

KIC 009966915

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})
009966915-01	OBS	No	0.970870	131.661536	71.3	4.626	8.8	9.3	0.82	4859	0.66	1010.06
009966915-02	OBS	No	66.367768	179.001957	401.9	12.039	10.9	4.5	0.82	4859	1.79	3.61
009966915-03	OBS	No	96.453997	214.817376	683.3	10.055	9.8	6.2	0.82	4859	2.25	2.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009966915-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009966915-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV
009966915-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

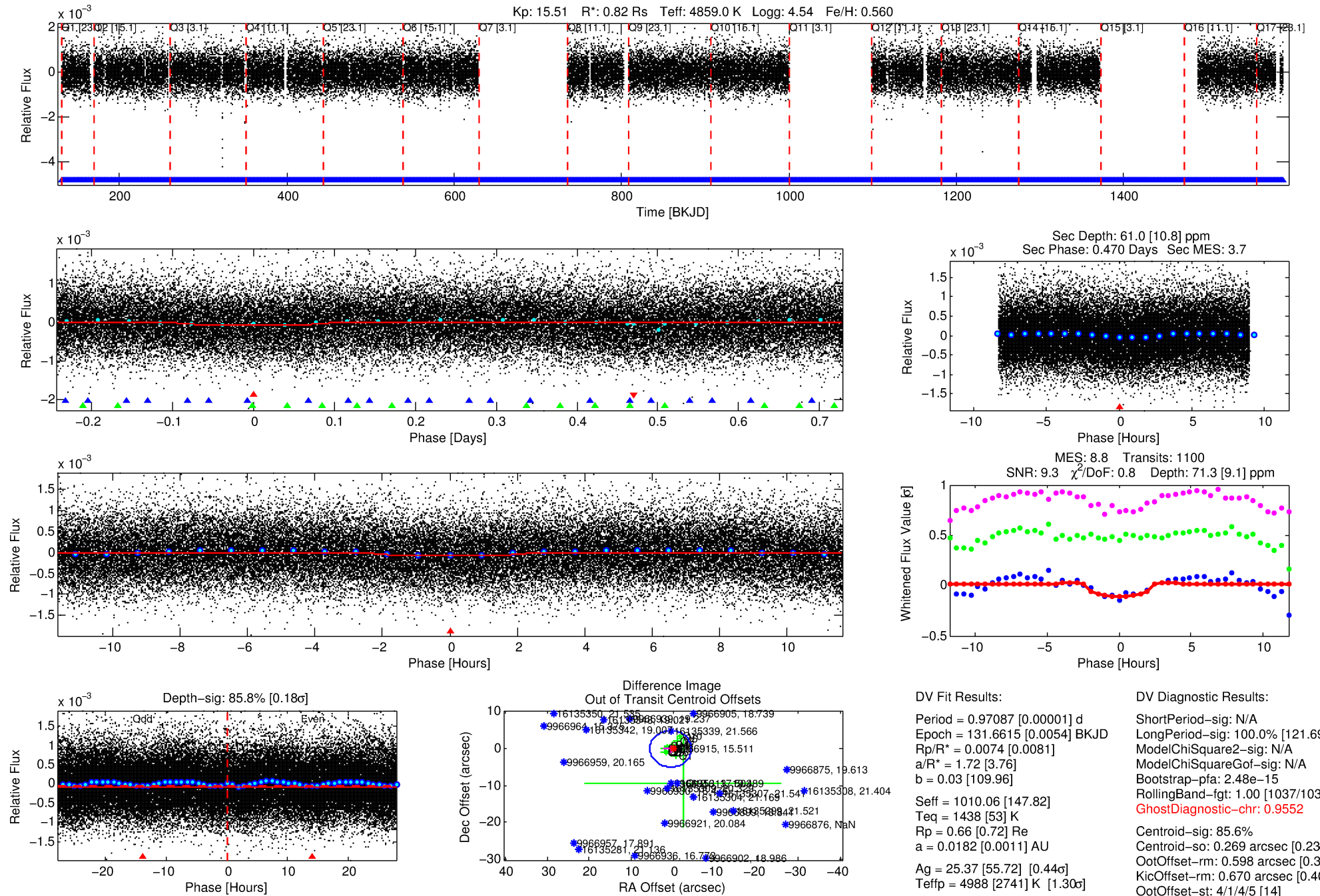
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009966915-01

No Significant Match Found

DV One-Page Summary

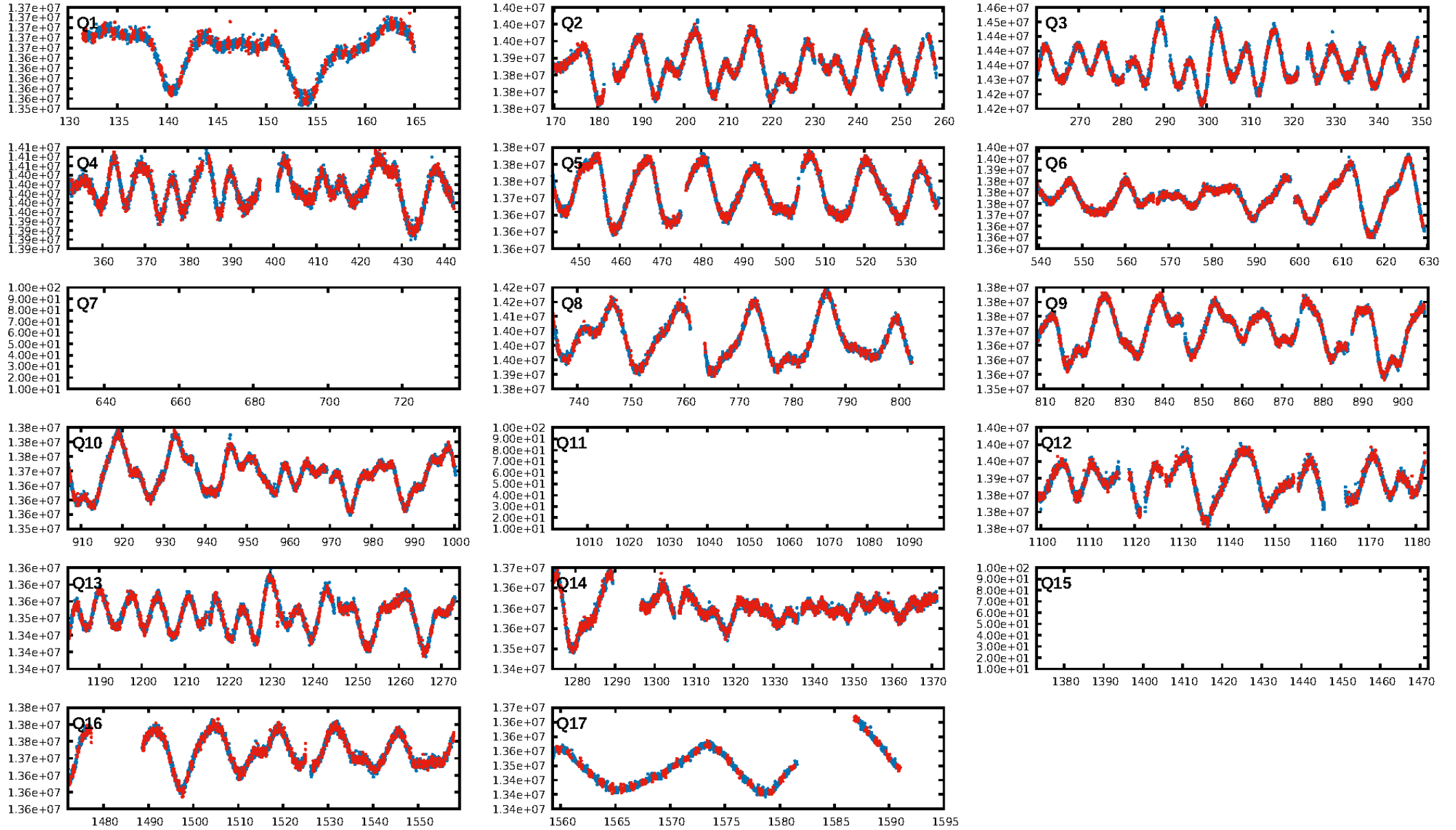
KIC: 9966915 Candidate: 1 of 3 Period: 0.971 d



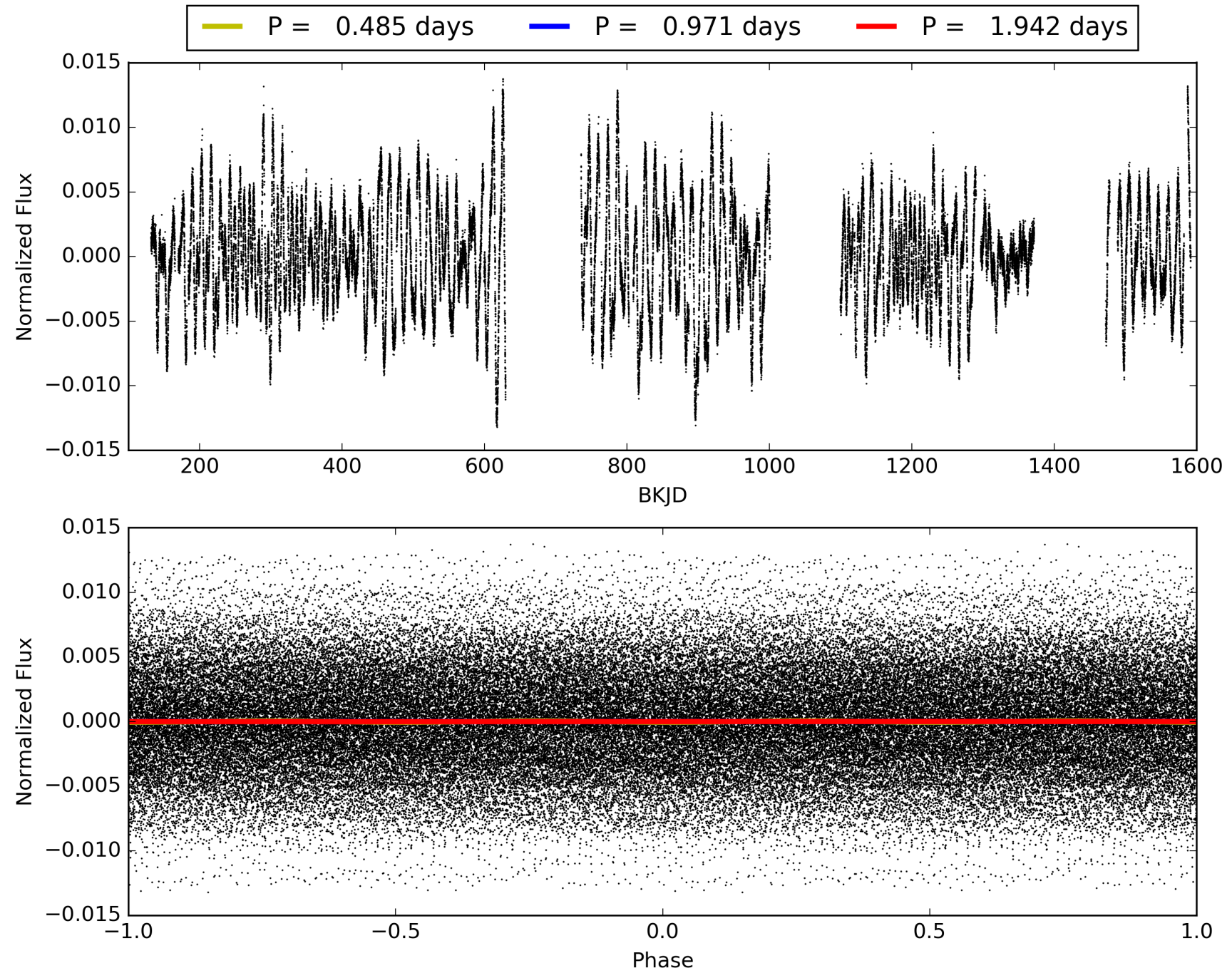
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:55:20 Z

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

TCE 009966915-01, PDC Light Curves

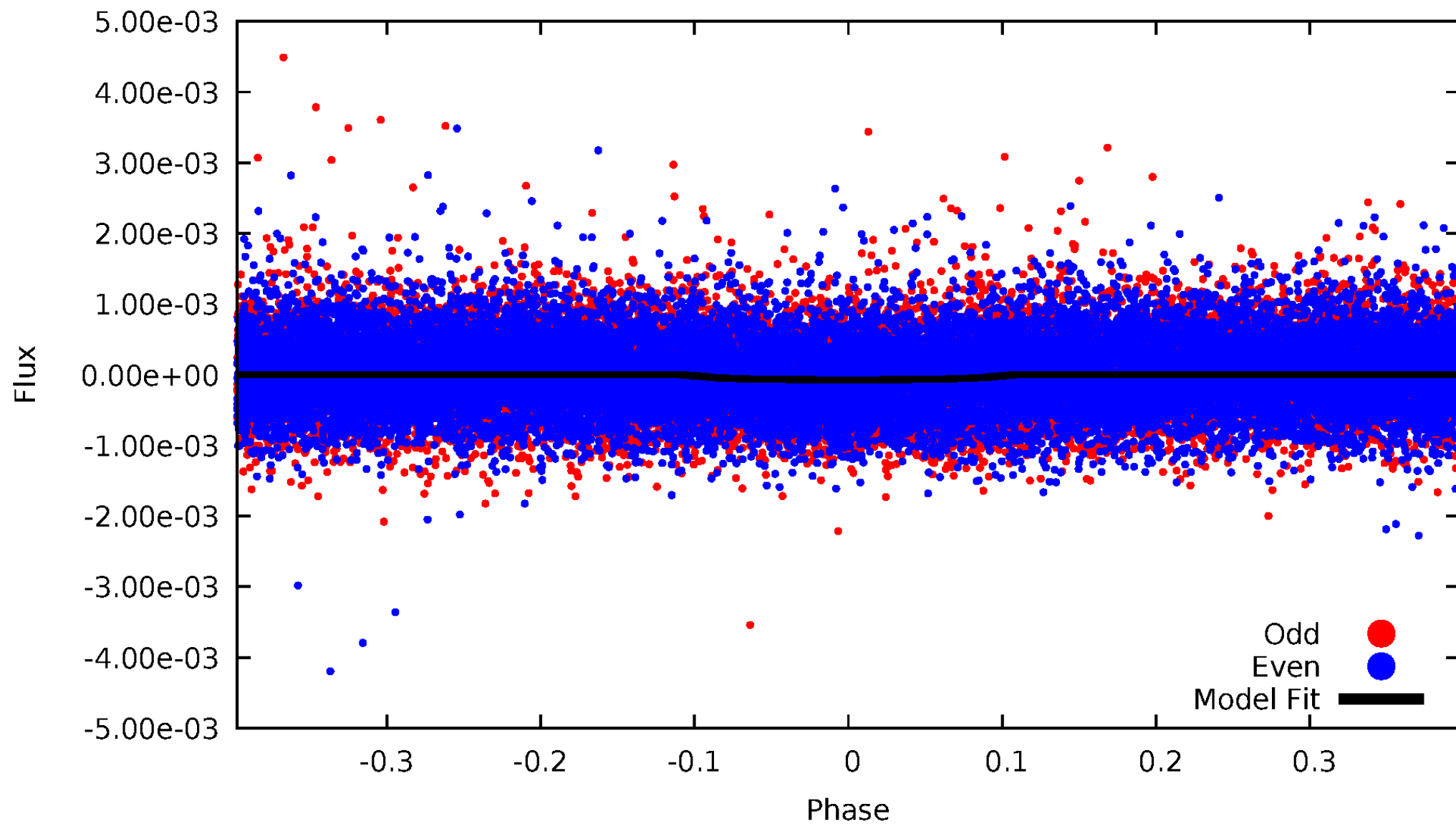


TCE 009966915-01



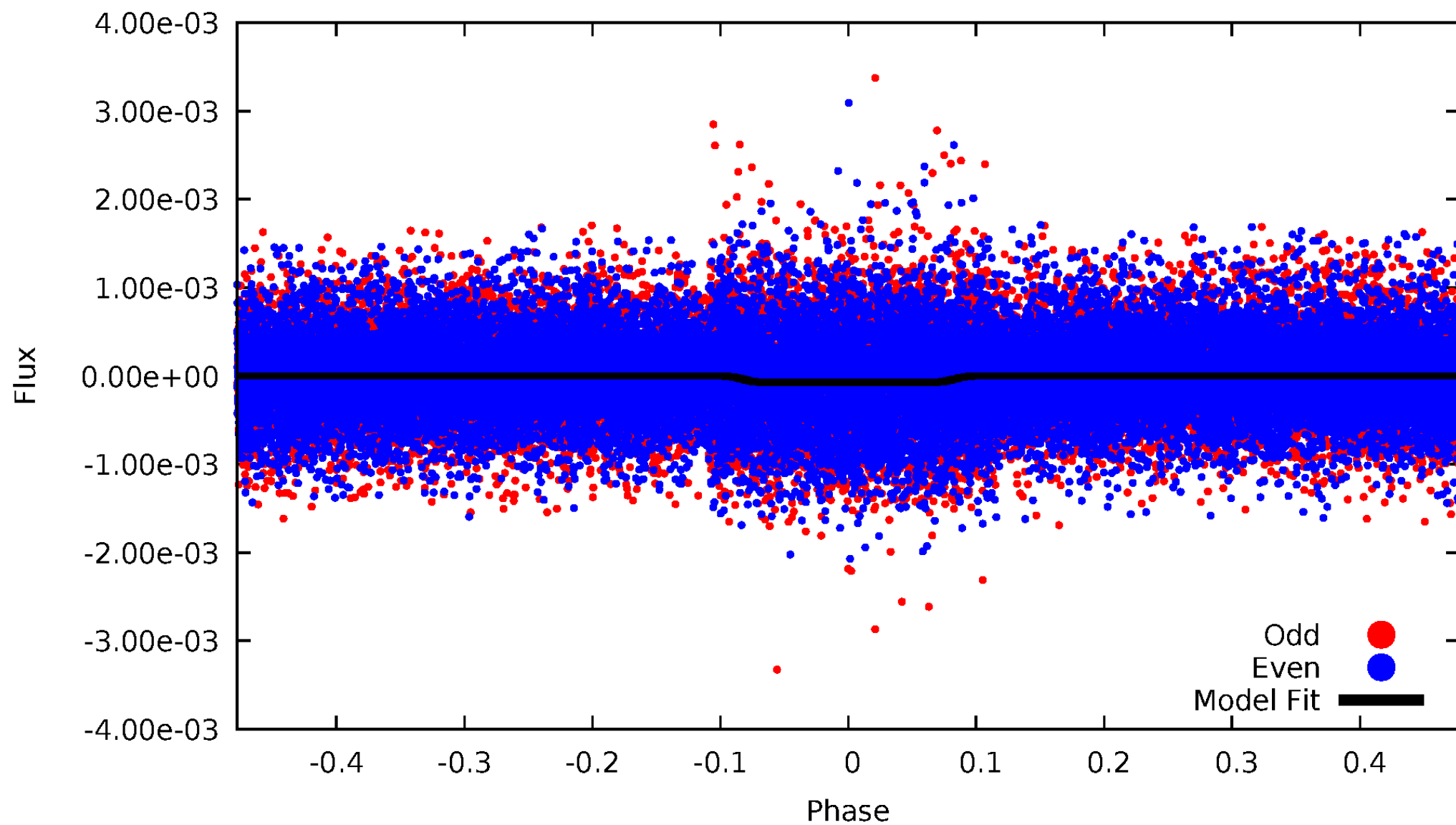
DV Odd/Even

TCE 009966915-01

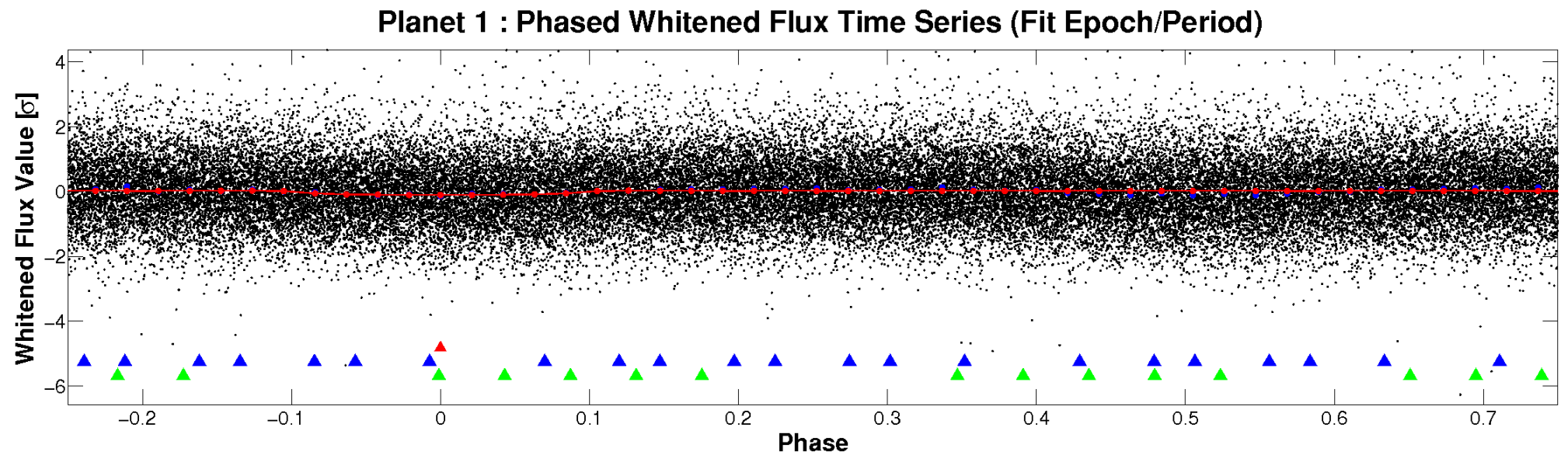
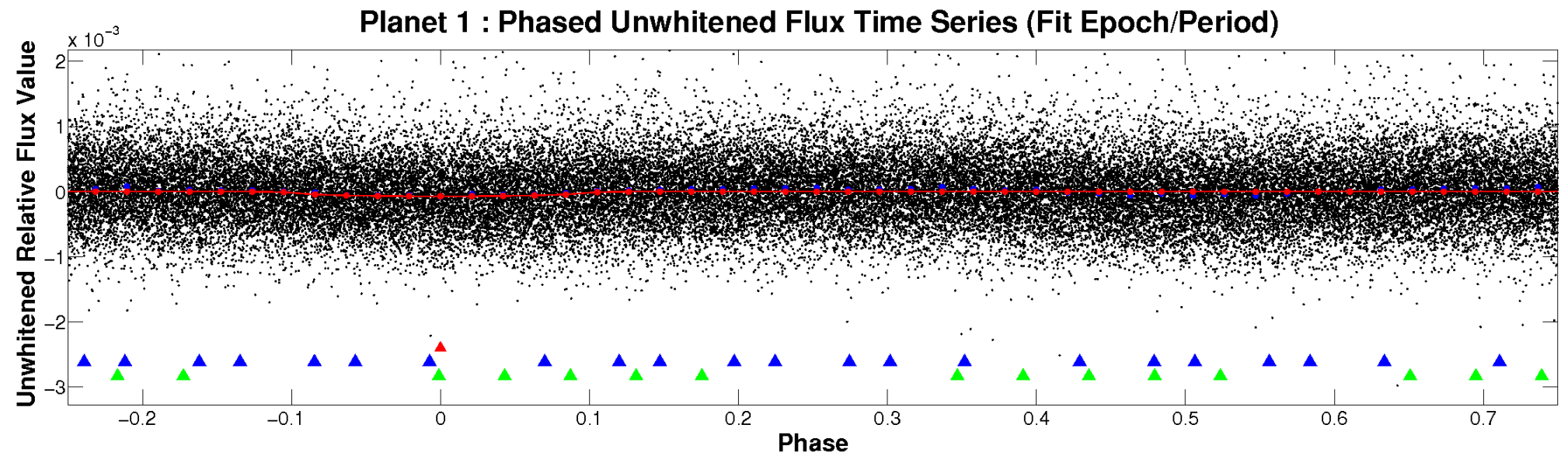


ALT Odd/Even

TCE 009966915-01

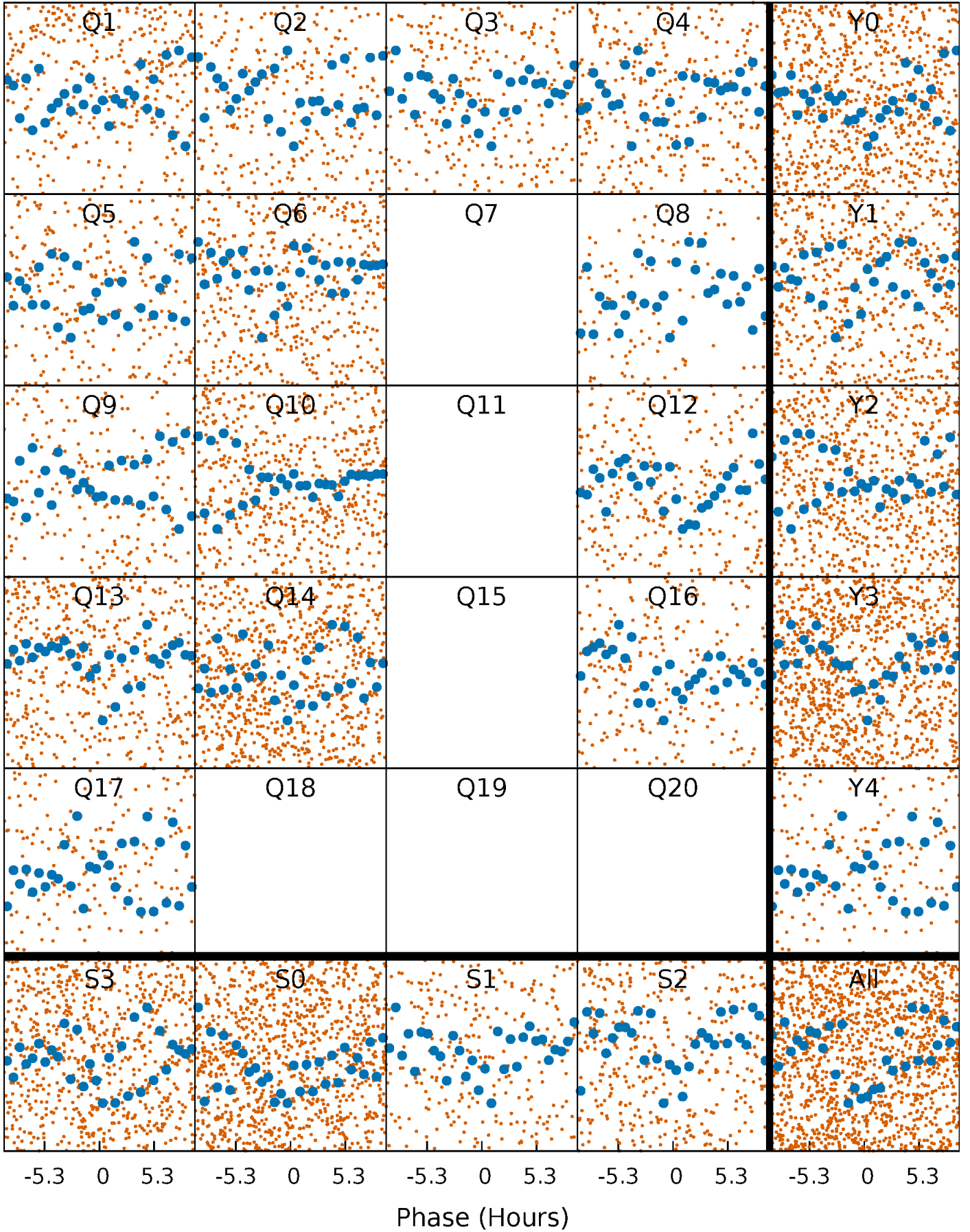


Non-Whitened Vs. Whitened Light Curve



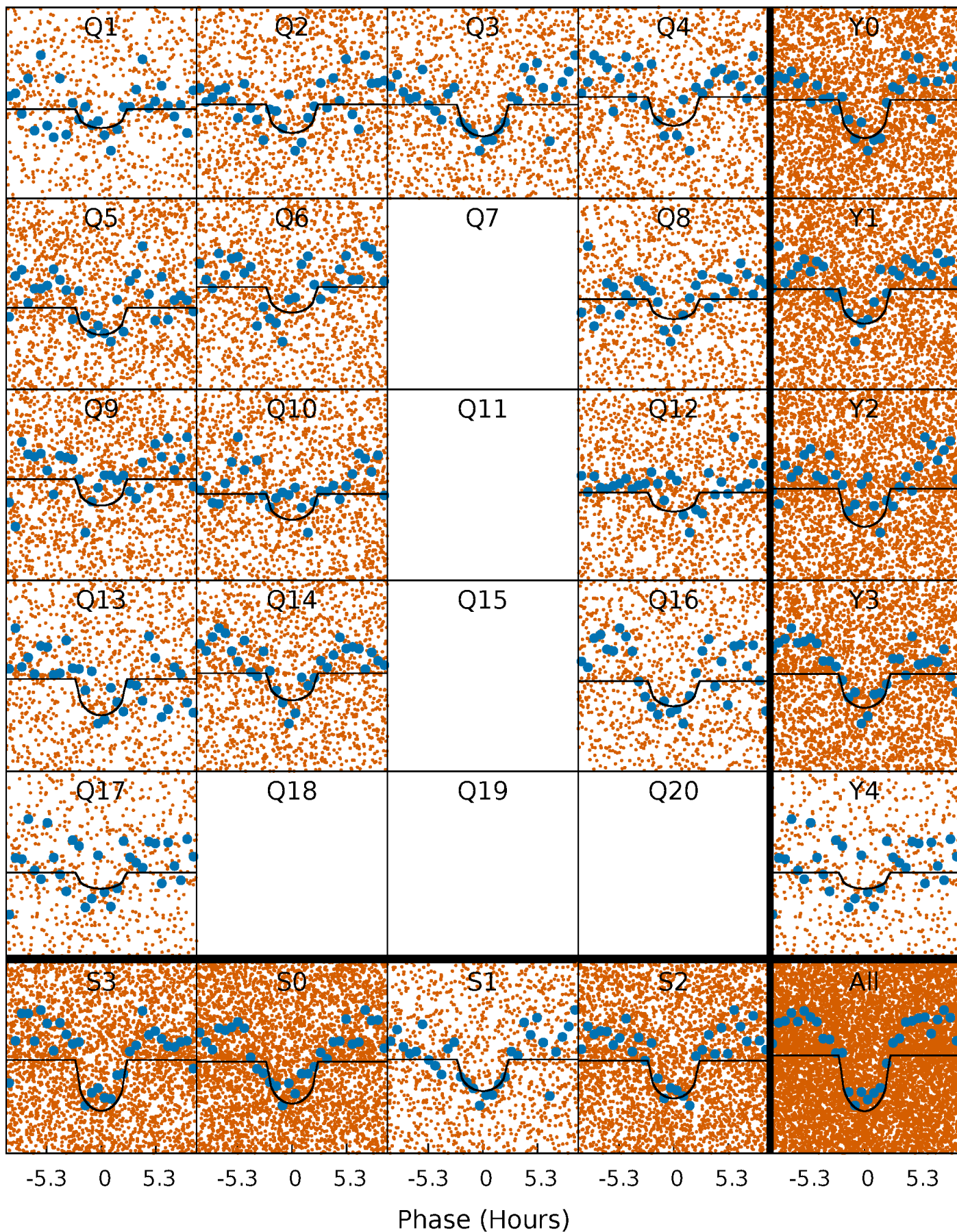
PDC Quarter-Phased Transit Curves

TCE 009966915-01 P= 0.970870 Days $T_0=131.661536$ (BKJD)



