

# KIC 010426656

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010426656-01	OBS	1161.01	6.057310	135.925712	373.8	3.889	27.4	31.8	1.00	5334	2.24	190.21
010426656-02	OBS	1161.02	10.937253	136.984471	412.3	3.063	20.2	22.3	1.00	5334	2.34	86.51
010426656-03	OBS	1161.03	2.971362	134.387608	212.5	2.749	19.4	21.6	1.00	5334	1.70	491.65

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010426656-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010426656-02	OBS	PC	0.99	0	0	0	0	NO_COMMENT
010426656-03	OBS	PC	0.96	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.

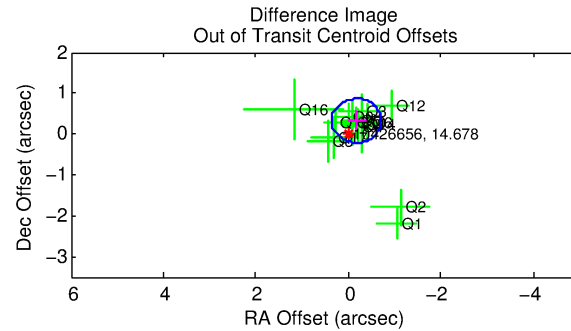
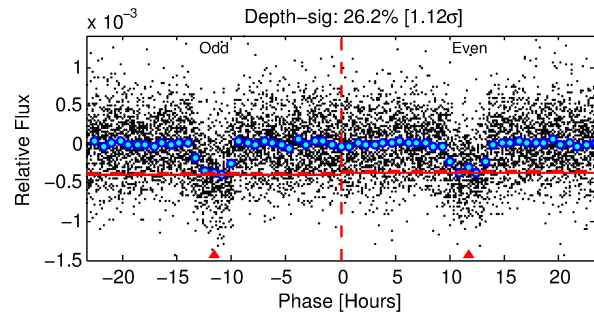
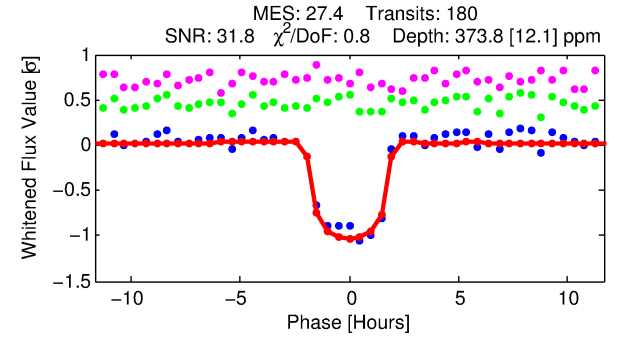
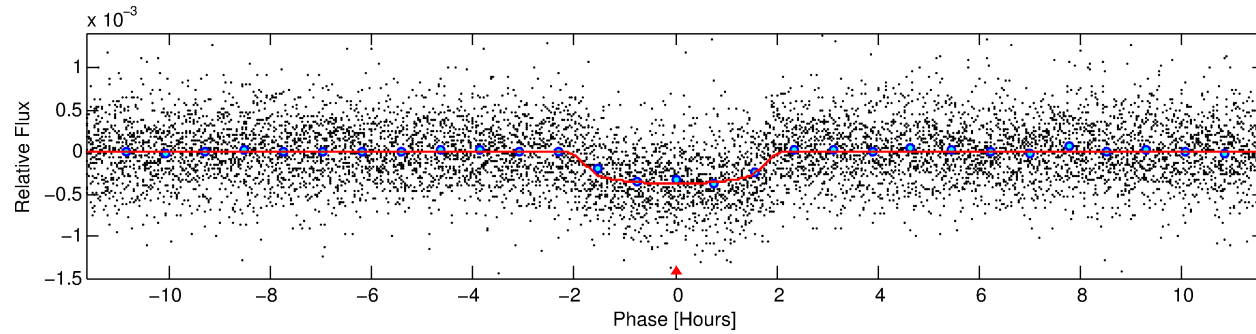
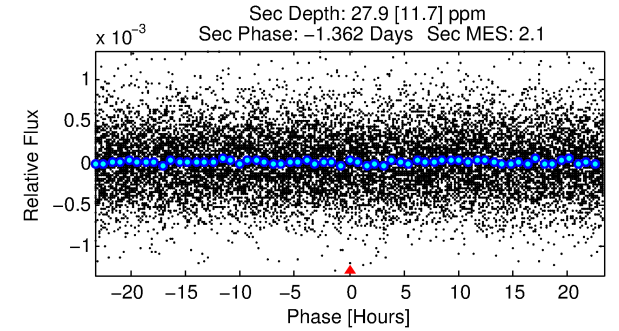
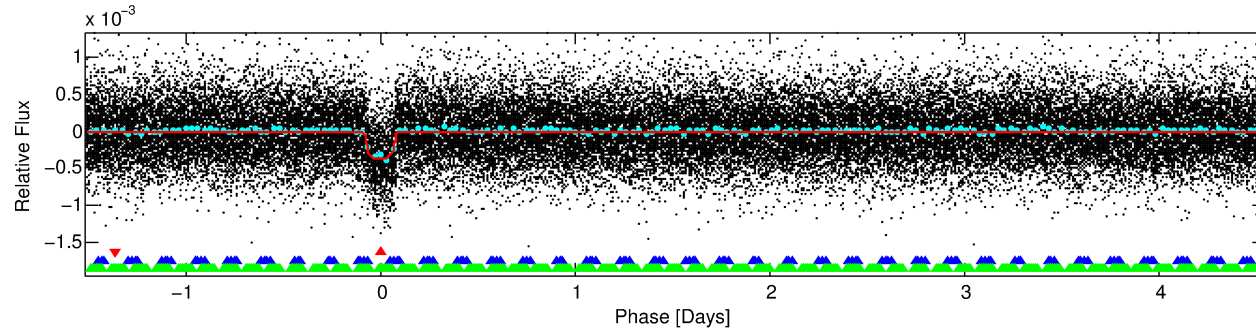
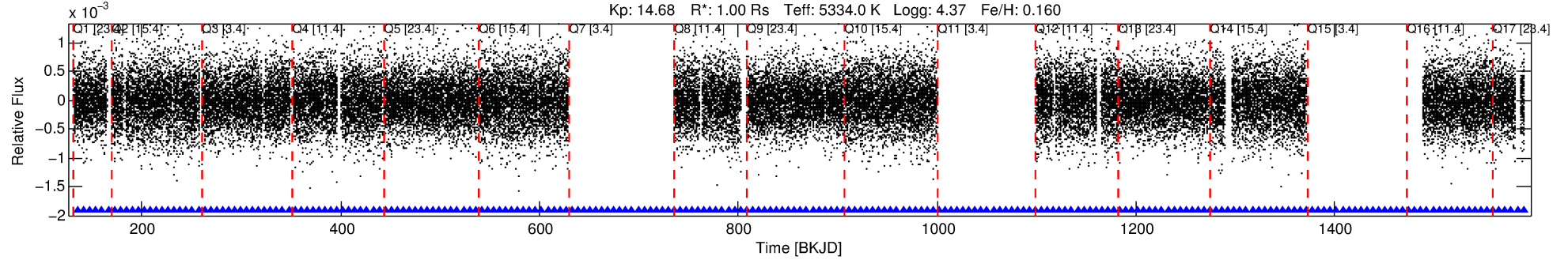
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Ephemeris Match Information For 010426656-01

No Significant Match Found

# DV One-Page Summary

KIC: 10426656 Candidate: 1 of 3 Period: 6.057 d  
KOI: K01161.01 Name: Kepler-272c Corr: 0.979



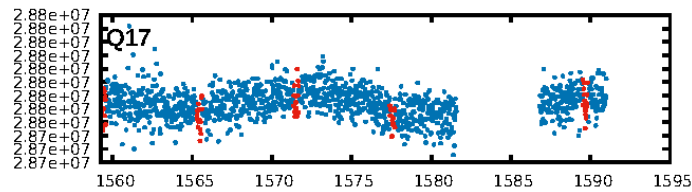
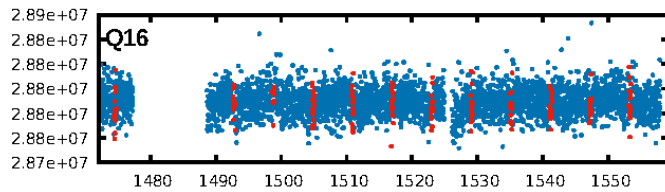
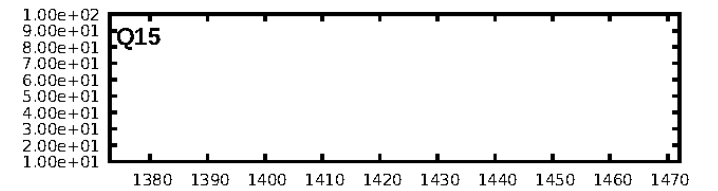
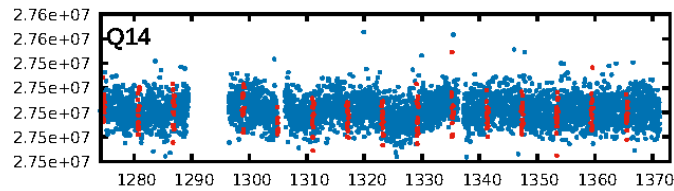
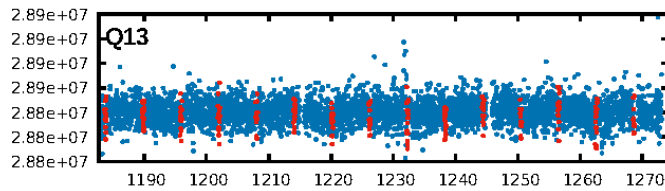
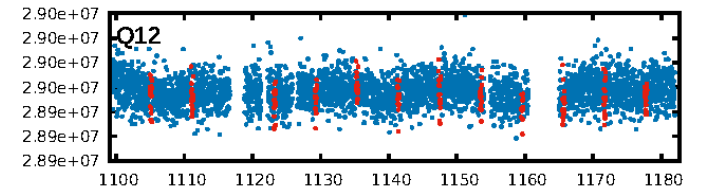
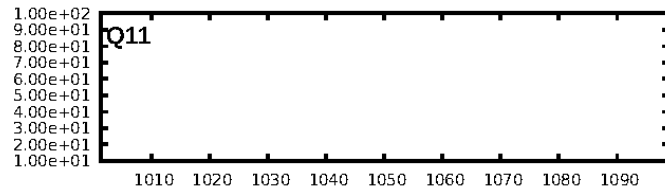
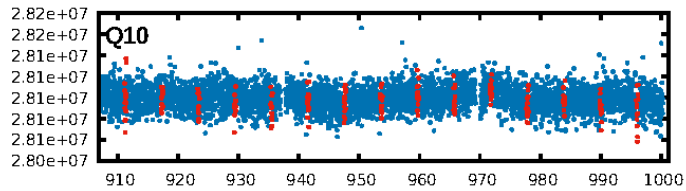
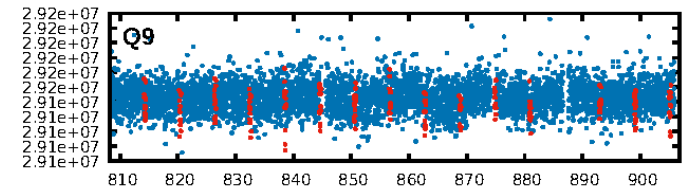
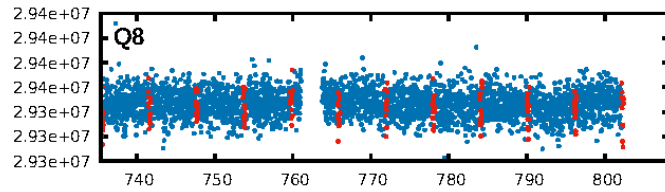
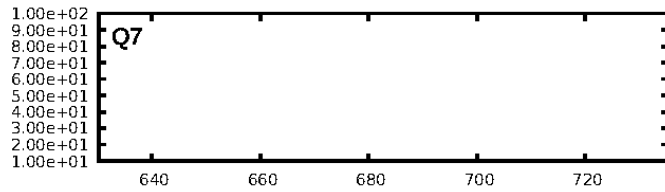
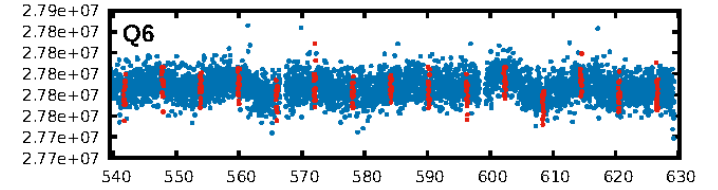
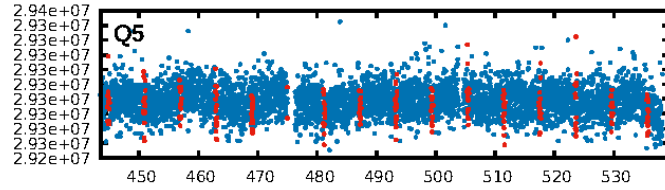
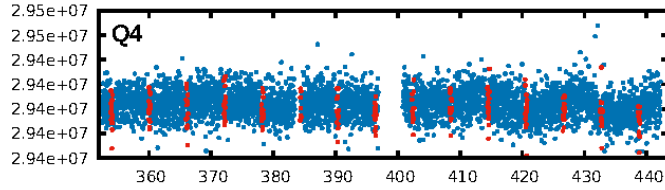
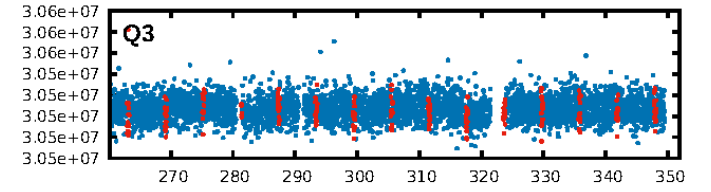
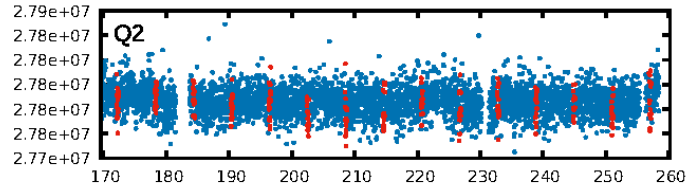
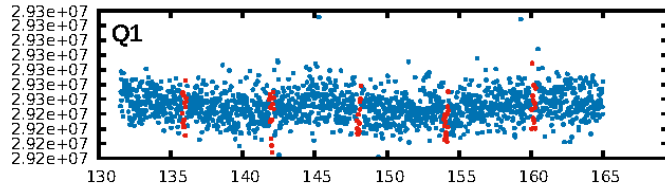
## DV Fit Results:

Period = 6.05731 [0.00002] d  
Epoch = 135.9257 [0.0022] BKJD  
Rp/R\* = 0.0205 [0.0044]  
a/R\* = 6.77 [5.79]  
b = 0.85 [0.29]  
Seff = 190.21 [43.62]  
Teff = 947 [54] K  
Rp = 2.24 [0.57] Re  
a = 0.0620 [0.0084] AU  
Ag = 11.75 [7.56] [1.42 $\sigma$ ]  
Teffp = 2711 [411] K [4.25 $\sigma$ ]

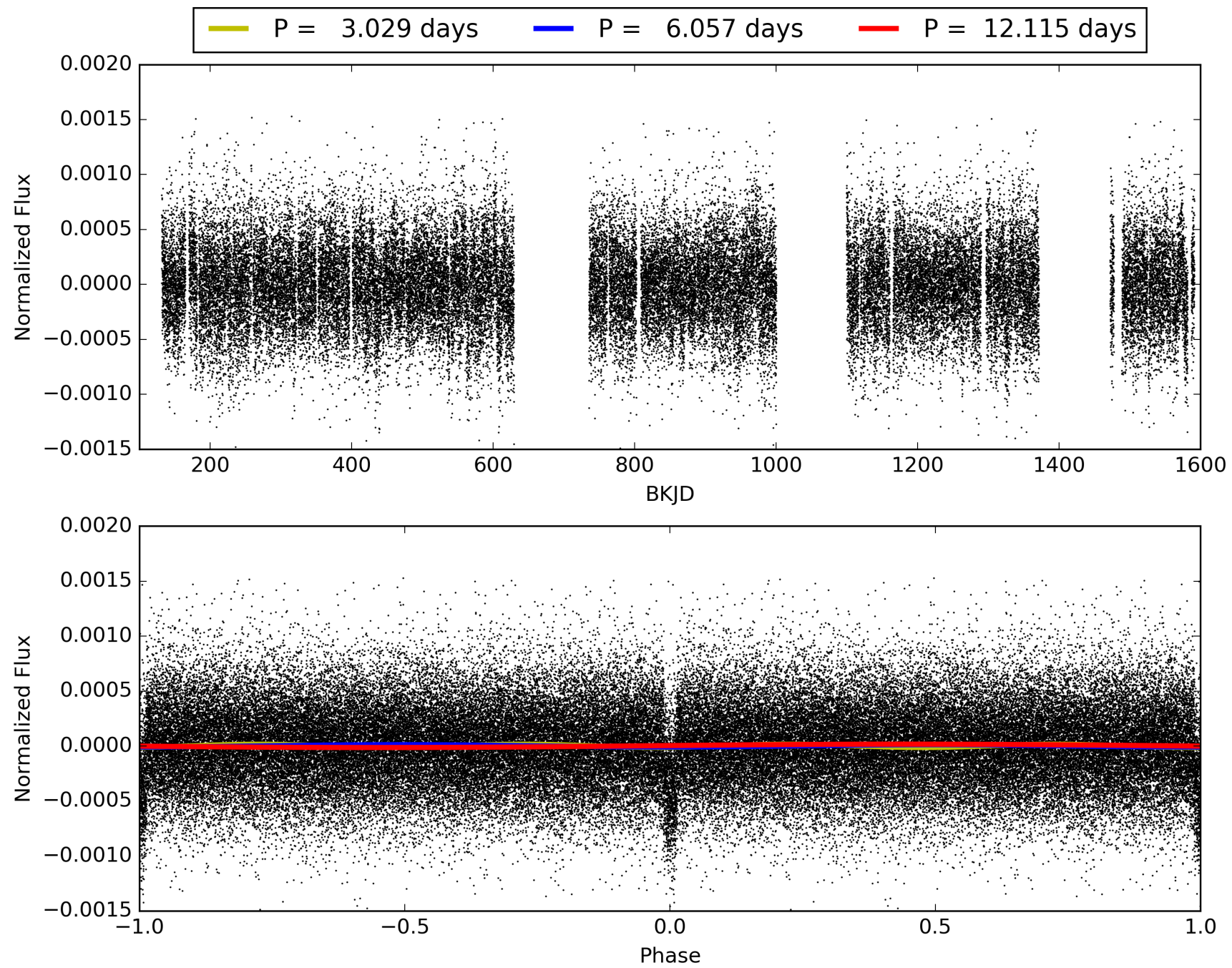
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.55 $\sigma$ ]  
LongPeriod-sig: 100.0% [23.66 $\sigma$ ]  
ModelChiSquare2-sig: 99.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.29e-158  
RollingBand-fgt: 1.00 [170/170]  
GhostDiagnostic-chr: 2.997  
Centroid-sig: 64.4%  
Centroid-so: 0.216 arcsec [0.44 $\sigma$ ]  
OotOffset-rm: 0.367 arcsec [2.05 $\sigma$ ]  
KicOffset-rm: 0.413 arcsec [2.19 $\sigma$ ]  
OotOffset-st: 4/1/4/5 [14]  
KicOffset-st: 4/1/4/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 010426656-01, PDC Light Curves



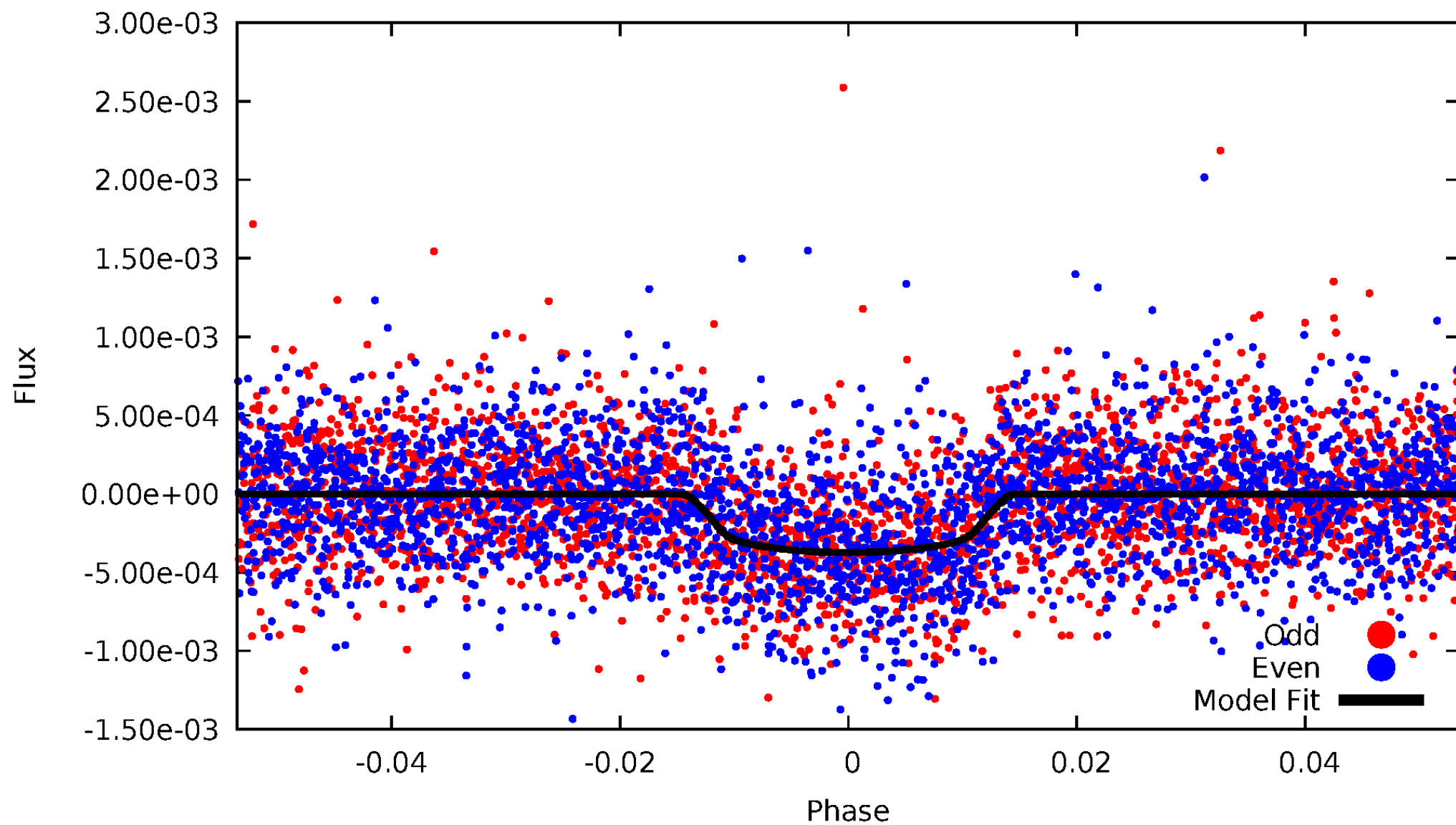
TCE 010426656-01





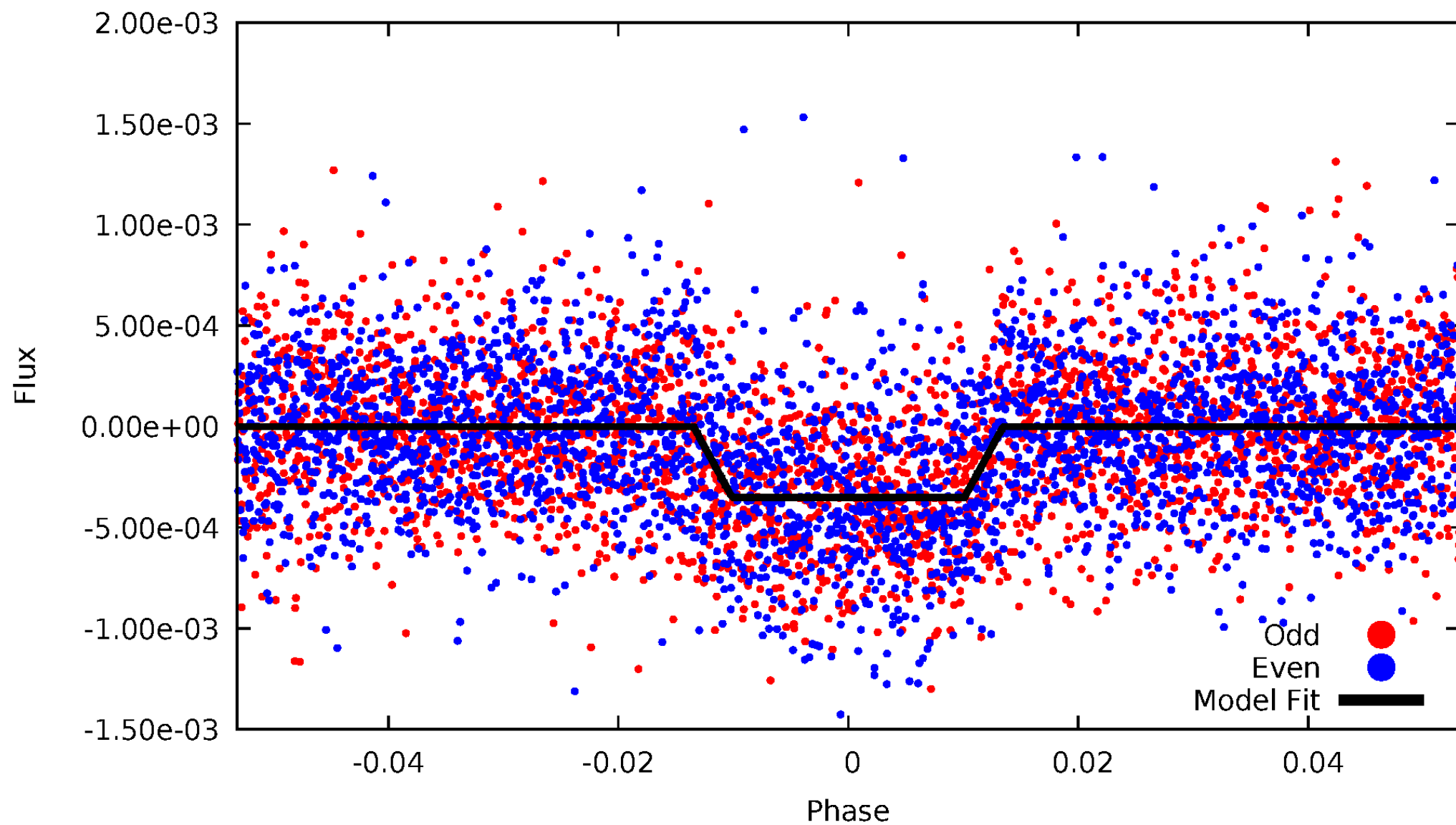
# DV Odd/Even

TCE 010426656-01



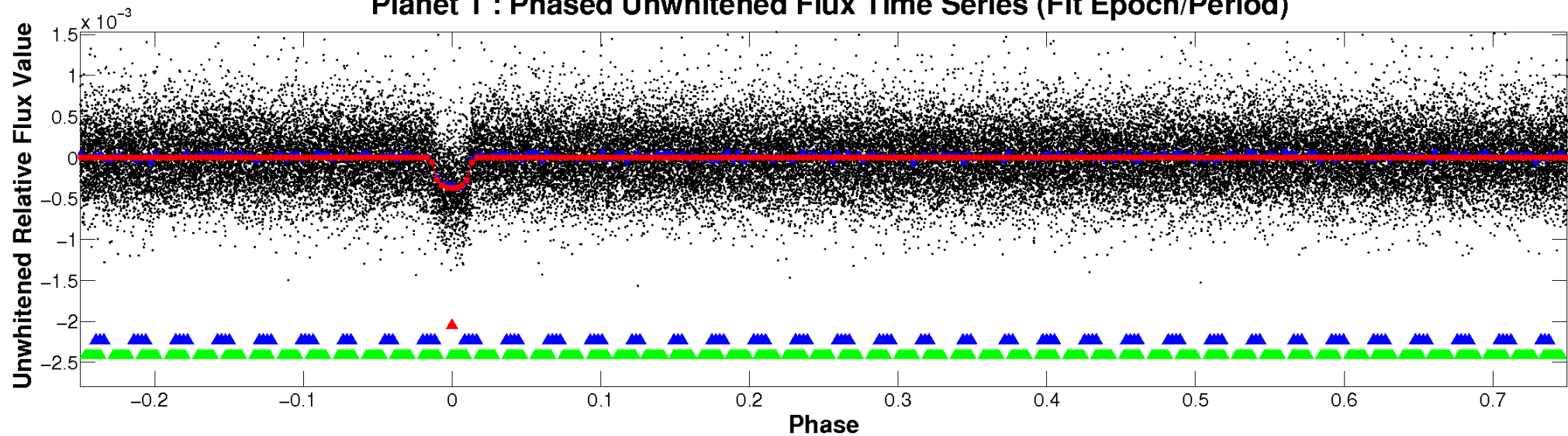
# ALT Odd/Even

TCE 010426656-01

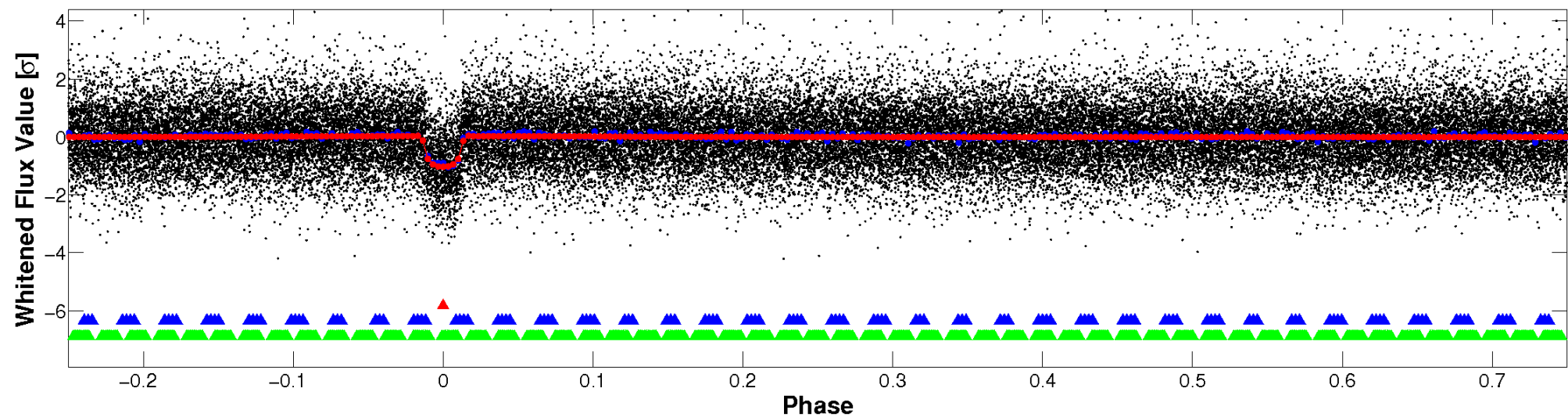


# Non-Whitened Vs. Whitened Light Curve

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

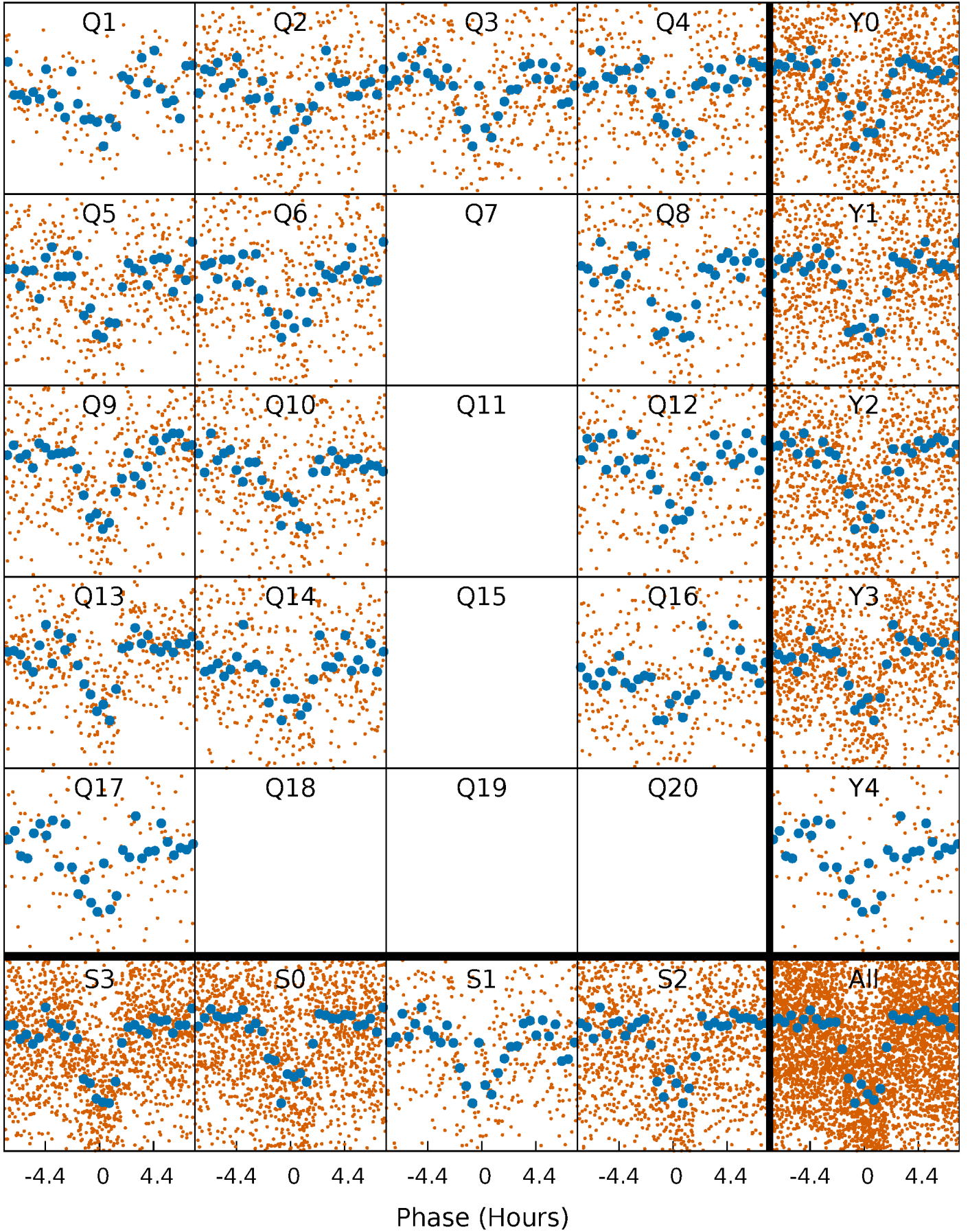


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

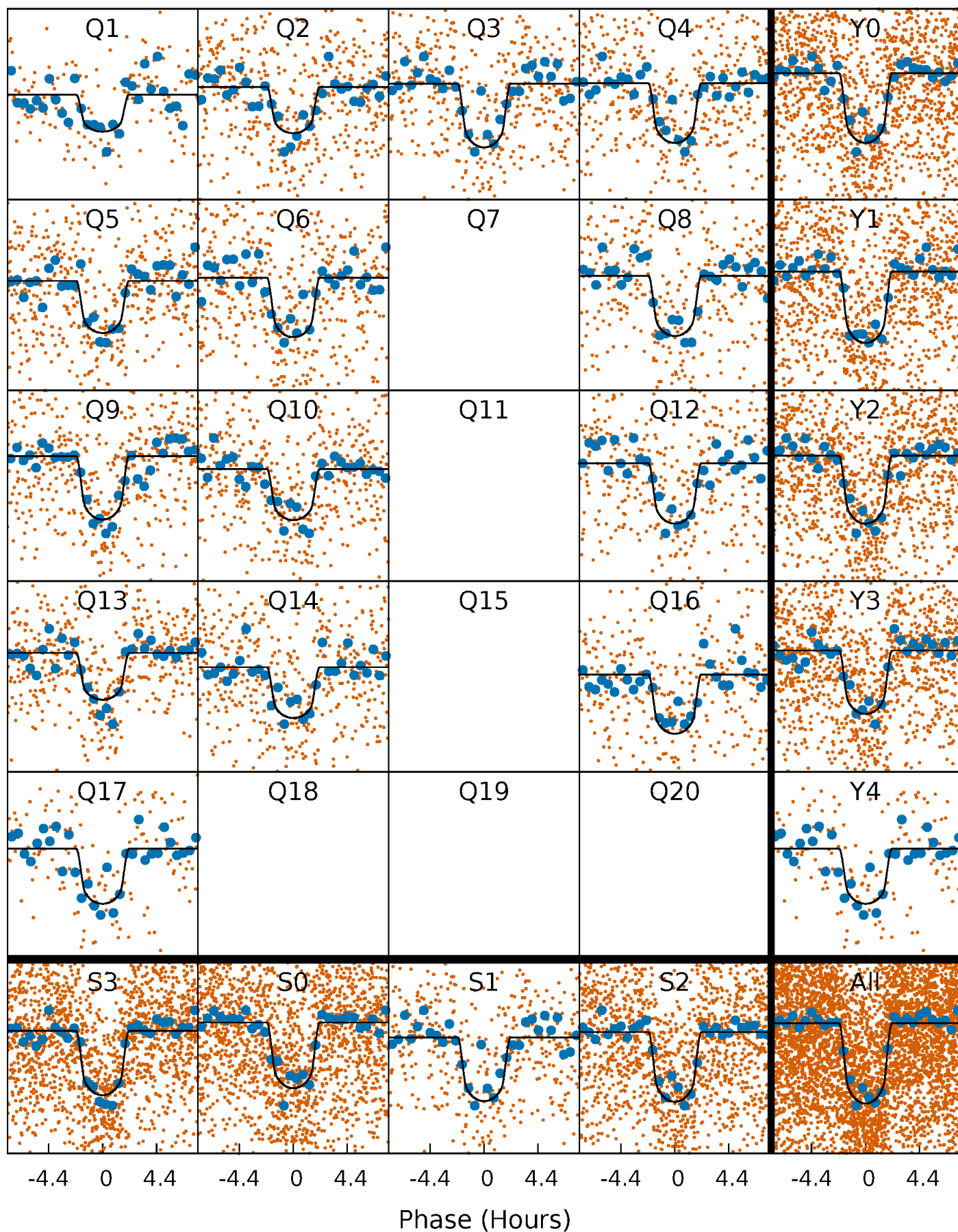
TCE 010426656-01   P= 6.057310 Days    $T_0=135.925712$  (BKJD)





