

KIC 009941662

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})
009941662-01	OBS	0013.01	1.763587	132.911505	4564.4	3.180	6790.6	5051.9	3.03	9107	21.55	37983.12
009941662-02	OBS	No	1.763570	132.033959	26.7	3.040	28.5	40.3	3.03	9107	1.81	37983.61
009941662-03	OBS	No	0.540862	131.778455	5.6	6.490	8.4	13.3	3.03	9107	0.73	183655.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009941662-01	OBS	PC	0.88	0	1	0	0	MOD_SEC_DV—PLANET_OCCULT_DV—MOD_SEC_ALT—PLANET_OCCULT_ALT—HAS_SEC_TCE—CENT_SATURATED
009941662-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
009941662-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—CENT_SATURATED

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.

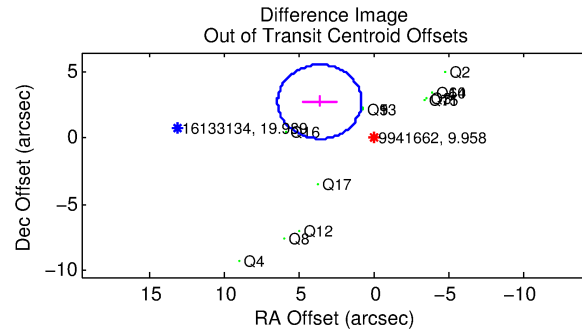
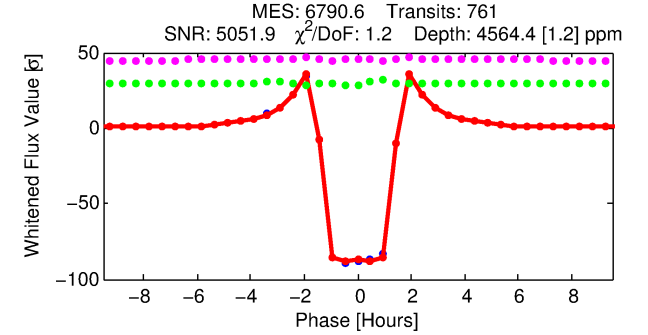
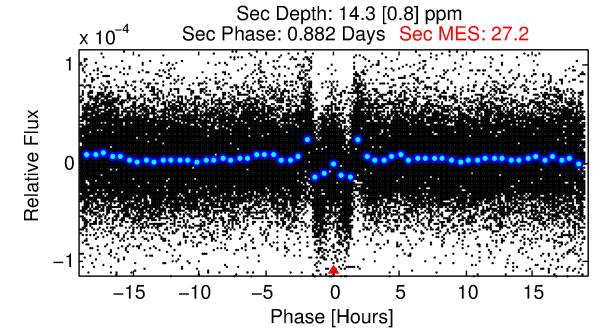
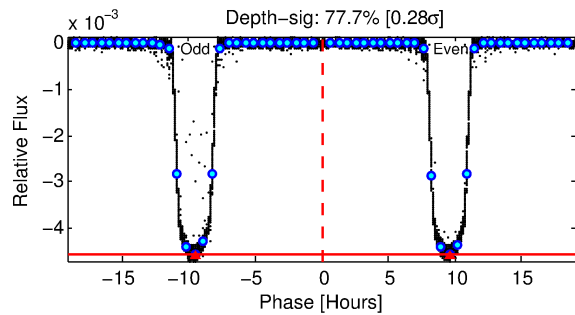
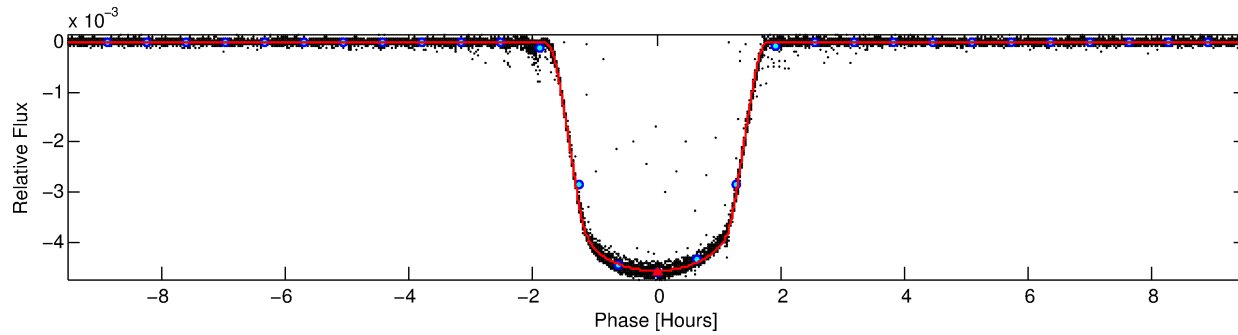
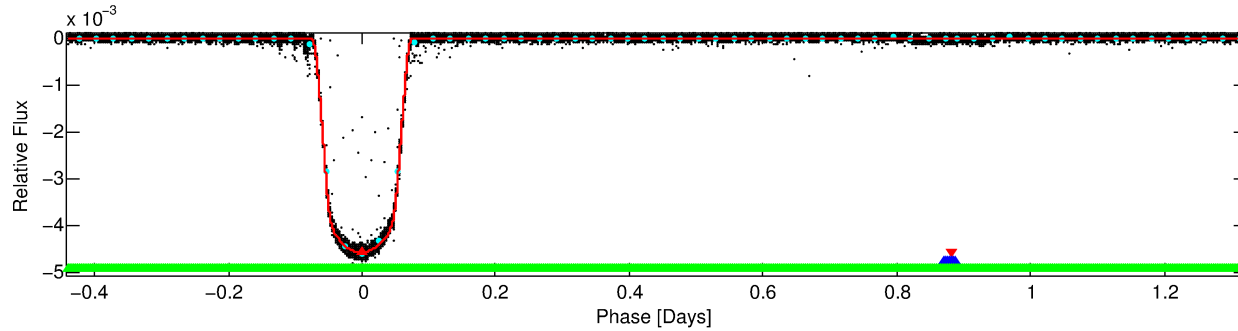
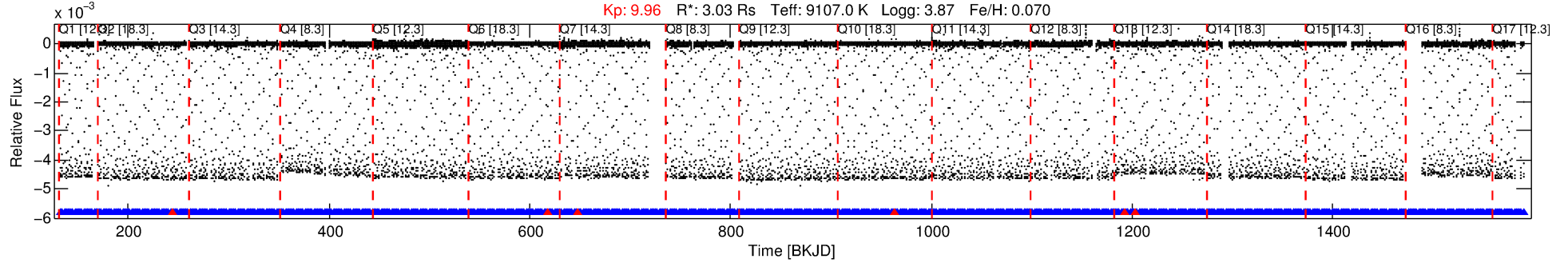
Ephemeris Match Information For 009941662-01

No Significant Match Found

DV One-Page Summary

KIC: 9941662 Candidate: 1 of 3 Period: 1.764 d
KOI: K00013.01 Name: Kepler-13b Corr: 0.998

Kp: 9.96 R*: 3.03 Rs Teff: 9107.0 K Logg: 3.87 Fe/H: 0.070



DV Fit Results:

Period = 1.76359 [0.00000] d
Epoch = 132.9115 [0.0000] BKJD
Rp/R* = 0.0651 [0.0000]
a/R* = 3.89 [0.01]
b = 0.57 [0.00]
Seff = 37983.12 [24089.03]
Teq = 3560 [564] K
Rp = 21.55 [9.54] Re
a = 0.0386 [0.0153] AU
Ag = 0.03 [0.02] [-63.74σ]
Teff = 2194 [111] K [-2.38σ]

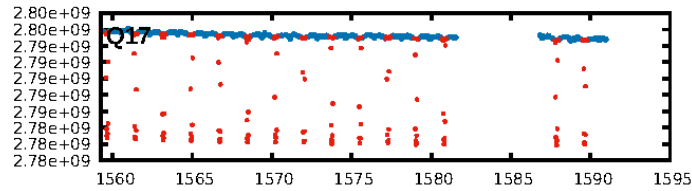
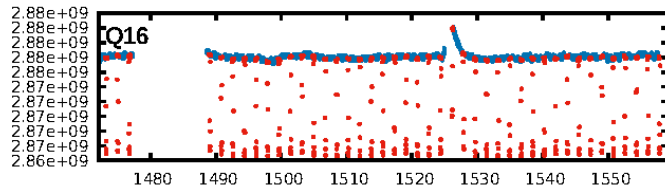
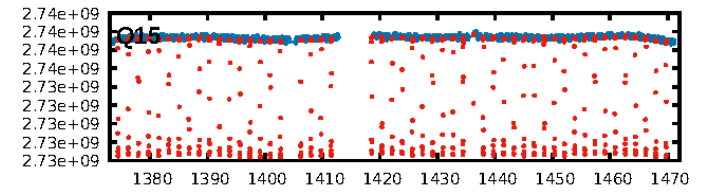
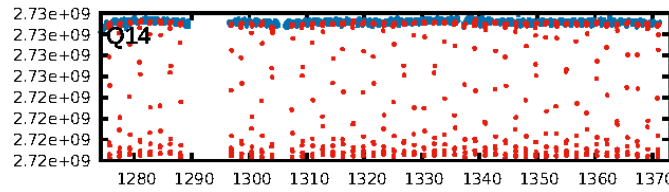
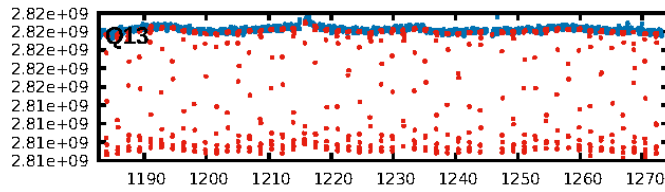
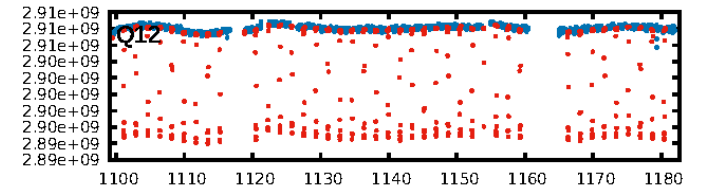
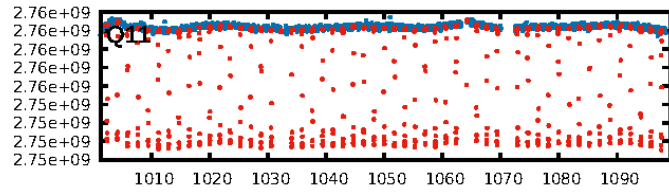
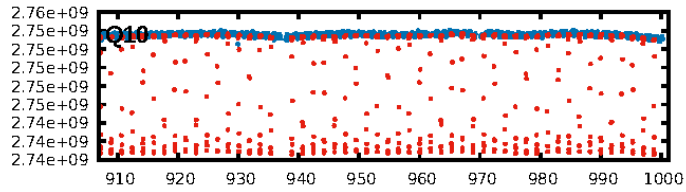
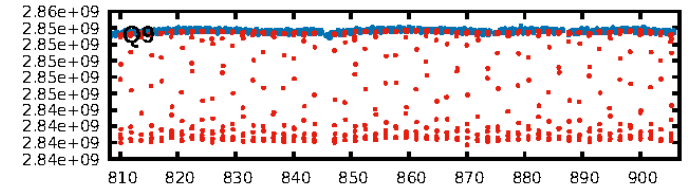
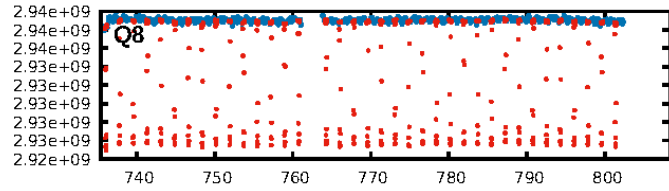
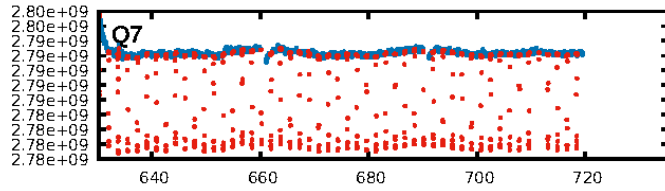
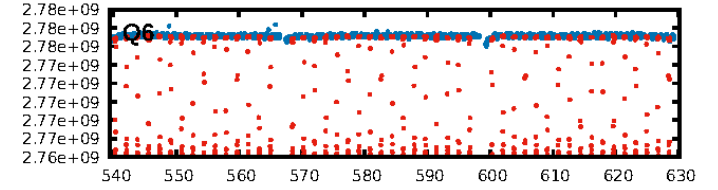
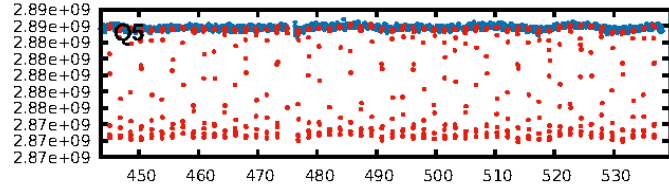
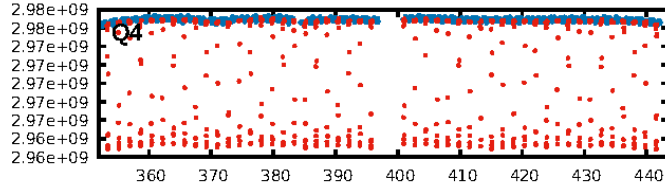
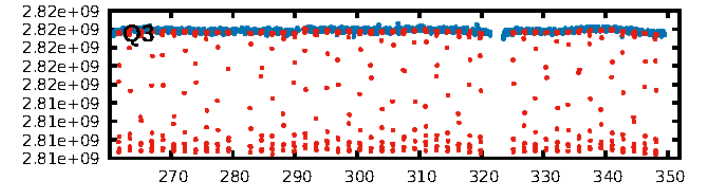
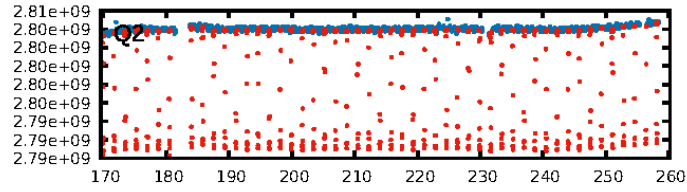
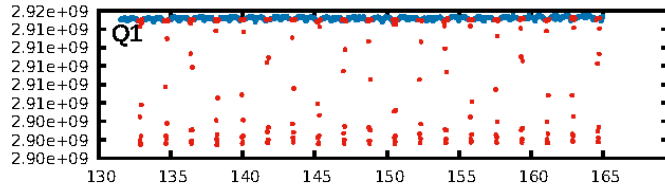
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [721/727]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 0.721 arcsec [266.94σ]
OotOffset-rm: 4.528 arcsec [4.85σ]
KicOffset-rm: 3.799 arcsec [4.53σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.00 [0/17]

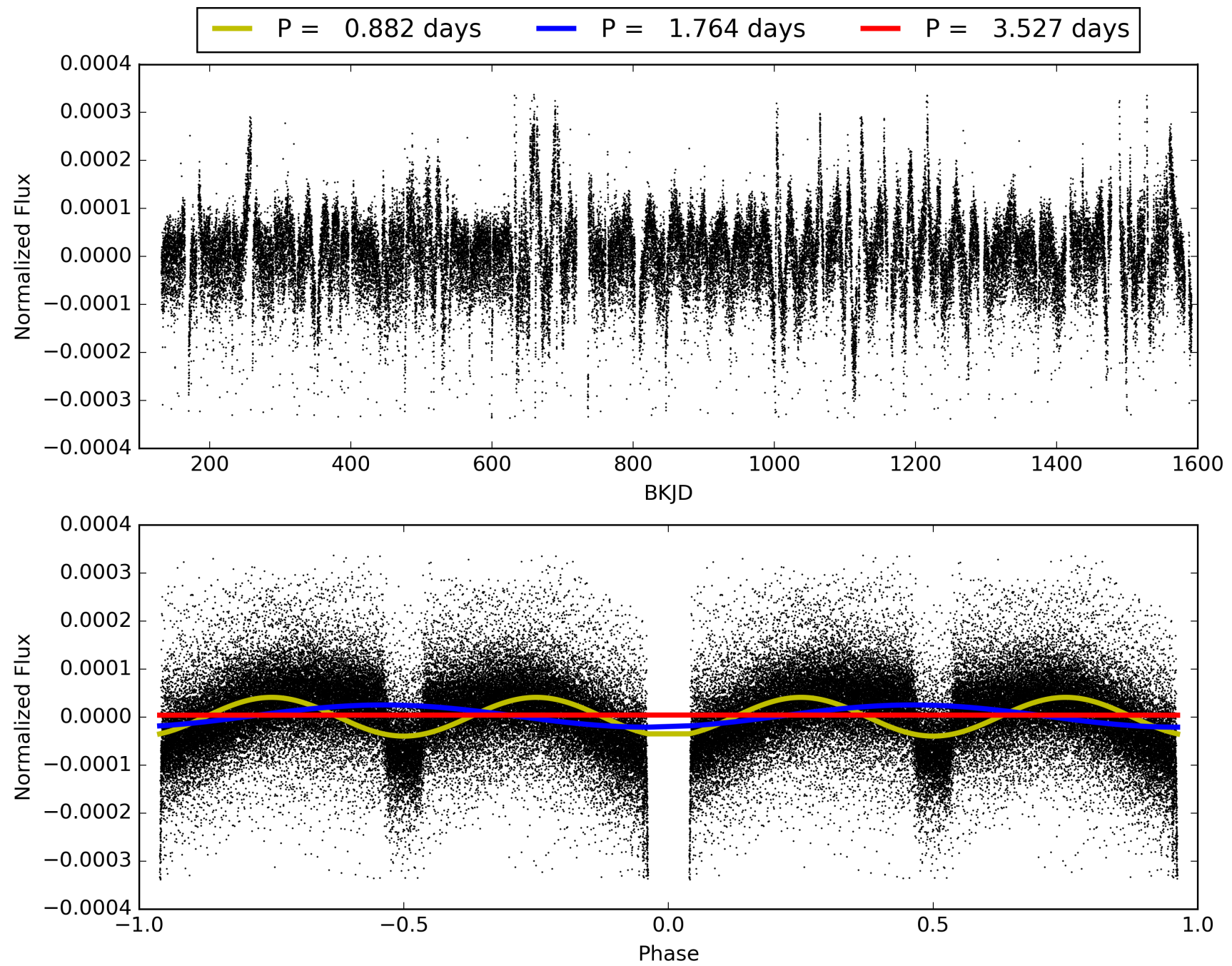
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:41:18 Z

