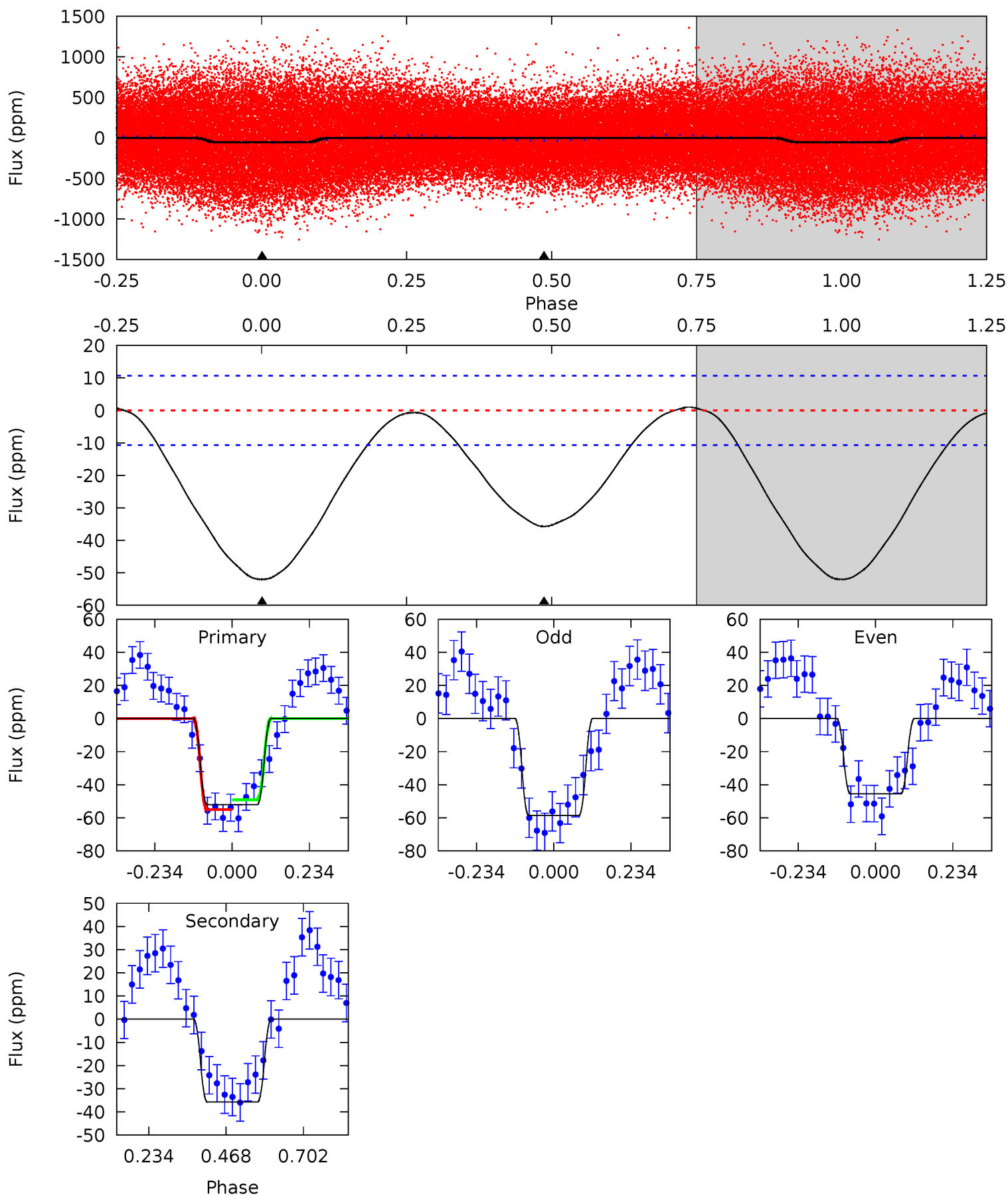
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	11.9	0	0	4.35	1.10	0.52	12.1	12.1	11.9	11.9	1.72	1.12	0.07	3.40



Alt Model-Shift Uniqueness Test

009426817-01, P = 0.986118 Days, E = 131.472660 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	14.7	0	0	4.38	1.19	0.41	21.3	21.3	14.7	14.7	2.66	0.76	0.02	1.21



Stellar Parameters For KIC 009426817

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6365^{+171}_{-209}	$4.345^{+0.108}_{-0.186}$	$-0.420^{+0.300}_{-0.300}$	$1.110^{+0.325}_{-0.175}$	$0.993^{+0.146}_{-0.110}$	$1.021^{+0.556}_{-0.485}$
	+3%/-3%	+2%/-4%	+71%/-71%	+29%/-16%	+15%/-11%	+55%/-48%
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 009426817-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-17 ± 1	$0.60^{+0.54}_{-0.39}$	3001^{+205}_{-170}	5908^{+5123}_{-1561}	10^{+68}_{-7}
Alt.	-36 ± 2	$1.02^{+0.66}_{-0.57}$	3001^{+221}_{-177}	5383^{+2948}_{-1025}	$7.145^{+28.436}_{-4.585}$

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

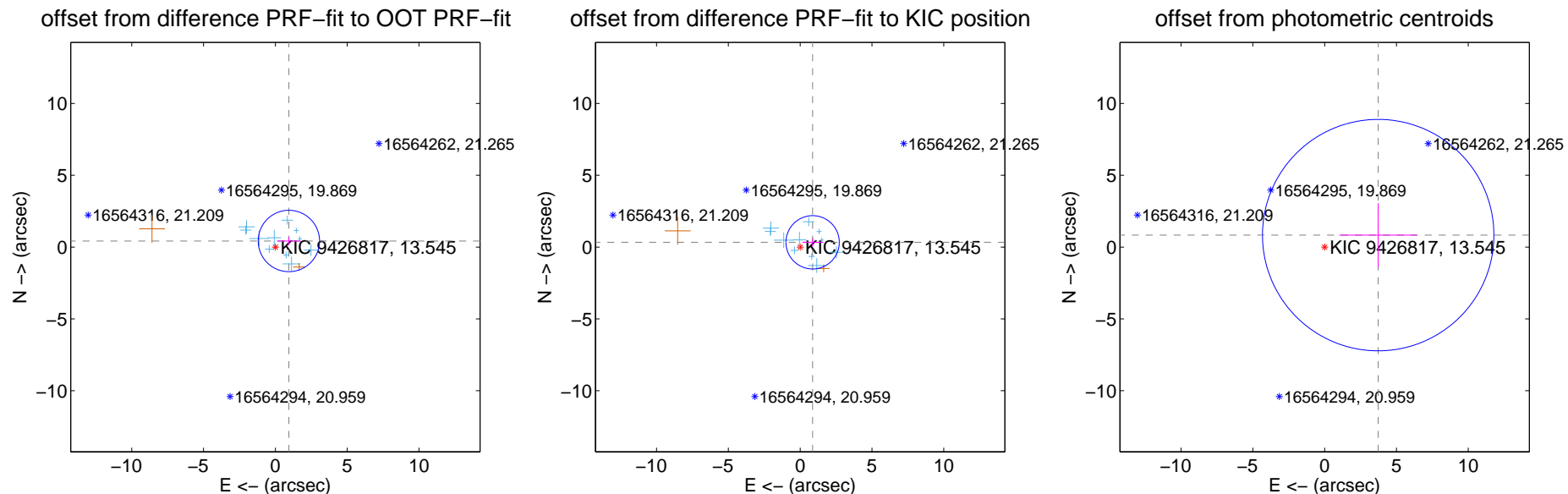
DV Centroid Data

Supplemental centroid analysis for 009426817-01. Kepler magnitude: 13.54. Transit SNR 4.63

There are 11 quarters with good PRF difference image offsets

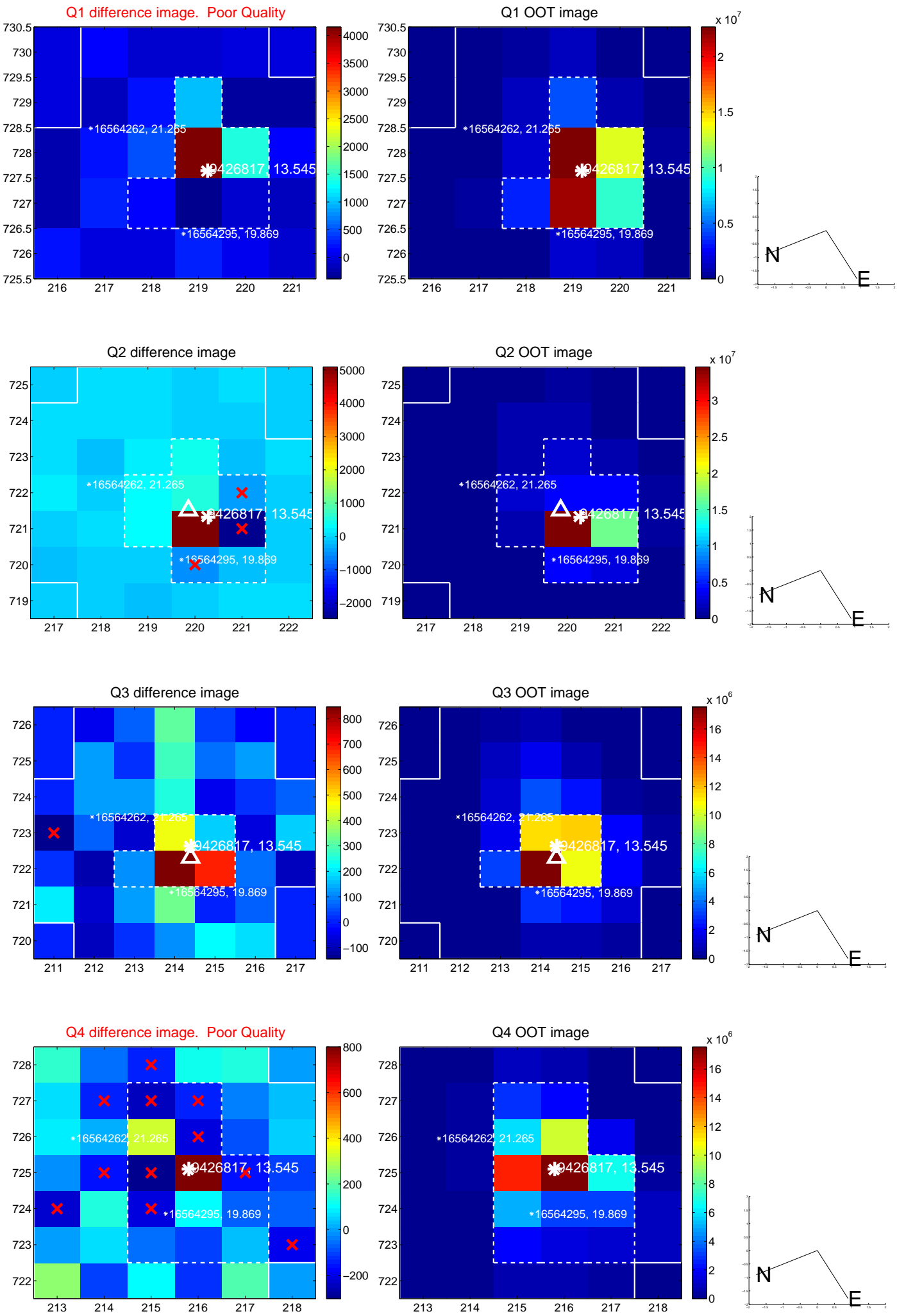
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.032 ± 0.712	1.45	-0.941 ± 0.827	0.425 ± 0.290
PRF-fit source offset from KIC position	0.929 ± 0.619	1.50	-0.868 ± 0.710	0.332 ± 0.292
photometric centroid source offset	3.82 ± 2.69	1.42	-3.73 ± 2.71	0.83 ± 2.22

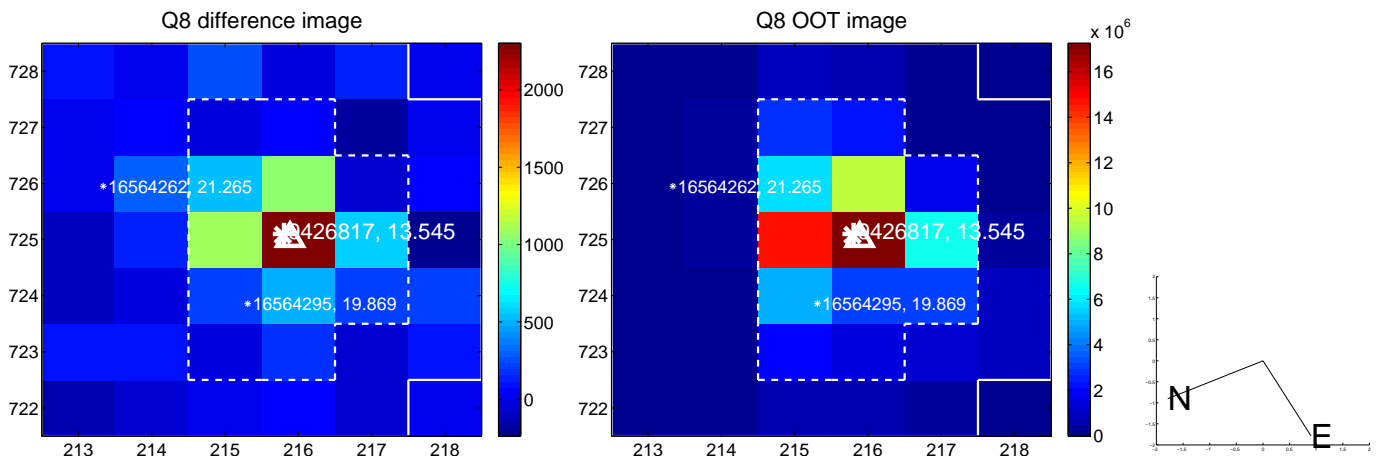
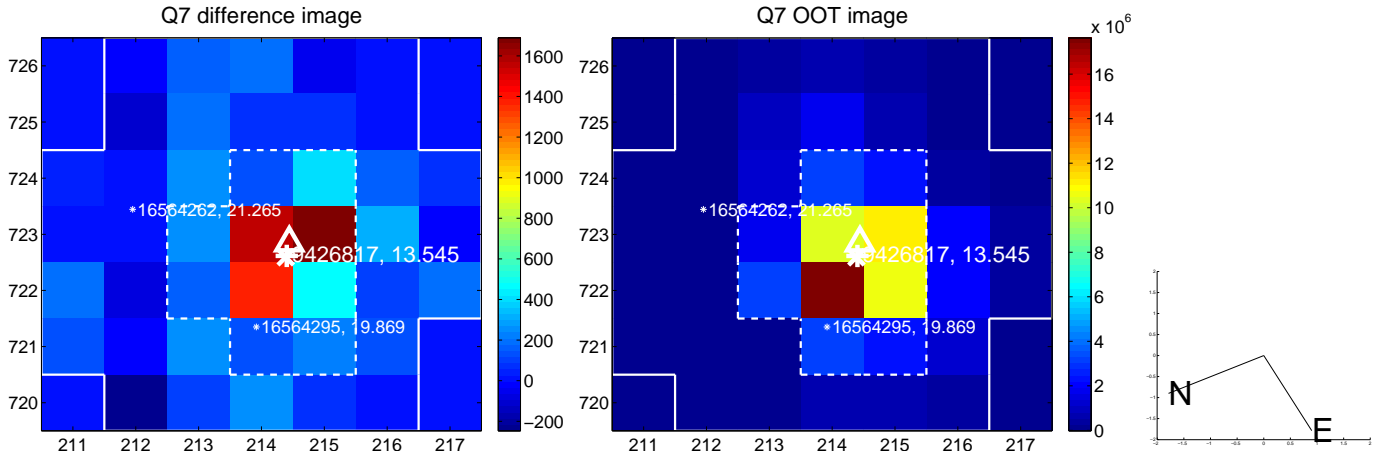
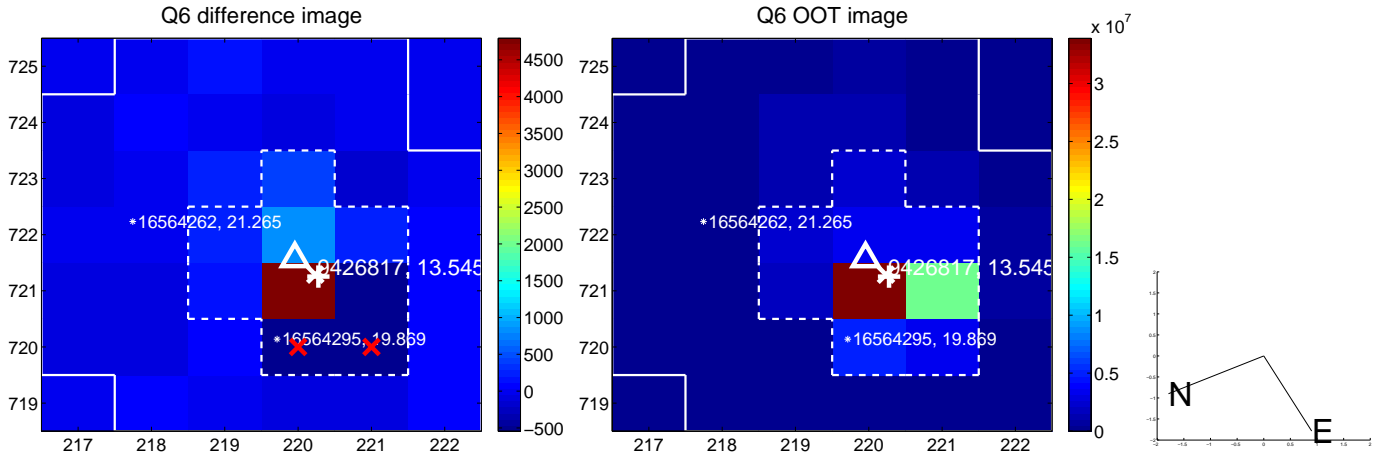
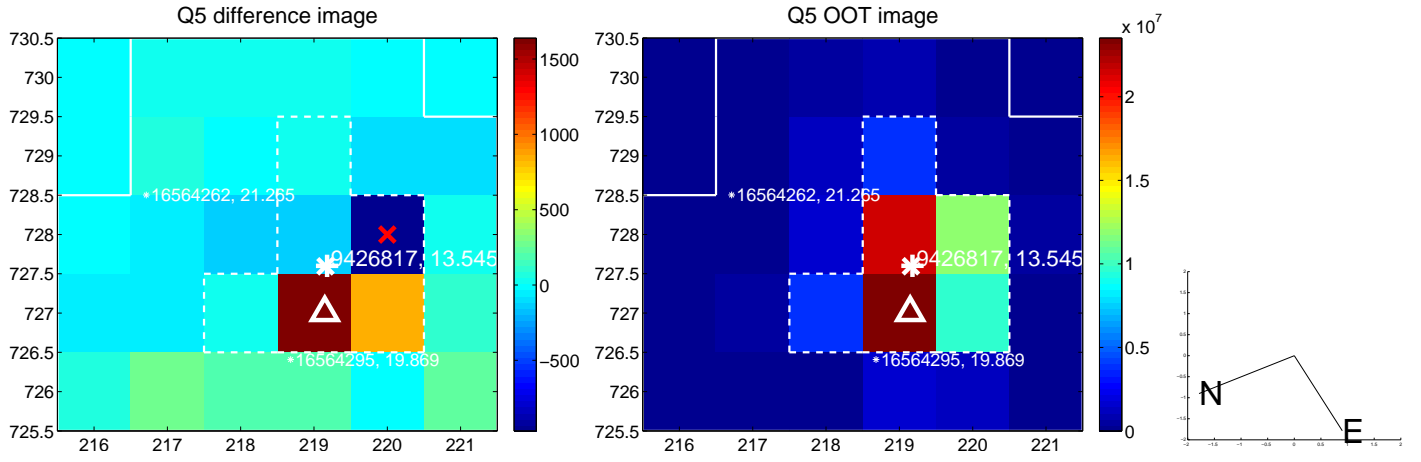


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

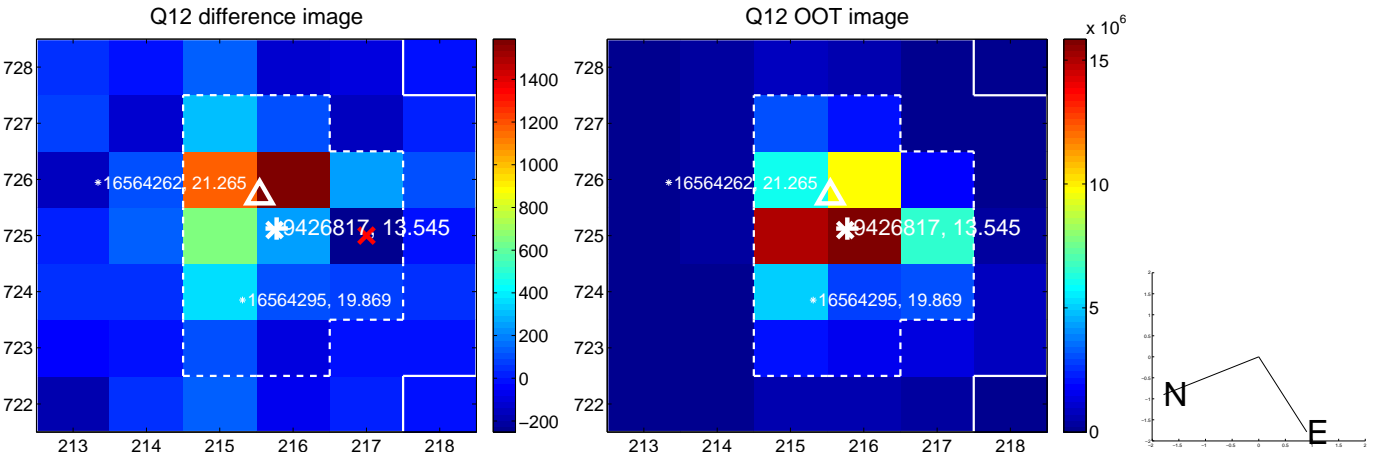
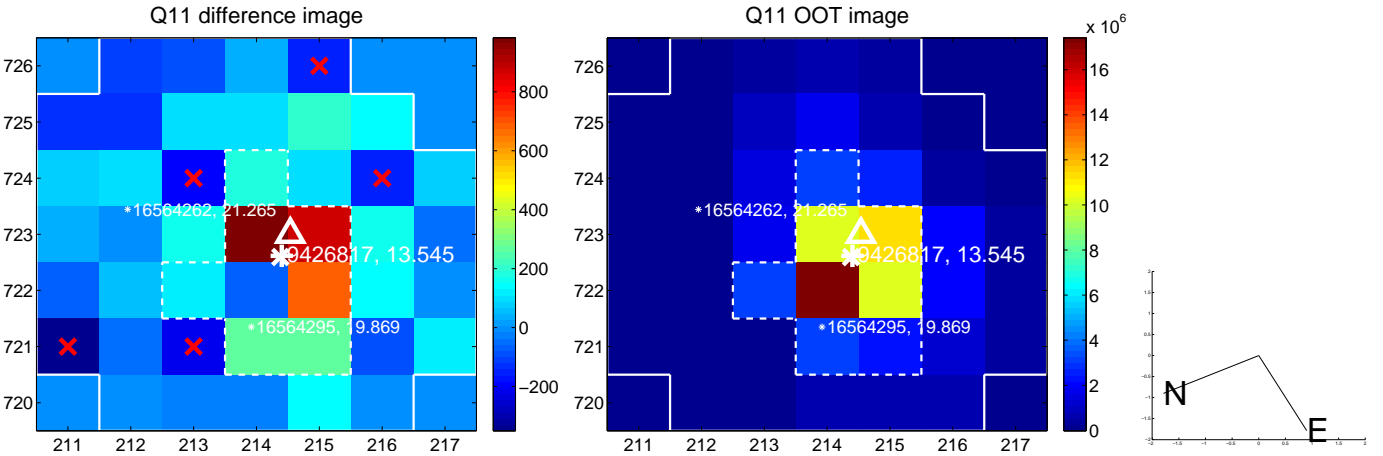
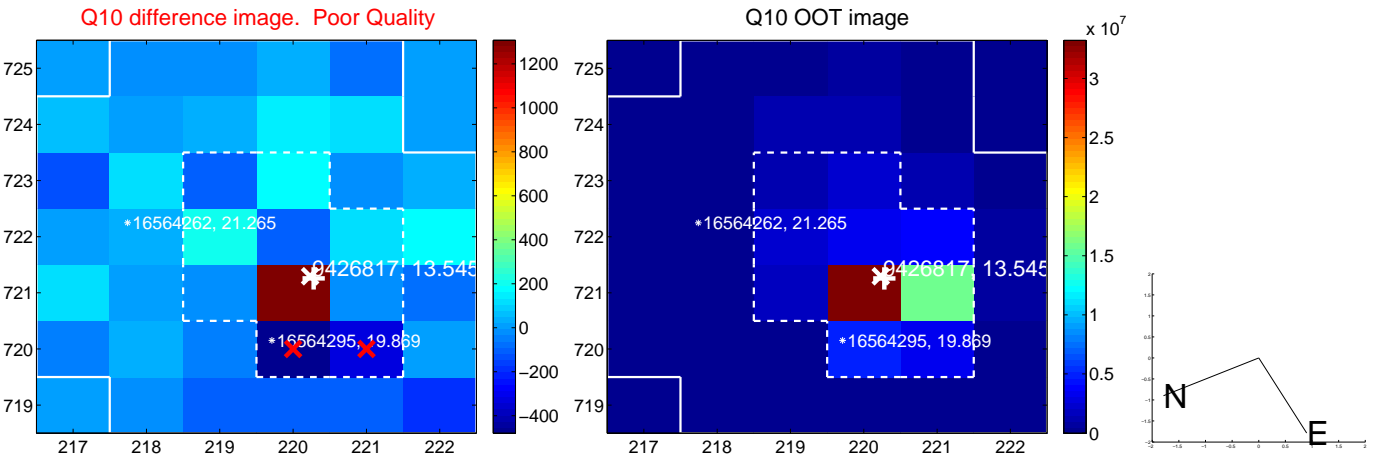
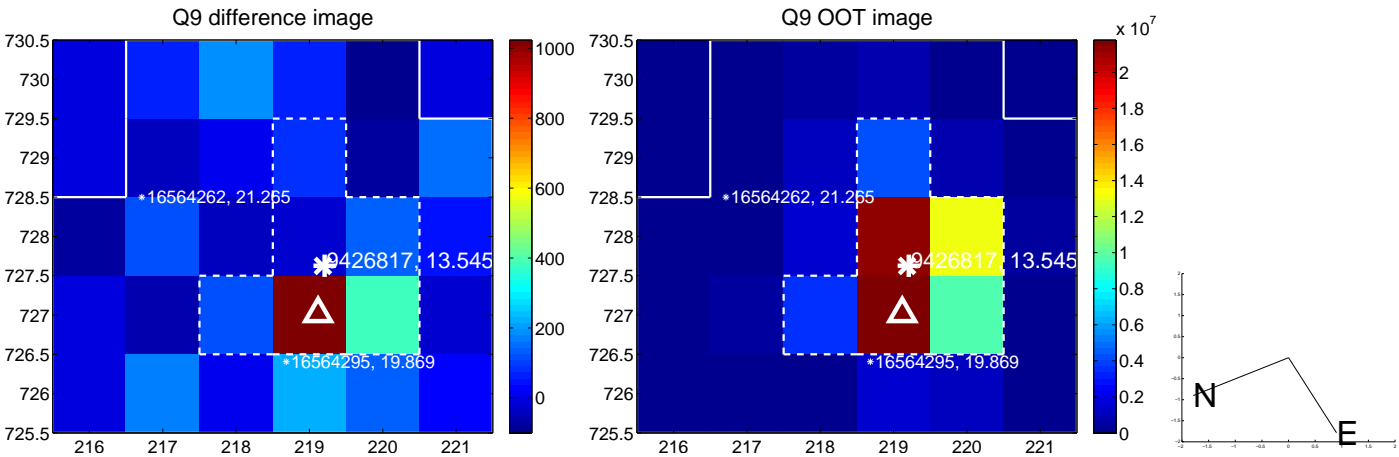
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



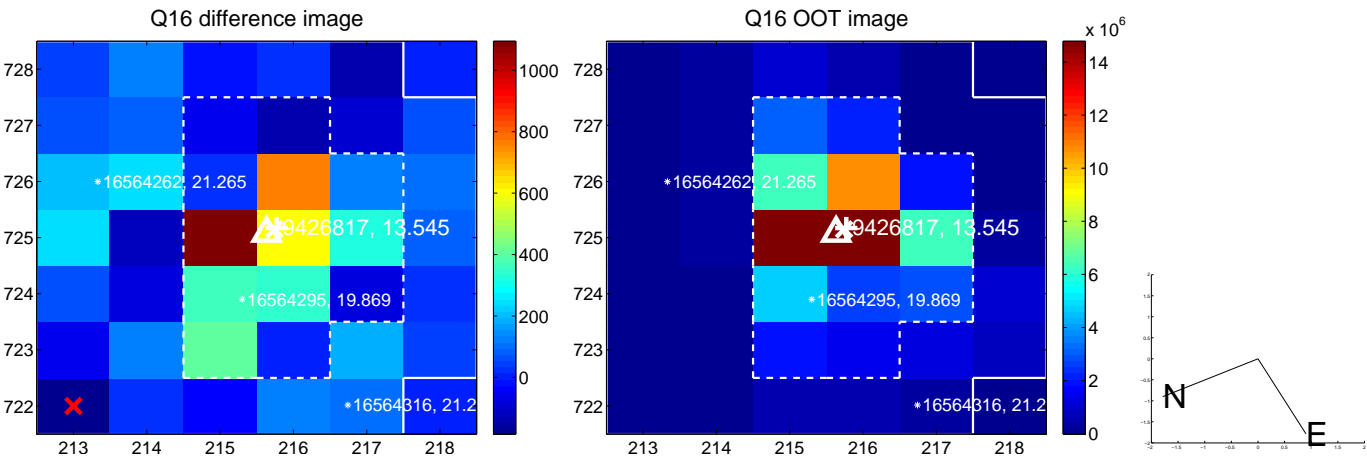
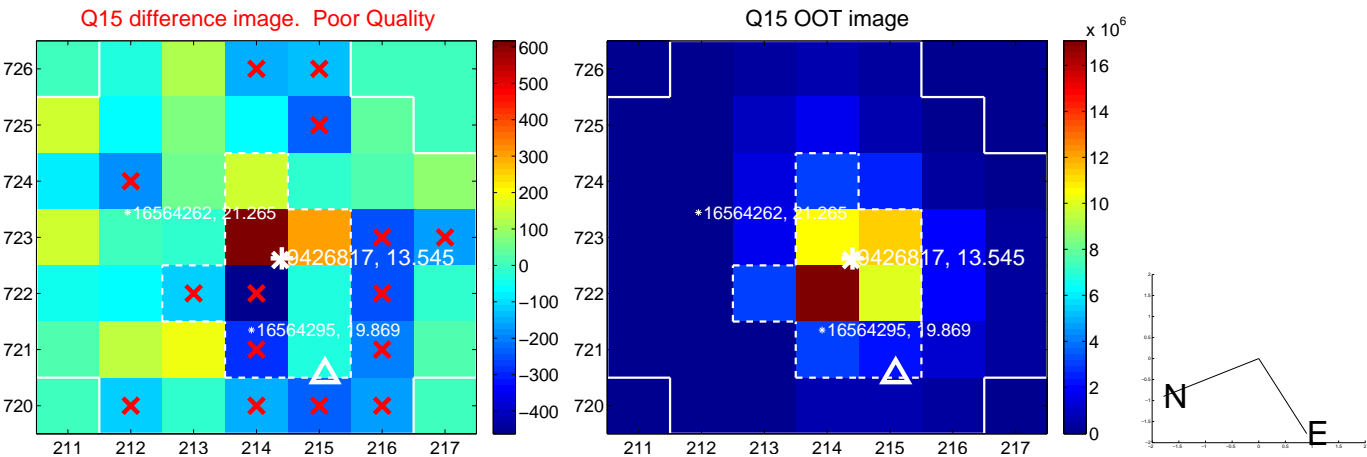
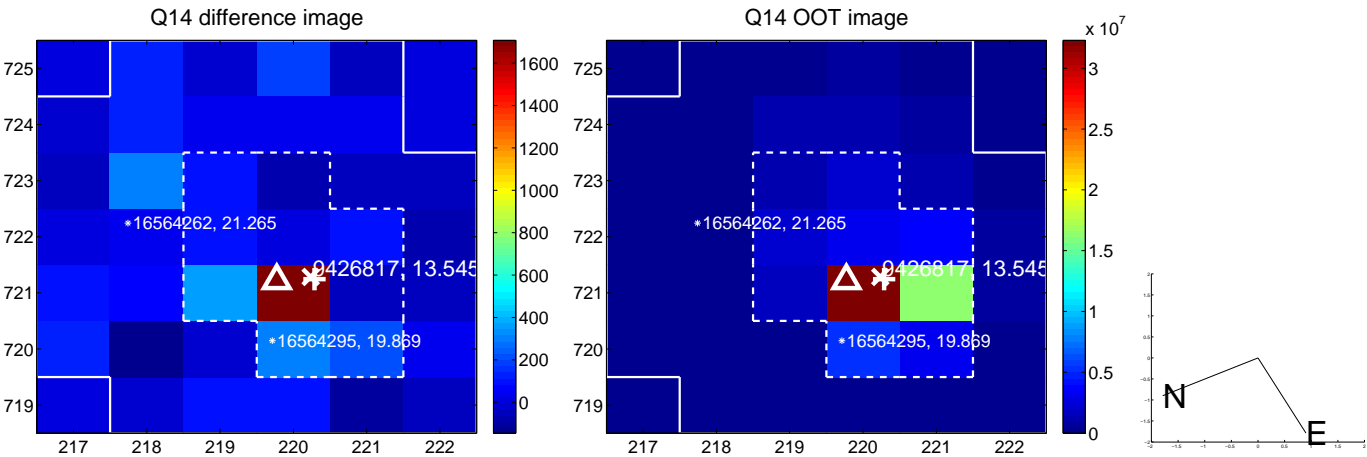
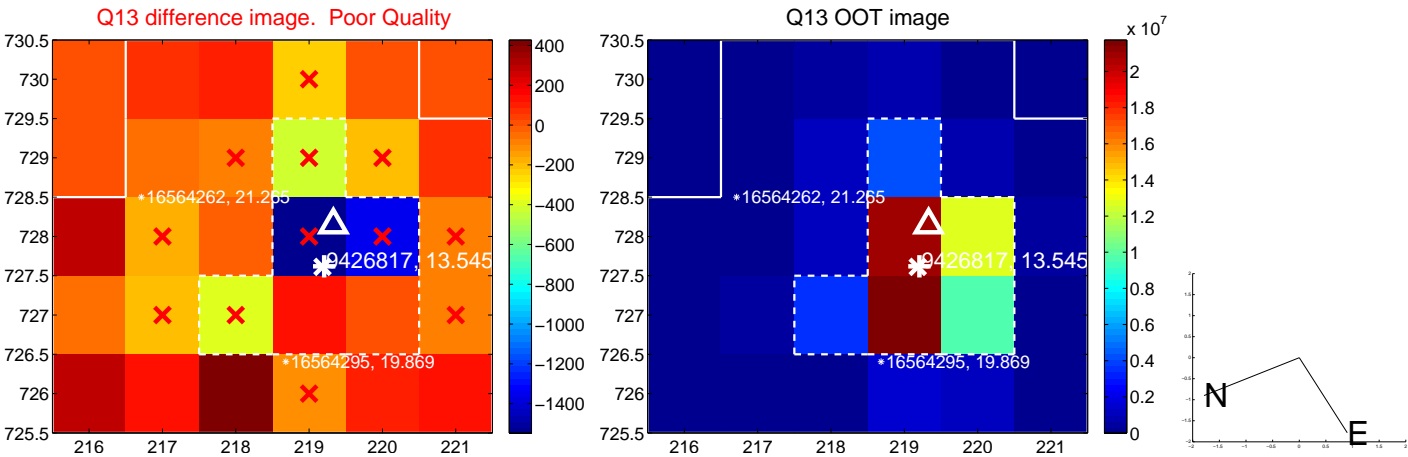
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



