

KIC 009027328

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})
009027328-01	OBS	No	2.346580	132.764083	30.1	17.669	10.6	2.9	1.70	7278	0.96	4797.35
009027328-02	OBS	No	37.535843	149.987142	4951.0	44.416	20.8	10.2	1.70	7278	21.27	119.03
009027328-03	OBS	No	46.955150	140.913837	379.4	5.000	8.7	-1.0	1.70	7278	3.36	88.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009027328-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009027328-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009027328-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—NO_FITS—CENT_NOFITS

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

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

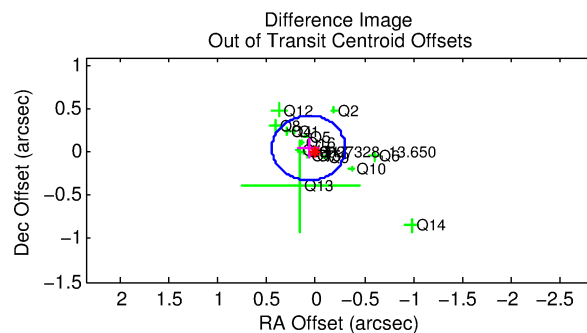
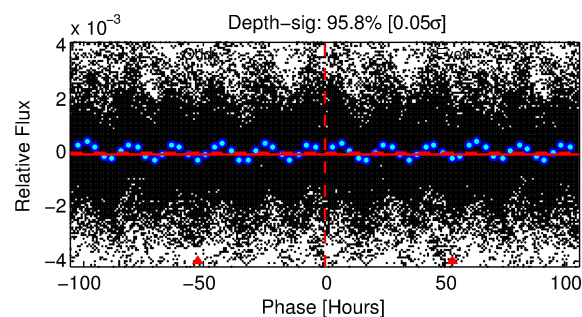
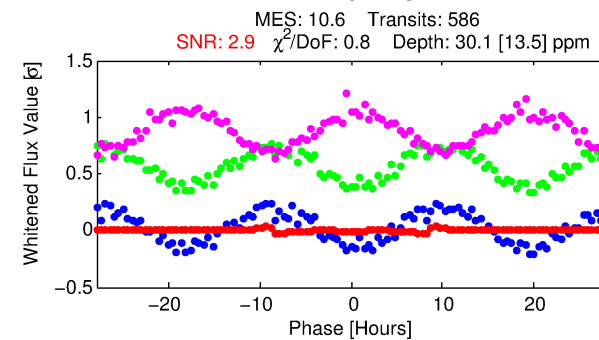
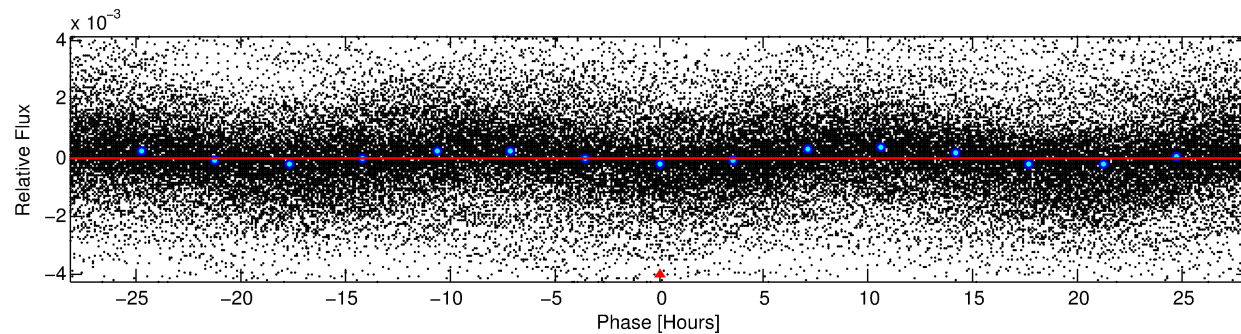
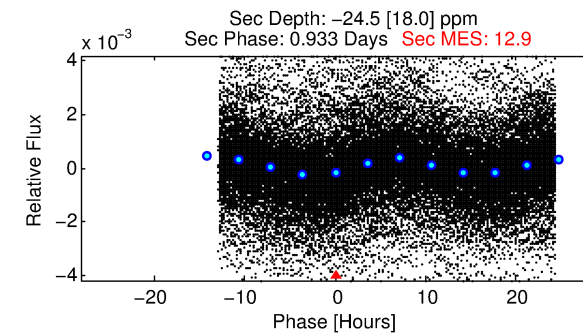
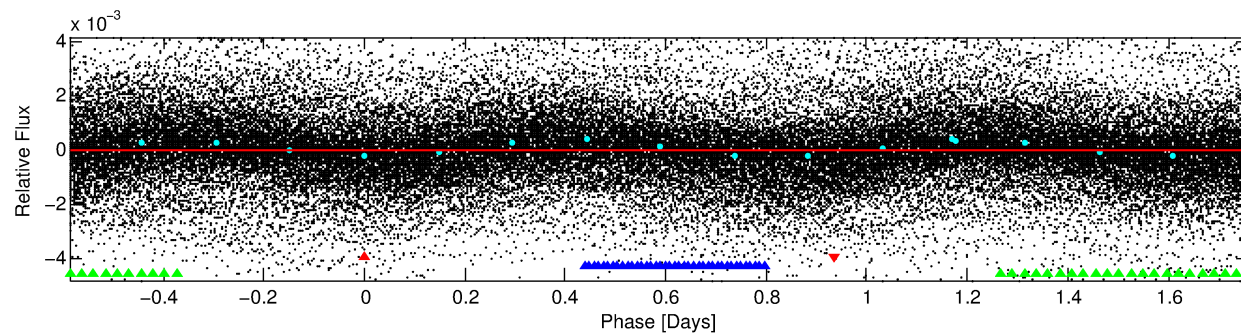
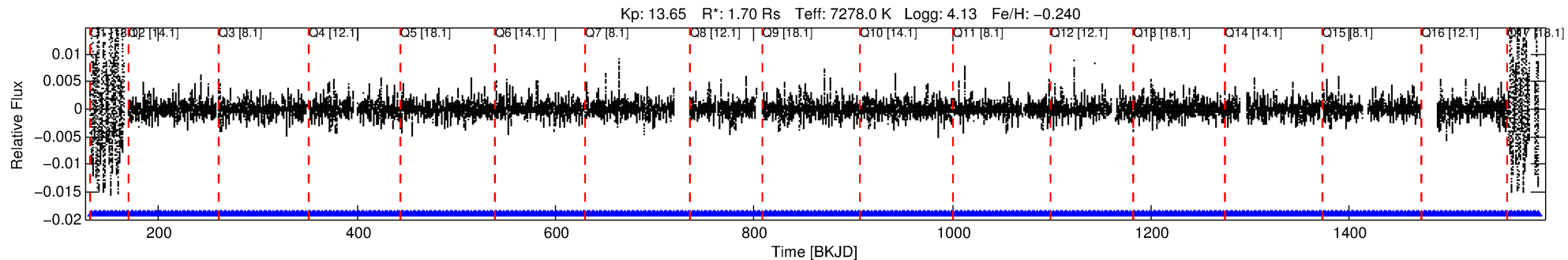
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009027328-01

No Significant Match Found

DV One-Page Summary

KIC: 9027328 Candidate: 1 of 3 Period: 2.347 d



DV Fit Results:

Period = 2.34658 [0.00004] d
Epoch = 132.7641 [0.0073] BKJD
Rp/R* = 0.0051 [0.0052]
a/R* = 1.19 [2.19]
b = 0.33 [17.30]
Seff = 4797.35 [1934.28]
Teq = 2122 [214] K
Rp = 0.96 [1.01] Re
a = 0.0390 [0.0099] AU
Ag = N/A
Teffp = N/A

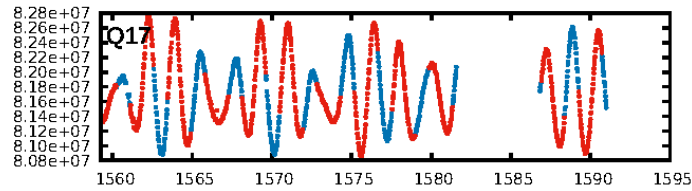
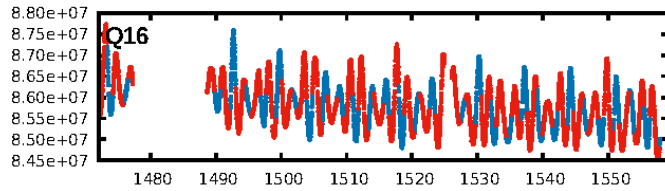
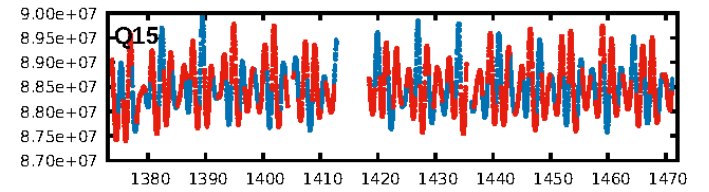
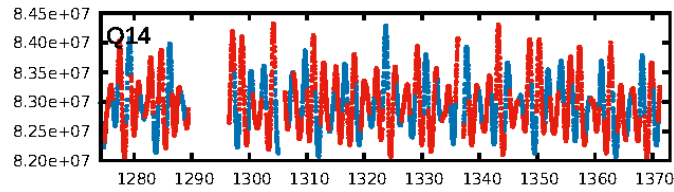
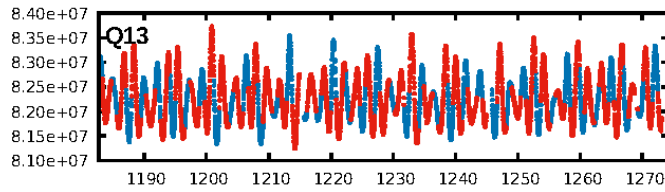
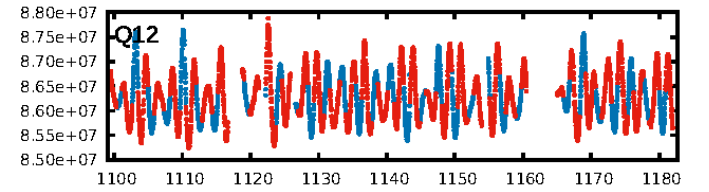
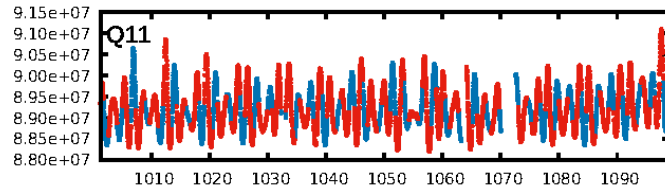
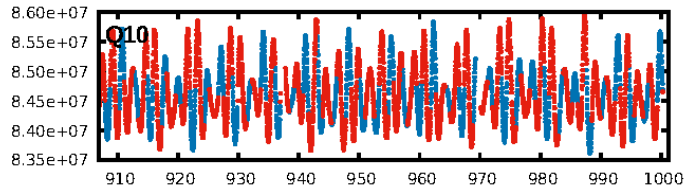
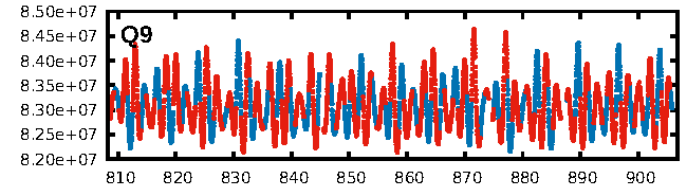
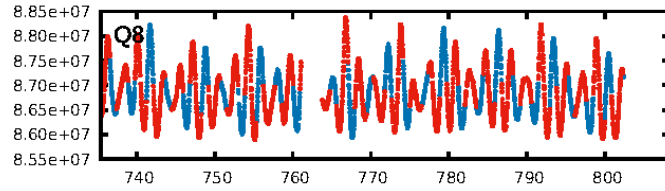
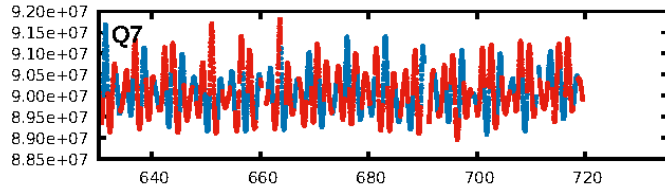
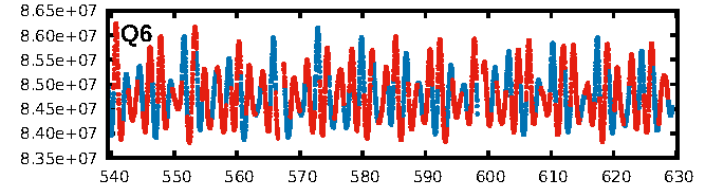
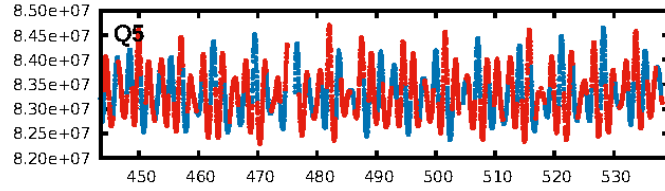
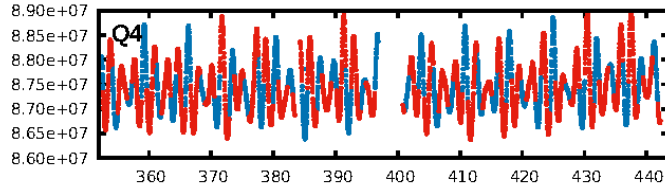
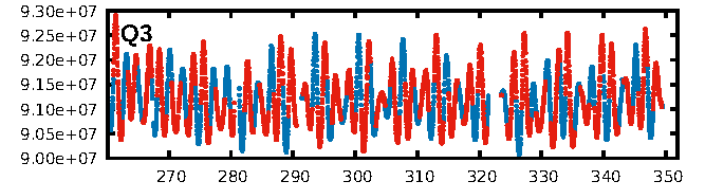
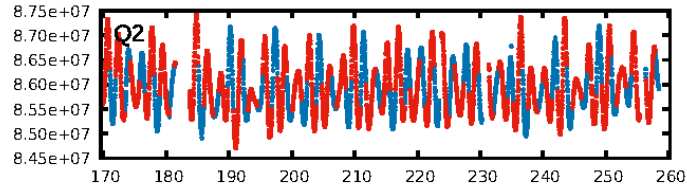
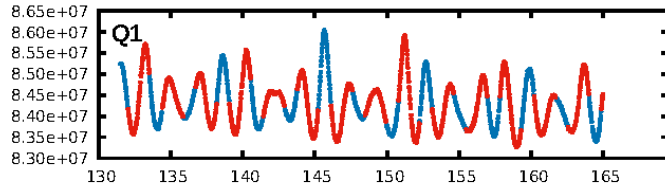
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [17.67σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.49e-55
RollingBand-fgt: 1.00 [560/560]
GhostDiagnostic-chr: -5.053
Centroid-sig: 83.0%
Centroid-so: 0.325 arcsec [0.48σ]
OotOffset-rm: 0.087 arcsec [0.70σ]
KicOffset-rm: 0.026 arcsec [0.22σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.65 [11/17]
DiffImageOverlap-fno: 1.00 [17/17]

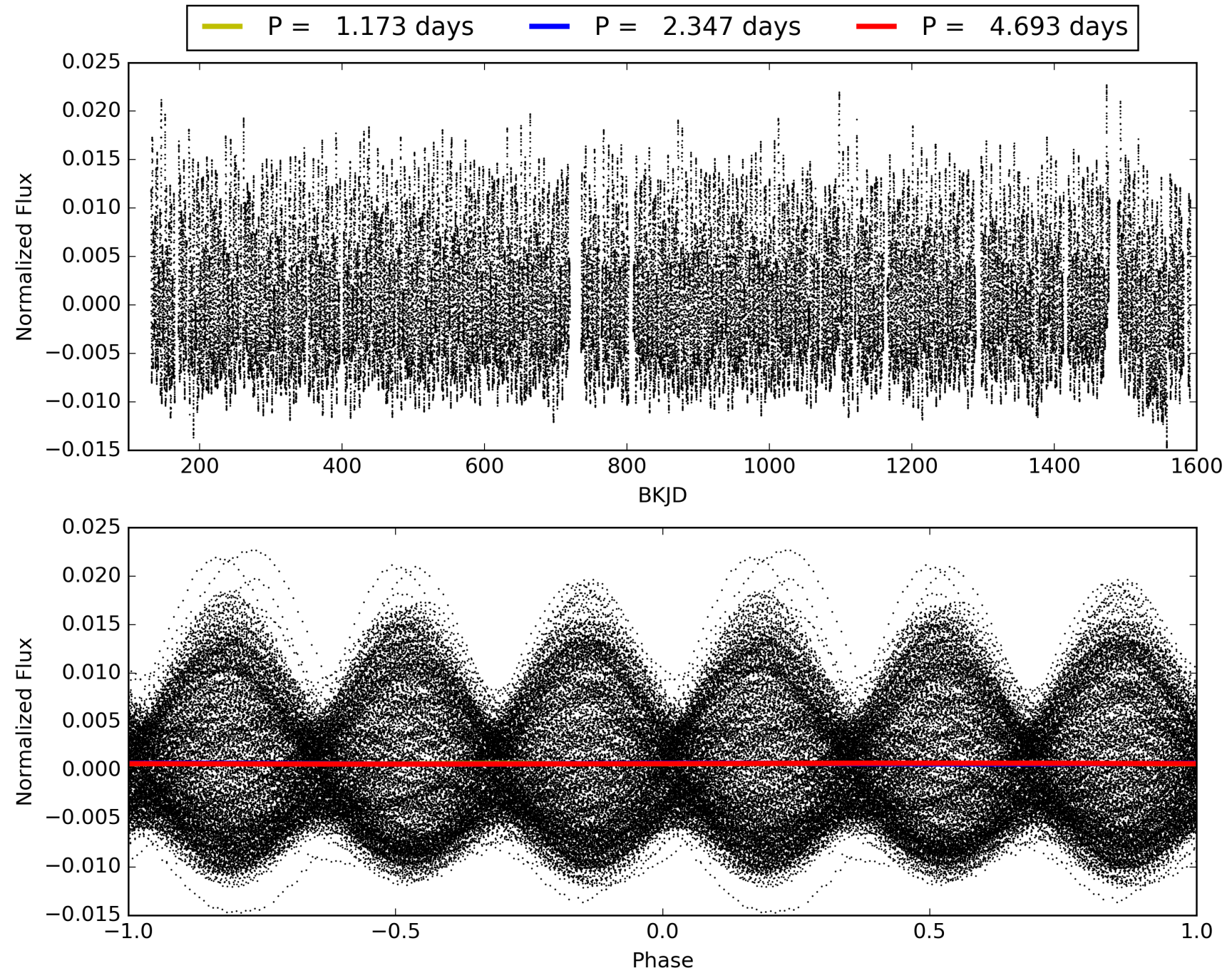
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:24:40 Z

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

TCE 009027328-01, PDC Light Curves

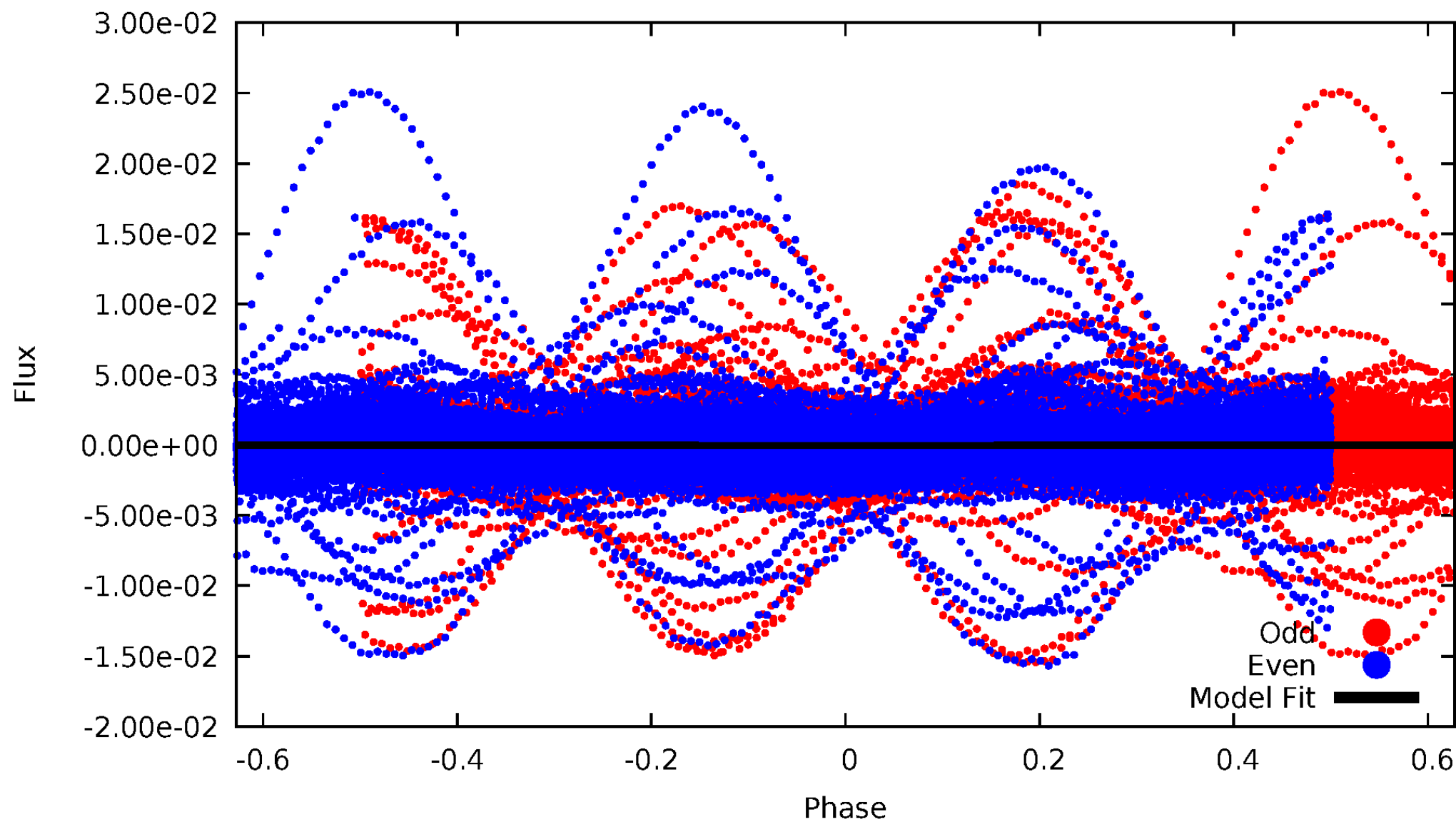


TCE 009027328-01



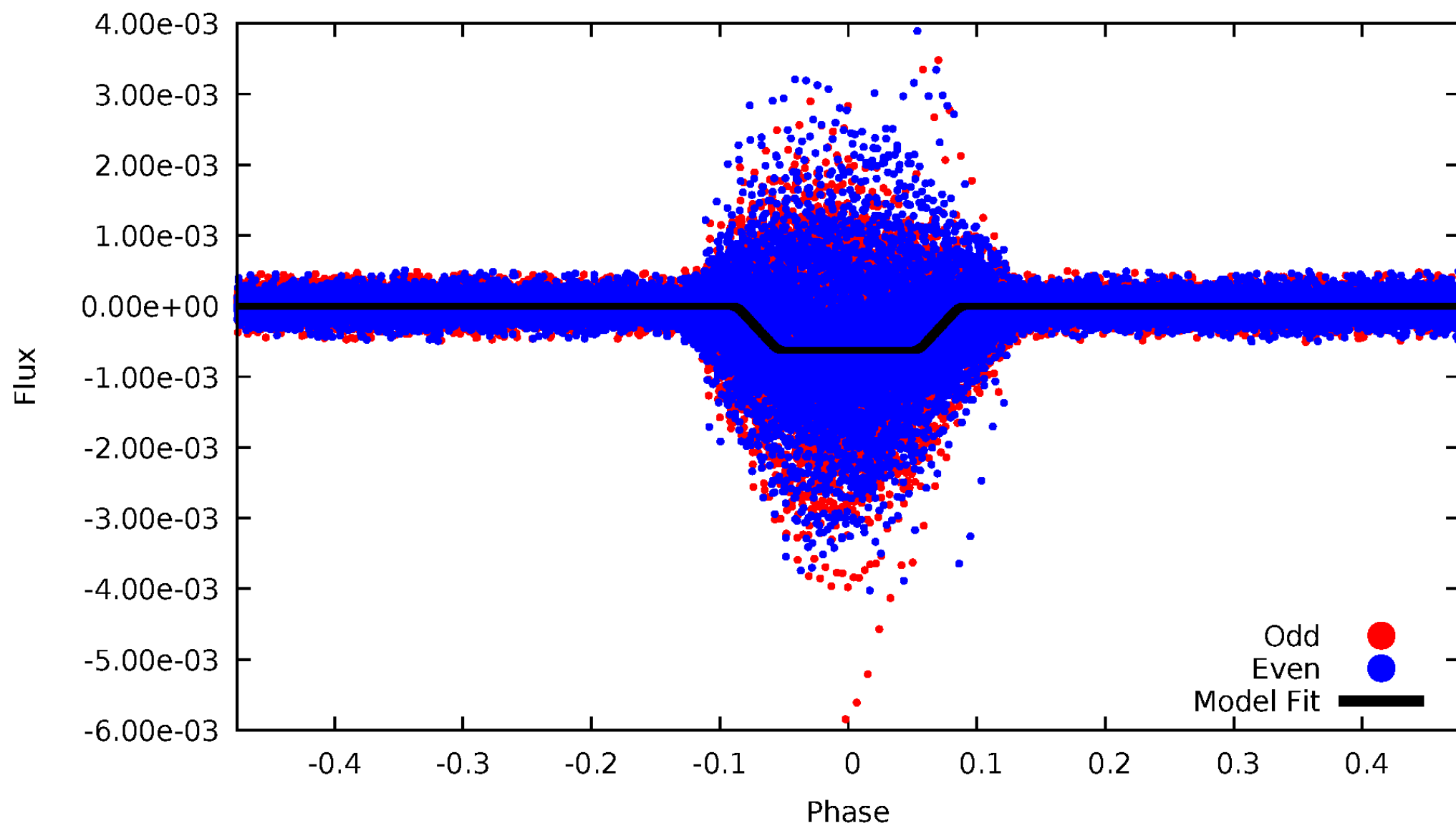
DV Odd/Even

TCE 009027328-01



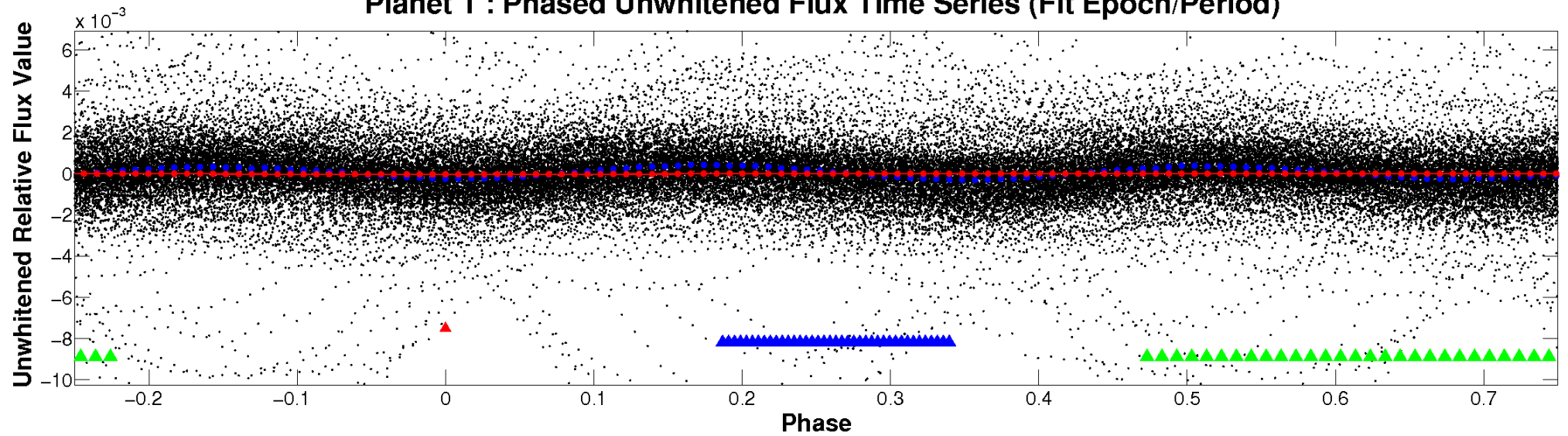
ALT Odd/Even

TCE 009027328-01

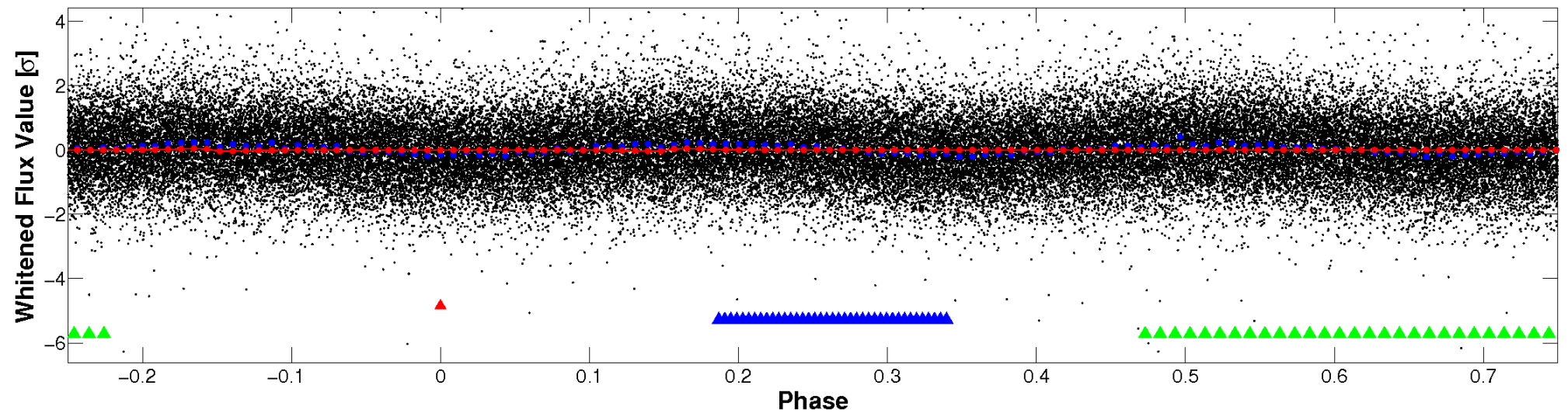


Non-Whitened Vs. Whitened Light Curve

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

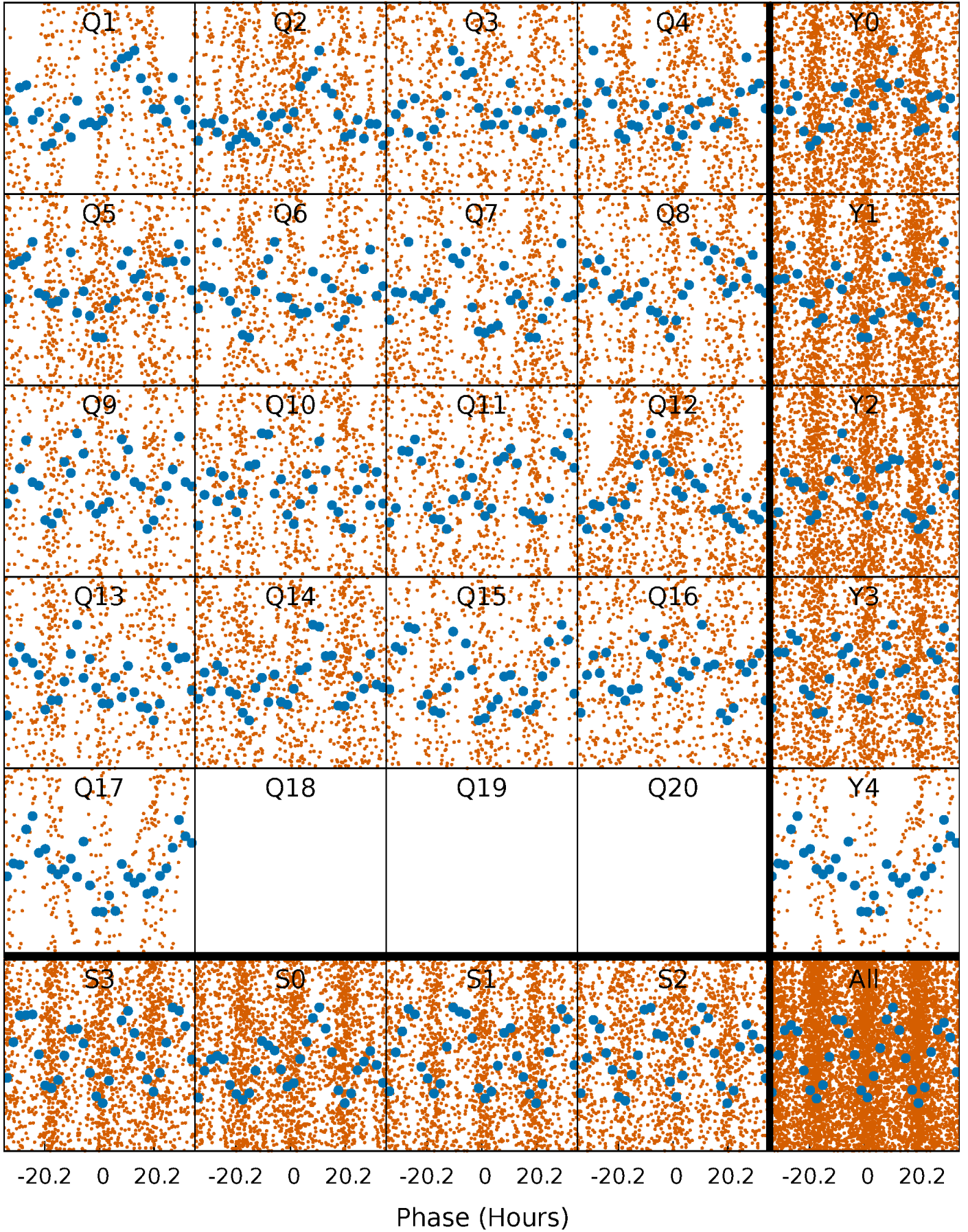


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



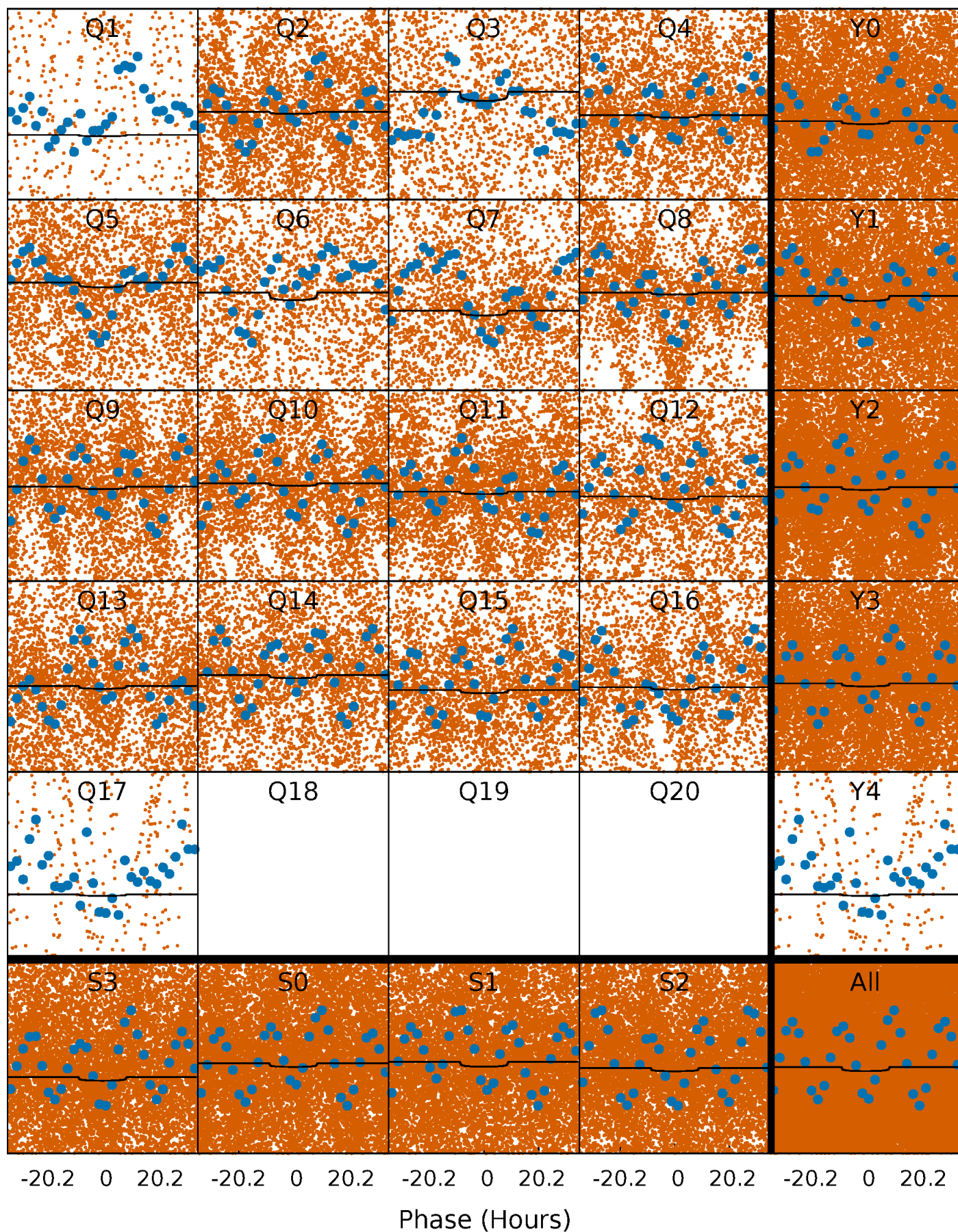
PDC Quarter-Phased Transit Curves

TCE 009027328-01 P= 2.346580 Days $T_0=132.764083$ (BKJD)



