

KIC 009119402

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})
009119402-01	OBS	No	1.067417	132.047677	442.7	5.627	11.5	14.0	1.77	6848	7.06	11735.89
009119402-02	OBS	No	1.125671	132.235266	845.8	6.998	12.0	15.9	1.77	6848	9.70	10933.18

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009119402-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009119402-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV

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

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

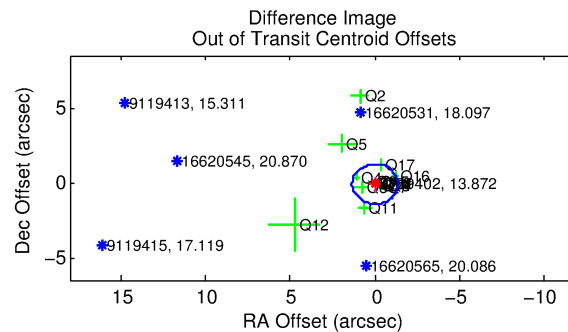
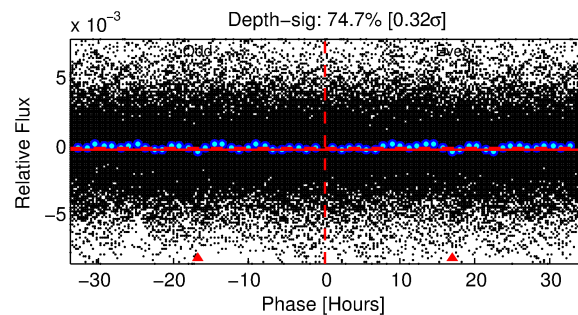
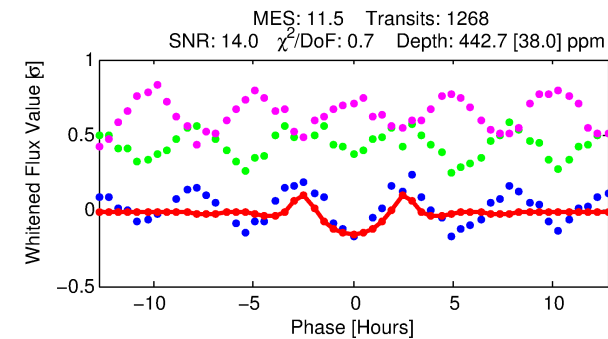
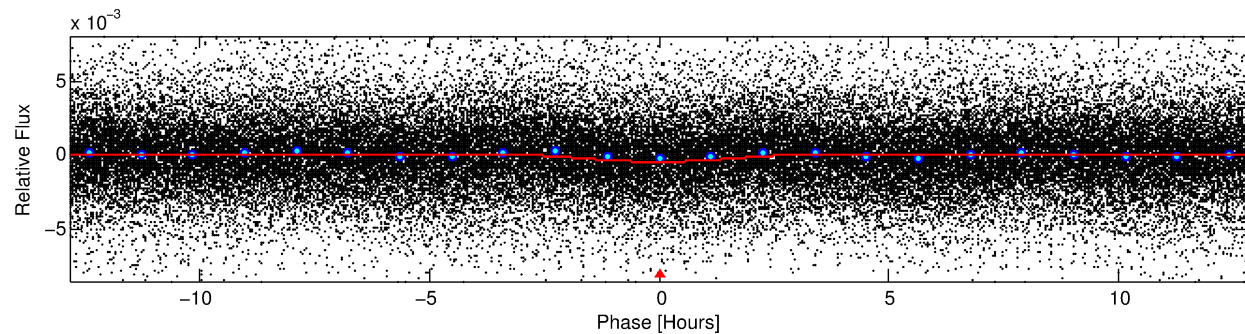
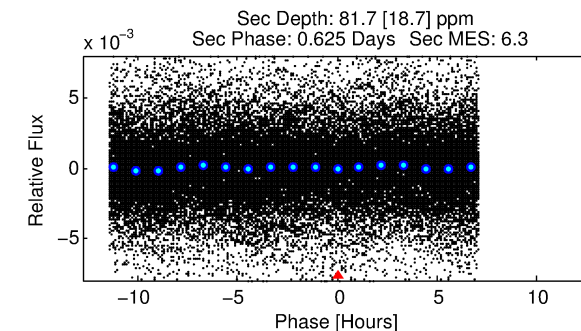
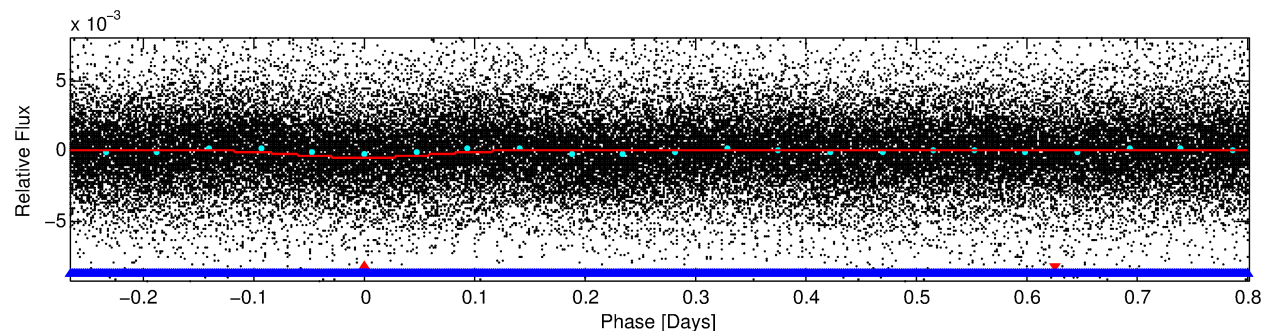
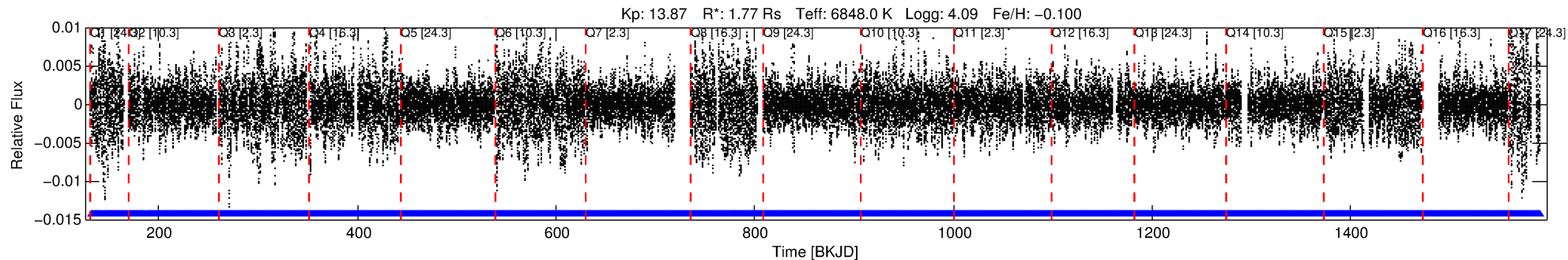
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009119402-01

No Significant Match Found

DV One-Page Summary

KIC: 9119402 Candidate: 1 of 2 Period: 1.067 d



DV Fit Results:

Period = 1.06742 [0.00001] d
Epoch = 132.0477 [0.0023] BKJD
Rp/R* = 0.0365 [0.0135]
a/R* = 1.09 [0.01]
b = 1.00 [0.02]
Seff = 11735.89 [4902.26]
Teq = 2654 [277] K
Rp = 7.06 [3.42] Re
a = 0.0229 [0.0060] AU
Ag = 0.48 [0.41] [-1.28σ]
Teffp = 3407 [673] K [1.03σ]

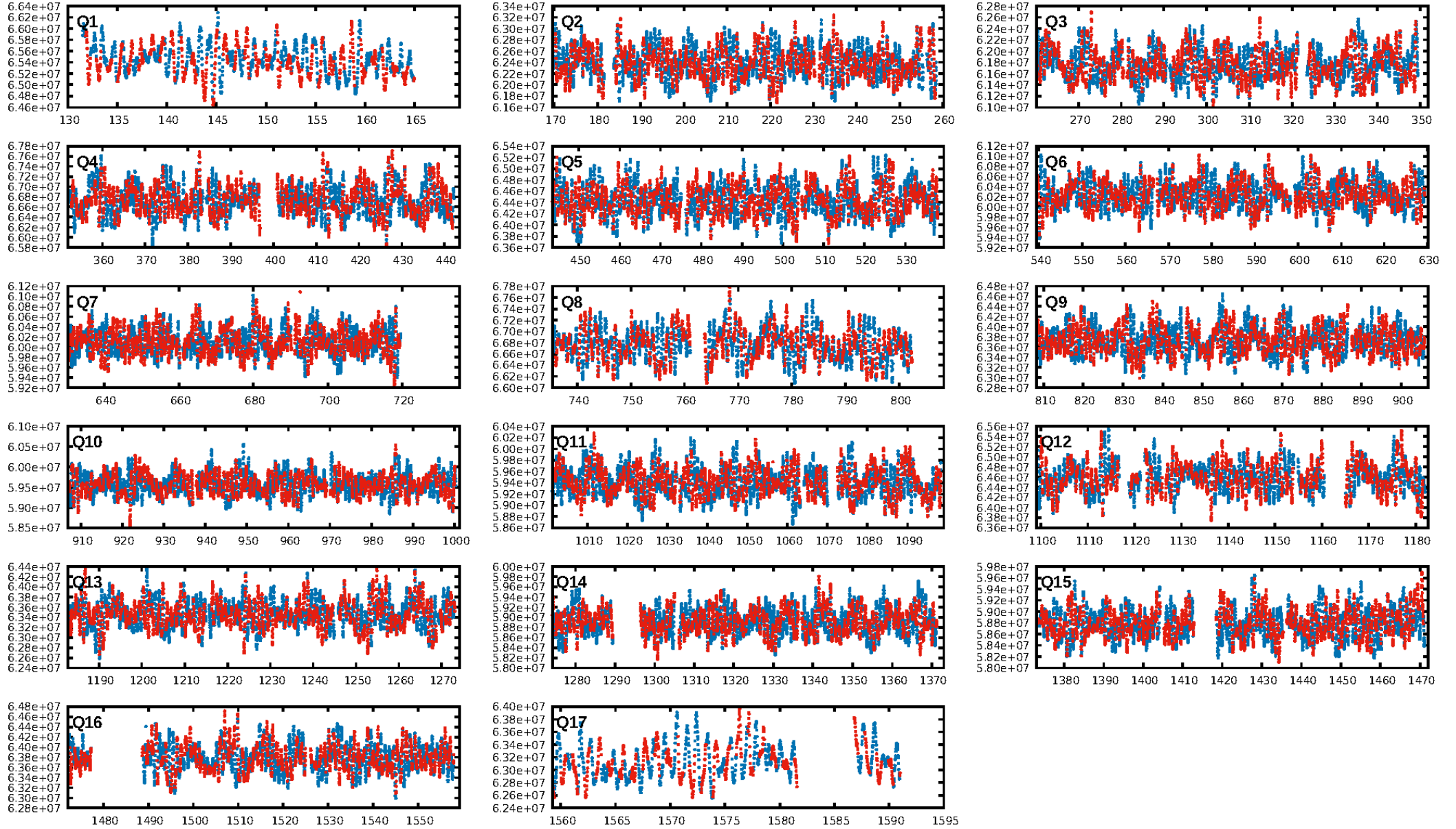
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 12.4% [0.16σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1211/1211]
GhostDiagnostic-chr: 1.907
Centroid-sig: 0.0%
Centroid-so: 0.757 arcsec [5.84σ]
OotOffset-rm: 0.099 arcsec [0.22σ]
KicOffset-rm: 0.105 arcsec [0.25σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.65 [11/17]
DiffImageOverlap-fno: 0.00 [0/17]

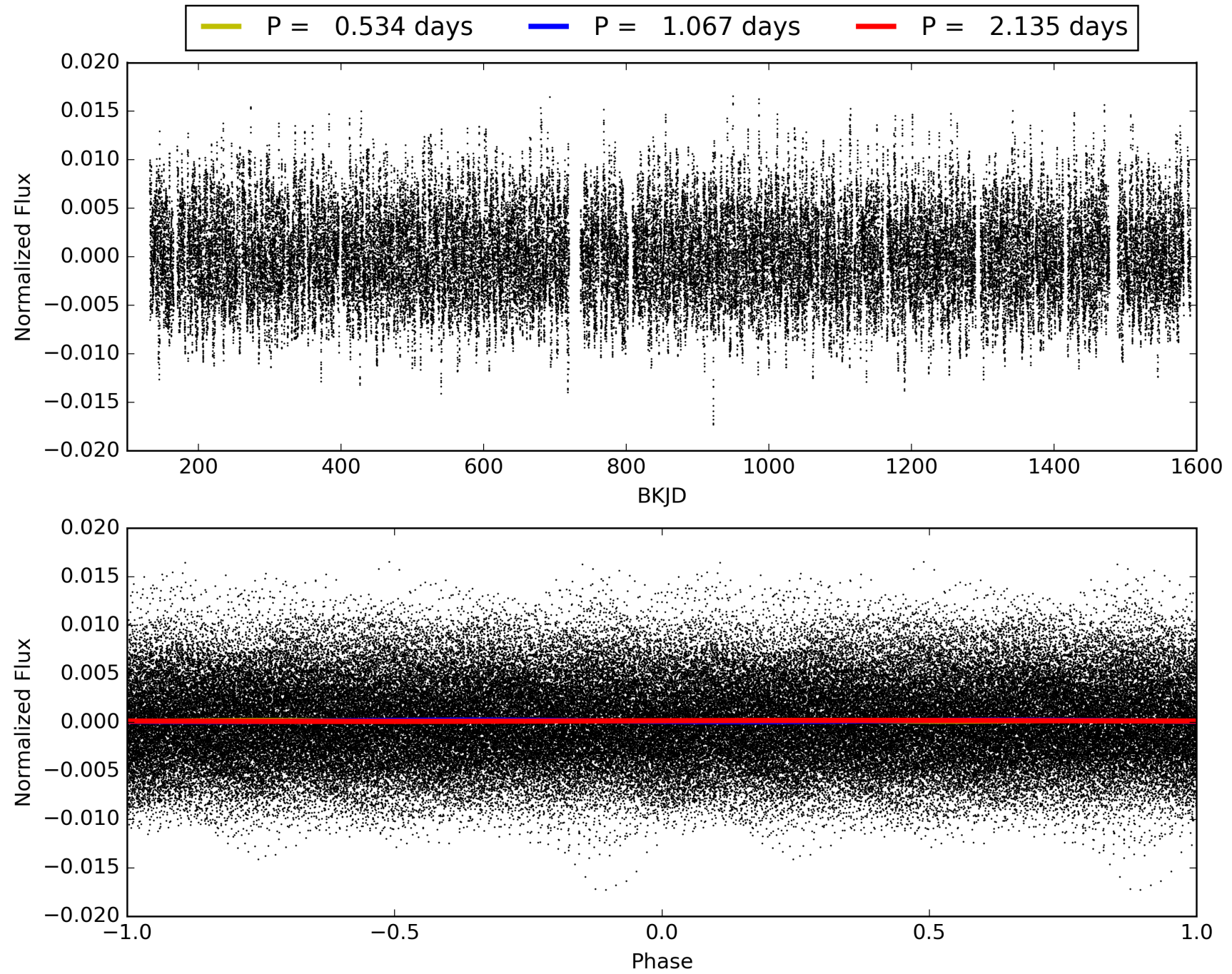
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:04:40 Z

