

KIC 005476864

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})
005476864-01	OBS	No	1.591665	132.833428	144.5	8.546	9.4	8.1	2.71	6546	3.51	13081.42
005476864-02	OBS	No	1.591666	132.237944	272.7	5.996	12.3	14.1	2.71	6546	5.80	13081.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005476864-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005476864-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

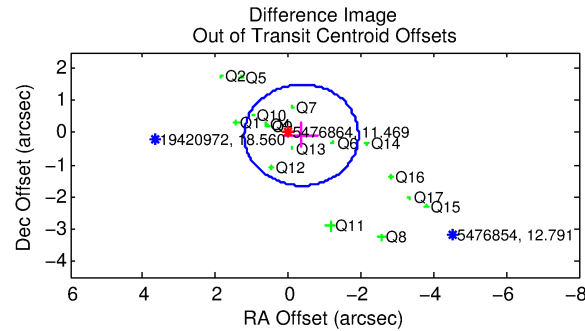
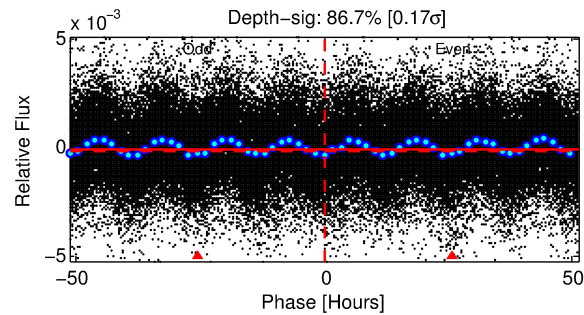
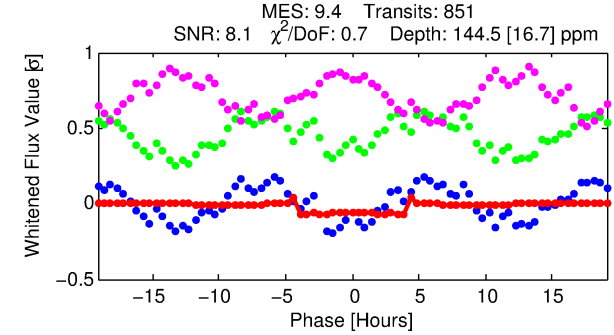
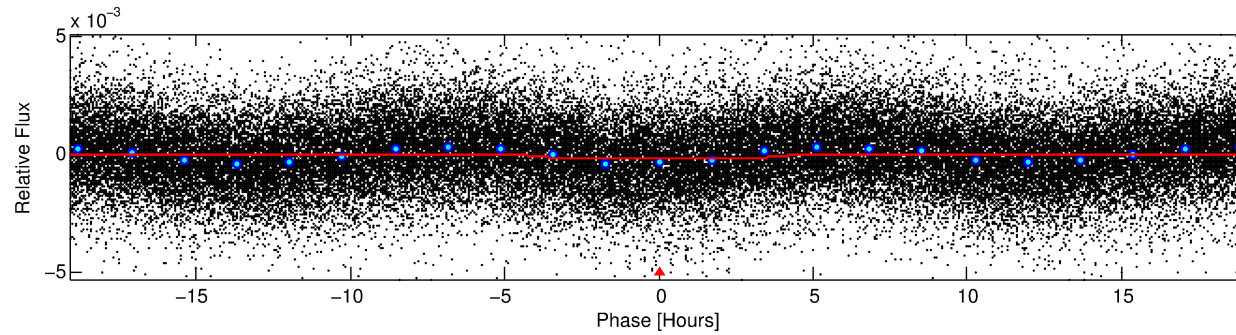
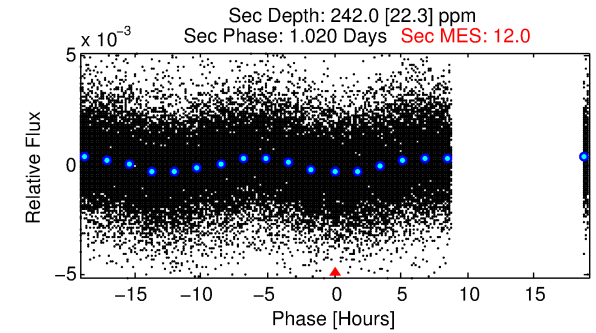
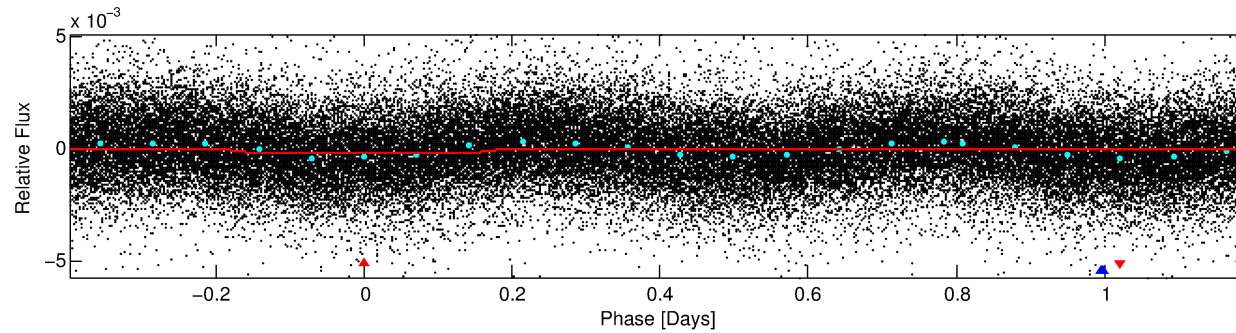
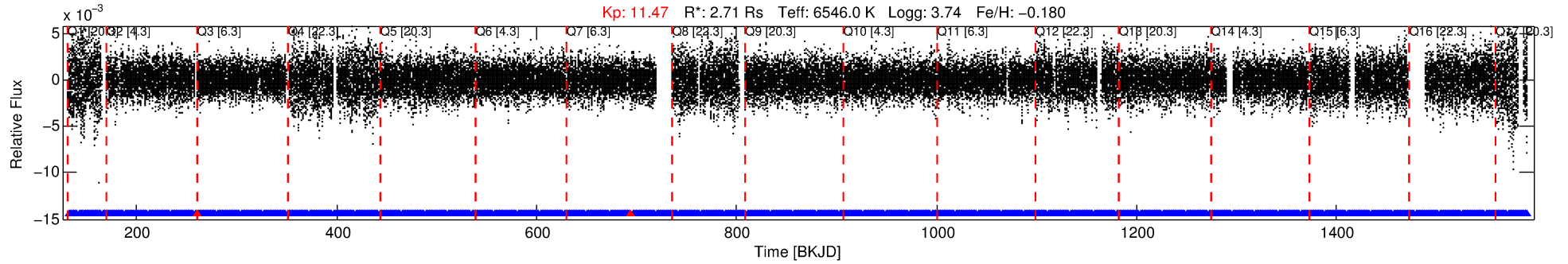
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005476864-01

No Significant Match Found

DV One-Page Summary

KIC: 5476864 Candidate: 1 of 2 Period: 1.592 d



DV Fit Results:

Period = 1.59167 [0.00002] d
Epoch = 132.8334 [0.0030] BKJD
Rp/R* = 0.0119 [0.0026]
a/R* = 1.31 [0.63]
b = 0.72 [0.76]
Seff = 13081.42 [4592.24]
Teq = 2727 [239] K
Rp = 3.51 [1.15] Re
a = 0.0304 [0.0068] AU
Ag = 9.98 [5.57] [1.61σ]
Teffp = 7494 [840] K [5.46σ]

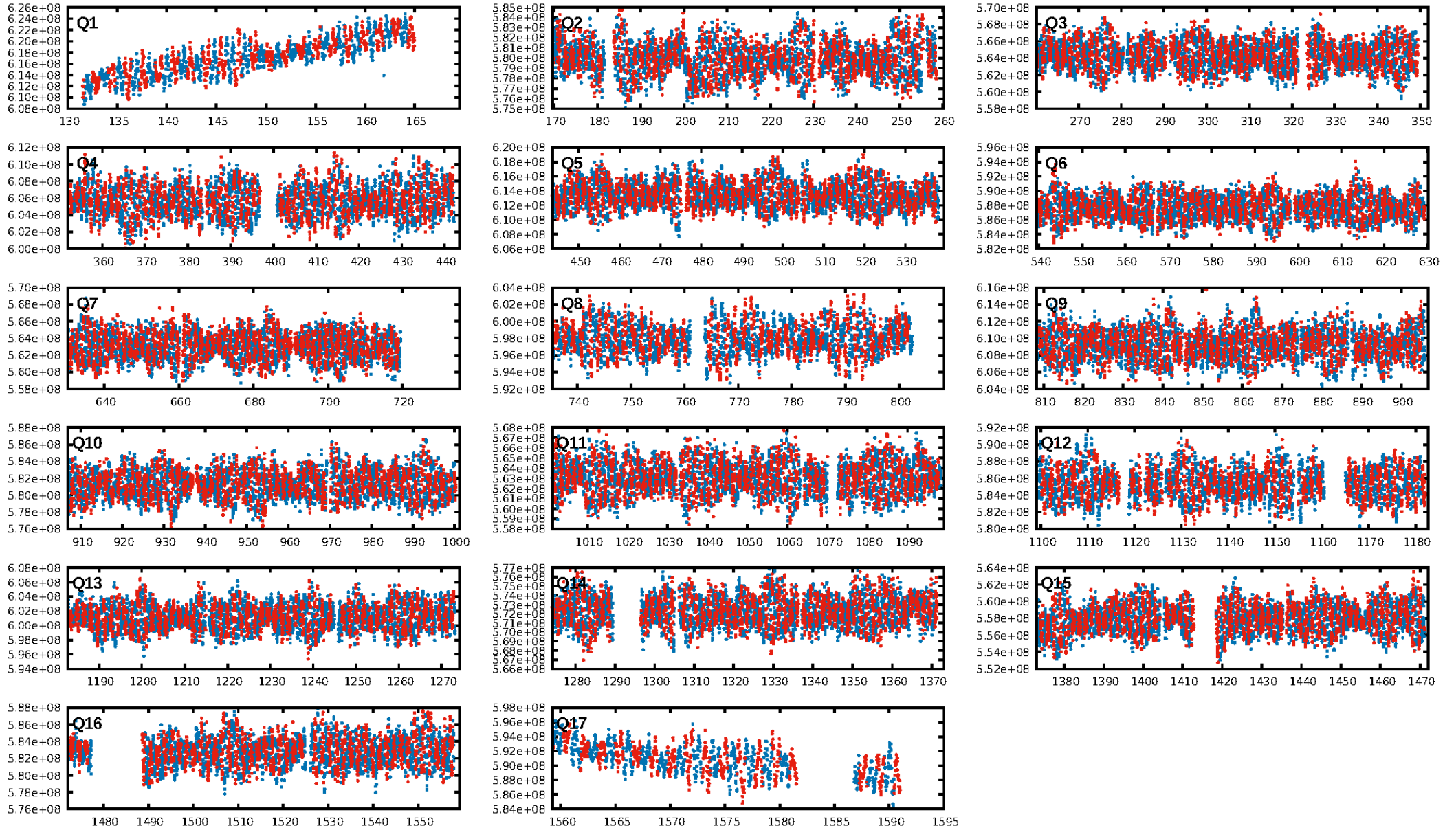
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.20e-49
RollingBand-fgt: 1.00 [811/813]
GhostDiagnostic-chr: 4.608
Centroid-sig: 0.0%
Centroid-so: 1.039 arcsec [2.77σ]
OotOffset-rm: 0.367 arcsec [0.70σ]
KicOffset-rm: 1.293 arcsec [2.45σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 0.00 [0/17]

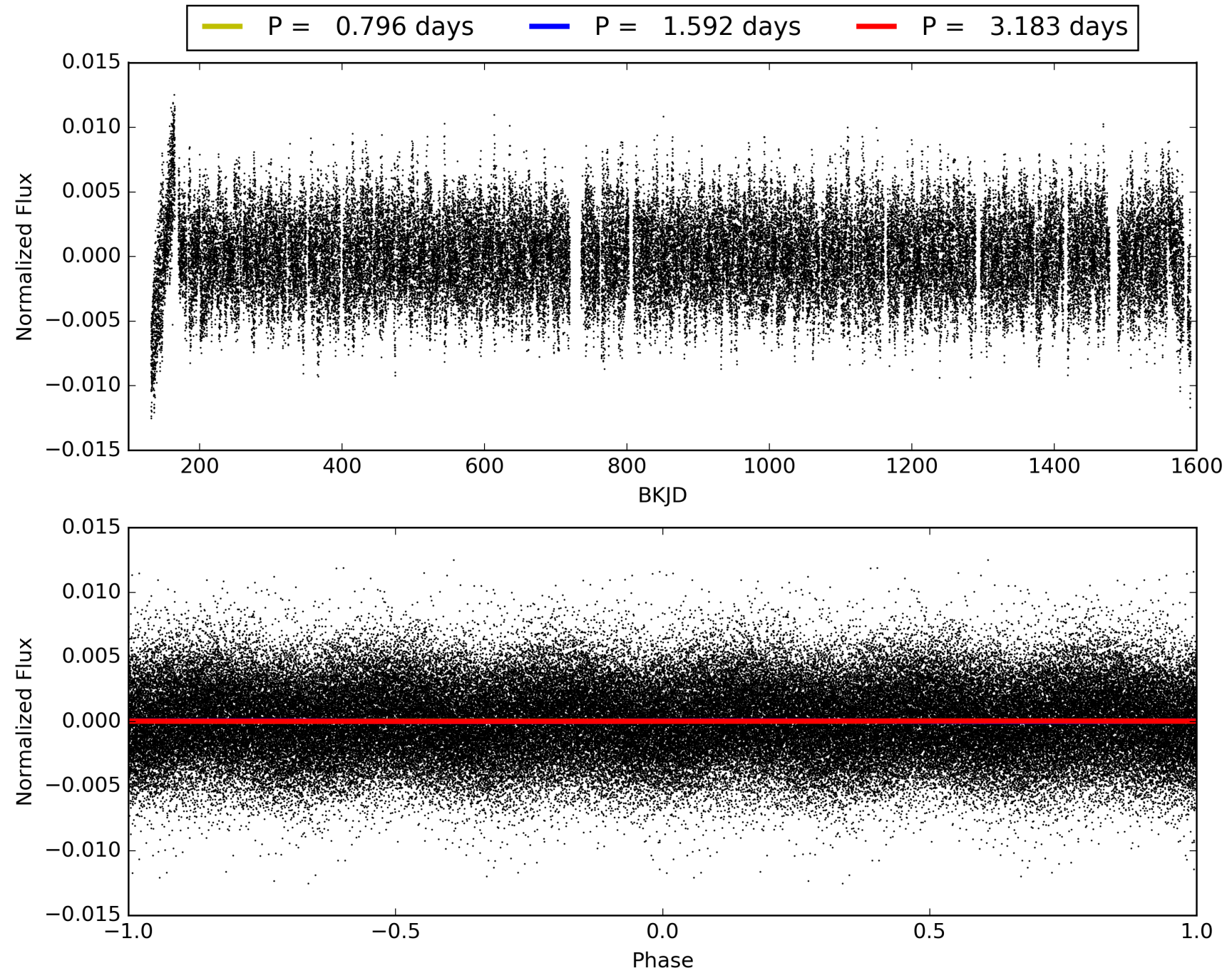
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:29:27 Z

