

# KIC 010268903

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010268903-01	OBS	3773.01	1.103975	131.575518	71117.3	1.315	546.6	354.1	0.42	3606	11.94	106.62
010268903-02	OBS	No	0.551993	131.564119	38925.1	1.500	173.0	-1.0	0.42	3606	8.24	268.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010268903-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—HAS_SEC_TCE—CENT_KIC_POS
010268903-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

**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.

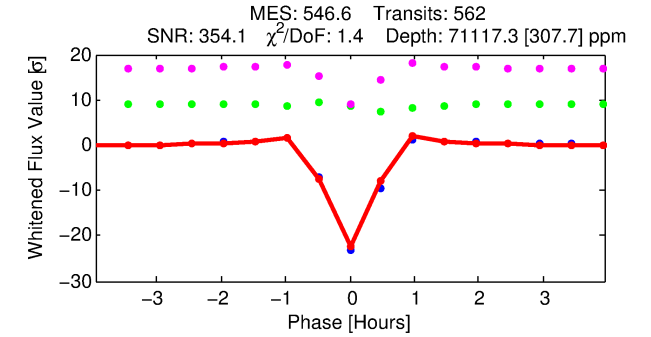
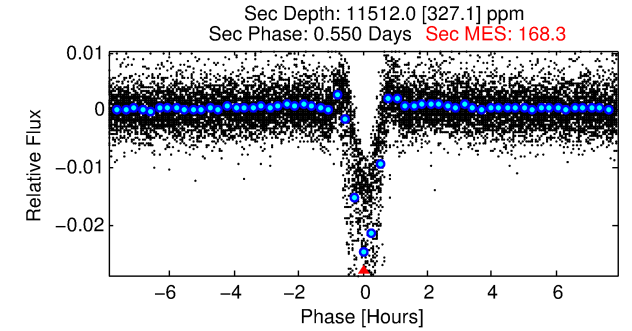
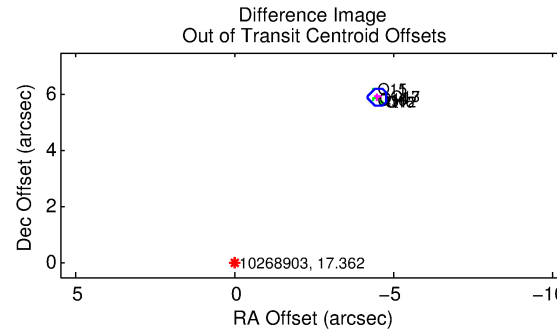
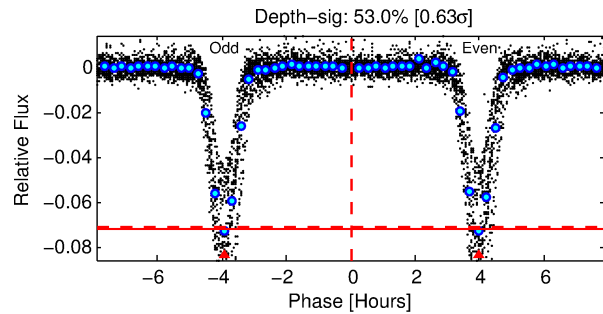
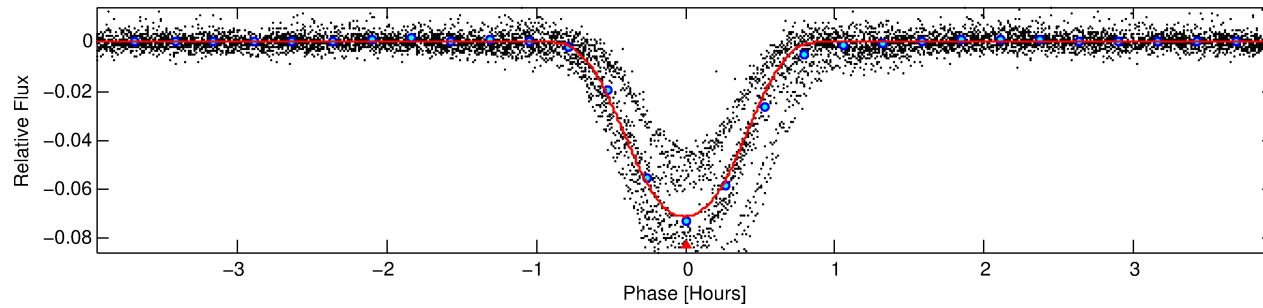
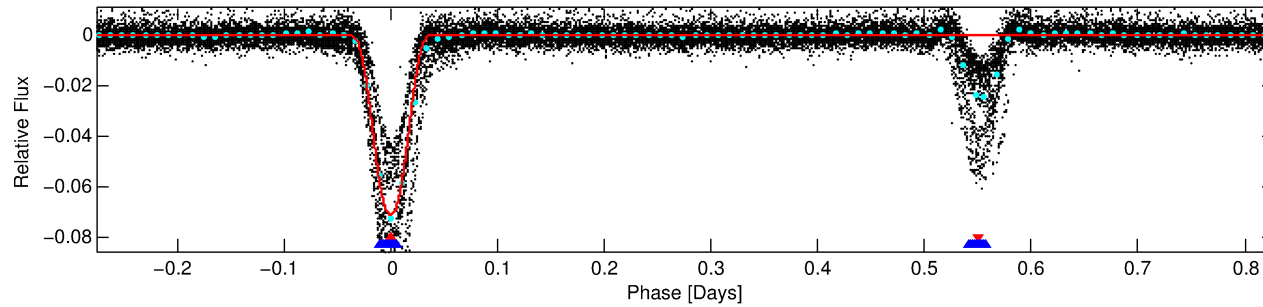
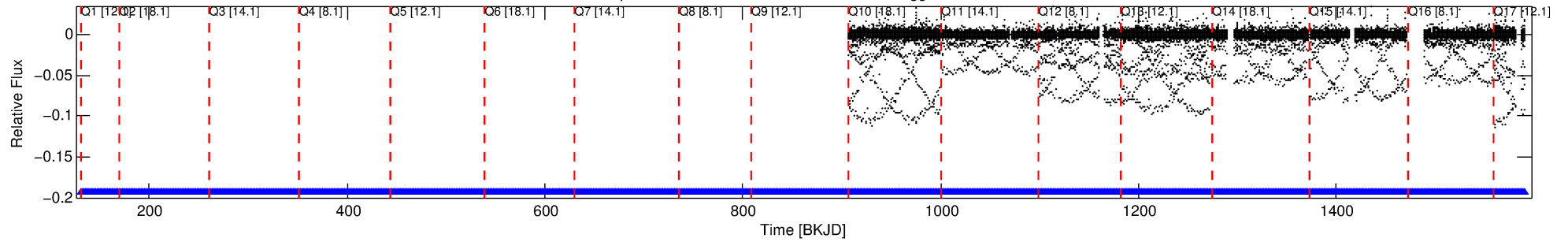
## Ephemeris Match Information For 010268903-01

No Significant Match Found

# DV One-Page Summary

KIC: 10268903 Candidate: 1 of 2 Period: 1.104 d  
KOI: K03773.01 Corr: 0.973

Kp: 17.36 R\*: 0.42 Rs Teff: 3606.0 K Logg: 4.83 Fe/H: -0.120



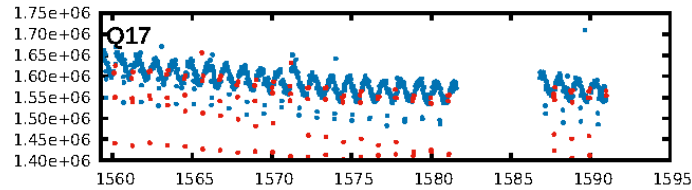
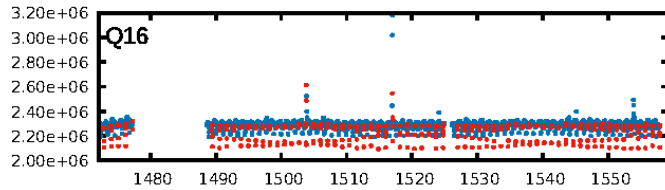
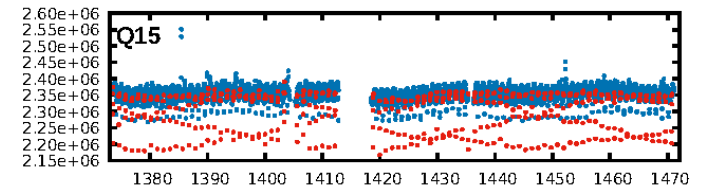
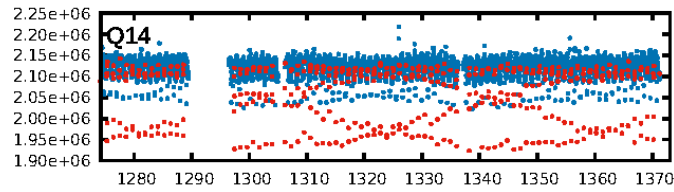
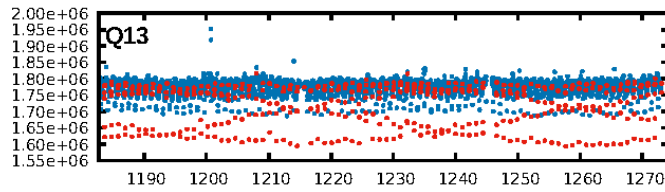
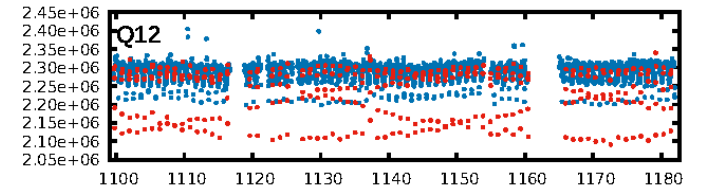
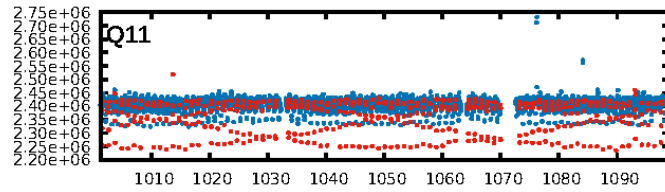
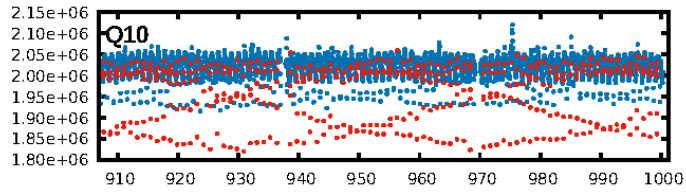
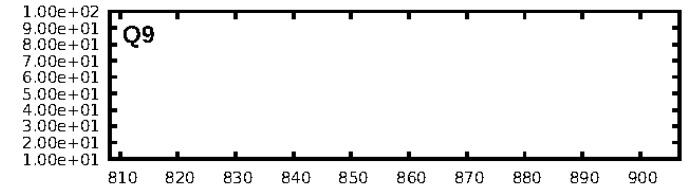
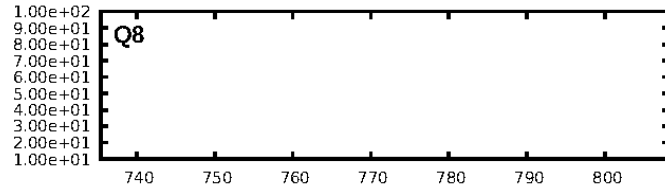
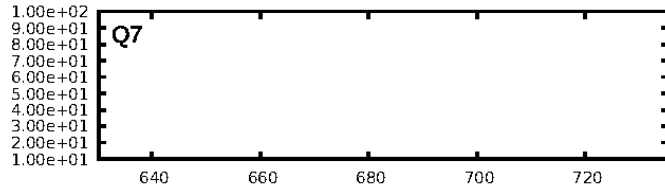
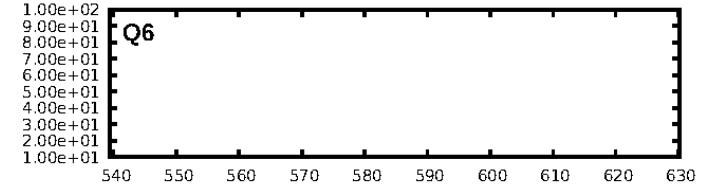
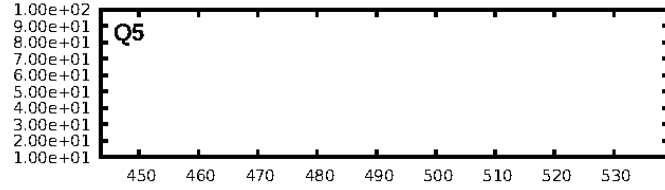
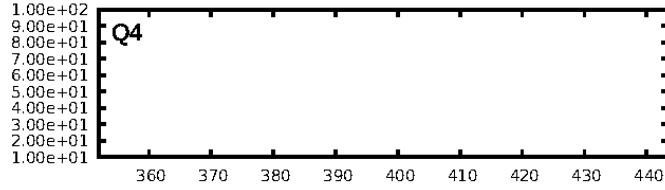
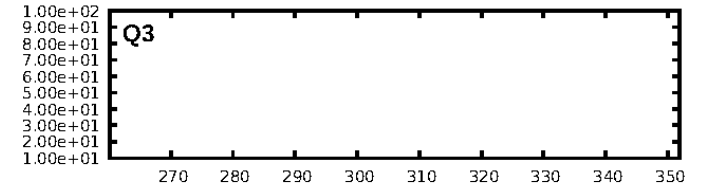
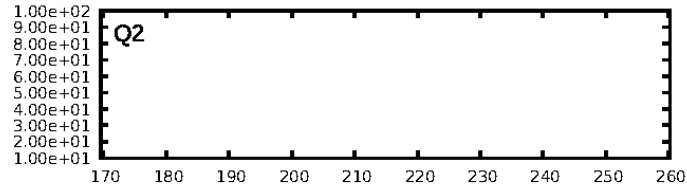
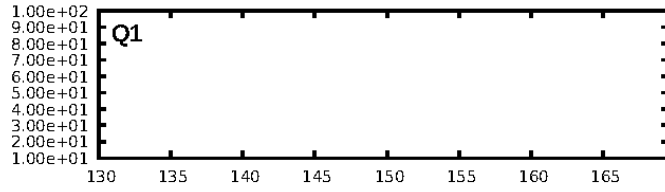
## DV Fit Results:

Period = 1.10398 [0.00000] d  
Epoch = 131.5755 [0.0000] BKJD  
Rp/R\* = 0.2611 [0.0017]  
a/R\* = 7.10 [0.10]  
b = 0.62 [0.02]  
Seff = 106.63 [30.99]  
Teq = 819 [60] K  
Rp = 11.94 [3.02] Re  
a = 0.0158 [0.0030] AU  
Ag = 11.08 [2.75] [3.66σ]  
Teffp = 2312 [91] K [13.73σ]

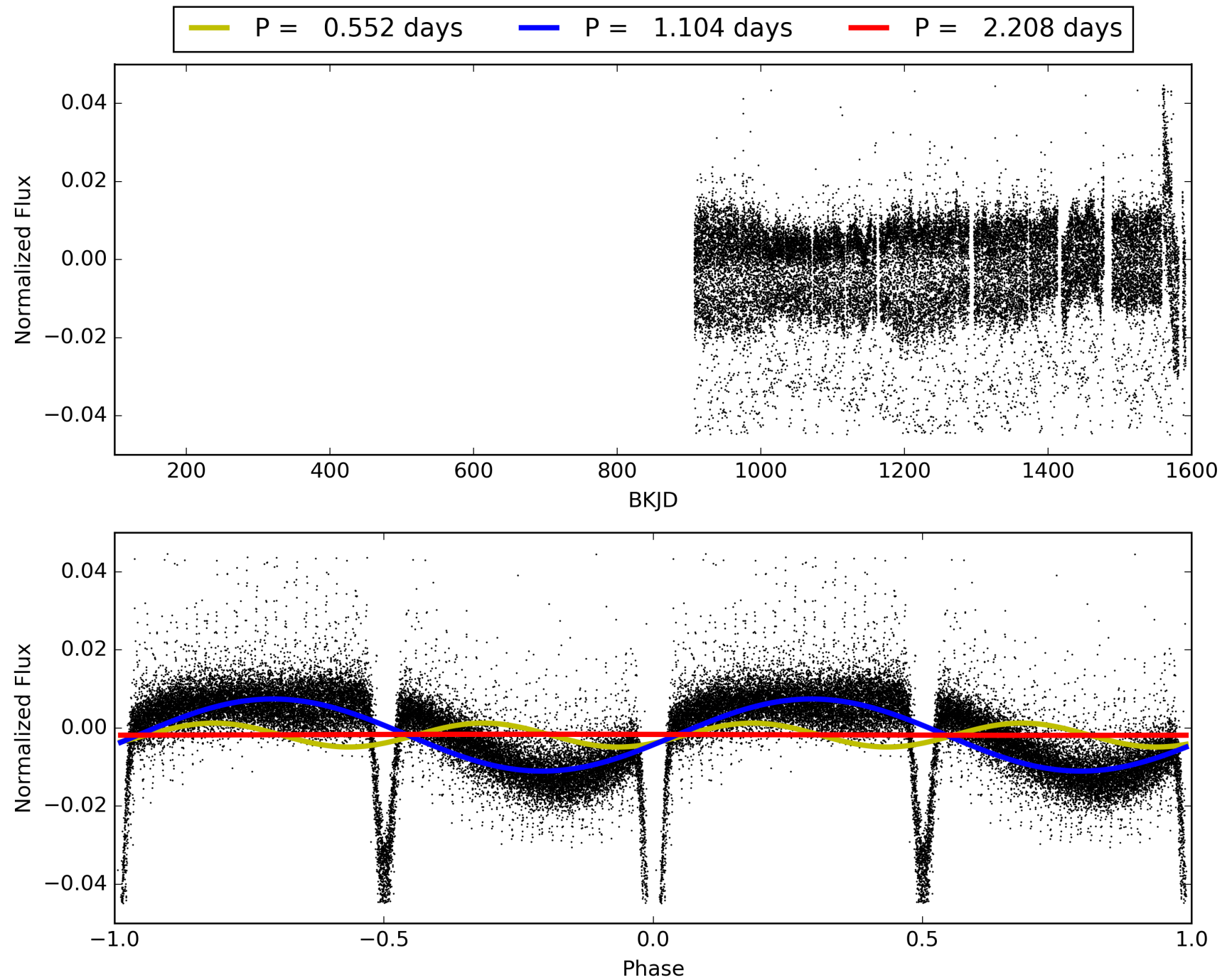
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.64σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [538/538]  
GhostDiagnostic-chr: 1.865  
Centroid-sig: 0.0%  
Centroid-so: 3.880 arcsec [586.76σ]  
OotOffset-rm: 7.416 arcsec [74.81σ]  
KicOffset-rm: 0.635 arcsec [7.07σ]  
OotOffset-st: 2/2/2/2 [8]  
KicOffset-st: 2/2/2/2 [8]  
DiffImageQuality-fgm: 1.00 [8/8]  
DiffImageOverlap-fno: 0.00 [0/8]

