

# KIC 005039441

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005039441-01	OBS	6125.01	2.151370	133.109953	262110.9	2.500	19467.6	-1.0	1.26	6184	41.80	2098.50
005039441-02	OBS	No	4.302773	134.180033	19200.3	3.258	3812.8	1040.8	1.26	6184	19.51	832.78
005039441-03	OBS	No	4.302955	133.336392	9932.9	15.000	3619.6	-1.0	1.26	6184	12.58	832.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005039441-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
005039441-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005039441-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—RESIDUAL_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 005039441-01

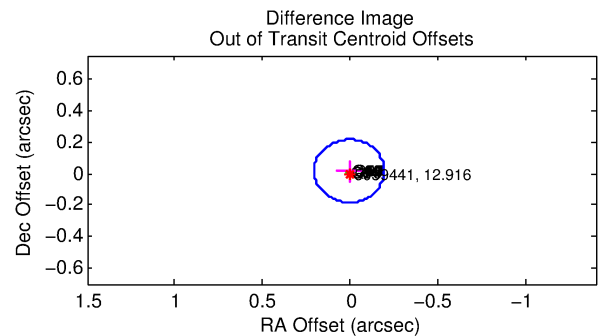
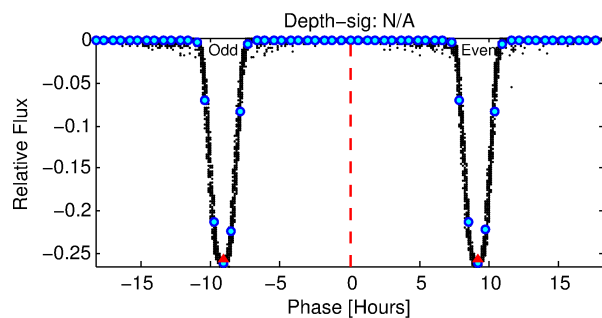
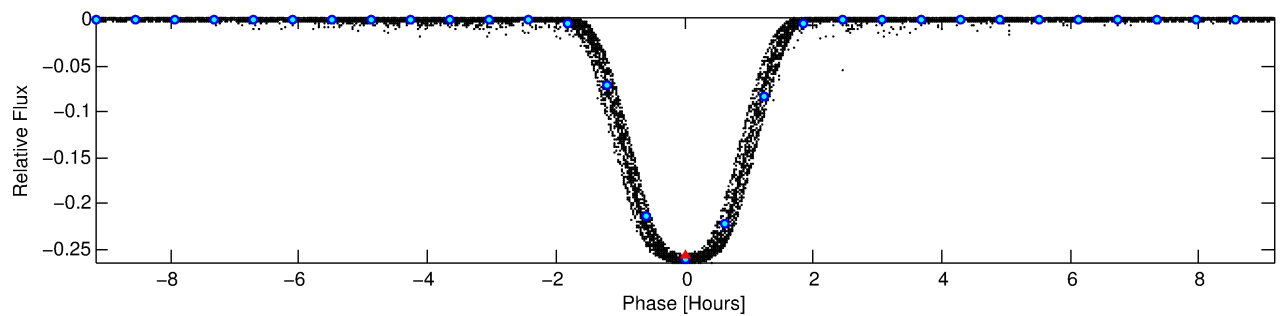
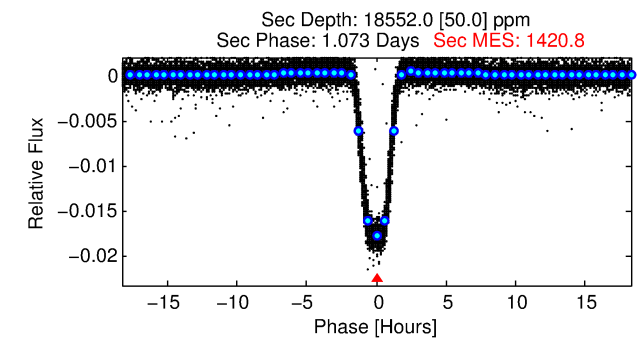
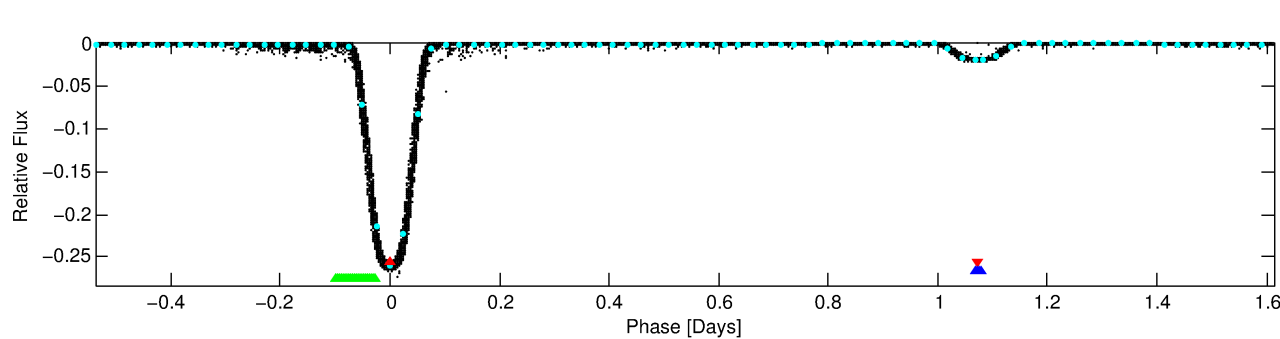
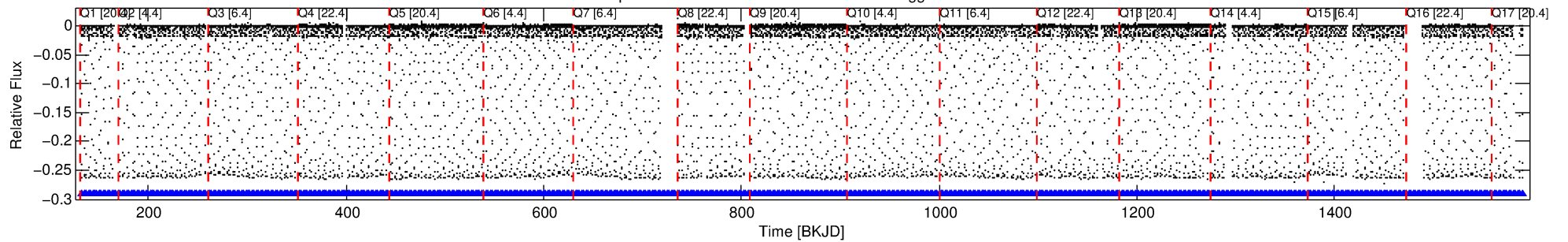
No Significant Match Found

