

# KIC 007673841

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007673841-01	OBS	2585.01	5.341772	136.321963	65.4	3.737	15.3	16.6	1.14	5767	1.05	380.00
007673841-02	OBS	2585.02	10.423155	135.152839	69.5	2.229	8.9	10.0	1.14	5767	1.05	155.84
007673841-03	OBS	2585.03	7.878572	138.577085	45.1	3.771	8.1	9.3	1.14	5767	0.90	226.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007673841-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT
007673841-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673841-03	OBS	PC	0.95	0	0	0	0	NO_COMMENT

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

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

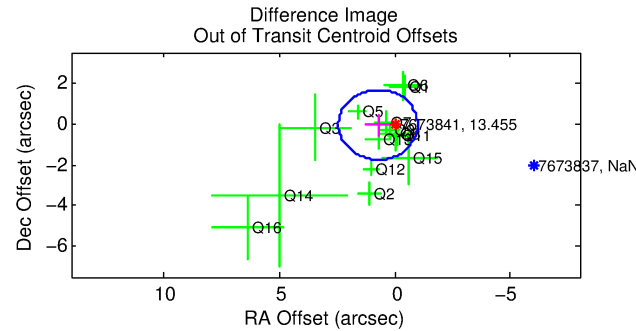
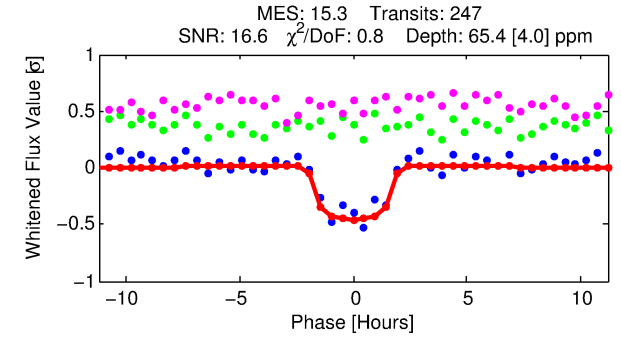
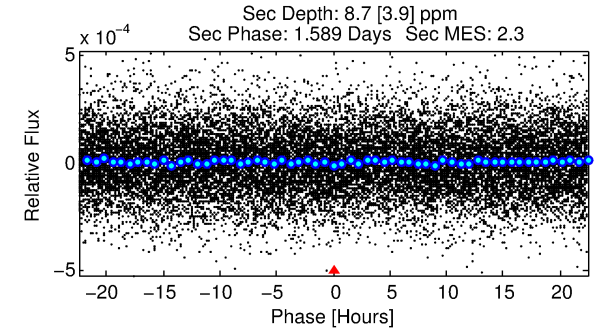
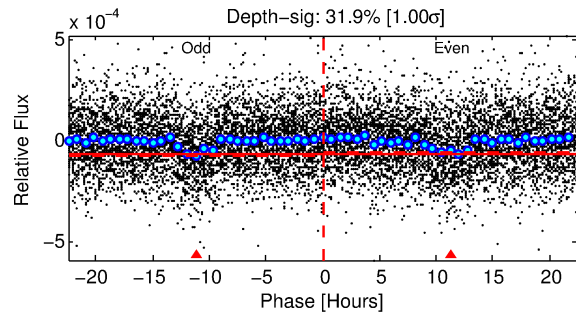
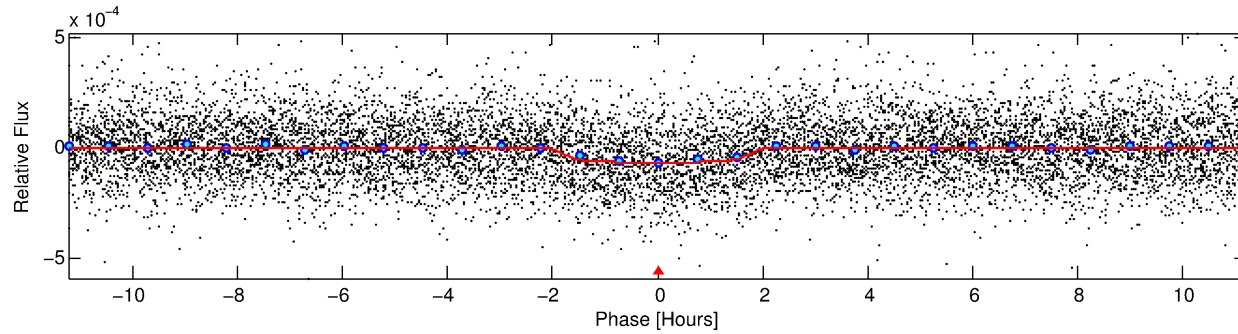
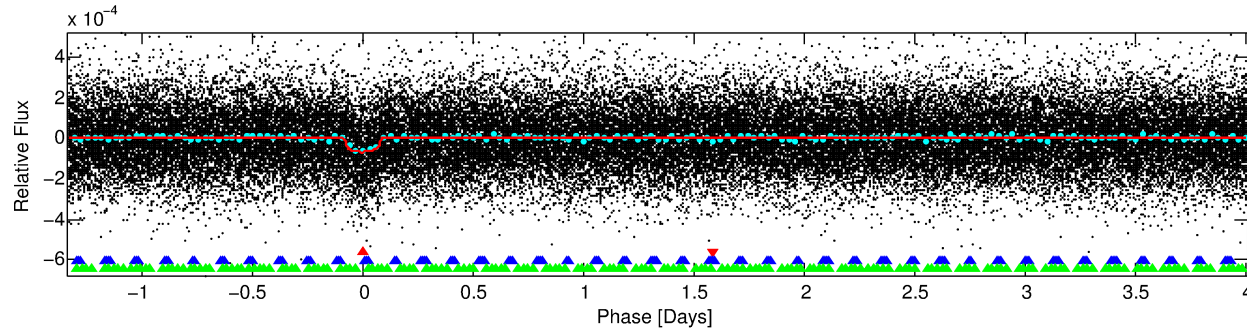
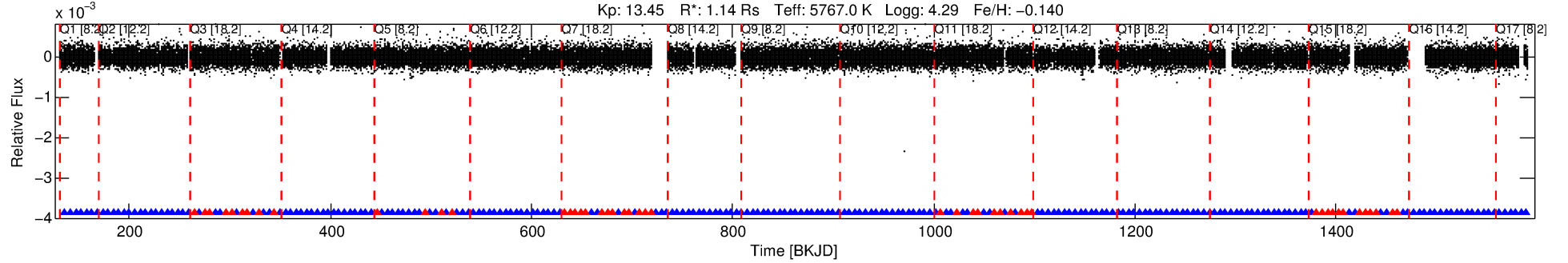
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007673841-01

No Significant Match Found

# DV One-Page Summary

KIC: 7673841 Candidate: 1 of 3 Period: 5.342 d  
KOI: K02585.01 Name: Kepler-392b Corr: 0.946



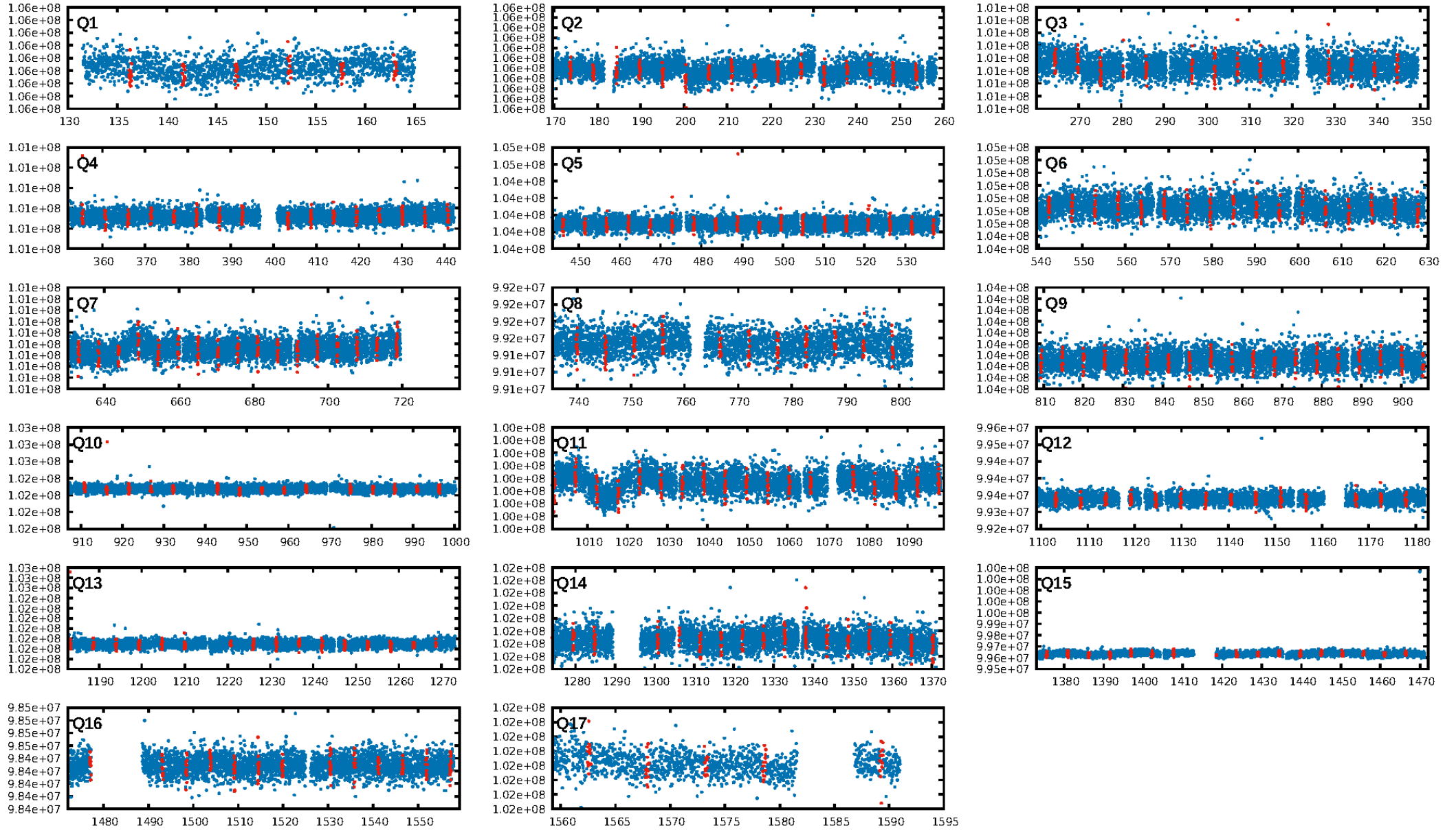
## DV Fit Results:

Period = 5.34177 [0.00003] d  
Epoch = 136.3220 [0.0037] BKJD  
Rp/R\* = 0.0085 [0.0031]  
a/R\* = 5.81 [9.74]  
b = 0.86 [0.53]  
Seff = 379.99 [109.00]  
Teq = 1126 [81] K  
Rp = 1.05 [0.43] Re  
a = 0.0580 [0.0100] AU  
Ag = 14.46 [12.94] [1.04 $\sigma$ ]  
Teffp = 3395 [725] K [3.11 $\sigma$ ]

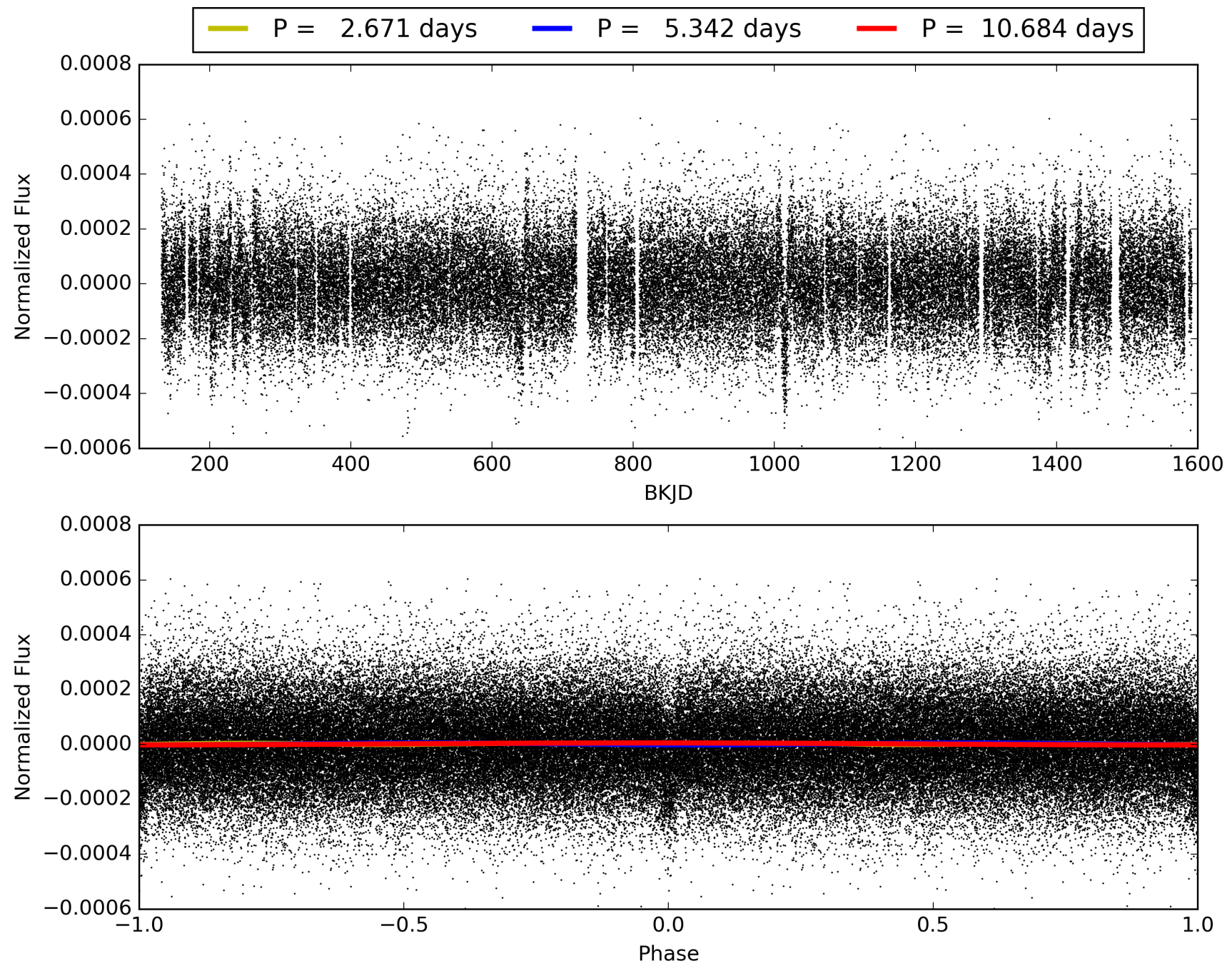
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [11.47 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.06e-52  
RollingBand-fgt: 0.80 [188/236]  
GhostDiagnostic-chr: 4.599  
Centroid-sig: 5.7%  
Centroid-so: 0.728 arcsec [0.96 $\sigma$ ]  
OotOffset-rm: 0.735 arcsec [1.29 $\sigma$ ]  
KicOffset-rm: 0.849 arcsec [2.18 $\sigma$ ]  
OotOffset-st: 3/4/3/4 [14]  
KicOffset-st: 3/4/3/4 [14]  
DiffImageQuality-fgm: 0.71 [10/14]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007673841-01, PDC Light Curves

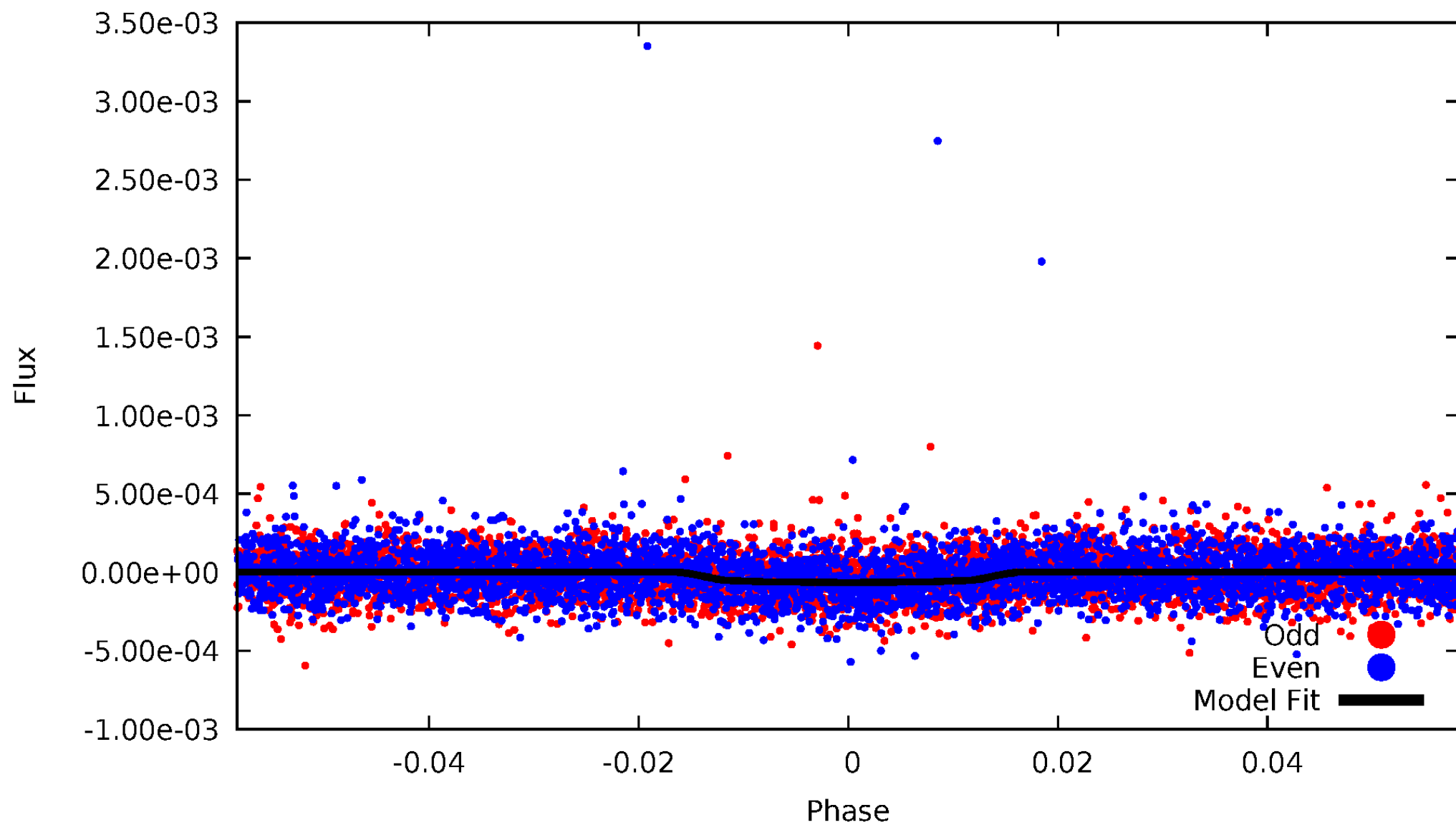


TCE 007673841-01



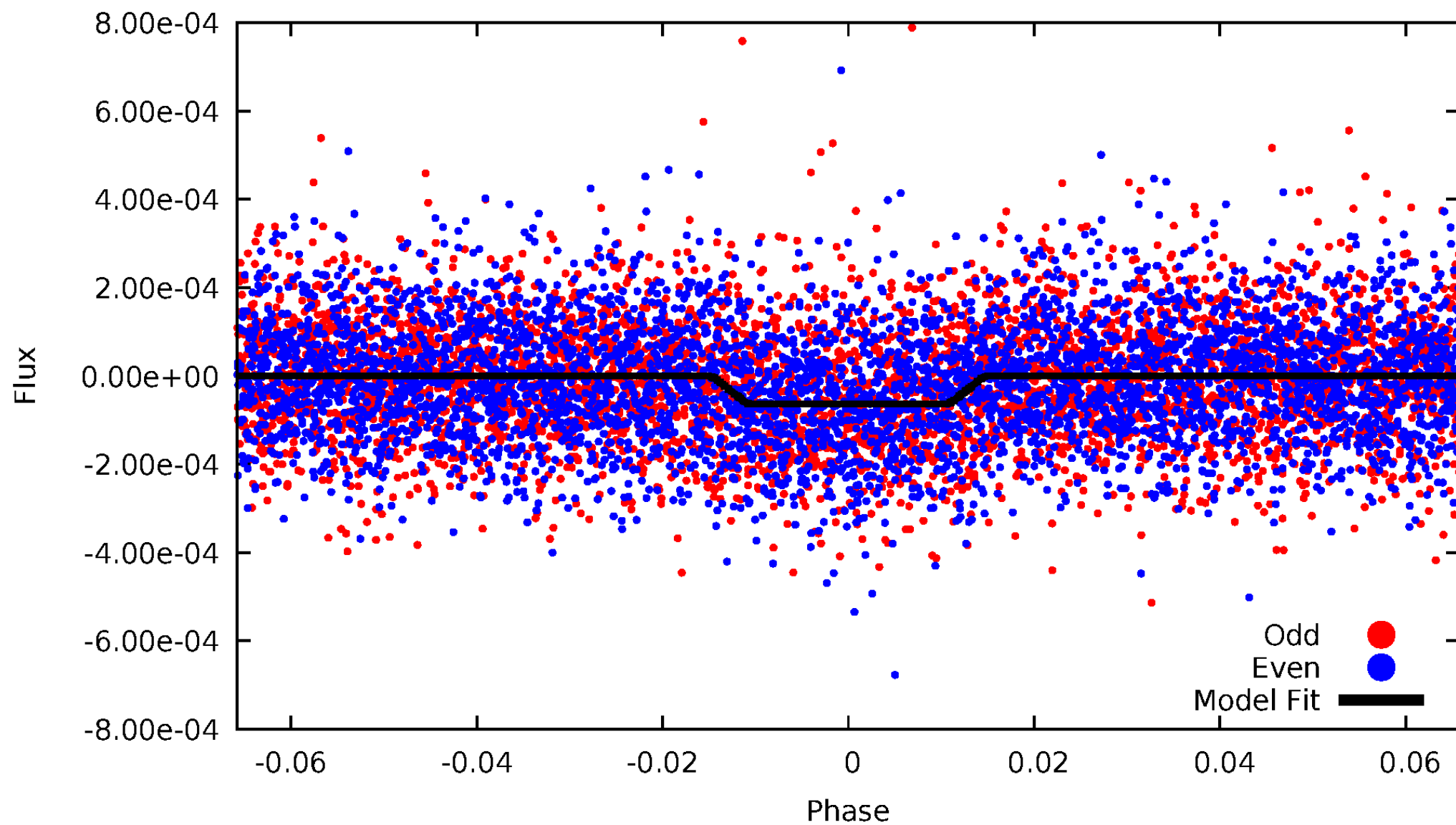
# DV Odd/Even

TCE 007673841-01



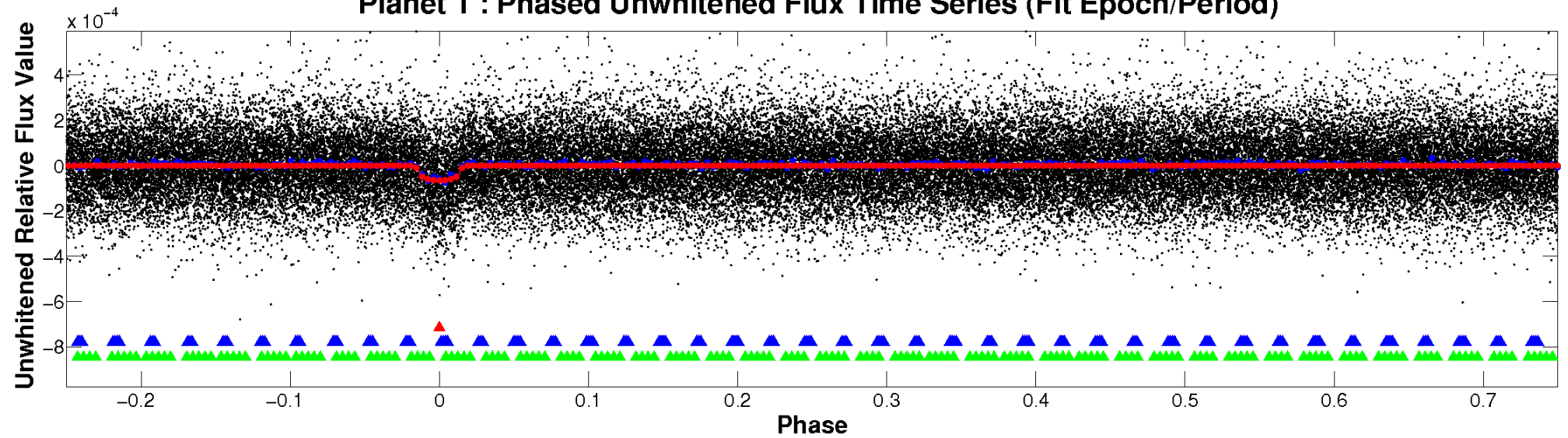
# ALT Odd/Even

TCE 007673841-01

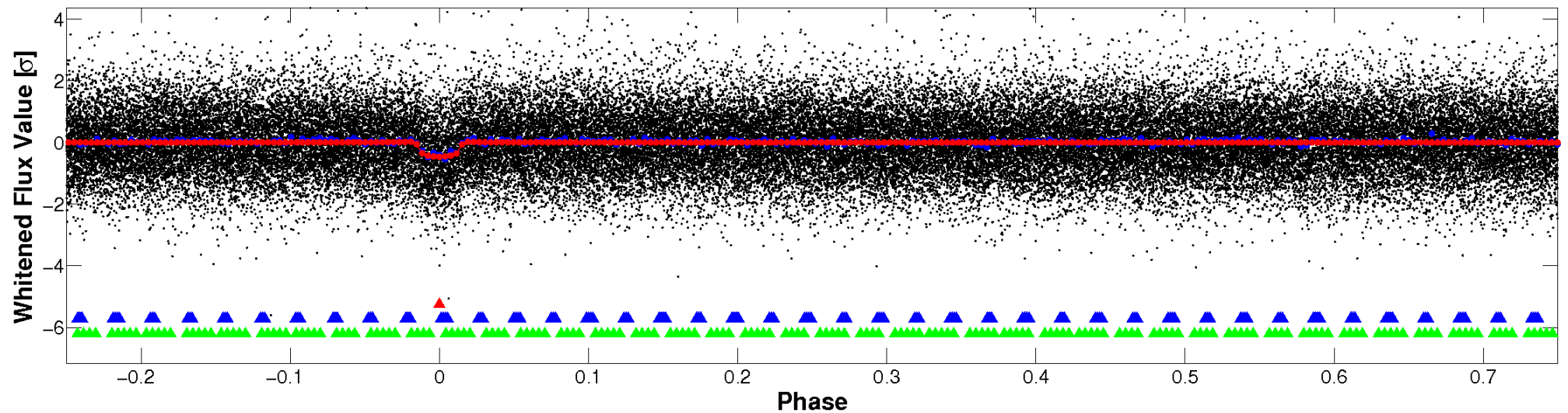


# Non-Whitened Vs. Whitened Light Curve

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

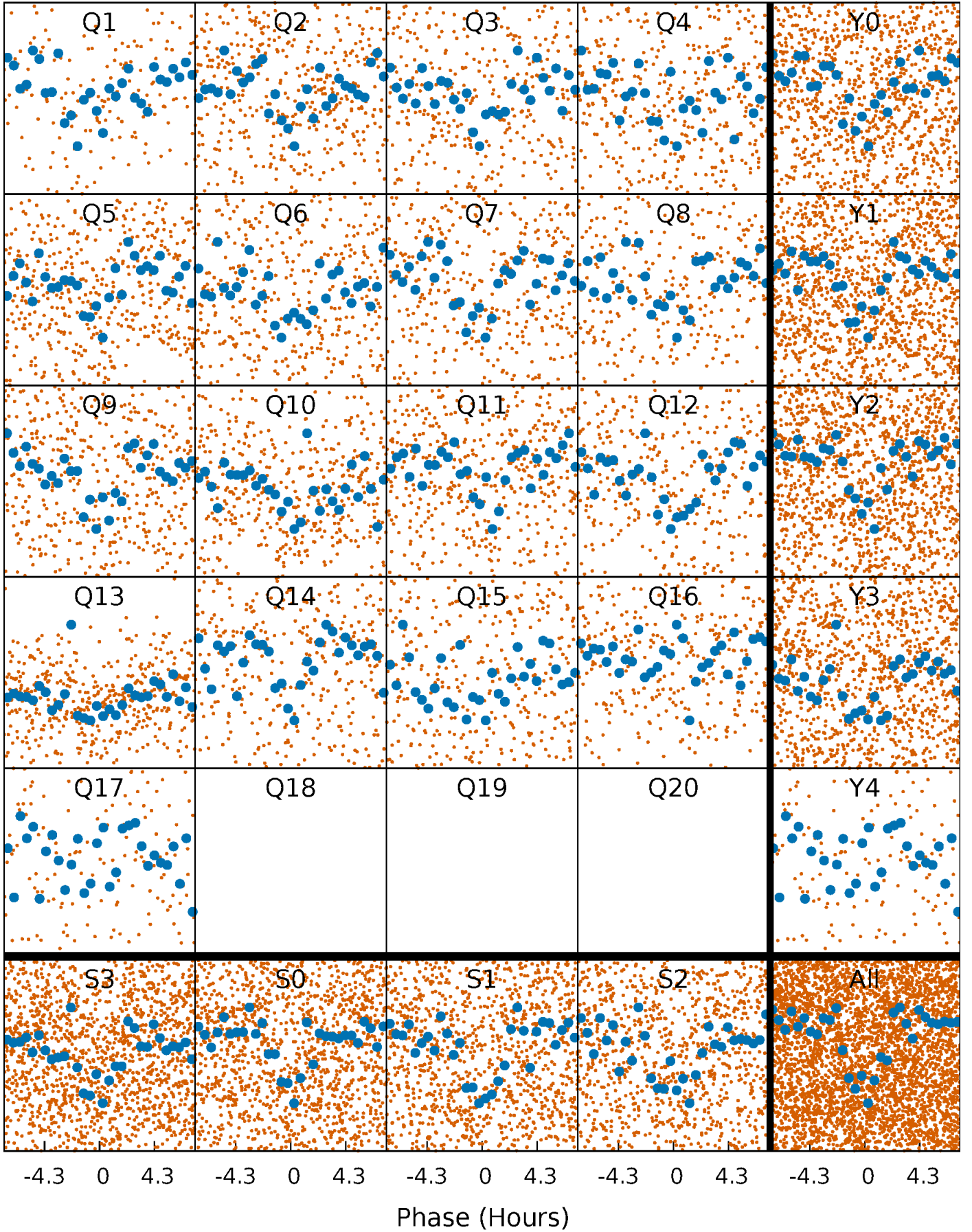


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



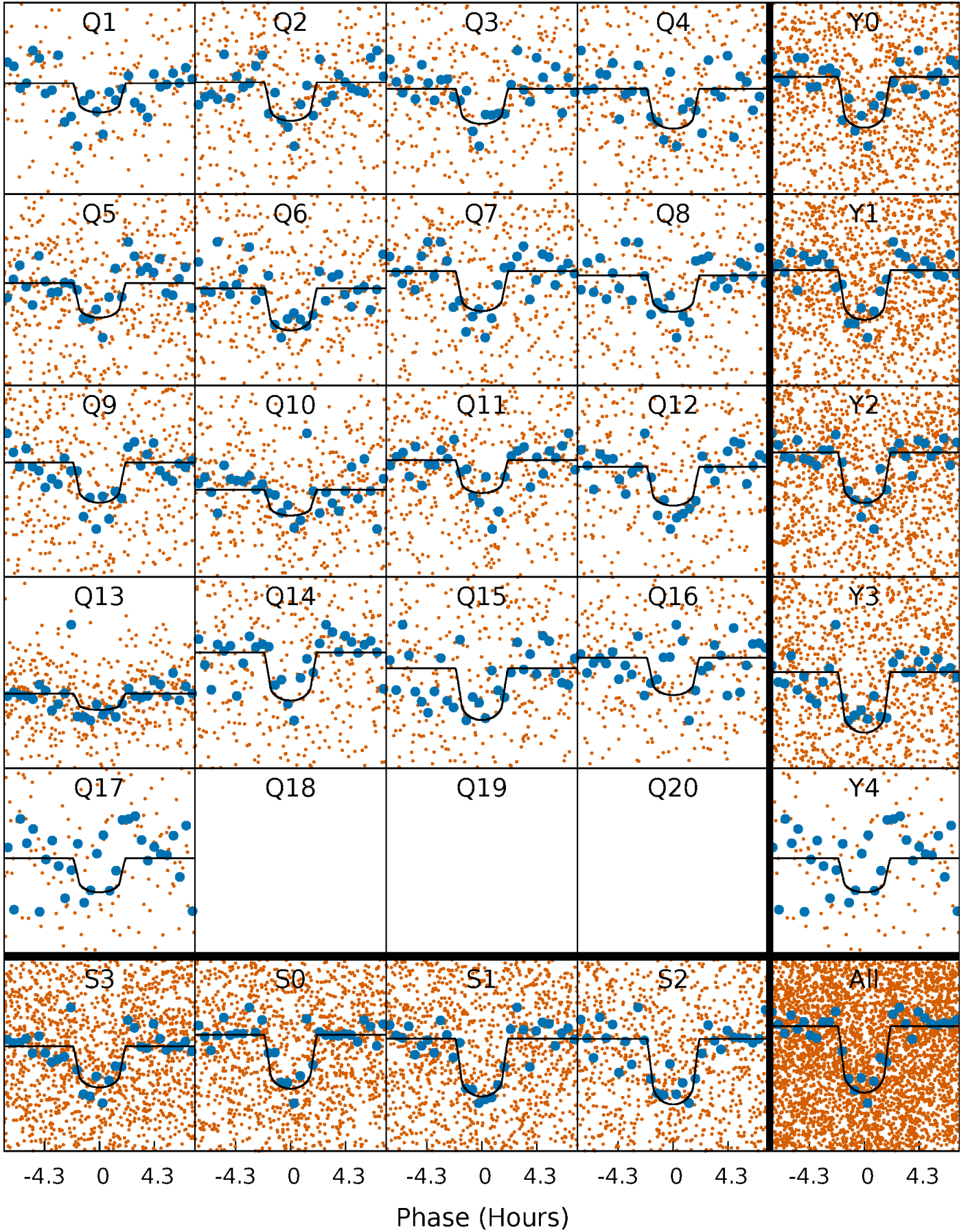
# PDC Quarter-Phased Transit Curves

TCE 007673841-01   P= 5.341772 Days    $T_0=136.321963$  (BKJD)