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

TCE 005476864-01, PDC Light Curves

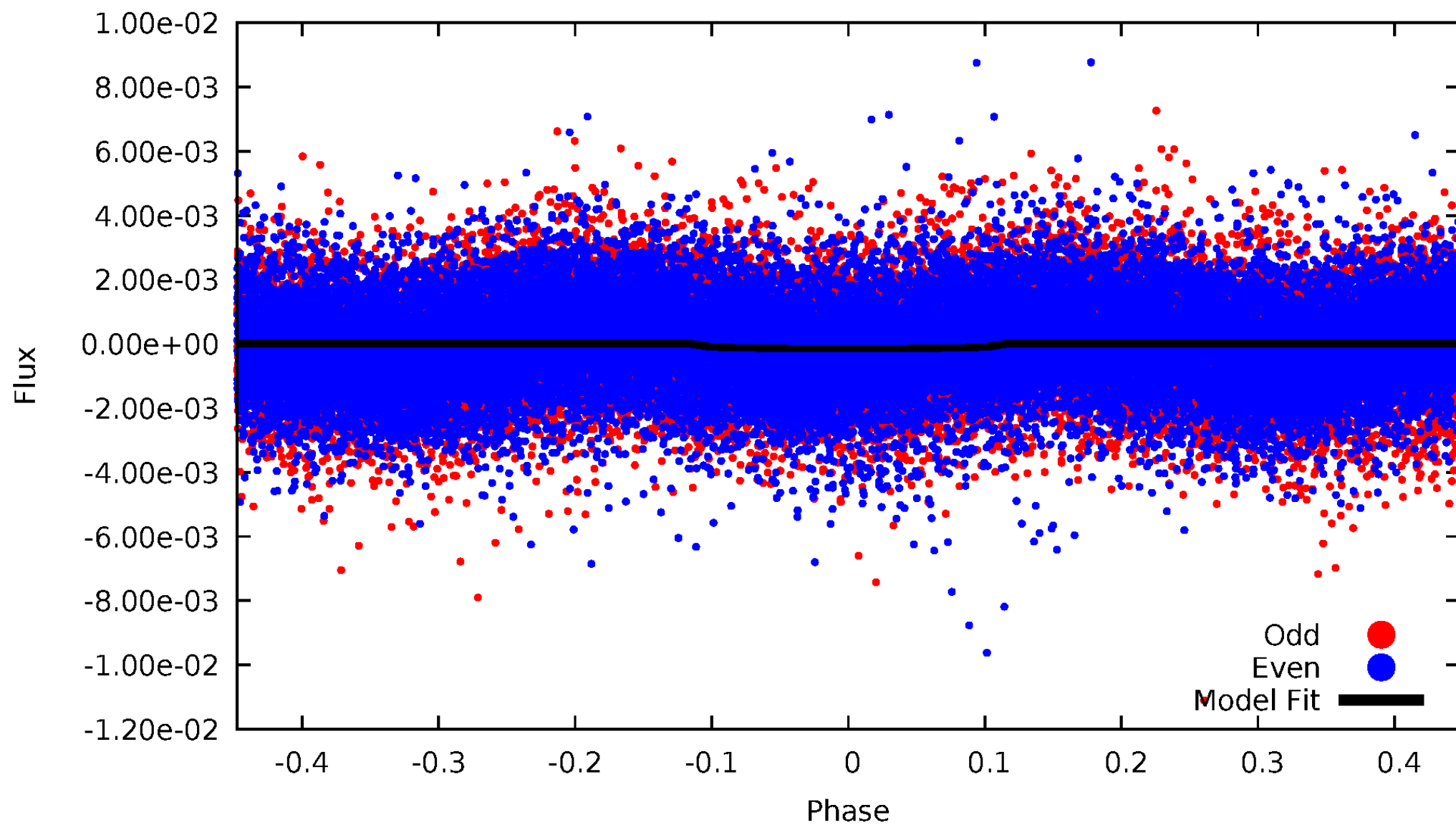


TCE 005476864-01



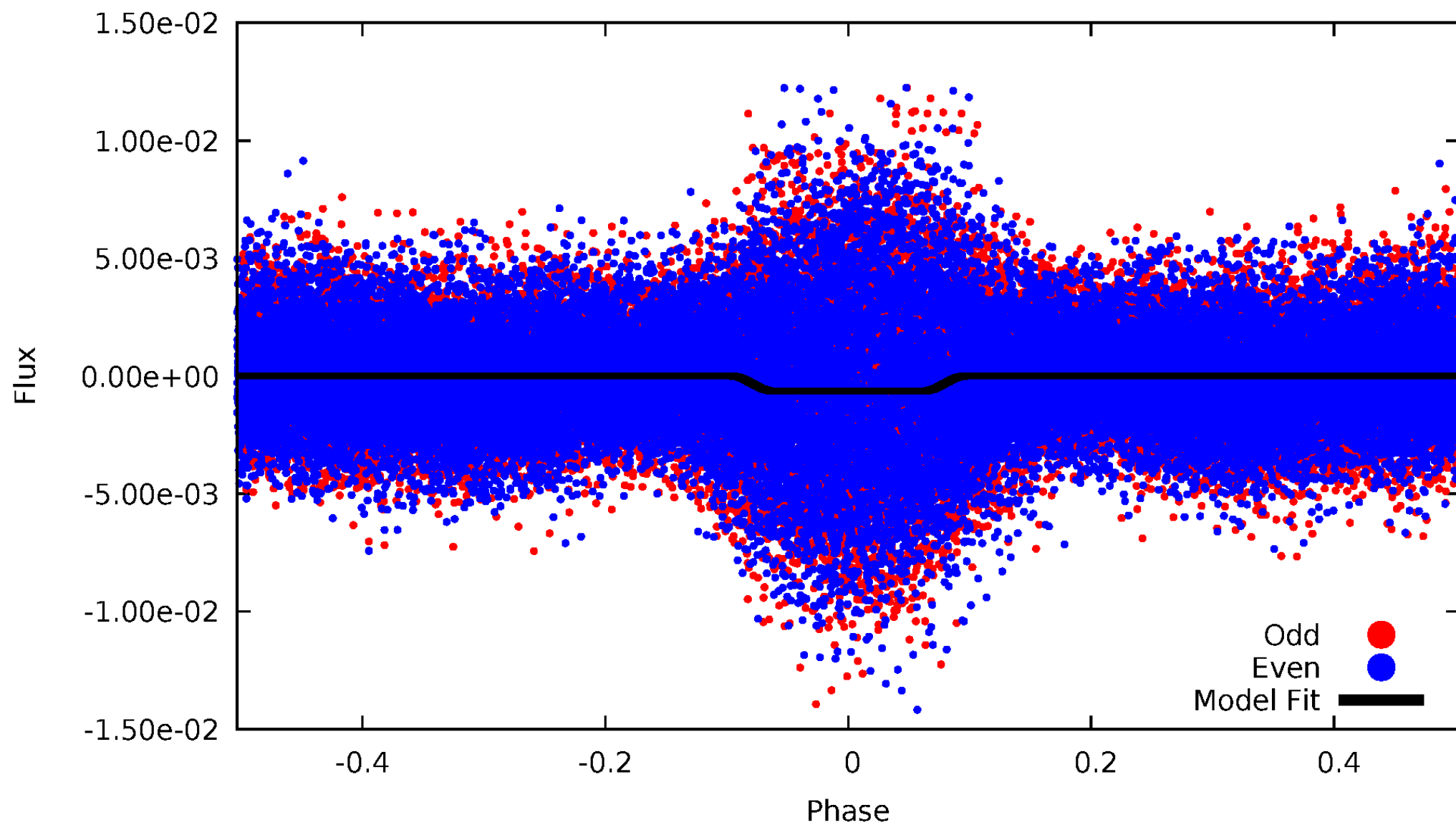
DV Odd/Even

TCE 005476864-01

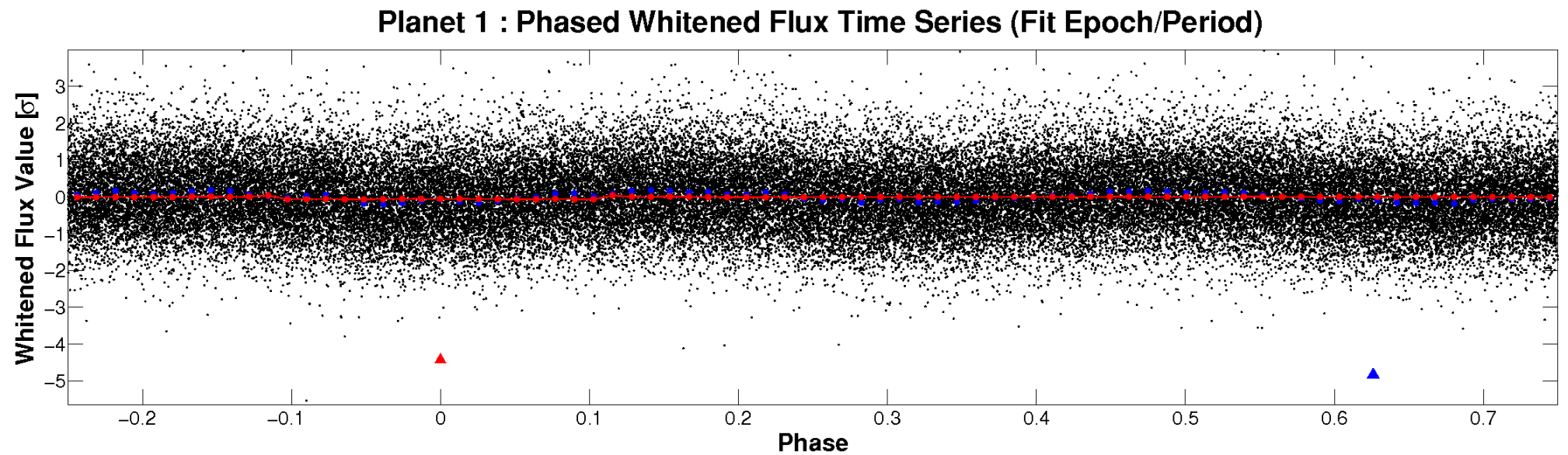
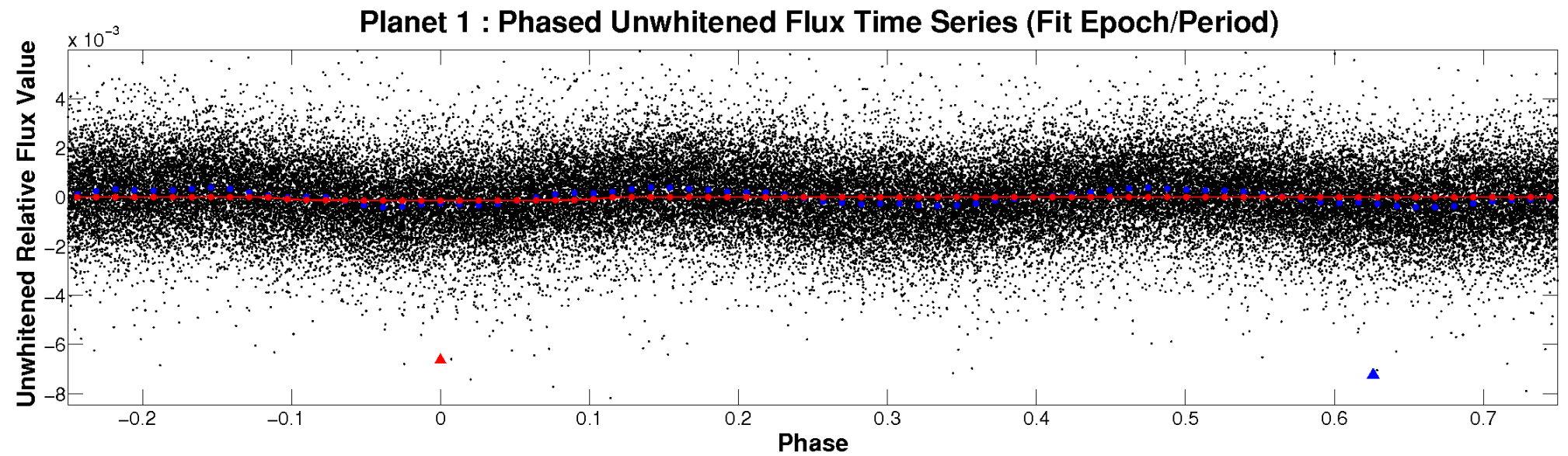


ALT Odd/Even

TCE 005476864-01

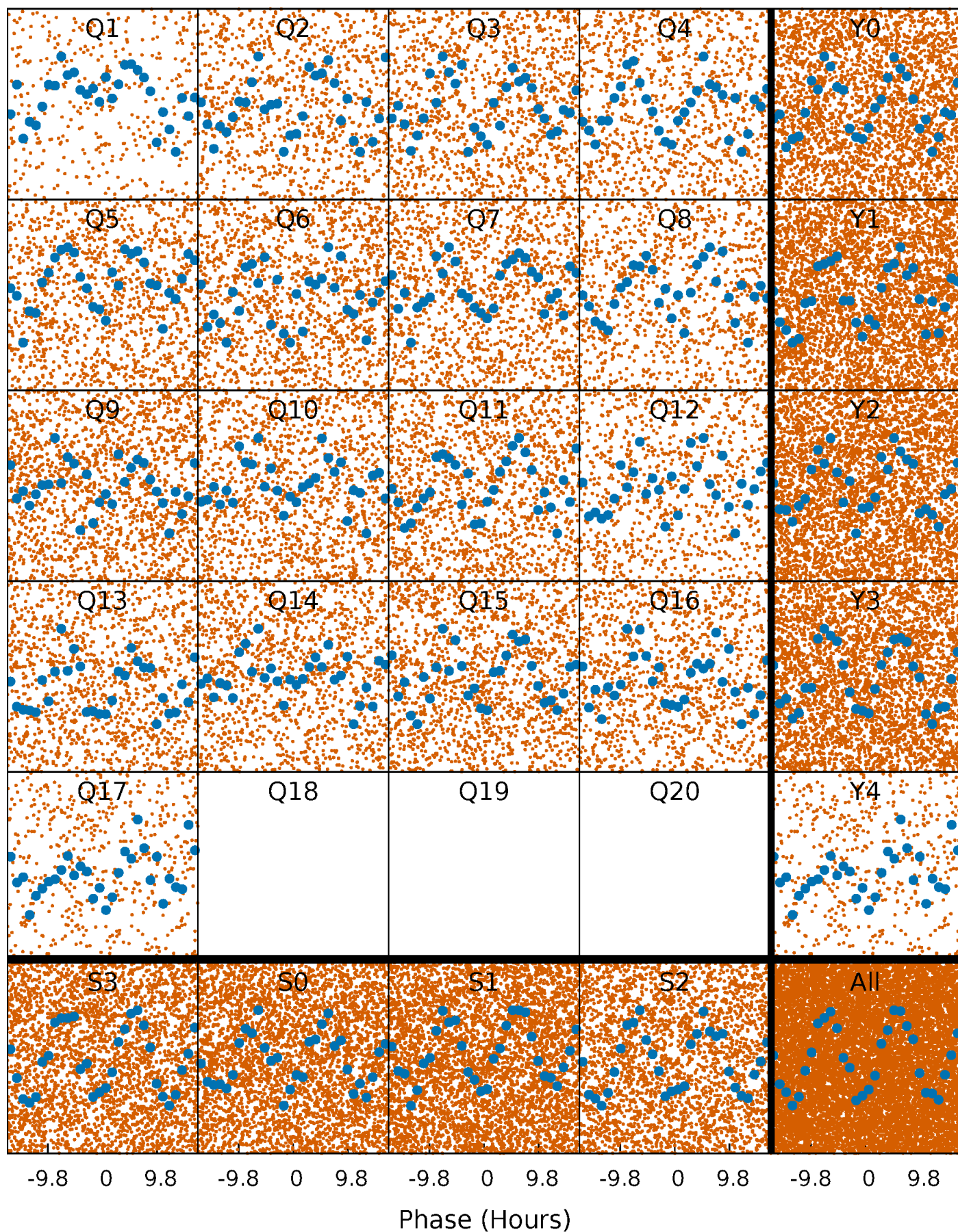


Non-Whitened Vs. Whitened Light Curve



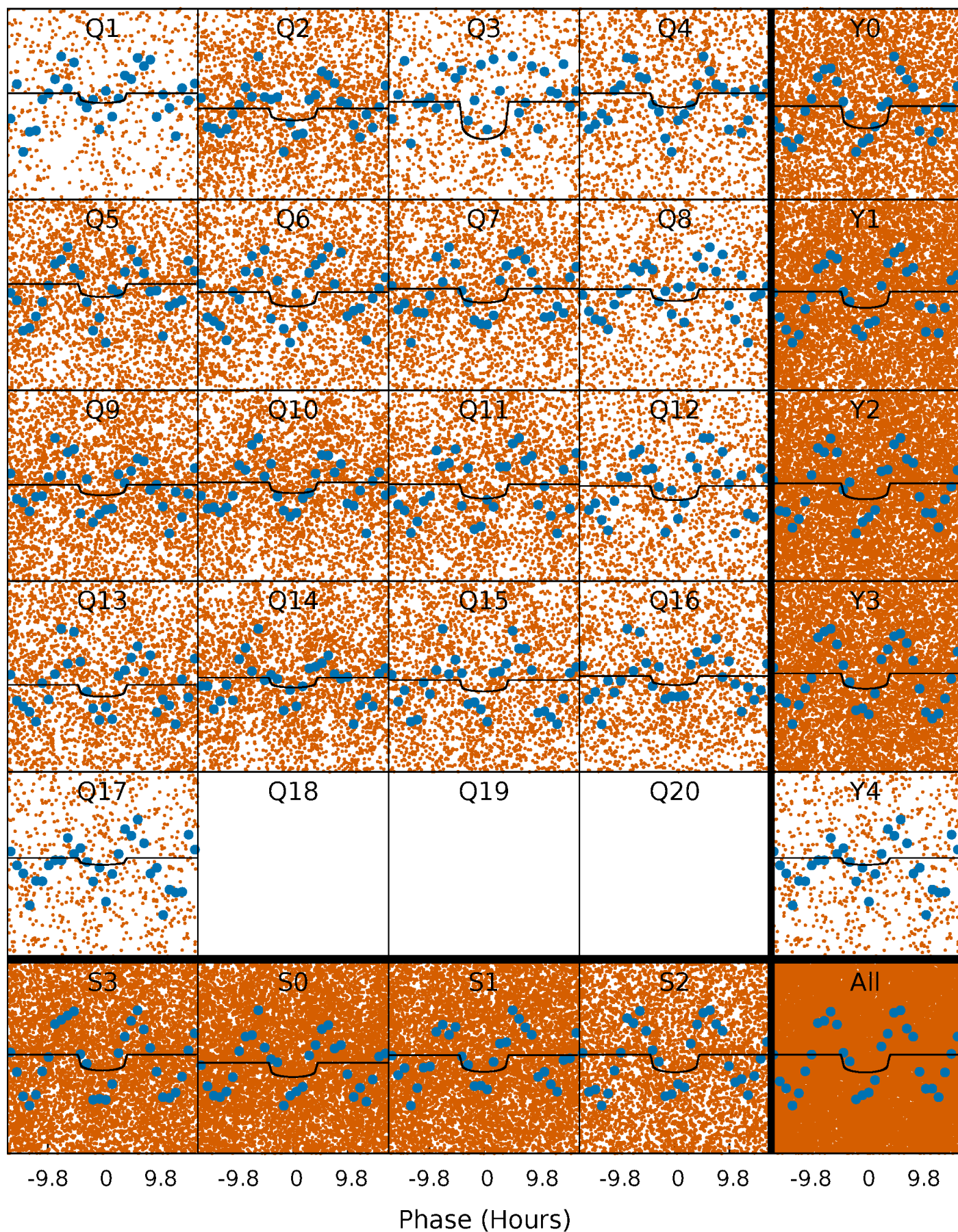
PDC Quarter-Phased Transit Curves

TCE 005476864-01 P= 1.591665 Days $T_0=132.833428$ (BKJD)



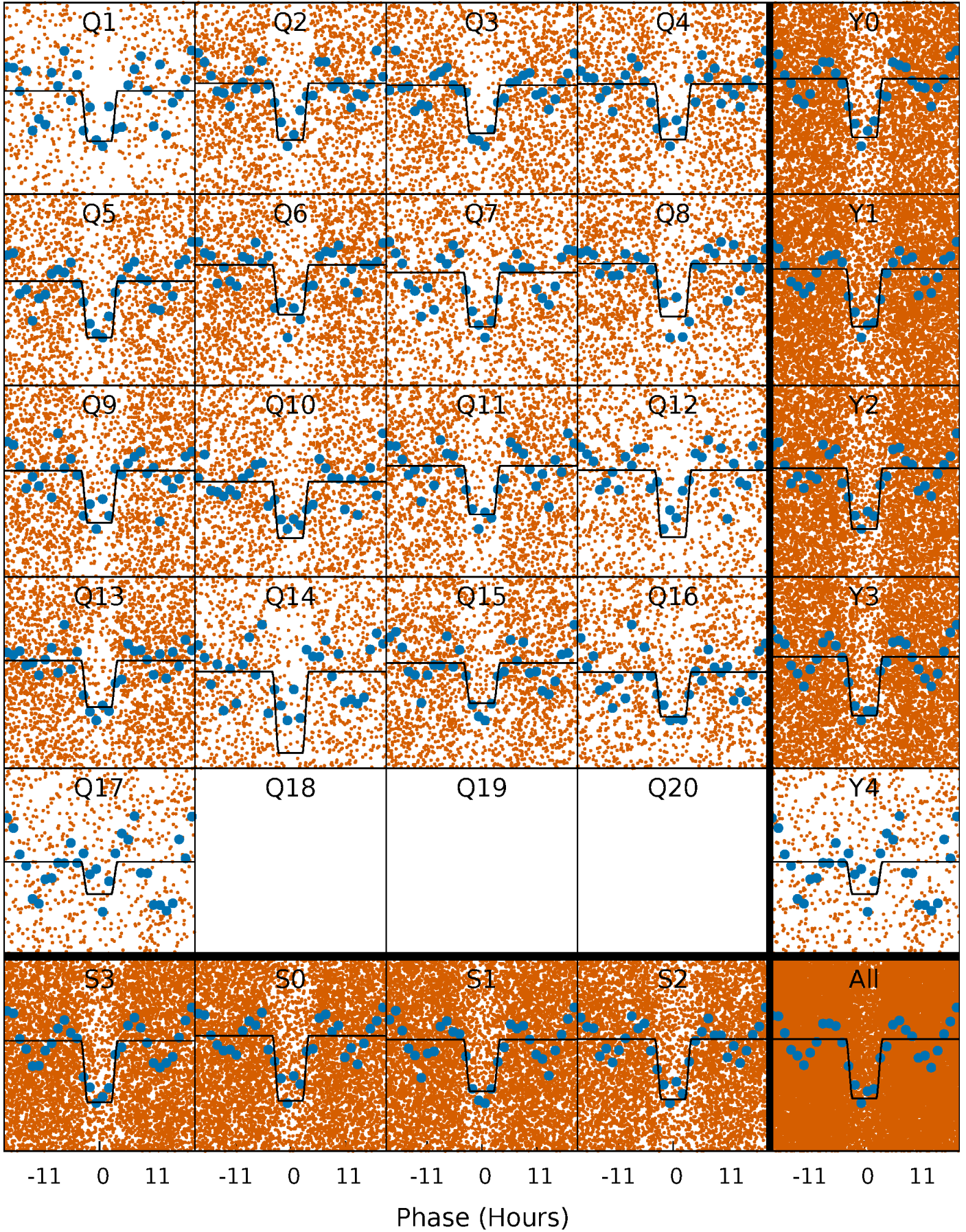
DV Quarter-Phased Transit Curves

TCE 005476864-01 P= 1.591665 Days $T_0=132.833428$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

