

KIC 004860300

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})
004860300-01	OBS	No	1.383272	132.763021	3.9	0.707	8.3	0.6	3.98	6514	0.81	31233.55
004860300-02	OBS	No	1.382595	132.180406	10.0	4.686	8.2	3.7	3.98	6514	1.43	31253.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004860300-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004860300-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

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

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

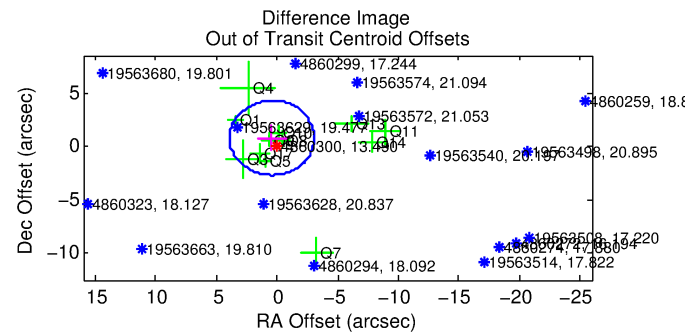
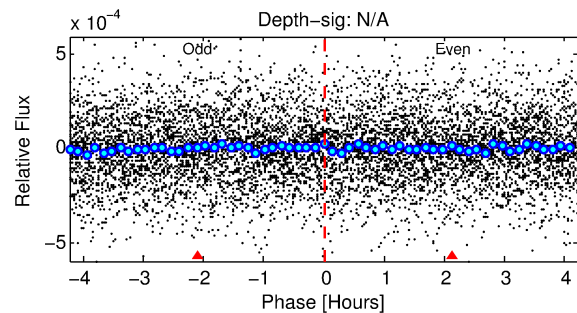
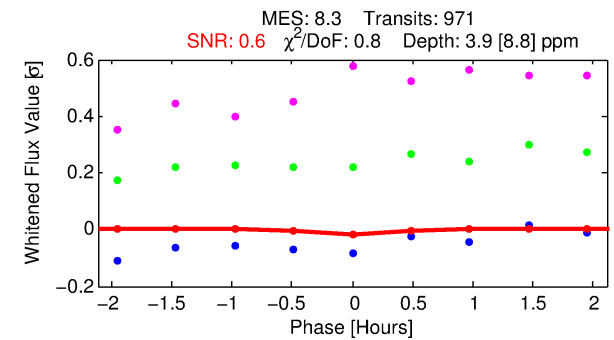
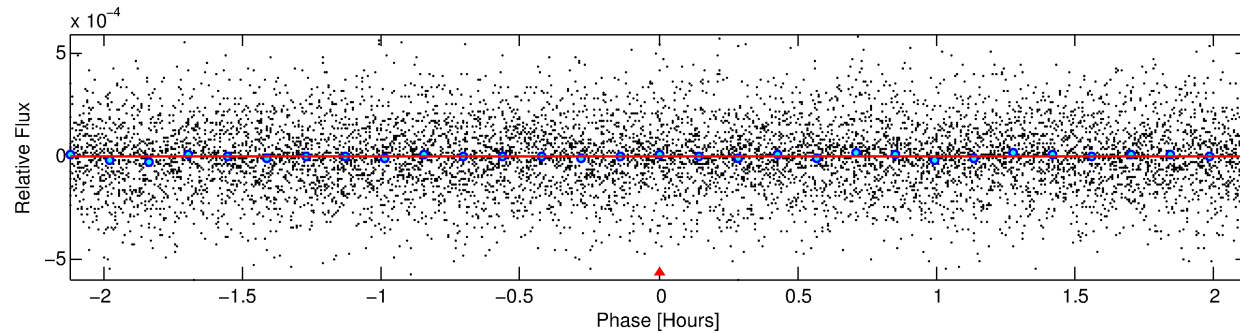
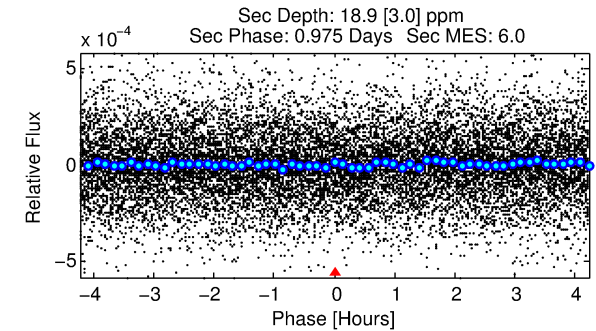
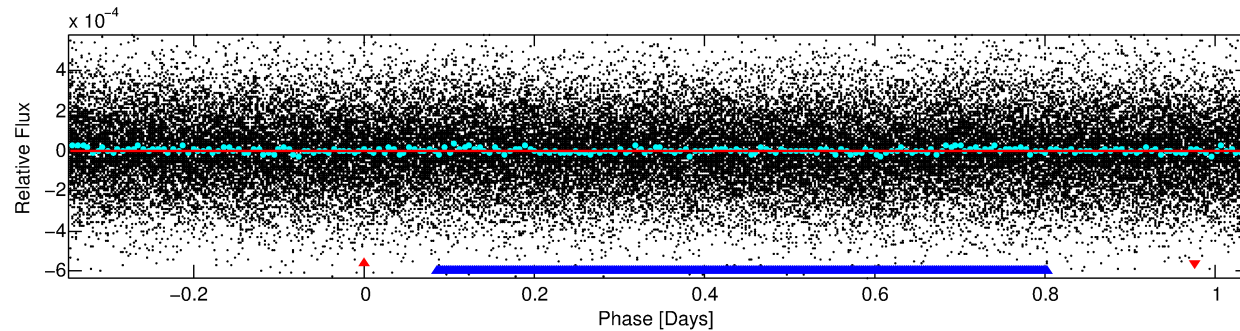
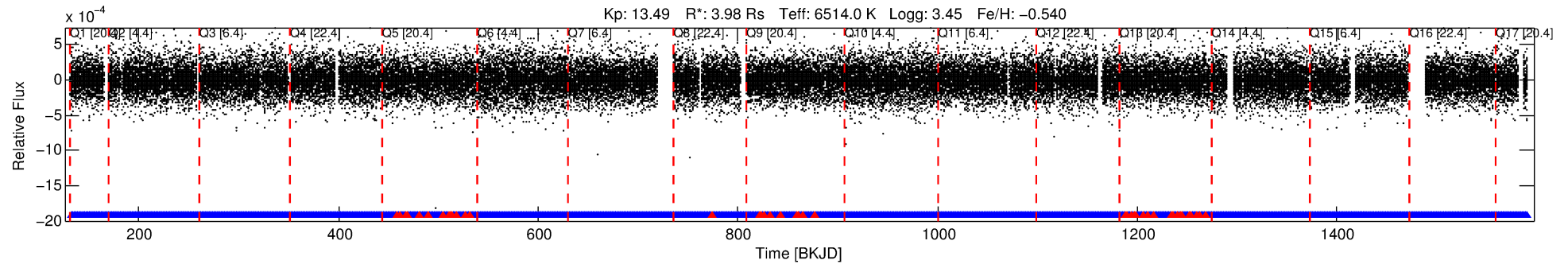
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004860300-01

No Significant Match Found

DV One-Page Summary

KIC: 4860300 Candidate: 1 of 2 Period: 1.383 d



DV Fit Results:

Period = 1.38327 [0.00016] d
Epoch = 132.7630 [0.0221] BKJD
Rp/R* = 0.0019 [0.0504]
a/R* = 14.89 [2147.51]
b = 0.11 [1317.15]
Seff = 31233.55 [20169.47]
Teq = 3390 [547] K
Rp = 0.80 [21.93] Re
a = 0.0286 [0.0115] AU
Ag = 13.19 [719.10] [0.02σ]
Teffp = 9988 [136129] K [0.05σ]

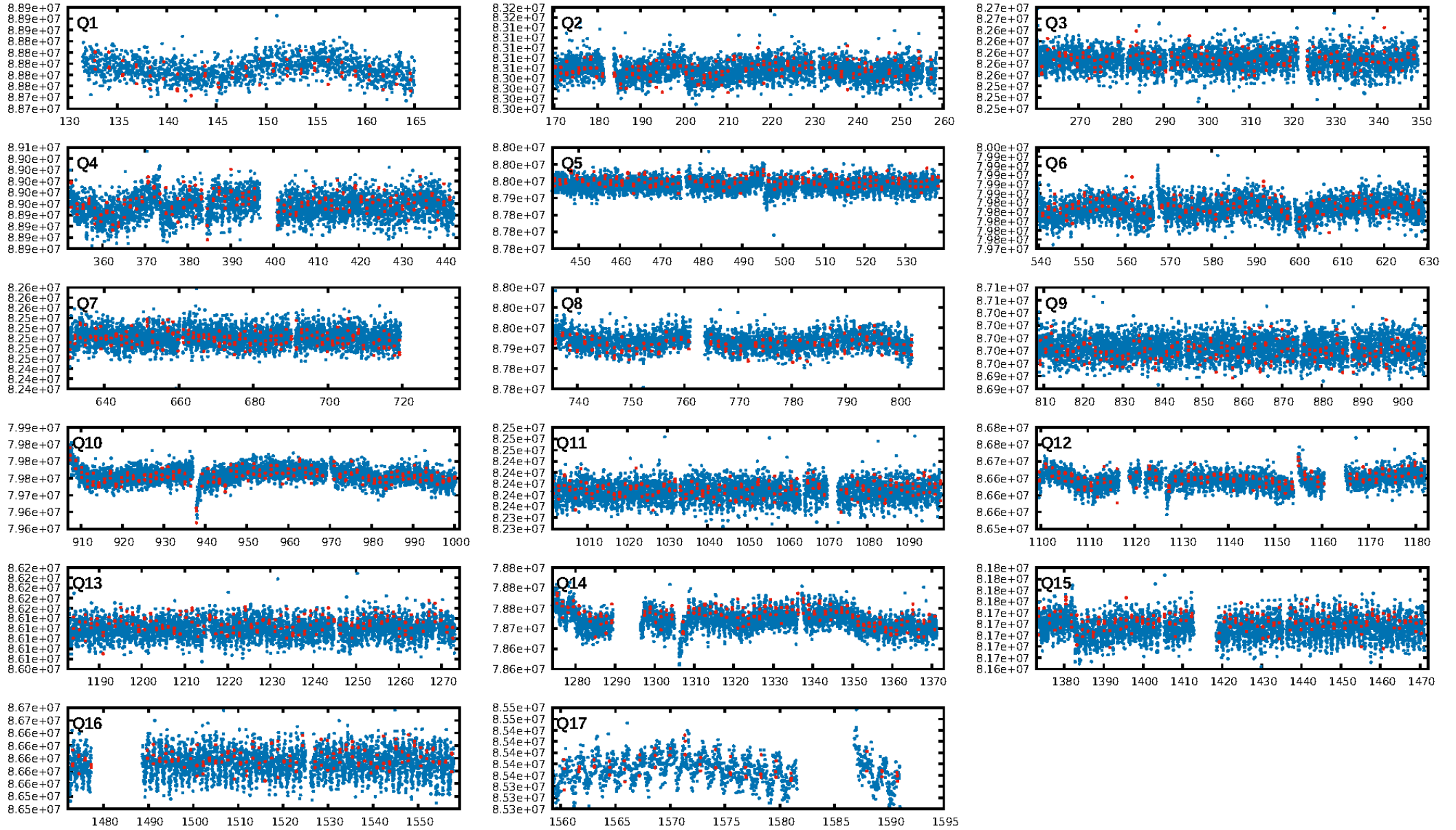
DV Diagnostic Results:

ShortPeriod-sig: 0.3% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.42e-13
RollingBand-fgt: 0.95 [885/928]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.895 arcsec [0.77σ]
KicOffset-rm: 0.952 arcsec [0.84σ]
OotOffset-st: 2/3/2/5 [12]
KicOffset-st: 2/3/2/5 [12]
DiffImageQuality-fgm: 0.33 [4/12]
DiffImageOverlap-fno: 0.71 [12/17]

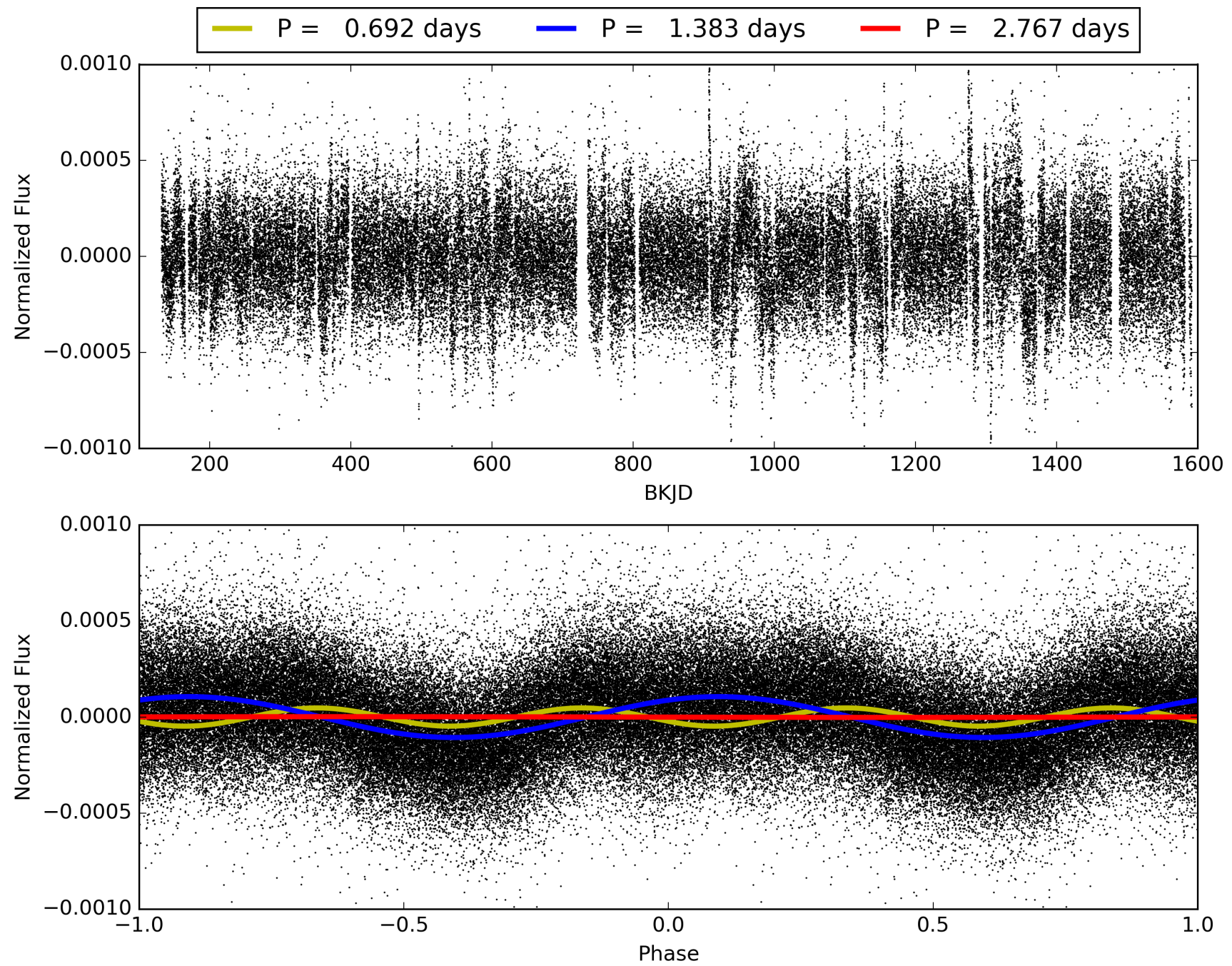
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:10:23 Z

