

KIC 005900260

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})
005900260-01	OBS	No	0.818121	132.312671	46.8	0.948	9.6	8.9	3.12	6652	2.51	43147.64
005900260-02	OBS	No	0.580892	131.826378	28.0	5.454	9.1	11.0	3.12	6652	1.67	68116.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005900260-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005900260-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

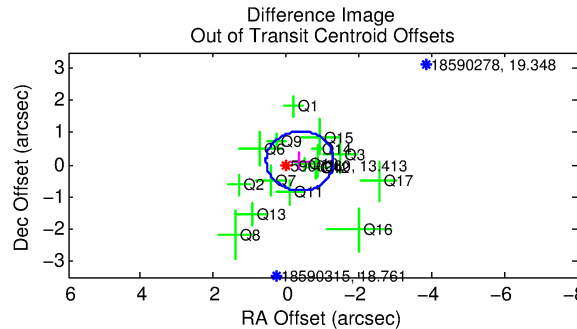
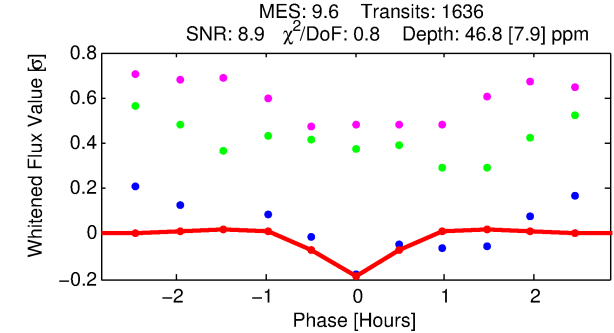
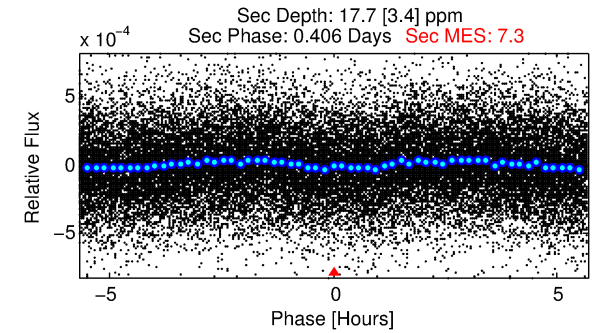
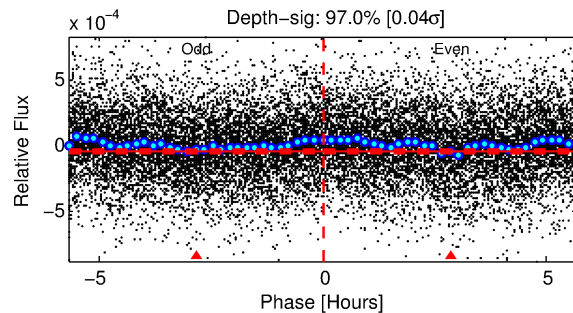
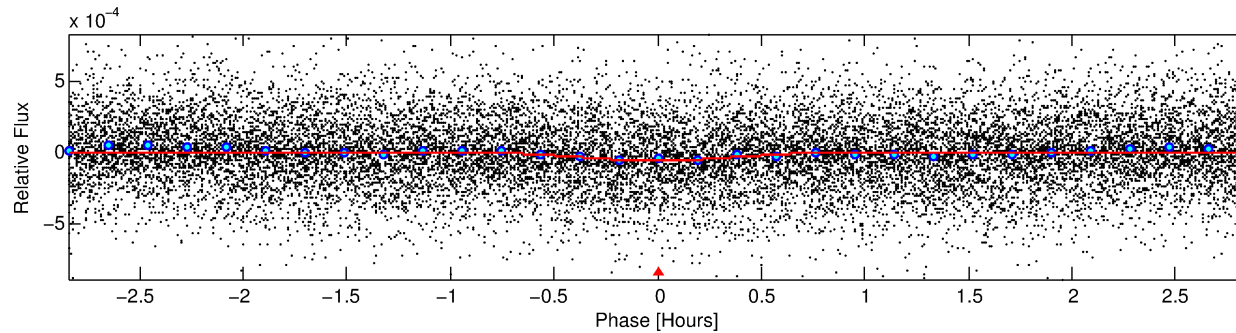
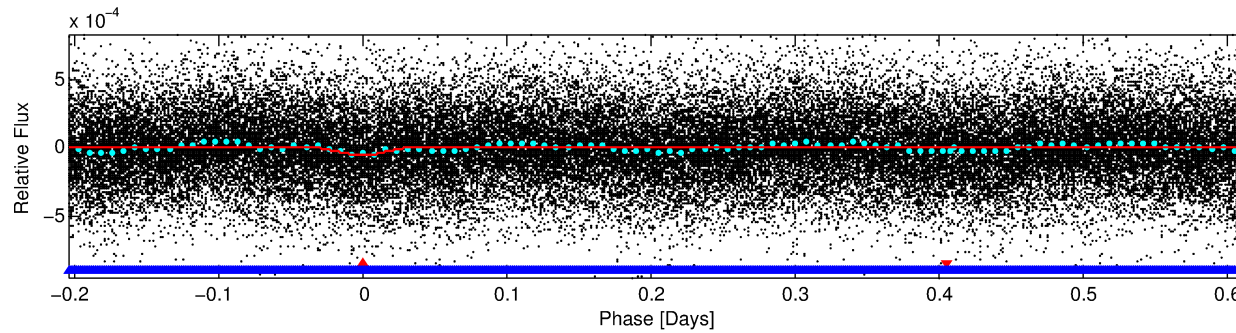
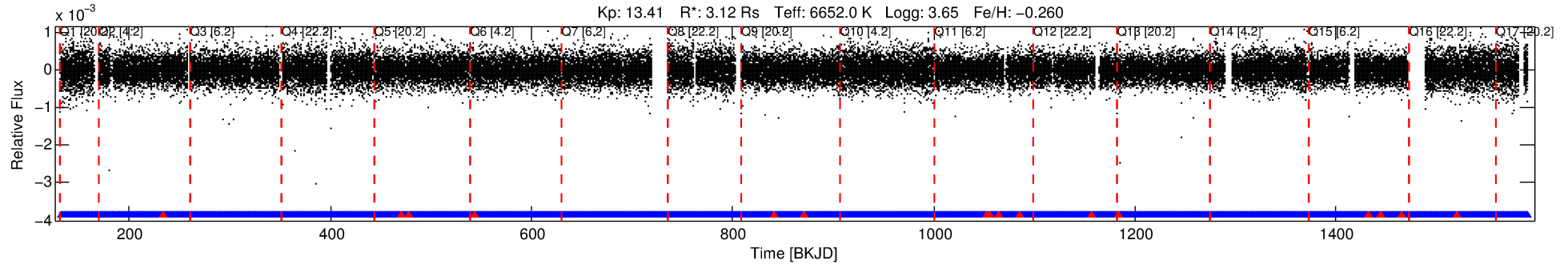
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005900260-01

No Significant Match Found

DV One-Page Summary

KIC: 5900260 Candidate: 1 of 2 Period: 0.818 d



DV Fit Results:

Period = 0.81812 [0.00001] d
Epoch = 132.3127 [0.0019] BKJD
Rp/R* = 0.0074 [0.0023]
a/R* = 3.09 [5.02]
b = 0.90 [0.38]
Seff = 43147.64 [41332.99]
Teq = 3675 [880] K
Rp = 2.51 [1.56] Re
a = 0.0199 [0.0112] AU
Ag = 0.61 [0.70] [-0.56 σ]
Teffp = 5019 [850] K [1.10 σ]

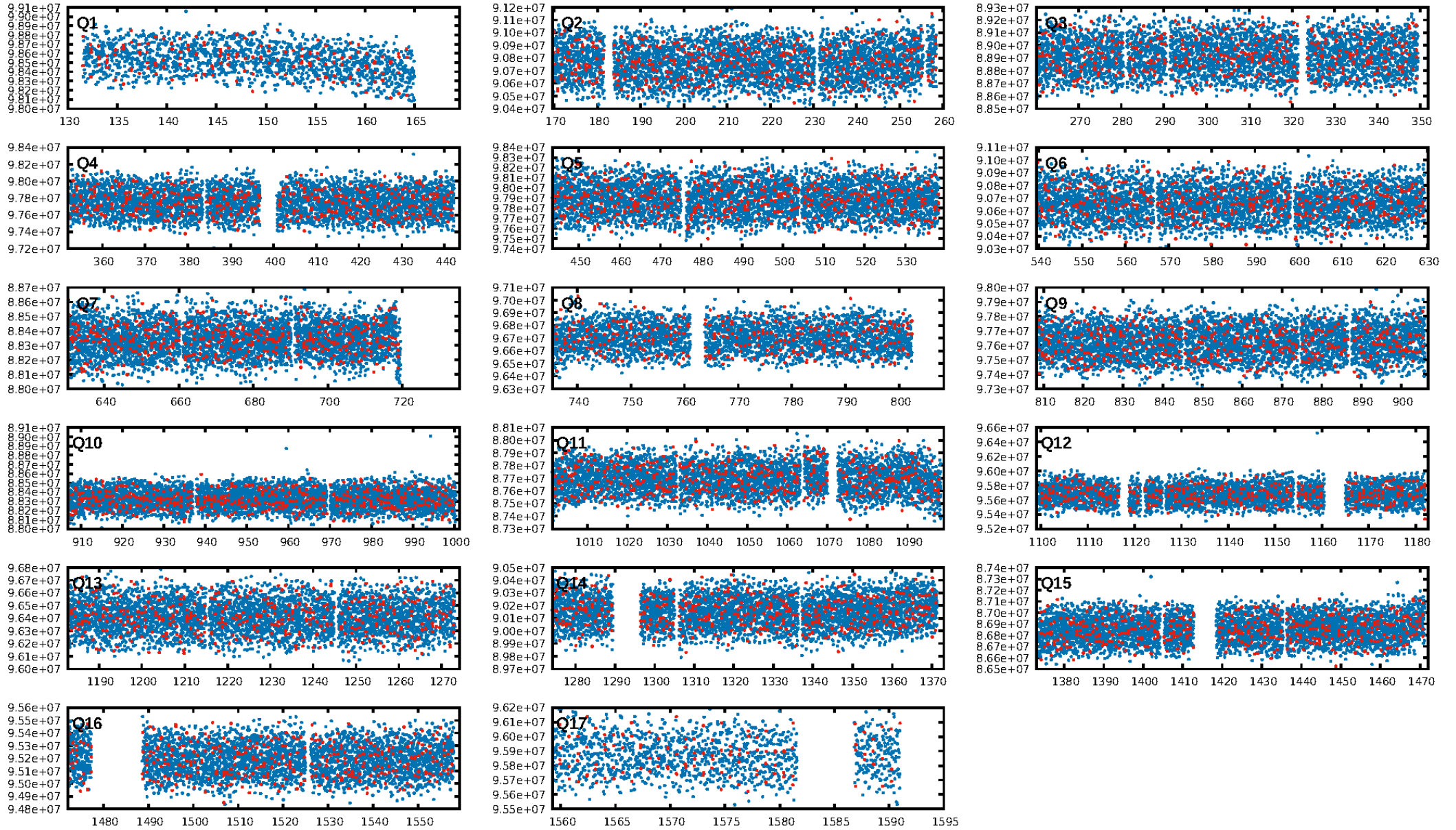
DV Diagnostic Results:

ShortPeriod-sig: 69.6% [1.03 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1546/1562]
GhostDiagnostic-chr: 1.321
Centroid-sig: 0.6%
Centroid-so: 2.047 arcsec [1.86 σ]
OotOffset-rm: 0.395 arcsec [1.28 σ]
KicOffset-rm: 0.441 arcsec [1.55 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.62 [10/16]
DiffImageOverlap-fno: 0.00 [0/17]

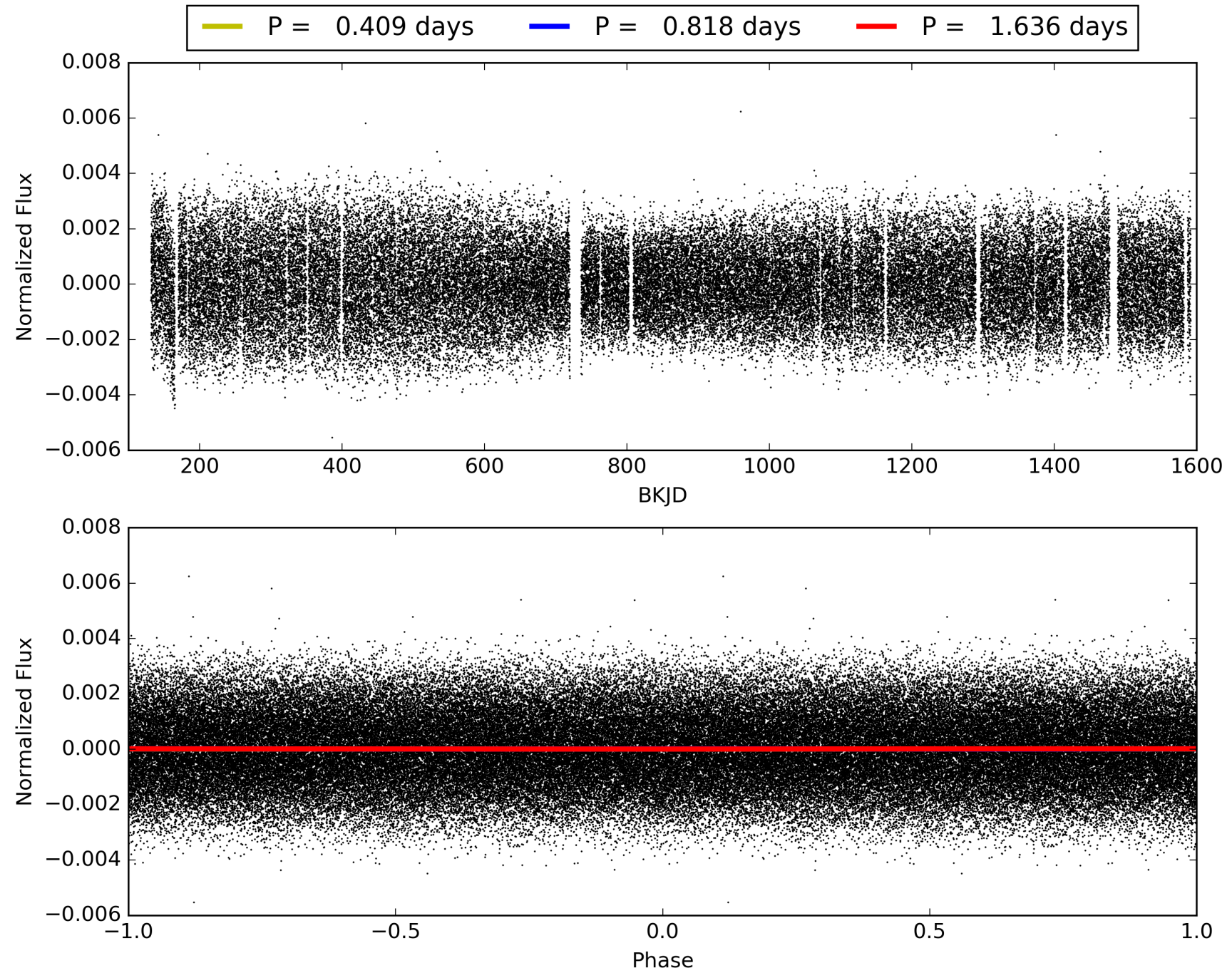
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:42:39 Z