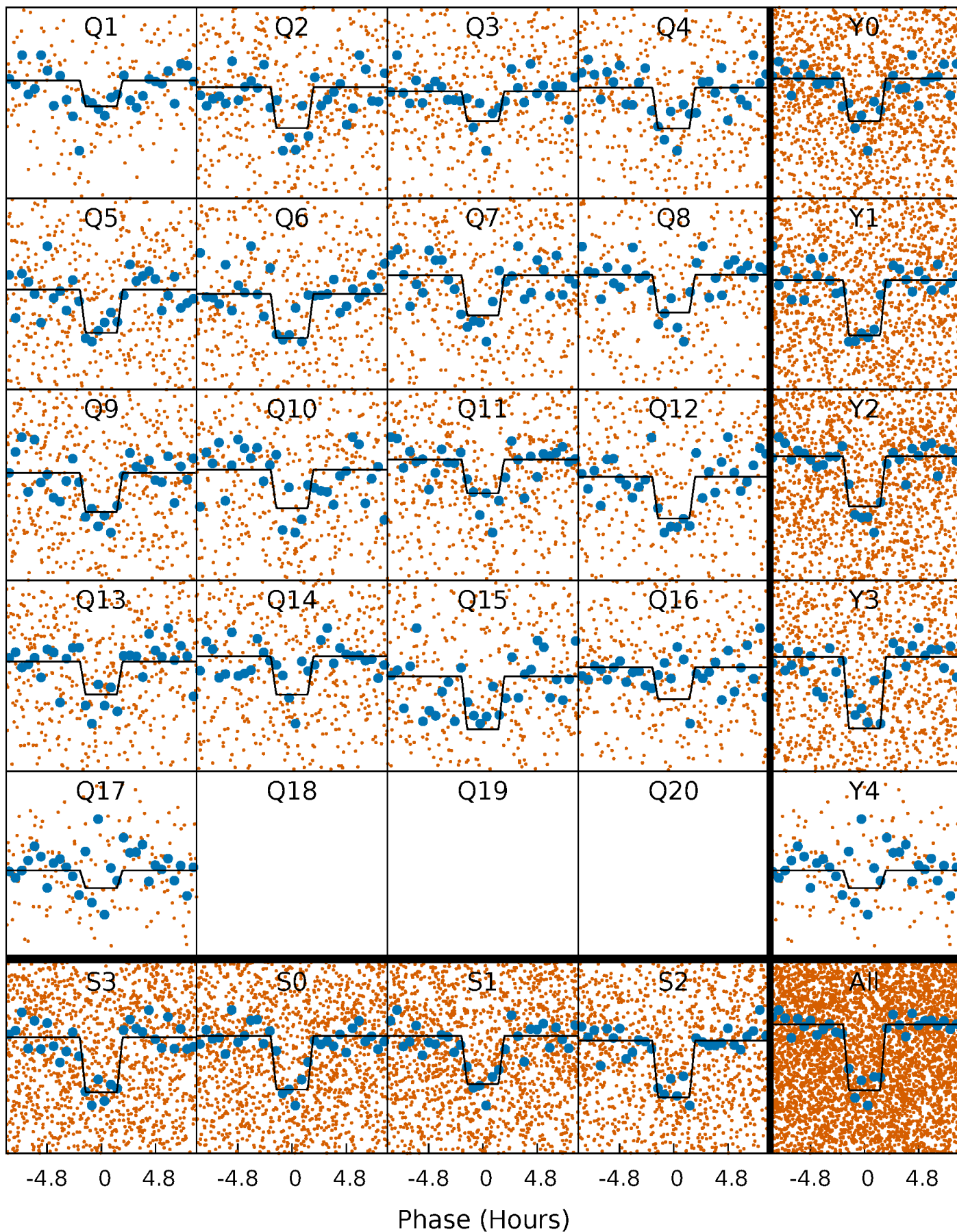
# DV Quarter-Phased Transit Curves

TCE 007673841-01     $P = 5.341772$  Days     $T_0 = 136.321963$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

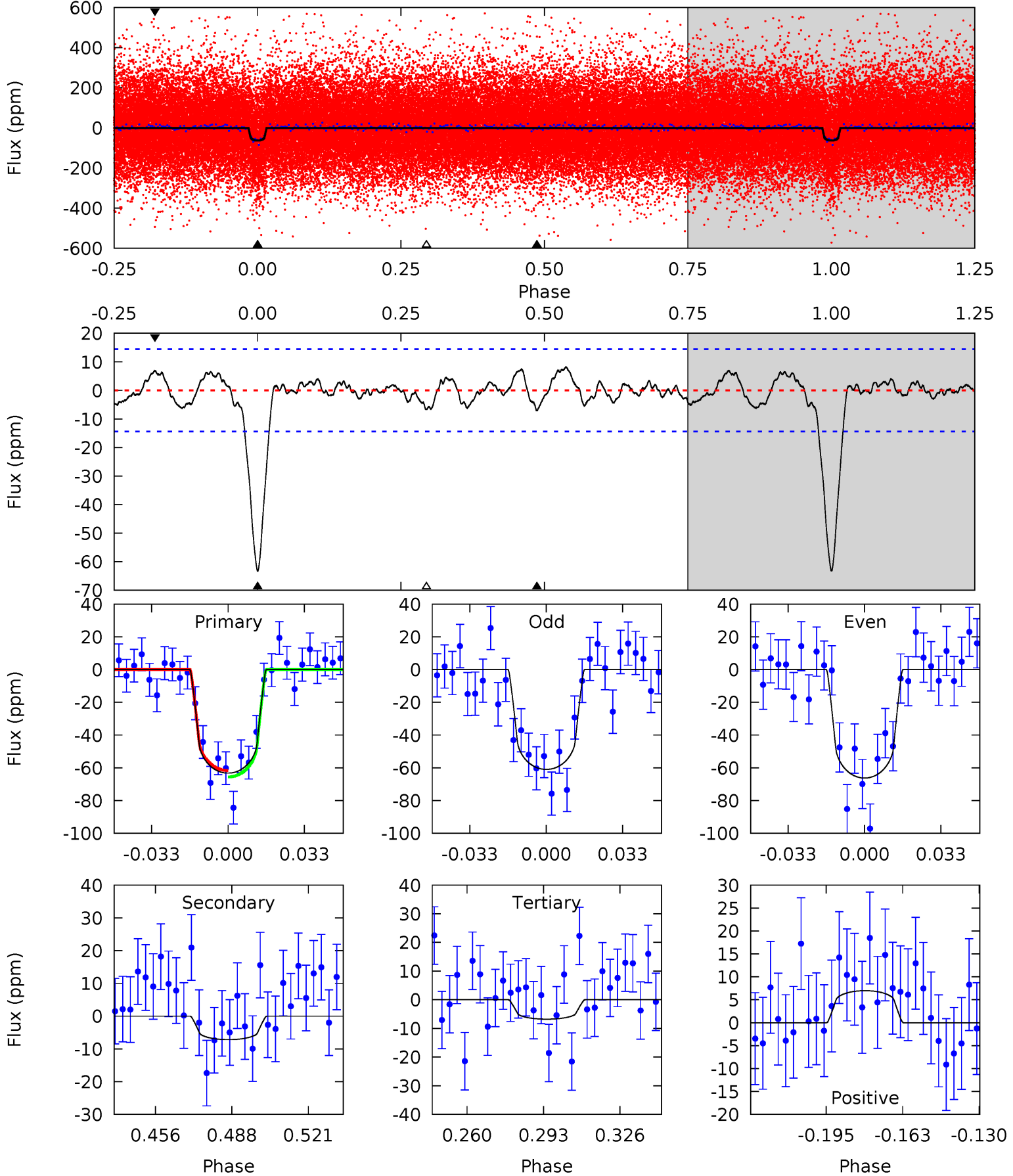
TCE 007673841-01 P= 5.341735 Days  $T_0=136.329550$  (BKJD)



# DV Model-Shift Uniqueness Test

007673841-01, P = 5.341772 Days, E = 130.980191 Days

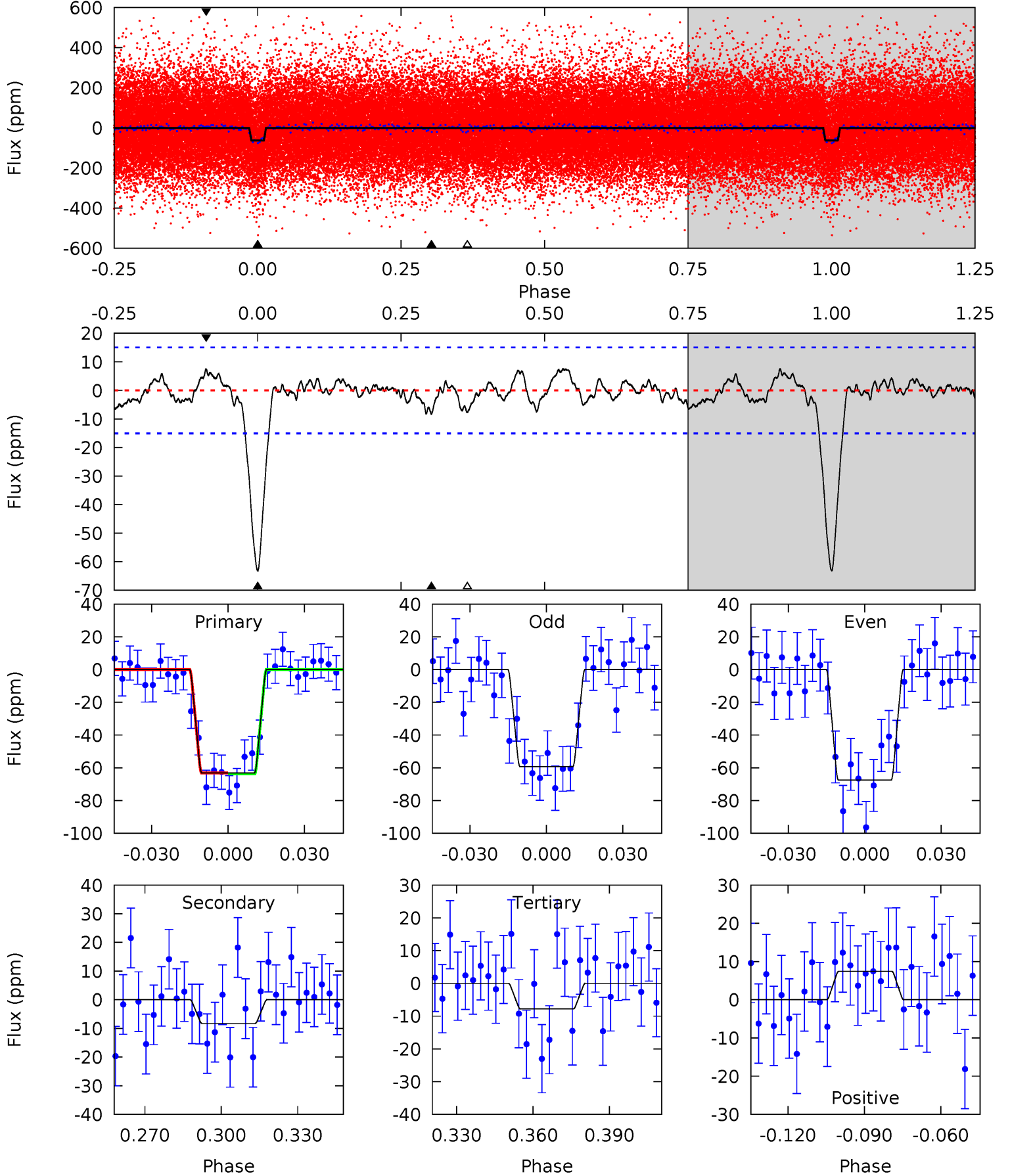
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.0	2.39	2.25	2.32	4.79	2.14	1.07	18.8	18.7	0.13	0.07	0.88	0.98	0.11	0.65



# Alt Model-Shift Uniqueness Test

007673841-01, P = 5.341735 Days, E = 130.987815 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
20.1	2.65	2.49	2.38	4.81	2.17	1.02	17.7	17.8	0.16	0.27	1.31	0.99	0.11	0.10



### Stellar Parameters For KIC 007673841

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5767^{+115}_{-104}$	$4.287^{+0.162}_{-0.108}$	$-0.140^{+0.150}_{-0.150}$	$1.135^{+0.165}_{-0.202}$	$0.910^{+0.078}_{-0.052}$	$0.877^{+0.661}_{-0.273}$
	+2%/-2%	+4%/-3%	+107%/-107%	+15%/-18%	+9%/-6%	+75%/-31%
Source	SPE59	SPE59	SPE59	DSEP		

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

### Secondary Eclipse Parameters for KIC 007673841-01 / KOI 2585.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-7 \pm 3$	$1.04^{+0.38}_{-0.38}$	$1568^{+69}_{-82}$	$3628^{+669}_{-443}$	$12^{+19}_{-6}$
Alt.	$-8 \pm 3$	$0.98^{+0.39}_{-0.38}$	$1569^{+70}_{-81}$	$3791^{+807}_{-477}$	$16^{+27}_{-9}$

$T_{\text{max}}$  = 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

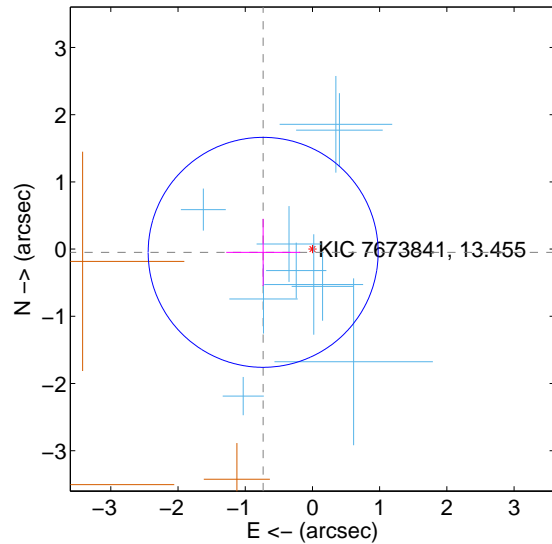
Supplemental centroid analysis for 007673841-01. Kepler magnitude: 13.46. Transit SNR 16.61

There are 10 quarters with good PRF difference image offsets

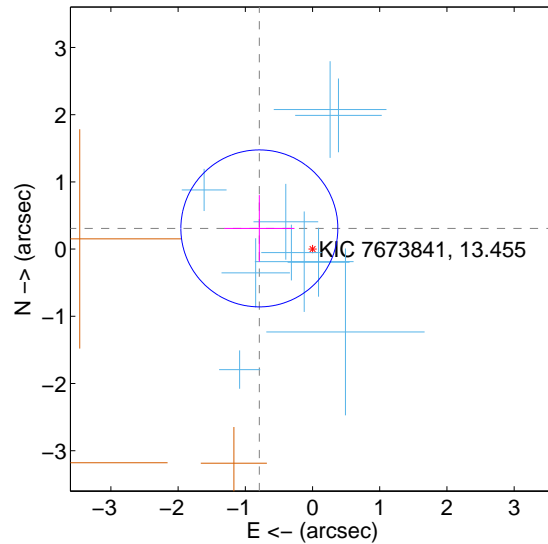
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.735 \pm 0.570$	1.29	$0.733 \pm 0.549$	$-0.048 \pm 0.500$
PRF-fit source offset from KIC position	$0.849 \pm 0.389$	2.18	$0.791 \pm 0.522$	$0.308 \pm 0.496$
photometric centroid source offset	$0.73 \pm 0.76$	0.96	$-0.08 \pm 0.75$	$-0.72 \pm 0.76$

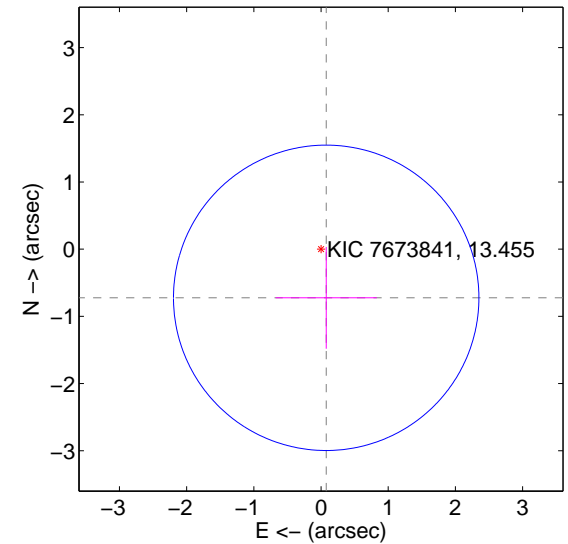
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

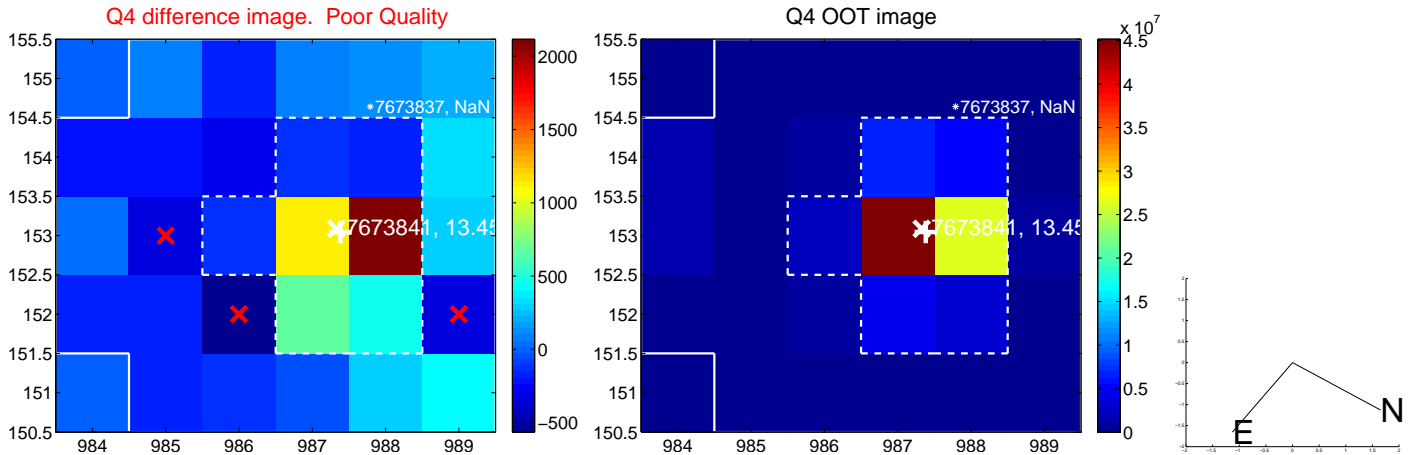
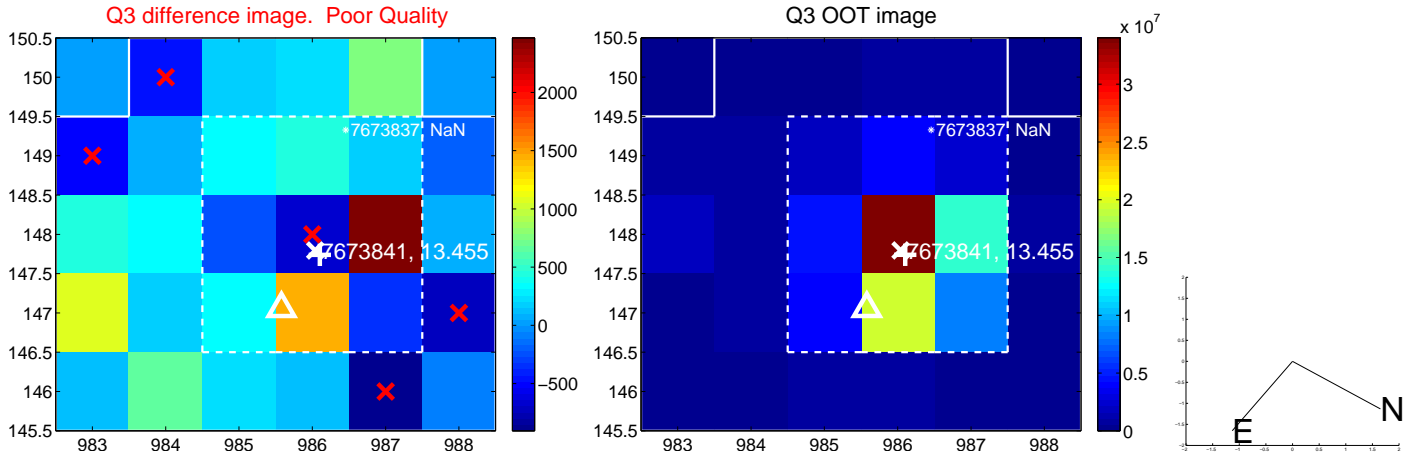
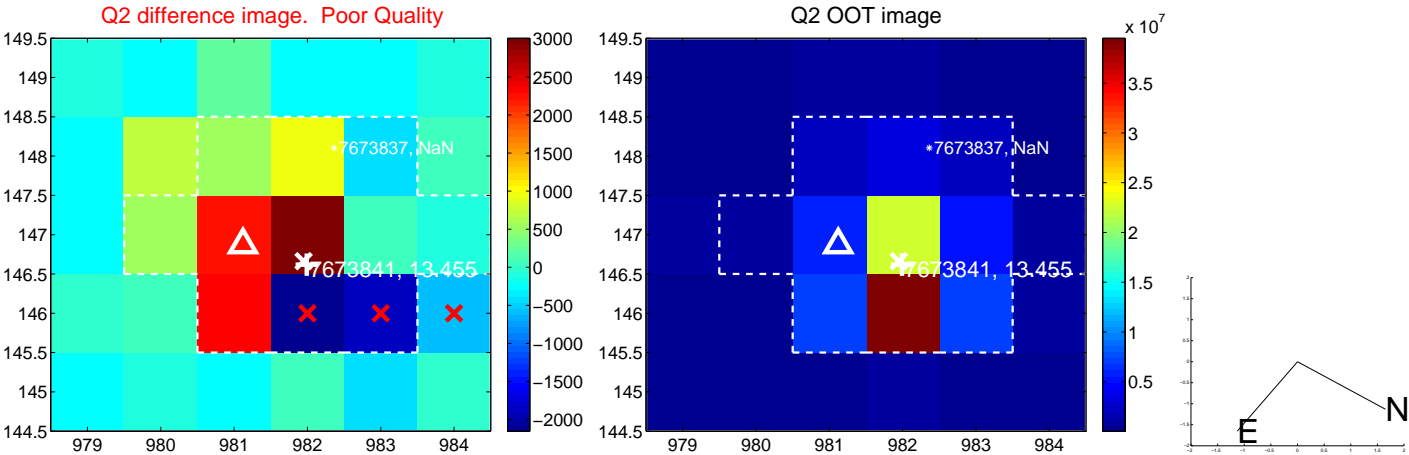
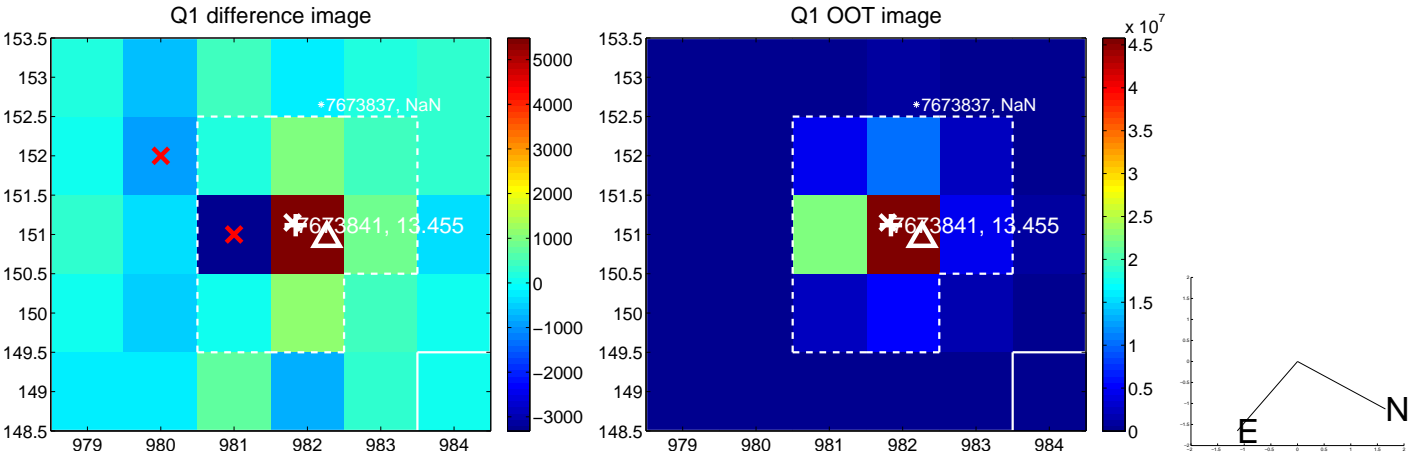


offset from photometric centroids

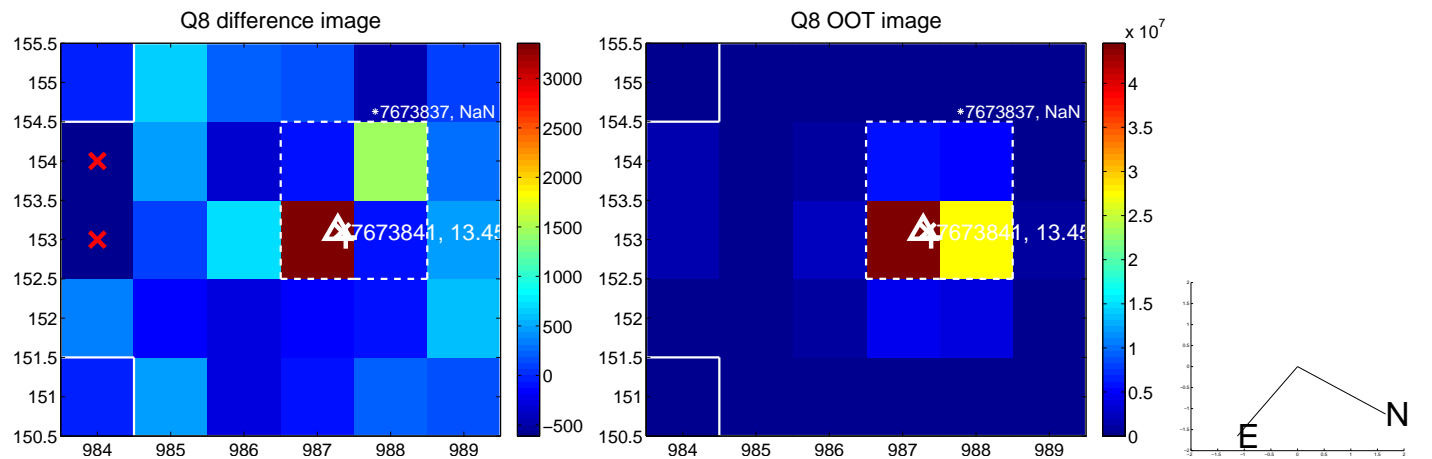
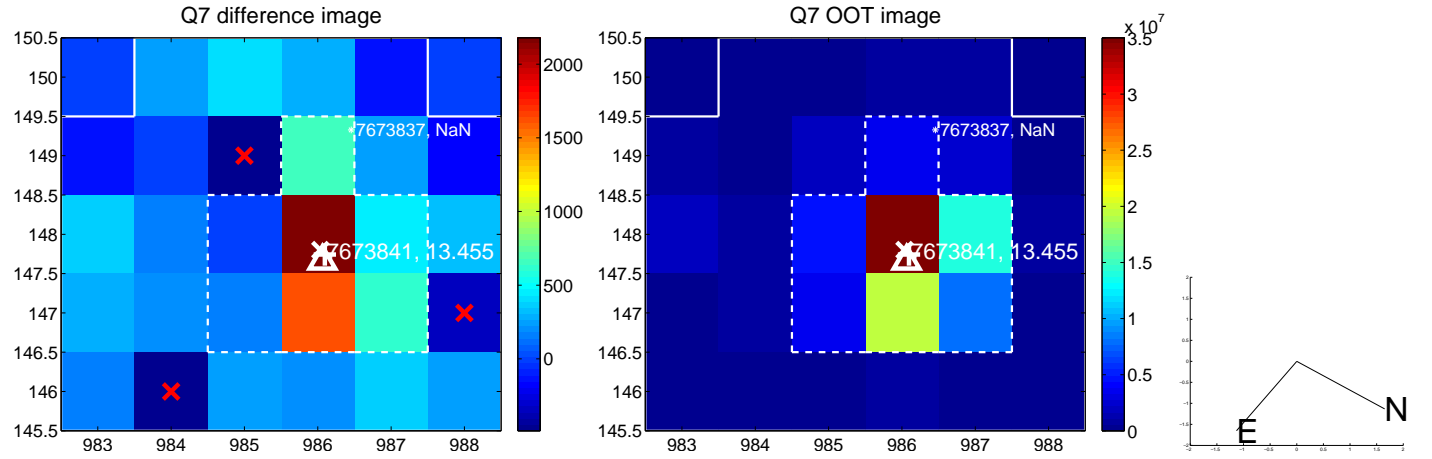
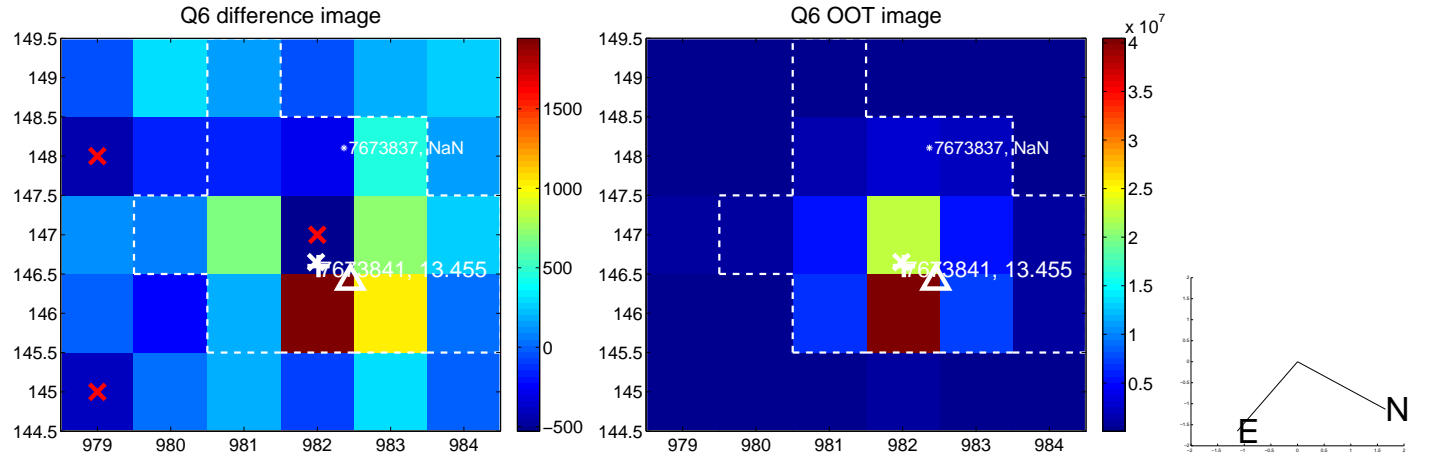
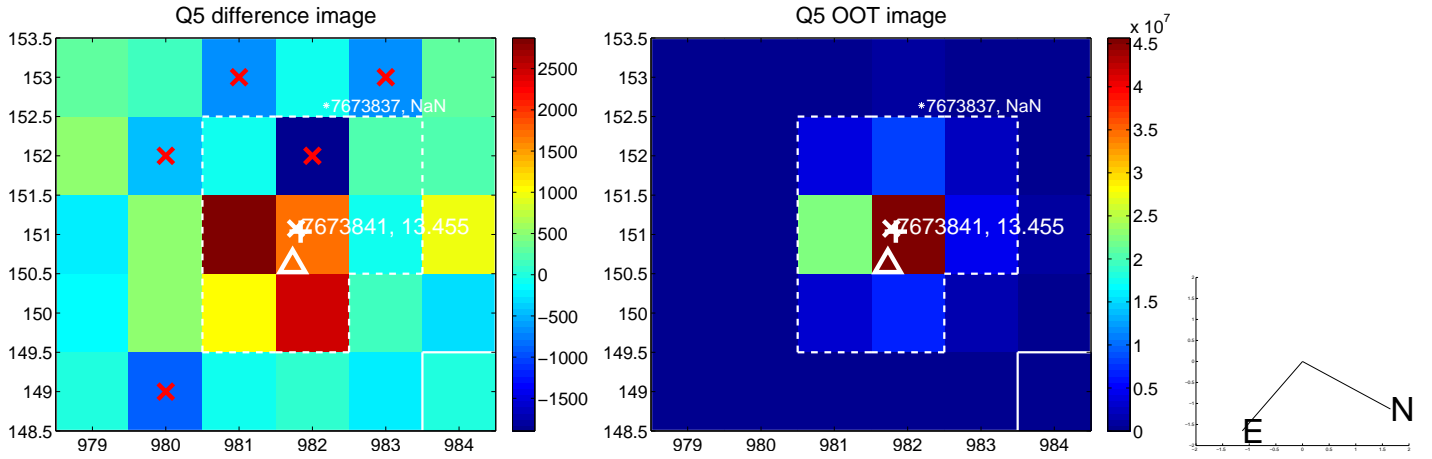