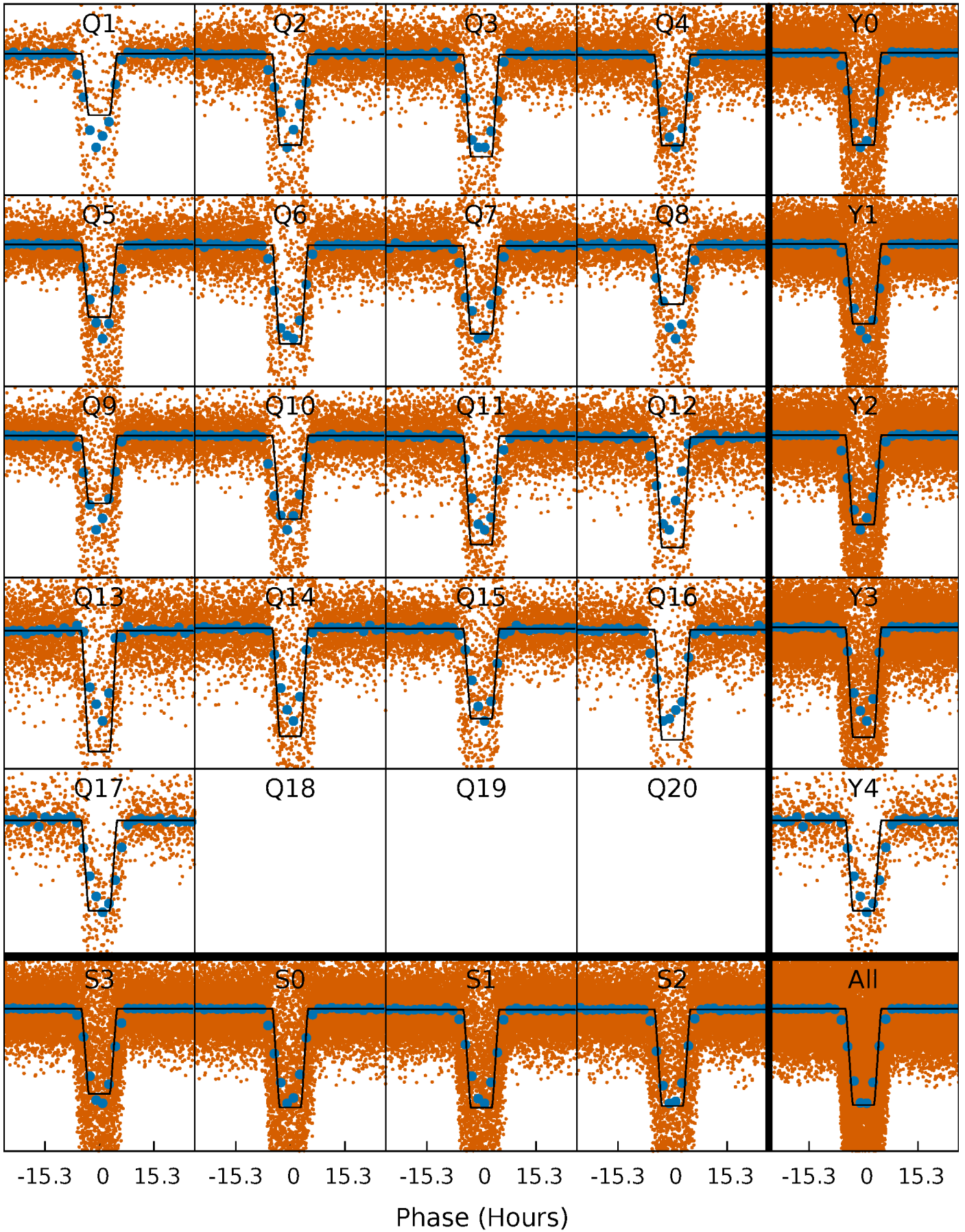
DV Quarter-Phased Transit Curves

TCE 009027328-01 P= 2.346580 Days $T_0=132.764083$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

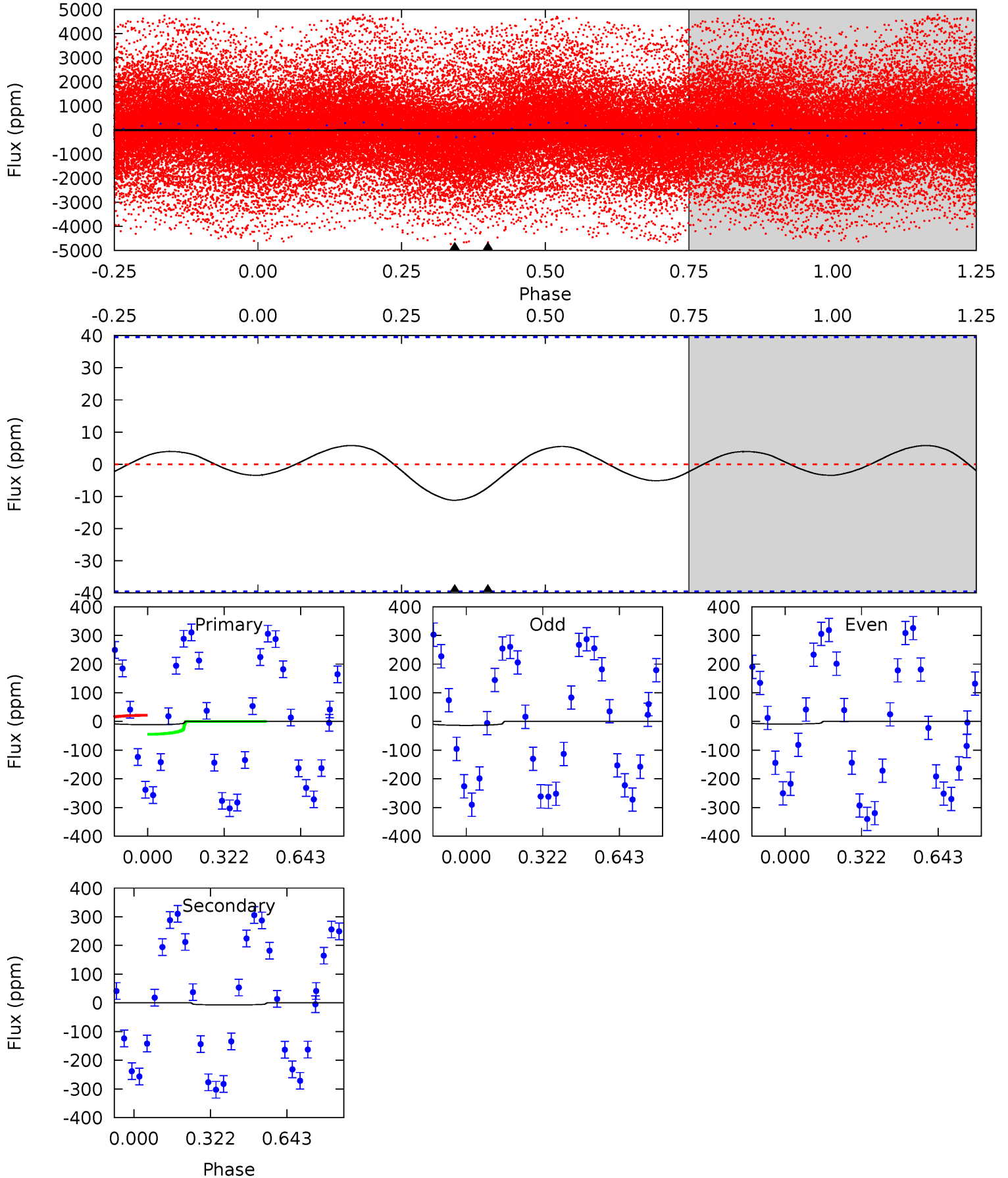
TCE 009027328-01 P= 2.346639 Days $T_0=132.769885$ (BKJD)



DV Model-Shift Uniqueness Test

009027328-01, P = 2.346580 Days, E = 130.417503 Days

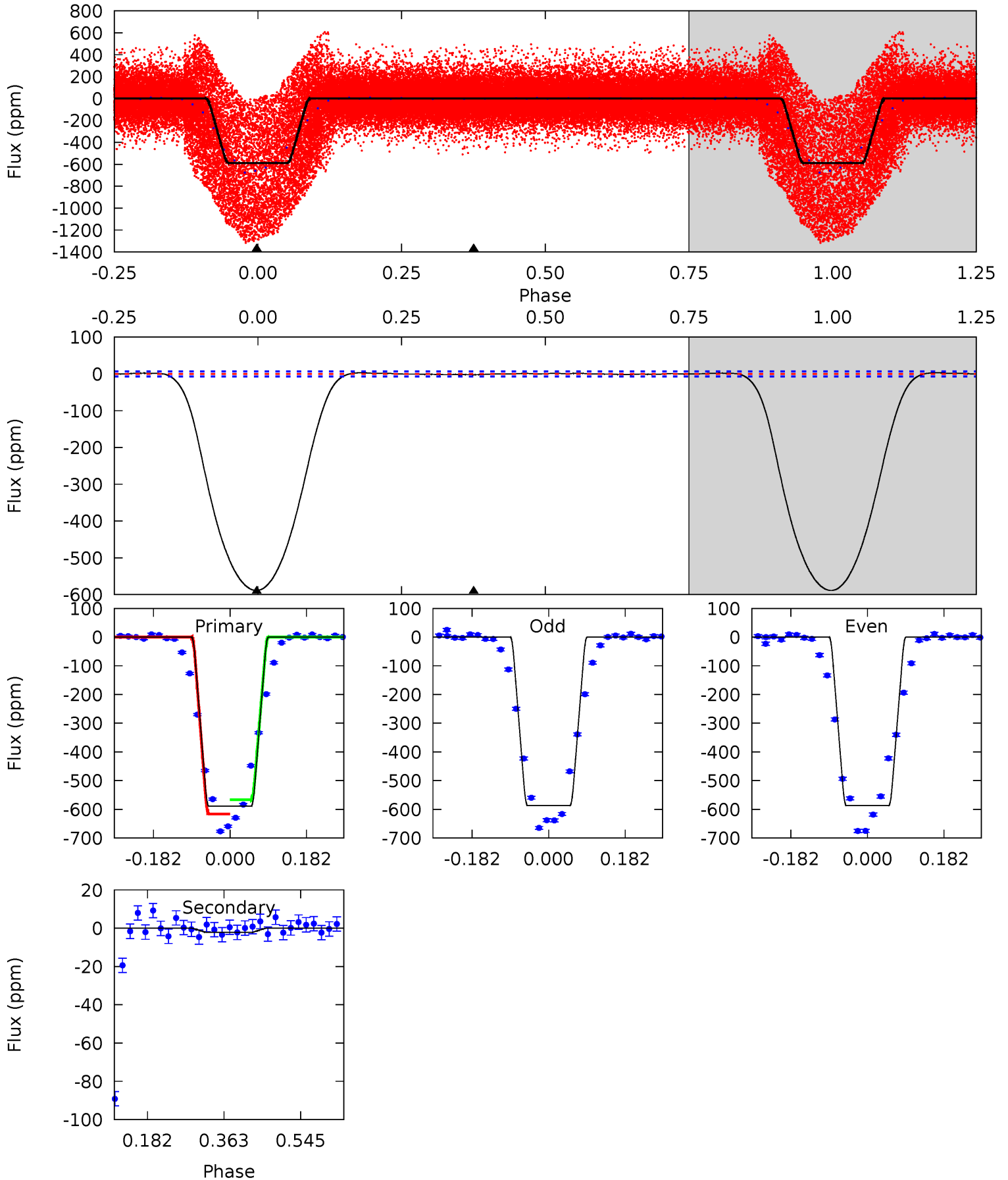
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.22	0.79	0	0	4.31	0.99	0.31	1.22	1.22	0.79	0.79	0.25	1.13	0.34	1.33



Alt Model-Shift Uniqueness Test

009027328-01, P = 2.346639 Days, E = 130.423246 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
383.5	1.43	0	0	4.44	1.34	0.80	383.5	383.5	1.43	1.43	0.09	0.82	0.01	0



Stellar Parameters For KIC 009027328

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7278^{+232}_{-348}	$4.132^{+0.170}_{-0.187}$	$-0.240^{+0.250}_{-0.350}$	$1.702^{+0.533}_{-0.400}$	$1.432^{+0.219}_{-0.241}$	$0.409^{+0.363}_{-0.190}$
	+3%/-5%	+4%/-5%	+104%/-146%	+31%/-24%	+15%/-17%	+89%/-47%
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 009027328-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7 ± 9	$1.17^{+0.91}_{-0.77}$	2967^{+218}_{-201}	4463^{+3239}_{-8351}	$3.262^{+27.627}_{-4.297}$
Alt.	-2 ± 2	$4.54^{+1.37}_{-1.10}$	2941^{+242}_{-223}	-2883^{+260}_{-210}	$0.084^{+0.101}_{-0.060}$

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

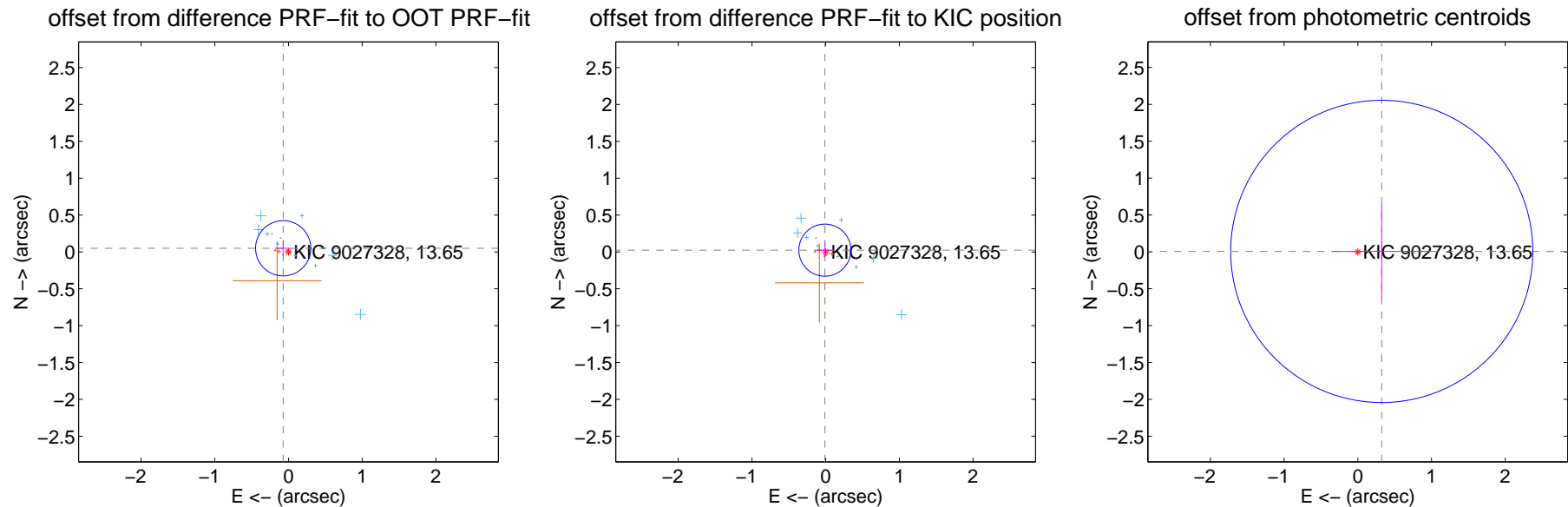
DV Centroid Data

Supplemental centroid analysis for 009027328-01. Kepler magnitude: 13.65. Transit SNR 2.92

There are 11 quarters with good PRF difference image offsets

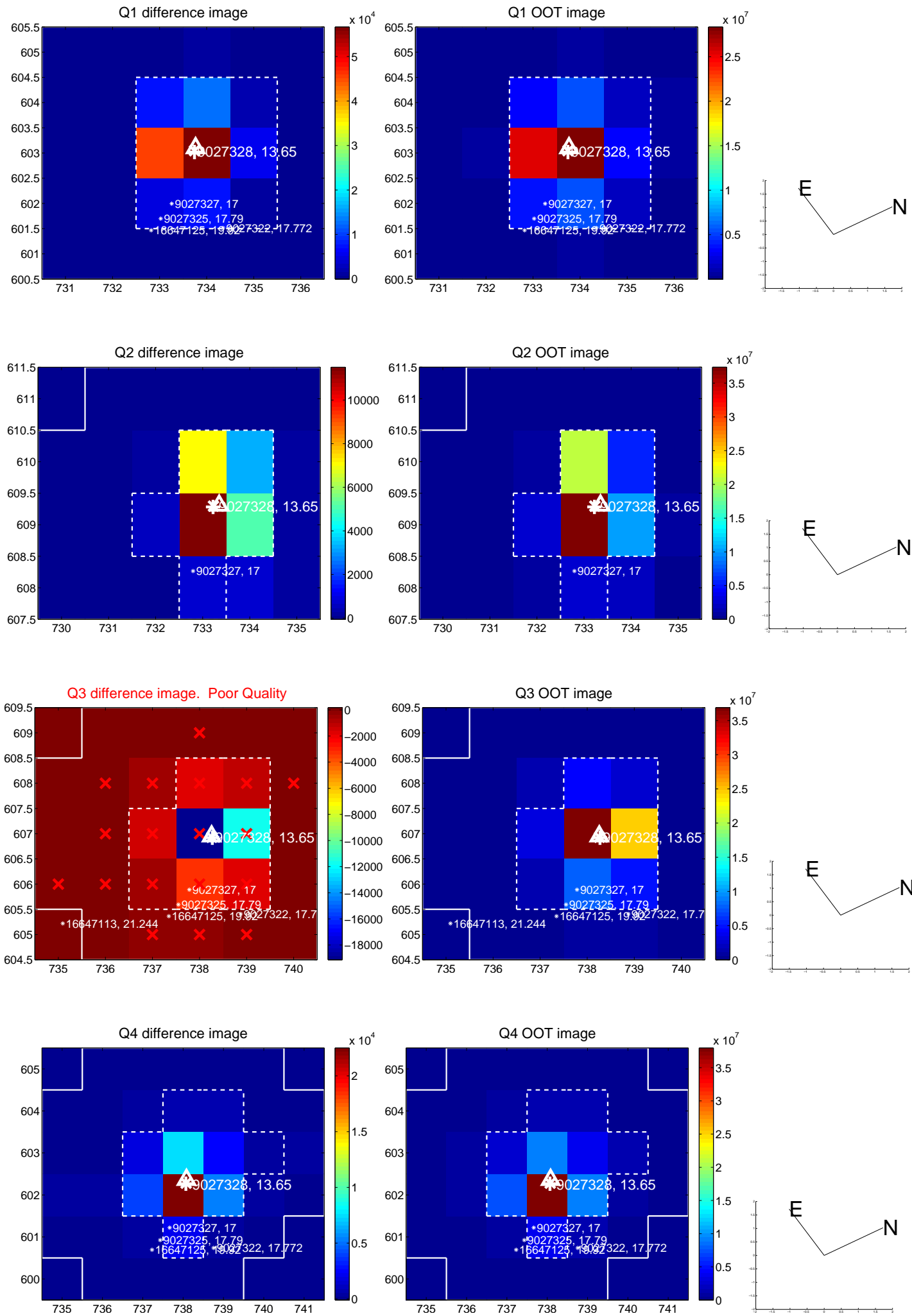
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.087 ± 0.125	0.70	0.072 ± 0.109	0.050 ± 0.102
PRF-fit source offset from KIC position	0.026 ± 0.118	0.22	0.011 ± 0.112	0.024 ± 0.099
photometric centroid source offset	0.32 ± 0.68	0.48	-0.32 ± 0.68	0.01 ± 0.64

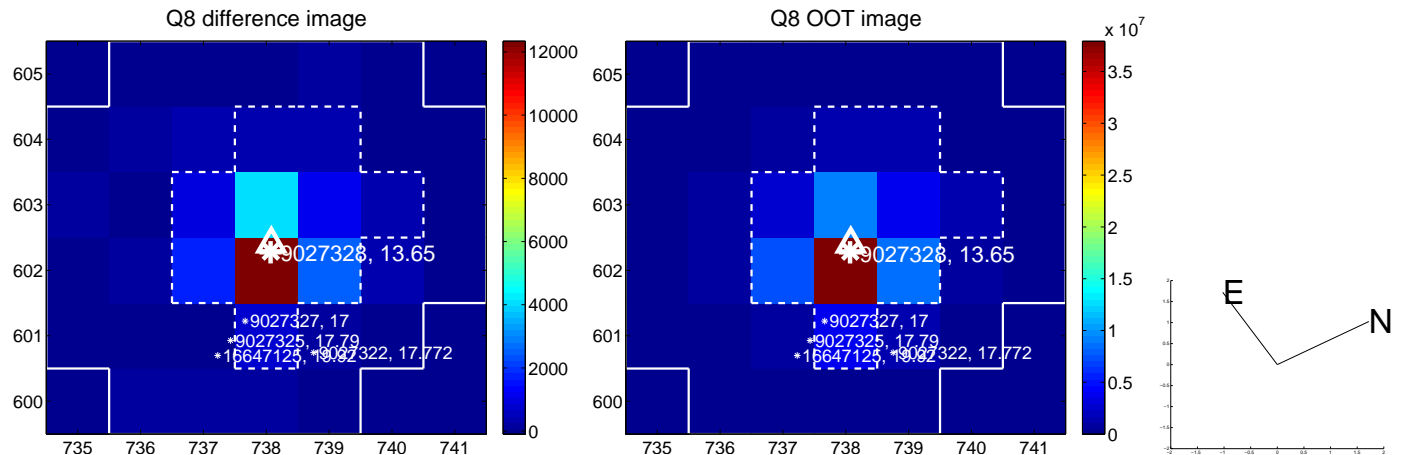
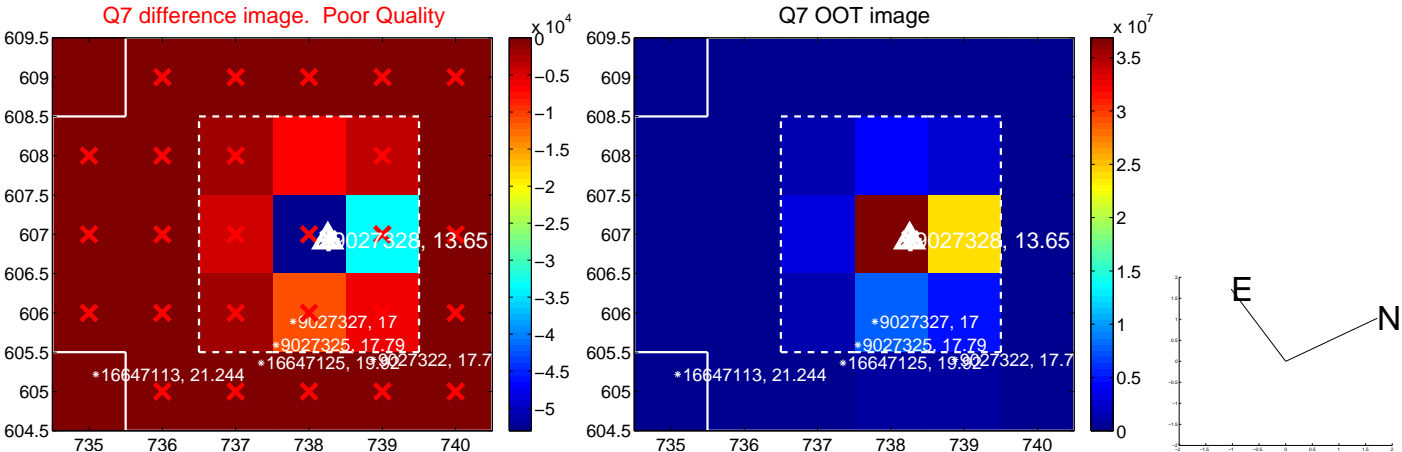
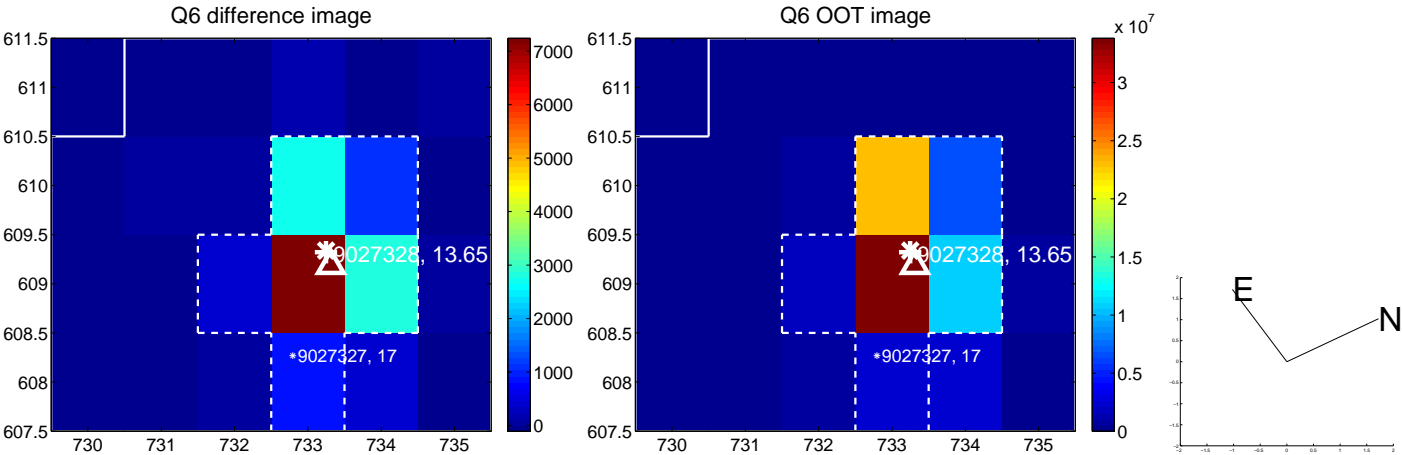
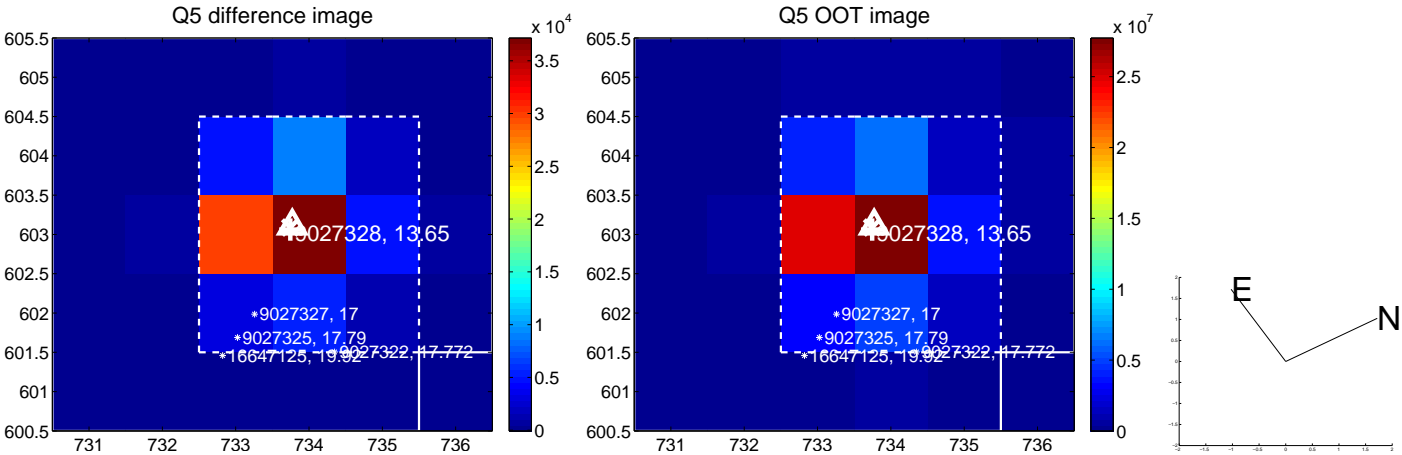


