

KIC 005476273

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})
005476273-01	OBS	No	1.374212	131.767941	67.5	6.146	12.7	13.4	1.50	7408	1.45	8268.12
005476273-02	OBS	No	332.959877	237.491668	1773.8	28.777	20.2	19.3	1.50	7408	11.56	5.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005476273-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005476273-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—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.

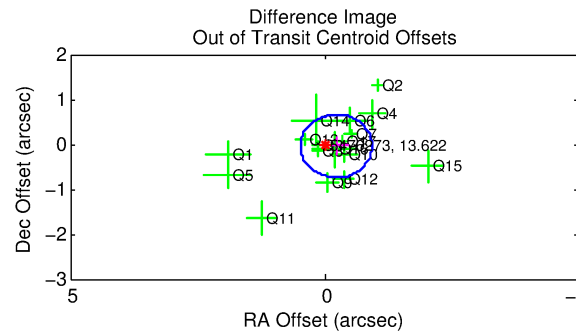
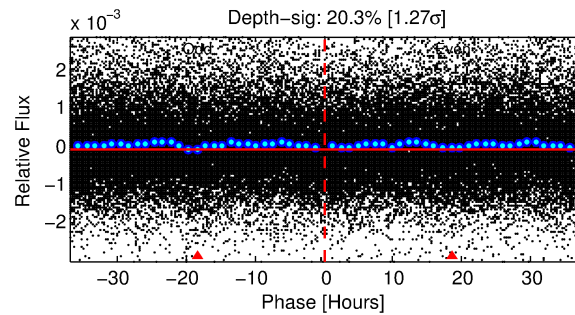
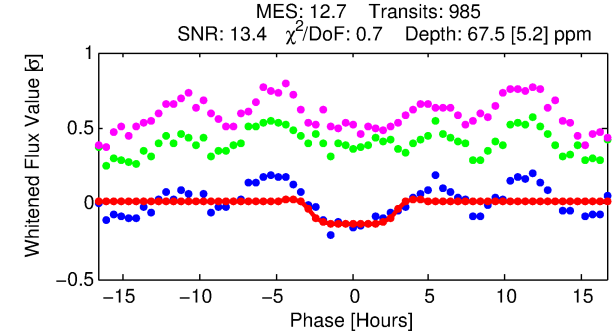
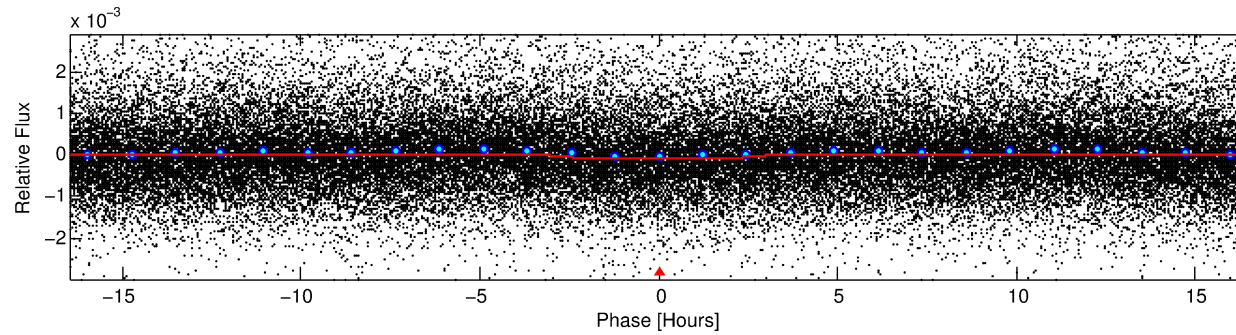
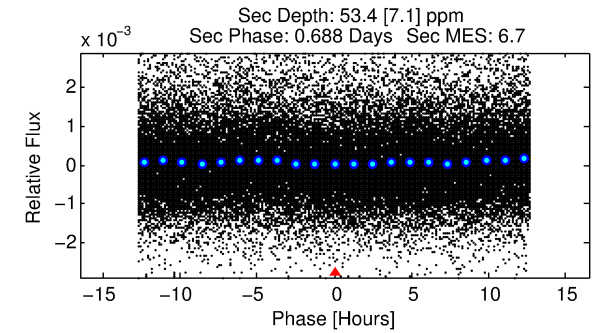
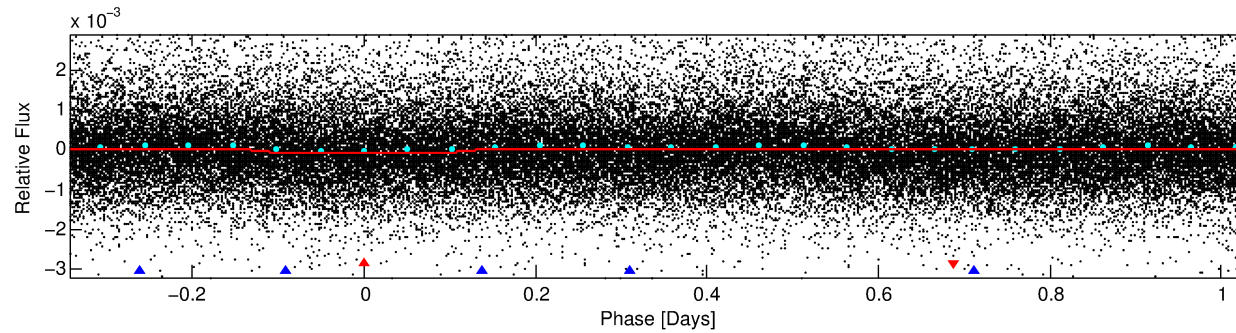
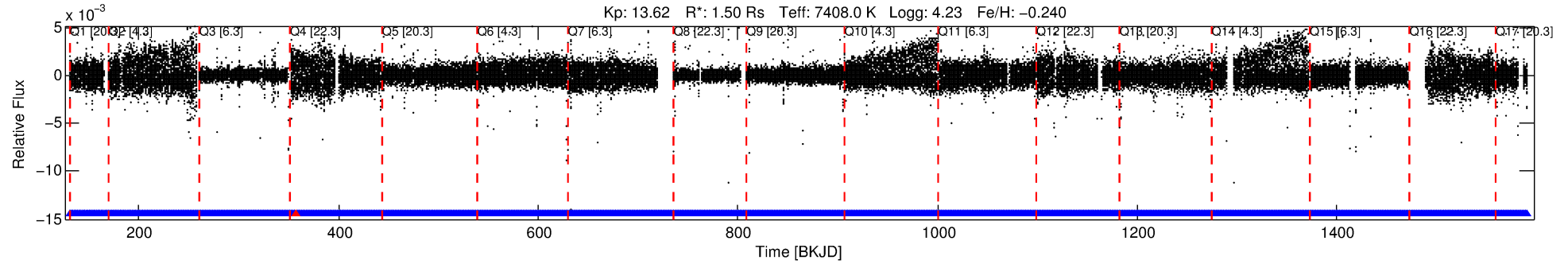
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005476273-01

No Significant Match Found

DV One-Page Summary

KIC: 5476273 Candidate: 1 of 2 Period: 1.374 d



DV Fit Results:

Period = 1.37421 [0.00001] d
Epoch = 131.7679 [0.0051] BKJD
Rp/R* = 0.0088 [0.0024]
a/R* = 1.20 [0.63]
b = 0.91 [0.32]
Seff = 8268.12 [3359.69]
Teq = 2432 [247] K
Rp = 1.45 [0.62] Re
a = 0.0271 [0.0072] AU
Ag = 10.36 [6.98] [1.34σ]
Teffp = 6744 [991] K [4.22σ]

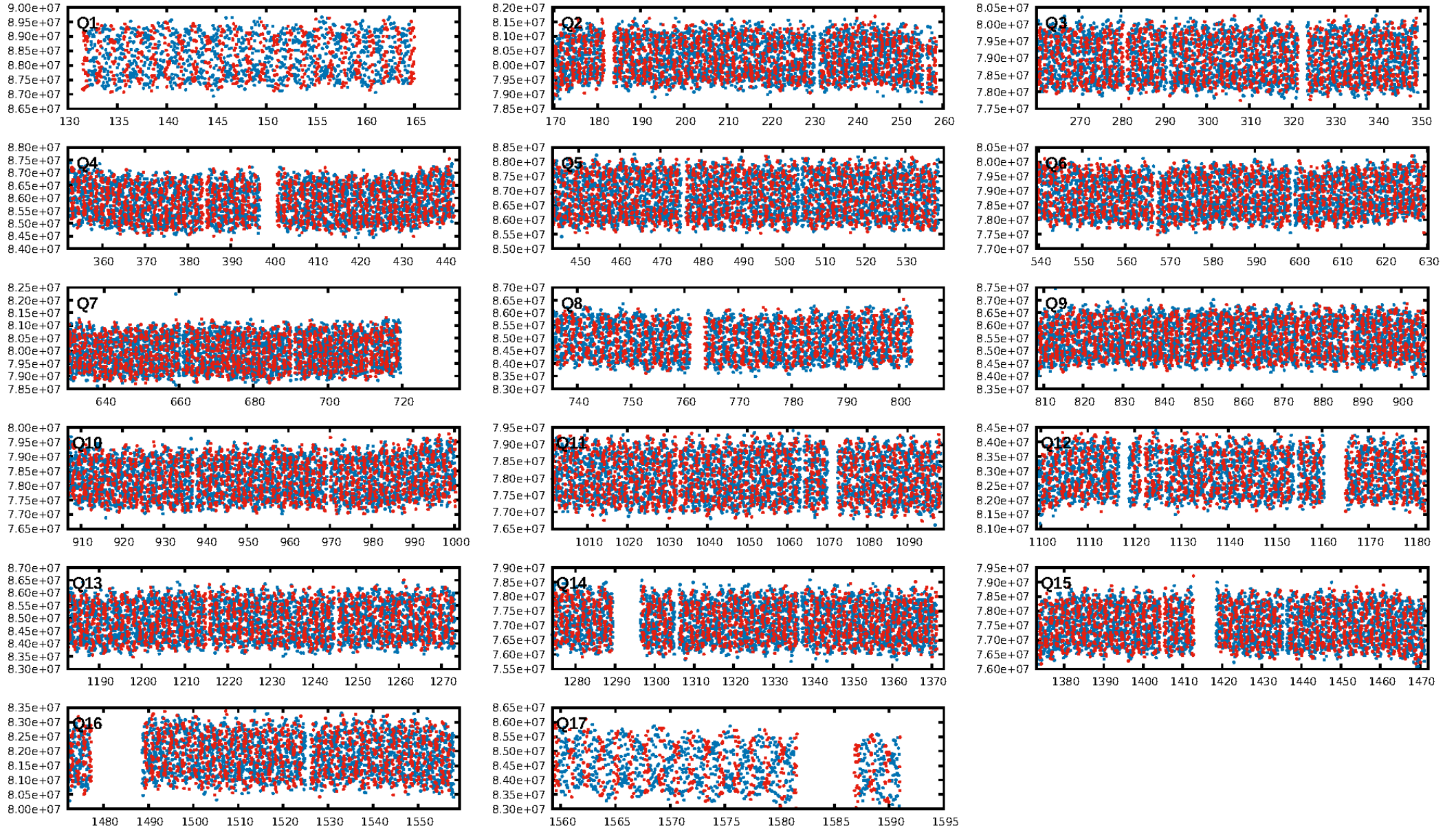
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [270.44σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.11e-31
RollingBand-fgt: 1.00 [939/940]
GhostDiagnostic-chr: 1.539
Centroid-sig: 0.0%
Centroid-so: 0.594 arcsec [1.36σ]
OotOffset-rm: 0.231 arcsec [0.99σ]
KicOffset-rm: 0.232 arcsec [0.89σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

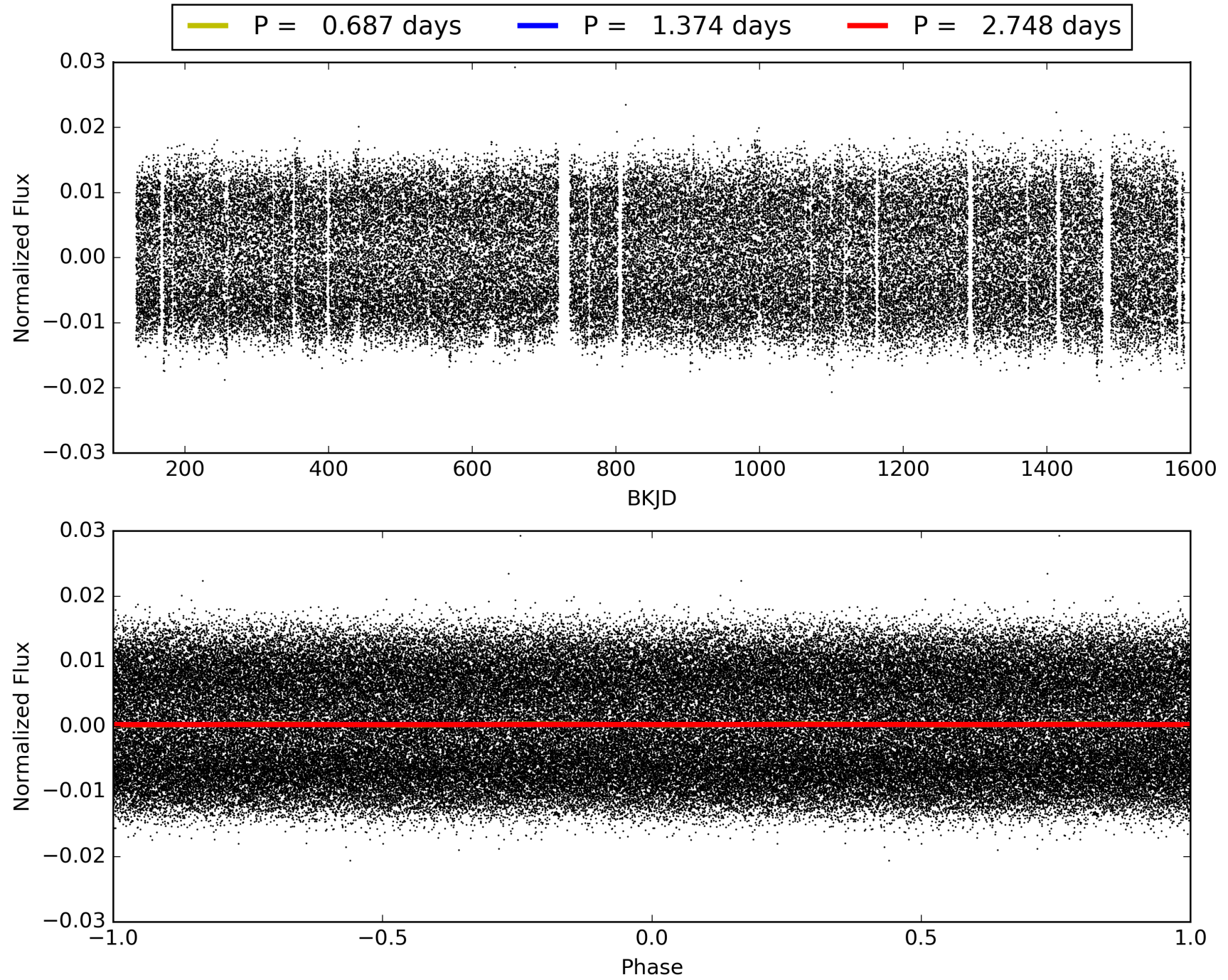
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:45:52 Z

