

KIC 008646702

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})
008646702-01	OBS	No	4.201925	133.855493	7.7	15.653	8.4	8.1	1.21	6436	0.39	805.38
008646702-02	OBS	No	642.315750	216.444758	104.2	85.222	12.4	8.2	1.21	6436	1.29	0.98
008646702-03	OBS	No	8.404994	132.952738	18.4	42.474	9.6	11.1	1.21	6436	0.57	319.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008646702-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
008646702-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008646702-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

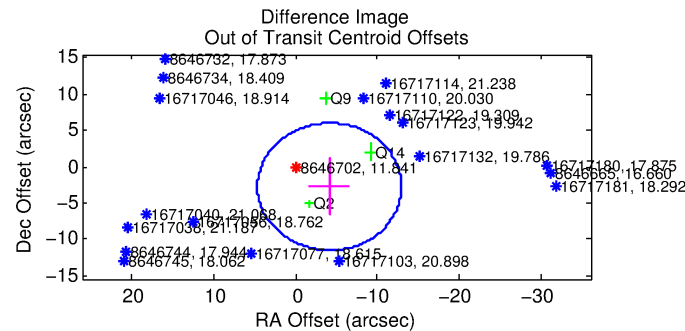
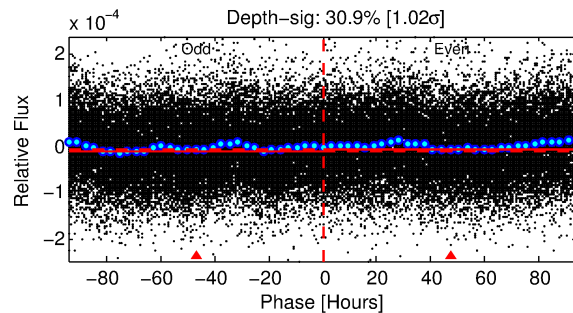
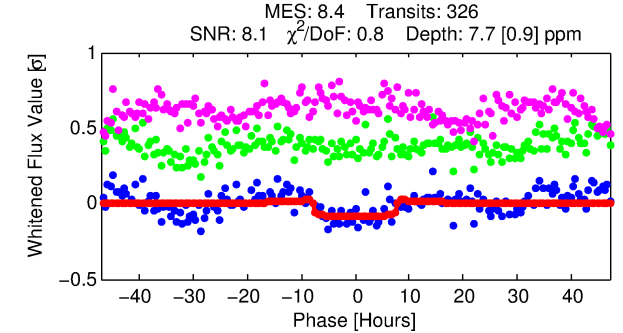
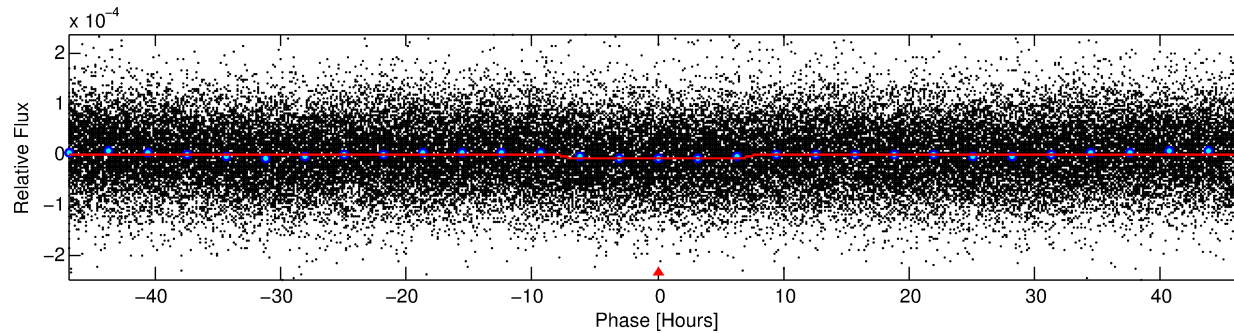
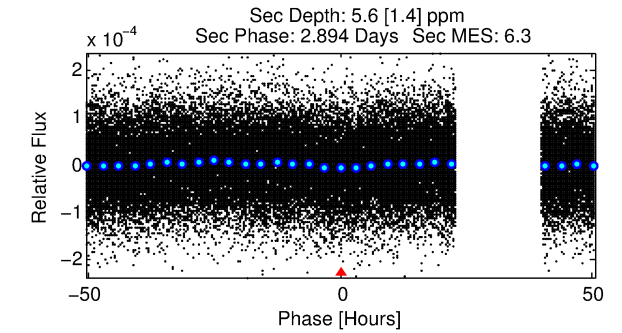
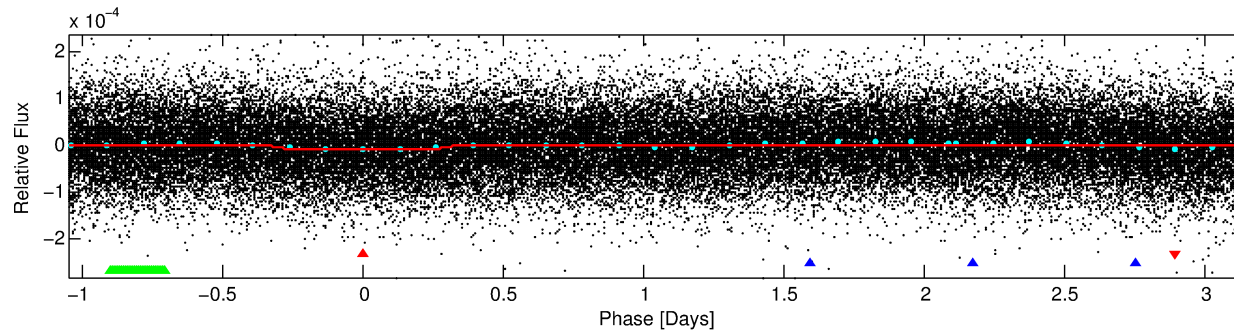
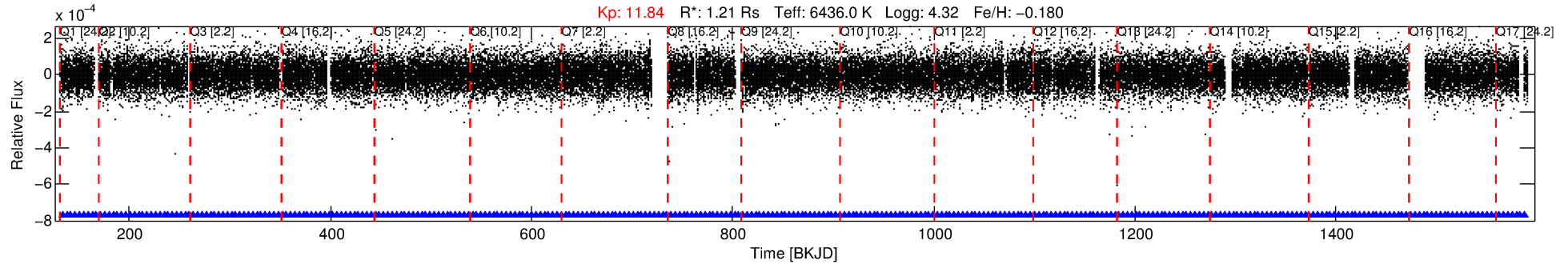
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008646702-01

No Significant Match Found

DV One-Page Summary

KIC: 8646702 Candidate: 1 of 3 Period: 4.202 d



DV Fit Results:

Period = 4.20193 [0.00009] d
Epoch = 133.8555 [0.0143] BKJD
 $R_p/R^* = 0.0029$ [0.0006]
 $a/R^* = 1.34$ [0.65]
 $b = 0.88$ [0.27]
Seff = 805.38 [225.40]
 $T_{eq} = 1358$ [95] K
 $R_p = 0.39$ [0.12] R_e
 $a = 0.0530$ [0.0095] AU
 $A_g = 57.42$ [30.65] [1.84 σ]
 $T_{eff} = 5781$ [695] K [6.31 σ]

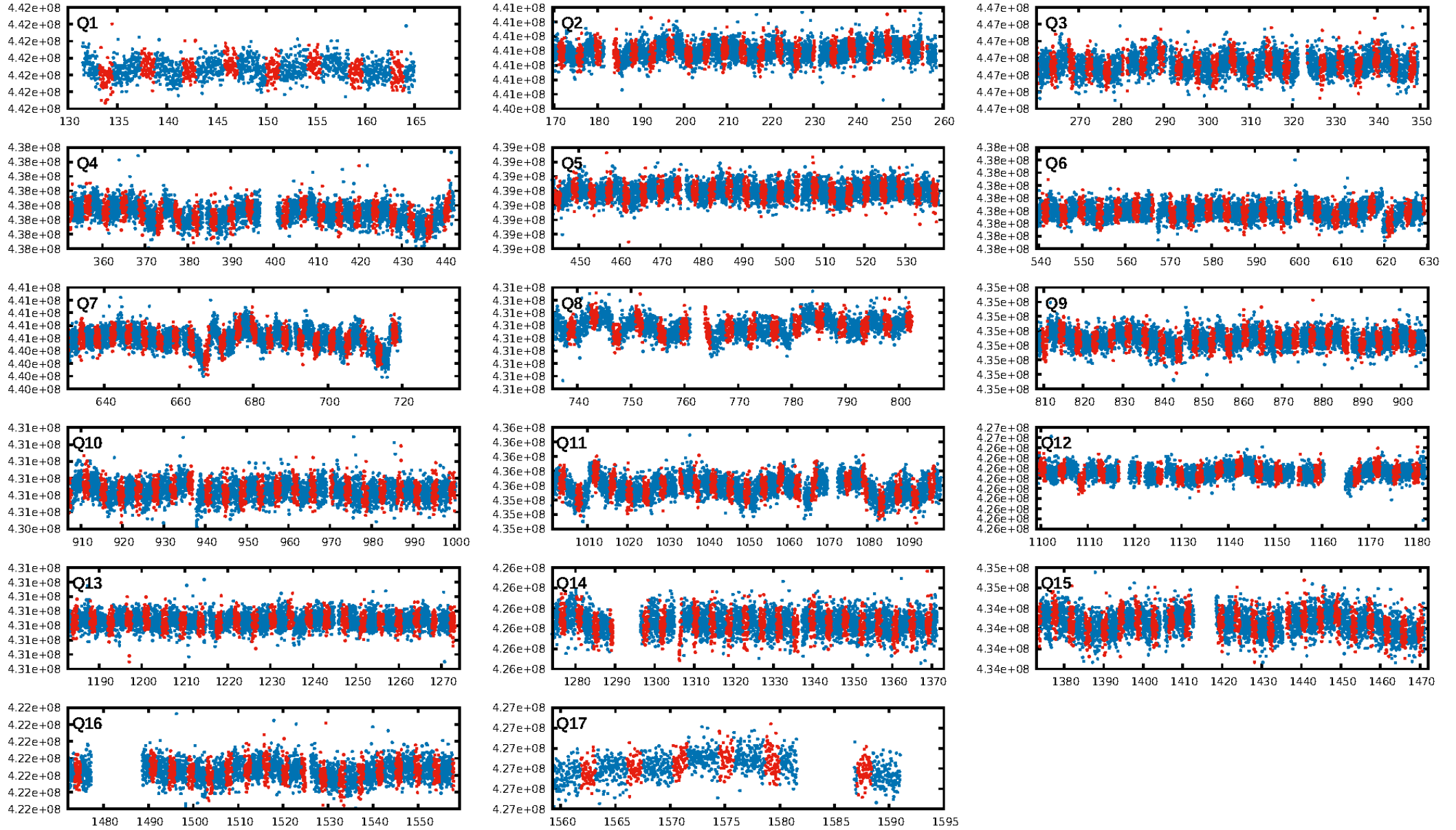
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 97.4% [2.23 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.39e-14
RollingBand-fgt: 1.00 [312/312]
GhostDiagnostic-chr: 1.401
Centroid-sig: 81.6%
Centroid-so: 1.028 arcsec [0.45 σ]
OotOffset-rm: 4.983 arcsec [1.70 σ]
KicOffset-rm: 4.971 arcsec [1.69 σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [17/17]

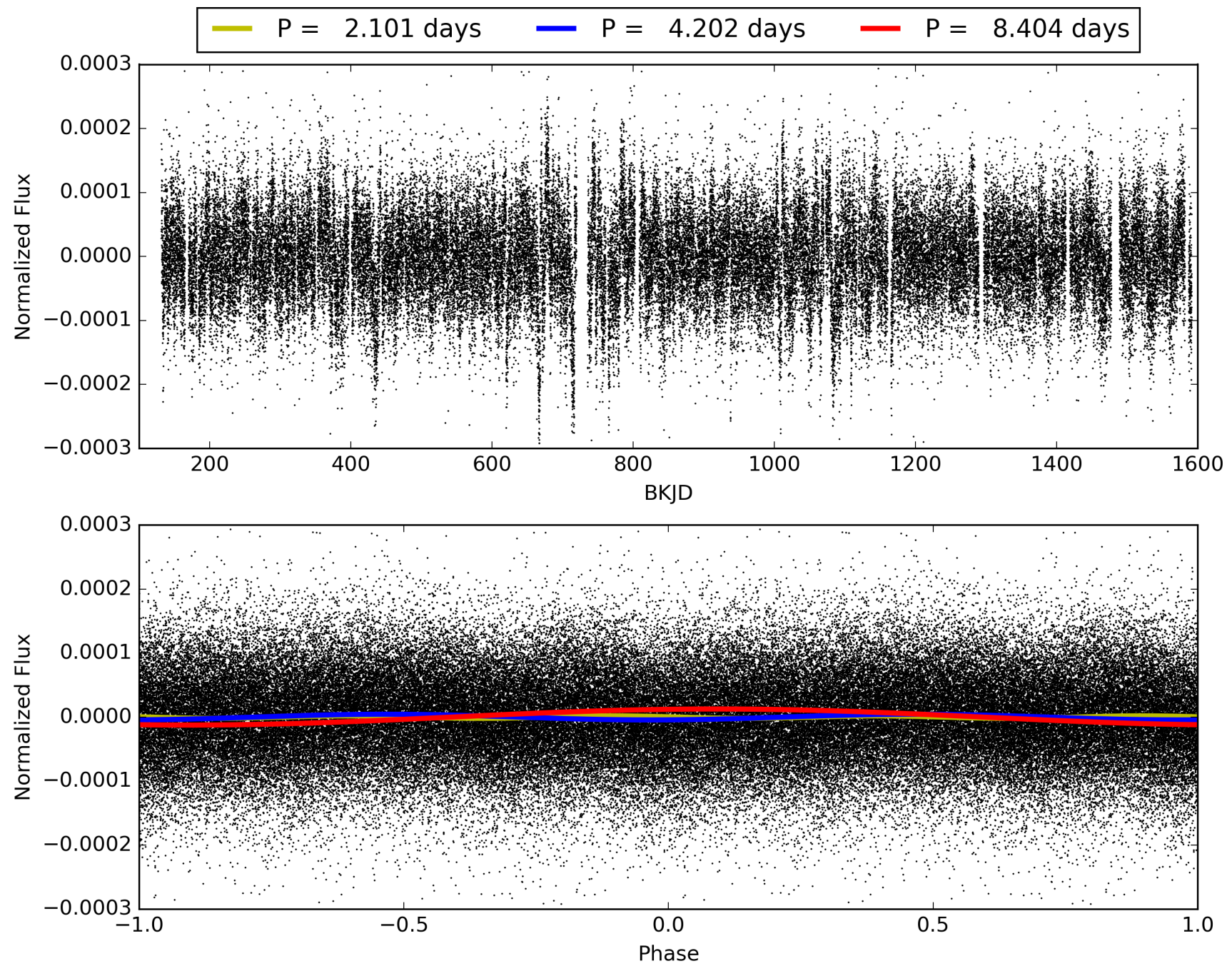
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008646702-01, PDC Light Curves

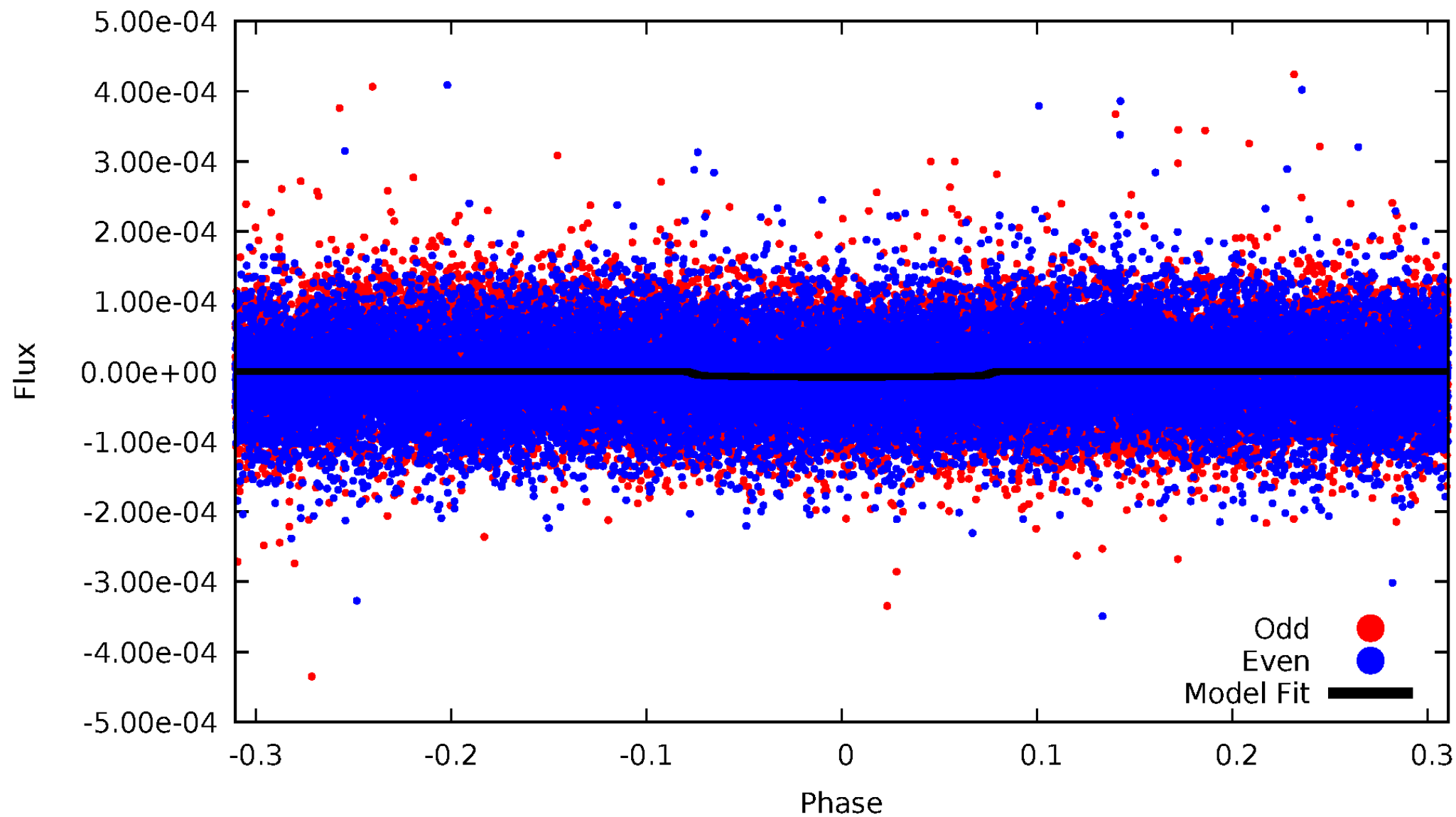


TCE 008646702-01



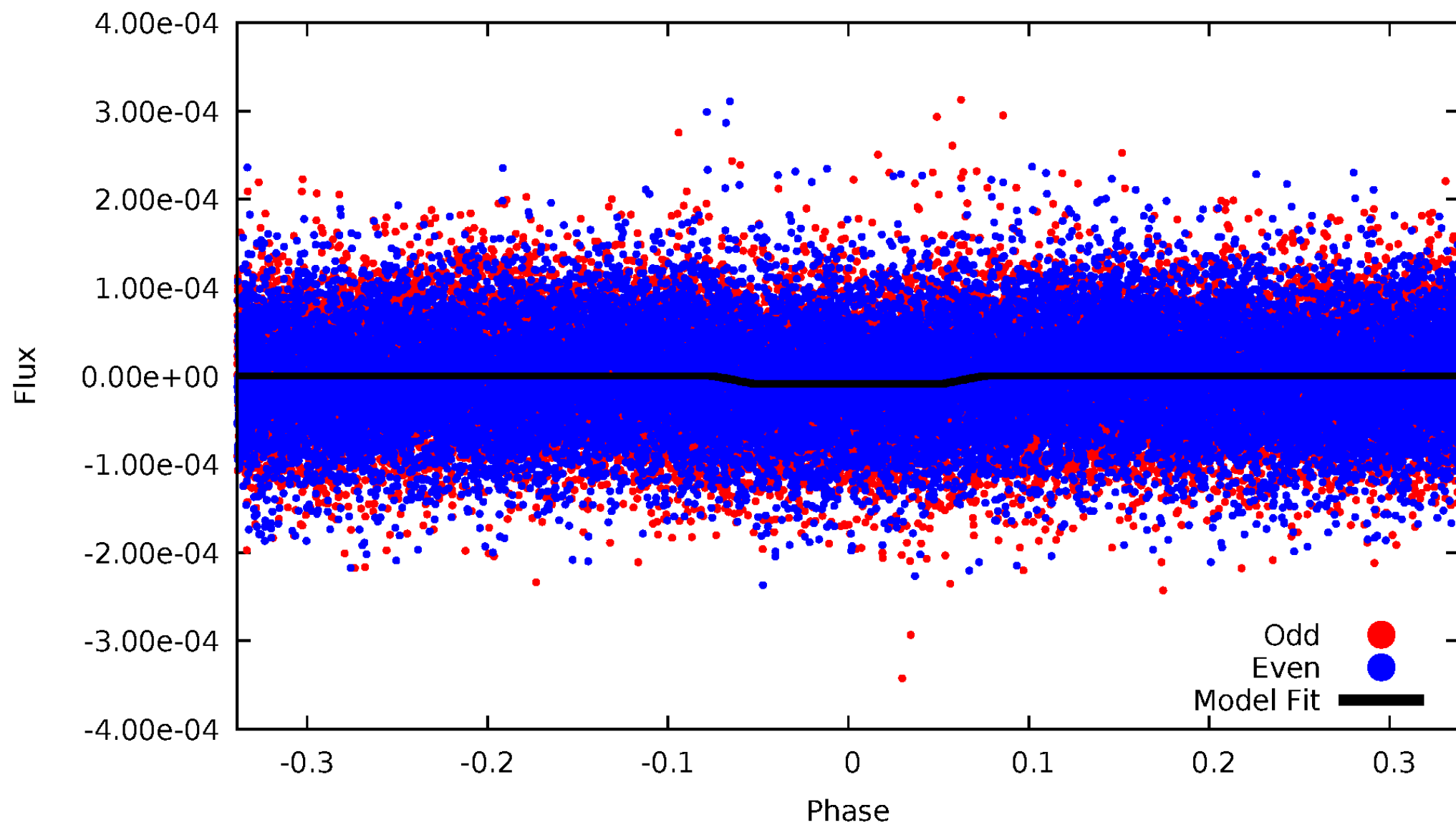
DV Odd/Even

TCE 008646702-01

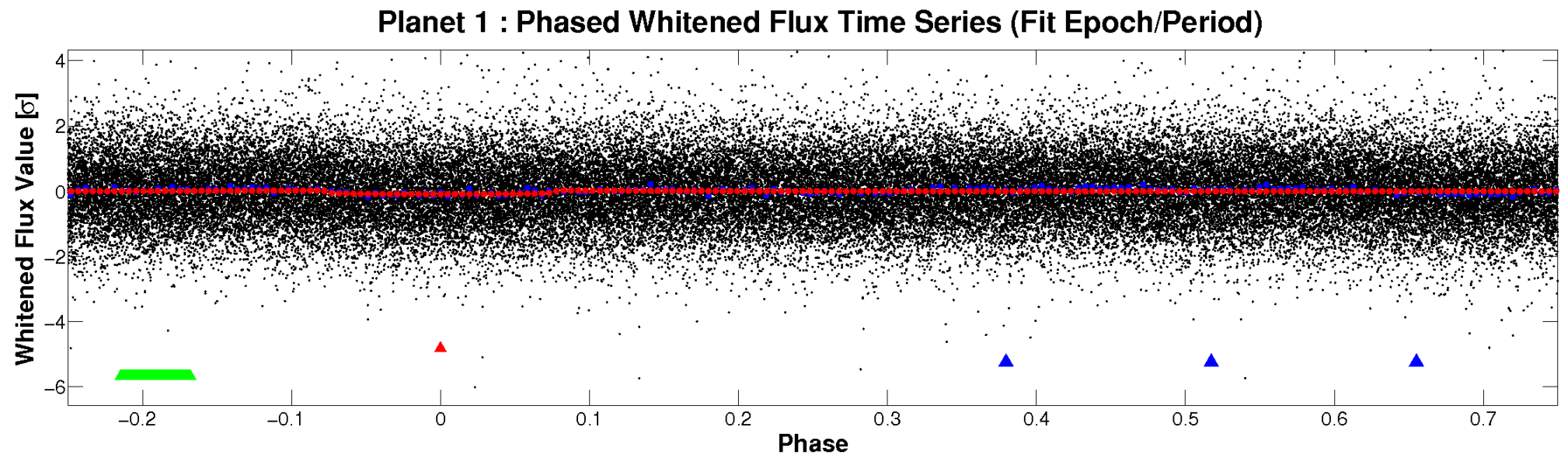
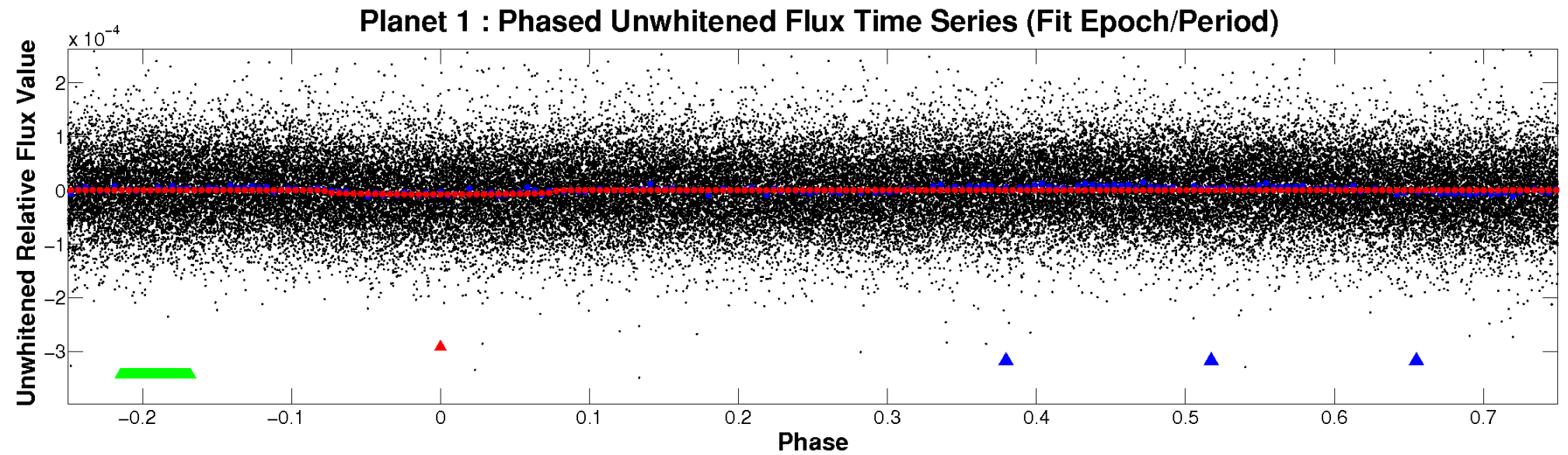