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

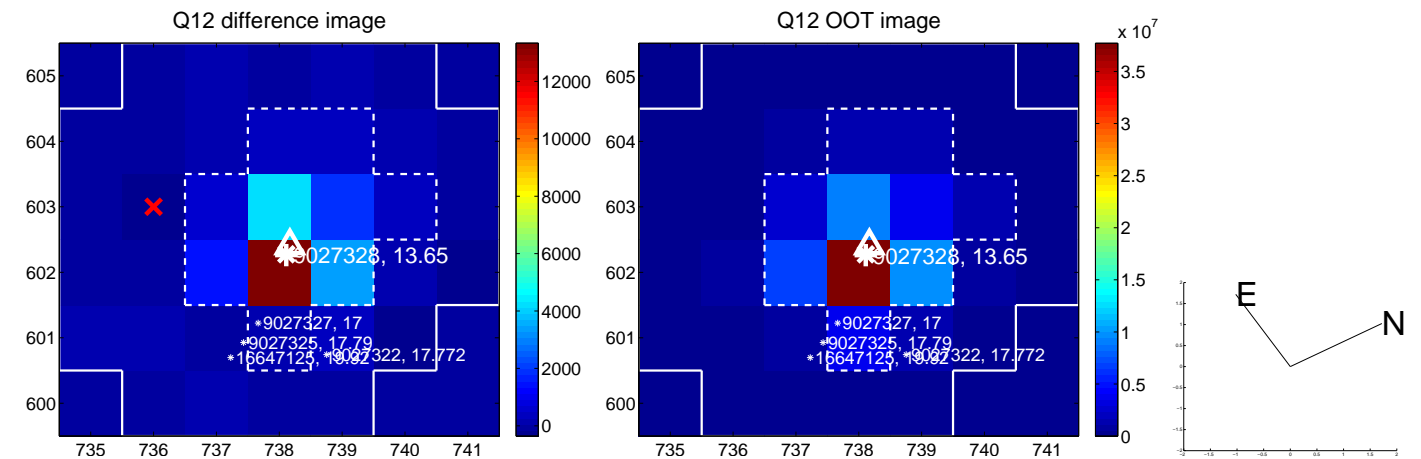
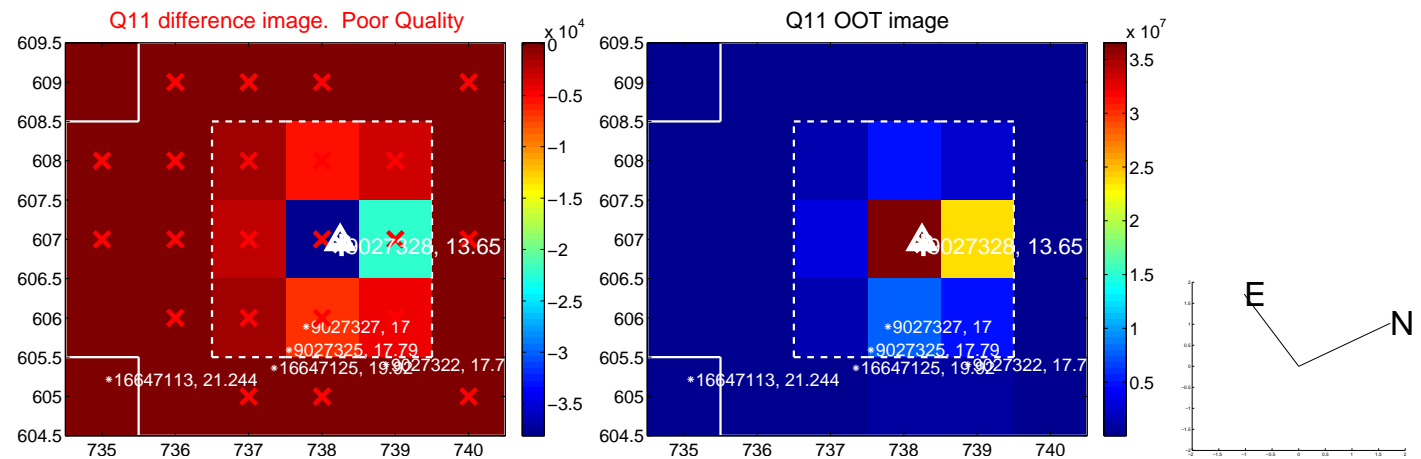
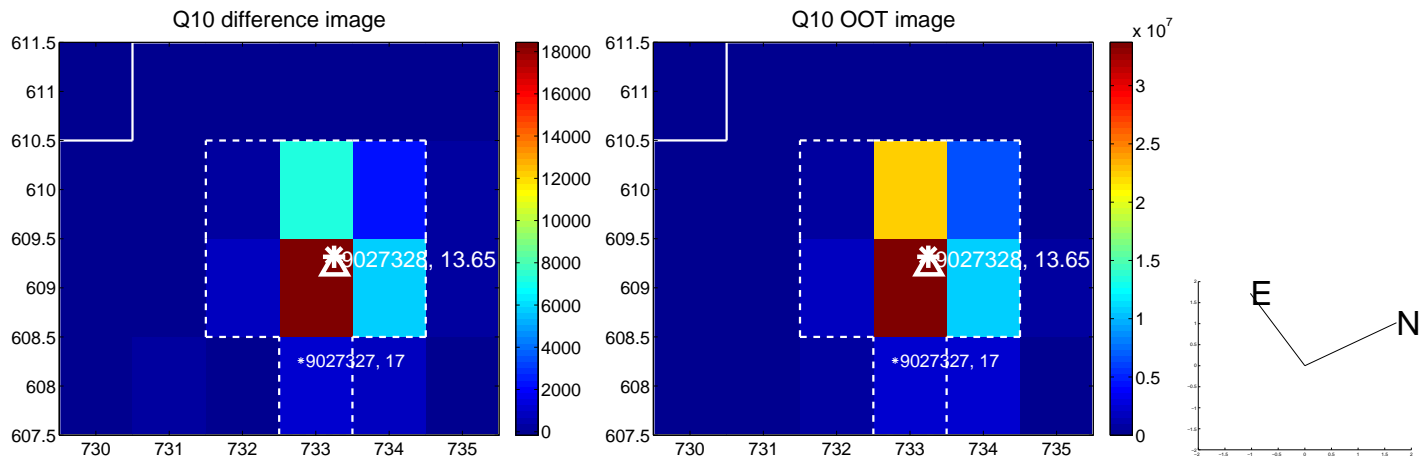
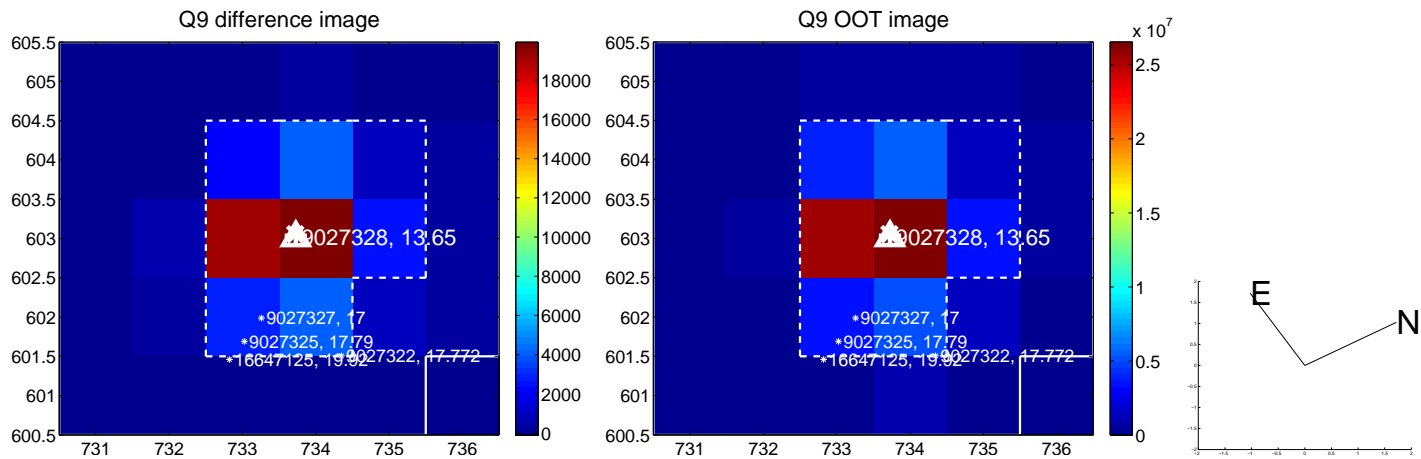
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



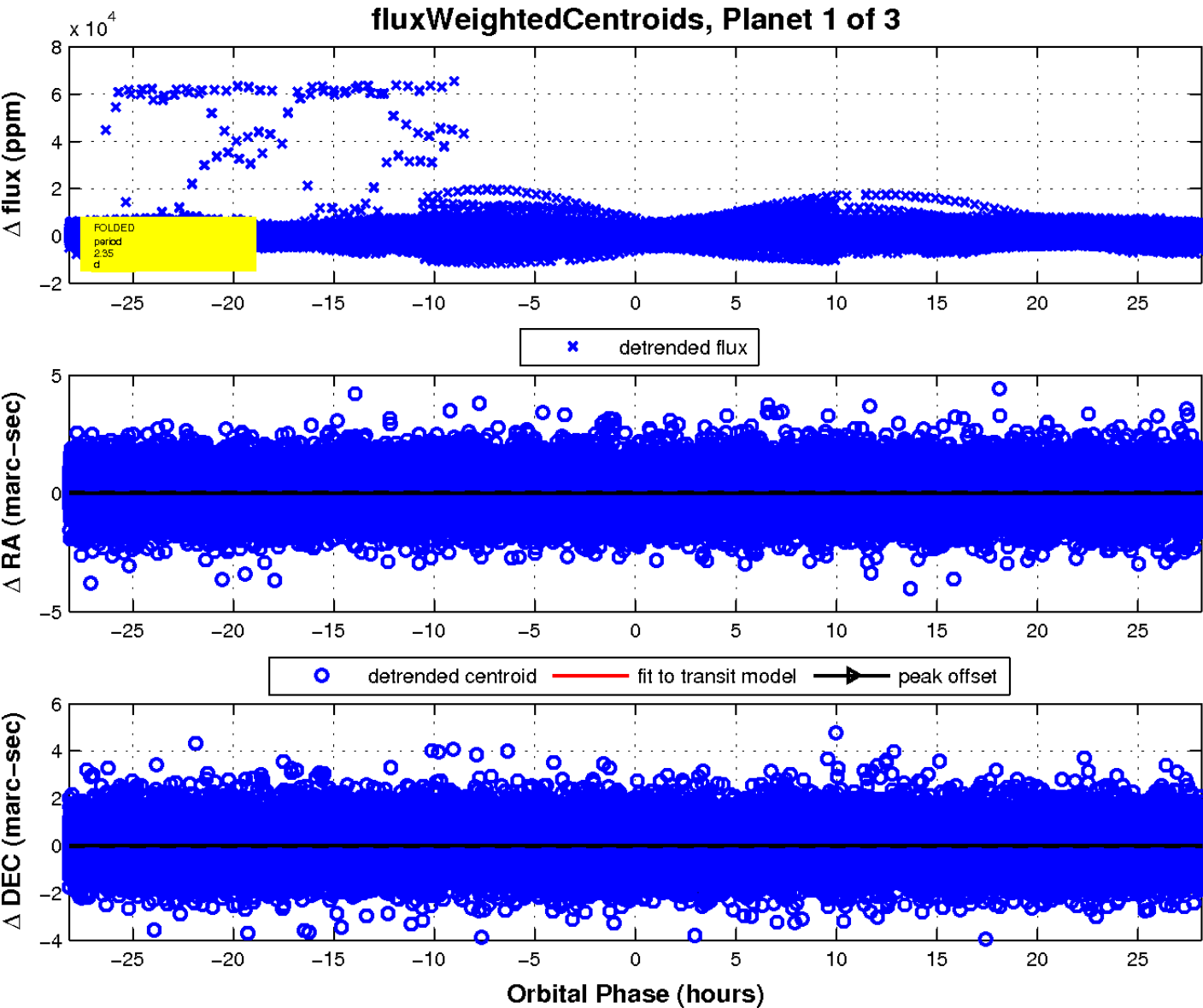
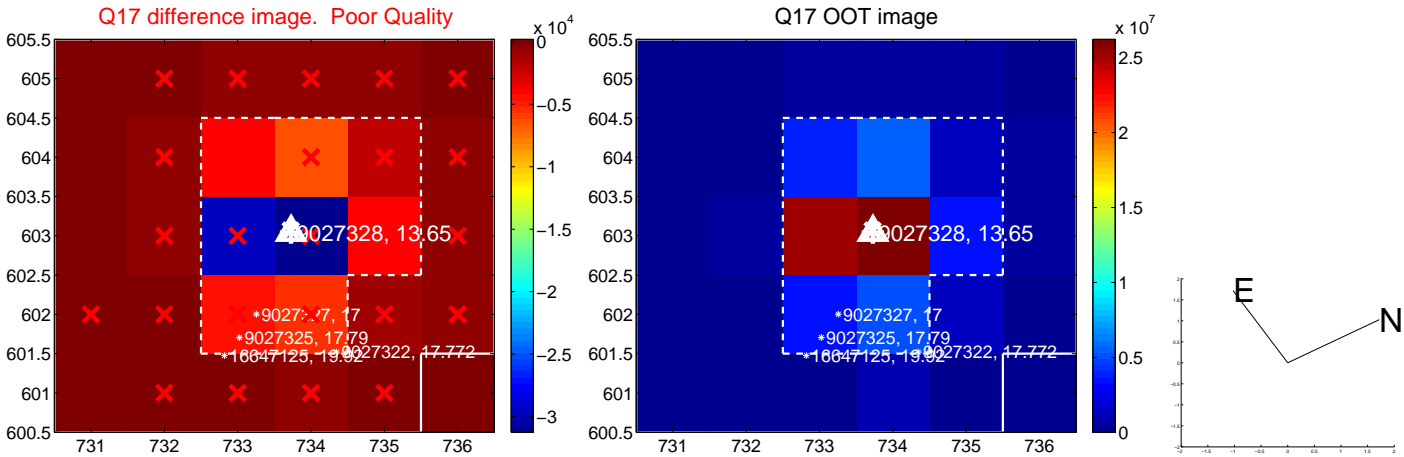
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

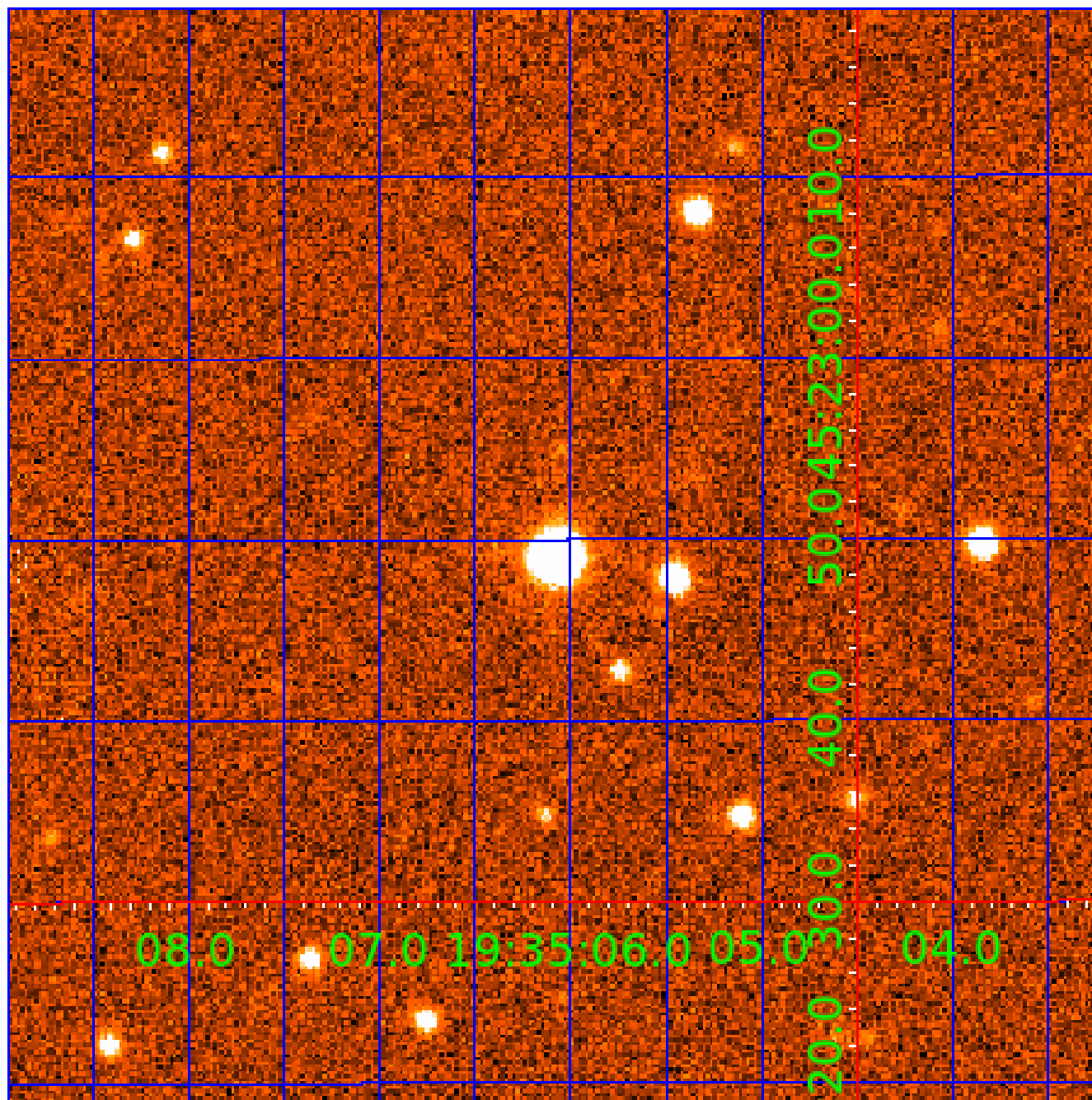


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009027328

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
009027328-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009027328-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009027328-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—NO_FITS—CENT_NOFITS

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

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

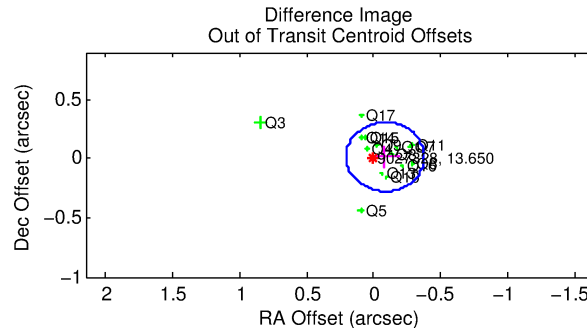
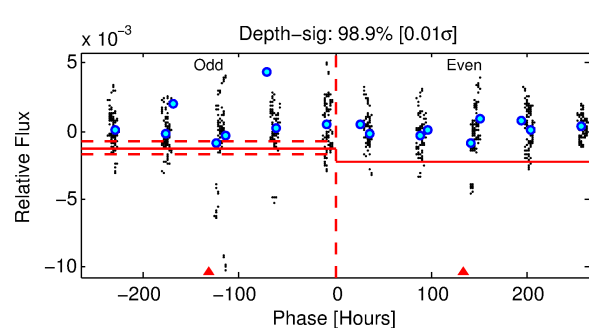
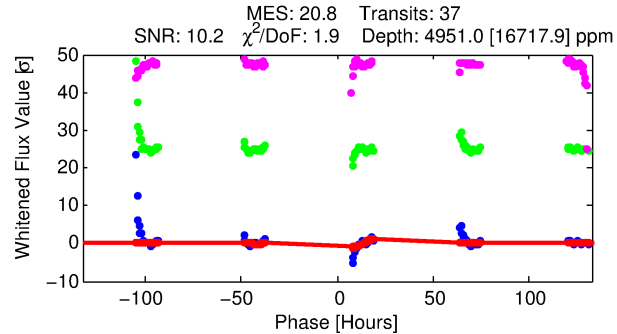
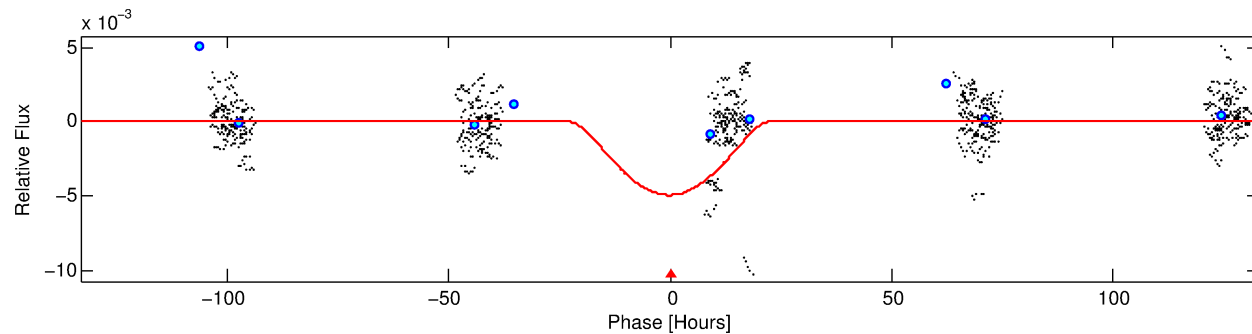
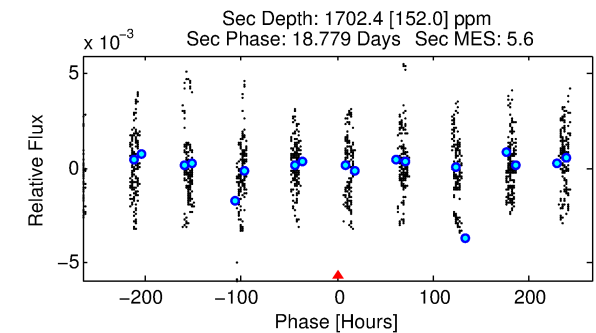
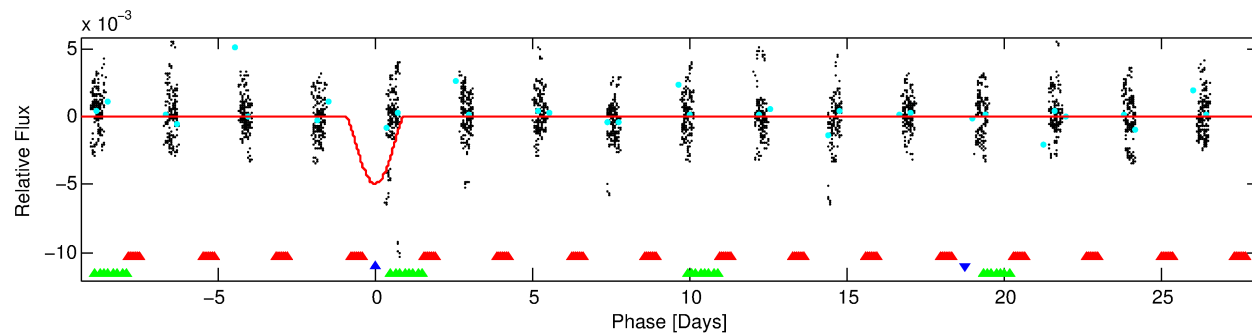
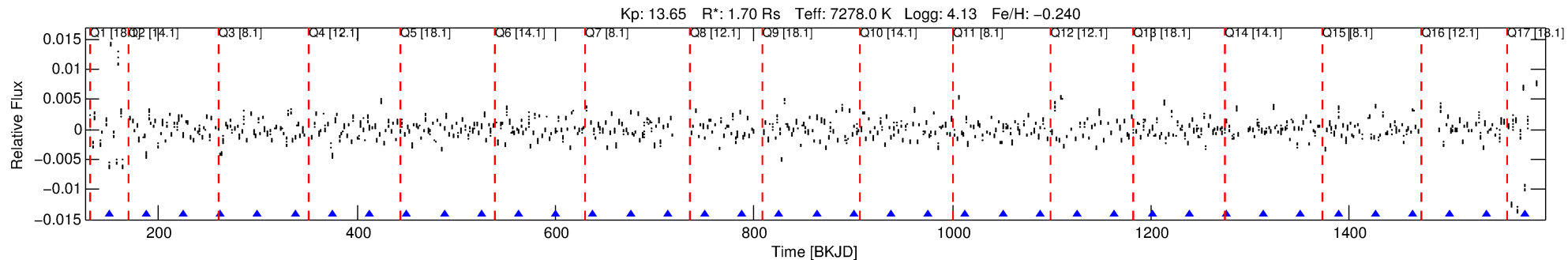
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009027328-02

No Significant Match Found

DV One-Page Summary

KIC: 9027328 Candidate: 2 of 3 Period: 37.536 d



DV Fit Results:

Period = 37.53584 [0.00516] d
Epoch = 149.9871 [0.2743] BKJD
Rp/R* = 0.1145 [0.3198]
a/R* = 3.34 [1.04]
b = 1.00 [0.19]
Seff = 119.03 [47.99]
Teq = 842 [85] K
Rp = 21.27 [59.78] Re
a = 0.2473 [0.0627] AU
Ag = 126.61 [708.60] [0.18σ]
Teff = 4368 [6103] K [0.58σ]

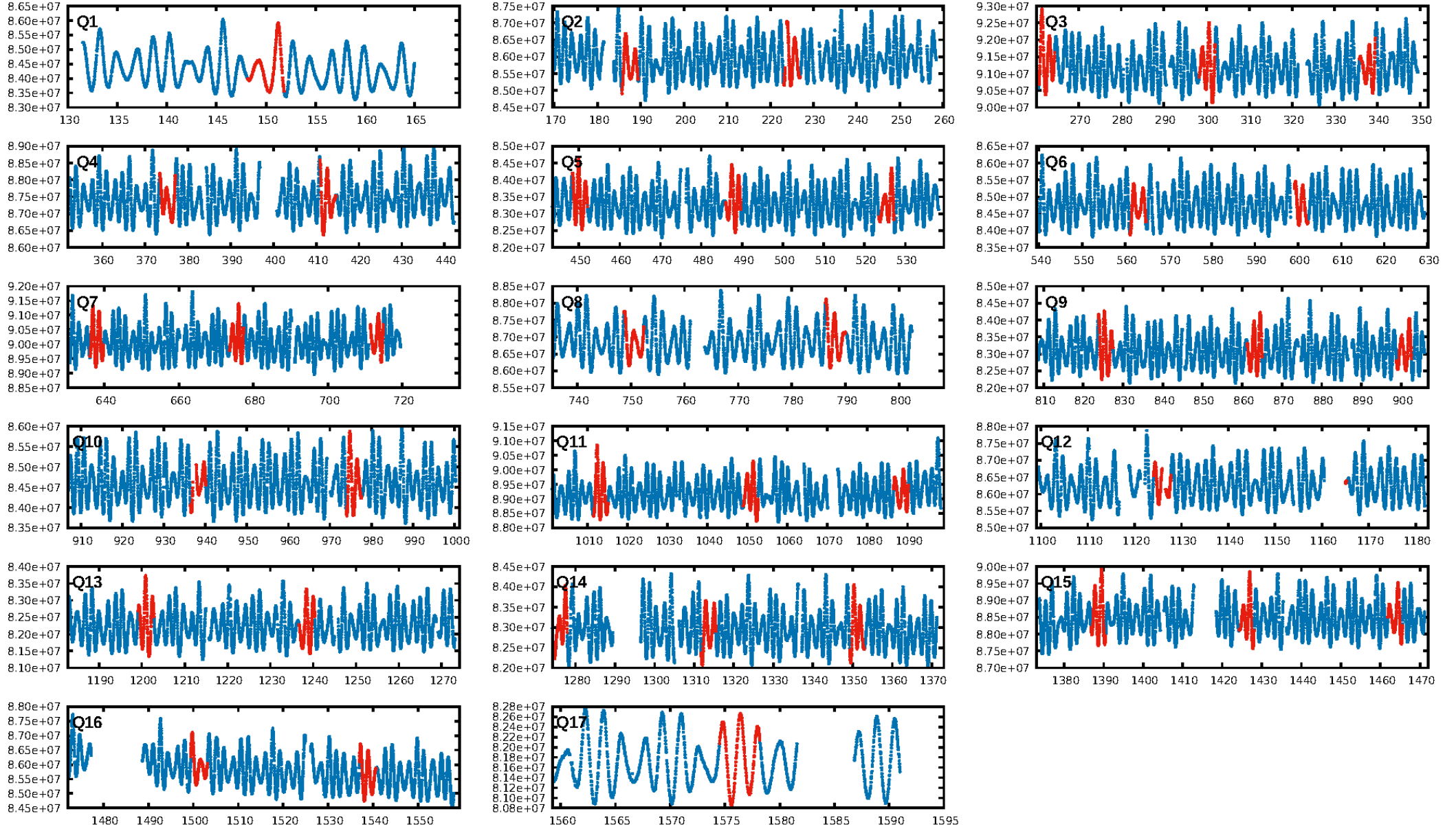
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.67σ]
LongPeriod-sig: 100.0% [5.06σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.20e-132
RollingBand-fgt: 1.00 [35/35]
GhostDiagnostic-chr: 1.074
Centroid-sig: 46.0%
Centroid-so: 0.174 arcsec [10.82σ]
OotOffset-rm: 0.087 arcsec [0.89σ]
KicOffset-rm: 0.143 arcsec [1.55σ]
OotOffset-st: 3/4/3/5 [15]
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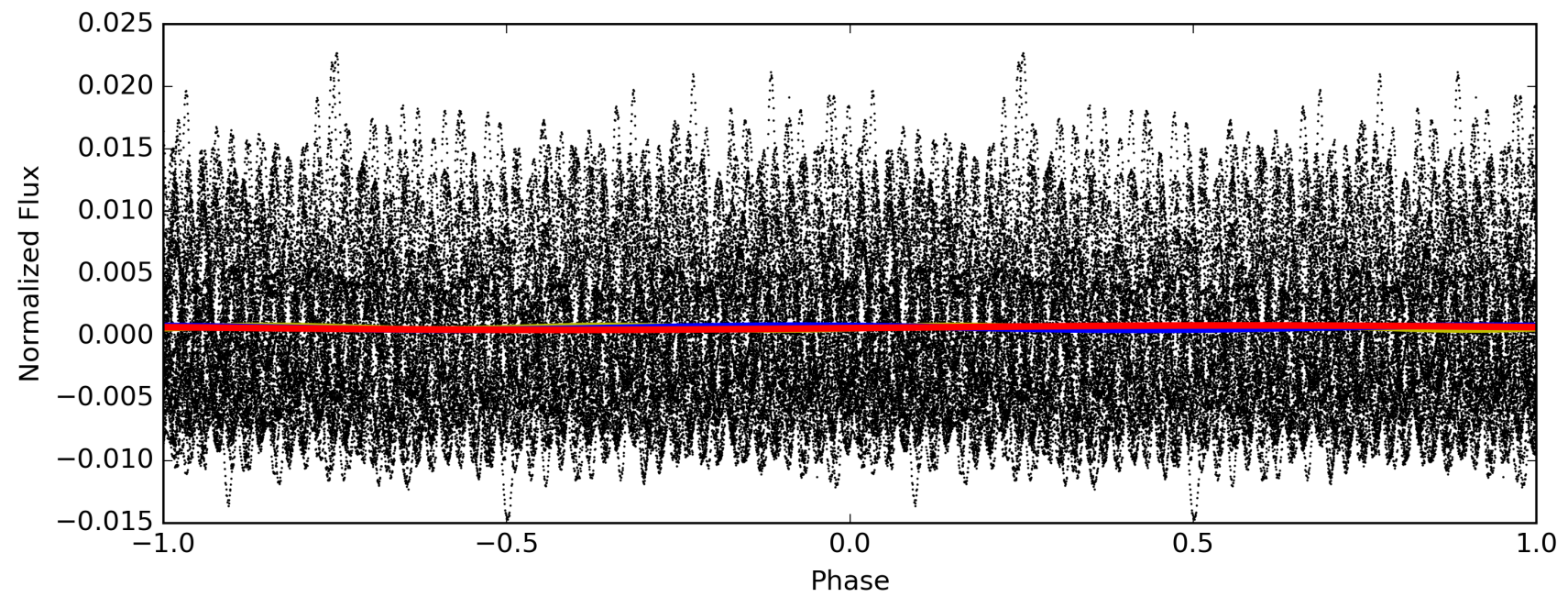
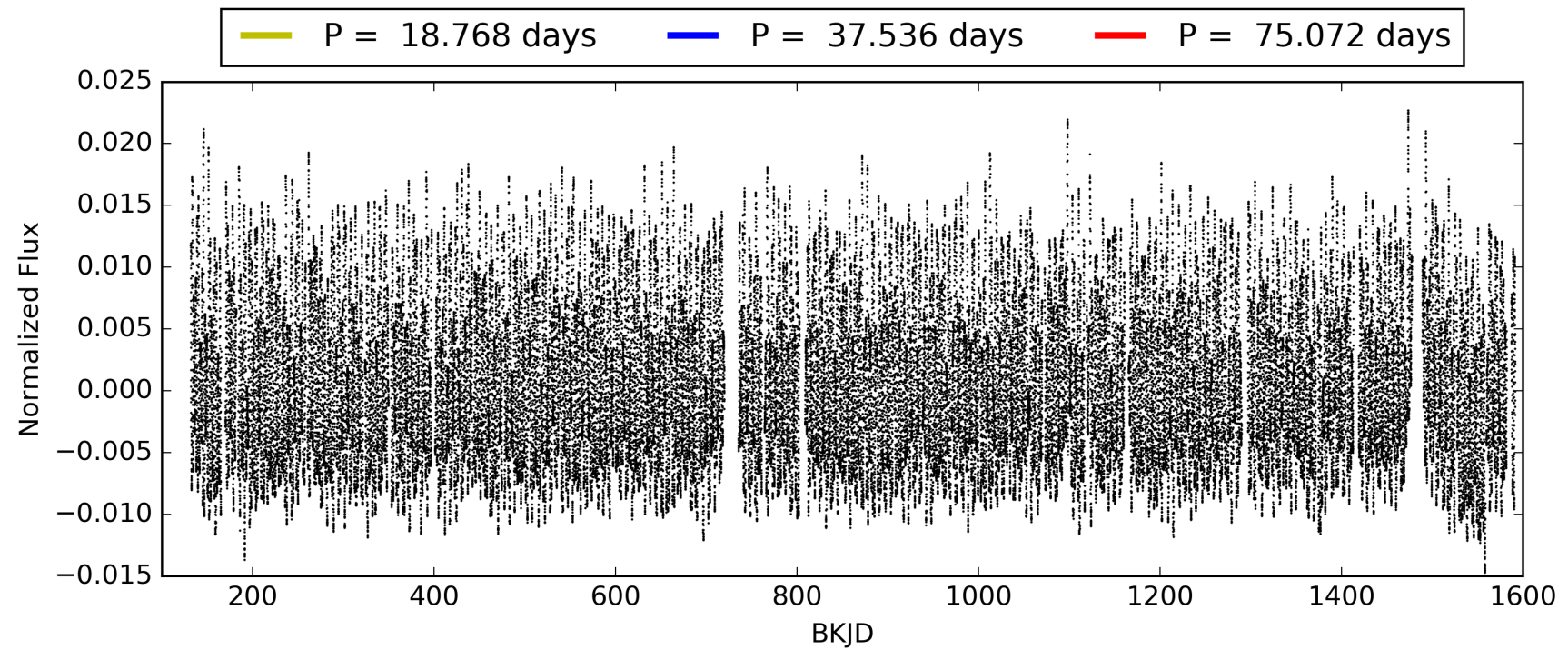
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:24:52 Z