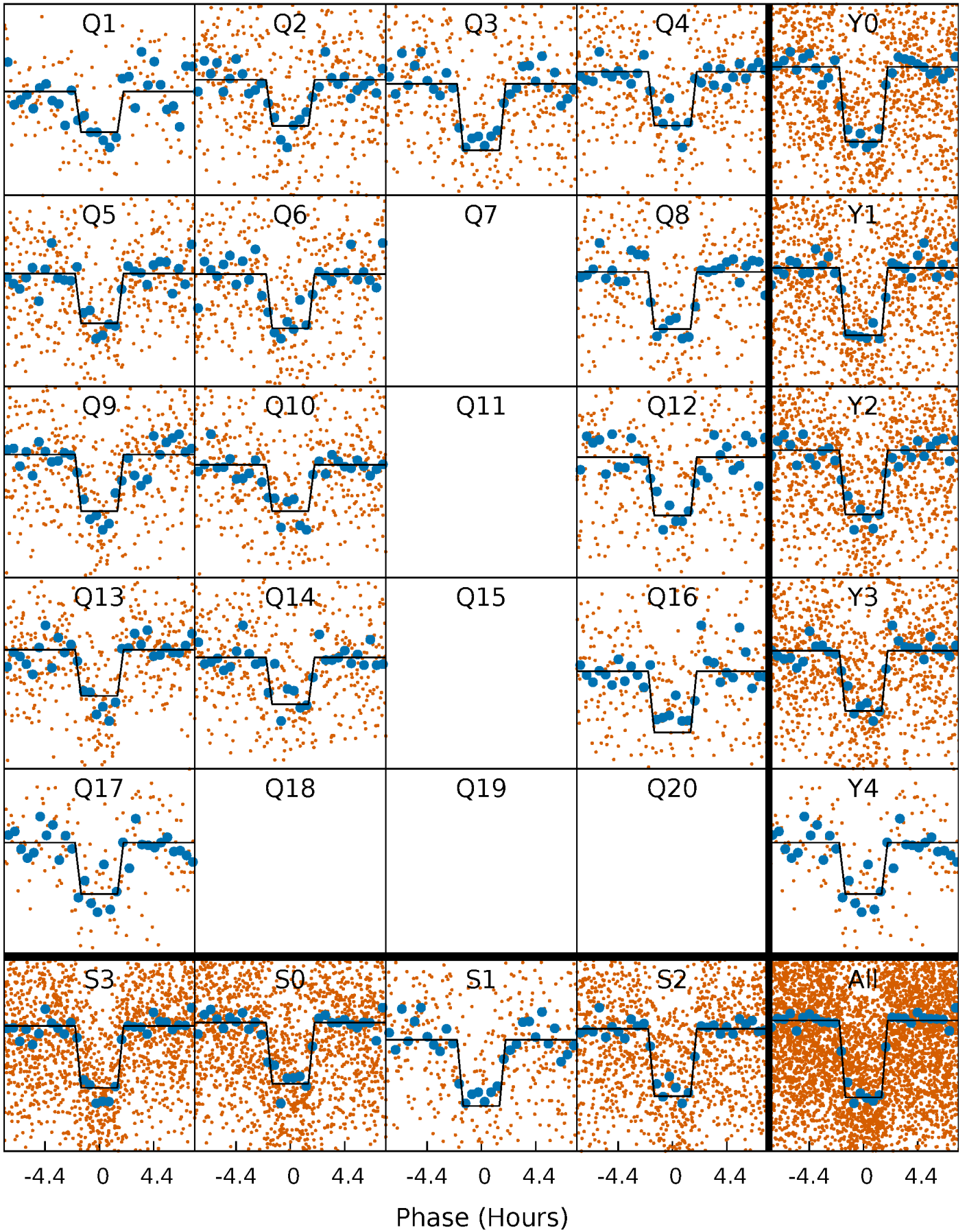
# DV Quarter-Phased Transit Curves

TCE 010426656-01 P= 6.057310 Days  $T_0=135.925712$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

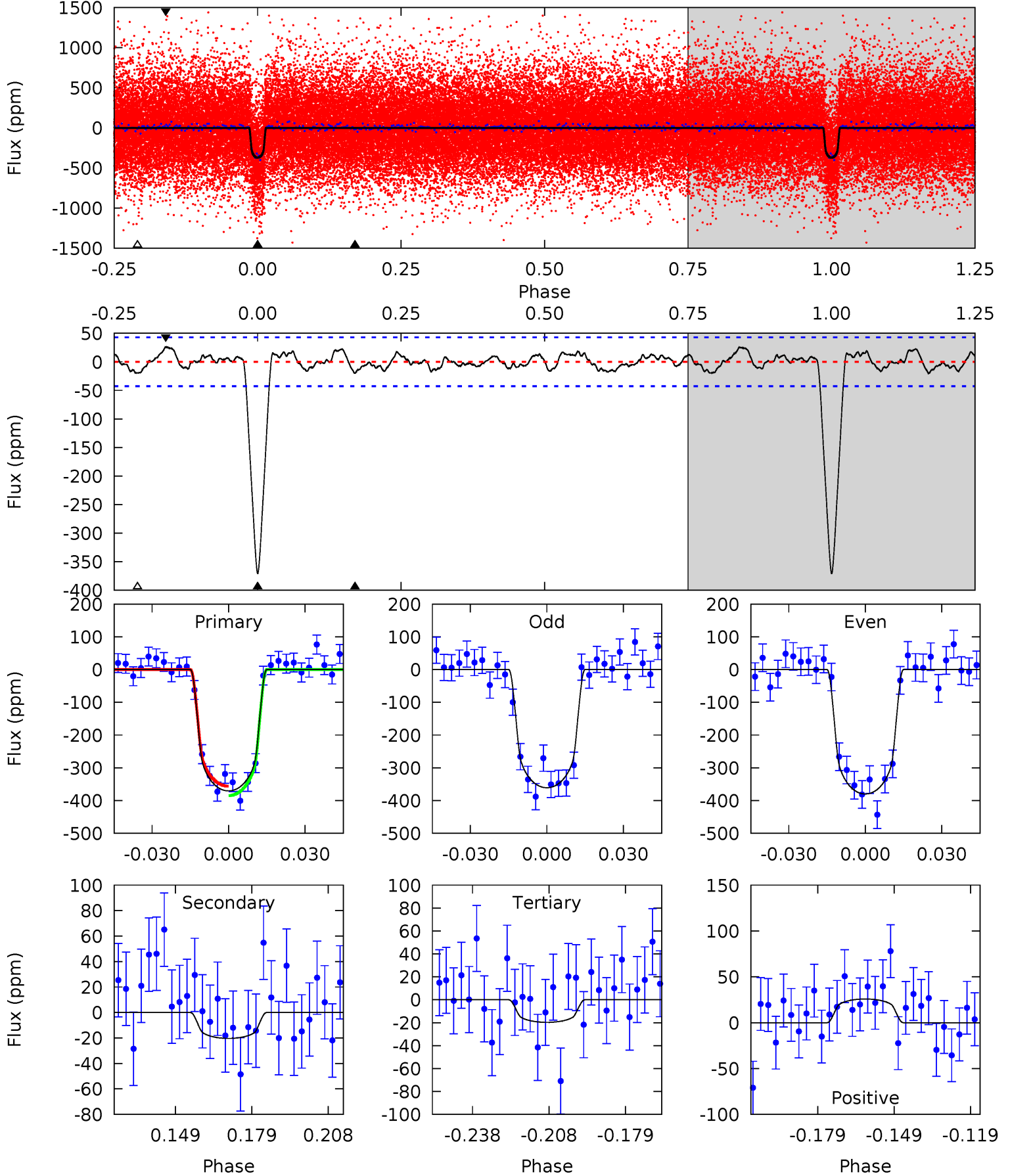
TCE 010426656-01 P= 6.057284 Days  $T_0=135.929314$  (BKJD)



# DV Model-Shift Uniqueness Test

010426656-01, P = 6.057310 Days, E = 129.868402 Days

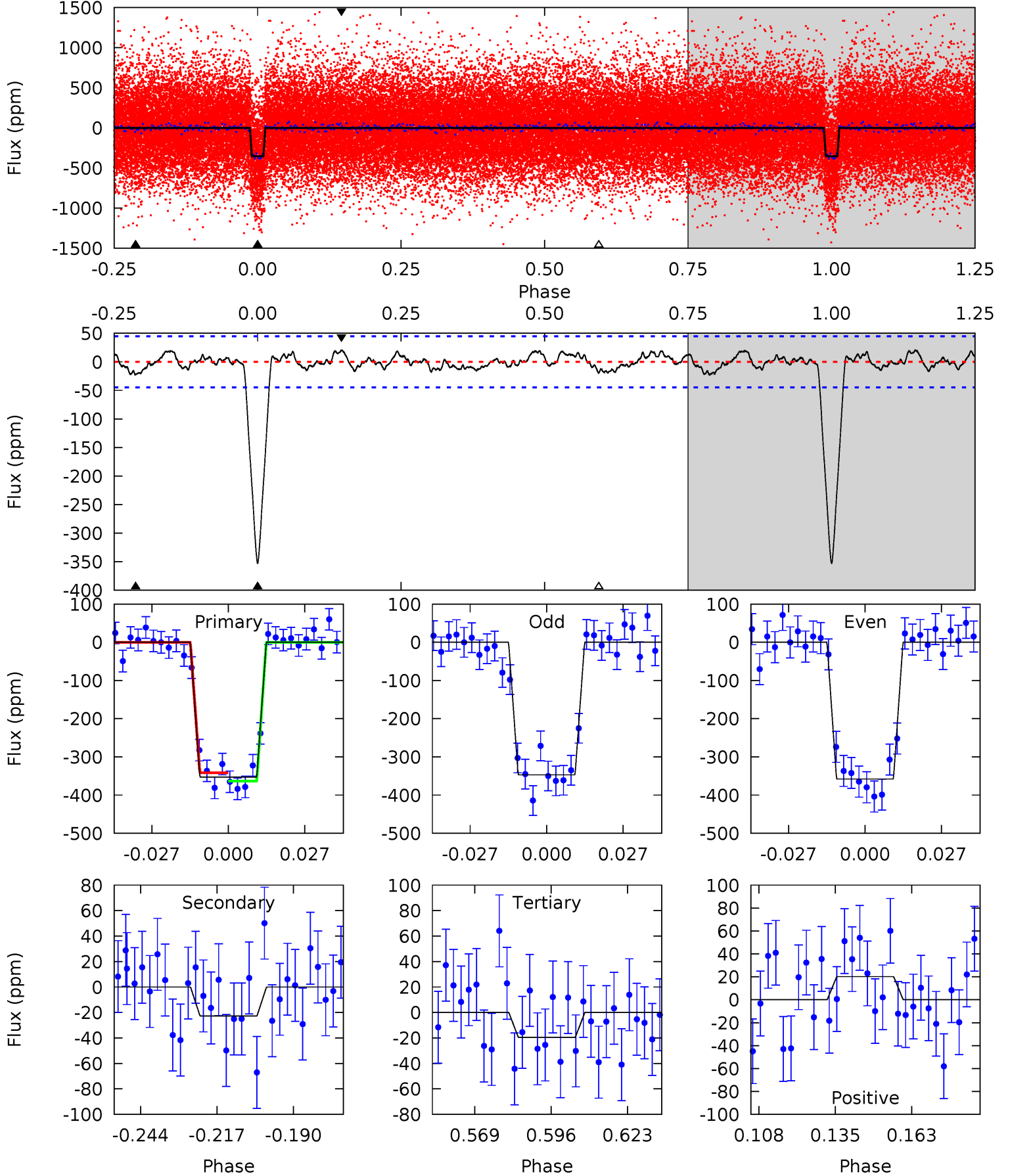
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.7	2.29	2.22	2.91	4.81	2.17	1.11	39.5	38.8	0.07	-0.62	1.08	0.98	0.07	1.62



# Alt Model-Shift Uniqueness Test

010426656-01, P = 6.057284 Days, E = 129.872030 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
38.1	2.46	2.12	2.18	4.83	2.21	1.02	36.0	35.9	0.35	0.28	0.59	0.97	0.05	1.17





### Stellar Parameters For KIC 010426656

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5334^{+79}_{-79}$	$4.372^{+0.132}_{-0.077}$	$0.160^{+0.150}_{-0.150}$	$1.004^{+0.111}_{-0.135}$	$0.865^{+0.064}_{-0.032}$	$1.204^{+0.693}_{-0.314}$
	+1%/-1%	+3%/-2%	+94%/-94%	+11%/-13%	+7%/-4%	+58%/-26%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 010426656-01 / KOI 1161.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-20 \pm 9$	$2.23^{+0.51}_{-0.53}$	$1317^{+48}_{-47}$	$3078^{+318}_{-295}$	$8.501^{+7.804}_{-4.366}$
Alt.	$-23 \pm 9$	$1.99^{+0.51}_{-0.50}$	$1317^{+41}_{-56}$	$3217^{+376}_{-290}$	$12^{+11}_{-6}$

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

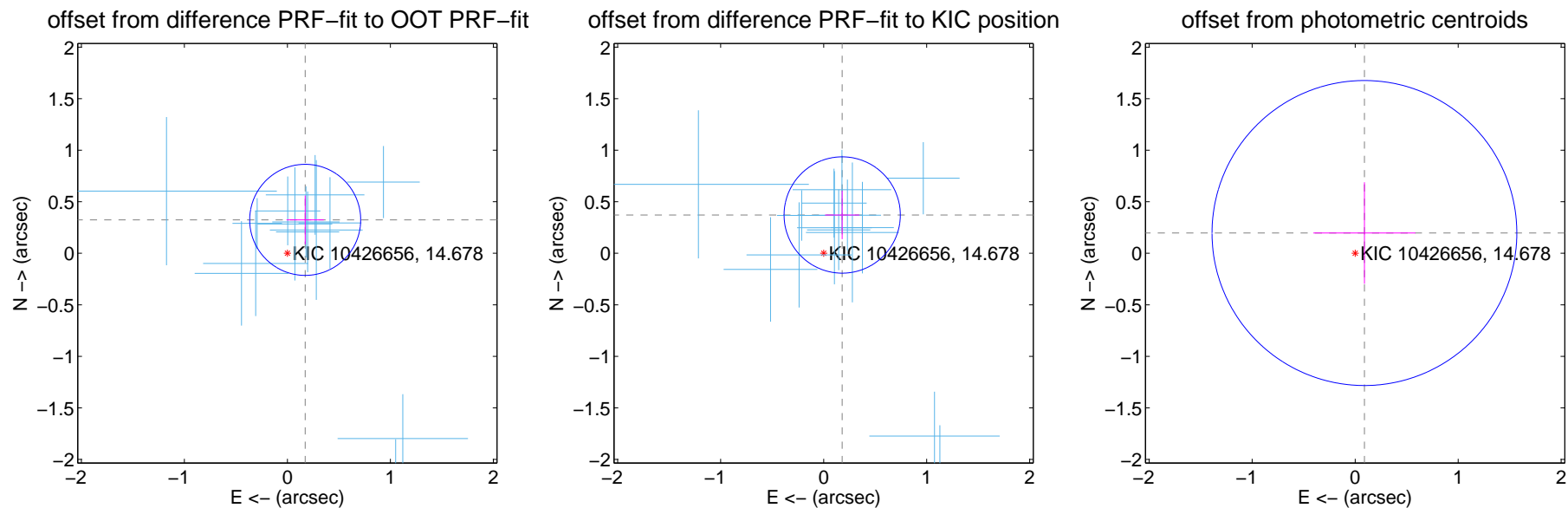
## DV Centroid Data

Supplemental centroid analysis for 010426656-01. Kepler magnitude: 14.68. Transit SNR 31.75

There are 14 quarters with good PRF difference image offsets

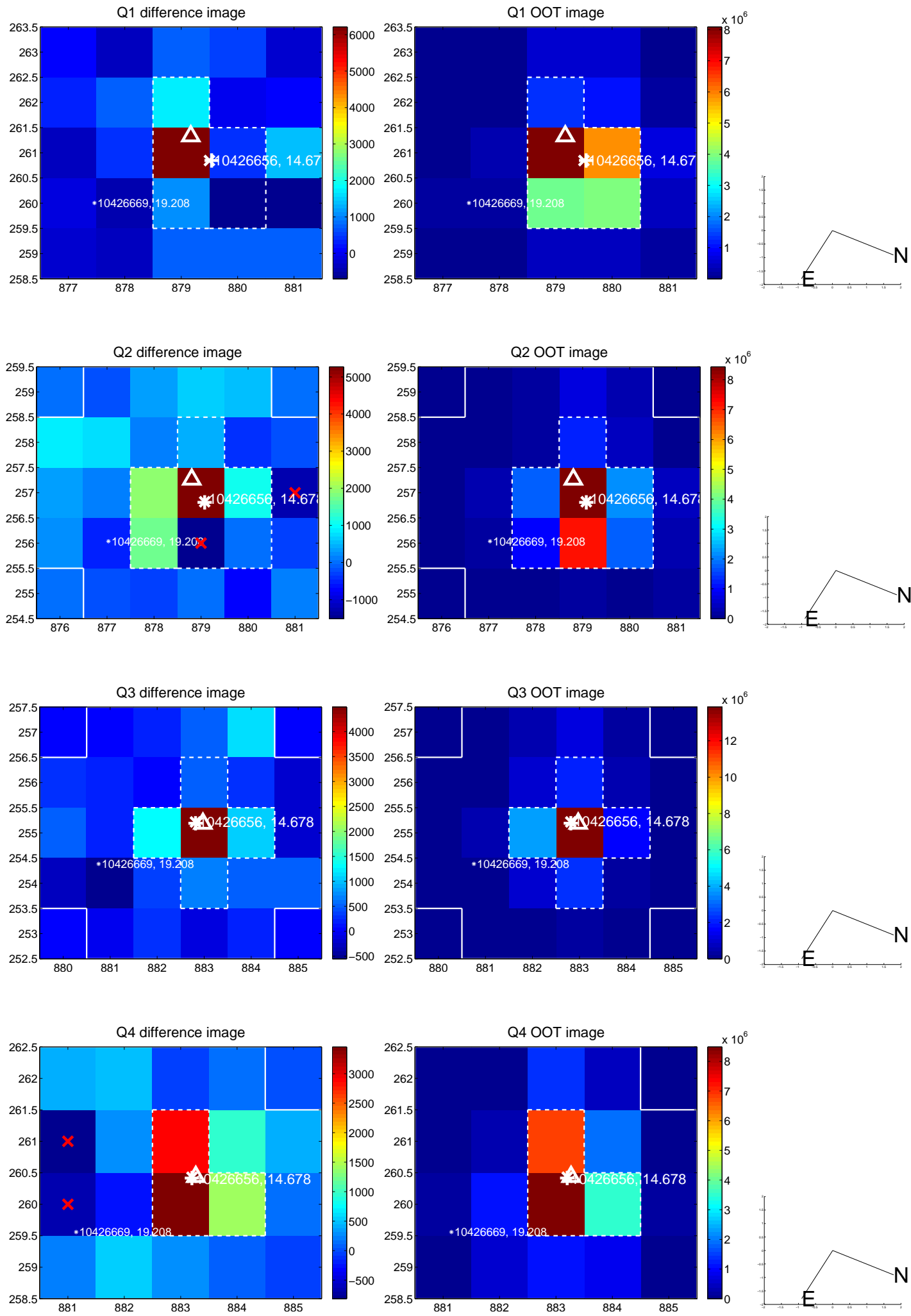
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.367 \pm 0.180$	2.05	$-0.173 \pm 0.181$	$0.324 \pm 0.237$
PRF-fit source offset from KIC position	$0.413 \pm 0.188$	2.19	$-0.180 \pm 0.166$	$0.371 \pm 0.234$
photometric centroid source offset	$0.22 \pm 0.49$	0.44	$-0.09 \pm 0.50$	$0.20 \pm 0.49$

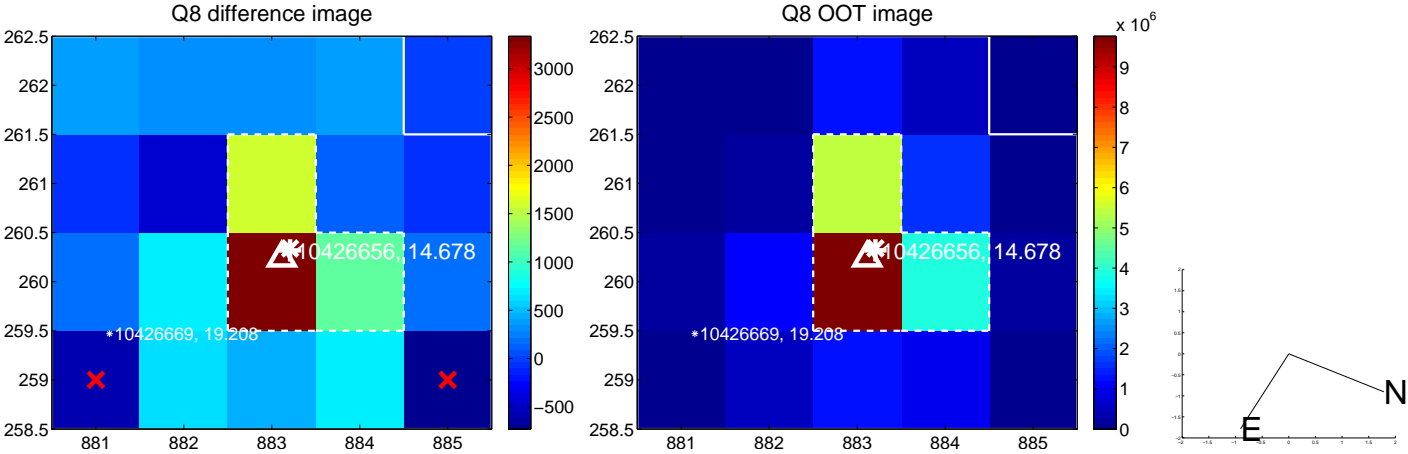
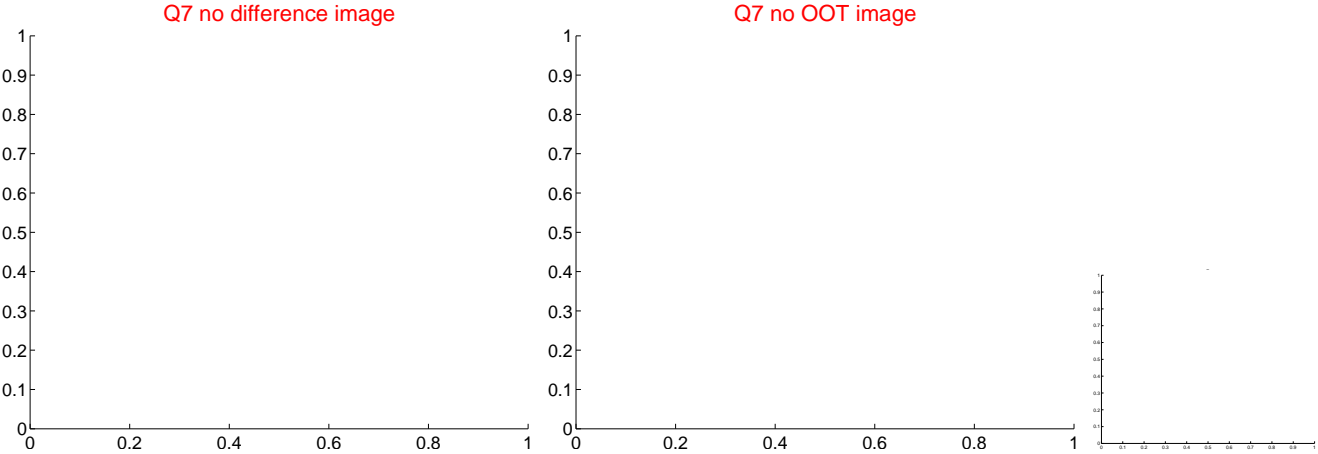
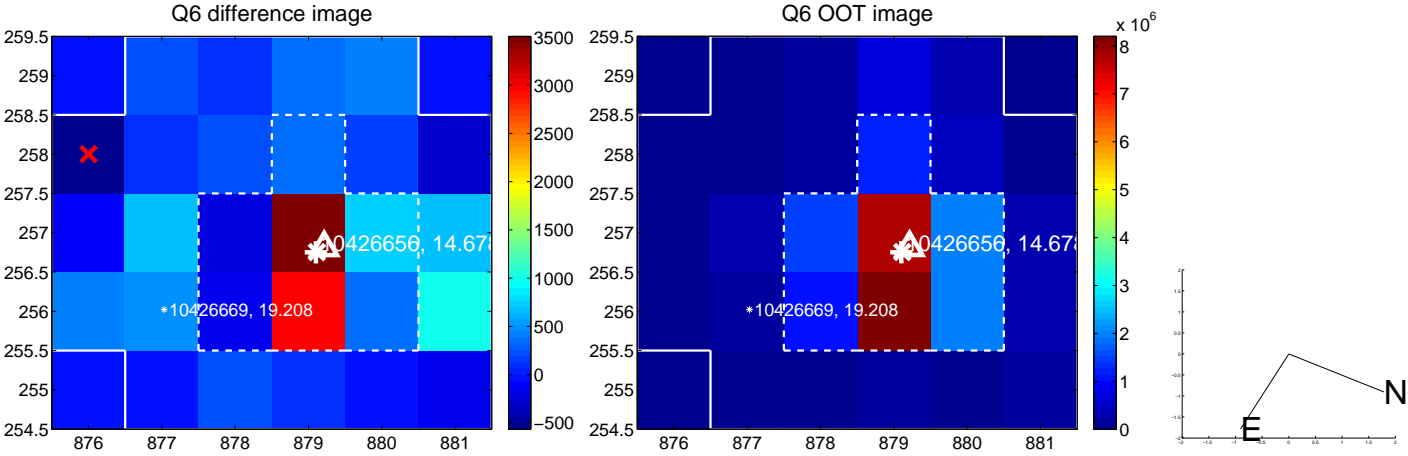
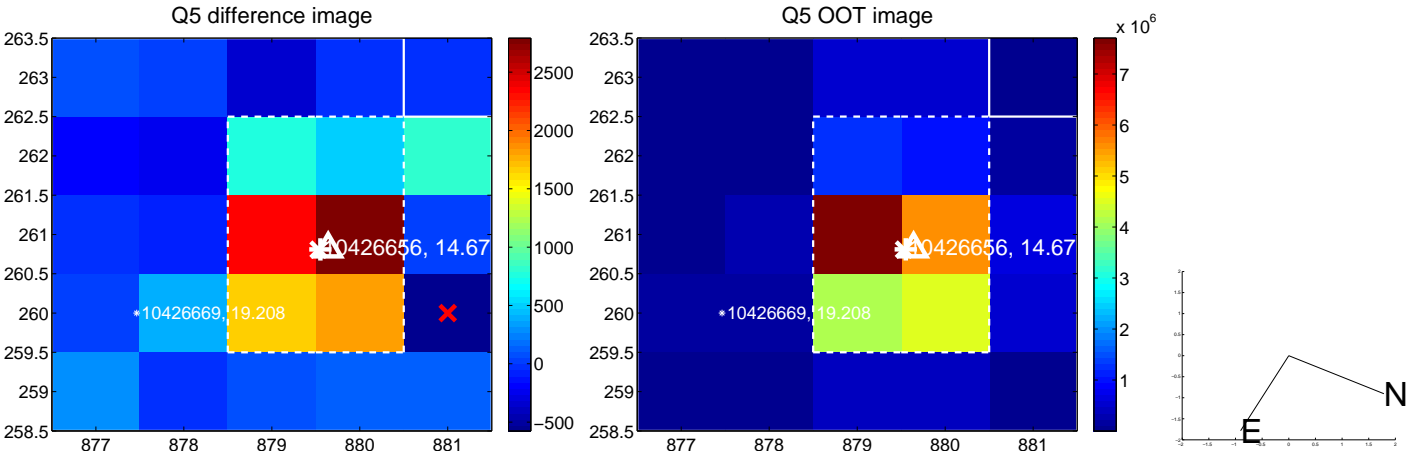