ALT Odd/Even

TCE 008646702-01

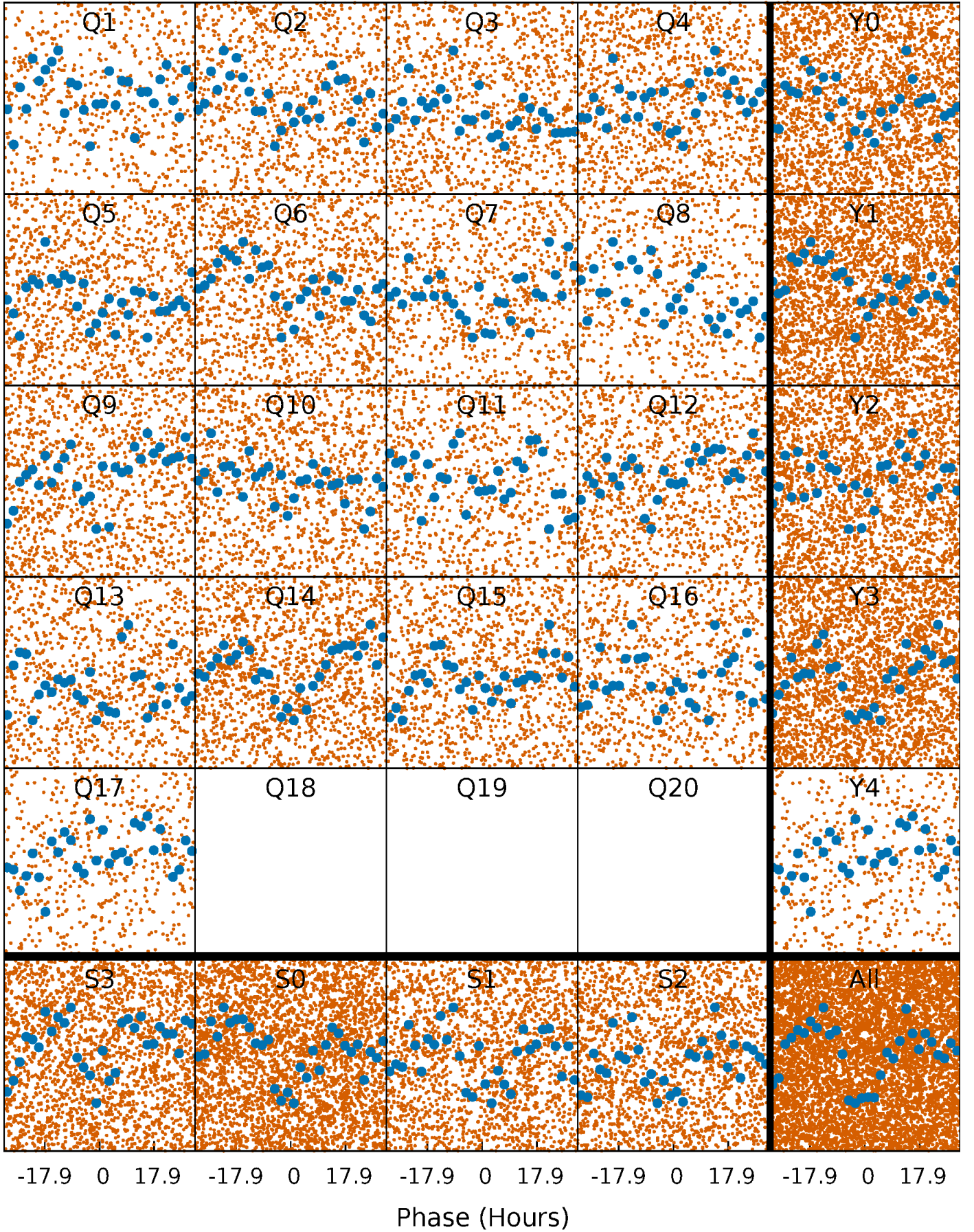


Non-Whitened Vs. Whitened Light Curve



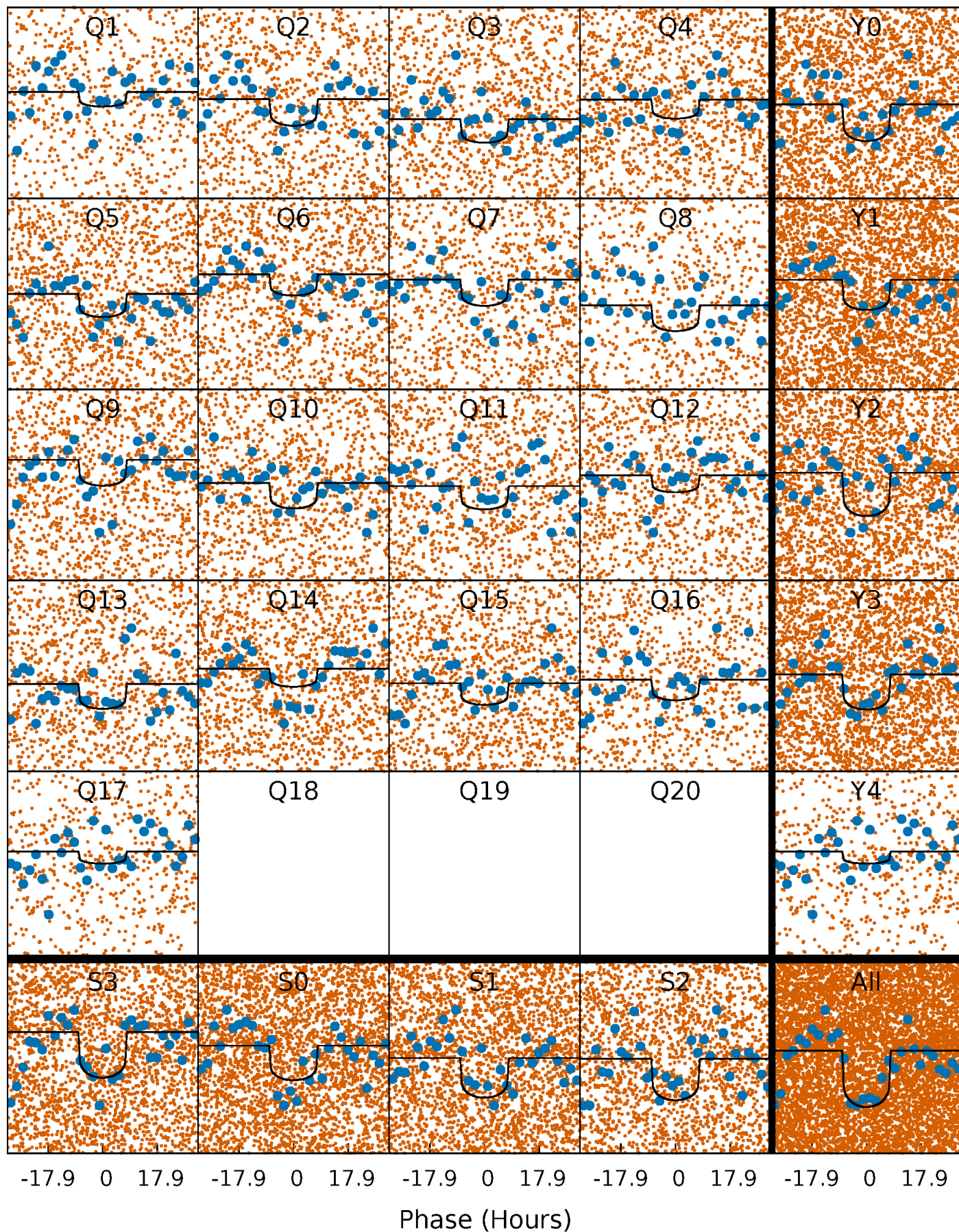
PDC Quarter-Phased Transit Curves

TCE 008646702-01 P= 4.201925 Days $T_0=133.855493$ (BKJD)



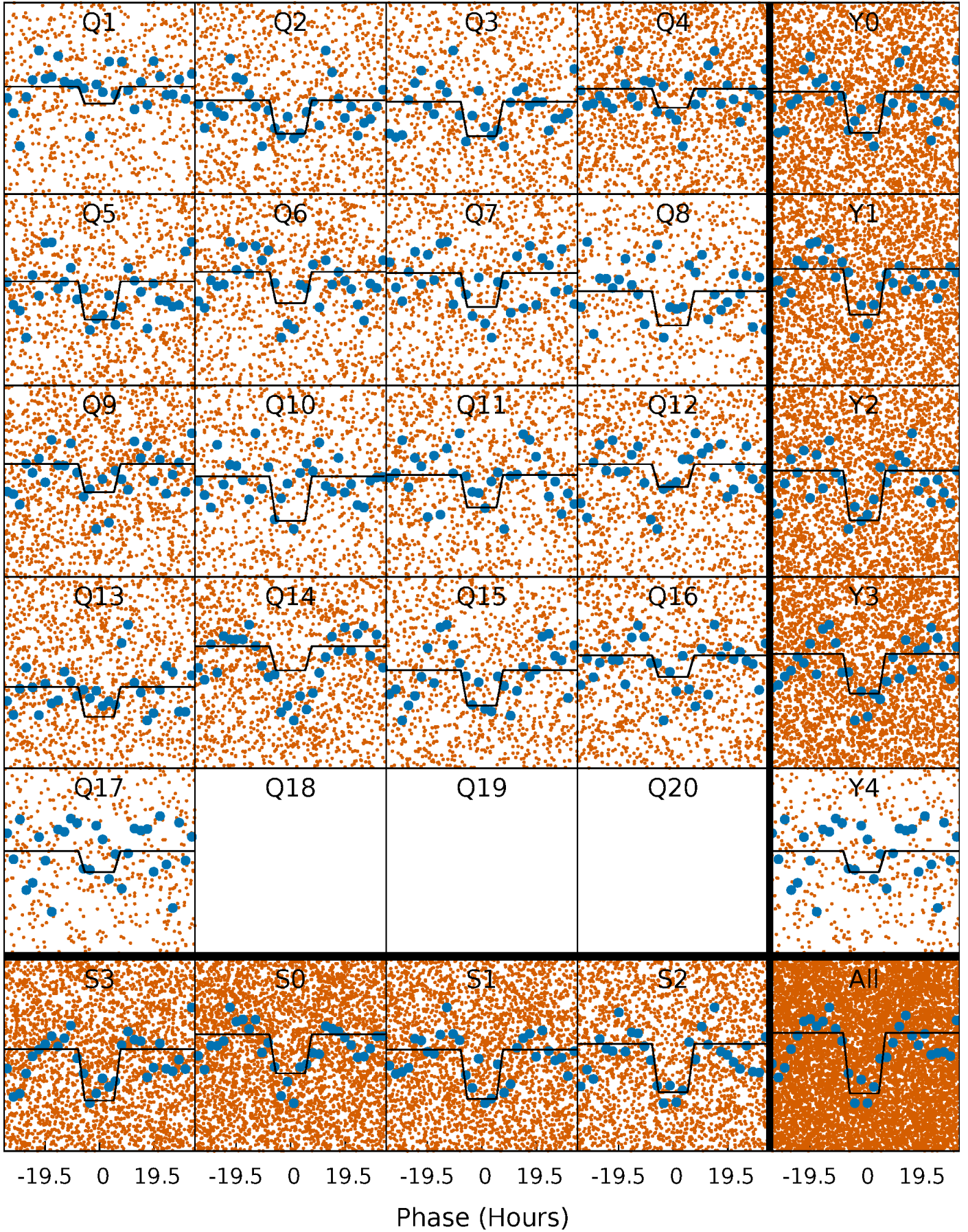
DV Quarter-Phased Transit Curves

TCE 008646702-01 P= 4.201925 Days $T_0=133.855493$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

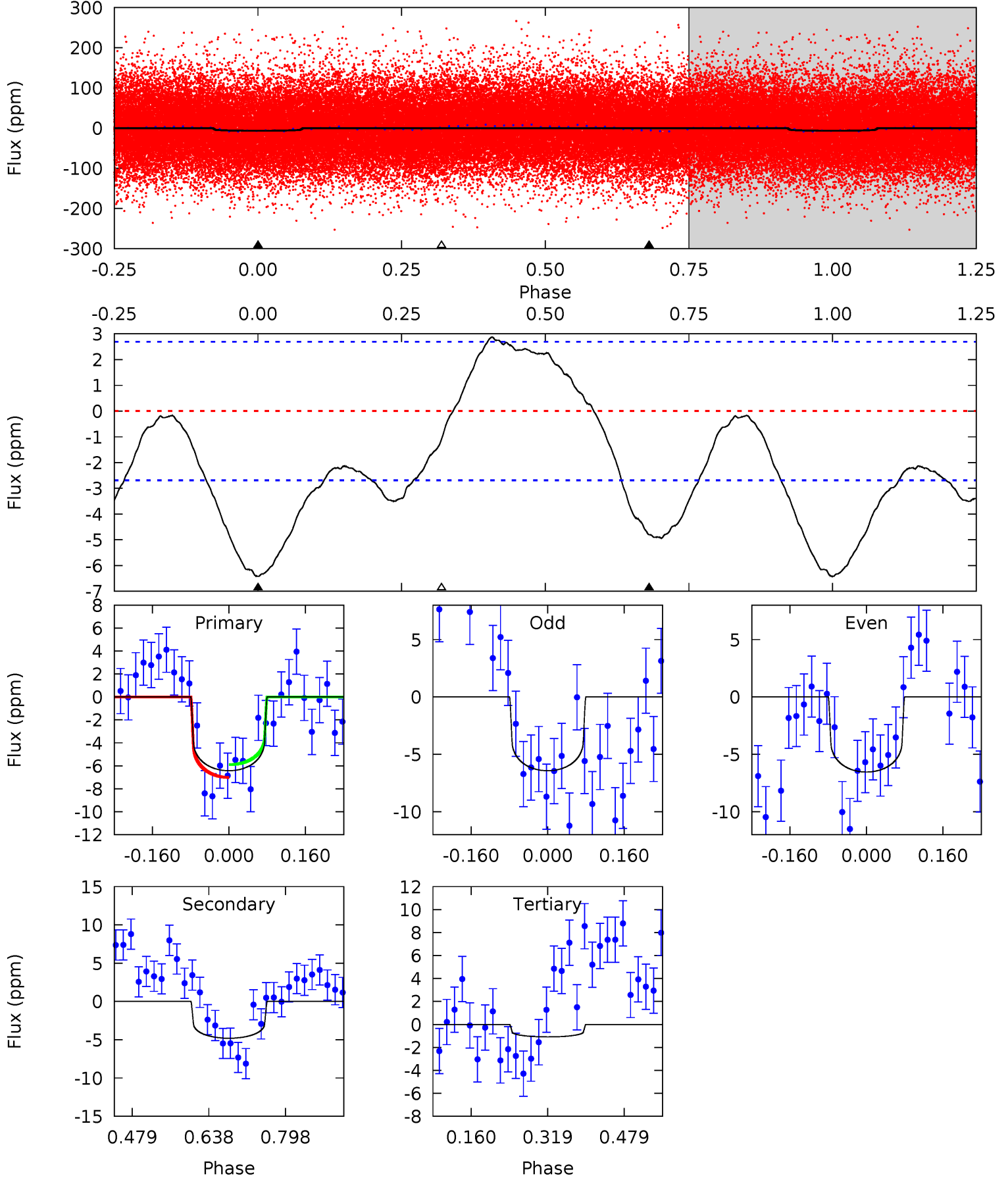
TCE 008646702-01 P= 4.201759 Days $T_0=133.870249$ (BKJD)



DV Model-Shift Uniqueness Test

008646702-01, P = 4.201925 Days, E = 129.653568 Days

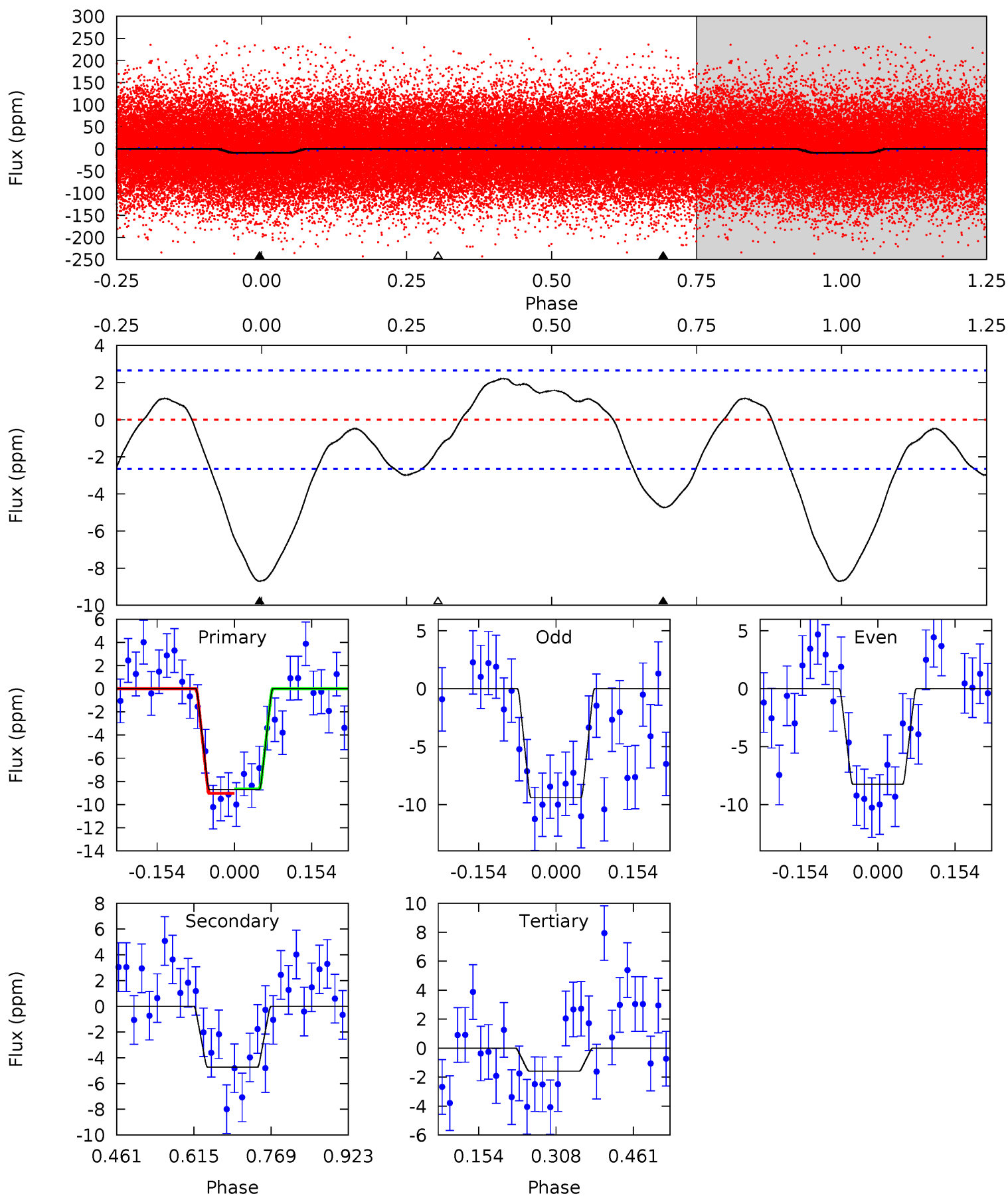
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	7.97	1.80	0	4.47	1.41	3.93	8.87	10.7	6.17	7.97	0.09	0.96	0.31	0.92



Alt Model-Shift Uniqueness Test

008646702-01, P = 4.201759 Days, E = 129.668490 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	7.94	2.67	0	4.47	1.43	3.05	12.0	14.6	5.27	7.94	0.98	1.05	0.20	0.33



Stellar Parameters For KIC 008646702

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6436^{+145}_{-178}	$4.321^{+0.092}_{-0.138}$	$-0.180^{+0.250}_{-0.300}$	$1.213^{+0.265}_{-0.155}$	$1.122^{+0.152}_{-0.125}$	$0.886^{+0.376}_{-0.367}$
	+2%/-3%	+2%/-3%	+139%/-167%	+22%/-13%	+14%/-11%	+42%/-41%
Source	PHO1	FLK73	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 008646702-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5 ± 1	$0.39^{+0.10}_{-0.08}$	1900^{+115}_{-82}	5529^{+685}_{-460}	47^{+31}_{-17}
Alt.	-5 ± 1	$0.41^{+0.09}_{-0.08}$	1909^{+103}_{-89}	5435^{+620}_{-449}	43^{+27}_{-14}

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 $A_{obs} \gg 1.0$

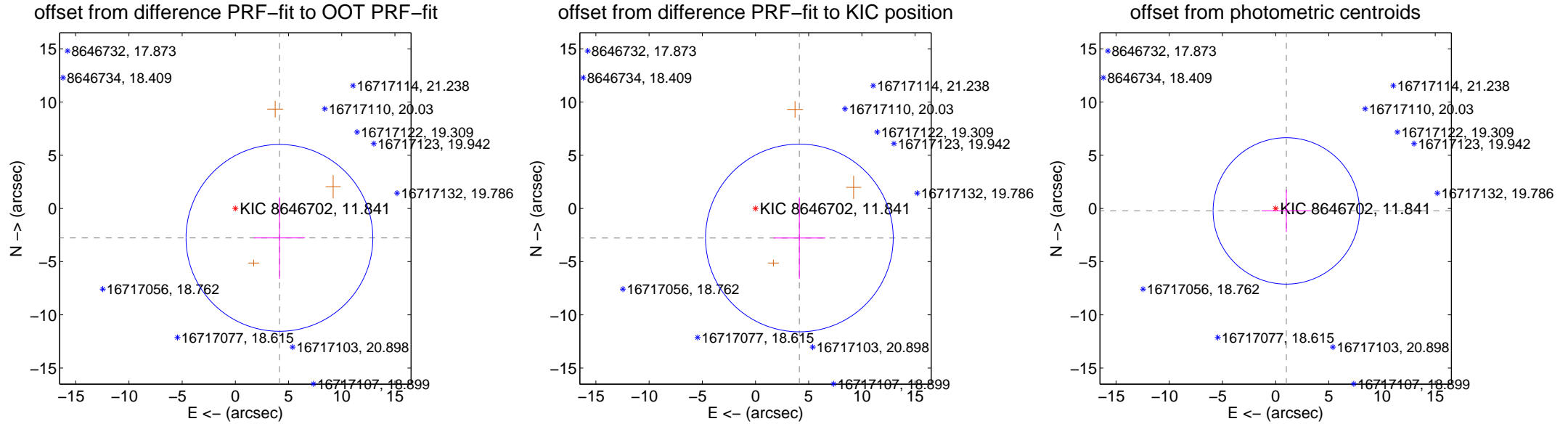
DV Centroid Data

Supplemental centroid analysis for 008646702-01. **Kepler magnitude: 11.84.** Transit SNR 8.06

There are 0 quarters with good PRF difference image offsets

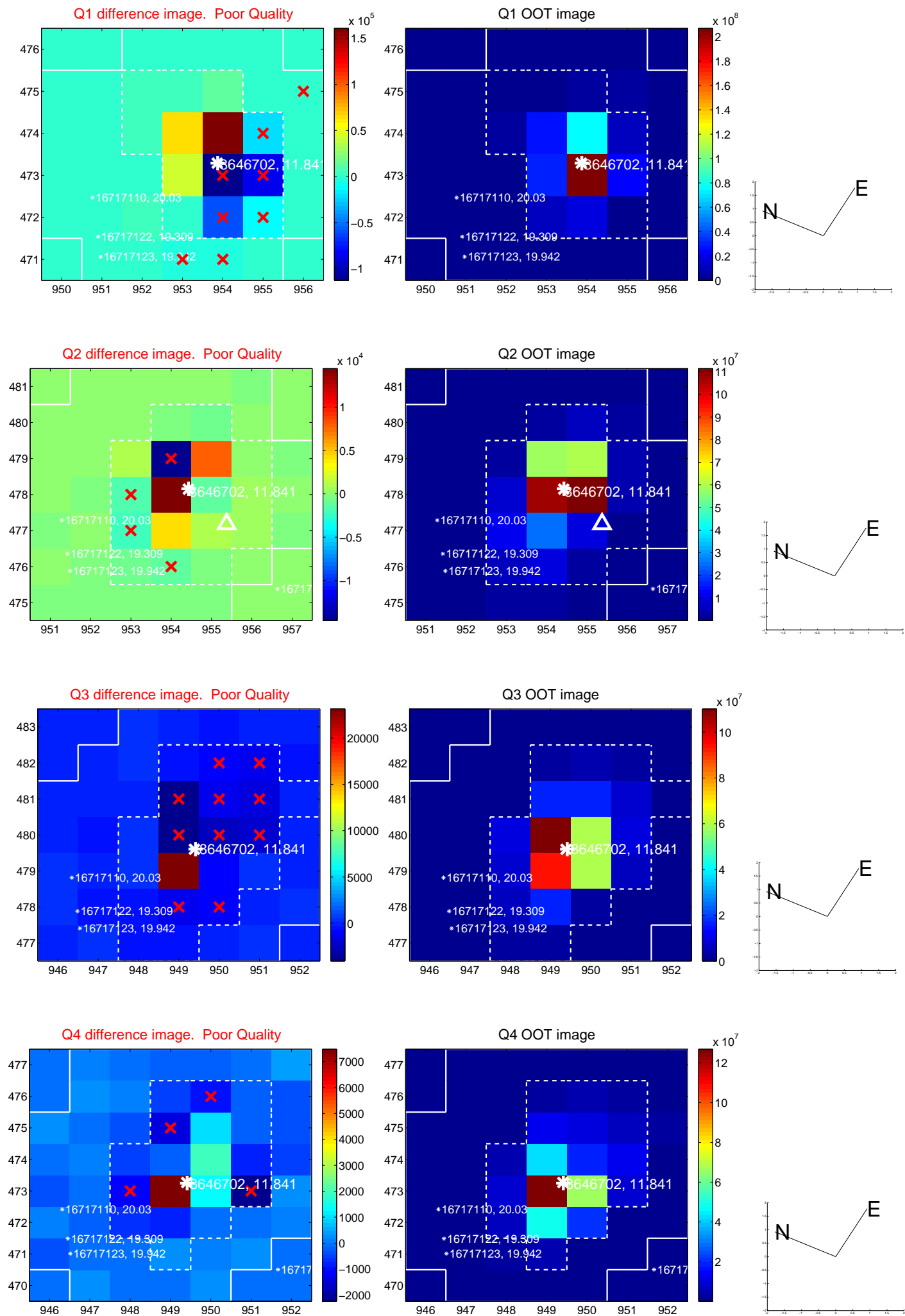
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.983 ± 2.926	1.70	-4.143 ± 2.411	-2.767 ± 3.837
PRF-fit source offset from KIC position	4.971 ± 2.940	1.69	-4.124 ± 2.435	-2.775 ± 3.826
photometric centroid source offset	1.03 ± 2.29	0.45	-1.00 ± 2.31	-0.23 ± 1.99