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

TCE 009027328-02, PDC Light Curves

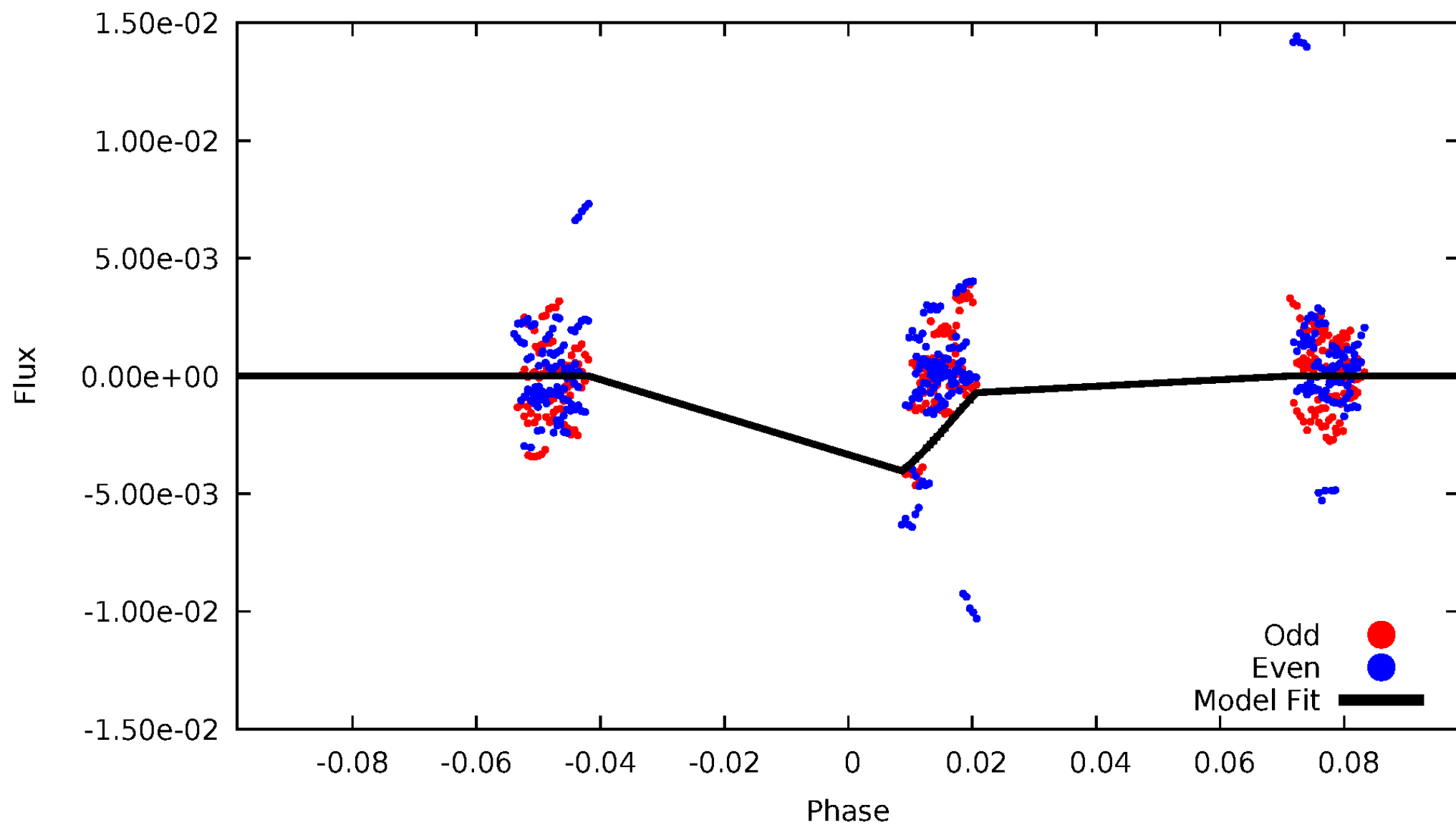


TCE 009027328-02



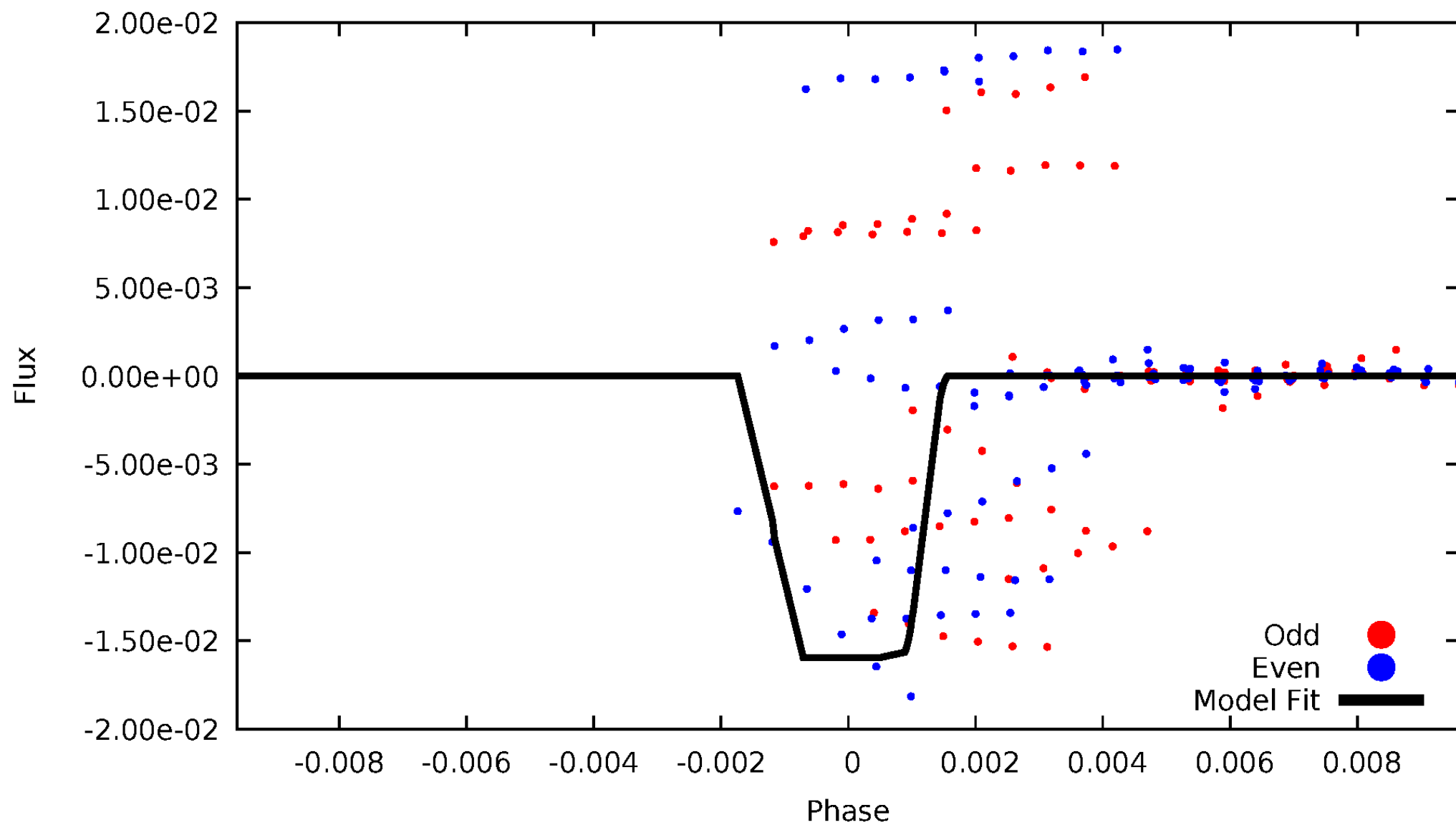
DV Odd/Even

TCE 009027328-02



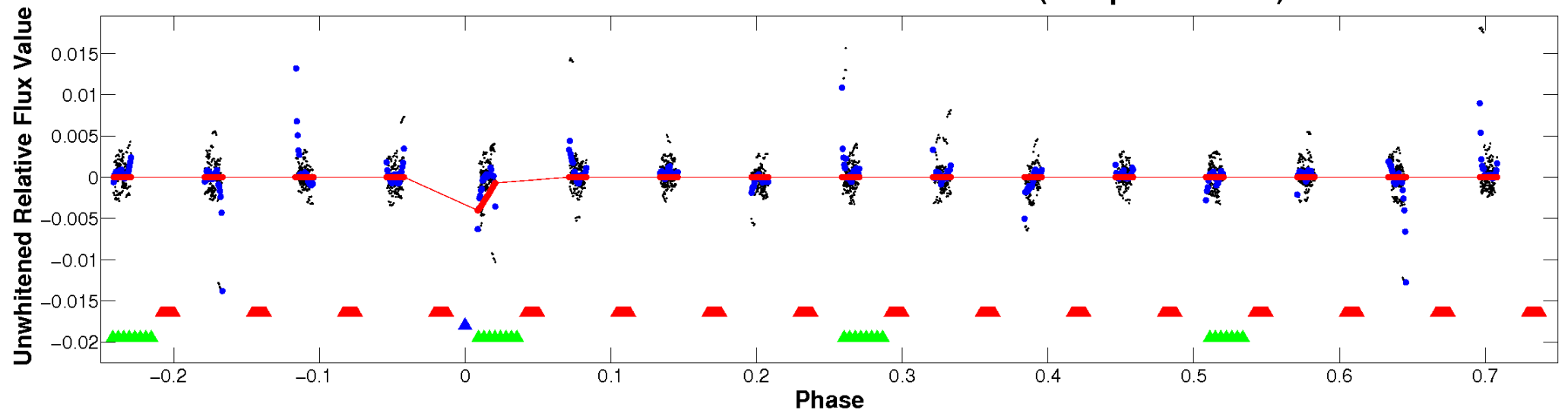
ALT Odd/Even

TCE 009027328-02

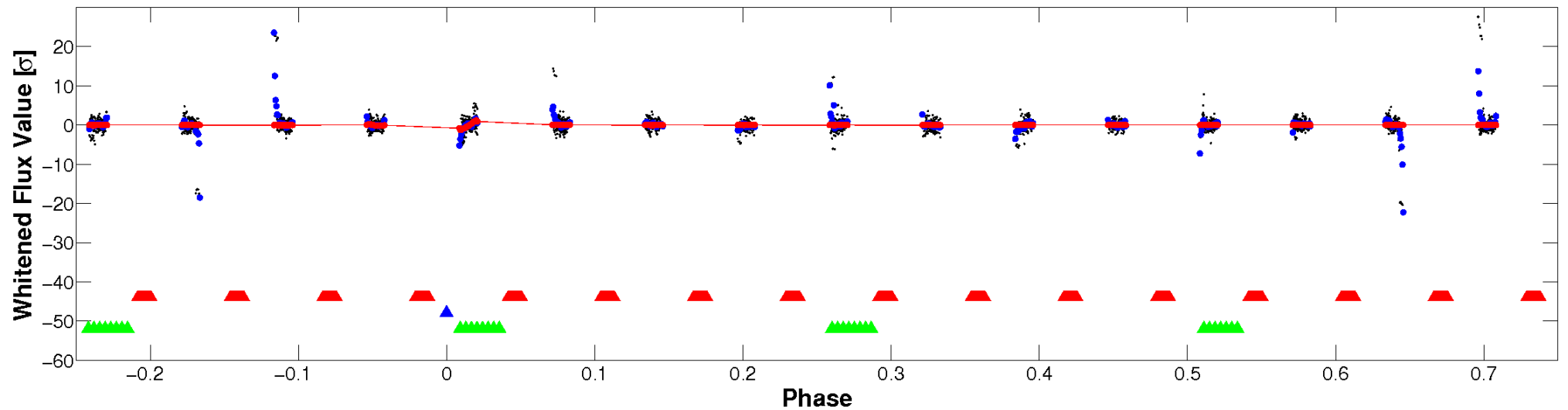


Non-Whitened Vs. Whitened Light Curve

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

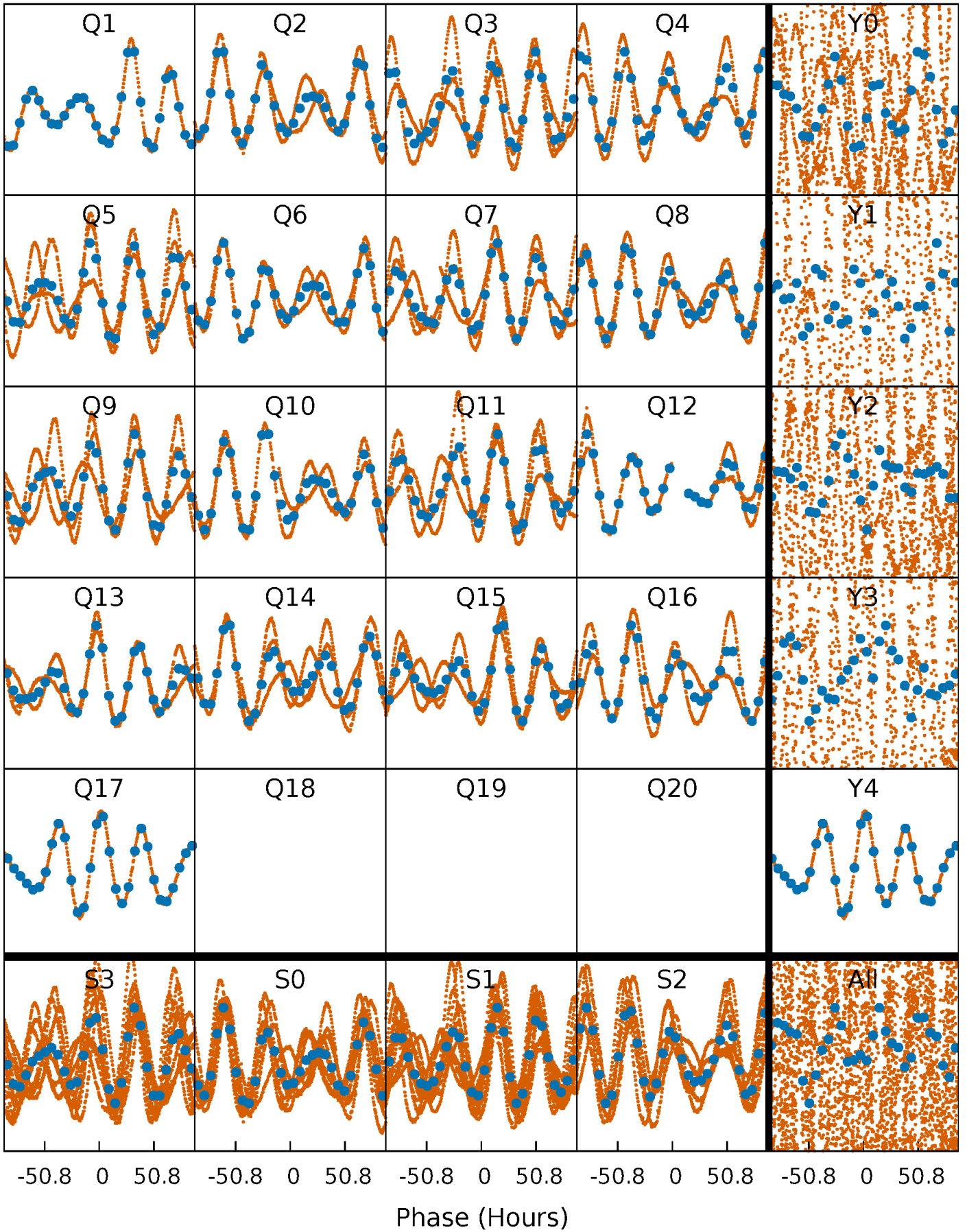


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



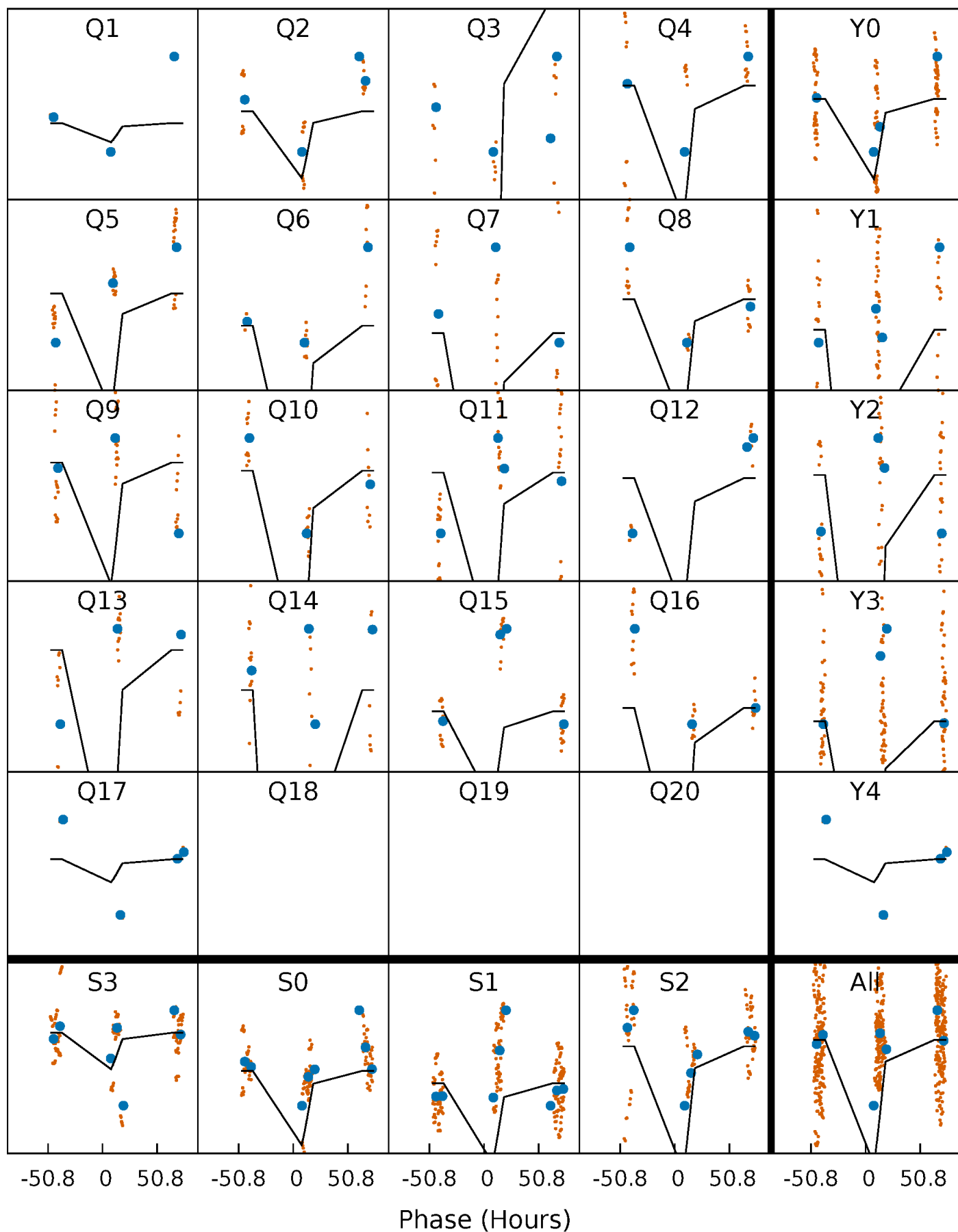
PDC Quarter-Phased Transit Curves

TCE 009027328-02 P= 37.535843 Days $T_0=149.987142$ (BKJD)



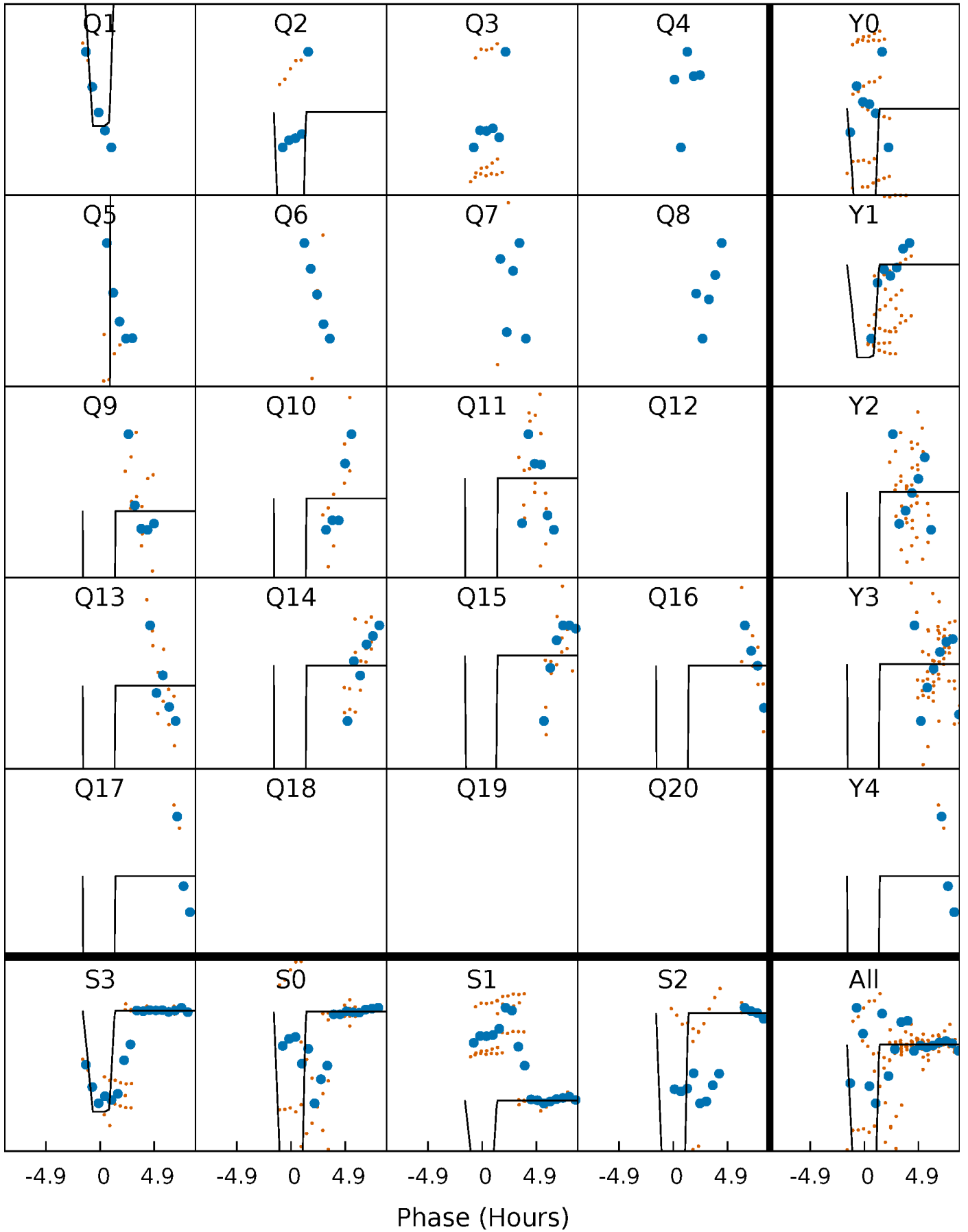
DV Quarter-Phased Transit Curves

TCE 009027328-02 P= 37.535843 Days $T_0=149.987142$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

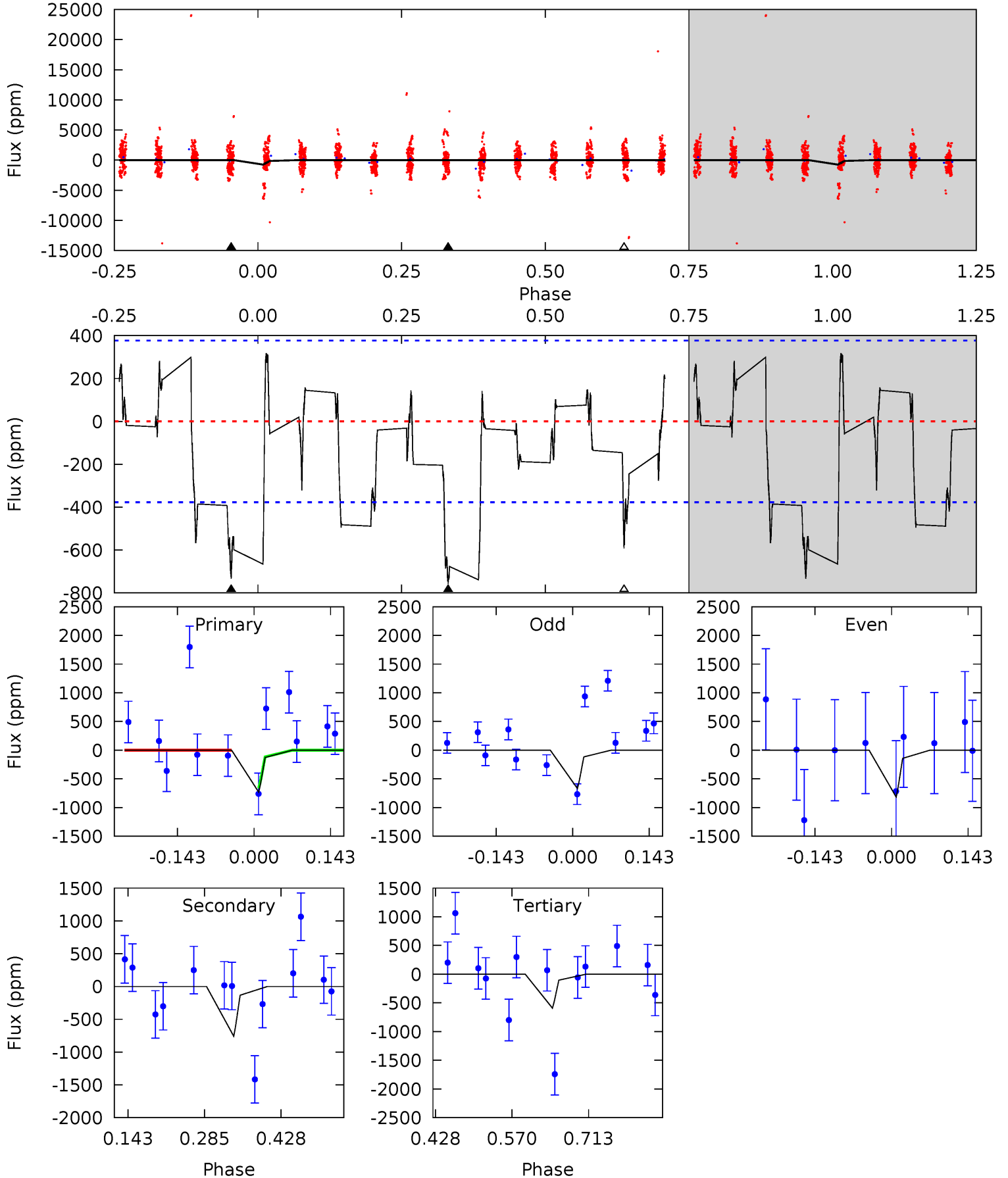
TCE 009027328-02 P= 37.536530 Days $T_0=150.376989$ (BKJD)



DV Model-Shift Uniqueness Test

009027328-02, P = 37.535843 Days, E = 112.451299 Days

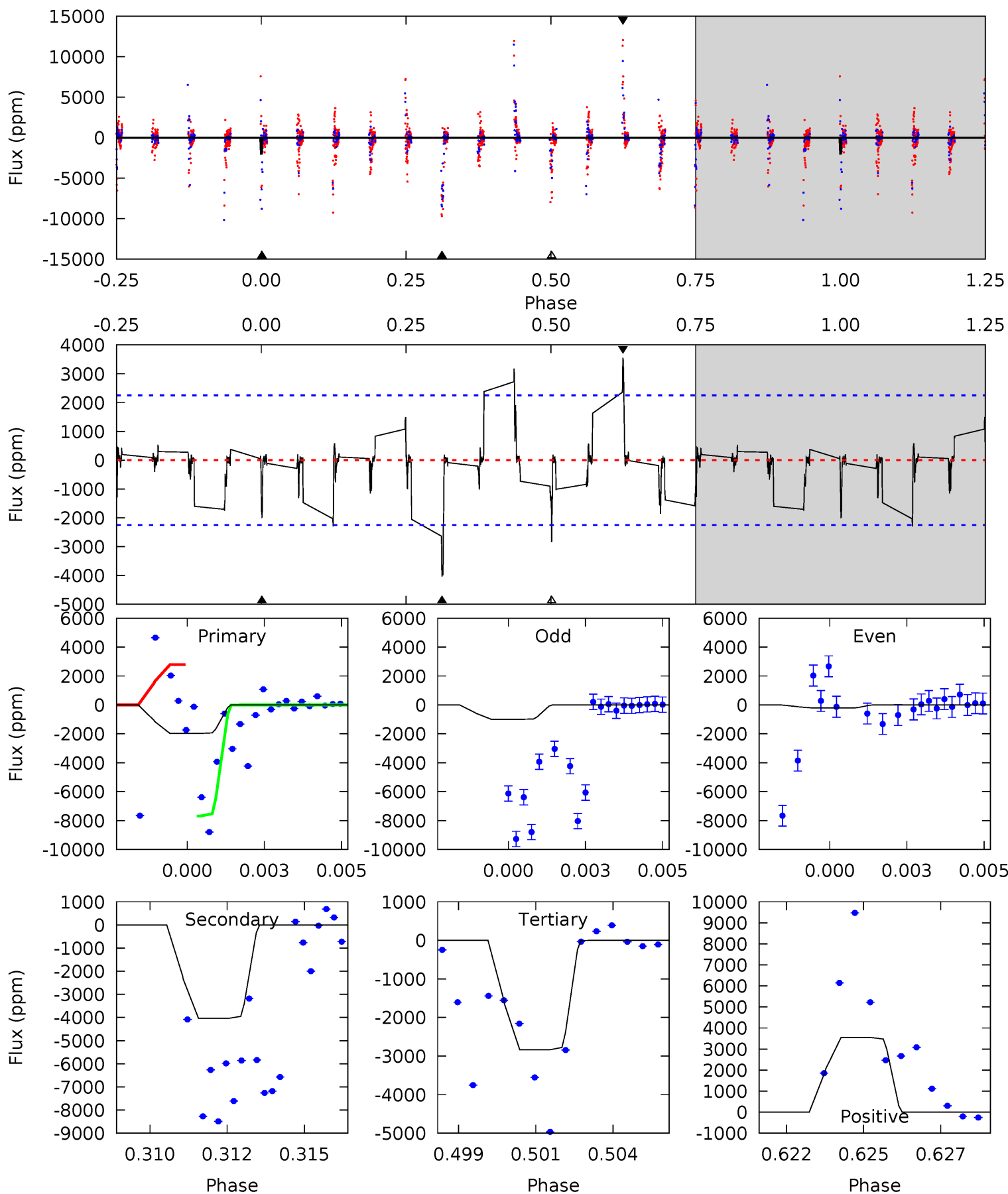
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.73	9.04	7.06	0	4.49	1.47	2.54	1.68	8.73	1.99	9.04	0.82	-4.01	0.29	0



Alt Model-Shift Uniqueness Test

009027328-02, P = 37.536530 Days, E = 112.840459 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.63	9.45	6.64	8.30	5.27	3.00	1.21	-2.01	-3.68	2.81	1.15	0.89	0.54	0.47	5.59



Stellar Parameters For KIC 009027328

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7278^{+232}_{-348}	$4.132^{+0.170}_{-0.187}$	$-0.240^{+0.250}_{-0.350}$	$1.702^{+0.533}_{-0.400}$	$1.432^{+0.219}_{-0.241}$	$0.409^{+0.363}_{-0.190}$
	+3%/-5%	+4%/-5%	+104%/-146%	+31%/-24%	+15%/-17%	+89%/-47%
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 009027328-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-759 ± 84	$50.53^{+46.32}_{-34.09}$	1172^{+93}_{-89}	2950^{+1310}_{-475}	10^{+87}_{-8}
Alt.	-4036 ± 427	$51.60^{+47.78}_{-34.63}$	1175^{+85}_{-96}	3789^{+2351}_{-715}	50^{+423}_{-36}