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

TCE 005476273-01, PDC Light Curves

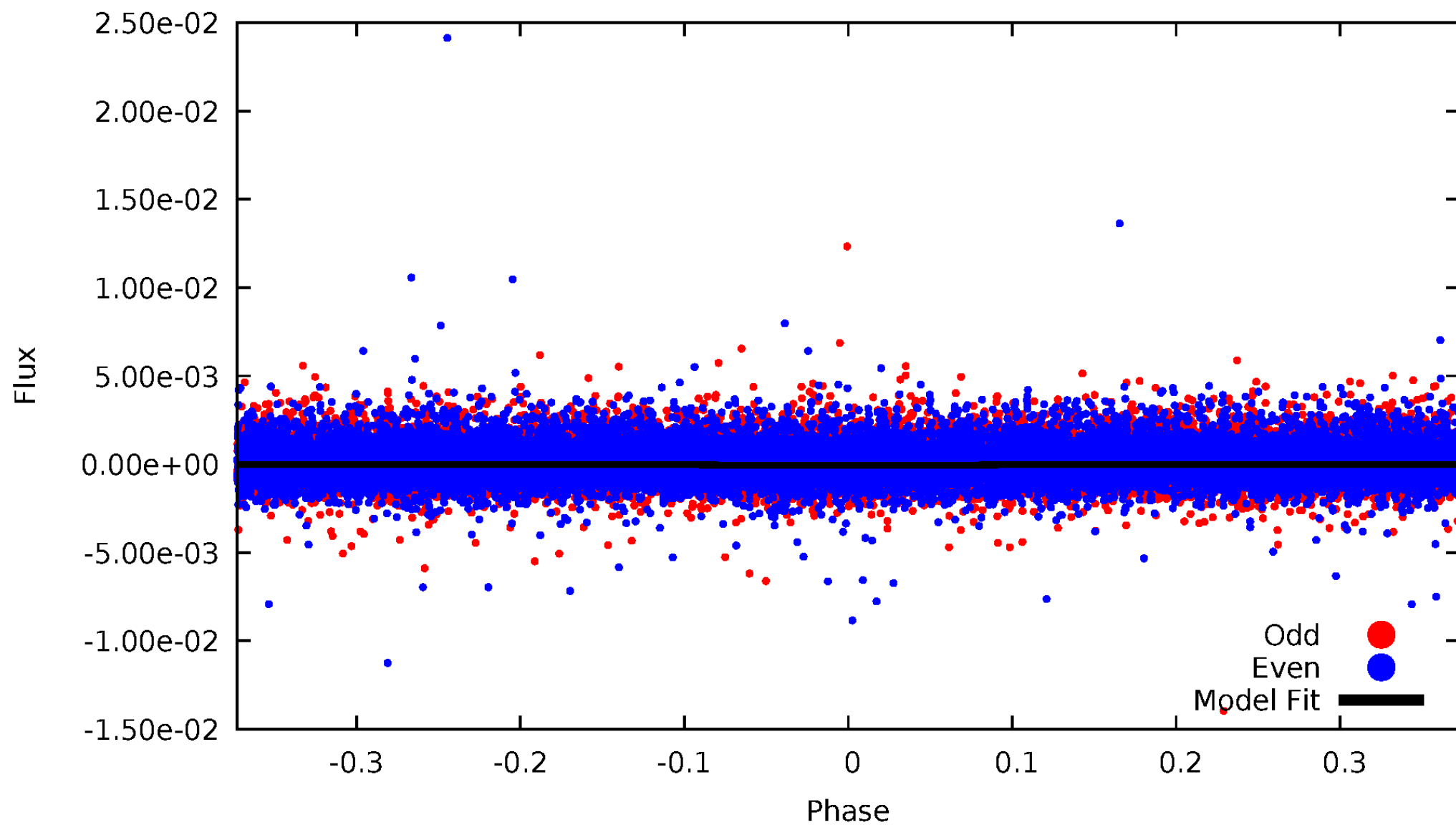


TCE 005476273-01



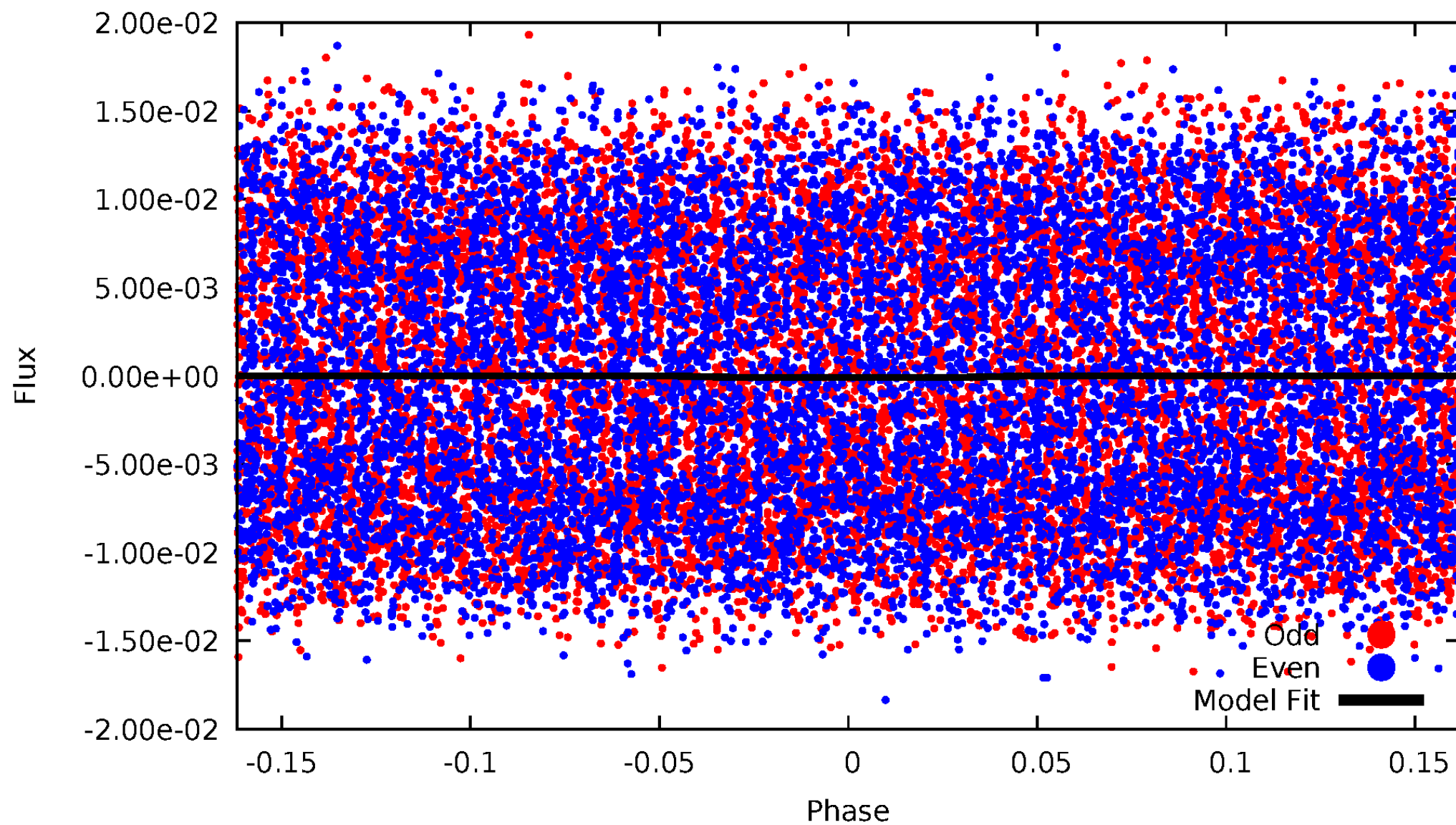
DV Odd/Even

TCE 005476273-01

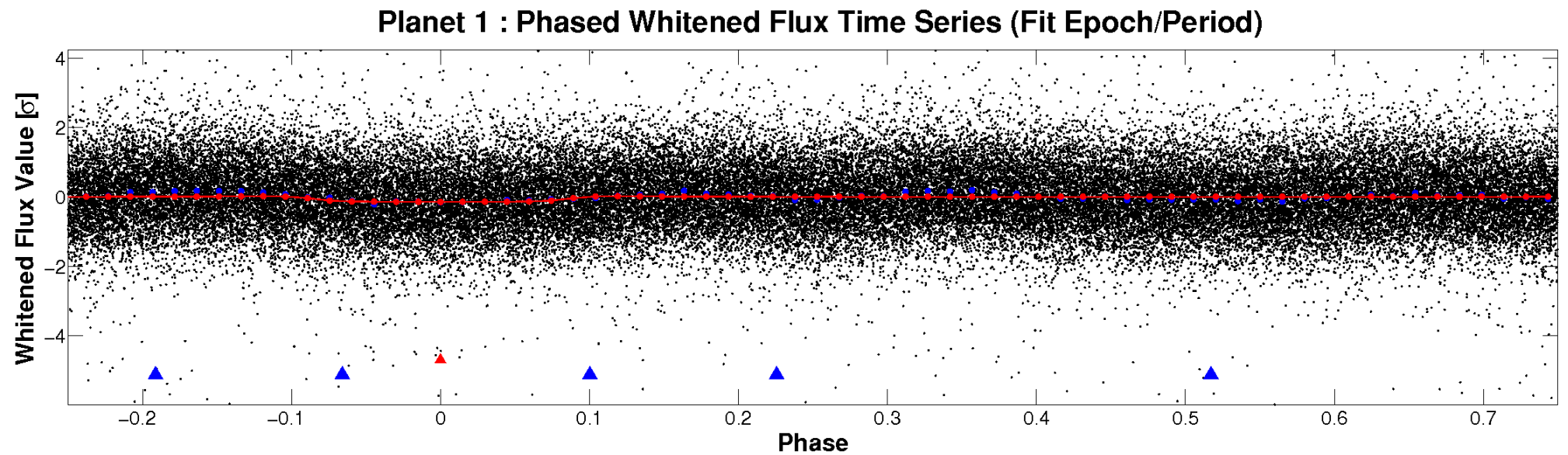
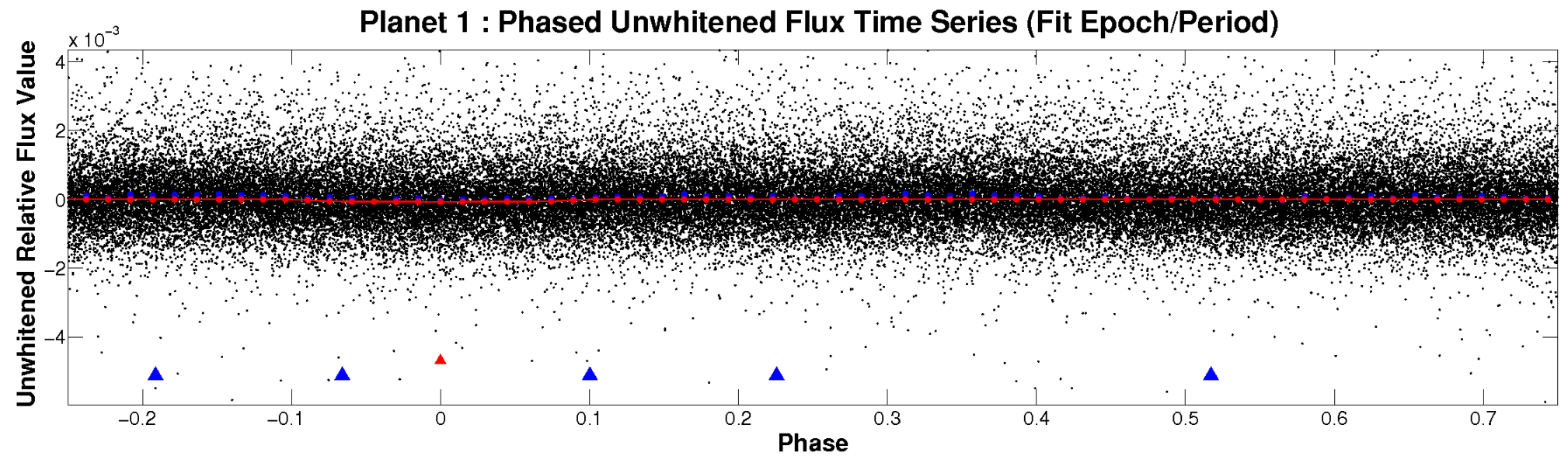


ALT Odd/Even

TCE 005476273-01

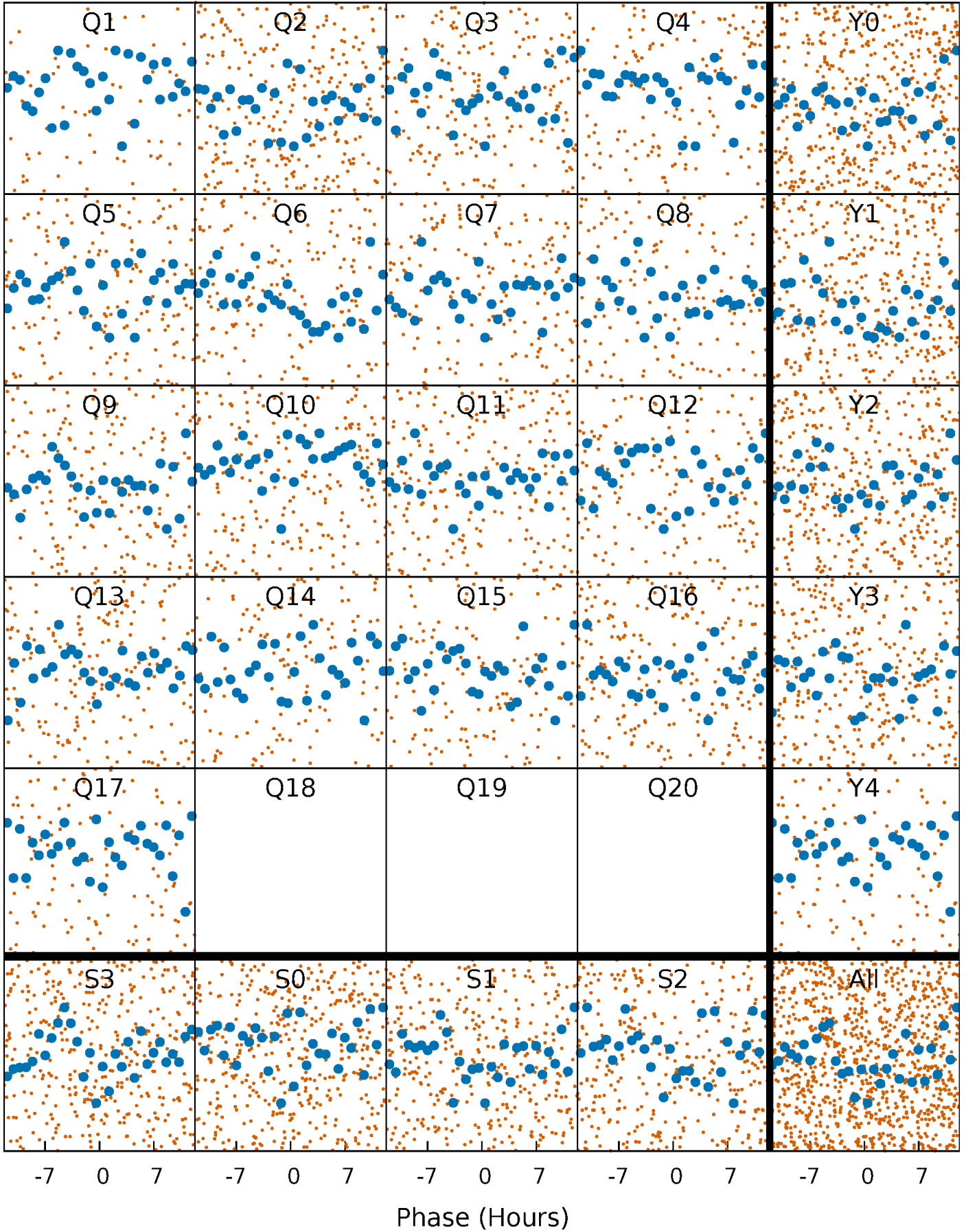


Non-Whitened Vs. Whitened Light Curve



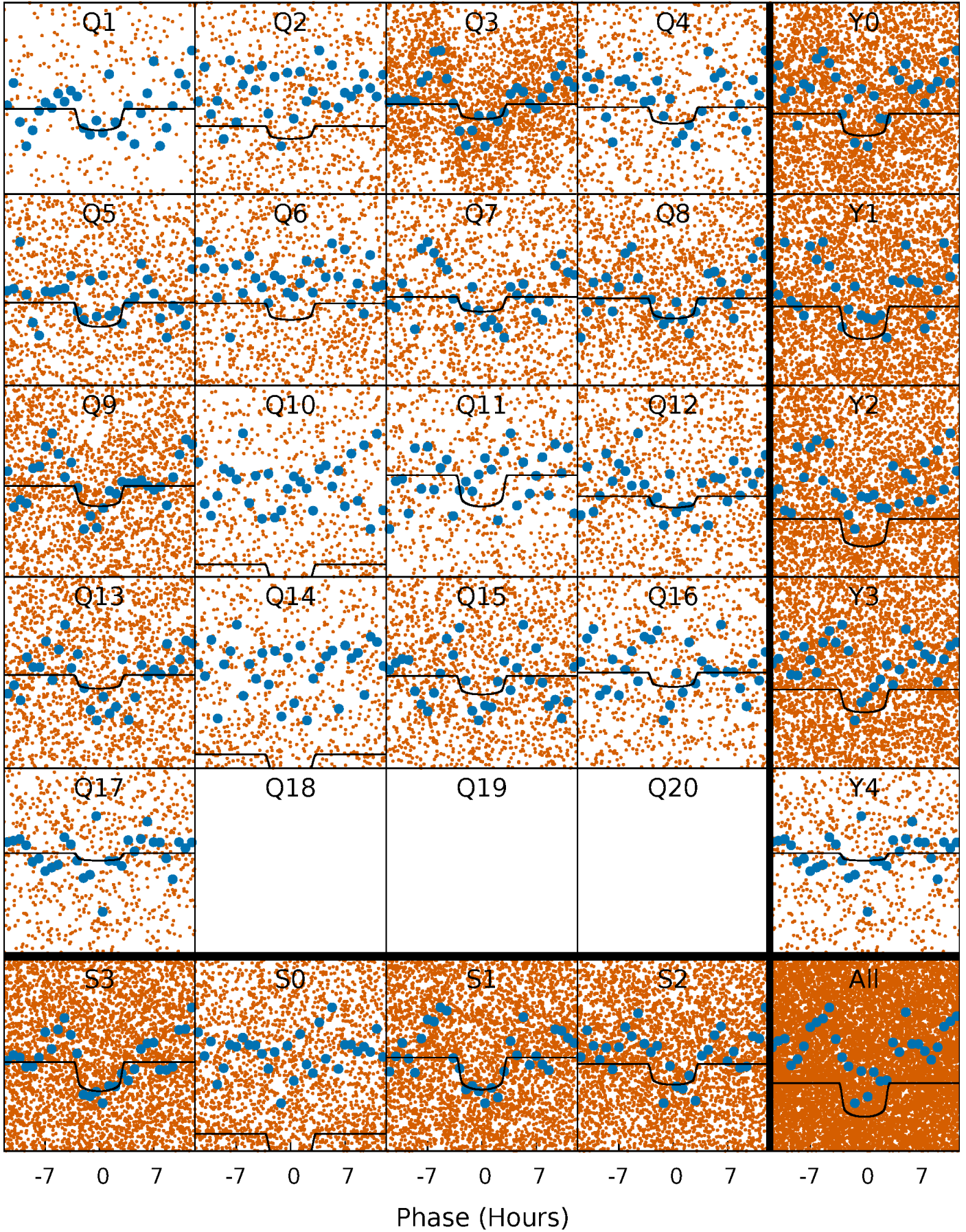
PDC Quarter-Phased Transit Curves

TCE 005476273-01 P= 1.374212 Days $T_0=131.767941$ (BKJD)