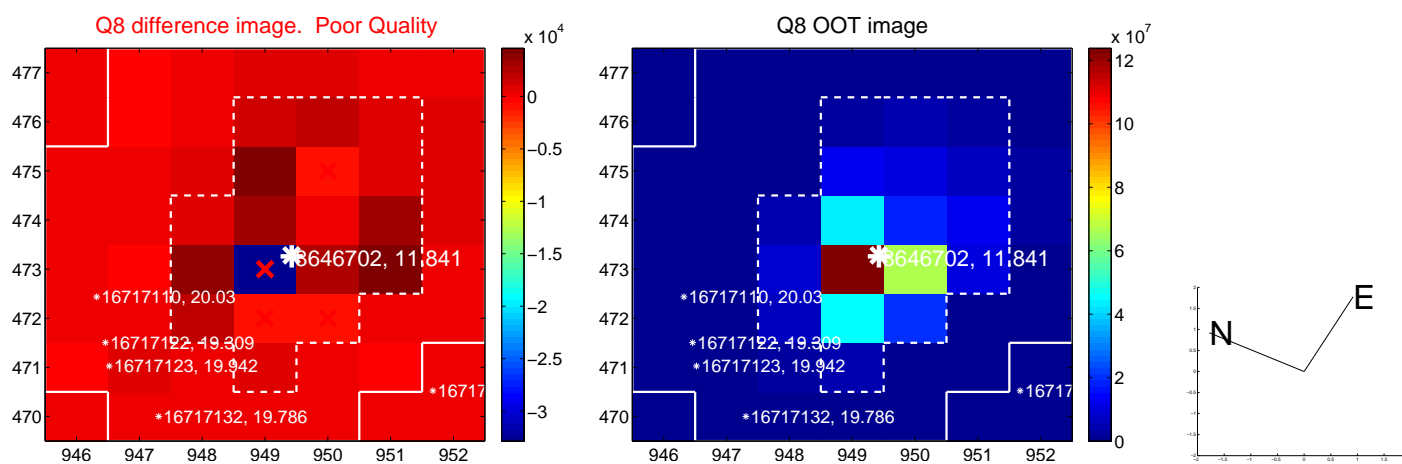
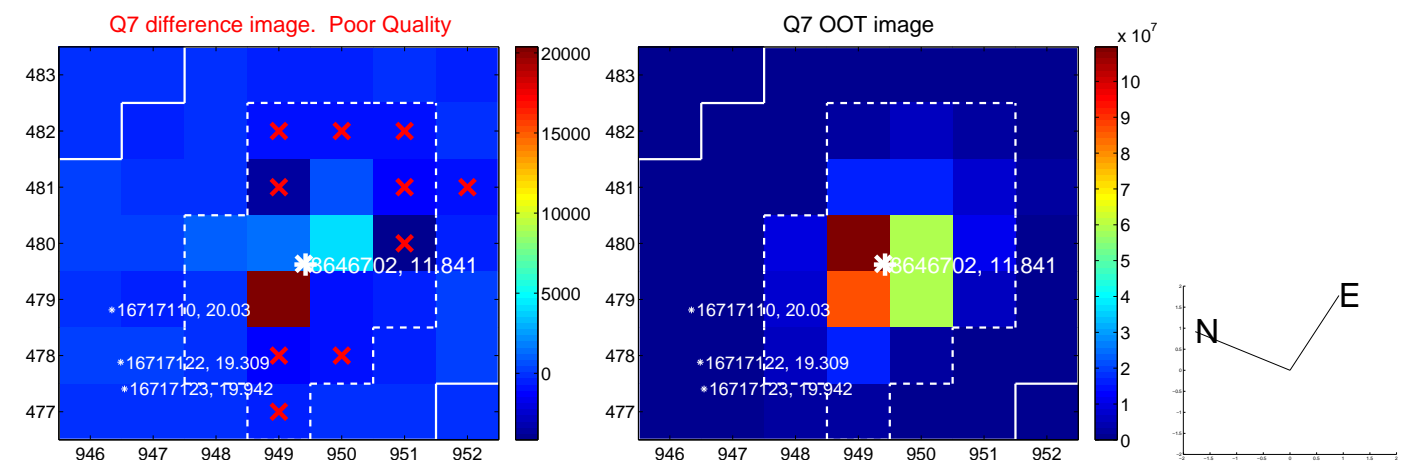
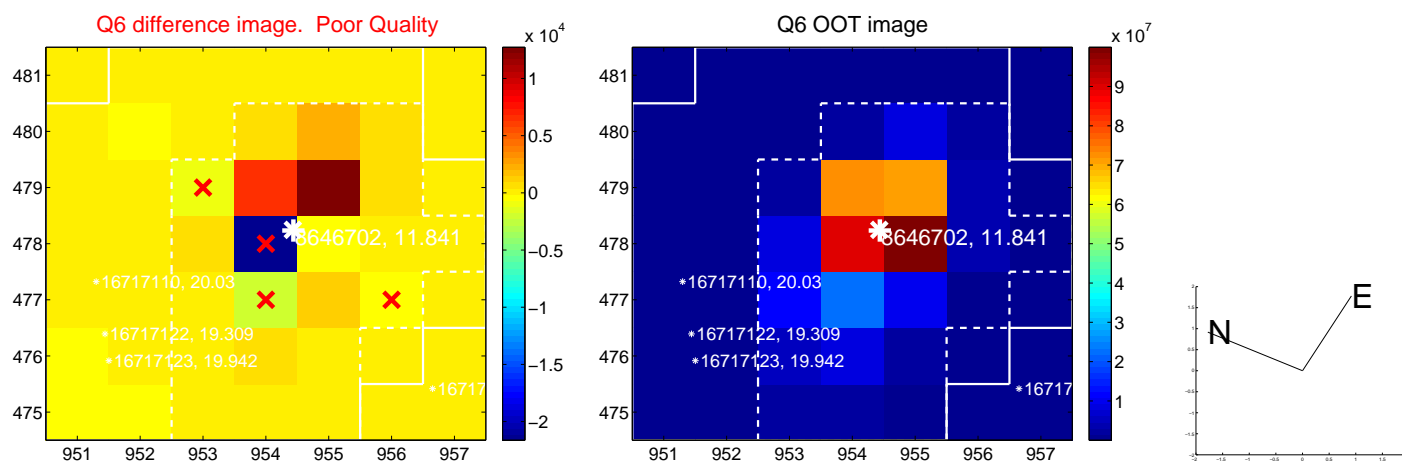
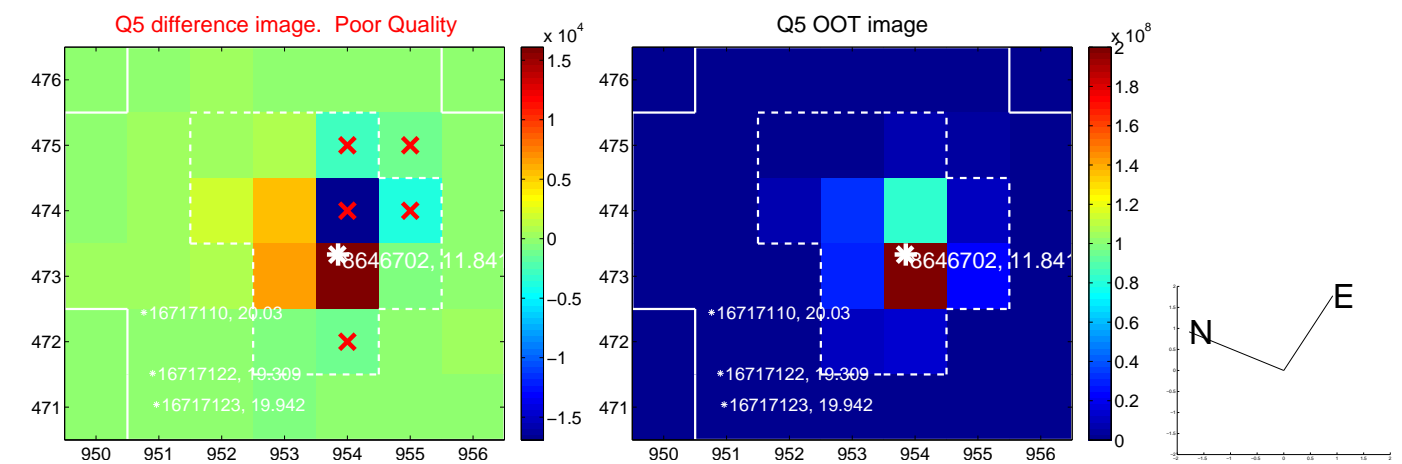


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

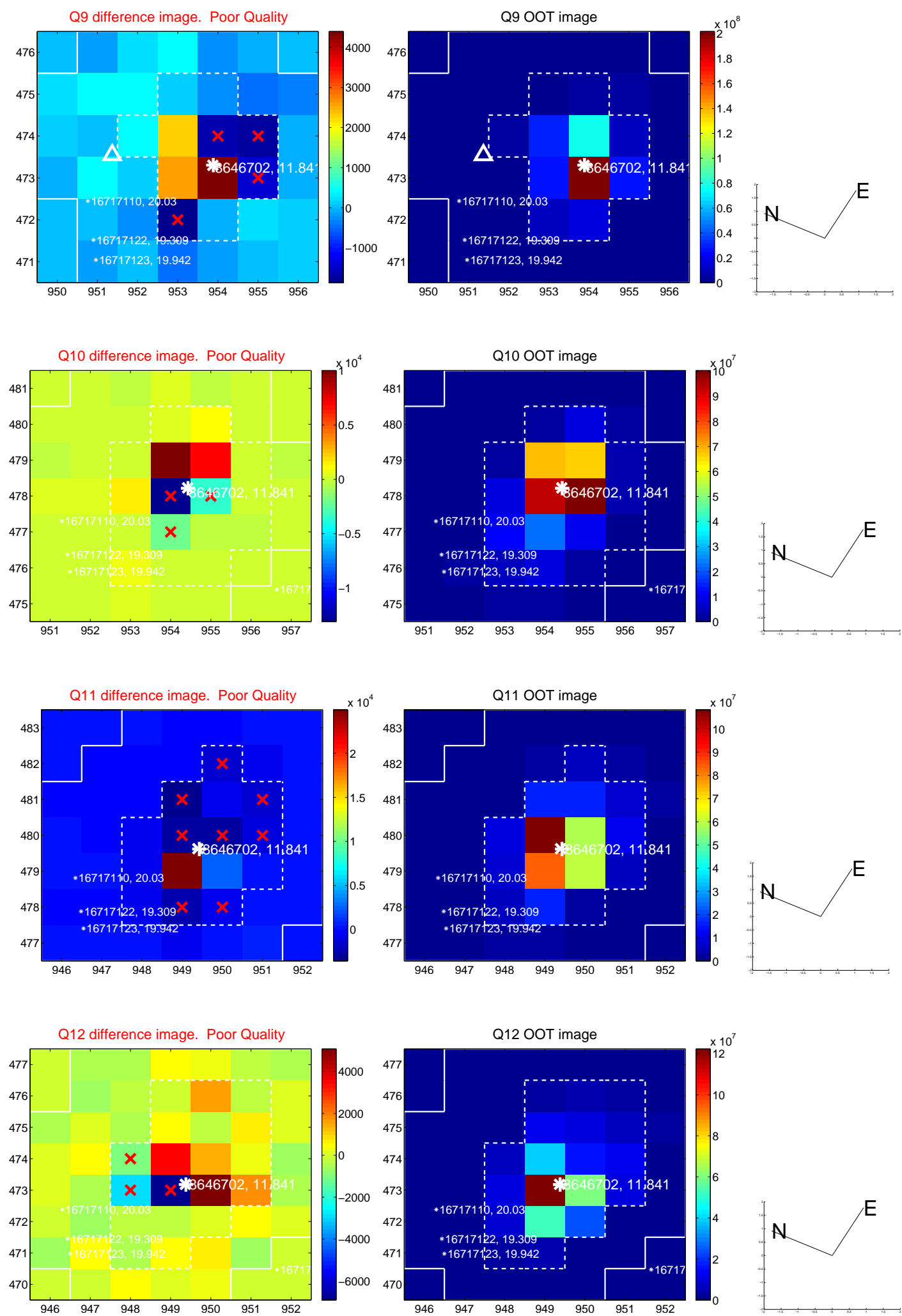
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



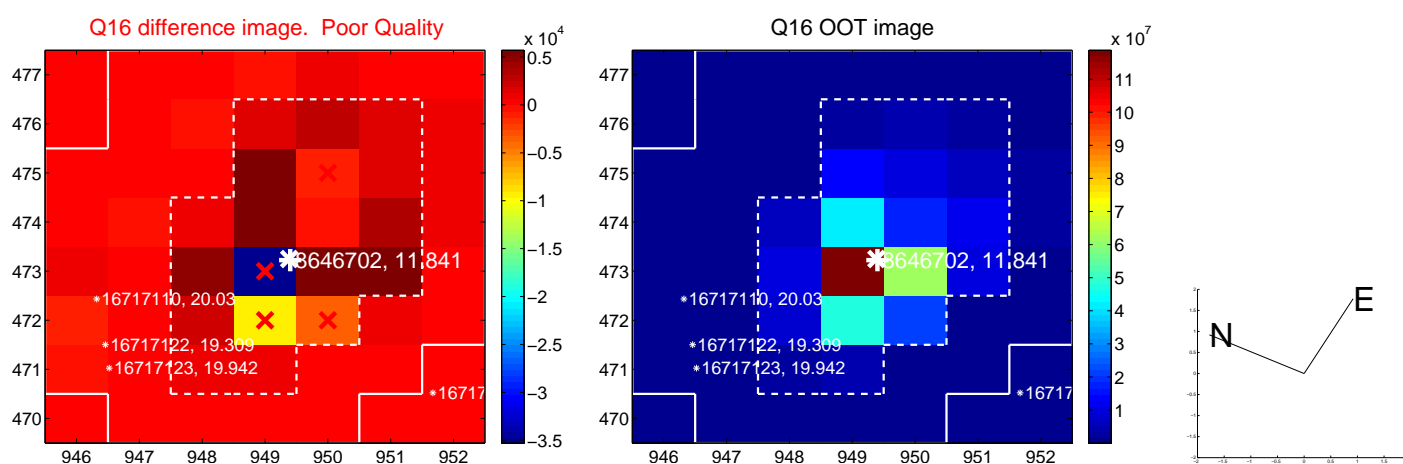
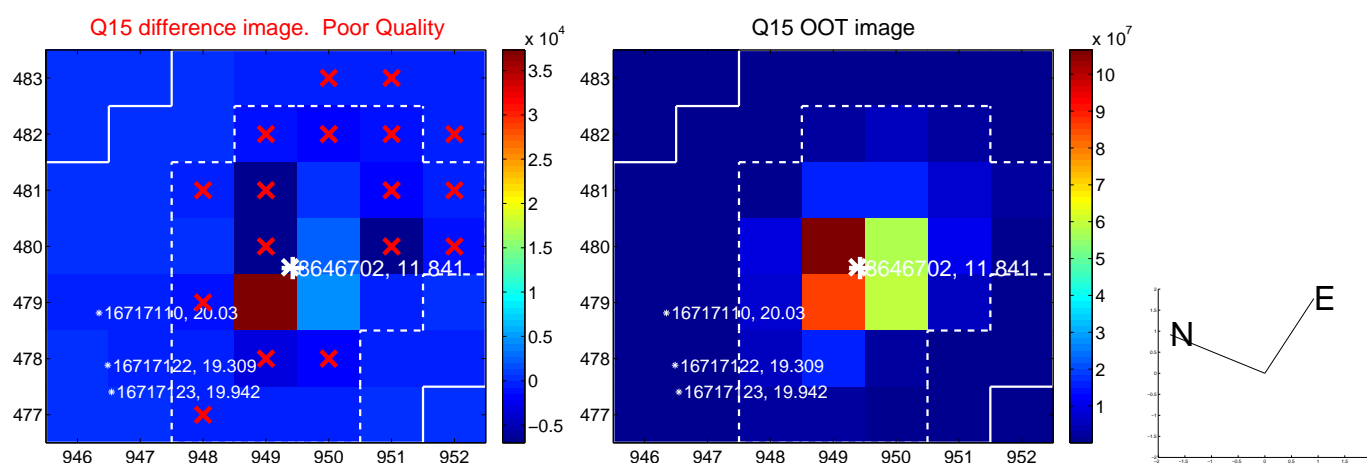
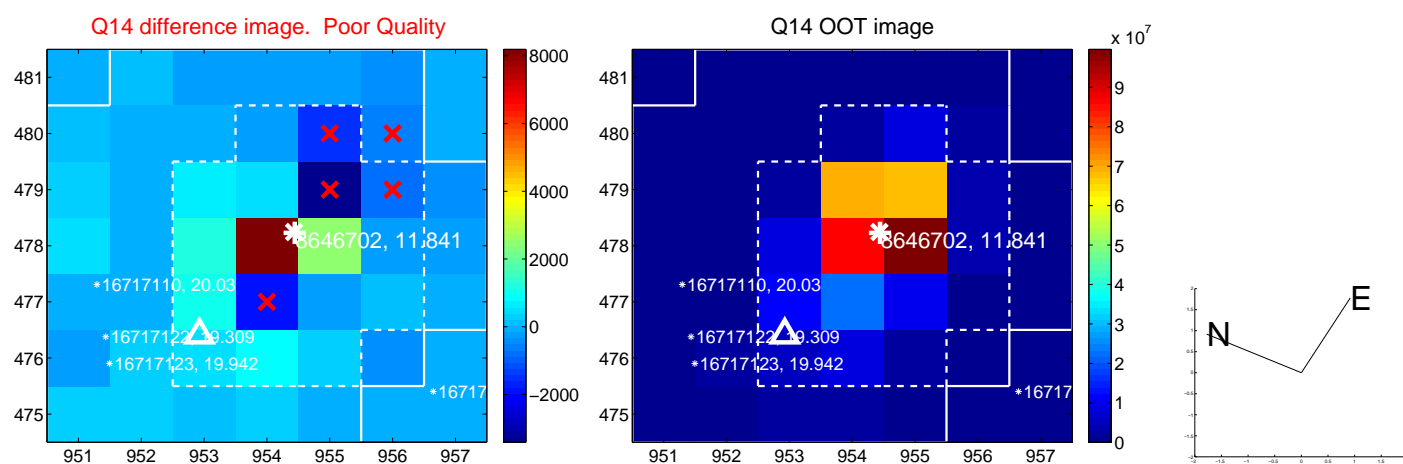
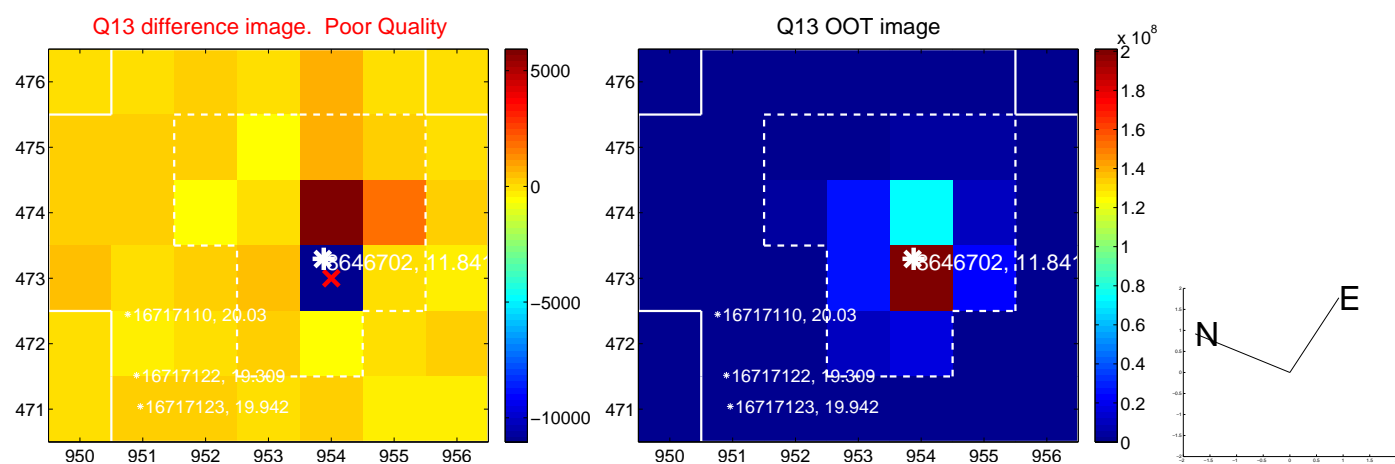
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



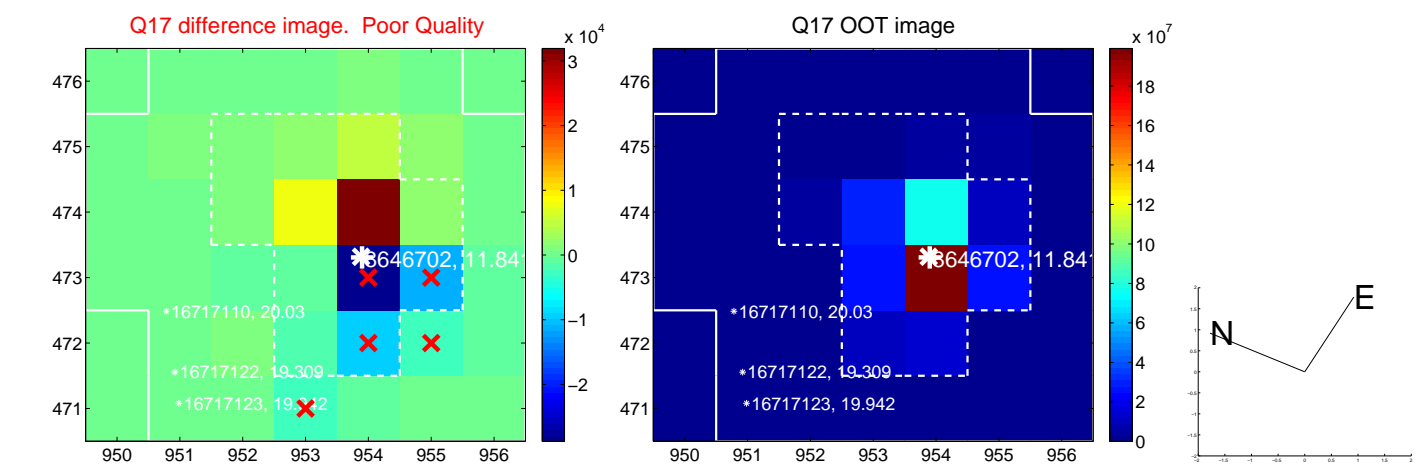
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



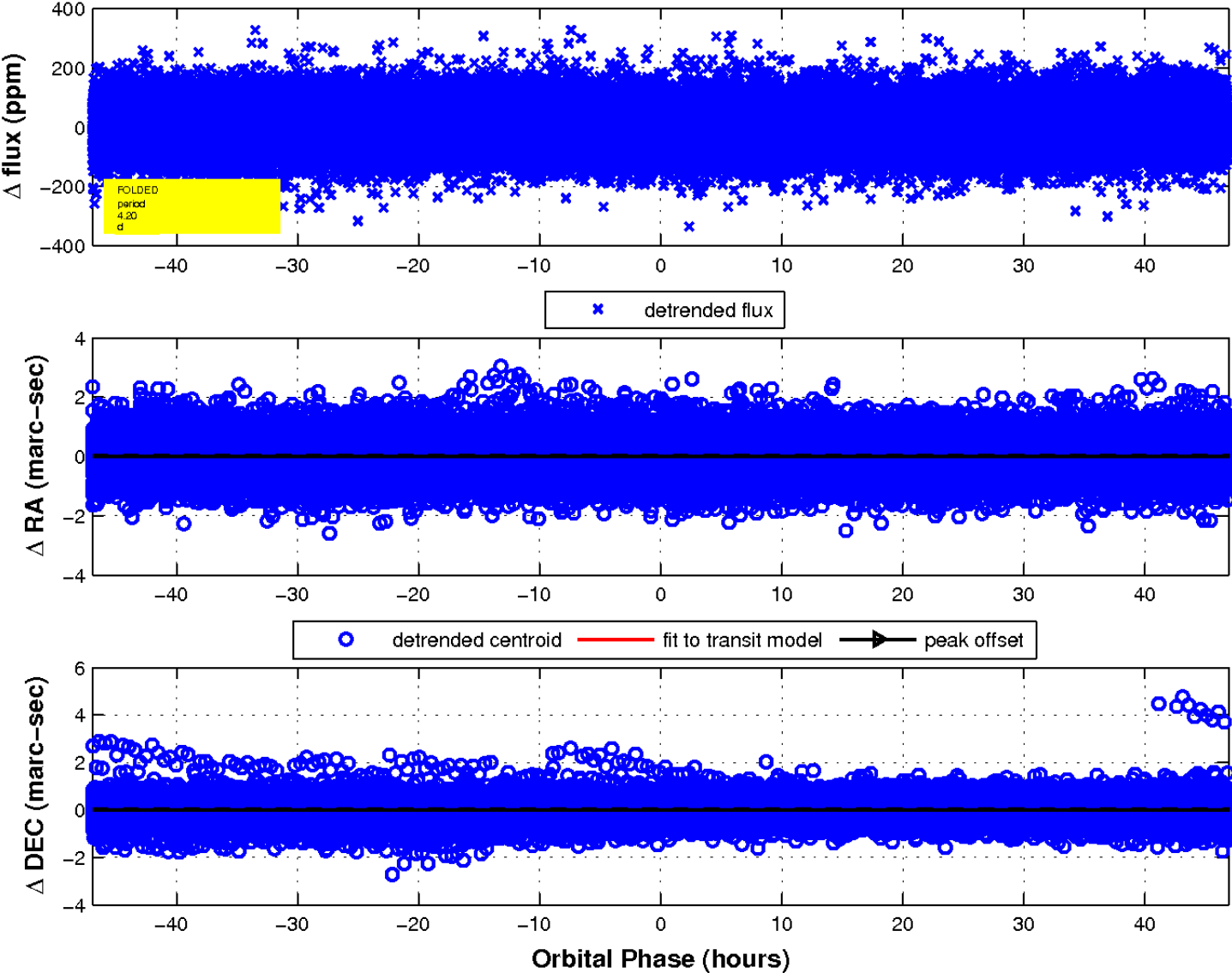
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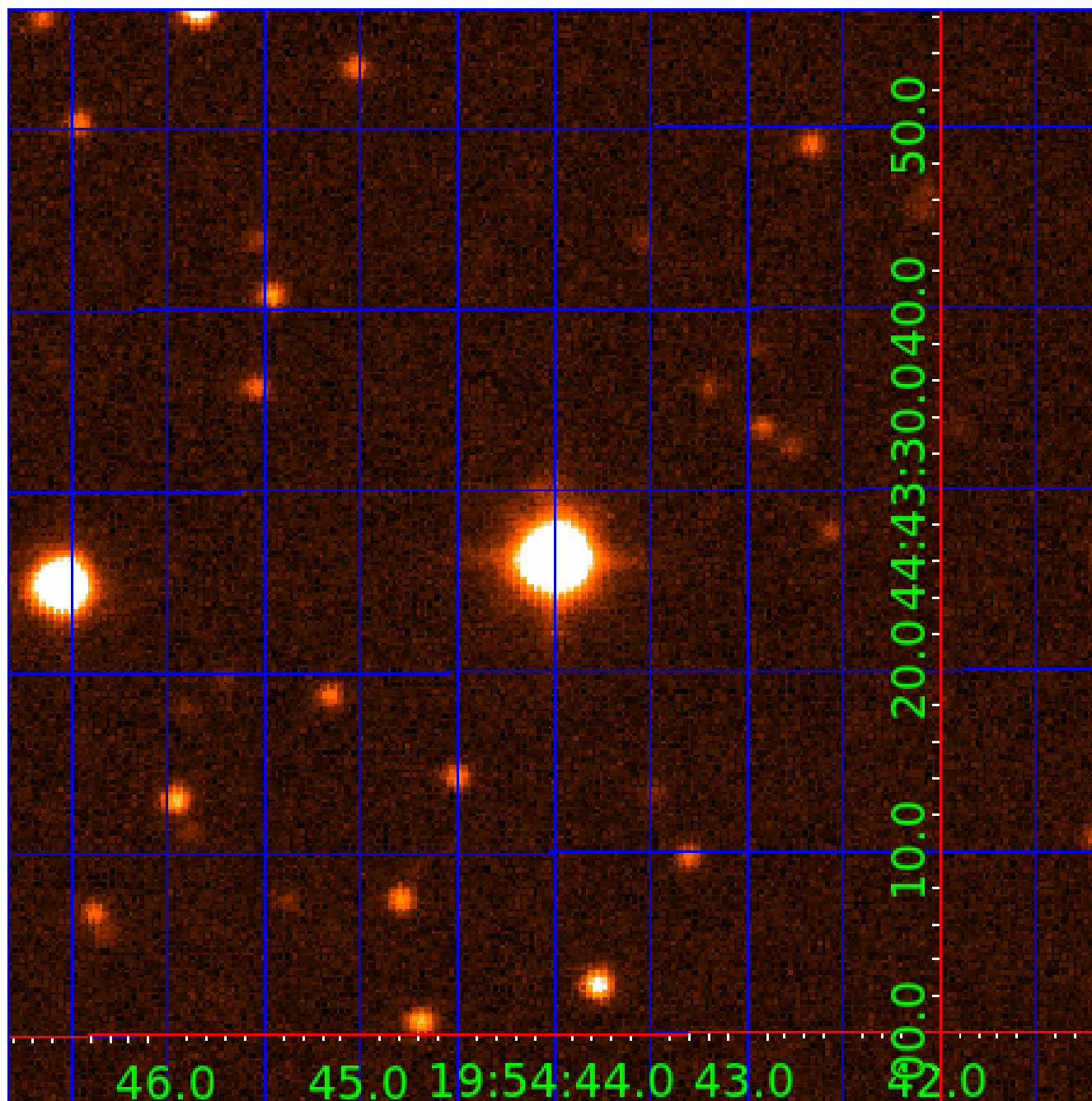


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 008646702

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

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008646702-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008646702-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