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

TCE 004860300-01, PDC Light Curves

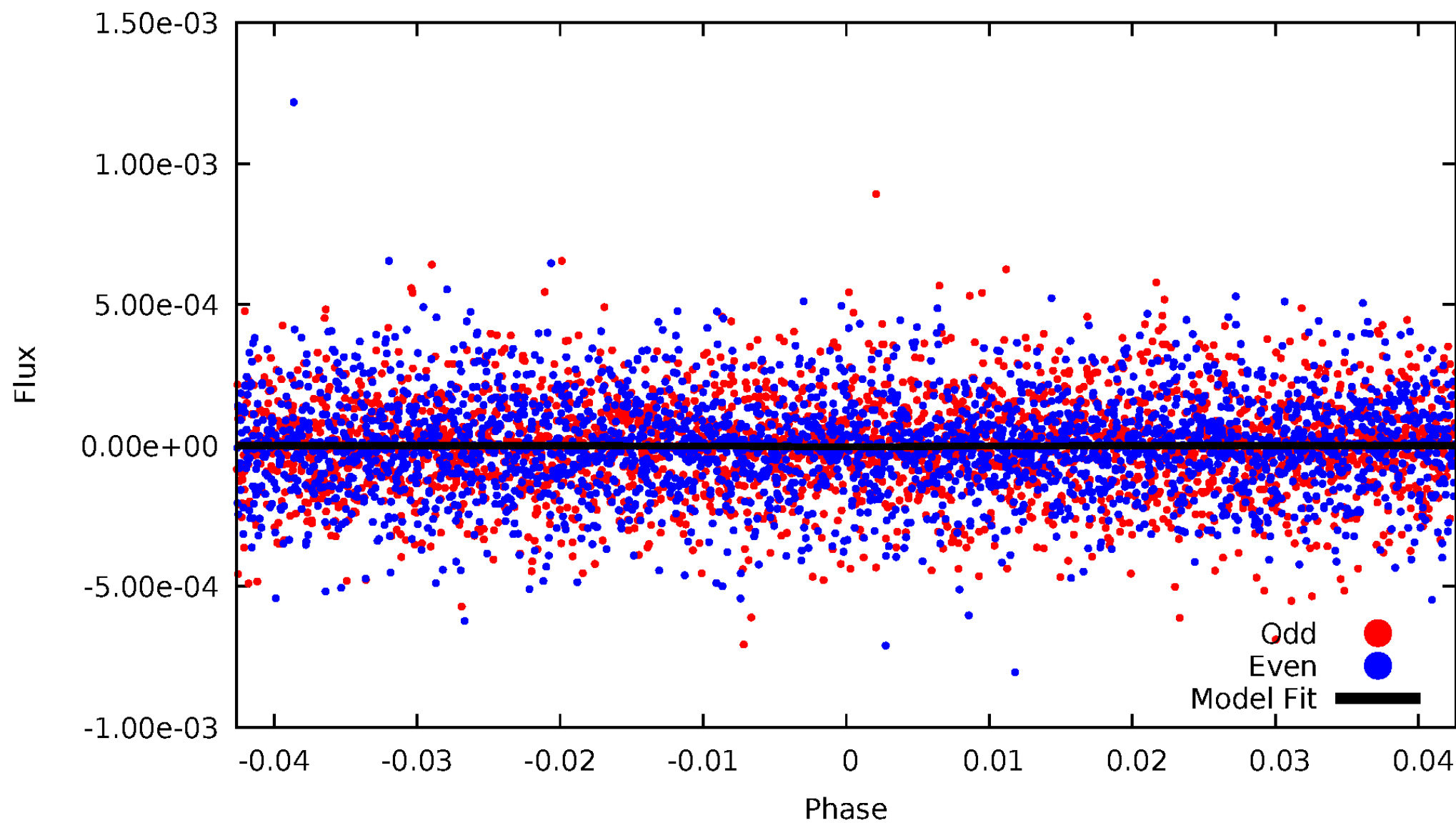


TCE 004860300-01



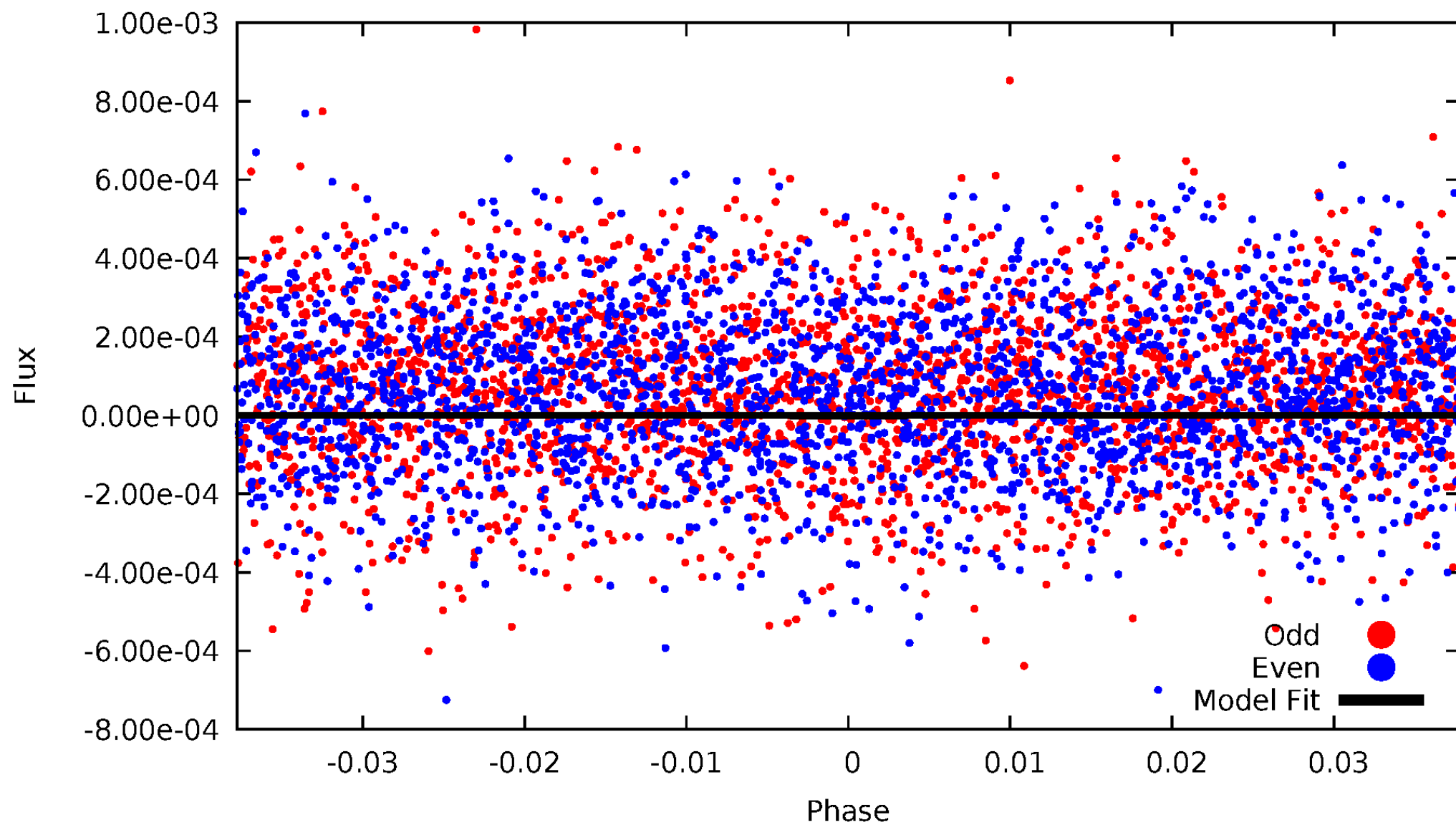
DV Odd/Even

TCE 004860300-01



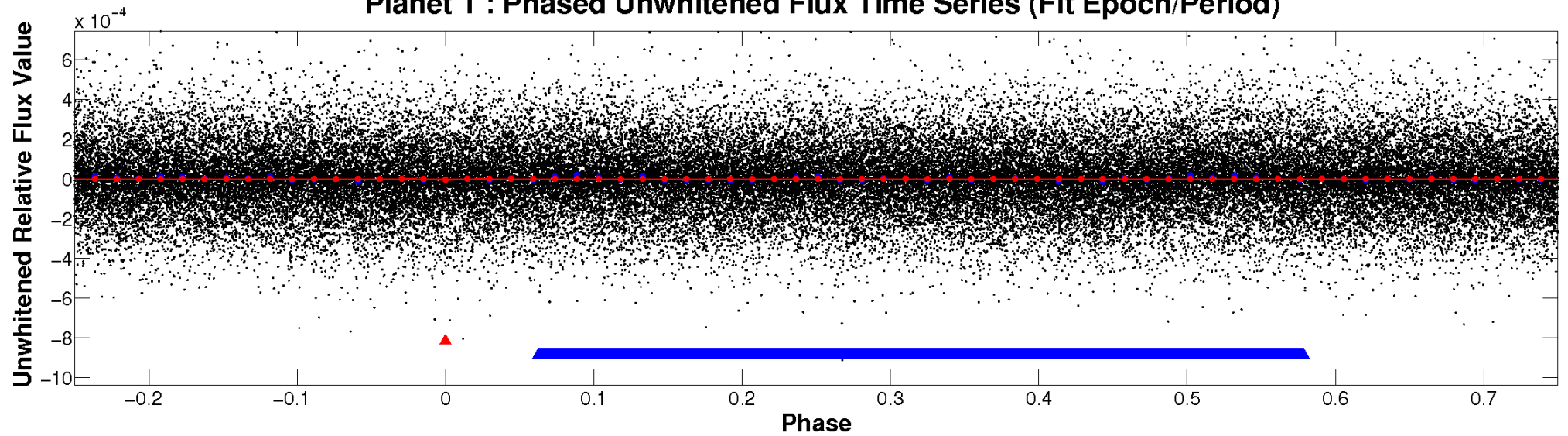
ALT Odd/Even

TCE 004860300-01

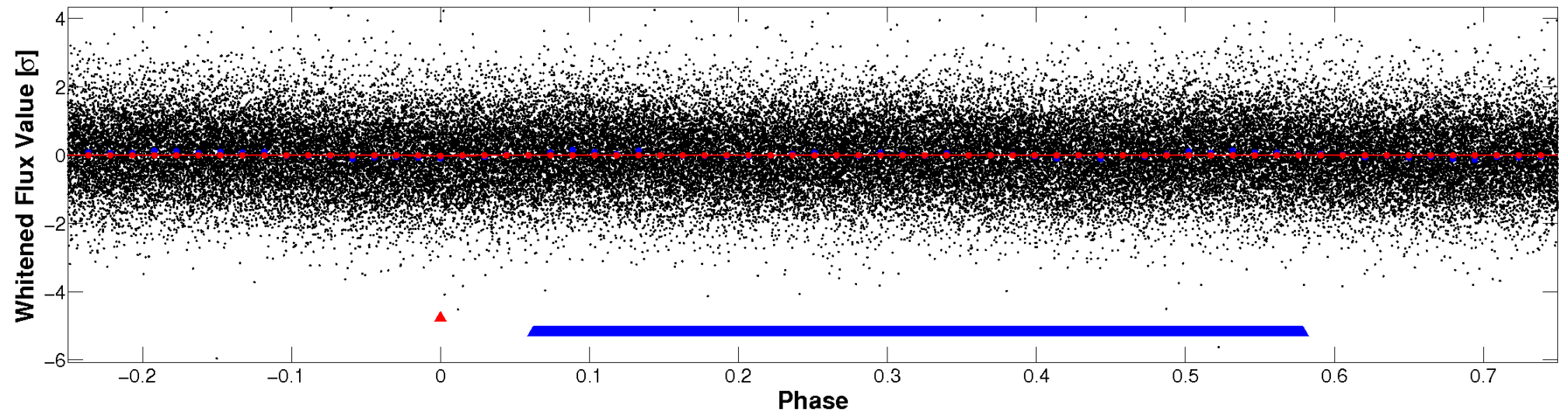


Non-Whitened Vs. Whitened Light Curve

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

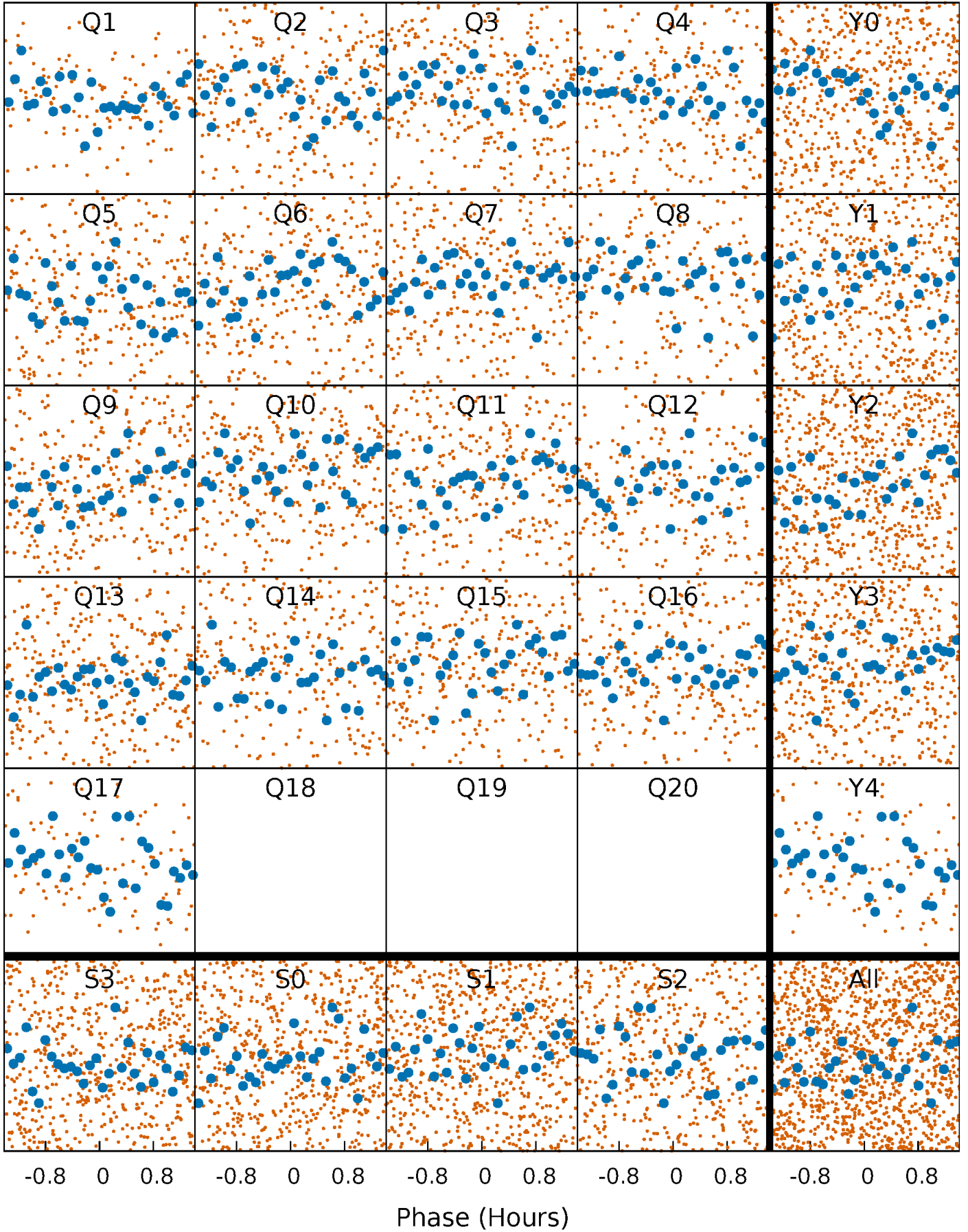


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



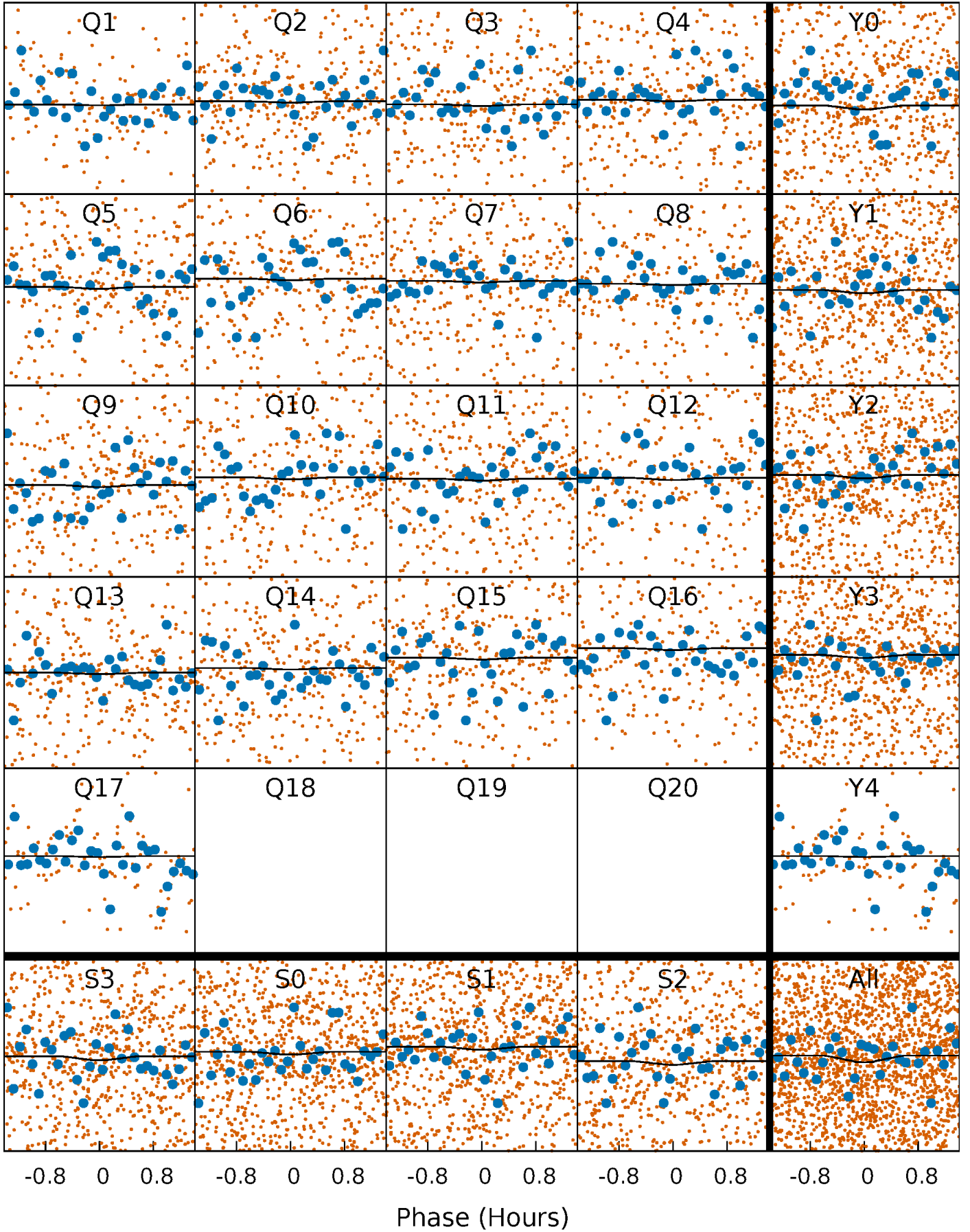
PDC Quarter-Phased Transit Curves

TCE 004860300-01 P= 1.383272 Days $T_0=132.763021$ (BKJD)



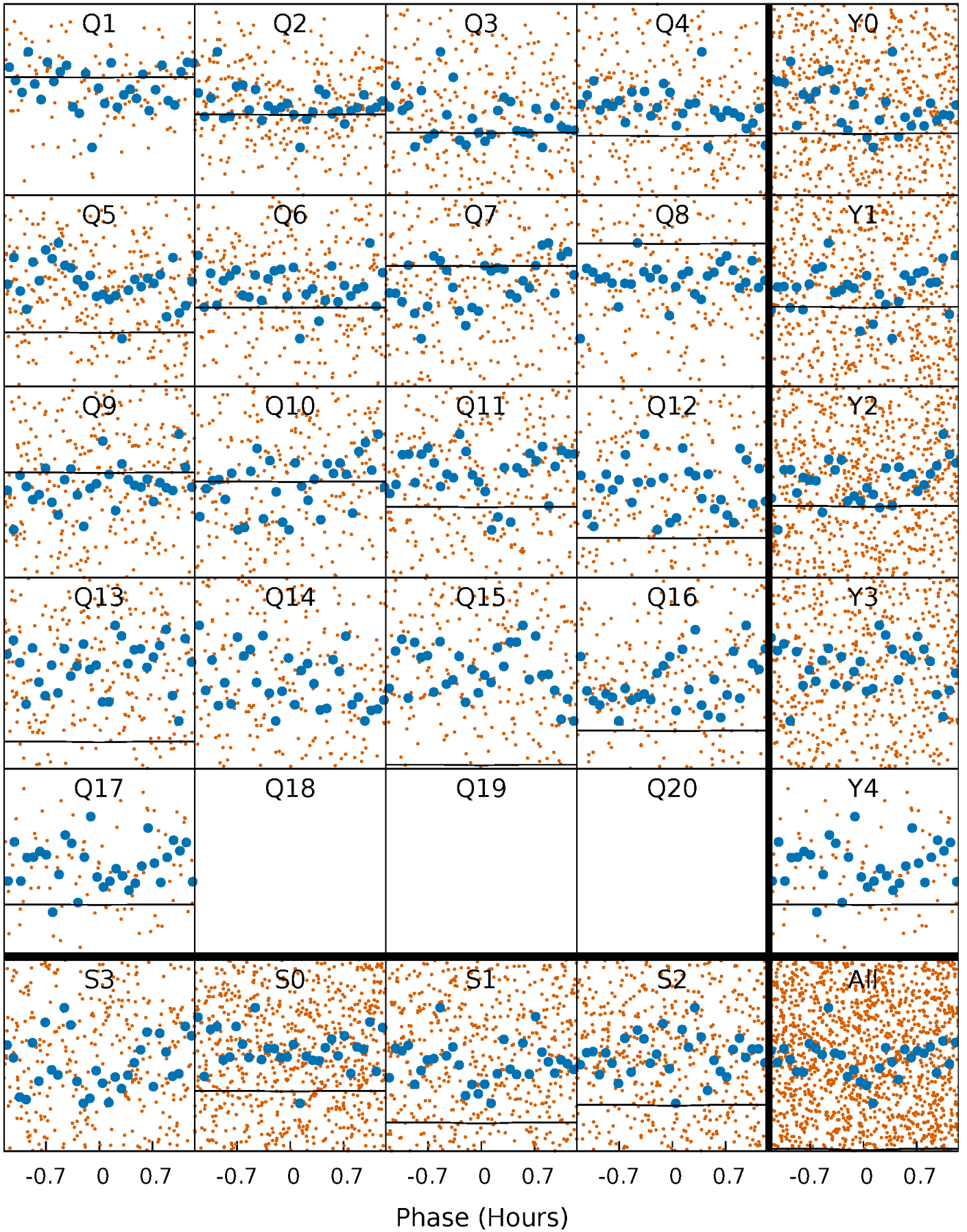
DV Quarter-Phased Transit Curves

TCE 004860300-01 P= 1.383272 Days $T_0=132.763021$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

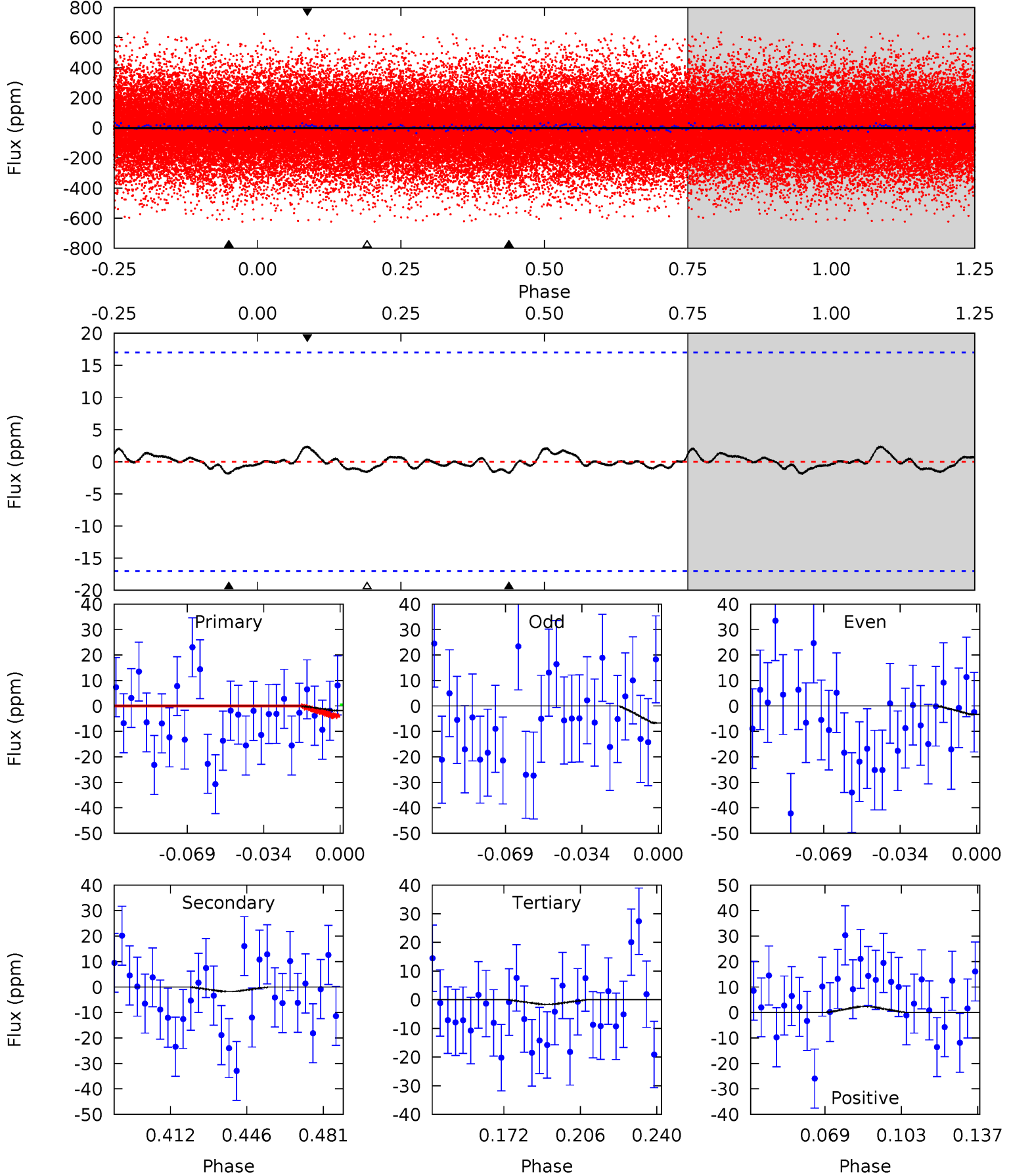
TCE 004860300-01 P= 1.383378 Days $T_0=132.764883$ (BKJD)