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

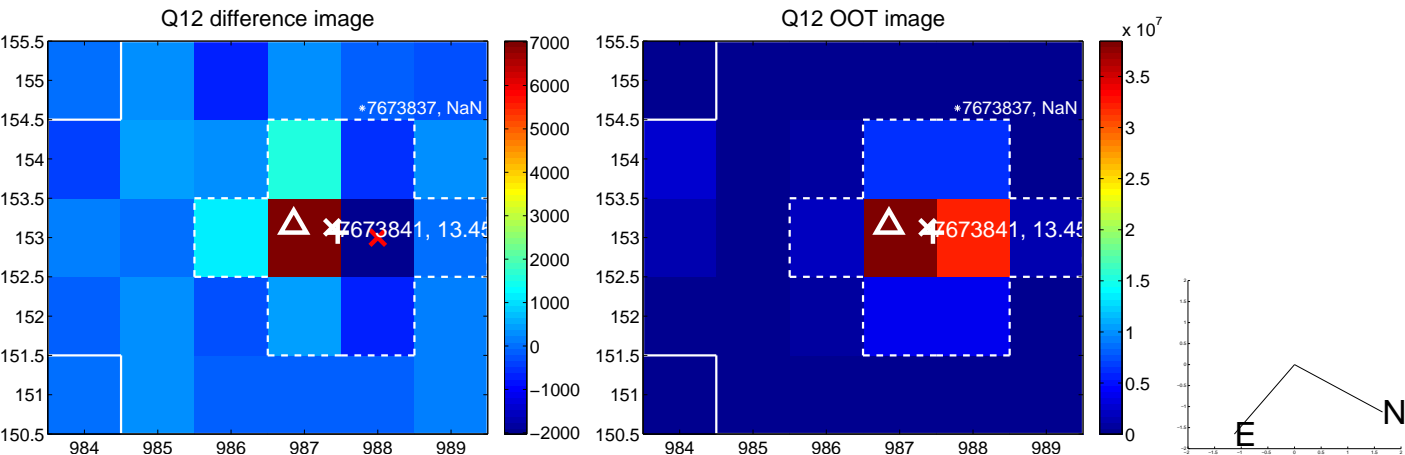
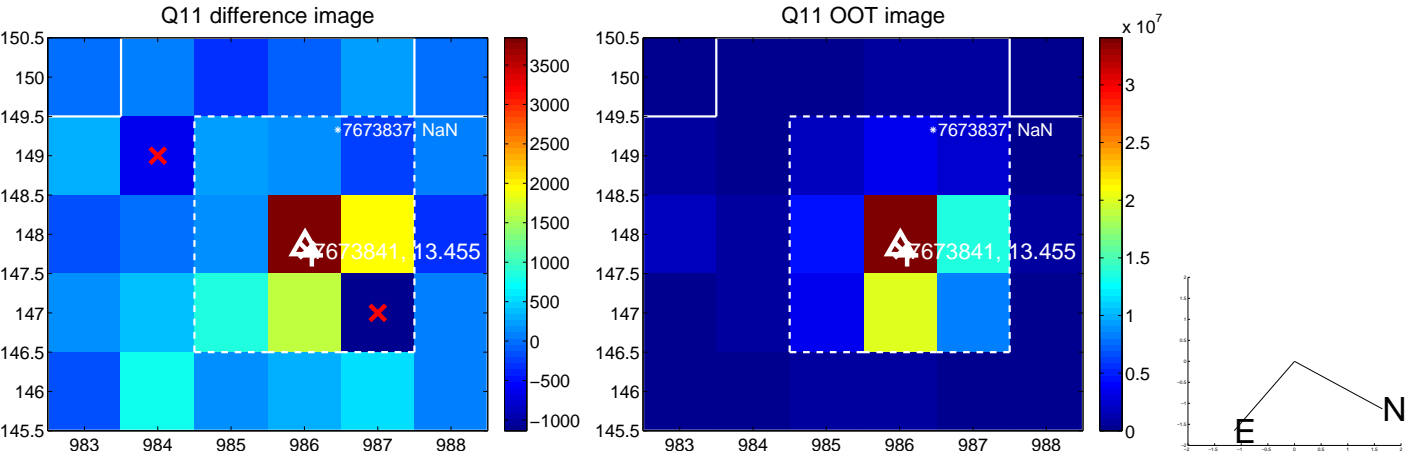
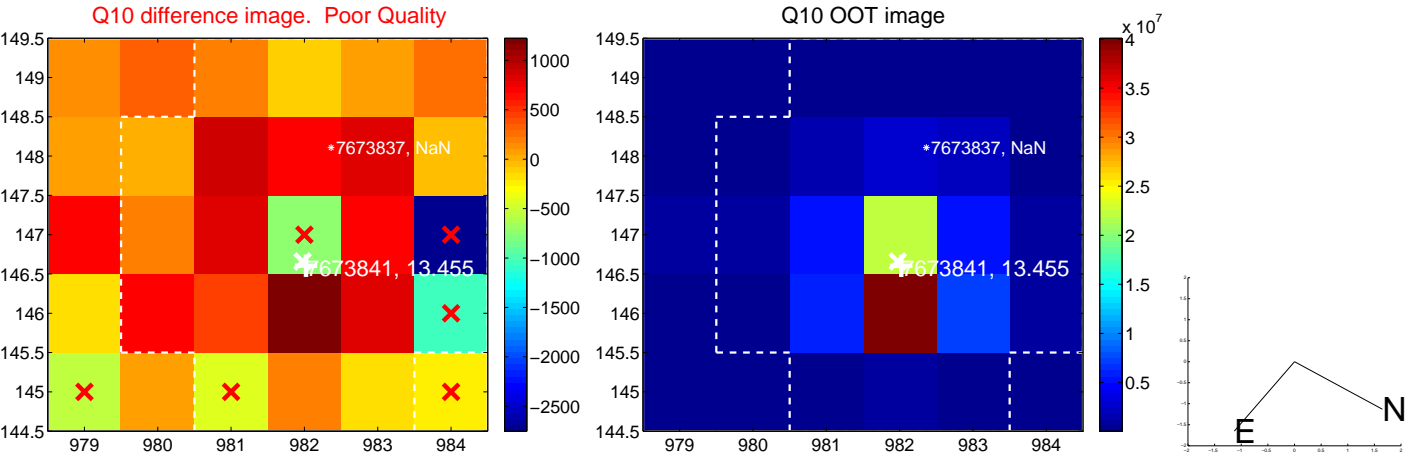
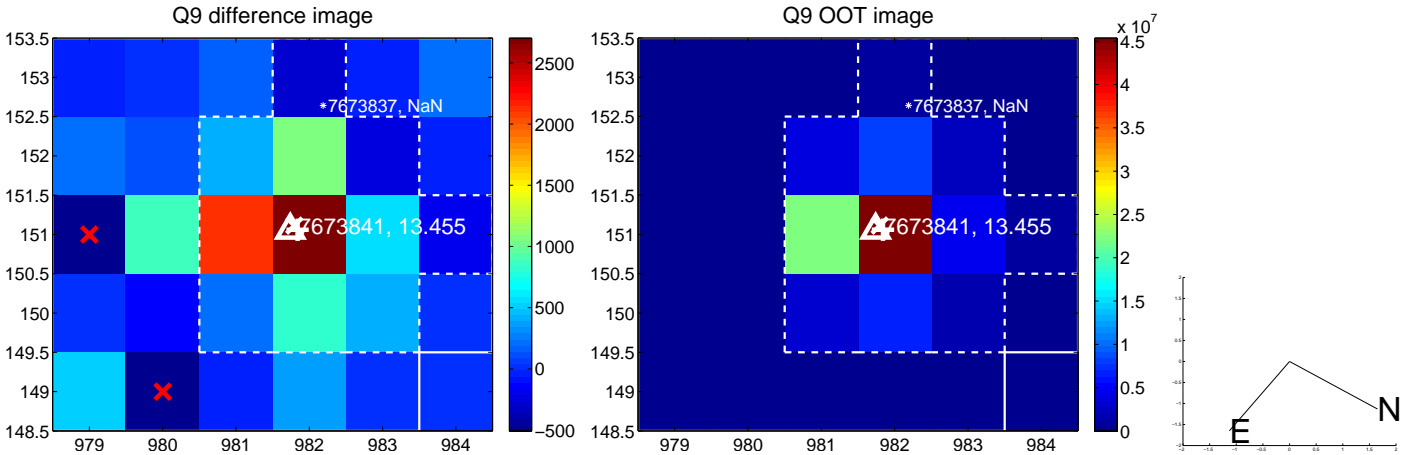
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



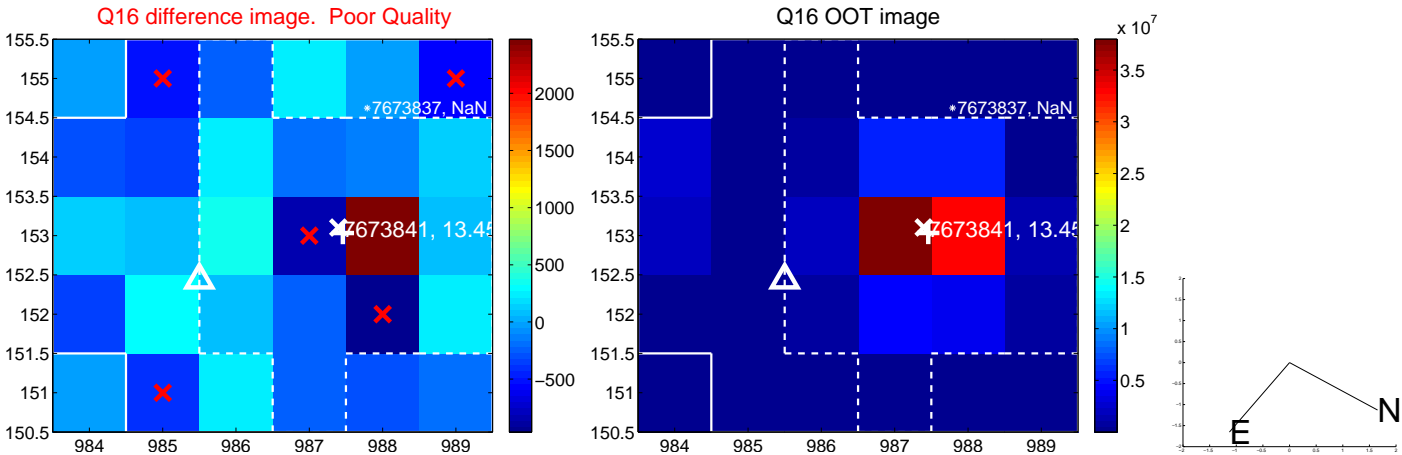
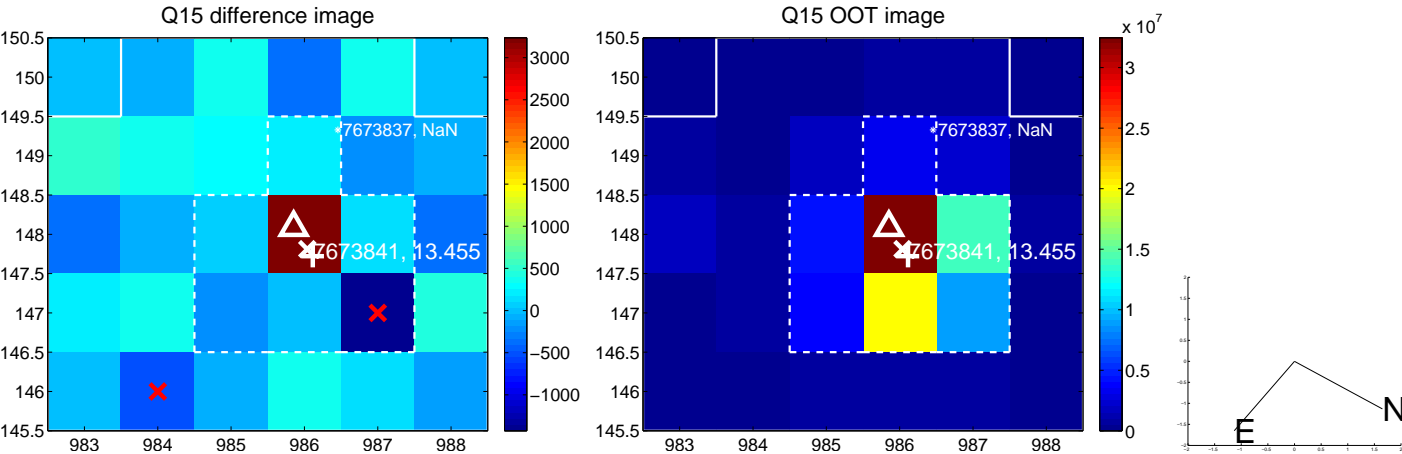
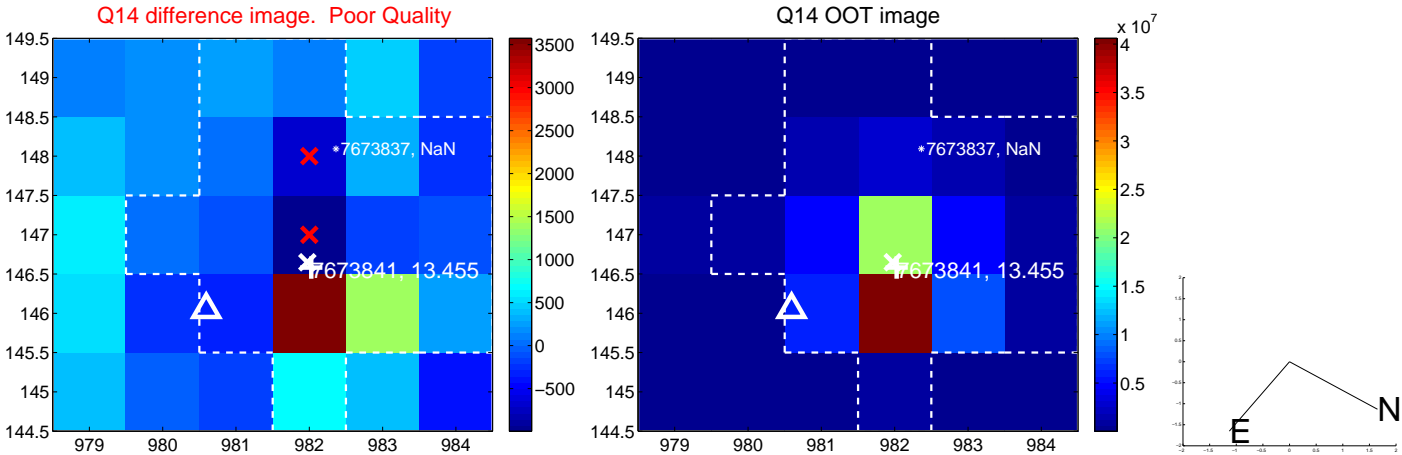
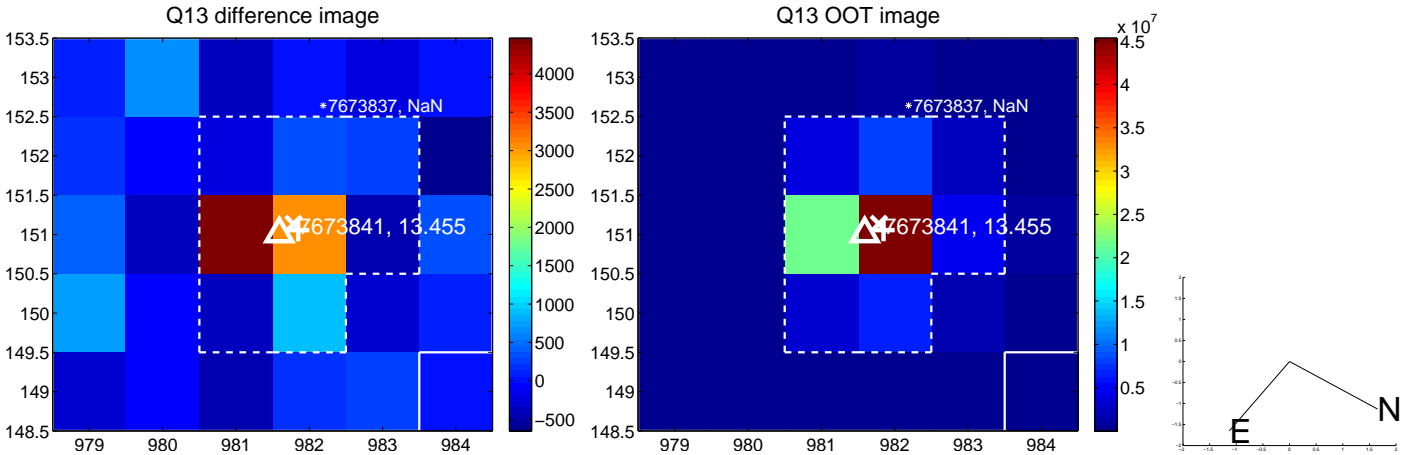
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



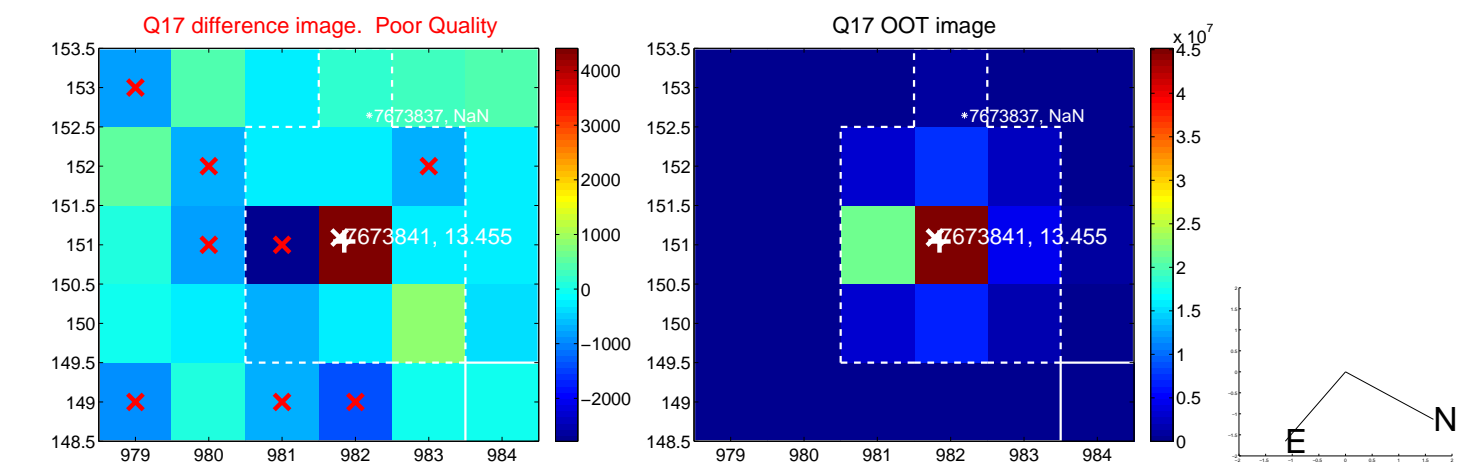
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



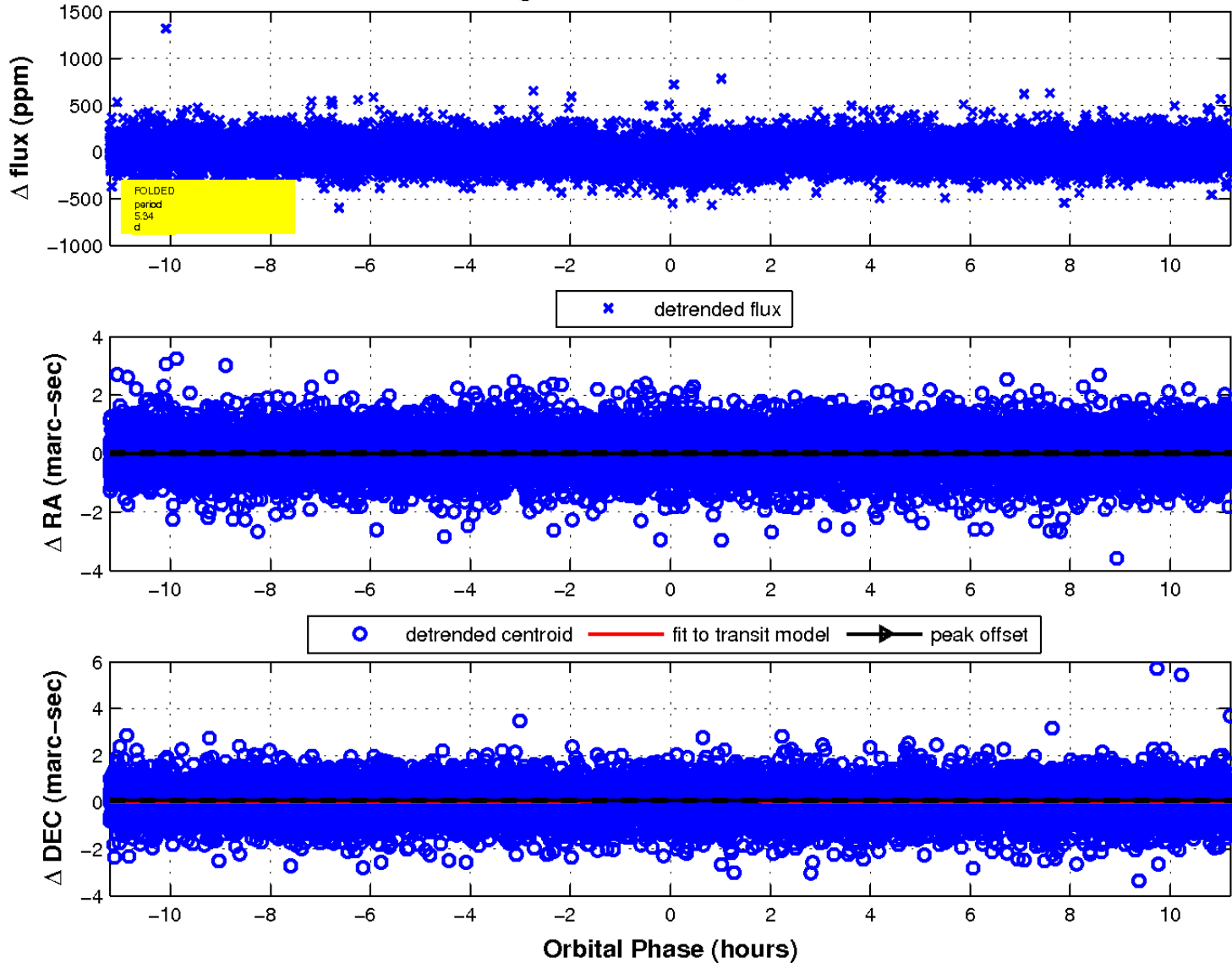
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

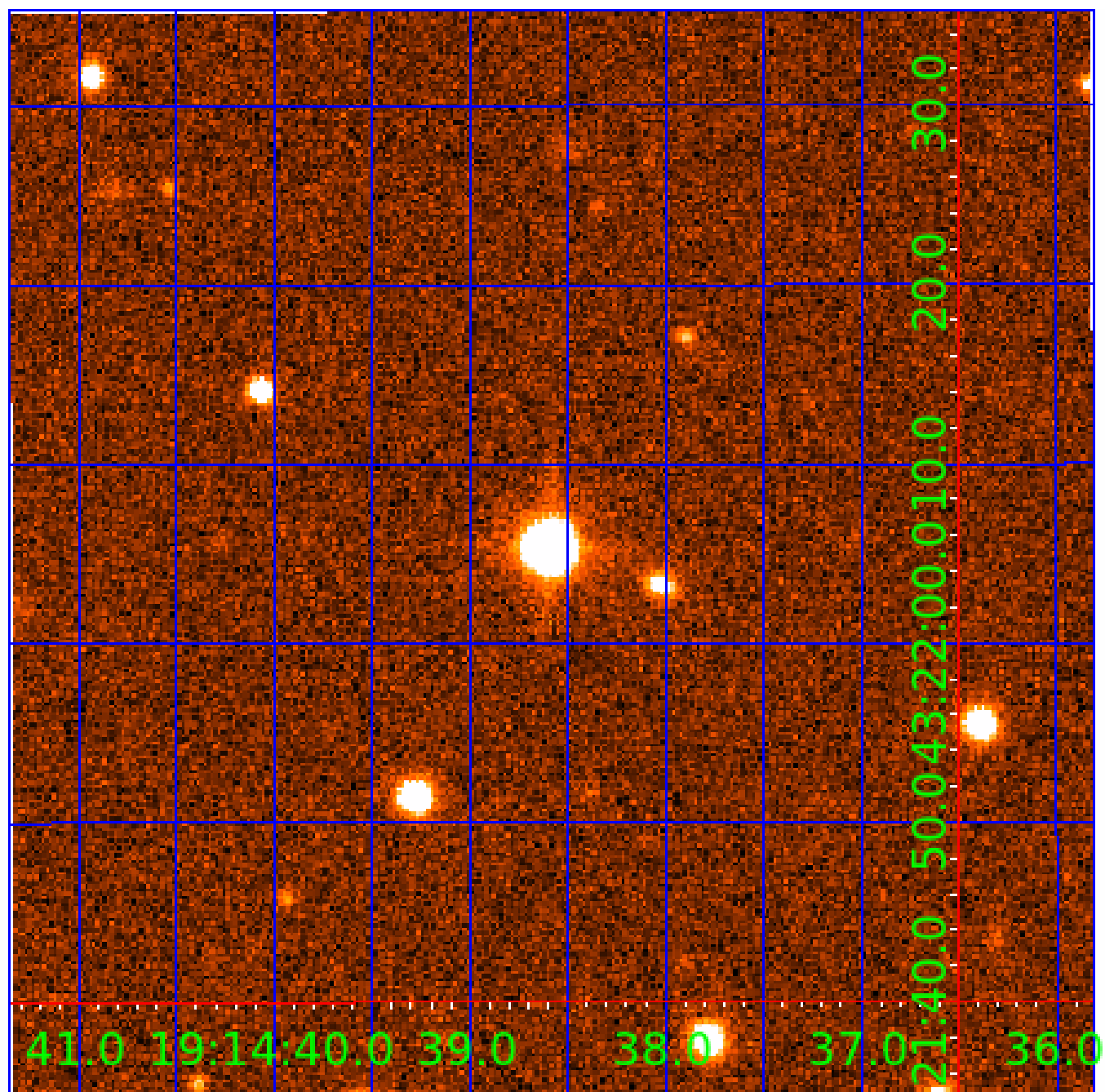


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



# KIC 007673841

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007673841-01	OBS	2585.01	5.341772	136.321963	65.4	3.737	15.3	16.6	1.14	5767	1.05	380.00
007673841-02	OBS	2585.02	10.423155	135.152839	69.5	2.229	8.9	10.0	1.14	5767	1.05	155.84
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007673841-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT
007673841-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673841-03	OBS	PC	0.95	0	0	0	0	NO_COMMENT

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

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

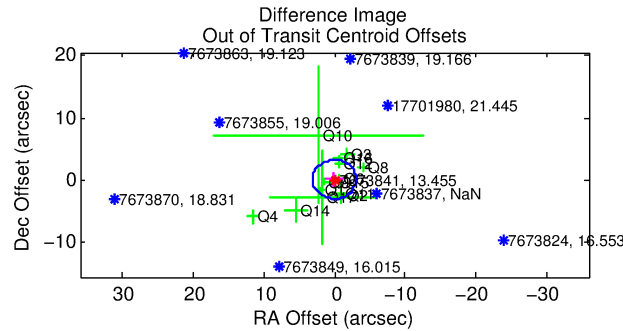
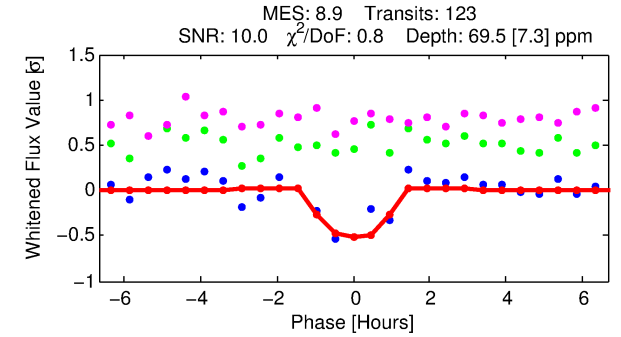
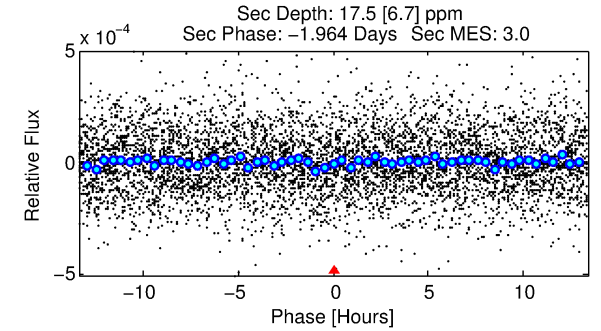
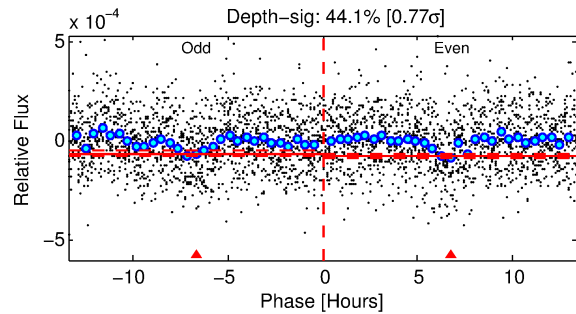
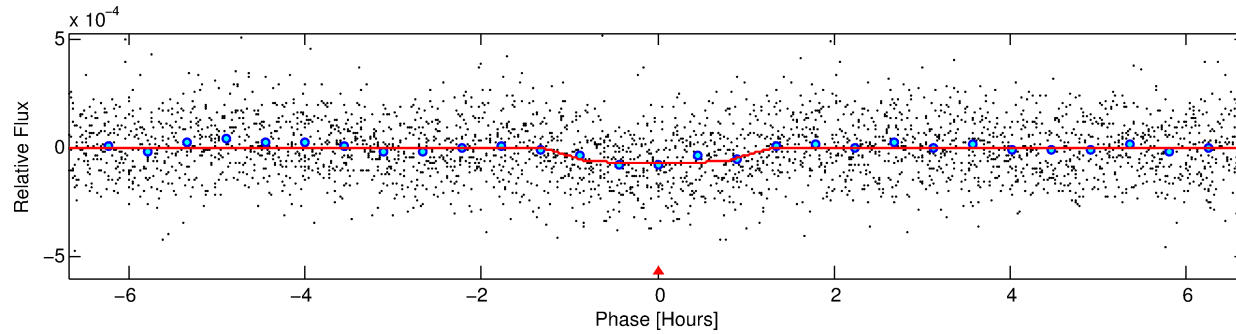
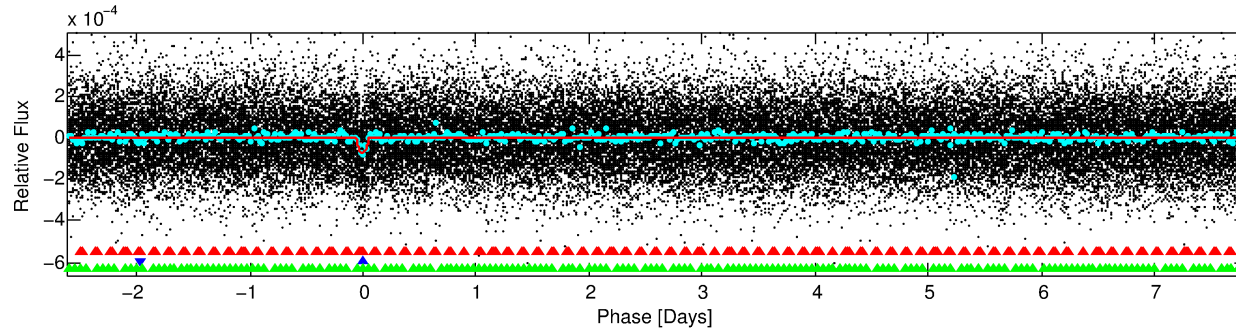
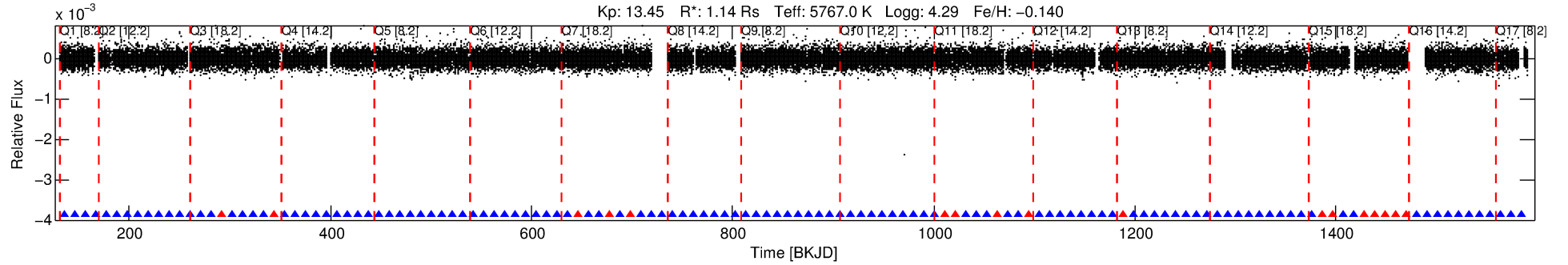
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007673841-02

No Significant Match Found

# DV One-Page Summary

KIC: 7673841 Candidate: 2 of 3 Period: 10.423 d  
KOI: K02585.02 Name: Kepler-392c Corr: 0.986



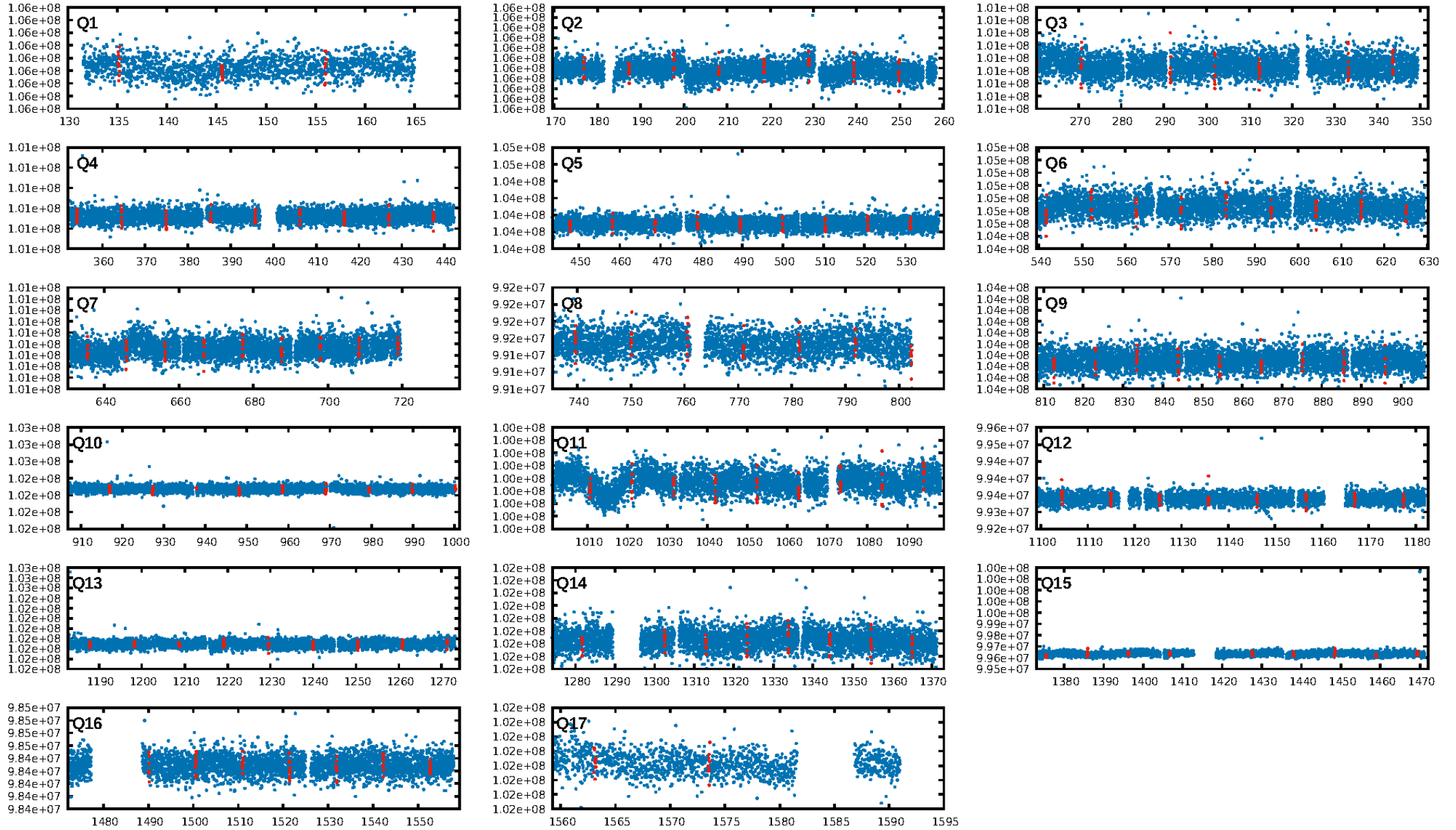
## DV Fit Results:

