

# KIC 005272673

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005272673-01	OBS	No	0.614996	131.968564	11.4	0.960	11.7	1.1	2.09	7246	0.72	36494.05
005272673-02	OBS	No	0.615043	131.629096	82.1	4.164	10.7	13.3	2.09	7246	2.20	36490.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005272673-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005272673-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

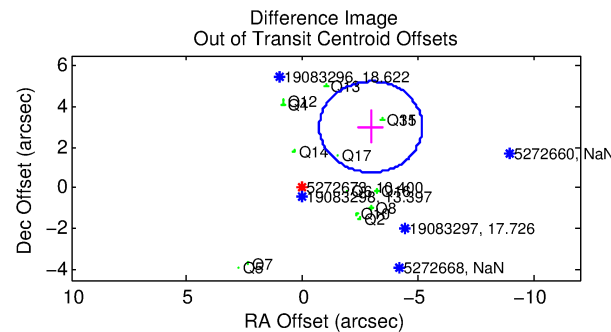
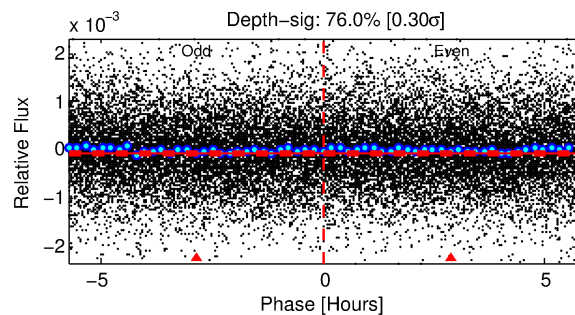
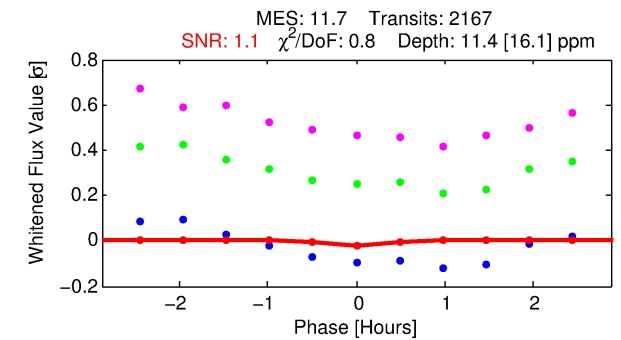
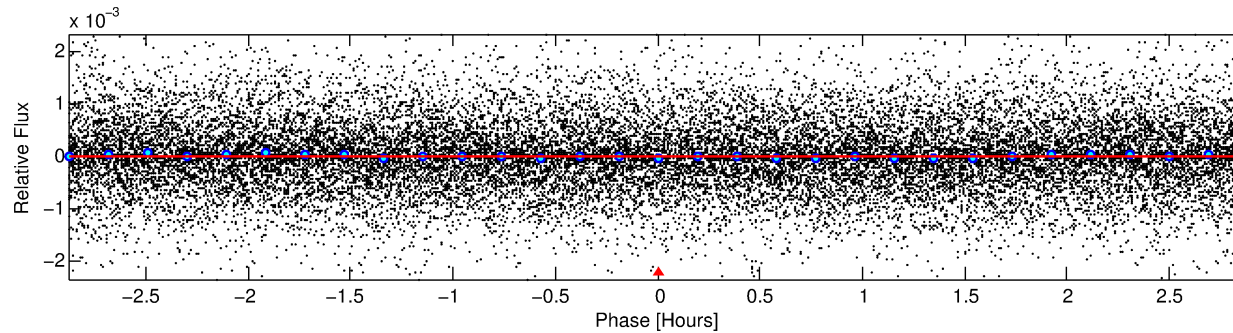
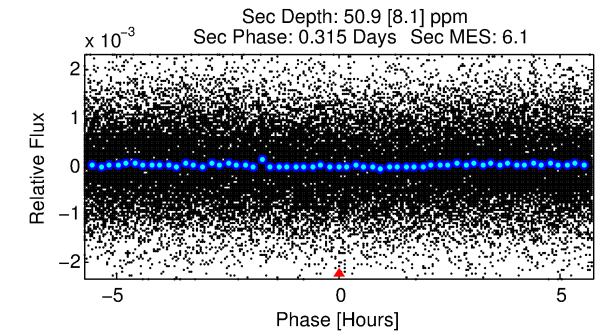
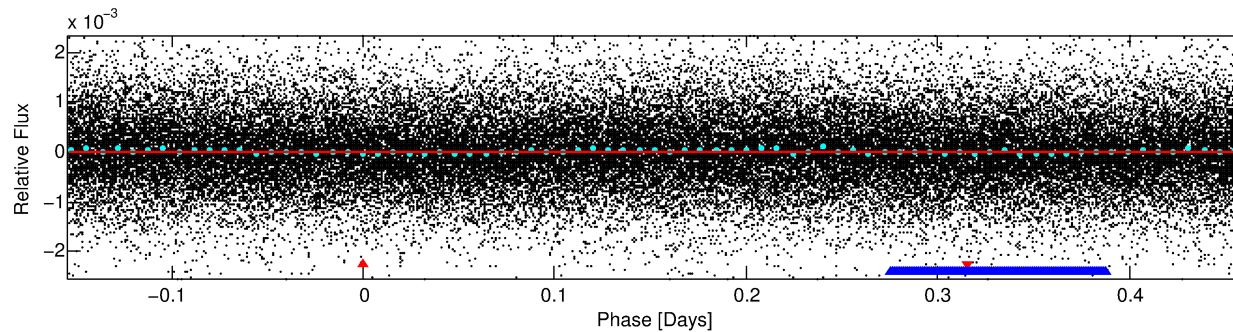
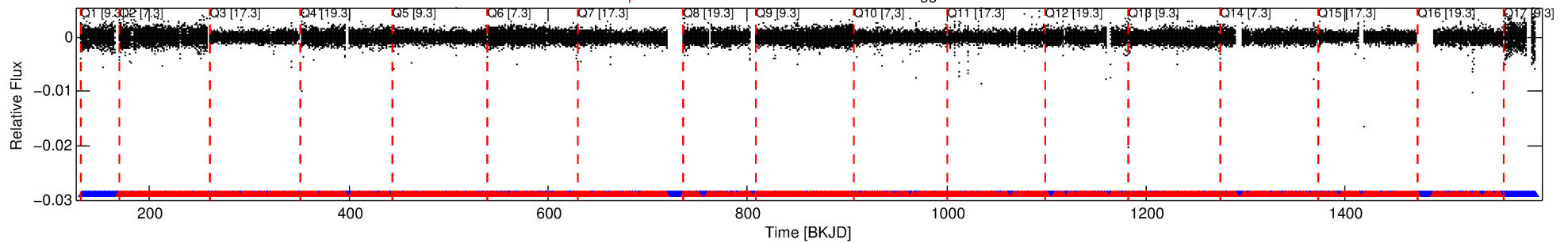
## Ephemeris Match Information For 005272673-01

No Significant Match Found

# DV One-Page Summary

KIC: 5272673 Candidate: 1 of 2 Period: 0.615 d

Kp: 10.40 R\*: 2.09 Rs Teff: 7246.0 K Logg: 4.05 Fe/H: 0.360



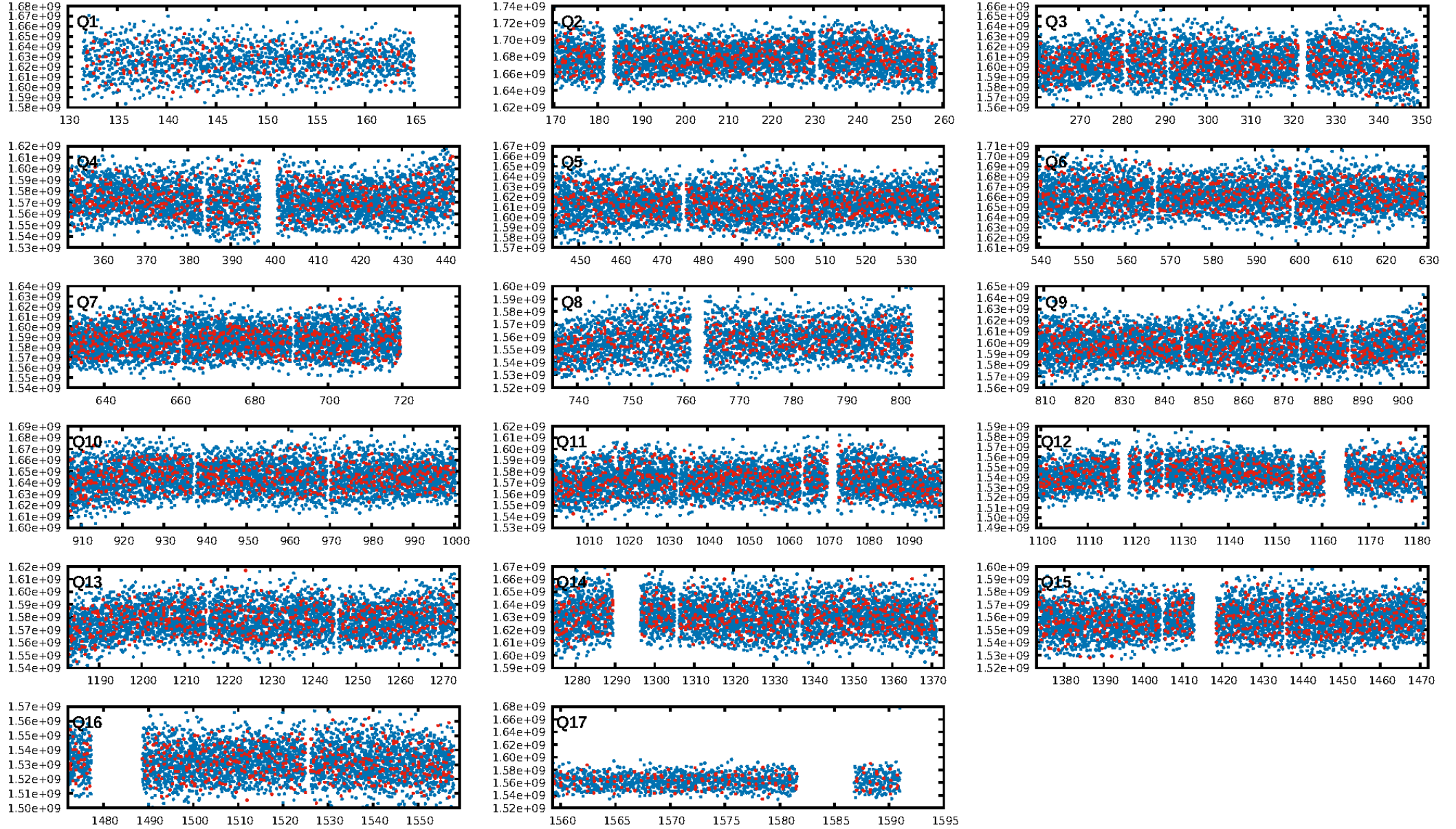
## DV Fit Results:

Period = 0.61500 [0.00010] d  
Epoch = 131.9686 [0.0166] BKJD  
Rp/R\* = 0.0032 [0.0467]  
a/R\* = 4.94 [414.59]  
b = 0.03 [2677.99]  
Seff = 36494.05 [8081.86]  
Teq = 3524 [195] K  
Rp = 0.72 [10.65] Re  
a = 0.0172 [0.0026] AU  
Ag = 15.95 [471.32] [0.03] $\sigma$   
Teffp = 10889 [80458] K [0.09] $\sigma$

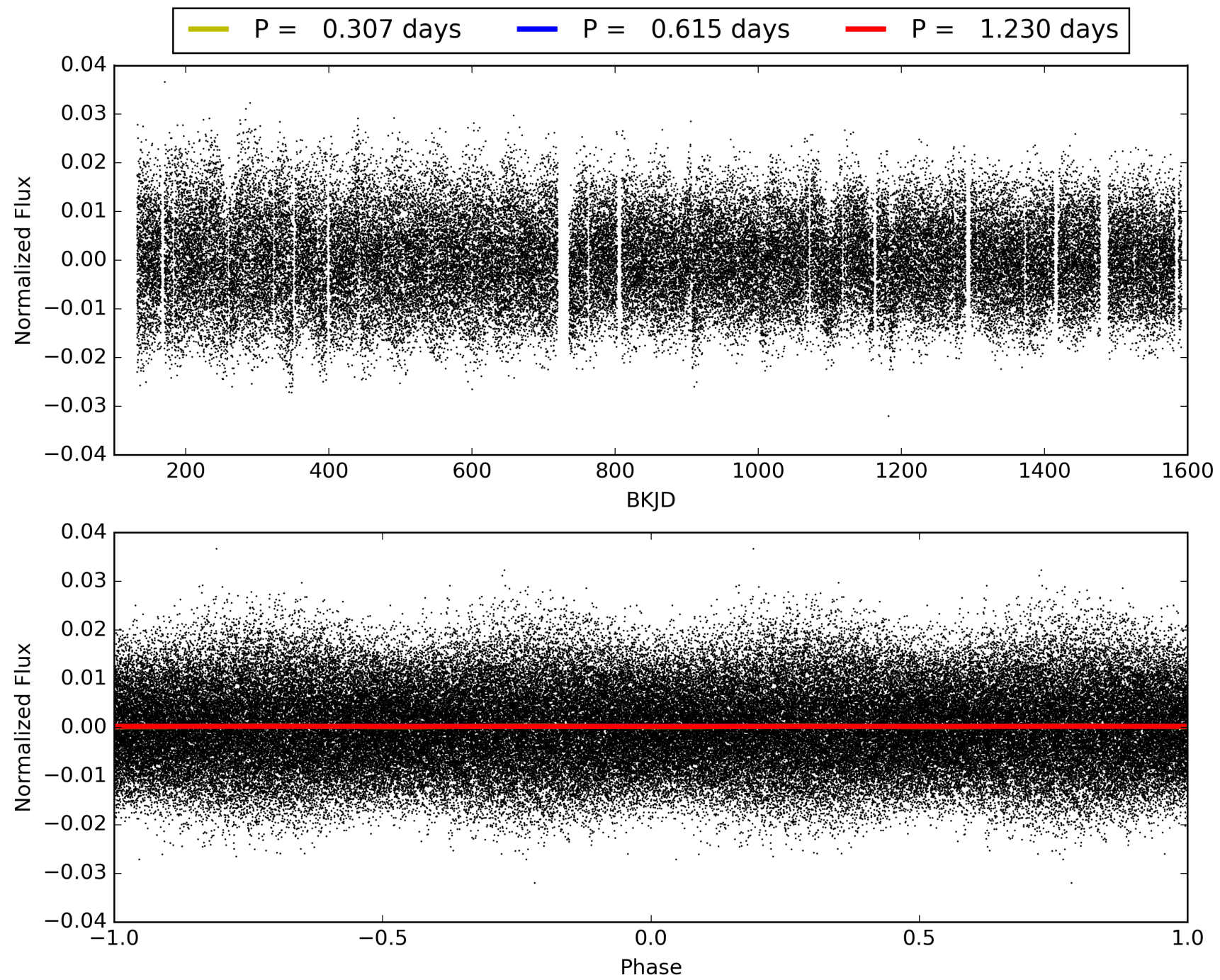
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00] $\sigma$   
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.34e-22  
RollingBand-fgt: 0.49 [1022/2069]  
GhostDiagnostic-chr: 0.6269  
Centroid-sig: 30.7%  
Centroid-so: 2.564 arcsec [1.08] $\sigma$   
OotOffset-rm: 4.209 arcsec [5.67] $\sigma$   
KicOffset-rm: 3.609 arcsec [5.08] $\sigma$   
OotOffset-st: 4/4/4/3 [15]  
KicOffset-st: 4/4/4/3 [15]  
DiffImageQuality-fgm: 0.07 [1/15]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 005272673-01, PDC Light Curves