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

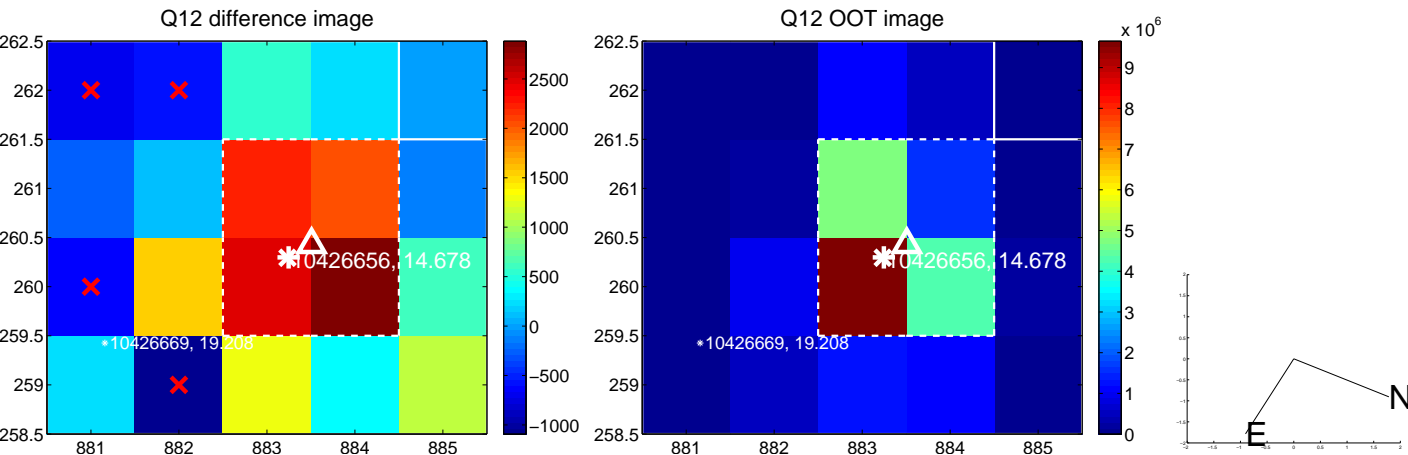
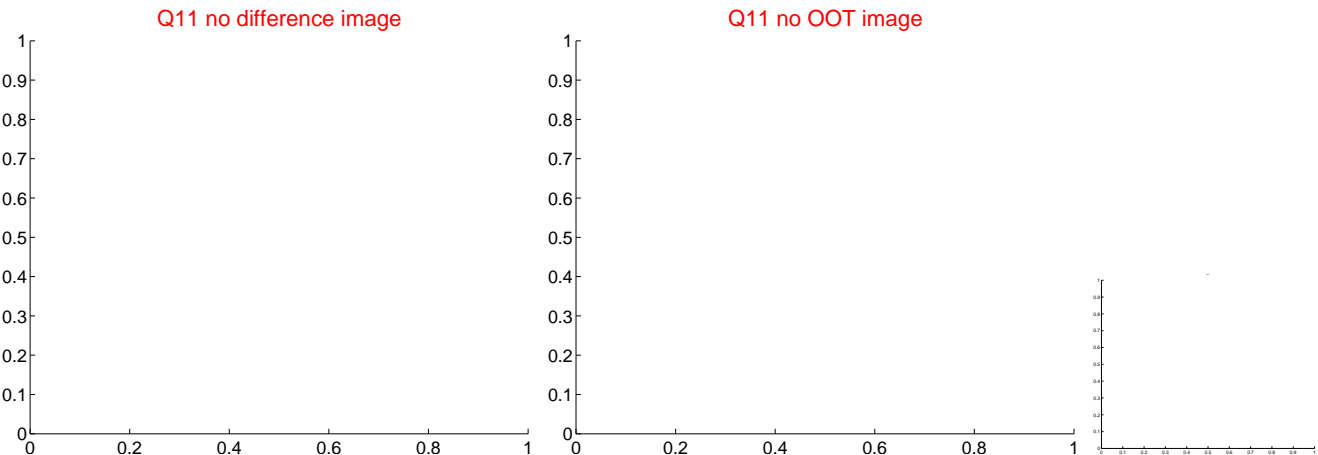
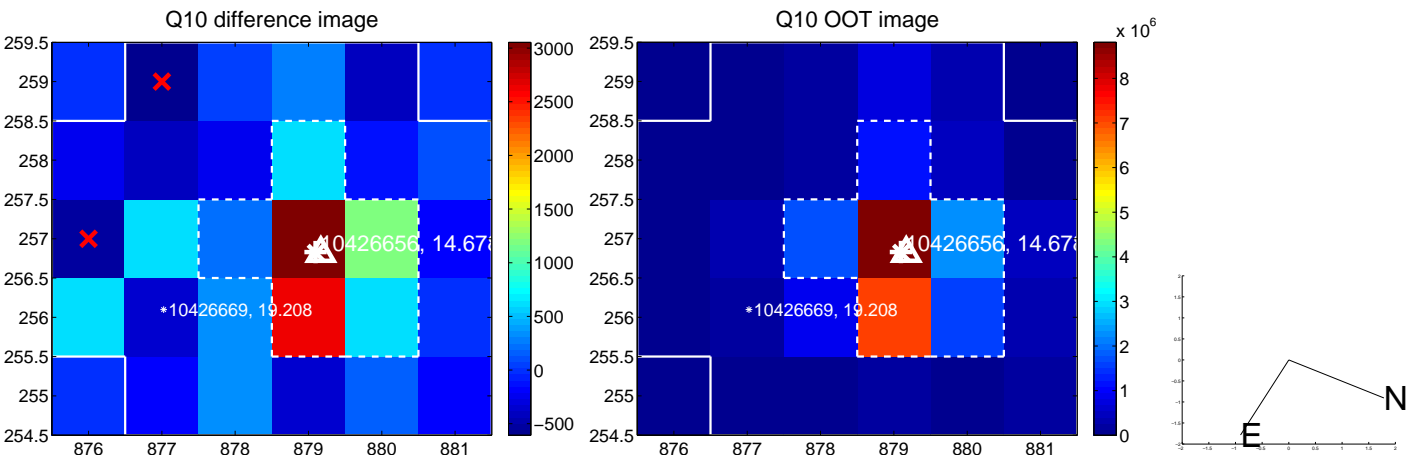
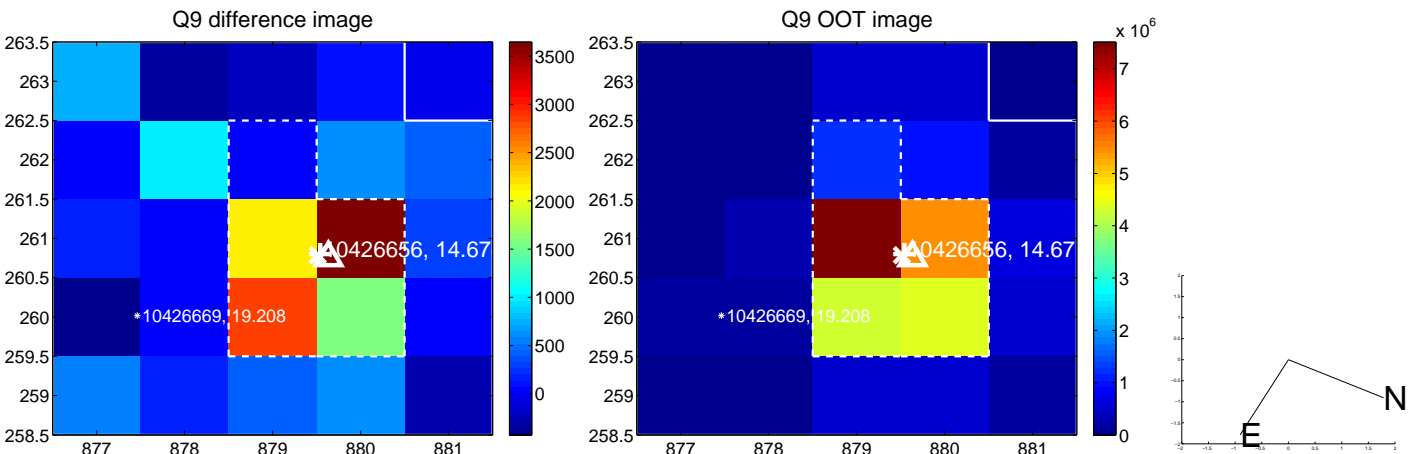


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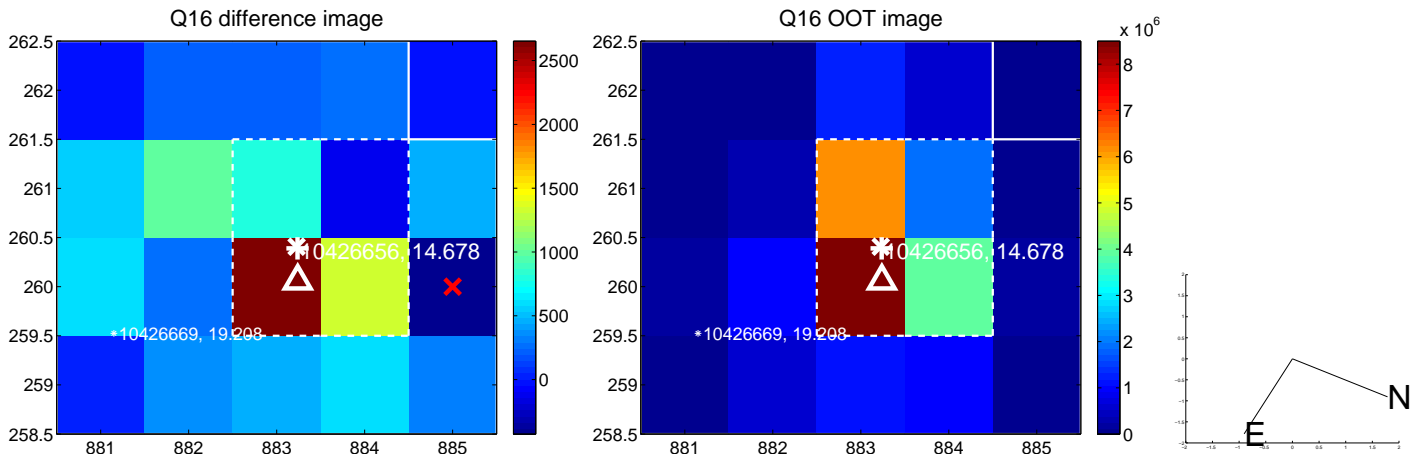
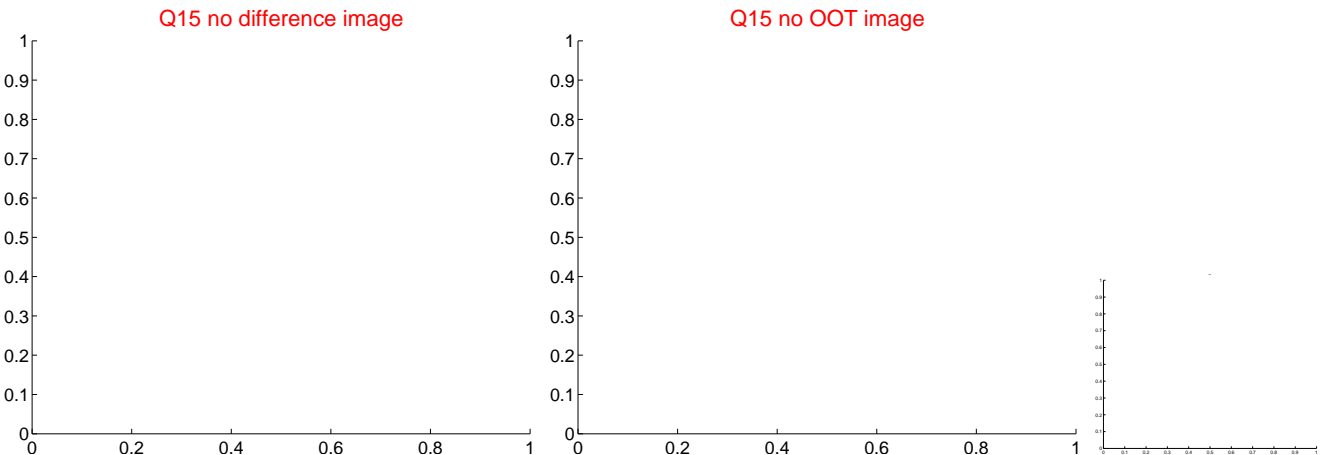
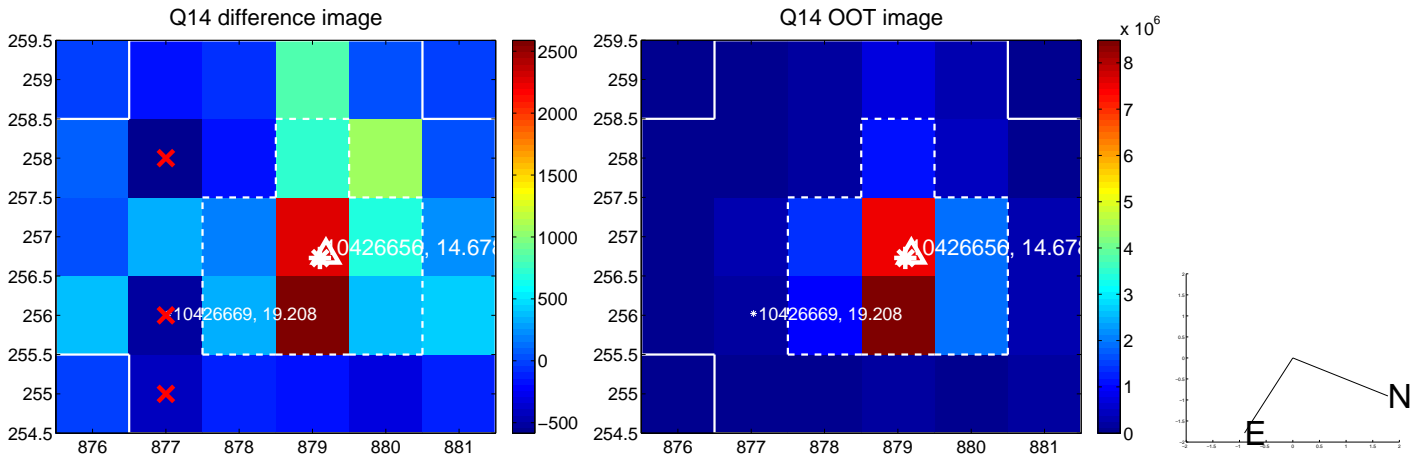
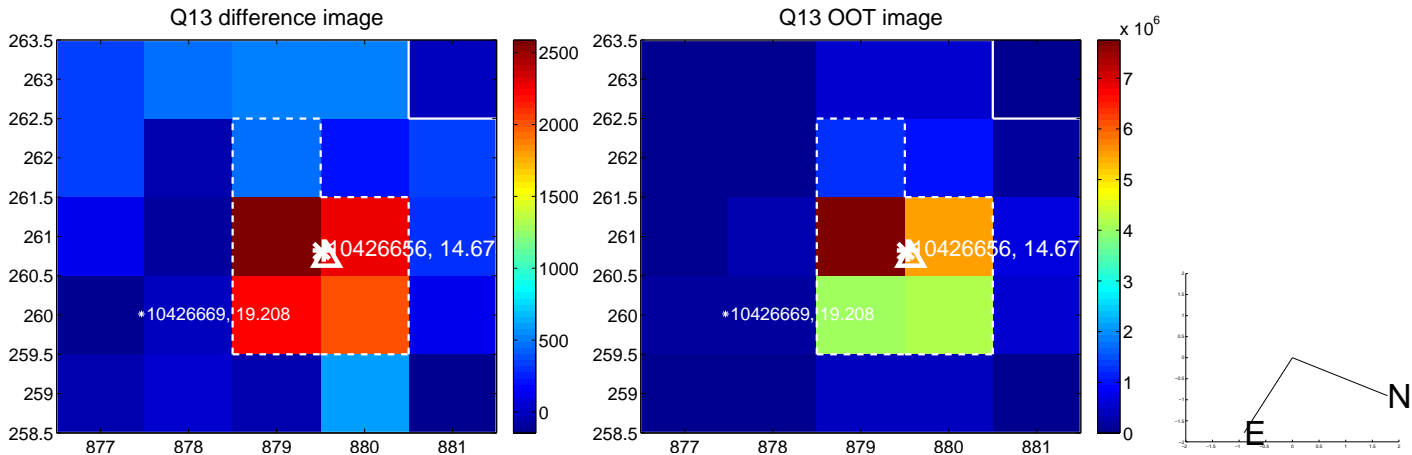




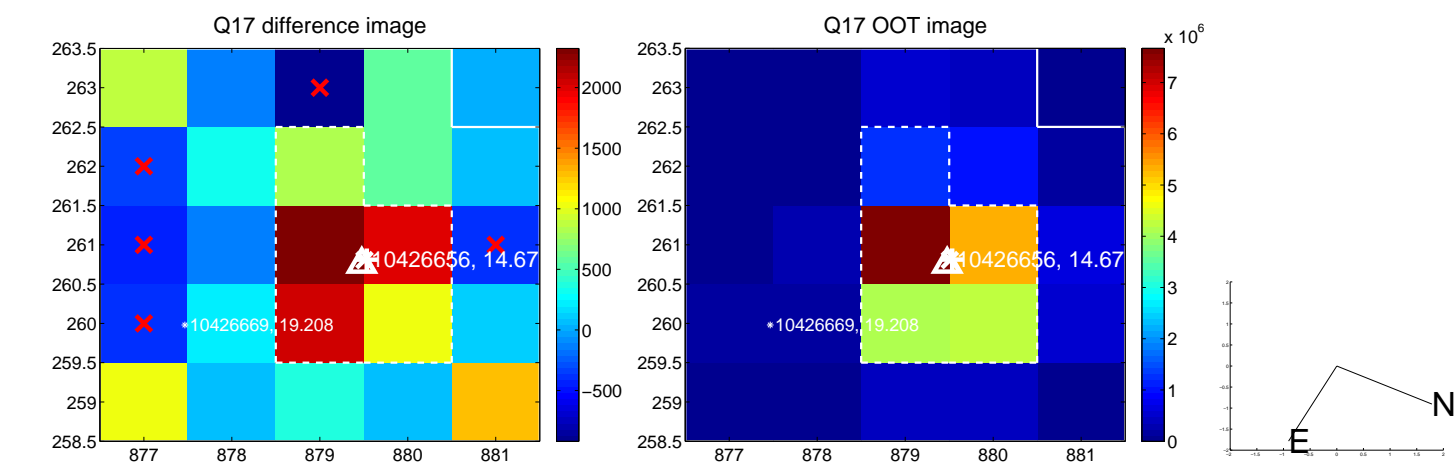
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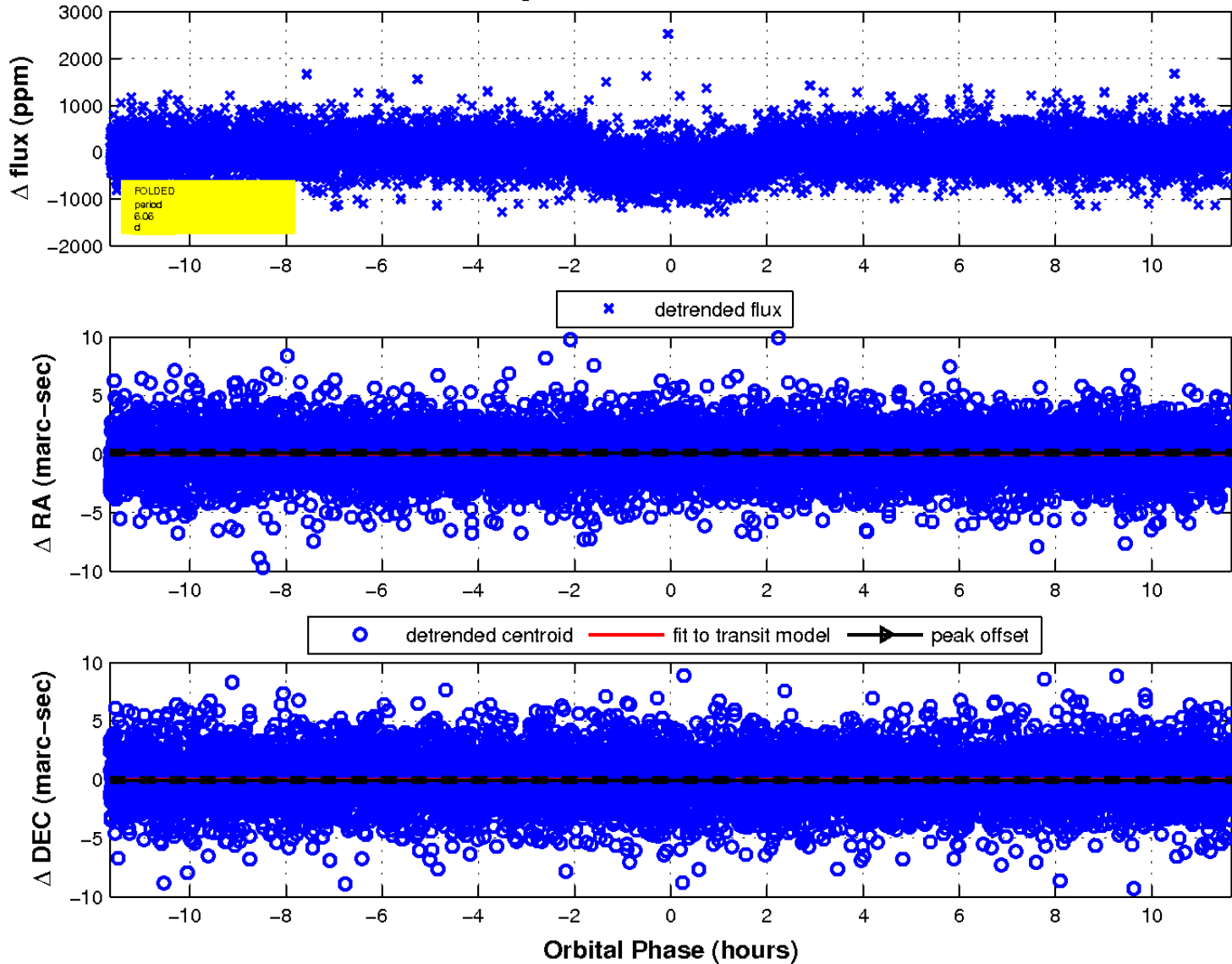
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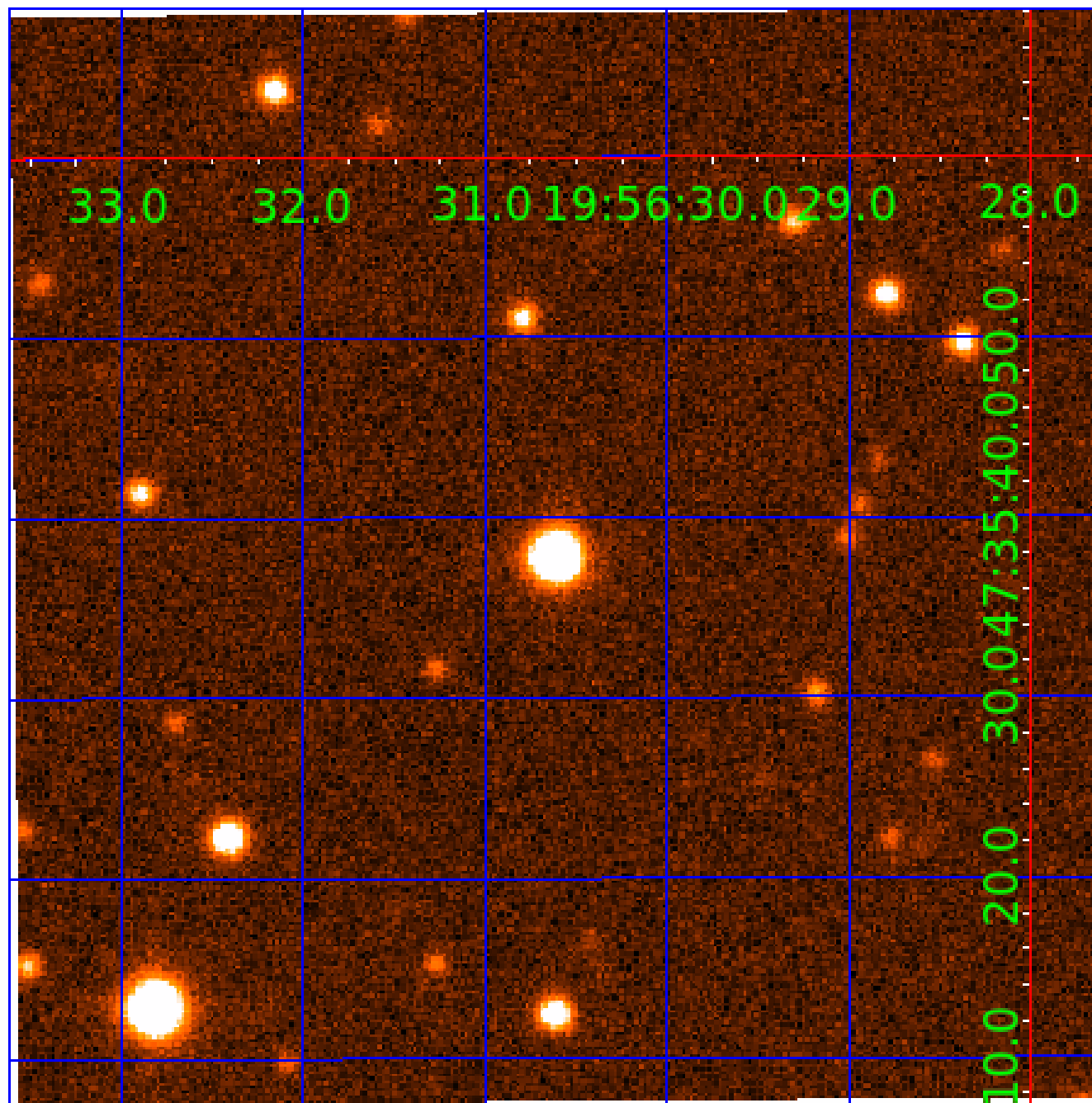


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination





# KIC 010426656

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010426656-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010426656-02	OBS	PC	0.99	0	0	0	0	NO_COMMENT
010426656-03	OBS	PC	0.96	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.

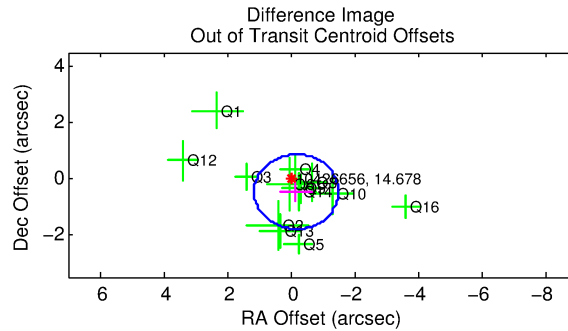
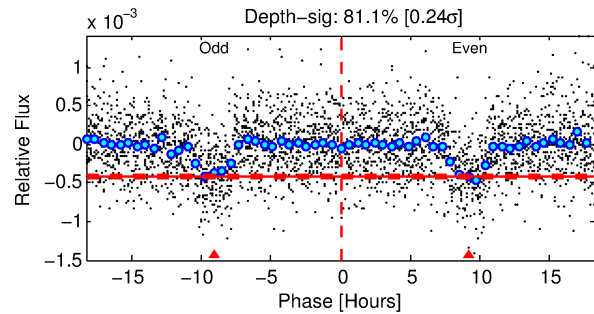
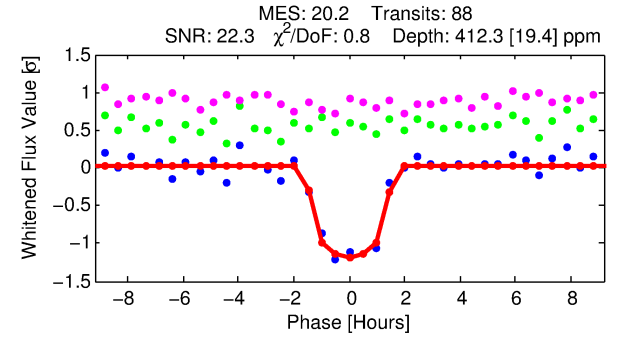
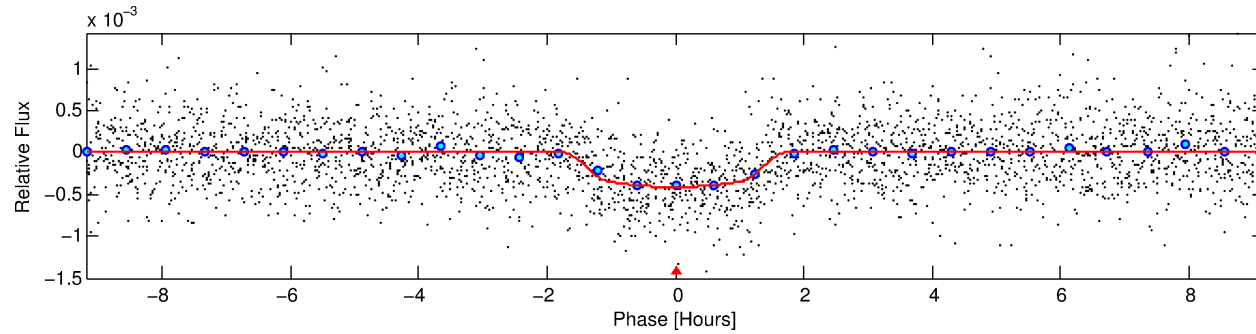
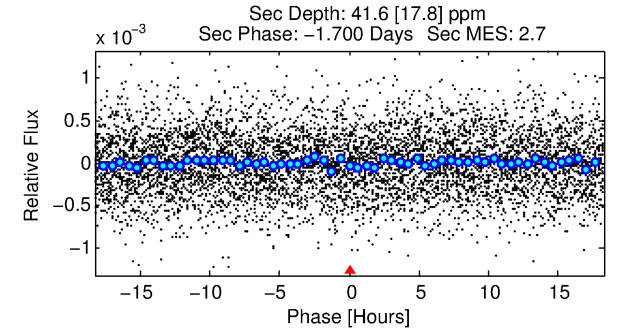
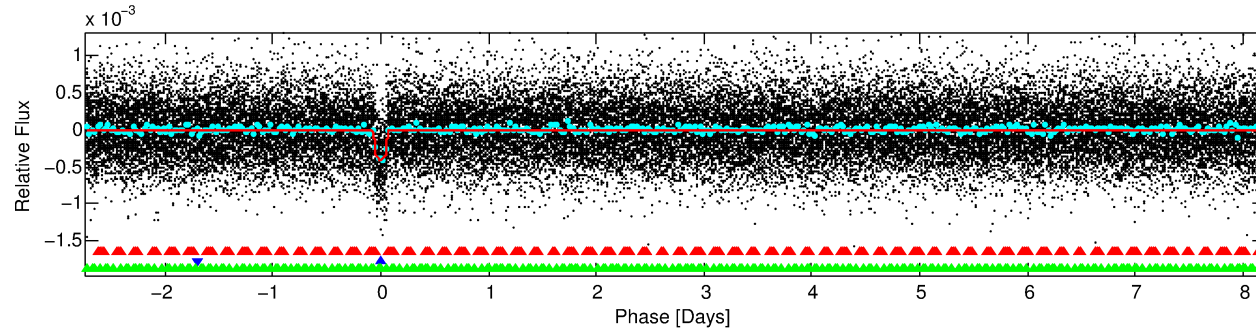
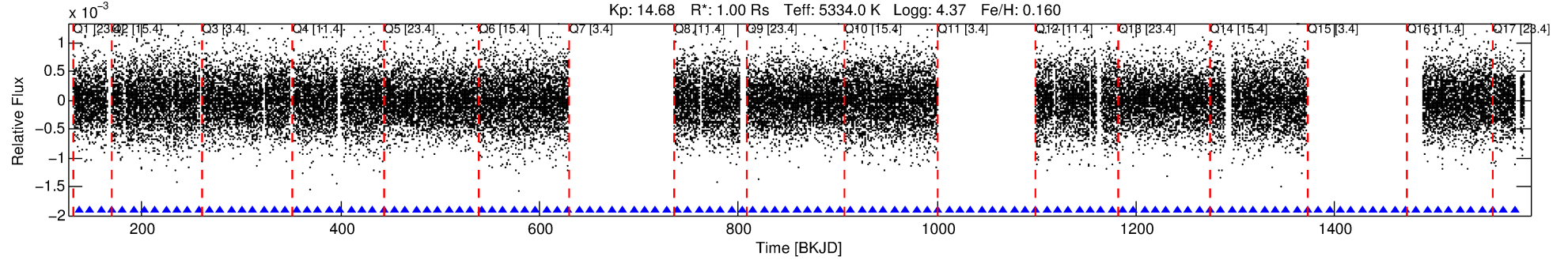
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010426656-02

No Significant Match Found

# DV One-Page Summary

KIC: 10426656 Candidate: 2 of 3 Period: 10.937 d  
KOI: K01161.02 Name: Kepler-272d Corr: 0.969



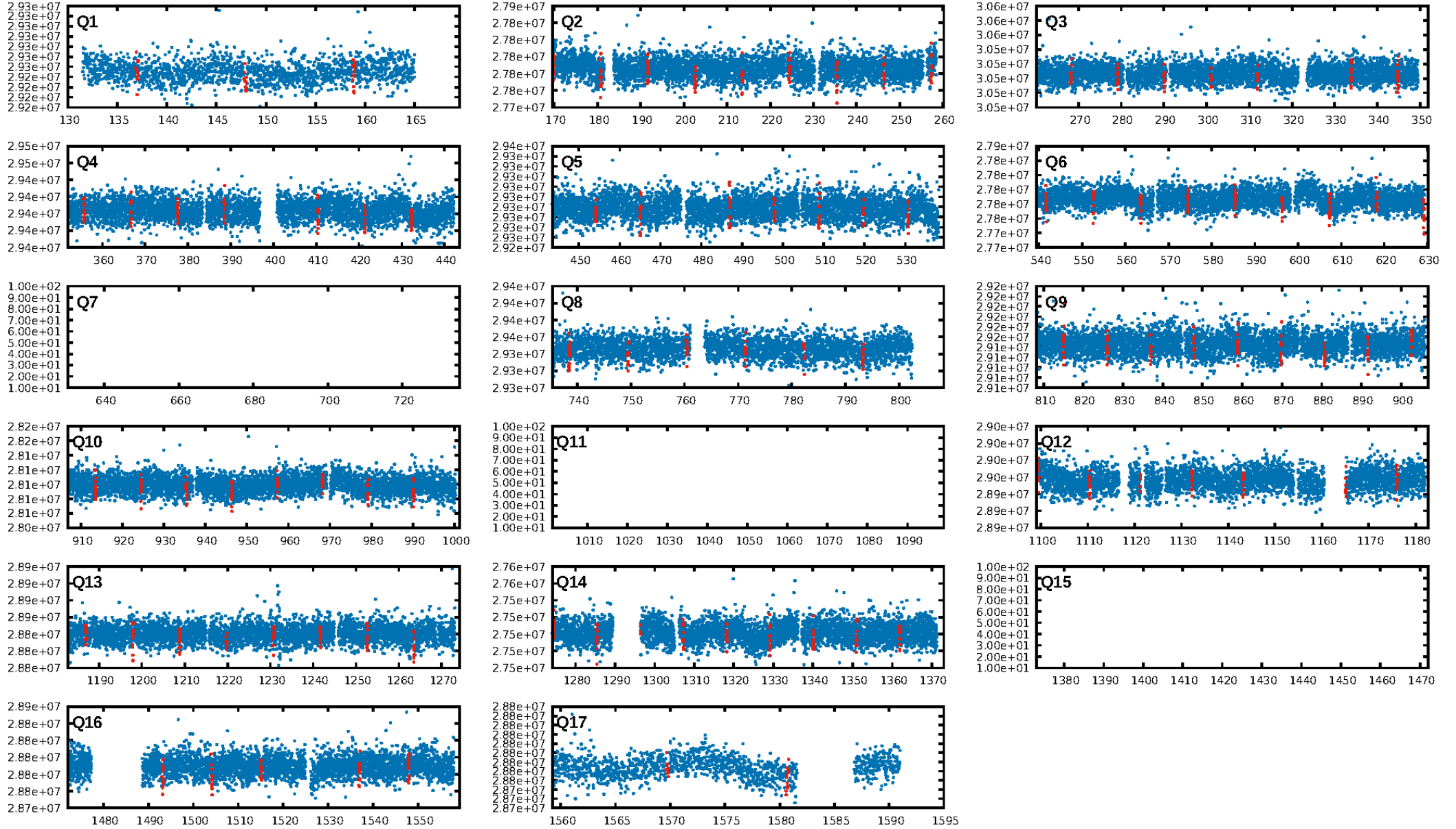
## DV Fit Results:

Period = 10.93725 [0.00004] d  
Epoch = 136.9845 [0.0031] BKJD  
Rp/R\* = 0.0213 [0.0084]  
a/R\* = 15.87 [24.73]  
b = 0.84 [0.56]  
Seff = 86.51 [19.84]  
Teff = 778 [45] K  
Rp = 2.34 [0.97] Re  
a = 0.0919 [0.0124] AU  
Ag = 35.46 [32.72] [1.05σ]  
Teffp = 2934 [658] K [3.27σ]