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

TCE 005900260-01, PDC Light Curves

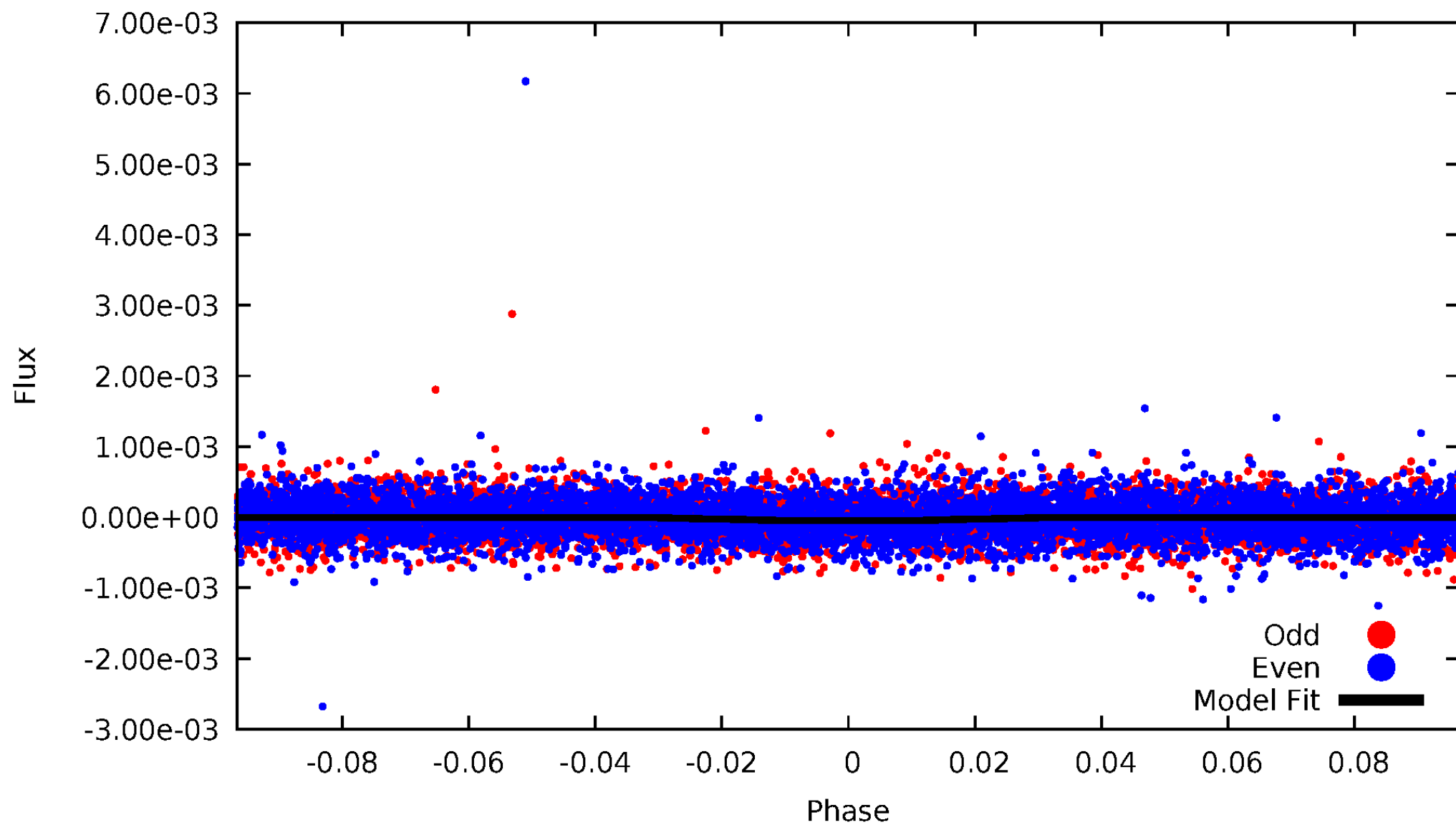


TCE 005900260-01



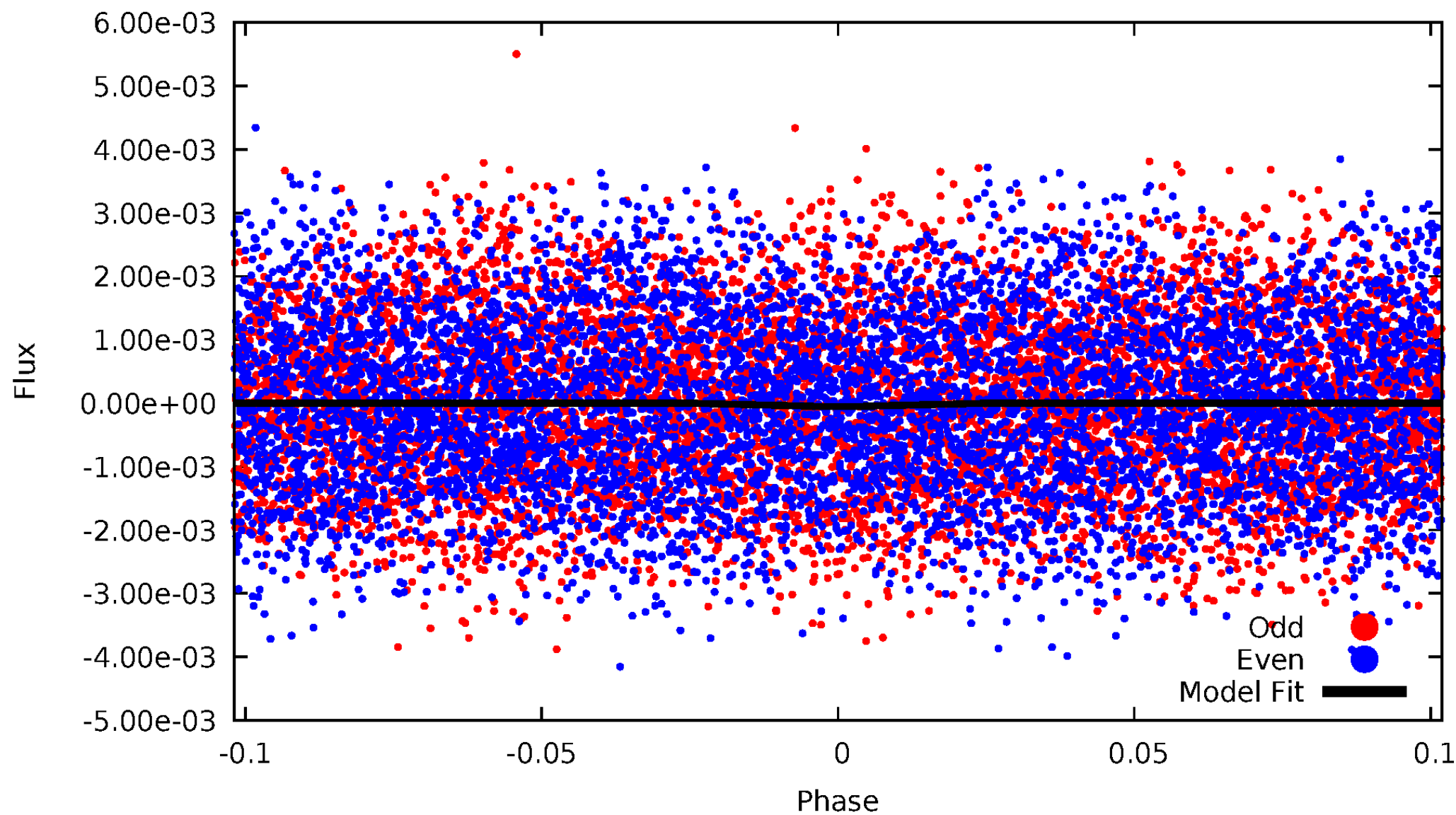
DV Odd/Even

TCE 005900260-01

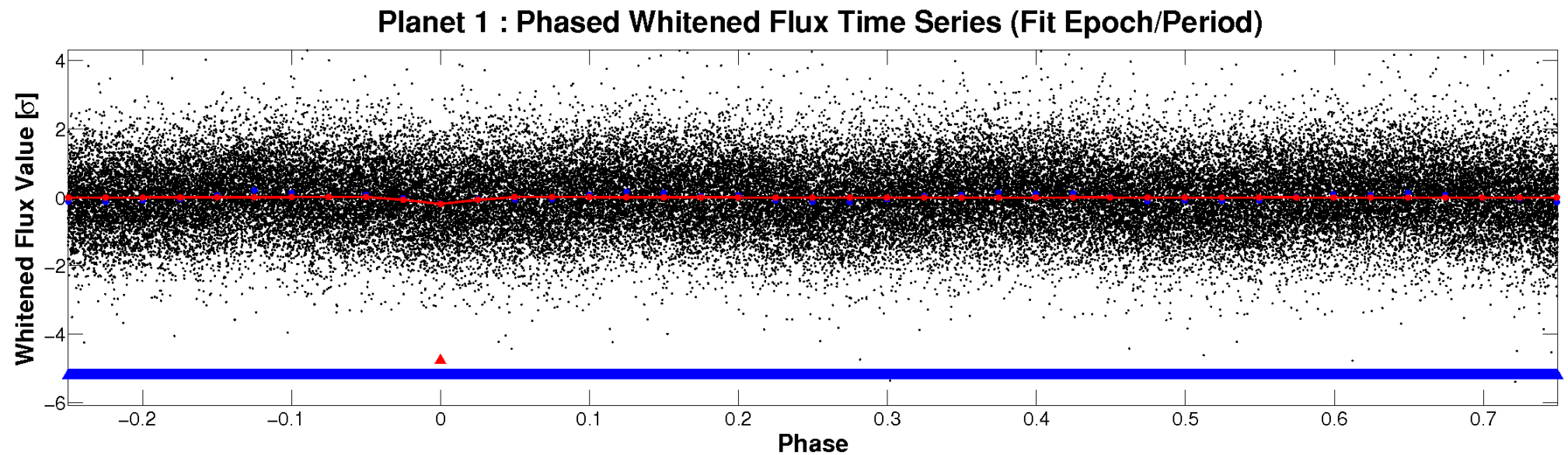
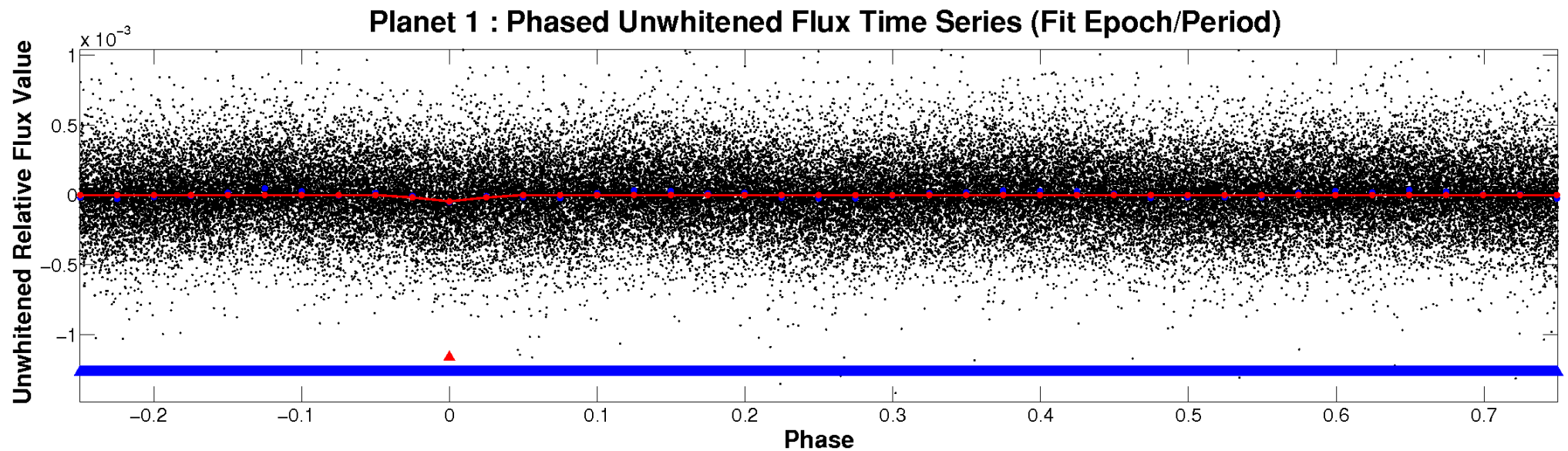


ALT Odd/Even

TCE 005900260-01

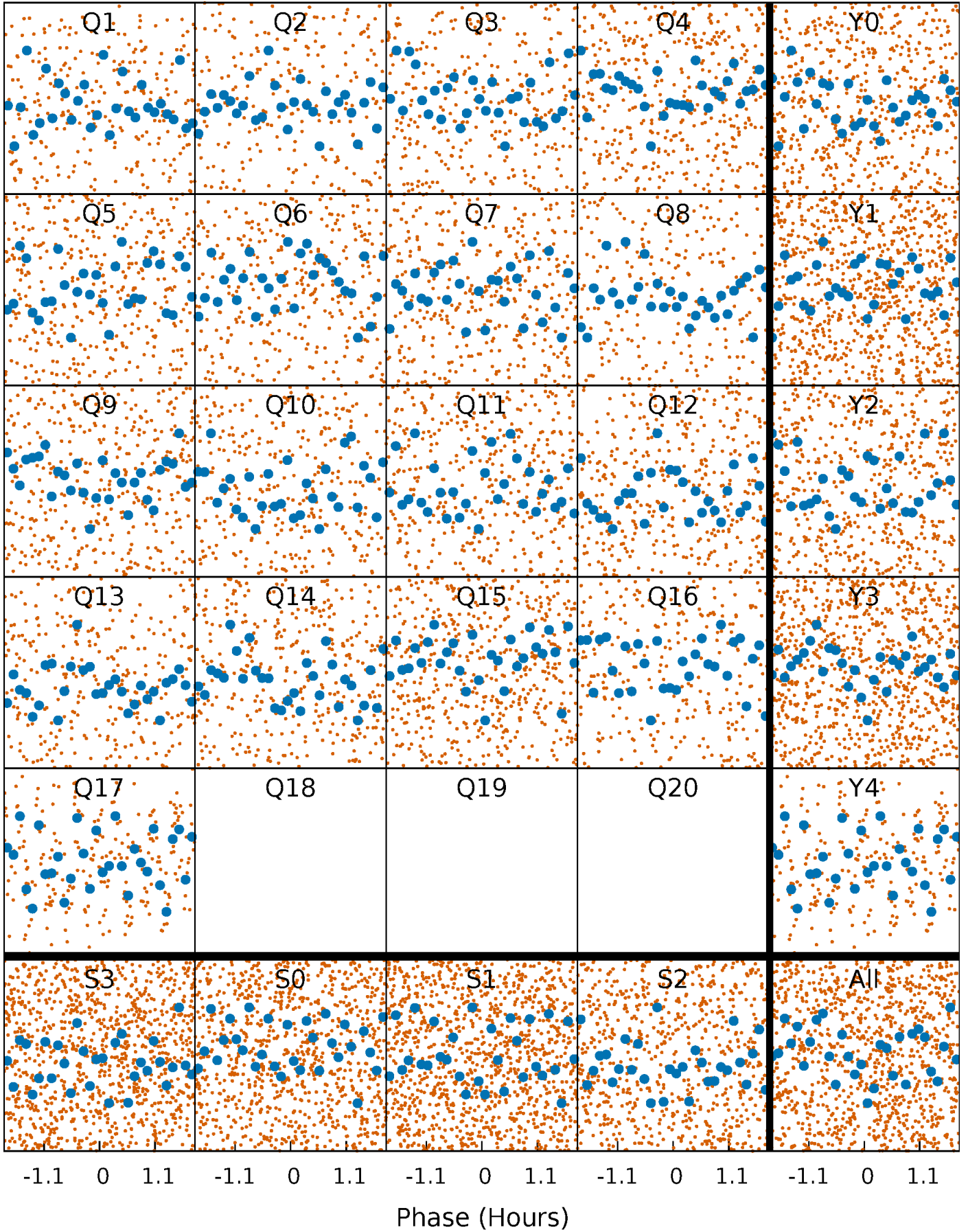


Non-Whitened Vs. Whitened Light Curve



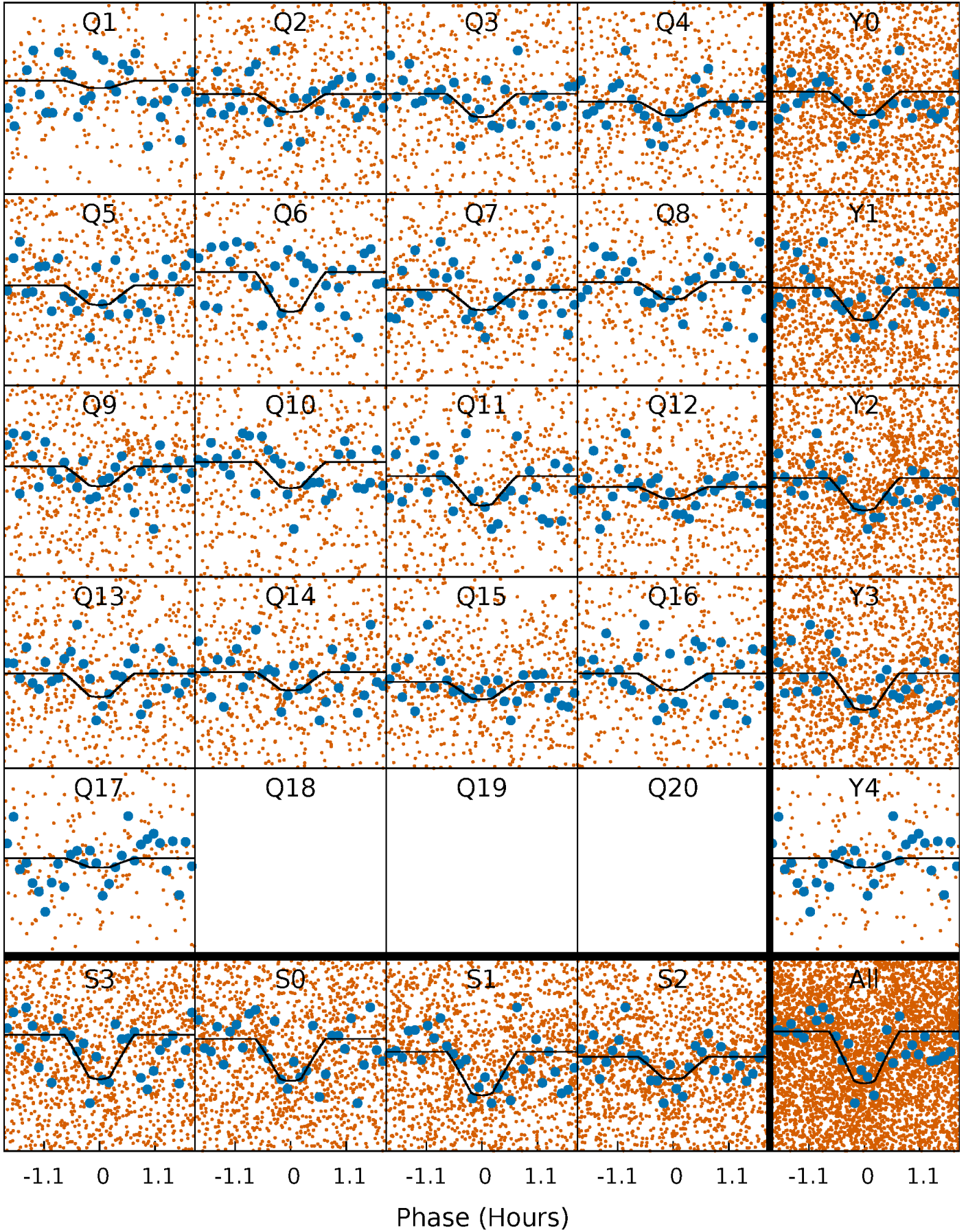
PDC Quarter-Phased Transit Curves

TCE 005900260-01 P= 0.818121 Days $T_0=132.312671$ (BKJD)