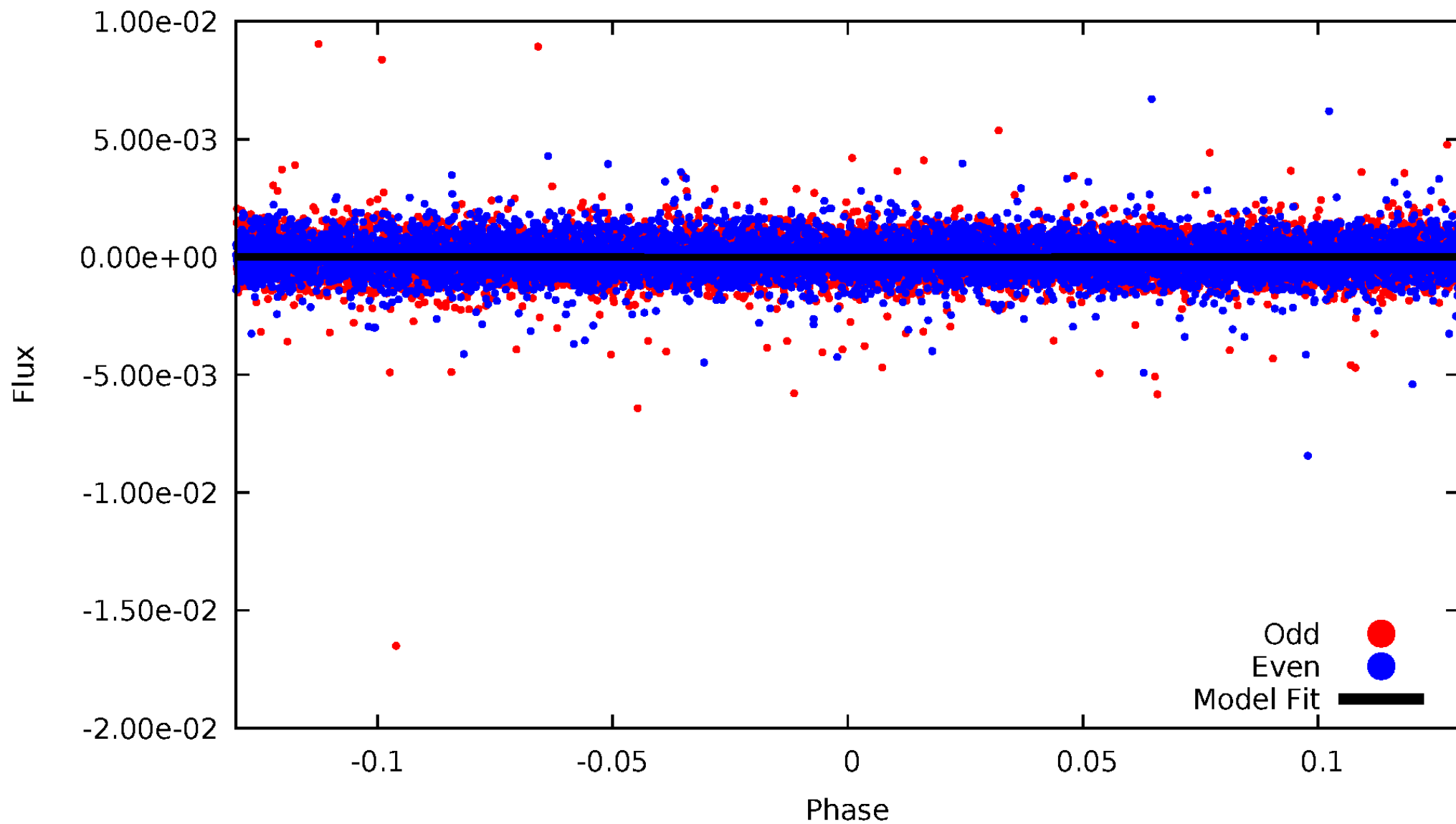


TCE 005272673-01



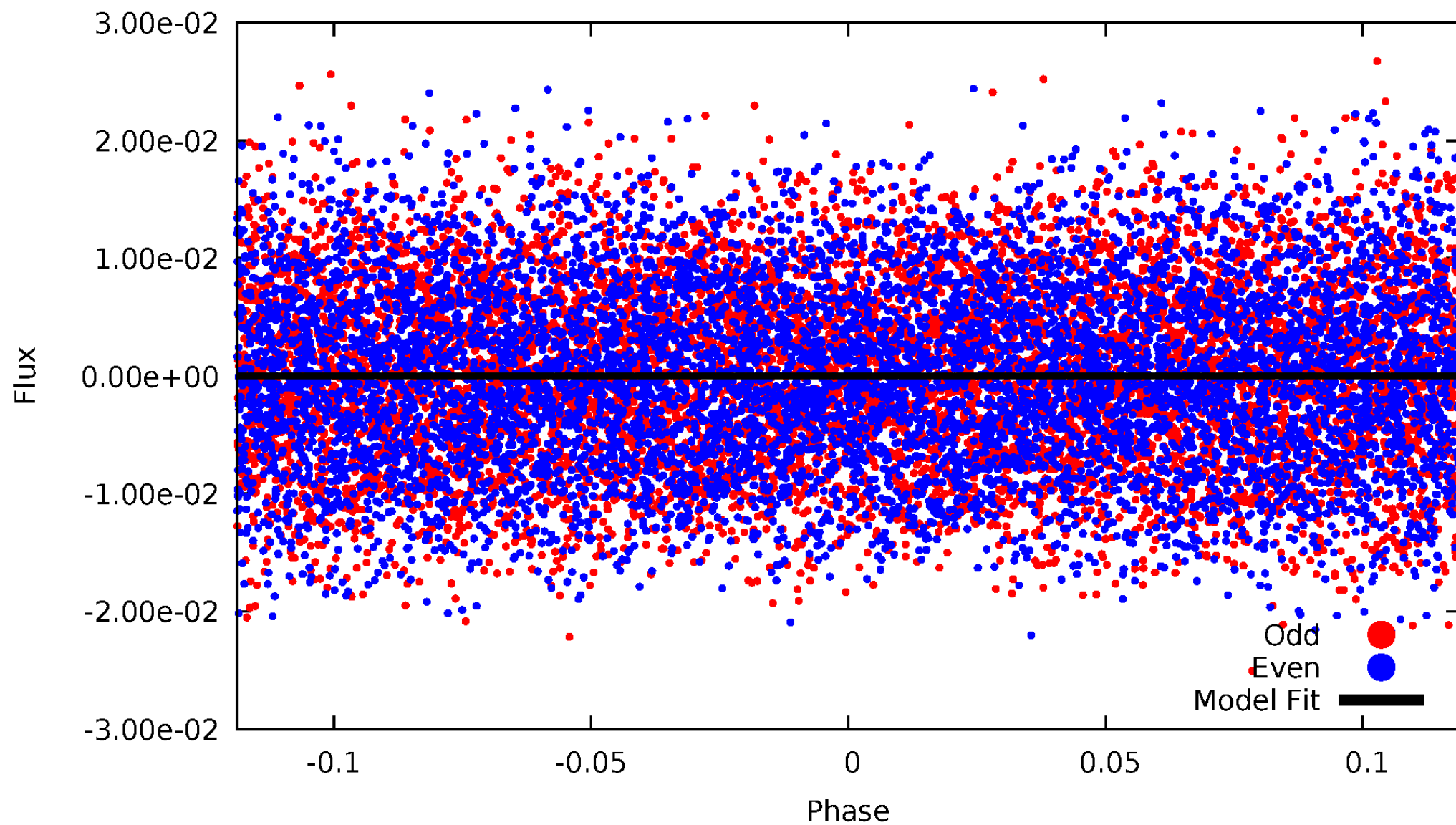
# DV Odd/Even

TCE 005272673-01



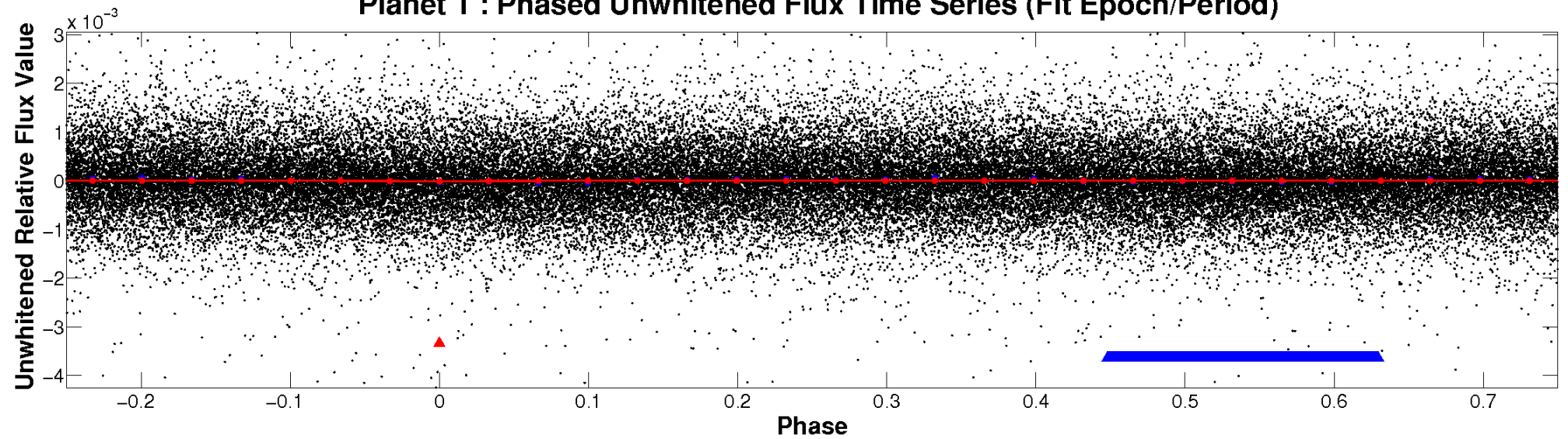
# ALT Odd/Even

TCE 005272673-01

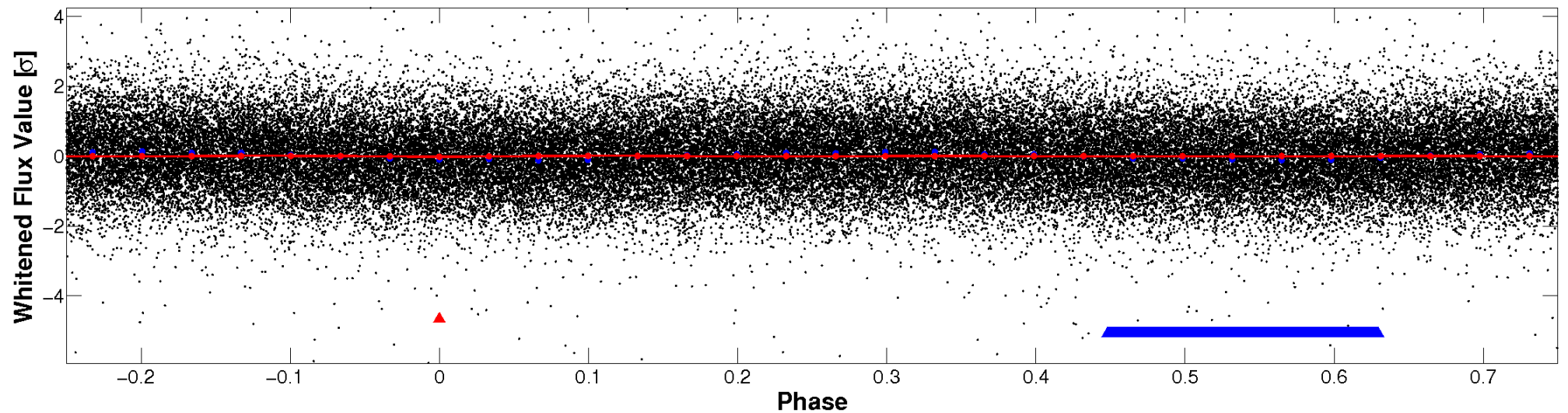


# Non-Whitened Vs. Whitened Light Curve

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

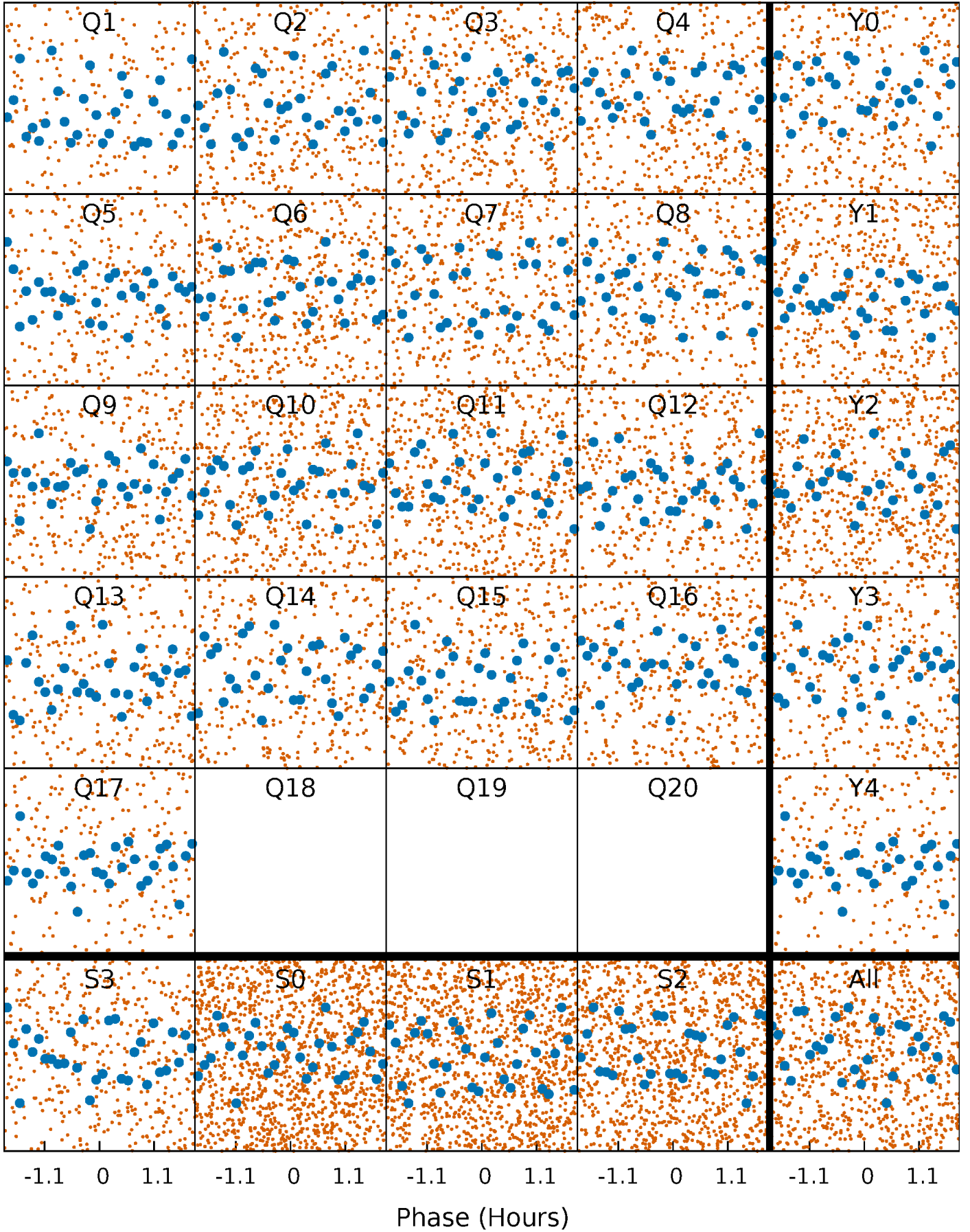


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



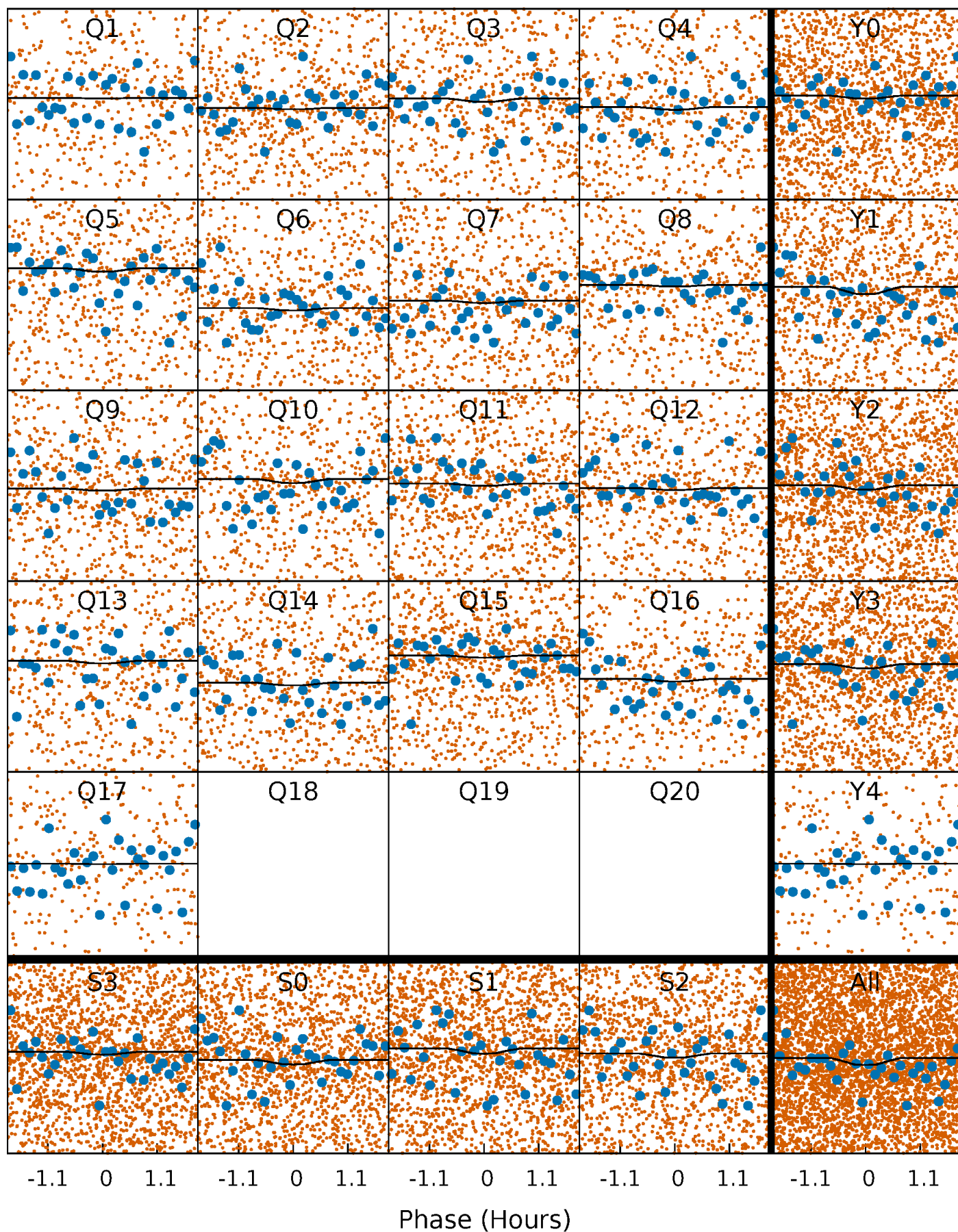
# PDC Quarter-Phased Transit Curves

TCE 005272673-01 P= 0.614996 Days  $T_0=131.968565$  (BKJD)



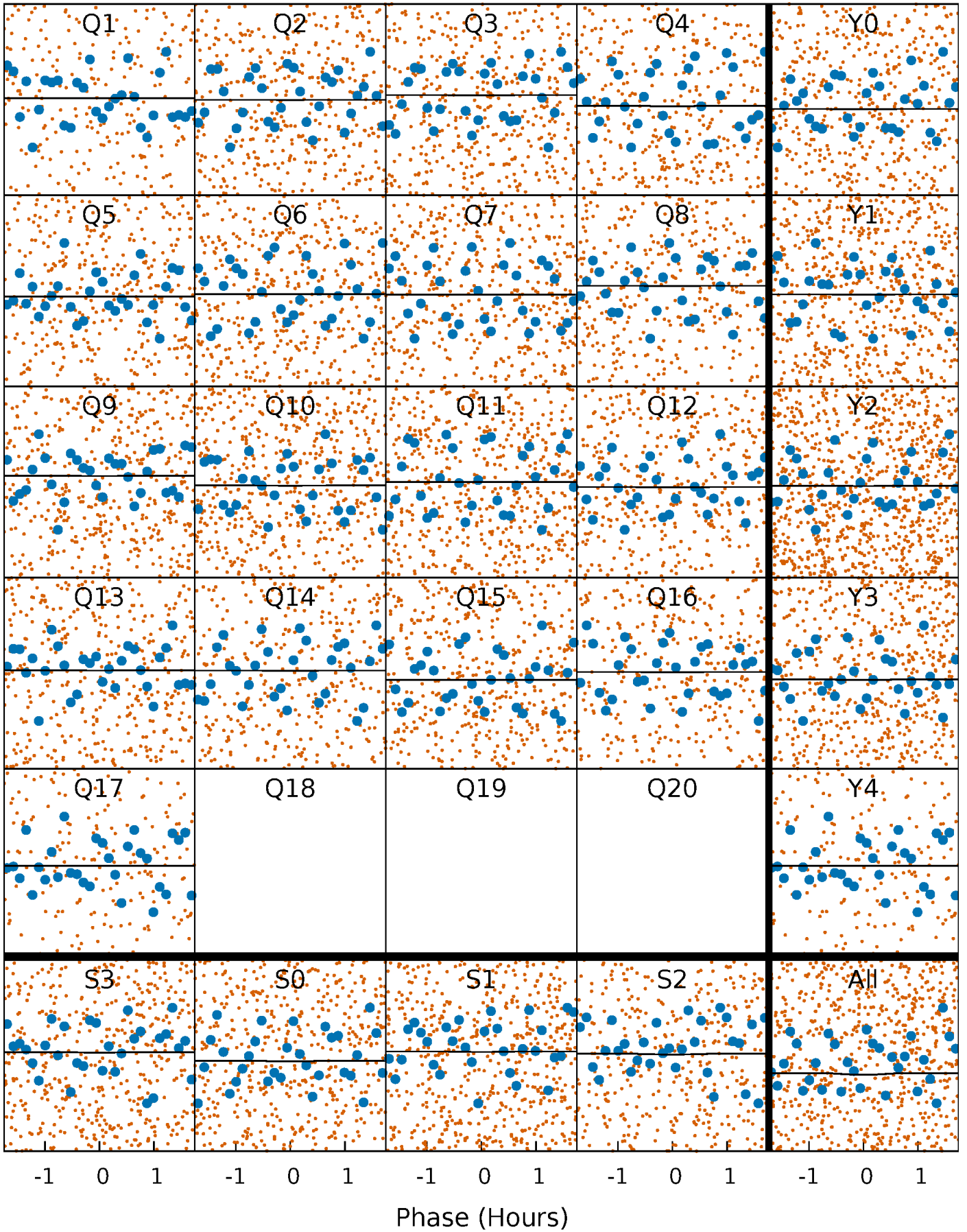
# DV Quarter-Phased Transit Curves

TCE 005272673-01 P= 0.614996 Days  $T_0=131.968565$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