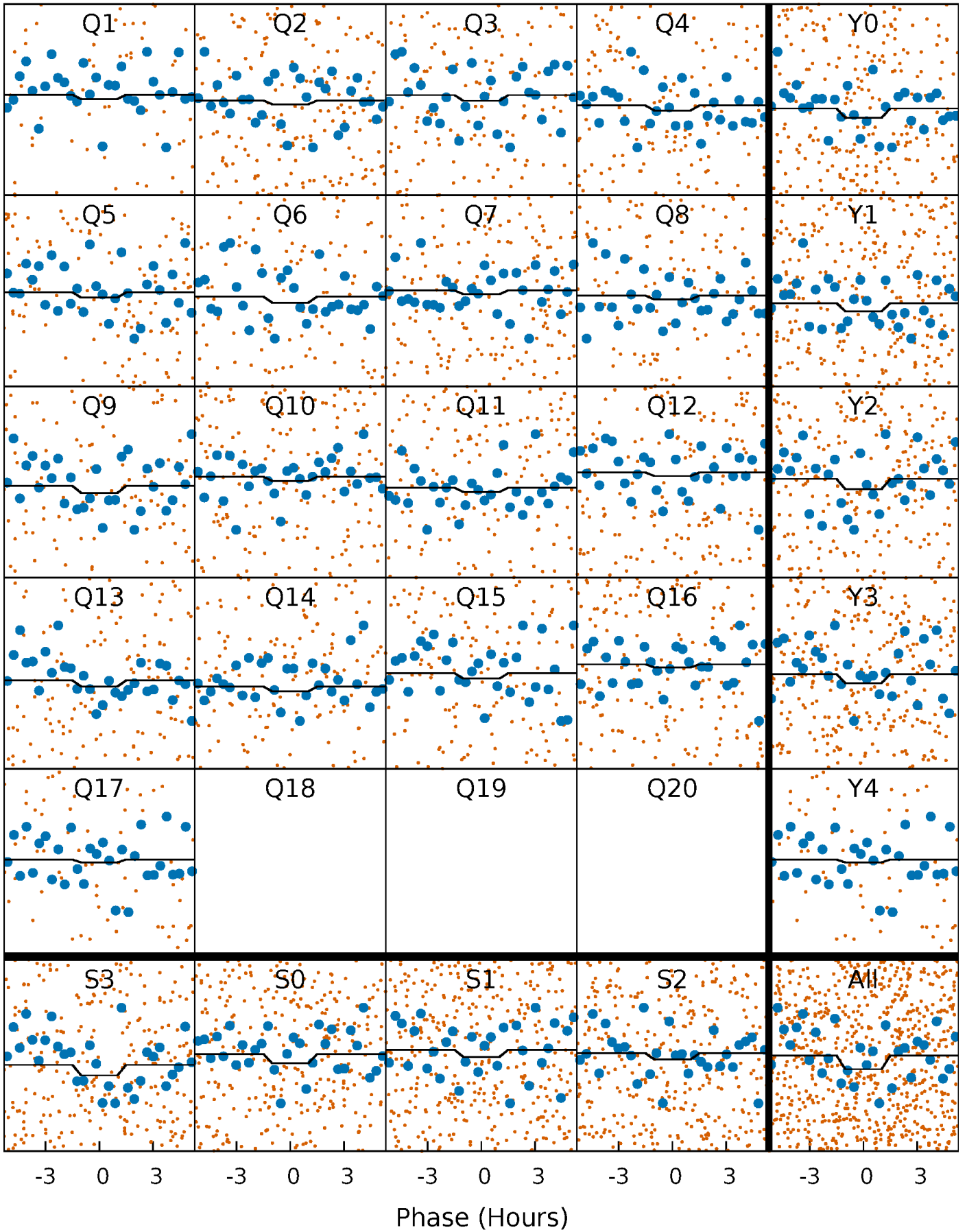
DV Quarter-Phased Transit Curves

TCE 005476273-01 P= 1.374212 Days $T_0=131.767941$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

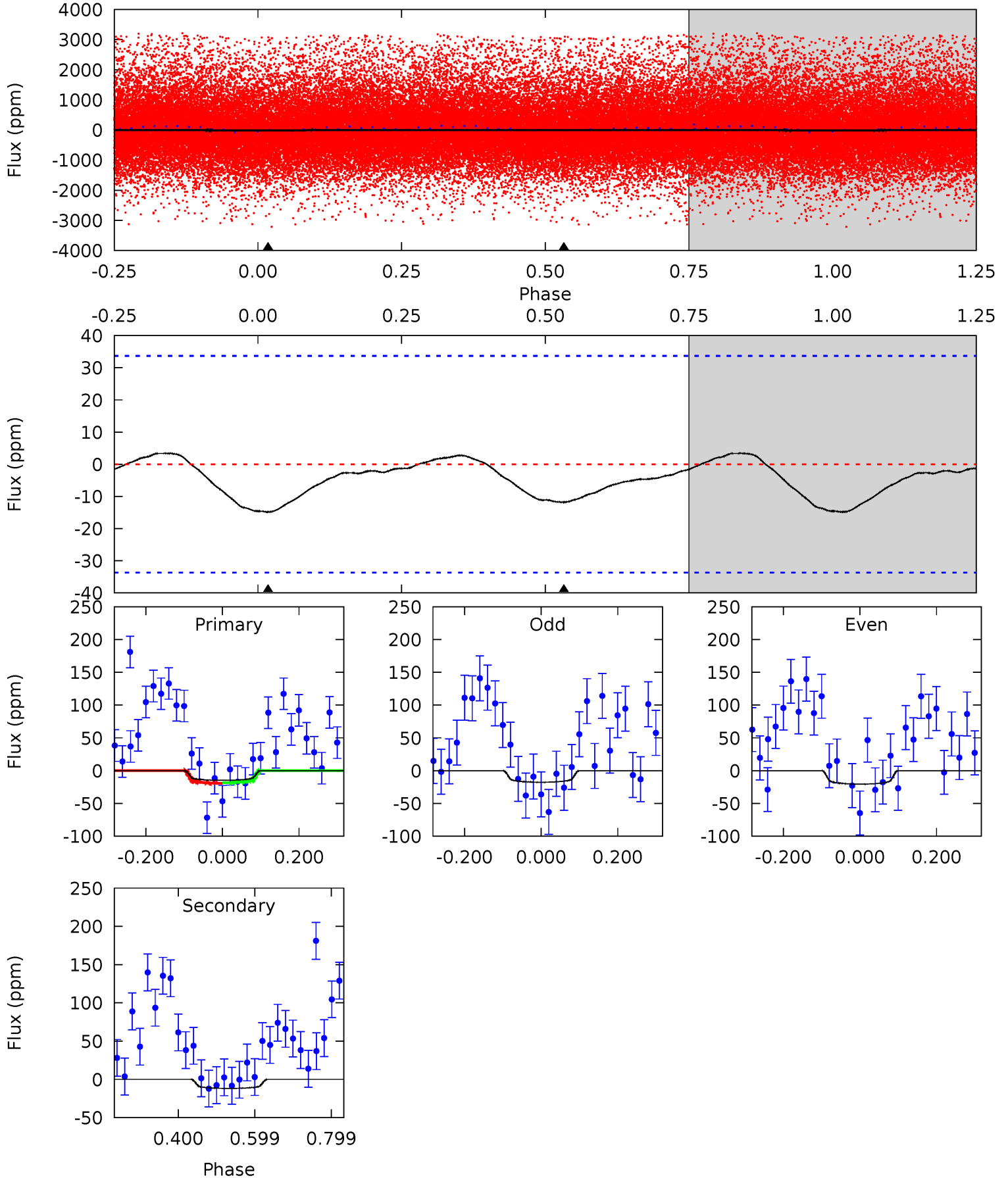
TCE 005476273-01 P= 1.374234 Days $T_0=131.729105$ (BKJD)



DV Model-Shift Uniqueness Test

005476273-01, P = 1.374212 Days, E = 130.393729 Days

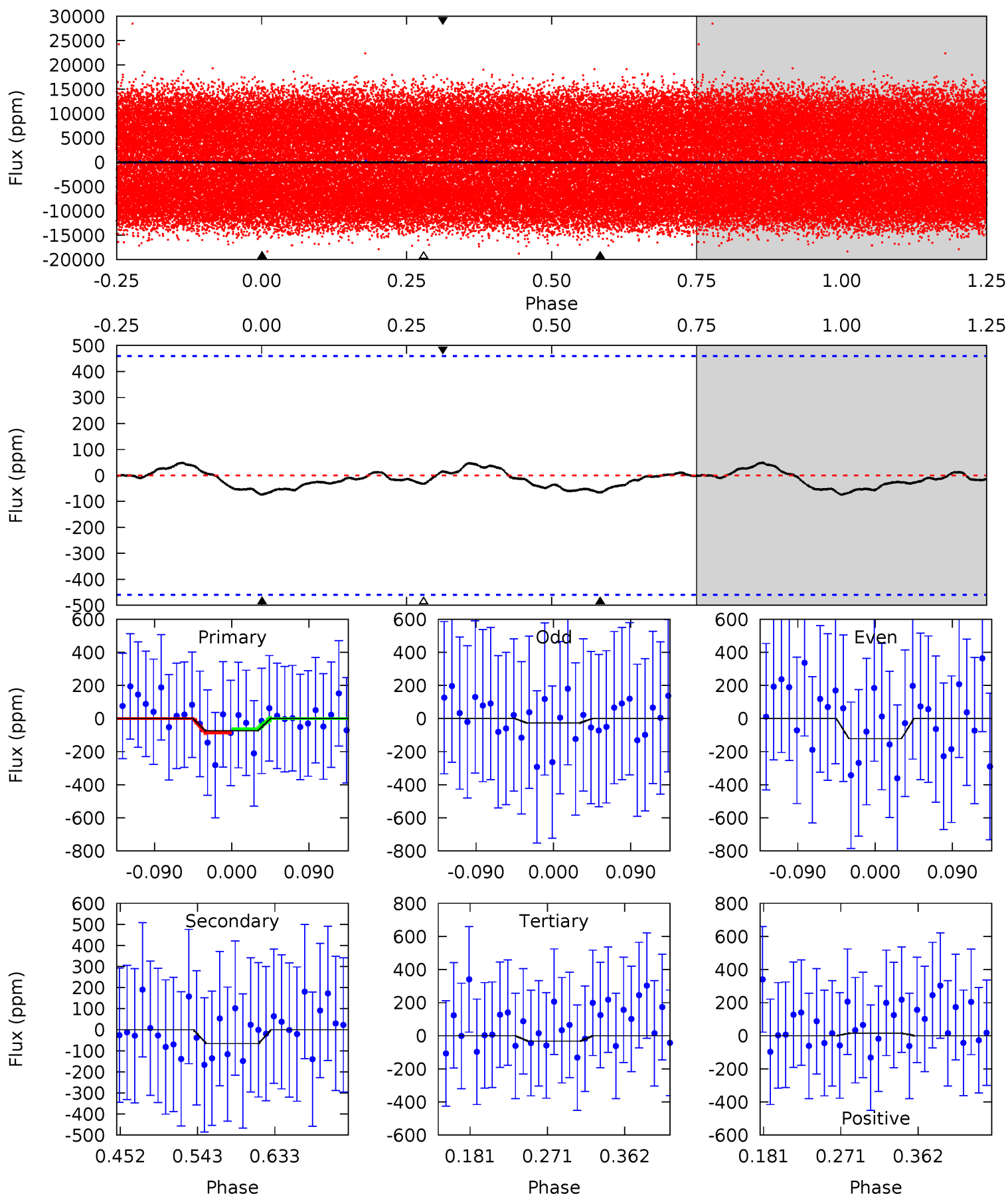
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.95	1.55	0	0	4.42	1.28	0.20	1.95	1.95	1.55	1.55	0.19	-0.08	0.19	0.05



Alt Model-Shift Uniqueness Test

005476273-01, P = 1.374234 Days, E = 130.354871 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.74	0.66	0.33	0.15	4.59	1.69	0.23	0.42	0.59	0.33	0.50	0.47	0.80	0.40	0.12



Stellar Parameters For KIC 005476273

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7408^{+232}_{-310}	$4.234^{+0.090}_{-0.195}$	$-0.240^{+0.250}_{-0.350}$	$1.502^{+0.491}_{-0.227}$	$1.416^{+0.216}_{-0.216}$	$0.589^{+0.298}_{-0.317}$
	+3%/-4%	+2%/-5%	+104%/-146%	+33%/-15%	+15%/-15%	+51%/-54%
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 005476273-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-12 ± 8	$1.48^{+0.45}_{-0.40}$	3451^{+242}_{-213}	4528^{+983}_{-1031}	$1.996^{+2.719}_{-1.336}$
Alt.	-66 ± 100	$1.43^{+0.51}_{-0.41}$	3450^{+248}_{-221}	7023^{+3353}_{-13155}	12^{+29}_{-19}

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

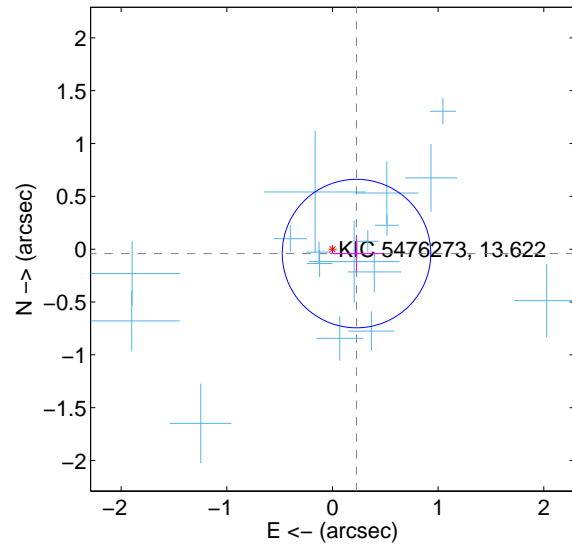
Supplemental centroid analysis for 005476273-01. Kepler magnitude: 13.62. Transit SNR 13.38

There are 17 quarters with good PRF difference image offsets

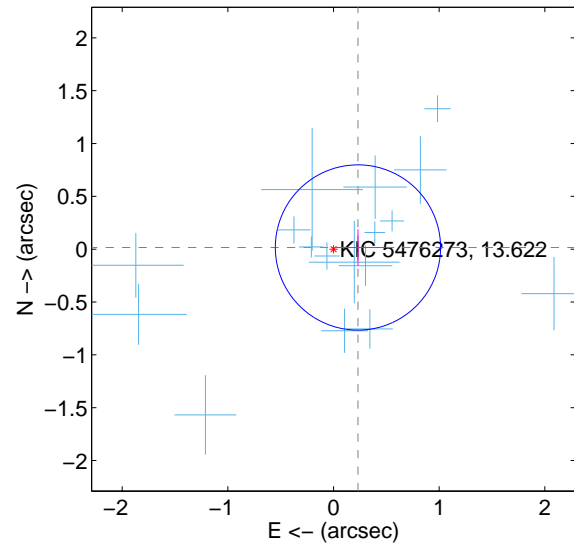
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.231 ± 0.234	0.99	-0.227 ± 0.248	-0.041 ± 0.176
PRF-fit source offset from KIC position	0.232 ± 0.261	0.89	-0.231 ± 0.256	0.016 ± 0.173
photometric centroid source offset	0.59 ± 0.44	1.36	-0.44 ± 0.50	-0.40 ± 0.36

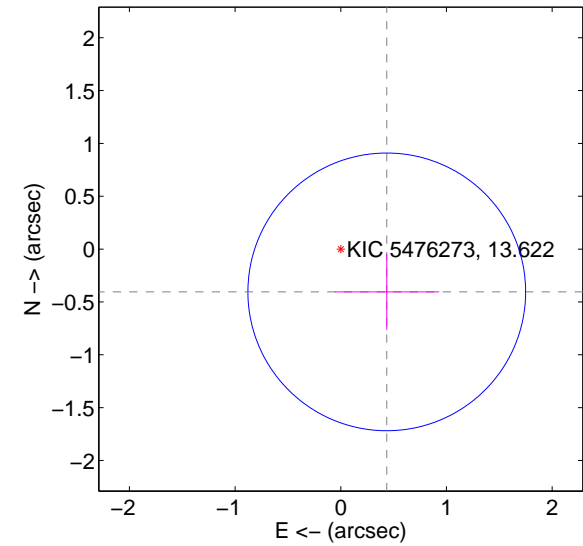
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