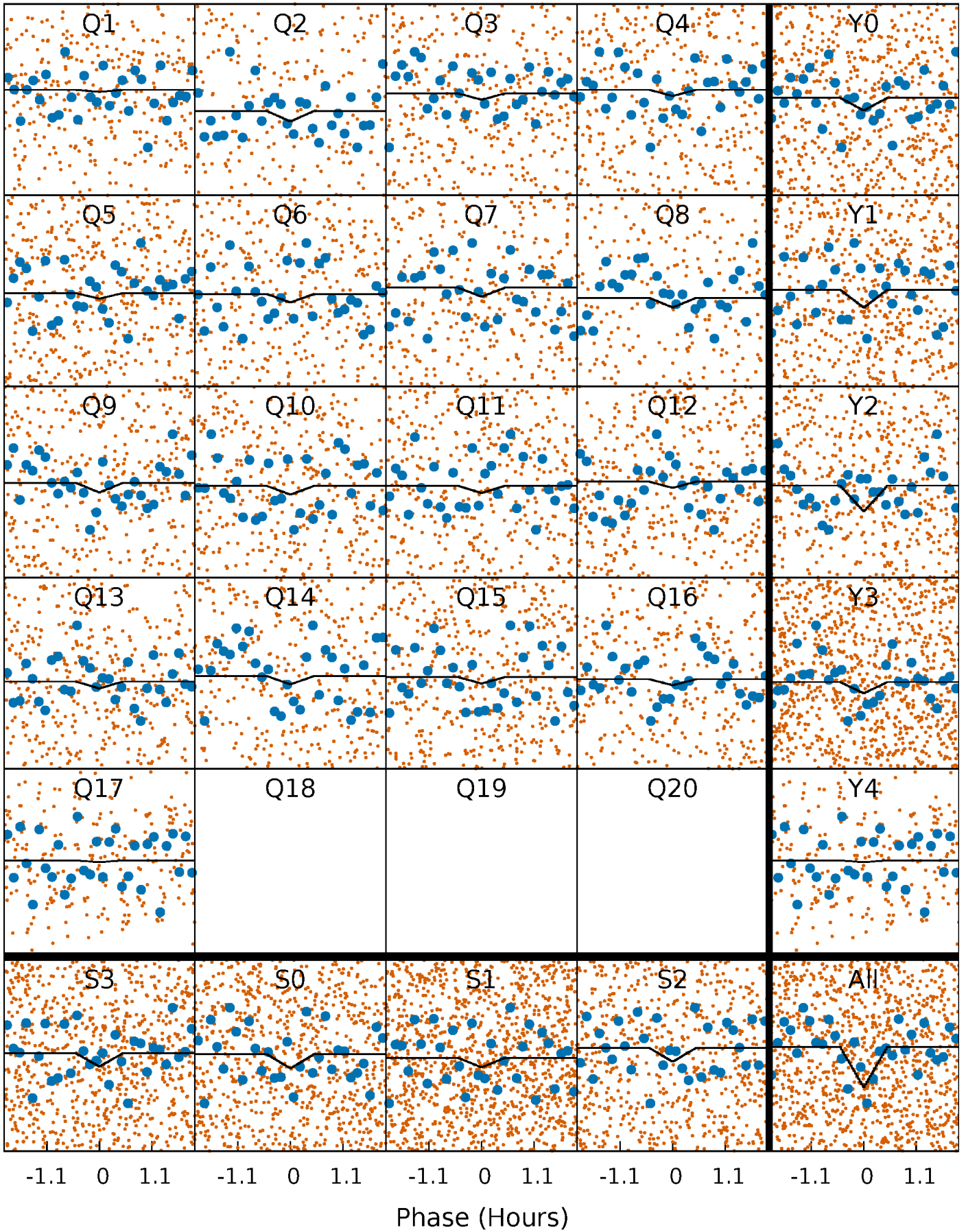
DV Quarter-Phased Transit Curves

TCE 005900260-01 P= 0.818121 Days $T_0=132.312671$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

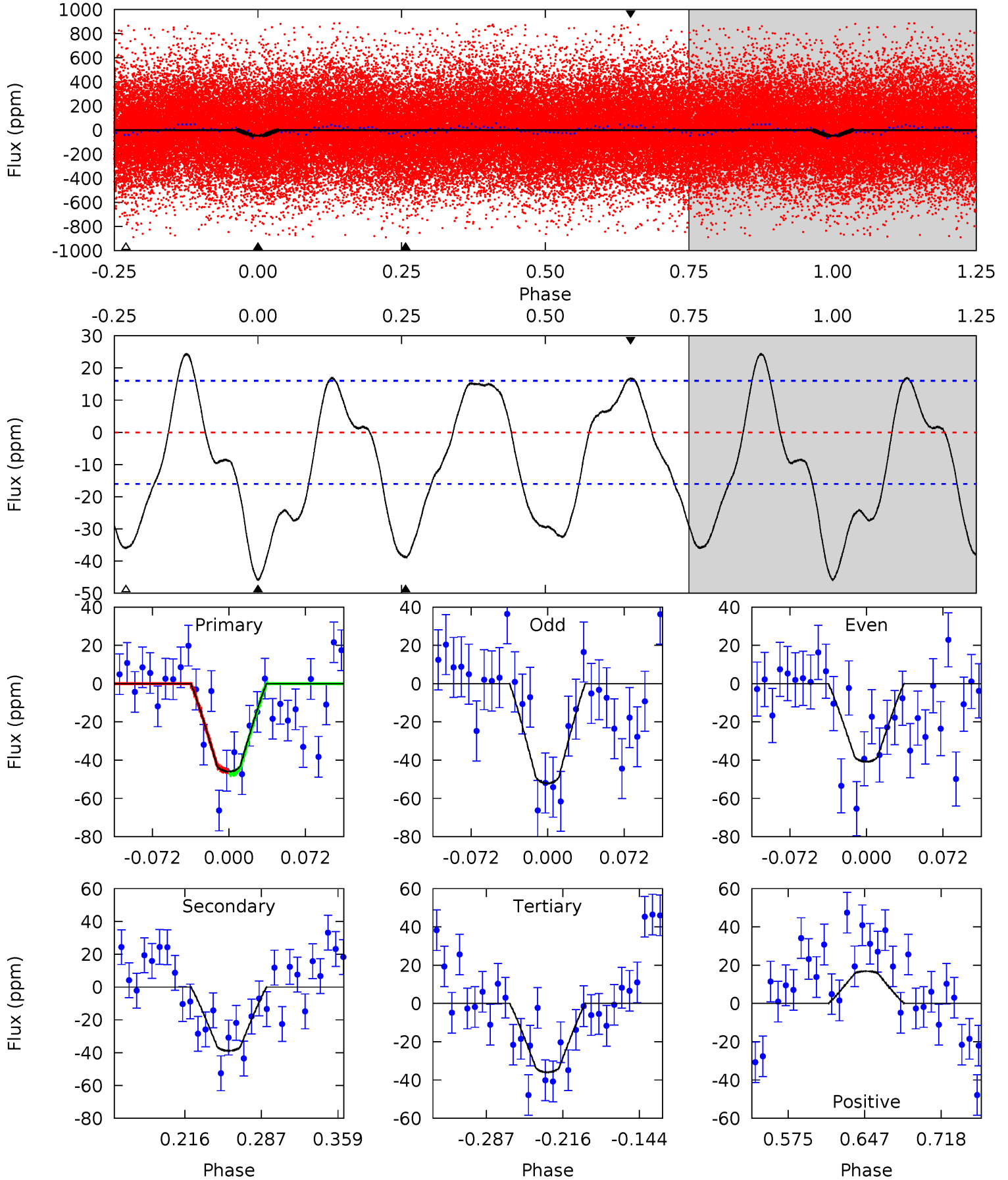
TCE 005900260-01 P= 0.818121 Days $T_0=132.312553$ (BKJD)



DV Model-Shift Uniqueness Test

005900260-01, P = 0.818121 Days, E = 131.494550 Days

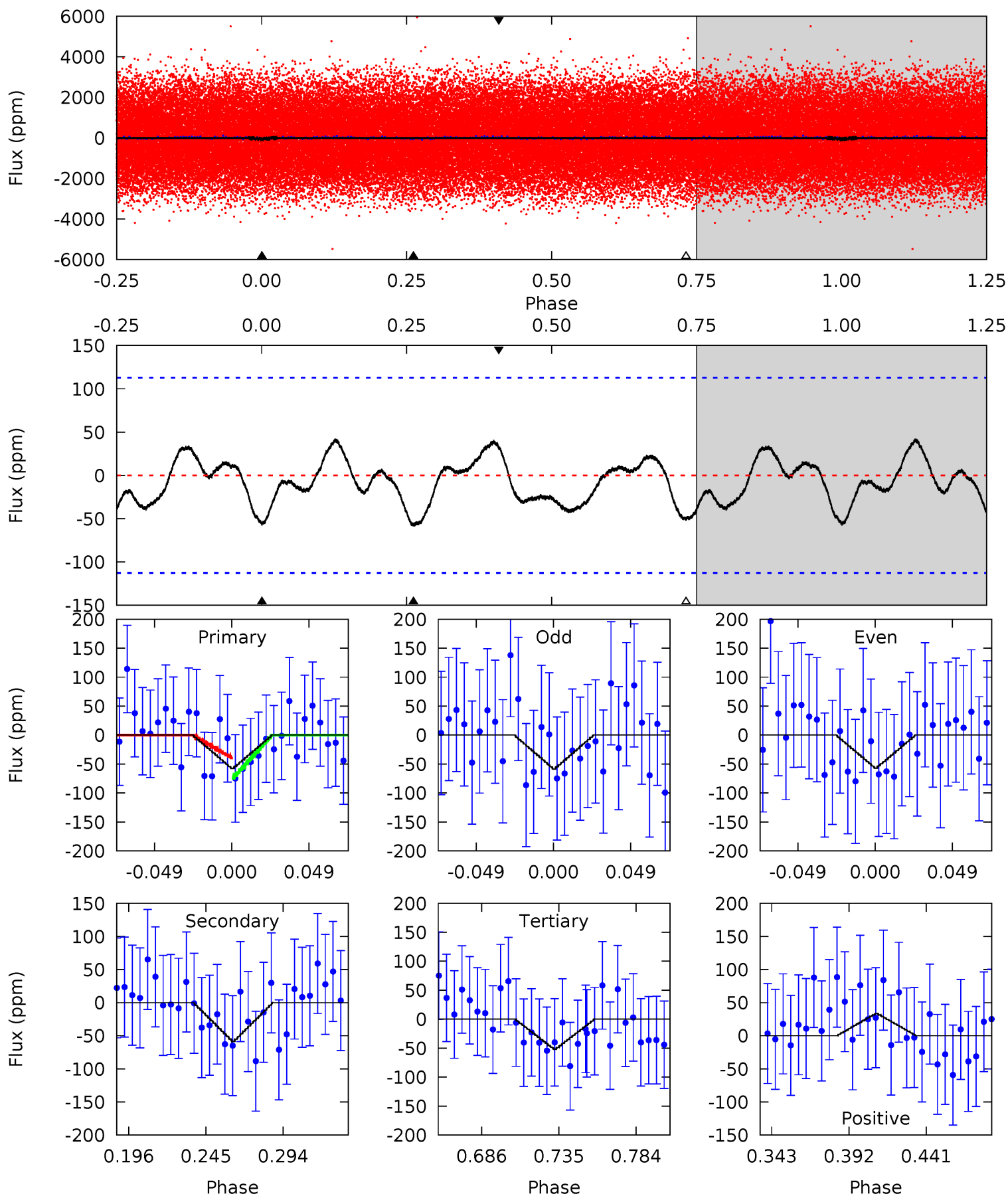
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	11.2	10.4	4.87	4.63	1.80	4.97	2.89	8.43	0.84	6.37	1.64	0.98	0.35	0.23



Alt Model-Shift Uniqueness Test

005900260-01, P = 0.818121 Days, E = 131.494432 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.43	2.47	2.19	1.41	4.71	1.97	0.97	0.24	1.02	0.28	1.06	0.03	1.34	0.42	0.74



Stellar Parameters For KIC 005900260

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6652^{+210}_{-257}	$3.645^{+0.570}_{-0.101}$	$-0.260^{+0.300}_{-0.300}$	$3.119^{+0.447}_{-1.675}$	$1.566^{+0.191}_{-0.446}$	$0.073^{+0.543}_{-0.024}$
	+3%/-4%	+16%/-3%	+115%/-115%	+14%/-54%	+12%/-28%	+746%/-32%
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 005900260-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-39 ± 3	$2.20^{+1.00}_{-0.90}$	4996^{+340}_{-741}	5747^{+1493}_{-879}	$1.690^{+2.950}_{-0.877}$
Alt.	-59 ± 24	$2.28^{+1.00}_{-0.84}$	4963^{+375}_{-746}	6388^{+1691}_{-1381}	$2.321^{+3.946}_{-1.360}$

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 $A_{obs} \gg 1.0$

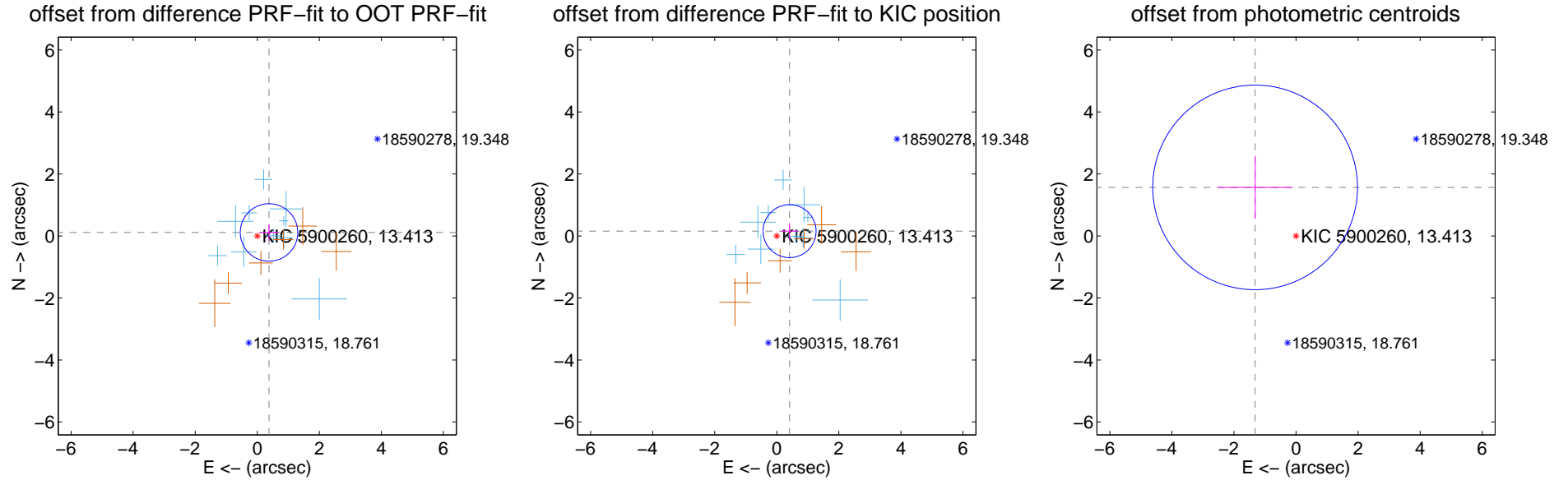
DV Centroid Data

Supplemental centroid analysis for 005900260-01. Kepler magnitude: 13.41. Transit SNR 8.94

There are 10 quarters with good PRF difference image offsets

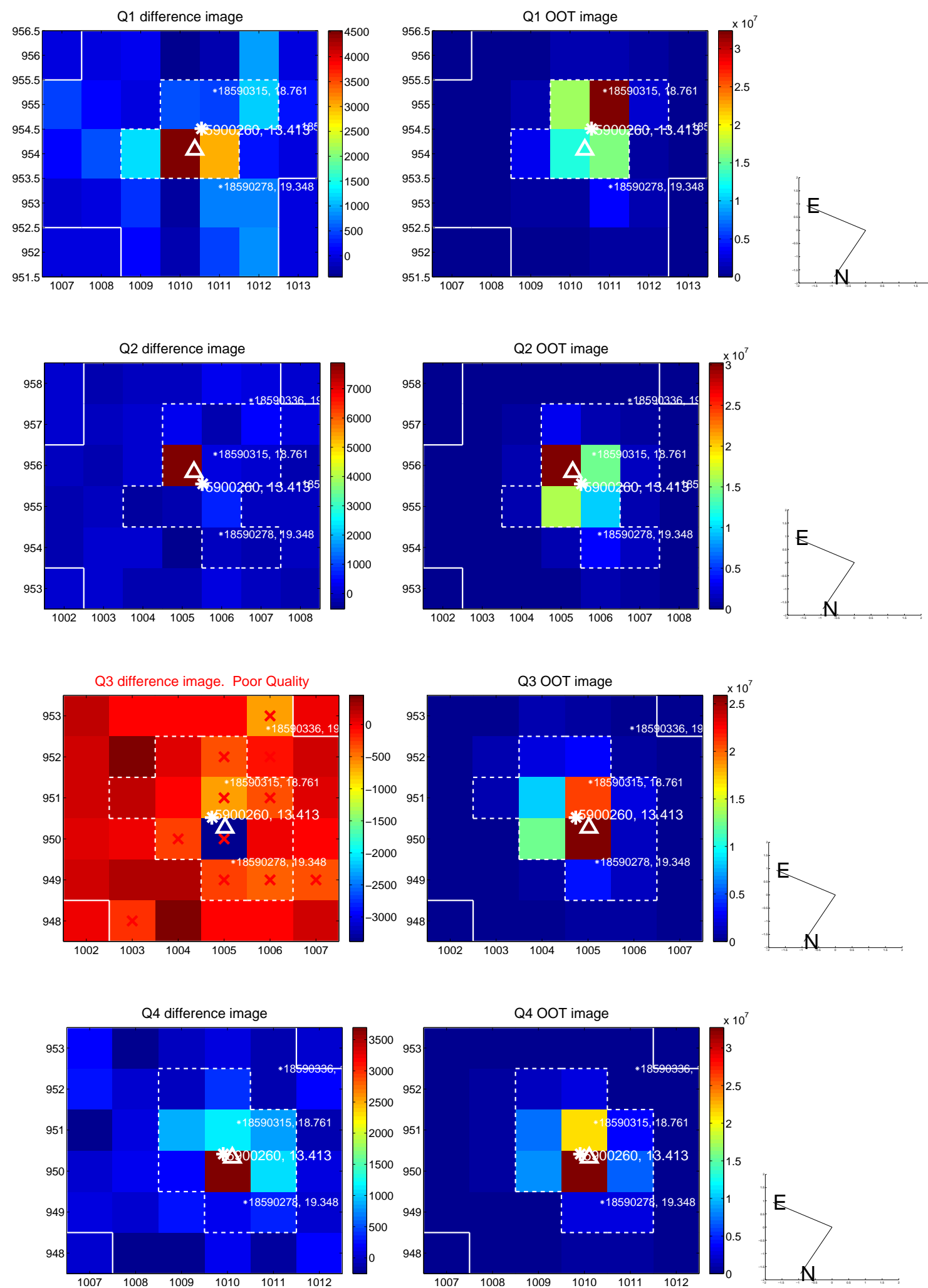
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.395 ± 0.309	1.28	-0.378 ± 0.302	0.113 ± 0.269
PRF-fit source offset from KIC position	0.441 ± 0.285	1.55	-0.412 ± 0.274	0.156 ± 0.260
photometric centroid source offset	2.05 ± 1.10	1.86	1.32 ± 1.21	1.57 ± 1.01