# TCE 010268903-01, PDC Light Curves

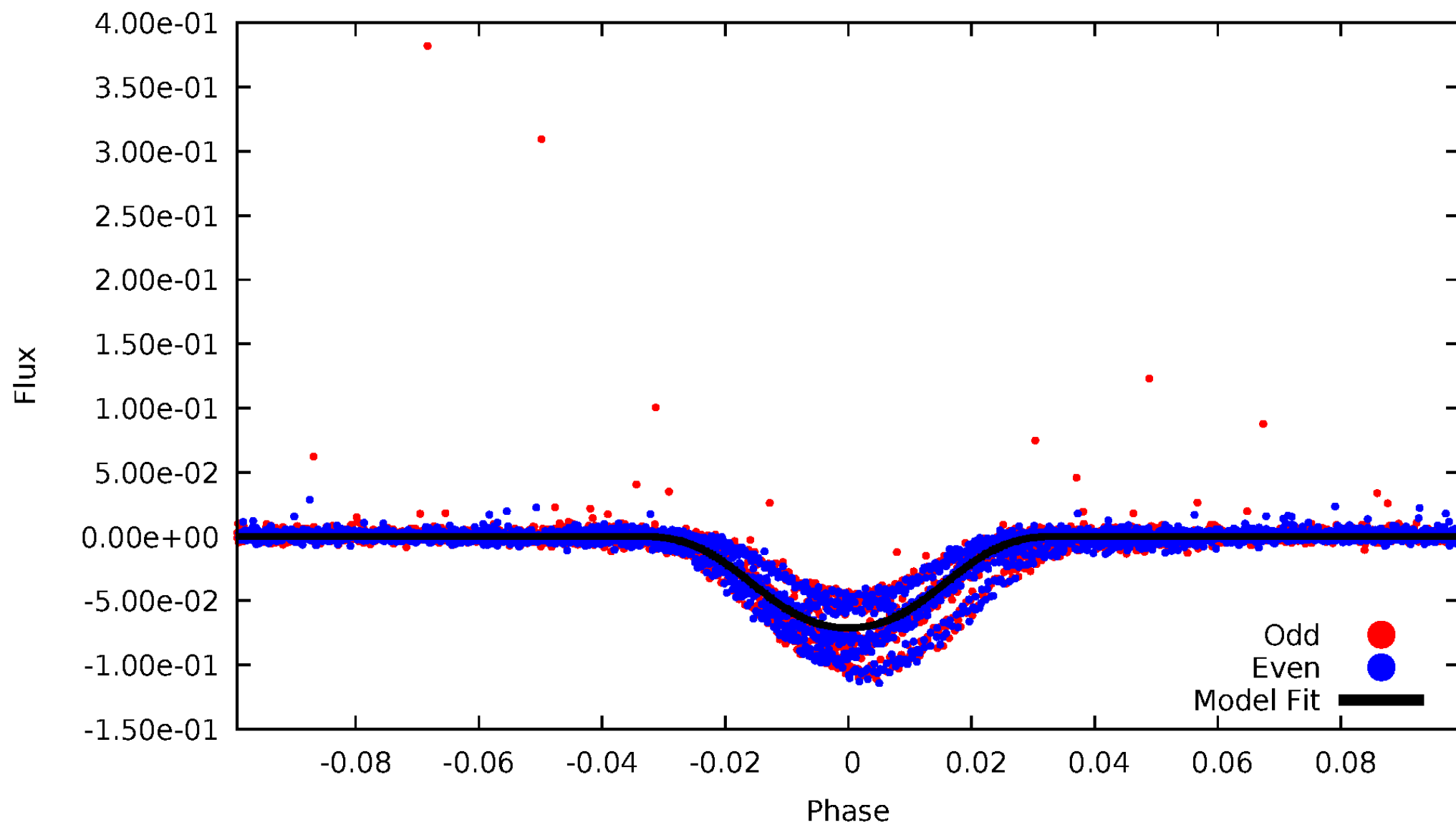


TCE 010268903-01



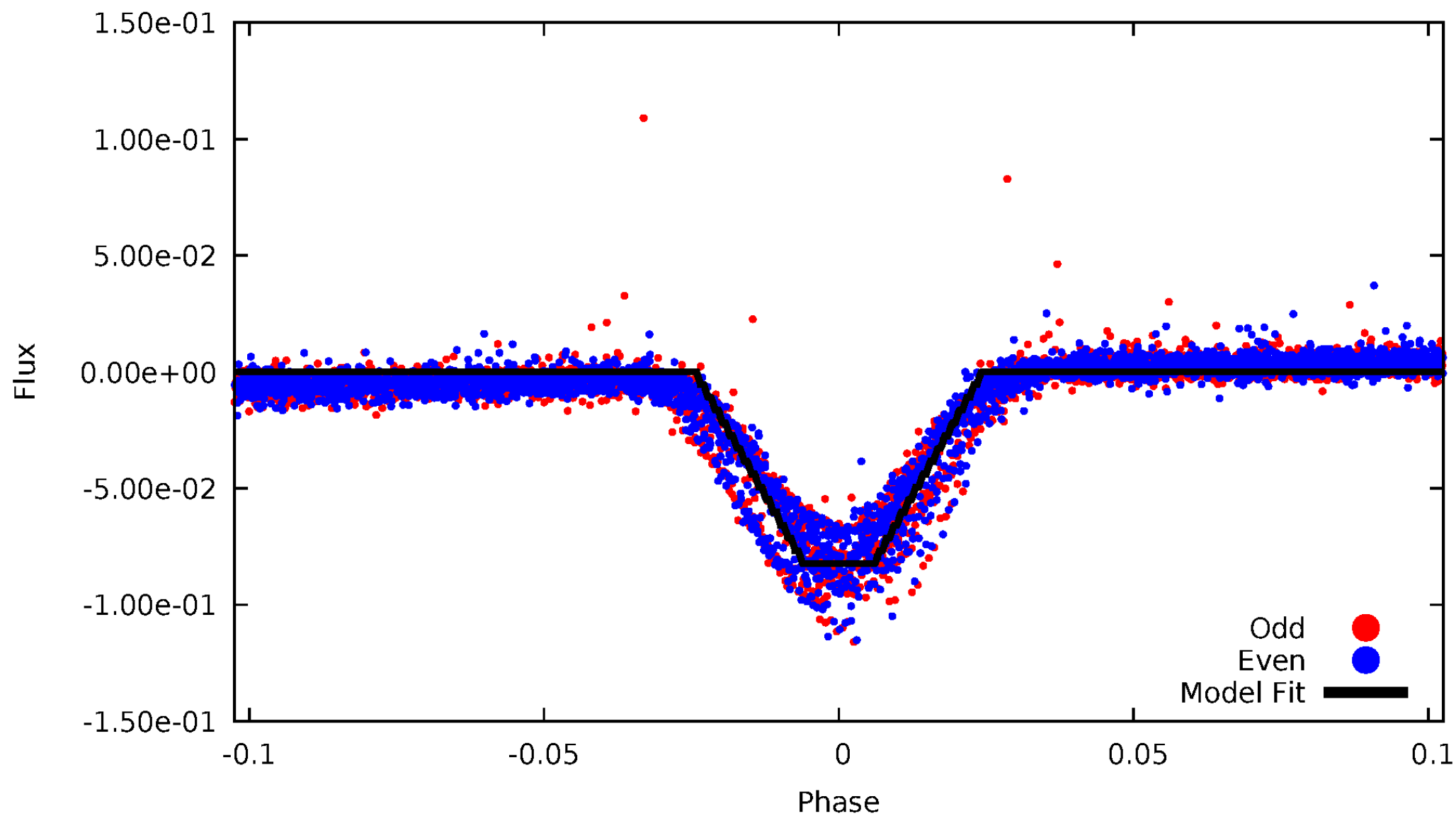
# DV Odd/Even

TCE 010268903-01



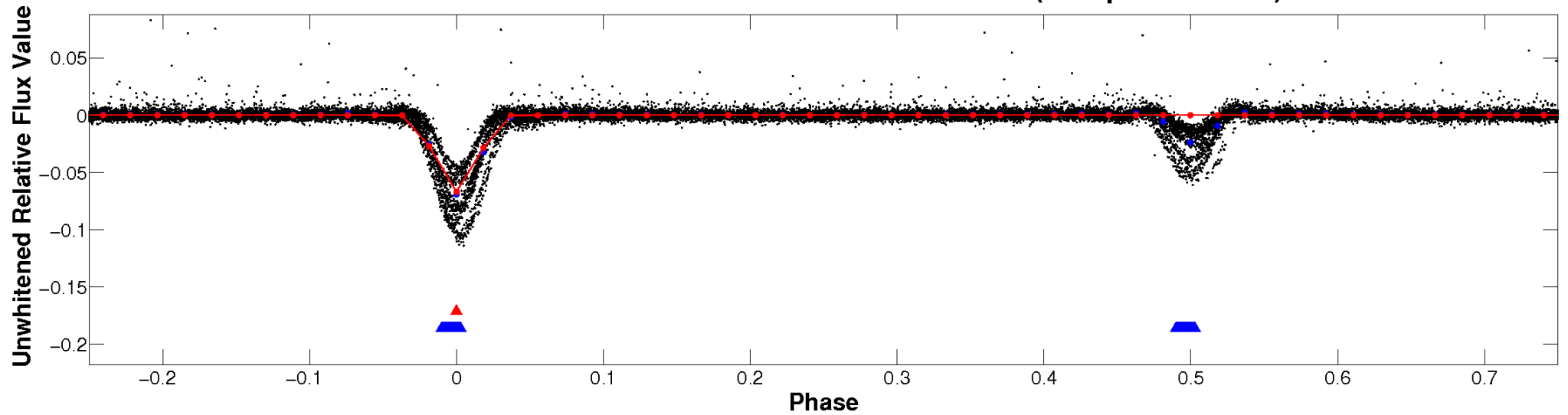
# ALT Odd/Even

TCE 010268903-01

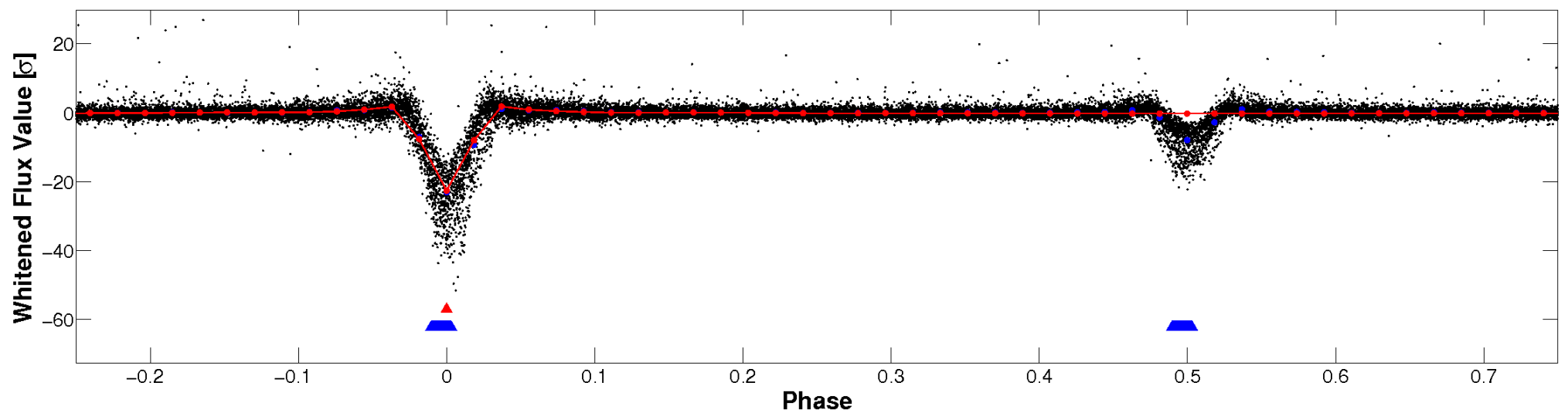


# Non-Whitened Vs. Whitened Light Curve

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

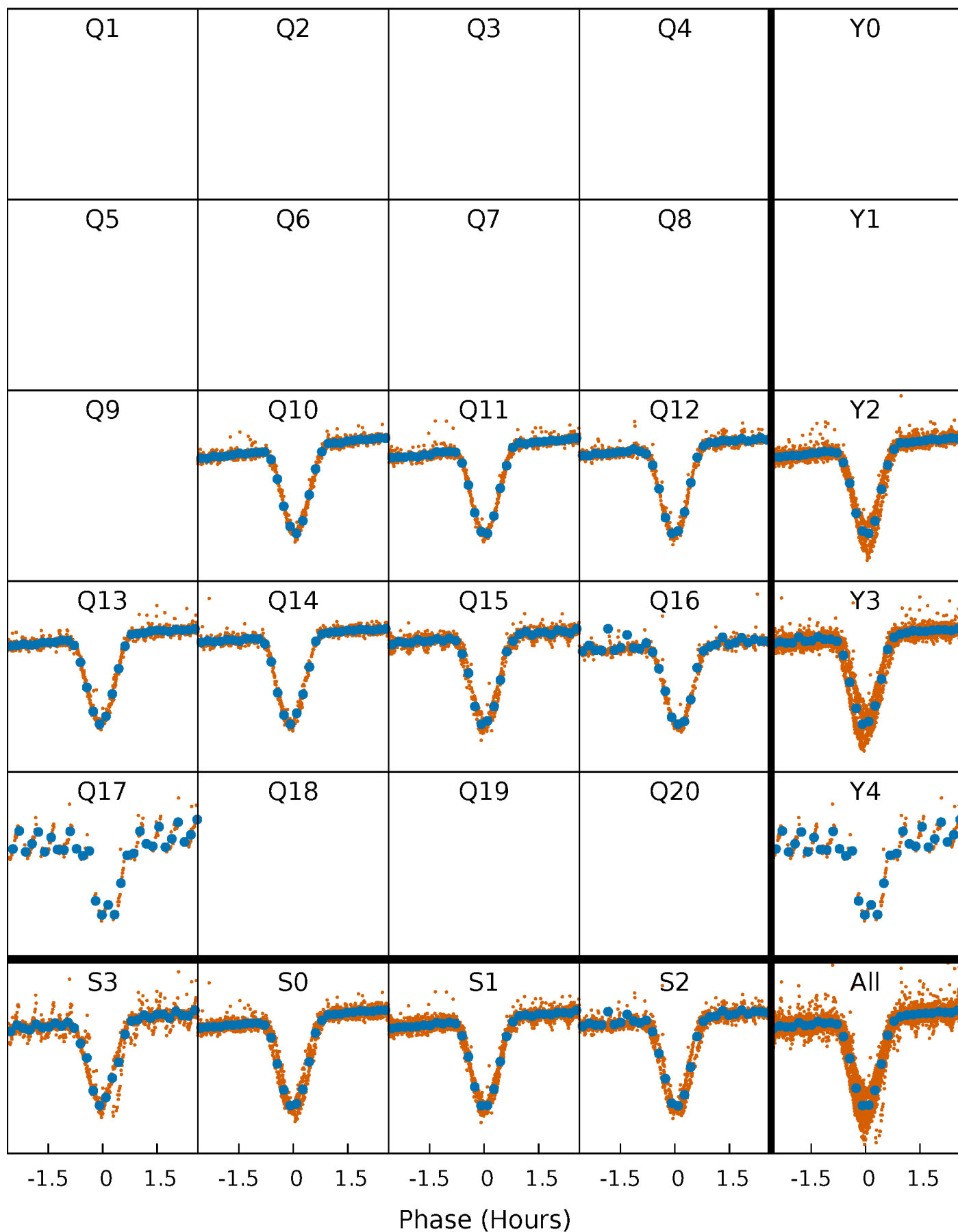


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

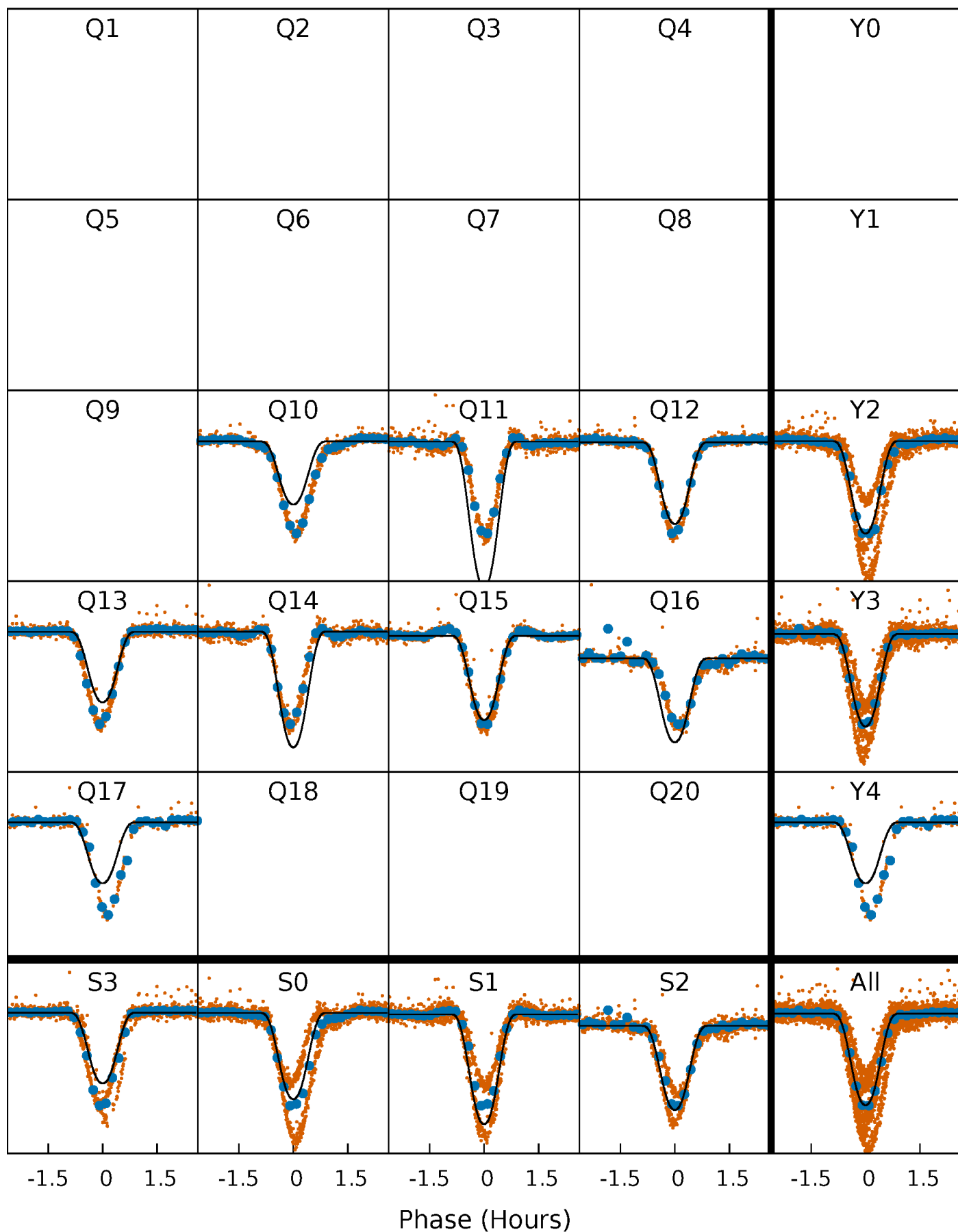
TCE 010268903-01 P= 1.103975 Days  $T_0=131.575518$  (BKJD)