Period = 10.42316 [0.00007] d  
Epoch = 135.1528 [0.0056] BKJD  
Rp/R\* = 0.0085 [0.0054]  
a/R\* = 22.21 [65.09]  
b = 0.79 [1.39]  
Seff = 155.84 [44.70]  
Teq = 901 [65] K  
Rp = 1.05 [0.70] Re  
a = 0.0905 [0.0156] AU  
Ag = 71.91 [98.34] [0.72 $\sigma$ ]  
Teff = 4056 [1361] K [2.32 $\sigma$ ]

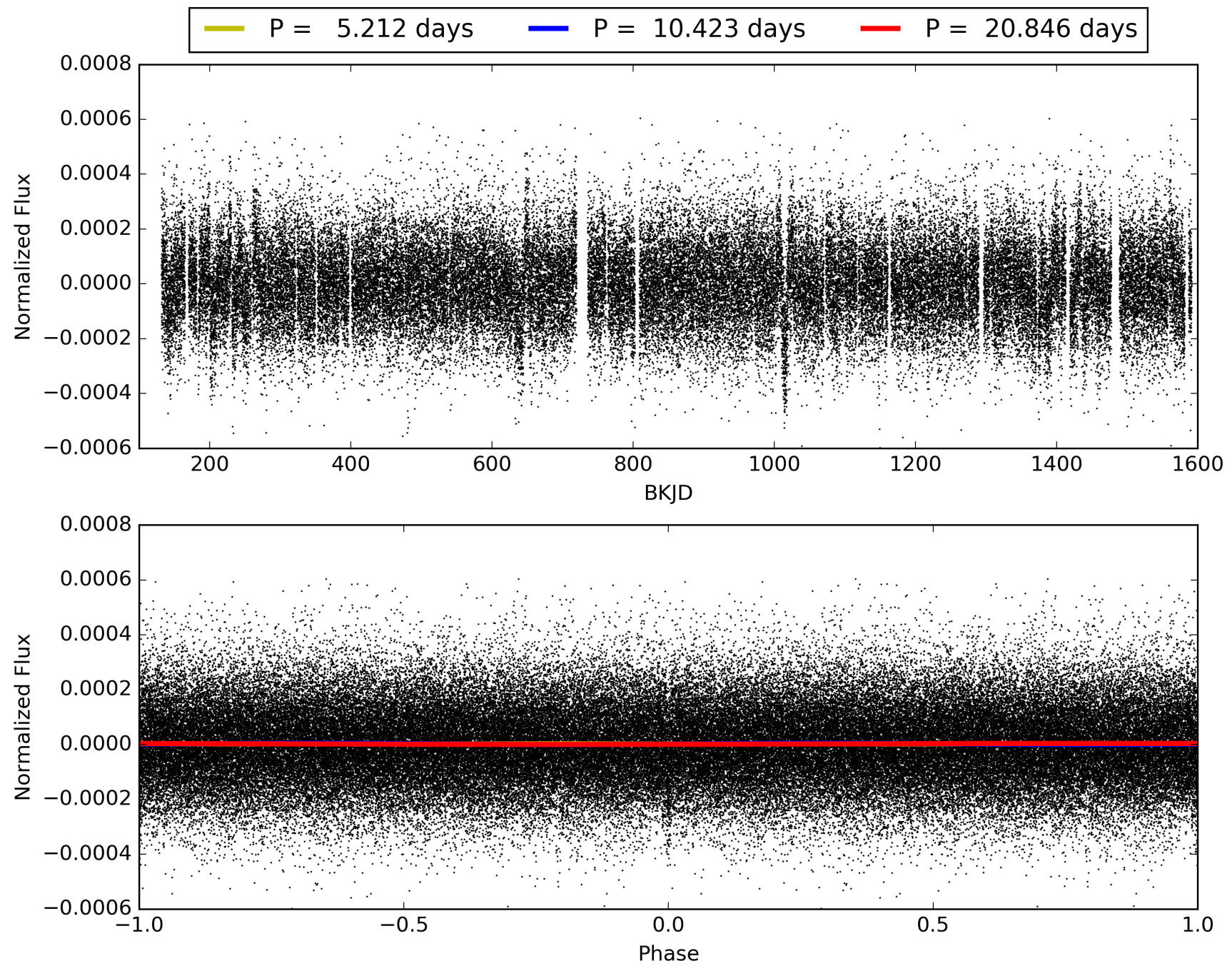
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.94 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.36e-19  
RollingBand-fgt: 0.86 [101/118]  
GhostDiagnostic-chr: 6.703  
Centroid-sig: 0.4%  
Centroid-so: 2.124 arcsec [1.69 $\sigma$ ]  
OotOffset-rm: 0.158 arcsec [0.15 $\sigma$ ]  
KicOffset-rm: 0.453 arcsec [0.45 $\sigma$ ]  
OotOffset-st: 4/3/4/3 [14]  
KicOffset-st: 4/3/4/3 [14]  
DiffImageQuality-fgm: 0.43 [6/14]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007673841-02, PDC Light Curves

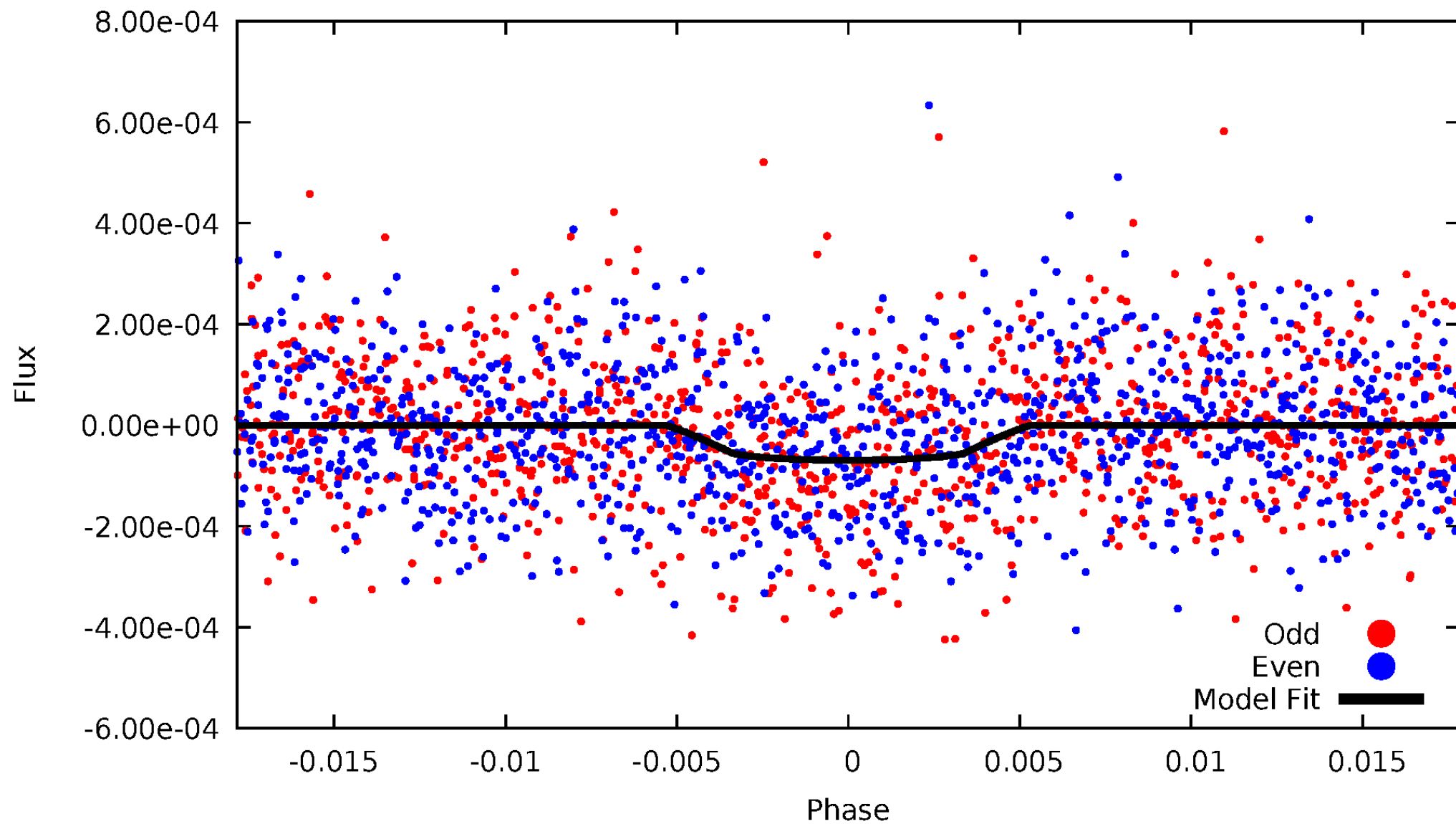


TCE 007673841-02



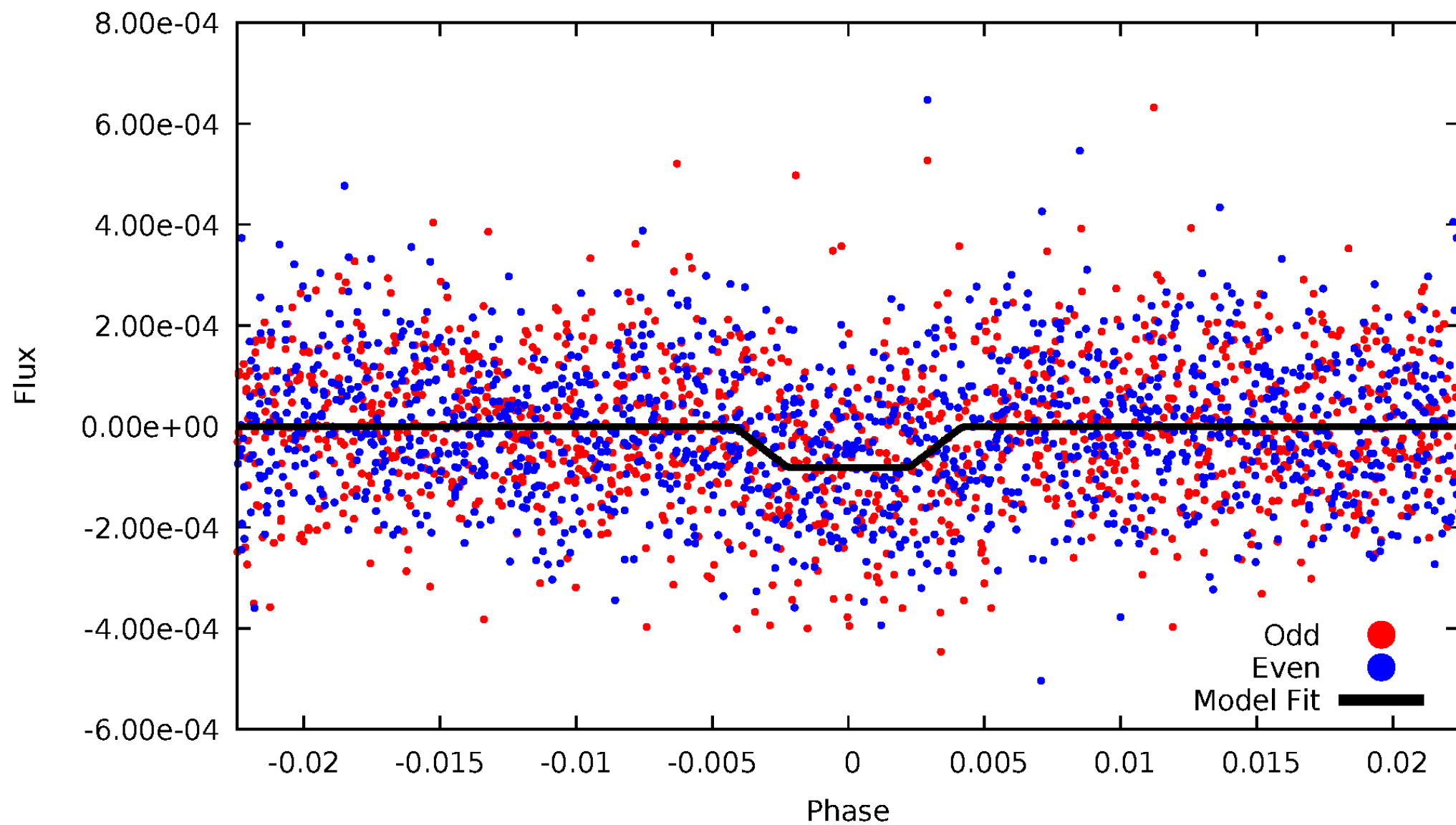
DV Odd/Even

TCE 007673841-02



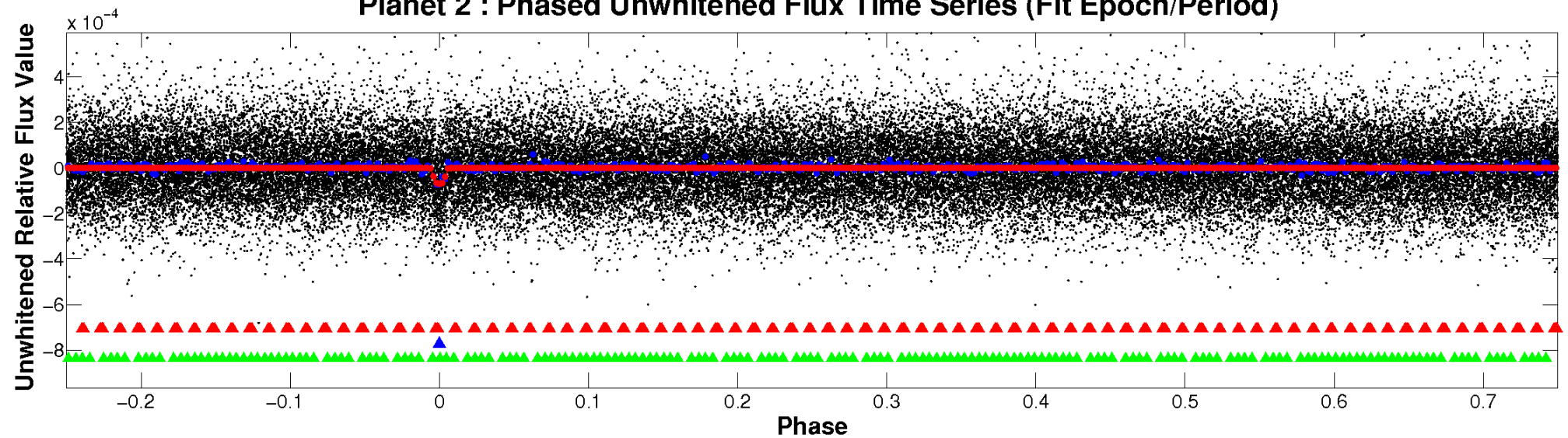
# ALT Odd/Even

TCE 007673841-02

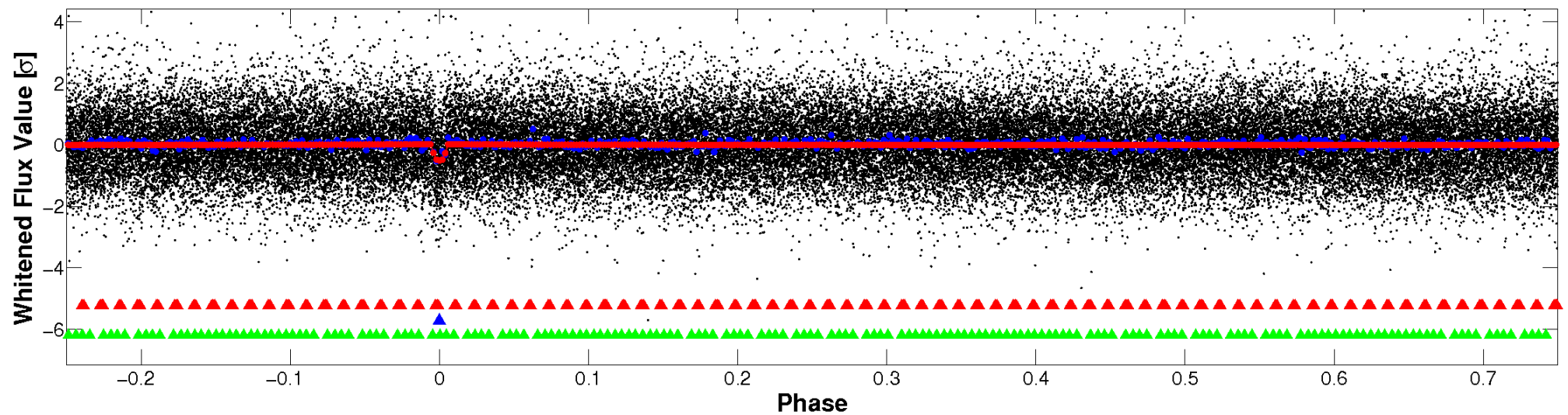


# Non-Whitened Vs. Whitened Light Curve

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

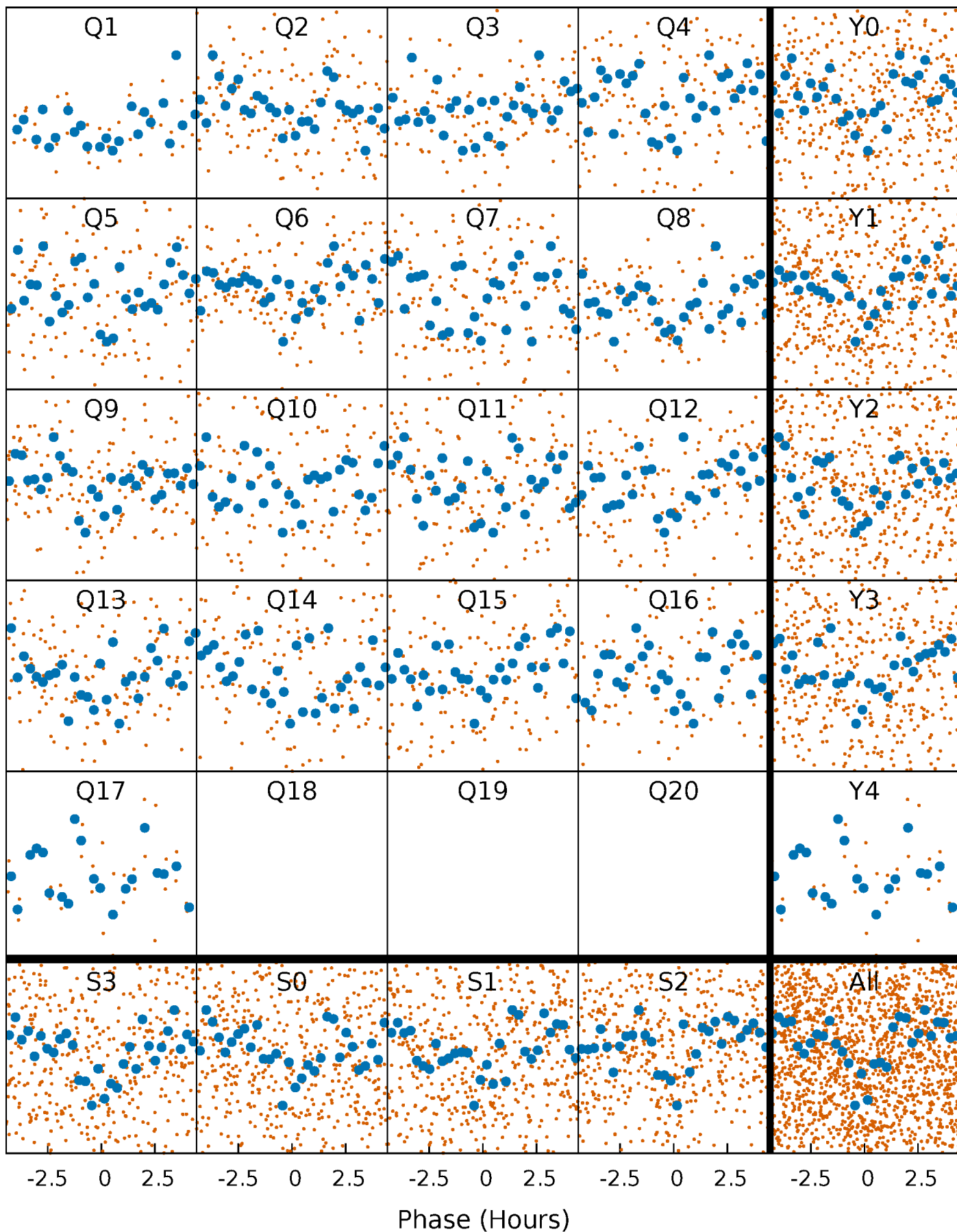


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



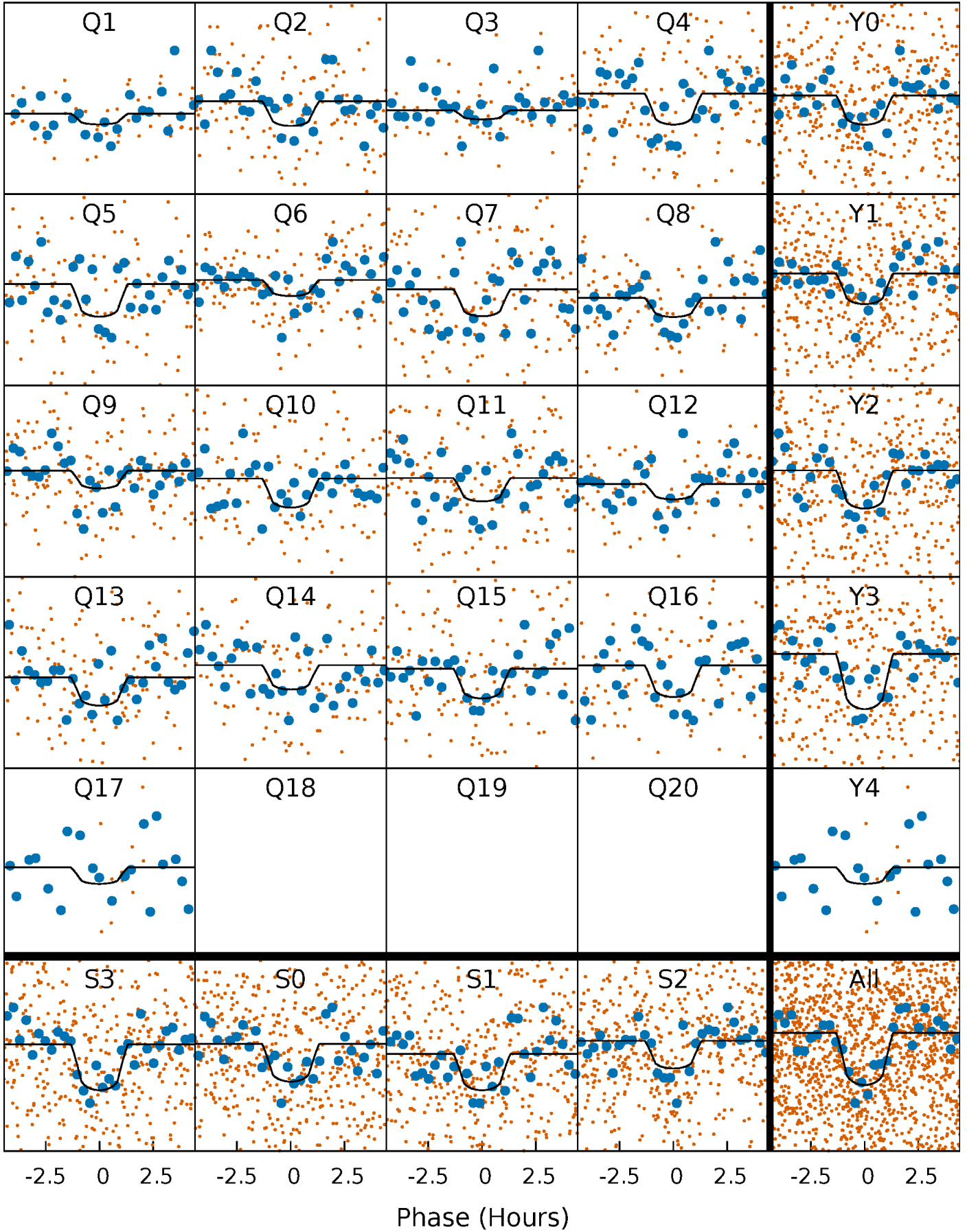
# PDC Quarter-Phased Transit Curves

TCE 007673841-02 P= 10.423155 Days  $T_0=135.152839$  (BKJD)



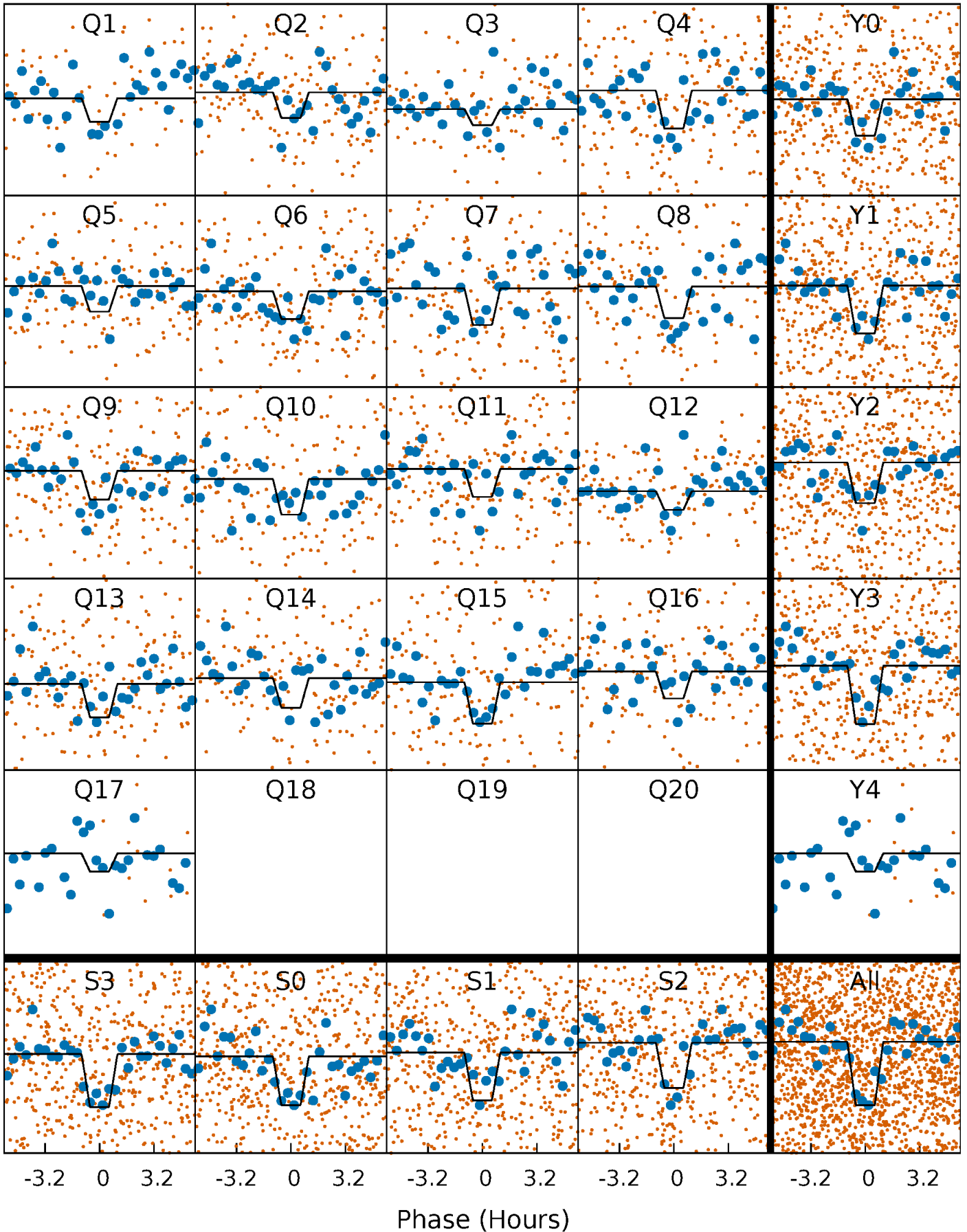
# DV Quarter-Phased Transit Curves

TCE 007673841-02   P= 10.423155 Days    $T_0=135.152839$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

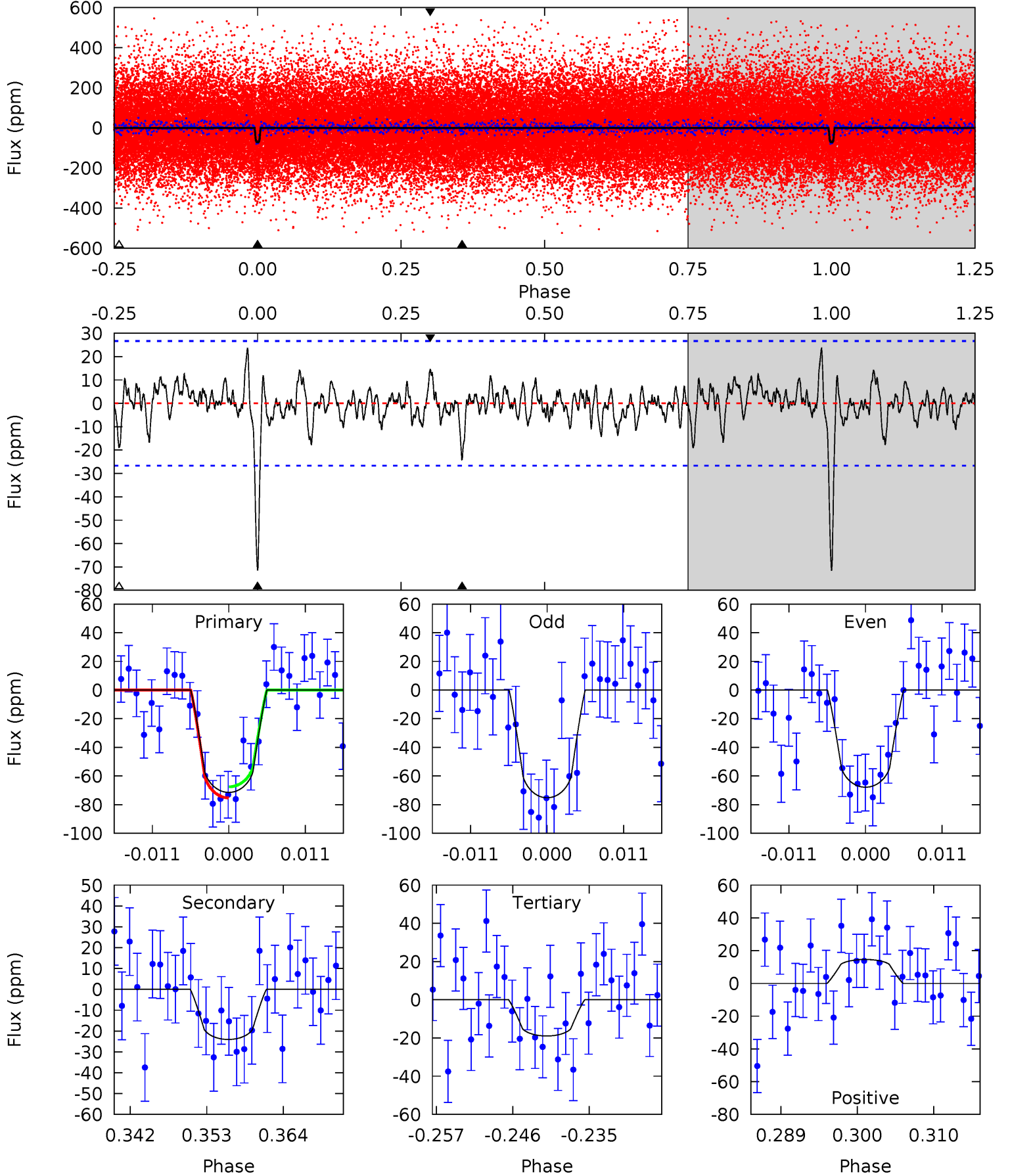
TCE 007673841-02 P= 10.423118 Days  $T_0=135.150583$  (BKJD)



