

KIC 008167996

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})
008167996-01	OBS	1867.01	2.549569	132.607173	490.1	1.859	35.1	40.0	0.51	3716	1.34	51.13
008167996-02	OBS	1867.02	13.969545	132.169282	1070.9	1.558	27.2	33.5	0.51	3716	1.98	5.29
008167996-03	OBS	1867.03	5.212327	132.706875	427.5	2.128	22.2	25.6	0.51	3716	1.11	19.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008167996-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008167996-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008167996-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

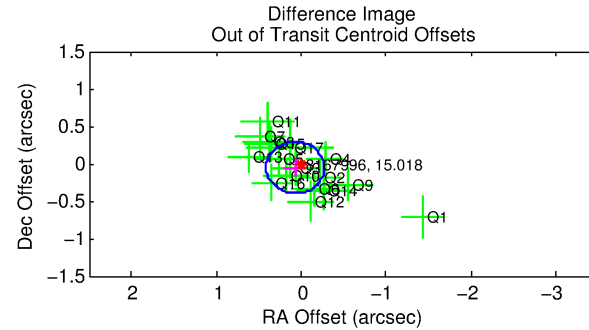
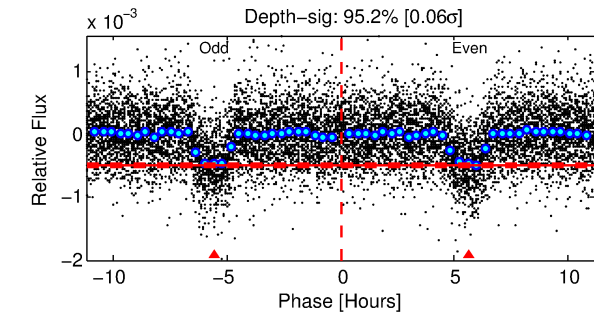
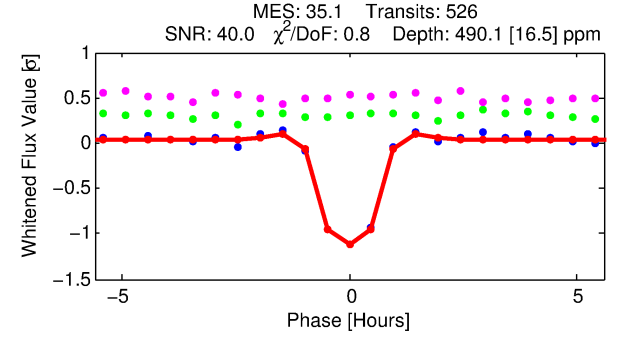
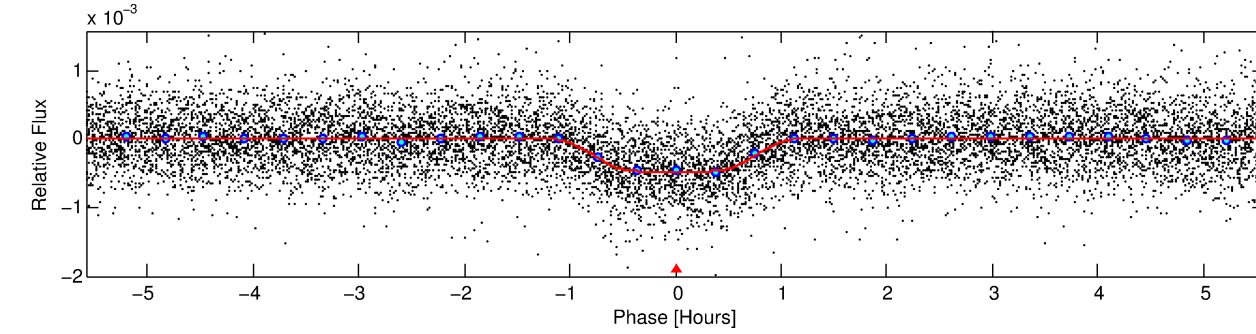
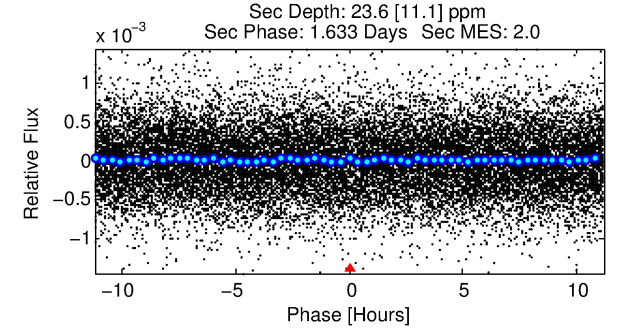
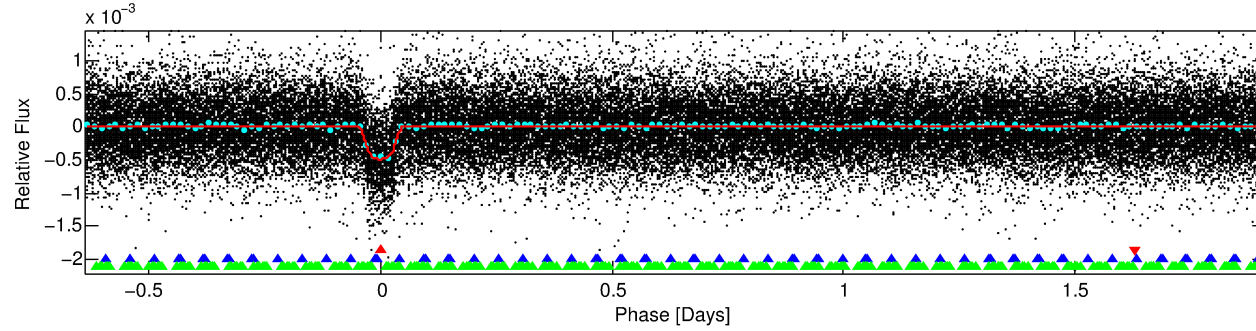
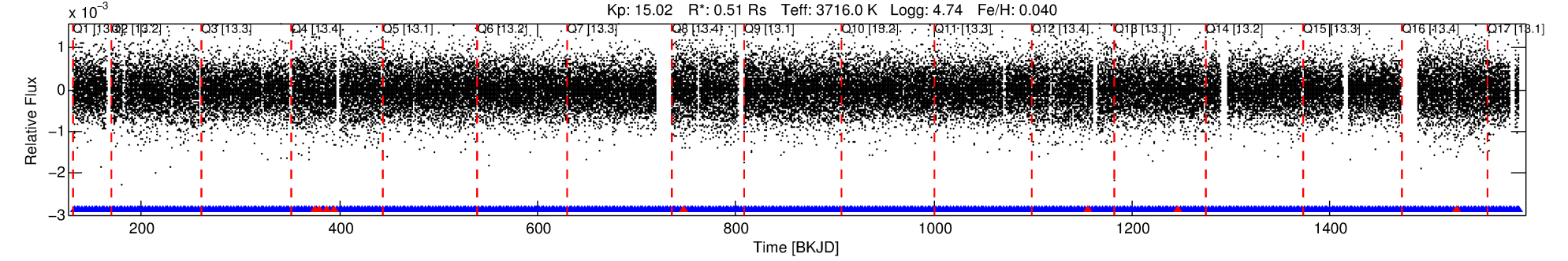
Ephemeris Match Information For 008167996-01

No Significant Match Found

DV One-Page Summary

KIC: 8167996 Candidate: 1 of 3 Period: 2.550 d
KOI: K01867.01 Name: Kepler-327b Corr: 0.981

Kp: 15.02 R*: 0.51 Rs Teff: 3716.0 K Logg: 4.74 Fe/H: 0.040



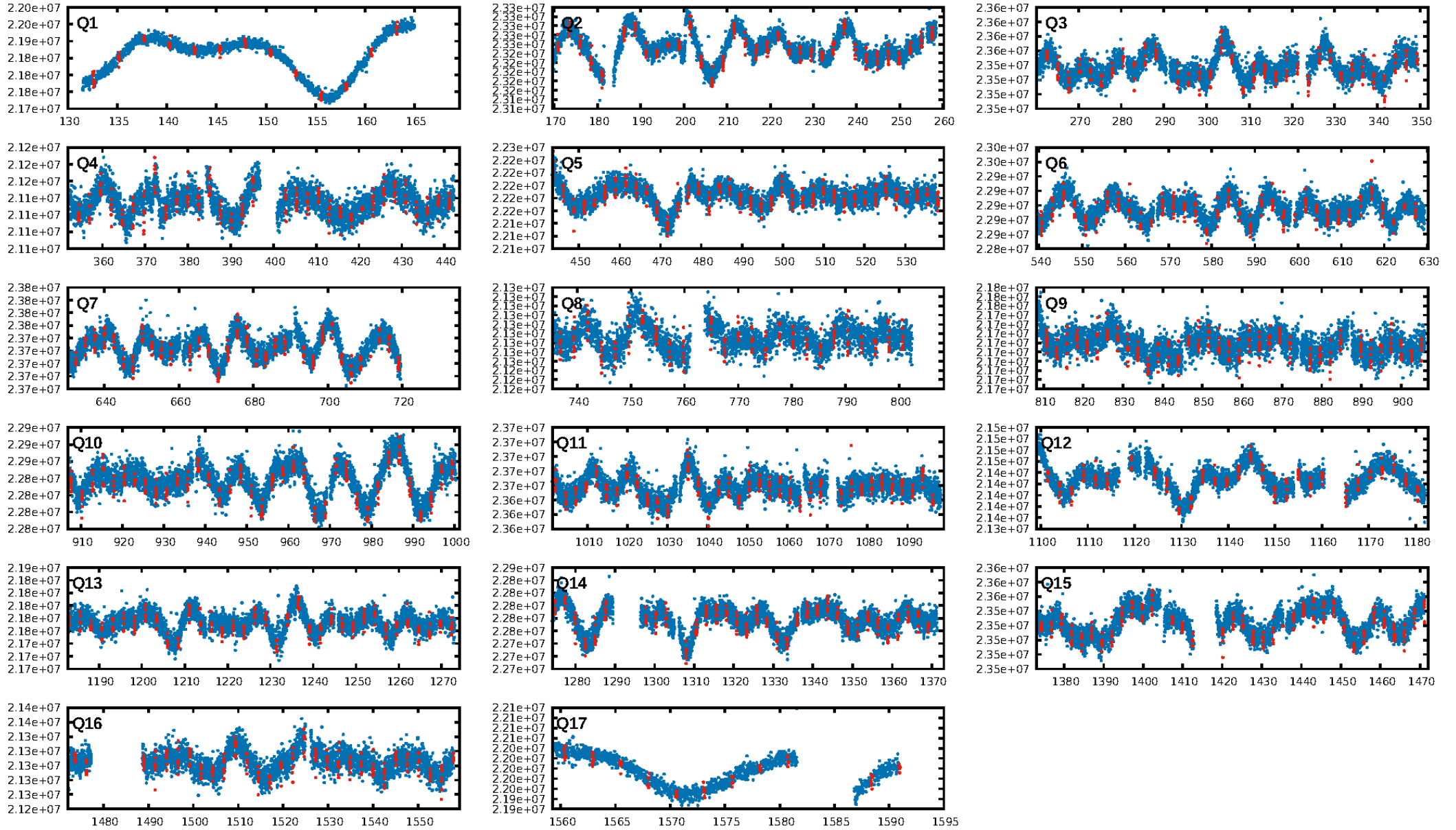
DV Fit Results:

Period = 2.54957 [0.00000] d
Epoch = 132.6072 [0.0007] BKJD
Rp/R* = 0.0243 [0.0030]
a/R* = 5.21 [2.59]
b = 0.90 [0.11]
Seff = 51.13 [7.21]
Teq = 682 [24] K
Rp = 1.34 [0.21] Re
a = 0.0292 [0.0023] AU
Ag = 6.16 [3.33] [1.55σ]
Teffp = 1661 [223] K [4.36σ]

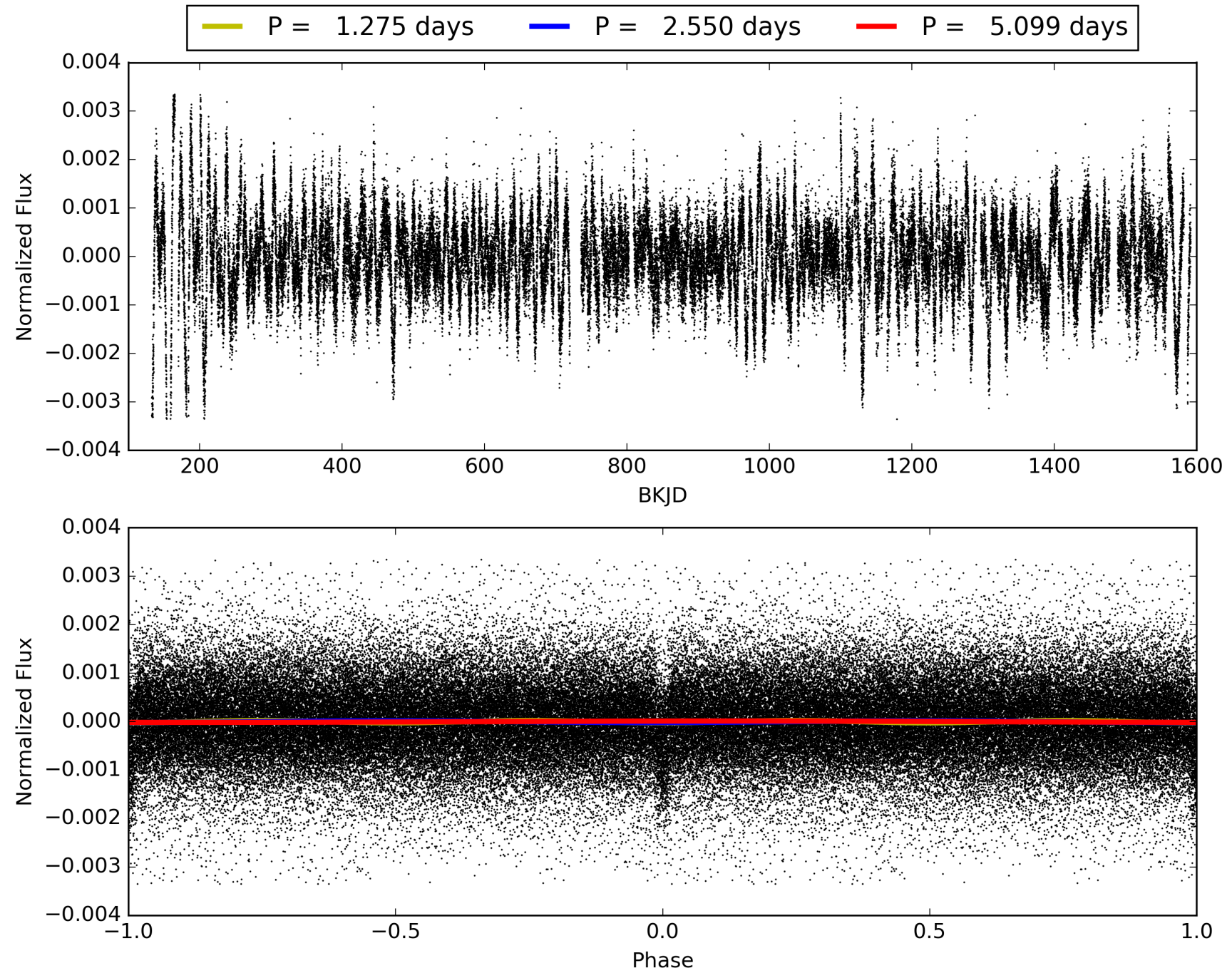
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [22.62σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.39e-252
RollingBand-fgt: 0.98 [494/502]
GhostDiagnostic-chr: 2.858
Centroid-sig: 0.2%
Centroid-so: 0.687 arcsec [2.15σ]
OotOffset-rm: 0.090 arcsec [0.79σ]
KicOffset-rm: 0.189 arcsec [1.50σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008167996-01, PDC Light Curves

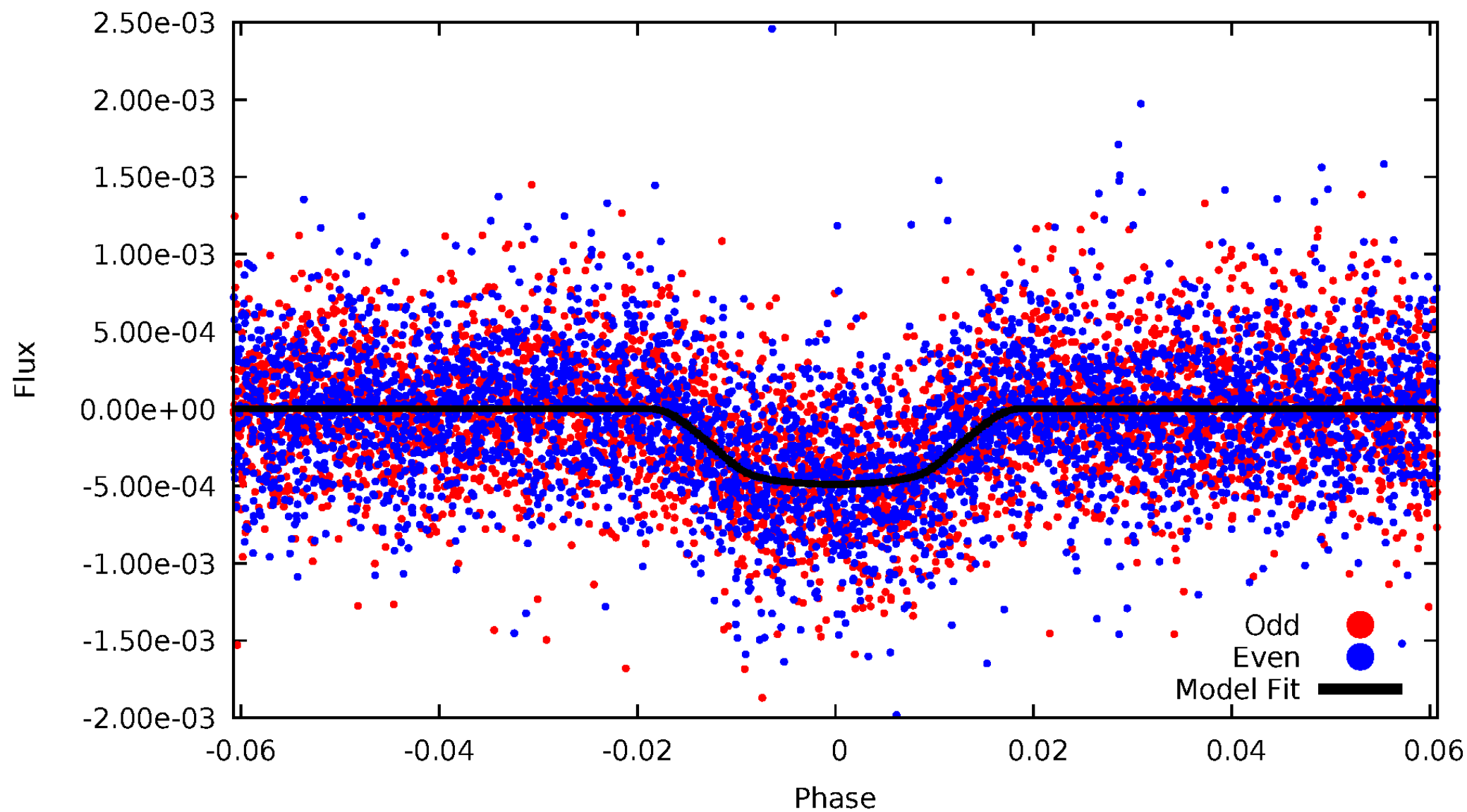


TCE 008167996-01



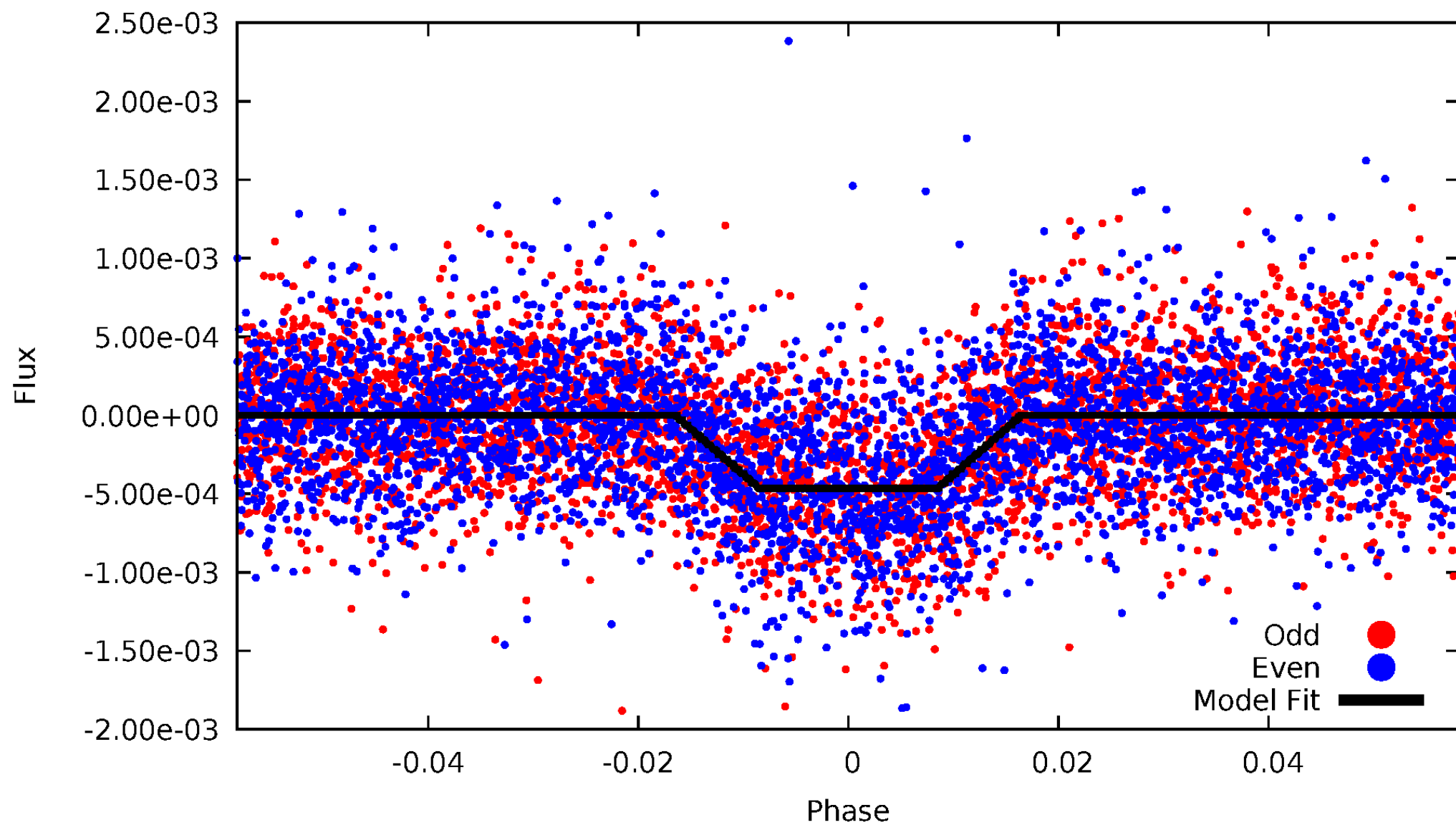
DV Odd/Even

TCE 008167996-01



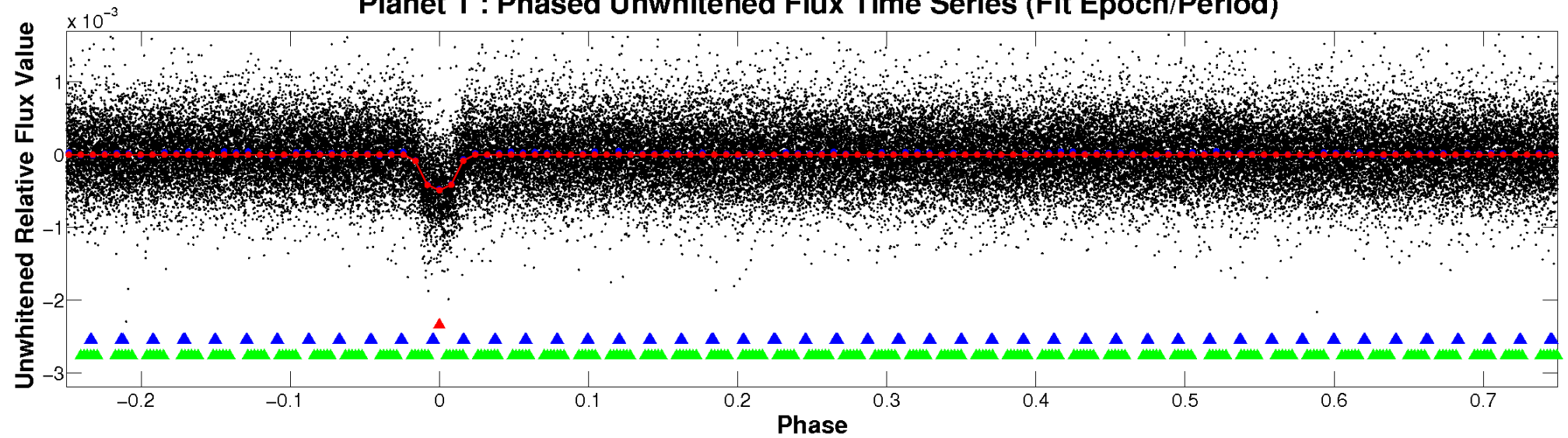
ALT Odd/Even

TCE 008167996-01

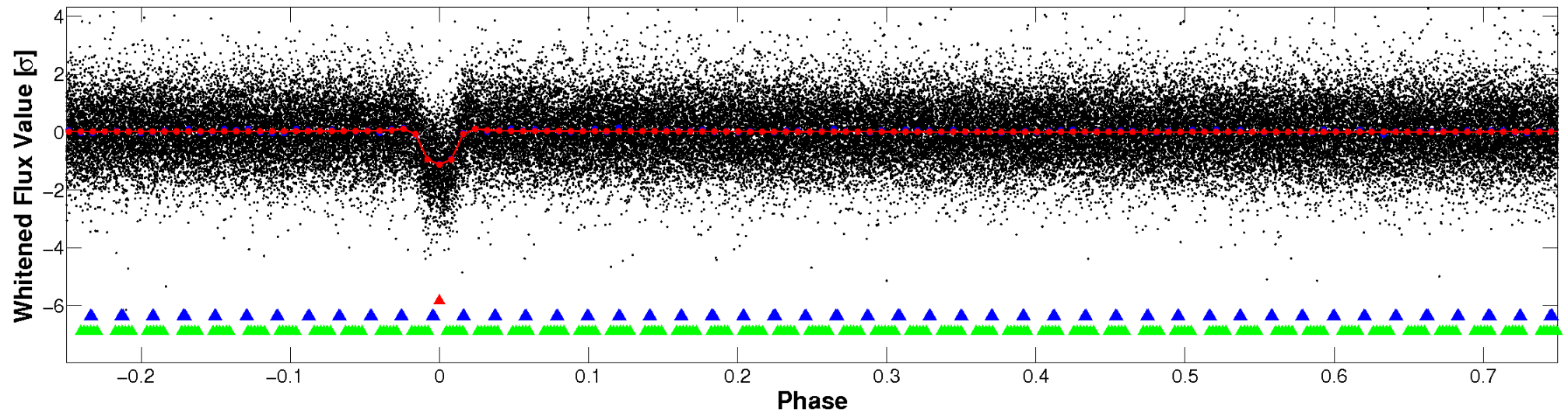


Non-Whitened Vs. Whitened Light Curve

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

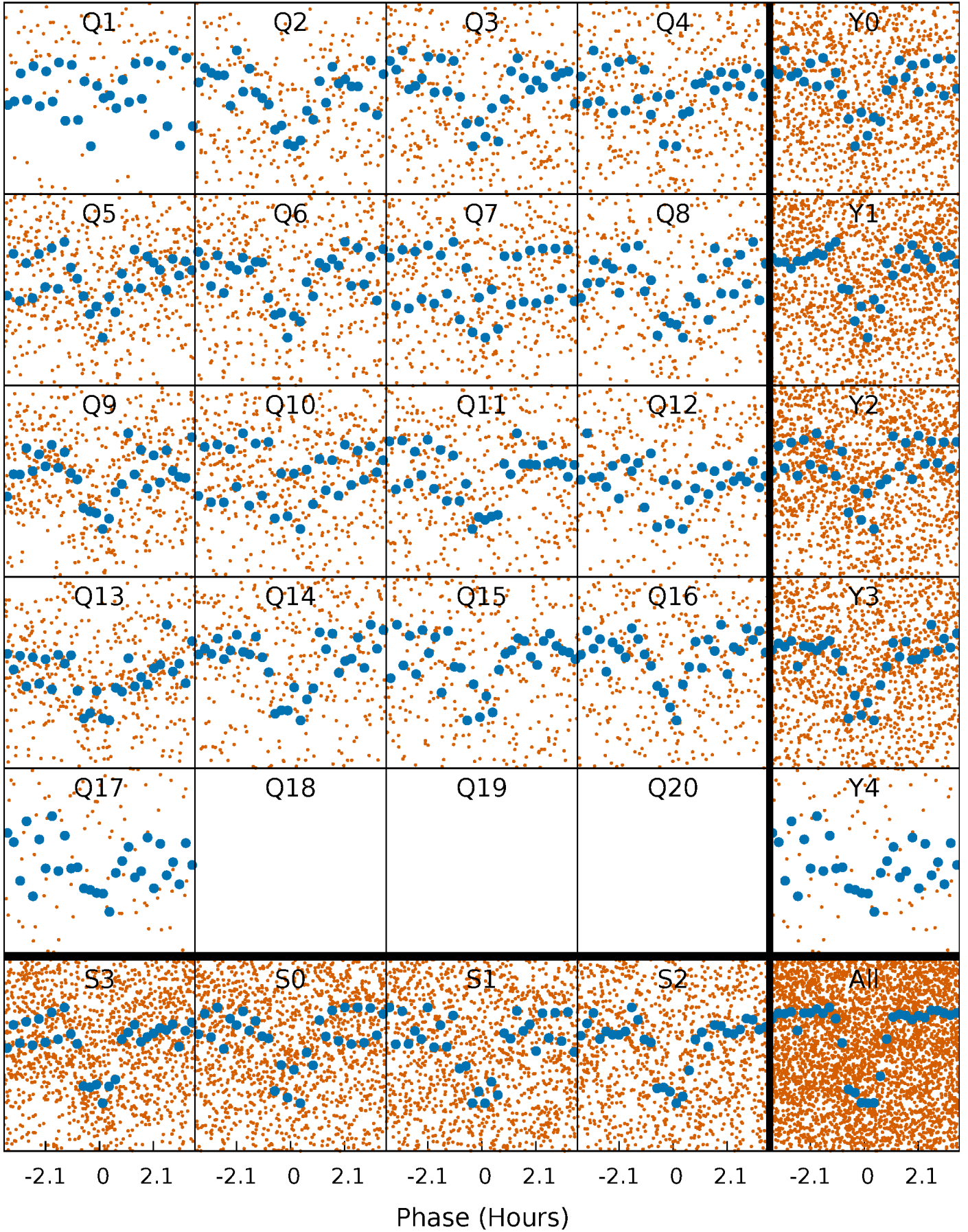


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



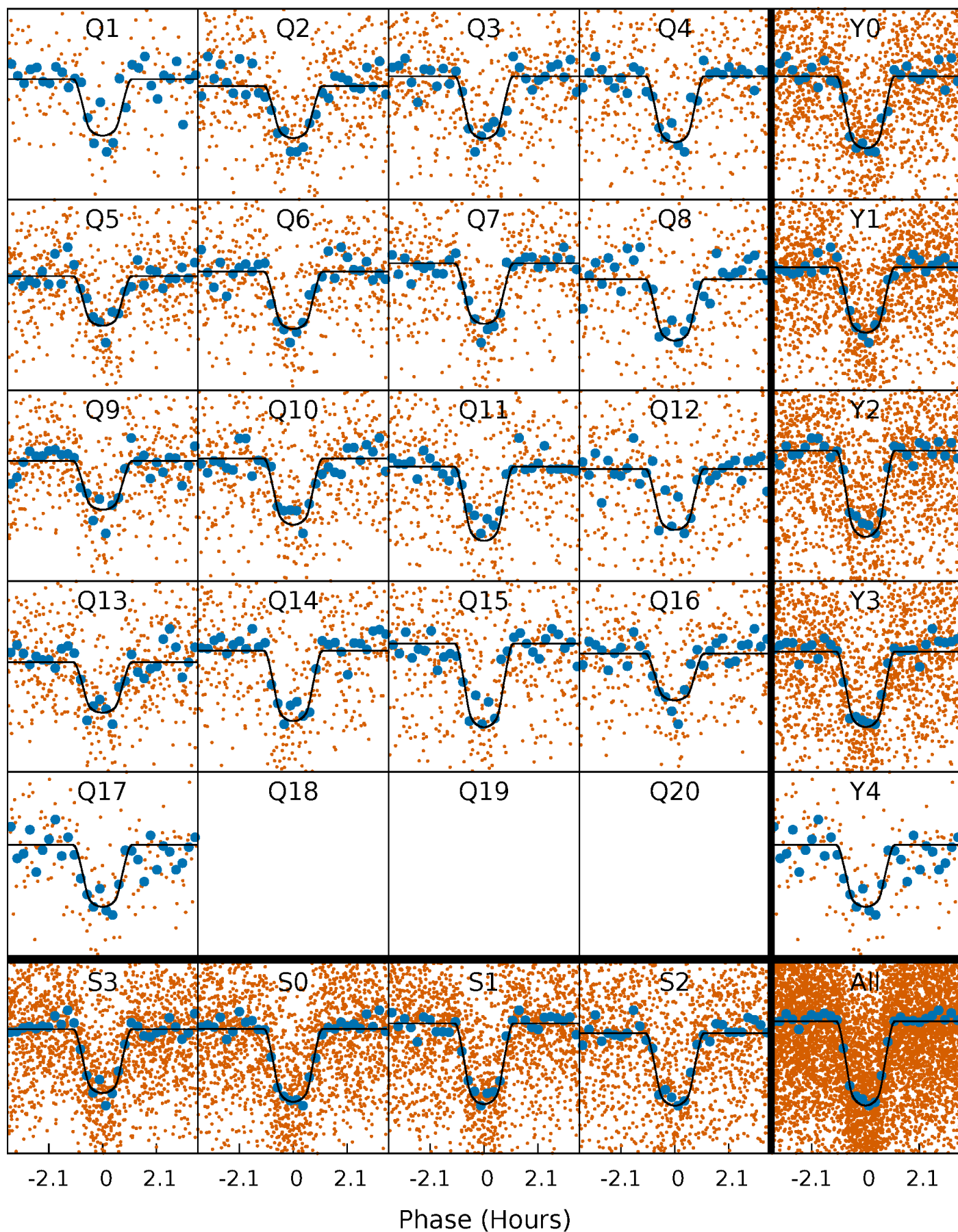
PDC Quarter-Phased Transit Curves

TCE 008167996-01 P= 2.549569 Days $T_0=132.607173$ (BKJD)