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

TCE 009119402-01, PDC Light Curves

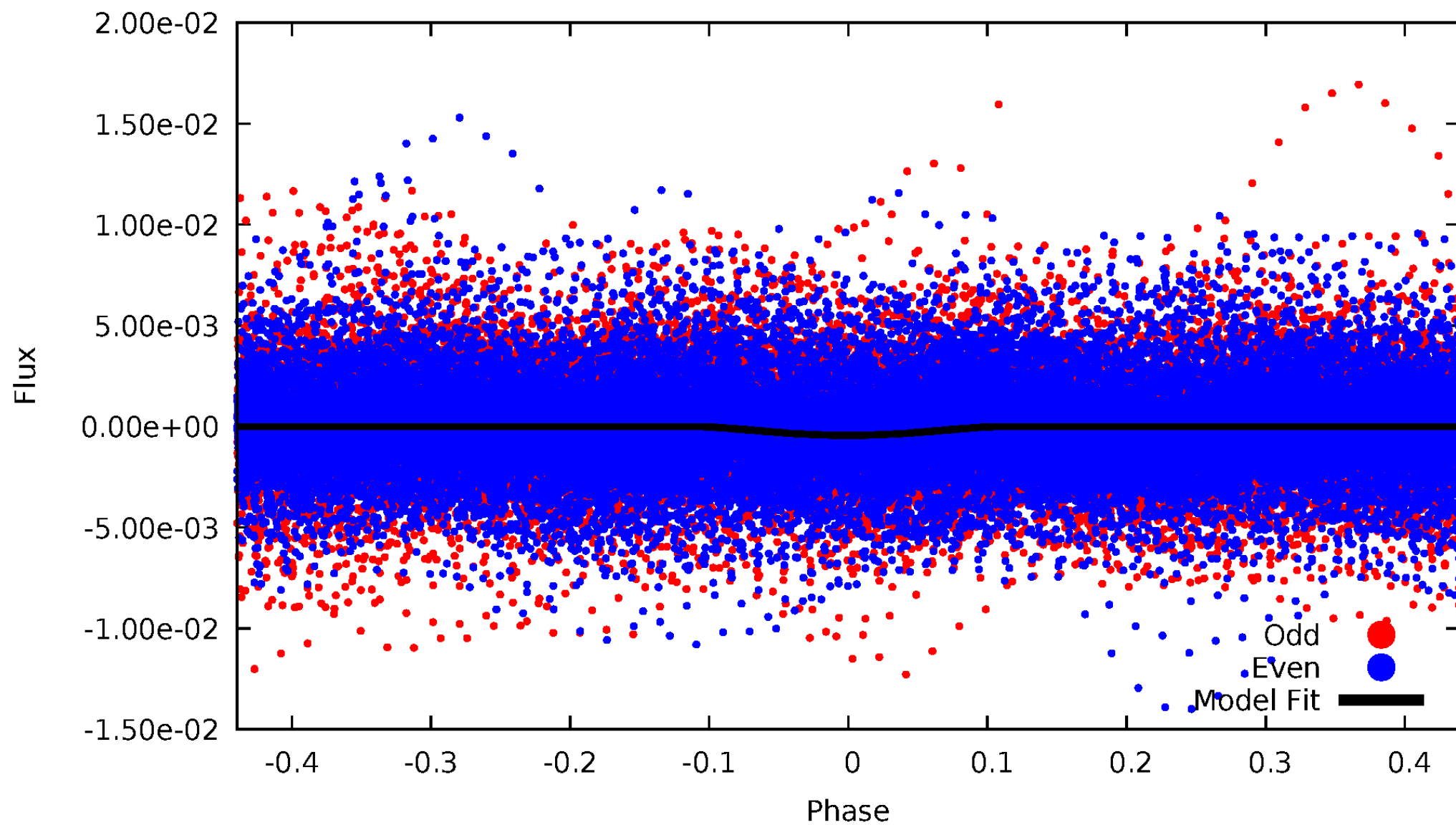


TCE 009119402-01



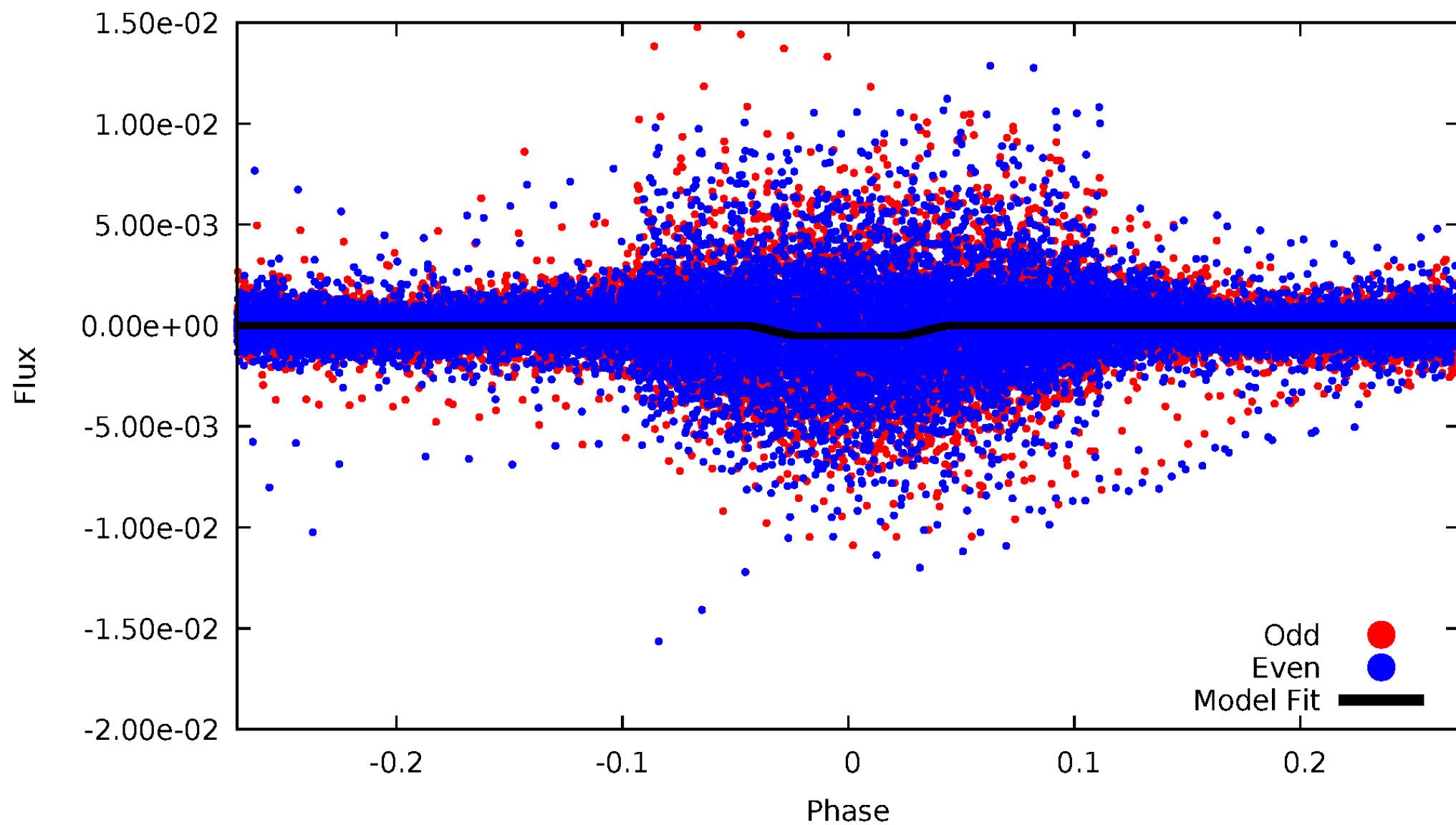
DV Odd/Even

TCE 009119402-01



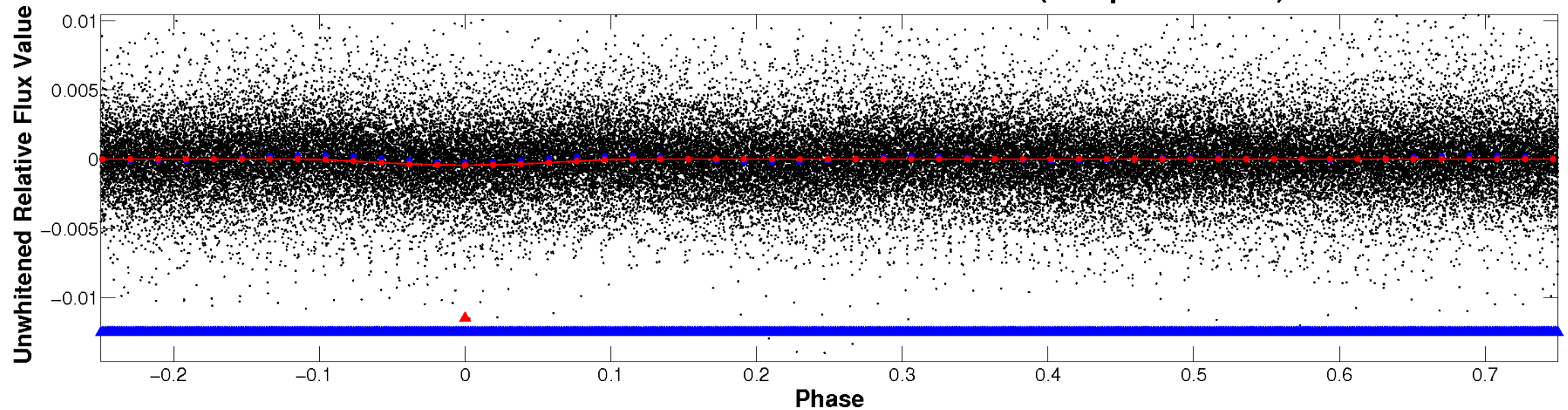
ALT Odd/Even

TCE 009119402-01

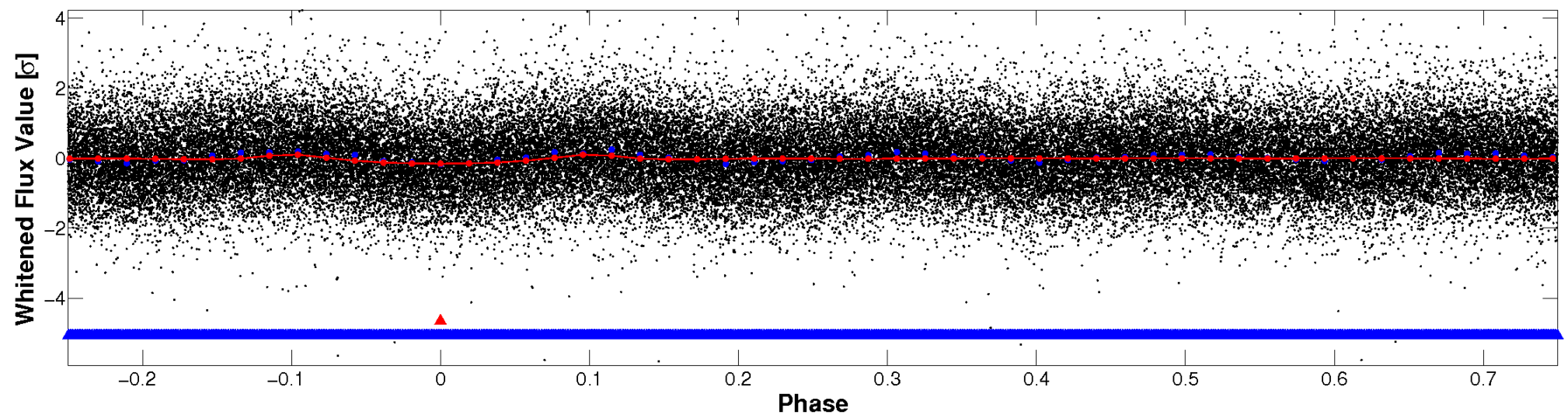


Non-Whitened Vs. Whitened Light Curve

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

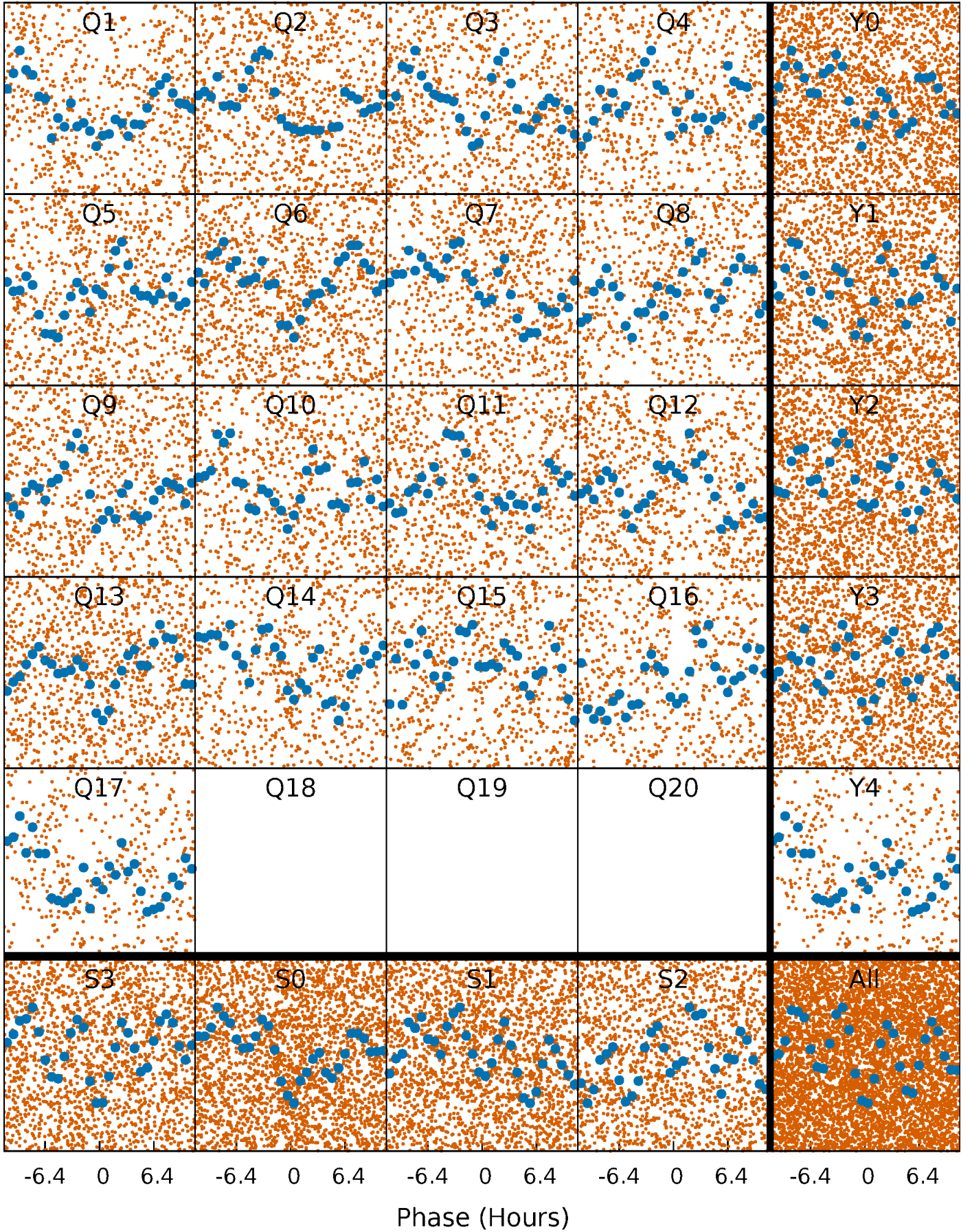


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



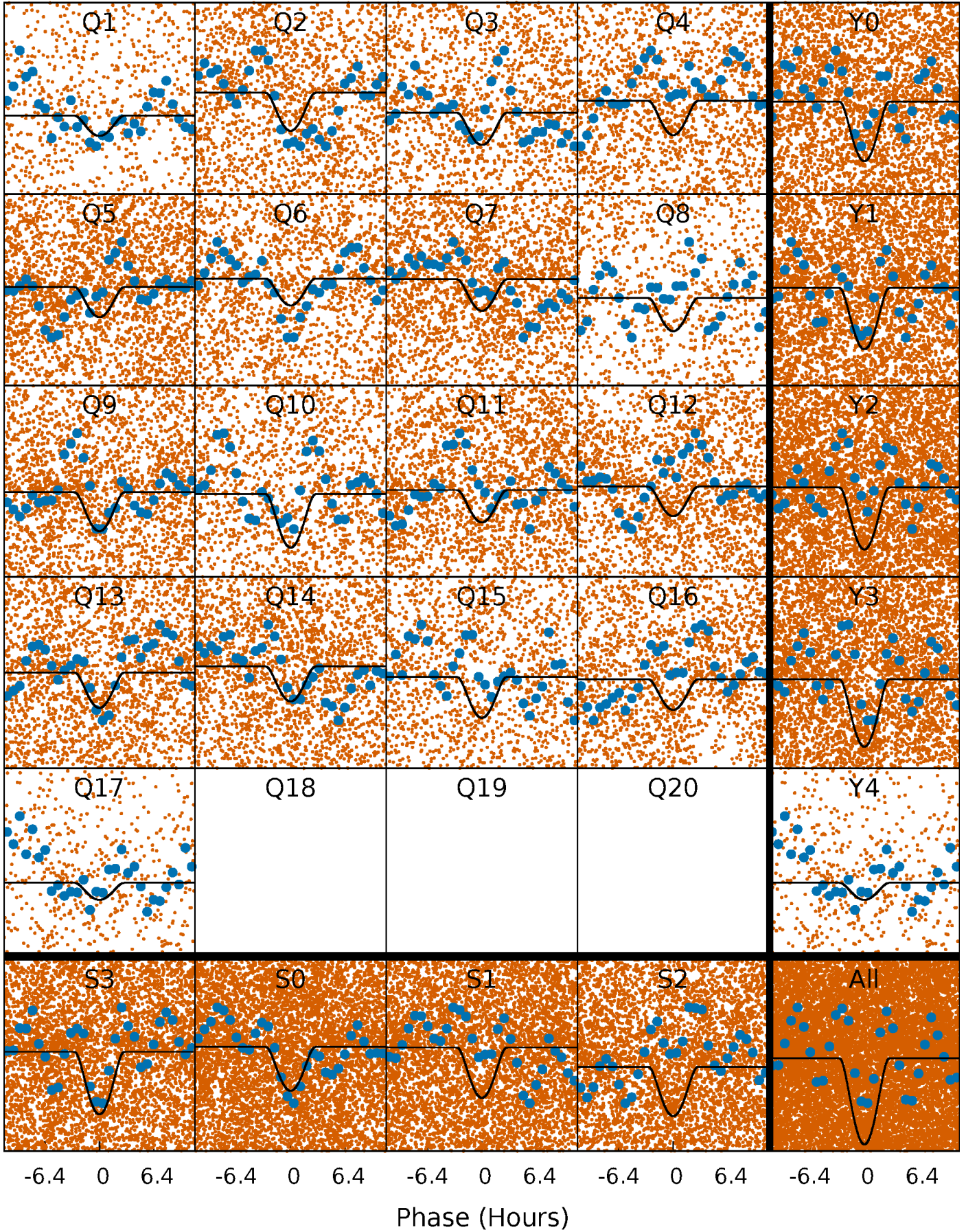
PDC Quarter-Phased Transit Curves

TCE 009119402-01 P= 1.067417 Days $T_0=132.047677$ (BKJD)



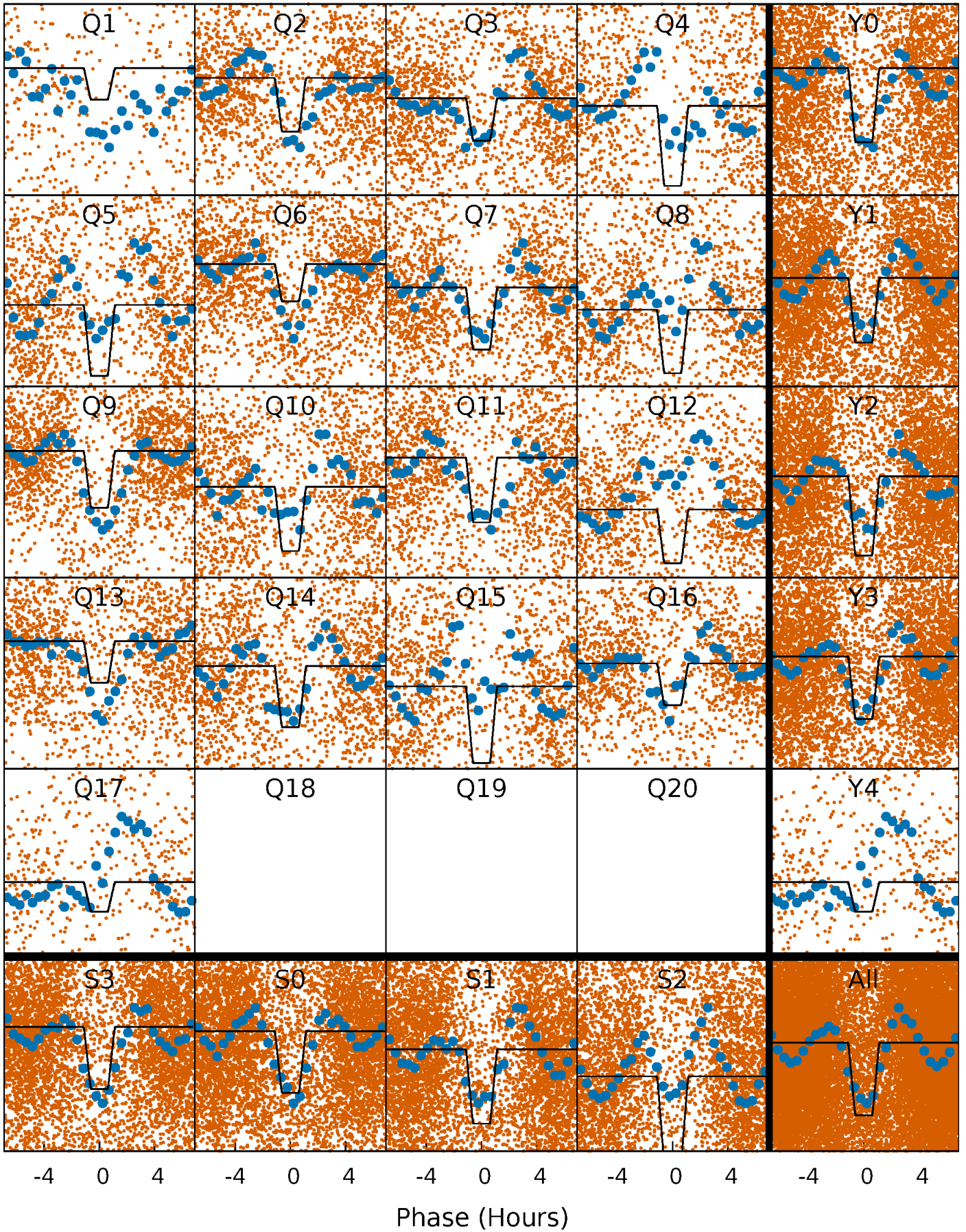
DV Quarter-Phased Transit Curves

TCE 009119402-01 P= 1.067417 Days $T_0=132.047677$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

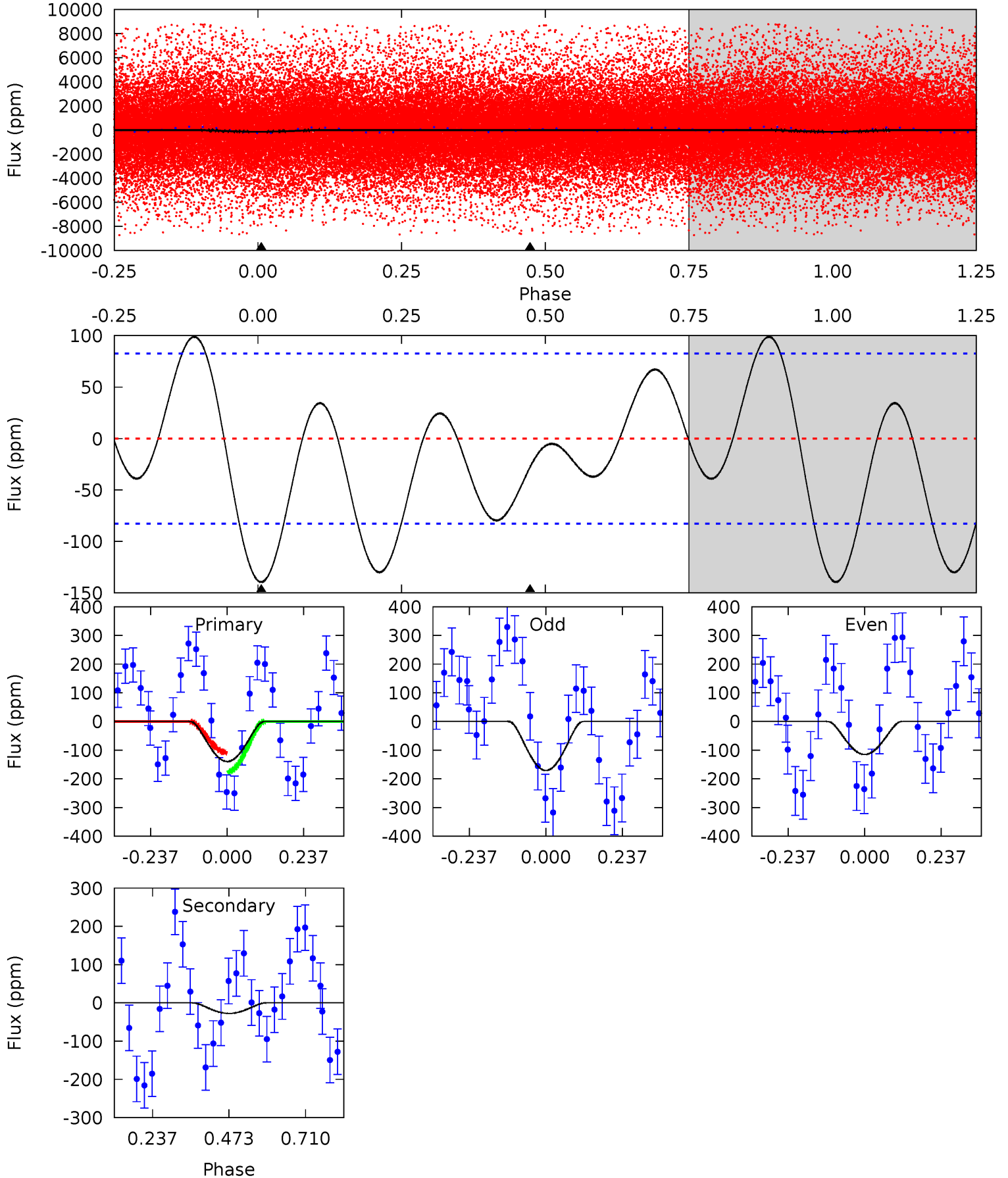
TCE 009119402-01 P= 1.067467 Days $T_0=132.012712$ (BKJD)