# DV Model-Shift Uniqueness Test

007673841-02, P = 10.423155 Days, E = 124.729684 Days

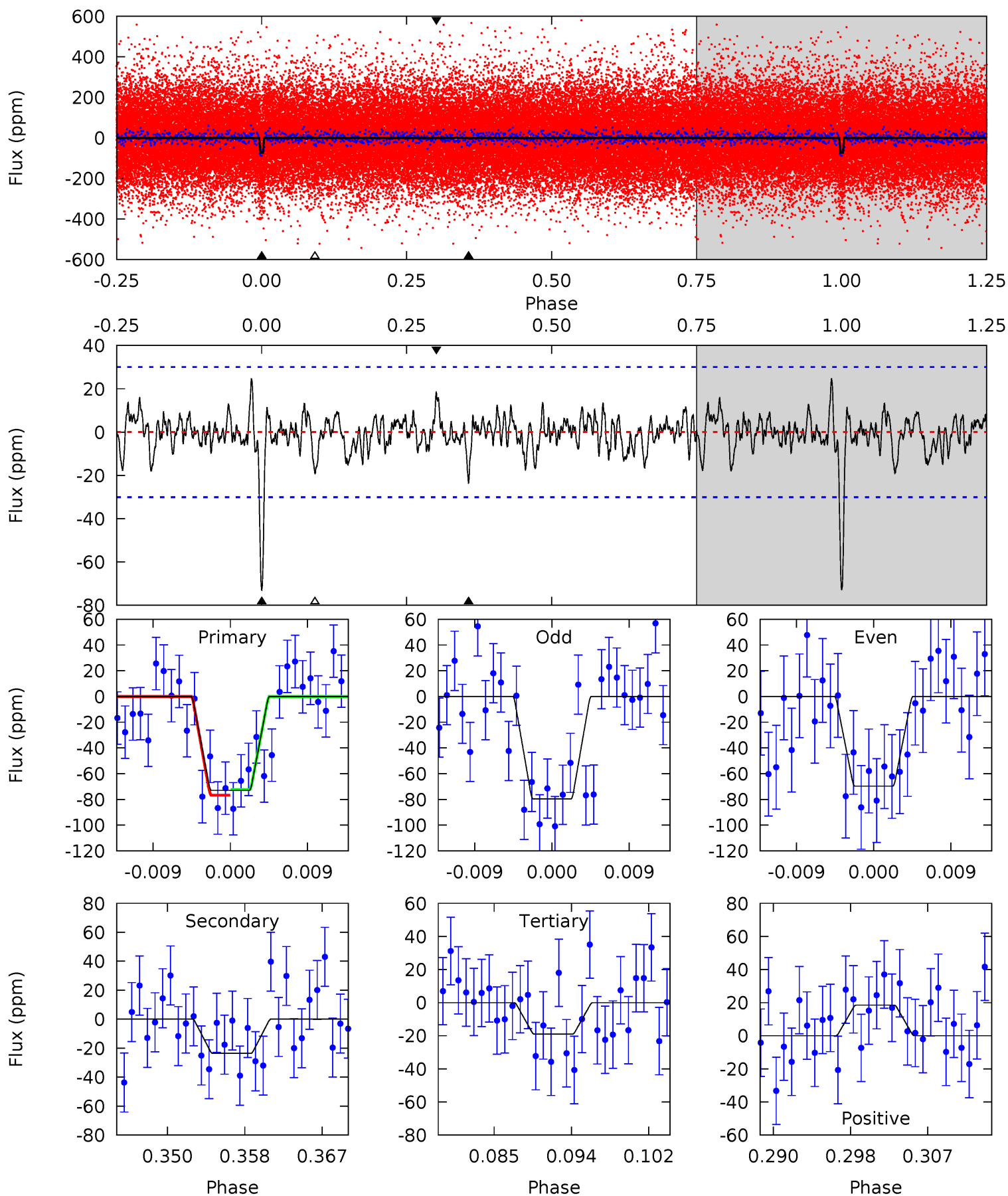
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	4.53	3.57	2.74	5.01	2.55	1.07	9.88	10.7	0.96	1.78	0.69	0.90	0.25	0.73



# Alt Model-Shift Uniqueness Test

007673841-02, P = 10.423118 Days, E = 124.727465 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
12.3	3.97	3.21	3.12	5.06	2.63	1.08	9.06	9.15	0.76	0.85	0.83	1.01	0.25	0.36



### Stellar Parameters For KIC 007673841

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5767^{+115}_{-104}$	$4.287^{+0.162}_{-0.108}$	$-0.140^{+0.150}_{-0.150}$	$1.135^{+0.165}_{-0.202}$	$0.910^{+0.078}_{-0.052}$	$0.877^{+0.661}_{-0.273}$
	+2%/-2%	+4%/-3%	+107%/-107%	+15%/-18%	+9%/-6%	+75%/-31%
Source	SPE59	SPE59	SPE59	DSEP		

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

### Secondary Eclipse Parameters for KIC 007673841-02 / KOI 2585.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-24 \pm 5$	$1.07^{+0.64}_{-0.60}$	$1253^{+62}_{-67}$	$4520^{+1933}_{-771}$	$99^{+403}_{-64}$
Alt.	$-24 \pm 6$	$1.17^{+0.65}_{-0.62}$	$1253^{+59}_{-59}$	$4281^{+1682}_{-604}$	$75^{+289}_{-45}$

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

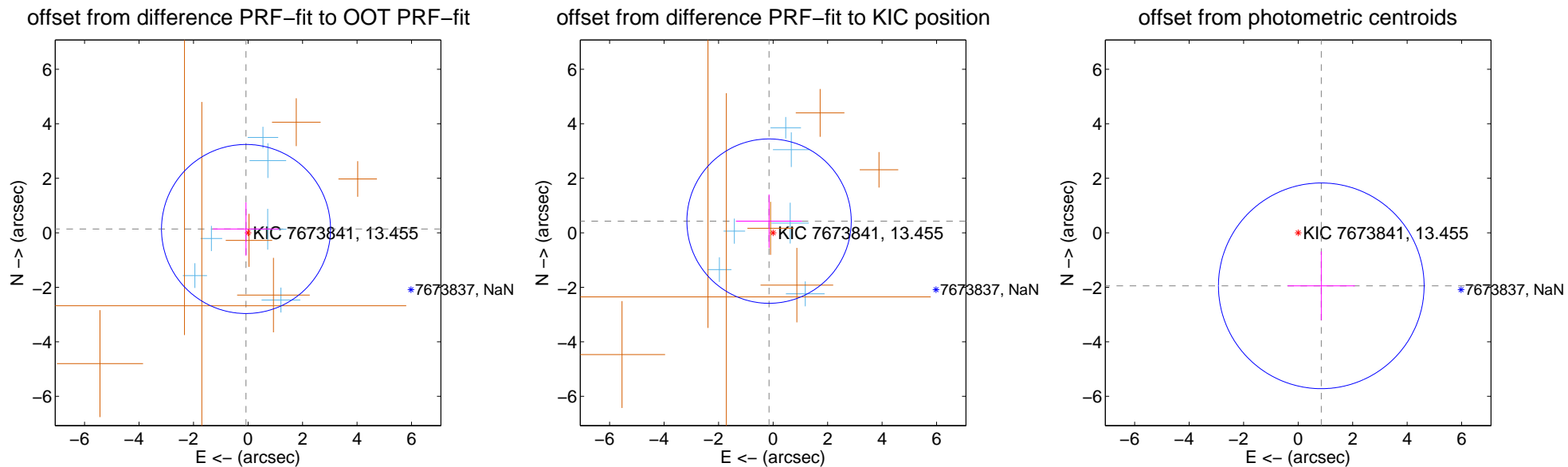
## DV Centroid Data

Supplemental centroid analysis for 007673841-02. Kepler magnitude: 13.46. Transit SNR 10.00

There are 6 quarters with good PRF difference image offsets

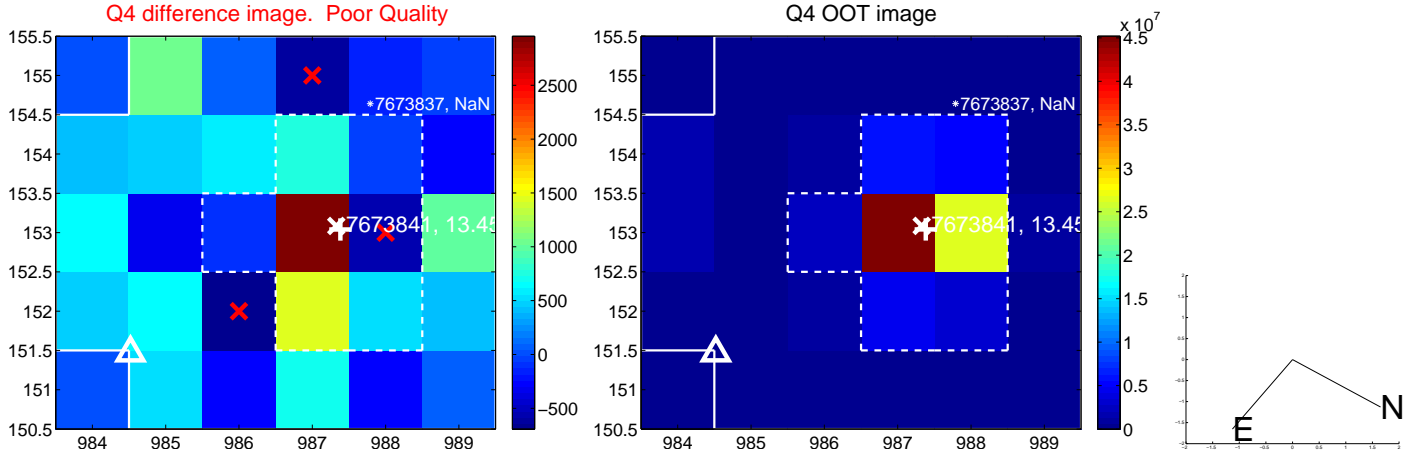
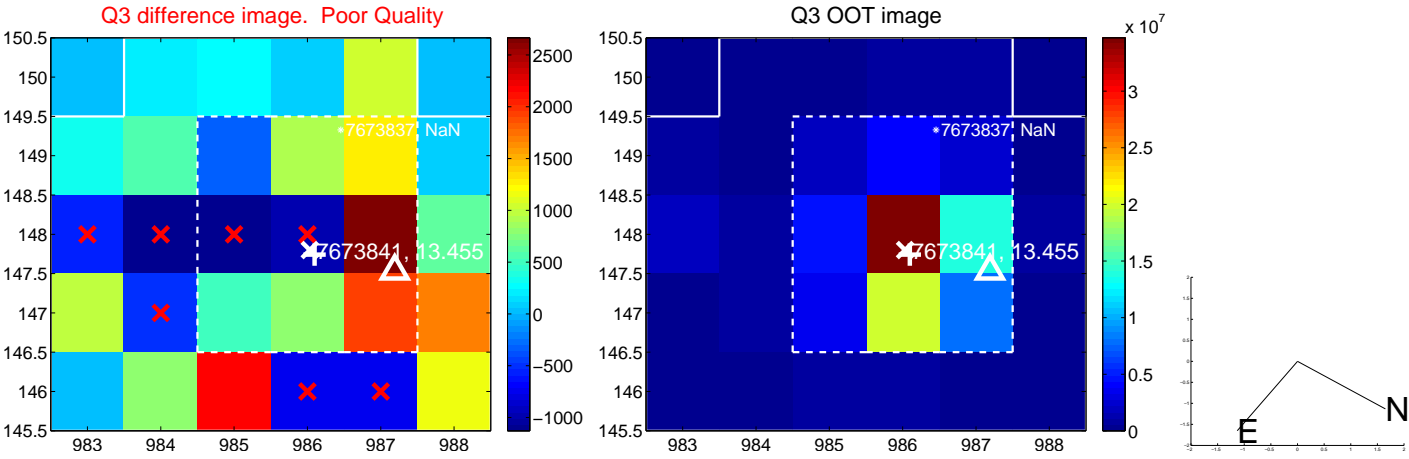
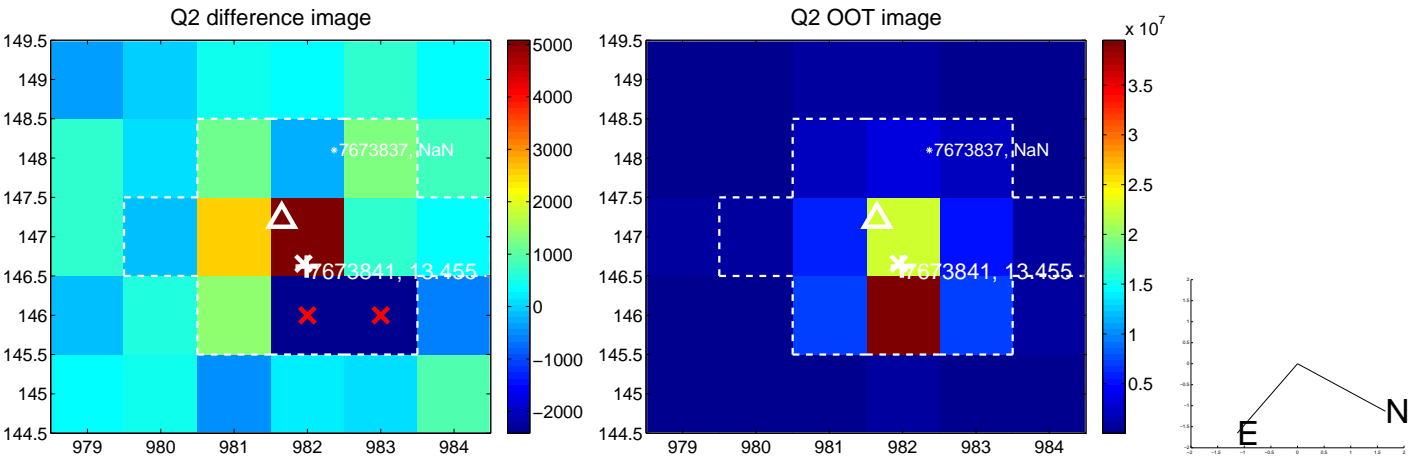
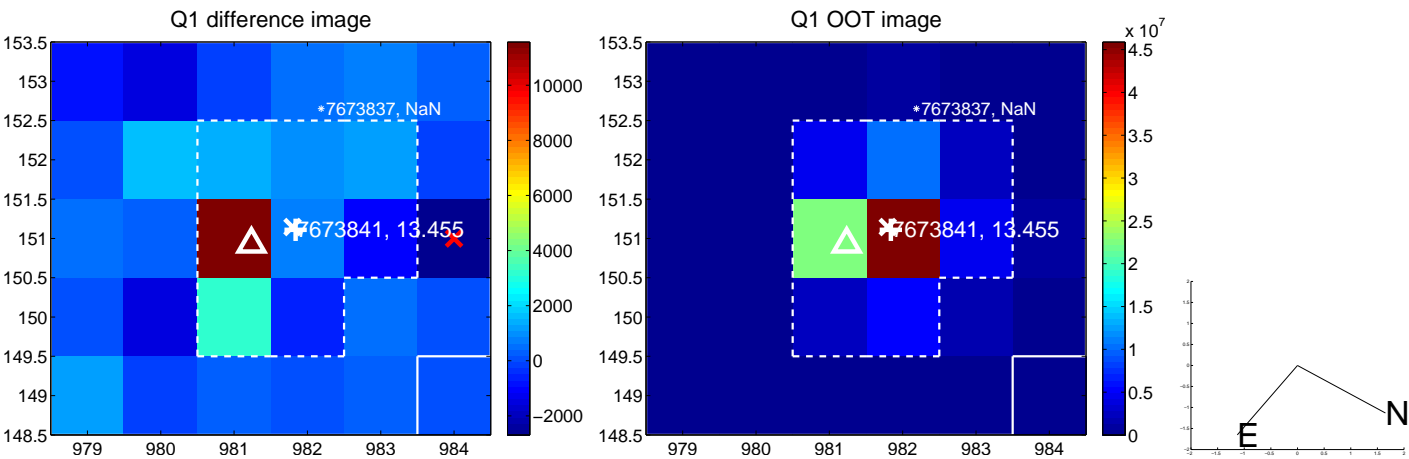
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.158 \pm 1.034$	0.15	$0.074 \pm 1.210$	$0.139 \pm 0.978$
PRF-fit source offset from KIC position	$0.453 \pm 1.005$	0.45	$0.148 \pm 1.210$	$0.428 \pm 0.978$
photometric centroid source offset	$2.12 \pm 1.26$	1.69	$-0.85 \pm 1.24$	$-1.95 \pm 1.26$

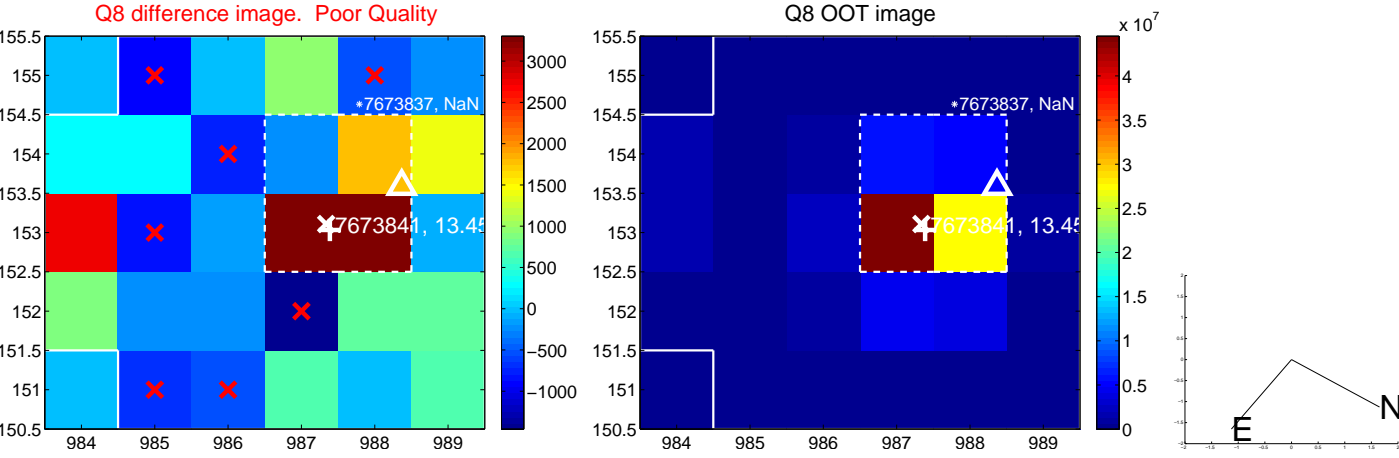
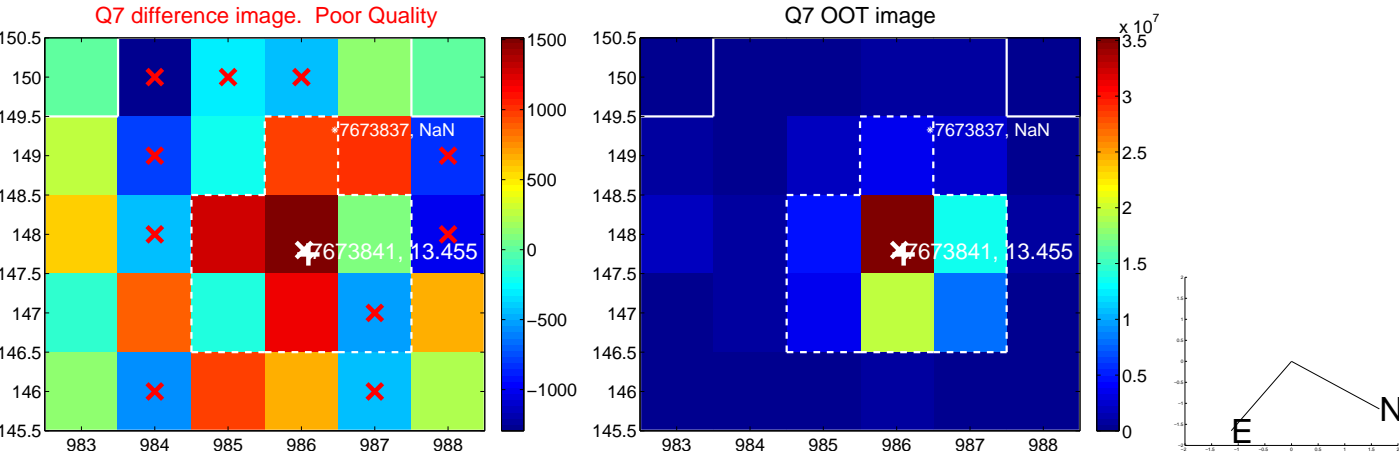
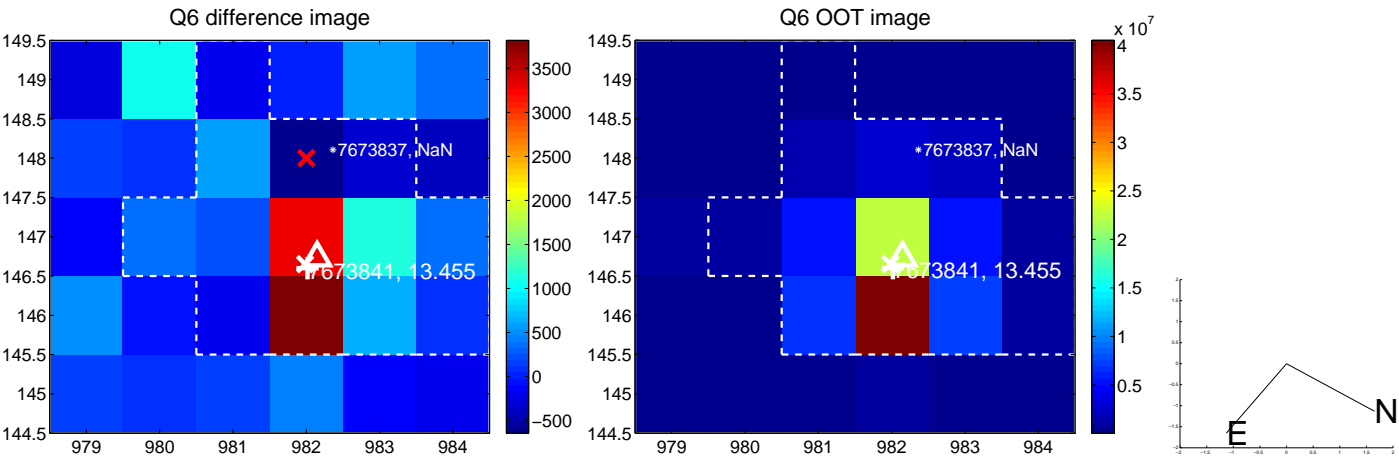
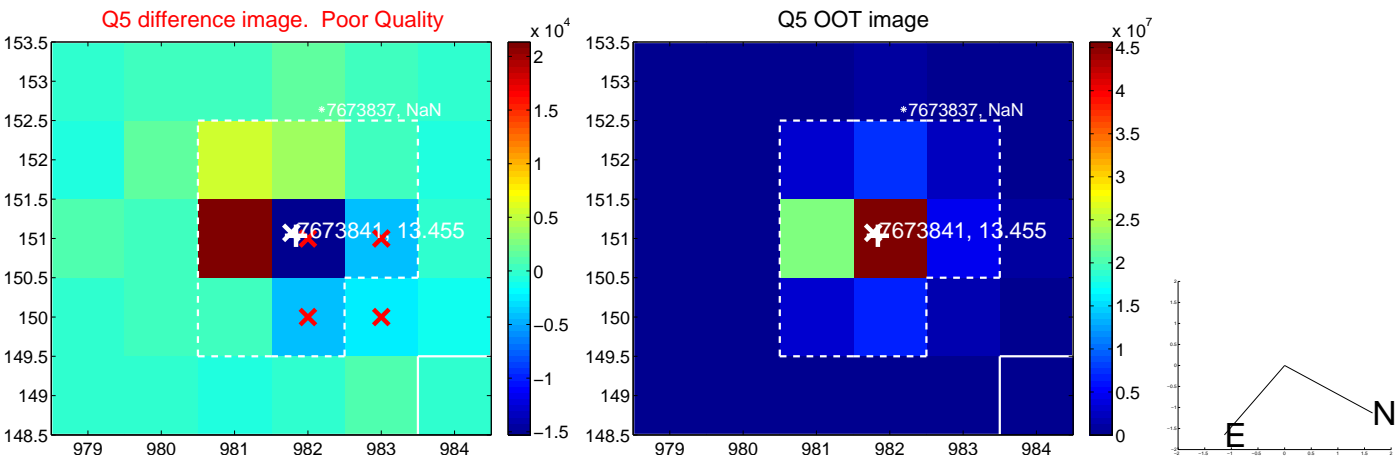


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

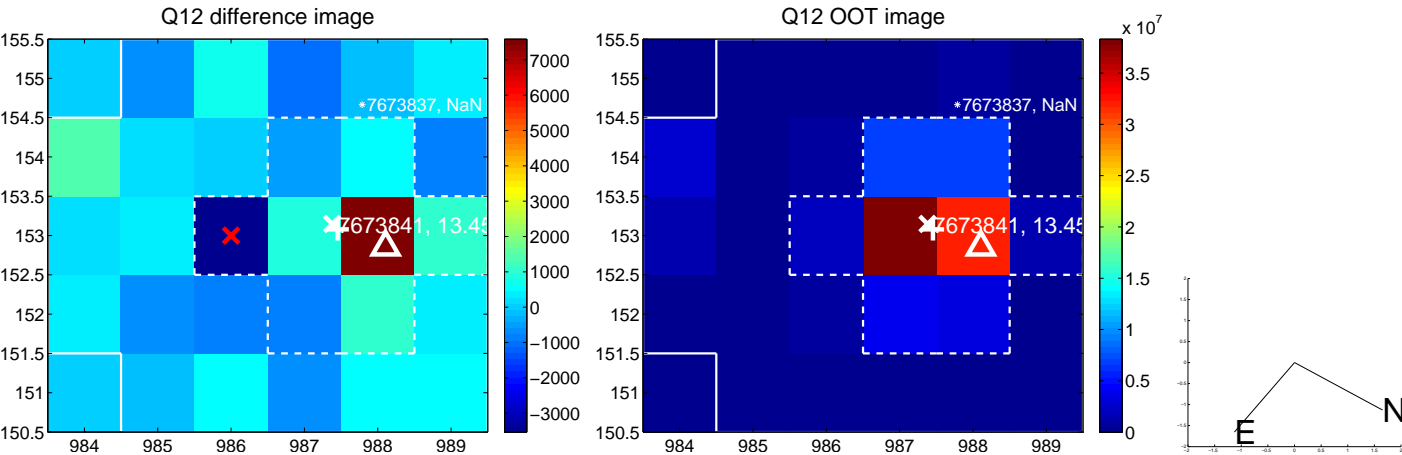
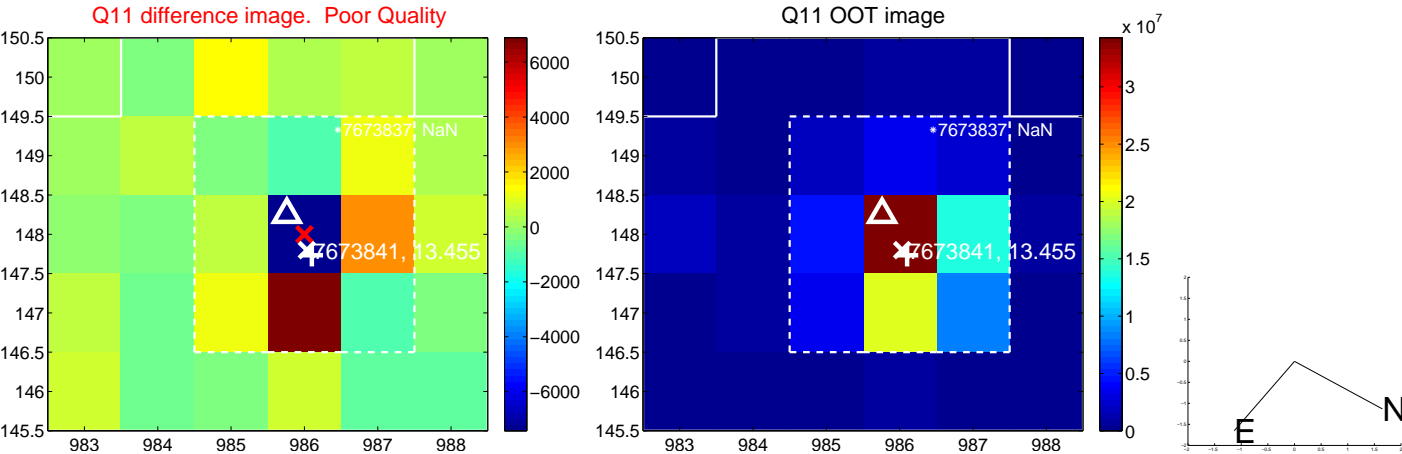
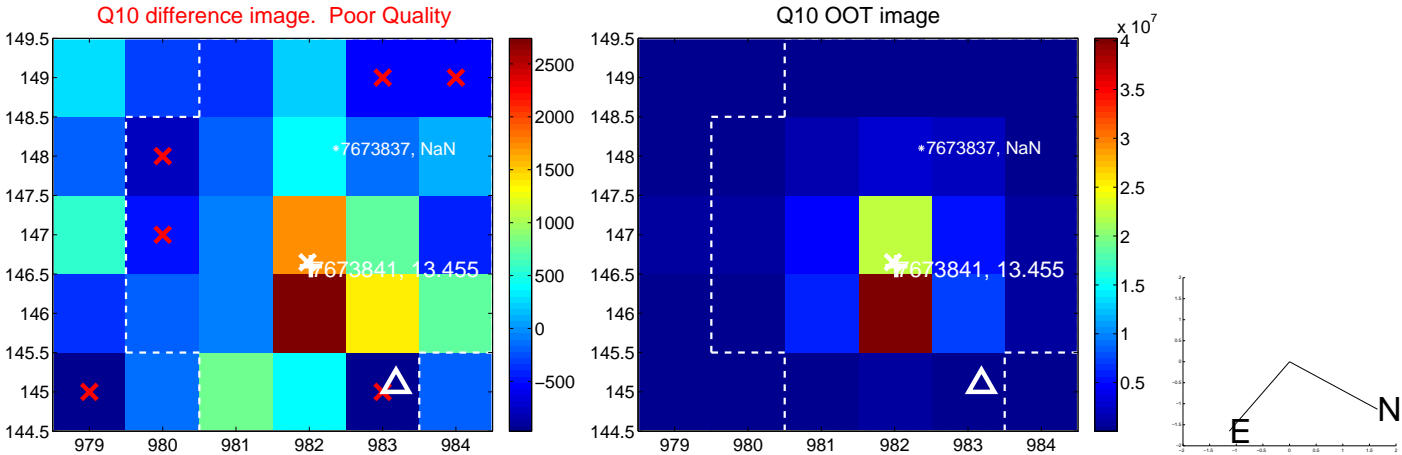
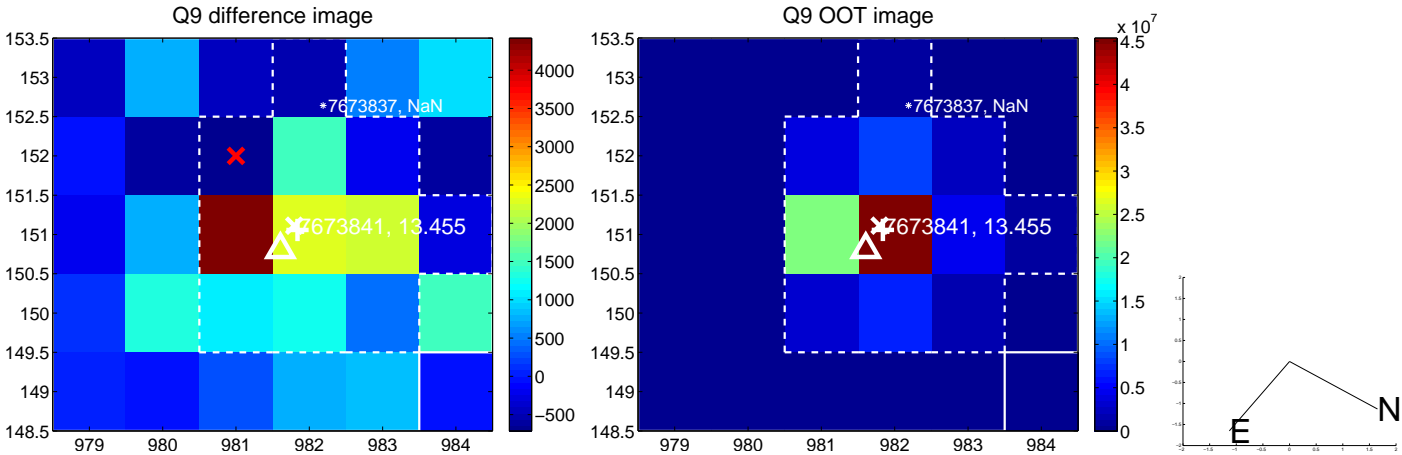
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