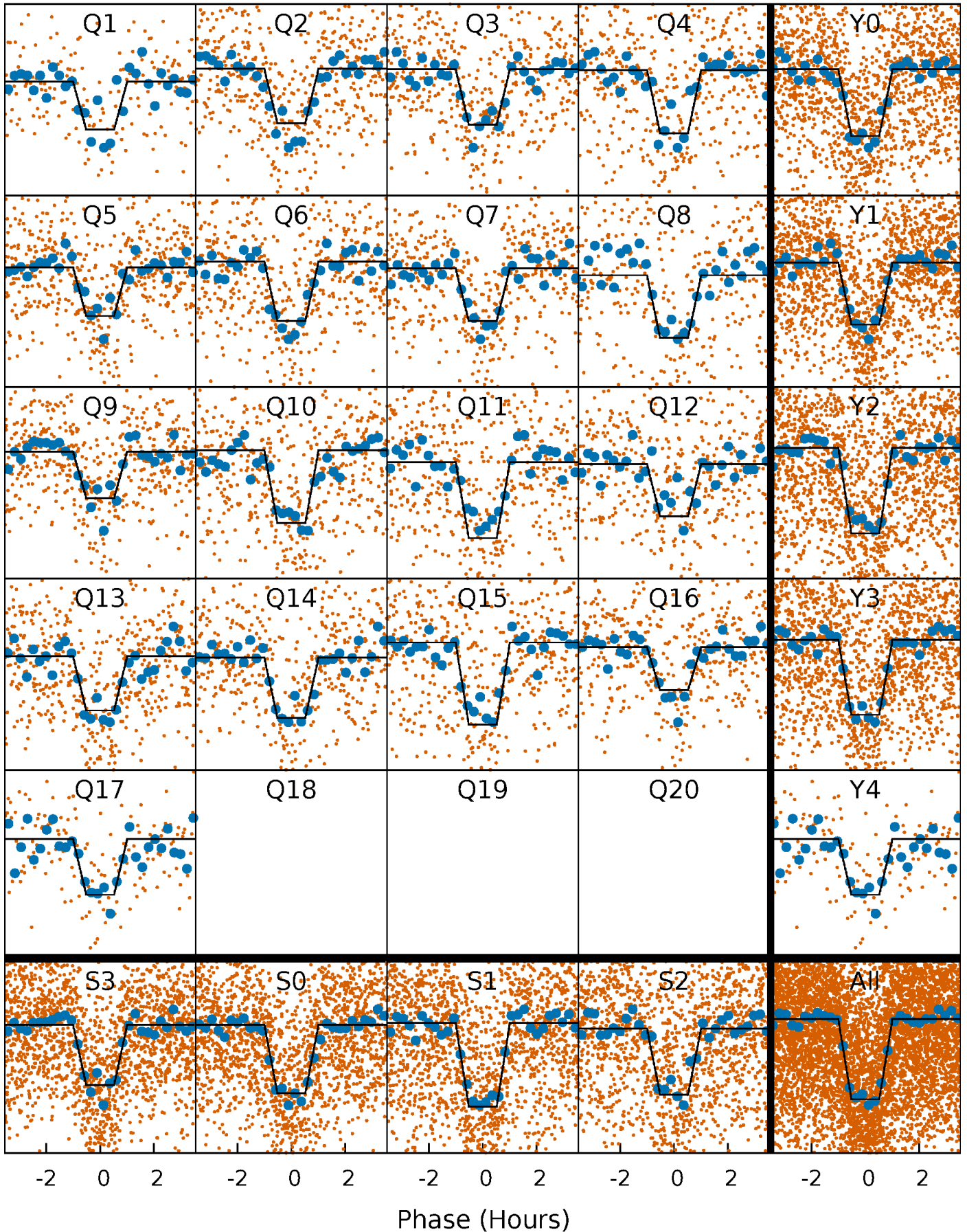
DV Quarter-Phased Transit Curves

TCE 008167996-01 P= 2.549569 Days $T_0=132.607173$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

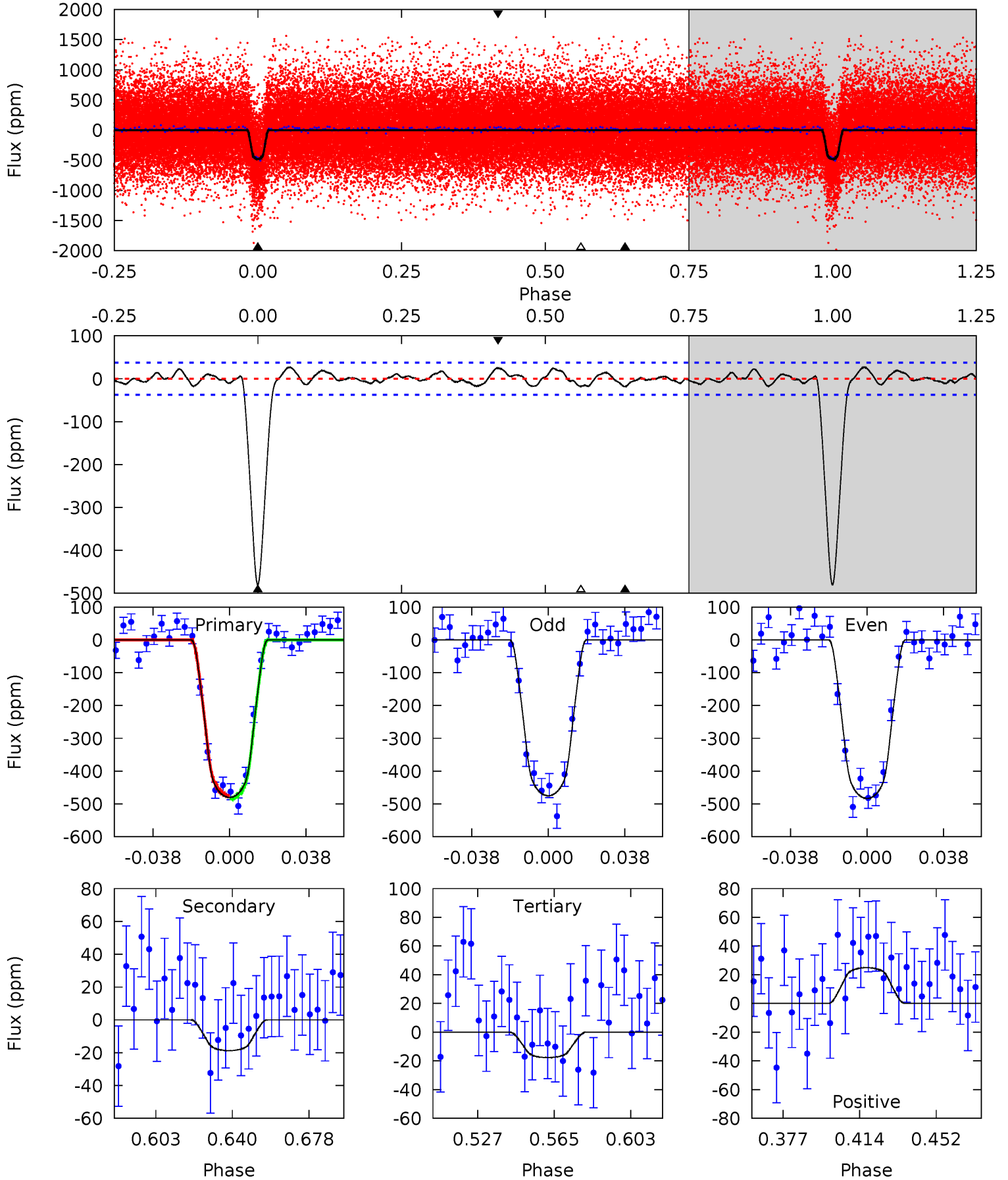
TCE 008167996-01 P= 2.549558 Days $T_0=132.609136$ (BKJD)



DV Model-Shift Uniqueness Test

008167996-01, P = 2.549569 Days, E = 130.057604 Days

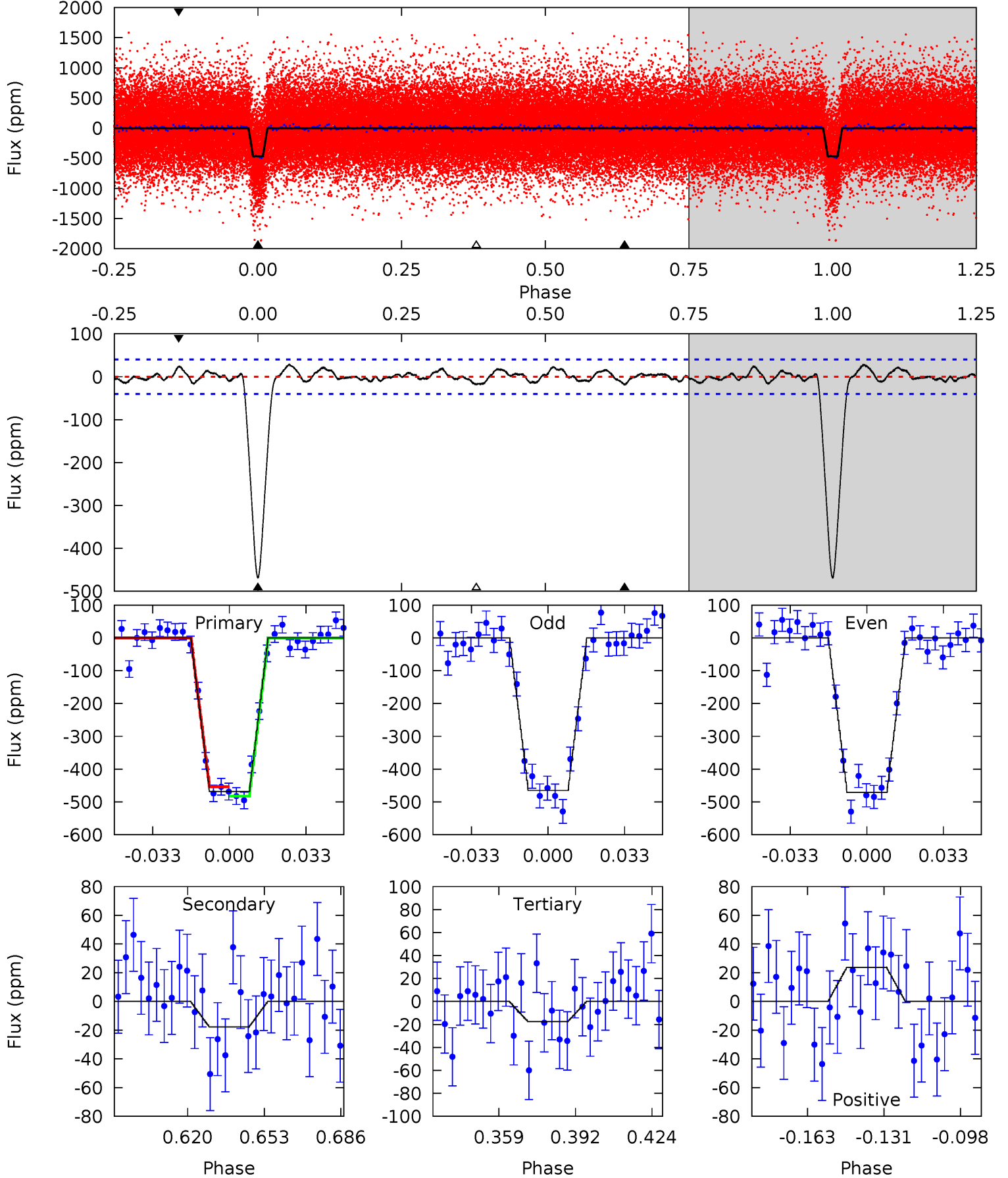
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
61.1	2.39	2.25	3.18	4.77	2.08	1.33	58.8	57.9	0.13	-0.79	0.53	1.03	0.05	0.67



Alt Model-Shift Uniqueness Test

008167996-01, P = 2.549558 Days, E = 130.059578 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
56.1	2.12	2.11	2.84	4.79	2.14	1.14	54.0	53.2	0.01	-0.71	0.34	1.01	0.06	1.73



Stellar Parameters For KIC 008167996

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	3716^{+73}_{-83}	$4.740^{+0.056}_{-0.024}$	$0.040^{+0.150}_{-0.150}$	$0.506^{+0.031}_{-0.051}$	$0.513^{+0.037}_{-0.045}$	$5.579^{+1.405}_{-0.549}$
	+2%/-2%	+1%/-1%	+375%/-375%	+6%/-10%	+7%/-9%	+25%/-10%
Source	SPE70	SPE60	SPE70	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008167996-01 / KOI 1867.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-19 ± 8	$1.33^{+0.17}_{-0.18}$	946^{+24}_{-28}	2296^{+132}_{-166}	$5.025^{+2.844}_{-2.319}$
Alt.	-18 ± 8	$1.18^{+0.17}_{-0.17}$	945^{+26}_{-25}	2339^{+156}_{-190}	$5.887^{+4.165}_{-2.927}$

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

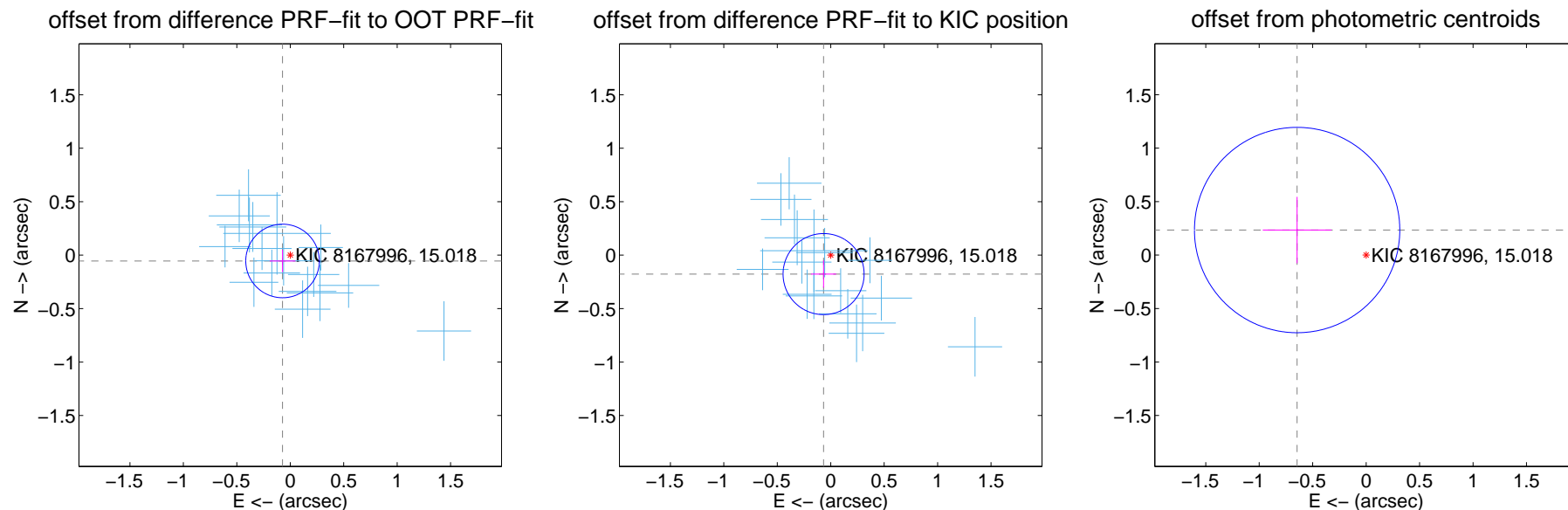
DV Centroid Data

Supplemental centroid analysis for 008167996-01. Kepler magnitude: 15.02. Transit SNR 39.95

There are 17 quarters with good PRF difference image offsets

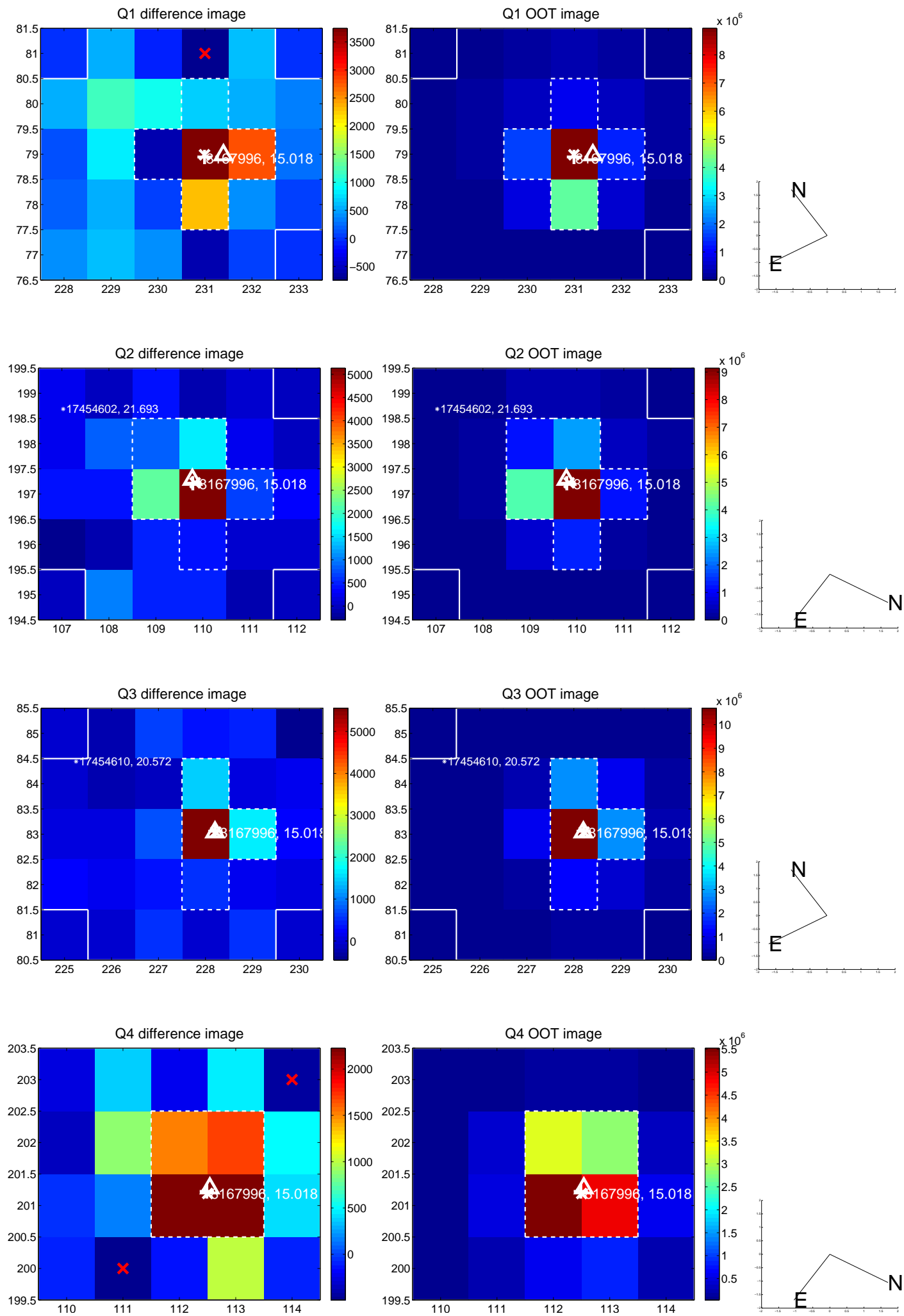
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.090 ± 0.115	0.79	0.072 ± 0.120	-0.054 ± 0.105
PRF-fit source offset from KIC position	0.189 ± 0.126	1.50	0.067 ± 0.118	-0.177 ± 0.128
photometric centroid source offset	0.69 ± 0.32	2.15	0.65 ± 0.32	0.23 ± 0.31

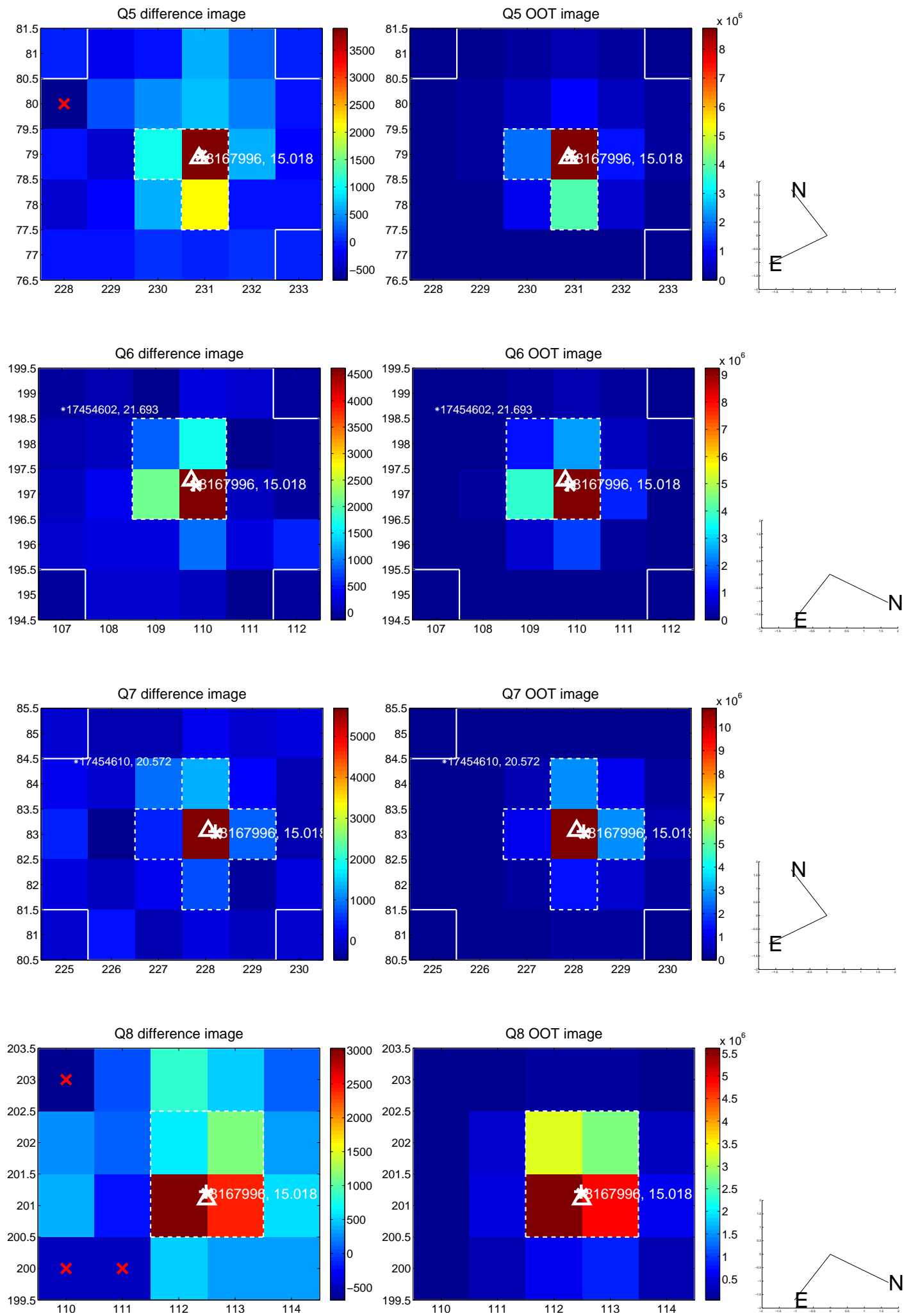


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

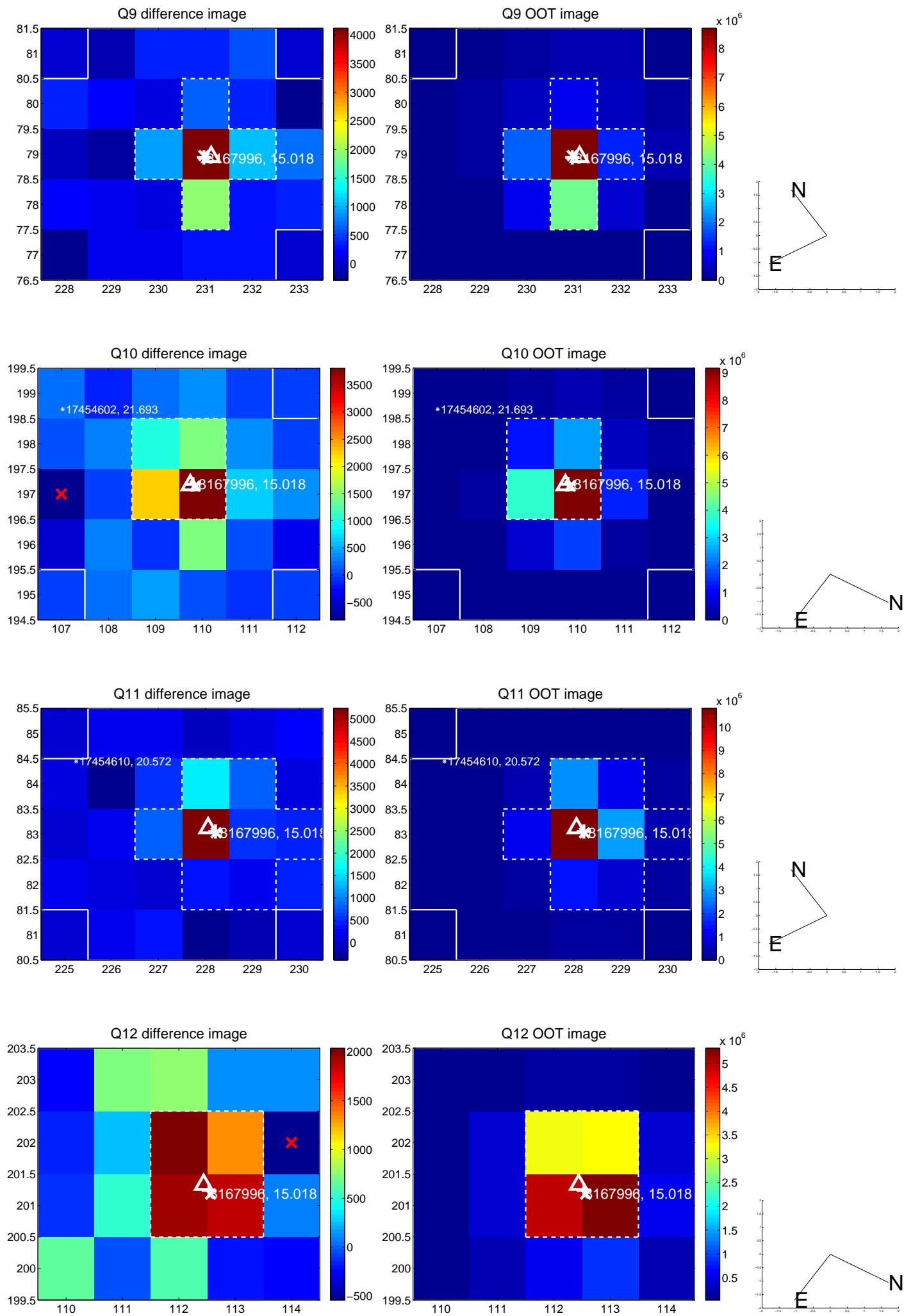
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



