

# KIC 005097446

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005097446-01	OBS	No	1.288052	131.988277	409156.5	3.000	2924.9	-1.0	2.14	6873	29.75	12238.23
005097446-02	OBS	No	1.288066	131.735763	1600.3	4.500	497.3	-1.0	2.14	6873	8.66	12238.04

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005097446-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
005097446-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—SWEET_NTL—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—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.

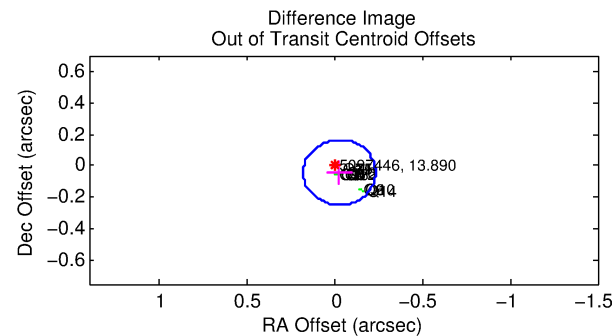
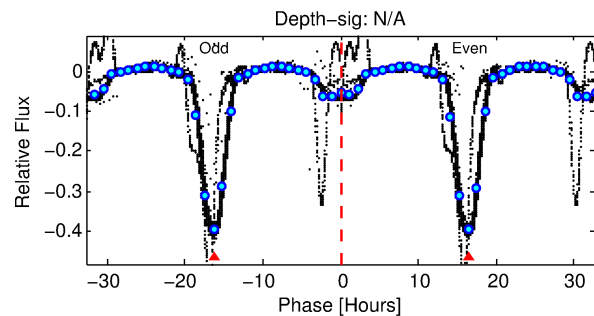
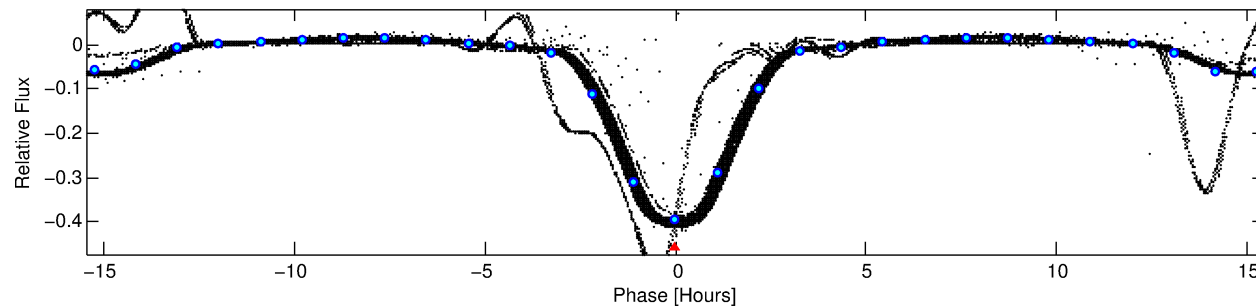
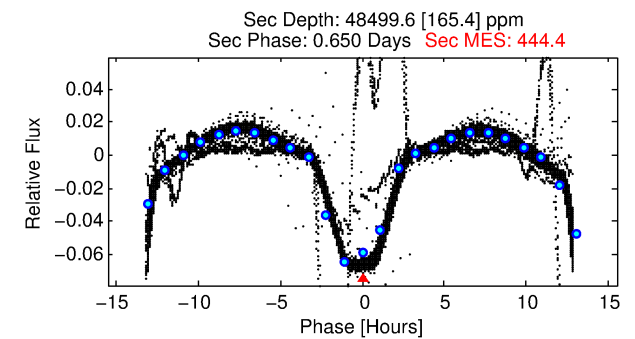
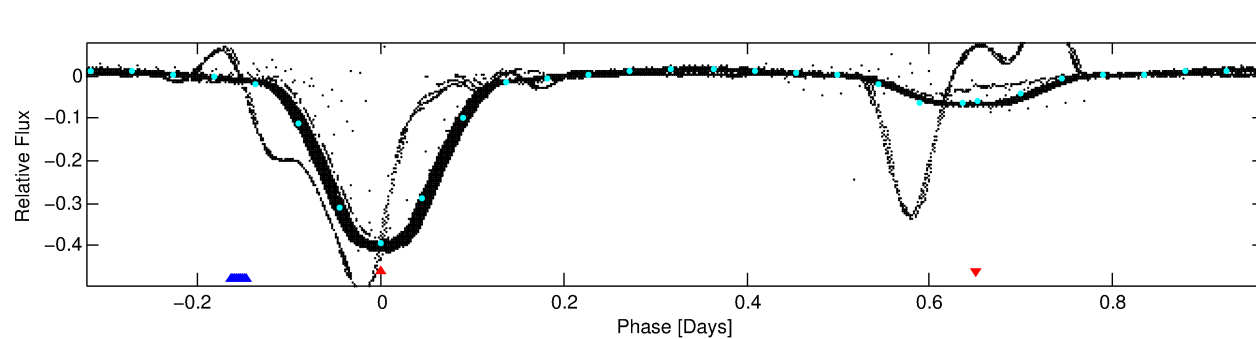
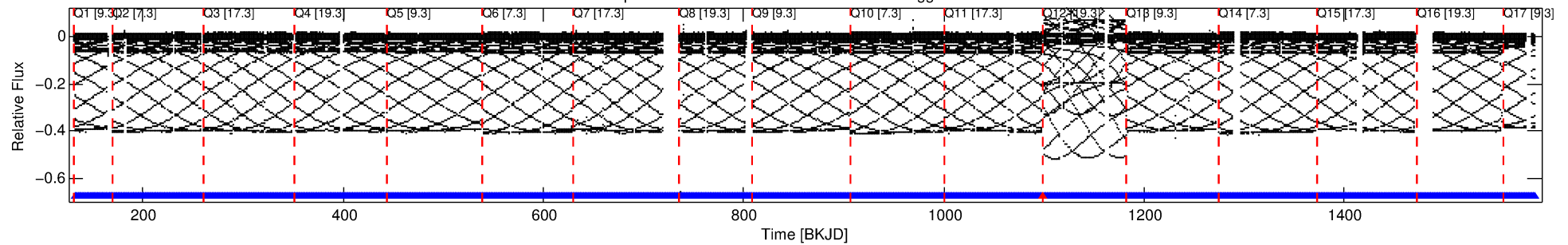
## Ephemeris Match Information For 005097446-01

No Significant Match Found

# DV One-Page Summary

KIC: 5097446 Candidate: 1 of 2 Period: 1.288 d

Kp: 13.89 R\*: 2.14 Rs Teff: 6873.0 K Logg: 3.99 Fe/H: 0.210



## TPS TCE Results:

Period = 1.28805 d  
Epoch = 131.9883 BKJD

DV fit results are unavailable

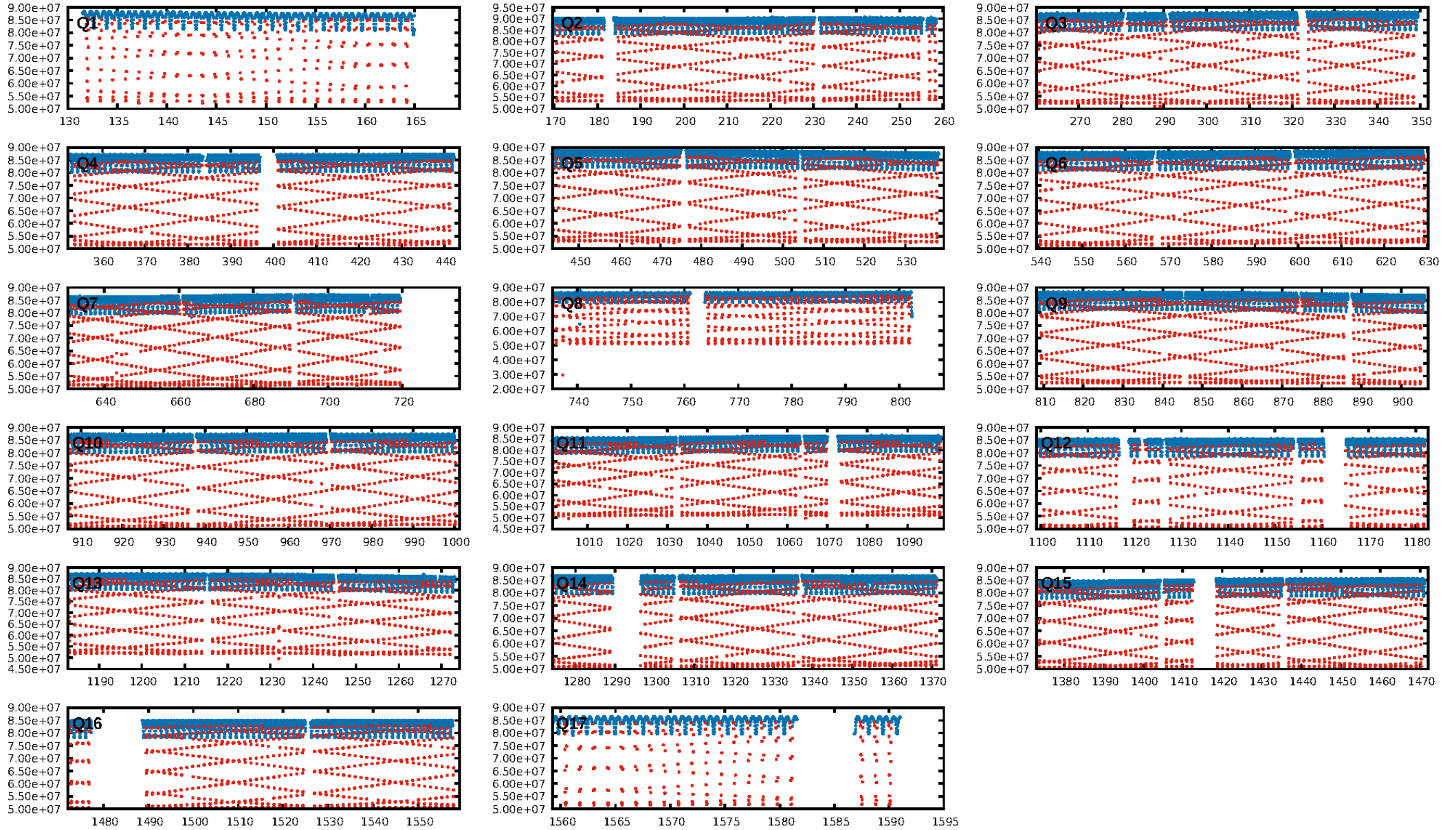
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1001/1002]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.050 arcsec [0.73σ]  
KicOffset-rm: 0.068 arcsec [0.98σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

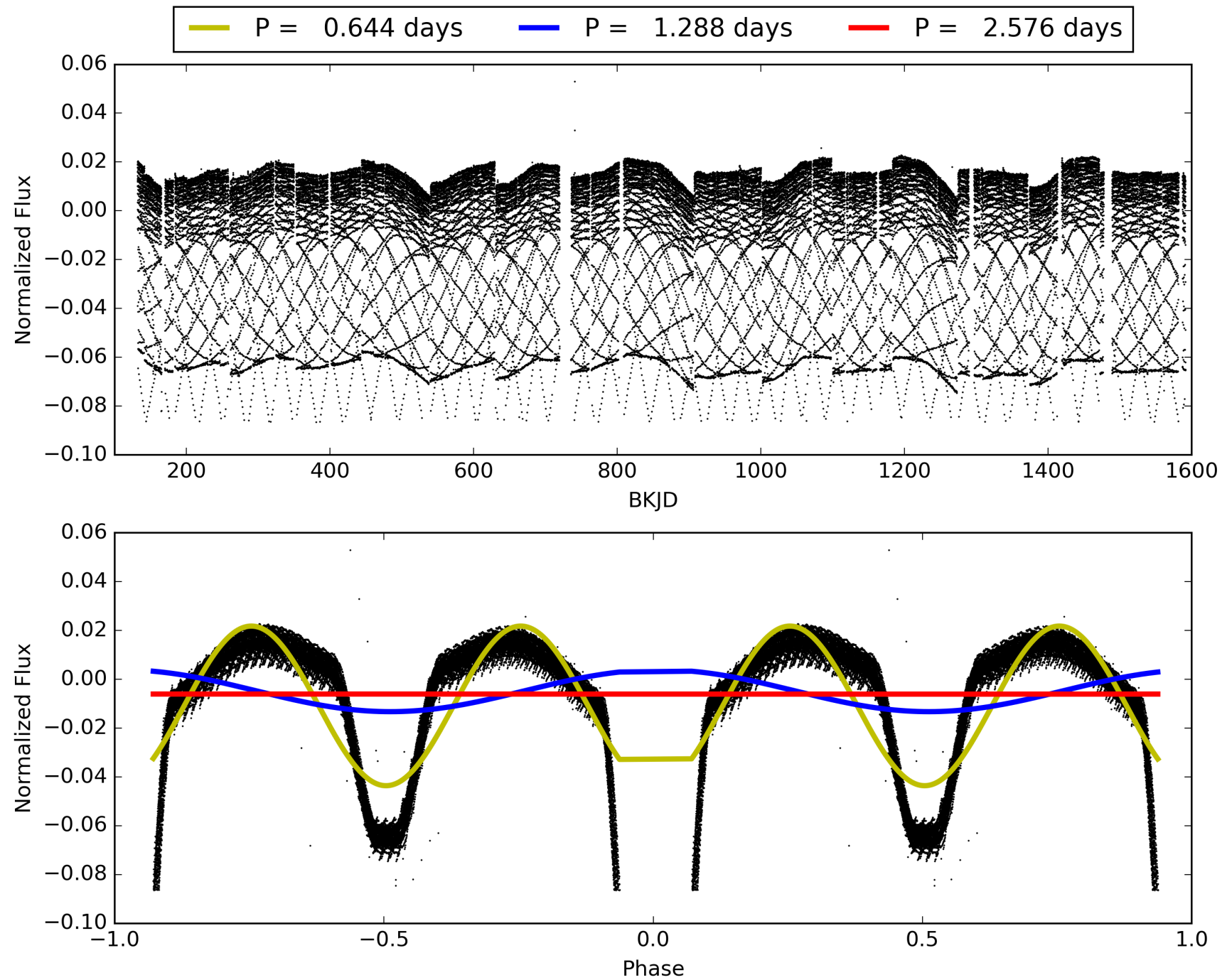
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:33:42 Z