DV Model-Shift Uniqueness Test

004860300-01, P = 1.383272 Days, E = 131.379749 Days

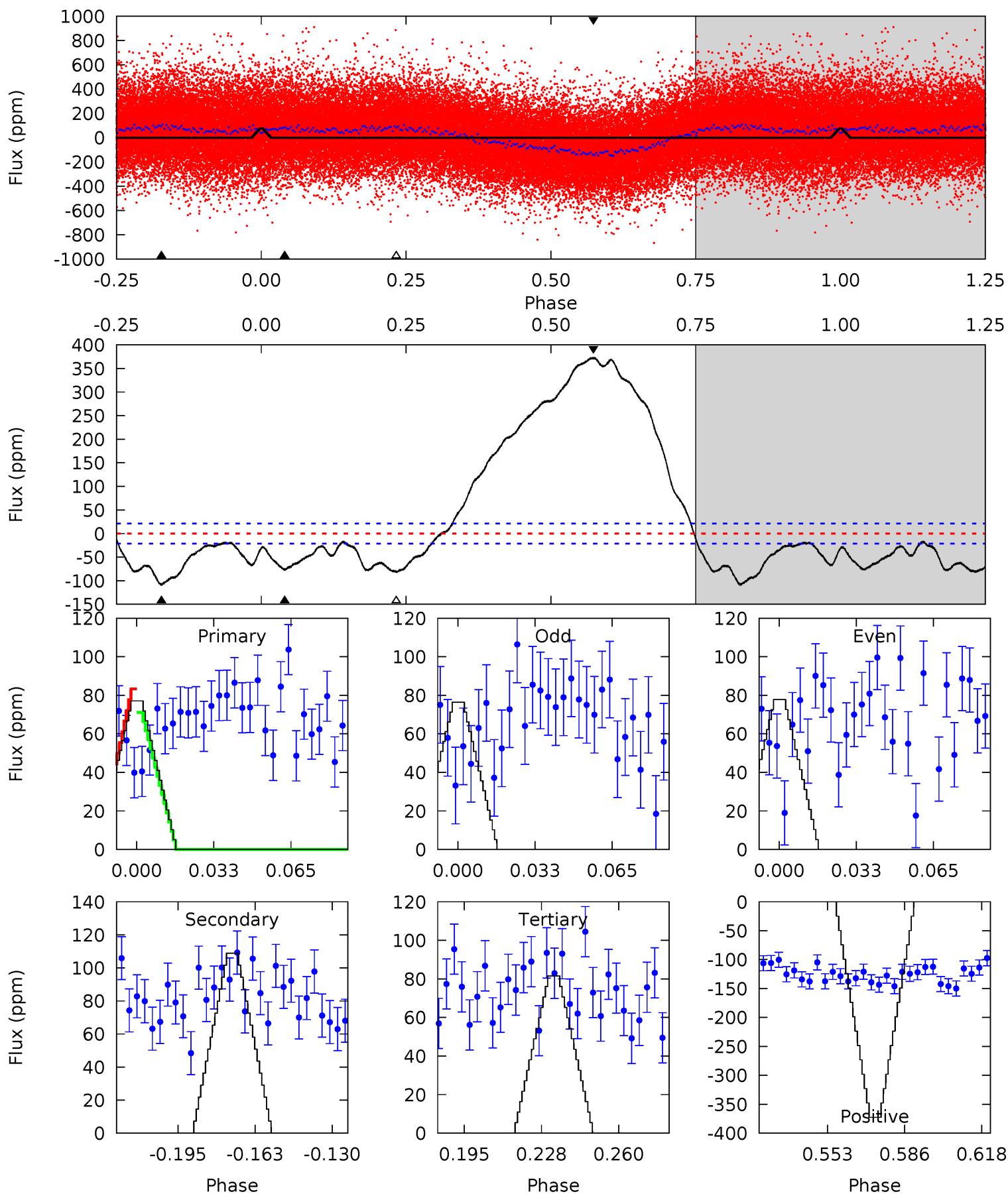
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.52	0.50	0.45	0.66	4.78	2.12	0.23	0.07	-0.14	0.05	-0.16	0.47	1.48	0.56	0.50



Alt Model-Shift Uniqueness Test

004860300-01, P = 1.383378 Days, E = 131.381505 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.3	24.5	18.3	83.7	4.79	2.14	34.9	-1.01	-66.4	6.14	-59.2	0.16	0.98	0.77	1.37



Stellar Parameters For KIC 004860300

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6514^{+181}_{-203}	$3.451^{+0.368}_{-0.092}$	$-0.540^{+0.400}_{-0.300}$	$3.984^{+0.572}_{-1.715}$	$1.636^{+0.191}_{-0.415}$	$0.036^{+0.114}_{-0.011}$
	+3%/-3%	+11%/-3%	+74%/-56%	+14%/-43%	+12%/-25%	+314%/-30%
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 004860300-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2 ± 4	$13.37^{+14.49}_{-10.09}$	4626^{+308}_{-462}	-4043^{+412}_{-239}	$0.002^{+0.052}_{-0.007}$
Alt.	-109 ± 4	$13.45^{+15.97}_{-9.40}$	4653^{+294}_{-484}	-2676^{+9084}_{-1293}	$0.278^{+2.697}_{-0.220}$

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 $A_{obs} \gg 1.0$

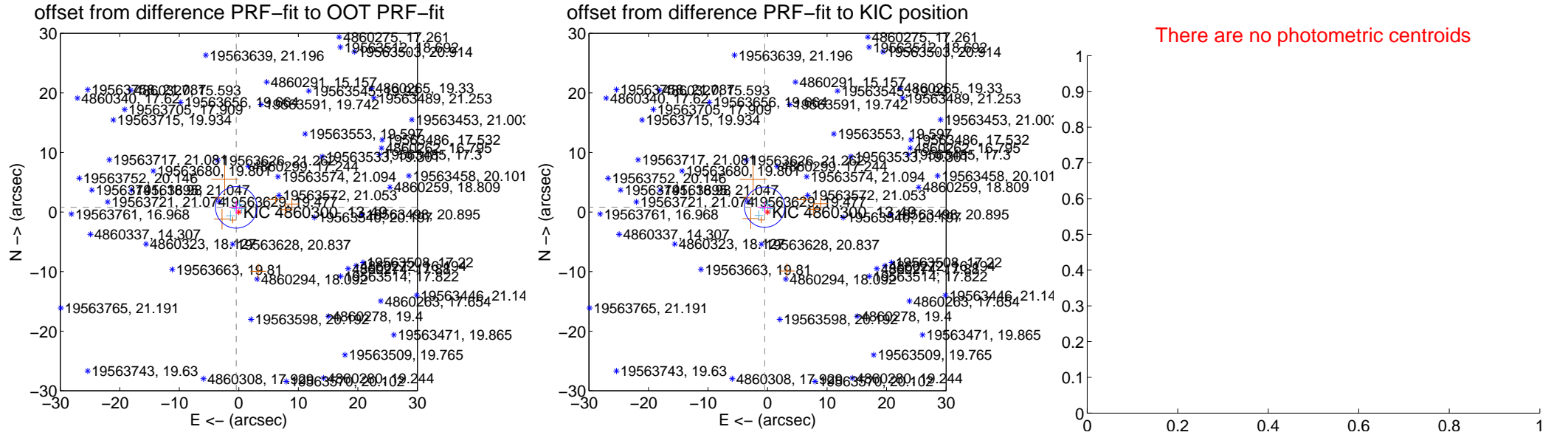
DV Centroid Data

Supplemental centroid analysis for 004860300-01. Kepler magnitude: 13.49. Transit SNR 0.63

There are 4 quarters with good PRF difference image offsets

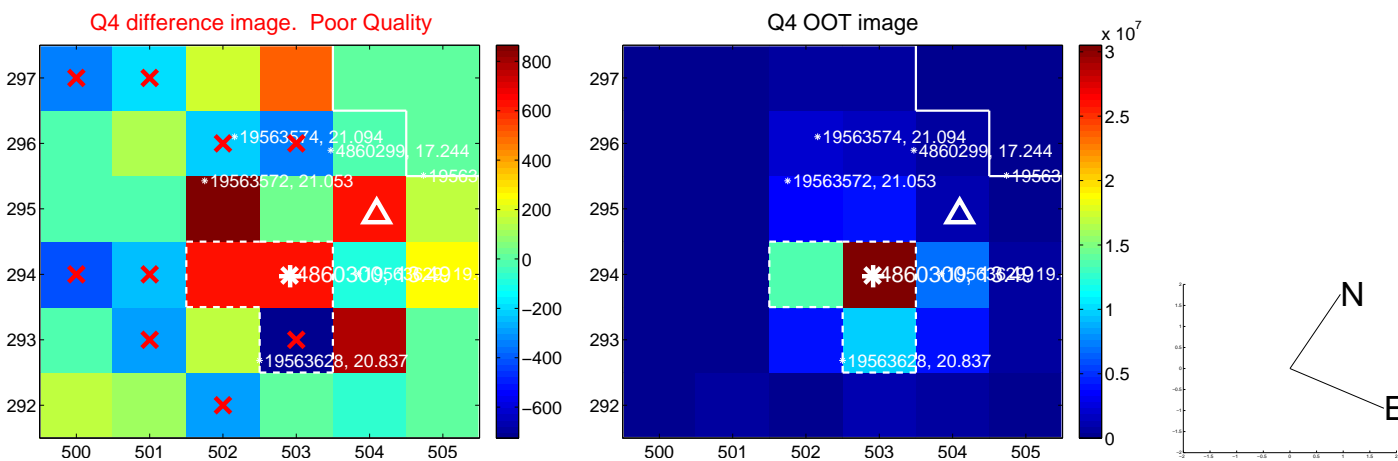
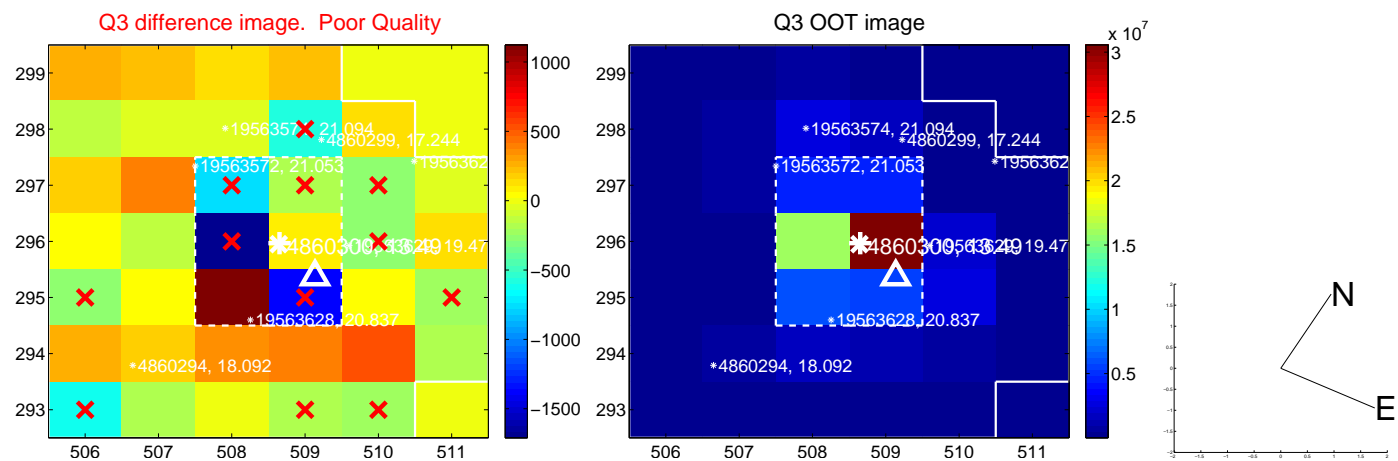
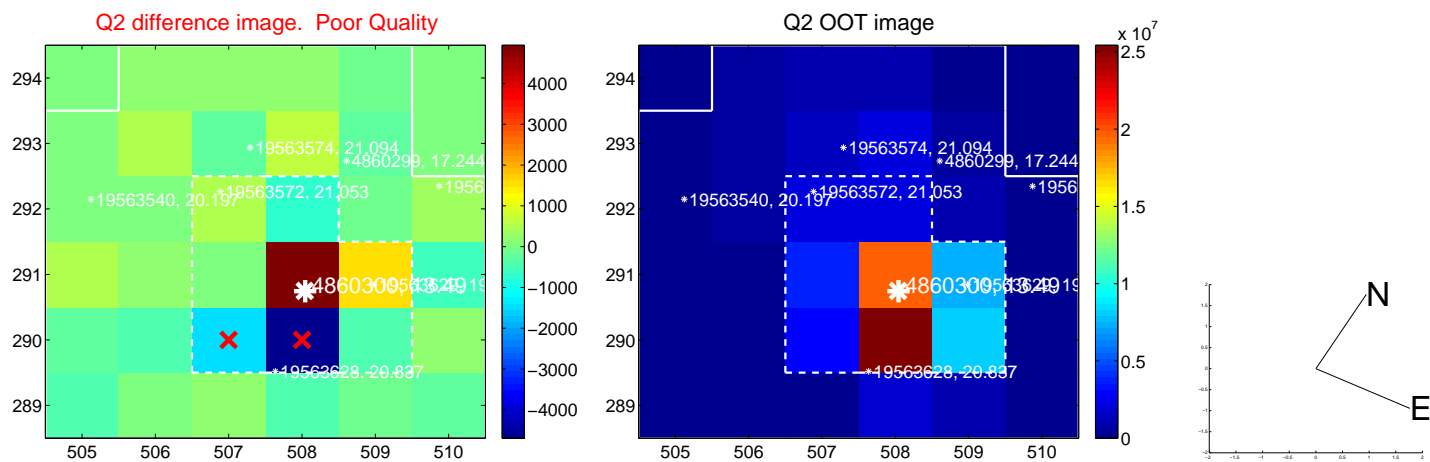
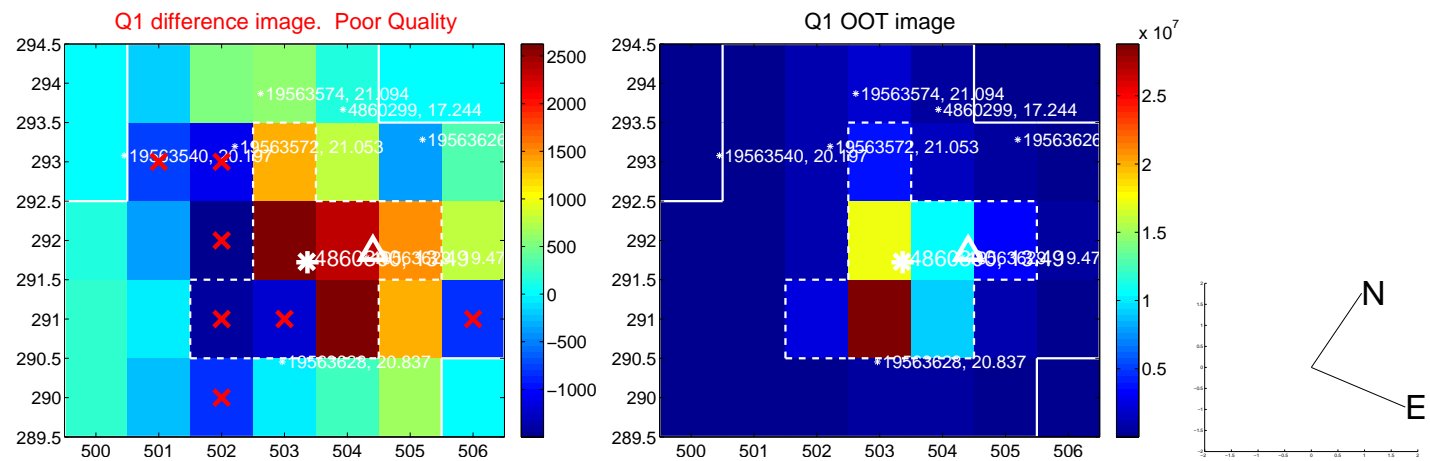
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.895 ± 1.162	0.77	0.432 ± 1.157	0.784 ± 1.103
PRF-fit source offset from KIC position	0.952 ± 1.127	0.84	0.480 ± 1.173	0.822 ± 0.989
photometric centroid source offset	—	—	—	—