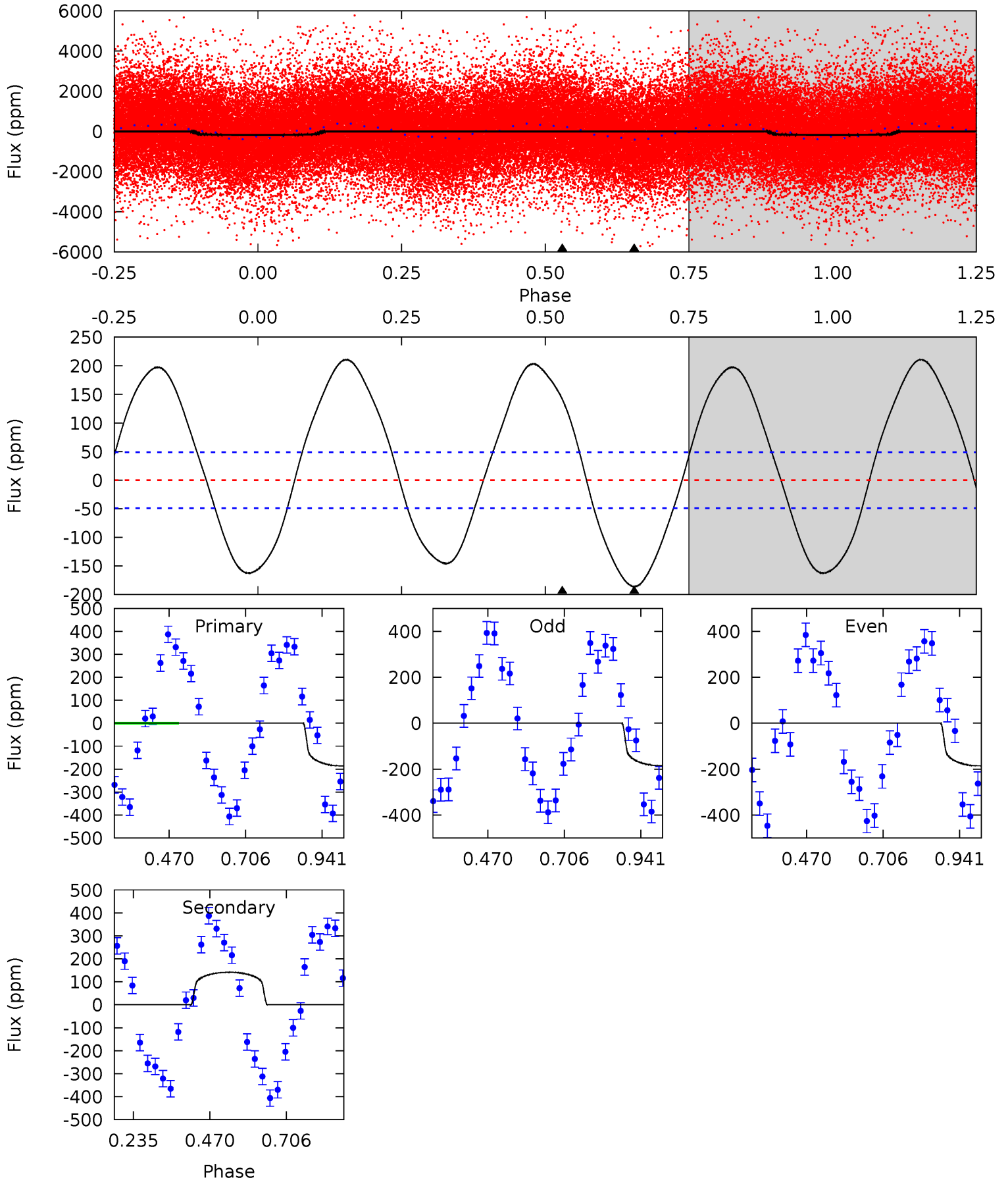
TCE 005476864-01 P= 1.591676 Days $T_0=132.804524$ (BKJD)



DV Model-Shift Uniqueness Test

005476864-01, P = 1.591665 Days, E = 131.241763 Days

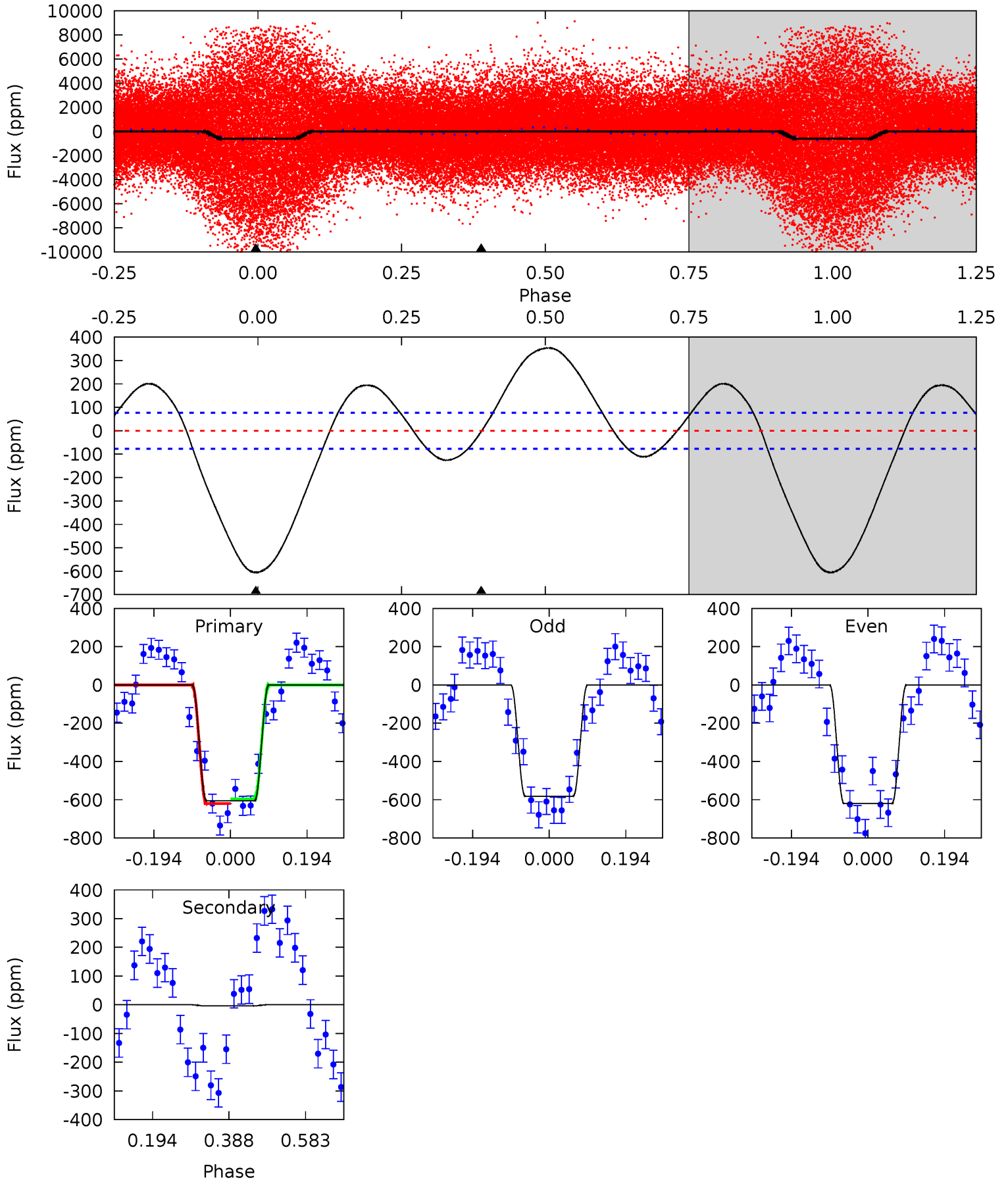
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	-12.7	0	0	4.38	1.19	11.1	16.7	16.7	-12.7	-12.7	0.04	1.17	0.53	5.67



Alt Model-Shift Uniqueness Test

005476864-01, P = 1.591676 Days, E = 131.212848 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.9	0.22	0	0	4.42	1.30	5.68	34.9	34.9	0.22	0.22	1.09	1.05	0.37	0.74



Stellar Parameters For KIC 005476864

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6546^{+118}_{-131}	$3.741^{+0.195}_{-0.065}$	$-0.180^{+0.150}_{-0.100}$	$2.707^{+0.361}_{-0.670}$	$1.473^{+0.179}_{-0.199}$	$0.104^{+0.117}_{-0.023}$
	+2%/-2%	+5%/-2%	+83%/-56%	+13%/-25%	+12%/-14%	+112%/-22%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 005476864-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	142 ± 11	$3.38^{+0.88}_{-0.84}$	3754^{+169}_{-237}	-6609^{+572}_{-973}	$-6.368^{+2.315}_{-4.780}$
Alt.	-4 ± 17	$7.21^{+1.02}_{-1.04}$	3757^{+141}_{-215}	-3460^{+560}_{-287}	$0.036^{+0.182}_{-0.173}$

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 $A_{obs} \gg 1.0$

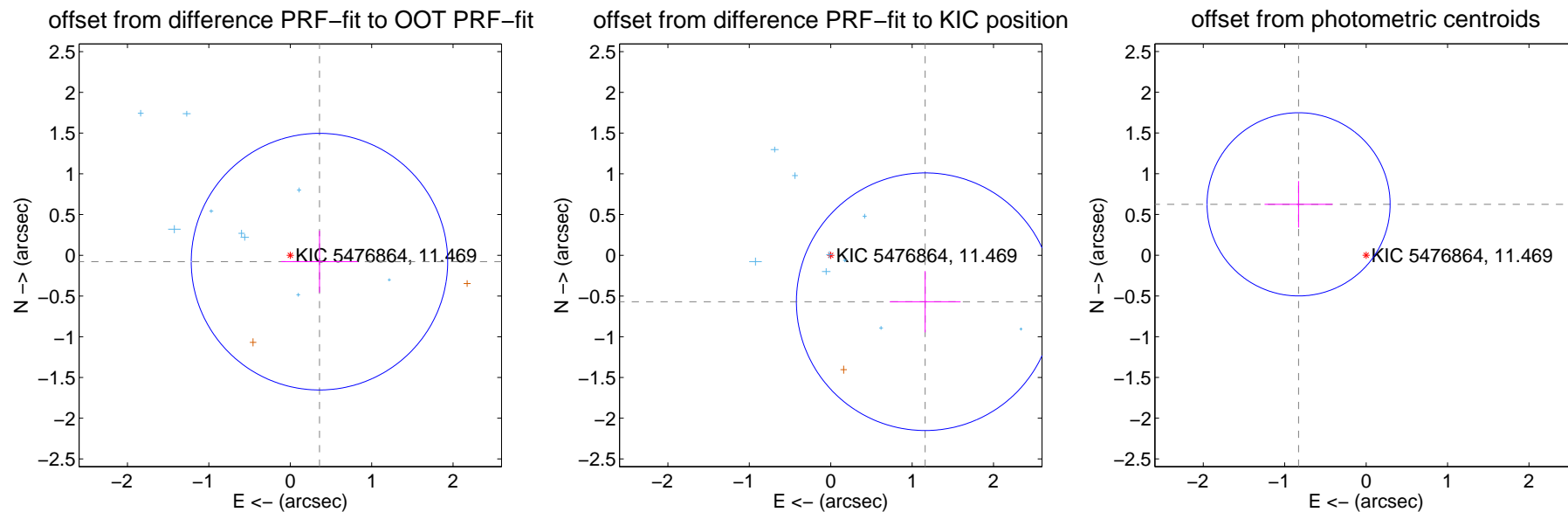
DV Centroid Data

Supplemental centroid analysis for 005476864-01. **Kepler magnitude: 11.47.** Transit SNR 8.10

There are 14 quarters with good PRF difference image offsets

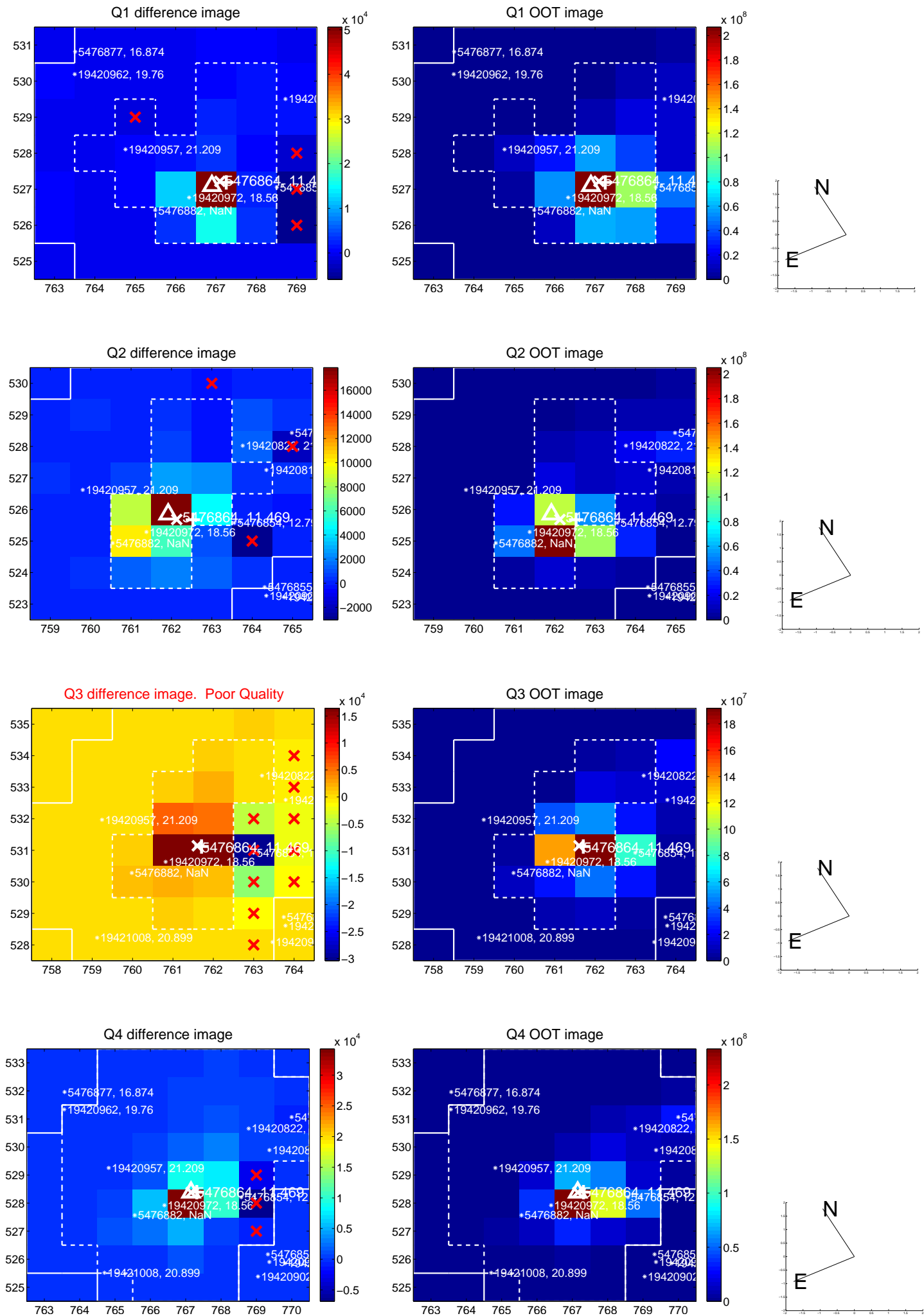
The direct PRF centroid is offset from the target star catalog position by about 0.66 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.367 ± 0.525	0.70	-0.359 ± 0.468	-0.078 ± 0.379
PRF-fit source offset from KIC position	1.293 ± 0.527	2.45	-1.160 ± 0.437	-0.570 ± 0.376
photometric centroid source offset	1.04 ± 0.37	2.77	0.83 ± 0.42	0.62 ± 0.28