# DV One-Page Summary

KIC: 5039441 Candidate: 1 of 3 Period: 2.151 d

KOI: K06125.01 Corr: 0.865

Kp: 12.92 R\*: 1.26 Rs Teff: 6184.0 K Logg: 4.19 Fe/H: -0.600



## TPS TCE Results:

Period = 2.15137 d  
Epoch = 133.1100 BKJD

DV fit results are unavailable

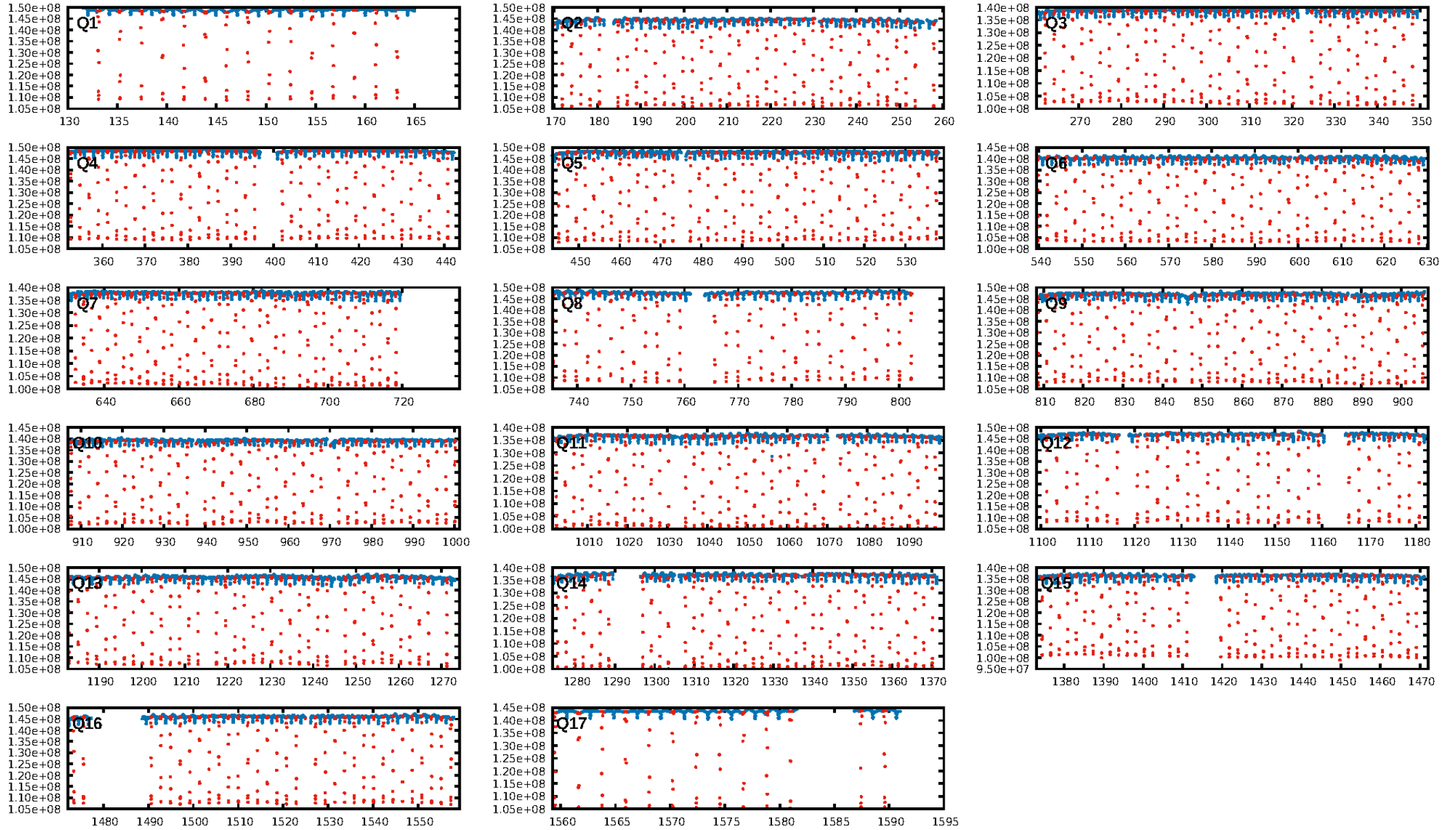
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [12.57σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [591/591]  
GhostDiagnostic-chr: 1.614  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.018 arcsec [0.26σ]  
KicOffset-rm: 0.118 arcsec [1.75σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