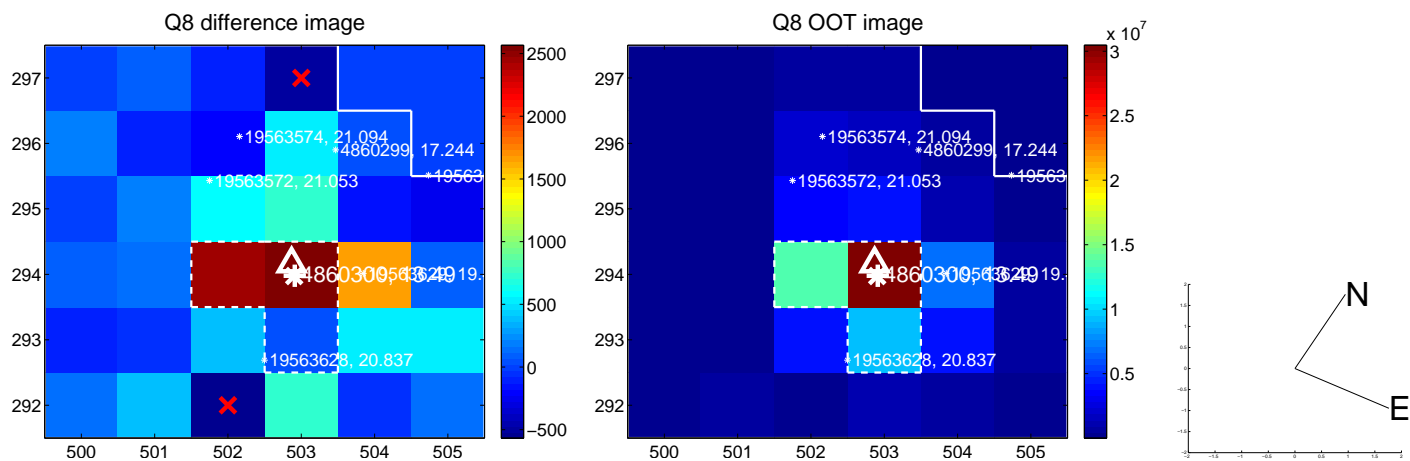
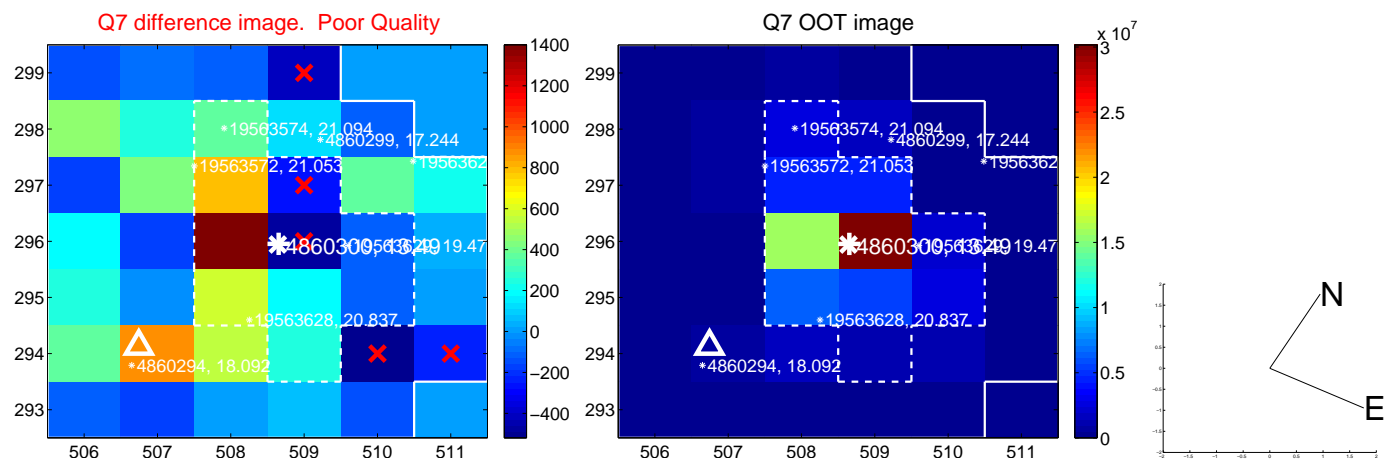
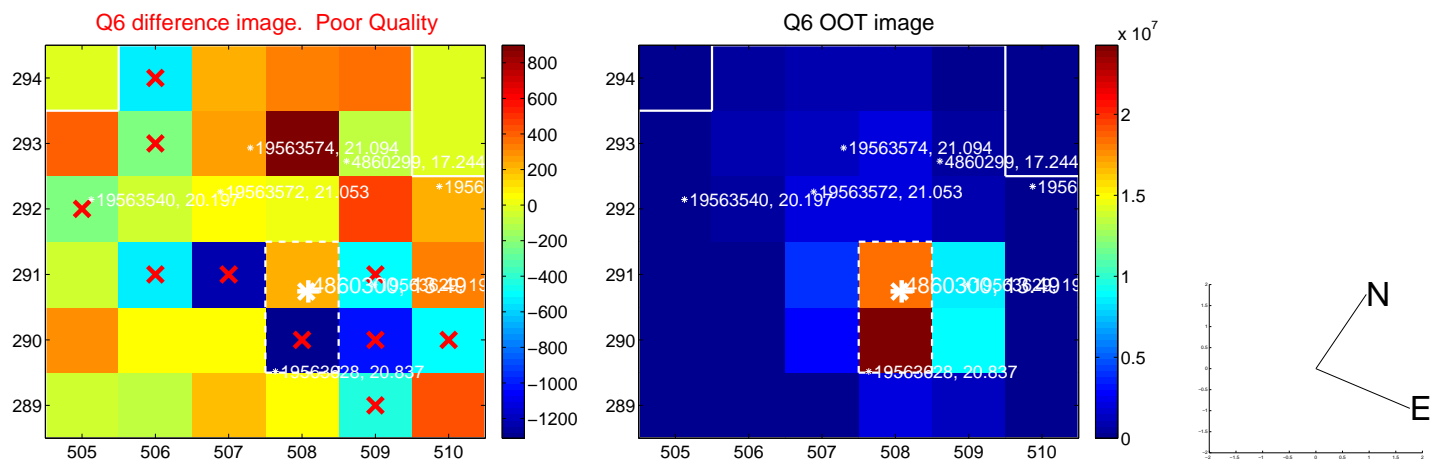
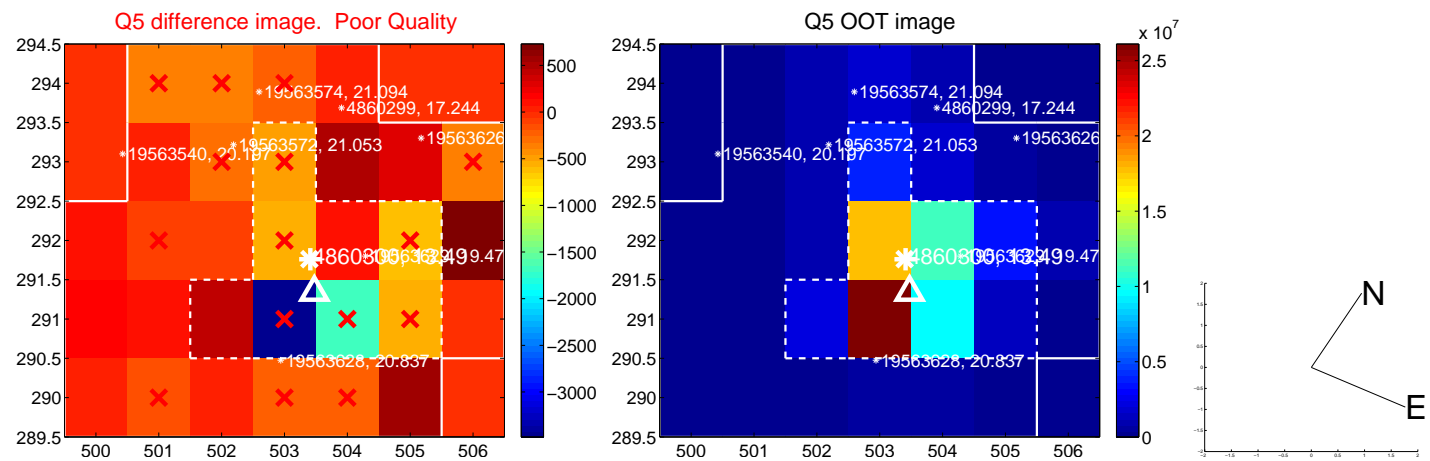


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

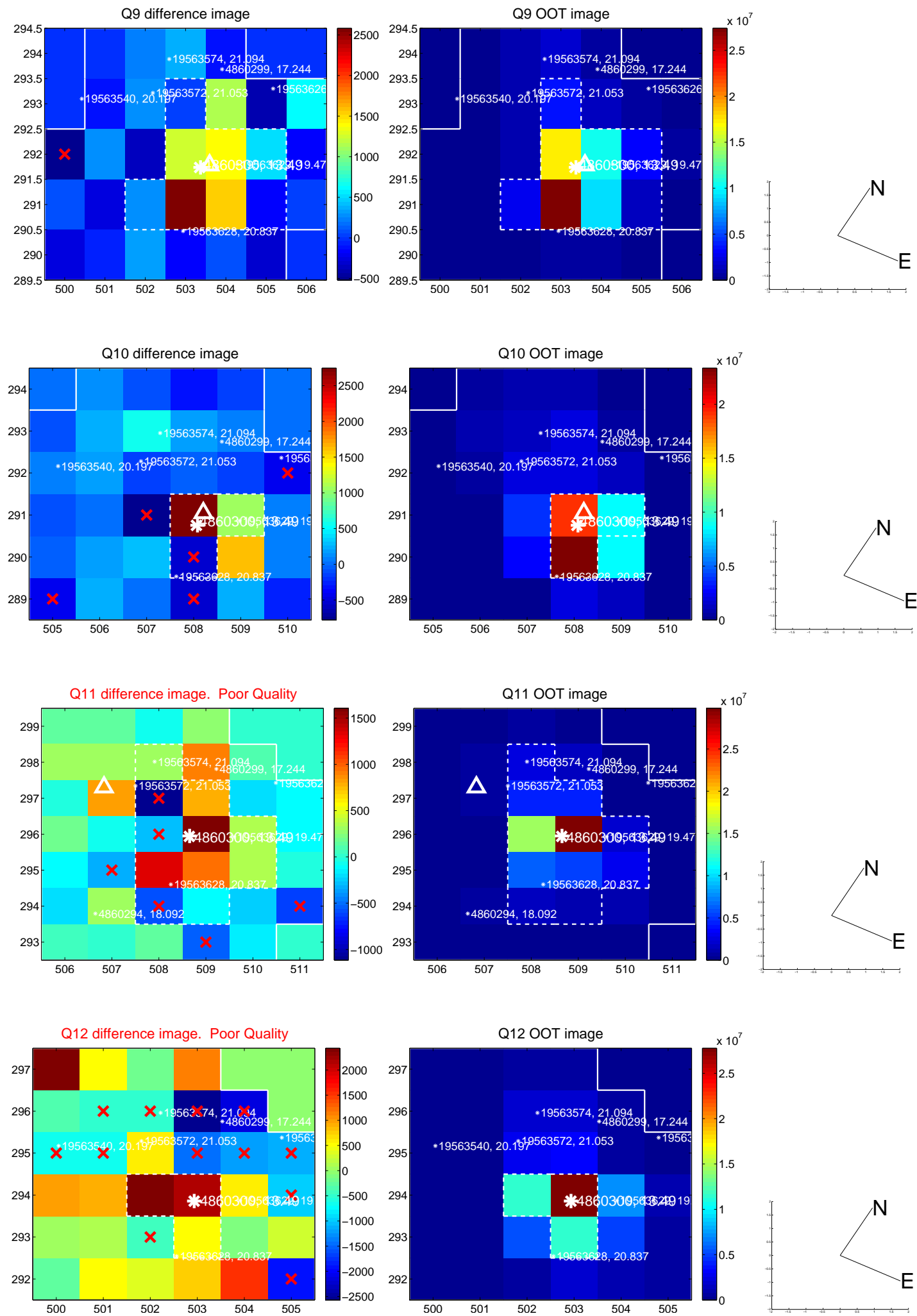
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



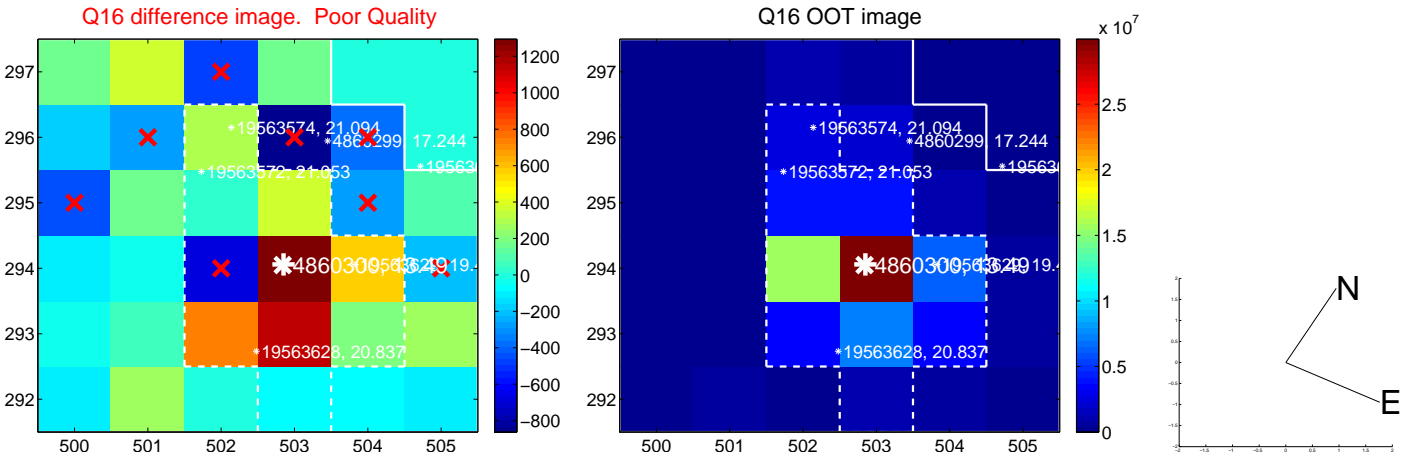
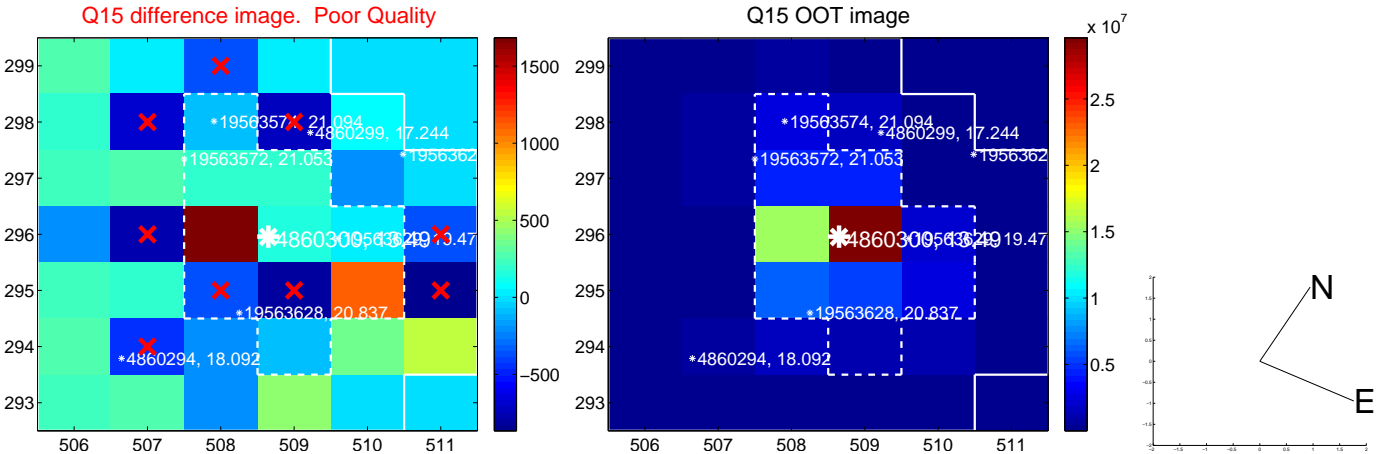
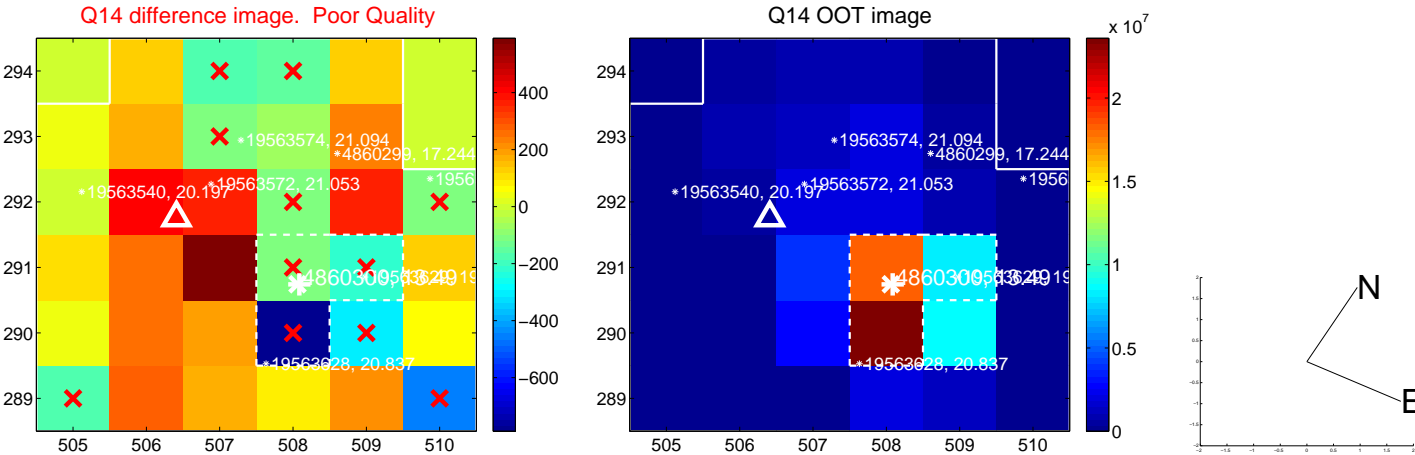
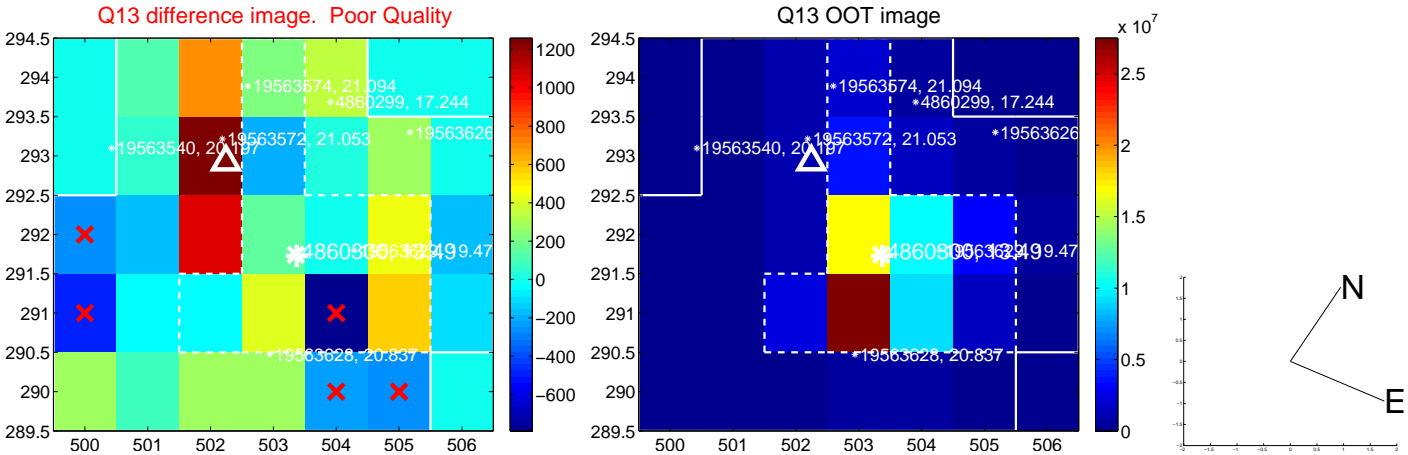
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



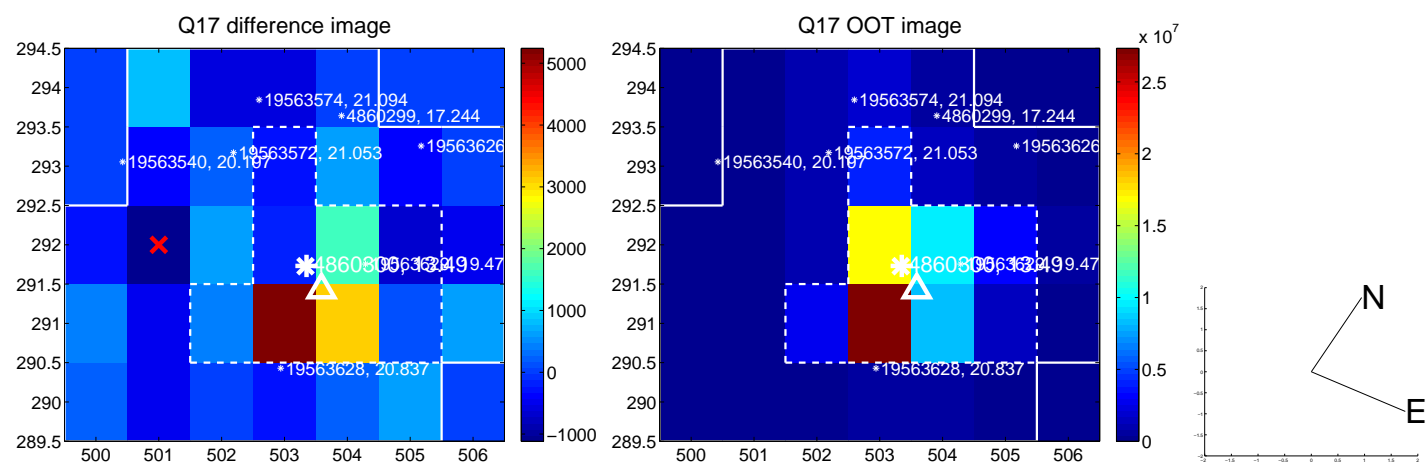
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