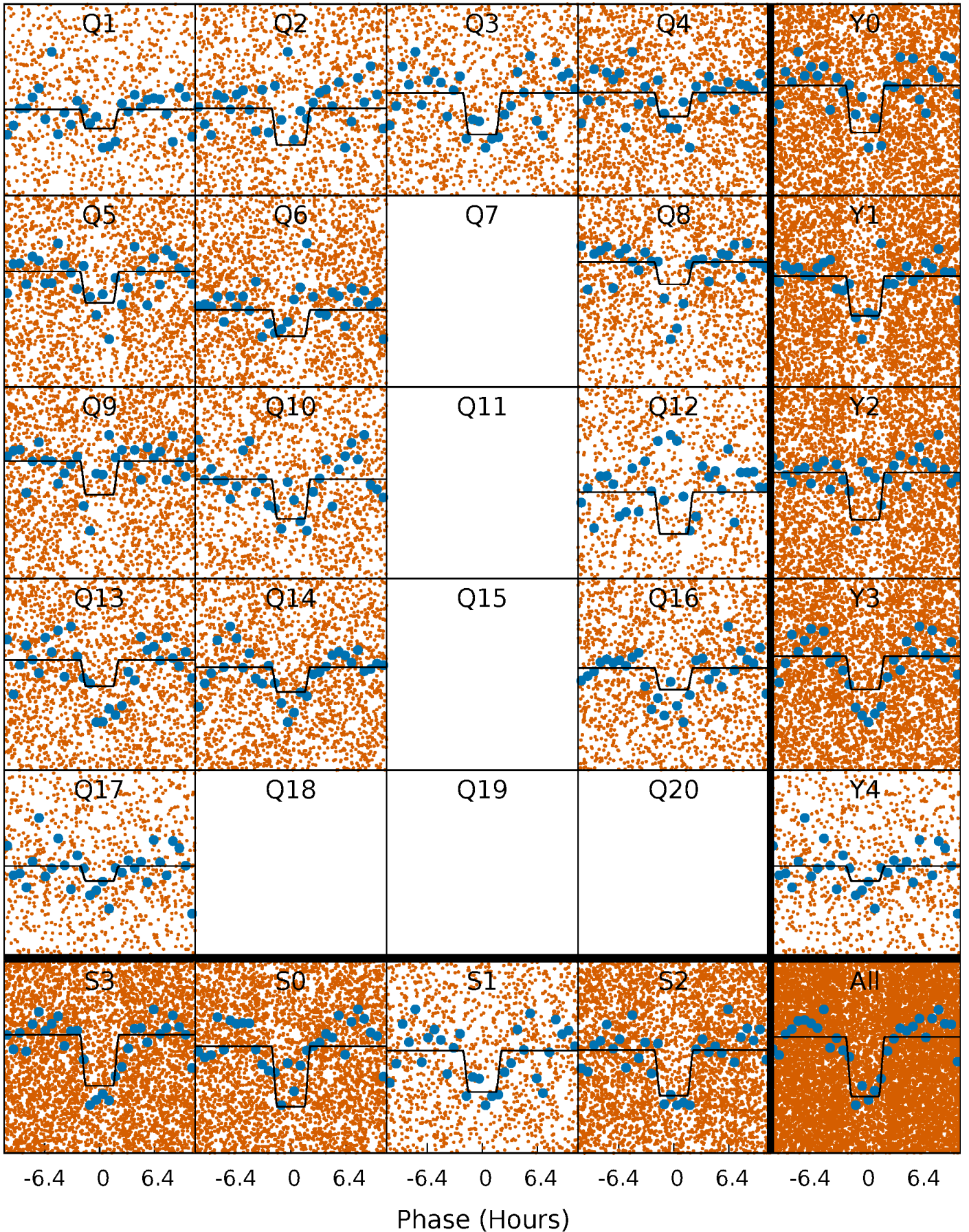
DV Quarter-Phased Transit Curves

TCE 009966915-01 P= 0.970870 Days $T_0=131.661536$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

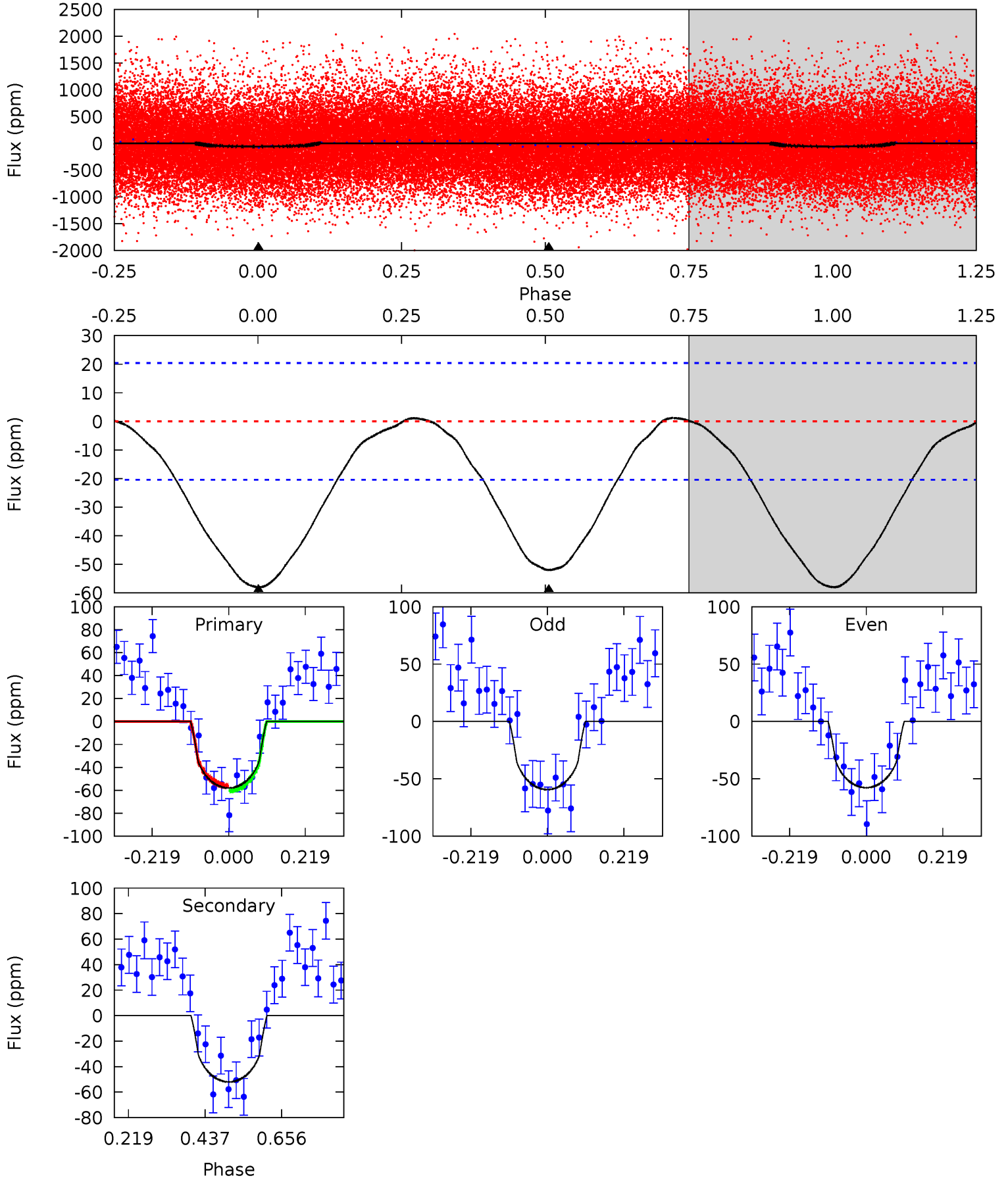
TCE 009966915-01 P= 0.970871 Days $T_0=131.651632$ (BKJD)



DV Model-Shift Uniqueness Test

009966915-01, P = 0.970870 Days, E = 130.690666 Days

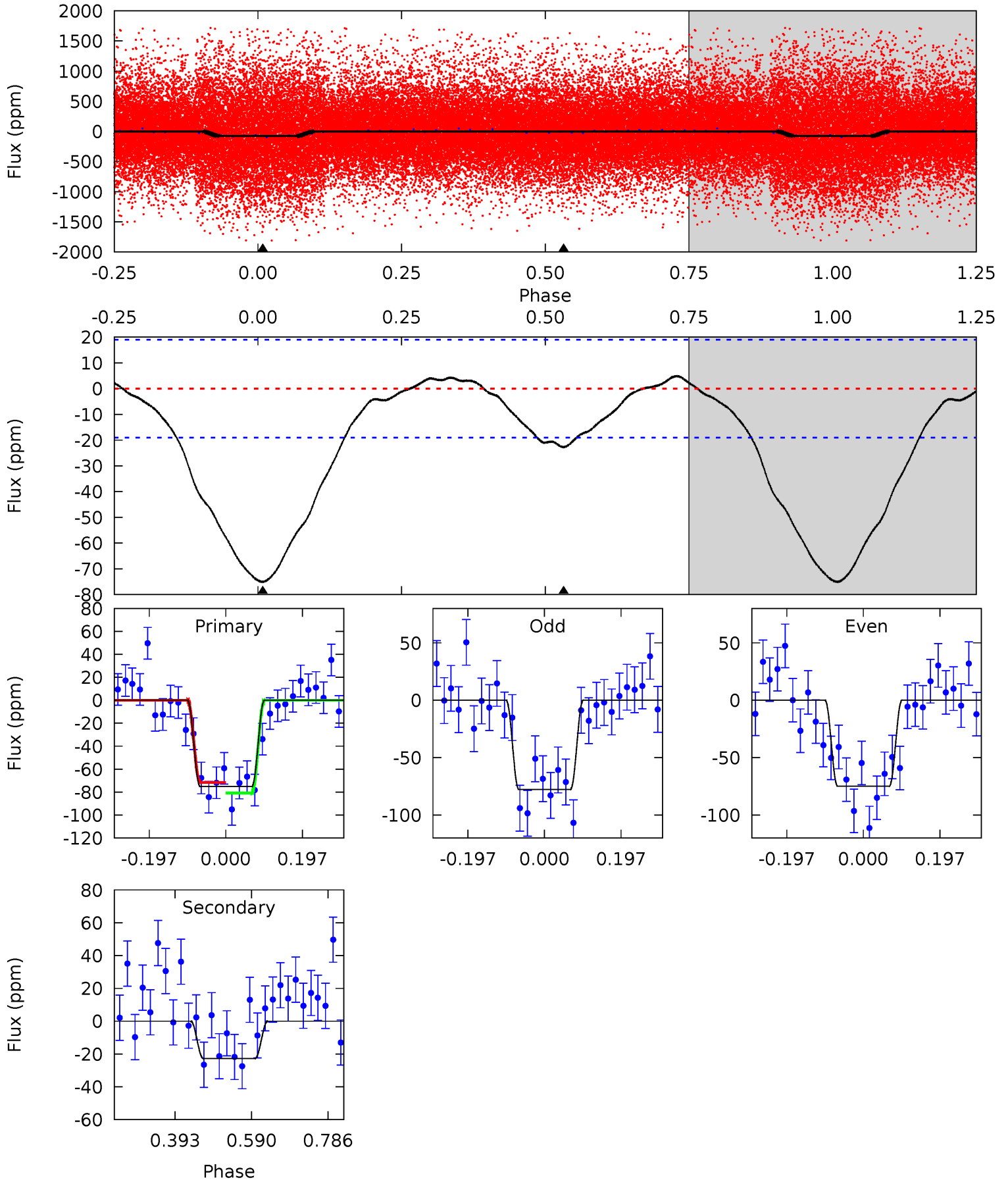
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	11.2	0	0	4.40	1.23	0.29	12.5	12.5	11.2	11.2	0.18	1.04	0.02	0.41



Alt Model-Shift Uniqueness Test

009966915-01, P = 0.970871 Days, E = 130.680761 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	5.29	0	0	4.42	1.29	0.77	17.5	17.5	5.29	5.29	0.33	0.92	0.06	1.07



Stellar Parameters For KIC 009966915

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4859^{+145}_{-145}	$4.542^{+0.045}_{-0.045}$	$0.560^{+0.050}_{-0.300}$	$0.817^{+0.049}_{-0.060}$	$0.849^{+0.036}_{-0.057}$	$2.192^{+0.415}_{-0.317}$
	+3%/-3%	+1%/-1%	+9%/-54%	+6%/-7%	+4%/-7%	+19%/-14%
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 009966915-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-52 ± 5	$0.82^{+0.65}_{-0.50}$	2009^{+68}_{-66}	4396^{+2277}_{-848}	14^{+80}_{-10}
Alt.	-23 ± 4	$0.86^{+0.67}_{-0.55}$	2007^{+78}_{-66}	3686^{+1833}_{-653}	$5.449^{+35.254}_{-3.718}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

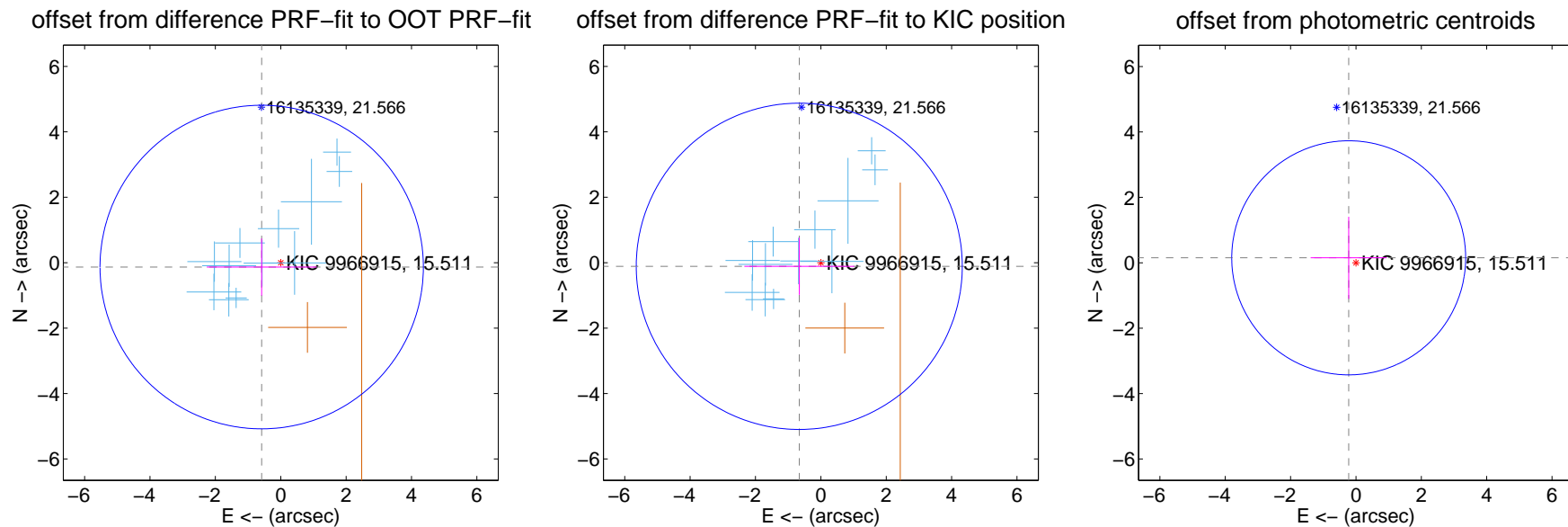
DV Centroid Data

Supplemental centroid analysis for 009966915-01. Kepler magnitude: 15.51. Transit SNR 9.33

There are 12 quarters with good PRF difference image offsets

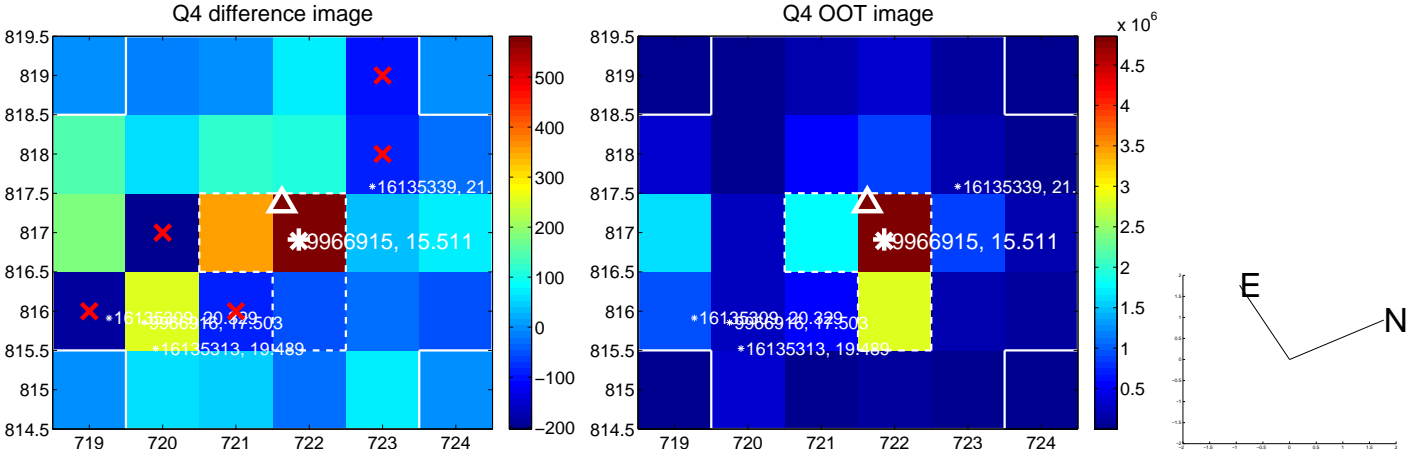
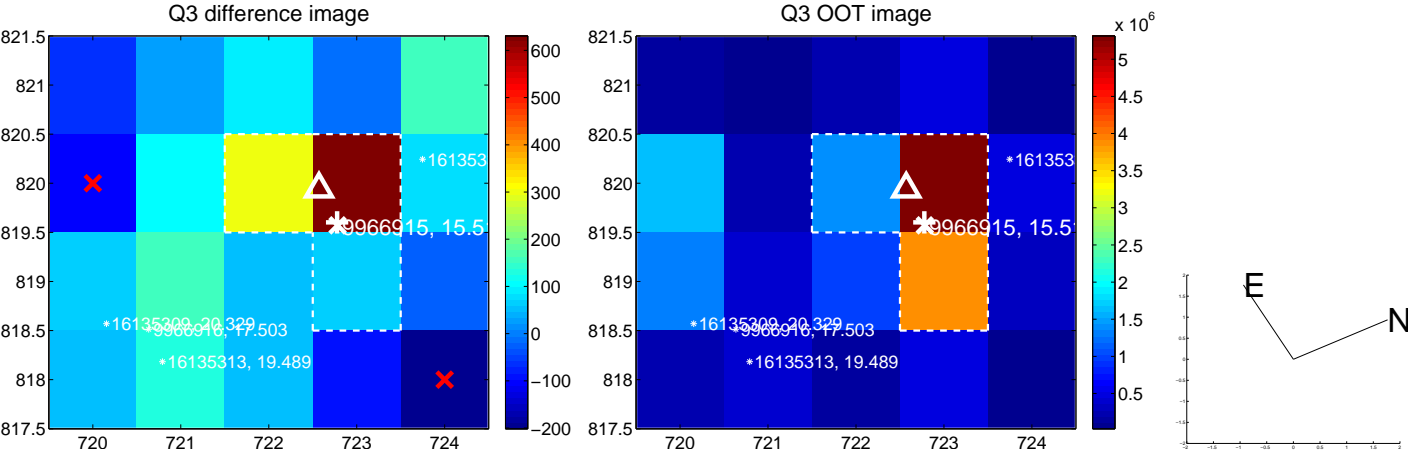
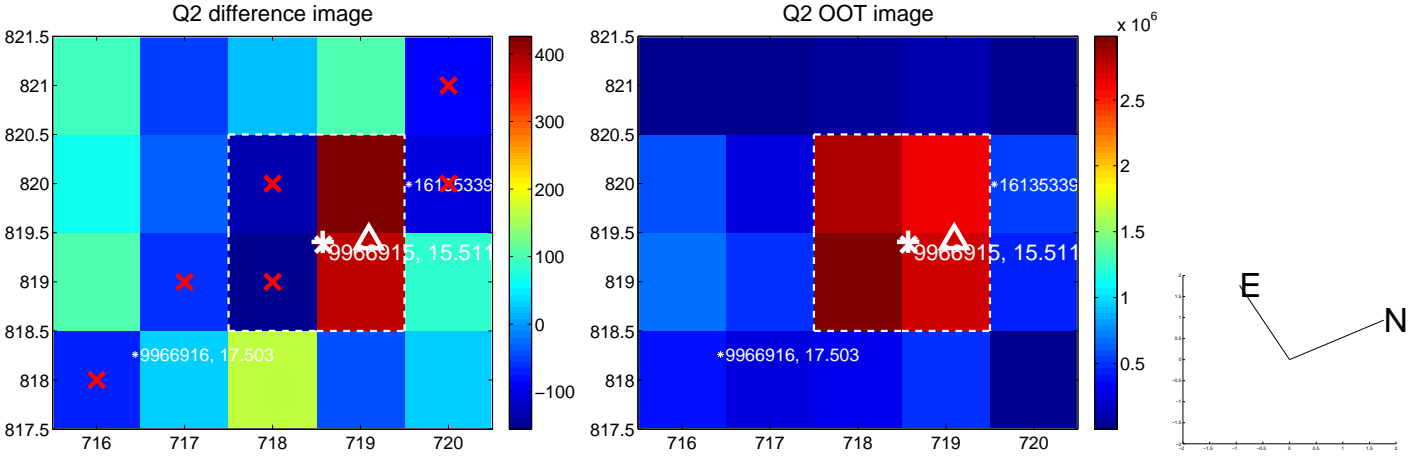
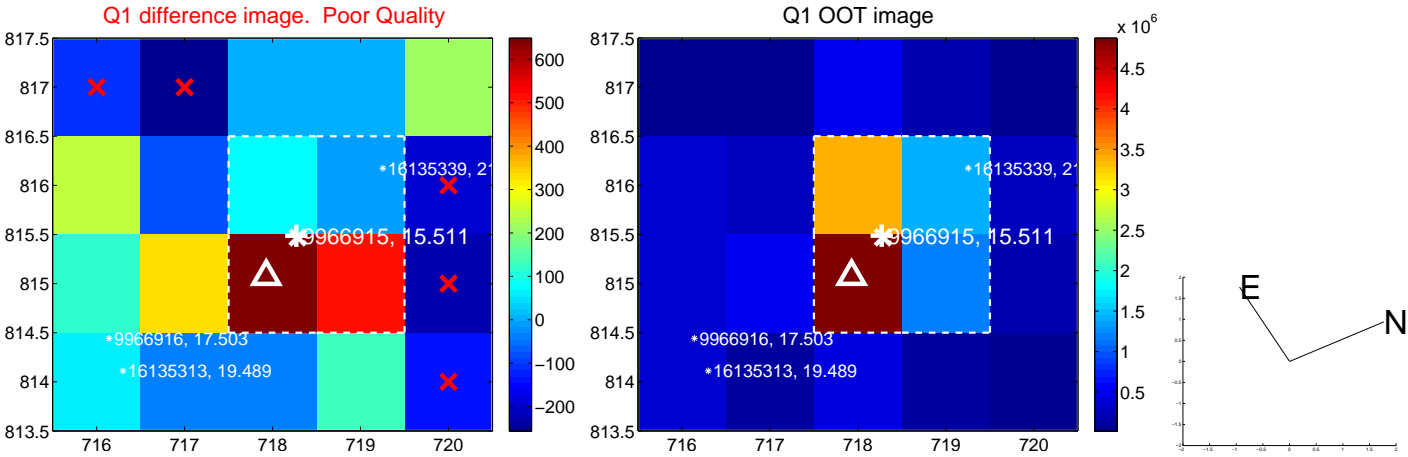
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.598 ± 1.648	0.36	0.583 ± 1.679	-0.133 ± 0.872
PRF-fit source offset from KIC position	0.670 ± 1.662	0.40	0.661 ± 1.679	-0.111 ± 0.872
photometric centroid source offset	0.27 ± 1.19	0.23	0.22 ± 1.16	0.15 ± 1.25

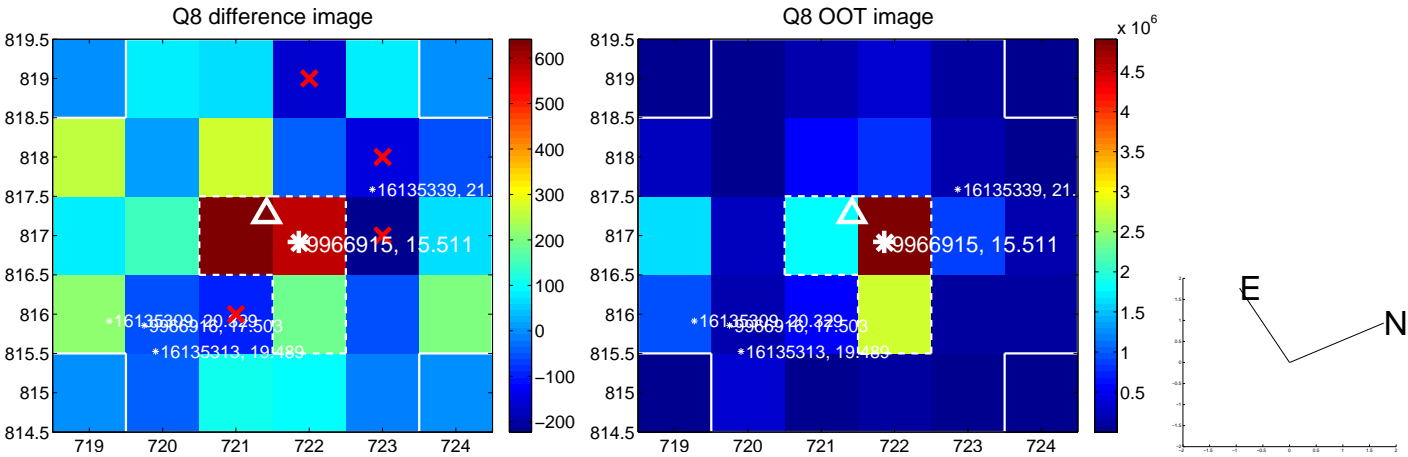
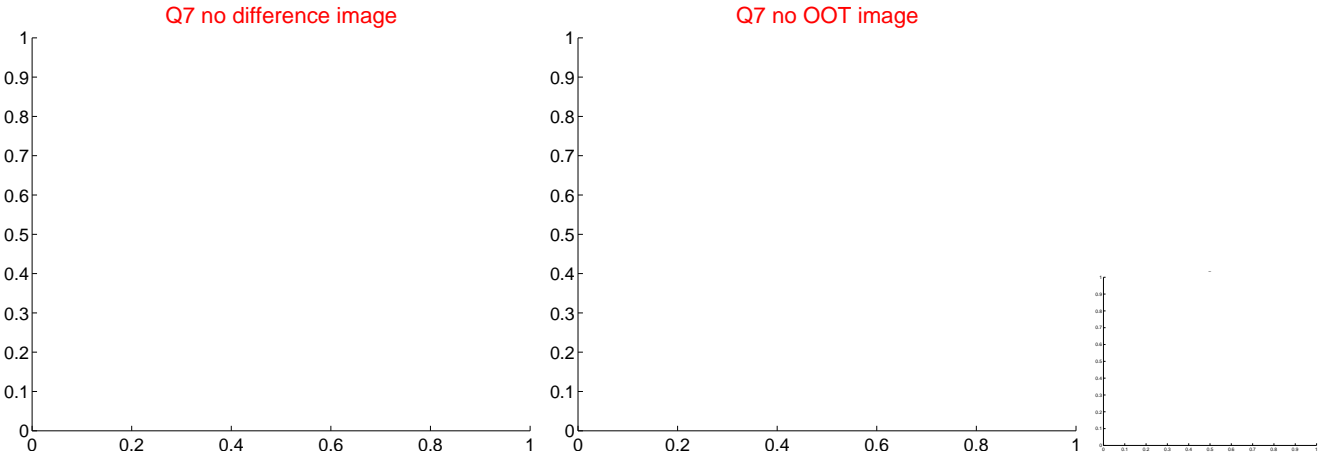
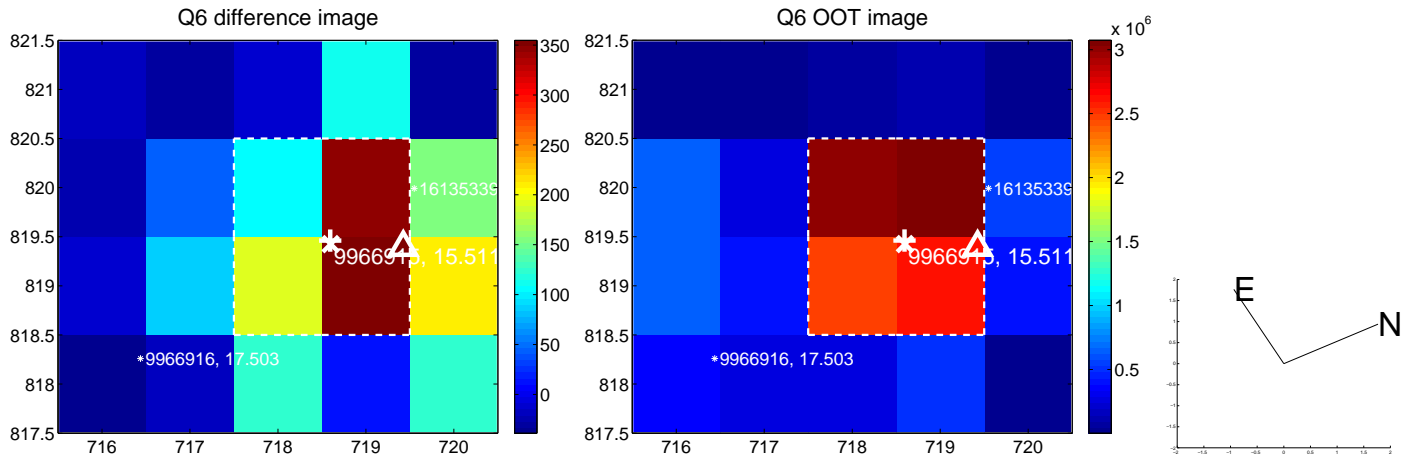
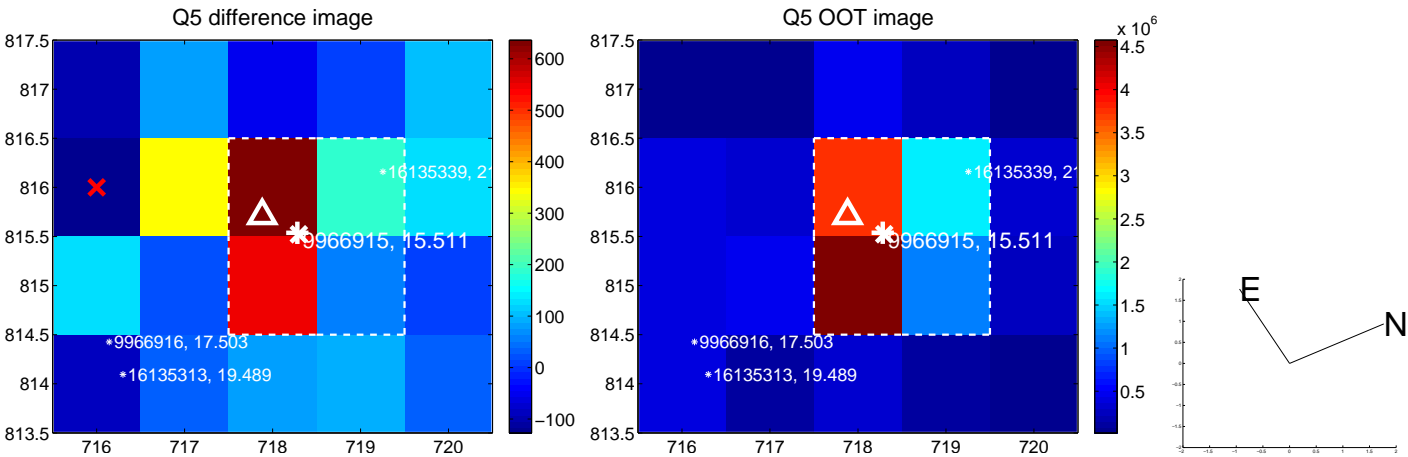