DV Model-Shift Uniqueness Test

009119402-01, P = 1.067417 Days, E = 130.980260 Days

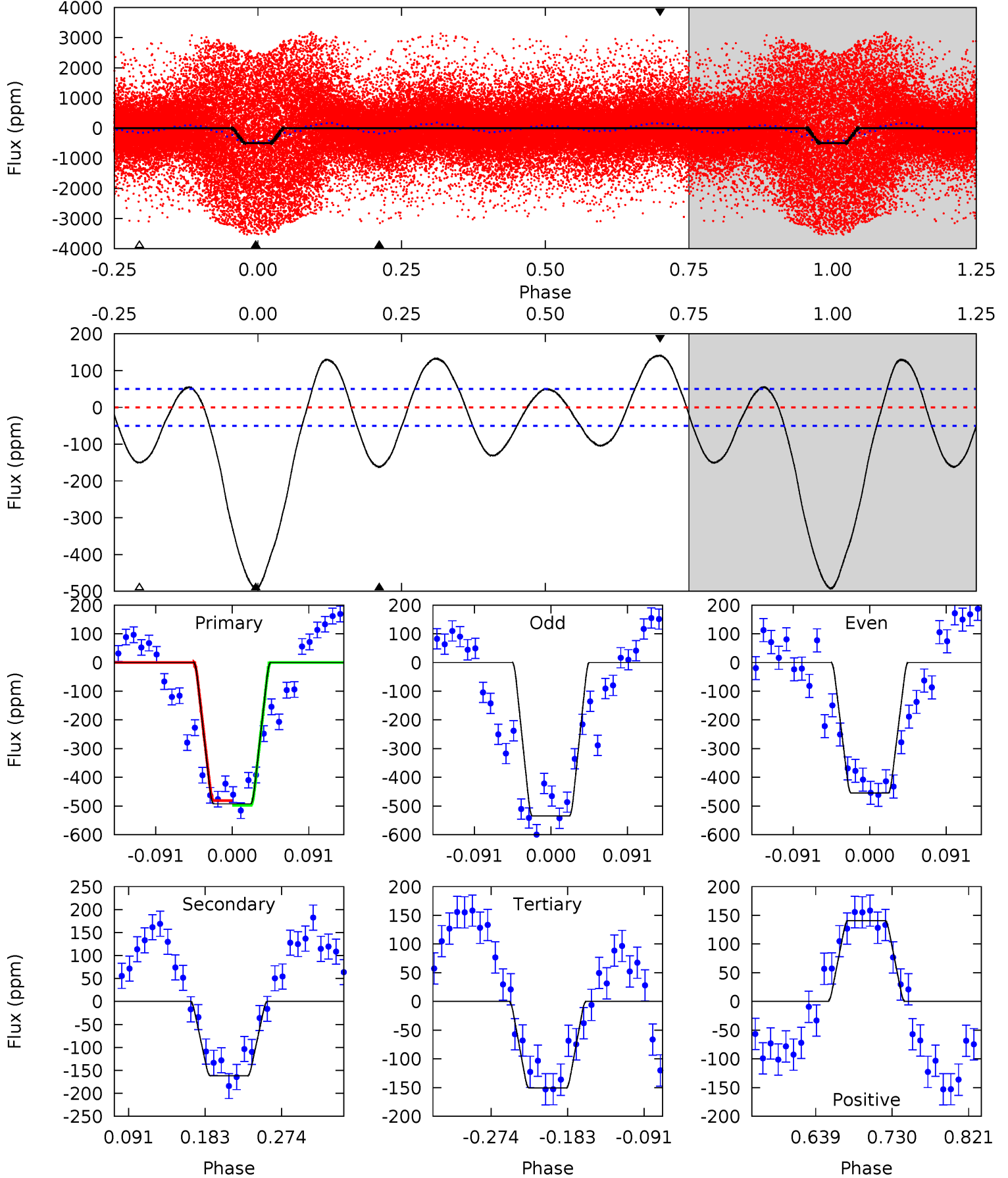
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.39	1.46	0	0	4.38	1.18	2.88	7.39	7.39	1.46	1.46	1.47	0.63	0.42	1.78



Alt Model-Shift Uniqueness Test

009119402-01, P = 1.067467 Days, E = 130.945245 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	14.8	13.7	12.8	4.58	1.69	7.77	31.2	32.1	1.04	1.94	3.63	0.79	0.22	0



Stellar Parameters For KIC 009119402

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6848^{+190}_{-286}	$4.092^{+0.209}_{-0.171}$	$-0.100^{+0.250}_{-0.300}$	$1.771^{+0.555}_{-0.505}$	$1.420^{+0.202}_{-0.269}$	$0.360^{+0.444}_{-0.172}$
	+3%/-4%	+5%/-4%	+250%/-300%	+31%/-29%	+14%/-19%	+123%/-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 009119402-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-28 ± 19	$6.83^{+2.90}_{-2.73}$	3679^{+281}_{-268}	-3133^{+6301}_{-372}	$0.149^{+0.345}_{-0.109}$
Alt.	-162 ± 11	$4.51^{+2.62}_{-2.30}$	3696^{+283}_{-305}	4921^{+2134}_{-980}	$2.306^{+7.423}_{-1.395}$

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

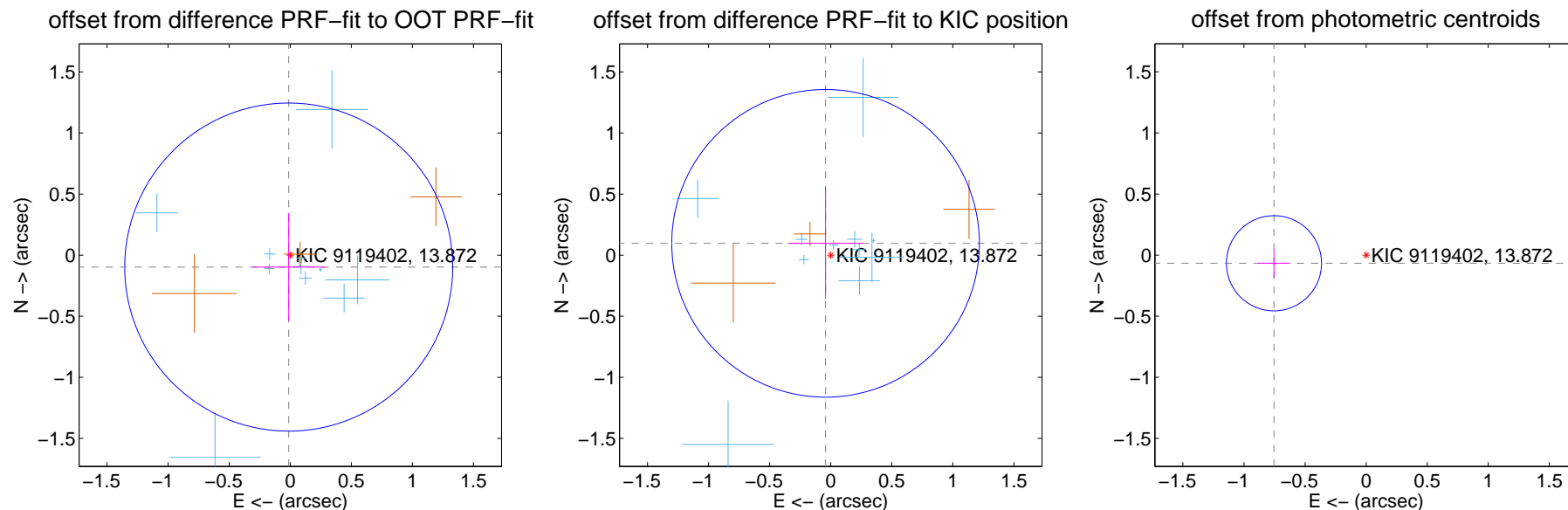
DV Centroid Data

Supplemental centroid analysis for 009119402-01. Kepler magnitude: 13.87. Transit SNR 13.96

There are 11 quarters with good PRF difference image offsets

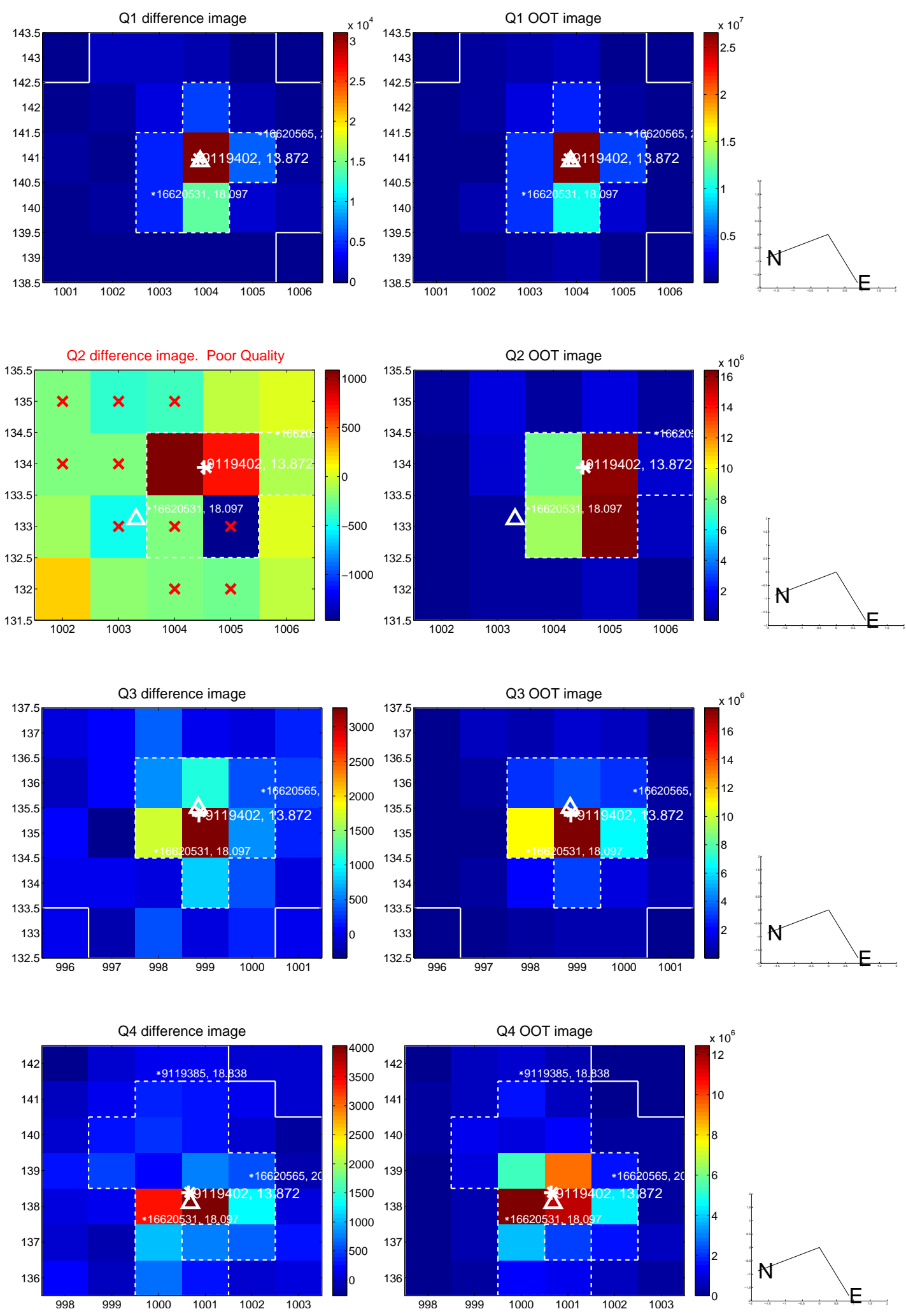
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.099 ± 0.448	0.22	0.013 ± 0.295	-0.098 ± 0.444
PRF-fit source offset from KIC position	0.105 ± 0.420	0.25	0.042 ± 0.307	0.097 ± 0.455
photometric centroid source offset	0.76 ± 0.13	5.84	0.75 ± 0.13	-0.07 ± 0.12

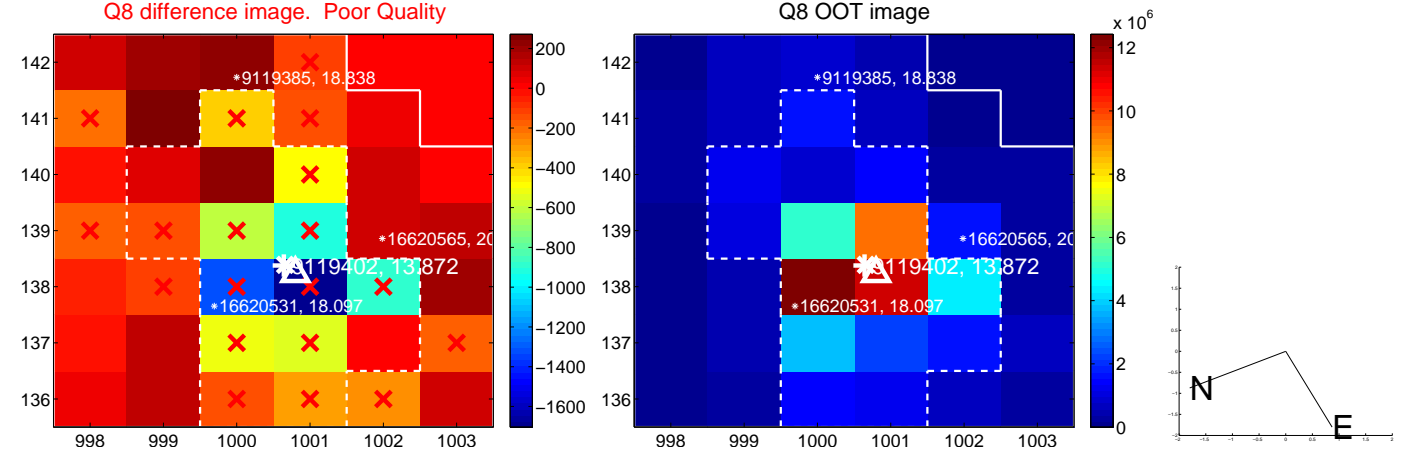
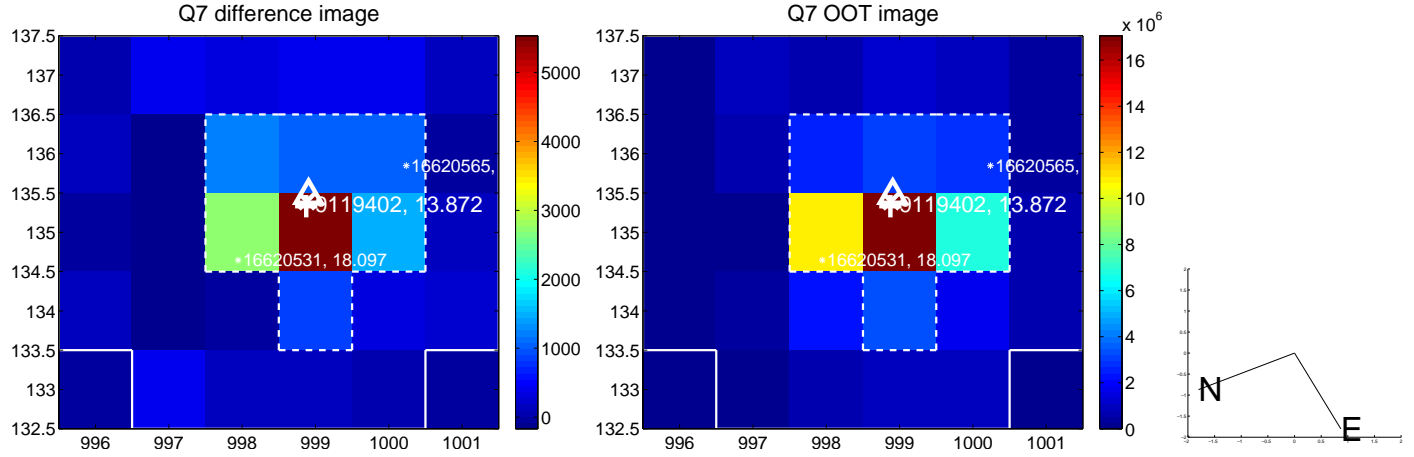
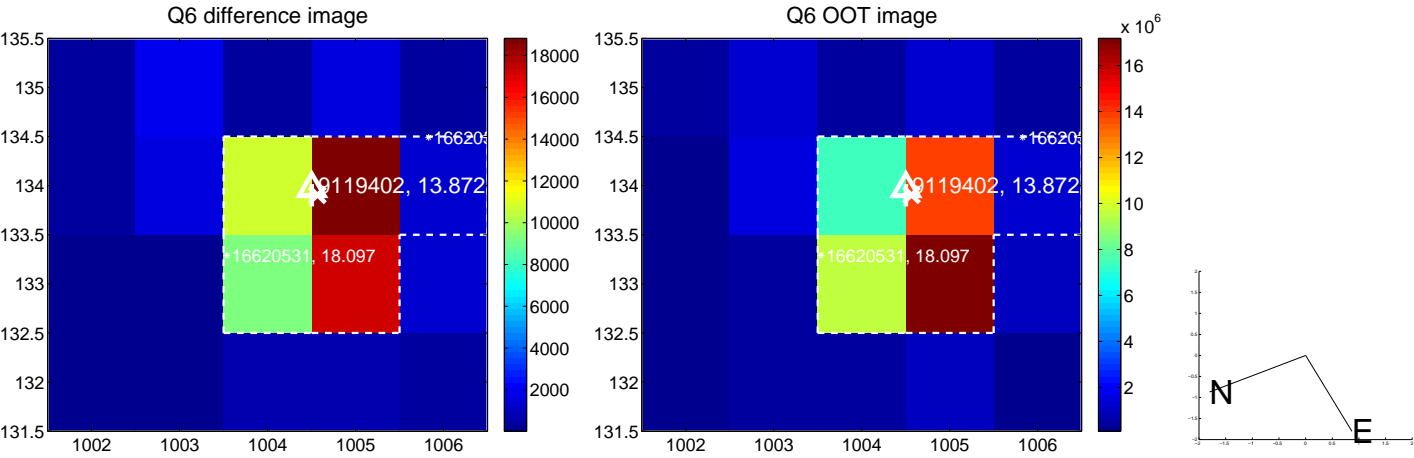
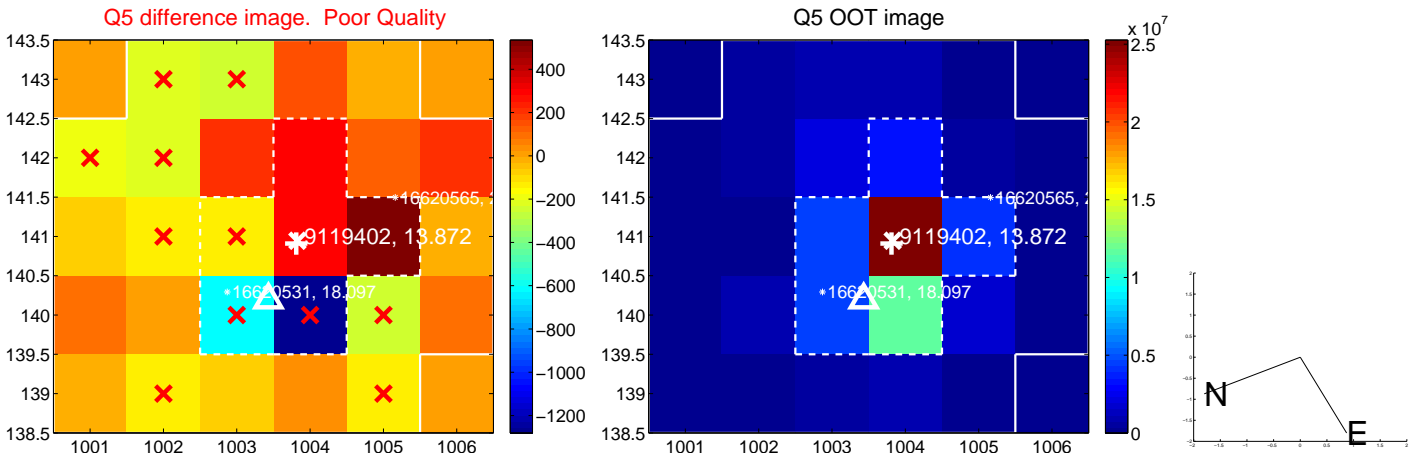