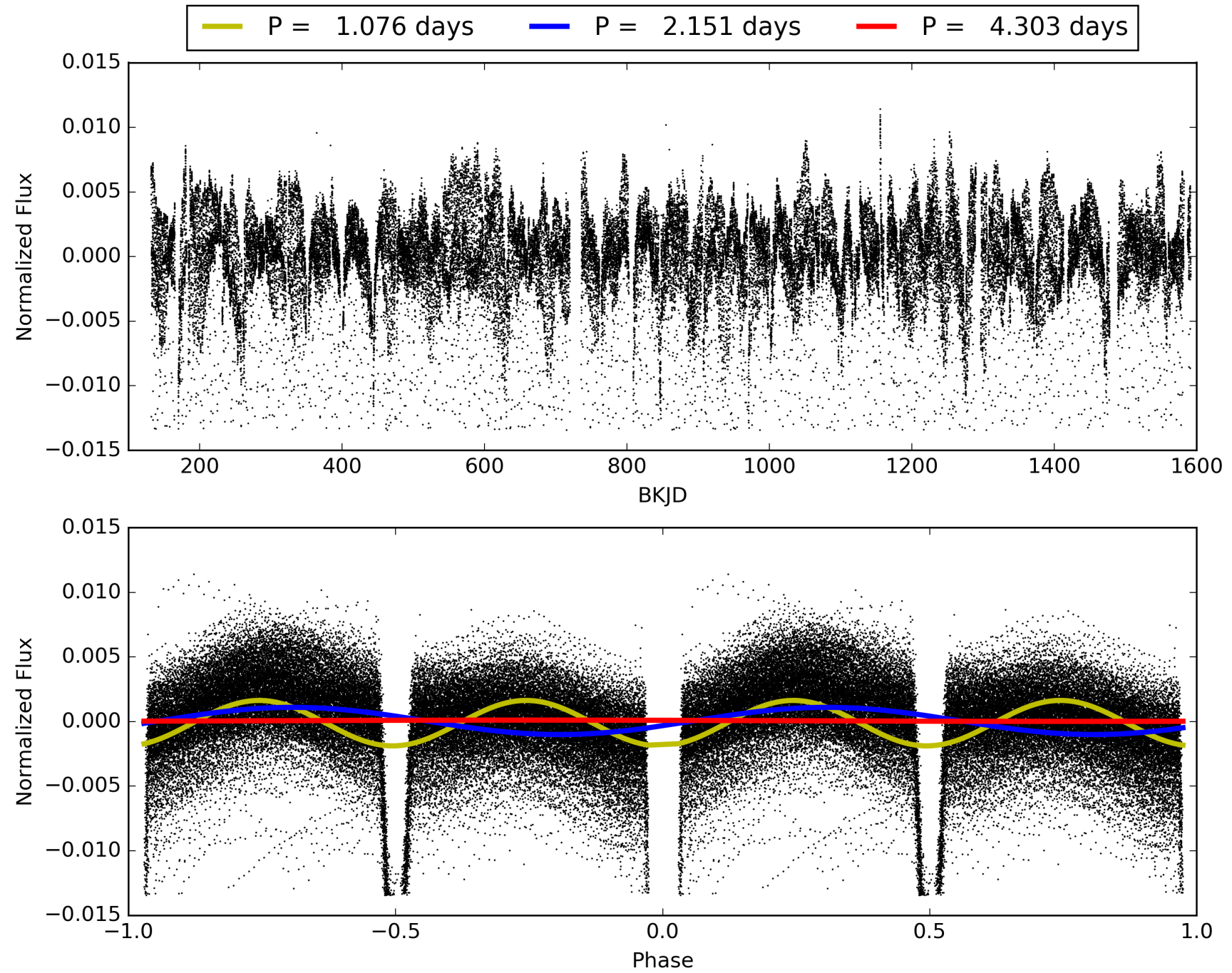
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:30:40 Z