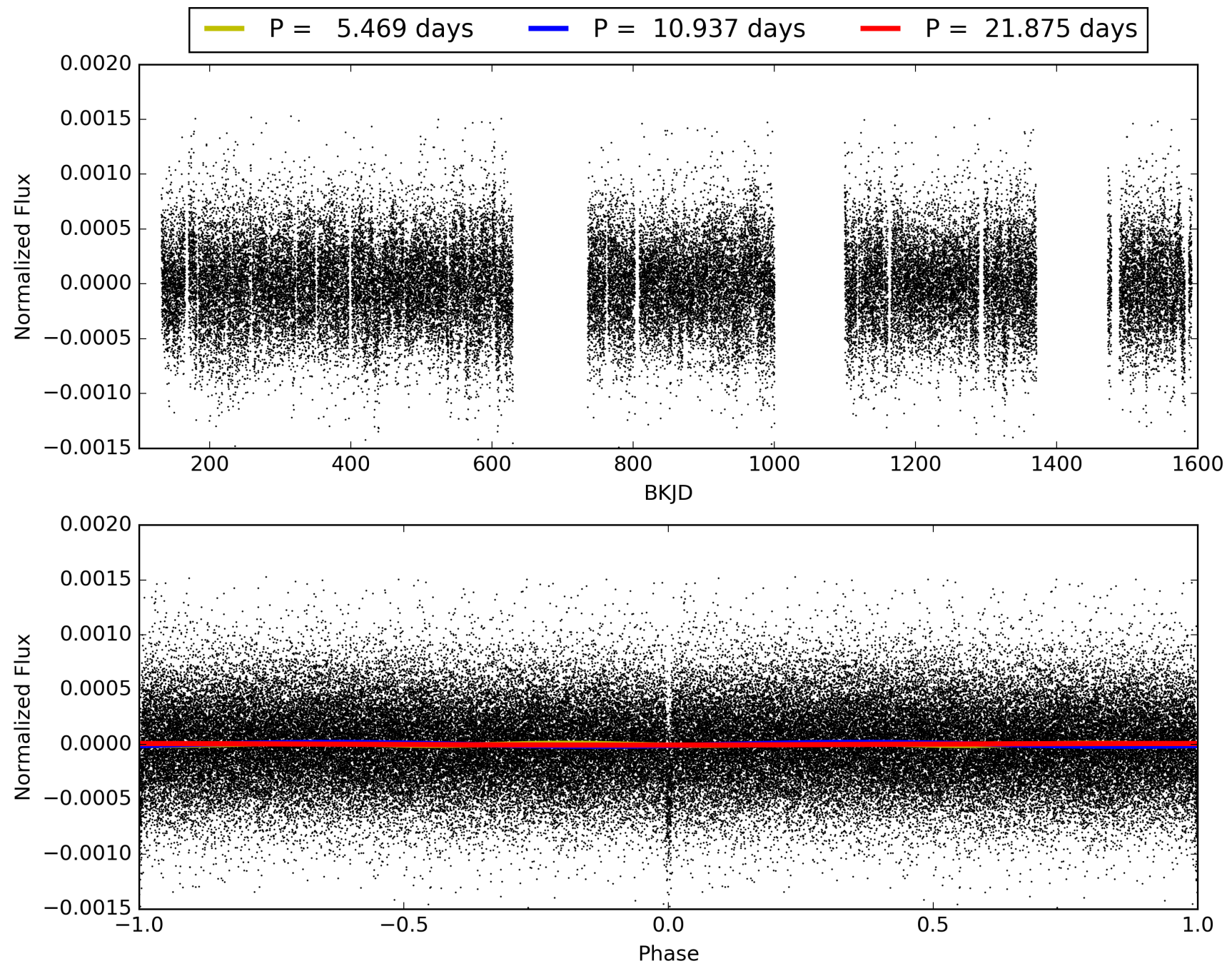
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [23.66σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.70e-87  
RollingBand-fgt: 1.00 [84/84]  
GhostDiagnostic-chr: 5.159  
Centroid-sig: 78.5%  
Centroid-so: 0.220 arcsec [0.32σ]  
OotOffset-rm: 0.498 arcsec [1.13σ]  
KicOffset-rm: 0.486 arcsec [1.22σ]  
OotOffset-st: 4/1/4/4 [13]  
KicOffset-st: 4/1/4/4 [13]  
DiffImageQuality-fgm: 0.92 [12/13]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 010426656-02, PDC Light Curves

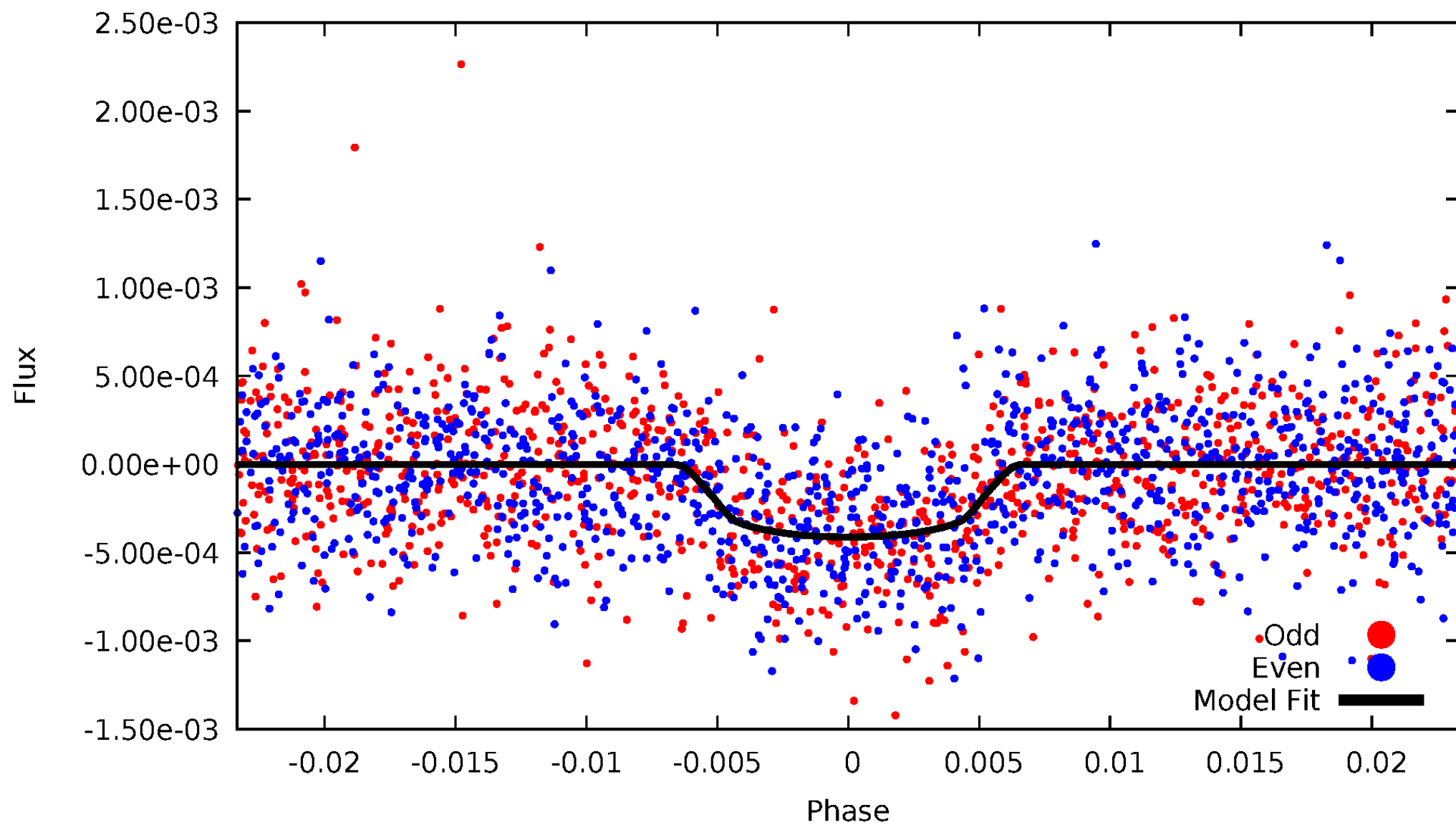


TCE 010426656-02



# DV Odd/Even

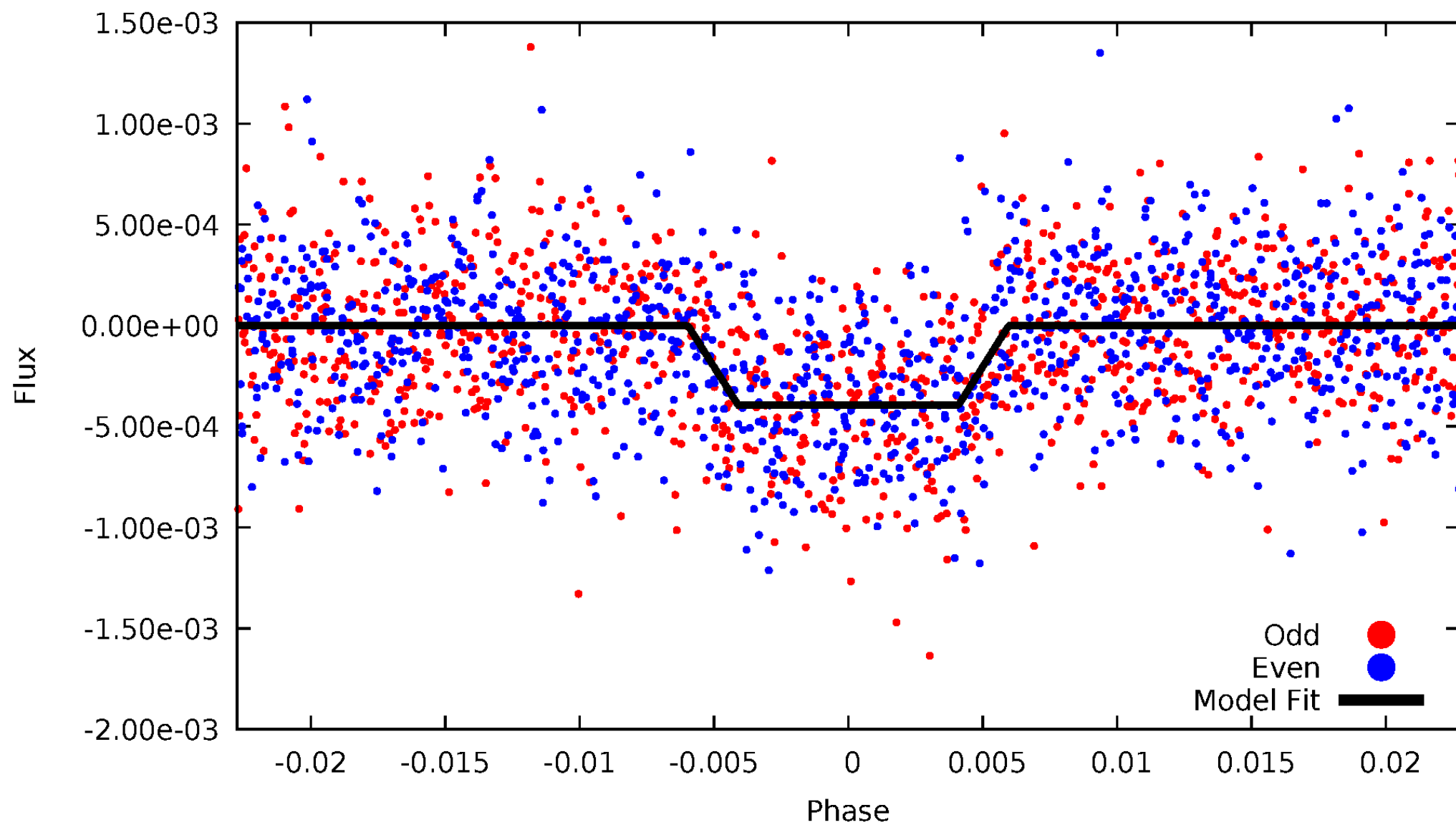
TCE 010426656-02





# ALT Odd/Even

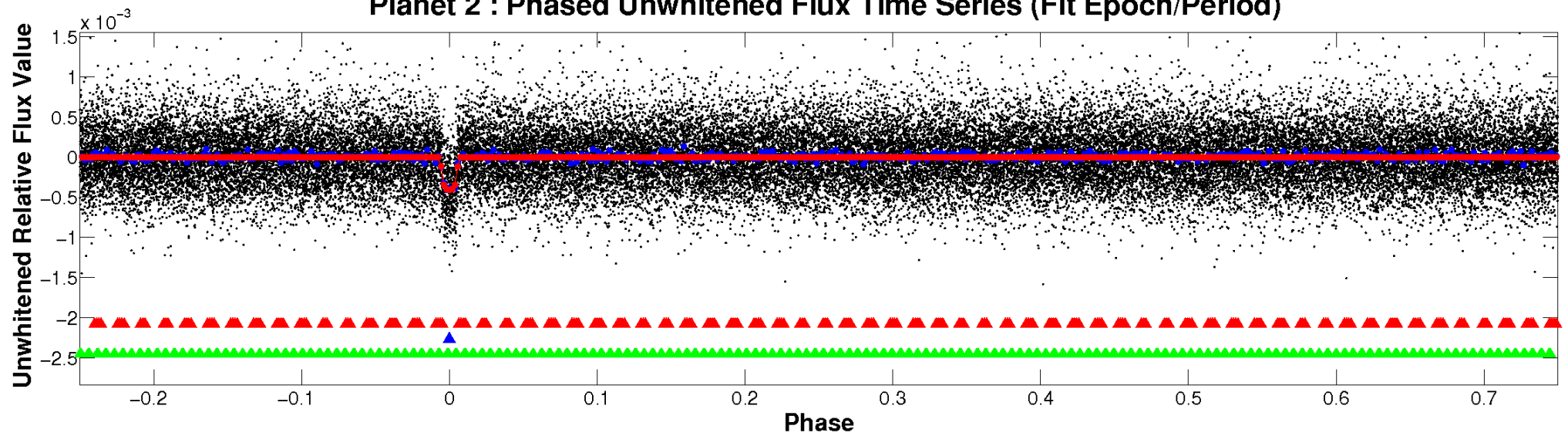
TCE 010426656-02



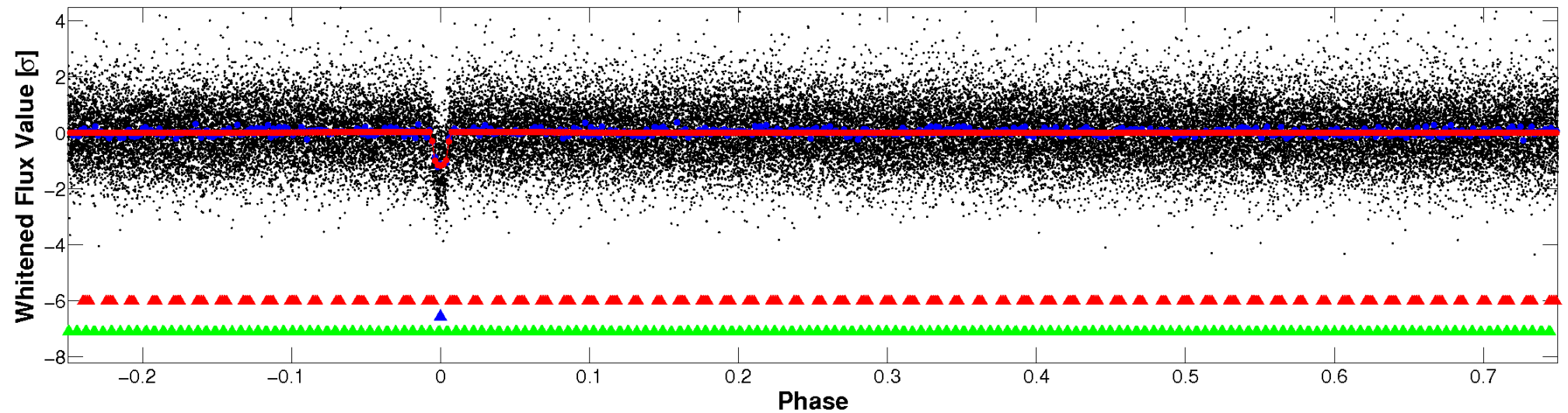


# Non-Whitened Vs. Whitened Light Curve

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

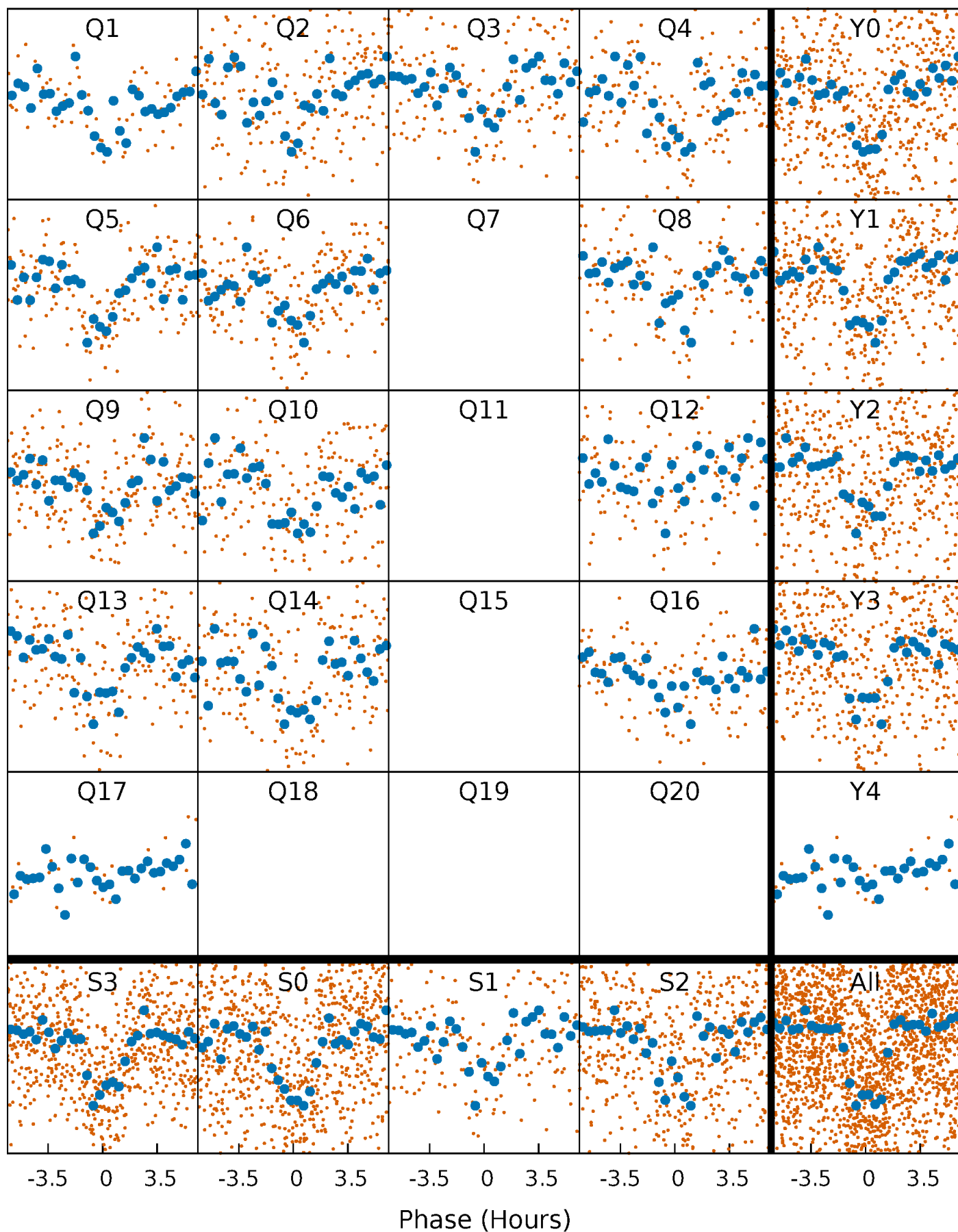


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



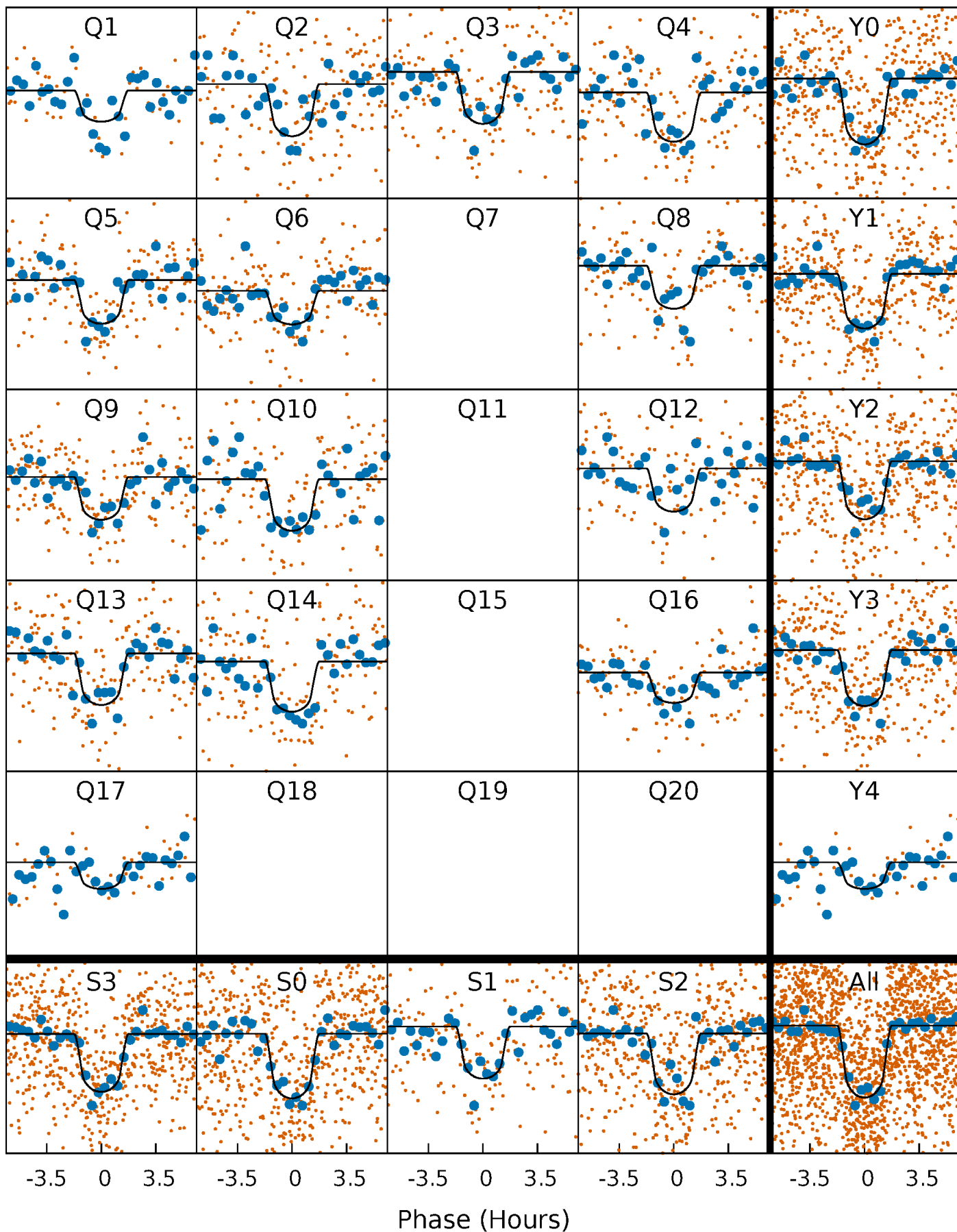
# PDC Quarter-Phased Transit Curves

TCE 010426656-02 P= 10.937253 Days  $T_0=136.984471$  (BKJD)



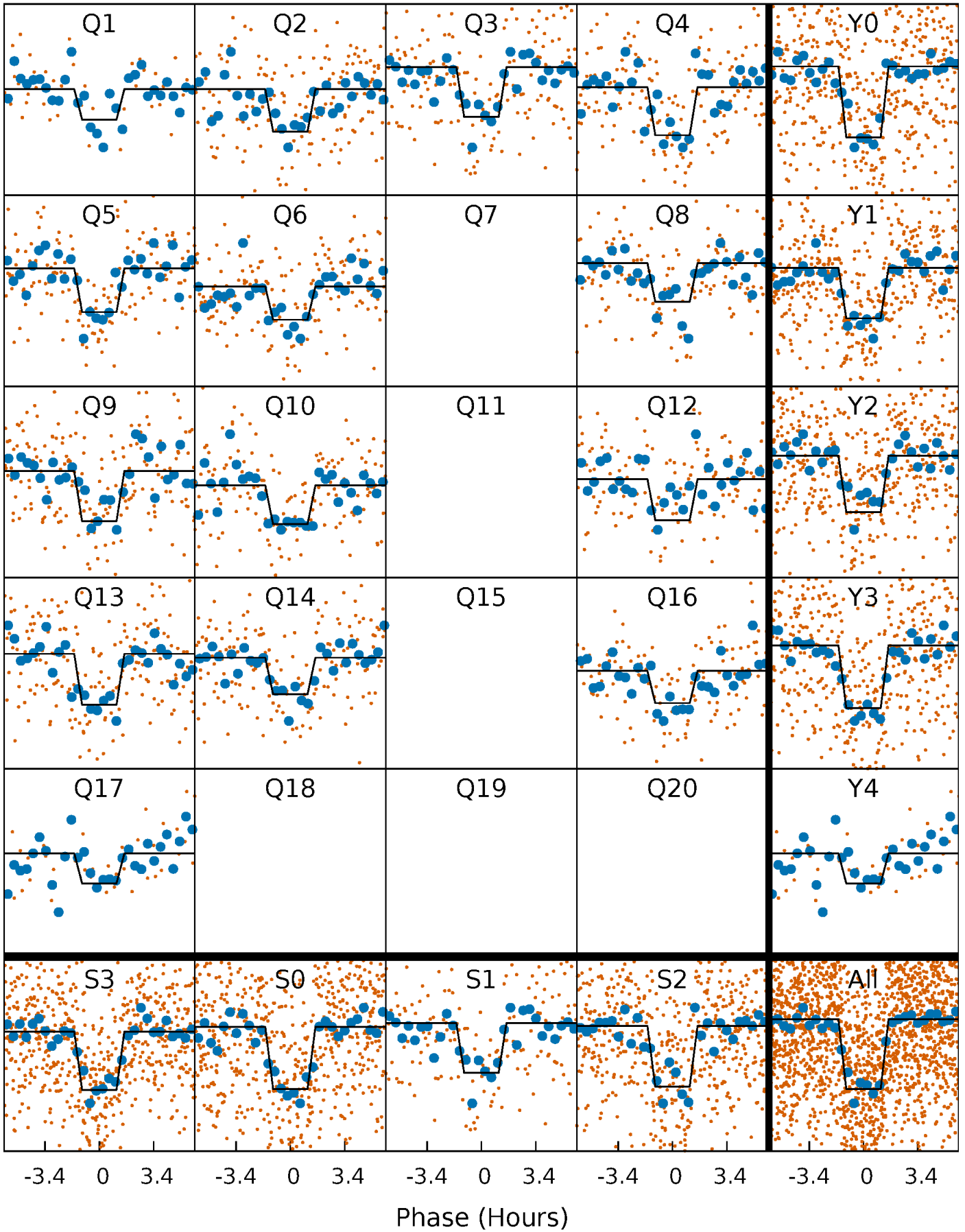
# DV Quarter-Phased Transit Curves

TCE 010426656-02 P= 10.937253 Days  $T_0=136.984471$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

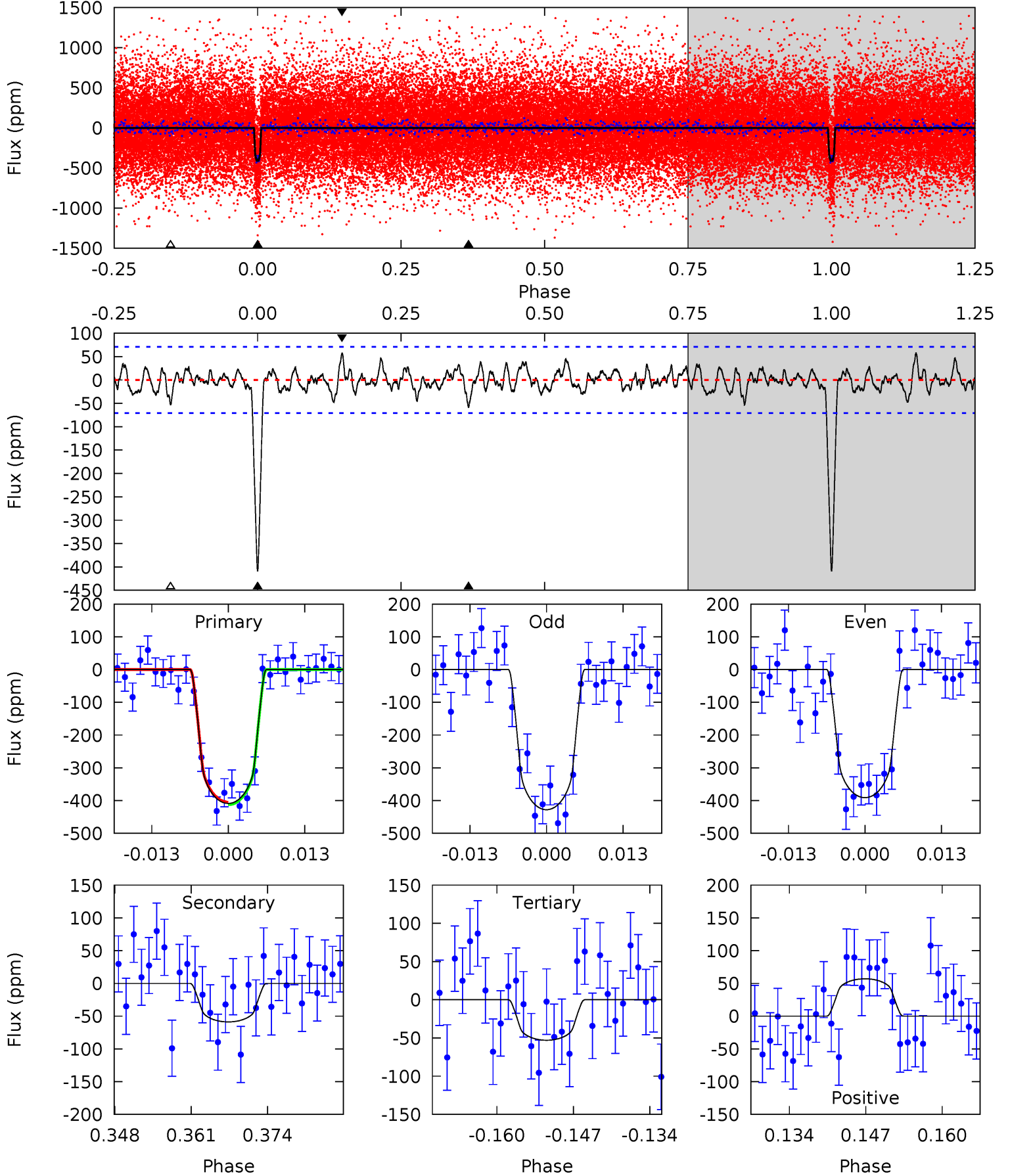
TCE 010426656-02     $P = 10.937266$  Days     $T_0 = 136.984426$  (BKJD)



# DV Model-Shift Uniqueness Test

010426656-02, P = 10.937253 Days, E = 126.047218 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
28.7	4.13	3.72	4.00	4.97	2.47	1.23	25.0	24.7	0.41	0.13	1.29	1.03	0.12	0.26

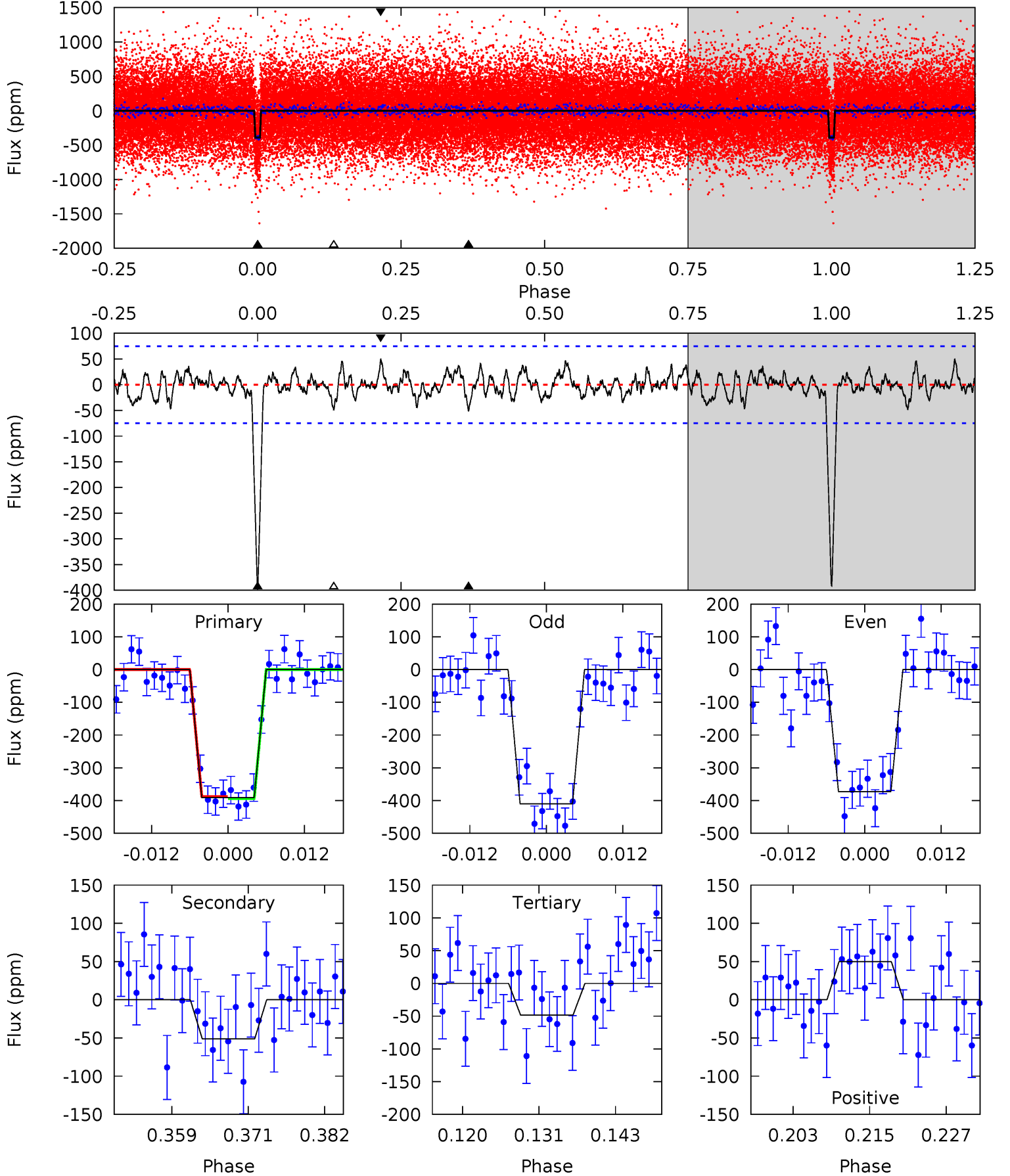




# Alt Model-Shift Uniqueness Test

010426656-02, P = 10.937266 Days, E = 126.047160 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
26.1	3.41	3.23	3.32	4.99	2.51	1.18	22.9	22.8	0.18	0.09	1.24	1.04	0.11	0.20