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

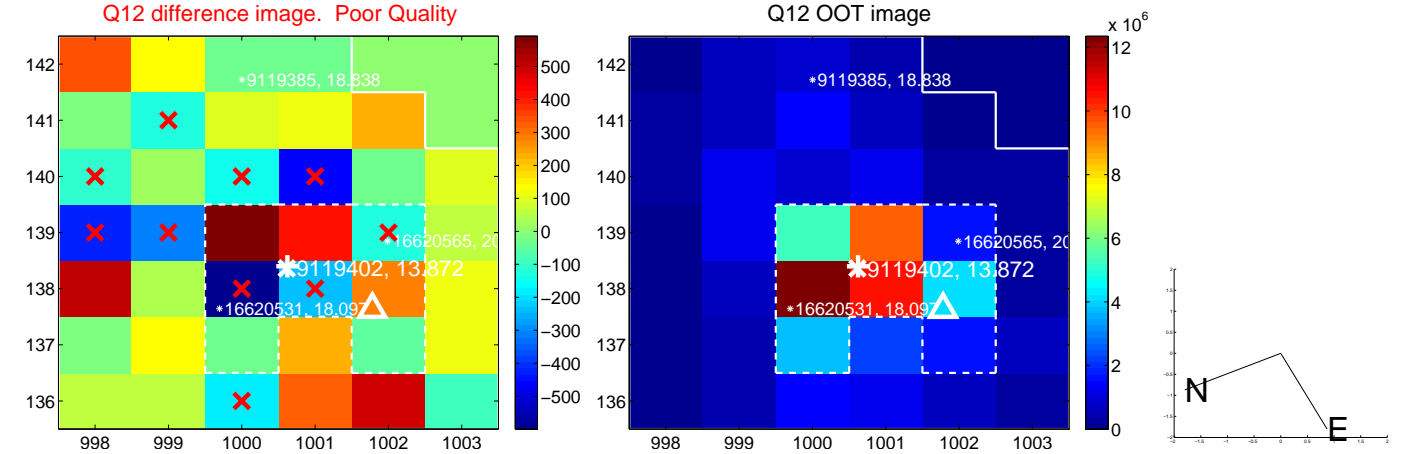
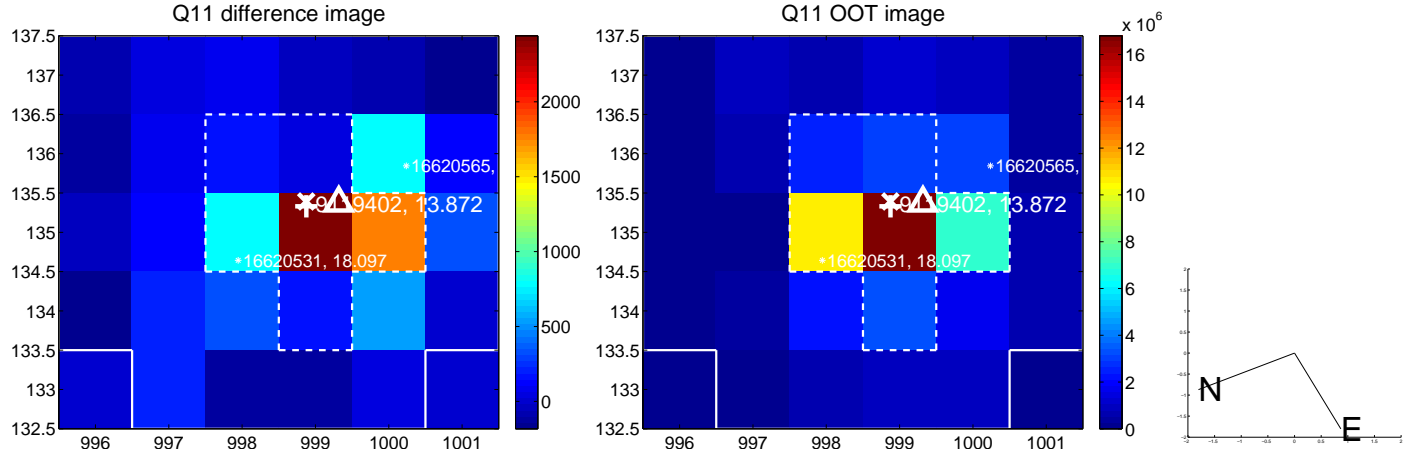
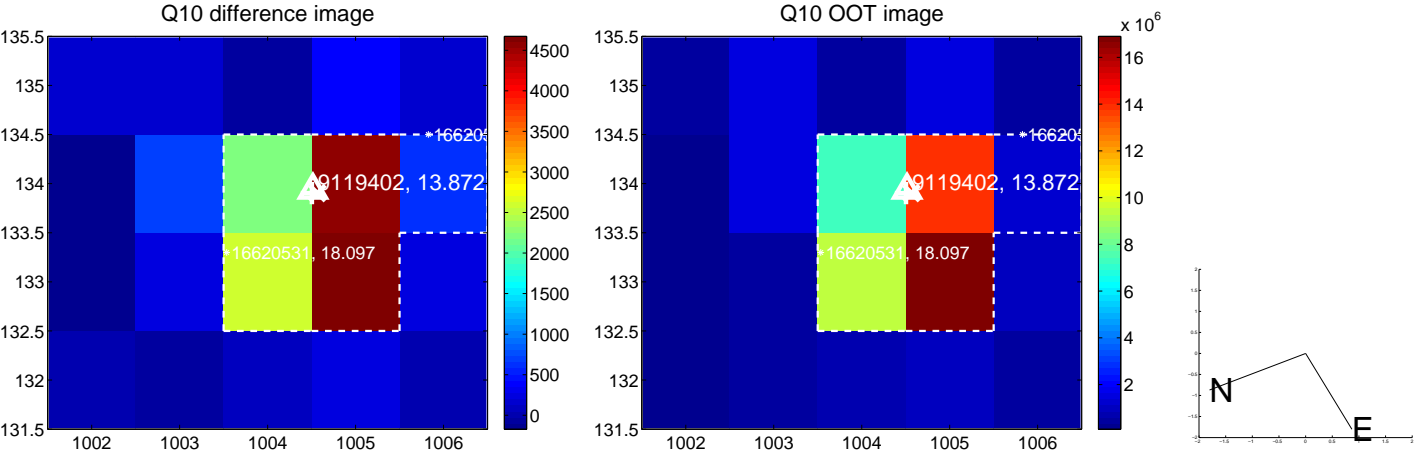
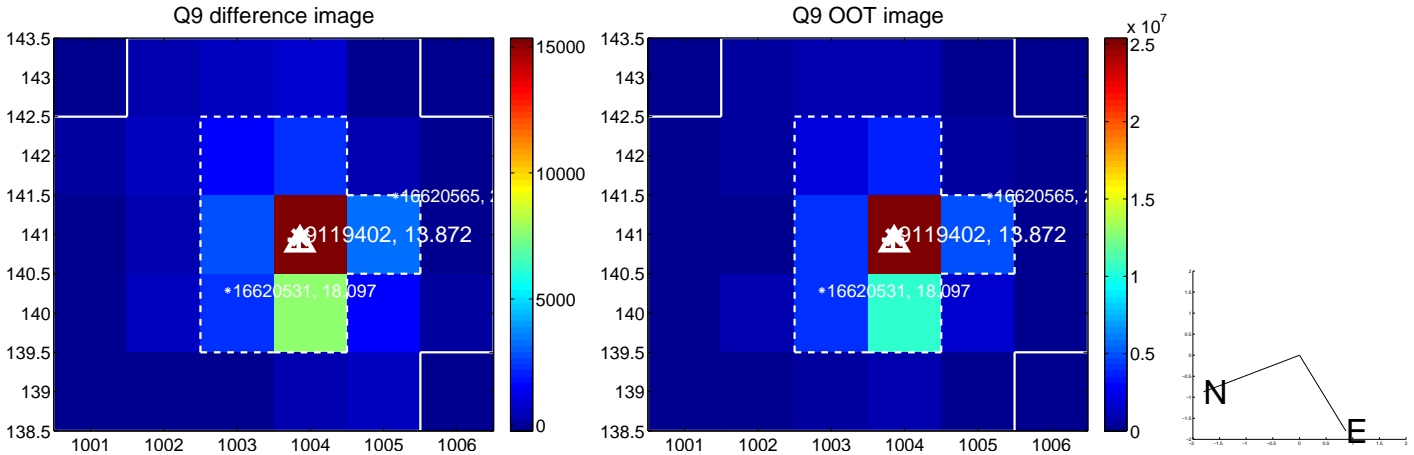
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



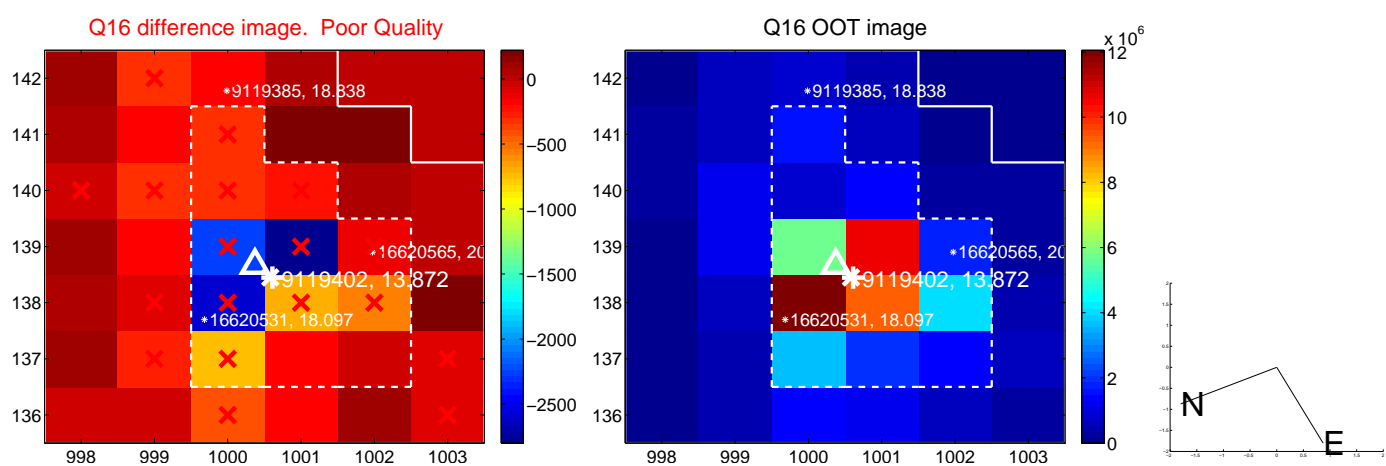
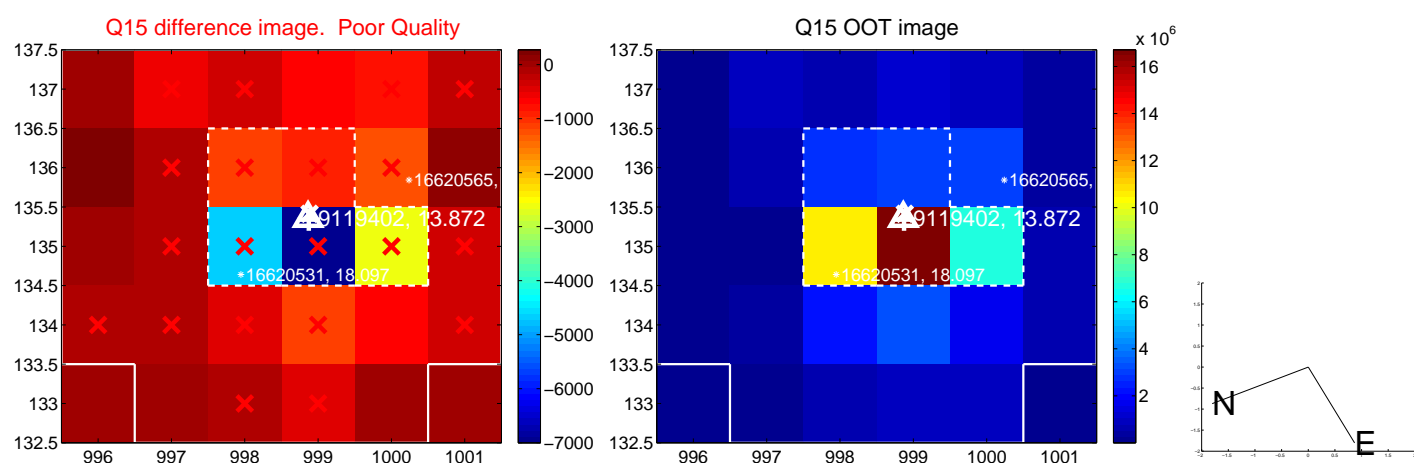
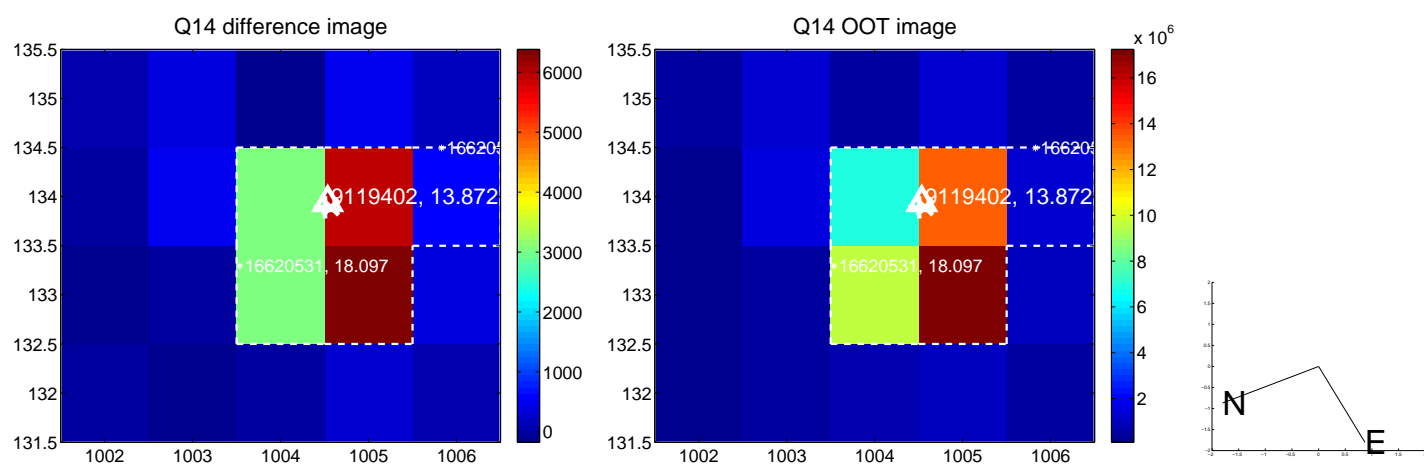
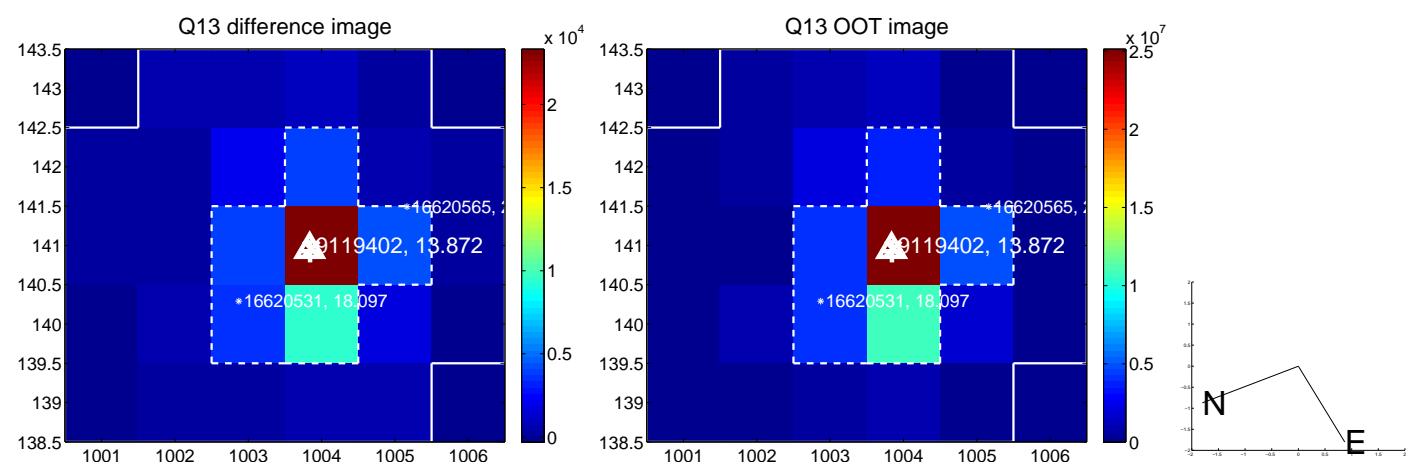
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



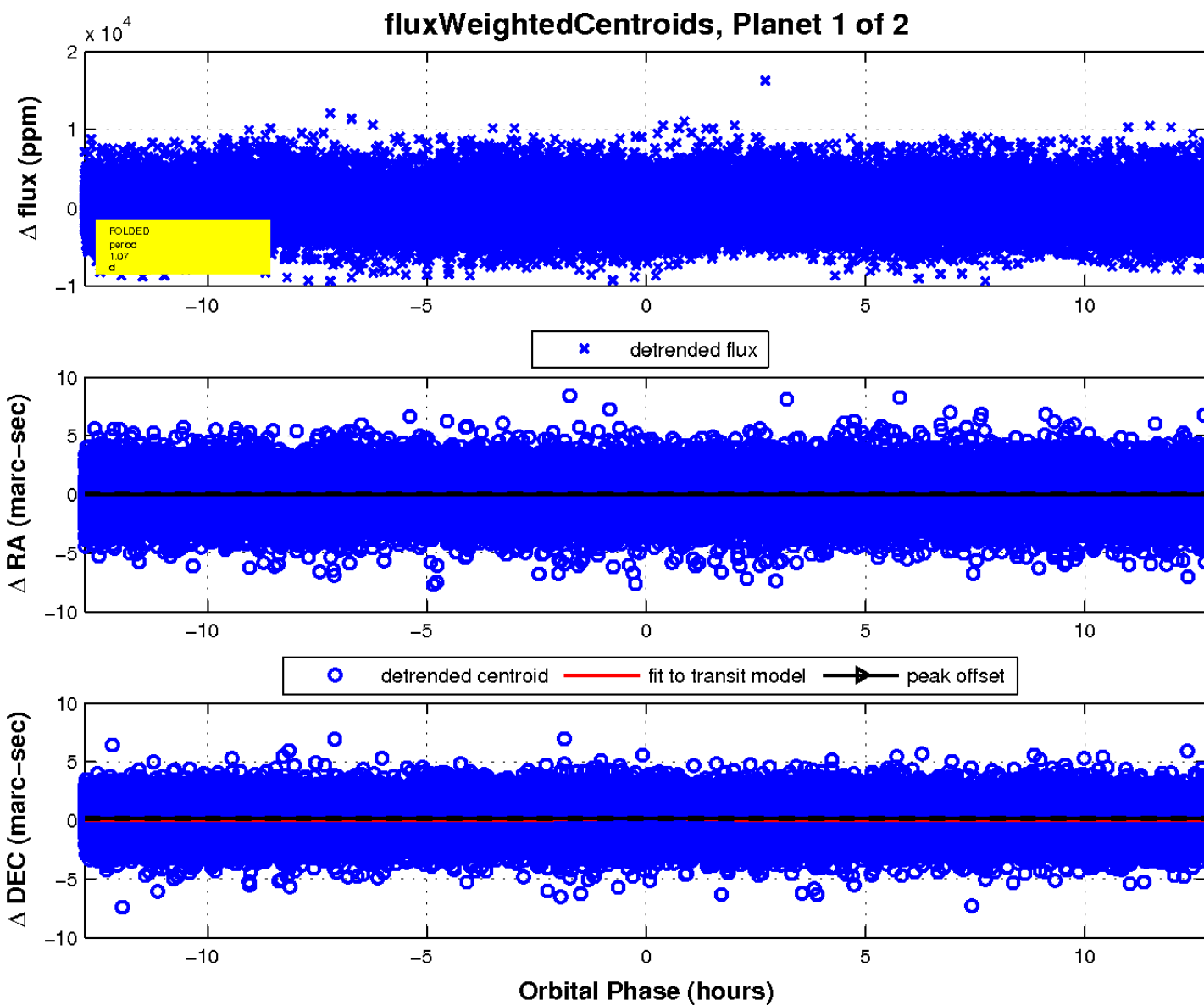
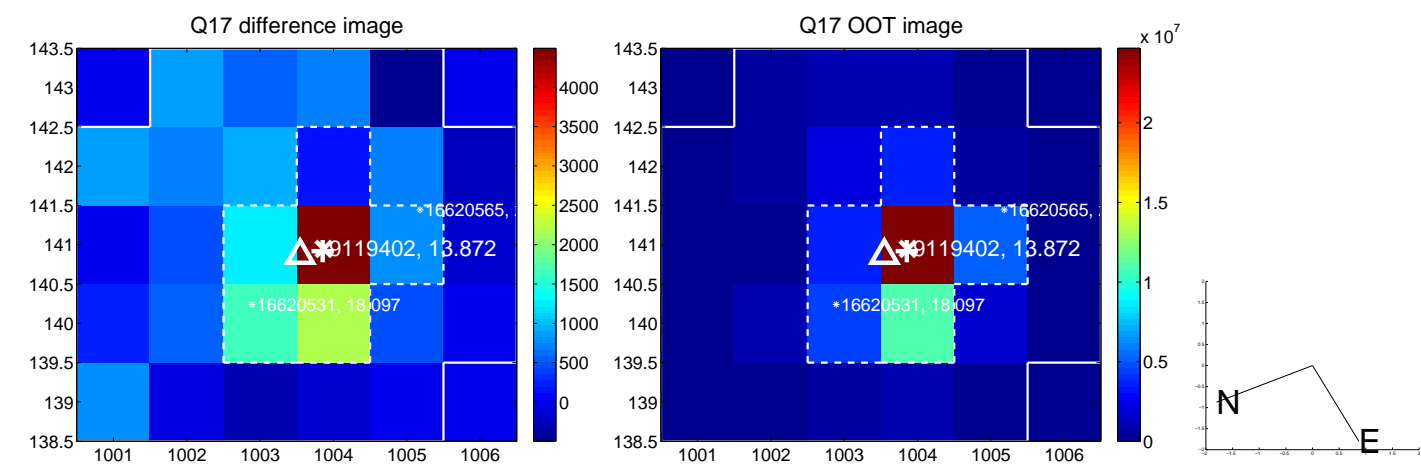
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

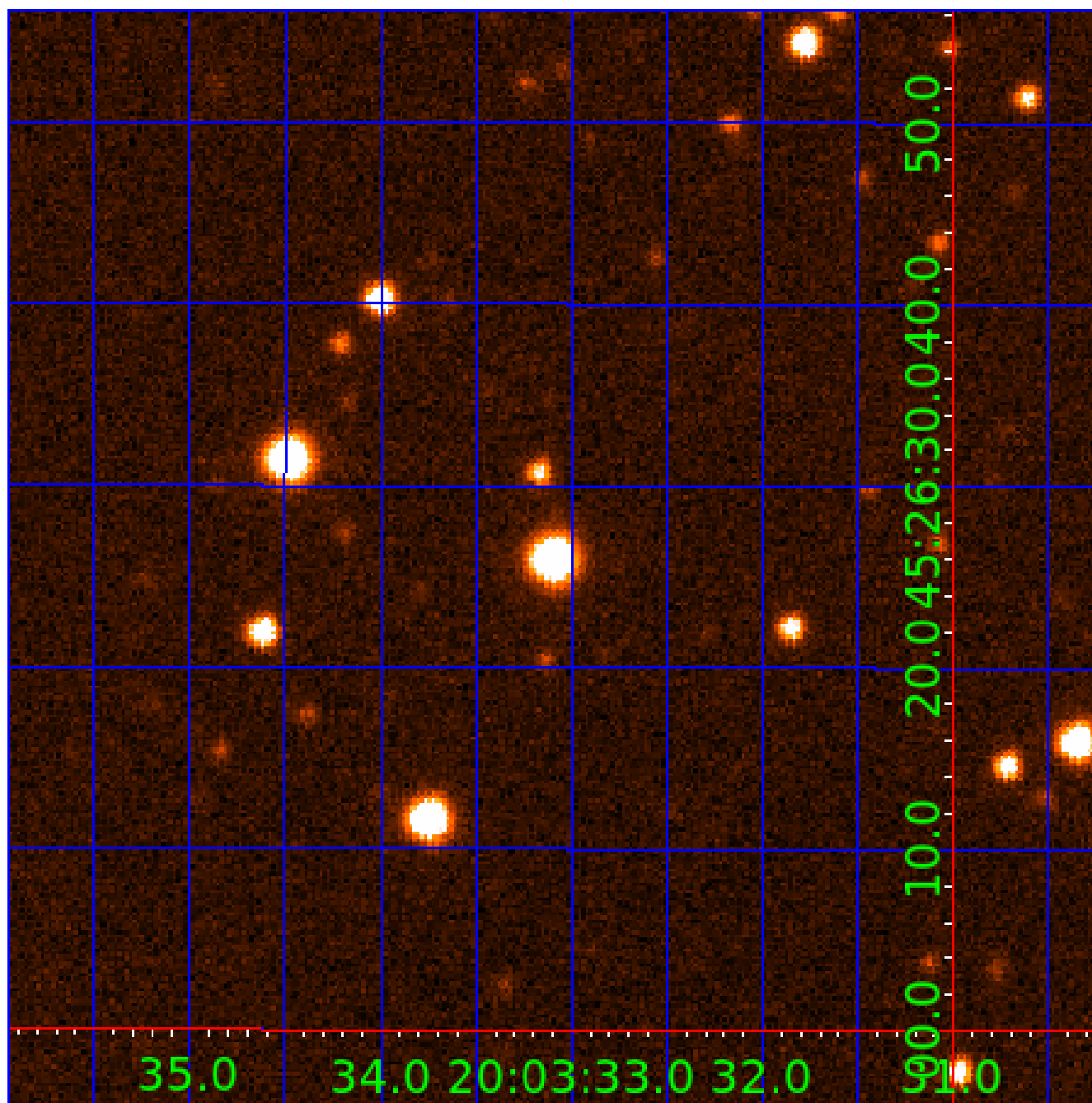


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009119402

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})
009119402-01	OBS	No	1.067417	132.047677	442.7	5.627	11.5	14.0	1.77	6848	7.06	11735.89
009119402-02	OBS	No	1.125671	132.235266	845.8	6.998	12.0	15.9	1.77	6848	9.70	10933.18