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

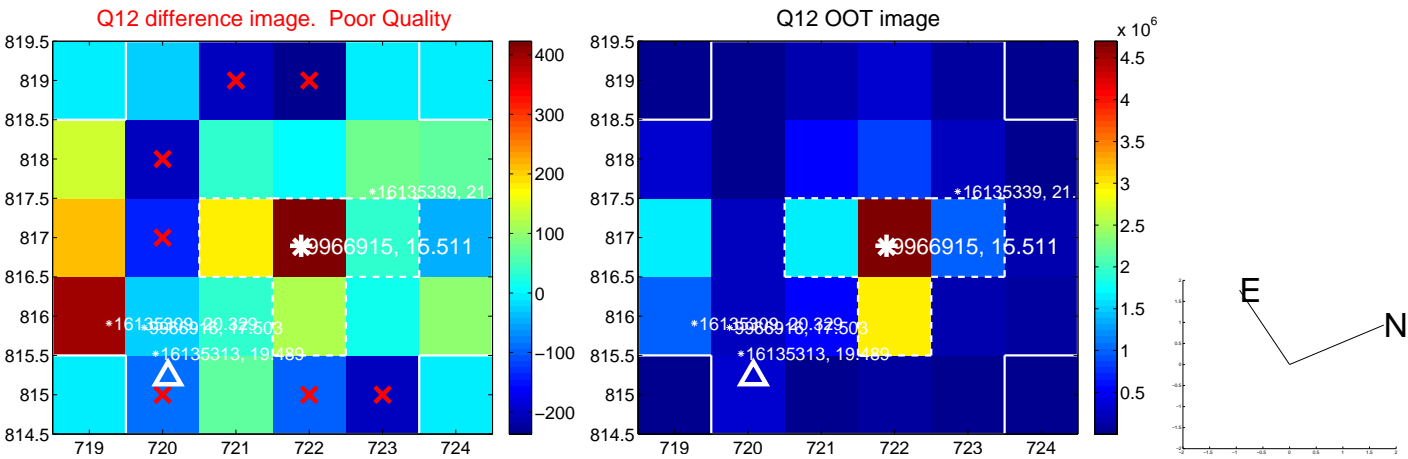
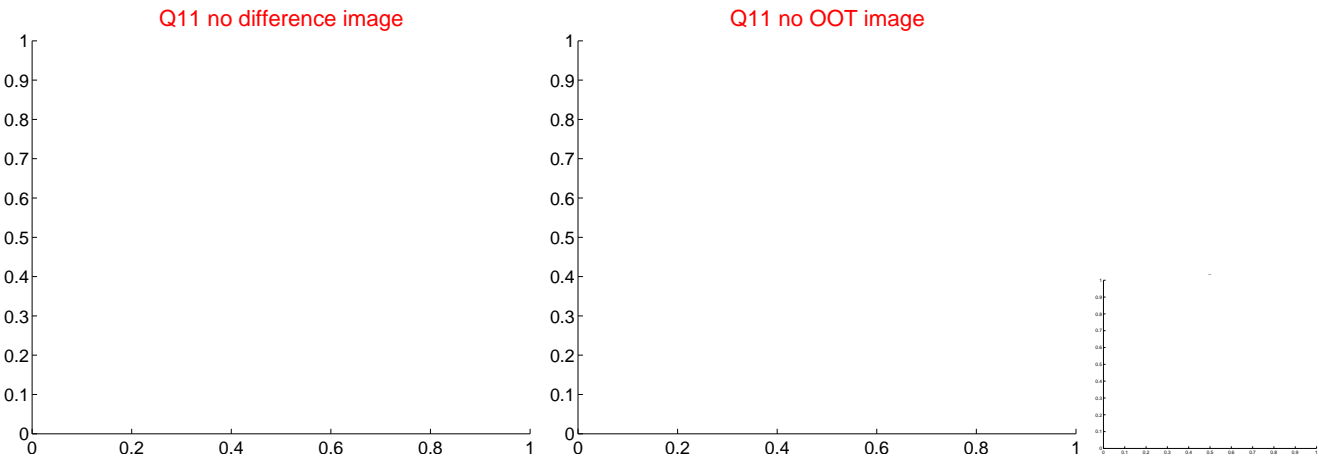
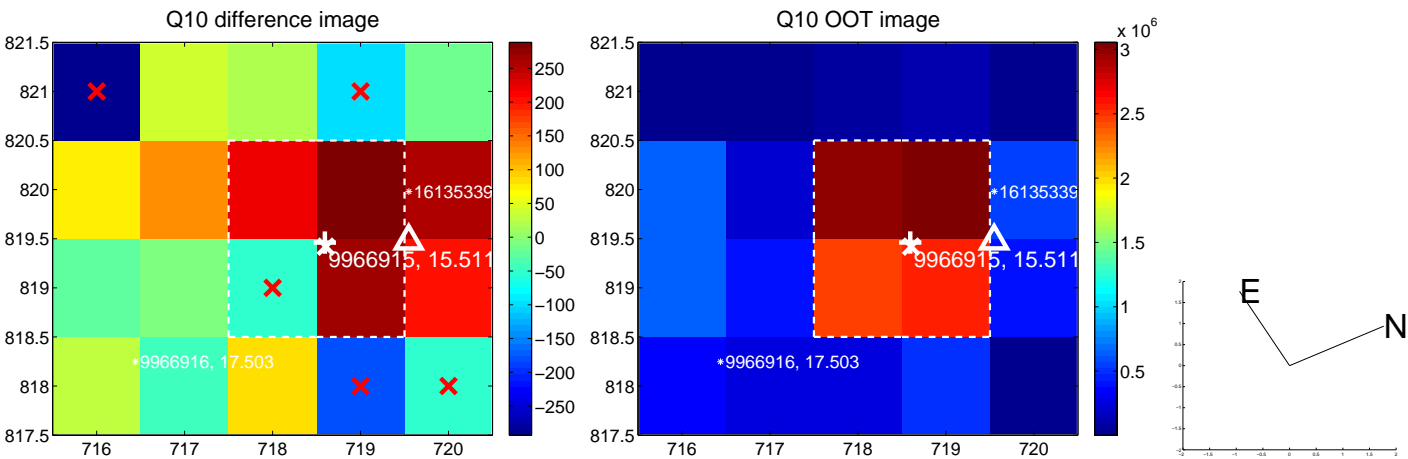
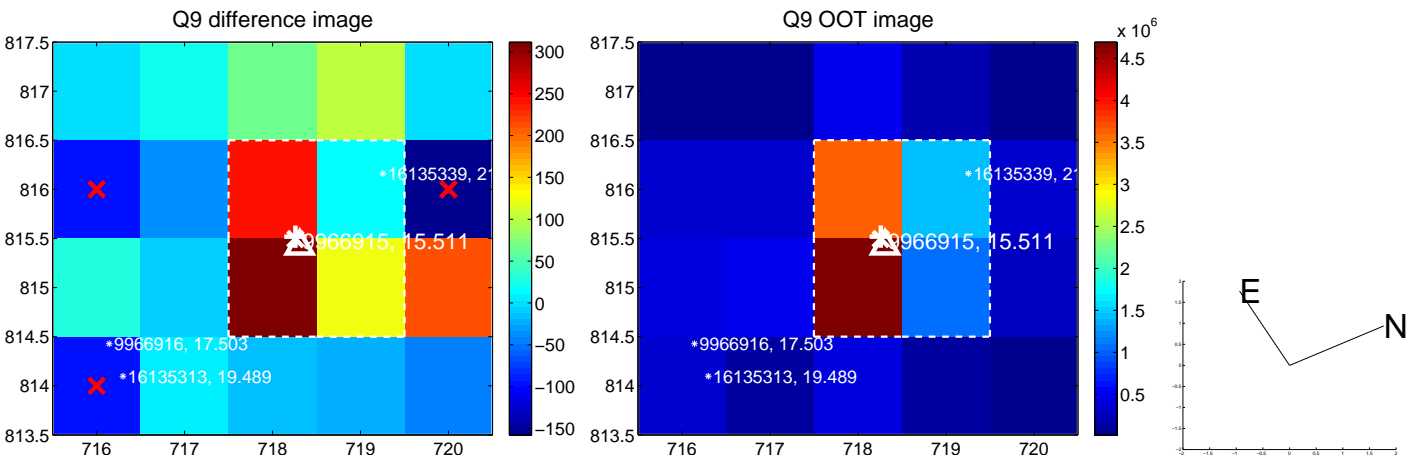
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



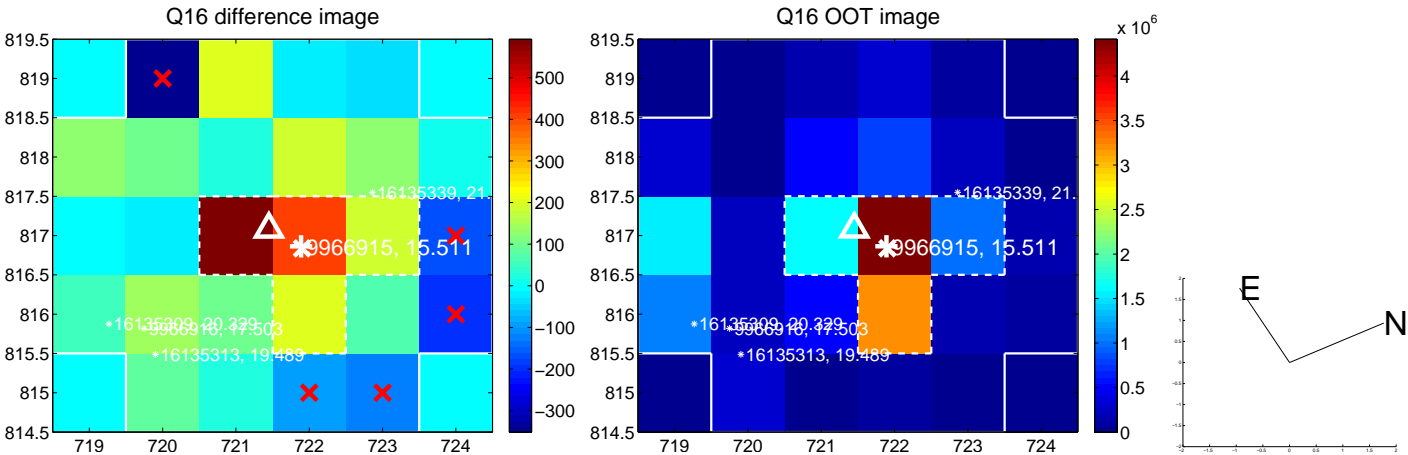
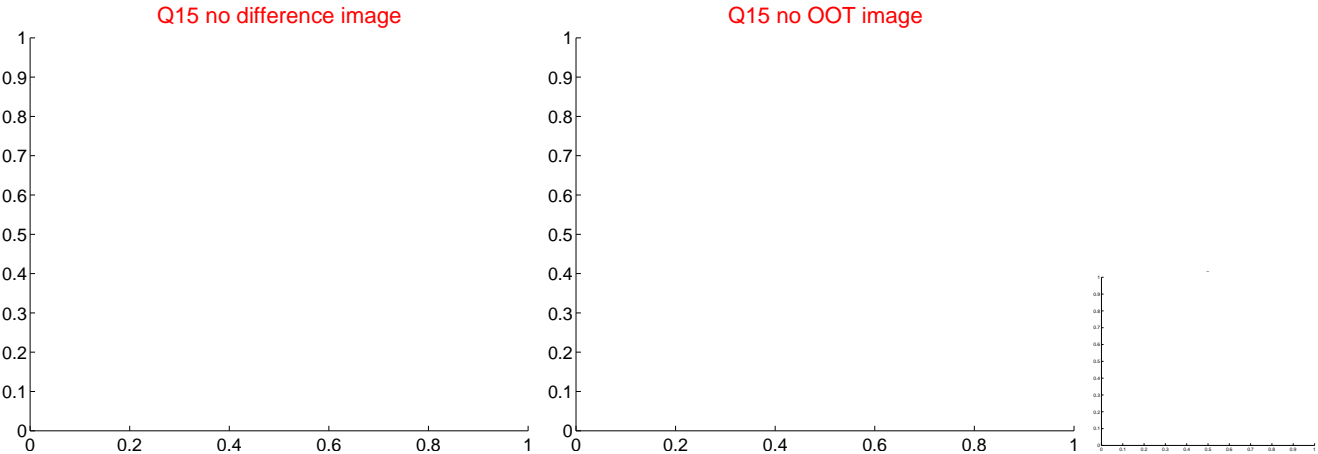
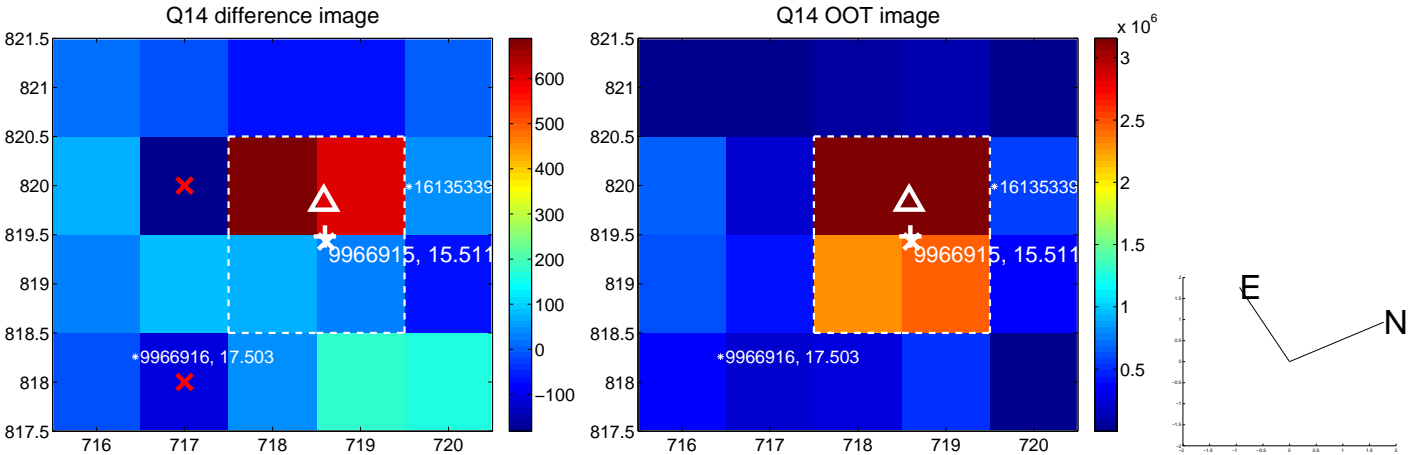
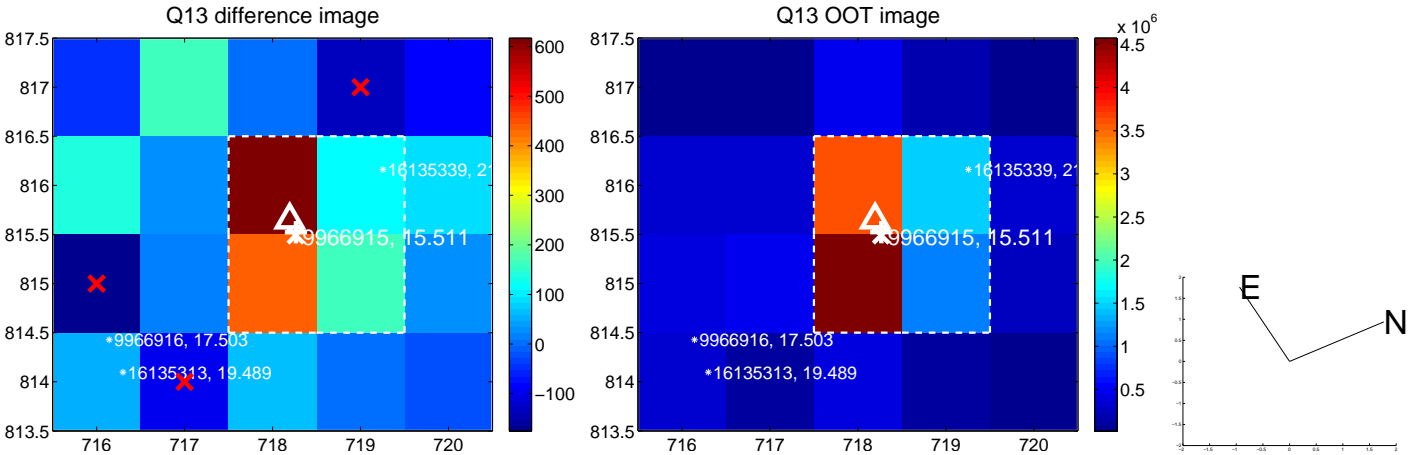
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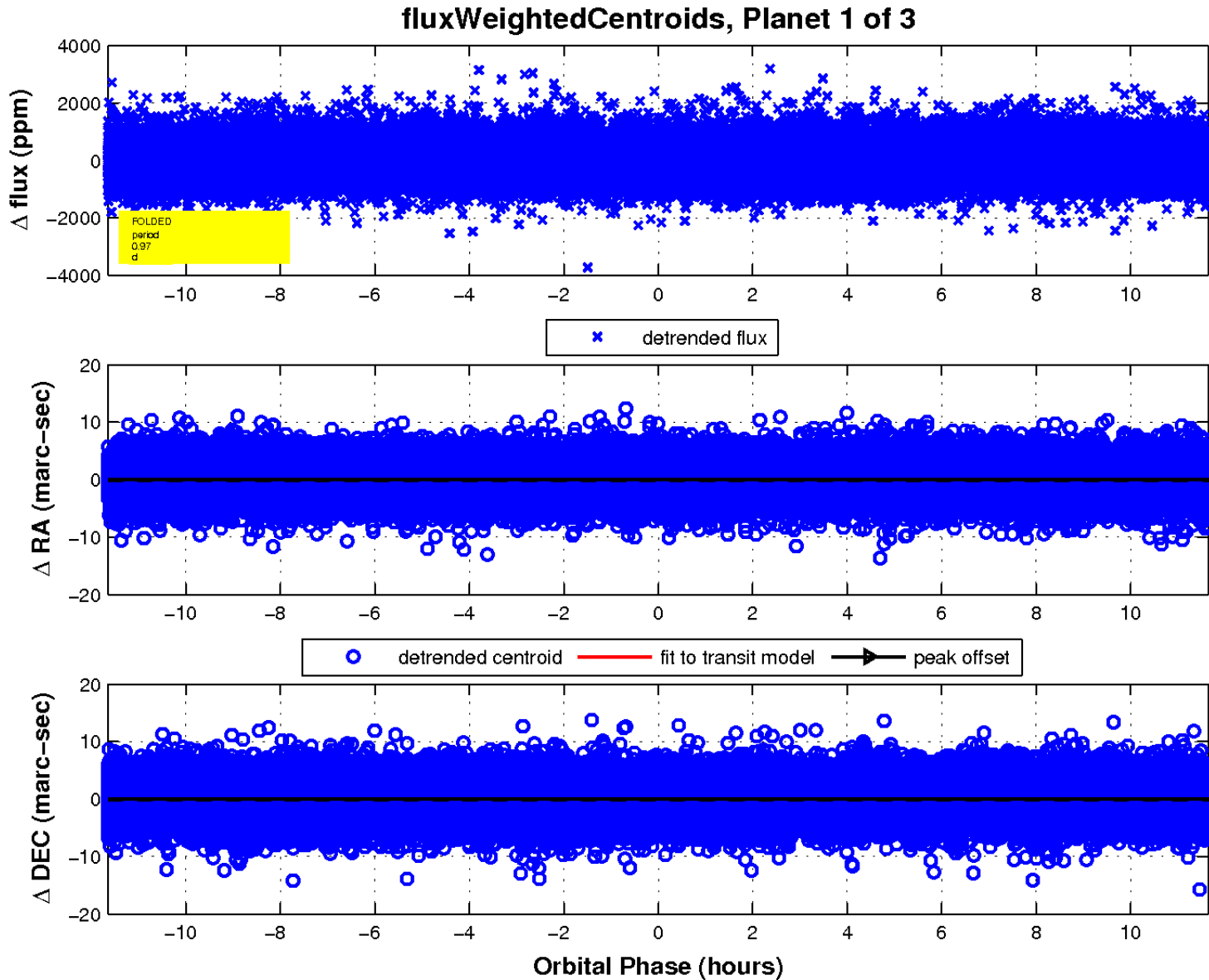
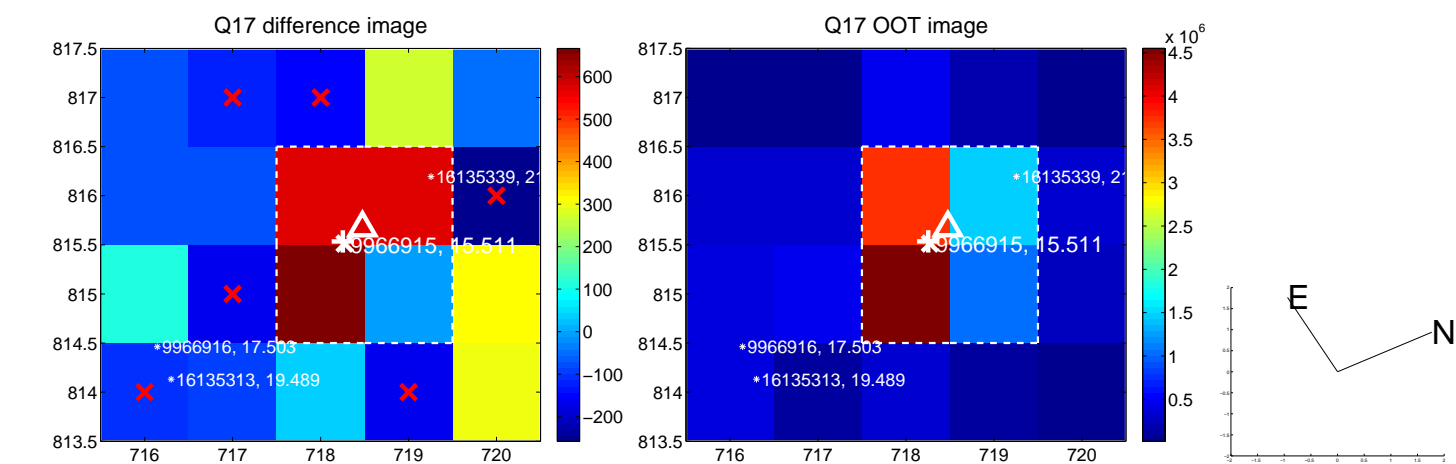
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

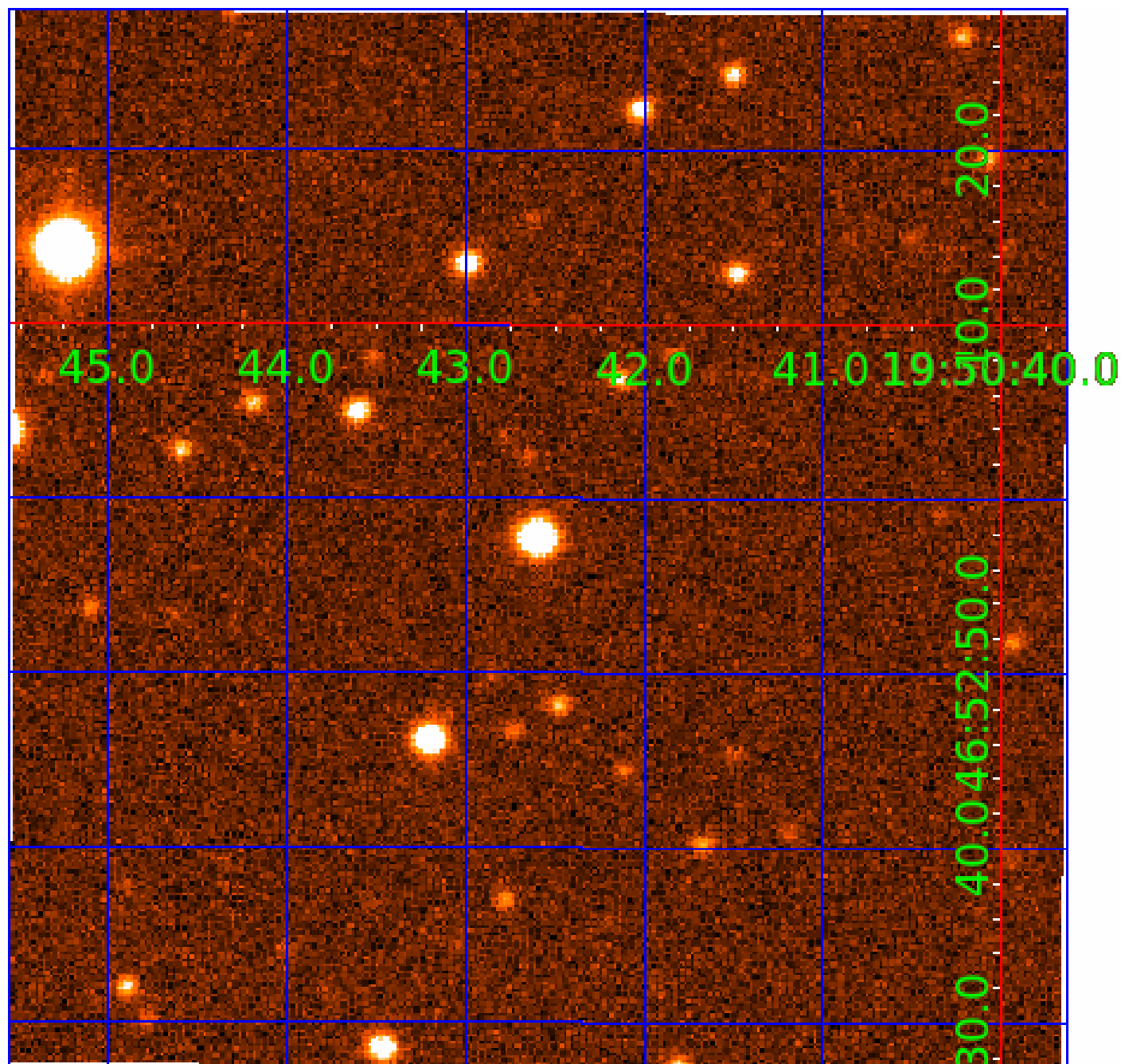


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009966915

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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009966915-02	OBS	No	66.367768	179.001957	401.9	12.039	10.9	4.5	0.82	4859	1.79	3.61
009966915-03	OBS	No	96.453997	214.817376	683.3	10.055	9.8	6.2	0.82	4859	2.25	2.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009966915-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009966915-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV
009966915-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