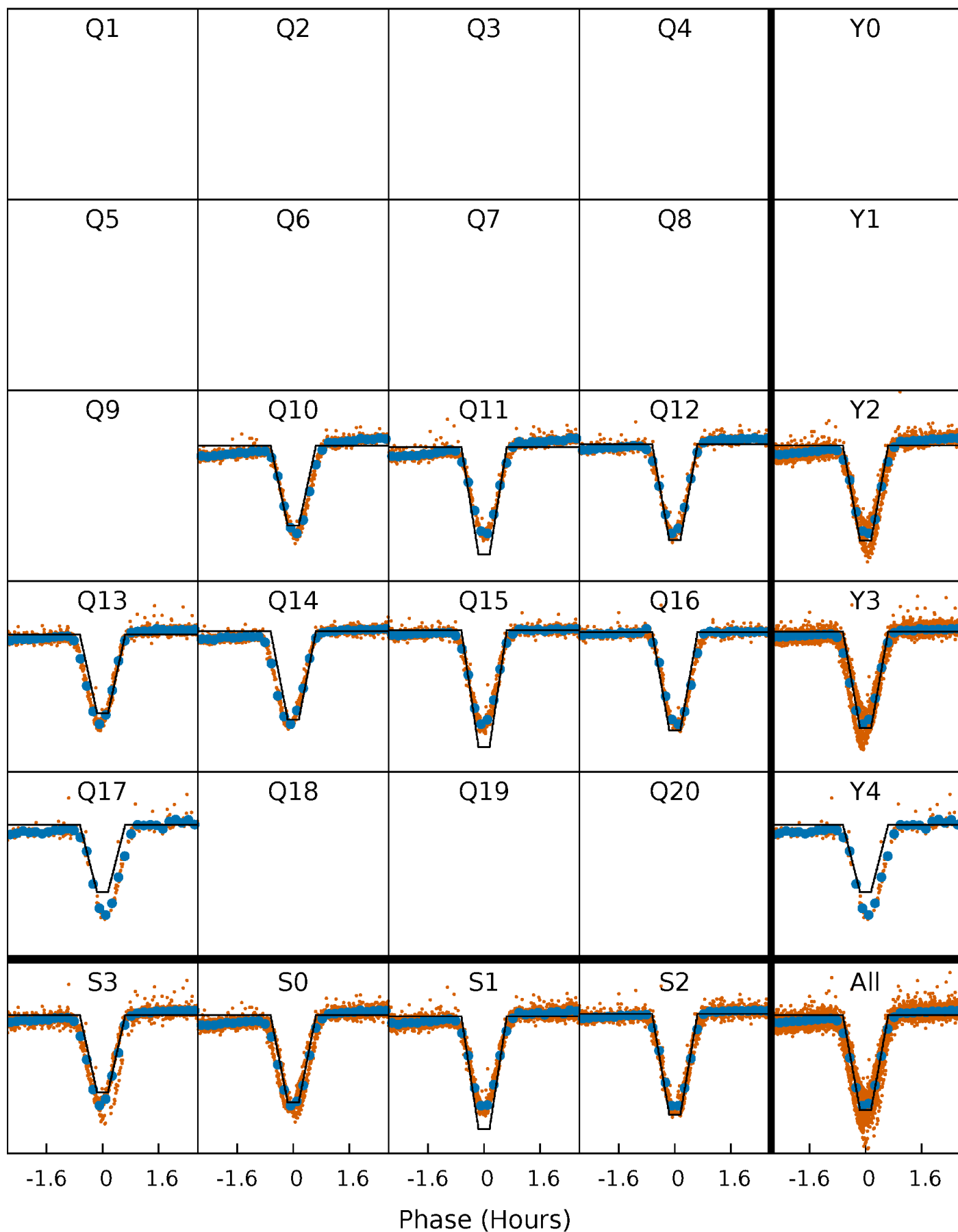
# DV Quarter-Phased Transit Curves

TCE 010268903-01 P= 1.103975 Days  $T_0=131.575518$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

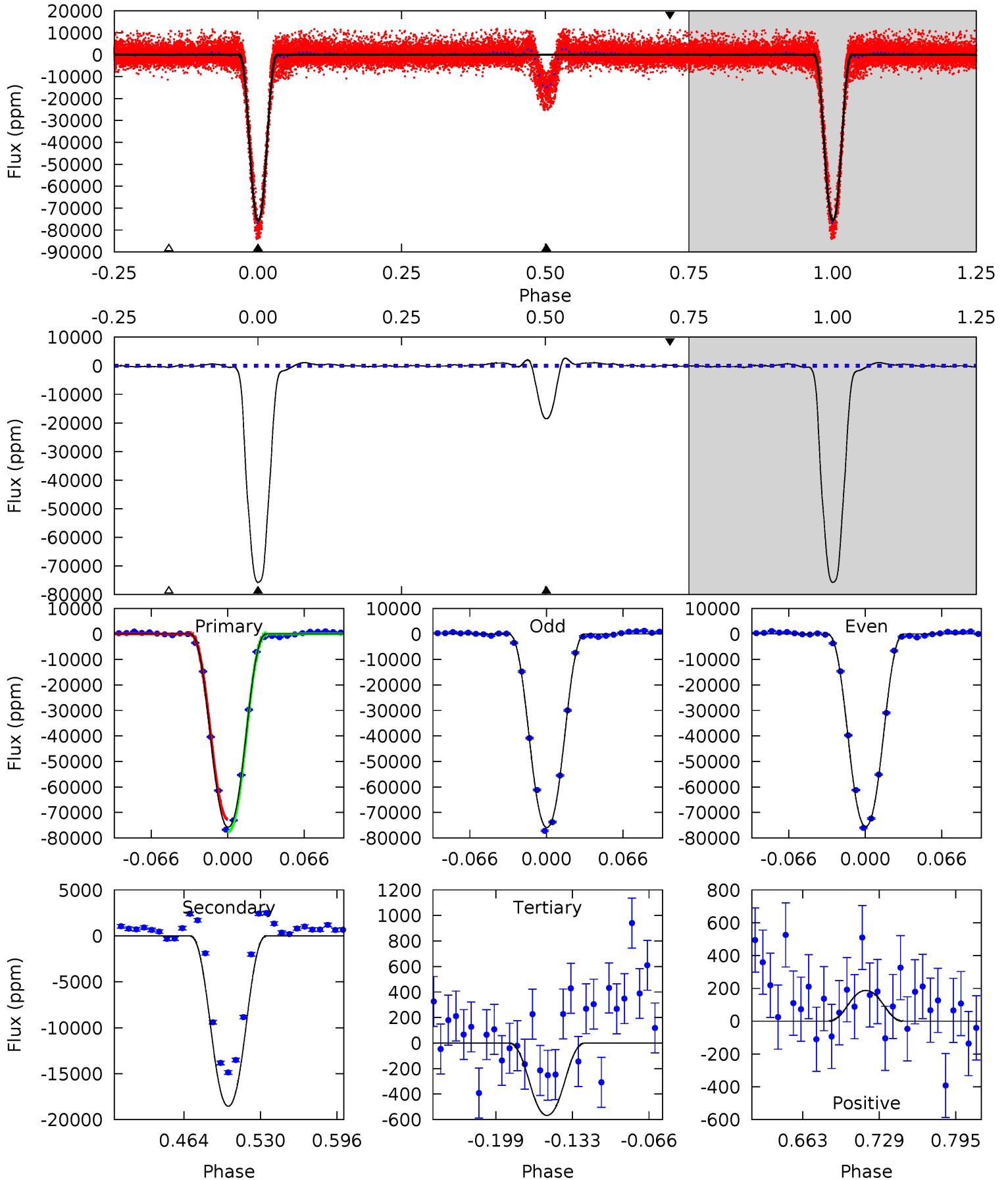
TCE 010268903-01     $P = 1.103980$  Days     $T_0 = 131.572009$  (BKJD)



# DV Model-Shift Uniqueness Test

010268903-01, P = 1.103975 Days, E = 131.575518 Days

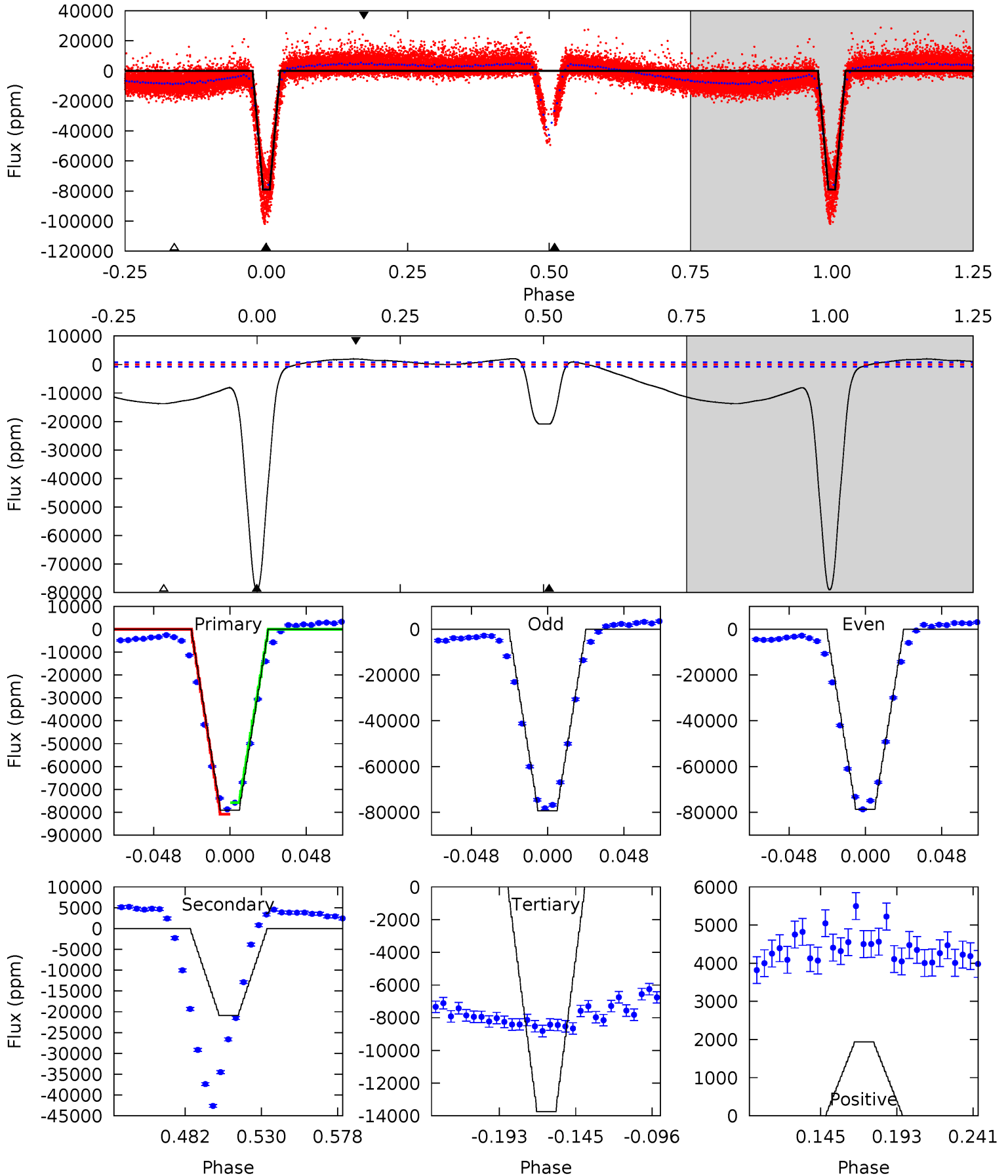
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
972.6	238.1	7.28	2.40	4.65	1.84	5.04	965.3	970.2	230.9	235.7	2.39	0.96	0.03	0



# Alt Model-Shift Uniqueness Test

010268903-01, P = 1.103980 Days, E = 131.572009 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
476.1	125.9	82.8	11.7	4.72	1.98	34.7	393.4	464.5	43.1	114.3	1.81	1.00	0.03	15.0



### Stellar Parameters For KIC 010268903

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3606^{+101}_{-139}$	$4.828^{+0.117}_{-0.063}$	$-0.120^{+0.250}_{-0.300}$	$0.419^{+0.071}_{-0.106}$	$0.431^{+0.076}_{-0.113}$	$8.253^{+6.072}_{-2.116}$
	+3%/-4%	+2%/-1%	+208%/-250%	+17%/-25%	+18%/-26%	+74%/-26%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 010268903-01 / KOI 3773.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-18539 \pm 78$	$11.98^{+1.08}_{-1.52}$	$1131^{+57}_{-65}$	$2962^{+77}_{-97}$	$19^{+3}_{-2}$
Alt.	$-20904 \pm 166$	$13.15^{+1.06}_{-1.82}$	$1130^{+55}_{-66}$	$2942^{+68}_{-102}$	$18^{+3}_{-2}$

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

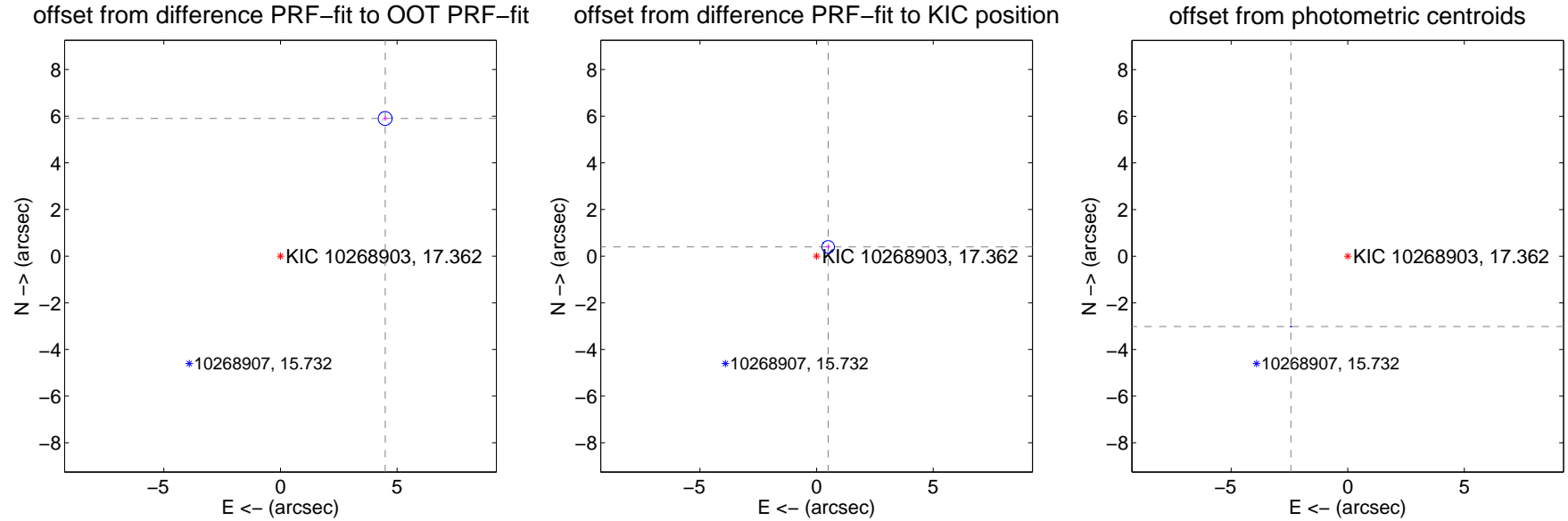
## DV Centroid Data

Supplemental centroid analysis for 010268903-01. Kepler magnitude: 17.36. Transit SNR 354.11

There are 8 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 7.17 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$7.416 \pm 0.099$	74.81	$-4.490 \pm 0.099$	$5.902 \pm 0.099$
PRF-fit source offset from KIC position	$0.635 \pm 0.090$	7.07	$-0.496 \pm 0.091$	$0.396 \pm 0.088$
photometric centroid source offset	$3.88 \pm 0.01$	586.76	$2.44 \pm 0.01$	$-3.02 \pm 0.01$



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.