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

# TCE 005097446-01, PDC Light Curves

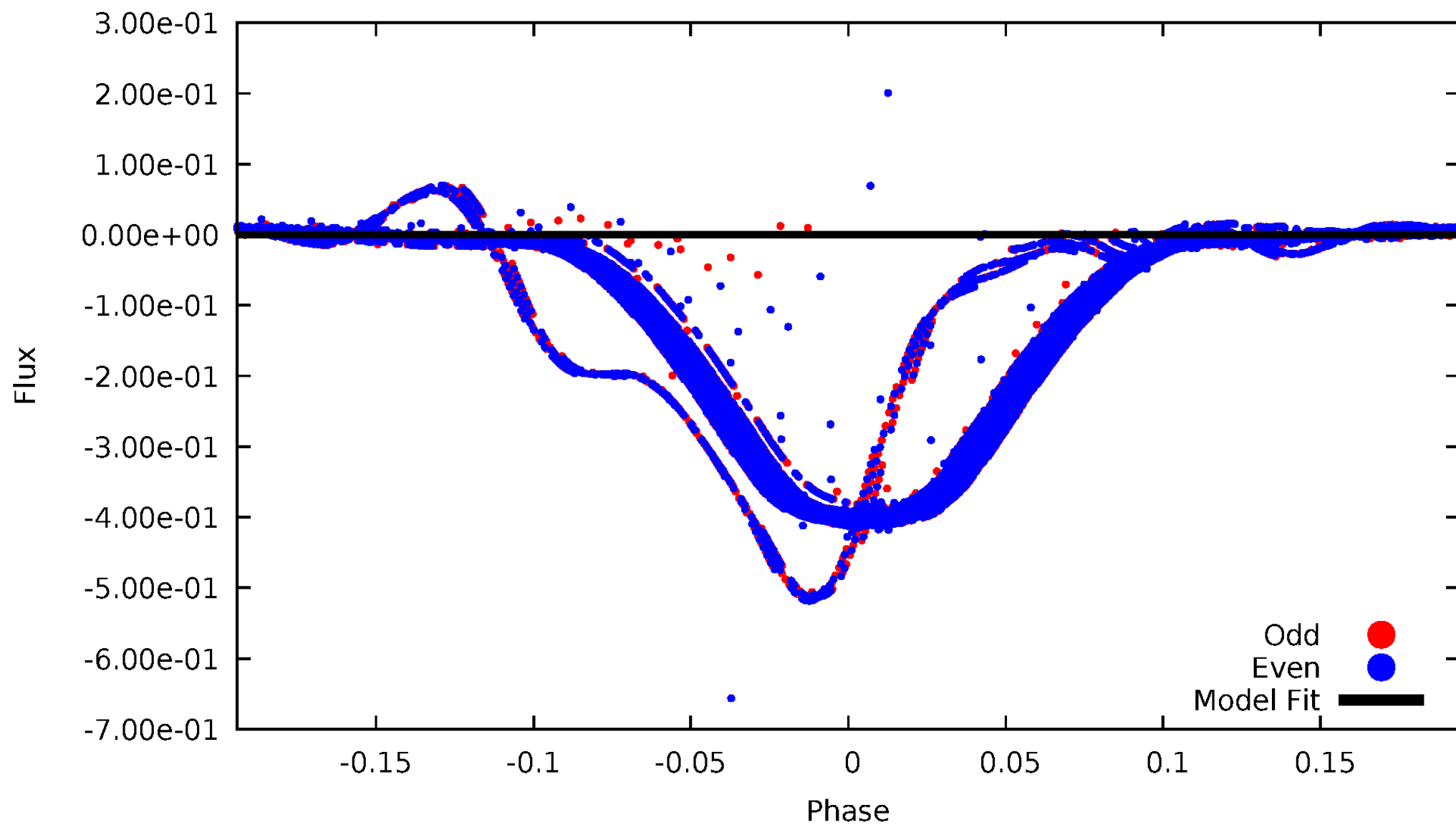


TCE 005097446-01



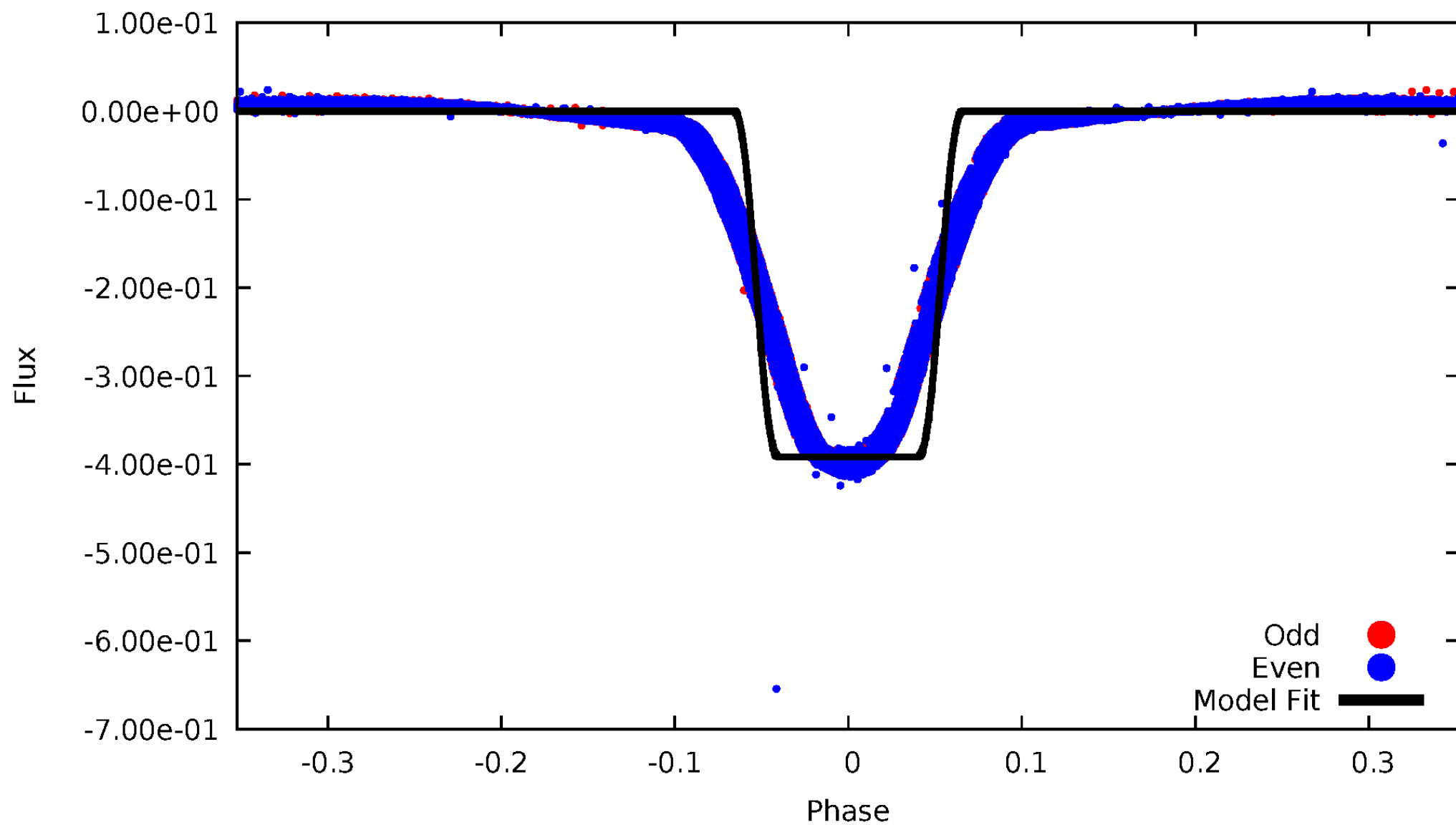
# DV Odd/Even

TCE 005097446-01



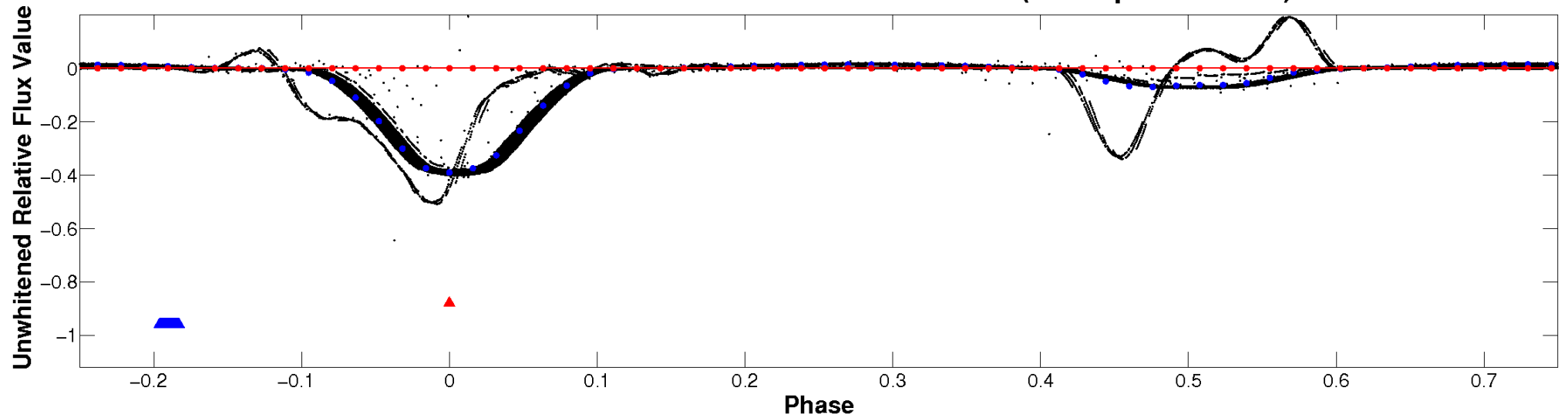
# ALT Odd/Even

TCE 005097446-01



# Non-Whitened Vs. Whitened Light Curve

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

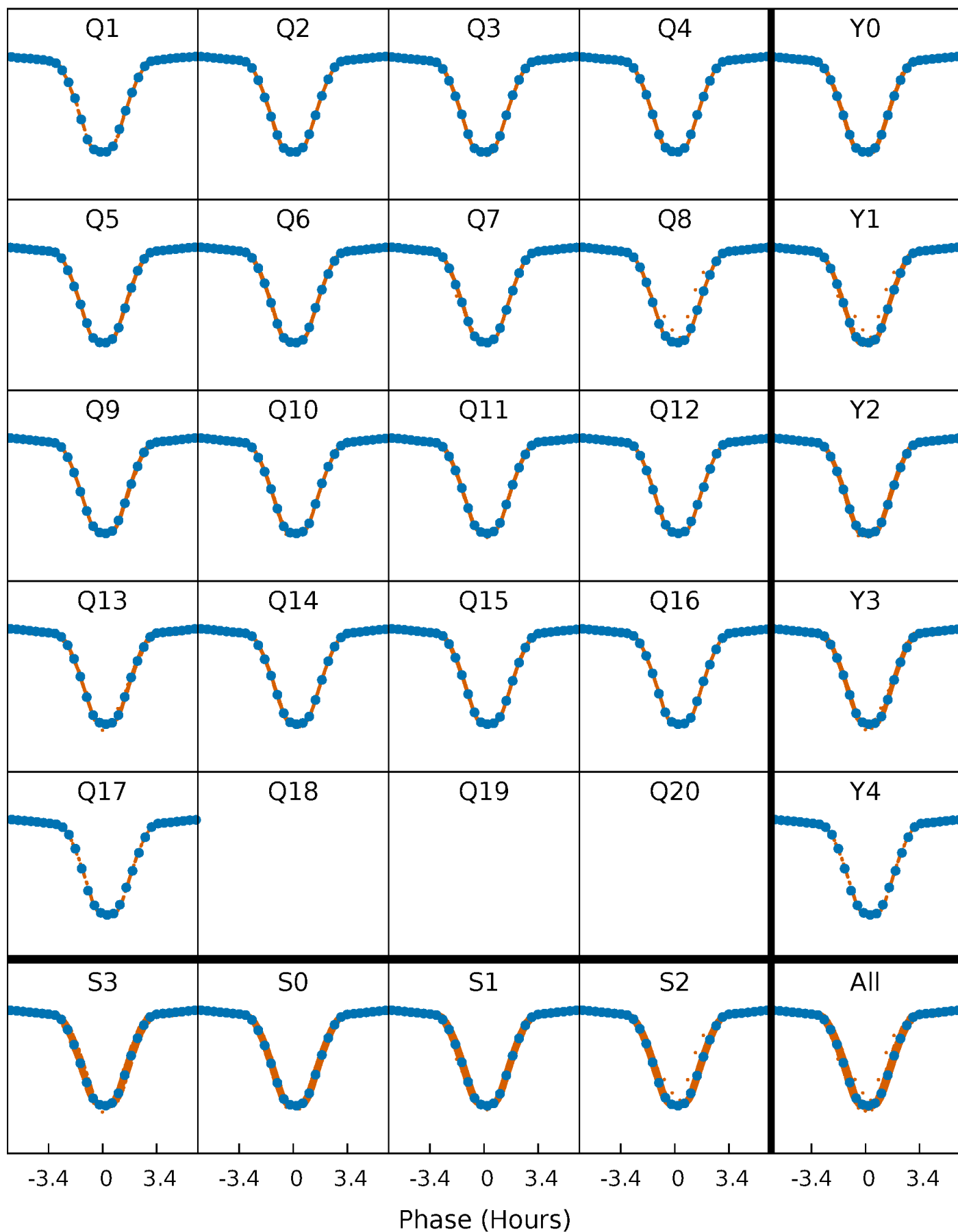


**Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

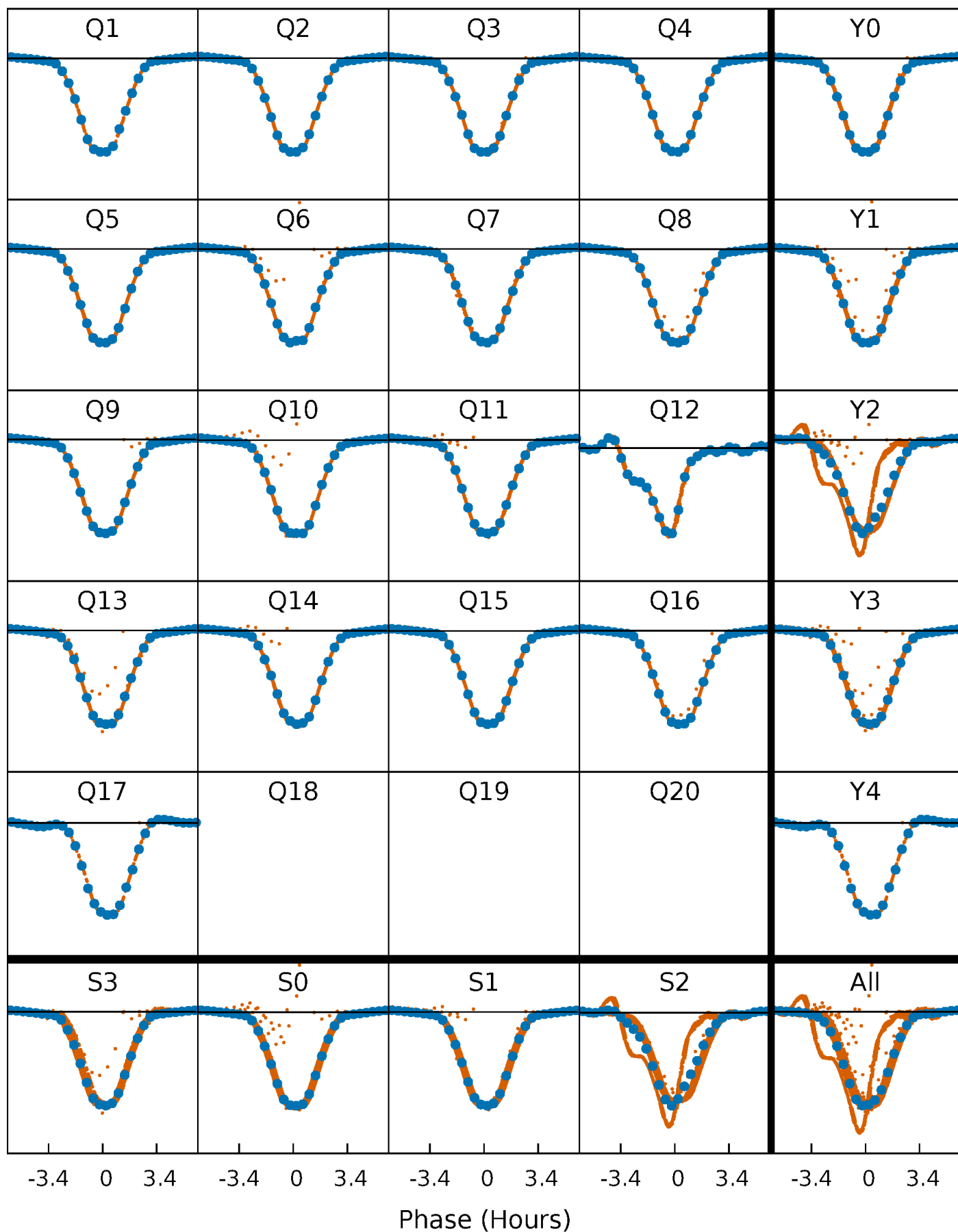
TCE 005097446-01 P= 1.288052 Days  $T_0=131.988277$  (BKJD)





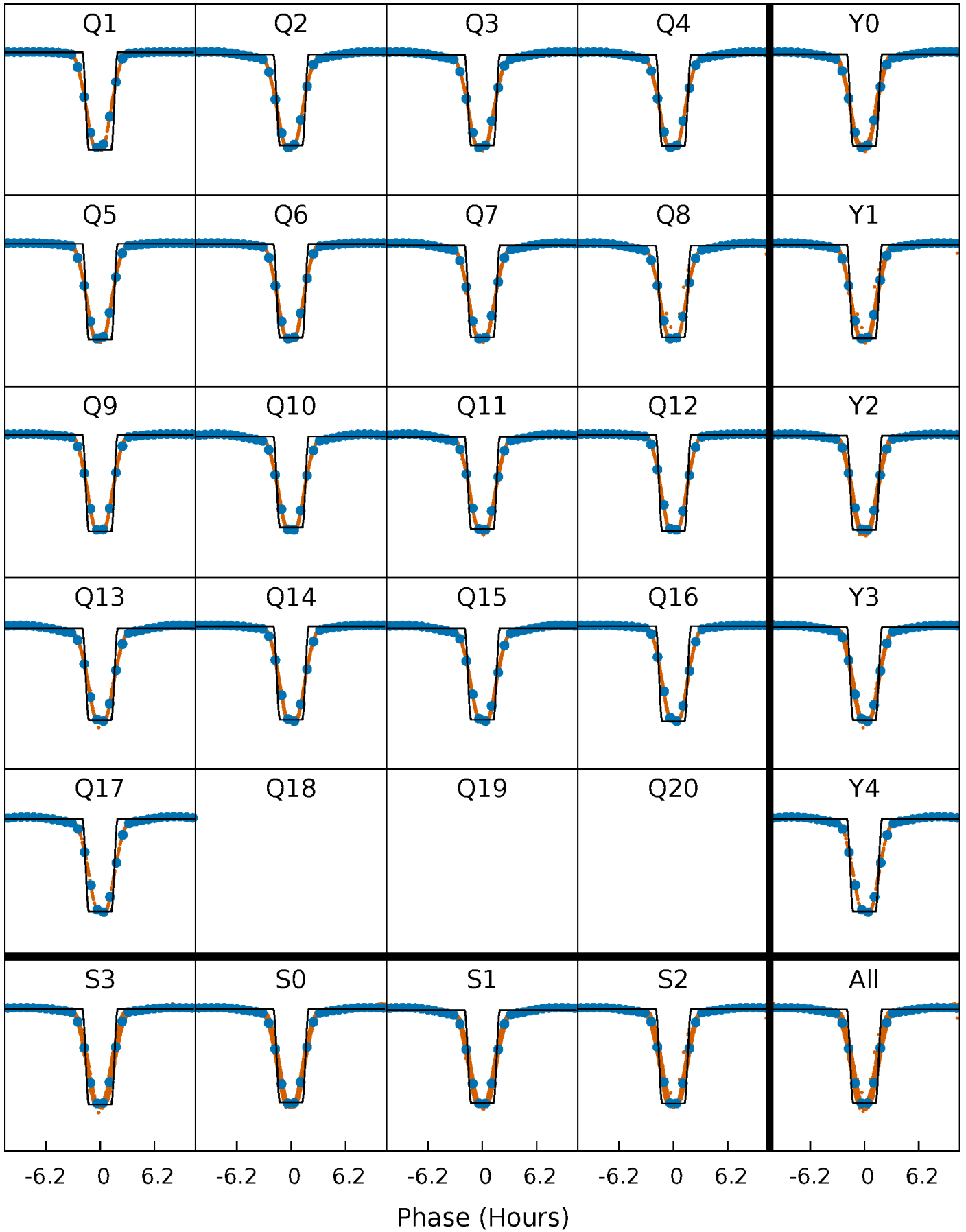
# DV Quarter-Phased Transit Curves

TCE 005097446-01 P= 1.288052 Days  $T_0=131.988277$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

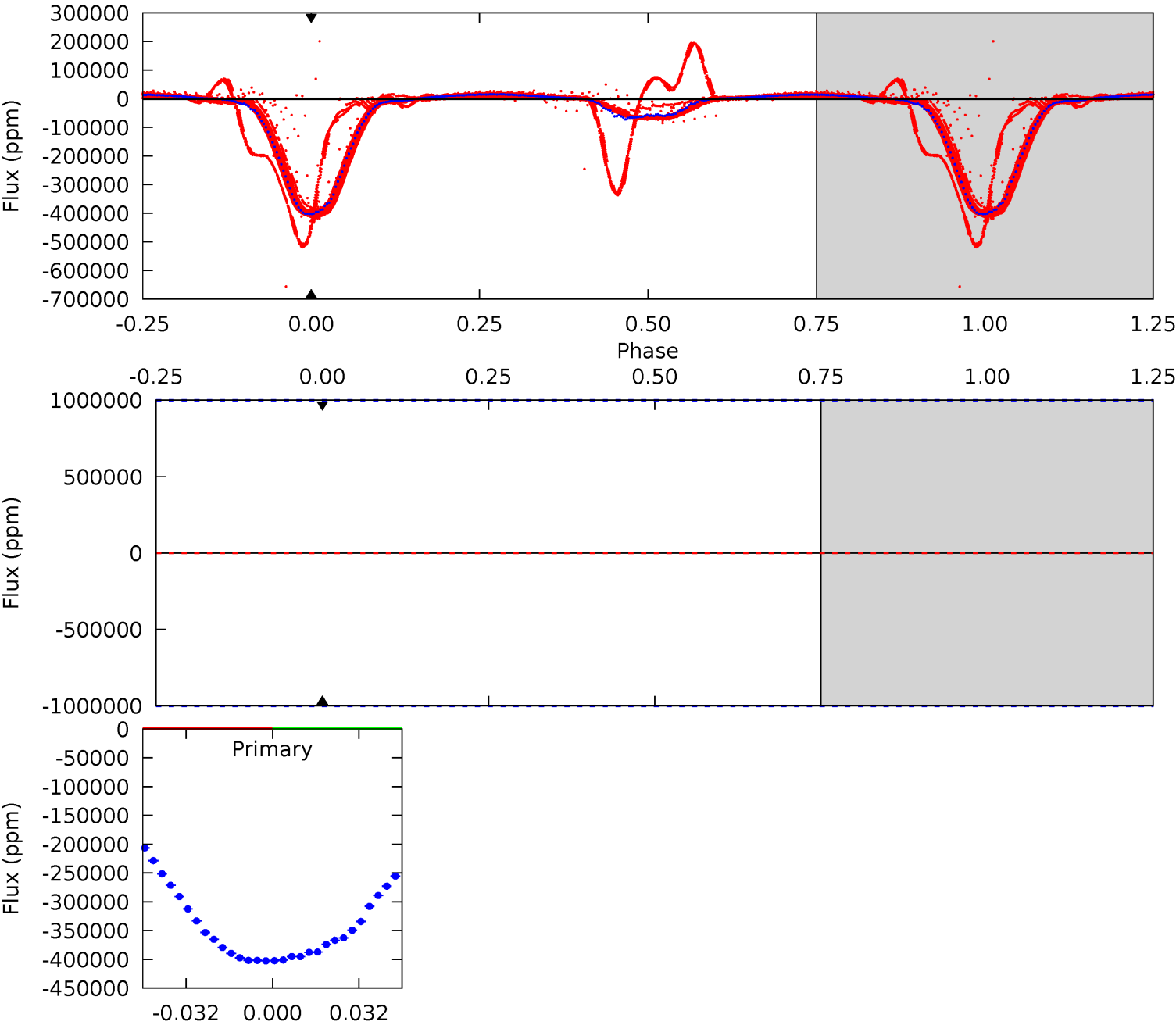
TCE 005097446-01 P= 1.288052 Days  $T_0=131.993697$  (BKJD)