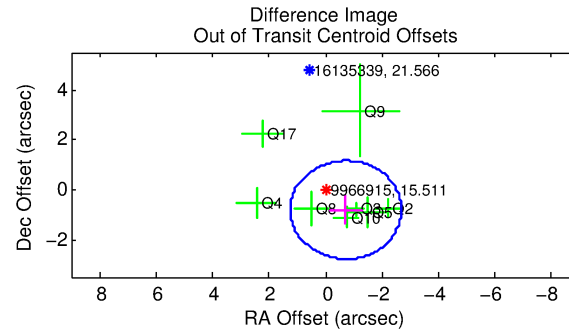
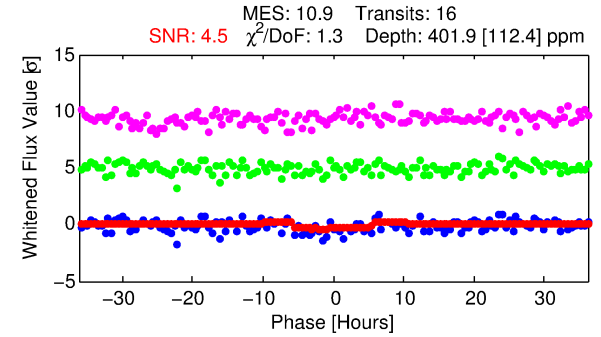
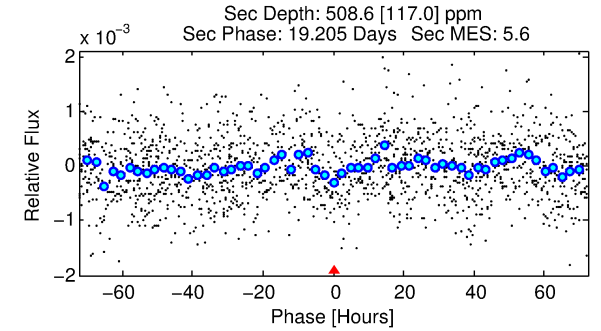
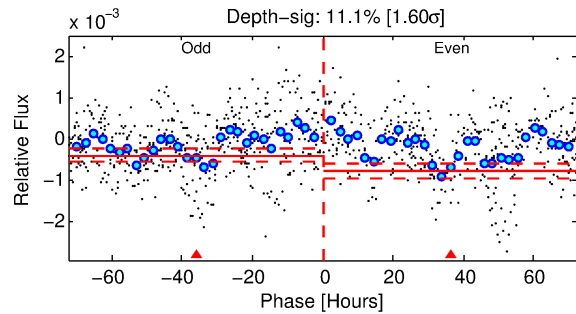
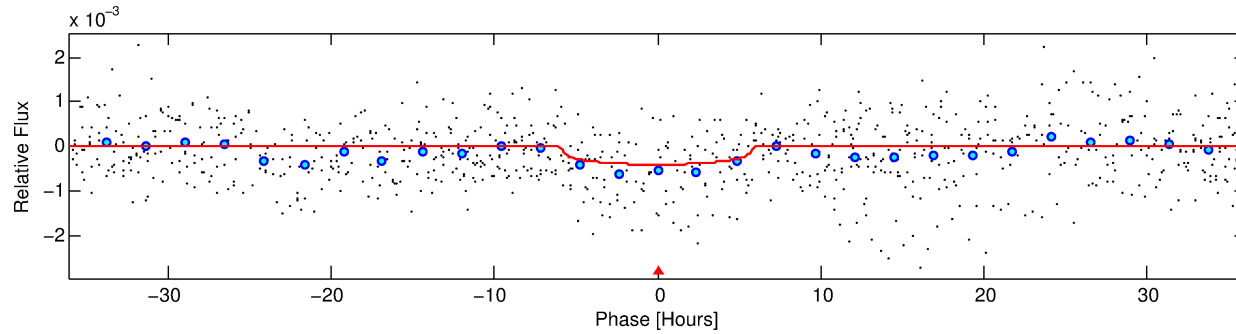
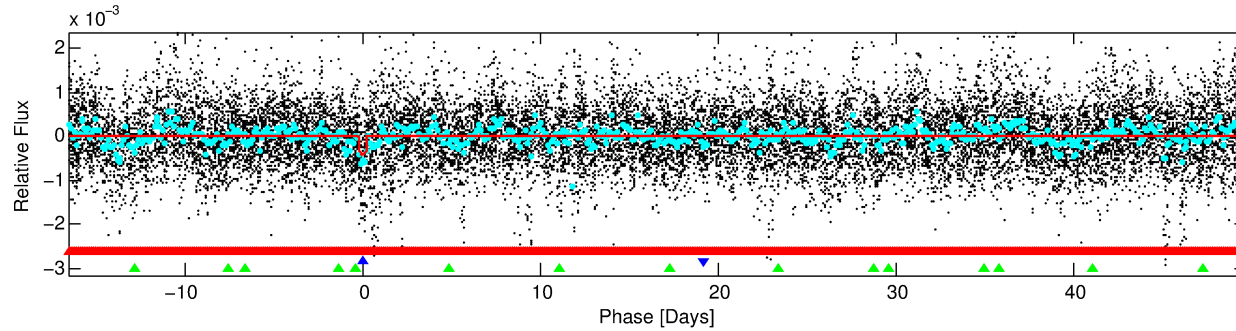
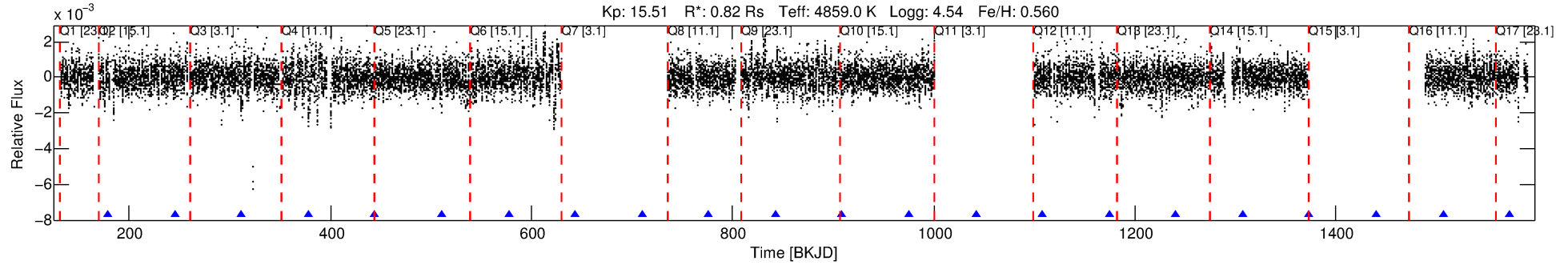
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009966915-02

No Significant Match Found

DV One-Page Summary

KIC: 9966915 Candidate: 2 of 3 Period: 66.368 d



DV Fit Results:

Period = 66.36777 [0.00272] d
Epoch = 179.0020 [0.0332] BKJD
Rp/R* = 0.0201 [0.0148]
a/R* = 28.95 [69.69]
b = 0.75 [1.41]
Seff = 3.61 [0.53]
Teq = 352 [13] K
Rp = 1.79 [1.33] Re
a = 0.3037 [0.0182] AU
Ag = 8038.70 [12020.68] [0.67 σ]
Teffp = 5147 [1927] K [2.49 σ]

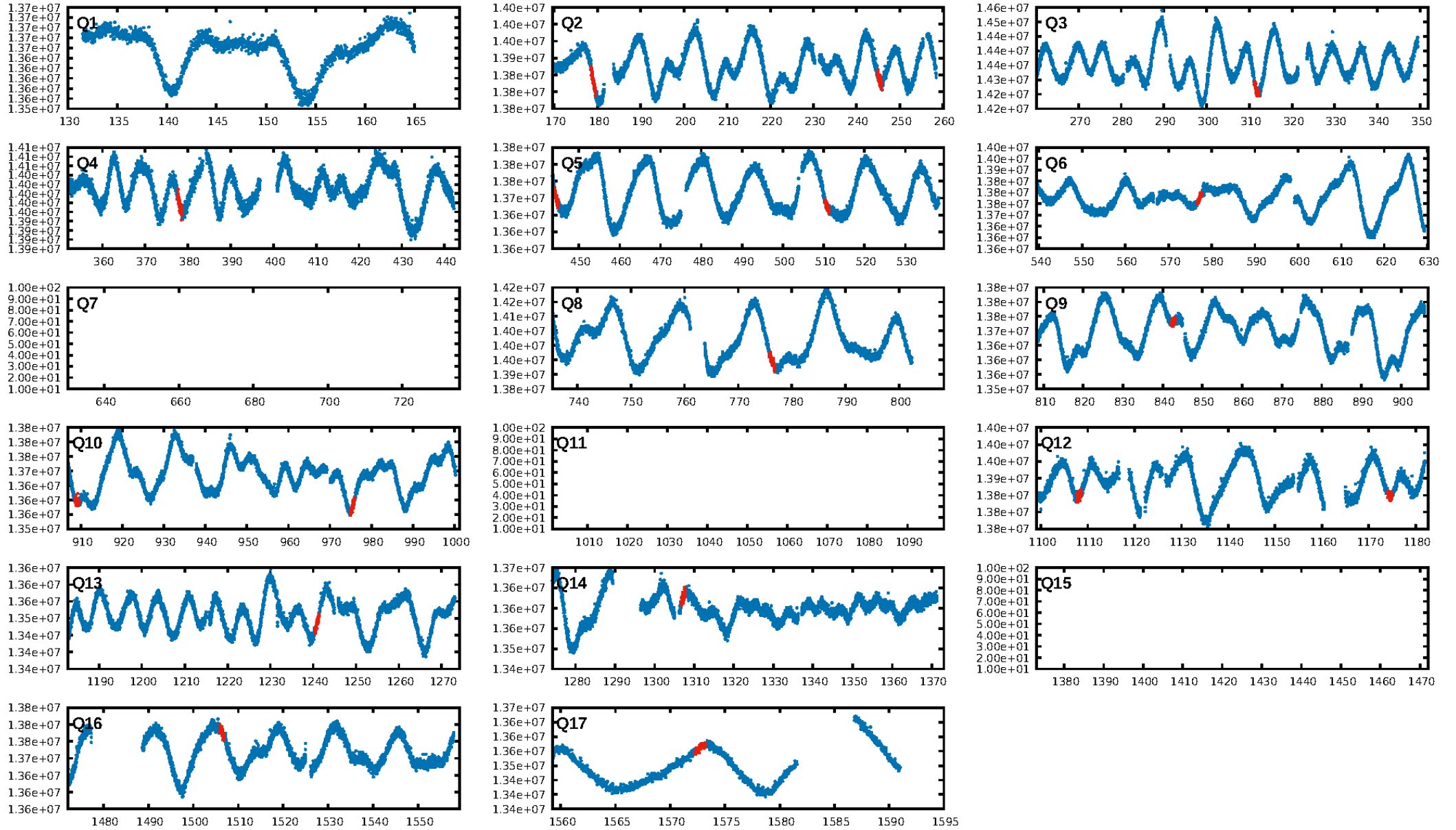
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [121.69 σ]
LongPeriod-sig: 100.0% [46.03 σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.49e-14
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: -0.2773
Centroid-sig: 15.2%
Centroid-so: 1.363 arcsec [1.25 σ]
OotOffset-rm: 1.082 arcsec [1.65 σ]
KicOffset-rm: 0.995 arcsec [1.74 σ]
OotOffset-st: 2/1/2/3 [8]
KicOffset-st: 2/1/2/3 [8]
DiffImageQuality-fgm: 0.62 [5/8]
DiffImageOverlap-fno: 0.00 [0/10]

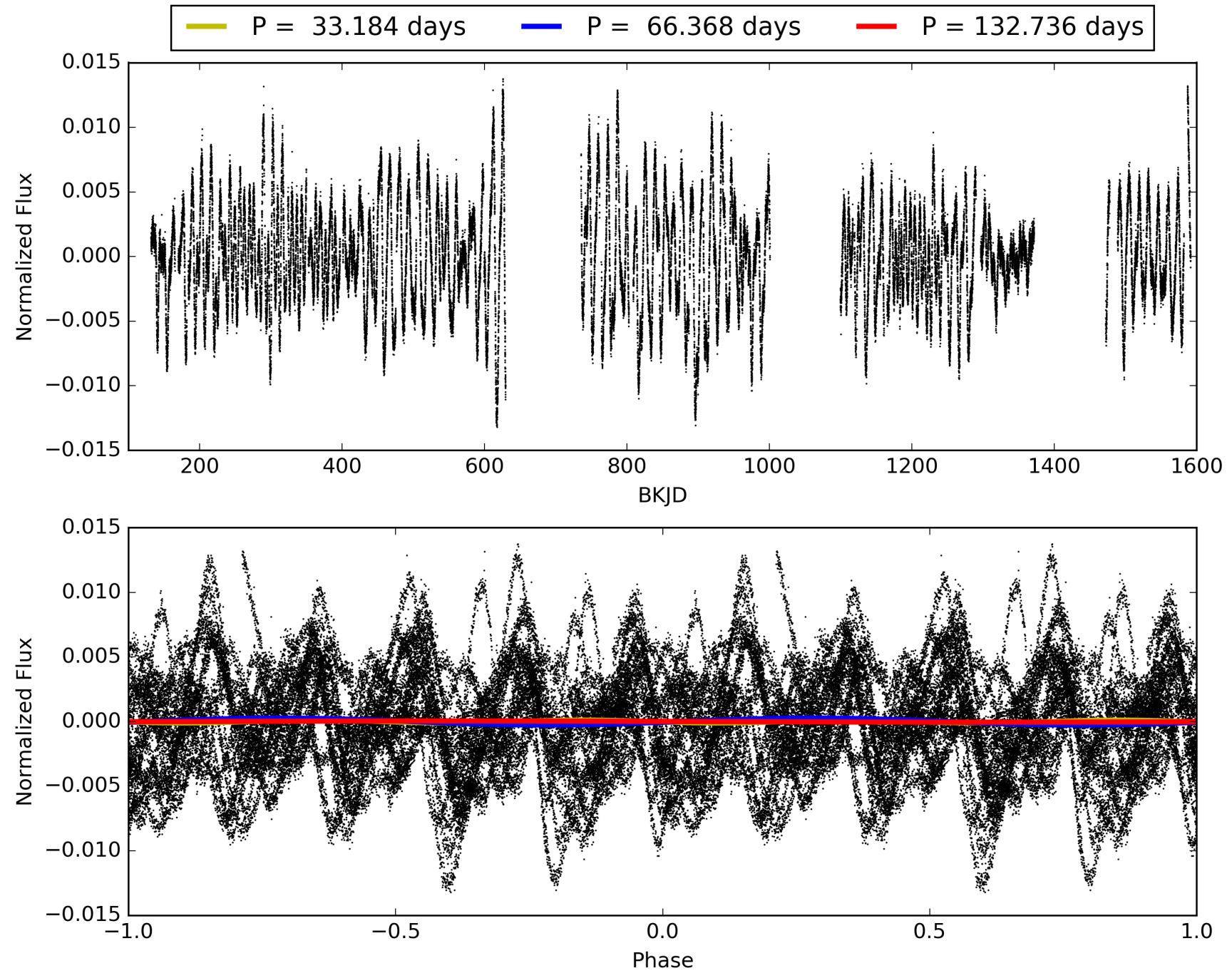
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:55:30 Z

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

TCE 009966915-02, PDC Light Curves

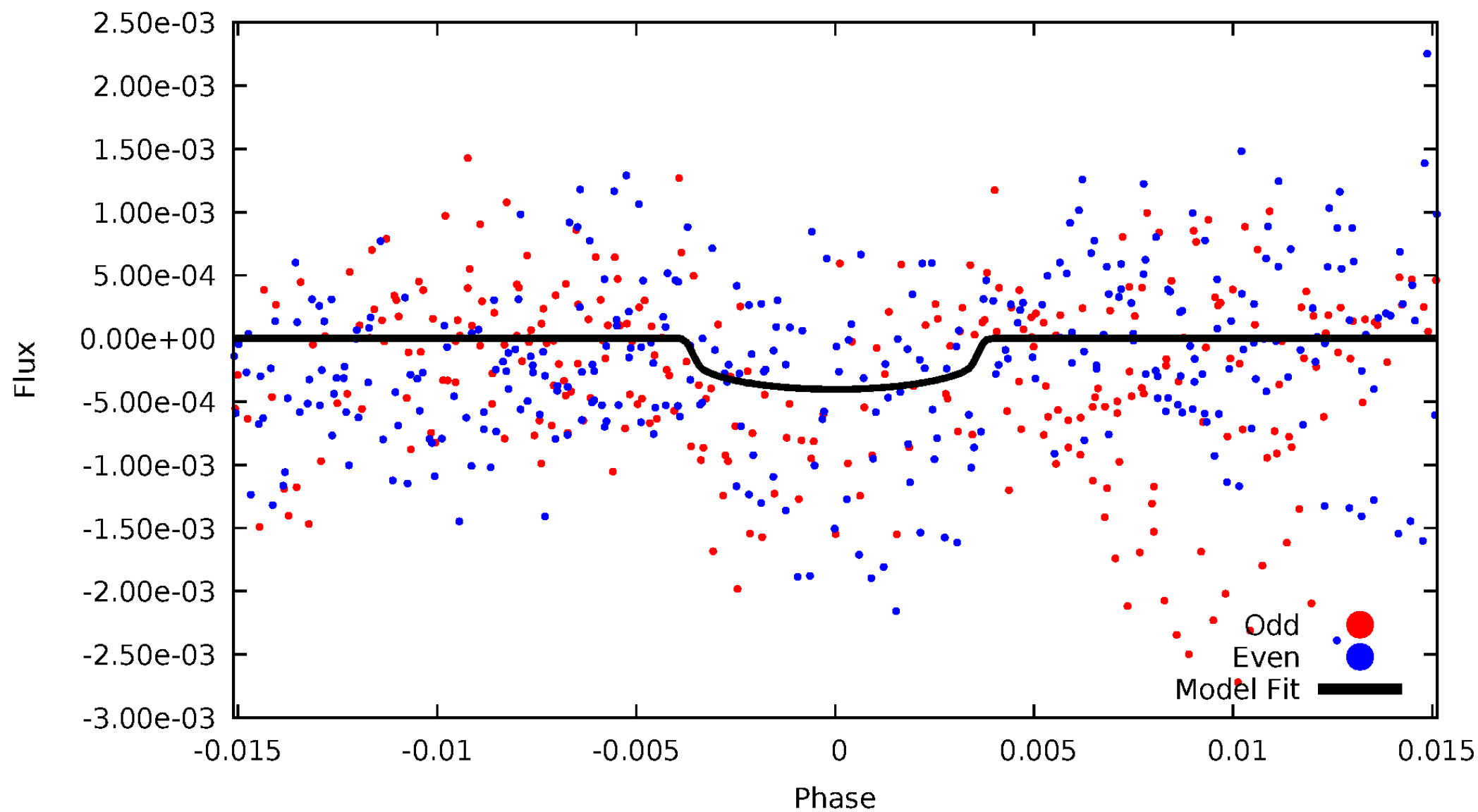


TCE 009966915-02



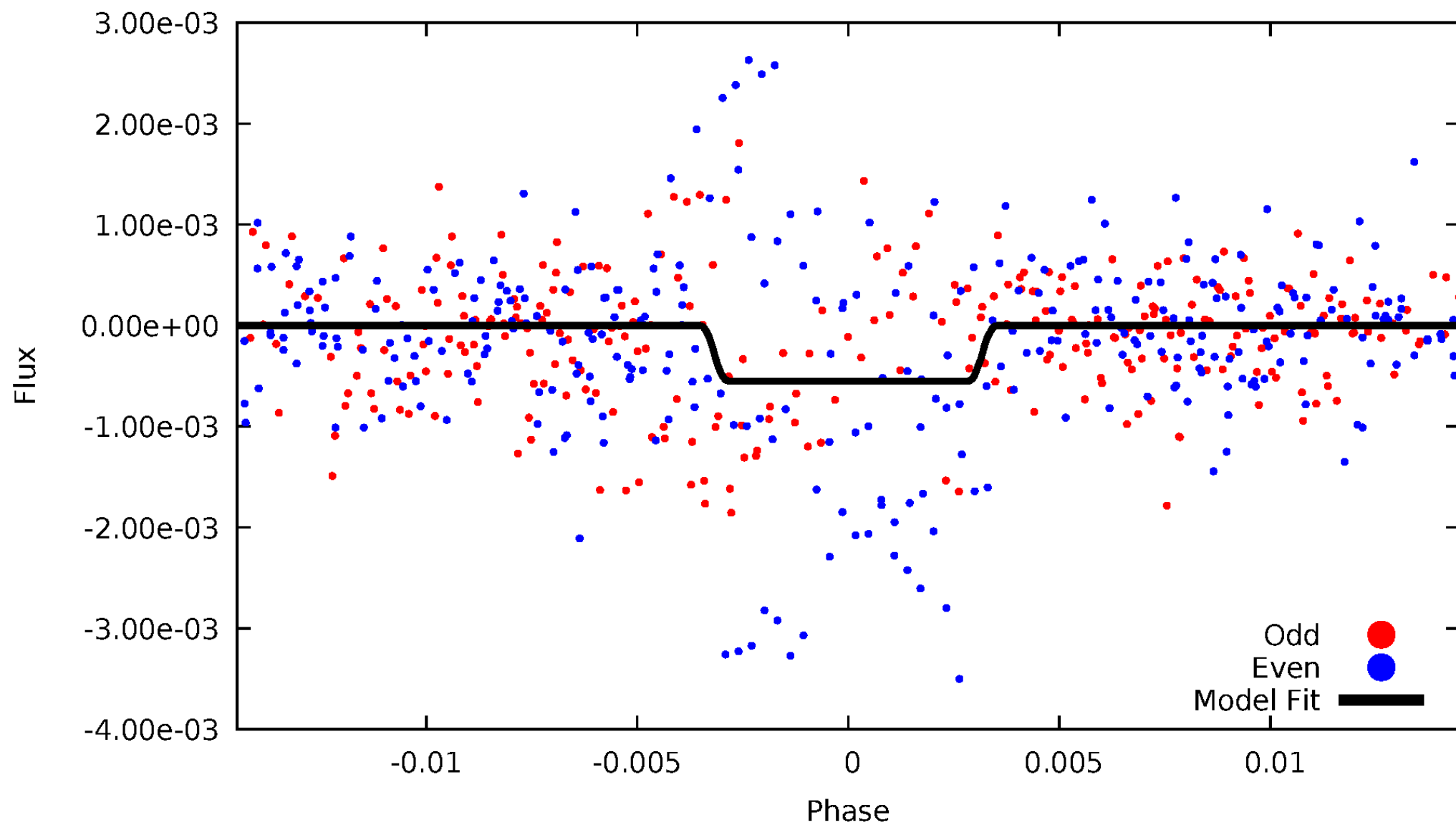
DV Odd/Even

TCE 009966915-02



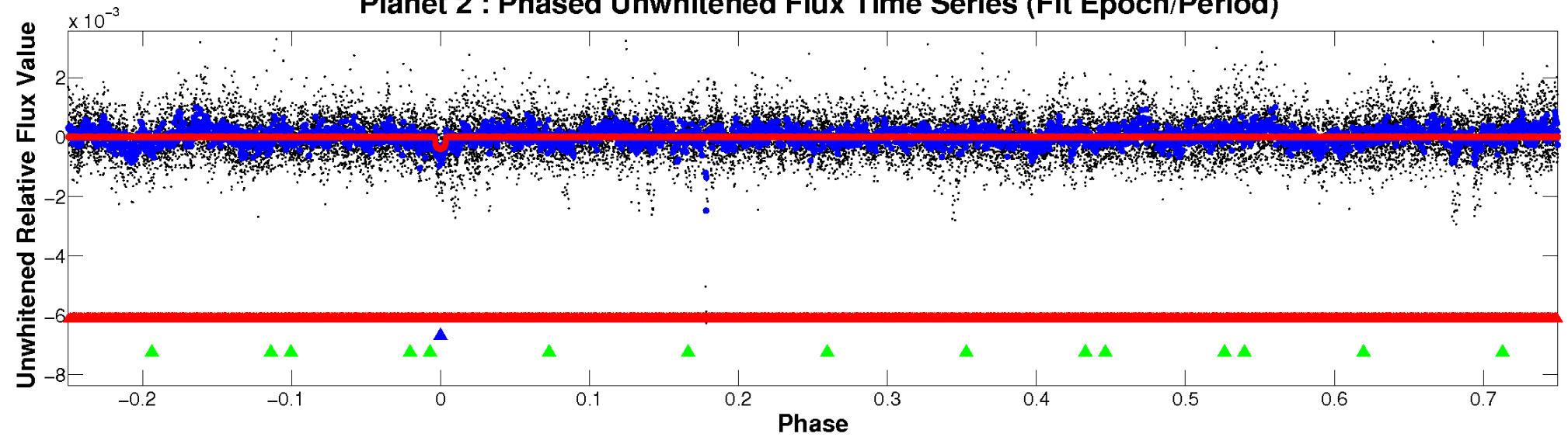
ALT Odd/Even

TCE 009966915-02

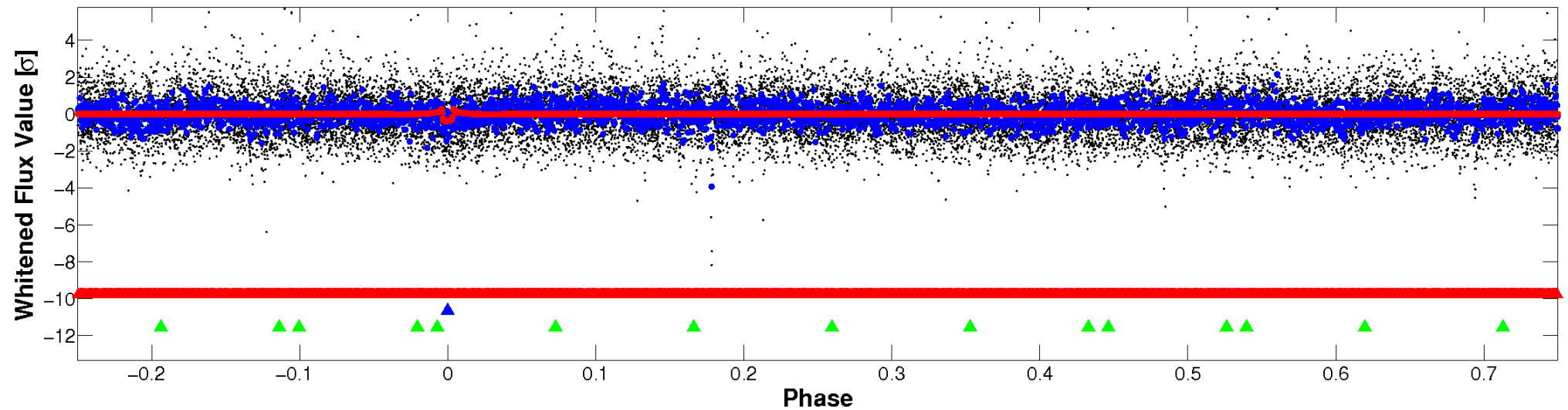


Non-Whitened Vs. Whitened Light Curve

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

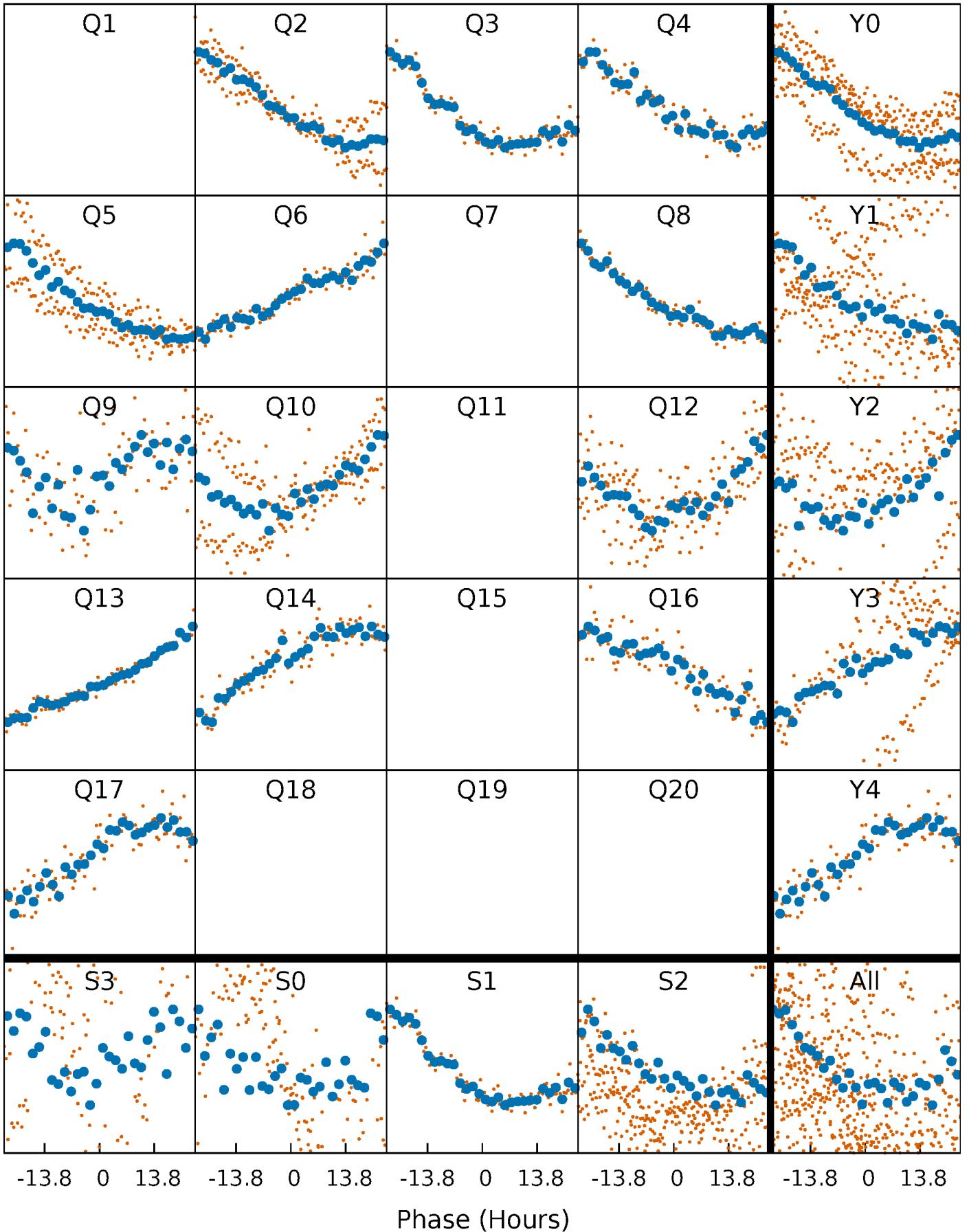


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



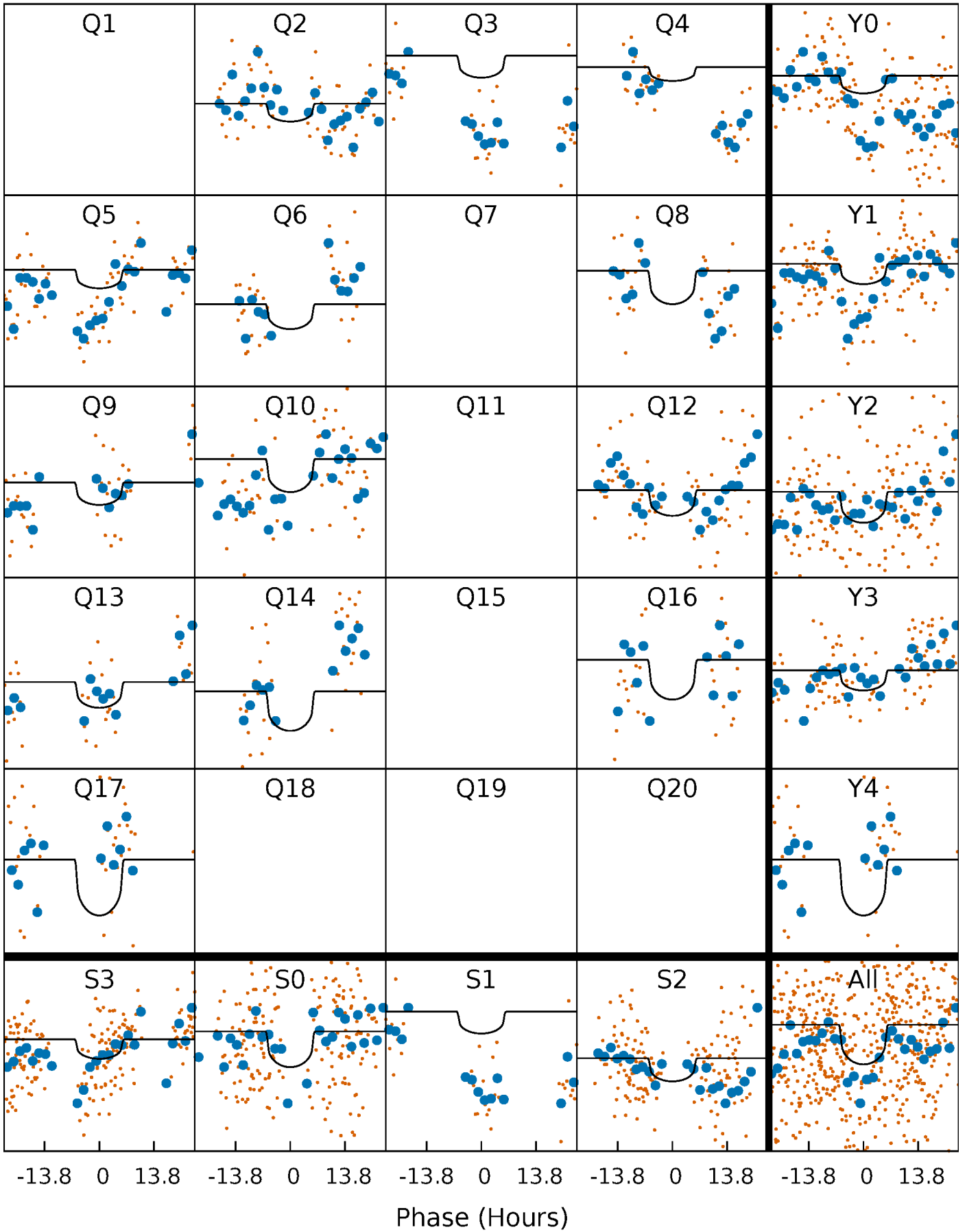
PDC Quarter-Phased Transit Curves

TCE 009966915-02 P= 66.367768 Days $T_0=179.001957$ (BKJD)