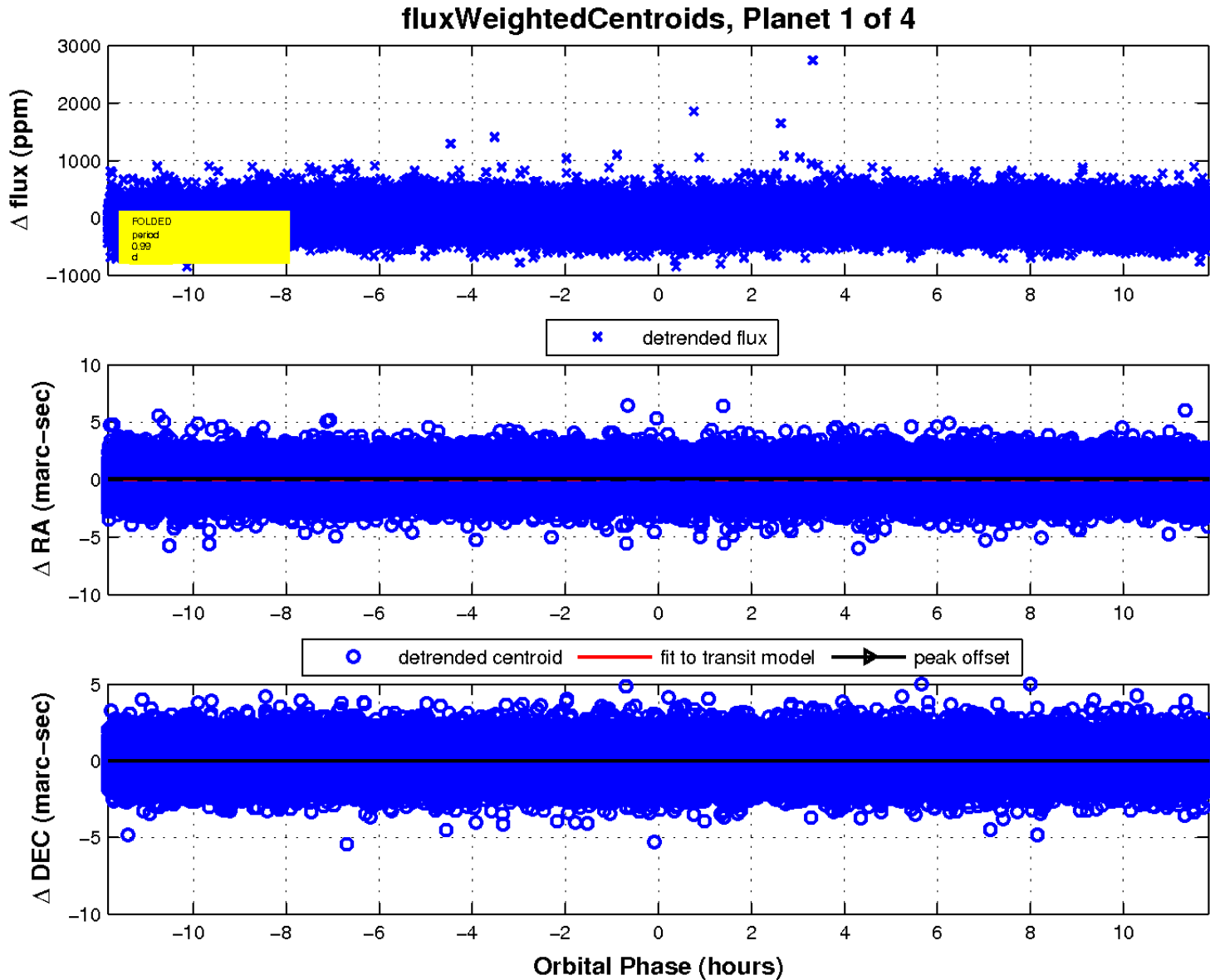
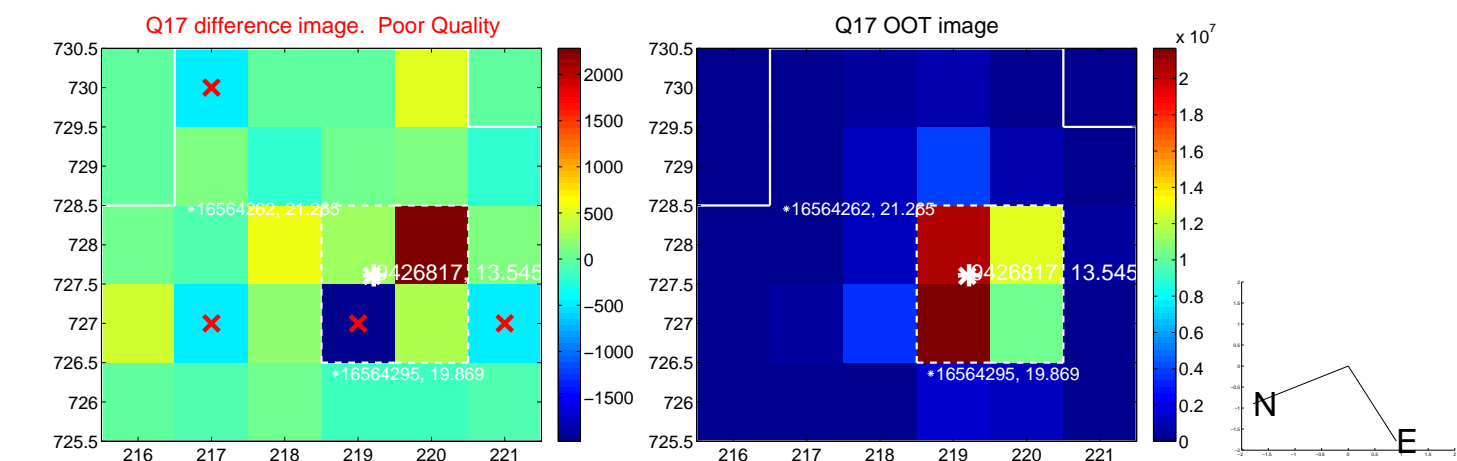
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

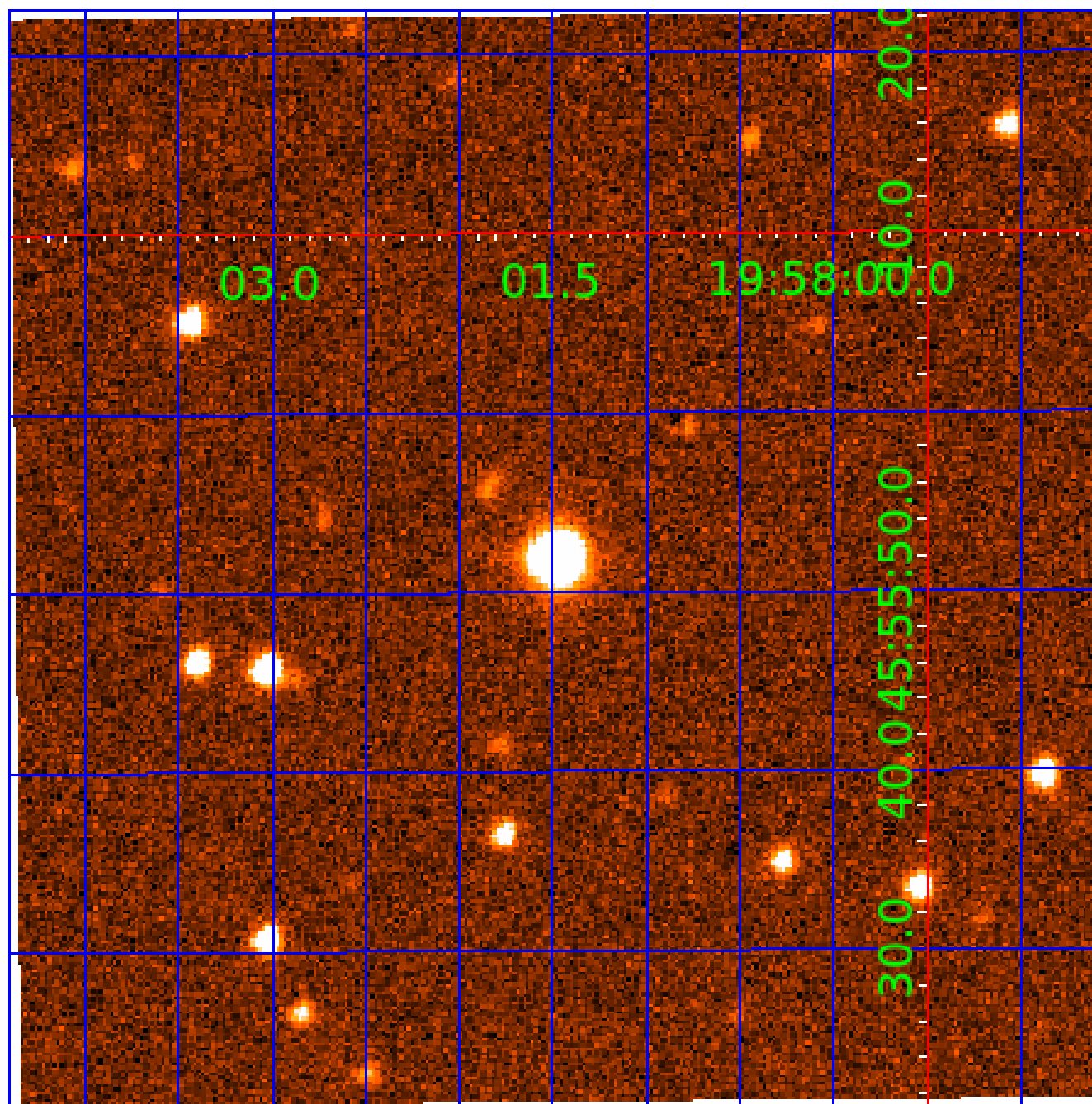


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009426817

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})
009426817-01	OBS	No	0.986014	132.536824	10.1	5.996	8.6	4.6	1.11	6365	0.36	4835.70
009426817-02	OBS	No	301.814760	185.111865	334.2	3.390	8.4	8.4	1.11	6365	2.10	2.34
009426817-03	OBS	No	117.828791	168.049531	259.6	2.250	7.8	9.1	1.11	6365	1.92	8.22
009426817-04	OBS	No	213.490075	295.640419	306.9	3.951	8.2	8.9	1.11	6365	2.25	3.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009426817-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009426817-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009426817-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009426817-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

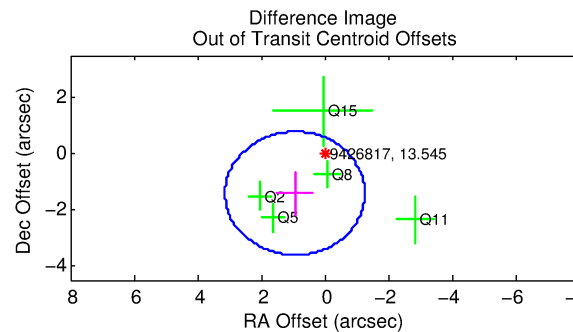
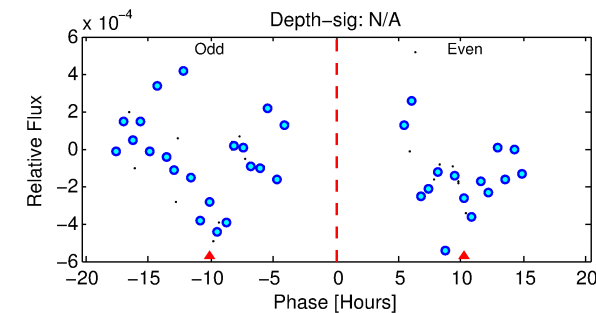
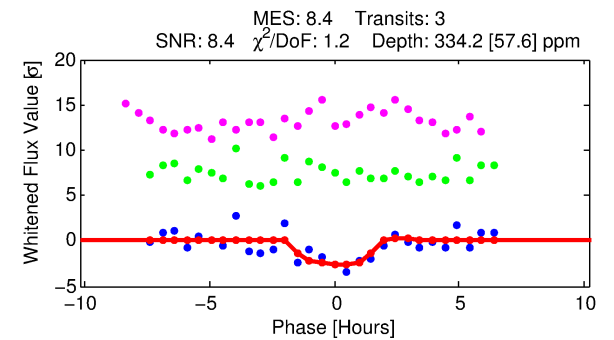
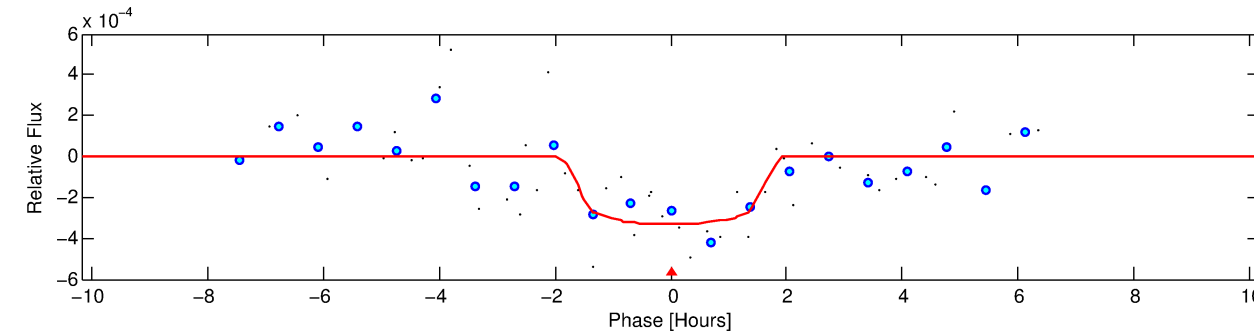
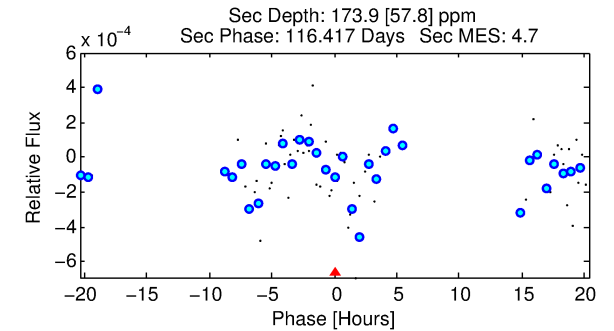
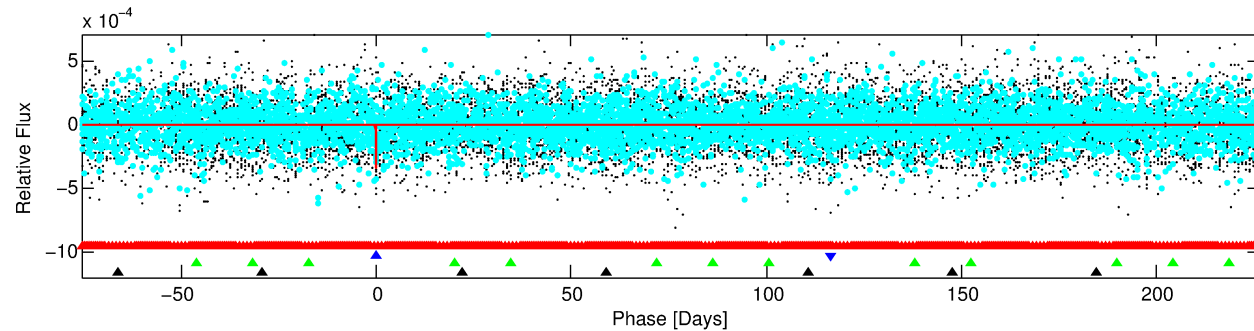
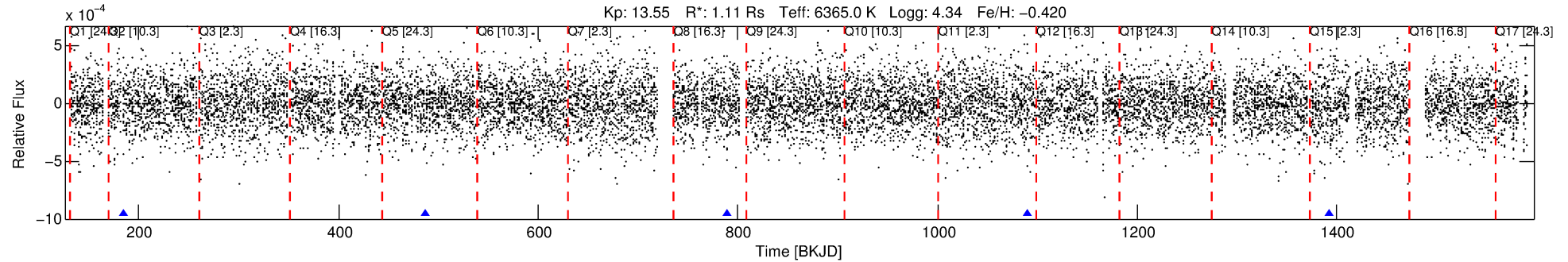
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009426817-02

No Significant Match Found

DV One-Page Summary

KIC: 9426817 Candidate: 2 of 4 Period: 301.815 d



DV Fit Results:

Period = 301.81476 [0.01156] d
Epoch = 185.1119 [0.0215] BKJD
Rp/R* = 0.0173 [0.0632]
a/R* = 602.30 [11672.83]
b = 0.50 [29.28]
Seff = 2.34 [0.87]
Teq = 316 [29] K
Rp = 2.10 [7.68] Re
a = 0.8792 [0.2126] AU
Ag = 16832.51 [123226.93] [0.14σ]
Teffp = 5556 [10160] K [0.5σ]

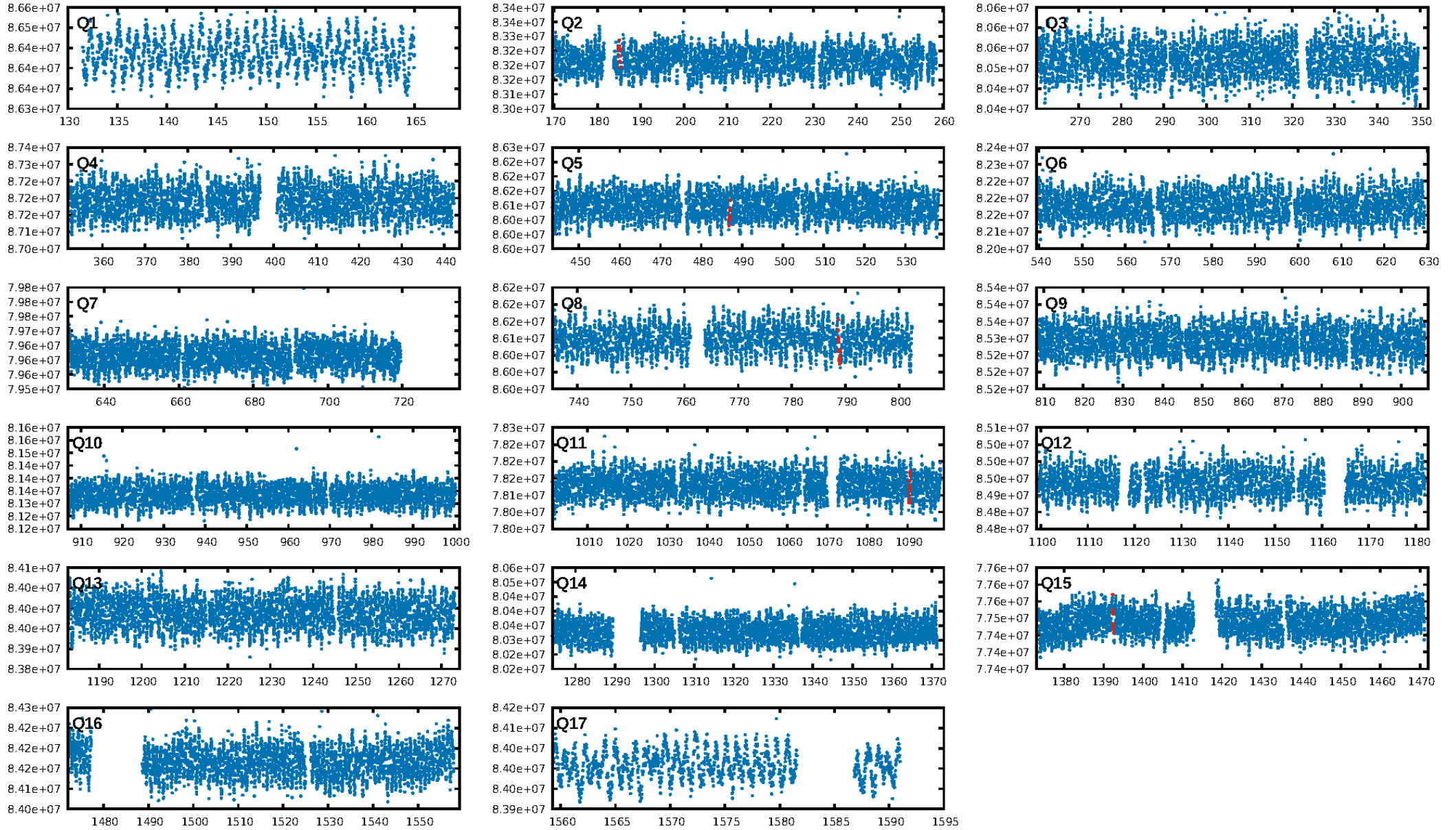
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [407.14σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 40.9%
ModelChiSquareGof-sig: 97.7%
Bootstrap-pfa: 6.78e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 12.08
Centroid-sig: 1.3%
Centroid-so: 2.854 arcsec [1.78σ]
OotOffset-rm: 1.697 arcsec [2.32σ]
KicOffset-rm: 1.778 arcsec [2.80σ]
OotOffset-st: 1/2/1/1 [5]
KicOffset-st: 1/2/1/1 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.20 [1/5]

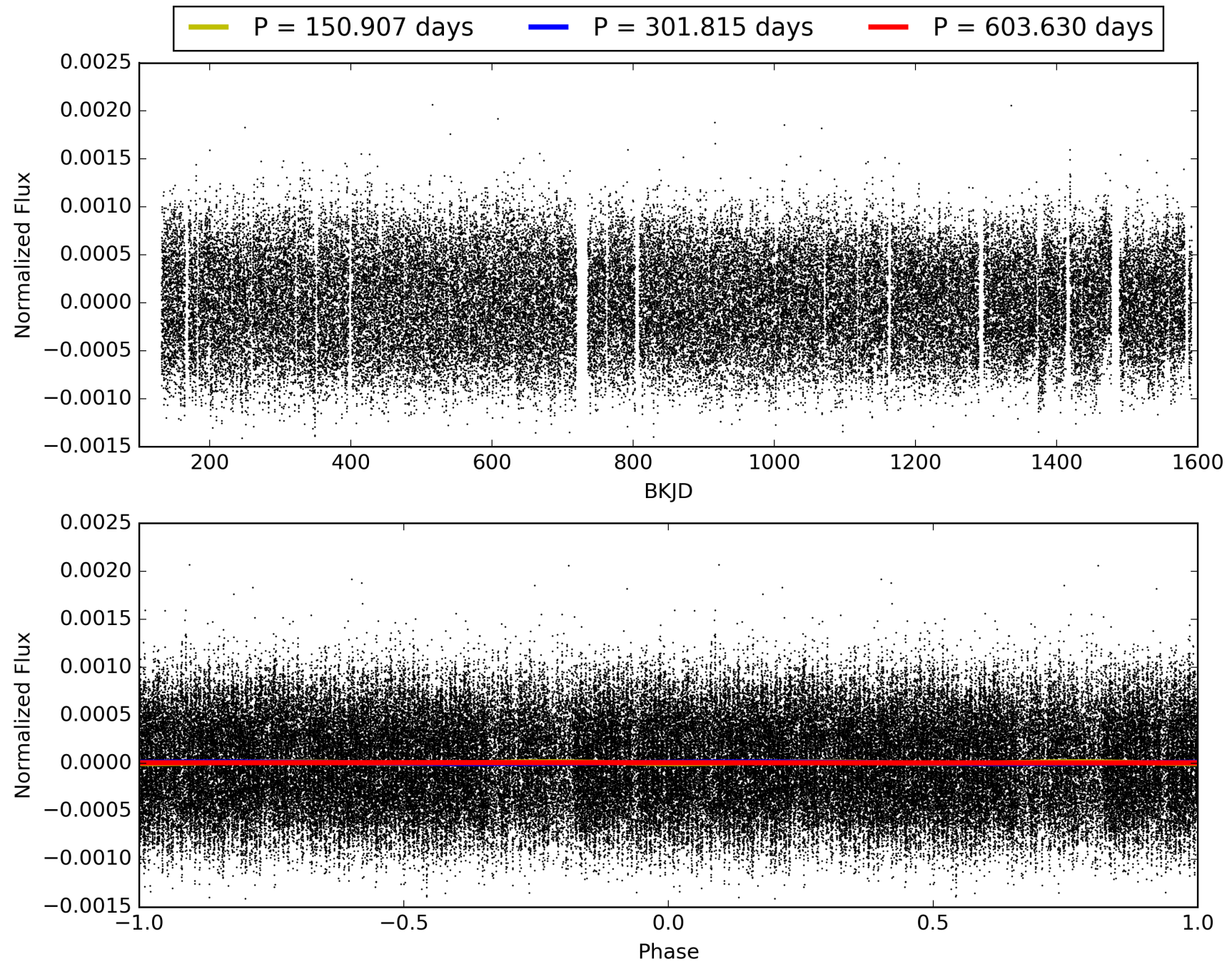
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:05:07 Z