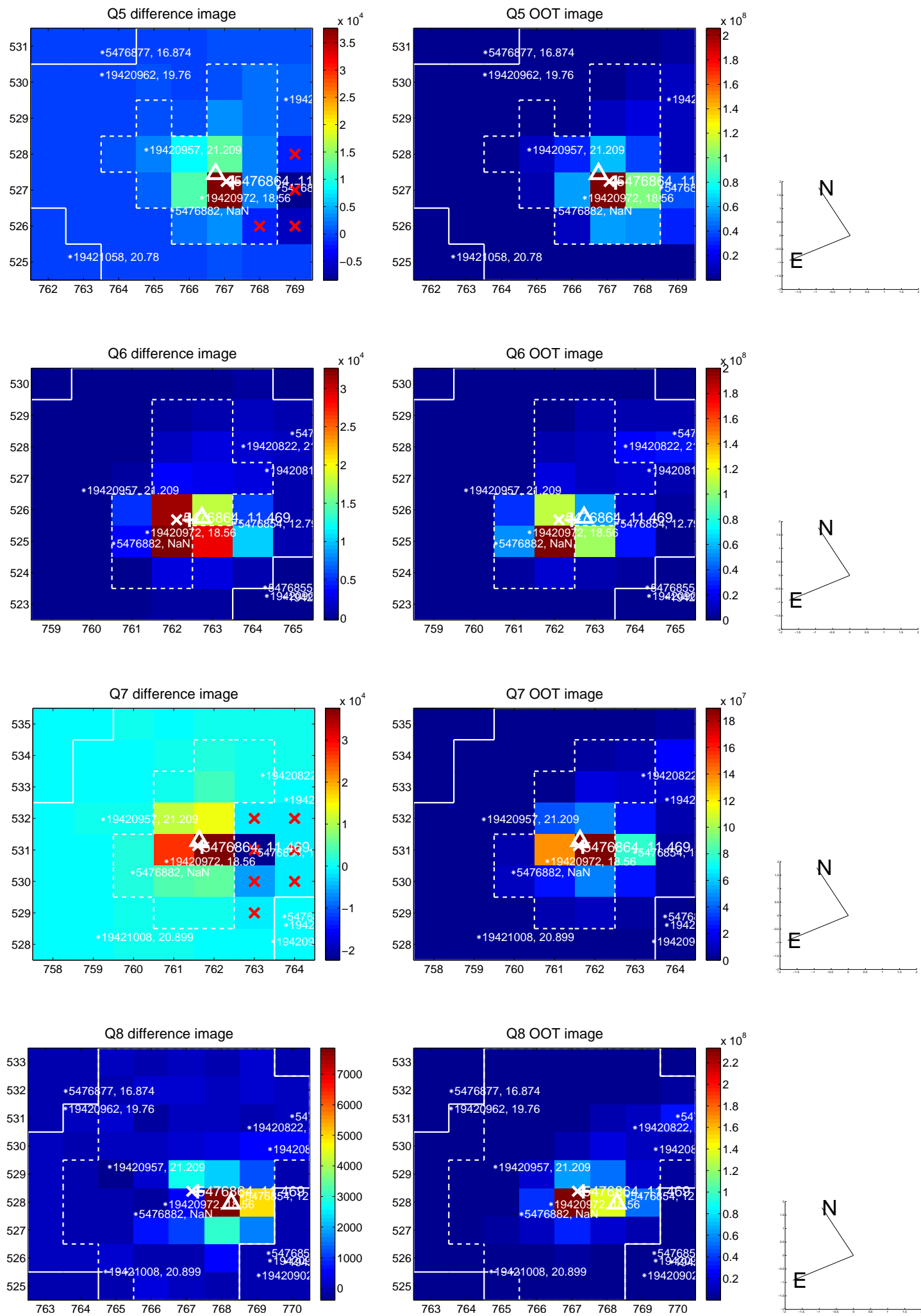


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

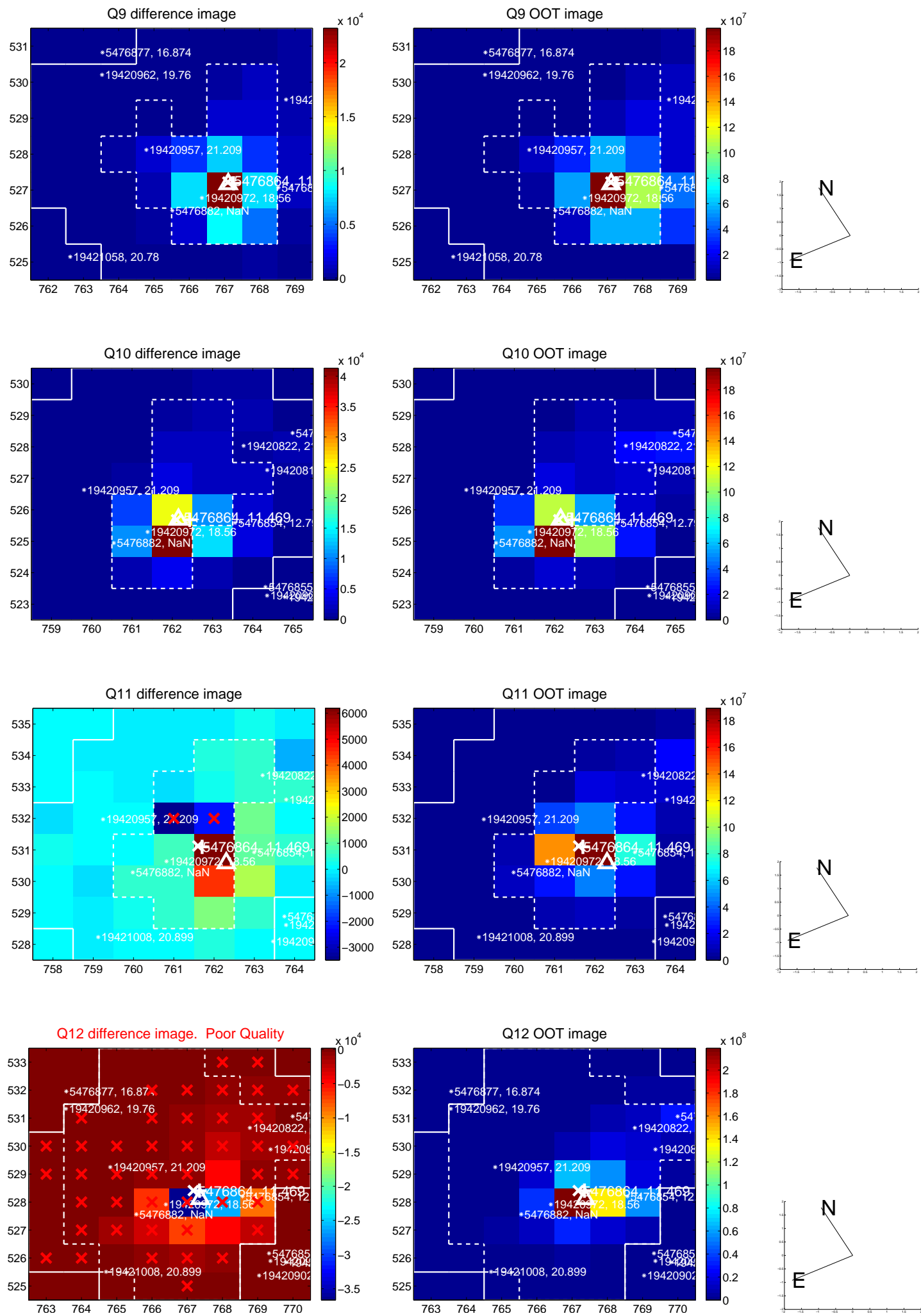
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



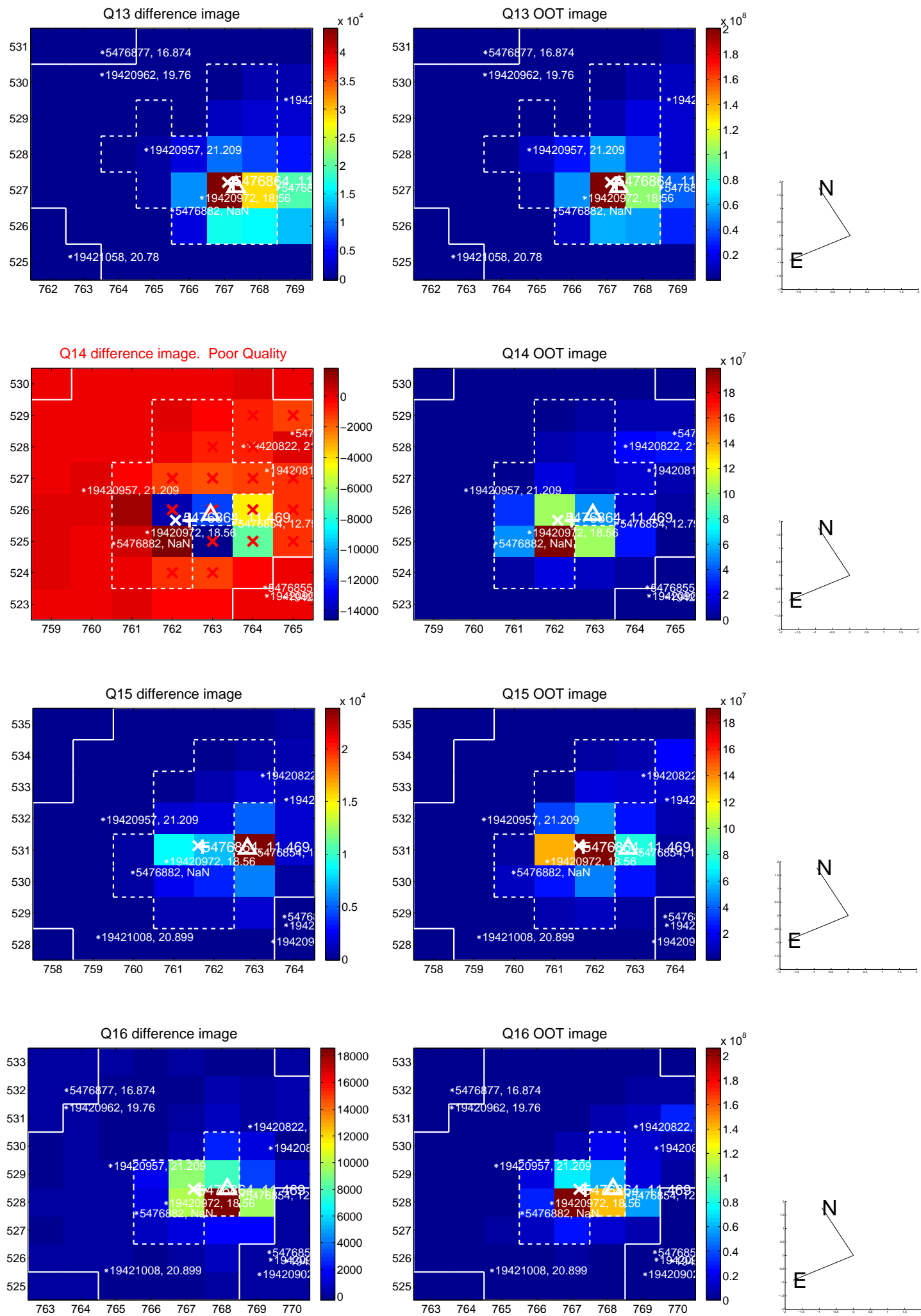
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



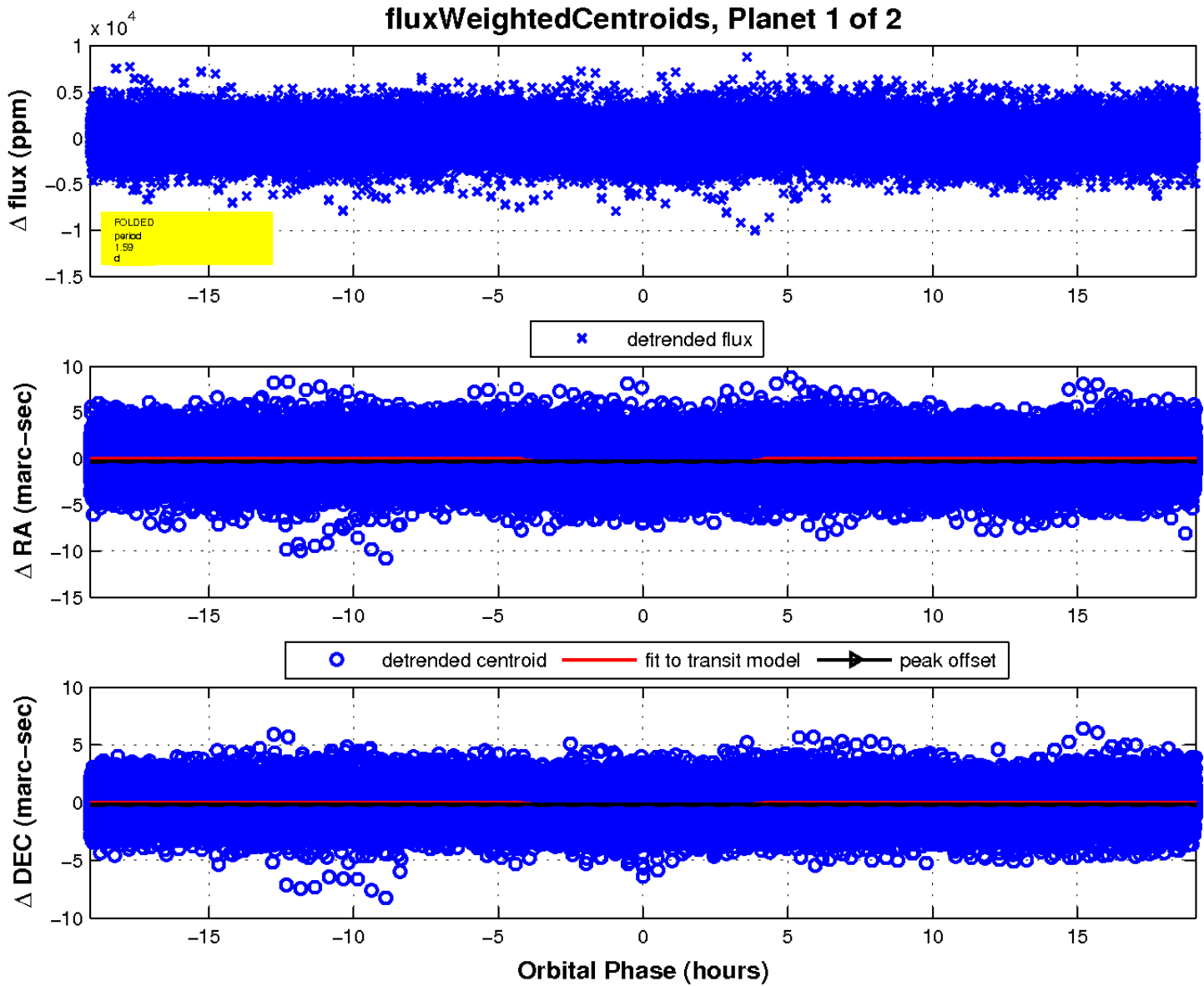
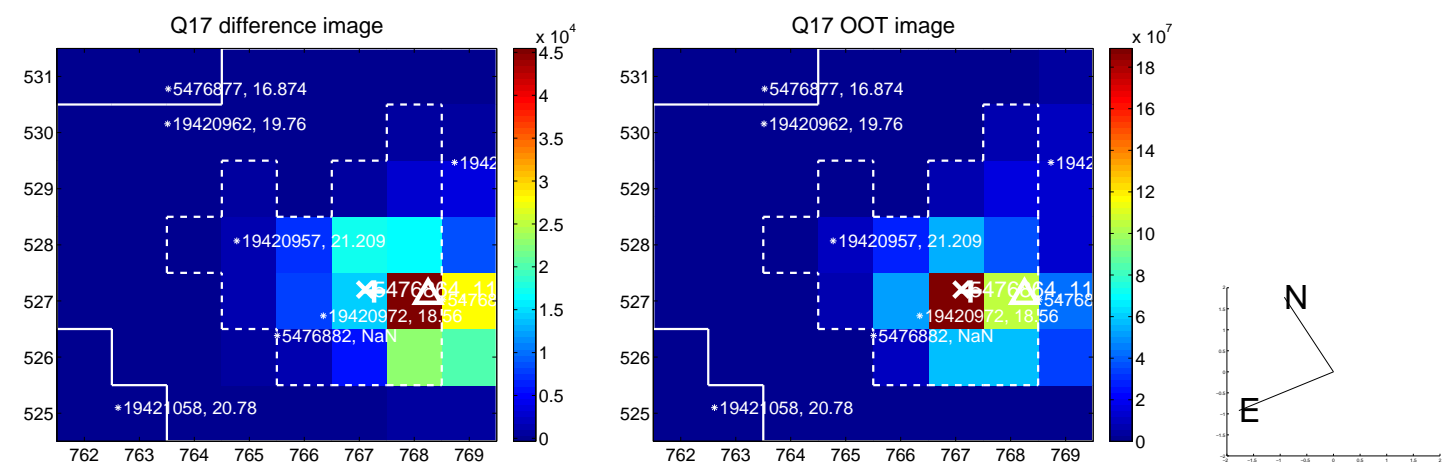
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

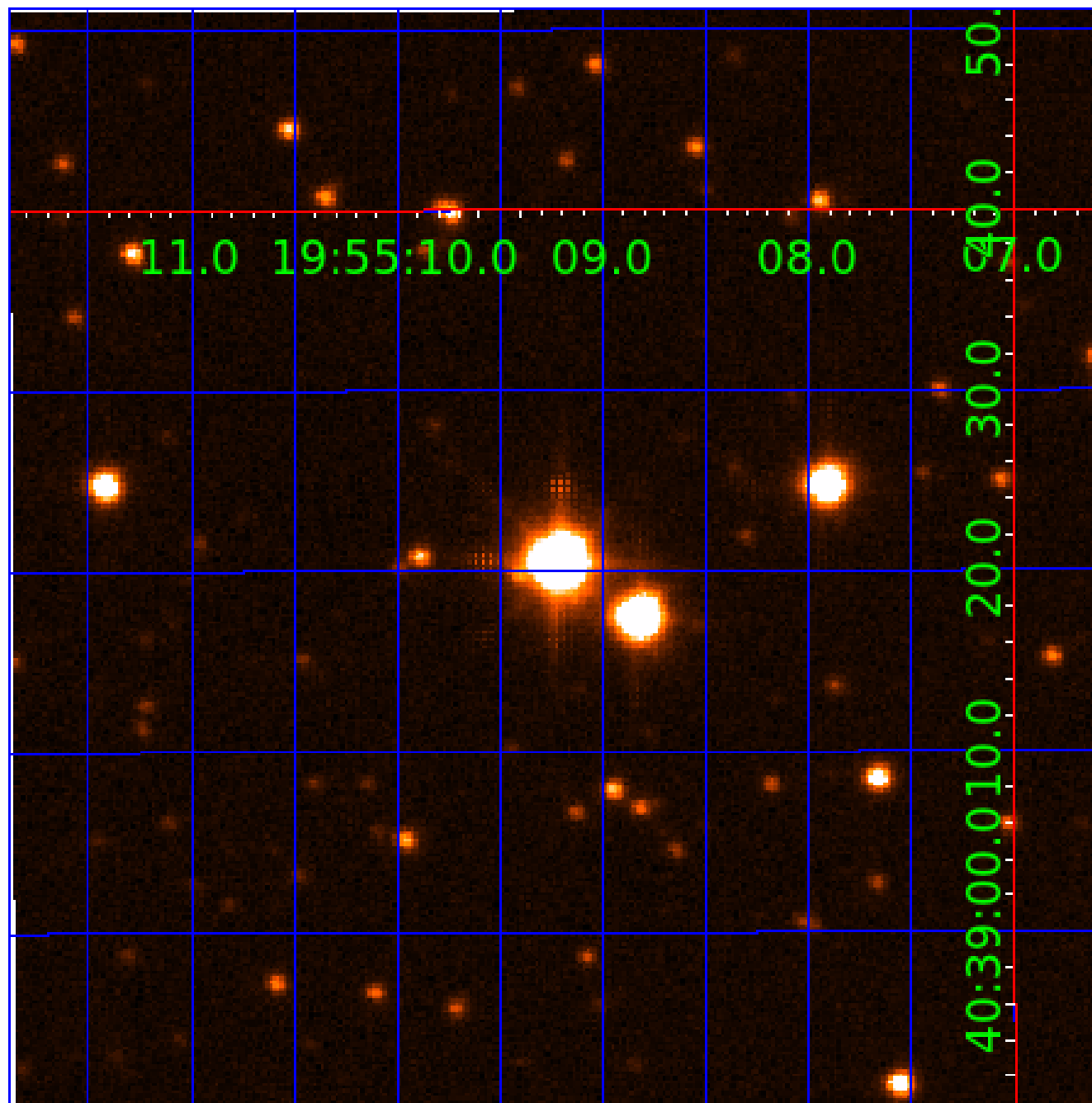


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005476864

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})
005476864-01	OBS	No	1.591665	132.833428	144.5	8.546	9.4	8.1	2.71	6546	3.51	13081.42
005476864-02	OBS	No	1.591666	132.237944	272.7	5.996	12.3	14.1	2.71	6546	5.80	13081.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005476864-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005476864-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