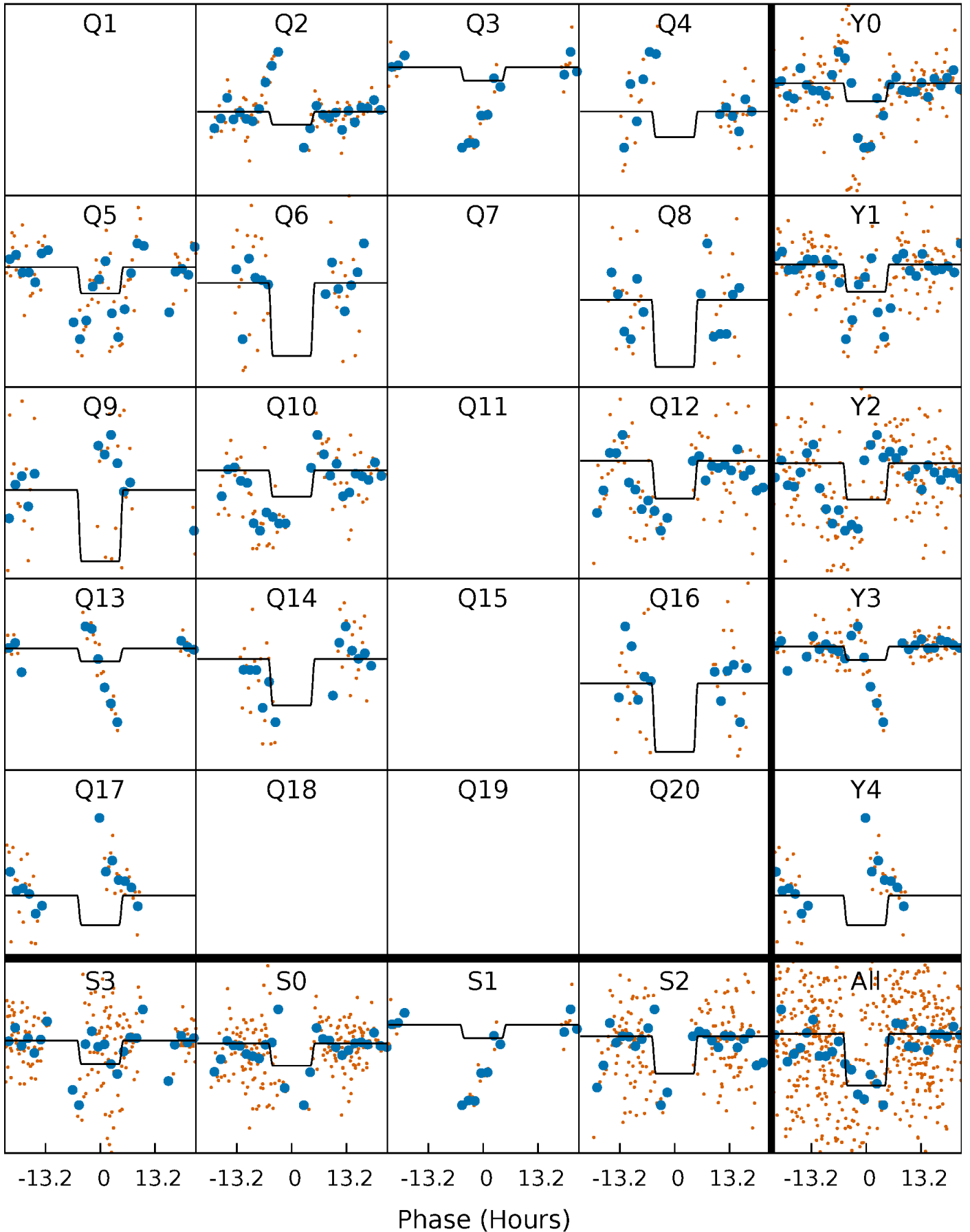
DV Quarter-Phased Transit Curves

TCE 009966915-02 P= 66.367768 Days $T_0=179.001957$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

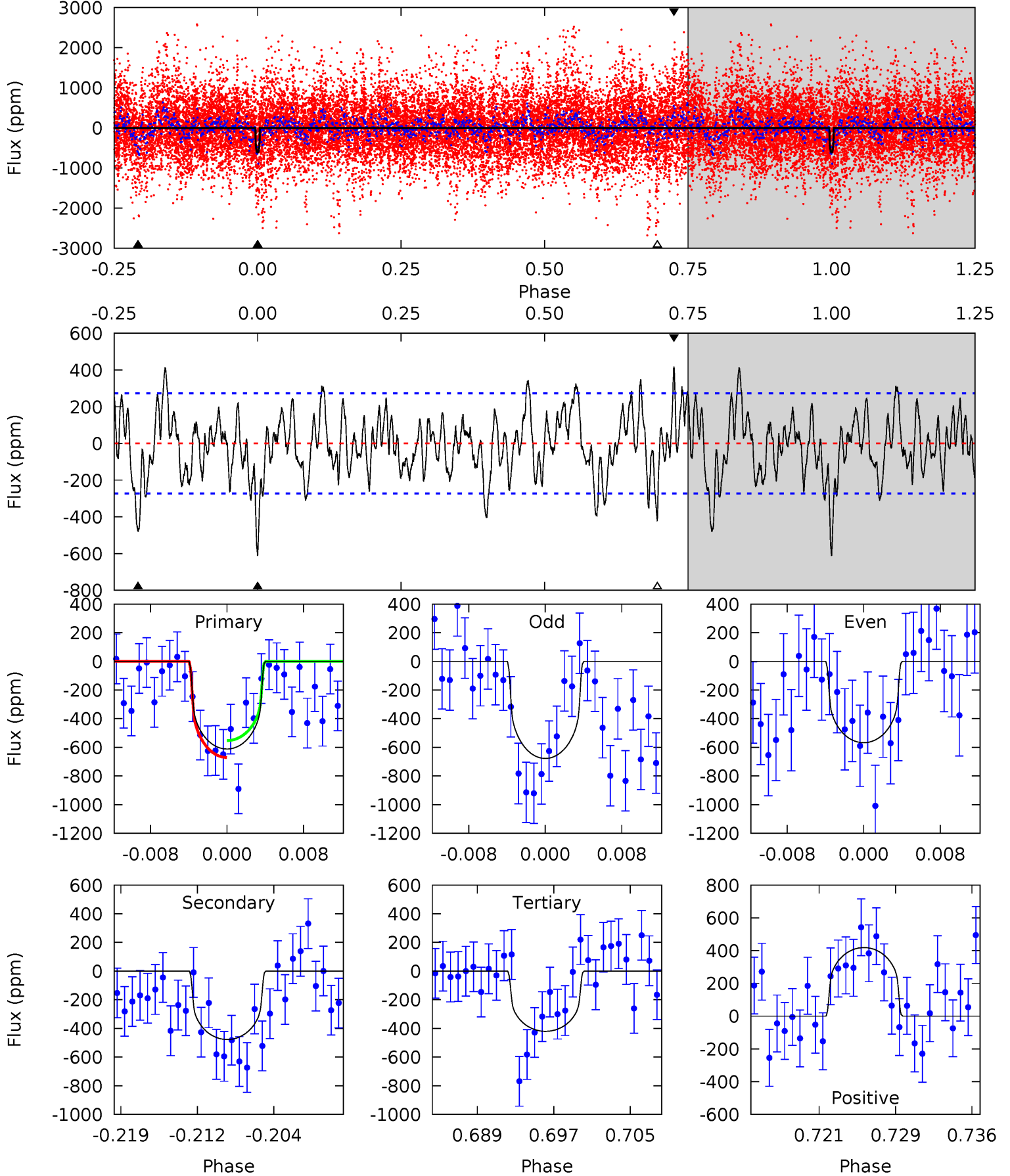
TCE 009966915-02 P= 66.365385 Days $T_0=179.035202$ (BKJD)



DV Model-Shift Uniqueness Test

009966915-02, P = 66.367768 Days, E = 112.634189 Days

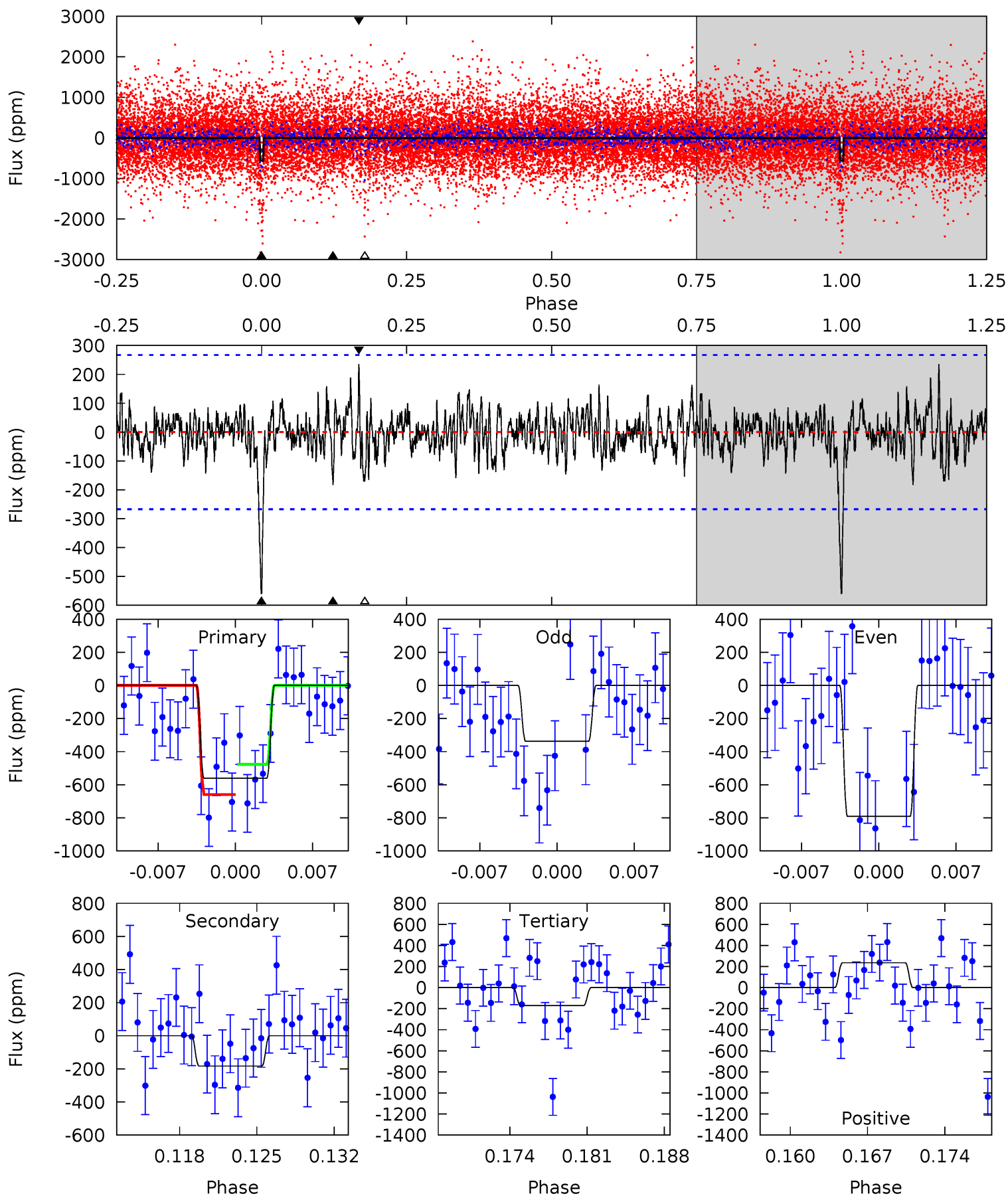
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	8.89	7.82	7.79	5.07	2.66	2.76	3.56	3.59	1.06	1.09	1.01	2.08	0.41	1.10



Alt Model-Shift Uniqueness Test

009966915-02, P = 66.365385 Days, E = 112.669817 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	3.49	3.26	4.48	5.10	2.70	1.08	7.45	6.22	0.24	-0.99	4.34	0.37	0.30	1.73



Stellar Parameters For KIC 009966915

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4859^{+145}_{-145}	$4.542^{+0.045}_{-0.045}$	$0.560^{+0.050}_{-0.300}$	$0.817^{+0.049}_{-0.060}$	$0.849^{+0.036}_{-0.057}$	$2.192^{+0.415}_{-0.317}$
	+3%/-3%	+1%/-1%	+9%/-54%	+6%/-7%	+4%/-7%	+19%/-14%
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 009966915-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-477 ± 54	$1.95^{+1.30}_{-1.24}$	492^{+17}_{-16}	4868^{+3102}_{-874}	6541^{+38700}_{-4283}
Alt.	-183 ± 52	$2.21^{+1.31}_{-1.24}$	491^{+18}_{-17}	3866^{+1390}_{-588}	1893^{+7620}_{-1198}

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

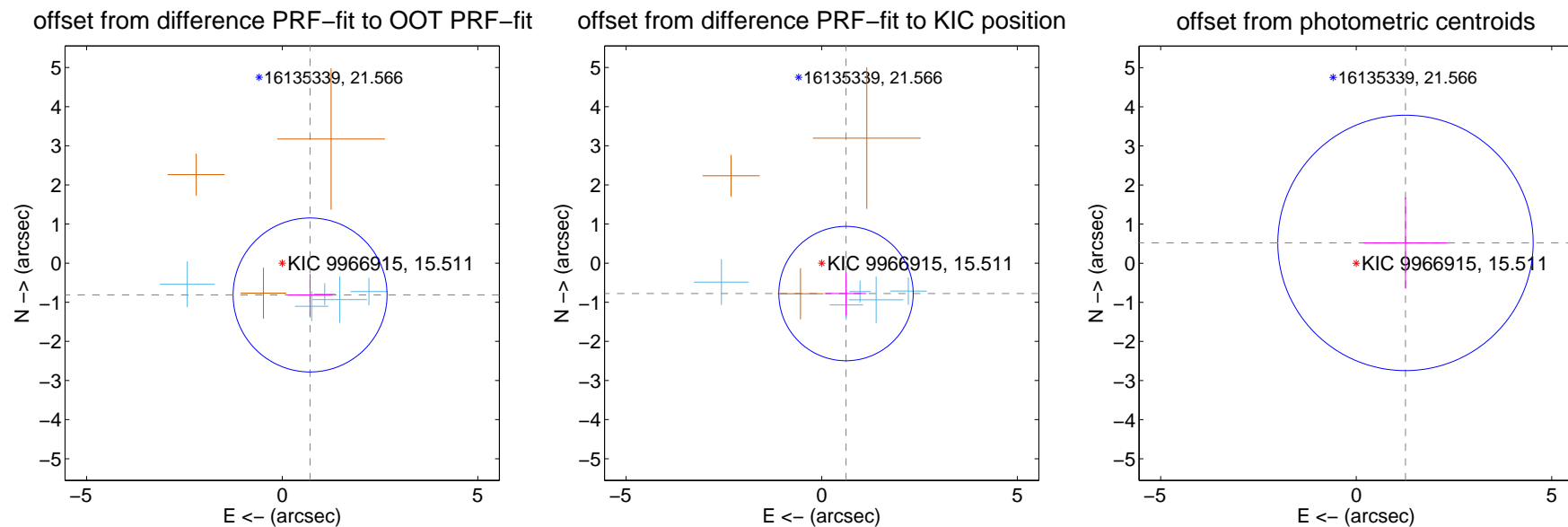
DV Centroid Data

Supplemental centroid analysis for 009966915-02. Kepler magnitude: 15.51. Transit SNR 4.47

There are 5 quarters with good PRF difference image offsets

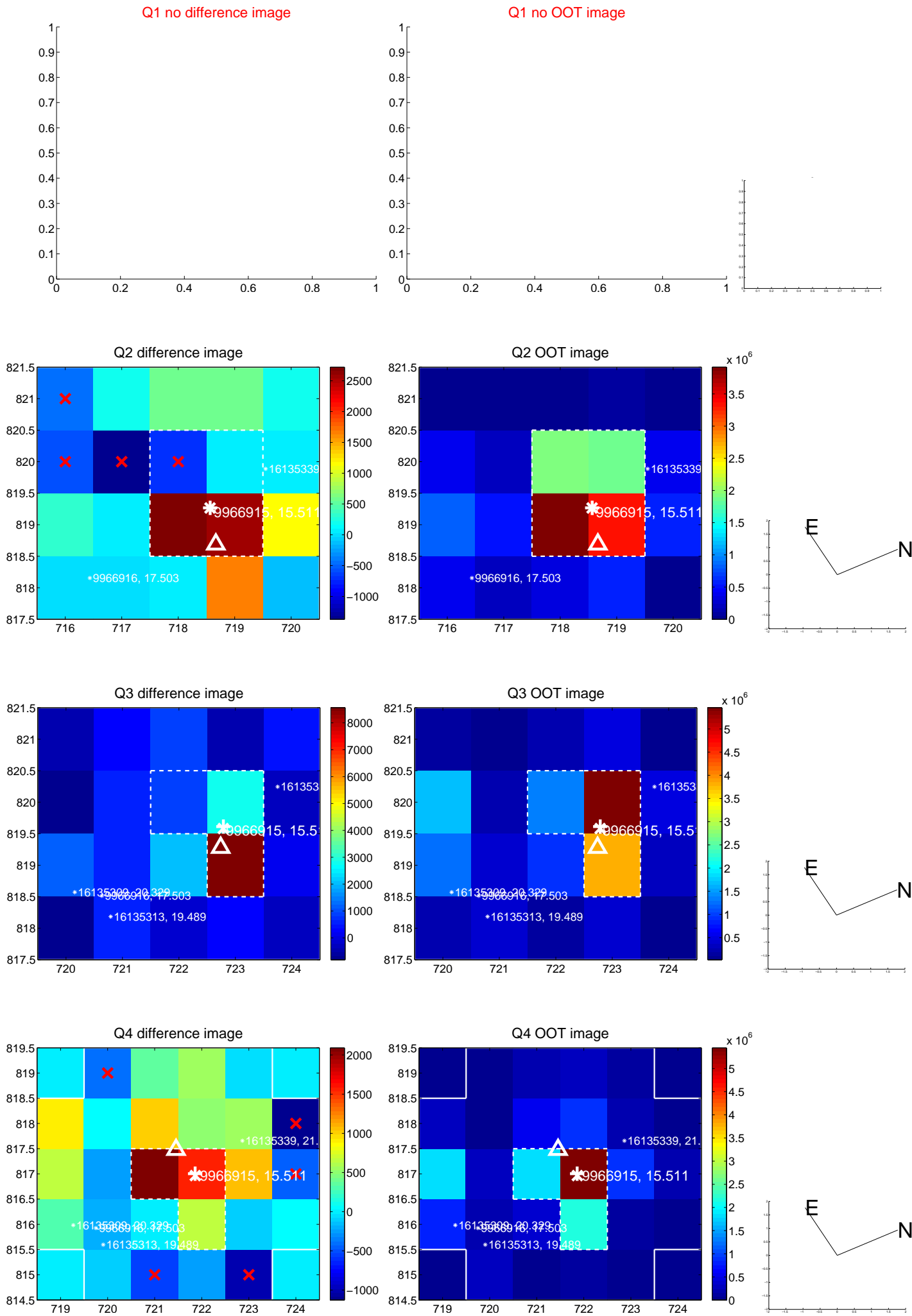
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.082 ± 0.656	1.65	-0.712 ± 0.572	-0.814 ± 0.541
PRF-fit source offset from KIC position	0.995 ± 0.573	1.74	-0.621 ± 0.522	-0.778 ± 0.548
photometric centroid source offset	1.36 ± 1.09	1.25	-1.26 ± 1.07	0.52 ± 1.17

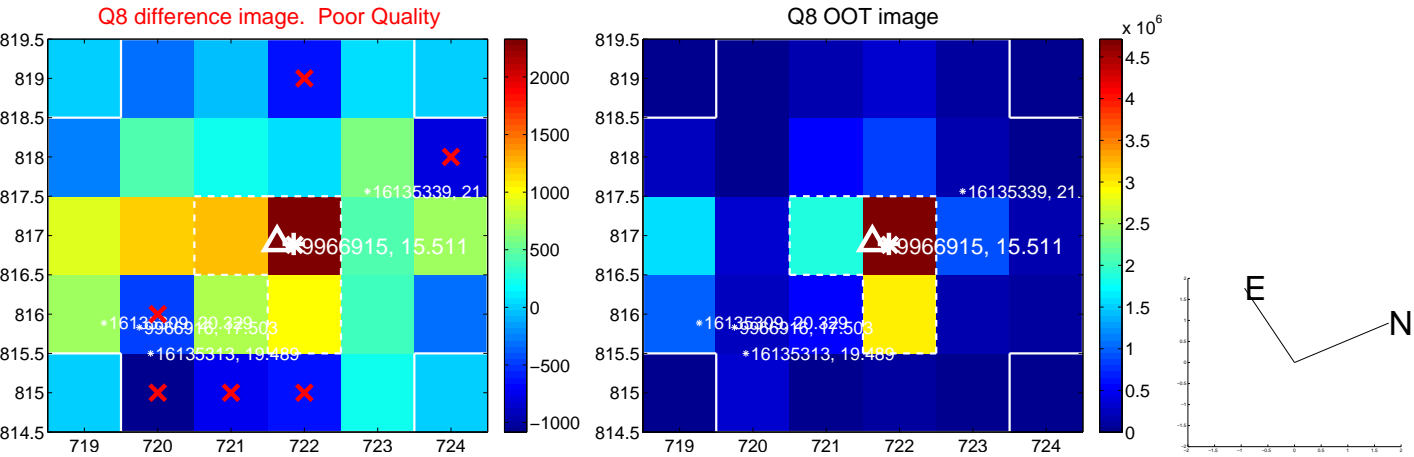
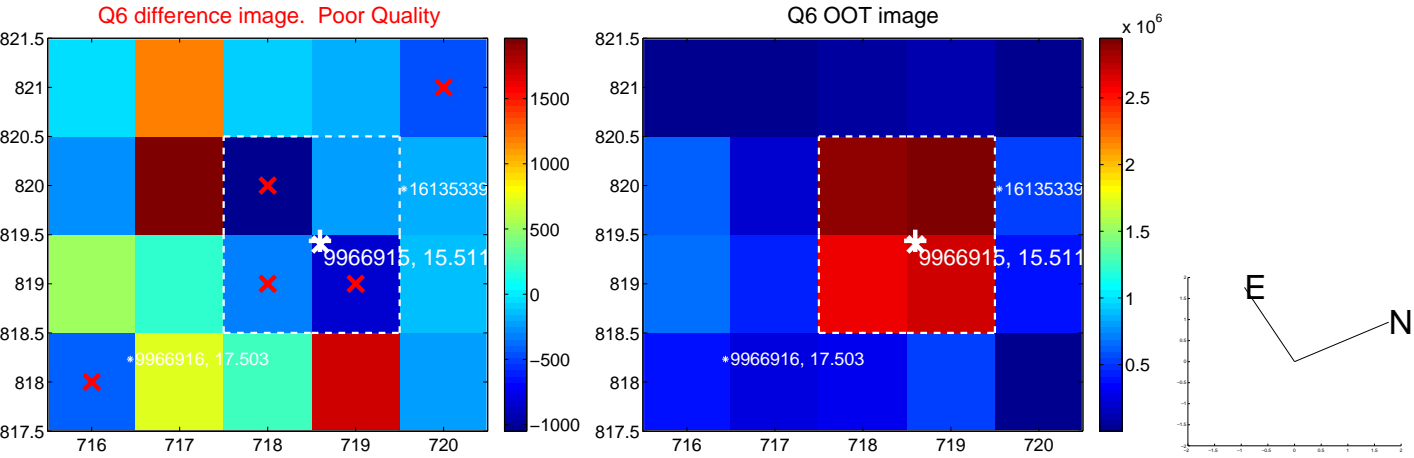
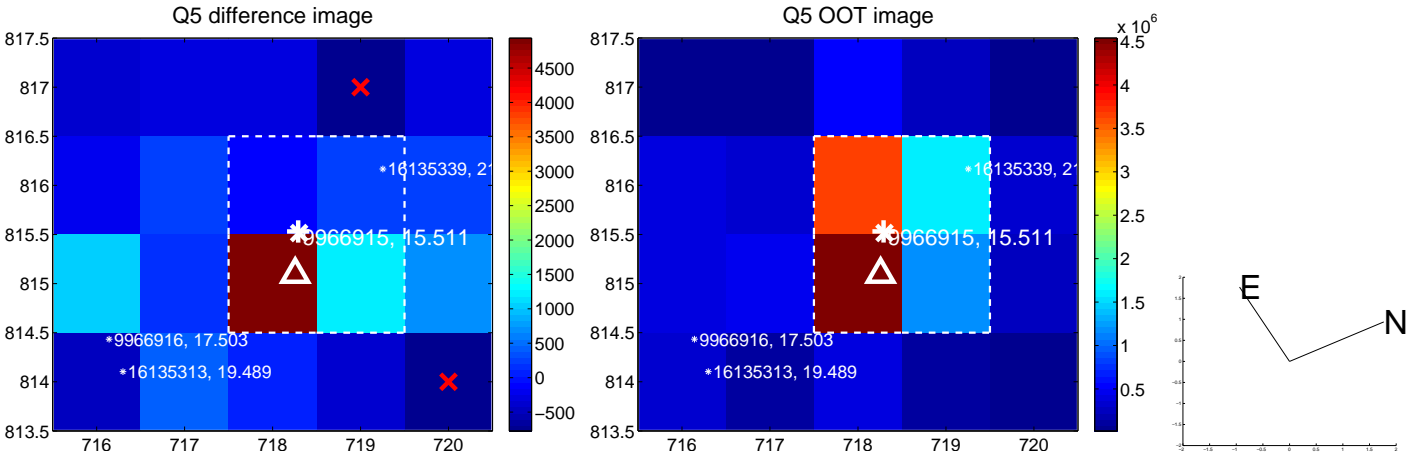