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

# TCE 005039441-01, PDC Light Curves

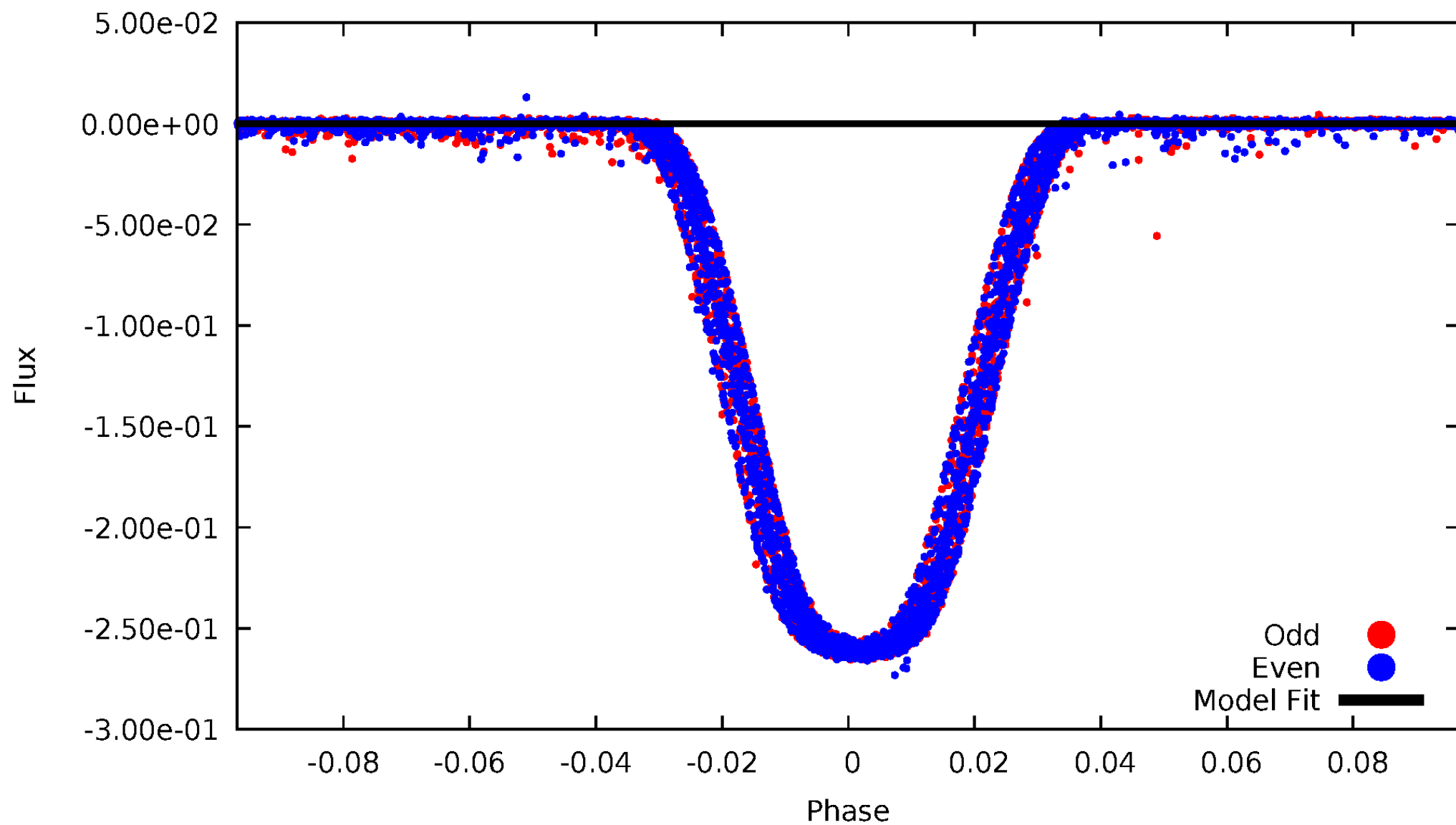


TCE 005039441-01



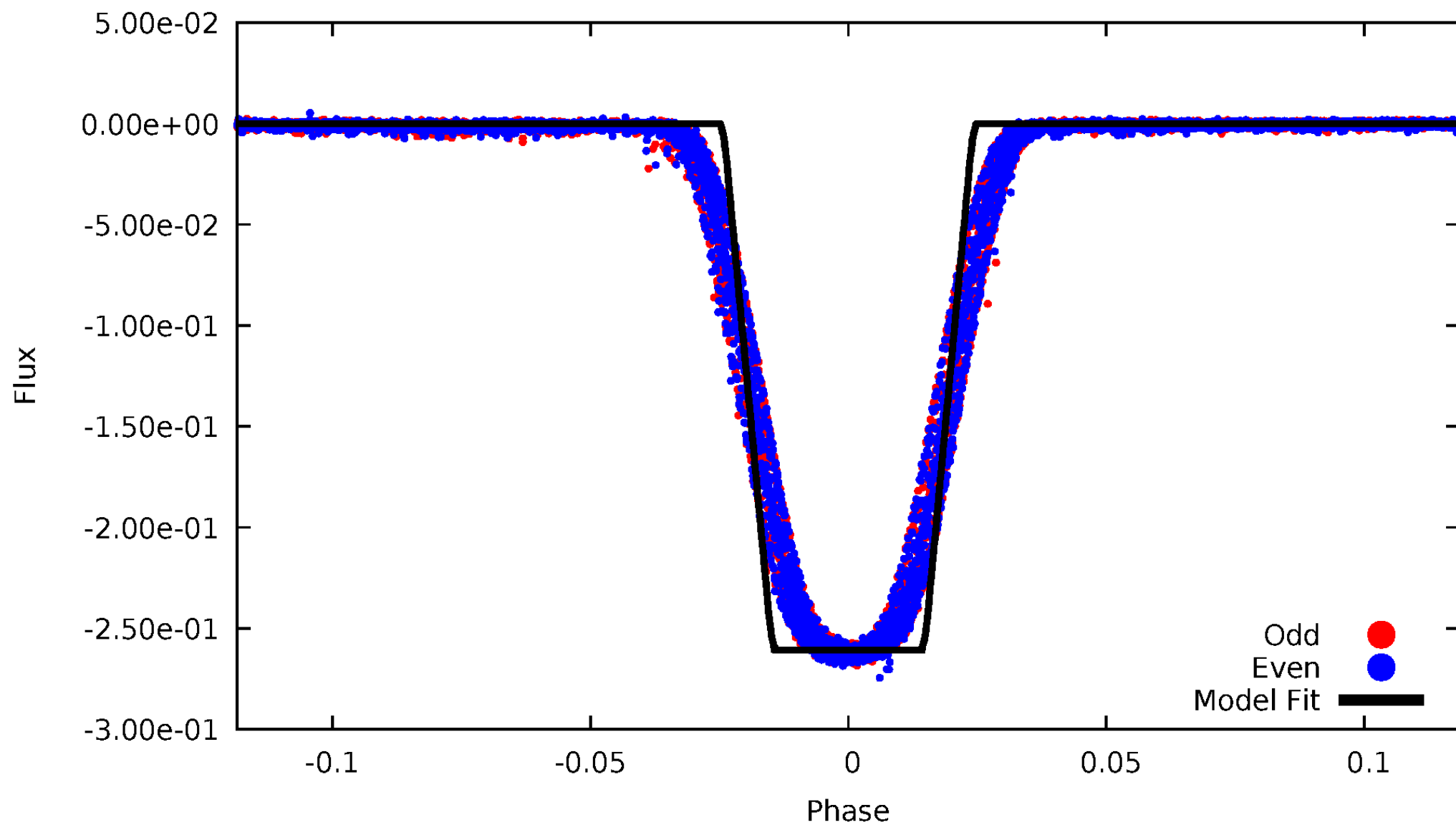