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

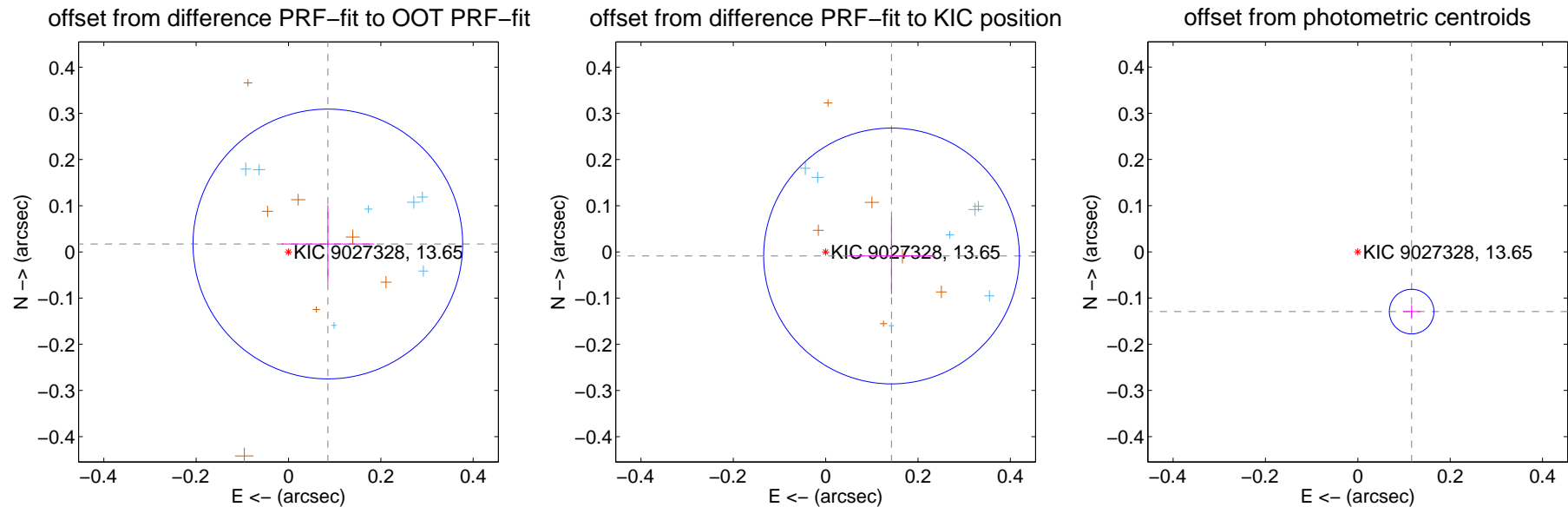
DV Centroid Data

Supplemental centroid analysis for 009027328-02. Kepler magnitude: 13.65. Transit SNR 10.17

There are 7 quarters with good PRF difference image offsets

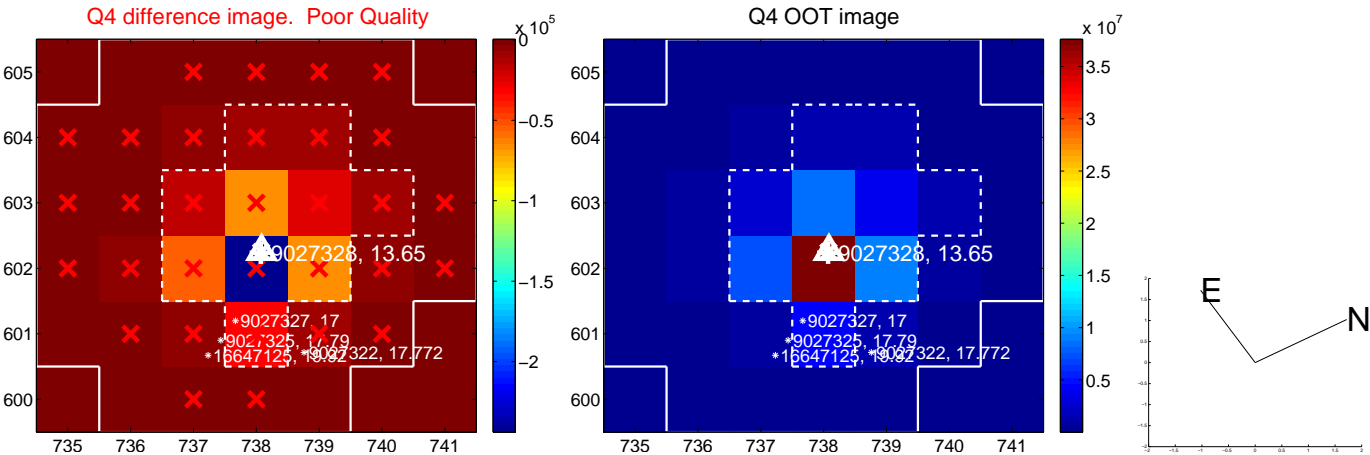
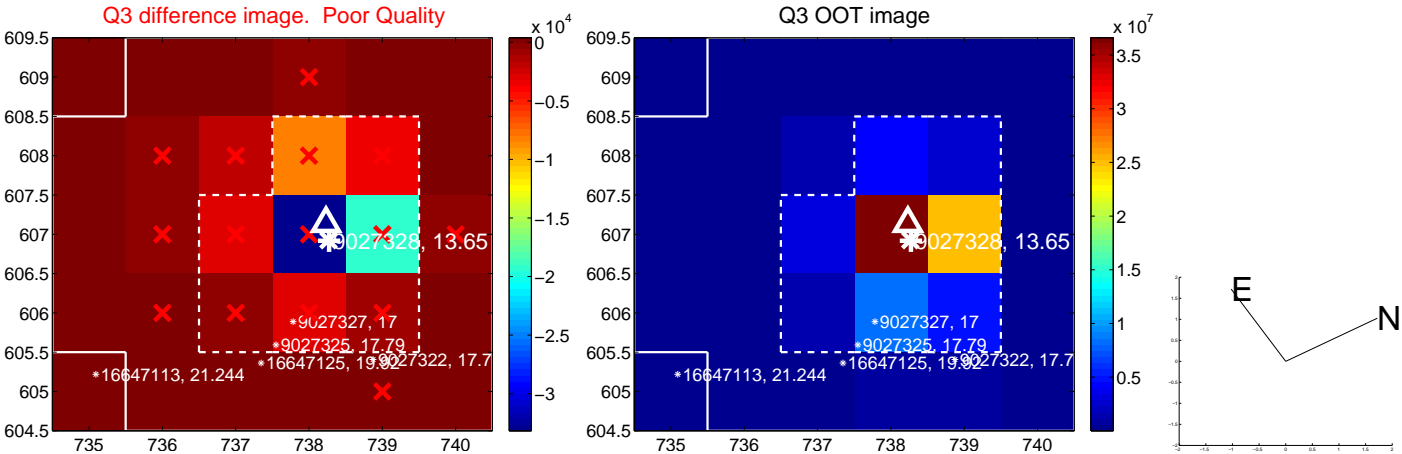
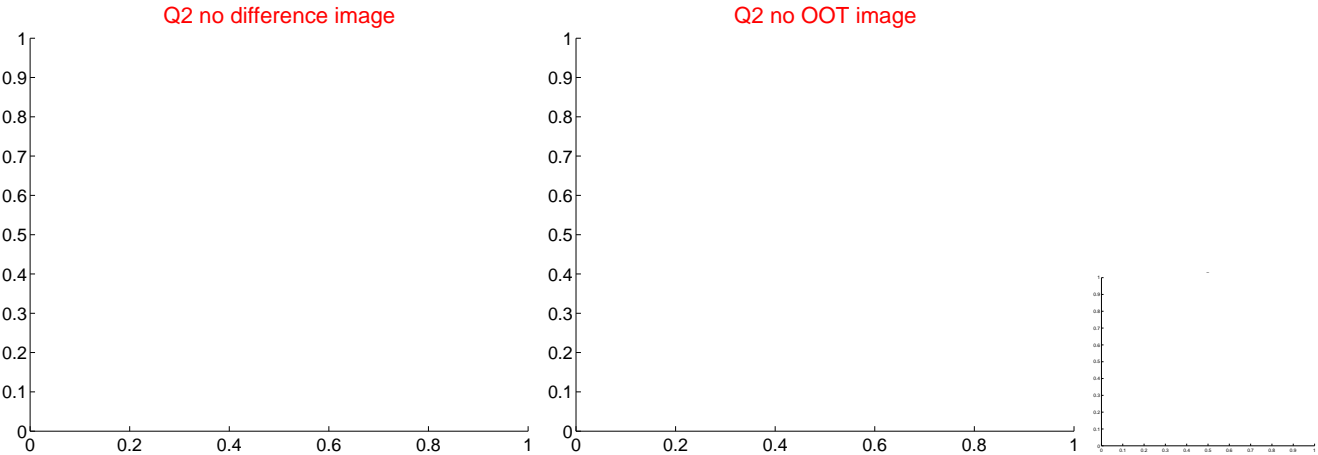
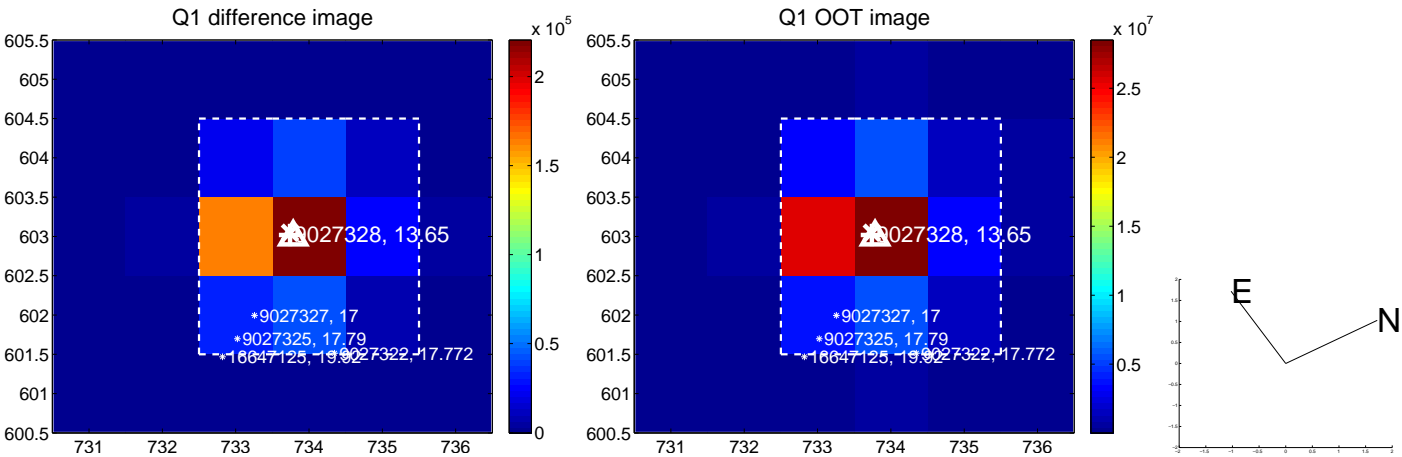
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.087 ± 0.097	0.89	-0.085 ± 0.100	0.017 ± 0.084
PRF-fit source offset from KIC position	0.143 ± 0.092	1.55	-0.143 ± 0.092	-0.009 ± 0.083
photometric centroid source offset	0.17 ± 0.02	10.82	-0.12 ± 0.02	-0.13 ± 0.01

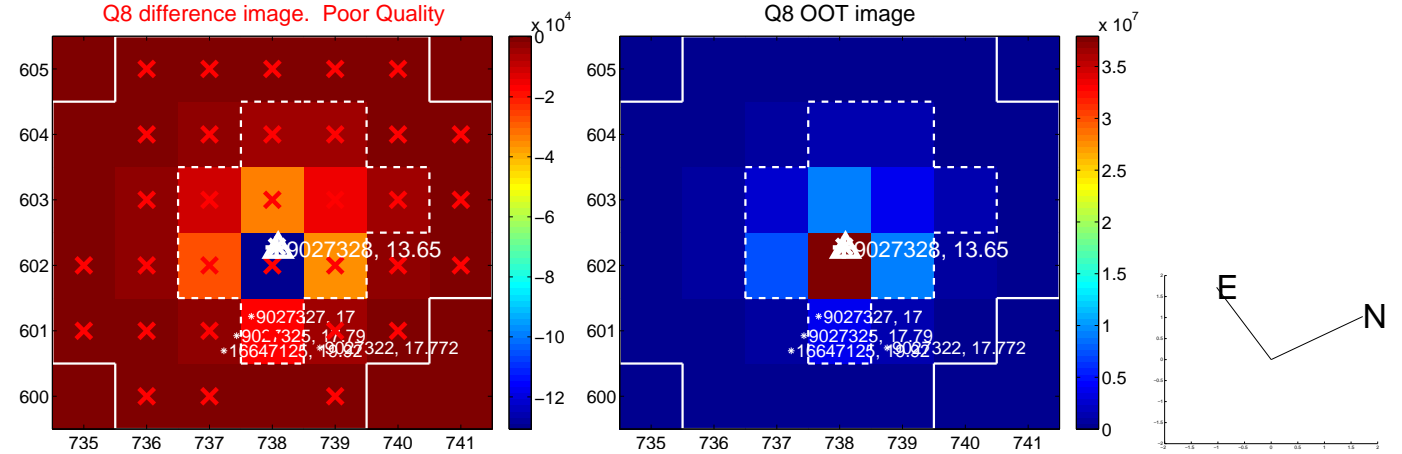
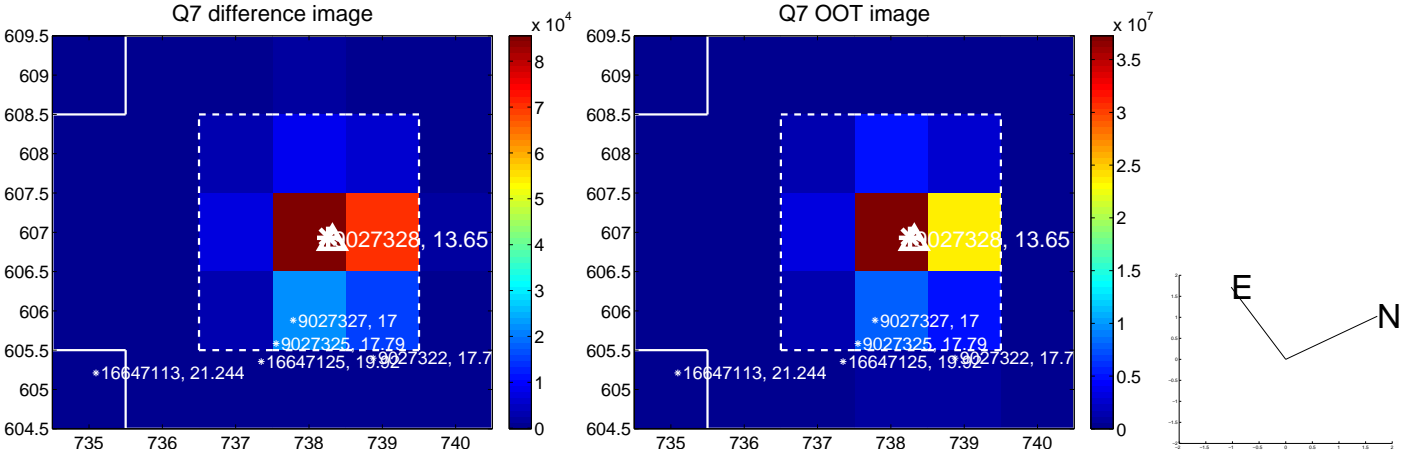
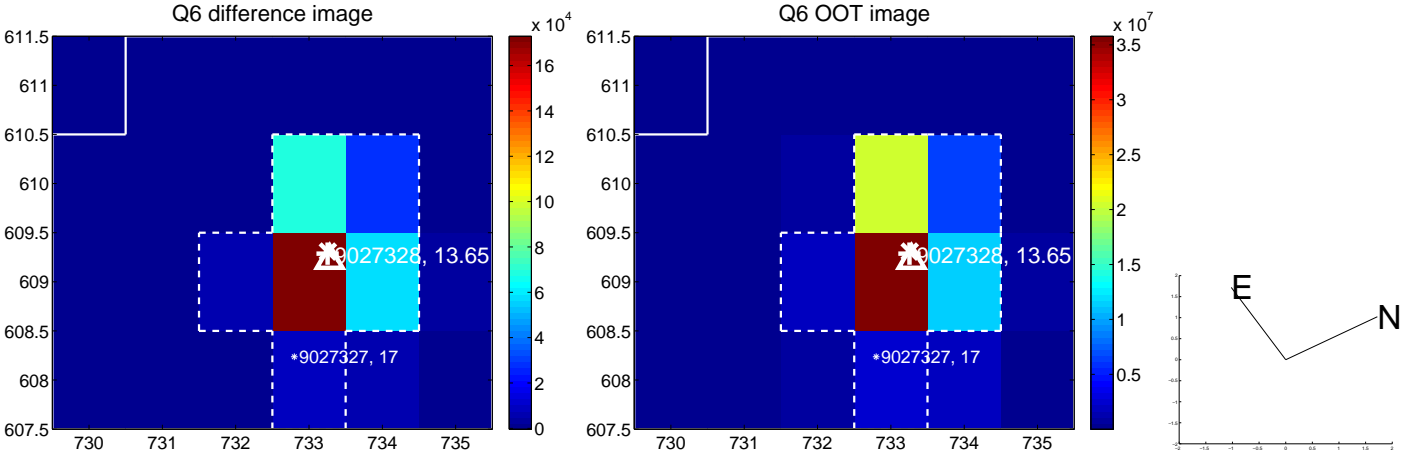
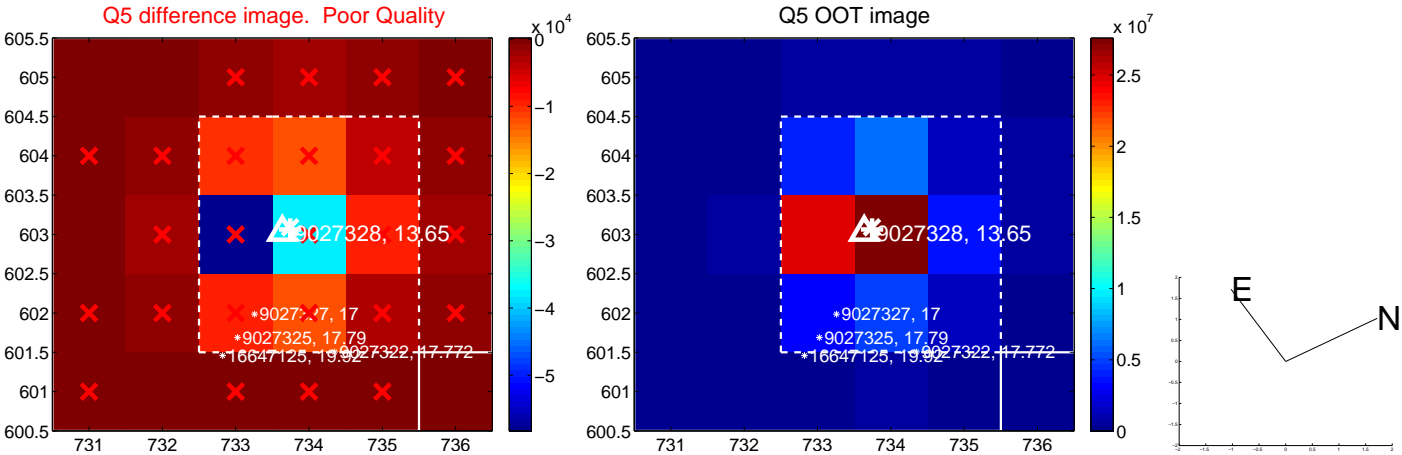


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

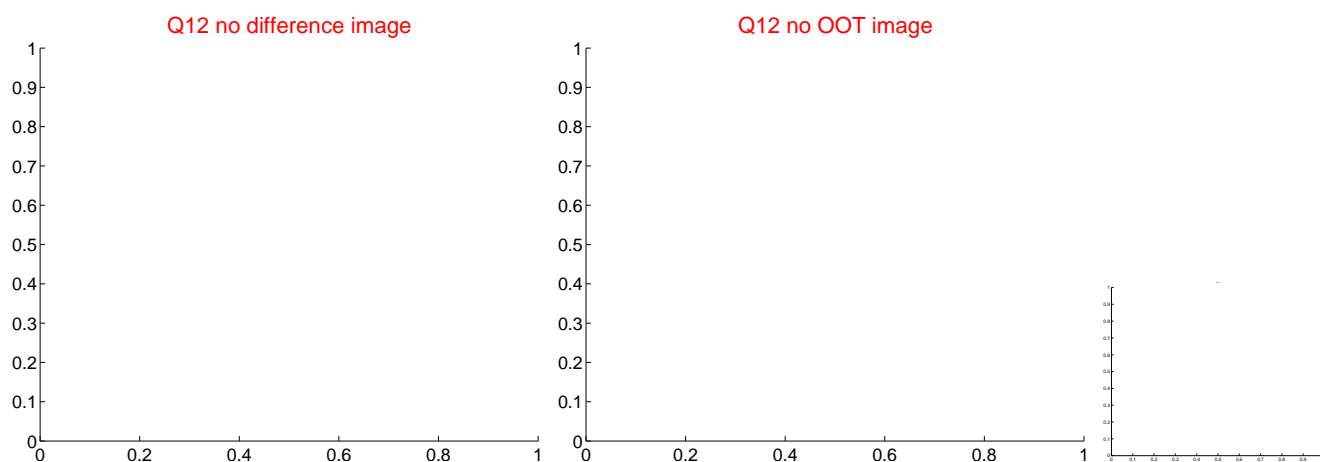
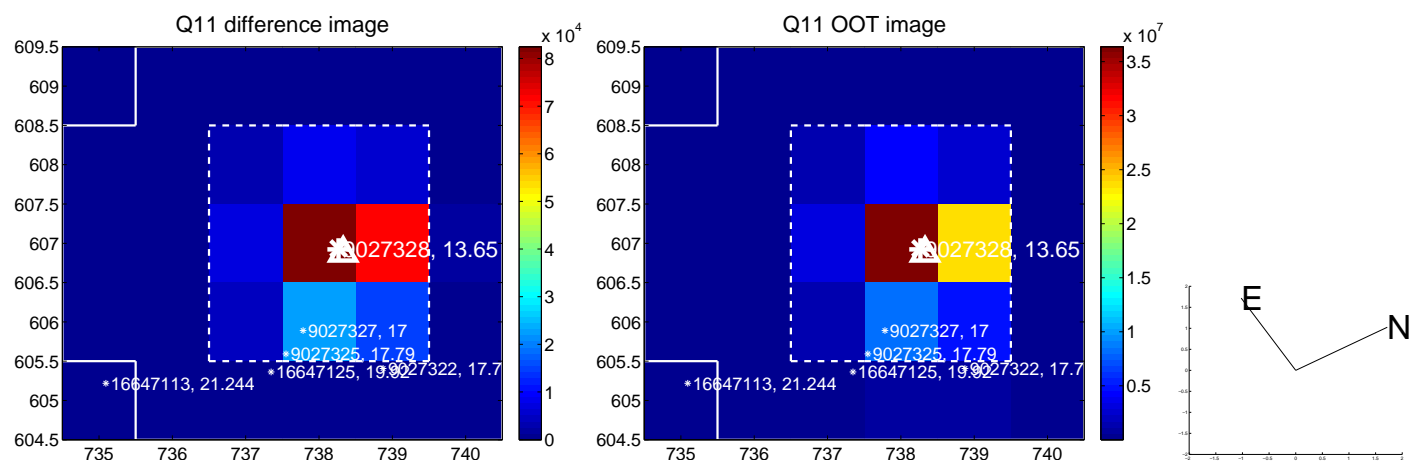
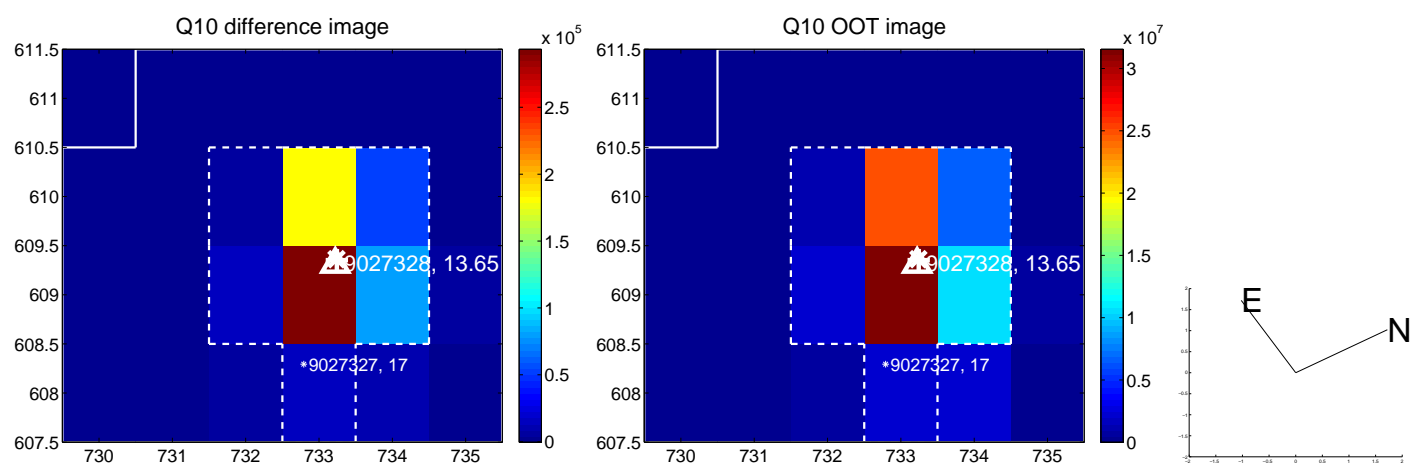
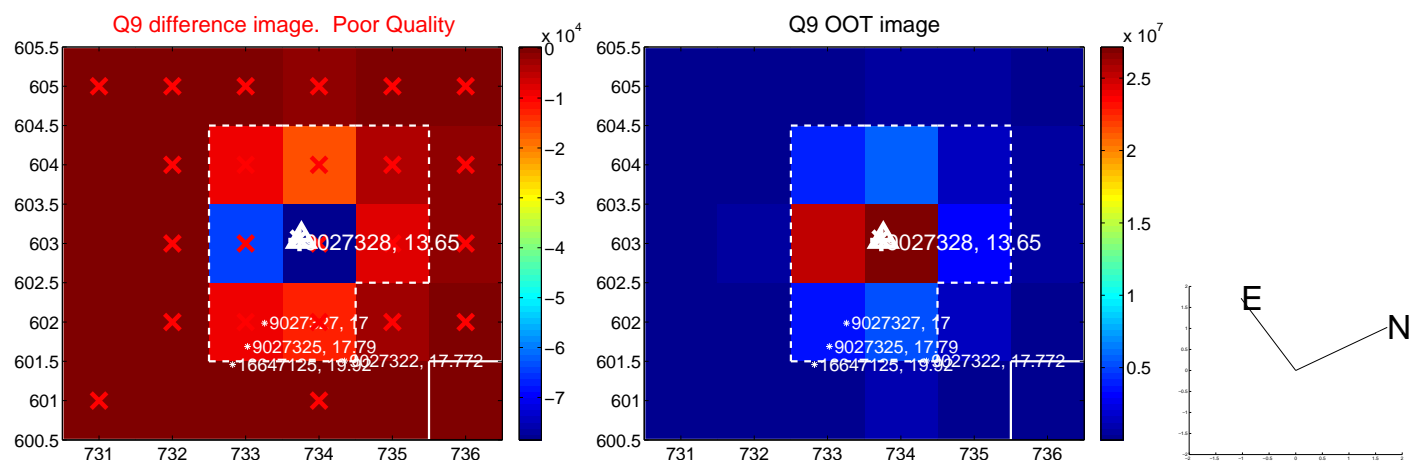
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



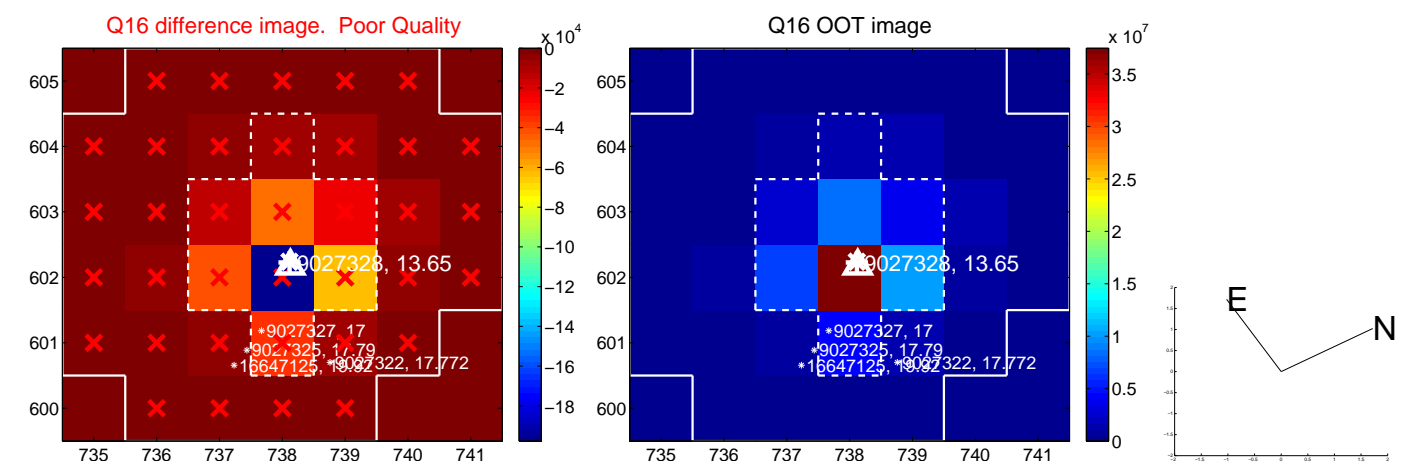
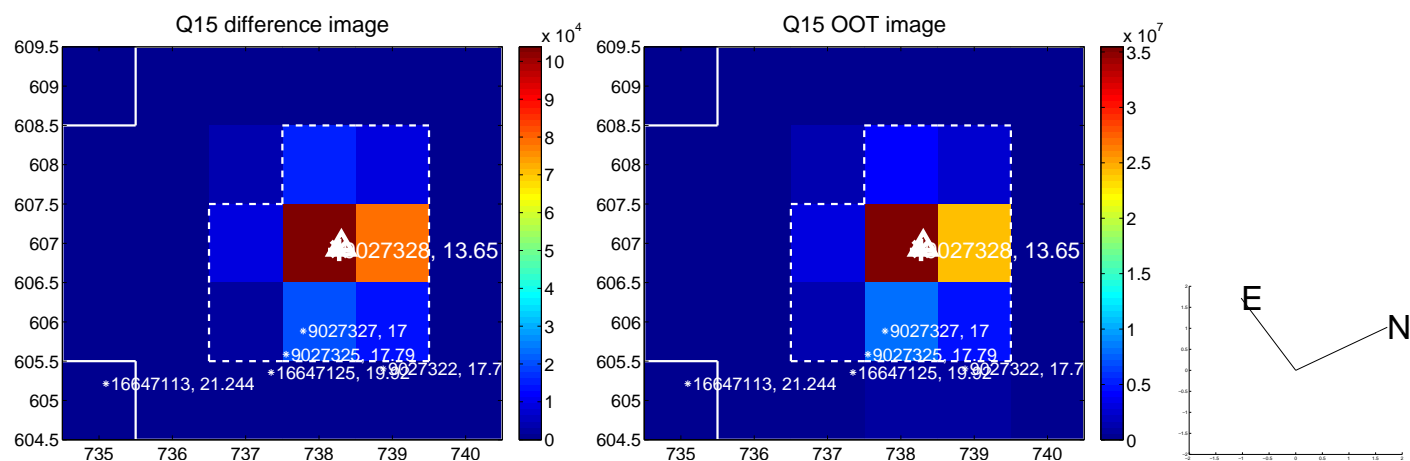
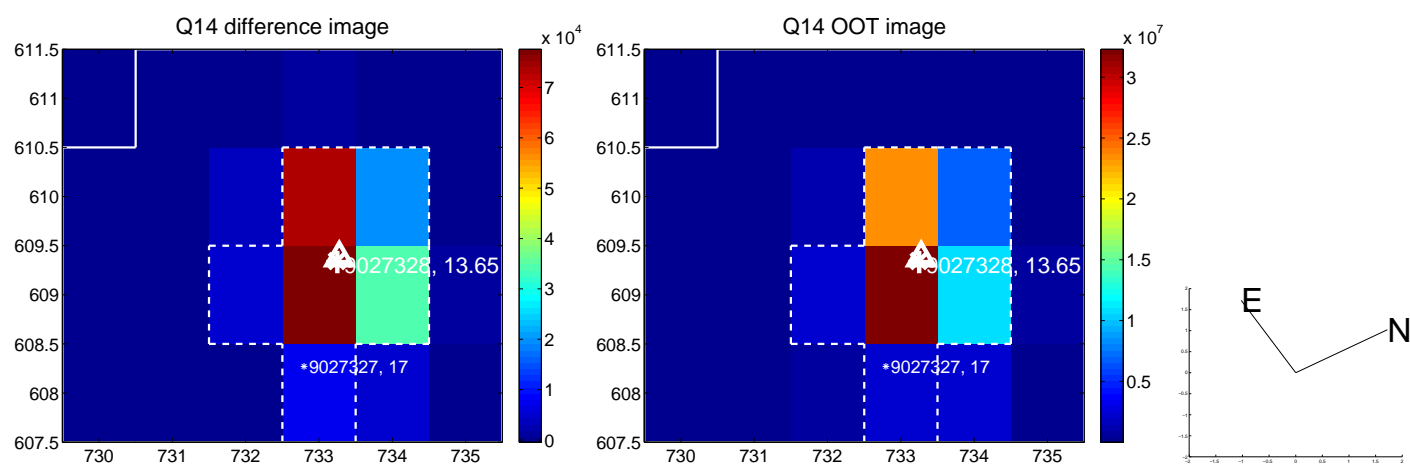
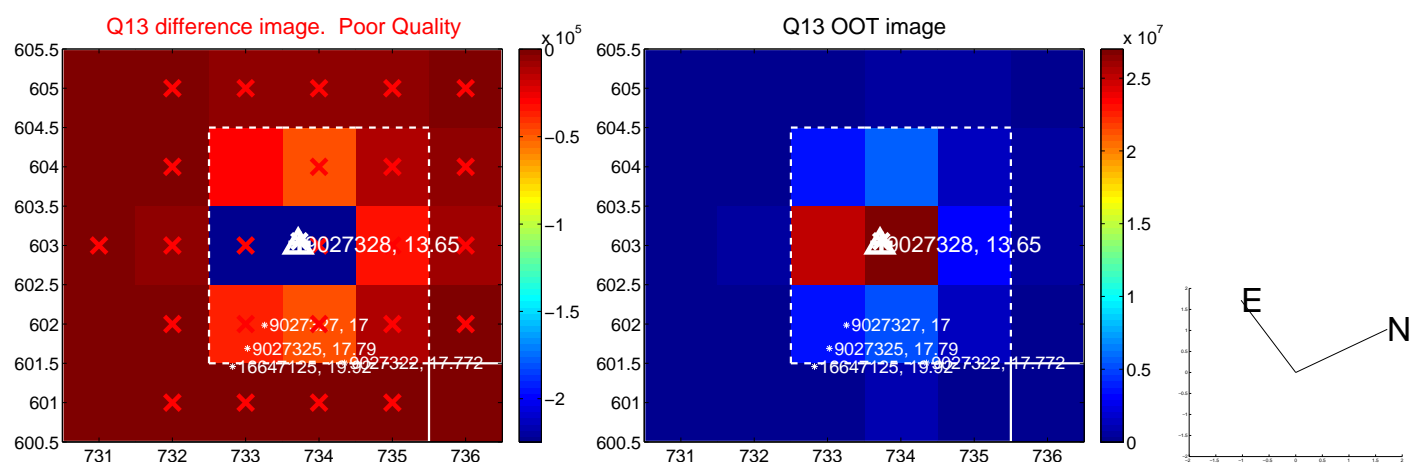
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