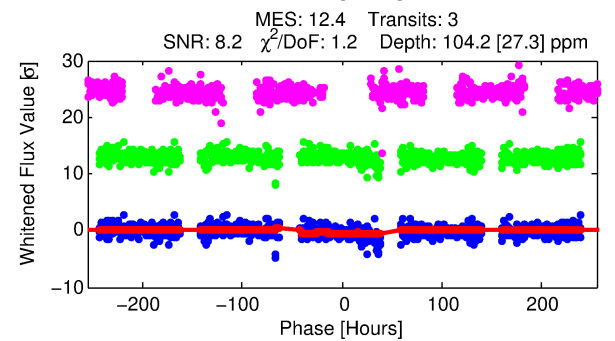
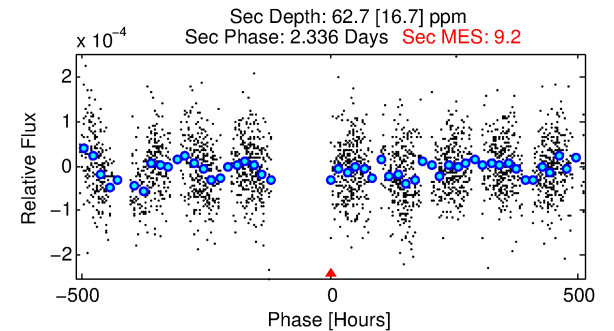
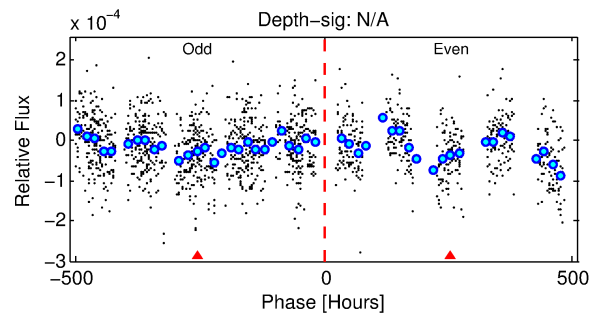
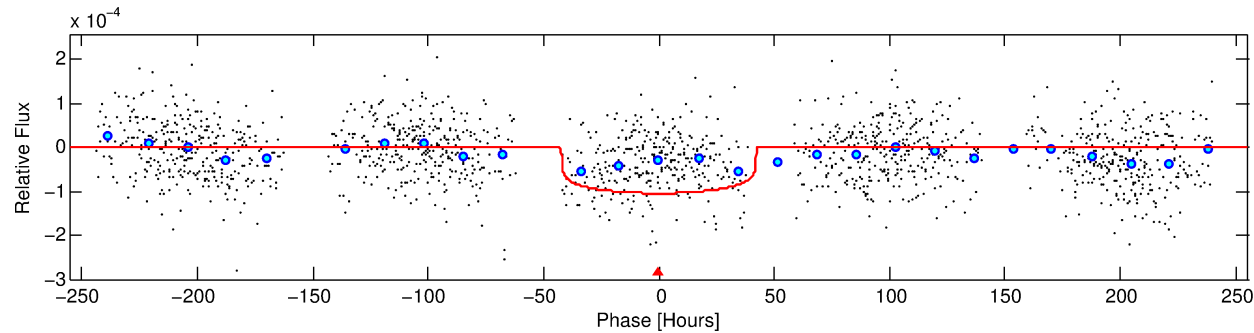
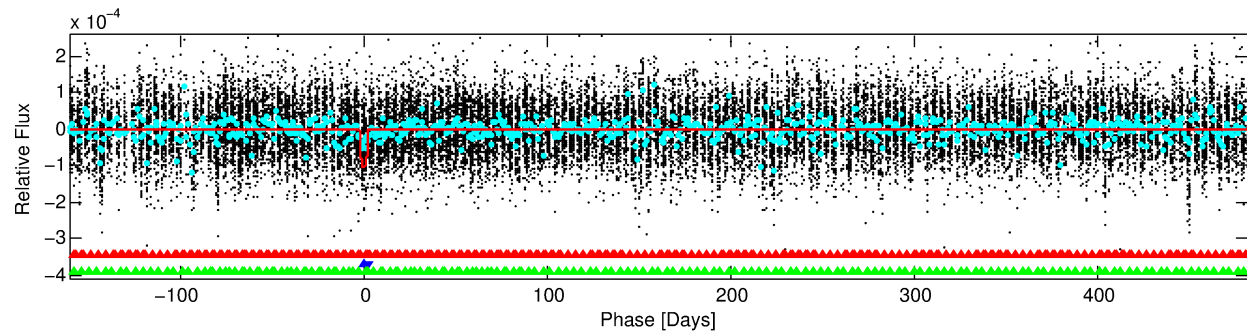
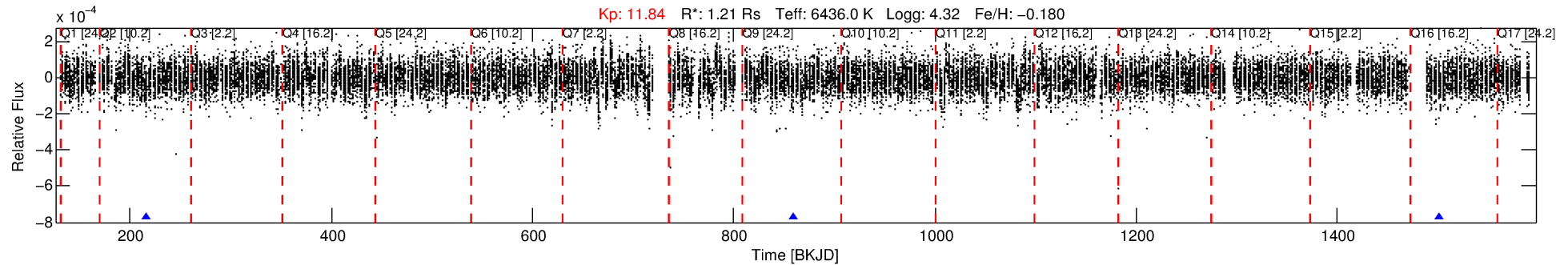
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008646702-02

No Significant Match Found

DV One-Page Summary

KIC: 8646702 Candidate: 2 of 3 Period: 642.316 d



DV Fit Results:

Period = 642.31575 [0.76600] d
Epoch = 216.4448 [0.5745] BKJD
Rp/R* = 0.0098 [0.0046]
a/R* = 47.39 [121.70]
b = 0.59 [3.09]
Seff = 0.99 [0.28]
Teq = 254 [18] K
Rp = 1.29 [0.68] Re
a = 1.5151 [0.2728] AU
Ag = 47344.31 [48258.48] [0.98σ]
Teffp = 5794 [1438] K [3.85σ]

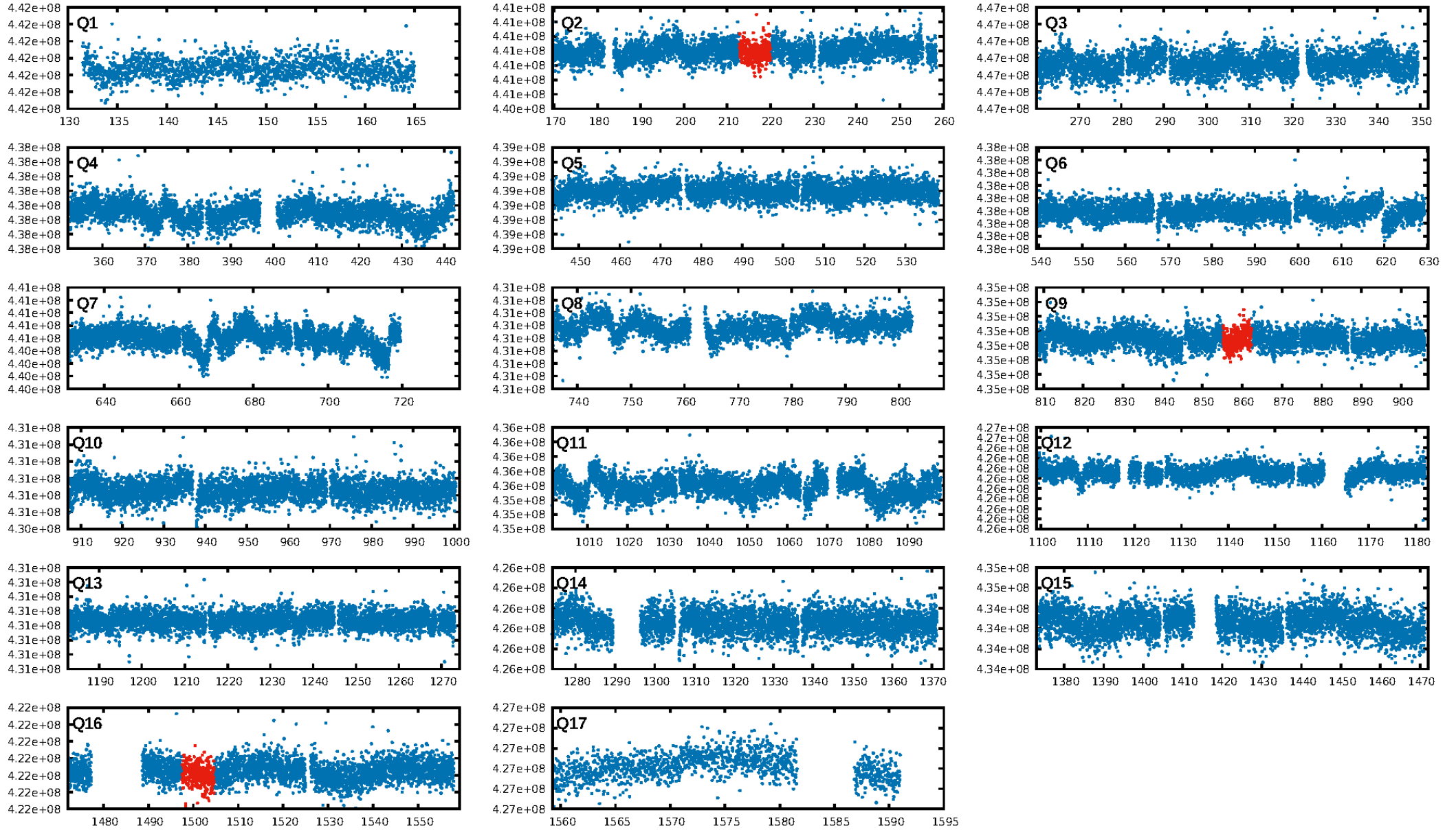
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [159.78σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.23e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4448
Centroid-sig: 37.9%
Centroid-so: 0.652 arcsec [0.87σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/2]

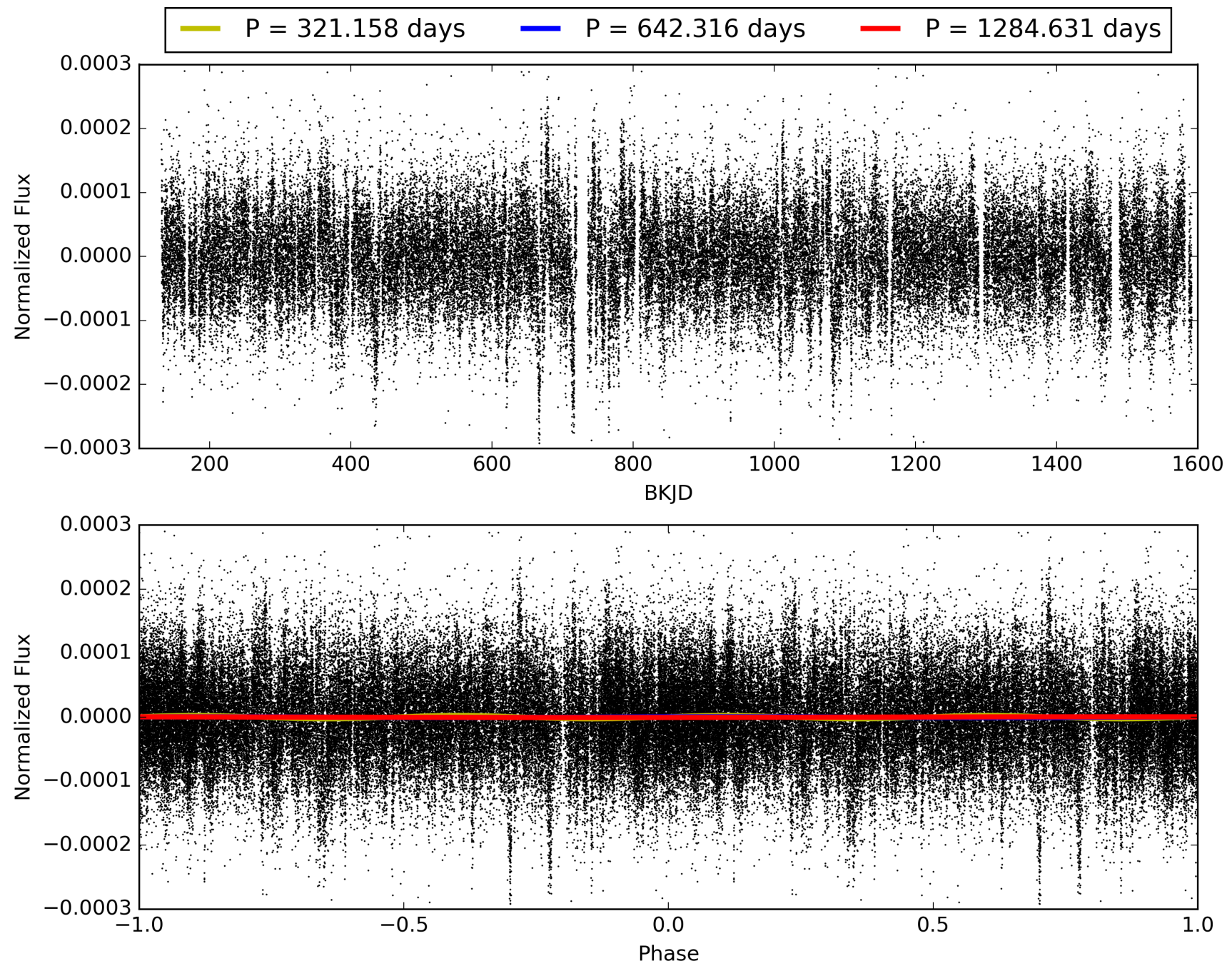
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:31:19 Z

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TCE 008646702-02, PDC Light Curves