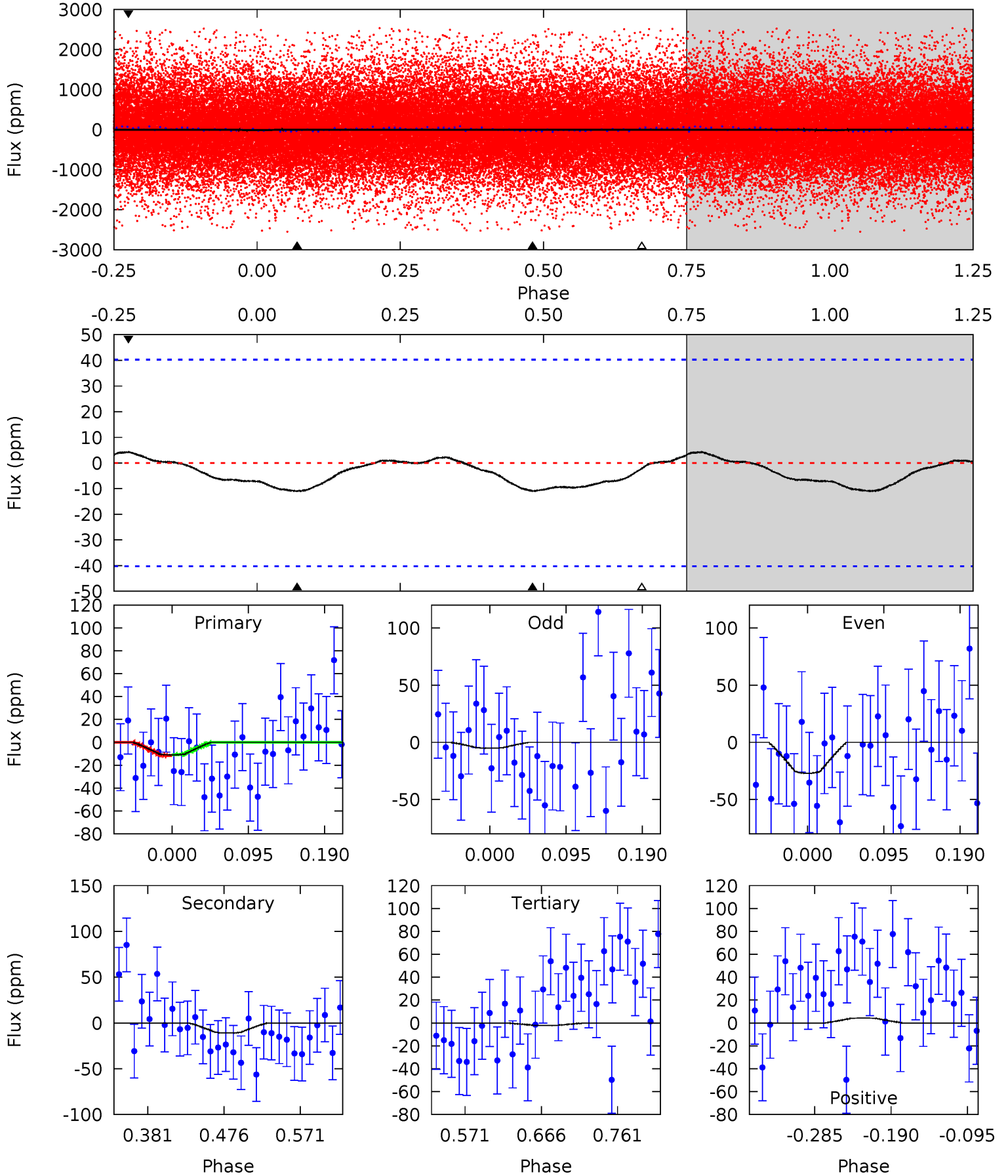
TCE 005272673-01 P= 0.615018 Days  $T_0=131.967587$  (BKJD)



# DV Model-Shift Uniqueness Test

005272673-01, P = 0.614996 Days, E = 131.353569 Days

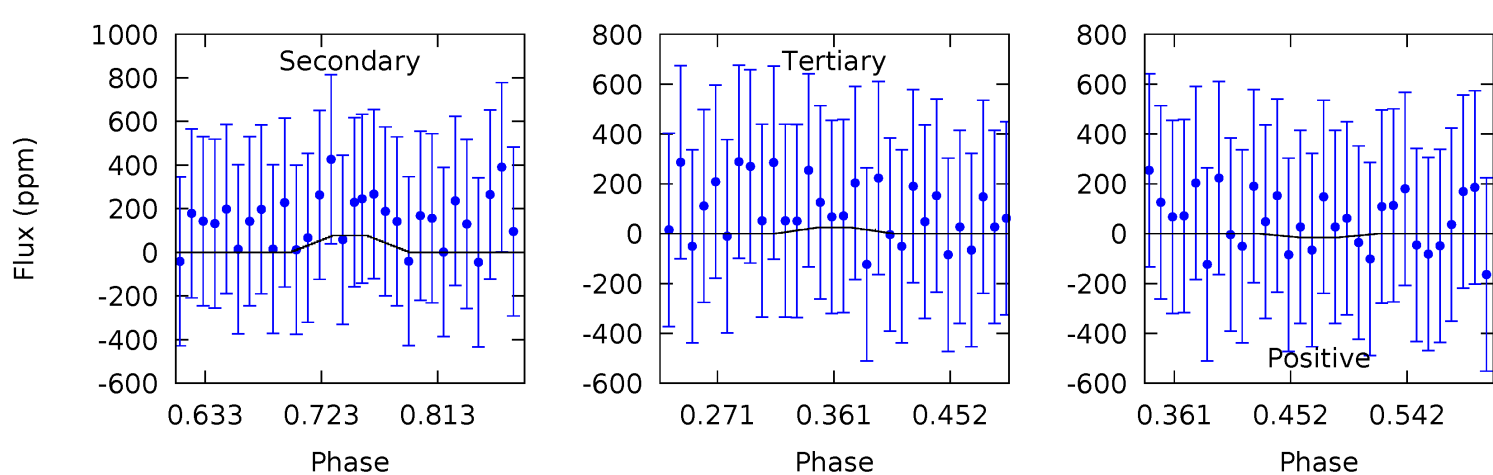
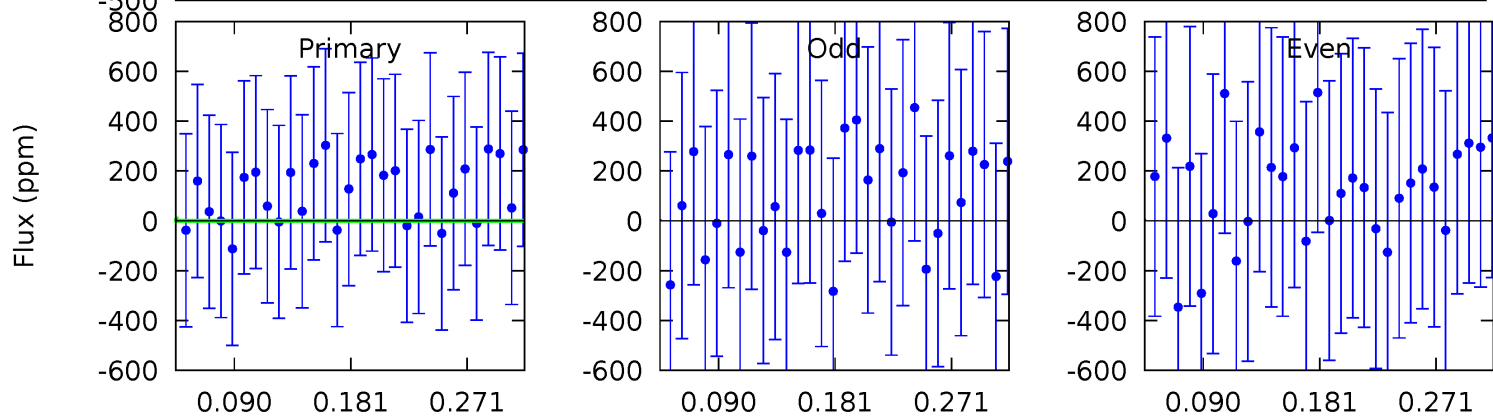
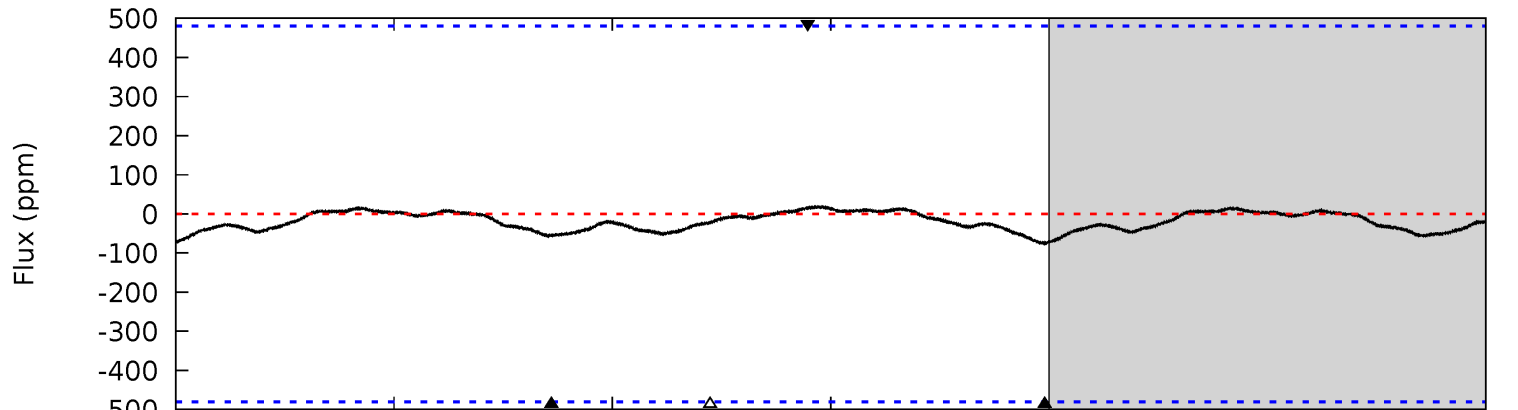
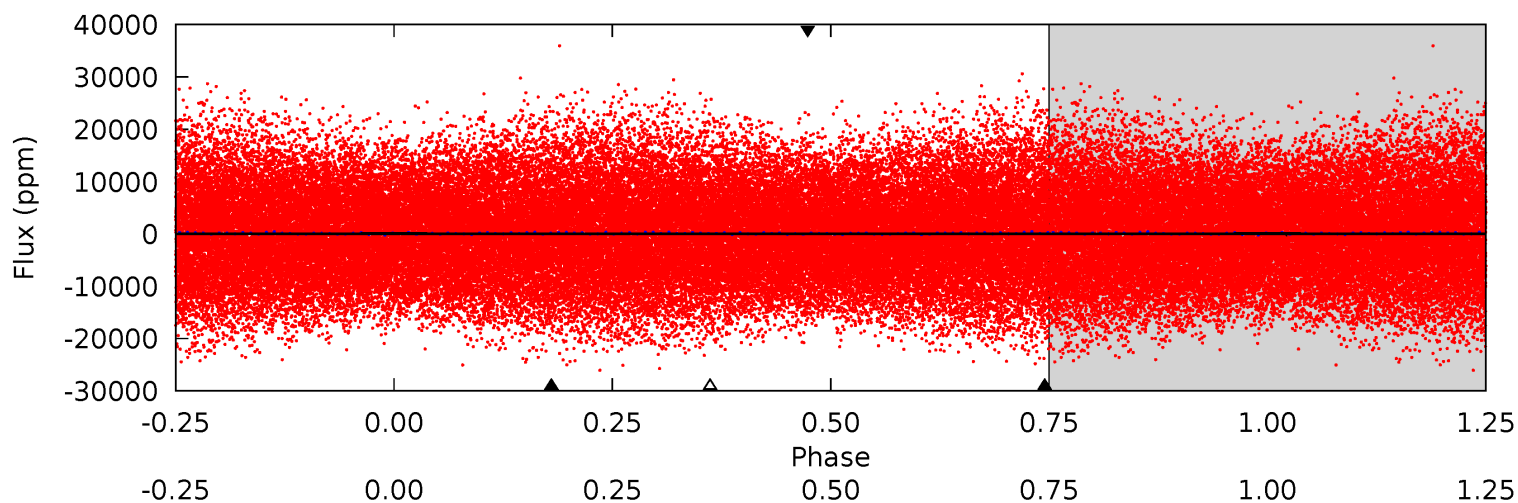
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.25	1.24	0.25	0.48	4.58	1.67	0.39	1.00	0.77	0.99	0.75	1.27	0.71	0.28	0.04



# Alt Model-Shift Uniqueness Test

005272673-01, P = 0.615018 Days, E = 131.352569 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.56	0.74	0.23	0.15	4.59	1.69	0.18	0.32	0.40	0.50	0.59	0.05	6.31	0.20	0.52



### Stellar Parameters For KIC 005272673

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7246^{+72}_{-86}$	$4.051^{+0.095}_{-0.116}$	$0.360^{+0.050}_{-0.150}$	$2.090^{+0.385}_{-0.257}$	$1.789^{+0.129}_{-0.103}$	$0.276^{+0.118}_{-0.098}$
	+1%/-1%	+2%/-3%	+14%/-42%	+18%/-12%	+7%/-6%	+43%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005272673-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-11 \pm 9$	$7.78^{+8.05}_{-5.29}$	$4925^{+235}_{-184}$	$-4151^{+1051}_{-174}$	$0.023^{+0.232}_{-0.020}$
Alt.	$-77 \pm 105$	$7.89^{+7.94}_{-5.89}$	$4937^{+212}_{-186}$	$-3812^{+10059}_{-643}$	$0.127^{+1.970}_{-0.173}$

$T_{max}$  = 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  $A_{obs} \gg 1.0$

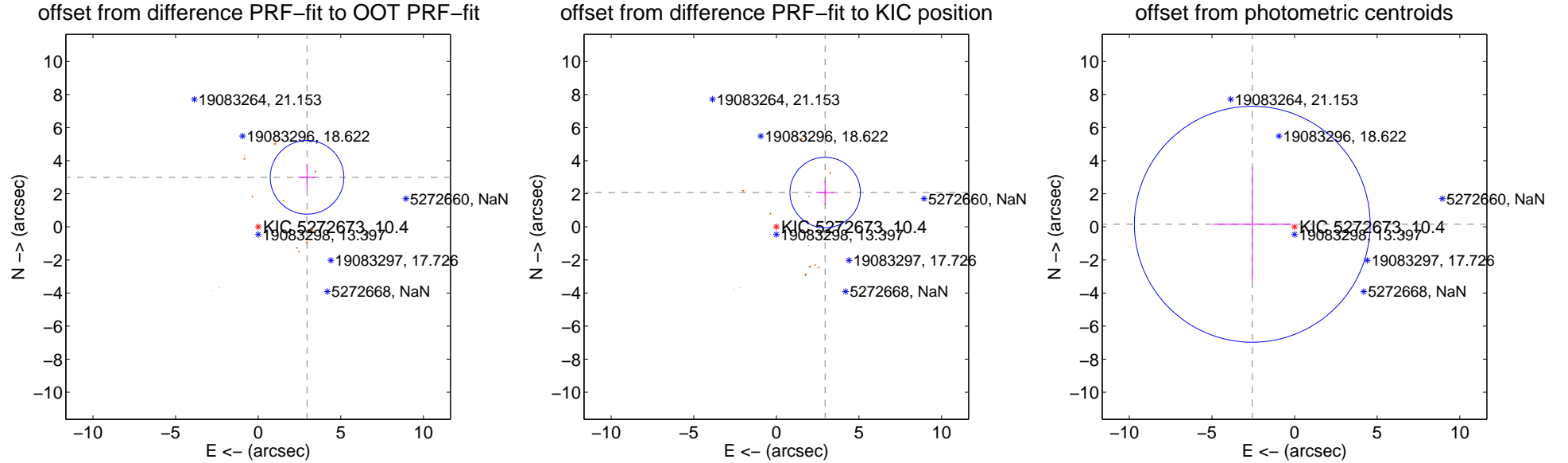
## DV Centroid Data

Supplemental centroid analysis for 005272673-01. **Kepler magnitude: 10.40.** Transit SNR 1.11