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

TCE 009426817-02, PDC Light Curves

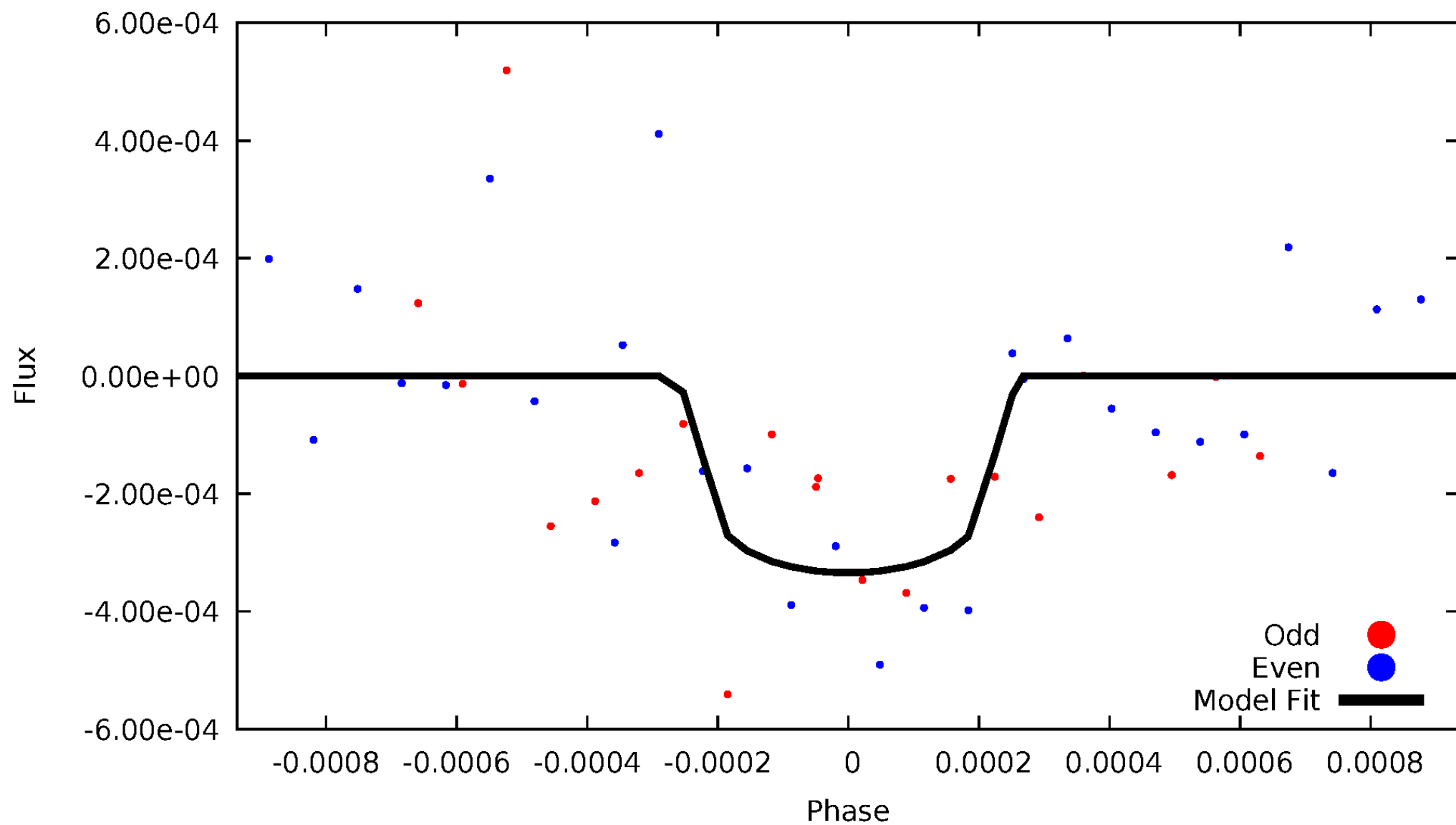


TCE 009426817-02



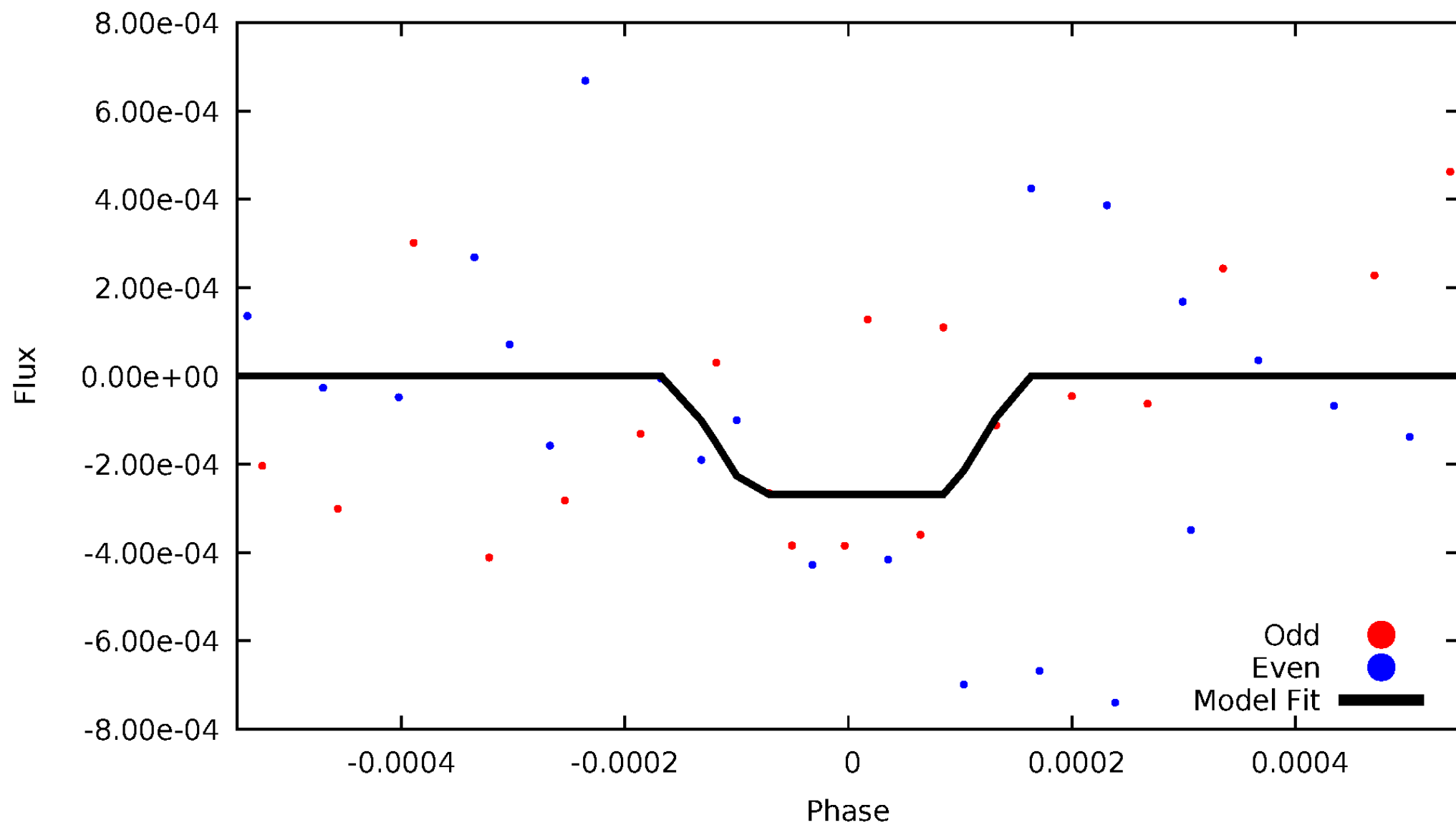
DV Odd/Even

TCE 009426817-02



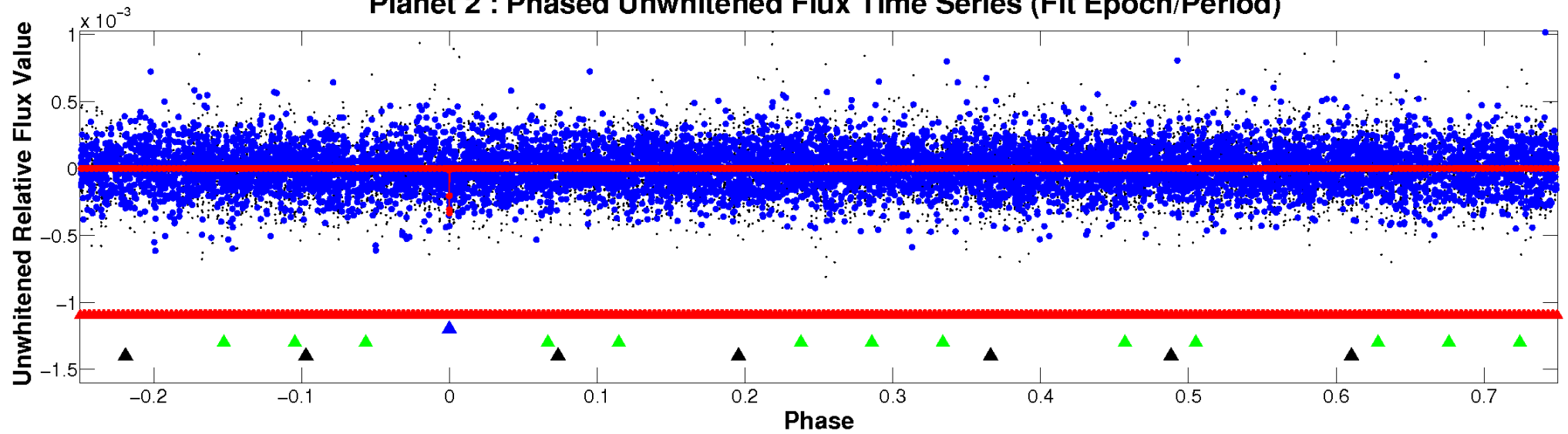
ALT Odd/Even

TCE 009426817-02

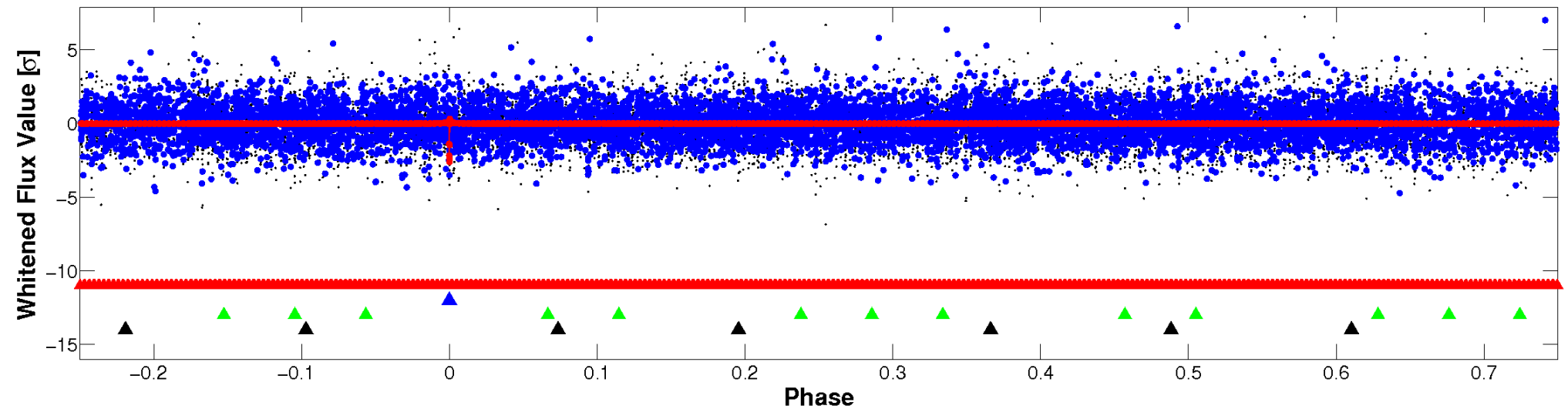


Non-Whitened Vs. Whitened Light Curve

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

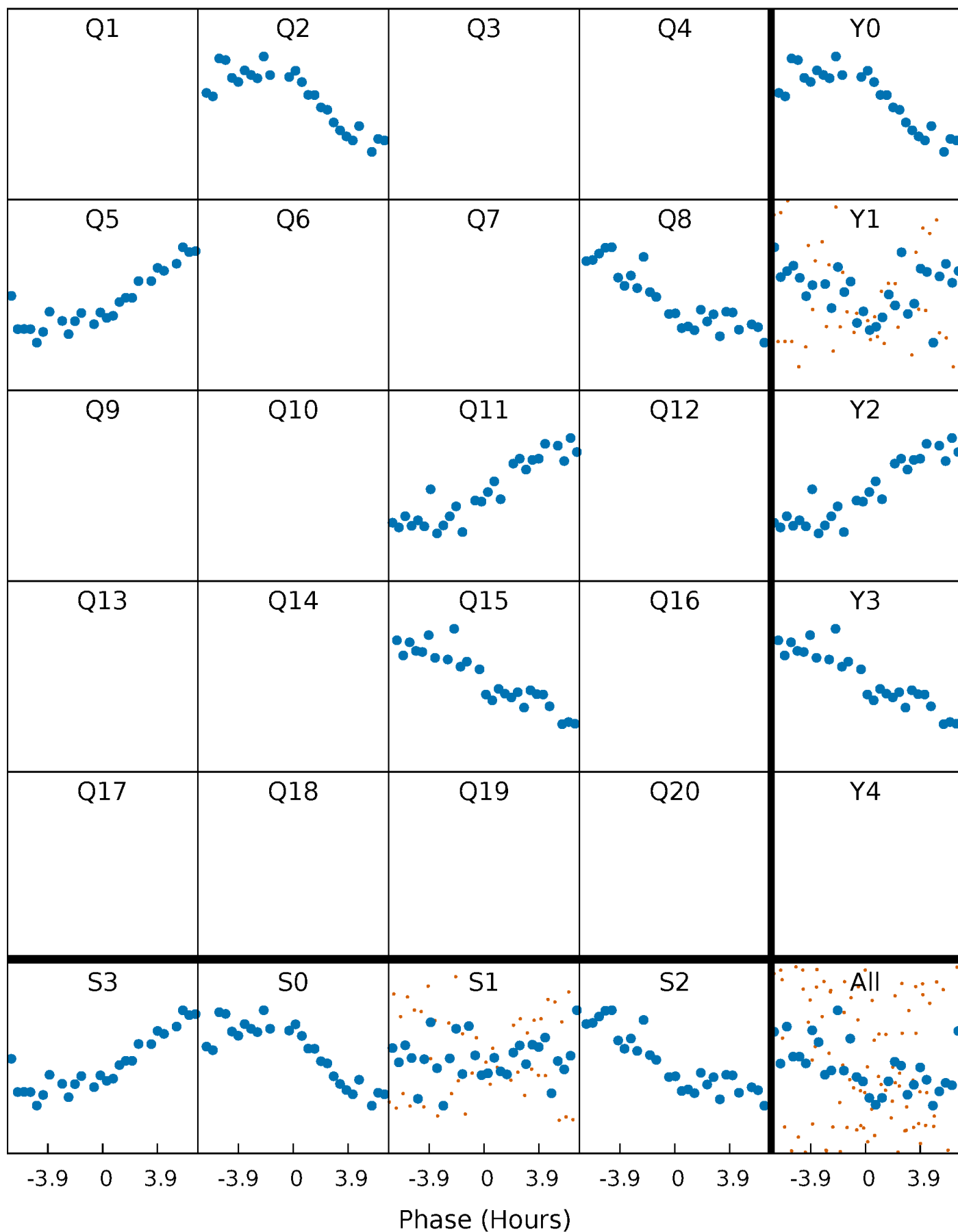


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



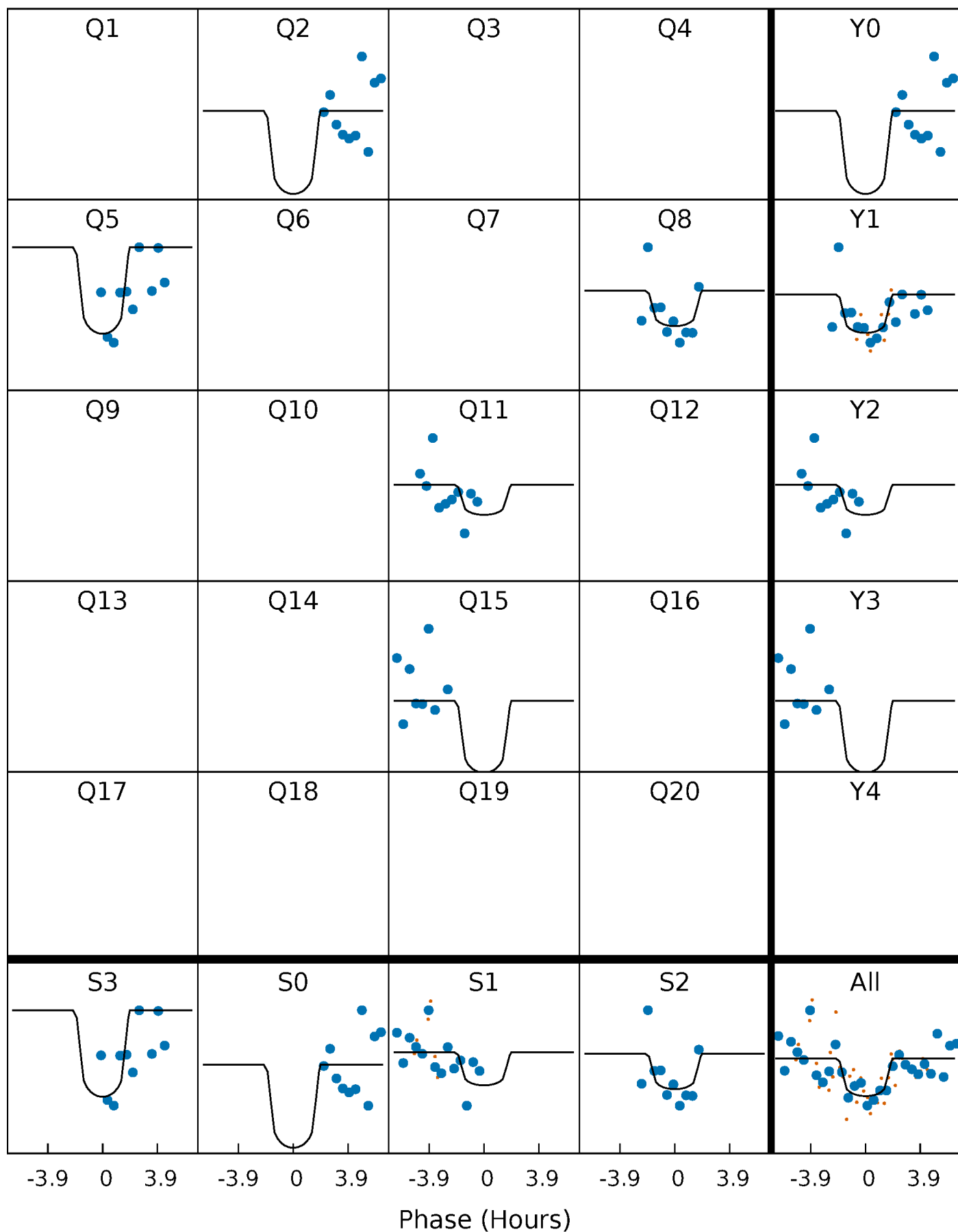
PDC Quarter-Phased Transit Curves

TCE 009426817-02 P=301.814760 Days $T_0=185.111865$ (BKJD)



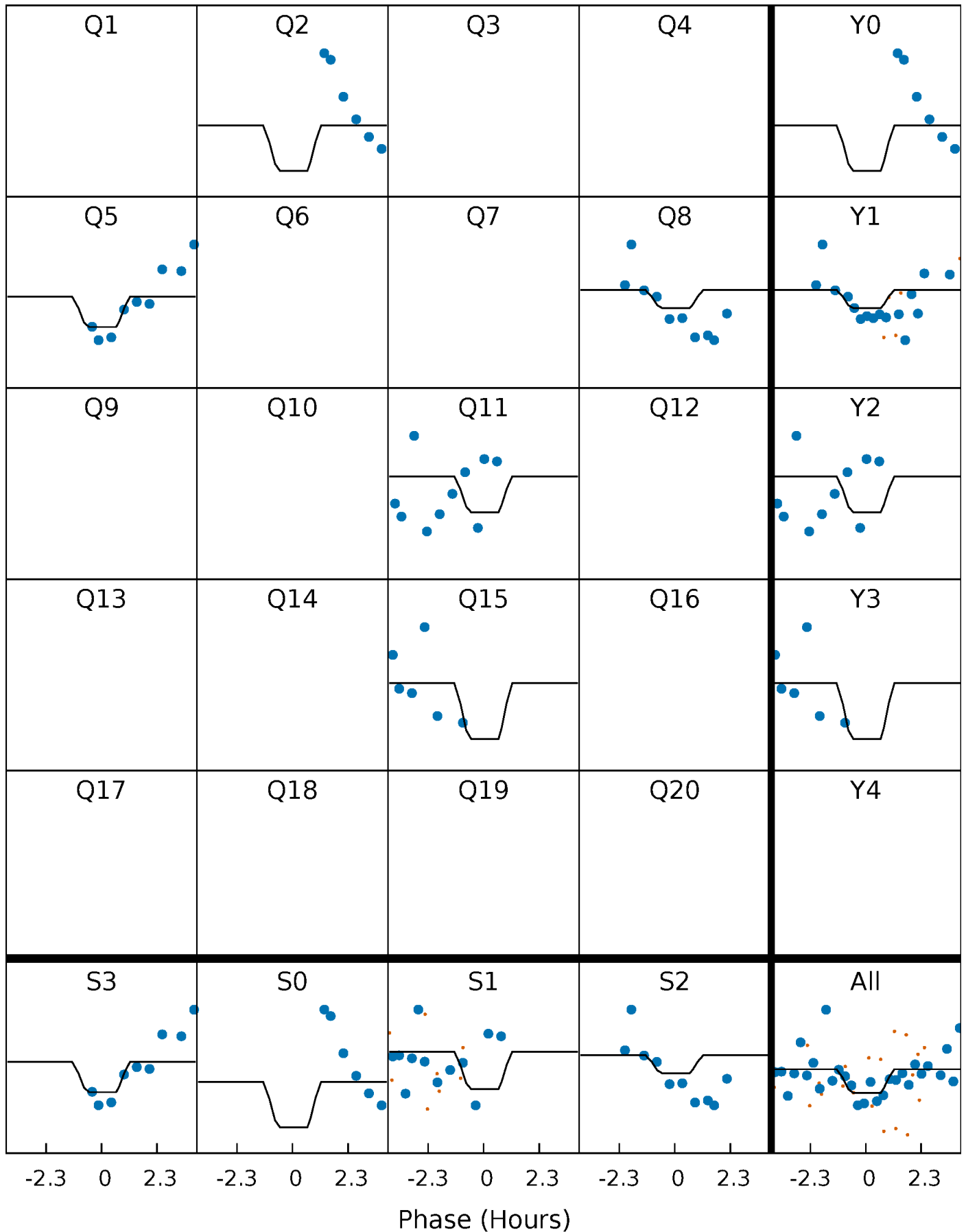
DV Quarter-Phased Transit Curves

TCE 009426817-02 P=301.814760 Days $T_0=185.111865$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

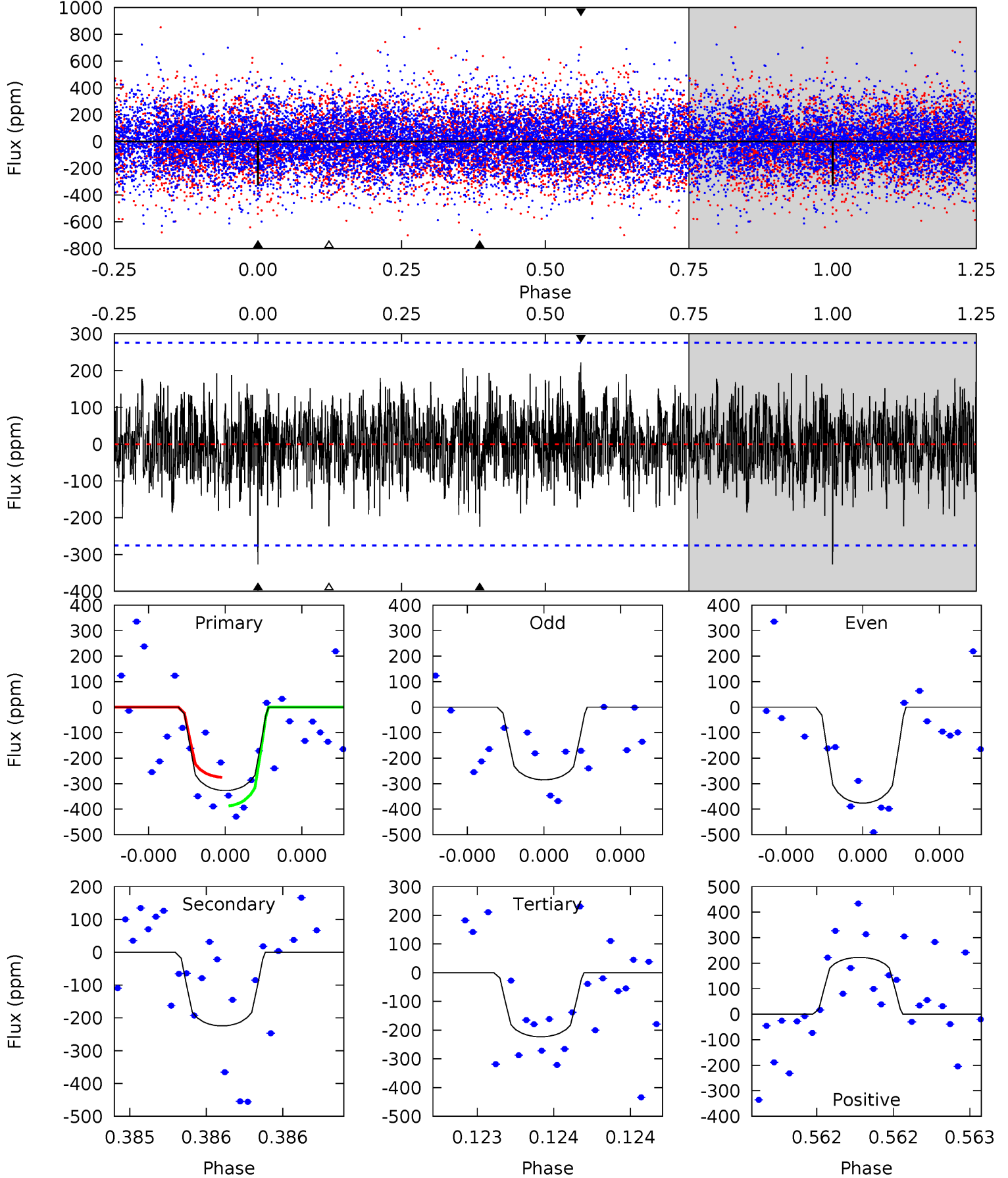
TCE 009426817-02 P=301.790732 Days $T_0=185.143314$ (BKJD)



DV Model-Shift Uniqueness Test

009426817-02, P = 301.814760 Days, E = 185.111865 Days

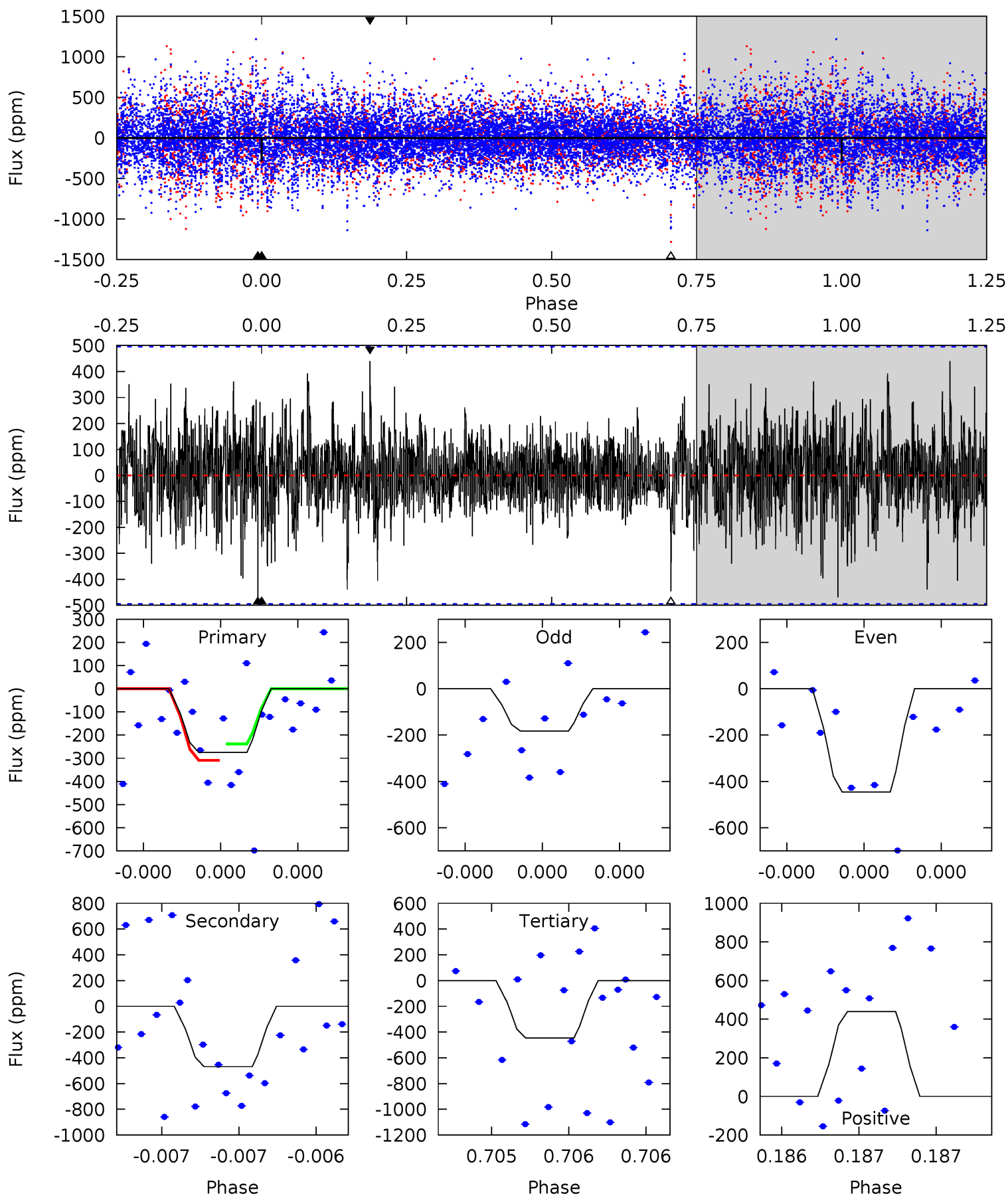
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.62	4.55	4.52	4.51	5.58	3.50	1.33	2.10	2.11	0.03	0.04	0.95	1.10	0.41	1.14



Alt Model-Shift Uniqueness Test

009426817-02, P = 301.790732 Days, E = 185.143314 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.16	5.38	5.13	5.04	5.69	3.66	1.11	-1.97	-1.89	0.26	0.34	1.48	0.81	0.48	0.41



Stellar Parameters For KIC 009426817

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6365^{+171}_{-209}	$4.345^{+0.108}_{-0.186}$	$-0.420^{+0.300}_{-0.300}$	$1.110^{+0.325}_{-0.175}$	$0.993^{+0.146}_{-0.110}$	$1.021^{+0.556}_{-0.485}$
	+3%/-3%	+2%/-4%	+71%/-71%	+29%/-16%	+15%/-11%	+55%/-48%
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 009426817-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-224 ± 49	$6.13^{+6.07}_{-4.30}$	446^{+32}_{-27}	3862^{+2645}_{-788}	2537^{+26818}_{-1943}
Alt.	-469 ± 87	$6.19^{+6.19}_{-4.33}$	444^{+30}_{-22}	4455^{+3382}_{-1004}	5280^{+54102}_{-4016}

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

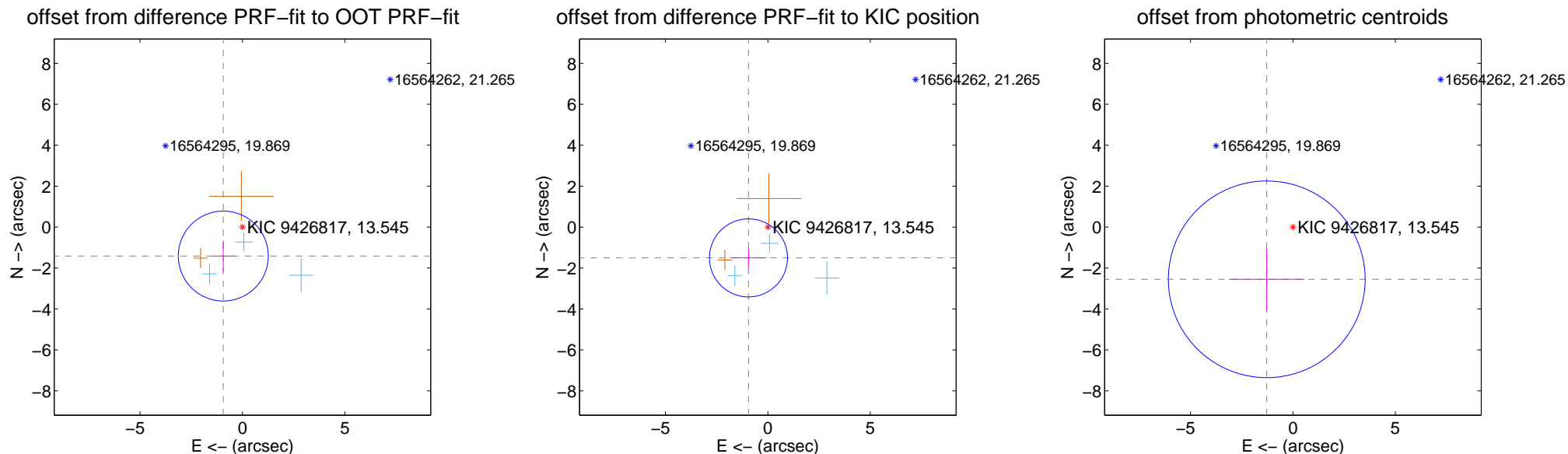
DV Centroid Data

Supplemental centroid analysis for 009426817-02. Kepler magnitude: 13.54. Transit SNR 8.38

There are 3 quarters with good PRF difference image offsets

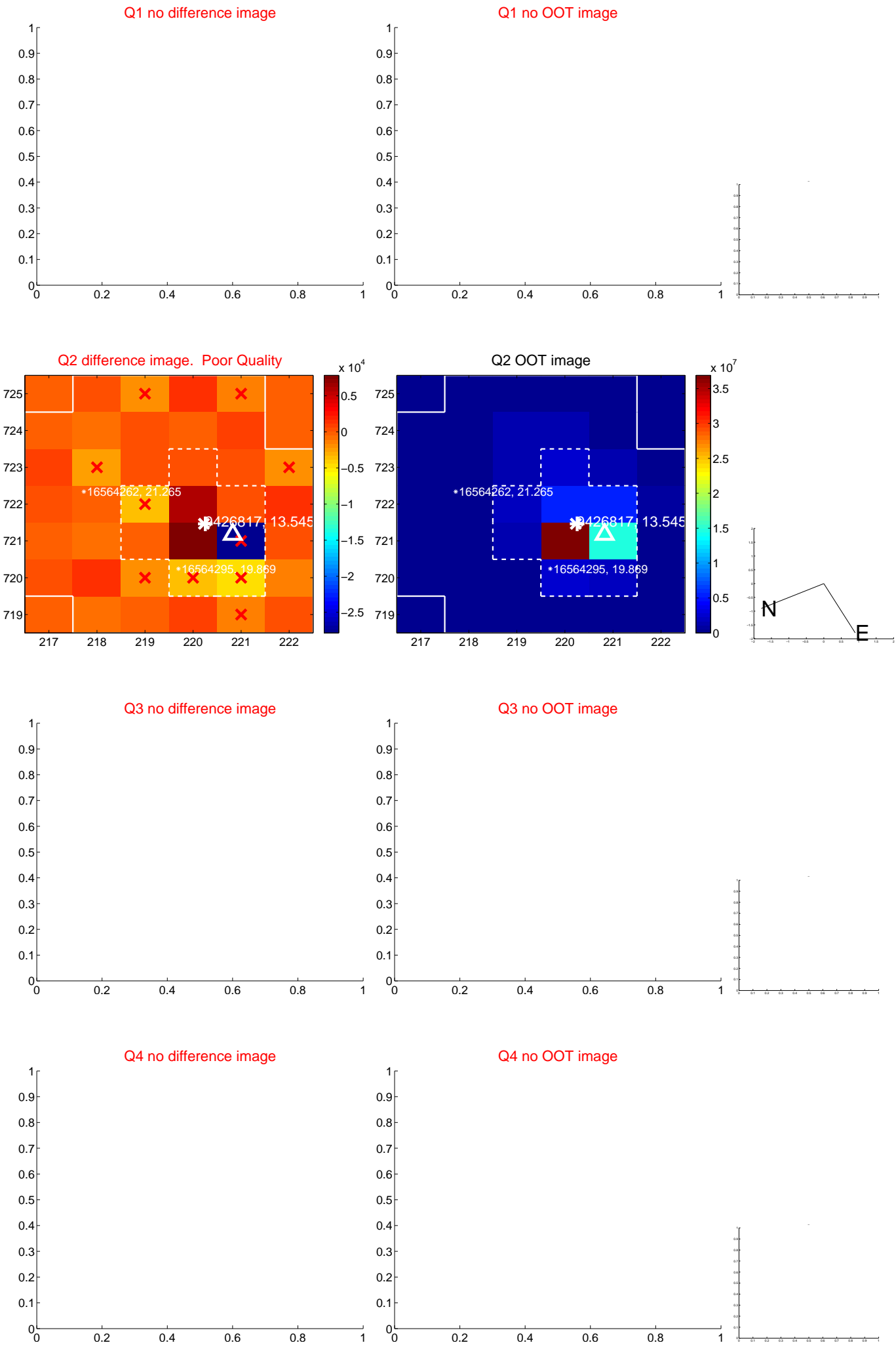
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.697 ± 0.732	2.32	0.937 ± 0.561	-1.415 ± 0.762
PRF-fit source offset from KIC position	1.778 ± 0.635	2.80	0.947 ± 0.895	-1.505 ± 0.496
photometric centroid source offset	2.85 ± 1.60	1.78	1.28 ± 1.85	-2.55 ± 1.53