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

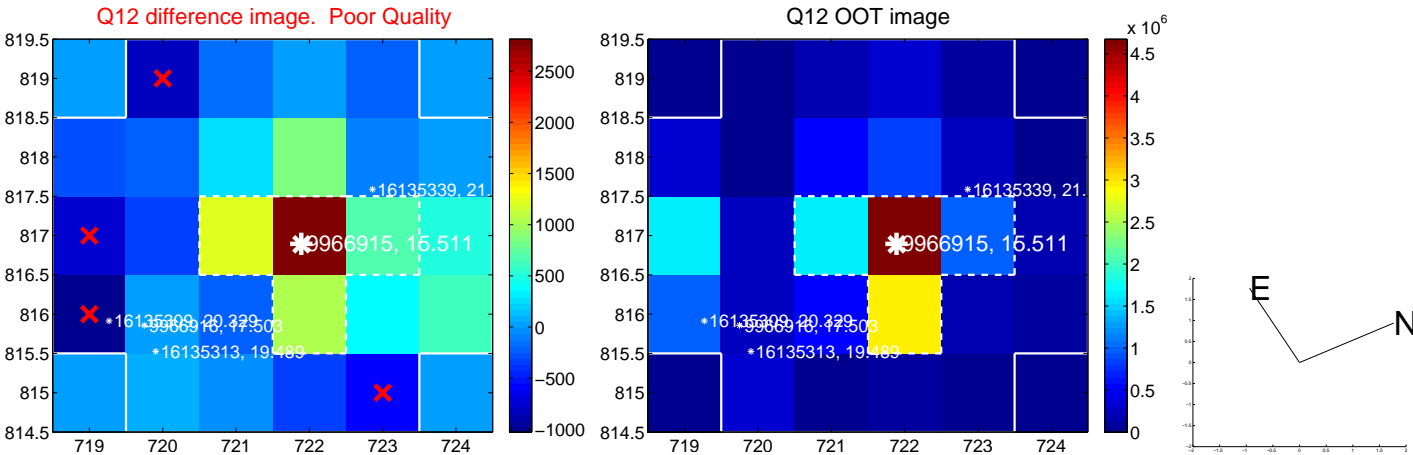
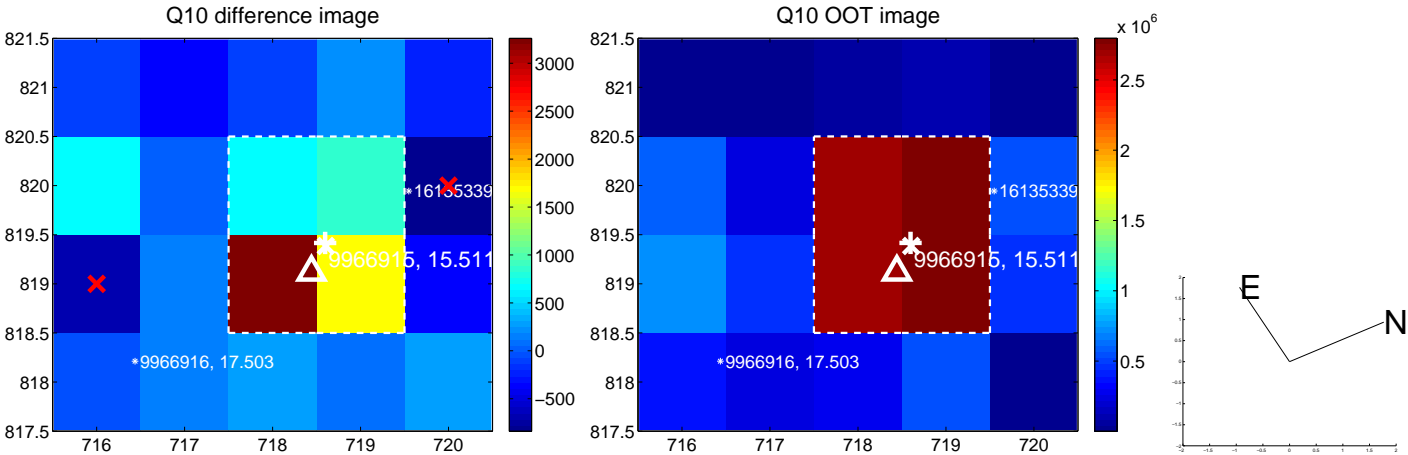
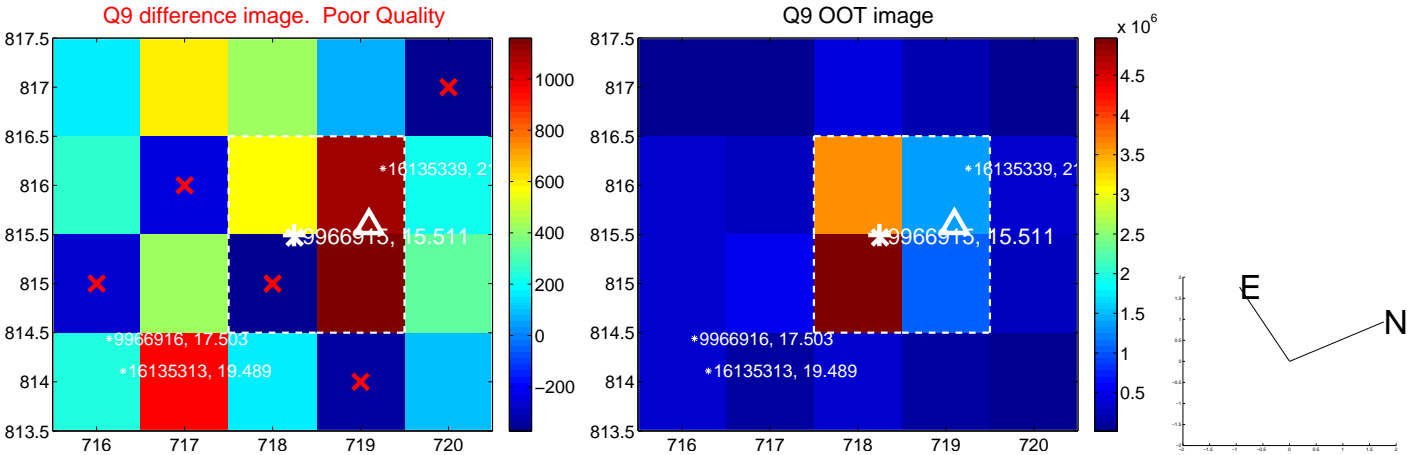
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



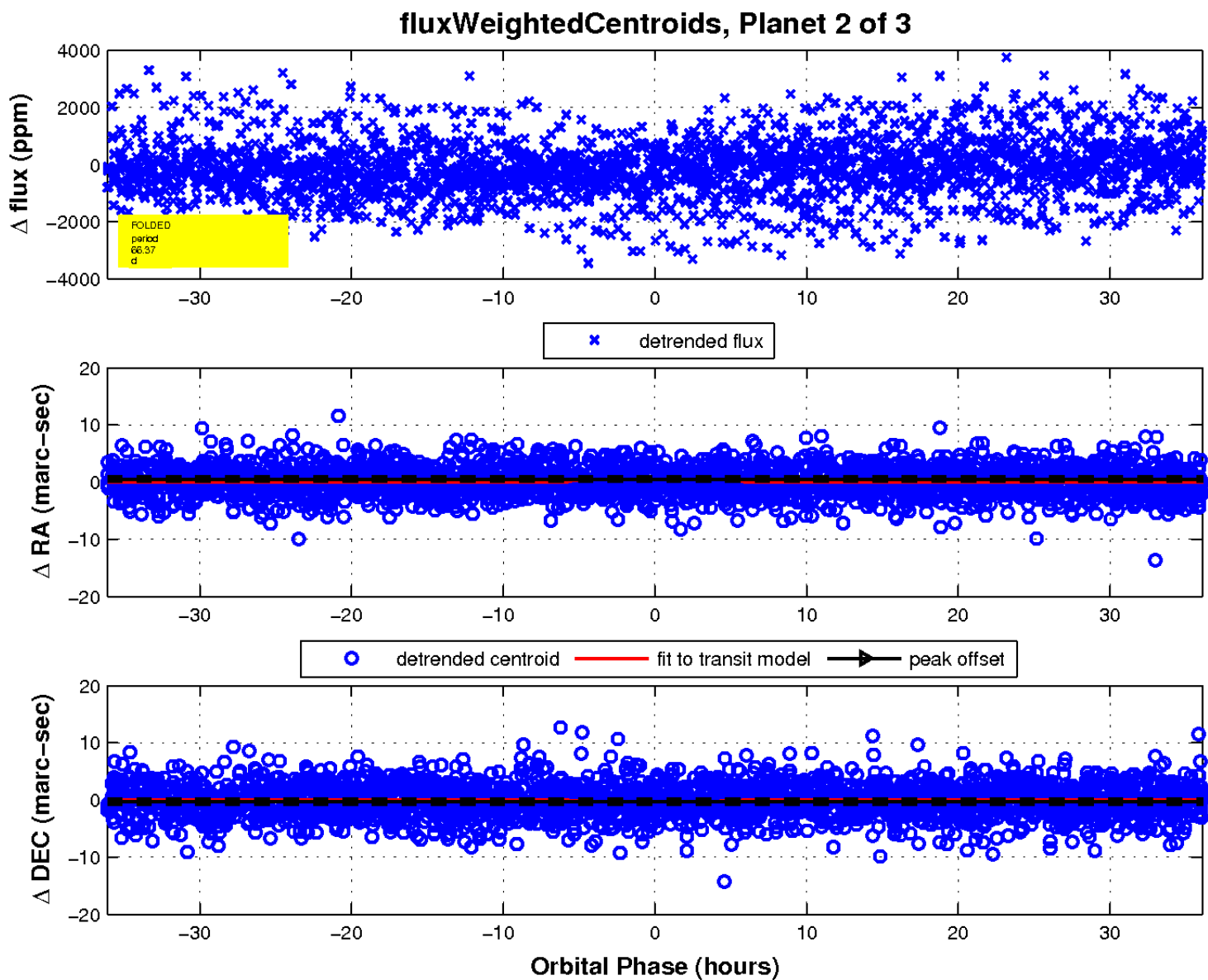
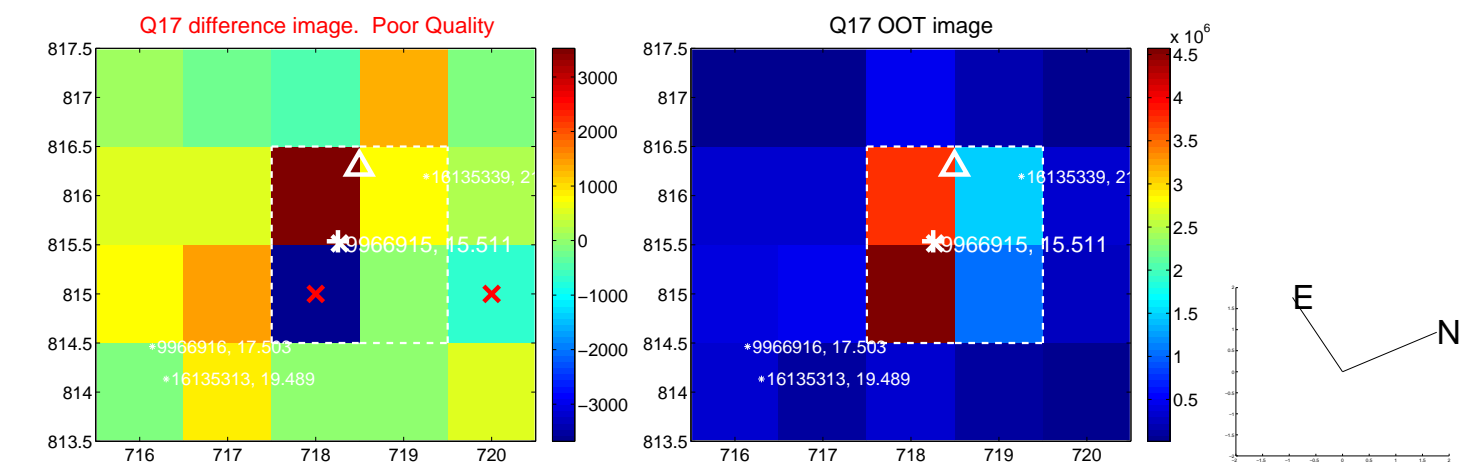
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

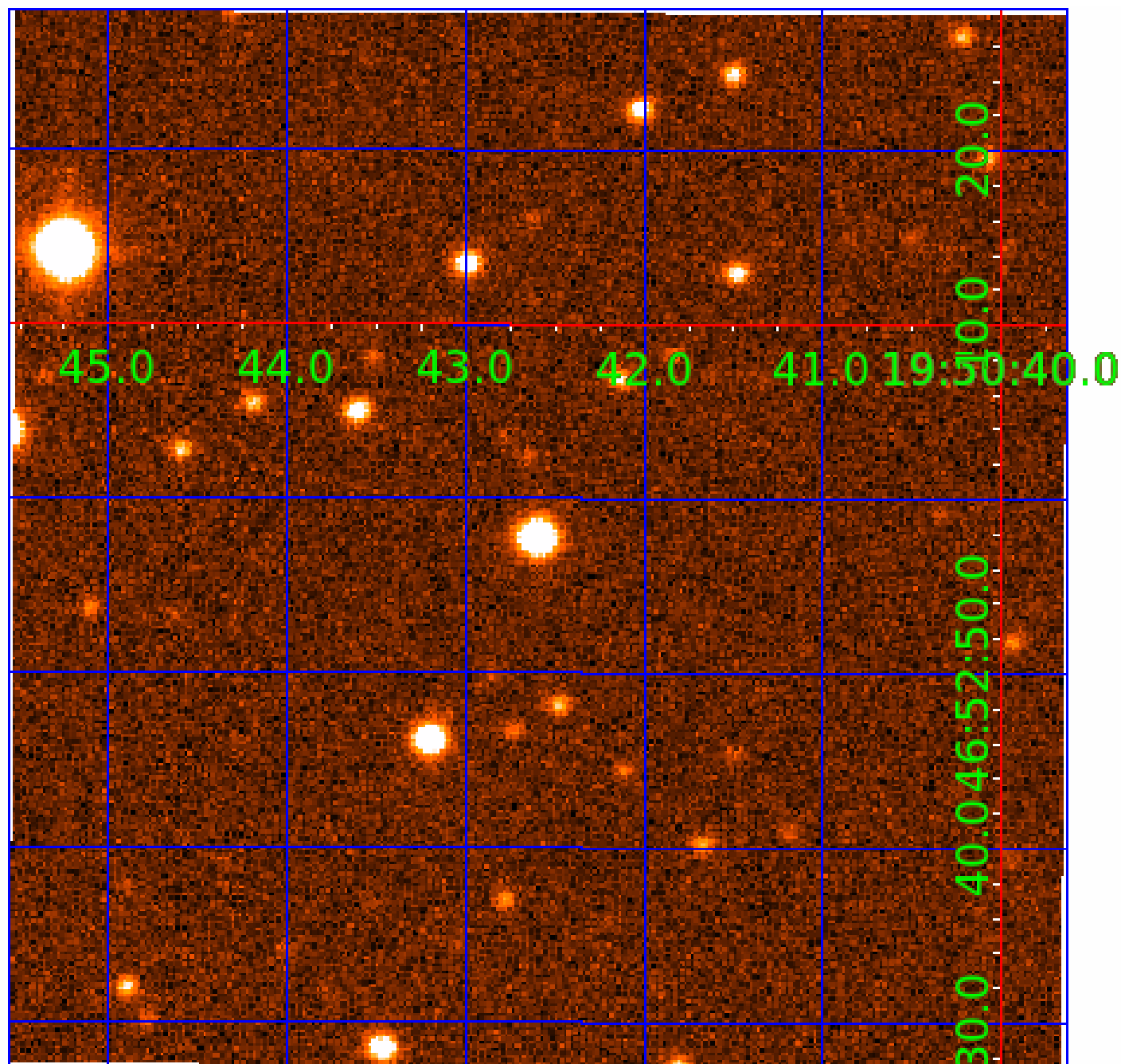


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009966915

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})
009966915-01	OBS	No	0.970870	131.661536	71.3	4.626	8.8	9.3	0.82	4859	0.66	1010.06
009966915-02	OBS	No	66.367768	179.001957	401.9	12.039	10.9	4.5	0.82	4859	1.79	3.61
009966915-03	OBS	No	96.453997	214.817376	683.3	10.055	9.8	6.2	0.82	4859	2.25	2.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009966915-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009966915-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV
009966915-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

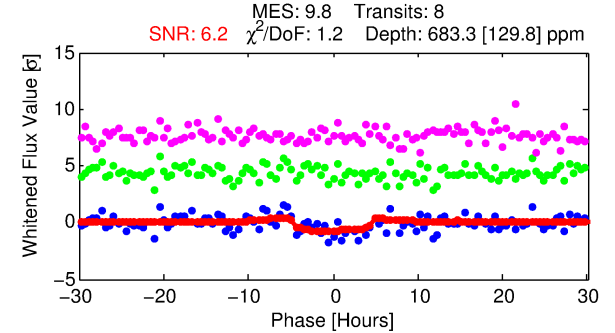
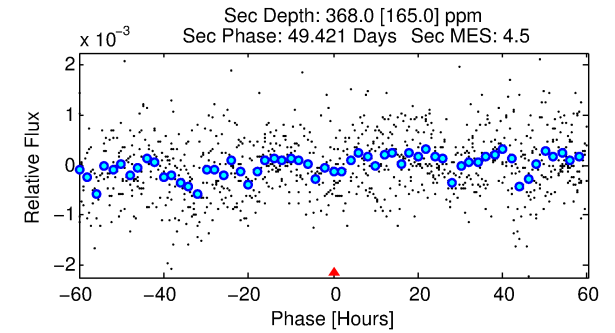
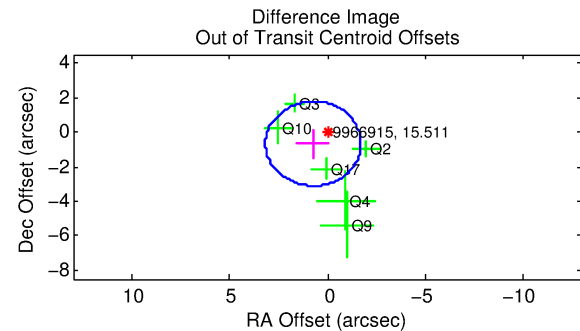
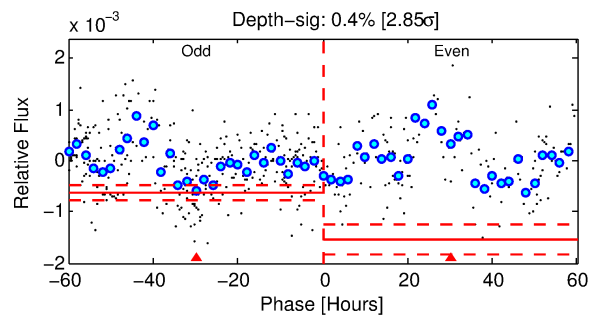
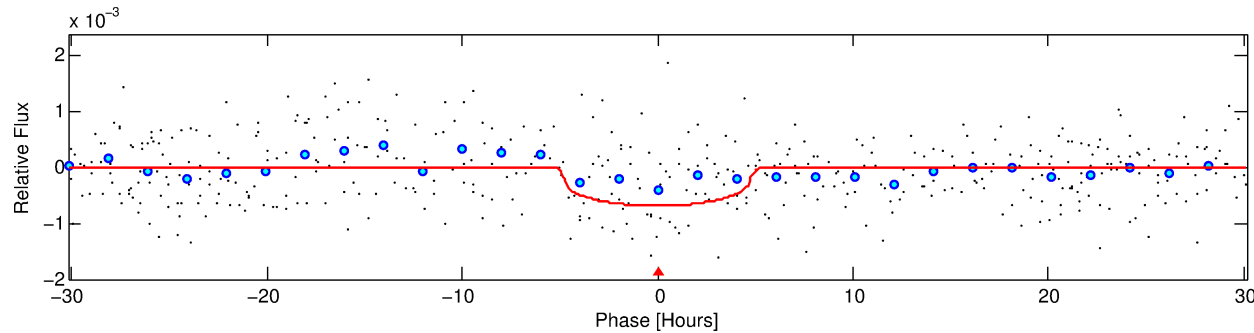
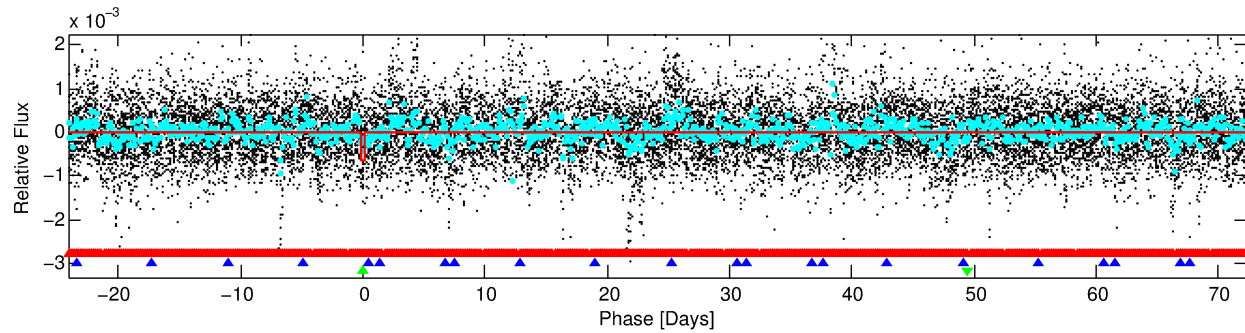
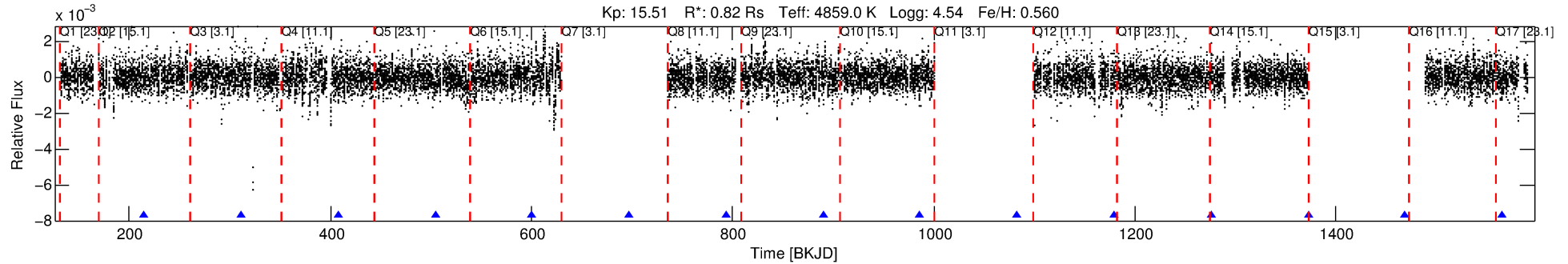
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009966915-03

No Significant Match Found

DV One-Page Summary

KIC: 9966915 Candidate: 3 of 3 Period: 96.454 d



DV Fit Results:

Period = 96.45400 [0.00285] d
Epoch = 214.8174 [0.0230] BKJD
Rp/R* = 0.0253 [0.0184]
a/R* = 56.74 [129.57]
b = 0.67 [1.90]
Seff = 2.20 [0.32]
Teq = 310 [11] K
Rp = 2.25 [1.65] Re
a = 0.3897 [0.0233] AU
Ag = 6063.23 [9258.20] [0.65 σ]
Teffp = 4235 [1619] K [2.42 σ]

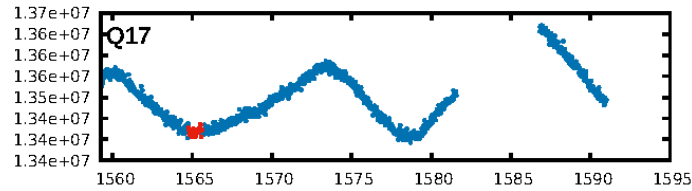
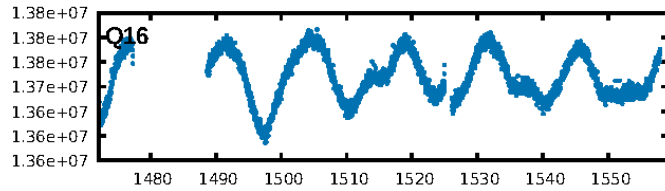
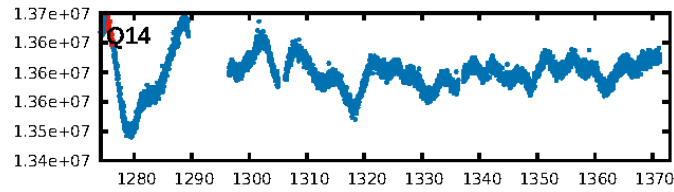
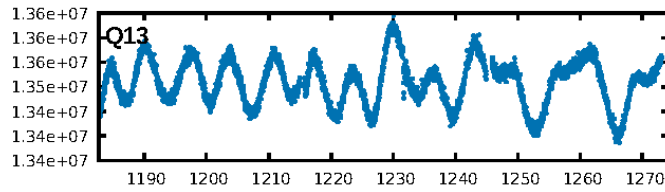
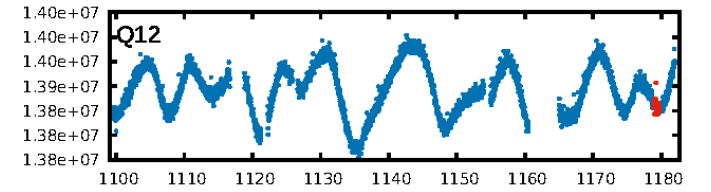
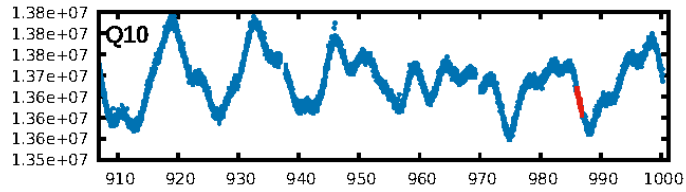
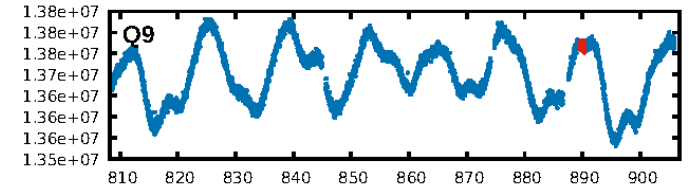
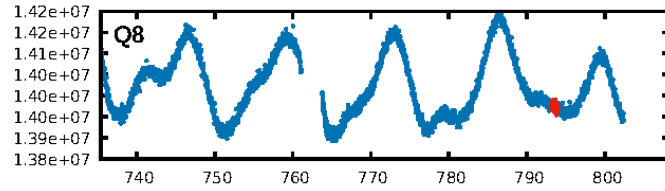
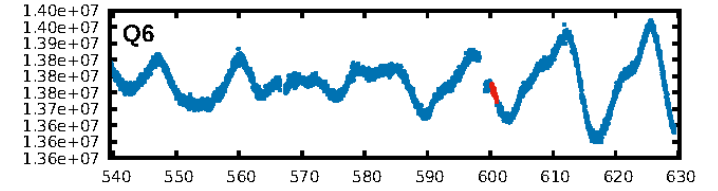
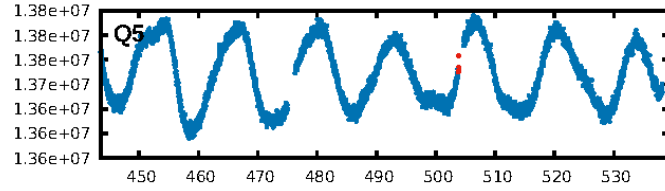
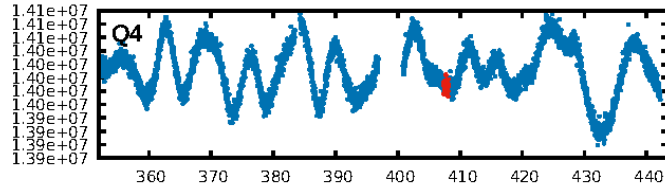
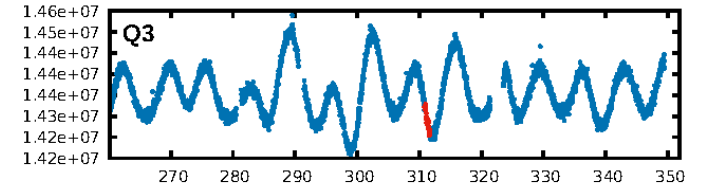
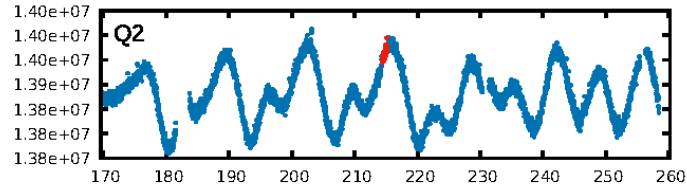
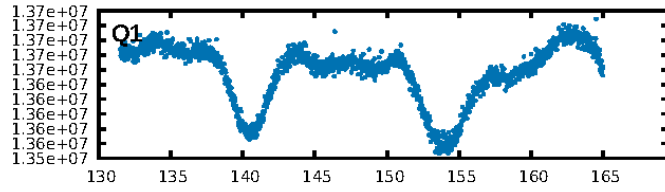
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [46.03 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 14.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.79e-12
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -1.193
Centroid-sig: 91.3%
Centroid-so: 0.384 arcsec [0.43 σ]
OotOffset-rm: 0.990 arcsec [1.22 σ]
OotOffset-st: 2/1/1/2 [6]
KicOffset-rm: 1.080 arcsec [1.30 σ]
KicOffset-st: 2/1/1/2 [6]
DiffImageQuality-fgm: 0.17 [1/6]
DiffImageOverlap-fno: 0.00 [0/7]

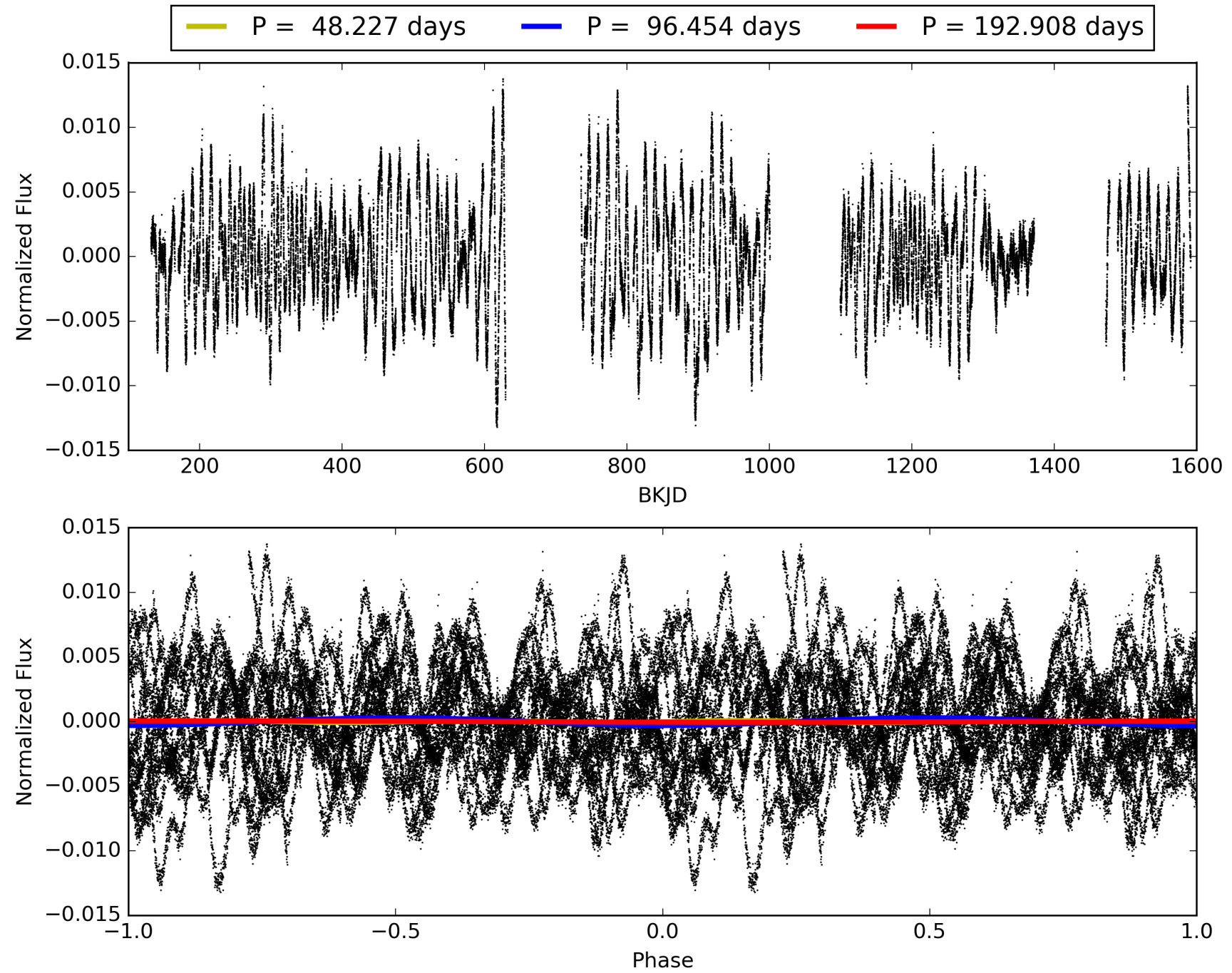
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:55:34 Z