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

TCE 009941662-01, PDC Light Curves

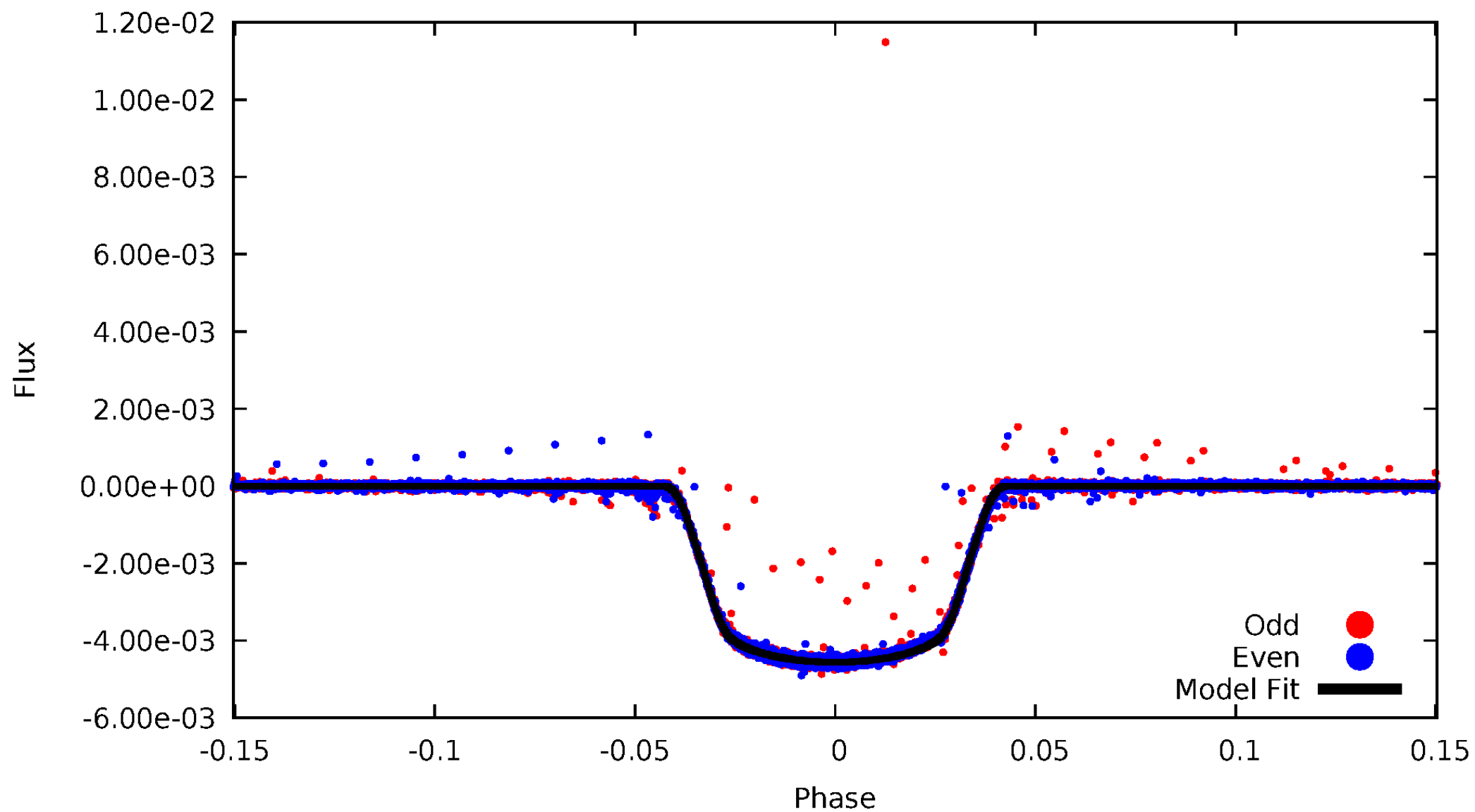


TCE 009941662-01



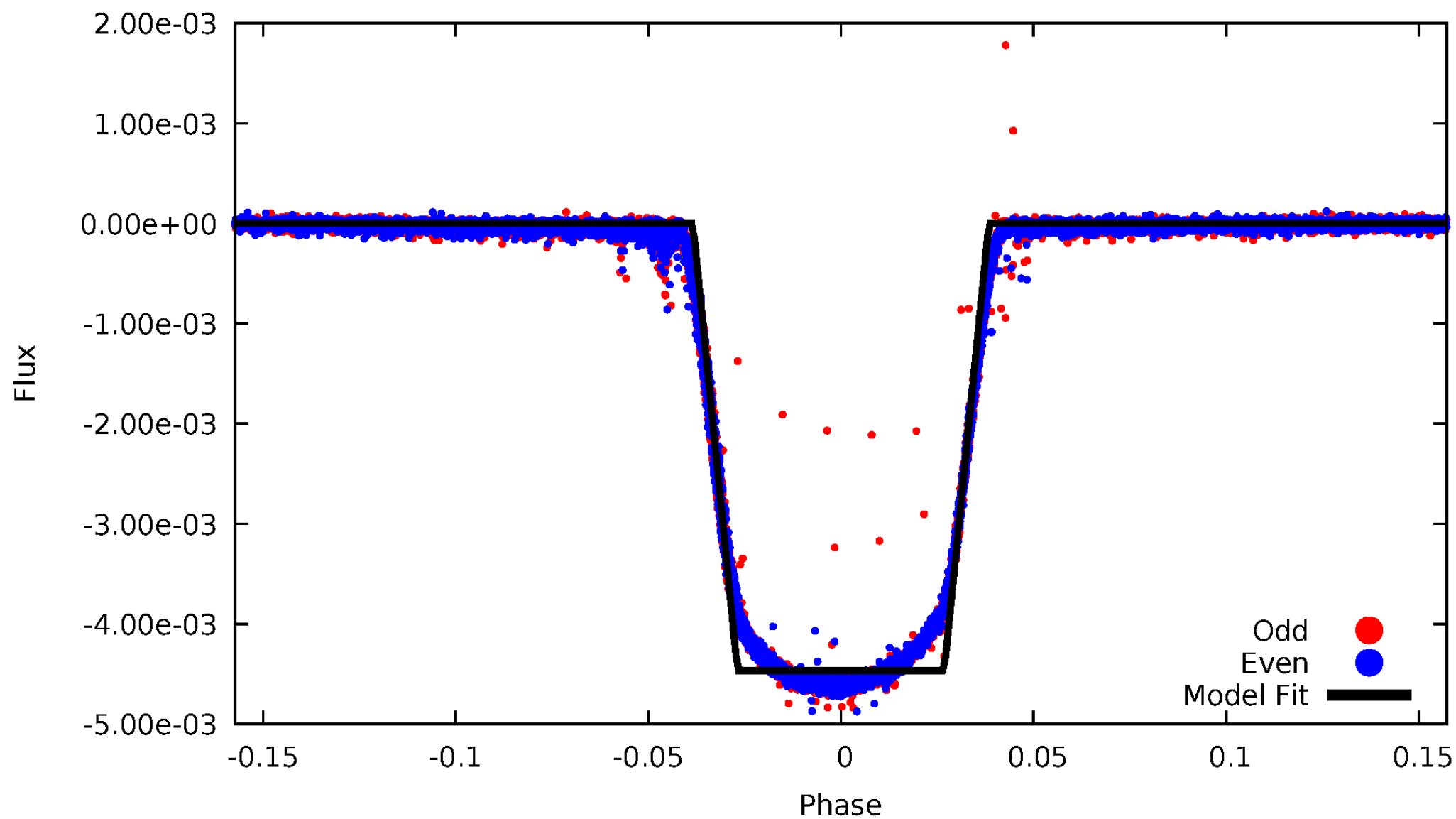
DV Odd/Even

TCE 009941662-01



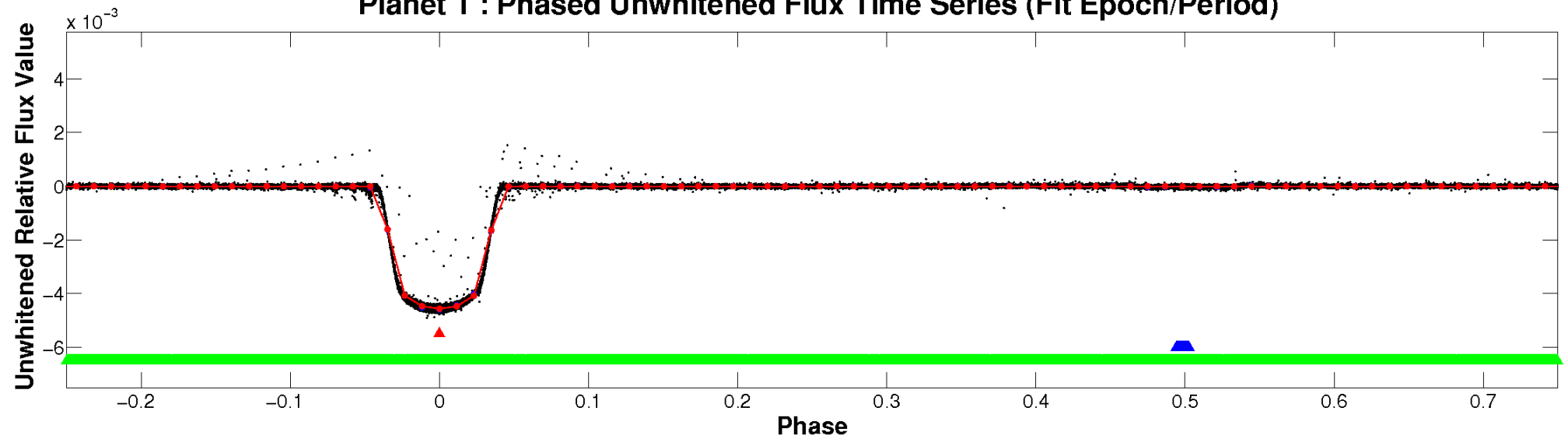
ALT Odd/Even

TCE 009941662-01

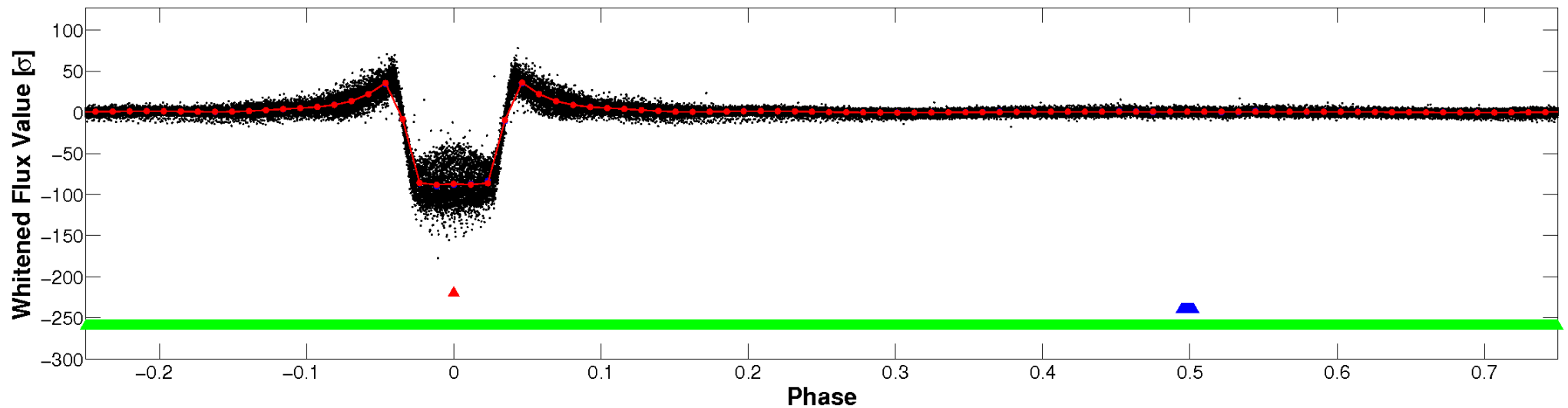


Non-Whitened Vs. Whitened Light Curve

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

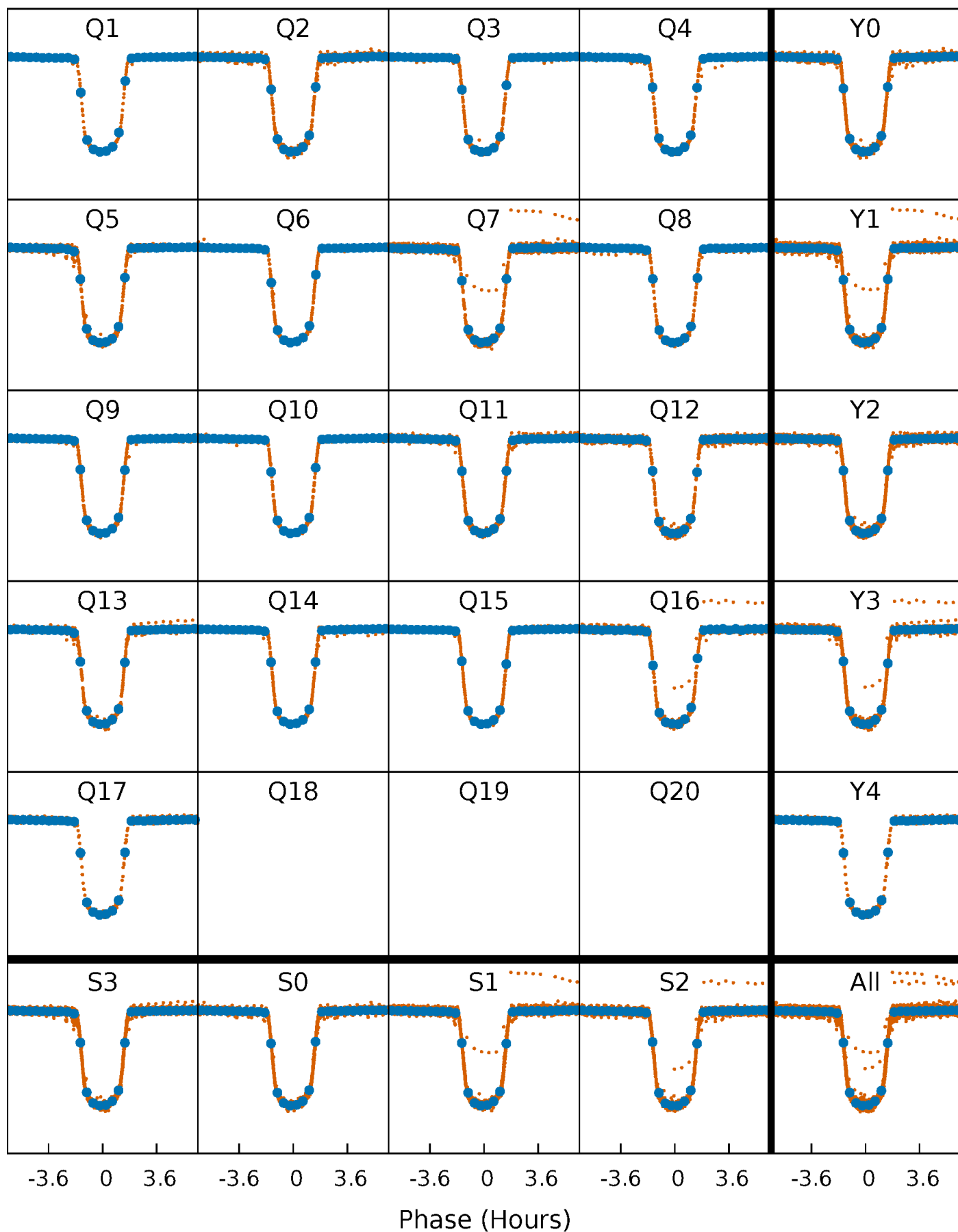


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



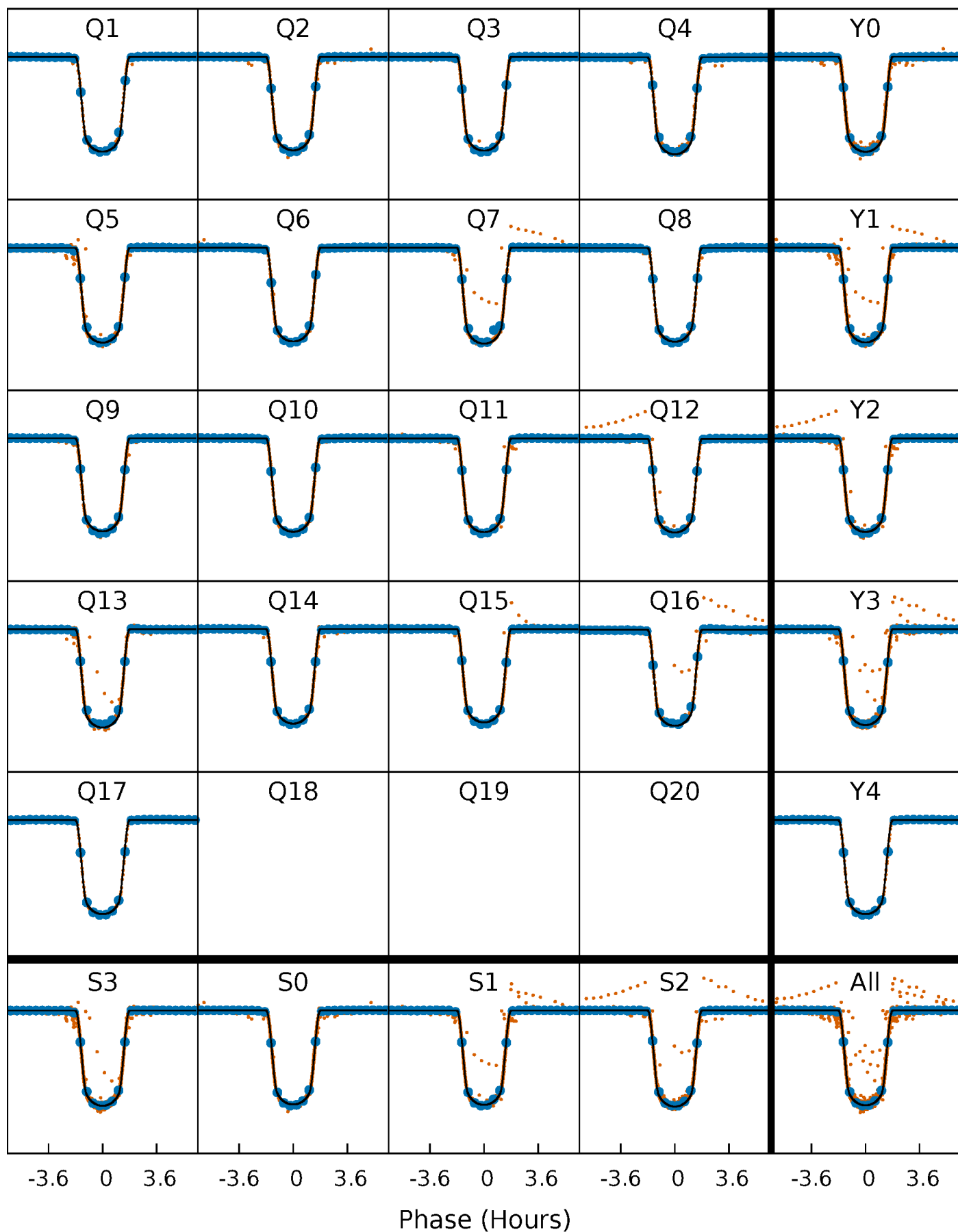
PDC Quarter-Phased Transit Curves

TCE 009941662-01 P= 1.763587 Days $T_0=132.911505$ (BKJD)



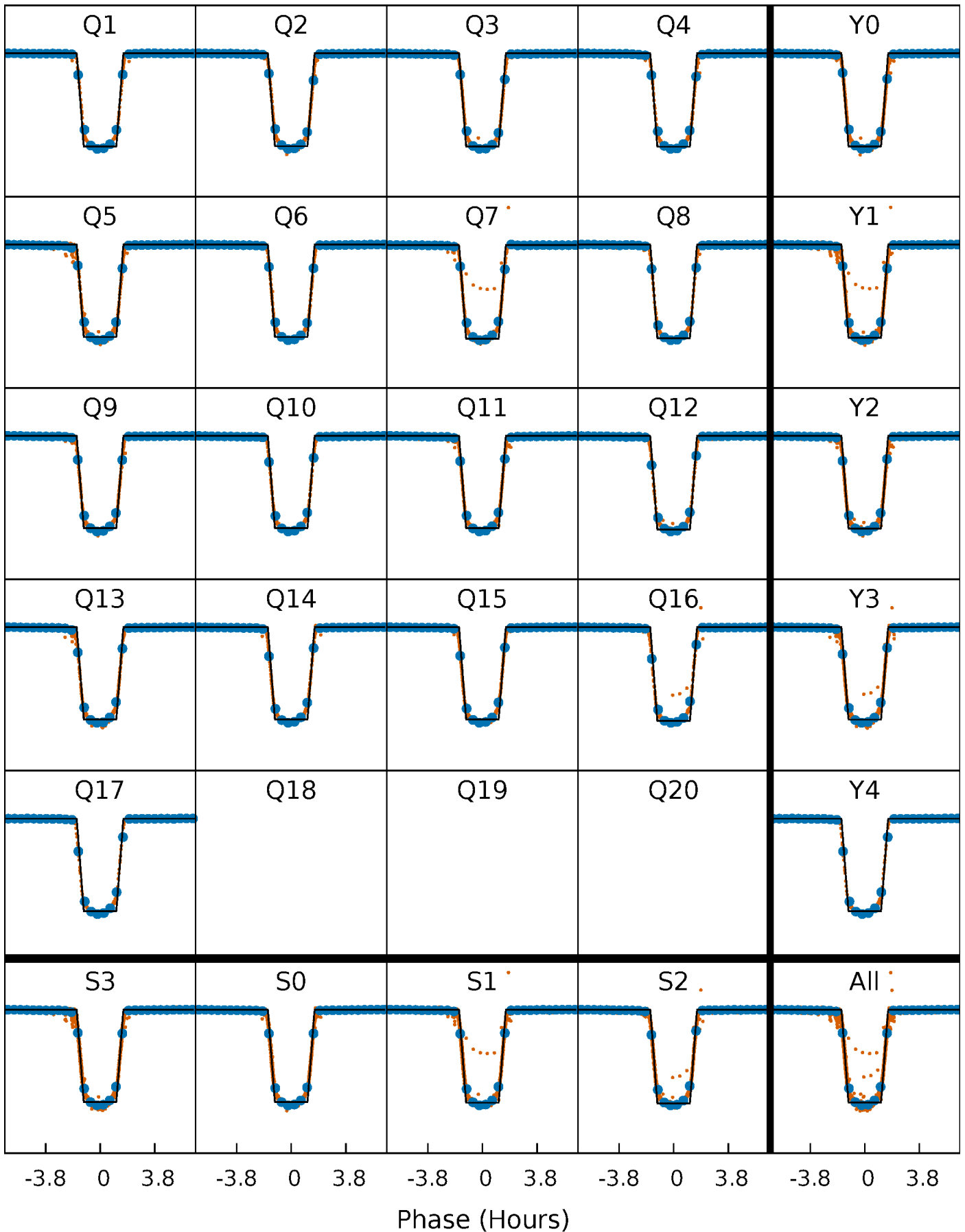
DV Quarter-Phased Transit Curves

TCE 009941662-01 P= 1.763587 Days $T_0=132.911505$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

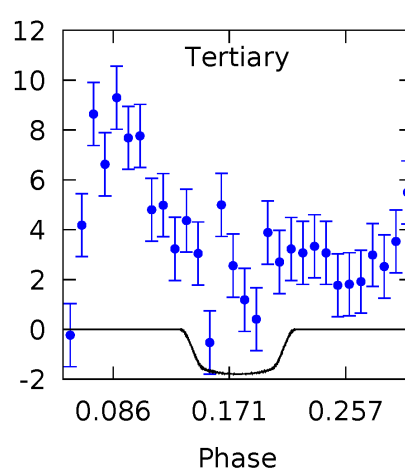
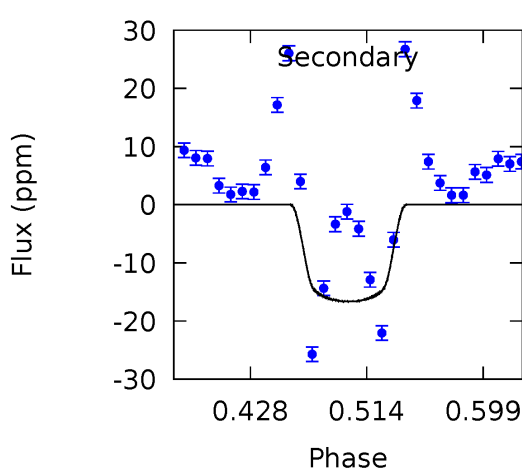
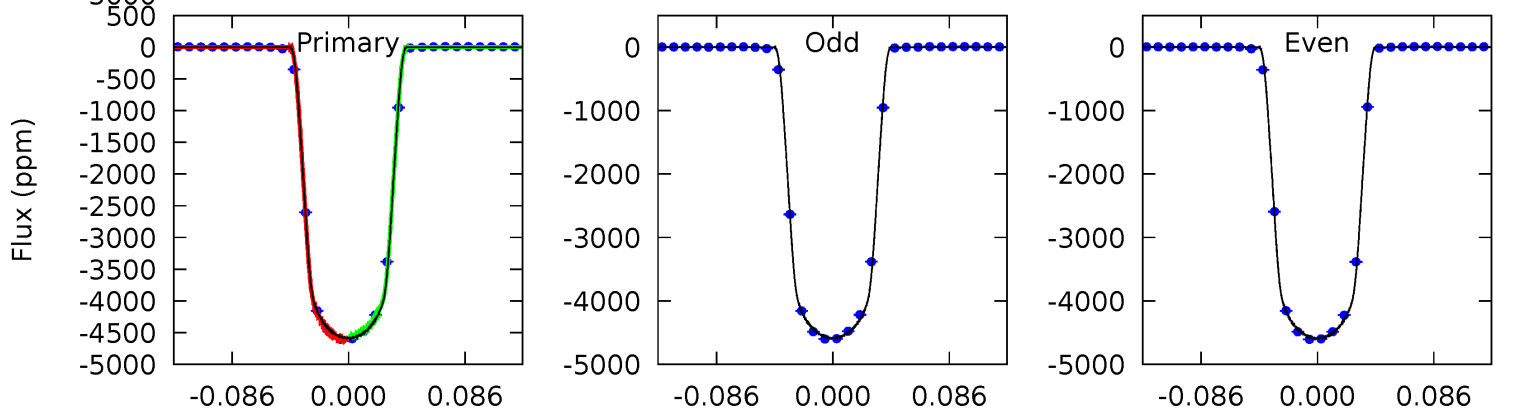
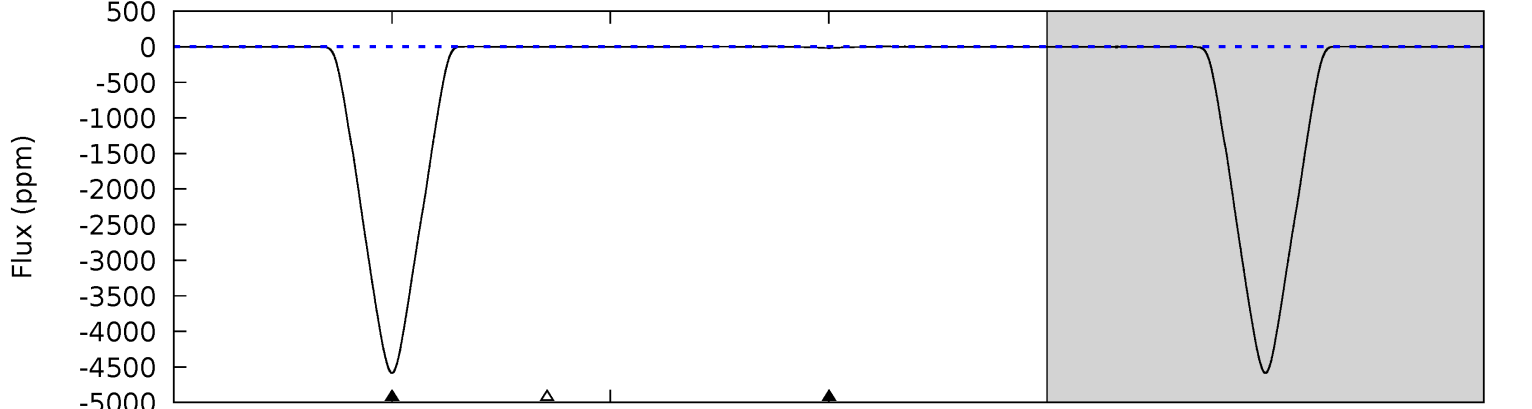
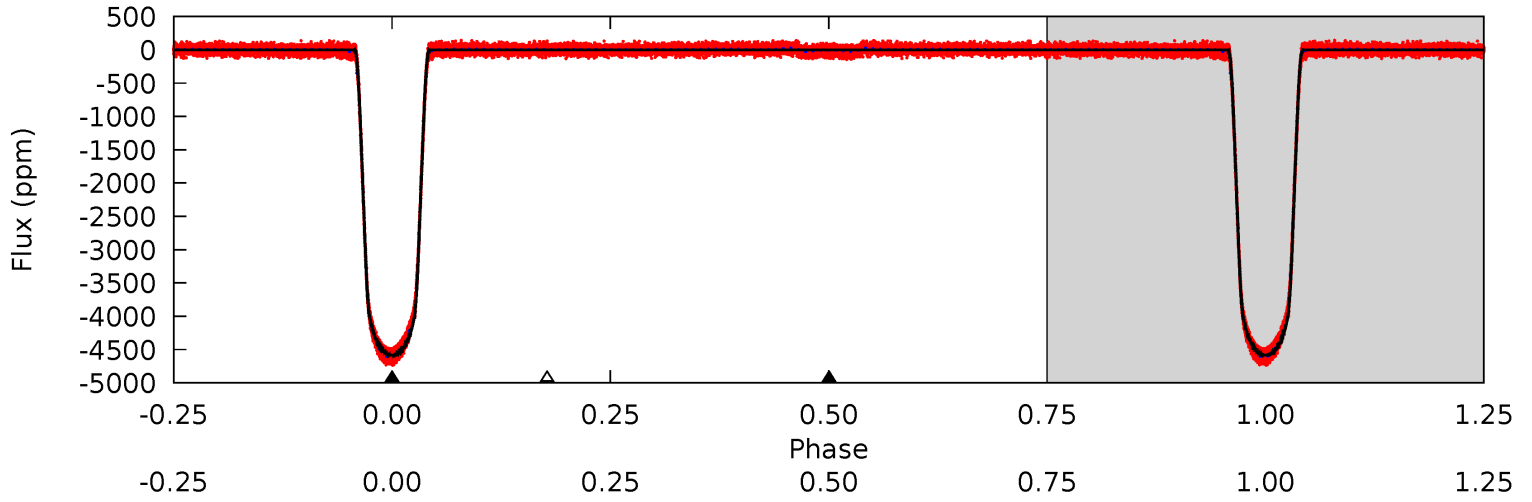
TCE 009941662-01 P= 1.763591 Days $T_0=132.909739$ (BKJD)



DV Model-Shift Uniqueness Test

009941662-01, P = 1.763587 Days, E = 131.147918 Days

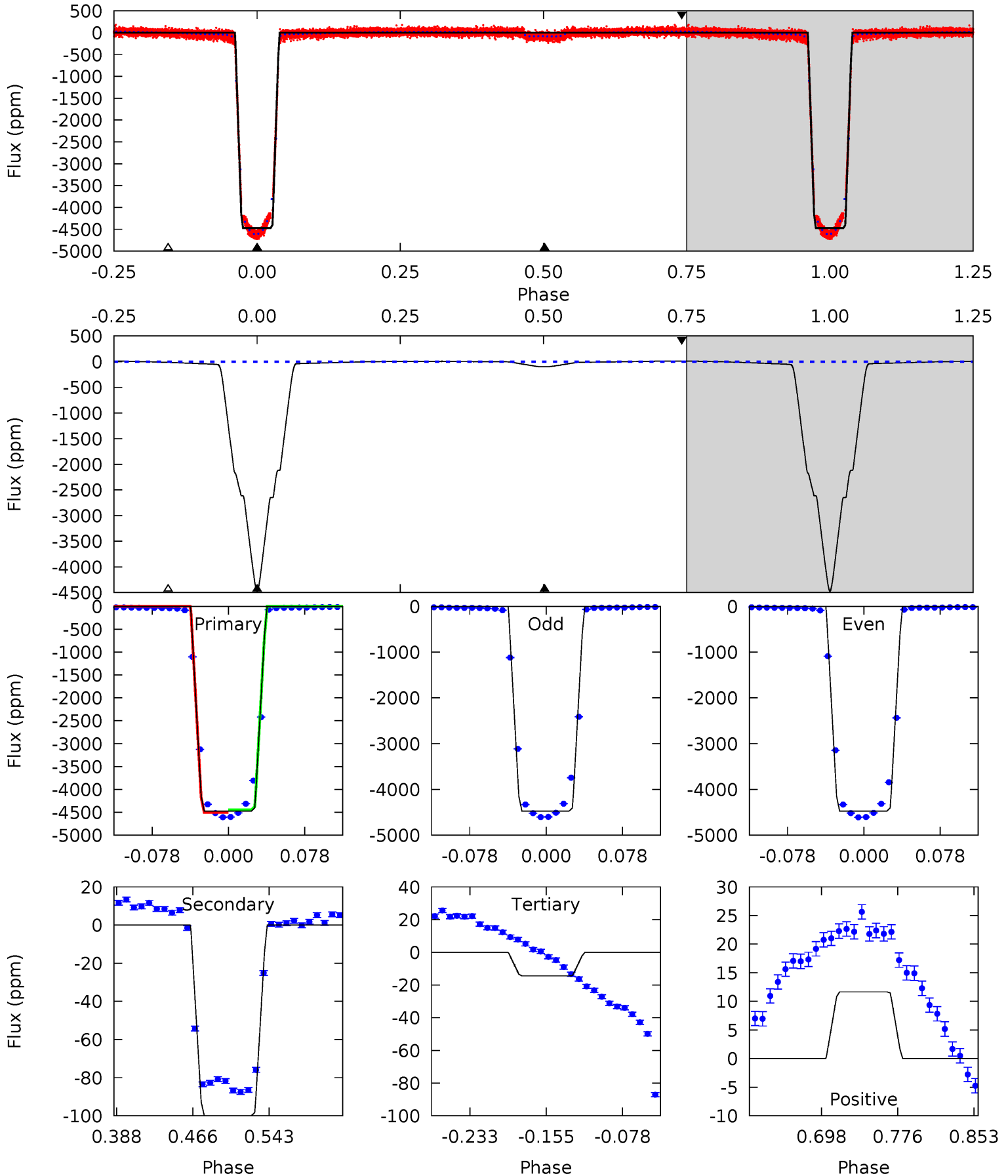
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10661	38.7	4.17	0	4.60	1.72	3.61	10657	10661	34.5	38.7	4.11	0.99	0.00	78.3



Alt Model-Shift Uniqueness Test

009941662-01, P = 1.763591 Days, E = 131.146148 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8064	180.0	26.0	21.0	4.62	1.76	25.9	8038	8043	154.0	159.0	2.49	1.00	0.00	48.9



Stellar Parameters For KIC 009941662

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9107^{+242}_{-443}	$3.867^{+0.343}_{-0.147}$	$0.070^{+0.150}_{-0.700}$	$3.031^{+0.895}_{-1.342}$	$2.466^{+0.349}_{-0.872}$	$0.125^{+0.367}_{-0.055}$
	+3%/-5%	+9%/-4%	+214%/-1000%	+30%/-44%	+14%/-35%	+294%/-44%
Source	KIC0	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 009941662-01 / KOI 0013.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-17 ± 0	$20.68^{+3.87}_{-4.65}$	4828^{+464}_{-534}	-3974^{+341}_{-288}	$0.031^{+0.018}_{-0.008}$
Alt.	-100 ± 1	$21.40^{+3.40}_{-5.04}$	4824^{+427}_{-497}	-3489^{+892}_{-356}	$0.179^{+0.098}_{-0.043}$

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

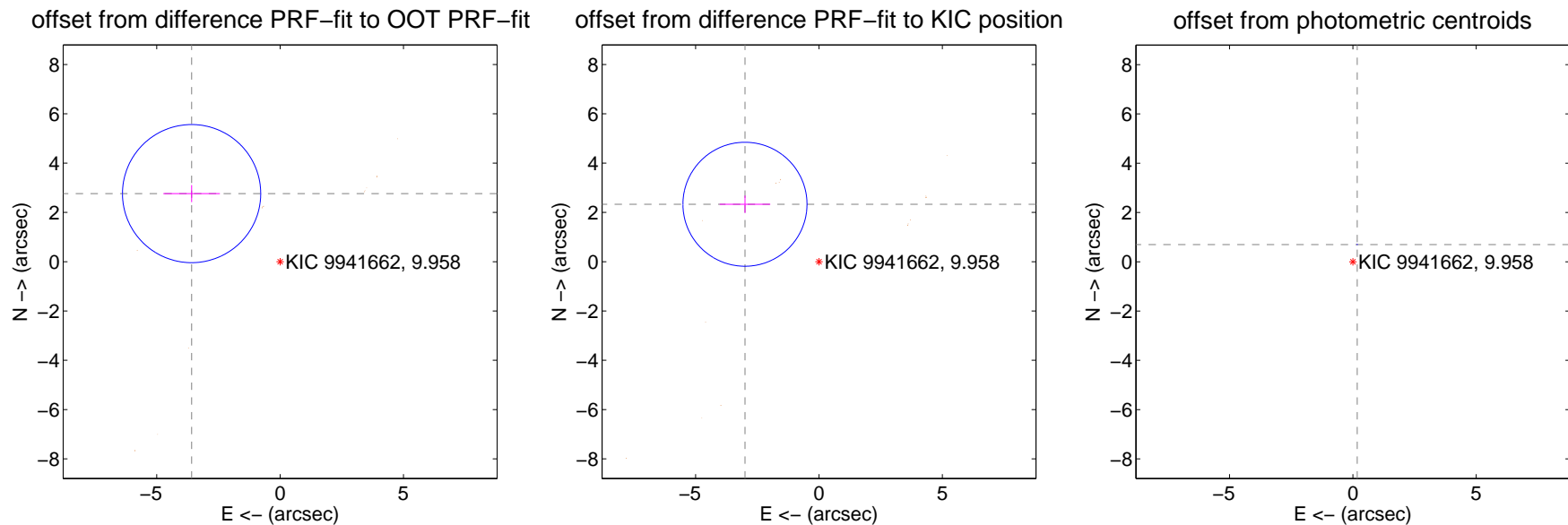
DV Centroid Data

Supplemental centroid analysis for 009941662-01. **Kepler magnitude: 9.96.** Transit SNR 5051.87

There are 0 quarters with good PRF difference image offsets

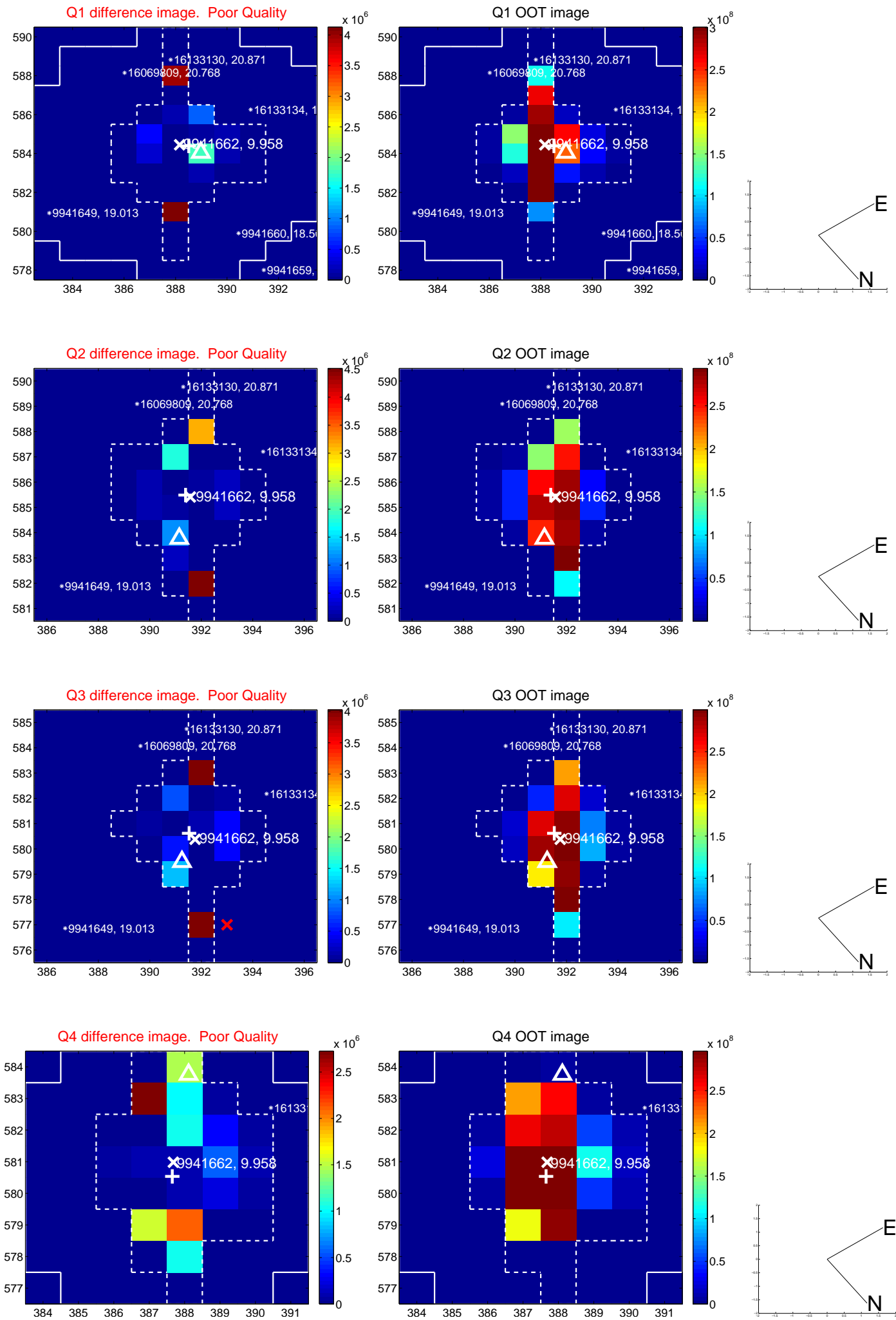
The direct PRF centroid is offset from the target star catalog position by about 1.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.528 ± 0.934	4.85	3.588 ± 1.148	2.762 ± 0.344
PRF-fit source offset from KIC position	3.799 ± 0.838	4.53	3.001 ± 1.025	2.330 ± 0.354
photometric centroid source offset	0.72 ± 0.00	266.94	-0.18 ± 0.00	0.70 ± 0.00