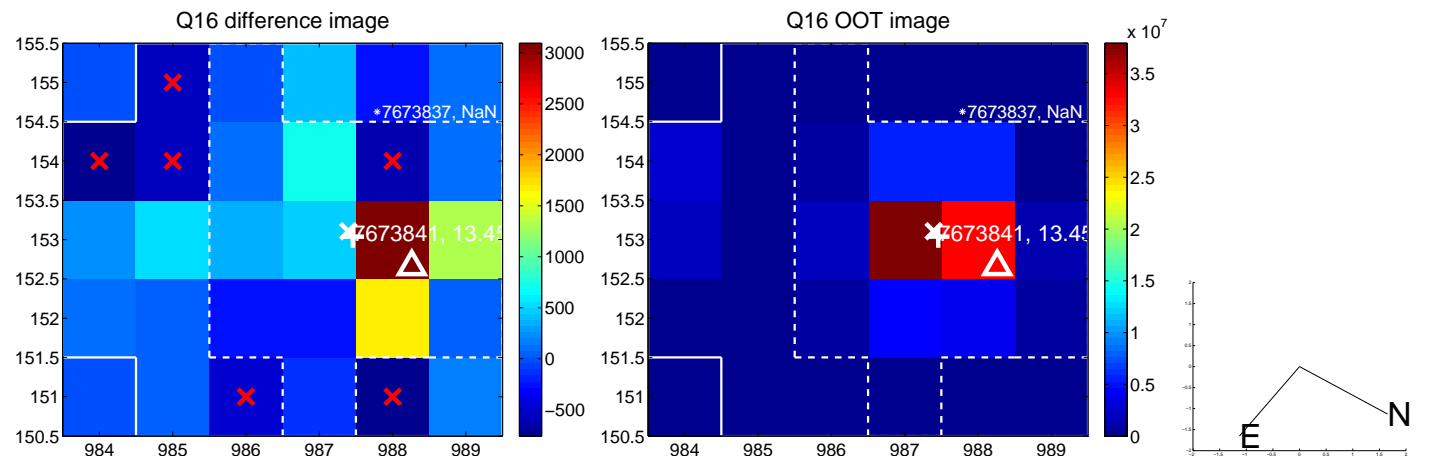
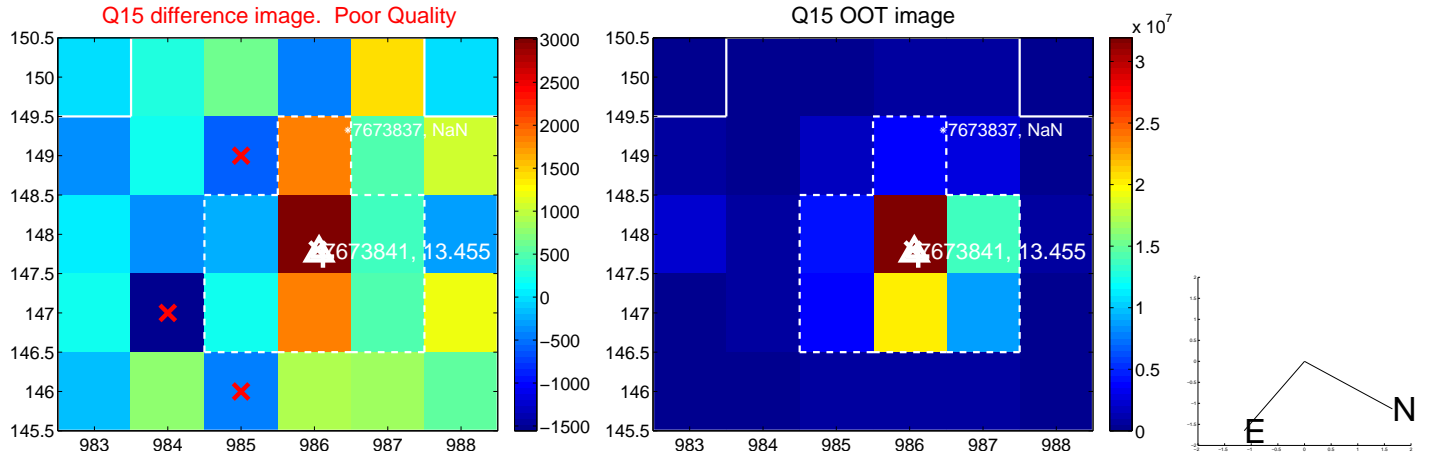
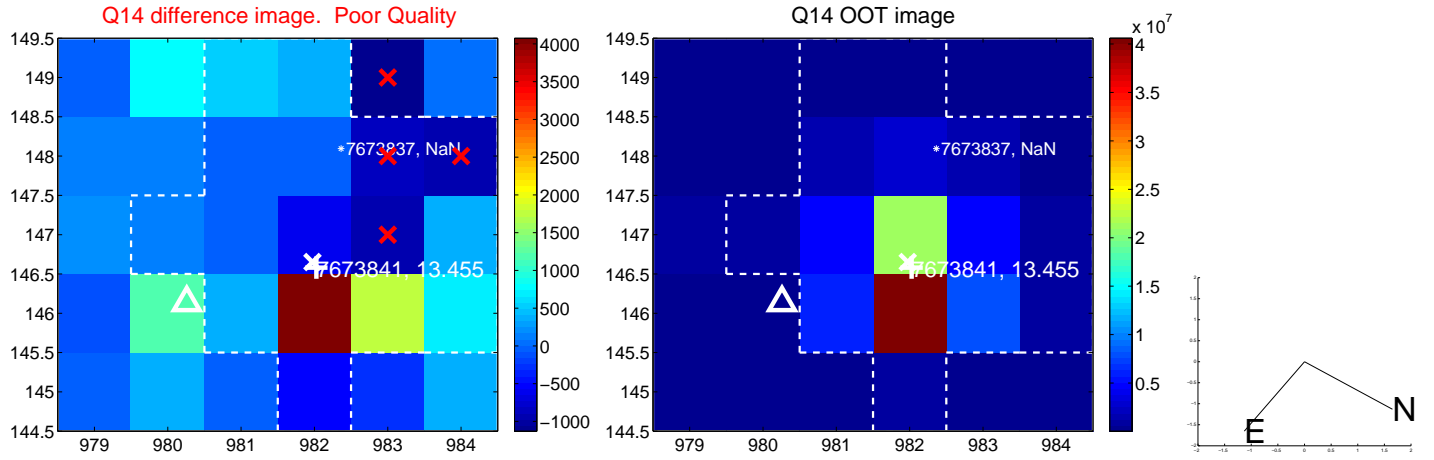
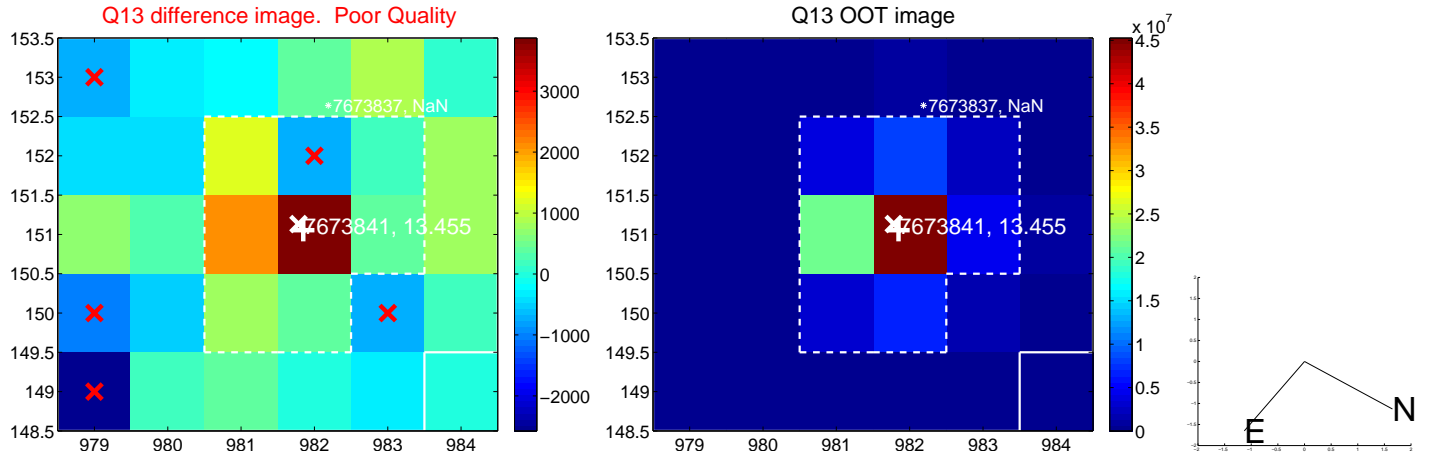
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



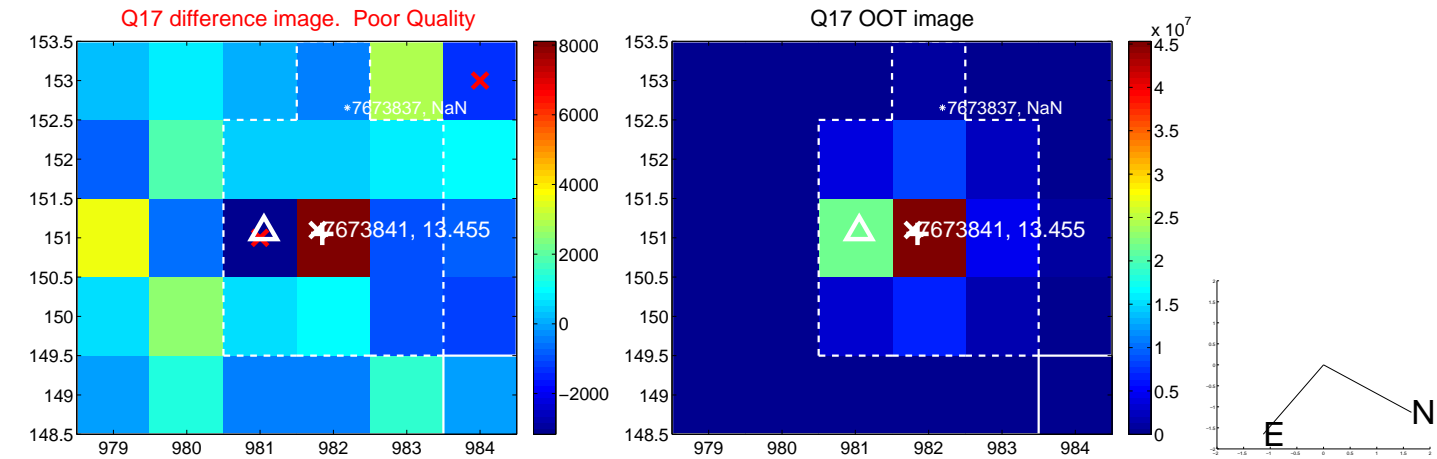
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



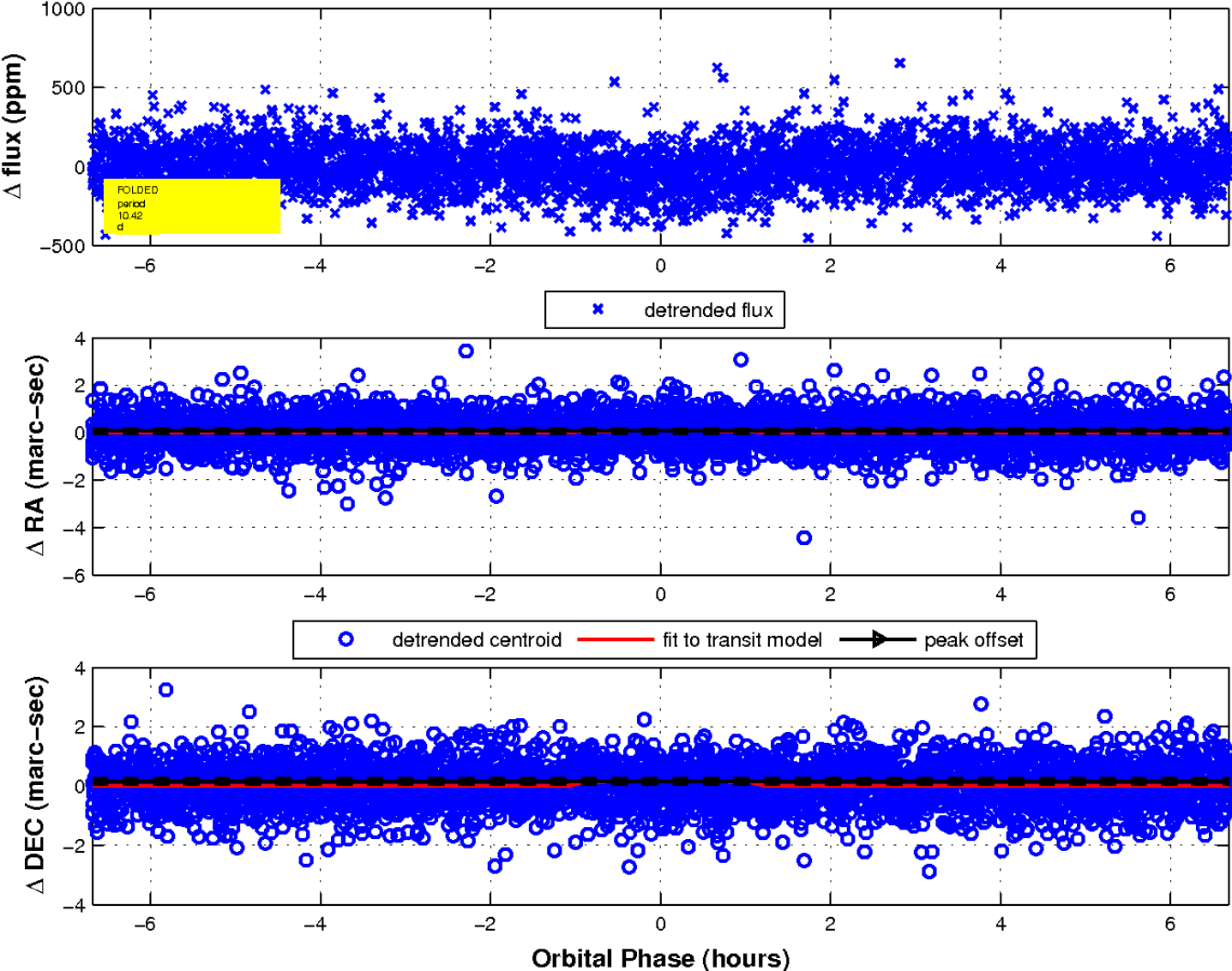
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

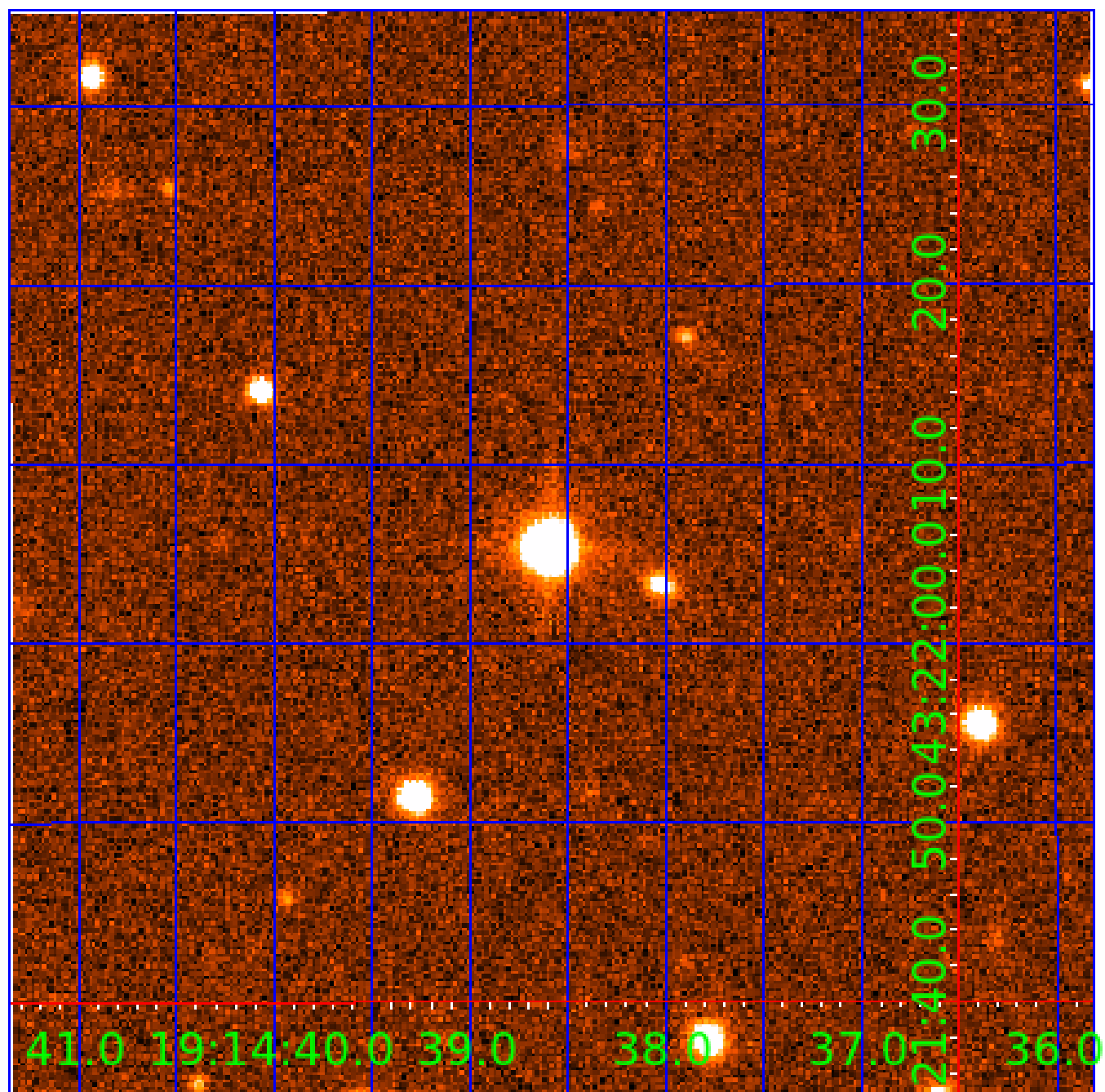


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



# KIC 007673841

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007673841-01	OBS	2585.01	5.341772	136.321963	65.4	3.737	15.3	16.6	1.14	5767	1.05	380.00
007673841-02	OBS	2585.02	10.423155	135.152839	69.5	2.229	8.9	10.0	1.14	5767	1.05	155.84
007673841-03	OBS	2585.03	7.878572	138.577085	45.1	3.771	8.1	9.3	1.14	5767	0.90	226.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007673841-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT
007673841-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007673841-03	OBS	PC	0.95	0	0	0	0	NO_COMMENT

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

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

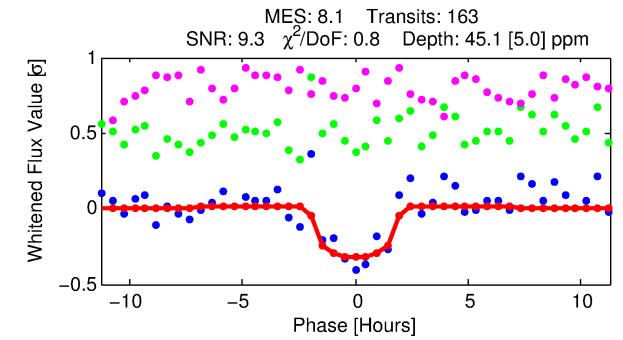
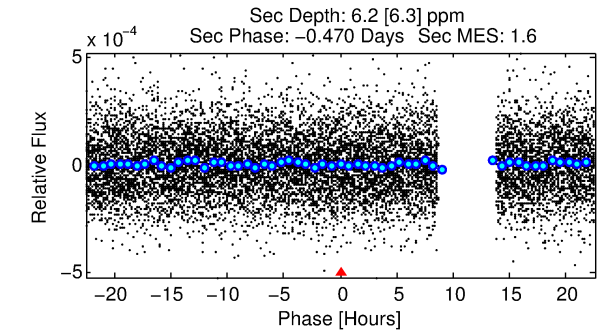
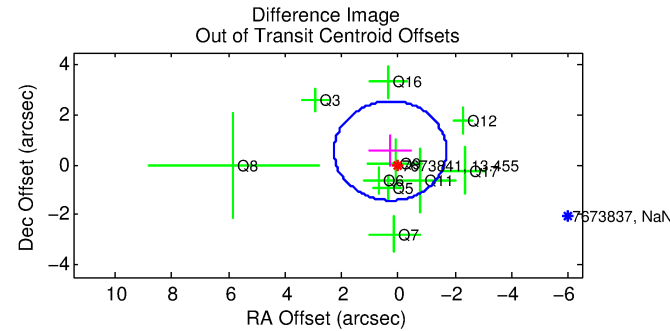
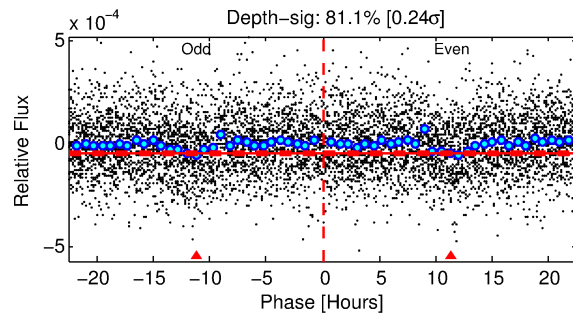
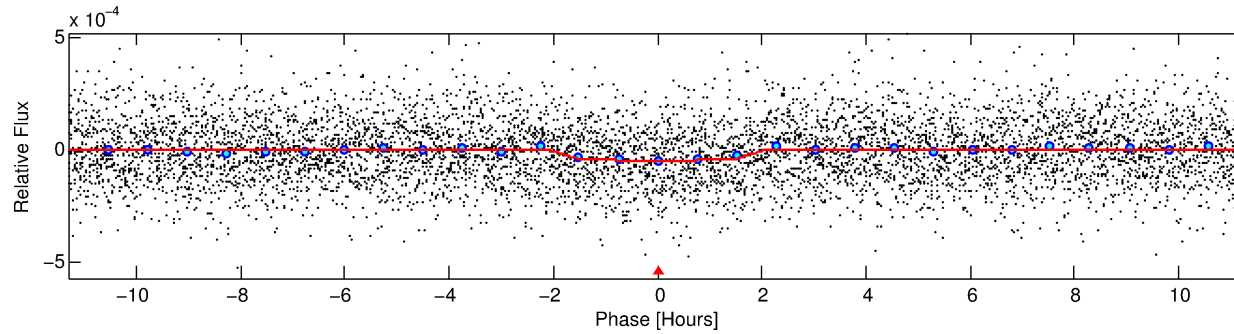
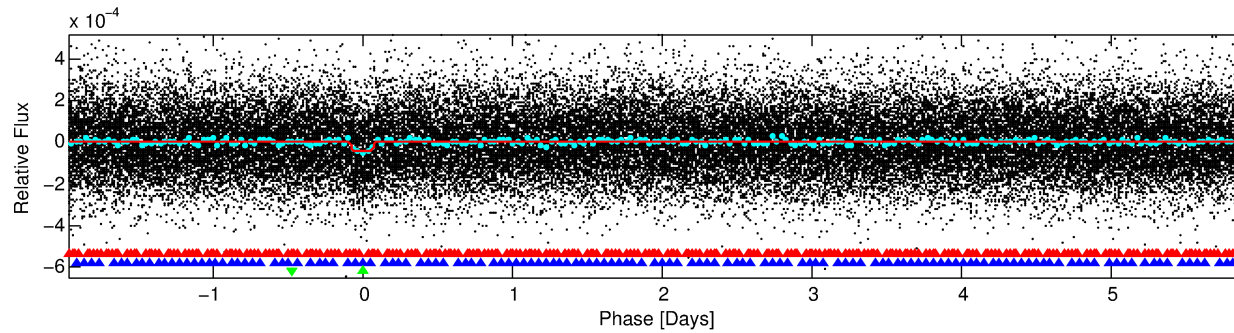
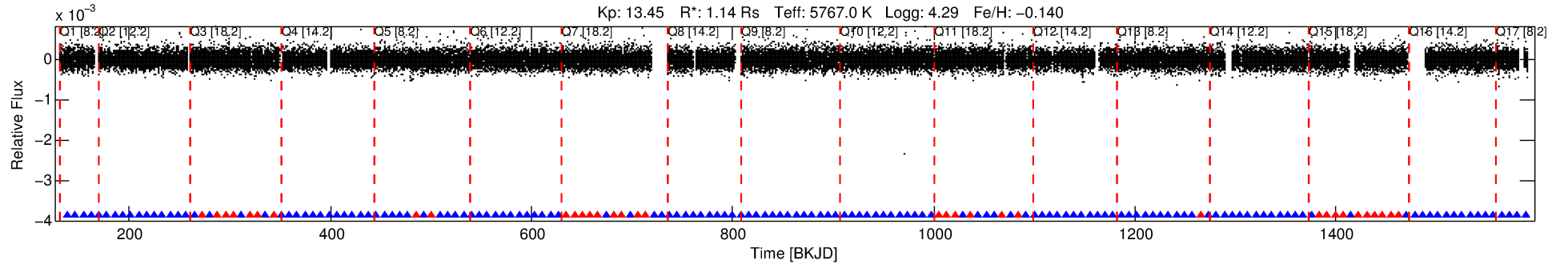
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007673841-03

No Significant Match Found

# DV One-Page Summary

KIC: 7673841 Candidate: 3 of 3 Period: 7.879 d  
KOI: K02585.03 Corr: 0.950



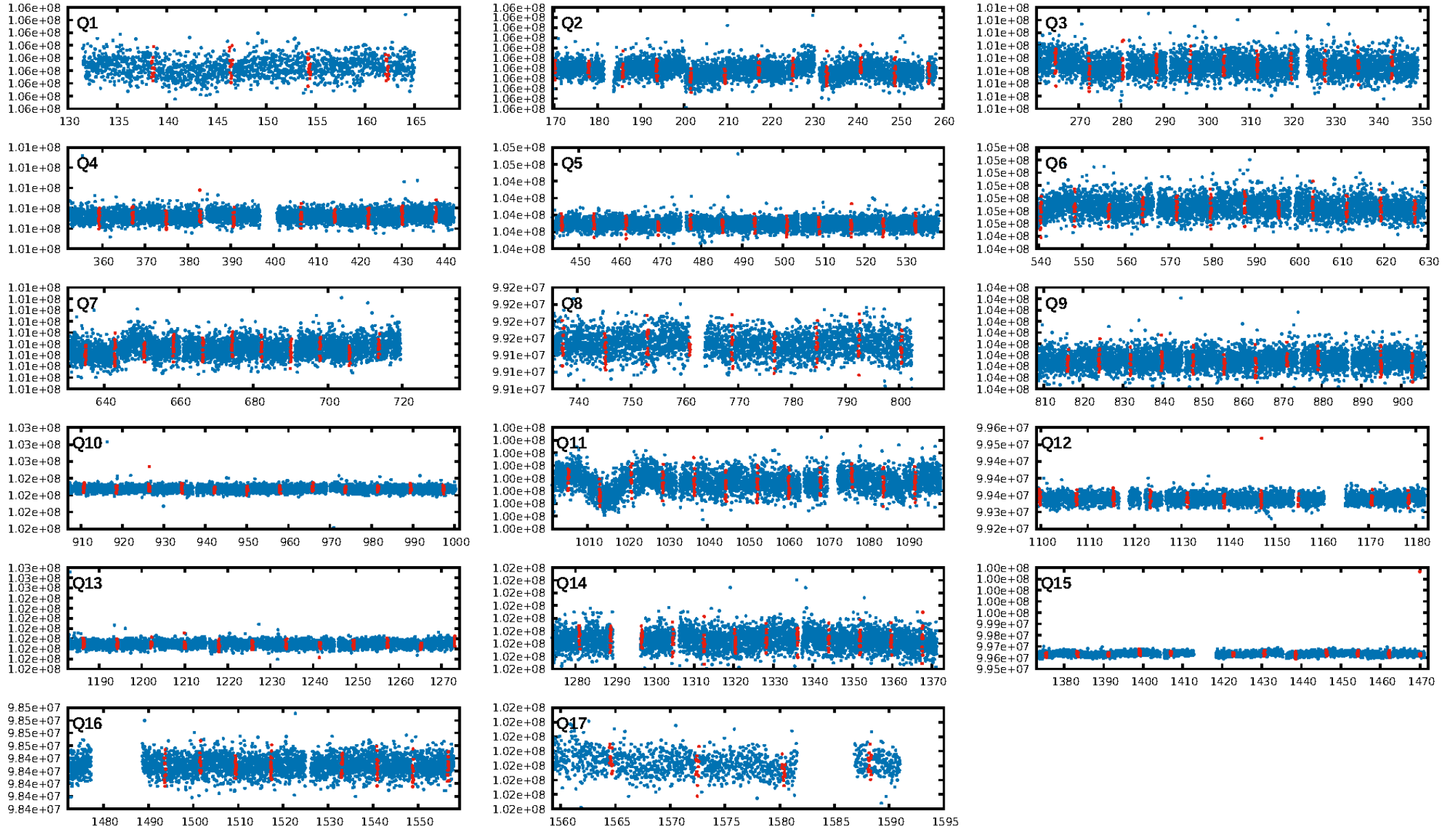
## DV Fit Results:

Period = 7.87857 [0.00008] d  
Epoch = 138.5771 [0.0077] BKJD  
Rp/R\* = 0.0073 [0.0039]  
a/R\* = 7.45 [19.32]  
b = 0.89 [0.60]  
Seff = 226.34 [64.92]  
Teq = 989 [71] K  
Rp = 0.90 [0.51] Re  
a = 0.0751 [0.0129] AU  
Ag = 23.61 [35.60] [0.63 $\sigma$ ]  
Teffp = 3371 [1251] K [1.90 $\sigma$ ]

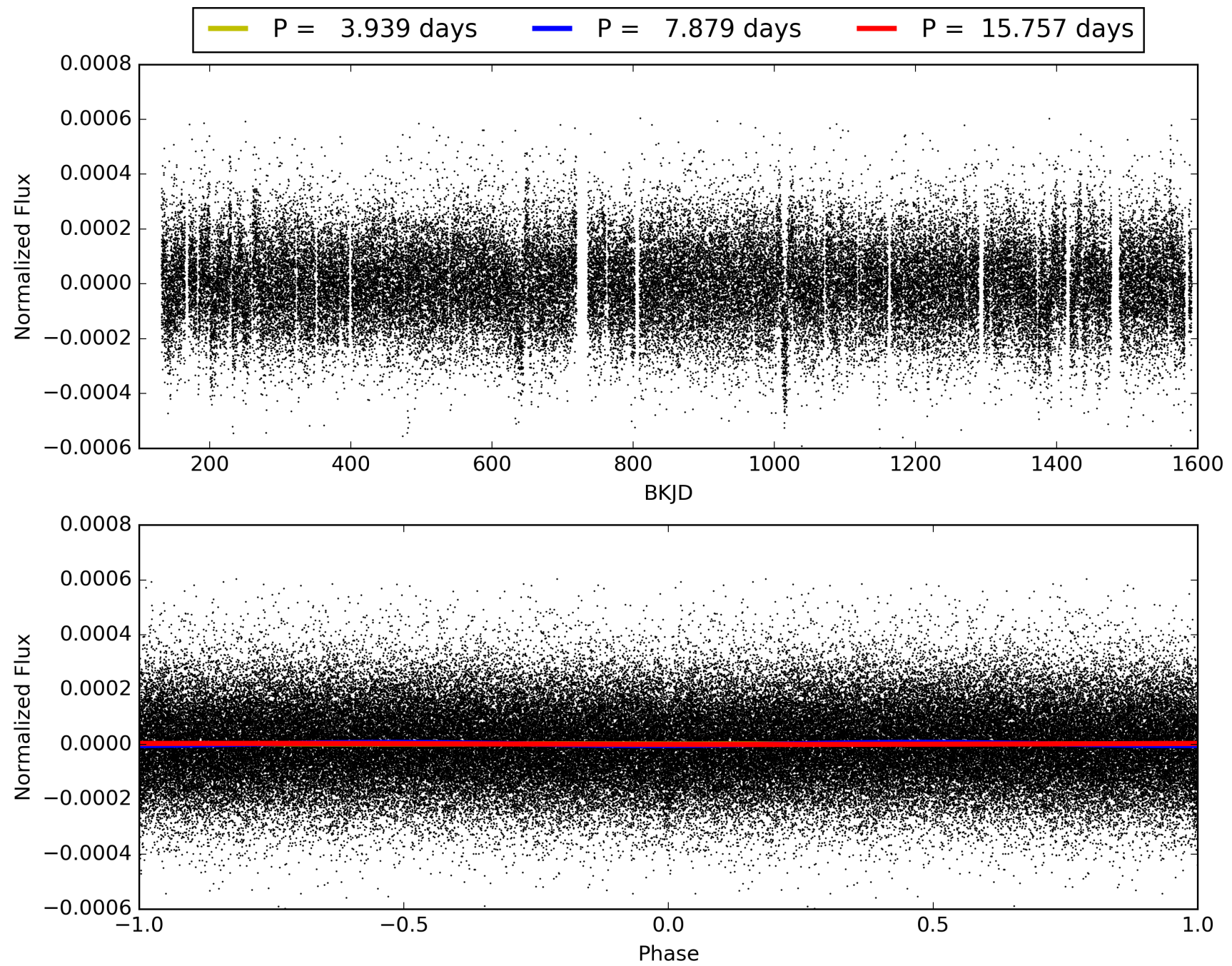
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [11.47 $\sigma$ ]  
LongPeriod-sig: 100.0% [13.94 $\sigma$ ]  
ModelChiSquare2-sig: 98.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.43e-16  
RollingBand-fgt: 0.77 [120/155]  
GhostDiagnostic-chr: 3.935  
Centroid-sig: 3.9%  
Centroid-so: 2.705 arcsec [2.09 $\sigma$ ]  
OotOffset-rm: 0.621 arcsec [0.94 $\sigma$ ]  
OotOffset-st: 1/3/3/3 [10]  
KicOffset-rm: 0.927 arcsec [1.42 $\sigma$ ]  
KicOffset-st: 1/3/3/3 [10]  
DiffImageQuality-fgm: 0.70 [7/10]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007673841-03, PDC Light Curves