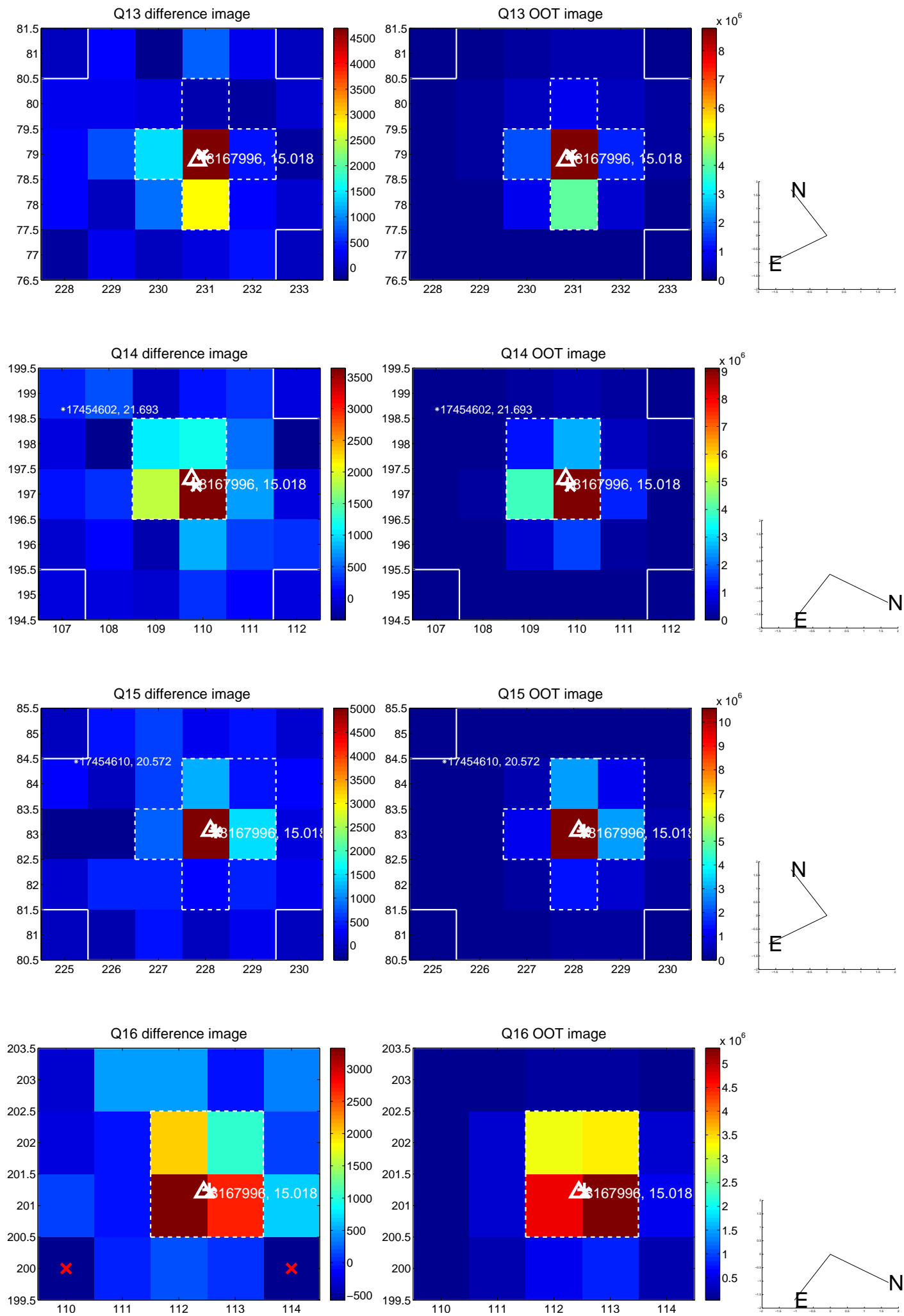
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



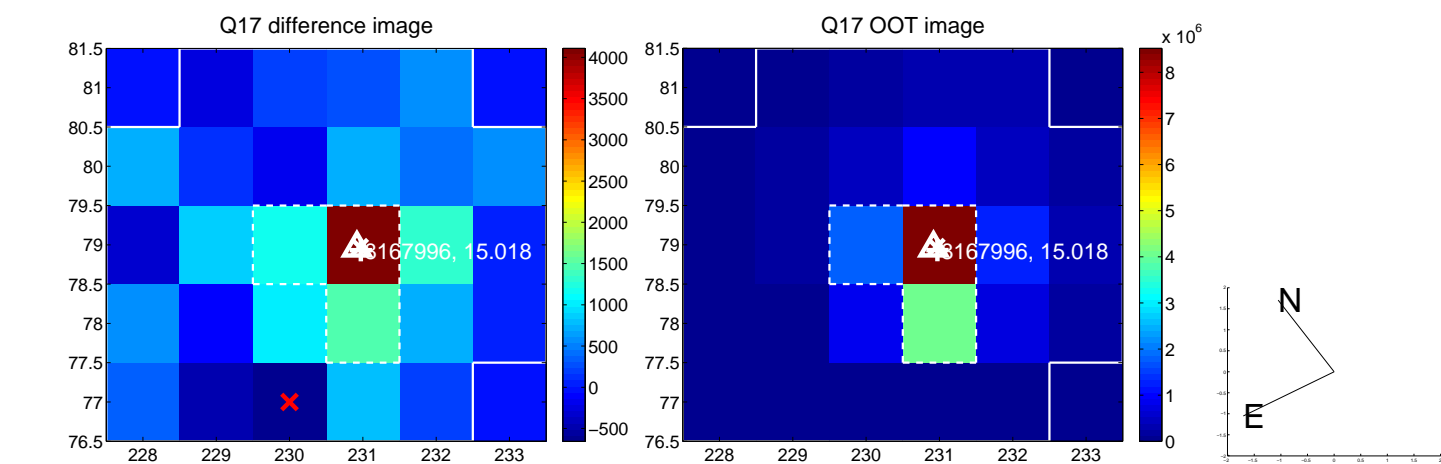
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



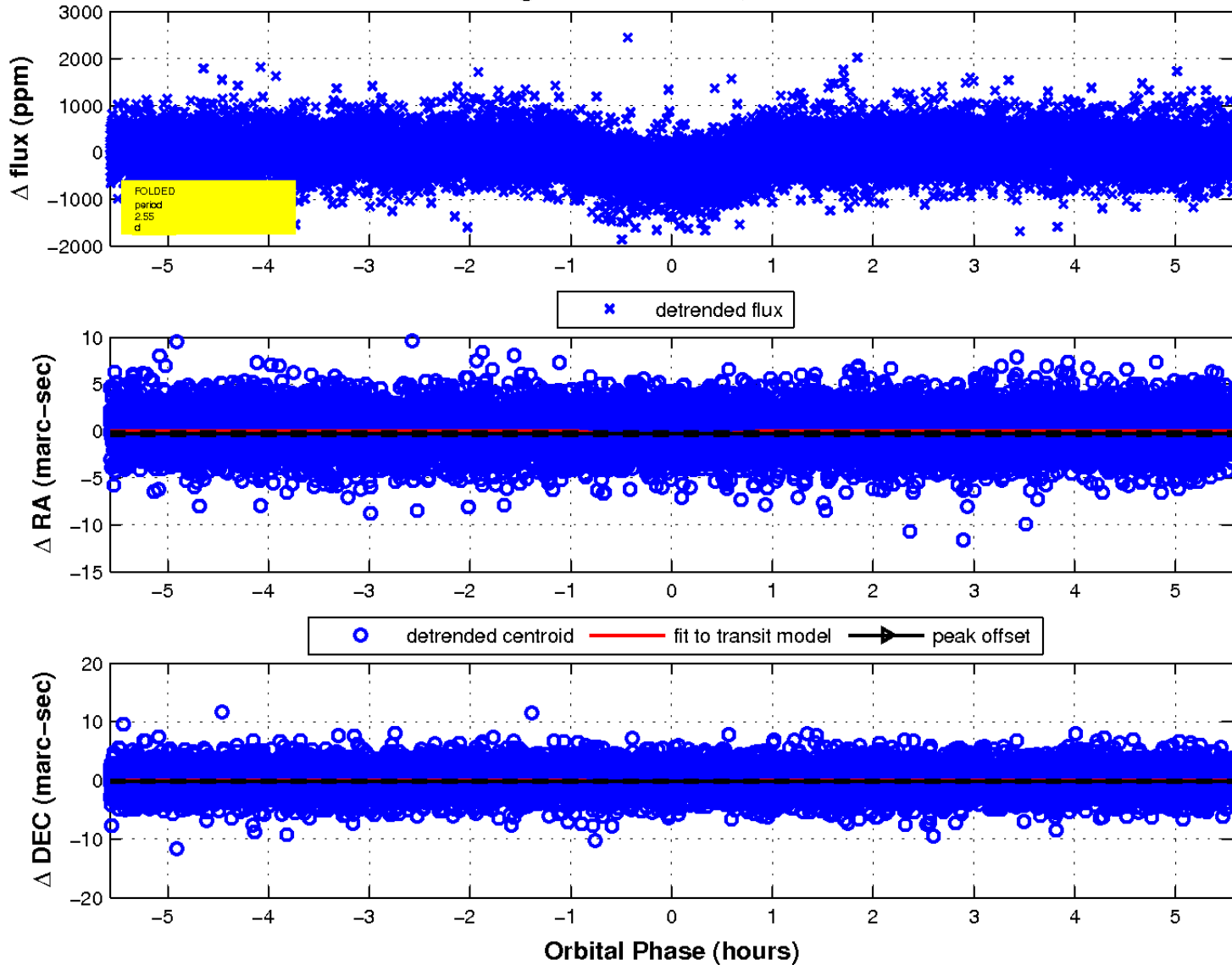
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

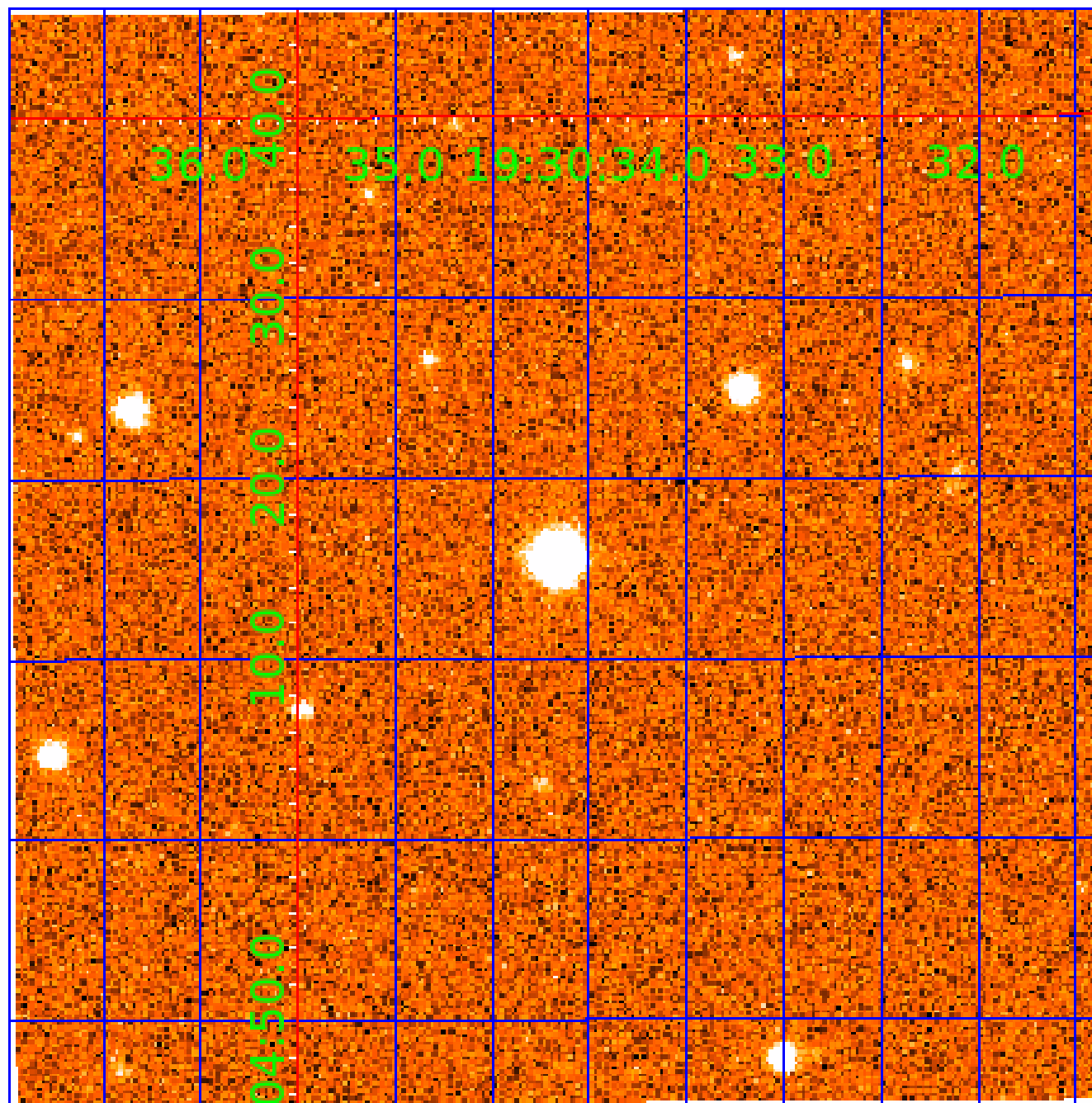


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 008167996

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})
008167996-01	OBS	1867.01	2.549569	132.607173	490.1	1.859	35.1	40.0	0.51	3716	1.34	51.13
008167996-02	OBS	1867.02	13.969545	132.169282	1070.9	1.558	27.2	33.5	0.51	3716	1.98	5.29
008167996-03	OBS	1867.03	5.212327	132.706875	427.5	2.128	22.2	25.6	0.51	3716	1.11	19.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008167996-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008167996-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008167996-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

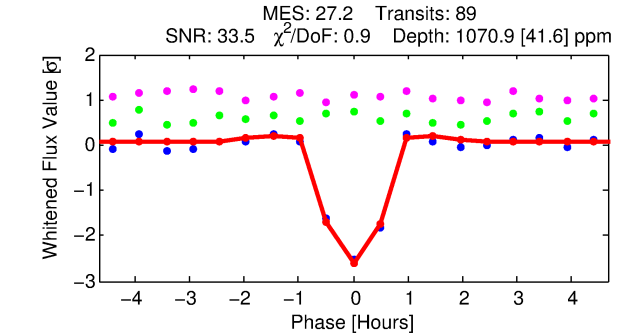
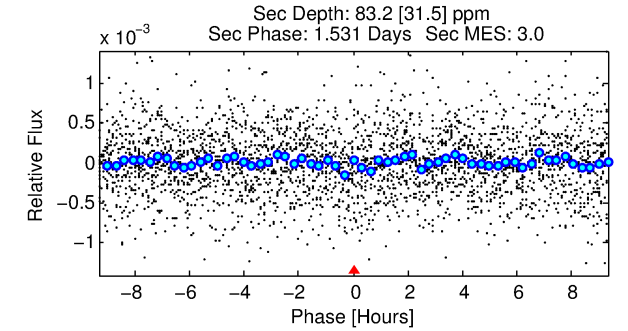
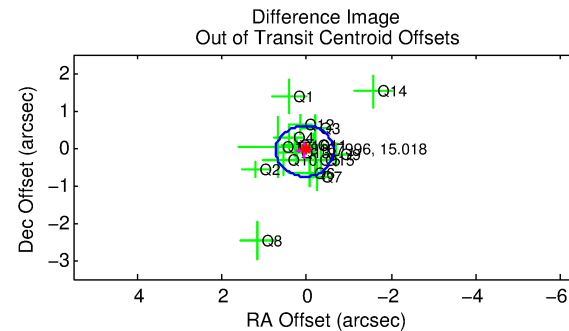
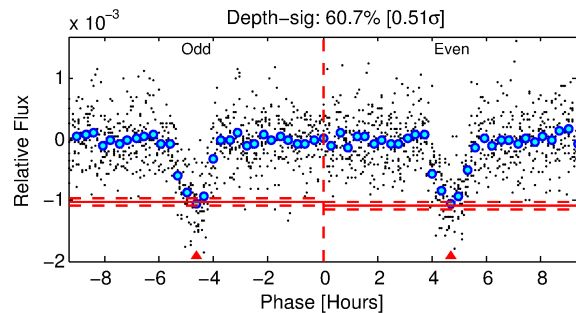
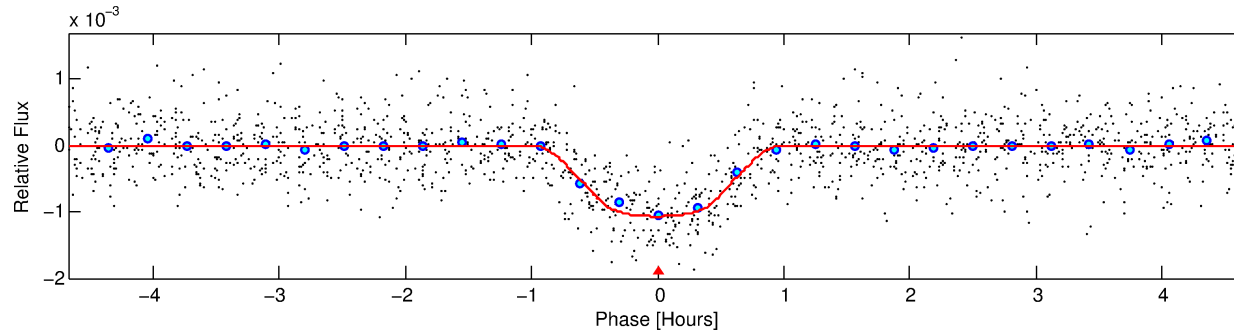
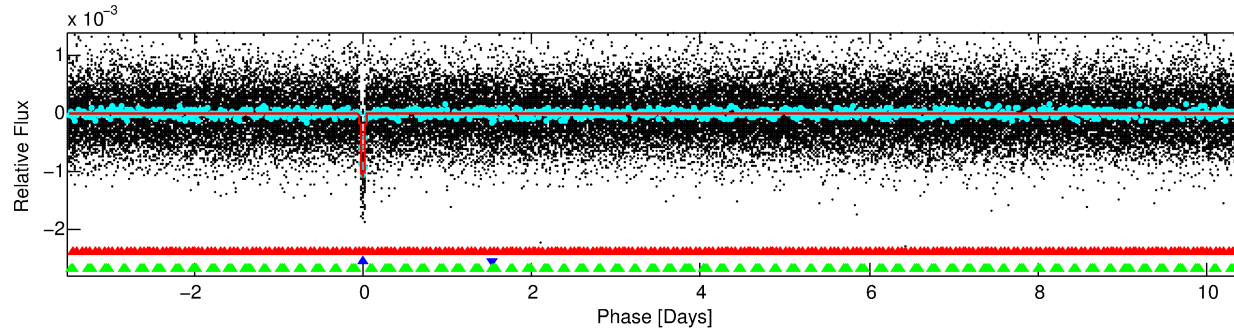
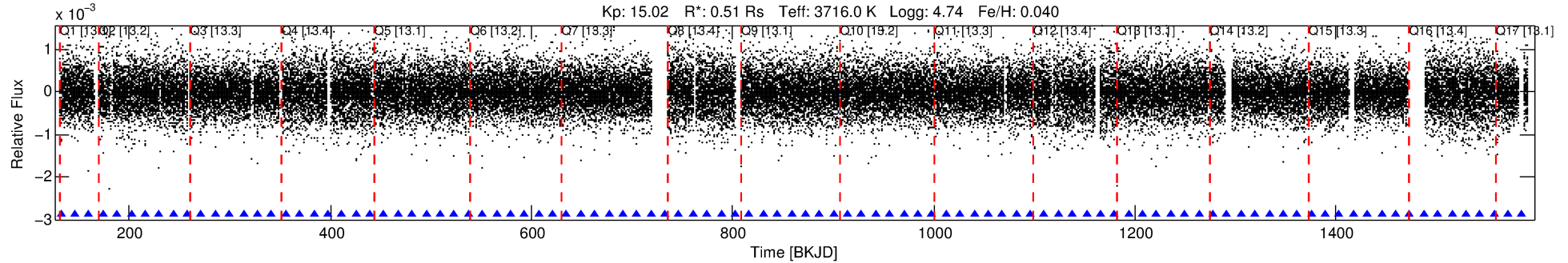
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008167996-02

No Significant Match Found

DV One-Page Summary

KIC: 8167996 Candidate: 2 of 3 Period: 13.970 d
KOI: K01867.02 Name: Kepler-327d Corr: 0.950



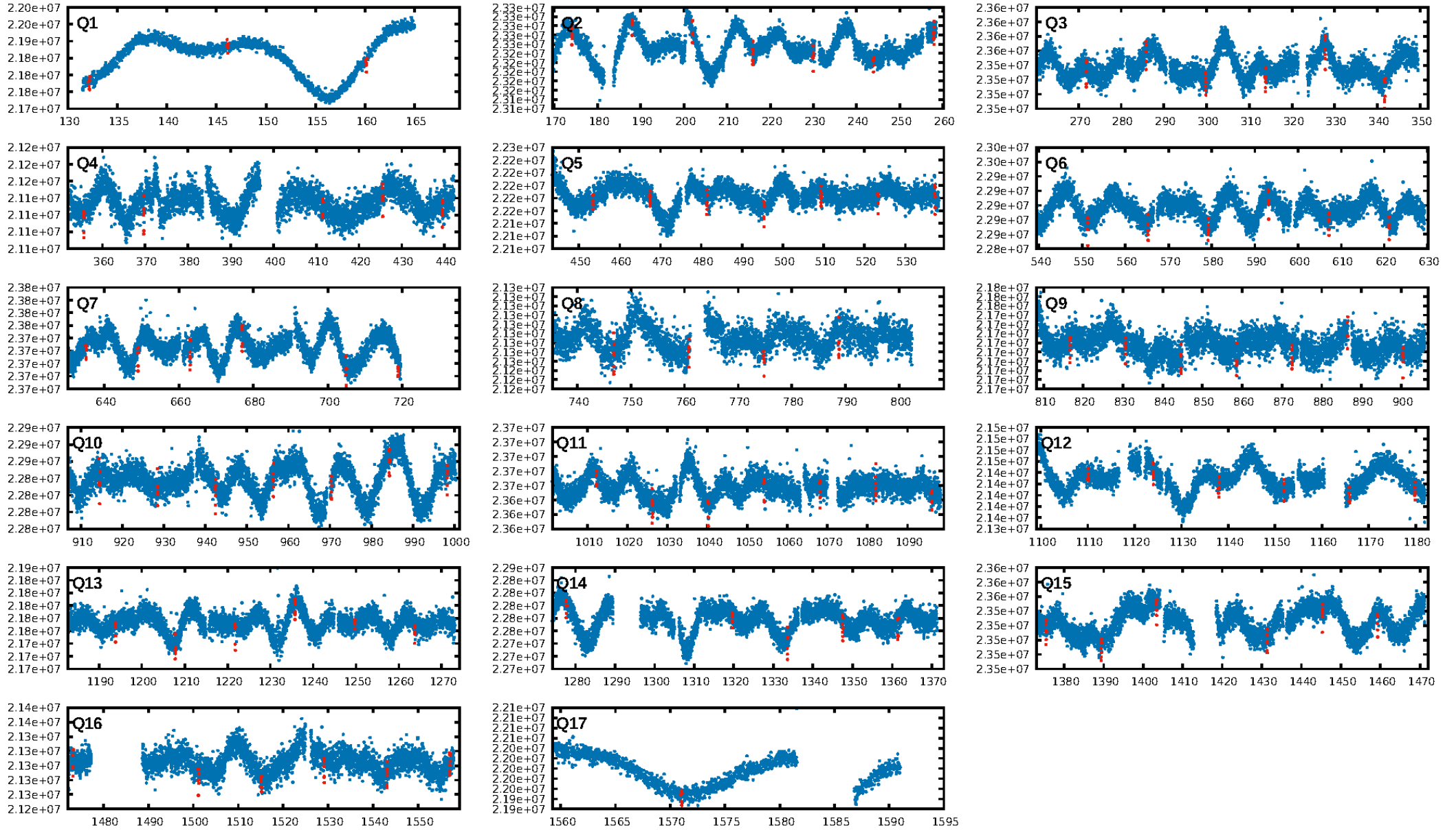
DV Fit Results:

Period = 13.96954 [0.00002] d
Epoch = 132.1693 [0.0012] BKJD
Rp/R* = 0.0359 [0.0043]
a/R* = 35.54 [16.63]
b = 0.90 [0.10]
Seff = 5.29 [0.75]
Teq = 387 [14] K
Rp = 1.98 [0.31] Re
a = 0.0909 [0.0073] AU
Ag = 96.29 [44.31] [2.15 σ]
Teffp = 1873 [214] K [6.95 σ]

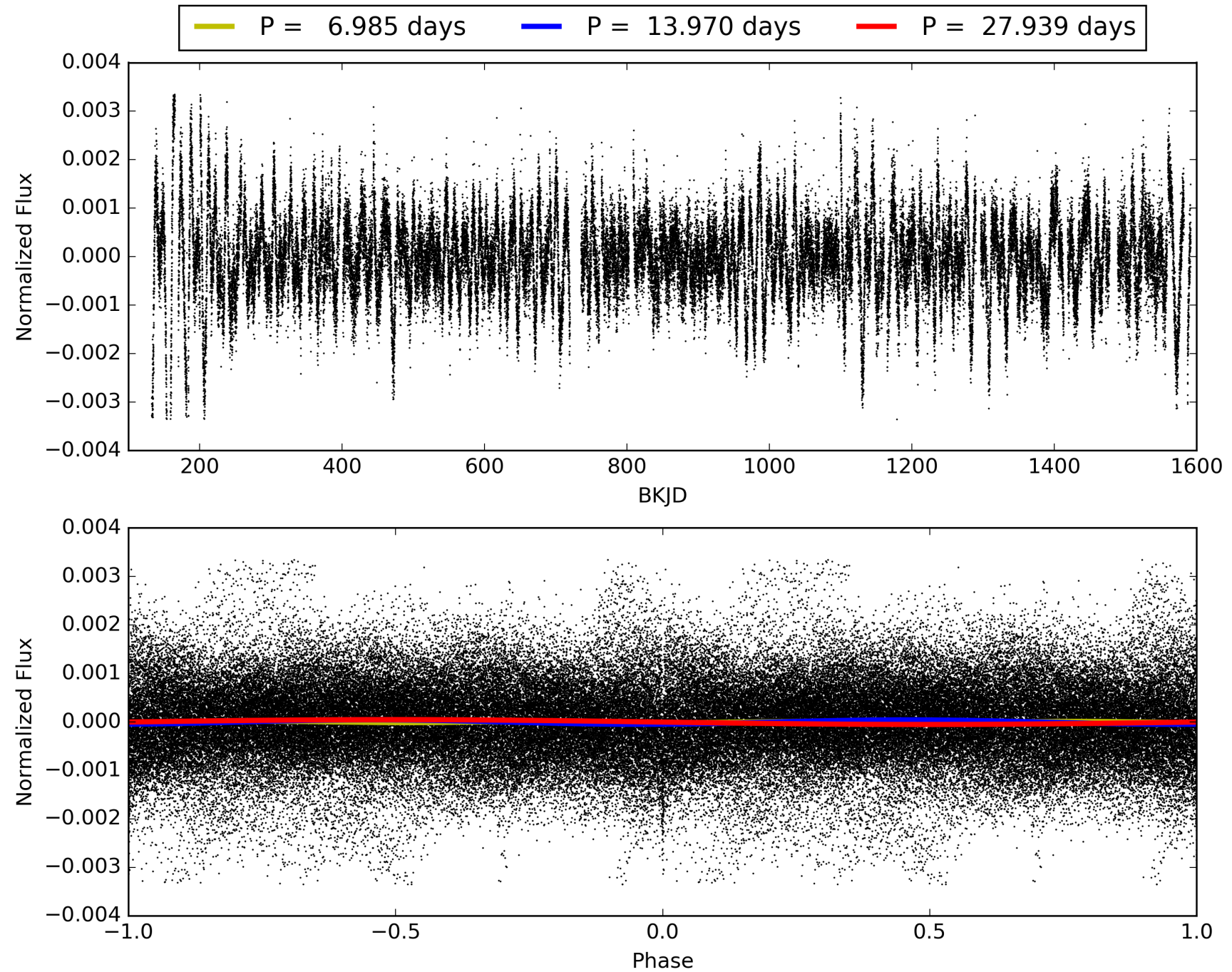
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [79.69 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.88e-149
RollingBand-fgt: 1.00 [85/85]
GhostDiagnostic-chr: 3.389
Centroid-sig: 0.0%
Centroid-so: 0.660 arcsec [1.75 σ]
OotOffset-rm: 0.092 arcsec [0.41 σ]
KicOffset-rm: 0.165 arcsec [0.74 σ]
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]