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

TCE 009966915-03, PDC Light Curves

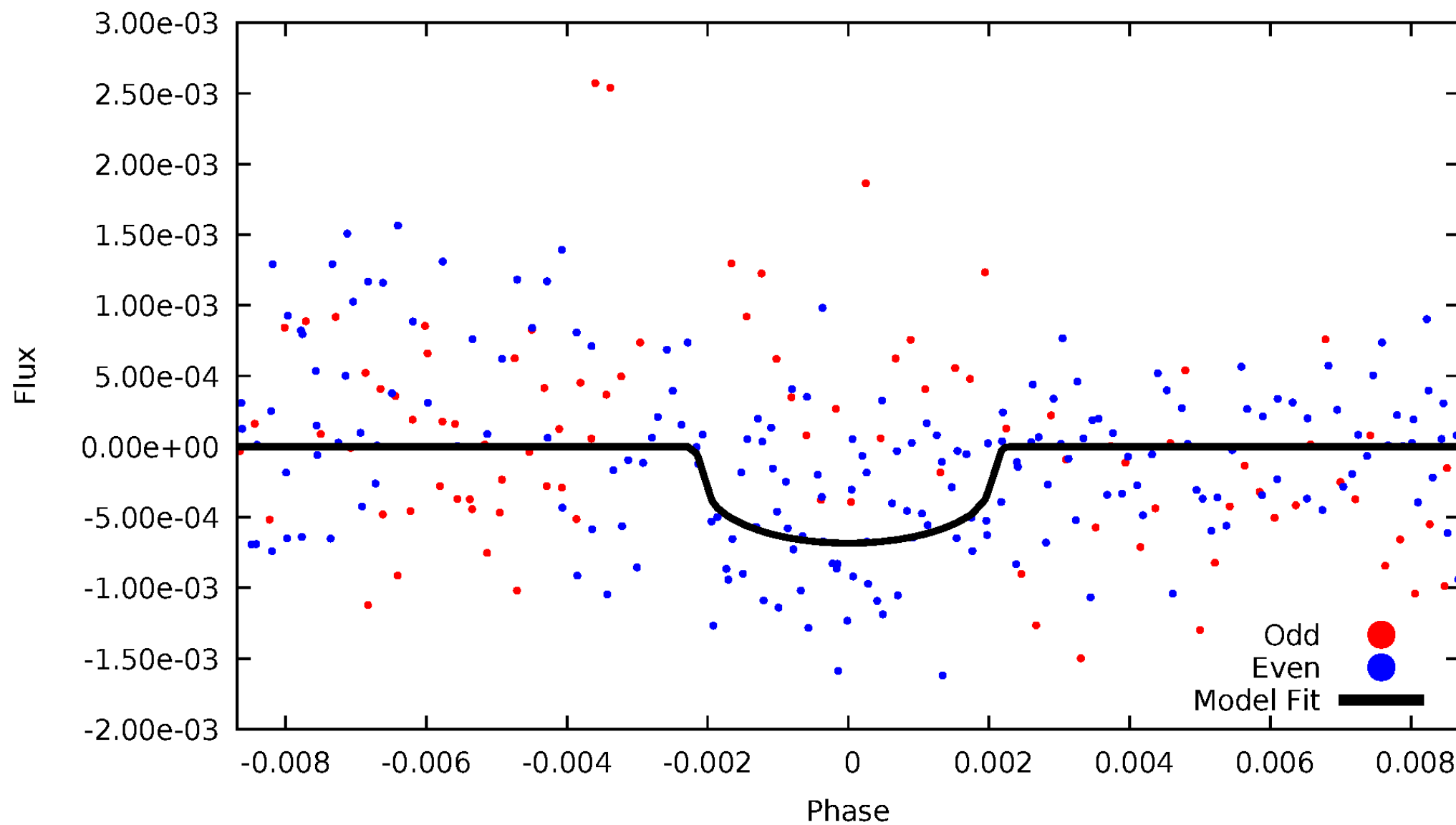


TCE 009966915-03



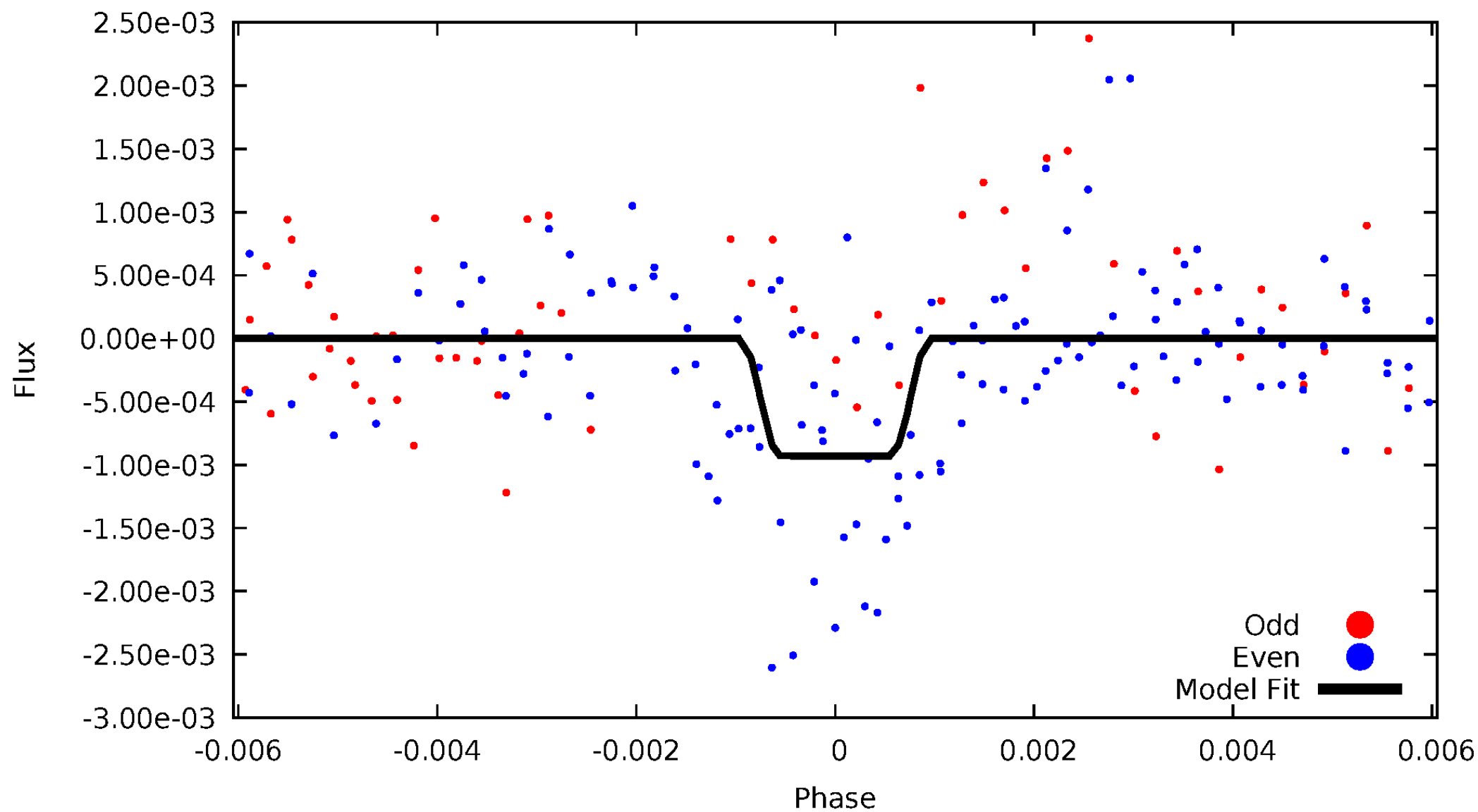
DV Odd/Even

TCE 009966915-03



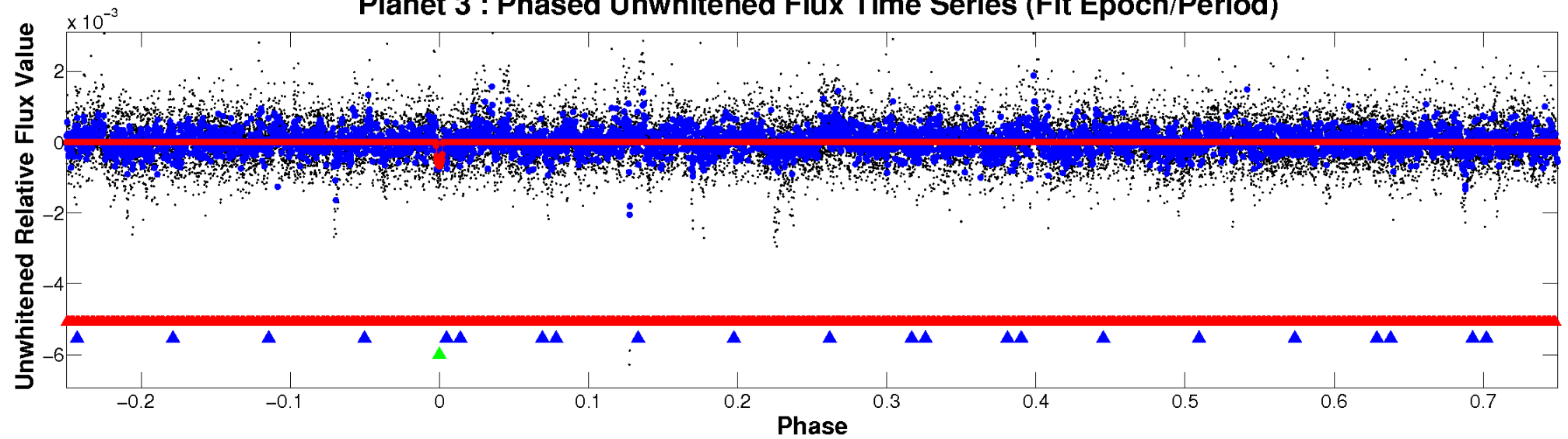
ALT Odd/Even

TCE 009966915-03

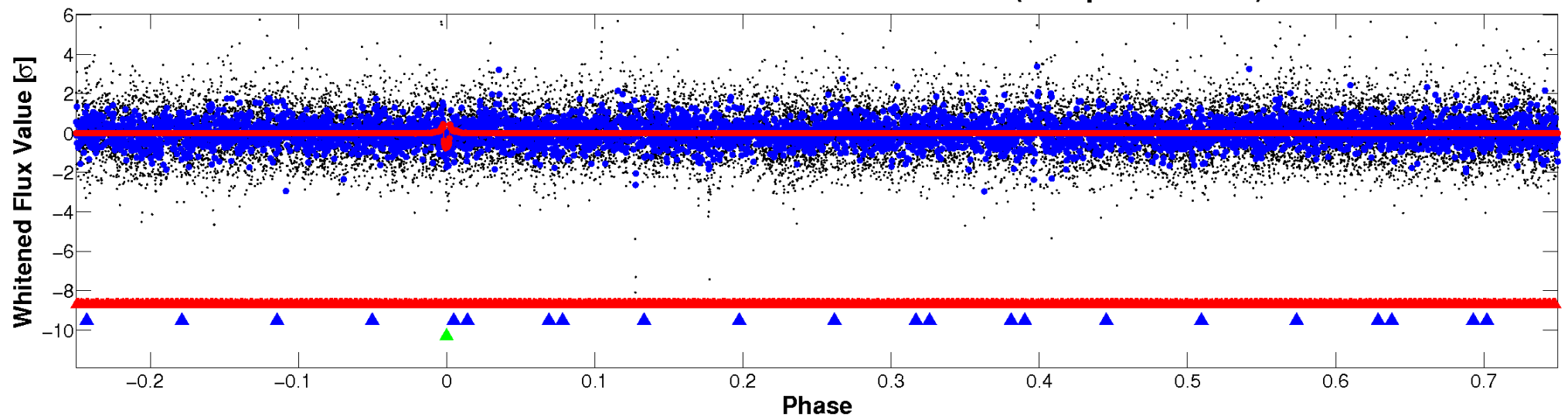


Non-Whitened Vs. Whitened Light Curve

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

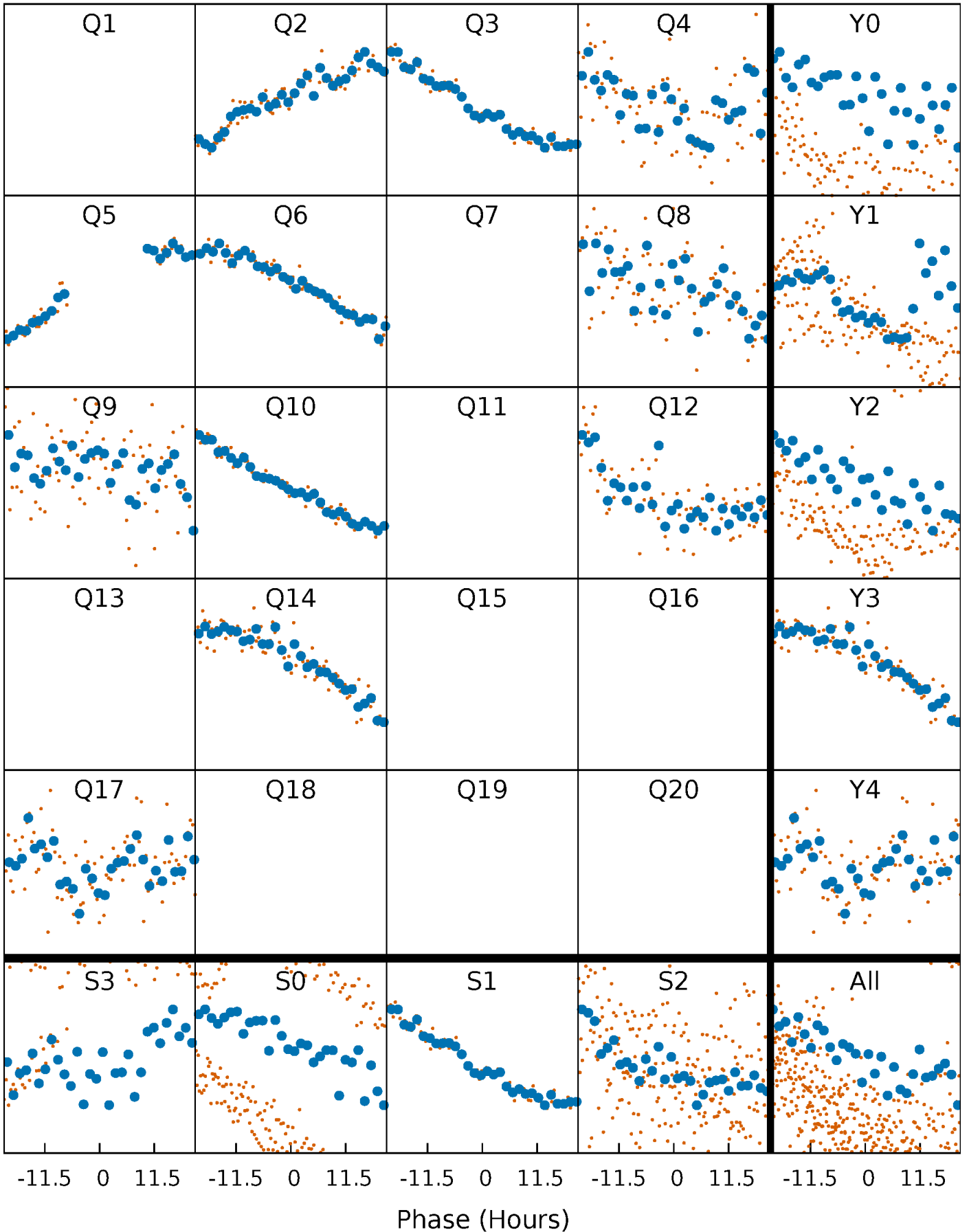


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



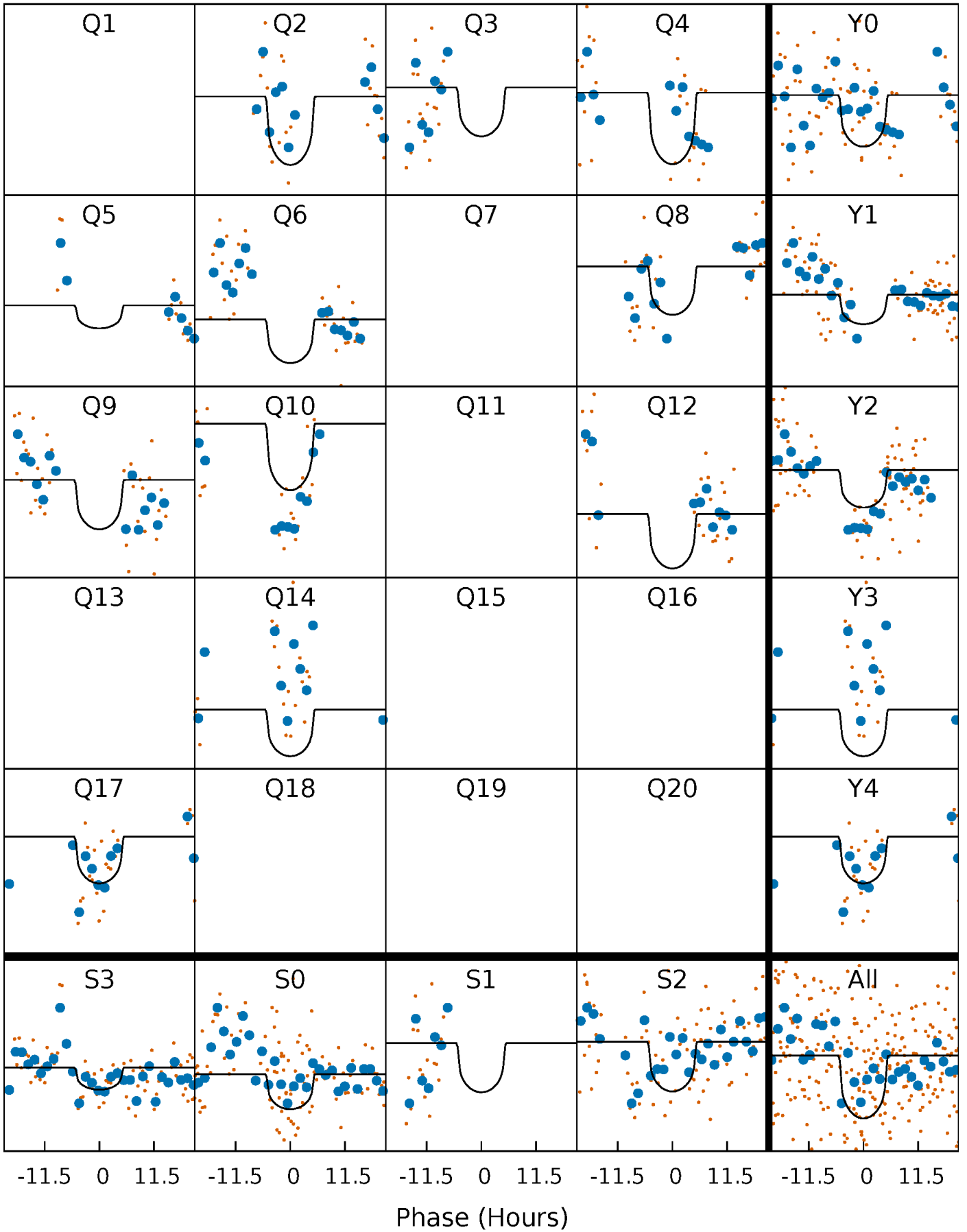
PDC Quarter-Phased Transit Curves

TCE 009966915-03 P= 96.453997 Days $T_0=214.817376$ (BKJD)



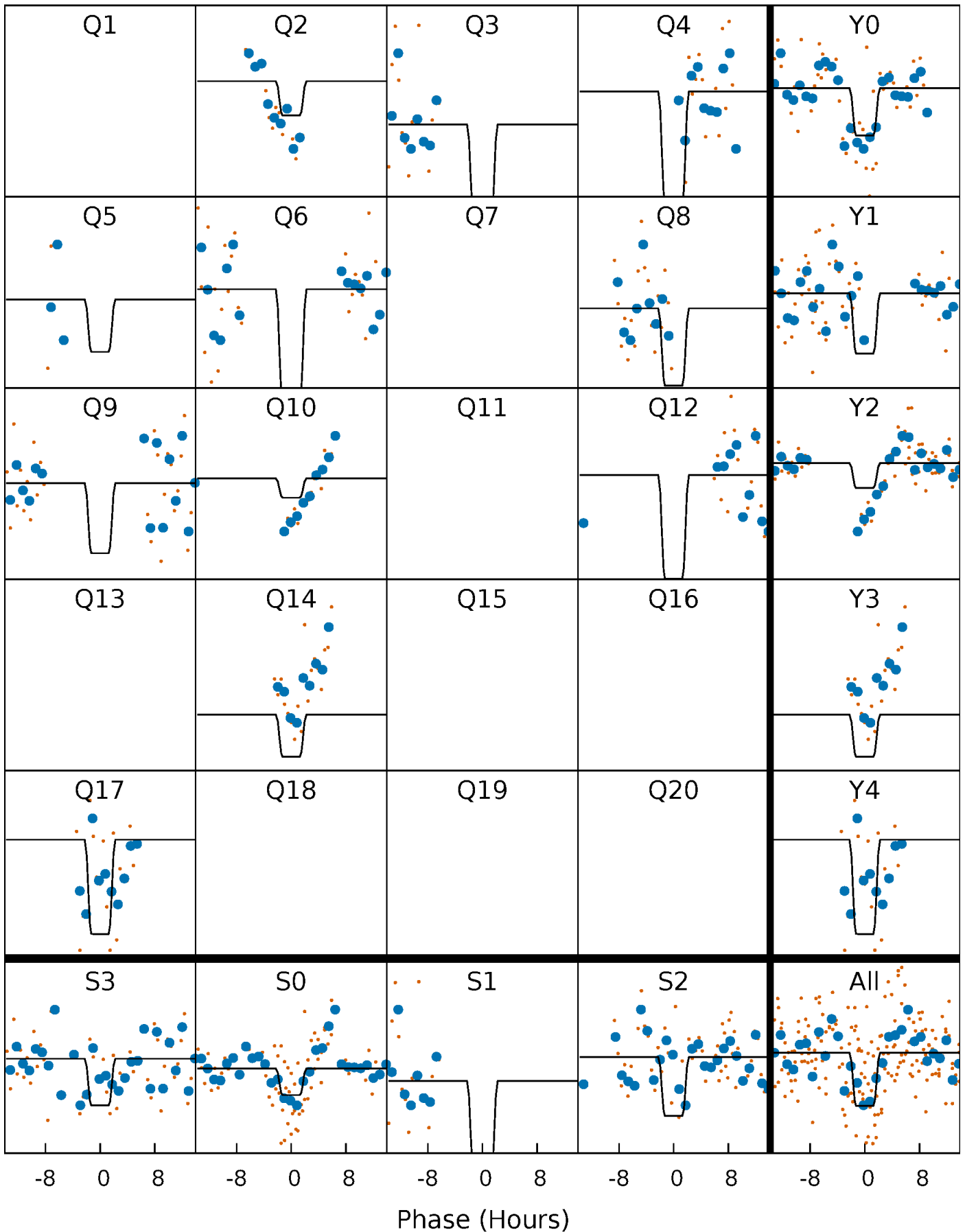
DV Quarter-Phased Transit Curves

TCE 009966915-03 P= 96.453997 Days $T_0=214.817376$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

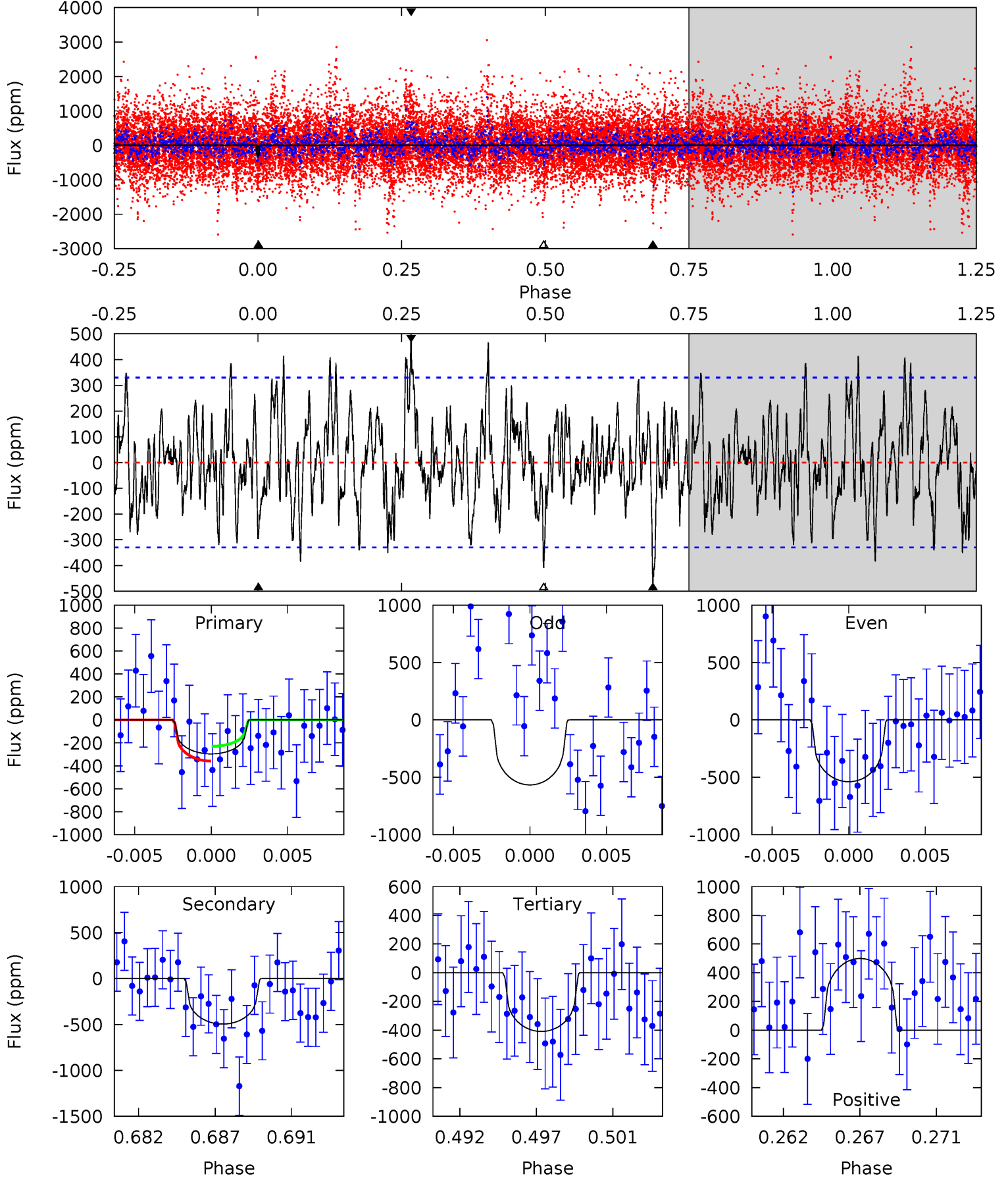
TCE 009966915-03 P= 96.452741 Days $T_0=214.772679$ (BKJD)