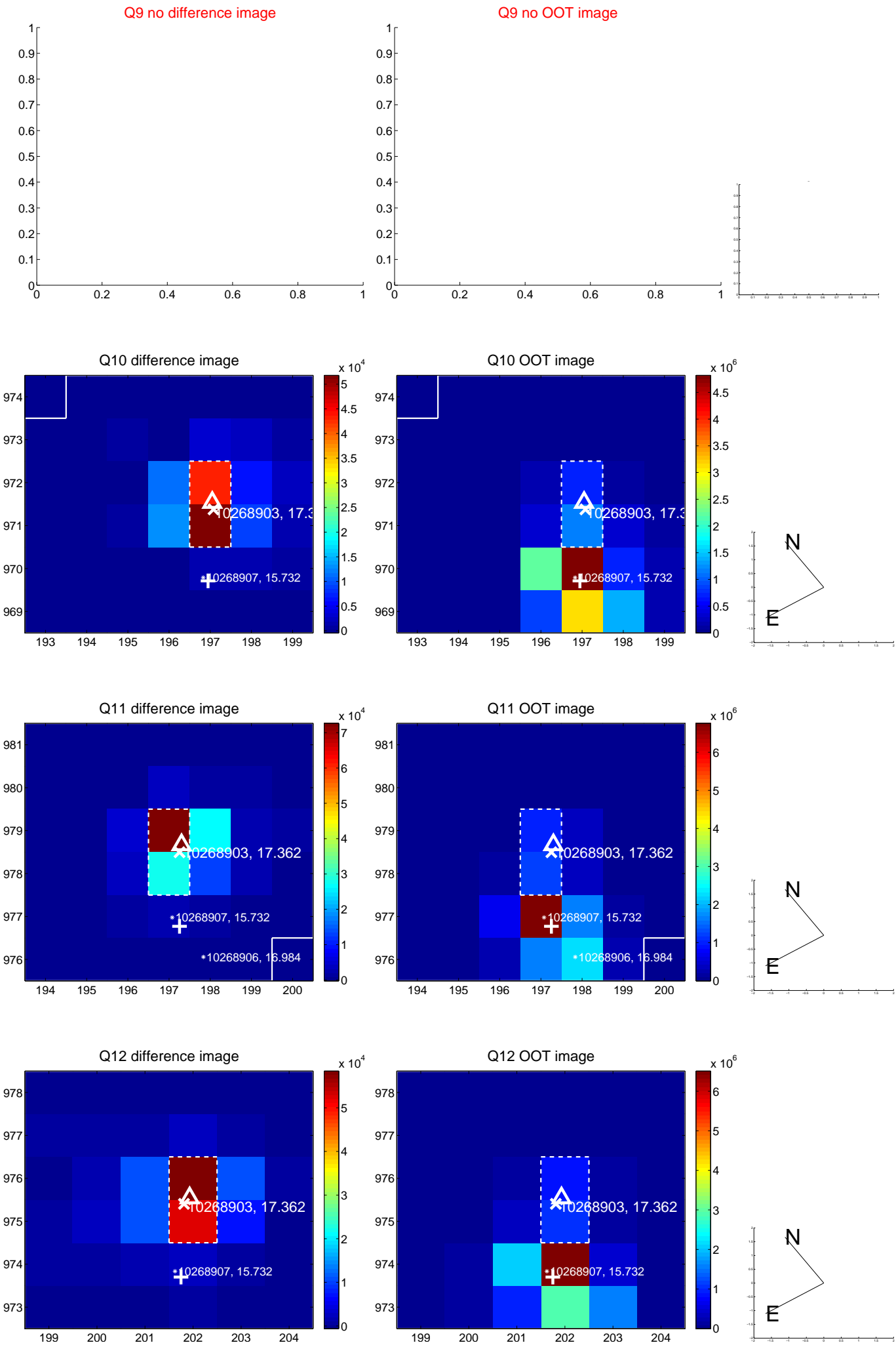


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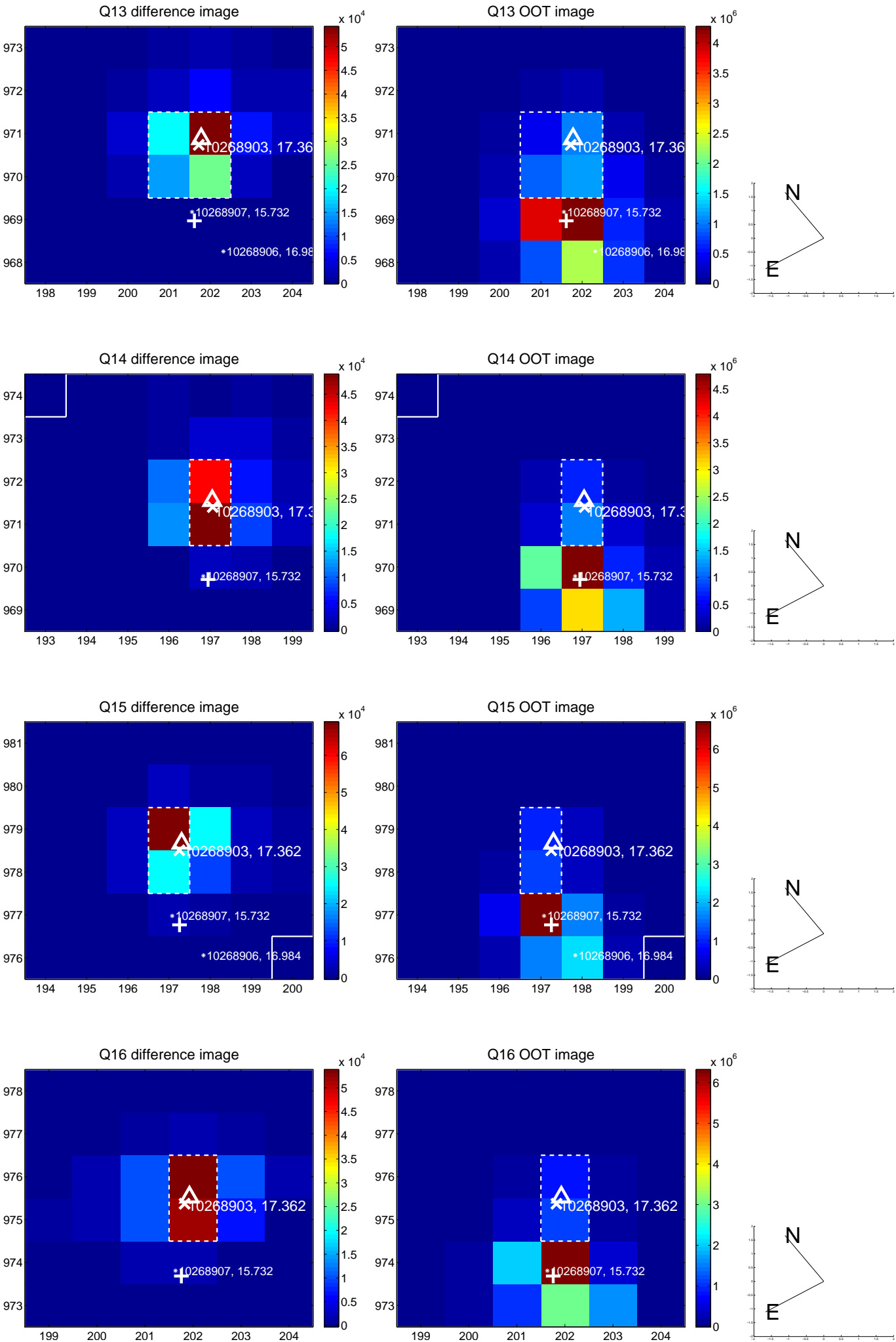




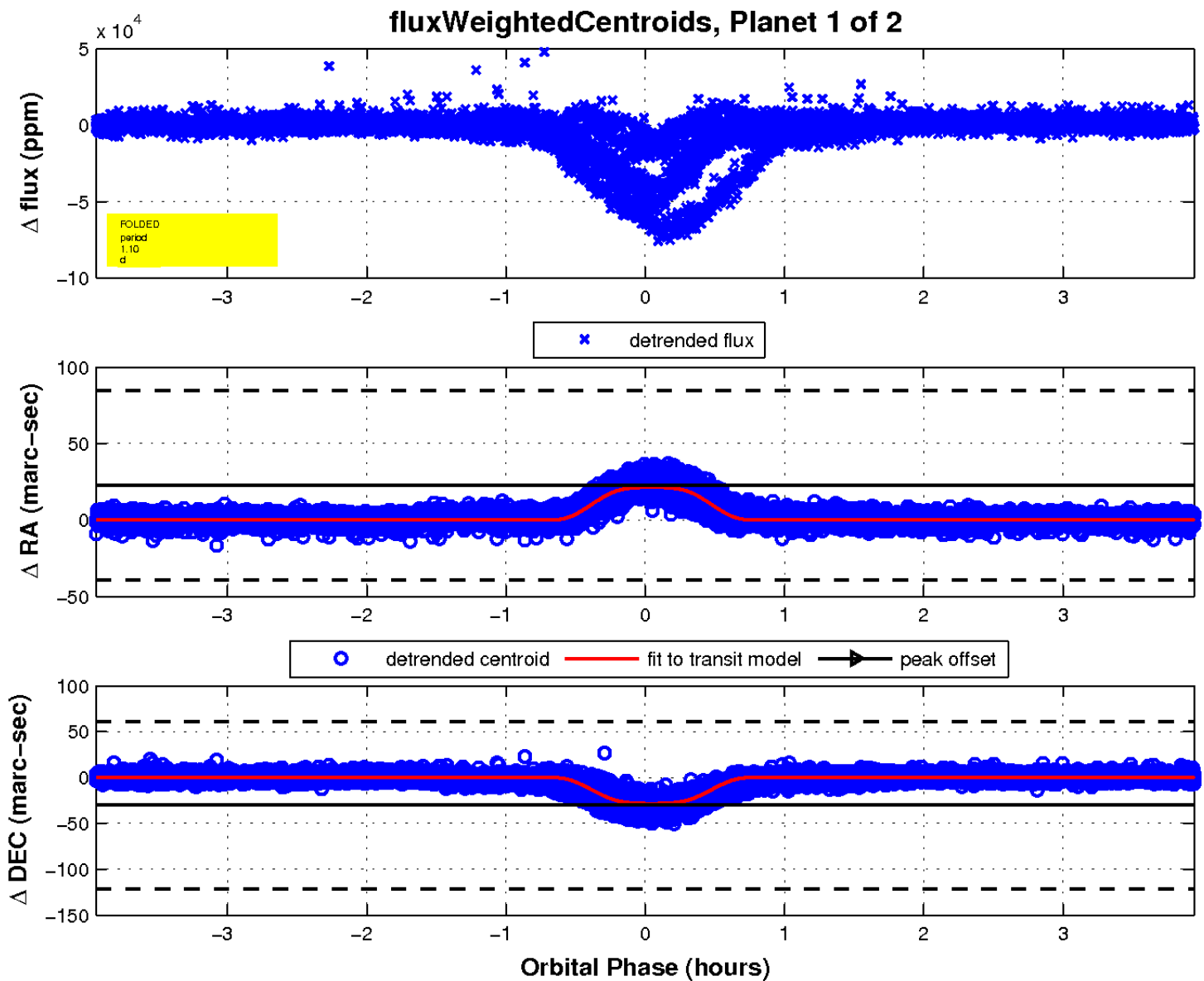
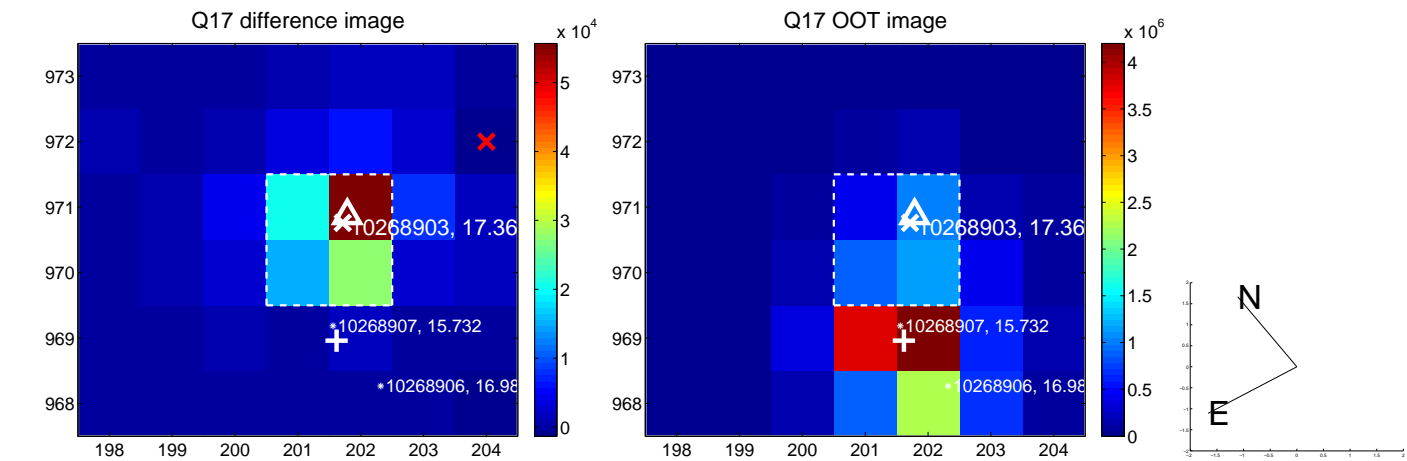
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



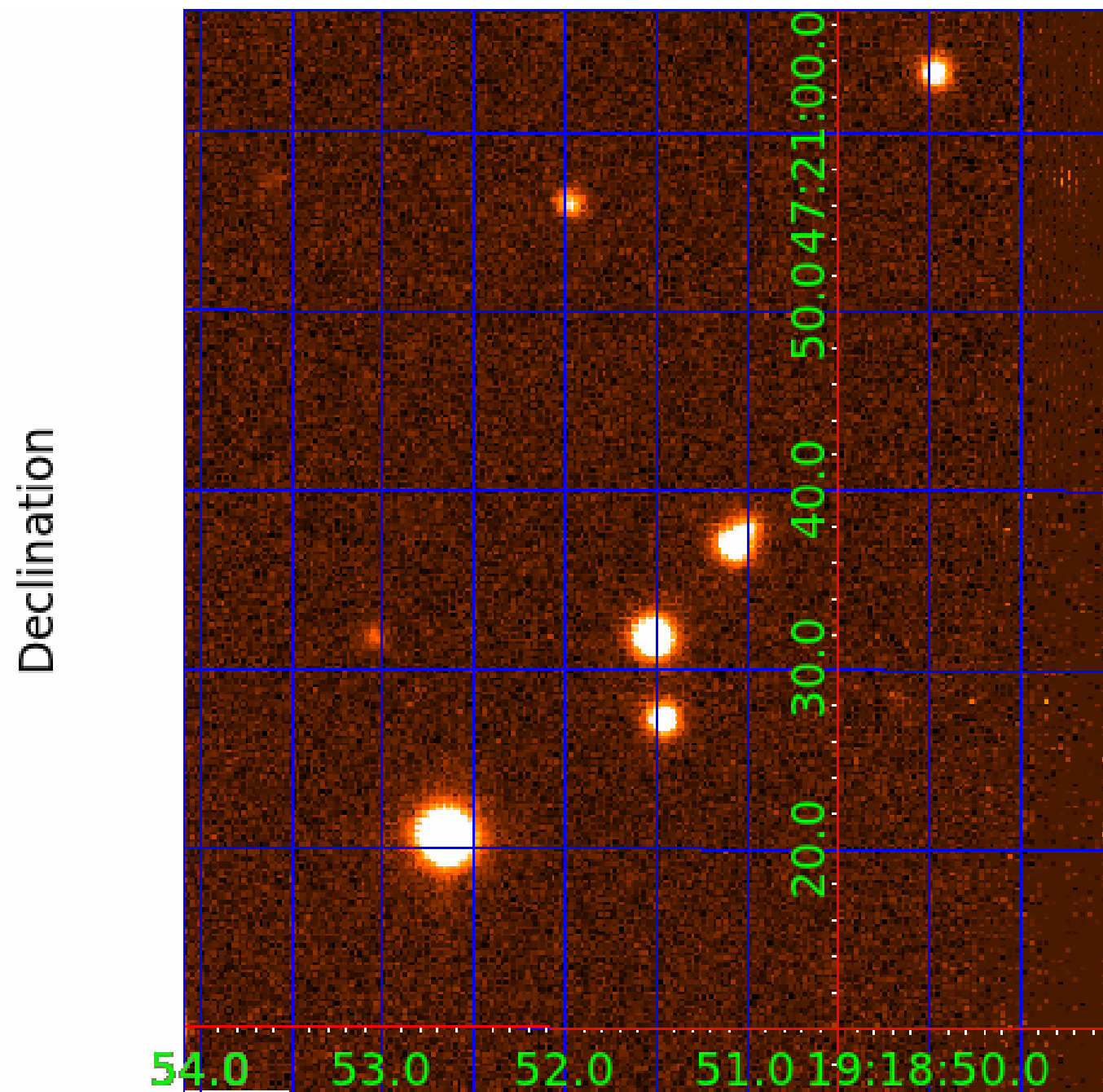
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image



# KIC 010268903

## 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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010268903-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