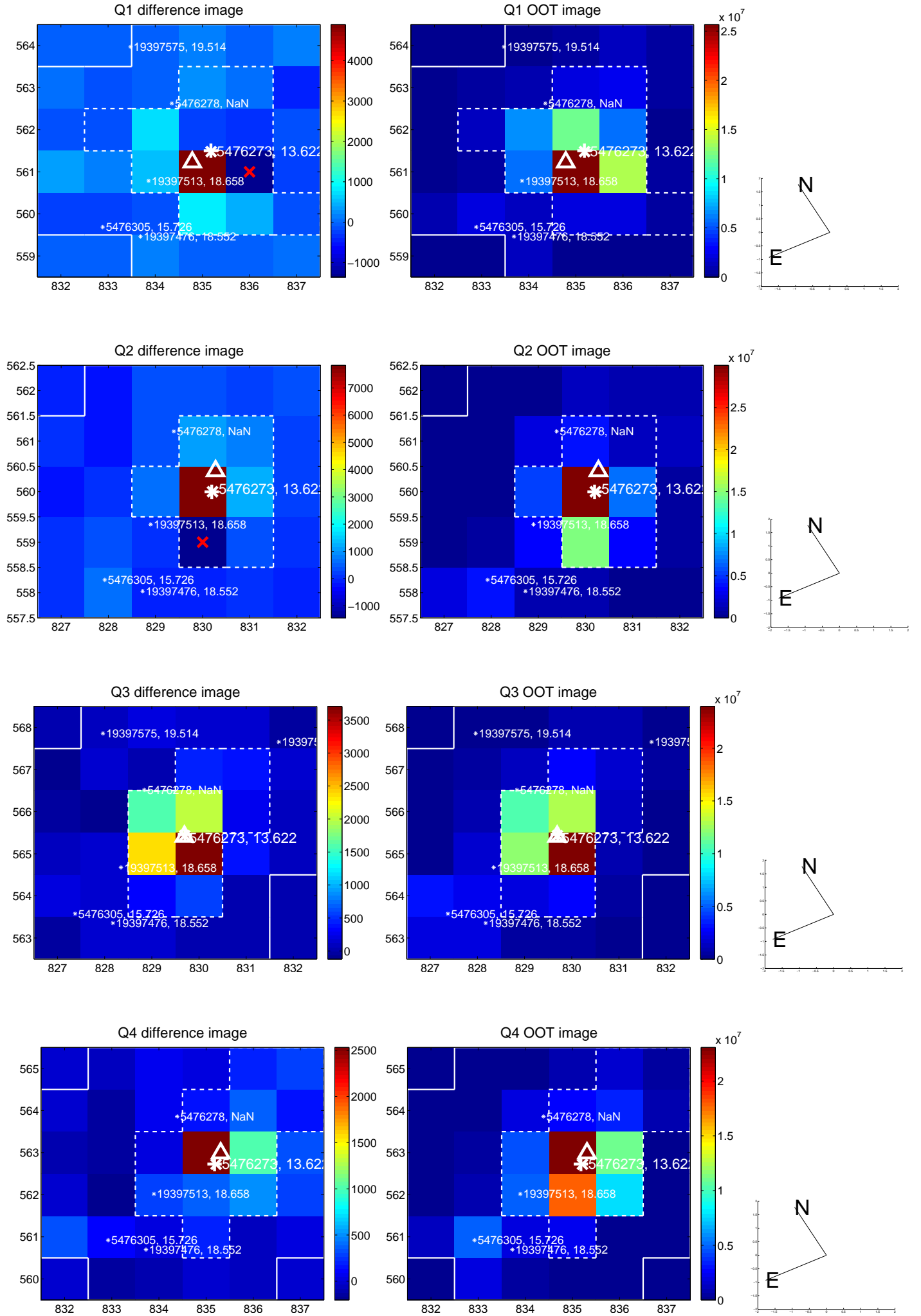


offset from photometric centroids

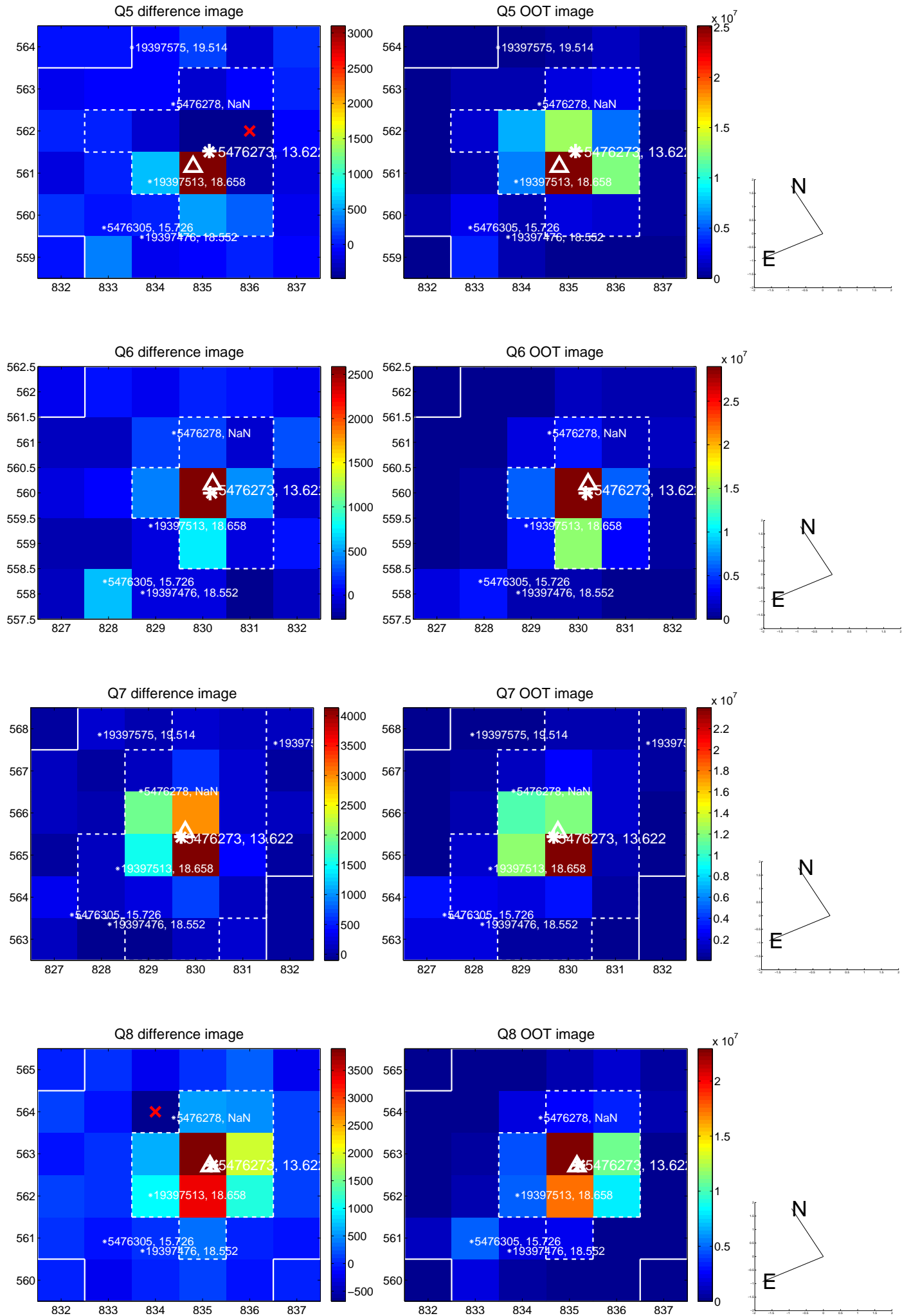


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

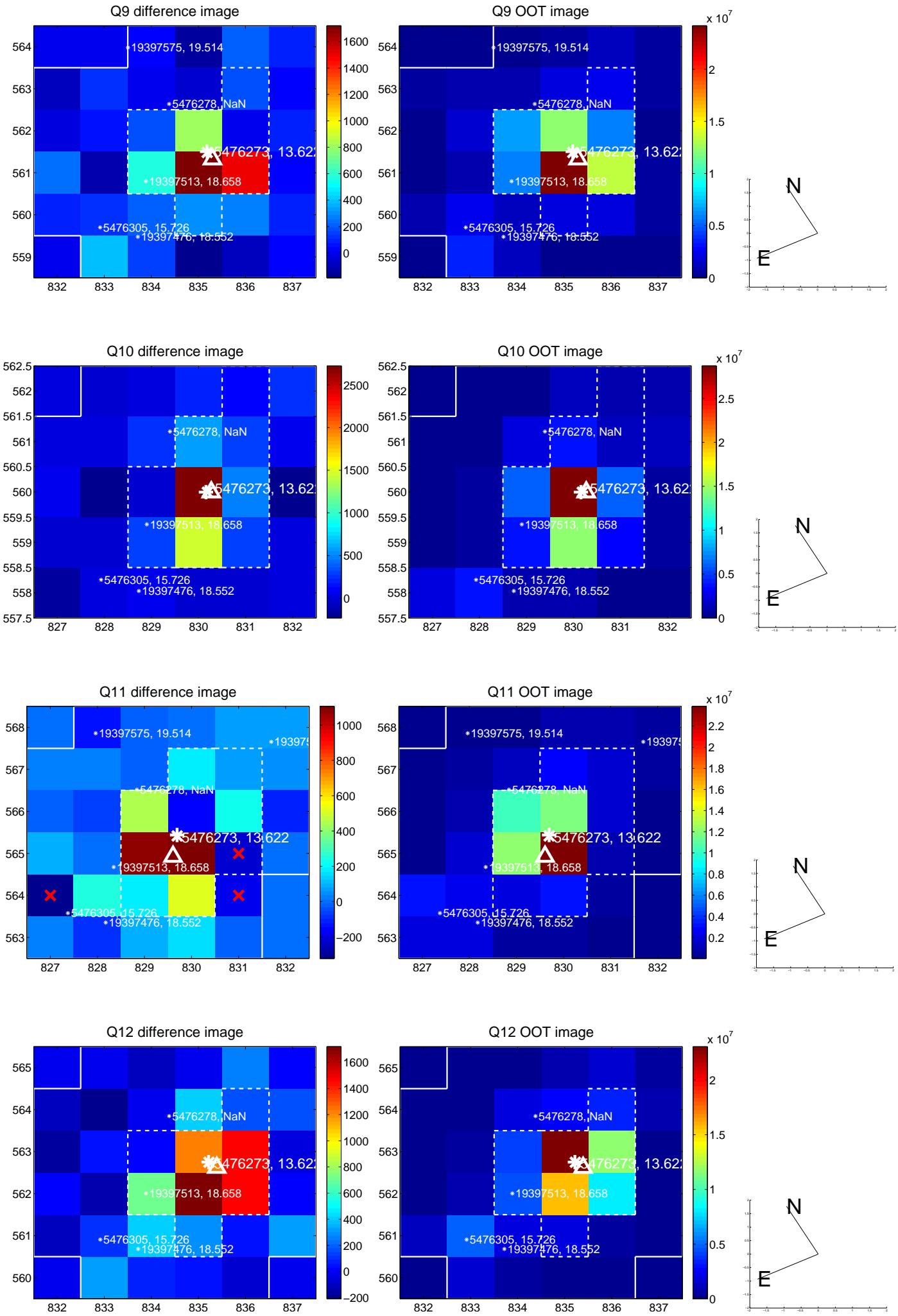
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



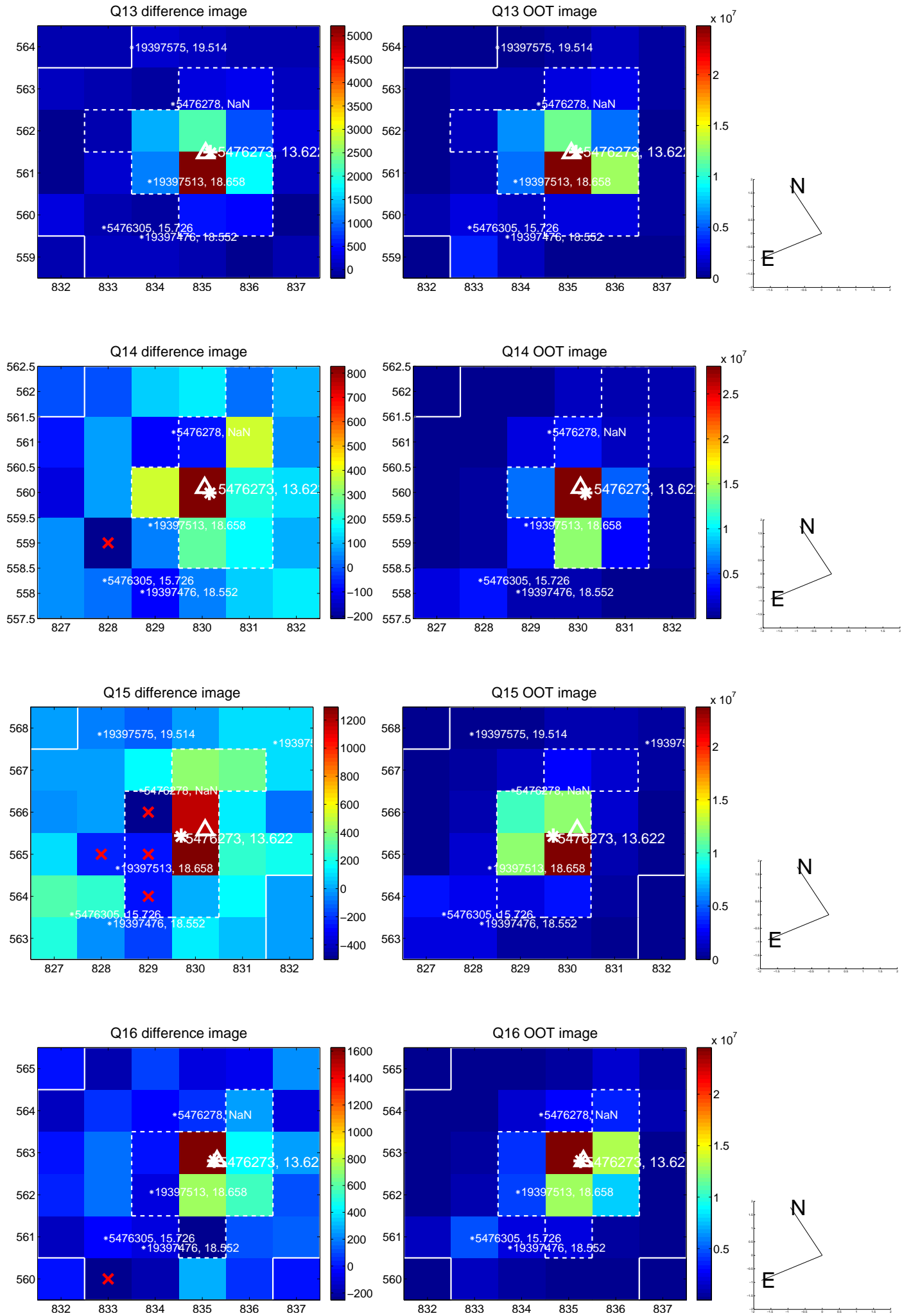
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



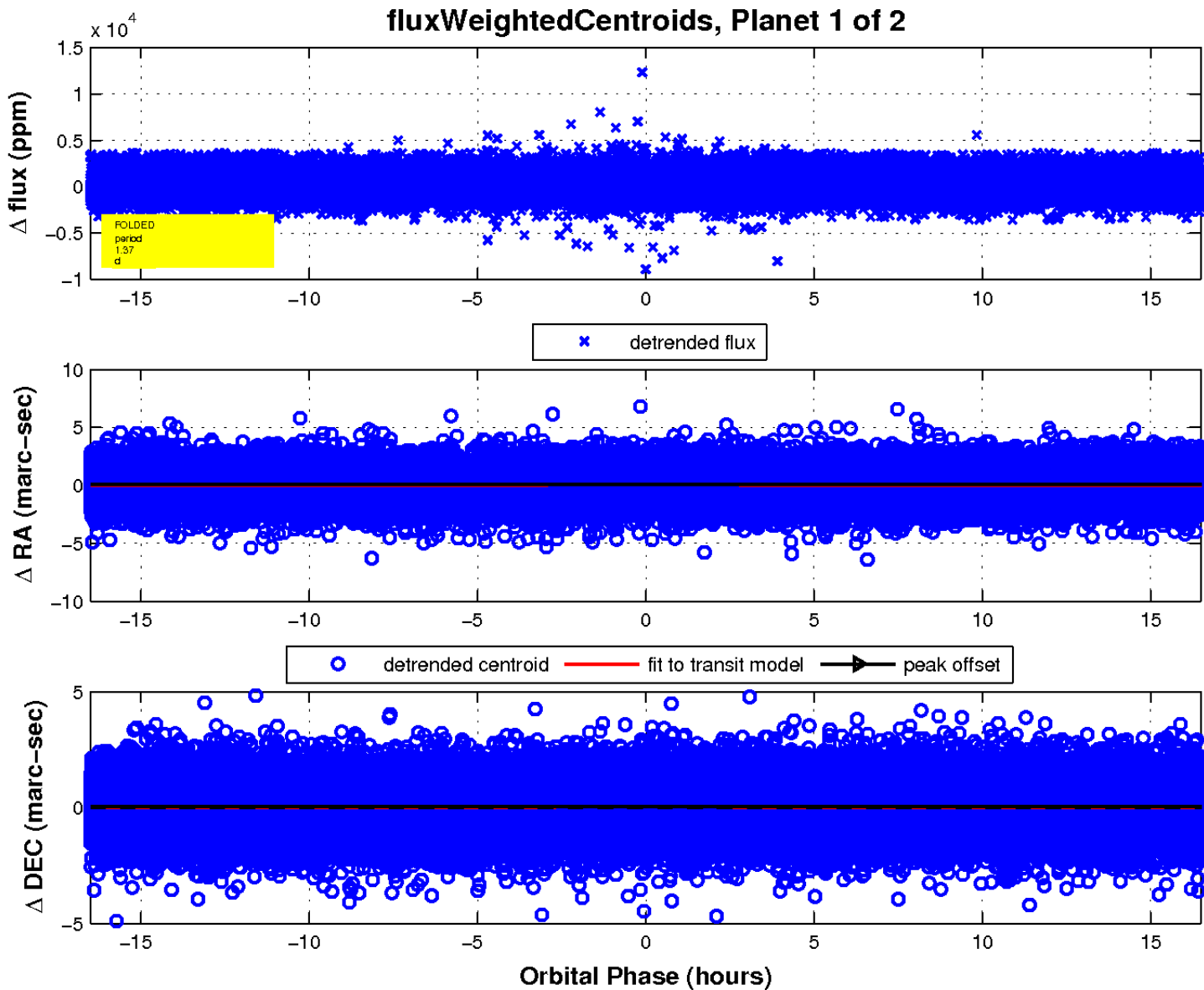
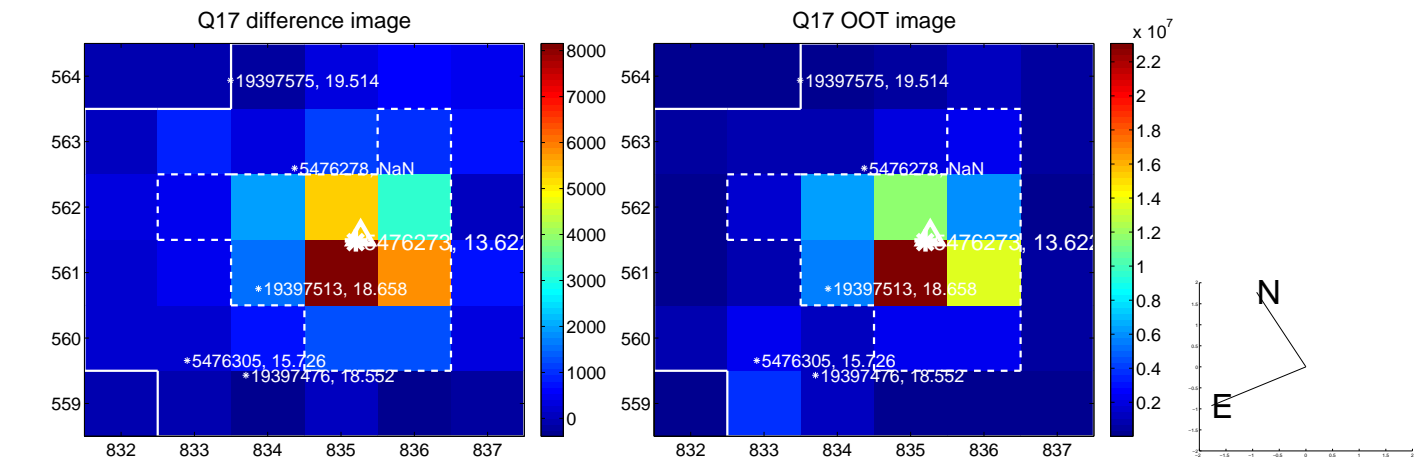
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