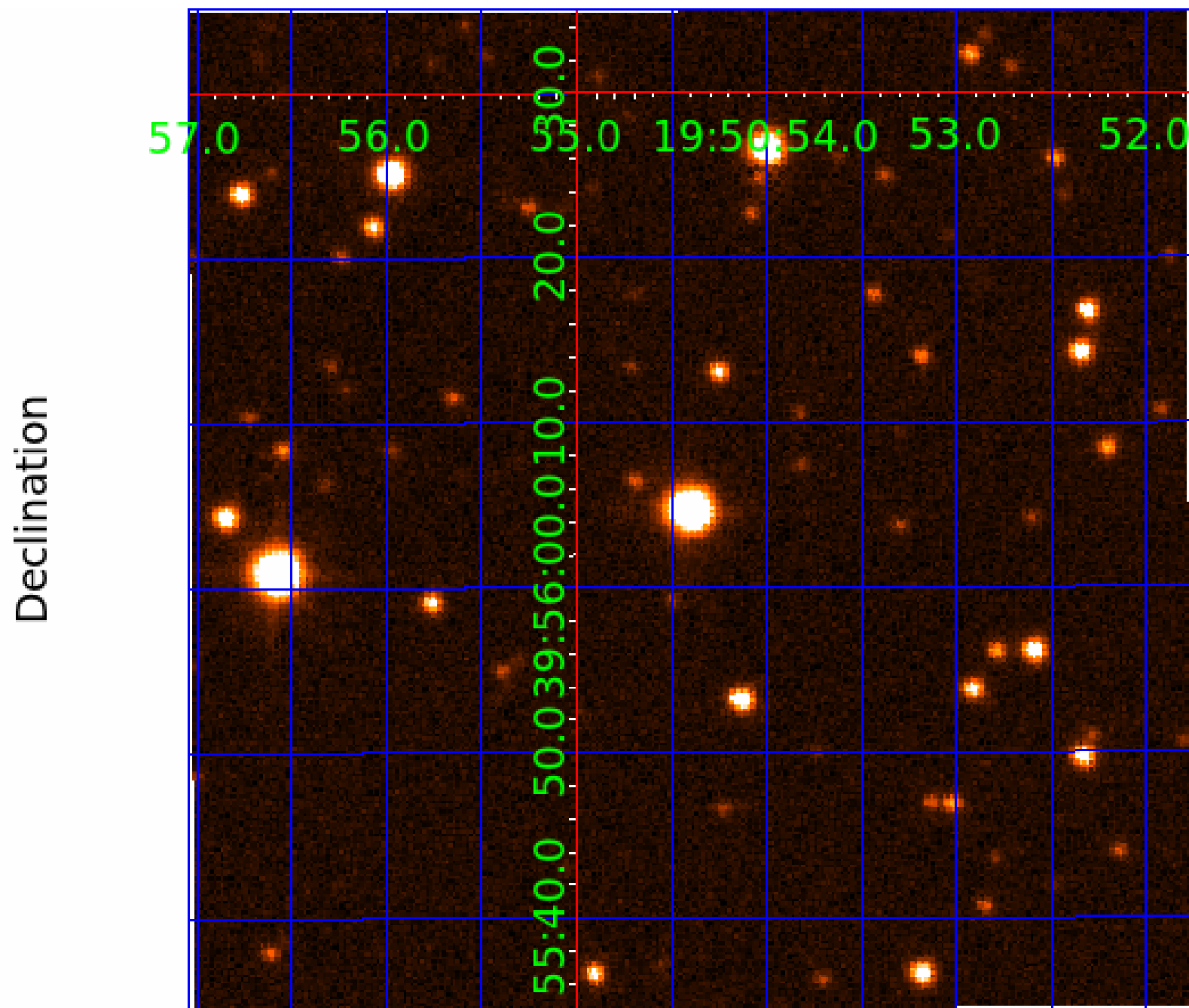


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image



KIC 004860300

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})
004860300-01	OBS	No	1.383272	132.763021	3.9	0.707	8.3	0.6	3.98	6514	0.81	31233.55
004860300-02	OBS	No	1.382595	132.180406	10.0	4.686	8.2	3.7	3.98	6514	1.43	31253.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004860300-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004860300-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

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

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

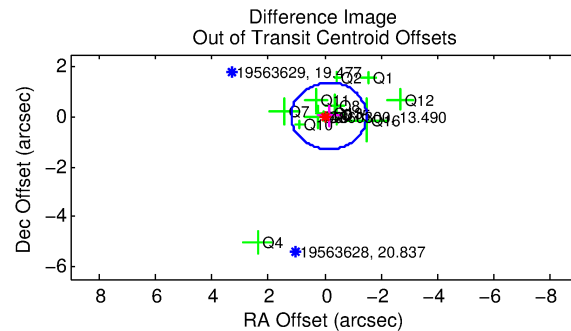
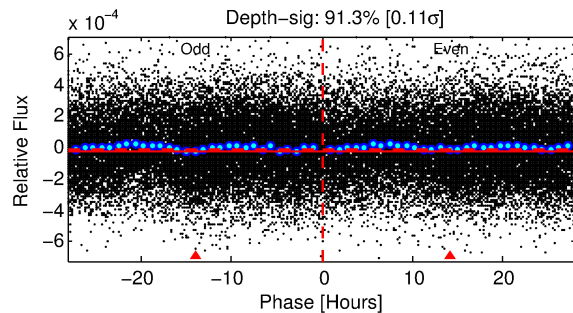
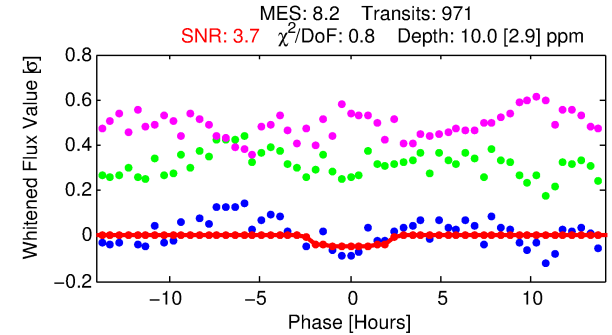
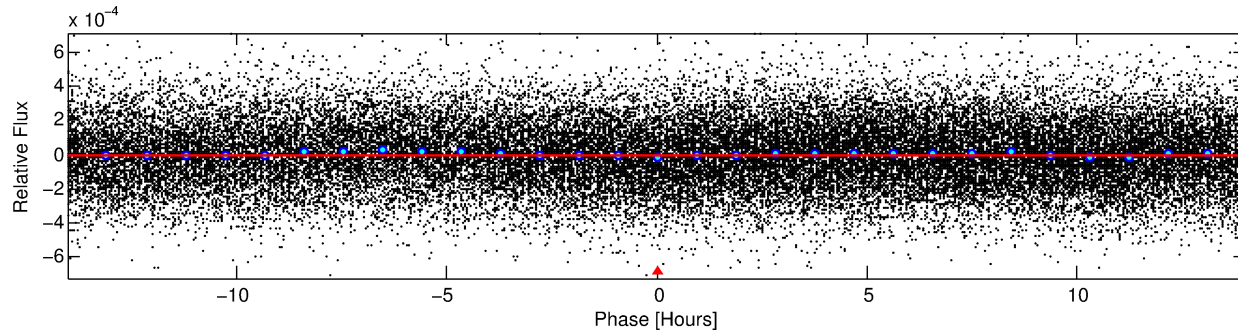
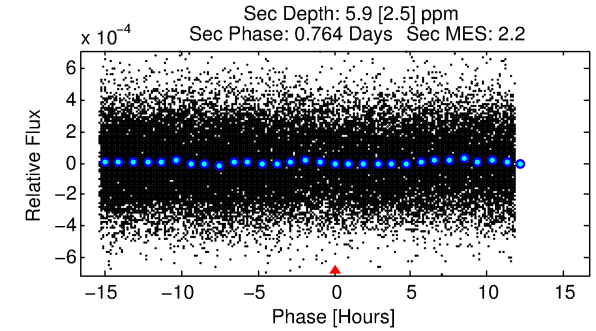
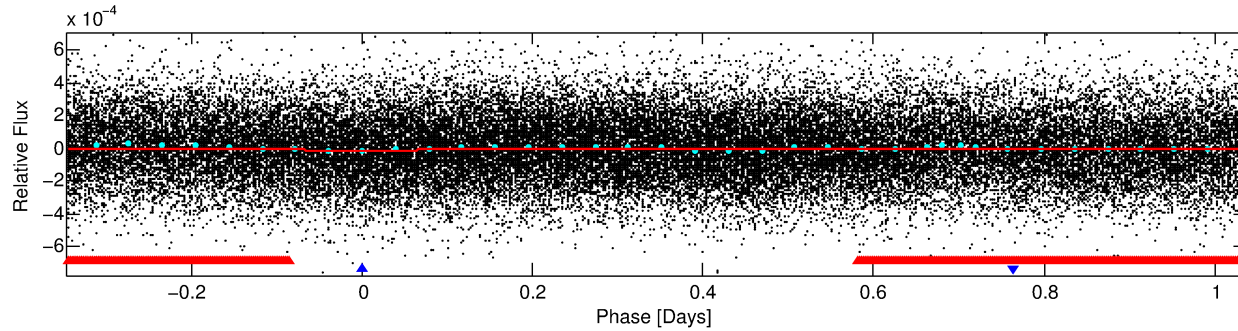
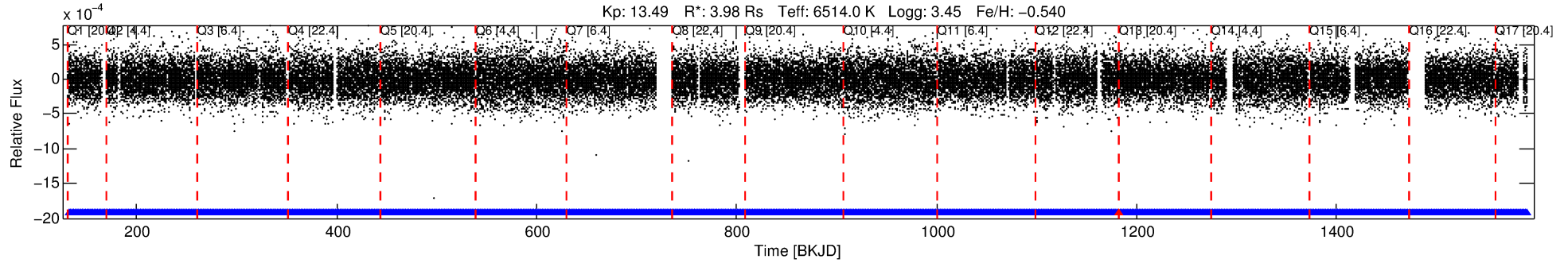
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004860300-02

No Significant Match Found

DV One-Page Summary

KIC: 4860300 Candidate: 2 of 2 Period: 1.383 d



DV Fit Results:

Period = 1.38260 [0.00004] d
Epoch = 132.1804 [0.0130] BKJD
Rp/R* = 0.0033 [0.0020]
a/R* = 1.51 [2.94]
b = 0.85 [1.16]
Seff = 31253.94 [20182.64]
Teq = 3390 [547] K
Rp = 1.42 [1.06] Re
a = 0.0286 [0.0115] AU
Ag = 1.30 [1.87] [0.16σ]
Teffp = 5598 [1812] K [1.17σ]

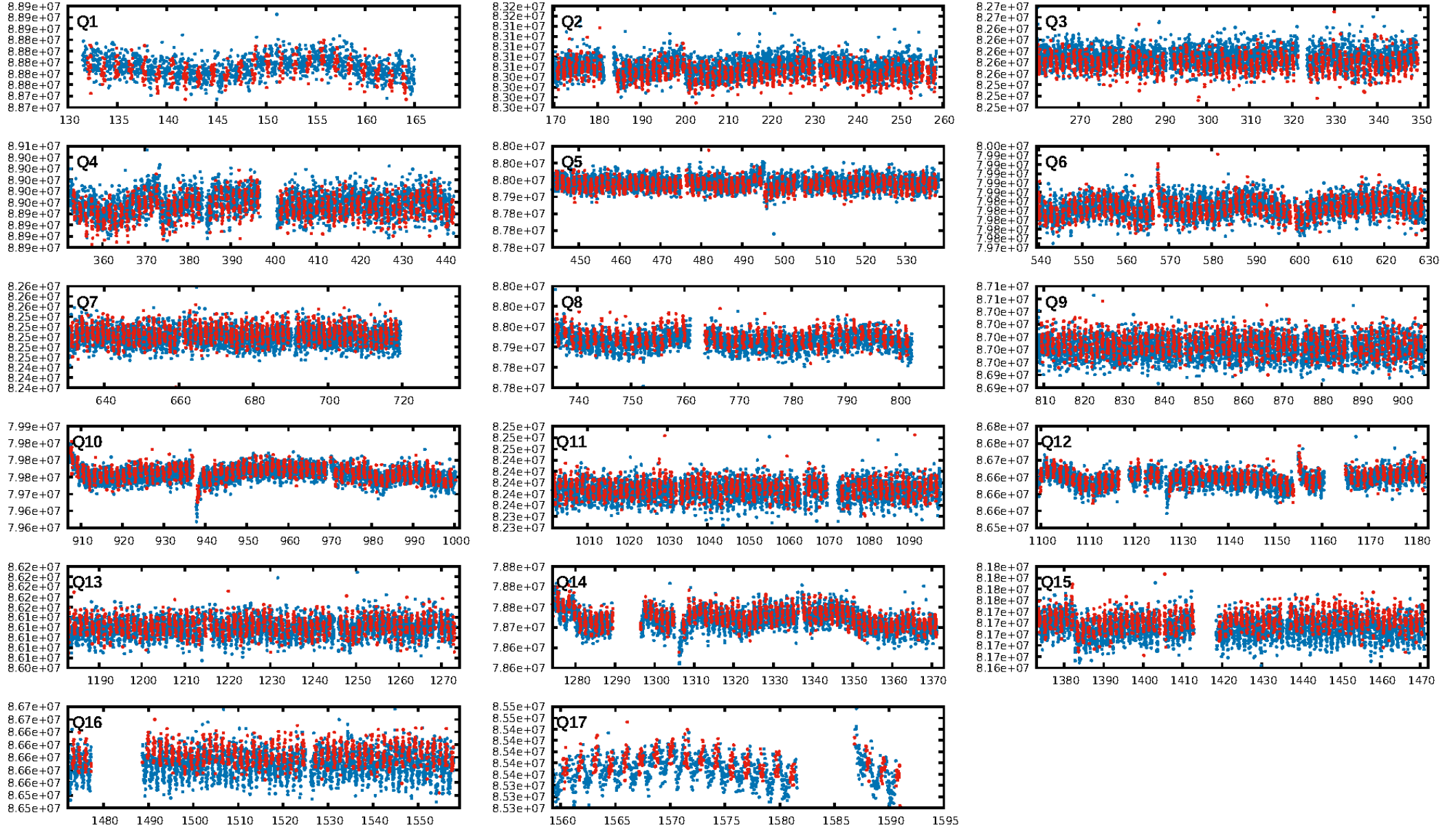
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.3% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.47e-12
RollingBand-fgt: 1.00 [927/928]
GhostDiagnostic-chr: -2.2
Centroid-sig: 43.4%
Centroid-so: 1.423 arcsec [0.55σ]
OotOffset-rm: 0.149 arcsec [0.34σ]
KicOffset-rm: 0.164 arcsec [0.34σ]
OotOffset-st: 2/4/4/3 [13]
KicOffset-st: 2/4/4/3 [13]
DiffImageQuality-fgm: 0.31 [4/13]
DiffImageOverlap-fno: 0.53 [9/17]

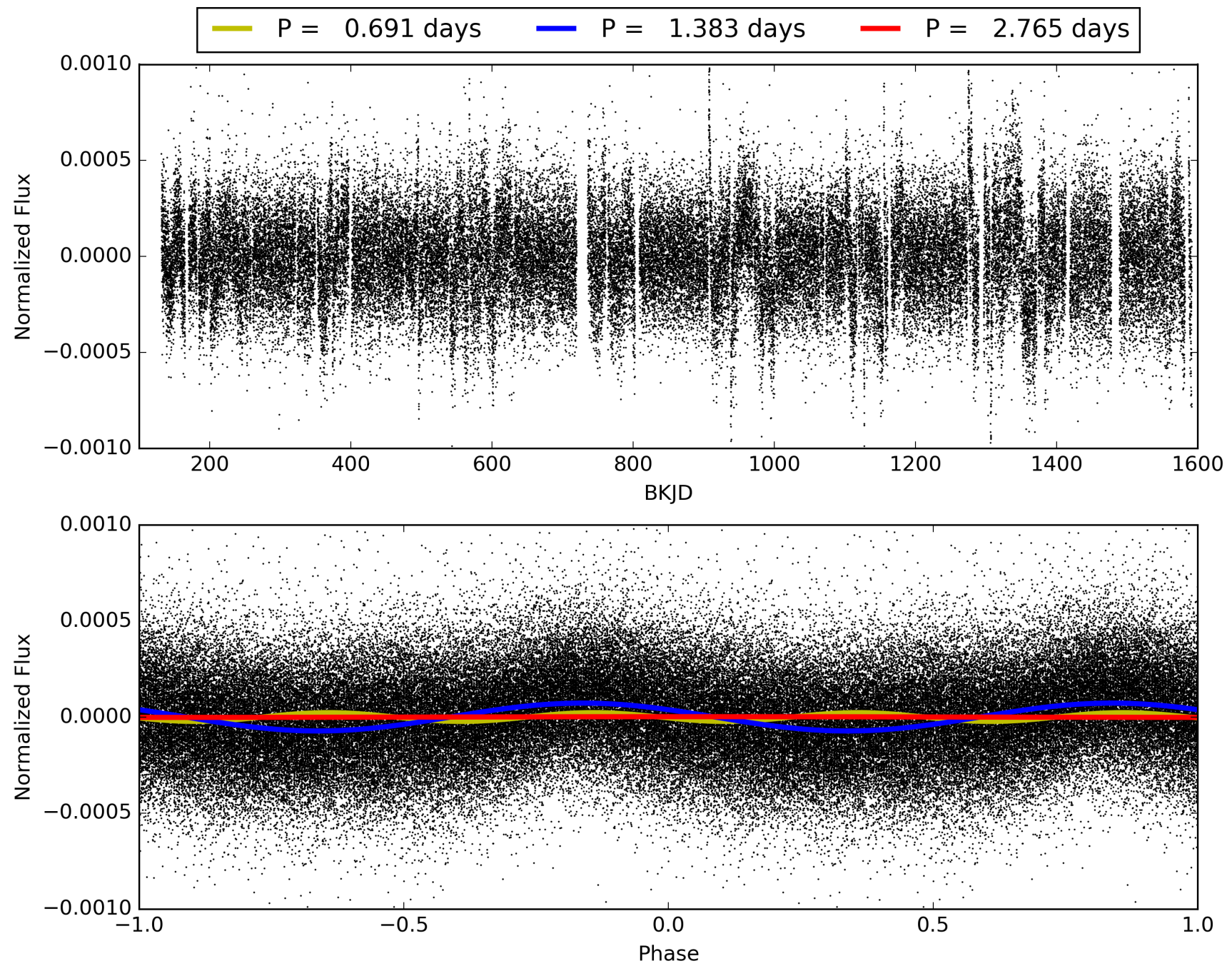
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:10:32 Z