**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 010268903-02

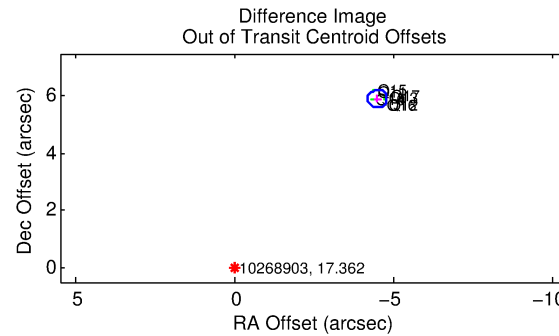
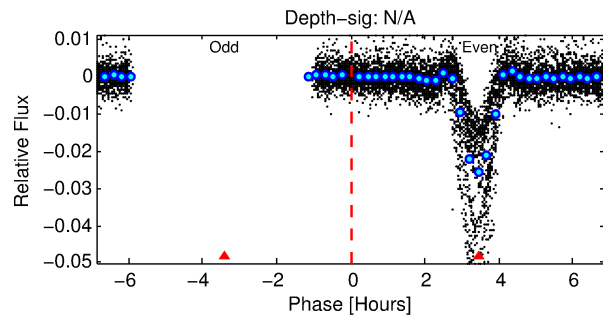
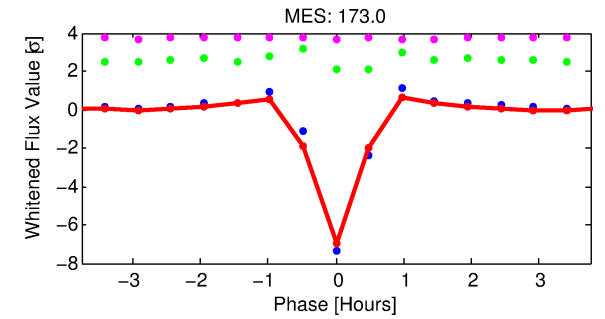
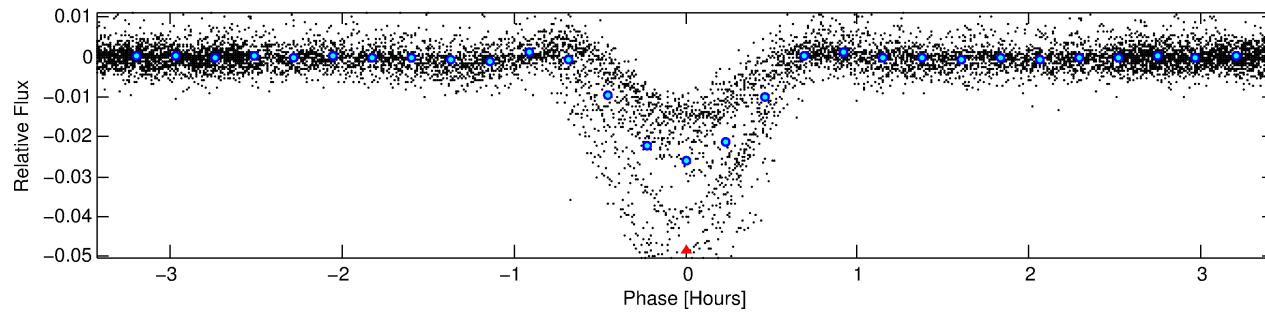
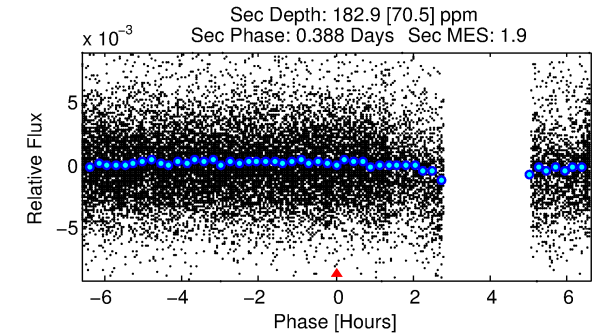
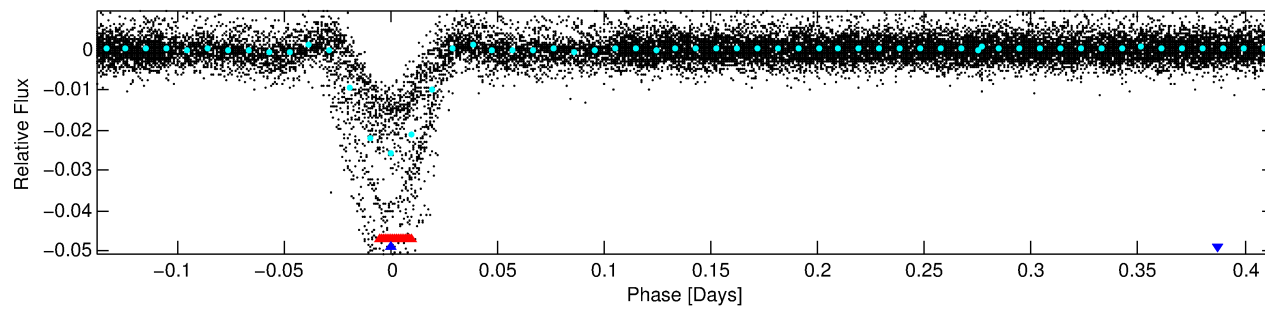
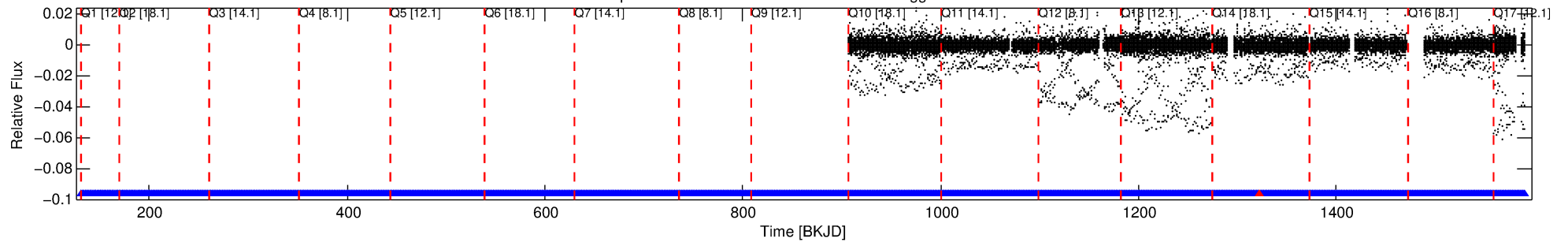
No Significant Match Found

# DV One-Page Summary

KIC: 10268903 Candidate: 2 of 2 Period: 0.552 d

KOI: K03773 Corr: No Ephemeris Match

Kp: 17.36 R\*: 0.42 Rs Teff: 3606.0 K Logg: 4.83 Fe/H: -0.120



TPS TCE Results:

Period = 0.55199 d  
Epoch = 131.5641 BKJD

DV fit results are unavailable

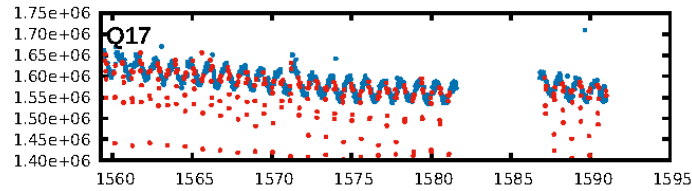
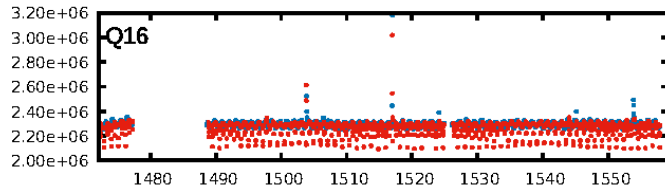
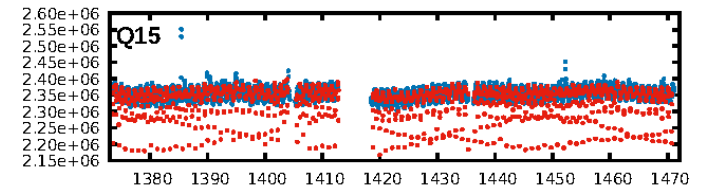
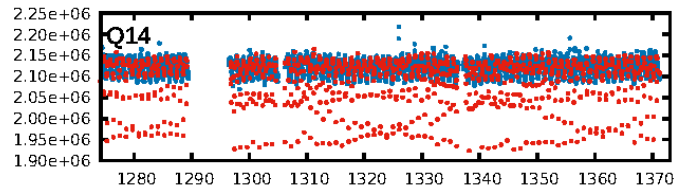
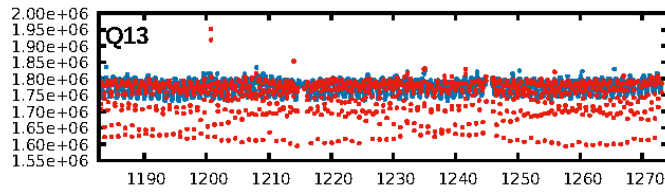
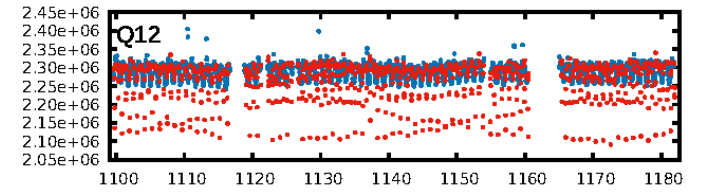
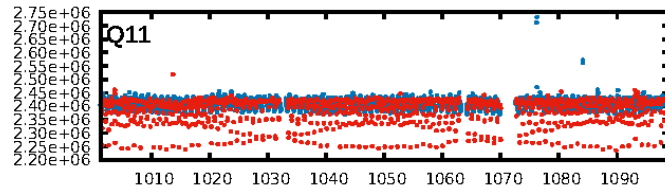
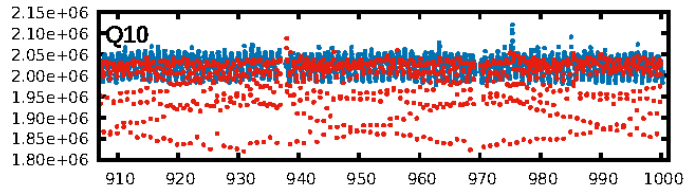
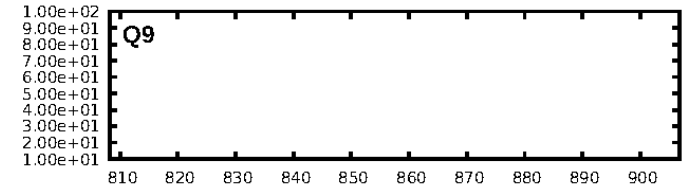
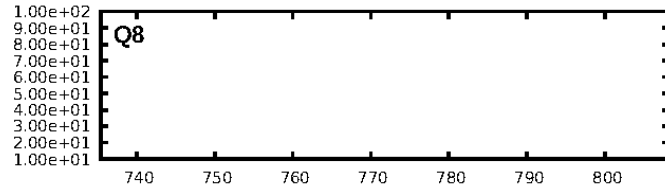
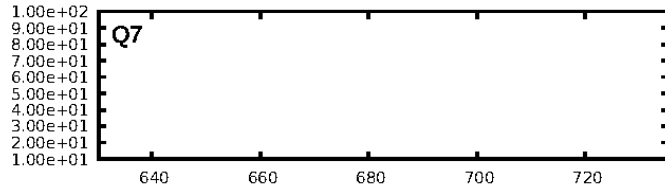
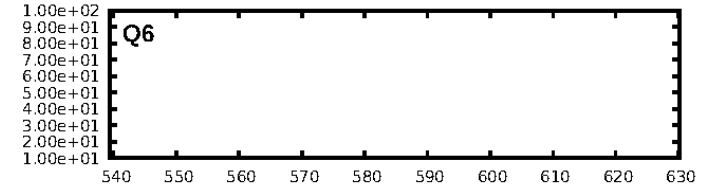
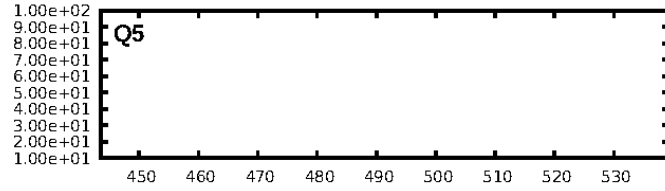
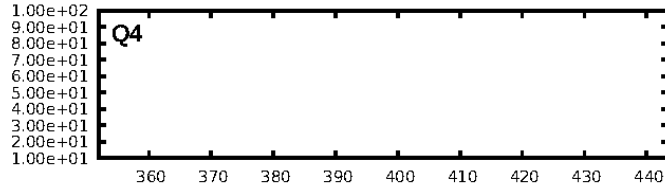
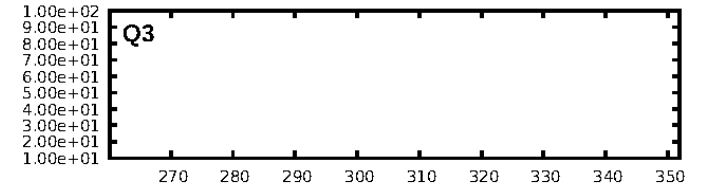
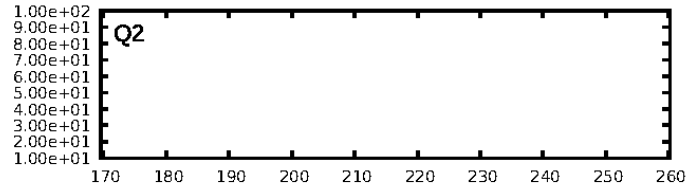
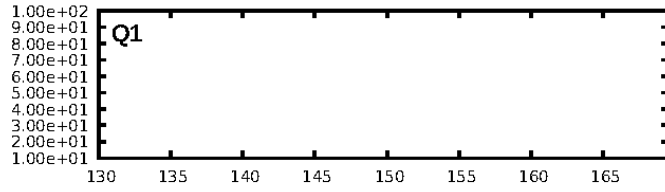
DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [6.64σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [538/539]  
GhostDiagnostic-chr: 4.634  
Centroid-sig: 0.0%  
Centroid-so: 4.166 arcsec [516.57σ]  
OotOffset-rm: 7.424 arcsec [73.42σ]  
KicOffset-rm: 0.632 arcsec [6.35σ]  
OotOffset-st: 2/2/2/2 [8]  
KicOffset-st: 2/2/2/2 [8]  
DiffImageQuality-fgm: 1.00 [8/8]  
DiffImageOverlap-fno: 1.00 [8/8]

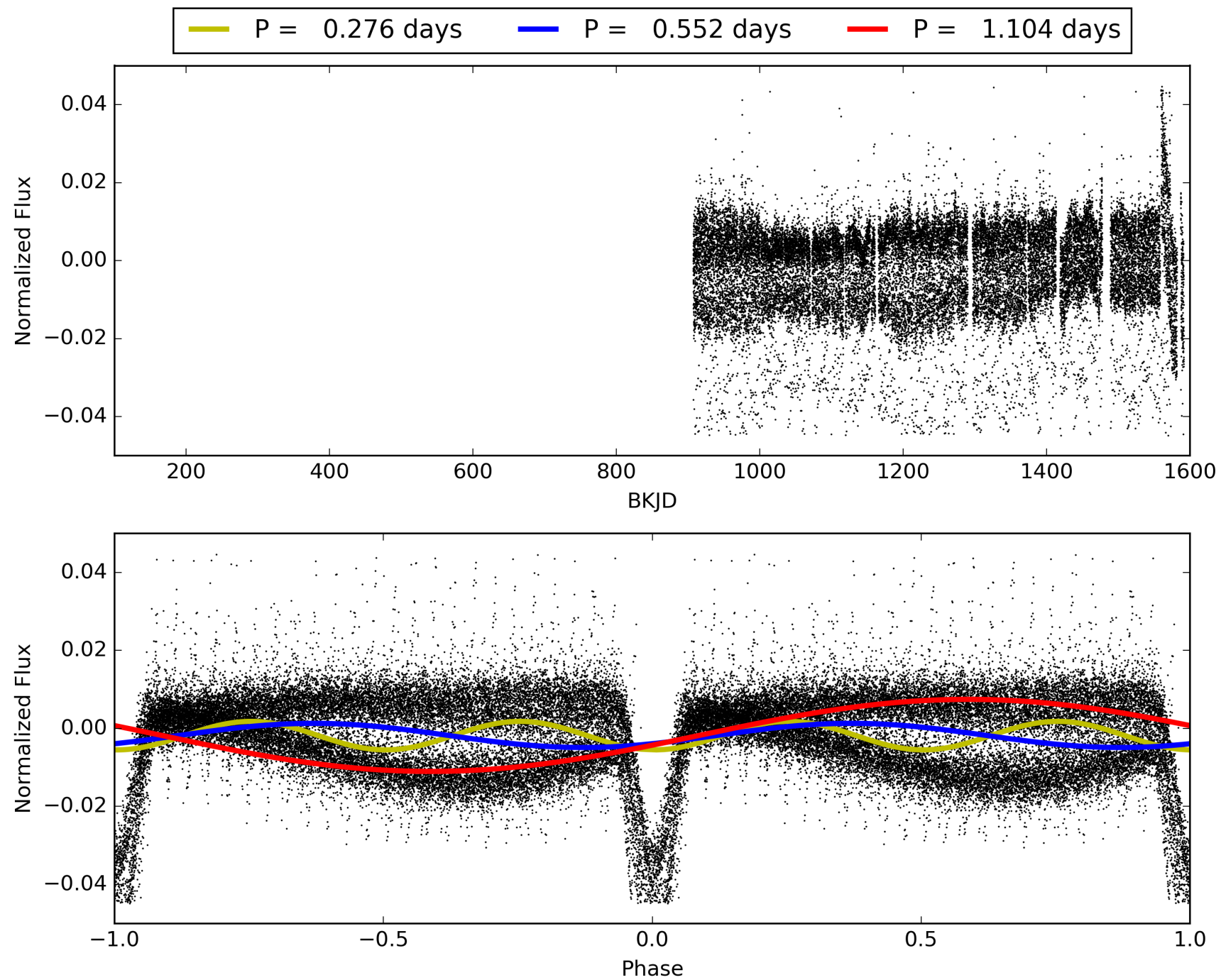
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:05:43 Z

