

KIC 008516008

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})
008516008-01	OBS	No	1.149256	131.547094	112.1	3.652	10.6	10.4	4.33	8540	5.31	102257.39
008516008-02	OBS	No	1.149287	131.980890	136.8	3.220	11.2	14.1	4.33	8540	5.87	102253.83
008516008-03	OBS	No	0.866014	131.727189	84.7	8.949	10.5	8.1	4.33	8540	4.14	149125.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008516008-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
008516008-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
008516008-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

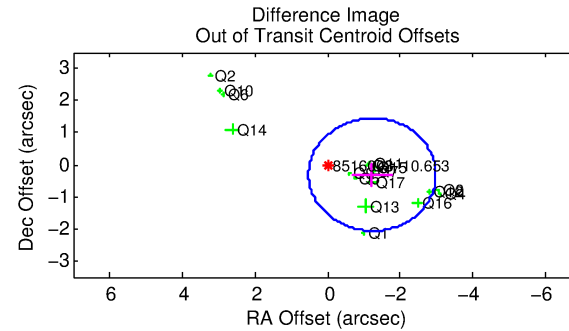
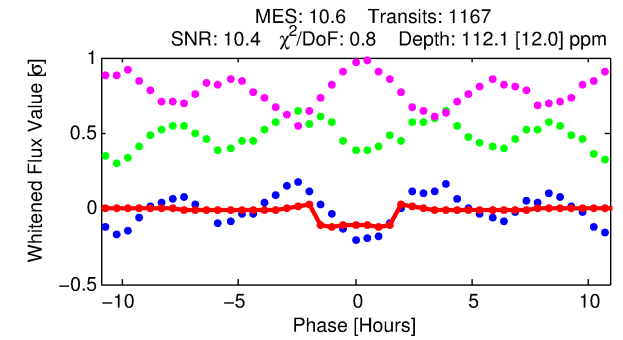
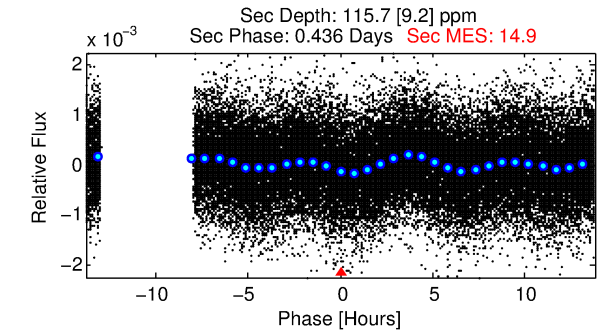
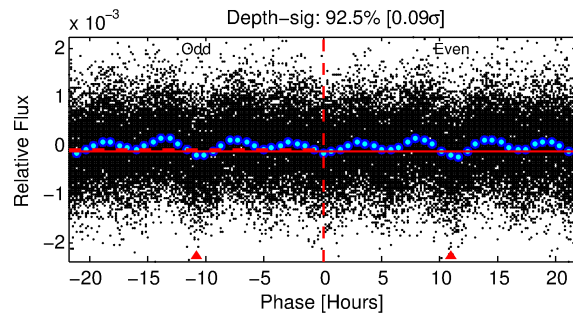
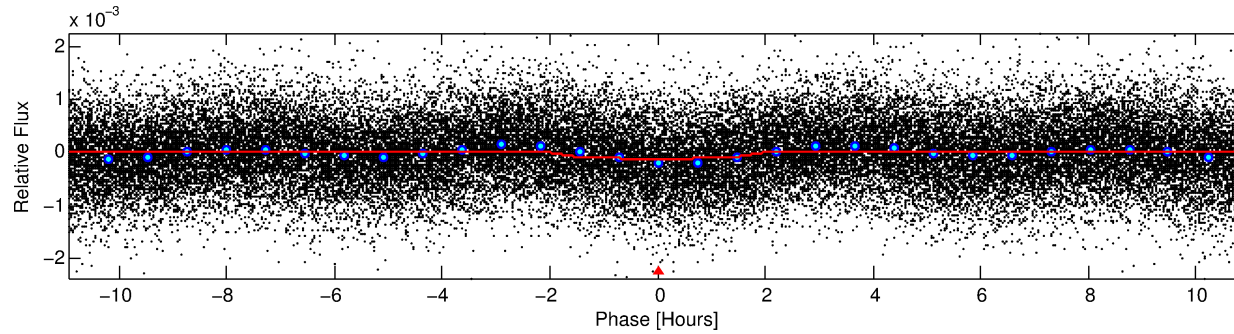
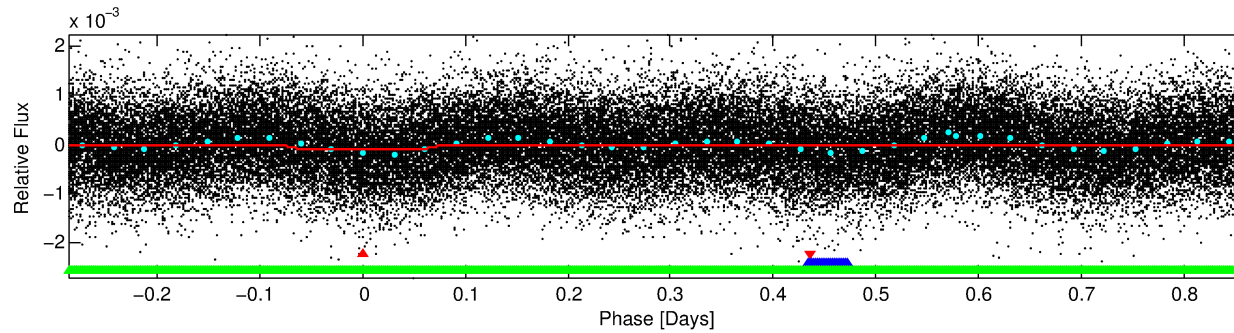
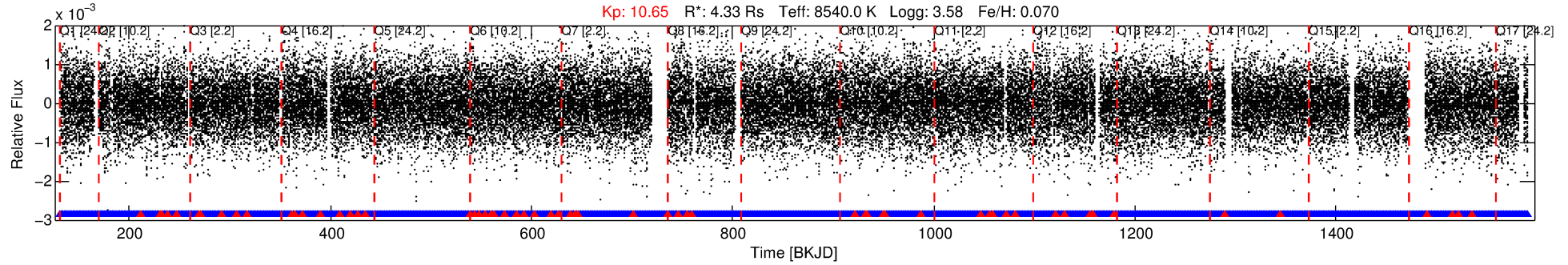
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008516008-01

No Significant Match Found

DV One-Page Summary

KIC: 8516008 Candidate: 1 of 3 Period: 1.149 d



DV Fit Results:

Period = 1.14926 [0.00001] d
Epoch = 131.5471 [0.0024] BKJD
Rp/R* = 0.0112 [0.0021]
a/R* = 1.45 [0.91]
b = 0.90 [0.25]
Seff = 102257.39 [99170.41]
Teff = 4560 [1106] K
Rp = 5.31 [3.22] Re
a = 0.0295 [0.0172] AU
Ag = 1.97 [2.02] [0.48 σ]
Teffp = 8351 [893] K [2.67 σ]

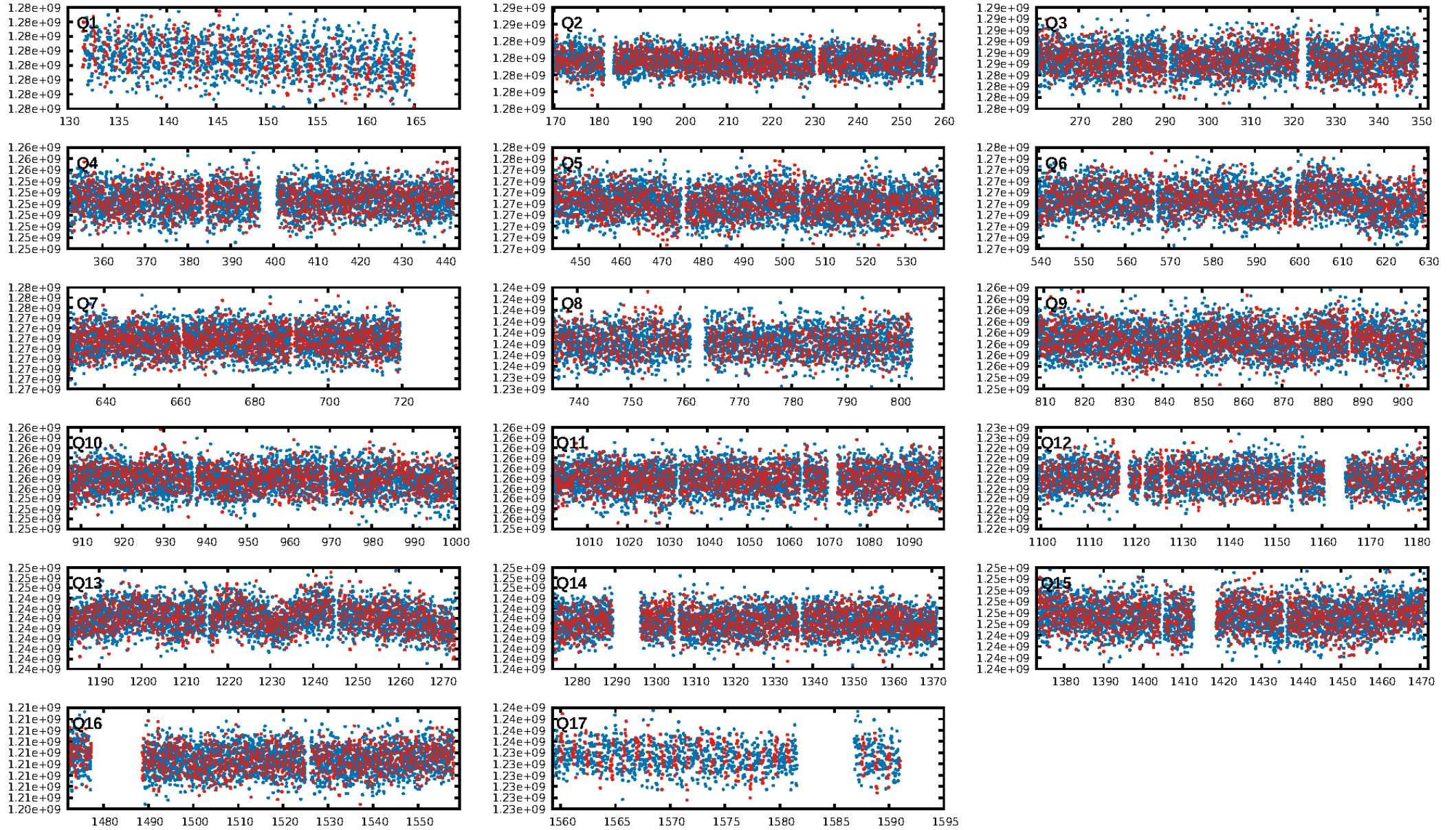
DV Diagnostic Results:

ShortPeriod-sig: 51.8% [0.70 σ]
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.95 [1054/1115]
GhostDiagnostic-chr: 1.476
Centroid-sig: 0.0%
Centroid-so: 0.256 arcsec [1.96 σ]
OotOffset-rm: 1.270 arcsec [2.18 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 1.818 arcsec [3.58 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 0.00 [0/17]

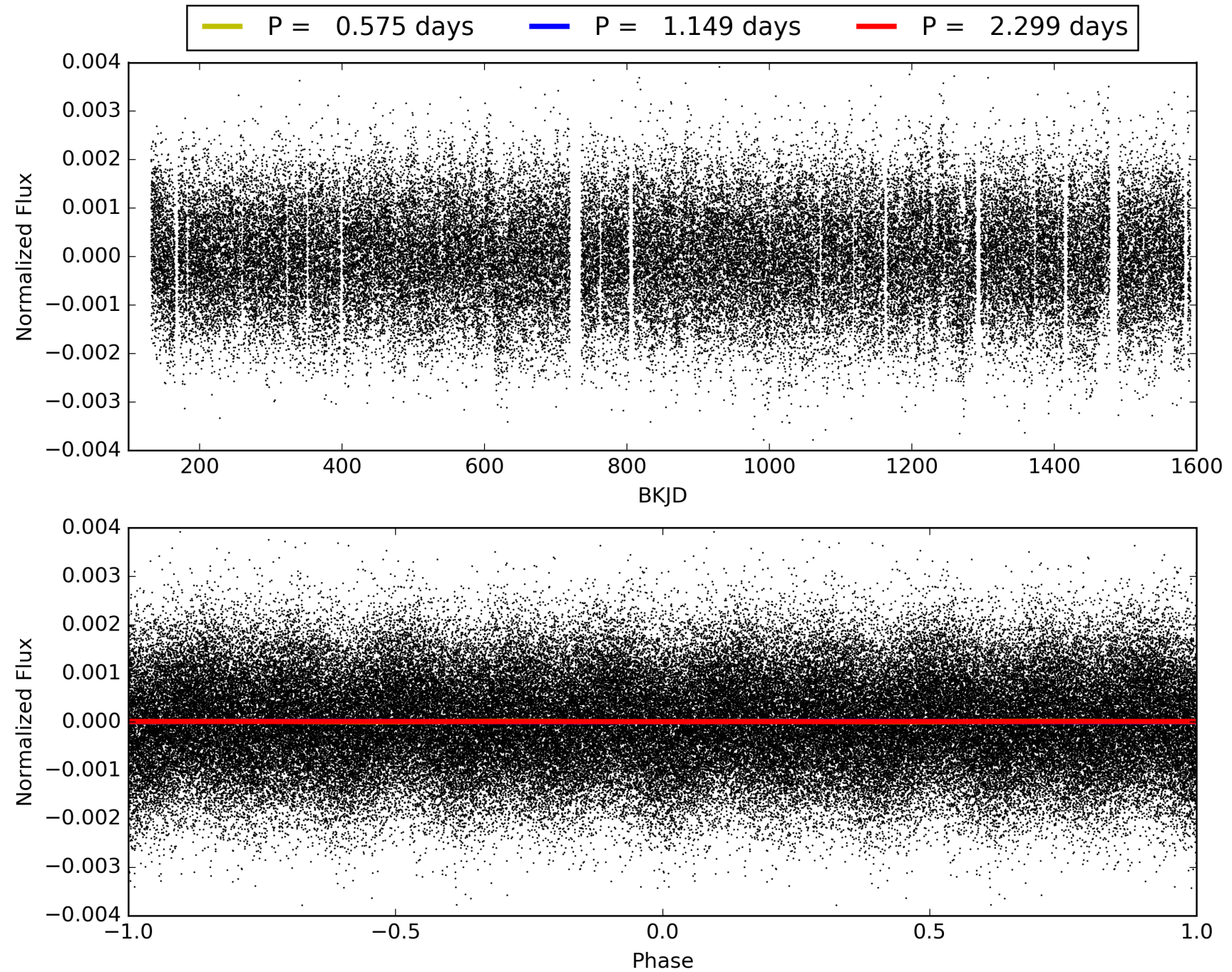
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:49:02 Z