**There are 1 quarters with good PRF difference image offsets**

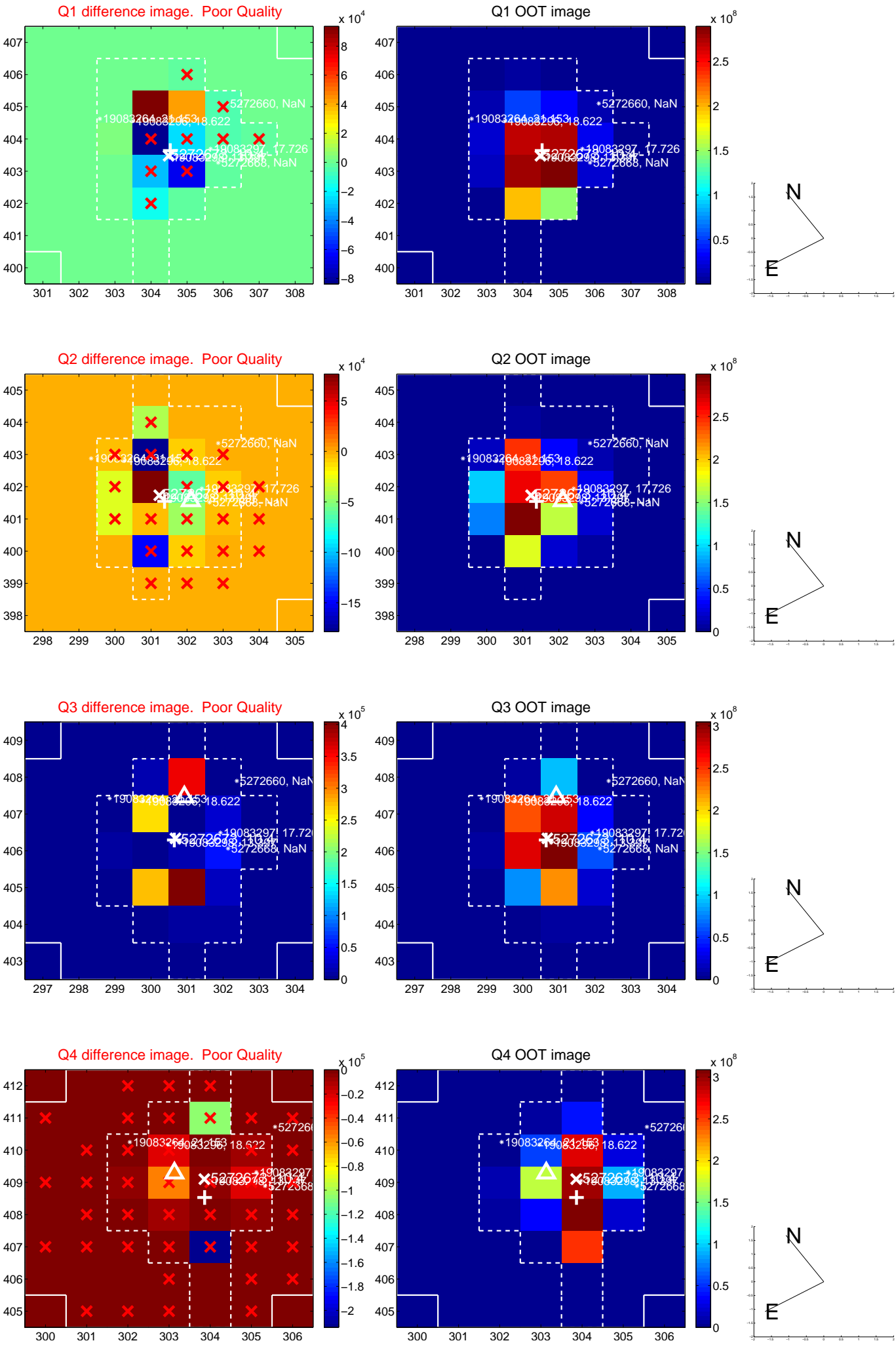
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>4.209 \pm 0.743</math></b>	<b>5.67</b>	$-2.957 \pm 0.544$	$2.995 \pm 0.765$
PRF-fit source offset from KIC position	<b><math>3.609 \pm 0.710</math></b>	<b>5.08</b>	$-2.952 \pm 0.548$	$2.078 \pm 0.778$
photometric centroid source offset	$2.56 \pm 2.38$	1.08	$2.56 \pm 2.37$	$0.16 \pm 3.45$

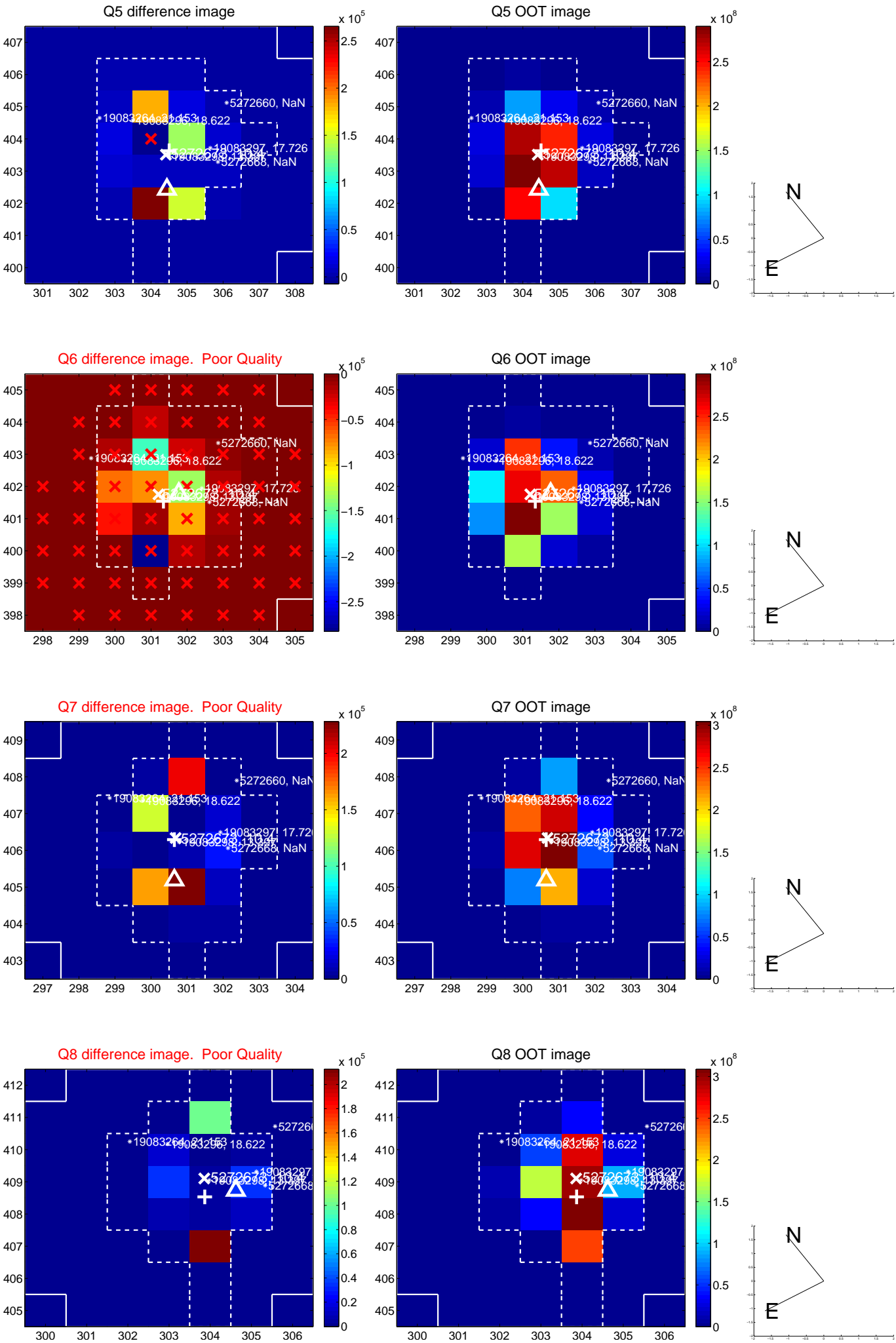


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

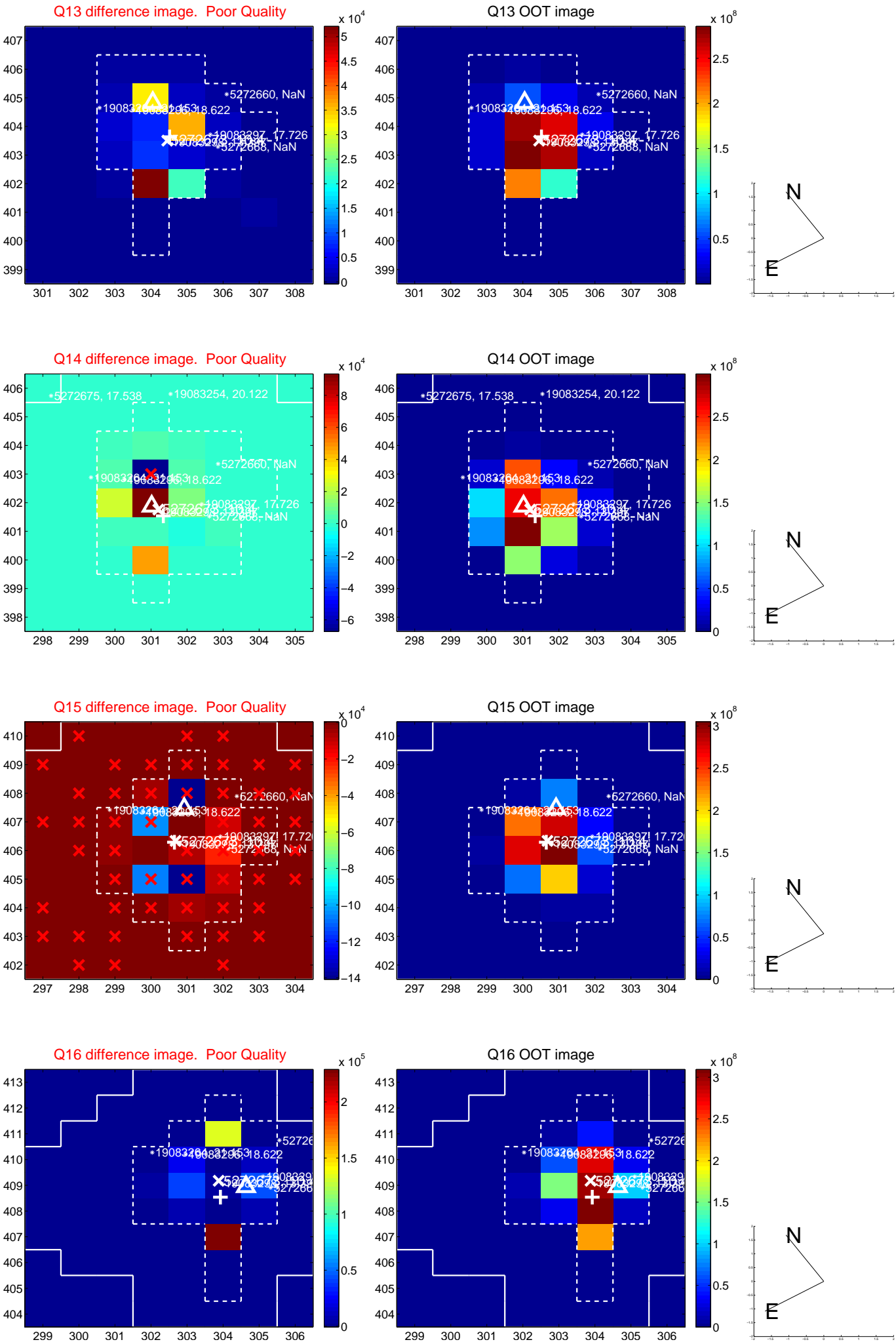


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

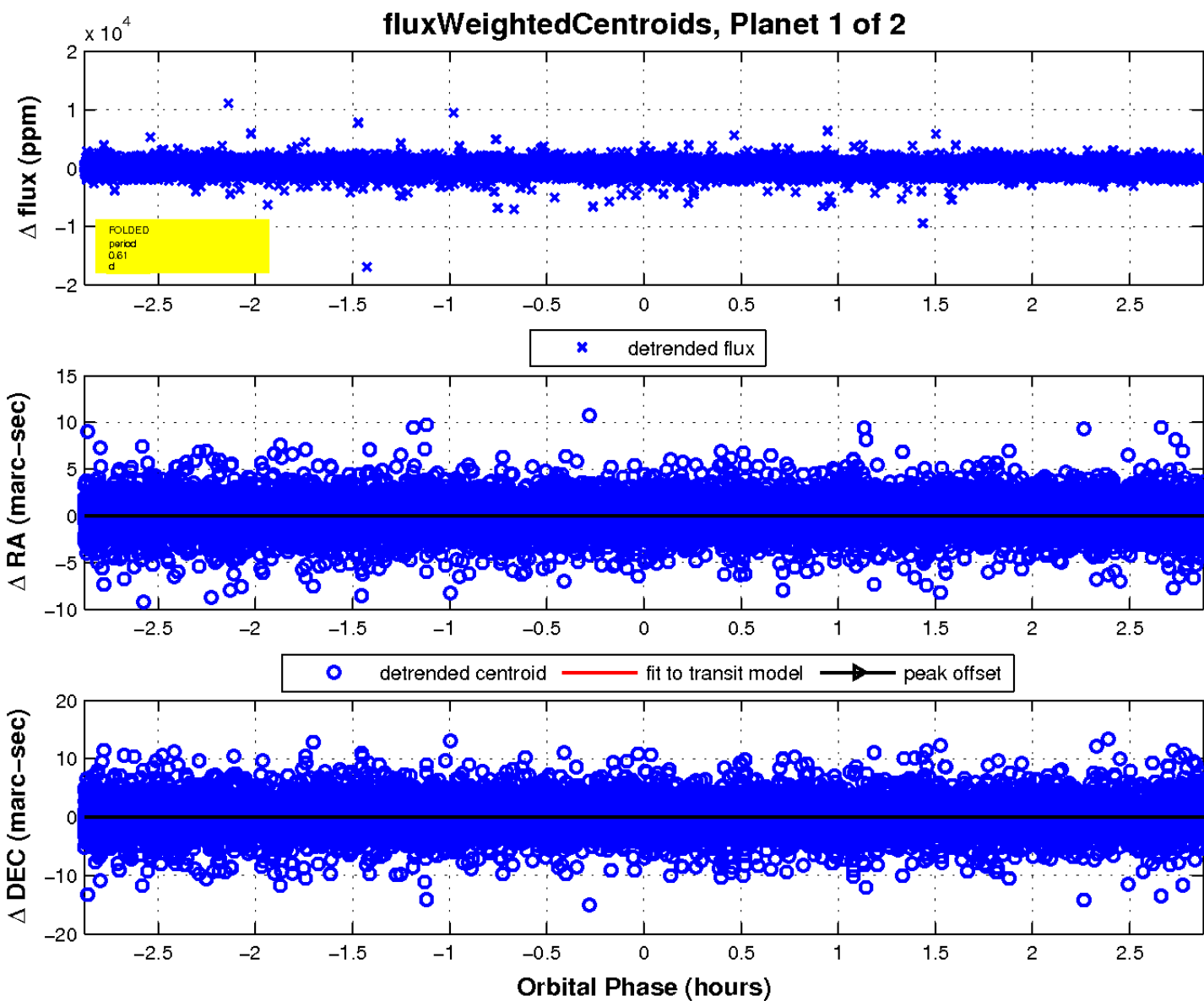
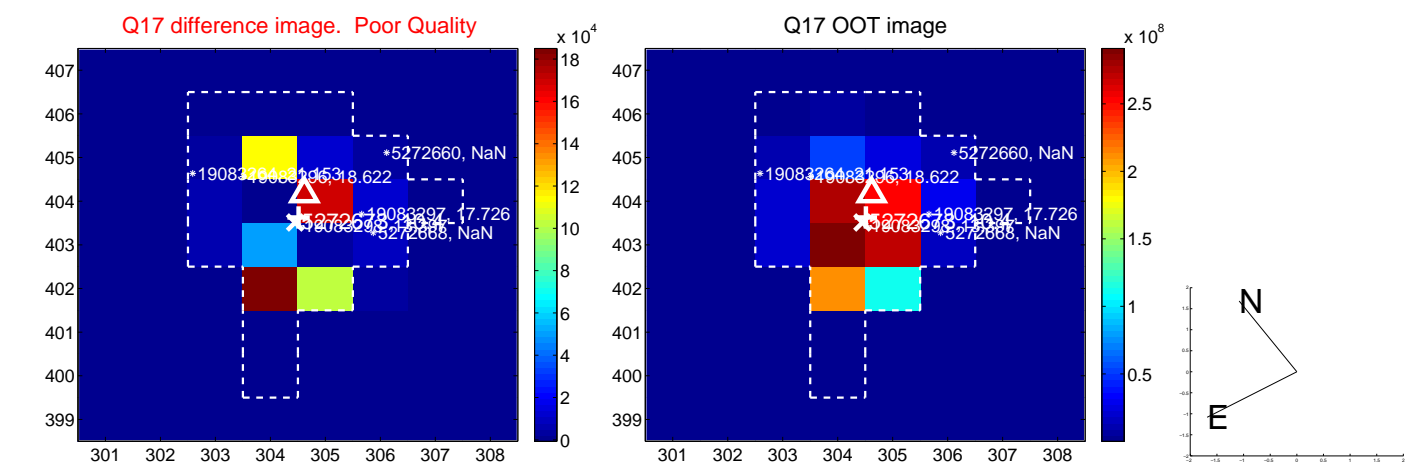




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

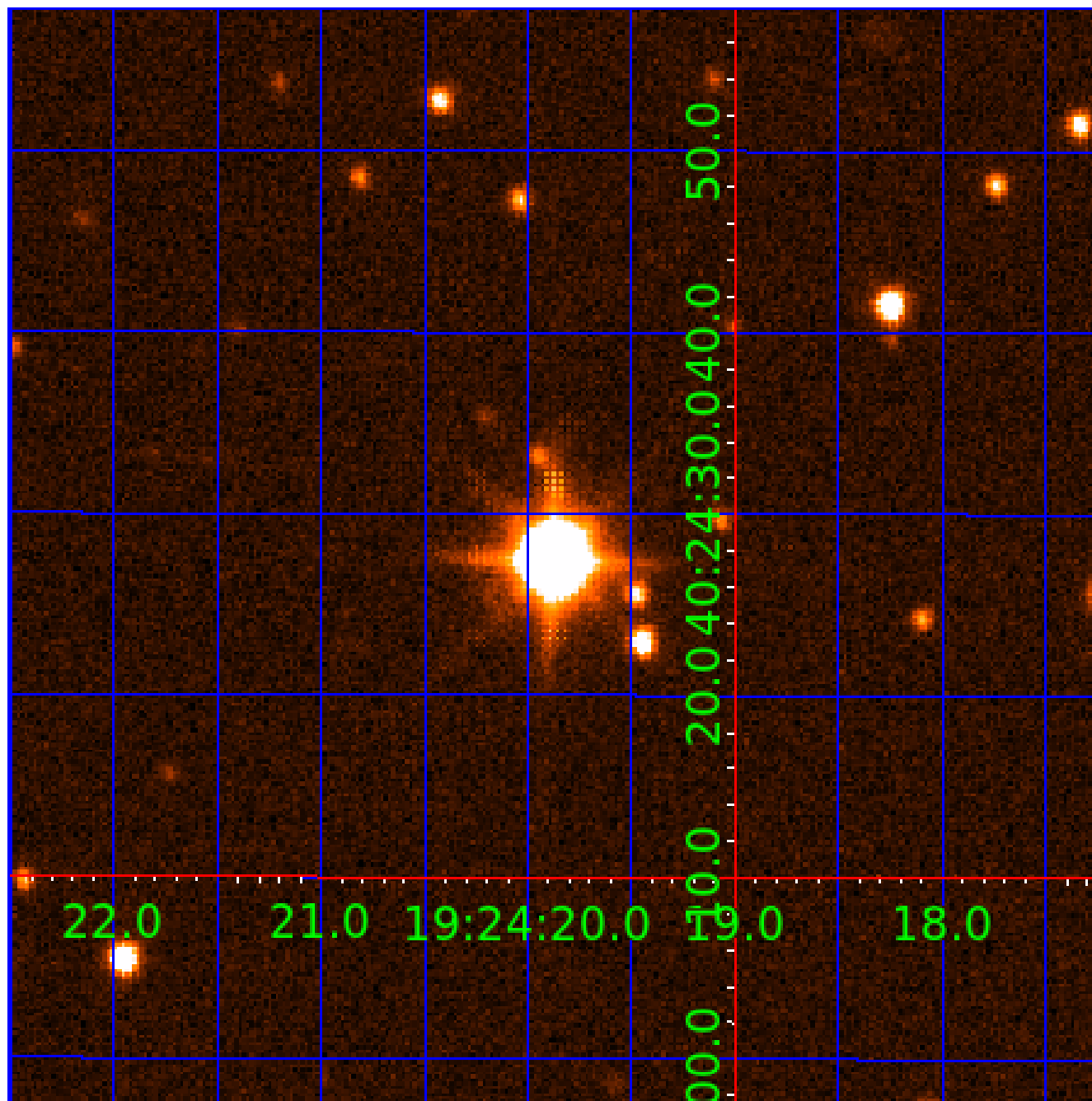


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005272673

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005272673-01	OBS	No	0.614996	131.968564	11.4	0.960	11.7	1.1	2.09	7246	0.72	36494.05
005272673-02	OBS	No	0.615043	131.629096	82.1	4.164	10.7	13.3	2.09	7246	2.20	36490.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005272673-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
005272673-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