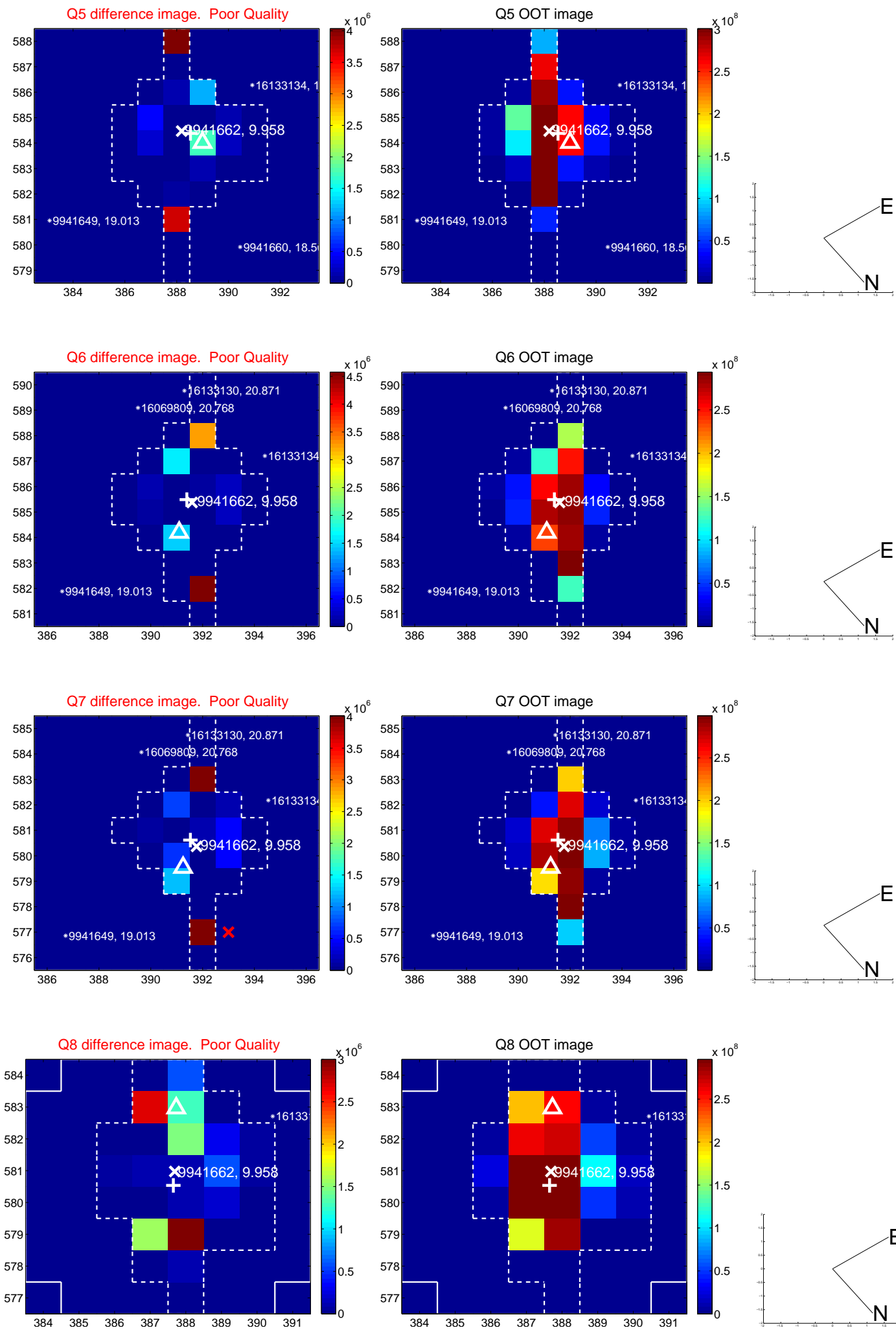


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

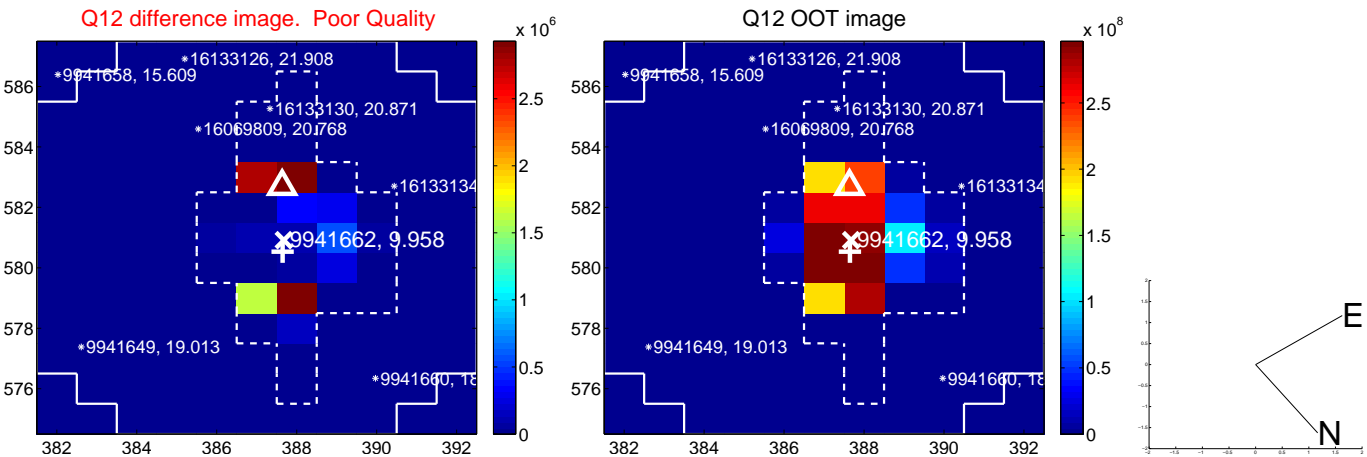
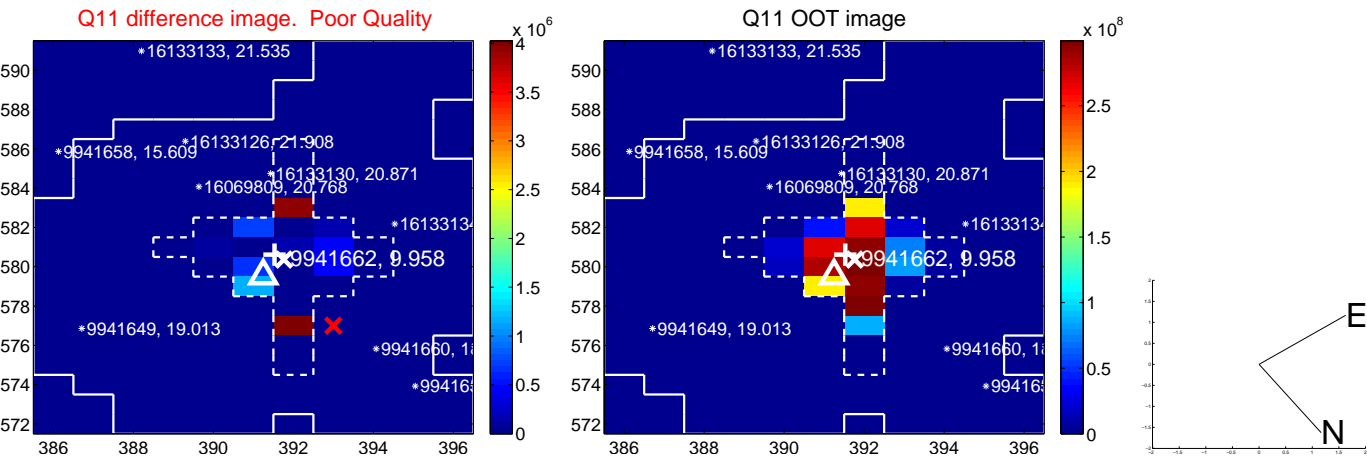
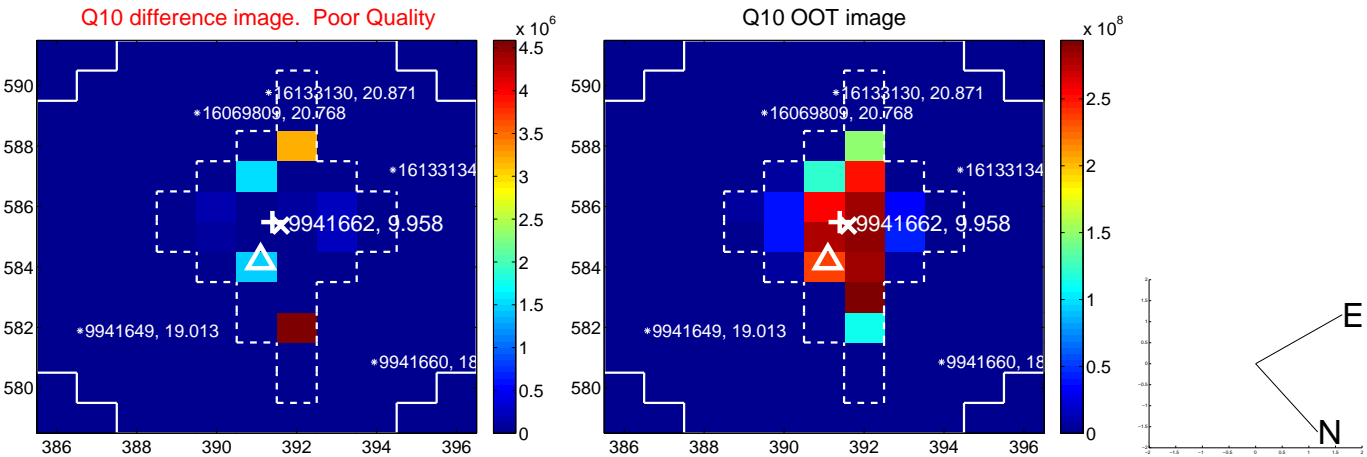
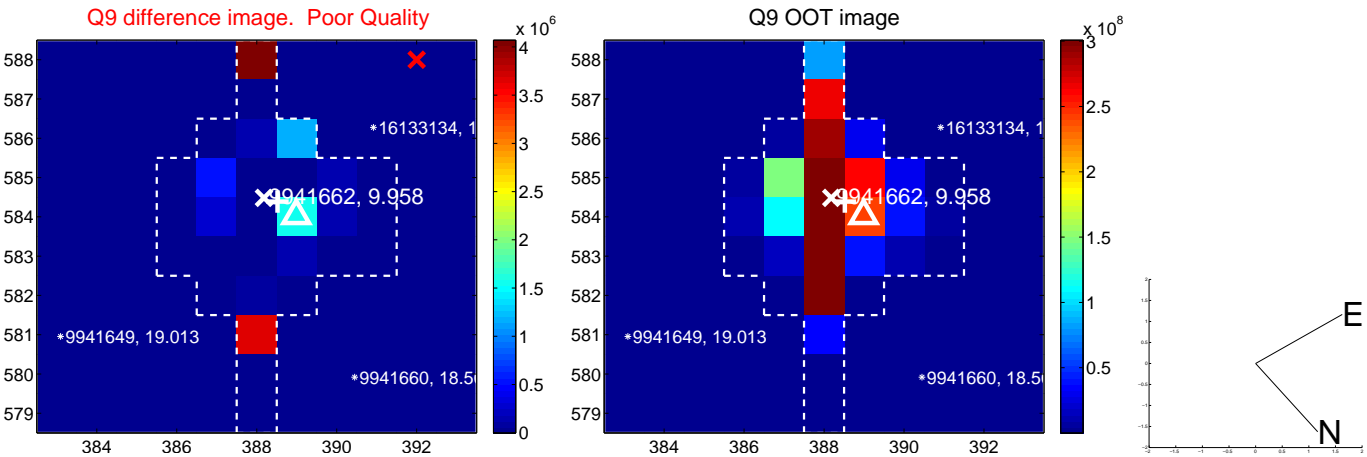
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



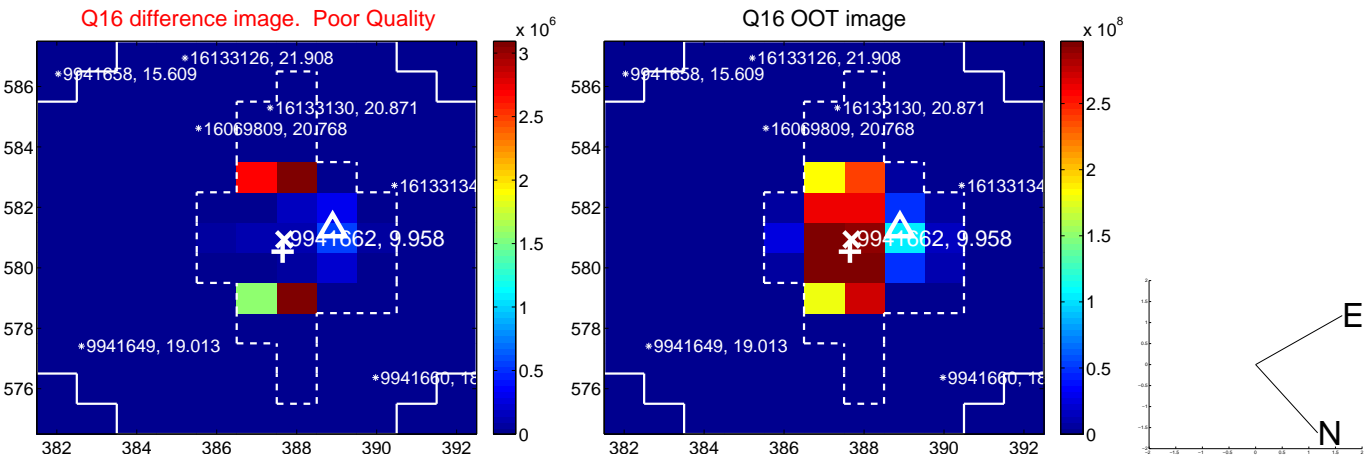
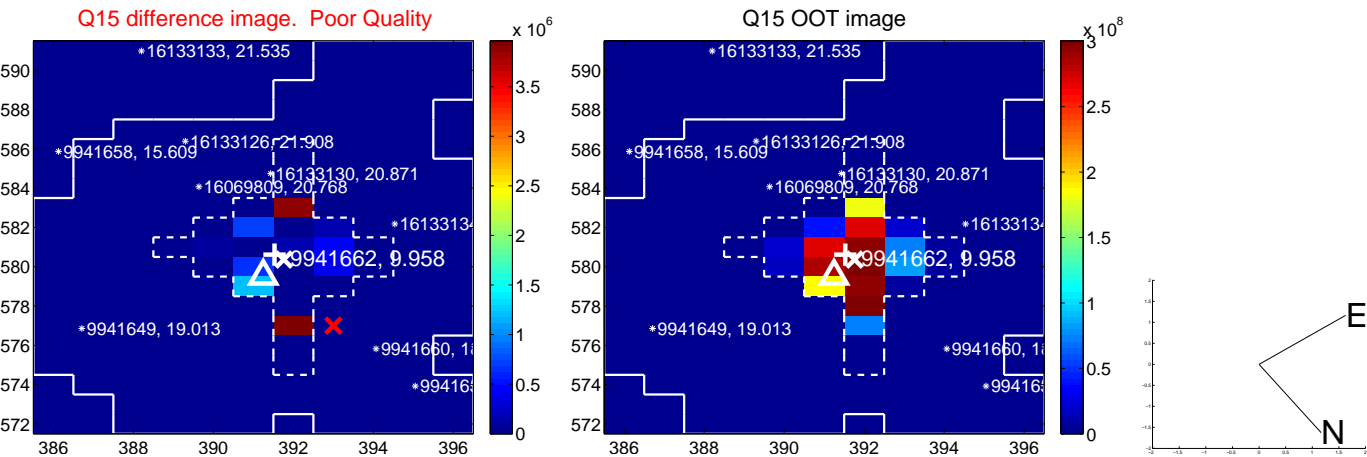
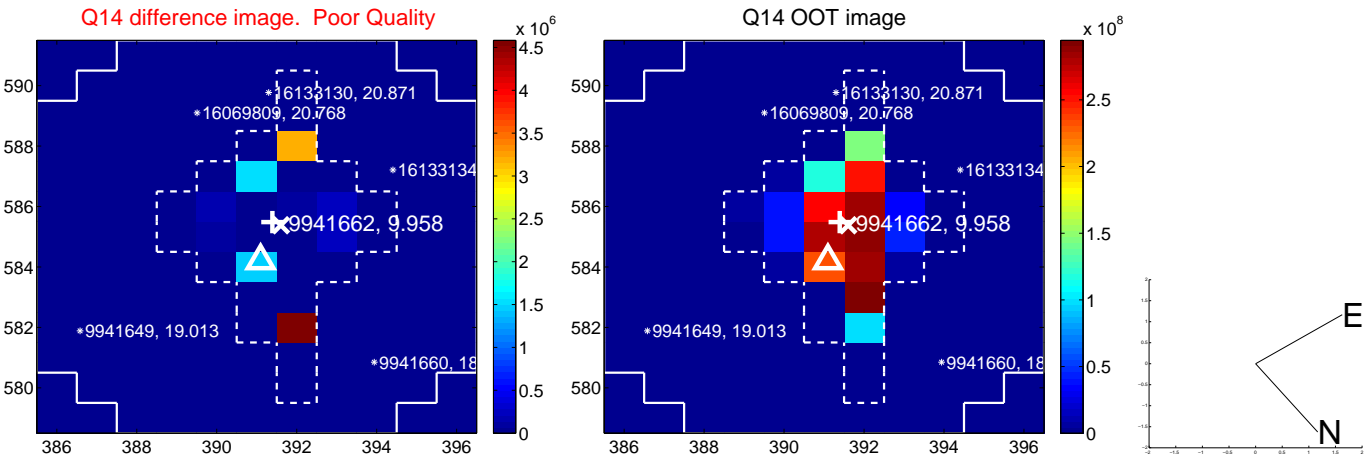
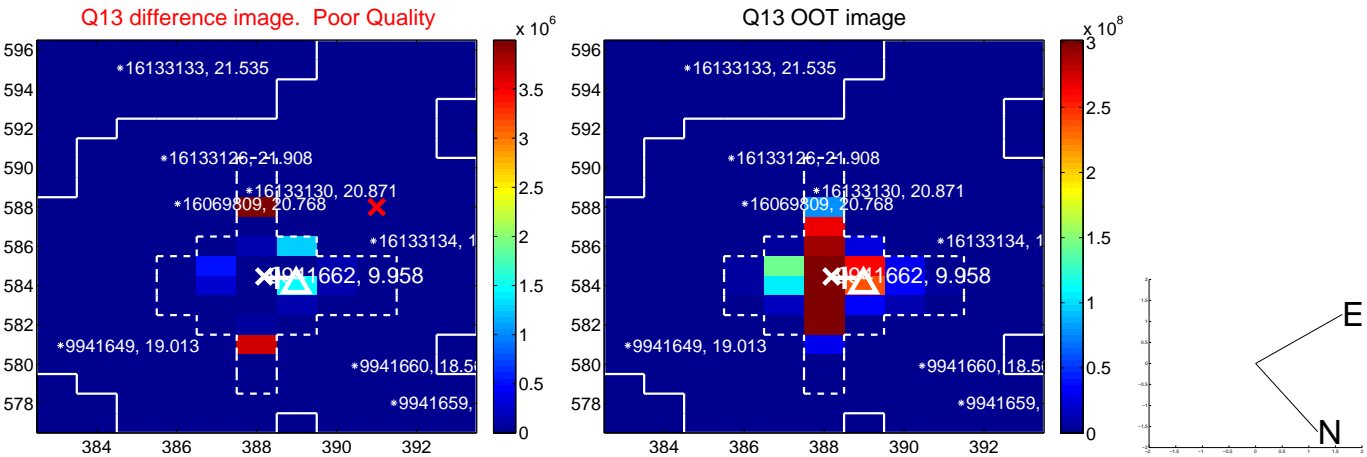
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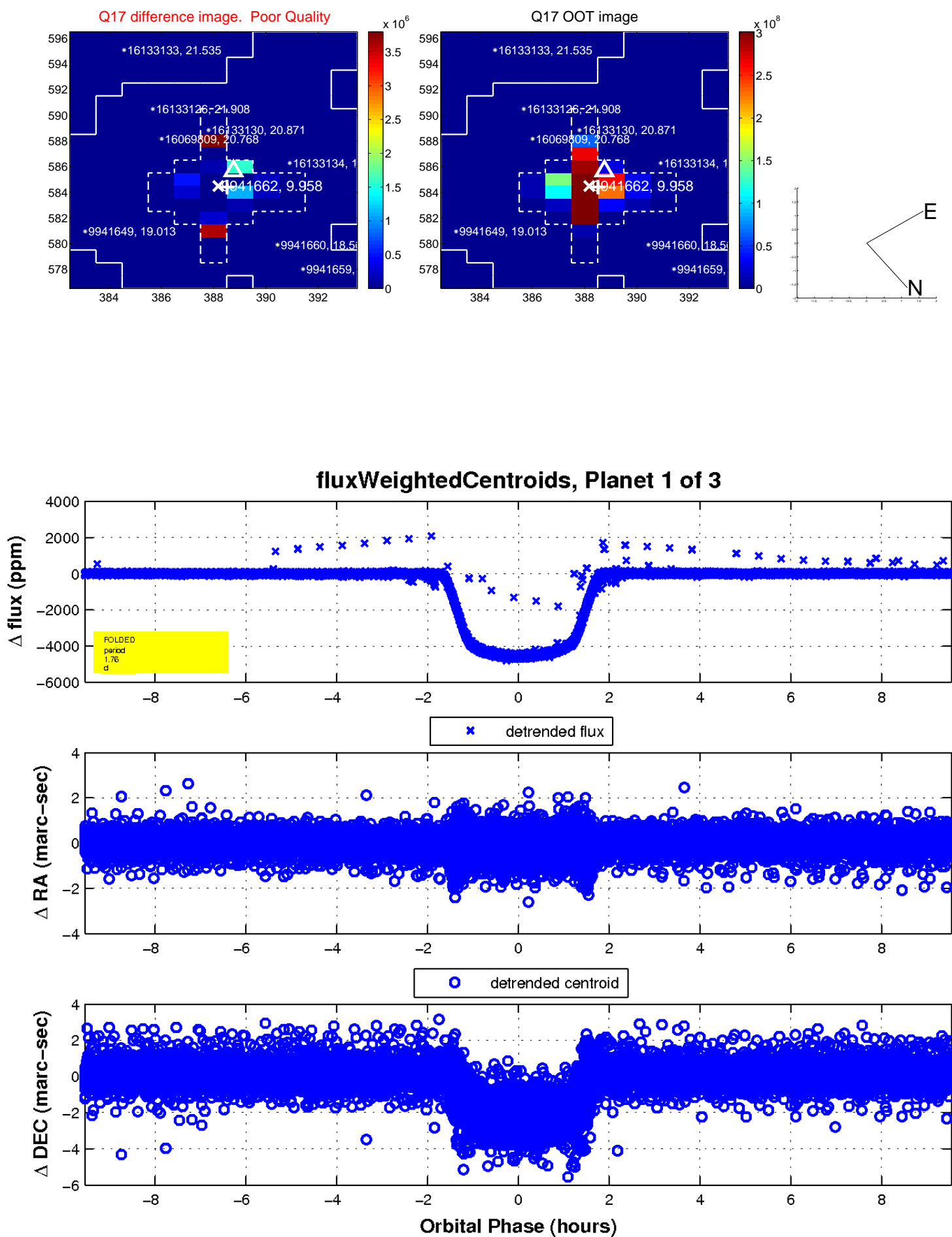
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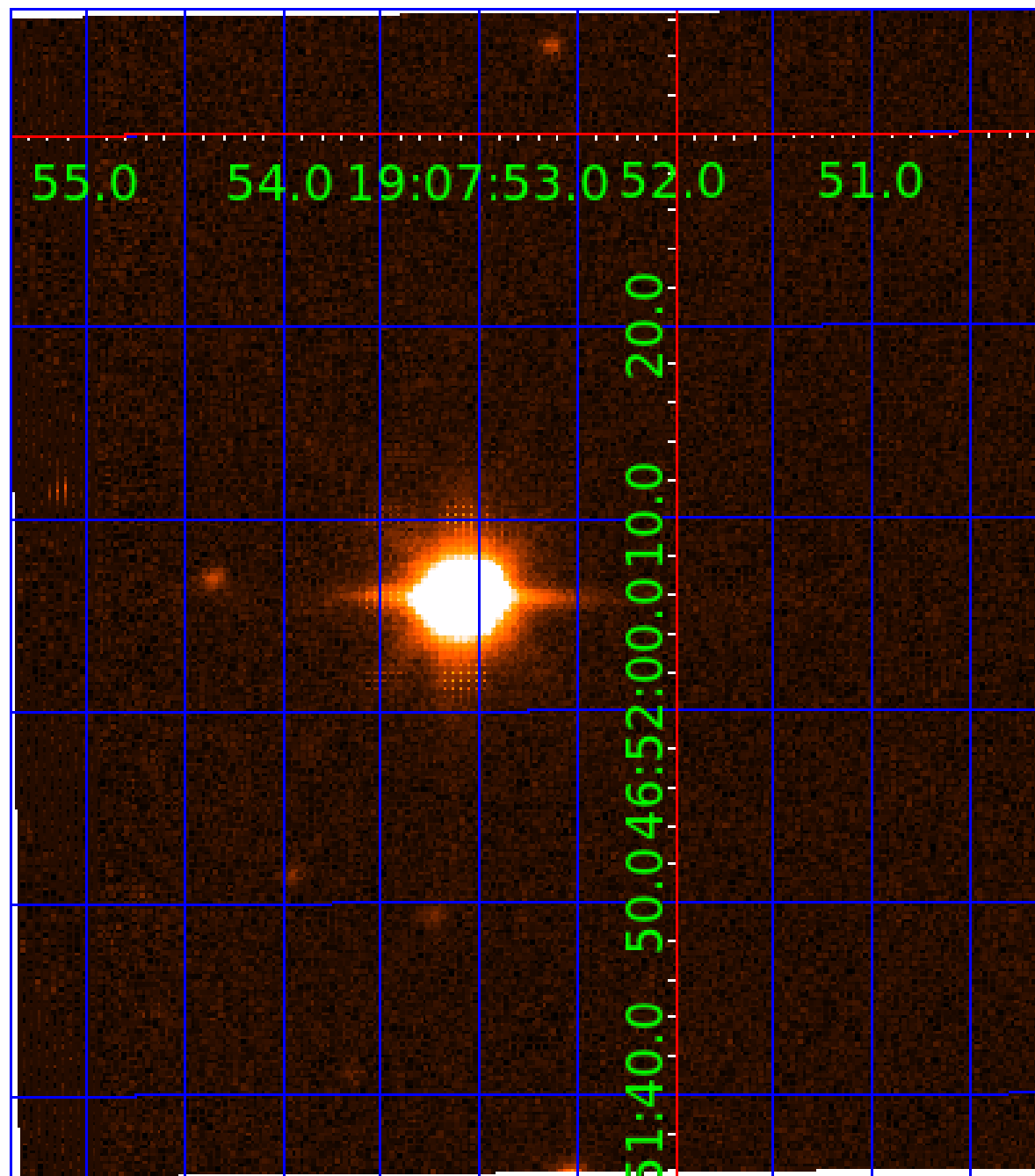


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UKIRT Image

Declination



KIC 009941662

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009941662-01	OBS	PC	0.88	0	1	0	0	MOD_SEC_DV—PLANET_OCCULT_DV—MOD_SEC_ALT—PLANET_OCCULT_ALT—HAS_SEC_TCE—CENT_SATURATED
009941662-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
009941662-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—CENT_SATURATED

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

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

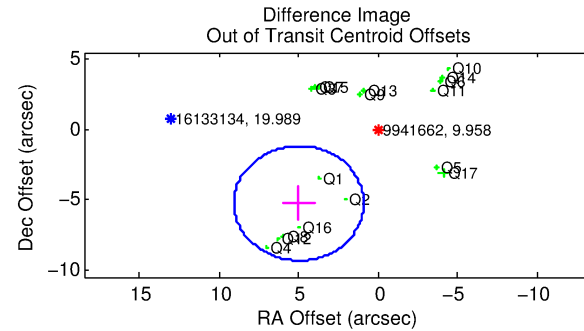
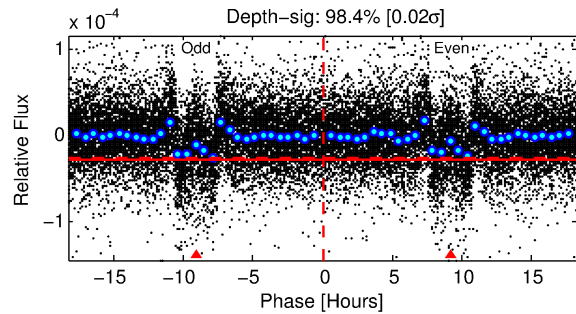
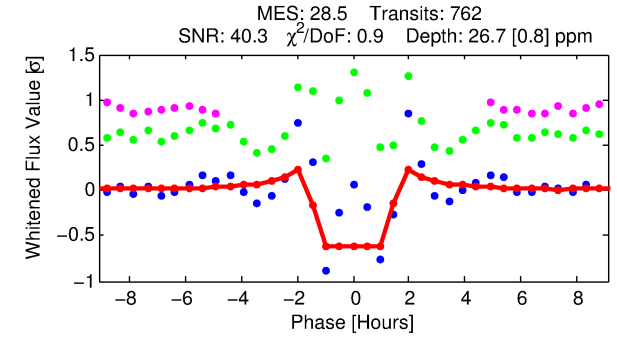
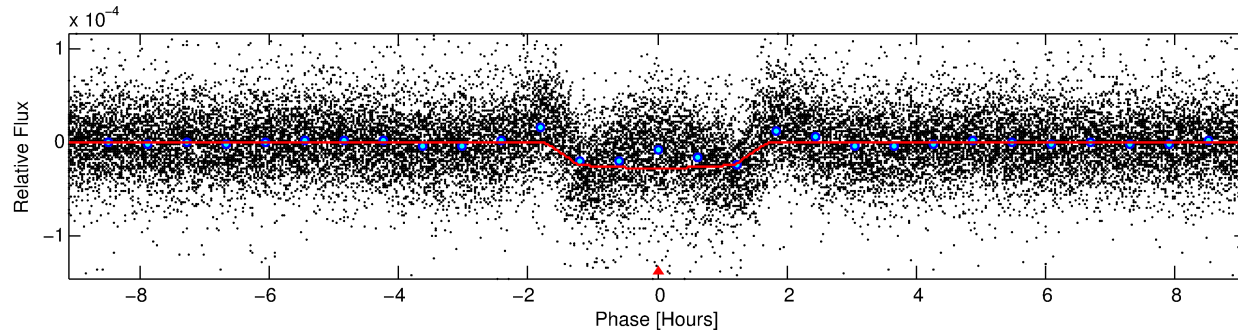
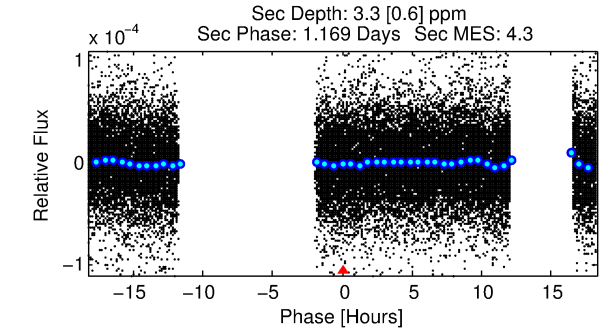
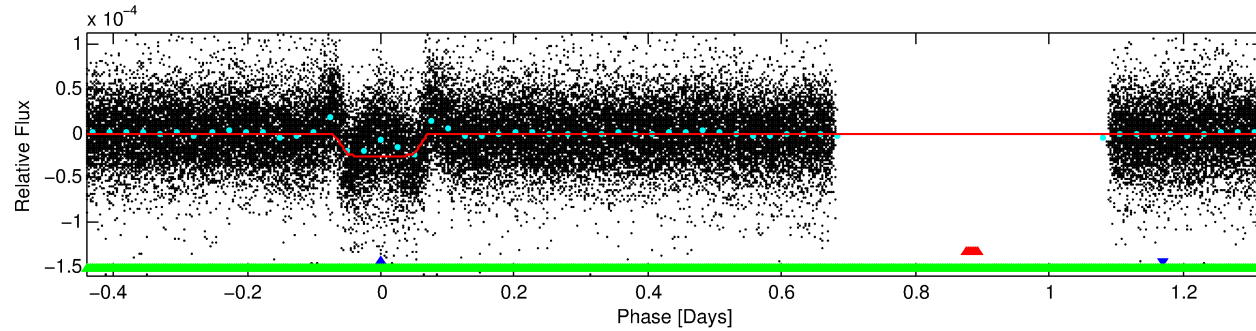
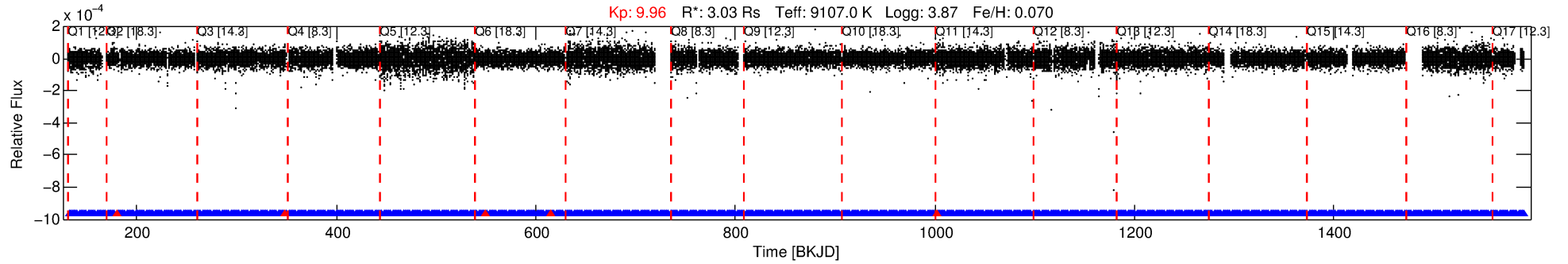
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009941662-02

No Significant Match Found

DV One-Page Summary

KIC: 9941662 Candidate: 2 of 3 Period: 1.764 d
KOI: K00013 Name: Kepler-13 Corr: No Ephemeris Match