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

TCE 008516008-01, PDC Light Curves

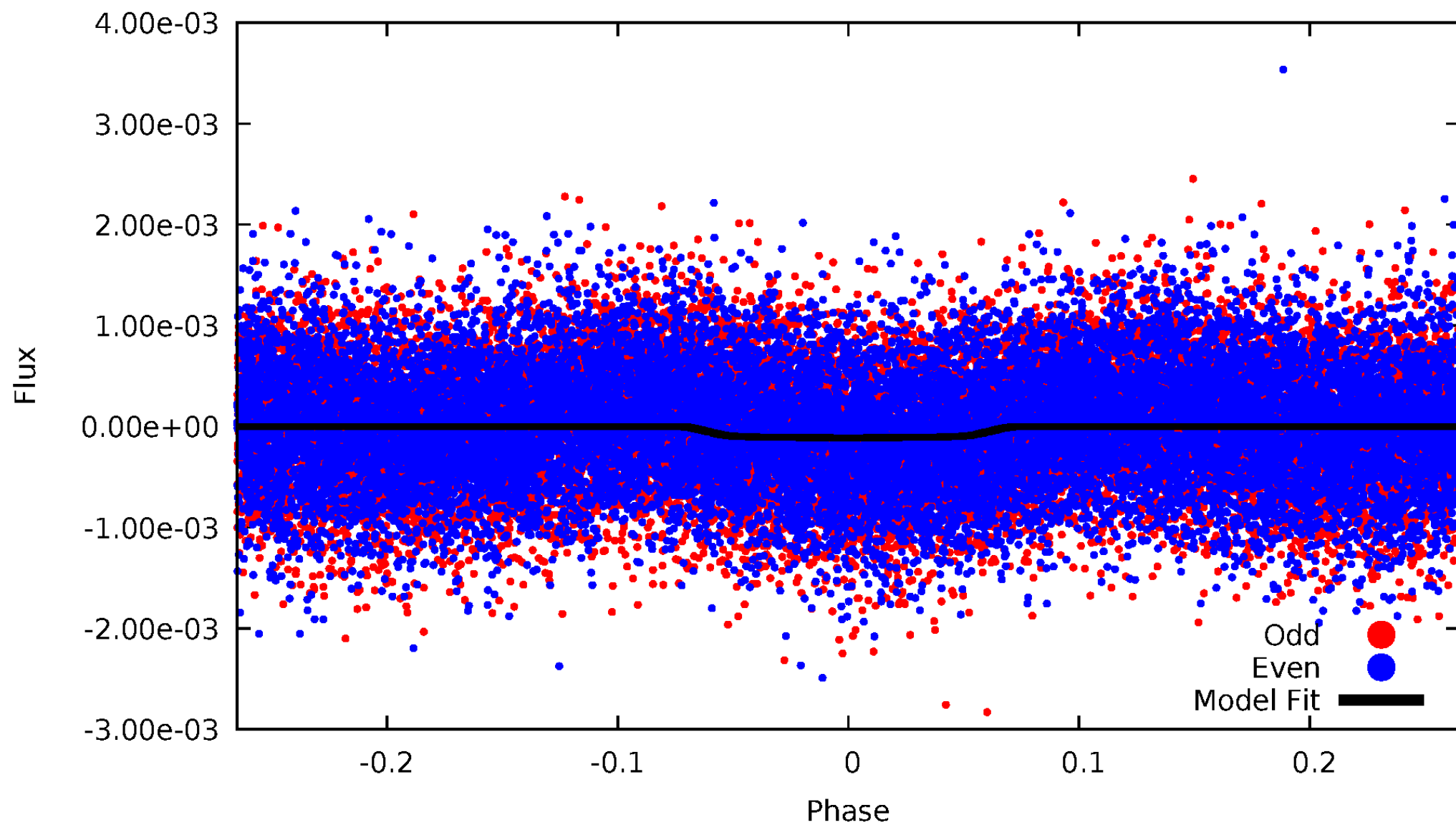


TCE 008516008-01



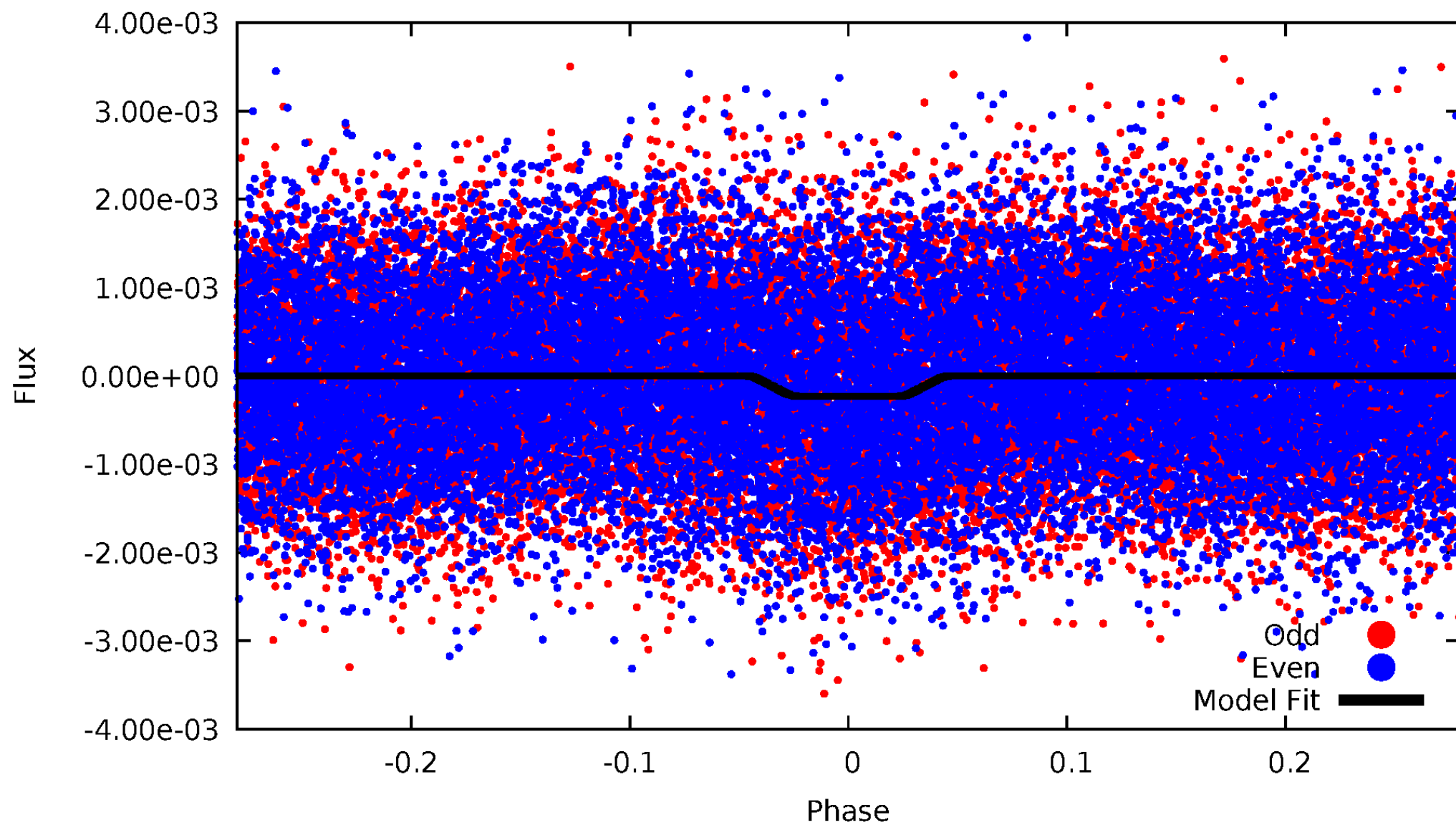
DV Odd/Even

TCE 008516008-01



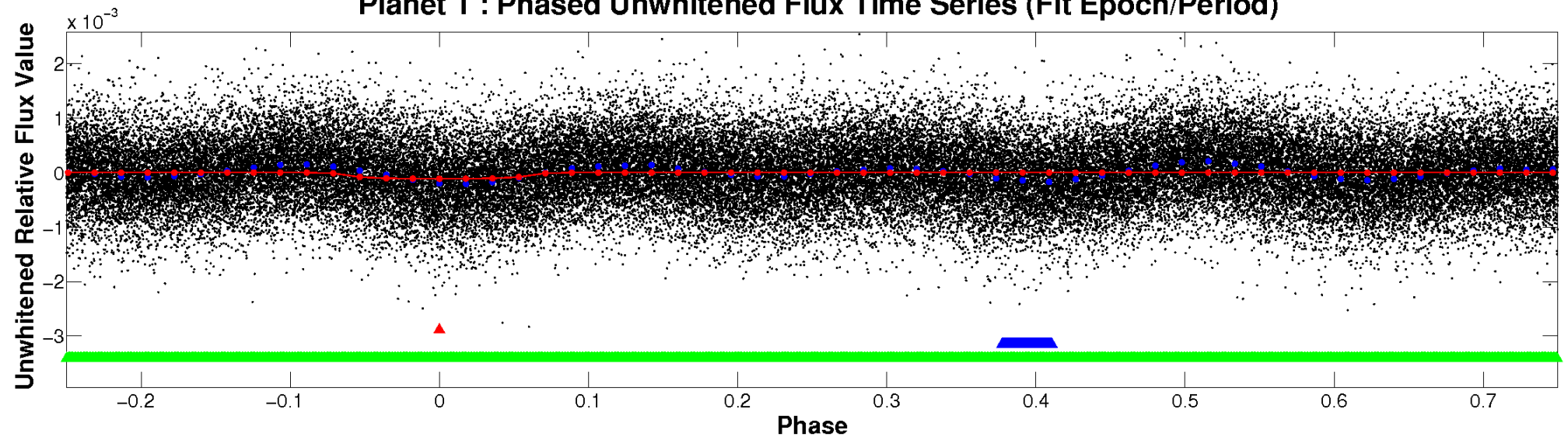
ALT Odd/Even

TCE 008516008-01

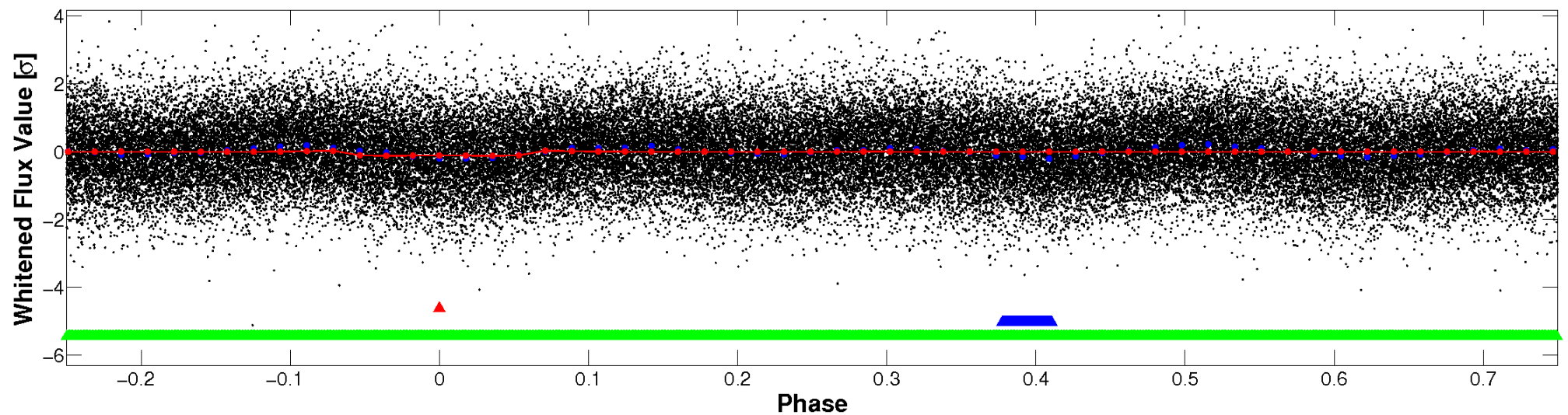


Non-Whitened Vs. Whitened Light Curve

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

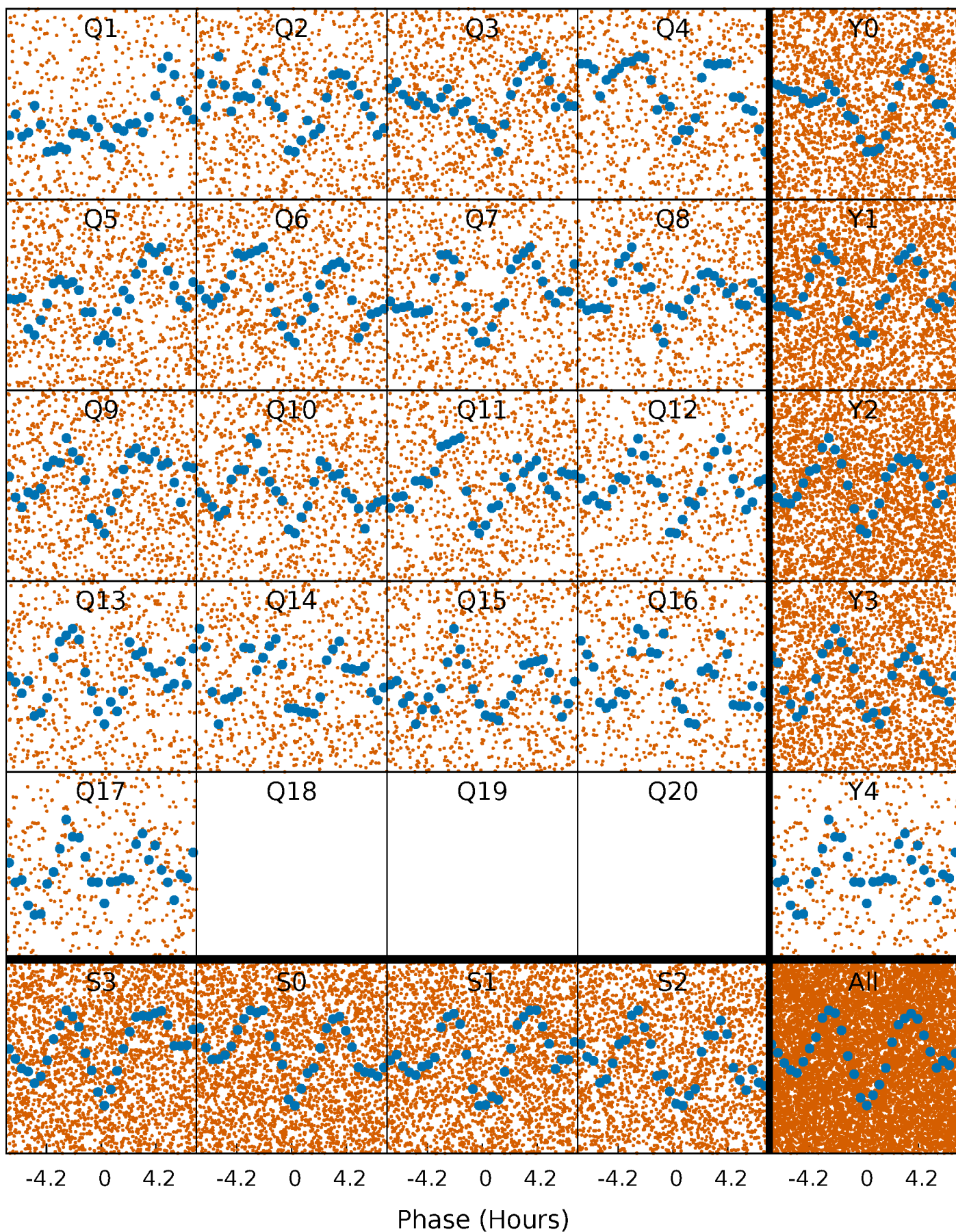


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



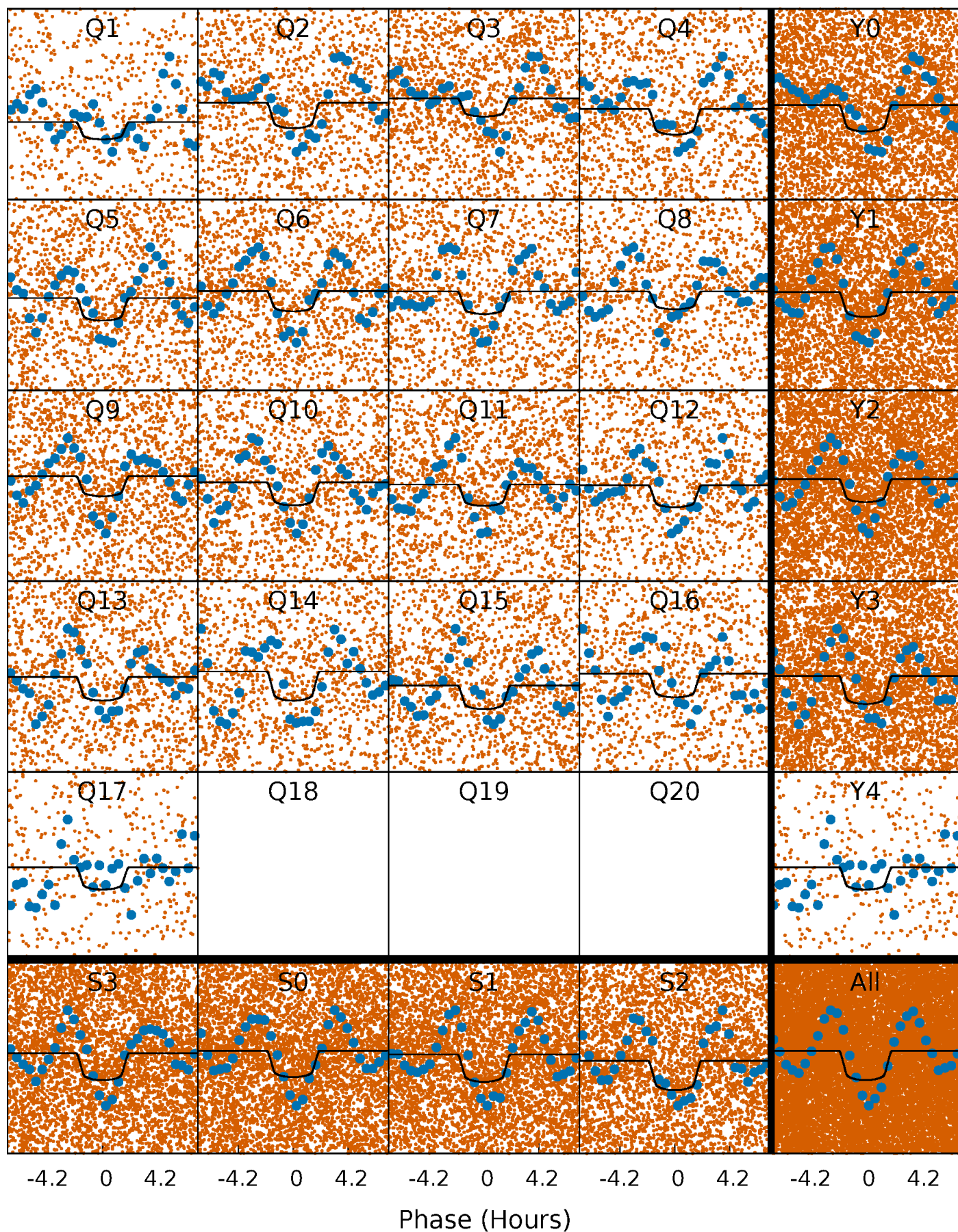
PDC Quarter-Phased Transit Curves

TCE 008516008-01 P= 1.149256 Days $T_0=131.547094$ (BKJD)



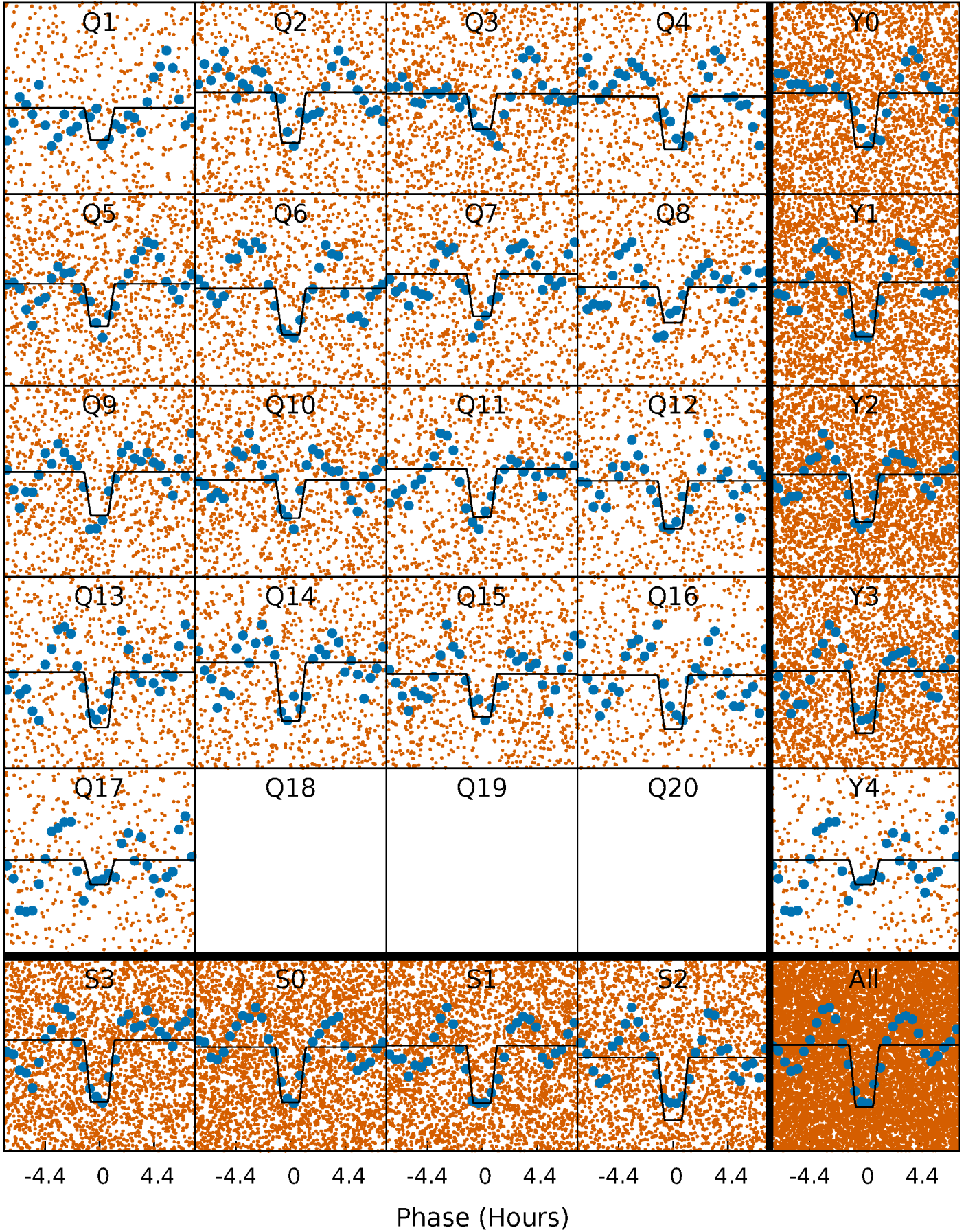
DV Quarter-Phased Transit Curves

TCE 008516008-01 P= 1.149256 Days $T_0=131.547094$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

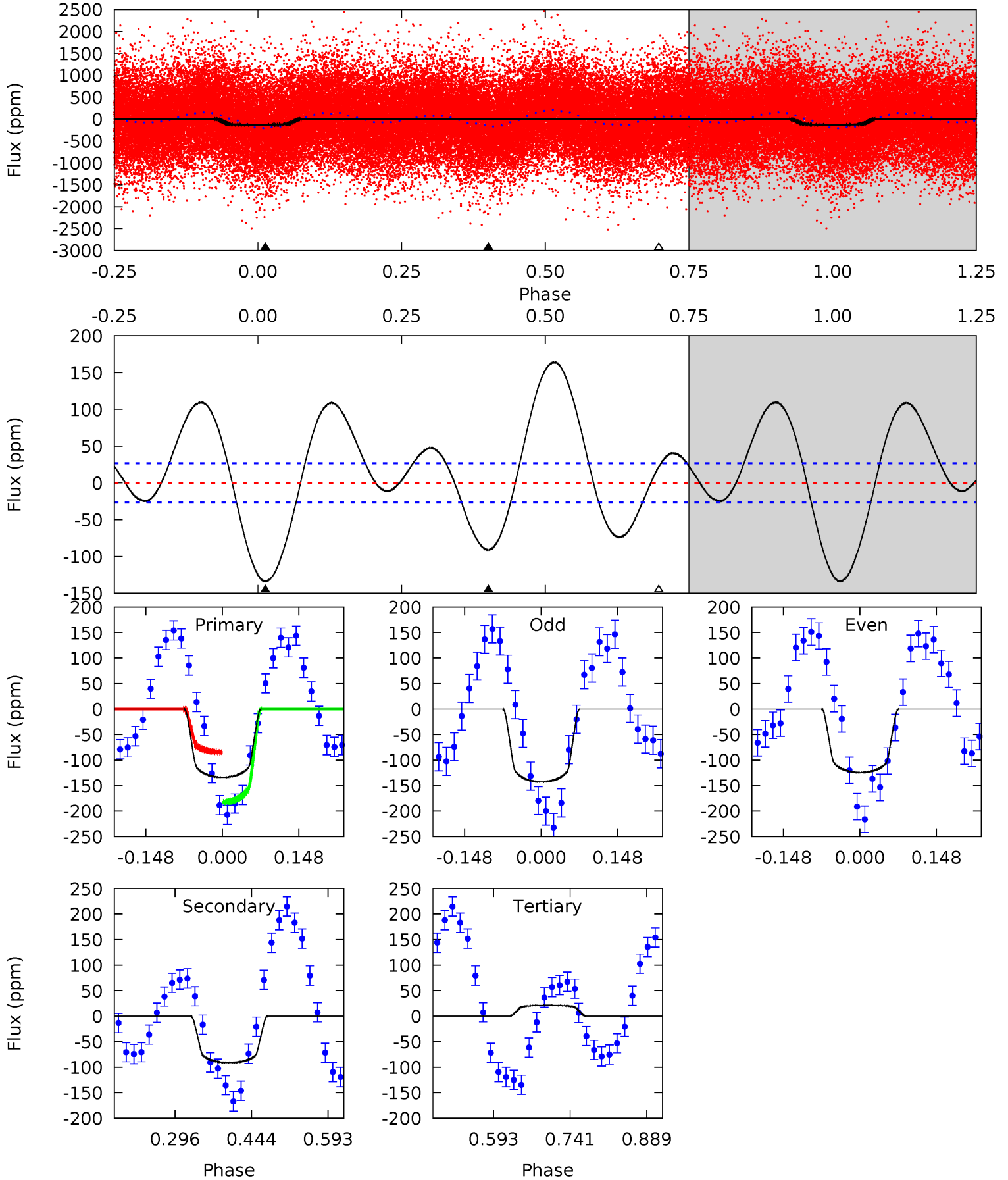
TCE 008516008-01 P= 1.149285 Days $T_0=131.543756$ (BKJD)



DV Model-Shift Uniqueness Test

008516008-01, P = 1.149256 Days, E = 130.397838 Days

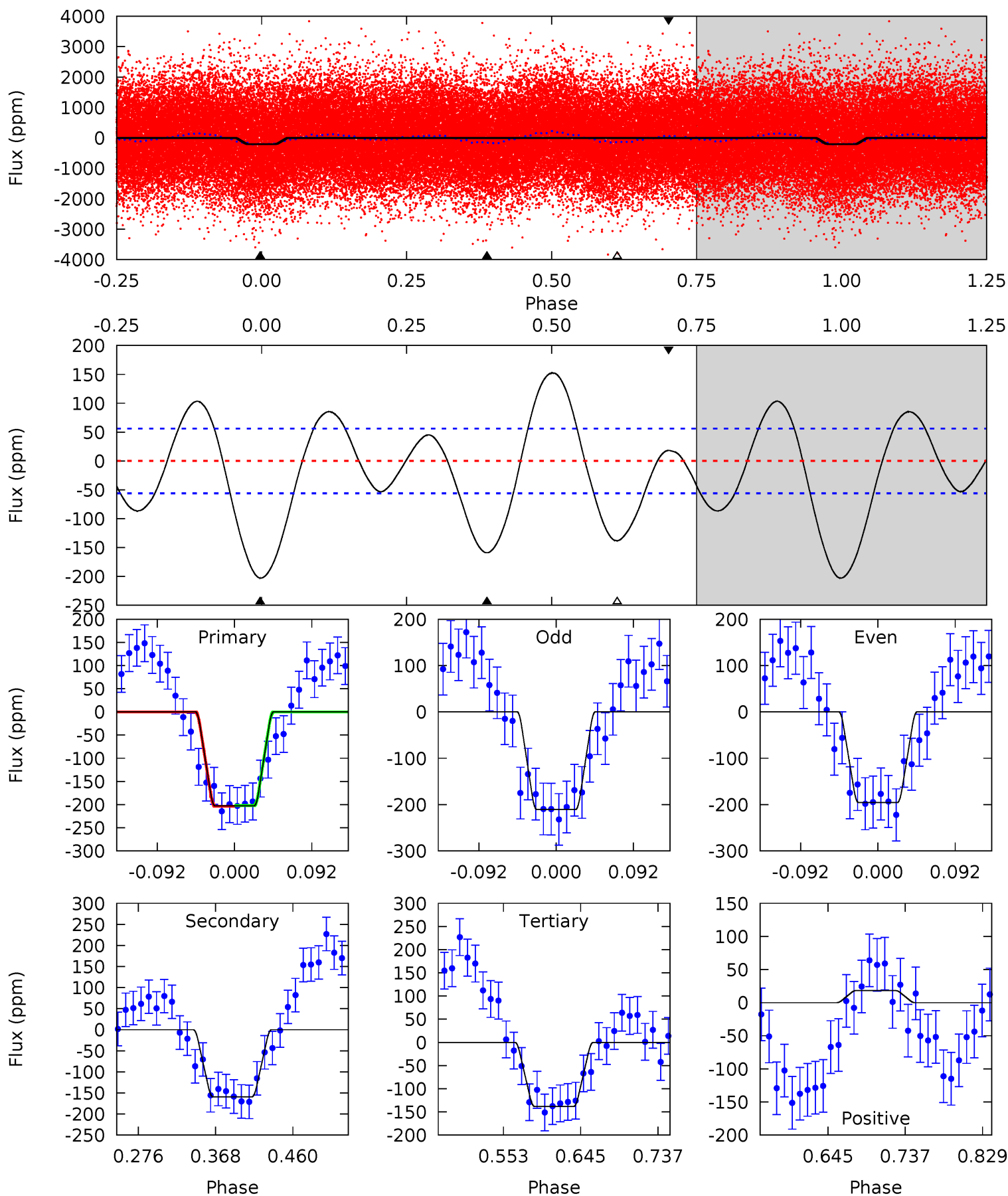
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.5	15.3	-3.63	0	4.48	1.45	6.62	26.1	22.5	18.9	15.3	1.56	1.04	0.55	8.28



Alt Model-Shift Uniqueness Test

008516008-01, P = 1.149285 Days, E = 130.394471 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	13.0	11.3	1.49	4.58	1.68	6.14	5.28	15.1	1.70	11.5	0.61	0.95	0.43	0.07



Stellar Parameters For KIC 008516008

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8540^{+233}_{-401}	$3.581^{+0.567}_{-0.063}$	$0.070^{+0.250}_{-0.550}$	$4.328^{+0.624}_{-2.495}$	$2.603^{+0.248}_{-0.992}$	$0.045^{+0.321}_{-0.014}$
	+3%/-5%	+16%/-2%	+357%/-786%	+14%/-58%	+10%/-38%	+709%/-32%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008516008-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-91 ± 6	$4.64^{+1.40}_{-1.46}$	6039^{+470}_{-883}	7271^{+1197}_{-836}	$2.001^{+2.039}_{-0.774}$
Alt.	-159 ± 12	$6.35^{+1.65}_{-1.94}$	6054^{+464}_{-837}	7183^{+940}_{-738}	$1.901^{+1.701}_{-0.681}$

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

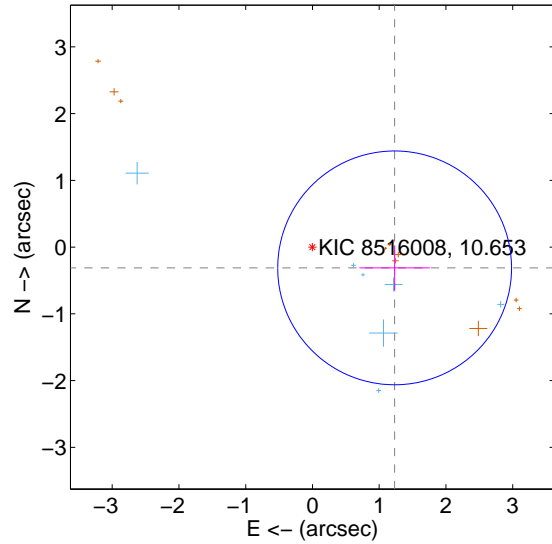
Supplemental centroid analysis for 008516008-01. **Kepler magnitude: 10.65.** Transit SNR 10.43

There are 7 quarters with good PRF difference image offsets

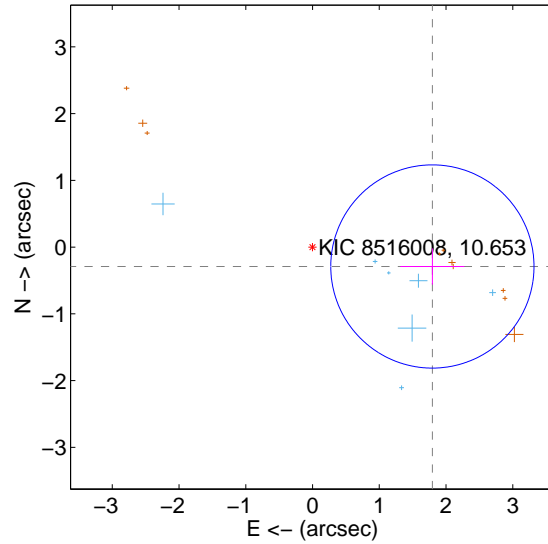
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.270 ± 0.584	2.18	-1.231 ± 0.528	-0.311 ± 0.335
PRF-fit source offset from KIC position	1.818 ± 0.507	3.58	-1.795 ± 0.478	-0.290 ± 0.271
photometric centroid source offset	0.26 ± 0.13	1.96	0.18 ± 0.15	0.18 ± 0.11

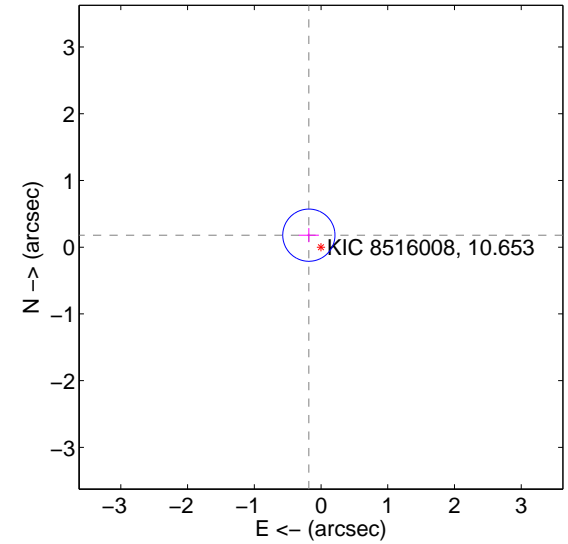
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

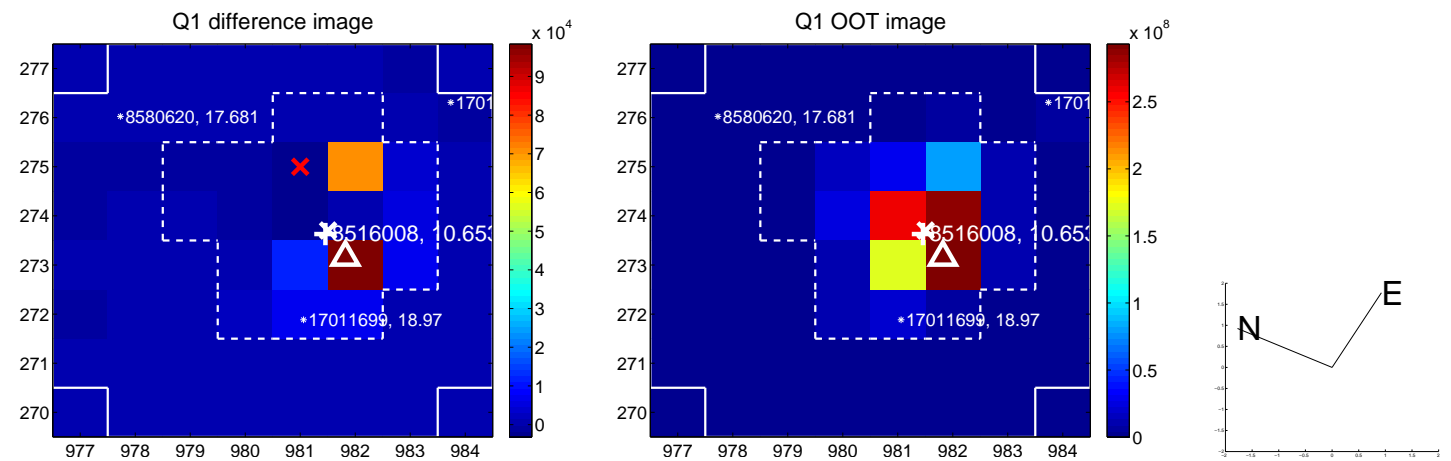


offset from photometric centroids

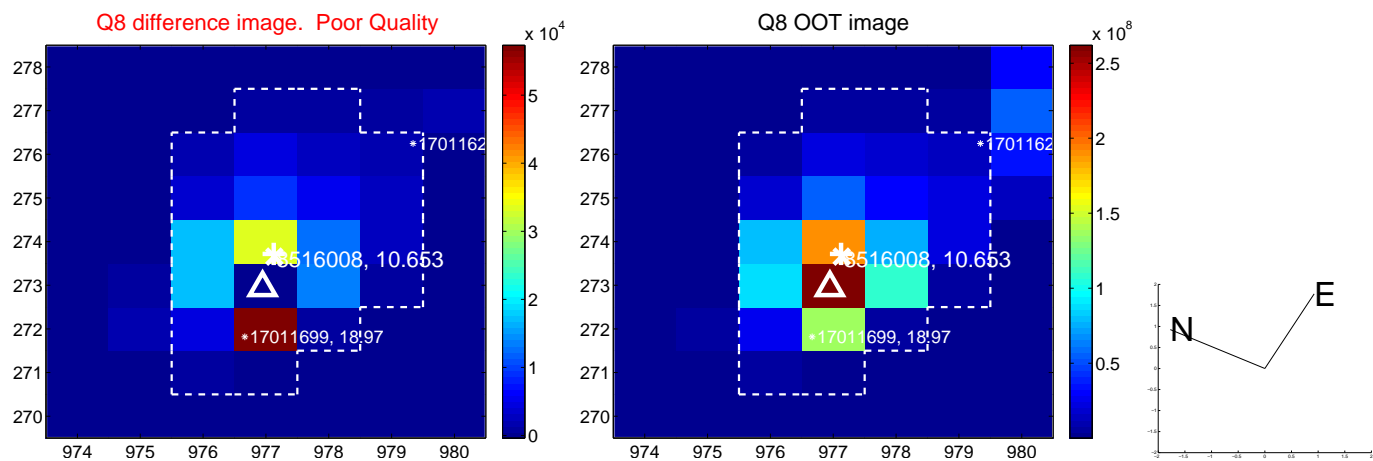
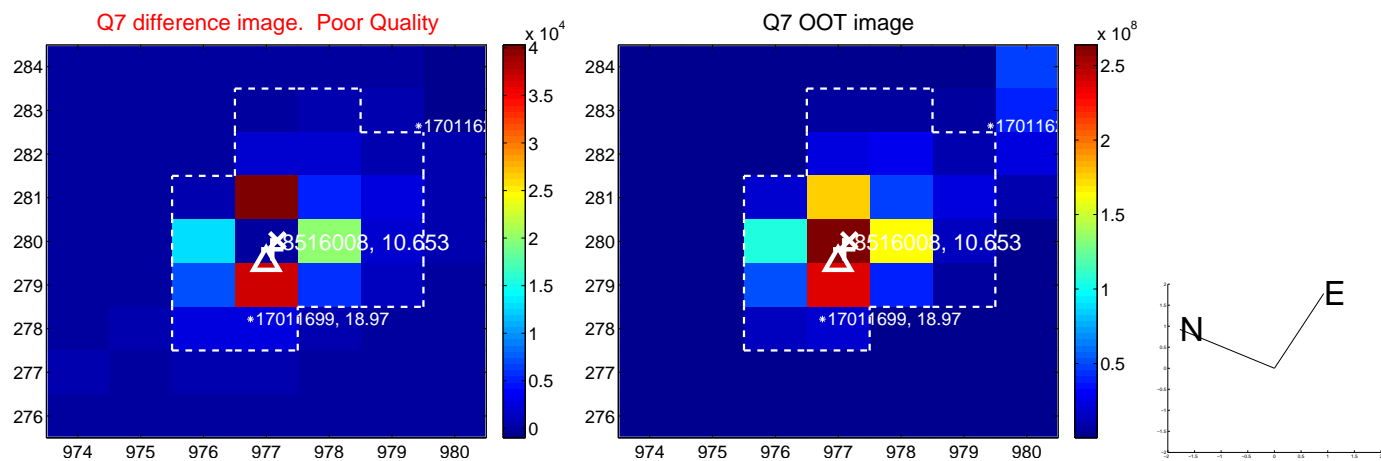
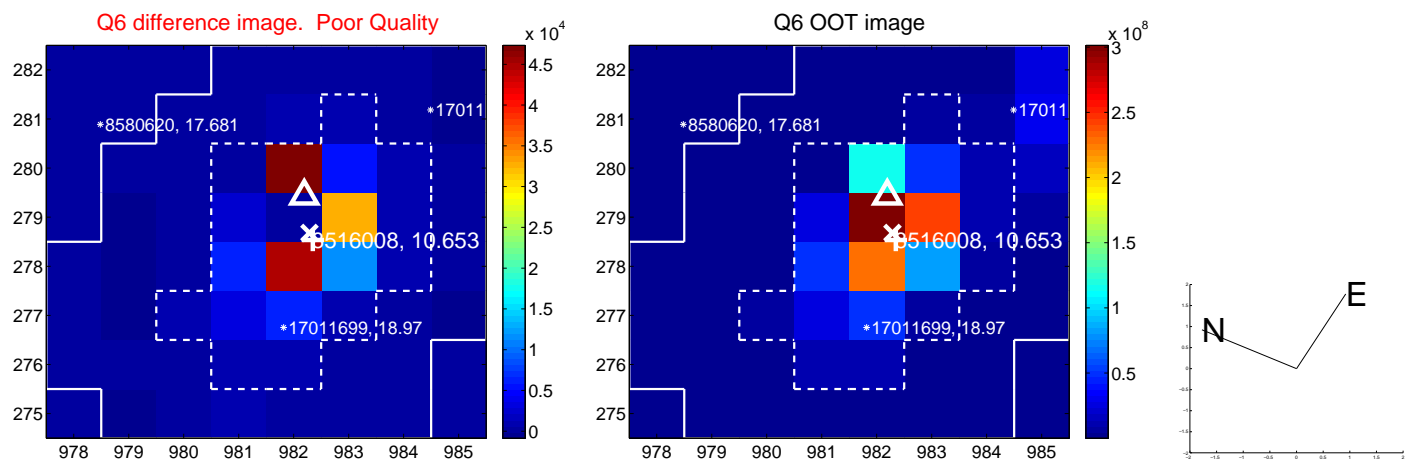
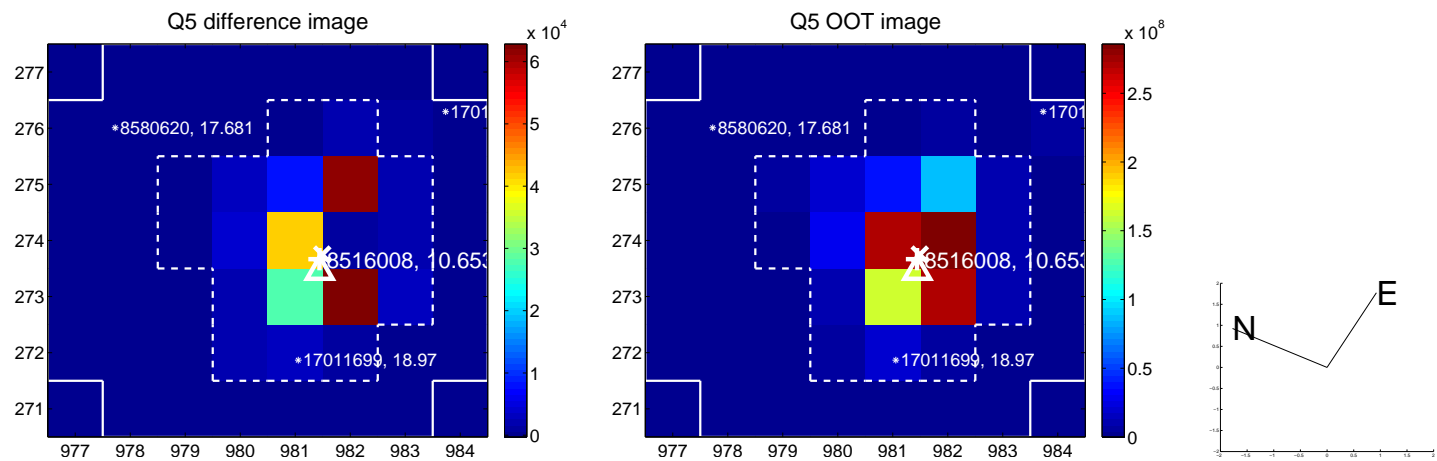