DV Model-Shift Uniqueness Test

005097446-01, P = 1.288052 Days, E = 130.700225 Days

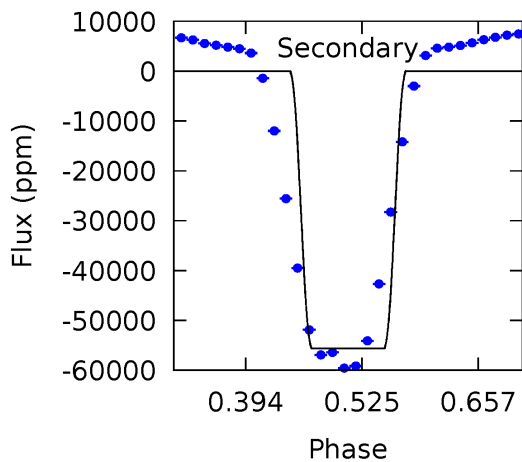
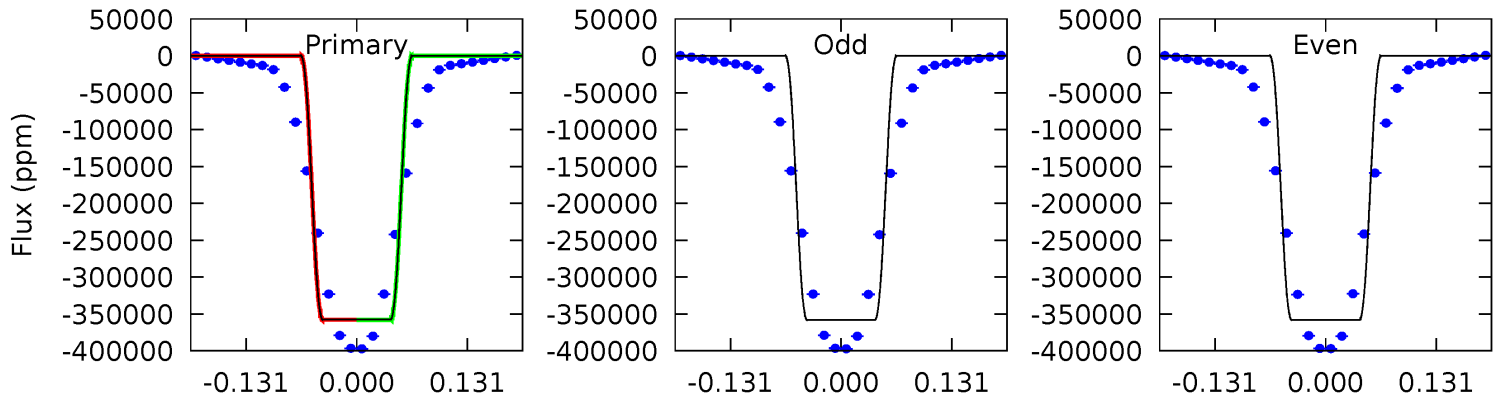
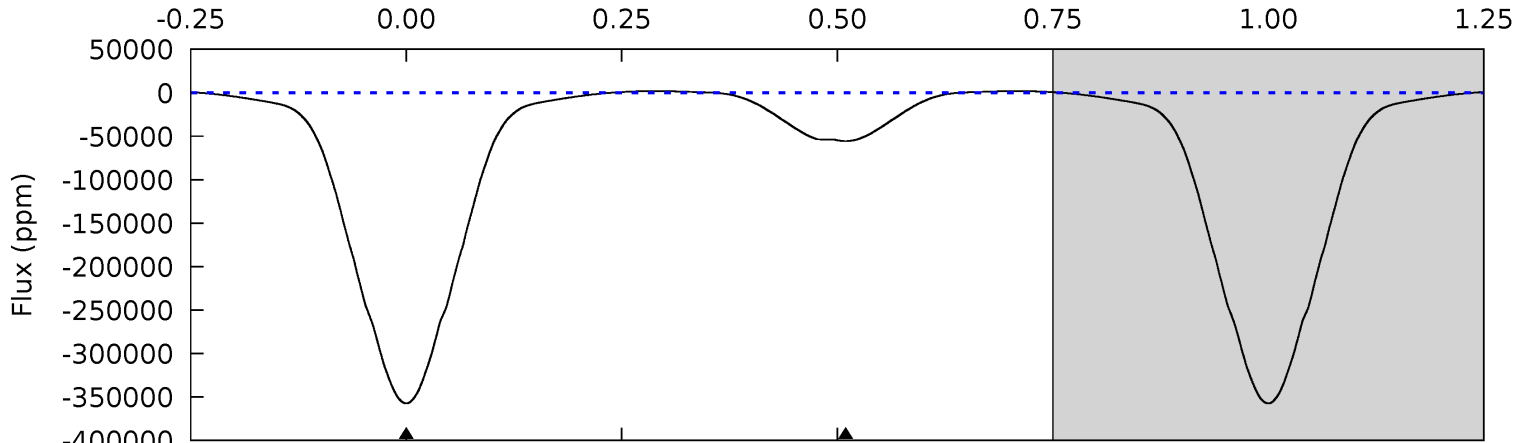
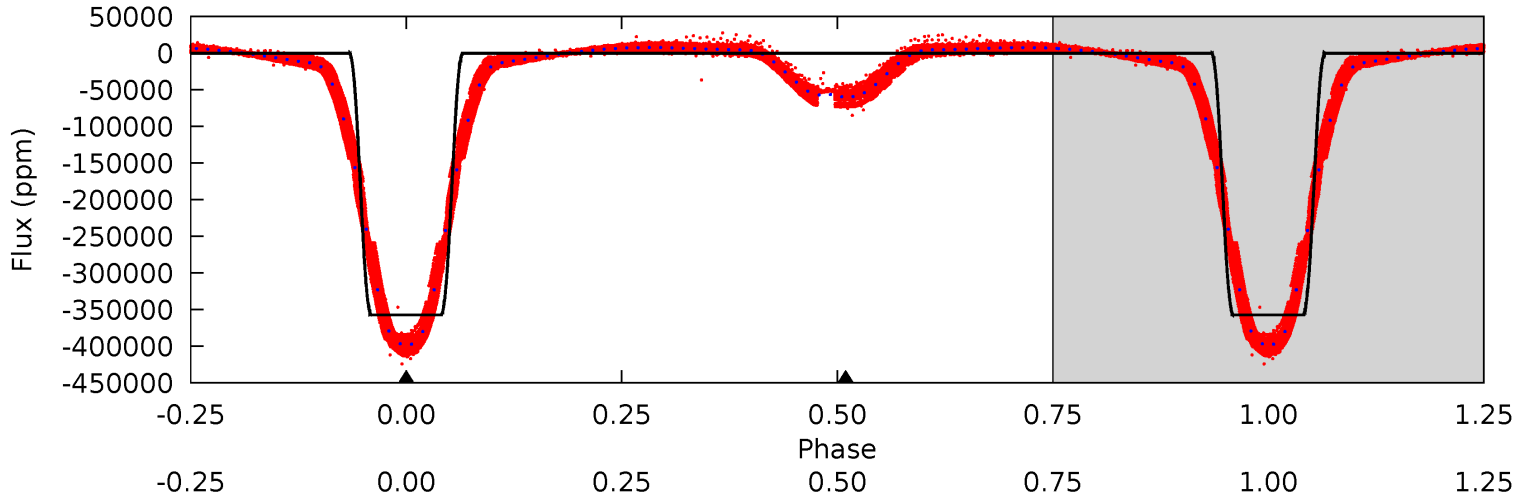
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

005097446-01, P = 1.288052 Days, E = 130.705645 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
4718	734.6	0	0	4.51	1.51	69.6	4718	4718	734.6	734.6	1.46	1.00	0.01	2.94



### Stellar Parameters For KIC 005097446

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6873^{+82}_{-75}$	$3.994^{+0.143}_{-0.117}$	$0.210^{+0.150}_{-0.150}$	$2.144^{+0.395}_{-0.356}$	$1.654^{+0.141}_{-0.141}$	$0.236^{+0.159}_{-0.081}$
	+1%/-1%	+4%/-3%	+71%/-71%	+18%/-17%	+9%/-9%	+67%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005097446-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$33.51^{+20.88}_{-20.07}$	$3738^{+171}_{-177}$	$4284^{+9963}_{-17106}$	$1.284^{+59.606}_{-48.707}$
Alt.	$-55647 \pm 76$	$144.44^{+29.55}_{-25.62}$	$3751^{+184}_{-179}$	$4228^{+376}_{-325}$	$1.176^{+0.532}_{-0.376}$

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

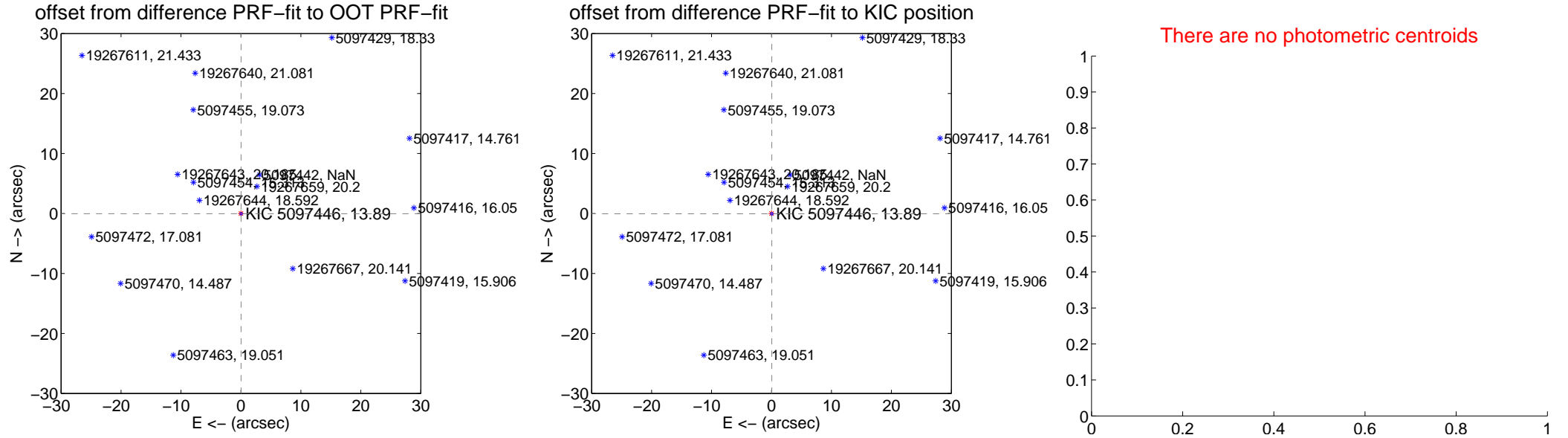
## DV Centroid Data

Supplemental centroid analysis for 005097446-01. Kepler magnitude: 13.89. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

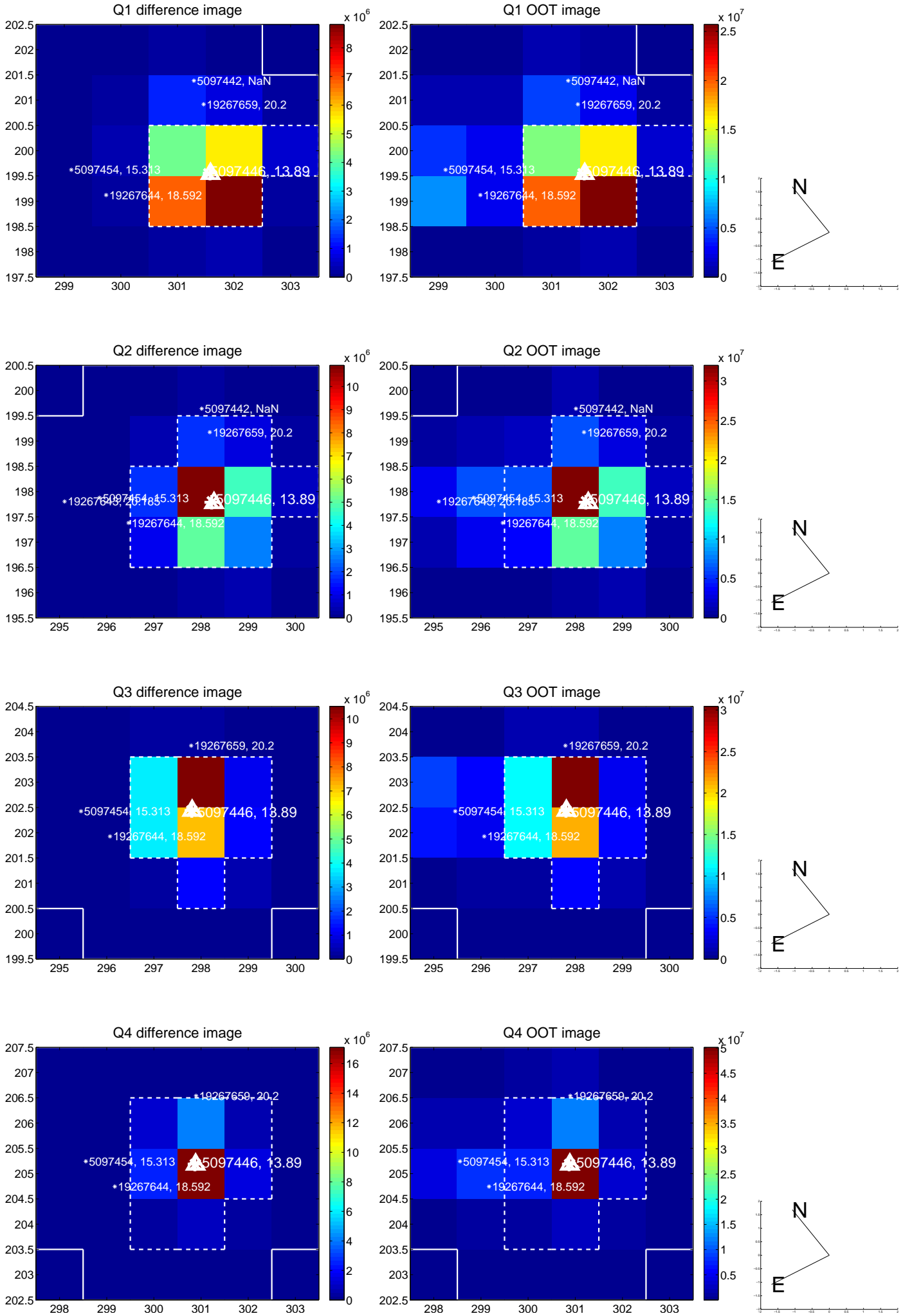
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.050 \pm 0.069$	0.73	$-0.027 \pm 0.068$	$-0.042 \pm 0.068$
PRF-fit source offset from KIC position	$0.068 \pm 0.070$	0.98	$-0.048 \pm 0.067$	$-0.049 \pm 0.070$
photometric centroid source offset	—	—	—	—

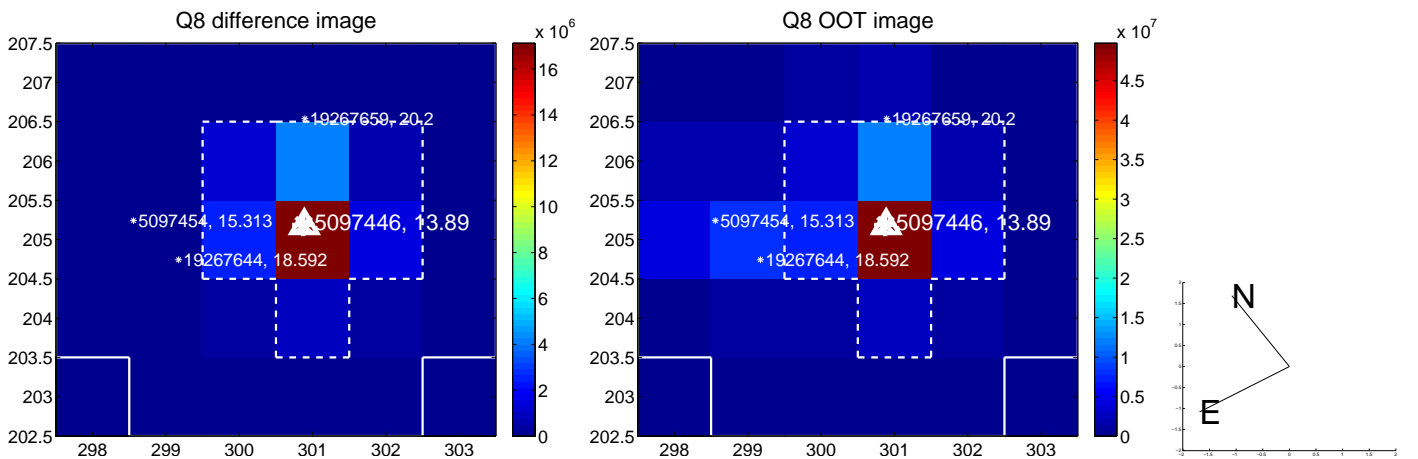
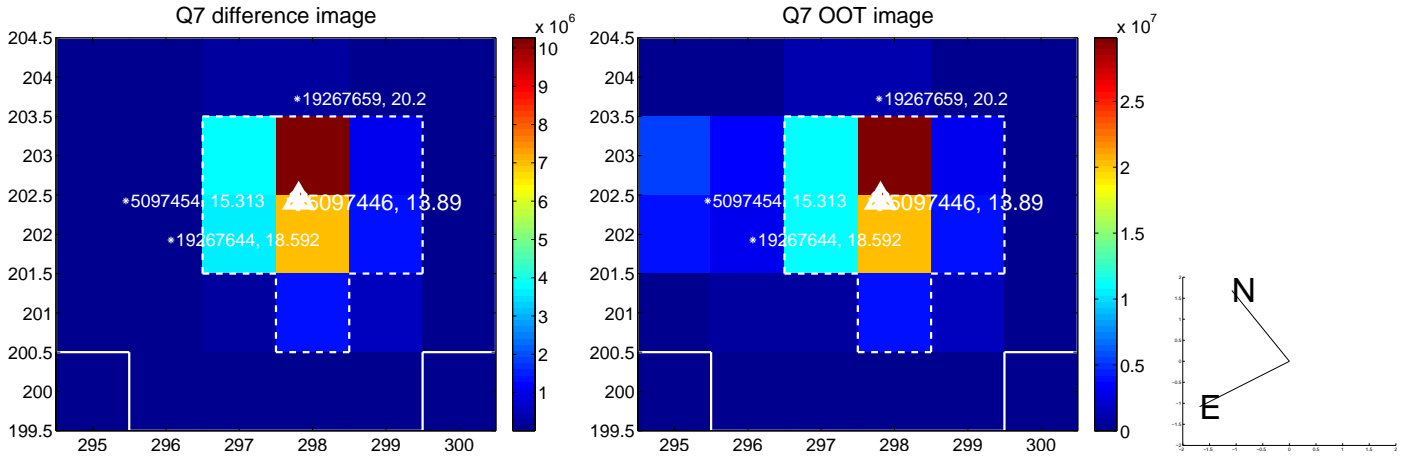
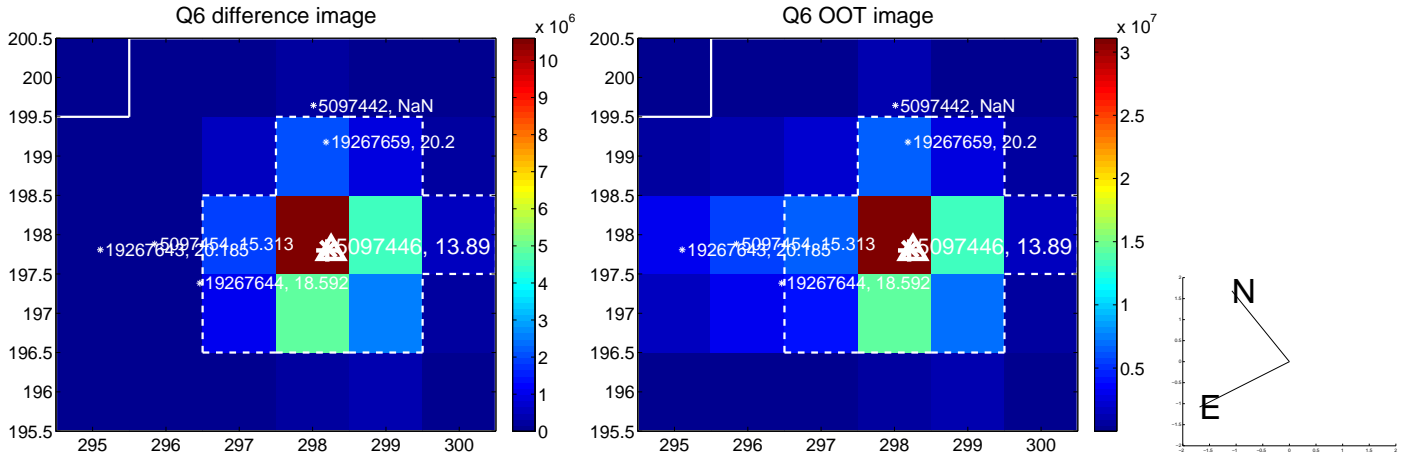
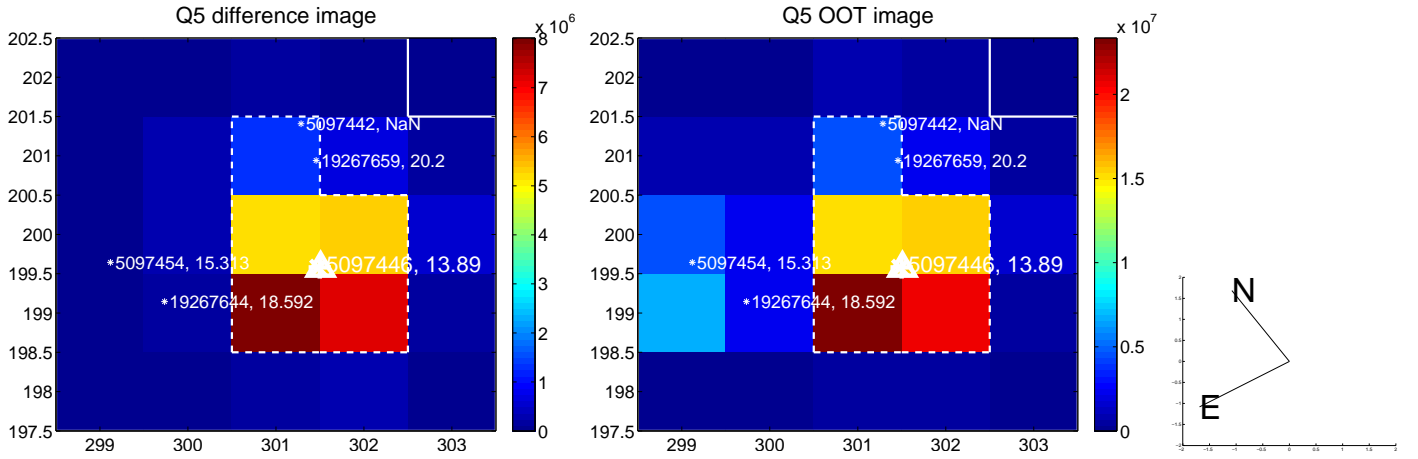