TCE 008167996-02, PDC Light Curves

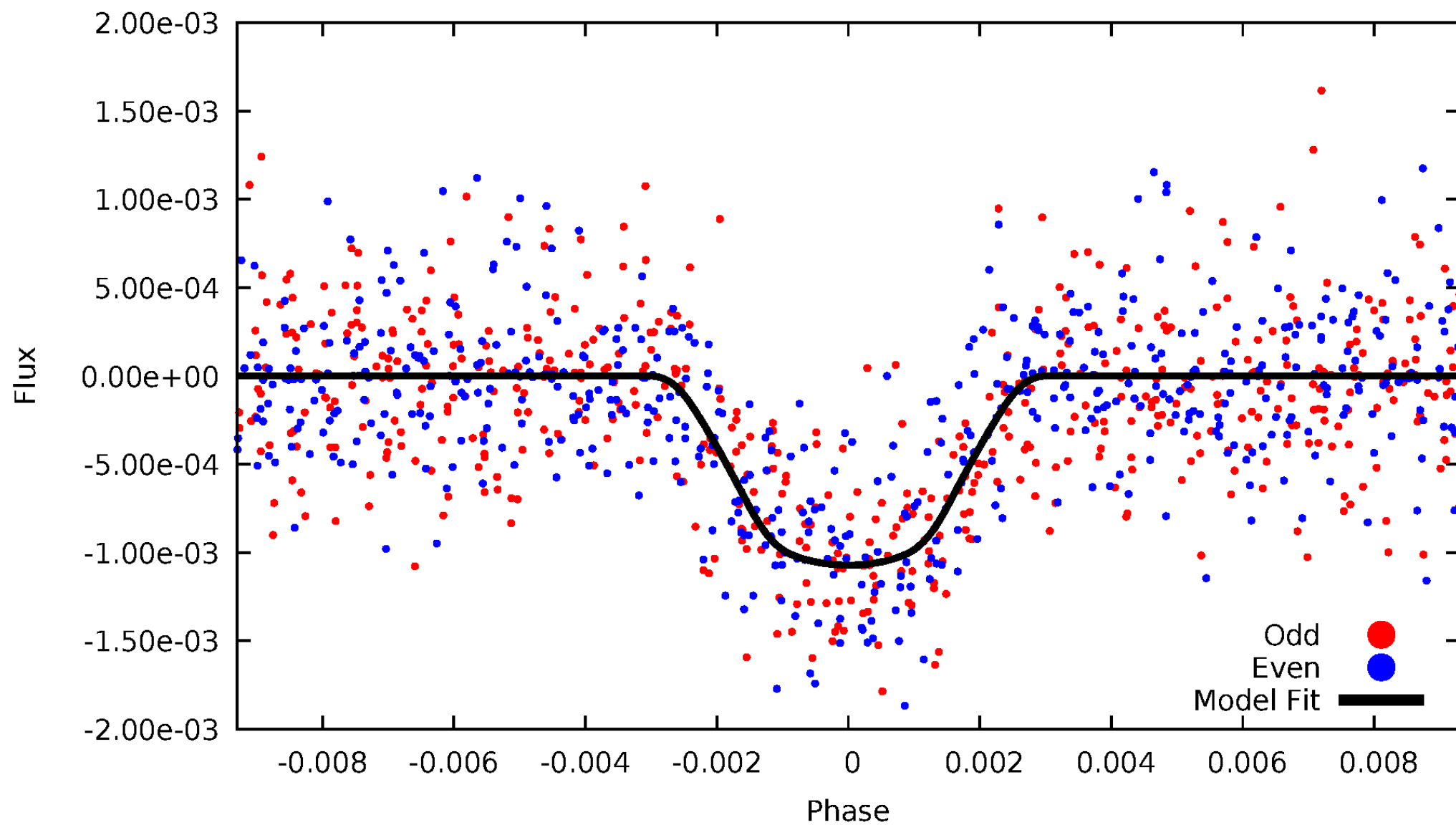


TCE 008167996-02



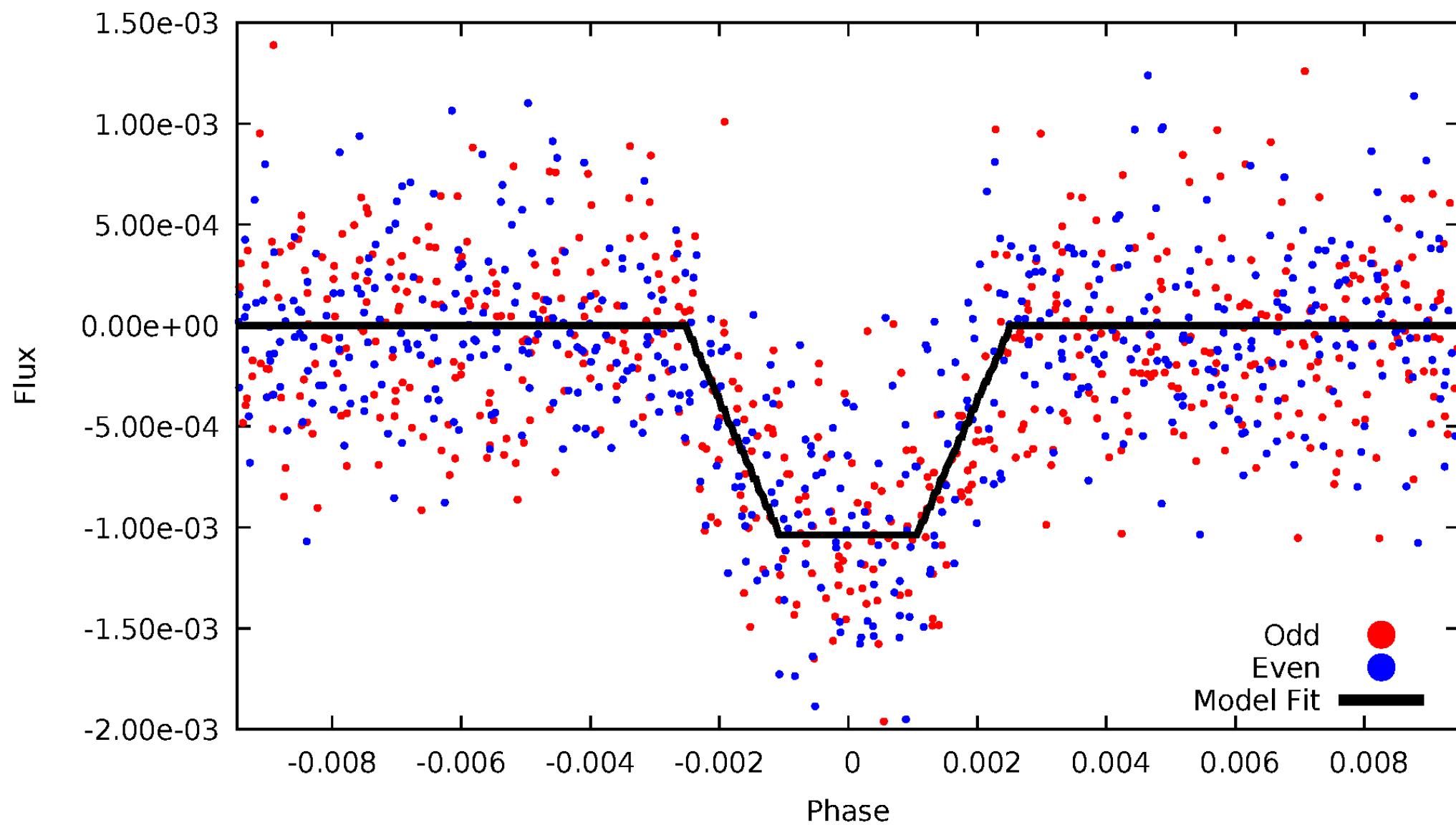
DV Odd/Even

TCE 008167996-02



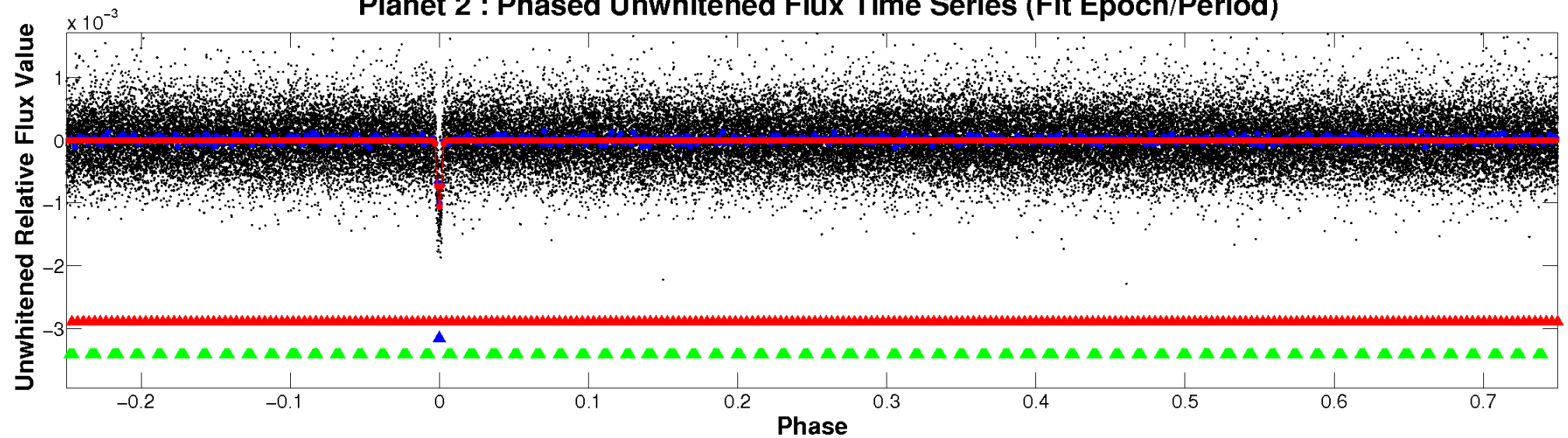
ALT Odd/Even

TCE 008167996-02

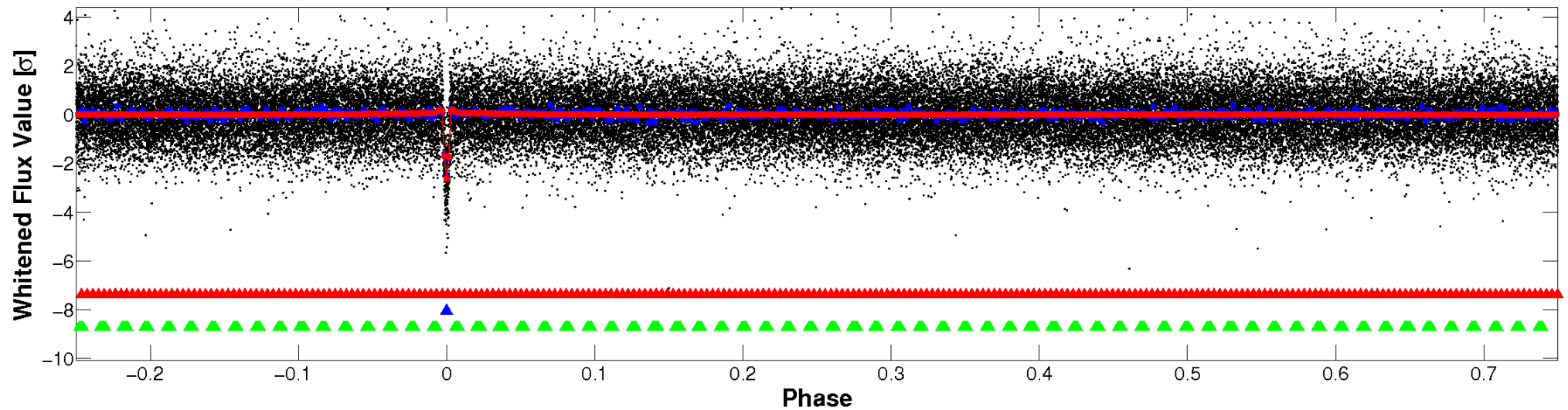


Non-Whitened Vs. Whitened Light Curve

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

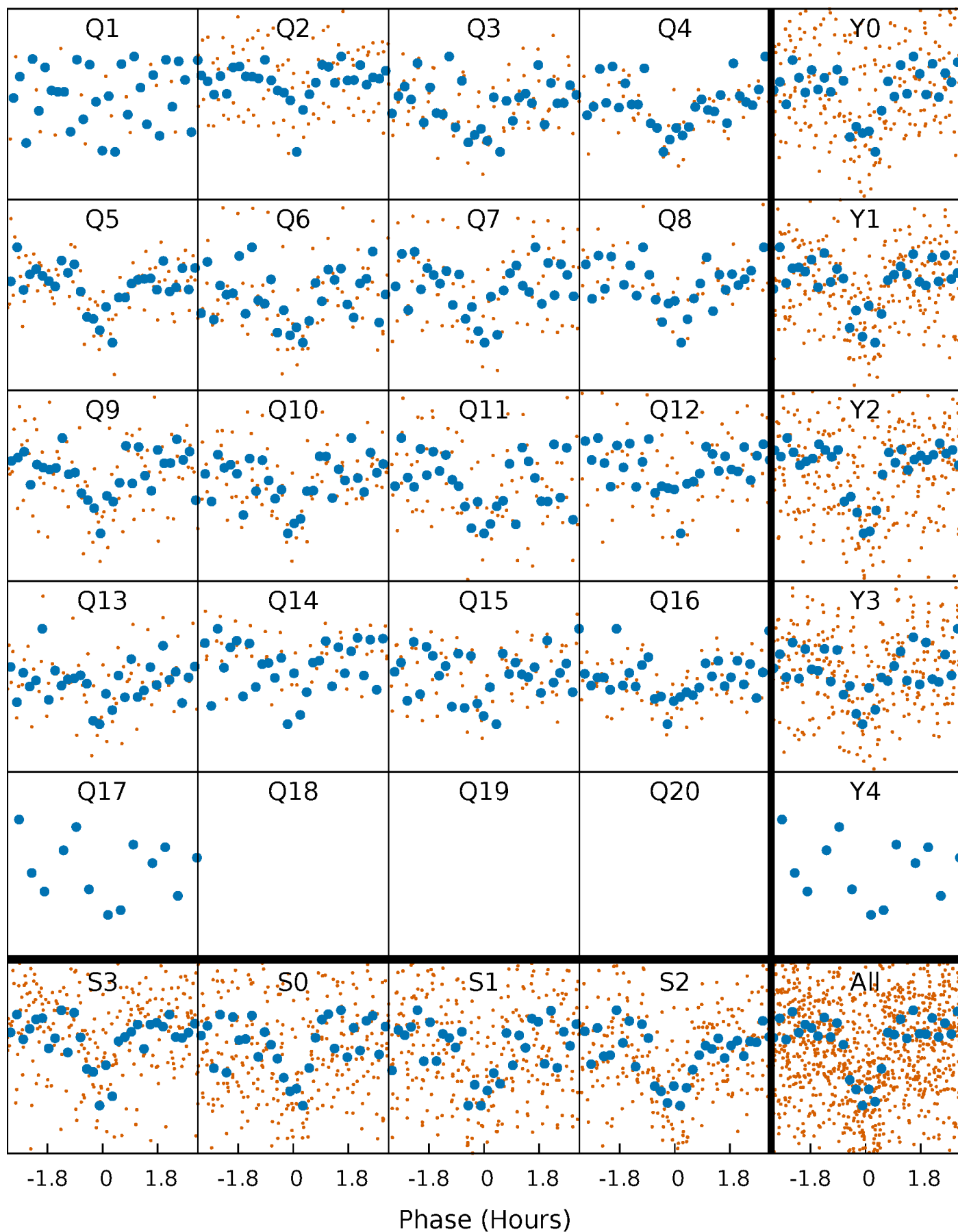


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



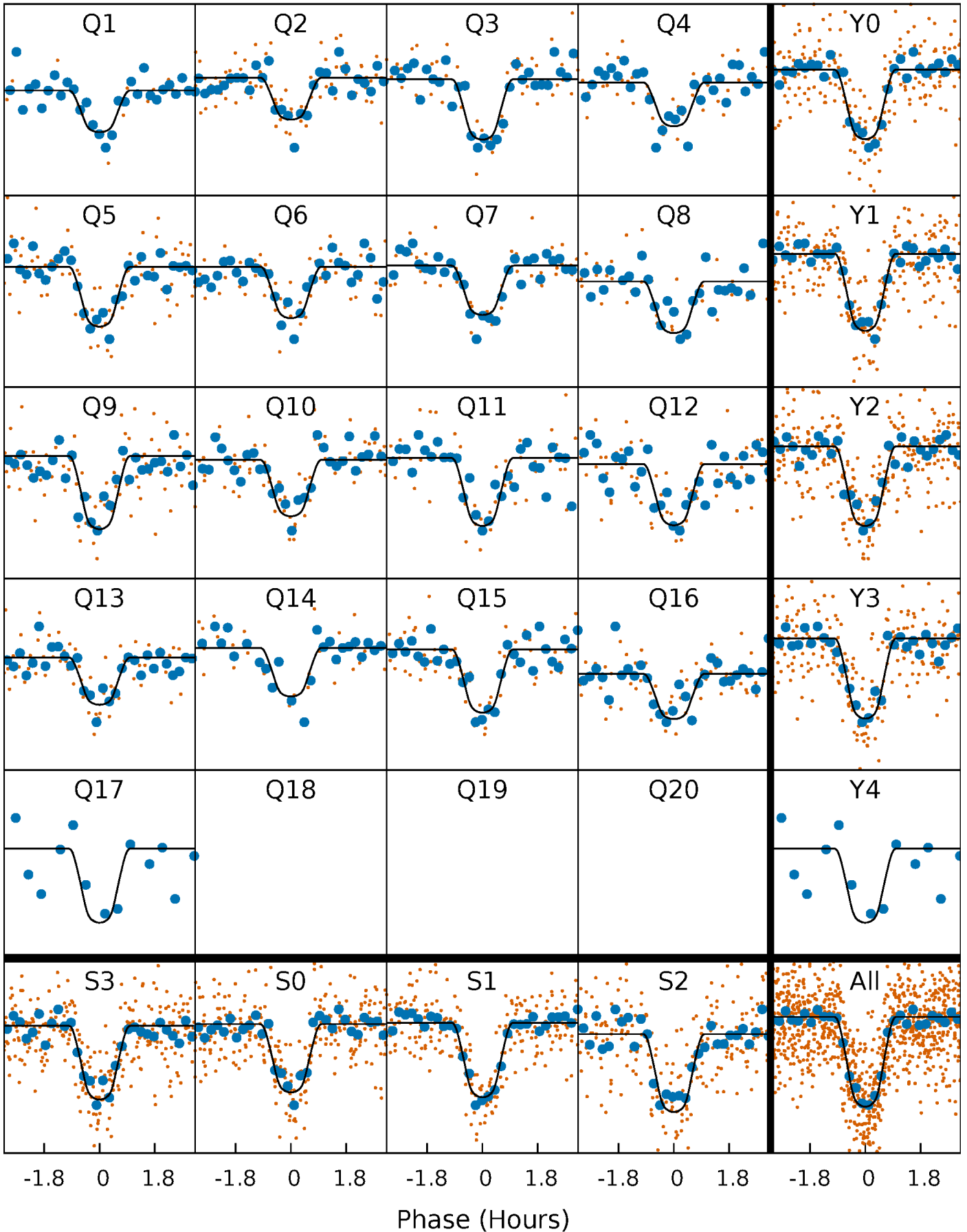
PDC Quarter-Phased Transit Curves

TCE 008167996-02 P= 13.969545 Days $T_0=132.169282$ (BKJD)



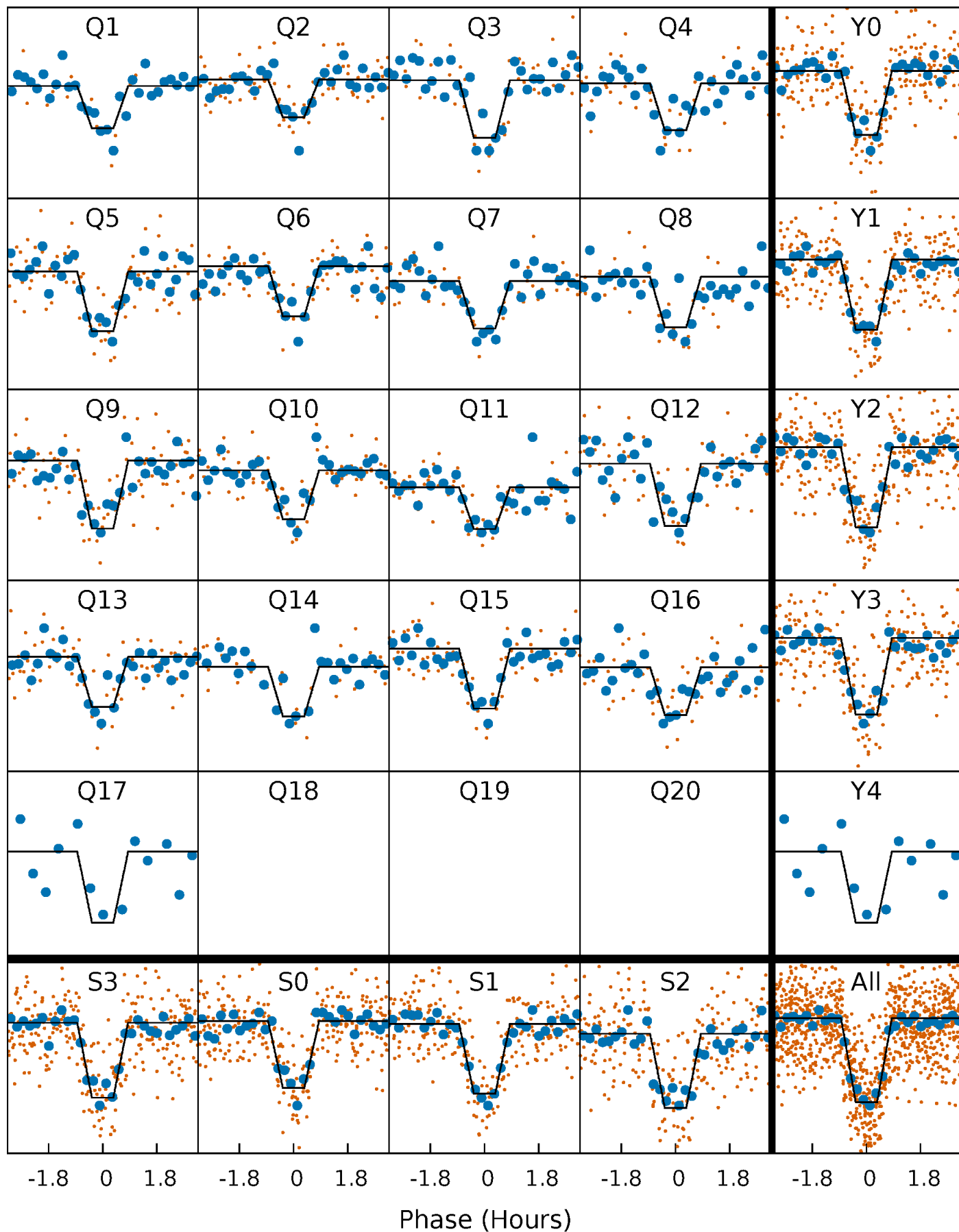
DV Quarter-Phased Transit Curves

TCE 008167996-02 P= 13.969545 Days $T_0=132.169282$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

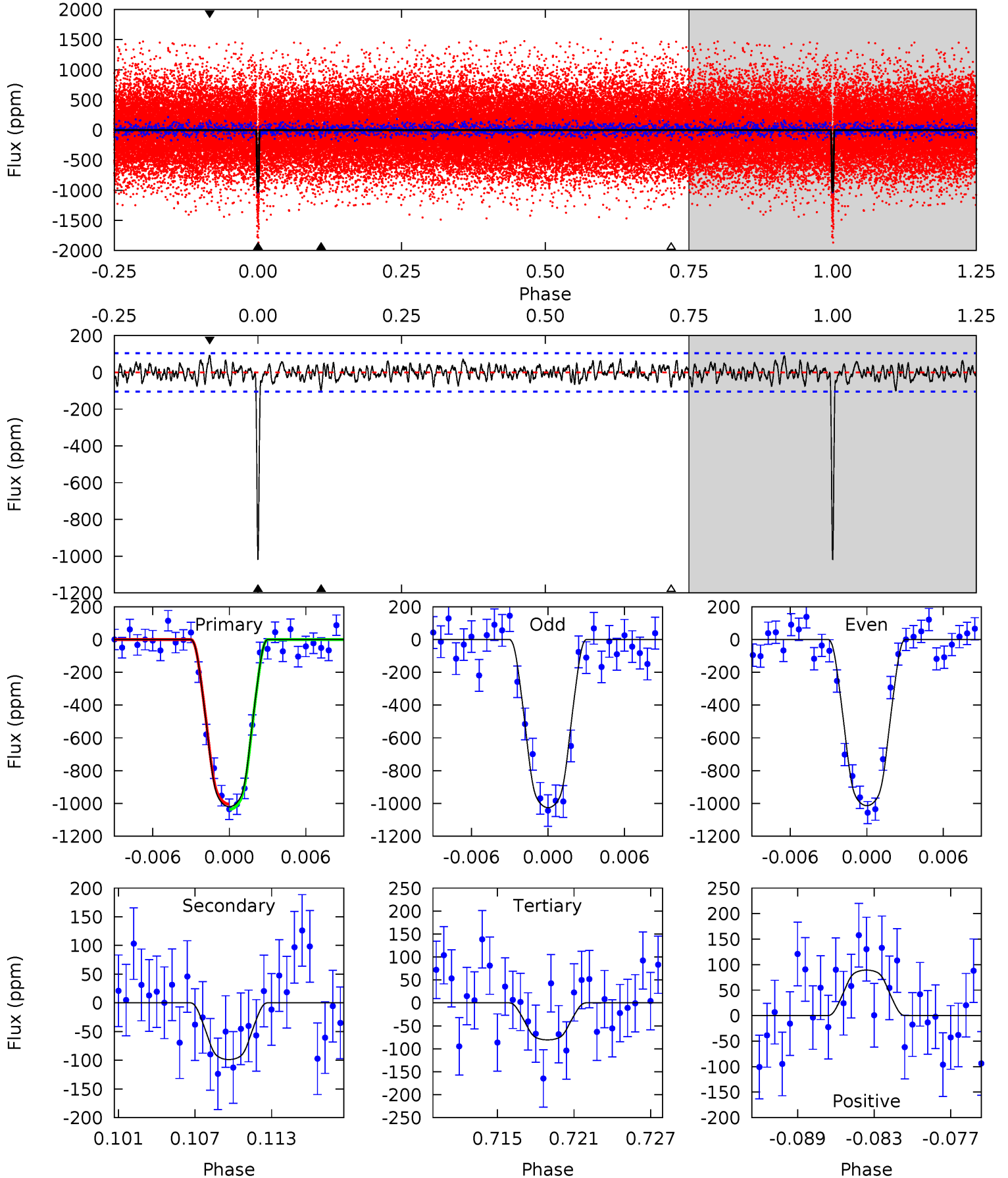
TCE 008167996-02 P= 13.969553 Days $T_0=132.168769$ (BKJD)



DV Model-Shift Uniqueness Test

008167996-02, $P = 13.969545$ Days, $E = 118.199737$ Days

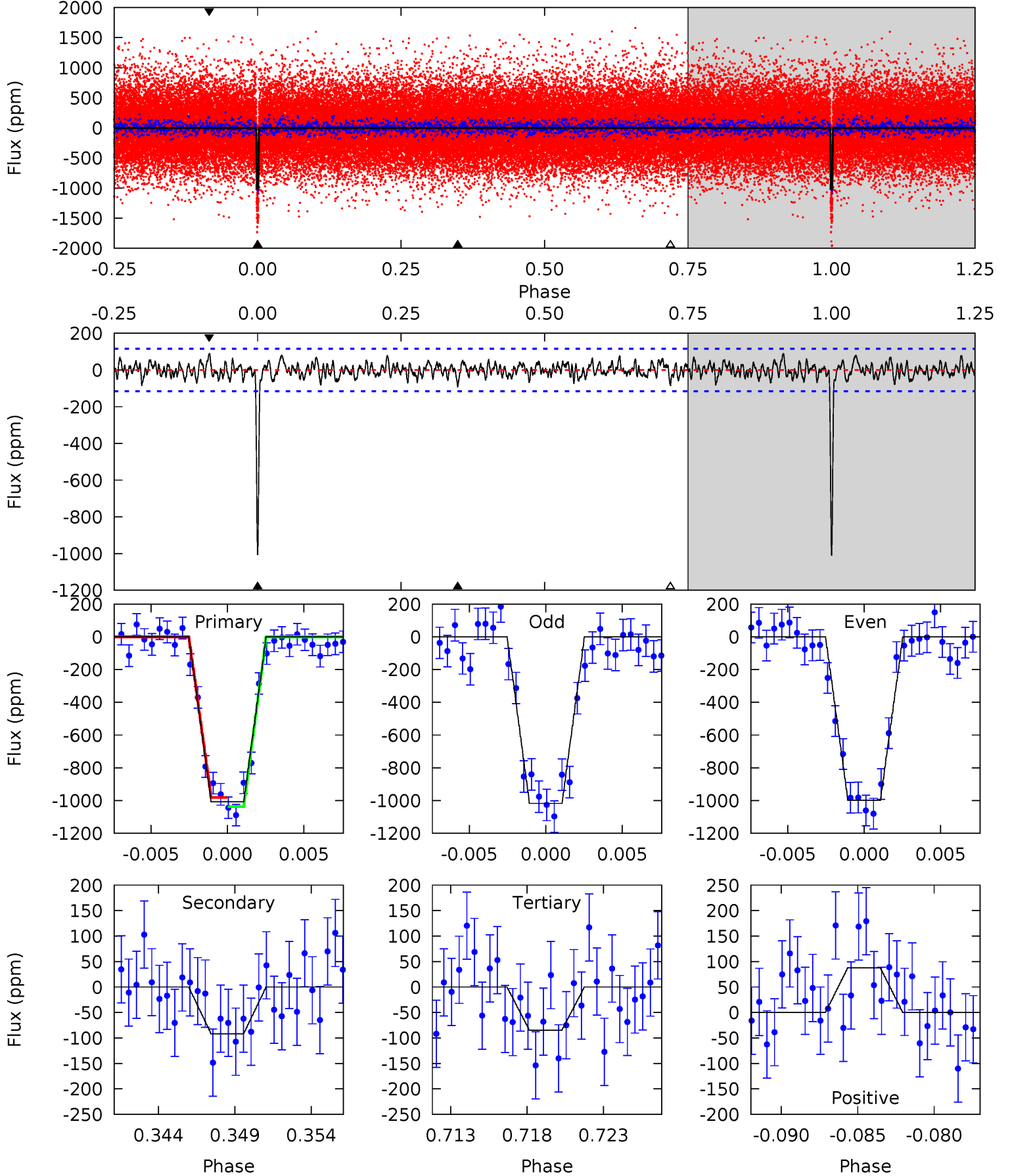
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.1	4.85	3.96	4.38	5.12	2.75	1.39	46.1	45.7	0.89	0.47	0.29	1.00	0.08	0.79



Alt Model-Shift Uniqueness Test

008167996-02, $P = 13.969553$ Days, $E = 118.199216$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.9	4.09	3.77	3.91	5.16	2.81	1.32	41.2	41.0	0.32	0.18	0.44	0.96	0.08	1.26



Stellar Parameters For KIC 008167996

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3716^{+73}_{-83}	$4.740^{+0.056}_{-0.024}$	$0.040^{+0.150}_{-0.150}$	$0.506^{+0.031}_{-0.051}$	$0.513^{+0.037}_{-0.045}$	$5.579^{+1.405}_{-0.549}$
	+2%/-2%	+1%/-1%	+375%/-375%	+6%/-10%	+7%/-9%	+25%/-10%
Source	SPE70	SPE60	SPE70	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008167996-02 / KOI 1867.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-99 ± 20	$1.96^{+0.28}_{-0.25}$	537^{+14}_{-16}	2574^{+111}_{-114}	119^{+44}_{-35}
Alt.	-92 ± 22	$1.76^{+0.23}_{-0.23}$	537^{+13}_{-15}	2618^{+126}_{-132}	135^{+60}_{-43}

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

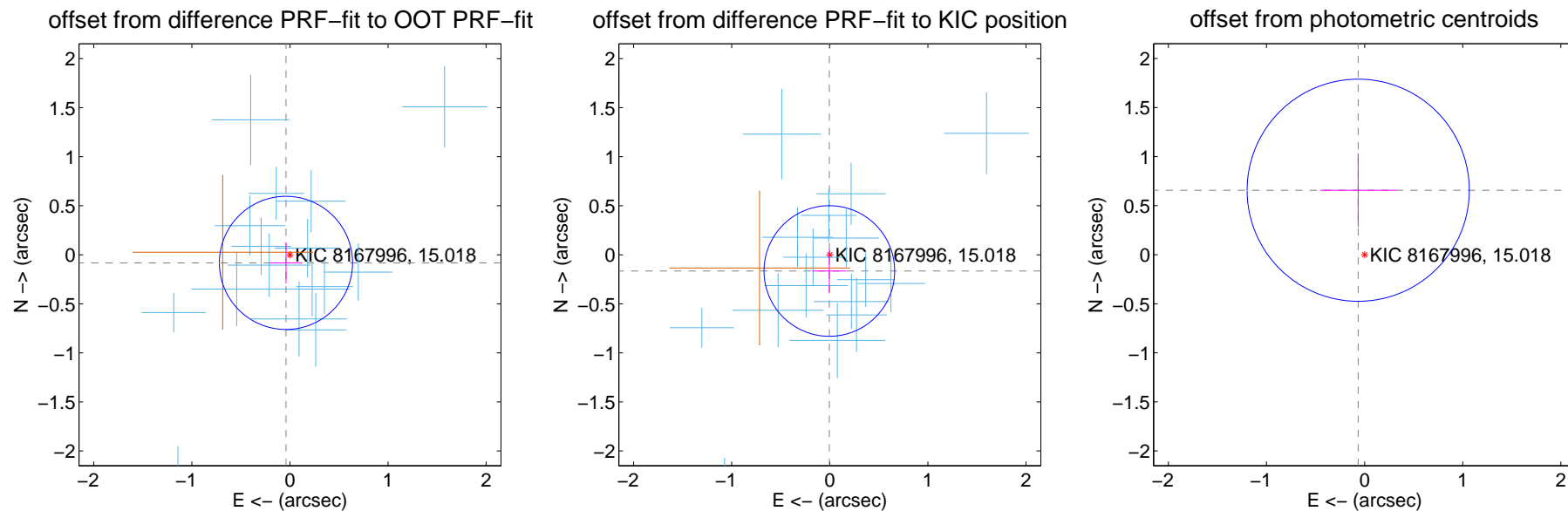
DV Centroid Data

Supplemental centroid analysis for 008167996-02. Kepler magnitude: 15.02. Transit SNR 33.48