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

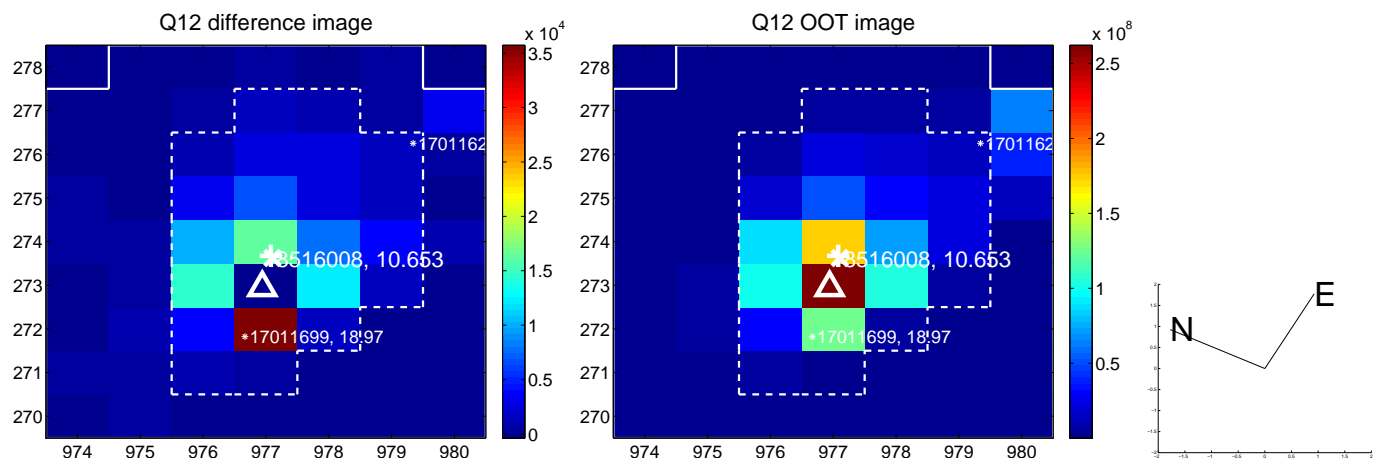
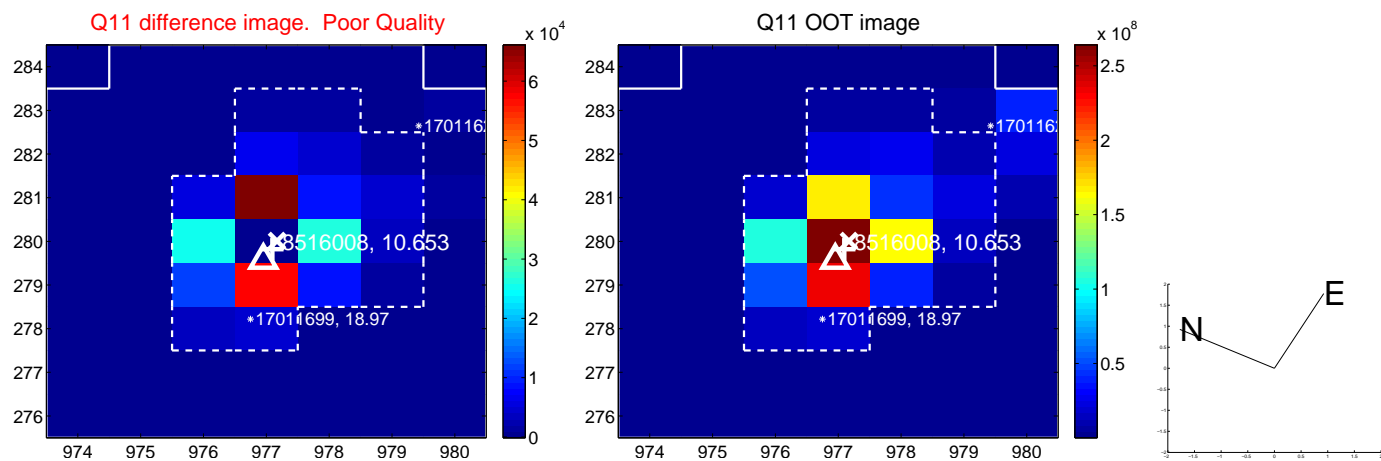
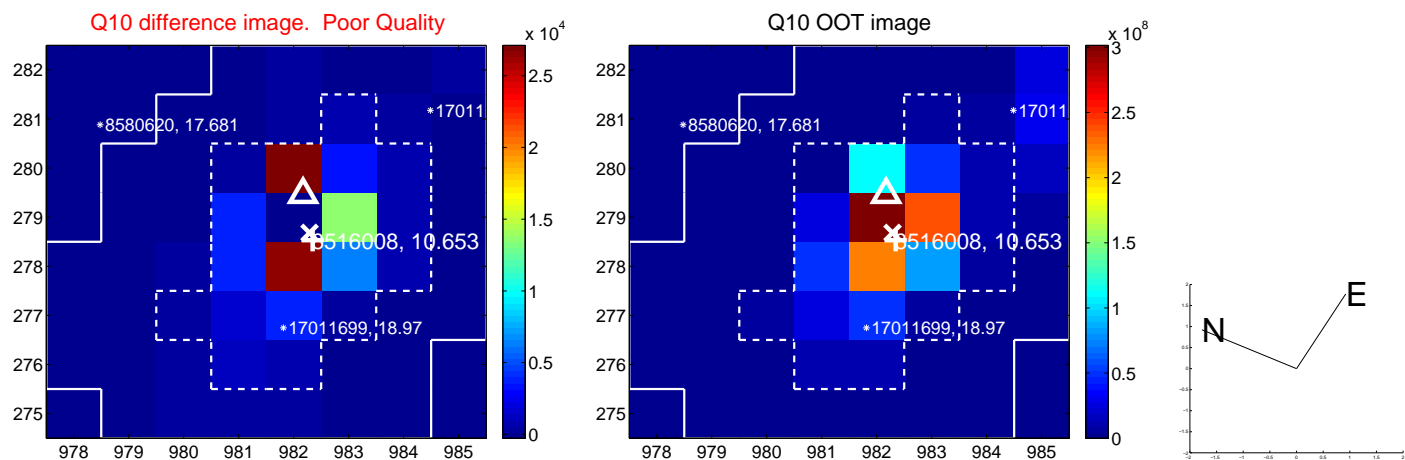
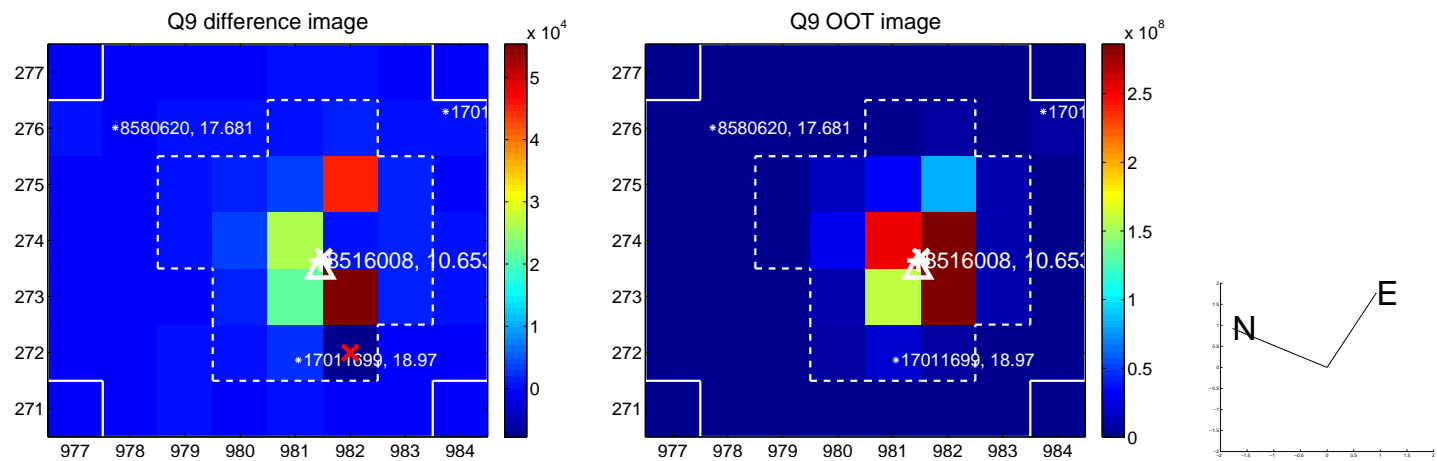
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



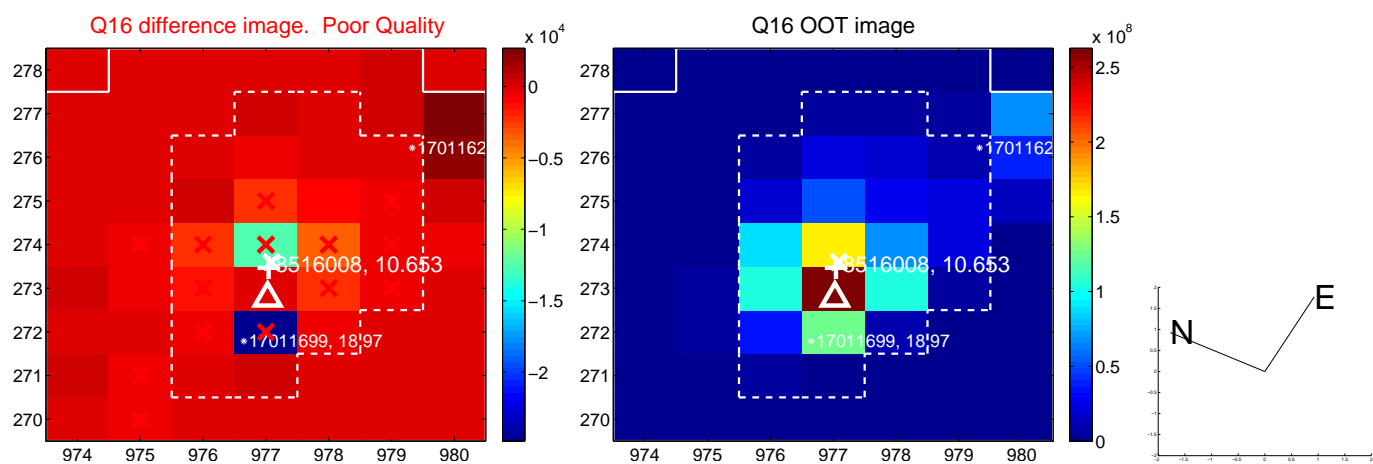
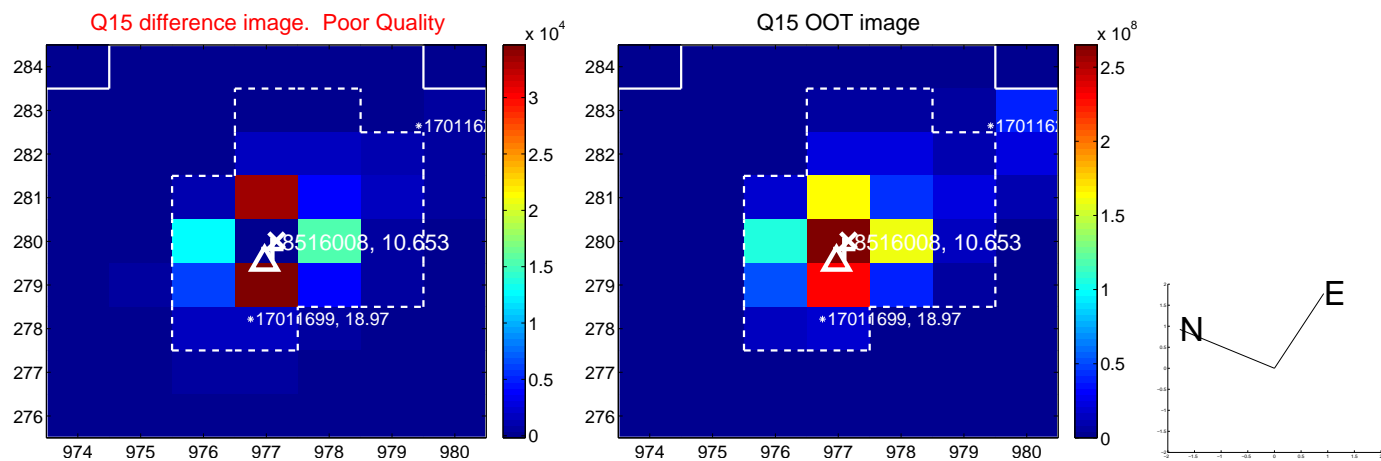
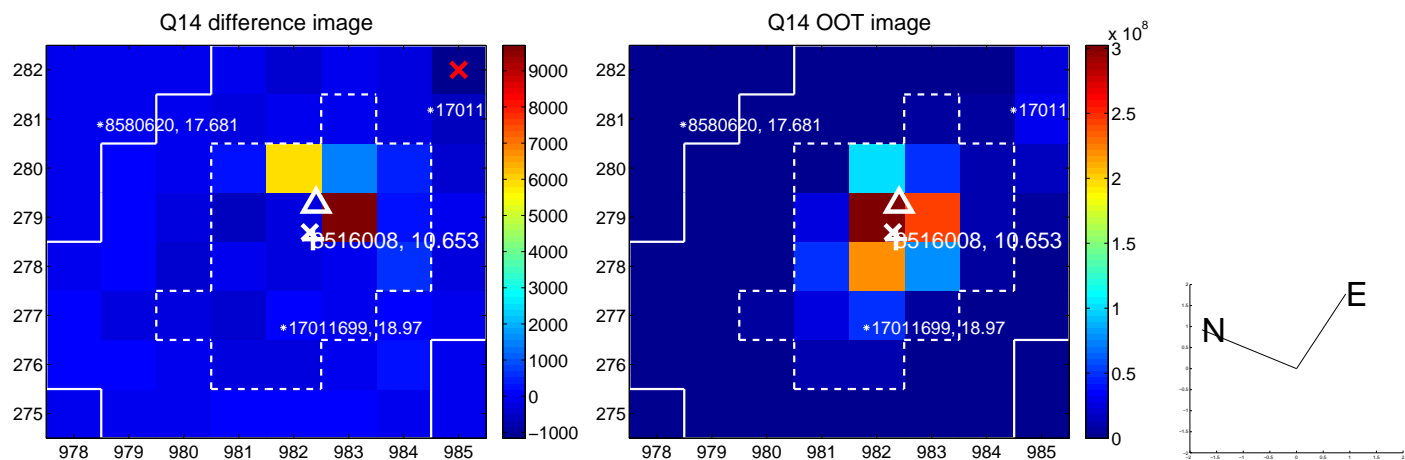
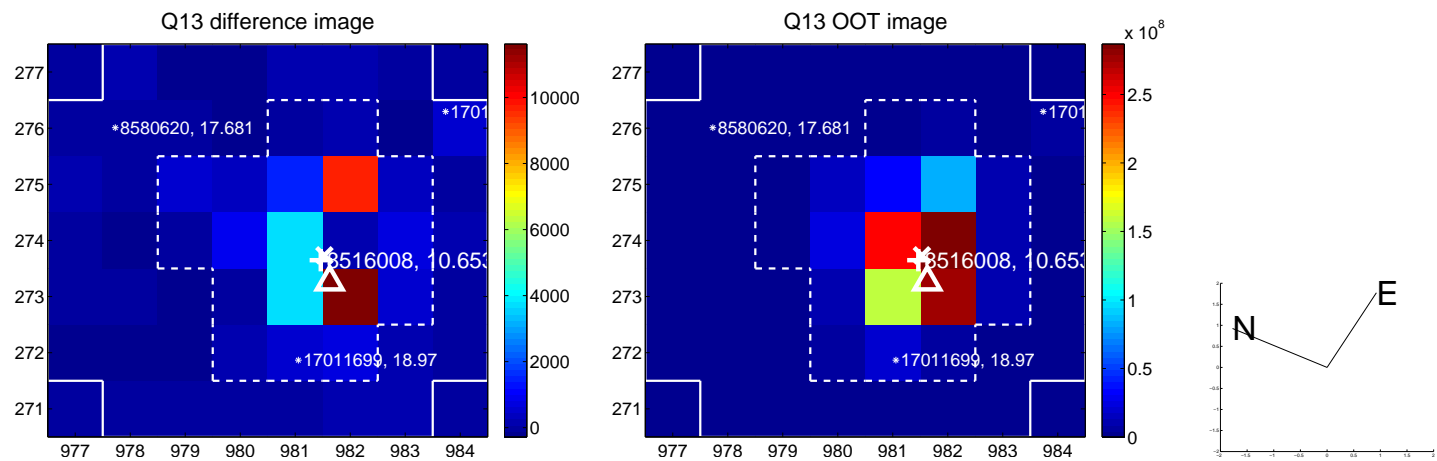
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



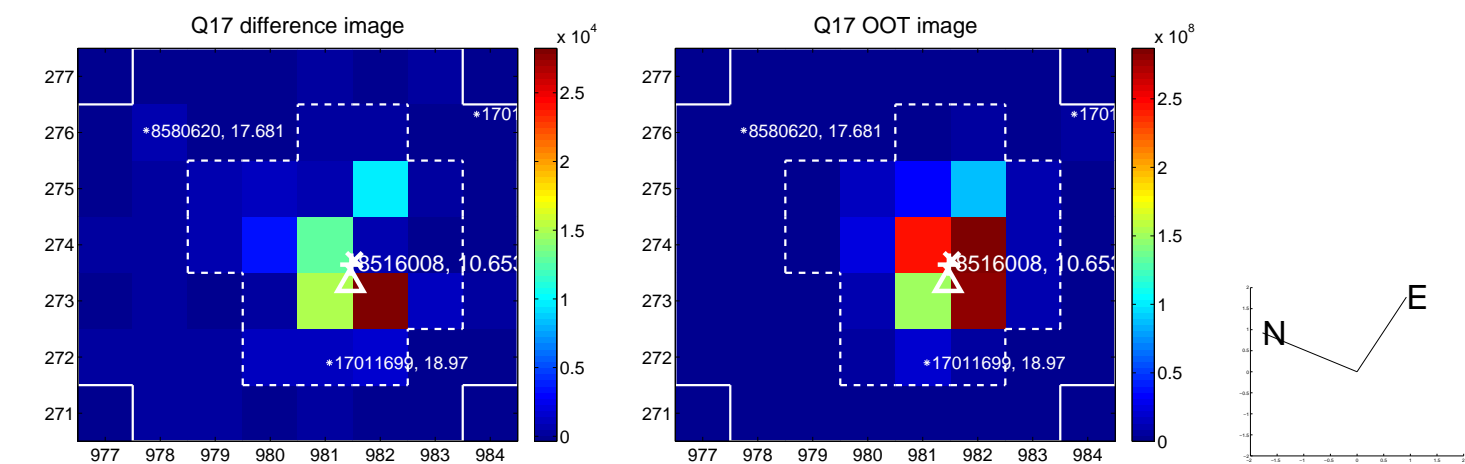
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



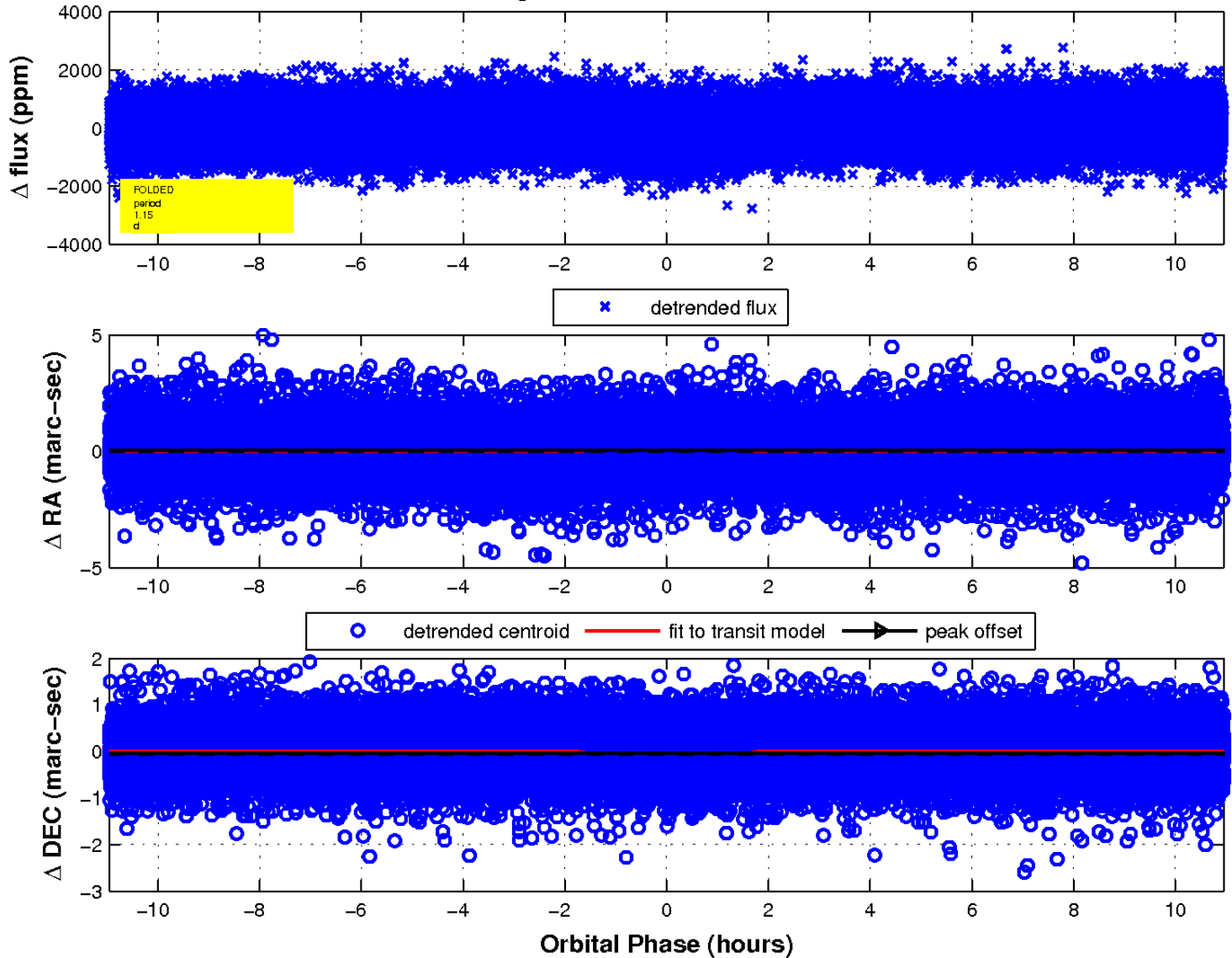
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

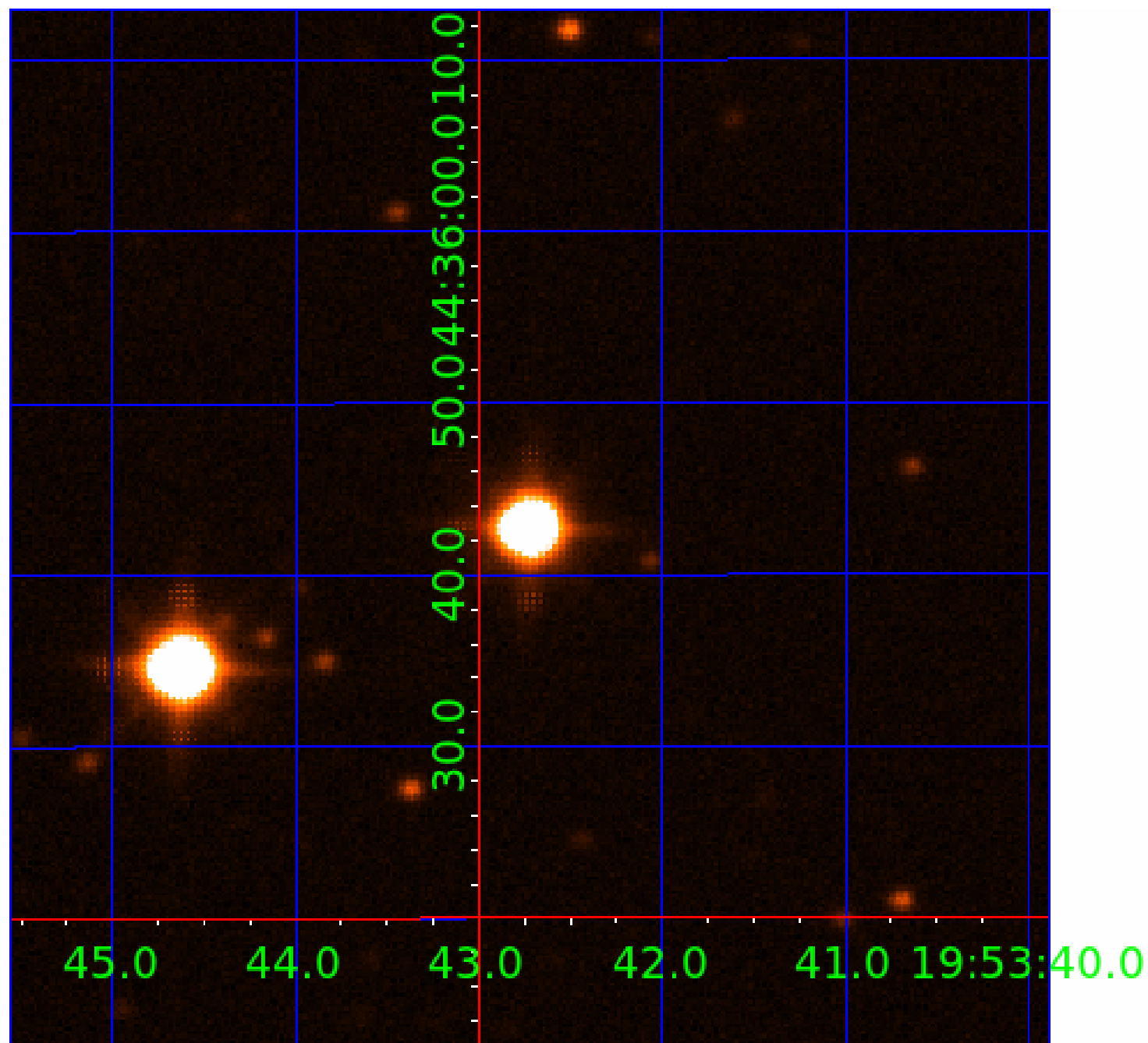


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 008516008

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})
008516008-01	OBS	No	1.149256	131.547094	112.1	3.652	10.6	10.4	4.33	8540	5.31	102257.39
008516008-02	OBS	No	1.149287	131.980890	136.8	3.220	11.2	14.1	4.33	8540	5.87	102253.83
008516008-03	OBS	No	0.866014	131.727189	84.7	8.949	10.5	8.1	4.33	8540	4.14	149125.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008516008-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
008516008-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
008516008-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