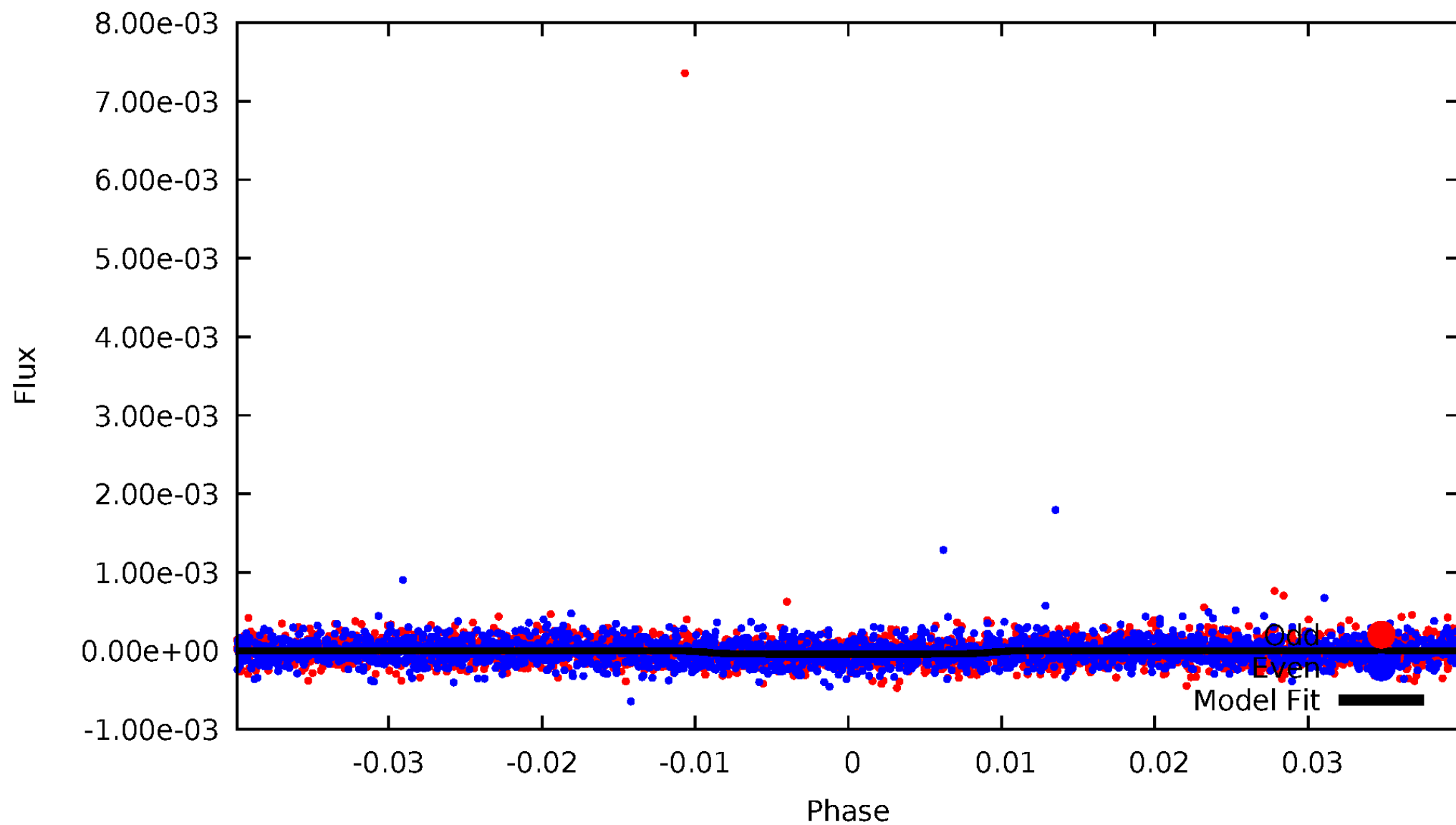


TCE 007673841-03



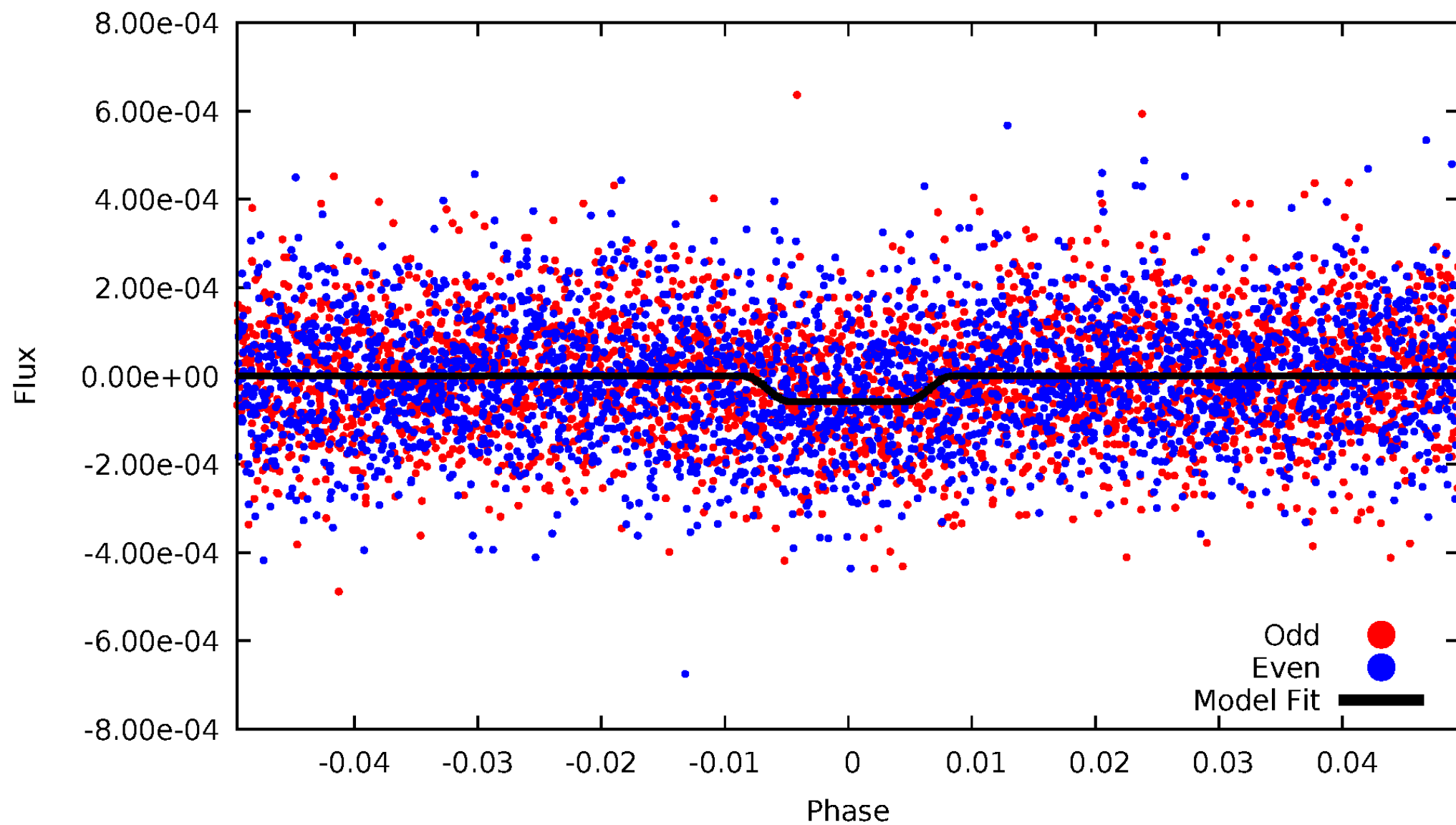
# DV Odd/Even

TCE 007673841-03



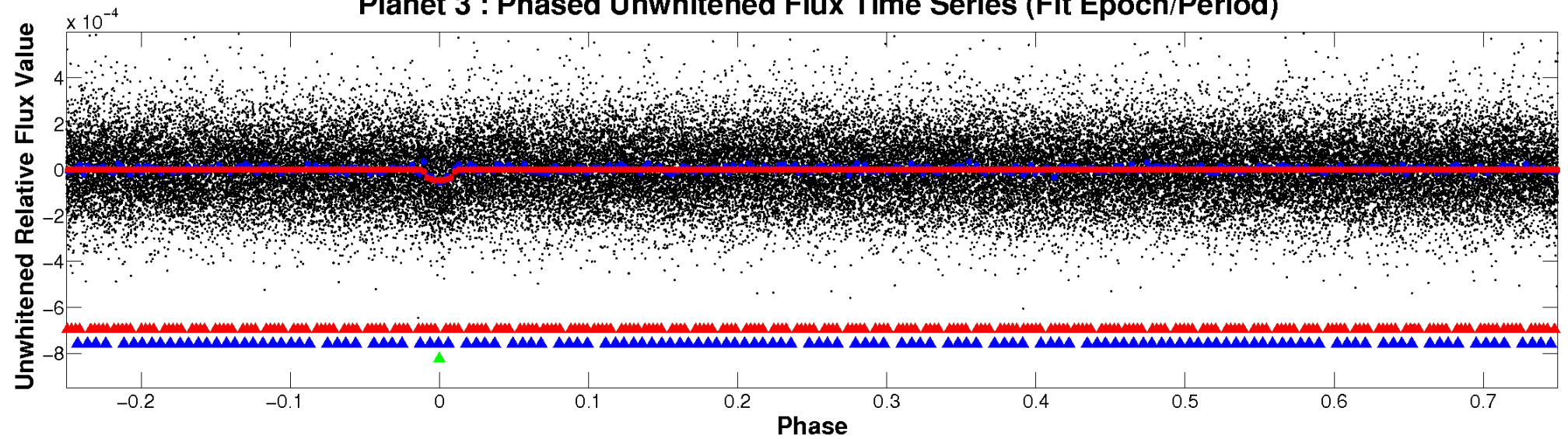
# ALT Odd/Even

TCE 007673841-03

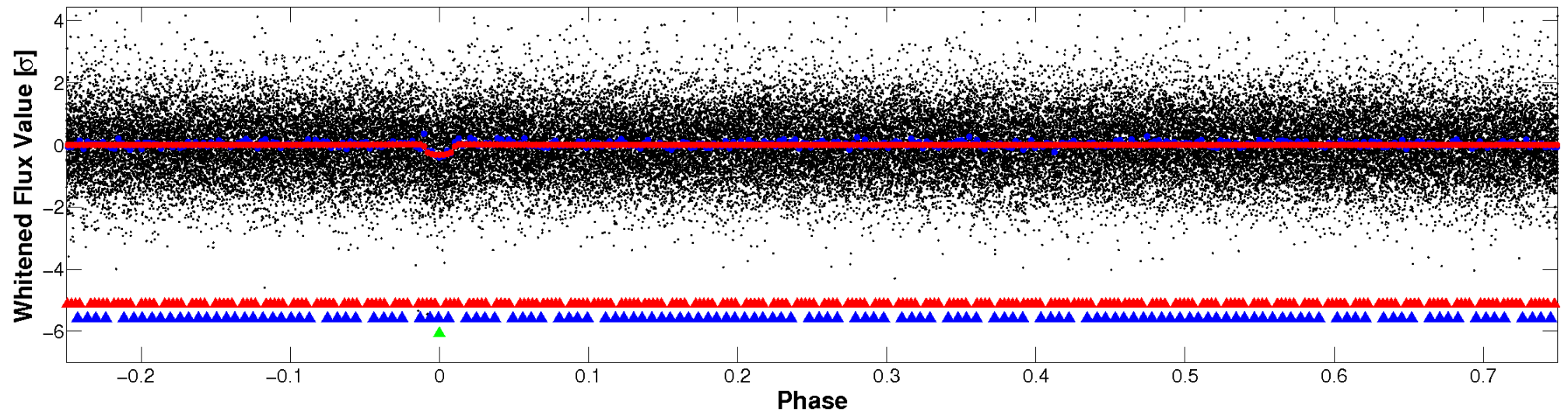


# Non-Whitened Vs. Whitened Light Curve

## Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

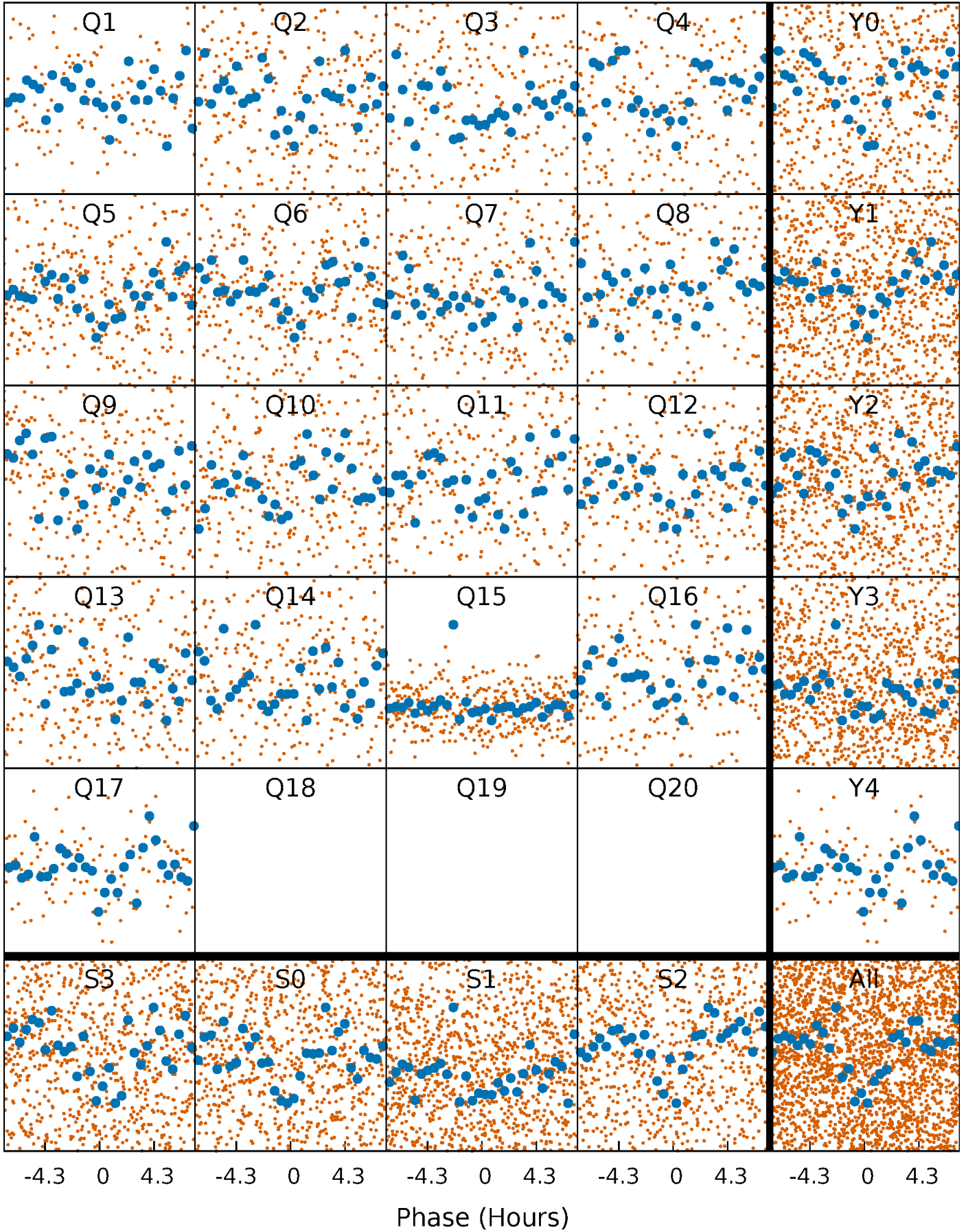


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



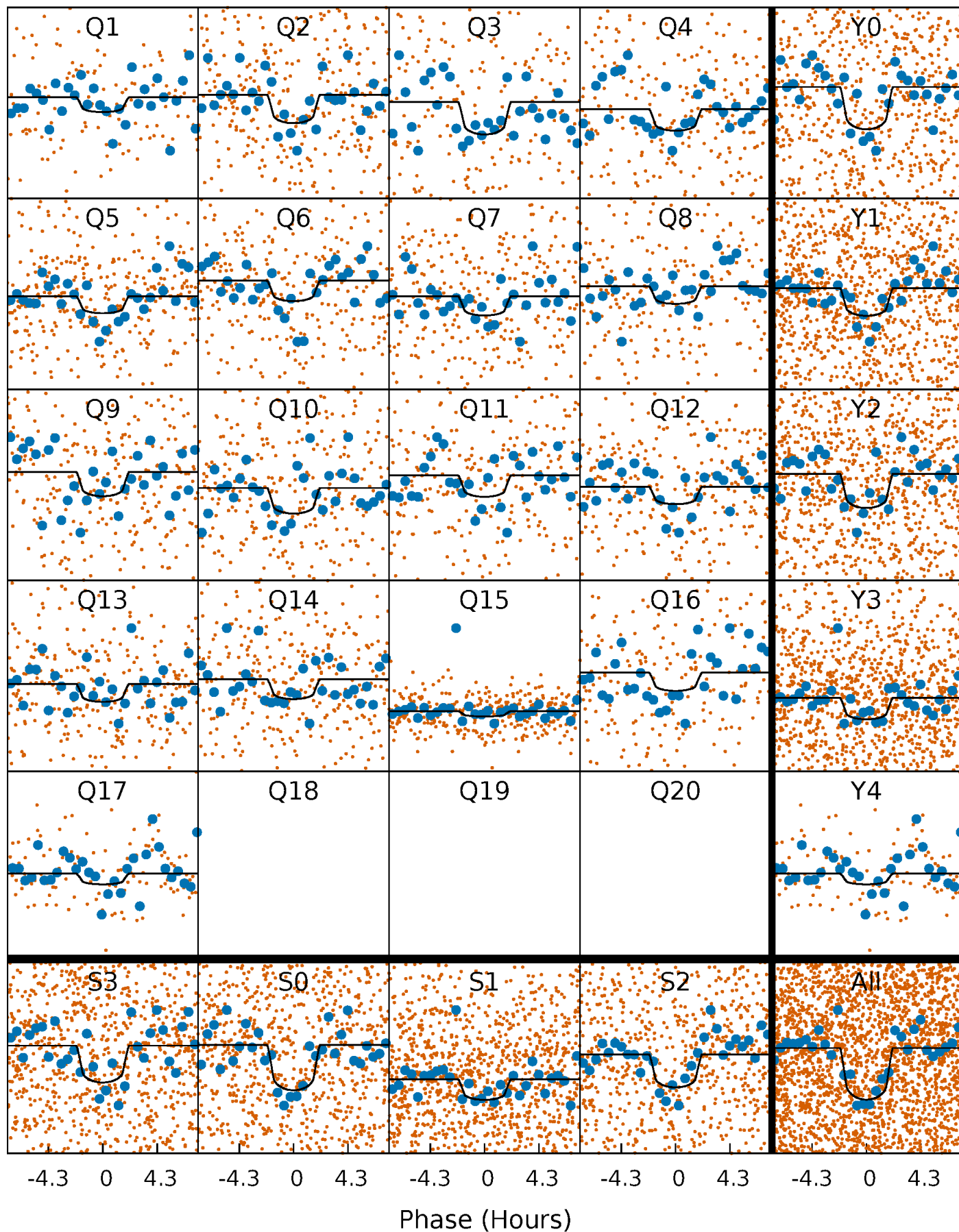
# PDC Quarter-Phased Transit Curves

TCE 007673841-03   P= 7.878572 Days    $T_0=138.577085$  (BKJD)



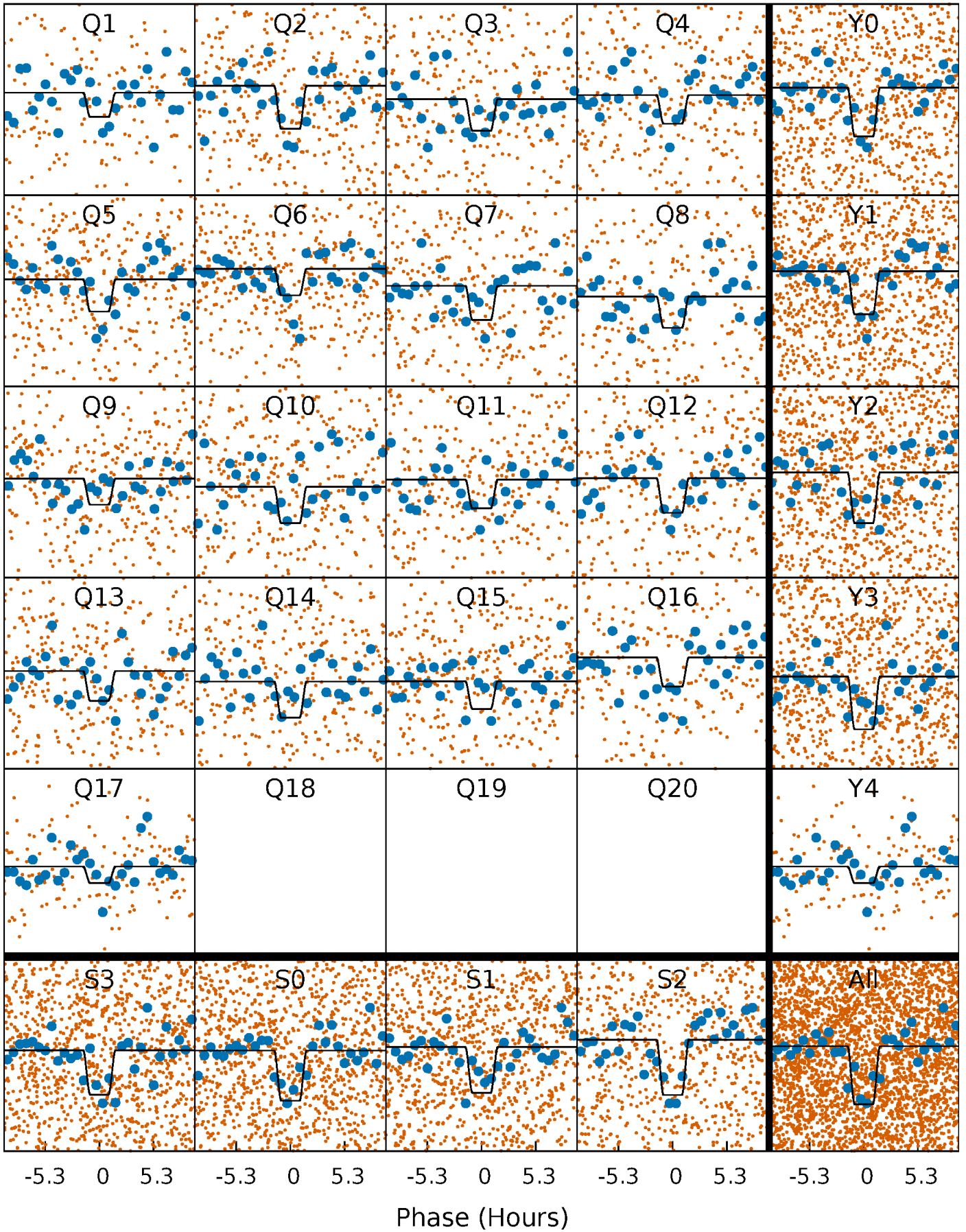
# DV Quarter-Phased Transit Curves

TCE 007673841-03 P= 7.878572 Days  $T_0=138.577085$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

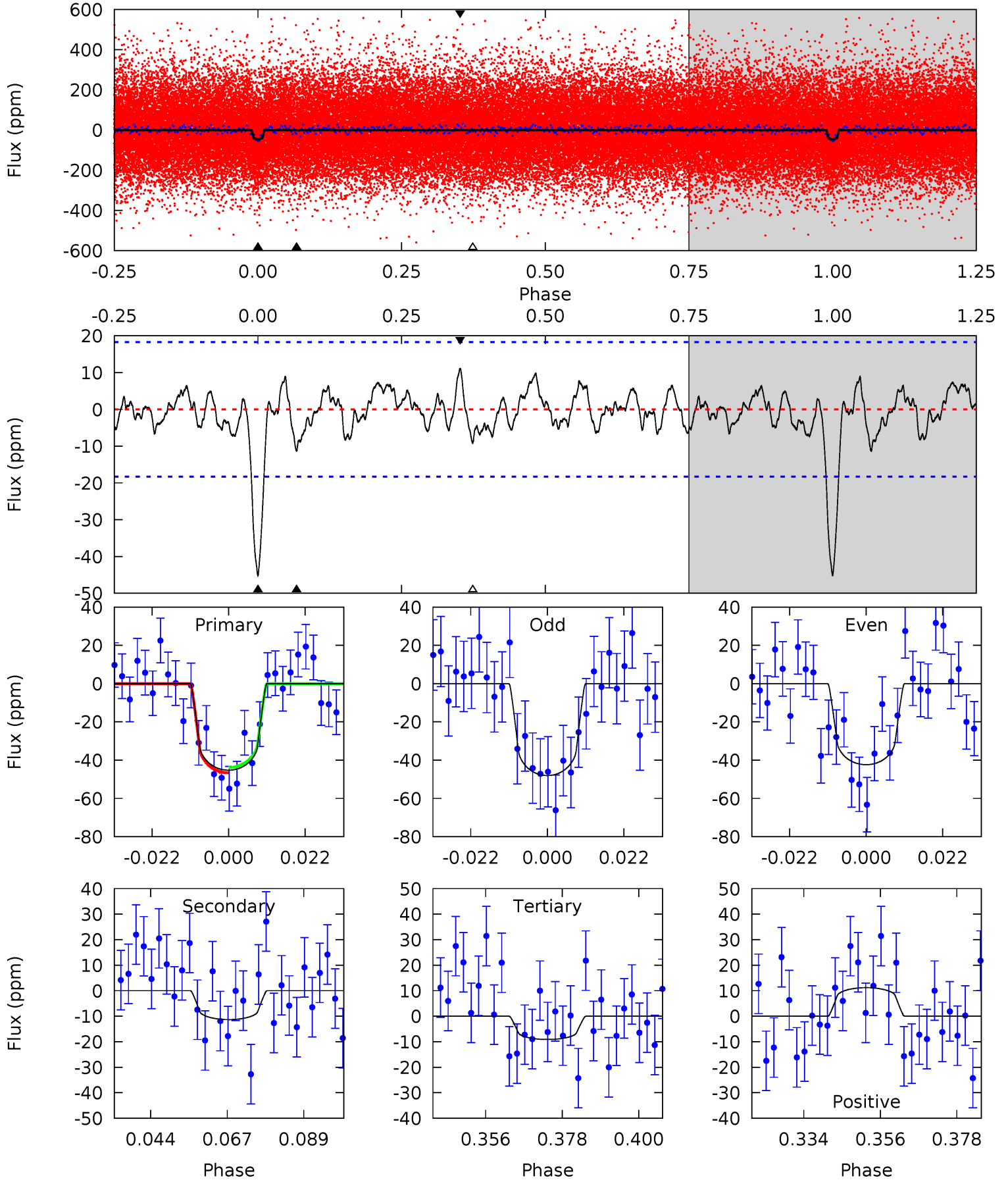
TCE 007673841-03   P= 7.878490 Days    $T_0=138.580853$  (BKJD)



# DV Model-Shift Uniqueness Test

007673841-03, P = 7.878572 Days, E = 130.698513 Days

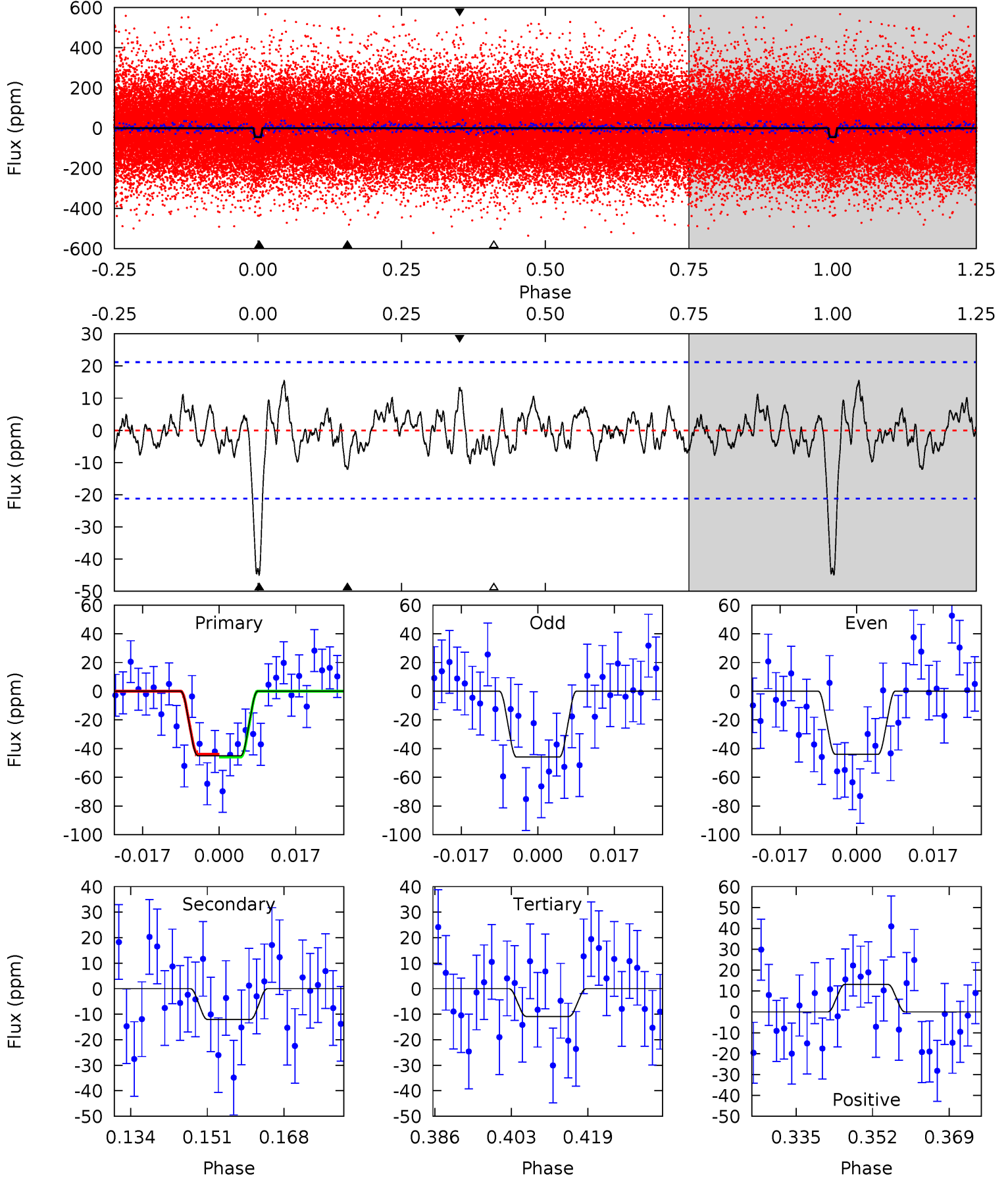
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	3.02	2.43	2.98	4.87	2.29	1.07	9.62	9.07	0.59	0.04	0.76	1.06	0.20	0.37



# Alt Model-Shift Uniqueness Test

007673841-03, P = 7.878490 Days, E = 130.702363 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
10.4	2.80	2.52	3.06	4.93	2.39	1.08	7.92	7.37	0.28	-0.27	0.23	1.02	0.26	0.22



### Stellar Parameters For KIC 007673841

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5767^{+115}_{-104}$	$4.287^{+0.162}_{-0.108}$	$-0.140^{+0.150}_{-0.150}$	$1.135^{+0.165}_{-0.202}$	$0.910^{+0.078}_{-0.052}$	$0.877^{+0.661}_{-0.273}$
	+2%/-2%	+4%/-3%	+107%/-107%	+15%/-18%	+9%/-6%	+75%/-31%
Source	SPE59	SPE59	SPE59	DSEP		

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

### Secondary Eclipse Parameters for KIC 007673841-03 / KOI 2585.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-11 \pm 4$	$0.91^{+0.47}_{-0.46}$	$1378^{+63}_{-68}$	$4120^{+1449}_{-595}$	$43^{+135}_{-26}$
Alt.	$-12 \pm 4$	$0.91^{+0.52}_{-0.41}$	$1381^{+66}_{-72}$	$4112^{+1172}_{-624}$	$41^{+100}_{-26}$

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

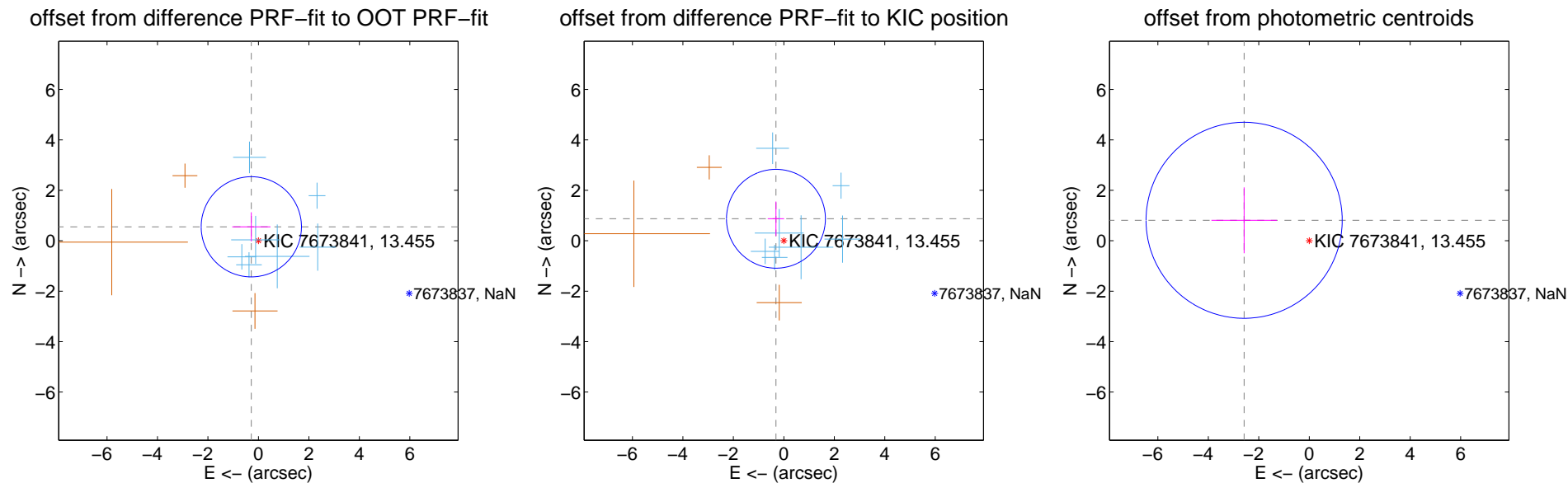
## DV Centroid Data

Supplemental centroid analysis for 007673841-03. Kepler magnitude: 13.46. Transit SNR 9.32

There are 7 quarters with good PRF difference image offsets

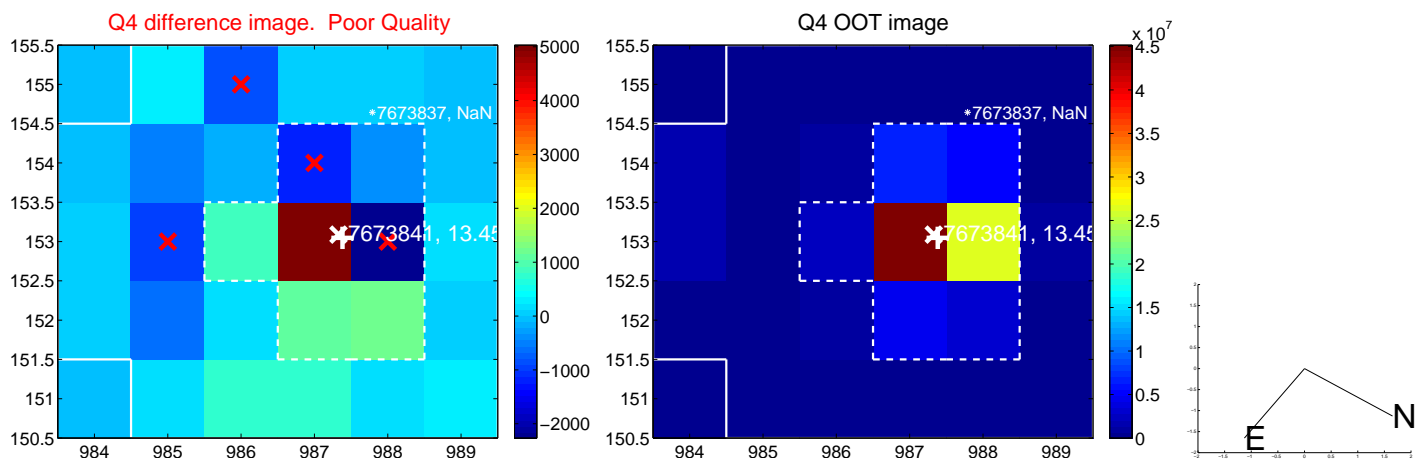
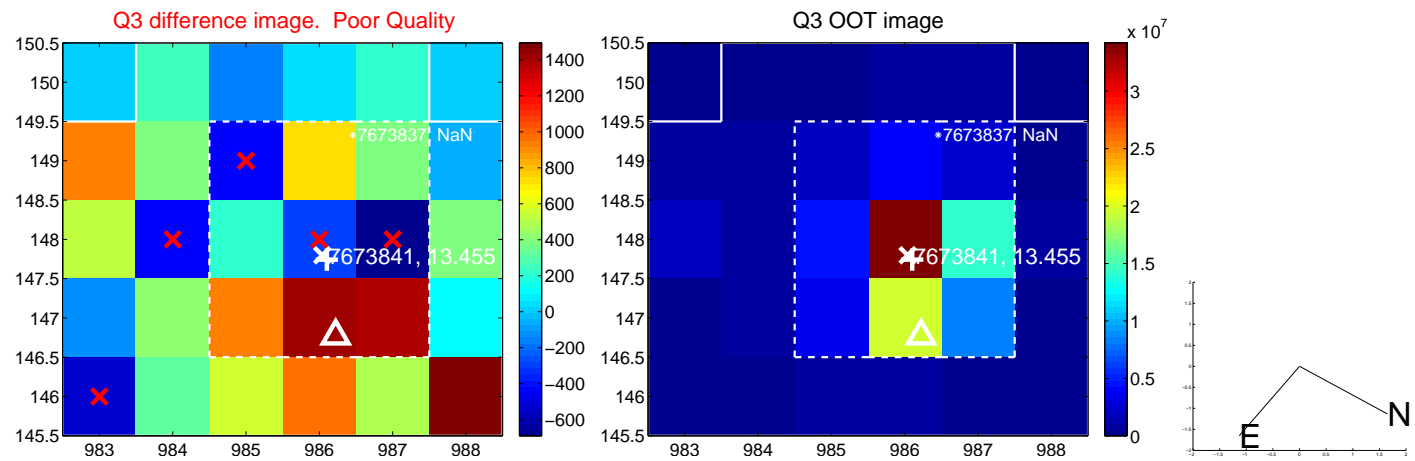
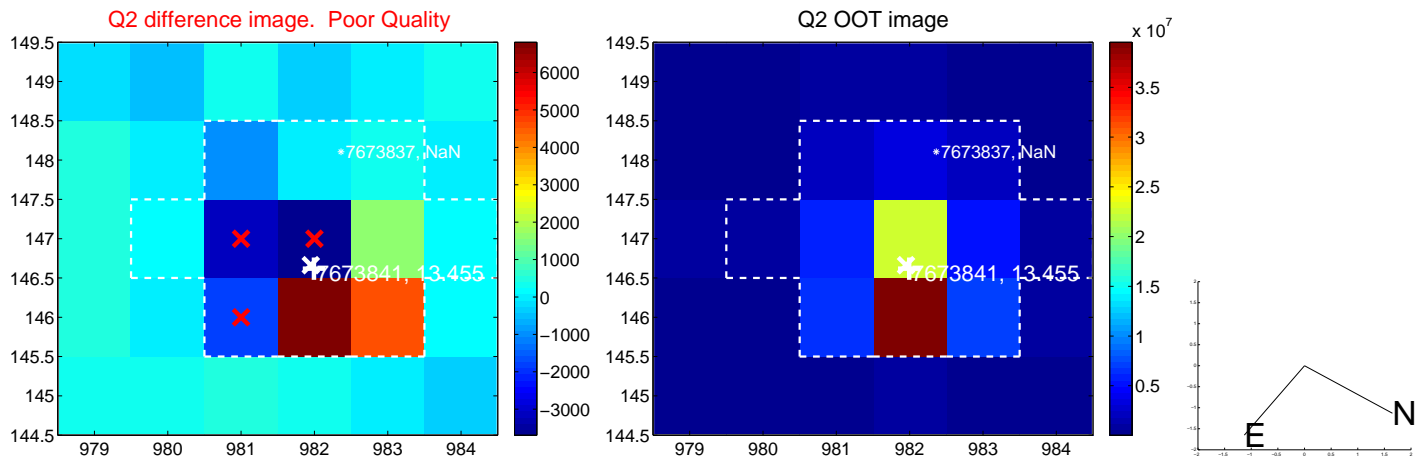
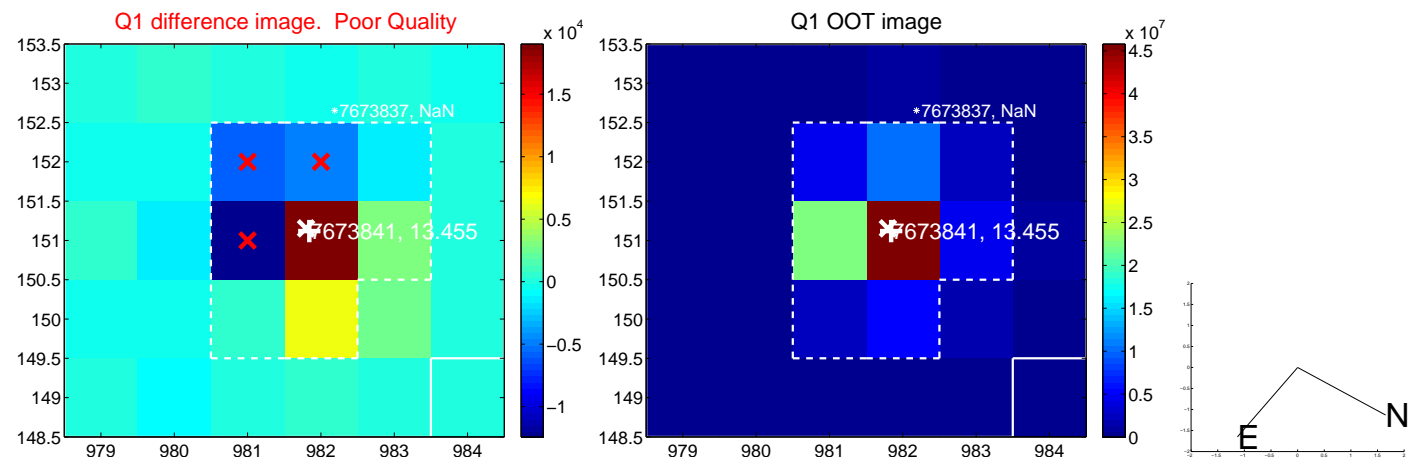
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.621 \pm 0.662$	0.94	$0.282 \pm 0.759$	$0.554 \pm 0.577$
PRF-fit source offset from KIC position	$0.927 \pm 0.653$	1.42	$0.313 \pm 0.324$	$0.872 \pm 0.684$
photometric centroid source offset	$2.71 \pm 1.30$	2.09	$2.58 \pm 1.29$	$0.81 \pm 1.31$