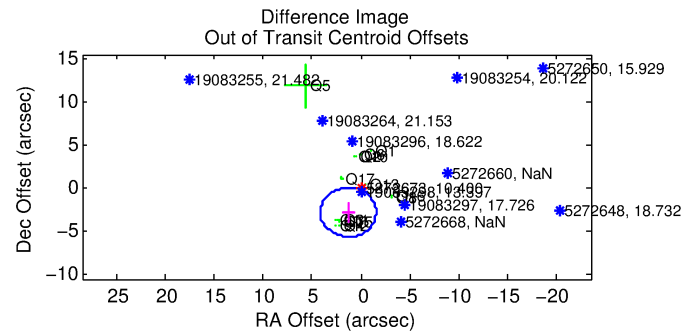
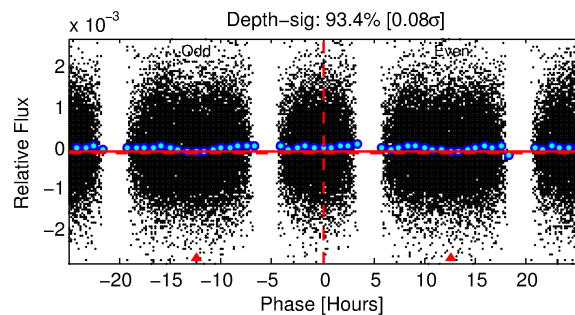
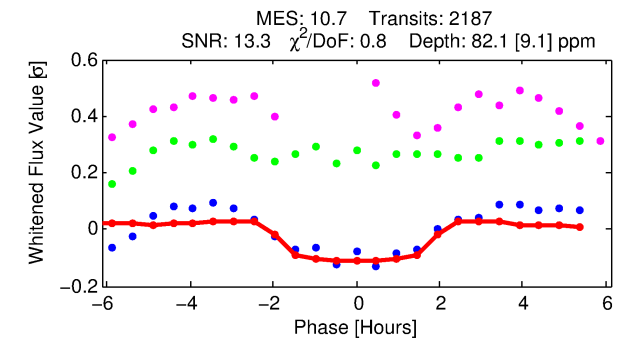
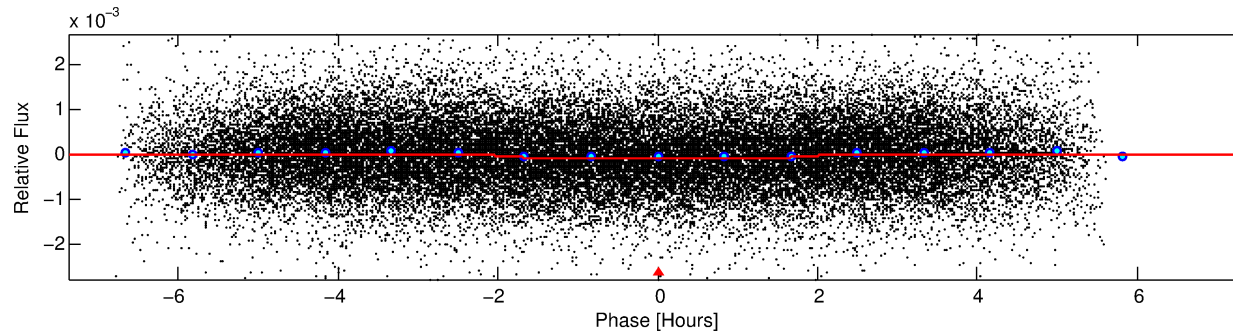
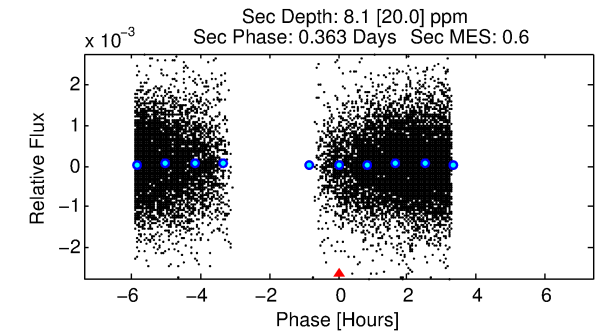
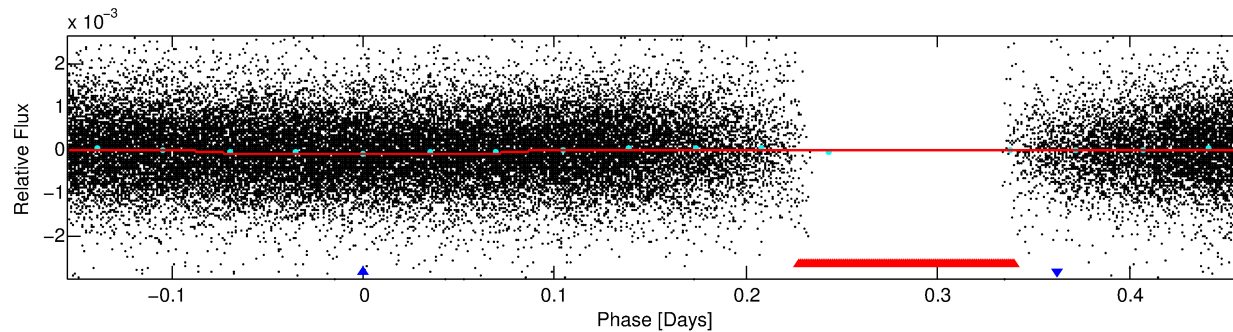
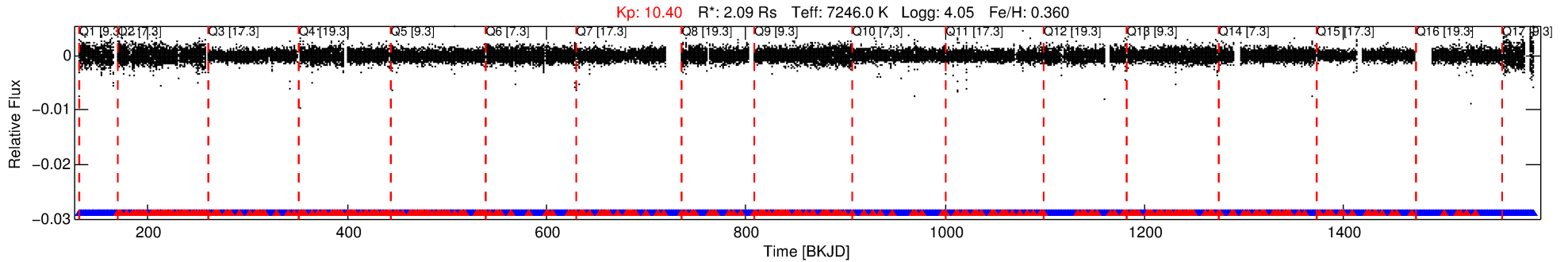
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005272673-02

No Significant Match Found

# DV One-Page Summary

KIC: 5272673 Candidate: 2 of 2 Period: 0.615 d



## DV Fit Results:

Period = 0.61504 [0.00001] d  
Epoch = 131.6291 [0.0031] BKJD  
Rp/R\* = 0.0097 [0.0030]  
a/R\* = 1.07 [0.27]  
b = 0.90 [0.39]  
Seff = 36490.33 [8081.03]  
Teq = 3524 [195] K  
Rp = 2.20 [0.80] Re  
a = 0.0172 [0.0026] AU  
Ag = 0.27 [0.69] [-1.05σ]  
Teffp = 3934 [2506] K [0.16σ]

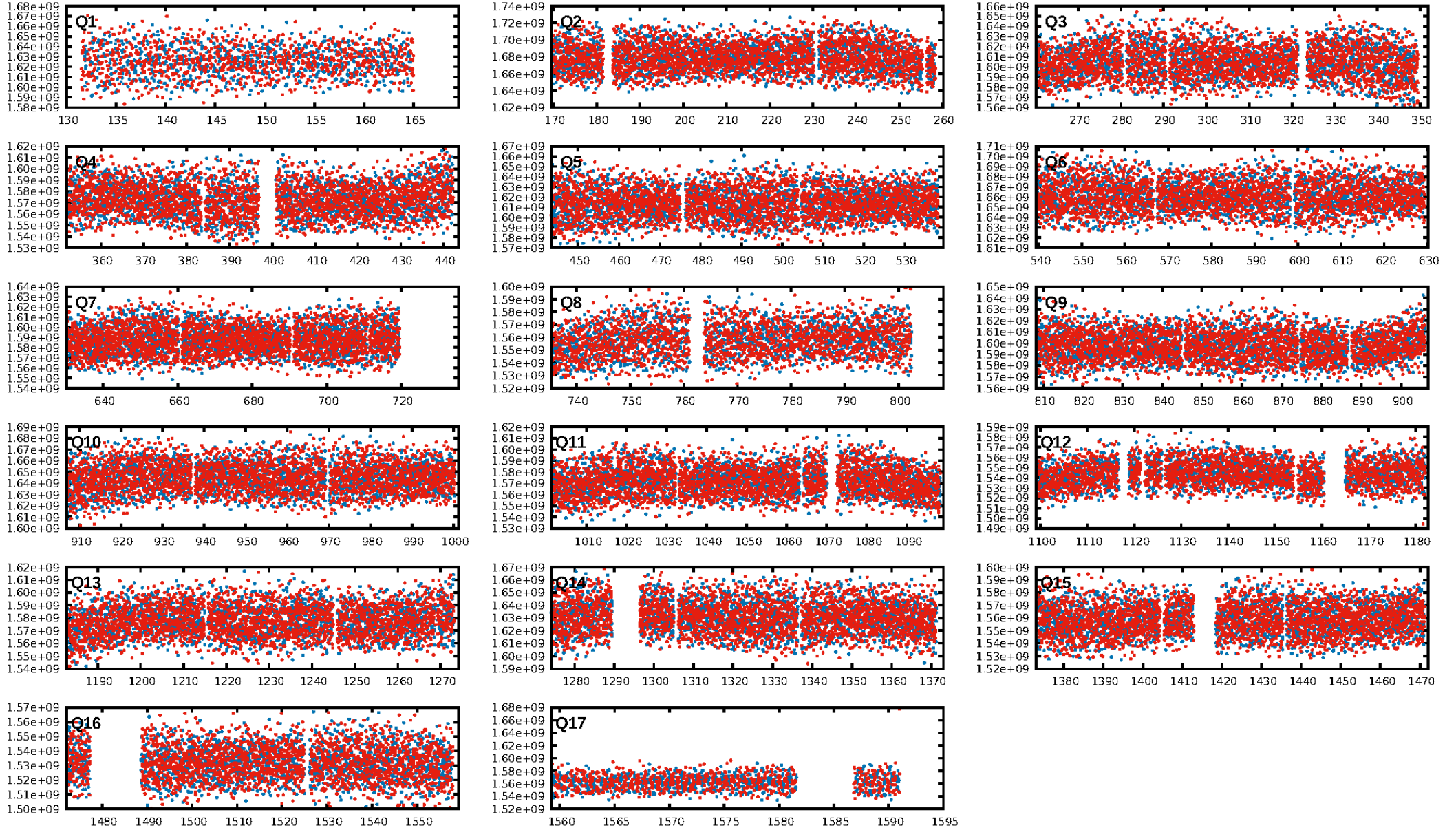
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 5.87e-20  
RollingBand-fgt: 0.83 [1742/2089]  
GhostDiagnostic-chr: 0.9357  
Centroid-sig: 0.1%  
Centroid-so: 0.976 arcsec [5.02σ]  
OotOffset-rm: 3.072 arcsec [3.23σ]  
KicOffset-rm: 2.306 arcsec [2.08σ]  
OotOffset-st: 3/4/4/4 [15]  
KicOffset-st: 3/4/4/4 [15]  
DiffImageQuality-fgm: 0.47 [7/15]  
DiffImageOverlap-fno: 0.00 [0/17]

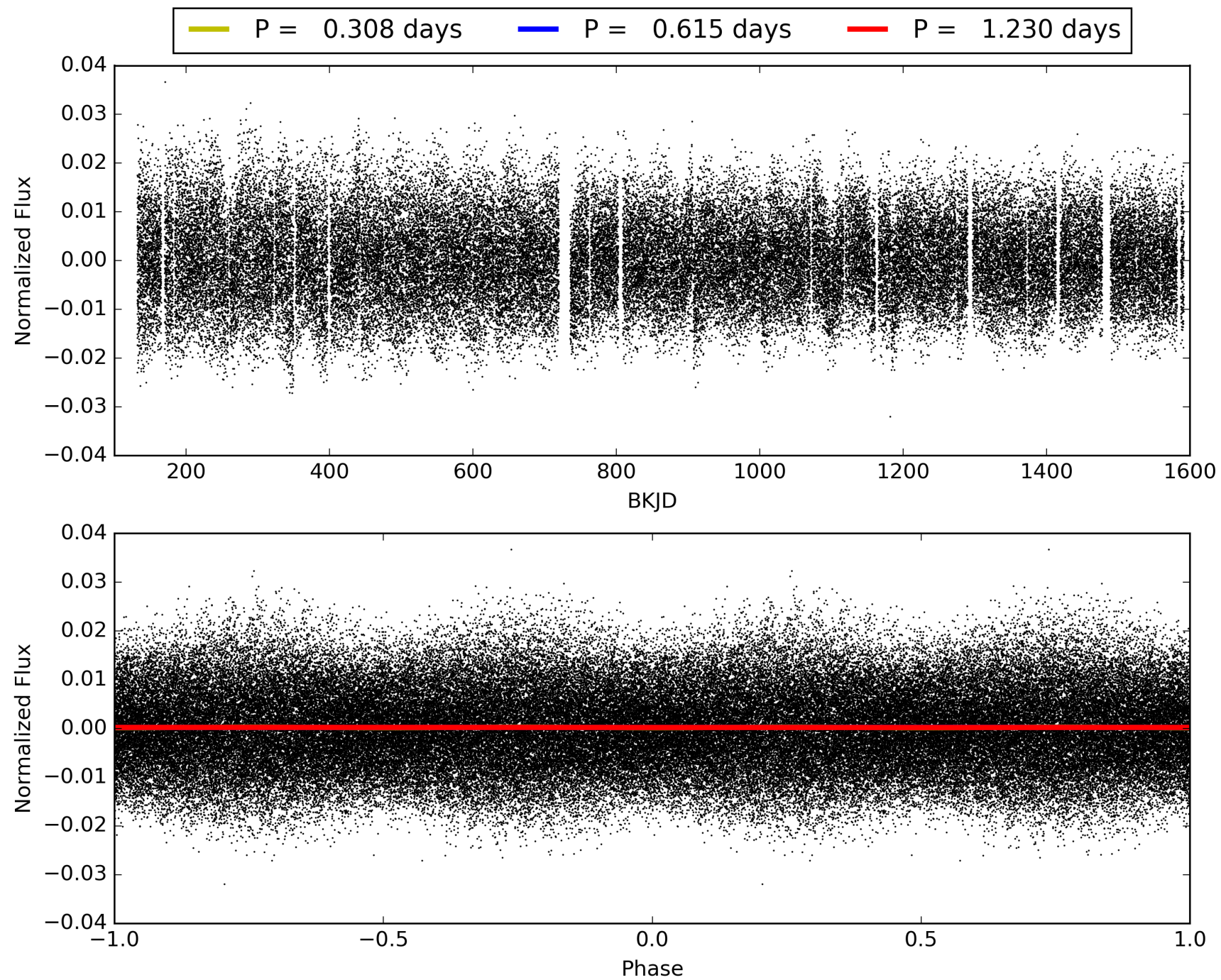
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:51:12 Z