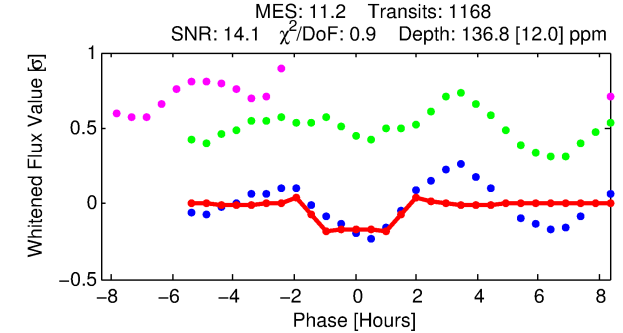
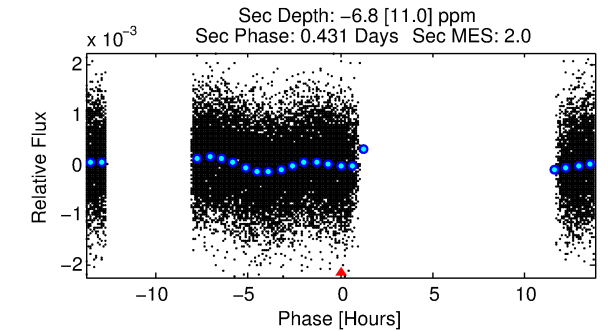
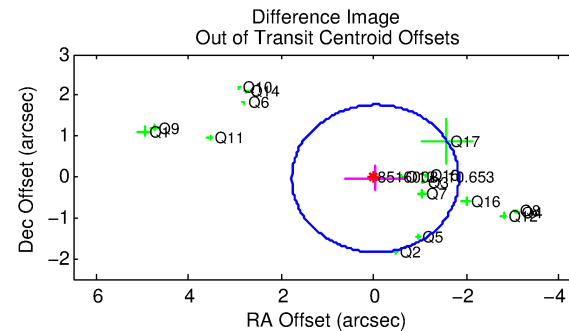
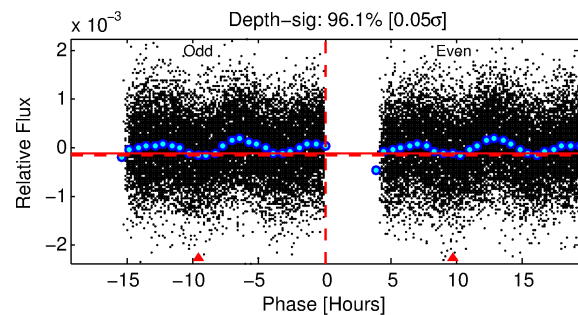
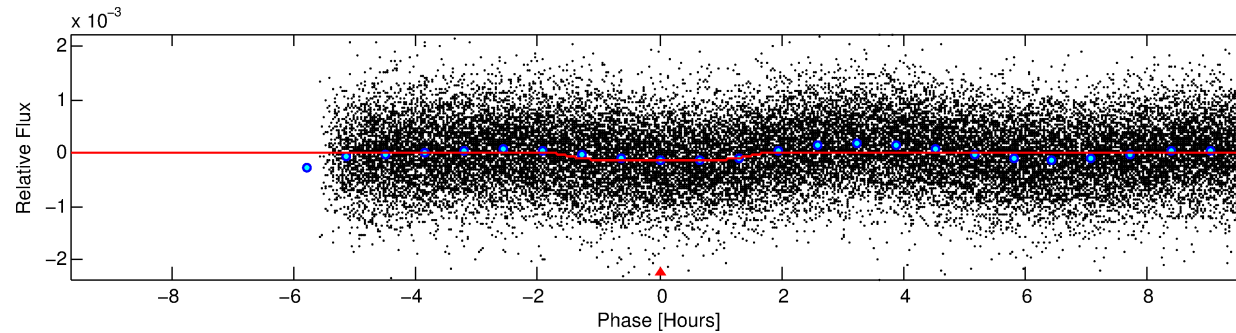
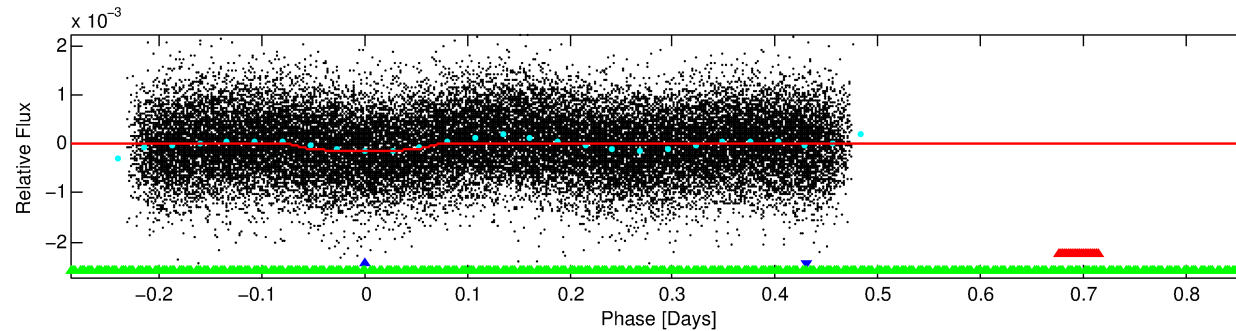
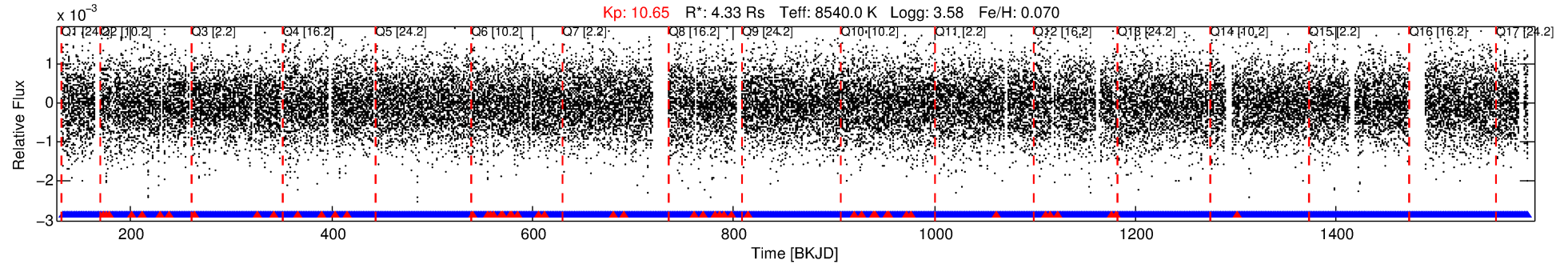
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008516008-02

No Significant Match Found

DV One-Page Summary

KIC: 8516008 Candidate: 2 of 3 Period: 1.149 d



DV Fit Results:

Period = 1.14929 [0.00001] d
Epoch = 131.9809 [0.0020] BKJD
Rp/R* = 0.0124 [0.0022]
a/R* = 1.57 [1.06]
b = 0.90 [0.24]
Seff = 102253.83 [99166.96]
Teq = 4560 [1106] K
Rp = 5.87 [3.54] Re
a = 0.0295 [0.0172] AU
Ag = N/A
Teffp = N/A

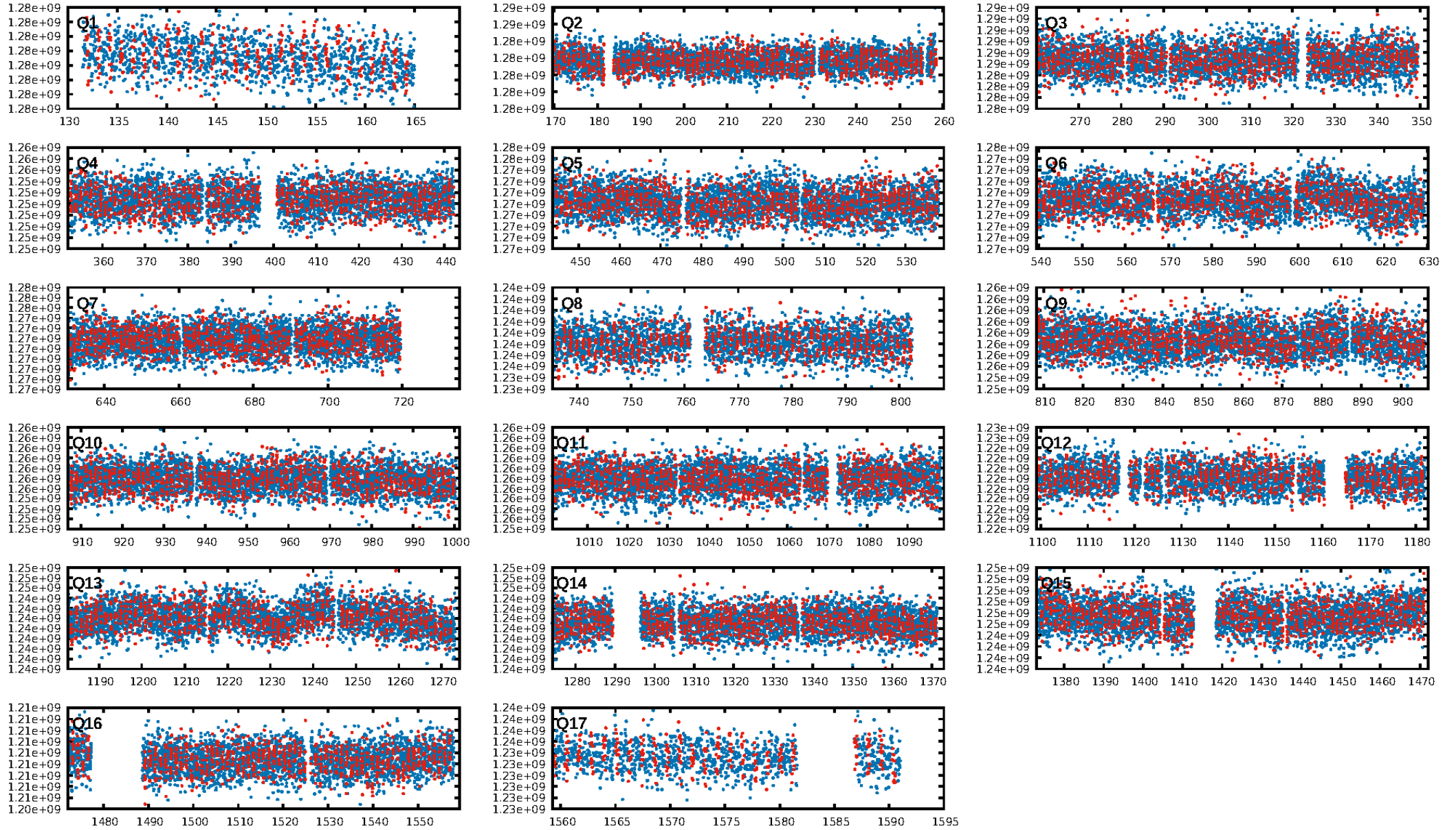
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.95 [1062/1115]
GhostDiagnostic-chr: 1.297
Centroid-sig: 0.0%
Centroid-so: 0.465 arcsec [3.64 σ]
OotOffset-rm: 0.053 arcsec [0.09 σ]
KicOffset-rm: 0.412 arcsec [0.66 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.35 [6/17]
DiffImageOverlap-fno: 0.00 [0/17]

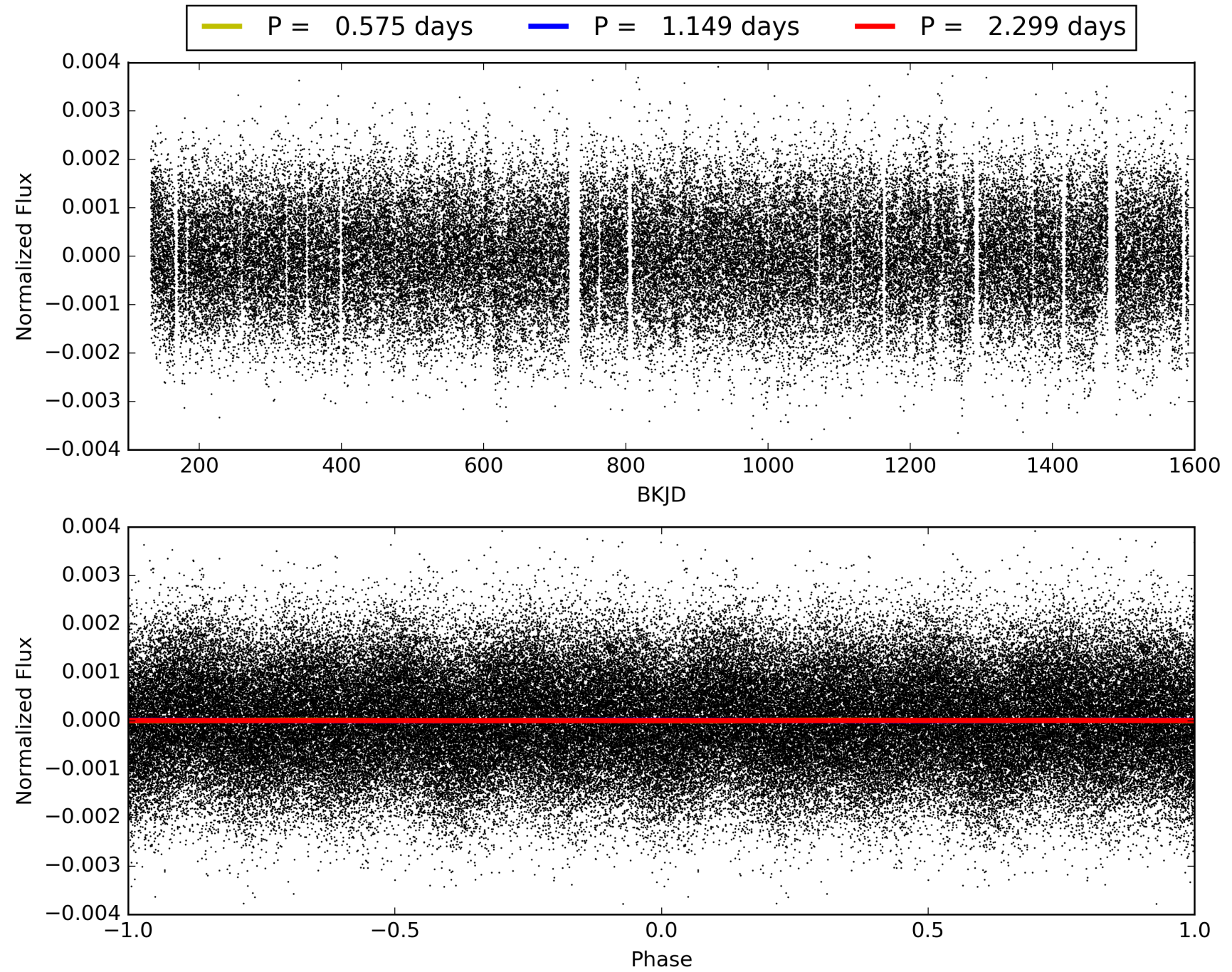
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:49:14 Z