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

TCE 004860300-02, PDC Light Curves

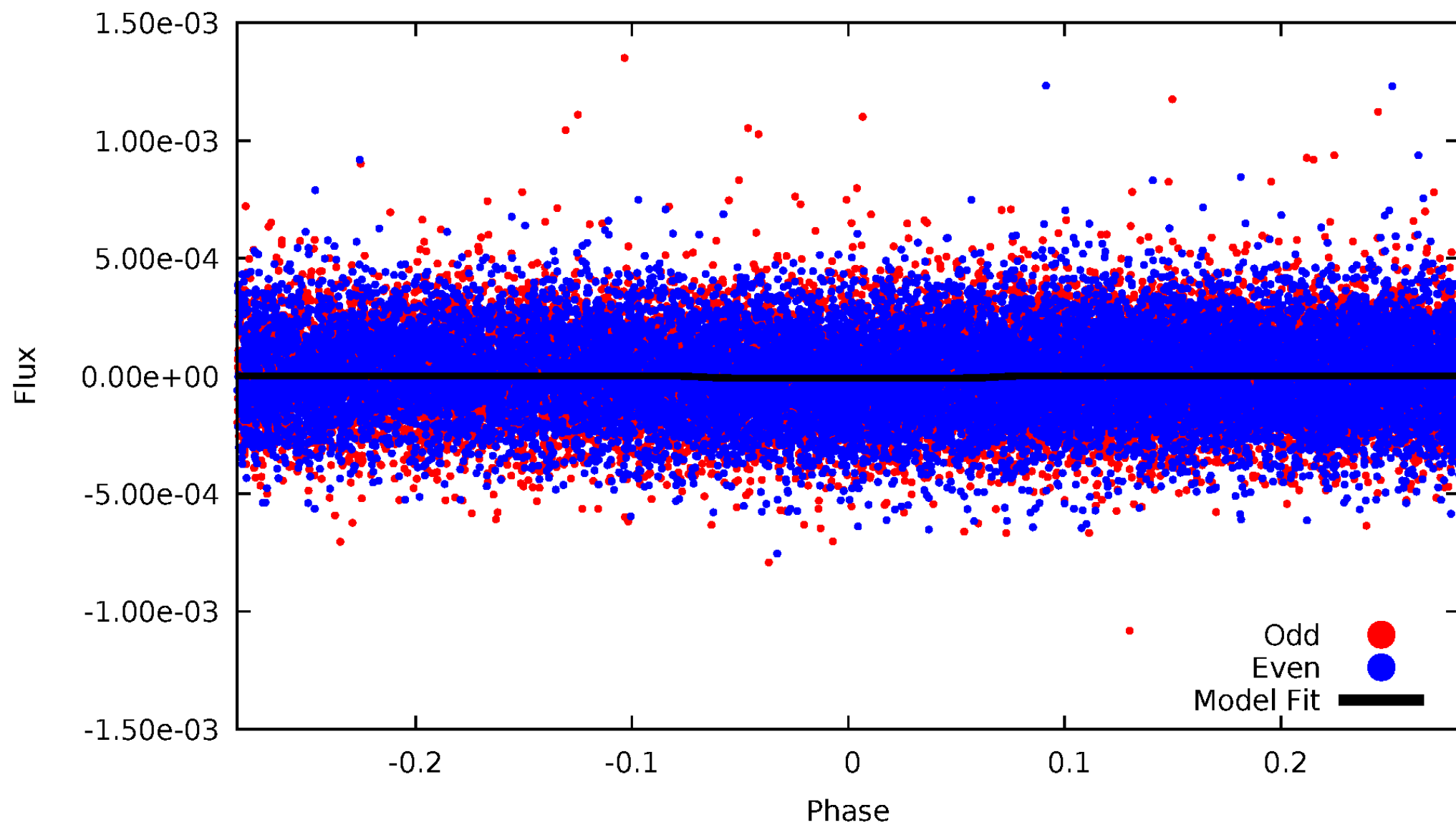


TCE 004860300-02



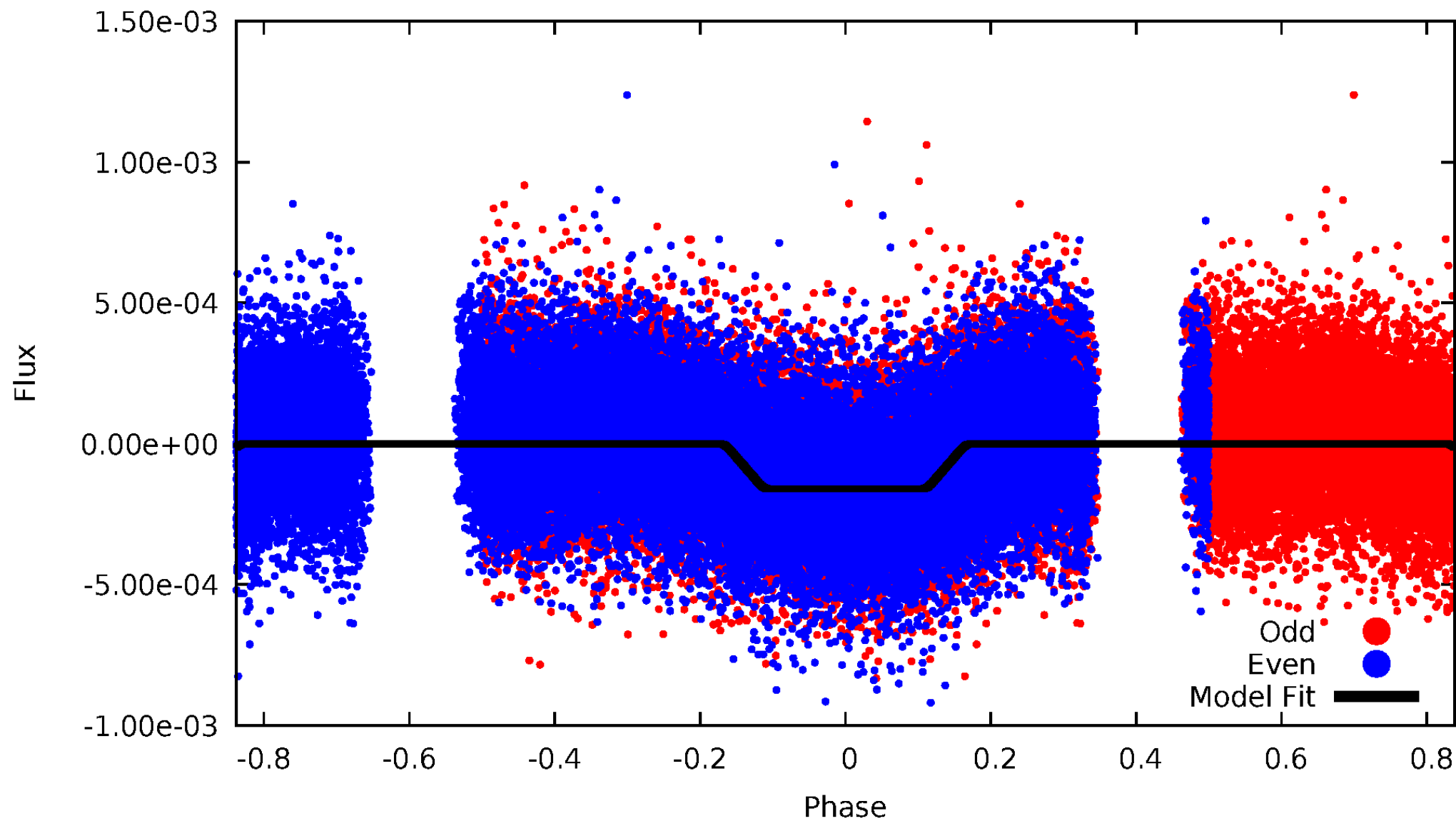
DV Odd/Even

TCE 004860300-02



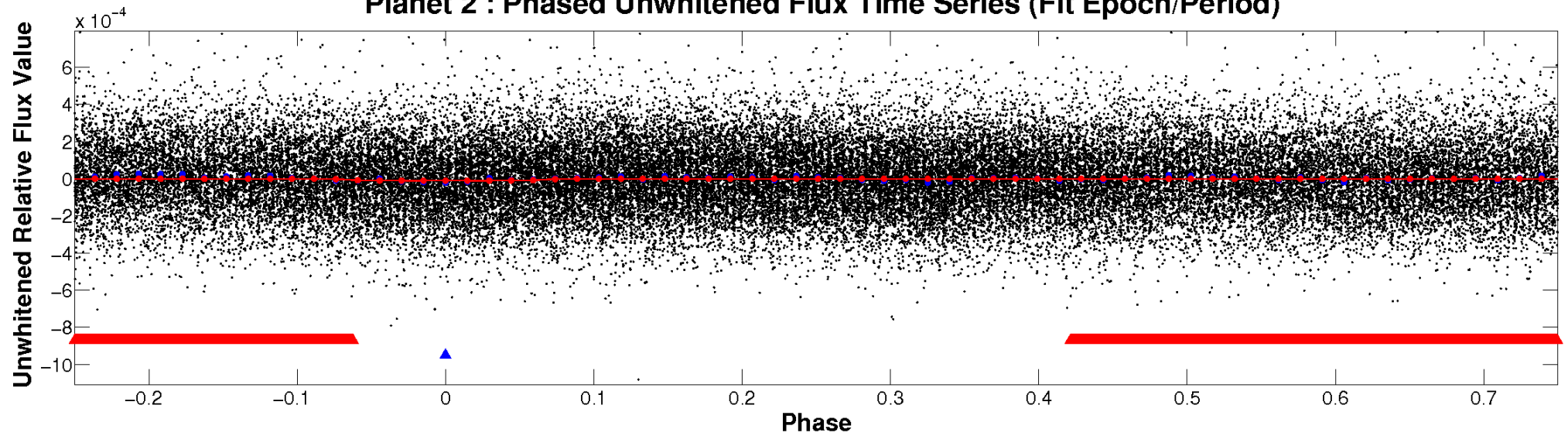
ALT Odd/Even

TCE 004860300-02

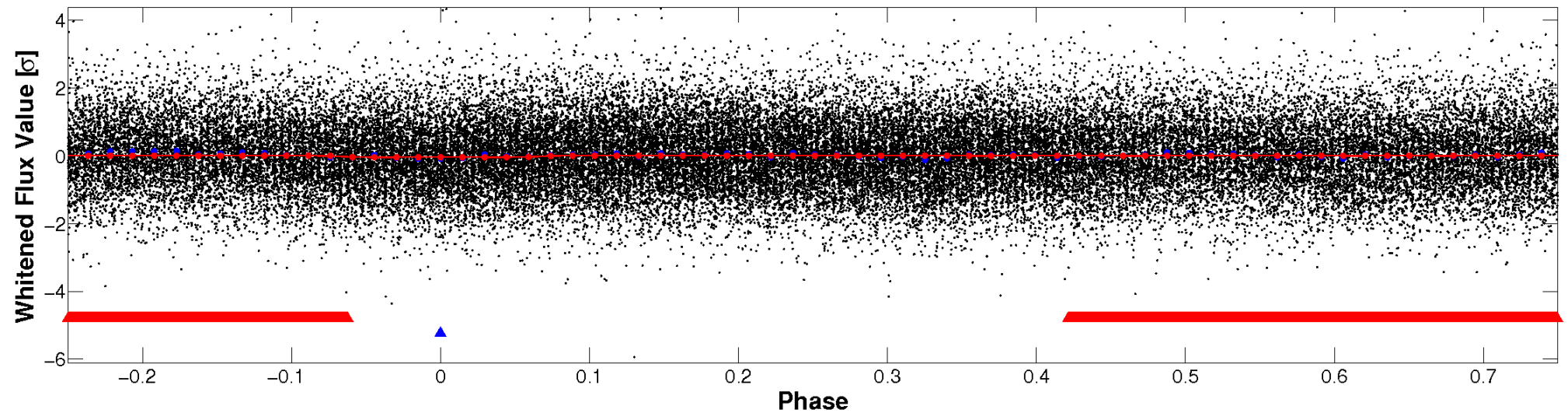


Non-Whitened Vs. Whitened Light Curve

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

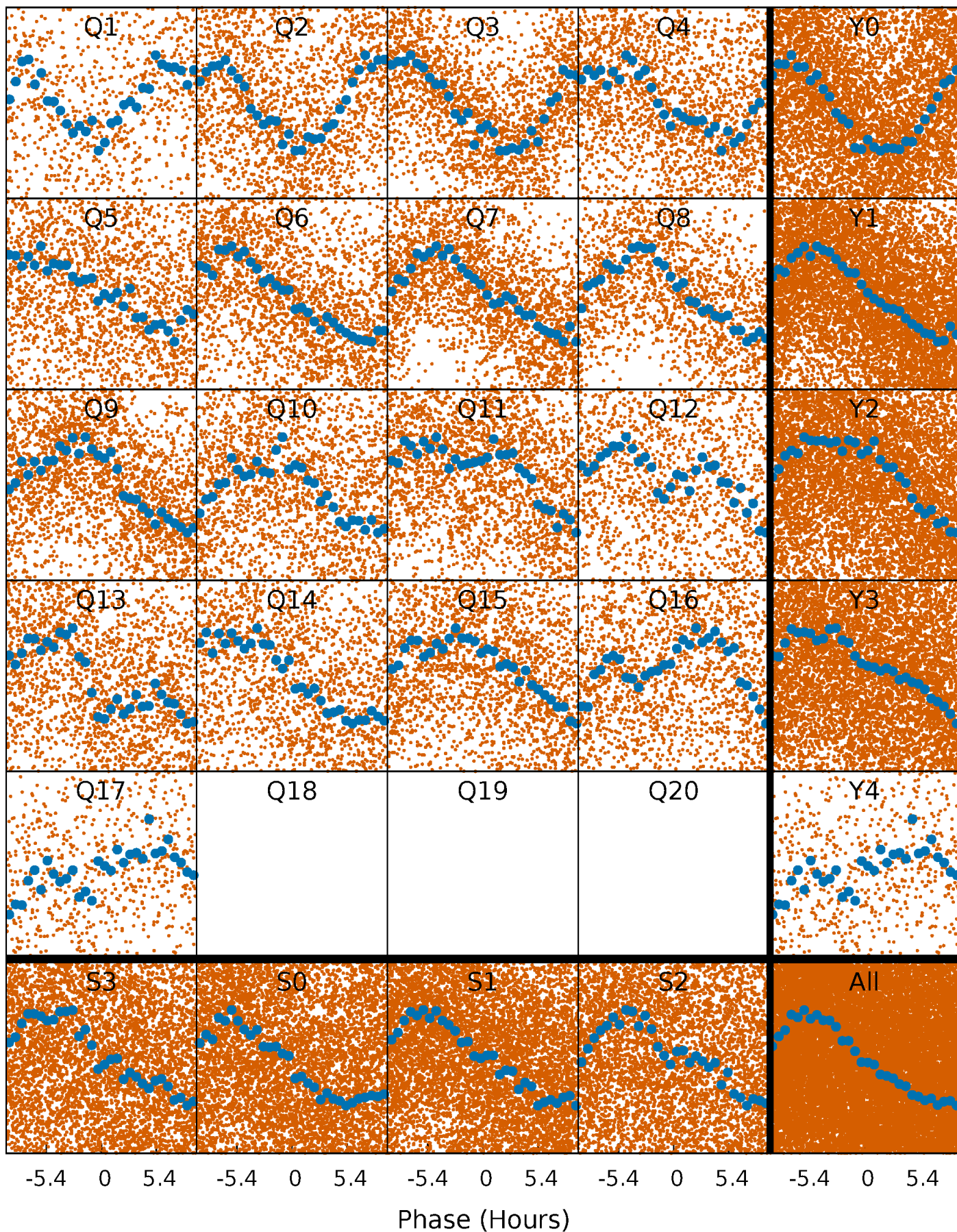


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



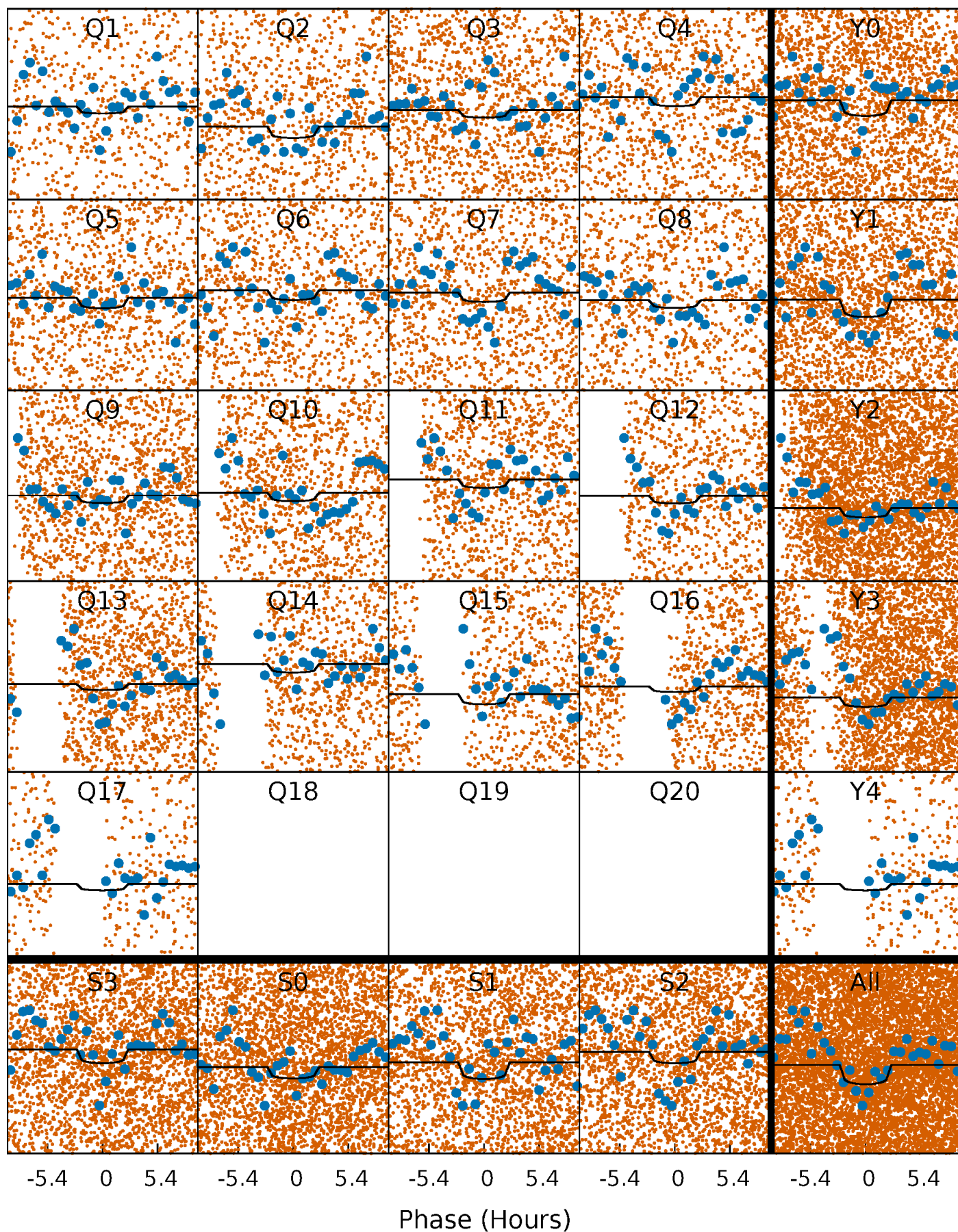
PDC Quarter-Phased Transit Curves

TCE 004860300-02 $P = 1.382595$ Days $T_0 = 132.180406$ (BKJD)



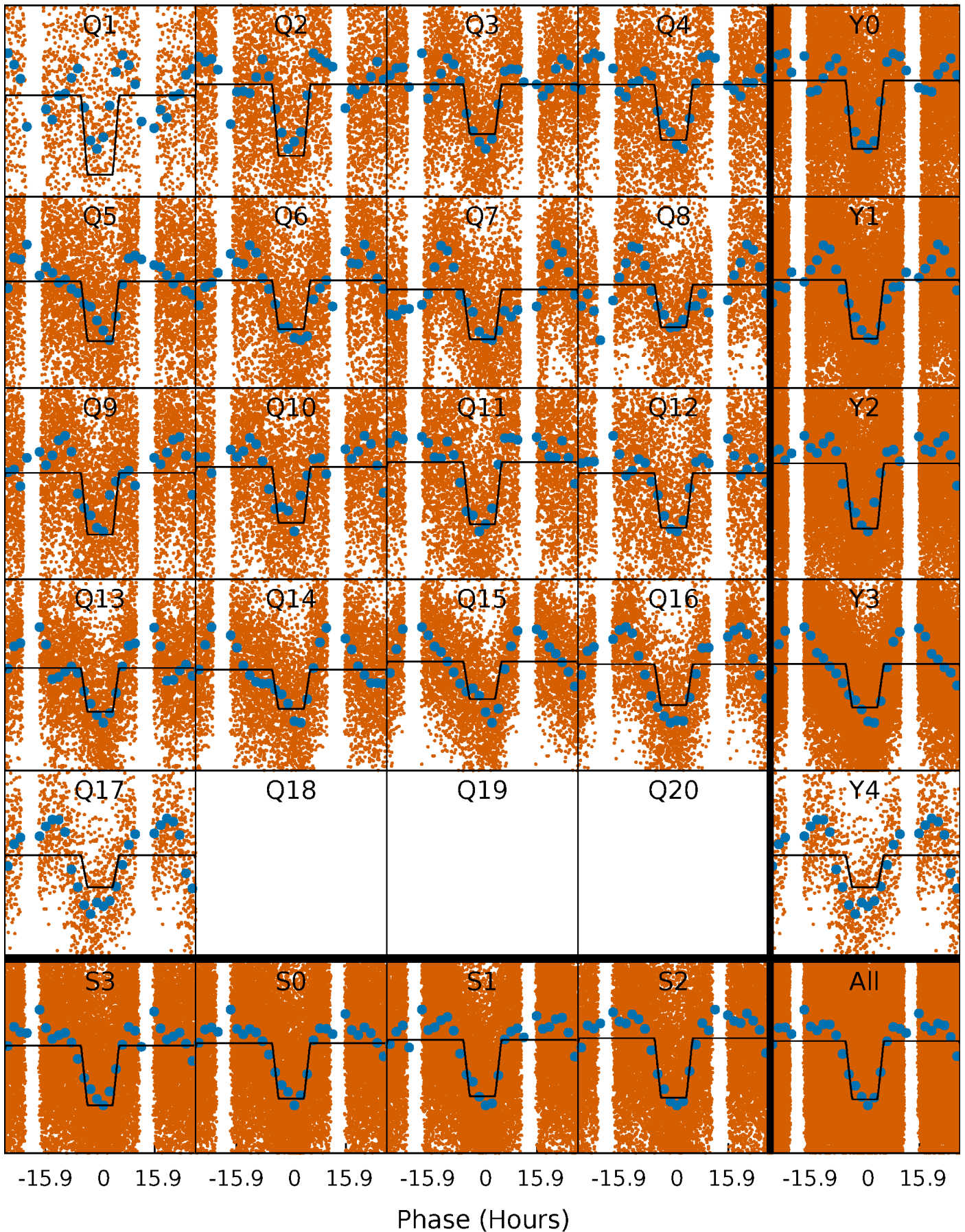
DV Quarter-Phased Transit Curves

TCE 004860300-02 $P = 1.382595$ Days $T_0 = 132.180406$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