There are 16 quarters with good PRF difference image offsets

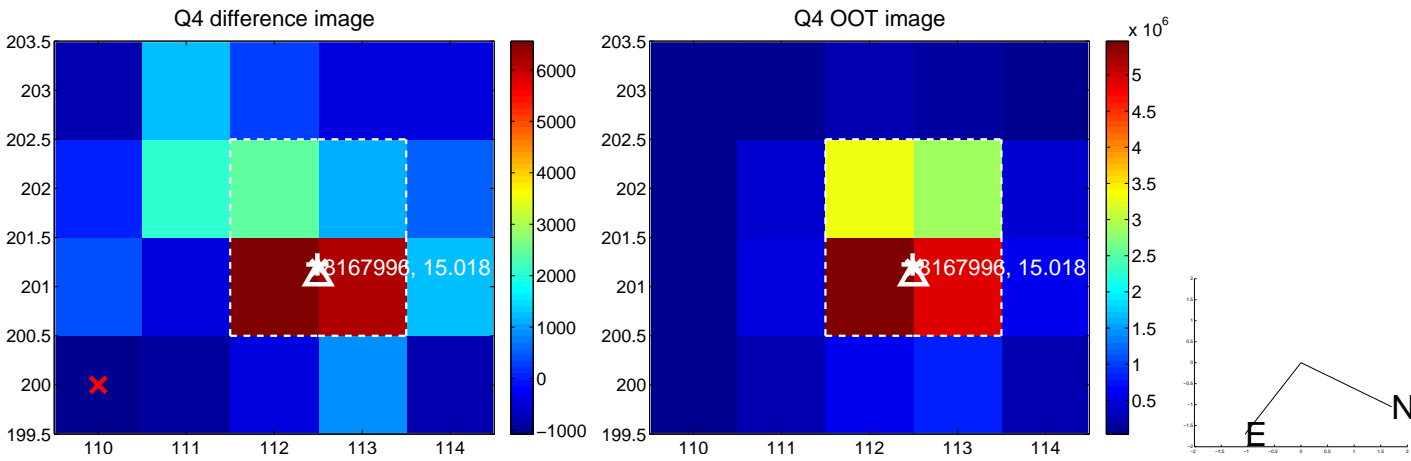
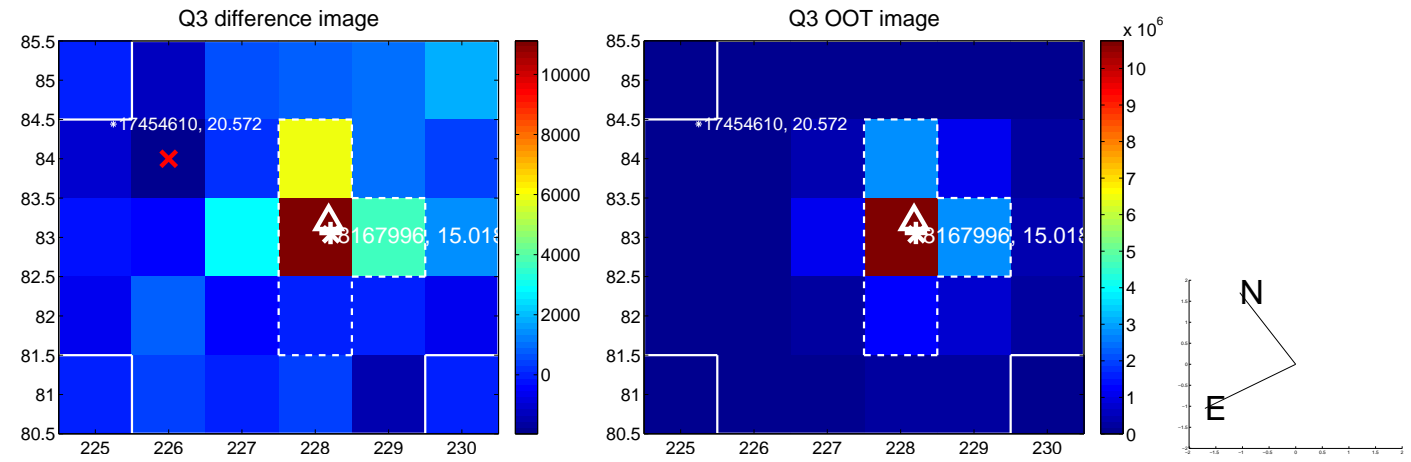
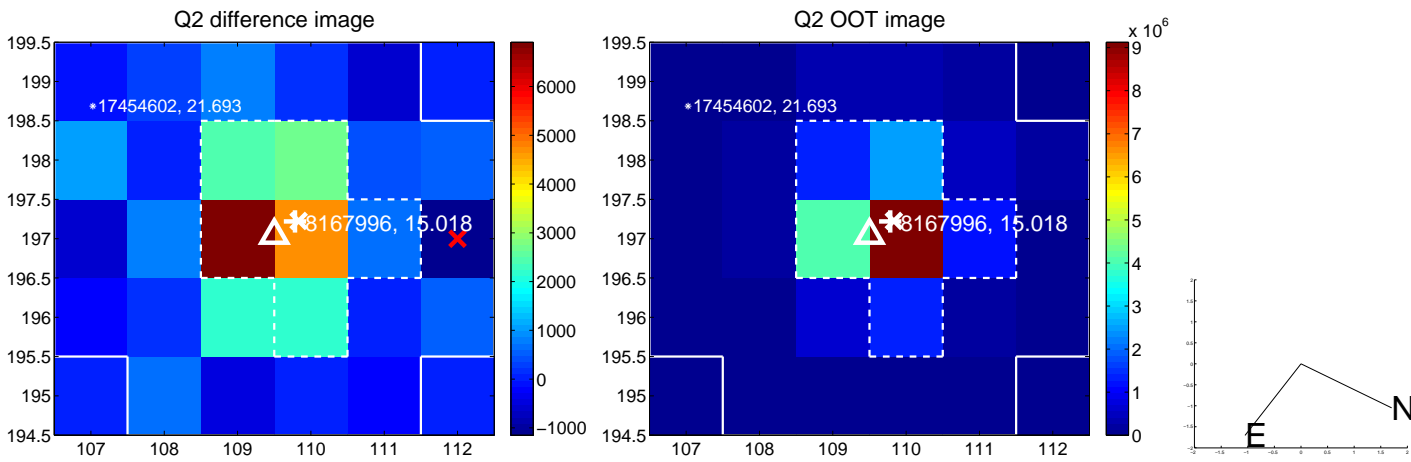
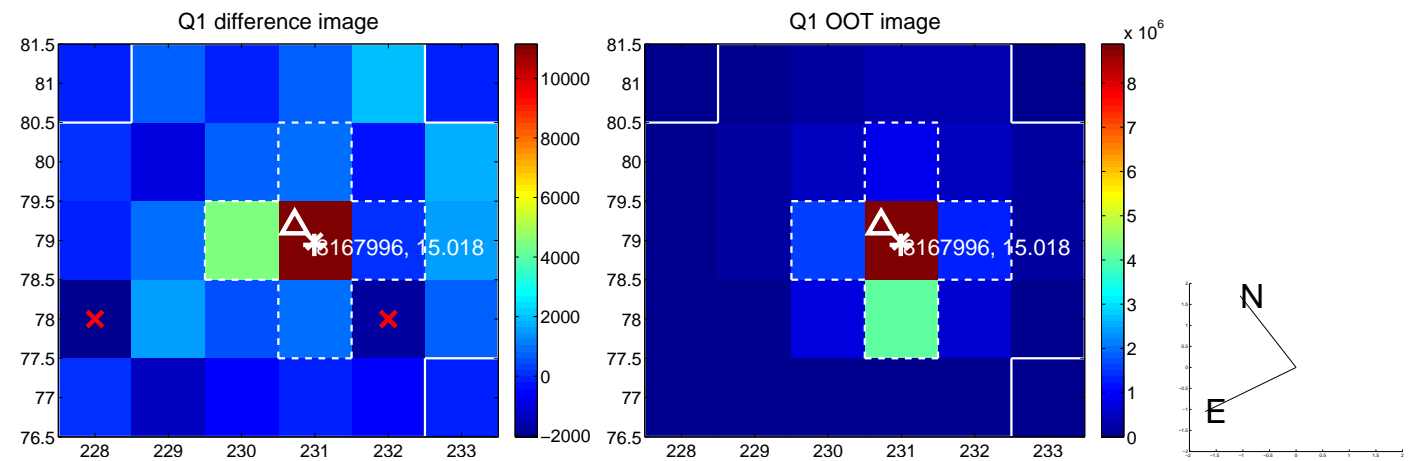
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.092 ± 0.226	0.41	0.041 ± 0.168	-0.083 ± 0.209
PRF-fit source offset from KIC position	0.165 ± 0.222	0.74	0.005 ± 0.175	-0.165 ± 0.220
photometric centroid source offset	0.66 ± 0.38	1.75	0.07 ± 0.39	0.66 ± 0.38

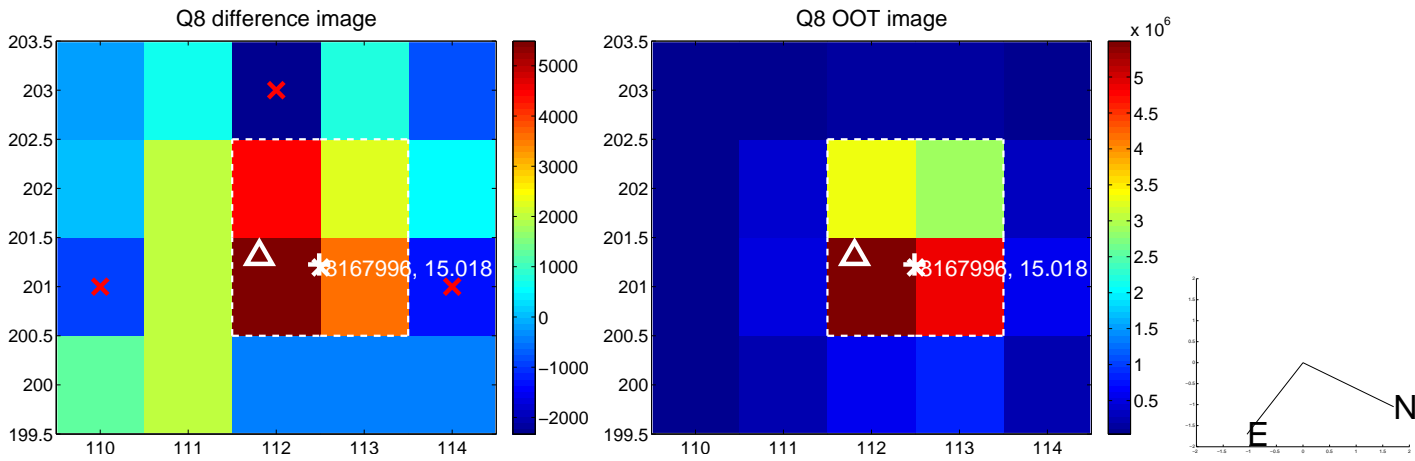
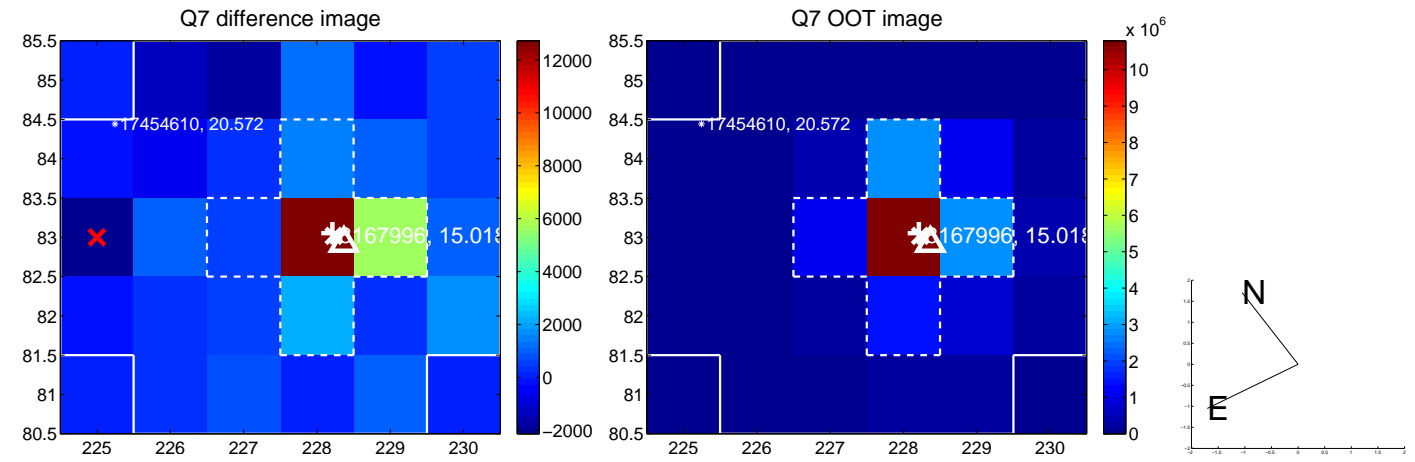
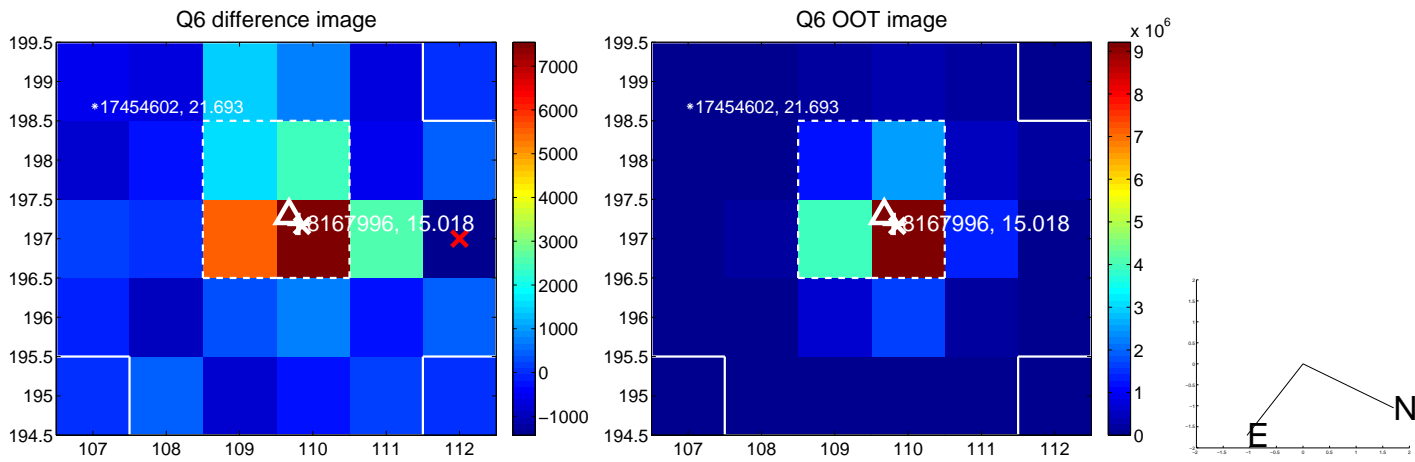
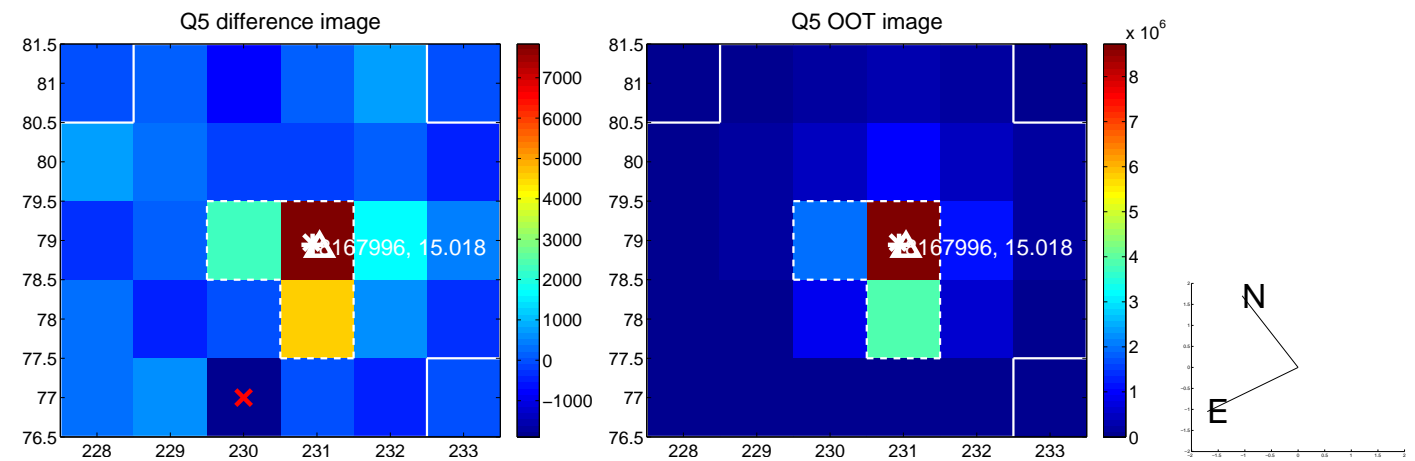


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

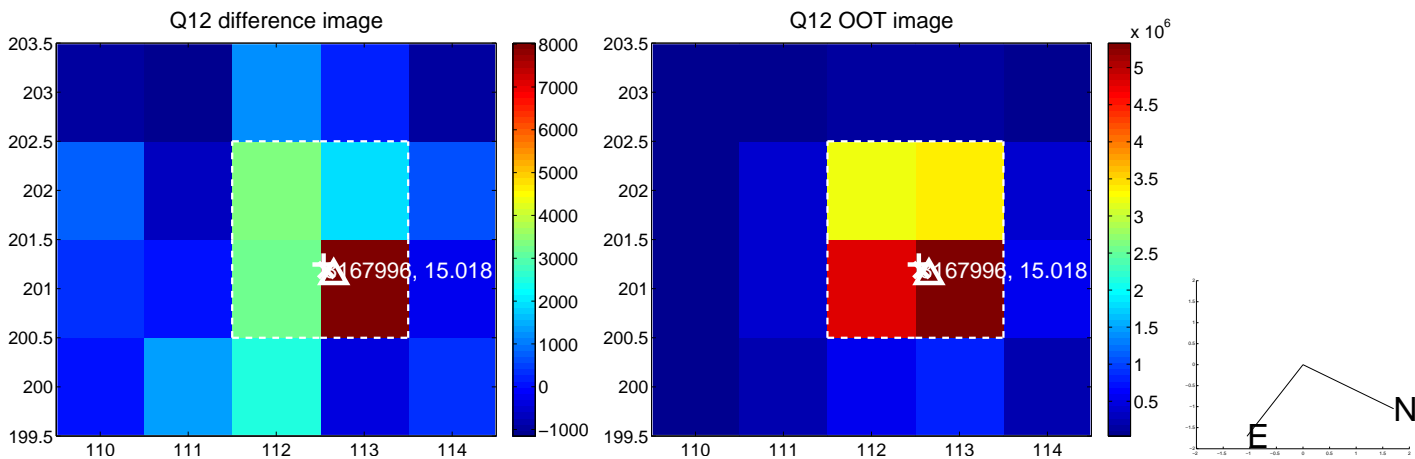
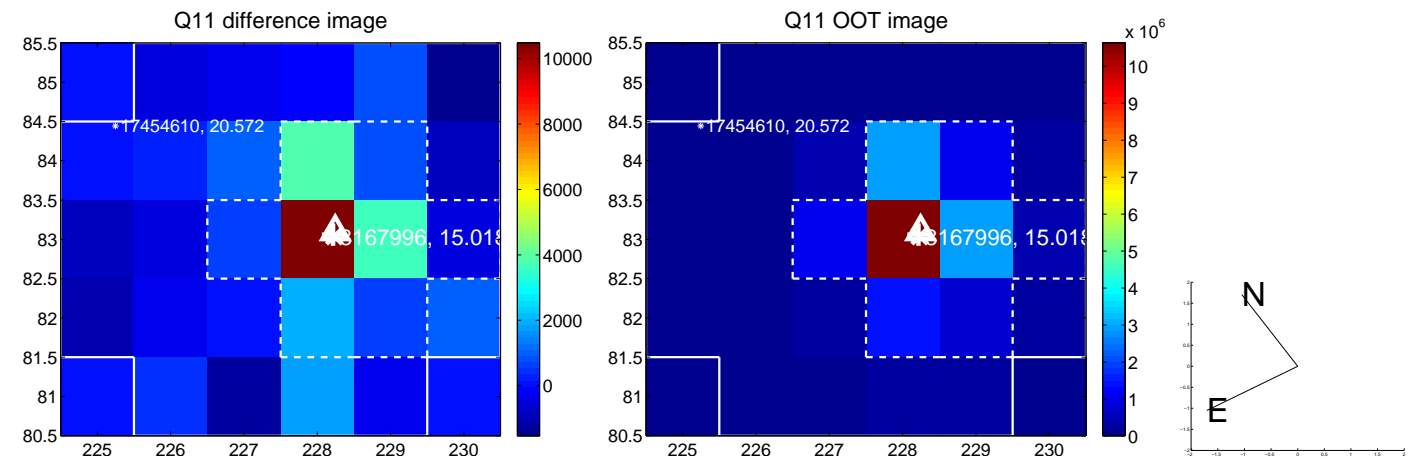
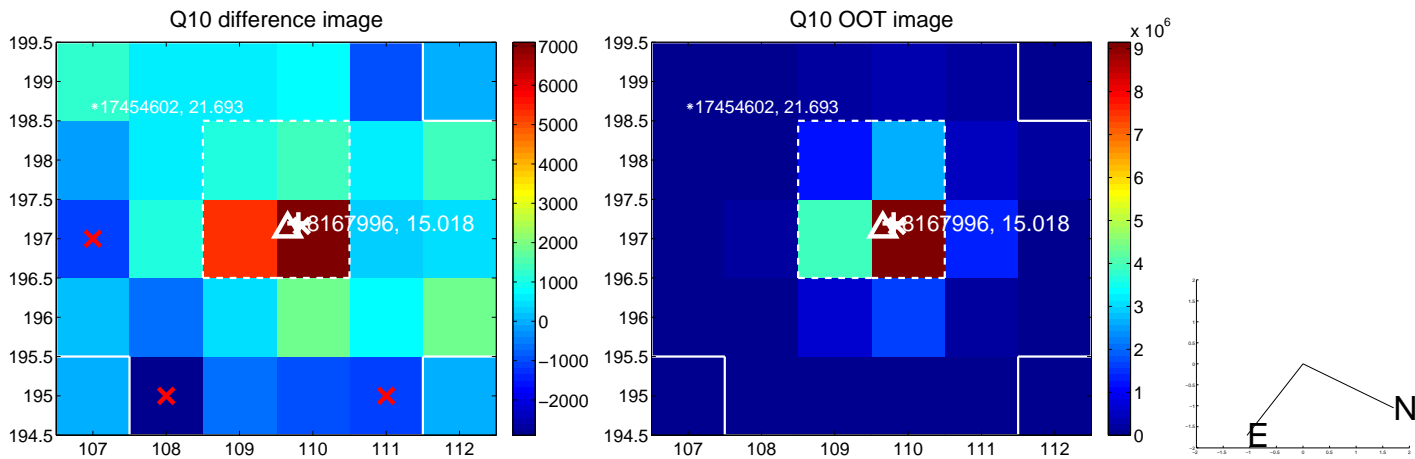
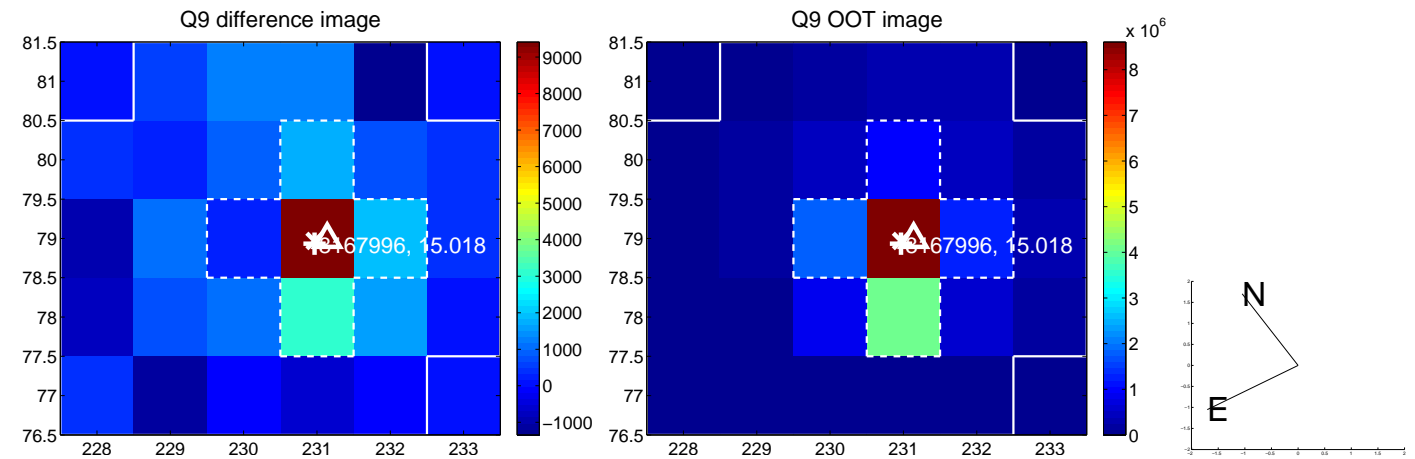
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



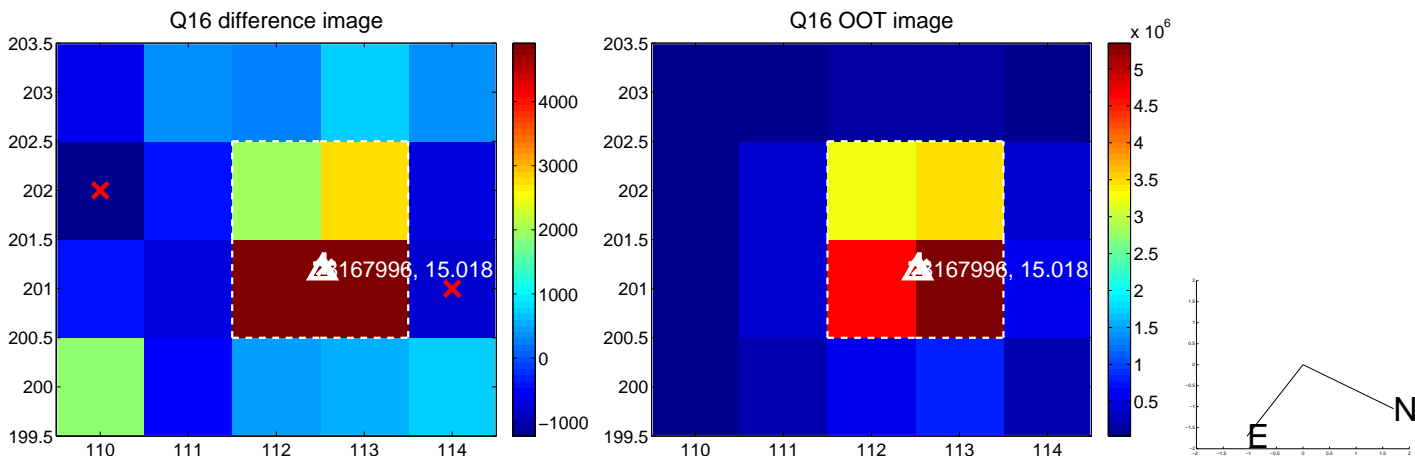
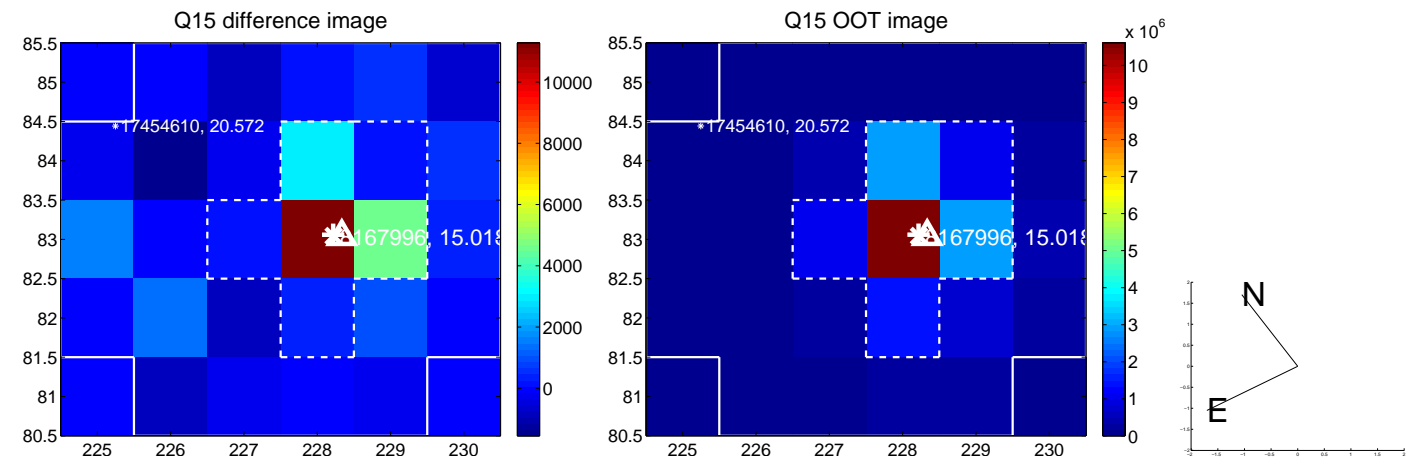
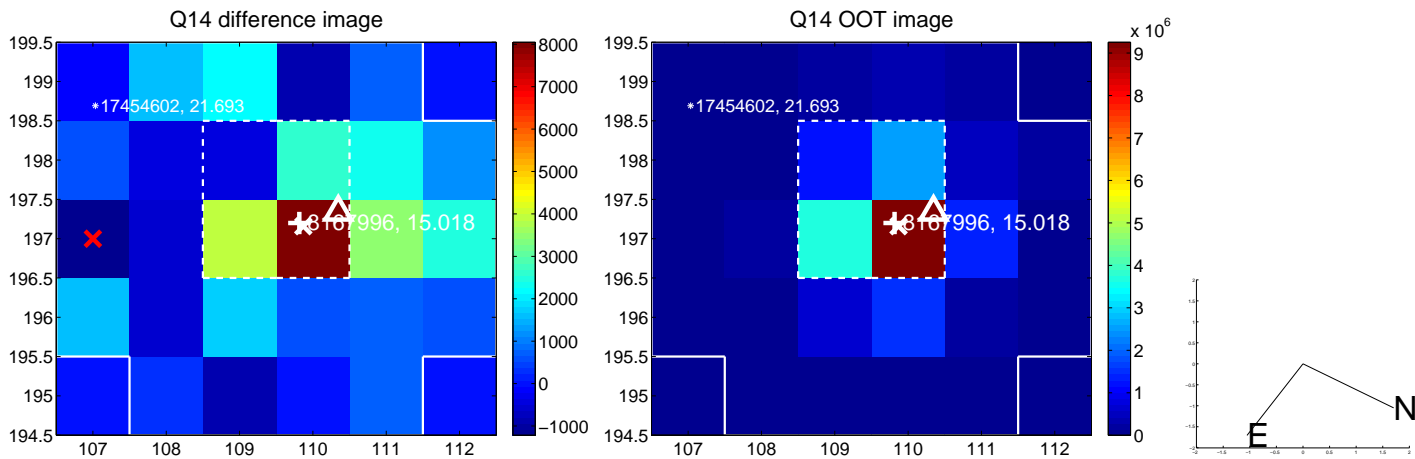
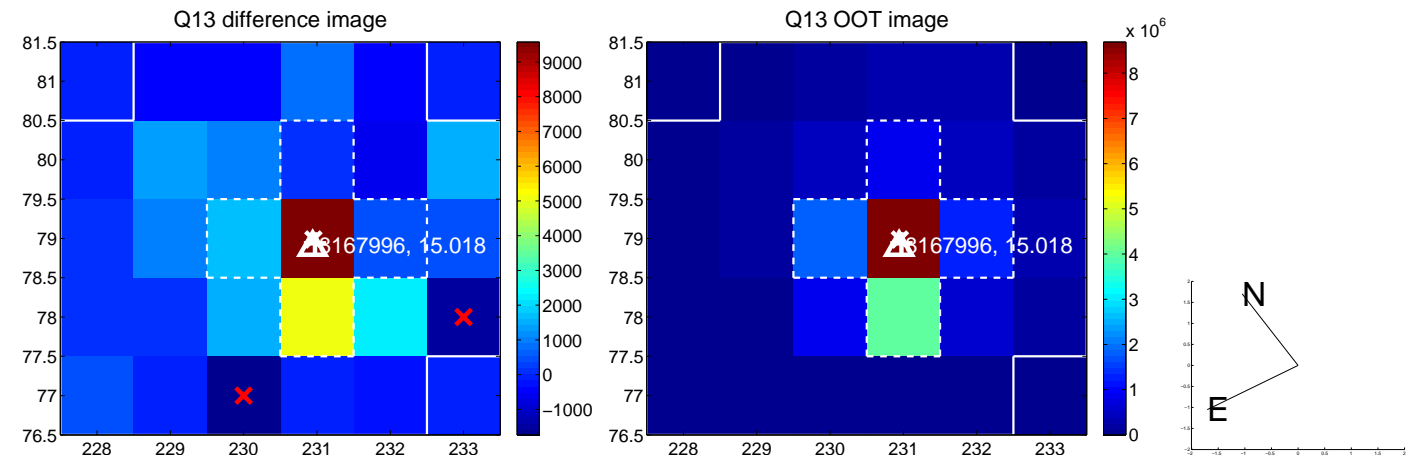
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