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

TCE 008516008-02, PDC Light Curves

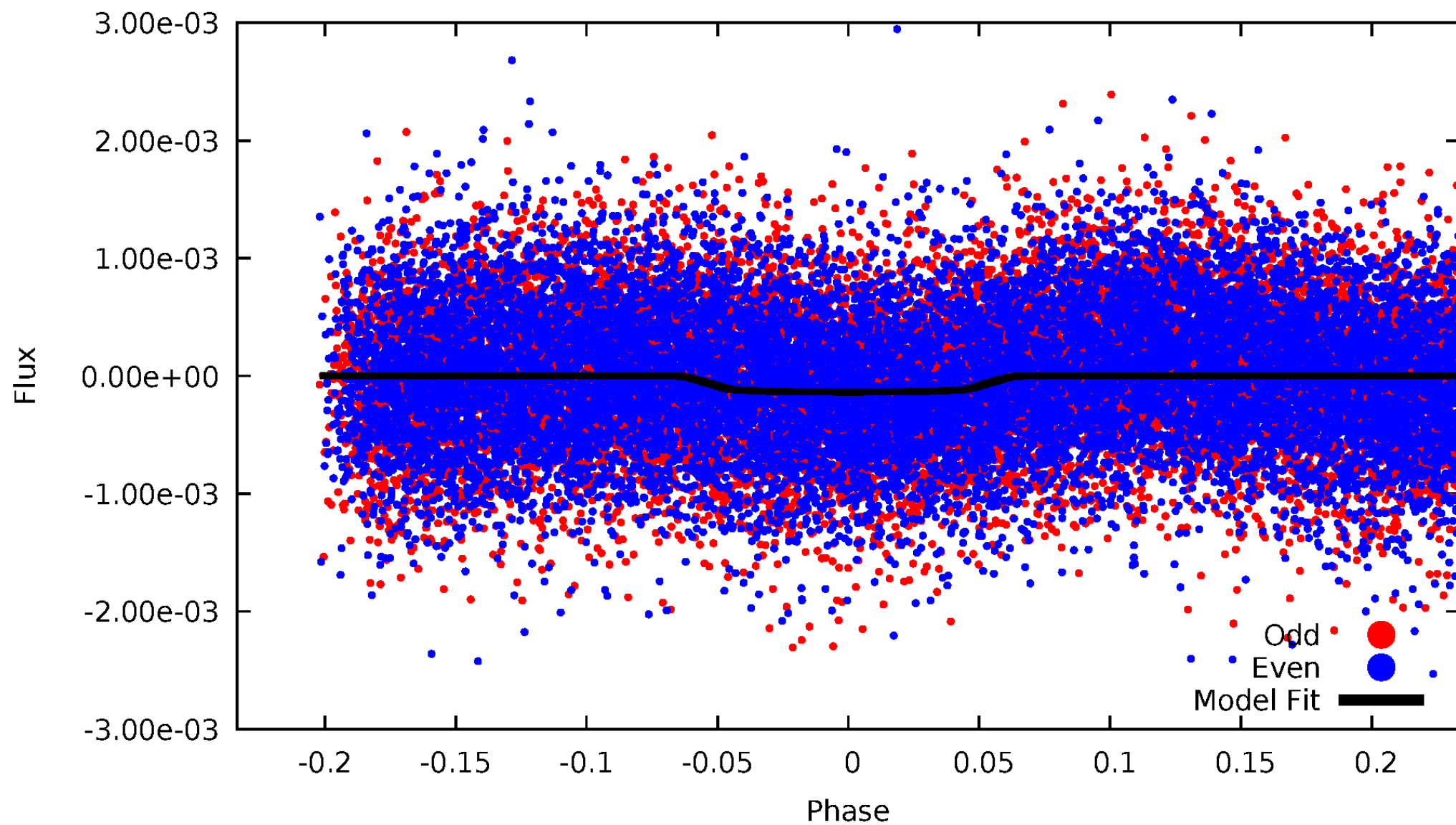


TCE 008516008-02



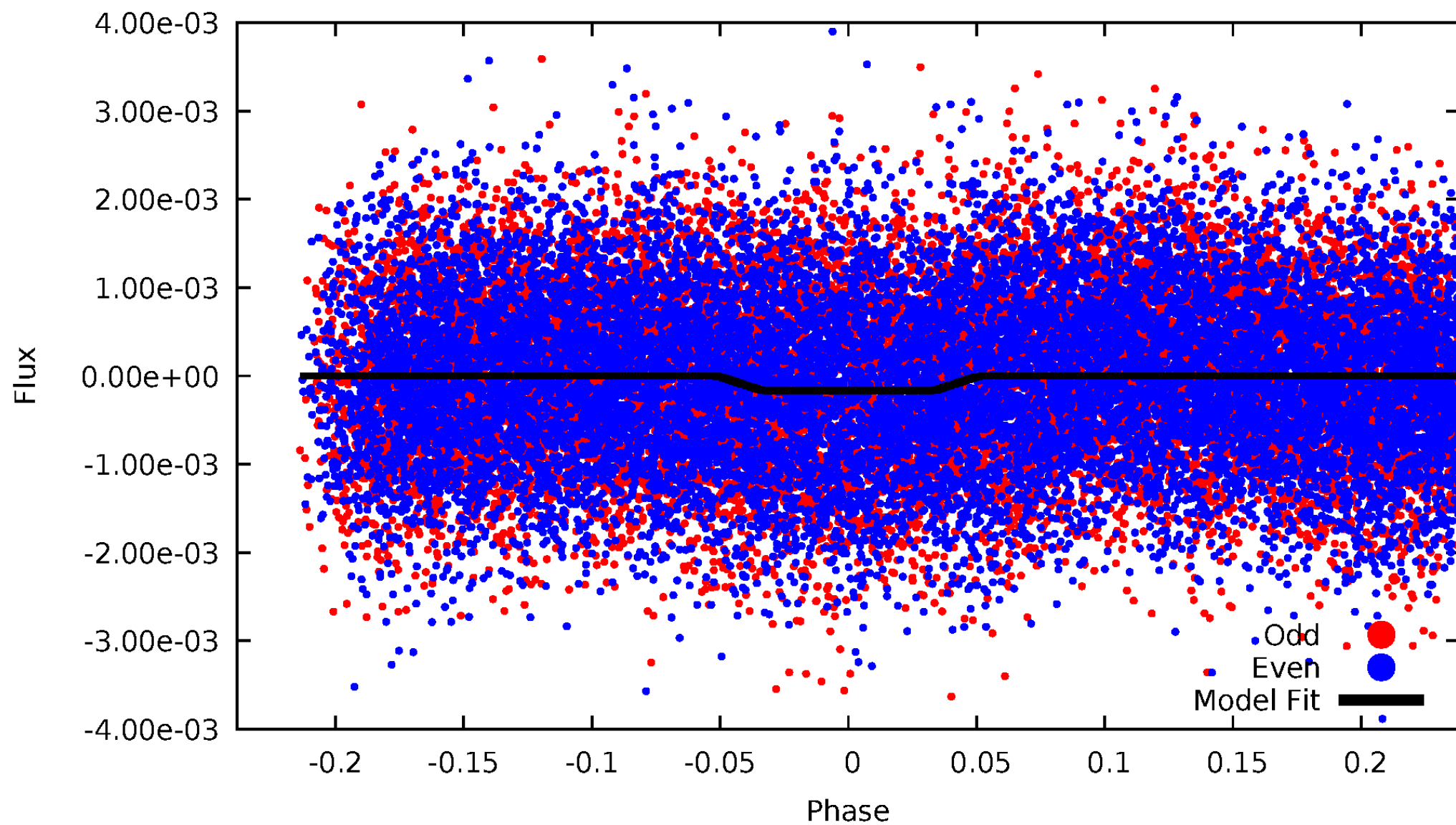
DV Odd/Even

TCE 008516008-02



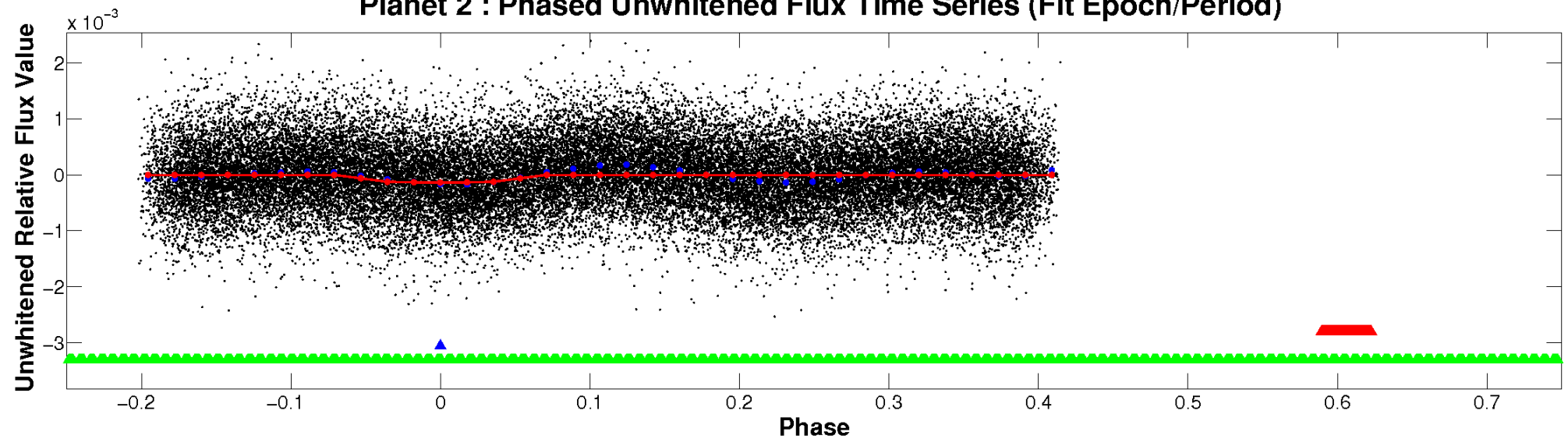
ALT Odd/Even

TCE 008516008-02

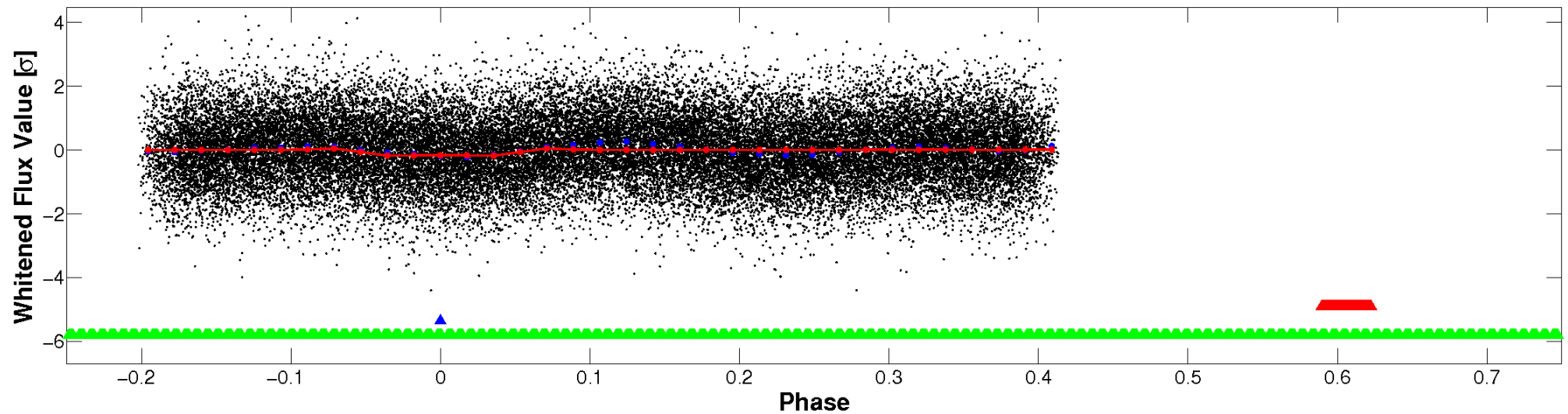


Non-Whitened Vs. Whitened Light Curve

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

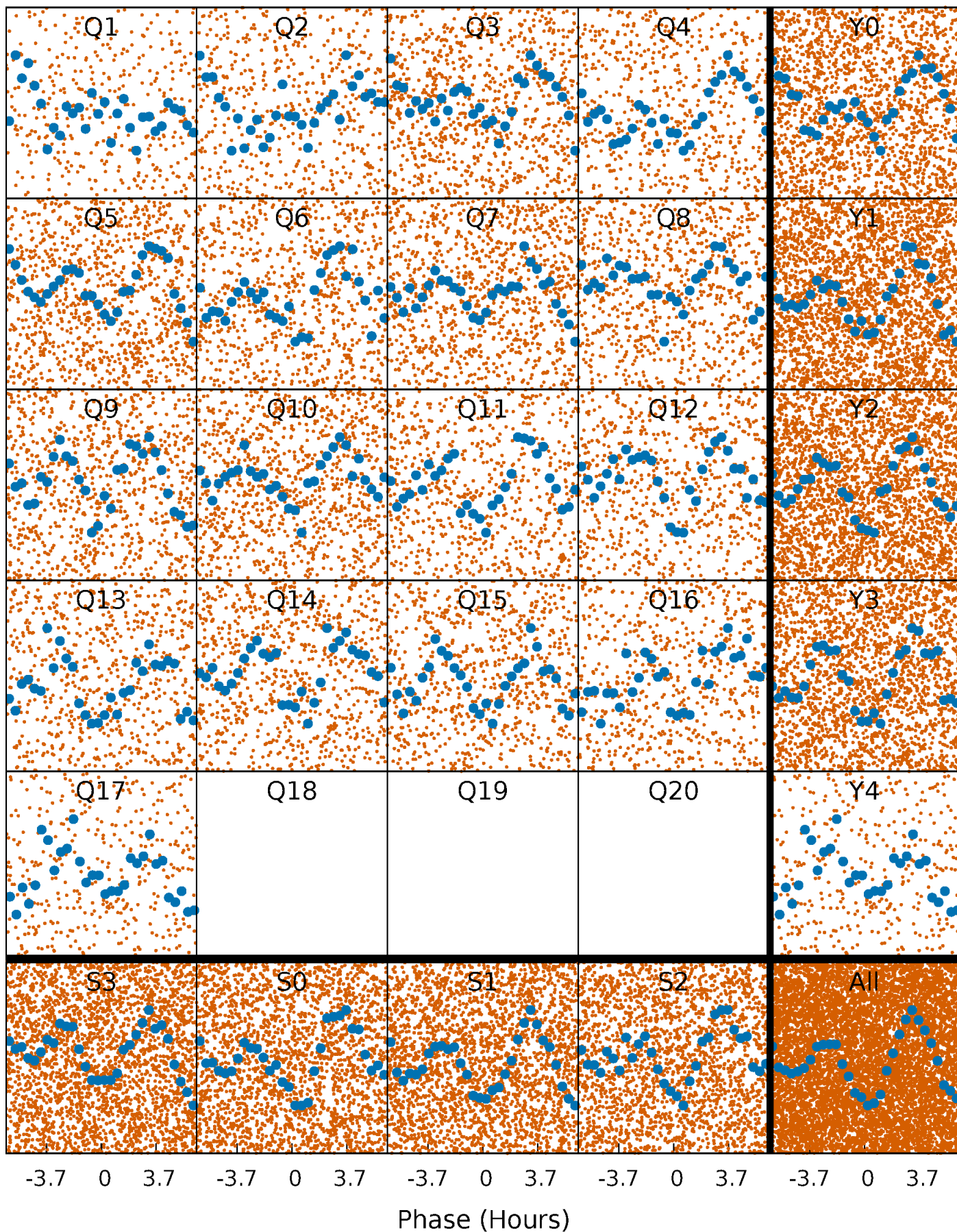


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



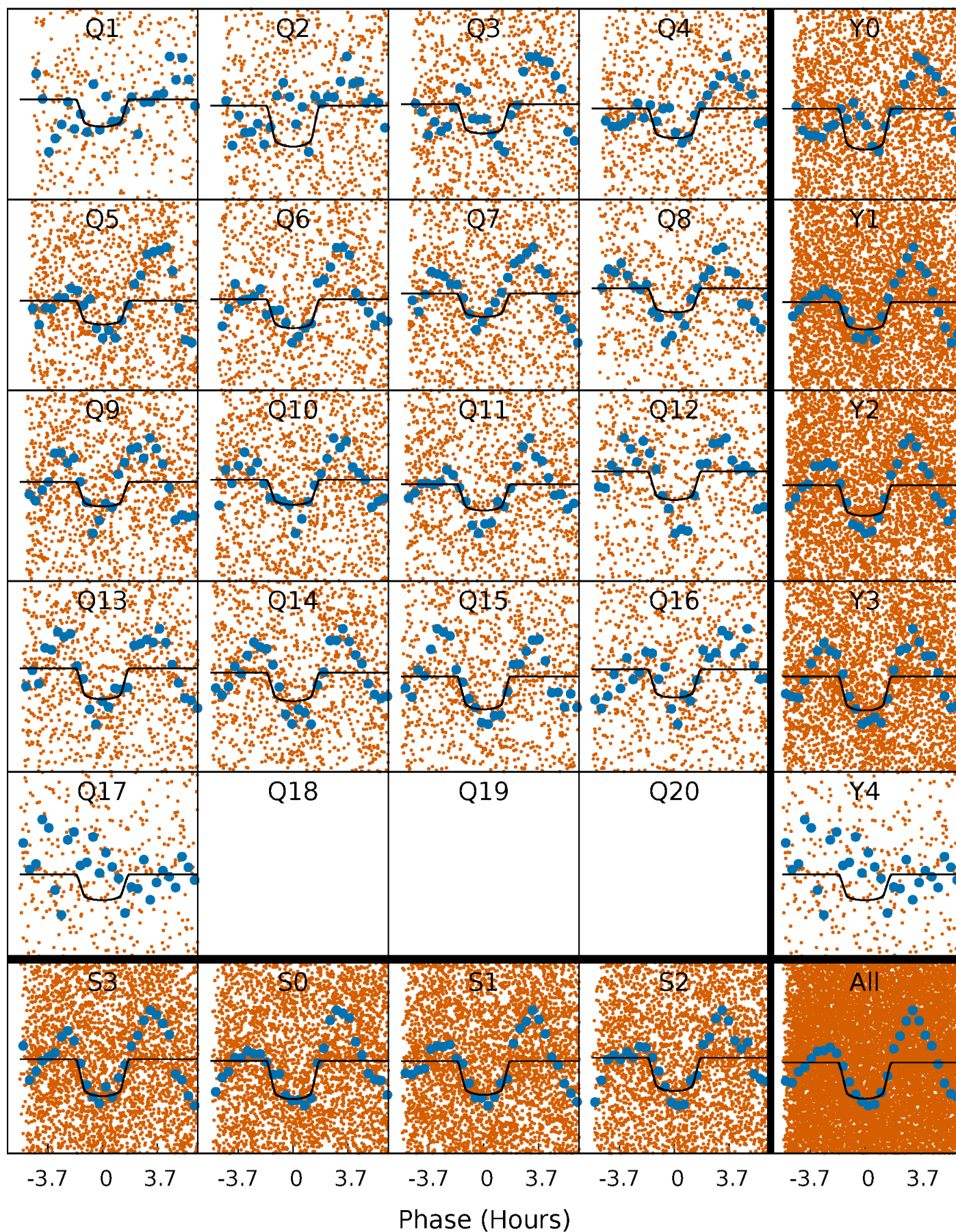
PDC Quarter-Phased Transit Curves

TCE 008516008-02 P= 1.149287 Days $T_0=131.980890$ (BKJD)



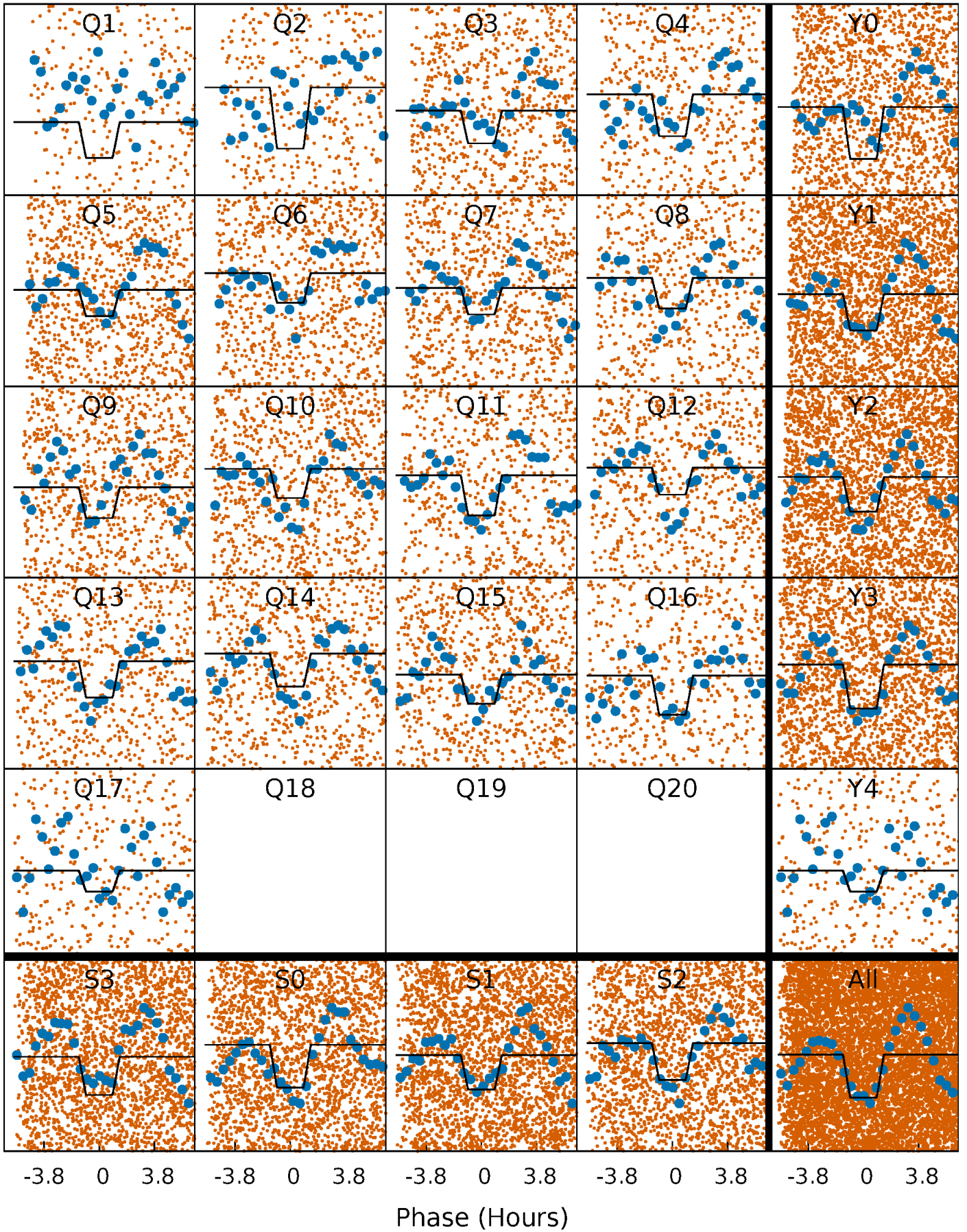
DV Quarter-Phased Transit Curves

TCE 008516008-02 P= 1.149287 Days $T_0=131.980890$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

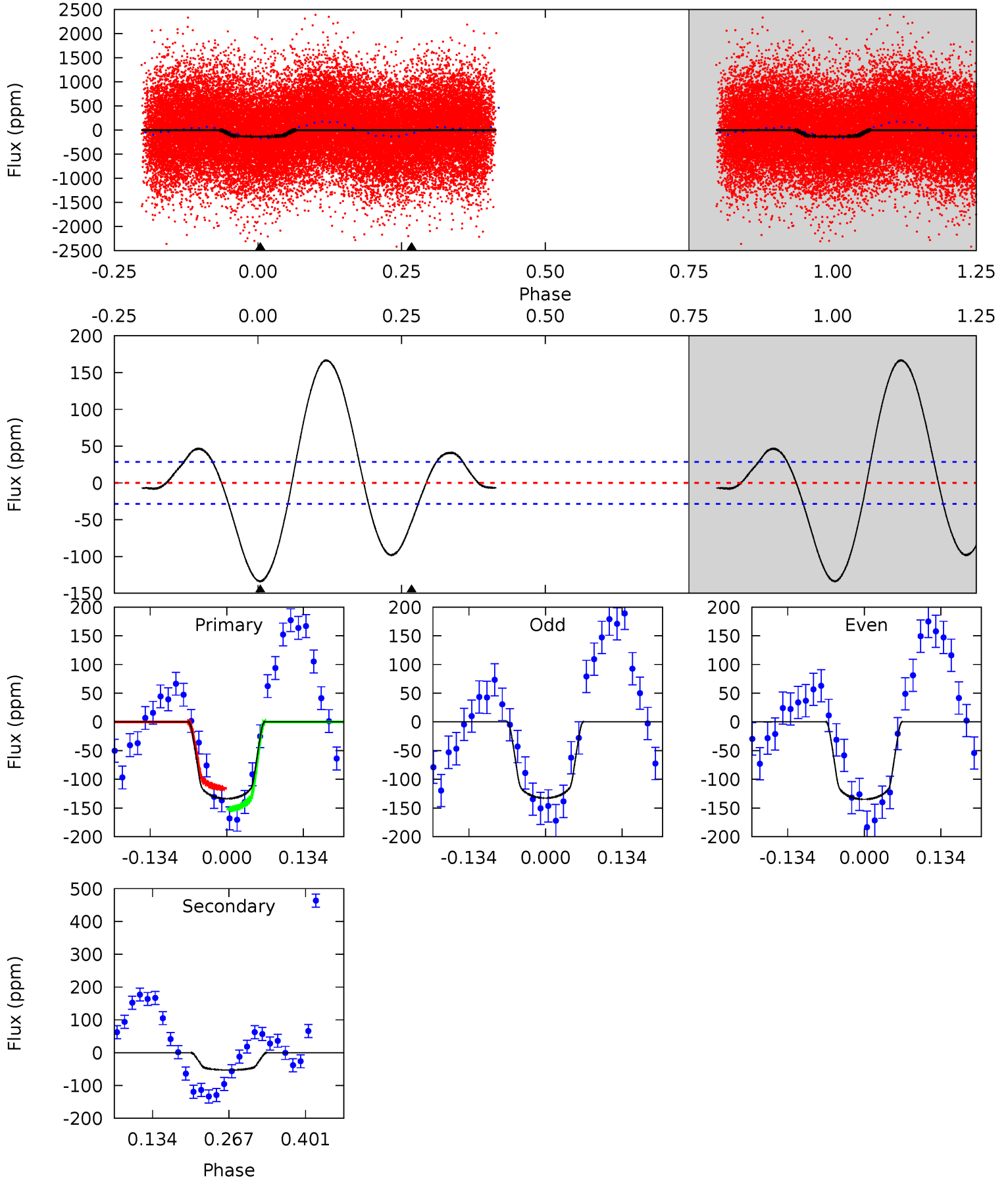
TCE 008516008-02 P= 1.149298 Days $T_0=131.980427$ (BKJD)



DV Model-Shift Uniqueness Test

008516008-02, P = 1.149287 Days, E = 130.831603 Days

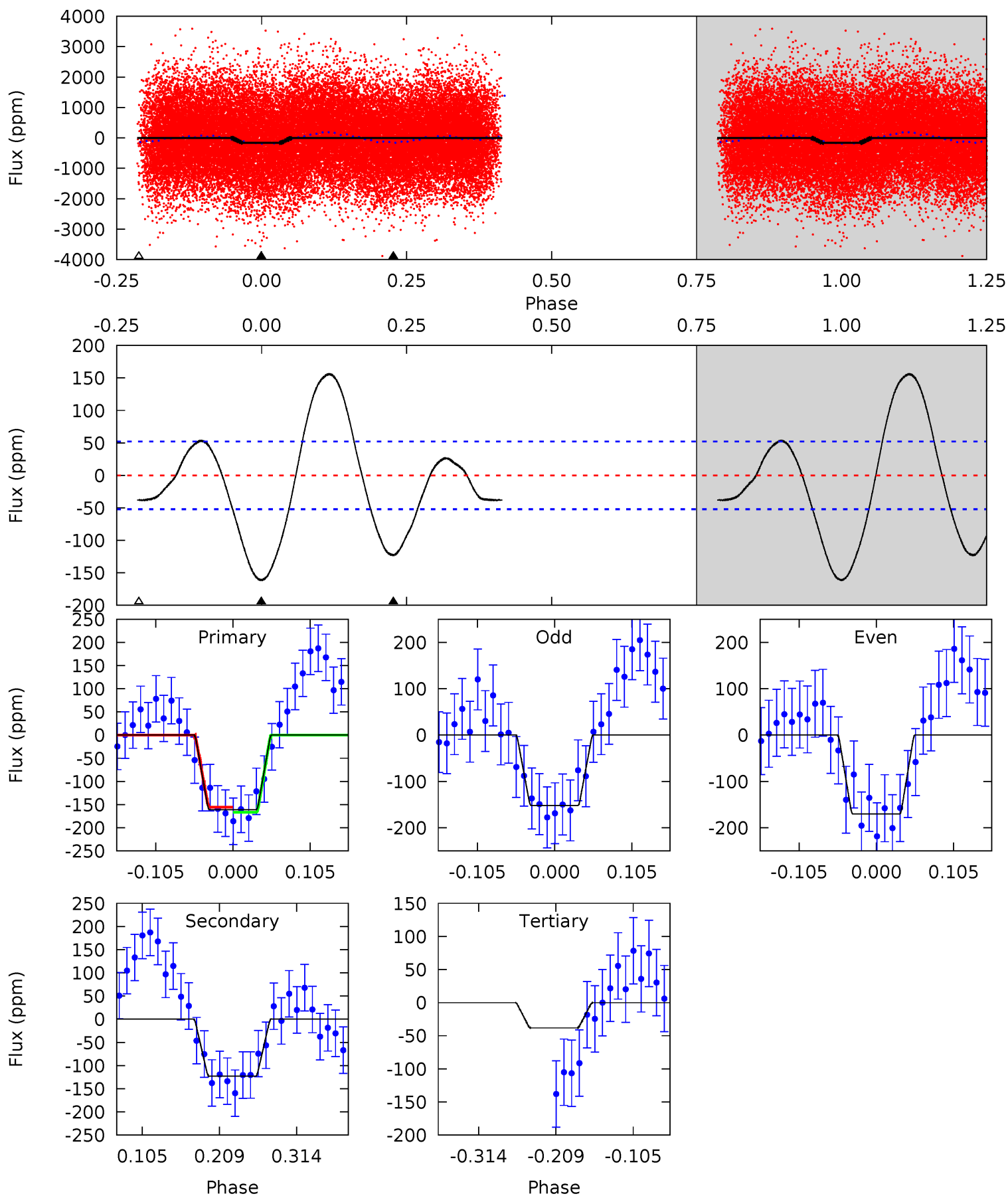
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	8.38	0	0	4.50	1.50	1.80	21.2	21.2	8.38	8.38	0.18	1.03	0.55	2.88



Alt Model-Shift Uniqueness Test

008516008-02, P = 1.149298 Days, E = 130.831129 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	10.7	3.33	0	4.56	1.62	4.91	10.7	14.1	7.39	10.7	0.81	1.06	0.49	0.50



Stellar Parameters For KIC 008516008

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8540^{+233}_{-401}	$3.581^{+0.567}_{-0.063}$	$0.070^{+0.250}_{-0.550}$	$4.328^{+0.624}_{-2.495}$	$2.603^{+0.248}_{-0.992}$	$0.045^{+0.321}_{-0.014}$
	+3%/-5%	+16%/-2%	+357%/-786%	+14%/-58%	+10%/-38%	+709%/-32%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008516008-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-53 ± 6	$5.21^{+1.42}_{-1.73}$	6000^{+534}_{-893}	5666^{+799}_{-771}	$0.939^{+0.981}_{-0.368}$
Alt.	-123 ± 11	$5.30^{+1.61}_{-1.70}$	6004^{+491}_{-820}	7346^{+1052}_{-803}	$2.083^{+2.093}_{-0.836}$

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

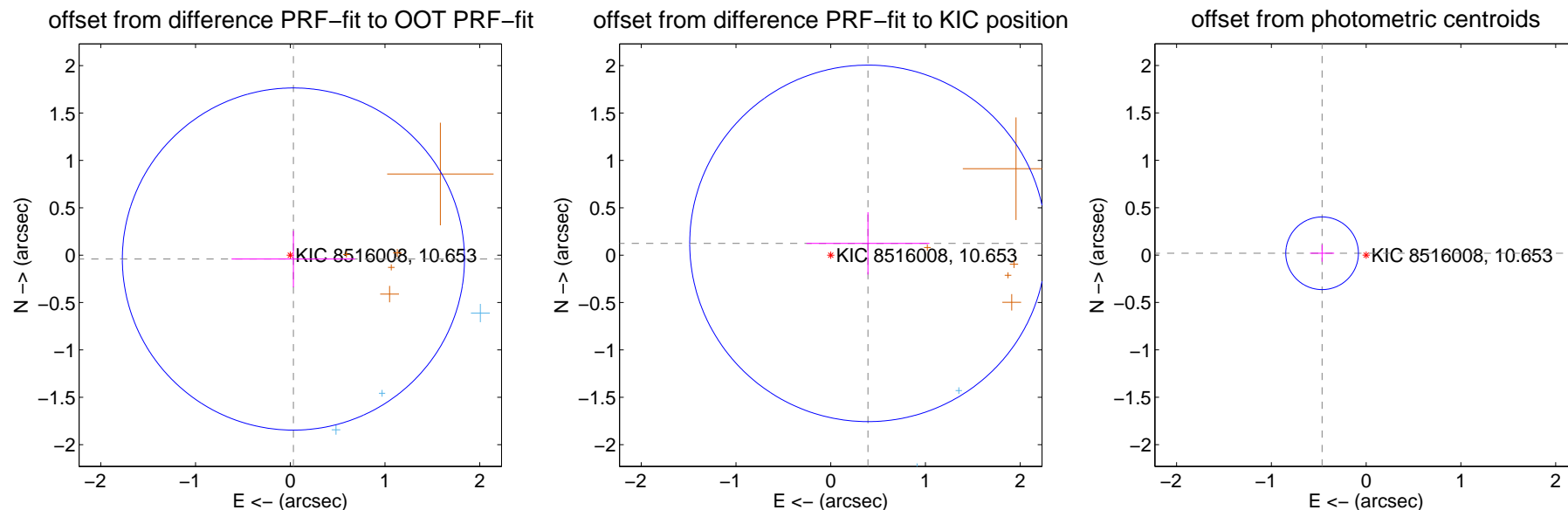
DV Centroid Data

Supplemental centroid analysis for 008516008-02. **Kepler magnitude: 10.65.** Transit SNR 14.06

There are 6 quarters with good PRF difference image offsets

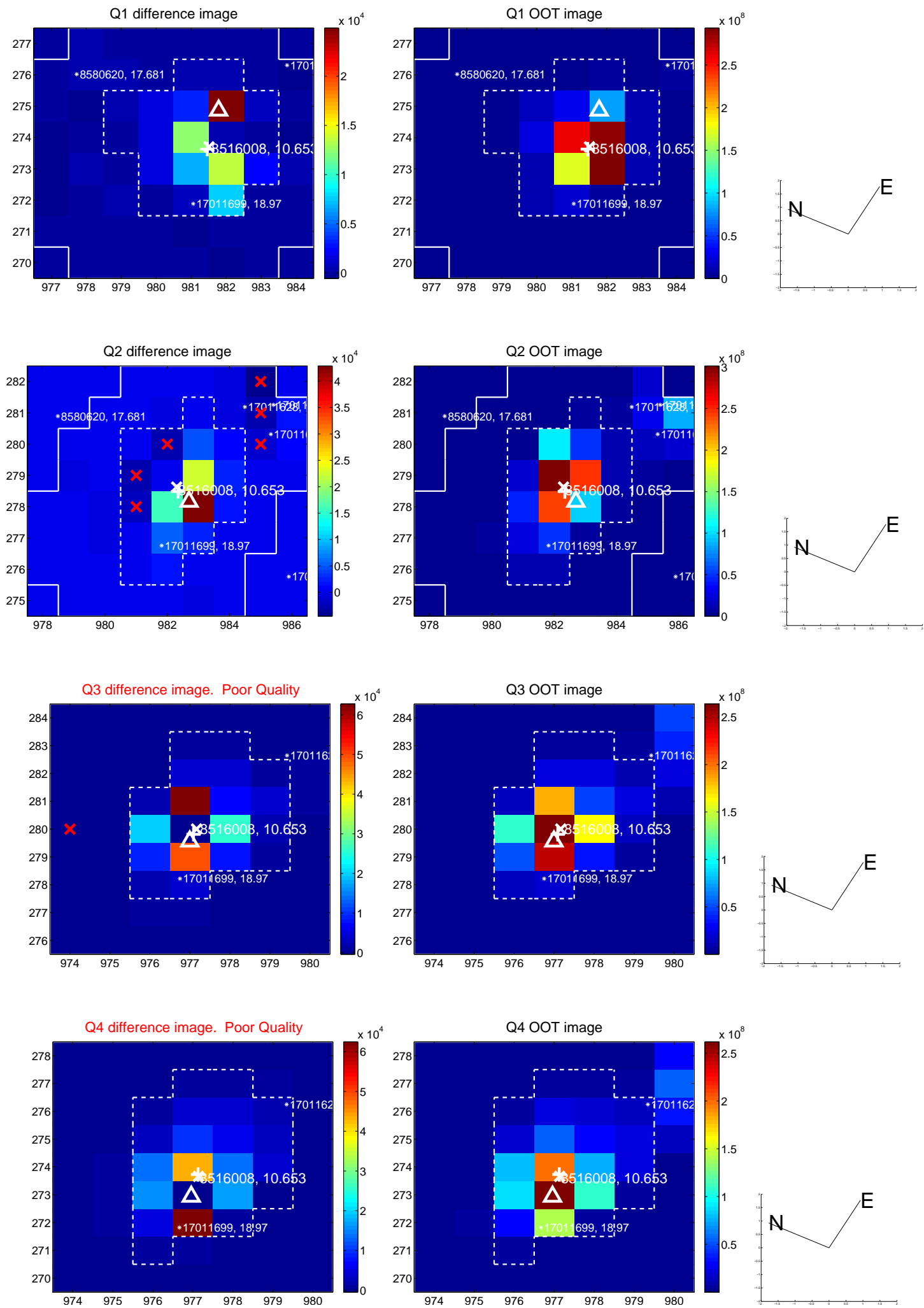
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.053 ± 0.602	0.09	-0.033 ± 0.653	-0.041 ± 0.297
PRF-fit source offset from KIC position	0.412 ± 0.627	0.66	-0.393 ± 0.649	0.124 ± 0.329
photometric centroid source offset	0.46 ± 0.13	3.64	0.46 ± 0.13	0.02 ± 0.09

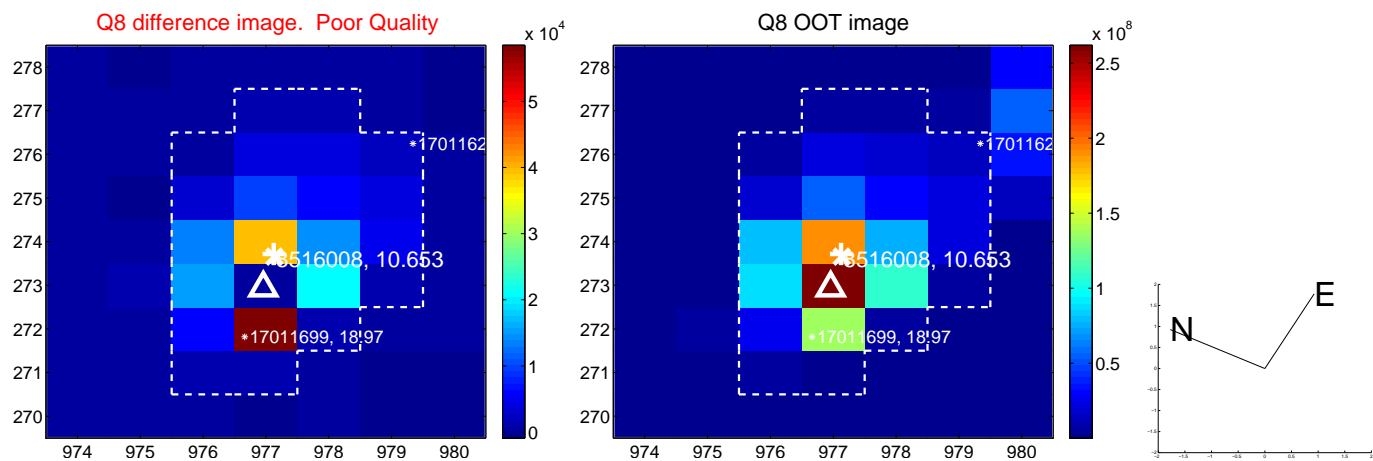
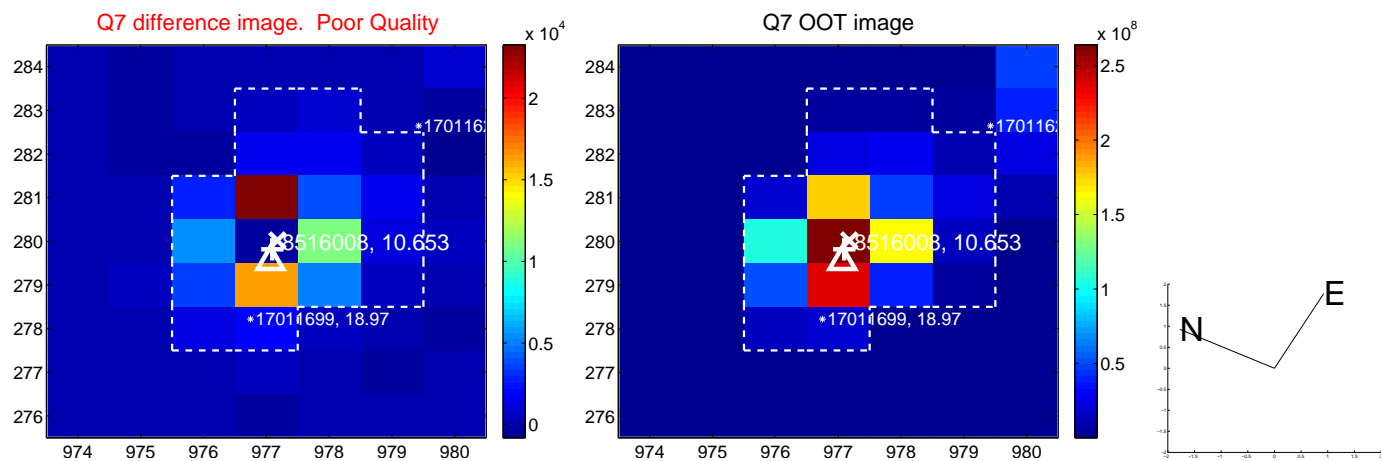
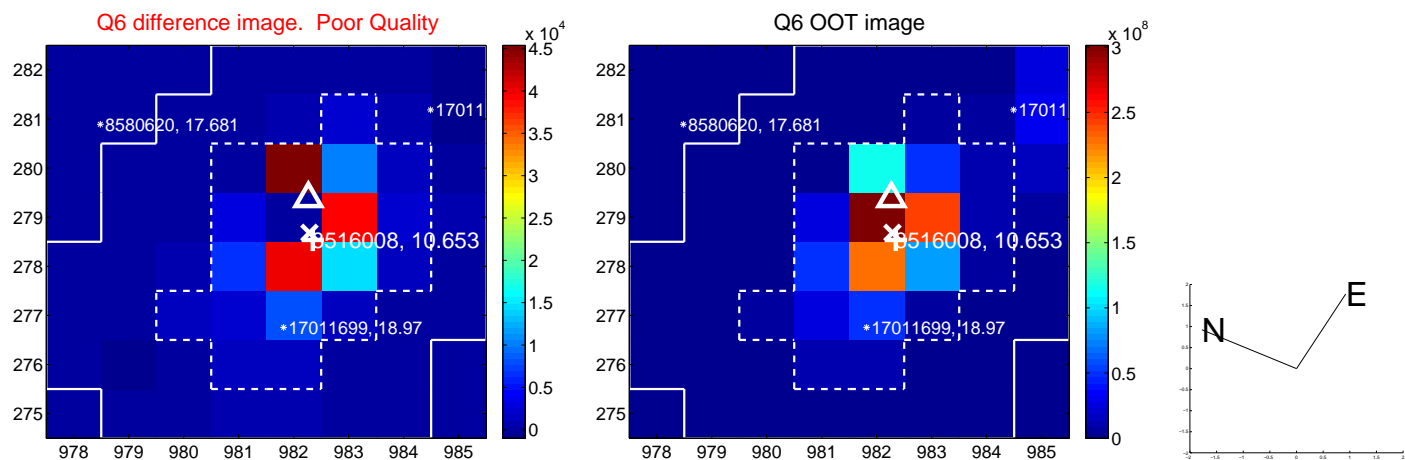
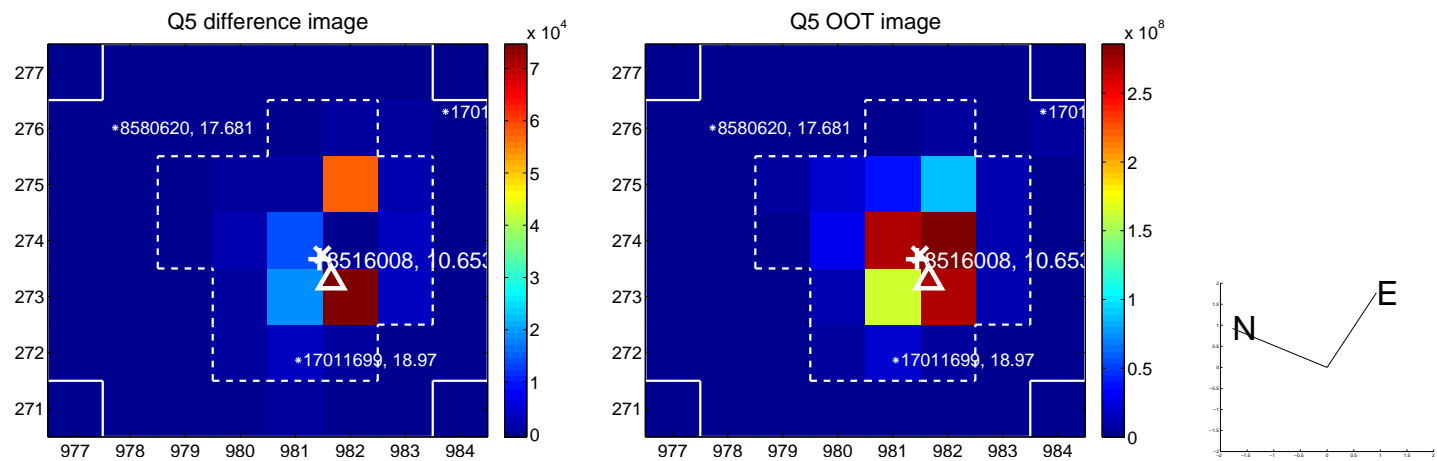