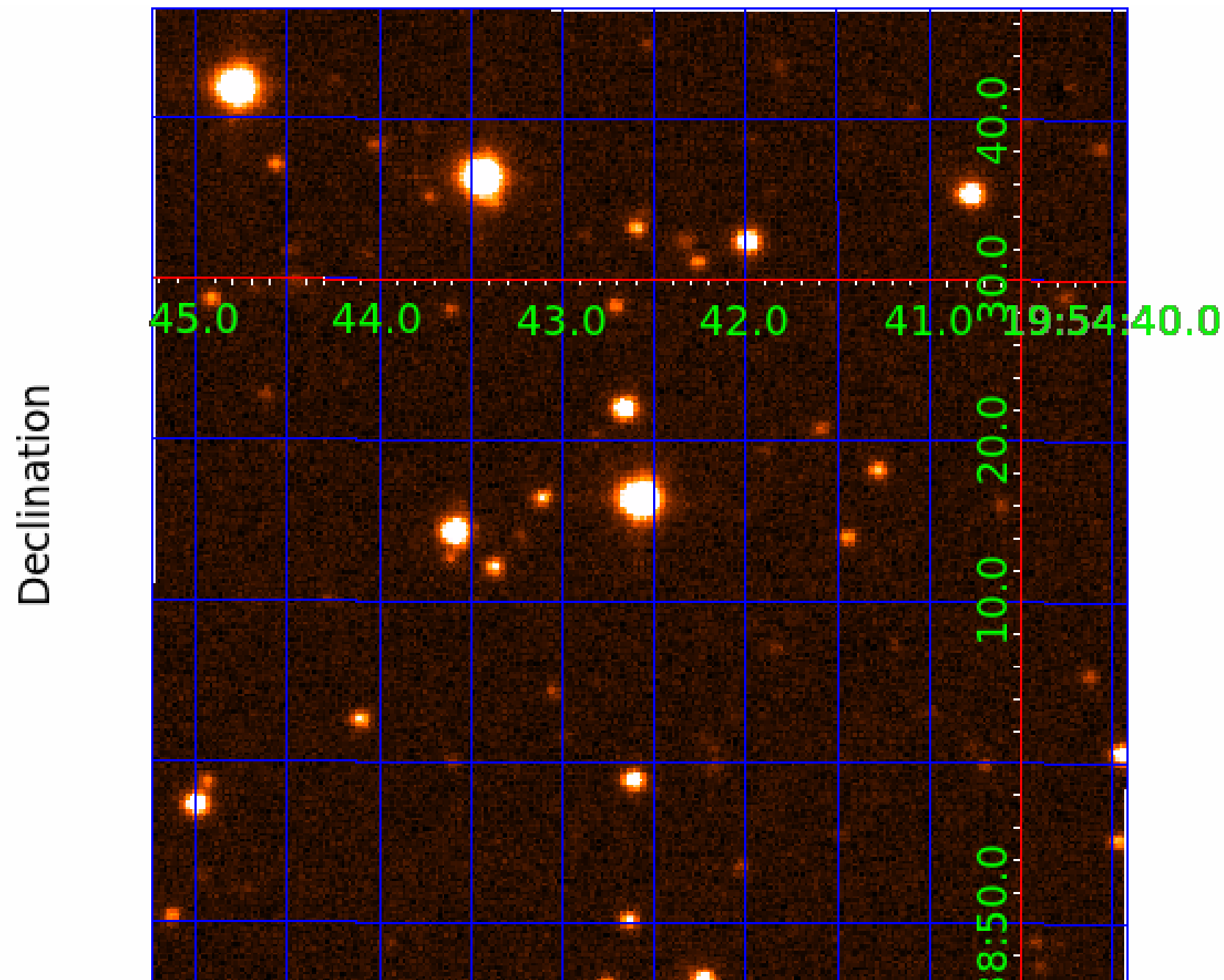
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 005476273

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})
005476273-01	OBS	No	1.374212	131.767941	67.5	6.146	12.7	13.4	1.50	7408	1.45	8268.12
005476273-02	OBS	No	332.959877	237.491668	1773.8	28.777	20.2	19.3	1.50	7408	11.56	5.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005476273-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005476273-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—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.

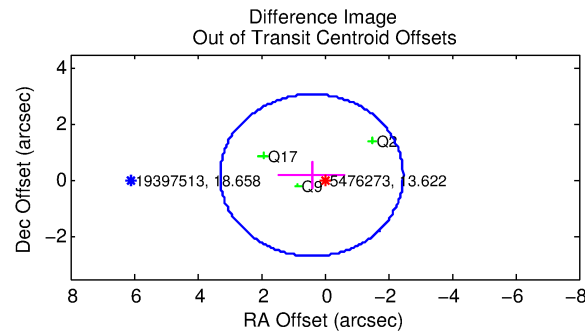
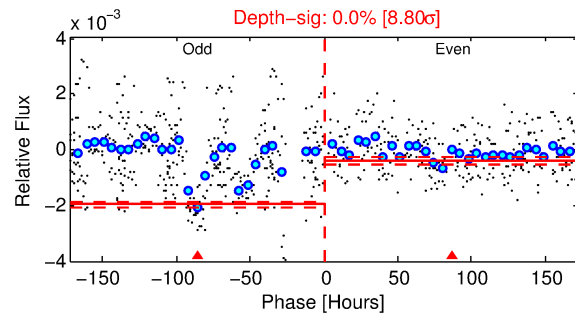
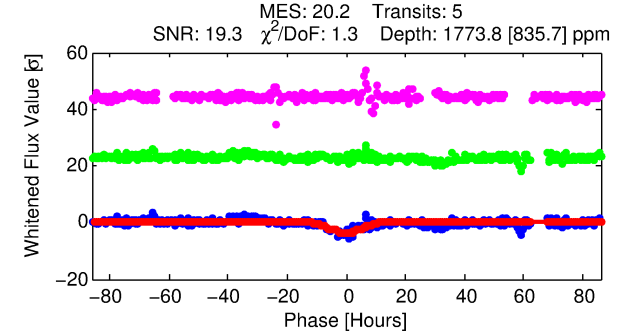
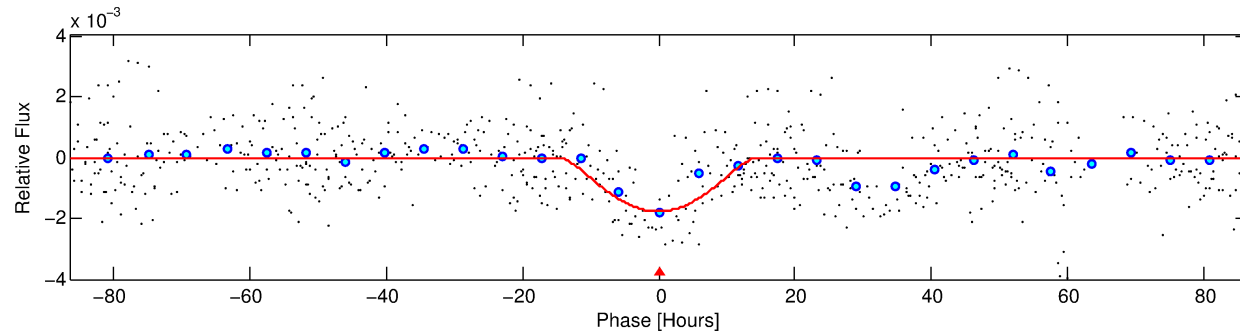
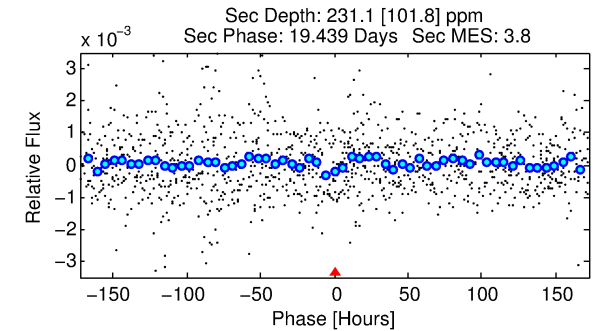
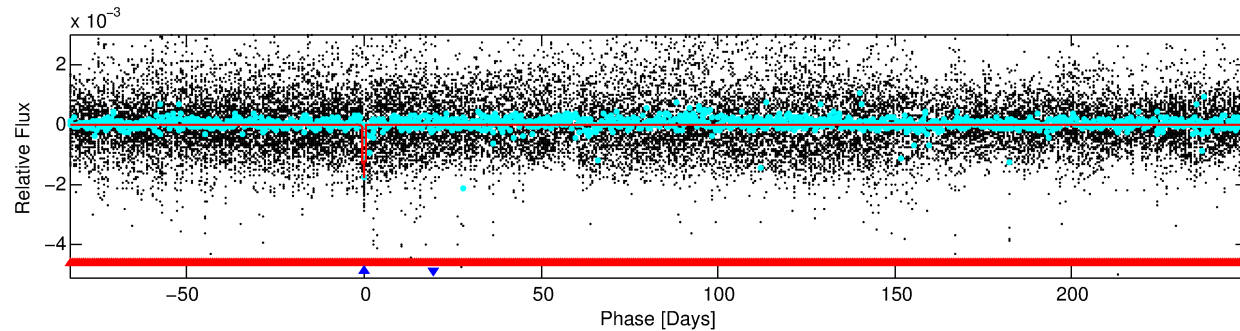
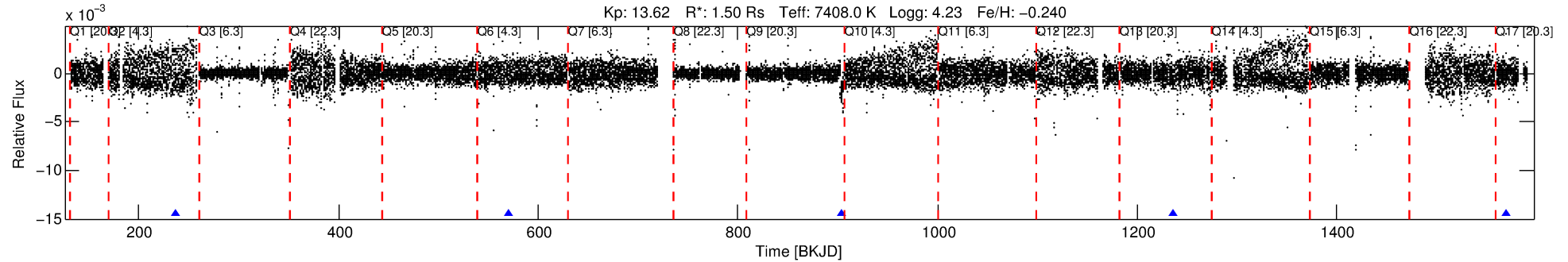
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005476273-02

No Significant Match Found

DV One-Page Summary

KIC: 5476273 Candidate: 2 of 2 Period: 332.960 d



DV Fit Results:

Period = 332.95988 [0.01607] d
Epoch = 237.4917 [0.0388] BKJD
Rp/R* = 0.0705 [0.1370]
a/R* = 33.80 [14.91]
b = 1.00 [0.18]
Seff = 5.47 [2.22]
Teq = 390 [40] K
Rp = 11.56 [22.76] Re
a = 1.0546 [0.2788] AU
Ag = 1058.05 [4153.96] [0.25 σ]
Teffp = 3439 [3364] K [0.91 σ]

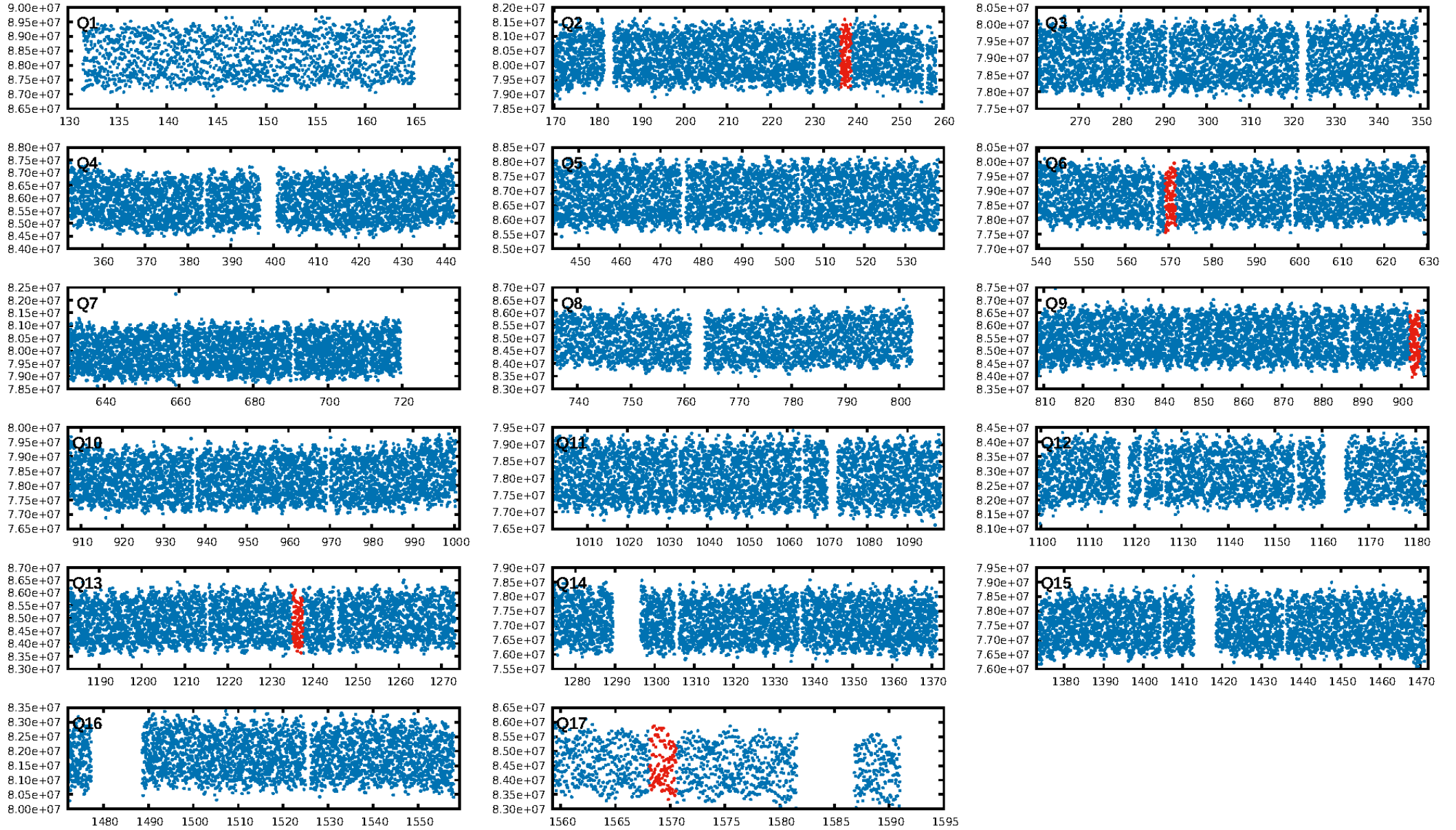
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [270.44 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.73e-26
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.89
Centroid-sig: 75.7%
Centroid-so: 0.764 arcsec [3.83 σ]
OotOffset-rm: 0.449 arcsec [0.47 σ]
KicOffset-rm: 0.517 arcsec [0.59 σ]
OotOffset-st: 1/0/0/2 [3]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/5]

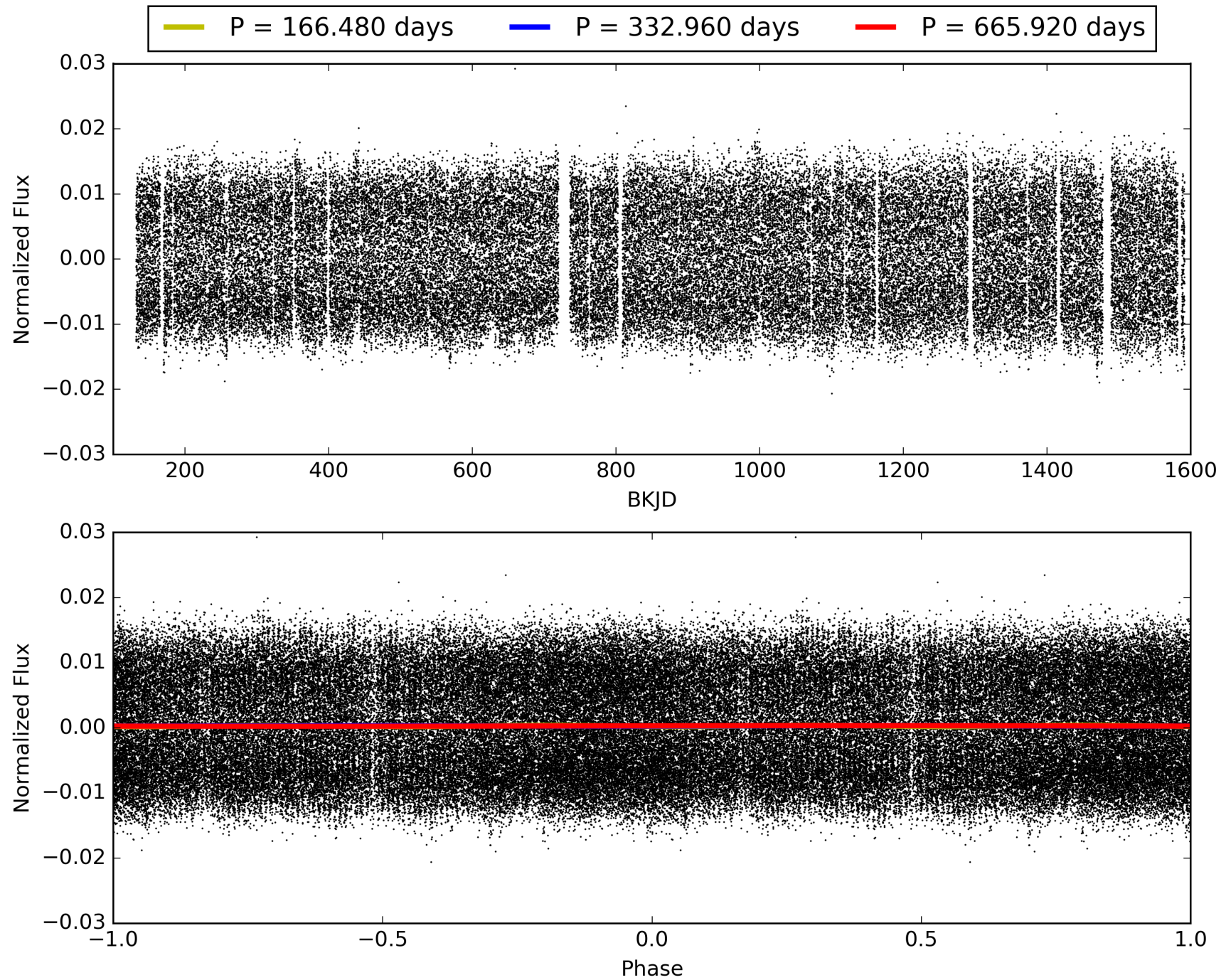
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:46:03 Z