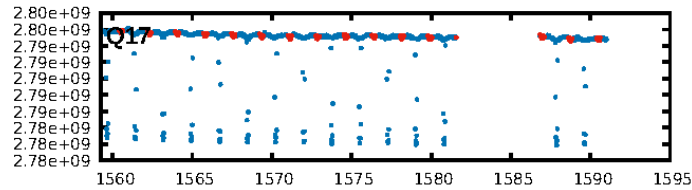
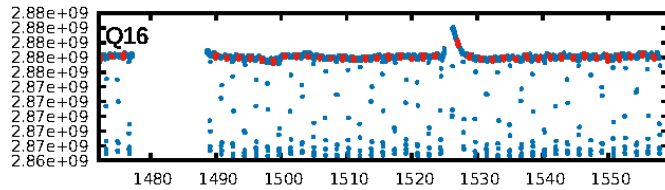
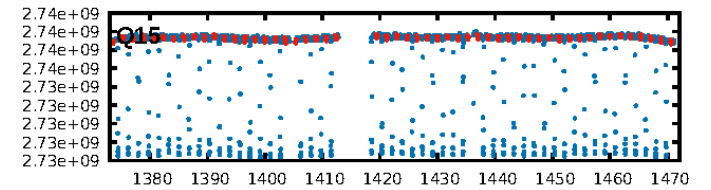
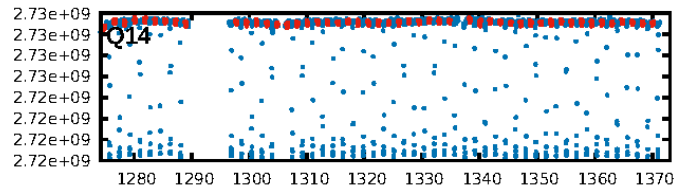
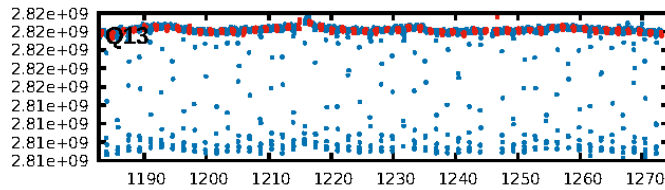
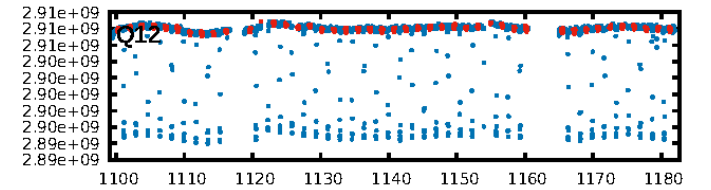
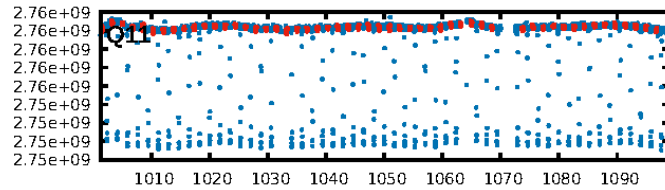
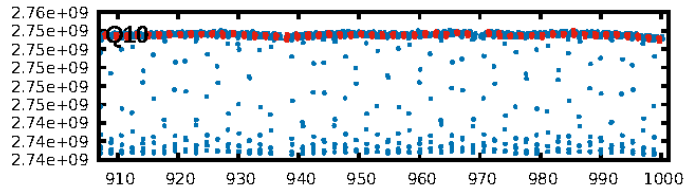
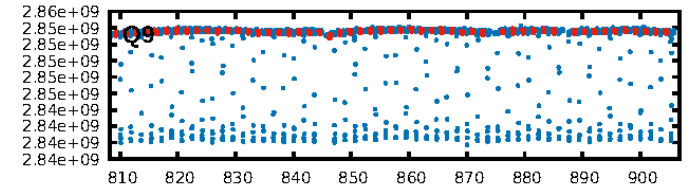
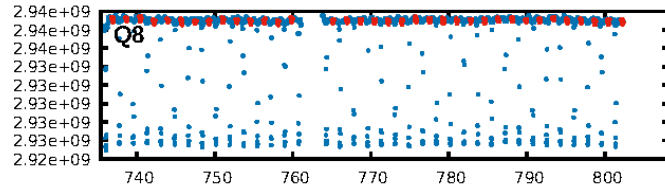
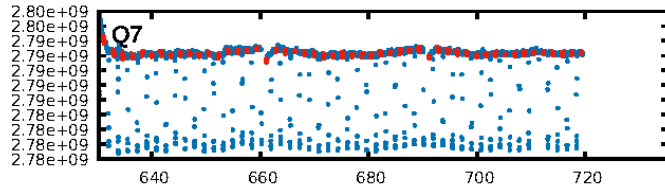
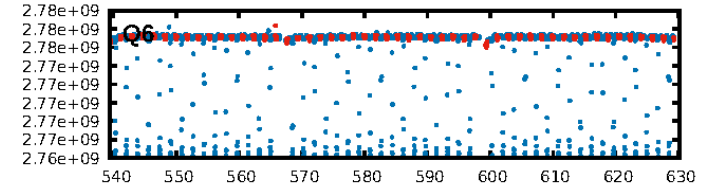
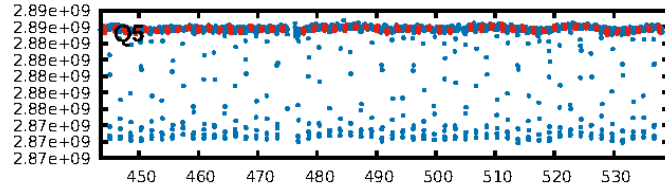
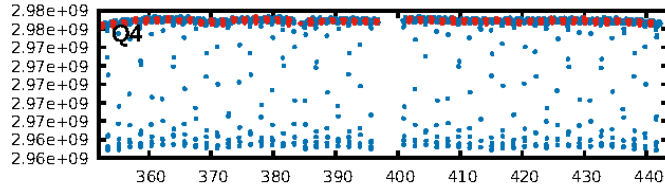
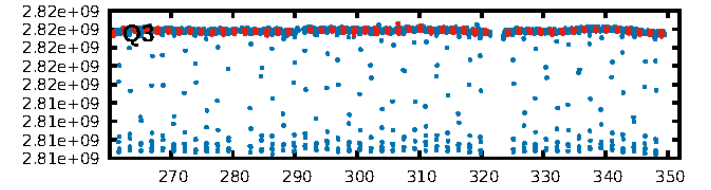
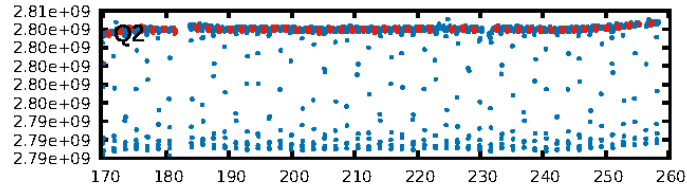
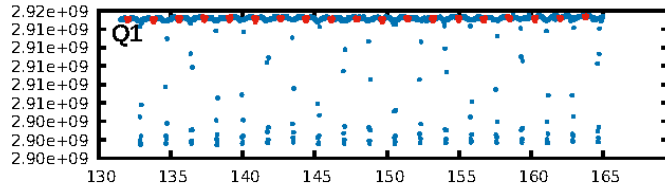
DV Fit Results:

Period = 1.76357 [0.00000] d
Epoch = 132.0340 [0.0007] BKJD
Rp/R* = 0.0055 [0.0002]
a/R* = 2.20 [0.51]
b = 0.90 [0.06]
Seff = 37983.61 [24089.34]
Teff = 3560 [564] K
Rp = 1.81 [0.80] Re
a = 0.0386 [0.0153] AU
Ag = 0.84 [0.53] [-0.31σ]
Teffp = 5264 [369] K [2.53σ]

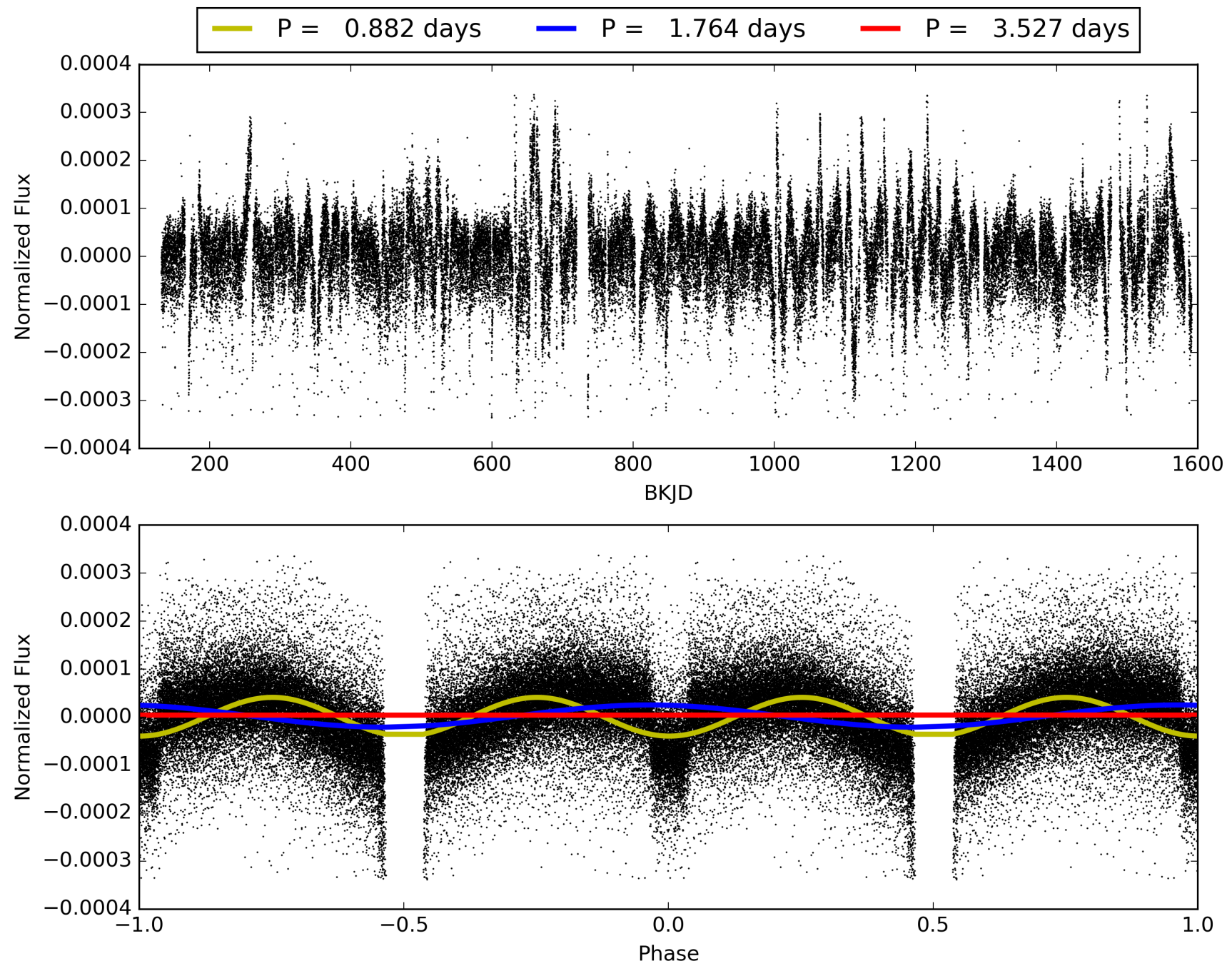
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.09σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [723/728]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 1.396 arcsec [3.06σ]
OotOffset-rm: 7.248 arcsec [5.33σ]
KicOffset-rm: 6.048 arcsec [5.51σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.06 [1/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 009941662-02, PDC Light Curves

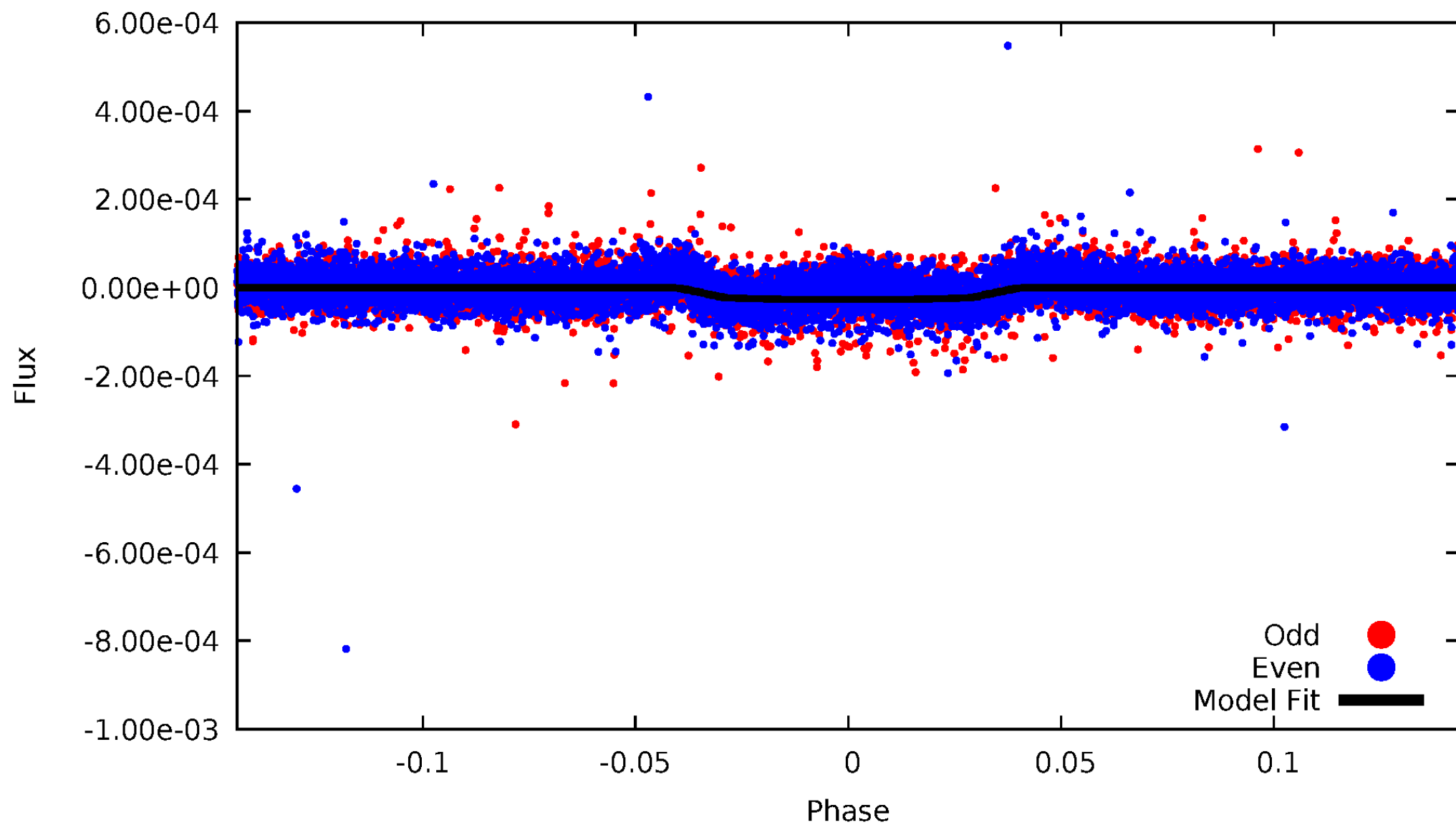


TCE 009941662-02



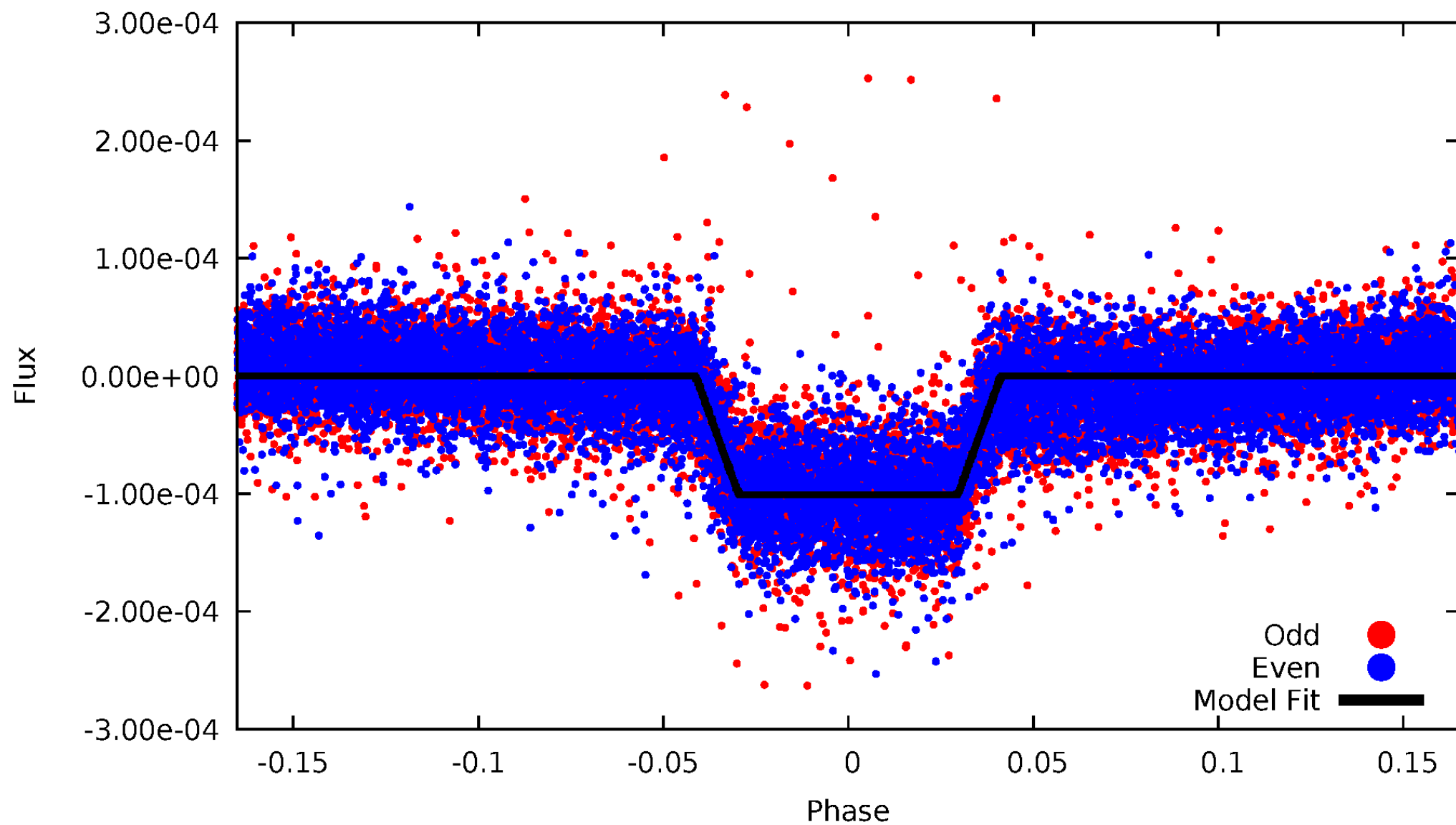
DV Odd/Even

TCE 009941662-02



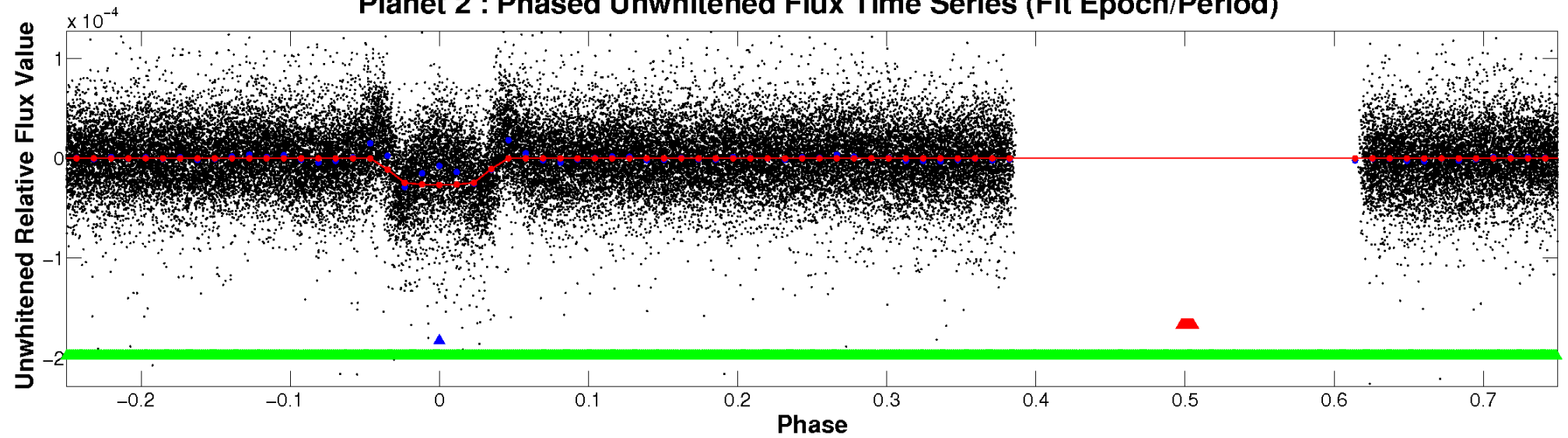
ALT Odd/Even

TCE 009941662-02

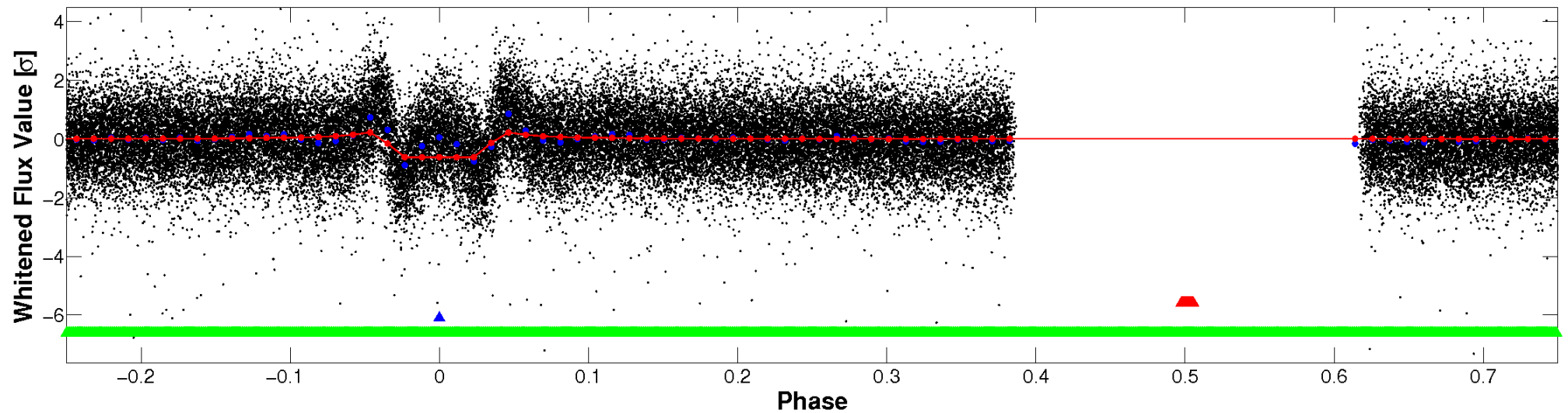


Non-Whitened Vs. Whitened Light Curve

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

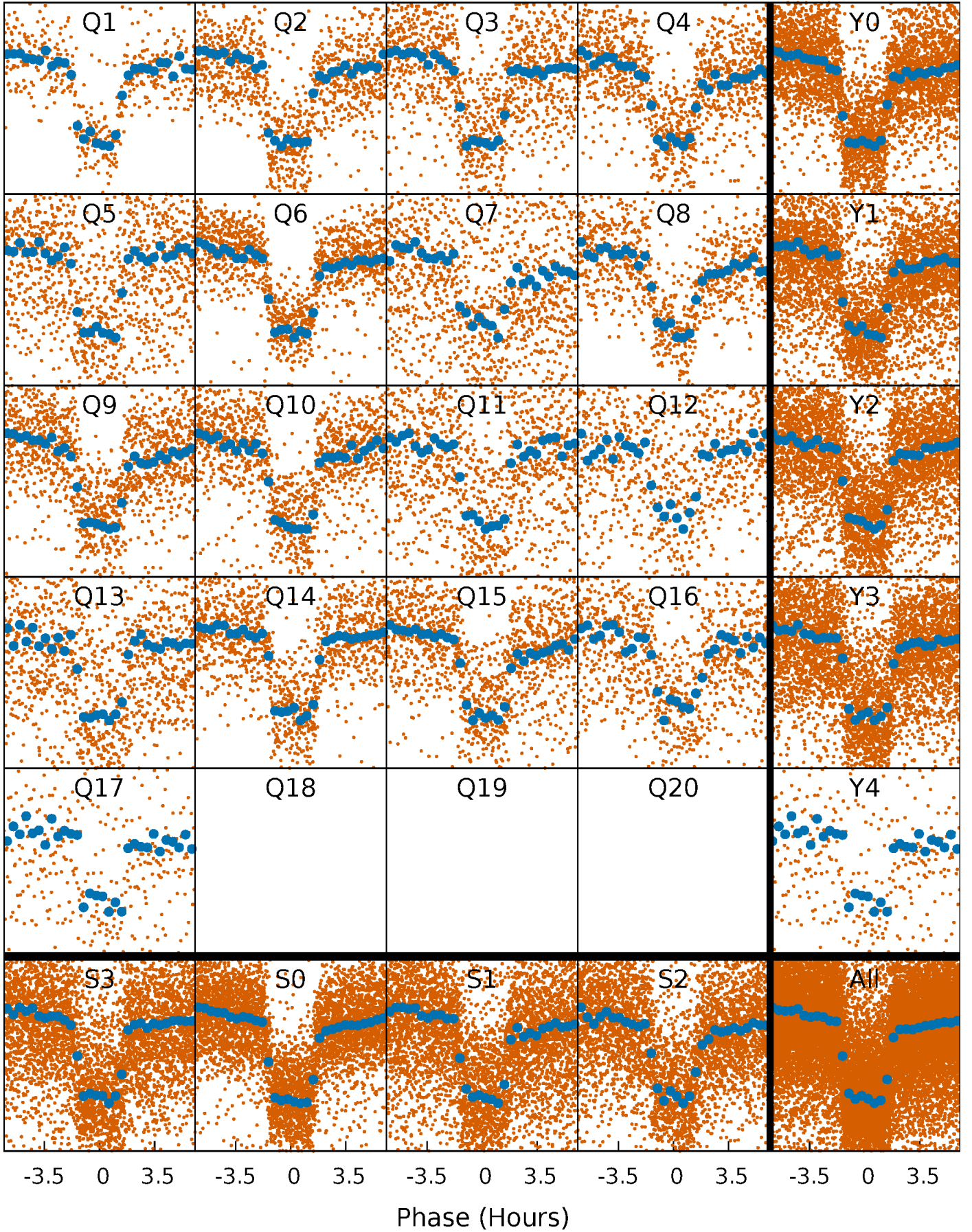


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



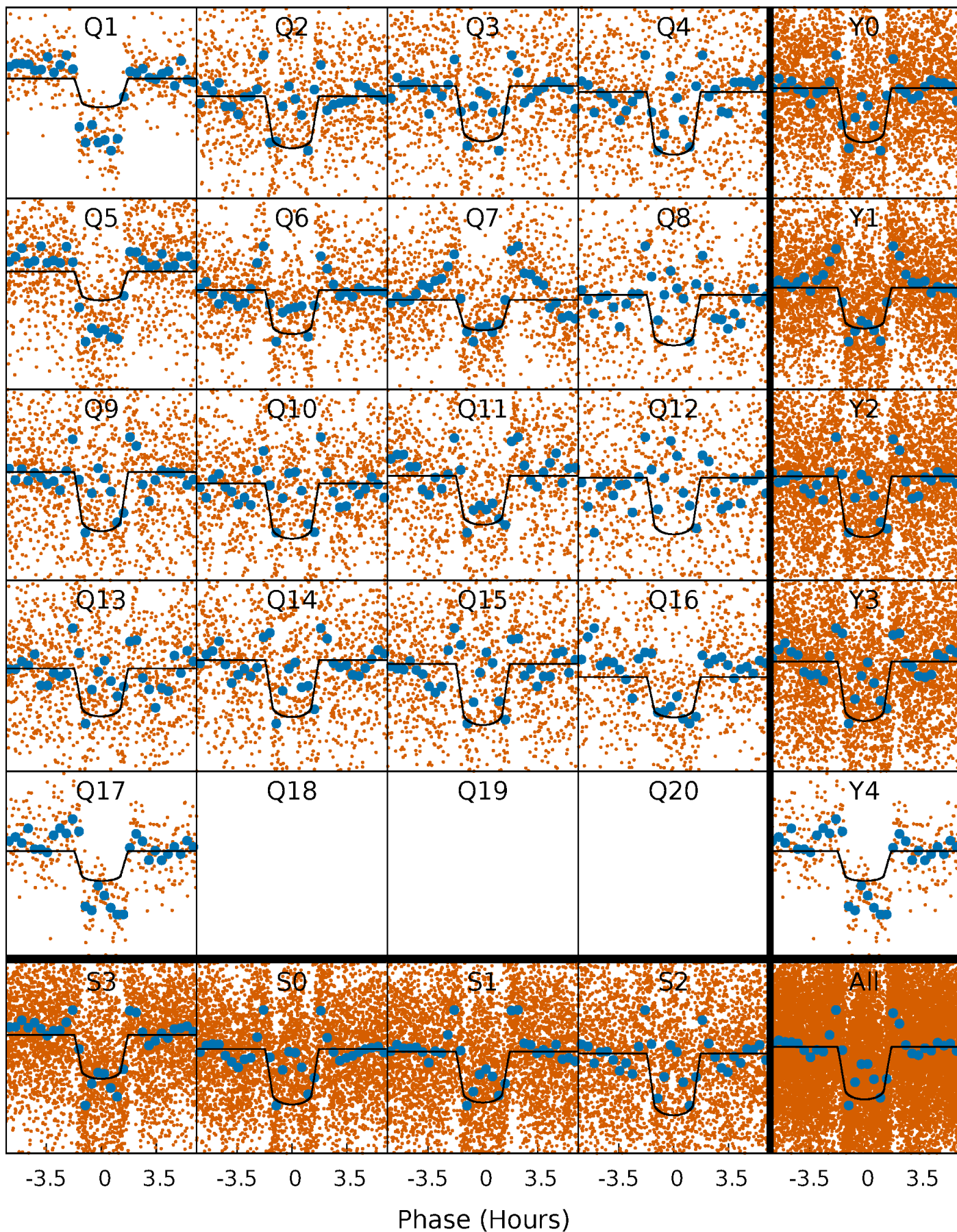
PDC Quarter-Phased Transit Curves

TCE 009941662-02 P= 1.763570 Days $T_0=132.033959$ (BKJD)



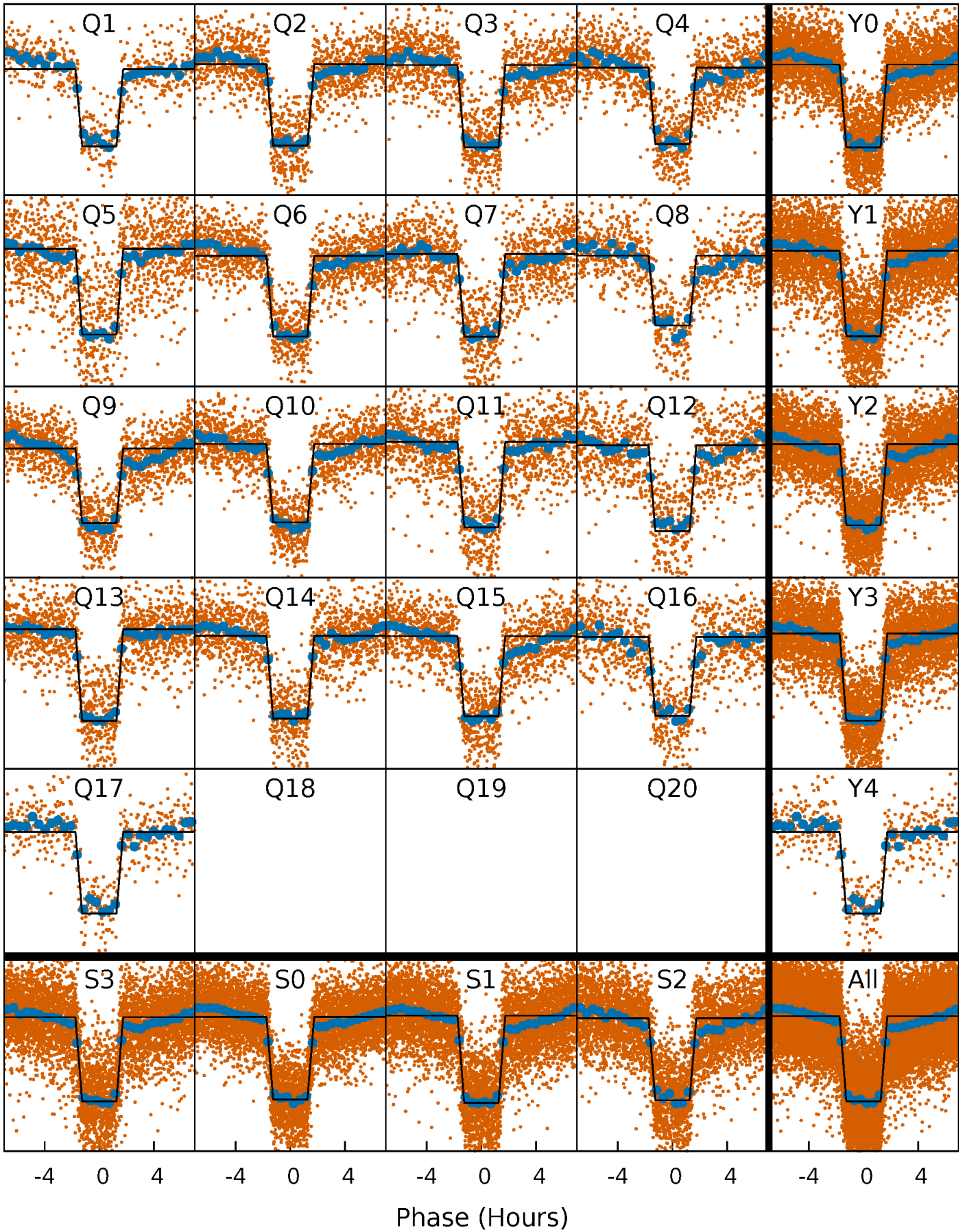
DV Quarter-Phased Transit Curves

TCE 009941662-02 P= 1.763570 Days $T_0=132.033959$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