### Stellar Parameters For KIC 010426656

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5334^{+79}_{-79}$	$4.372^{+0.132}_{-0.077}$	$0.160^{+0.150}_{-0.150}$	$1.004^{+0.111}_{-0.135}$	$0.865^{+0.064}_{-0.032}$	$1.204^{+0.693}_{-0.314}$
	+1%/-1%	+3%/-2%	+94%/-94%	+11%/-13%	+7%/-4%	+58%/-26%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 010426656-02 / KOI 1161.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-59 \pm 14$	$2.25^{+0.99}_{-0.87}$	$1082^{+38}_{-44}$	$3623^{+701}_{-406}$	$53^{+90}_{-28}$
Alt.	$-51 \pm 15$	$2.15^{+0.96}_{-0.80}$	$1081^{+37}_{-43}$	$3595^{+727}_{-438}$	$51^{+91}_{-29}$

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



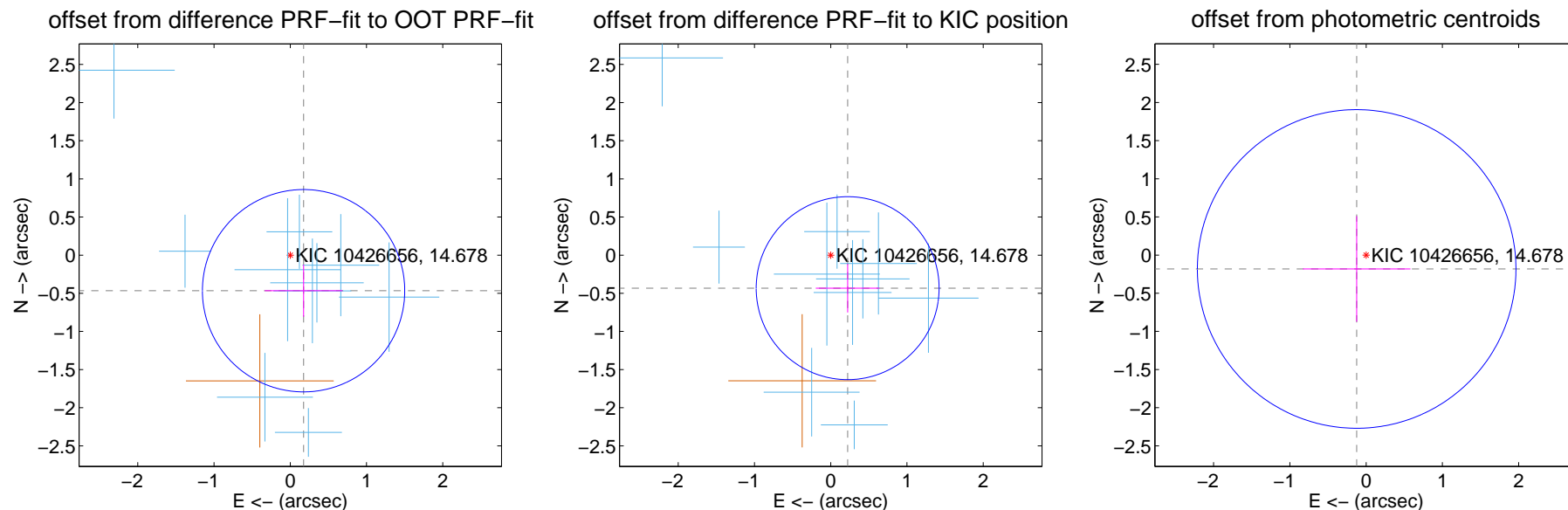
## DV Centroid Data

Supplemental centroid analysis for 010426656-02. Kepler magnitude: 14.68. Transit SNR 22.30

There are 12 quarters with good PRF difference image offsets

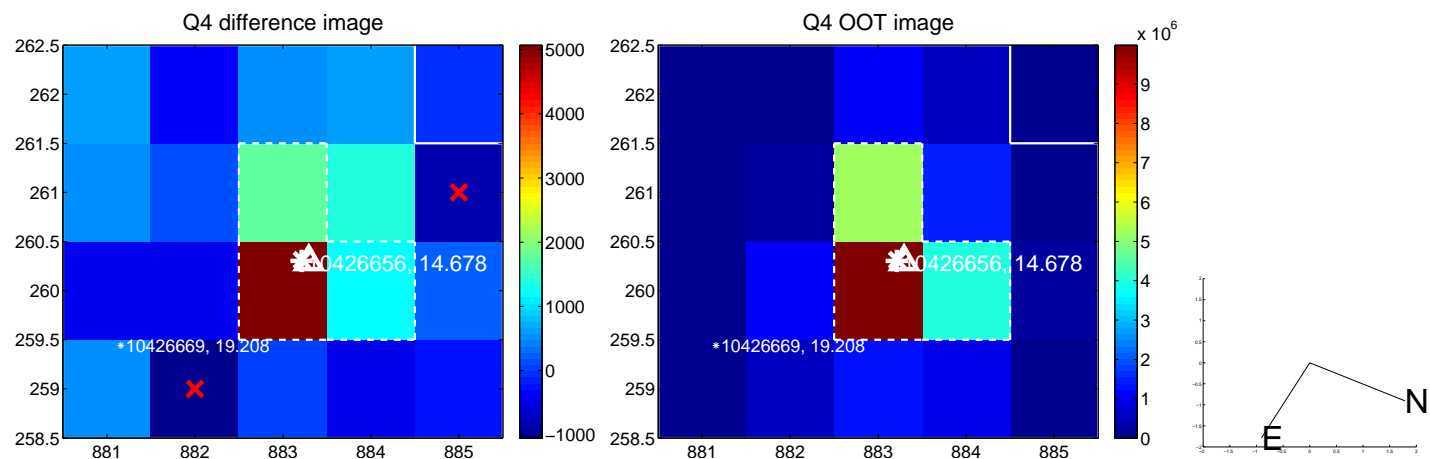
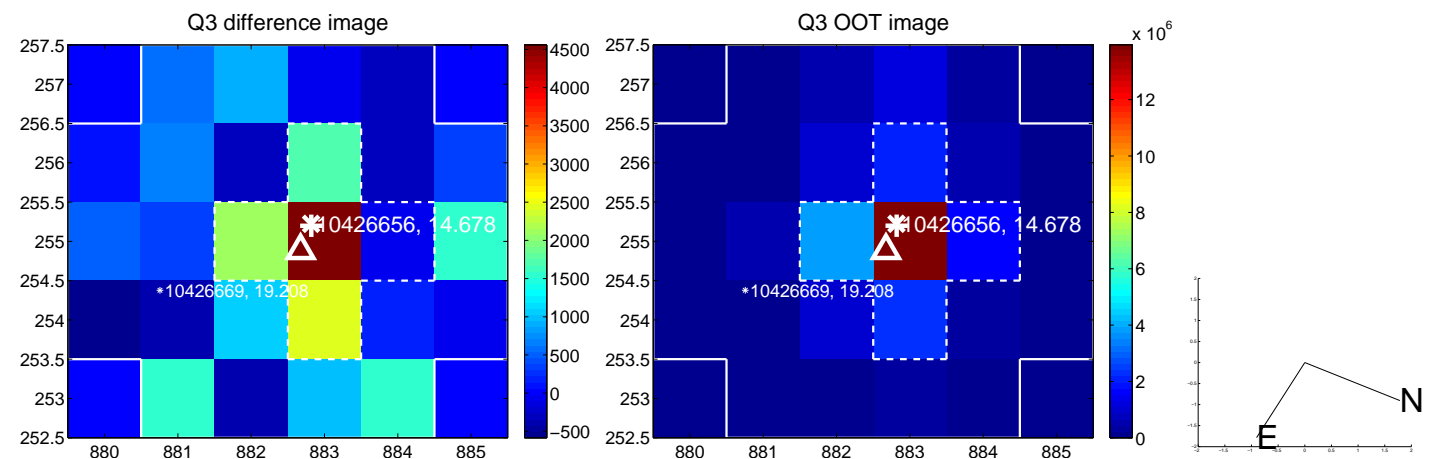
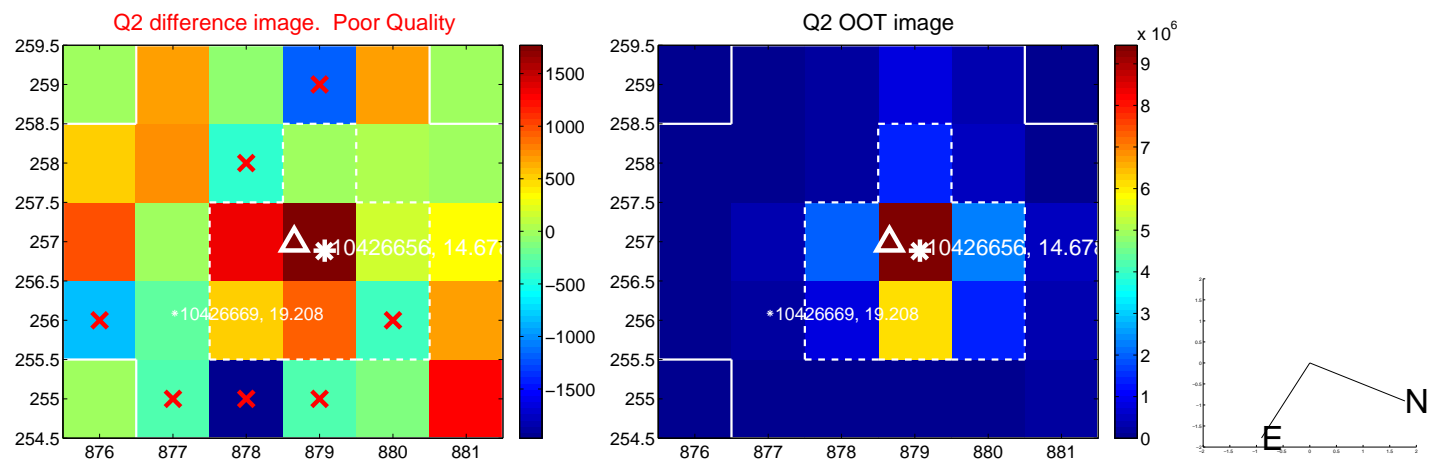
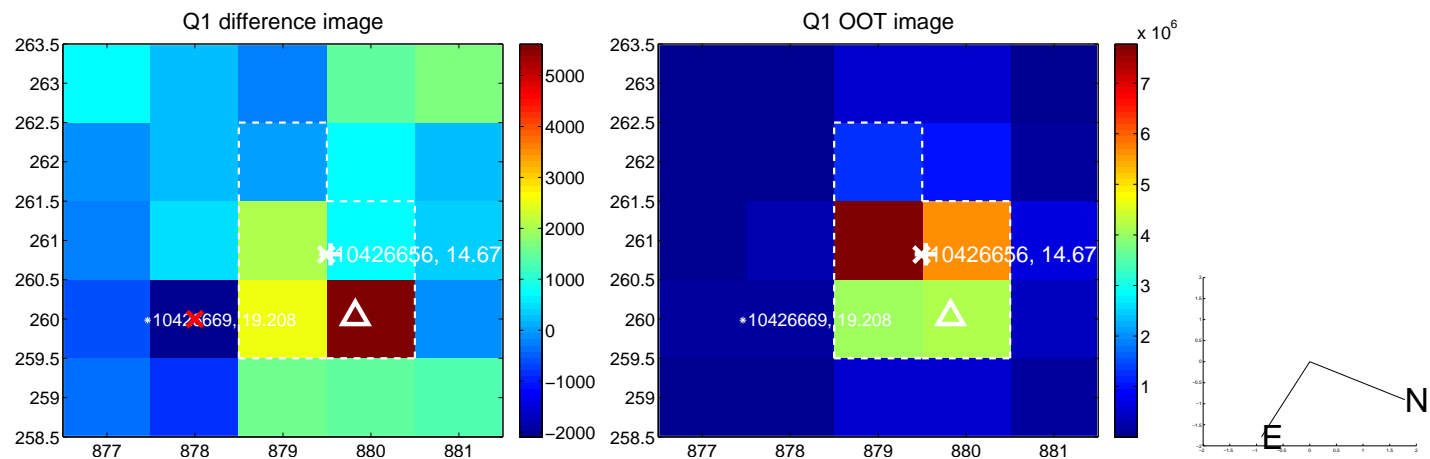
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.498 \pm 0.442$	1.13	$-0.175 \pm 0.510$	$-0.466 \pm 0.341$
PRF-fit source offset from KIC position	$0.486 \pm 0.400$	1.22	$-0.222 \pm 0.418$	$-0.433 \pm 0.319$
photometric centroid source offset	$0.22 \pm 0.70$	0.32	$0.12 \pm 0.70$	$-0.18 \pm 0.69$

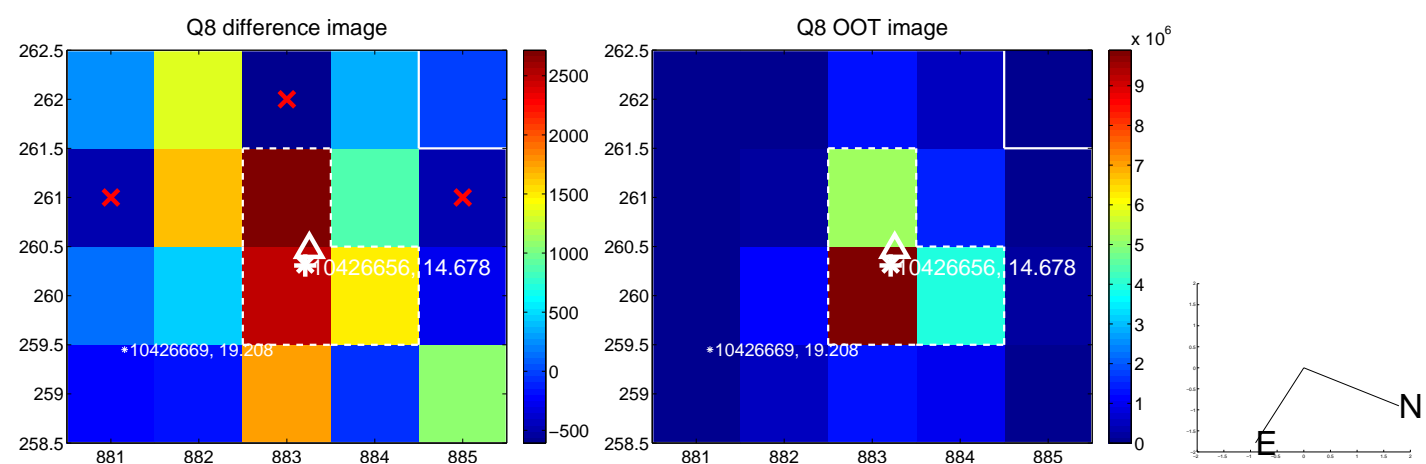
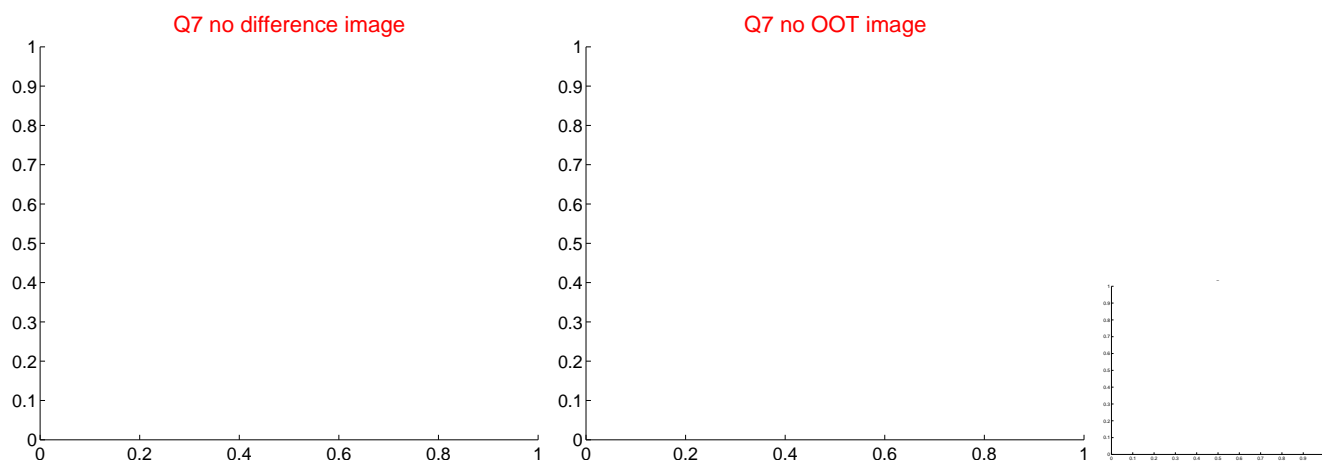
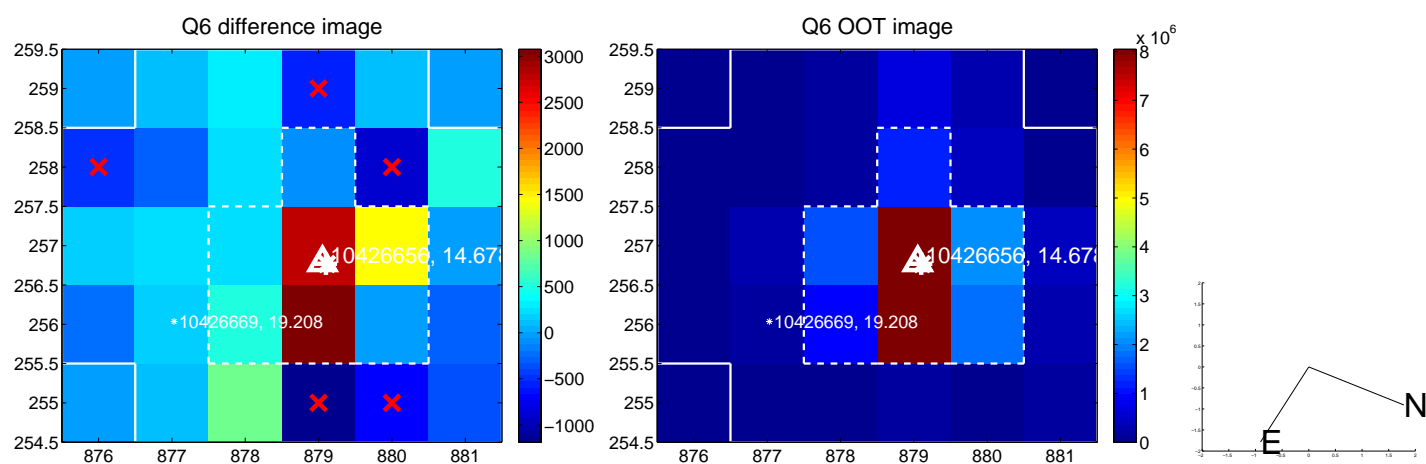
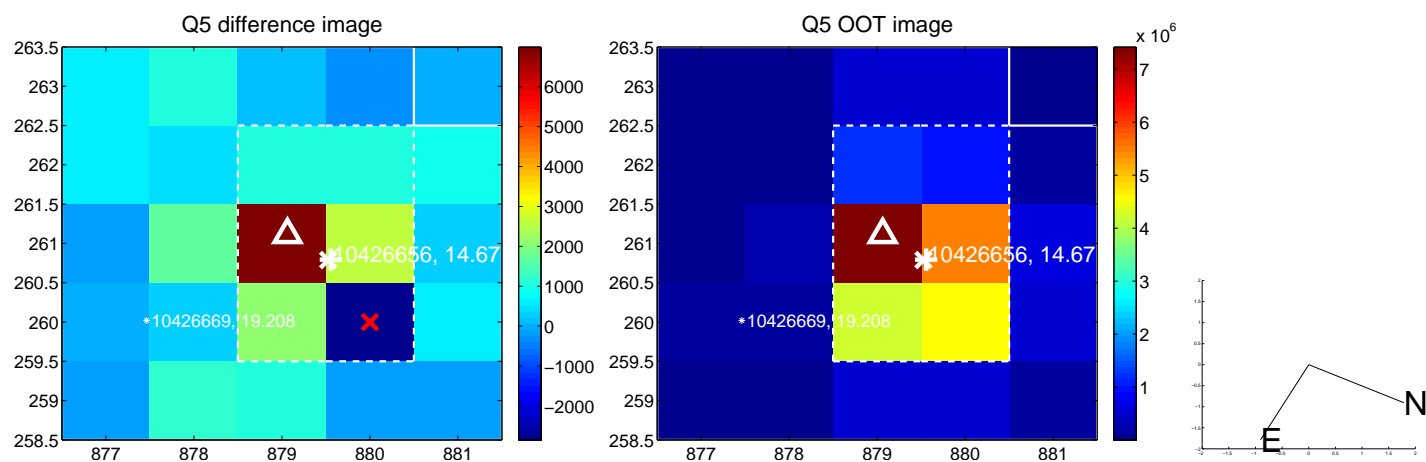


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

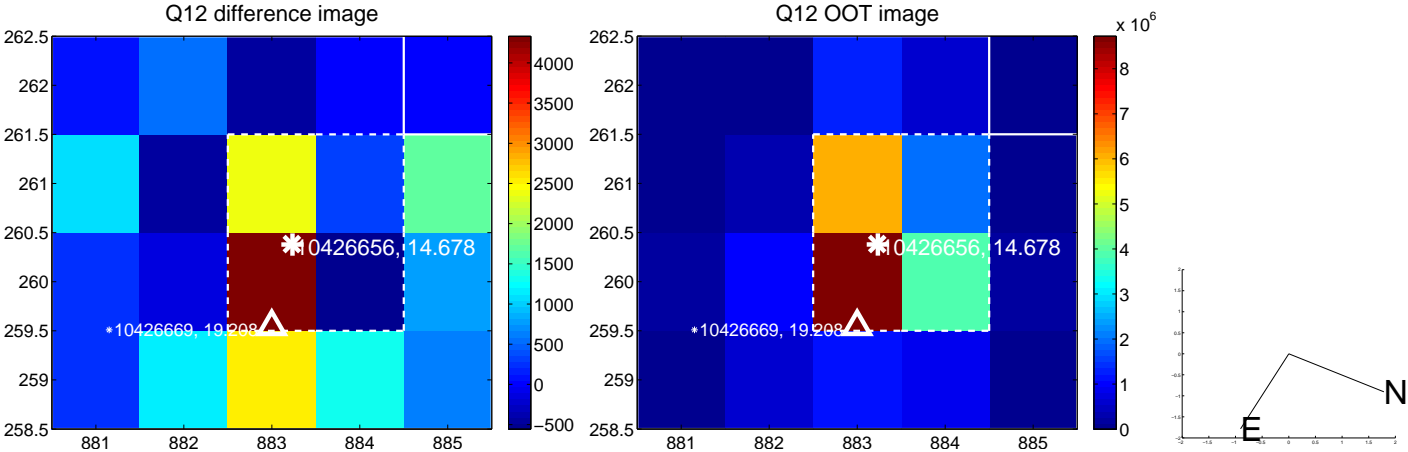
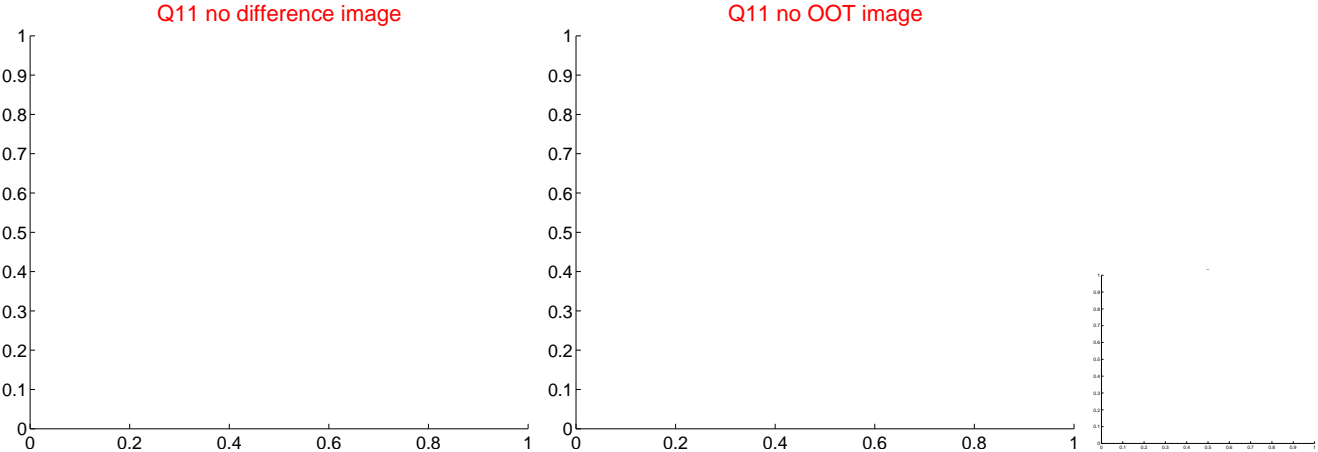
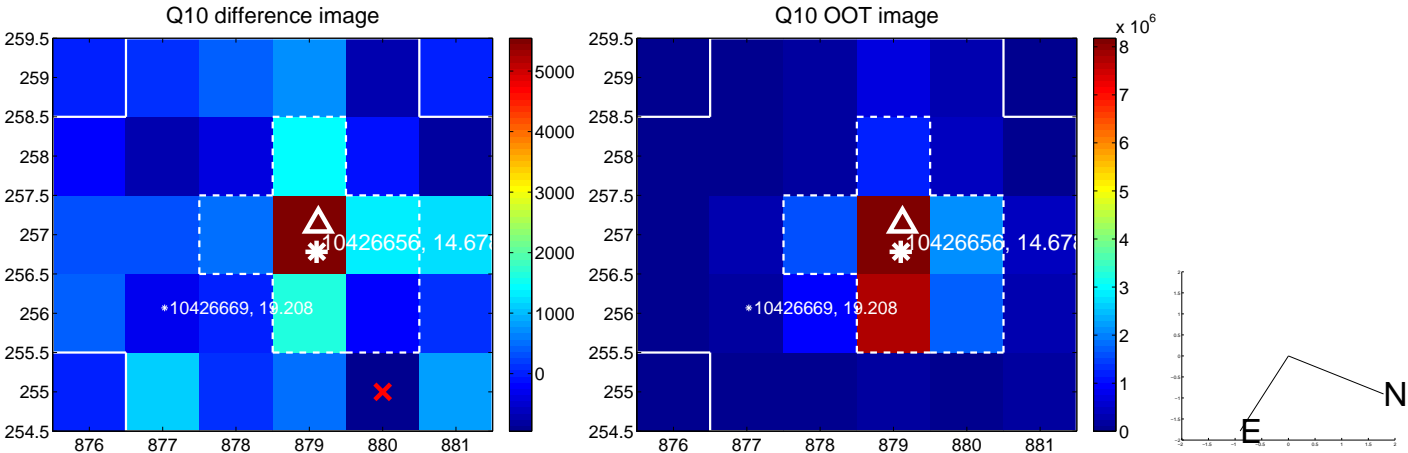
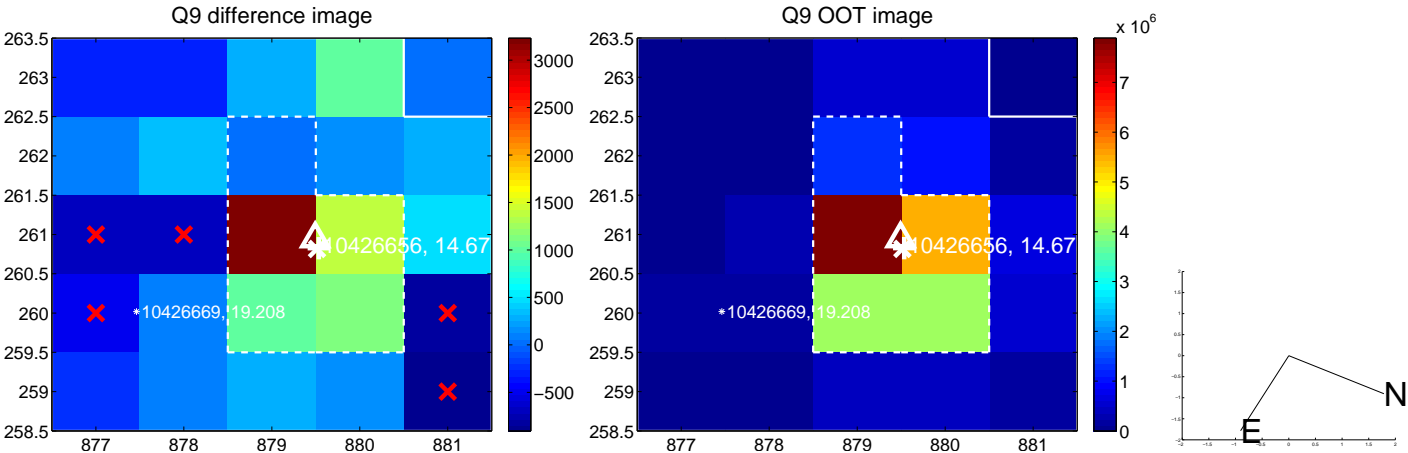
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



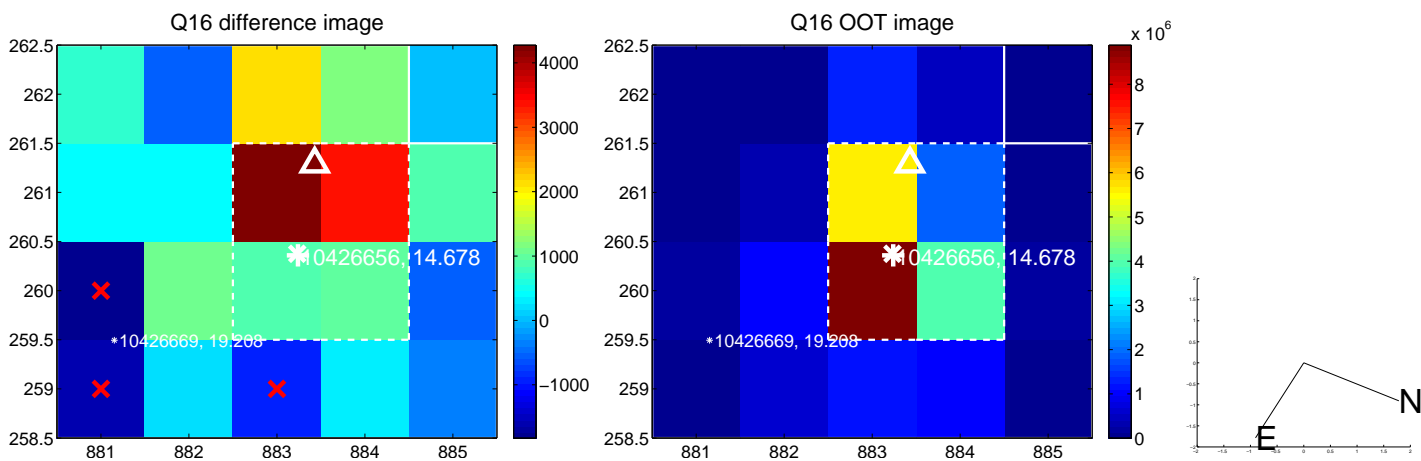
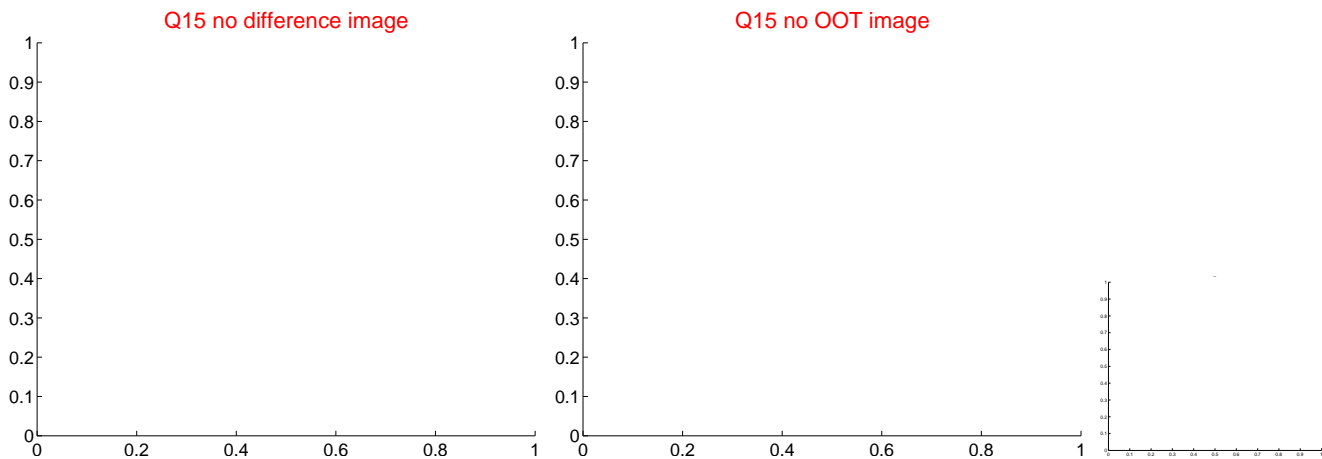
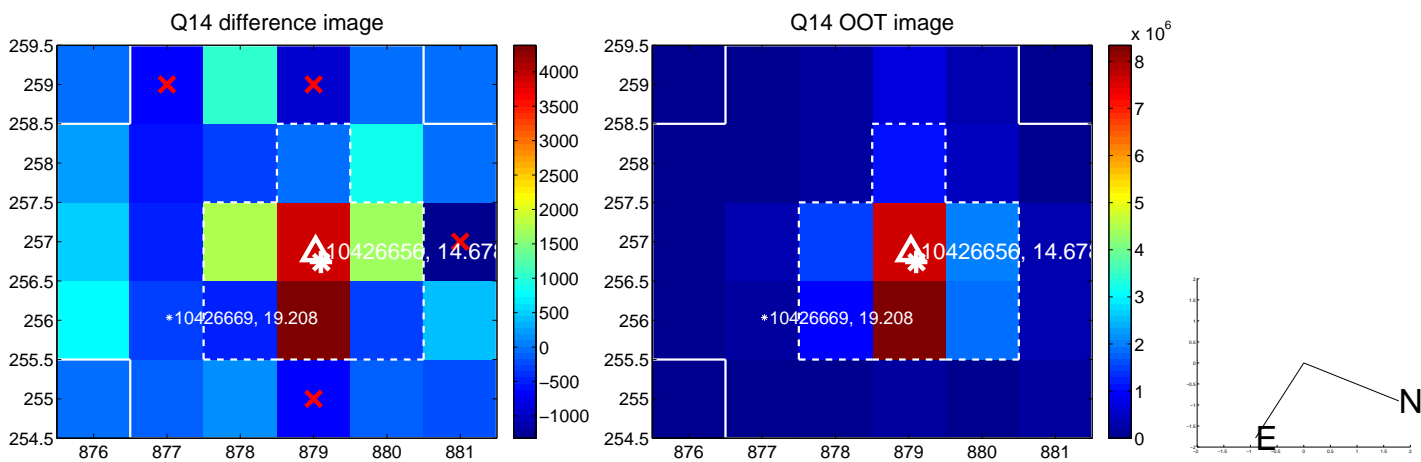
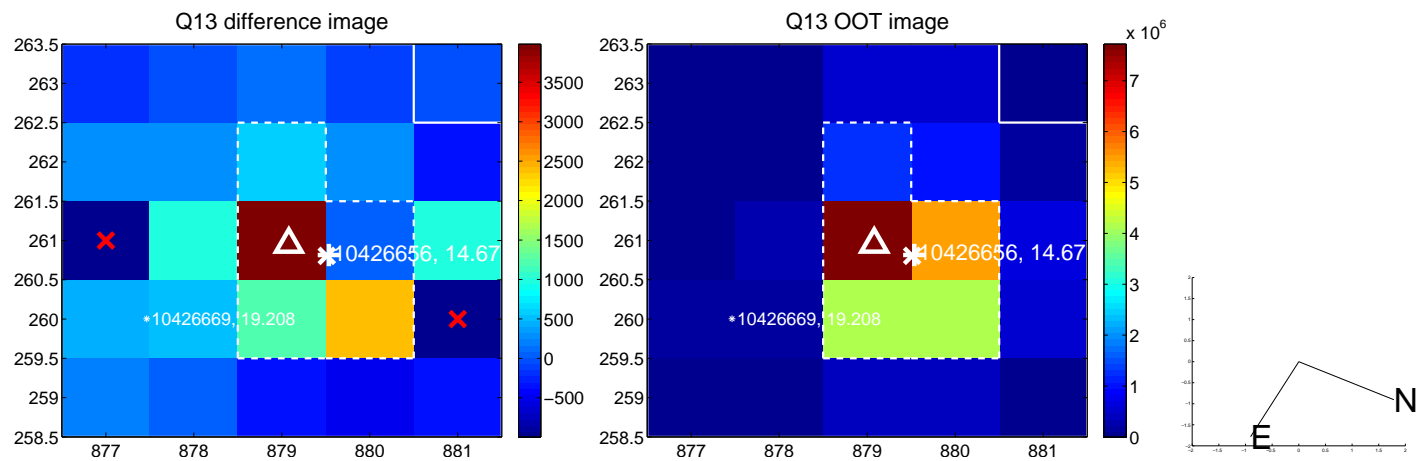
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