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

TCE 005476273-02, PDC Light Curves

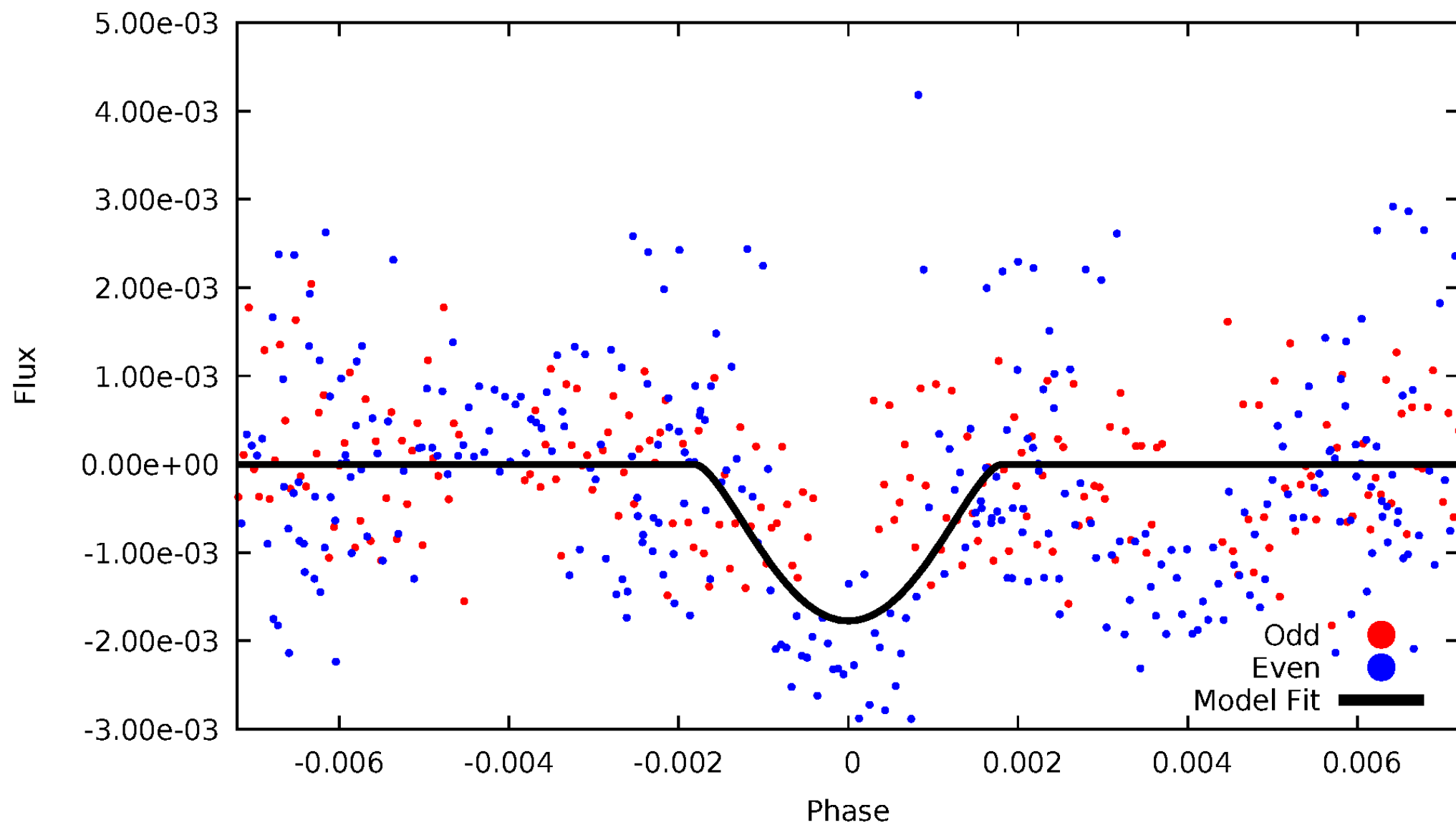


TCE 005476273-02



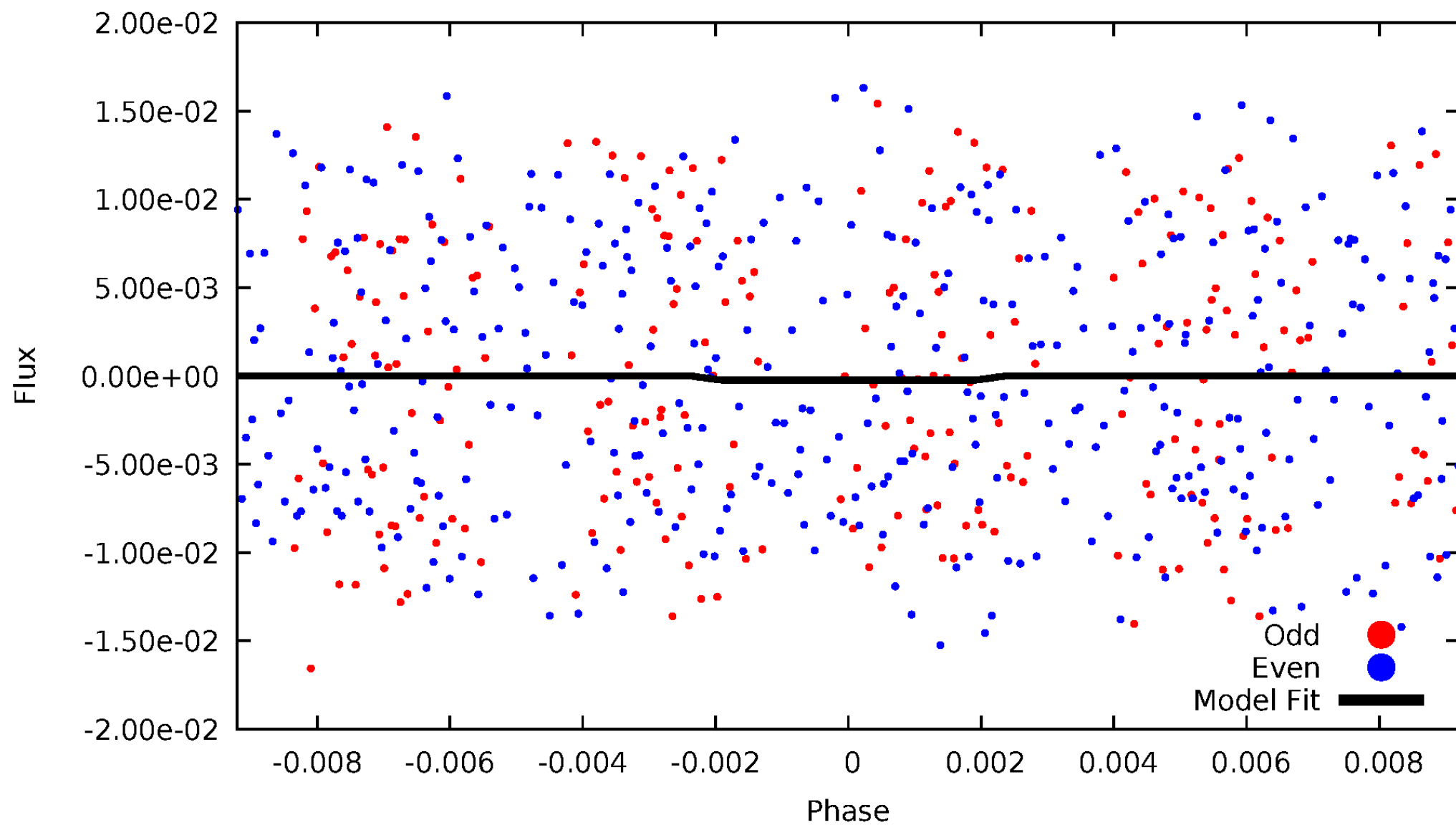
DV Odd/Even

TCE 005476273-02



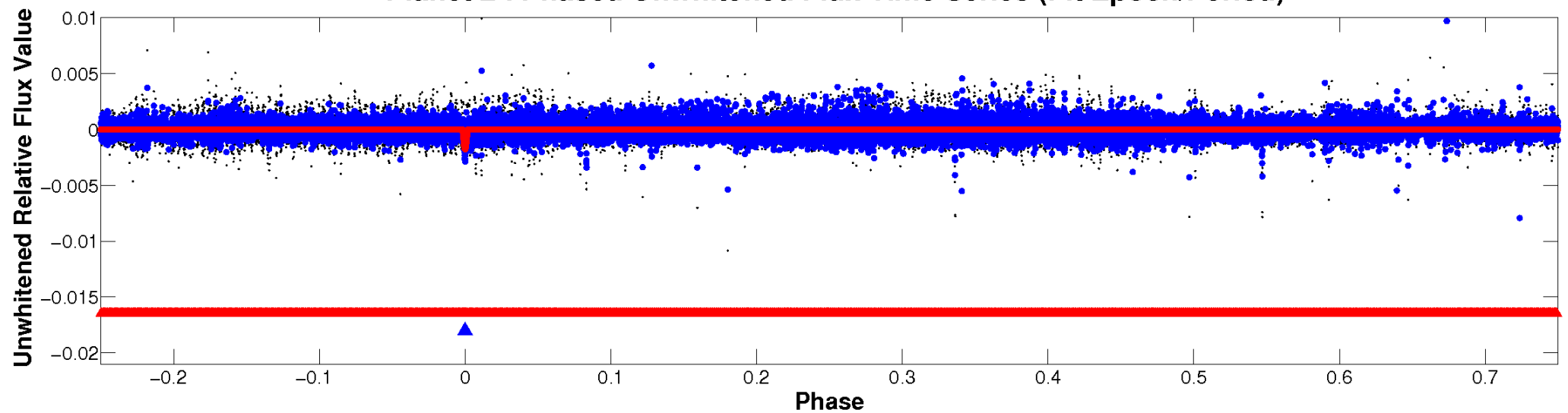
ALT Odd/Even

TCE 005476273-02

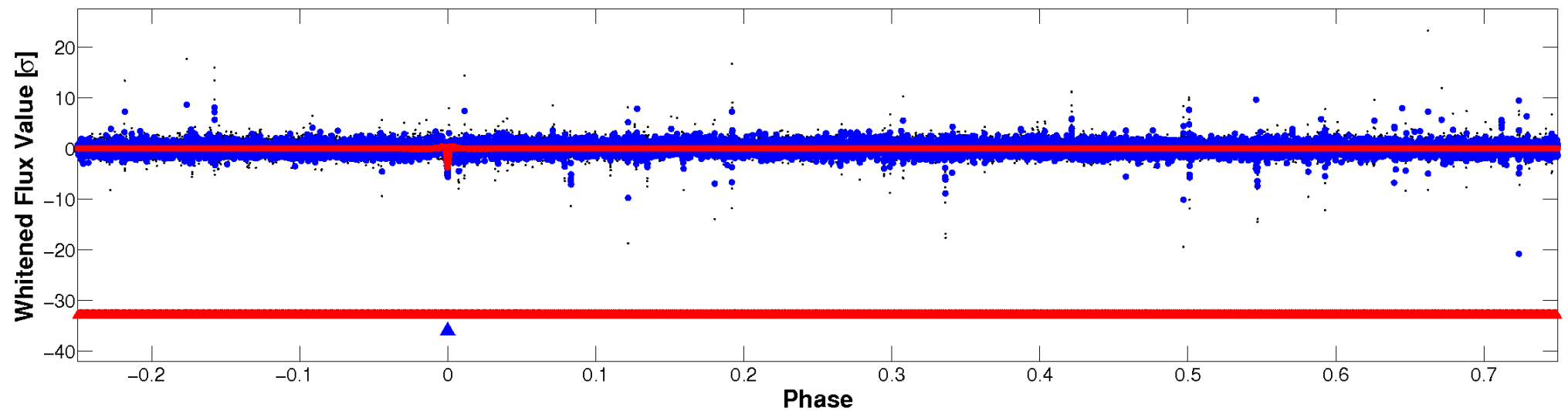


Non-Whitened Vs. Whitened Light Curve

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

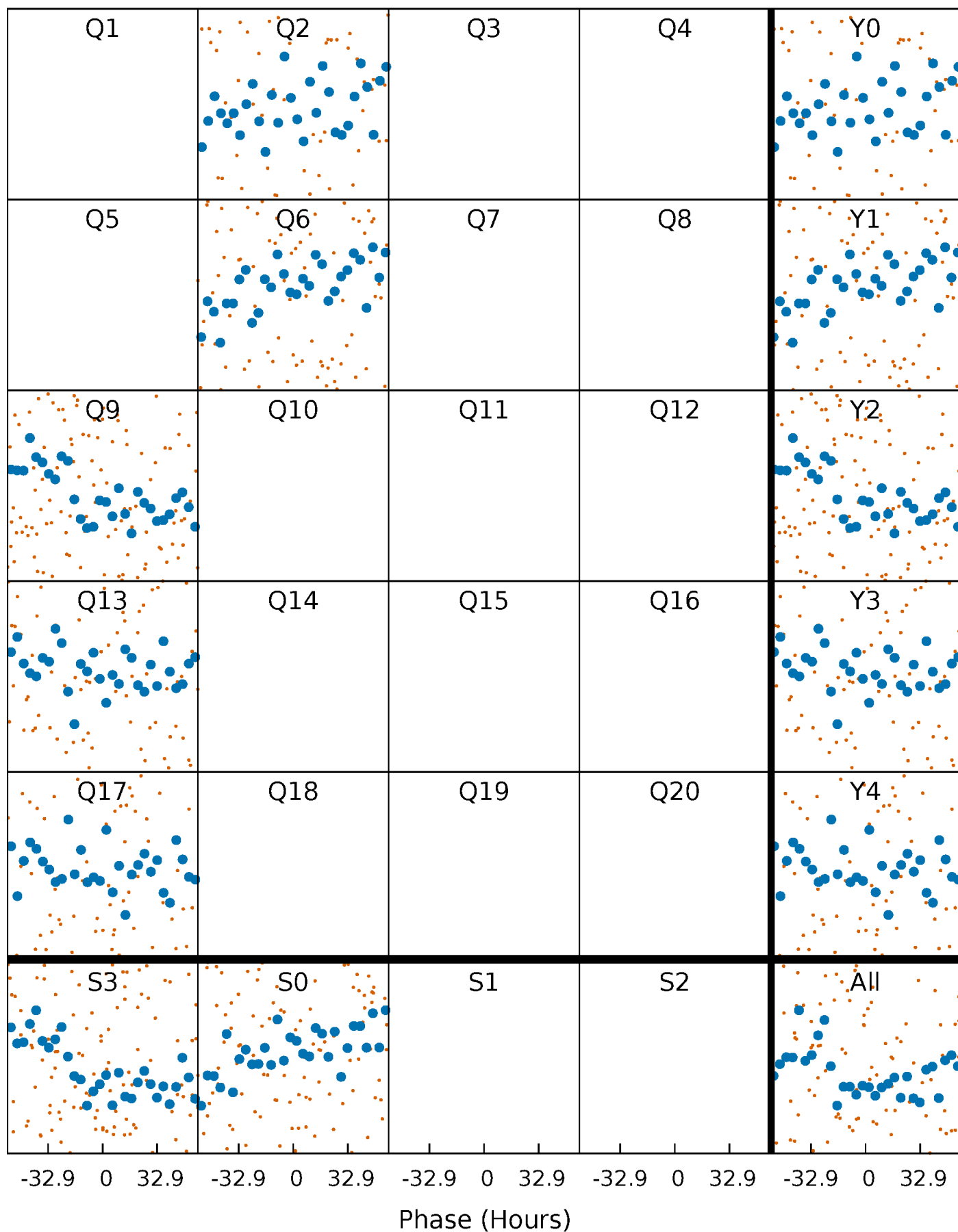


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



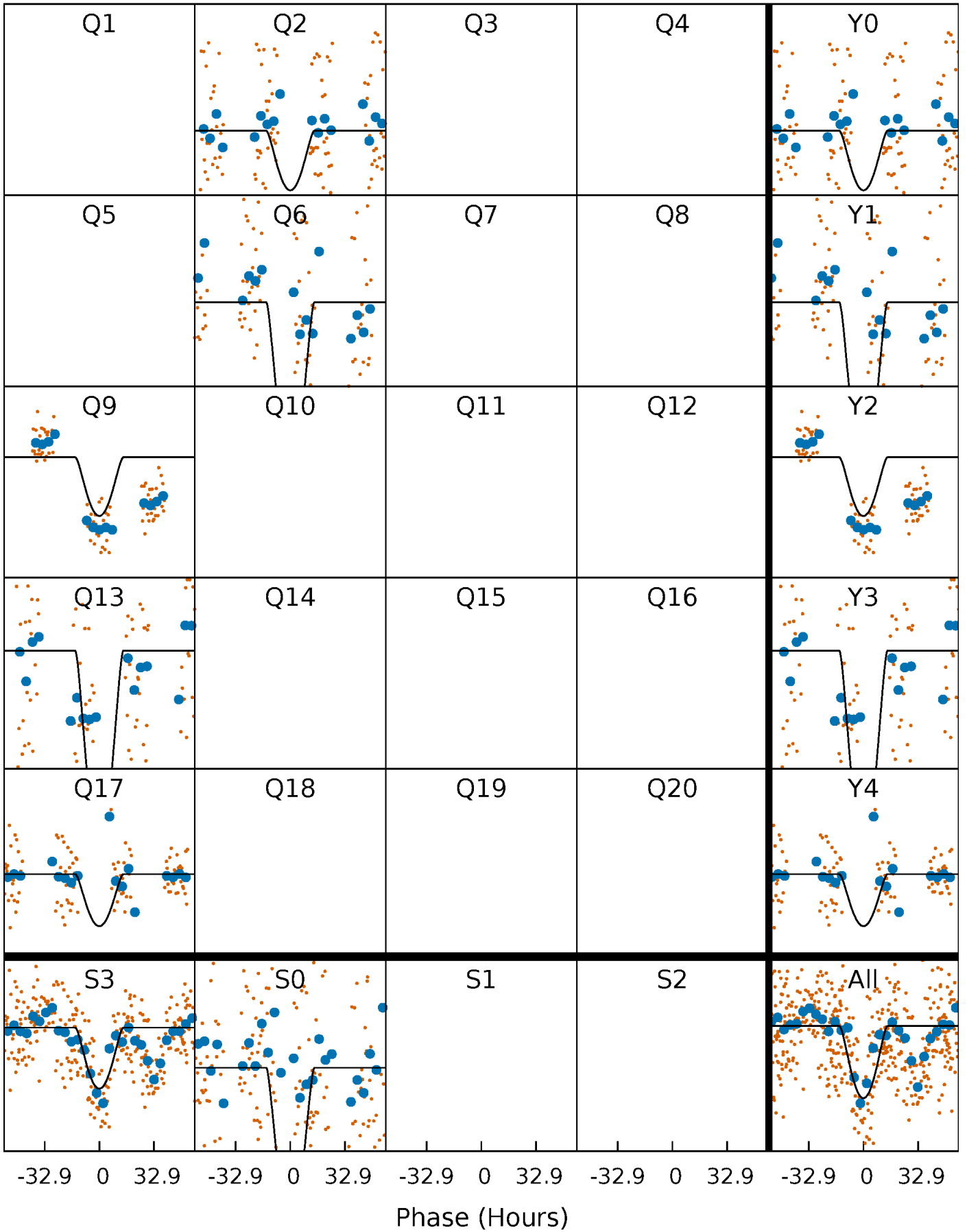
PDC Quarter-Phased Transit Curves

TCE 005476273-02 P=332.959877 Days $T_0=237.491668$ (BKJD)



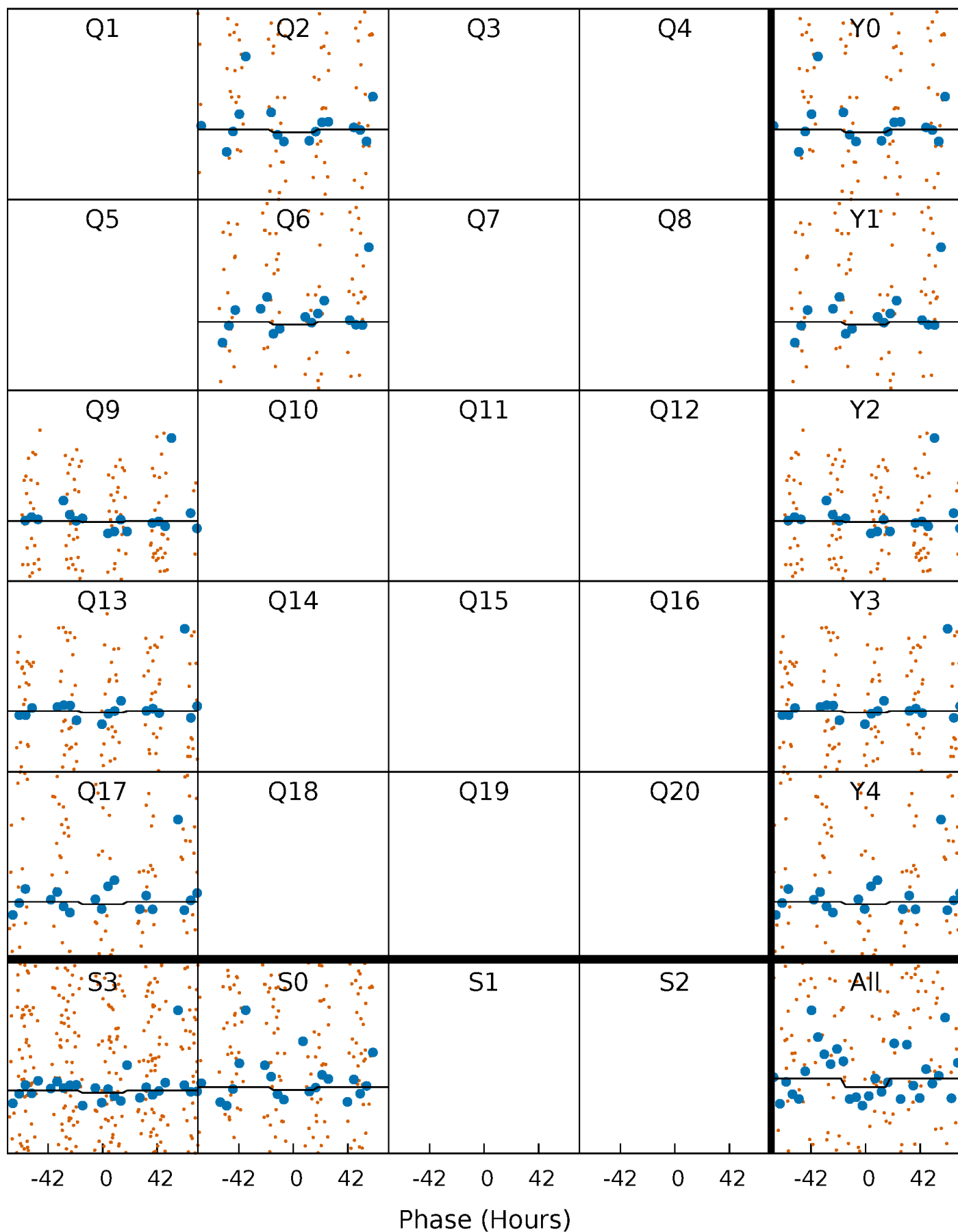
DV Quarter-Phased Transit Curves

TCE 005476273-02 P=332.959877 Days $T_0=237.491668$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

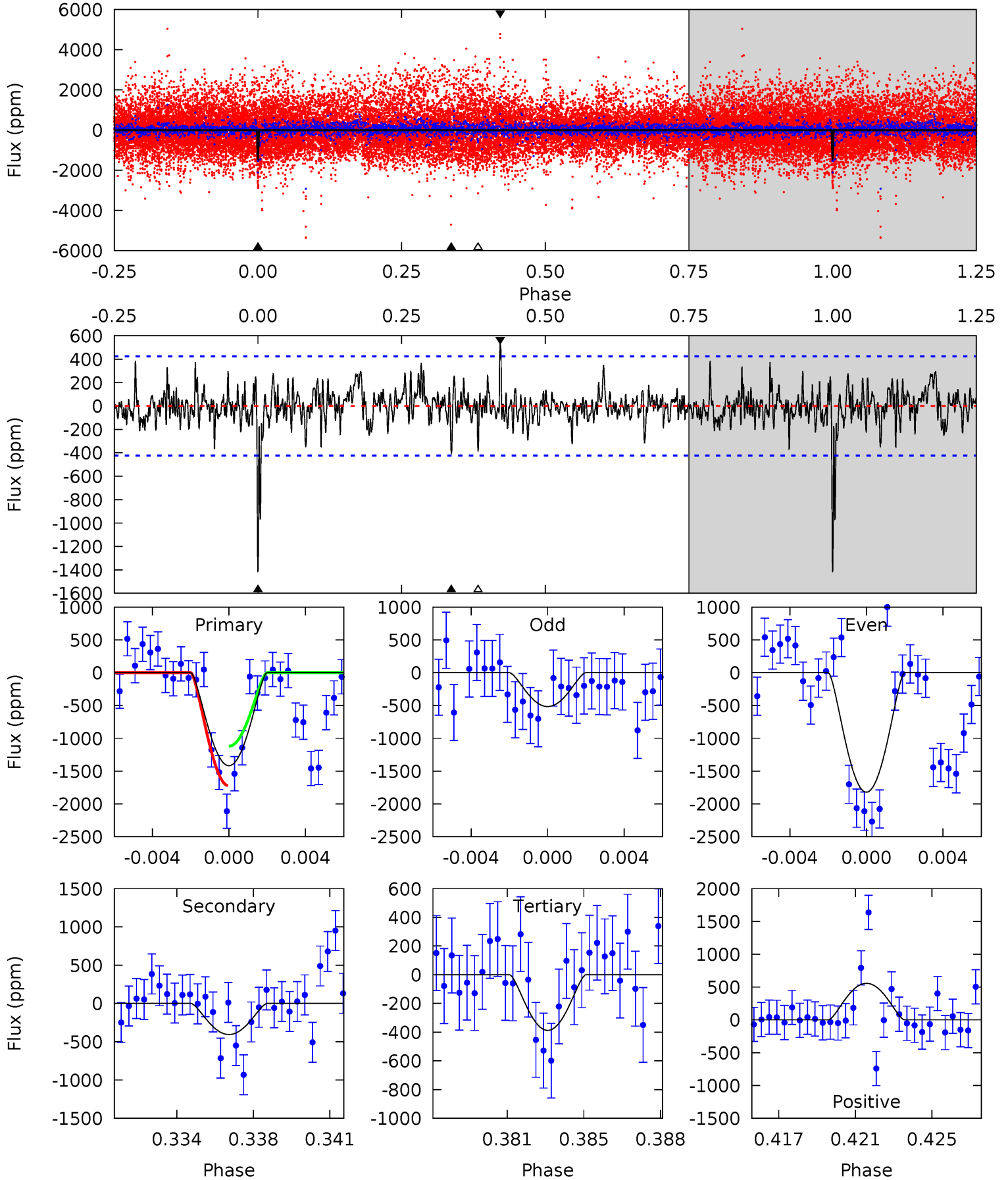
TCE 005476273-02 P=332.767336 Days $T_0=237.397694$ (BKJD)



DV Model-Shift Uniqueness Test

005476273-02, P = 332.959877 Days, E = 237.491668 Days

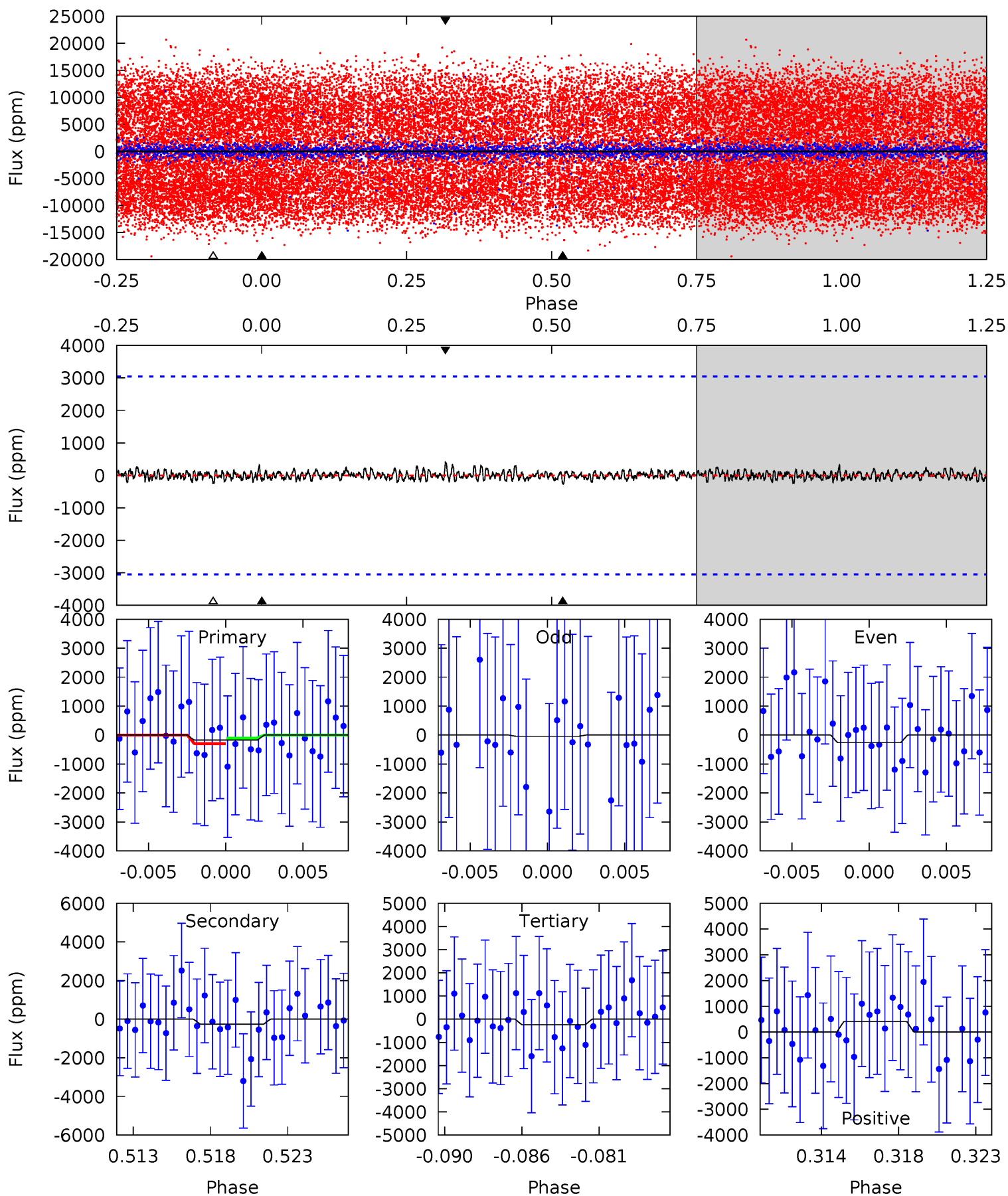