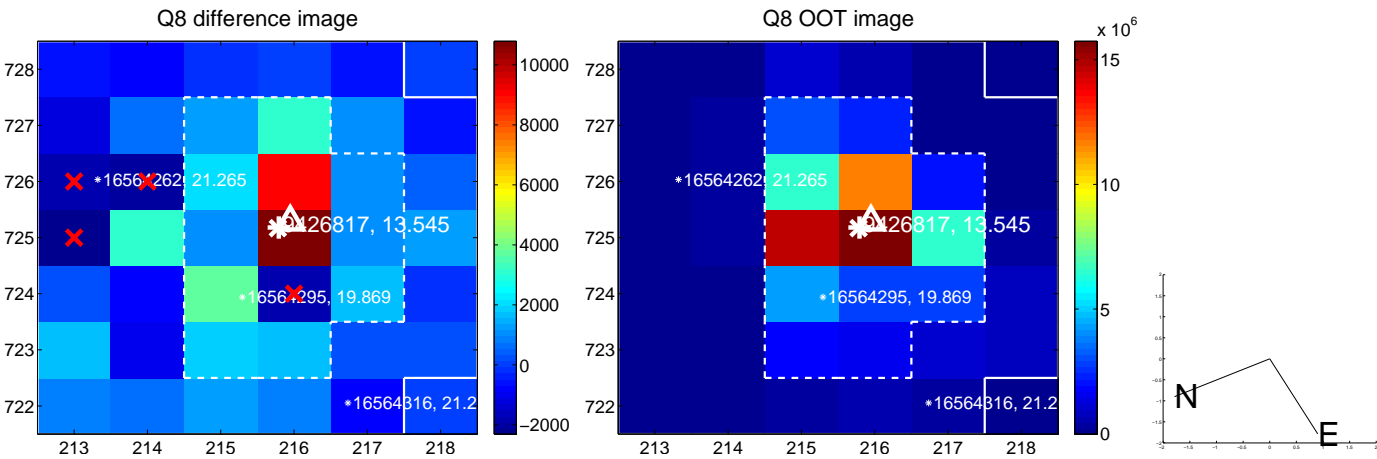
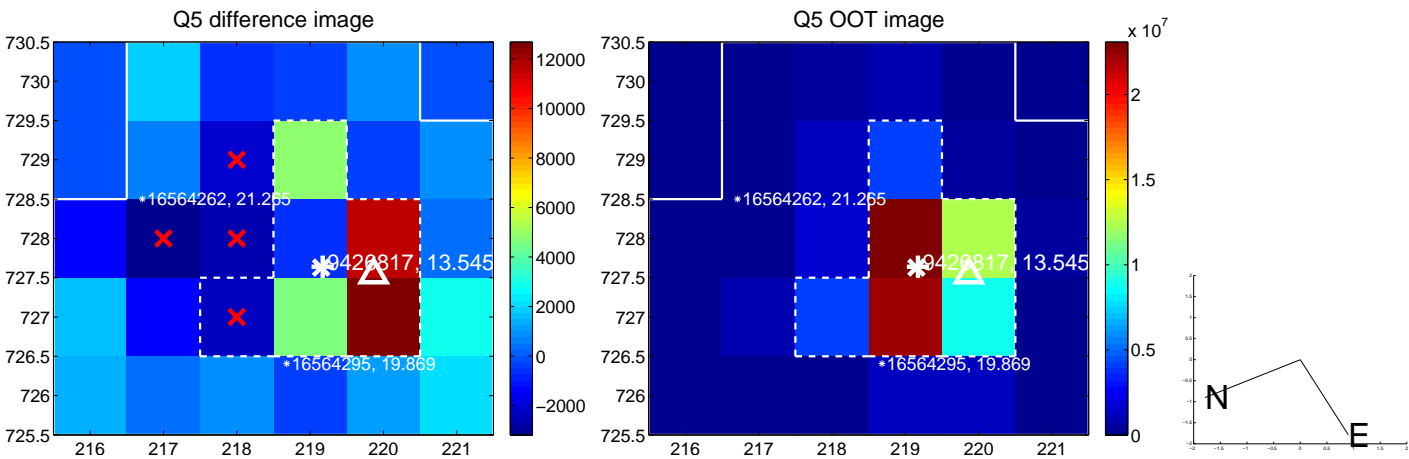


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

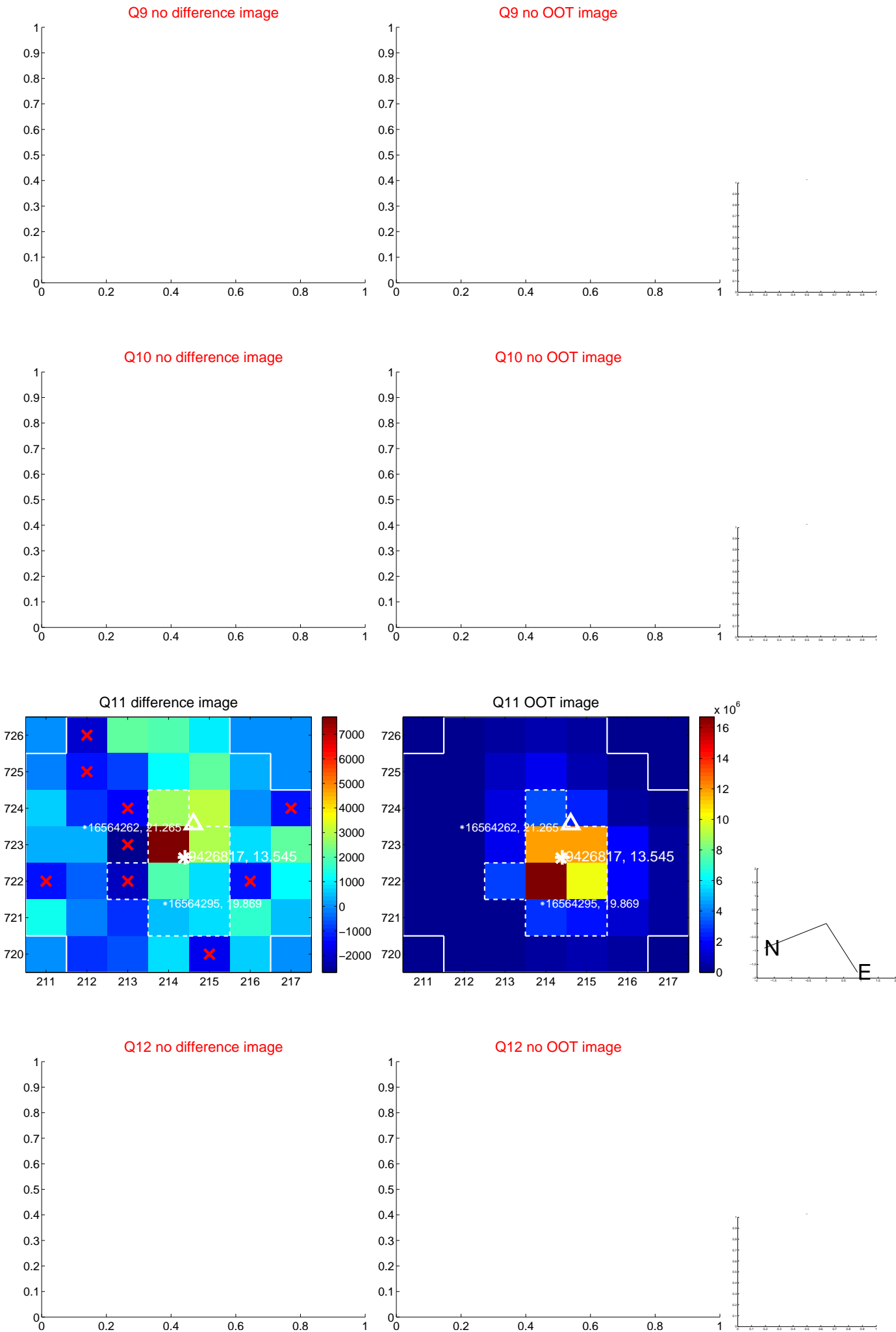
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.

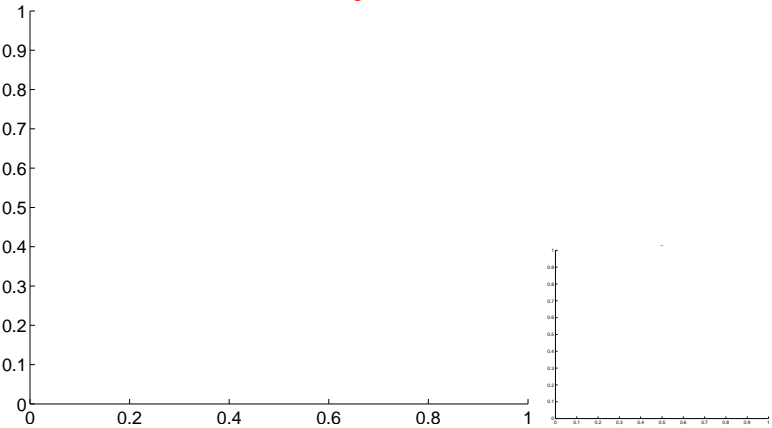


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q13 no difference image



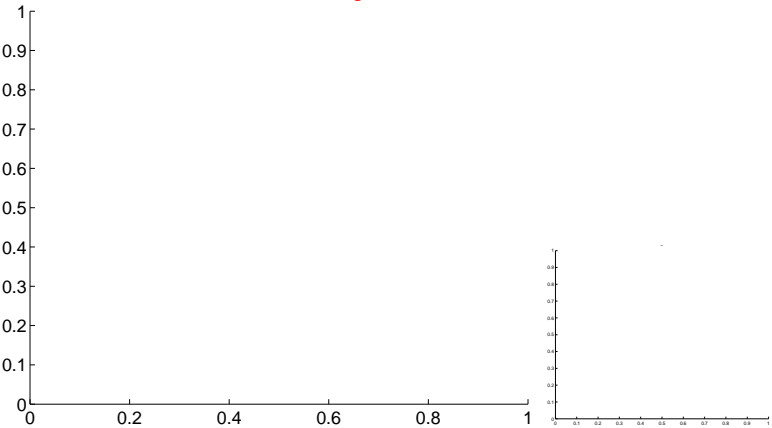
Q13 no OOT image



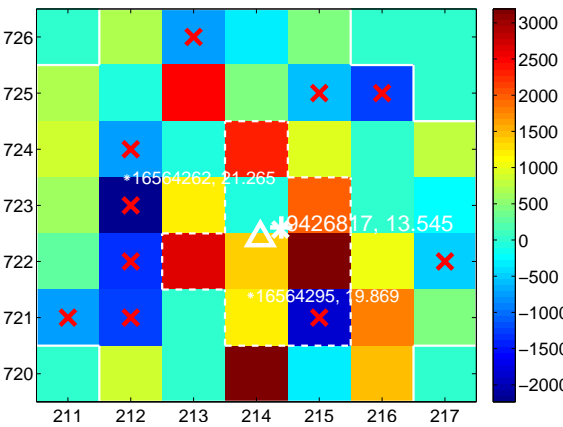
Q14 no difference image



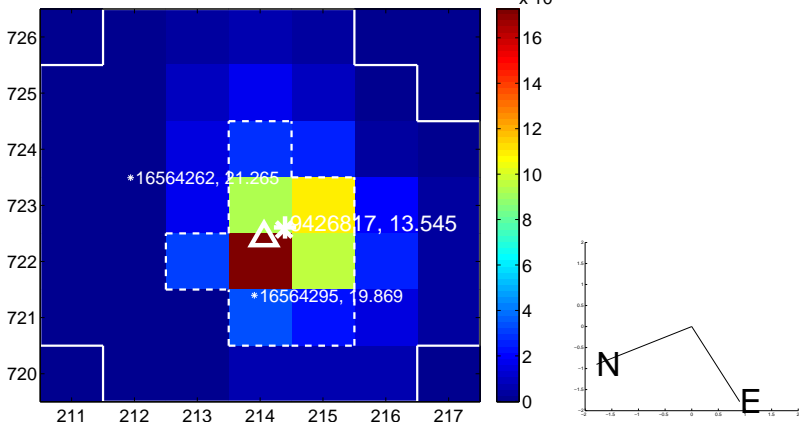
Q14 no OOT image



Q15 difference image. Poor Quality



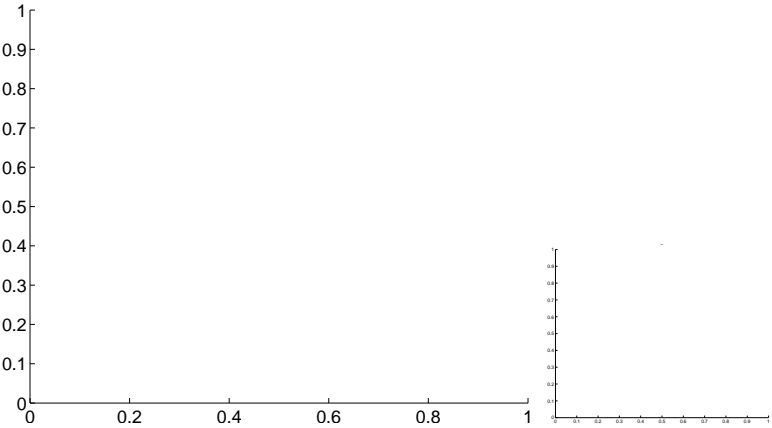
Q15 OOT image



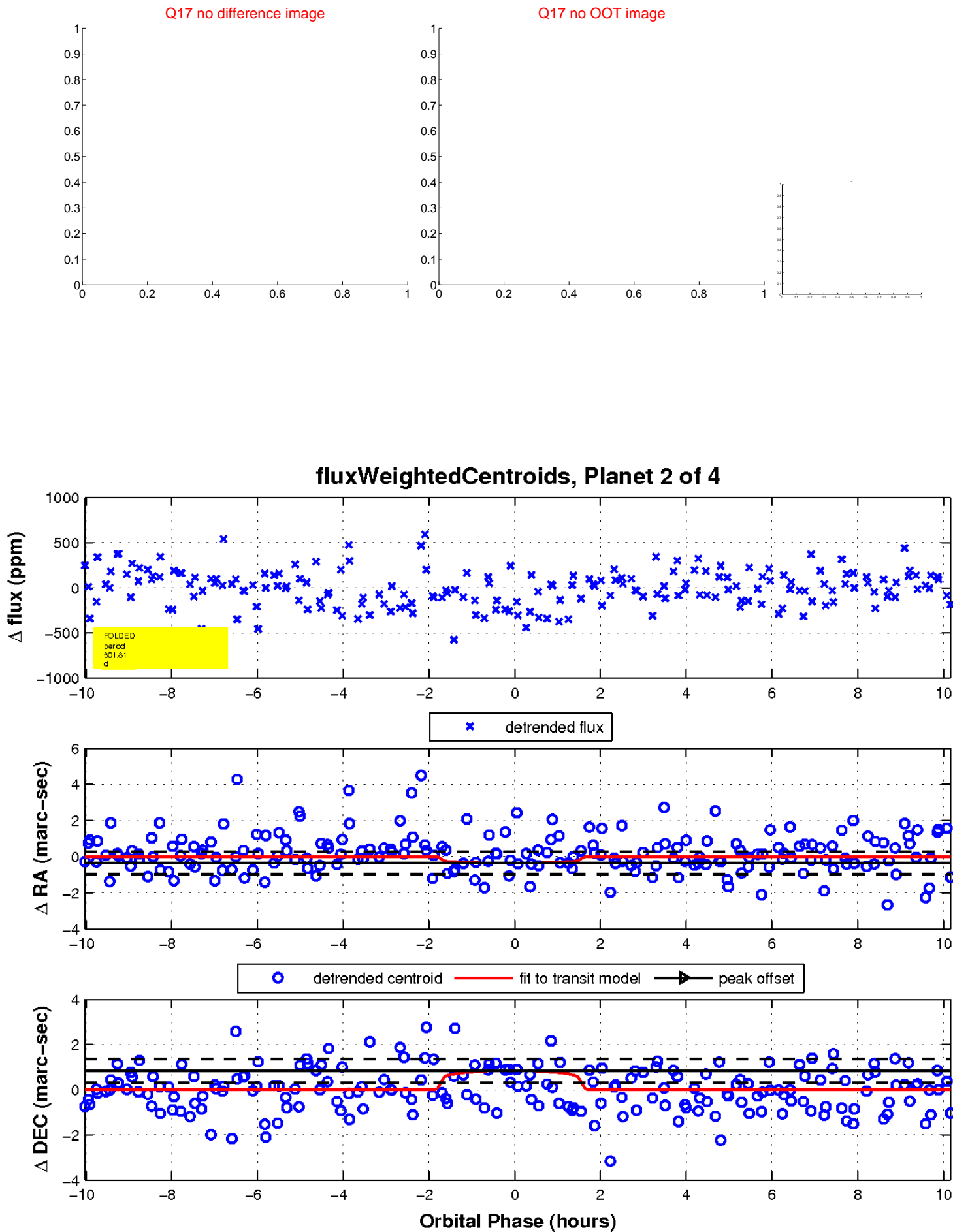
Q16 no difference image



Q16 no OOT image

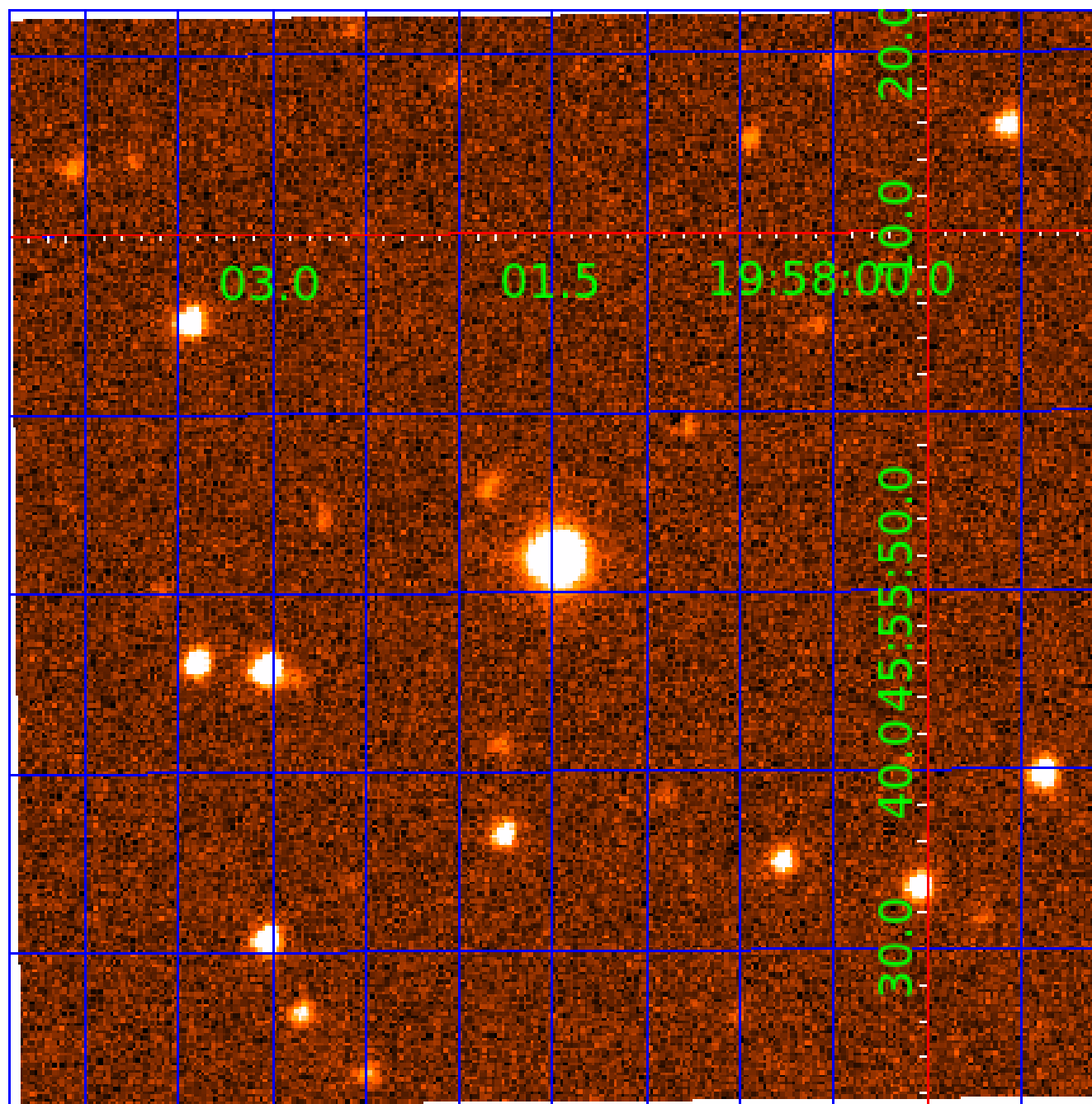


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009426817

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})
009426817-01	OBS	No	0.986014	132.536824	10.1	5.996	8.6	4.6	1.11	6365	0.36	4835.70
009426817-02	OBS	No	301.814760	185.111865	334.2	3.390	8.4	8.4	1.11	6365	2.10	2.34
009426817-03	OBS	No	117.828791	168.049531	259.6	2.250	7.8	9.1	1.11	6365	1.92	8.22
009426817-04	OBS	No	213.490075	295.640419	306.9	3.951	8.2	8.9	1.11	6365	2.25	3.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009426817-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009426817-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009426817-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009426817-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

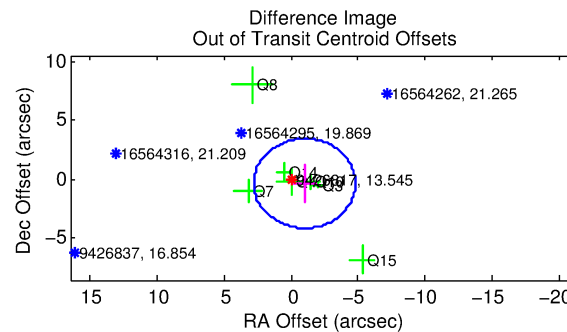
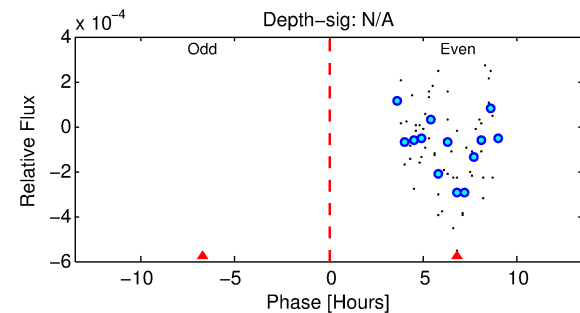
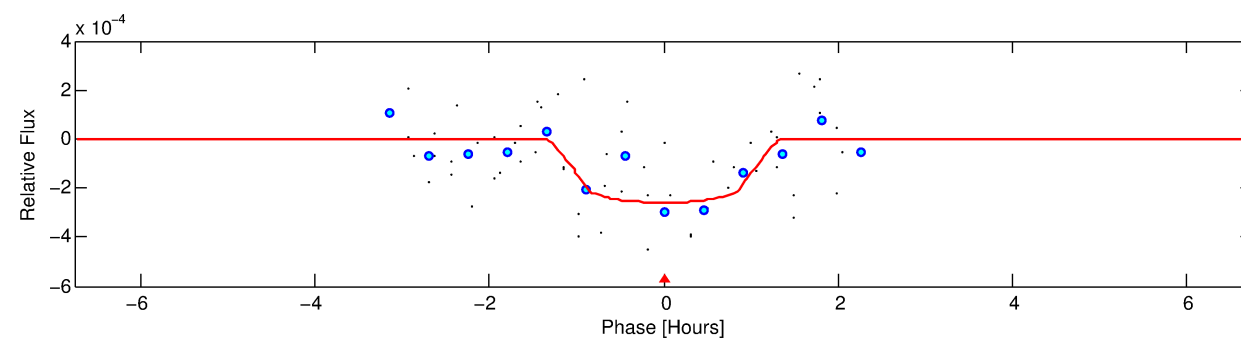
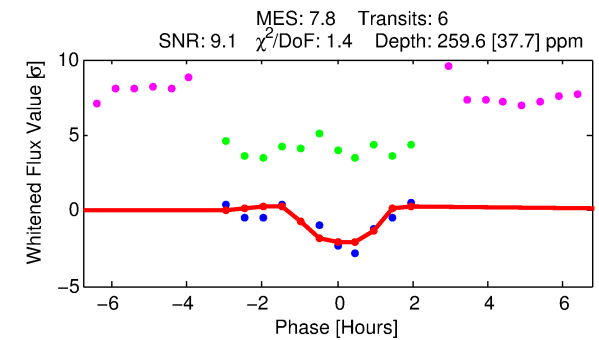
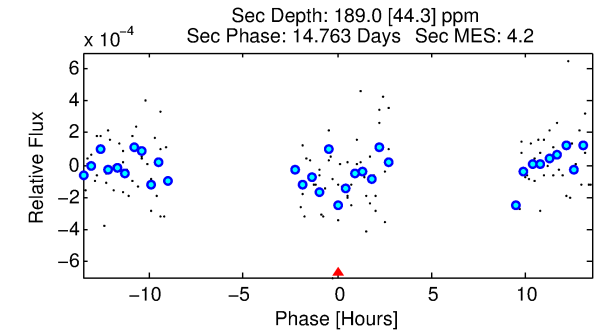
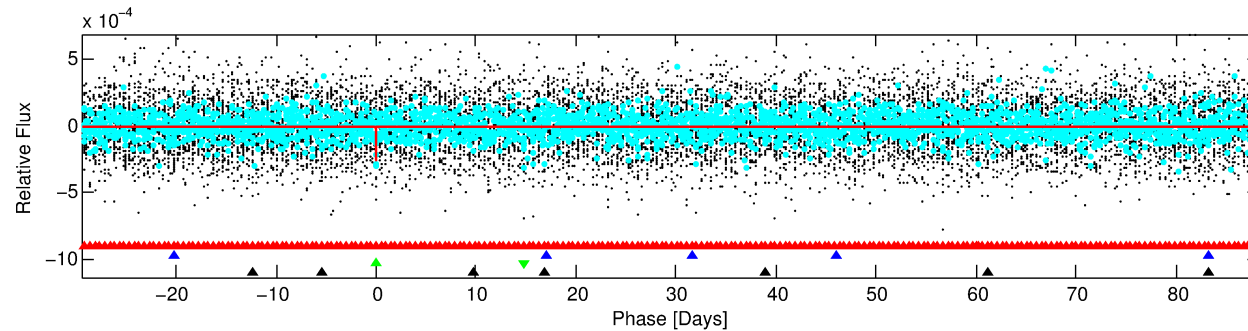
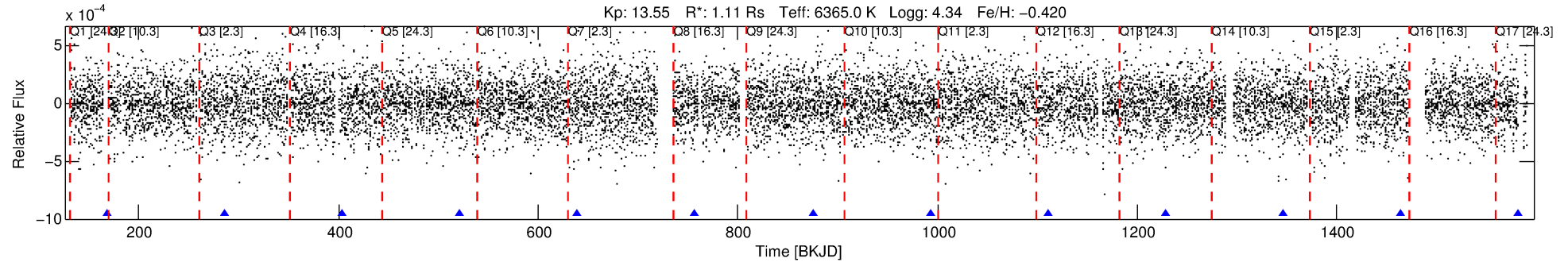
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009426817-03

No Significant Match Found

DV One-Page Summary

KIC: 9426817 Candidate: 3 of 4 Period: 117.829 d



DV Fit Results:

Period = 117.82879 [0.00151] d
Epoch = 168.0495 [0.0106] BKJD
Rp/R* = 0.0158 [0.0263]
a/R* = 294.14 [2646.85]
b = 0.70 [6.59]
Seff = 8.22 [3.04]
Teq = 432 [40] K
Rp = 1.92 [3.23] Re
a = 0.4696 [0.1136] AU
Ag = 6240.52 [20867.95] [0.30] σ
Teffp = 5932 [4937] K [1.11] σ

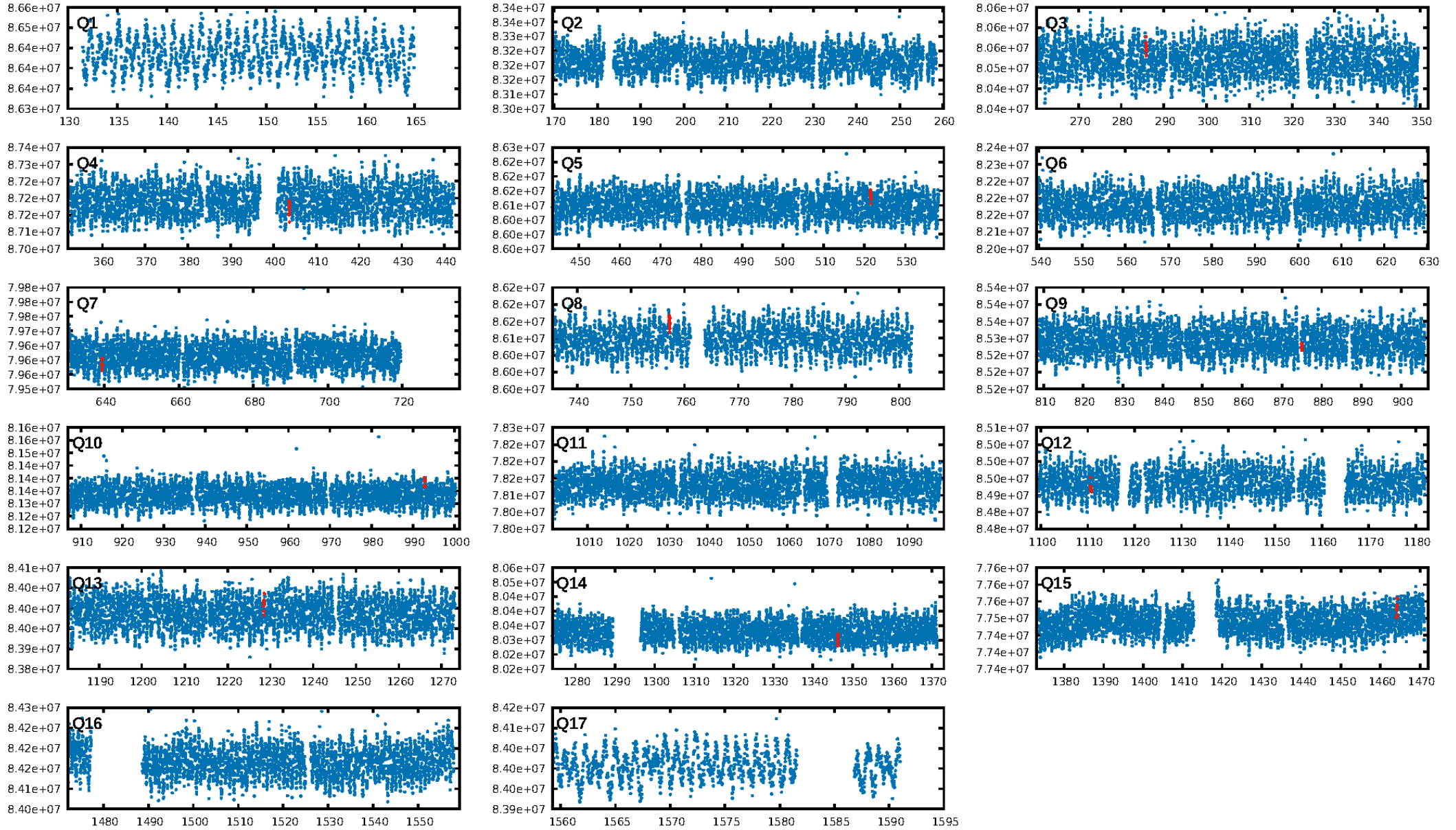
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [437.89] σ
LongPeriod-sig: 100.0% [504.90] σ
ModelChiSquare2-sig: 10.7%
ModelChiSquareGof-sig: 57.9%
Bootstrap-pfa: 2.47e-08
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.995
Centroid-sig: 3.8%
Centroid-so: 2.609 arcsec [1.48] σ
OotOffset-rm: 1.052 arcsec [0.83] σ
KicOffset-rm: 1.034 arcsec [0.79] σ
OotOffset-st: 2/3/2/0 [7]
KicOffset-st: 2/3/2/0 [7]
DiffImageQuality-fgm: 0.14 [1/7]
DiffImageOverlap-fno: 0.56 [5/9]