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

# TCE 005272673-02, PDC Light Curves

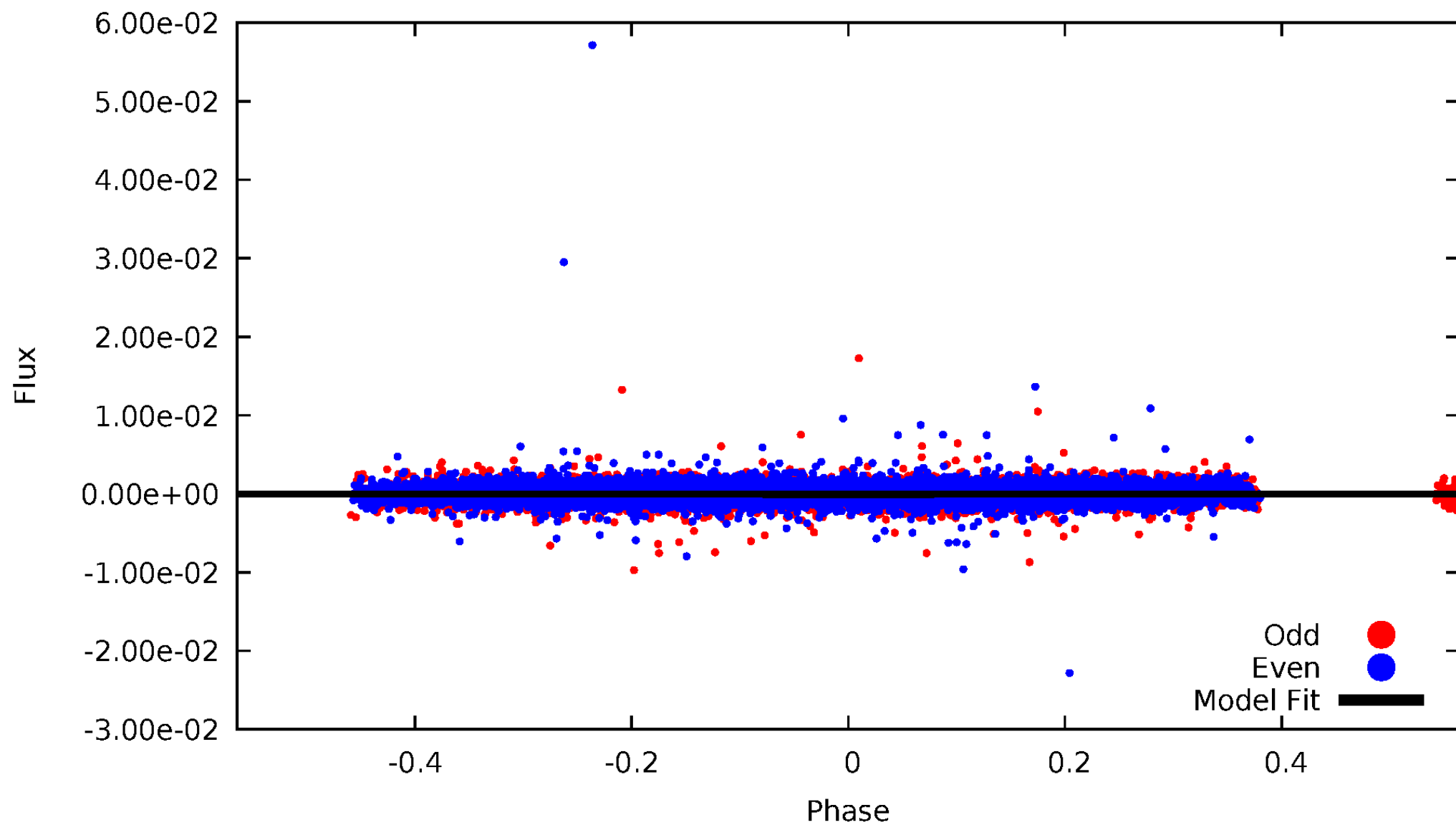


TCE 005272673-02



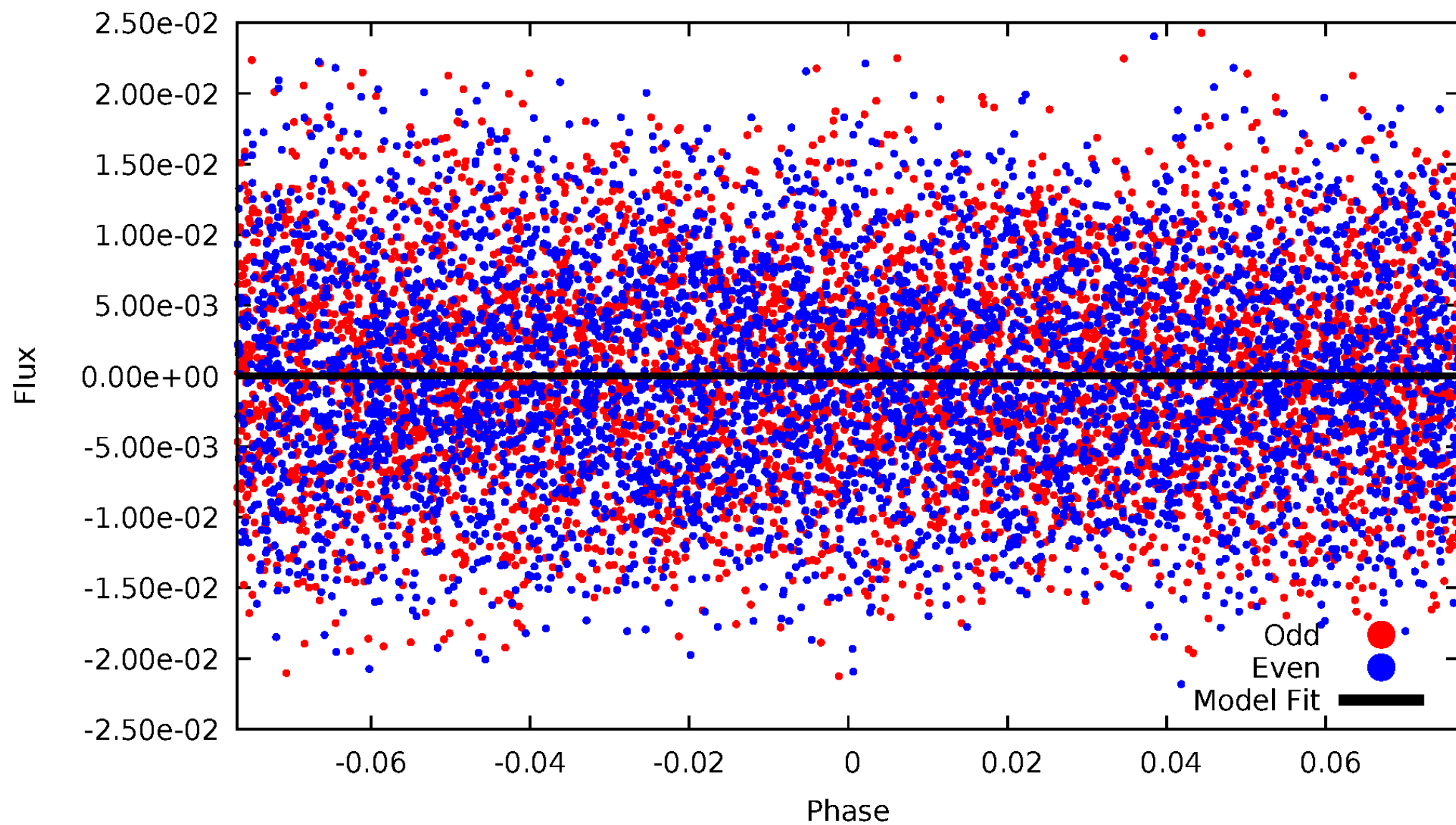
# DV Odd/Even

TCE 005272673-02



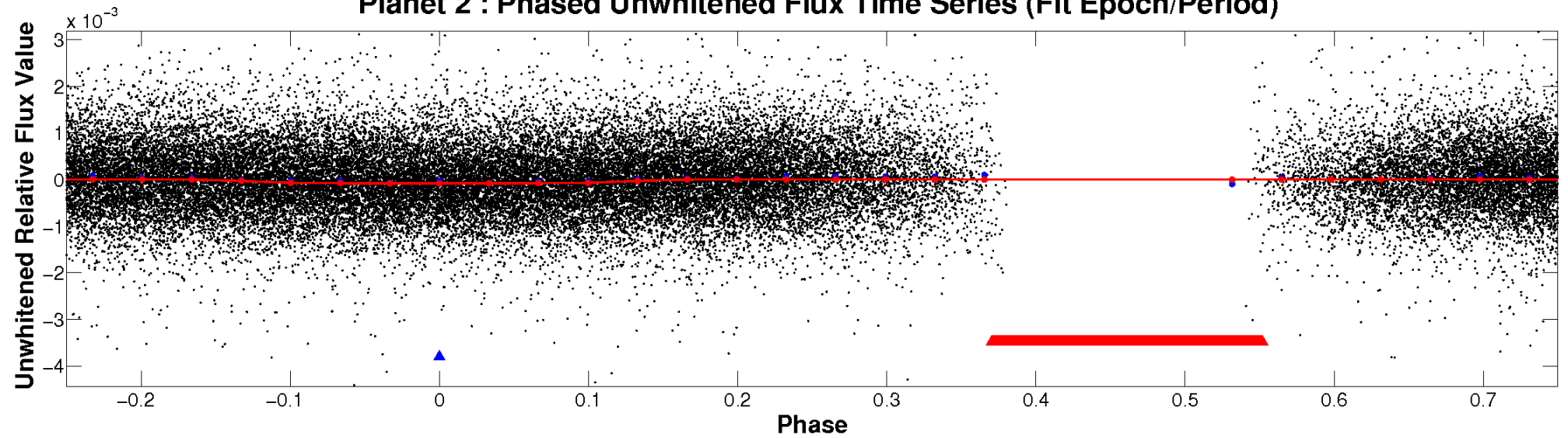
# ALT Odd/Even

TCE 005272673-02

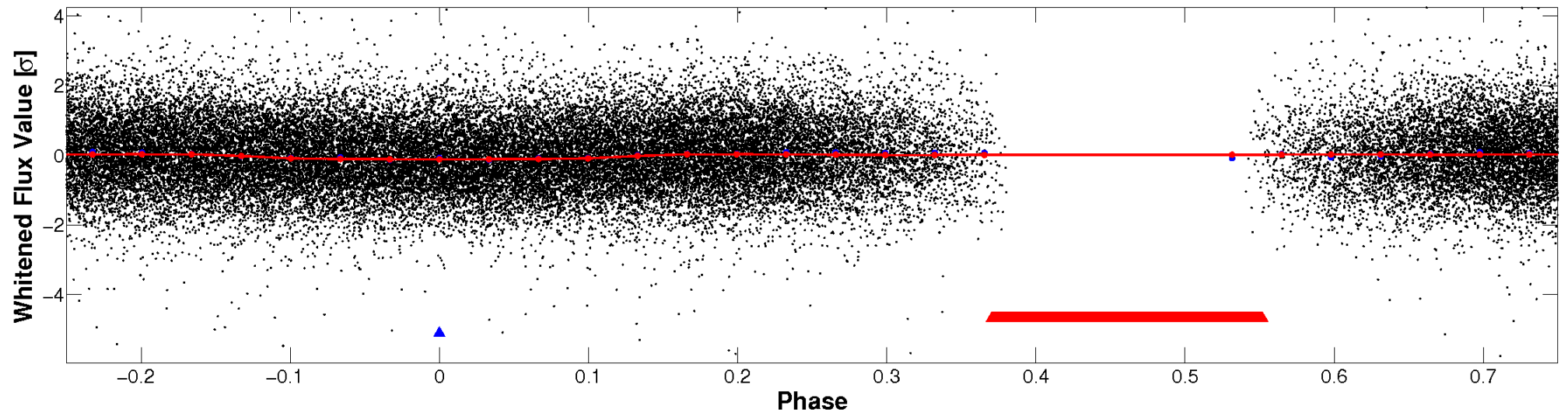


# Non-Whitened Vs. Whitened Light Curve

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

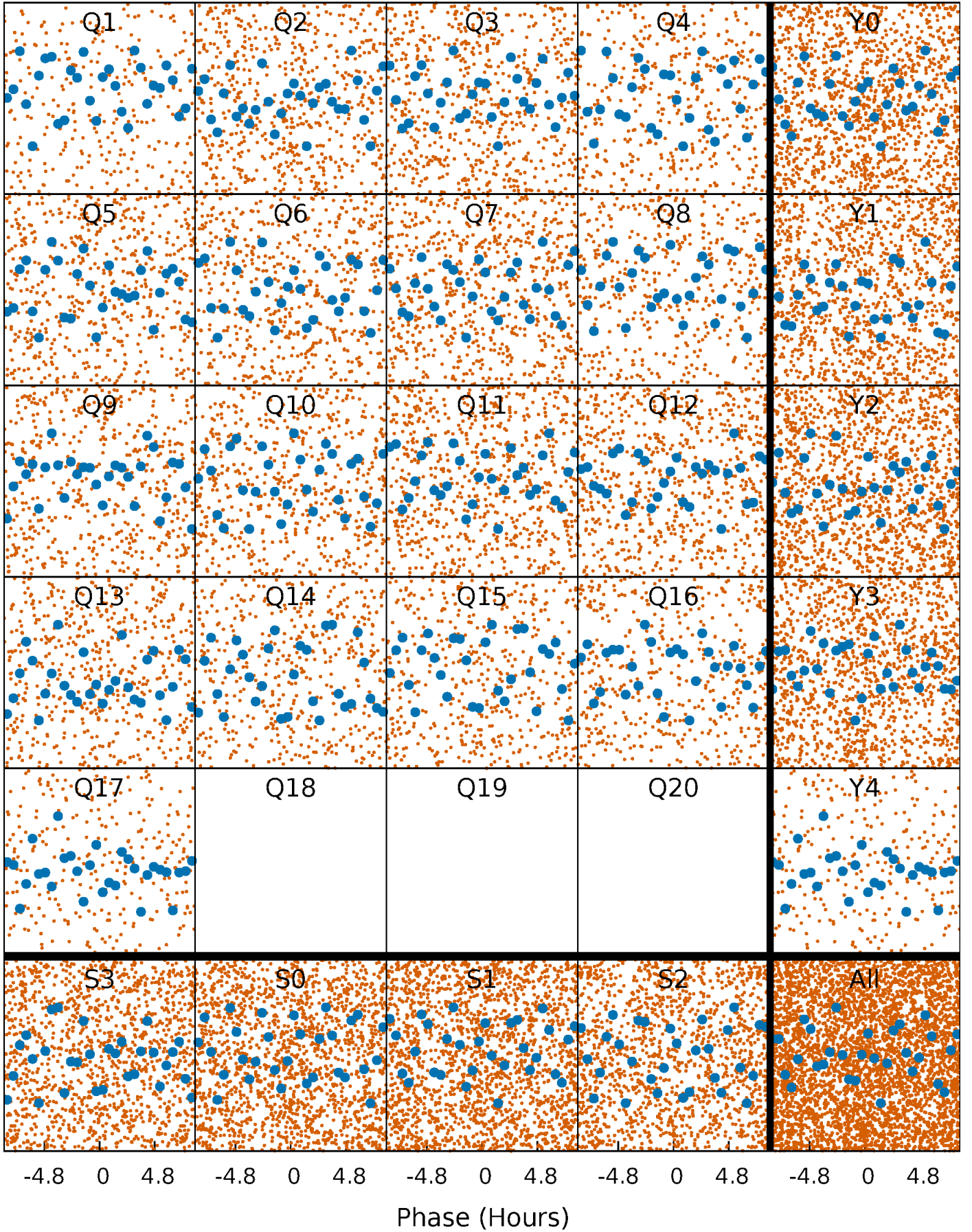


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



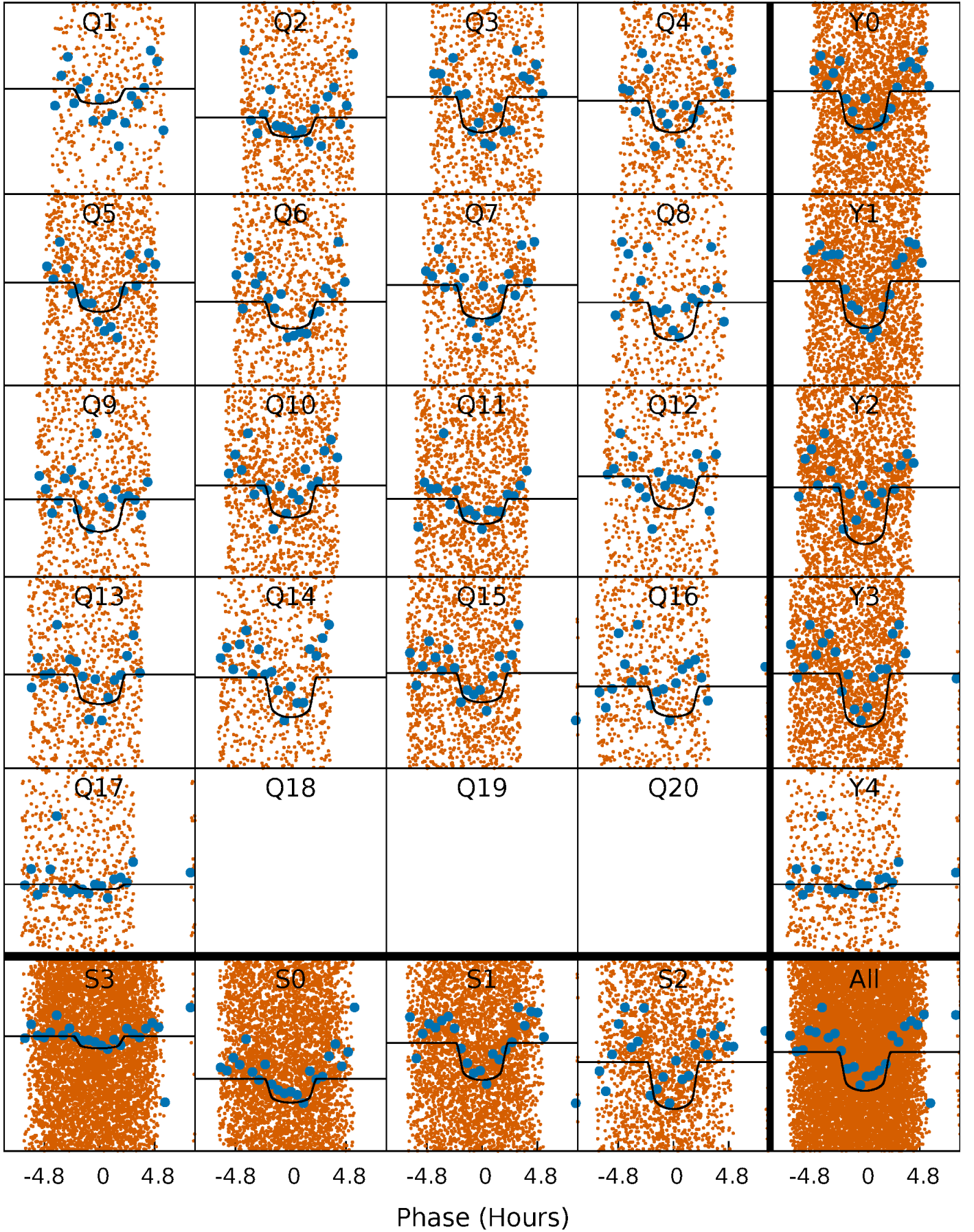
# PDC Quarter-Phased Transit Curves

TCE 005272673-02   P= 0.615043 Days    $T_0=131.629096$  (BKJD)



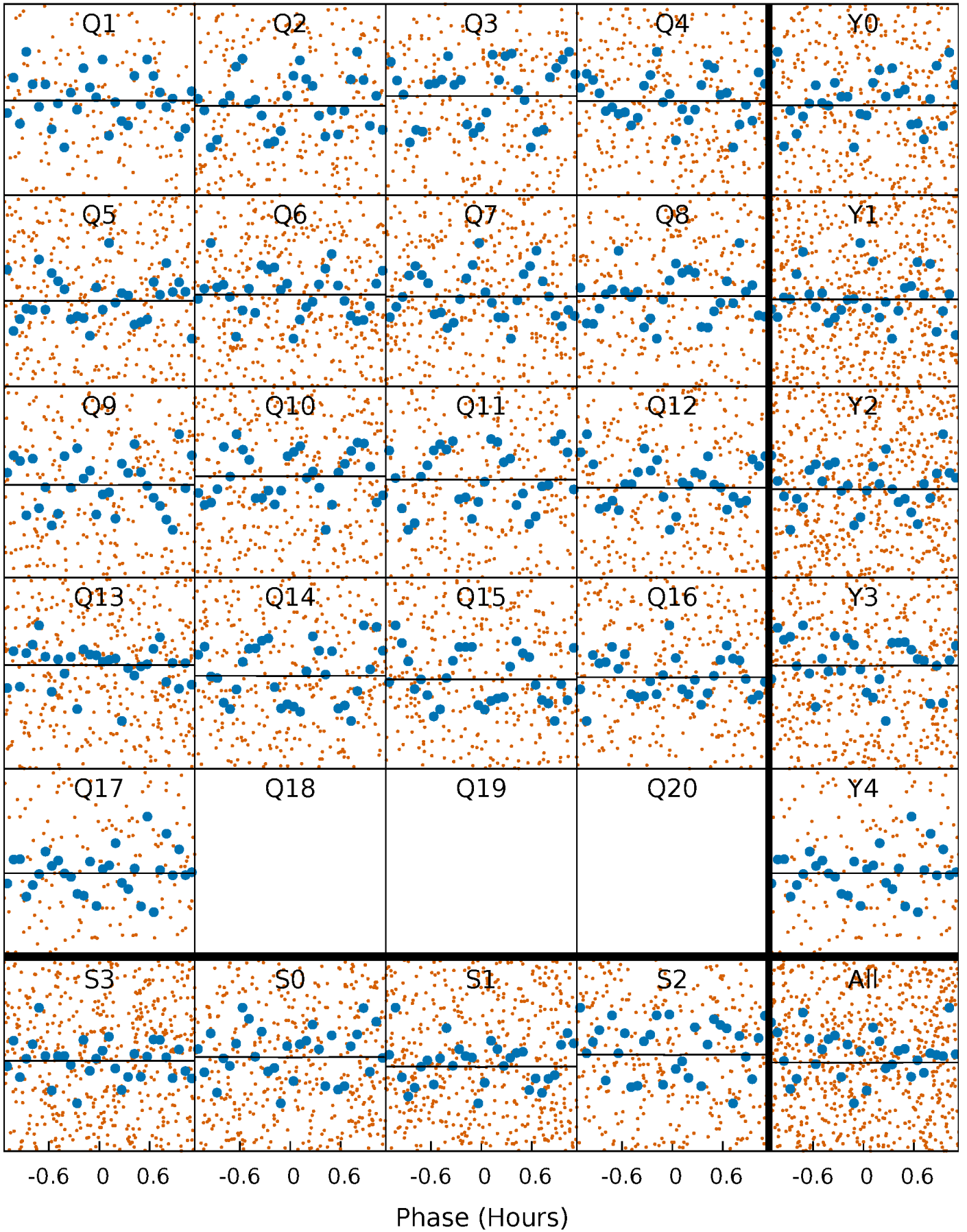
# DV Quarter-Phased Transit Curves

TCE 005272673-02   P= 0.615043 Days    $T_0=131.629096$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