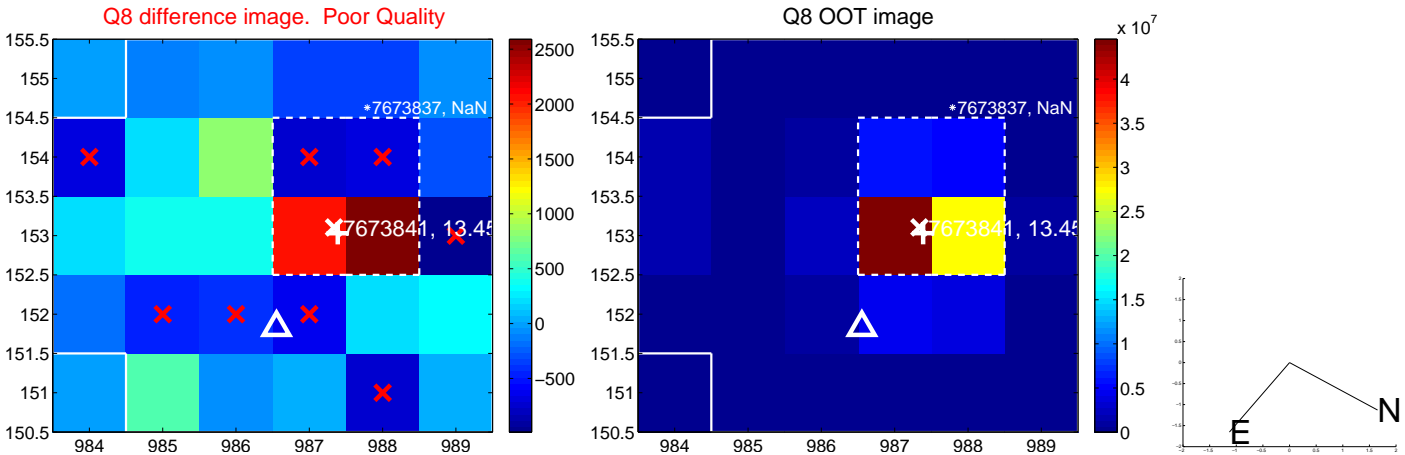
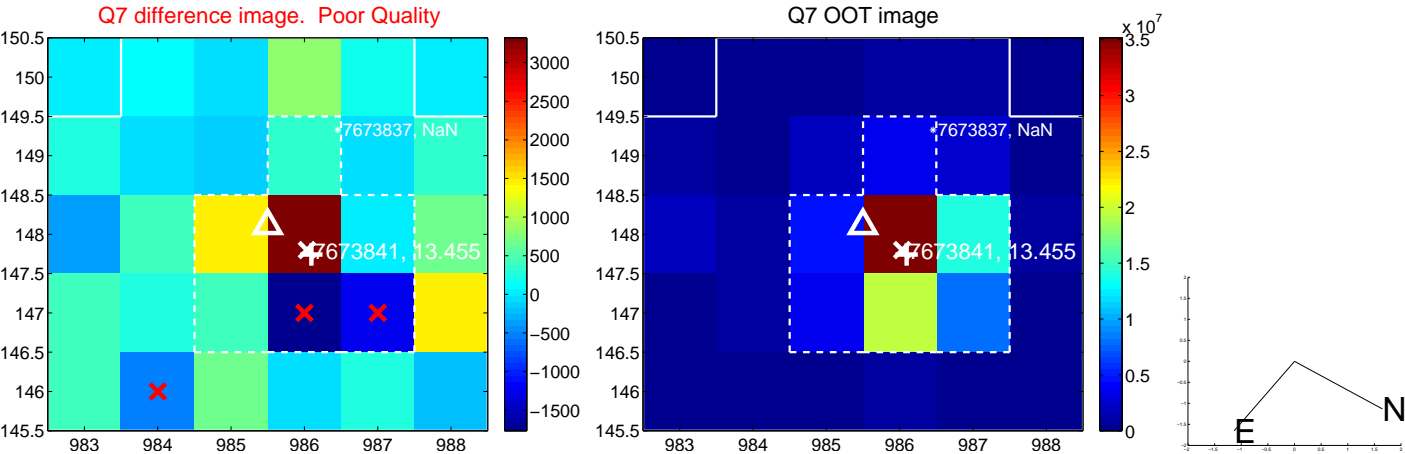
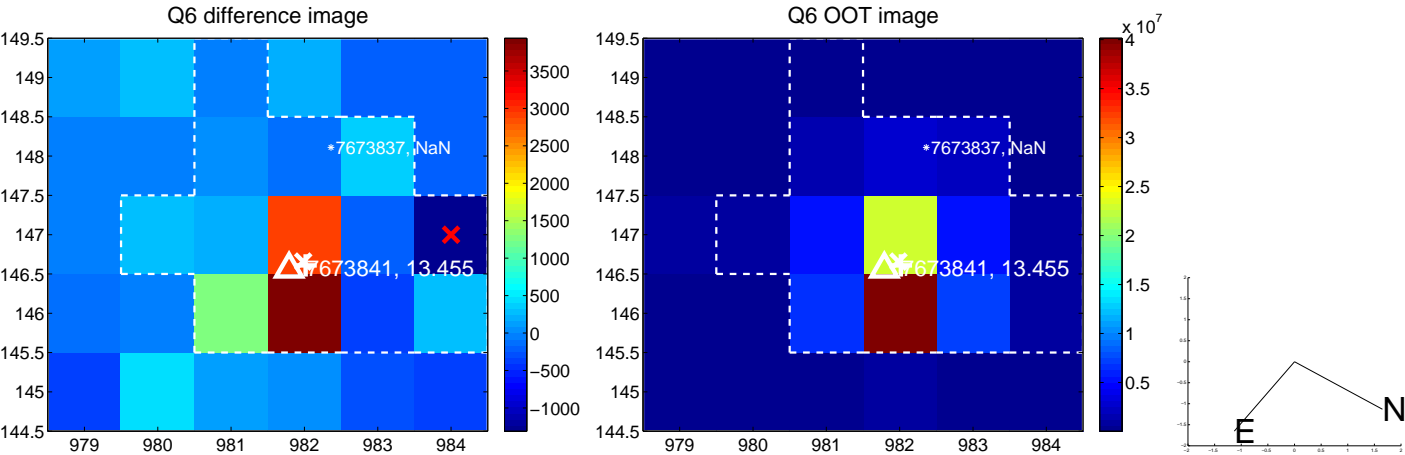
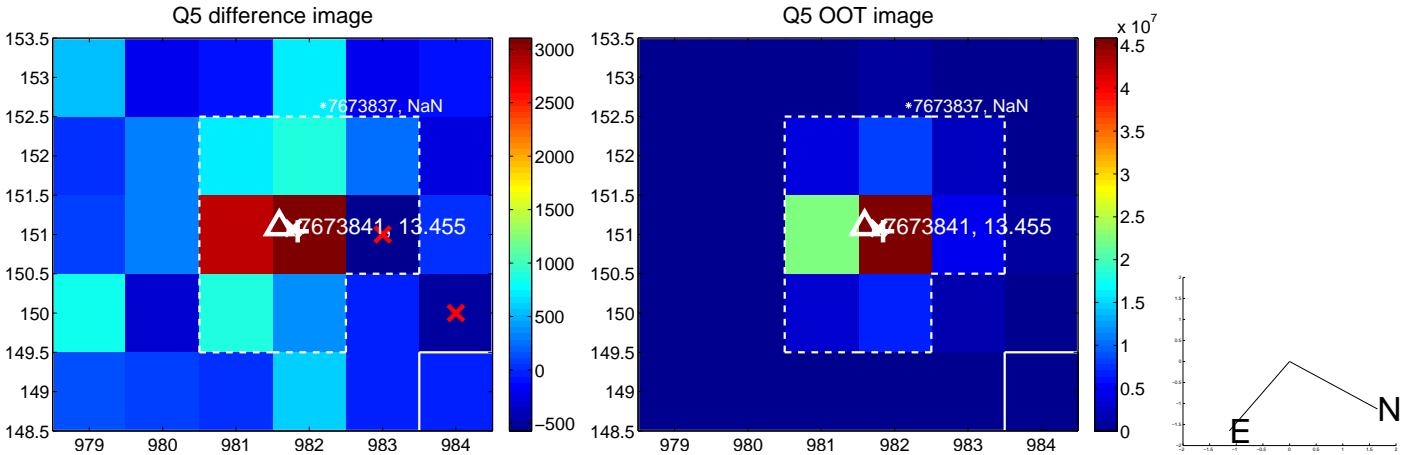


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

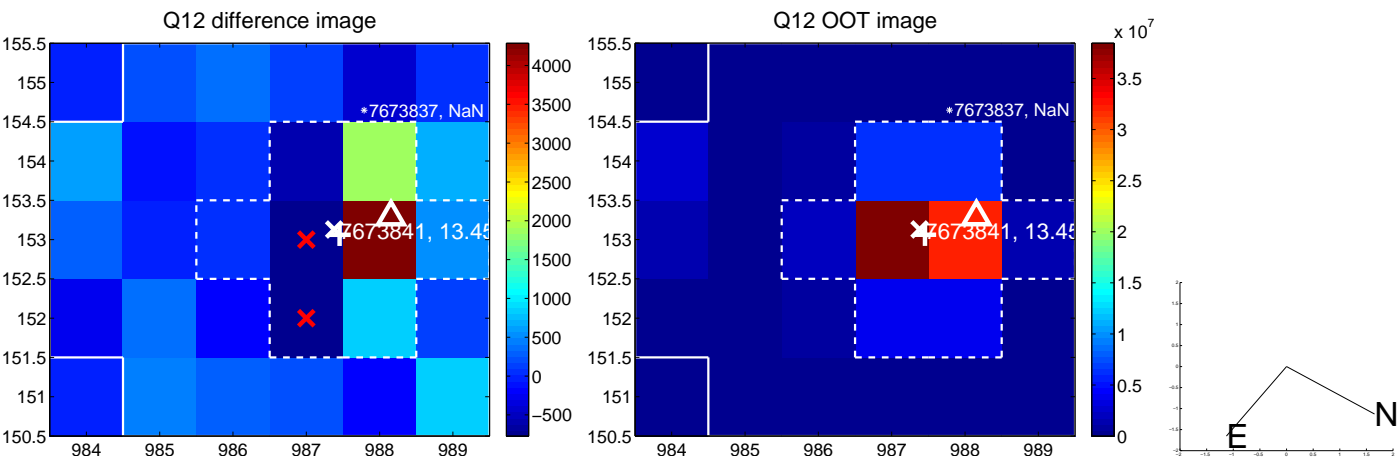
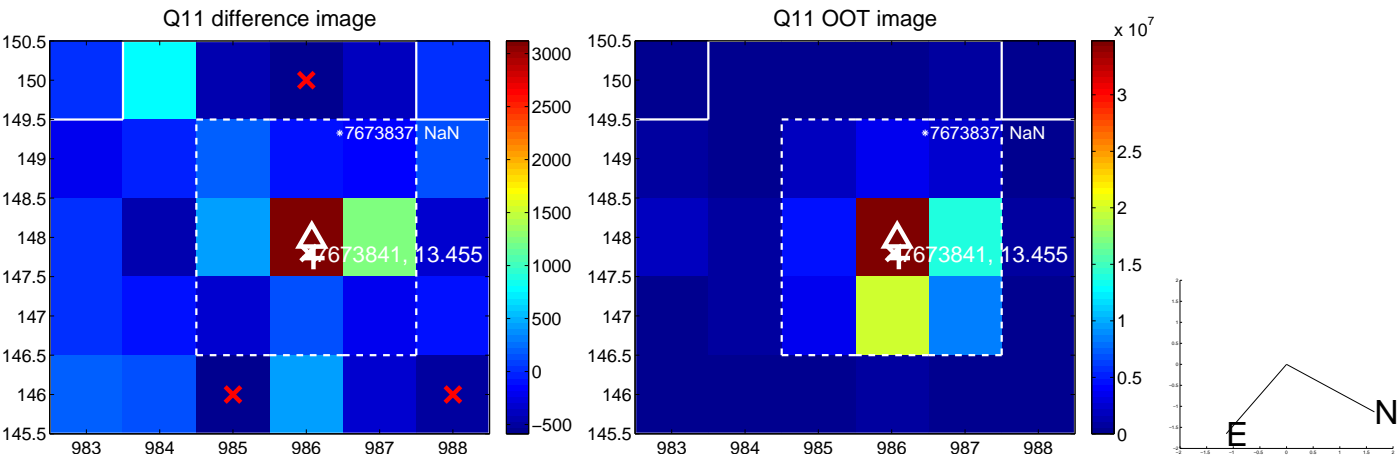
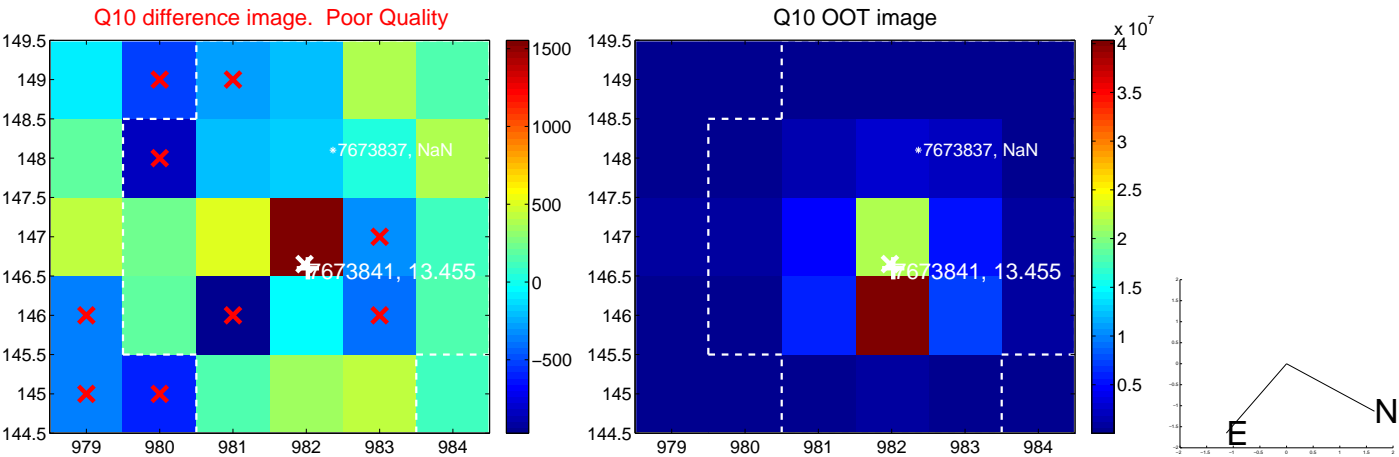
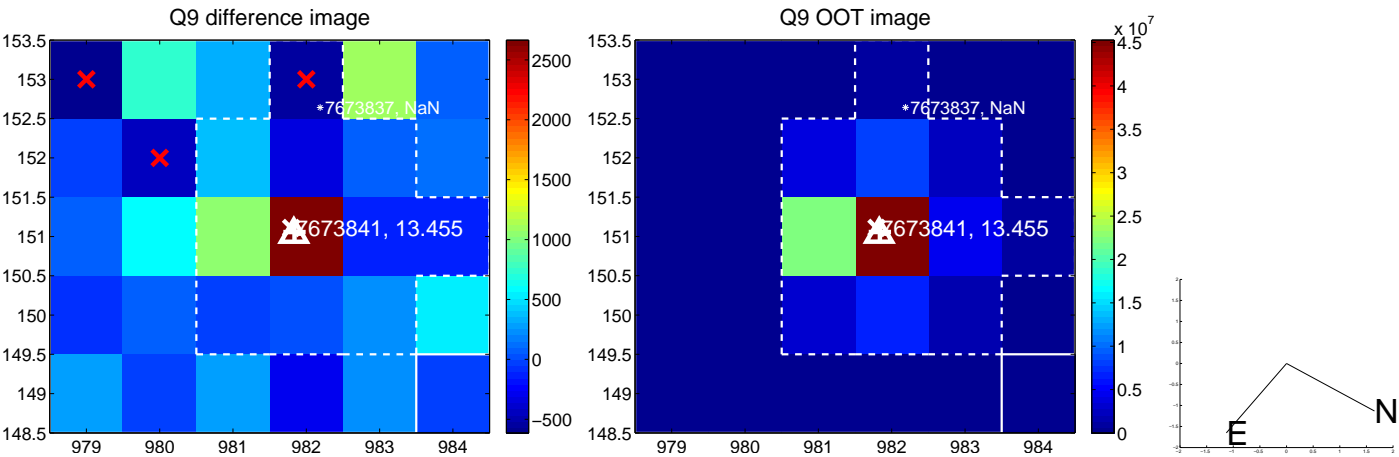
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



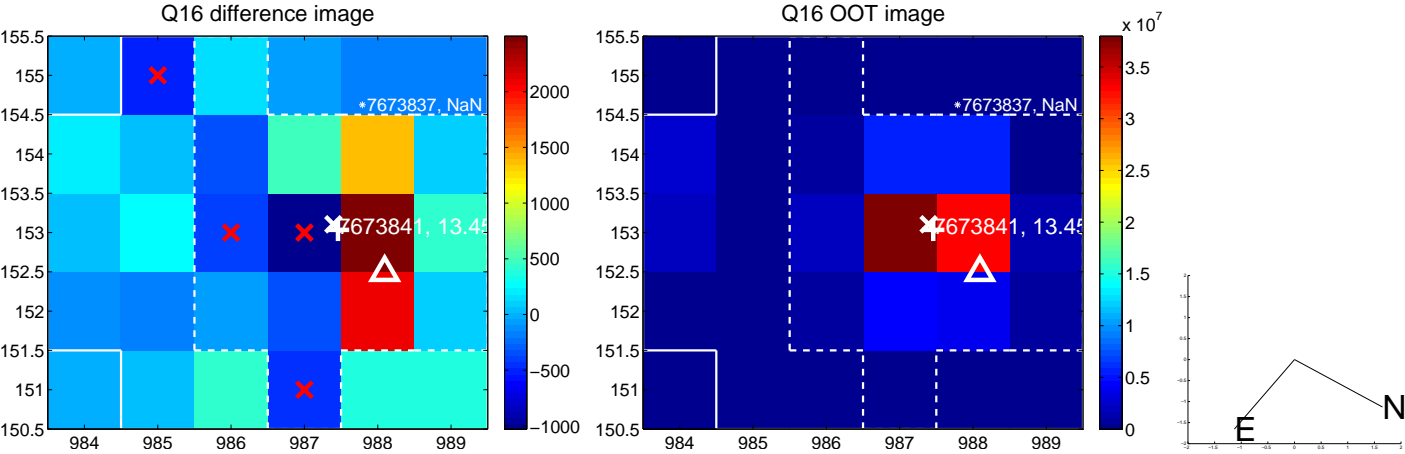
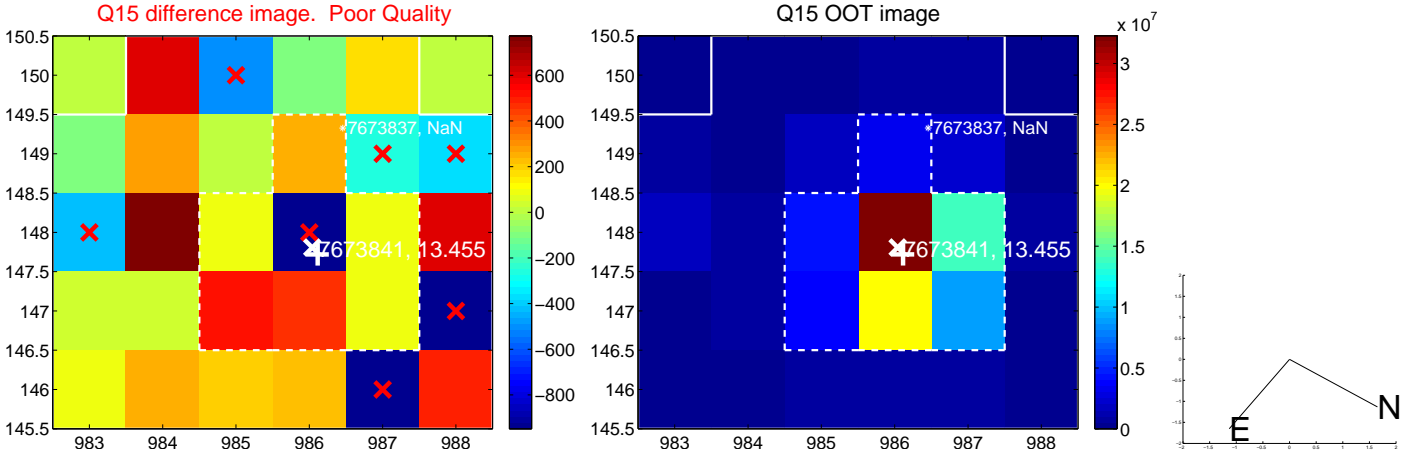
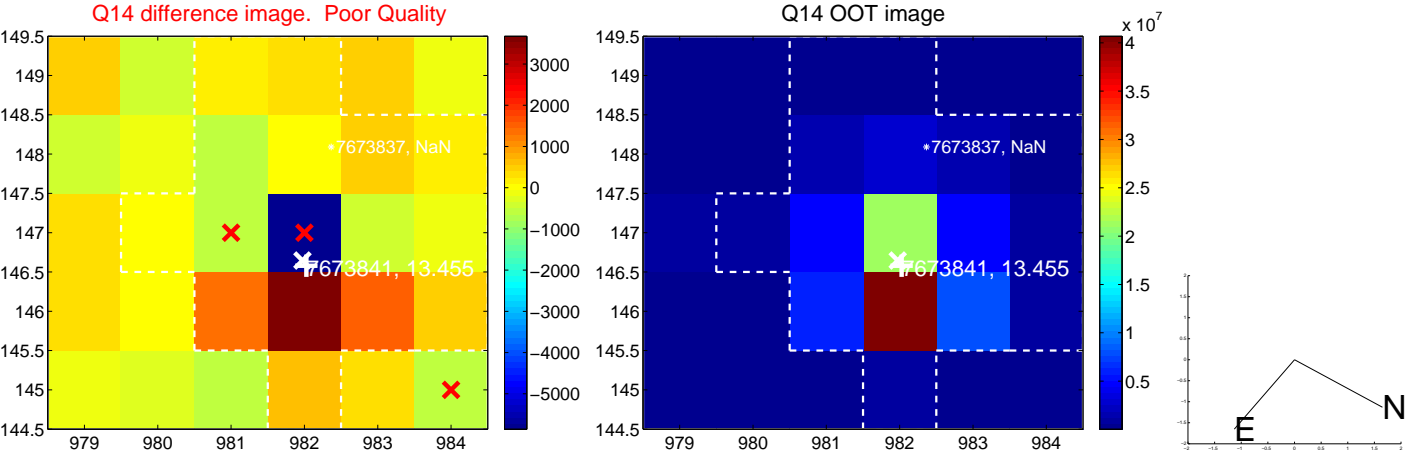
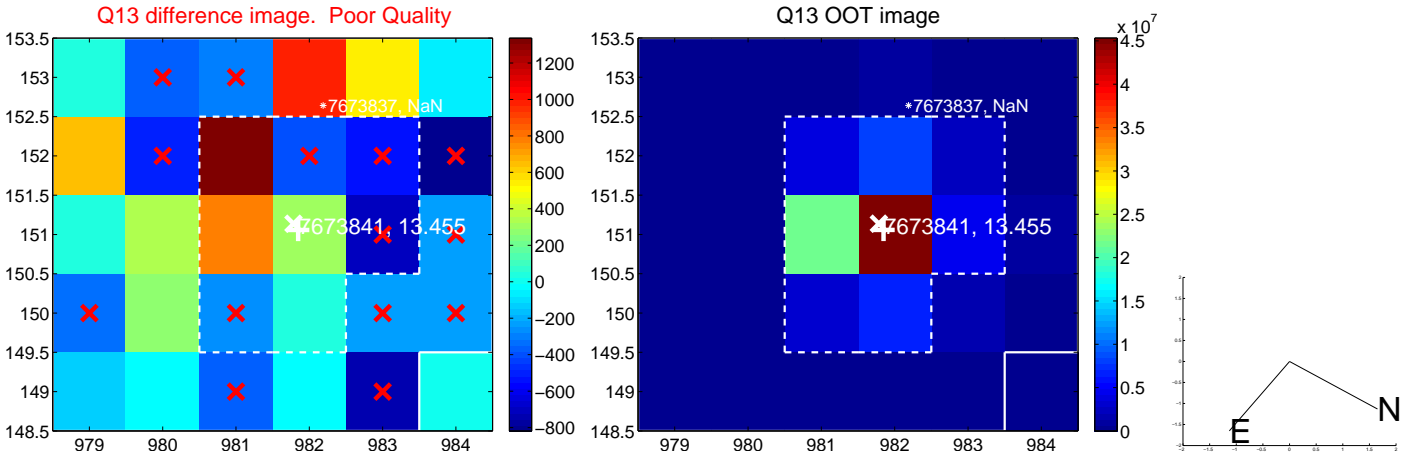
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



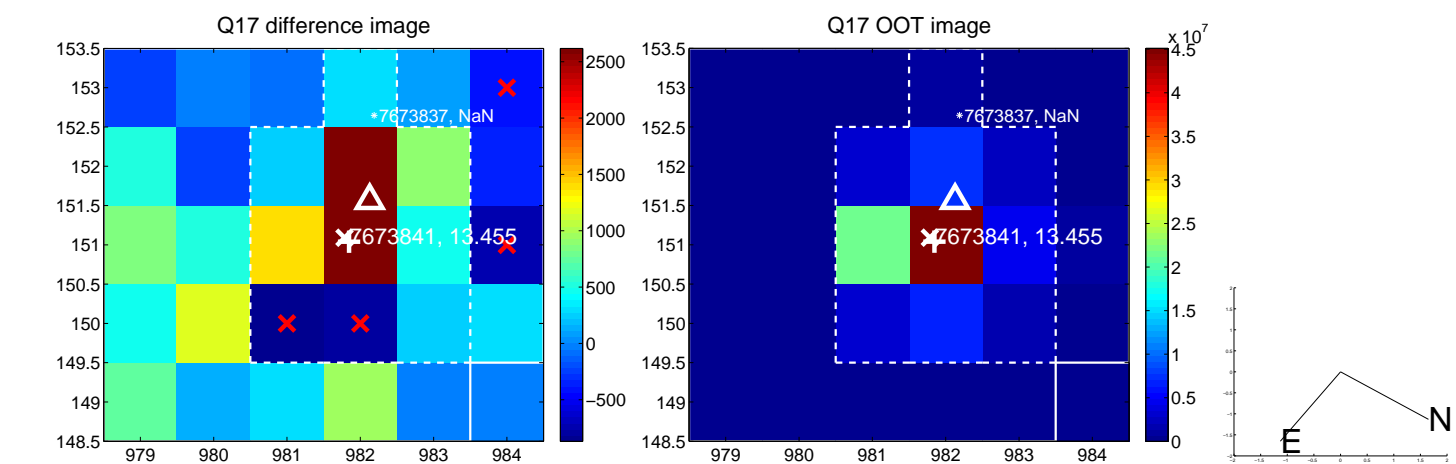
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



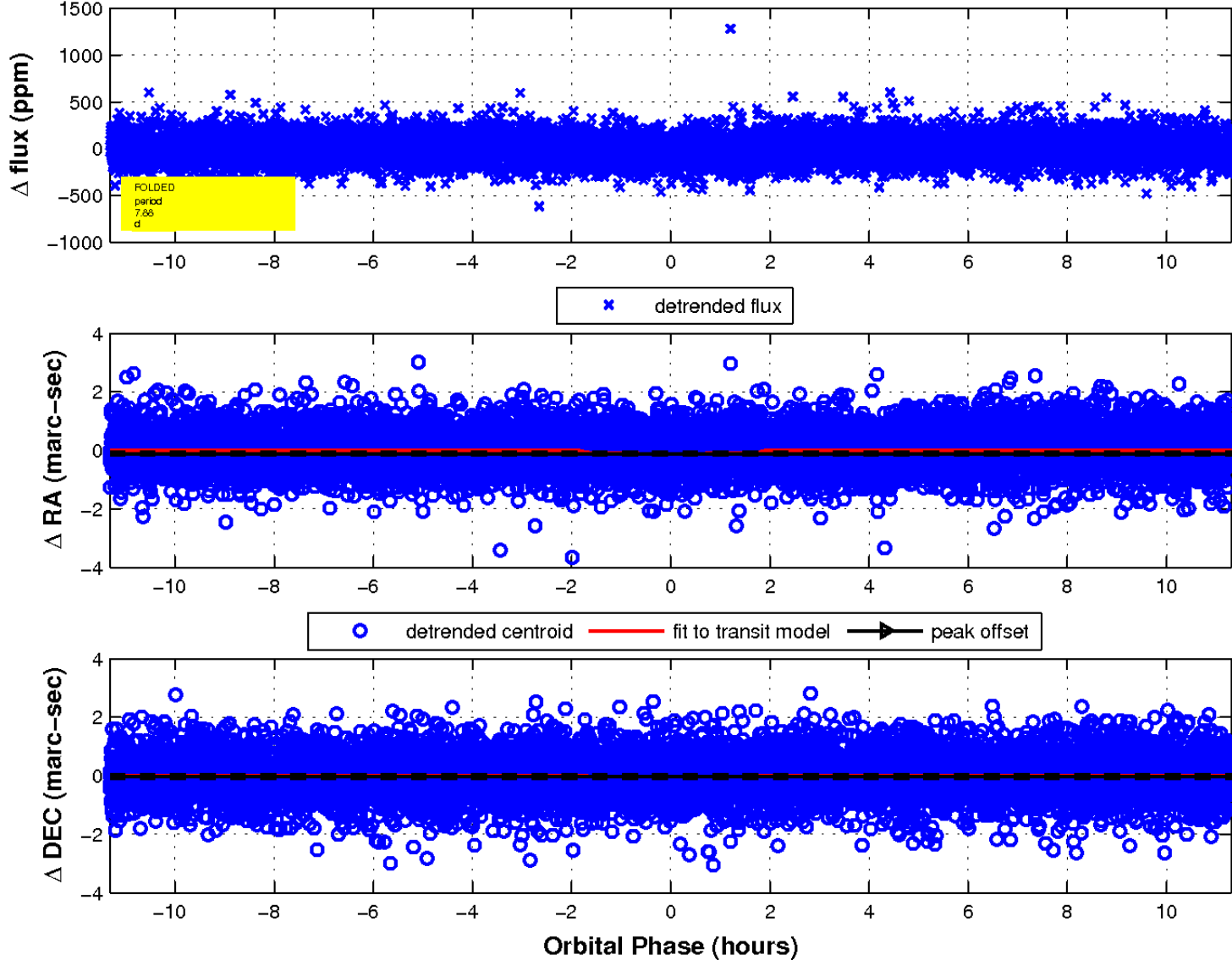
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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UKIRT Image

Declination