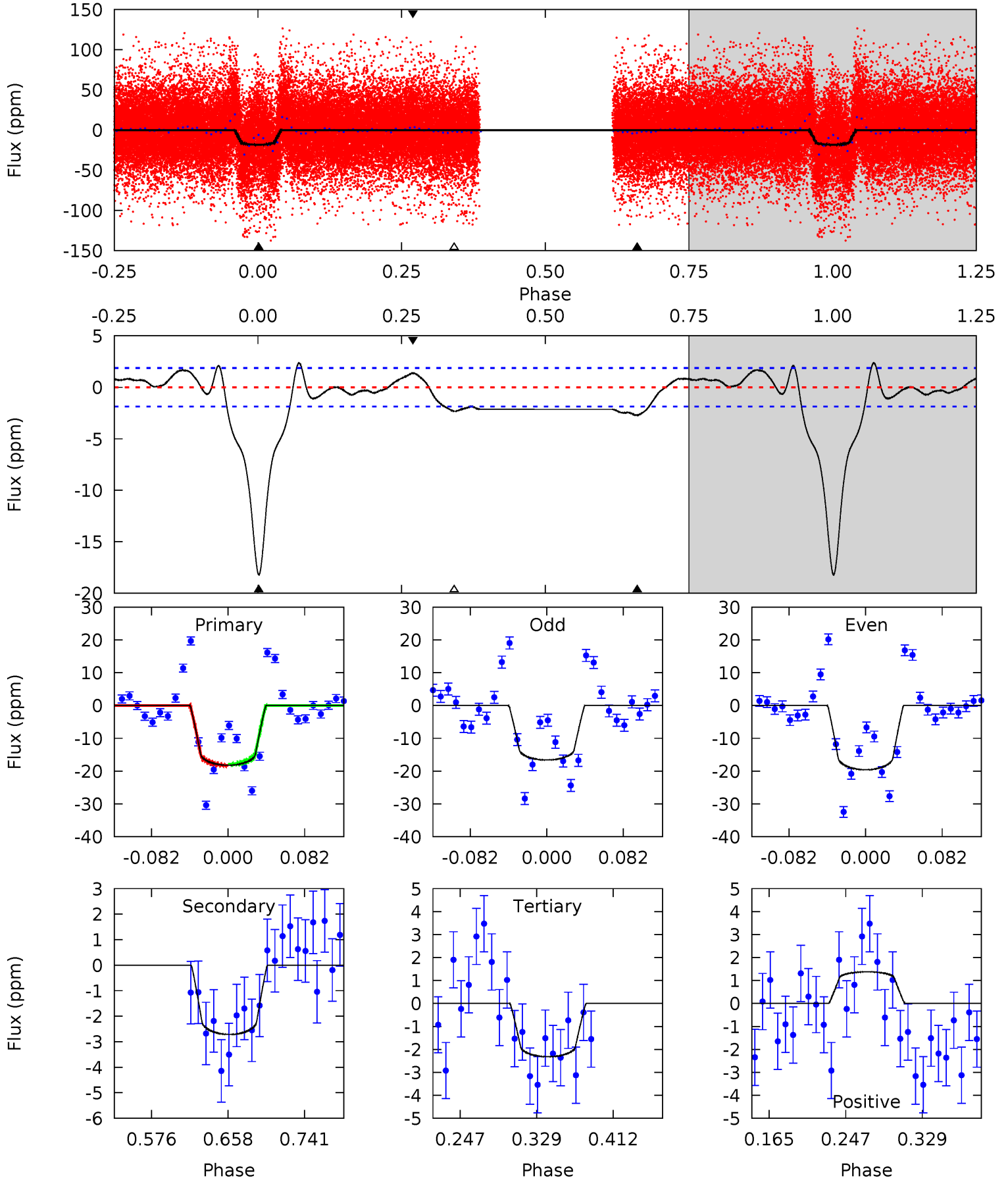
TCE 009941662-02 P= 1.763591 Days $T_0=132.029524$ (BKJD)



DV Model-Shift Uniqueness Test

009941662-02, P = 1.763570 Days, E = 130.270389 Days

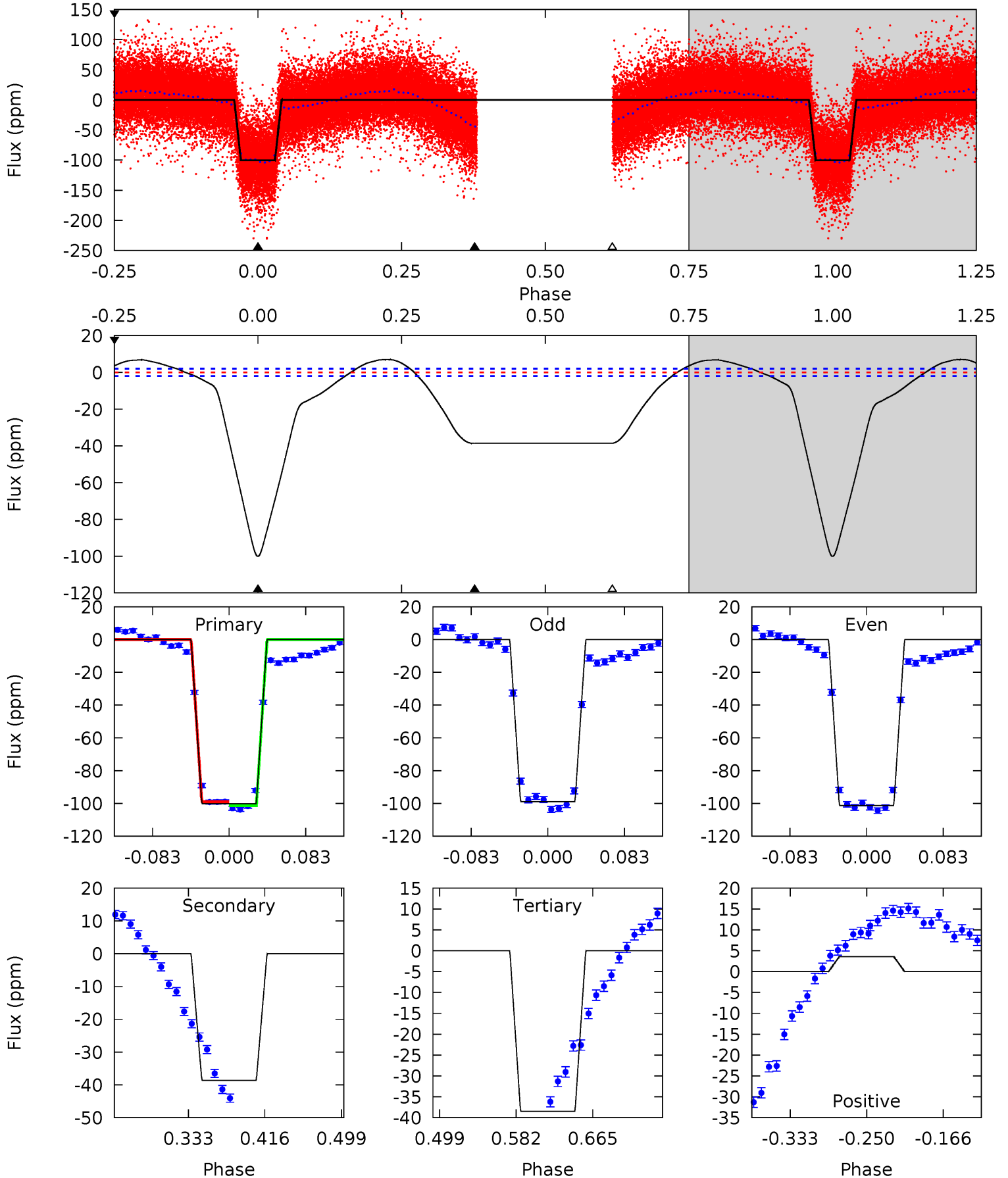
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.9	6.69	5.71	3.39	4.61	1.74	2.59	39.2	41.5	0.97	3.29	3.70	1.12	0.11	0.42



Alt Model-Shift Uniqueness Test

009941662-02, P = 1.763591 Days, E = 130.265933 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
230.5	88.9	88.6	8.27	4.60	1.73	25.7	141.9	222.3	0.26	80.6	2.63	0.99	0.07	3.02



Stellar Parameters For KIC 009941662

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9107^{+242}_{-443}	$3.867^{+0.343}_{-0.147}$	$0.070^{+0.150}_{-0.700}$	$3.031^{+0.895}_{-1.342}$	$2.466^{+0.349}_{-0.872}$	$0.125^{+0.367}_{-0.055}$
	+3%/-5%	+9%/-4%	+214%/-1000%	+30%/-44%	+14%/-35%	+294%/-44%
Source	KIC0	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 009941662-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3 ± 0	$1.75^{+0.31}_{-0.39}$	4838^{+392}_{-481}	4335^{+306}_{-395}	$0.747^{+0.369}_{-0.231}$
Alt.	-39 ± 0	$3.21^{+0.59}_{-0.73}$	4847^{+416}_{-509}	6603^{+192}_{-255}	$3.035^{+1.632}_{-0.769}$

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

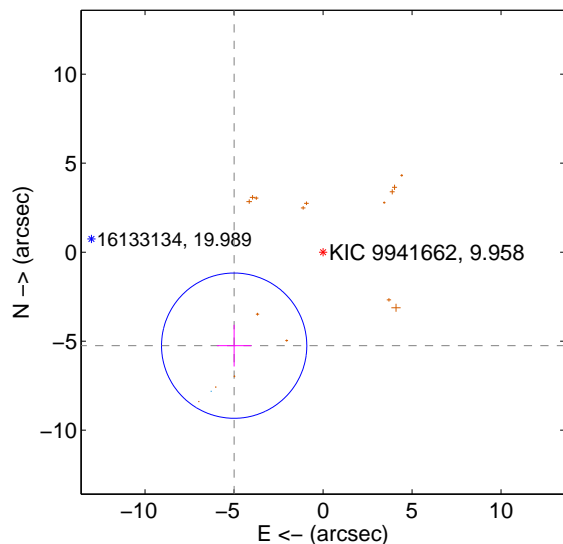
Supplemental centroid analysis for 009941662-02. **Kepler magnitude: 9.96.** Transit SNR 40.29

There are 1 quarters with good PRF difference image offsets

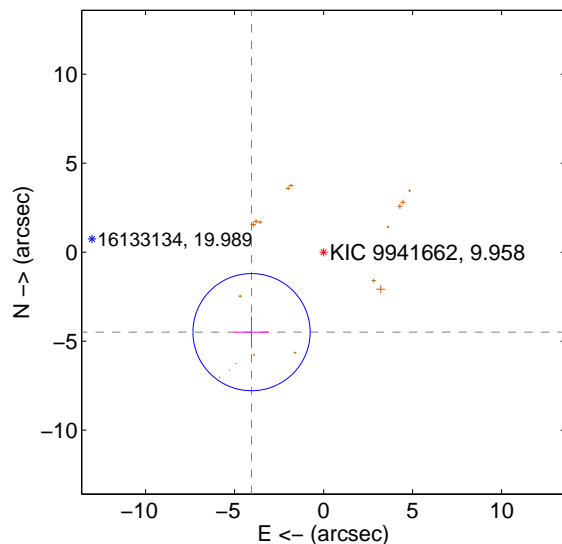
The direct PRF centroid is offset from the target star catalog position by about 1.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.248 ± 1.360	5.33	4.994 ± 0.969	-5.253 ± 1.169
PRF-fit source offset from KIC position	6.048 ± 1.097	5.51	4.048 ± 0.965	-4.494 ± 0.876
photometric centroid source offset	1.40 ± 0.46	3.06	0.15 ± 0.30	1.39 ± 0.46

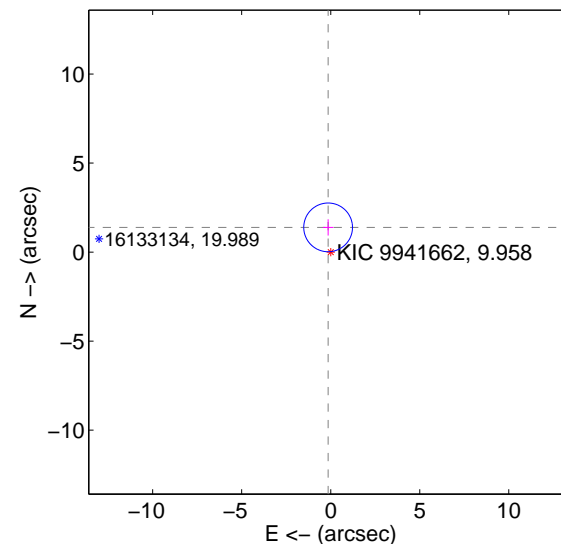
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

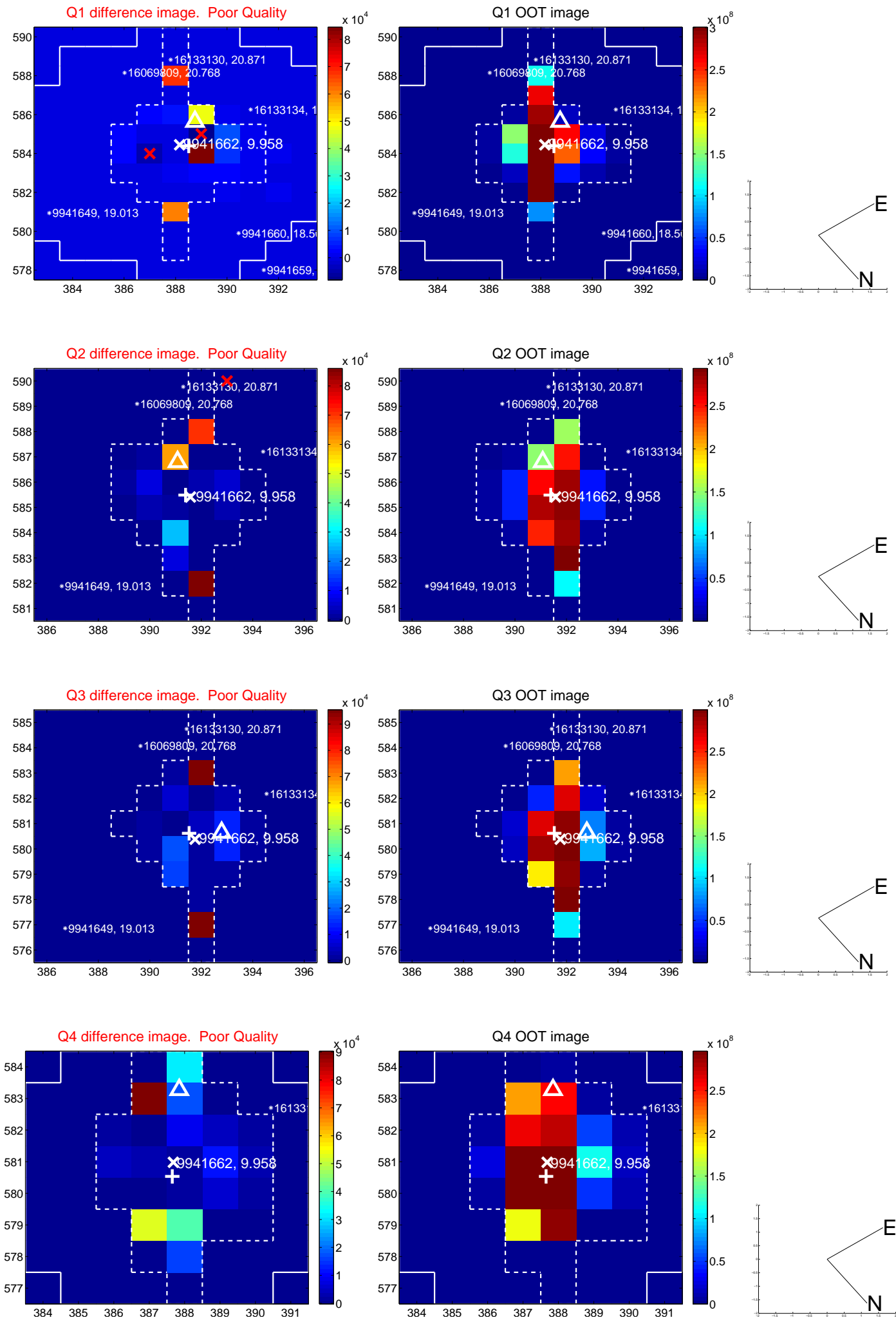


offset from photometric centroids

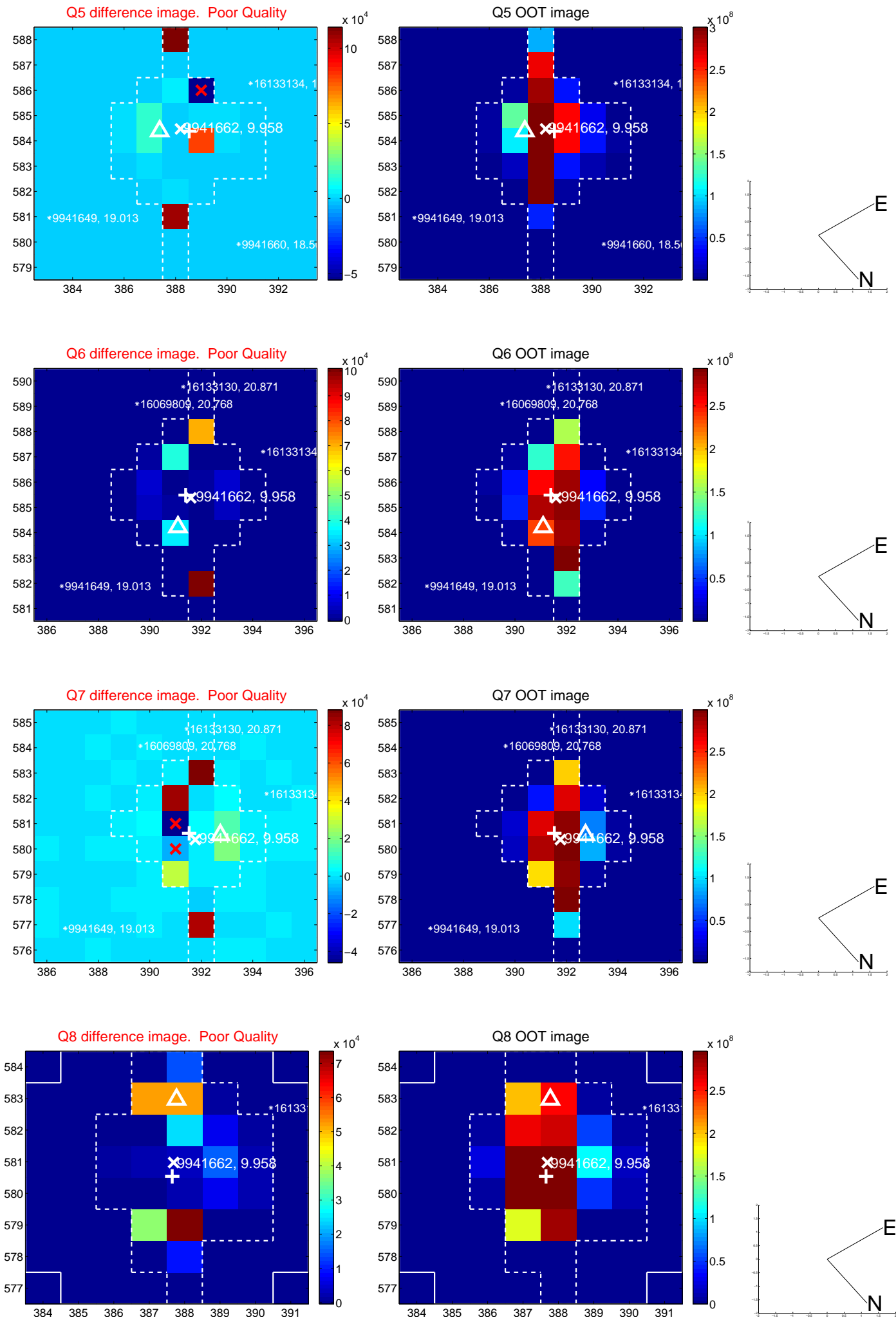


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

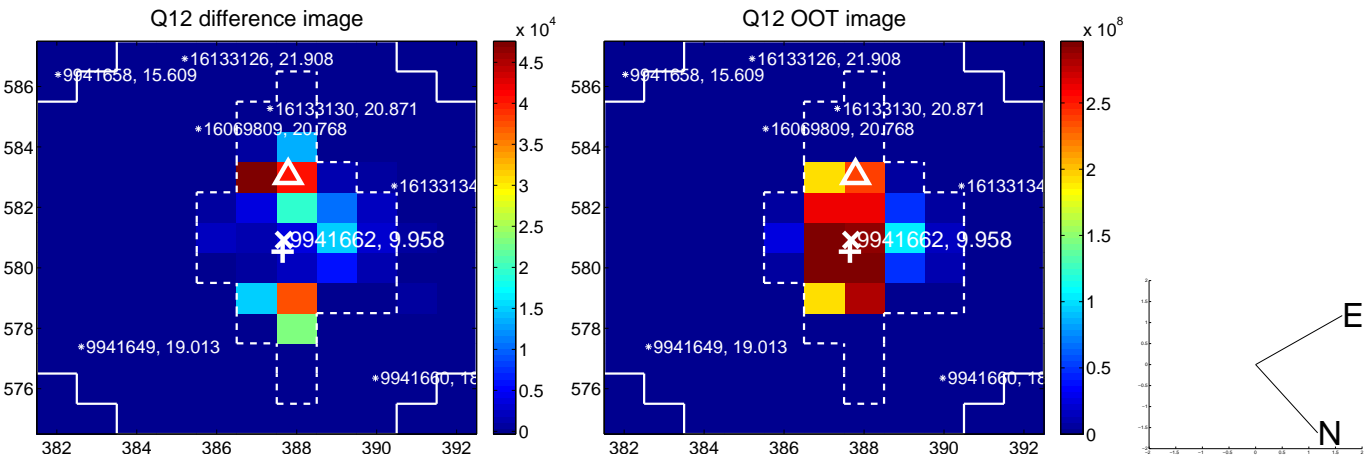
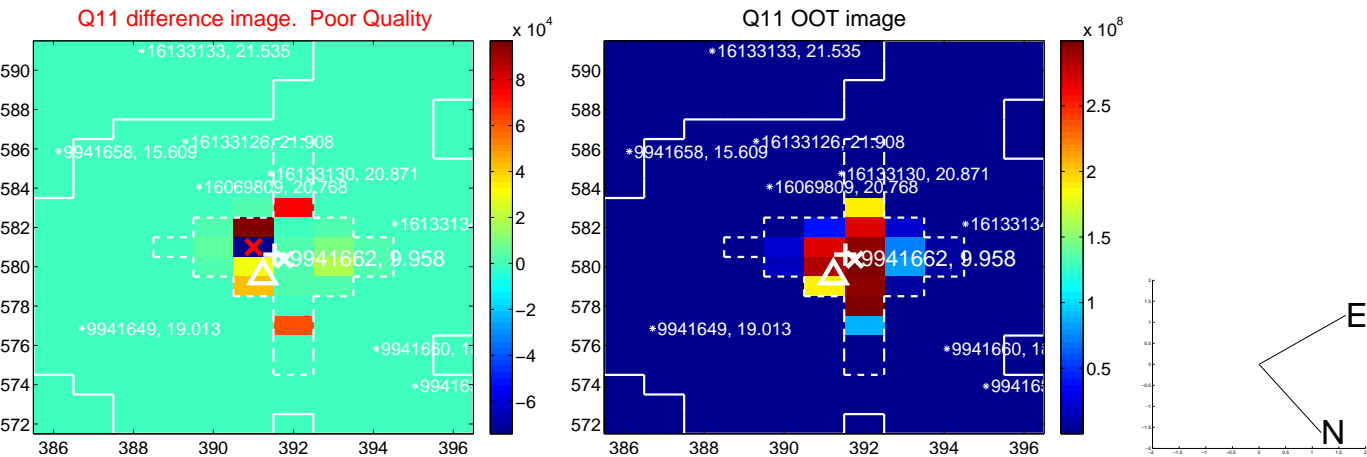
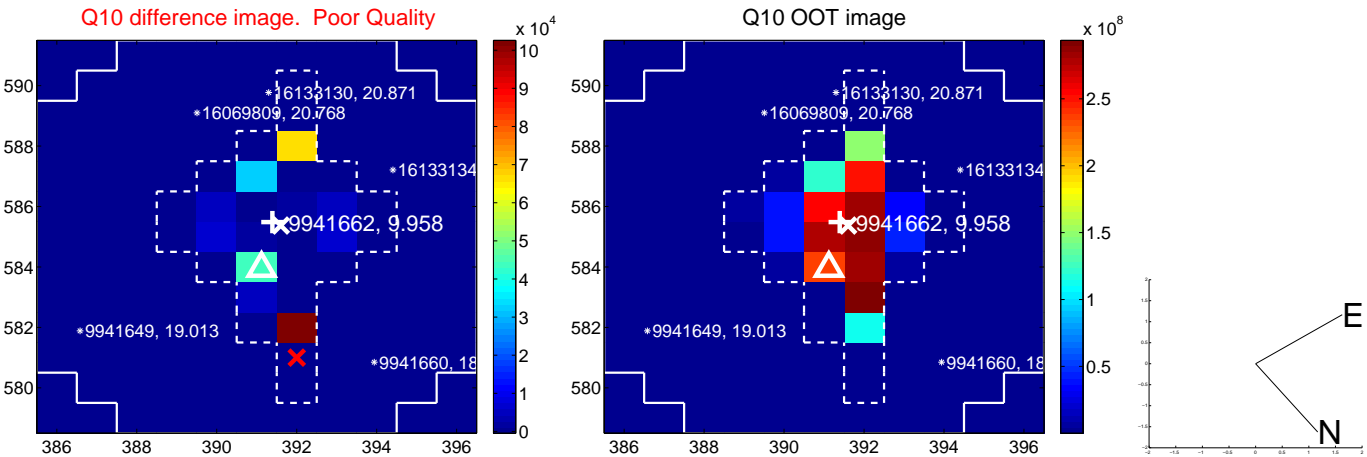
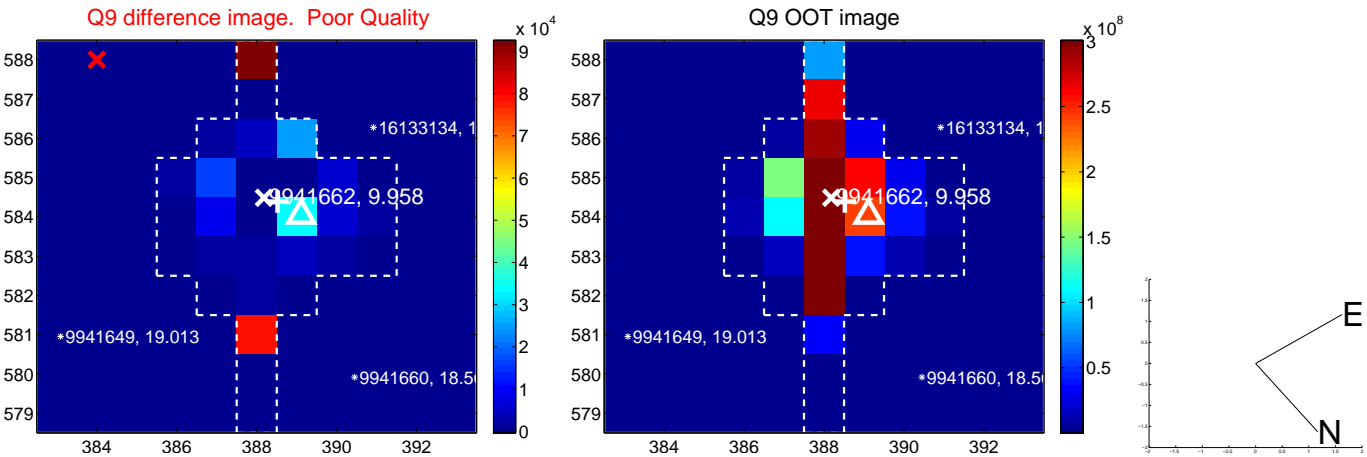
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