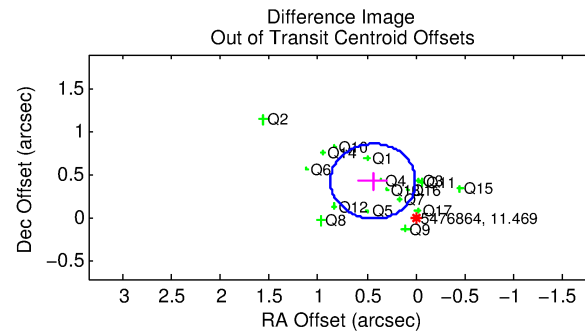
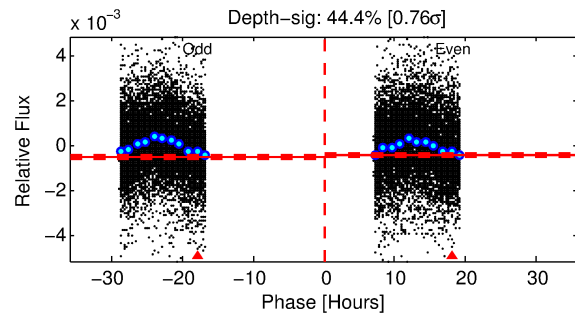
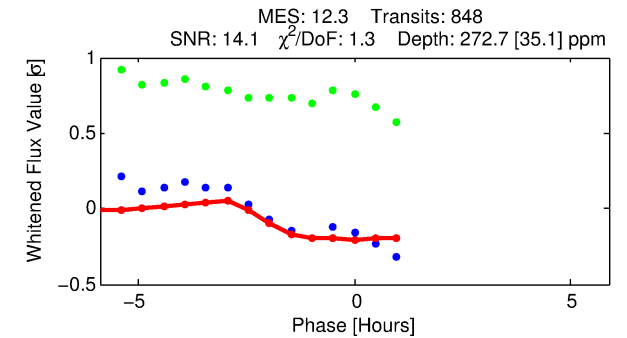
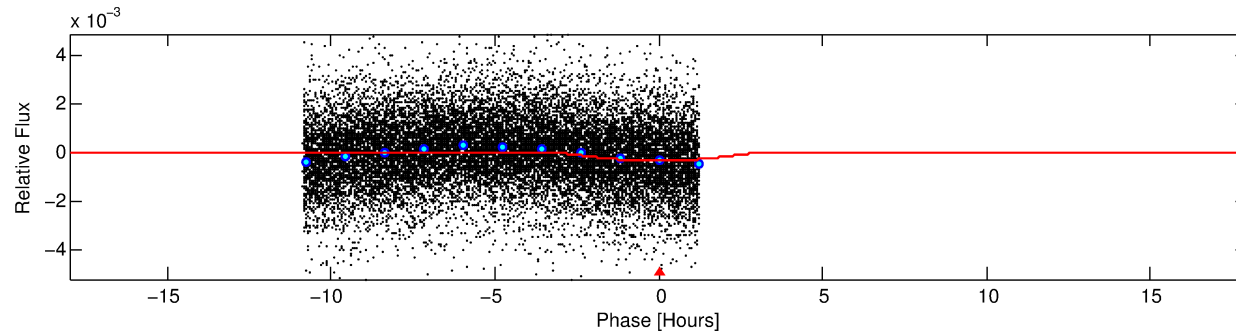
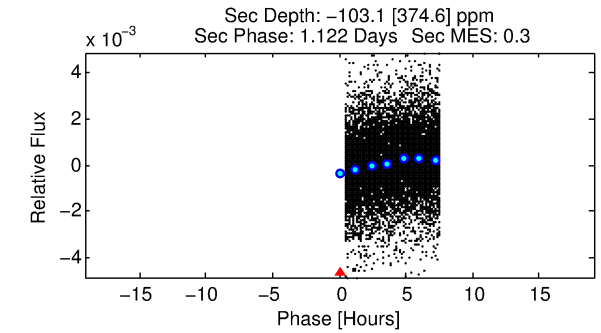
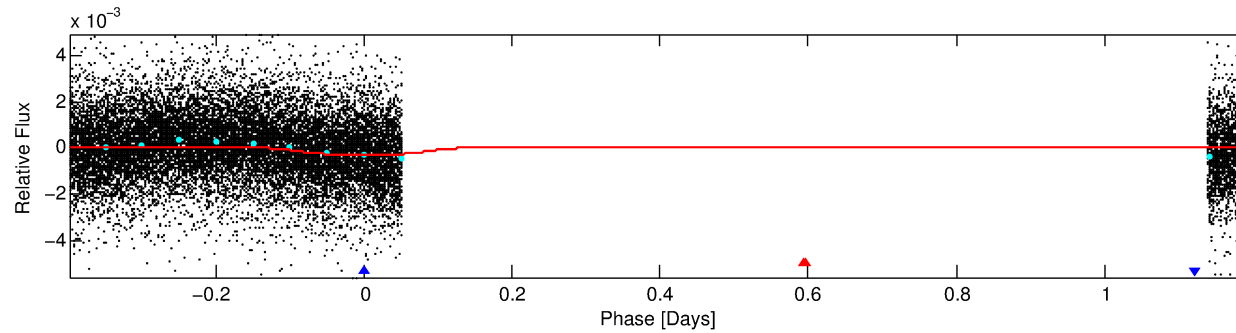
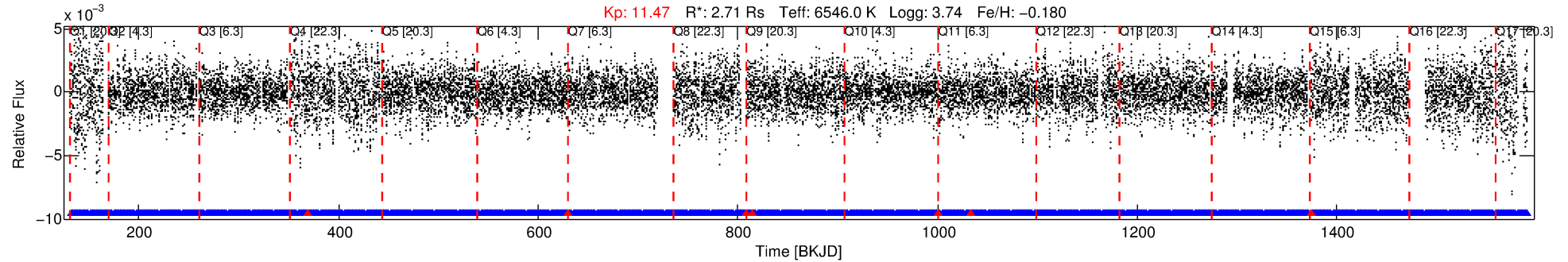
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005476864-02

No Significant Match Found

DV One-Page Summary

KIC: 5476864 Candidate: 2 of 2 Period: 1.592 d



DV Fit Results:

Period = 1.59167 [0.00003] d
Epoch = 132.2379 [0.0247] BKJD
Rp/R* = 0.0197 [0.0012]
a/R* = 1.17 [0.07]
b = 0.97 [0.01]
Seff = 13081.41 [4592.23]
Teq = 2727 [239] K
Rp = 5.81 [1.48] Re
a = 0.0304 [0.0068] AU
Ag = N/A
Teffp = N/A

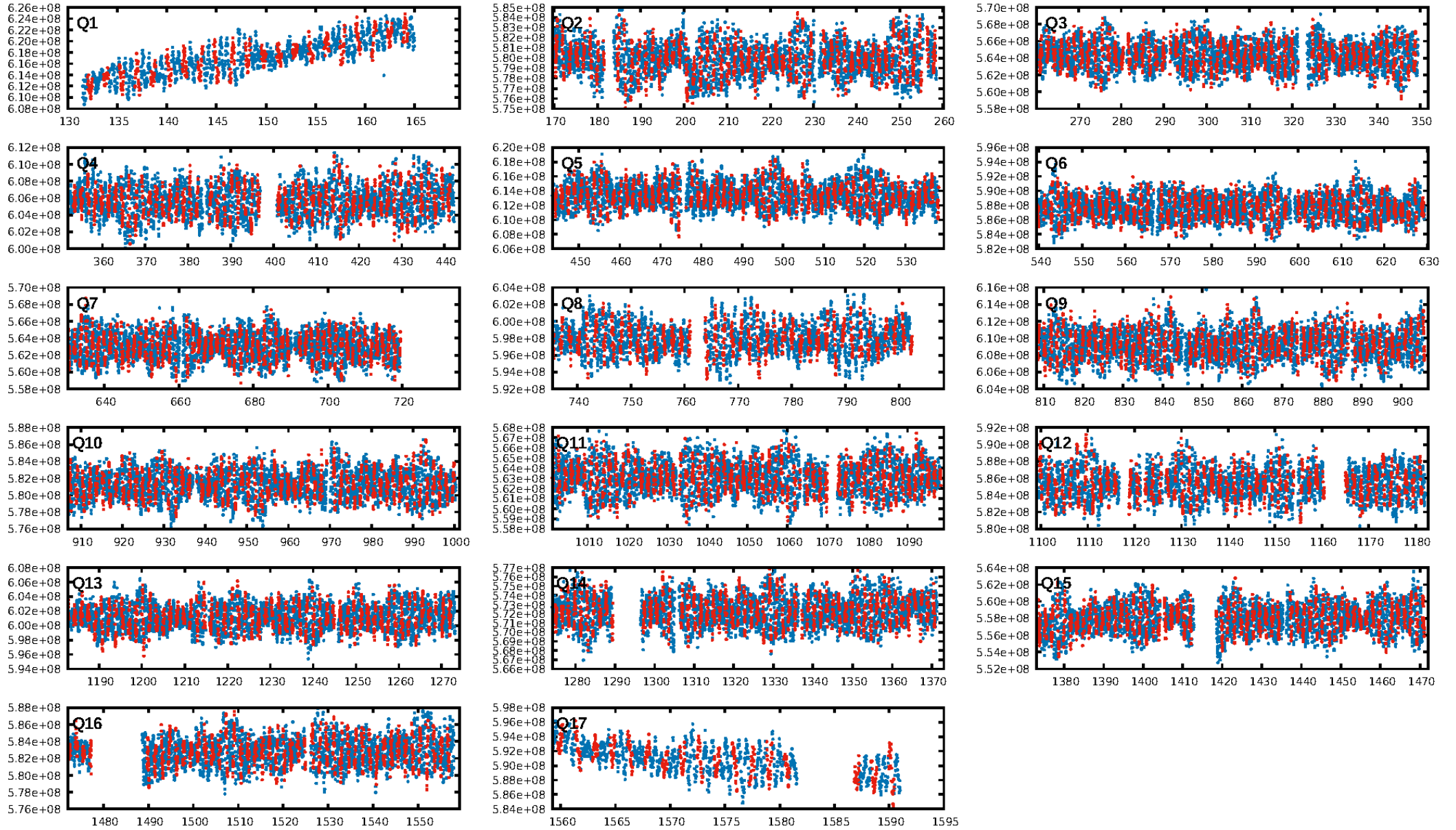
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.12e-71
RollingBand-fgt: 0.99 [803/810]
GhostDiagnostic-chr: 0.6353
Centroid-sig: 0.0%
Centroid-so: 0.547 arcsec [2.07σ]
OotOffset-rm: 0.614 arcsec [4.24σ]
KicOffset-rm: 0.226 arcsec [2.35σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

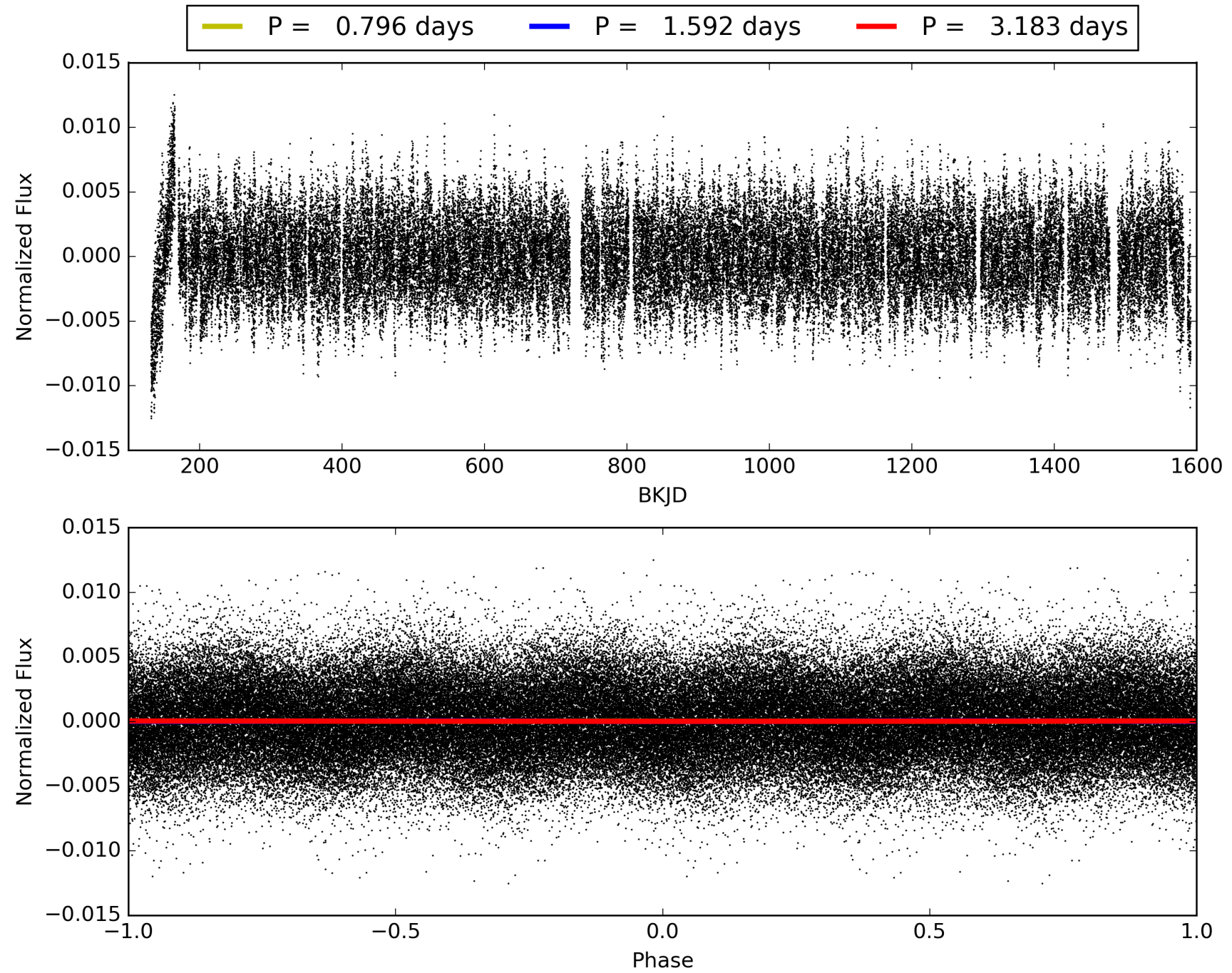
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005476864-02, PDC Light Curves