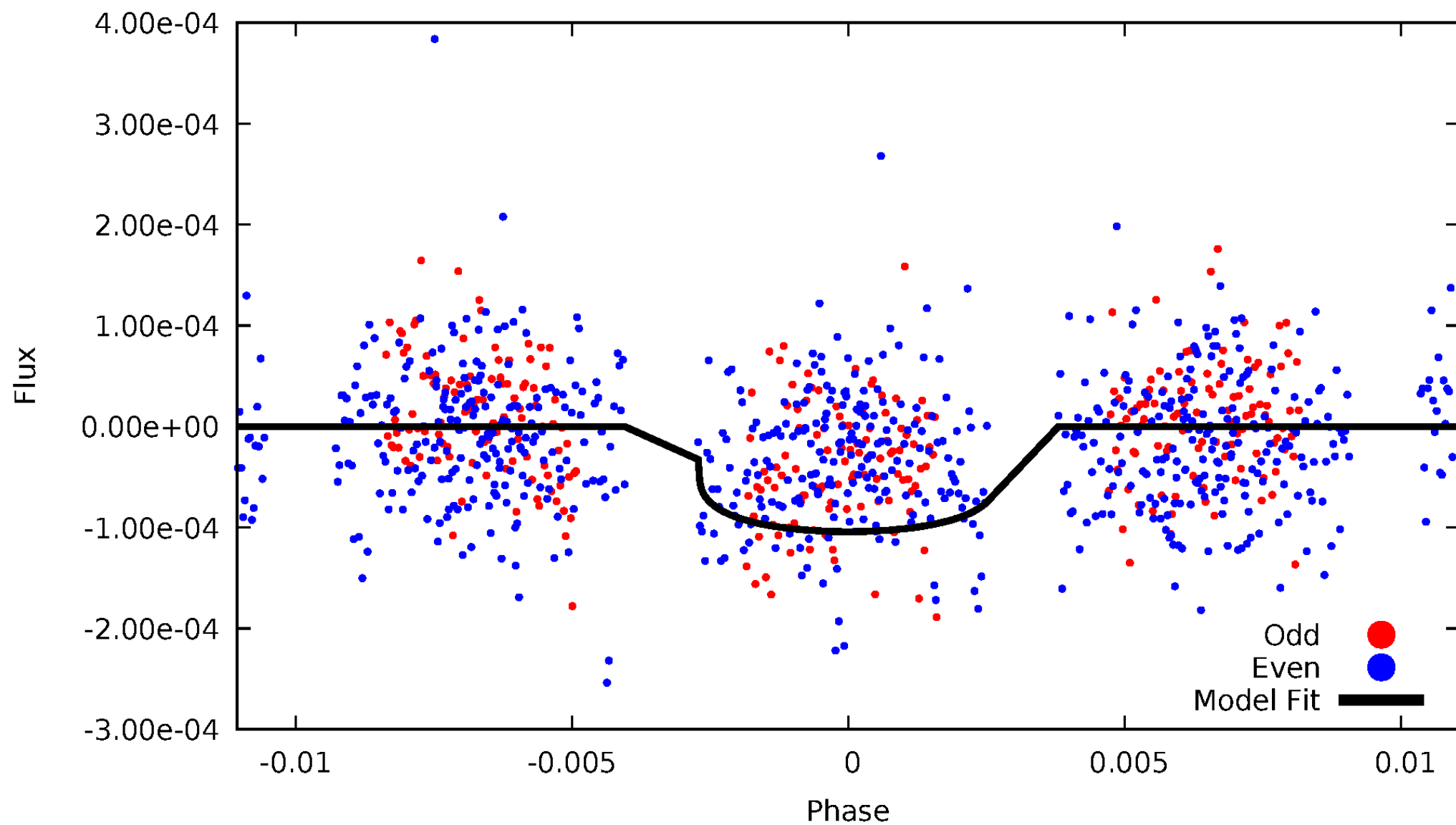


TCE 008646702-02



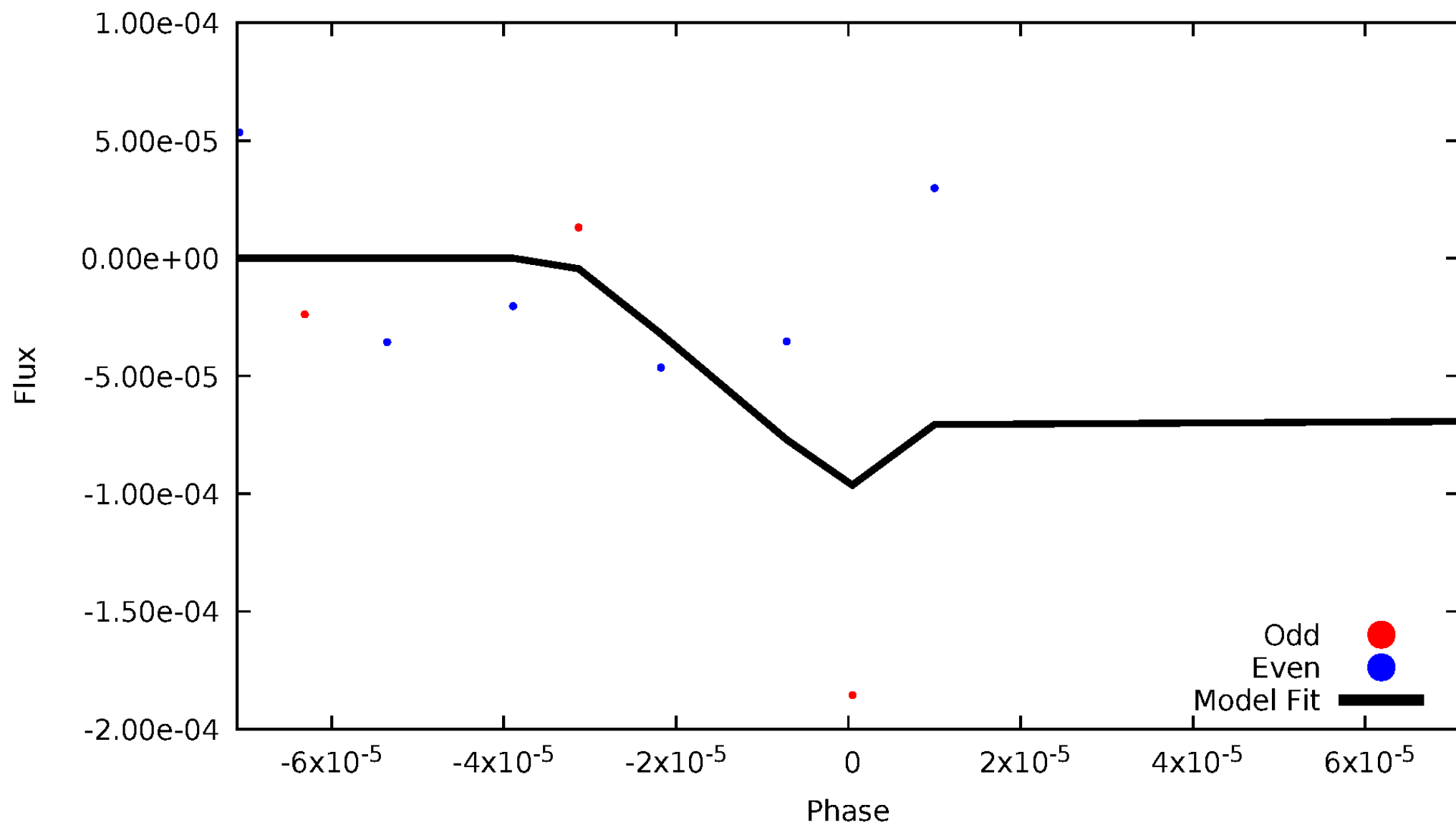
DV Odd/Even

TCE 008646702-02



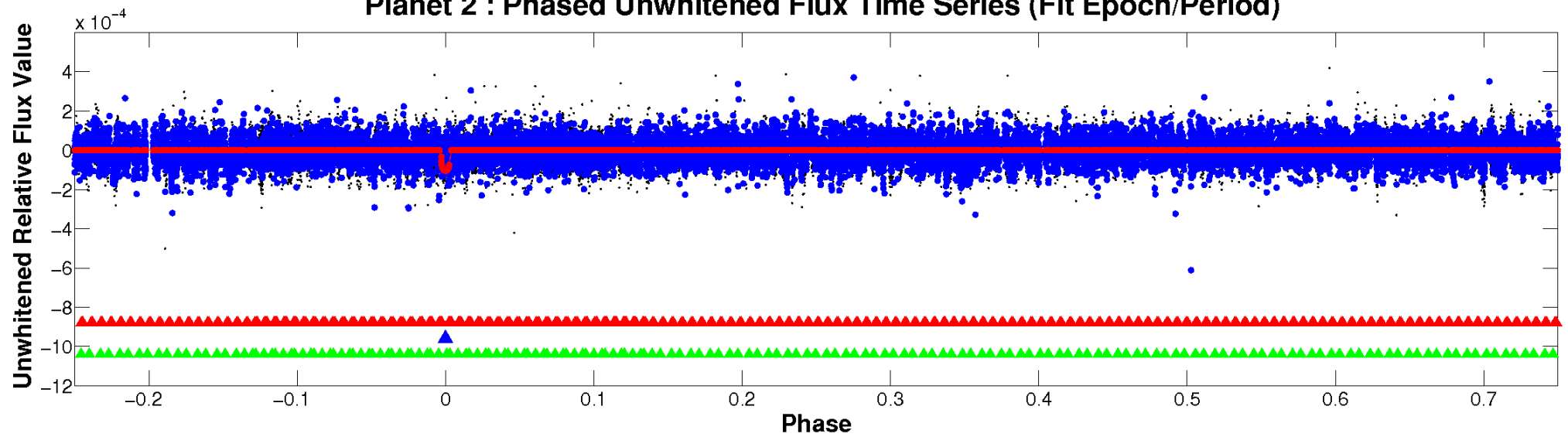
ALT Odd/Even

TCE 008646702-02

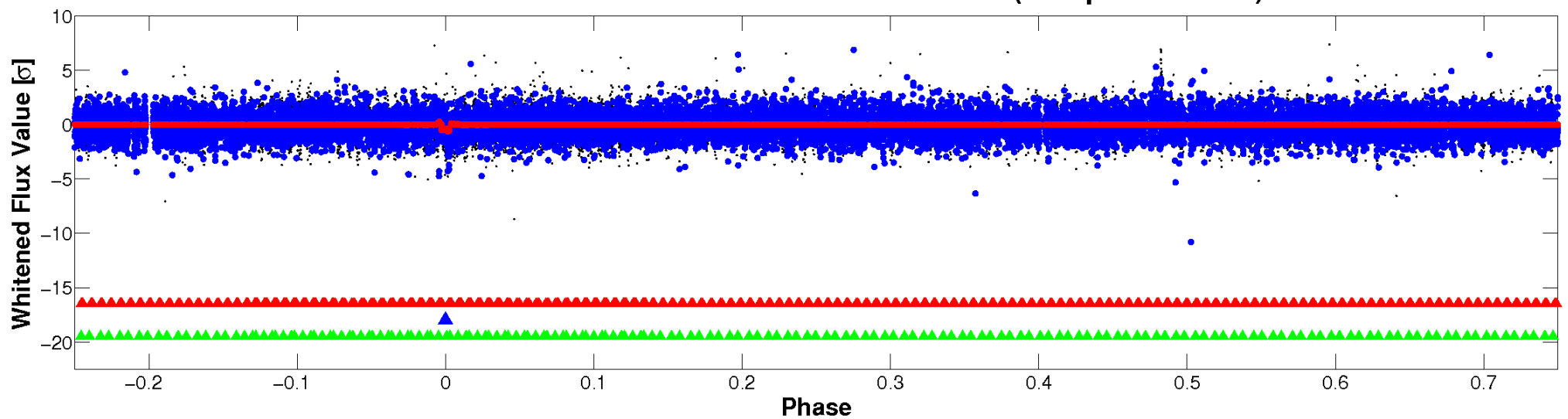


Non-Whitened Vs. Whitened Light Curve

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

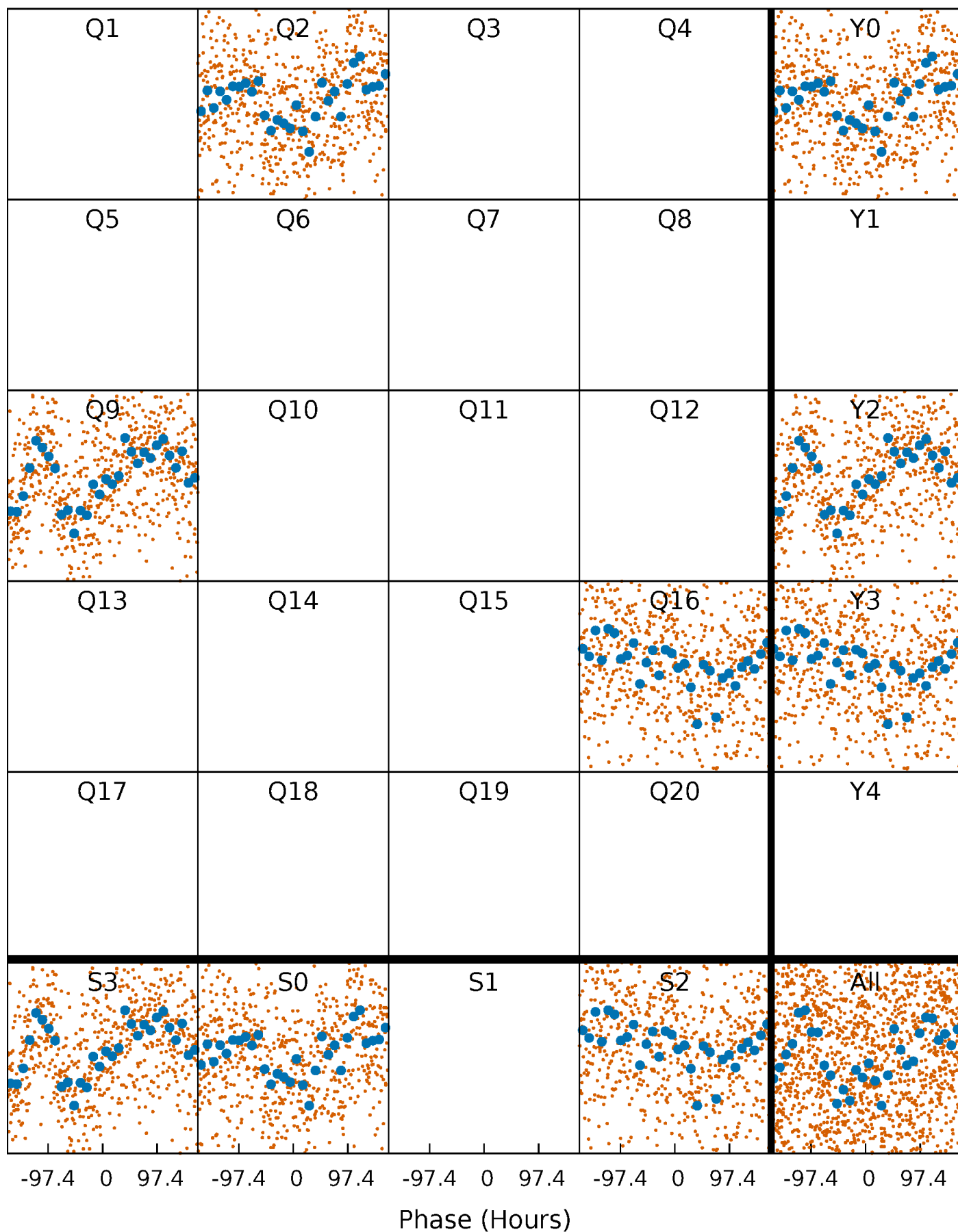


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



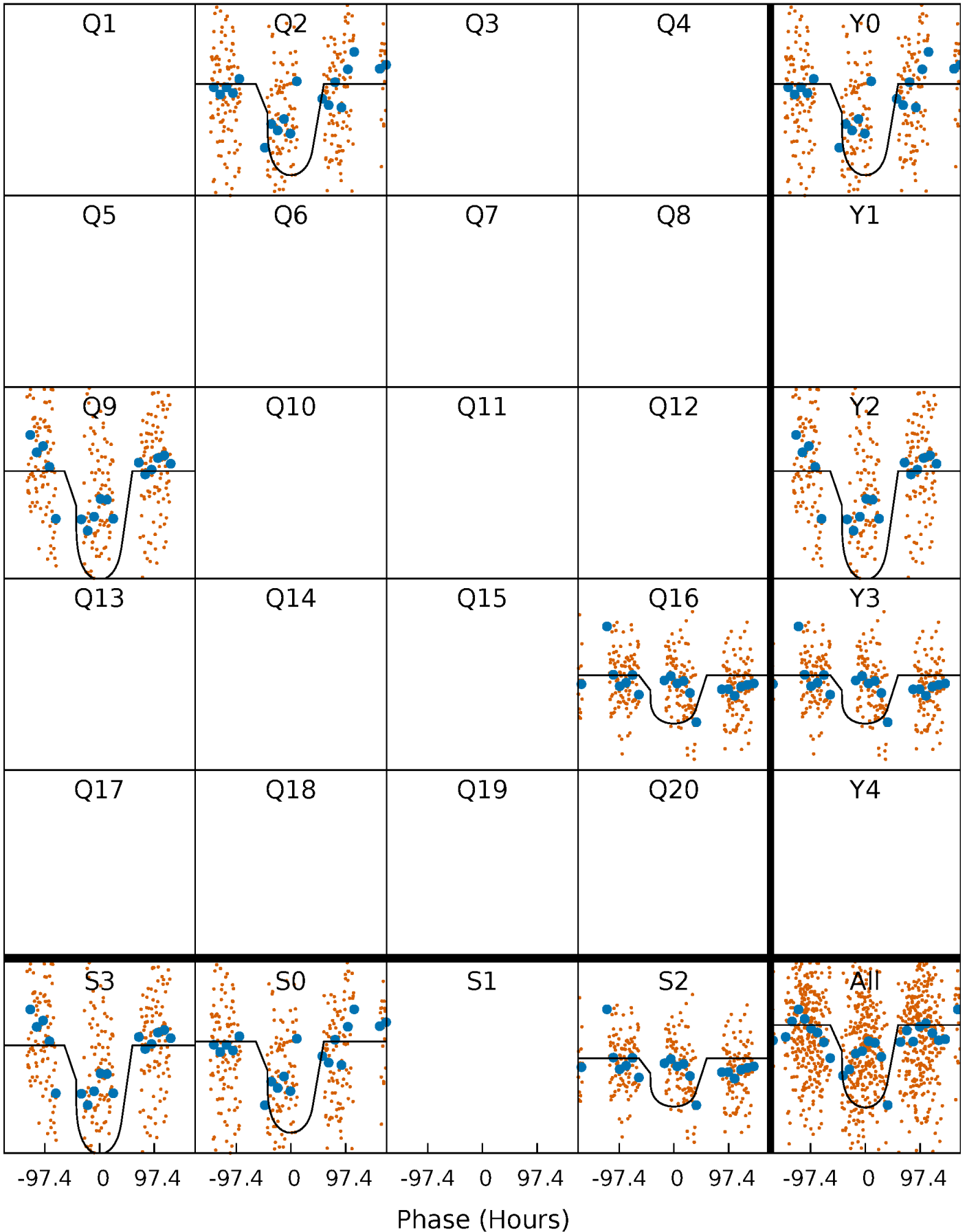
PDC Quarter-Phased Transit Curves

TCE 008646702-02 $P=642.315750$ Days $T_0=216.444758$ (BKJD)



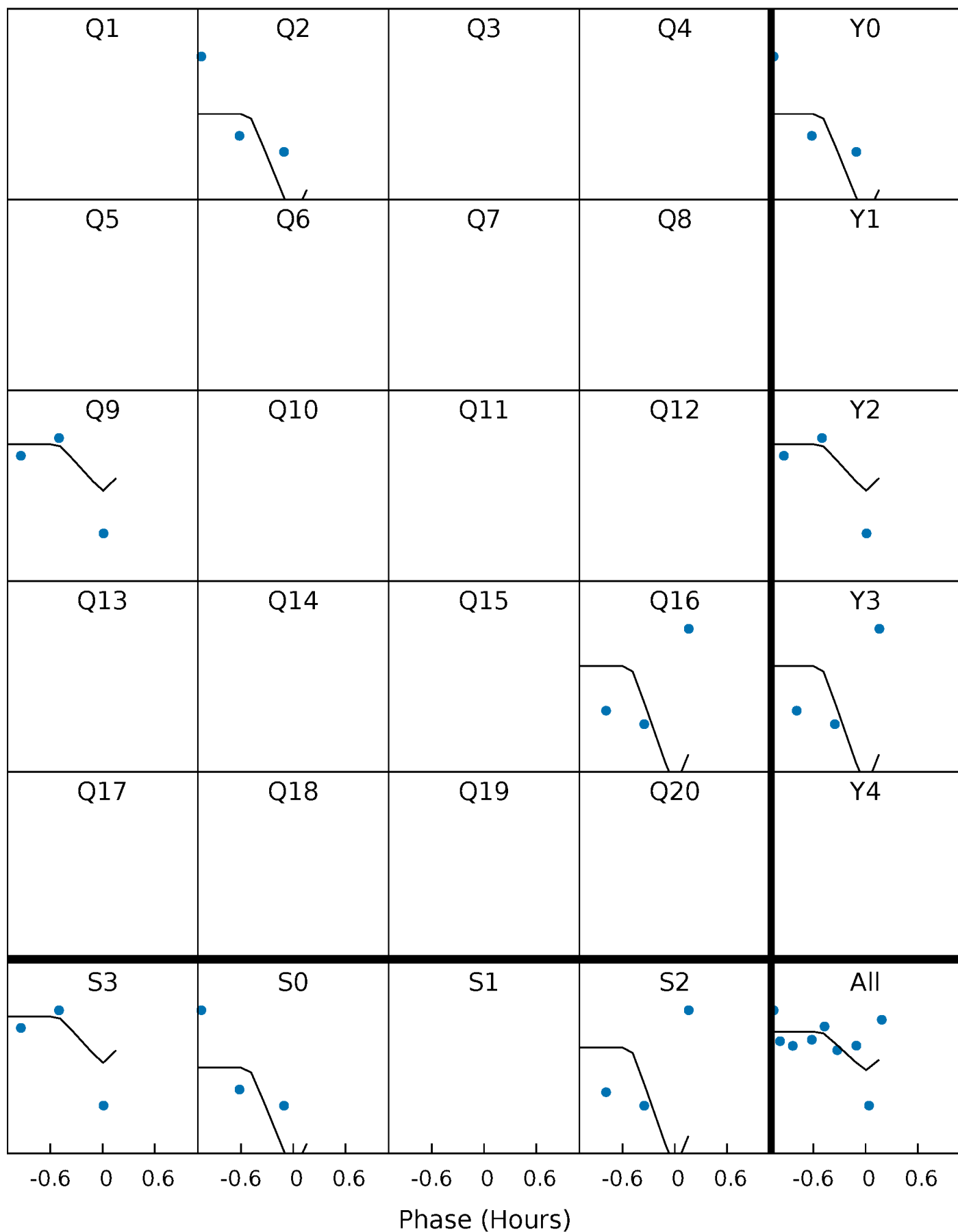
DV Quarter-Phased Transit Curves

TCE 008646702-02 $P=642.315750$ Days $T_0=216.444758$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

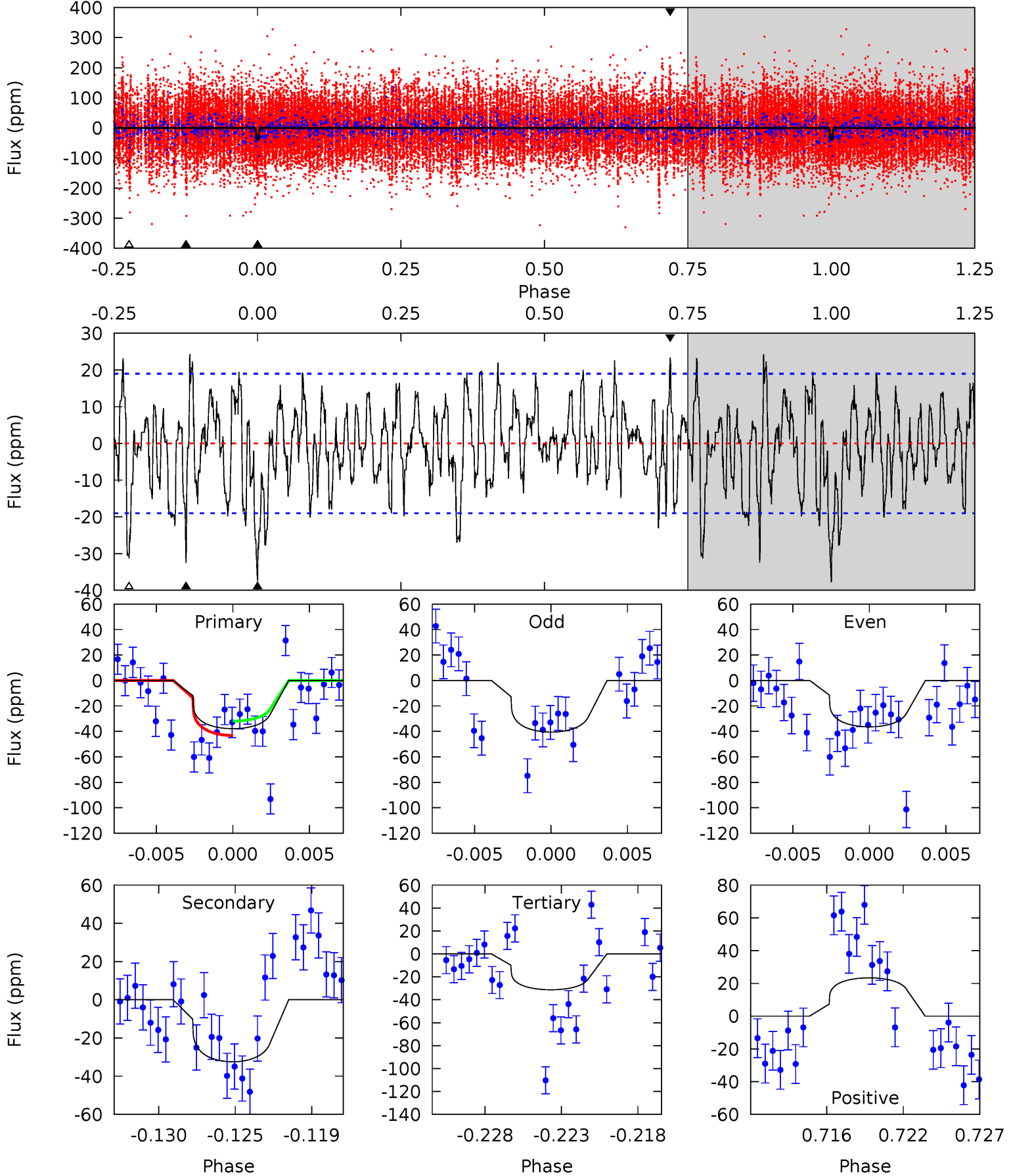
TCE 008646702-02 P=642.894287 Days $T_0=216.890514$ (BKJD)



DV Model-Shift Uniqueness Test

008646702-02, P = 642.315750 Days, E = 216.444758 Days

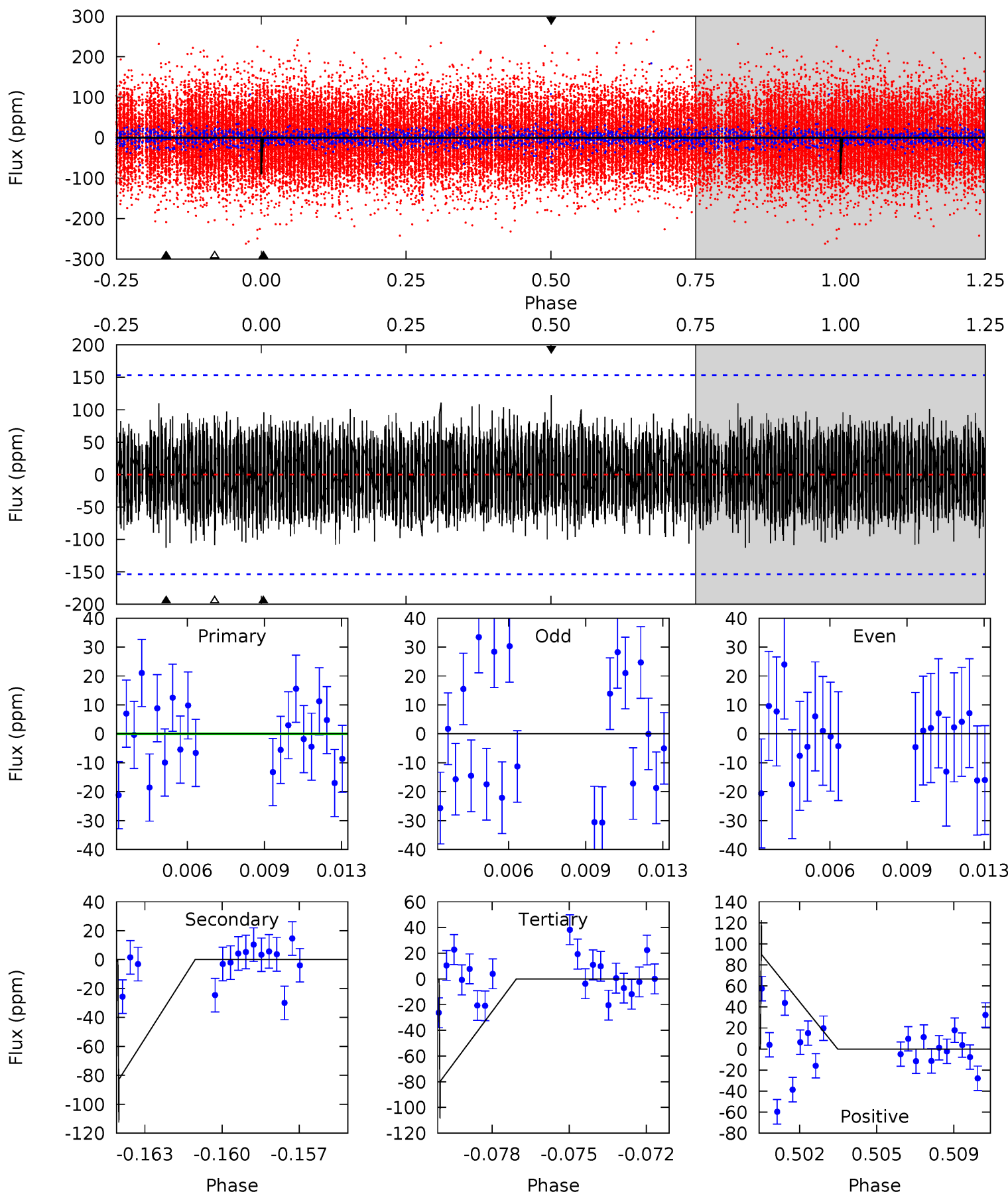
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	8.80	8.49	6.34	5.15	2.79	2.69	1.78	3.93	0.32	2.47	0.52	0.91	0.39	1.53



Alt Model-Shift Uniqueness Test

008646702-02, P = 642.894287 Days, E = 216.890514 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.08	3.85	3.71	4.18	5.24	2.95	0.98	-0.62	-1.09	0.14	-0.33	2.51	1.00	0.52	1.04



Stellar Parameters For KIC 008646702

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6436^{+145}_{-178}	$4.321^{+0.092}_{-0.138}$	$-0.180^{+0.250}_{-0.300}$	$1.213^{+0.265}_{-0.155}$	$1.122^{+0.152}_{-0.125}$	$0.886^{+0.376}_{-0.367}$
	+2%/-3%	+2%/-3%	+139%/-167%	+22%/-13%	+14%/-11%	+42%/-41%
Source	PHO1	FLK73	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 008646702-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-32 ± 4	$1.29^{+0.64}_{-0.54}$	355^{+20}_{-15}	4995^{+1579}_{-698}	24323^{+48728}_{-13525}
Alt.	-113 ± 29	$1.32^{+0.68}_{-0.63}$	356^{+18}_{-17}	6584^{+3131}_{-1186}	$78061^{+189666}_{-44800}$

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 008646702-02. **Kepler magnitude: 11.84.** Transit SNR 8.17

There are 0 quarters with good PRF difference image offsets

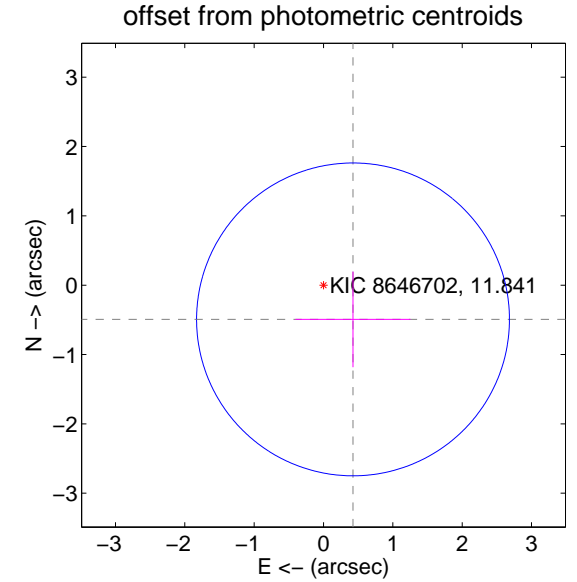
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	0.65 ± 0.75	0.87	-0.43 ± 0.83	-0.49 ± 0.69

There is no PRF-fit offset from OOT-fit

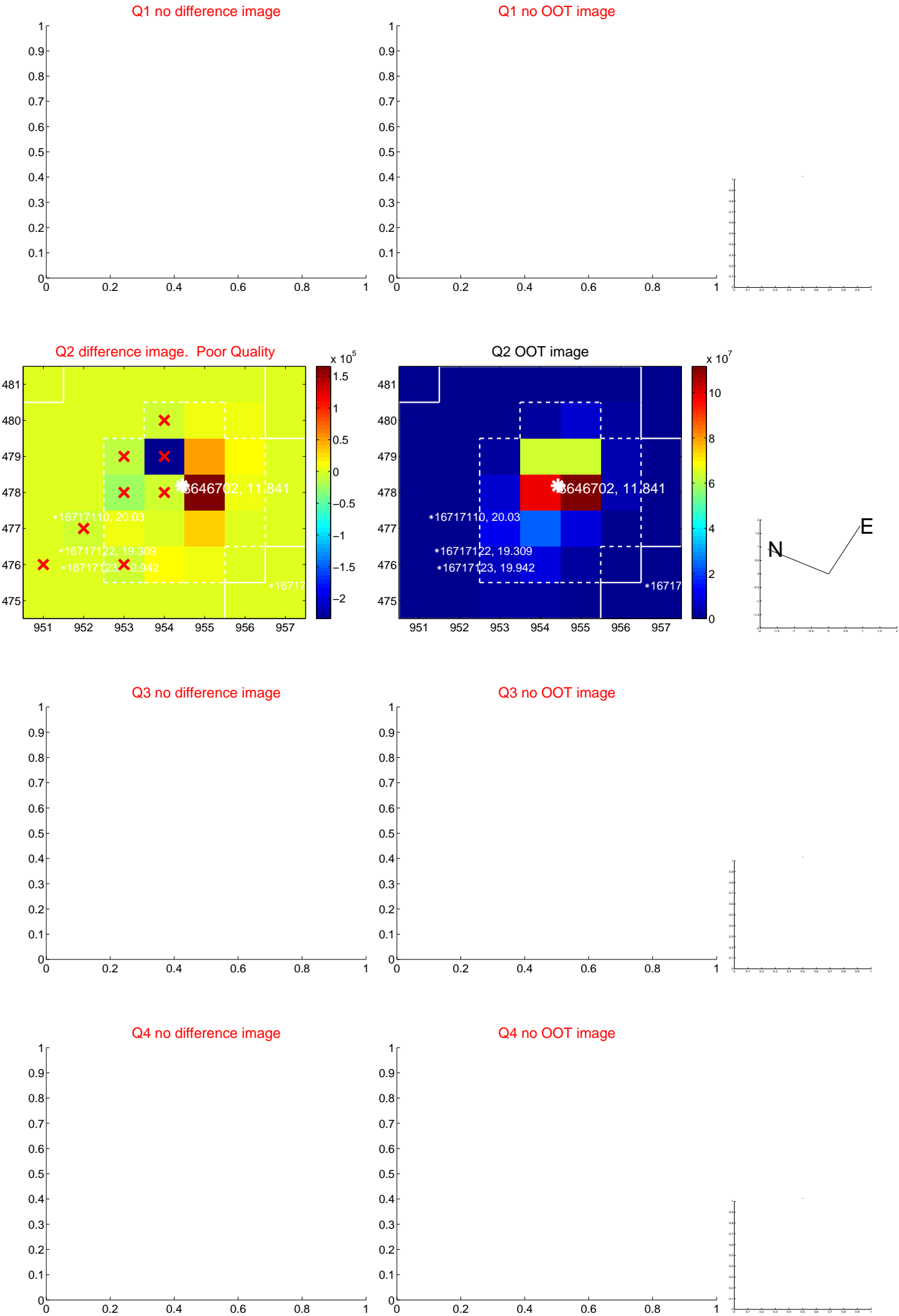


There is no PRF-fit offset from KIC



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.

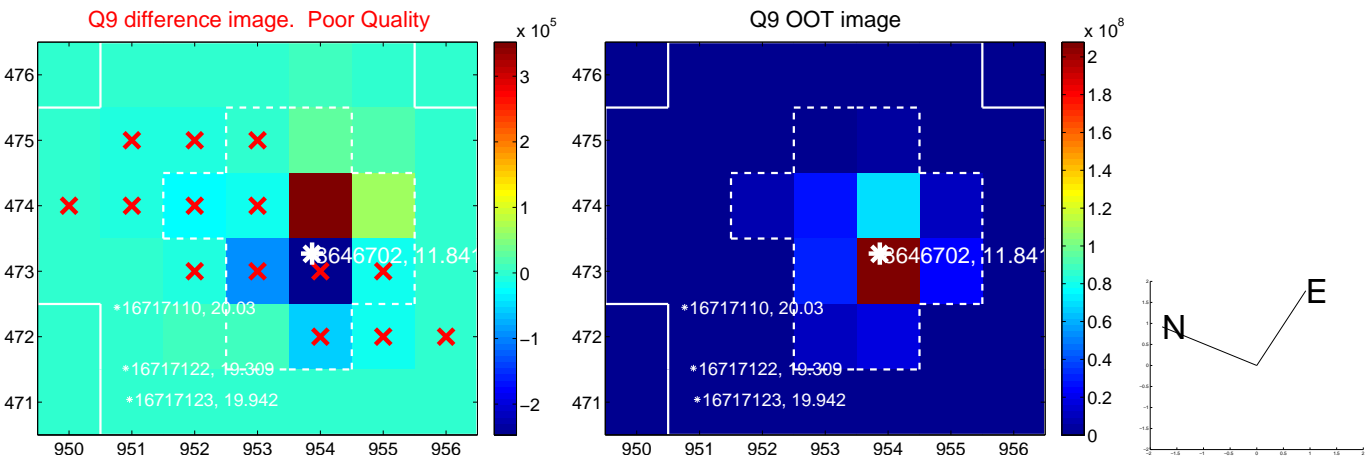
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



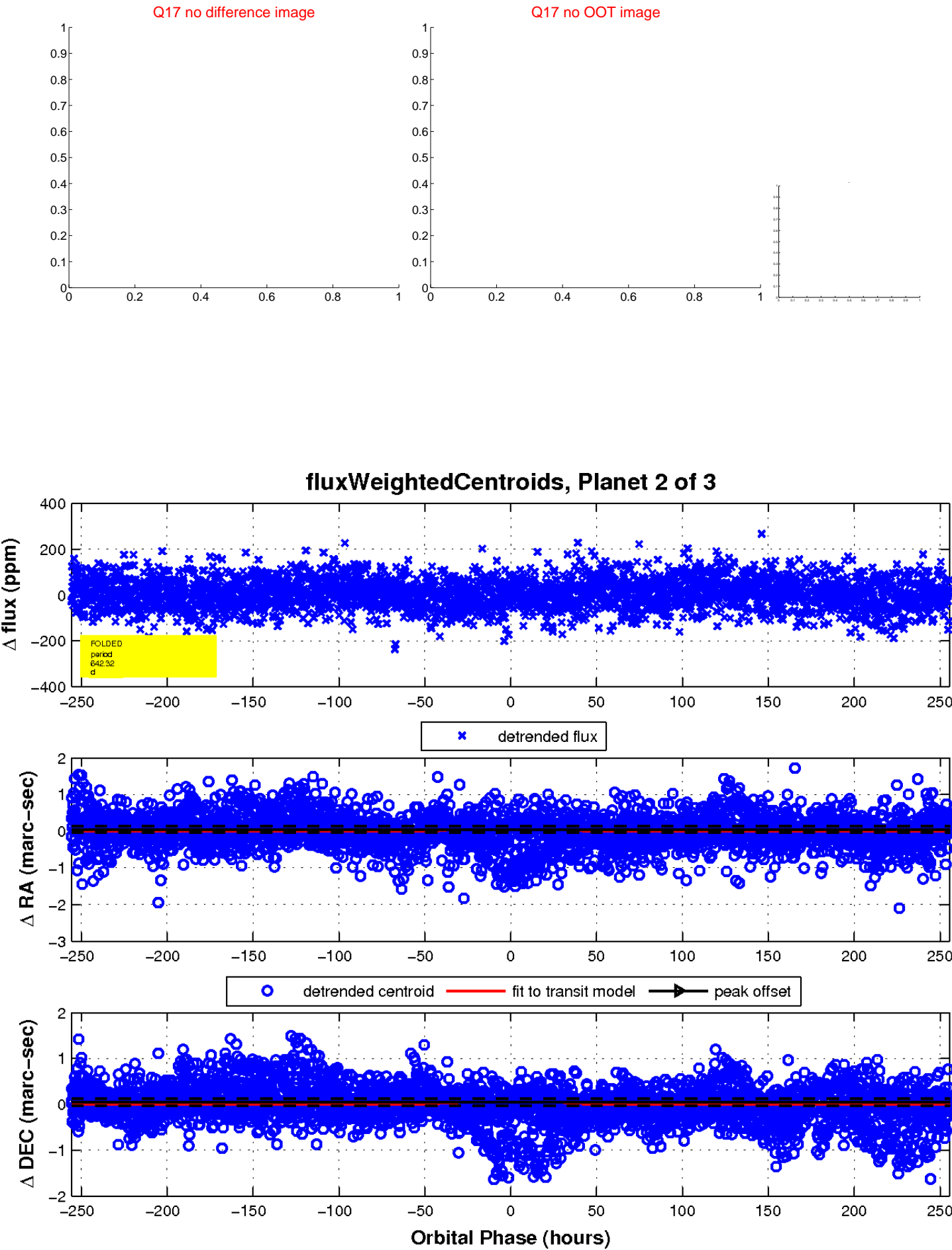
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