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

# TCE 010268903-02, PDC Light Curves



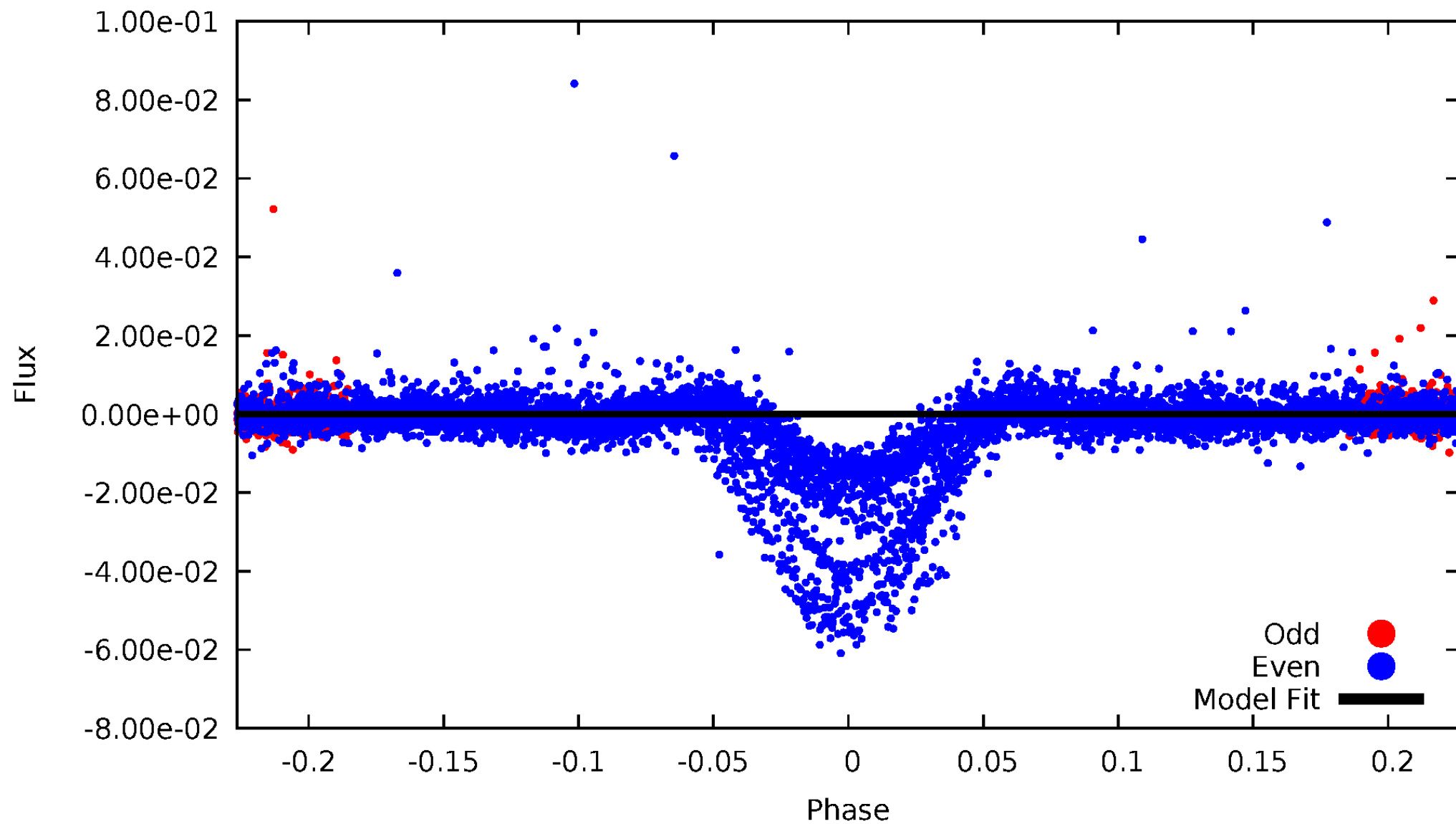
# TCE 010268903-02





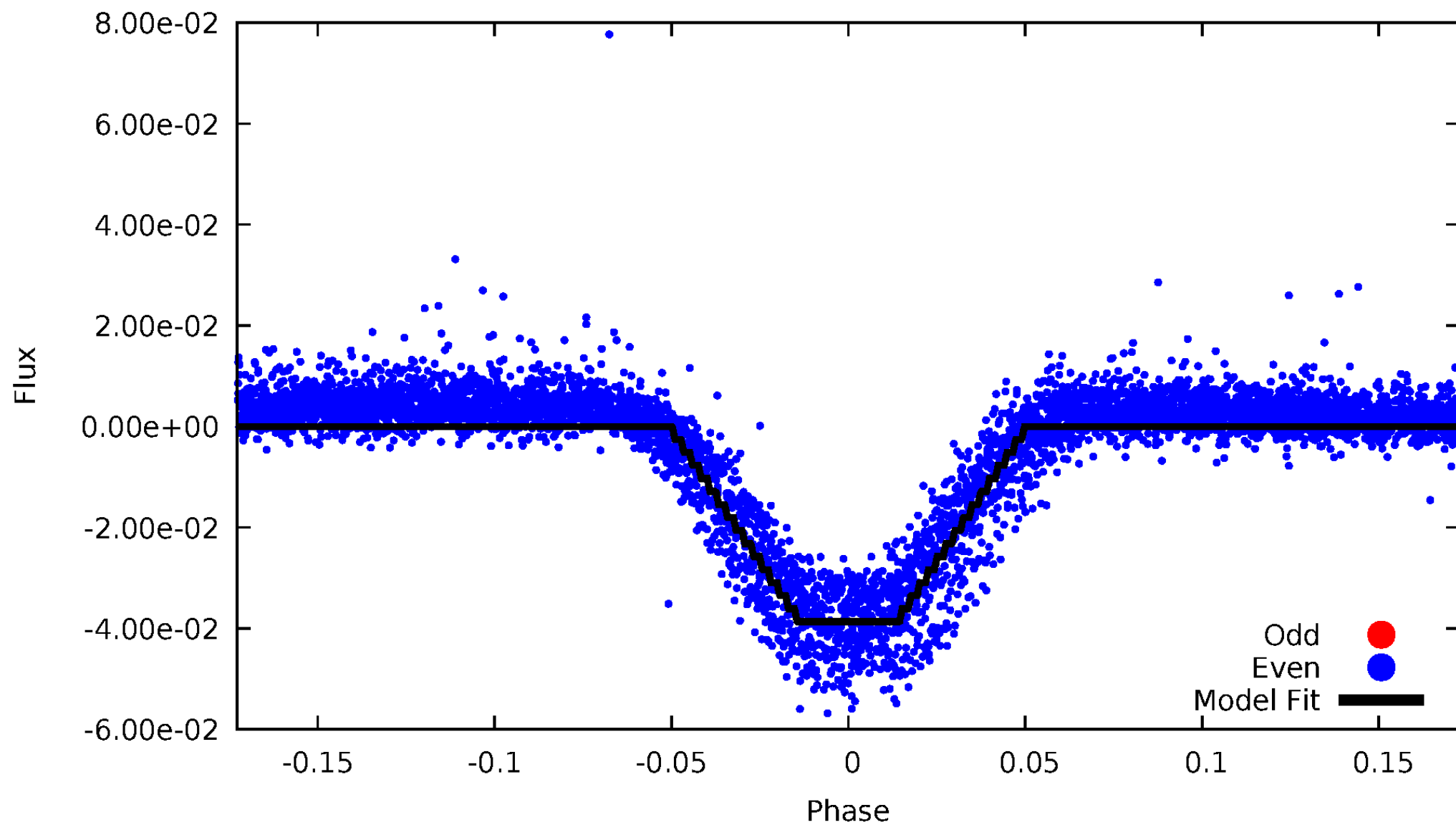
# DV Odd/Even

TCE 010268903-02



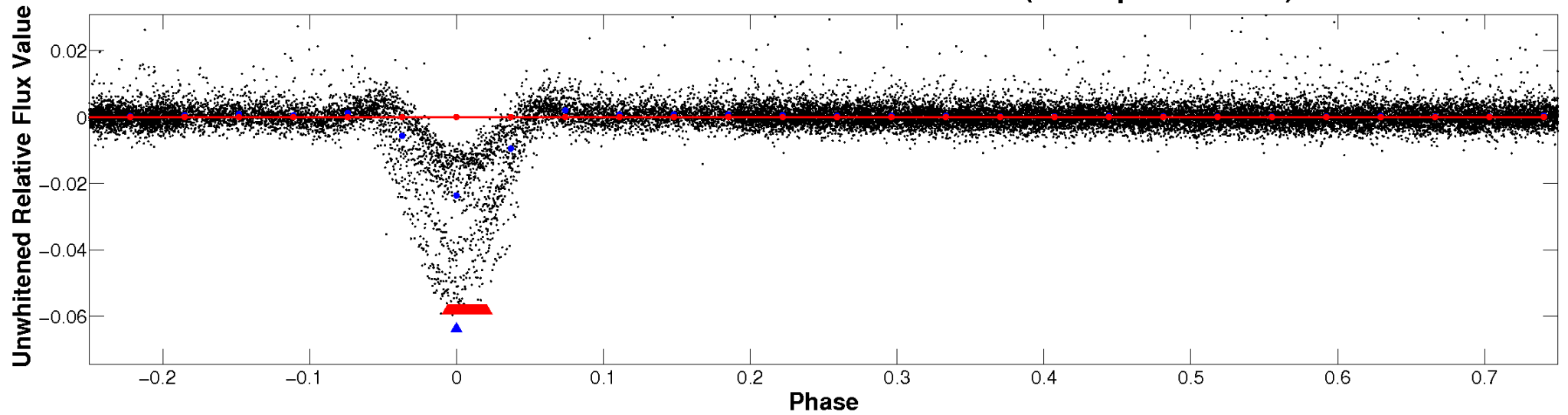
# ALT Odd/Even

TCE 010268903-02

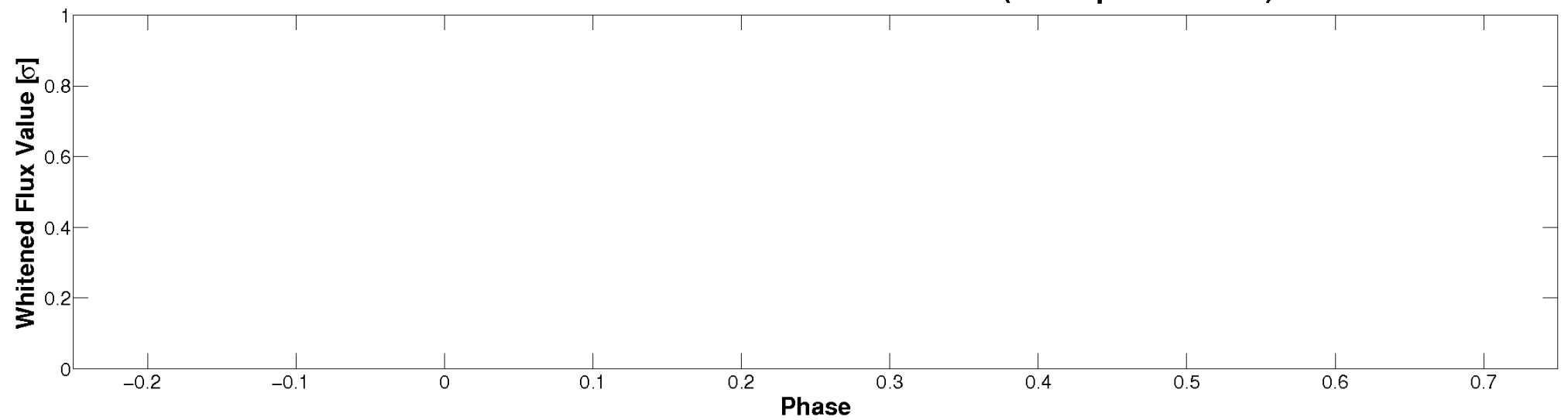


# Non-Whitened Vs. Whitened Light Curve

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

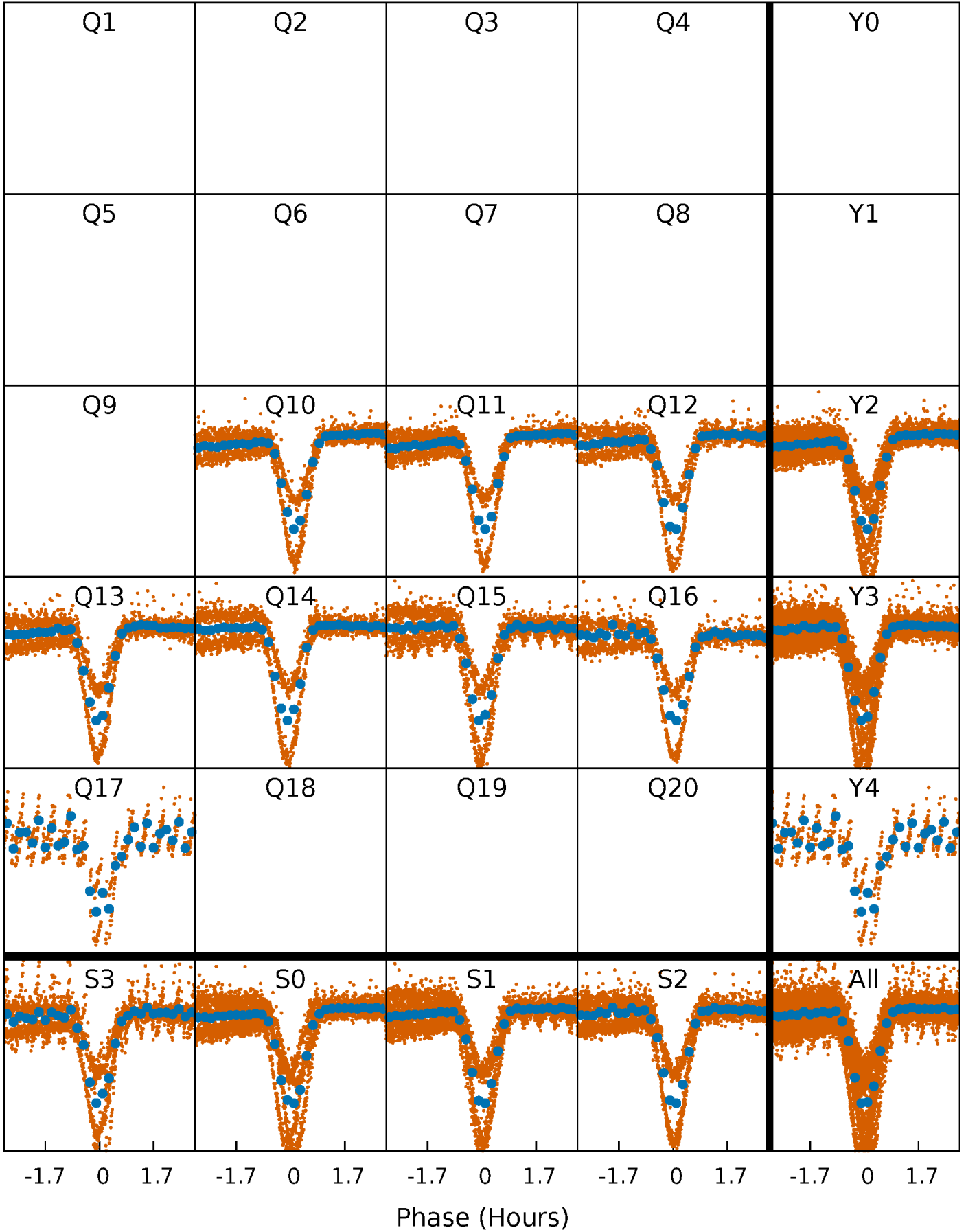


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



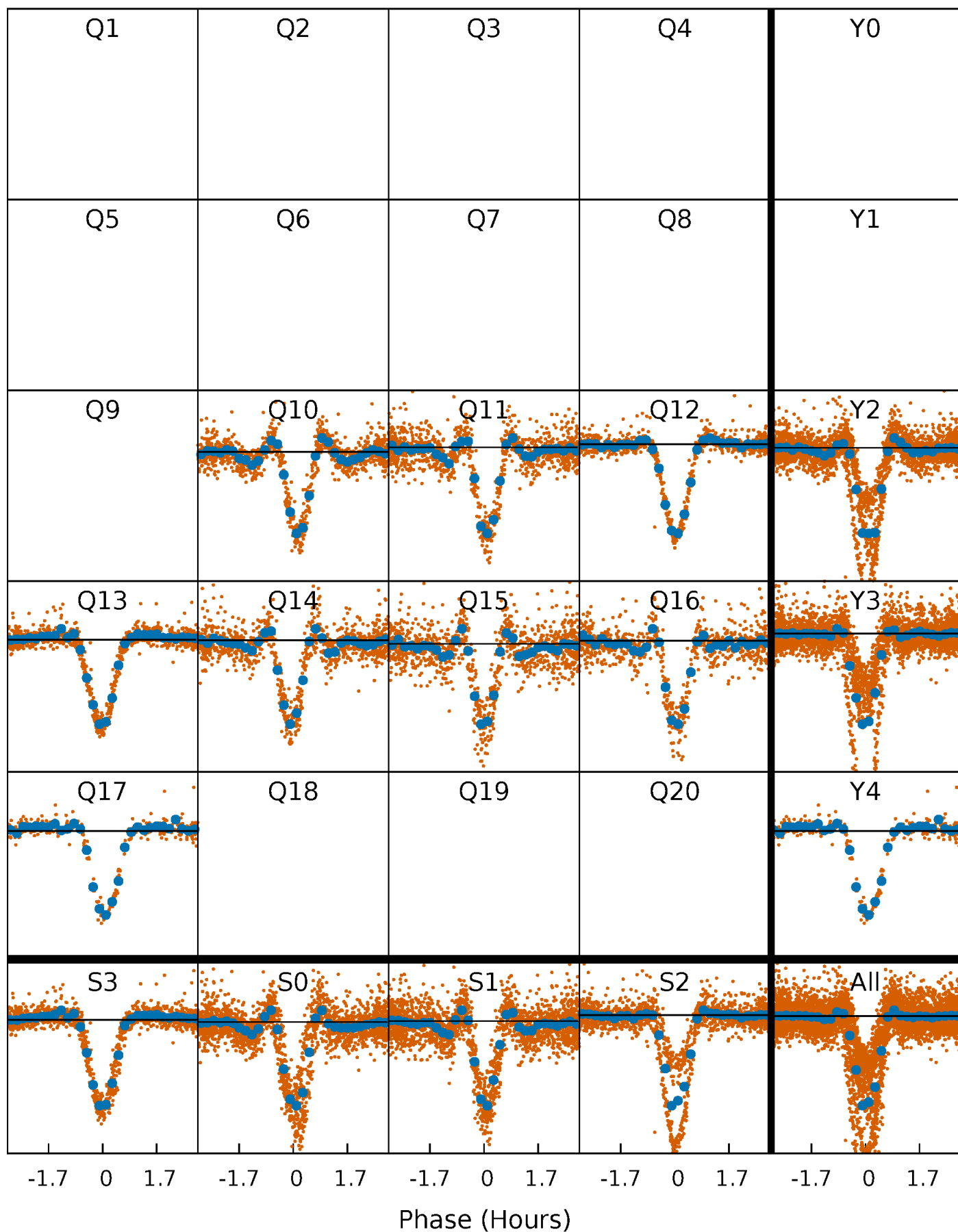
# PDC Quarter-Phased Transit Curves

TCE 010268903-02     $P = 0.551993$  Days     $T_0 = 131.564119$  (BKJD)