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009119402-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009119402-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV

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

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

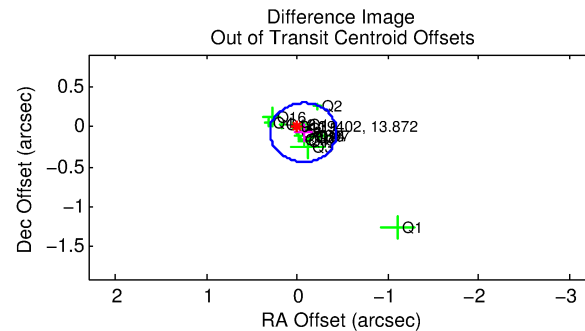
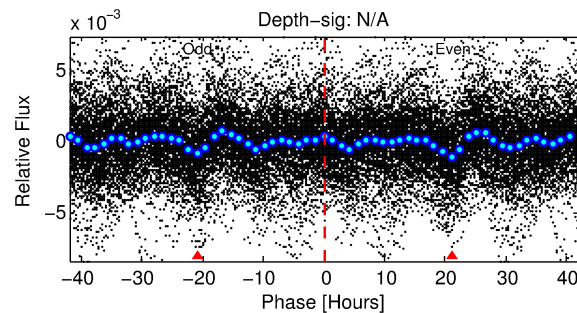
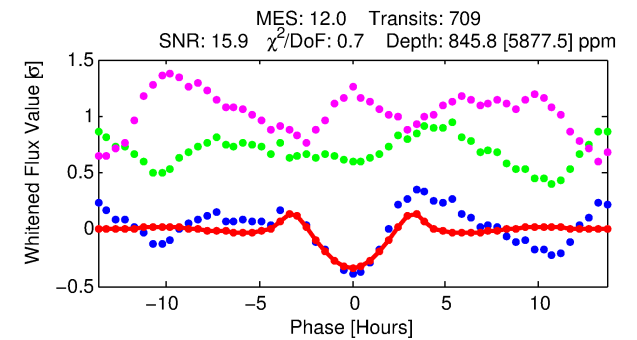
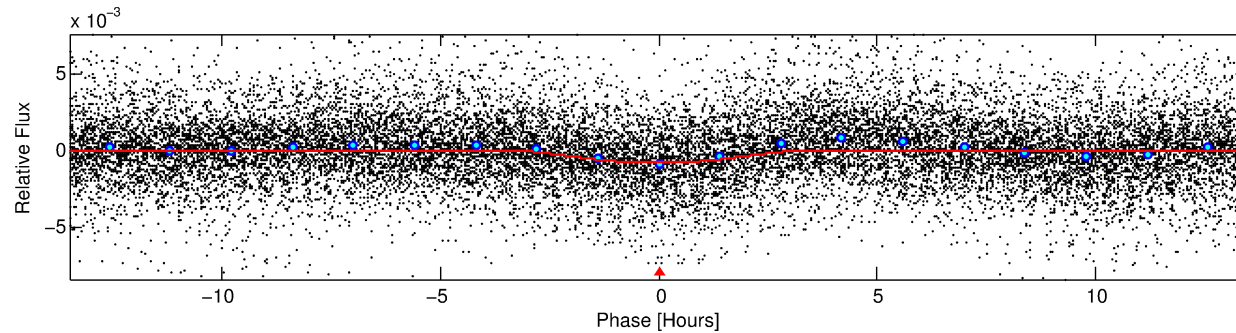
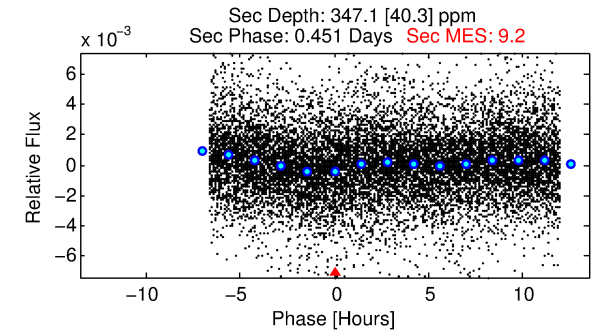
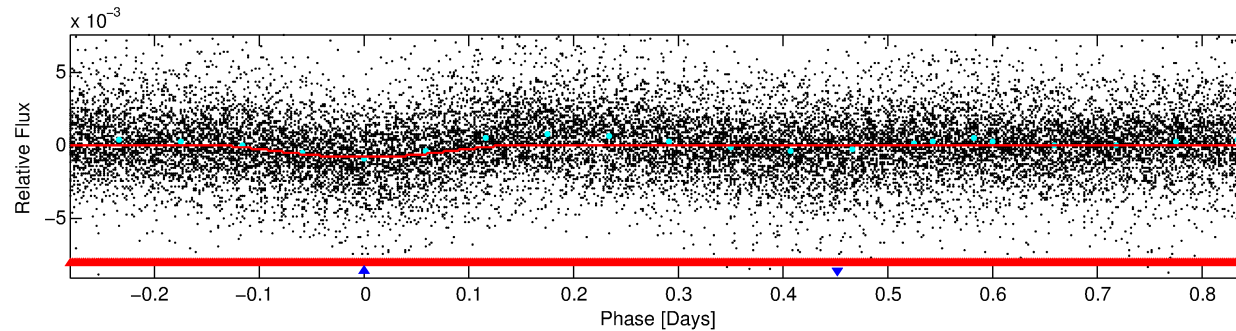
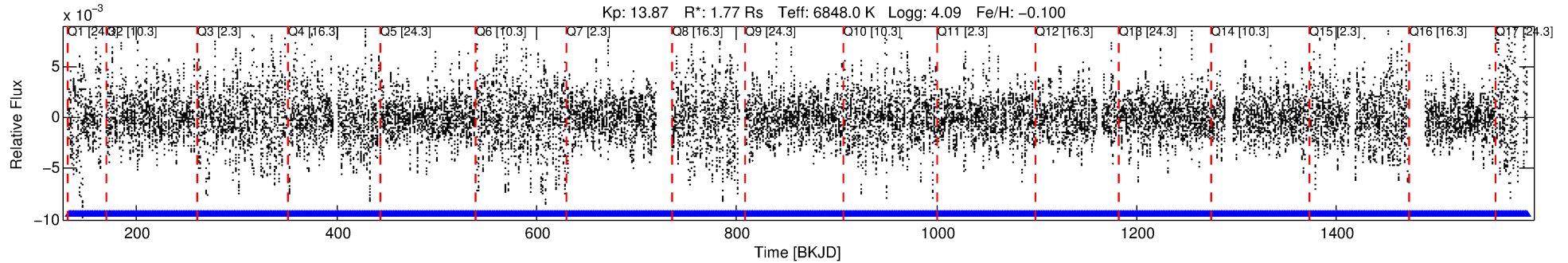
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009119402-02

No Significant Match Found

DV One-Page Summary

KIC: 9119402 Candidate: 2 of 2 Period: 1.126 d



DV Fit Results:

Period = 1.12567 [0.00001] d
Epoch = 132.2353 [0.0033] BKJD
Rp/R* = 0.0502 [0.0270]
a/R* = 1.09 [0.01]
b = 1.00 [0.20]
Seff = 10933.18 [4566.95]
Teq = 2607 [272] K
Rp = 9.70 [6.03] Re
a = 0.0238 [0.0063] AU
Ag = 1.15 [1.32] [0.11σ]
Teffp = 4173 [1141] K [1.33σ]

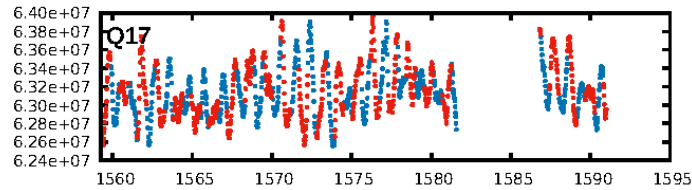
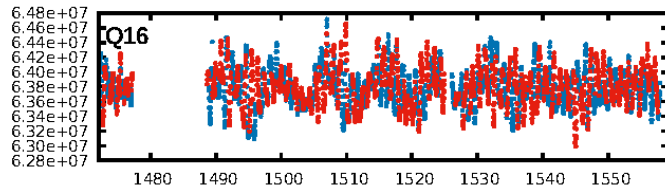
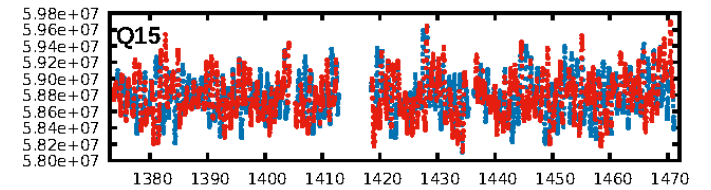
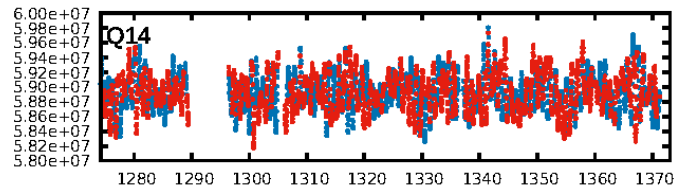
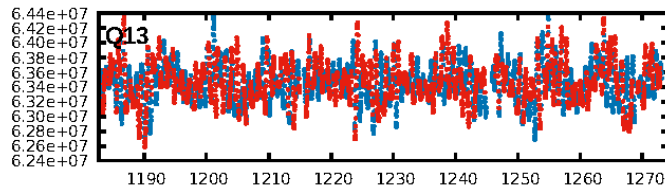
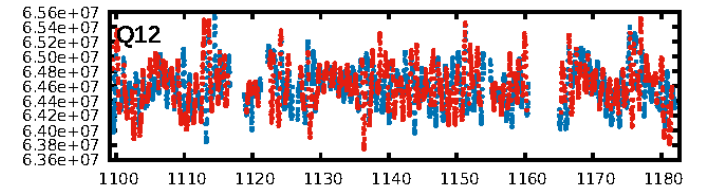
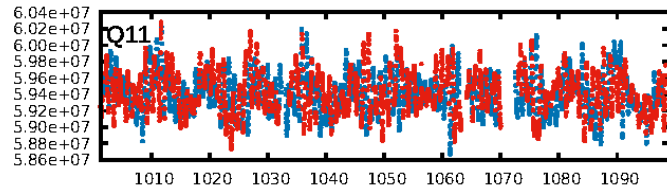
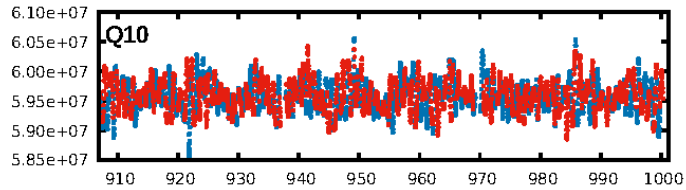
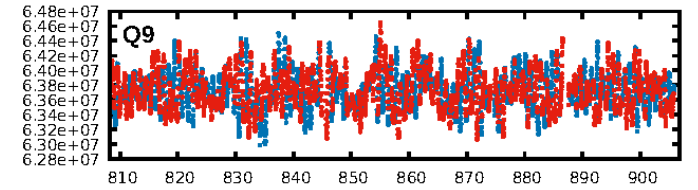
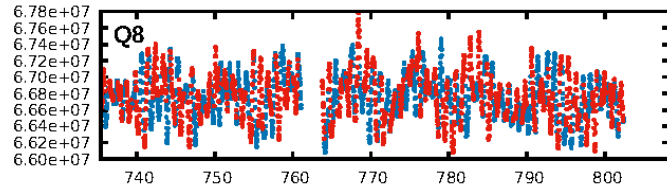
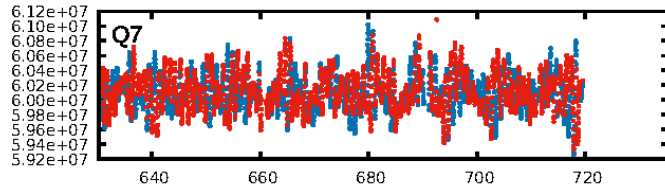
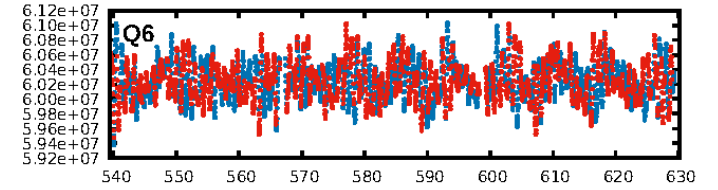
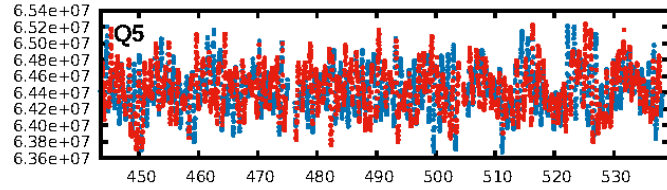
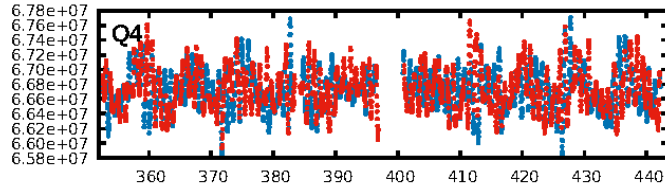
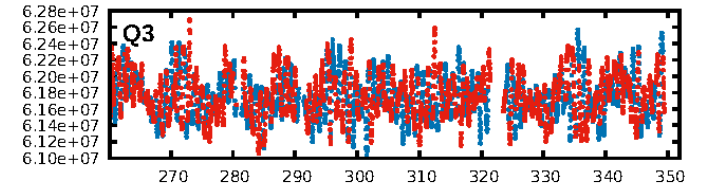
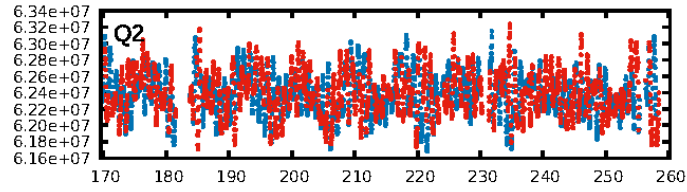
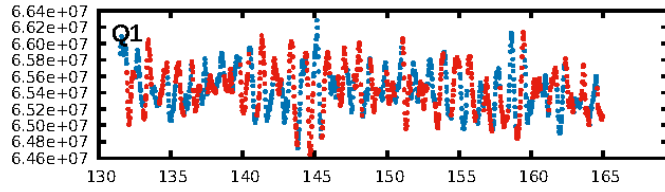
DV Diagnostic Results:

ShortPeriod-sig: 12.4% [0.16σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [674/674]
GhostDiagnostic-chr: 0.8293
Centroid-sig: 0.0%
Centroid-so: 0.645 arcsec [9.77σ]
OotOffset-rm: 0.101 arcsec [0.82σ]
KicOffset-rm: 0.104 arcsec [1.30σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

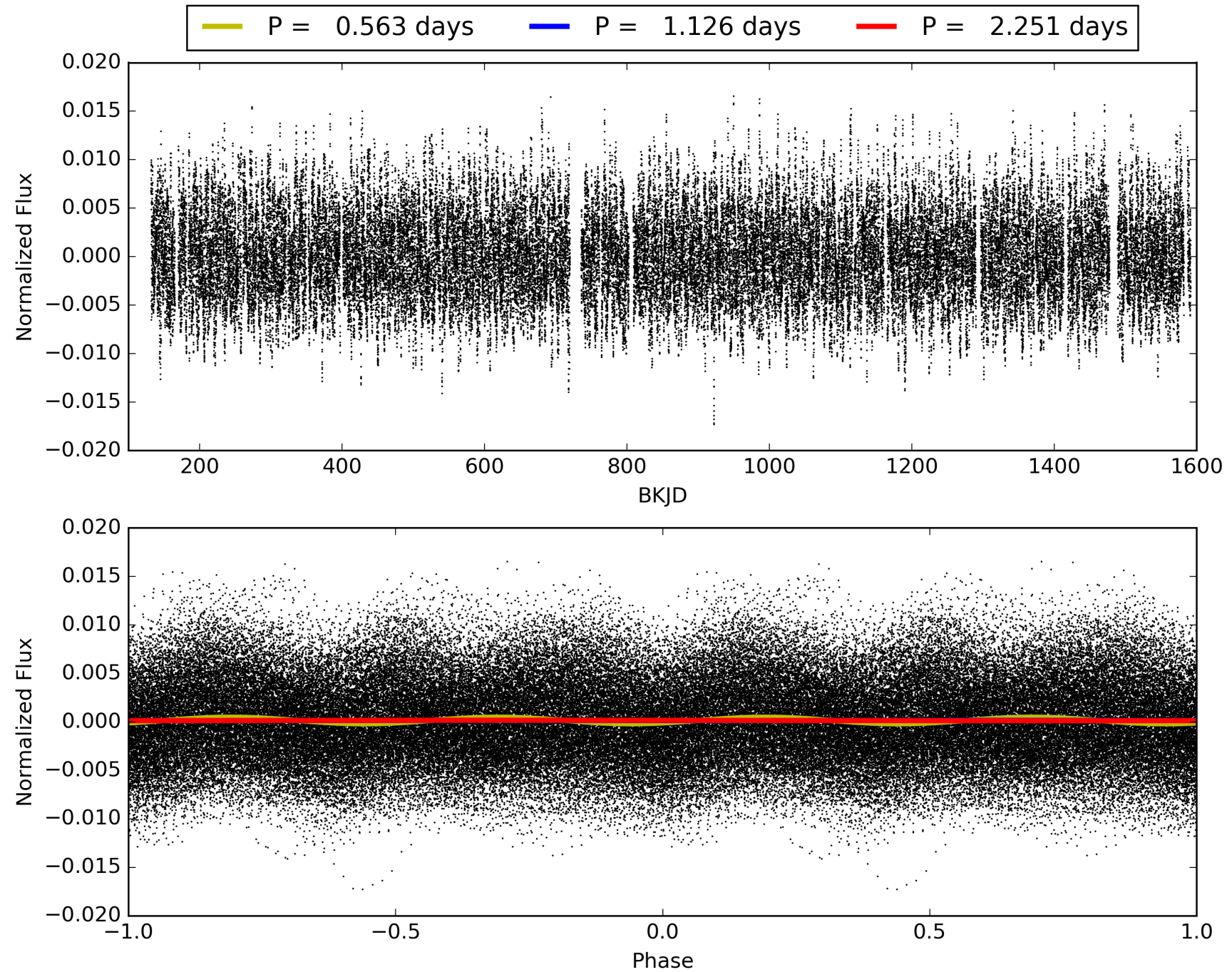
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009119402-02, PDC Light Curves