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	5.00	4.78	6.86	5.22	2.91	1.40	12.7	10.6	0.22	-1.86	8.10	0.86	0.28	3.70



Alt Model-Shift Uniqueness Test

005476273-02, P = 332.767336 Days, E = 237.397694 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.30	0.45	0.41	0.69	5.17	2.82	0.17	-0.12	-0.39	0.03	-0.24	0.18	1.47	0.61	0.16



Stellar Parameters For KIC 005476273

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7408^{+232}_{-310}	$4.234^{+0.090}_{-0.195}$	$-0.240^{+0.250}_{-0.350}$	$1.502^{+0.491}_{-0.227}$	$1.416^{+0.216}_{-0.216}$	$0.589^{+0.298}_{-0.317}$
	+3%/-4%	+2%/-5%	+104%/-146%	+33%/-15%	+15%/-15%	+51%/-54%
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 005476273-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-406 ± 81	$20.06^{+21.13}_{-13.47}$	553^{+41}_{-33}	3496^{+1824}_{-678}	584^{+5330}_{-445}
Alt.	-263 ± 590	$17.45^{+17.40}_{-12.58}$	553^{+43}_{-33}	3047^{+2132}_{-6624}	246^{+4316}_{-1050}

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 $A_{obs} \gg 1.0$

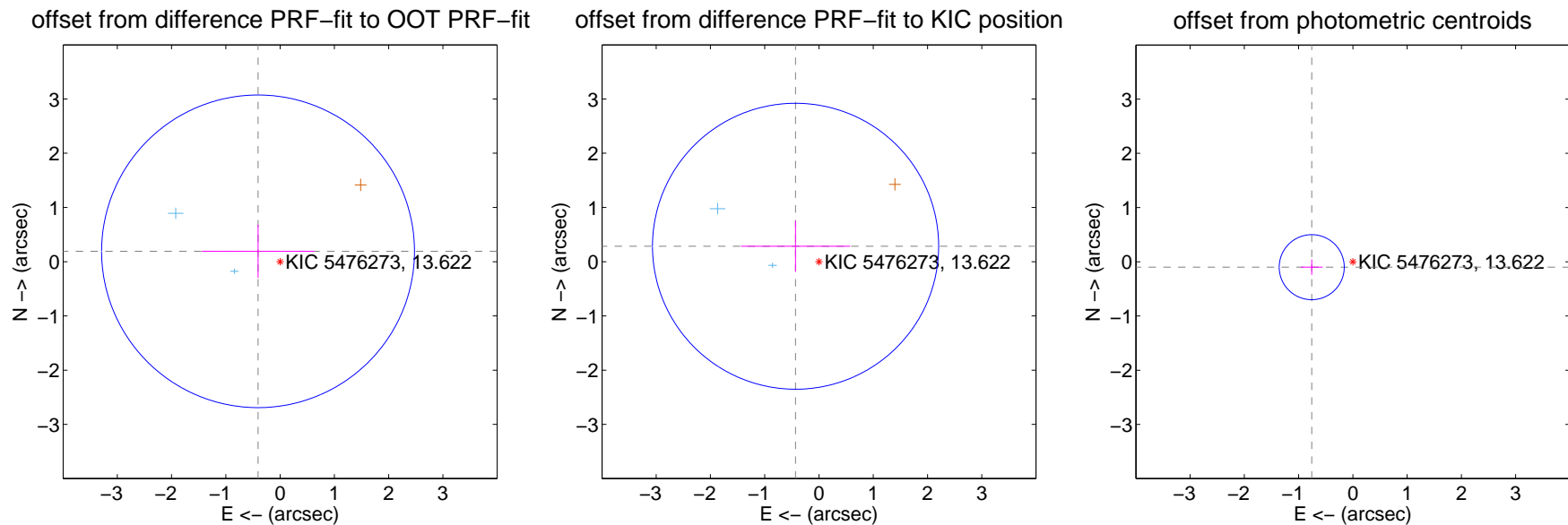
DV Centroid Data

Supplemental centroid analysis for 005476273-02. Kepler magnitude: 13.62. Transit SNR 19.26