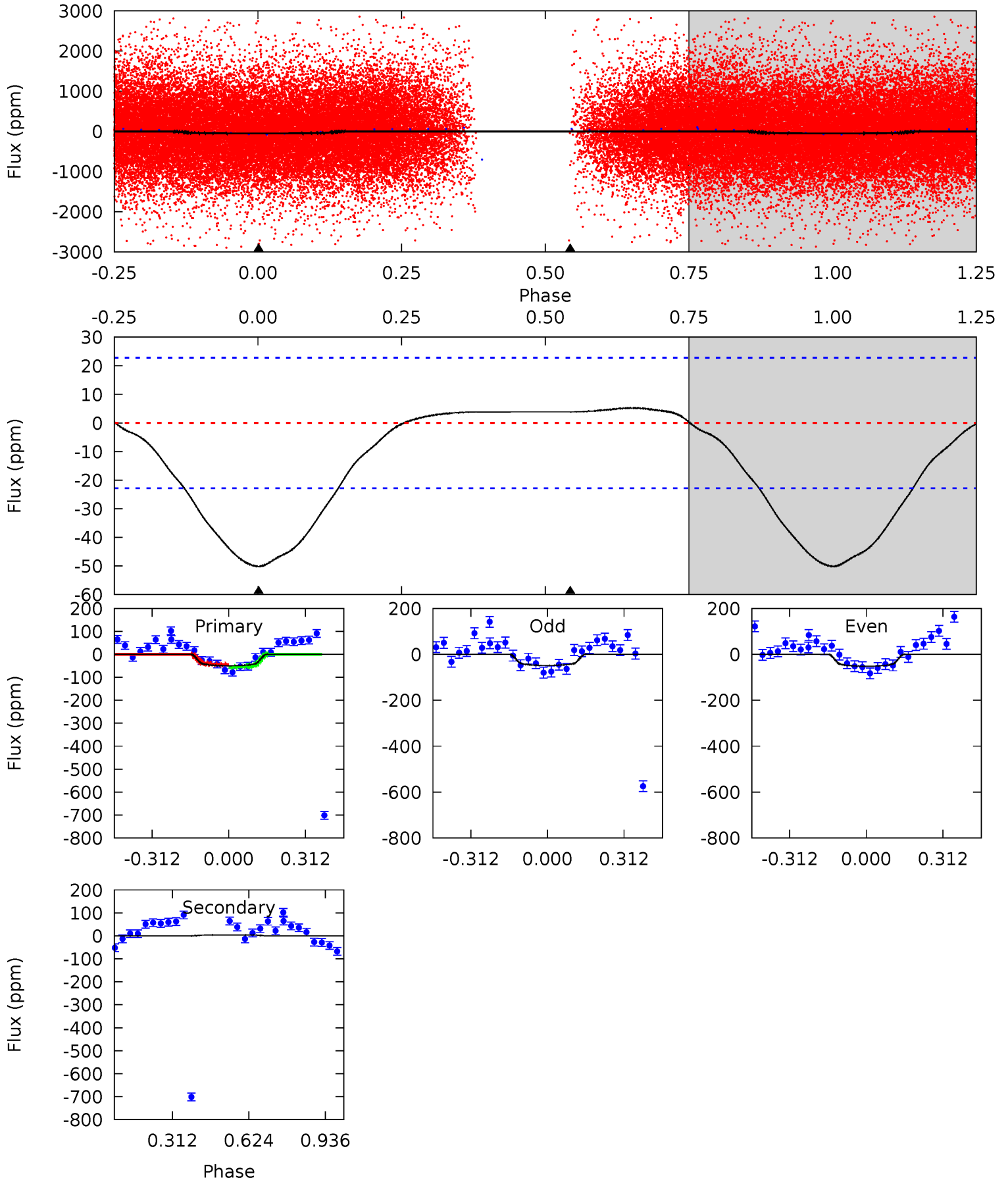
TCE 005272673-02   P= 0.615018 Days    $T_0=131.640663$  (BKJD)



# DV Model-Shift Uniqueness Test

005272673-02, P = 0.615043 Days, E = 131.014053 Days

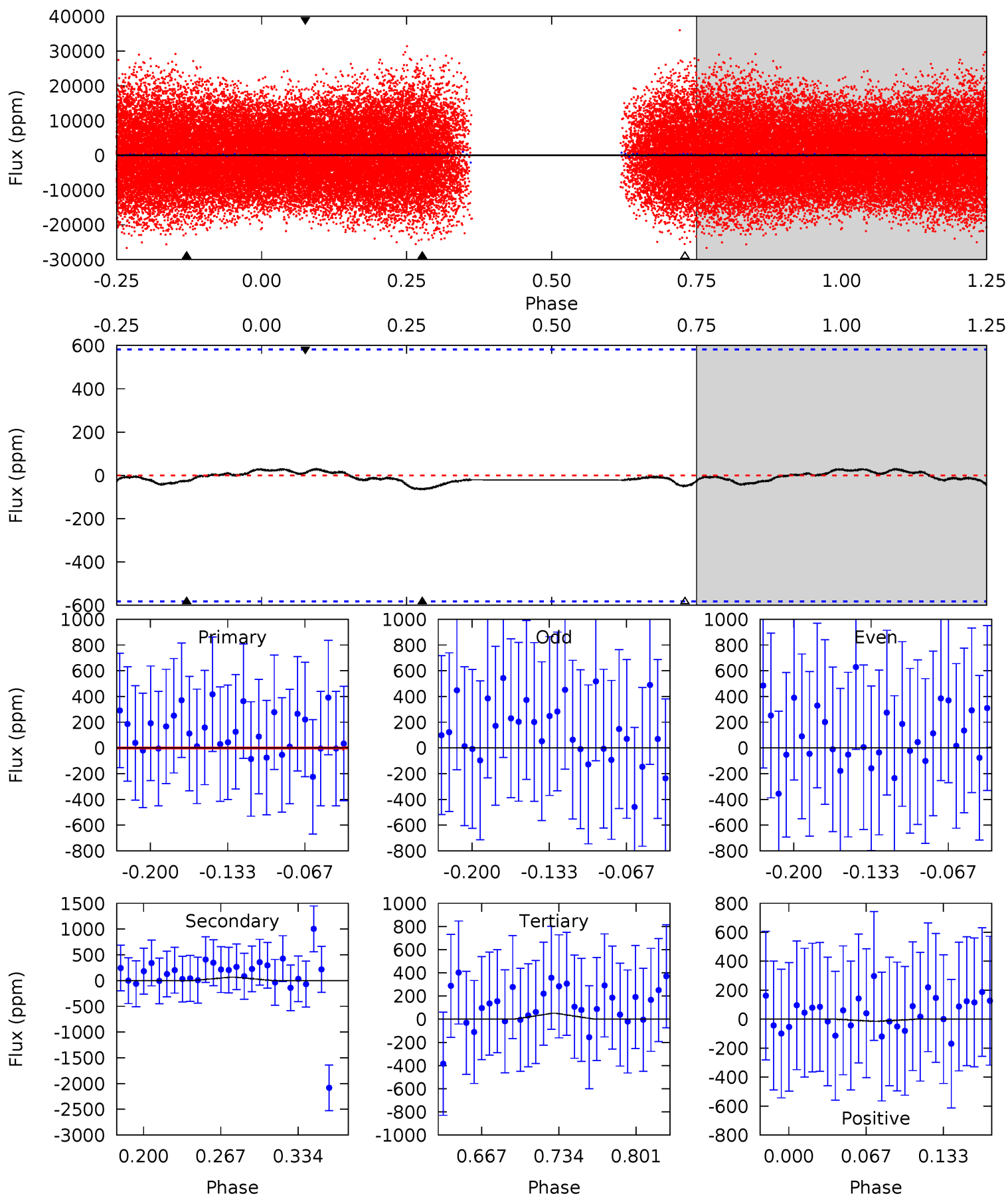
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.49	-0.73	0	0	4.32	1.01	0.40	9.49	9.49	-0.73	-0.73	0.33	0.98	0.09	1.04



# Alt Model-Shift Uniqueness Test

005272673-02, P = 0.615018 Days, E = 131.025645 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.22	0.53	0.41	0.12	4.65	1.83	0.17	-0.19	0.10	0.12	0.41	0.10	-3.79	0.32	0.18



### Stellar Parameters For KIC 005272673

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7246^{+72}_{-86}$	$4.051^{+0.095}_{-0.116}$	$0.360^{+0.050}_{-0.150}$	$2.090^{+0.385}_{-0.257}$	$1.789^{+0.129}_{-0.103}$	$0.276^{+0.118}_{-0.098}$
	+1%/-1%	+2%/-3%	+14%/-42%	+18%/-12%	+7%/-6%	+43%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005272673-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$4 \pm 5$	$2.21^{+0.71}_{-0.72}$	$4929^{+215}_{-181}$	$-4532^{+397}_{-537}$	$-0.119^{+0.155}_{-0.293}$
Alt.	$-66 \pm 125$	$0.65^{+0.61}_{-0.42}$	$4917^{+229}_{-167}$	$13395^{+47441}_{-27463}$	$17^{+177}_{-36}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

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

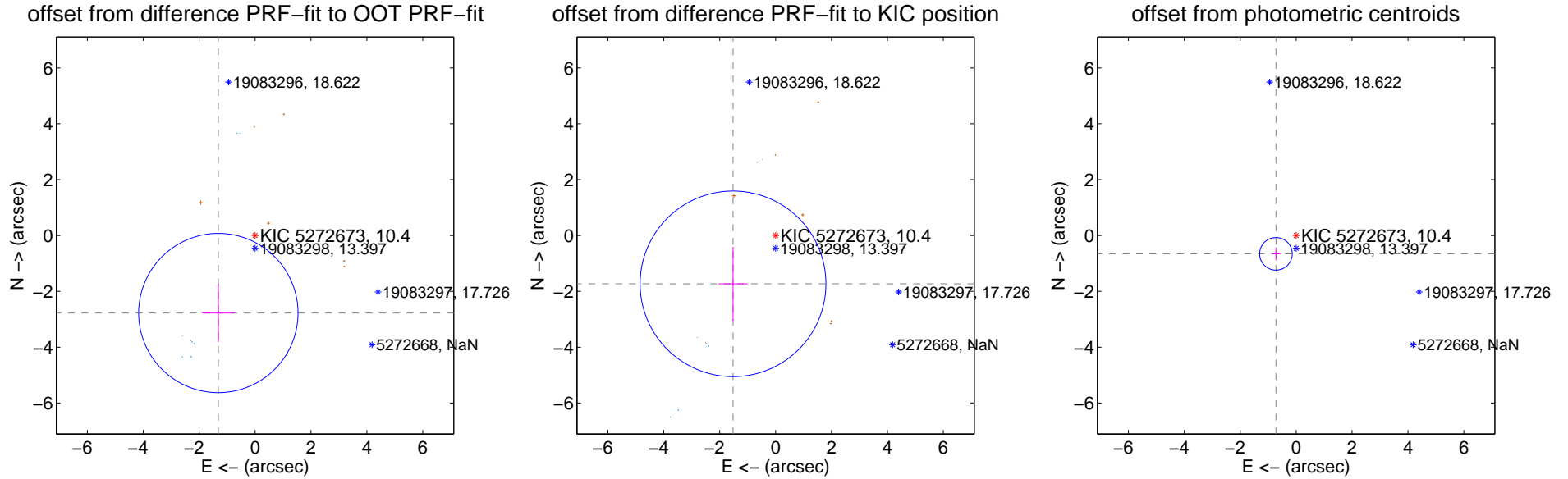
## DV Centroid Data

Supplemental centroid analysis for 005272673-02. **Kepler magnitude: 10.40.** Transit SNR 13.33

There are 7 quarters with good PRF difference image offsets

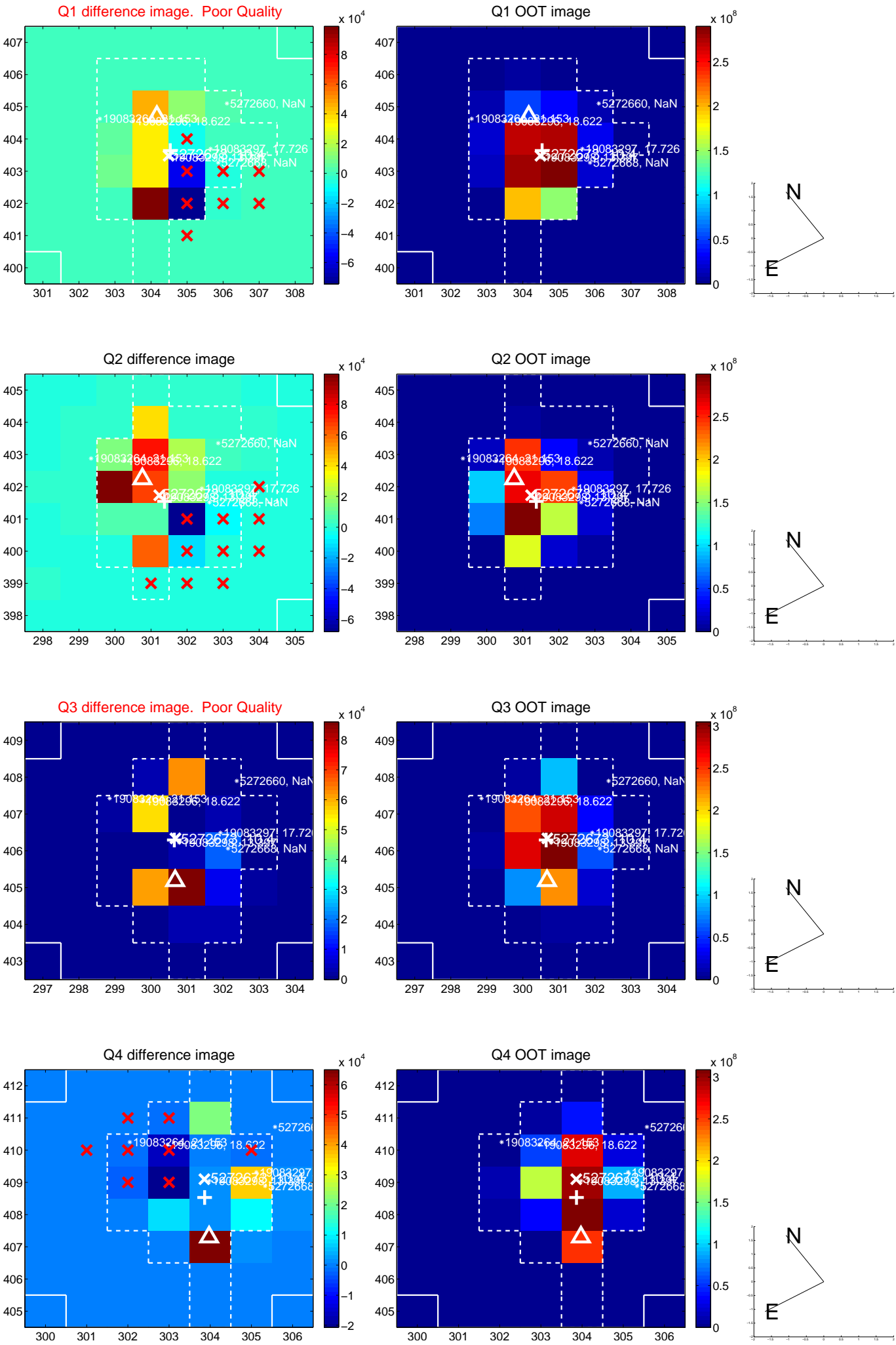
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>3.072 \pm 0.950</math></b>	<b>3.23</b>	$1.314 \pm 0.580$	$-2.777 \pm 1.043$
PRF-fit source offset from KIC position	$2.306 \pm 1.108$	2.08	$1.523 \pm 0.524$	$-1.731 \pm 1.326$
photometric centroid source offset	<b><math>0.98 \pm 0.19</math></b>	<b>5.02</b>	$0.72 \pm 0.16$	$-0.66 \pm 0.23$