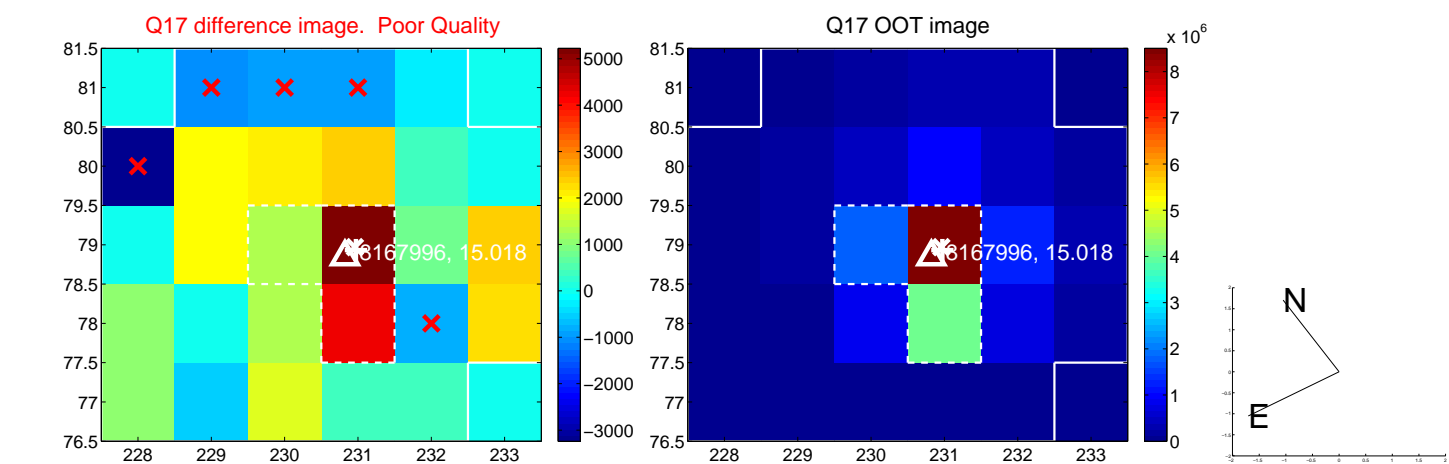
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



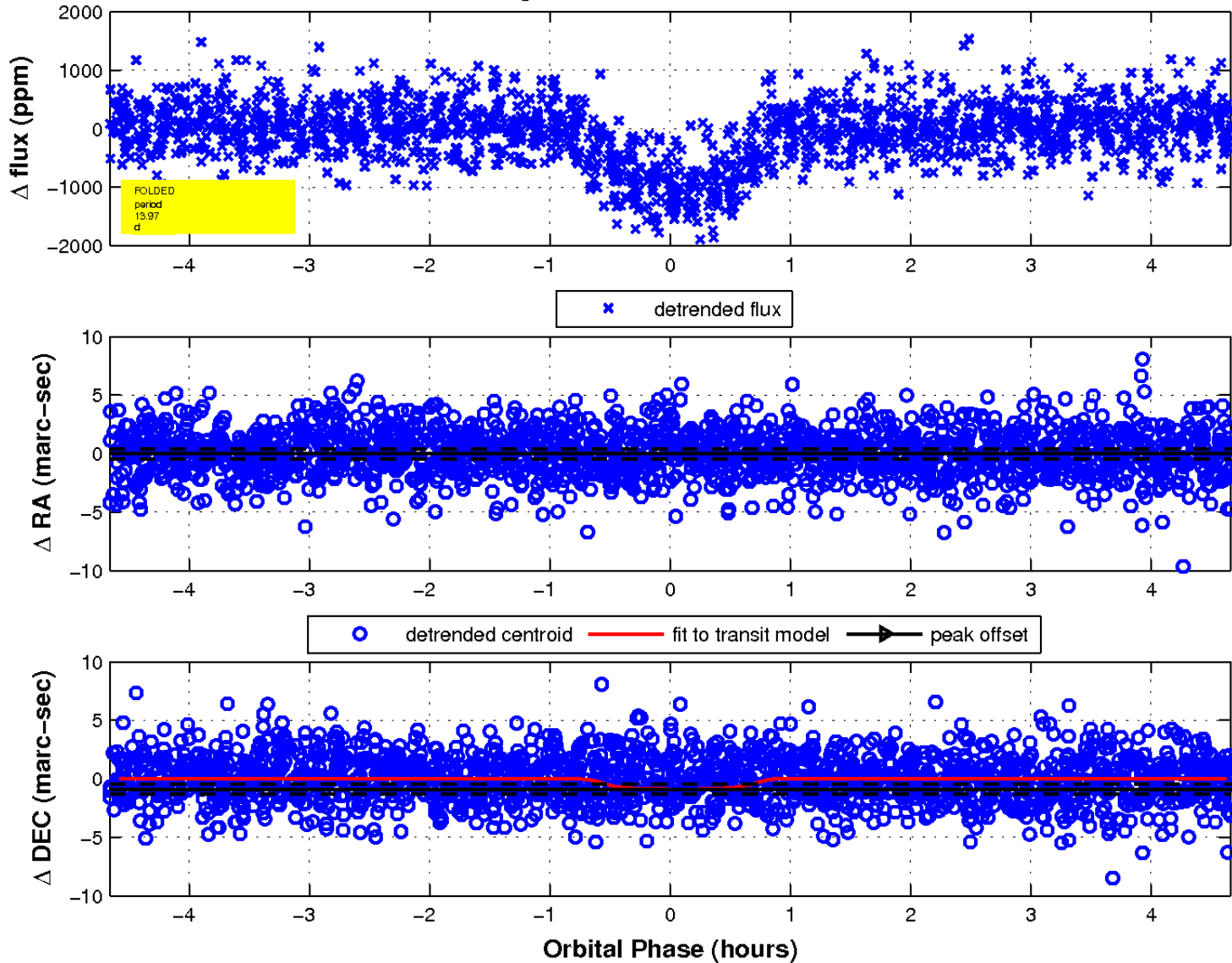
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

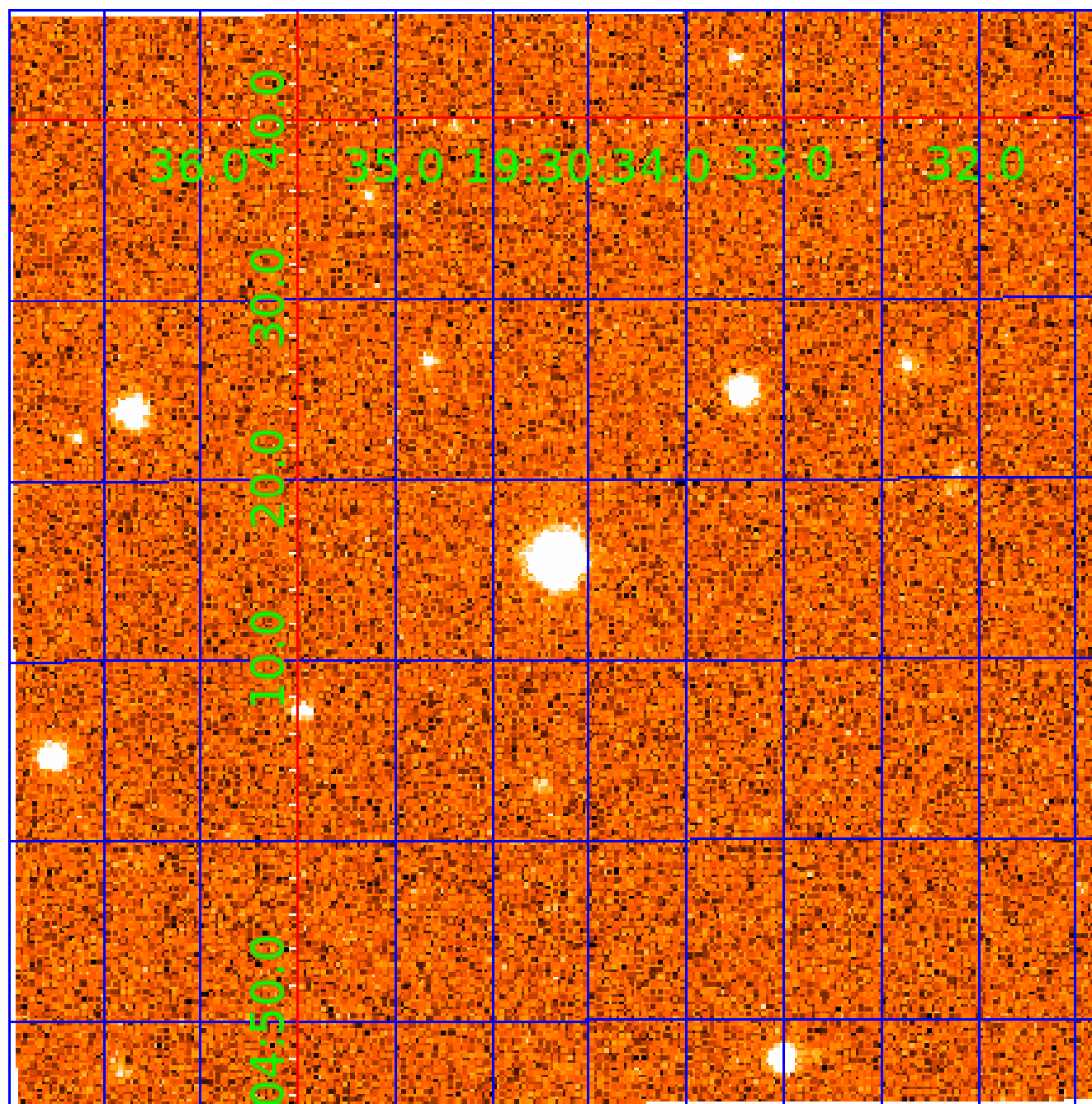


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 008167996

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})
008167996-01	OBS	1867.01	2.549569	132.607173	490.1	1.859	35.1	40.0	0.51	3716	1.34	51.13
008167996-02	OBS	1867.02	13.969545	132.169282	1070.9	1.558	27.2	33.5	0.51	3716	1.98	5.29
008167996-03	OBS	1867.03	5.212327	132.706875	427.5	2.128	22.2	25.6	0.51	3716	1.11	19.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008167996-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008167996-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008167996-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

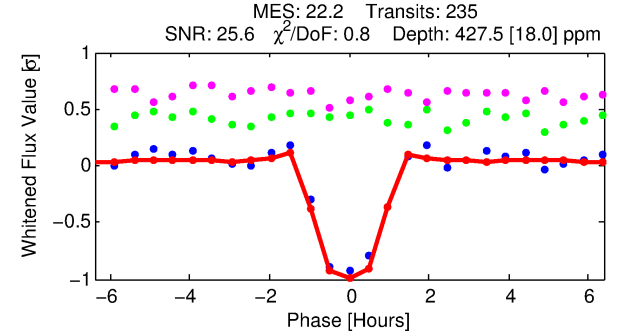
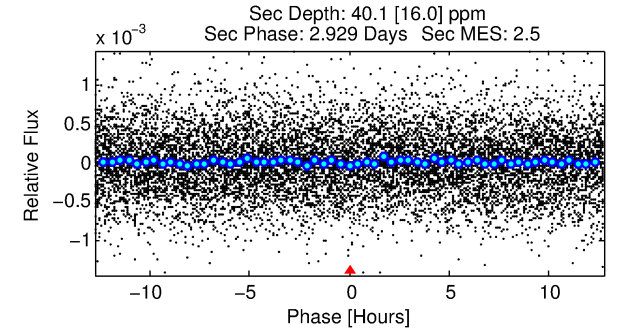
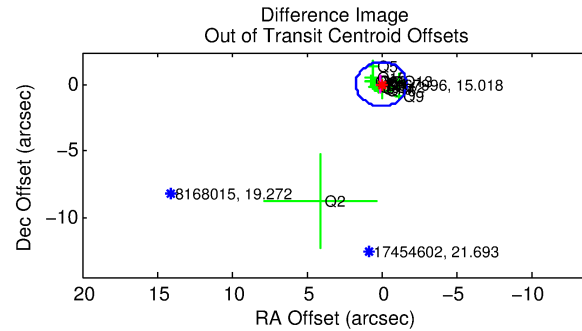
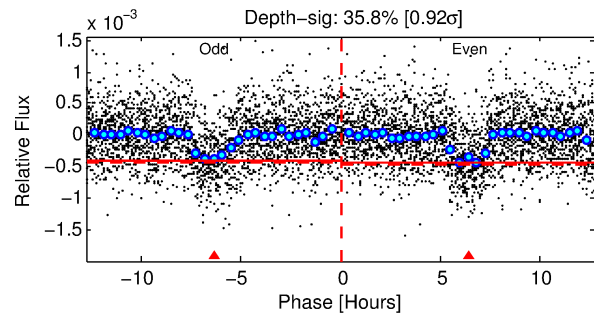
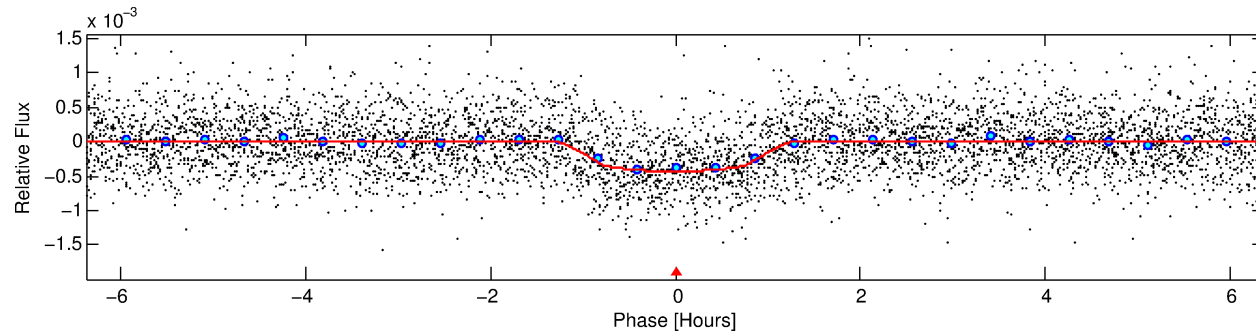
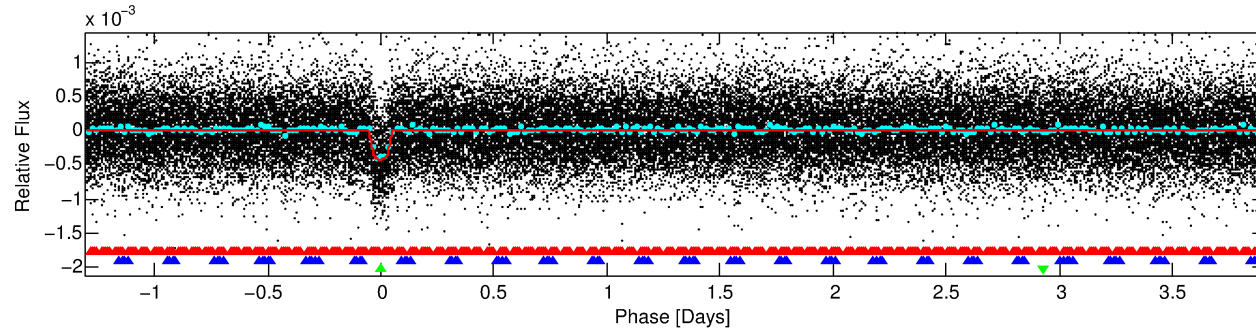
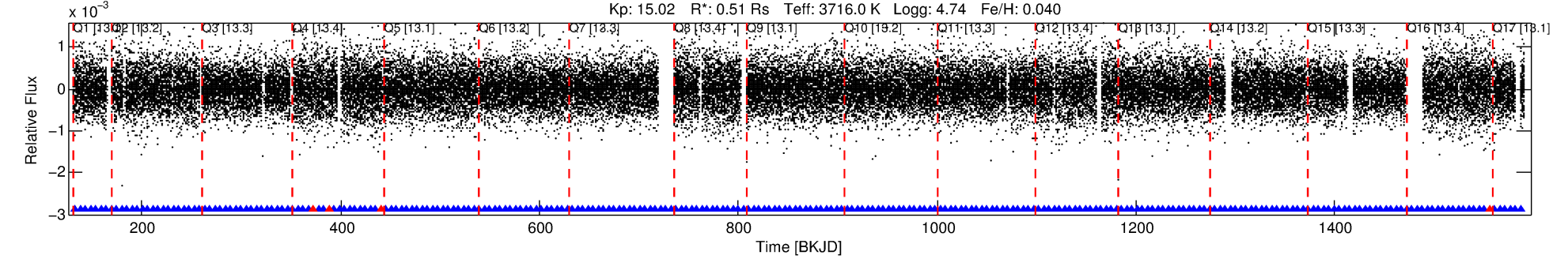
Ephemeris Match Information For 008167996-03

No Significant Match Found

DV One-Page Summary

KIC: 8167996 Candidate: 3 of 3 Period: 5.212 d
KOI: K01867.03 Name: Kepler-327c Corr: 0.966

Kp: 15.02 R*: 0.51 Rs Teff: 3716.0 K Logg: 4.74 Fe/H: 0.040



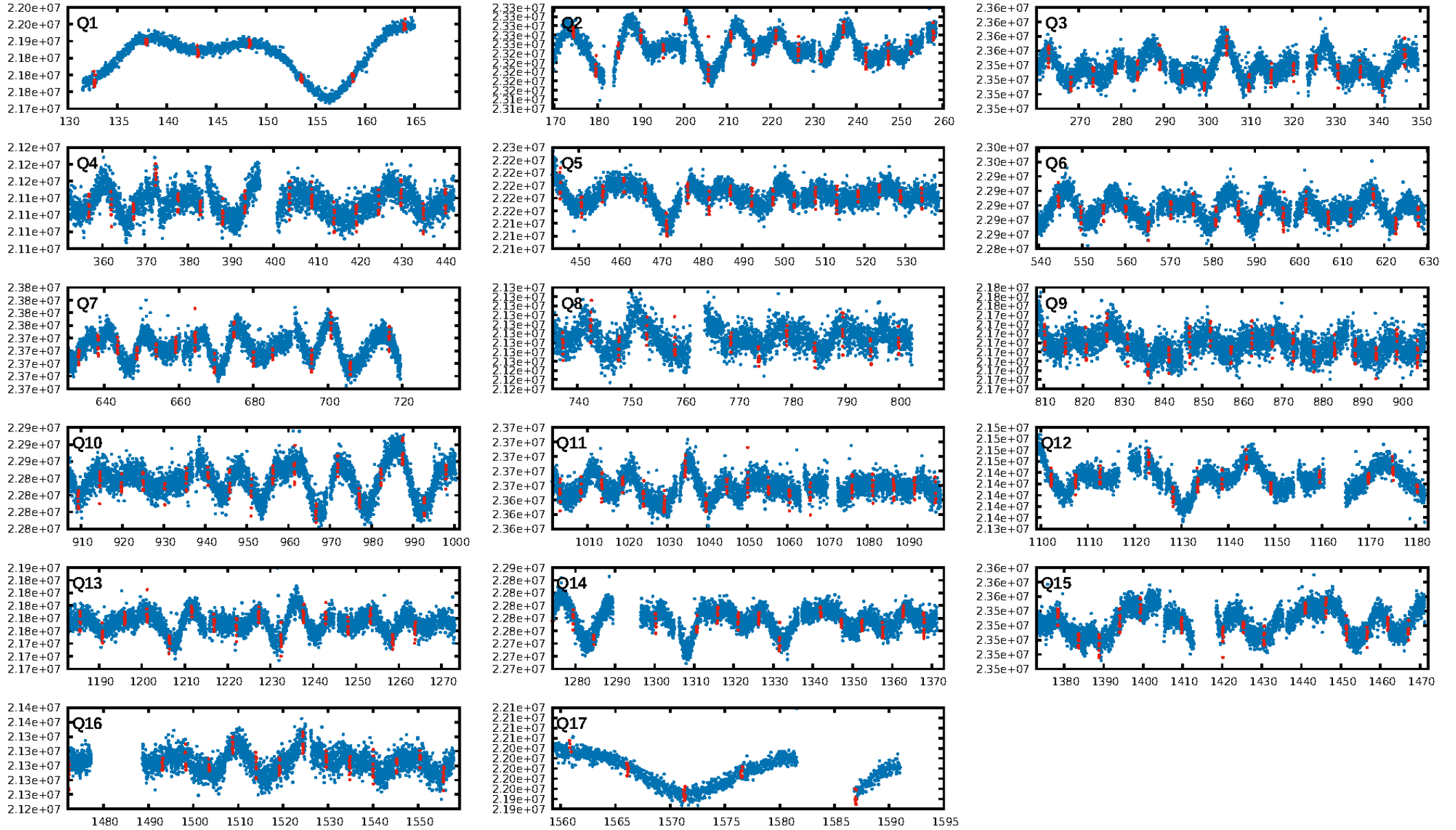
DV Fit Results:

Period = 5.21233 [0.00001] d
Epoch = 132.7069 [0.0015] BKJD
Rp/R* = 0.0201 [0.0114]
a/R* = 14.15 [33.62]
b = 0.69 [1.86]
Seff = 19.71 [2.78]
Teff = 537 [19] K
Rp = 1.11 [0.64] Re
a = 0.0471 [0.0038] AU
Ag = 39.65 [47.92] [0.81σ]
Teffp = 2084 [629] K [2.46σ]

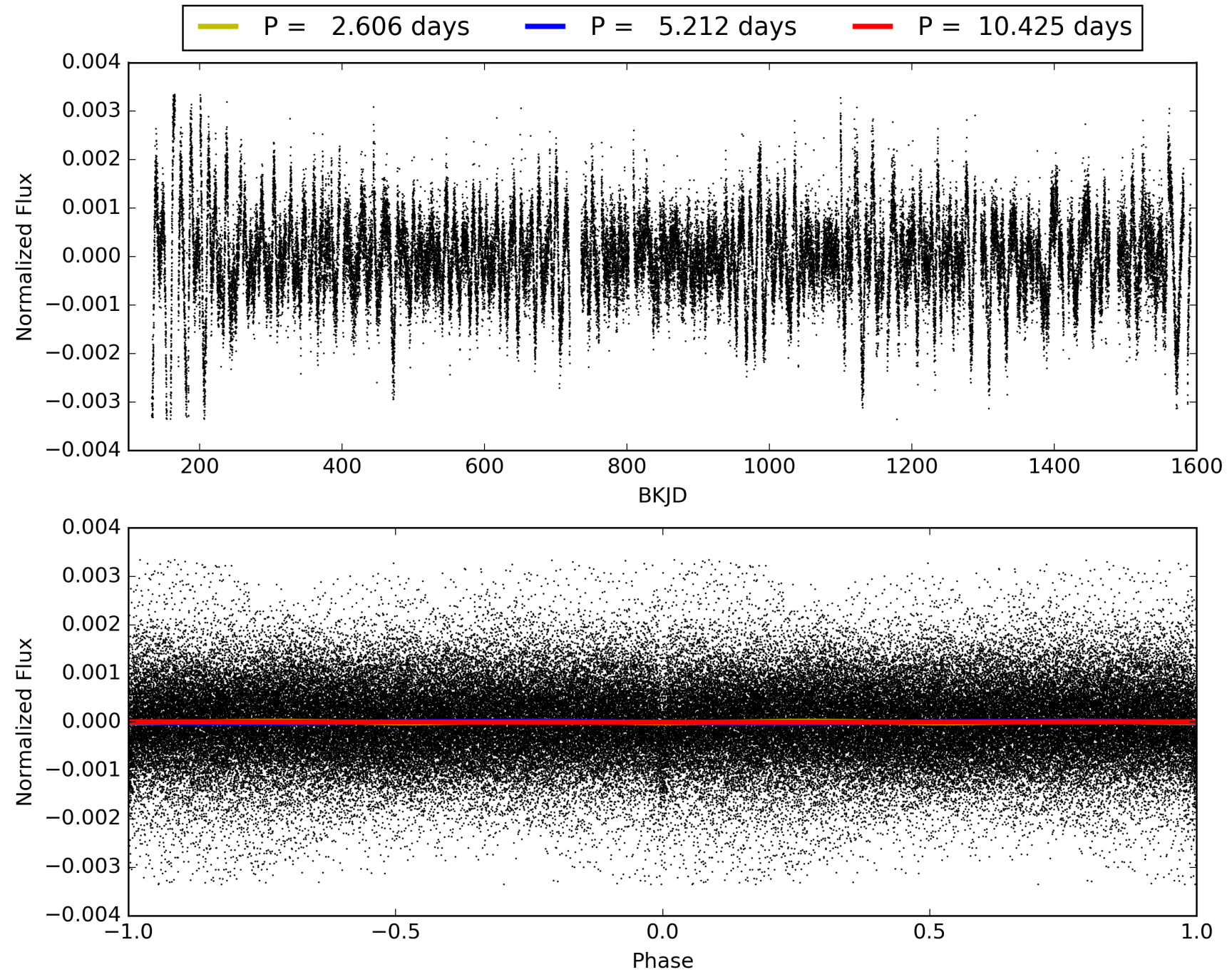
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [22.62σ]
LongPeriod-sig: 100.0% [79.69σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.53e-102
RollingBand-fgt: 0.98 [219/223]
GhostDiagnostic-chr: 3.187
Centroid-sig: 91.6%
Centroid-so: 0.281 arcsec [0.61σ]
OotOffset-rm: 0.089 arcsec [0.16σ]
KicOffset-rm: 0.081 arcsec [0.22σ]
OotOffset-st: 4/3/4/3 [14]
KicOffset-st: 4/3/4/3 [14]
DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008167996-03, PDC Light Curves