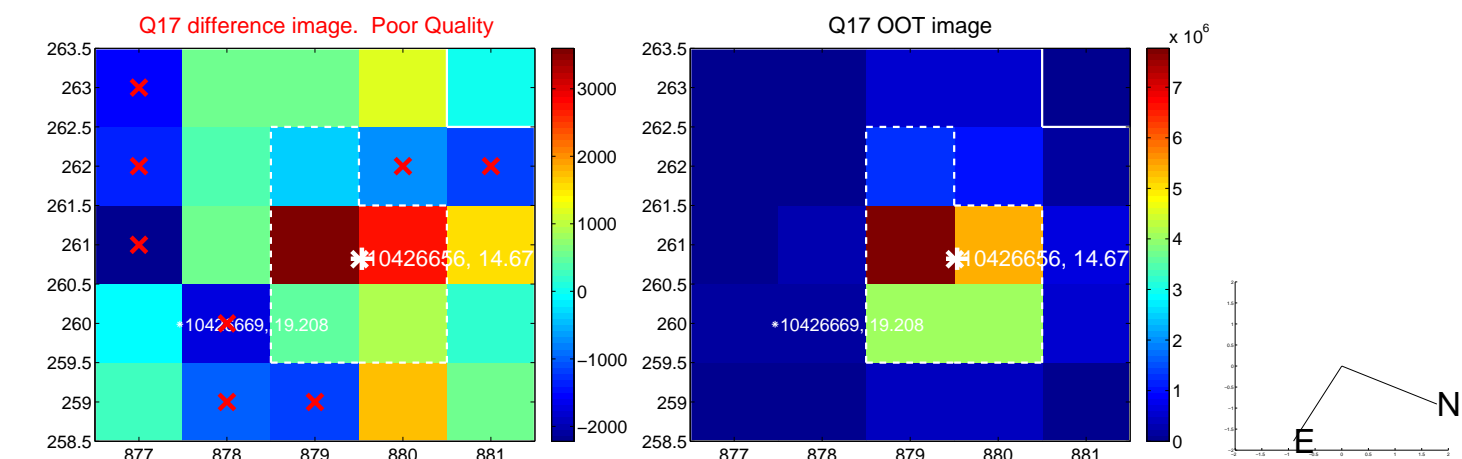
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



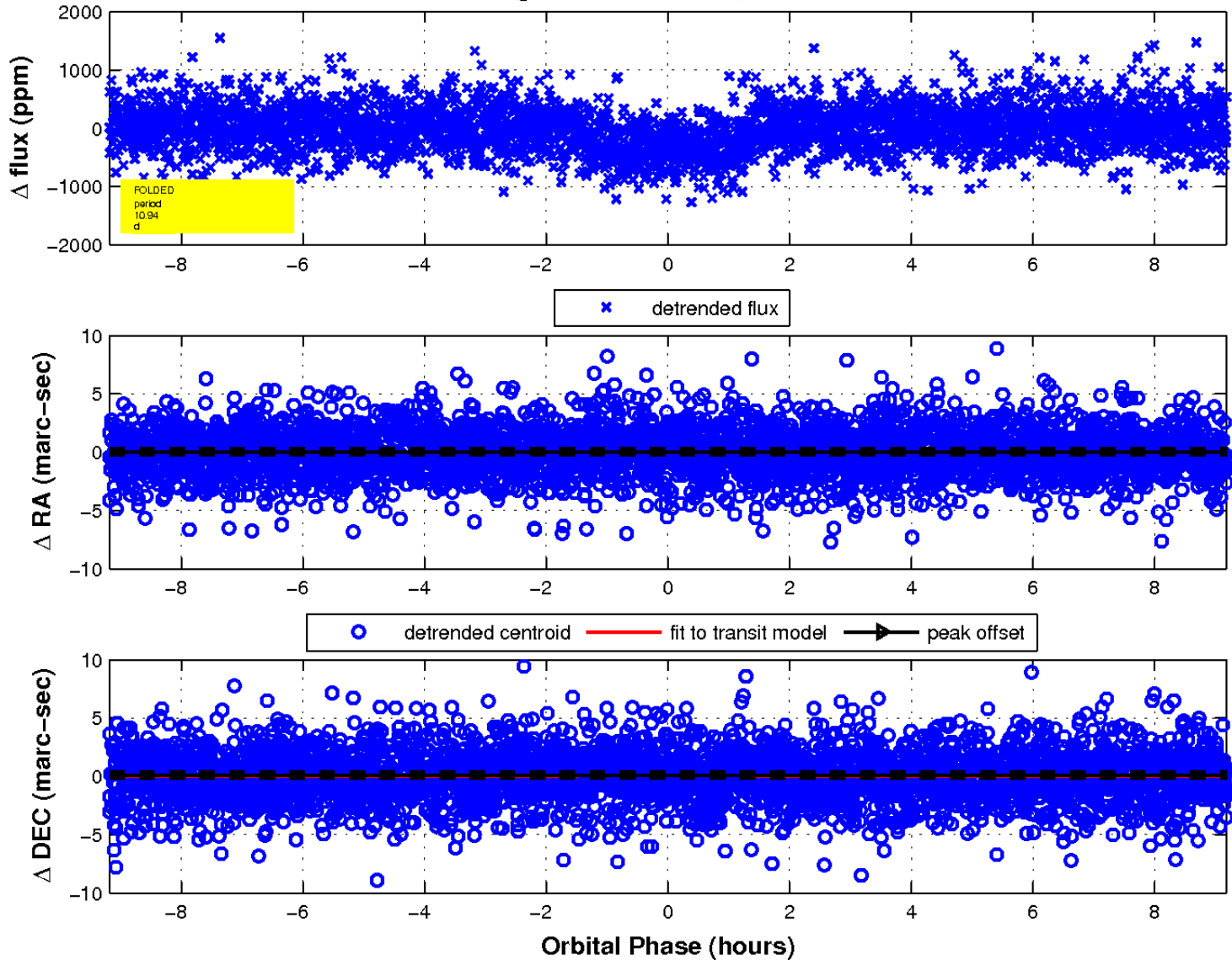
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



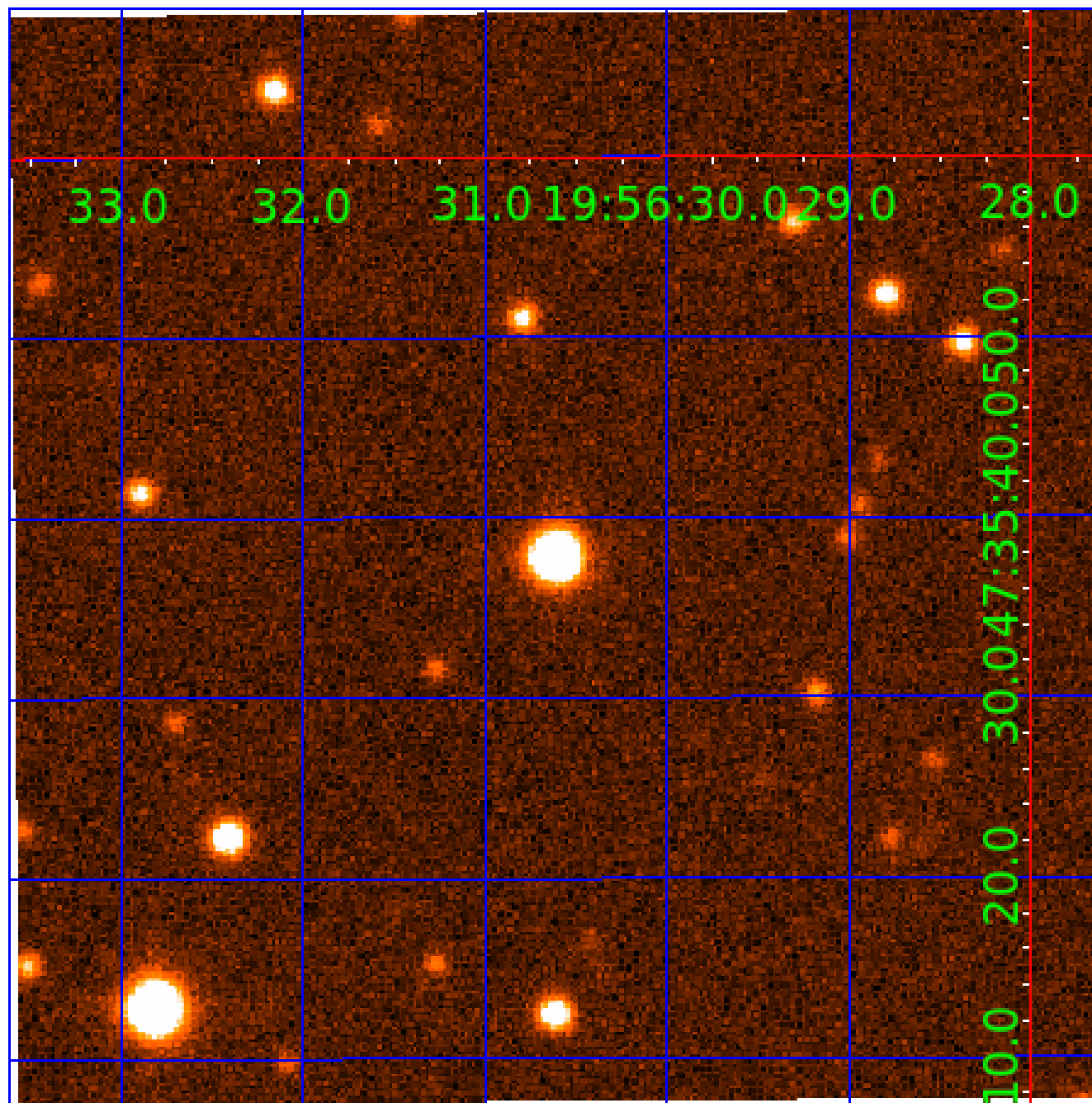
fluxWeightedCentroids, Planet 2 of 3





UKIRT Image

Declination



# KIC 010426656

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010426656-01	OBS	1161.01	6.057310	135.925712	373.8	3.889	27.4	31.8	1.00	5334	2.24	190.21
010426656-02	OBS	1161.02	10.937253	136.984471	412.3	3.063	20.2	22.3	1.00	5334	2.34	86.51
010426656-03	OBS	1161.03	2.971362	134.387608	212.5	2.749	19.4	21.6	1.00	5334	1.70	491.65

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010426656-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010426656-02	OBS	PC	0.99	0	0	0	0	NO_COMMENT
010426656-03	OBS	PC	0.96	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.

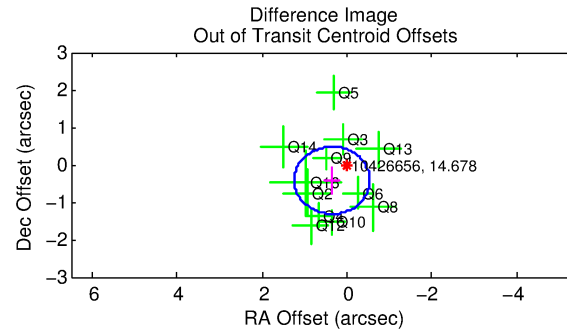
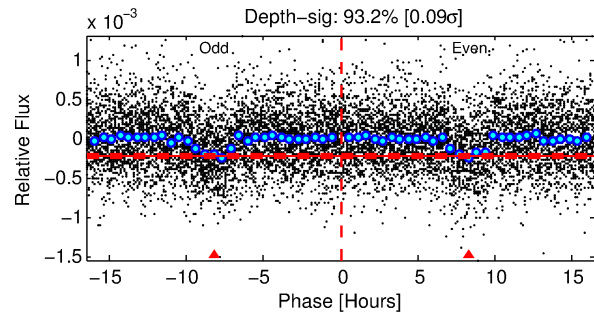
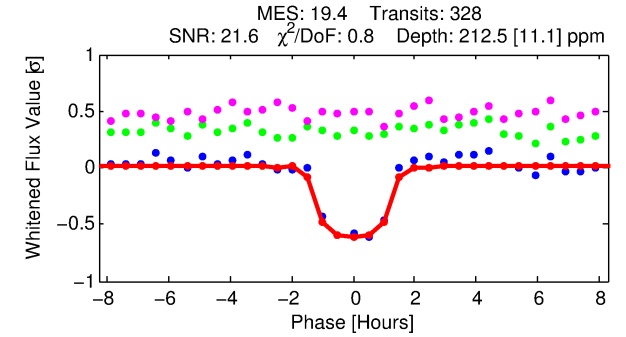
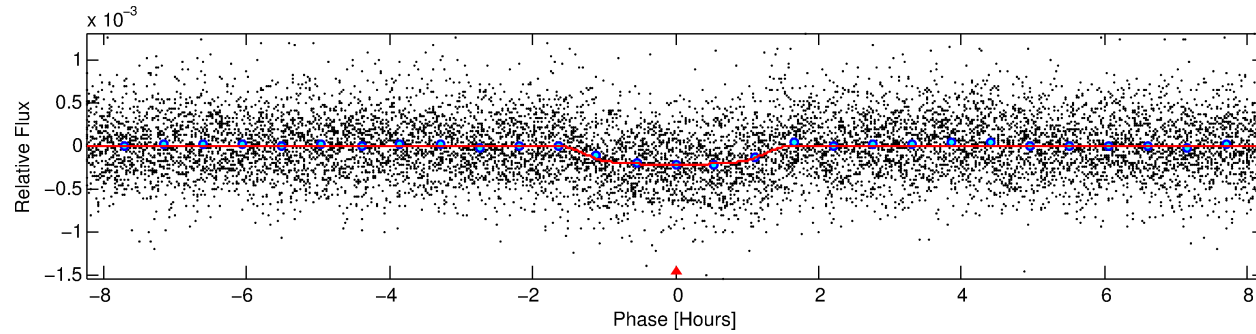
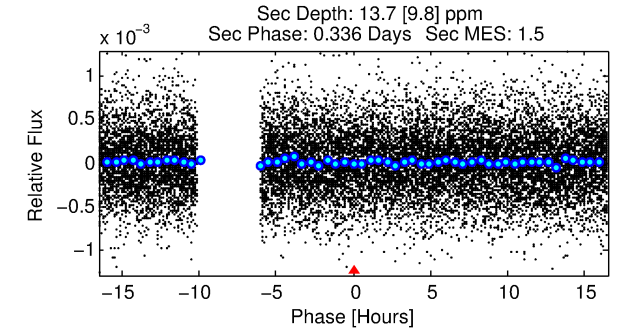
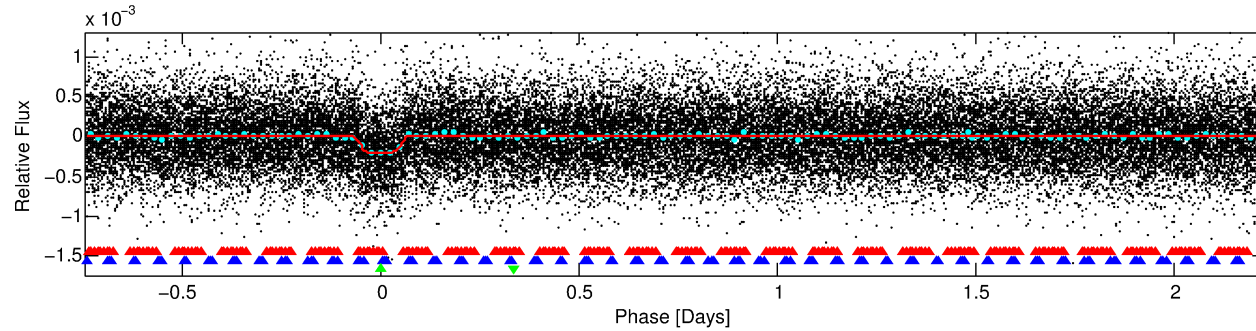
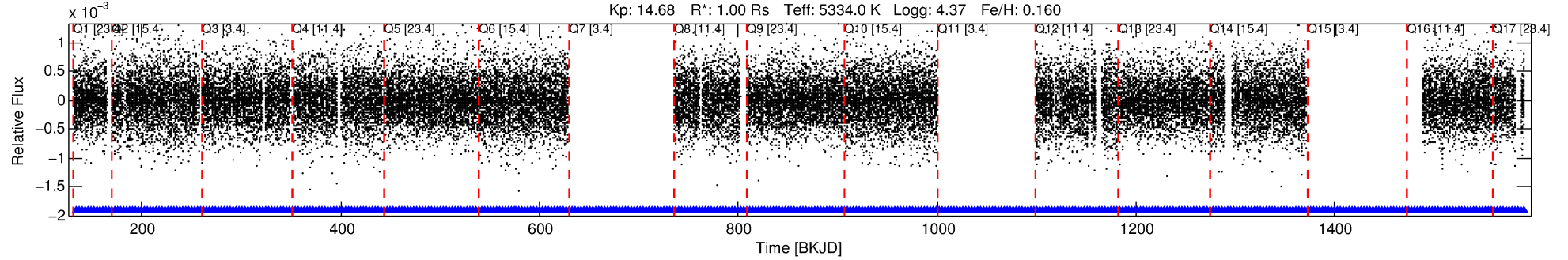
## Ephemeris Match Information For 010426656-03

No Significant Match Found

# DV One-Page Summary

KIC: 10426656 Candidate: 3 of 3 Period: 2.971 d  
KOI: K01161.03 Name: Kepler-272b Corr: 0.994

Kp: 14.68 R\*: 1.00 Rs Teff: 5334.0 K Logg: 4.37 Fe/H: 0.160



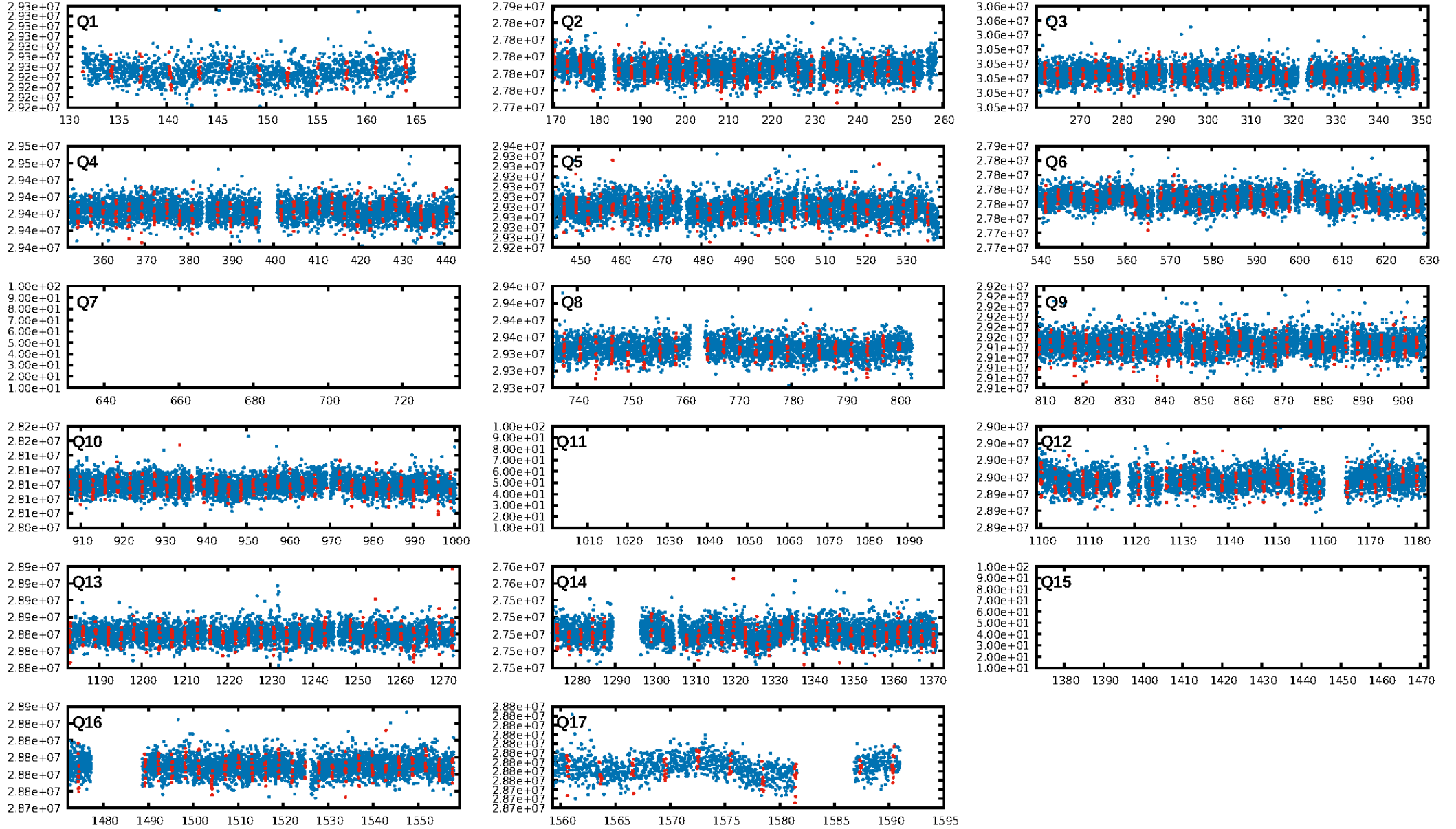
## DV Fit Results:

Period = 2.97136 [0.00001] d  
Epoch = 134.3876 [0.0021] BKJD  
Rp/R\* = 0.0155 [0.0072]  
a/R\* = 4.56 [8.21]  
b = 0.86 [0.59]  
Seff = 491.65 [112.76]  
Teff = 1201 [69] K  
Rp = 1.70 [0.82] Re  
a = 0.0386 [0.0052] AU  
Ag = 3.87 [4.62] [0.62σ]  
Teffp = 2604 [764] K [1.83σ]

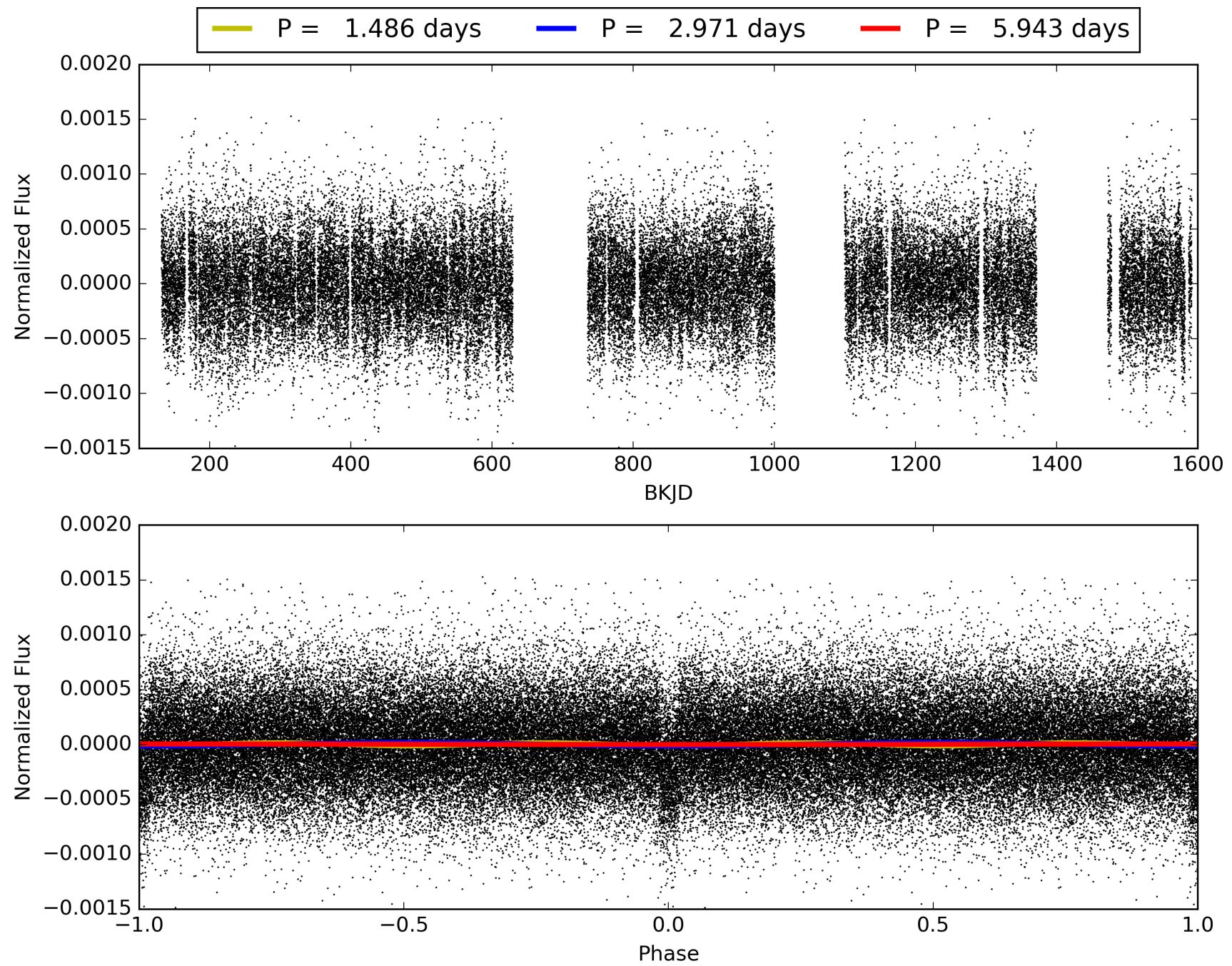
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [15.55σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 9.65e-83  
RollingBand-fgt: 1.00 [307/307]  
GhostDiagnostic-chr: 15.98  
Centroid-sig: 48.2%  
Centroid-so: 0.840 arcsec [1.16σ]  
OotOffset-rm: 0.546 arcsec [1.83σ]  
KicOffset-rm: 0.524 arcsec [1.76σ]  
OotOffset-st: 4/1/4/3 [12]  
KicOffset-st: 4/1/4/3 [12]  
DiffImageQuality-fgm: 1.00 [12/12]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 010426656-03, PDC Light Curves