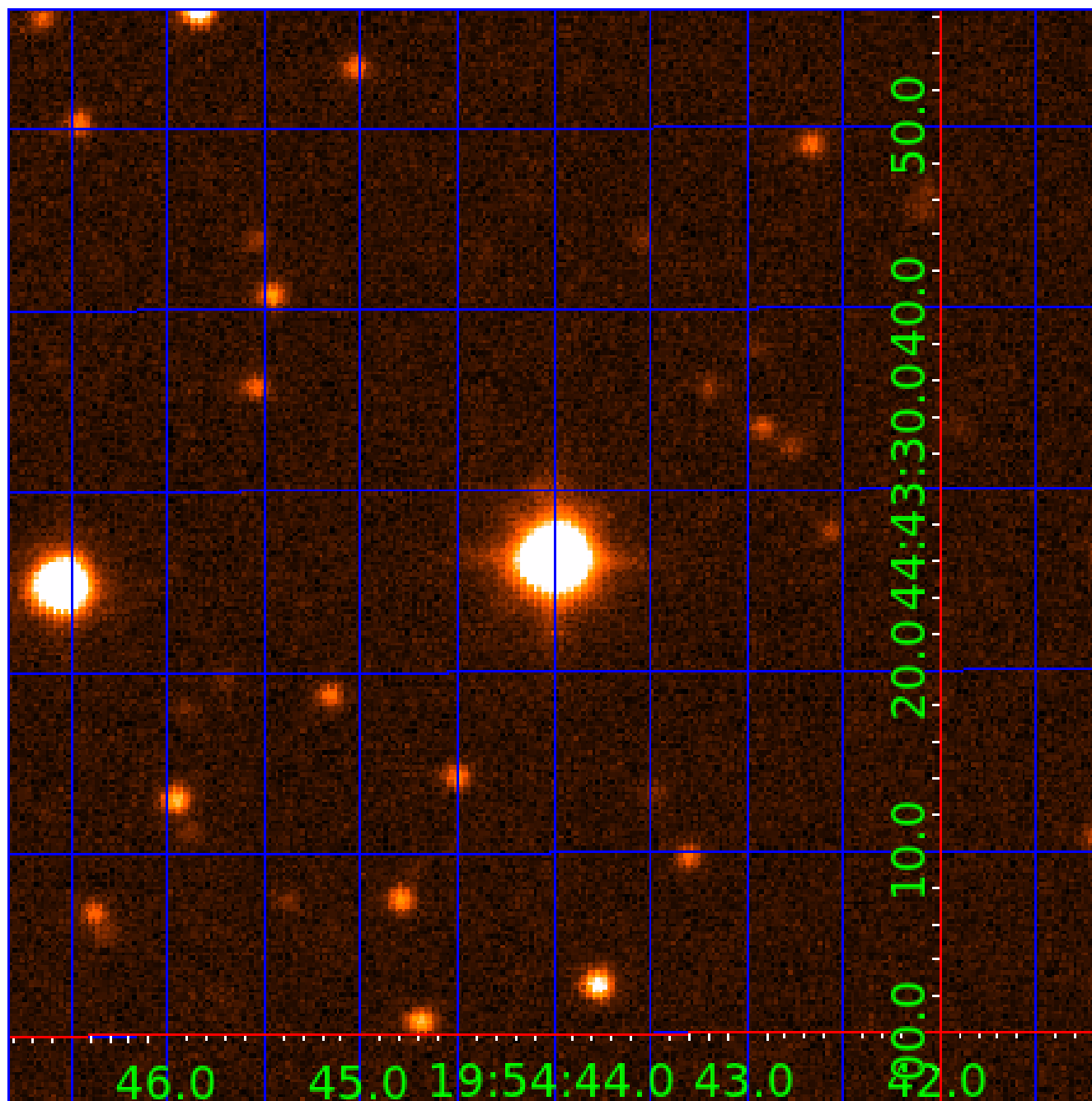


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008646702

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})
008646702-01	OBS	No	4.201925	133.855493	7.7	15.653	8.4	8.1	1.21	6436	0.39	805.38
008646702-02	OBS	No	642.315750	216.444758	104.2	85.222	12.4	8.2	1.21	6436	1.29	0.98
008646702-03	OBS	No	8.404994	132.952738	18.4	42.474	9.6	11.1	1.21	6436	0.57	319.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008646702-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
008646702-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008646702-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

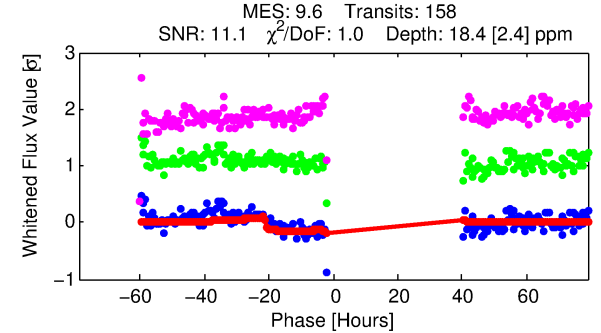
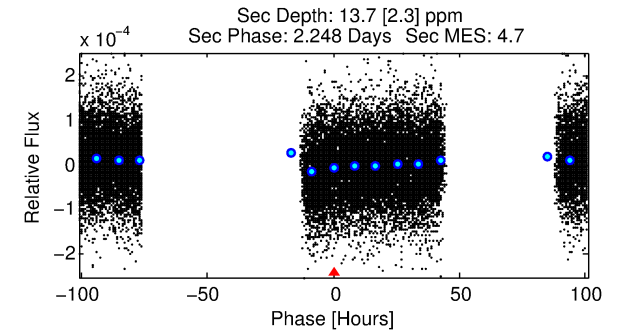
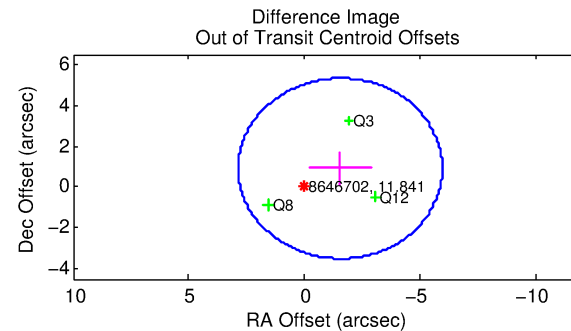
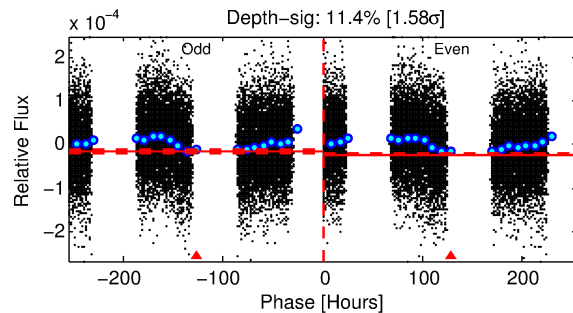
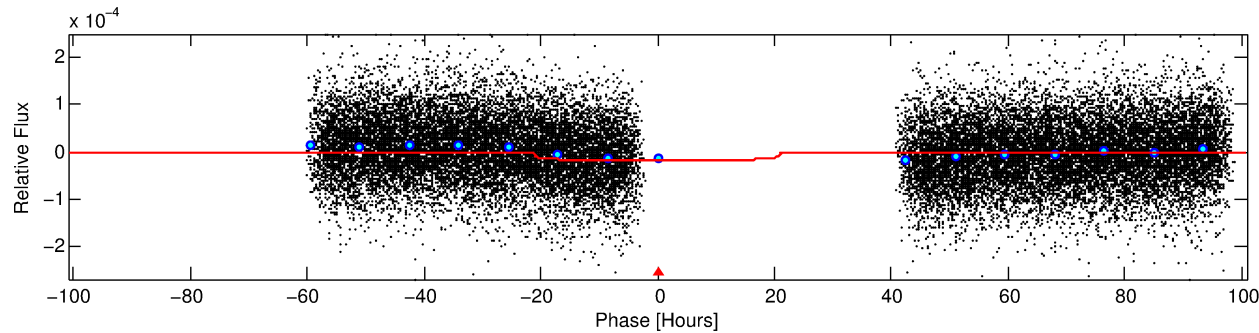
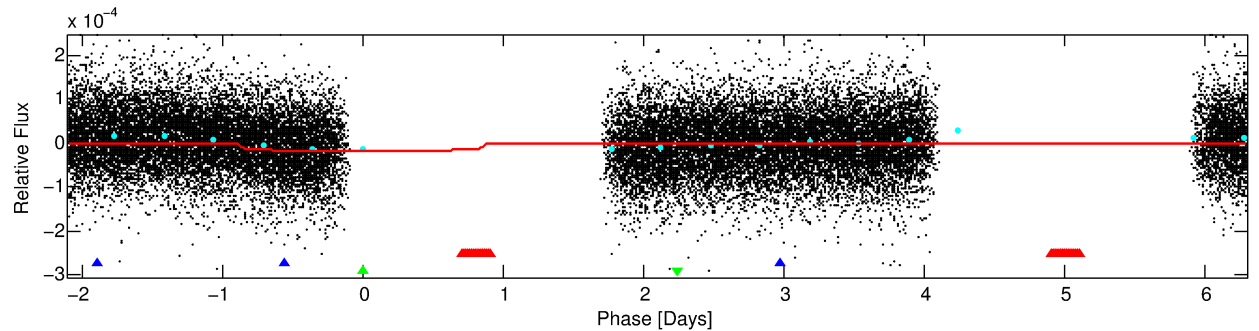
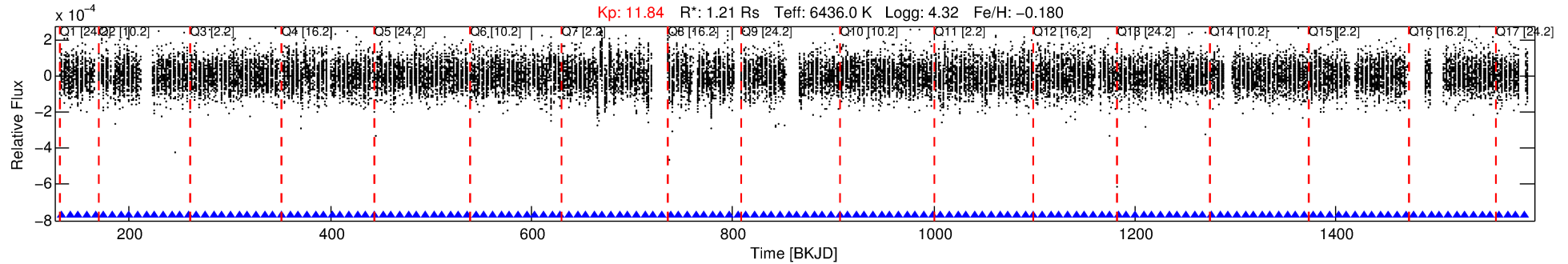
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008646702-03

No Significant Match Found

DV One-Page Summary

KIC: 8646702 Candidate: 3 of 3 Period: 8.405 d



DV Fit Results:

Period = 8.40499 [0.00023] d
Epoch = 132.9527 [0.1765] BKJD
Rp/R* = 0.0043 [0.0008]
a/R* = 1.29 [0.50]
b = 0.79 [0.59]
Seff = 319.56 [89.43]
Teq = 1078 [75] K
Rp = 0.57 [0.16] Re
a = 0.0841 [0.0152] AU
Ag = 163.67 [78.97] [2.06 σ]
Teffp = 5962 [631] K [7.69 σ]

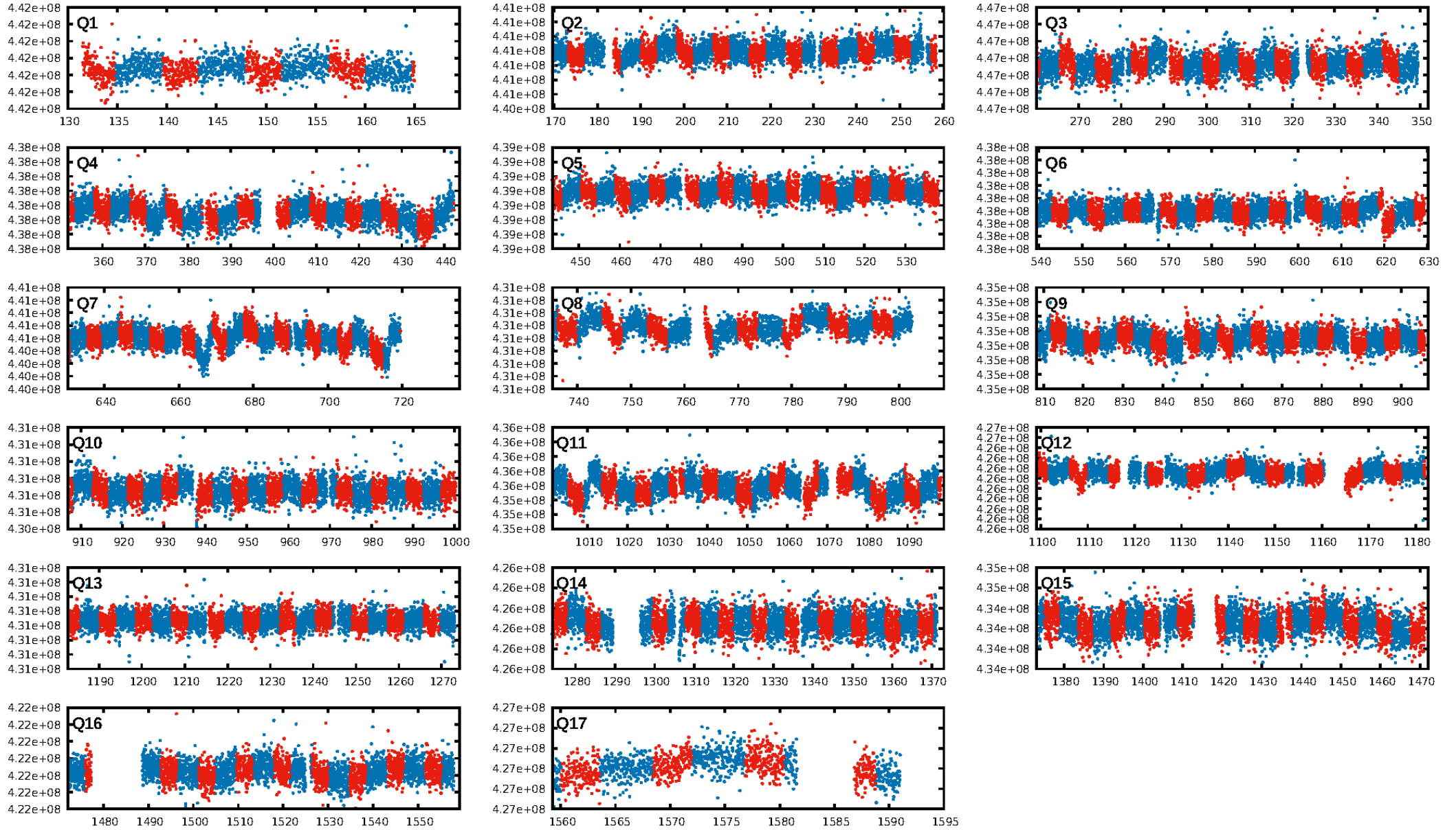
DV Diagnostic Results:

ShortPeriod-sig: 97.4% [2.23 σ]
LongPeriod-sig: 100.0% [159.78 σ]
ModelChiSquare2-sig: 13.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.61e-16
RollingBand-fgt: 1.00 [151/151]
GhostDiagnostic-chr: -40.8
Centroid-sig: 0.0%
Centroid-so: 1.904 arcsec [2.16 σ]
OotOffset-rm: 1.796 arcsec [1.22 σ]
KicOffset-rm: 1.733 arcsec [1.23 σ]
OotOffset-st: 0/1/2/0 [3]
KicOffset-st: 0/1/2/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/17]

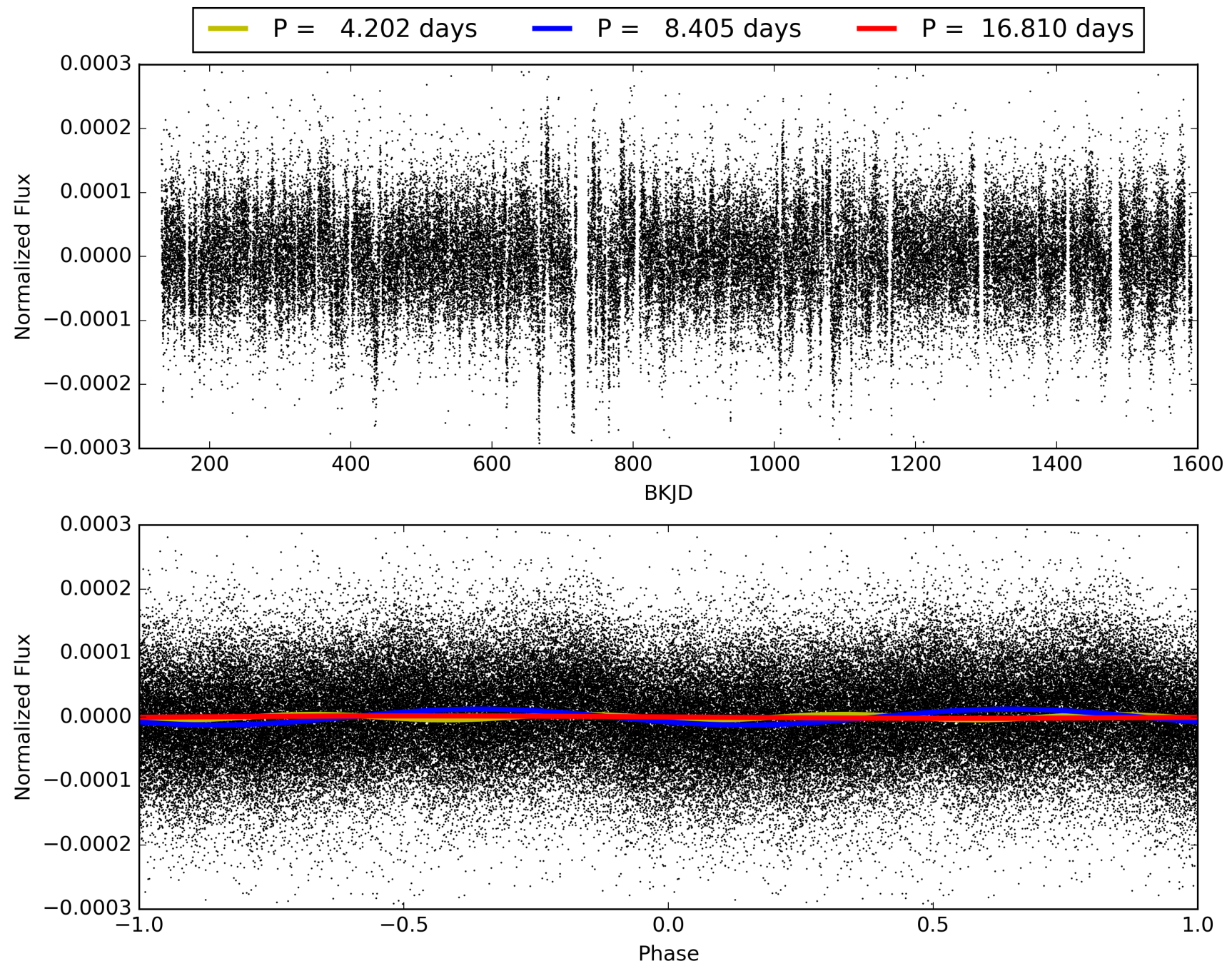
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:31:28 Z

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

TCE 008646702-03, PDC Light Curves

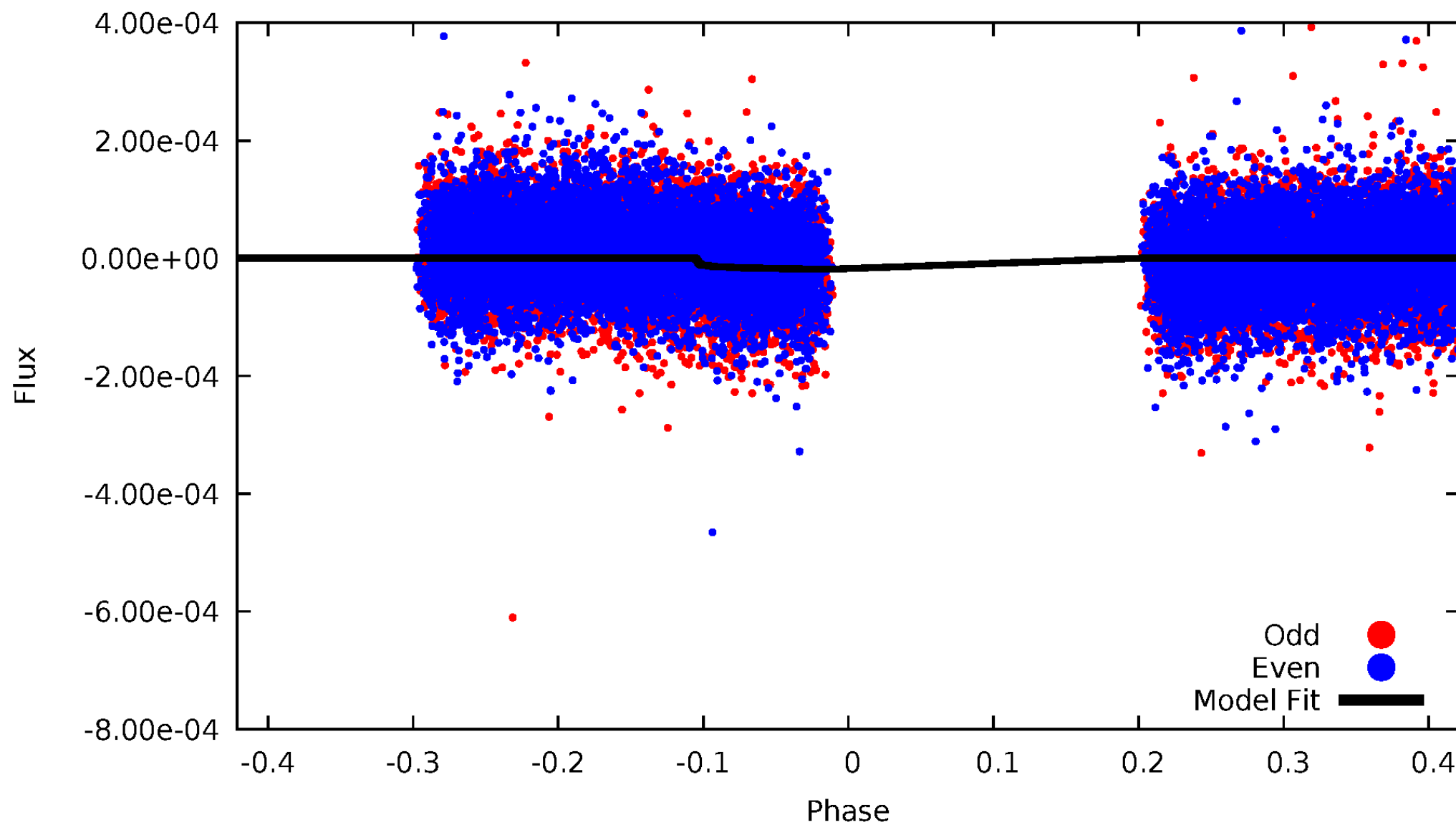


TCE 008646702-03



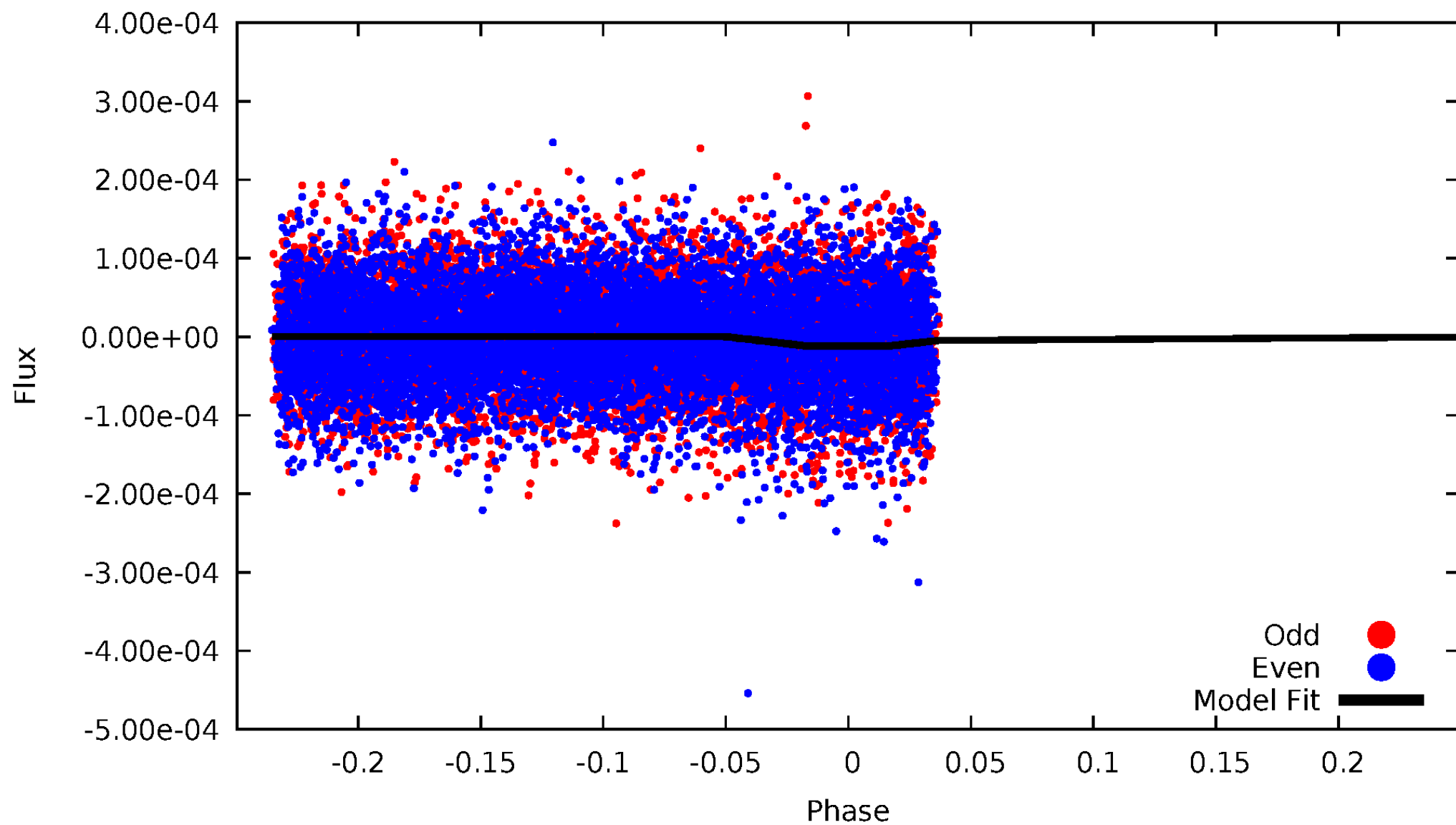
DV Odd/Even

TCE 008646702-03

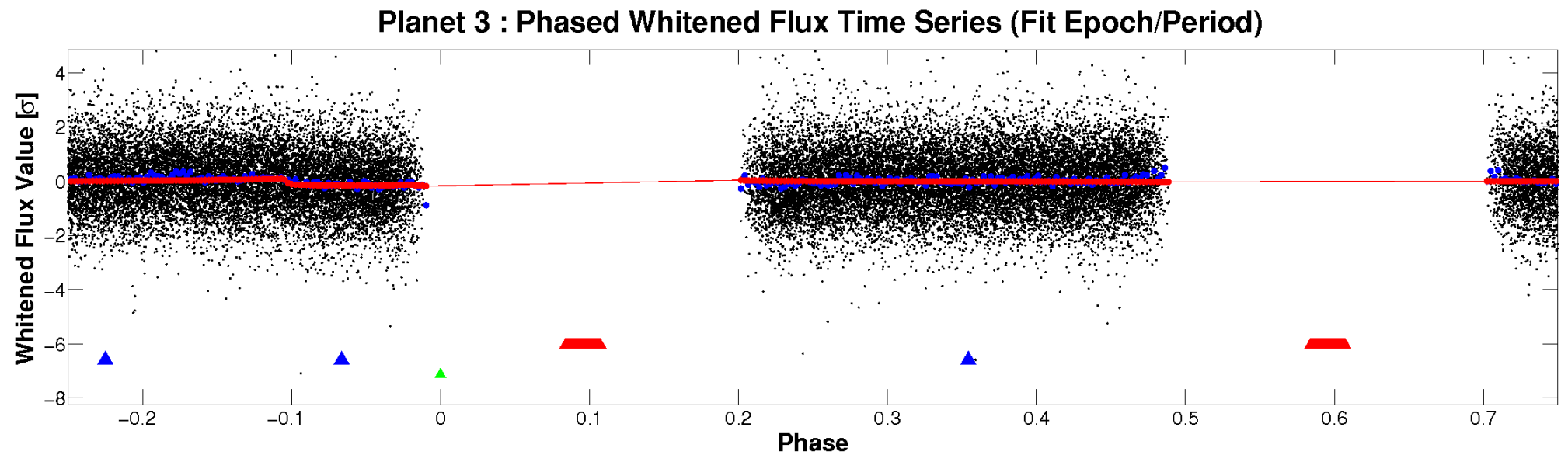
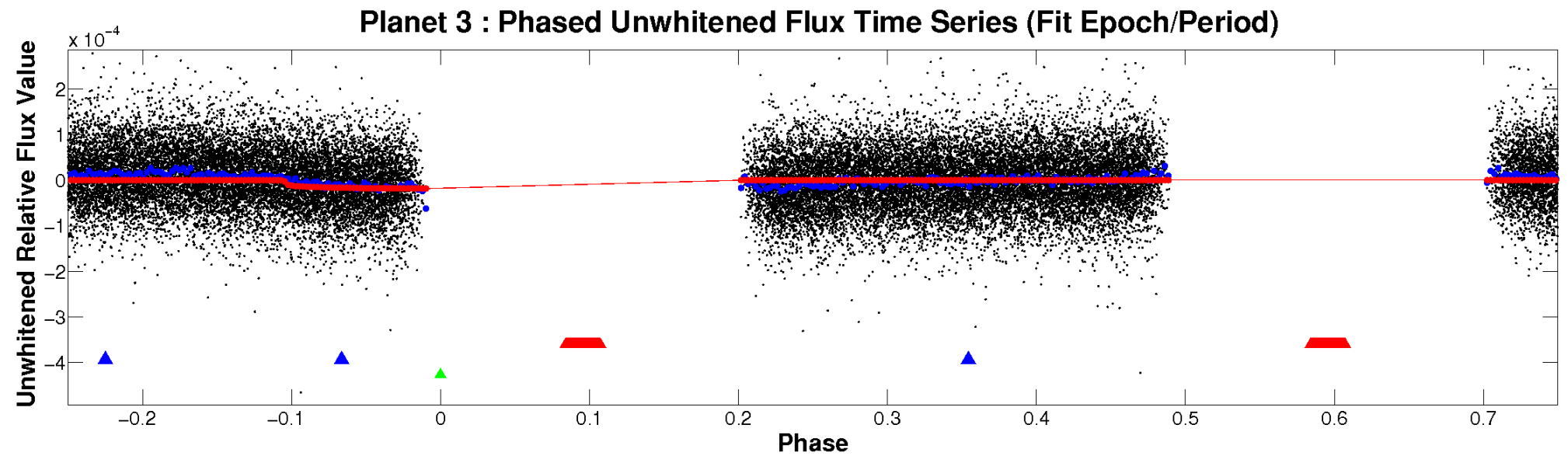