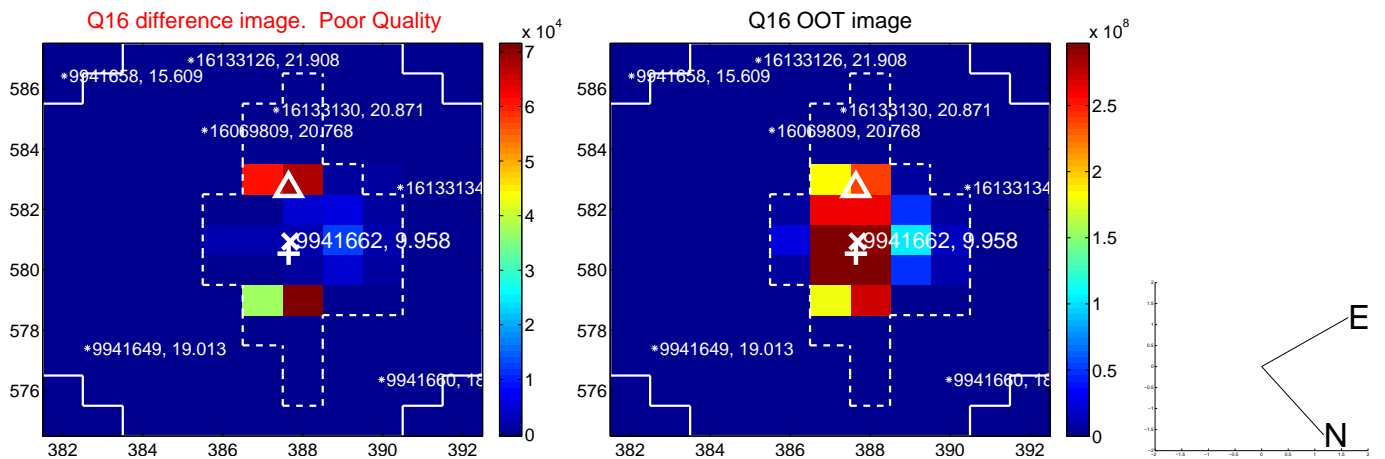
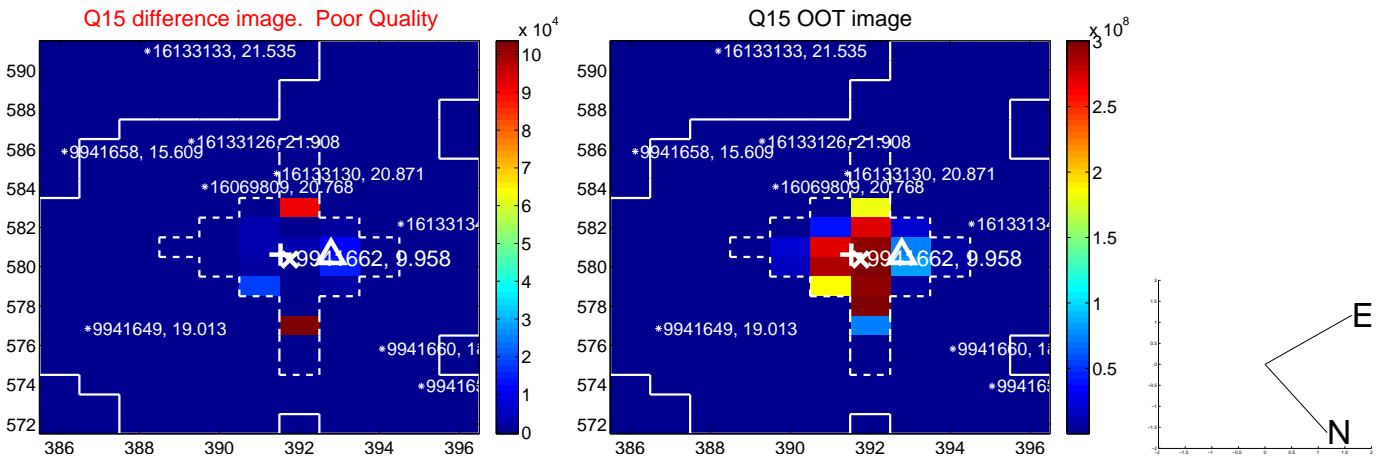
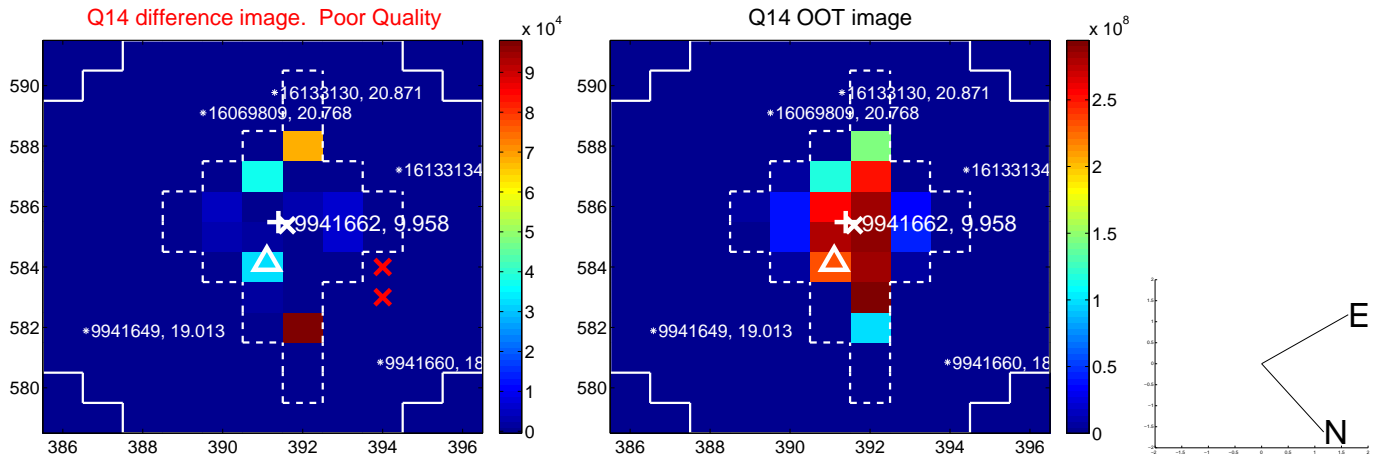
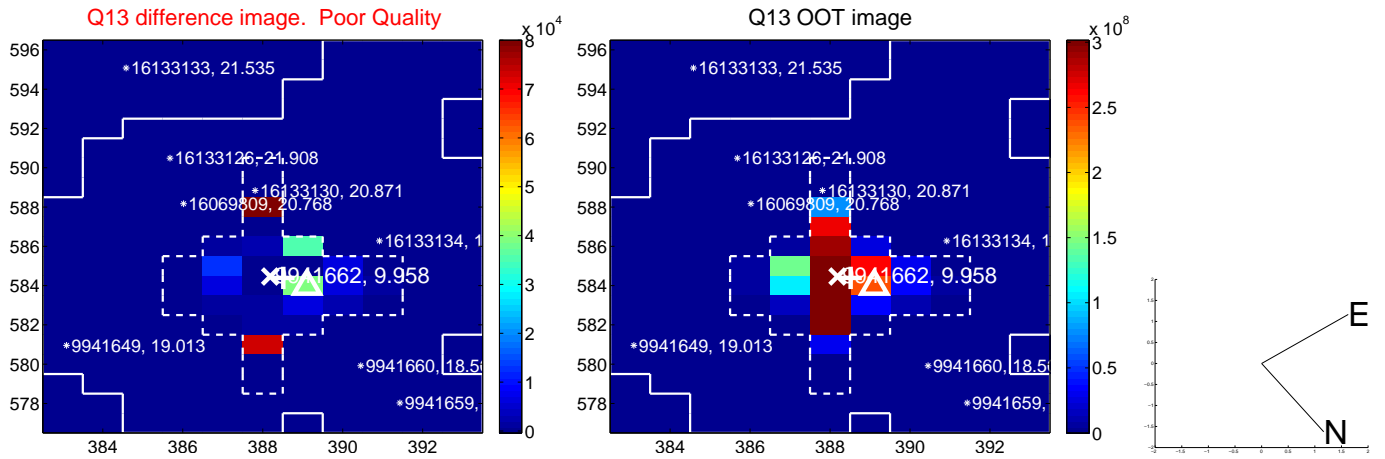
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



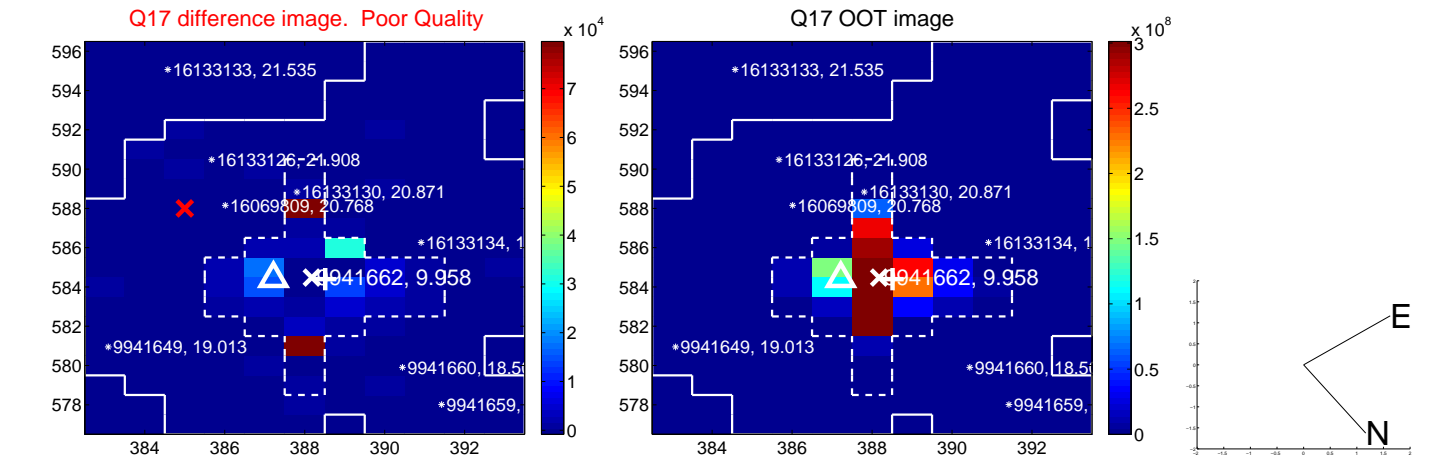
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



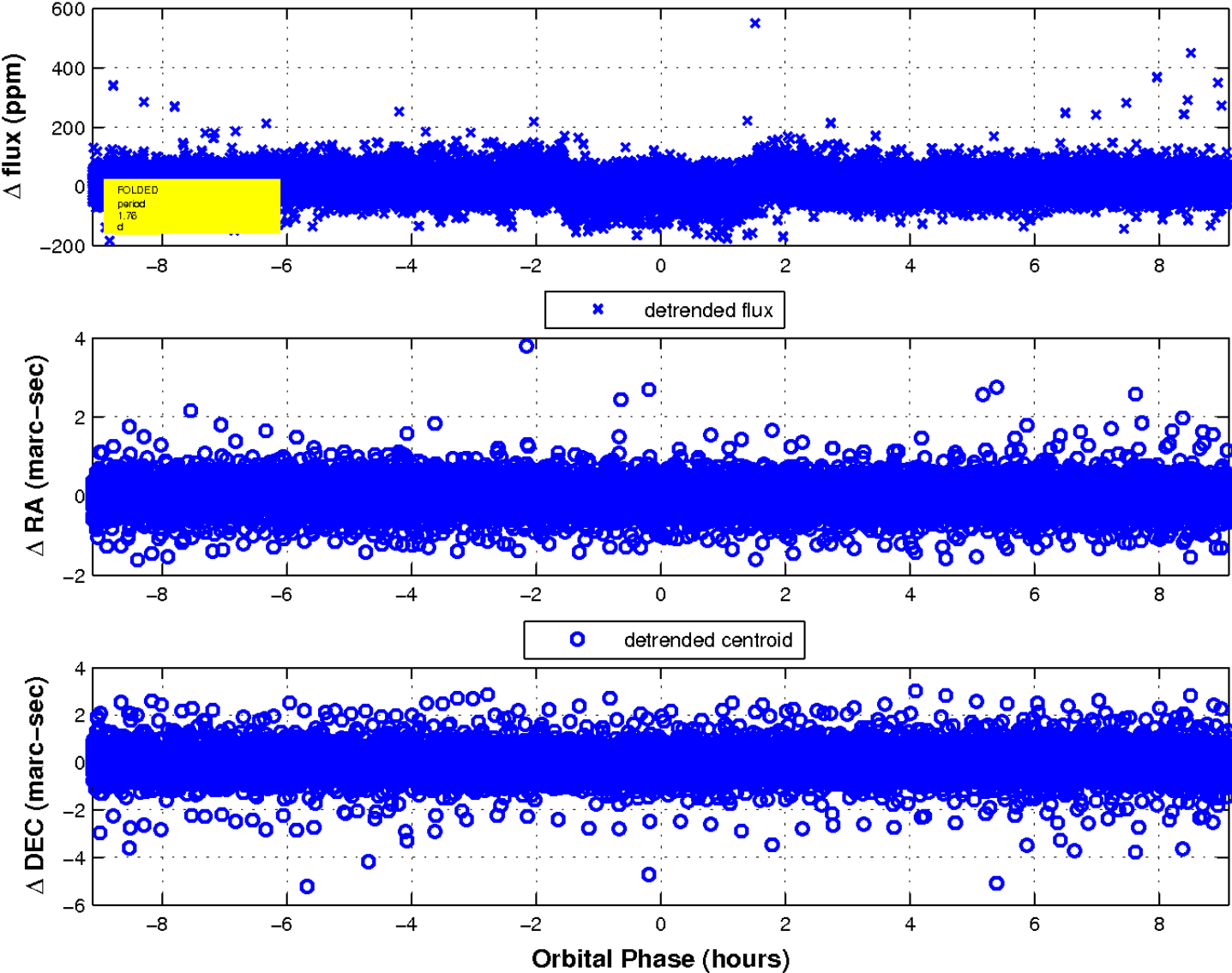
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

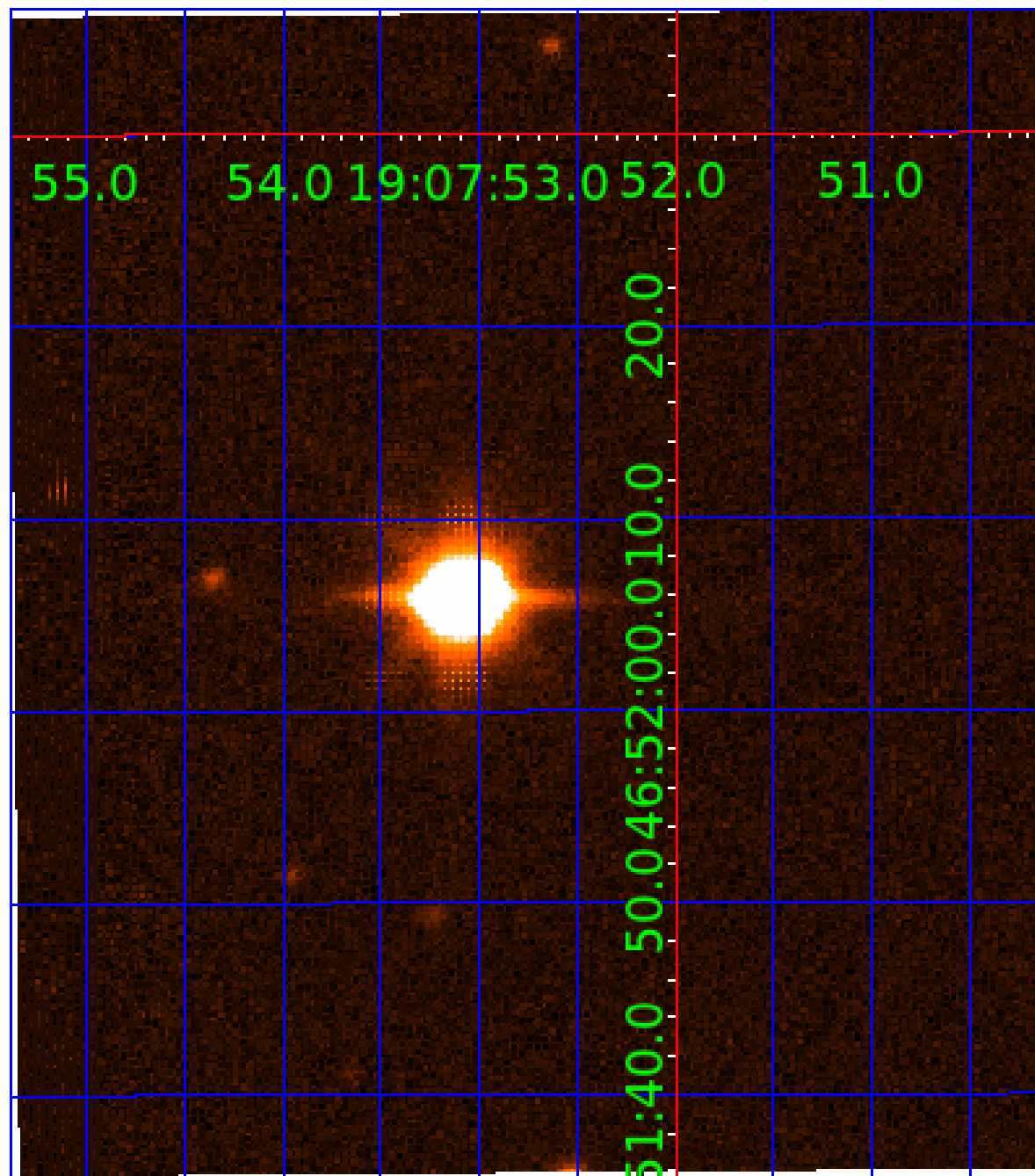


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 009941662

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})
009941662-01	OBS	0013.01	1.763587	132.911505	4564.4	3.180	6790.6	5051.9	3.03	9107	21.55	37983.12
009941662-02	OBS	No	1.763570	132.033959	26.7	3.040	28.5	40.3	3.03	9107	1.81	37983.61
009941662-03	OBS	No	0.540862	131.778455	5.6	6.490	8.4	13.3	3.03	9107	0.73	183655.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009941662-01	OBS	PC	0.88	0	1	0	0	MOD_SEC_DV—PLANET_OCCULT_DV—MOD_SEC_ALT—PLANET_OCCULT_ALT—HAS_SEC_TCE—CENT_SATURATED
009941662-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
009941662-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—CENT_SATURATED

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

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

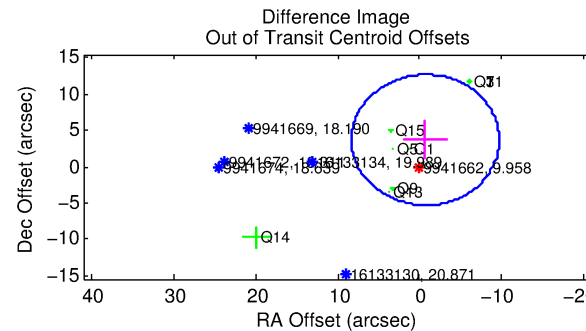
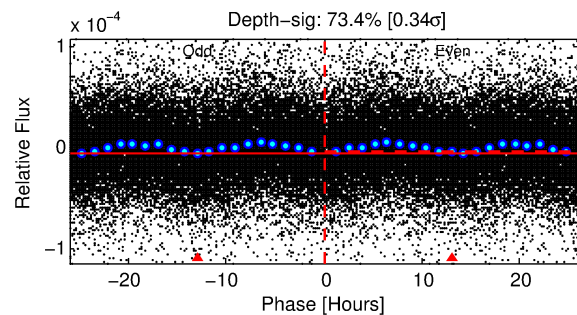
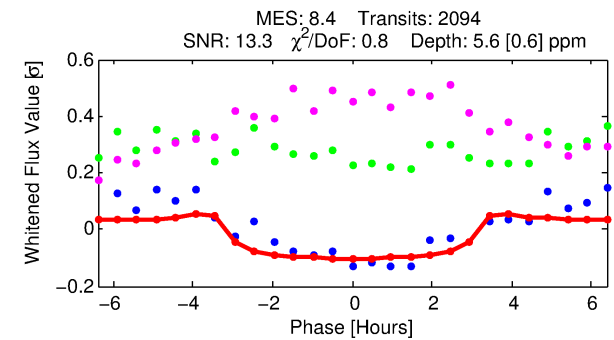
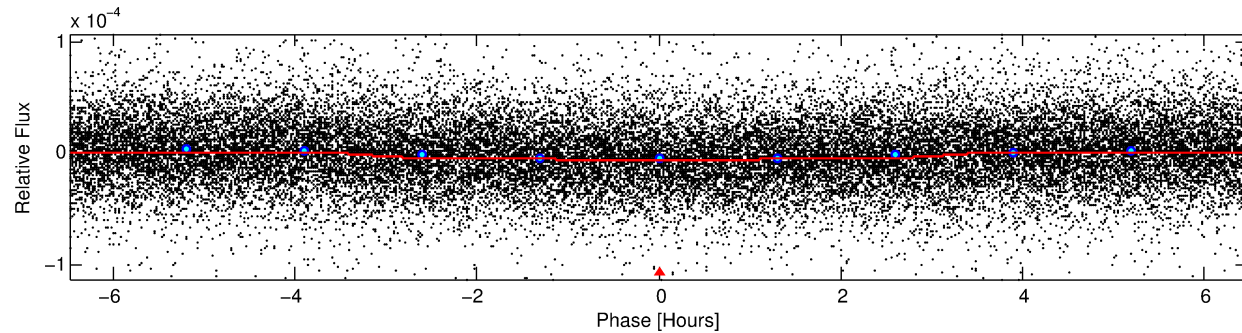
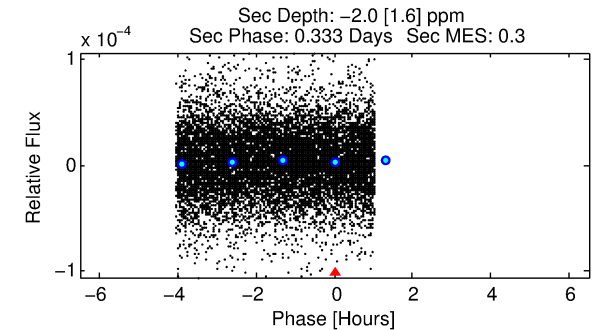
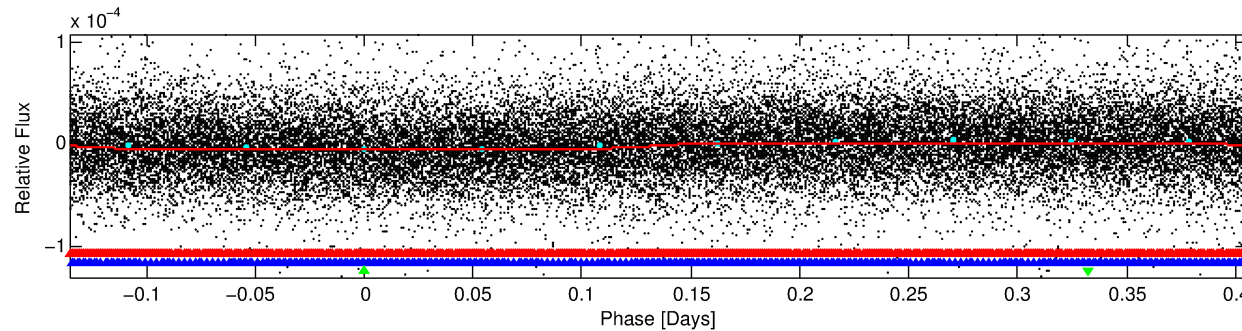
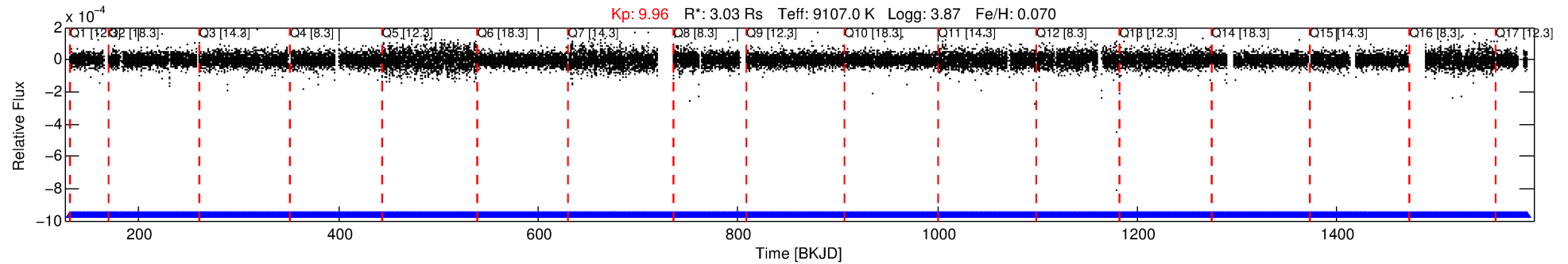
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009941662-03

No Significant Match Found

DV One-Page Summary

KIC: 9941662 Candidate: 3 of 3 Period: 0.541 d
KOI: K00013 Name: Kepler-13 Corr: No Ephemeris Match



DV Fit Results:

Period = 0.54086 [0.00001] d
Epoch = 131.7785 [0.0033] BKJD
Rp/R* = 0.0022 [0.0006]
a/R* = 1.00 [0.00]
b = 0.15 [12.25]
Seff = 183655.74 [116475.14]
Teq = 5279 [837] K
Rp = 0.73 [0.38] Re
a = 0.0176 [0.0069] AU
Ag = N/A
Teffp = N/A

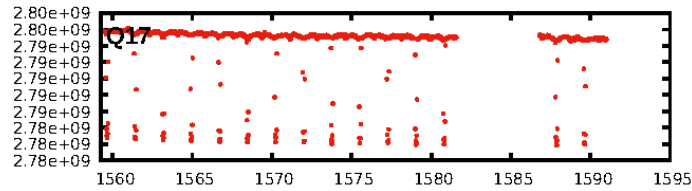
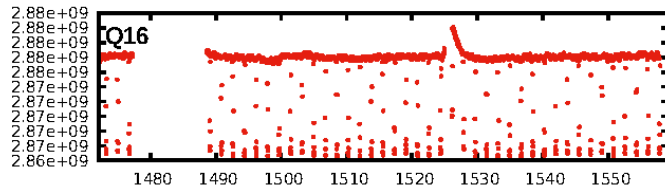
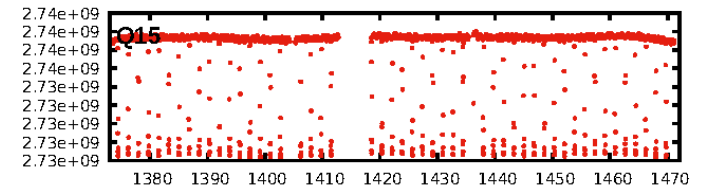
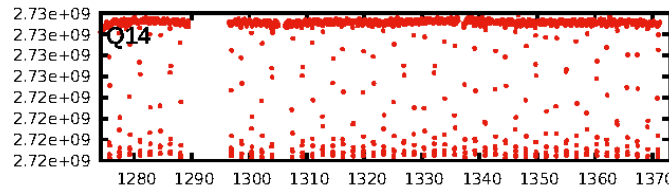
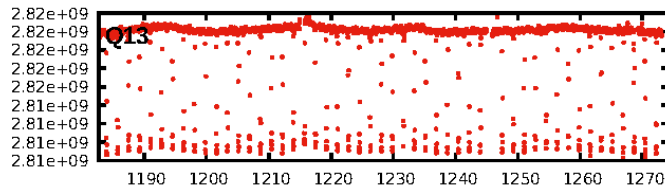
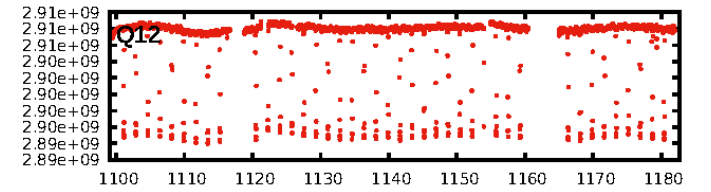
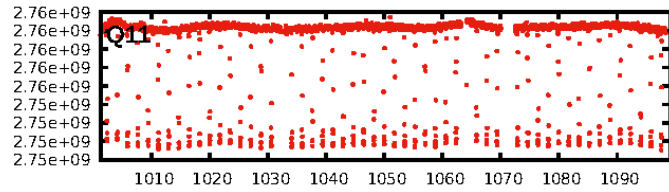
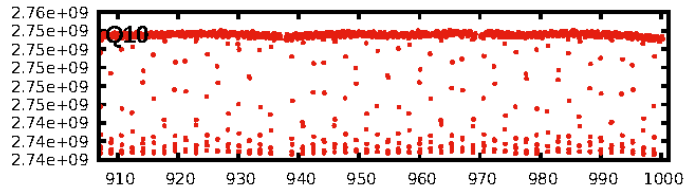
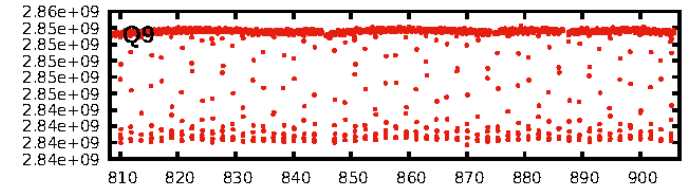
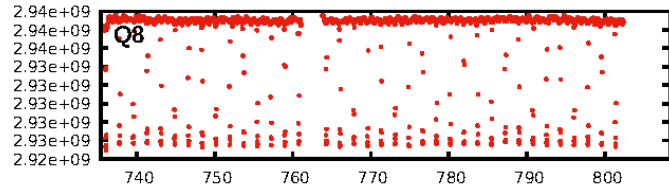
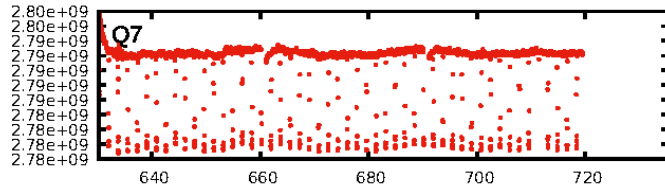
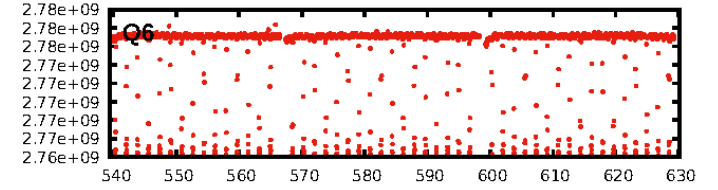
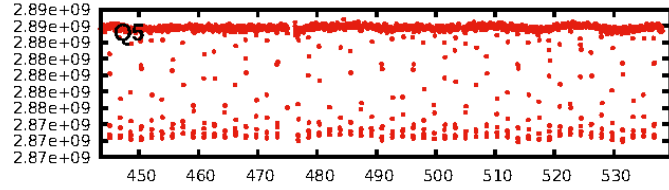
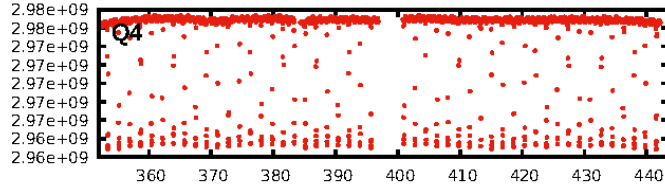
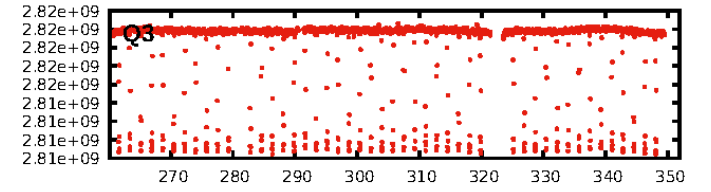
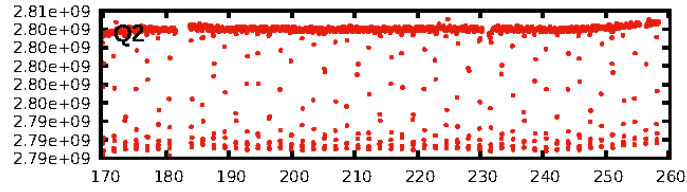
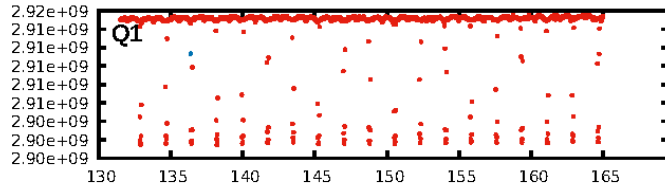
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.09σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2000/2000]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 5.213 arcsec [5.84σ]
OotOffset-rm: 3.753 arcsec [1.25σ]
KicOffset-rm: 4.164 arcsec [1.68σ]
OotOffset-st: 1/4/0/4 [9]
KicOffset-st: 1/4/0/4 [9]
DiffImageQuality-fgm: 0.00 [0/9]
DiffImageOverlap-fno: 1.00 [17/17]

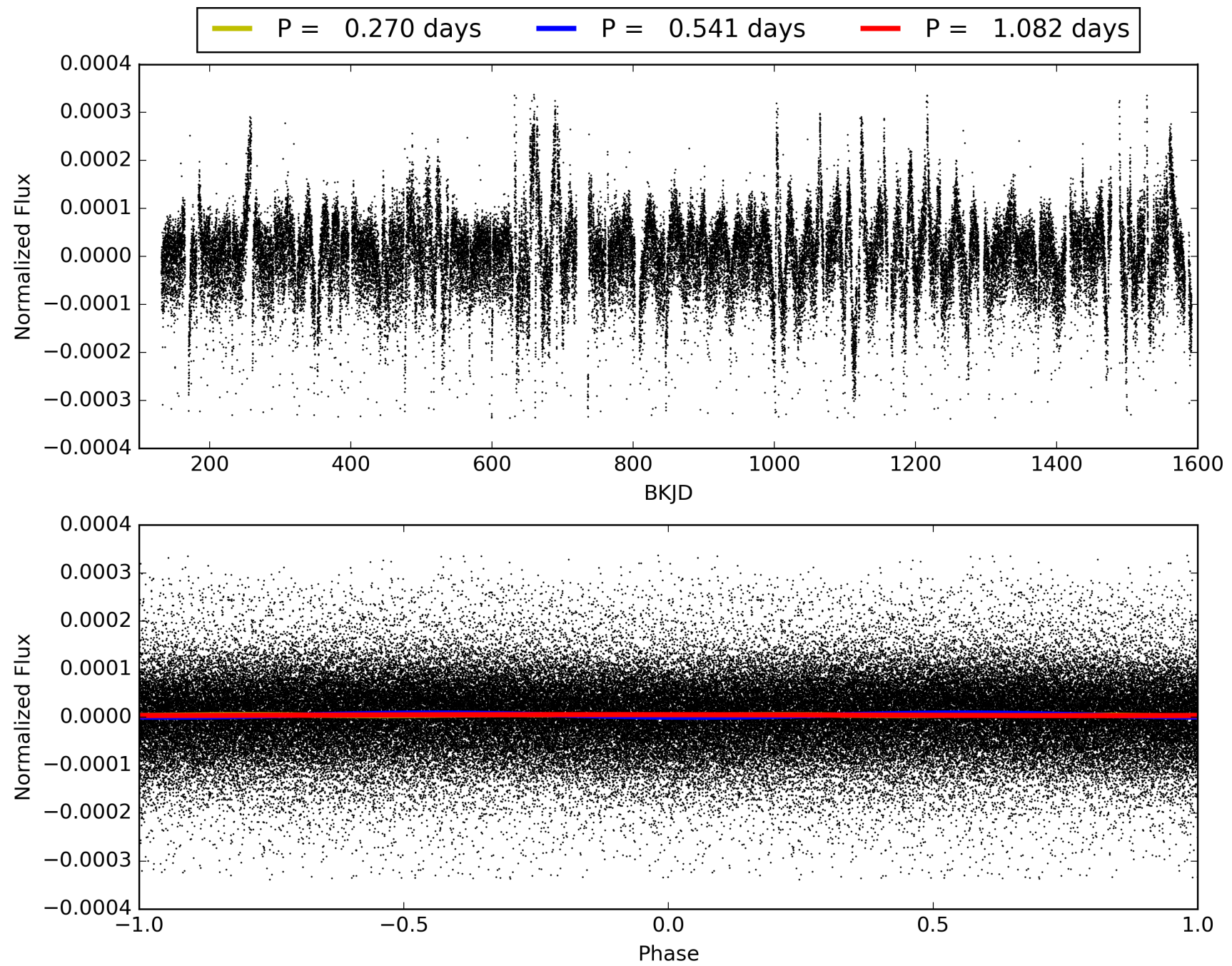
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:41:40 Z