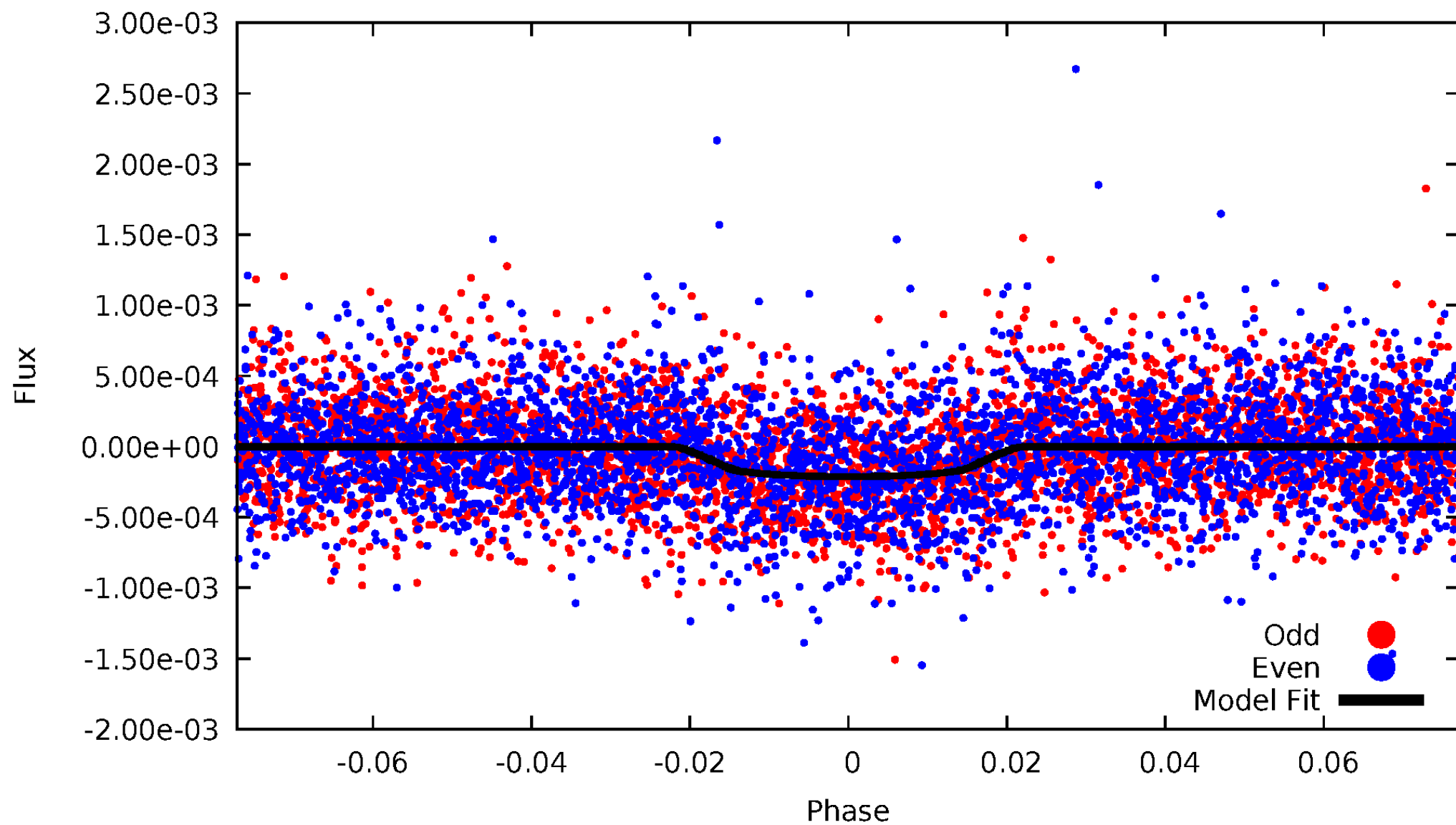
TCE 010426656-03





# DV Odd/Even

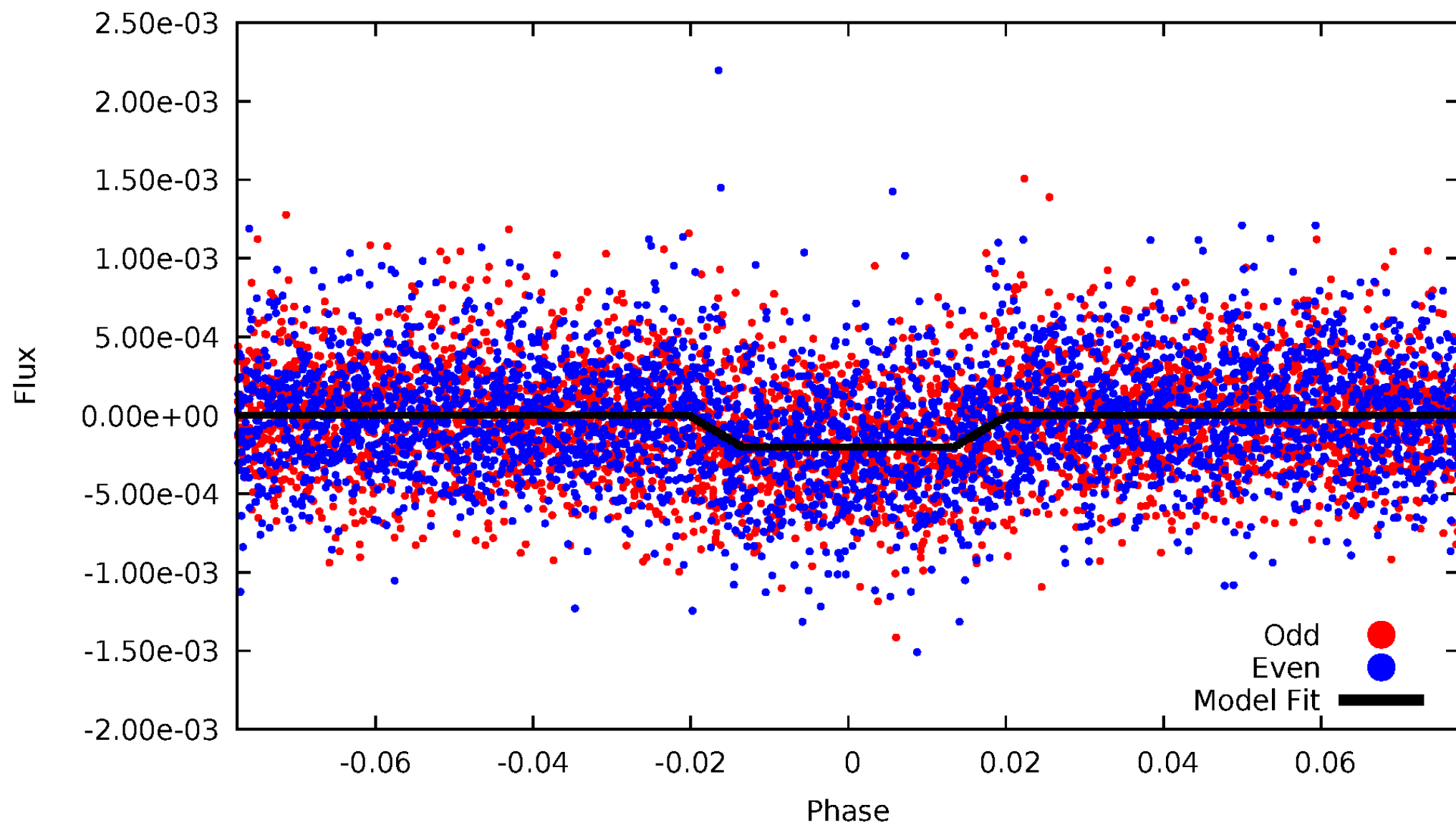
TCE 010426656-03





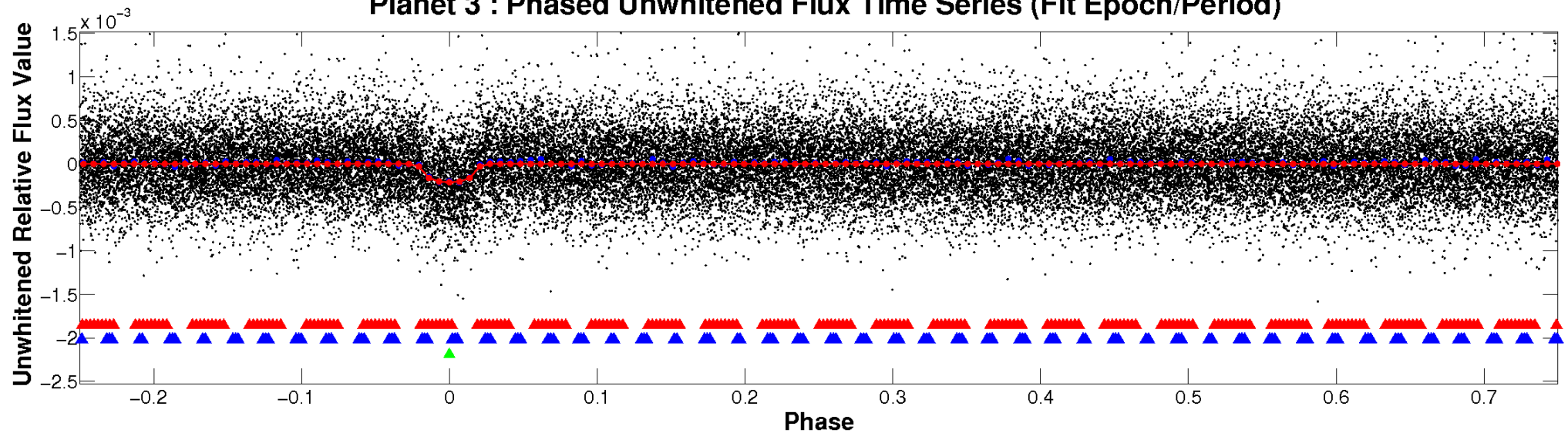
# ALT Odd/Even

TCE 010426656-03

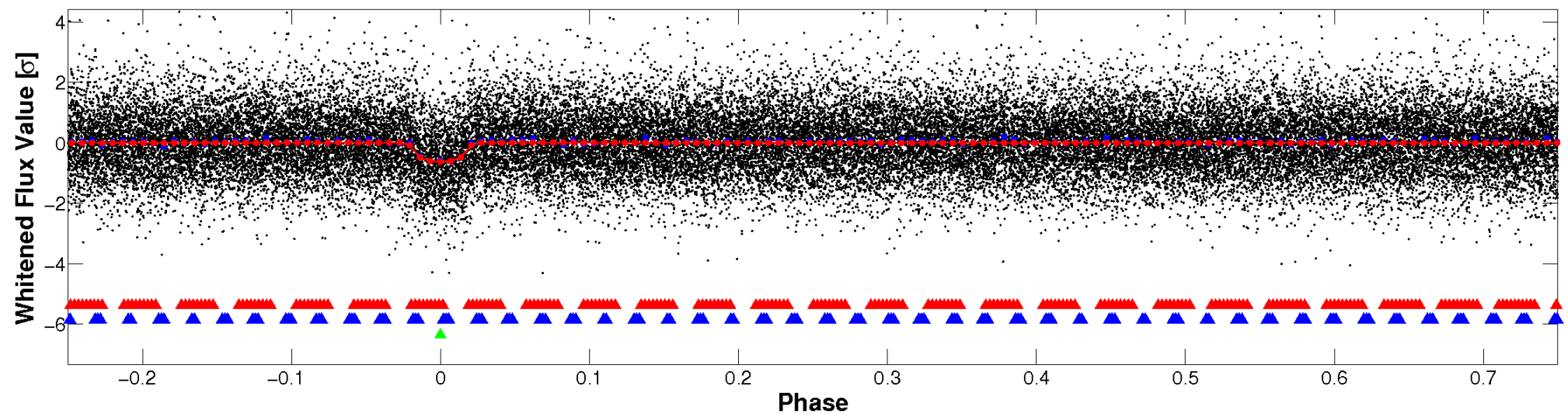


# Non-Whitened Vs. Whitened Light Curve

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

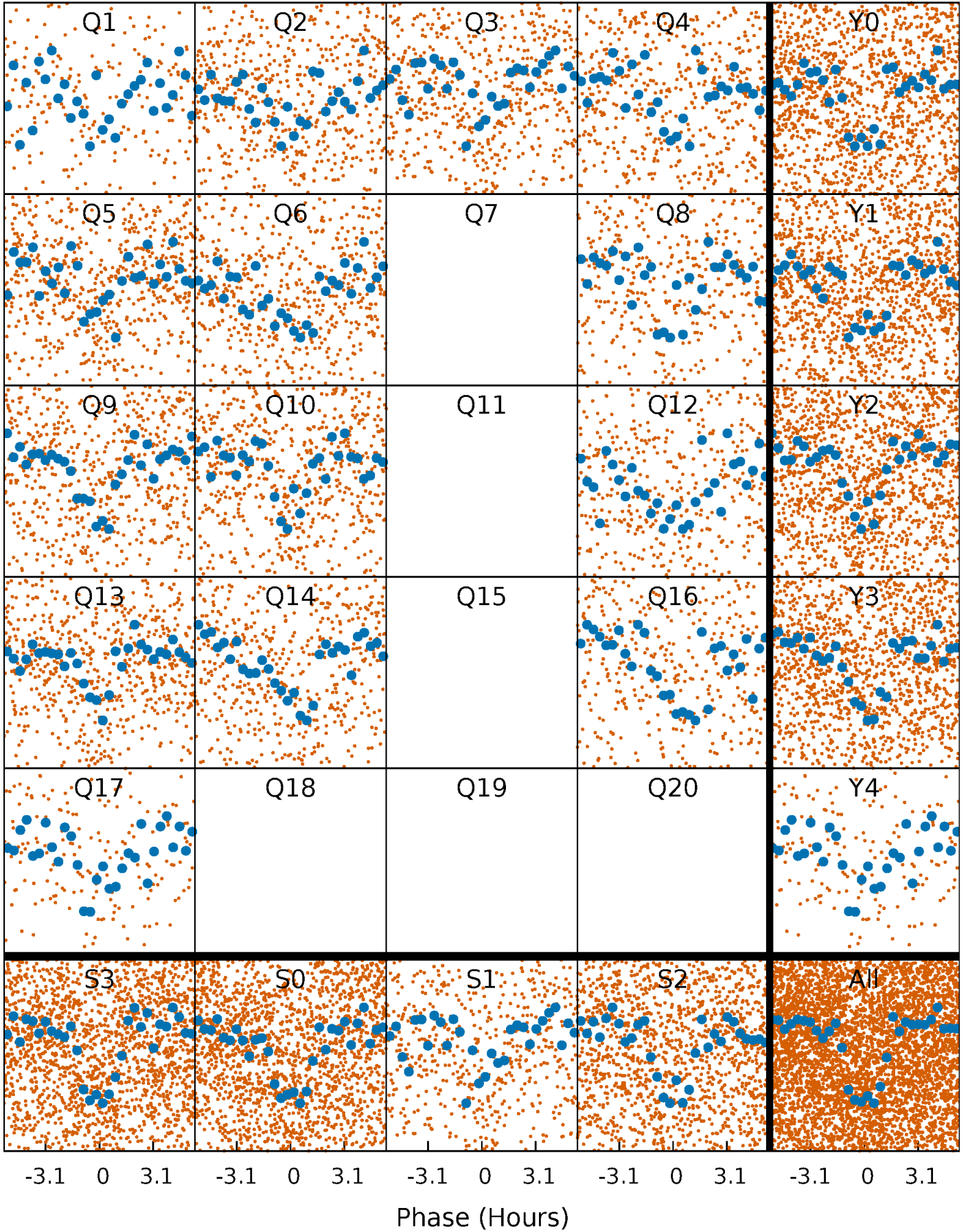


**Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



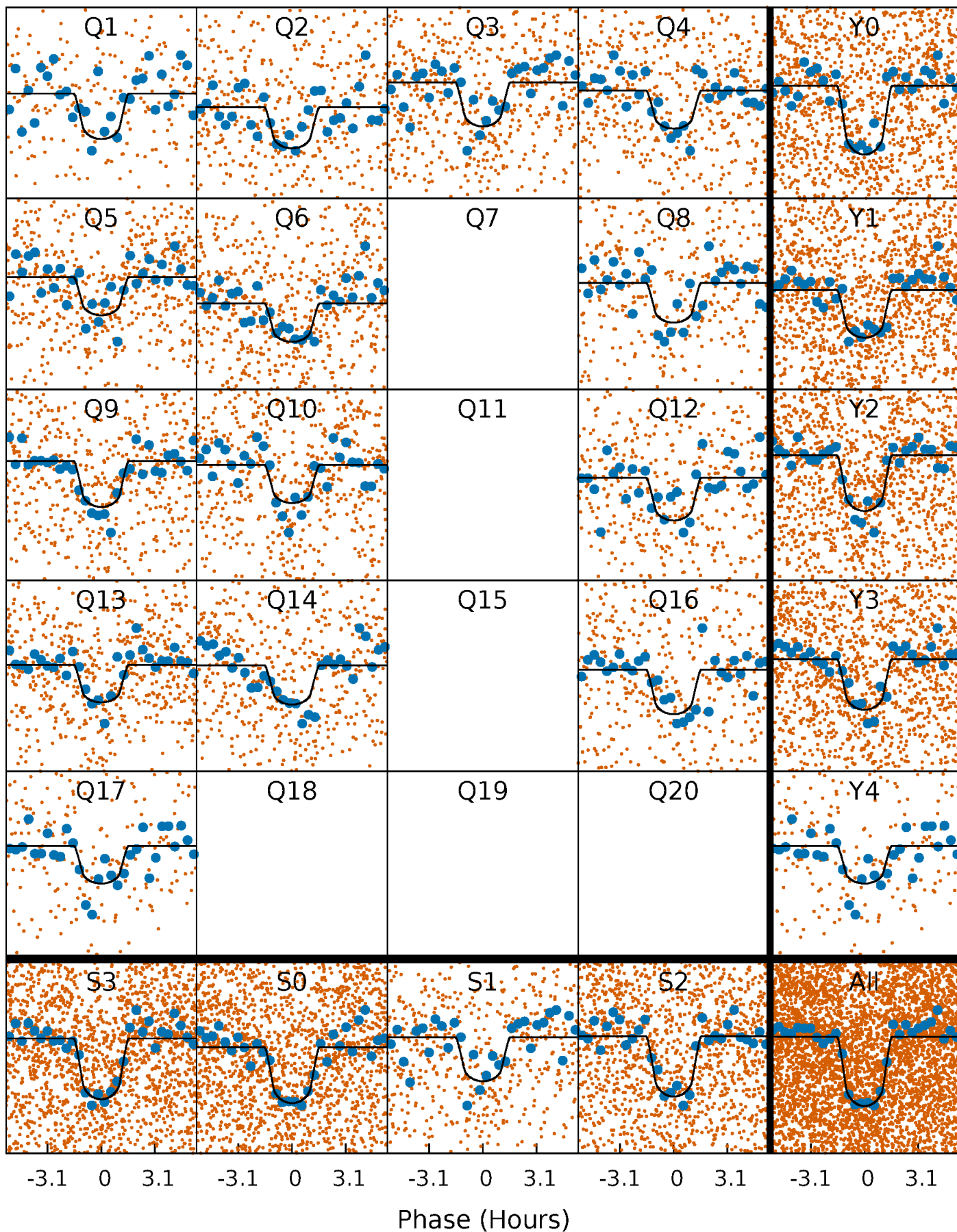
# PDC Quarter-Phased Transit Curves

TCE 010426656-03 P= 2.971362 Days  $T_0=134.387608$  (BKJD)



# DV Quarter-Phased Transit Curves

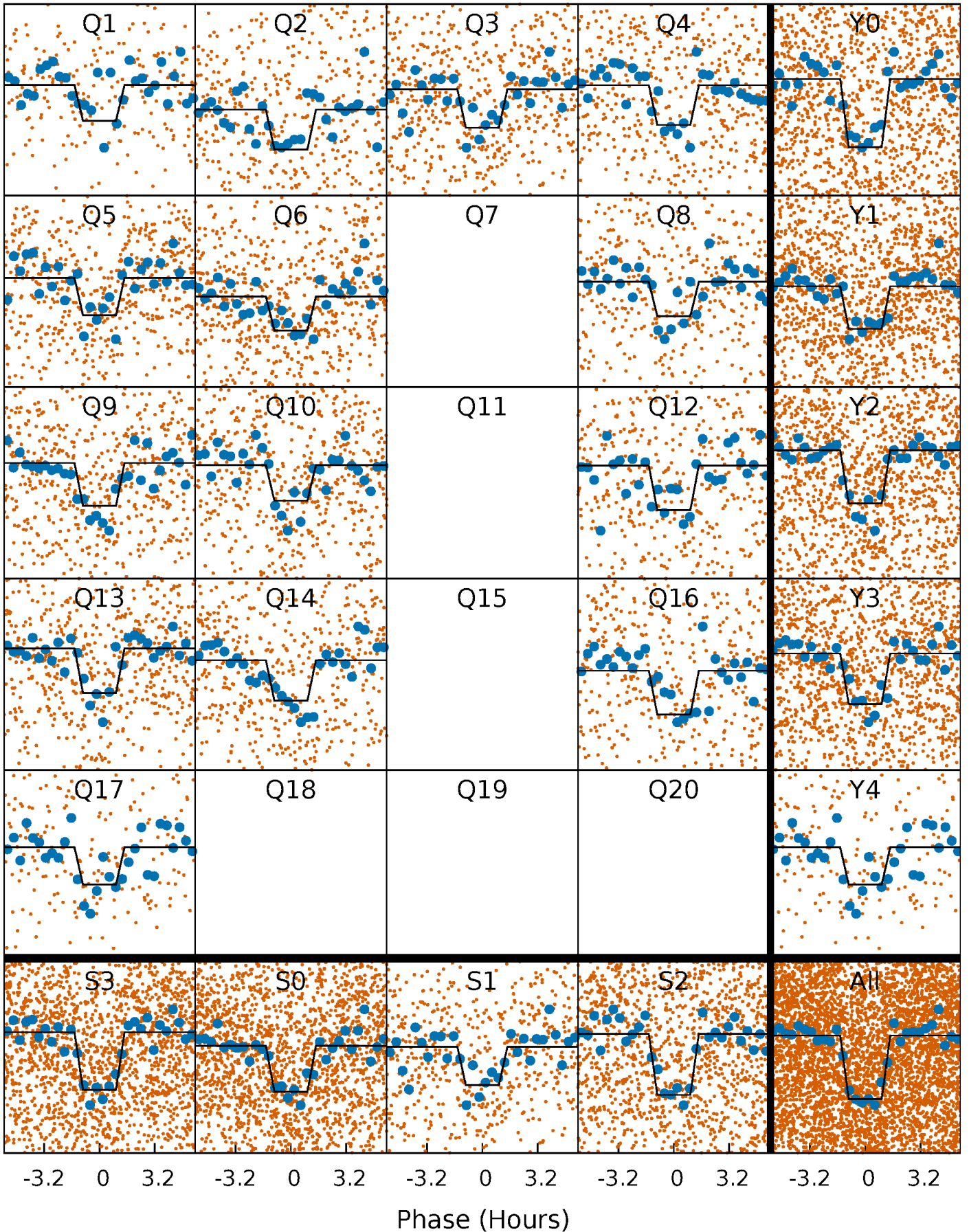
TCE 010426656-03 P= 2.971362 Days  $T_0=134.387608$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

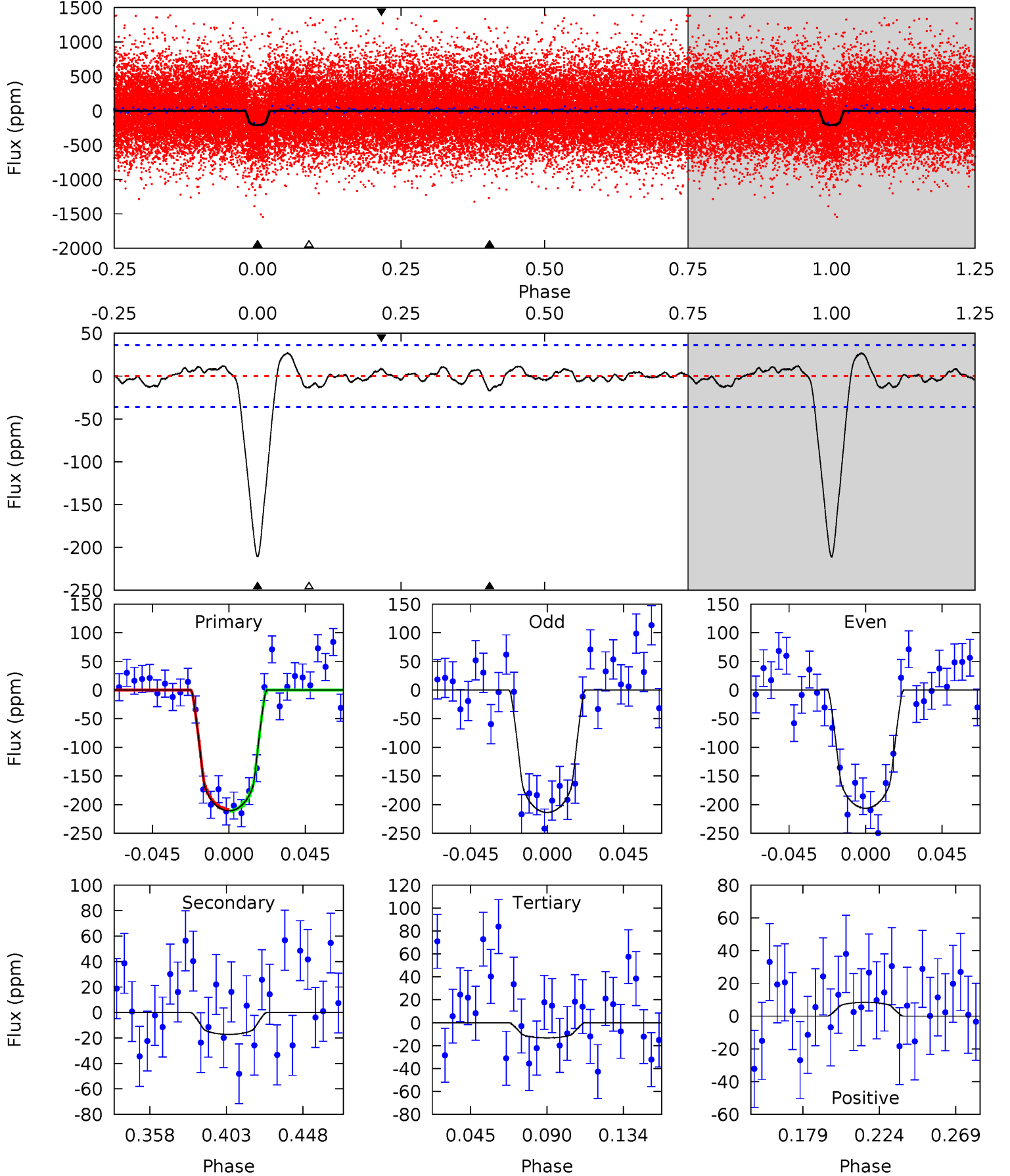
TCE 010426656-03 P= 2.971355 Days  $T_0=134.389726$  (BKJD)



# DV Model-Shift Uniqueness Test

010426656-03, P = 2.971362 Days, E = 131.416246 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
27.6	2.25	1.74	1.10	4.73	2.01	0.89	25.9	26.5	0.51	1.15	0.48	0.99	0.11	0.17

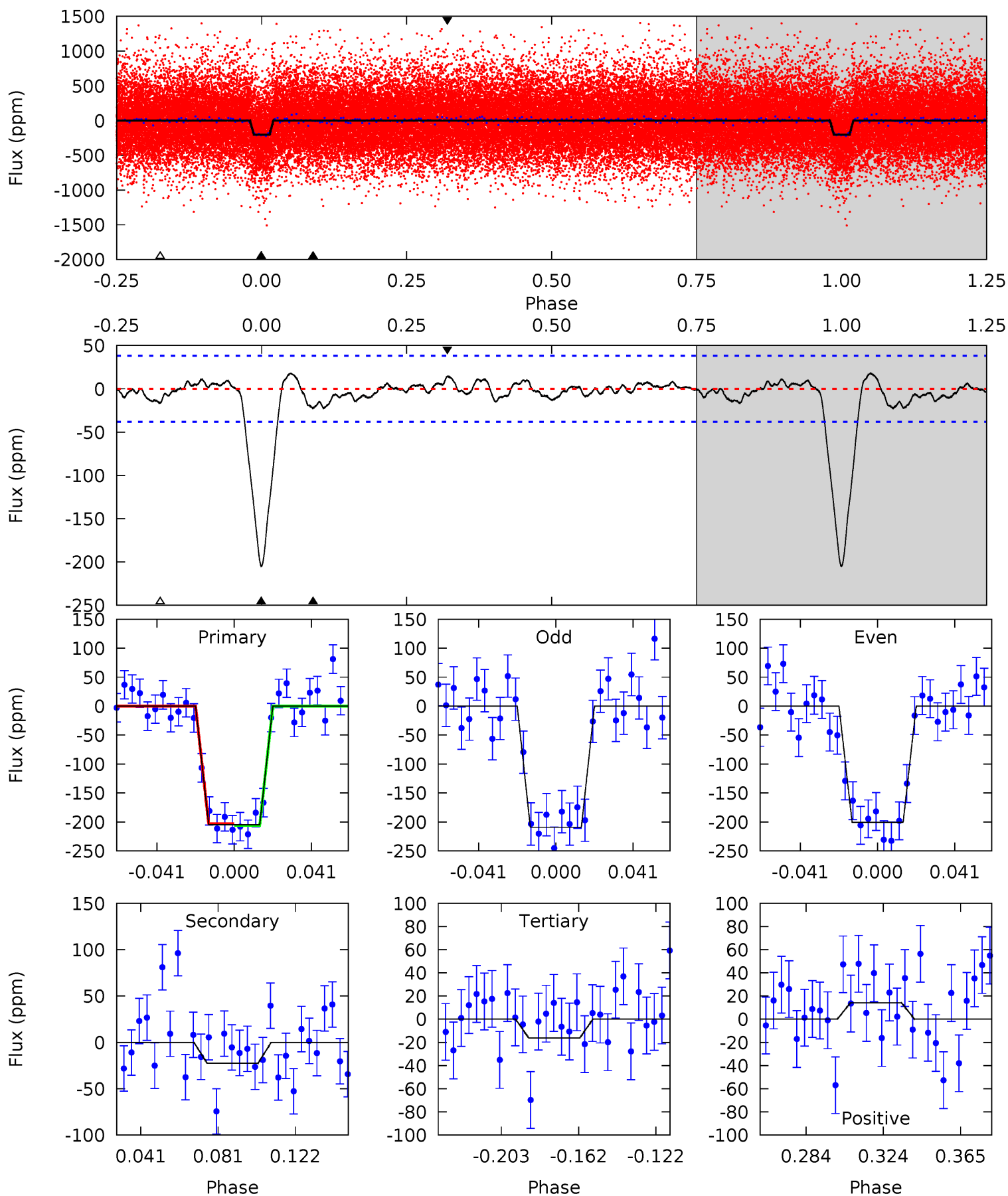




# Alt Model-Shift Uniqueness Test

010426656-03, P = 2.971355 Days, E = 131.418371 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
25.5	2.80	2.03	1.76	4.75	2.05	0.82	23.5	23.8	0.77	1.04	0.53	1.02	0.08	0.18



### Stellar Parameters For KIC 010426656

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5334^{+79}_{-79}$	$4.372^{+0.132}_{-0.077}$	$0.160^{+0.150}_{-0.150}$	$1.004^{+0.111}_{-0.135}$	$0.865^{+0.064}_{-0.032}$	$1.204^{+0.693}_{-0.314}$
	+1%/-1%	+3%/-2%	+94%/-94%	+11%/-13%	+7%/-4%	+58%/-26%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 010426656-03 / KOI 1161.03

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-17 \pm 8$	$1.69^{+0.78}_{-0.73}$	$1668^{+58}_{-66}$	$3247^{+729}_{-457}$	$4.727^{+11.379}_{-2.884}$
Alt.	$-22 \pm 8$	$1.60^{+0.74}_{-0.74}$	$1675^{+58}_{-72}$	$3461^{+853}_{-478}$	$7.094^{+16.921}_{-4.181}$

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

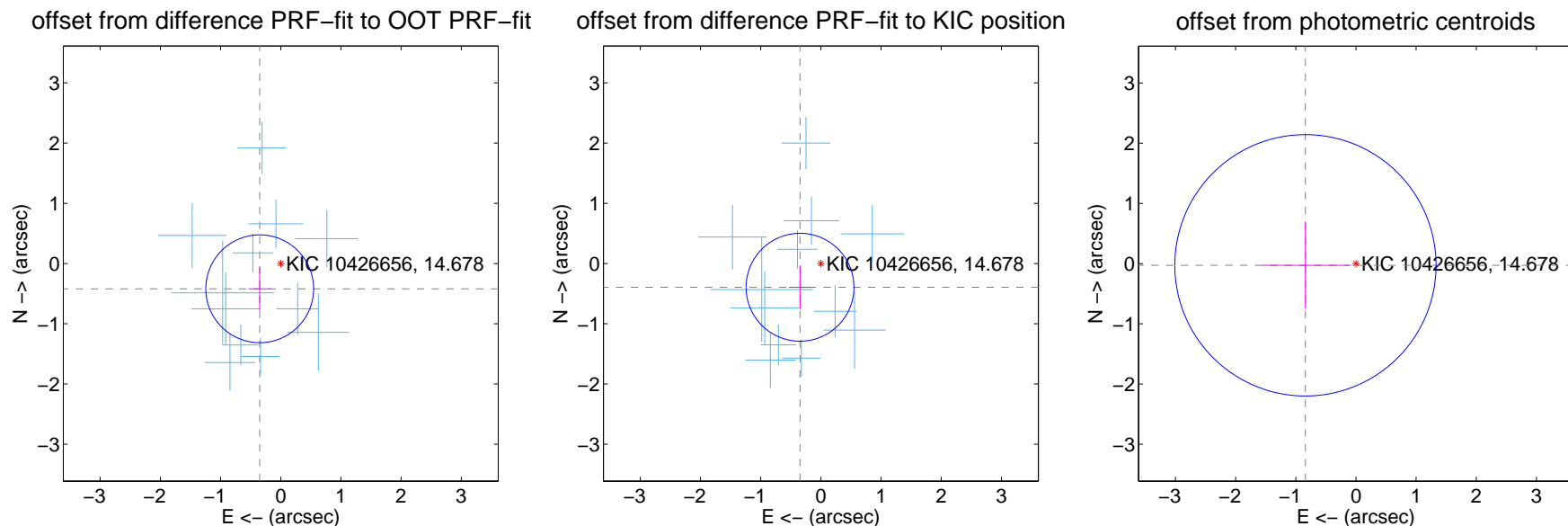
## DV Centroid Data

Supplemental centroid analysis for 010426656-03. Kepler magnitude: 14.68. Transit SNR 21.62

There are 12 quarters with good PRF difference image offsets

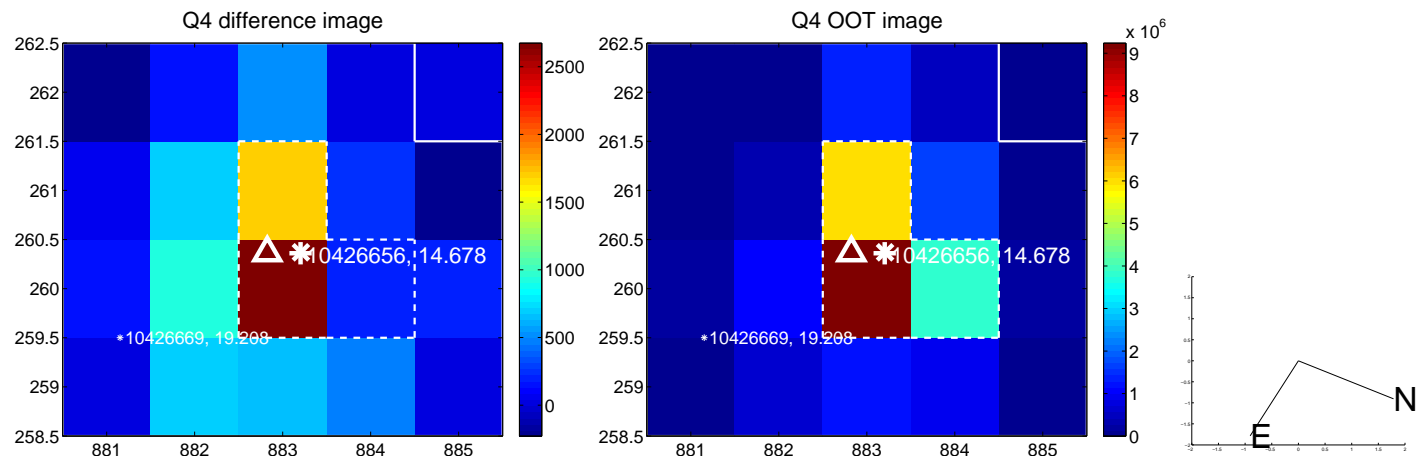
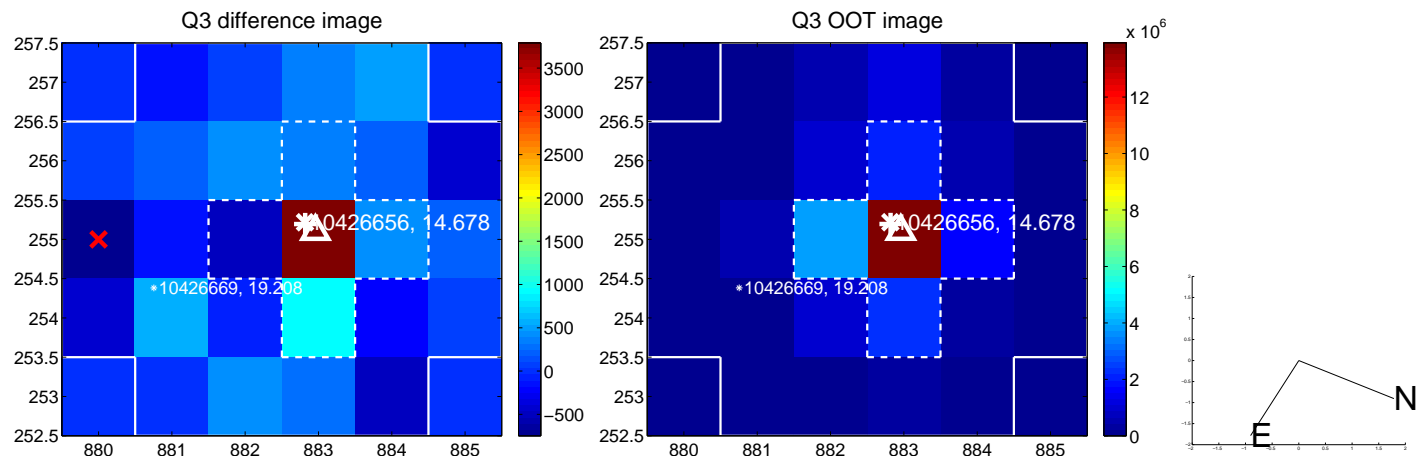
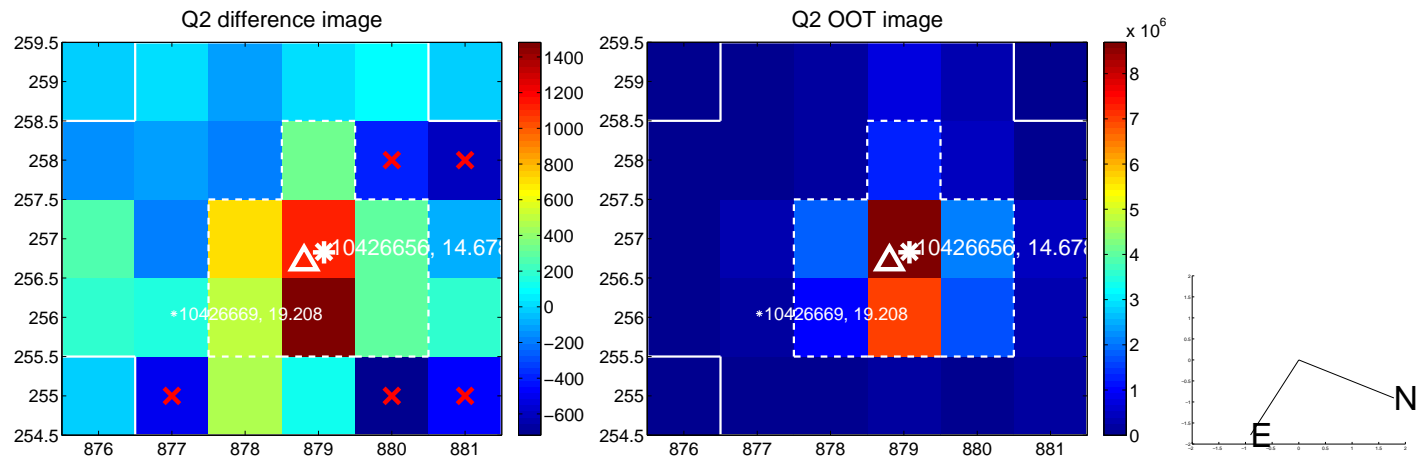
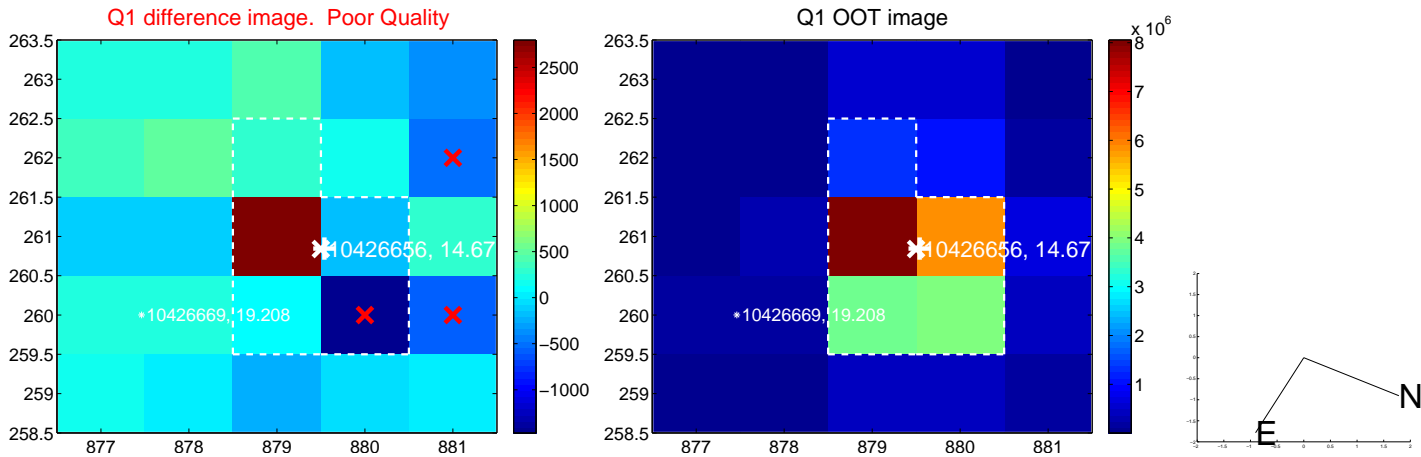
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.546 \pm 0.299$	1.83	$0.350 \pm 0.187$	$-0.419 \pm 0.356$
PRF-fit source offset from KIC position	$0.524 \pm 0.299$	1.76	$0.346 \pm 0.185$	$-0.394 \pm 0.363$
photometric centroid source offset	$0.84 \pm 0.72$	1.16	$0.84 \pm 0.72$	$-0.03 \pm 0.72$