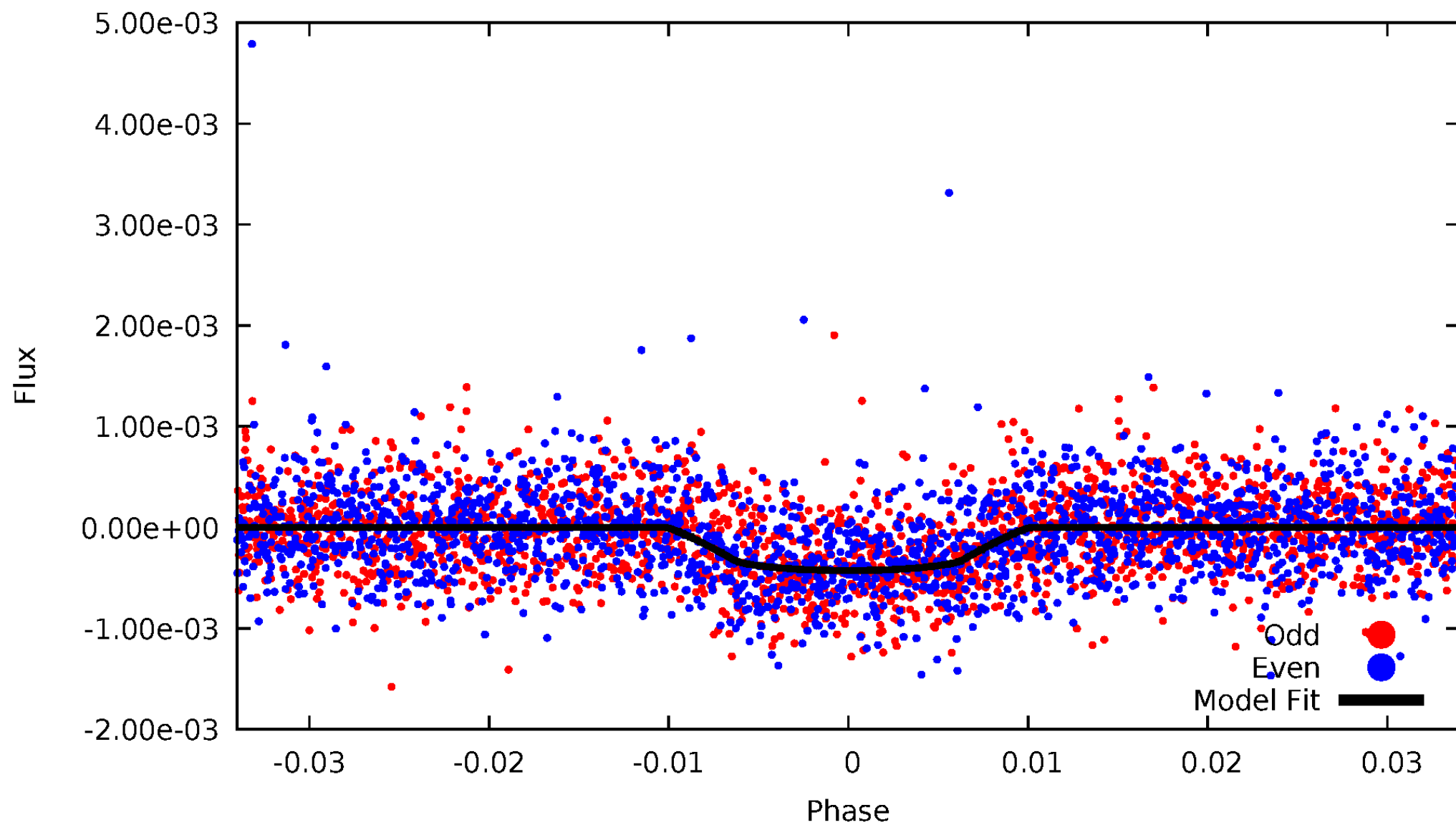


TCE 008167996-03



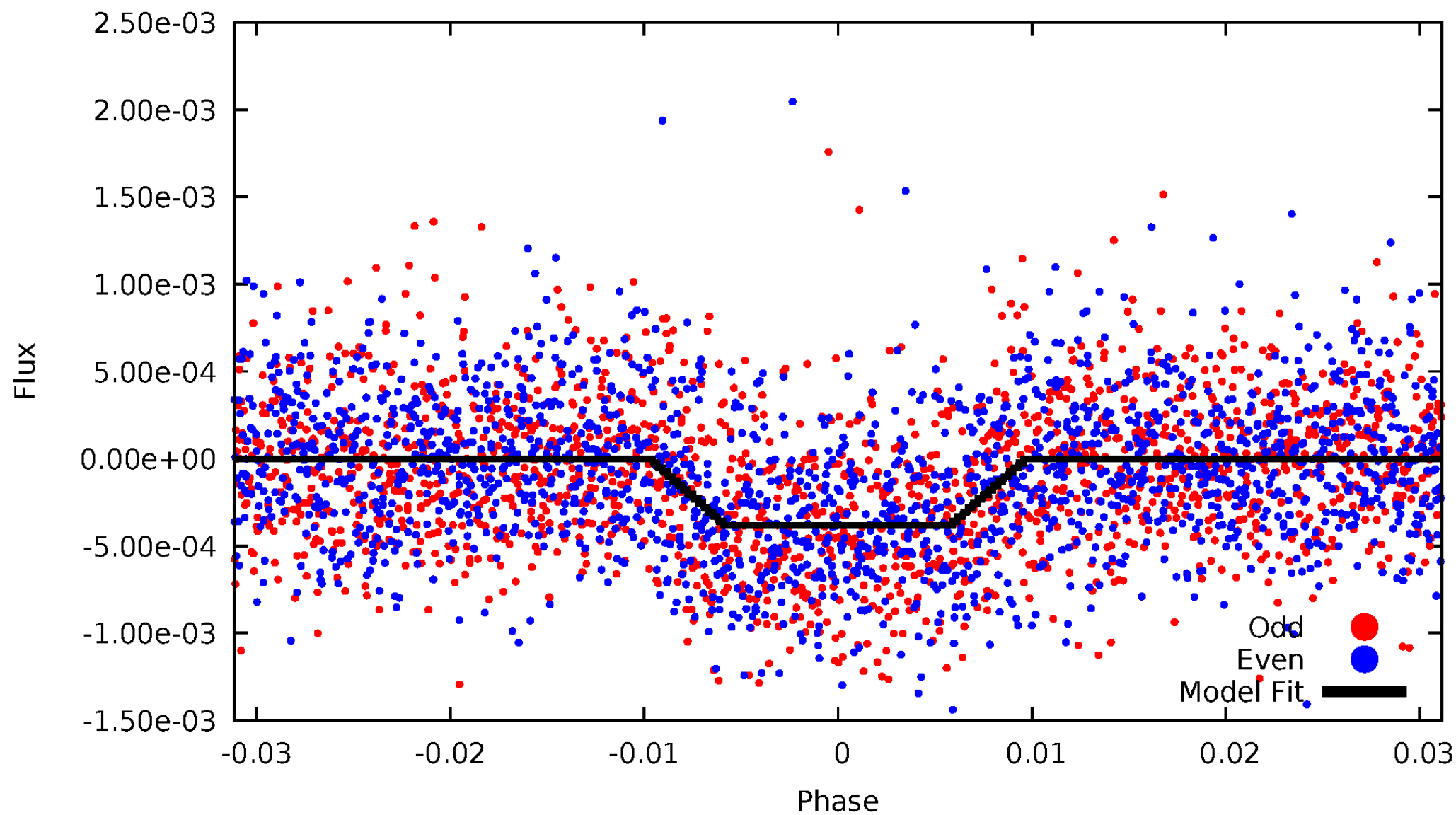
DV Odd/Even

TCE 008167996-03



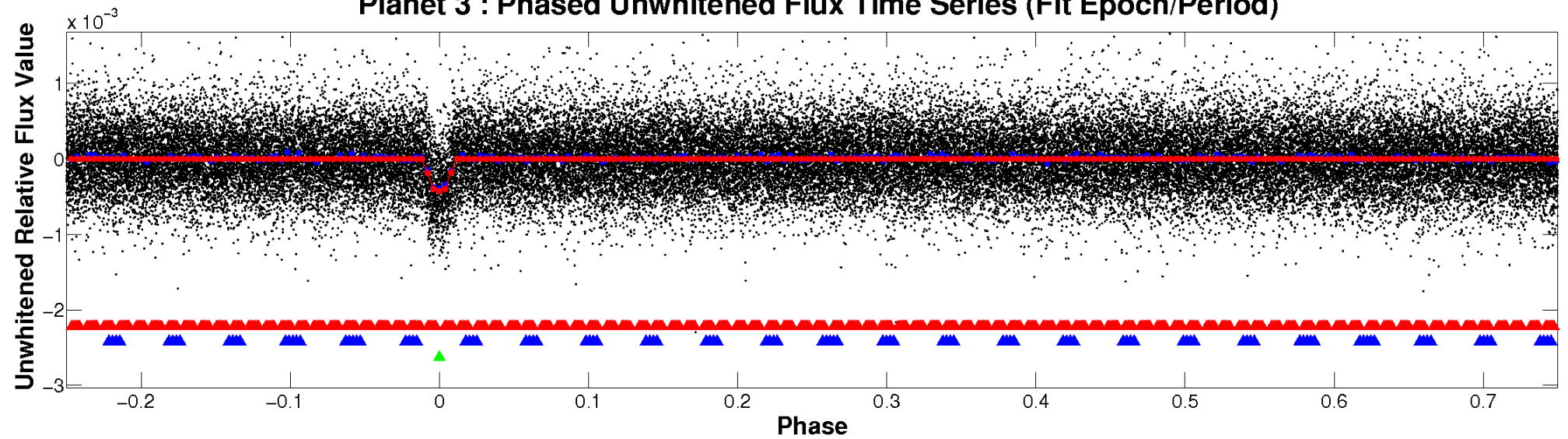
ALT Odd/Even

TCE 008167996-03

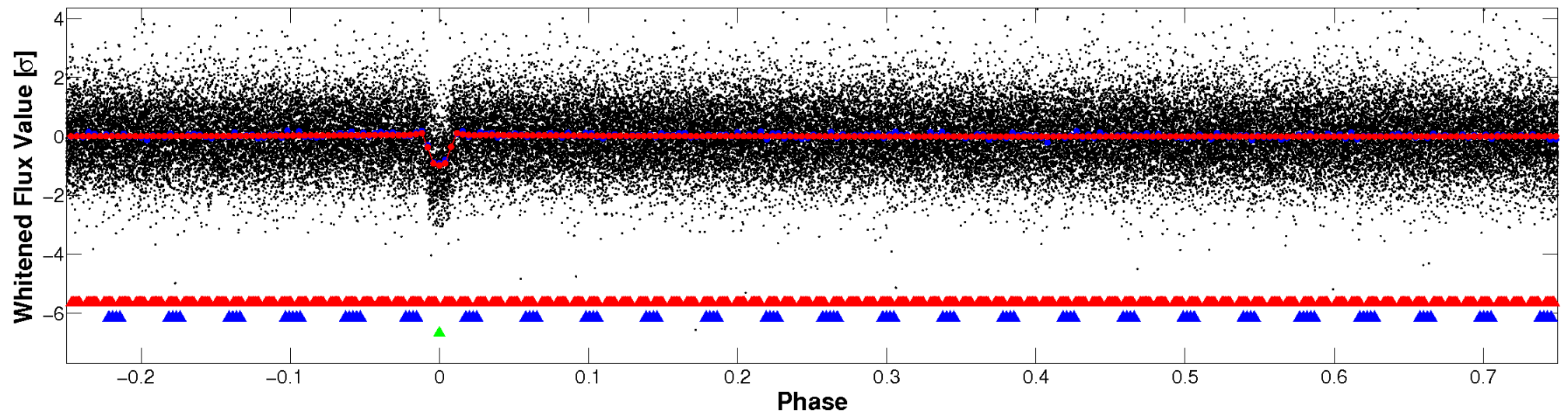


Non-Whitened Vs. Whitened Light Curve

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

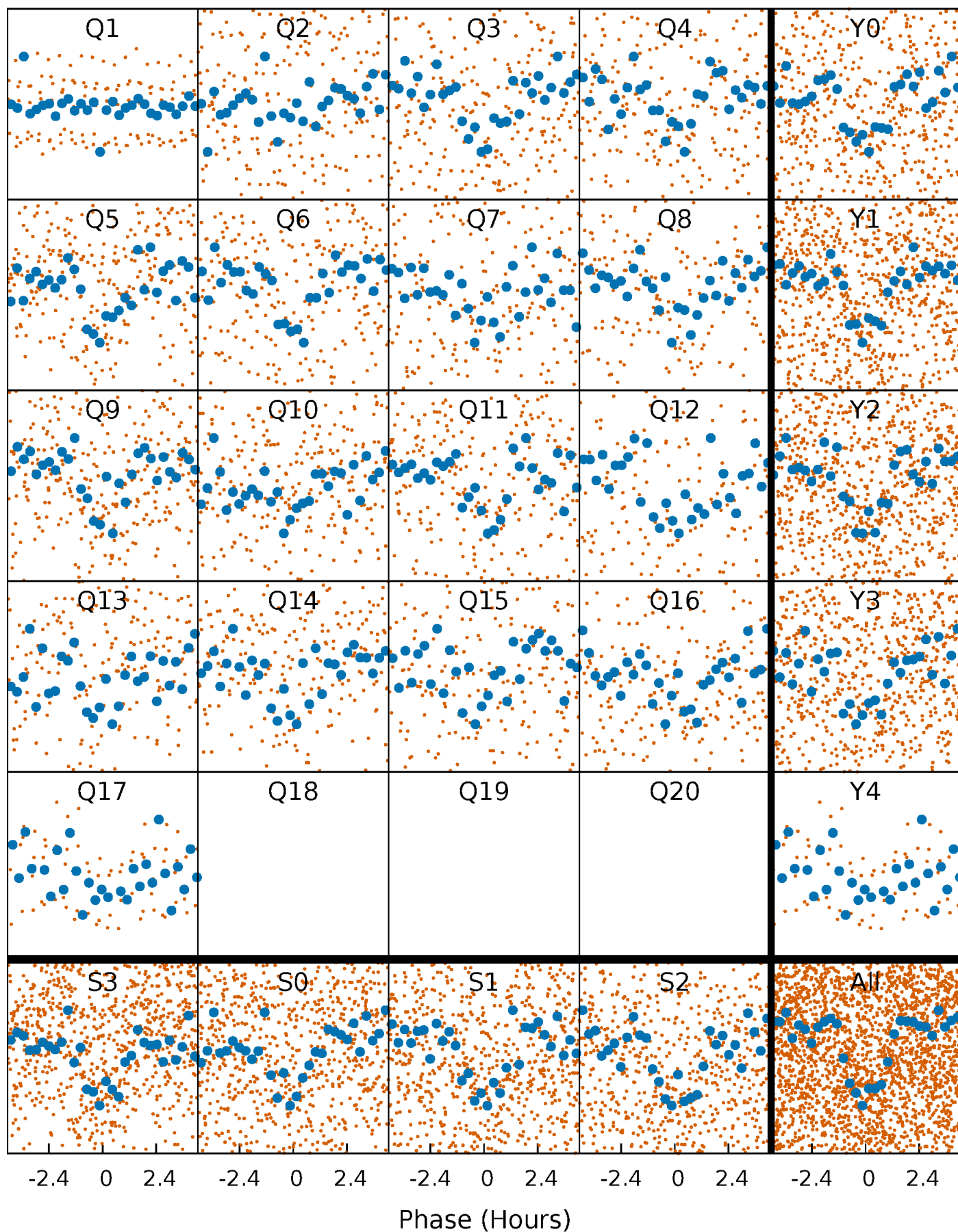


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



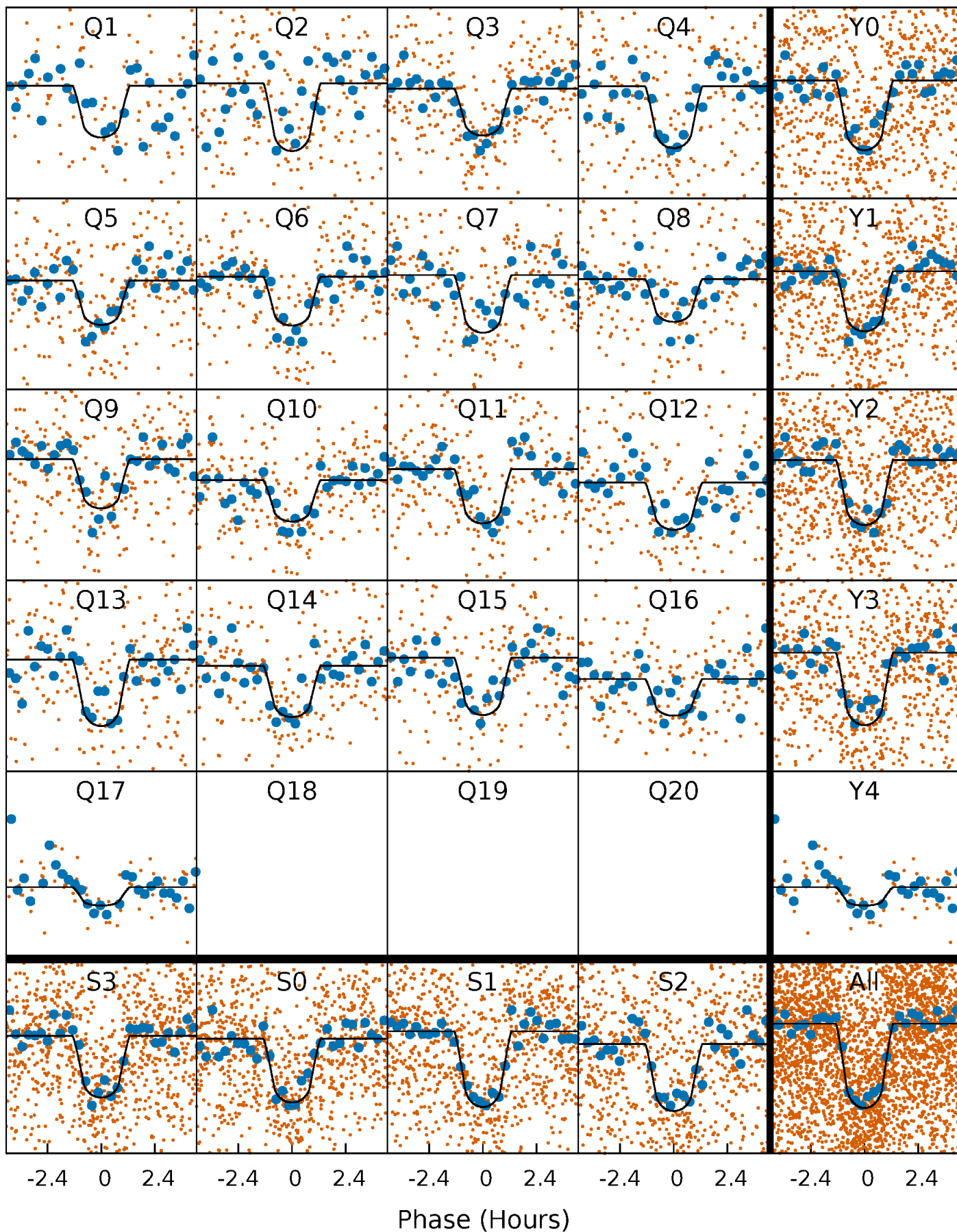
PDC Quarter-Phased Transit Curves

TCE 008167996-03 P= 5.212327 Days $T_0=132.706875$ (BKJD)



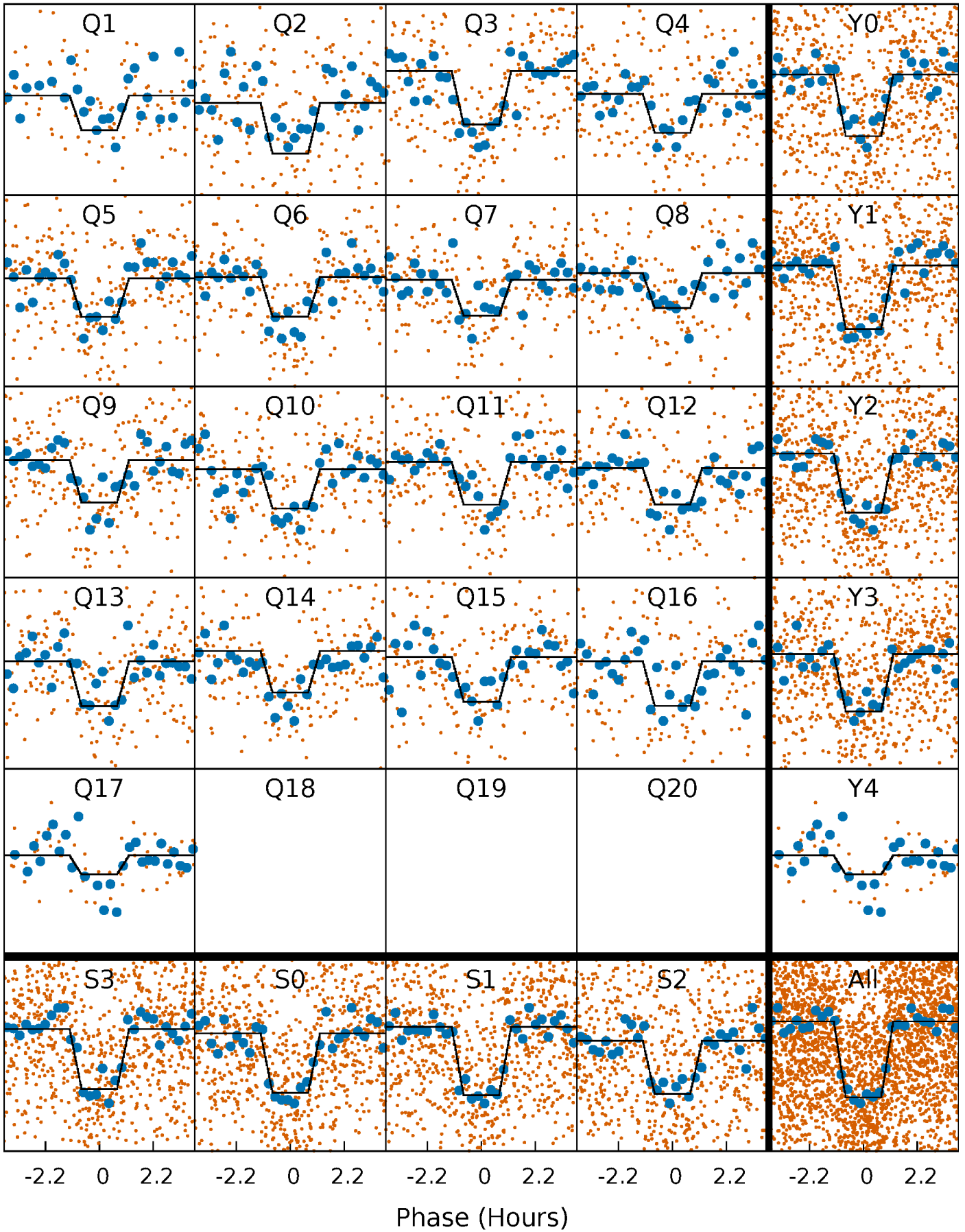
DV Quarter-Phased Transit Curves

TCE 008167996-03 P= 5.212327 Days $T_0=132.706875$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

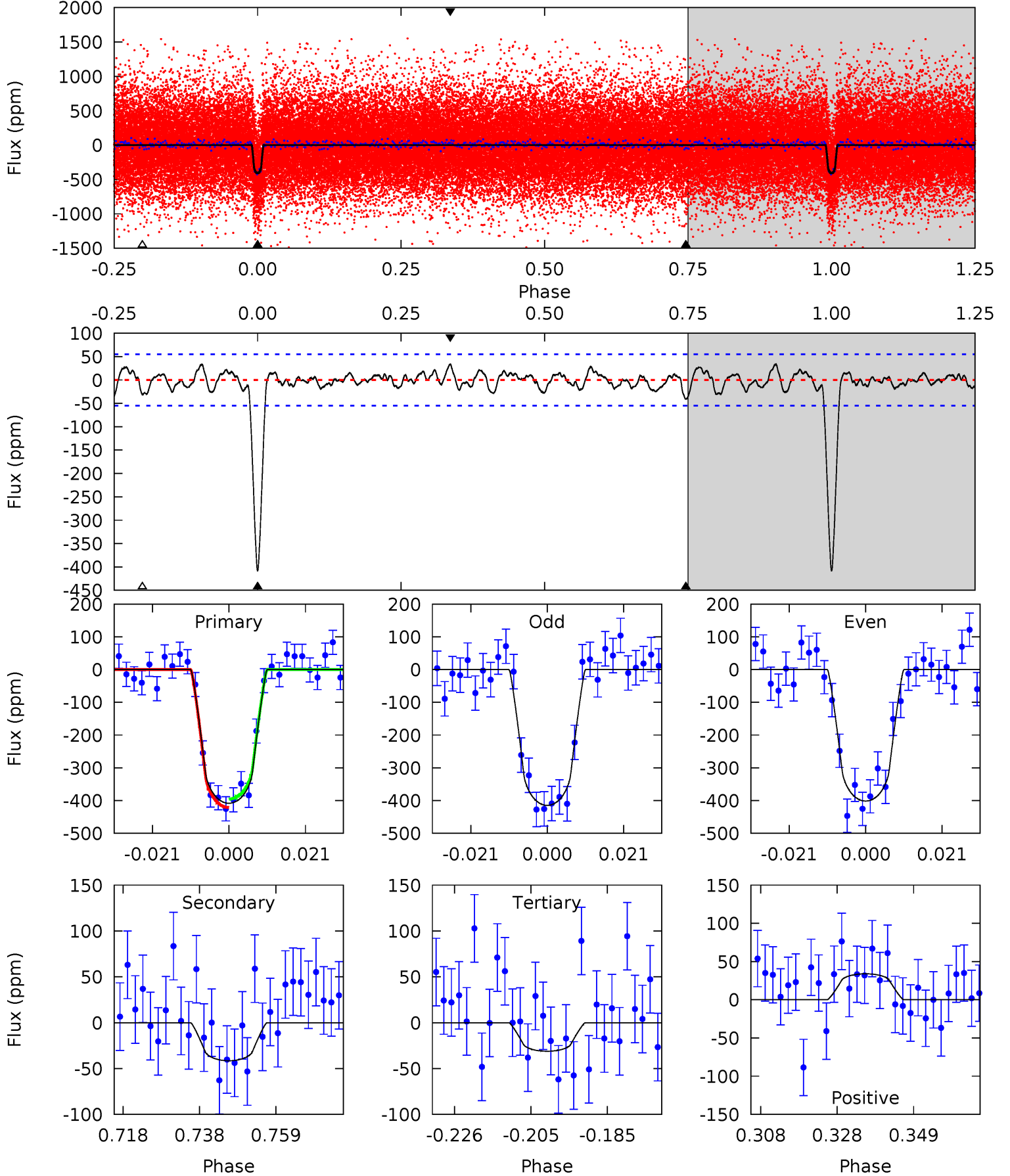
TCE 008167996-03 P= 5.212297 Days $T_0=132.711464$ (BKJD)



DV Model-Shift Uniqueness Test

008167996-03, P = 5.212327 Days, E = 127.494548 Days

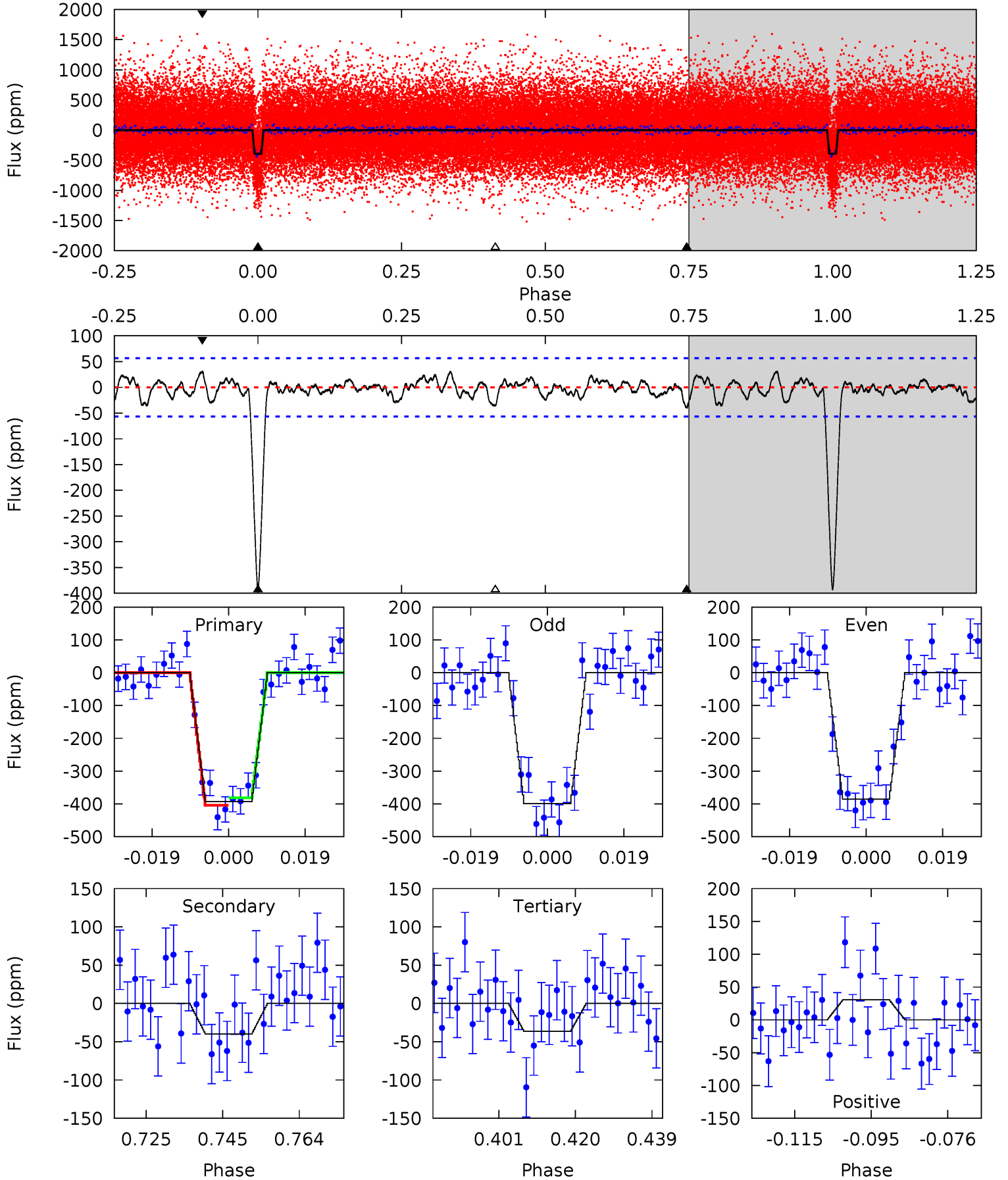
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.3	3.69	2.77	3.02	4.89	2.32	1.17	33.5	33.3	0.92	0.67	0.59	0.95	0.08	1.15



Alt Model-Shift Uniqueness Test

008167996-03, P = 5.212297 Days, E = 127.499167 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.0	3.44	3.16	2.64	4.90	2.34	1.11	30.8	31.3	0.28	0.80	0.59	0.93	0.07	0.98



Stellar Parameters For KIC 008167996

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3716^{+73}_{-83}	$4.740^{+0.056}_{-0.024}$	$0.040^{+0.150}_{-0.150}$	$0.506^{+0.031}_{-0.051}$	$0.513^{+0.037}_{-0.045}$	$5.579^{+1.405}_{-0.549}$
	+2%/-2%	+1%/-1%	+375%/-375%	+6%/-10%	+7%/-9%	+25%/-10%
Source	SPE70	SPE60	SPE70	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008167996-03 / KOI 1867.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-42 ± 11	$1.11^{+0.61}_{-0.55}$	744^{+19}_{-22}	2637^{+608}_{-285}	39^{+140}_{-24}
Alt.	-40 ± 12	$1.10^{+0.66}_{-0.58}$	746^{+19}_{-21}	2648^{+583}_{-319}	41^{+136}_{-26}

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 $A_{obs} \gg 1.0$

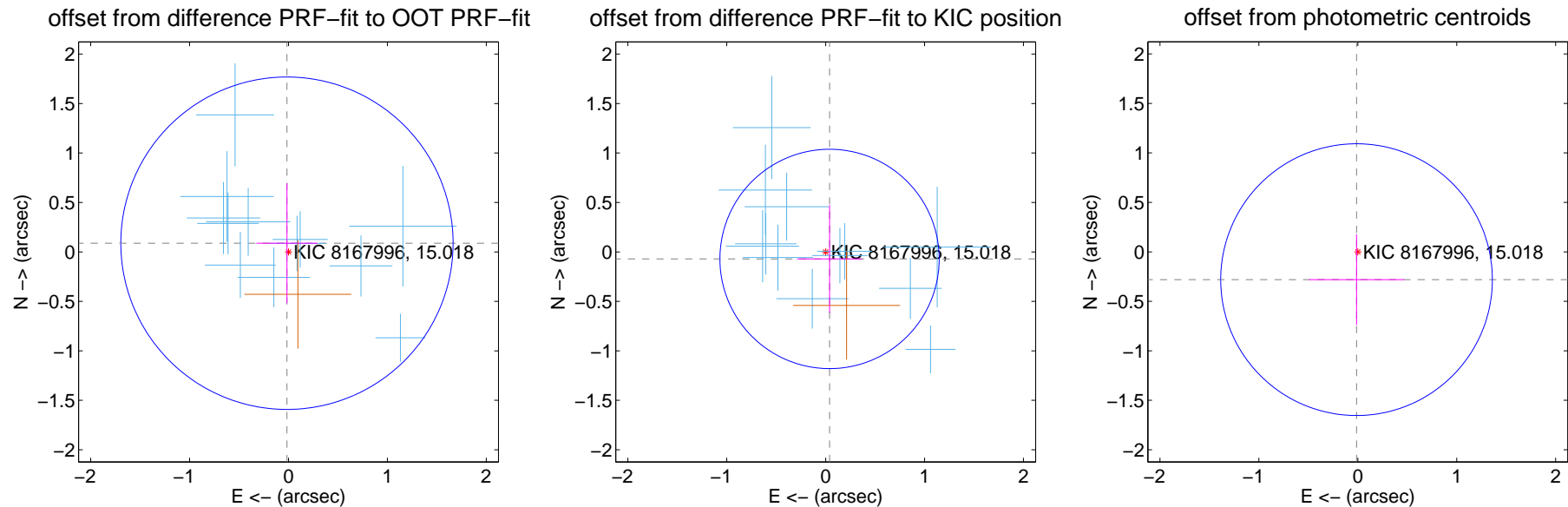
DV Centroid Data

Supplemental centroid analysis for 008167996-03. Kepler magnitude: 15.02. Transit SNR 25.56