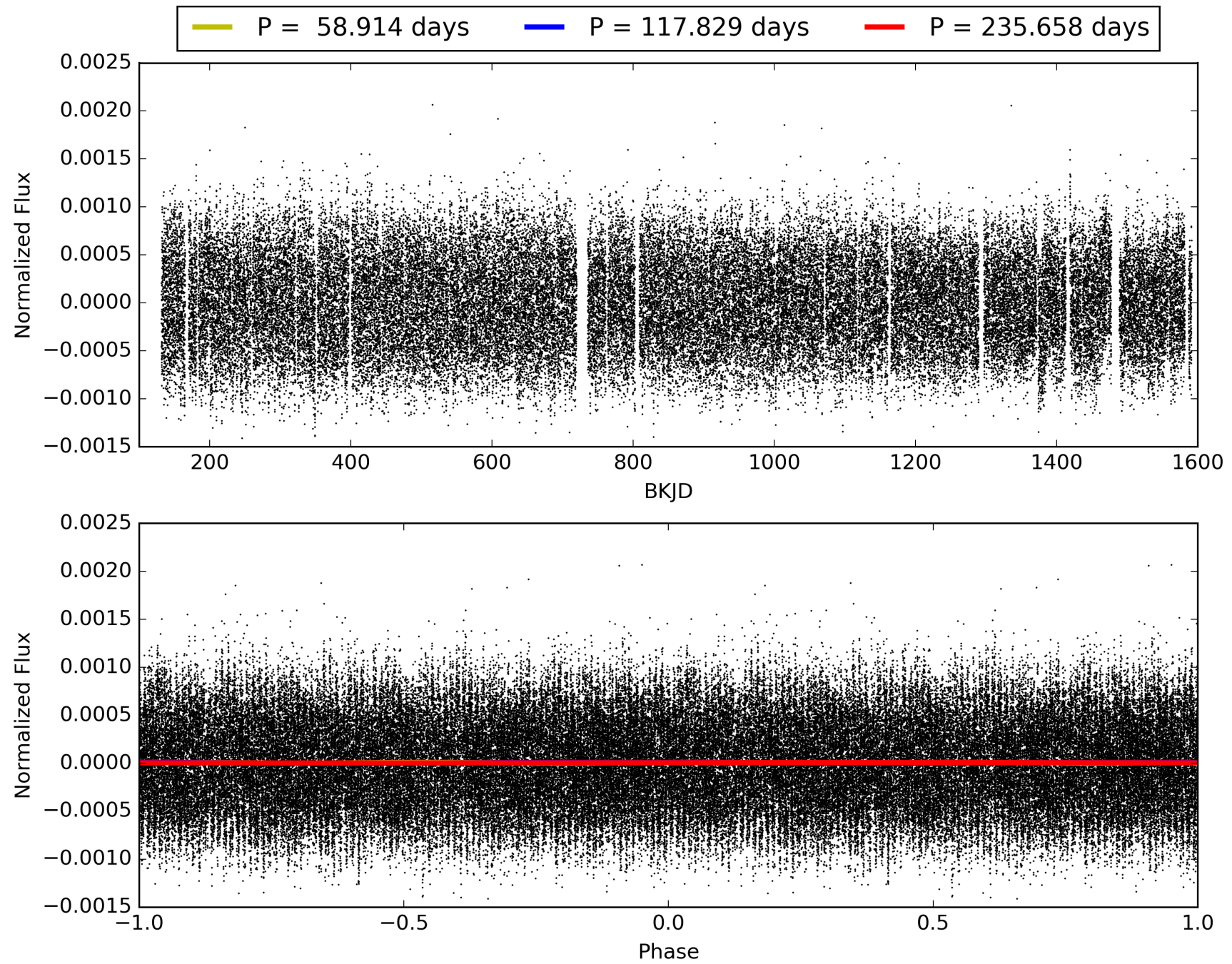
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:05:12 Z

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

TCE 009426817-03, PDC Light Curves

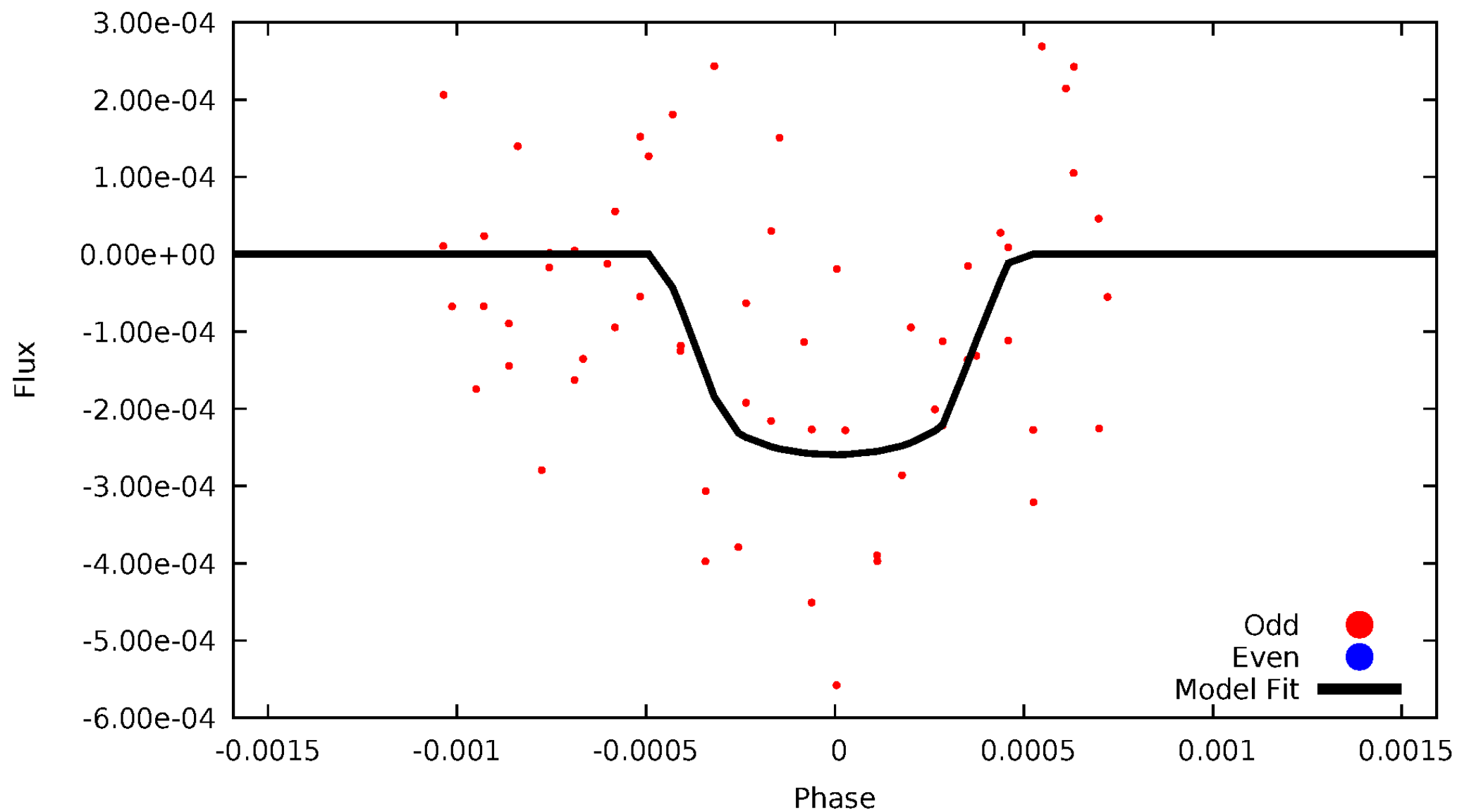


TCE 009426817-03



DV Odd/Even

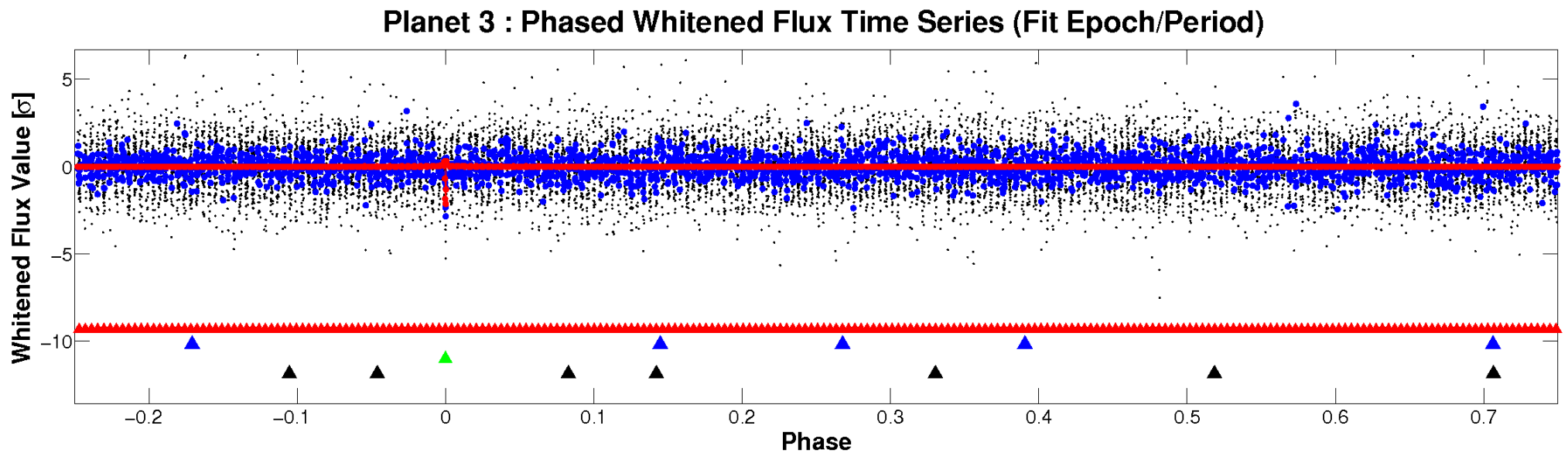
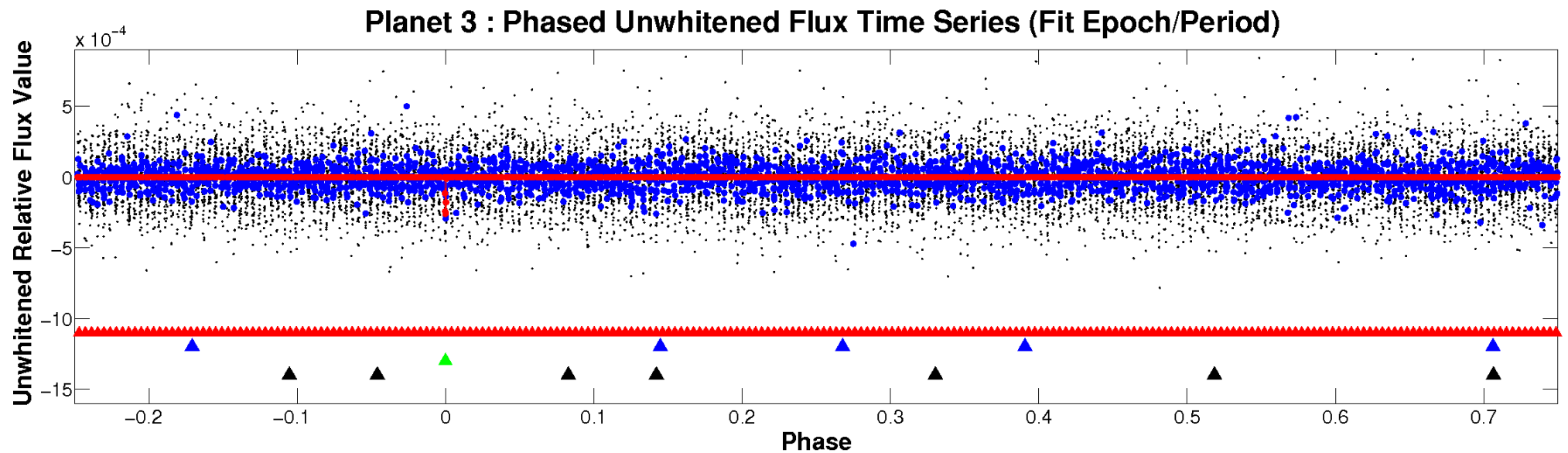
TCE 009426817-03



ALT Odd/Even

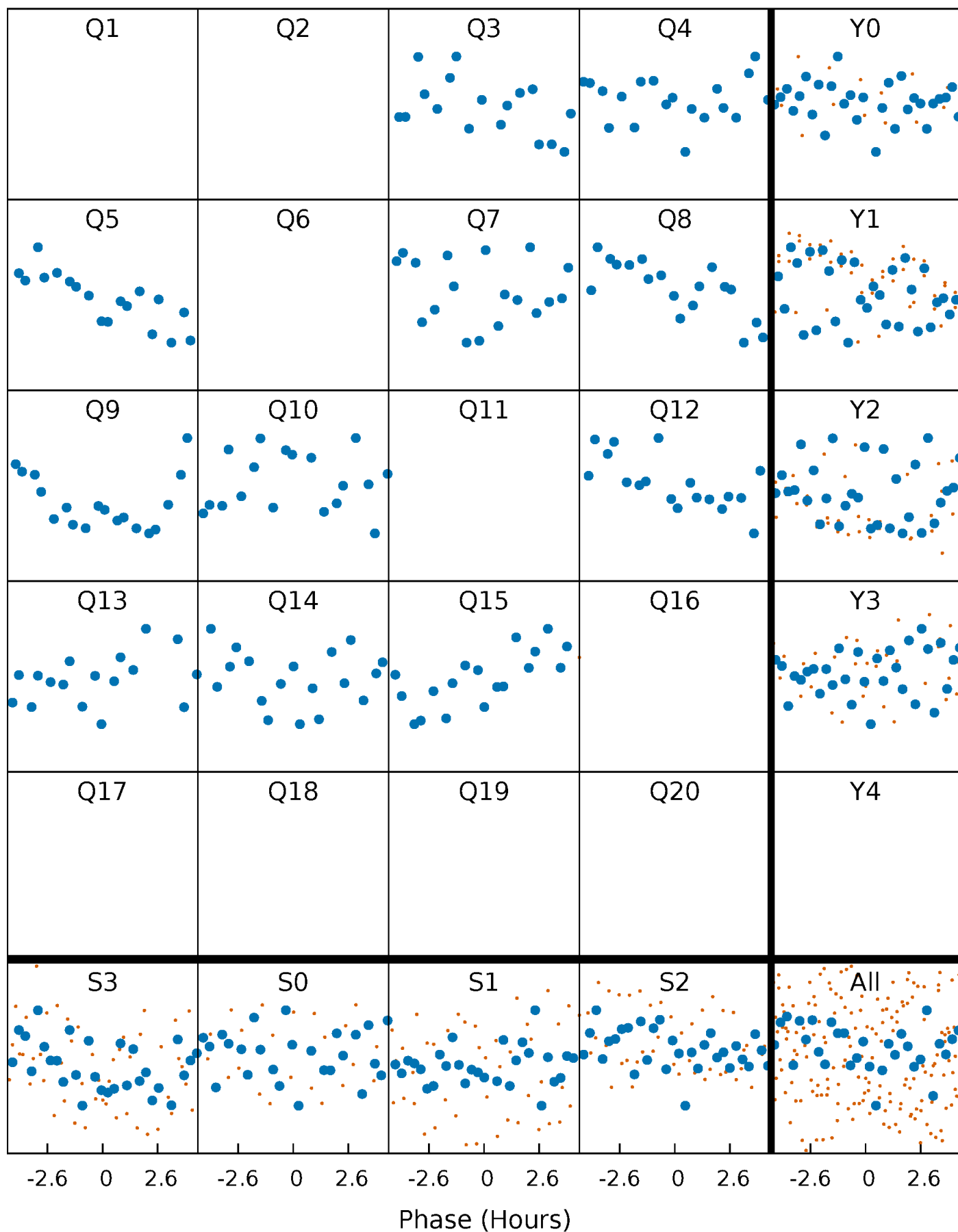
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve



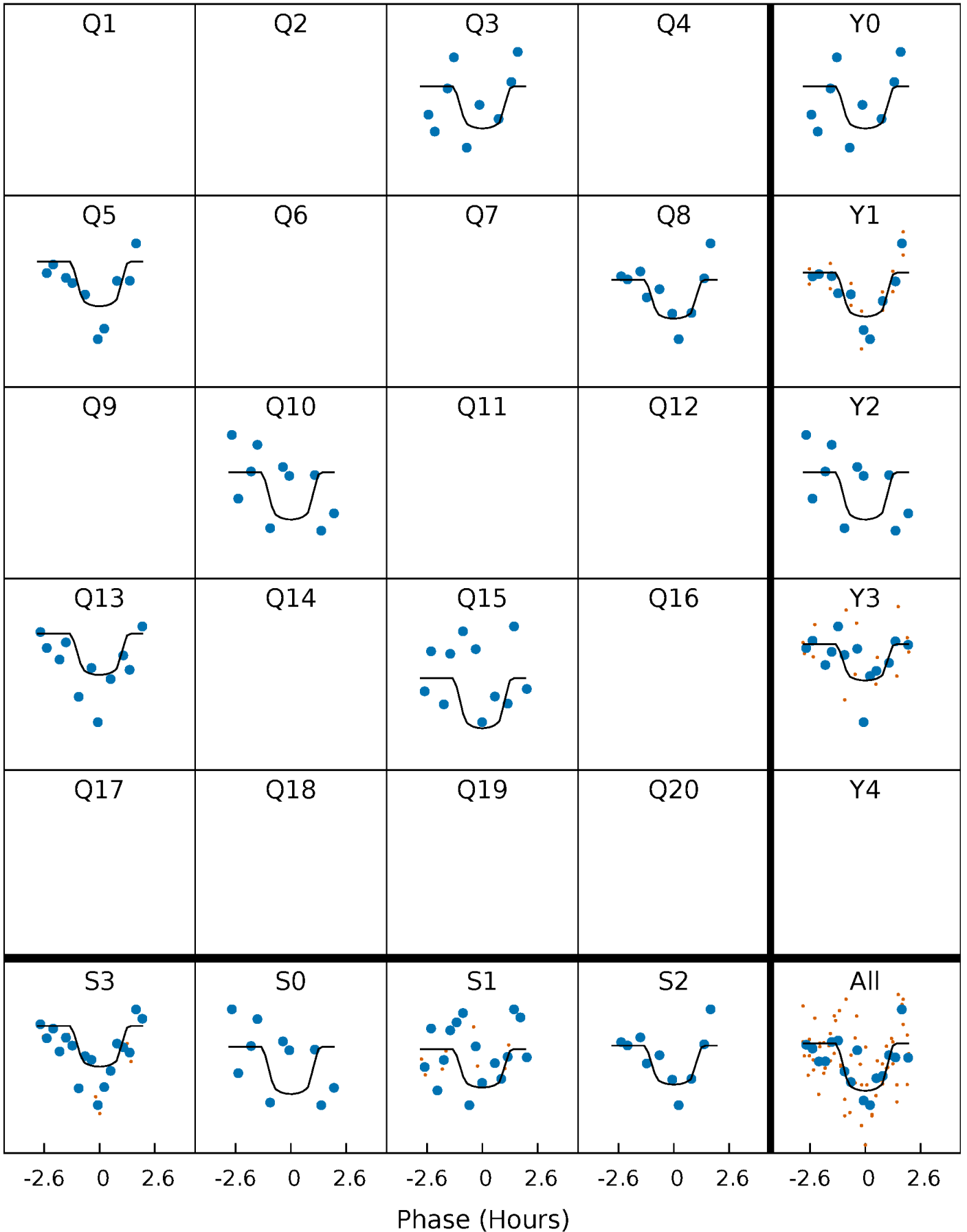
PDC Quarter-Phased Transit Curves

TCE 009426817-03 P=117.828791 Days $T_0=168.049531$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009426817-03 $P=117.828791$ Days $T_0=168.049531$ (BKJD)

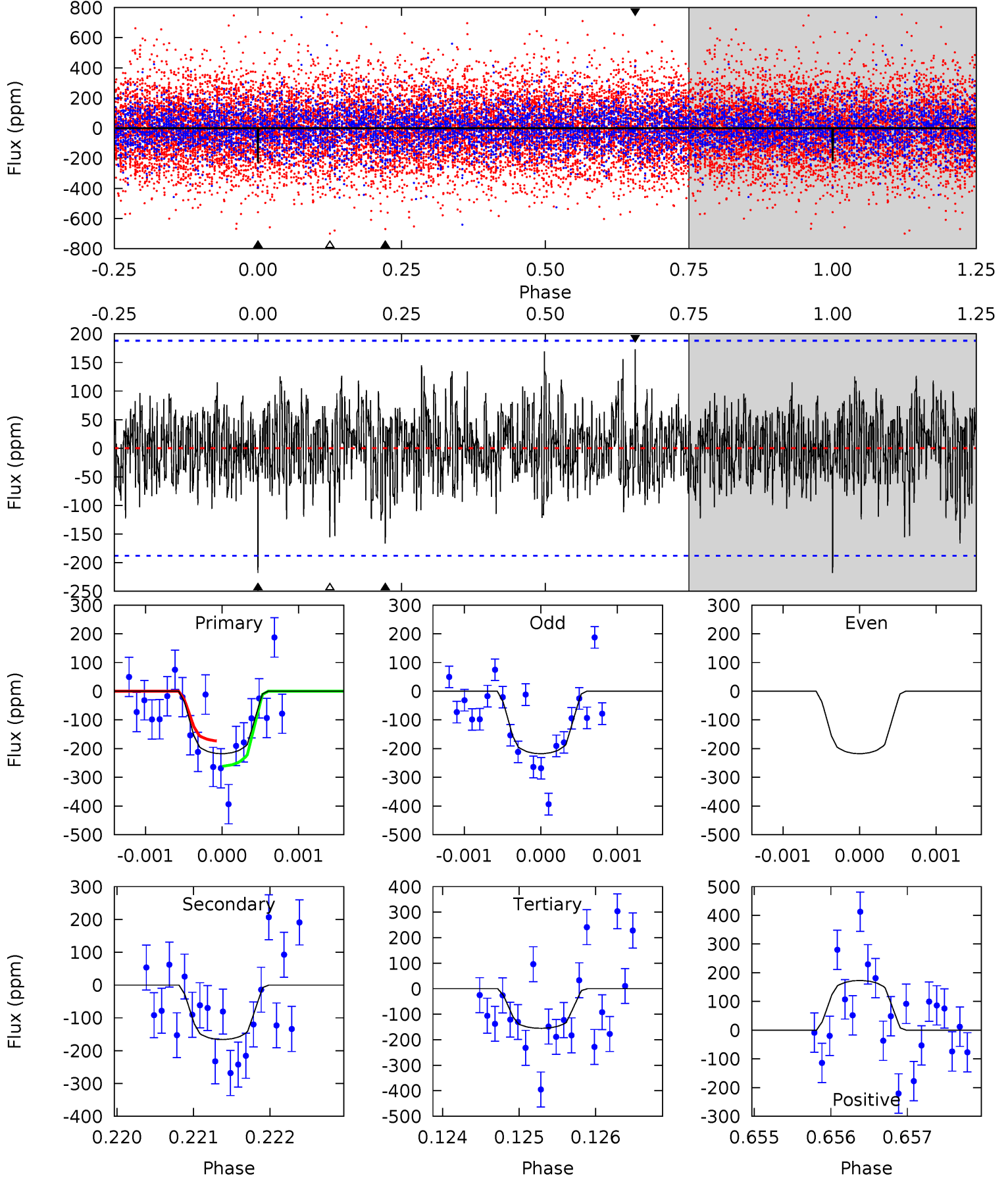


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

009426817-03, P = 117.828791 Days, E = 50.220740 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.35	4.84	4.52	5.05	5.48	3.33	1.33	1.83	1.30	0.32	-0.20	0	0.89	0.44	1.28



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 009426817

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6365^{+171}_{-209}	$4.345^{+0.108}_{-0.186}$	$-0.420^{+0.300}_{-0.300}$	$1.110^{+0.325}_{-0.175}$	$0.993^{+0.146}_{-0.110}$	$1.021^{+0.556}_{-0.485}$
	+3%/-3%	+2%/-4%	+71%/-71%	+29%/-16%	+15%/-11%	+55%/-48%
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 009426817-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-166 ± 34	$3.04^{+2.73}_{-2.04}$	605^{+44}_{-33}	4697^{+3562}_{-958}	2148^{+17056}_{-1554}
Alt.	N/A	N/A	N/A	N/A	N/A

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

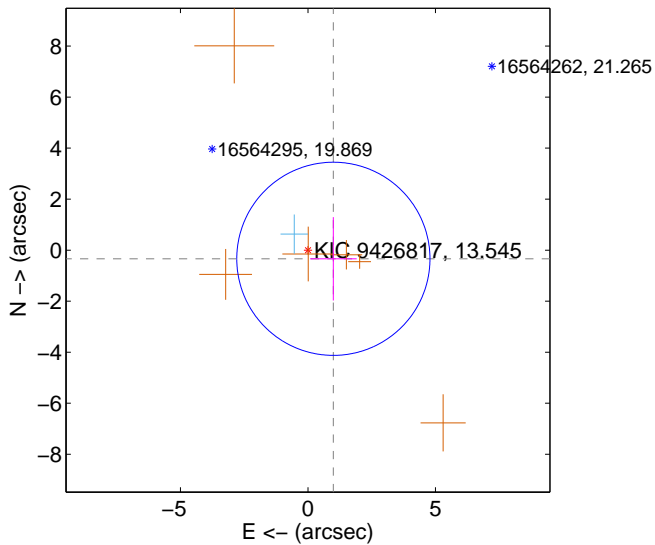
Supplemental centroid analysis for 009426817-03. Kepler magnitude: 13.54. Transit SNR 9.08

There are 1 quarters with good PRF difference image offsets

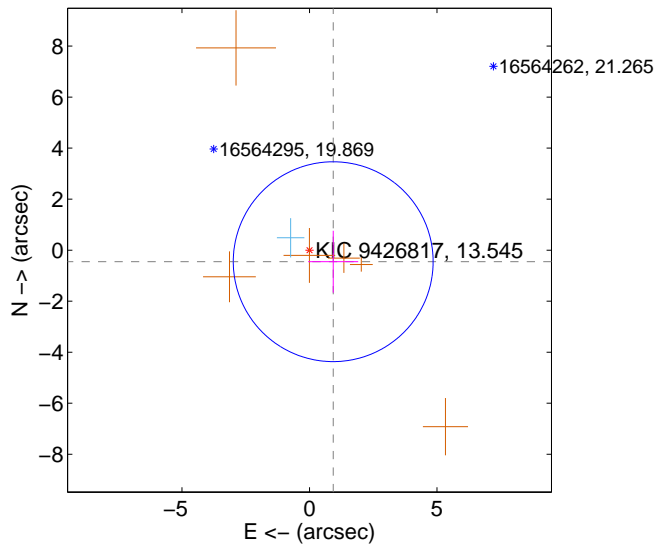
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.052 ± 1.262	0.83	-0.996 ± 0.914	-0.338 ± 1.633
PRF-fit source offset from KIC position	1.034 ± 1.306	0.79	-0.930 ± 0.980	-0.452 ± 1.215
photometric centroid source offset	2.61 ± 1.77	1.48	-1.54 ± 2.02	-2.11 ± 1.61

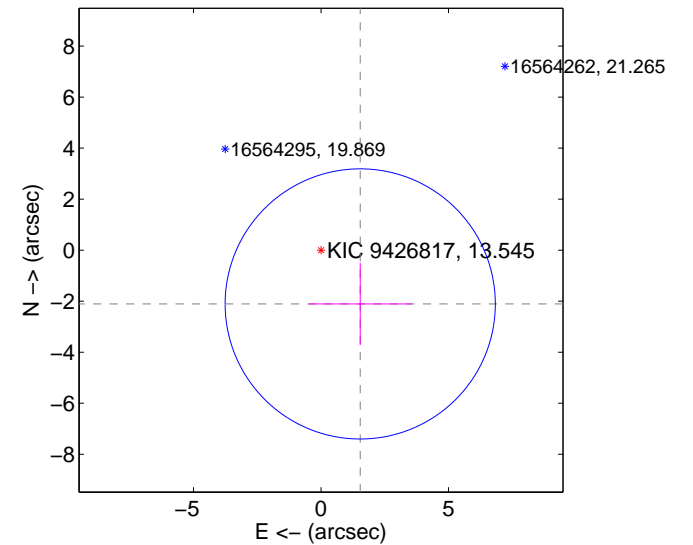
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