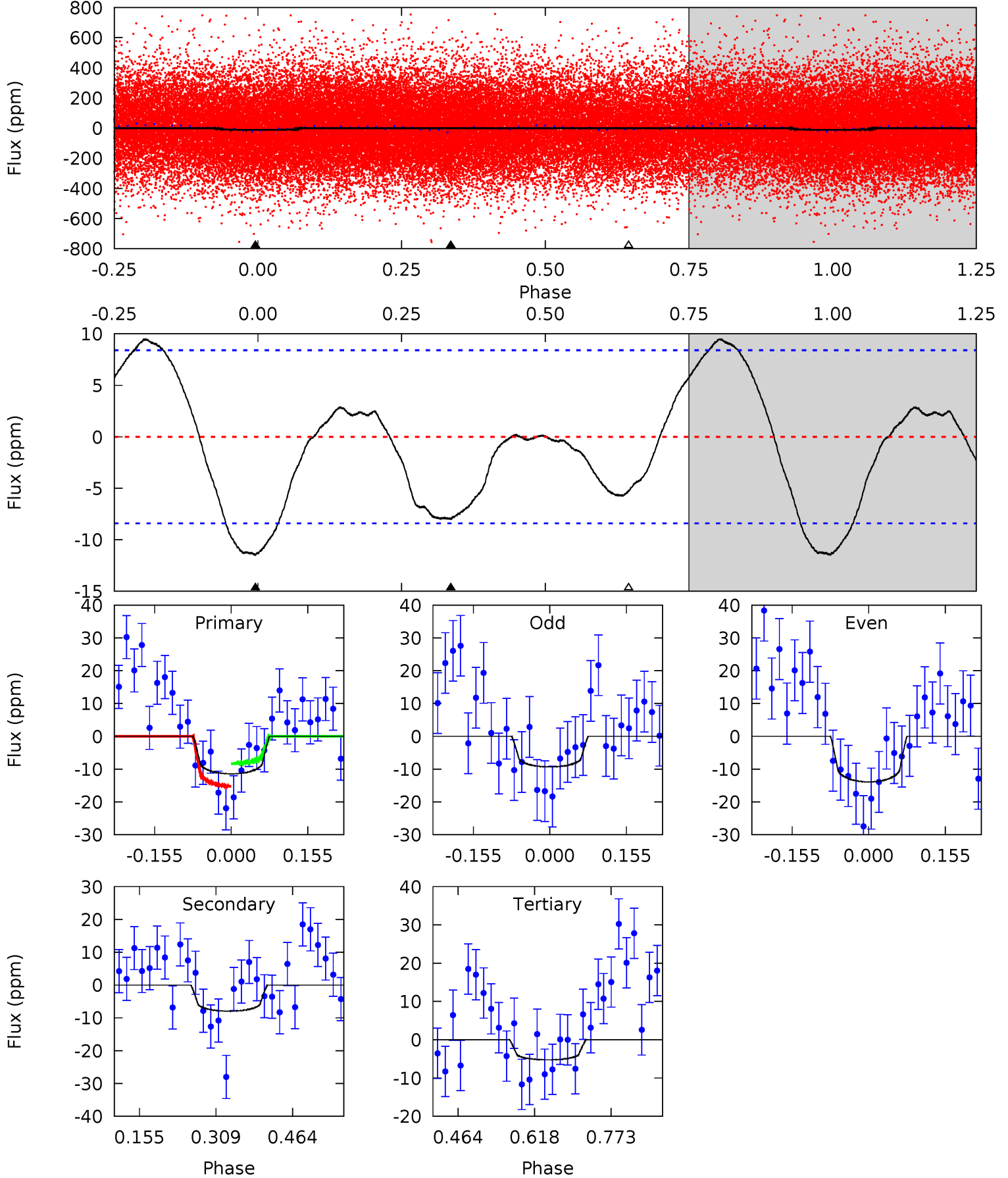
TCE 004860300-02 P= 1.383322 Days $T_0=132.176725$ (BKJD)



DV Model-Shift Uniqueness Test

004860300-02, P = 1.382595 Days, E = 130.797811 Days

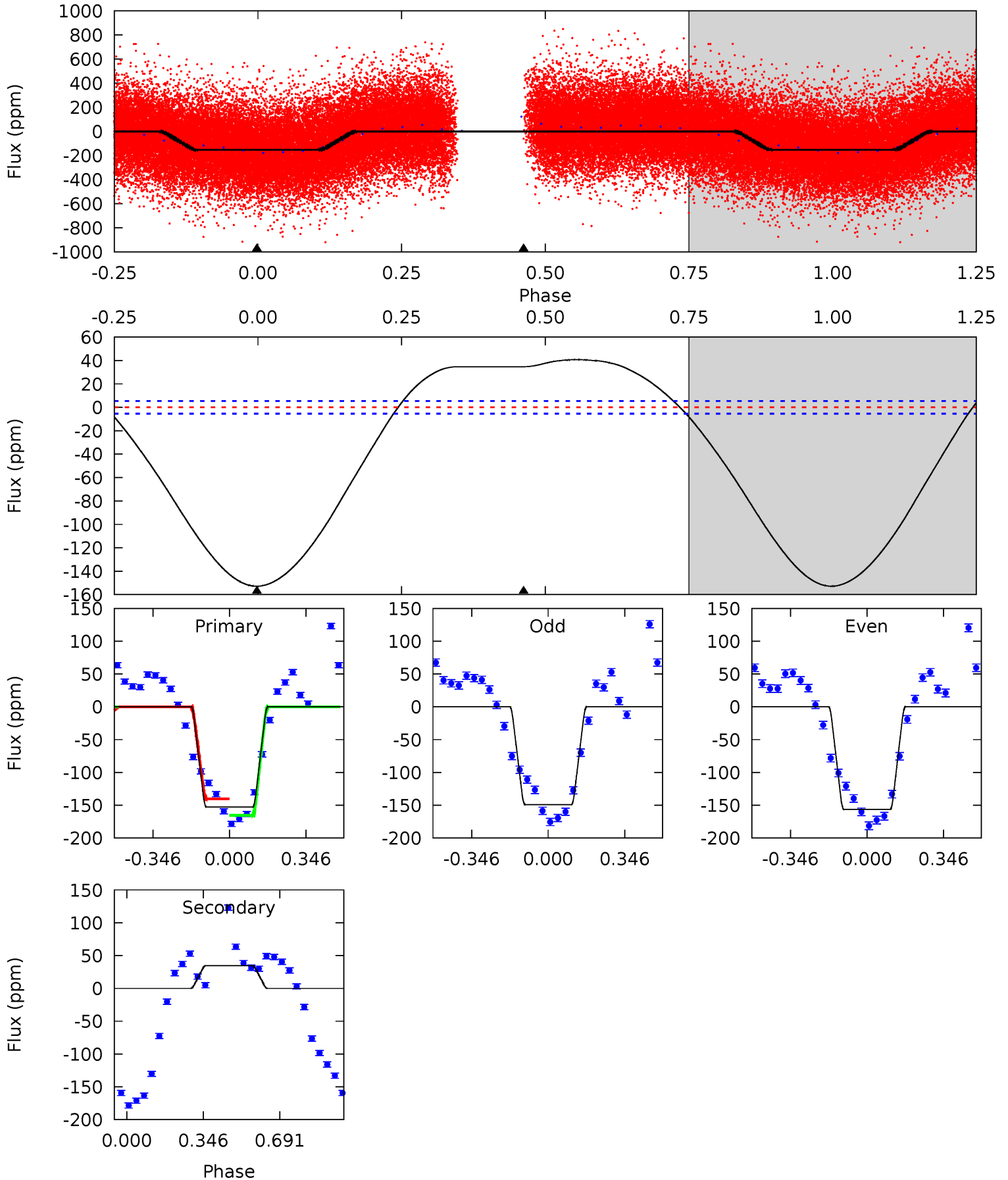
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.09	4.24	2.80	0	4.47	1.42	2.57	3.30	6.09	1.44	4.24	1.22	1.13	0.45	1.81



Alt Model-Shift Uniqueness Test

004860300-02, P = 1.383322 Days, E = 130.793403 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
120.7	-27.4	0	0	4.30	0.94	8.85	120.7	120.7	-27.4	-27.4	2.83	1.01	0.21	9.78



Stellar Parameters For KIC 004860300

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6514^{+181}_{-203}	$3.451^{+0.368}_{-0.092}$	$-0.540^{+0.400}_{-0.300}$	$3.984^{+0.572}_{-1.715}$	$1.636^{+0.191}_{-0.415}$	$0.036^{+0.114}_{-0.011}$
	+3%/-3%	+11%/-3%	+74%/-56%	+14%/-43%	+12%/-25%	+314%/-30%
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 004860300-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-8 ± 2	$1.39^{+0.89}_{-0.74}$	4616^{+302}_{-494}	5540^{+2963}_{-1326}	$1.771^{+6.534}_{-1.109}$
Alt.	35 ± 1	$5.11^{+1.21}_{-1.30}$	4635^{+279}_{-493}	-5027^{+276}_{-323}	$-0.603^{+0.198}_{-0.435}$

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 $A_{obs} \gg 1.0$

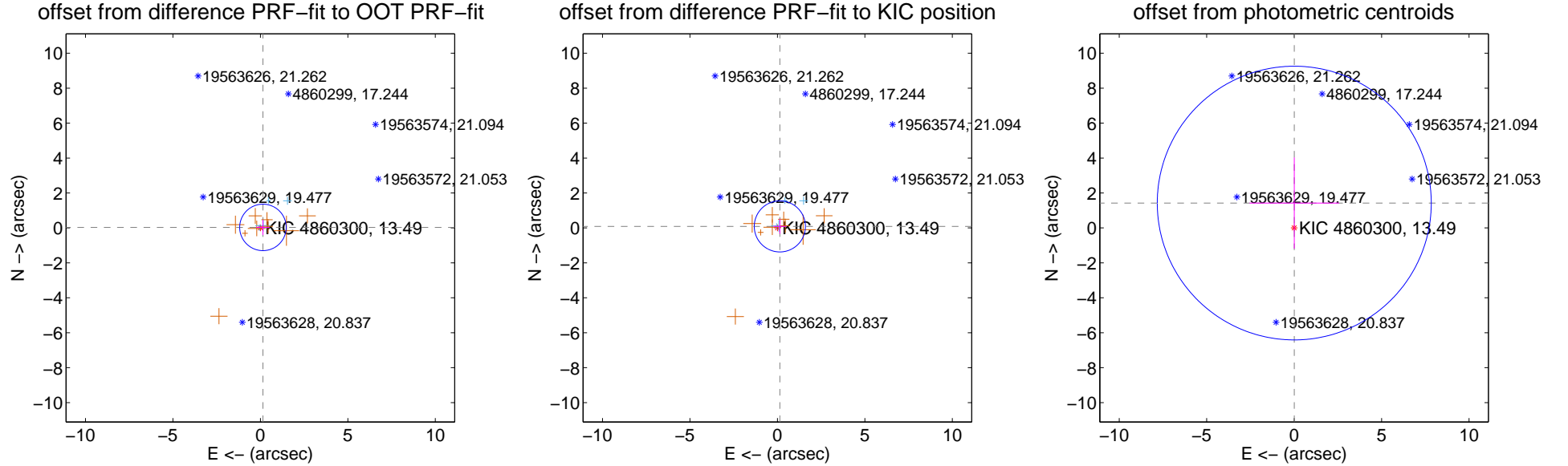
DV Centroid Data

Supplemental centroid analysis for 004860300-02. Kepler magnitude: 13.49. Transit SNR 3.69

There are 4 quarters with good PRF difference image offsets

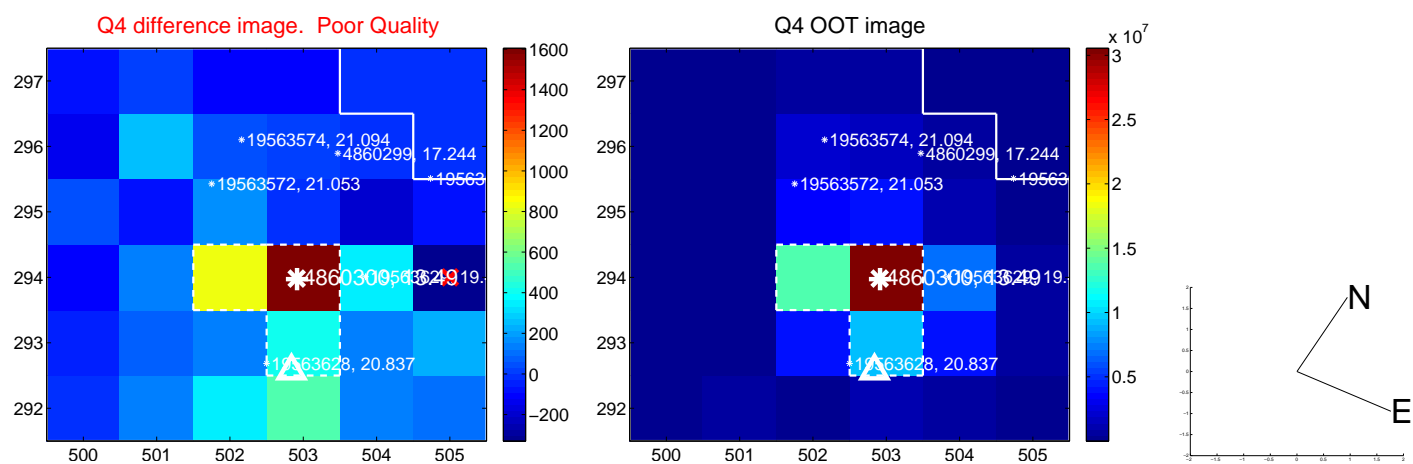
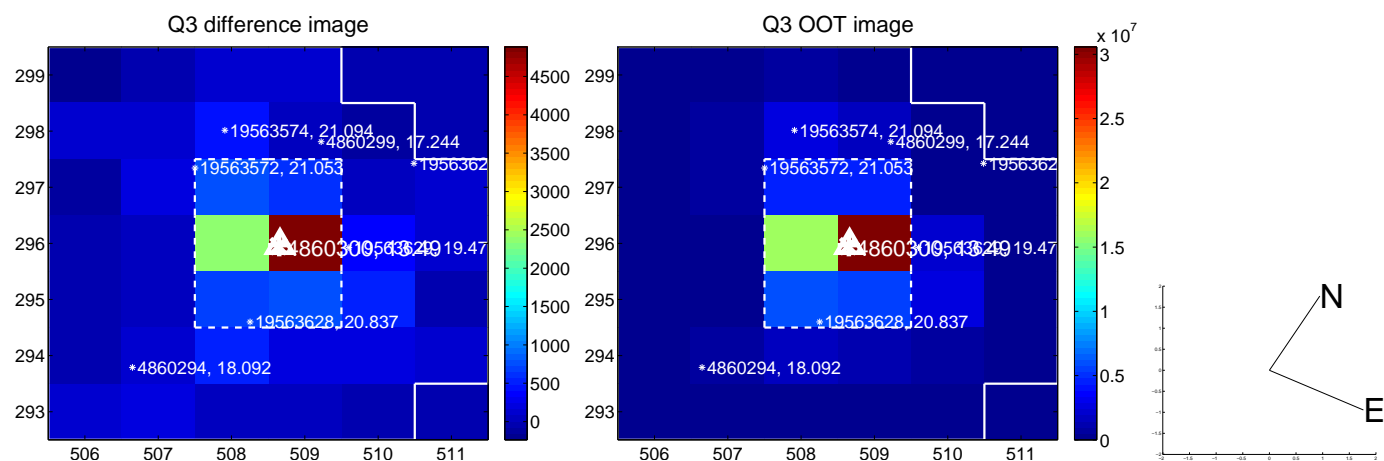
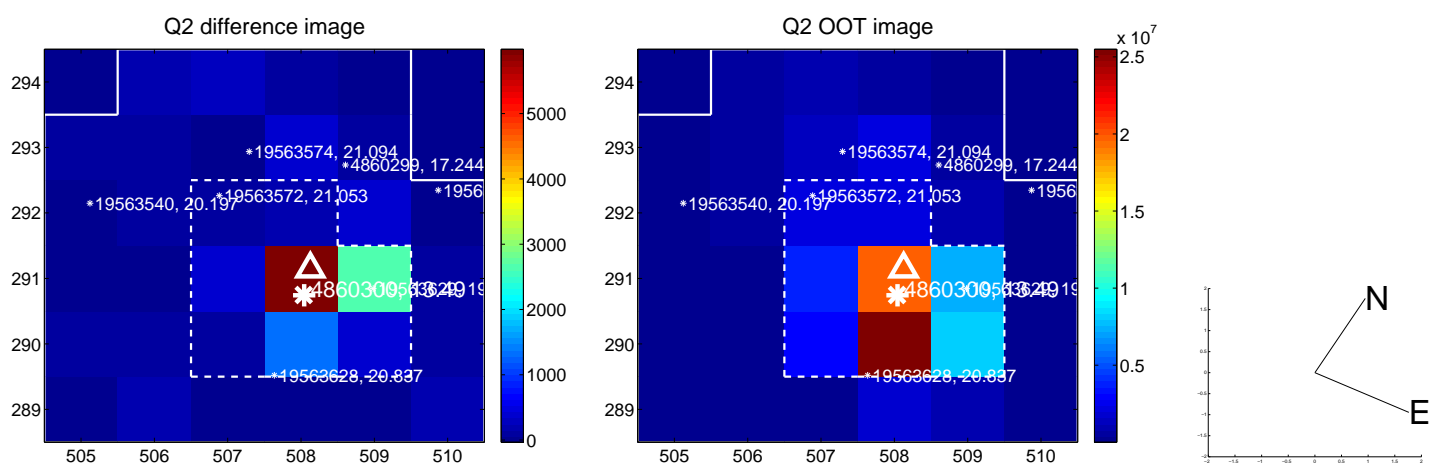
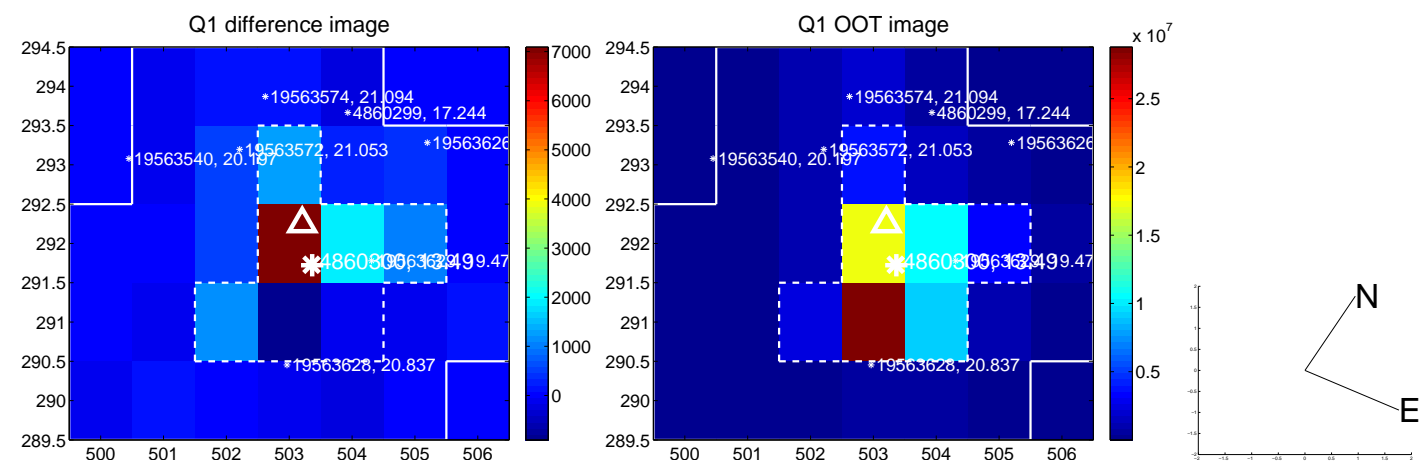
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.149 ± 0.443	0.34	-0.146 ± 0.385	0.030 ± 0.431
PRF-fit source offset from KIC position	0.164 ± 0.487	0.34	-0.139 ± 0.371	0.087 ± 0.427
photometric centroid source offset	1.42 ± 2.61	0.55	-0.01 ± 2.56	1.42 ± 2.61