There are 12 quarters with good PRF difference image offsets

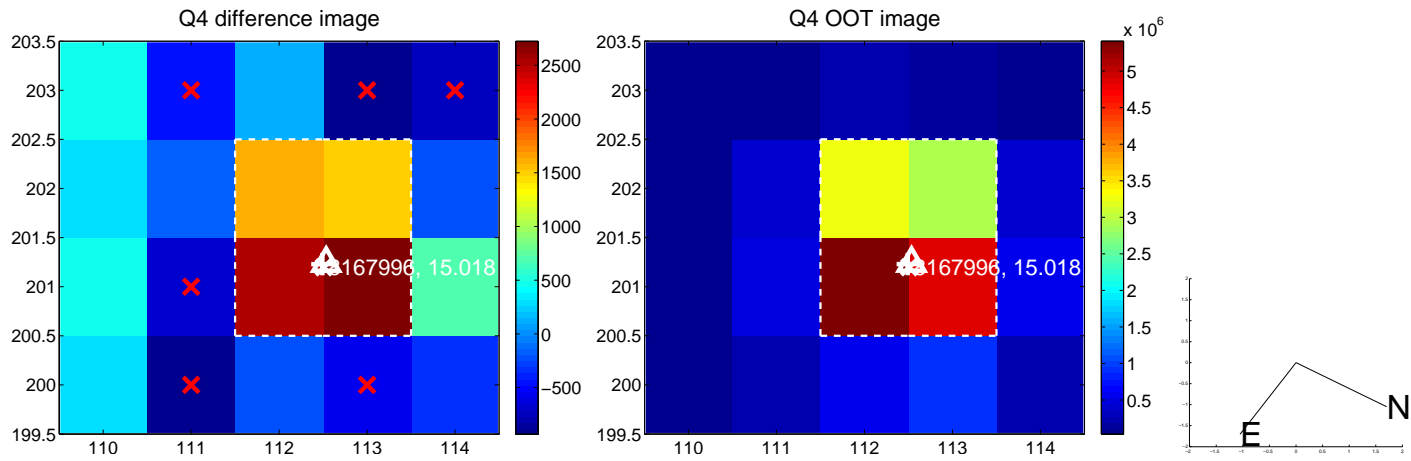
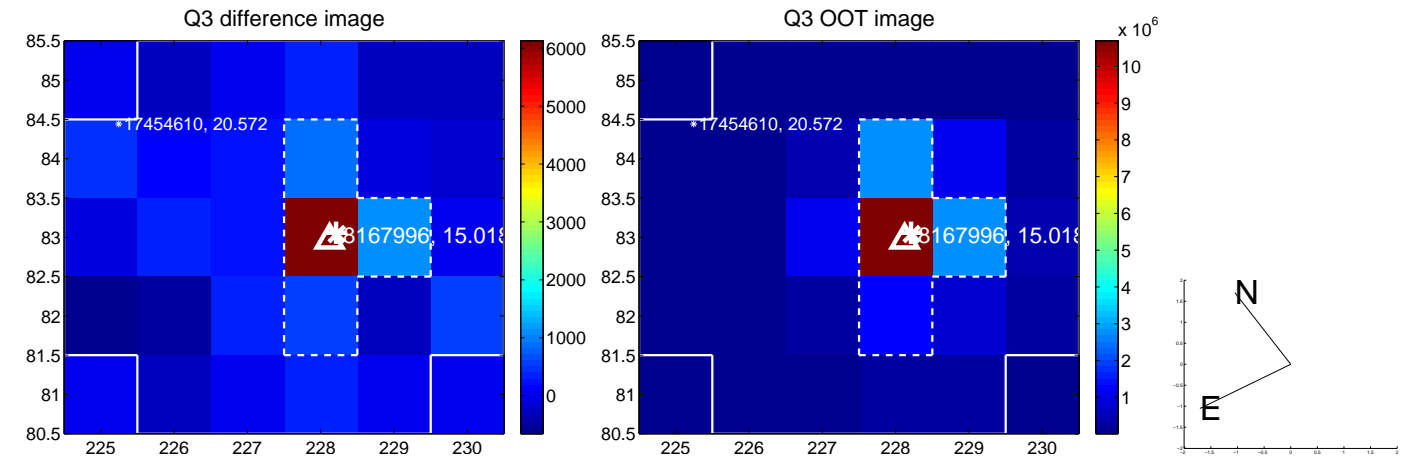
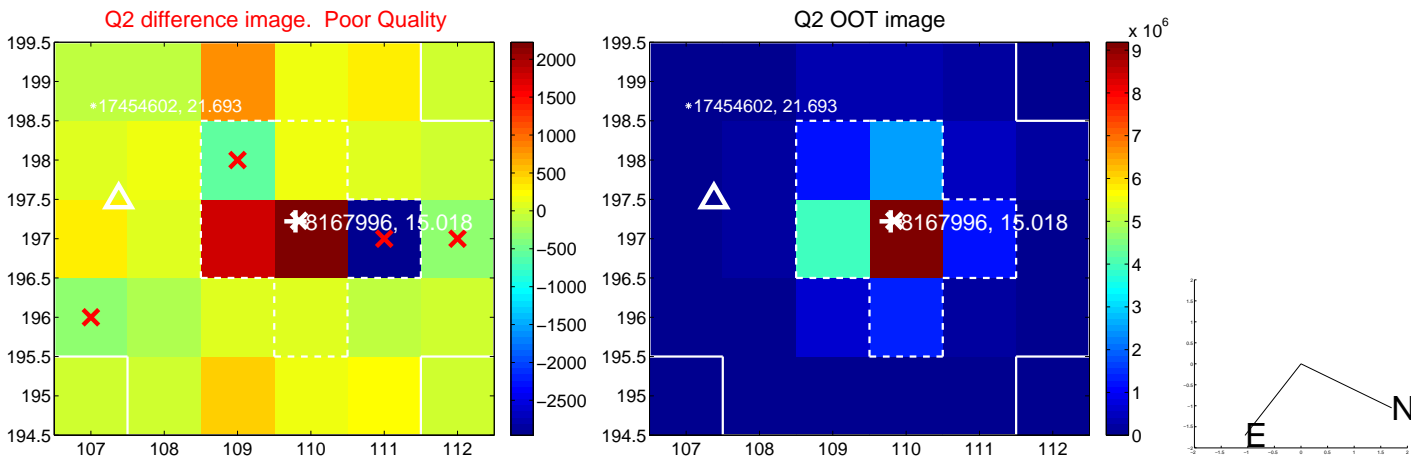
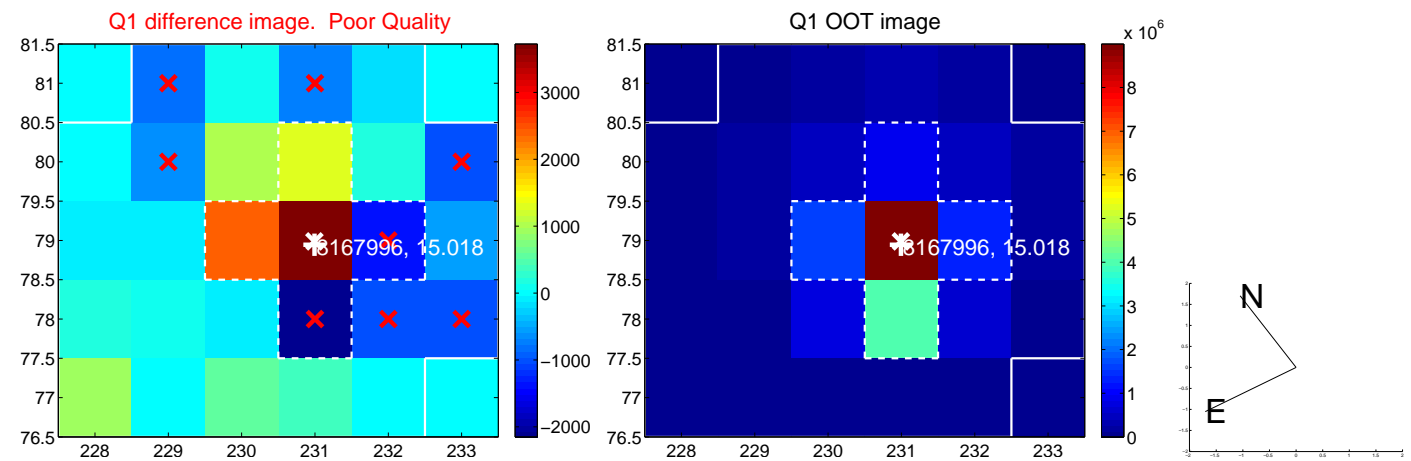
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.089 ± 0.560	0.16	0.015 ± 0.309	0.088 ± 0.606
PRF-fit source offset from KIC position	0.081 ± 0.370	0.22	-0.039 ± 0.327	-0.071 ± 0.544
photometric centroid source offset	0.28 ± 0.46	0.61	0.01 ± 0.48	-0.28 ± 0.46

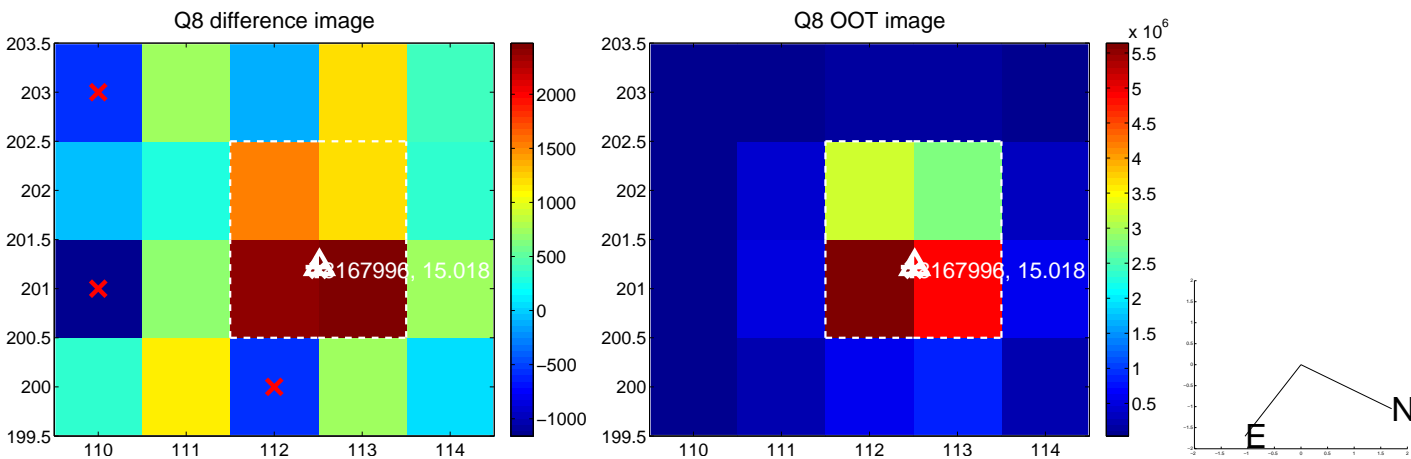
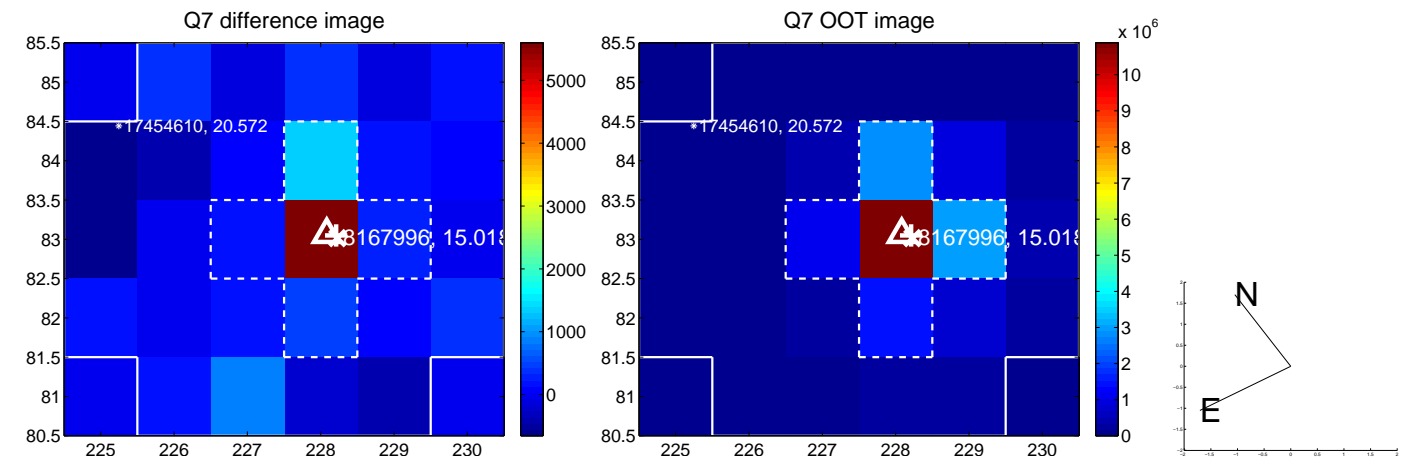
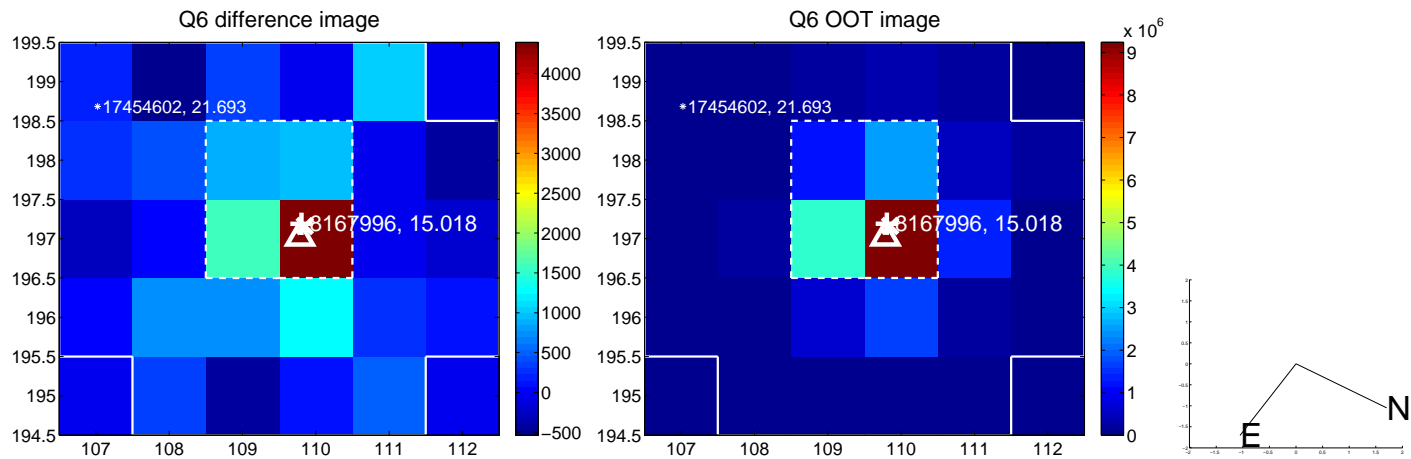
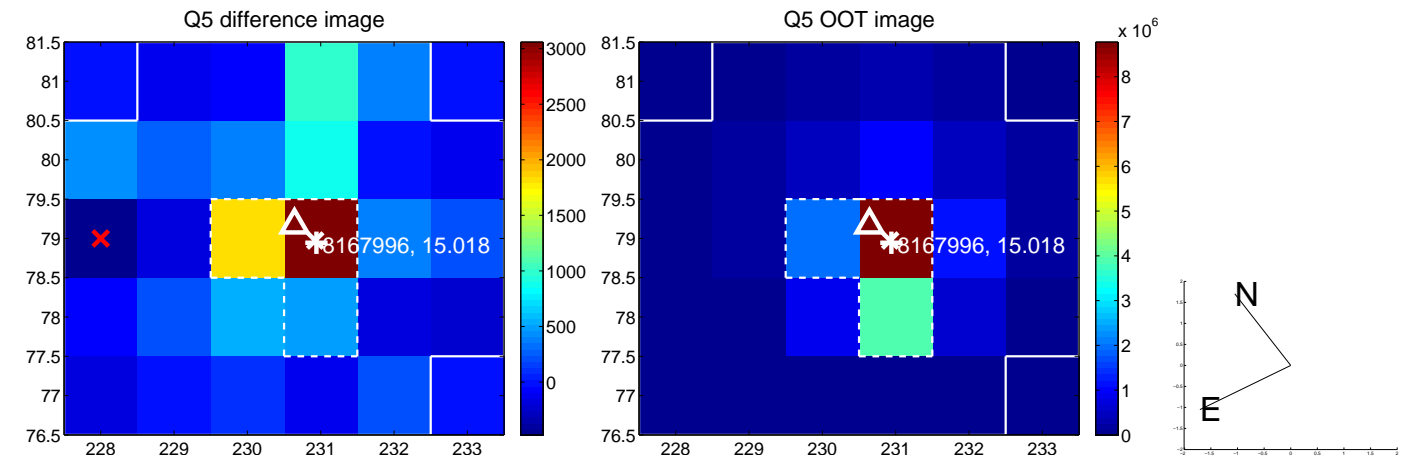


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

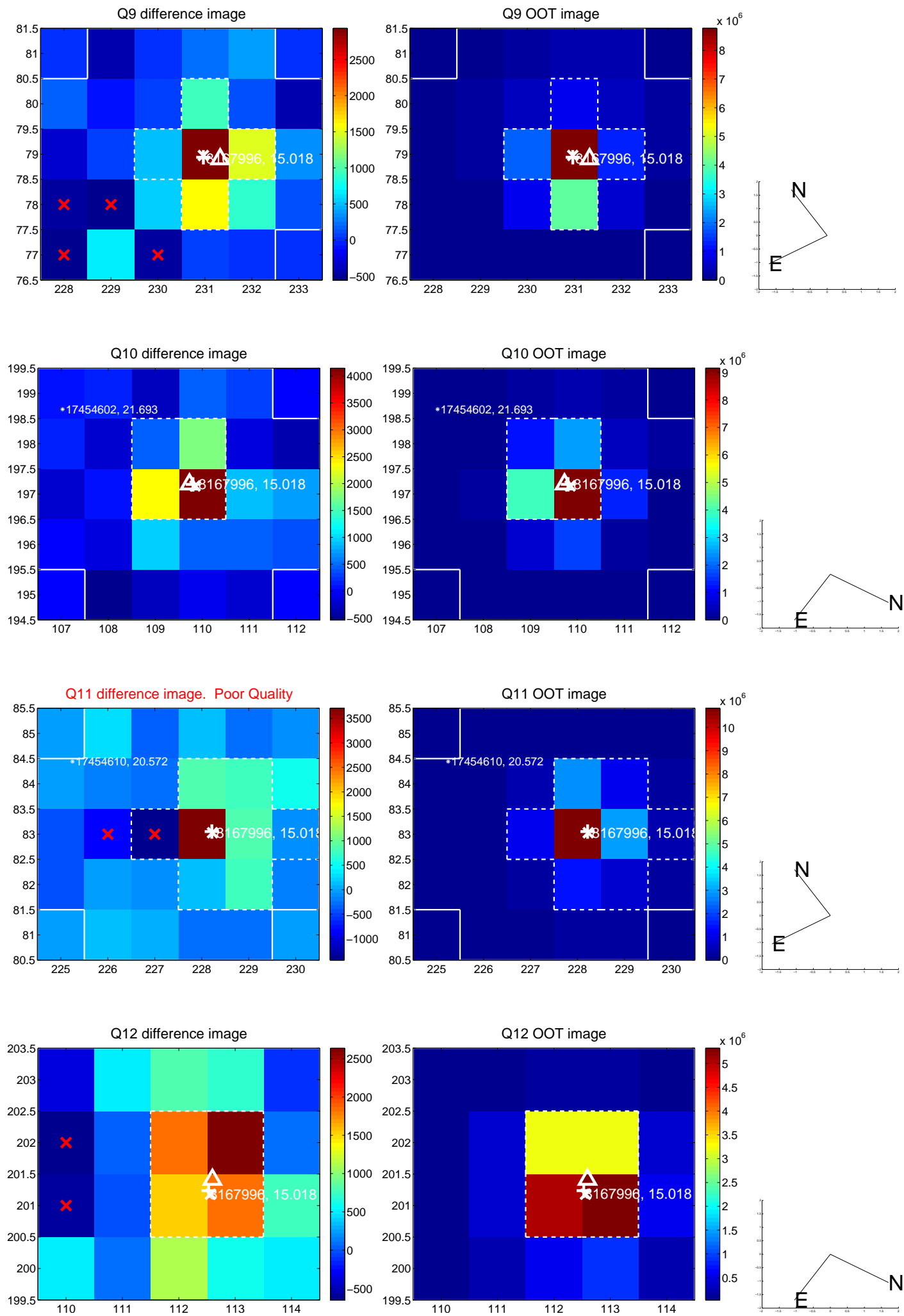
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



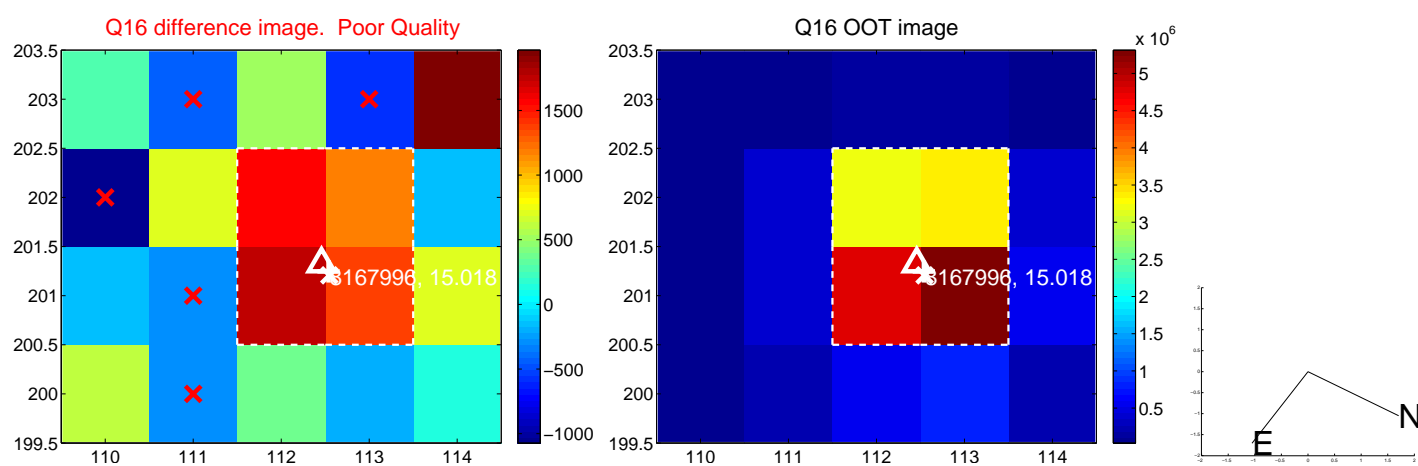
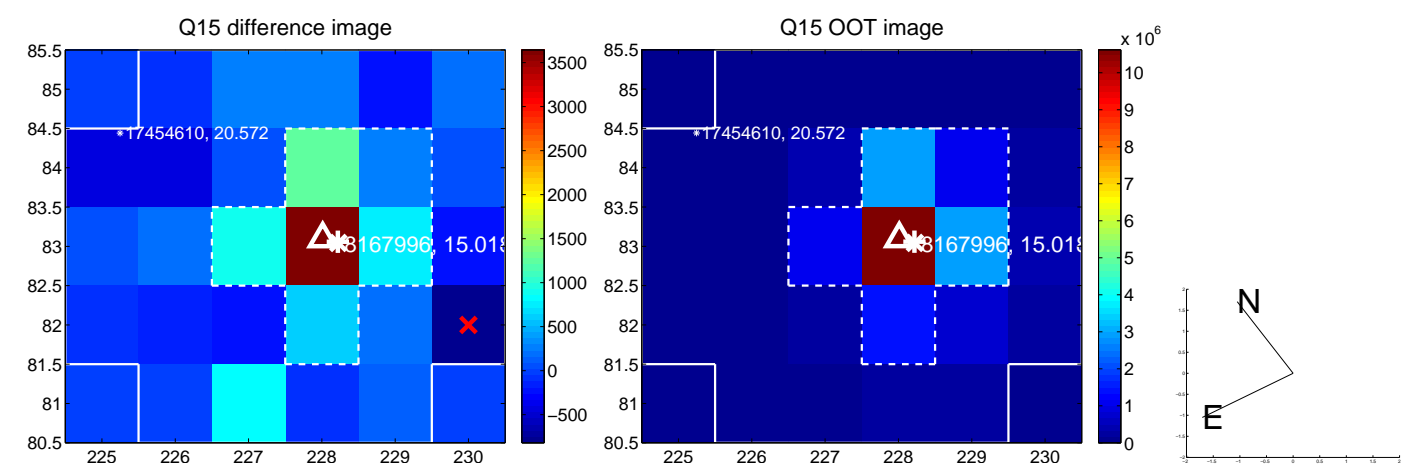
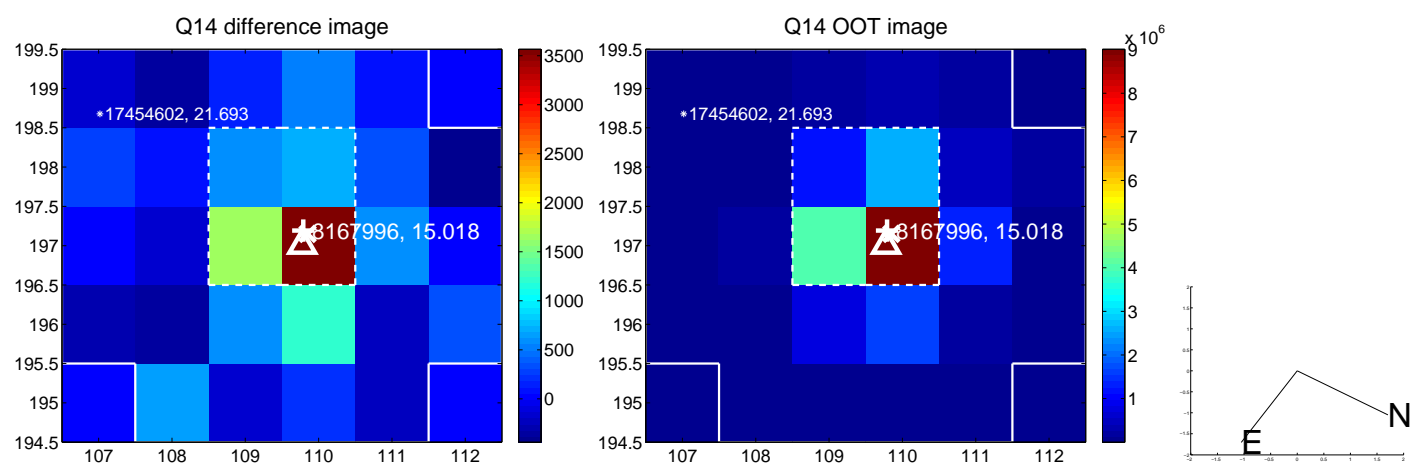
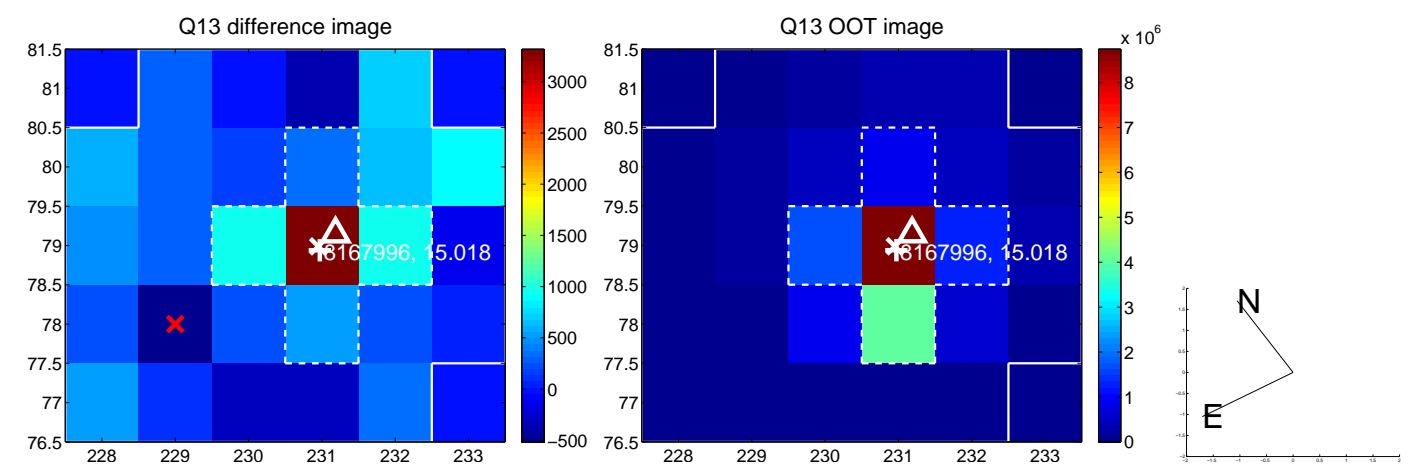
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



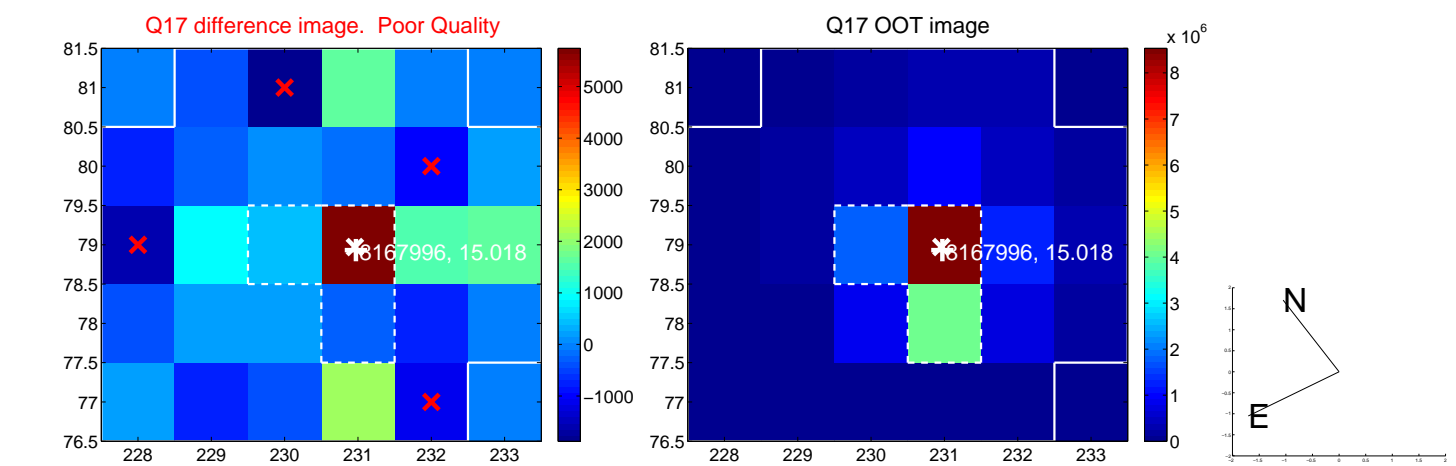
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



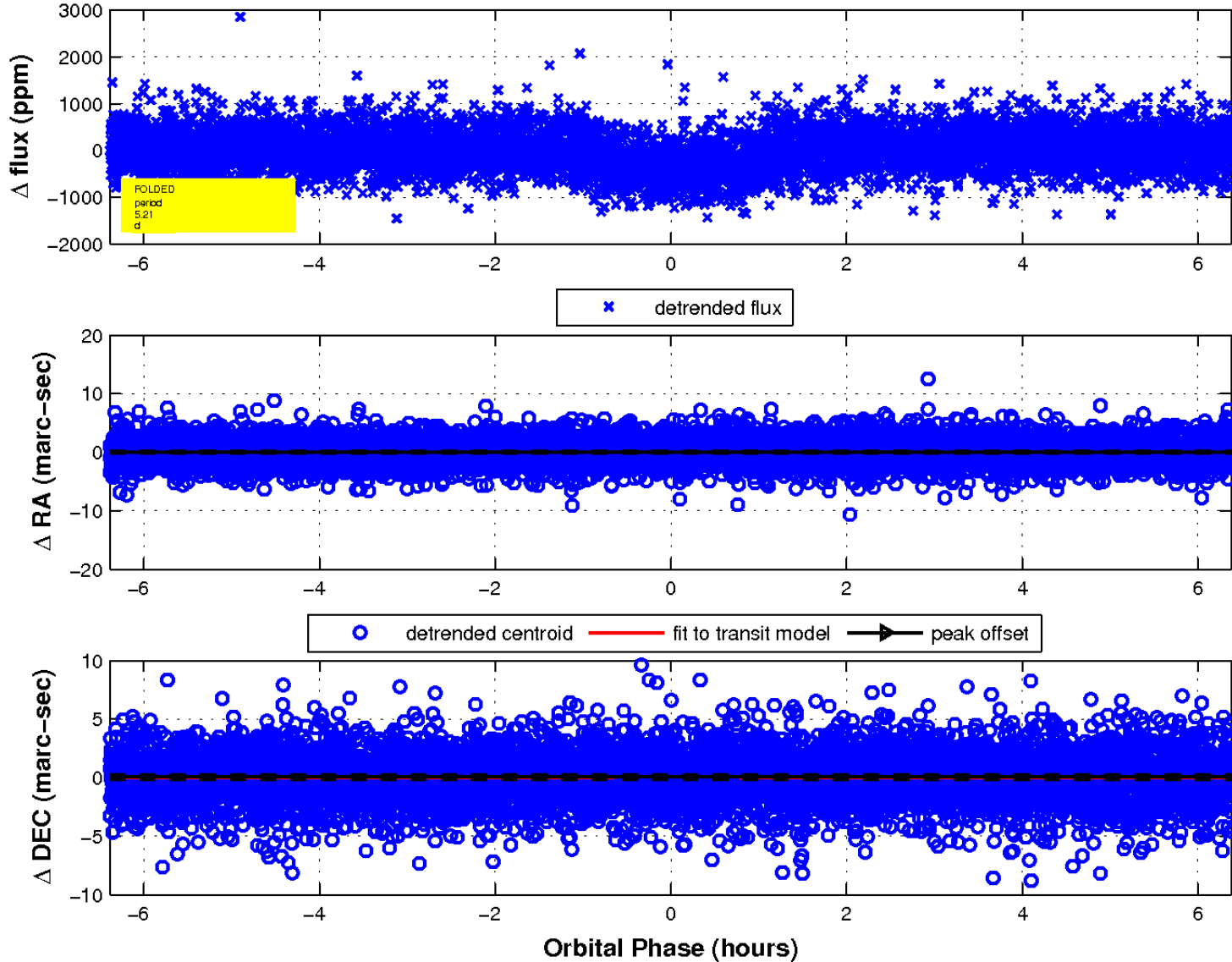
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