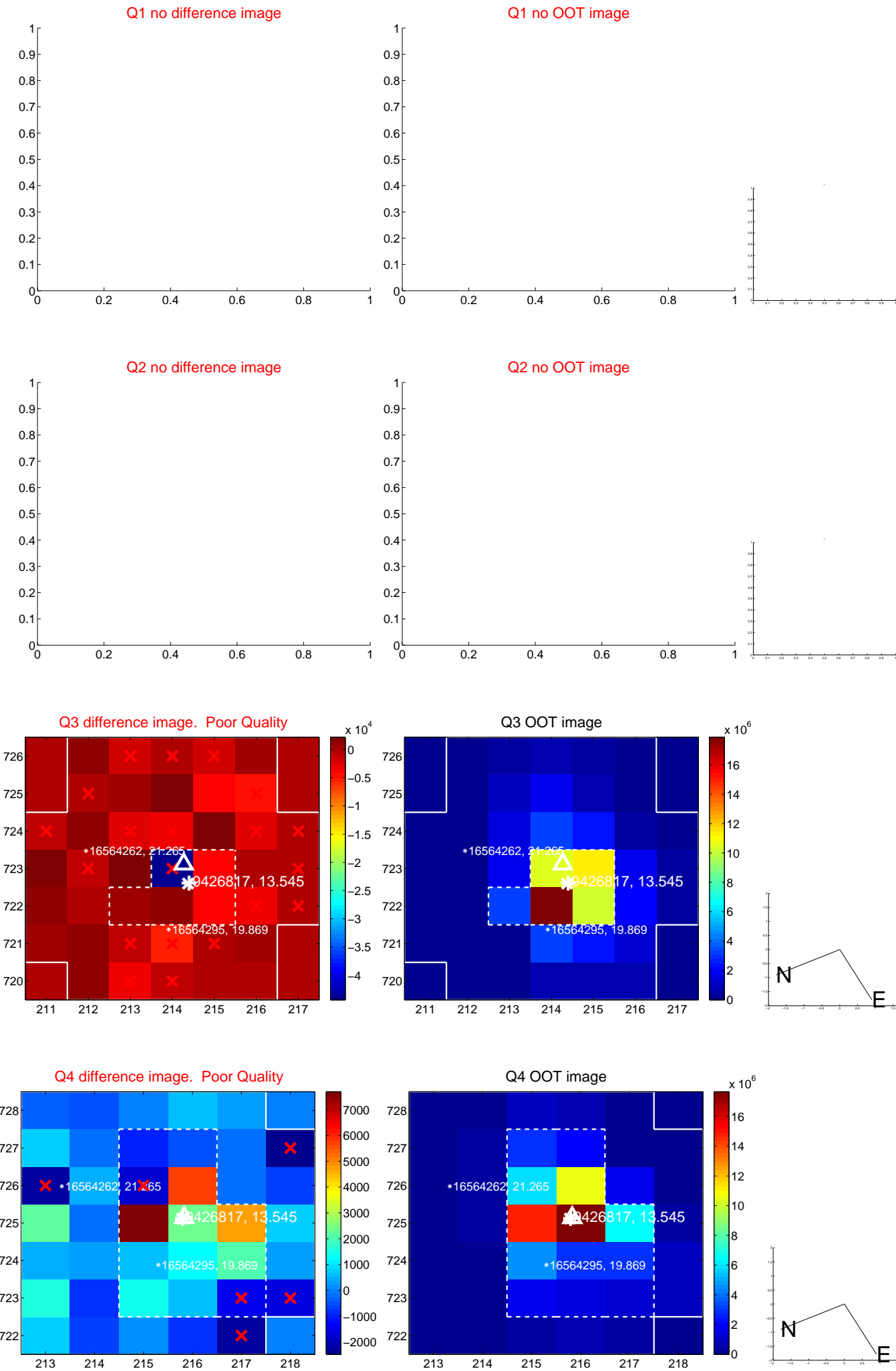


offset from photometric centroids

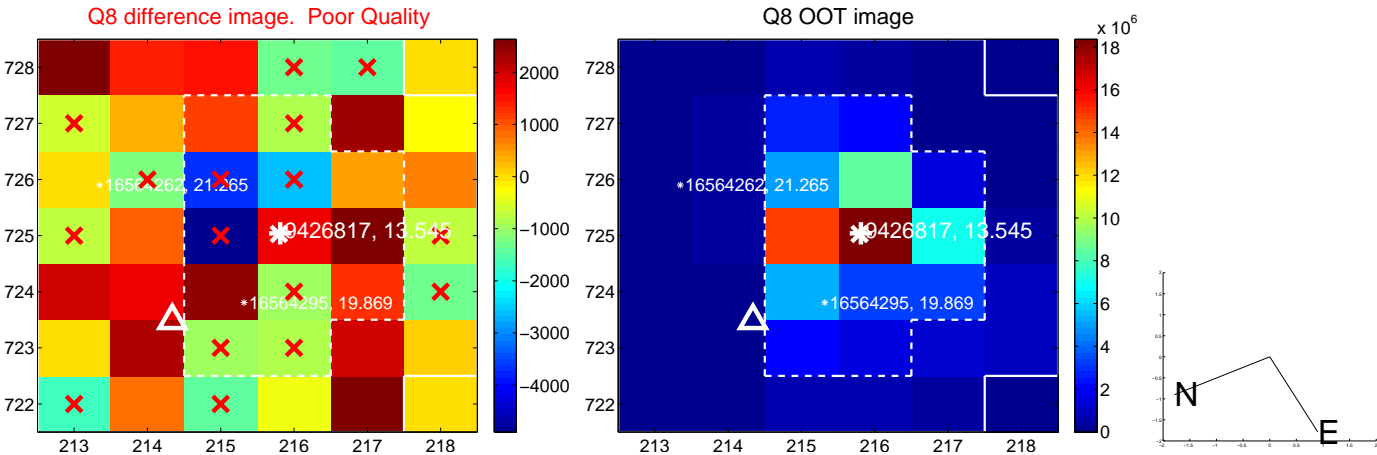
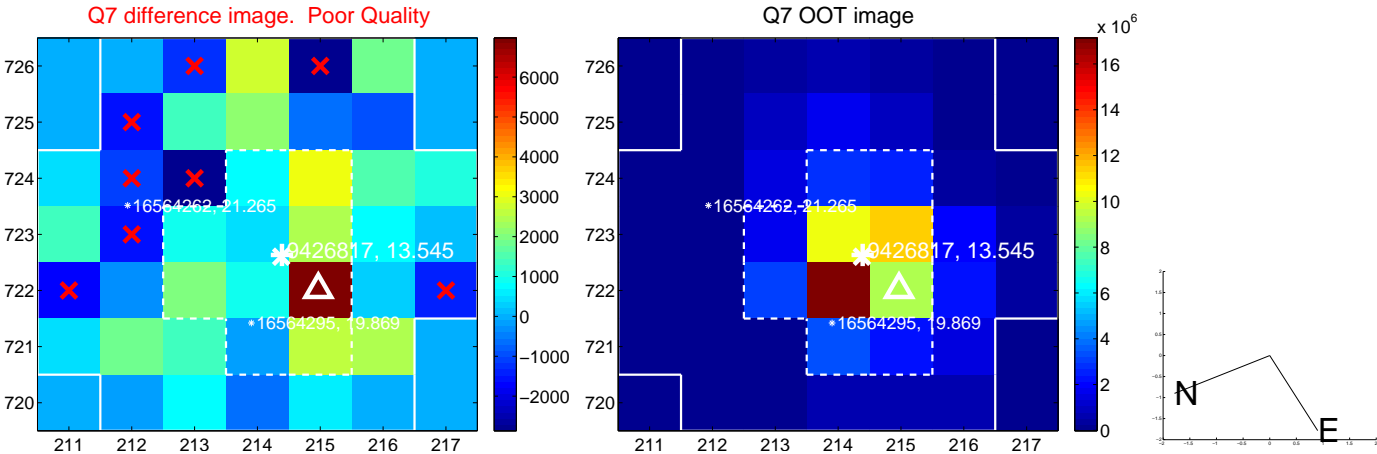
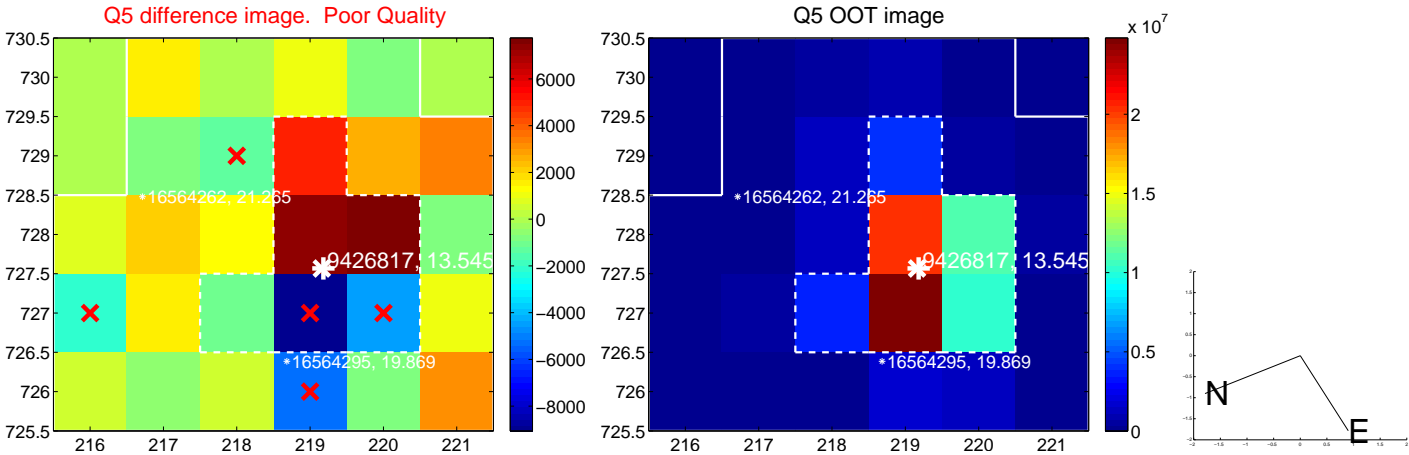


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

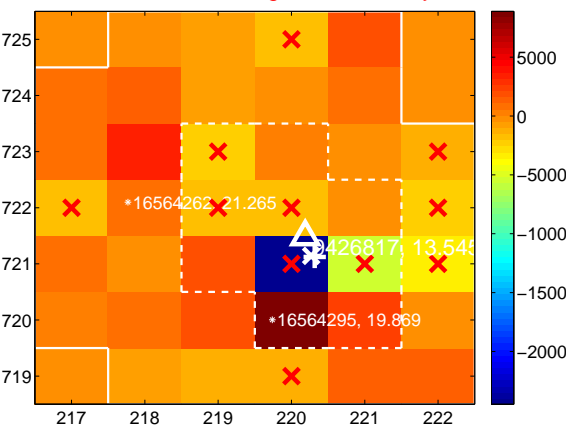
Q9 no difference image



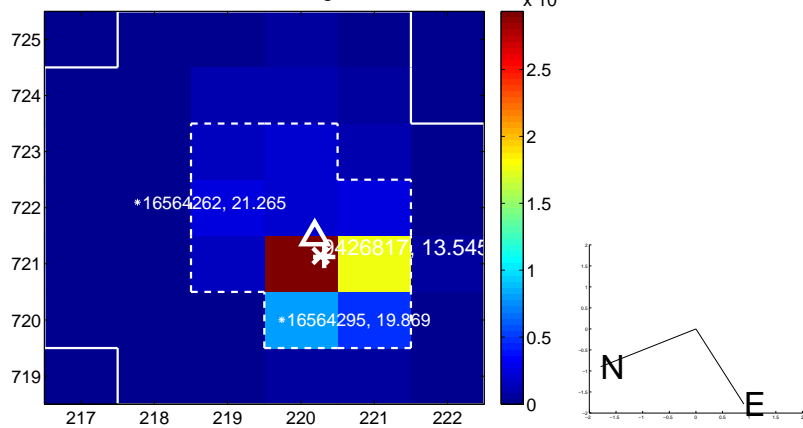
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



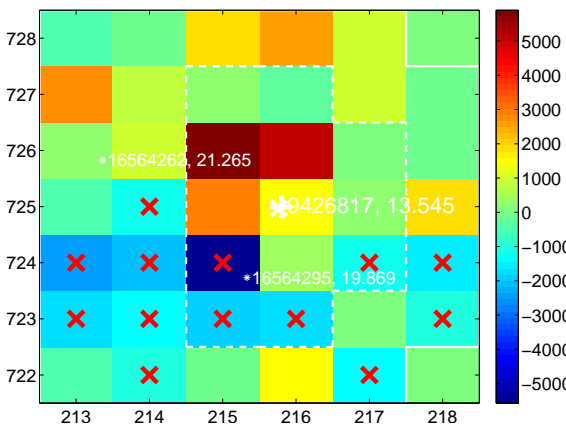
Q11 no difference image



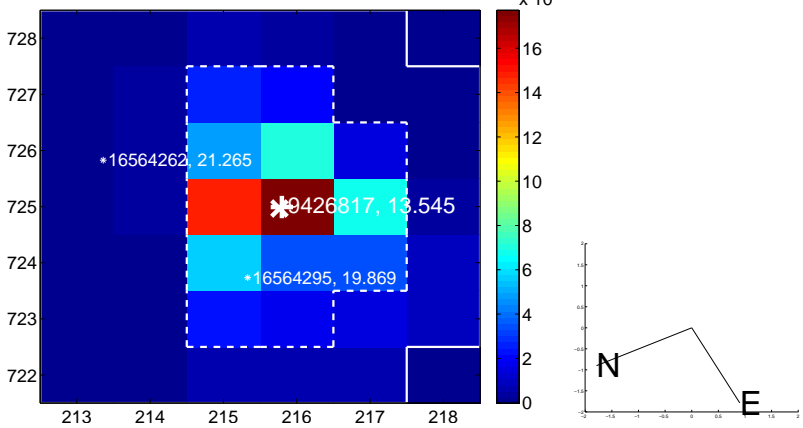
Q11 no OOT image



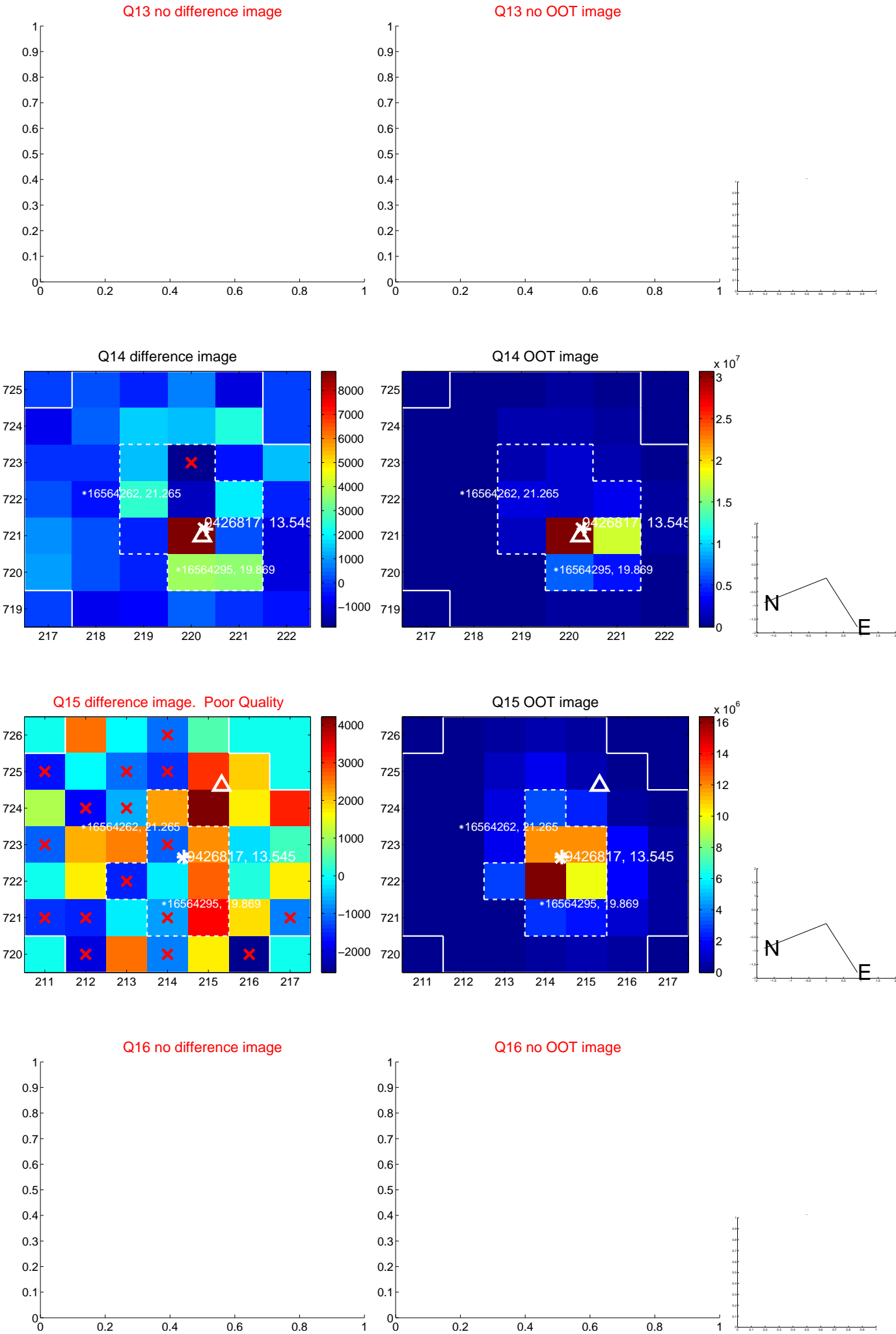
Q12 difference image. Poor Quality



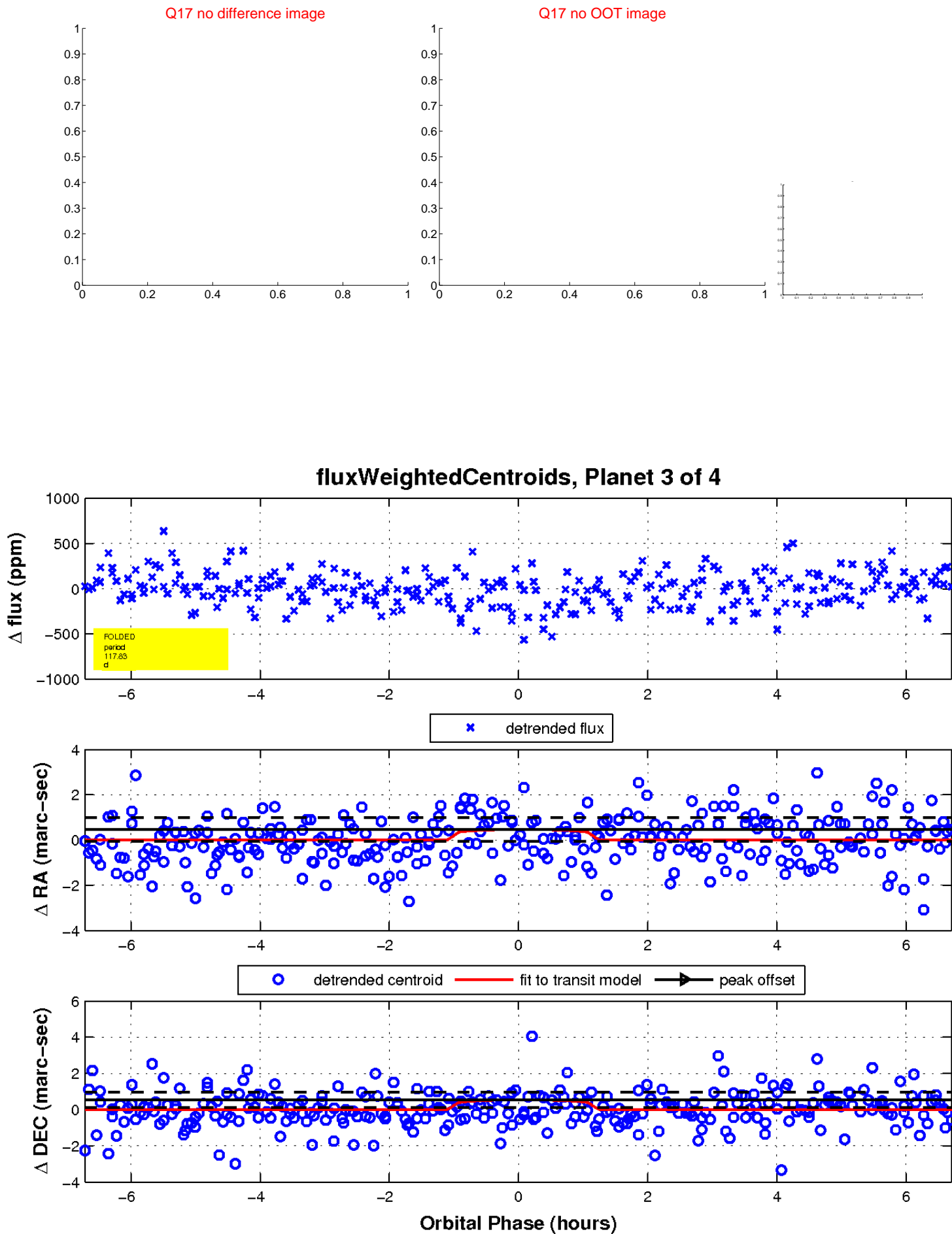
Q12 OOT image



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

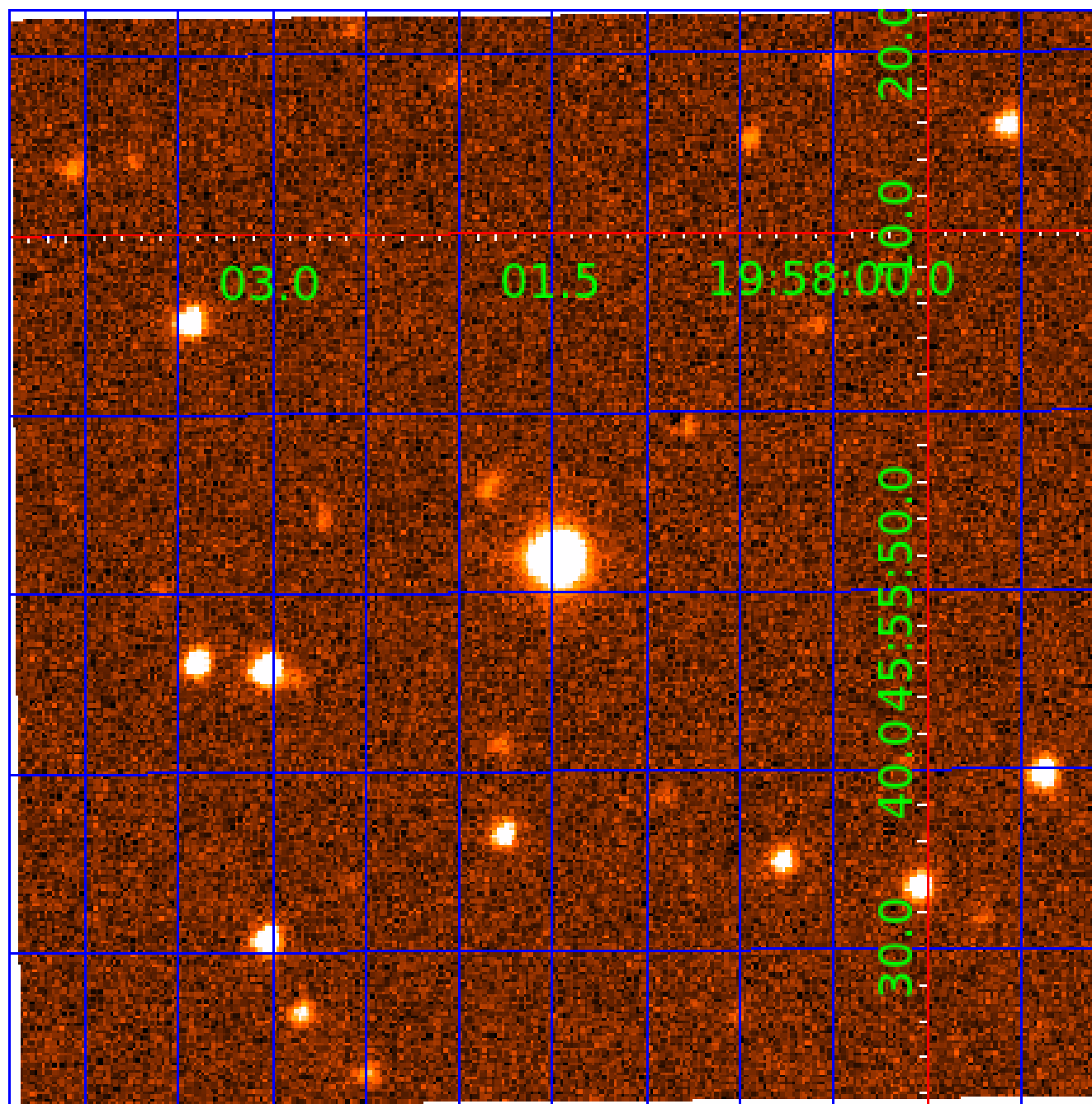


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009426817

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})
009426817-01	OBS	No	0.986014	132.536824	10.1	5.996	8.6	4.6	1.11	6365	0.36	4835.70
009426817-02	OBS	No	301.814760	185.111865	334.2	3.390	8.4	8.4	1.11	6365	2.10	2.34
009426817-03	OBS	No	117.828791	168.049531	259.6	2.250	7.8	9.1	1.11	6365	1.92	8.22
009426817-04	OBS	No	213.490075	295.640419	306.9	3.951	8.2	8.9	1.11	6365	2.25	3.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009426817-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009426817-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009426817-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009426817-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

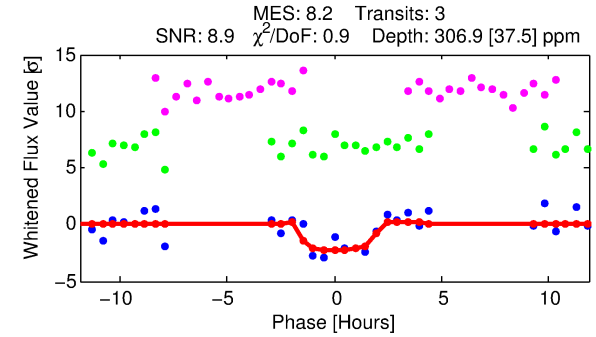
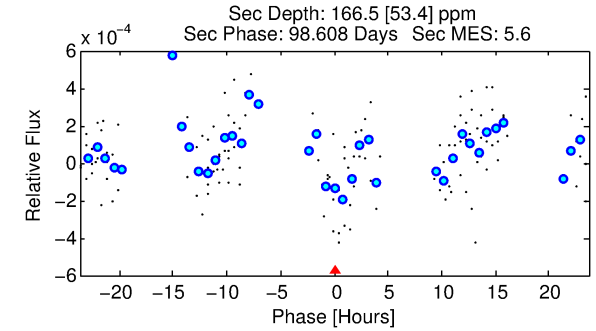
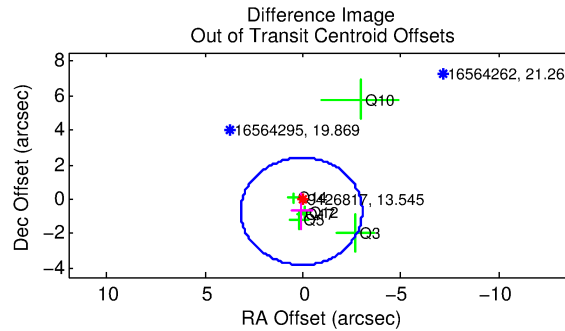
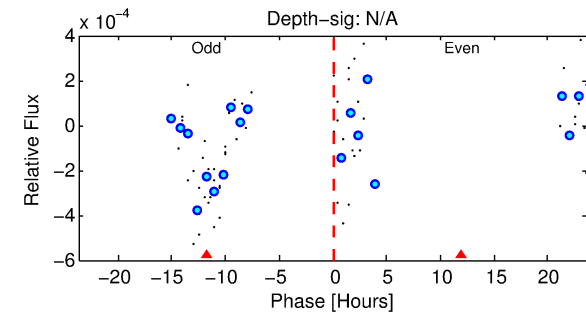
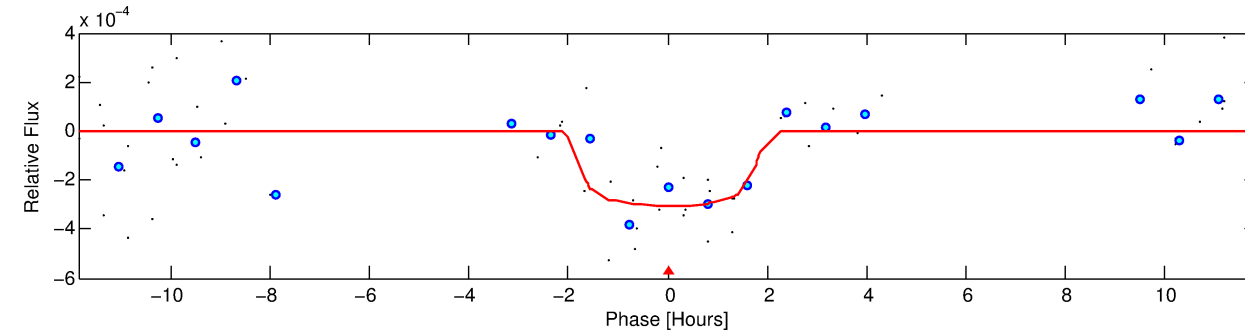
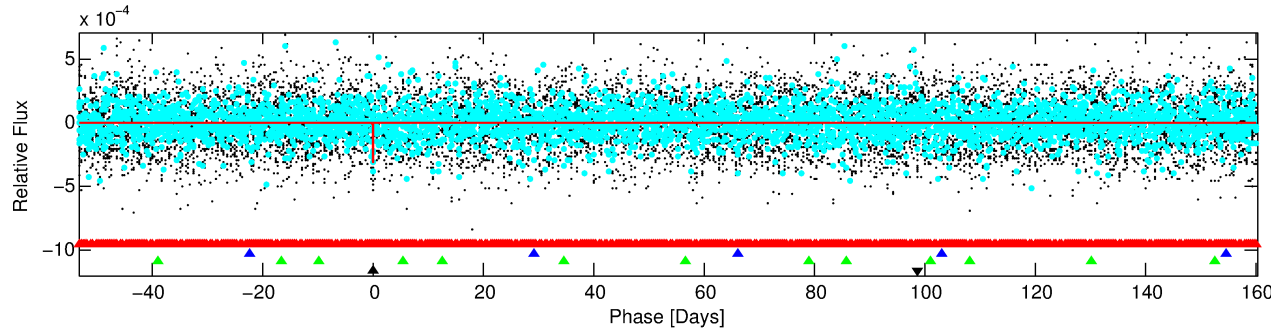
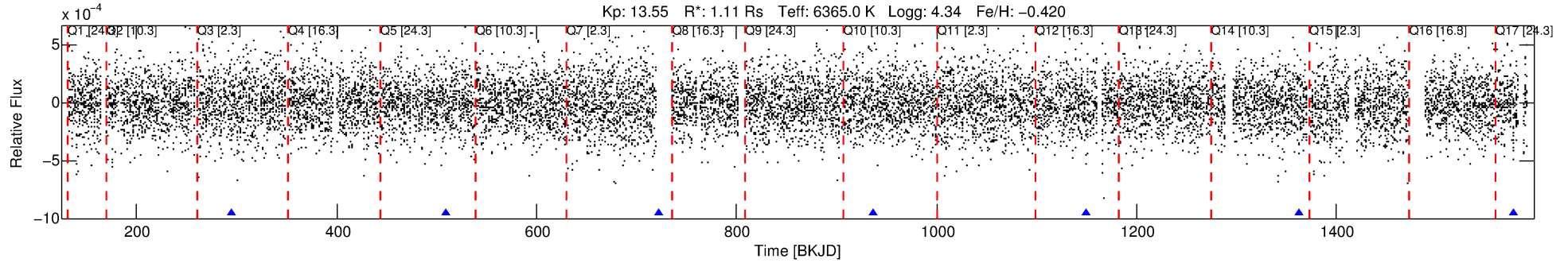
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009426817-04

No Significant Match Found

DV One-Page Summary

KIC: 9426817 Candidate: 4 of 4 Period: 213.490 d



DV Fit Results:

Period = 213.49007 [0.00235] d
Epoch = 295.6404 [0.0102] BKJD
Rp/R* = 0.0186 [0.0106]
a/R* = 208.39 [679.36]
b = 0.88 [0.80]
Seff = 3.72 [1.38]
Teq = 354 [33] K
Rp = 2.25 [1.44] Re
a = 0.6980 [0.1688] AU
Ag = 8831.35 [10876.95] [0.81σ]
Teffp = 5308 [1578] K [3.14σ]

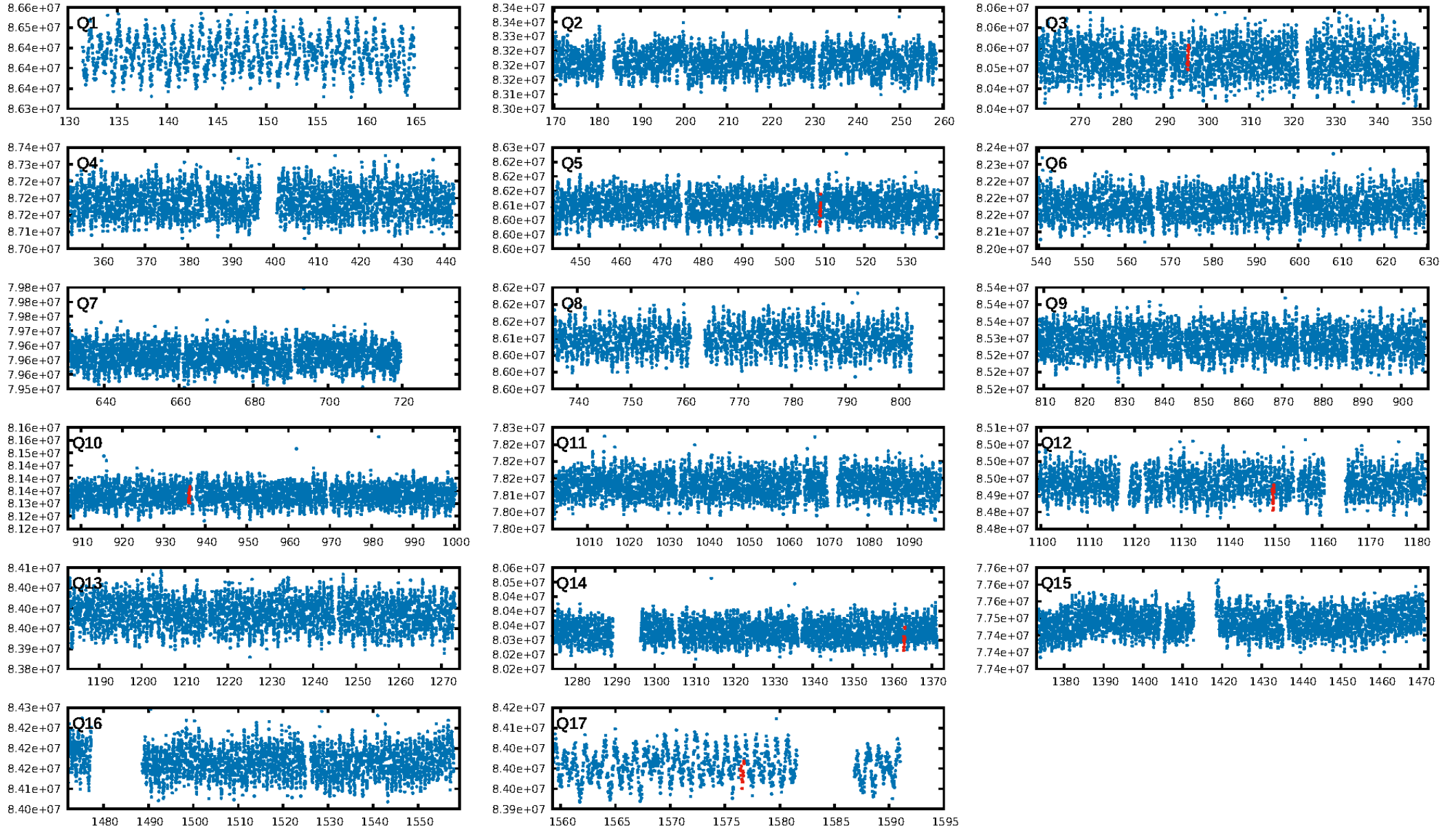
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [504.90σ]
LongPeriod-sig: 100.0% [407.14σ]
ModelChiSquare2-sig: 98.4%
ModelChiSquareGof-sig: 99.0%
Bootstrap-pfa: 4.78e-08
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 7.873
Centroid-sig: 1.8%
Centroid-so: 2.370 arcsec [1.78σ]
OotOffset-rm: 0.709 arcsec [0.69σ]
OotOffset-st: 2/1/1/2 [6]
KicOffset-rm: 0.855 arcsec [0.75σ]
KicOffset-st: 2/1/1/2 [6]
DiffImageQuality-fgm: 0.67 [4/6]
DiffImageOverlap-fno: 0.00 [0/6]