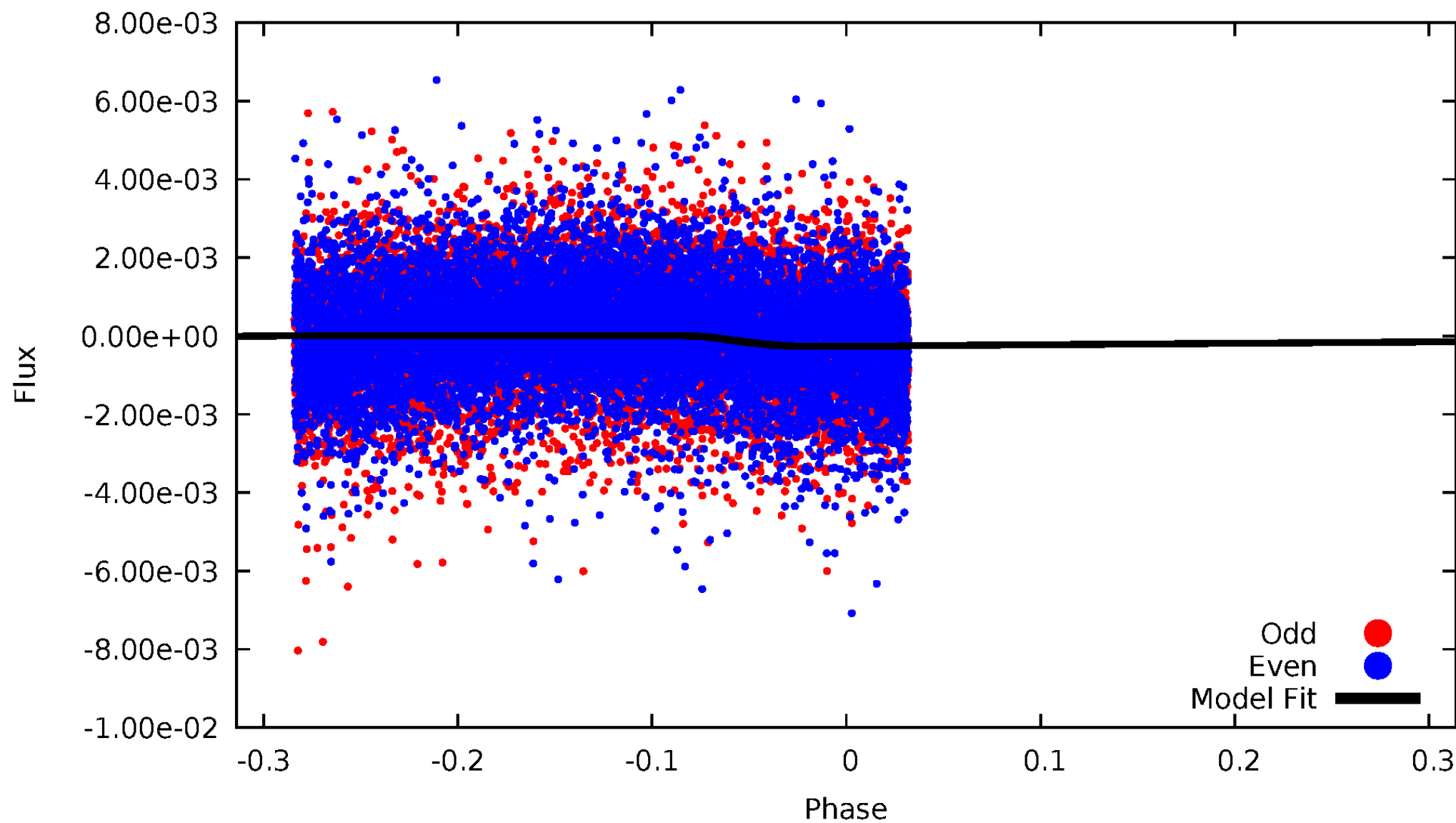


TCE 005476864-02



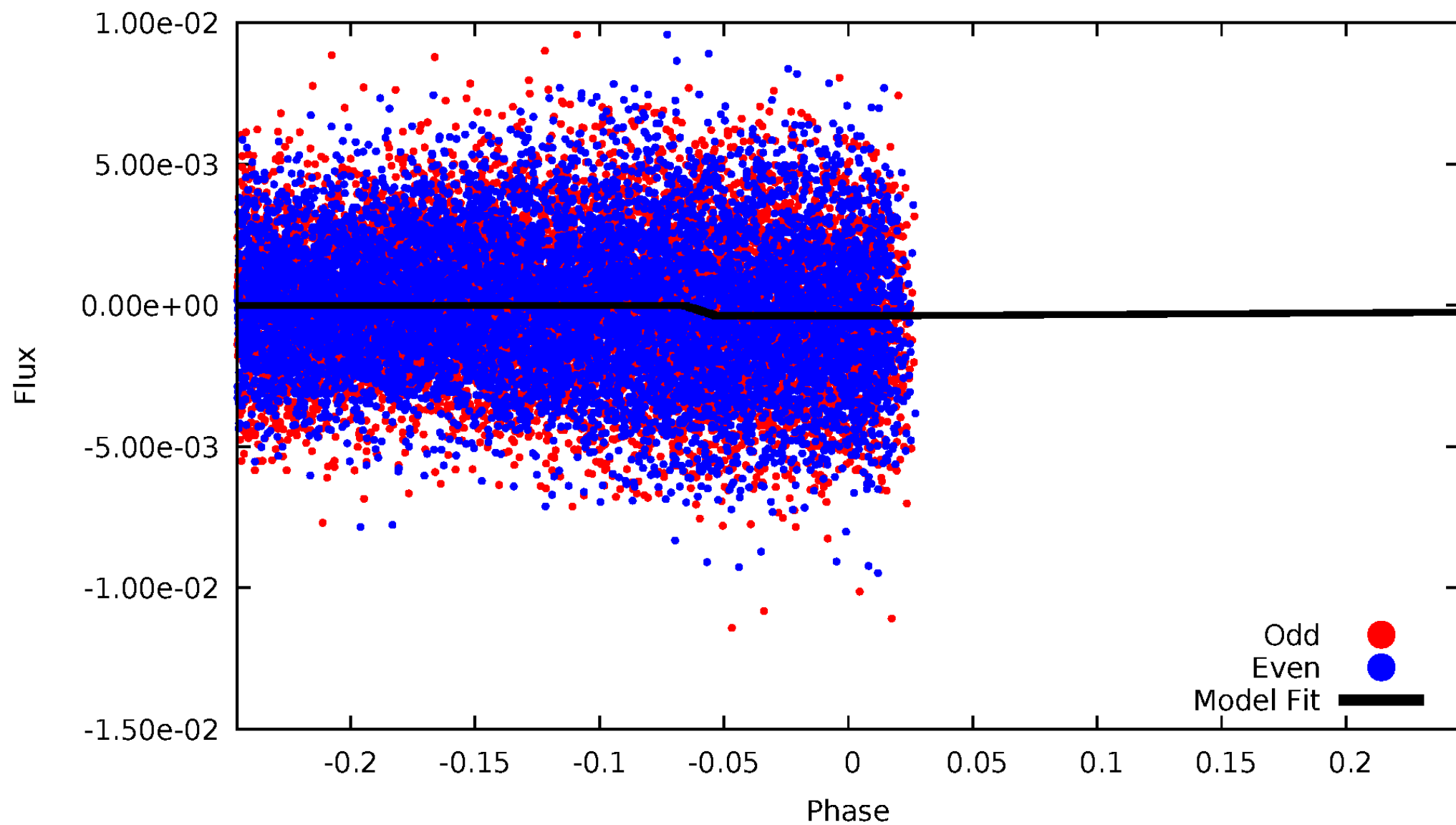
DV Odd/Even

TCE 005476864-02



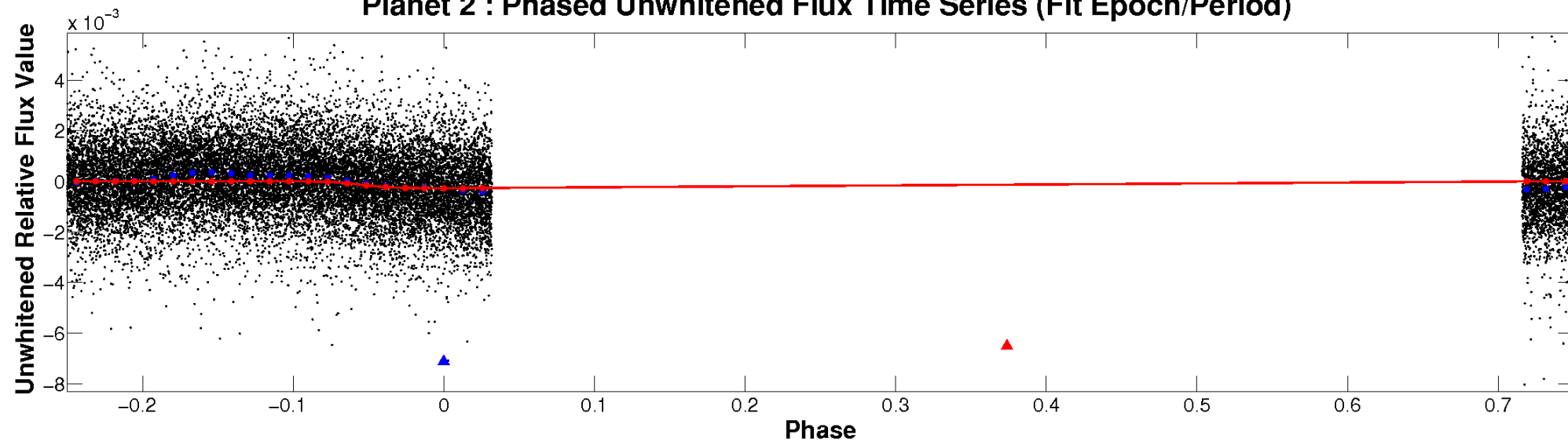
ALT Odd/Even

TCE 005476864-02

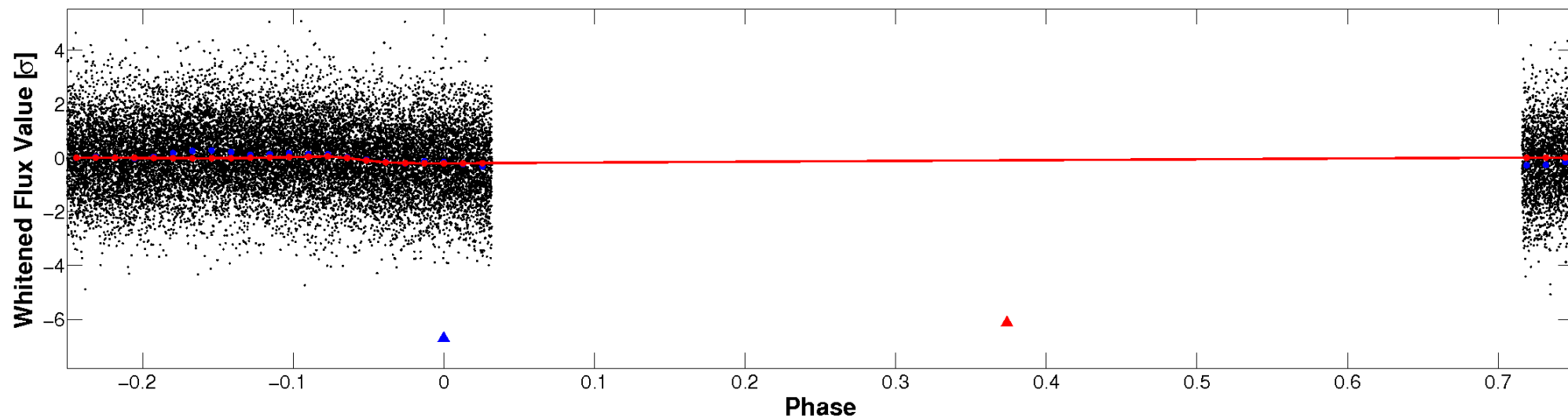


Non-Whitened Vs. Whitened Light Curve

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

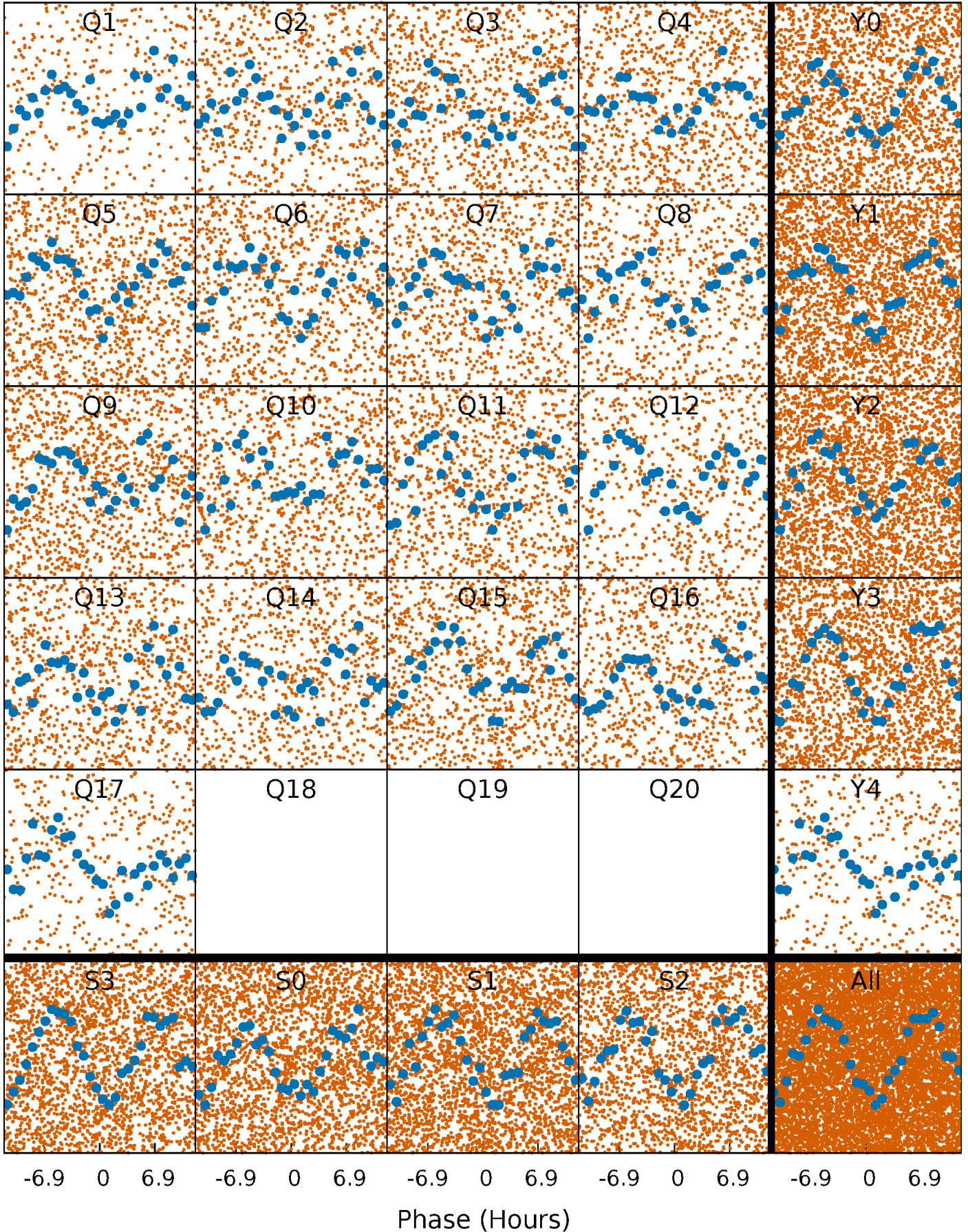


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



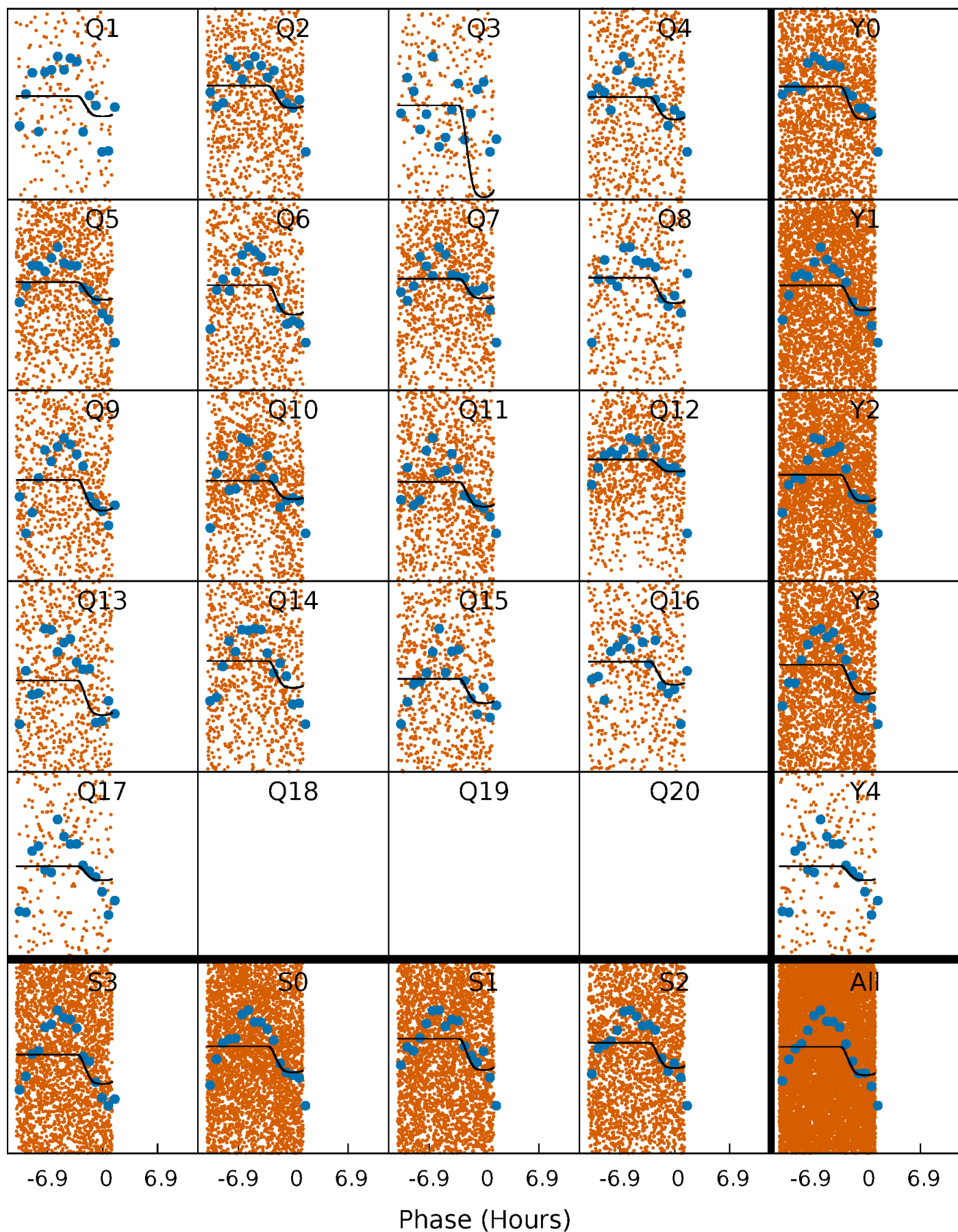
PDC Quarter-Phased Transit Curves

TCE 005476864-02 P= 1.591666 Days $T_0=132.237944$ (BKJD)



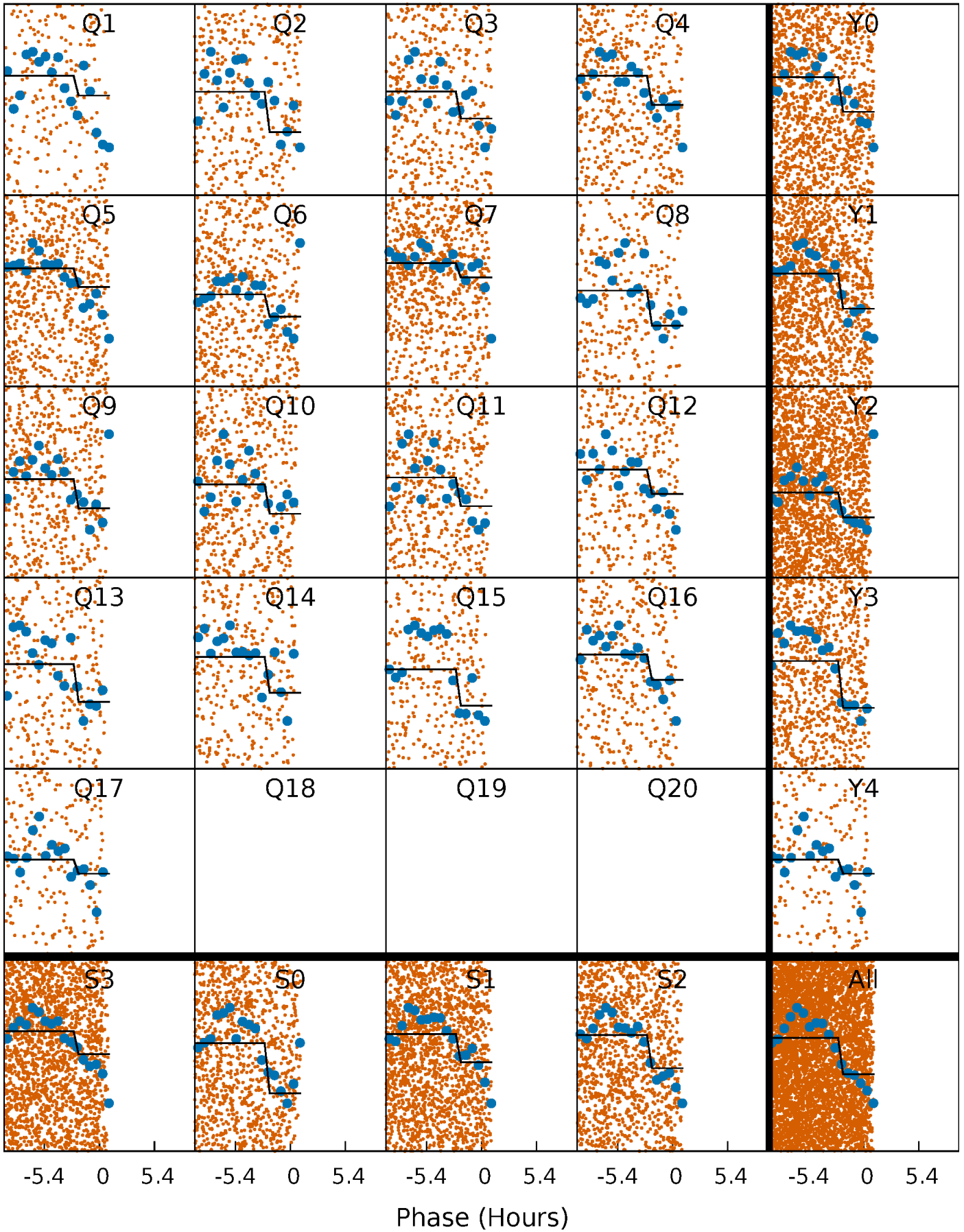
DV Quarter-Phased Transit Curves

TCE 005476864-02 P= 1.591666 Days $T_0=132.237944$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