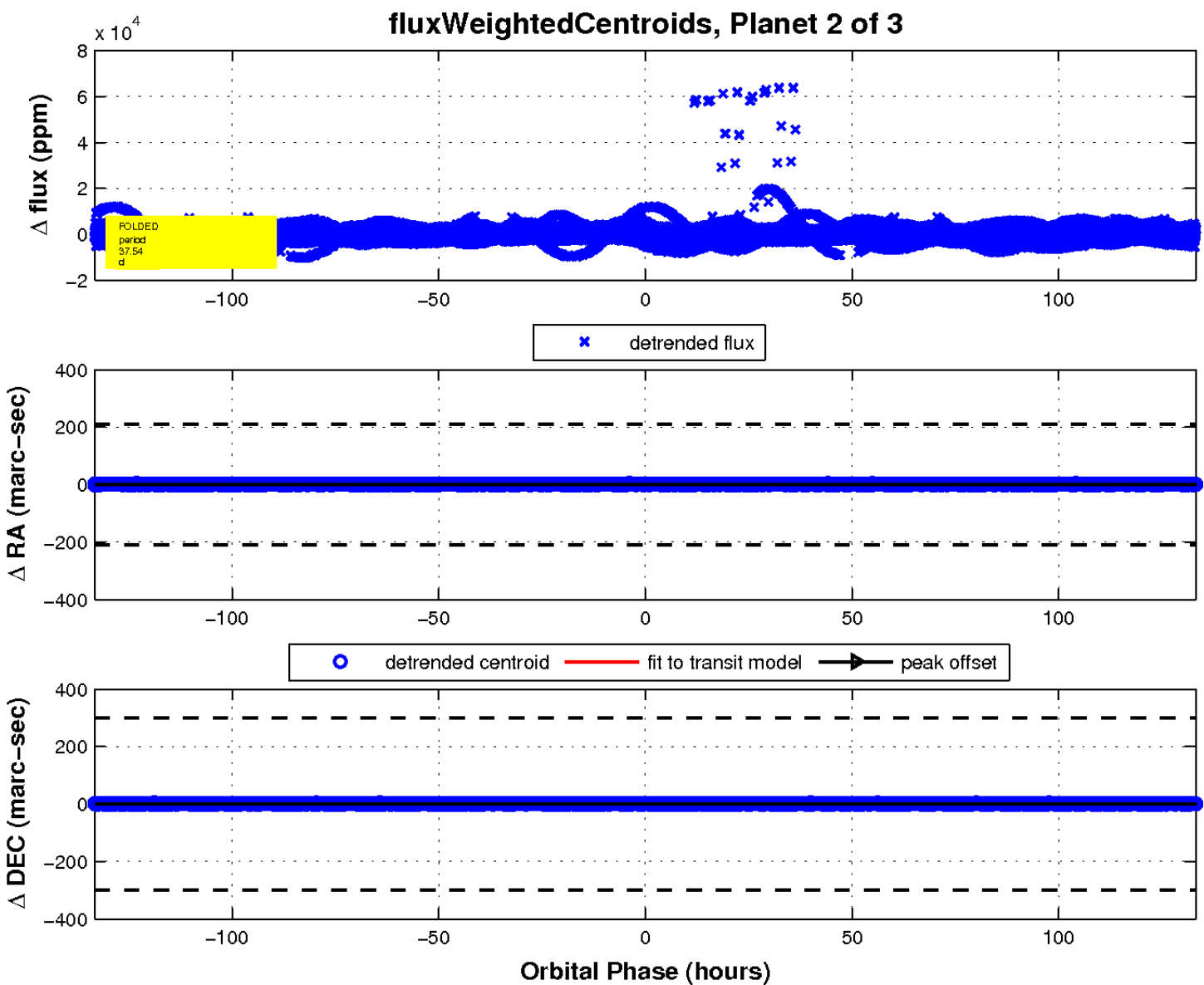
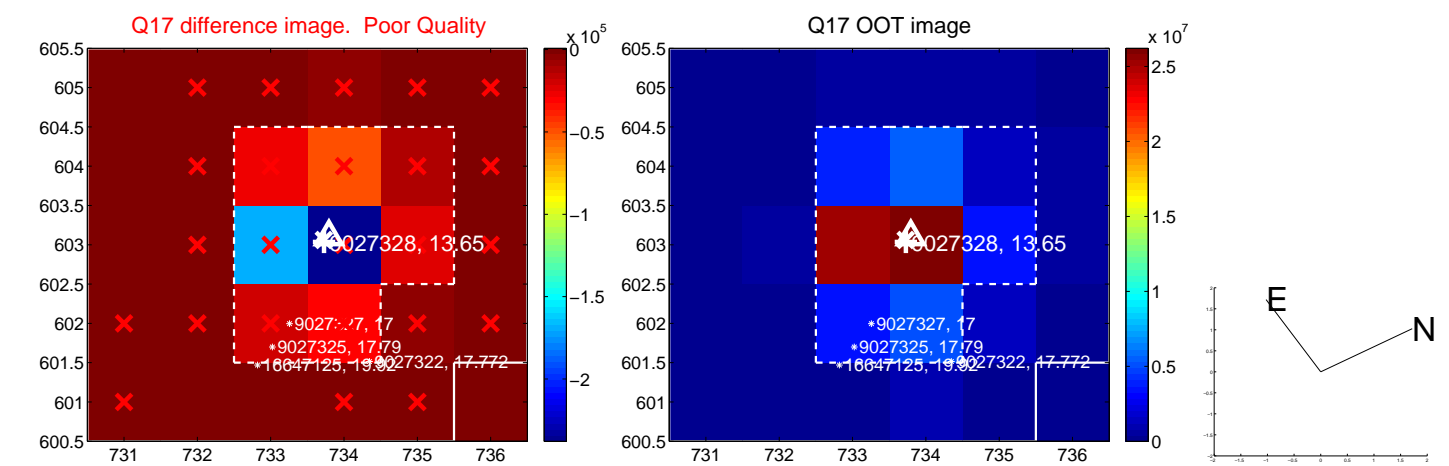
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

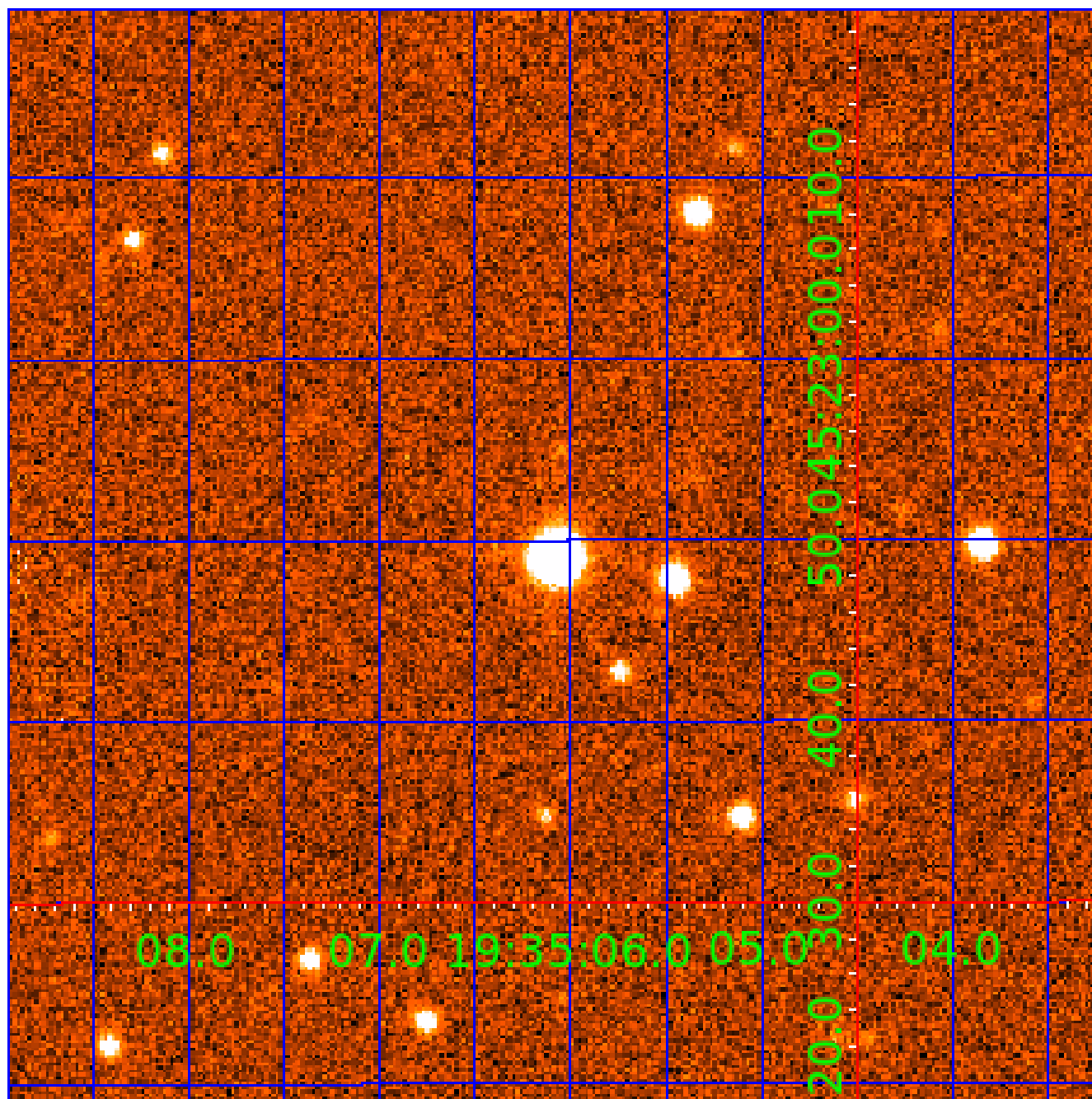


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009027328

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})
009027328-01	OBS	No	2.346580	132.764083	30.1	17.669	10.6	2.9	1.70	7278	0.96	4797.35
009027328-02	OBS	No	37.535843	149.987142	4951.0	44.416	20.8	10.2	1.70	7278	21.27	119.03
009027328-03	OBS	No	46.955150	140.913837	379.4	5.000	8.7	-1.0	1.70	7278	3.36	88.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009027328-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009027328-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009027328-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—NO_FITS—CENT_NOFITS

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

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

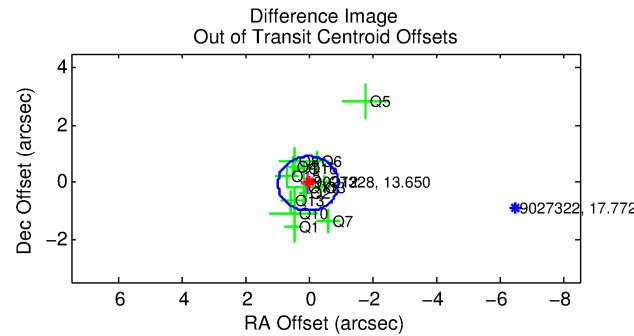
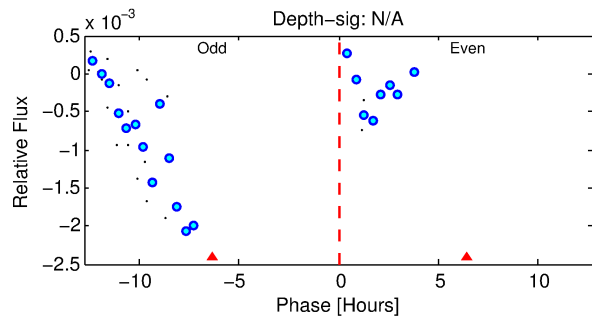
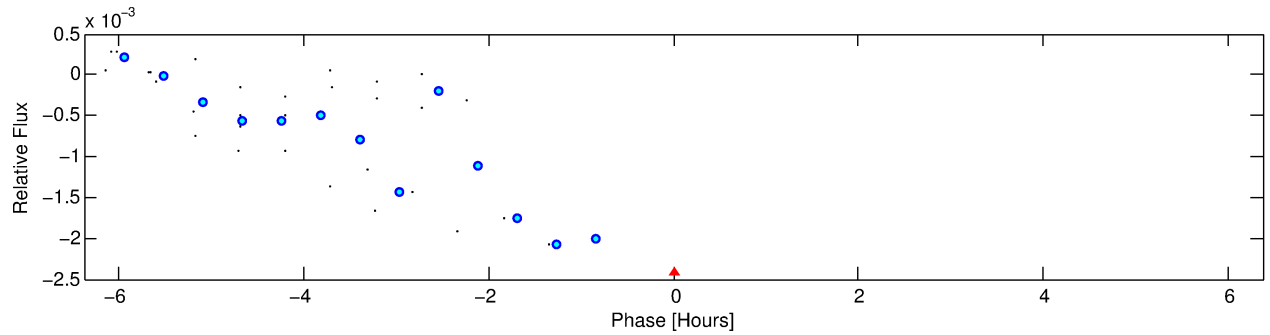
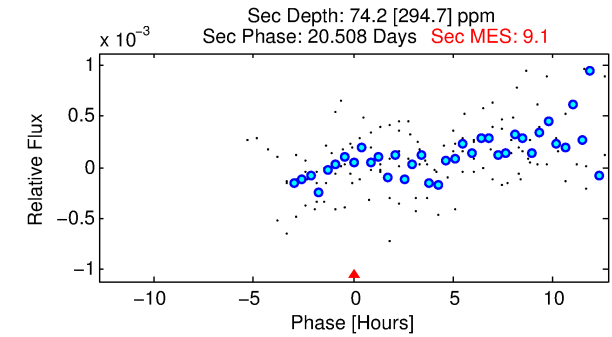
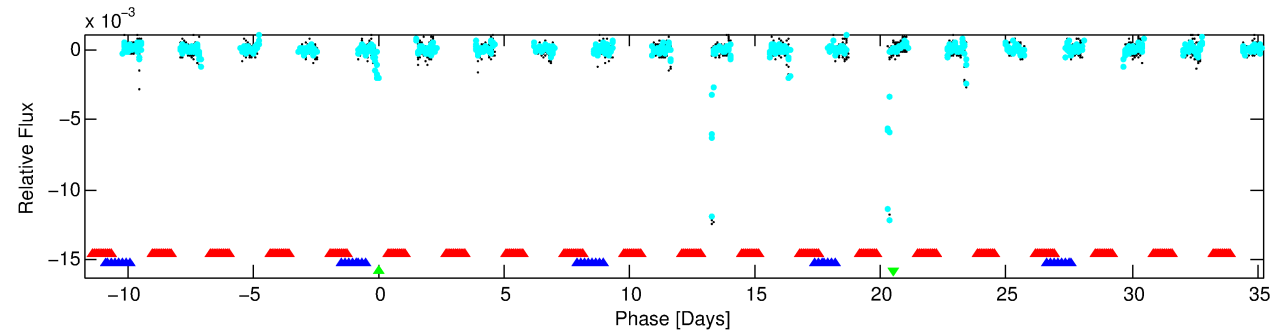
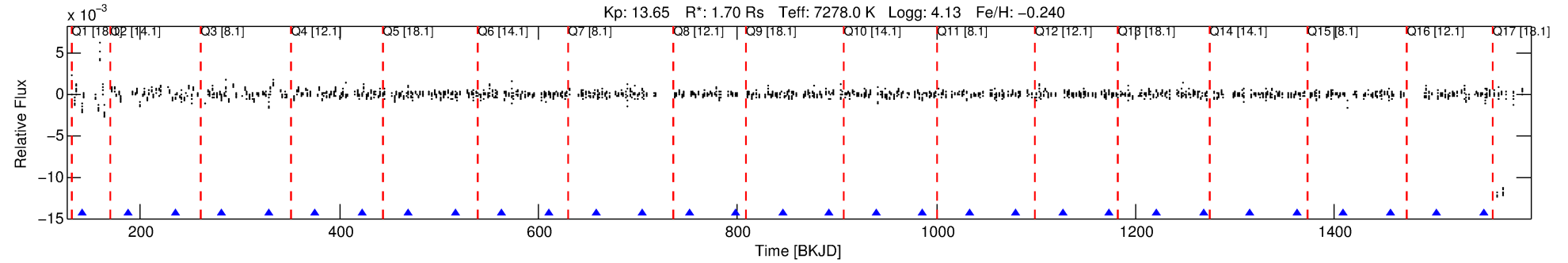
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009027328-03

No Significant Match Found

DV One-Page Summary

KIC: 9027328 Candidate: 3 of 3 Period: 46.955 d



TPS TCE Results:

Period = 46.95515 d
Epoch = 140.9138 BKJD

DV fit results are unavailable

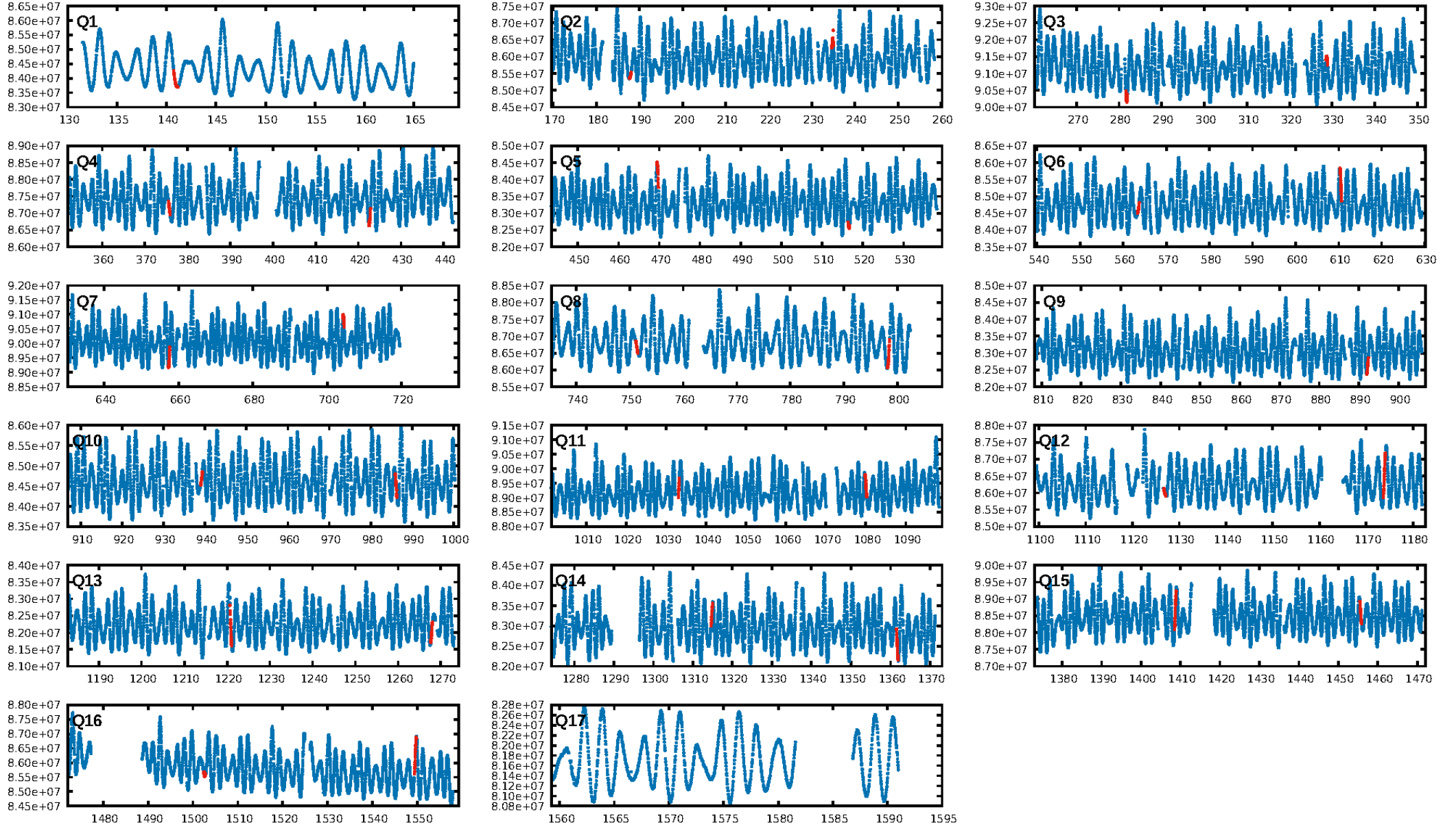
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.06 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.22e-11
RollingBand-fgt: N/A
GhostDiagnostic-chr: -0.6628
Centroid-sig: 4.8%
Centroid-so: 0.175 arcsec [39.38 σ]
OotOffset-rm: 0.068 arcsec [0.21 σ]
KicOffset-rm: 0.079 arcsec [0.29 σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 0.62 [10/16]

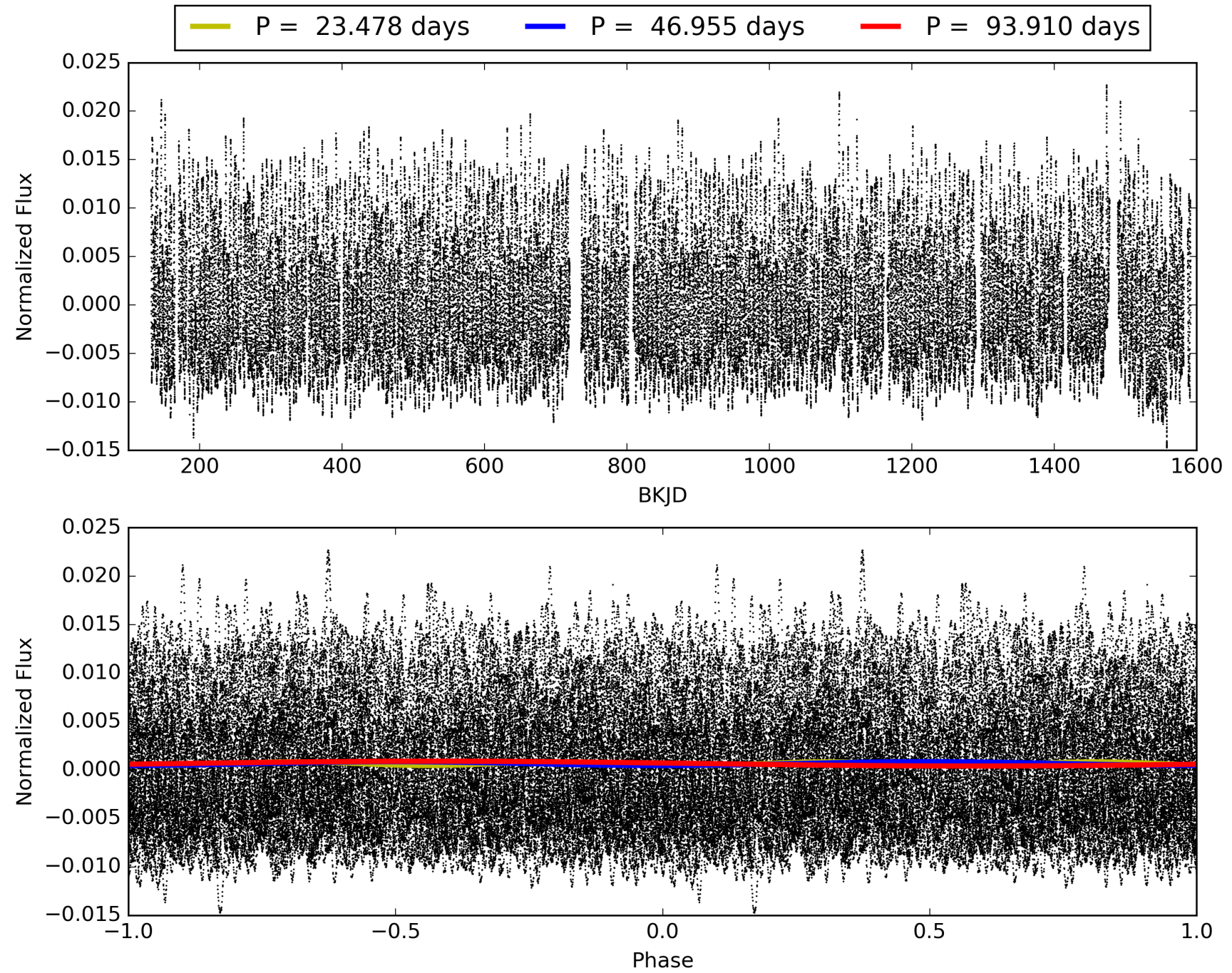
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:24:55 Z