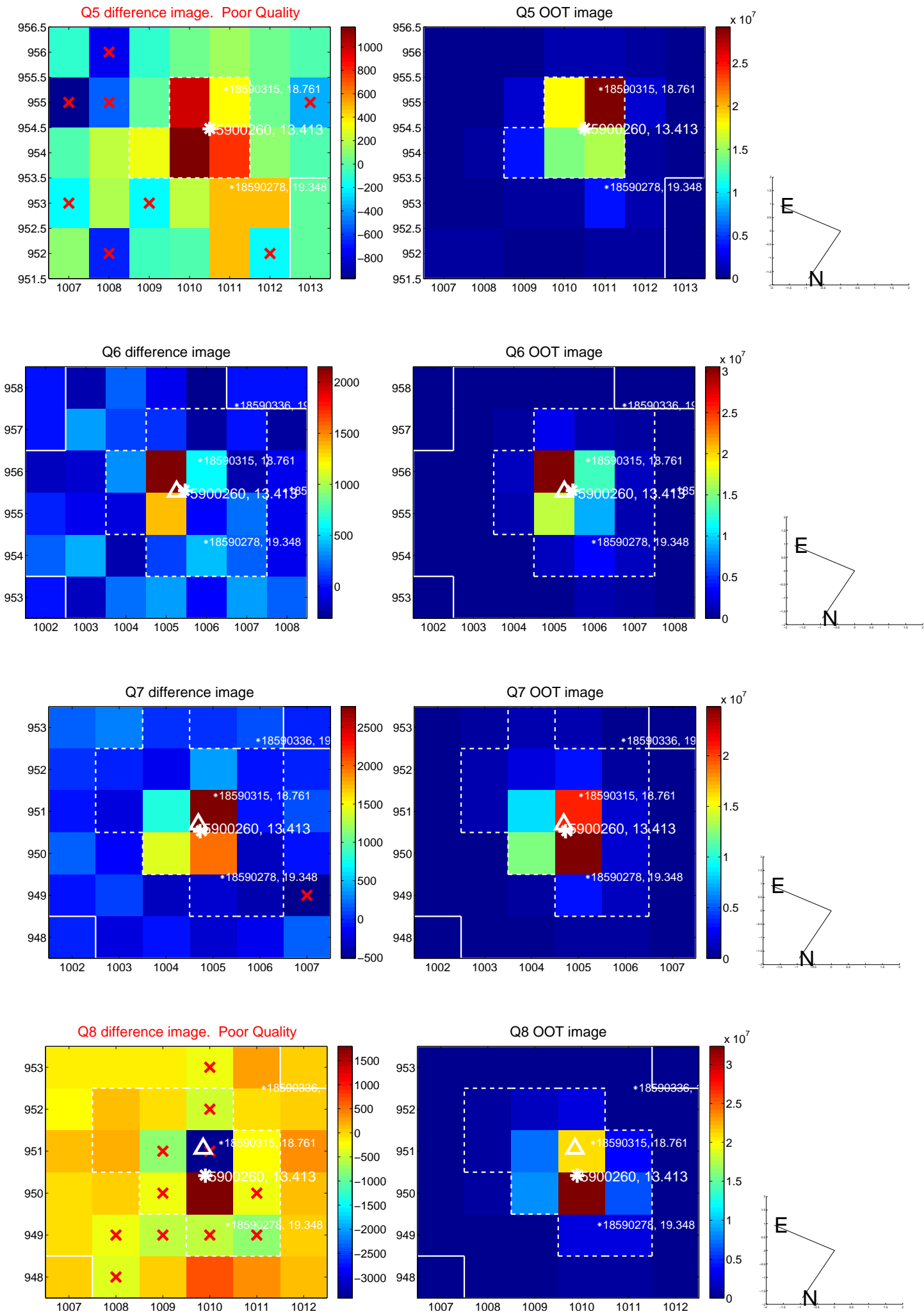


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

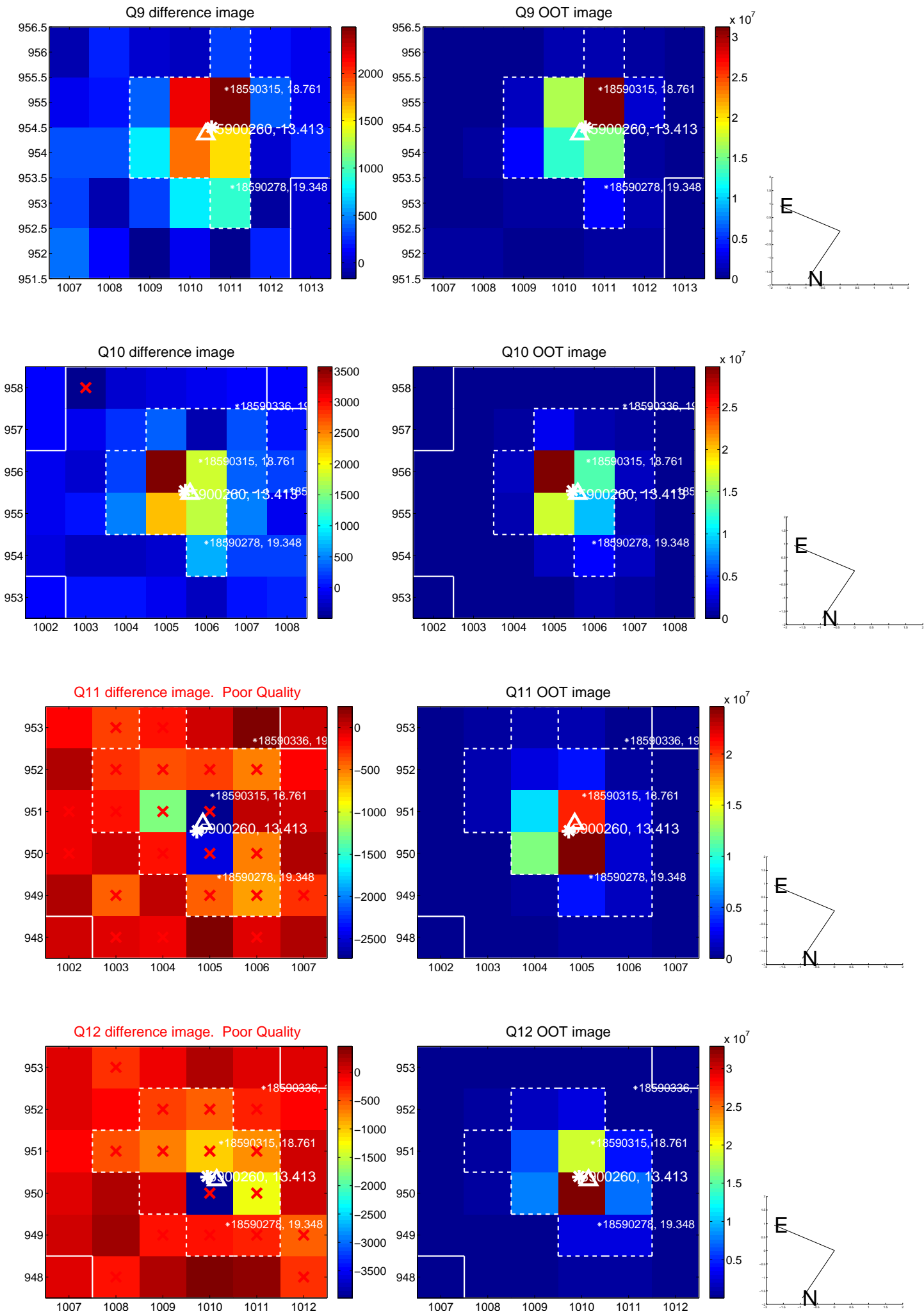
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



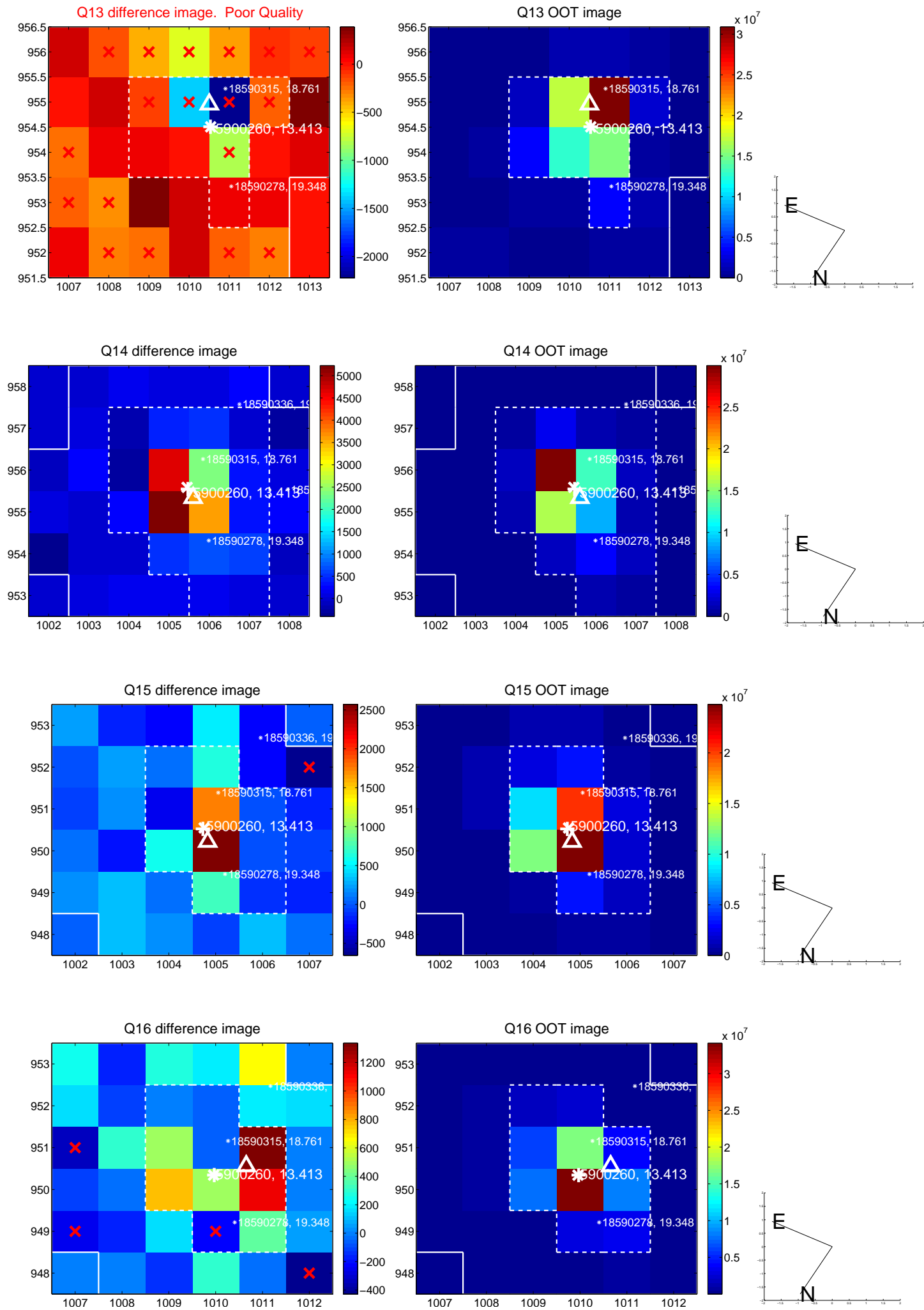
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



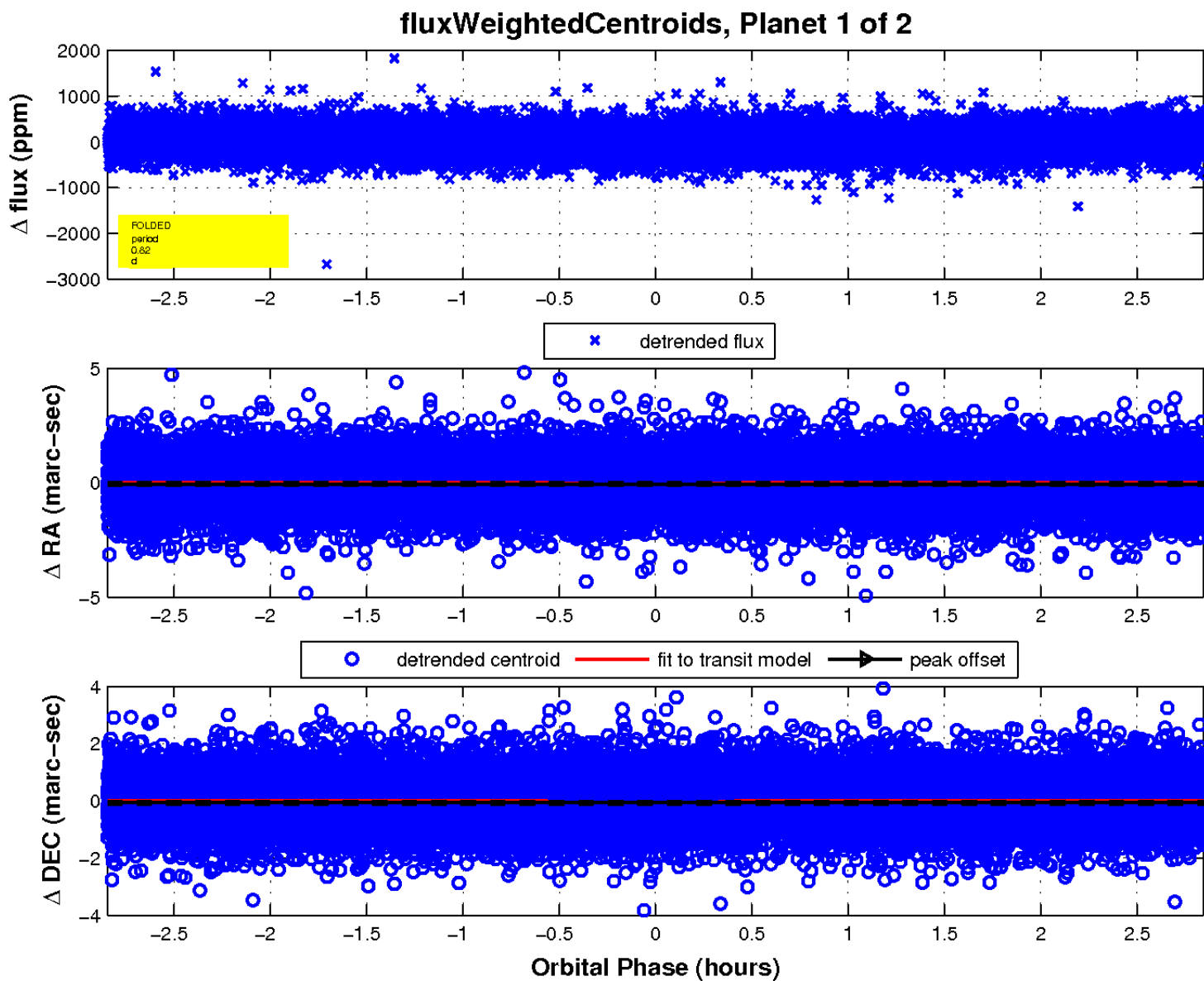
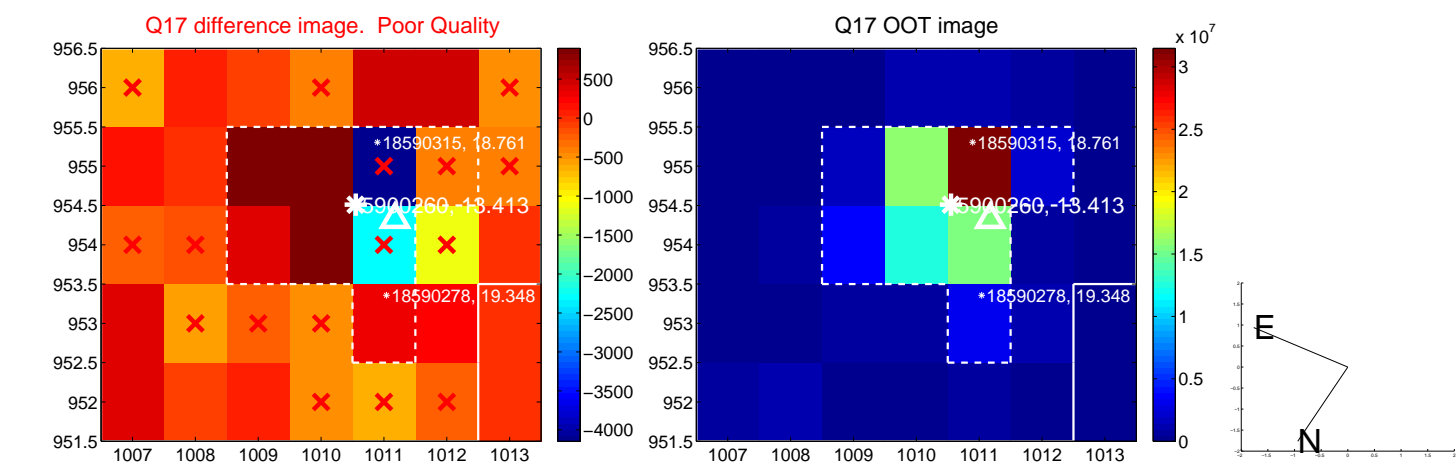
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