ALT Odd/Even

TCE 008646702-03

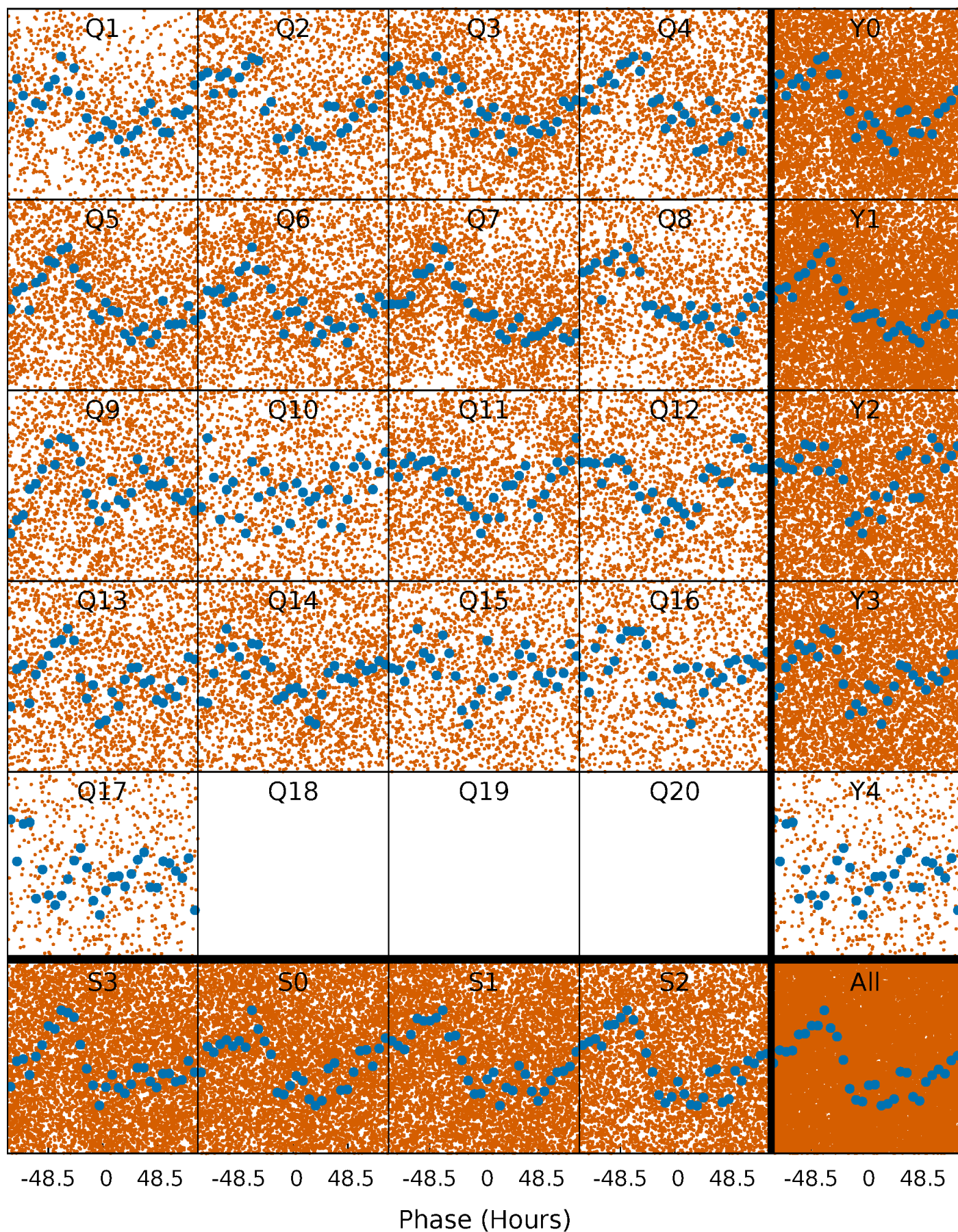


Non-Whitened Vs. Whitened Light Curve



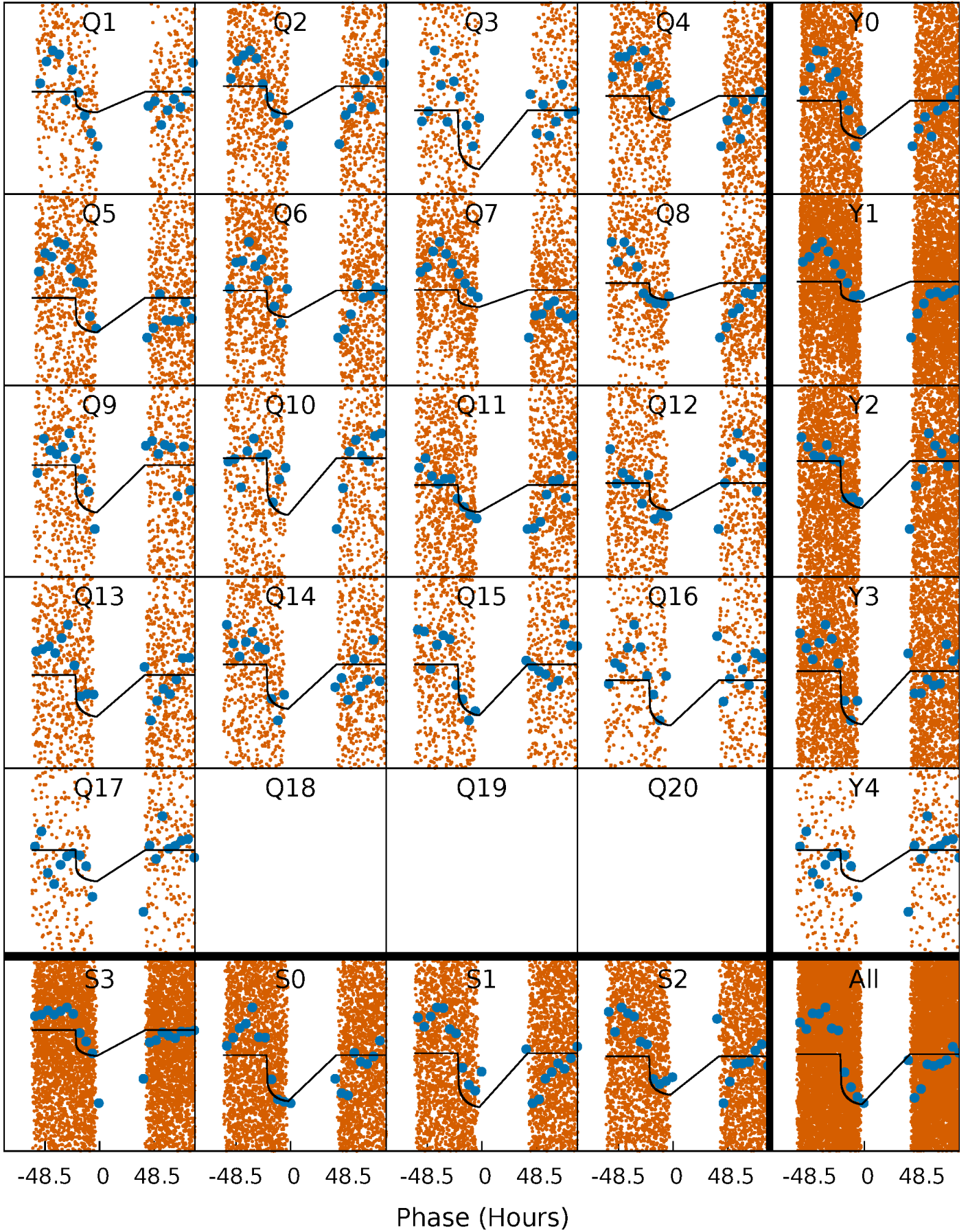
PDC Quarter-Phased Transit Curves

TCE 008646702-03 $P = 8.404994$ Days $T_0 = 132.952738$ (BKJD)



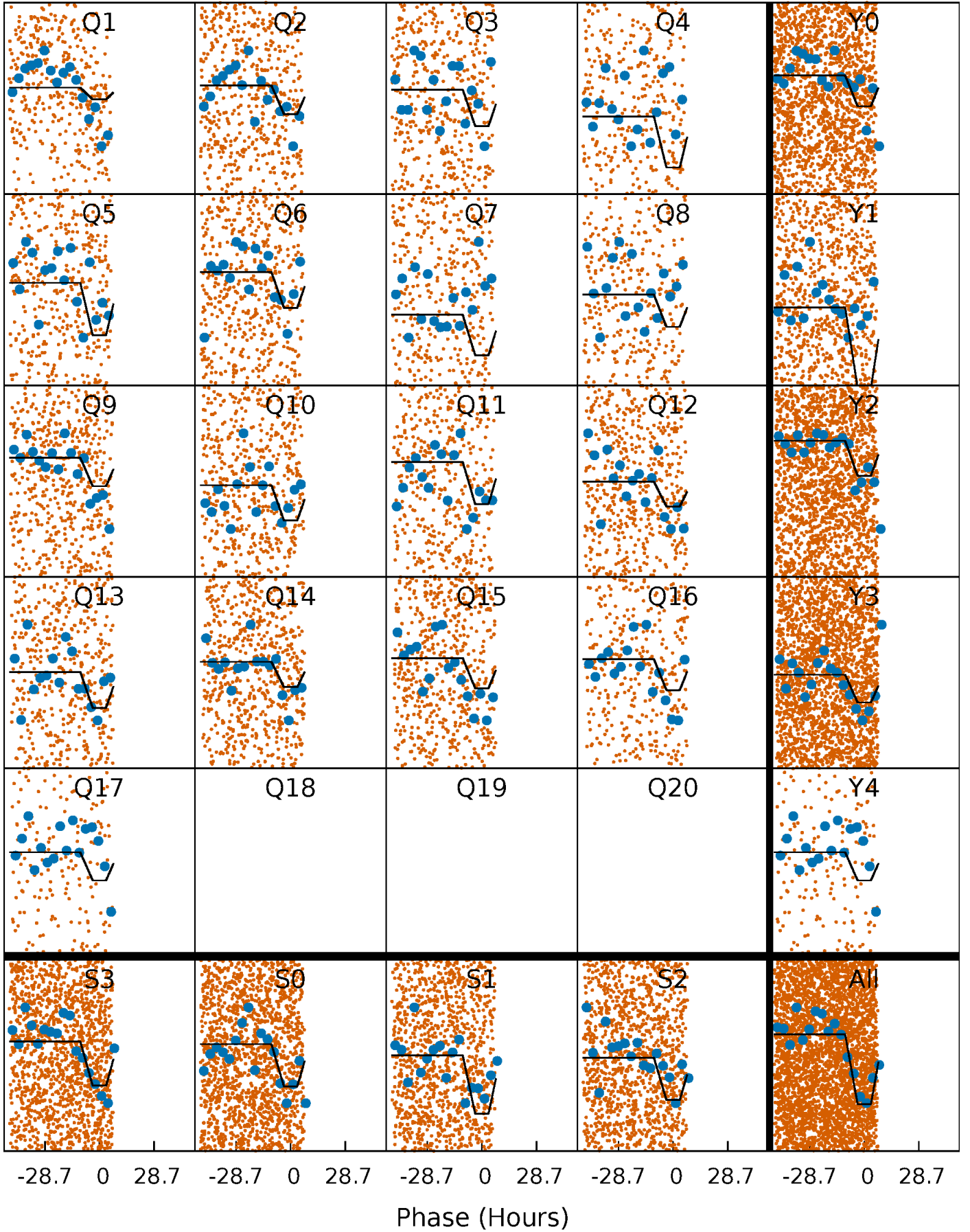
DV Quarter-Phased Transit Curves

TCE 008646702-03 $P = 8.404994$ Days $T_0 = 132.952738$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

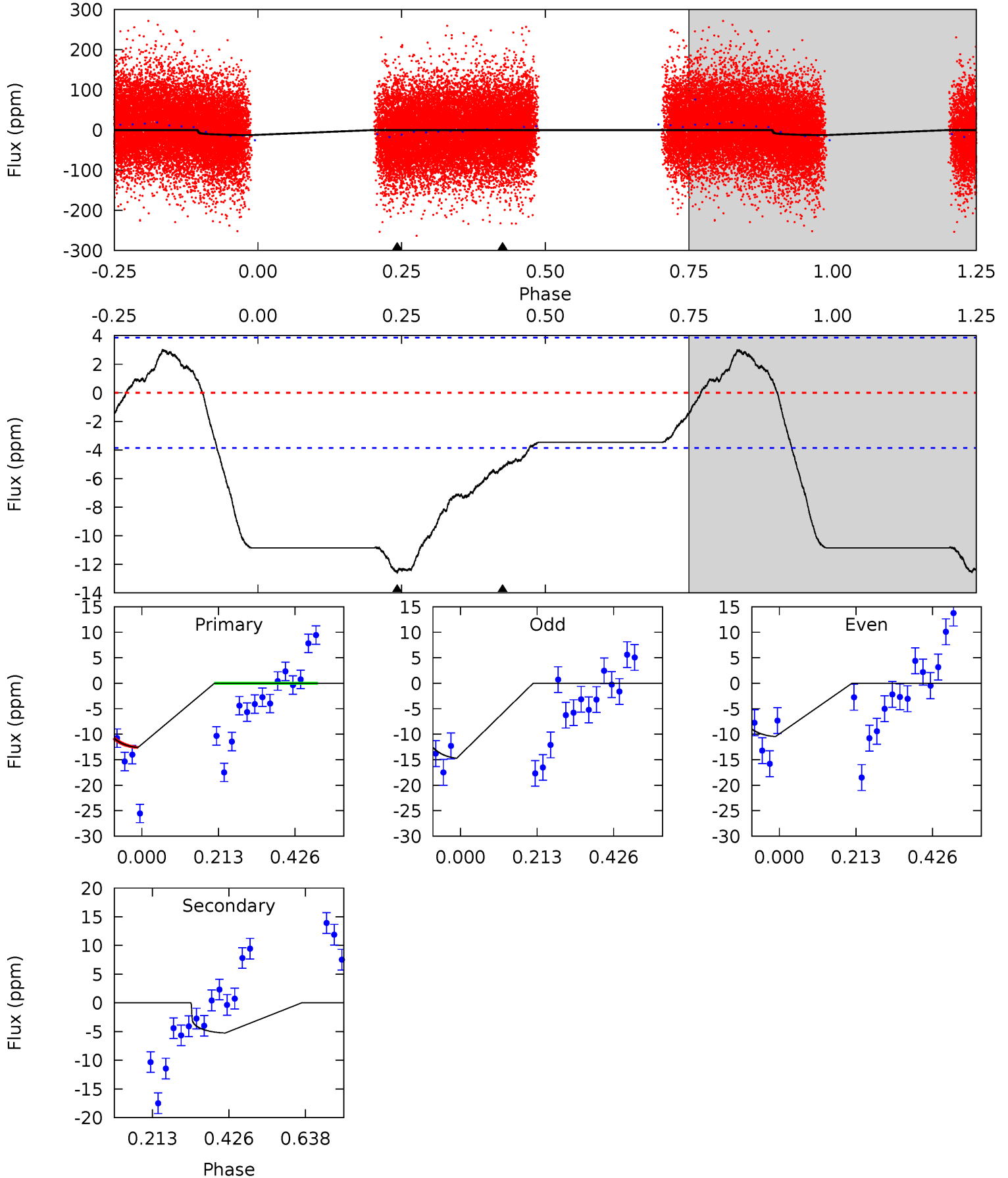
TCE 008646702-03 $P = 8.403468$ Days $T_0 = 132.619673$ (BKJD)



DV Model-Shift Uniqueness Test

008646702-03, P = 8.404994 Days, E = 124.547744 Days

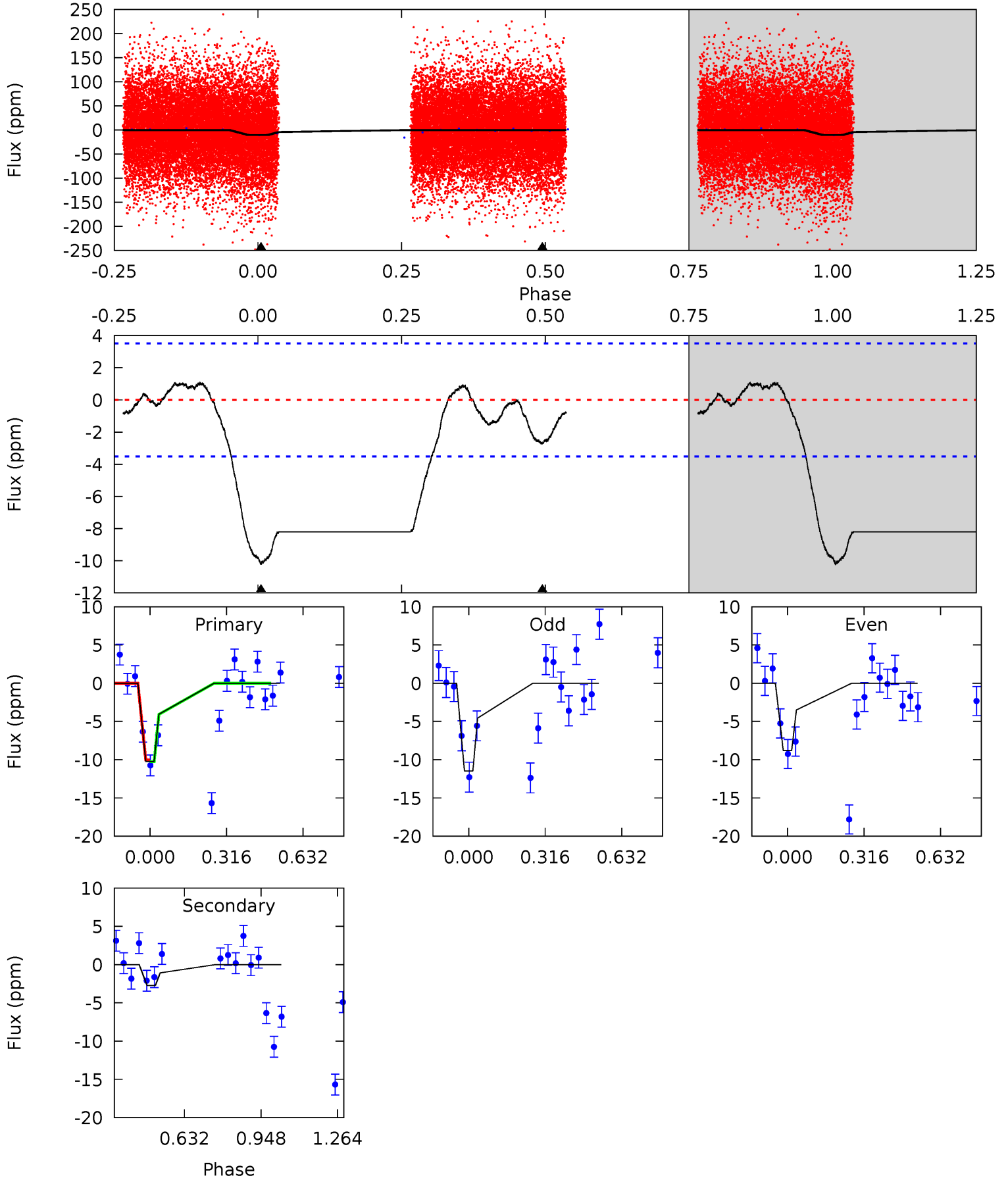
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	5.99	0	0	4.40	1.25	4.10	14.4	14.4	5.99	5.99	2.42	0	0.19	0



Alt Model-Shift Uniqueness Test

008646702-03, P = 8.403468 Days, E = 124.216205 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	3.33	0	0	4.32	1.00	1.20	12.5	12.5	3.33	3.33	1.66	0.74	0.10	0.13



Stellar Parameters For KIC 008646702

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6436^{+145}_{-178}	$4.321^{+0.092}_{-0.138}$	$-0.180^{+0.250}_{-0.300}$	$1.213^{+0.265}_{-0.155}$	$1.122^{+0.152}_{-0.125}$	$0.886^{+0.376}_{-0.367}$
	+2%/-3%	+2%/-3%	+139%/-167%	+22%/-13%	+14%/-11%	+42%/-41%
Source	PHO1	FLK73	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 008646702-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5 ± 1	$0.58^{+0.14}_{-0.12}$	1510^{+78}_{-73}	4791^{+501}_{-398}	61^{+38}_{-22}
Alt.	-3 ± 1	$0.45^{+0.12}_{-0.11}$	1504^{+92}_{-68}	4624^{+547}_{-458}	52^{+39}_{-24}

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

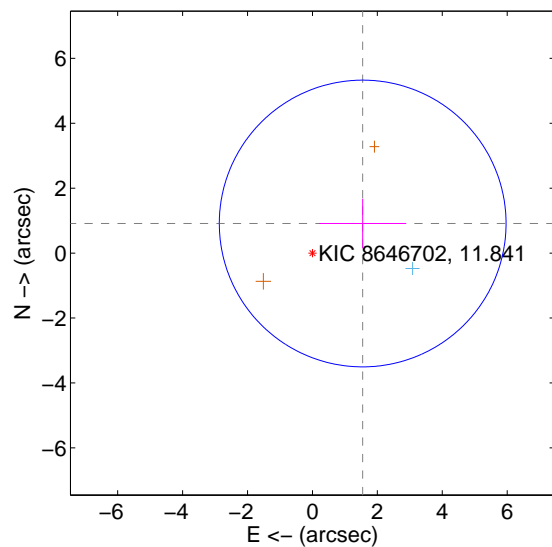
Supplemental centroid analysis for 008646702-03. **Kepler magnitude: 11.84.** Transit SNR 11.07

There are 1 quarters with good PRF difference image offsets

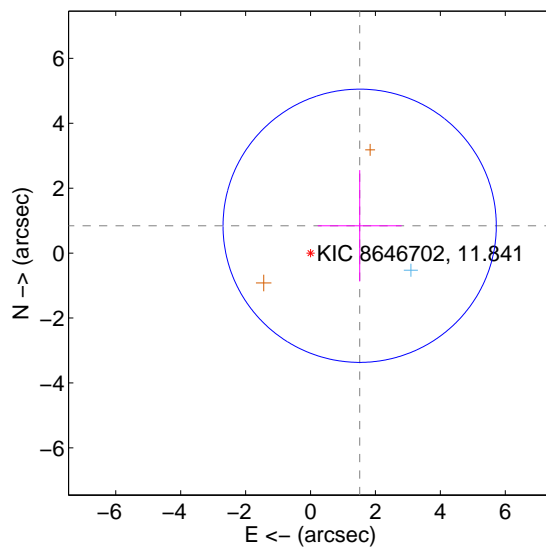
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.796 ± 1.472	1.22	-1.548 ± 1.341	0.912 ± 0.764
PRF-fit source offset from KIC position	1.733 ± 1.403	1.23	-1.514 ± 1.292	0.842 ± 1.715
photometric centroid source offset	1.90 ± 0.88	2.16	-0.59 ± 0.92	-1.81 ± 0.88

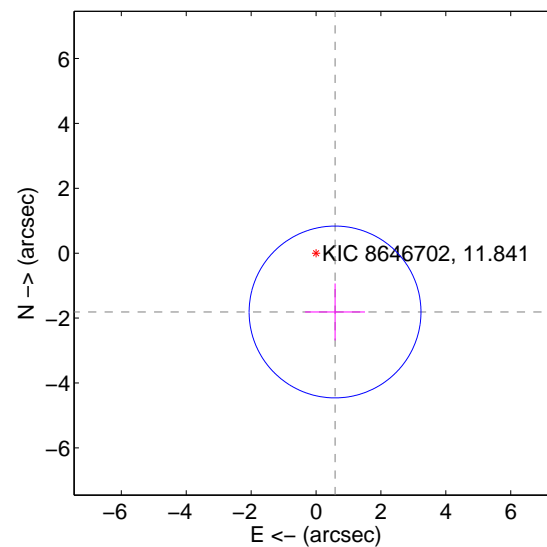
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