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

TCE 009027328-03, PDC Light Curves

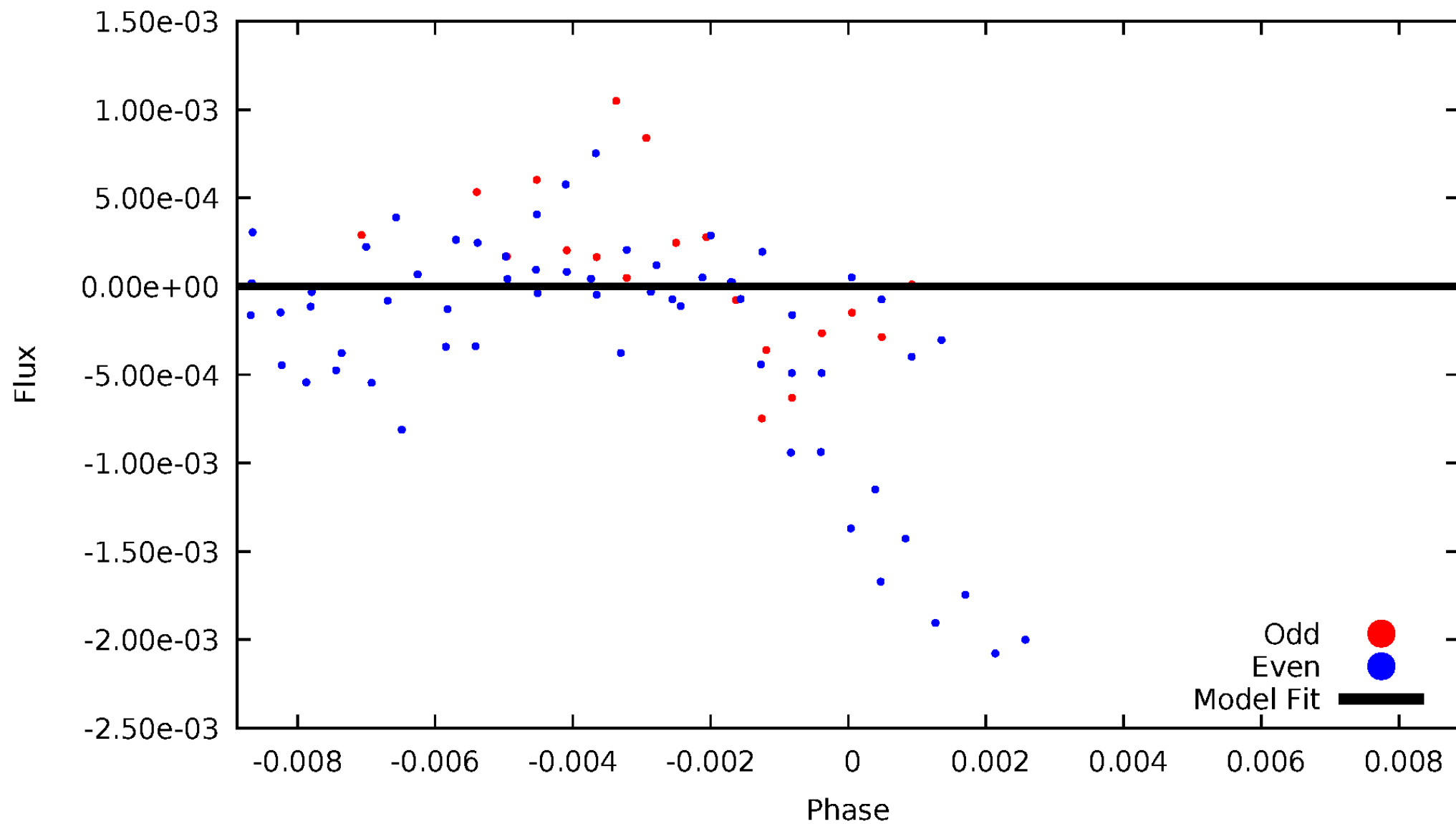


TCE 009027328-03



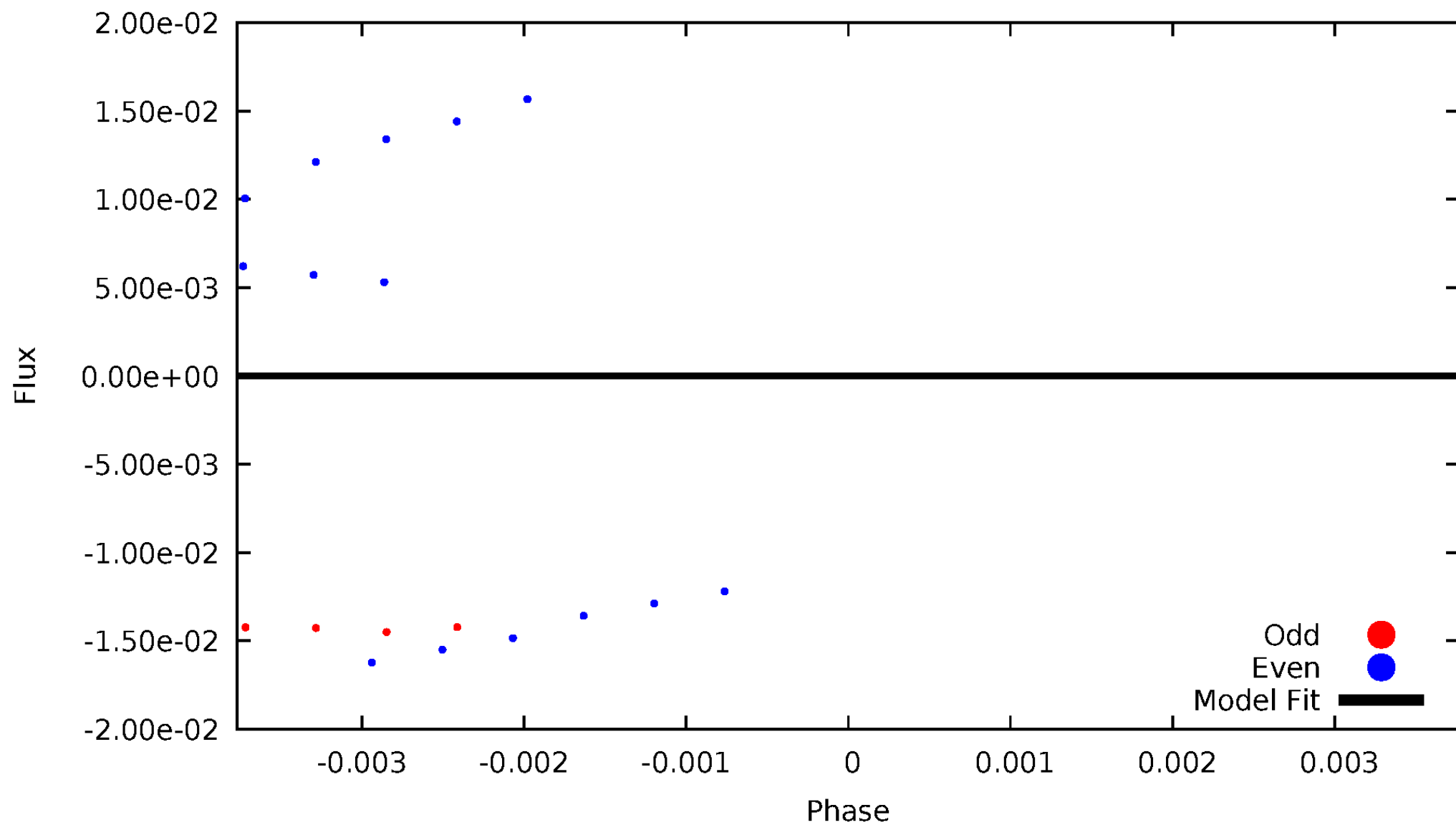
DV Odd/Even

TCE 009027328-03



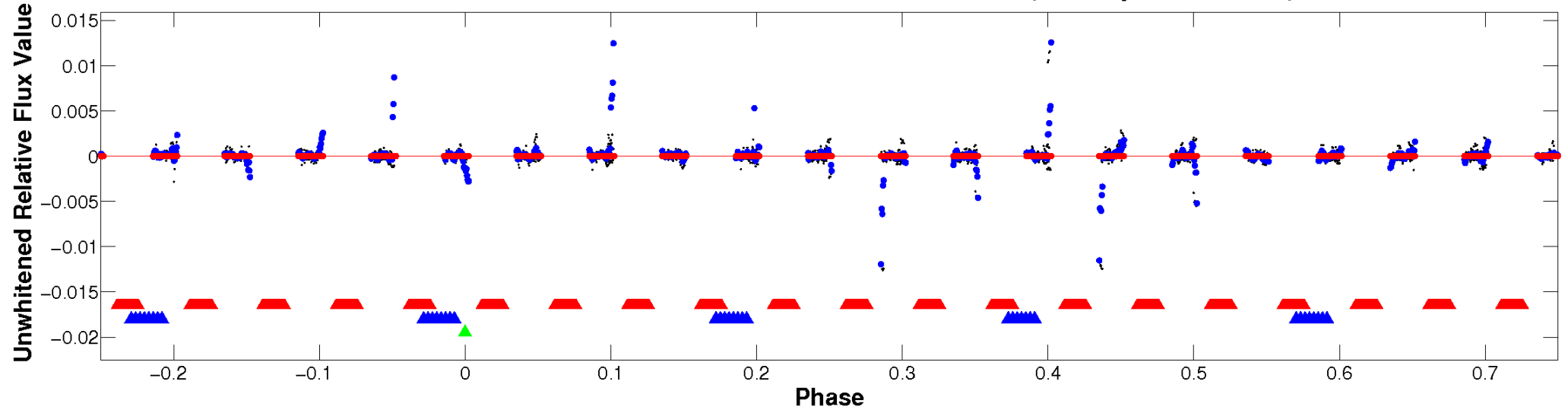
ALT Odd/Even

TCE 009027328-03

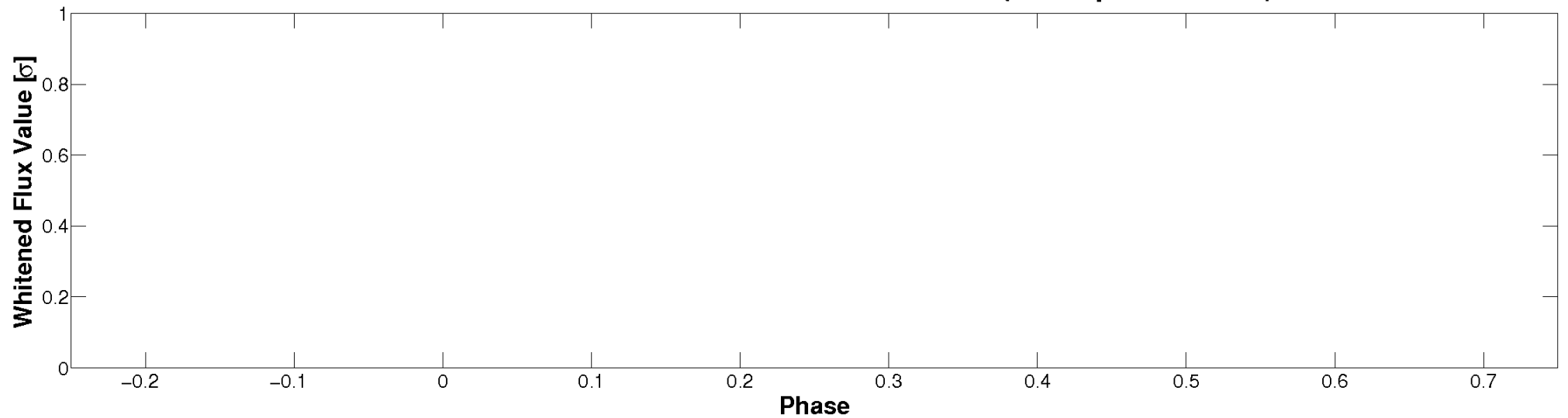


Non-Whitened Vs. Whitened Light Curve

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

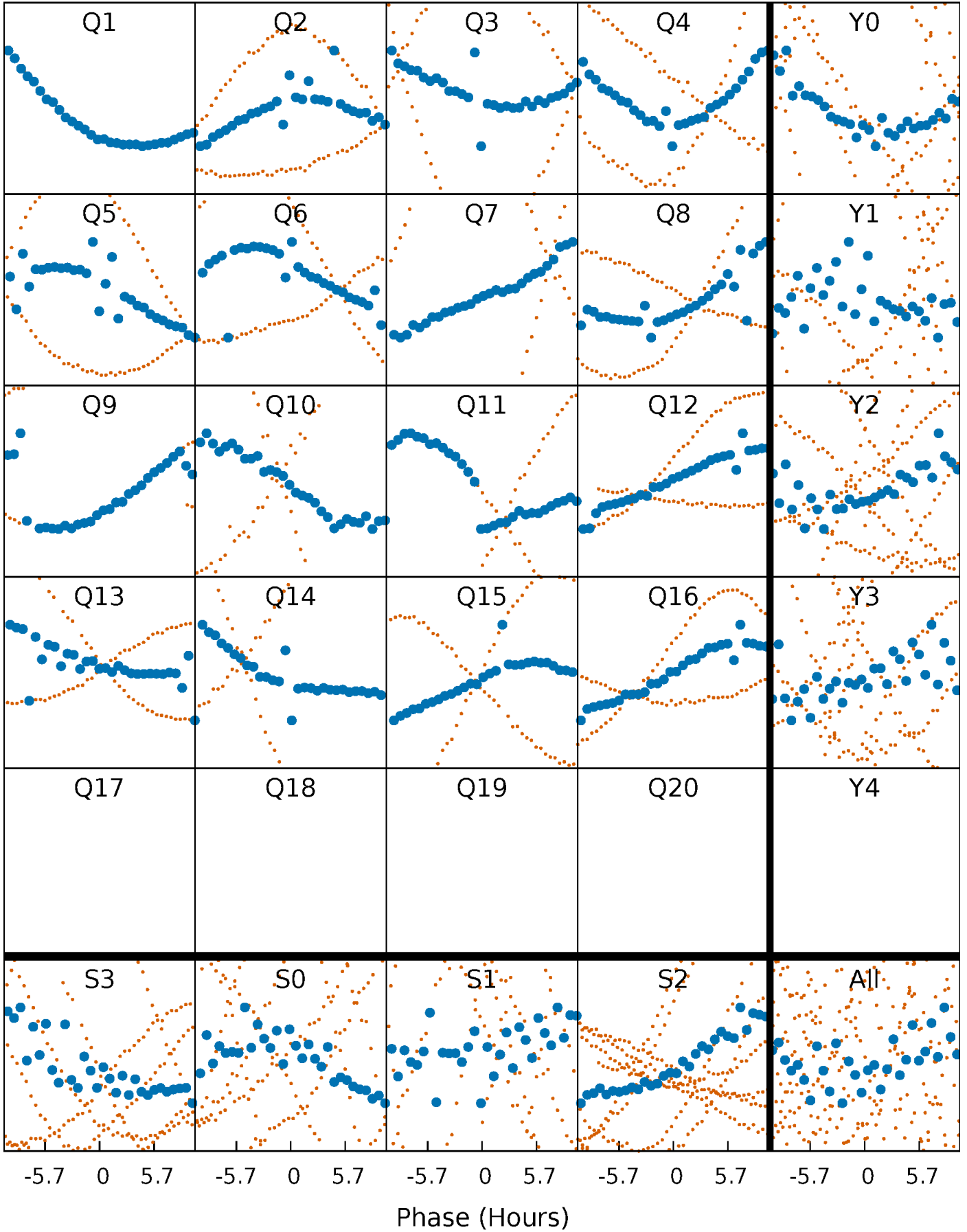


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



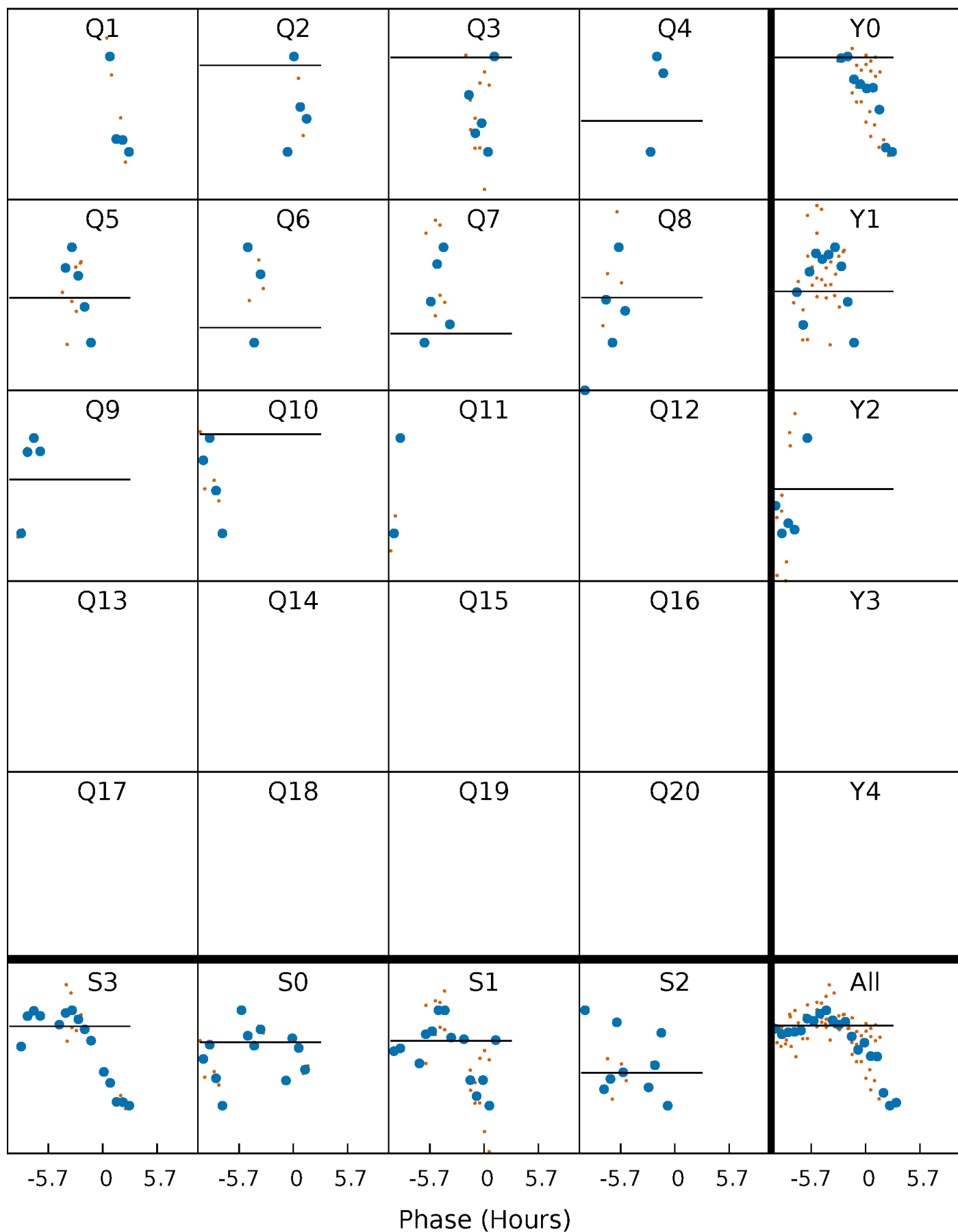
PDC Quarter-Phased Transit Curves

TCE 009027328-03 P= 46.955150 Days $T_0=140.913837$ (BKJD)



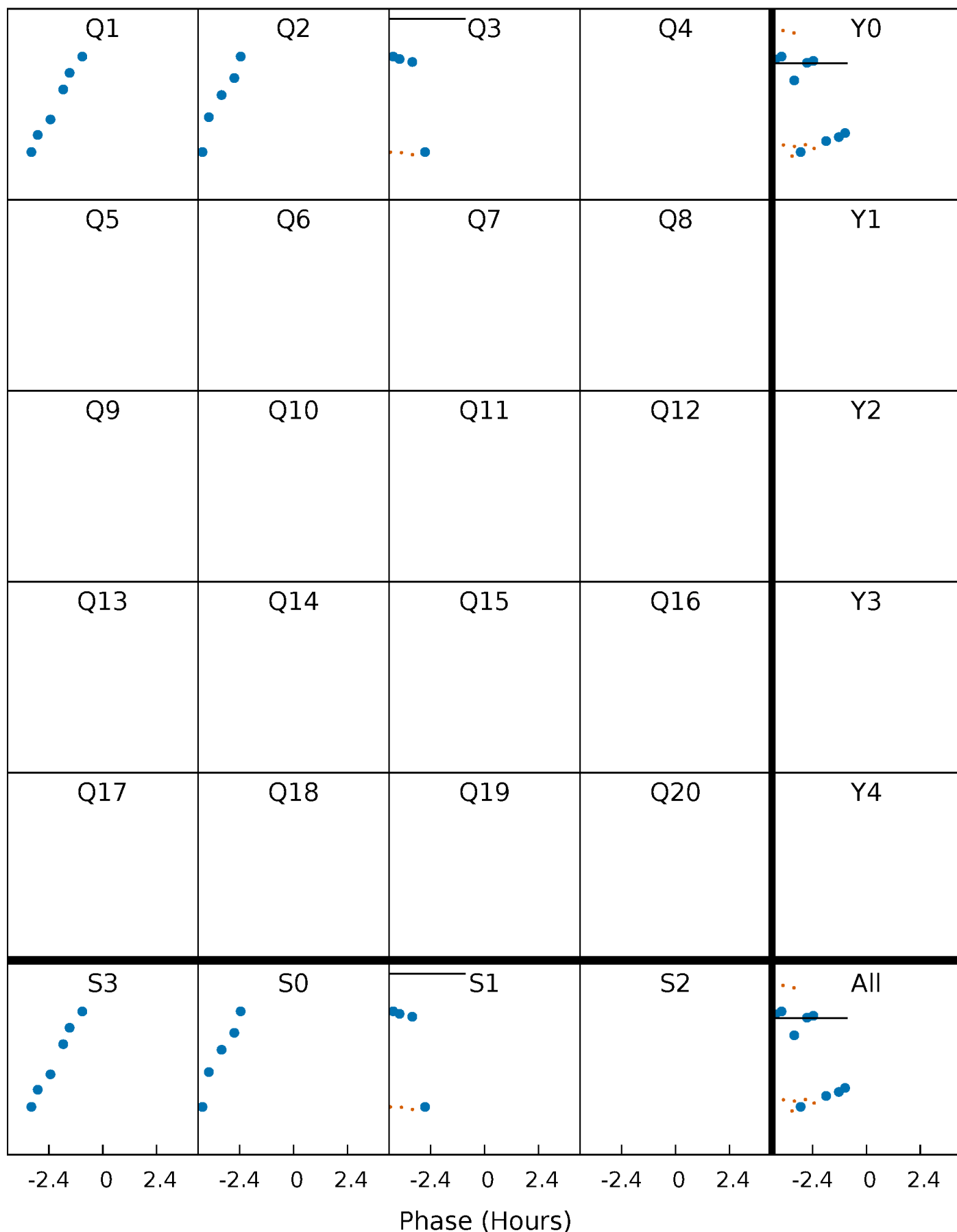
DV Quarter-Phased Transit Curves

TCE 009027328-03 $P = 46.955150$ Days $T_0 = 140.913837$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

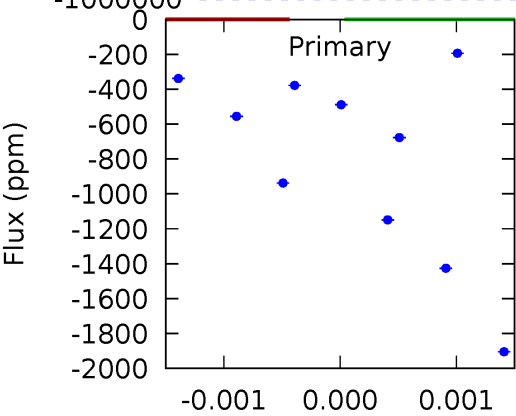
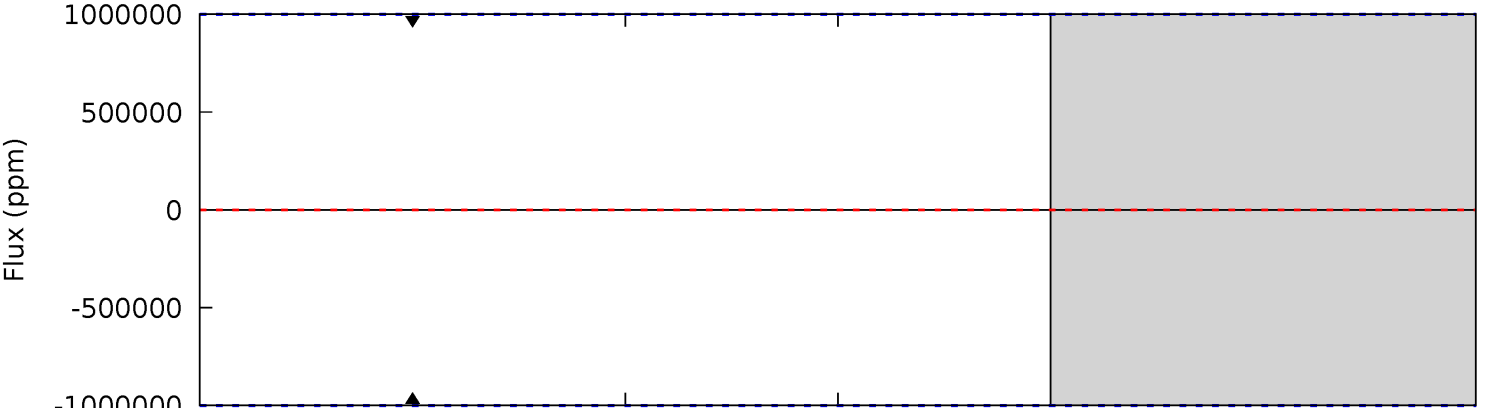
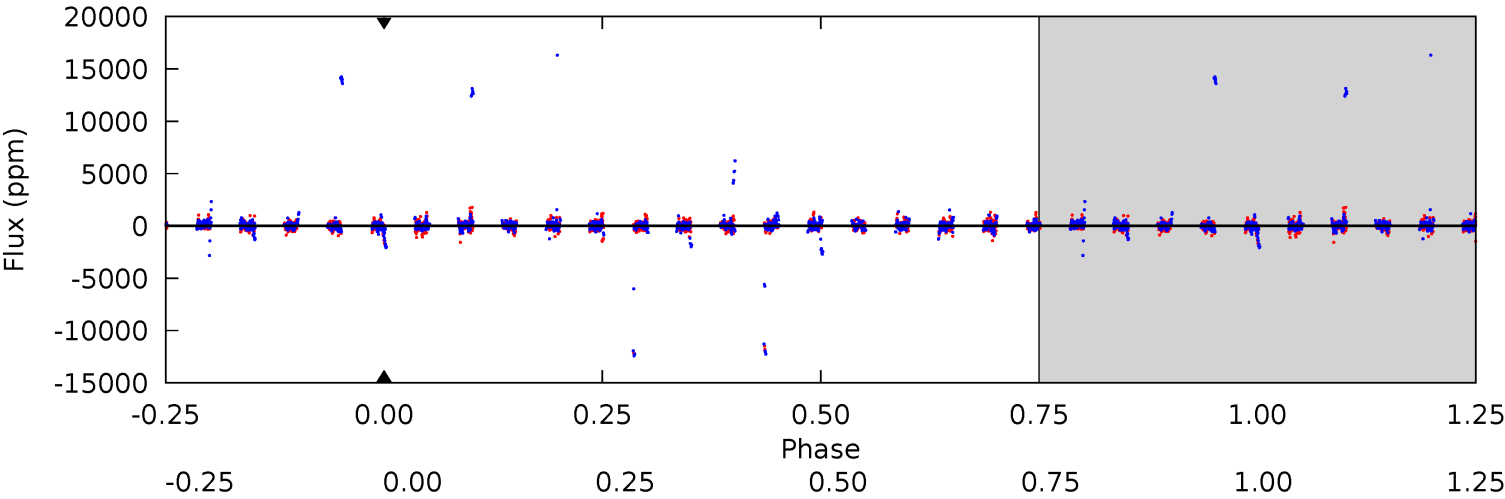
TCE 009027328-03 P= 46.955150 Days $T_0=141.070303$ (BKJD)



DV Model-Shift Uniqueness Test

009027328-03, P = 46.955150 Days, E = 93.958687 Days

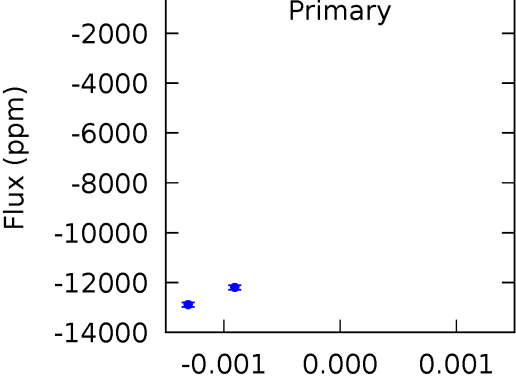
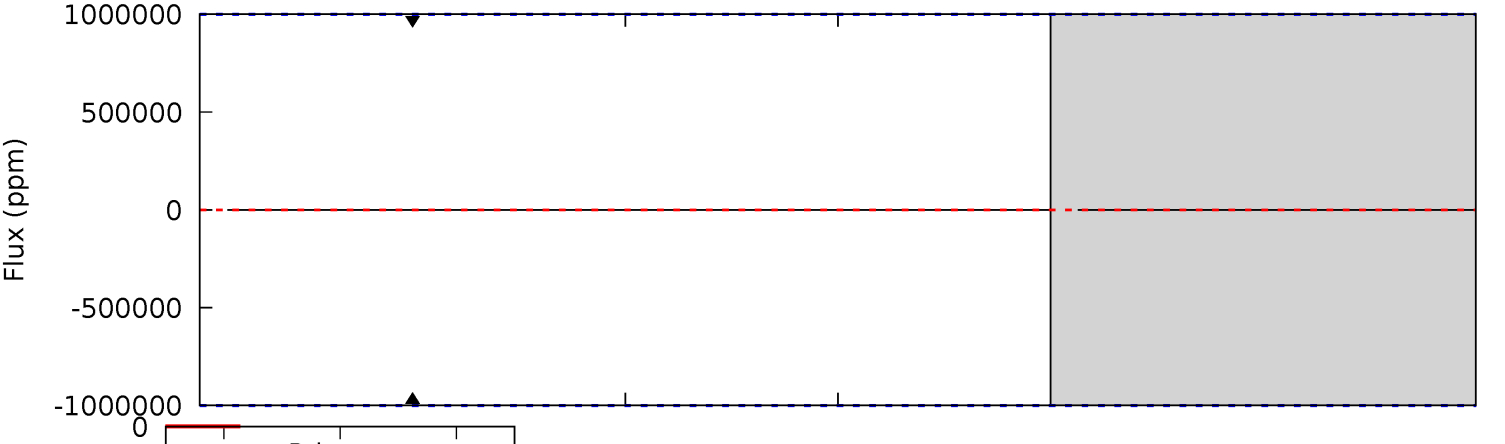
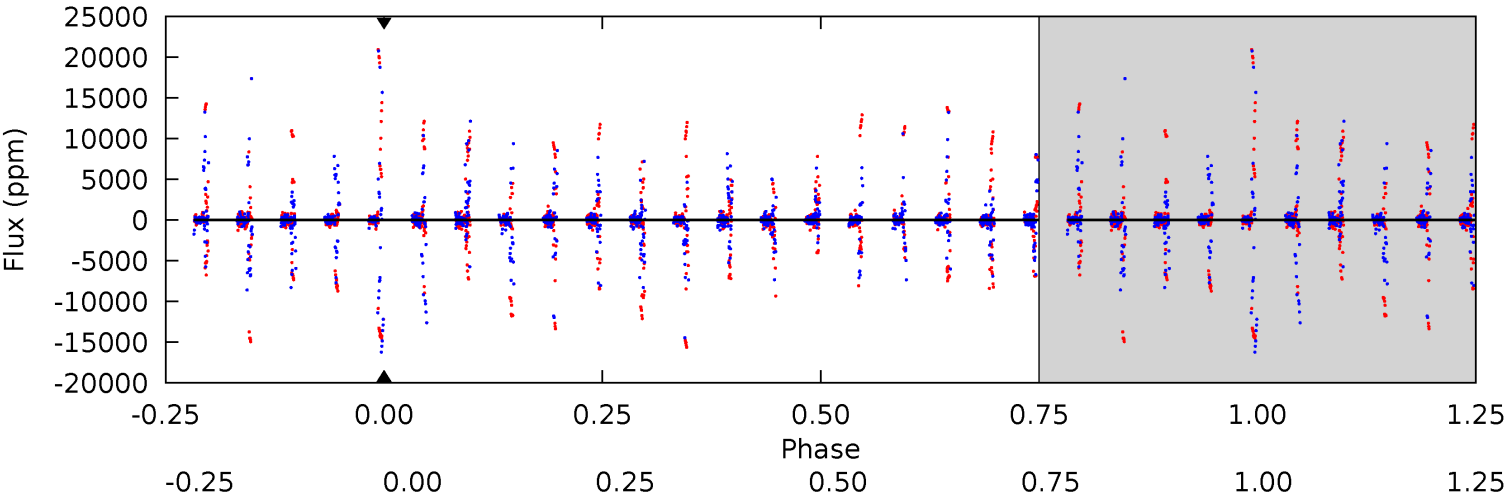
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009027328-03, P = 46.955150 Days, E = 94.115153 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Stellar Parameters For KIC 009027328

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7278^{+232}_{-348}	$4.132^{+0.170}_{-0.187}$	$-0.240^{+0.250}_{-0.350}$	$1.702^{+0.533}_{-0.400}$	$1.432^{+0.219}_{-0.241}$	$0.409^{+0.363}_{-0.190}$
	+3%/-5%	+4%/-5%	+104%/-146%	+31%/-24%	+15%/-17%	+89%/-47%
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 009027328-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$13.94^{+14.64}_{-9.66}$	1084^{+91}_{-74}	-3969^{+40482}_{-29013}	$-55.373^{+43661.421}_{-38055.744}$
Alt.	0 ± 1000000	$46.63^{+22.52}_{-18.91}$	1088^{+90}_{-80}	-3776^{+12911}_{-4932}	$-62.198^{+2743.274}_{-2134.576}$

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

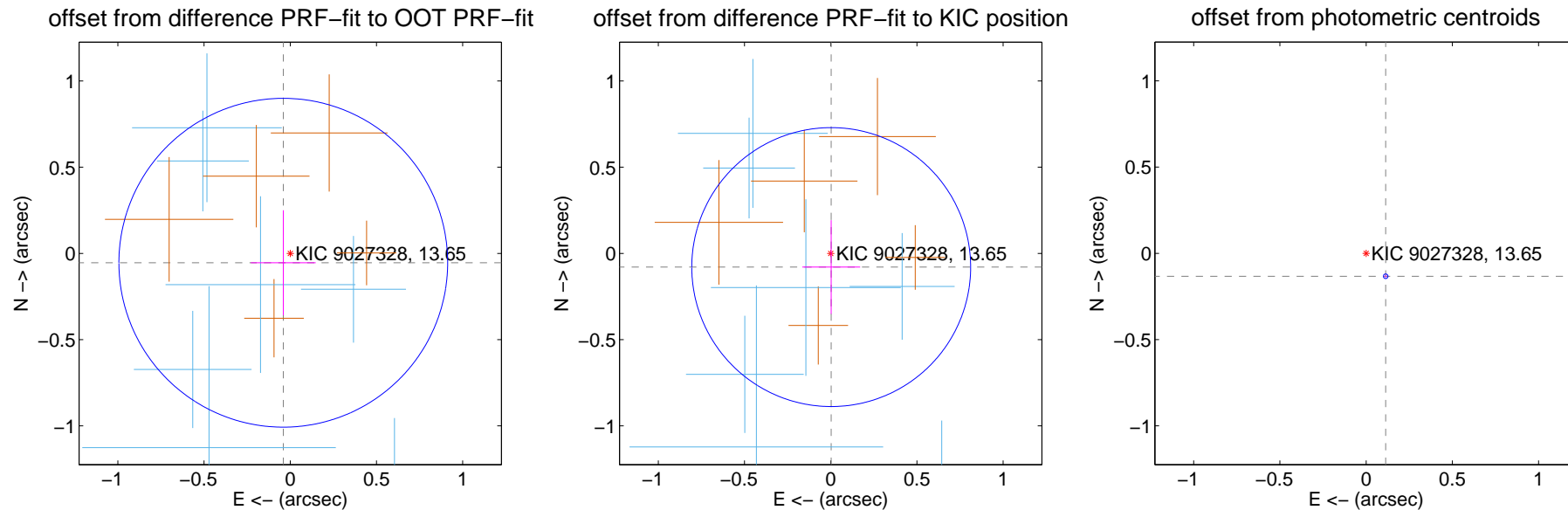
DV Centroid Data

Supplemental centroid analysis for 009027328-03. Kepler magnitude: 13.65. Transit SNR -1.00