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

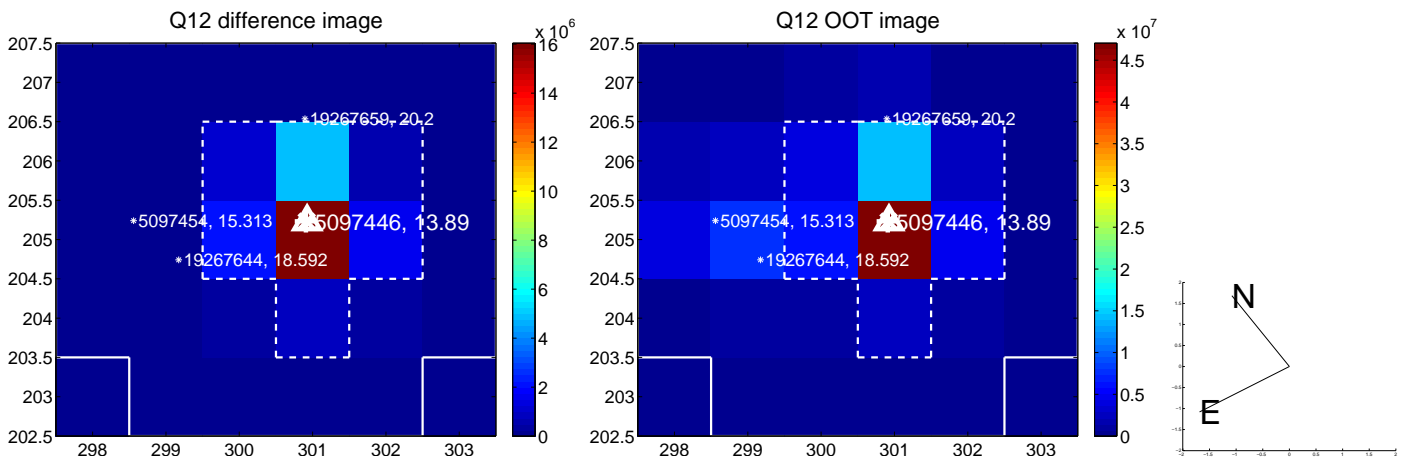
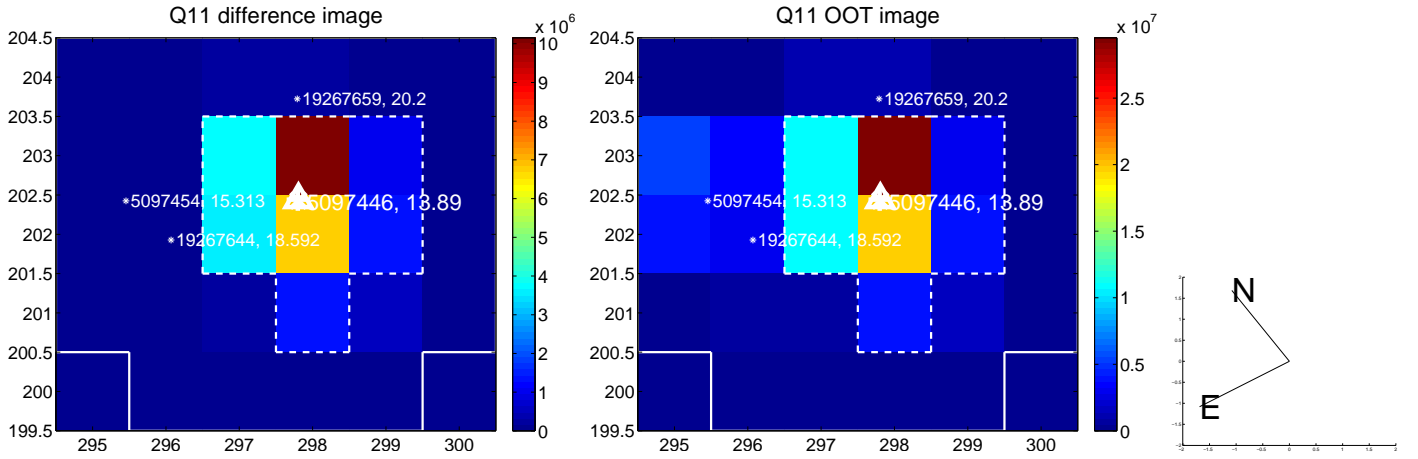
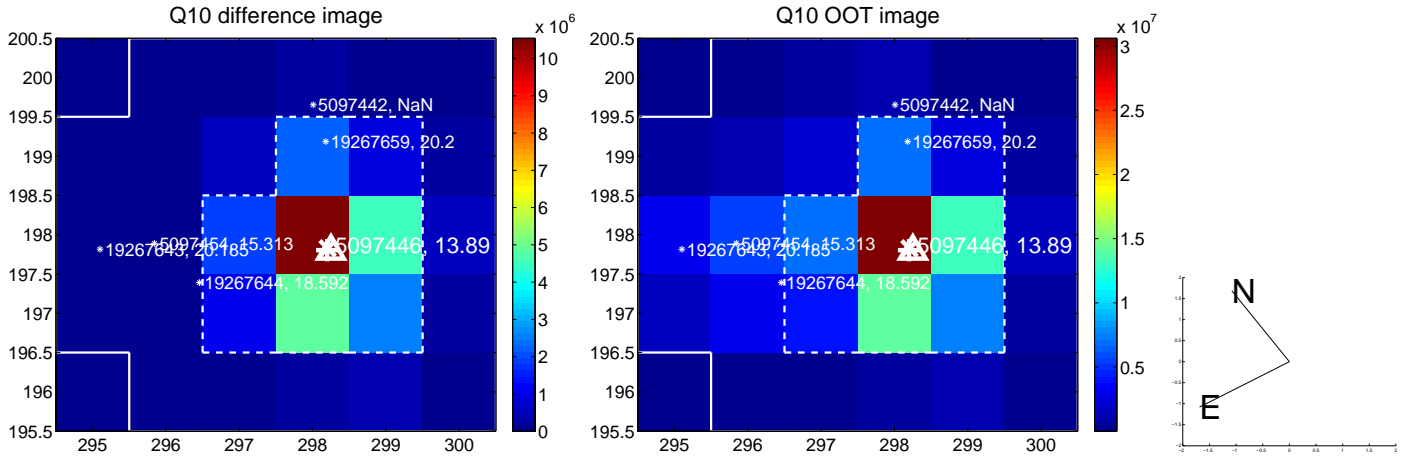
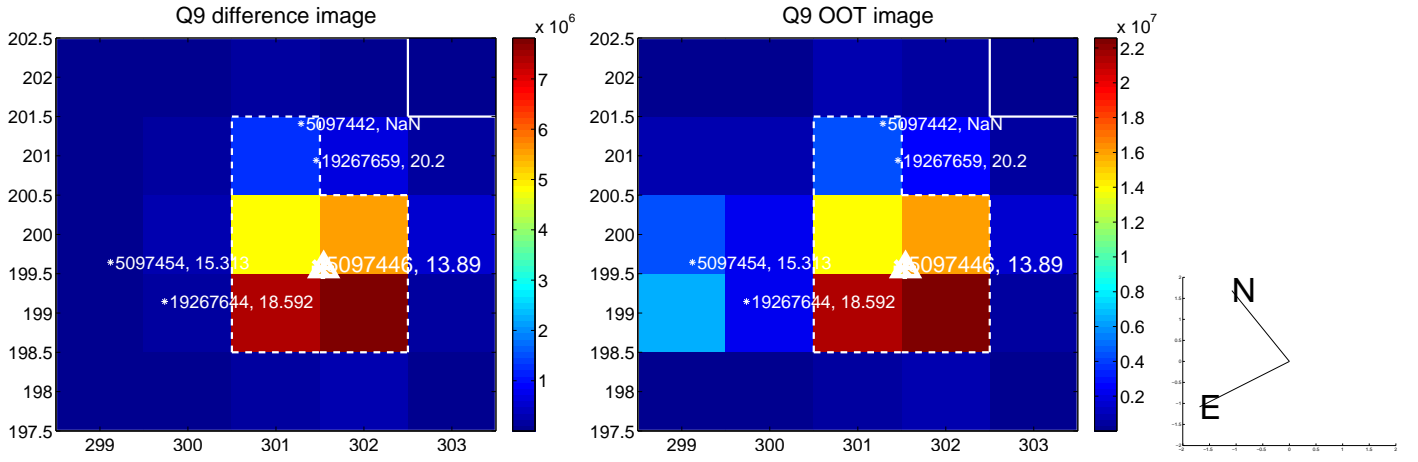


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

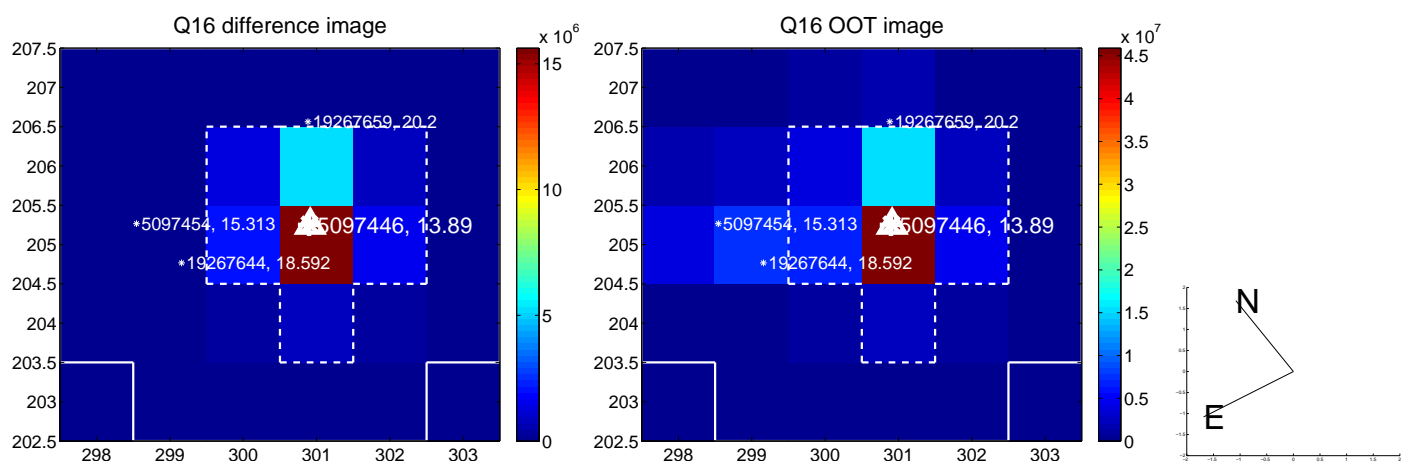
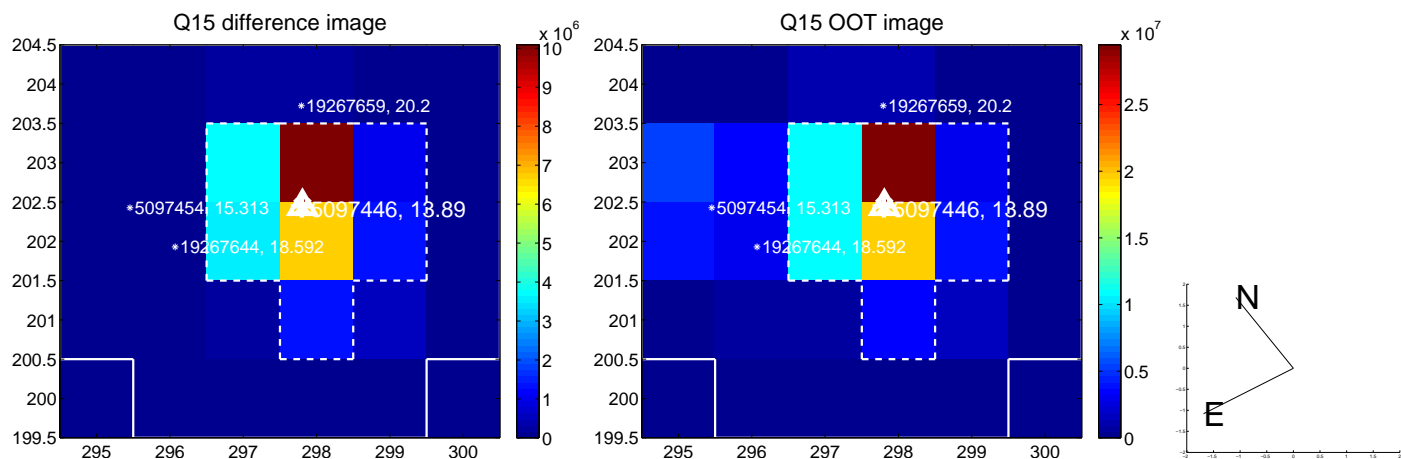
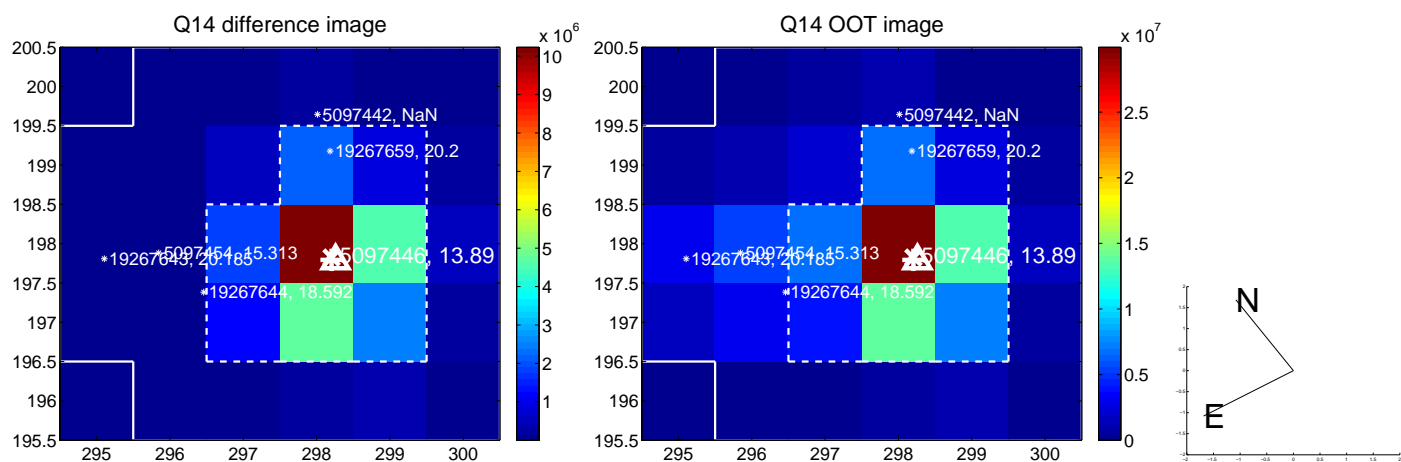
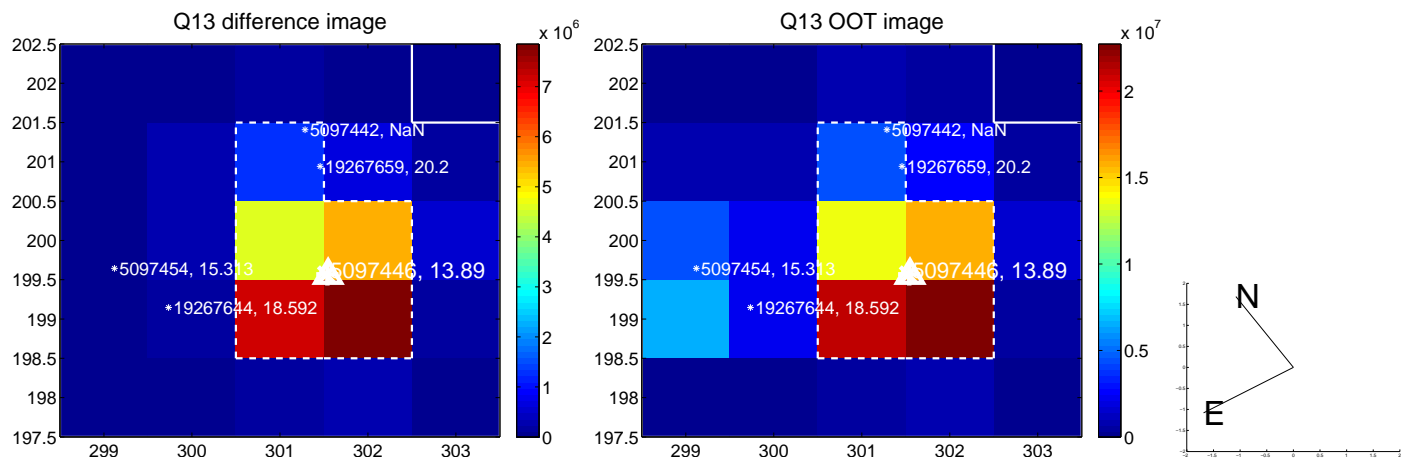




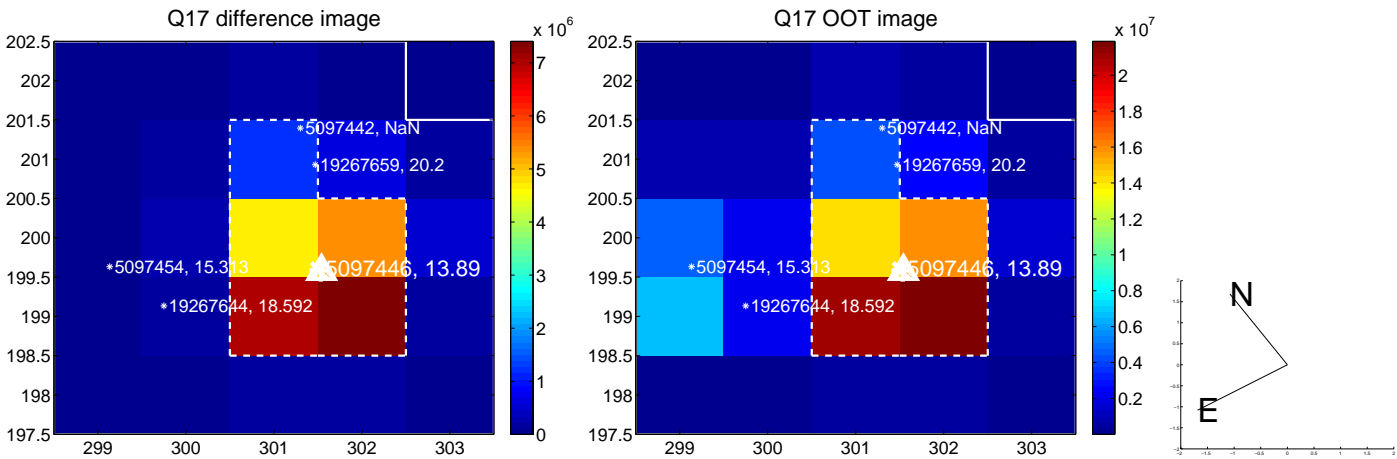
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