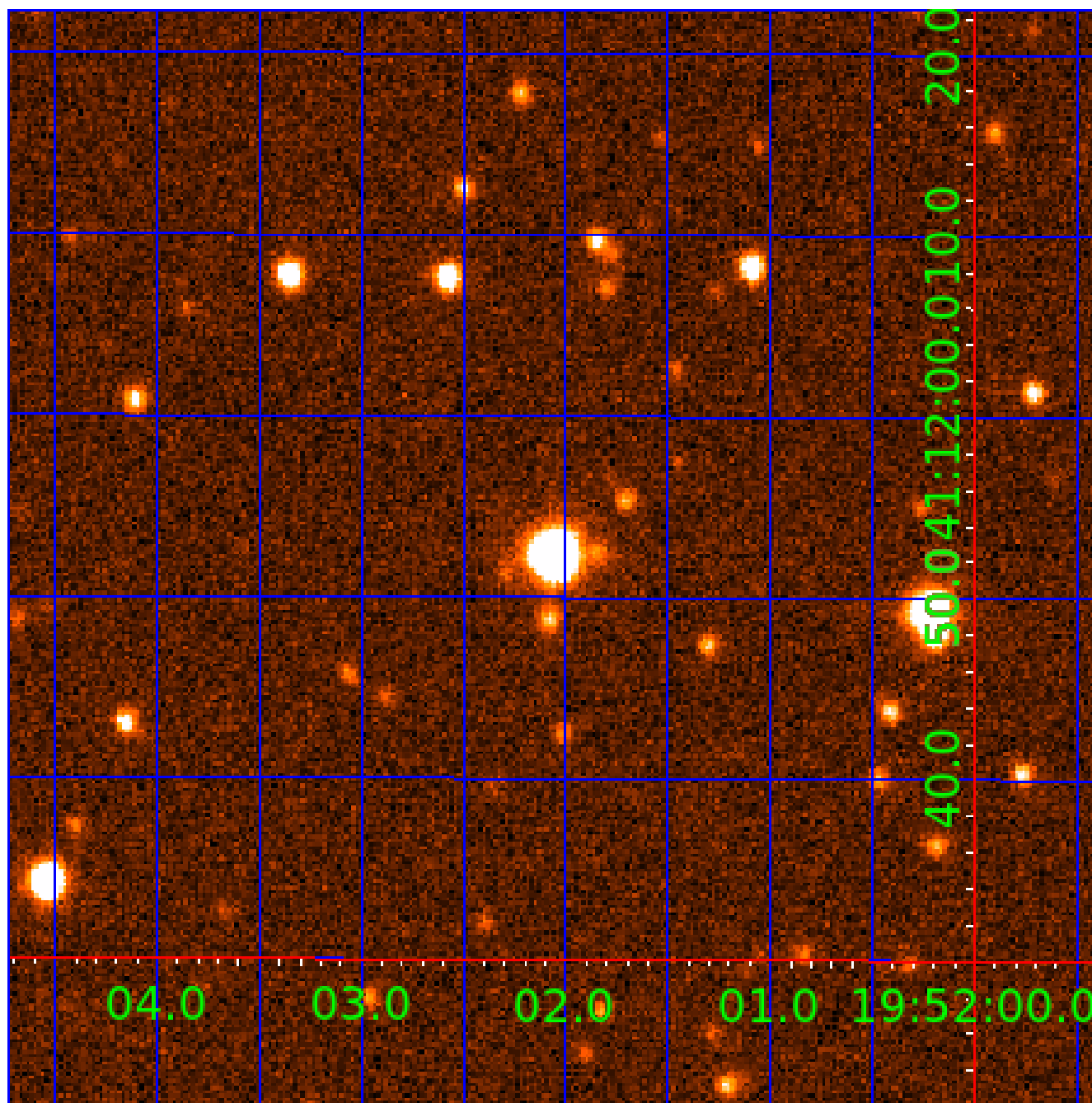


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005900260

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})
005900260-01	OBS	No	0.818121	132.312671	46.8	0.948	9.6	8.9	3.12	6652	2.51	43147.64
005900260-02	OBS	No	0.580892	131.826378	28.0	5.454	9.1	11.0	3.12	6652	1.67	68116.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005900260-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005900260-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

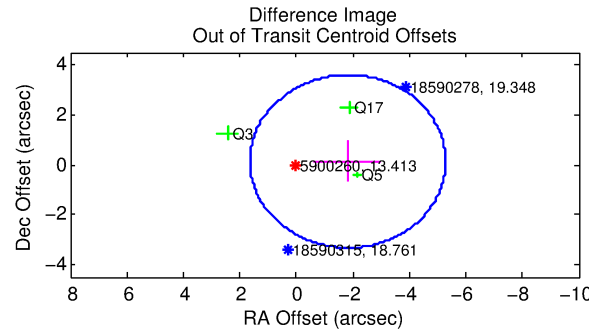
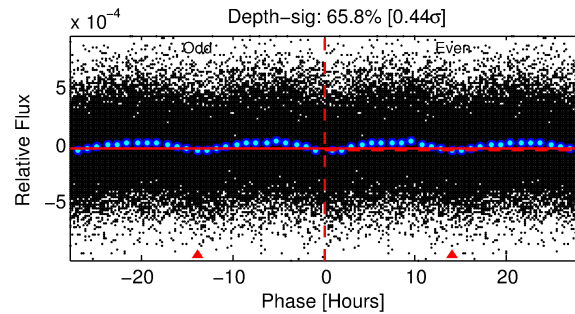
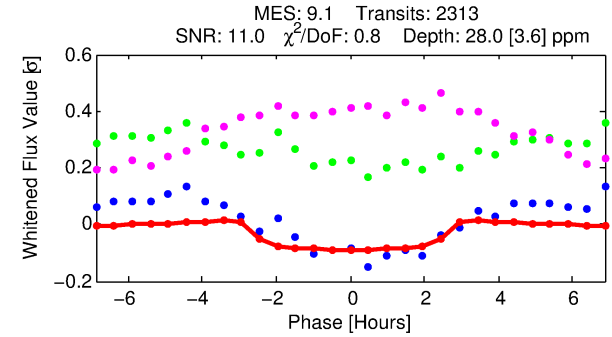
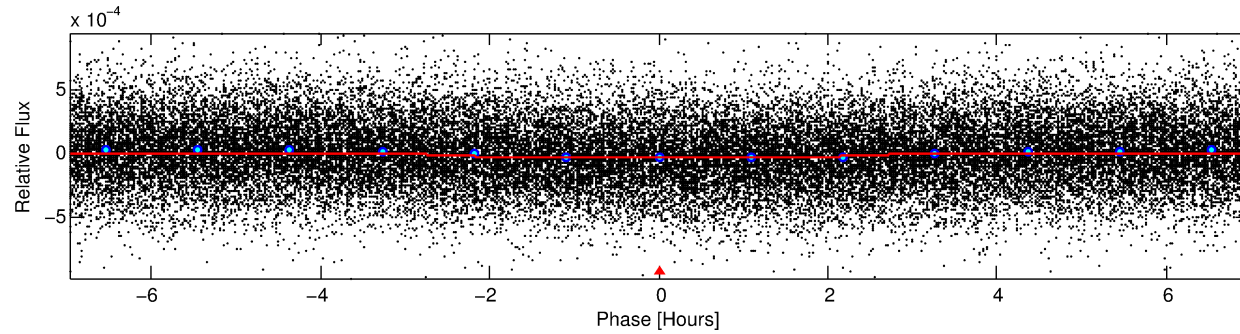
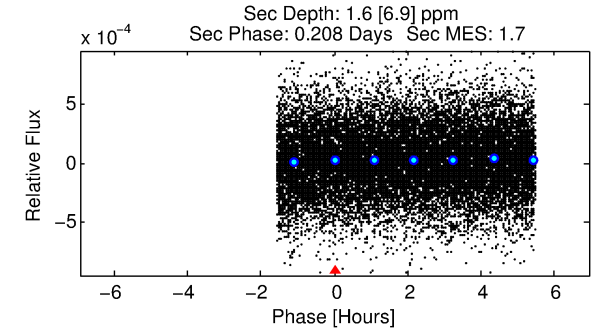
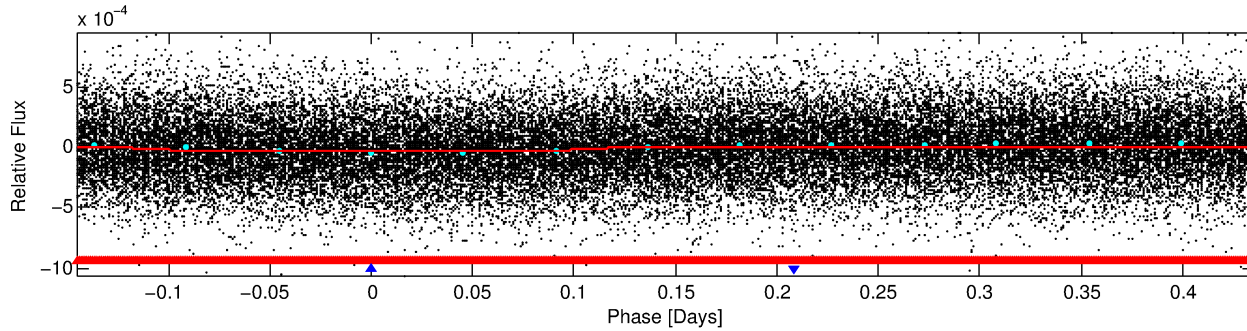
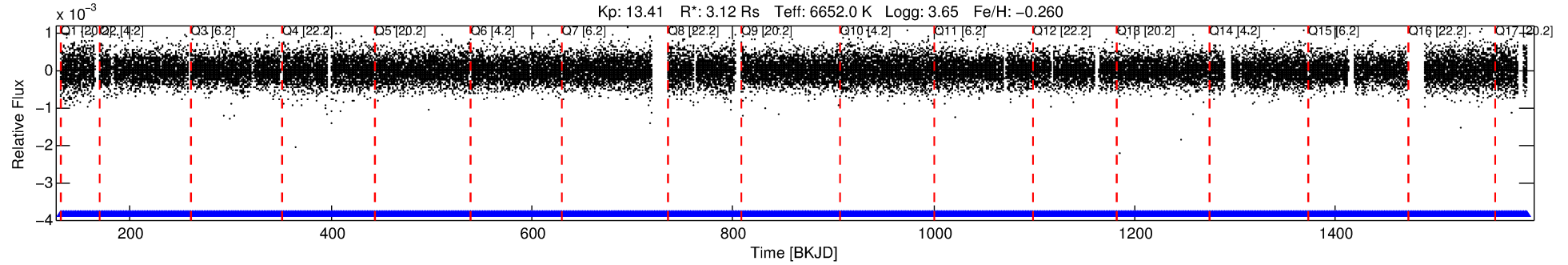
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005900260-02

No Significant Match Found

DV One-Page Summary

KIC: 5900260 Candidate: 2 of 2 Period: 0.581 d



DV Fit Results:

Period = 0.58089 [0.00001] d
Epoch = 131.8264 [0.0046] BKJD
Rp/R* = 0.0049 [0.0037]
a/R* = 1.06 [0.50]
b = 0.20 [20.22]
Seff = 68116.61 [65251.86]
Teq = 4119 [987] K
Rp = 1.67 [1.54] Re
a = 0.0158 [0.0089] AU
Ag = 0.08 [0.37] [-2.51σ]
Teffp = 3370 [3875] K [-0.19σ]

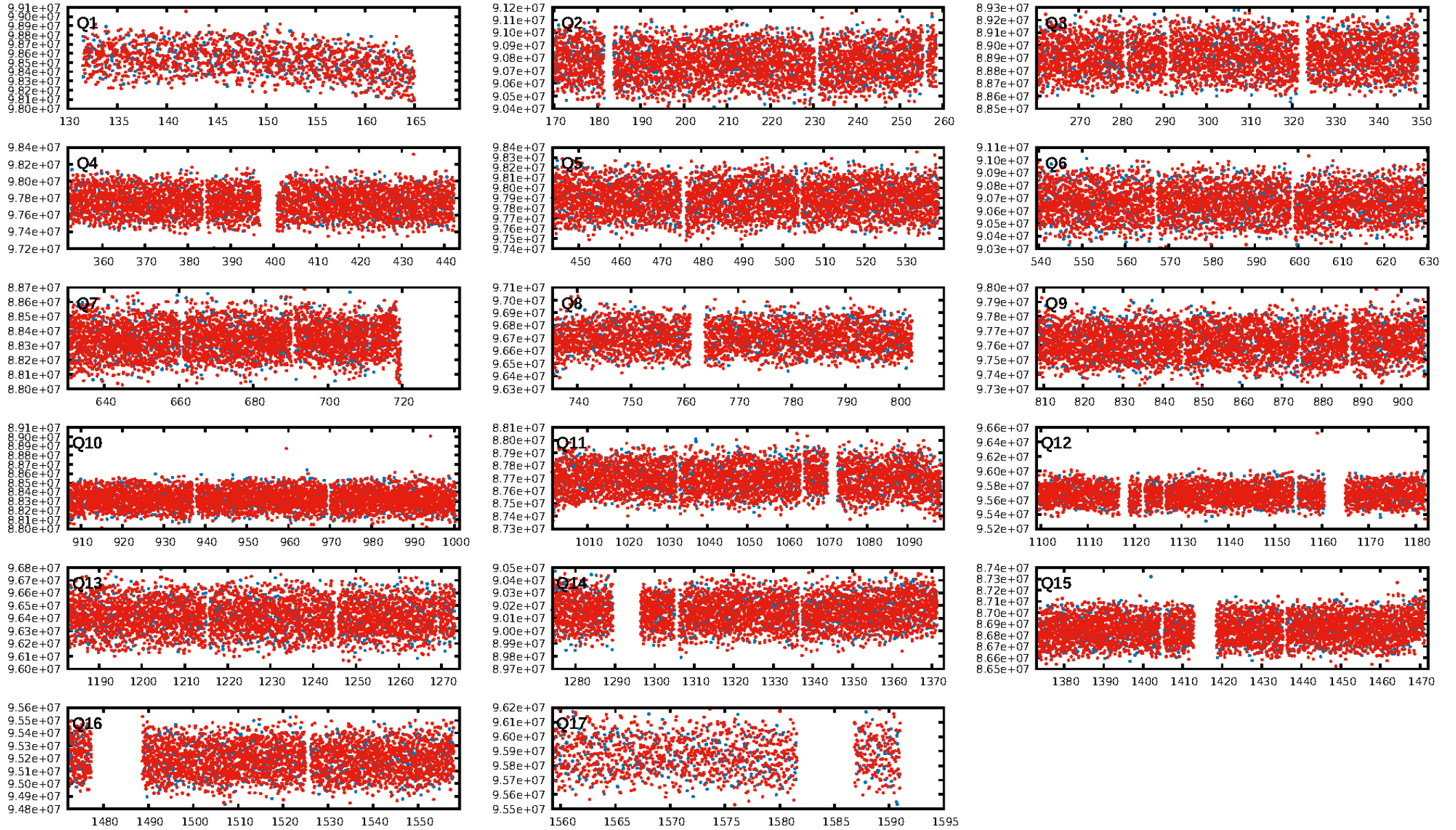
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 69.6% [1.03σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2211/2211]
GhostDiagnostic-chr: 3.859
Centroid-sig: 0.4%
Centroid-so: 1.068 arcsec [1.76σ]
OotOffset-rm: 1.823 arcsec [1.58σ]
KicOffset-rm: 1.821 arcsec [1.21σ]
OotOffset-st: 0/1/0/2 [3]
KicOffset-st: 0/1/0/2 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [17/17]

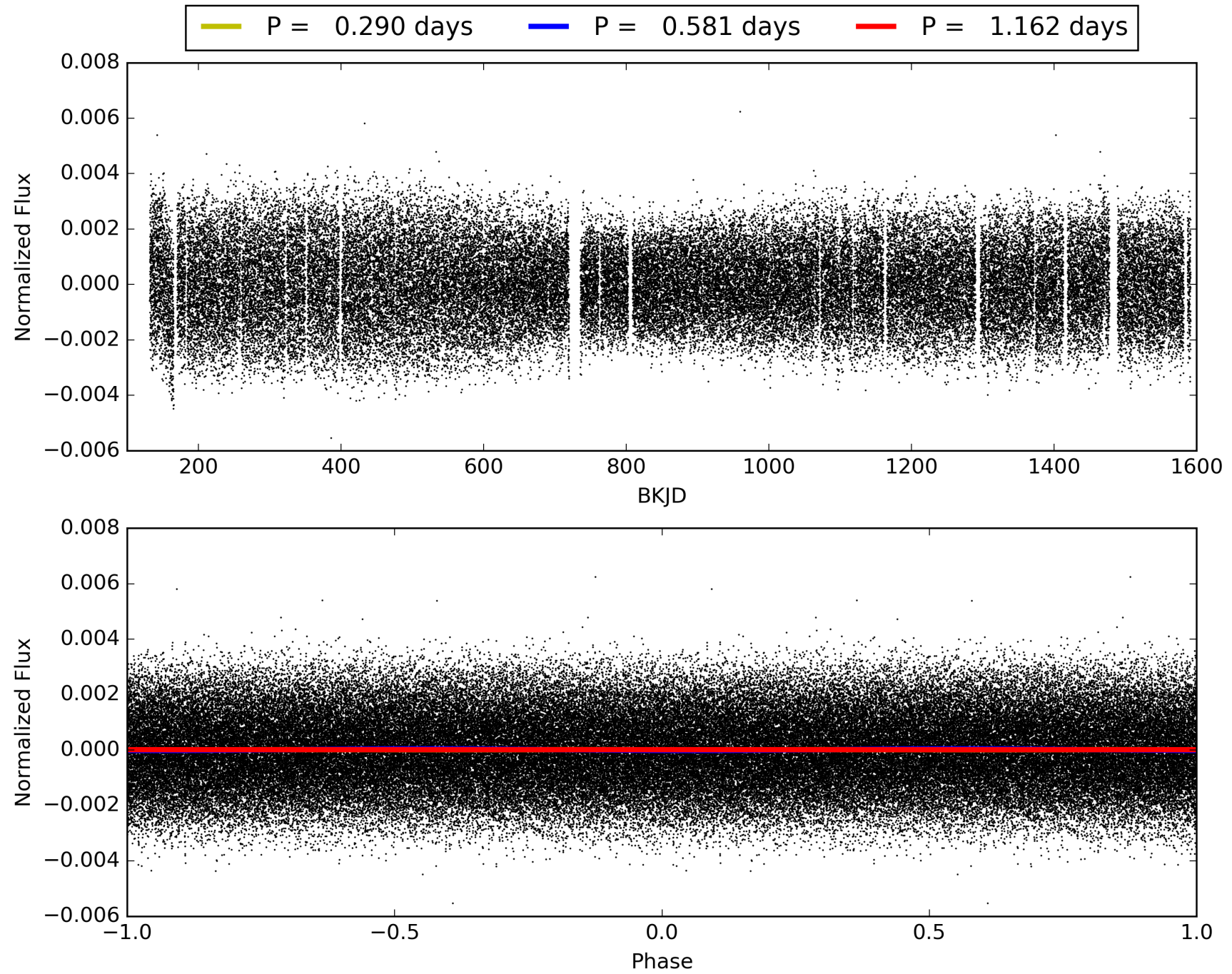
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:42:52 Z