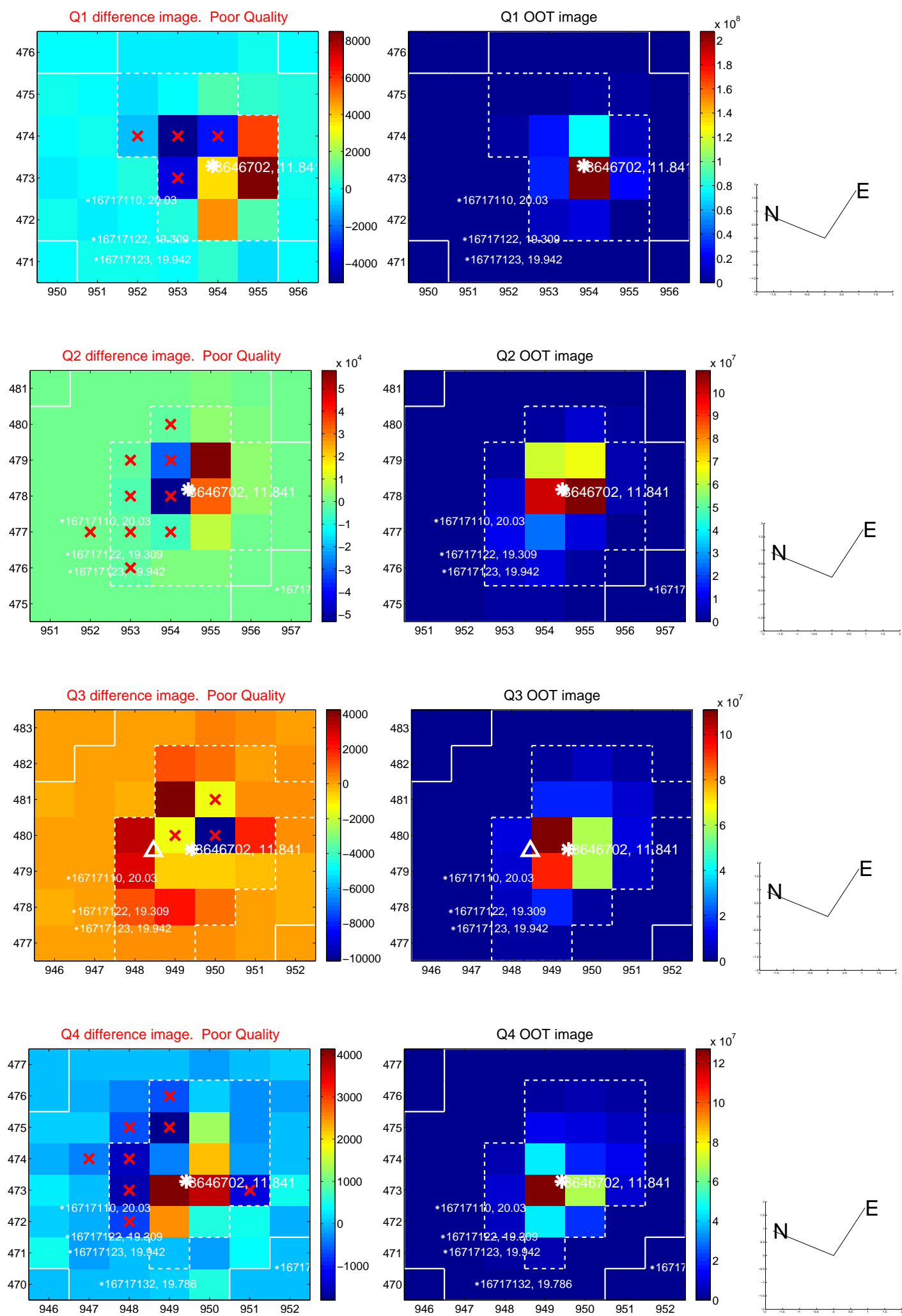


offset from photometric centroids

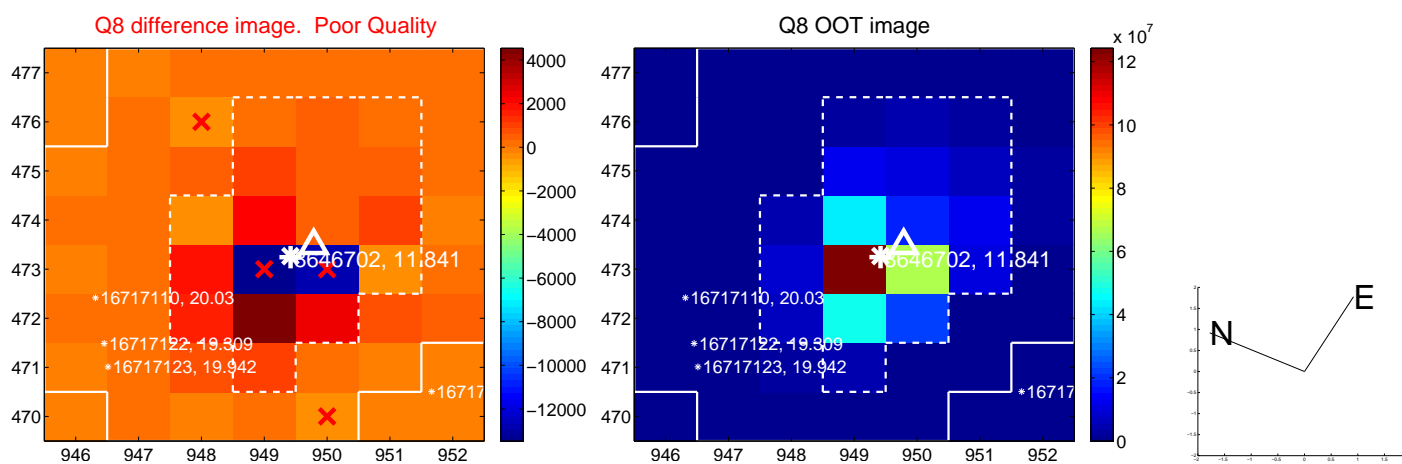
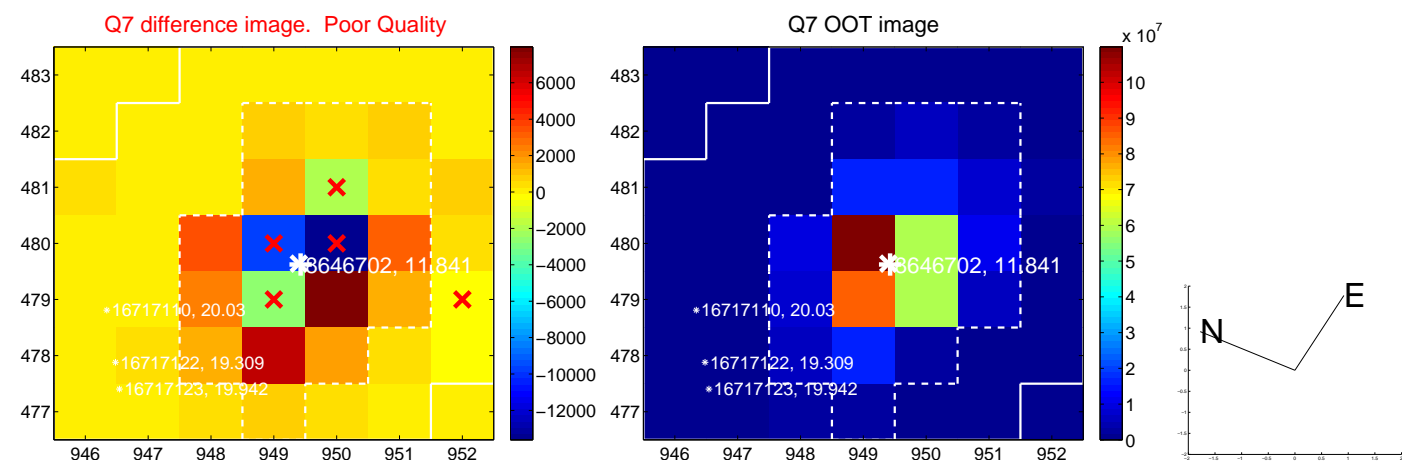
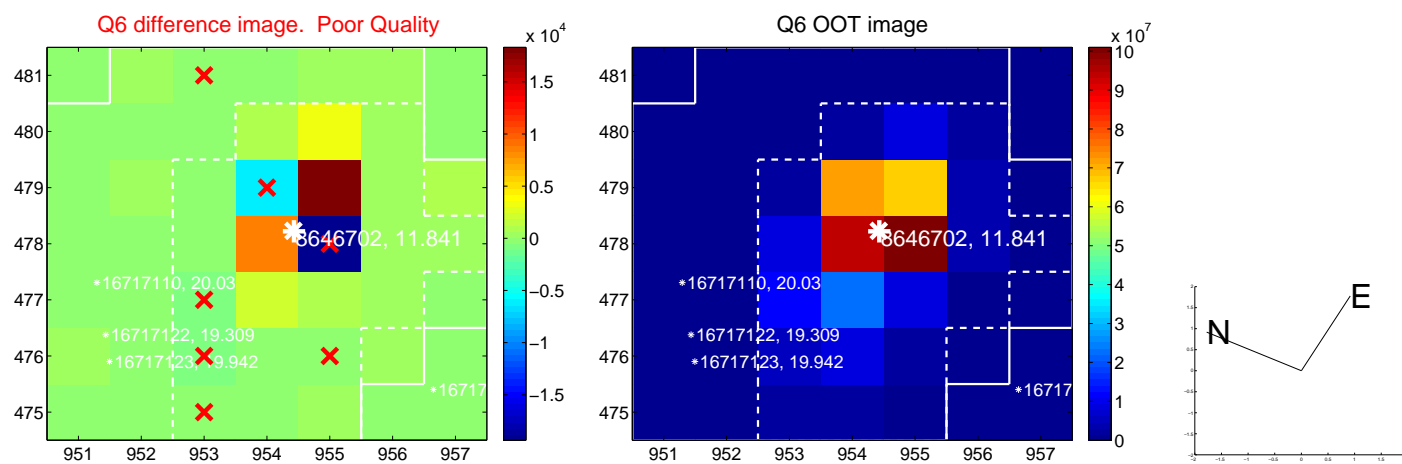
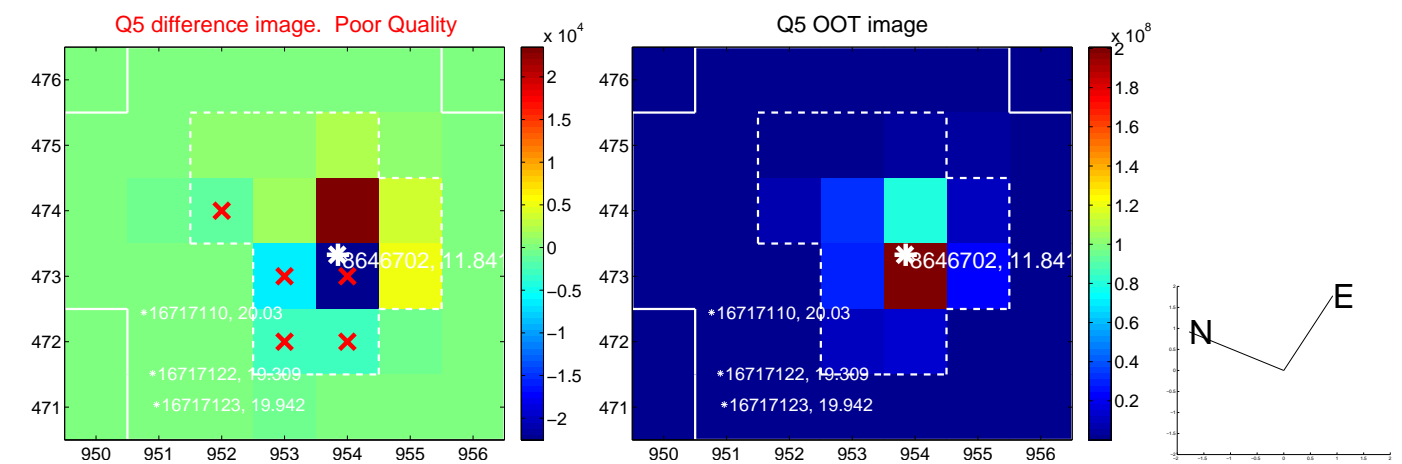


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

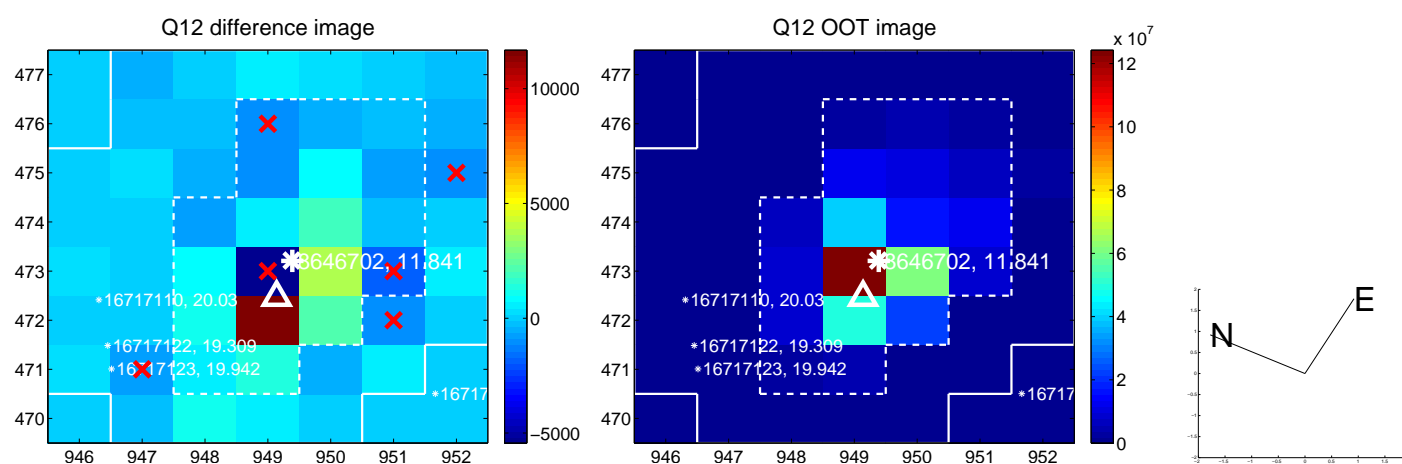
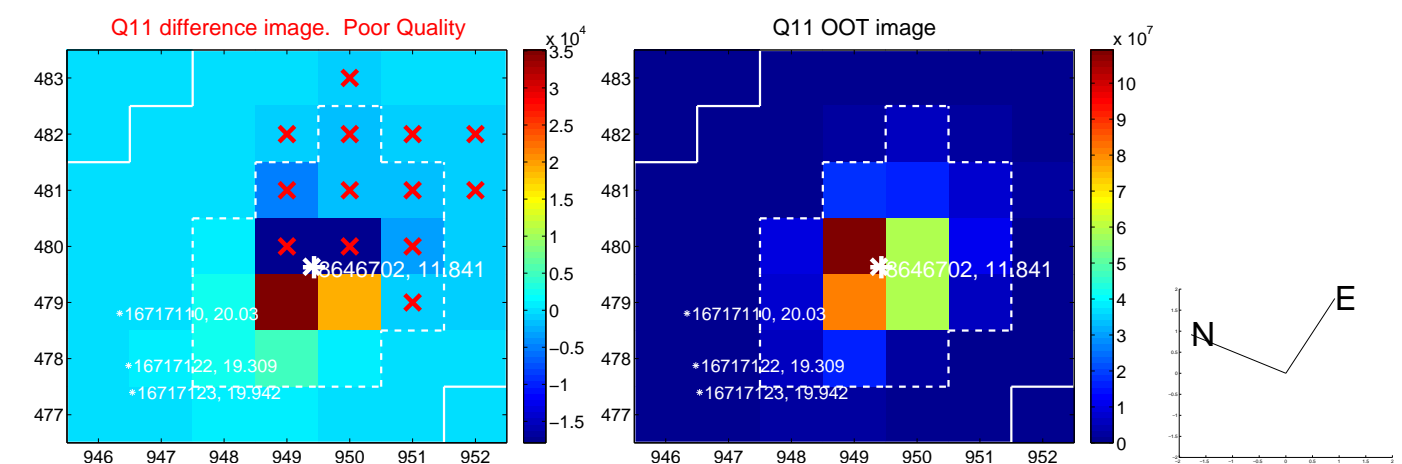
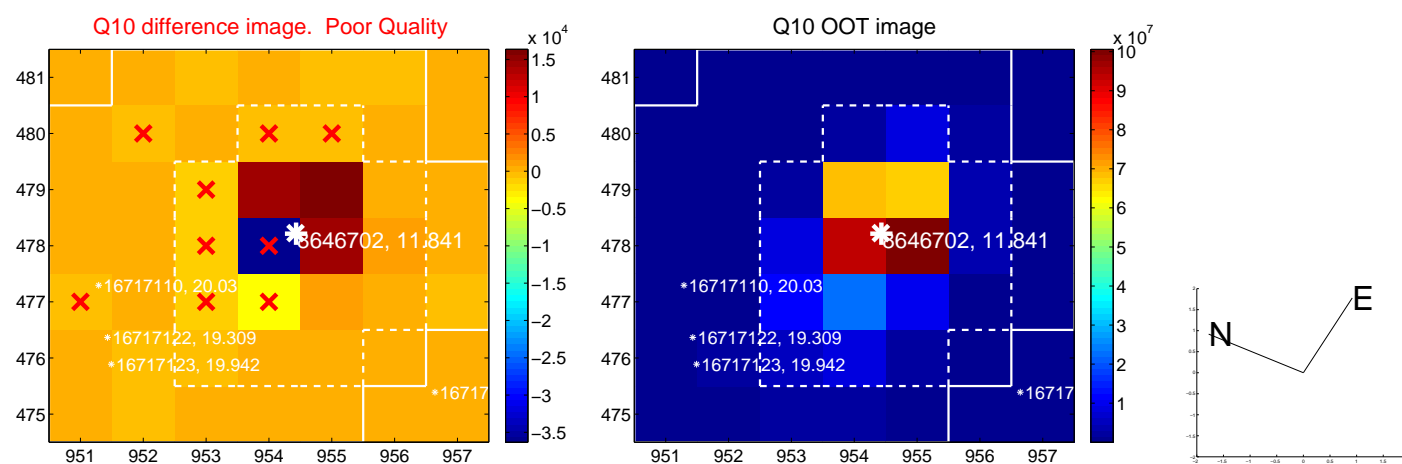
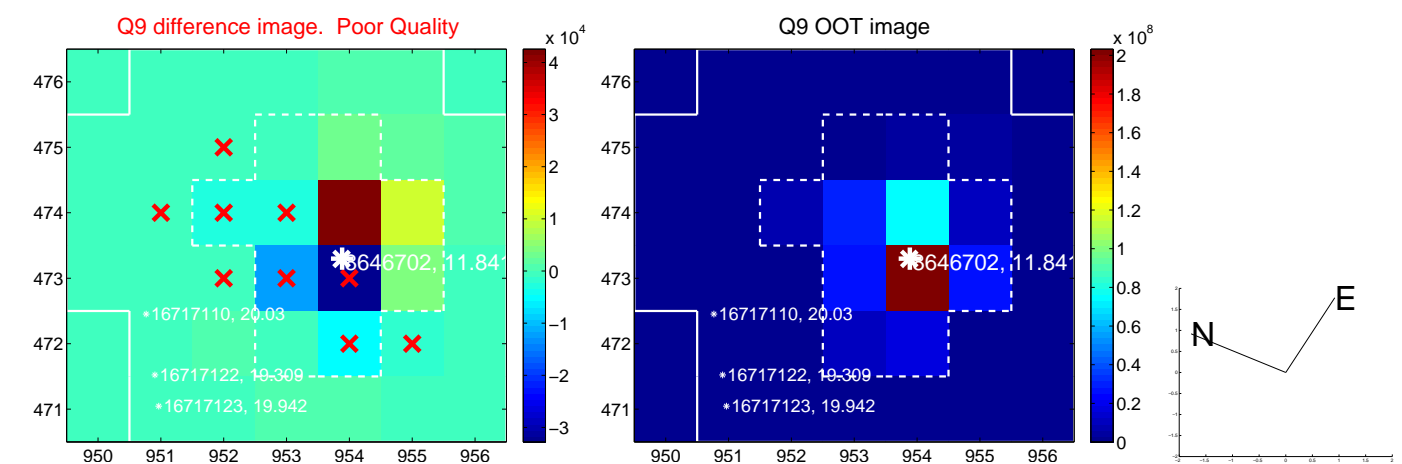
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



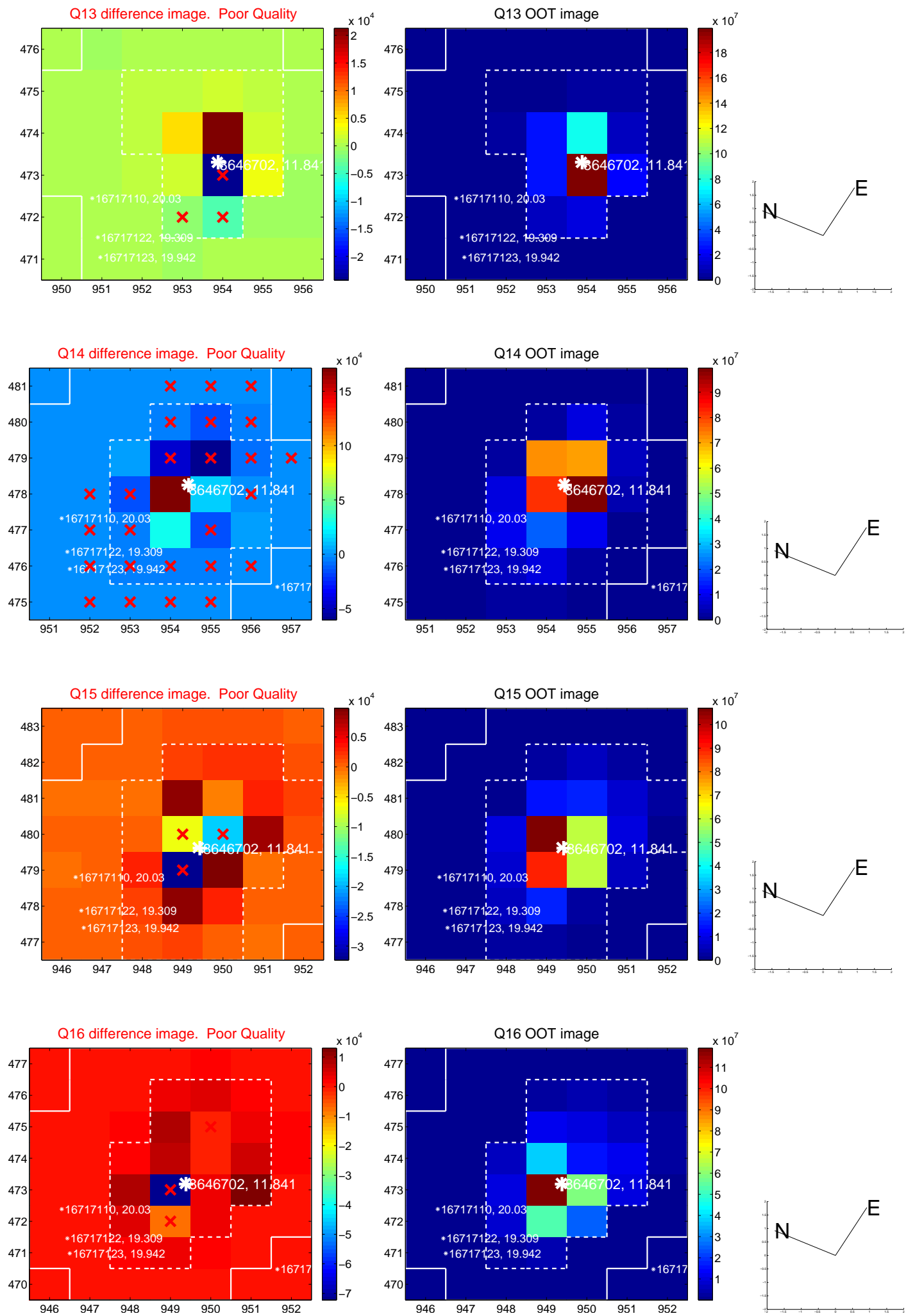
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



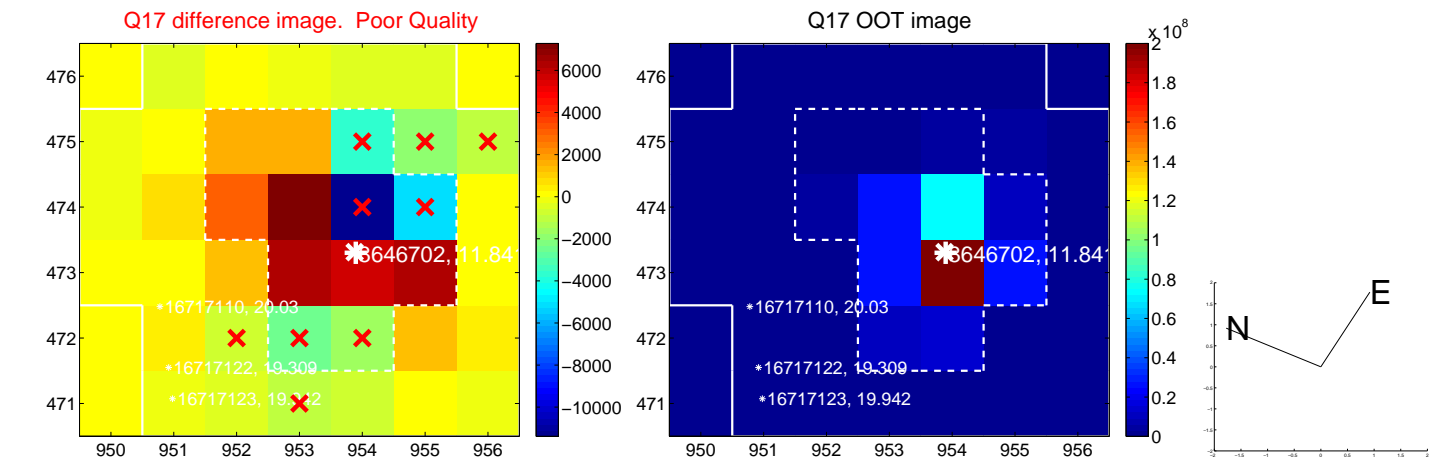
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



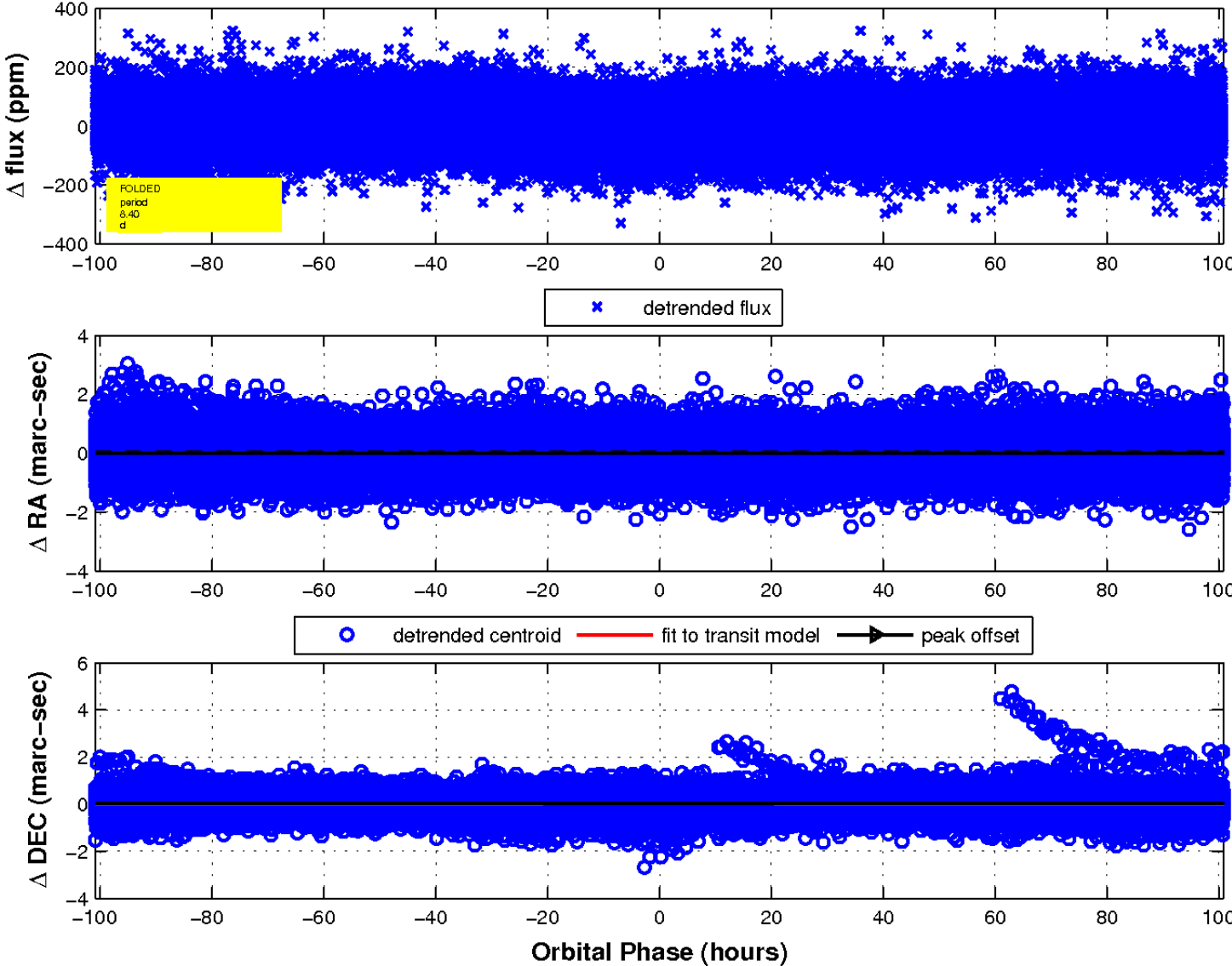
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