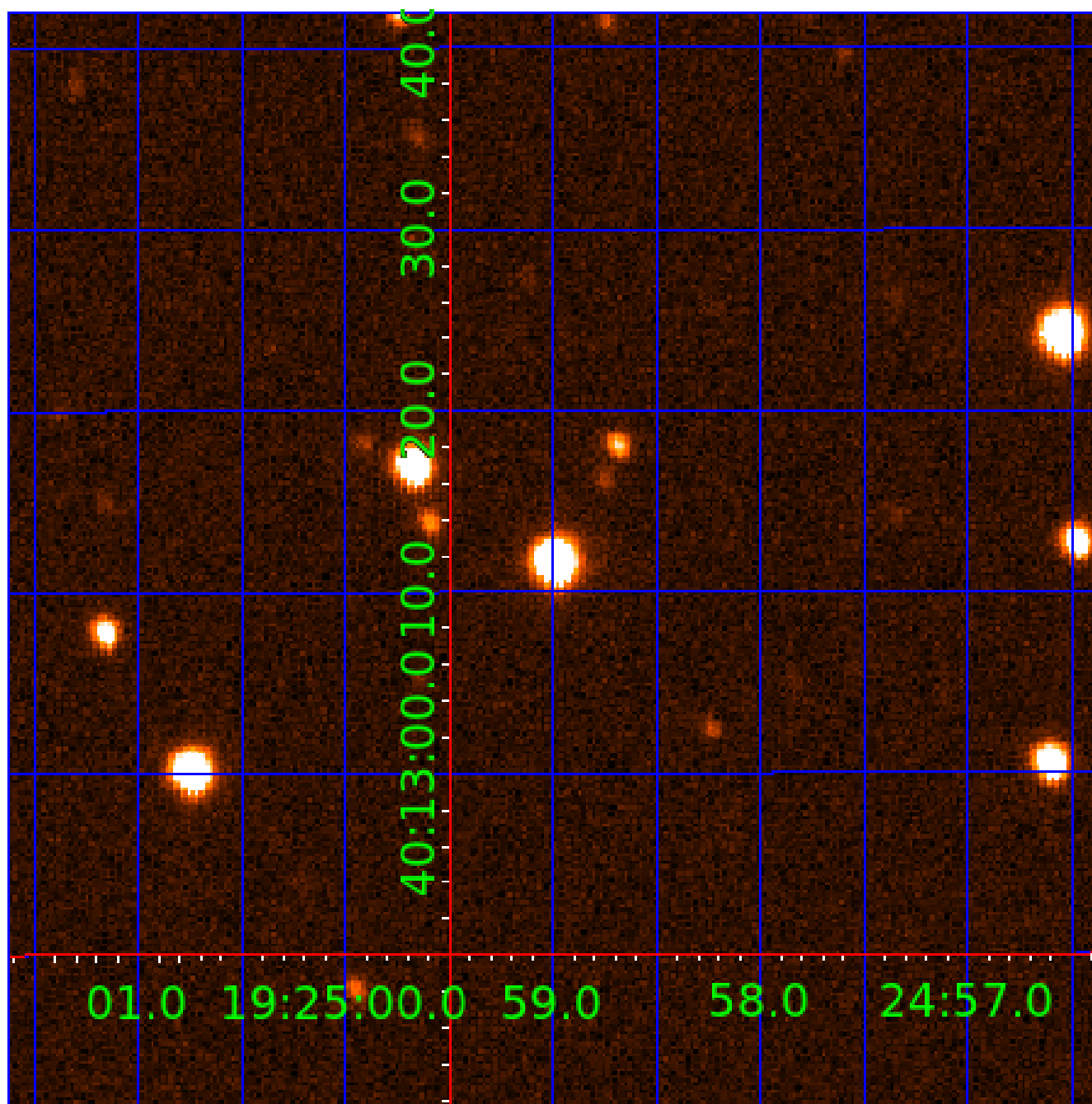
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



# KIC 005097446

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005097446-01	OBS	No	1.288052	131.988277	409156.5	3.000	2924.9	-1.0	2.14	6873	29.75	12238.23
005097446-02	OBS	No	1.288066	131.735763	1600.3	4.500	497.3	-1.0	2.14	6873	8.66	12238.04

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005097446-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
005097446-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—SWEET_NTL—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

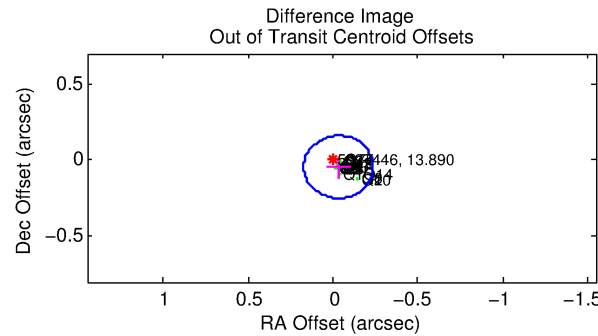
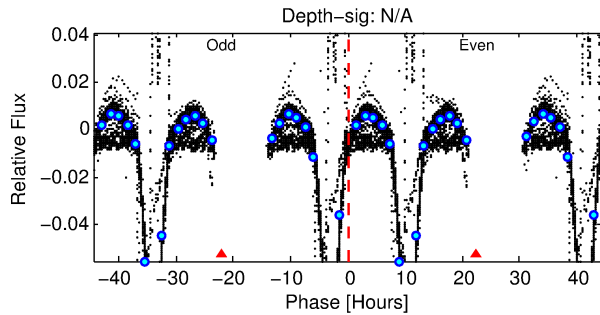
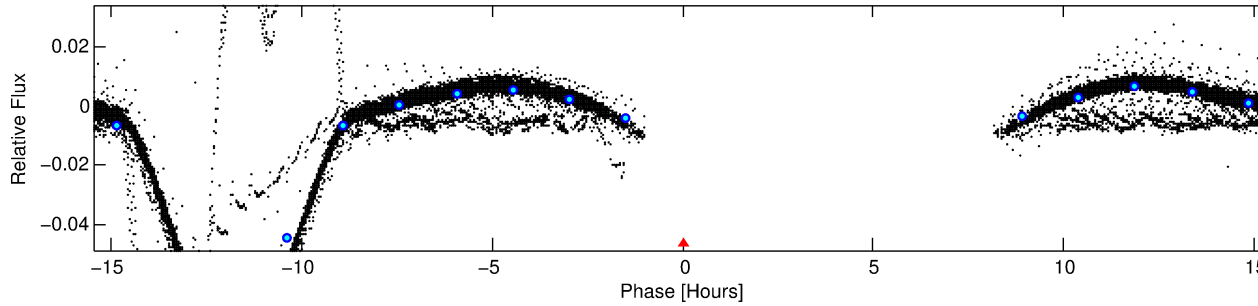
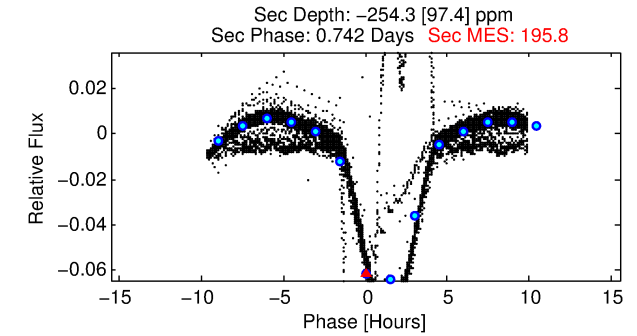
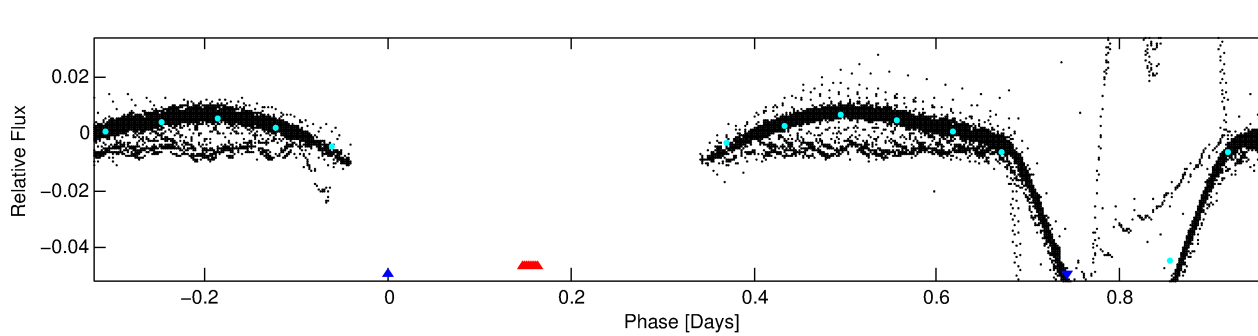
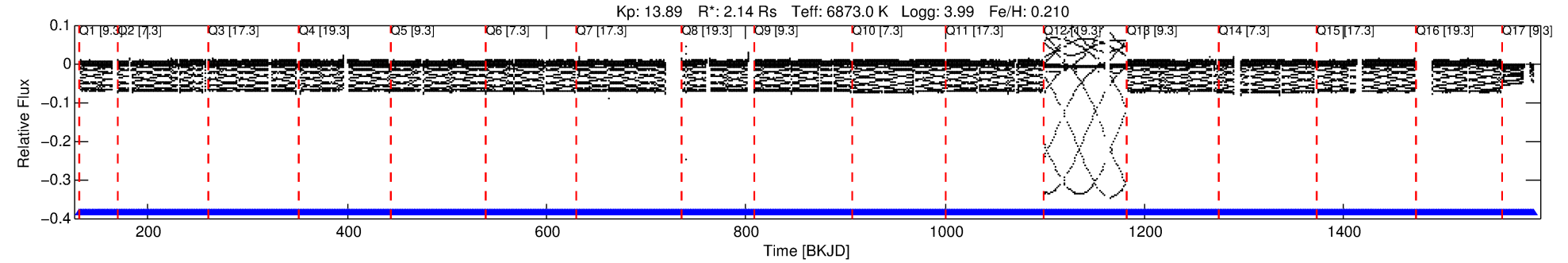
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005097446-02

No Significant Match Found

# DV One-Page Summary

KIC: 5097446 Candidate: 2 of 2 Period: 1.288 d



## TPS TCE Results:

Period = 1.28807 d  
Epoch = 131.7358 BKJD

**DV fit results are unavailable**

## DV Diagnostic Results:

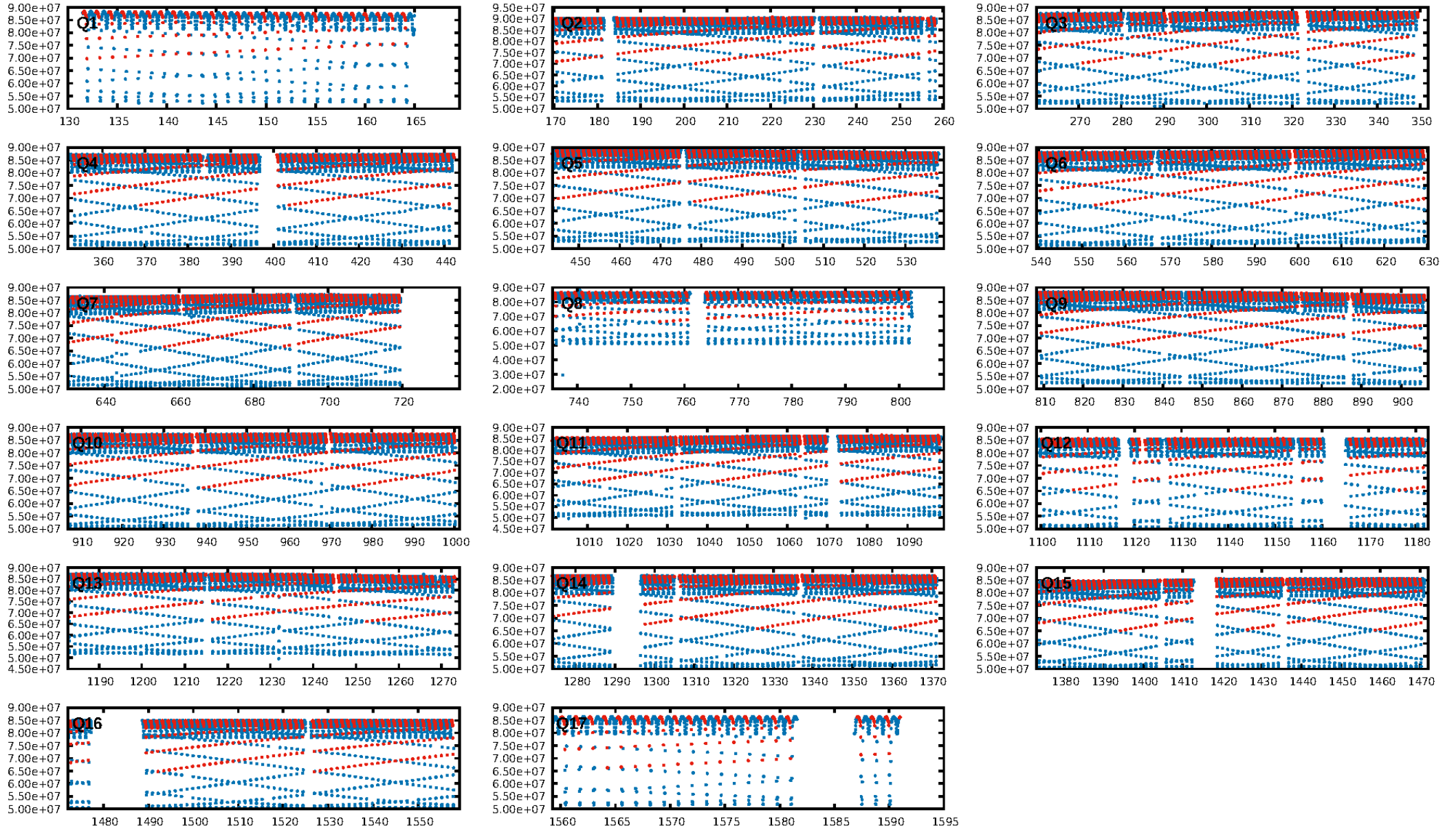
**ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]**  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [994/994]  
GhostDiagnostic-chr: N/A

Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.055 arcsec [0.80 $\sigma$ ]  
KicOffset-rm: 0.072 arcsec [1.05 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

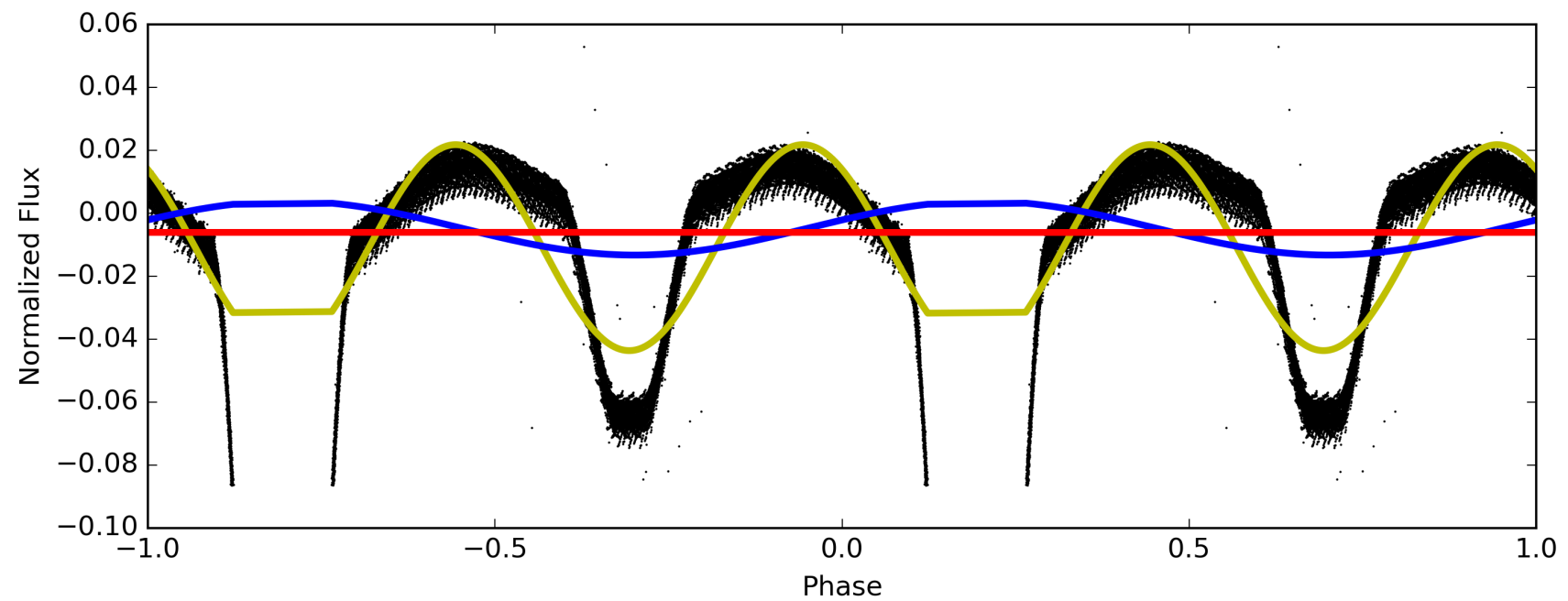
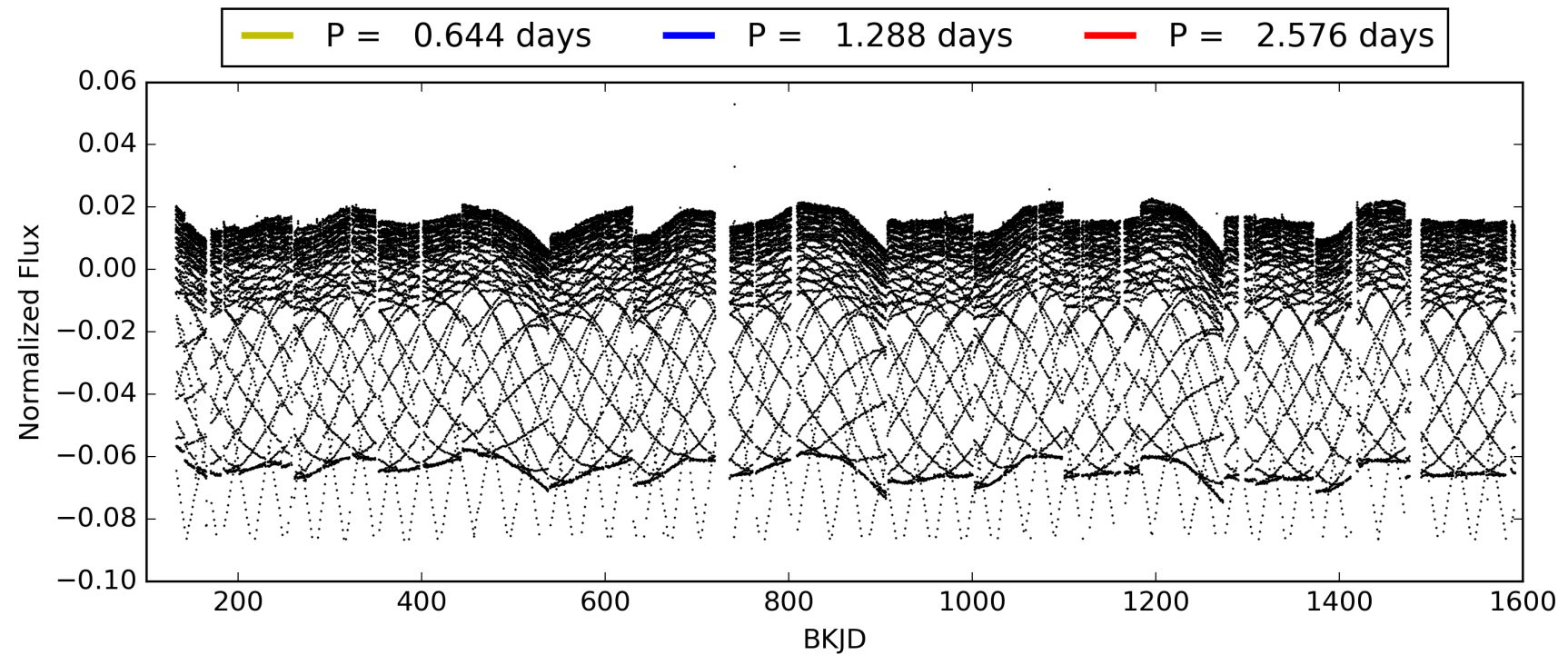
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:33:51 Z