DV Model-Shift Uniqueness Test

009966915-03, P = 96.453997 Days, E = 118.363379 Days

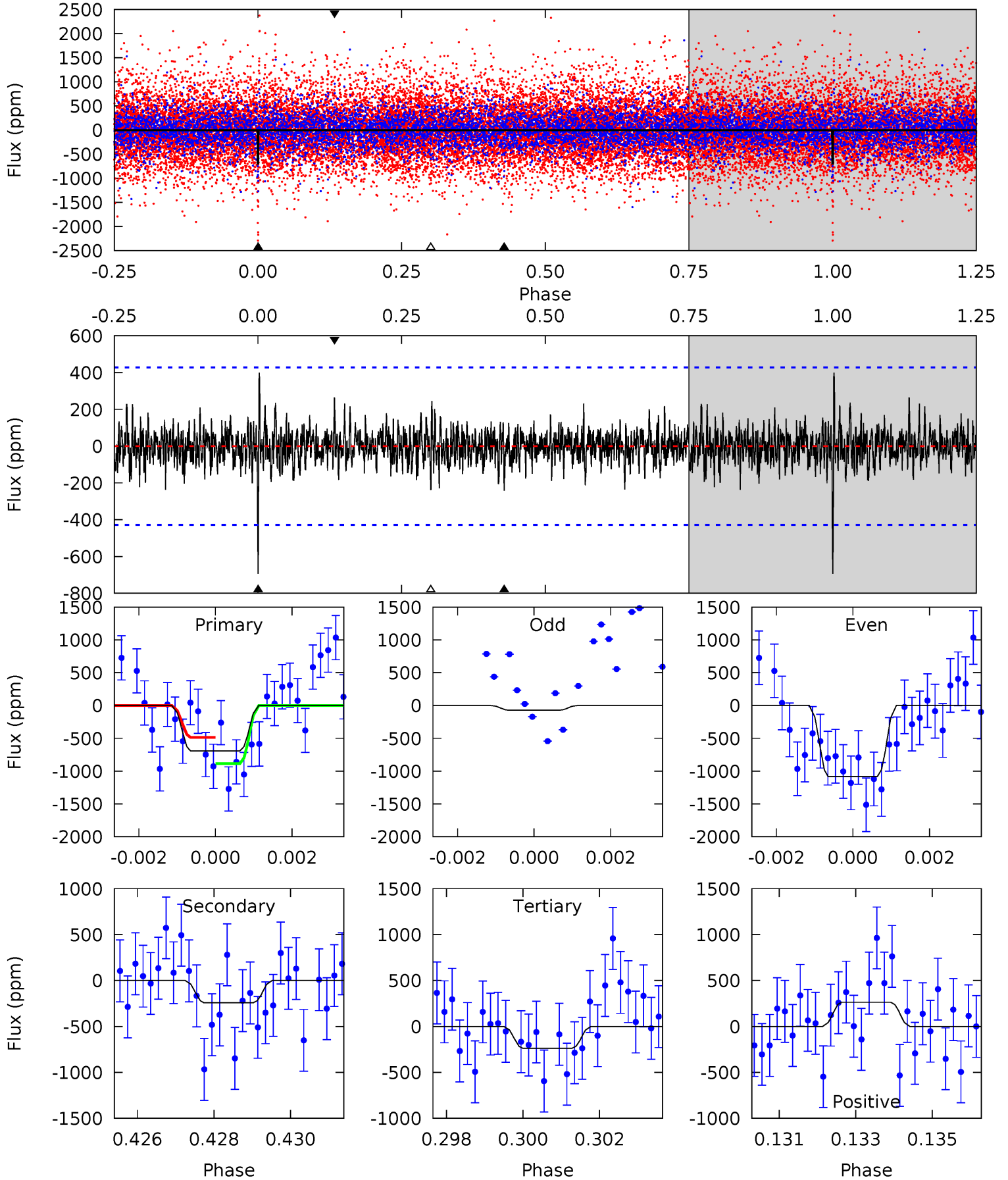
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.66	7.79	6.42	7.84	5.18	2.84	2.22	-1.77	-3.18	1.37	-0.05	0.18	1.15	0.50	1.01



Alt Model-Shift Uniqueness Test

009966915-03, P = 96.452741 Days, E = 118.319938 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.67	3.03	2.98	3.29	5.36	3.14	0.92	5.70	5.38	0.06	-0.26	5.37	2.67	0.37	2.50



Stellar Parameters For KIC 009966915

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4859^{+145}_{-145}	$4.542^{+0.045}_{-0.045}$	$0.560^{+0.050}_{-0.300}$	$0.817^{+0.049}_{-0.060}$	$0.849^{+0.036}_{-0.057}$	$2.192^{+0.415}_{-0.317}$
	+3%/-3%	+1%/-1%	+9%/-54%	+6%/-7%	+4%/-7%	+19%/-14%
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 009966915-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-496 ± 64	$2.40^{+1.61}_{-1.39}$	434^{+14}_{-15}	4506^{+2101}_{-792}	7007^{+32364}_{-4473}
Alt.	-242 ± 80	$2.93^{+1.61}_{-1.59}$	434^{+15}_{-15}	3664^{+1271}_{-517}	2258^{+9318}_{-1384}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

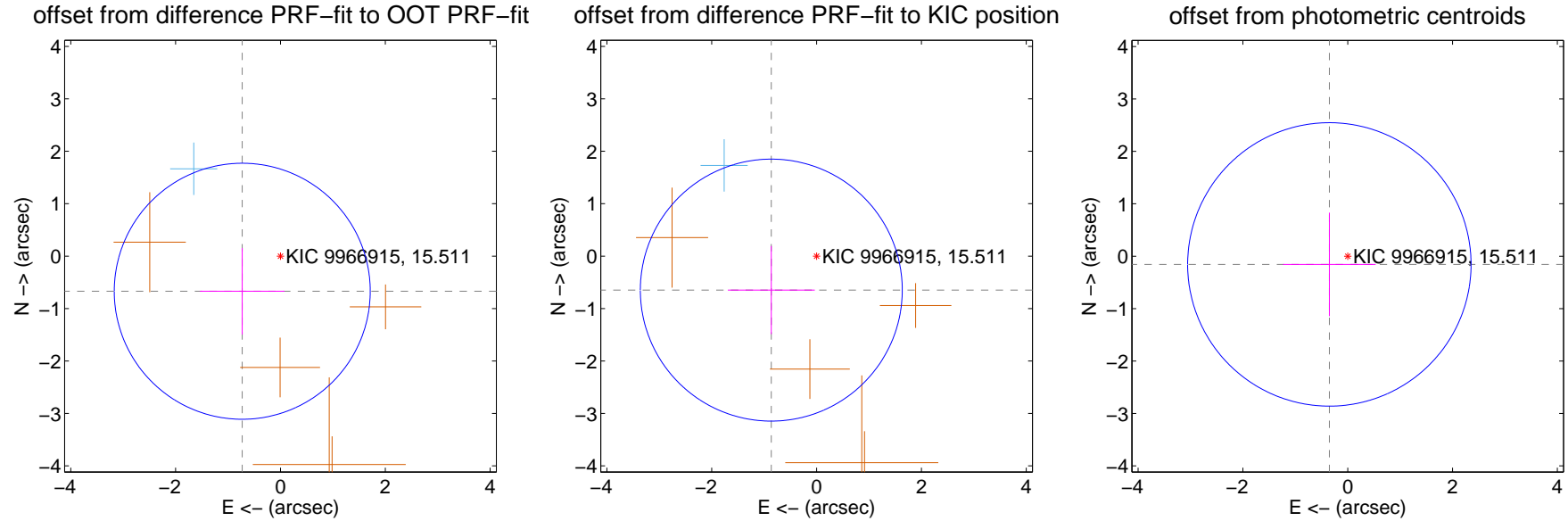
DV Centroid Data

Supplemental centroid analysis for 009966915-03. Kepler magnitude: 15.51. Transit SNR 6.22

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.990 ± 0.814	1.22	0.729 ± 0.805	-0.670 ± 0.824
PRF-fit source offset from KIC position	1.080 ± 0.833	1.30	0.864 ± 0.829	-0.648 ± 0.840
photometric centroid source offset	0.38 ± 0.90	0.43	0.35 ± 0.88	-0.16 ± 0.99



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.

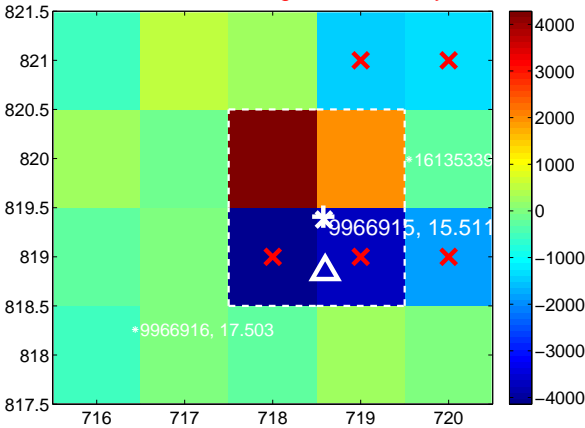
Q1 no difference image



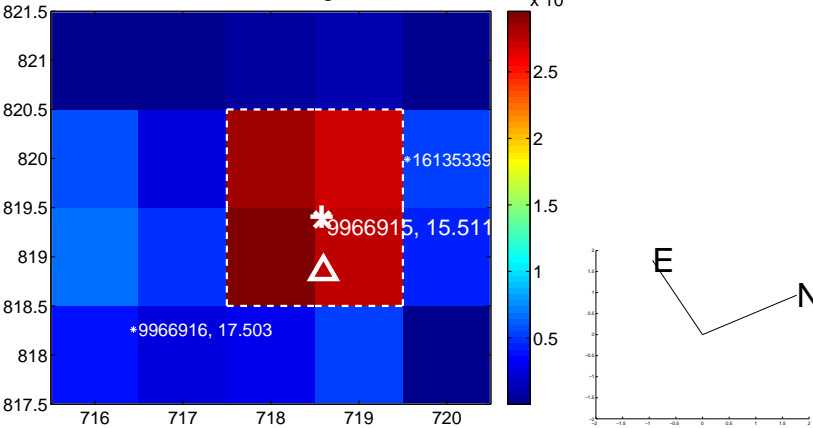
Q1 no OOT image



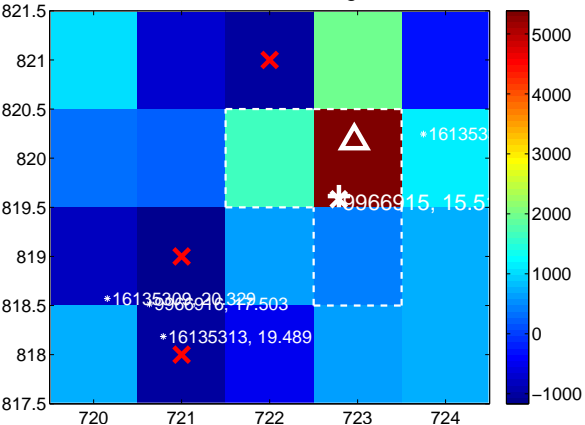
Q2 difference image. Poor Quality



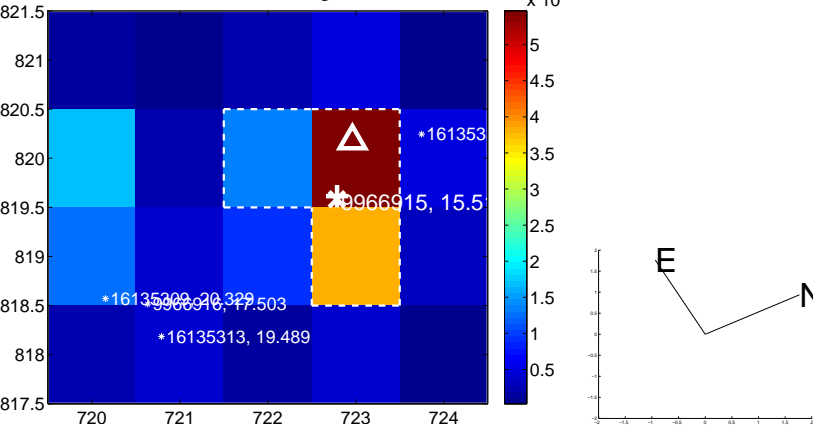
Q2 OOT image



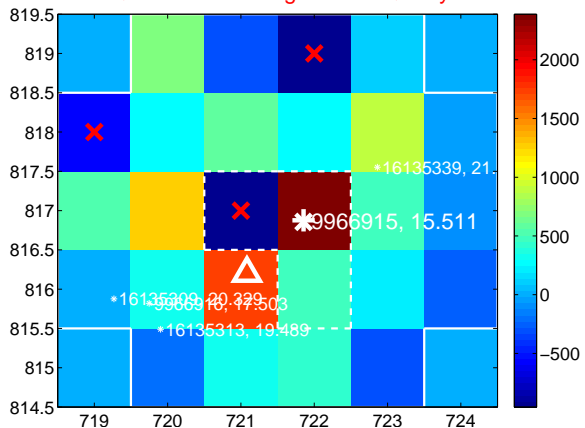
Q3 difference image



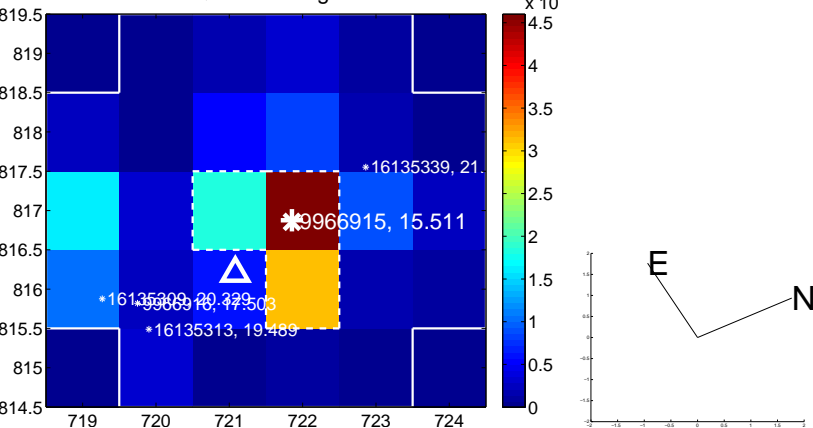
Q3 OOT image



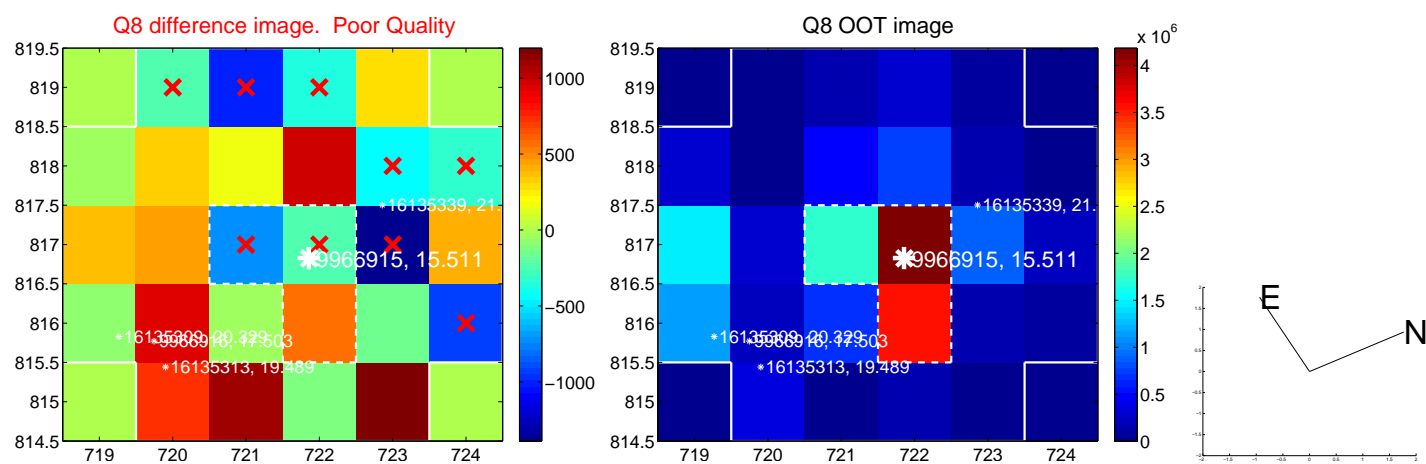
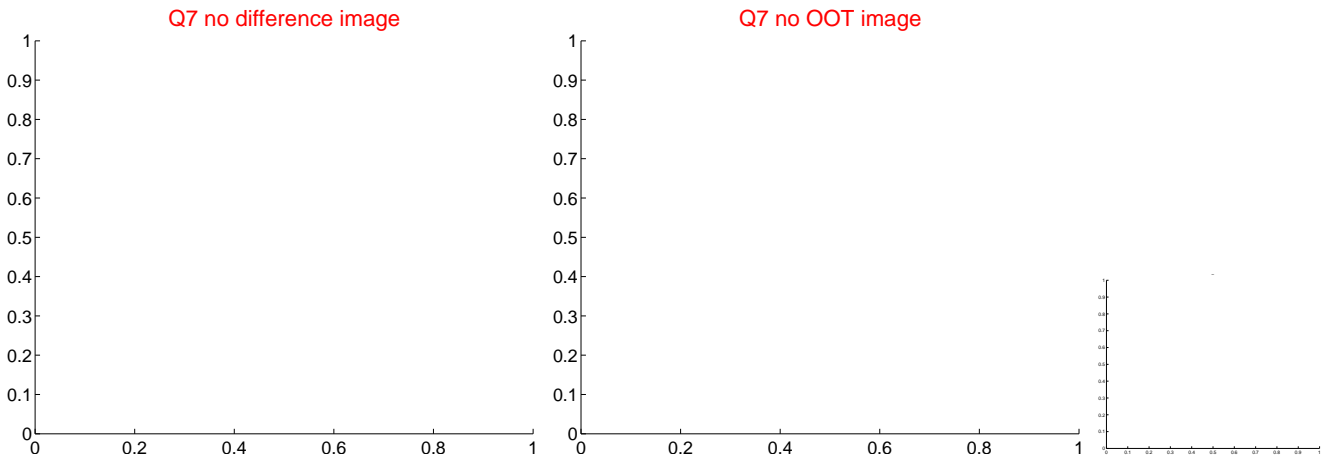
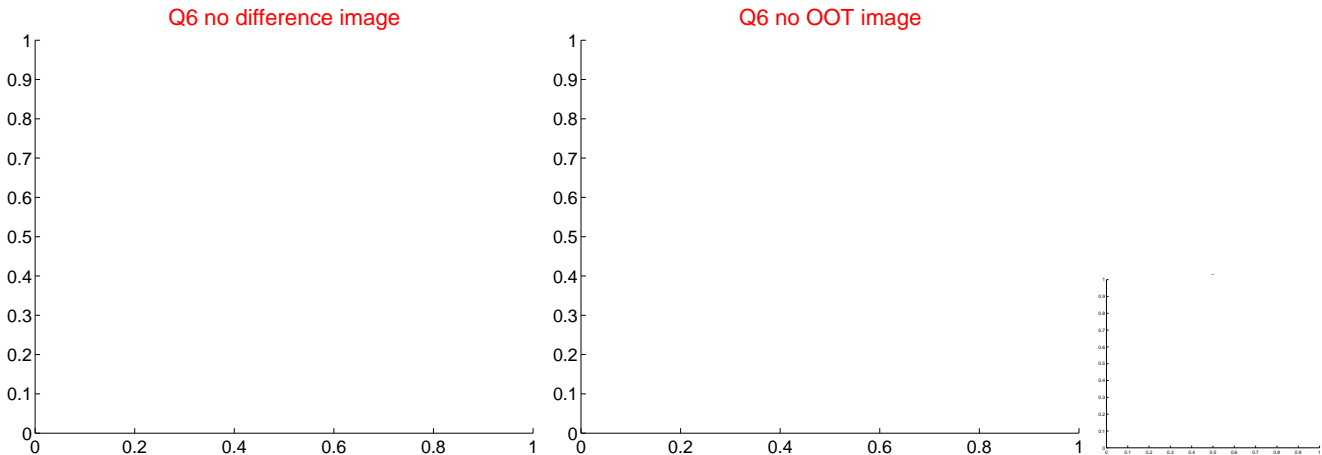
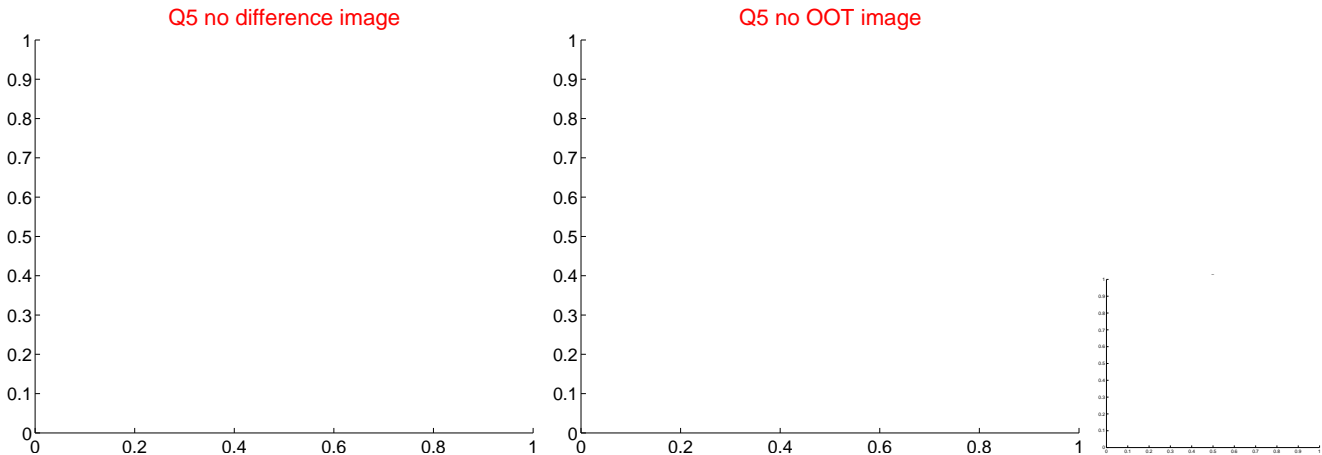
Q4 difference image. Poor Quality



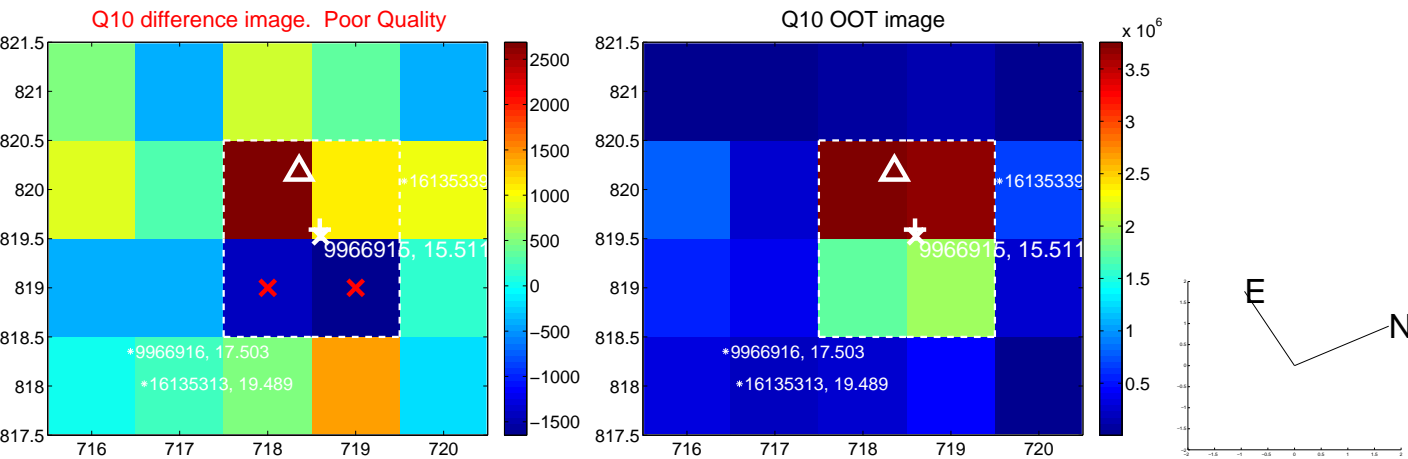
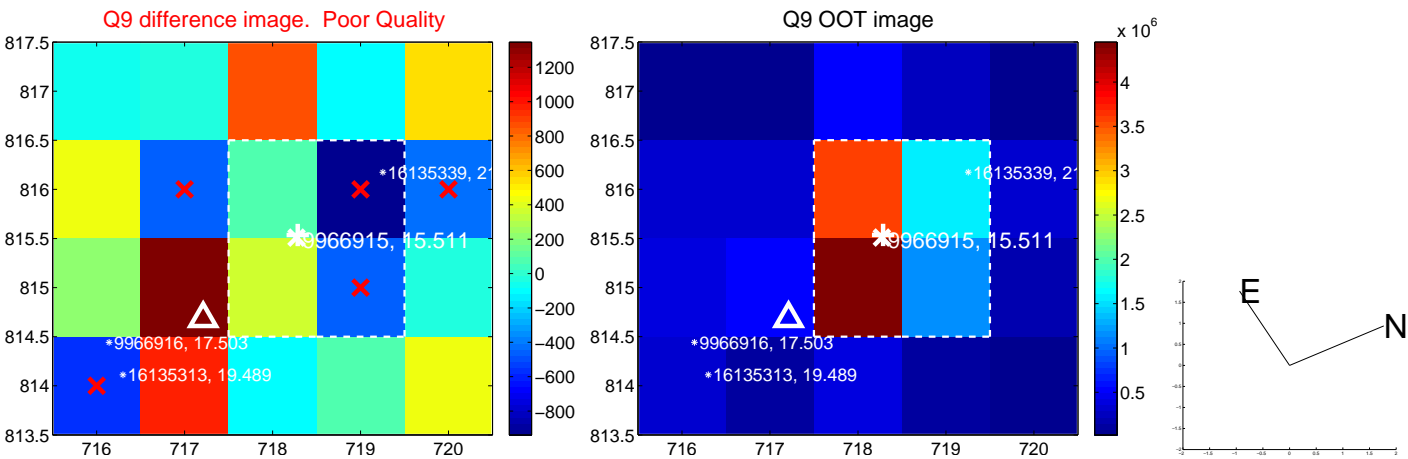
Q4 OOT image



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



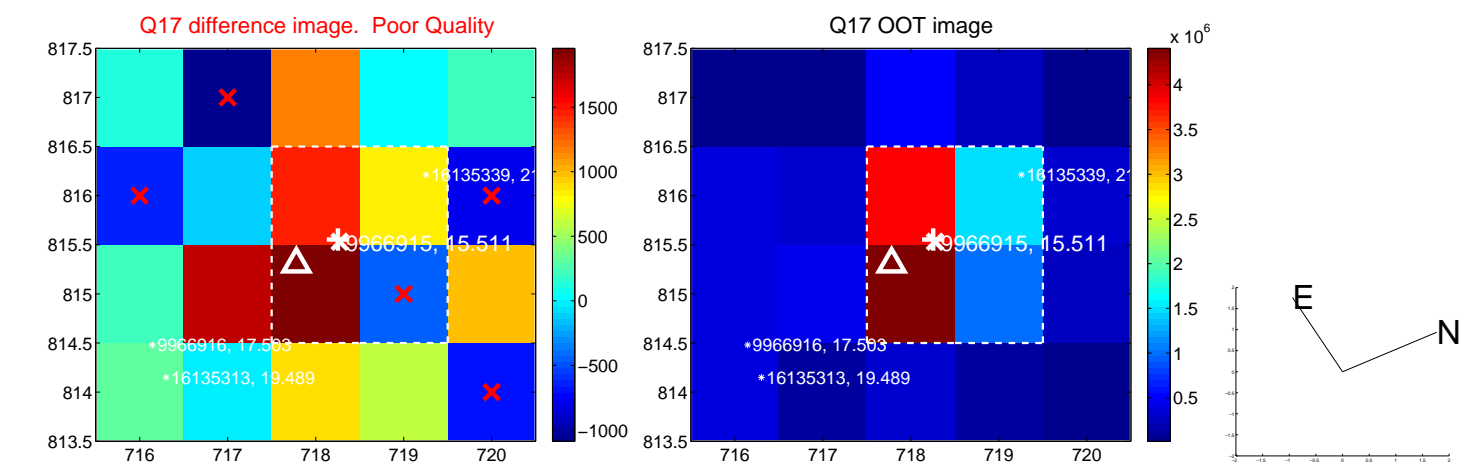
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



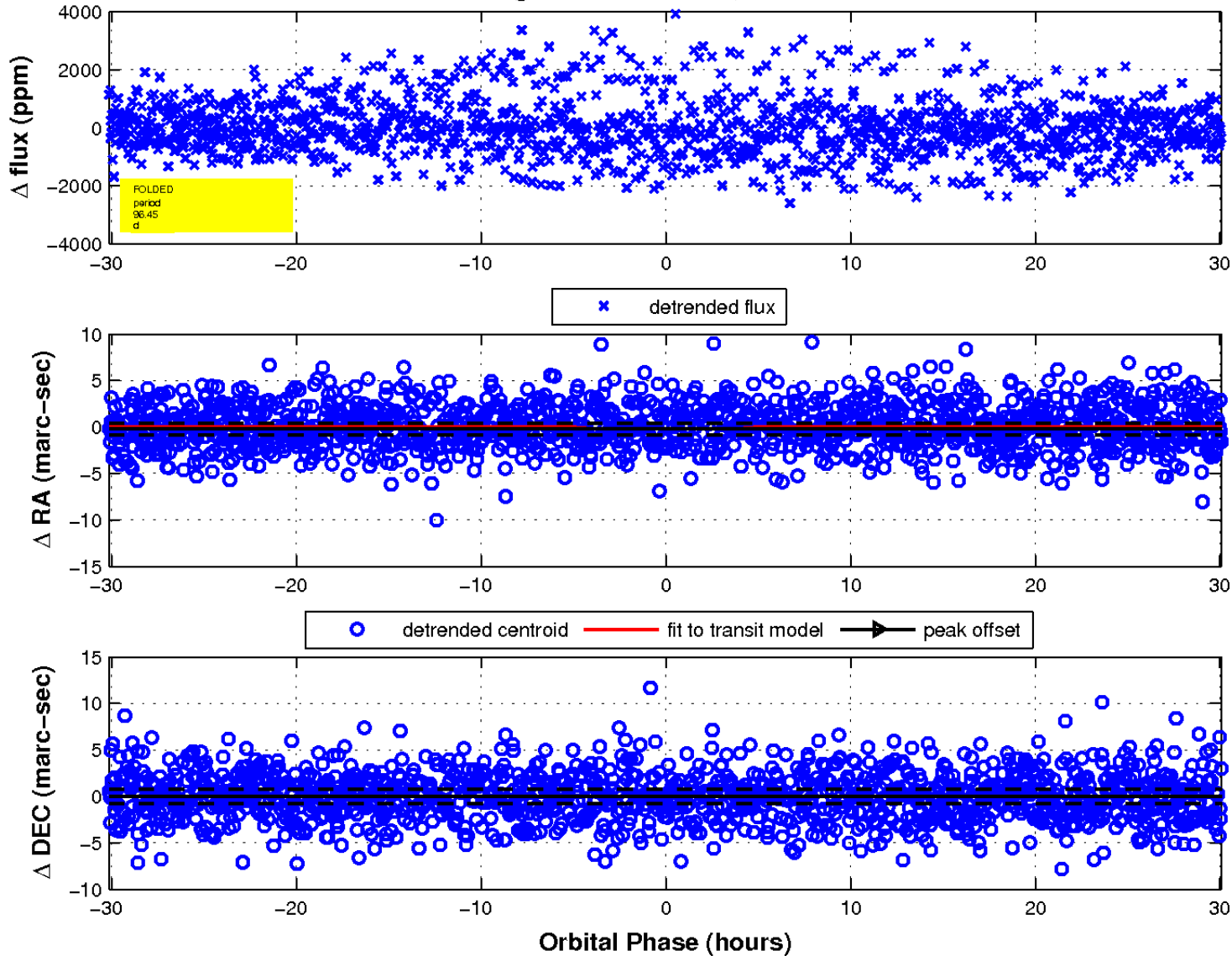
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