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

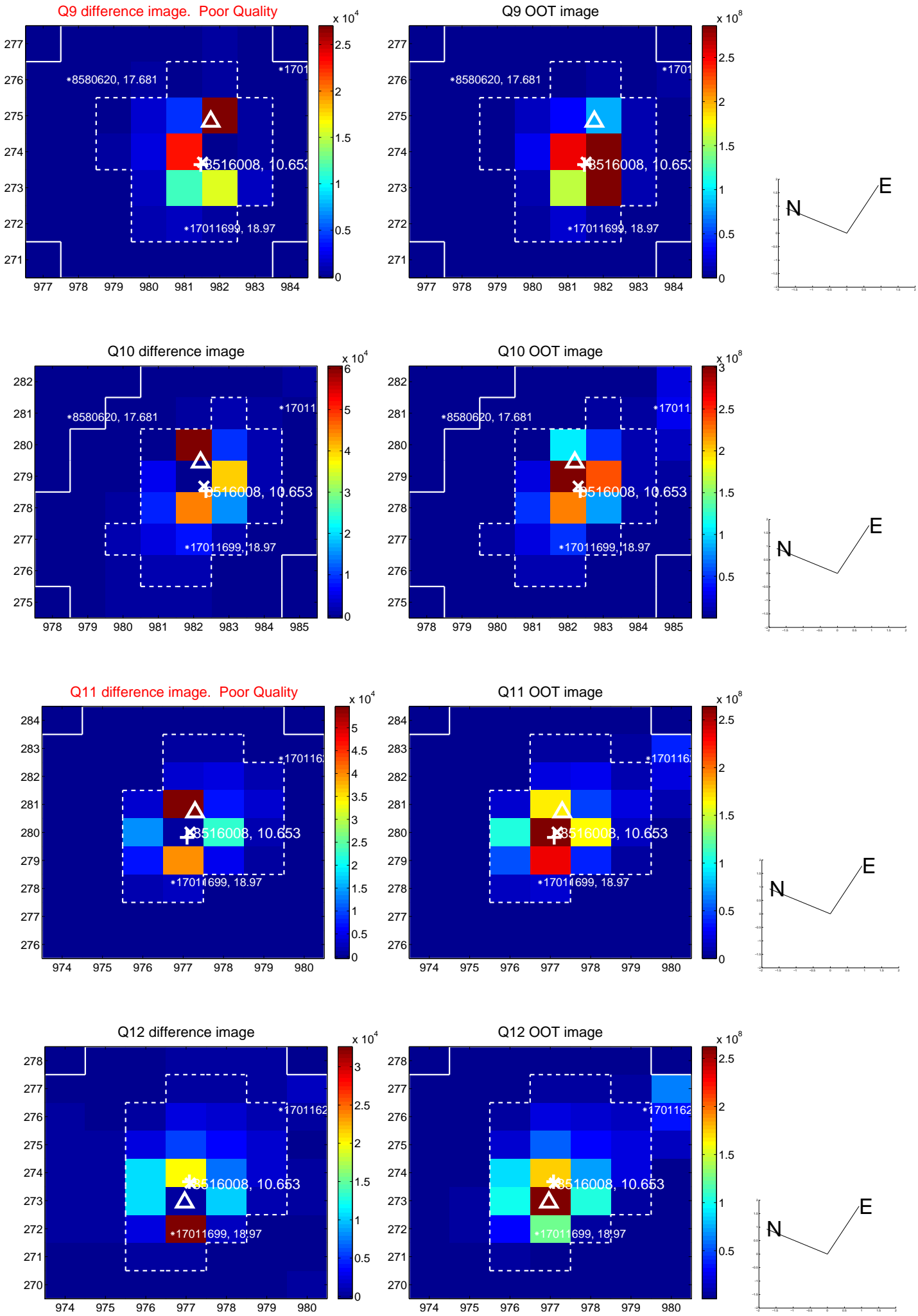
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



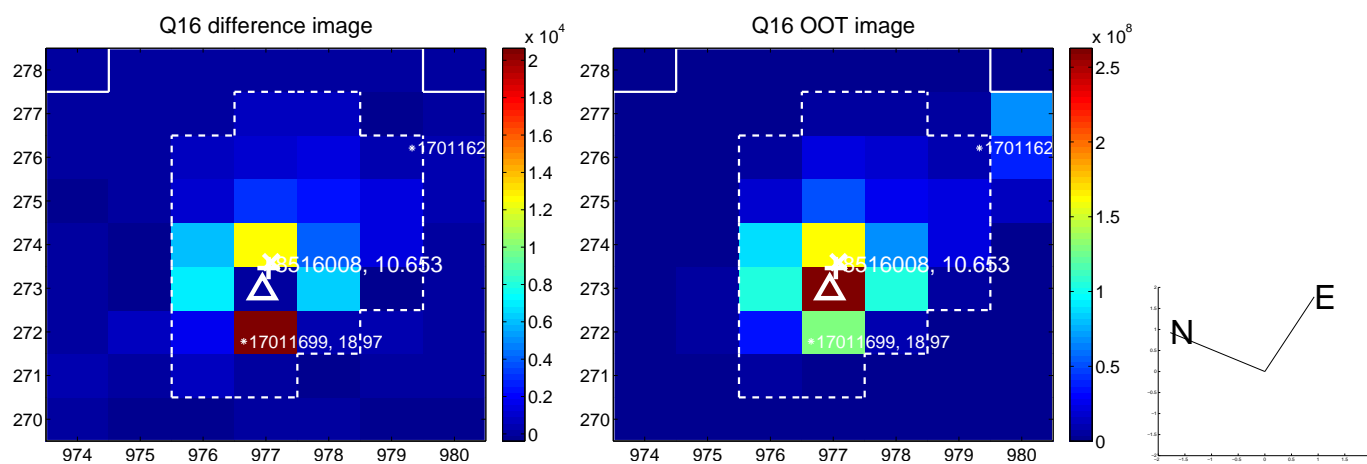
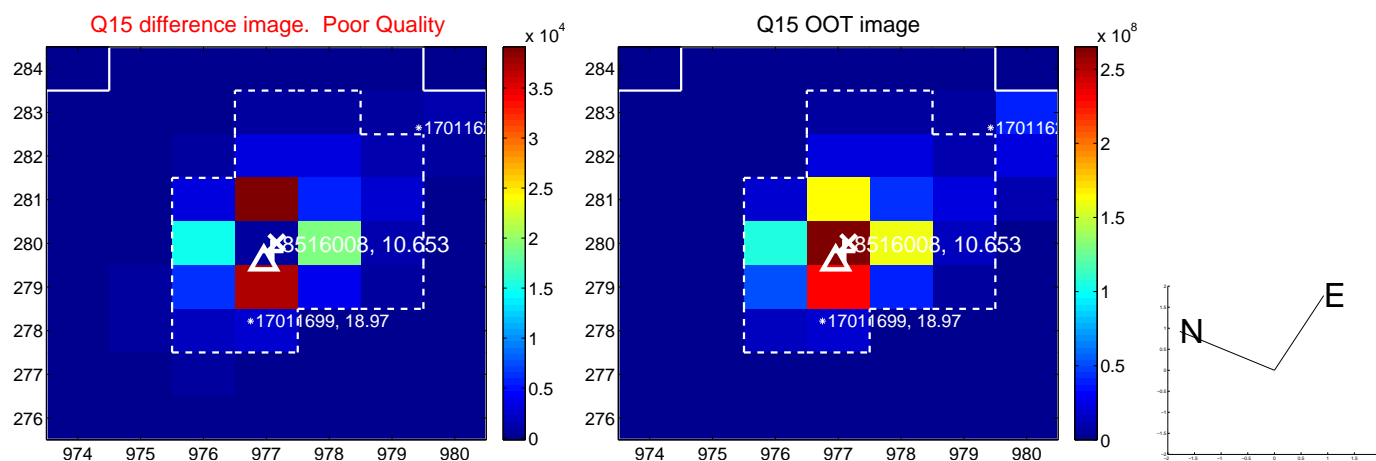
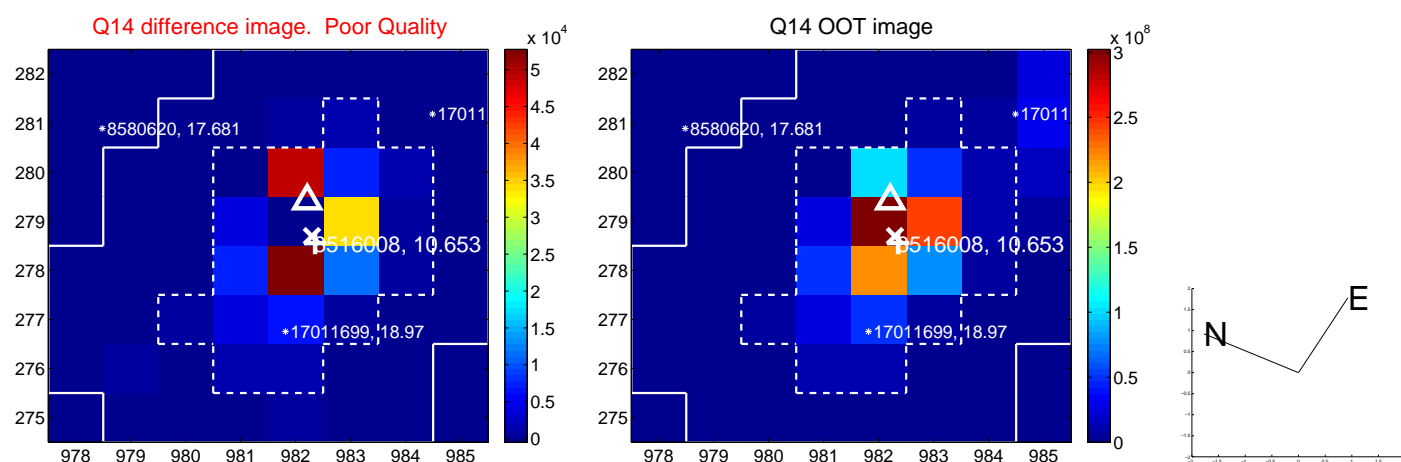
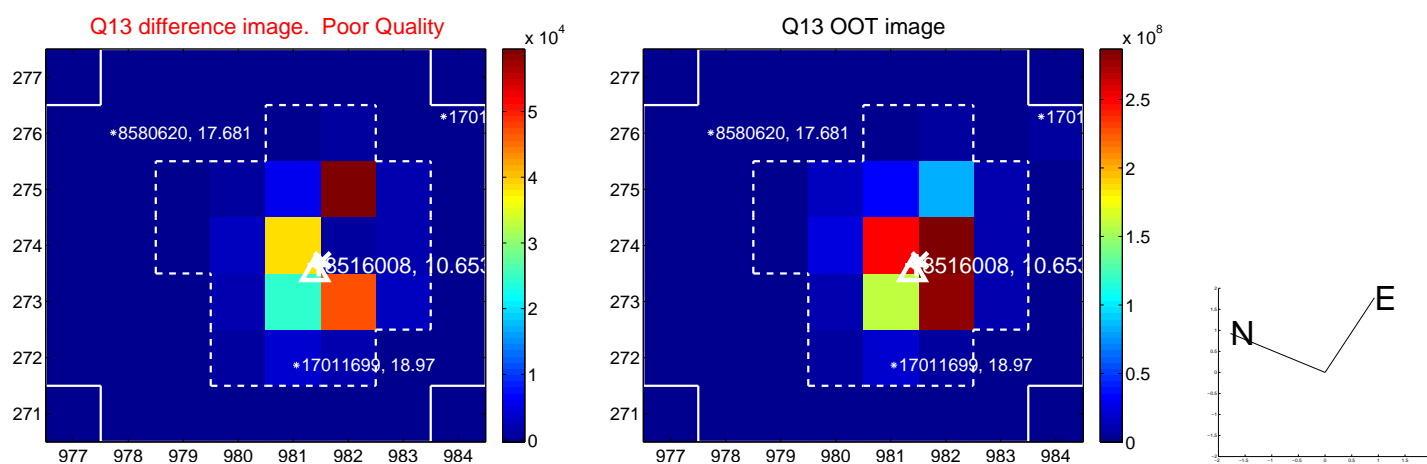
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



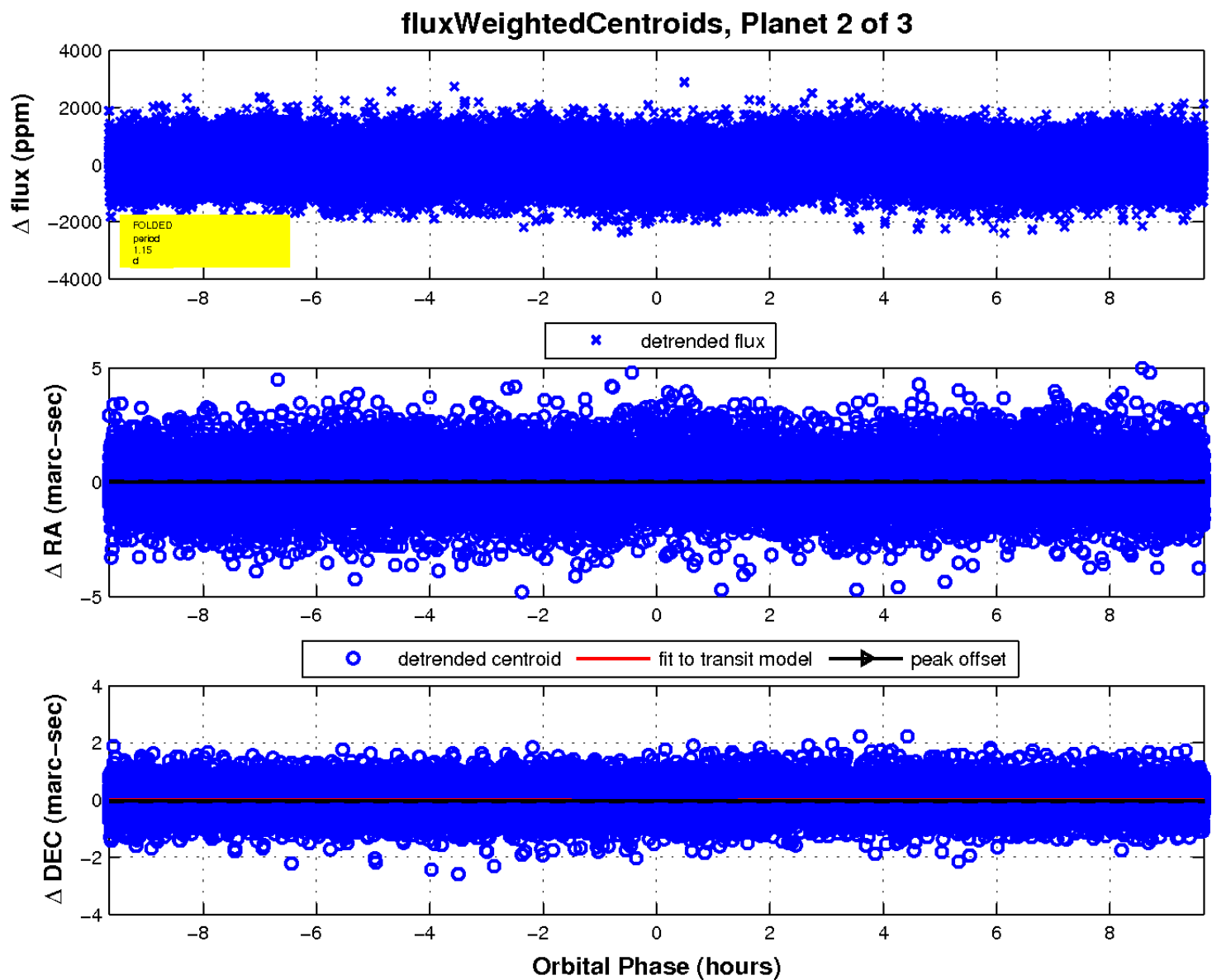
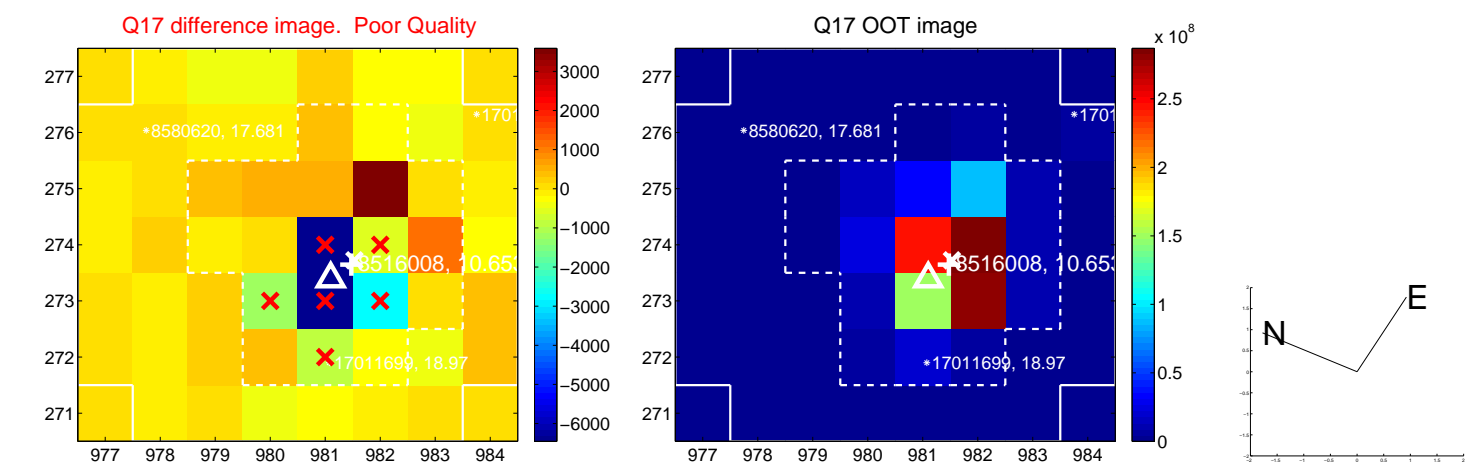
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

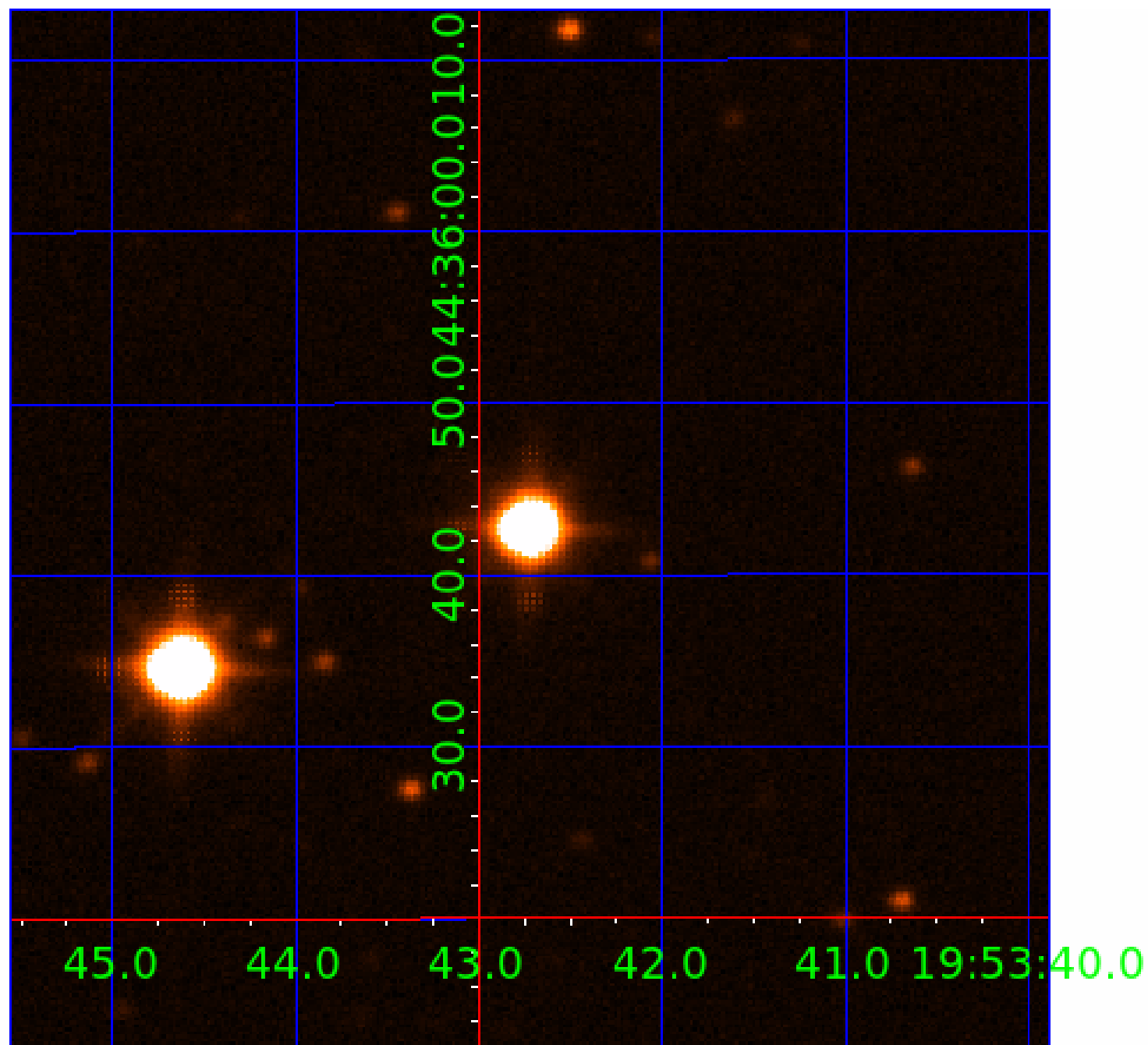


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008516008

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})
008516008-01	OBS	No	1.149256	131.547094	112.1	3.652	10.6	10.4	4.33	8540	5.31	102257.39
008516008-02	OBS	No	1.149287	131.980890	136.8	3.220	11.2	14.1	4.33	8540	5.87	102253.83
008516008-03	OBS	No	0.866014	131.727189	84.7	8.949	10.5	8.1	4.33	8540	4.14	149125.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008516008-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
008516008-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
008516008-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

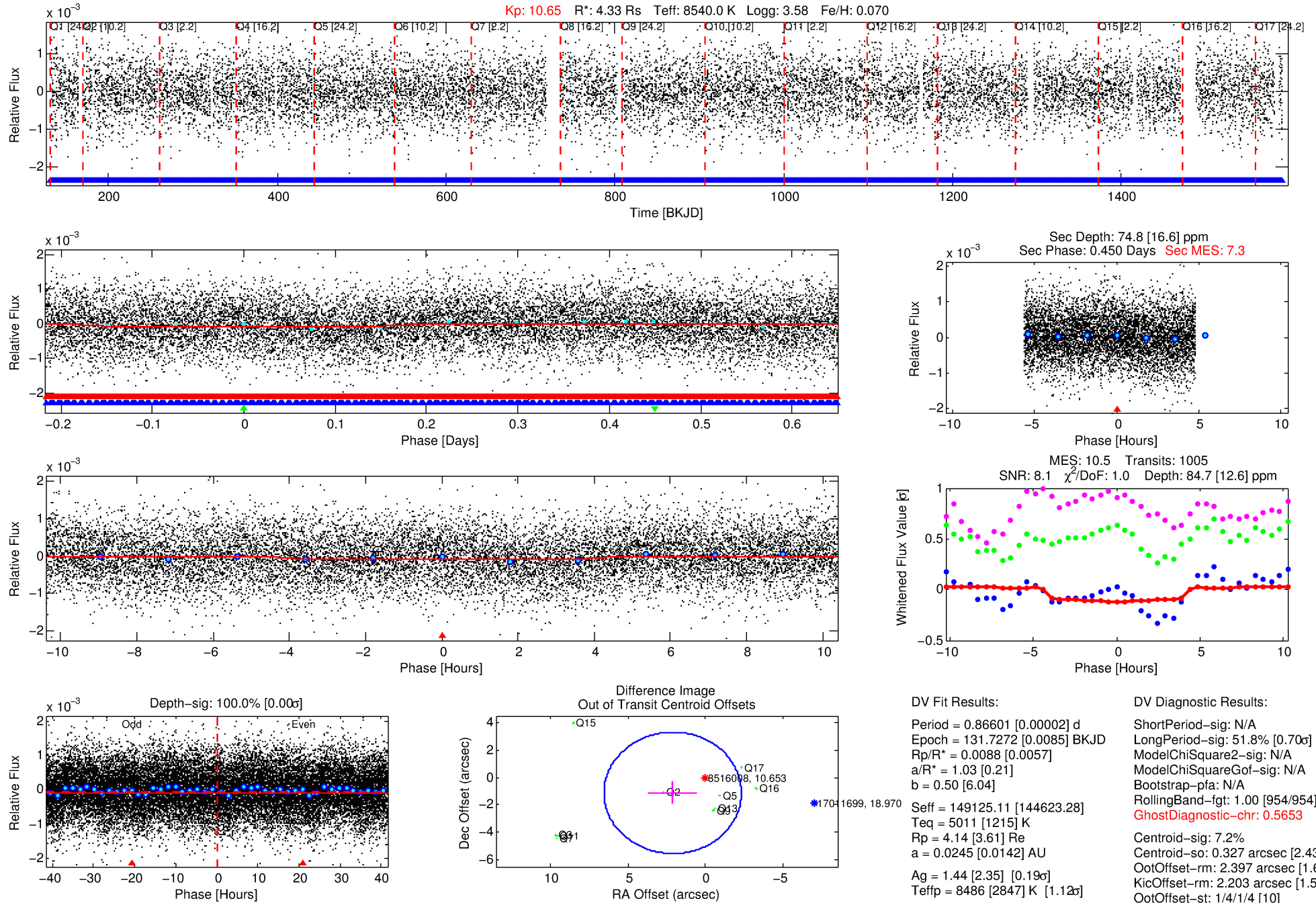
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008516008-03