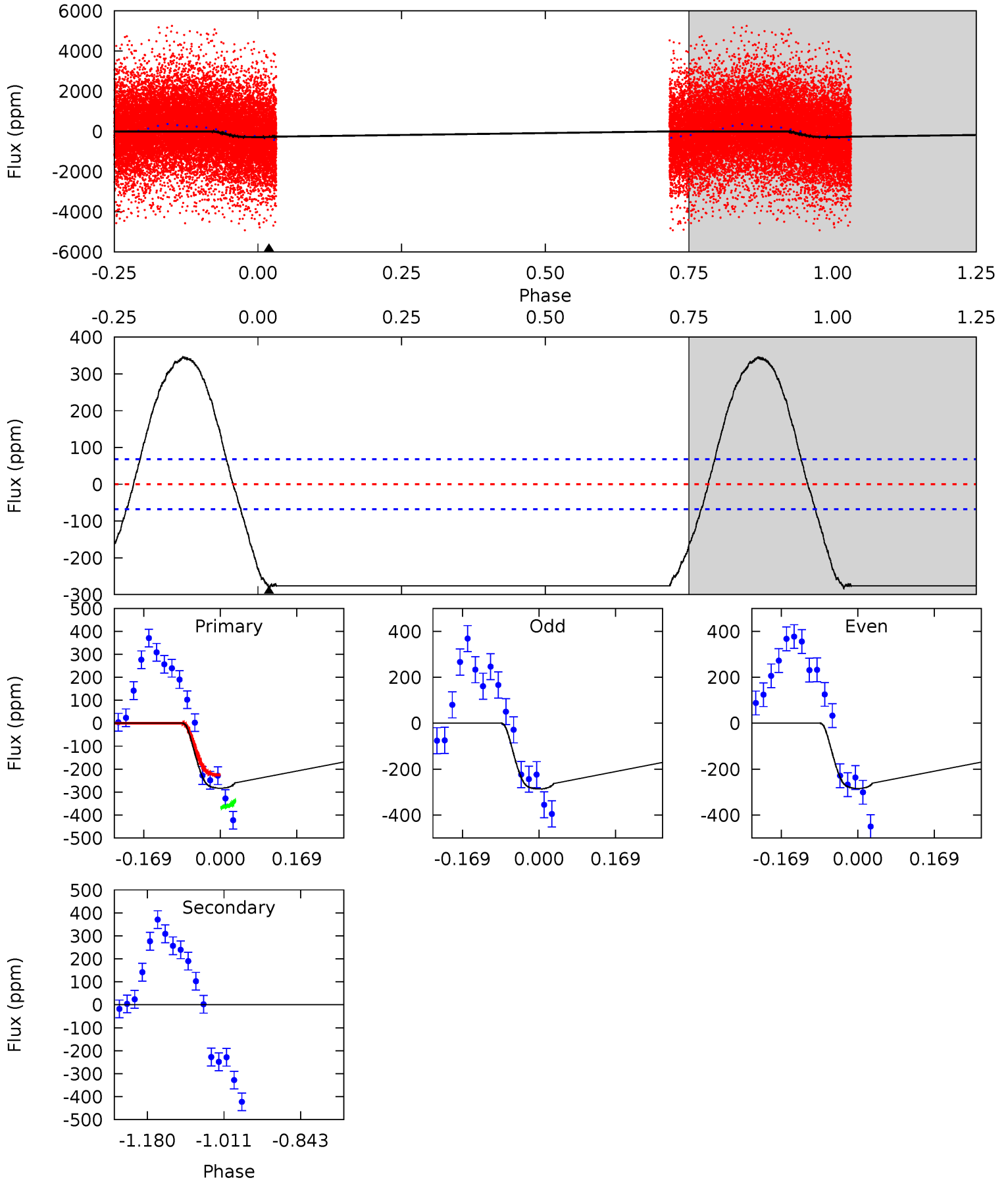
TCE 005476864-02 P= 1.591699 Days $T_0=132.245611$ (BKJD)



DV Model-Shift Uniqueness Test

005476864-02, P = 1.591666 Days, E = 130.646278 Days

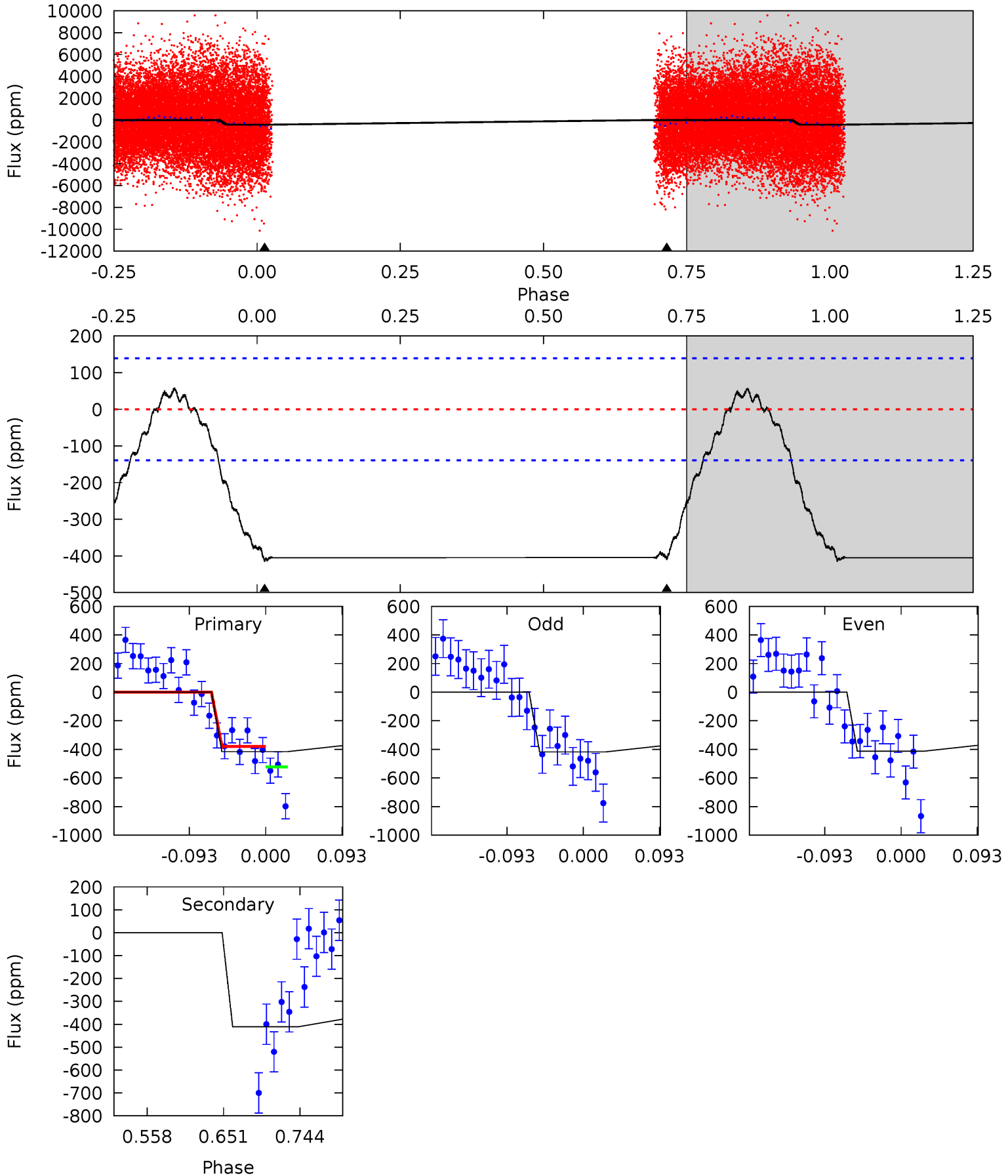
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	0	0	0	4.45	1.38	12.6	18.6	18.6	0	0	0.07	1.10	0.55	4.14



Alt Model-Shift Uniqueness Test

005476864-02, P = 1.591699 Days, E = 130.653912 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	13.5	0	0	4.58	1.68	2.35	13.7	13.7	13.5	13.5	0.08	0.99	0.12	1.70



Stellar Parameters For KIC 005476864

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6546^{+118}_{-131}	$3.741^{+0.195}_{-0.065}$	$-0.180^{+0.150}_{-0.100}$	$2.707^{+0.361}_{-0.670}$	$1.473^{+0.179}_{-0.199}$	$0.104^{+0.117}_{-0.023}$
	+2%/-2%	+5%/-2%	+83%/-56%	+13%/-25%	+12%/-14%	+112%/-22%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 005476864-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 15	$5.71^{+0.61}_{-0.79}$	3768^{+153}_{-230}	-3570^{+865}_{-367}	$-0.027^{+0.274}_{-0.240}$
Alt.	-411 ± 30	$5.42^{+0.69}_{-0.71}$	3754^{+151}_{-237}	6704^{+321}_{-312}	$7.160^{+2.159}_{-1.445}$

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 $A_{obs} \gg 1.0$

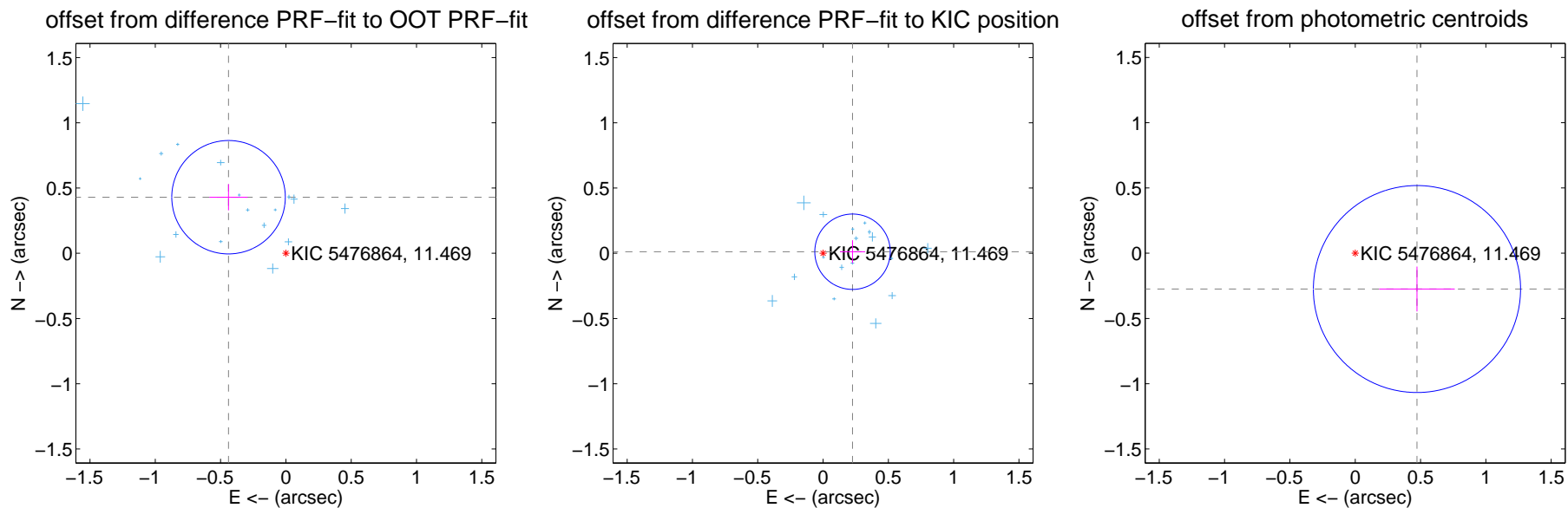
DV Centroid Data

Supplemental centroid analysis for 005476864-02. **Kepler magnitude: 11.47.** Transit SNR 14.08

There are 17 quarters with good PRF difference image offsets

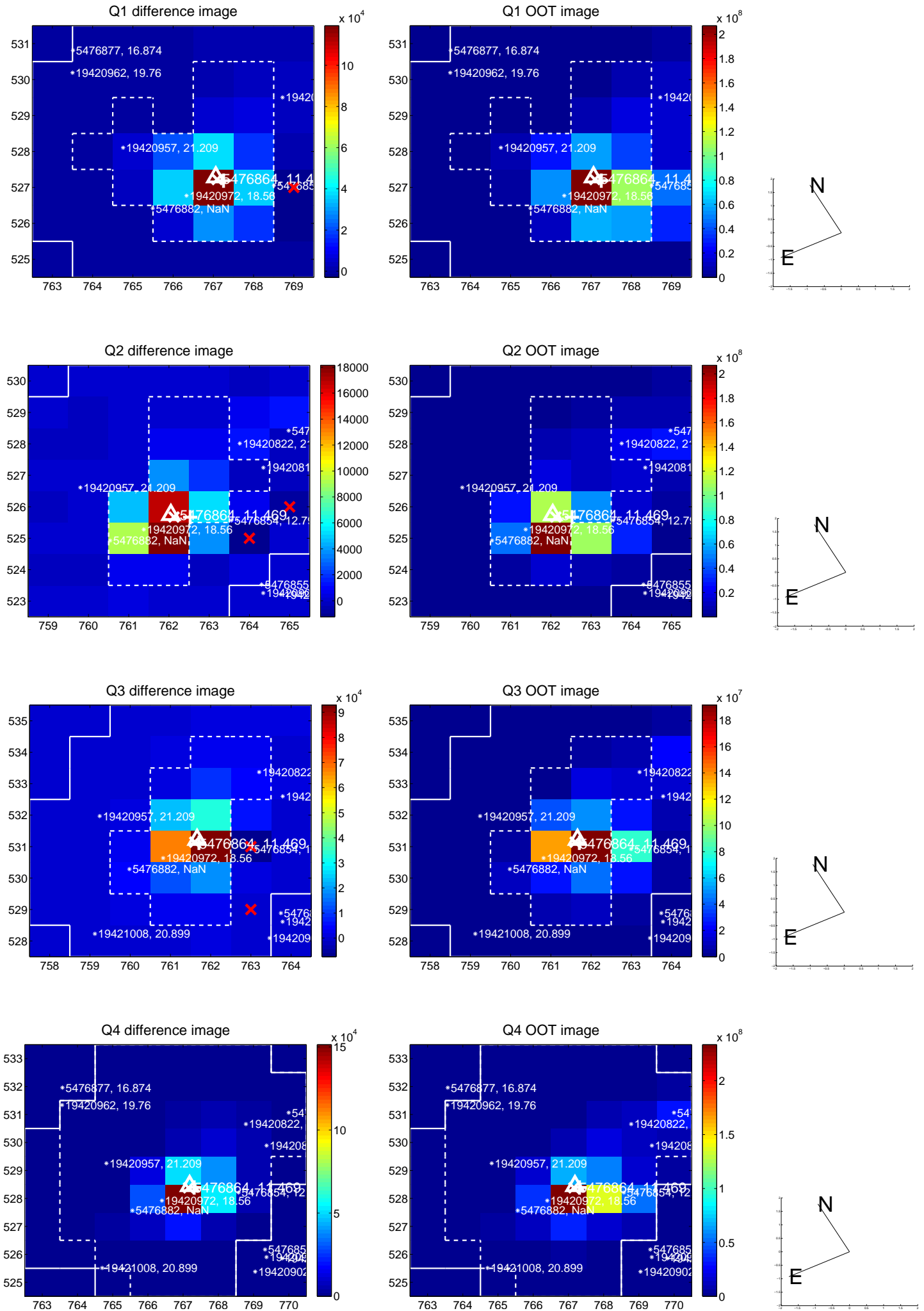
The direct PRF centroid is offset from the target star catalog position by about 0.66 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.614 ± 0.145	4.24	0.439 ± 0.146	0.430 ± 0.101
PRF-fit source offset from KIC position	0.226 ± 0.096	2.35	-0.226 ± 0.096	0.012 ± 0.088
photometric centroid source offset	0.55 ± 0.26	2.07	-0.47 ± 0.29	-0.27 ± 0.17