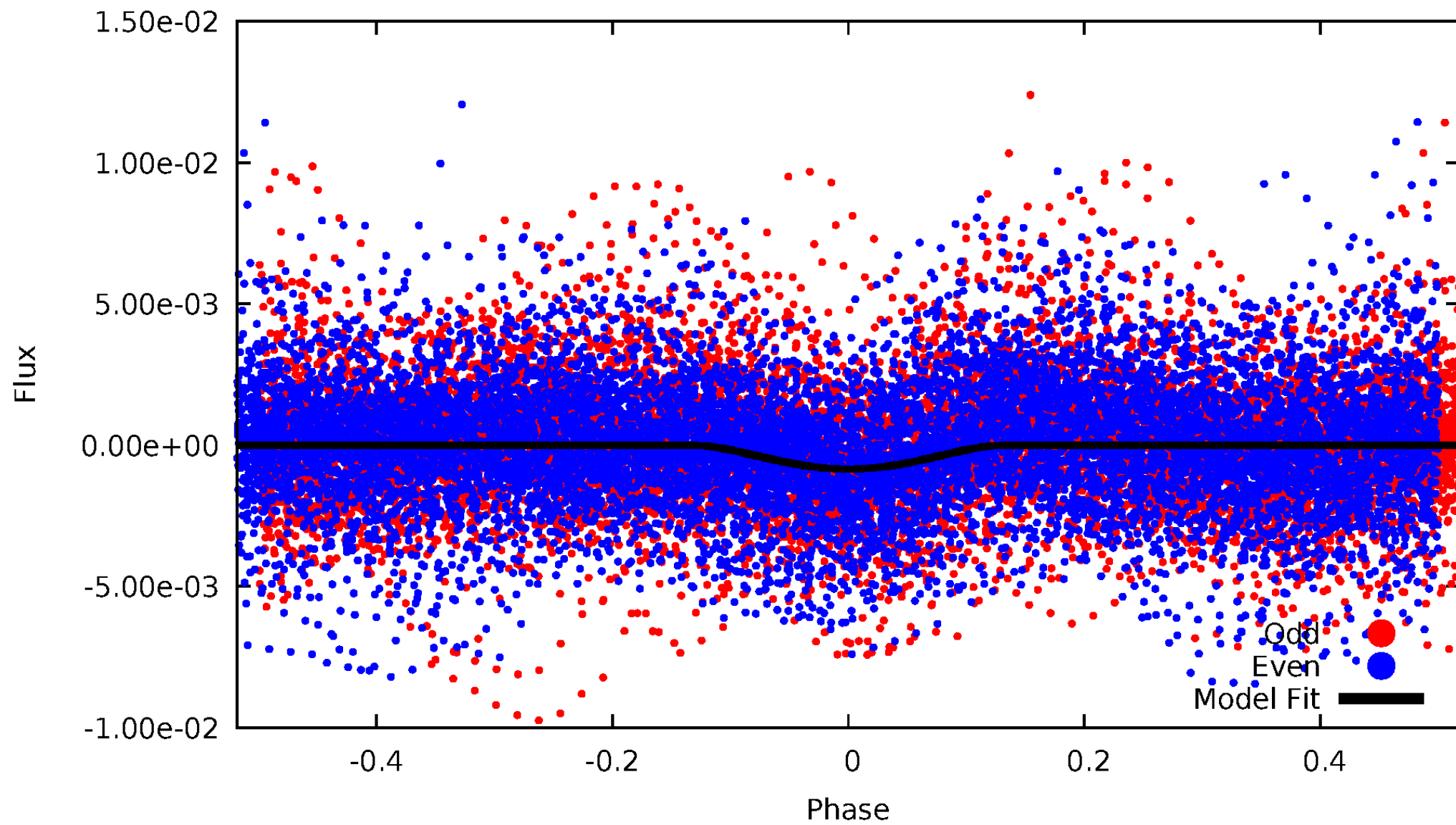


TCE 009119402-02



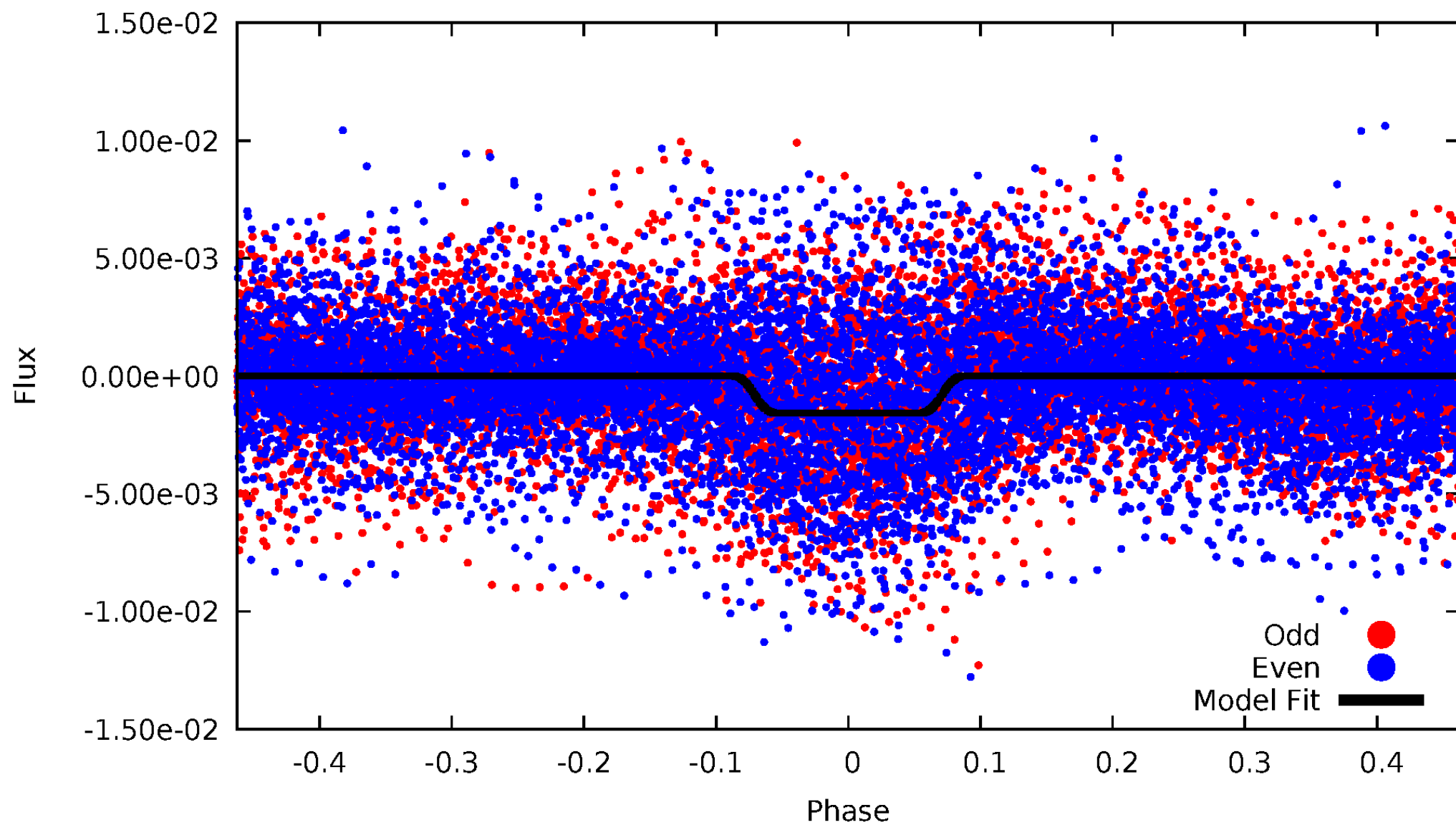
DV Odd/Even

TCE 009119402-02



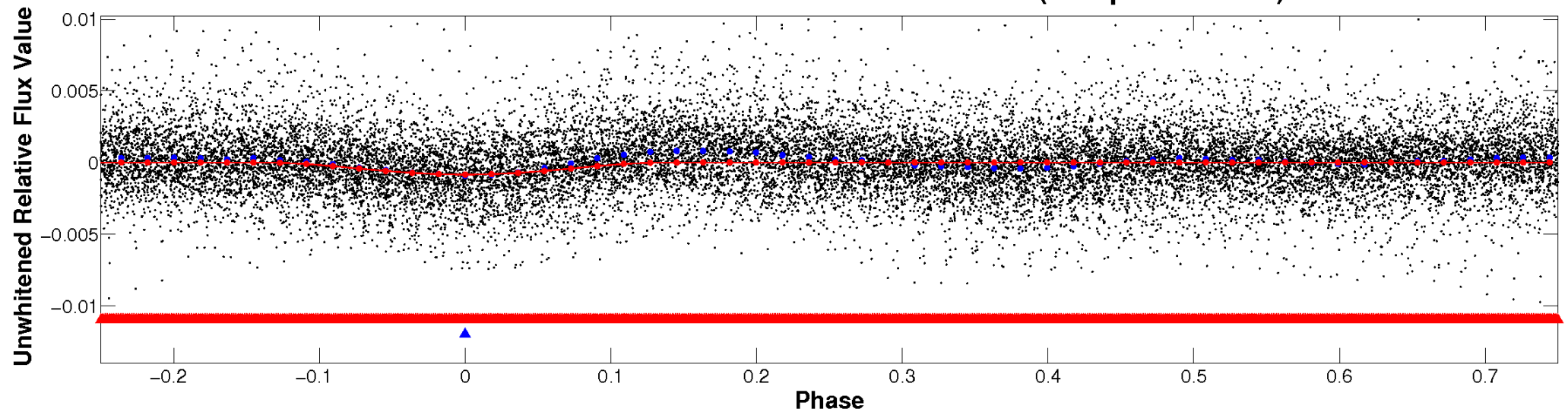
ALT Odd/Even

TCE 009119402-02

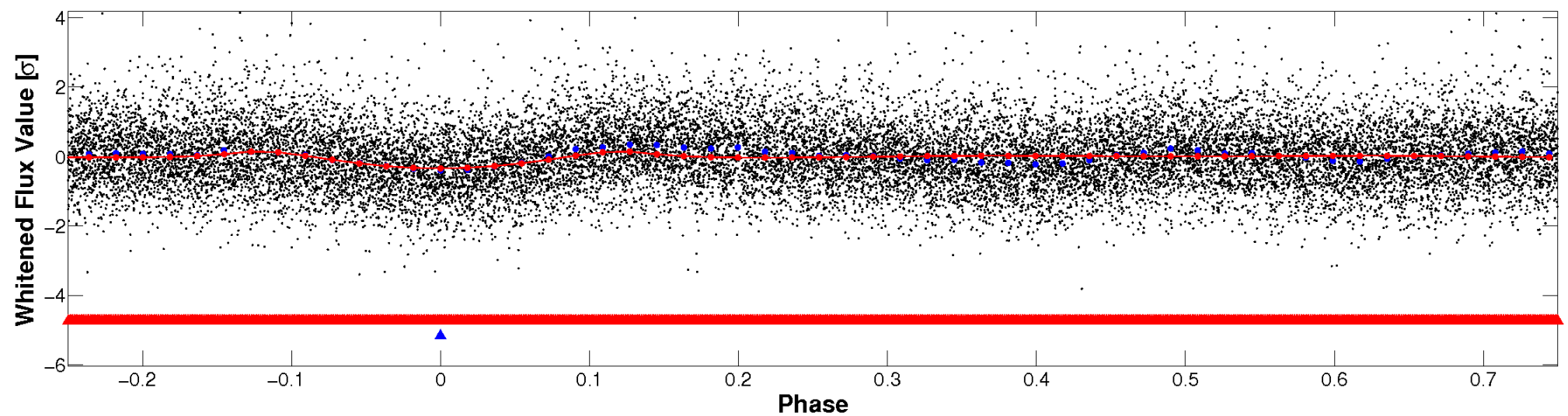


Non-Whitened Vs. Whitened Light Curve

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

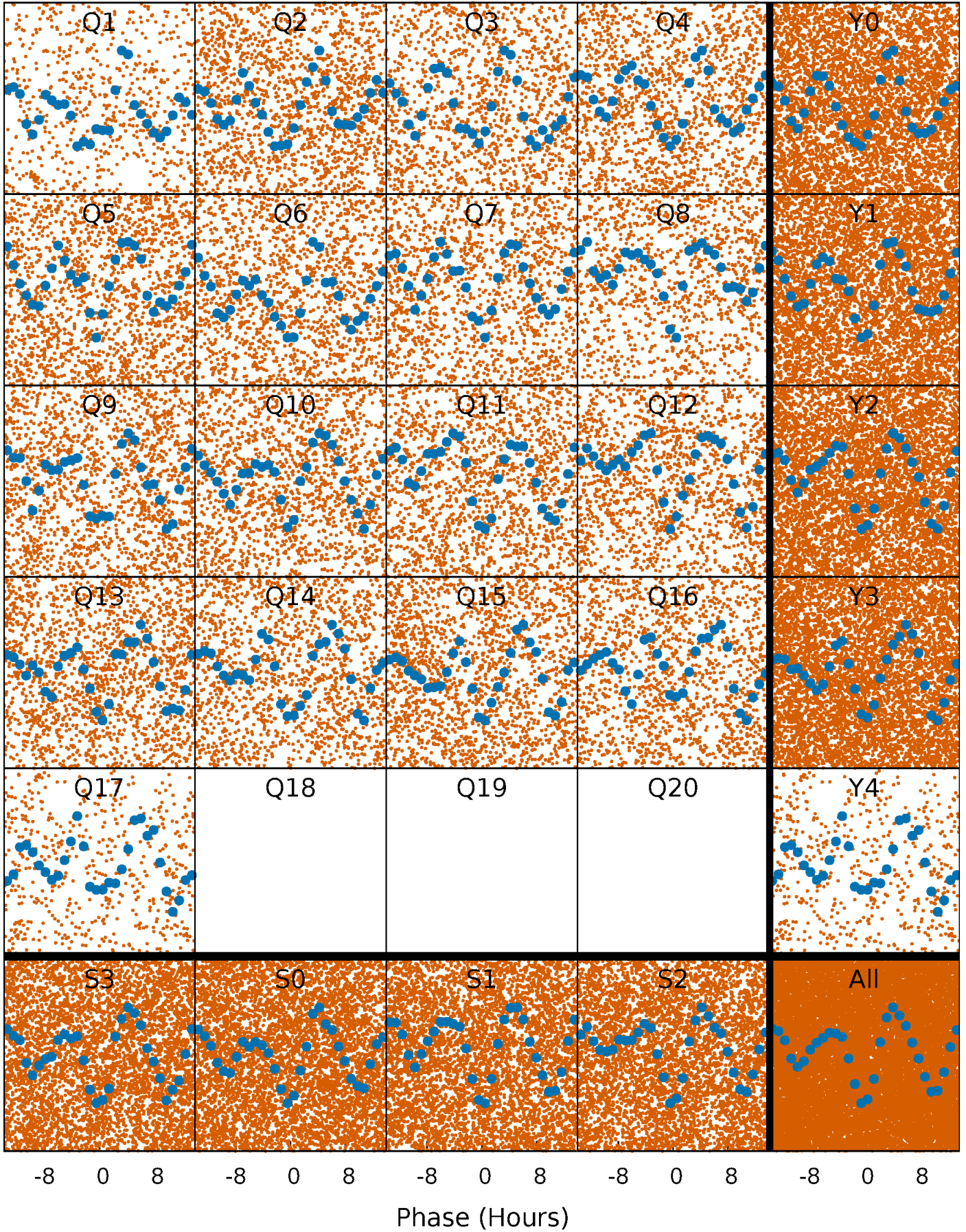


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



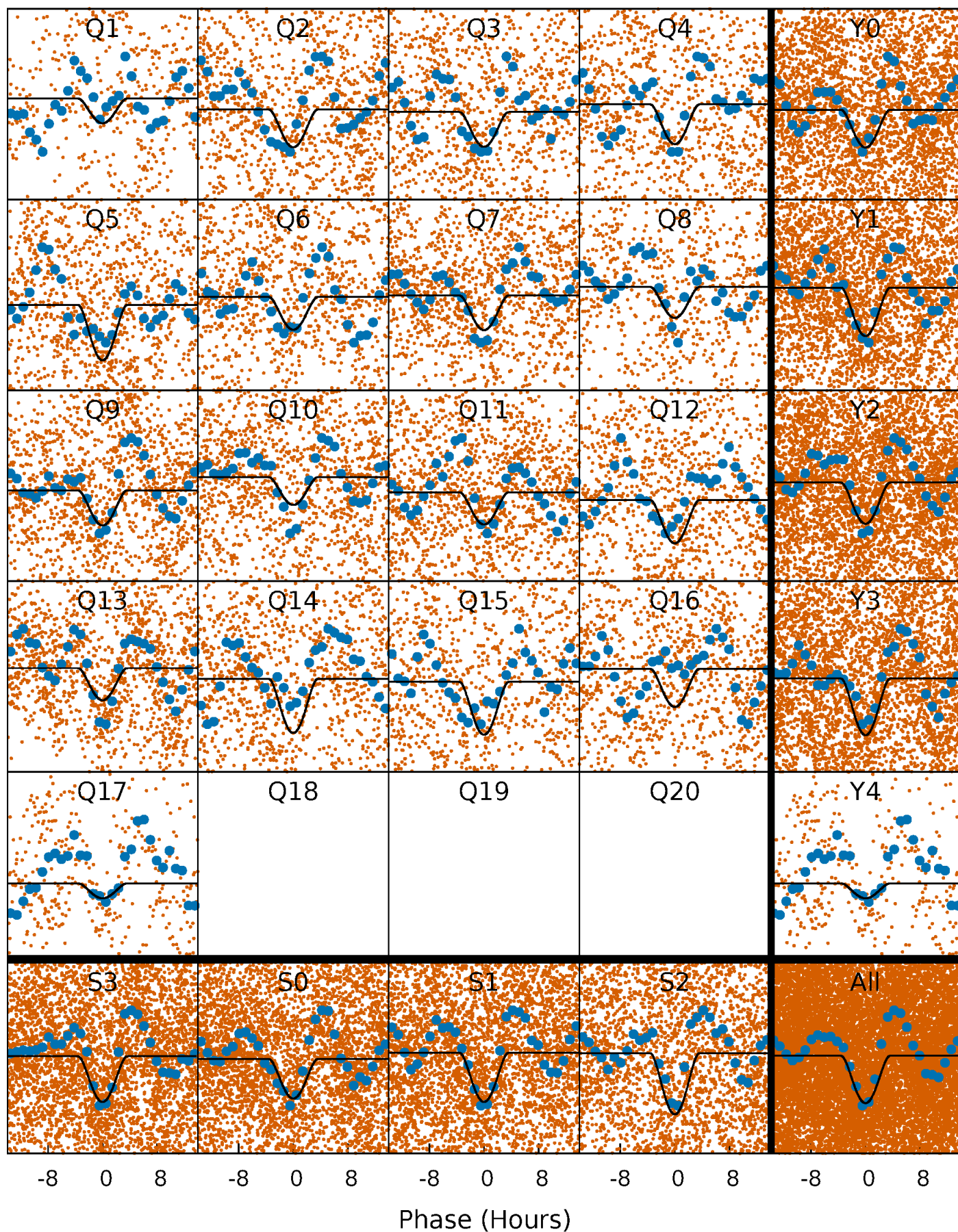
PDC Quarter-Phased Transit Curves

TCE 009119402-02 P= 1.125671 Days $T_0=132.235266$ (BKJD)



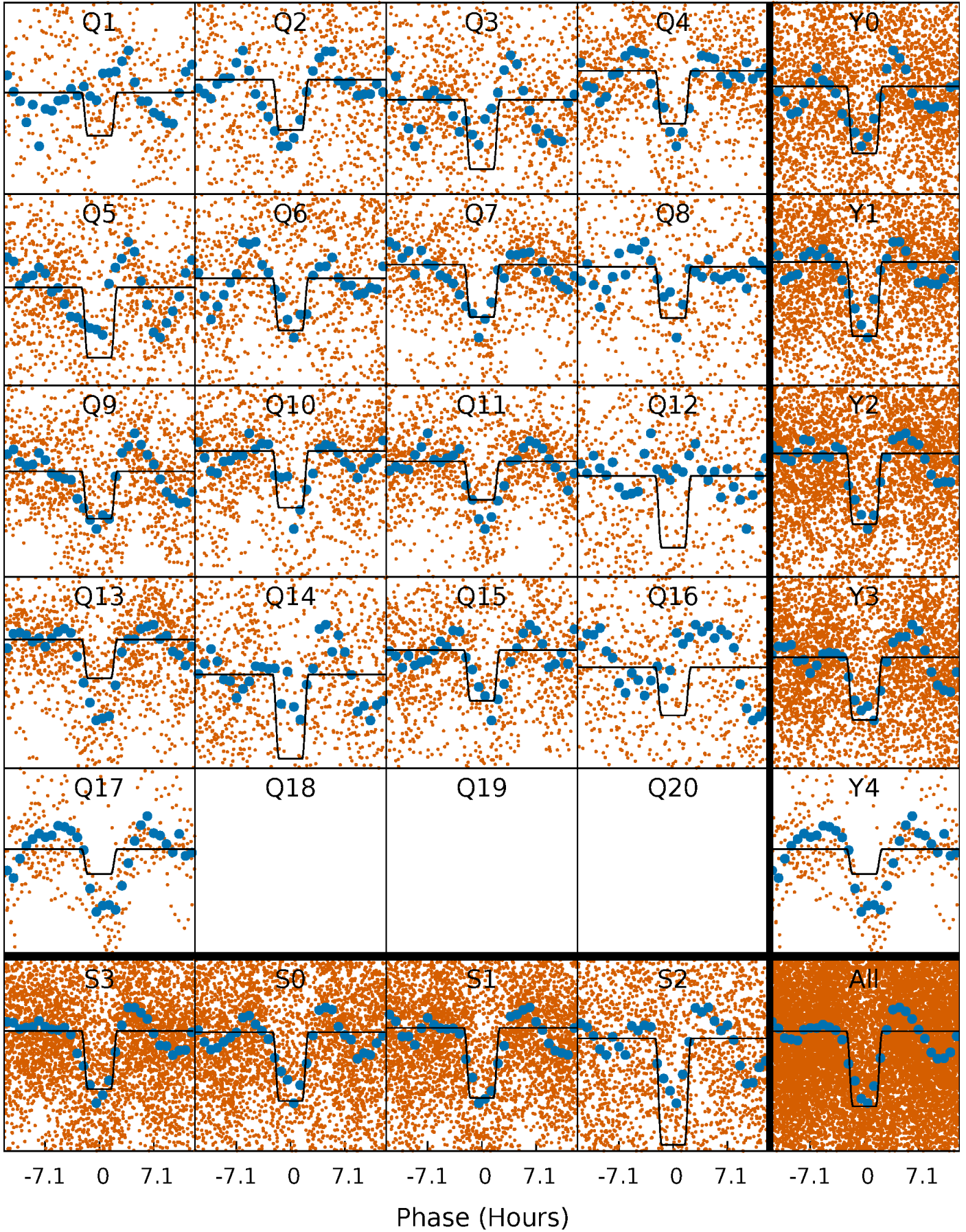
DV Quarter-Phased Transit Curves

TCE 009119402-02 P= 1.125671 Days $T_0=132.235266$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

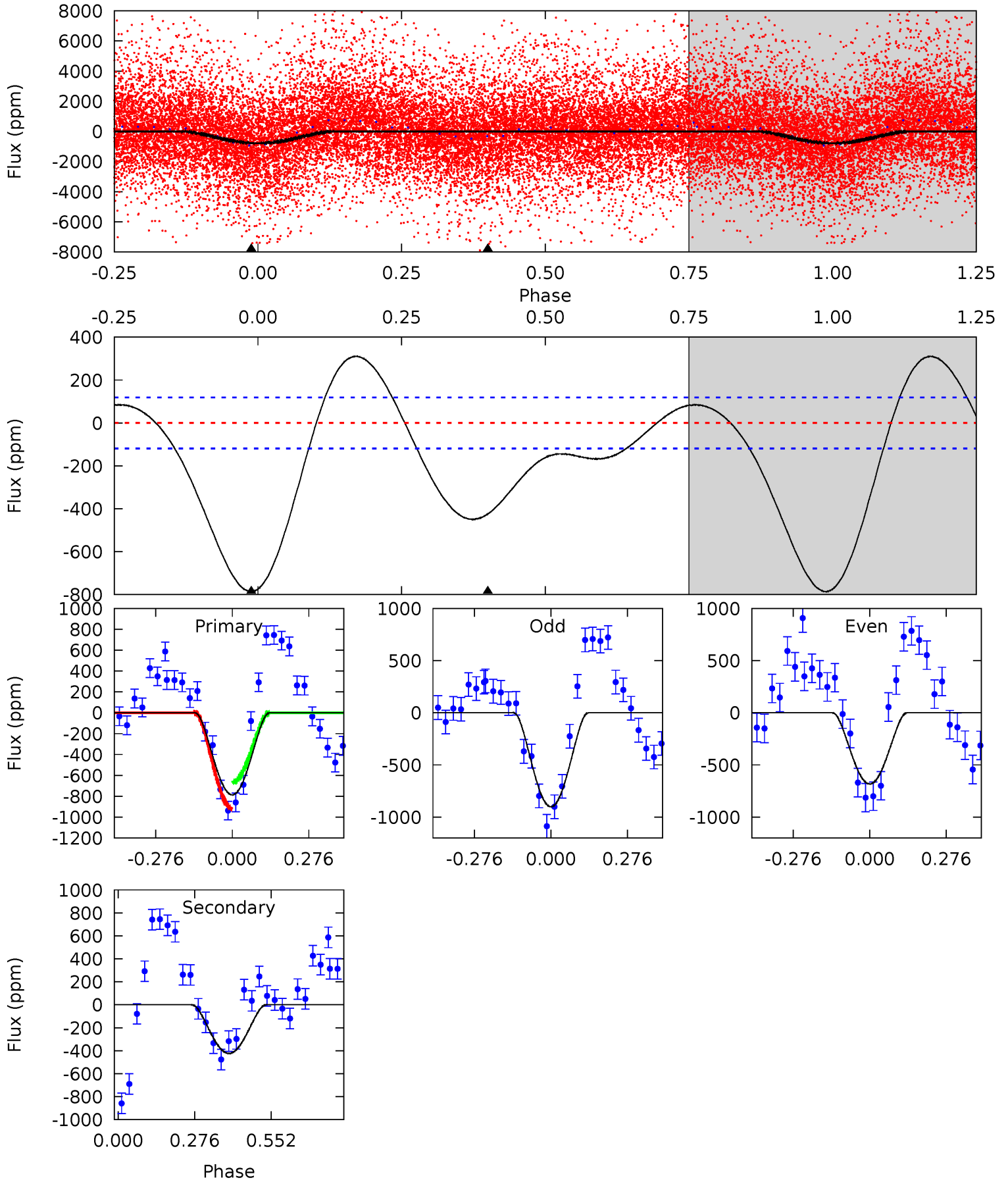
TCE 009119402-02 P= 1.125678 Days $T_0=132.222911$ (BKJD)