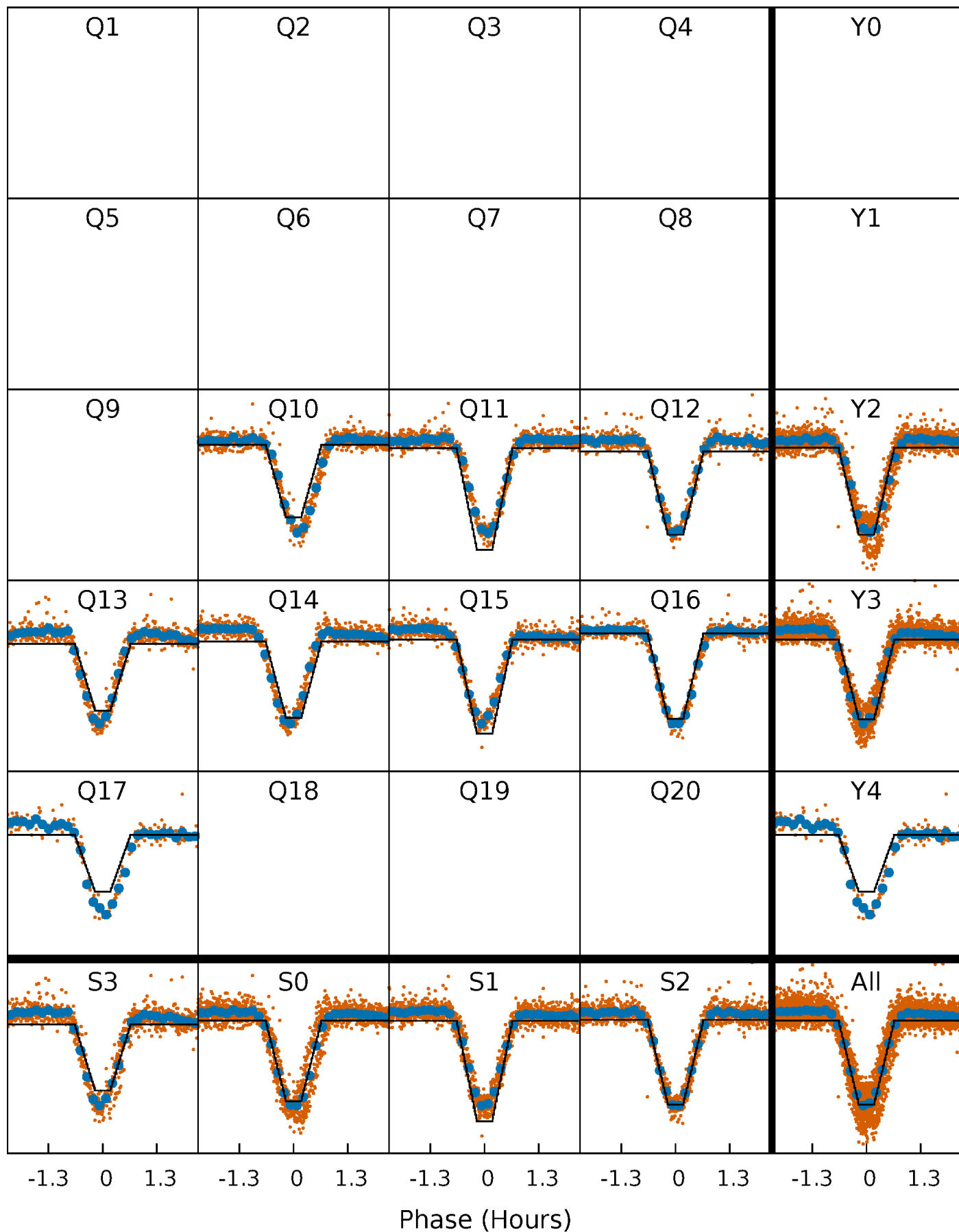
# DV Quarter-Phased Transit Curves

TCE 010268903-02     $P = 0.551993$  Days     $T_0 = 131.564119$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

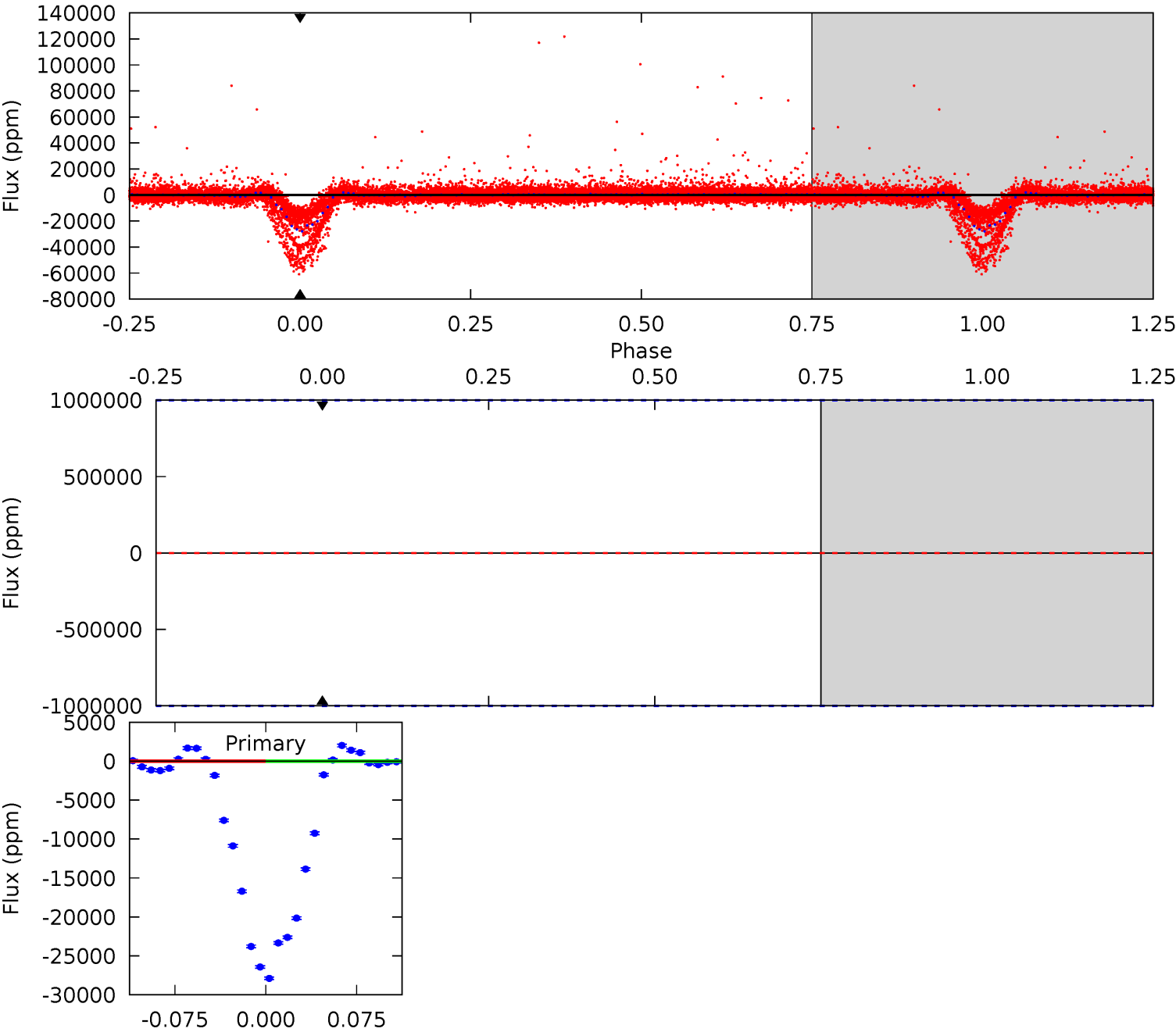
TCE 010268903-02     $P = 0.551993$  Days     $T_0 = 131.565814$  (BKJD)



# DV Model-Shift Uniqueness Test

010268903-02, P = 0.551993 Days, E = 131.564119 Days

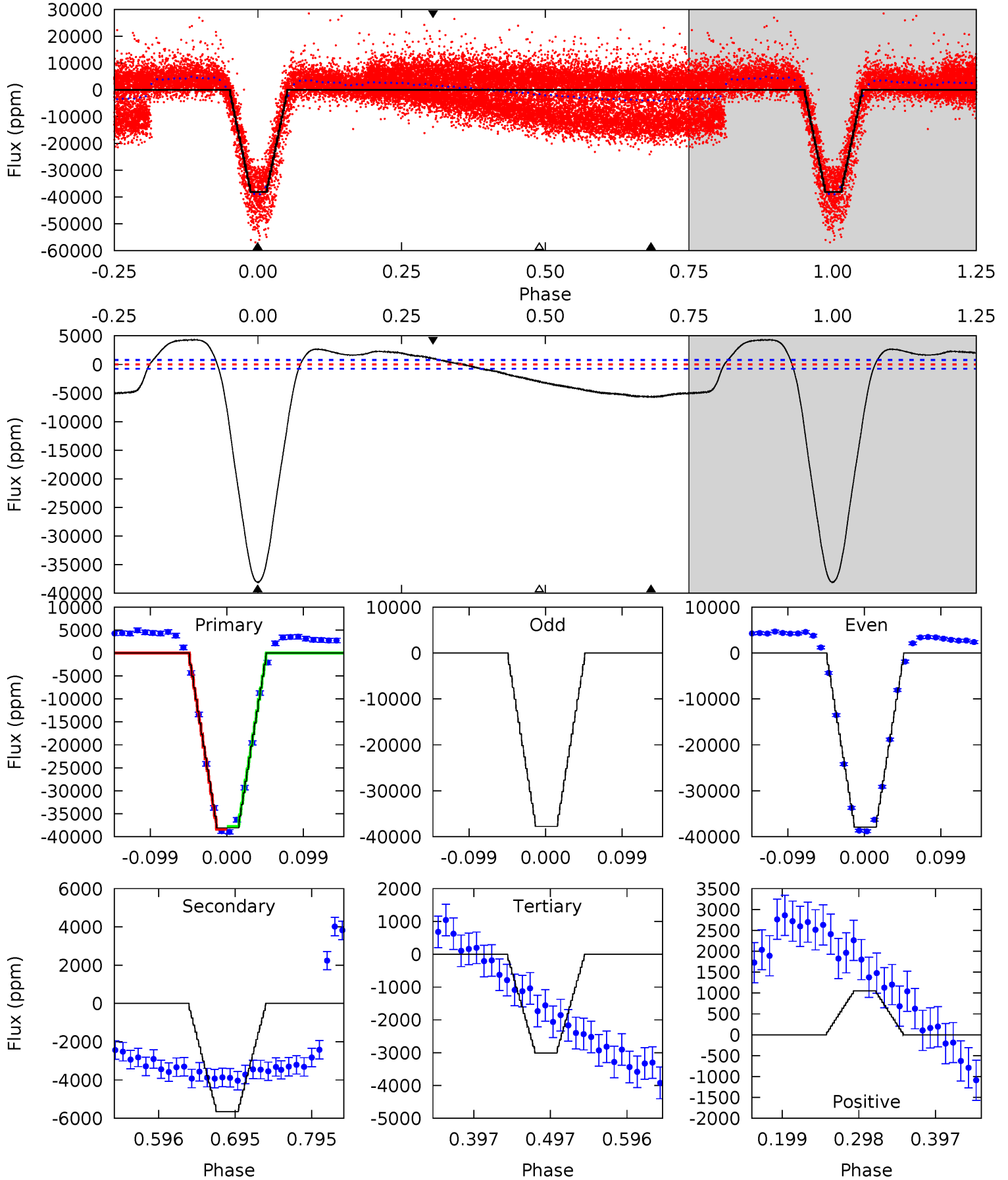
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

010268903-02, P = 0.551993 Days, E = 131.565814 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
225.1	33.4	17.8	6.22	4.57	1.65	15.1	207.3	218.9	15.6	27.2	0.74	1.00	0.10	1.74





### Stellar Parameters For KIC 010268903

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3606^{+101}_{-139}$	$4.828^{+0.117}_{-0.063}$	$-0.120^{+0.250}_{-0.300}$	$0.419^{+0.071}_{-0.106}$	$0.431^{+0.076}_{-0.113}$	$8.253^{+6.072}_{-2.116}$
	+3%/-4%	+2%/-1%	+208%/-250%	+17%/-25%	+18%/-26%	+74%/-26%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 010268903-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$8.42^{+4.45}_{-4.36}$	$1426^{+68}_{-80}$	$2302^{+2355}_{-6700}$	$1.214^{+107.635}_{-90.171}$
Alt.	$-5651 \pm 169$	$8.72^{+4.92}_{-4.25}$	$1429^{+69}_{-78}$	$2708^{+584}_{-303}$	$4.061^{+11.560}_{-2.303}$

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

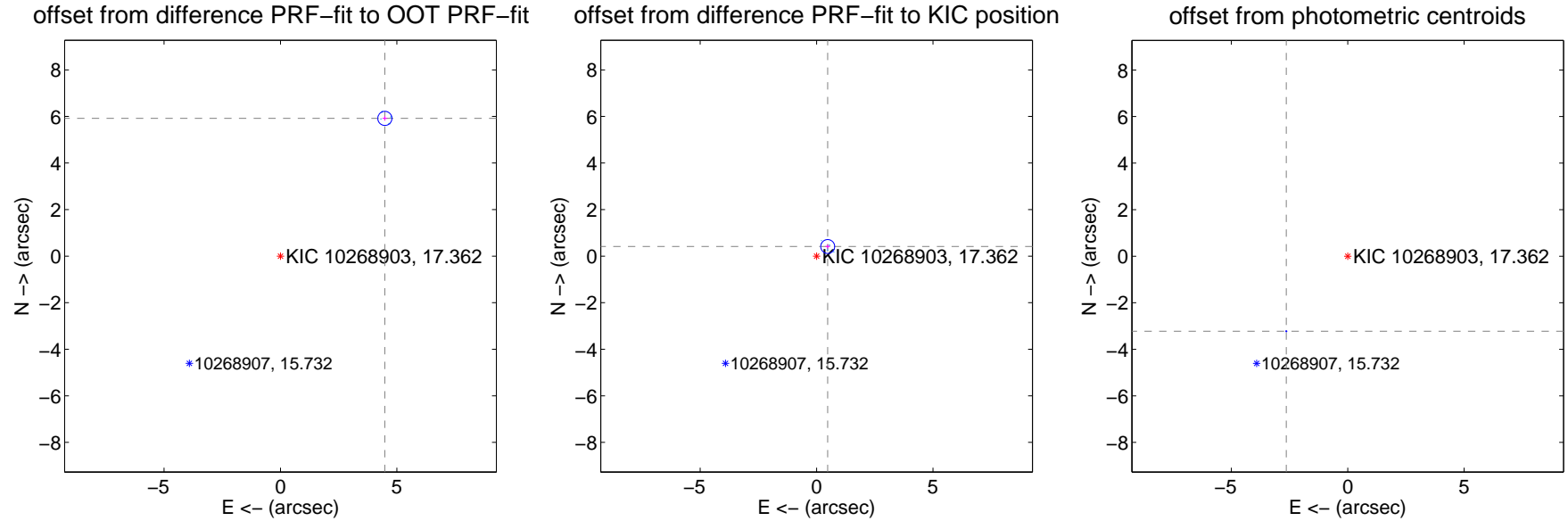
## DV Centroid Data

Supplemental centroid analysis for 010268903-02. Kepler magnitude: 17.36. Transit SNR -1.00