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

TCE 009941662-03, PDC Light Curves

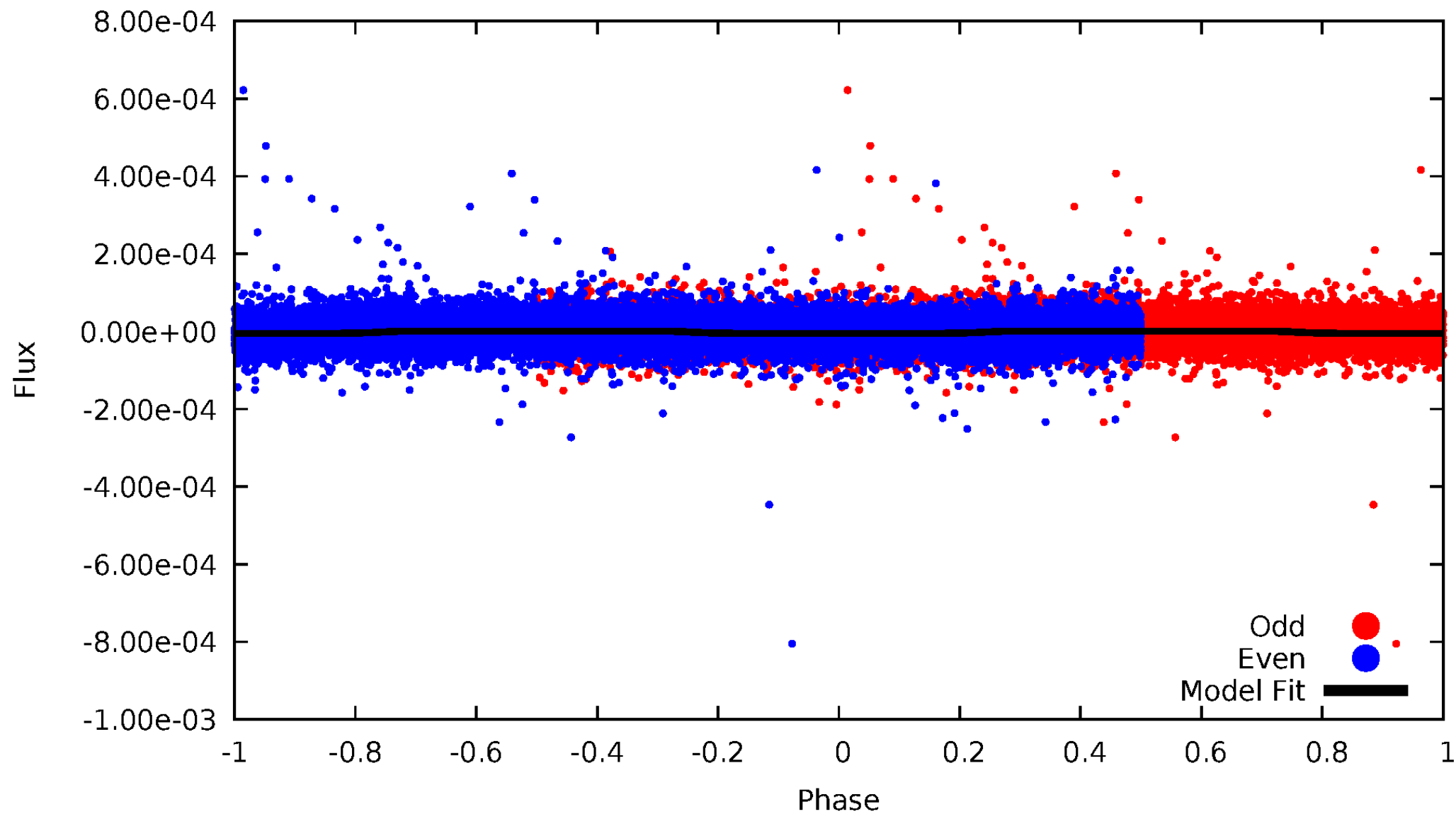


TCE 009941662-03



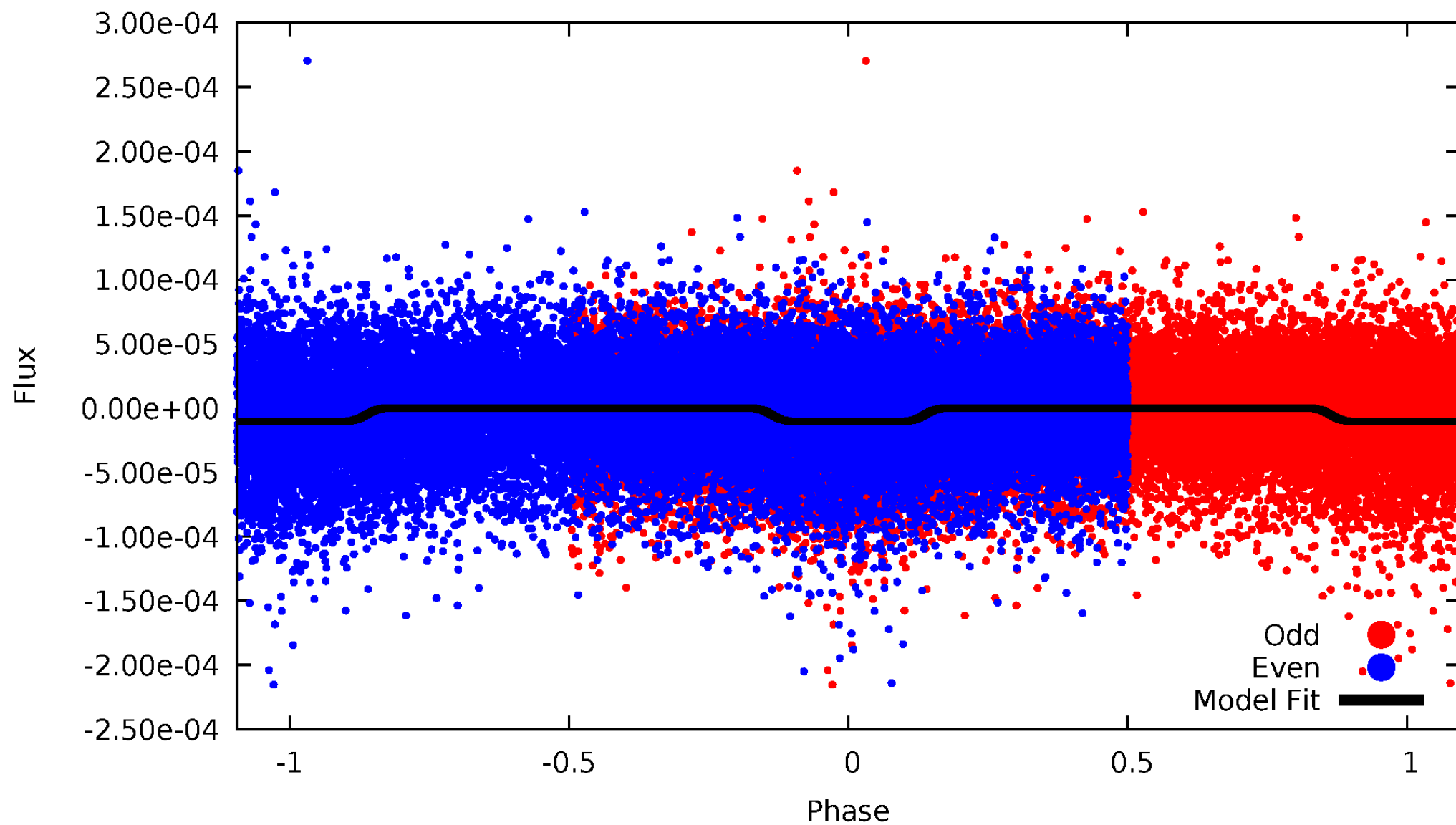
DV Odd/Even

TCE 009941662-03

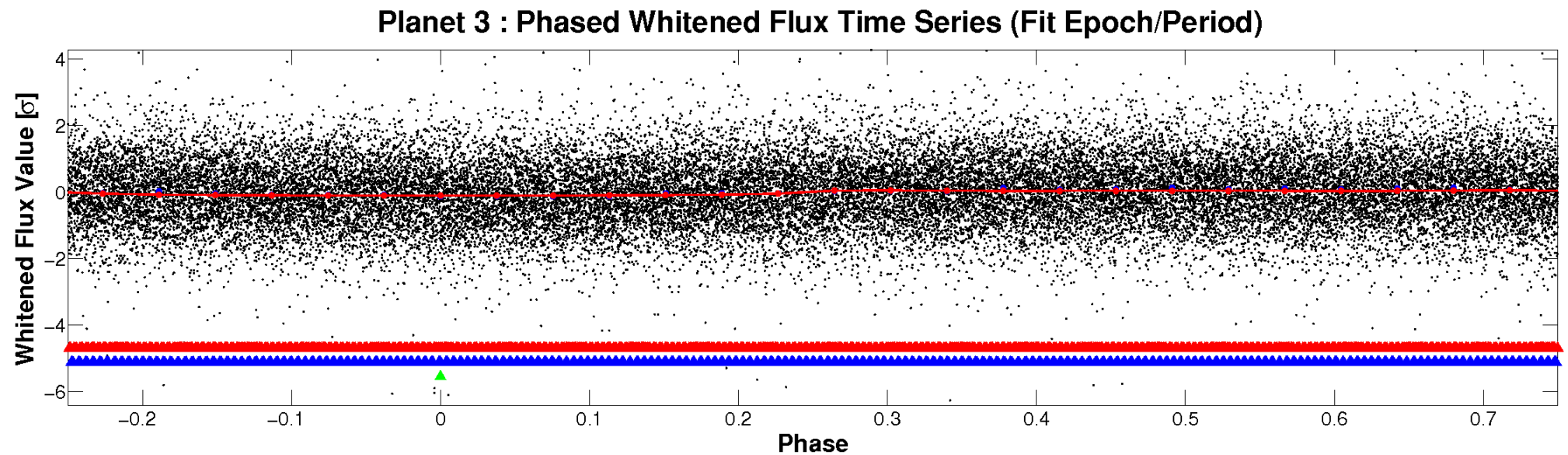
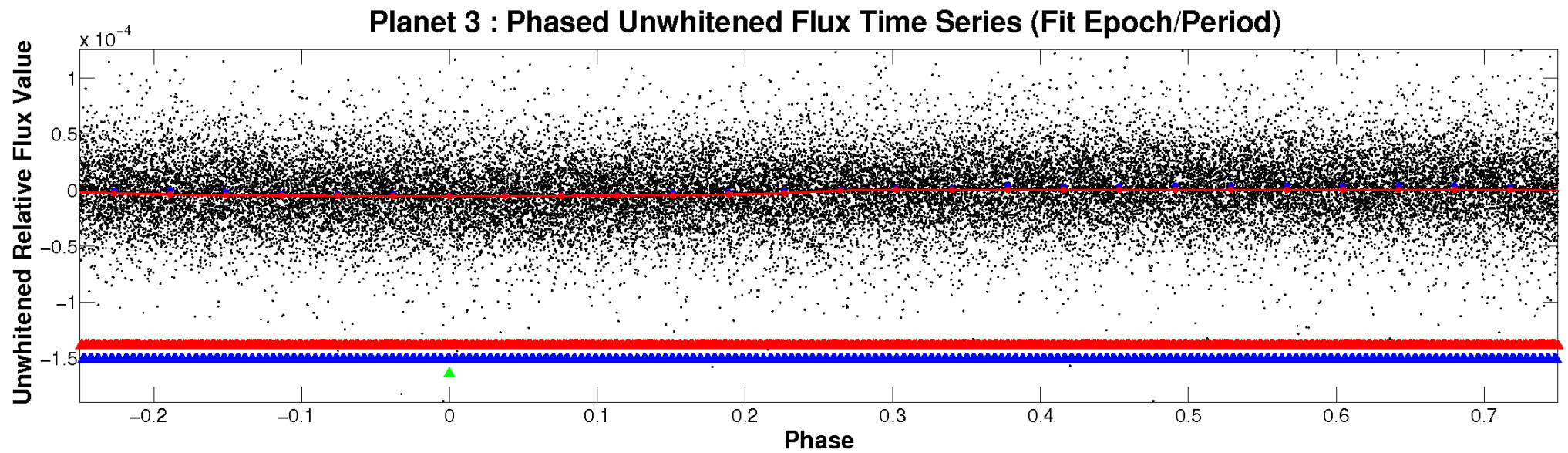


ALT Odd/Even

TCE 009941662-03

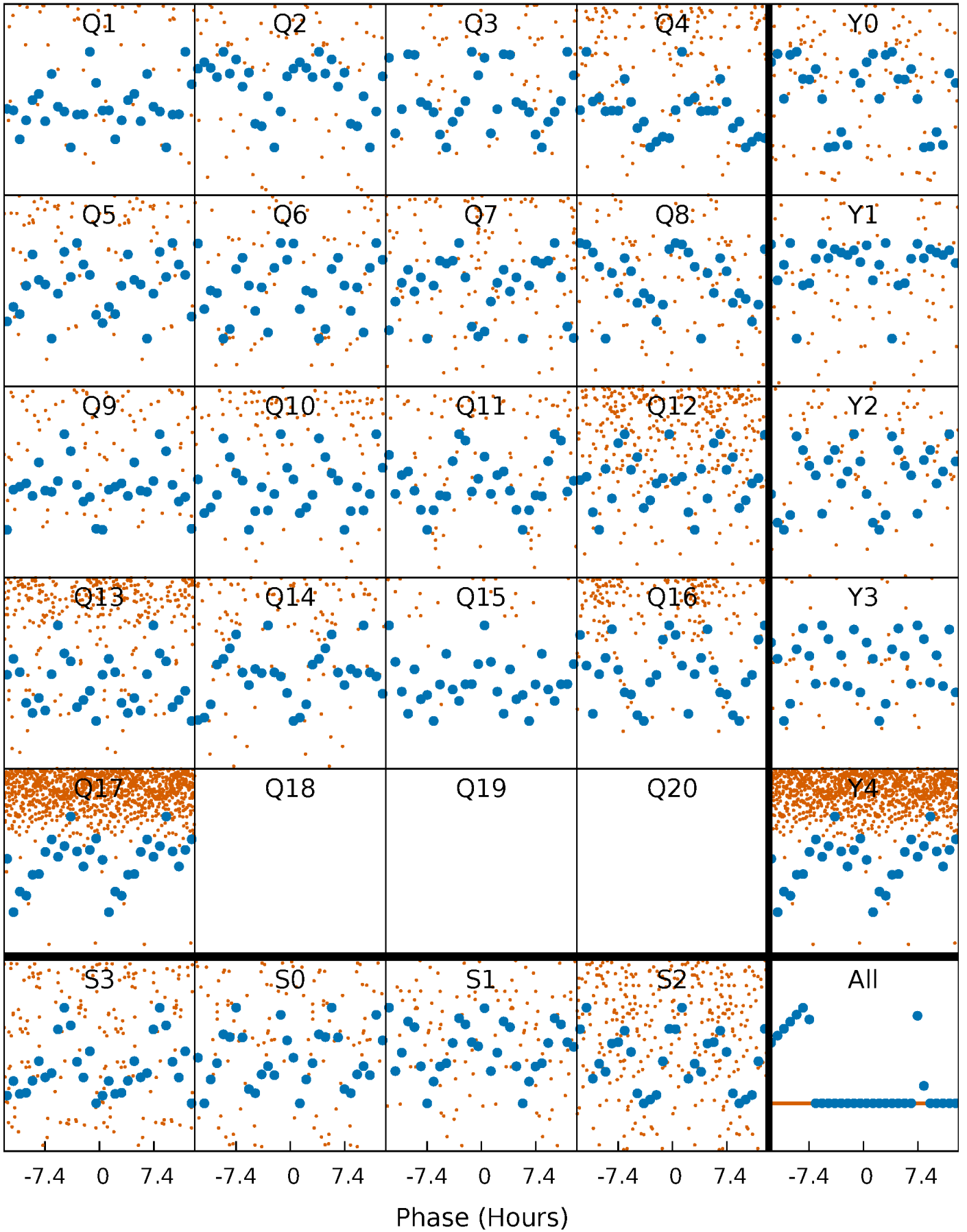


Non-Whitened Vs. Whitened Light Curve



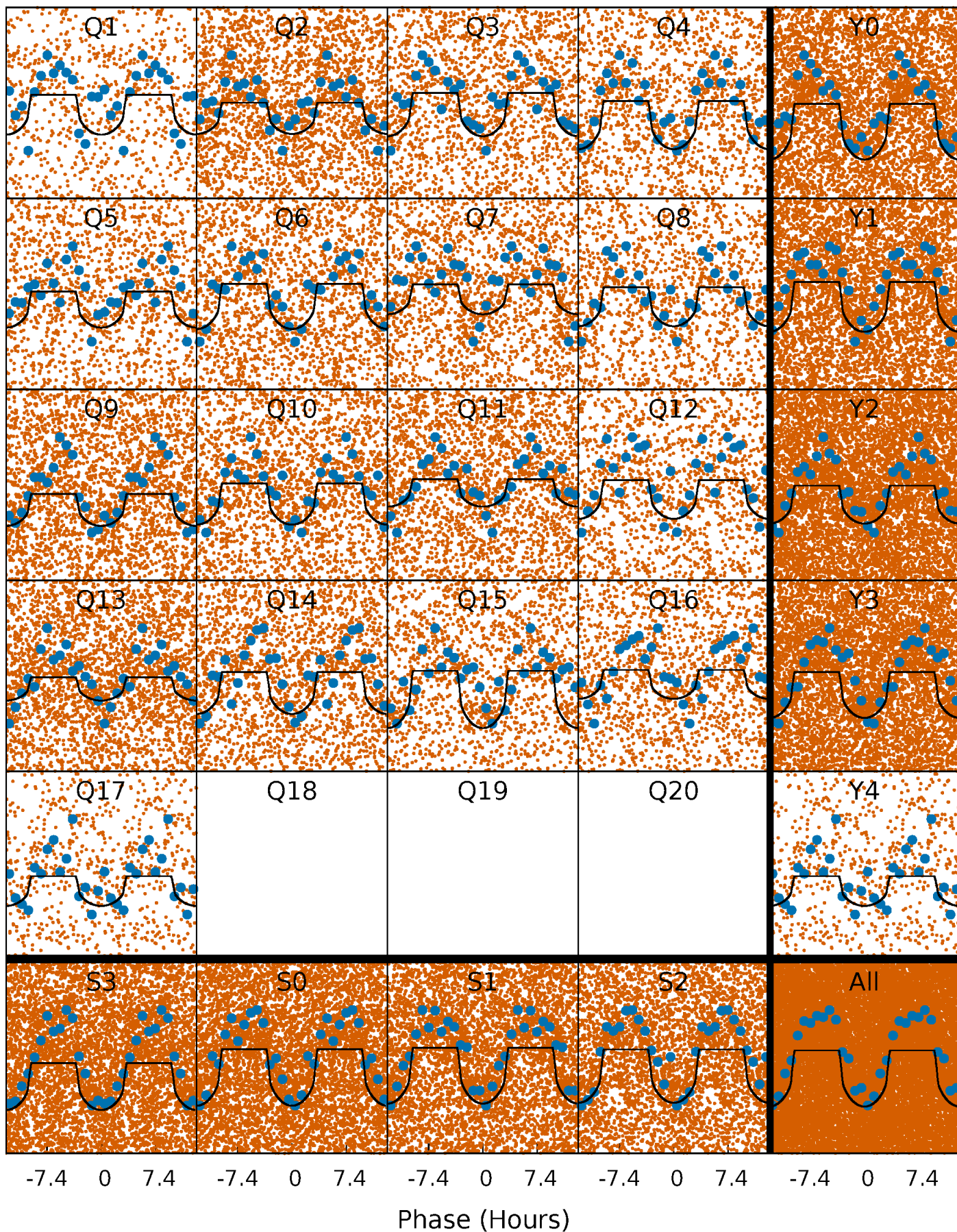
PDC Quarter-Phased Transit Curves

TCE 009941662-03 $P = 0.540862$ Days $T_0 = 131.778455$ (BKJD)



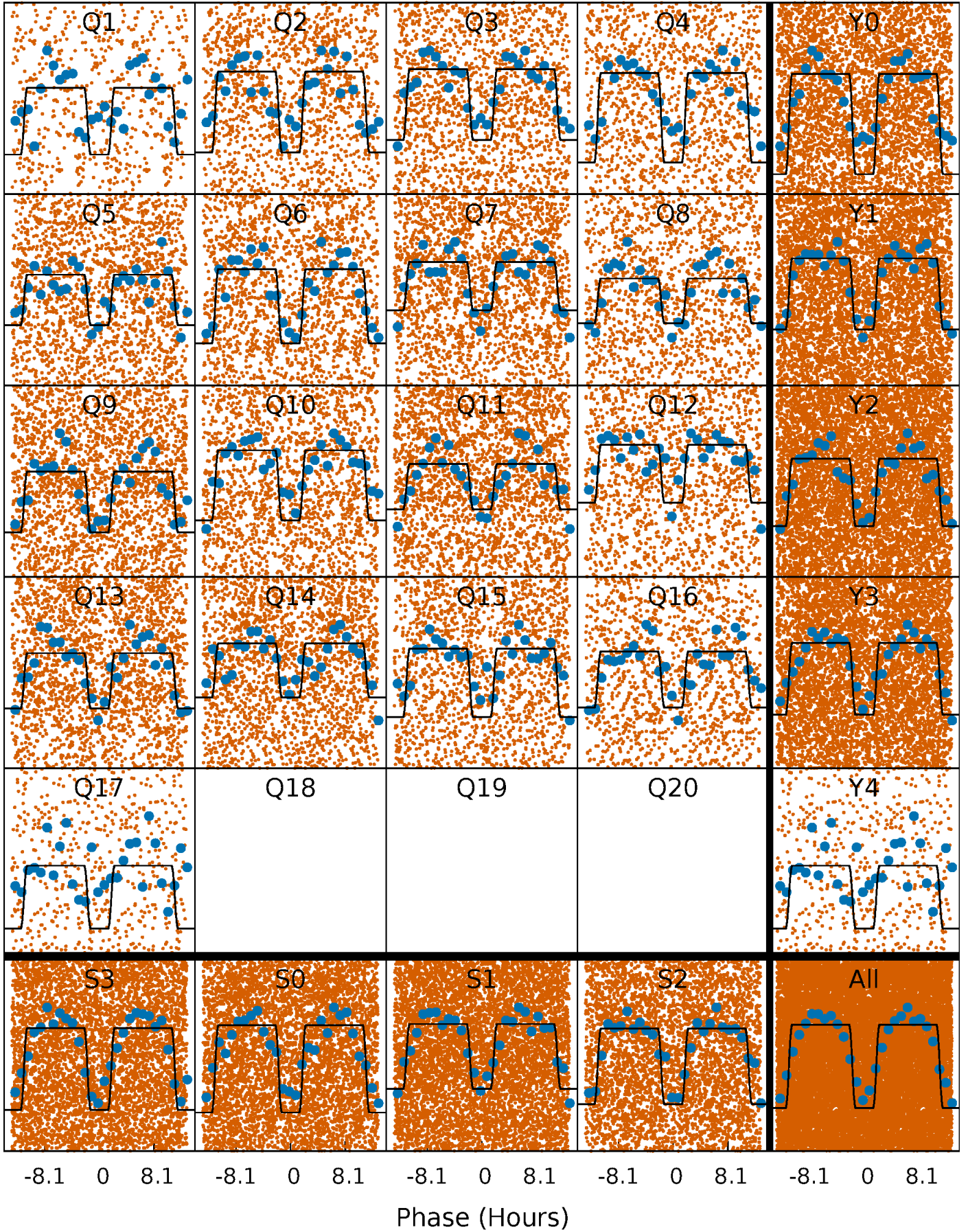
DV Quarter-Phased Transit Curves

TCE 009941662-03 $P = 0.540862$ Days $T_0 = 131.778455$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

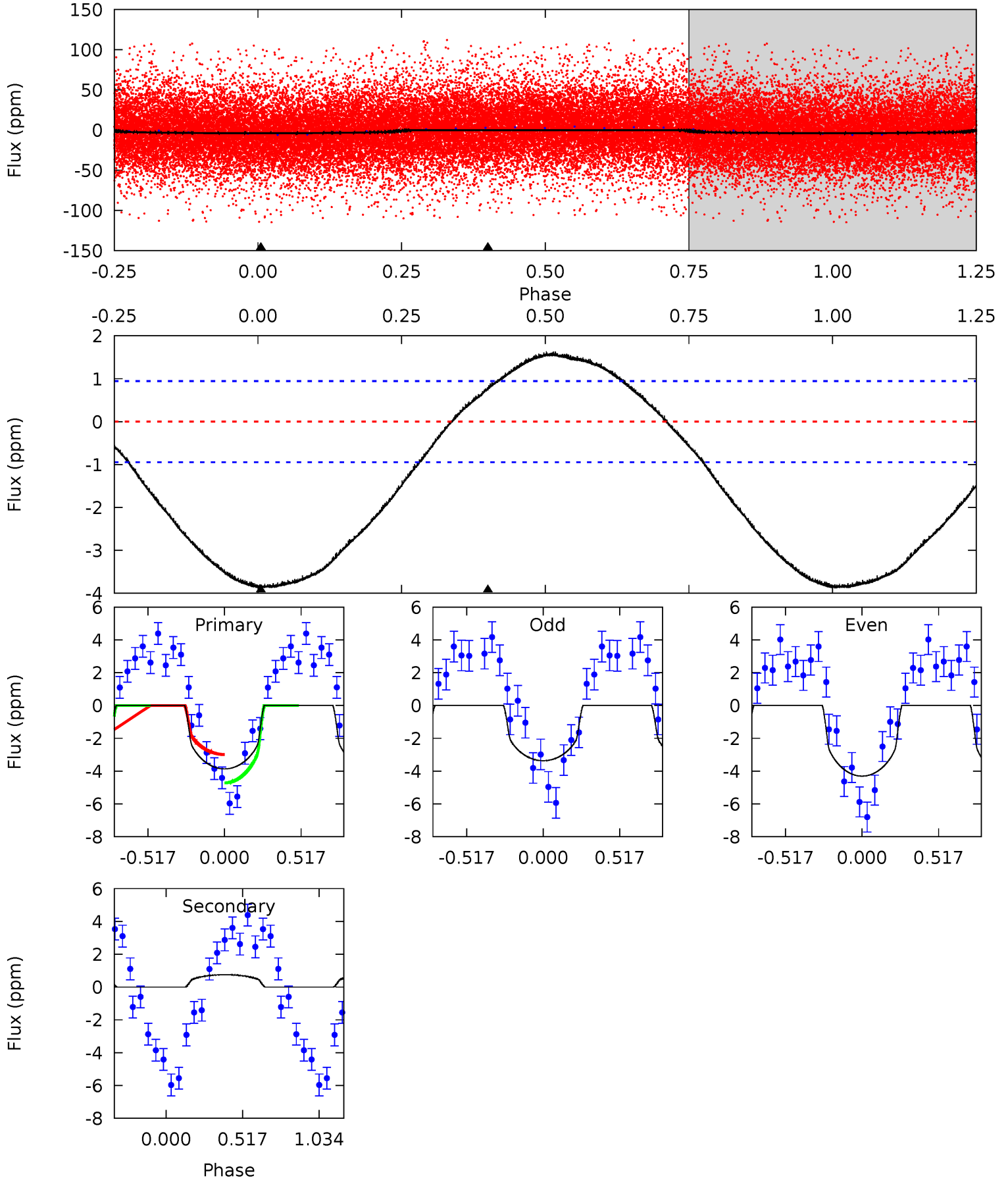
TCE 009941662-03 P= 0.540887 Days $T_0=131.765631$ (BKJD)



DV Model-Shift Uniqueness Test

009941662-03, P = 0.540862 Days, E = 131.237593 Days

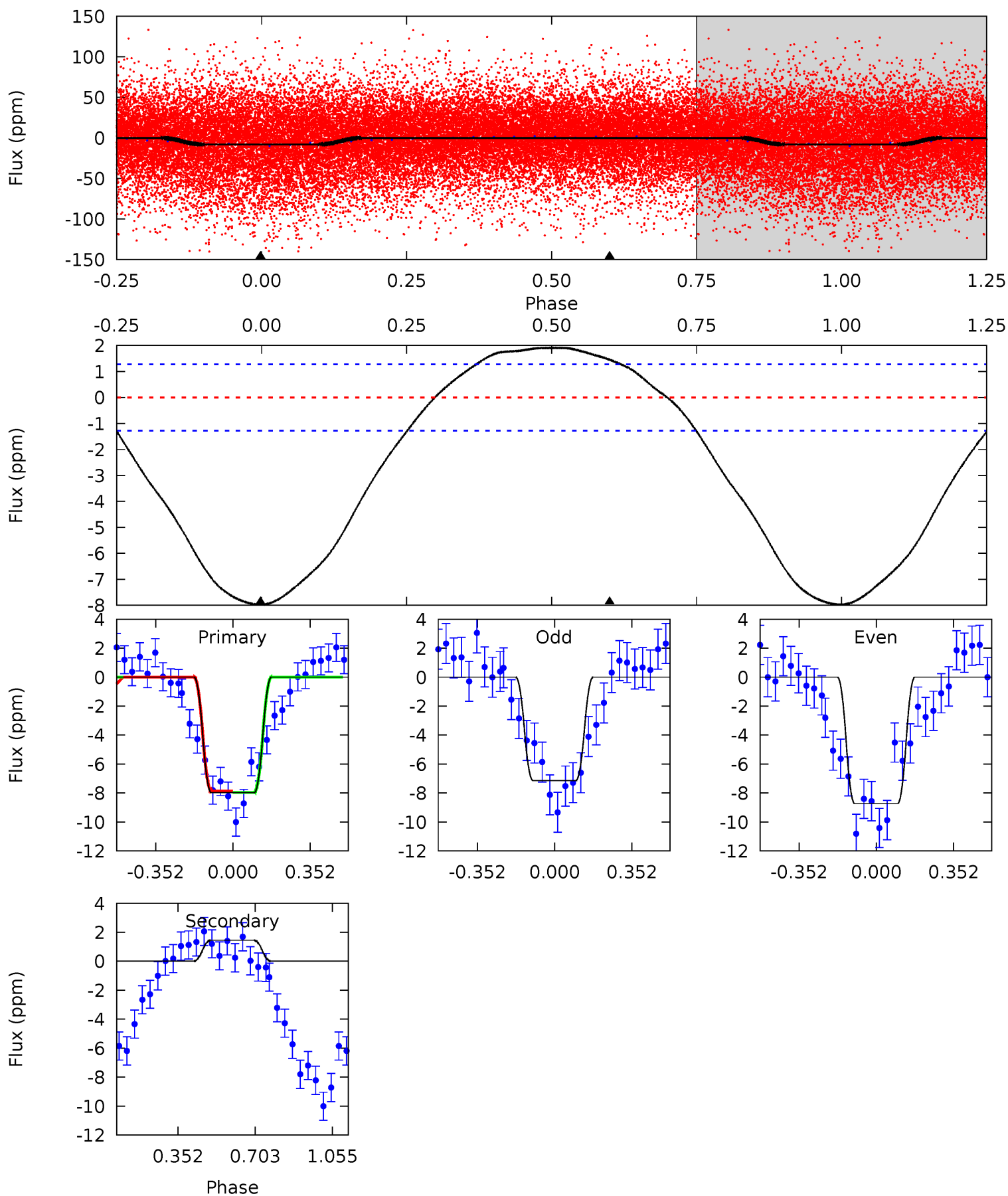
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	-3.35	0	0	4.21	0.65	1.85	17.2	17.2	-3.35	-3.35	2.11	0.80	0.30	3.99