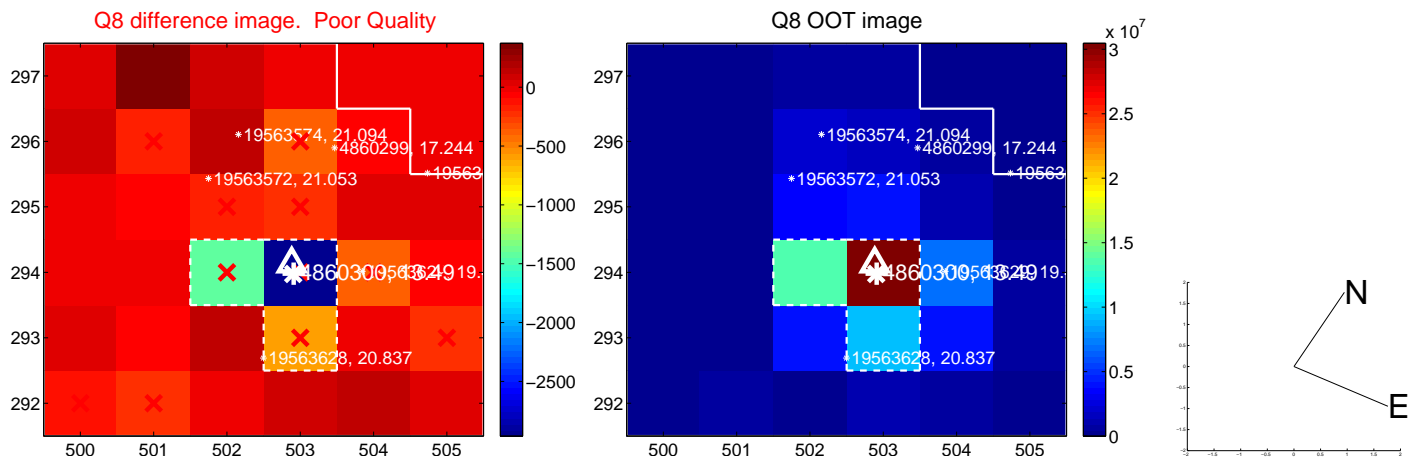
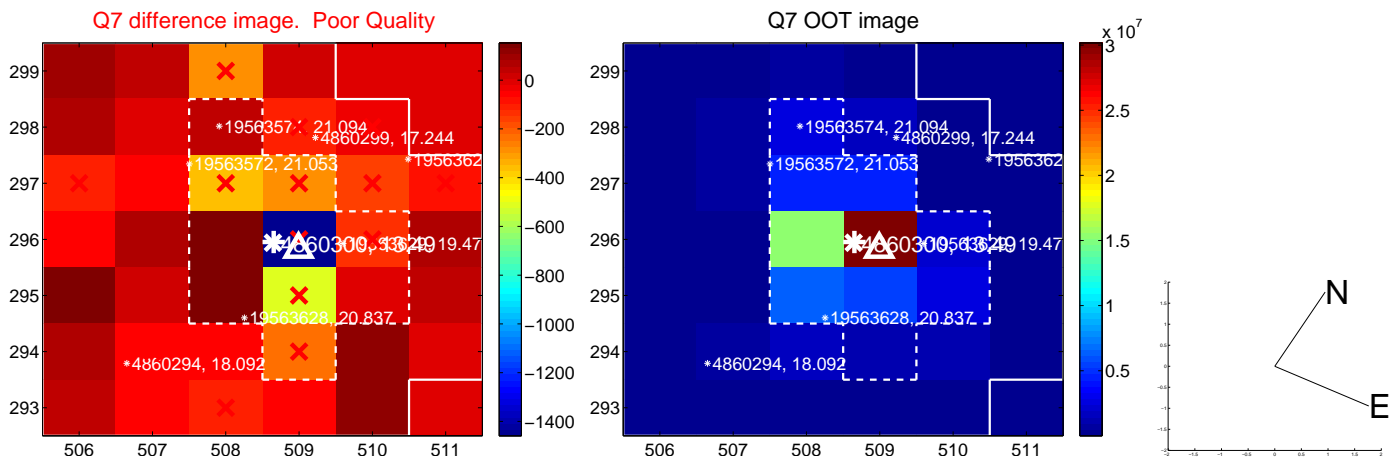
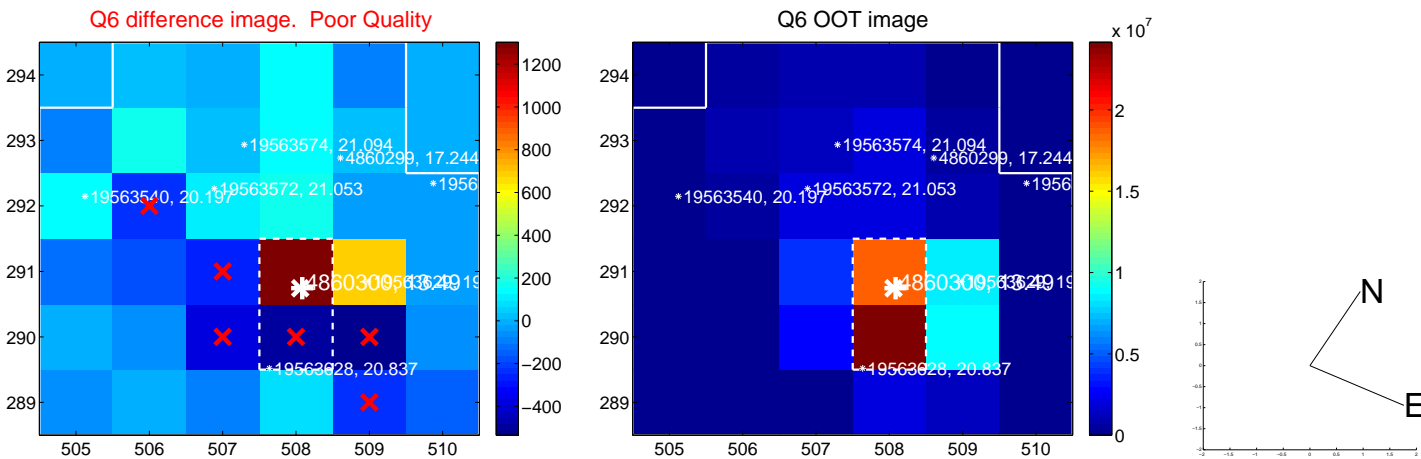
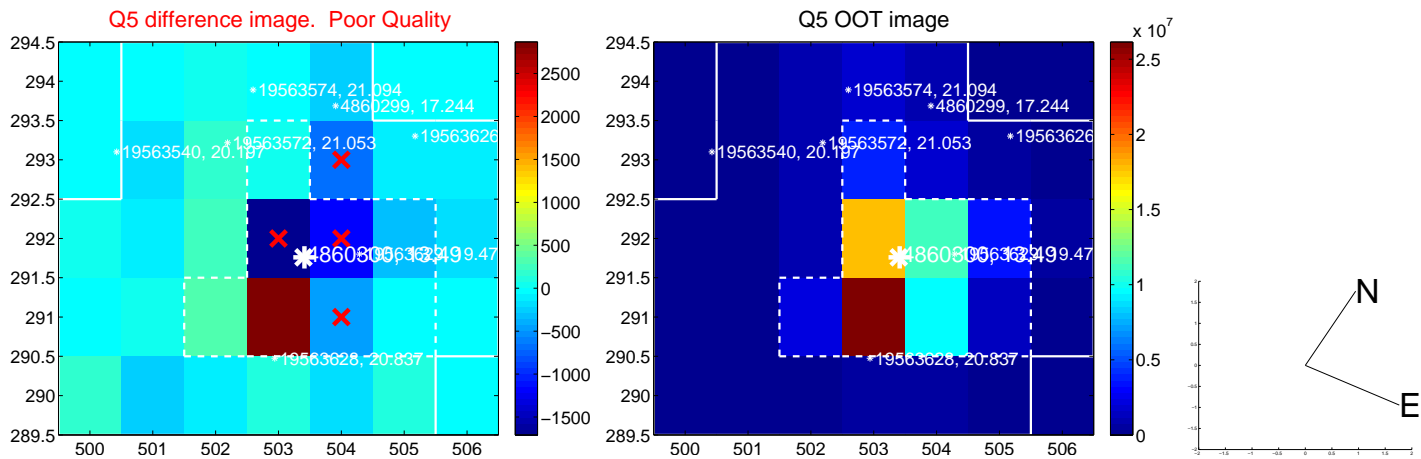


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

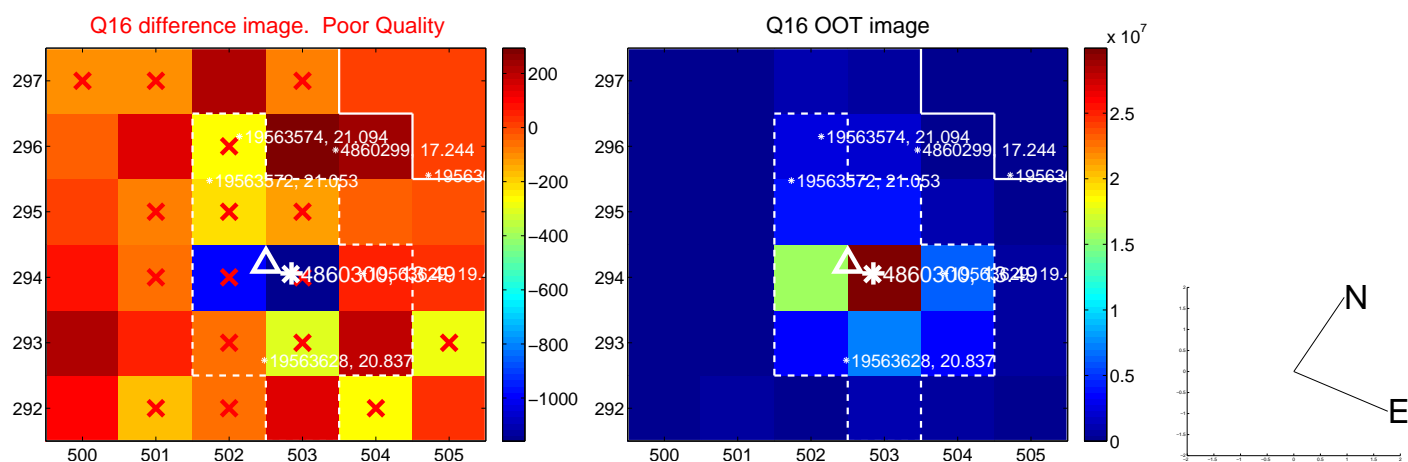
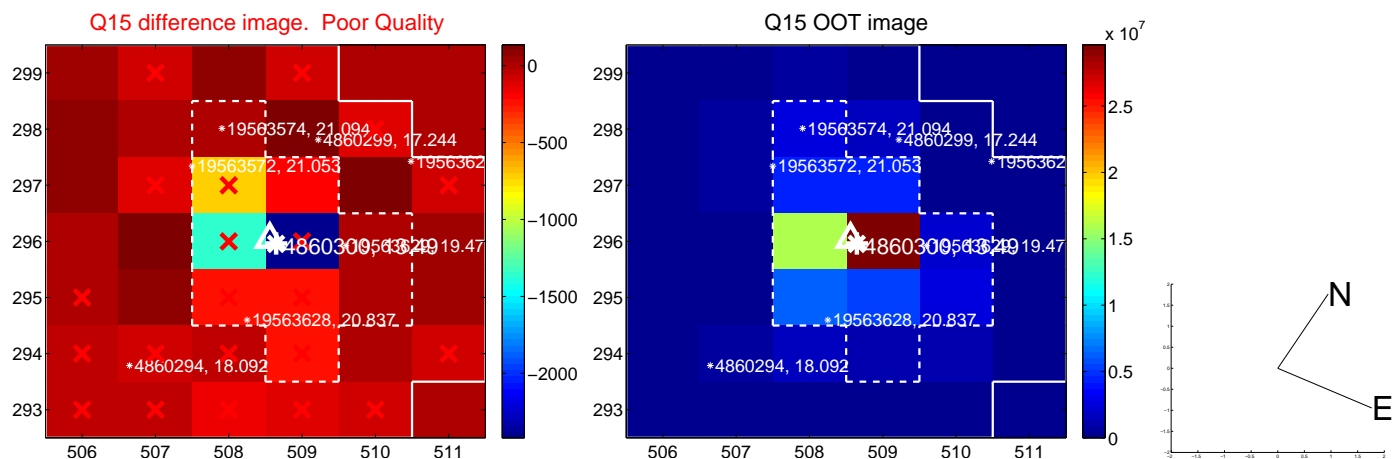
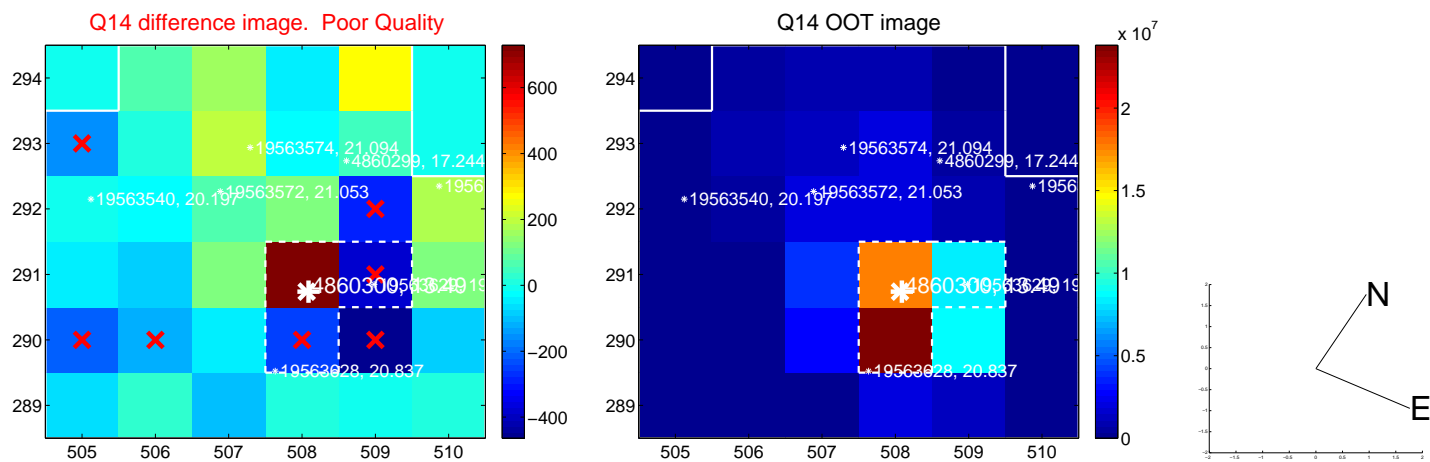
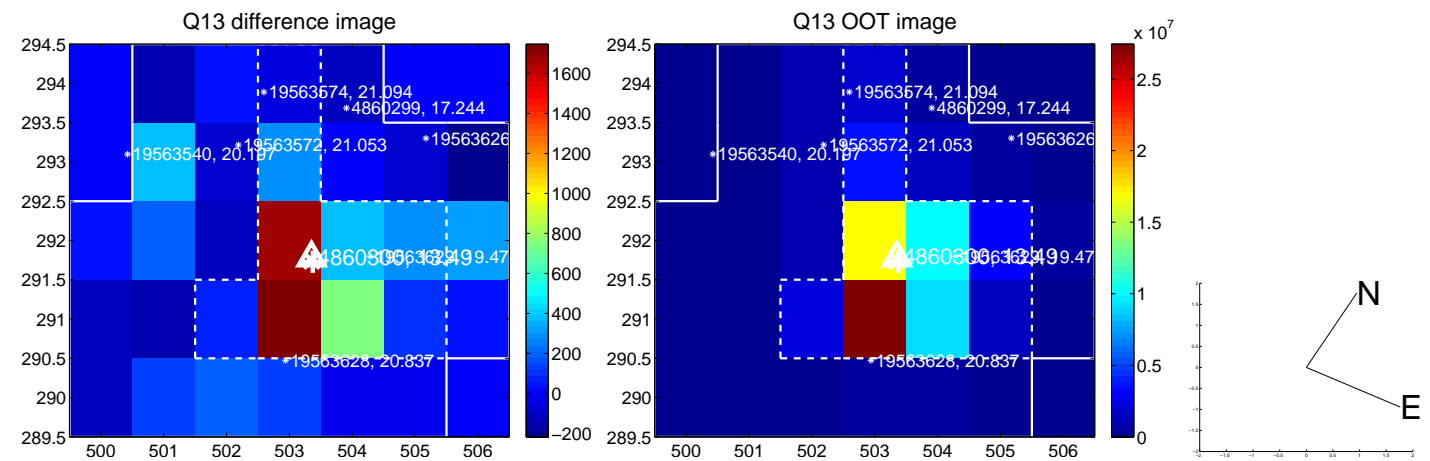
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



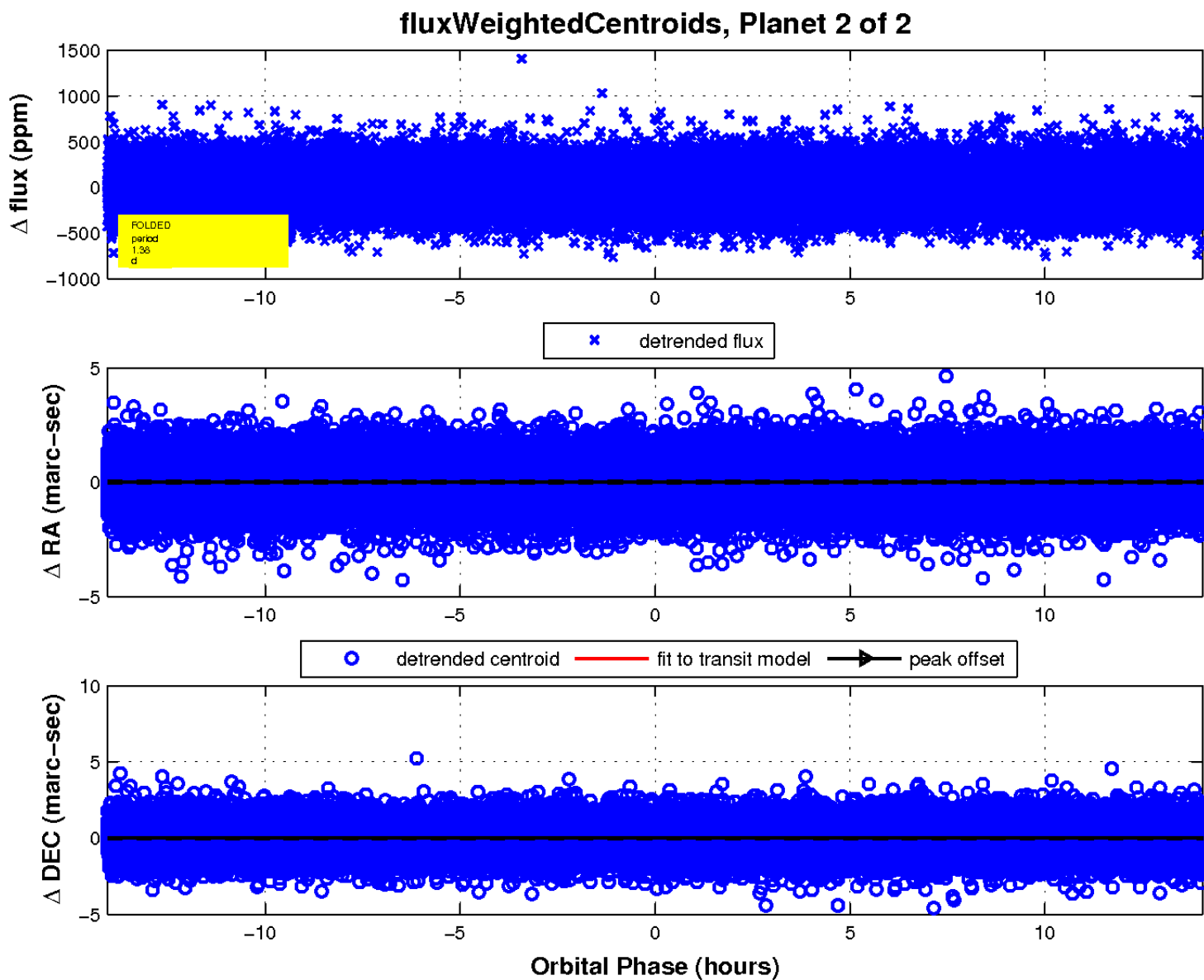
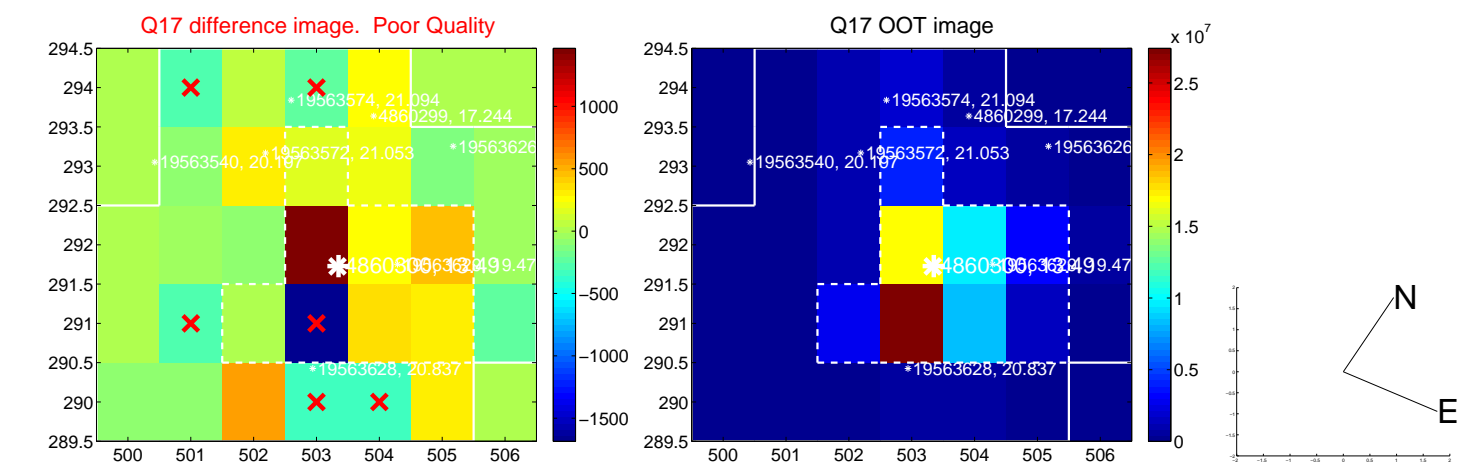
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