There are 9 quarters with good PRF difference image offsets

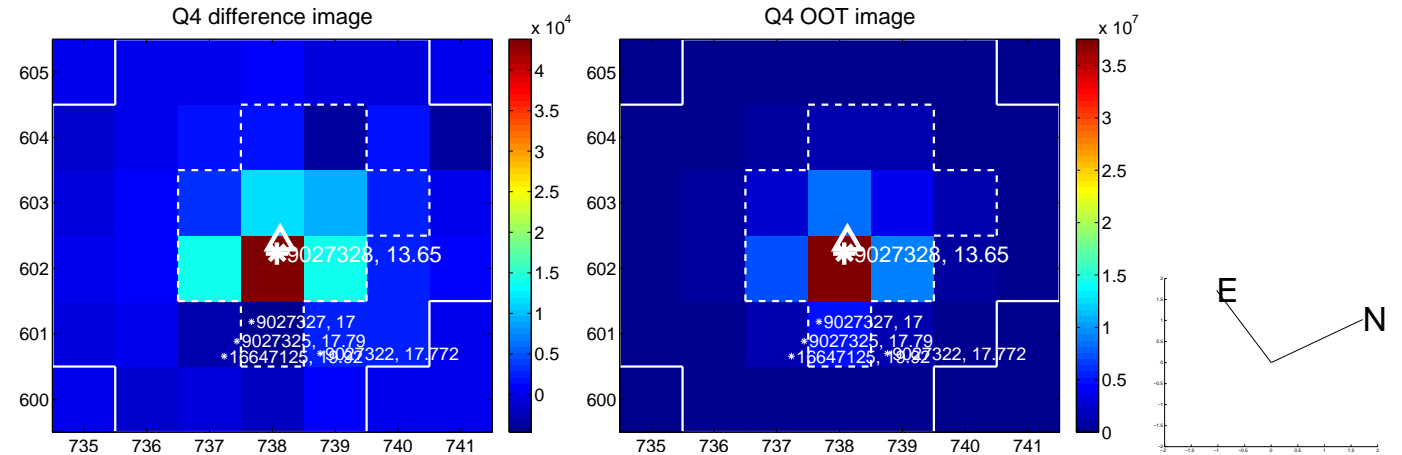
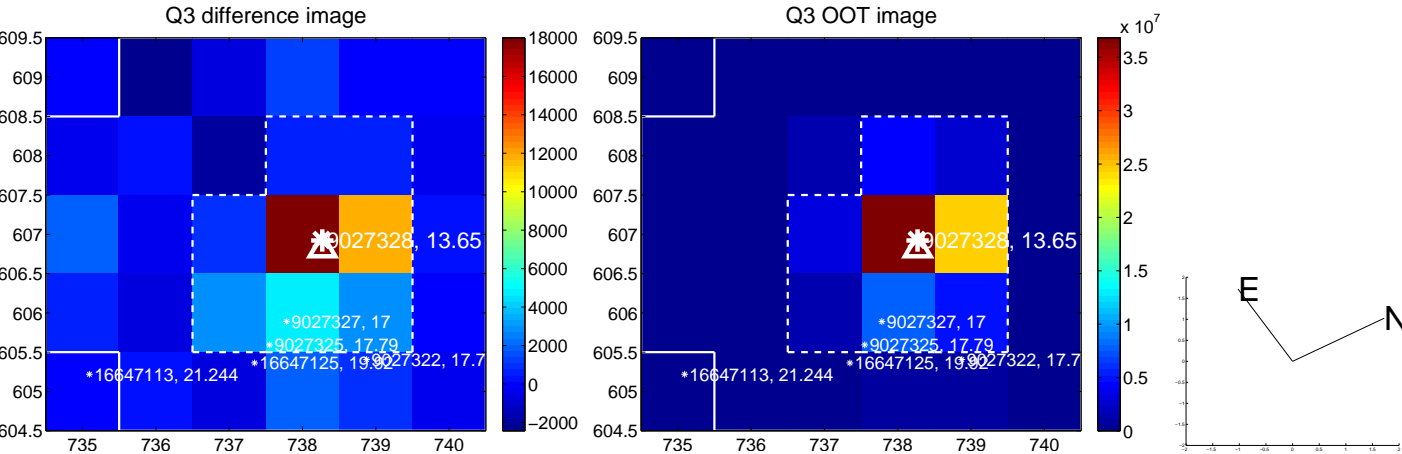
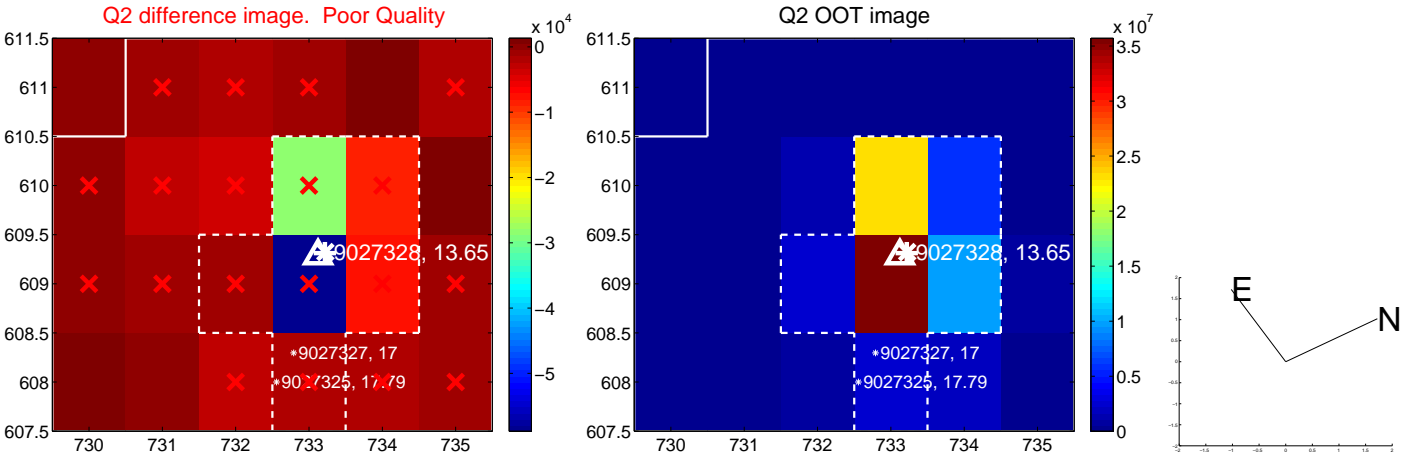
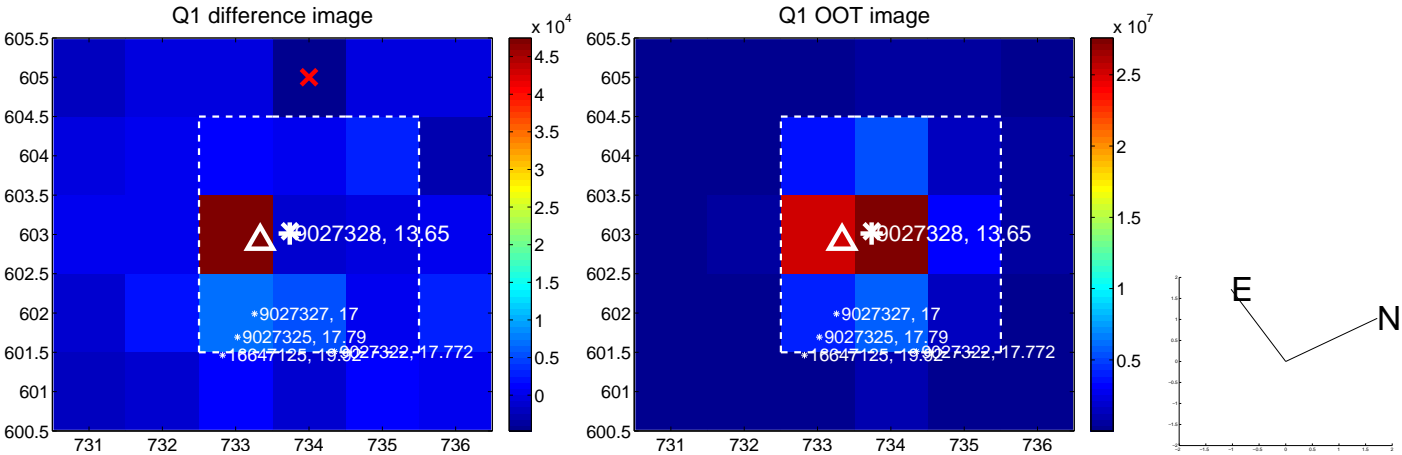
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.068 ± 0.318	0.21	0.041 ± 0.188	-0.054 ± 0.305
PRF-fit source offset from KIC position	0.079 ± 0.270	0.29	-0.003 ± 0.168	-0.079 ± 0.272
photometric centroid source offset	0.17 ± 0.00	39.38	-0.11 ± 0.00	-0.13 ± 0.00

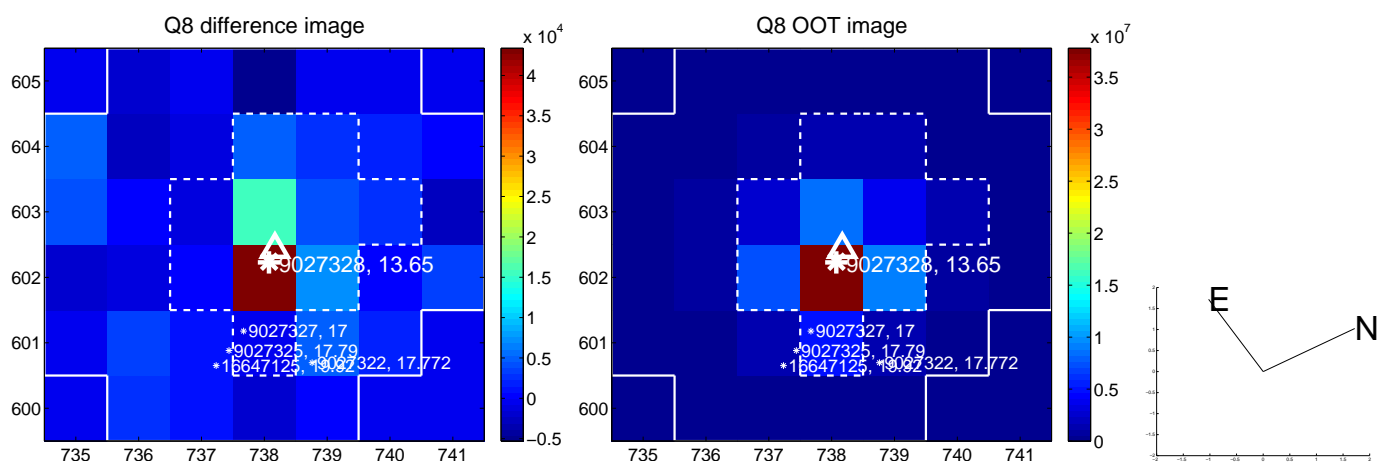
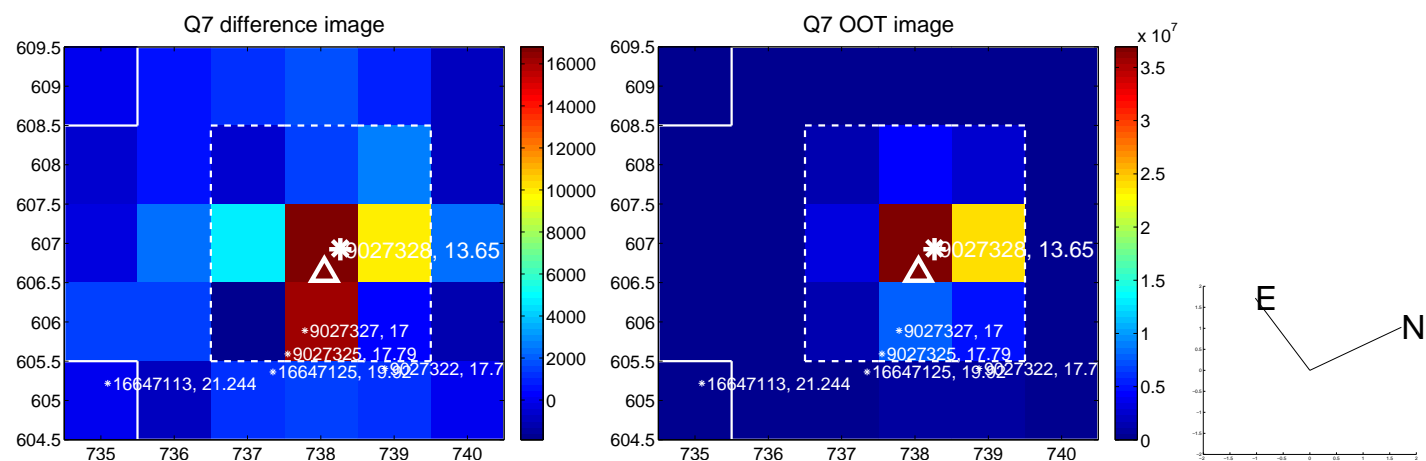
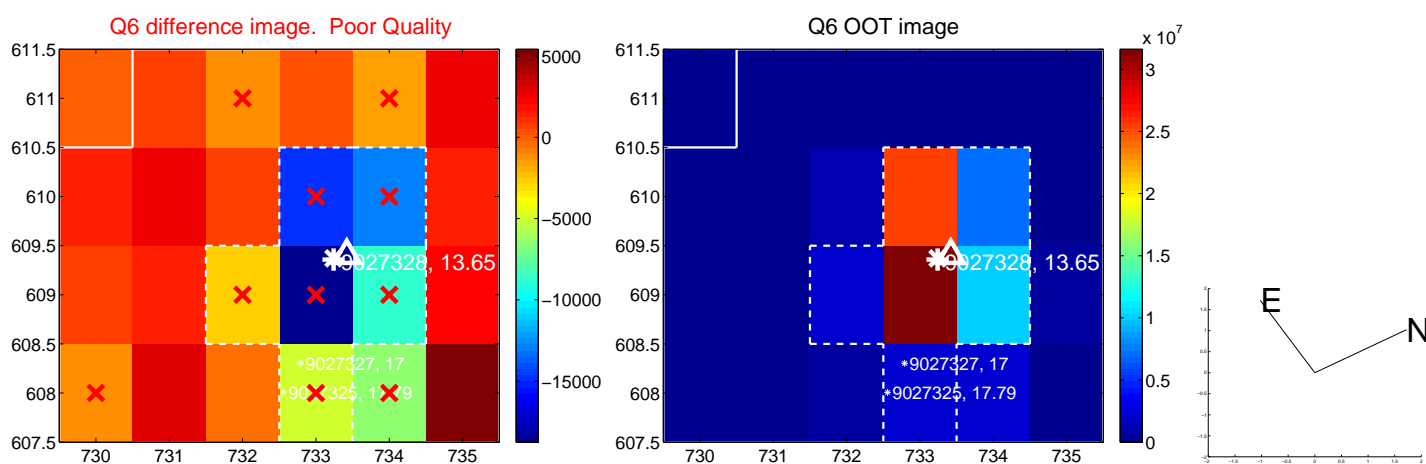
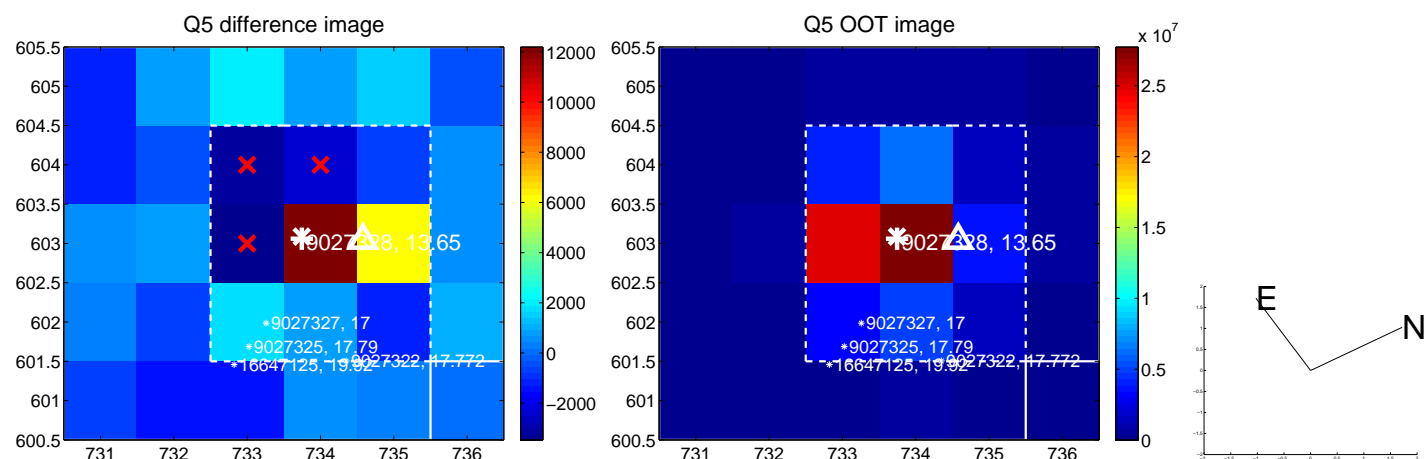


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

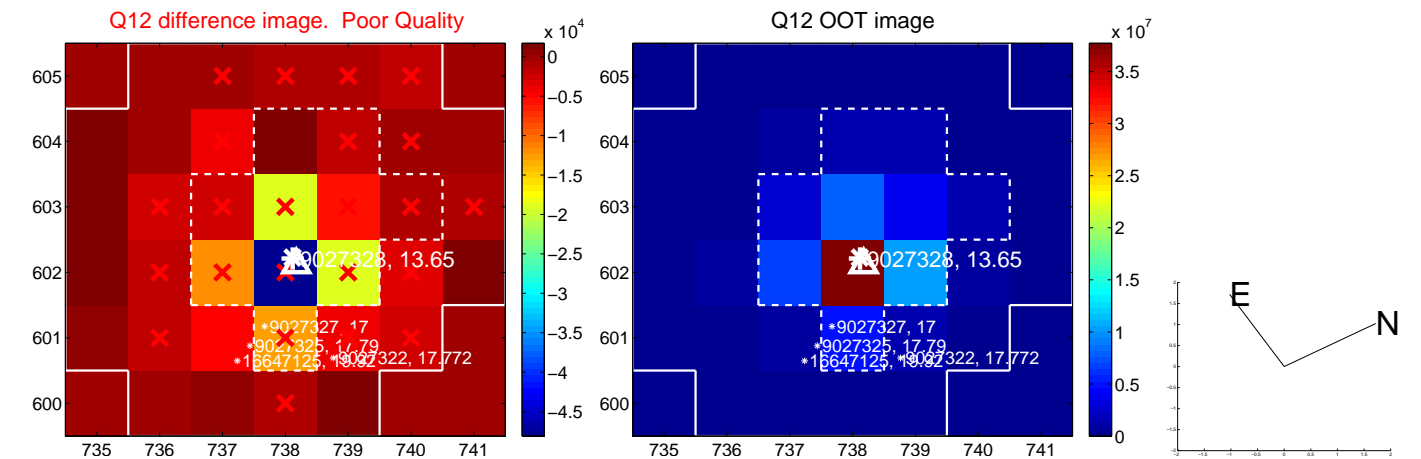
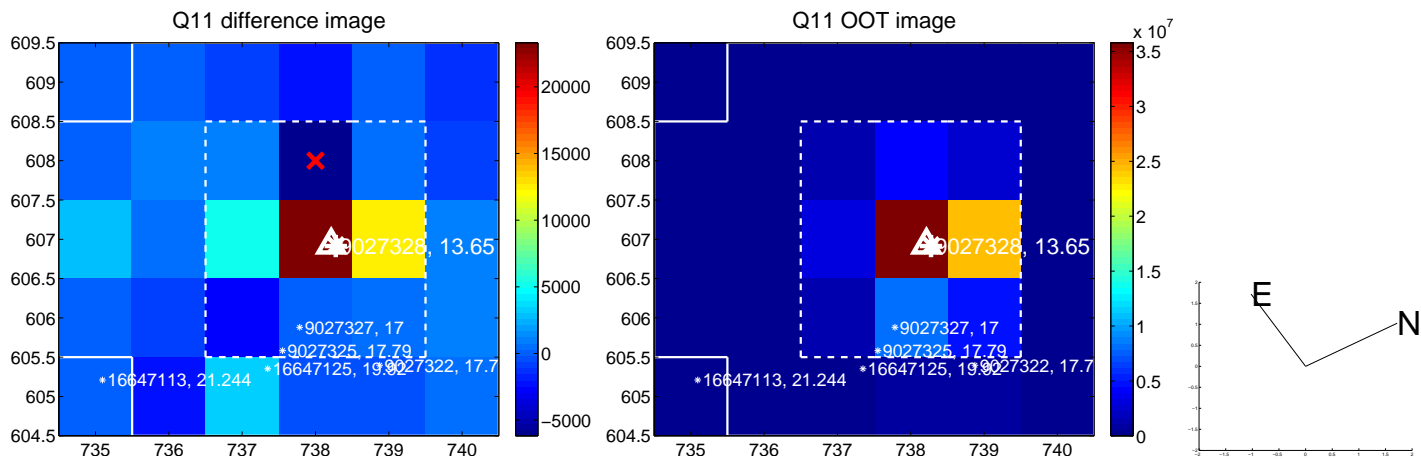
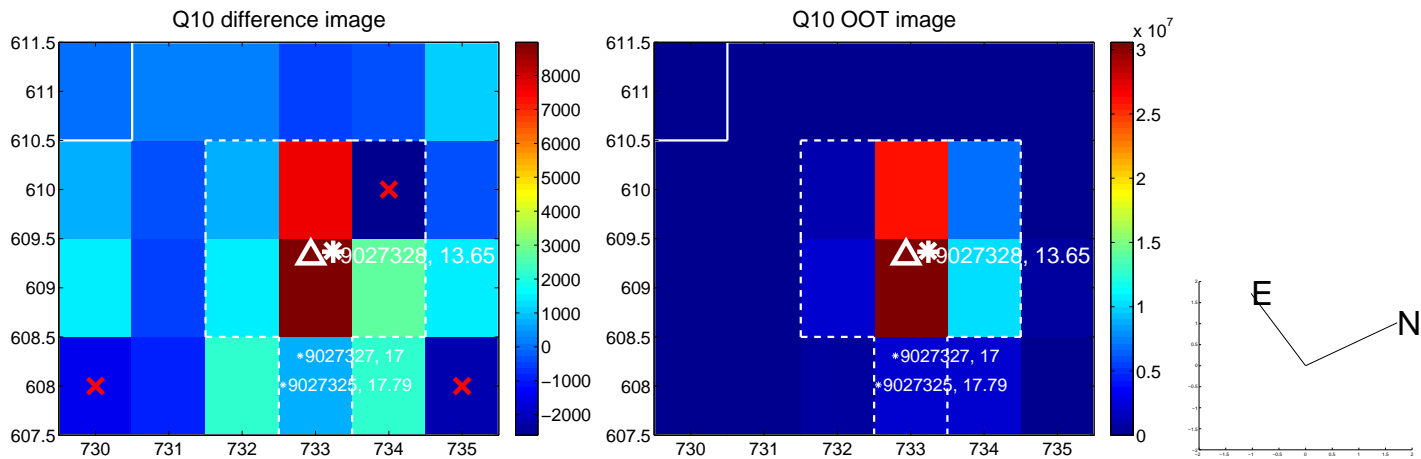
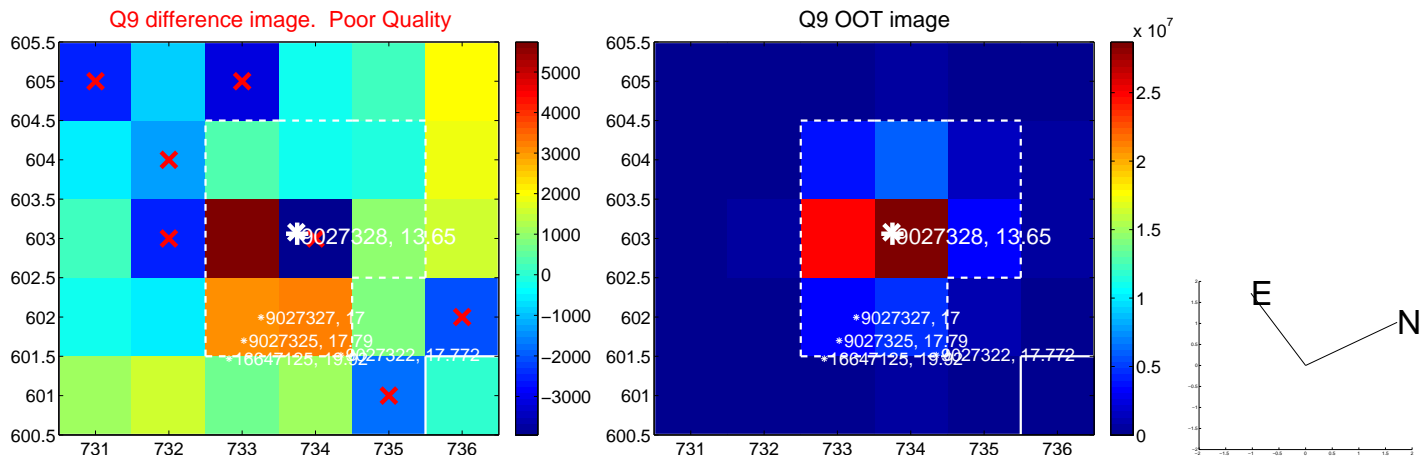
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



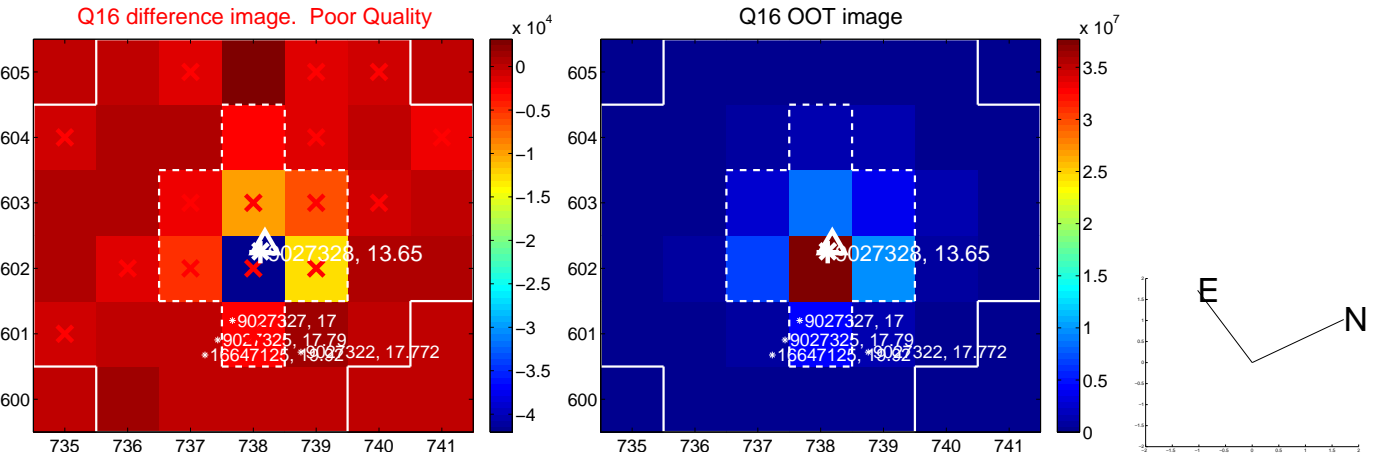
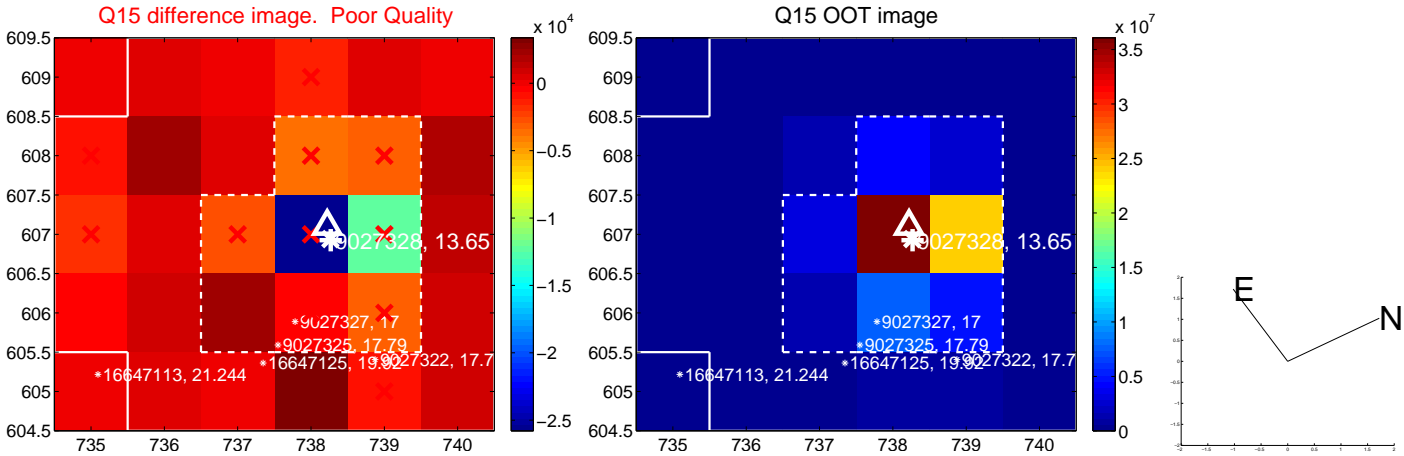
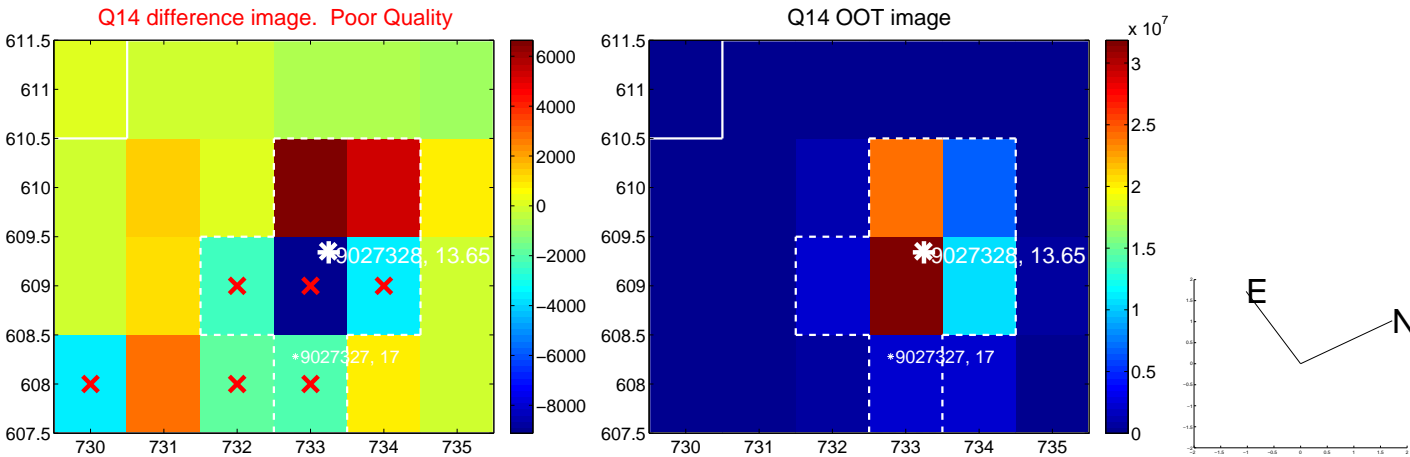
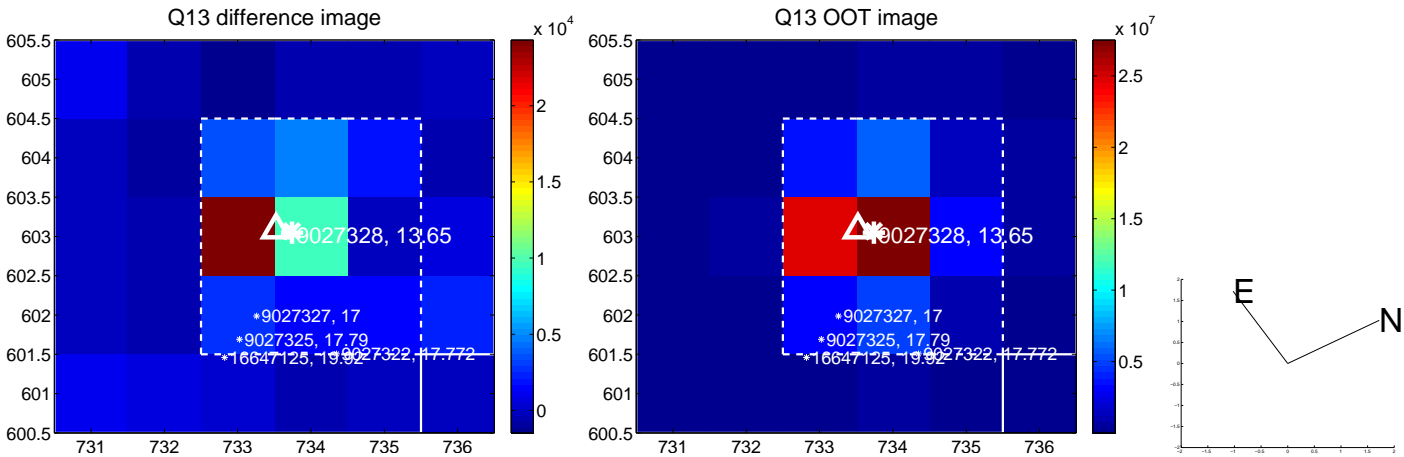
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



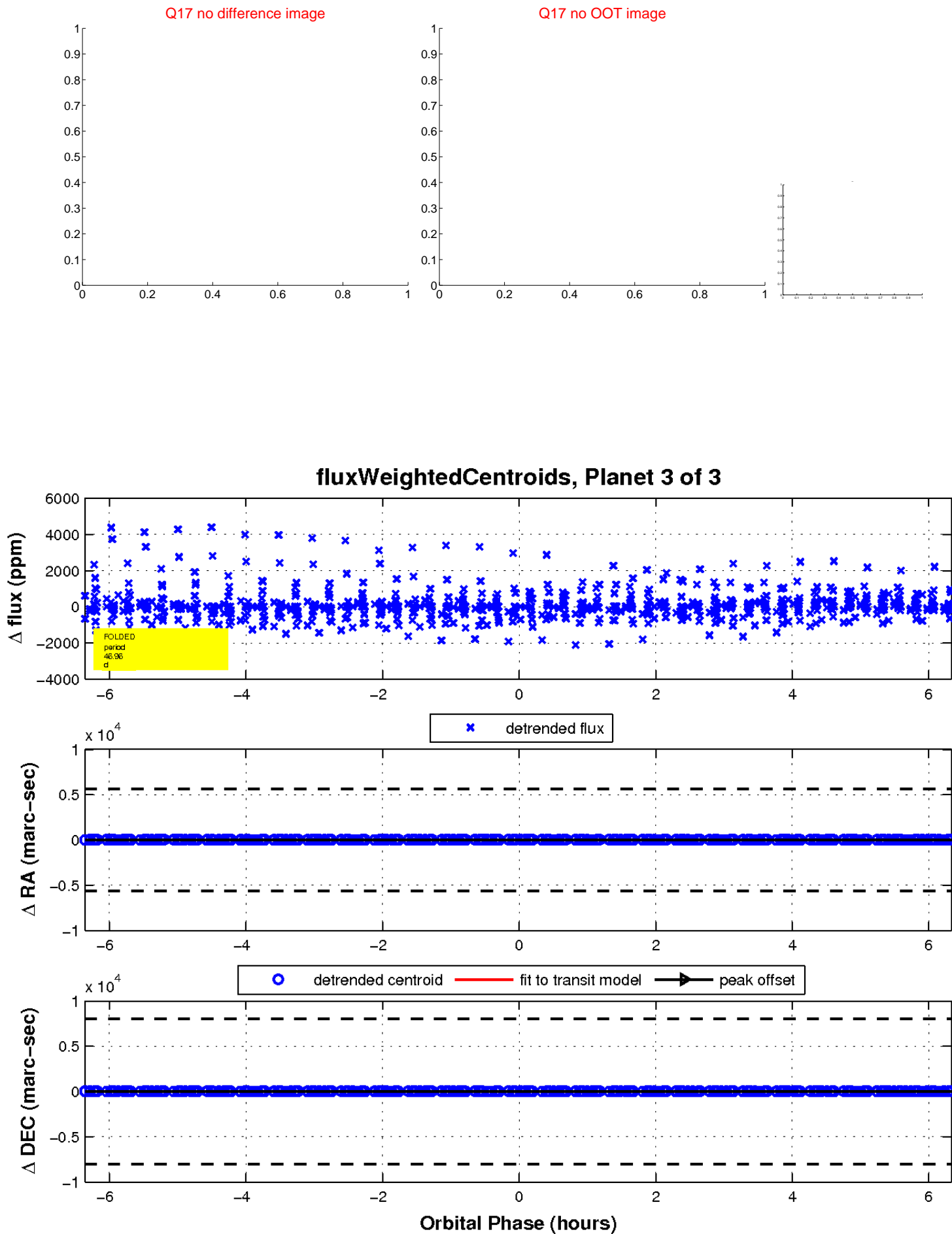
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