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

# TCE 005097446-02, PDC Light Curves



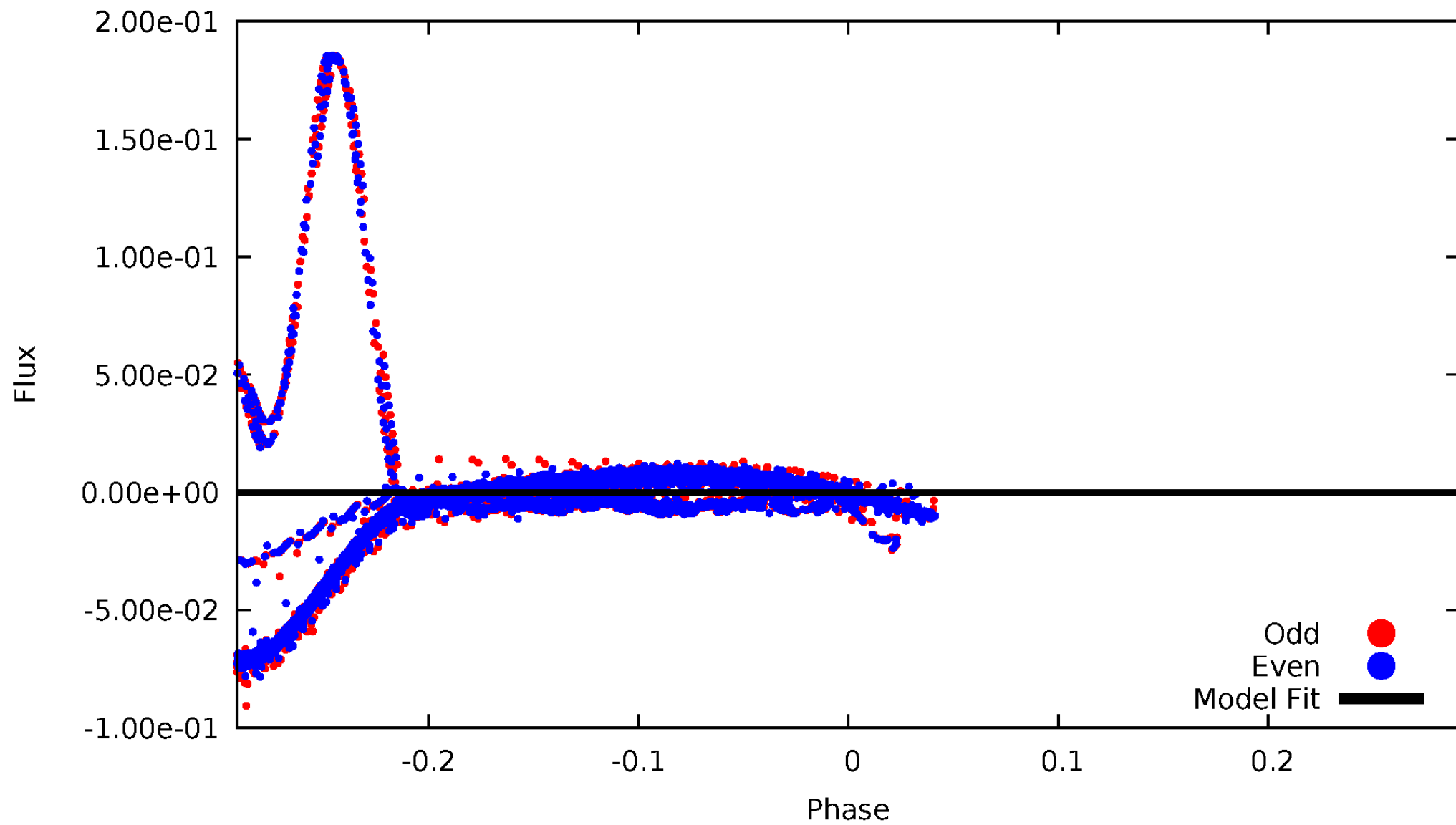
TCE 005097446-02





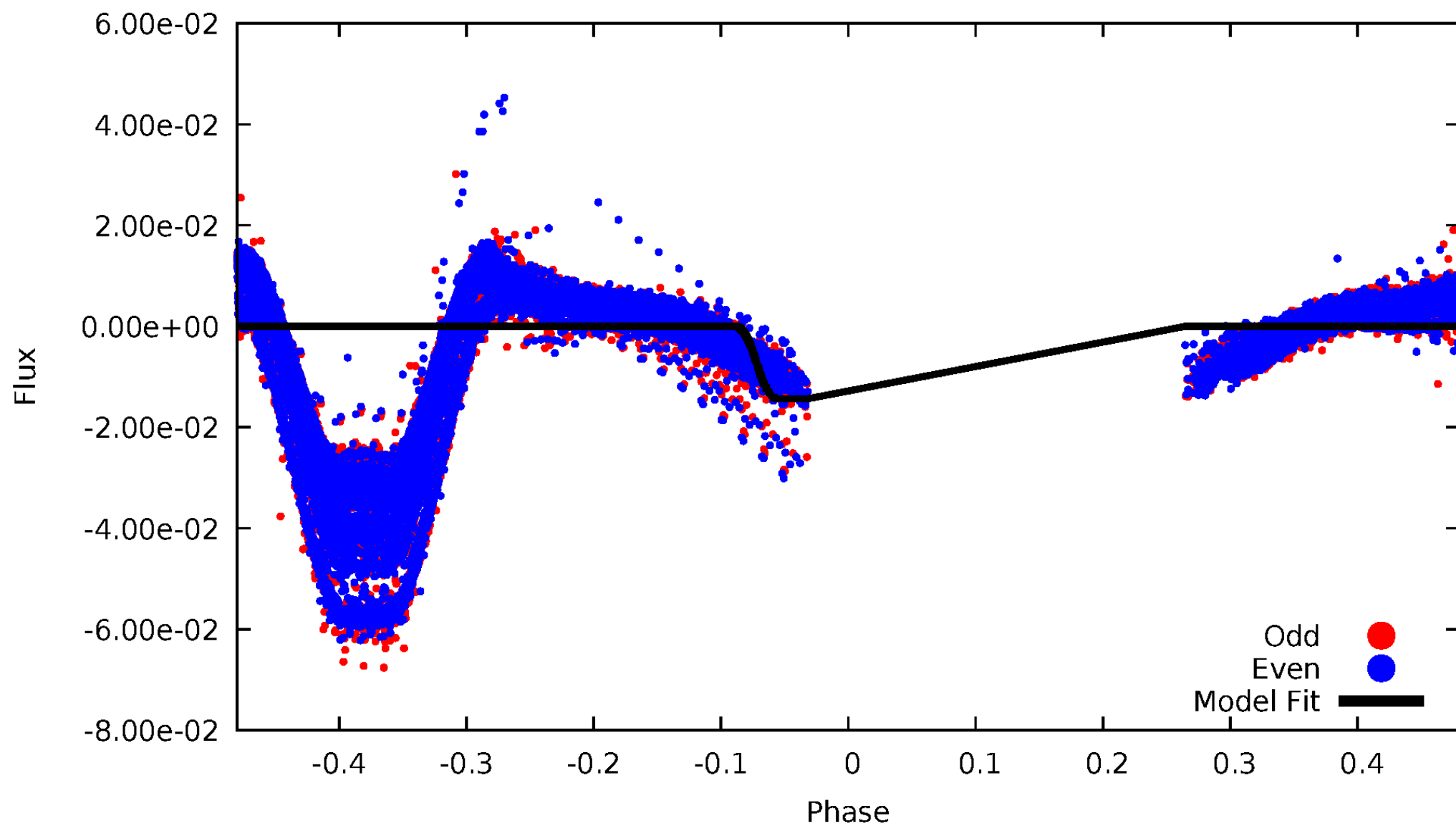
DV Odd/Even

TCE 005097446-02



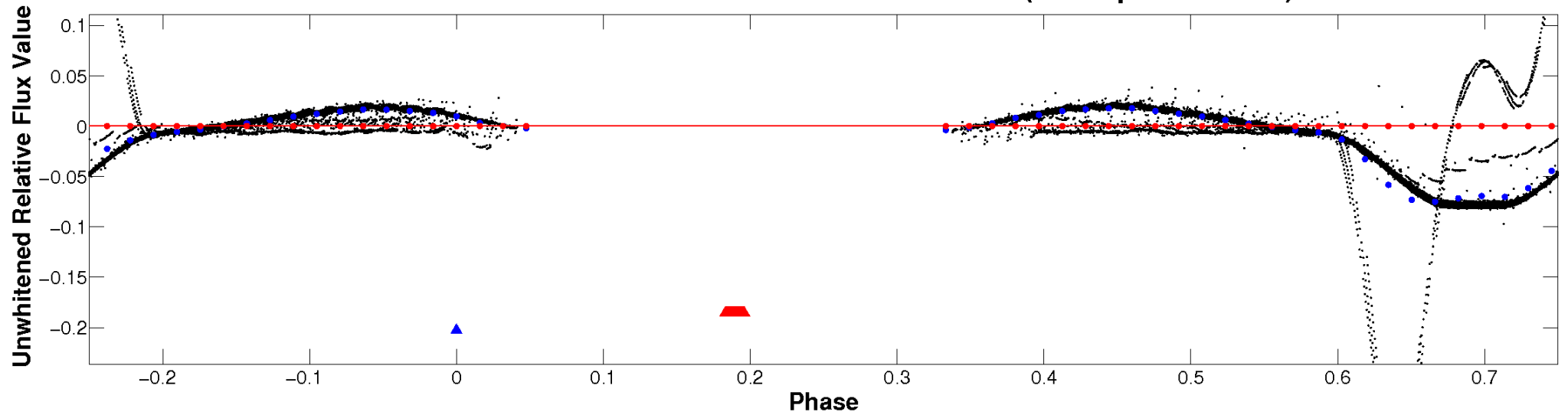
# ALT Odd/Even

TCE 005097446-02



# Non-Whitened Vs. Whitened Light Curve

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

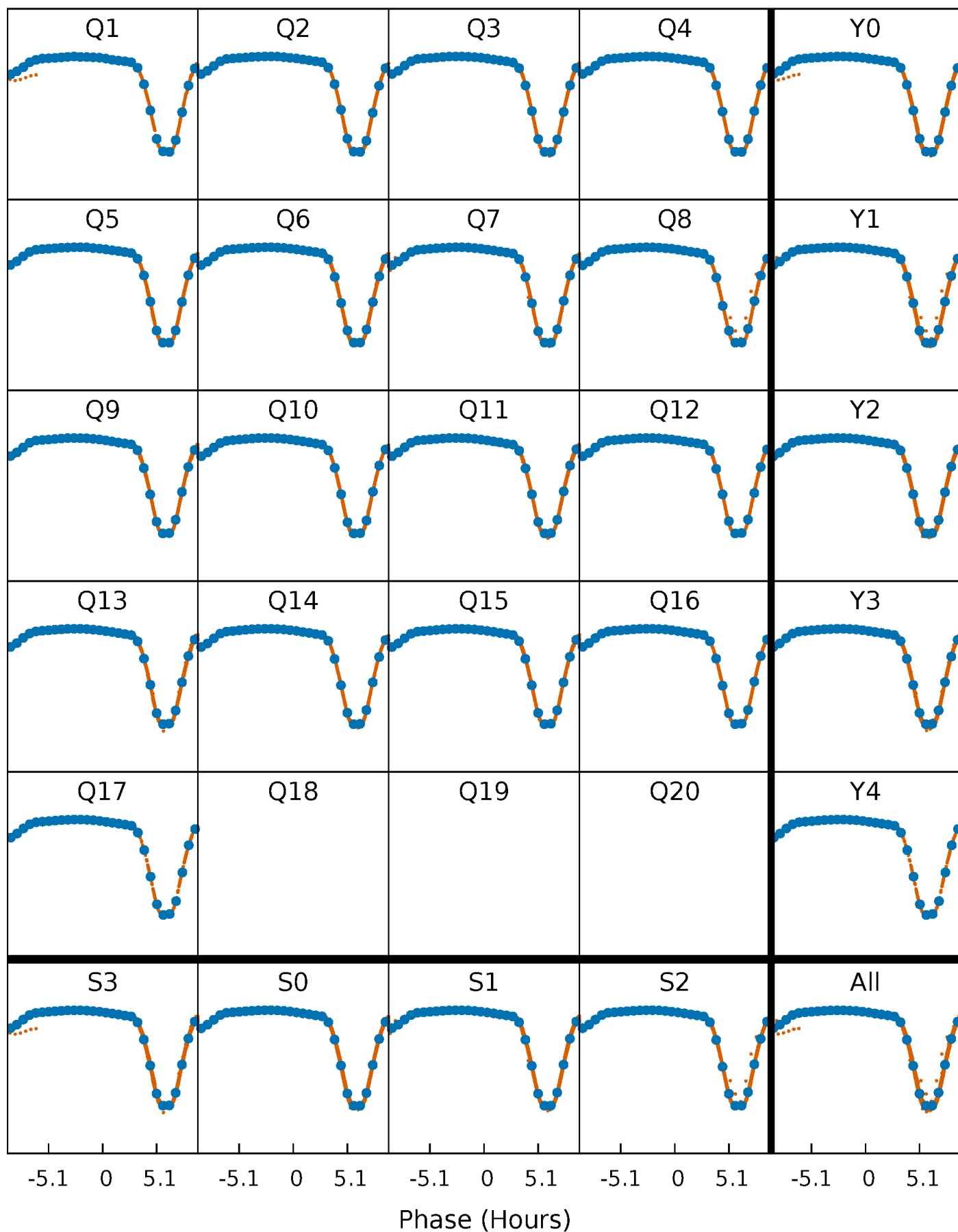


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



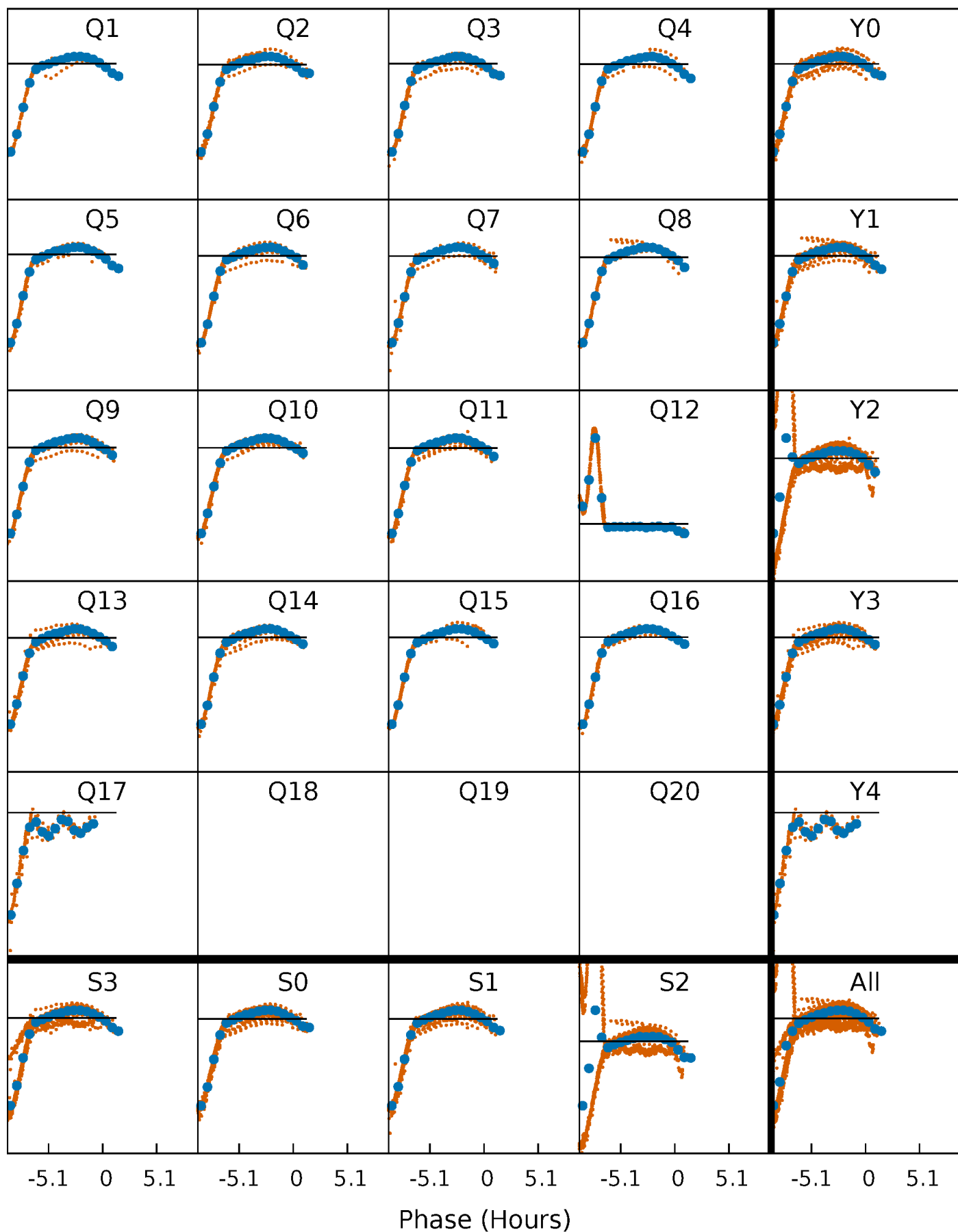
# PDC Quarter-Phased Transit Curves

TCE 005097446-02 P= 1.288066 Days  $T_0=131.735763$  (BKJD)



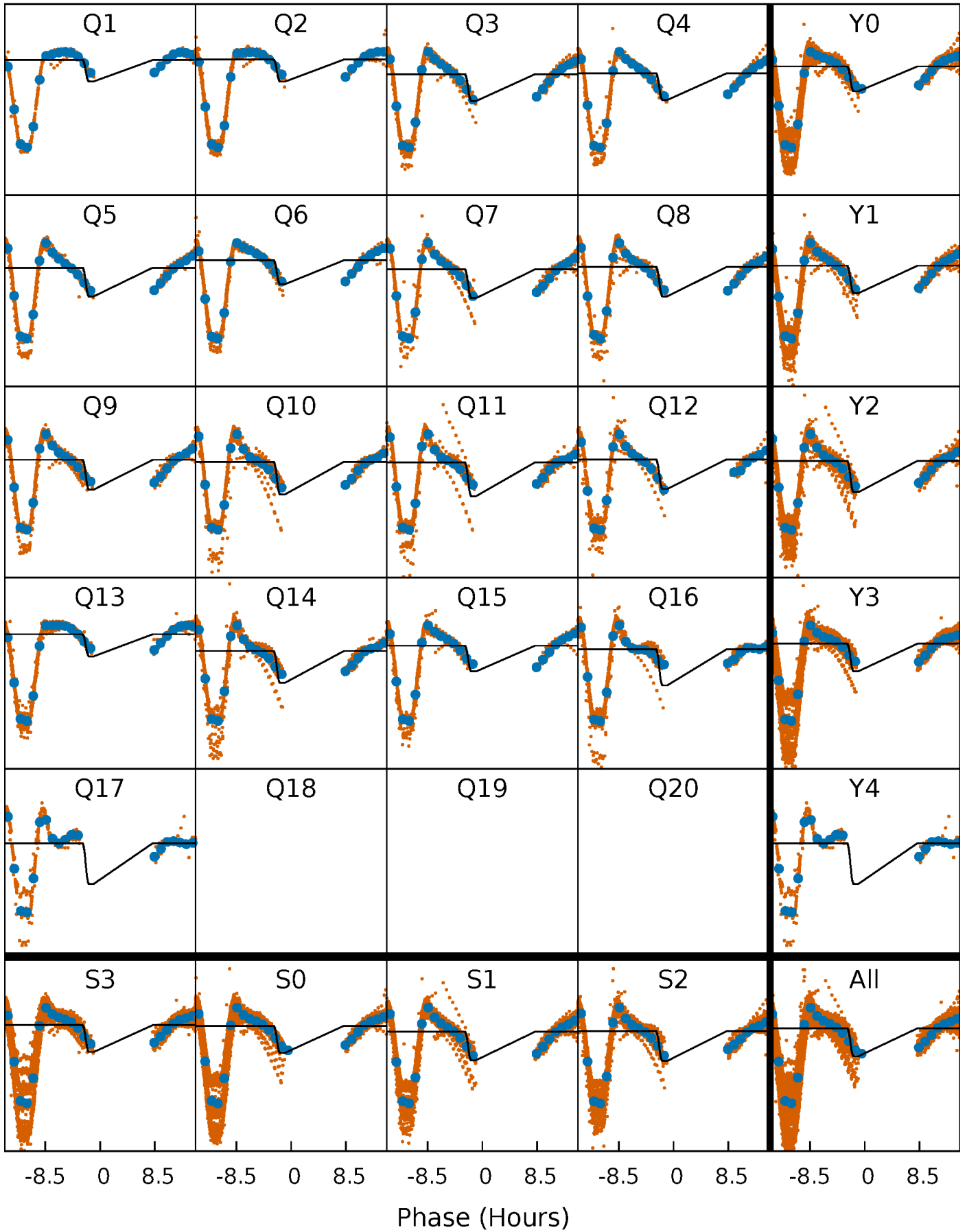
# DV Quarter-Phased Transit Curves

TCE 005097446-02   P= 1.288066 Days    $T_0=131.735763$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