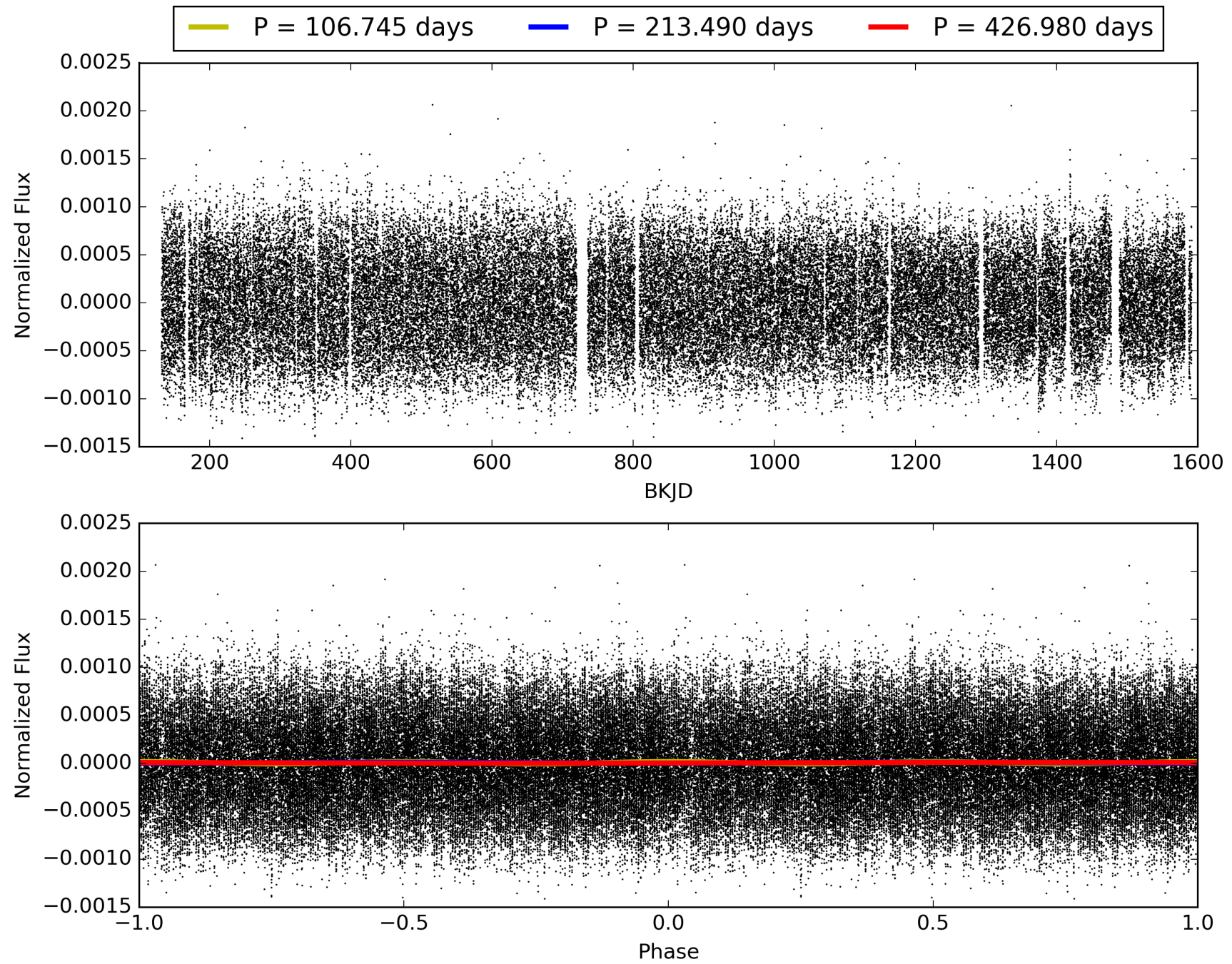
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:05:16 Z

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

TCE 009426817-04, PDC Light Curves

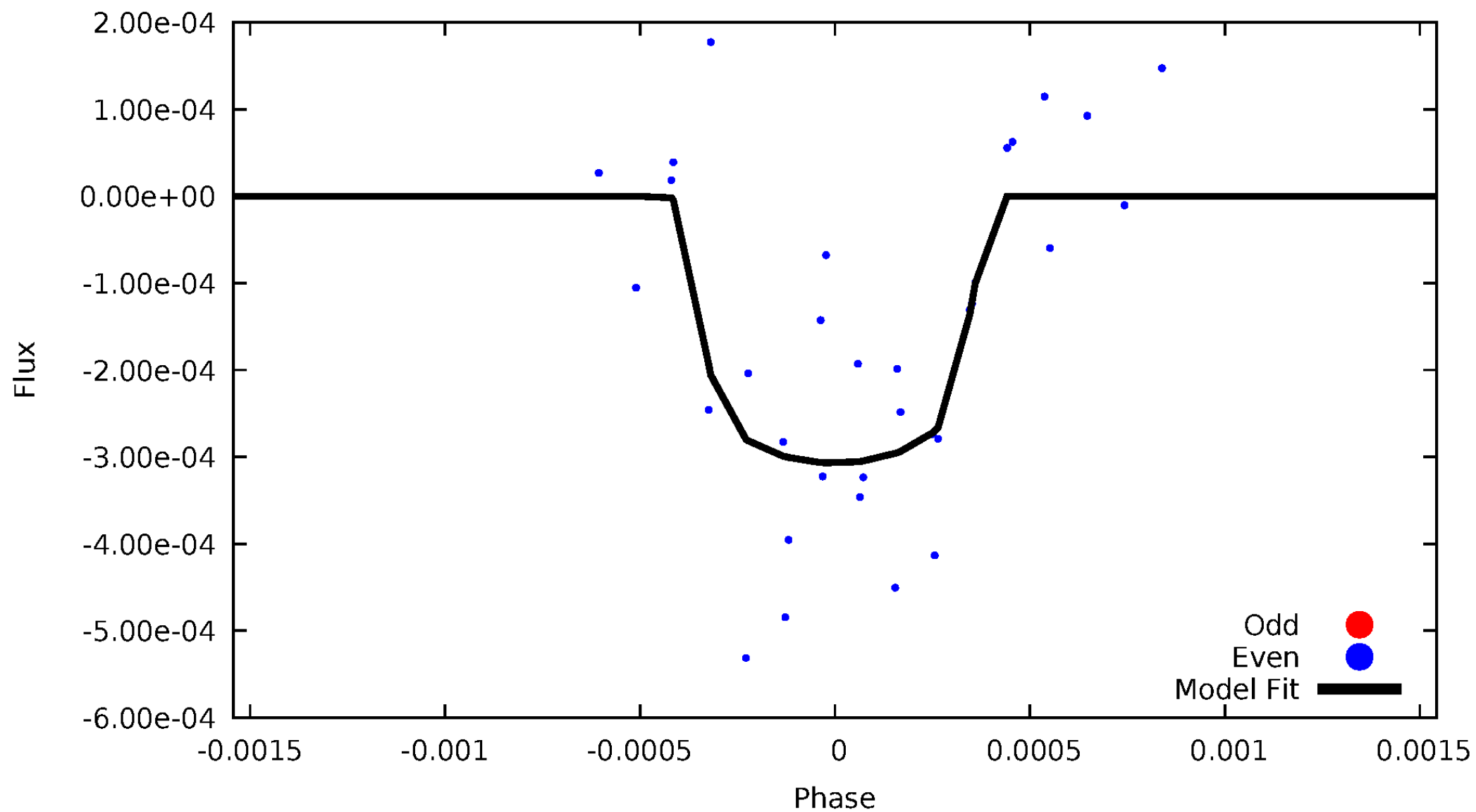


TCE 009426817-04



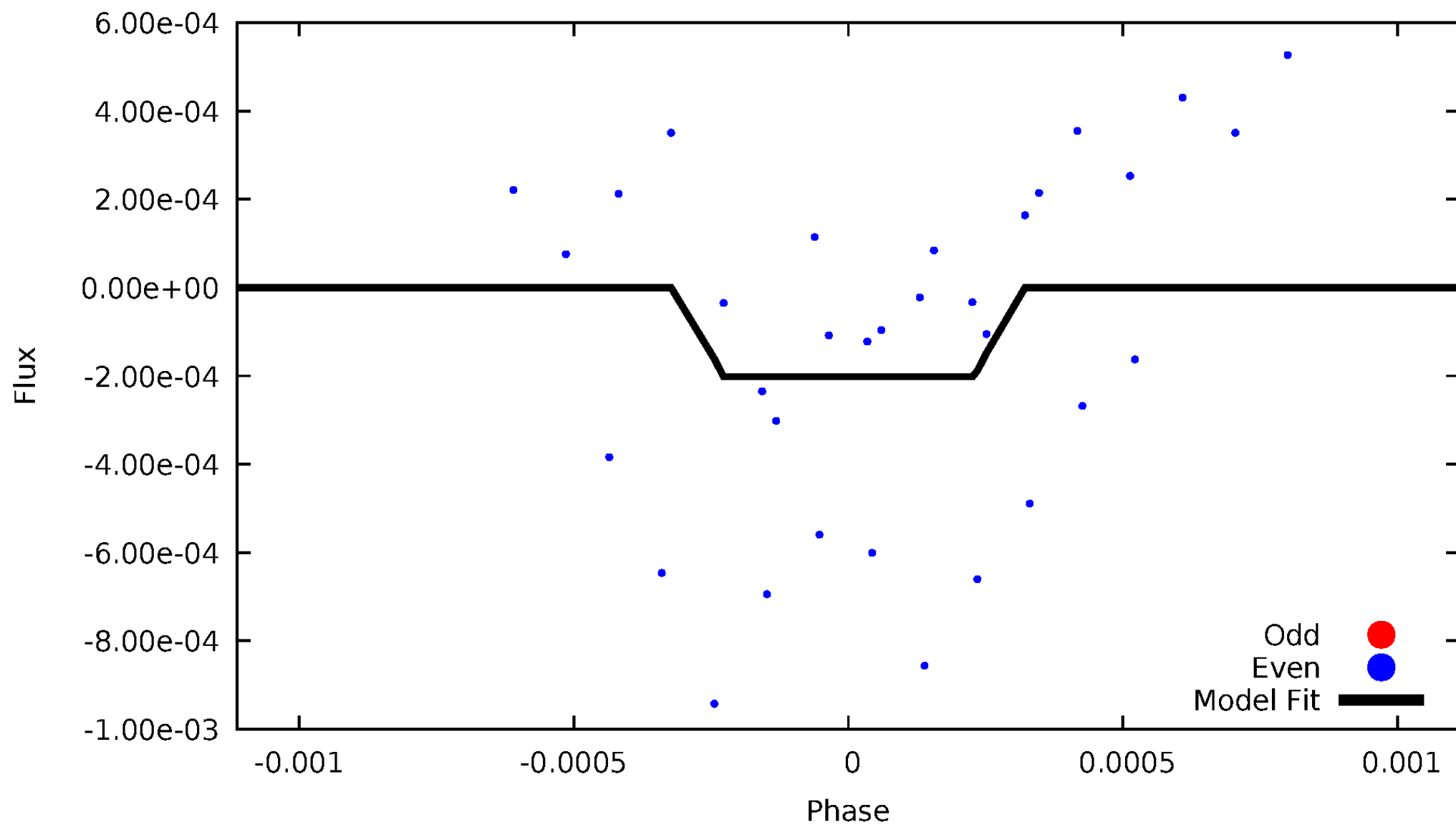
DV Odd/Even

TCE 009426817-04



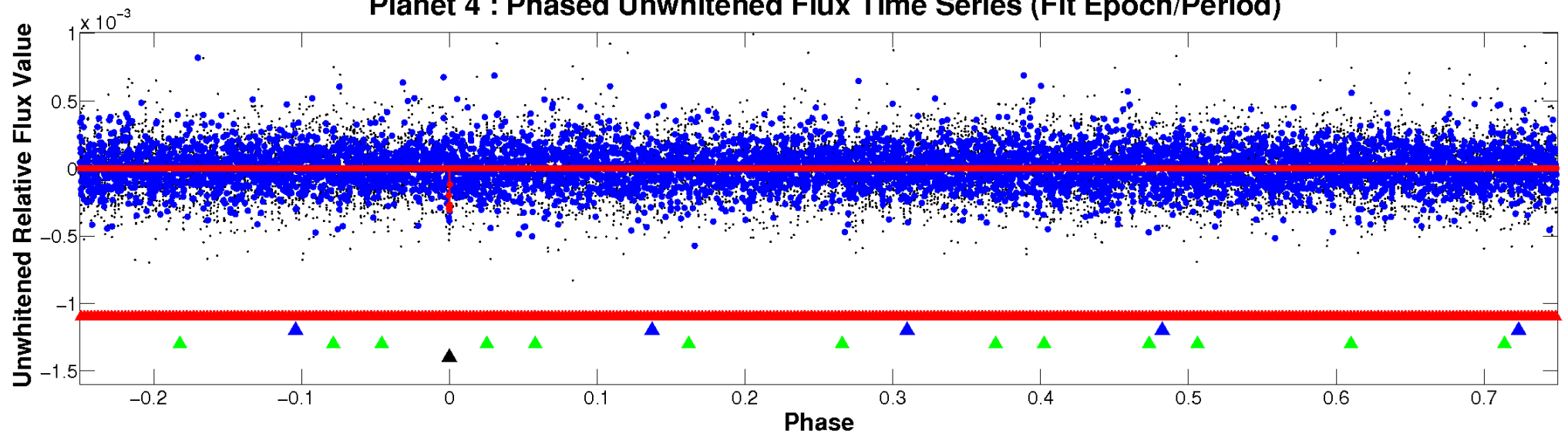
ALT Odd/Even

TCE 009426817-04

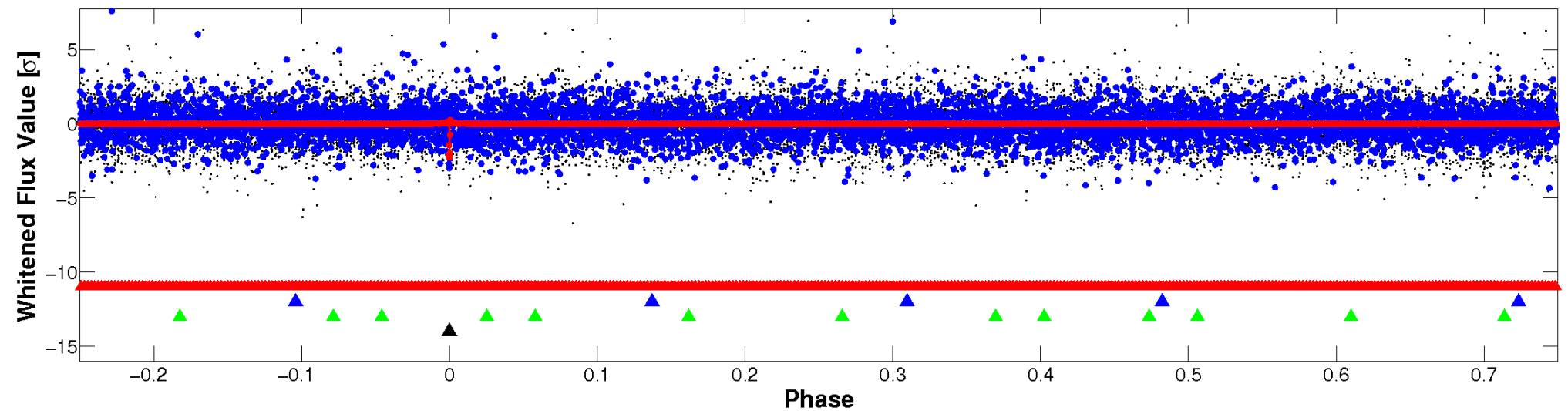


Non-Whitened Vs. Whitened Light Curve

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

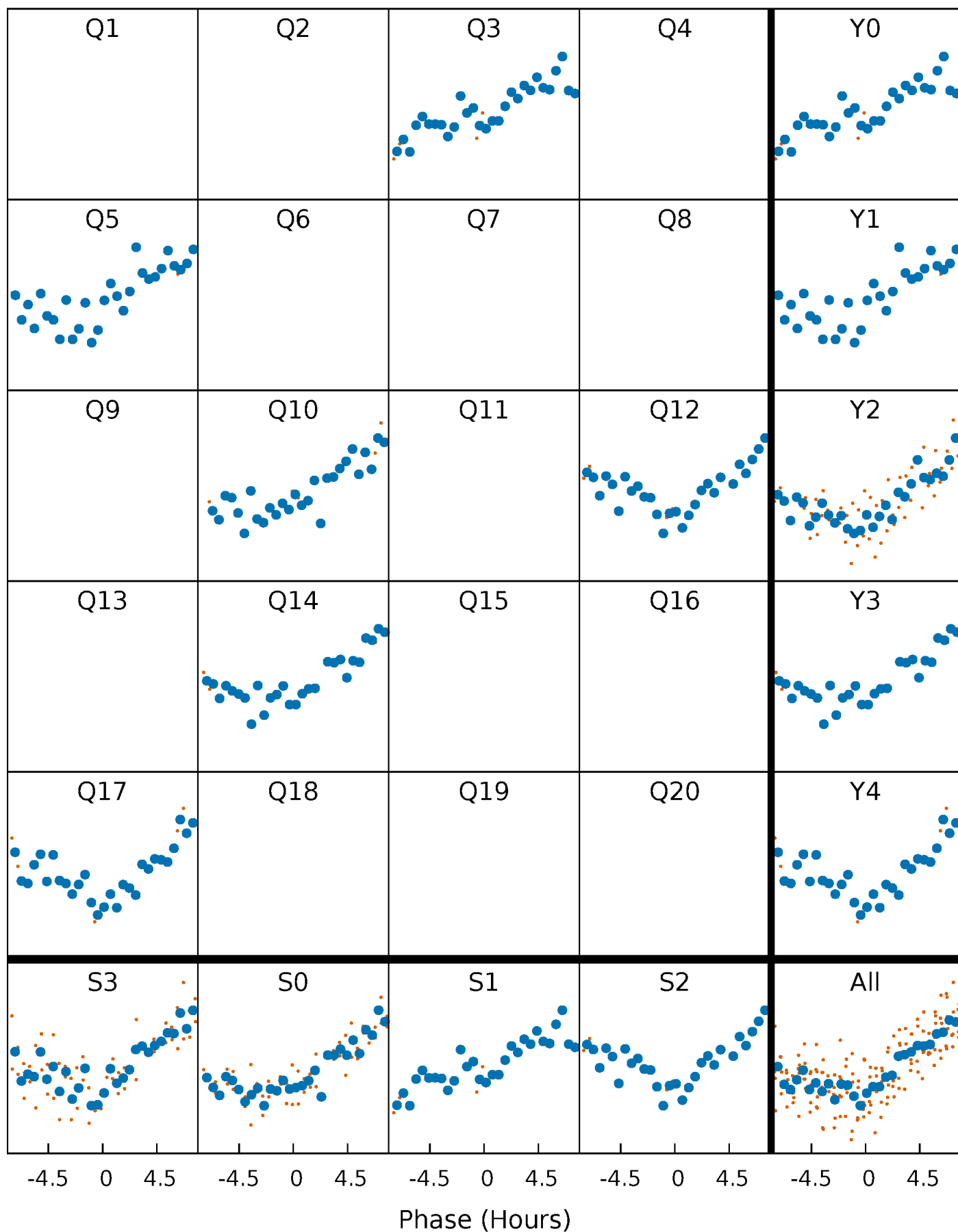


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



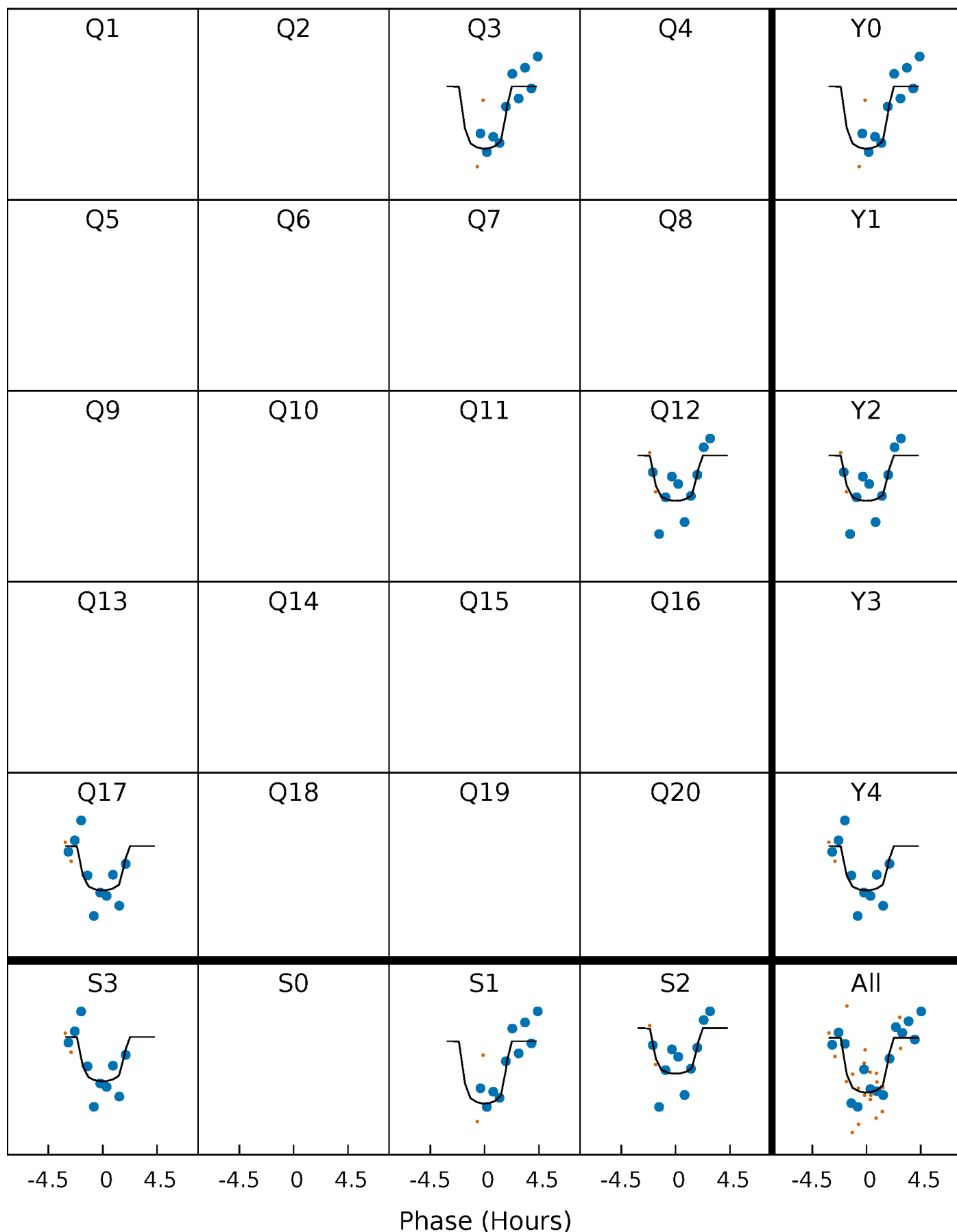
PDC Quarter-Phased Transit Curves

TCE 009426817-04 P=213.490075 Days $T_0=295.640419$ (BKJD)



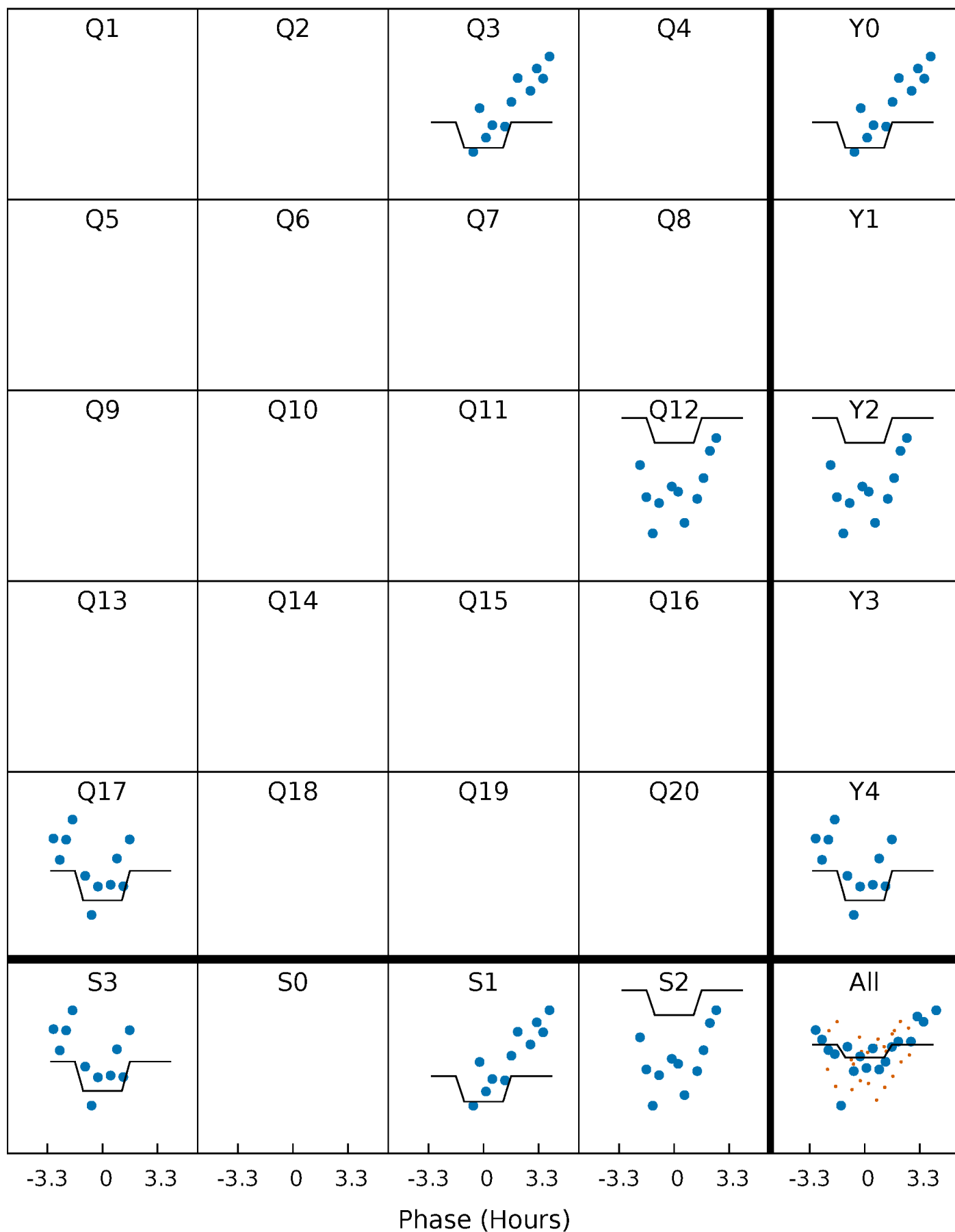
DV Quarter-Phased Transit Curves

TCE 009426817-04 P=213.490075 Days $T_0=295.640419$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

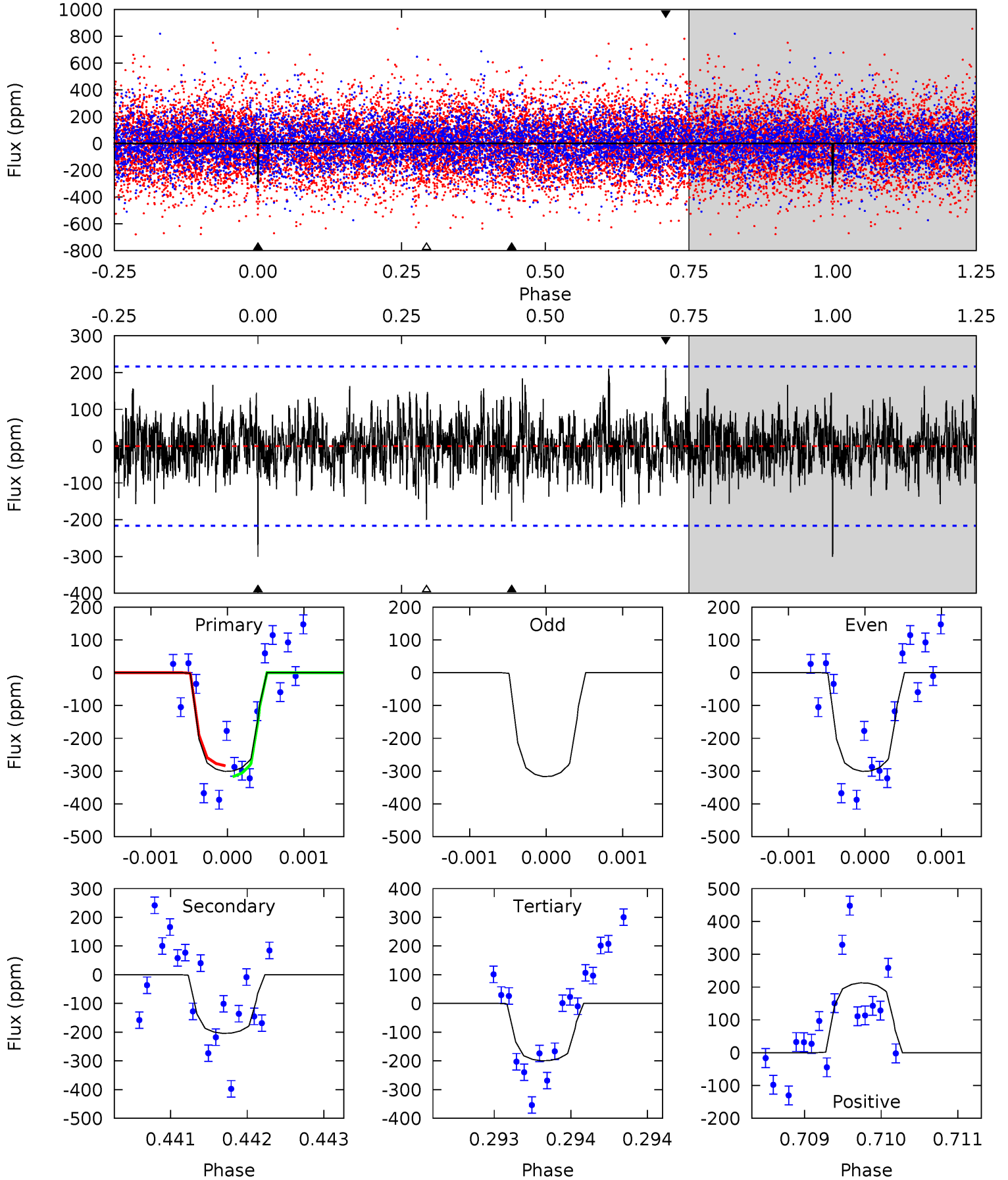
TCE 009426817-04 P=213.488865 Days $T_0=295.648587$ (BKJD)