No Significant Match Found

DV One-Page Summary

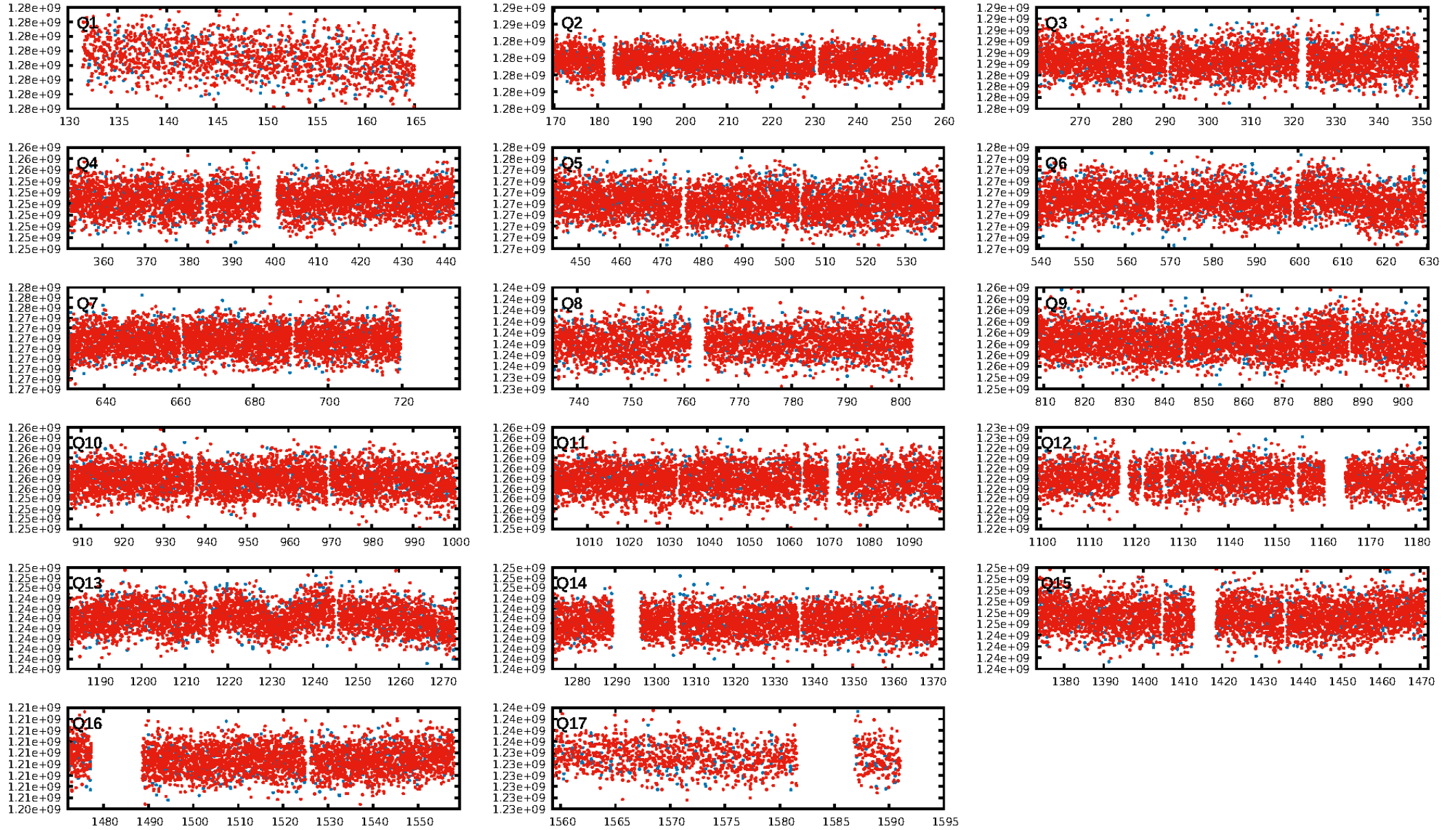
KIC: 8516008 Candidate: 3 of 3 Period: 0.866 d



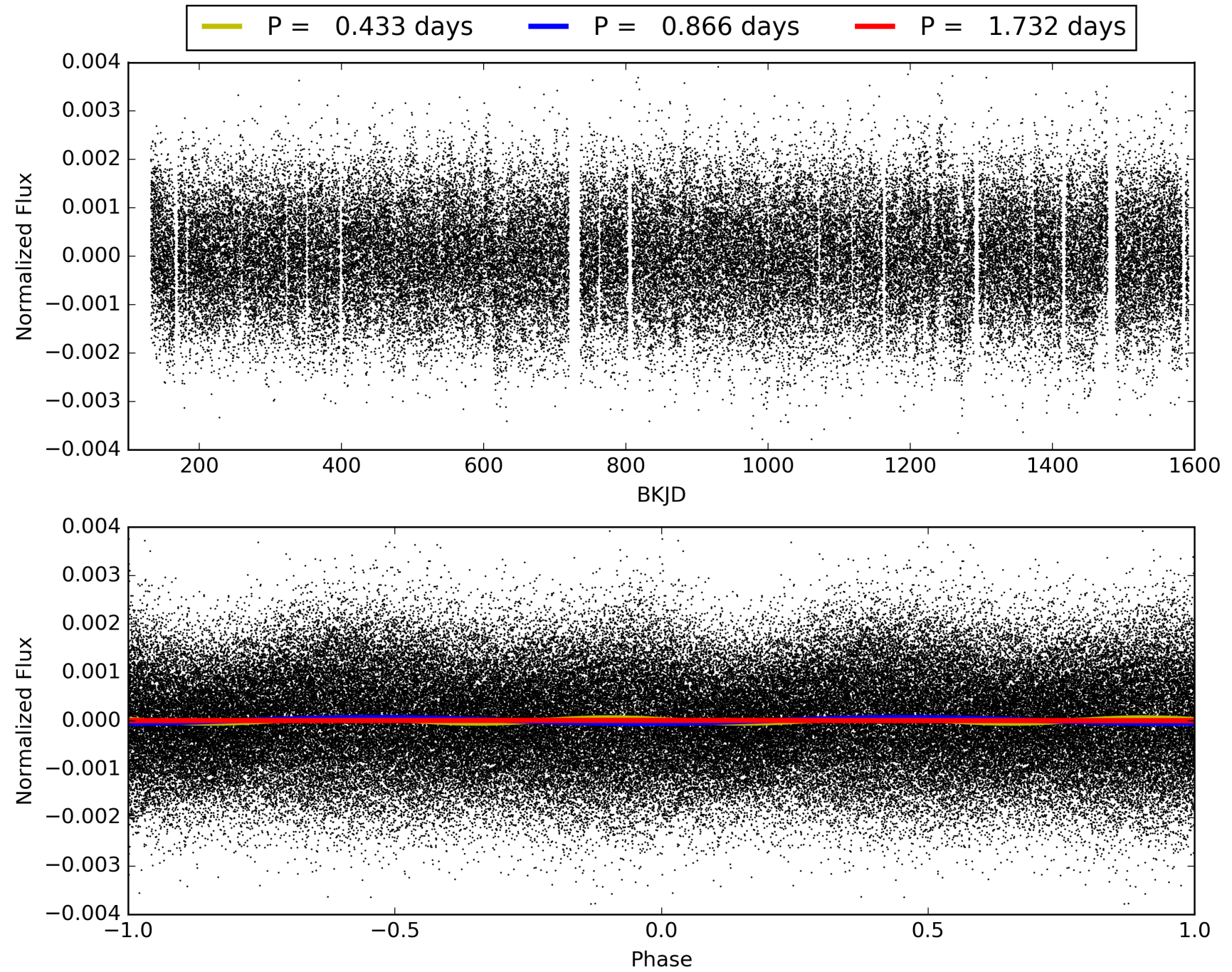
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:49:27 Z

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

TCE 008516008-03, PDC Light Curves

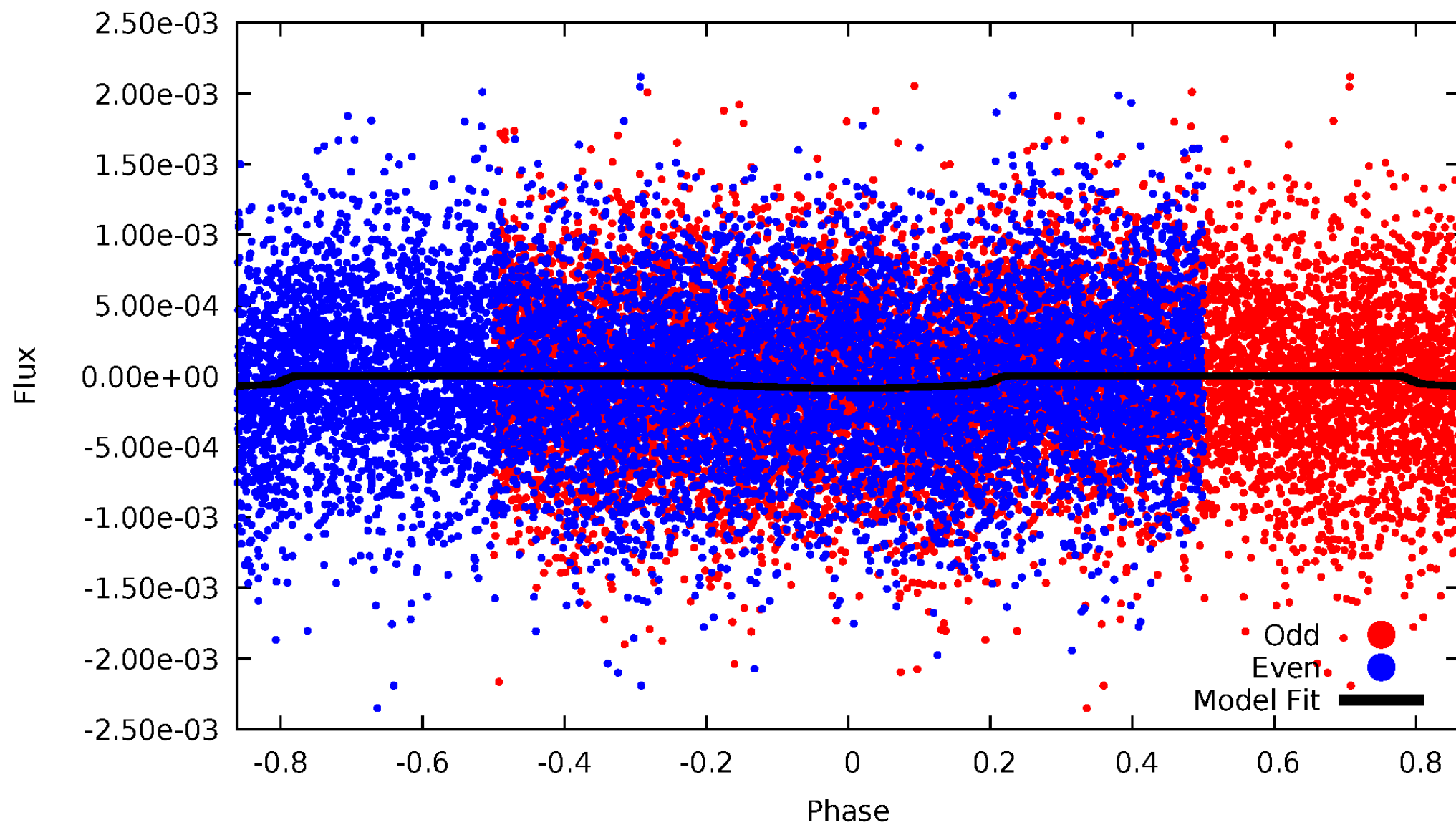


TCE 008516008-03



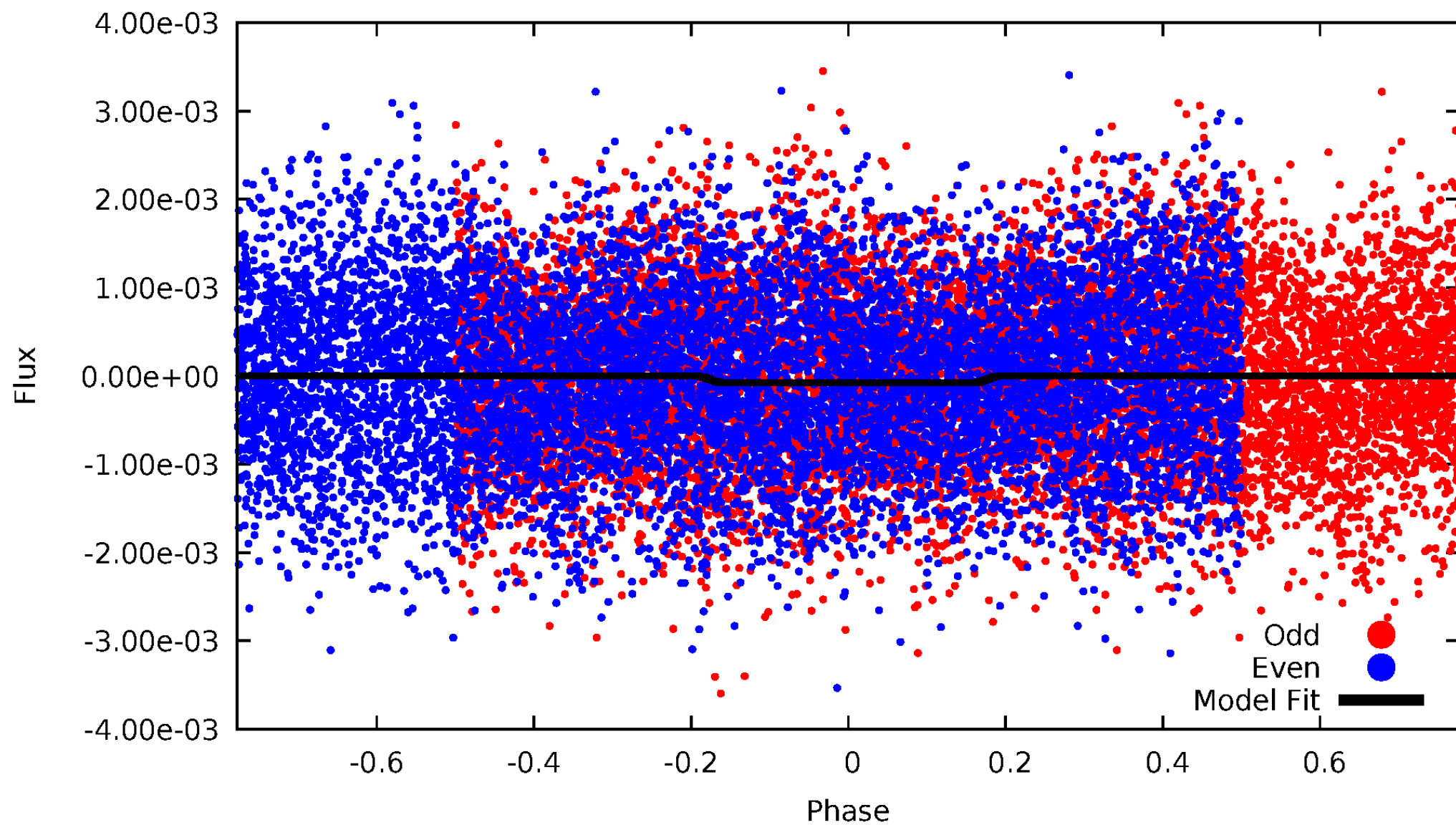
DV Odd/Even

TCE 008516008-03



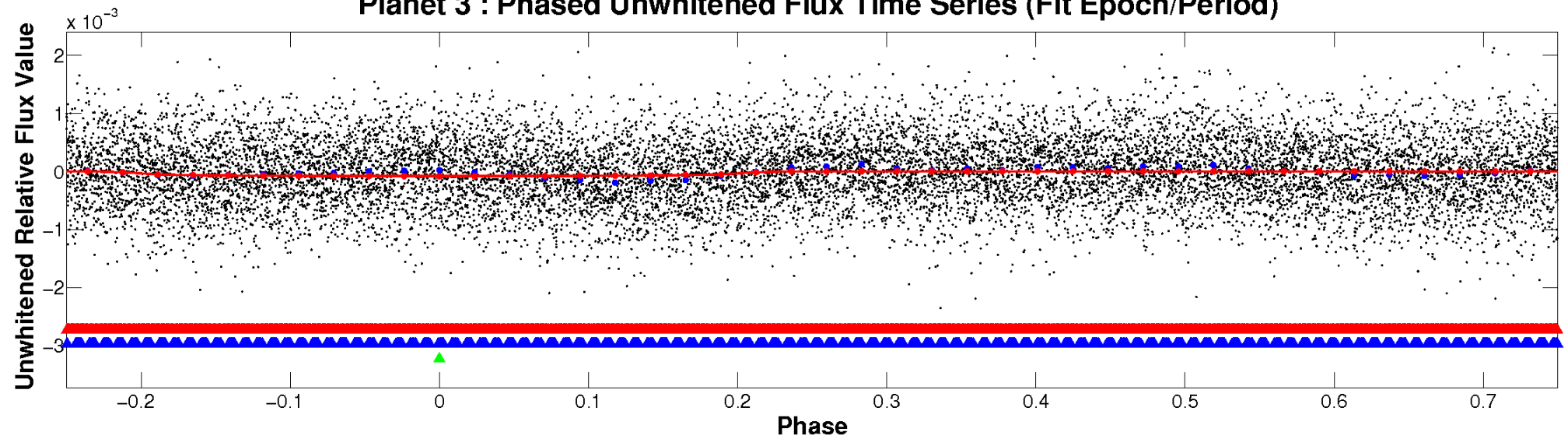
ALT Odd/Even

TCE 008516008-03

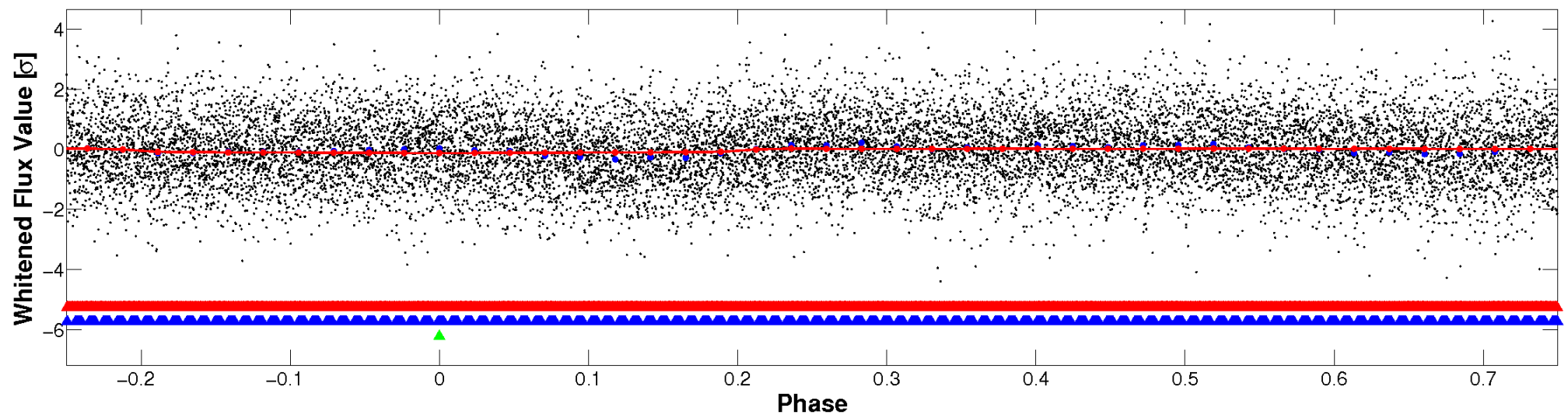


Non-Whitened Vs. Whitened Light Curve

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

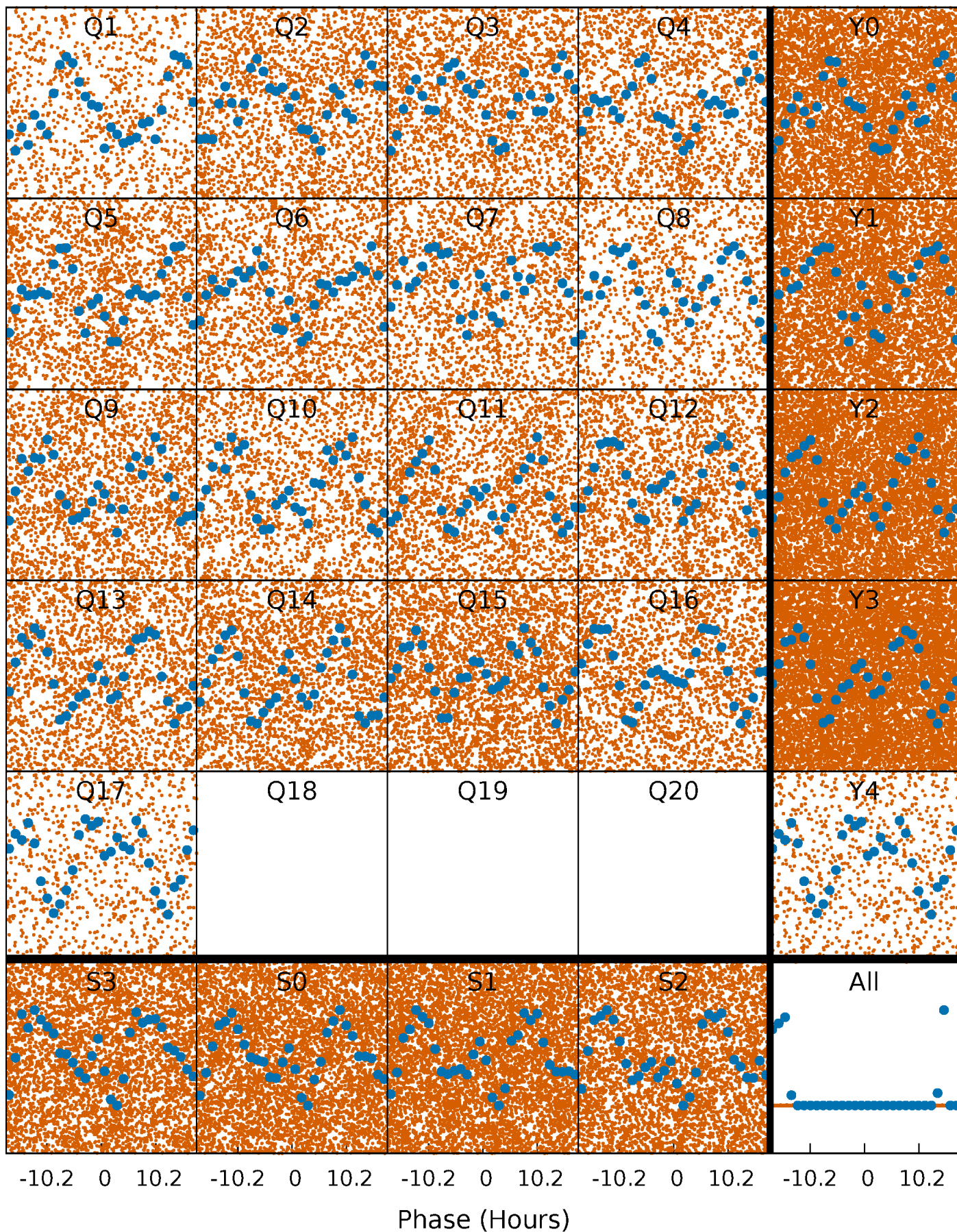


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



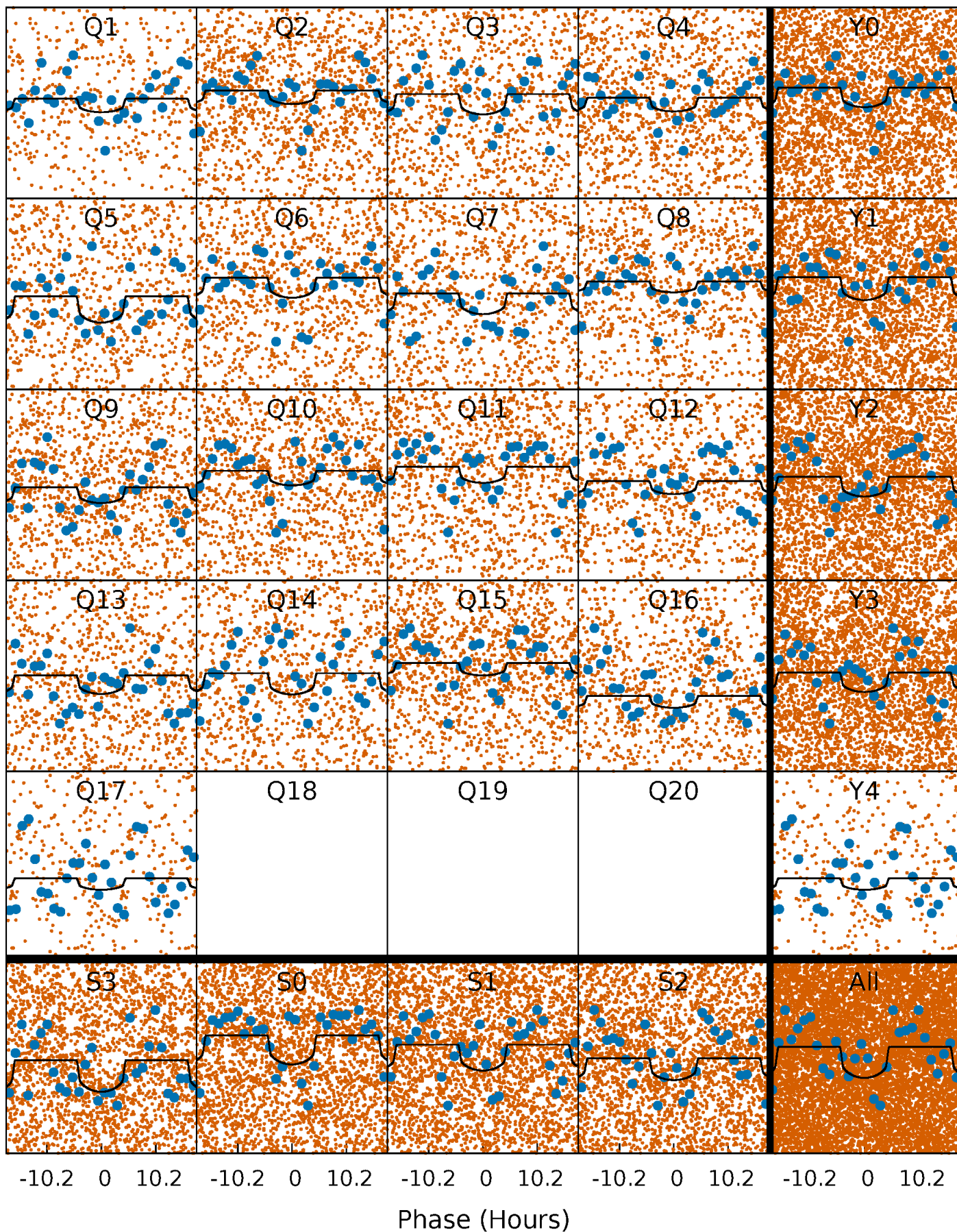
PDC Quarter-Phased Transit Curves

TCE 008516008-03 P= 0.866014 Days $T_0=131.727189$ (BKJD)