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

TCE 005900260-02, PDC Light Curves

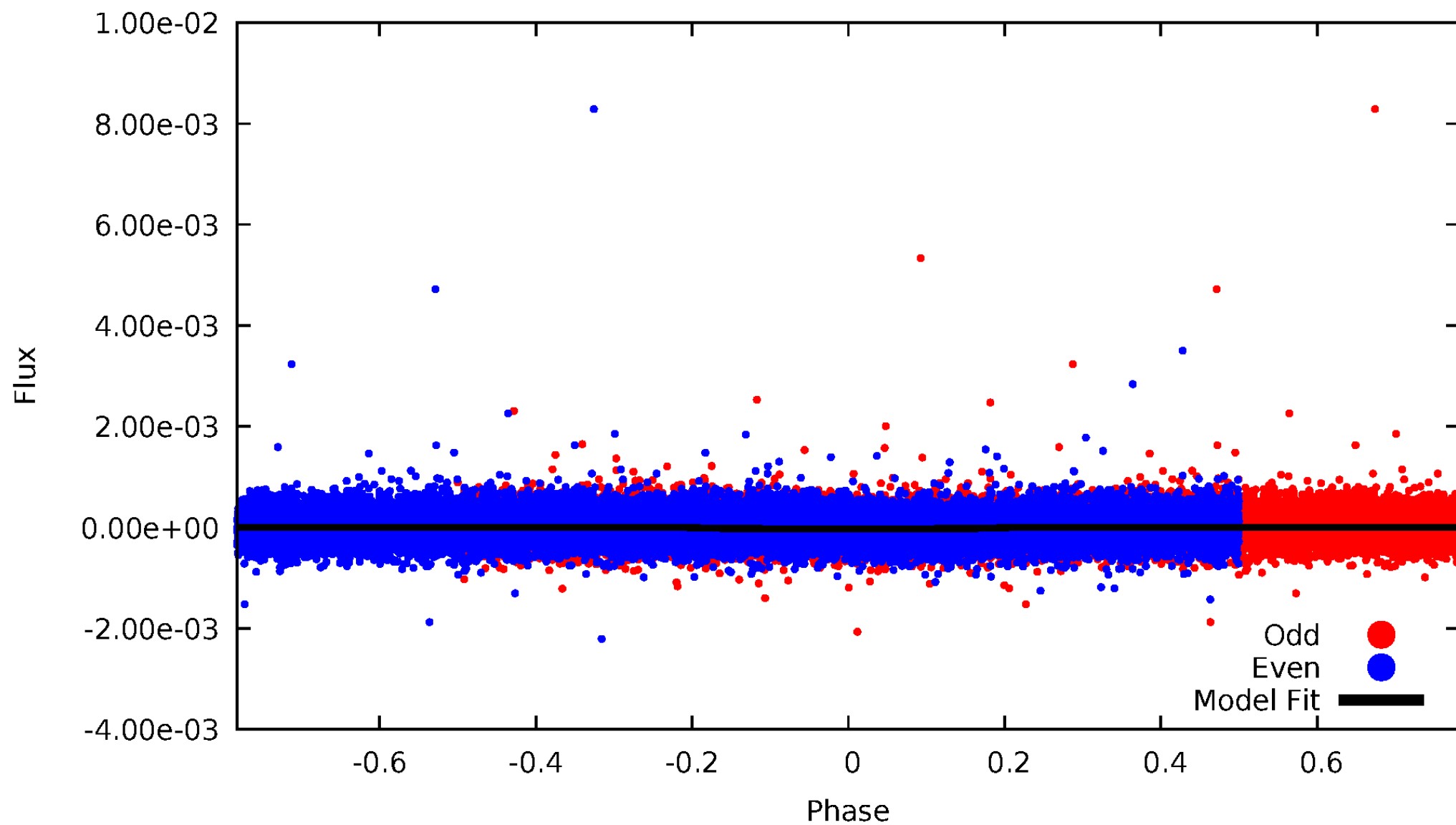


TCE 005900260-02



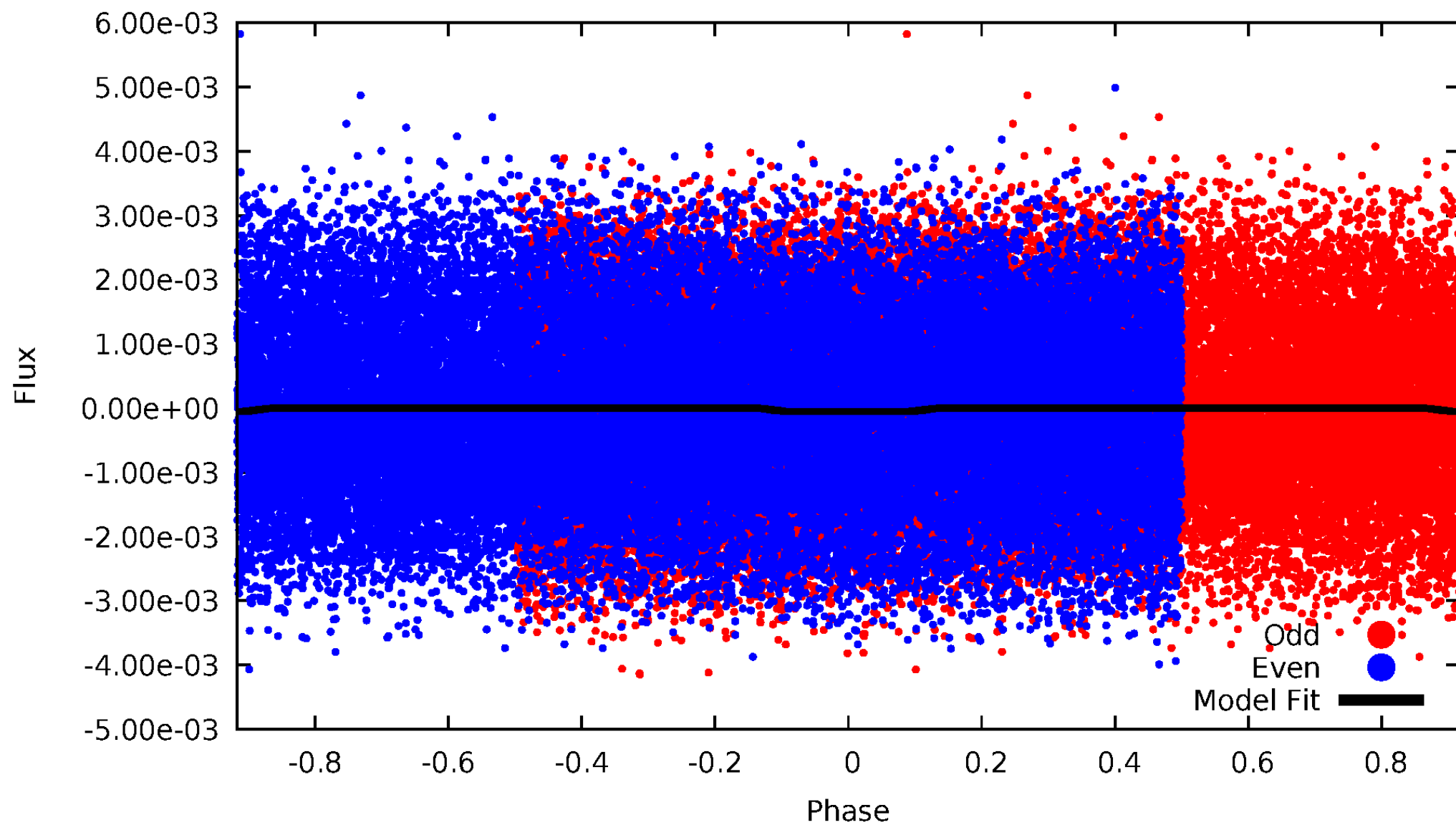
DV Odd/Even

TCE 005900260-02



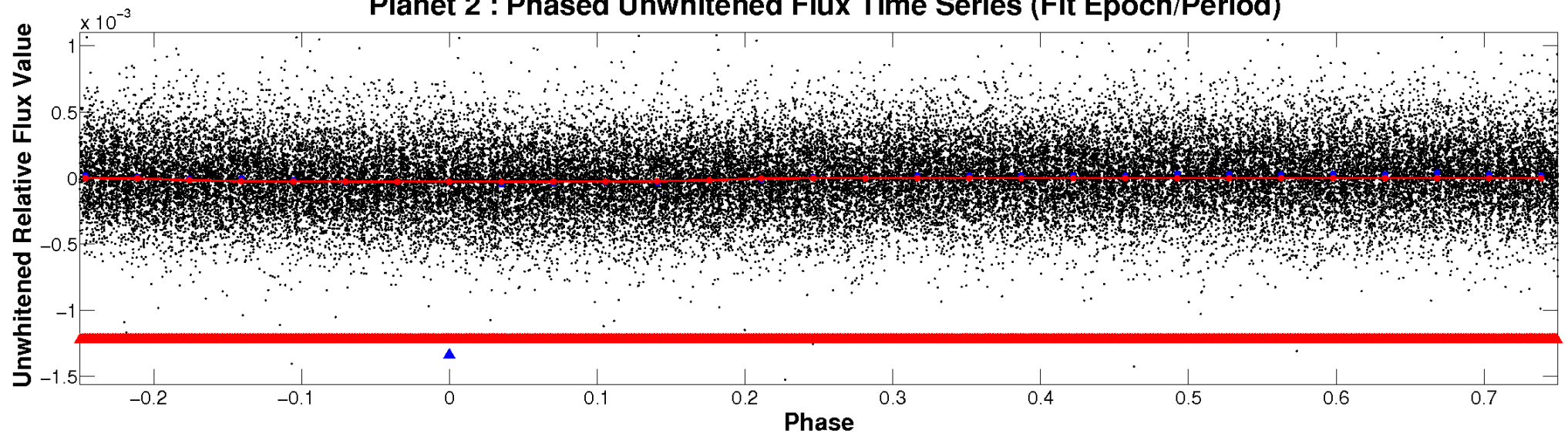
ALT Odd/Even

TCE 005900260-02

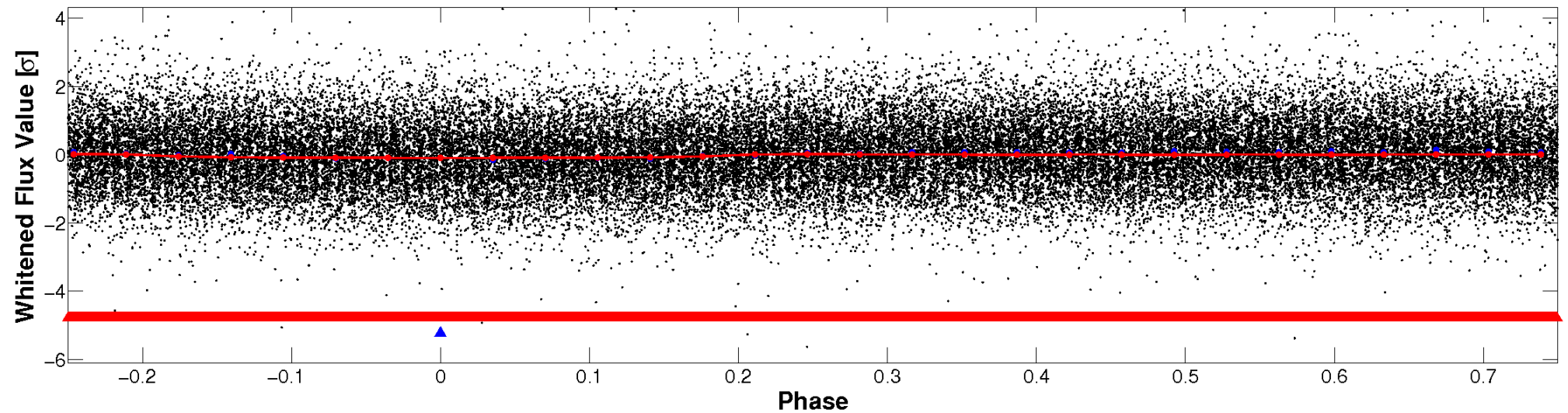


Non-Whitened Vs. Whitened Light Curve

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

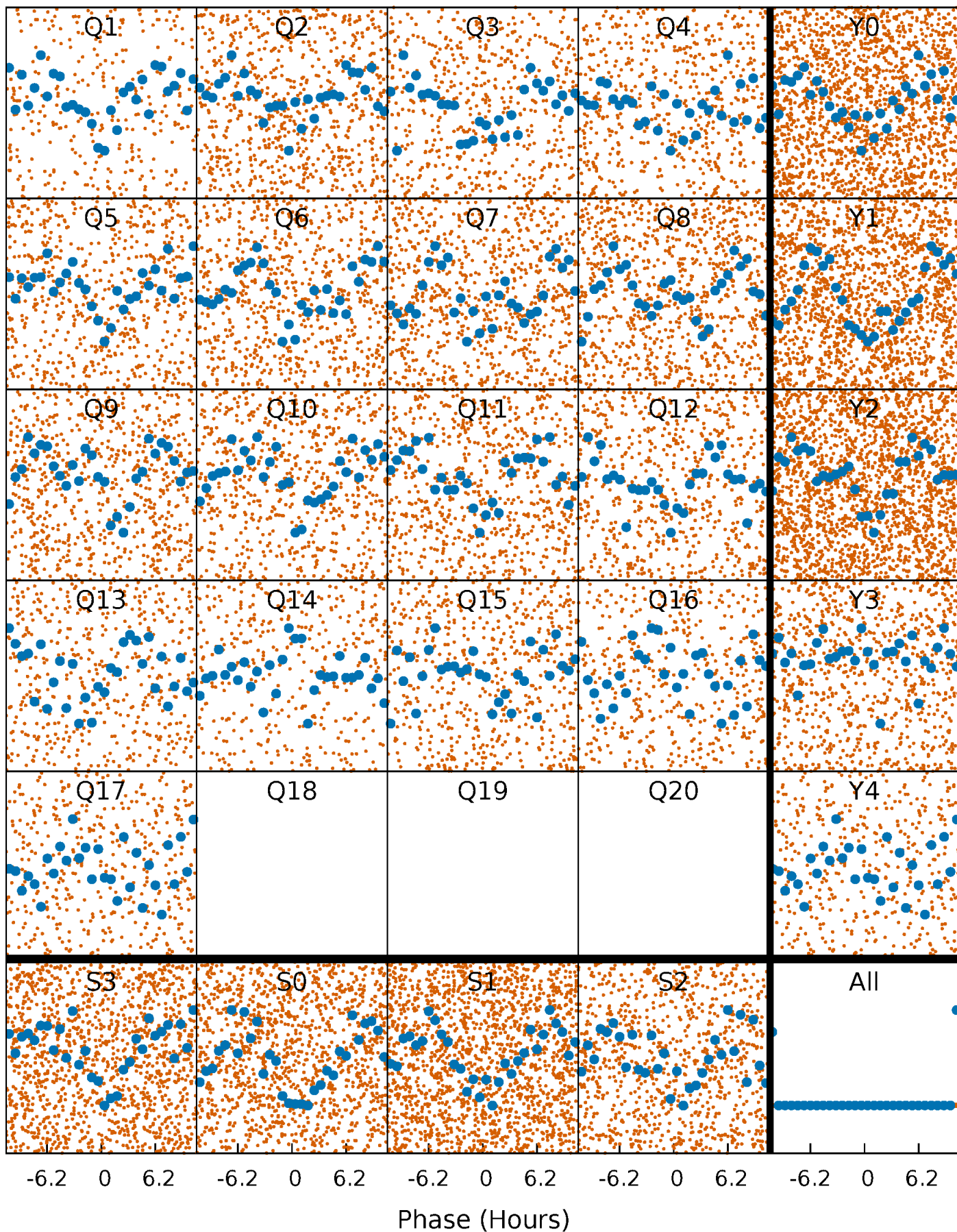


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



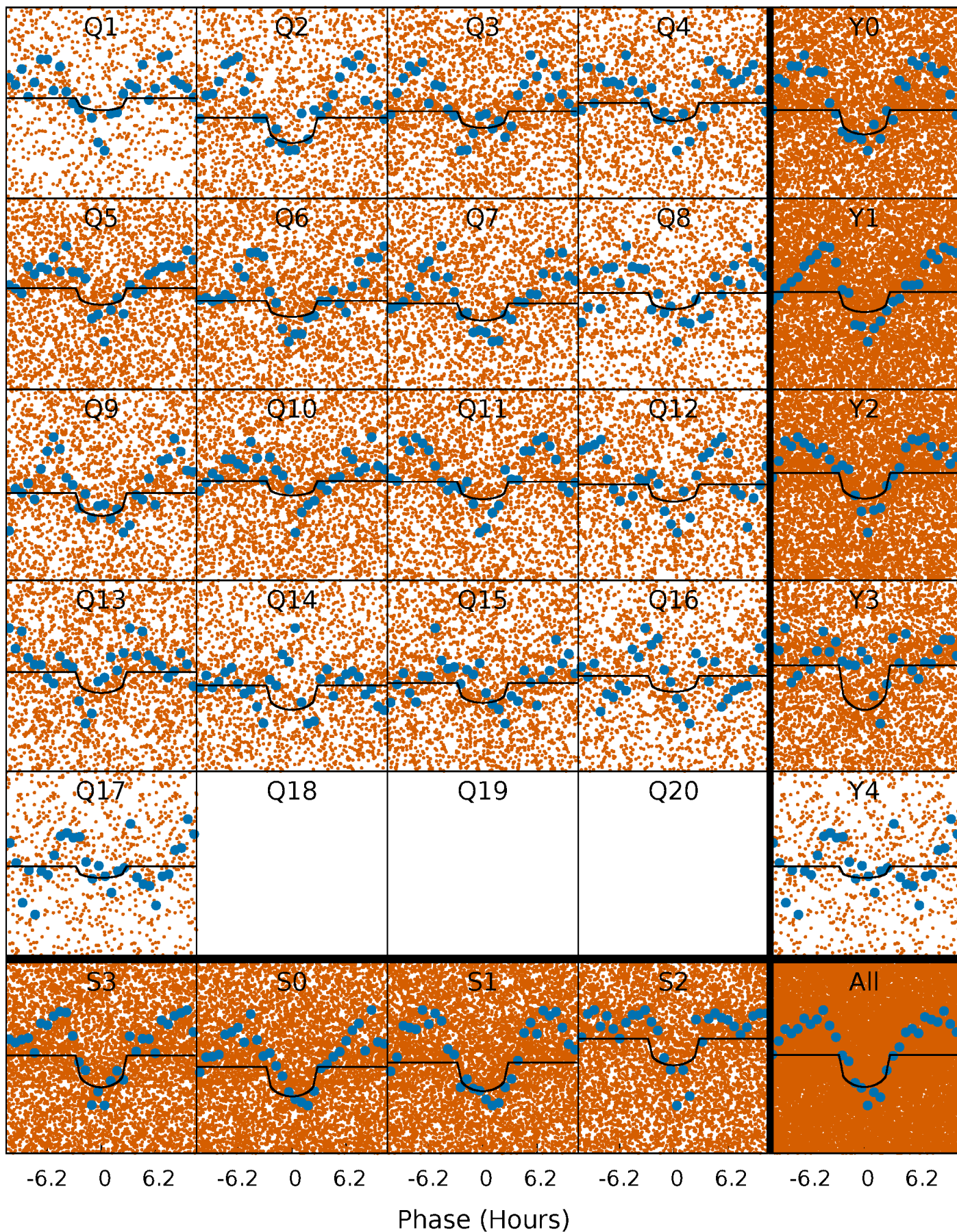
PDC Quarter-Phased Transit Curves

TCE 005900260-02 P= 0.580892 Days $T_0=131.826378$ (BKJD)