DV Model-Shift Uniqueness Test

009119402-02, P = 1.125671 Days, E = 131.109595 Days

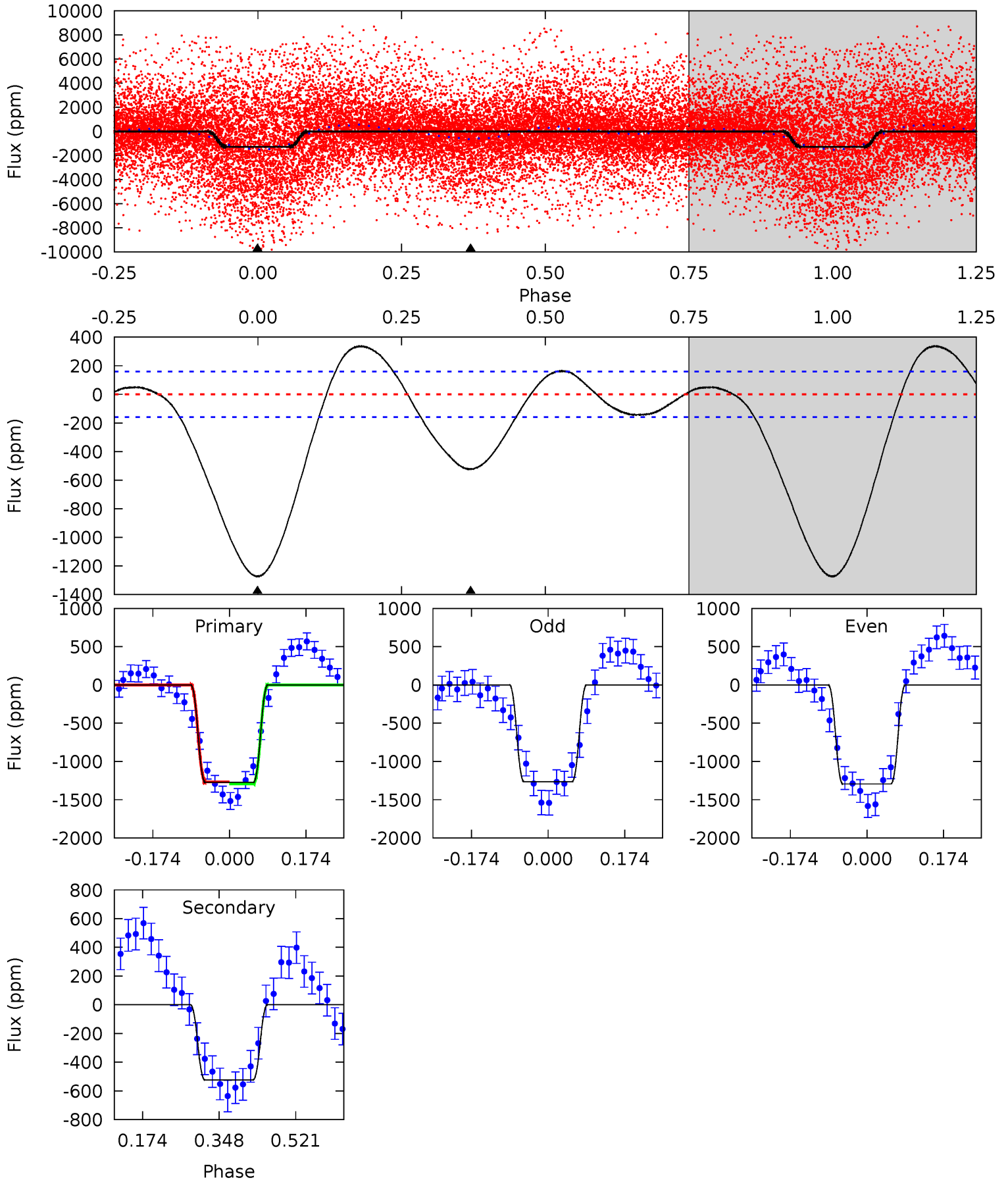
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.7	15.5	0	0	4.35	1.09	2.25	28.7	28.7	15.5	15.5	4.04	-0.09	0.28	4.53



Alt Model-Shift Uniqueness Test

009119402-02, P = 1.125678 Days, E = 131.097233 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.5	14.6	0	0	4.45	1.36	3.46	35.5	35.5	14.6	14.6	0.43	0.97	0.21	0.35



Stellar Parameters For KIC 009119402

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6848^{+190}_{-286}	$4.092^{+0.209}_{-0.171}$	$-0.100^{+0.250}_{-0.300}$	$1.771^{+0.555}_{-0.505}$	$1.420^{+0.202}_{-0.269}$	$0.360^{+0.444}_{-0.172}$
	+3%/-4%	+5%/-4%	+250%/-300%	+31%/-29%	+14%/-19%	+123%/-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 009119402-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-424 ± 27	$9.49^{+4.95}_{-4.95}$	3615^{+272}_{-285}	4322^{+1724}_{-870}	$1.406^{+4.844}_{-0.783}$
Alt.	-524 ± 36	$7.99^{+5.55}_{-4.70}$	3613^{+281}_{-284}	4945^{+2846}_{-1101}	$2.563^{+12.203}_{-1.693}$

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

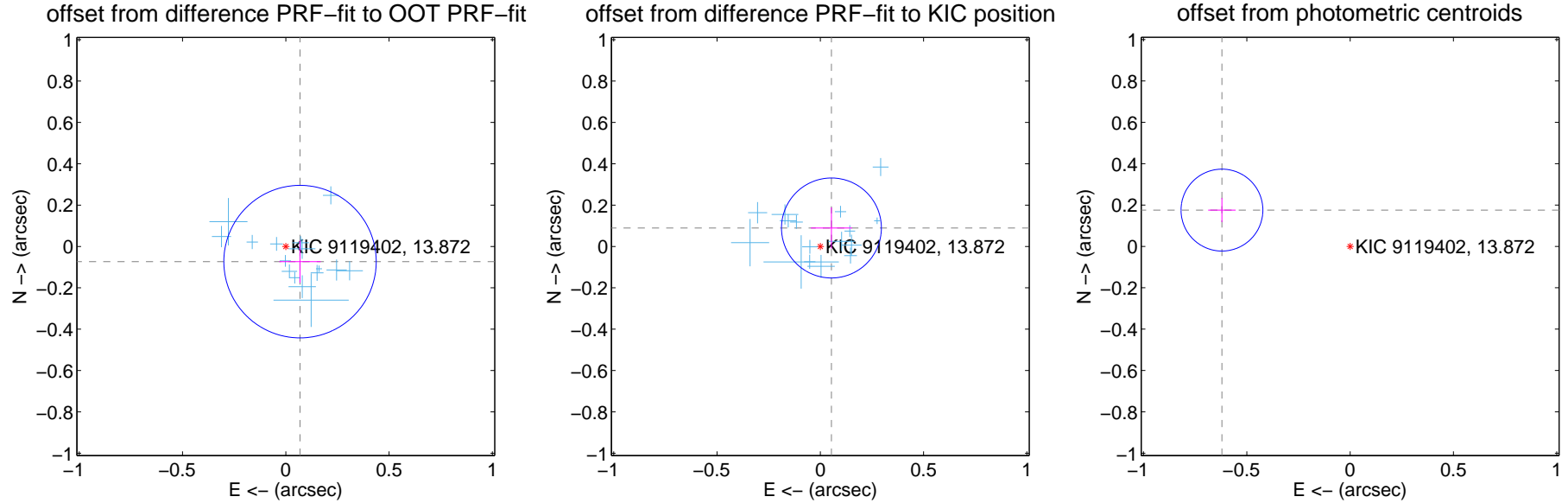
DV Centroid Data

Supplemental centroid analysis for 009119402-02. Kepler magnitude: 13.87. Transit SNR 15.87

There are 17 quarters with good PRF difference image offsets

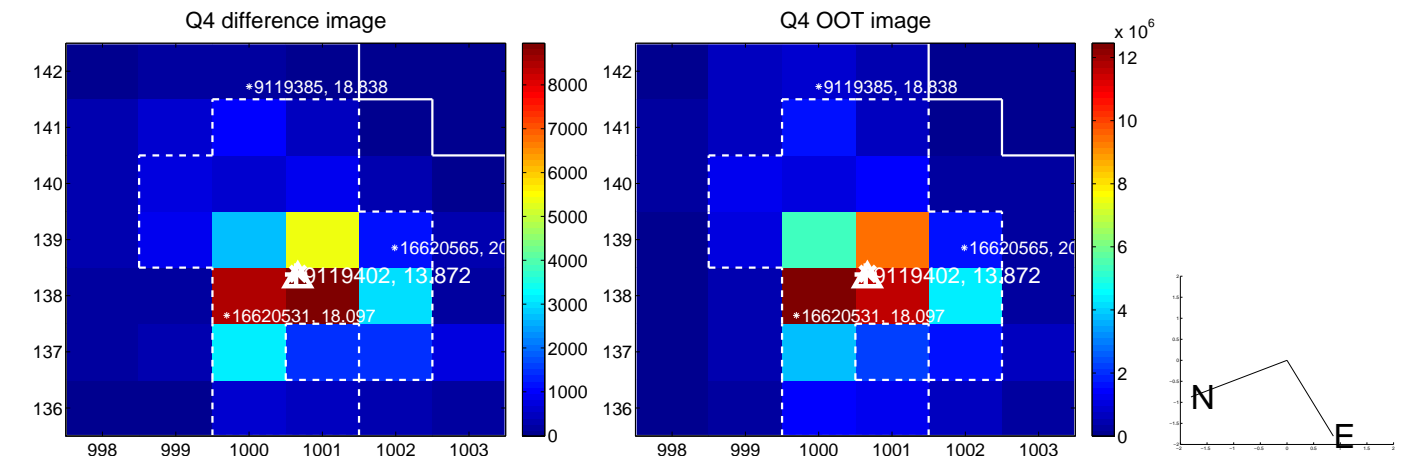
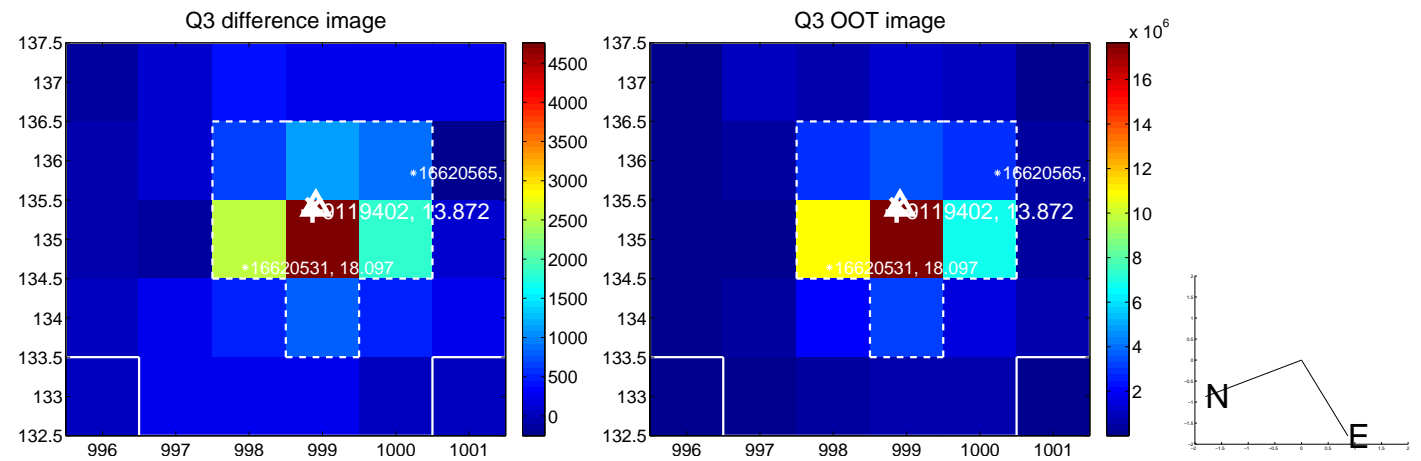
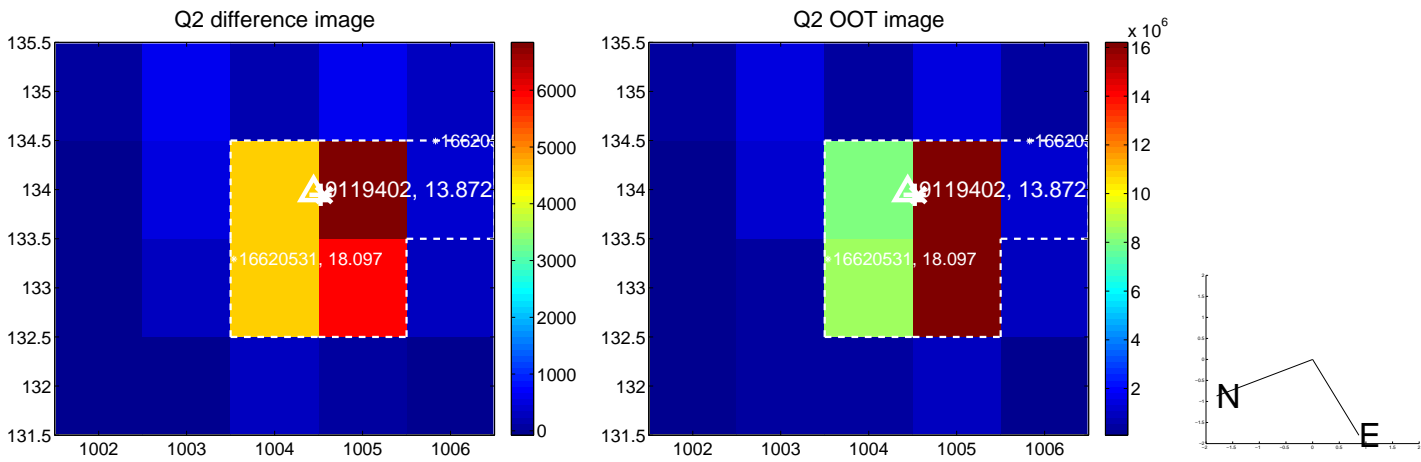
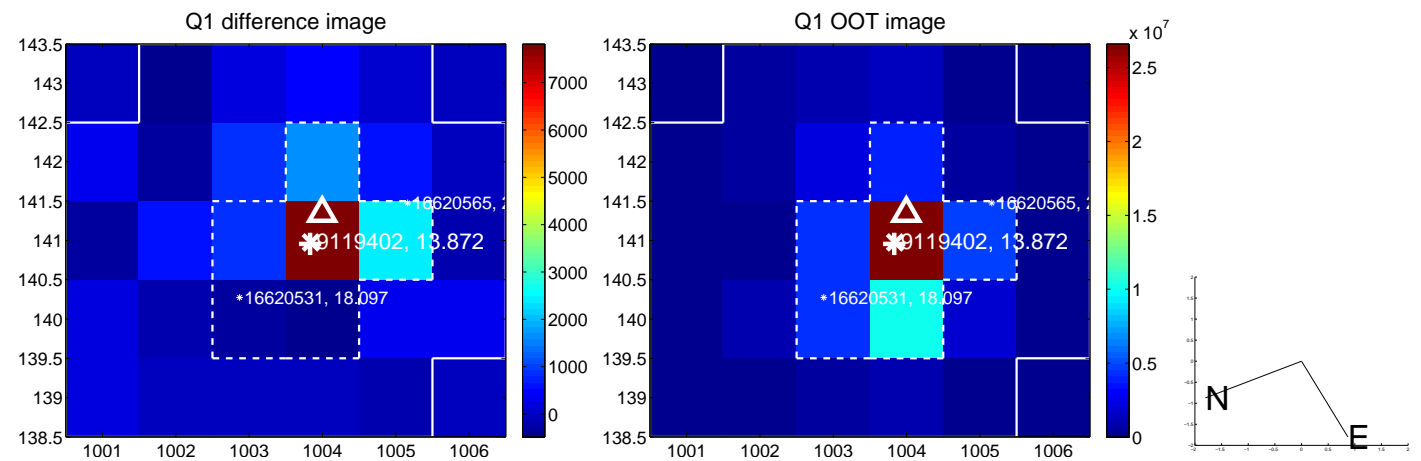
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.101 ± 0.123	0.82	-0.069 ± 0.101	-0.073 ± 0.102
PRF-fit source offset from KIC position	0.104 ± 0.081	1.30	-0.054 ± 0.100	0.089 ± 0.100
photometric centroid source offset	0.64 ± 0.07	9.77	0.62 ± 0.07	0.18 ± 0.06