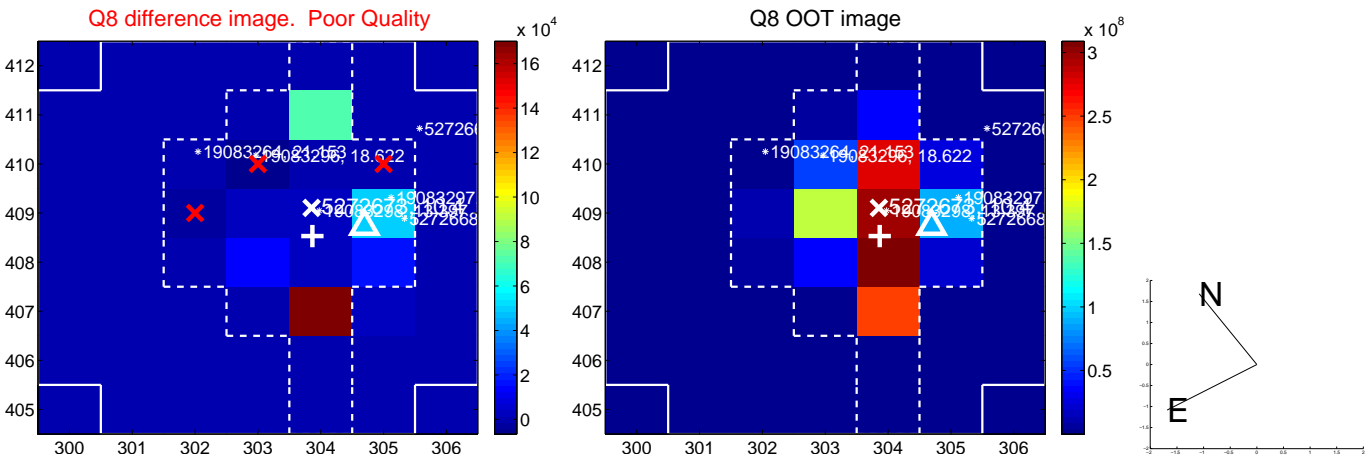
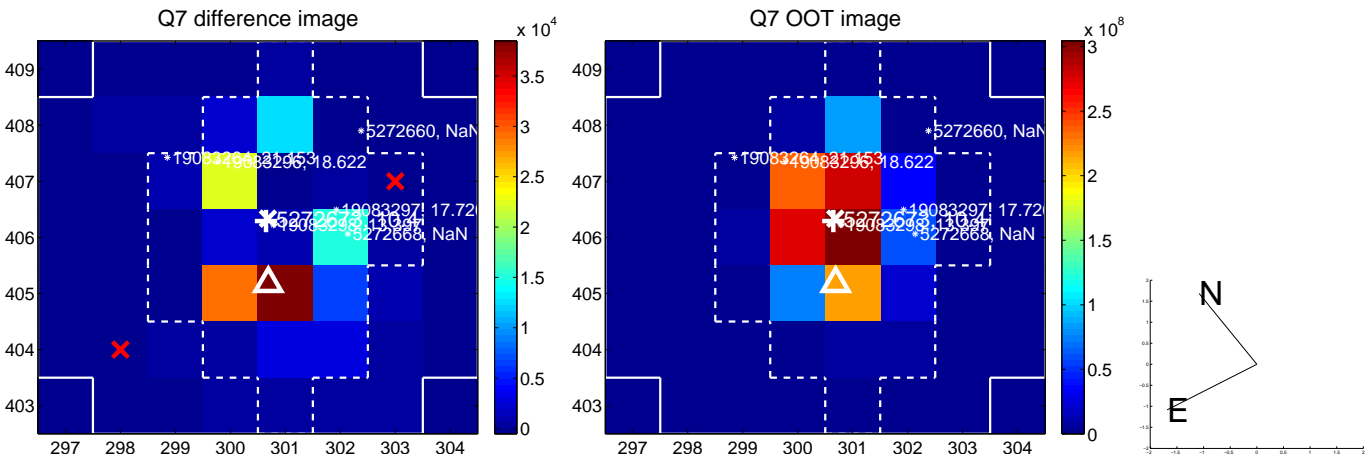
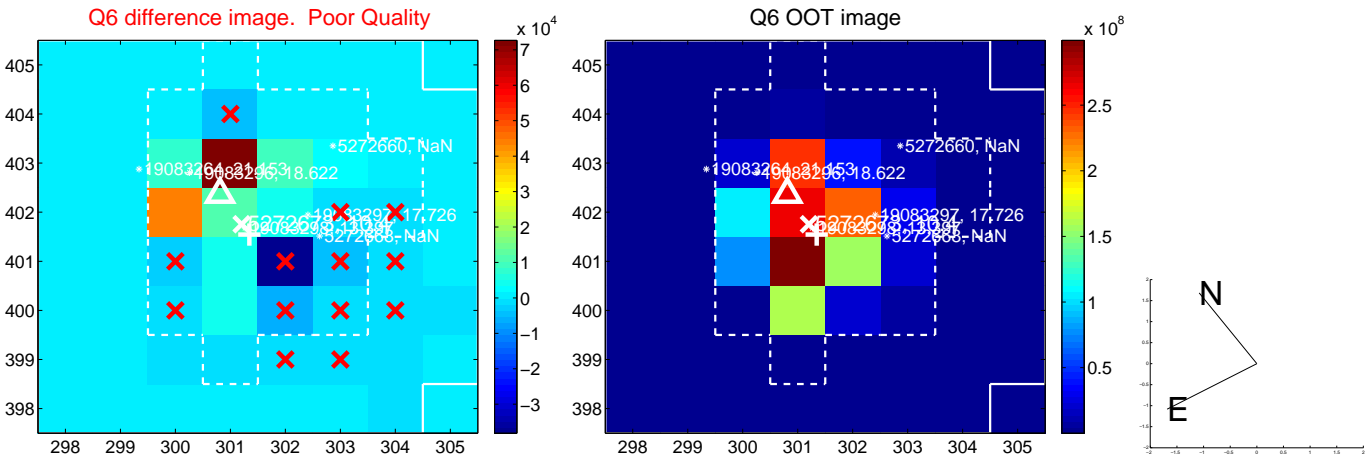
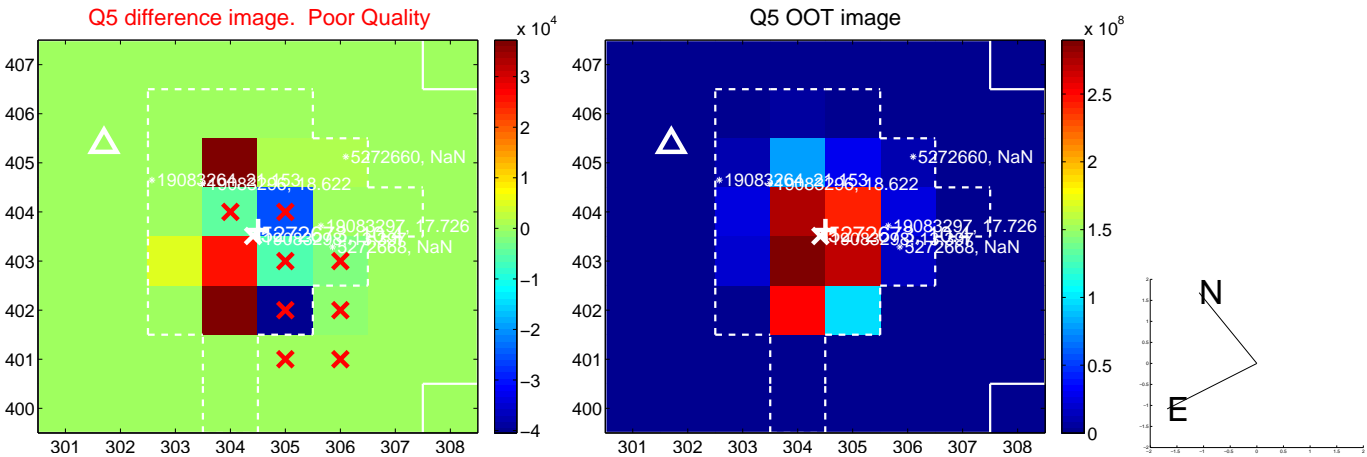


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

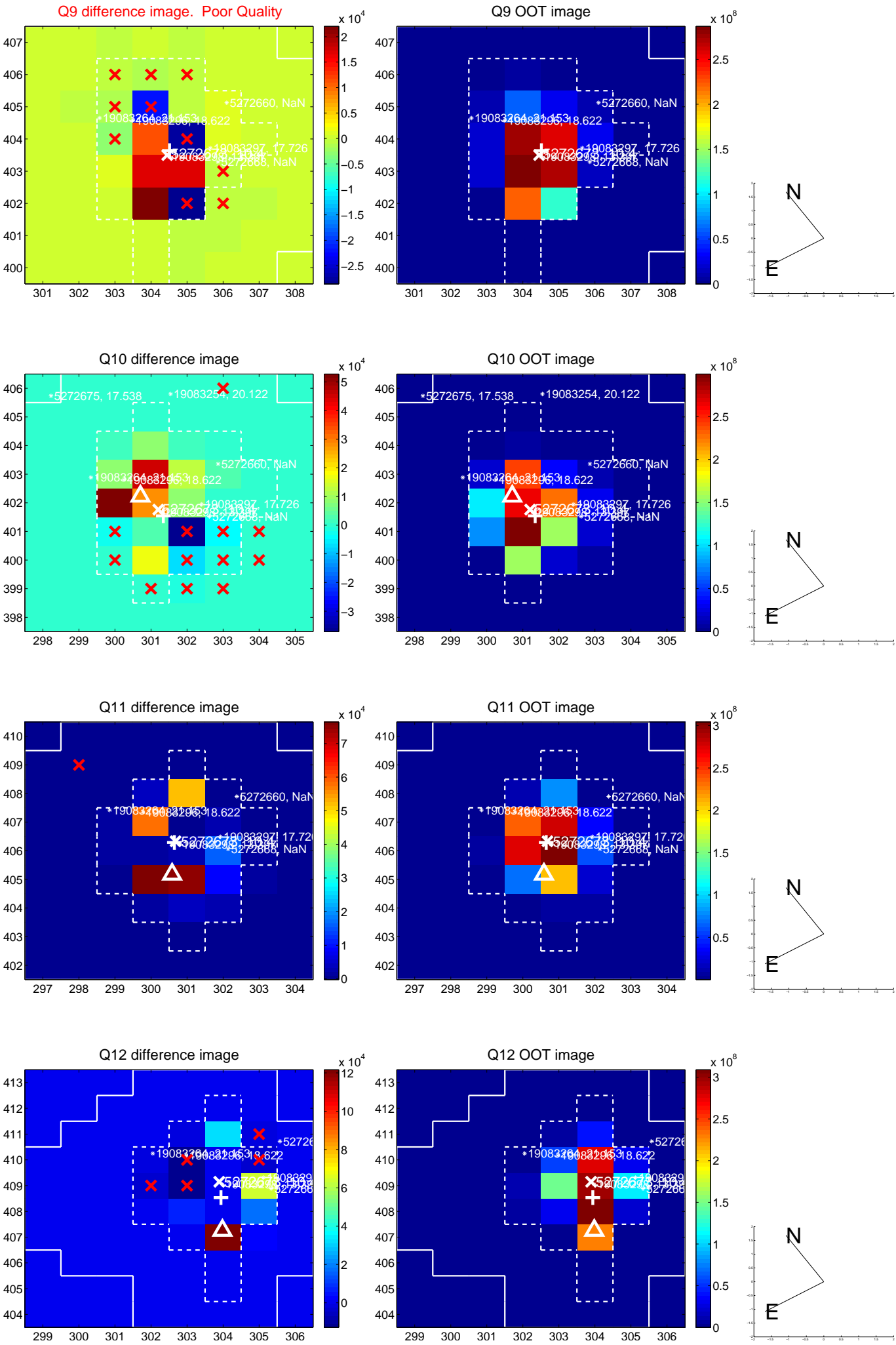
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



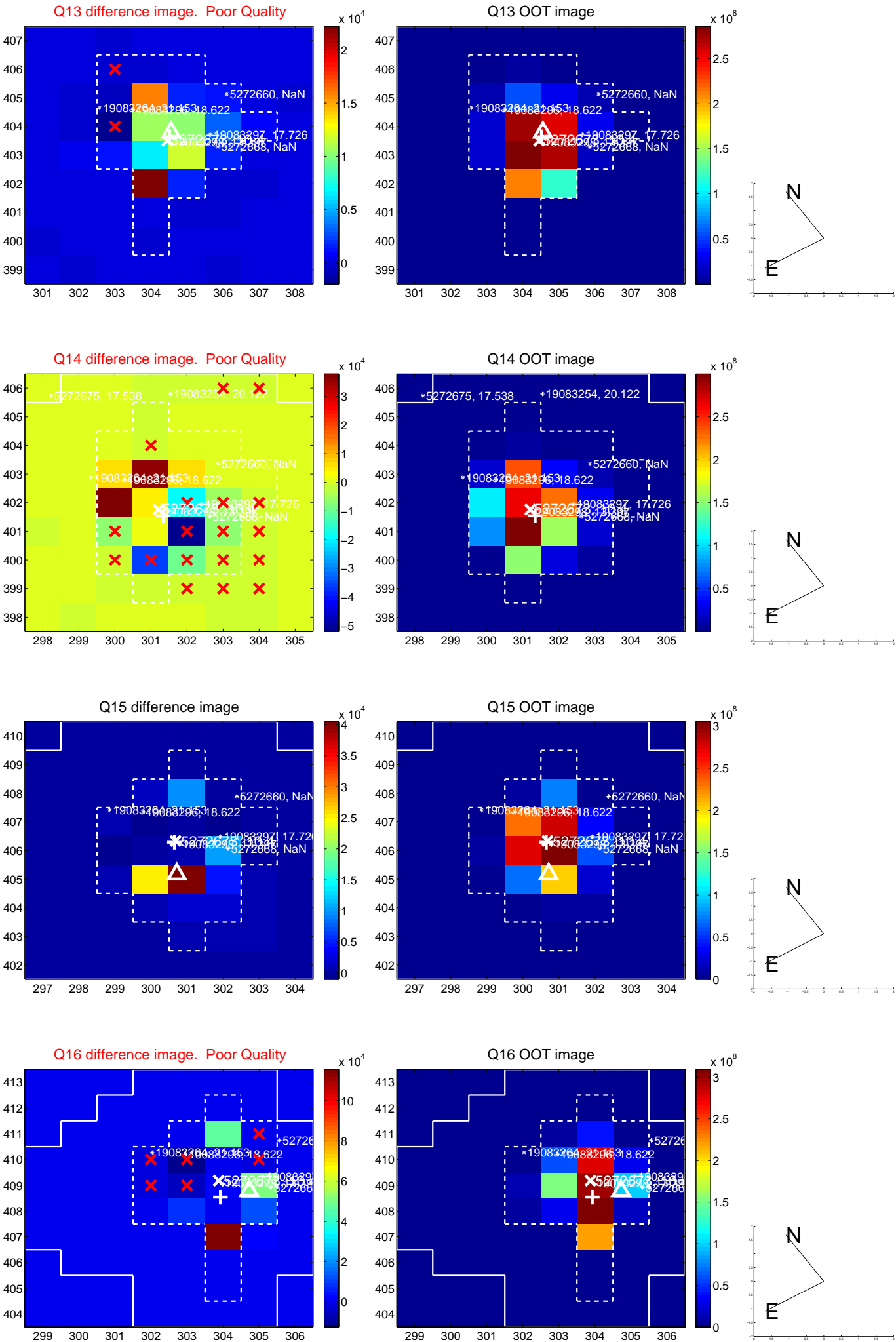
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



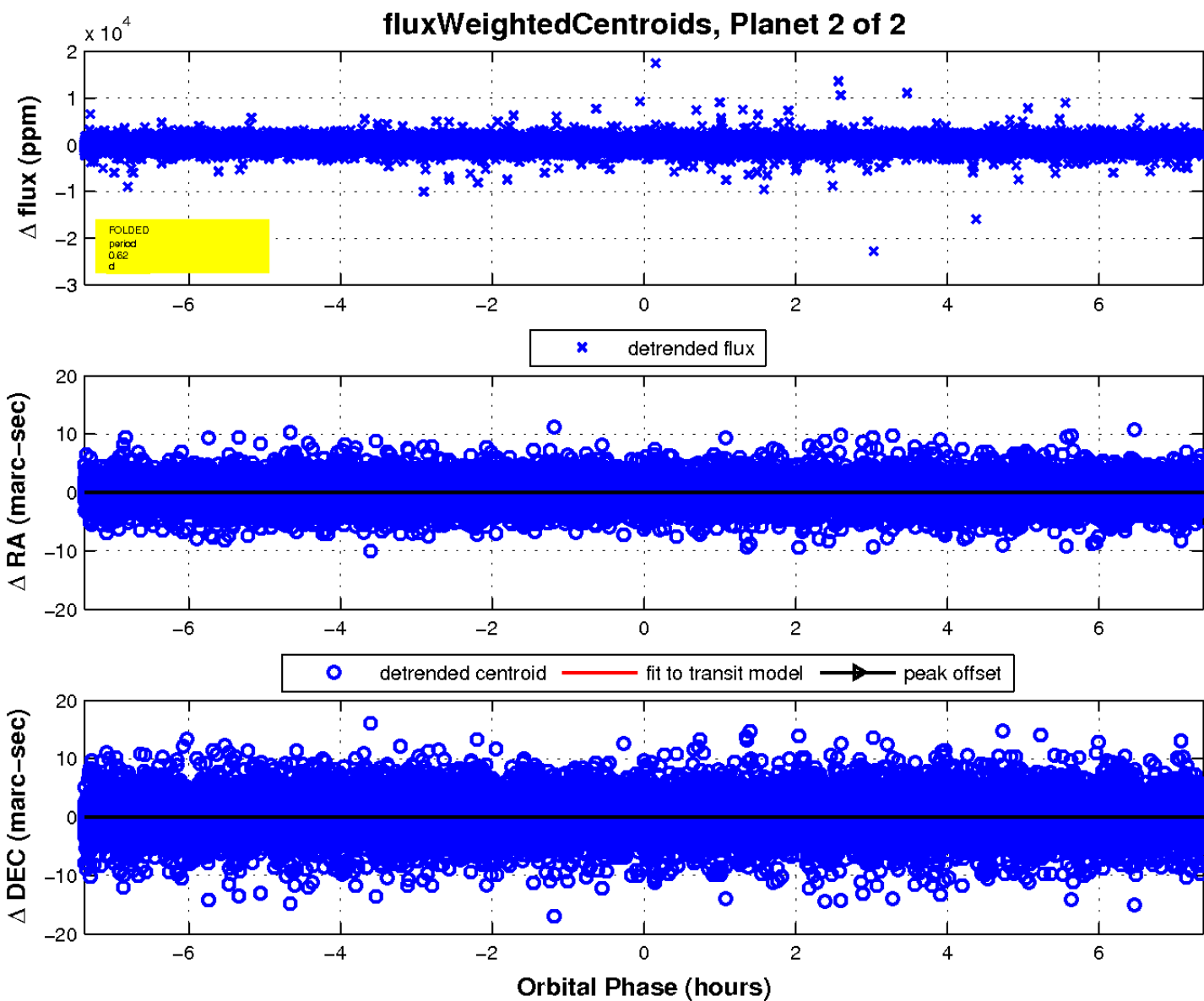
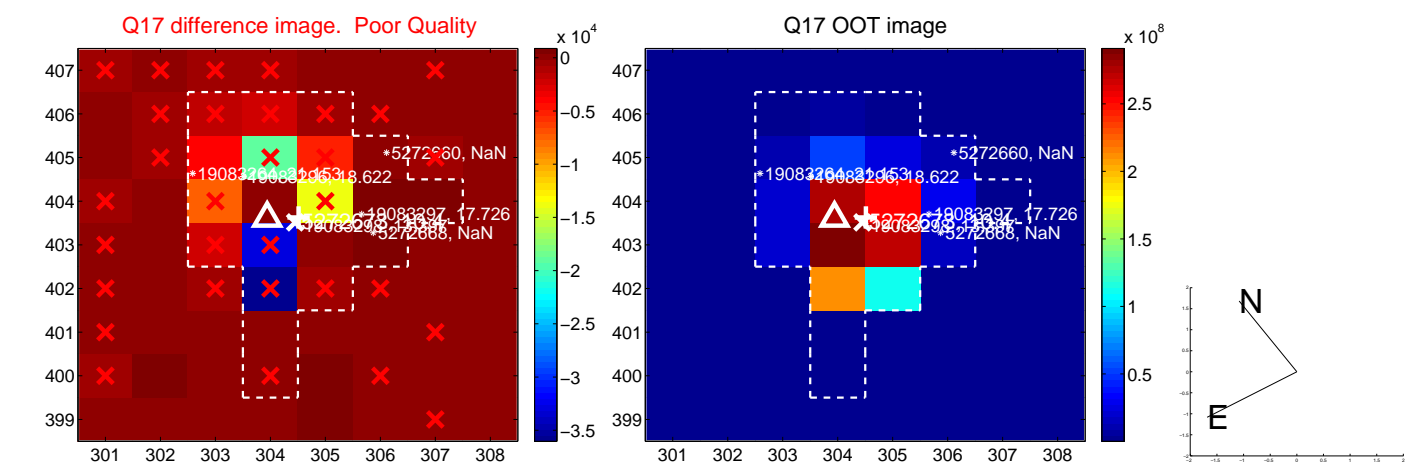
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