DV Model-Shift Uniqueness Test

009426817-04, P = 213.490075 Days, E = 82.150344 Days

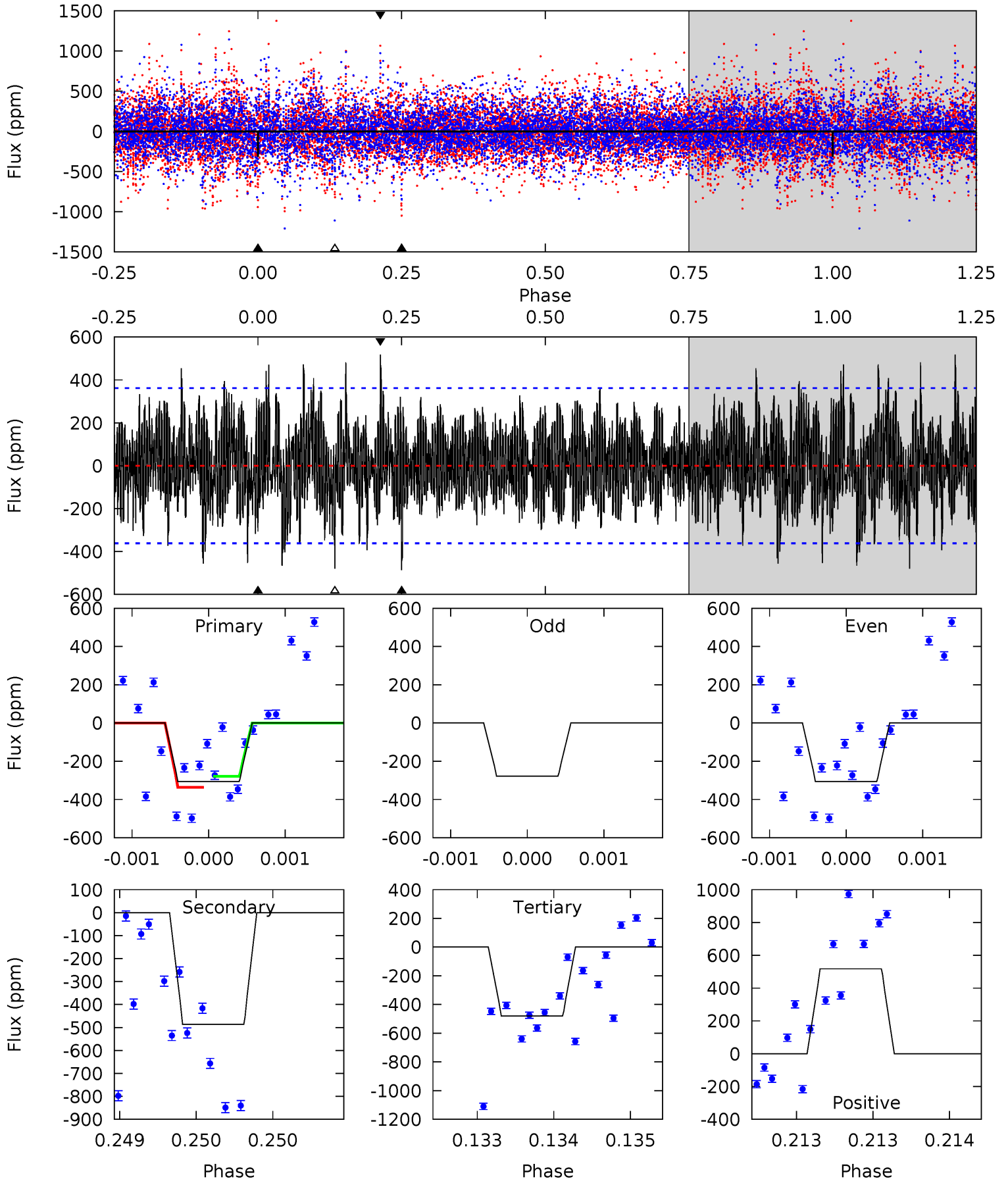
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.62	5.17	5.05	5.38	5.48	3.33	1.39	2.57	2.23	0.12	-0.22	0.24	1.00	0.41	0.42



Alt Model-Shift Uniqueness Test

009426817-04, P = 213.488865 Days, E = 82.159722 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.69	7.46	7.36	7.94	5.55	3.45	2.22	-2.66	-3.25	0.10	-0.48	0.25	3.10	0.52	0.45



Stellar Parameters For KIC 009426817

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6365^{+171}_{-209}	$4.345^{+0.108}_{-0.186}$	$-0.420^{+0.300}_{-0.300}$	$1.110^{+0.325}_{-0.175}$	$0.993^{+0.146}_{-0.110}$	$1.021^{+0.556}_{-0.485}$
	+3%/-3%	+2%/-4%	+71%/-71%	+29%/-16%	+15%/-11%	+55%/-48%
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 009426817-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-204 ± 39	$2.41^{+1.36}_{-1.31}$	500^{+39}_{-28}	5501^{+2600}_{-964}	9555^{+33792}_{-5882}
Alt.	-486 ± 65	$1.90^{+1.34}_{-1.12}$	499^{+34}_{-29}	7752^{+7114}_{-1875}	$34900^{+167383}_{-22595}$

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

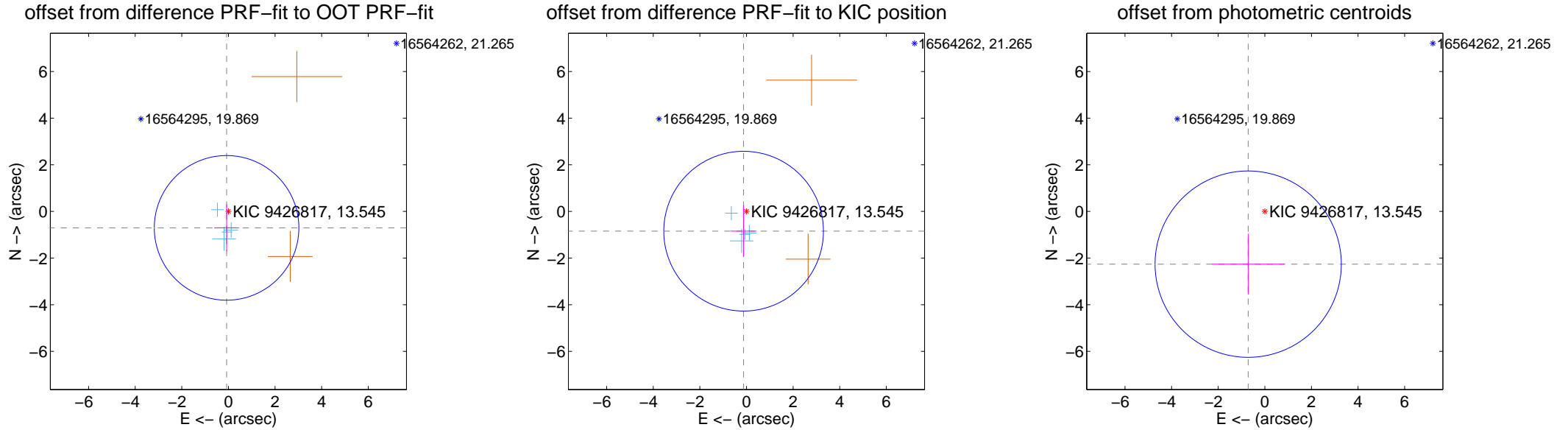
DV Centroid Data

Supplemental centroid analysis for 009426817-04. Kepler magnitude: 13.54. Transit SNR 8.89

There are 4 quarters with good PRF difference image offsets

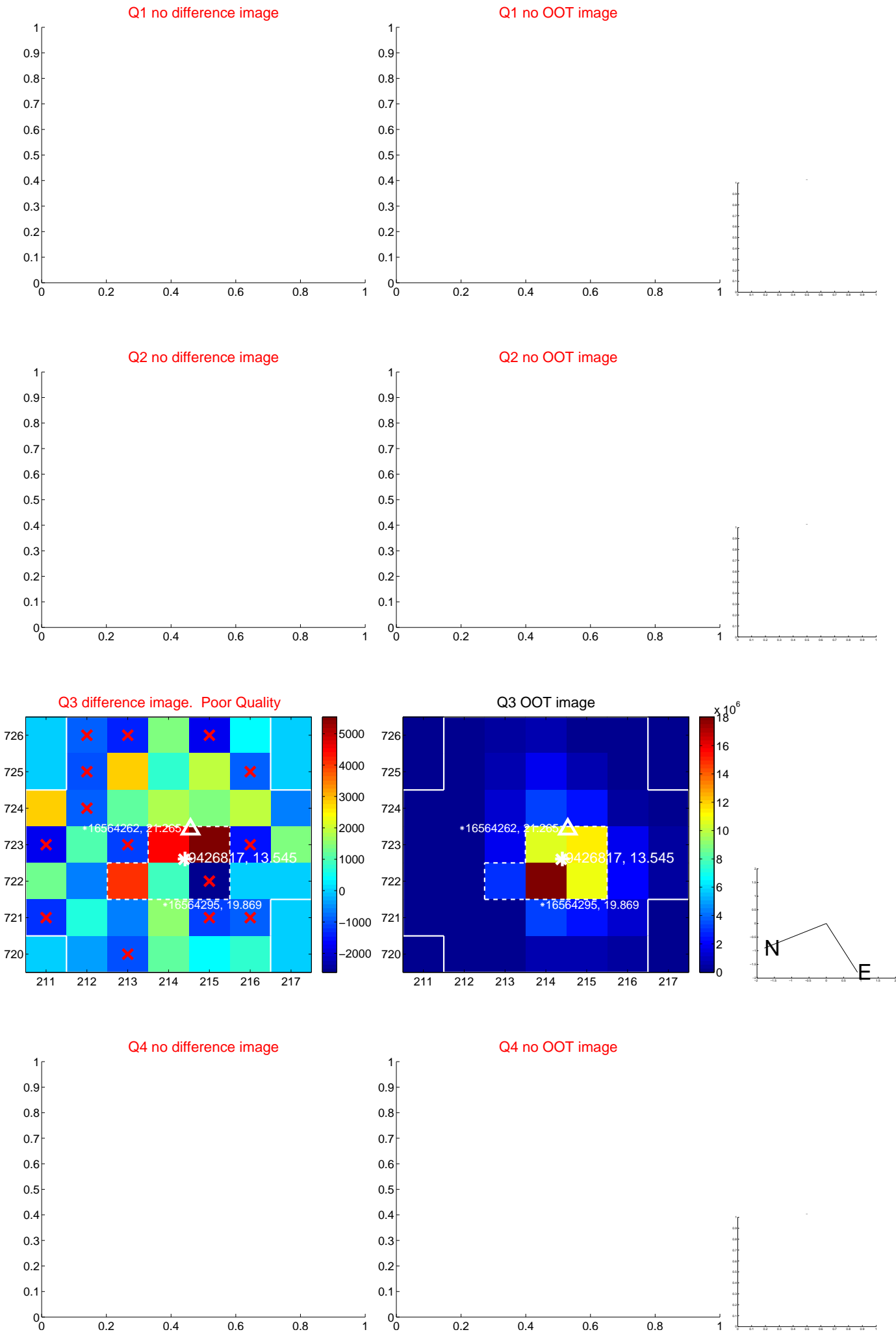
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.709 ± 1.034	0.69	0.079 ± 0.534	-0.704 ± 1.009
PRF-fit source offset from KIC position	0.855 ± 1.142	0.75	0.124 ± 0.552	-0.846 ± 1.104
photometric centroid source offset	2.37 ± 1.33	1.78	0.71 ± 1.56	-2.26 ± 1.31

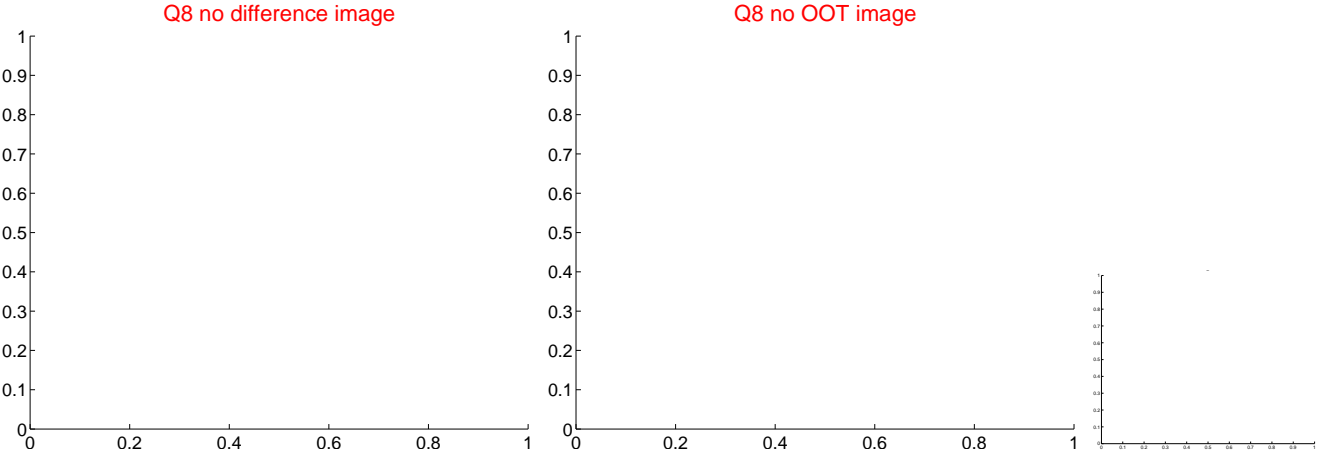
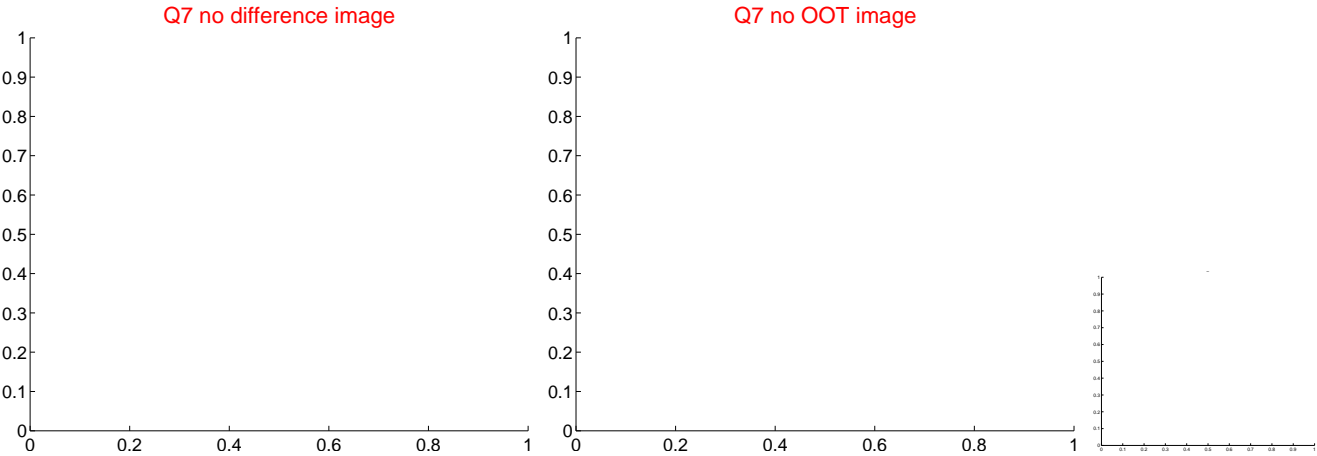
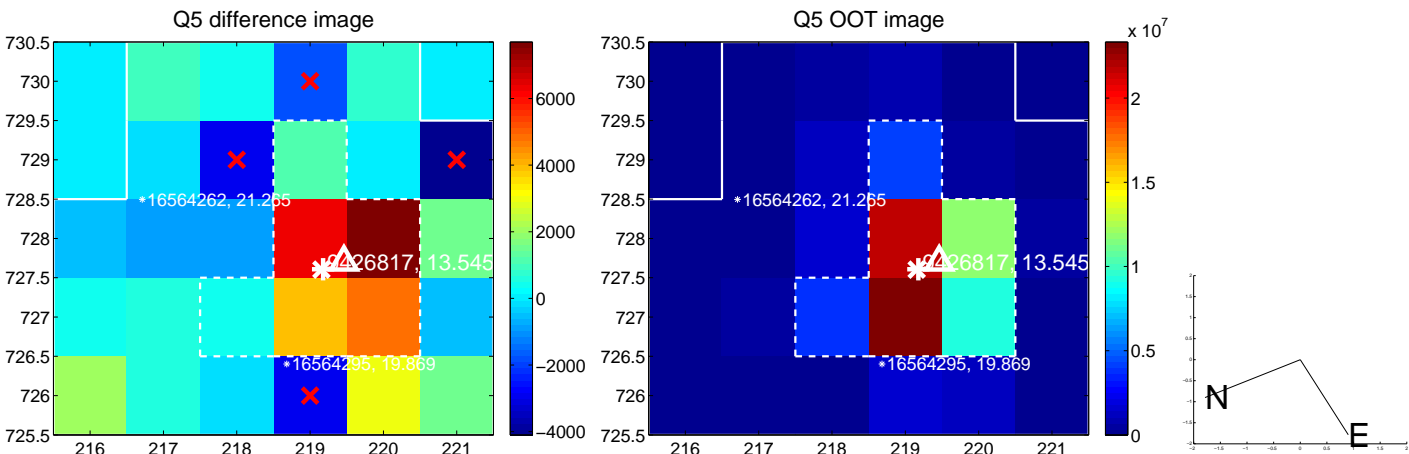


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

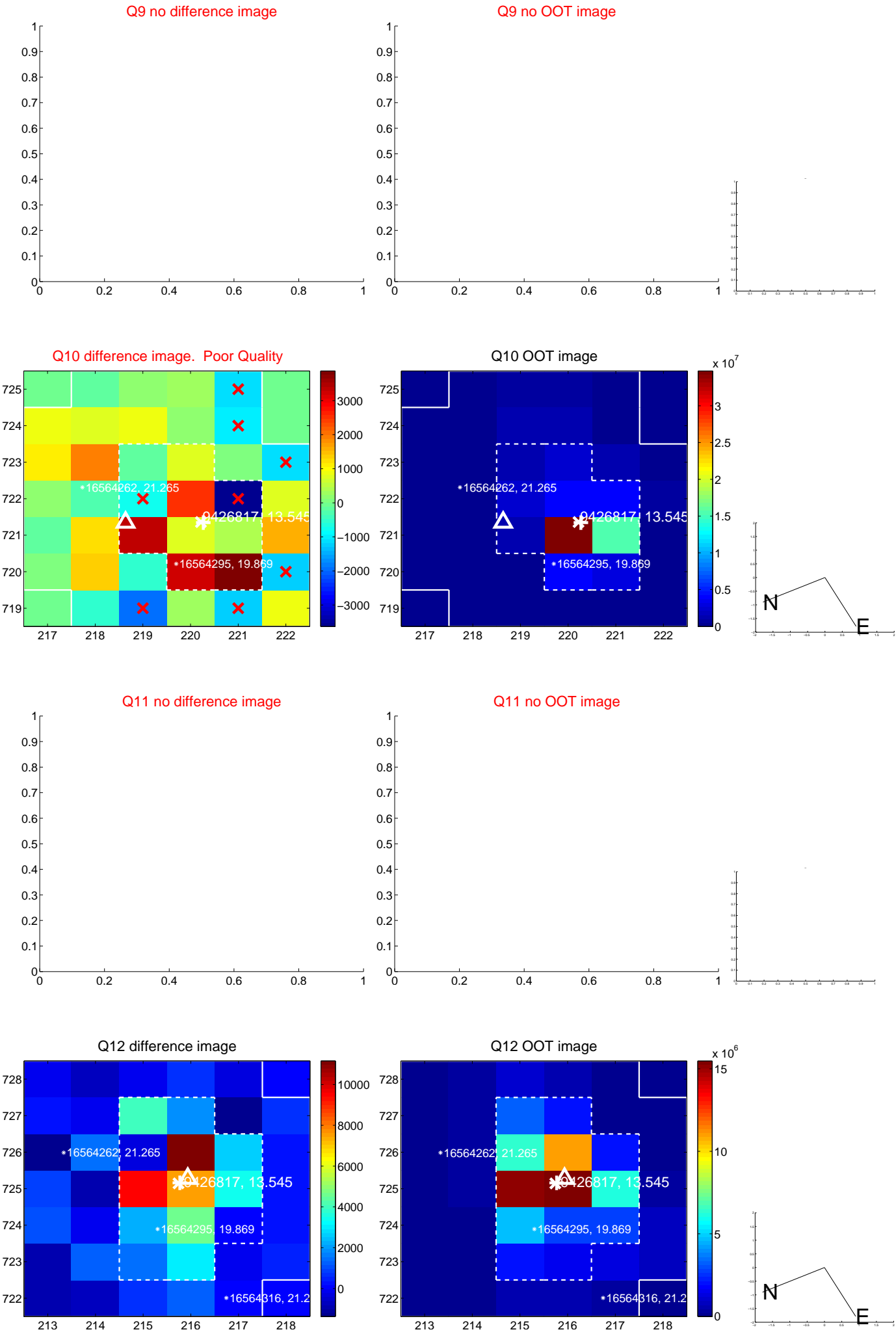
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



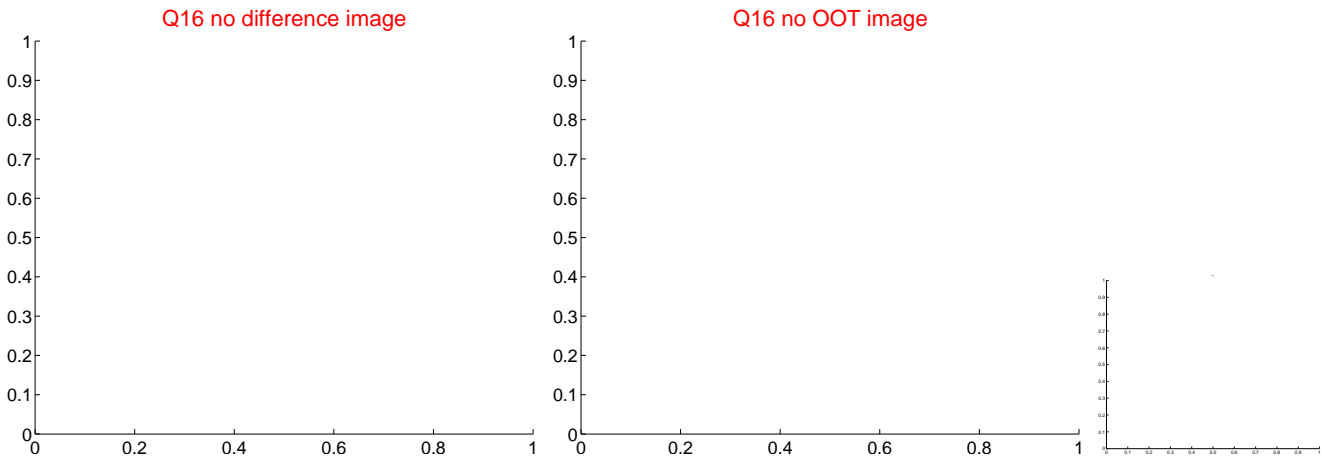
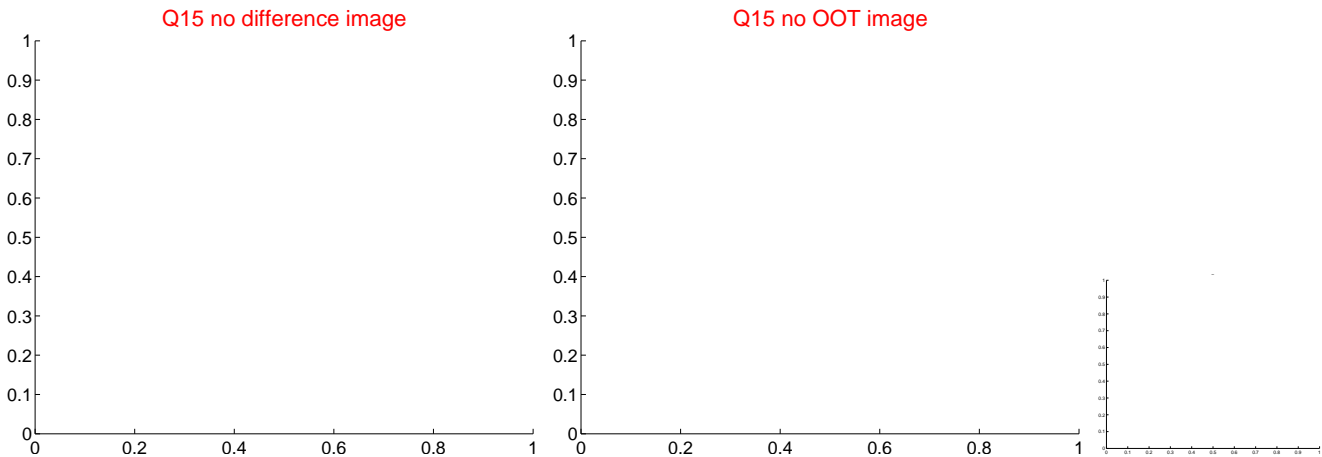
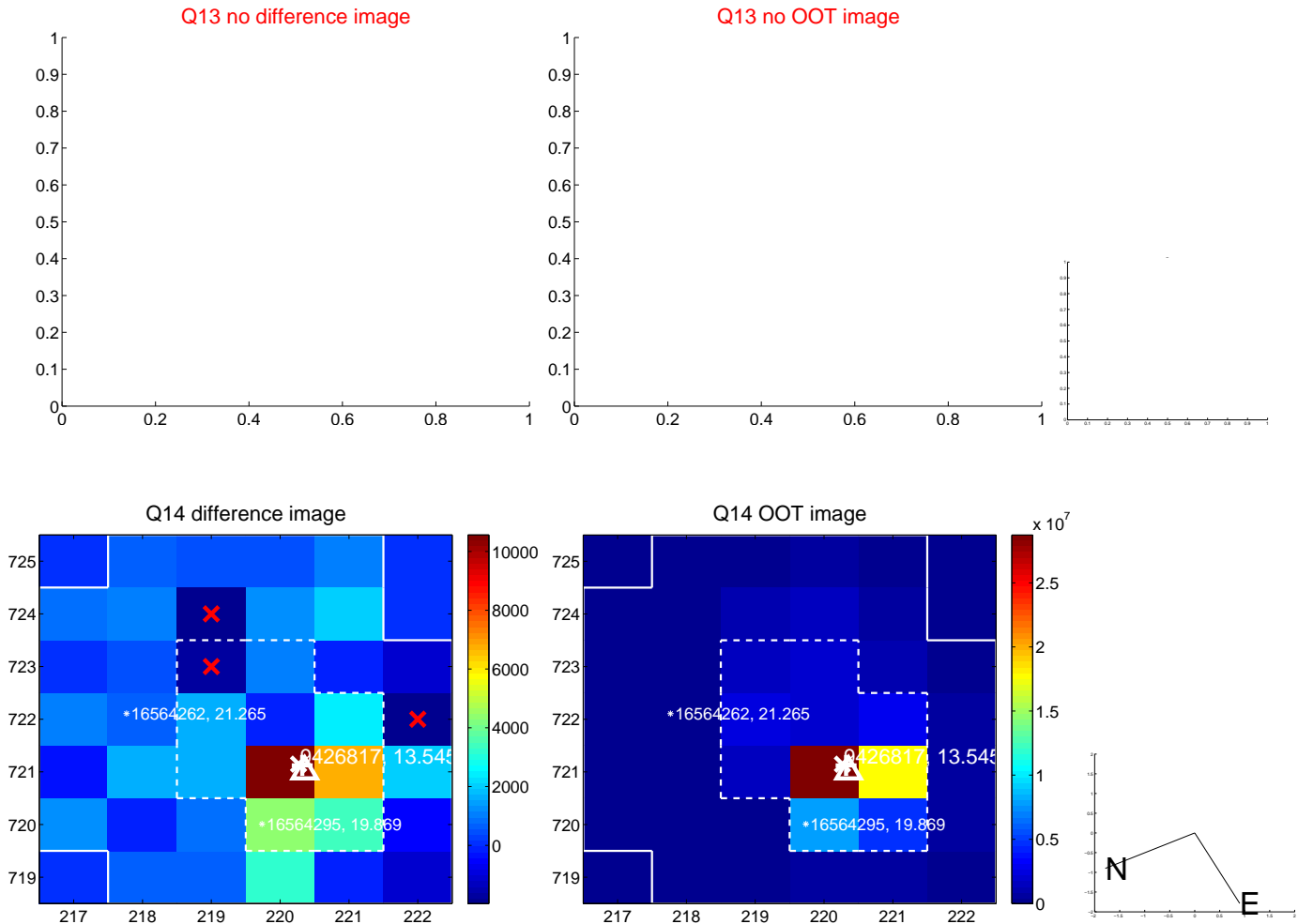
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



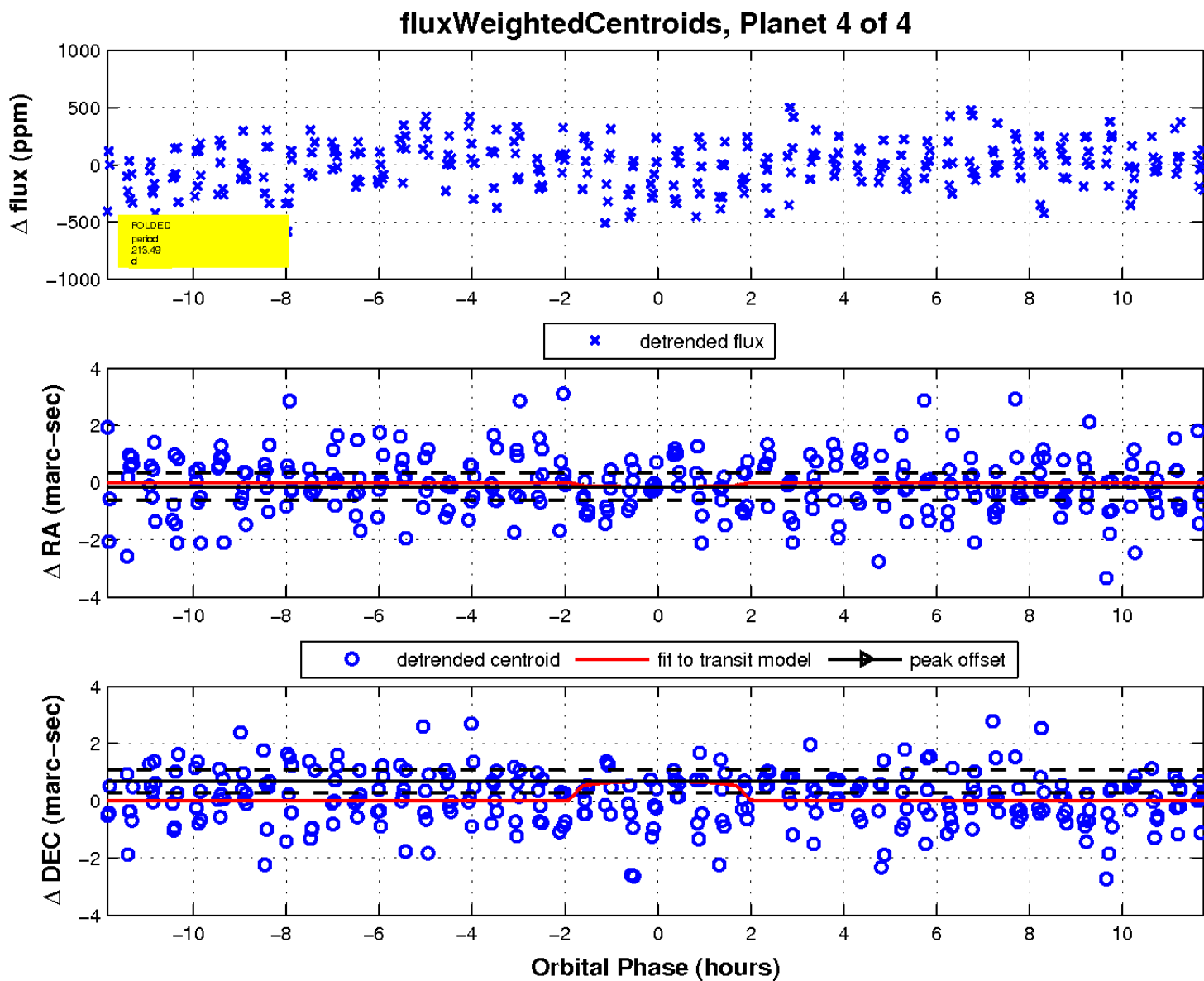
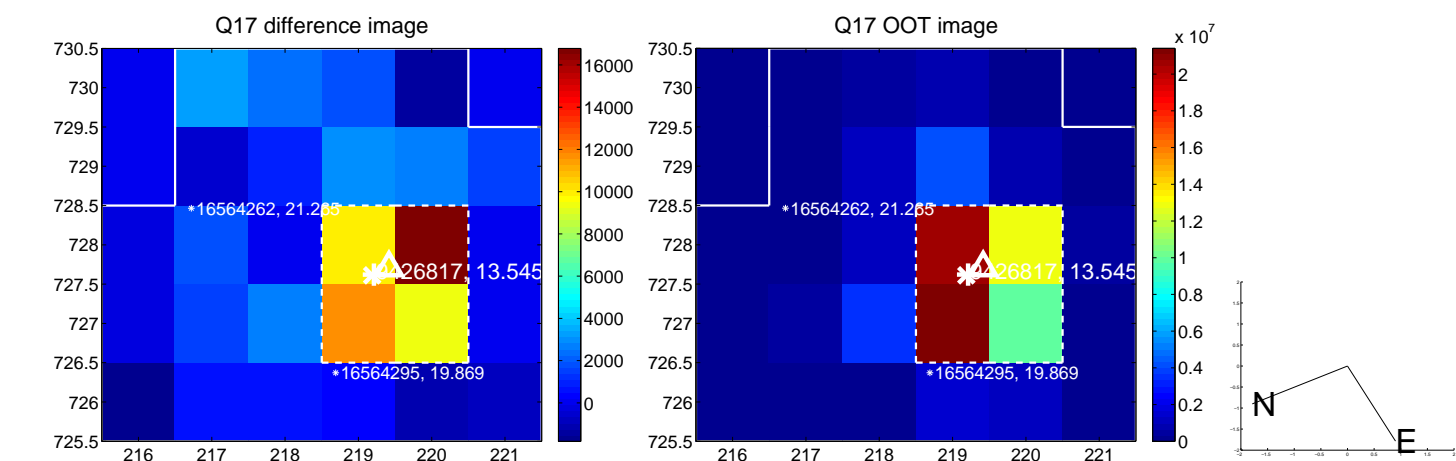
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