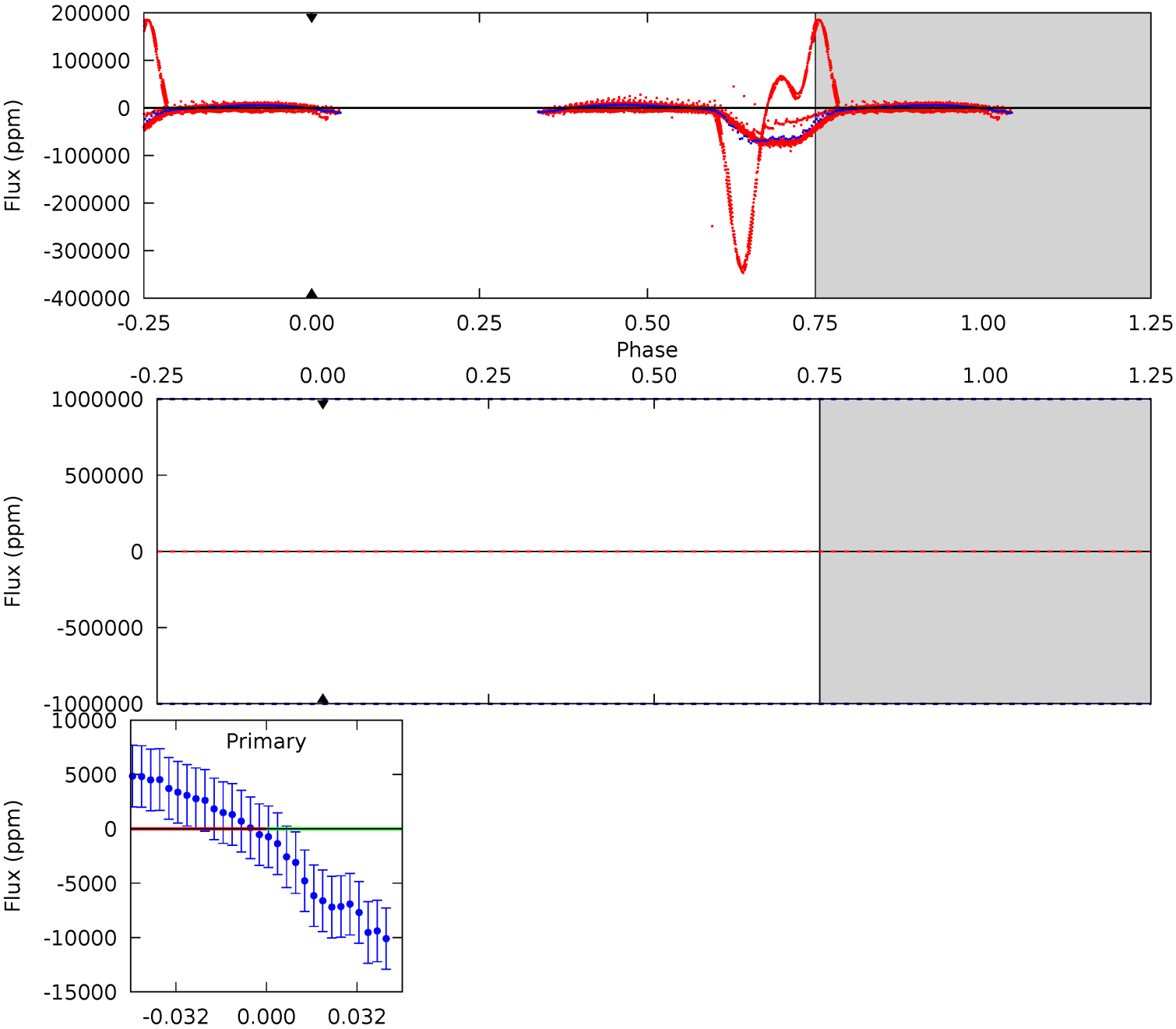
TCE 005097446-02 P= 1.288066 Days  $T_0=131.829964$  (BKJD)



# DV Model-Shift Uniqueness Test

005097446-02, P = 1.288066 Days, E = 130.447697 Days

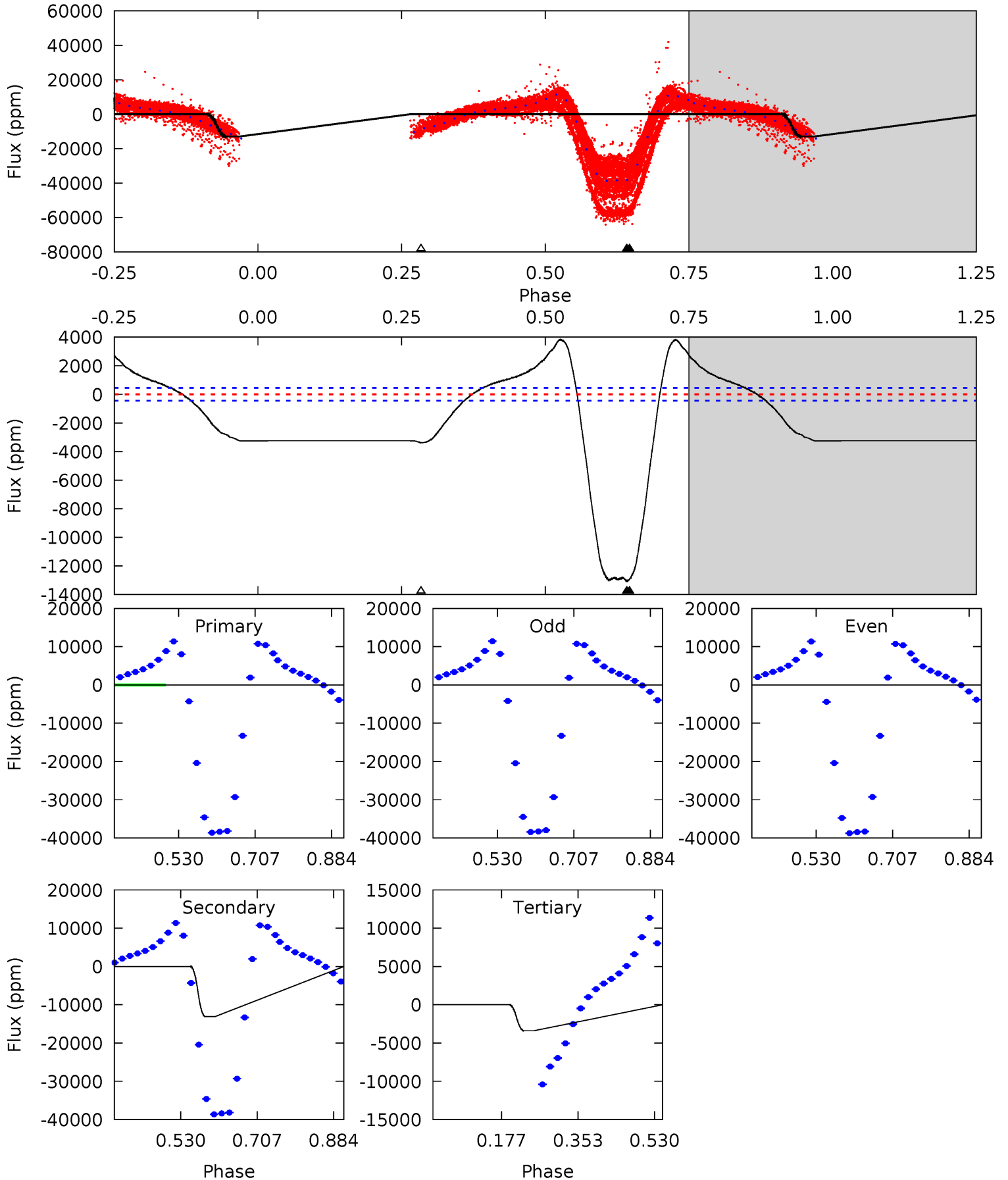
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

005097446-02, P = 1.288066 Days, E = 130.541898 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
128.1	129.3	33.5	0	4.44	1.35	12.7	94.6	128.1	95.8	129.3	0.30	0	0.23	0





### Stellar Parameters For KIC 005097446

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6873^{+82}_{-75}$	$3.994^{+0.143}_{-0.117}$	$0.210^{+0.150}_{-0.150}$	$2.144^{+0.395}_{-0.356}$	$1.654^{+0.141}_{-0.141}$	$0.236^{+0.159}_{-0.081}$
	+1%/-1%	+4%/-3%	+71%/-71%	+18%/-17%	+9%/-9%	+67%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005097446-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$18.65^{+19.14}_{-12.32}$	$3735^{+204}_{-179}$	$-3989^{+33885}_{-22524}$	$-0.319^{+221.302}_{-184.280}$
Alt.	$-13066 \pm 101$	$30.97^{+23.49}_{-18.42}$	$3724^{+173}_{-156}$	$6319^{+4693}_{-1569}$	$5.883^{+28.998}_{-4.025}$

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

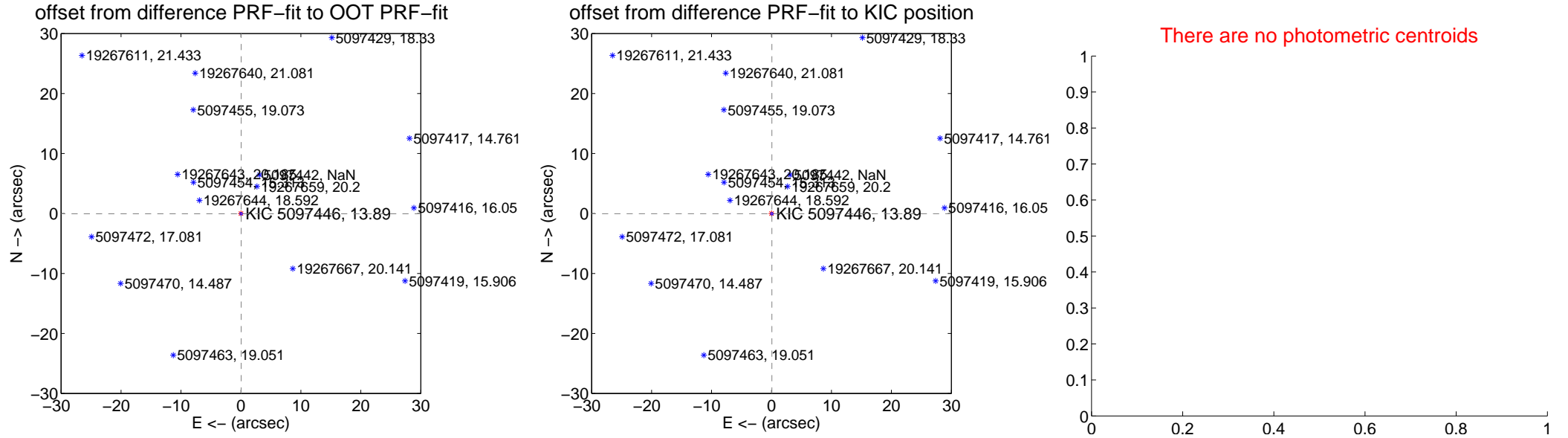
## DV Centroid Data

Supplemental centroid analysis for 005097446-02. Kepler magnitude: 13.89. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

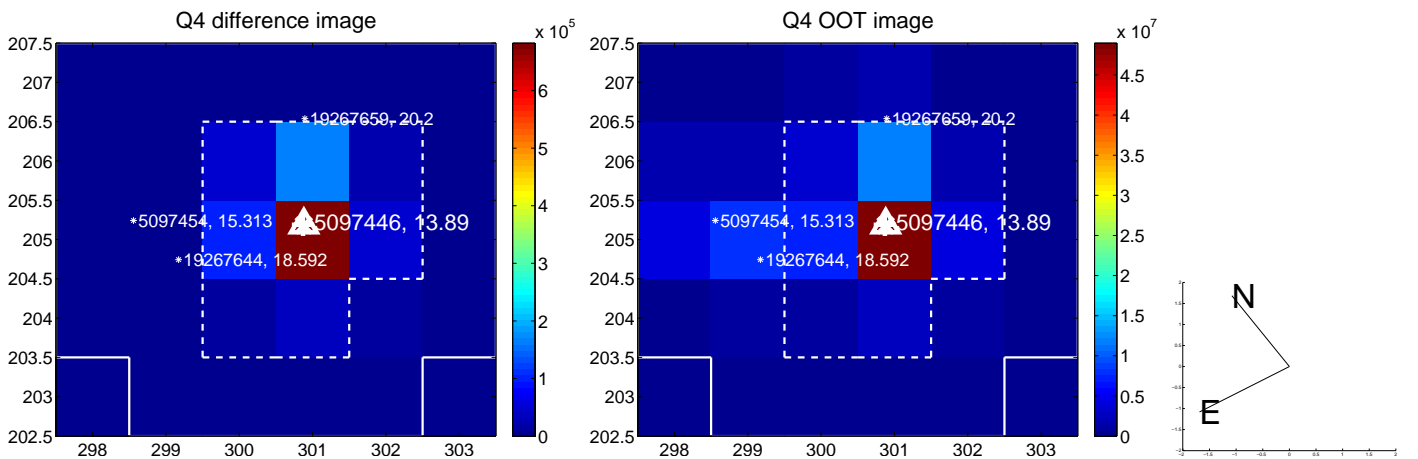
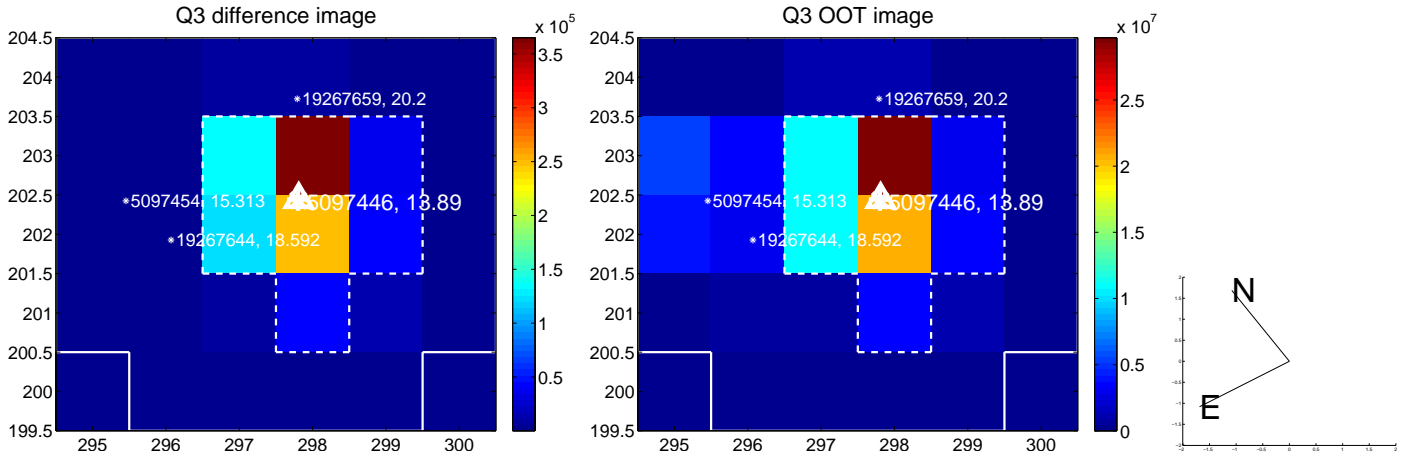
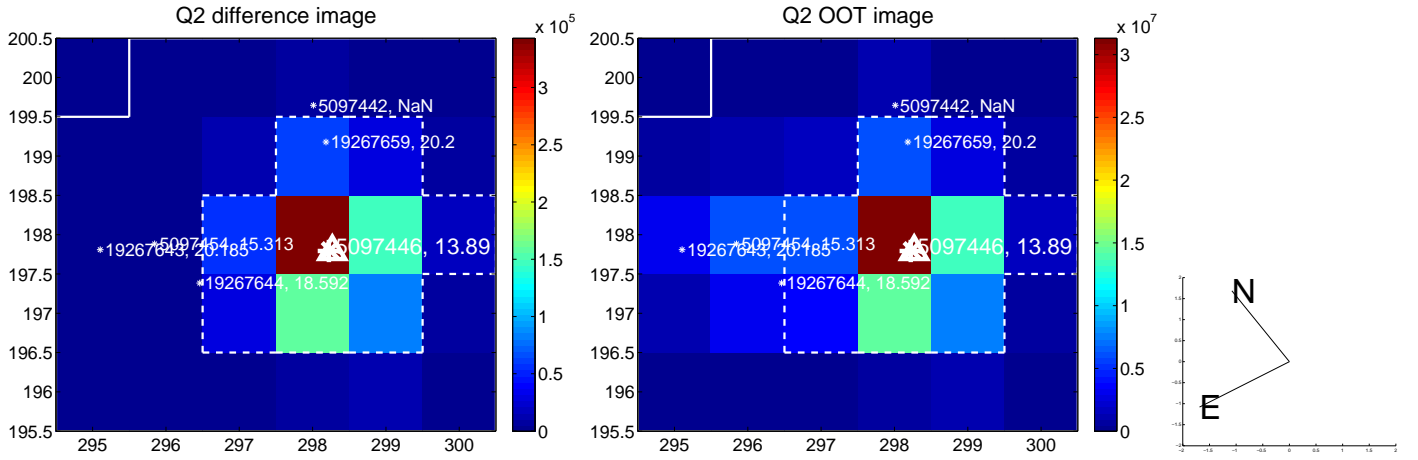
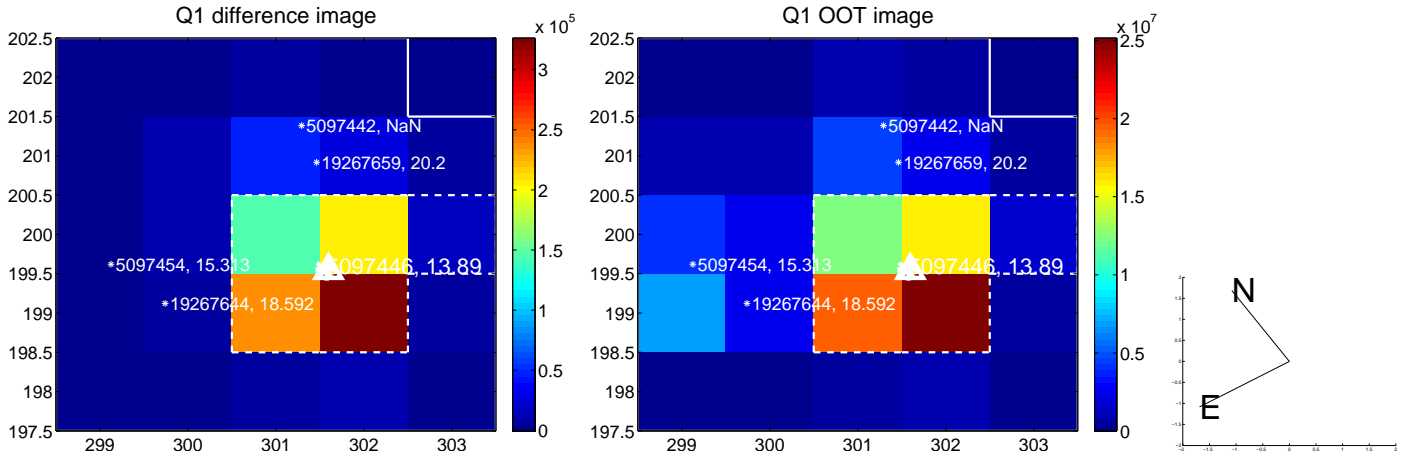
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.055 \pm 0.068$	0.80	$-0.031 \pm 0.068$	$-0.045 \pm 0.068$
PRF-fit source offset from KIC position	$0.072 \pm 0.069$	1.05	$-0.059 \pm 0.067$	$-0.042 \pm 0.069$
photometric centroid source offset	—	—	—	—