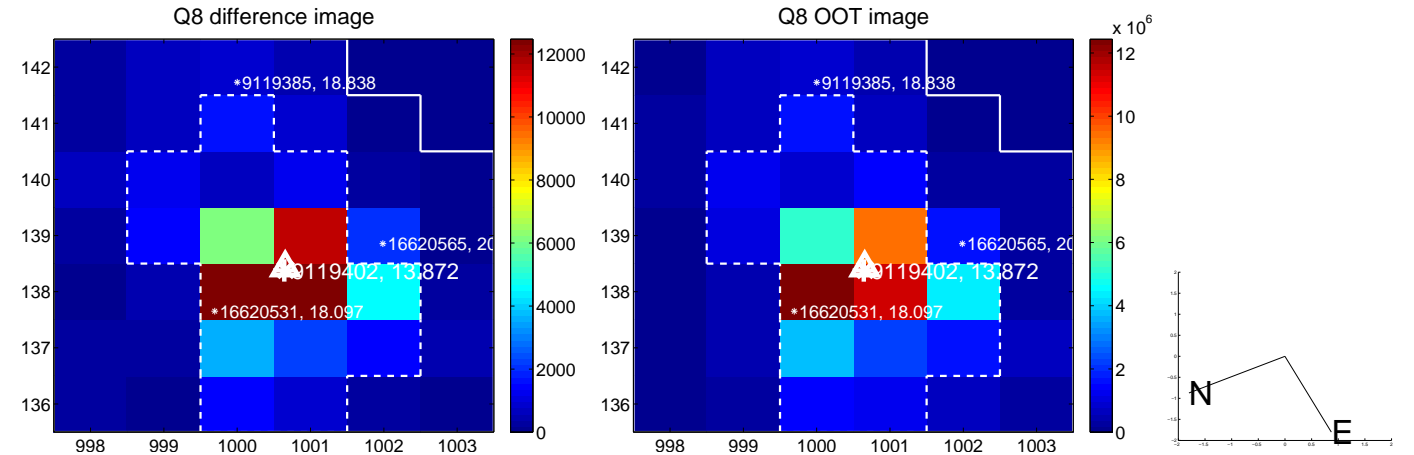
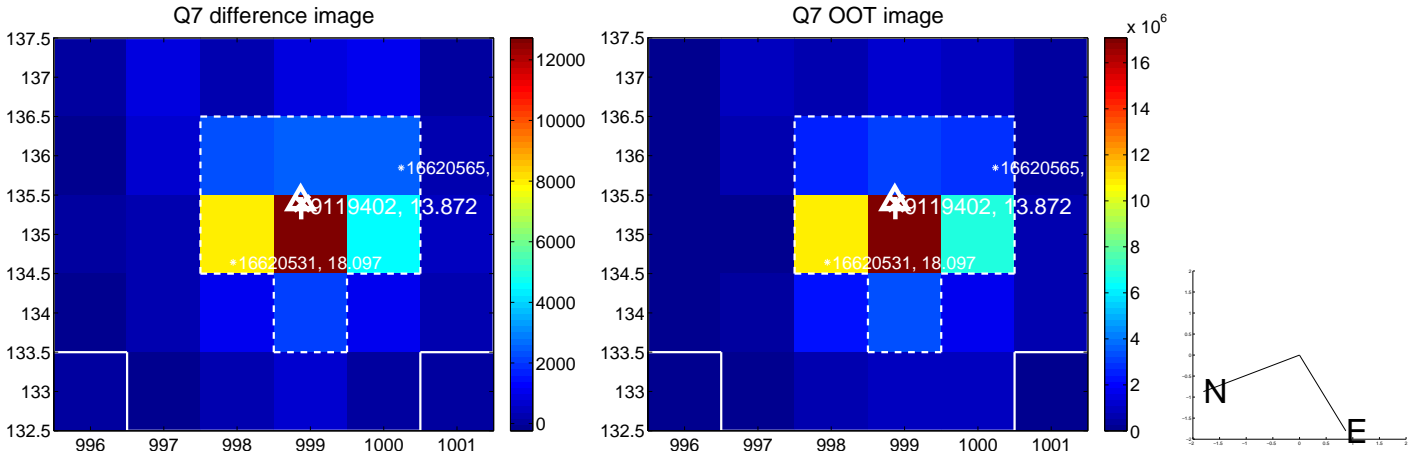
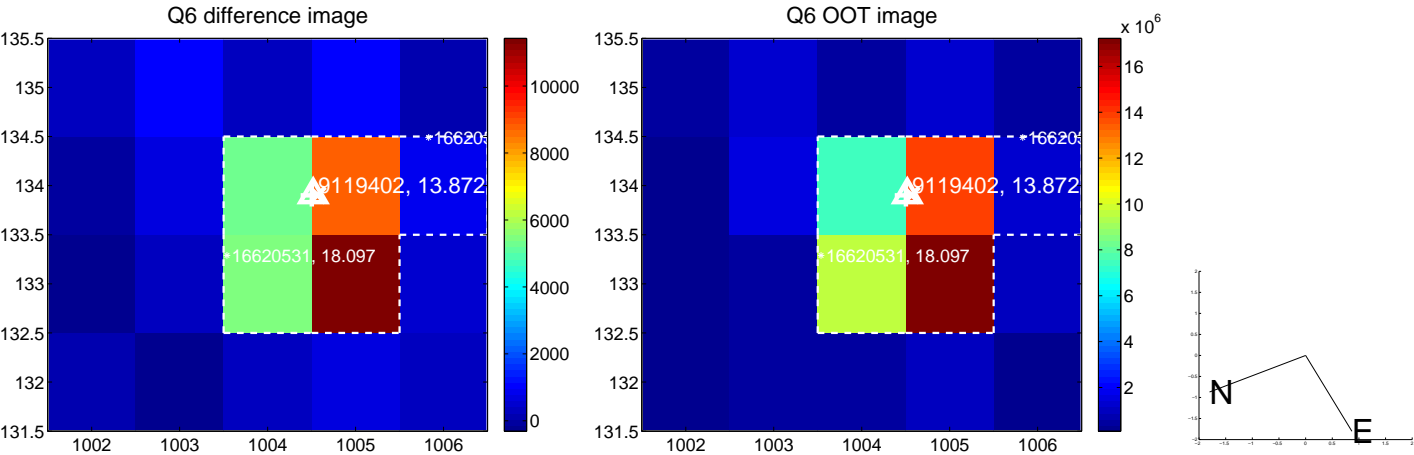
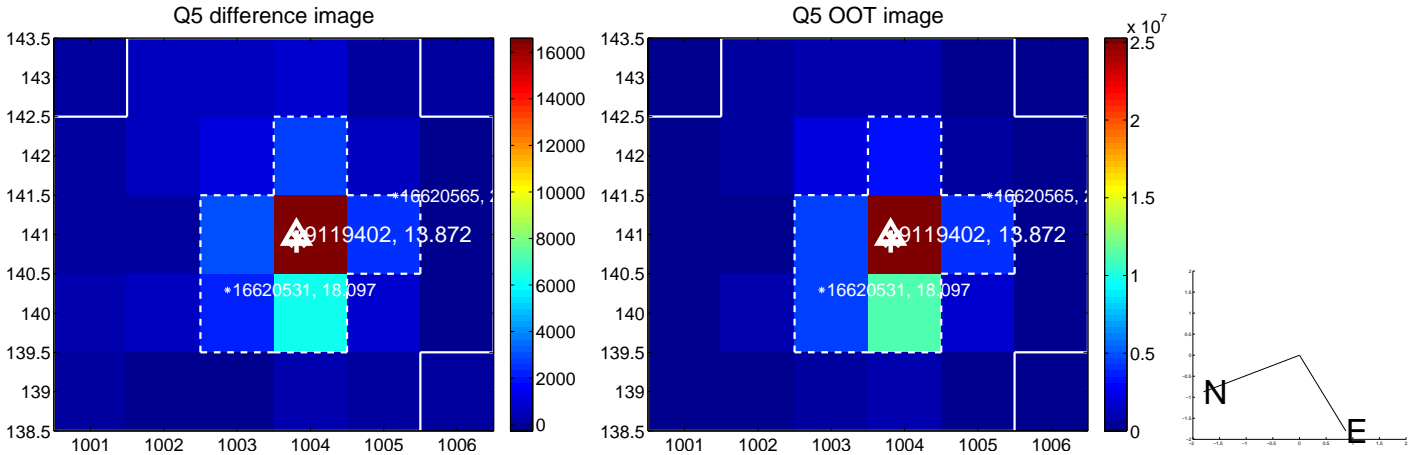


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

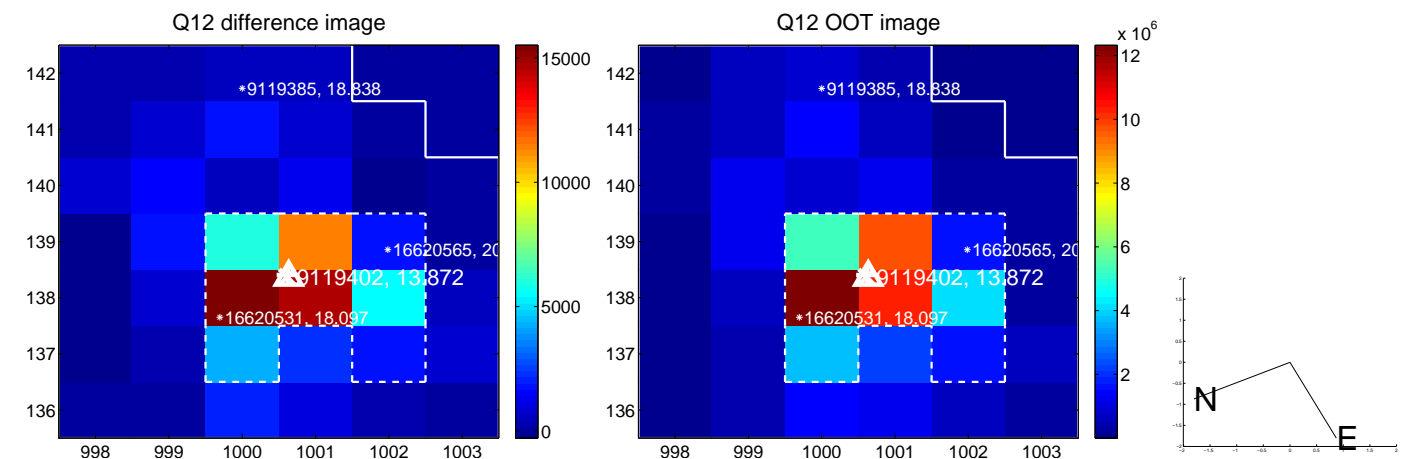
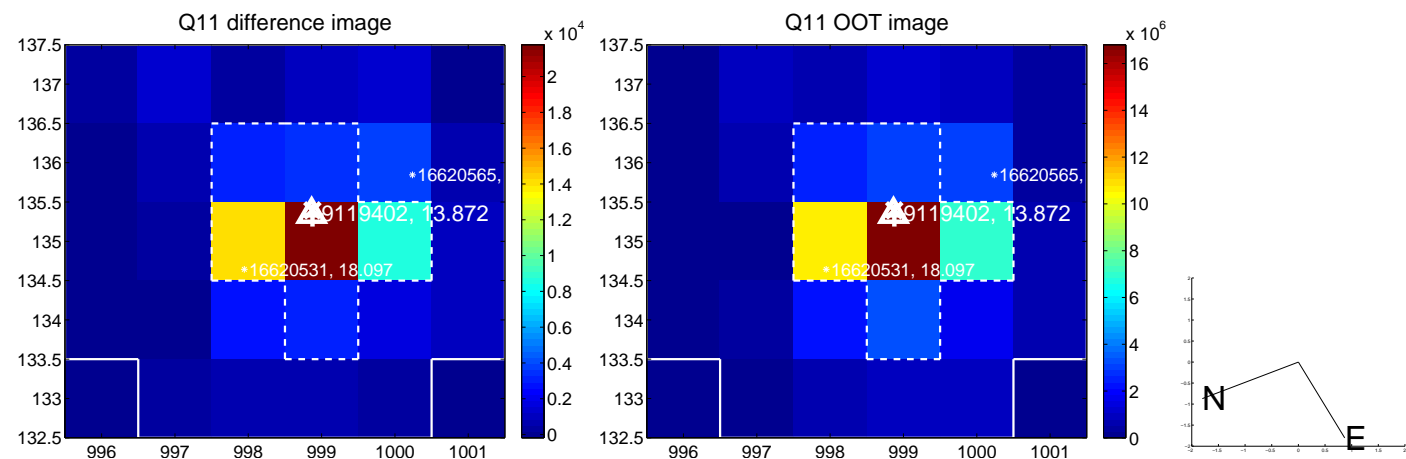
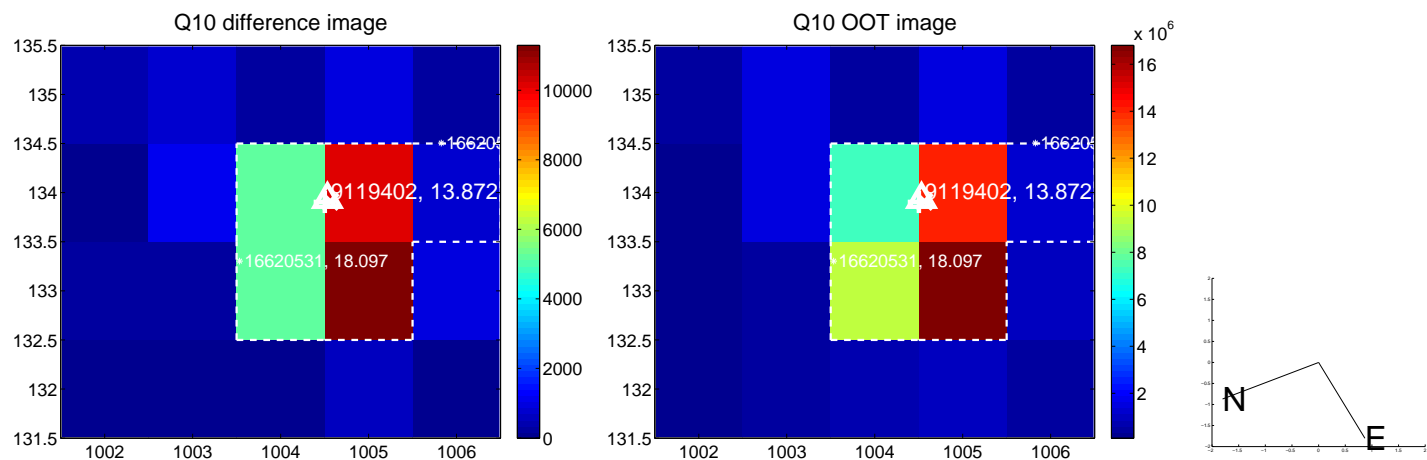
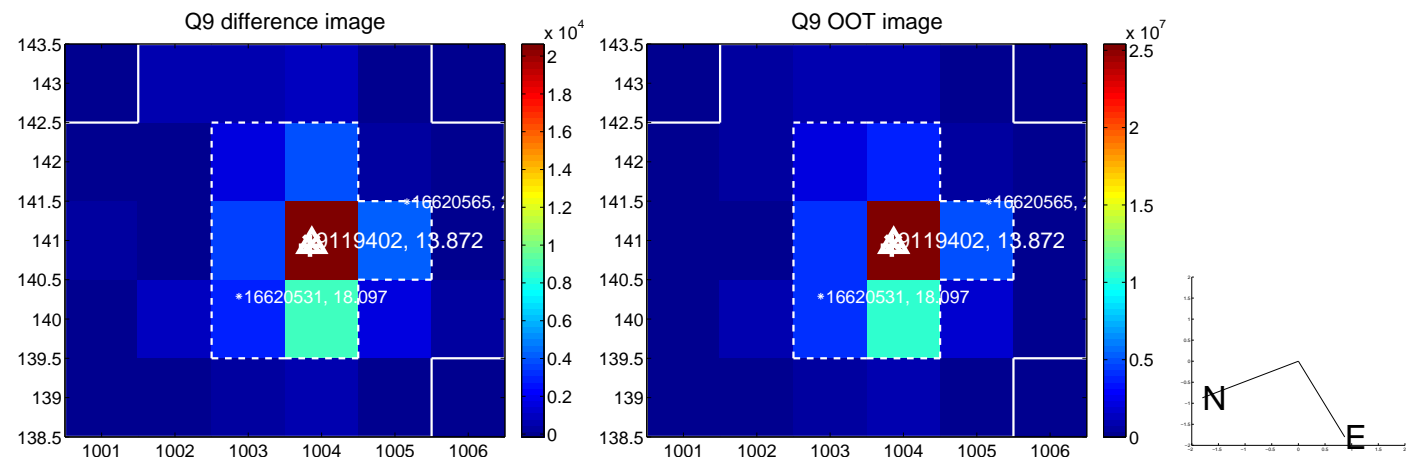
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



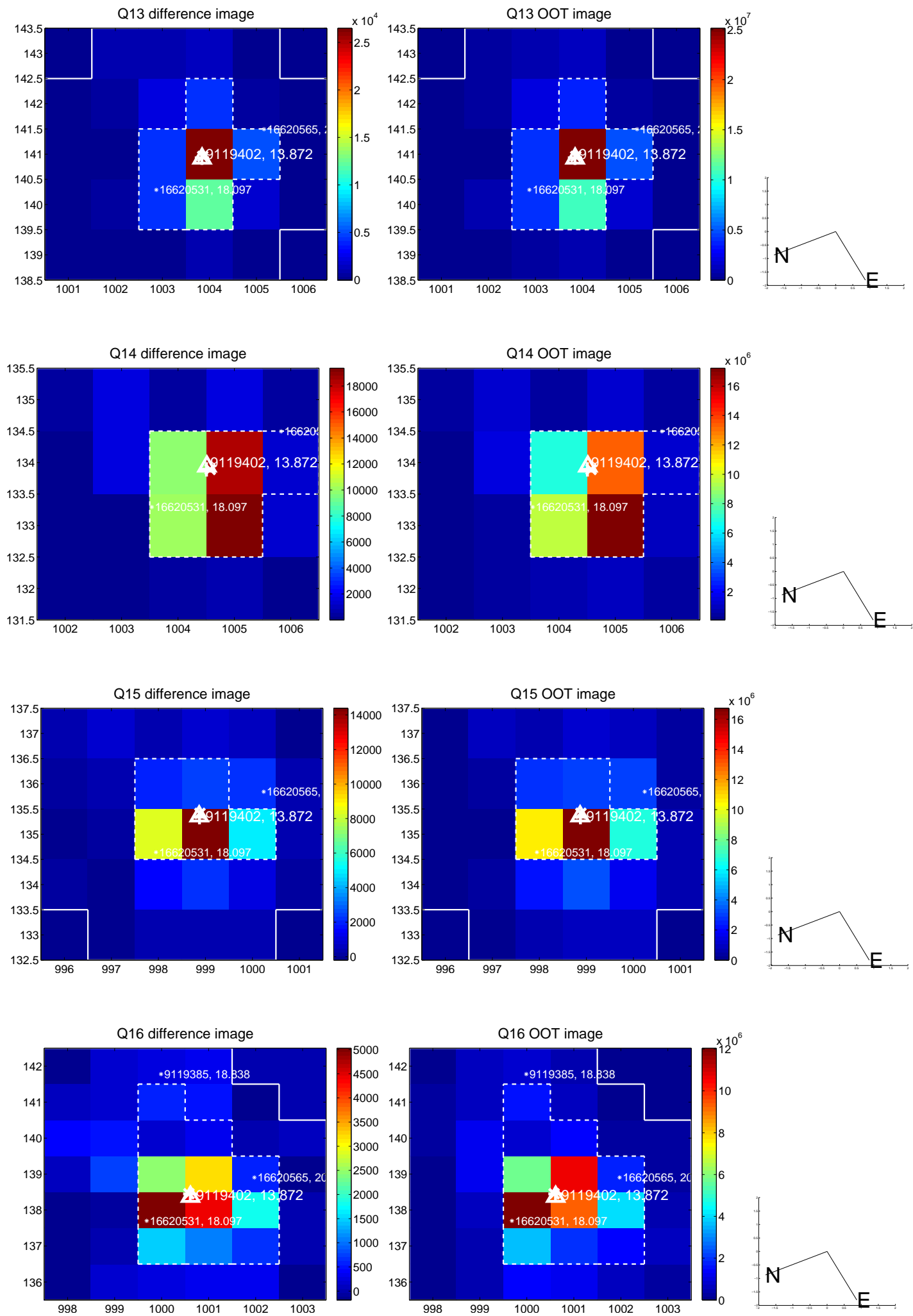
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



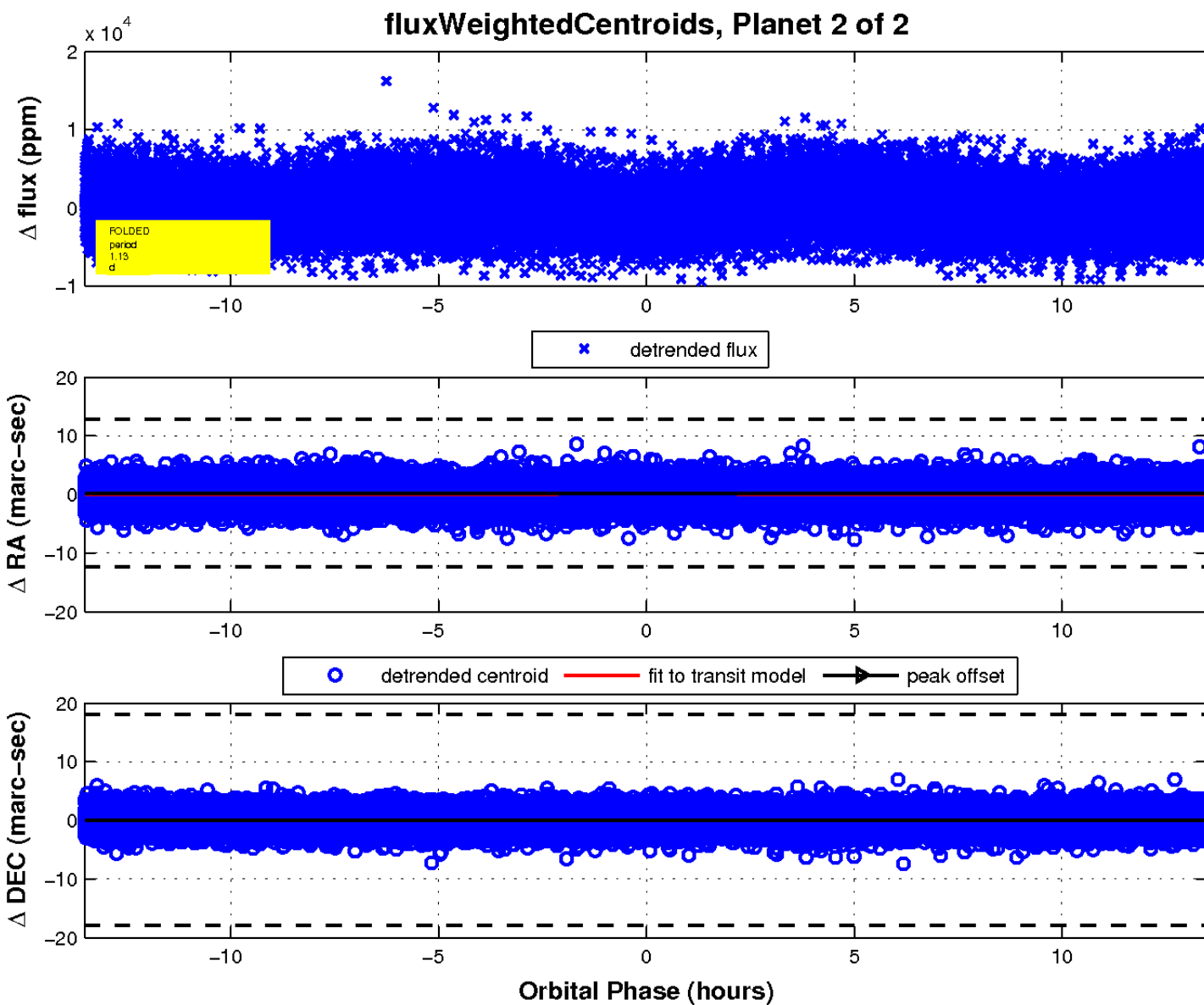
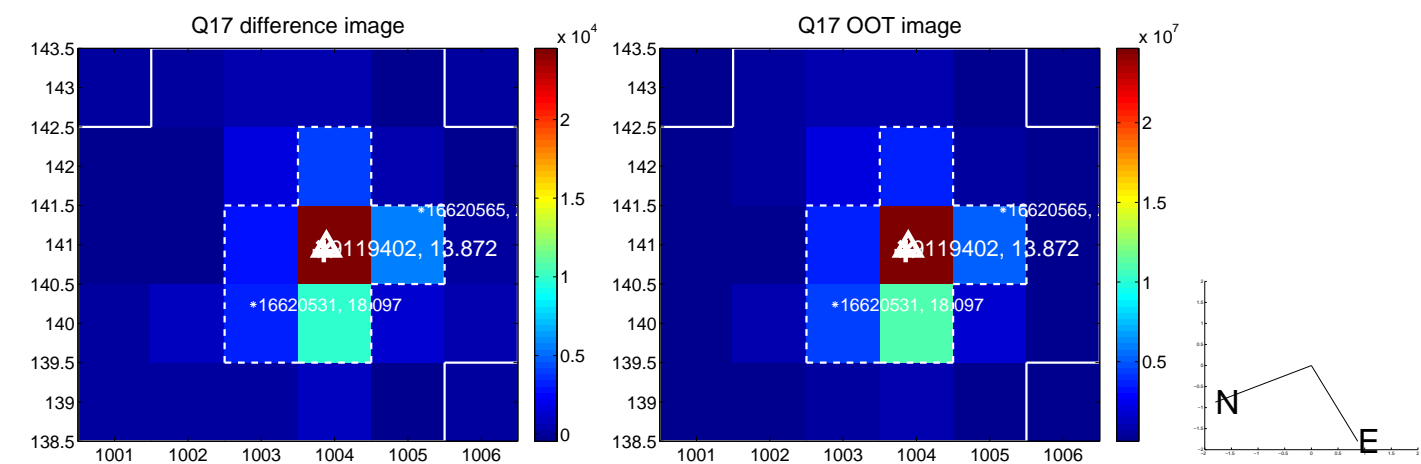
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