There are 2 quarters with good PRF difference image offsets

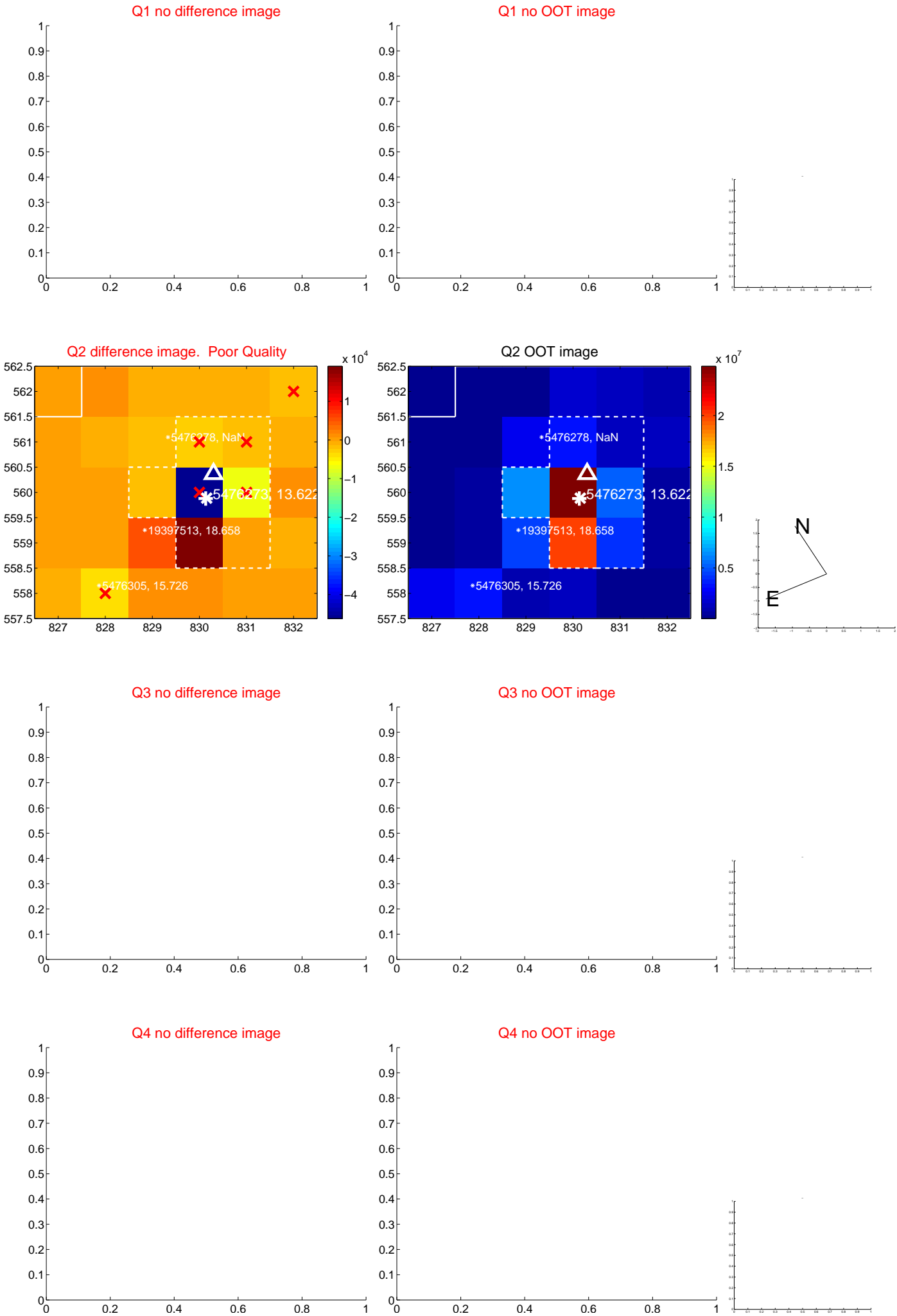
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.449 ± 0.961	0.47	0.406 ± 1.036	0.191 ± 0.490
PRF-fit source offset from KIC position	0.517 ± 0.879	0.59	0.432 ± 1.006	0.285 ± 0.469
photometric centroid source offset	0.76 ± 0.20	3.83	0.76 ± 0.20	-0.10 ± 0.14

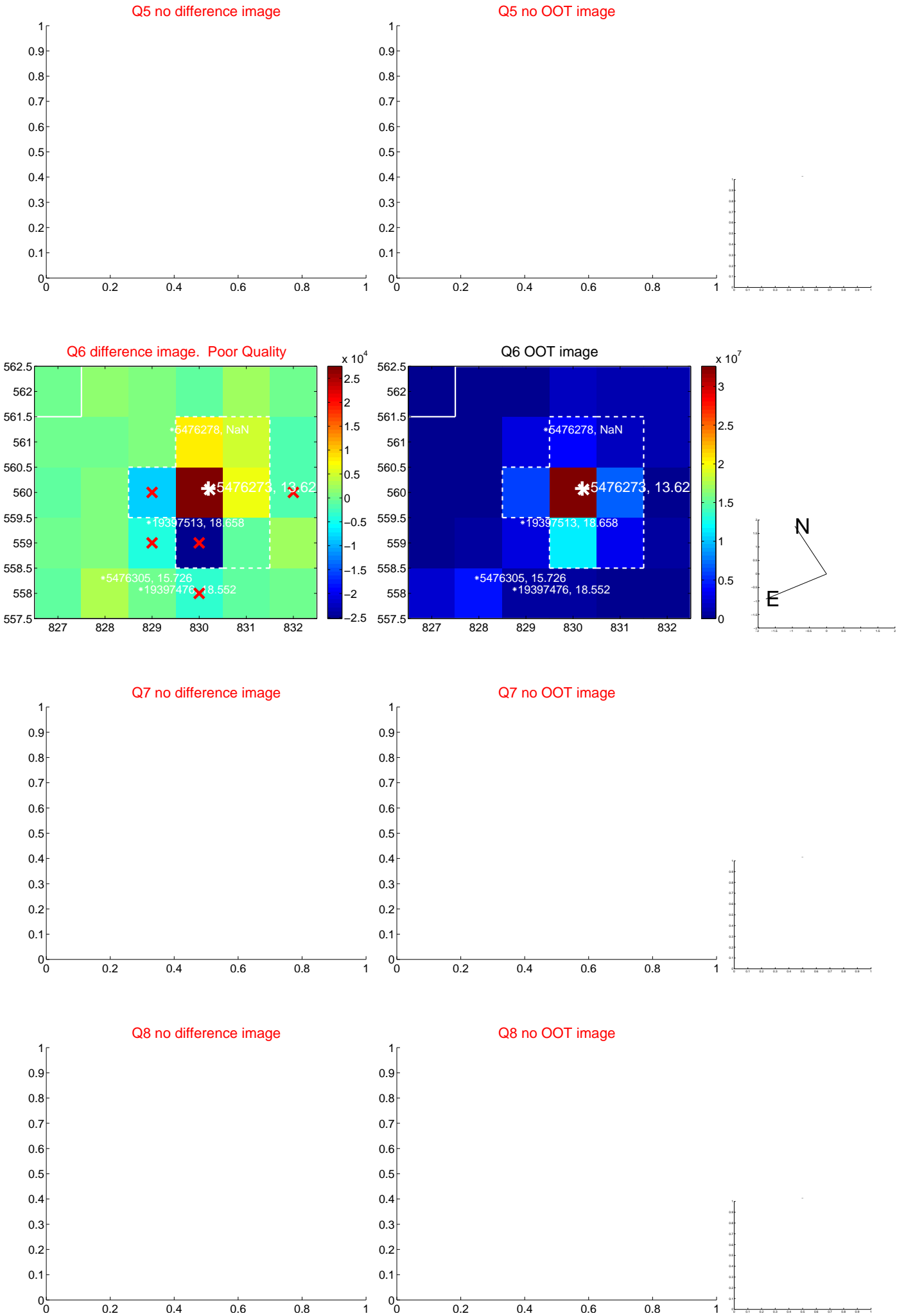


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

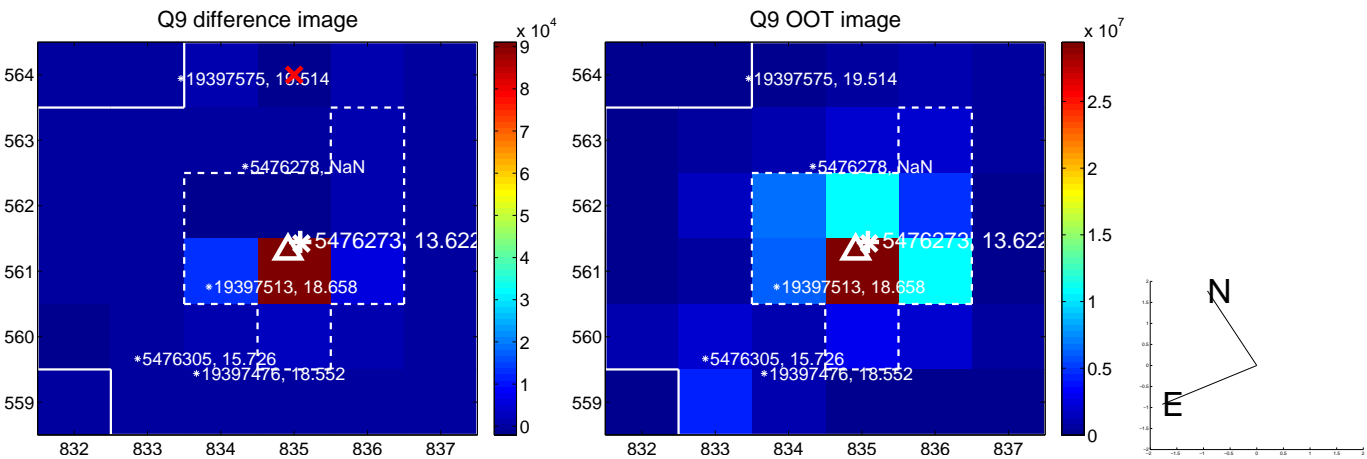
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



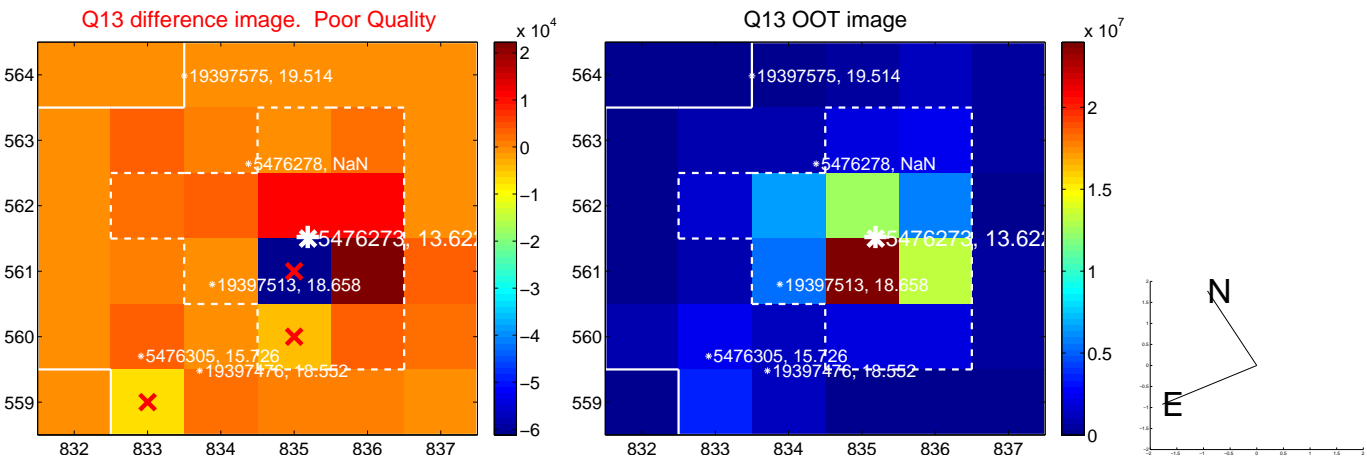
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



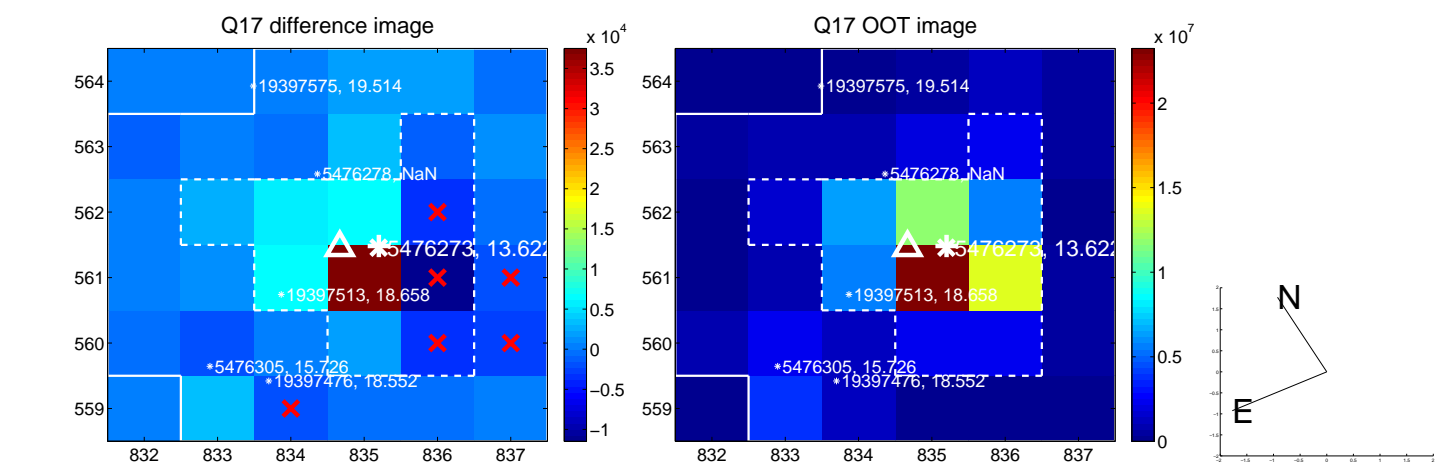
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



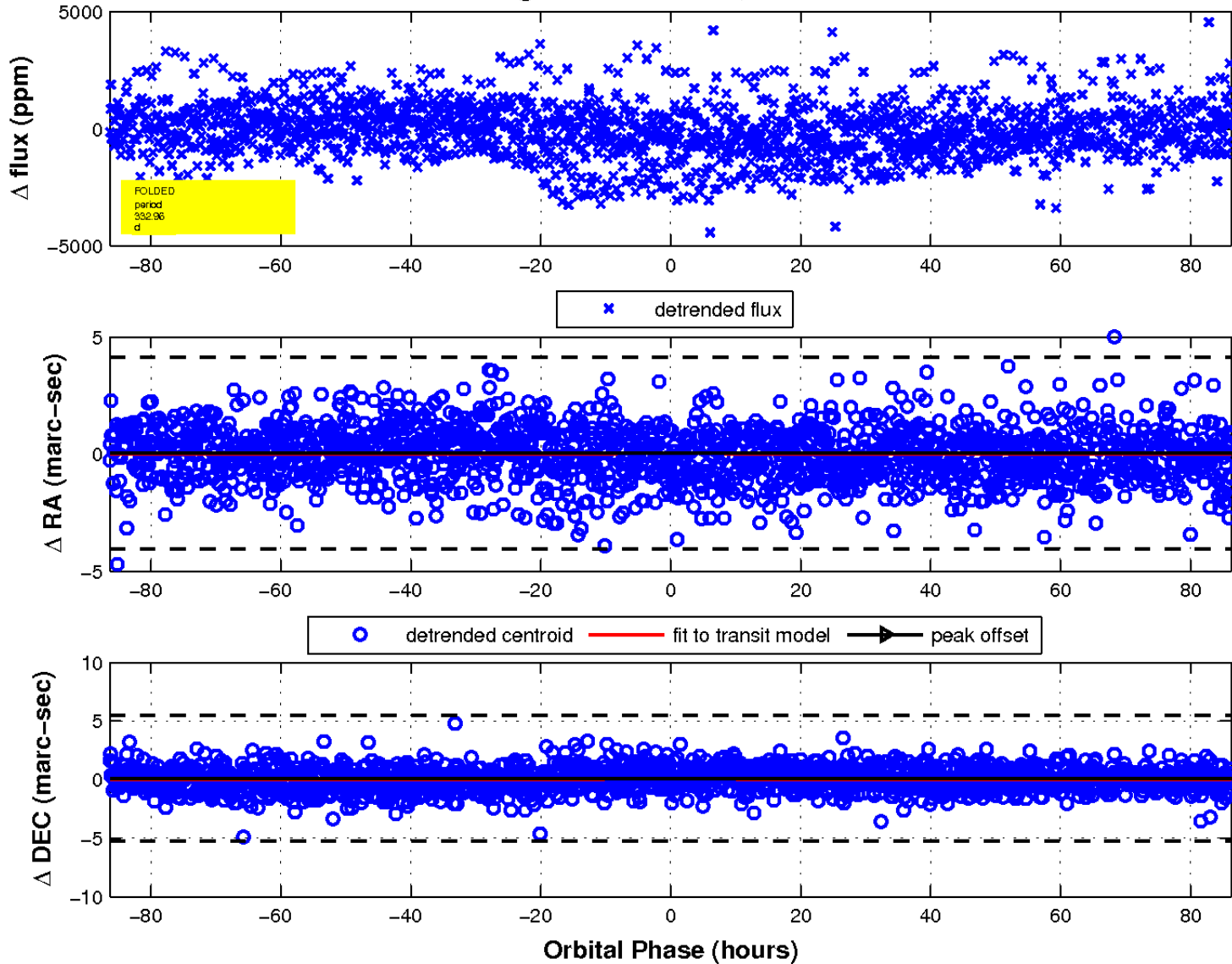
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