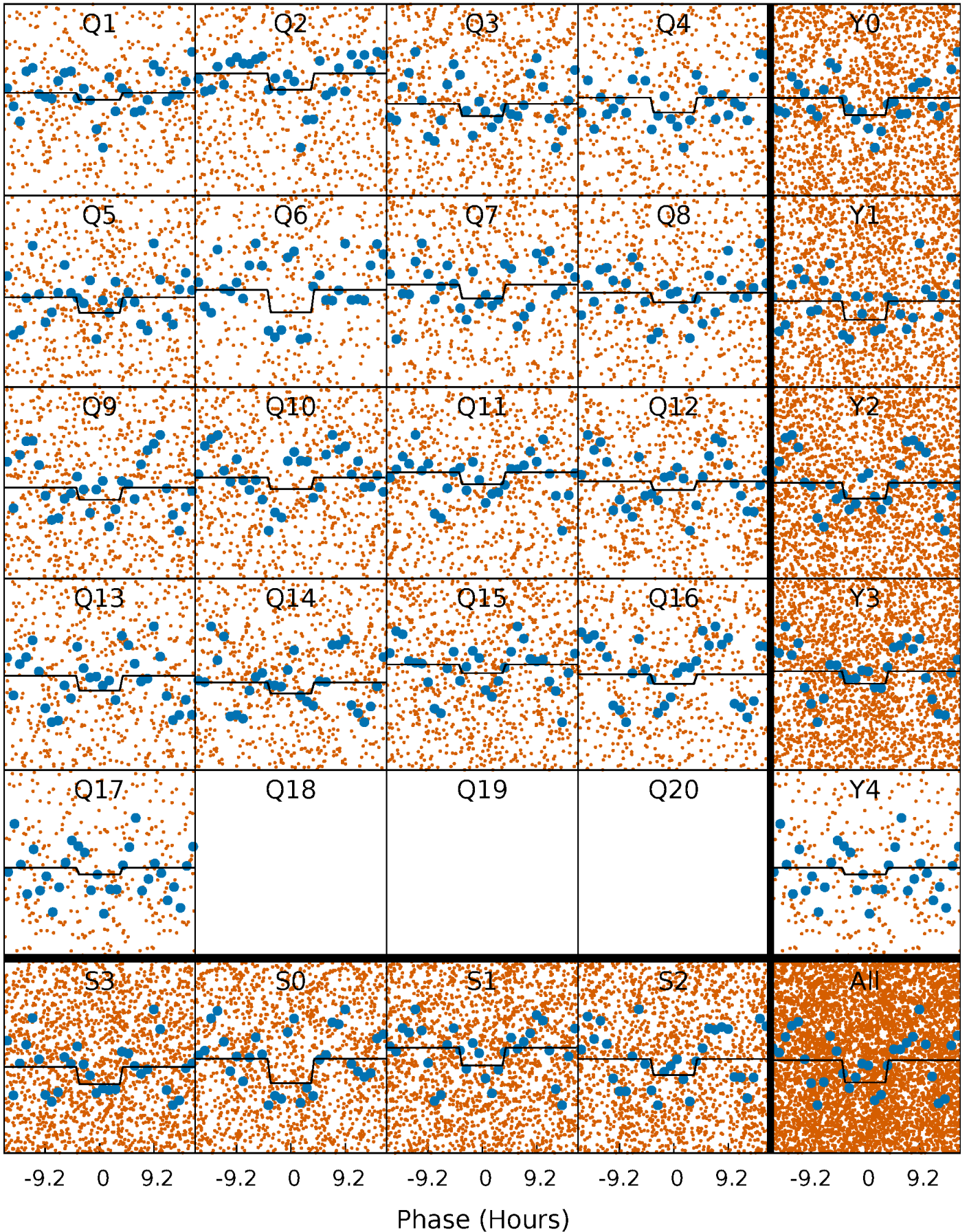
DV Quarter-Phased Transit Curves

TCE 008516008-03 P= 0.866014 Days $T_0=131.727189$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

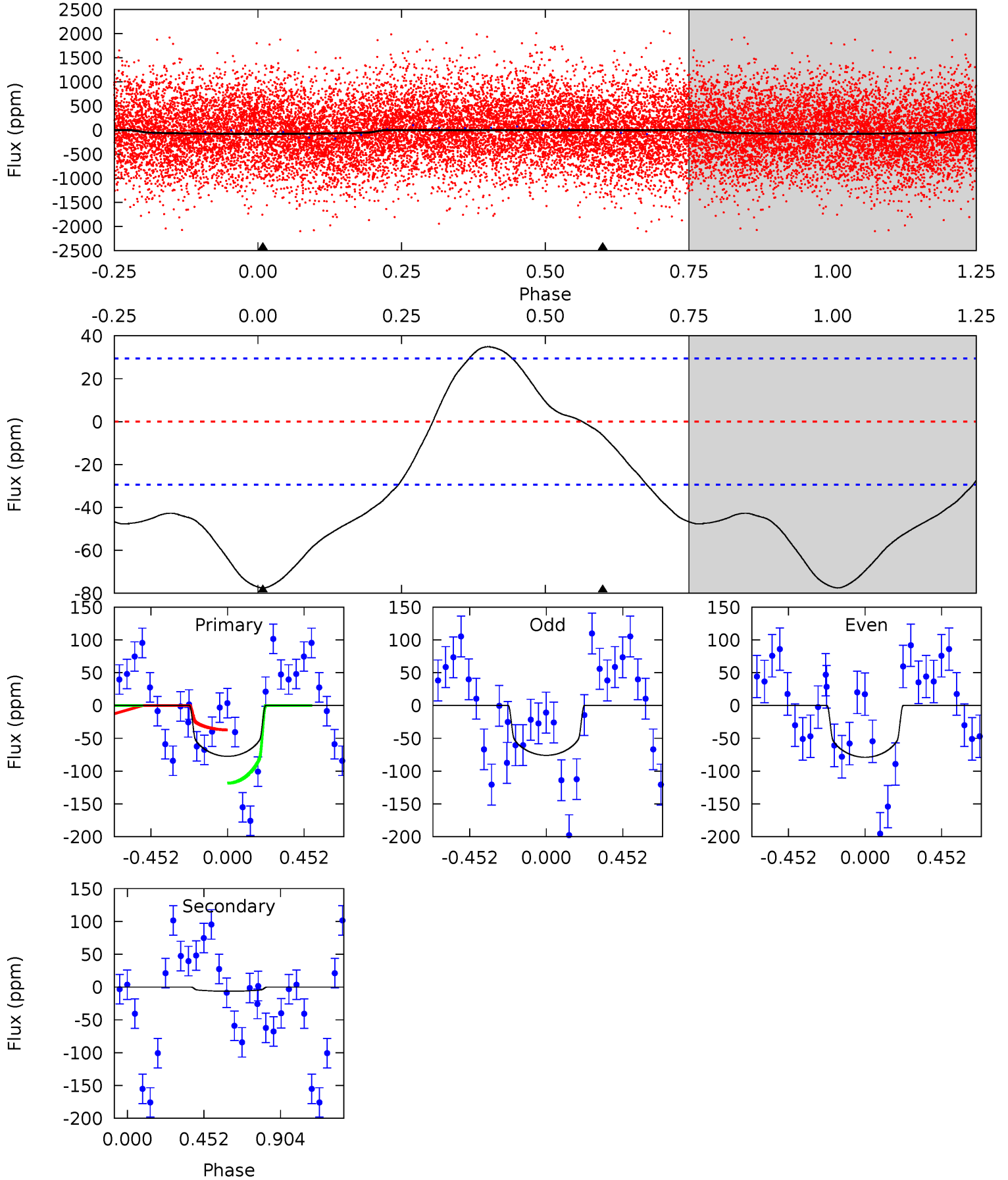
TCE 008516008-03 P= 0.866040 Days $T_0=131.732263$ (BKJD)



DV Model-Shift Uniqueness Test

008516008-03, P = 0.866014 Days, E = 131.727189 Days

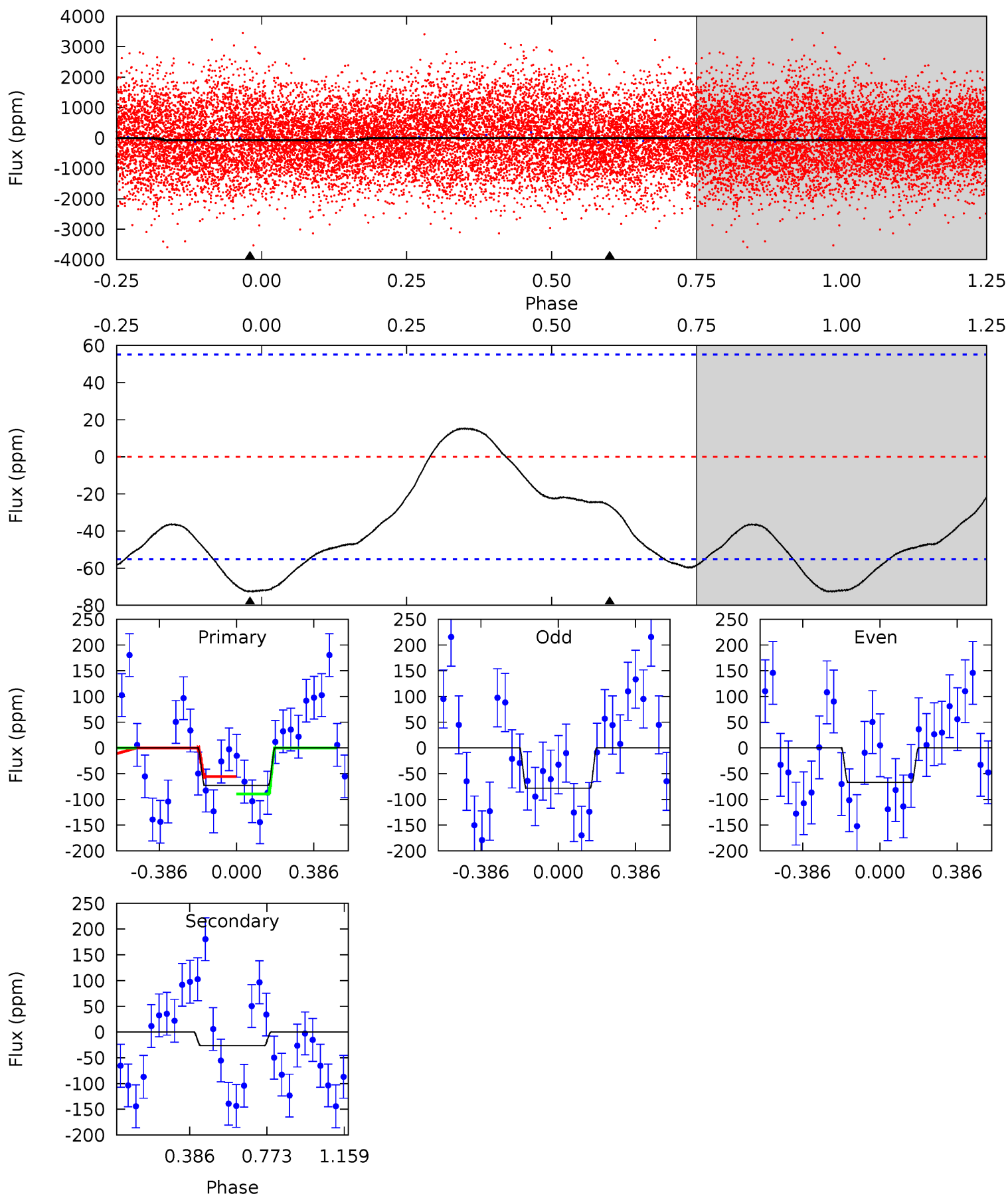
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	0.92	0	0	4.24	0.75	2.31	11.2	11.2	0.92	0.92	0.21	1.32	0.31	5.76



Alt Model-Shift Uniqueness Test

008516008-03, P = 0.866040 Days, E = 131.732263 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.63	2.04	0	0	4.27	0.87	1.04	5.63	5.63	2.04	2.04	0.43	1.06	0.17	1.32



Stellar Parameters For KIC 008516008

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8540^{+233}_{-401}	$3.581^{+0.567}_{-0.063}$	$0.070^{+0.250}_{-0.550}$	$4.328^{+0.624}_{-2.495}$	$2.603^{+0.248}_{-0.992}$	$0.045^{+0.321}_{-0.014}$
	+3%/-5%	+16%/-2%	+357%/-786%	+14%/-58%	+10%/-38%	+709%/-32%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008516008-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-6 ± 7	$3.54^{+2.88}_{-1.91}$	6593^{+563}_{-965}	-4595^{+9894}_{-894}	$0.119^{+0.645}_{-0.138}$
Alt.	-26 ± 13	$3.60^{+2.75}_{-2.11}$	6622^{+555}_{-958}	5029^{+4199}_{-9517}	$0.601^{+3.290}_{-0.433}$

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

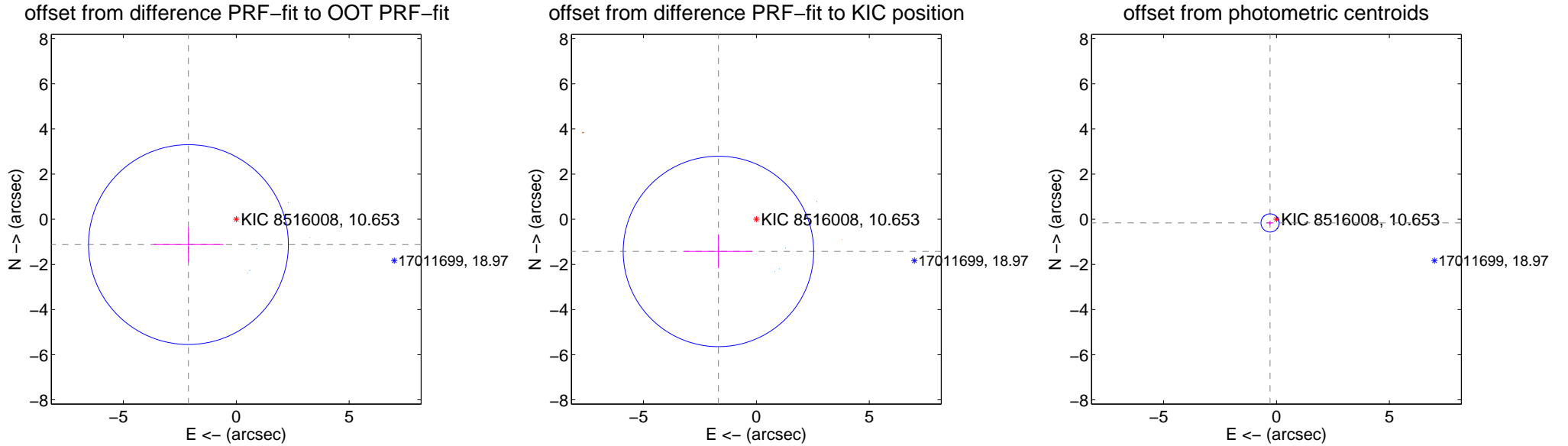
DV Centroid Data

Supplemental centroid analysis for 008516008-03. **Kepler magnitude: 10.65.** Transit SNR 8.08

There are 3 quarters with good PRF difference image offsets

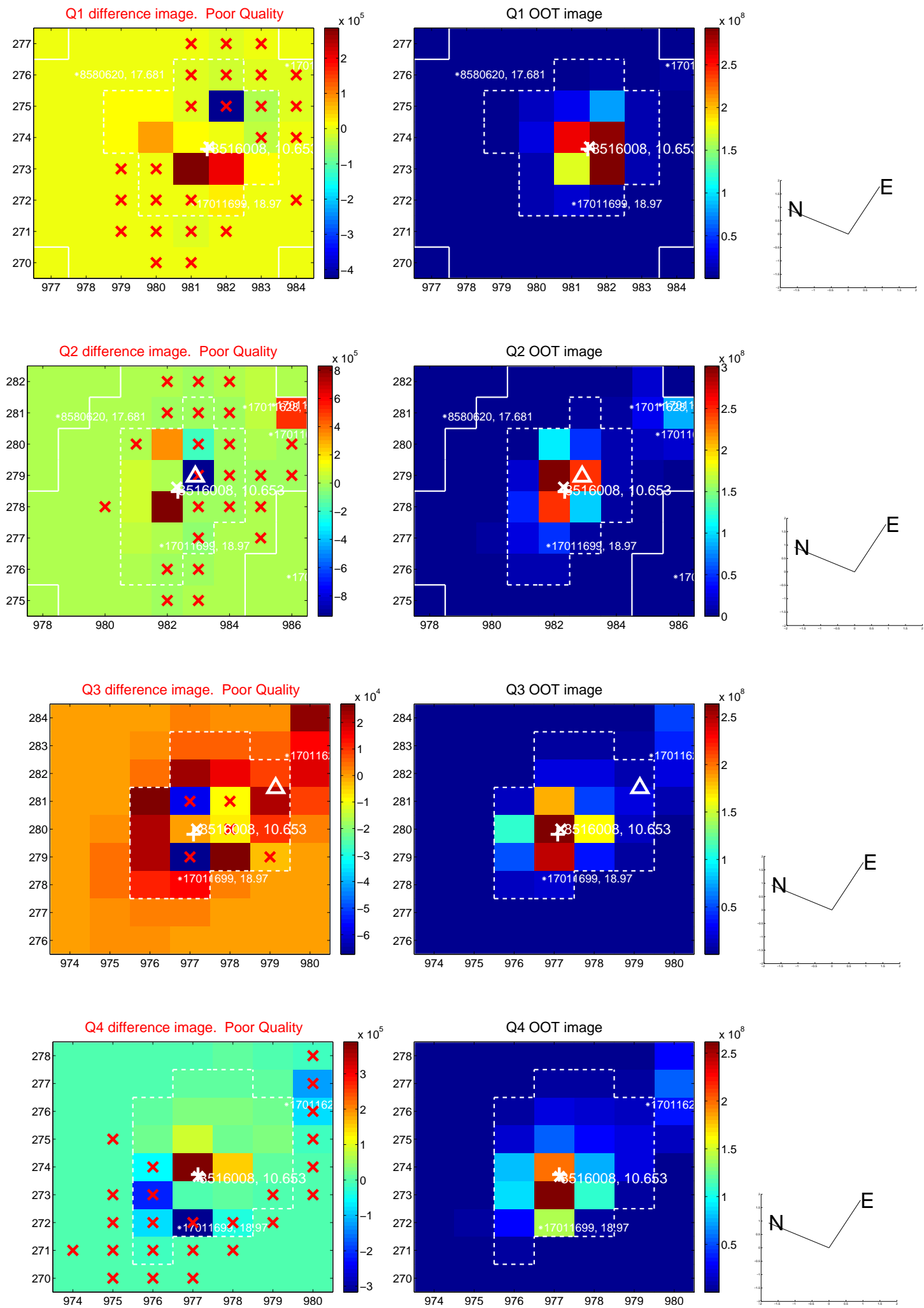
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.397 ± 1.475	1.62	2.118 ± 1.555	-1.122 ± 0.774
PRF-fit source offset from KIC position	2.203 ± 1.406	1.57	1.680 ± 1.509	-1.425 ± 0.733
photometric centroid source offset	0.33 ± 0.13	2.43	0.28 ± 0.15	-0.16 ± 0.09

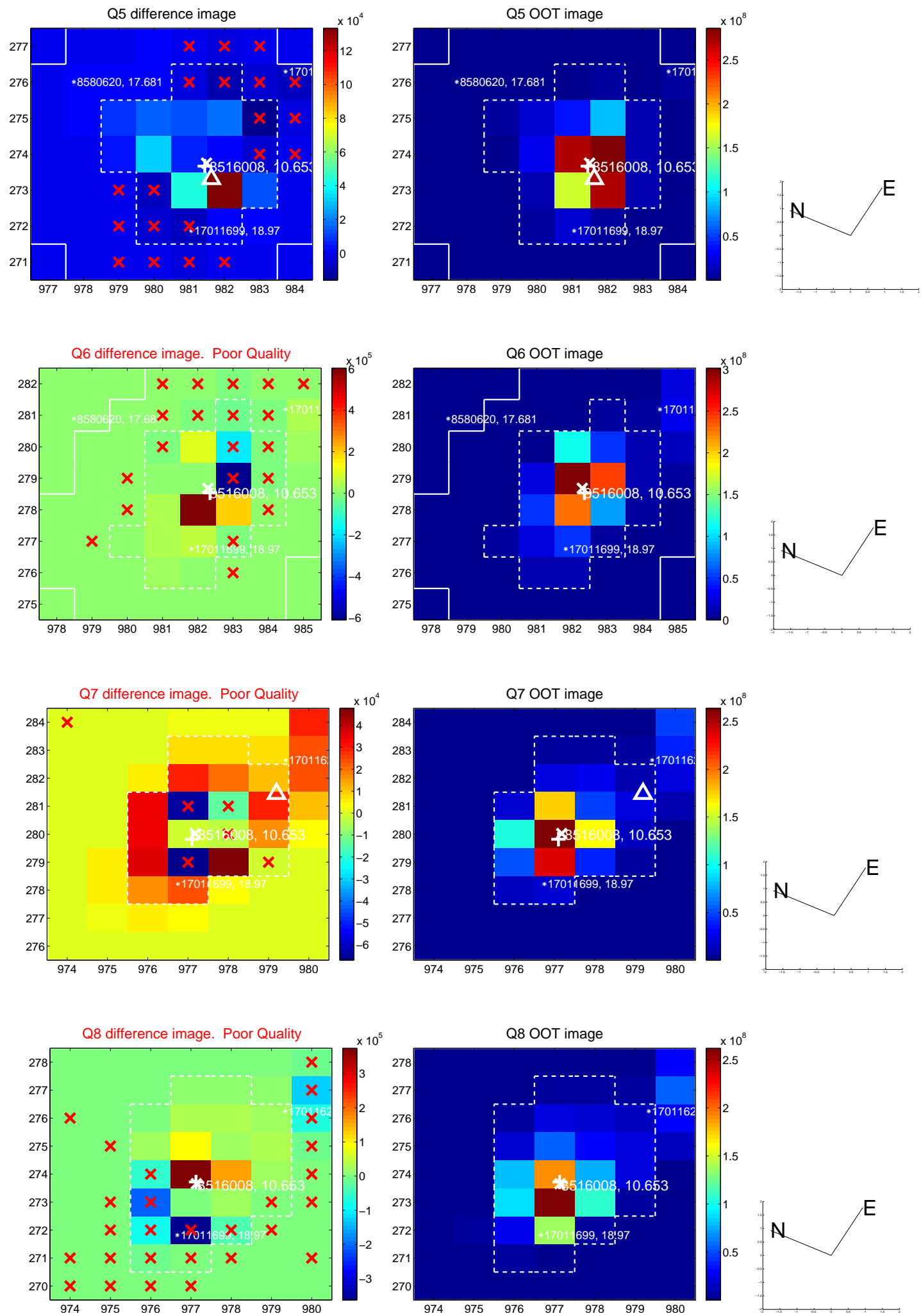


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

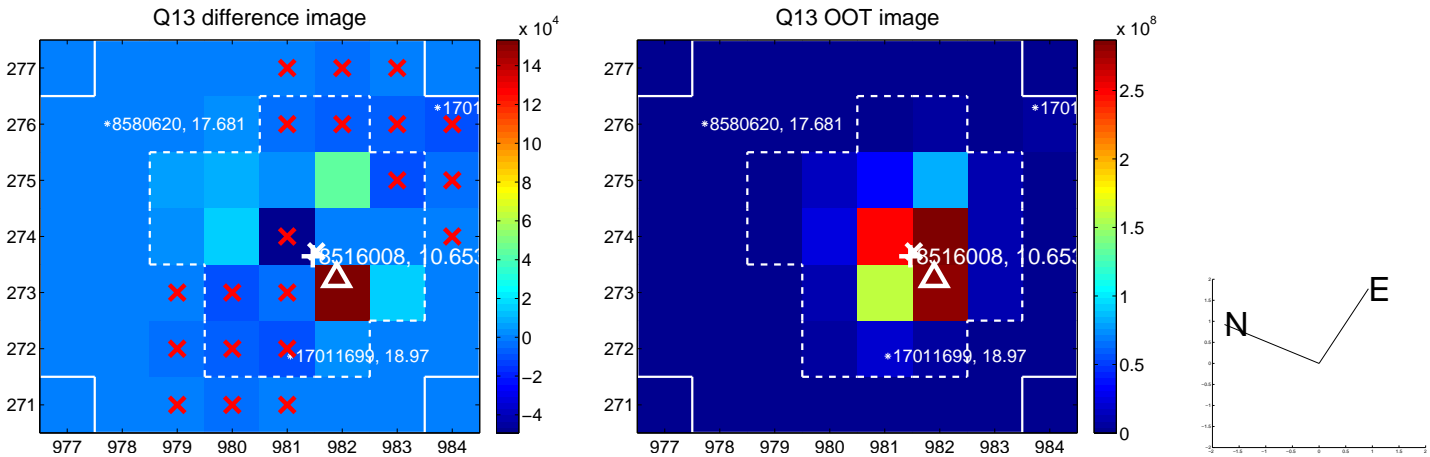
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



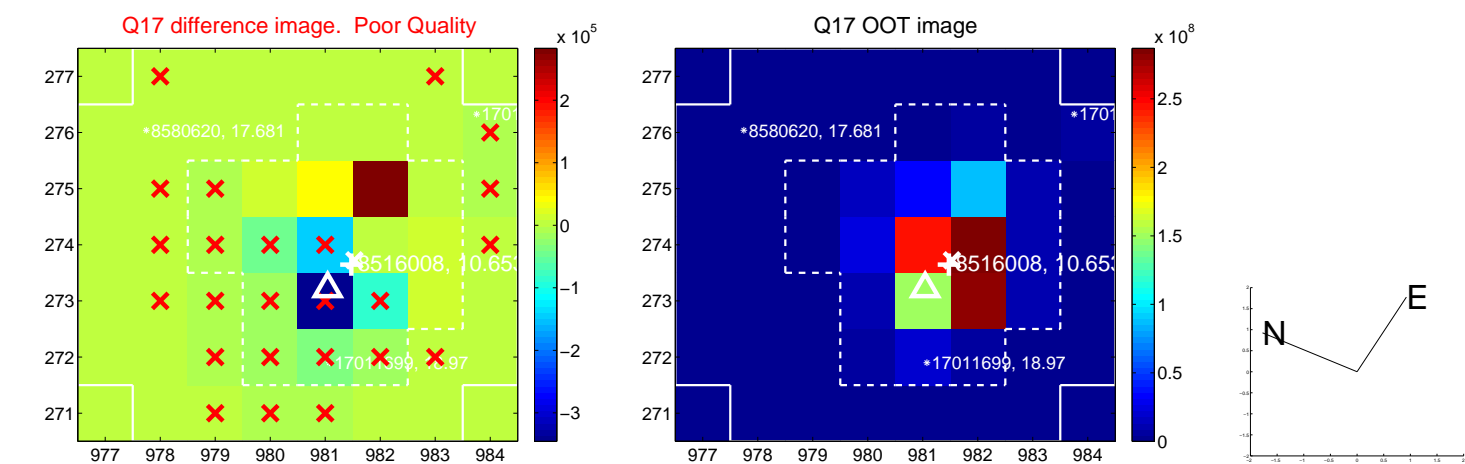
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



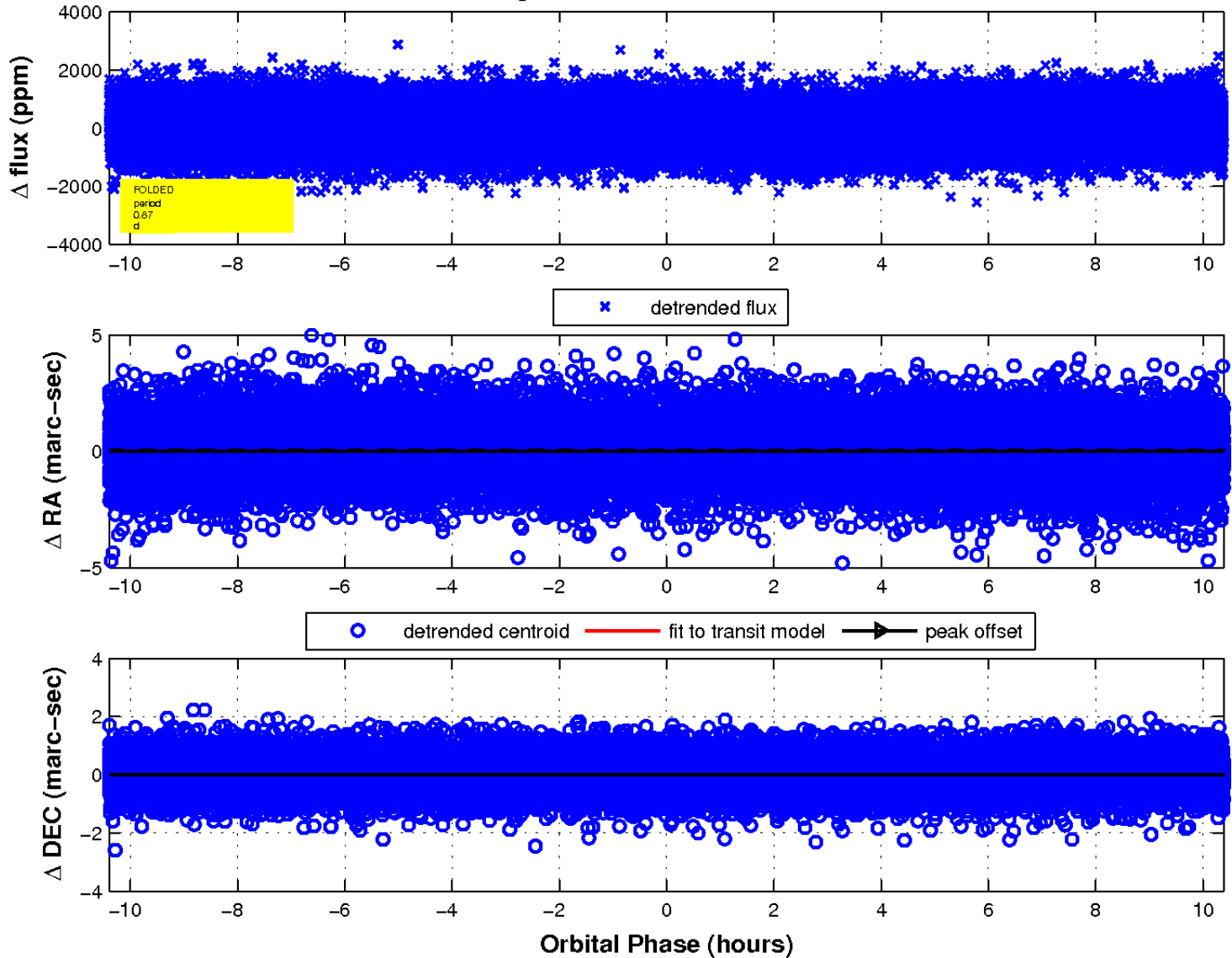
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