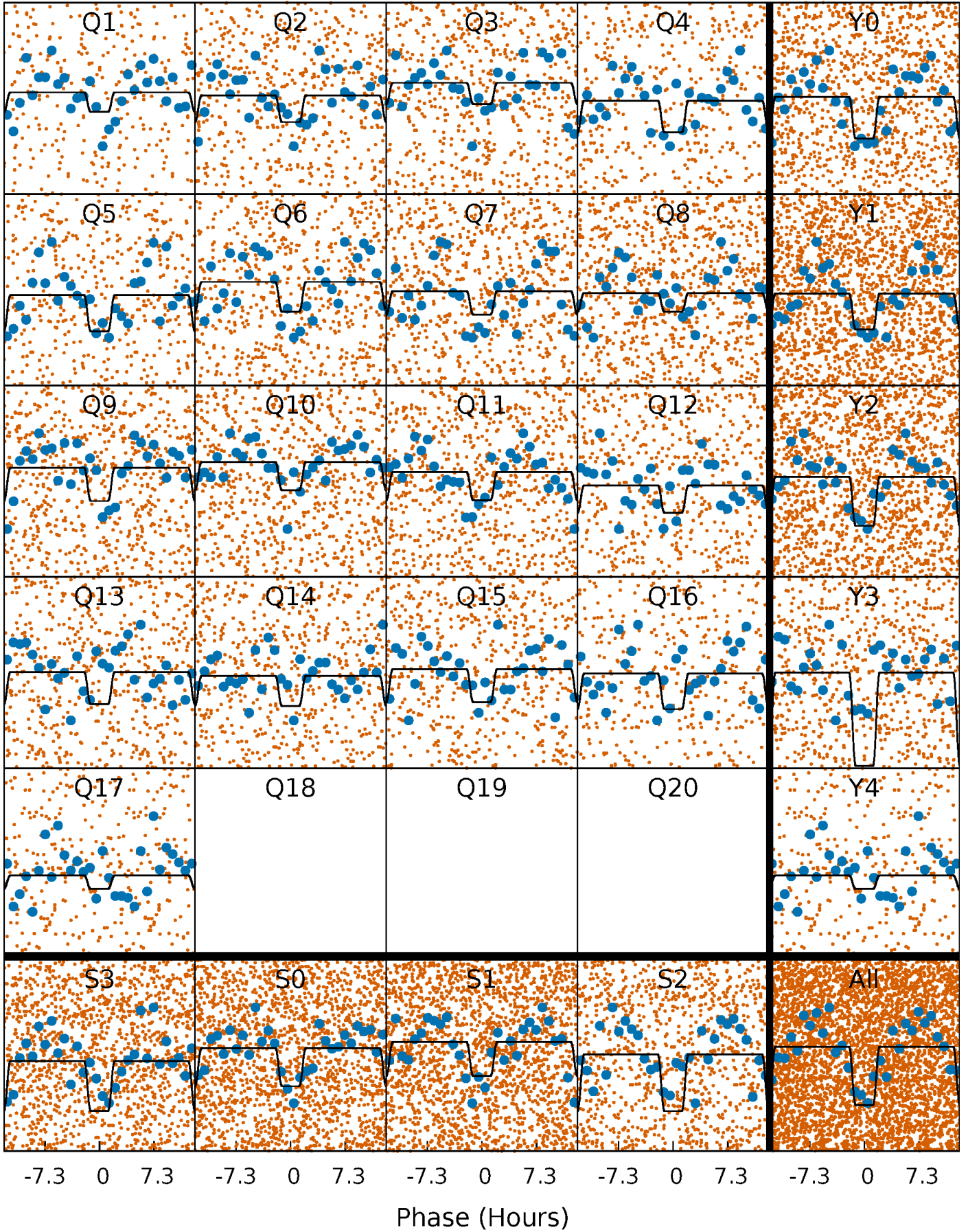
DV Quarter-Phased Transit Curves

TCE 005900260-02 P= 0.580892 Days $T_0=131.826378$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

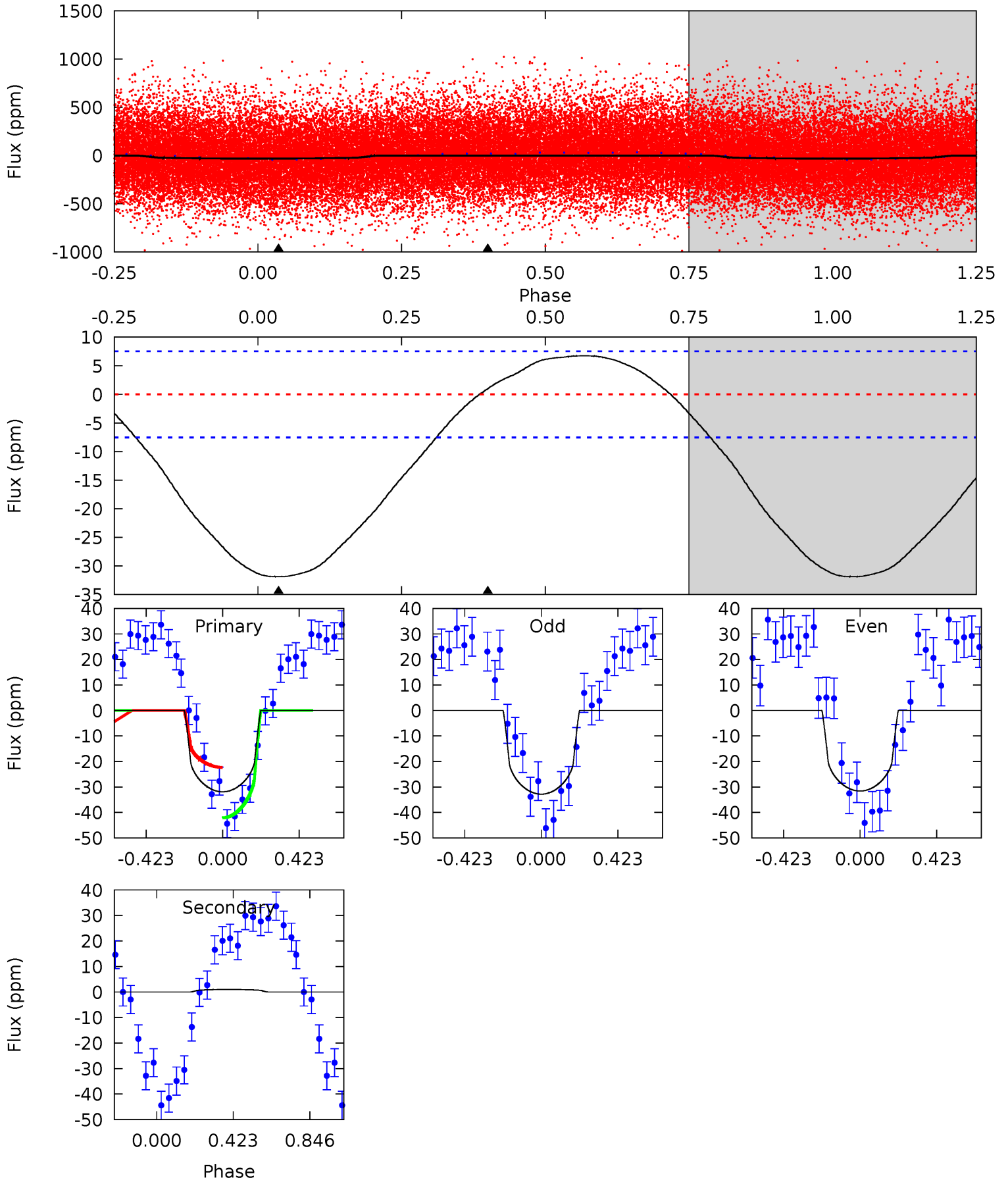
TCE 005900260-02 $P = 0.580940$ Days $T_0 = 131.804637$ (BKJD)



DV Model-Shift Uniqueness Test

005900260-02, P = 0.580892 Days, E = 131.245486 Days

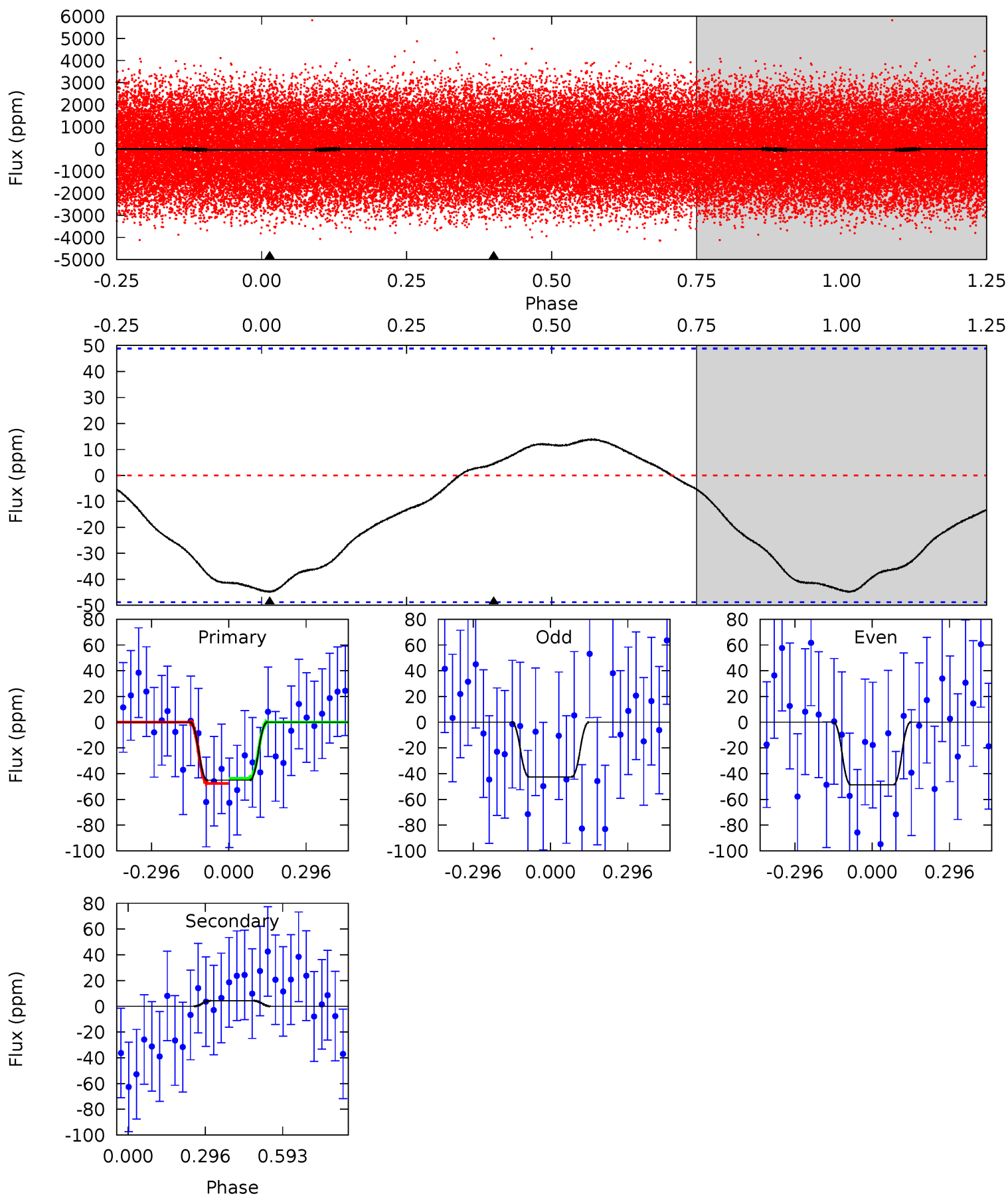
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	-0.55	0	0	4.25	0.80	1.54	18.0	18.0	-0.55	-0.55	0.35	0.52	0.17	5.55



Alt Model-Shift Uniqueness Test

005900260-02, P = 0.580940 Days, E = 131.223697 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.00	-0.38	0	0	4.33	1.04	0.33	4.00	4.00	-0.38	-0.38	0.28	0.82	0.24	0.18



Stellar Parameters For KIC 005900260

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6652^{+210}_{-257}	$3.645^{+0.570}_{-0.101}$	$-0.260^{+0.300}_{-0.300}$	$3.119^{+0.447}_{-1.675}$	$1.566^{+0.191}_{-0.446}$	$0.073^{+0.543}_{-0.024}$
	+3%/-4%	+16%/-3%	+115%/-115%	+14%/-54%	+12%/-28%	+746%/-32%
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 005900260-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	1 ± 2	$1.57^{+1.30}_{-0.91}$	5560^{+421}_{-749}	-4878^{+659}_{-656}	$-0.037^{+0.077}_{-0.344}$
Alt.	4 ± 11	$2.29^{+1.13}_{-1.19}$	5606^{+406}_{-760}	-4899^{+1270}_{-952}	$-0.080^{+0.291}_{-0.504}$

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

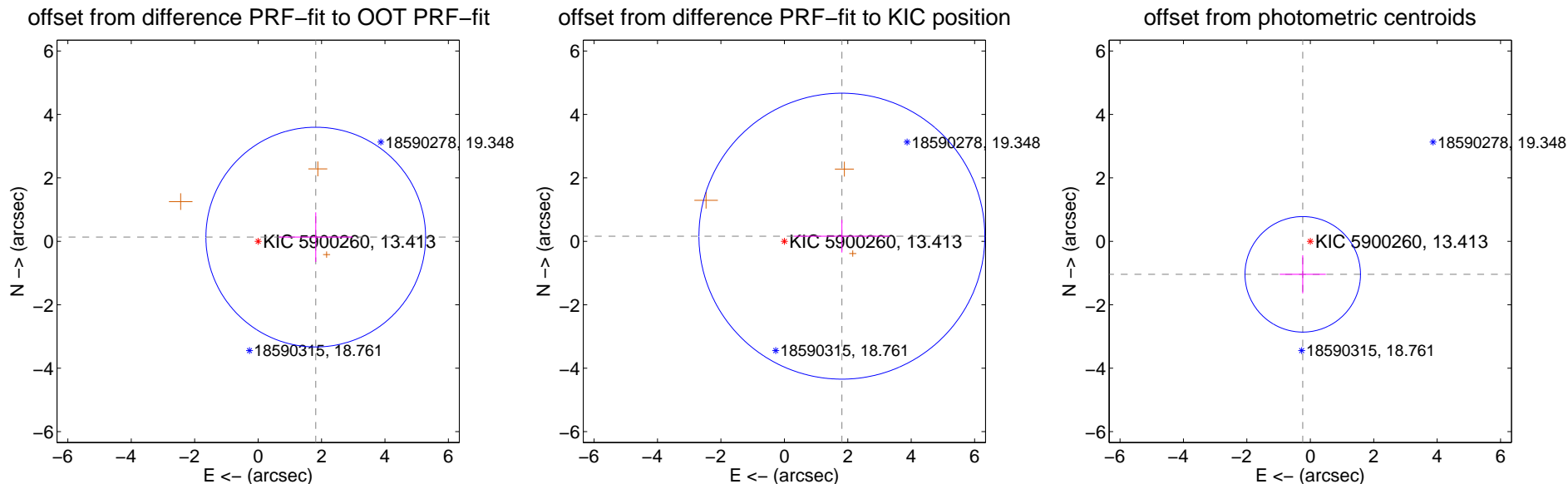
DV Centroid Data

Supplemental centroid analysis for 005900260-02. Kepler magnitude: 13.41. Transit SNR 11.04

There are 0 quarters with good PRF difference image offsets

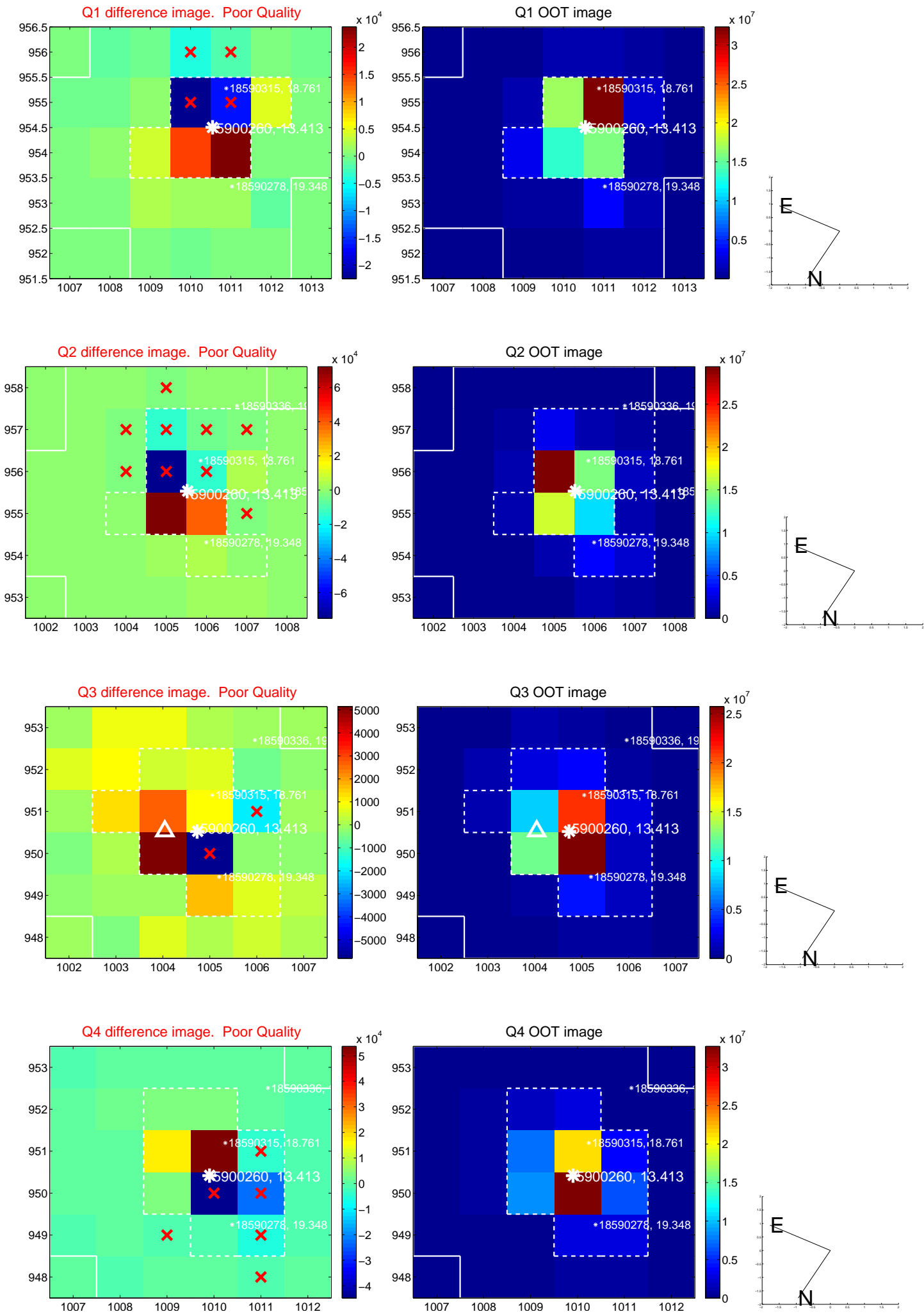
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.823 ± 1.154	1.58	-1.818 ± 1.163	0.133 ± 0.782
PRF-fit source offset from KIC position	1.821 ± 1.502	1.21	-1.814 ± 1.512	0.162 ± 0.516
photometric centroid source offset	1.07 ± 0.61	1.76	0.24 ± 0.73	-1.04 ± 0.60