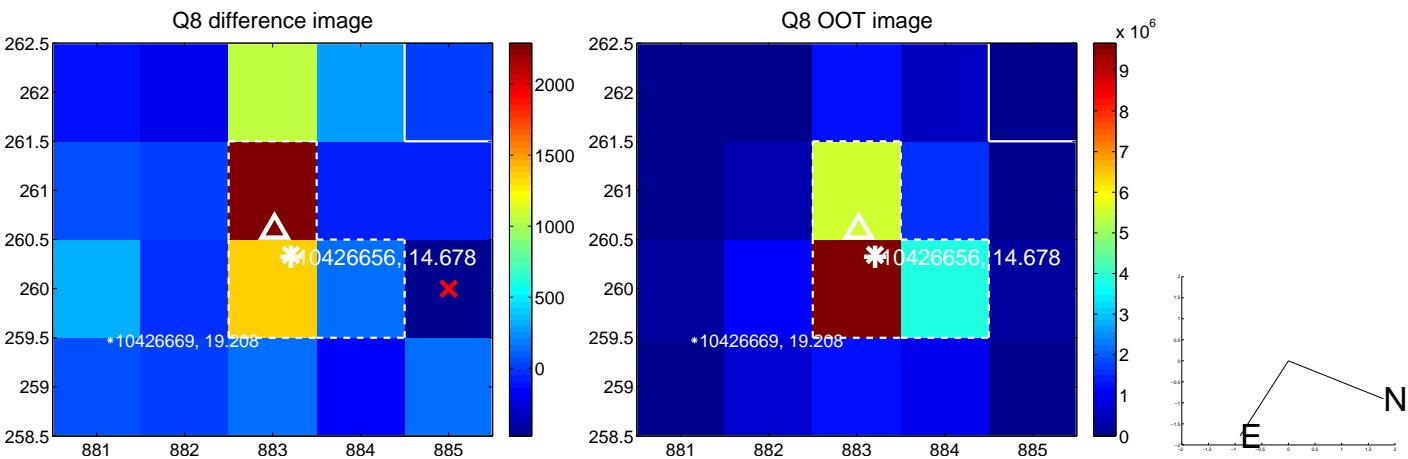
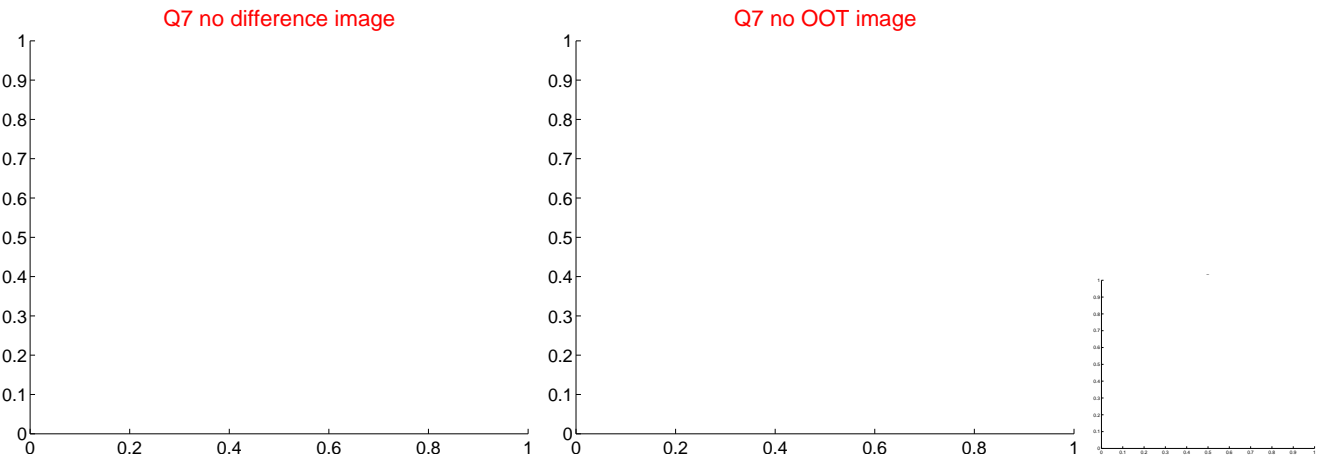
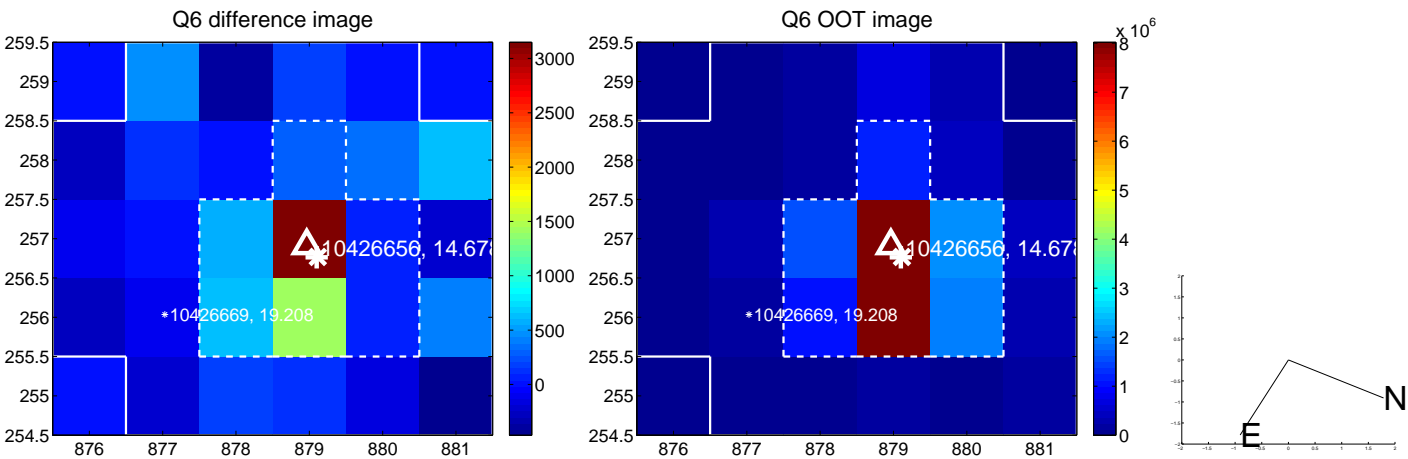
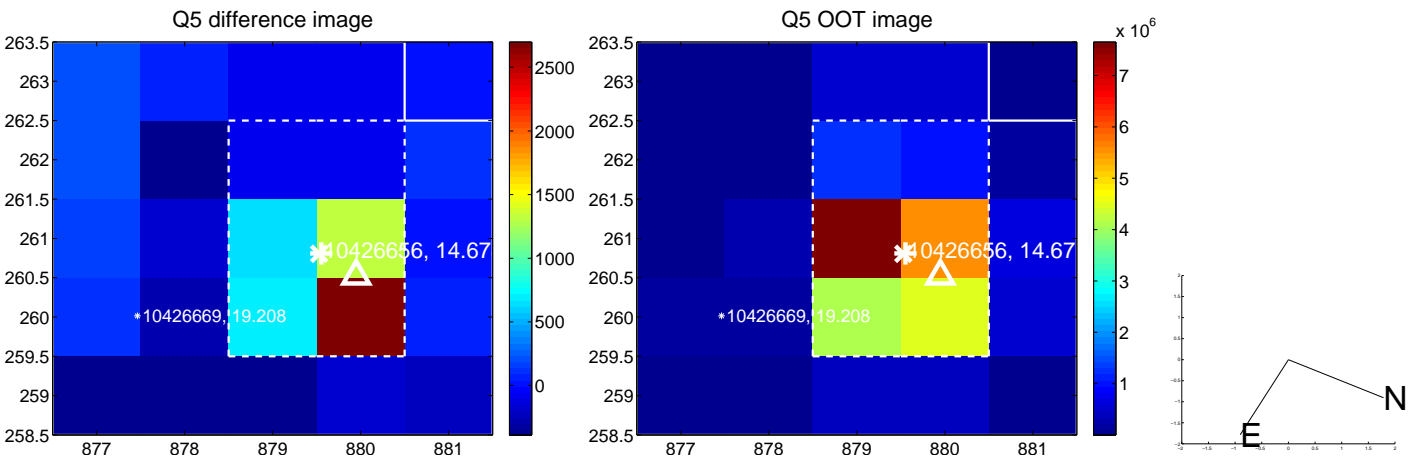


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

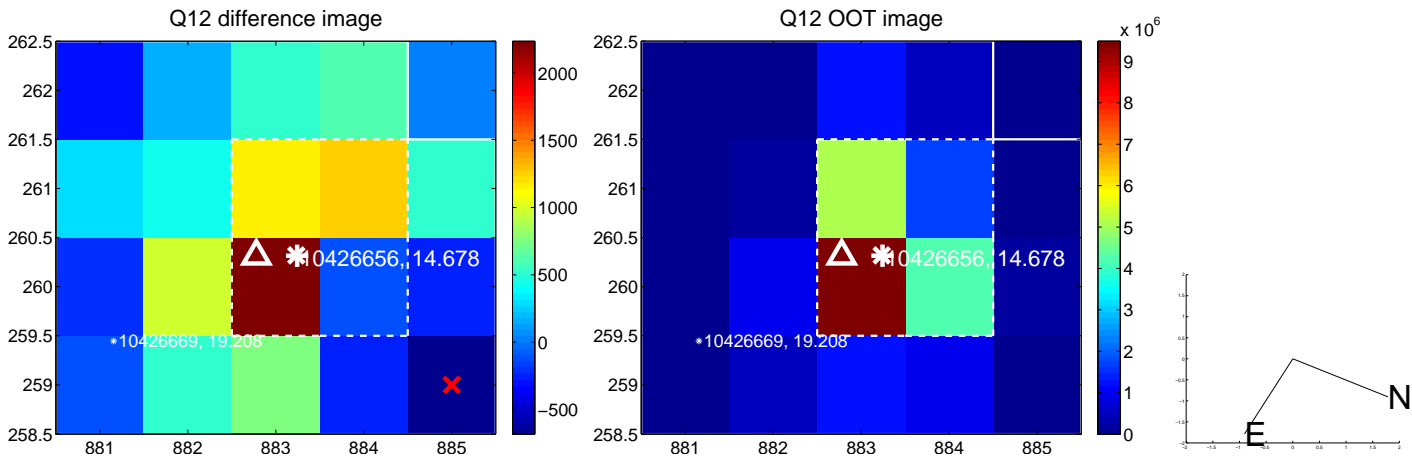
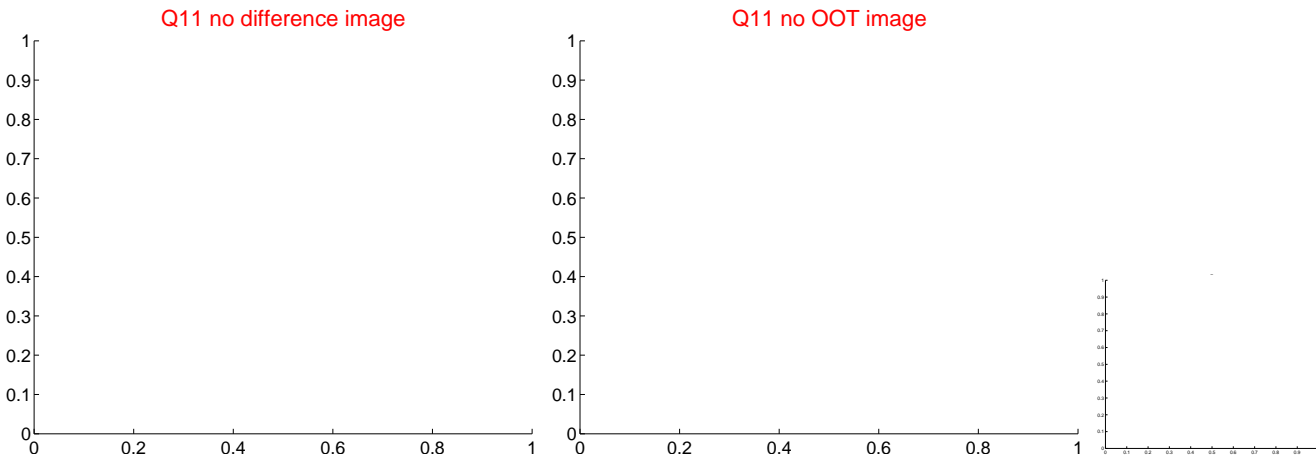
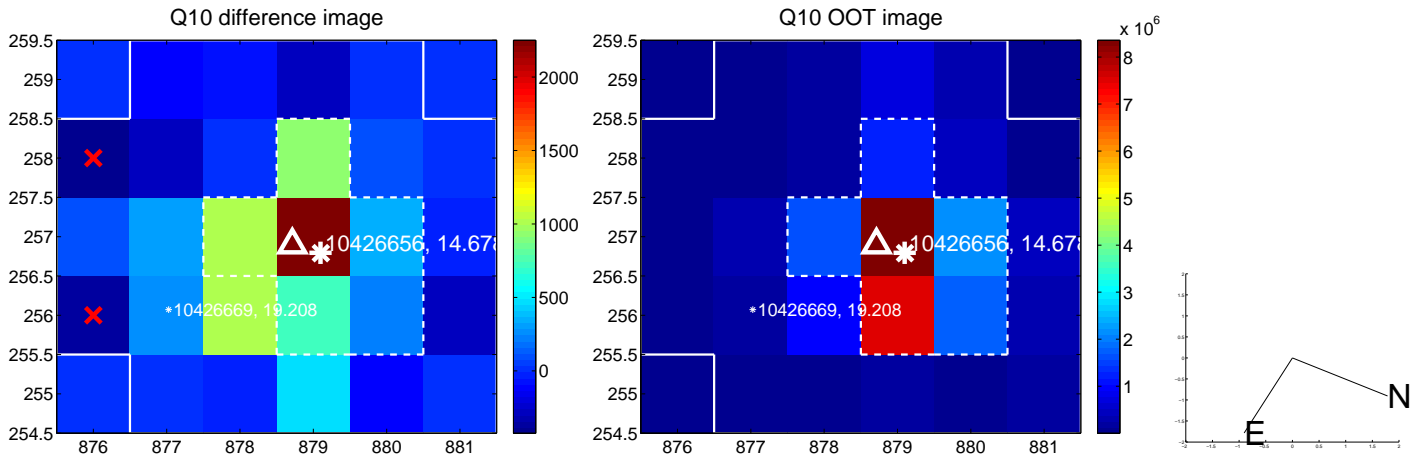
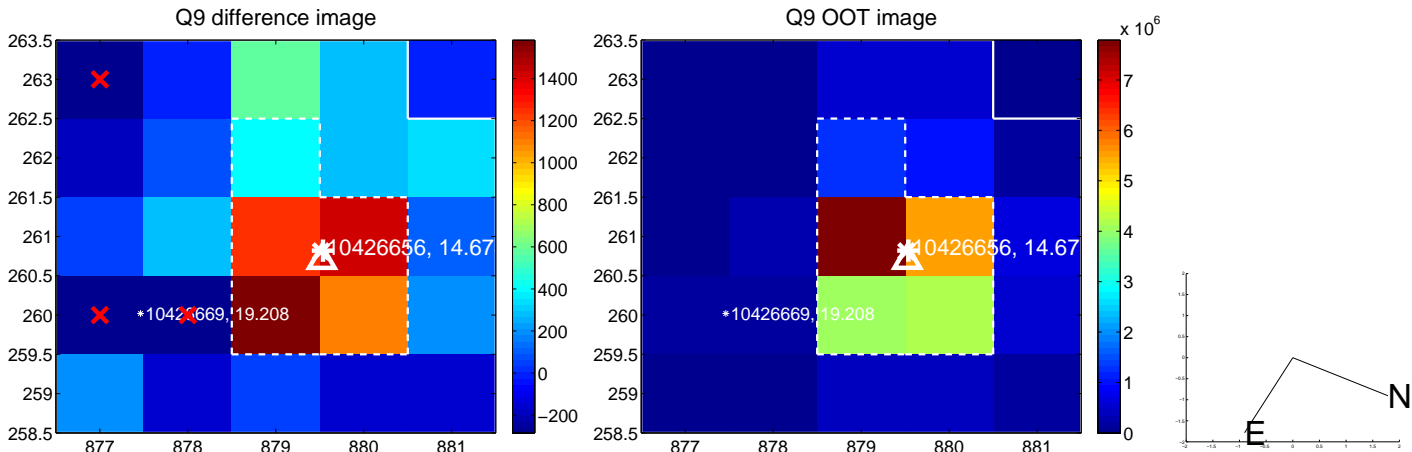
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

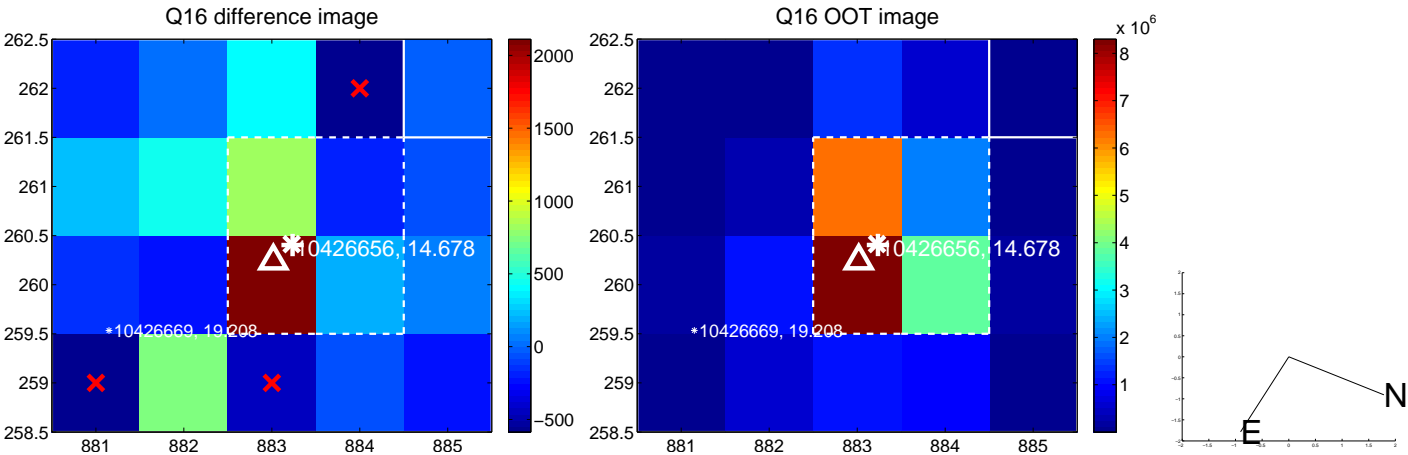
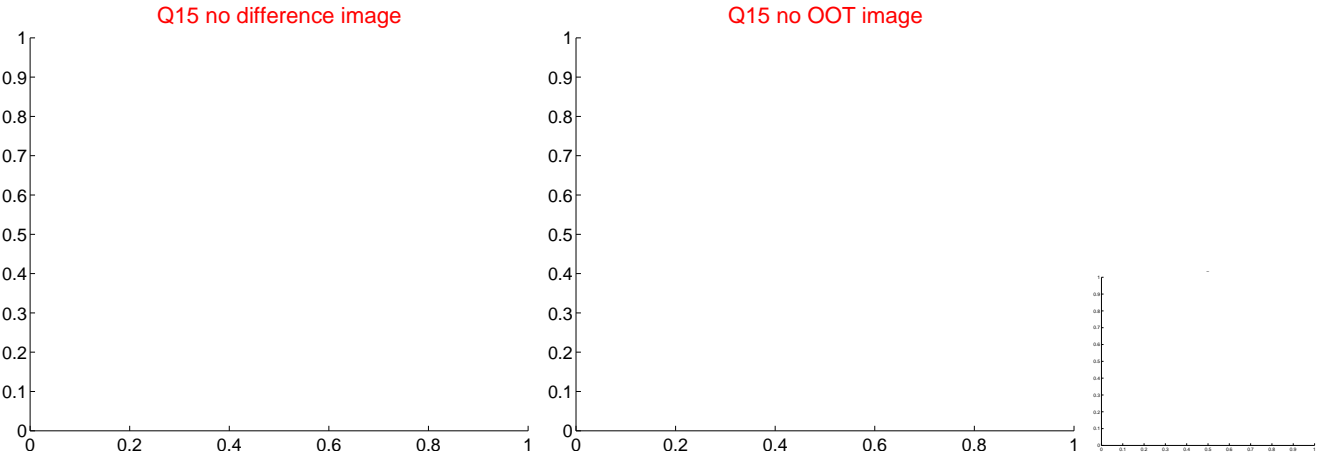
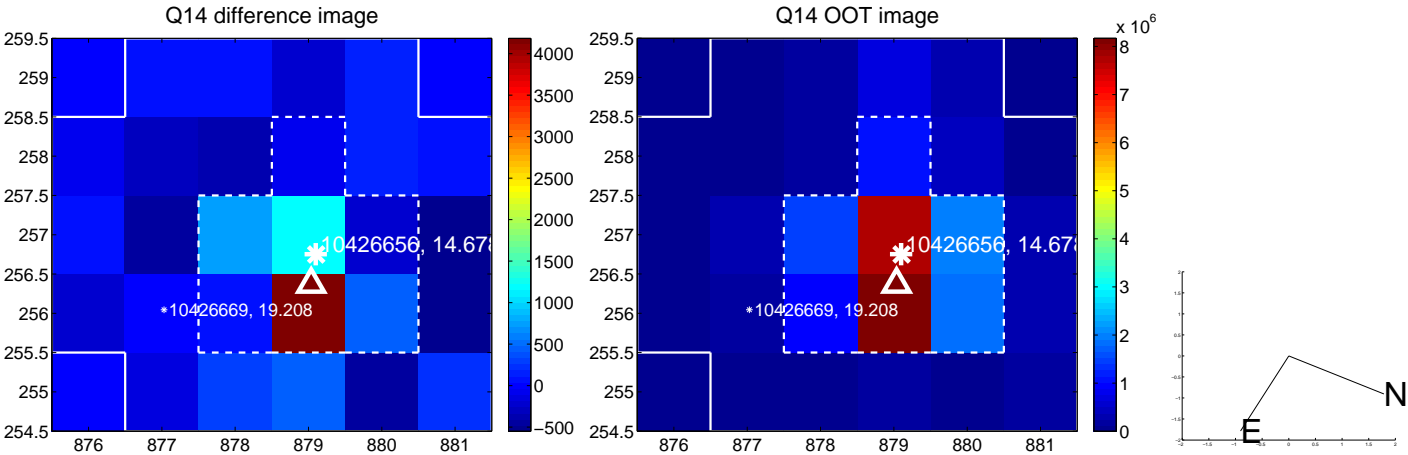
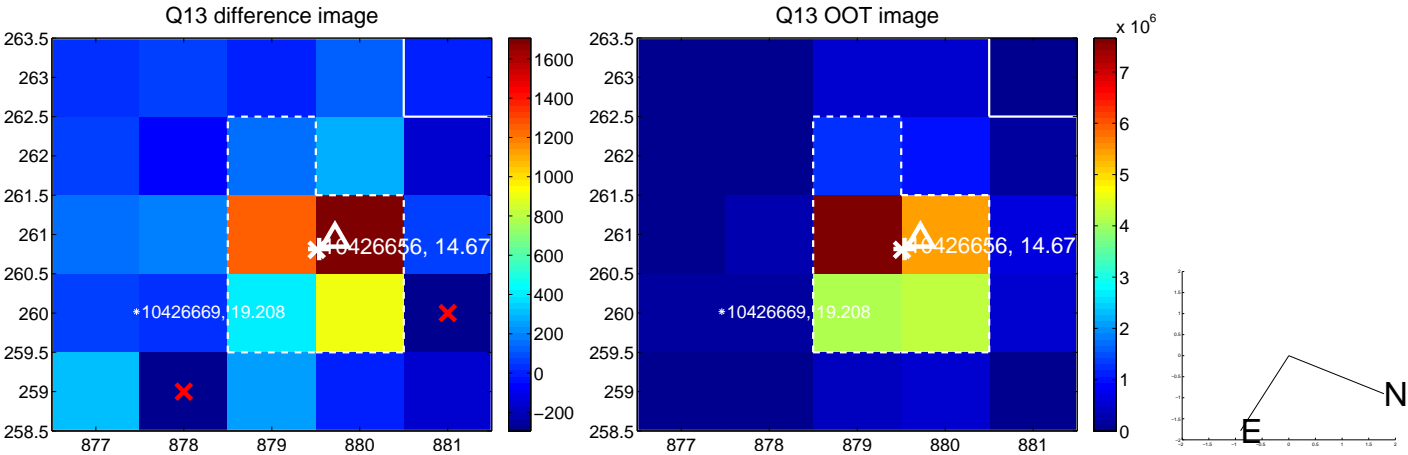


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

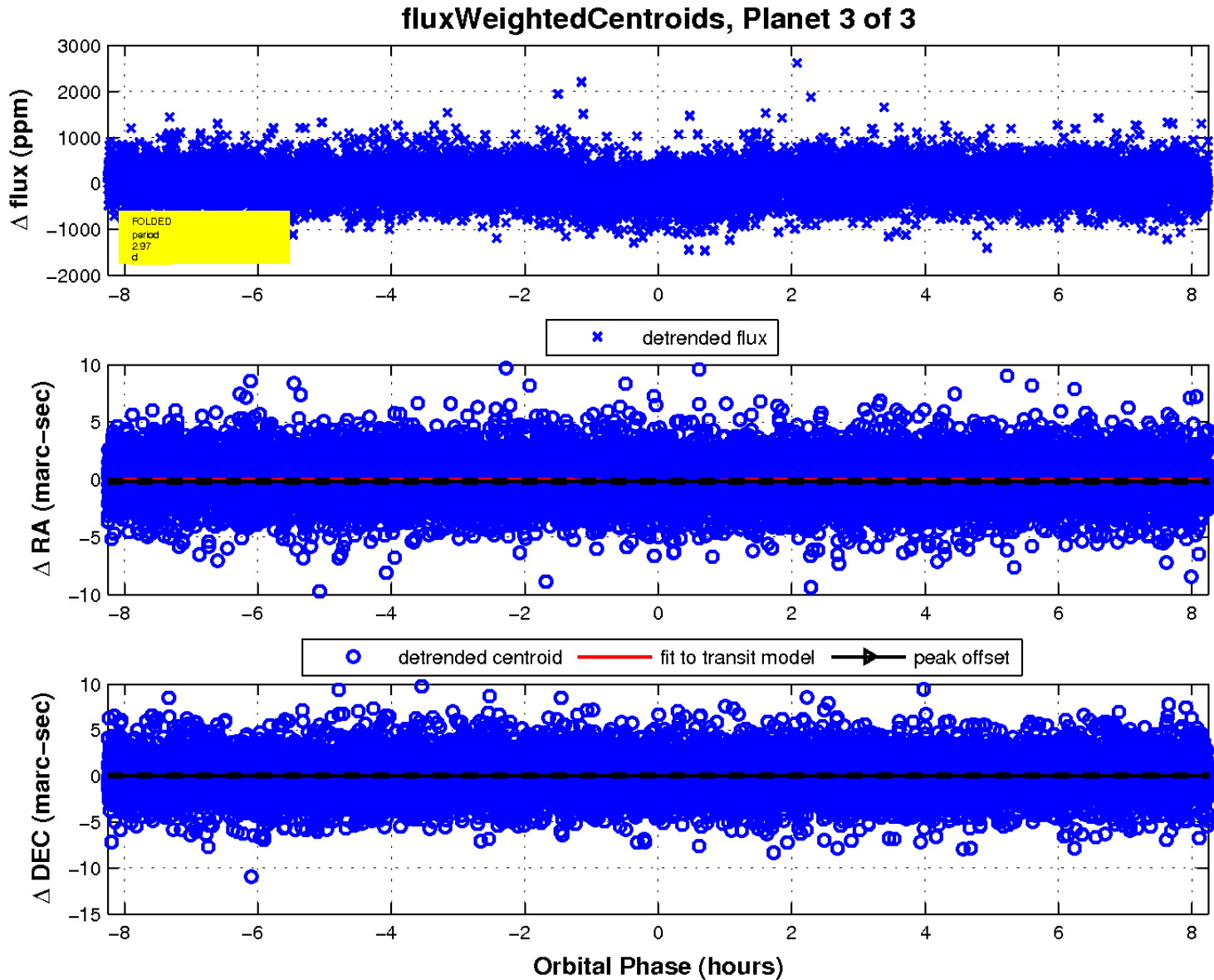
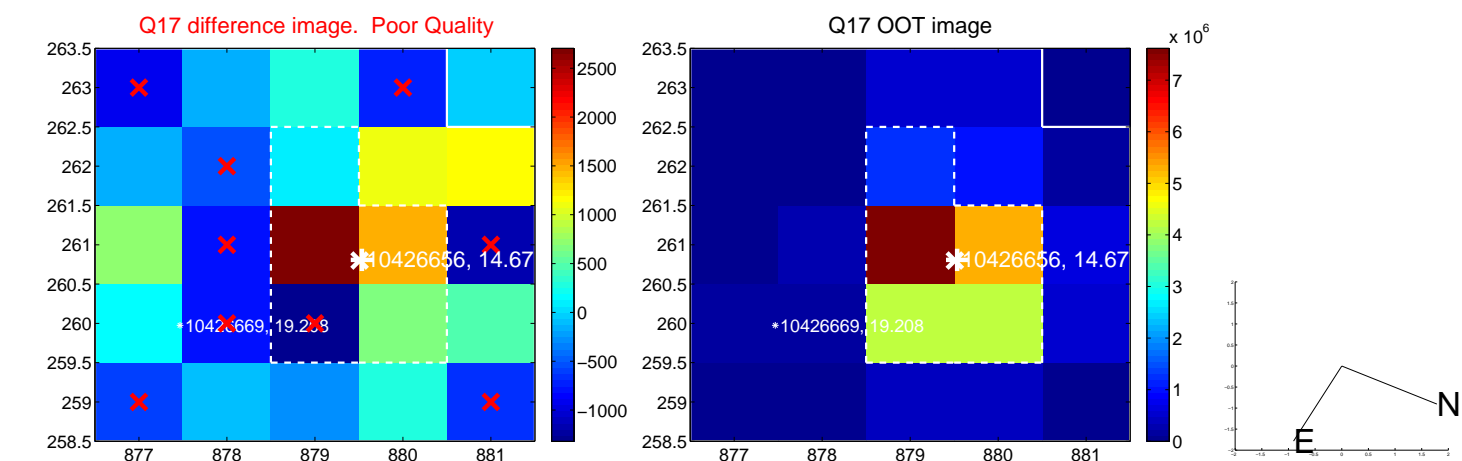




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