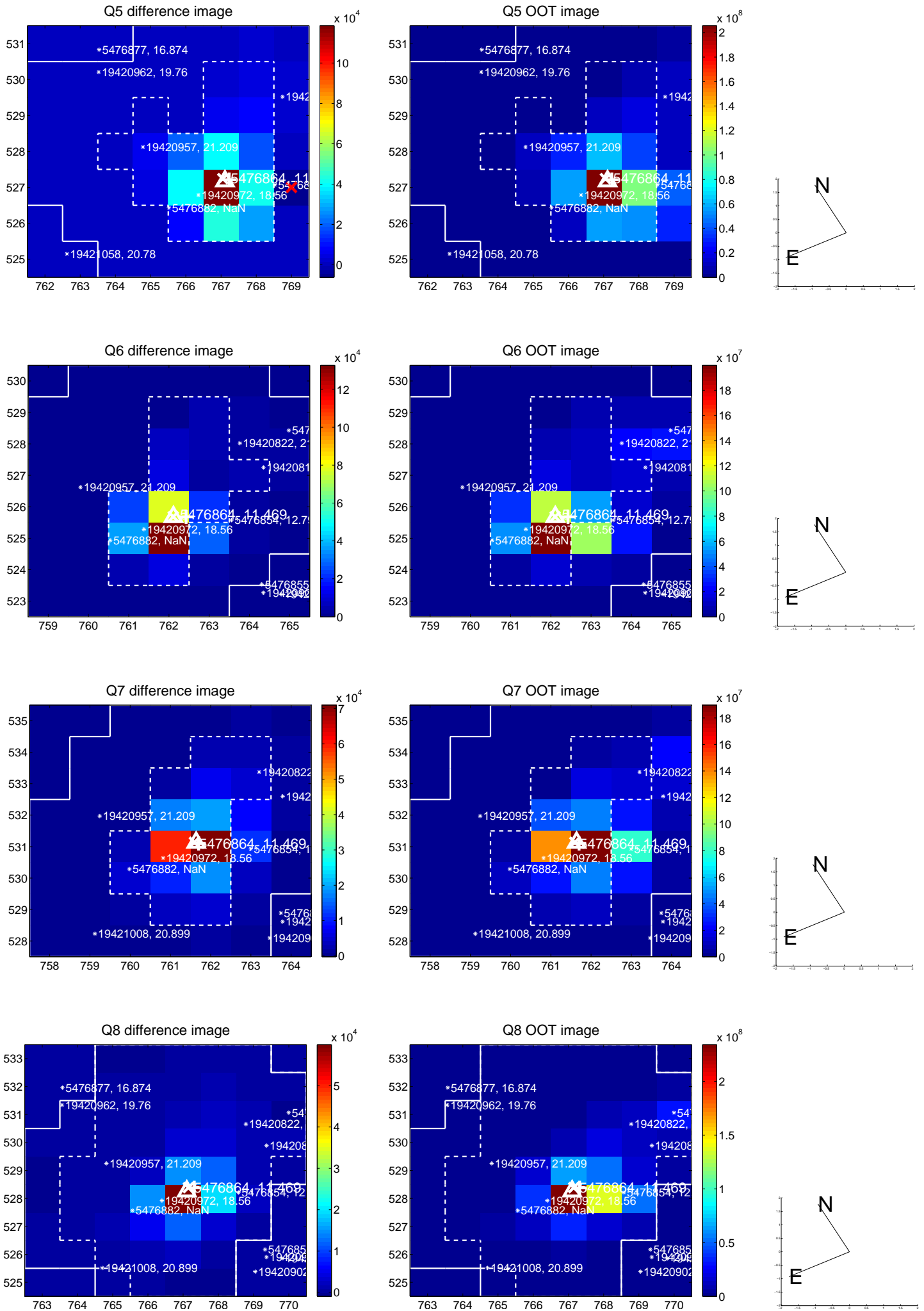


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

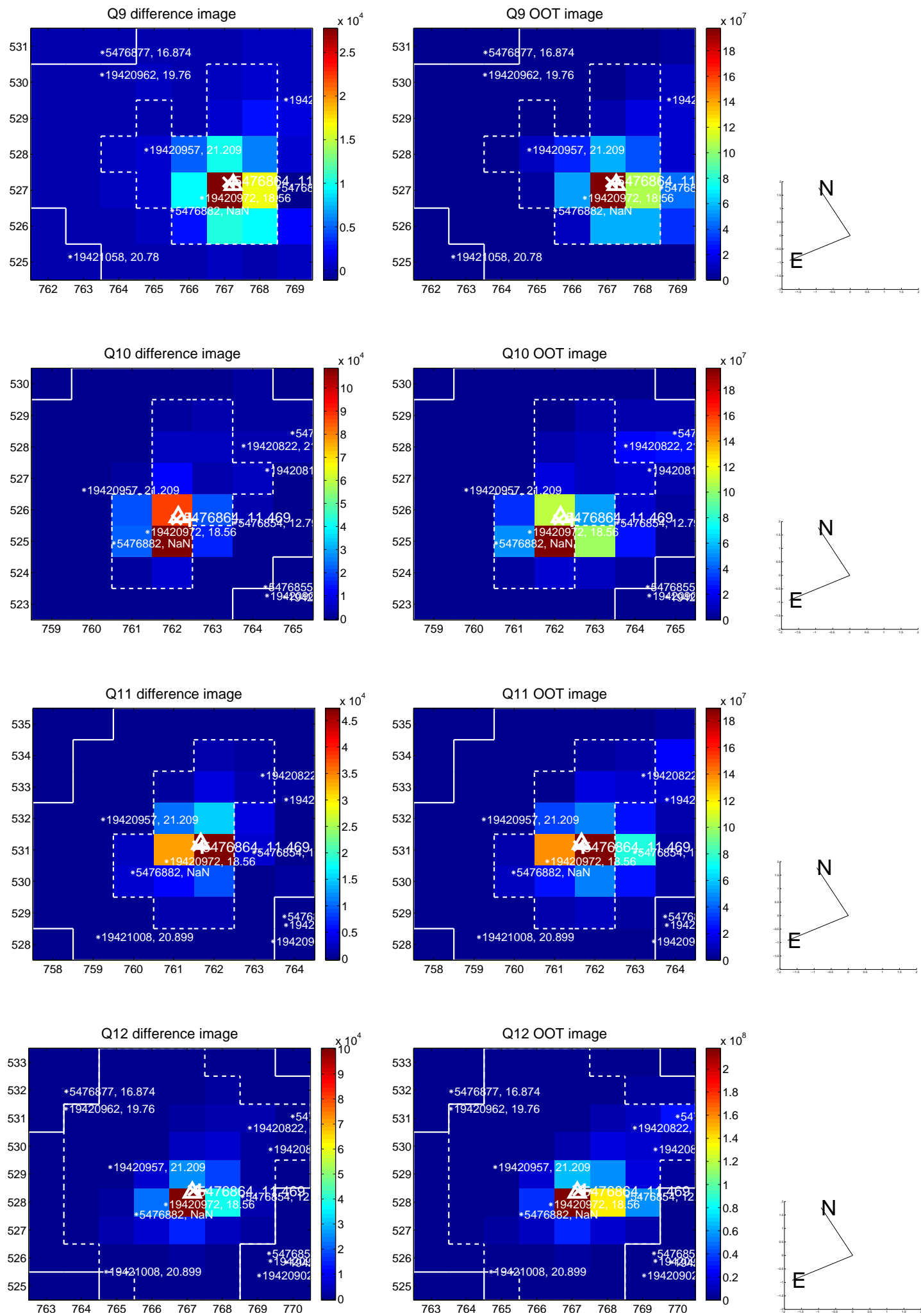
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



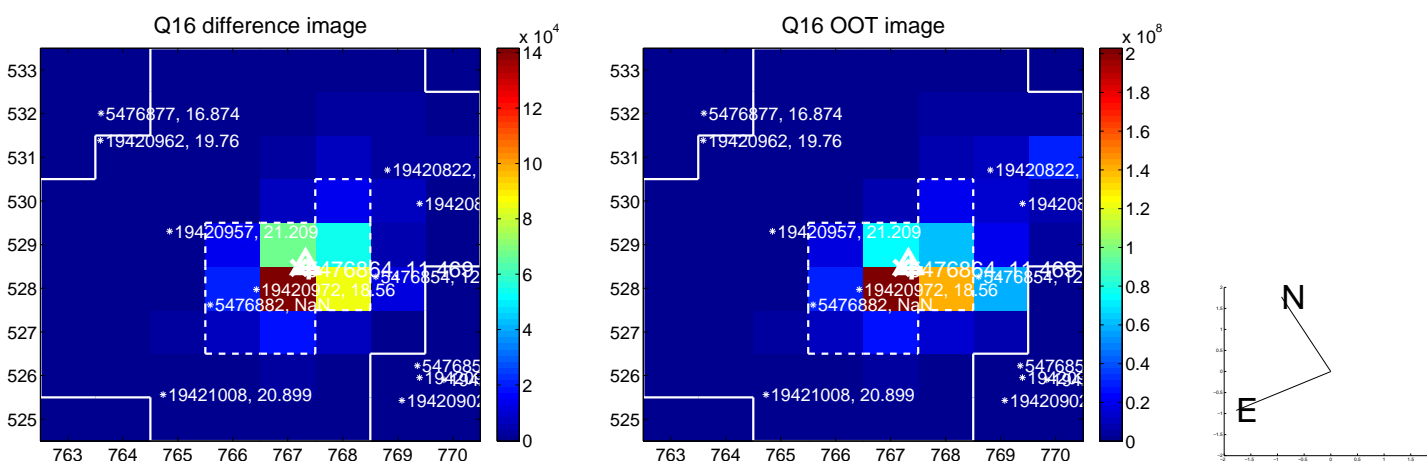
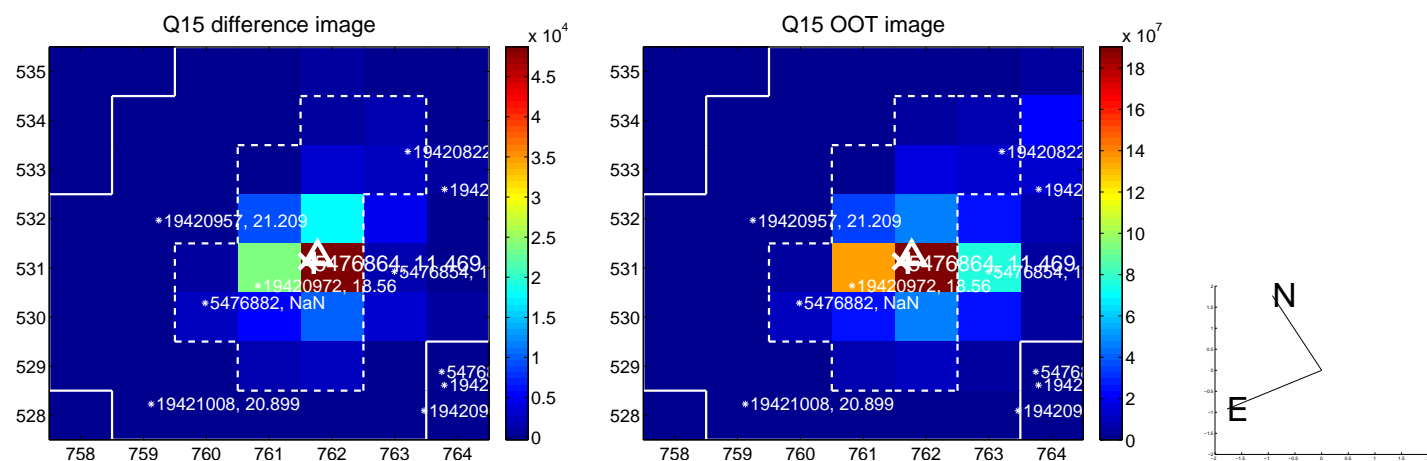
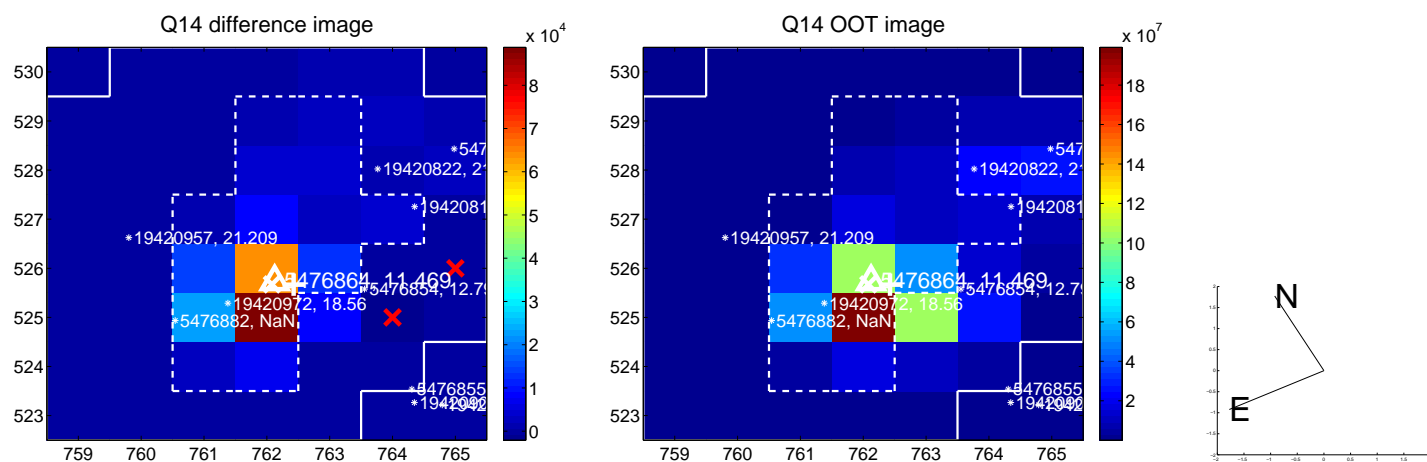
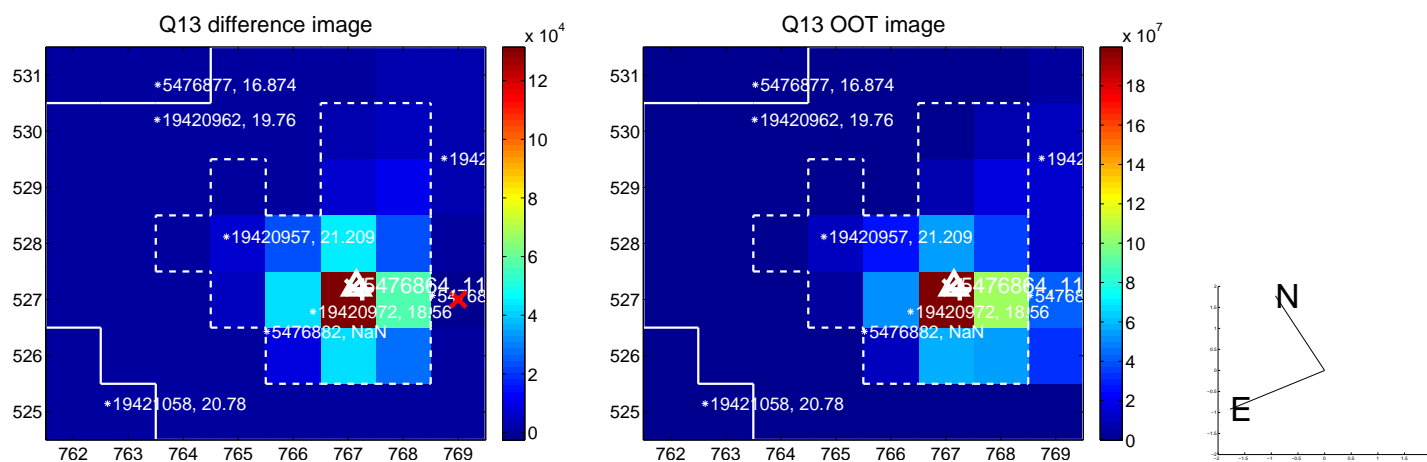
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



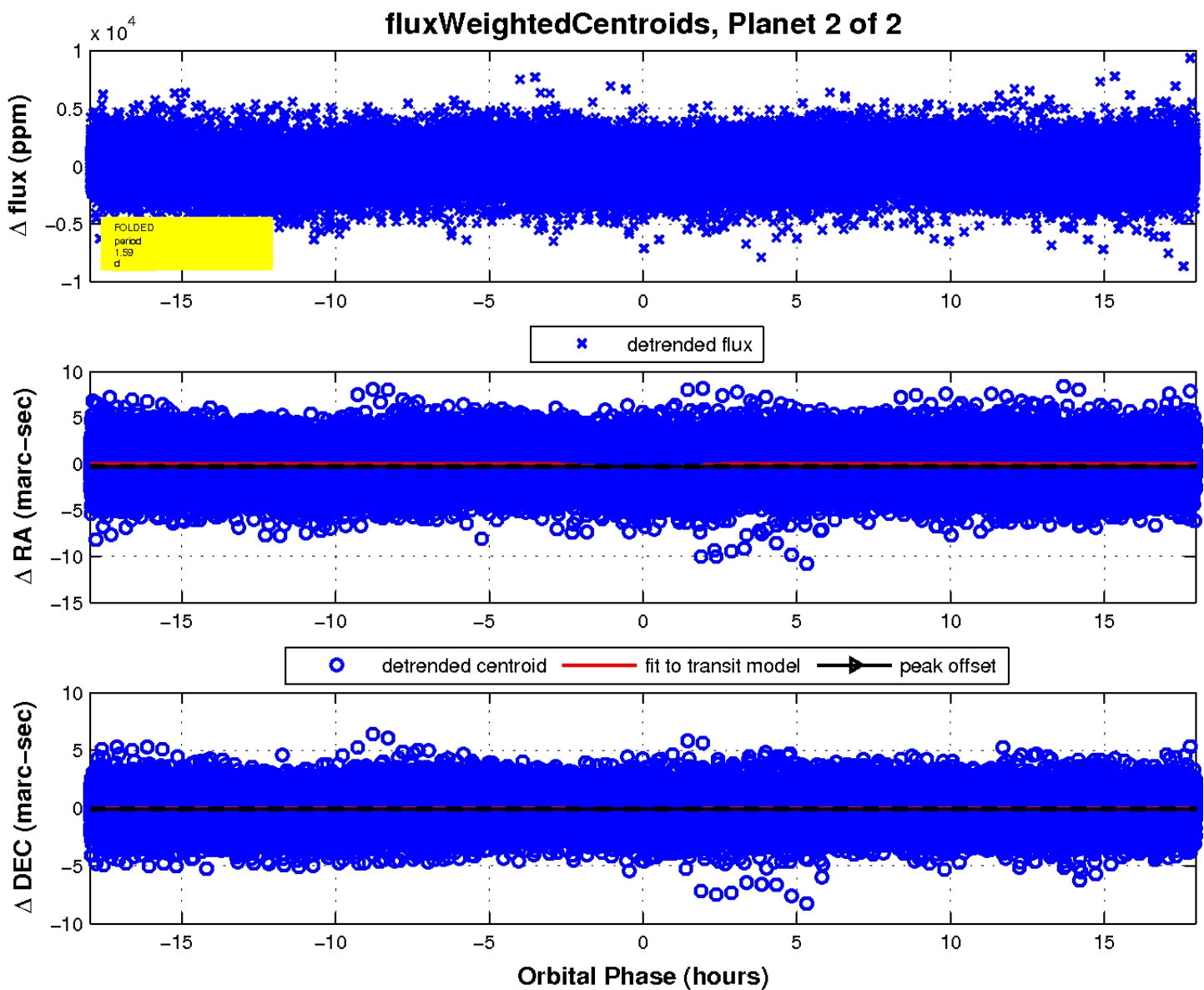
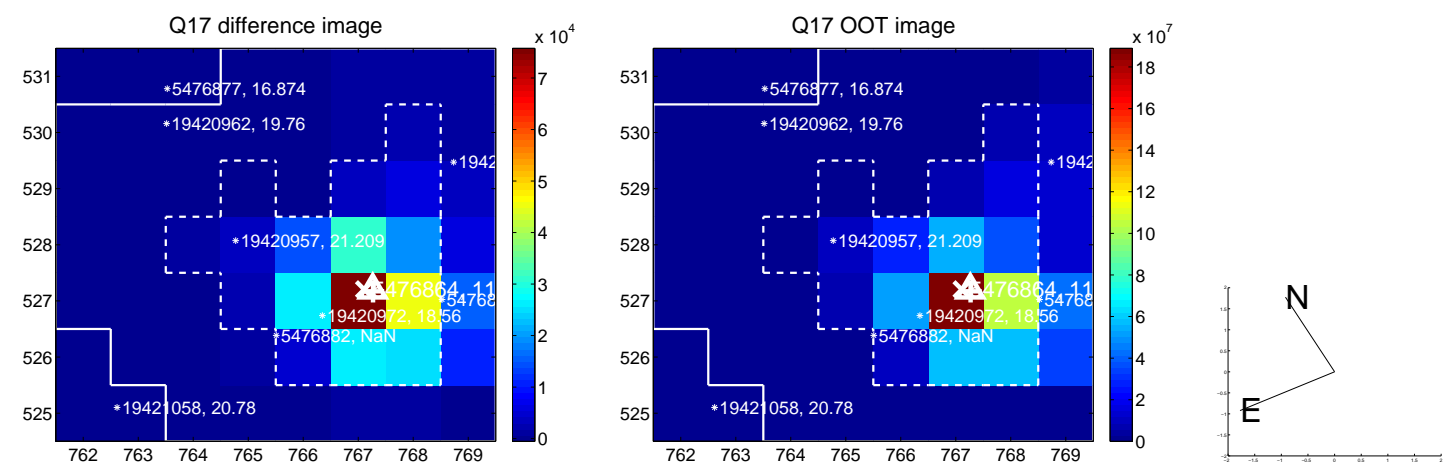
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