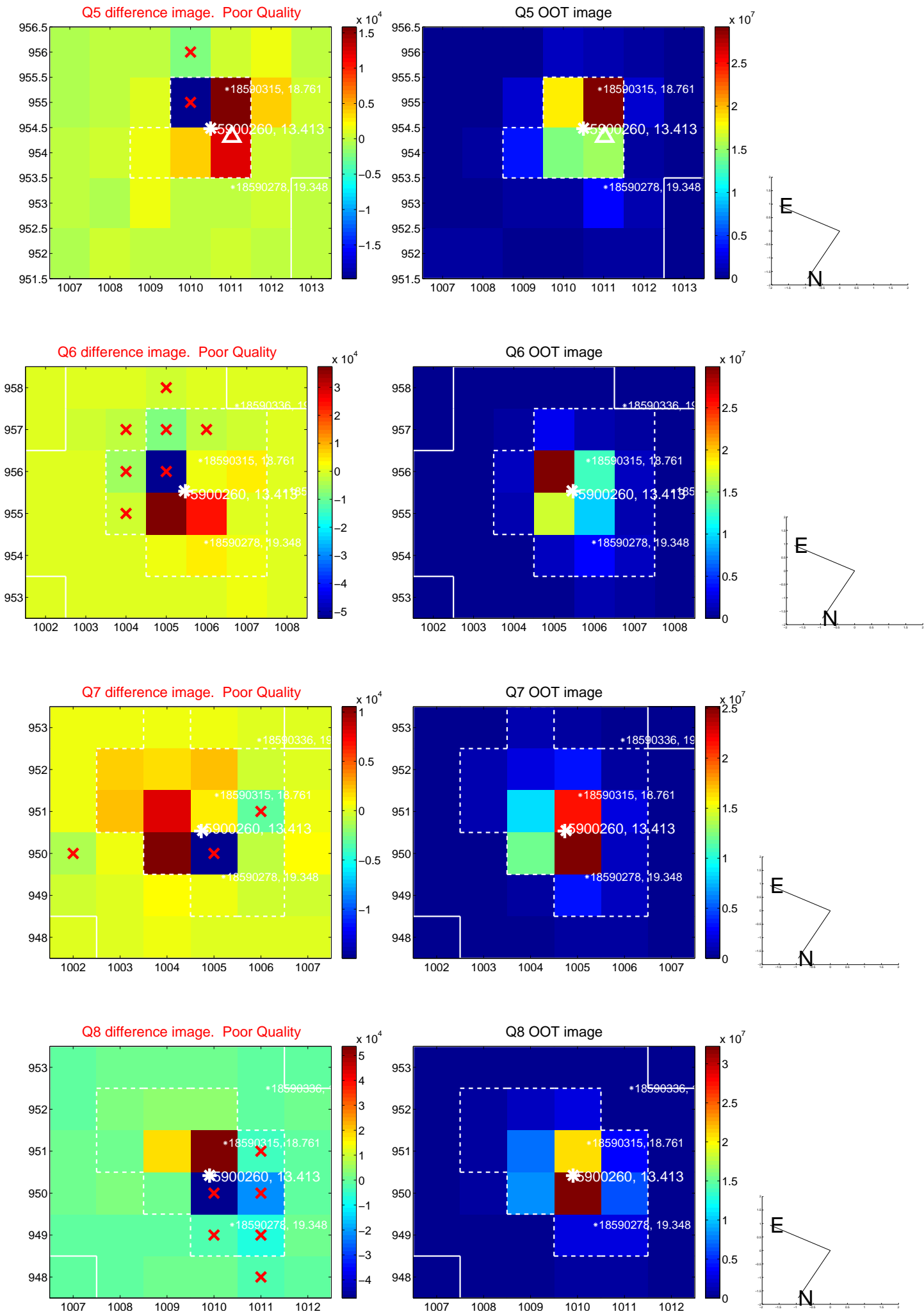


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

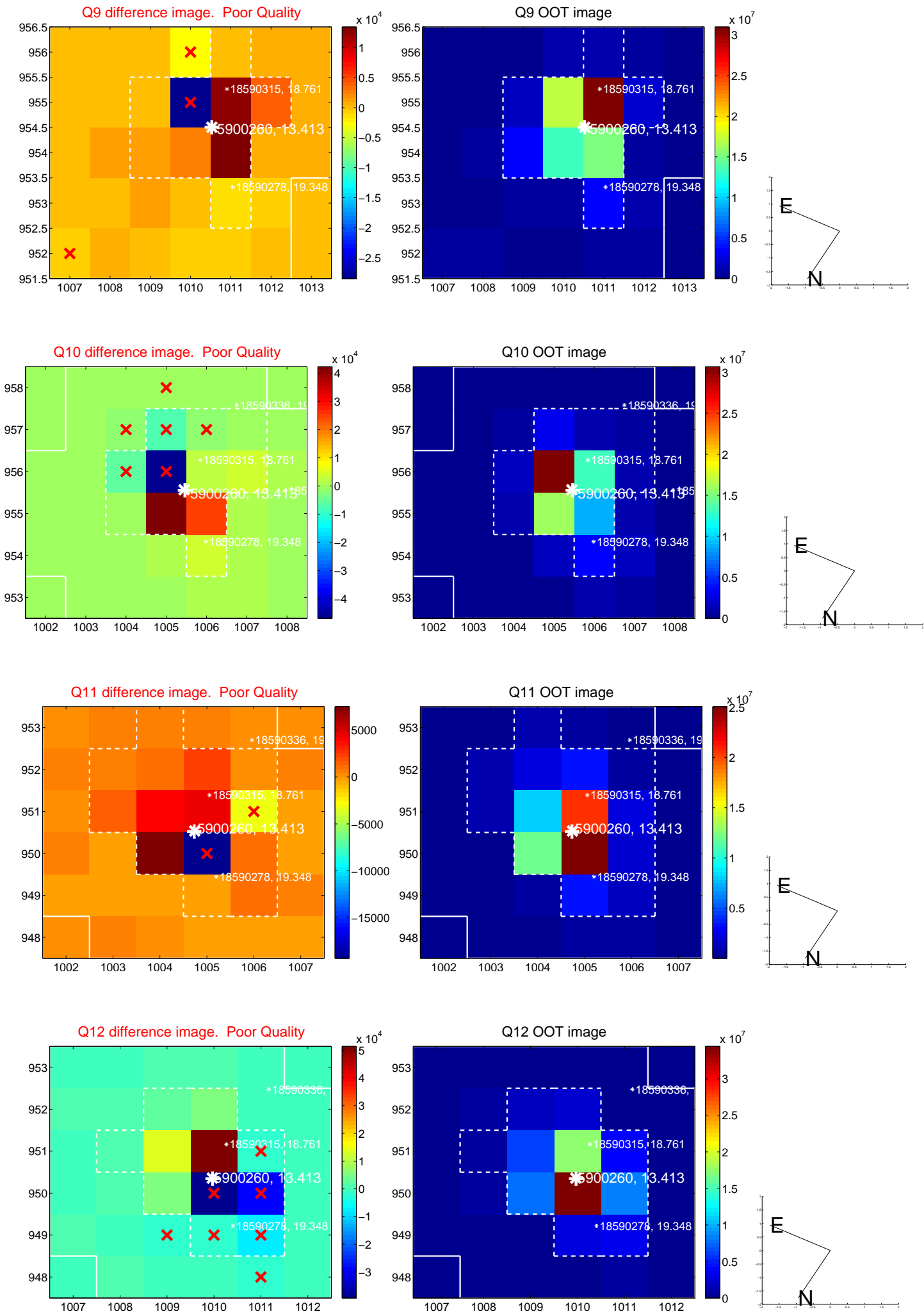
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



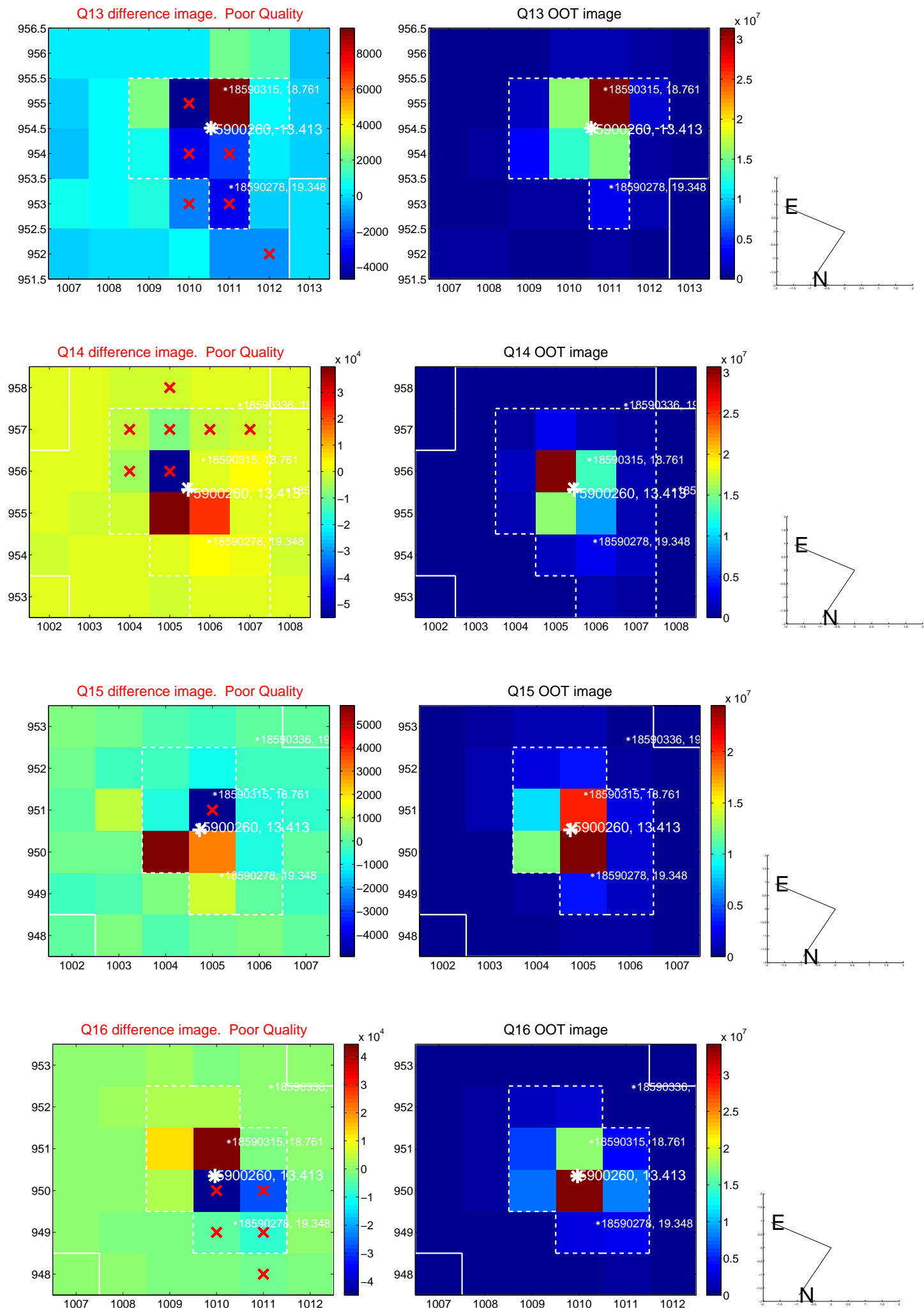
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



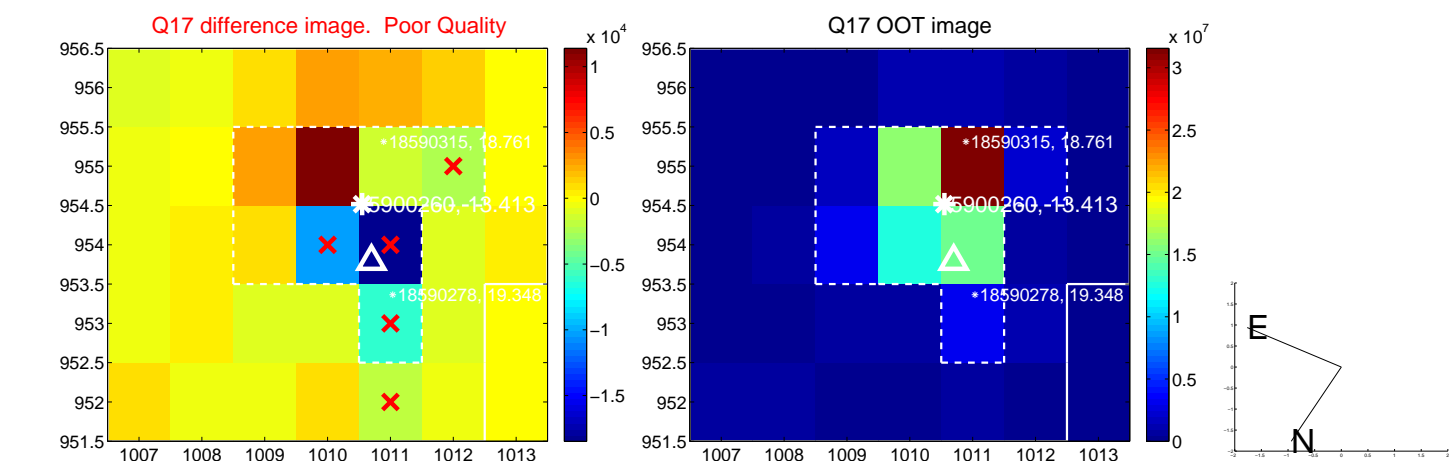
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



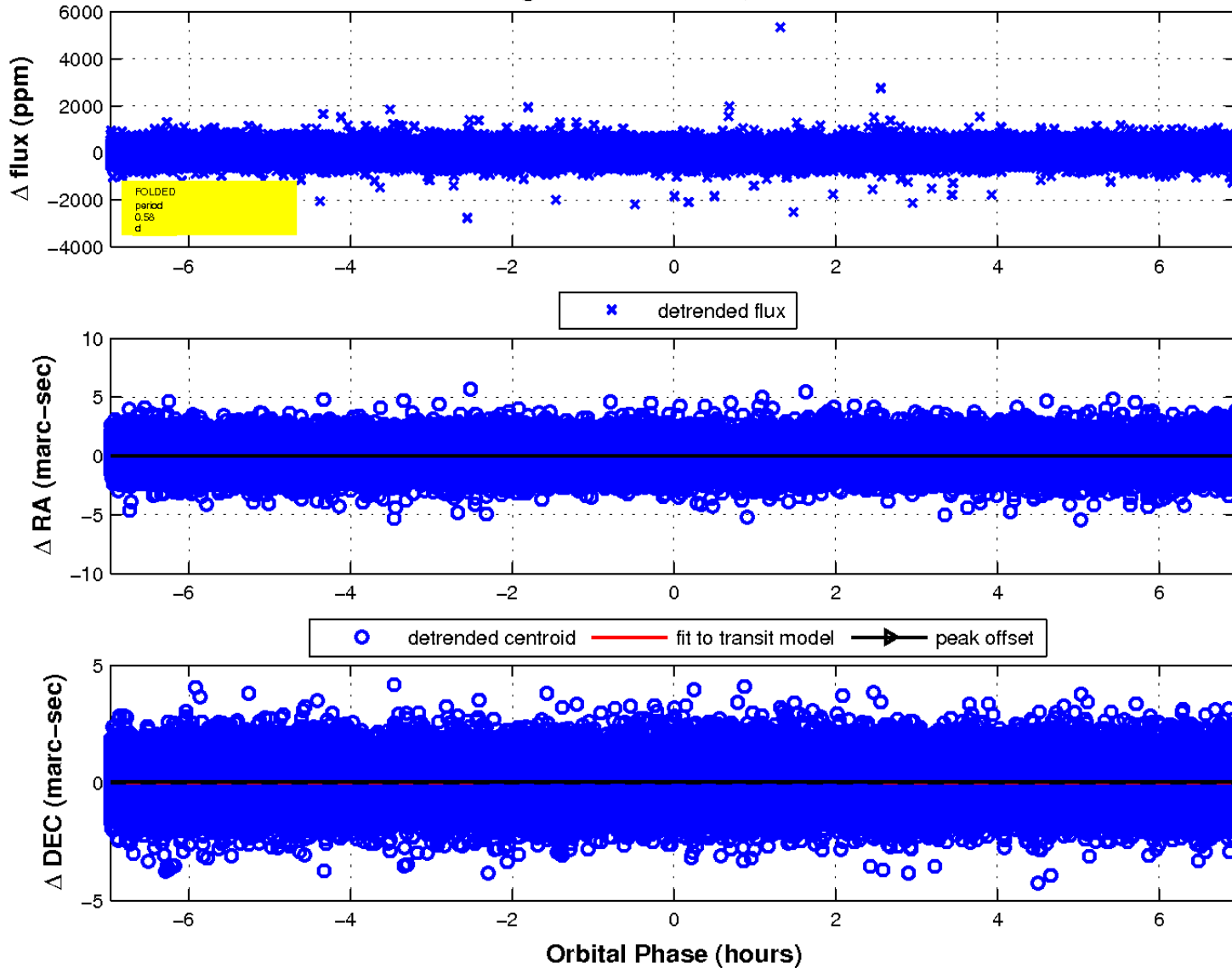
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