There are 8 quarters with good PRF difference image offsets

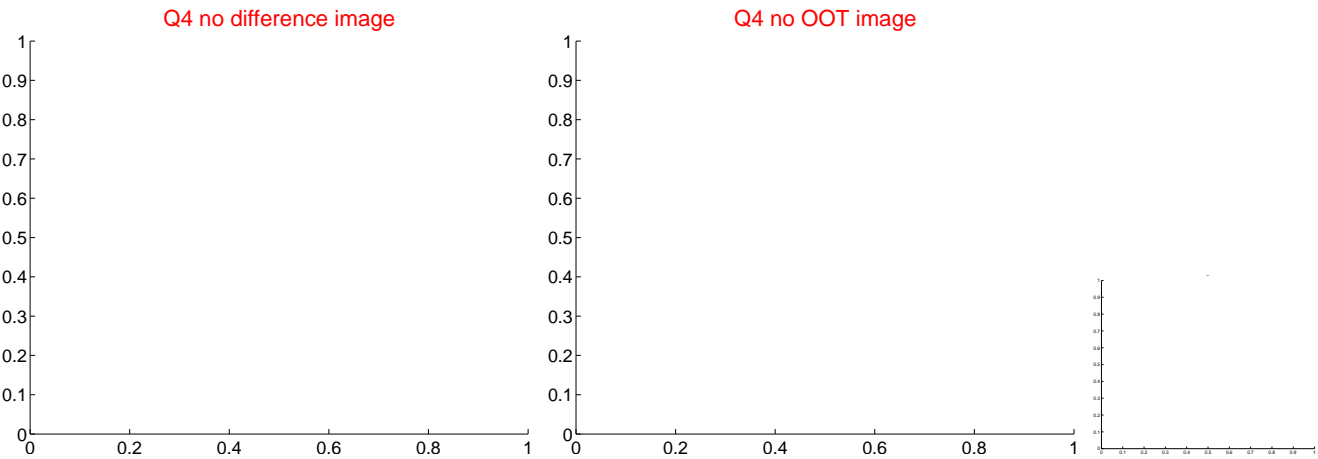
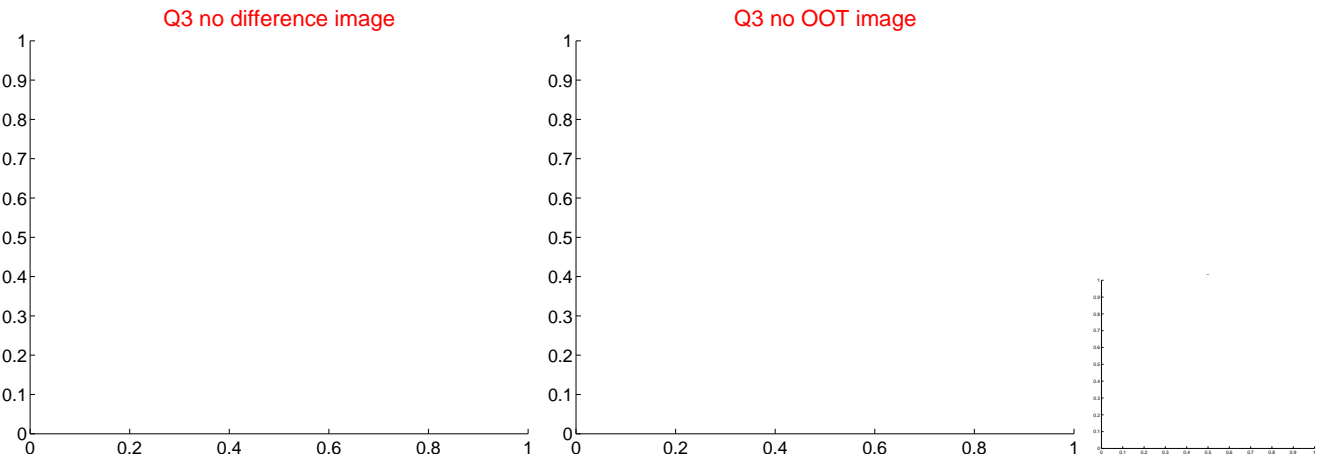
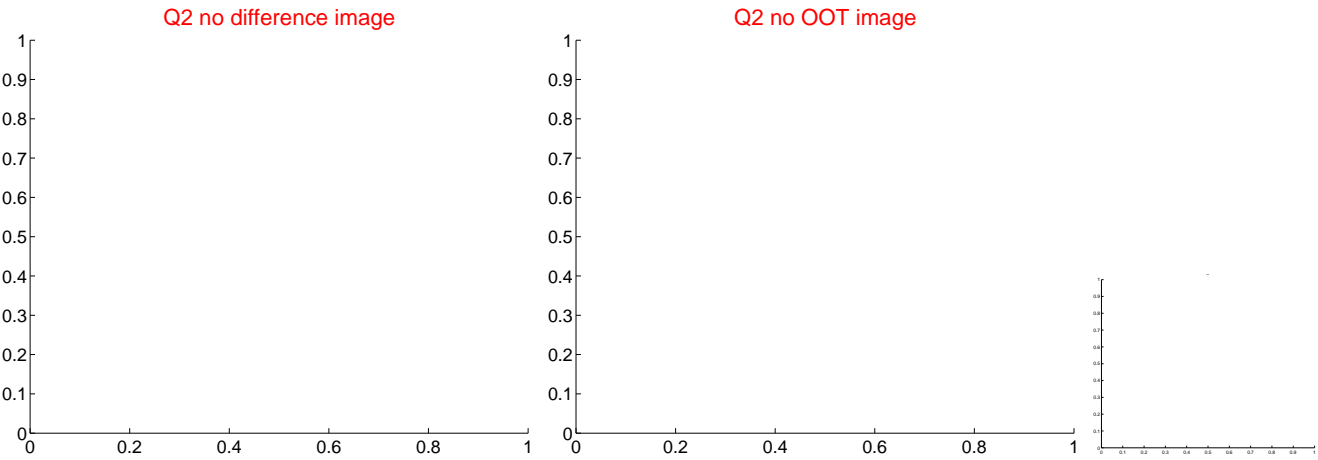
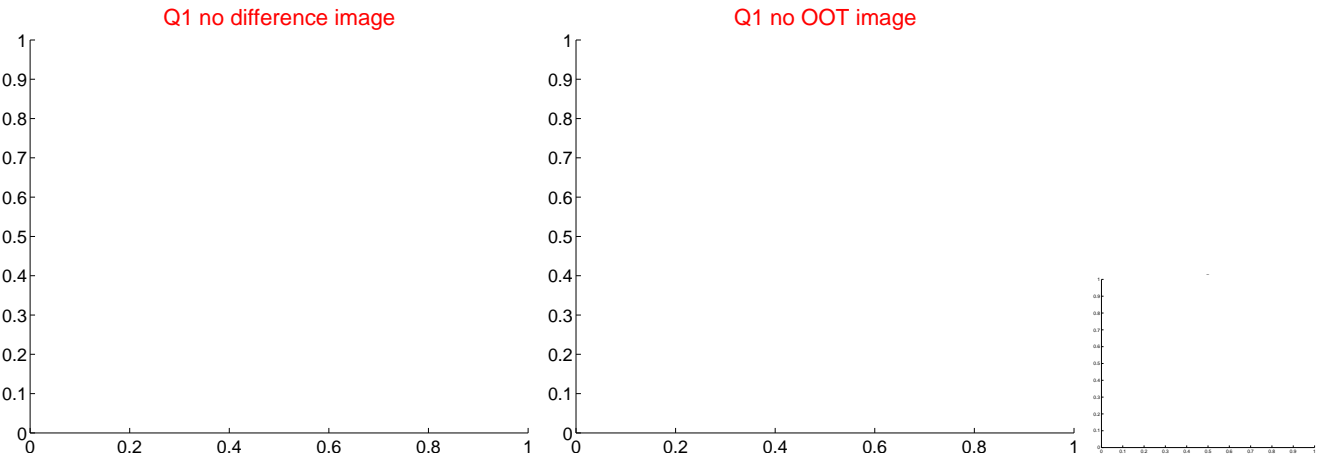
The OOT PRF centroid is offset from the target star catalog position by about 7.17 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$7.424 \pm 0.101$	73.42	$-4.485 \pm 0.102$	$5.917 \pm 0.101$
PRF-fit source offset from KIC position	$0.632 \pm 0.100$	6.35	$-0.478 \pm 0.102$	$0.413 \pm 0.096$
photometric centroid source offset	$4.17 \pm 0.01$	516.57	$2.64 \pm 0.01$	$-3.22 \pm 0.01$



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.

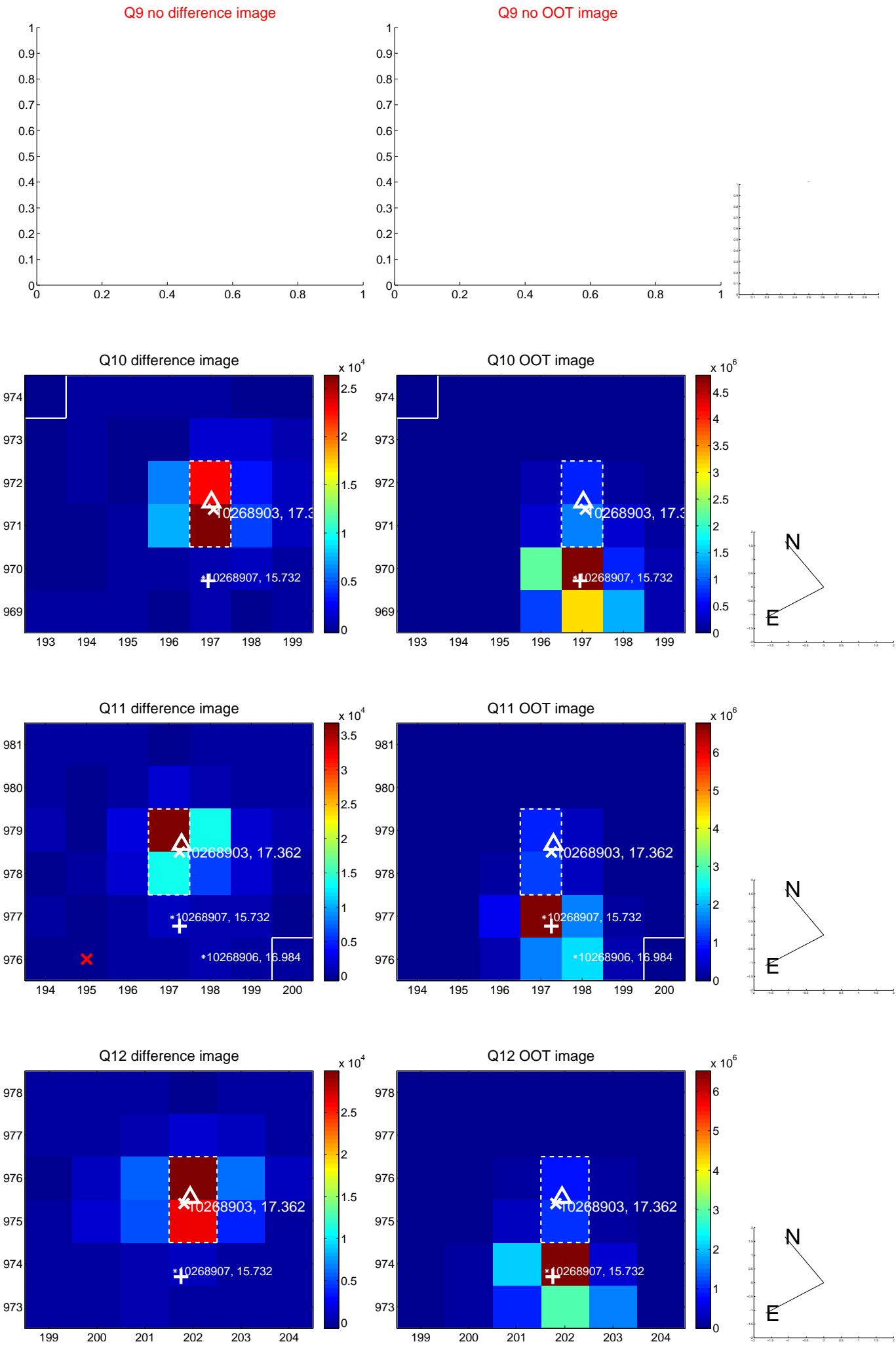
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



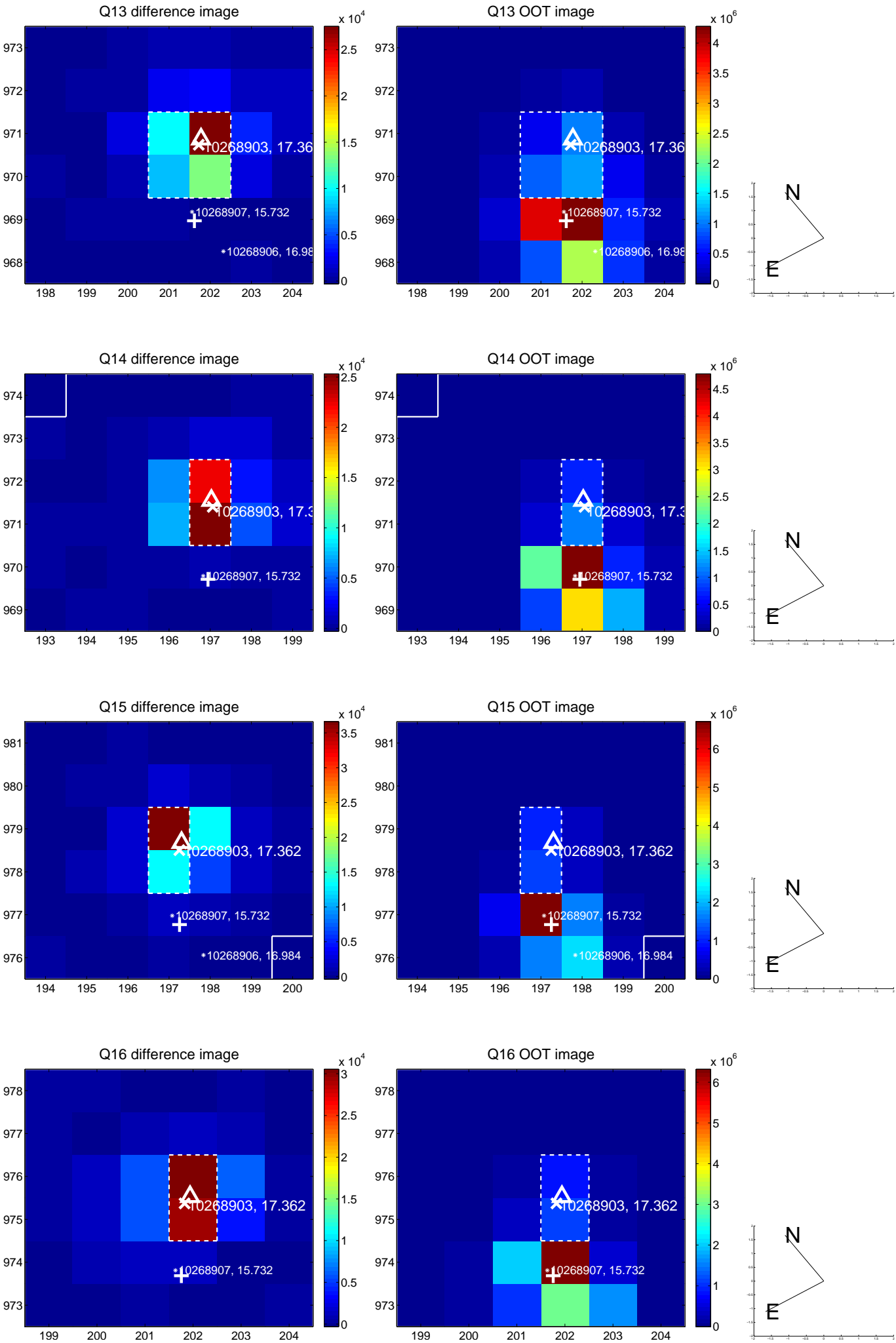
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



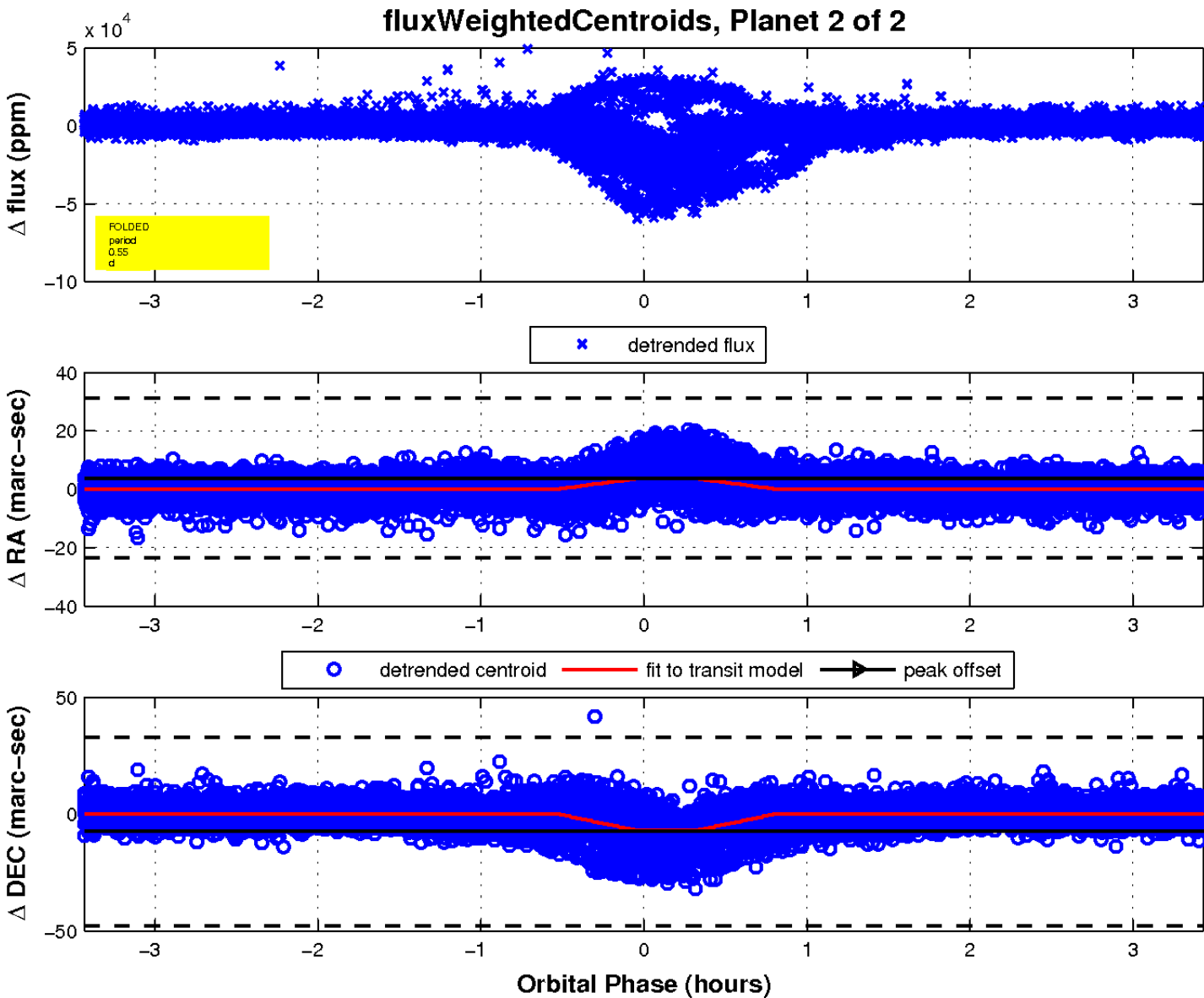
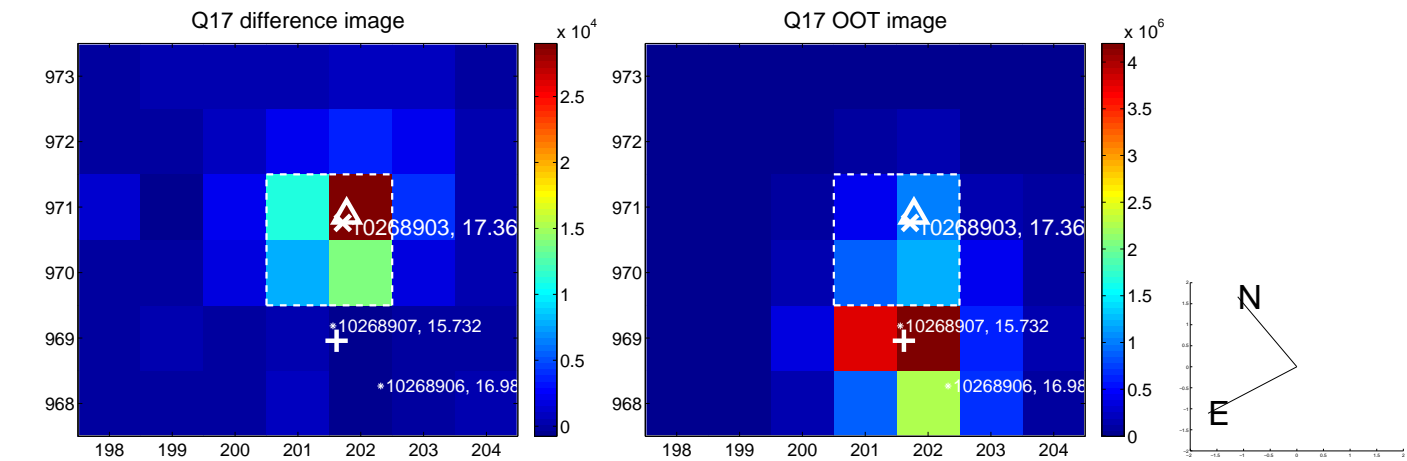
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