Alt Model-Shift Uniqueness Test

009941662-03, P = 0.540887 Days, E = 131.224744 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.8	-4.88	0	0	4.29	0.93	2.30	26.8	26.8	-4.88	-4.88	2.62	1.45	0.19	0.16



Stellar Parameters For KIC 009941662

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9107^{+242}_{-443}	$3.867^{+0.343}_{-0.147}$	$0.070^{+0.150}_{-0.700}$	$3.031^{+0.895}_{-1.342}$	$2.466^{+0.349}_{-0.872}$	$0.125^{+0.367}_{-0.055}$
	+3%/-5%	+9%/-4%	+214%/-1000%	+30%/-44%	+14%/-35%	+294%/-44%
Source	KIC0	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 009941662-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	1 ± 0	$0.67^{+0.24}_{-0.22}$	7186^{+606}_{-804}	-6582^{+575}_{-727}	$-0.273^{+0.136}_{-0.324}$
Alt.	1 ± 0	$1.00^{+0.29}_{-0.23}$	7229^{+588}_{-758}	-6502^{+529}_{-549}	$-0.237^{+0.096}_{-0.176}$

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

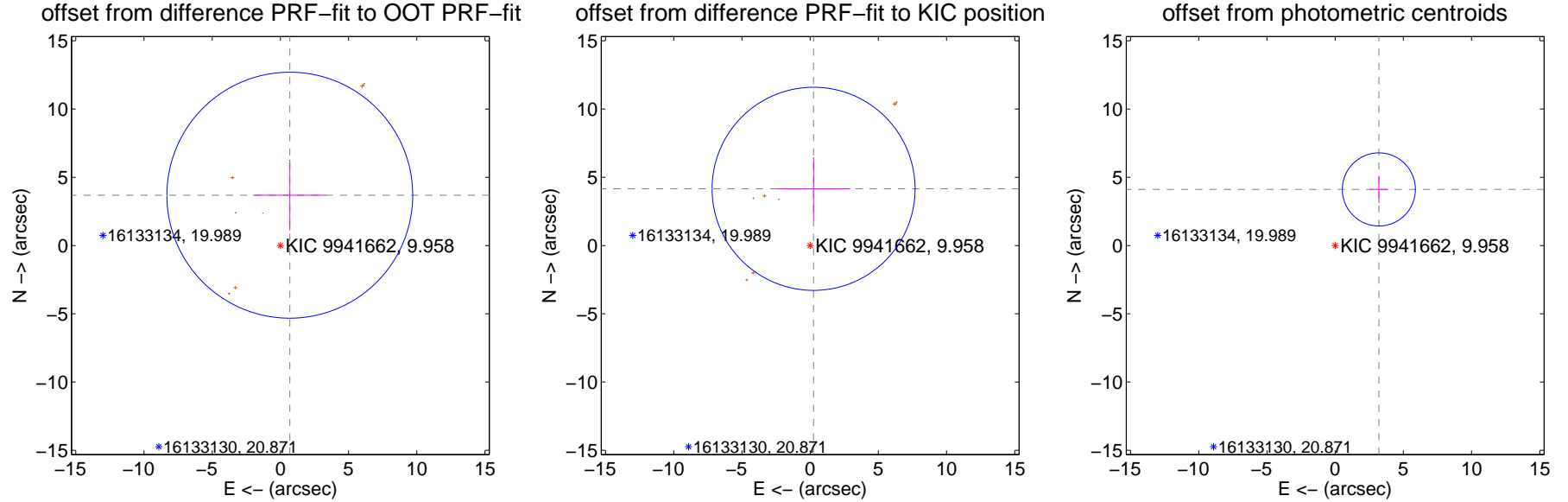
DV Centroid Data

Supplemental centroid analysis for 009941662-03. **Kepler magnitude: 9.96.** Transit SNR 13.35

There are 0 quarters with good PRF difference image offsets

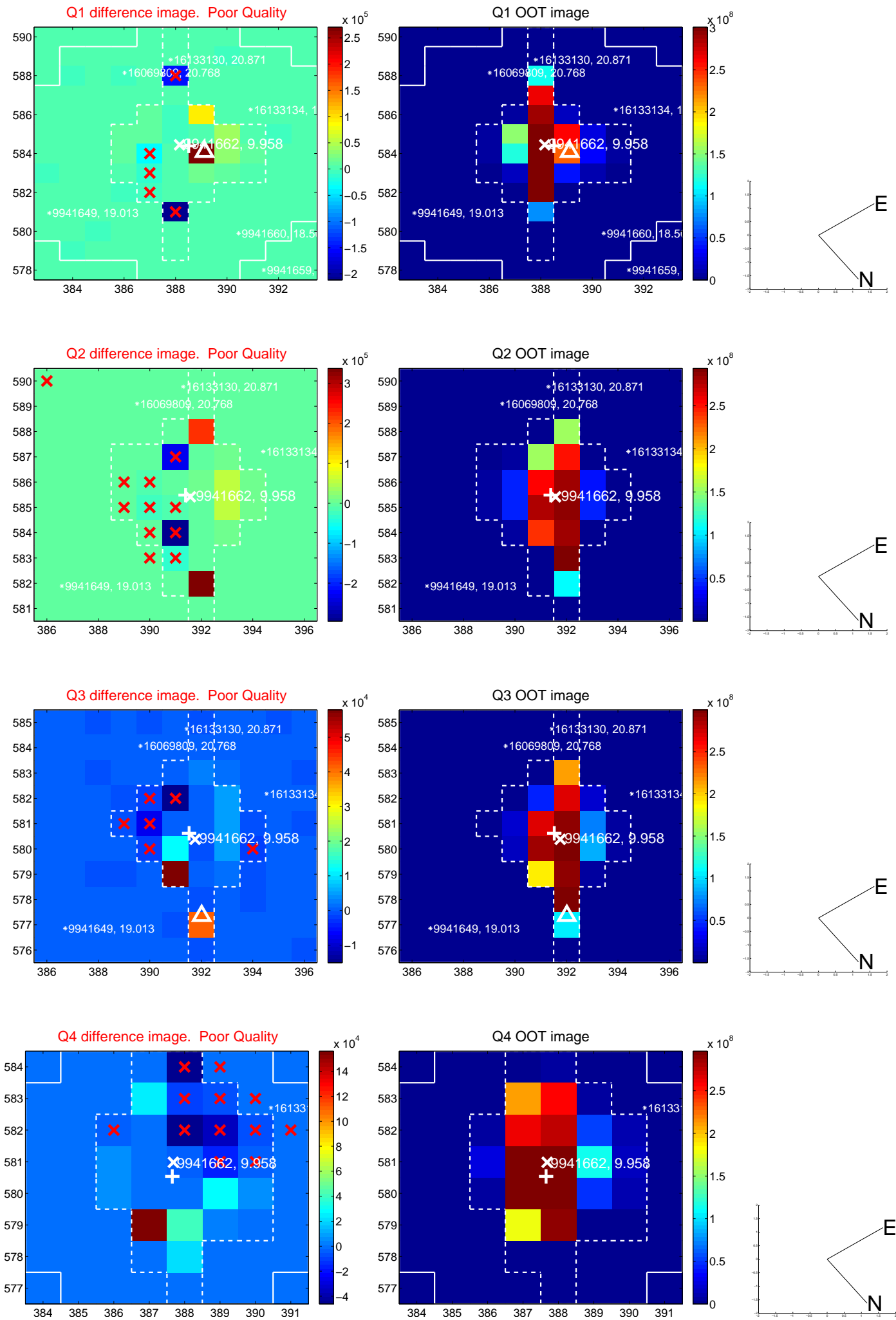
The direct PRF centroid is offset from the target star catalog position by about 1.35 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.753 ± 3.004	1.25	-0.690 ± 2.678	3.689 ± 2.591
PRF-fit source offset from KIC position	4.164 ± 2.481	1.68	-0.251 ± 2.681	4.157 ± 2.327
photometric centroid source offset	5.21 ± 0.89	5.84	-3.20 ± 0.68	4.11 ± 1.00

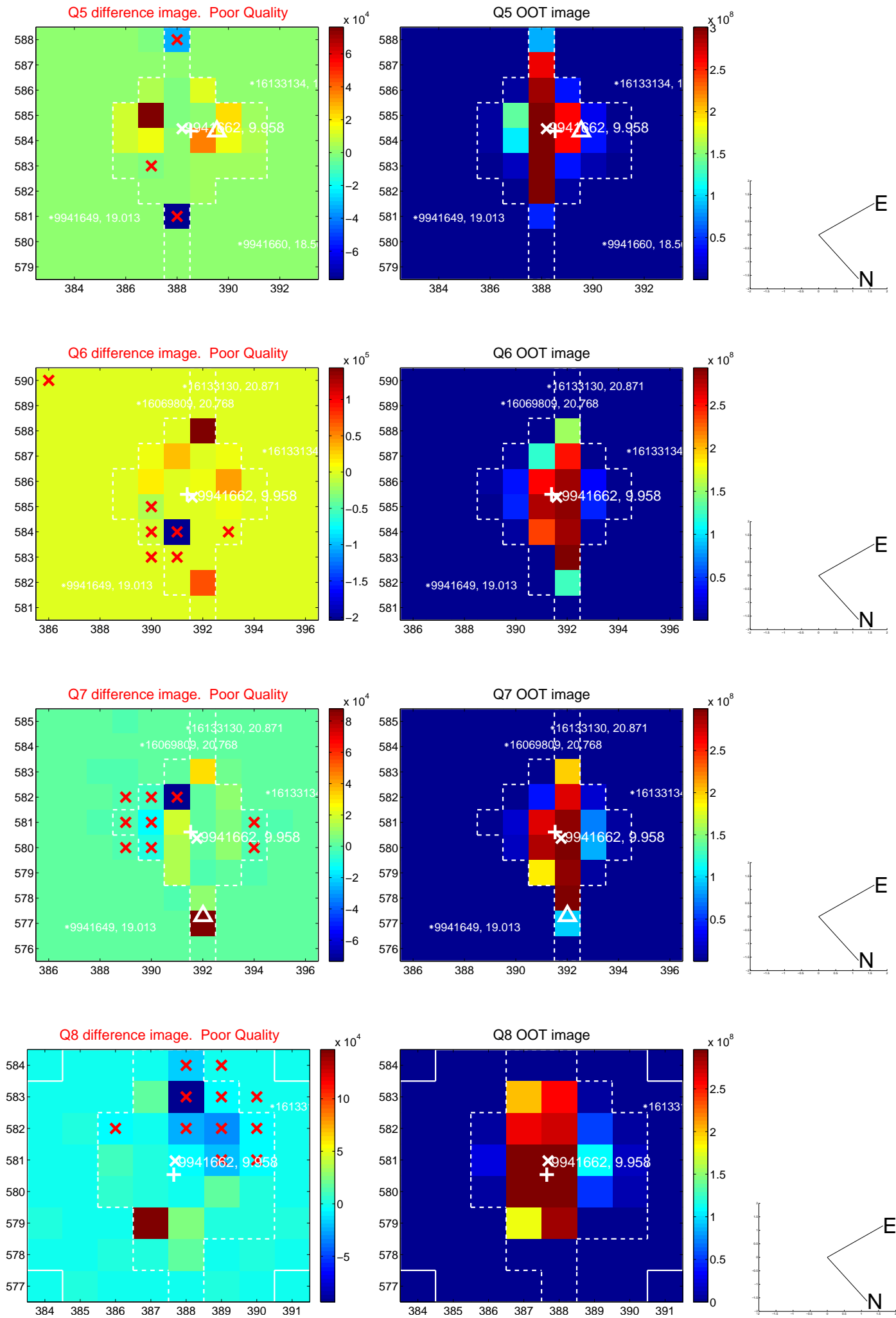


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

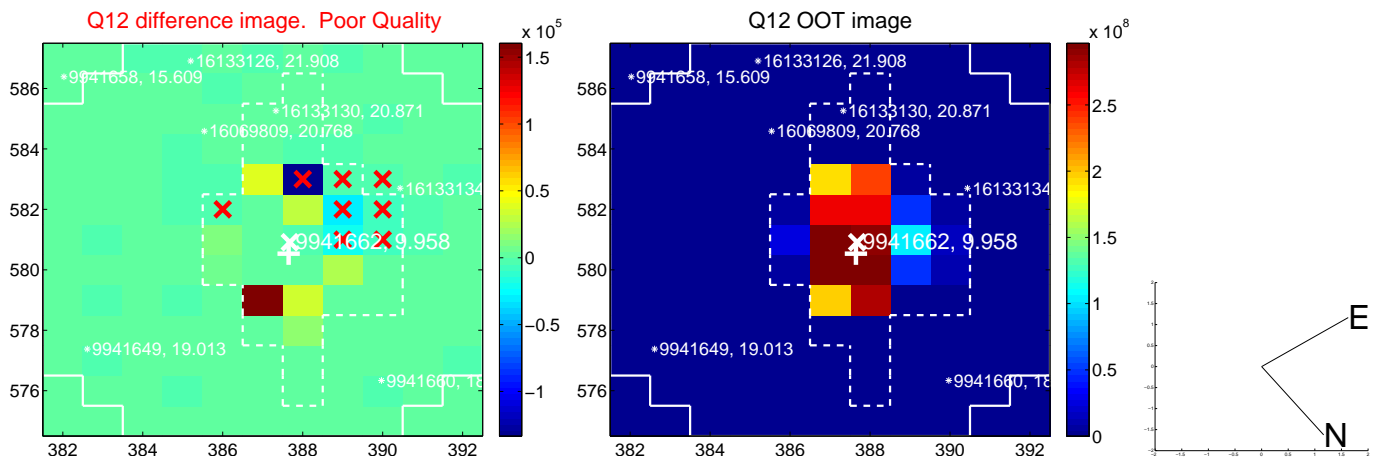
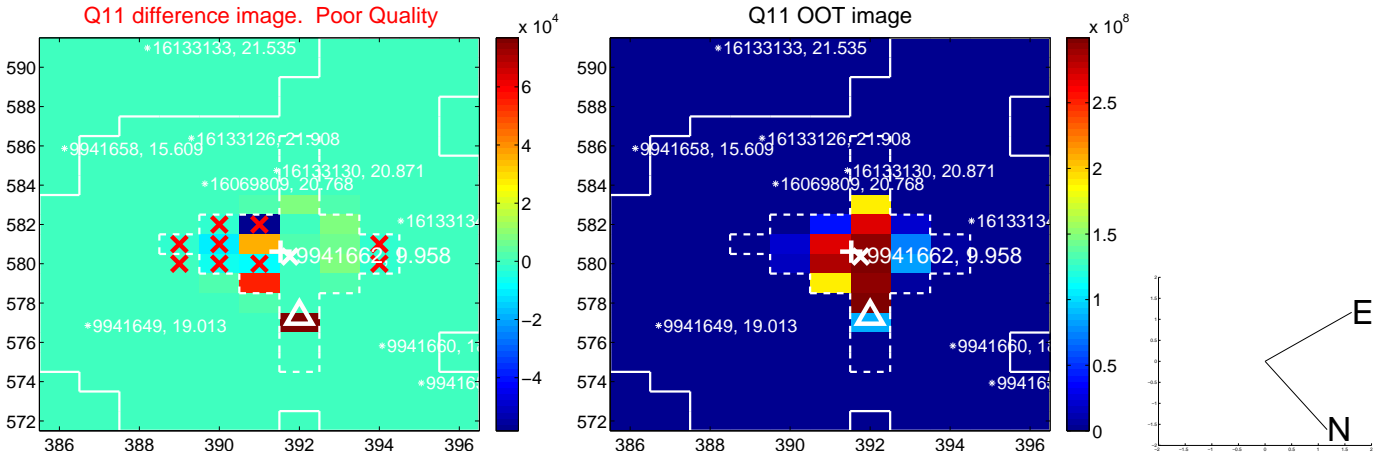
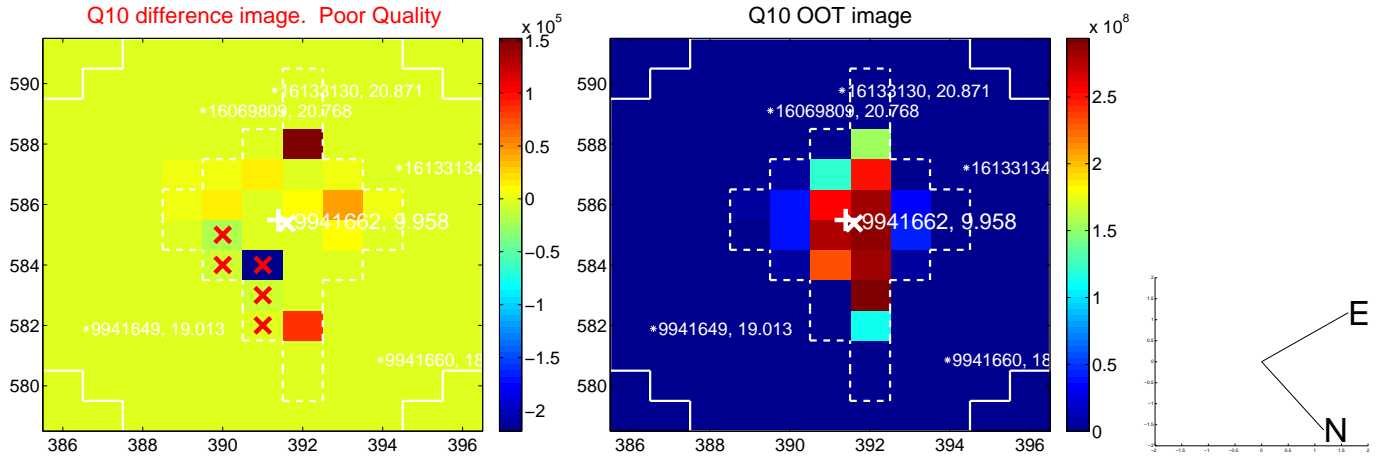
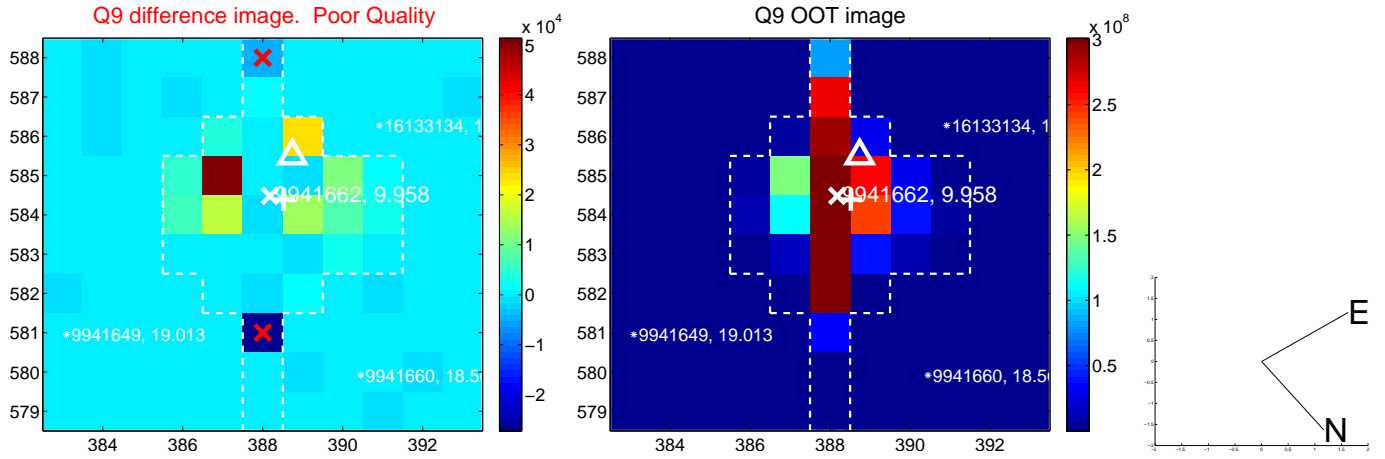
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



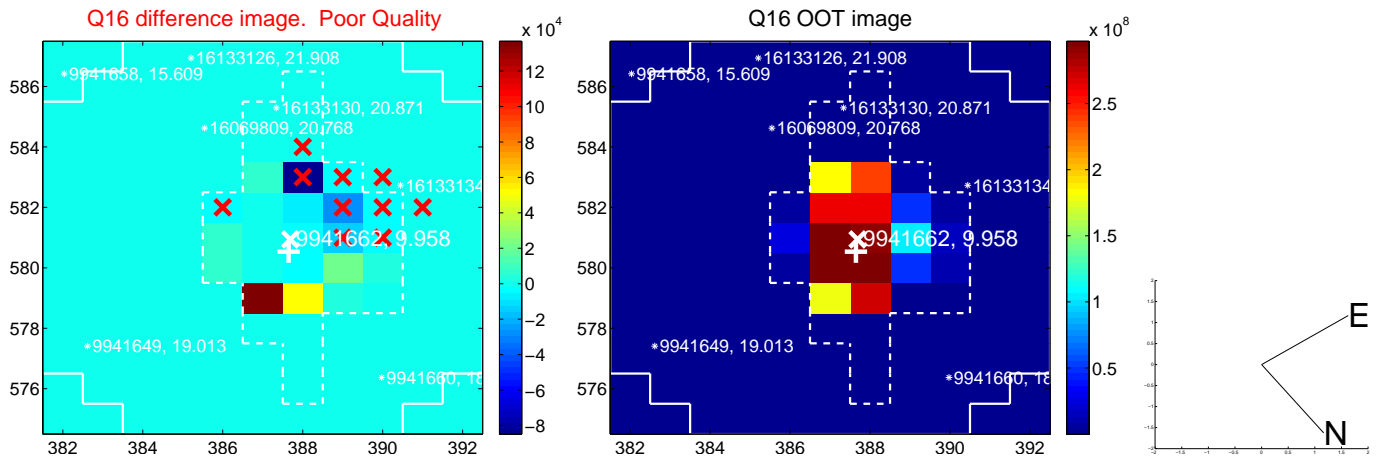
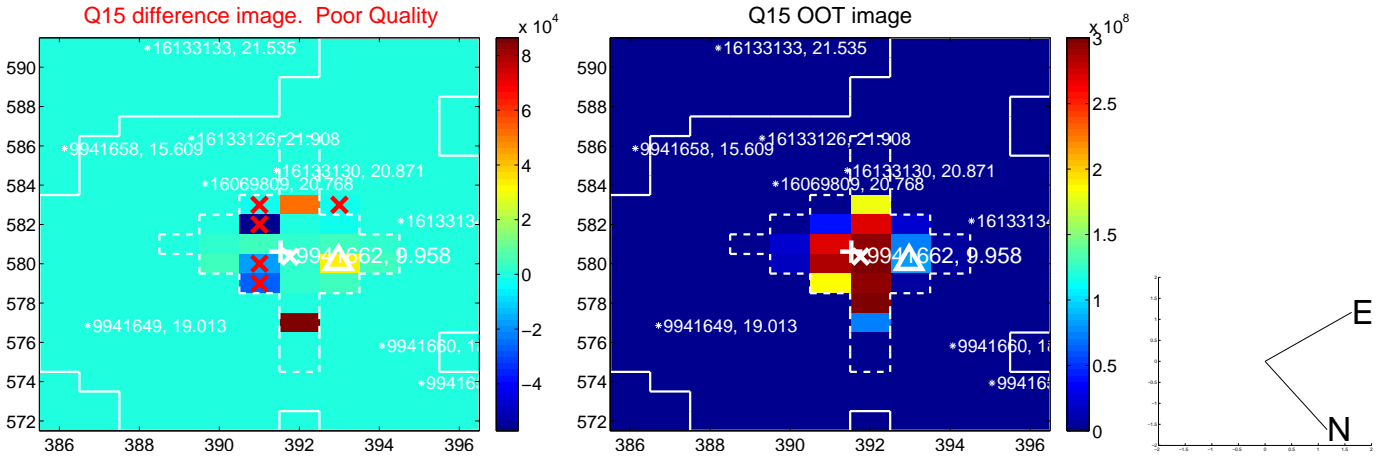
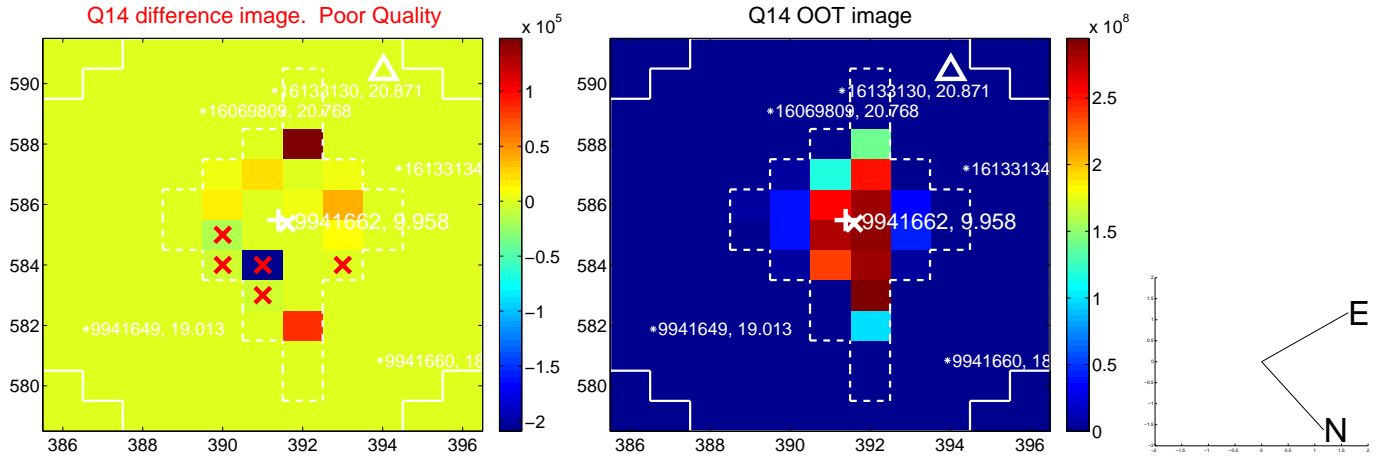
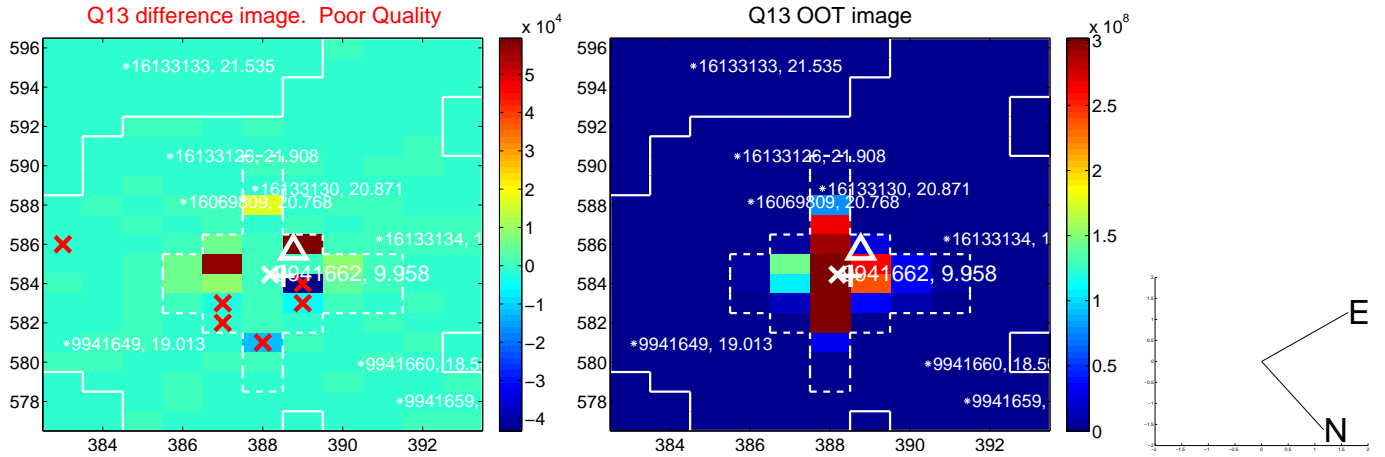
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



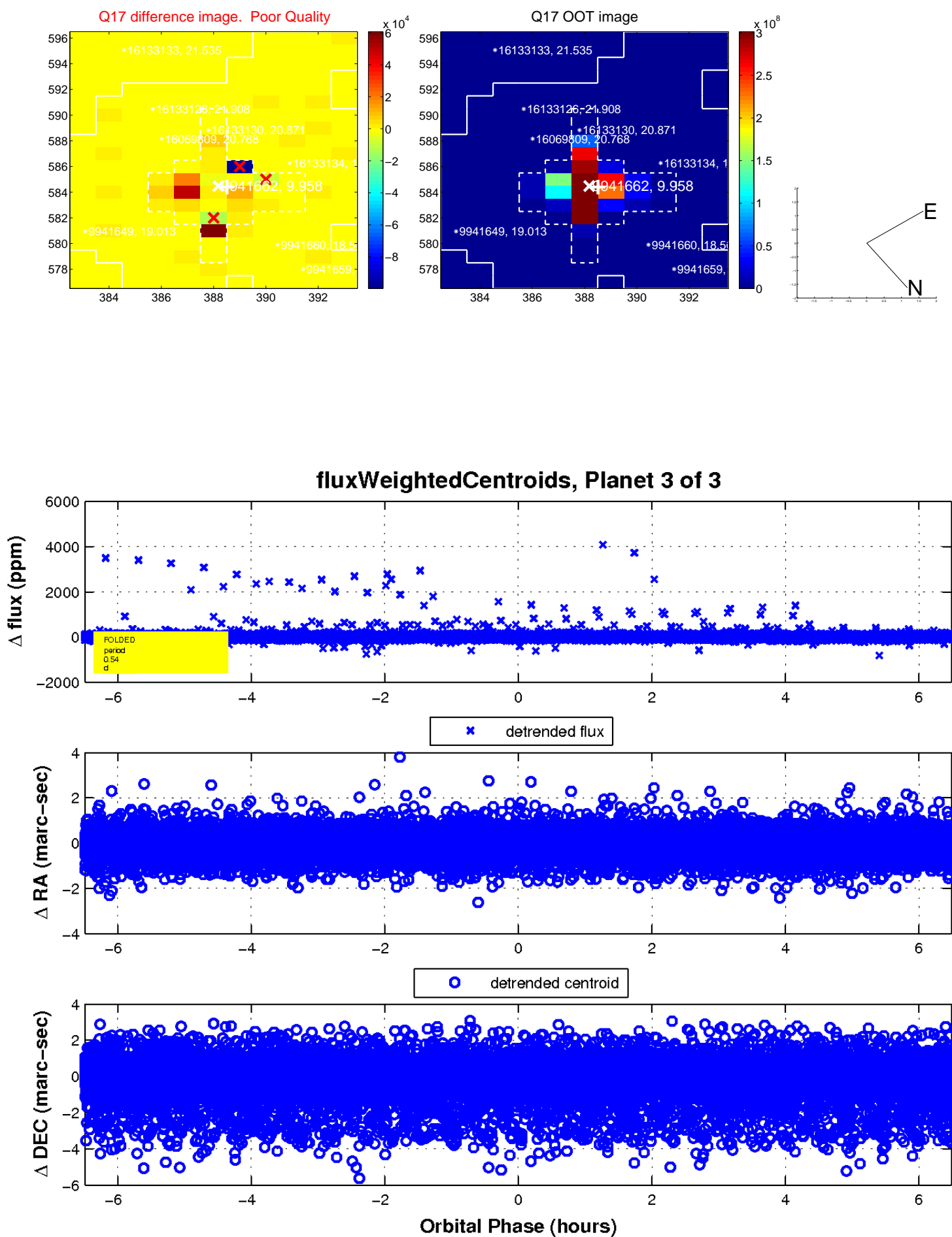
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