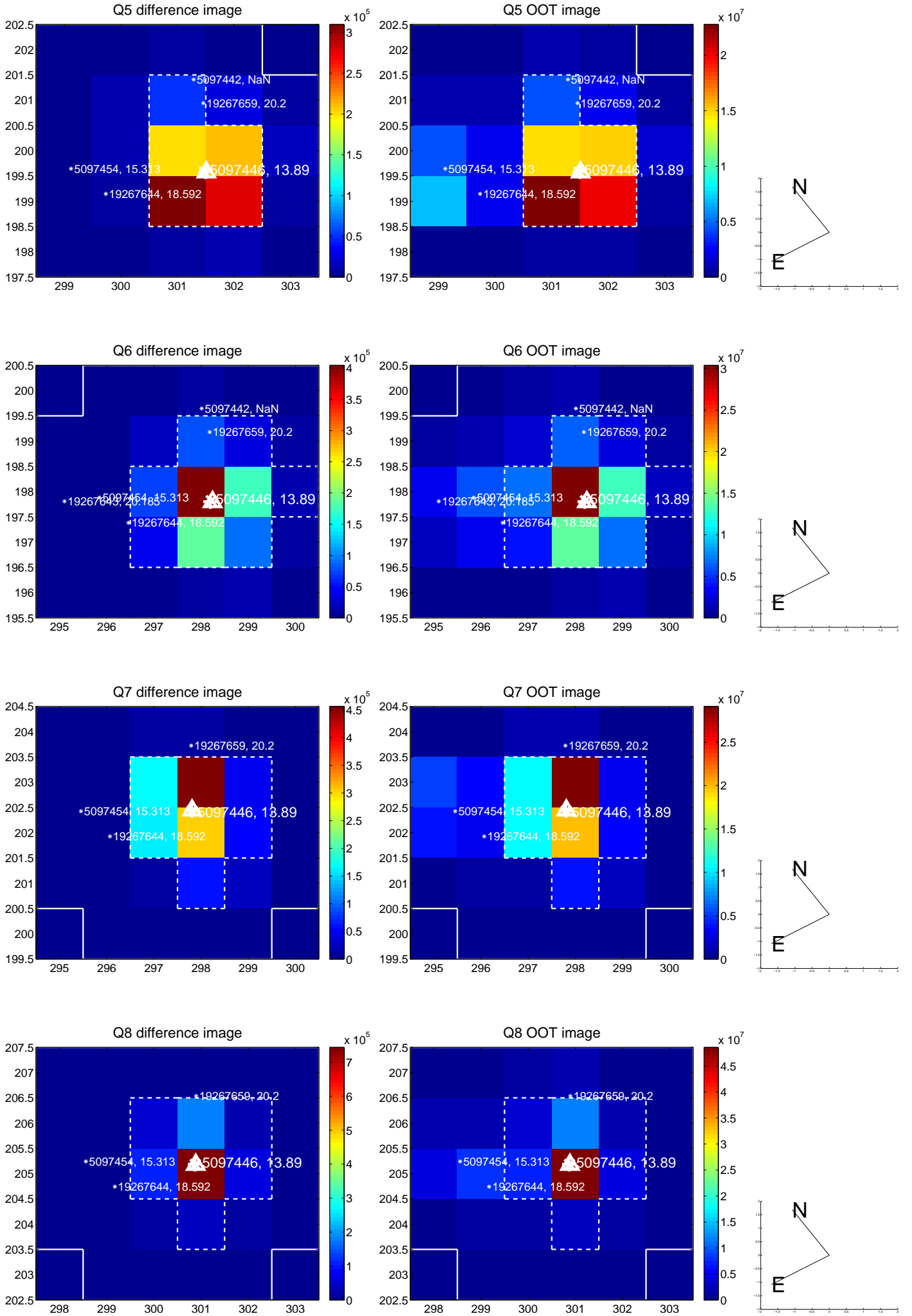


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

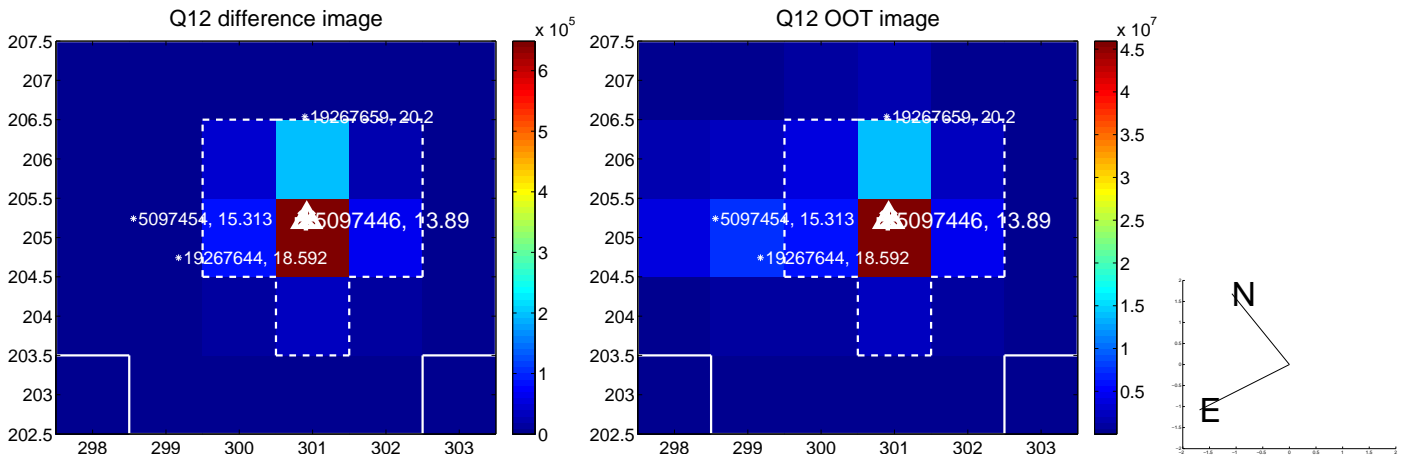
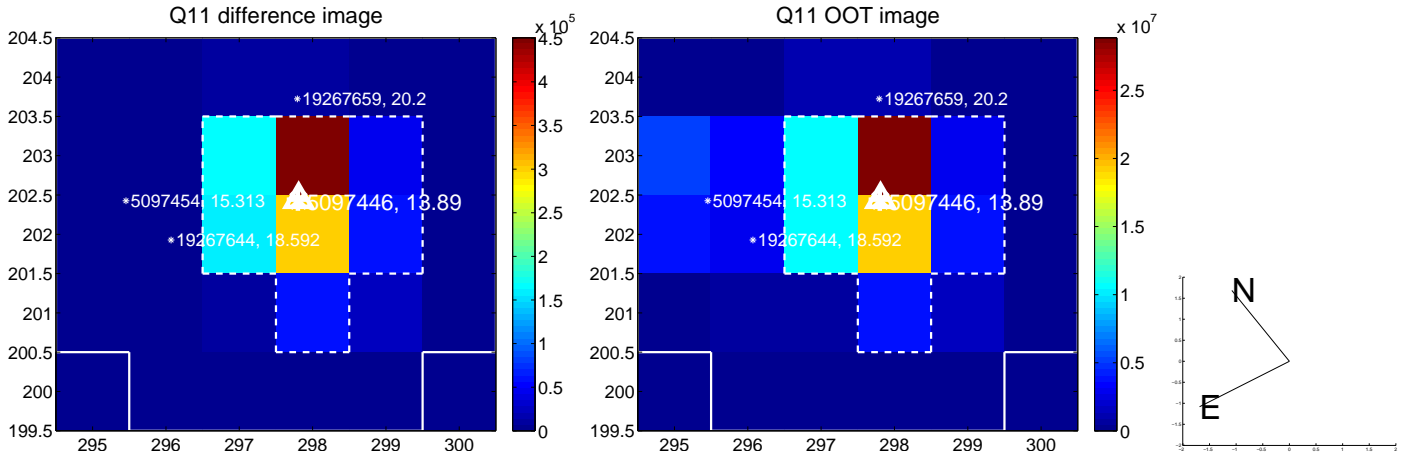
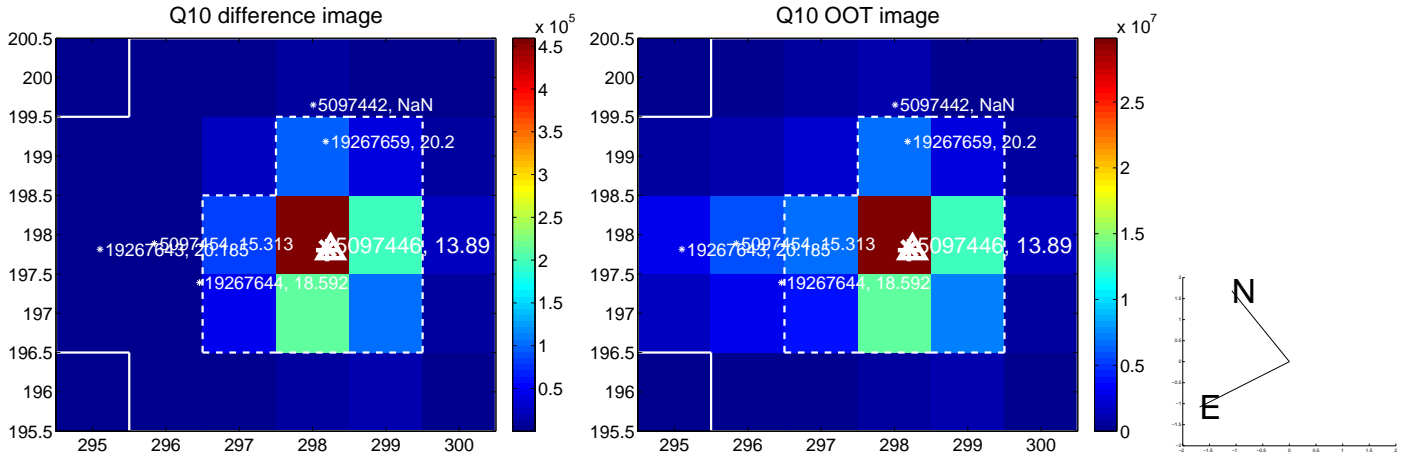
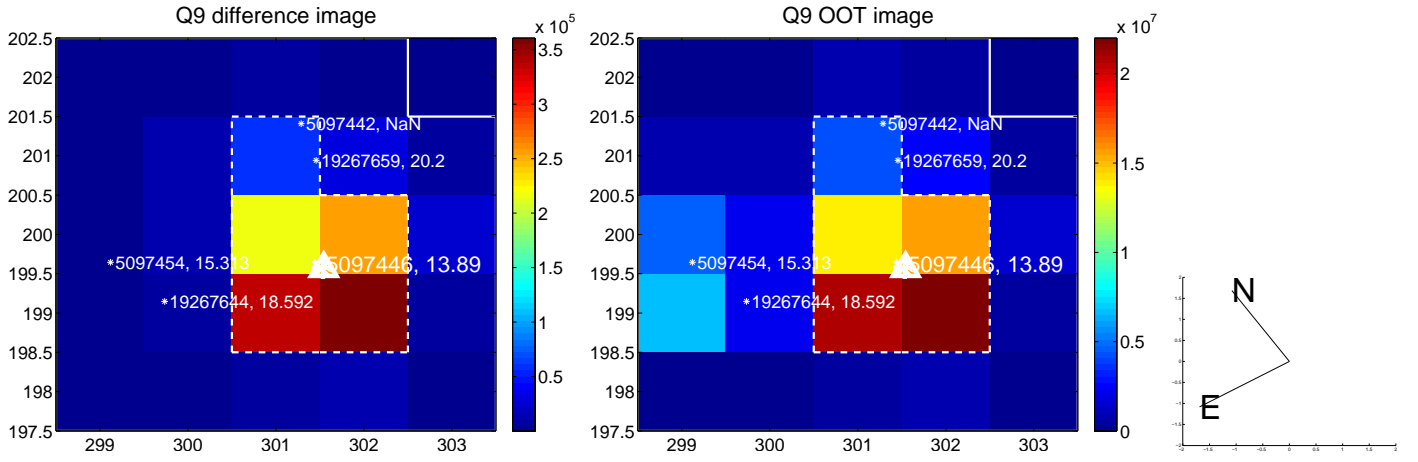
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



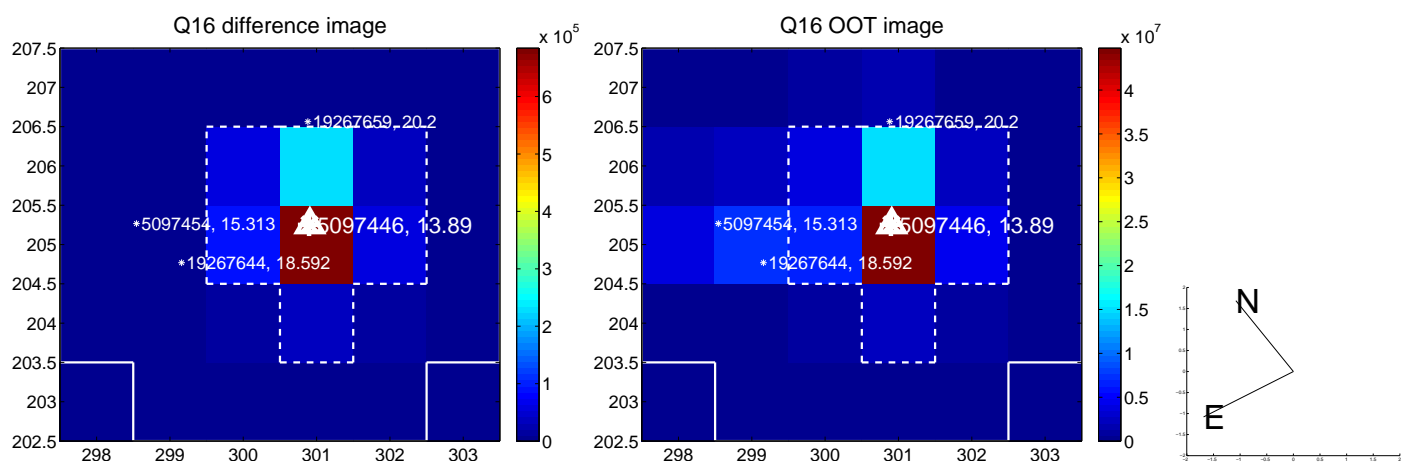
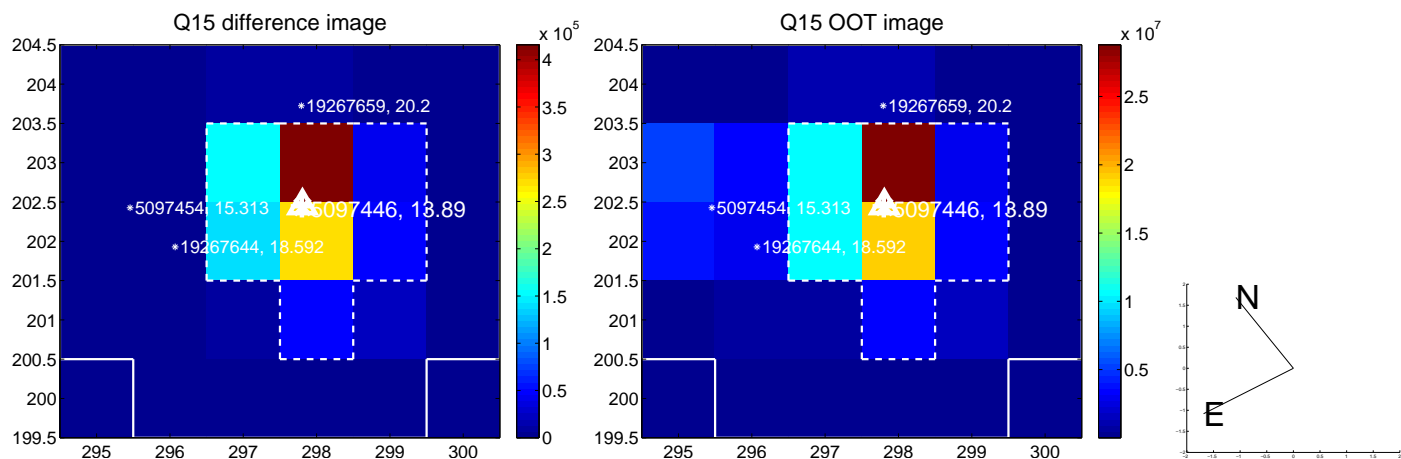
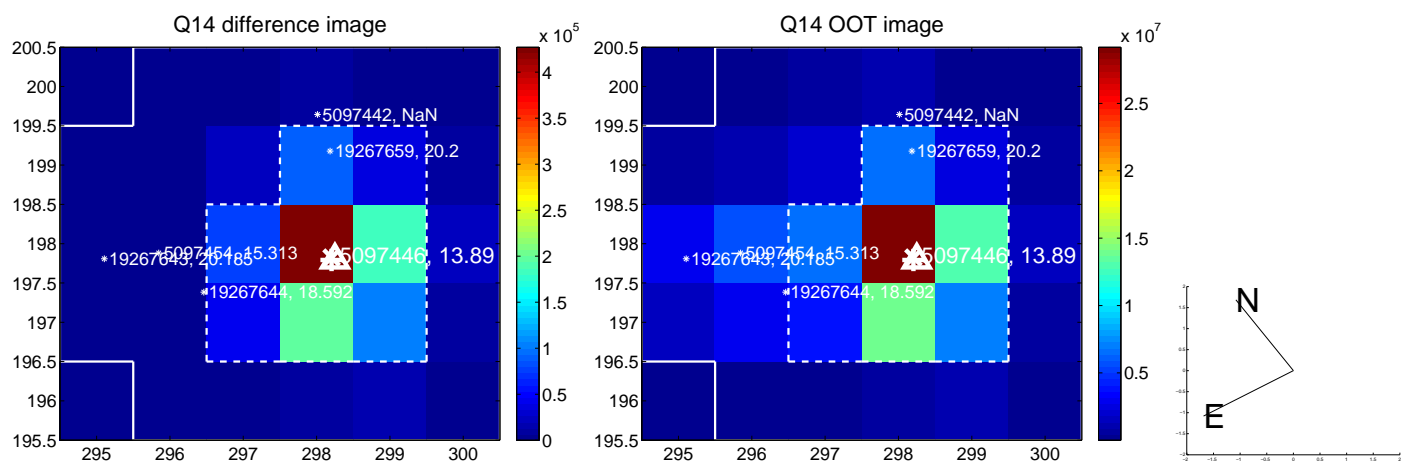
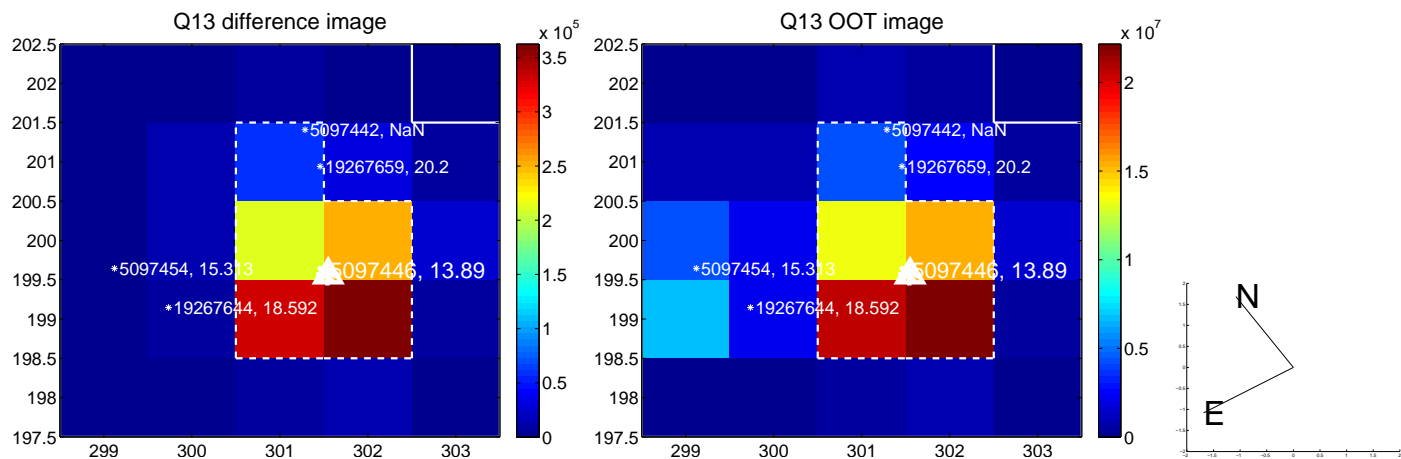
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



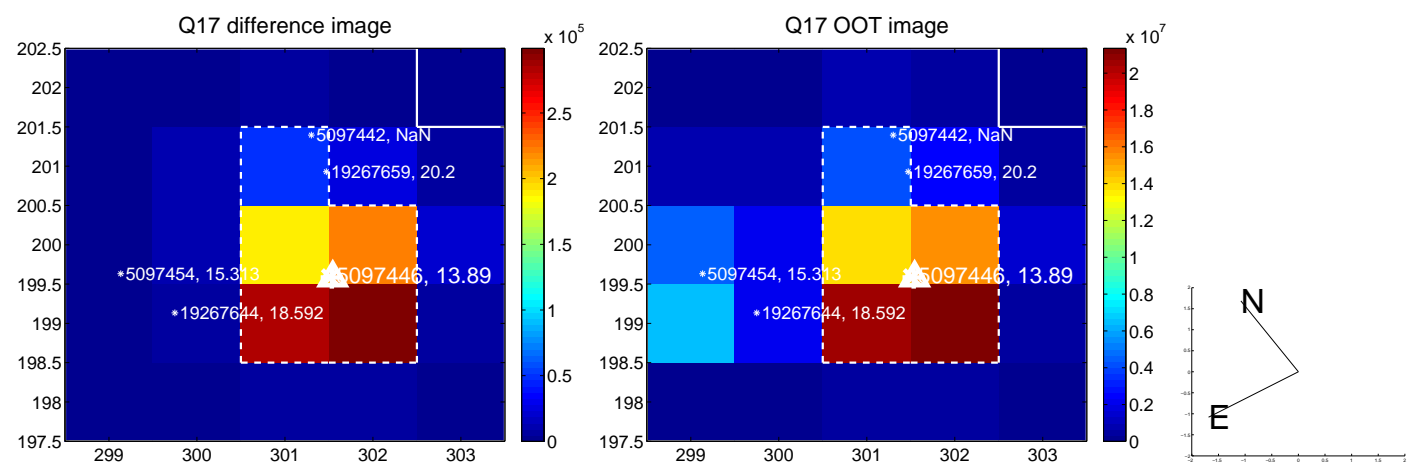
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folded centroid time series figure for this object.

UKIRT Image

Declination