# DV Odd/Even

TCE 005039441-01



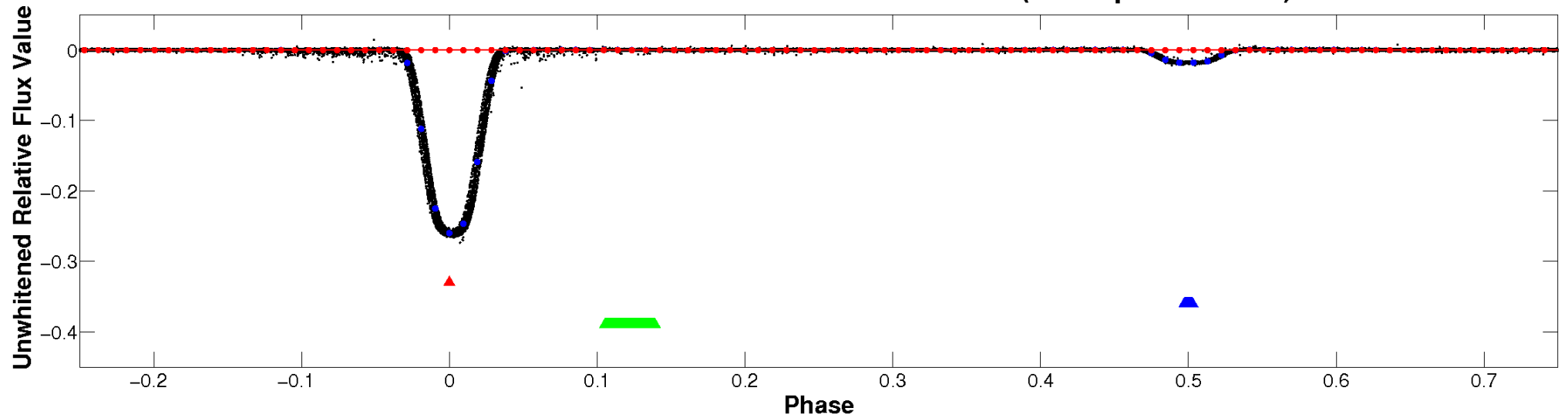
# ALT Odd/Even

TCE 005039441-01



# Non-Whitened Vs. Whitened Light Curve

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

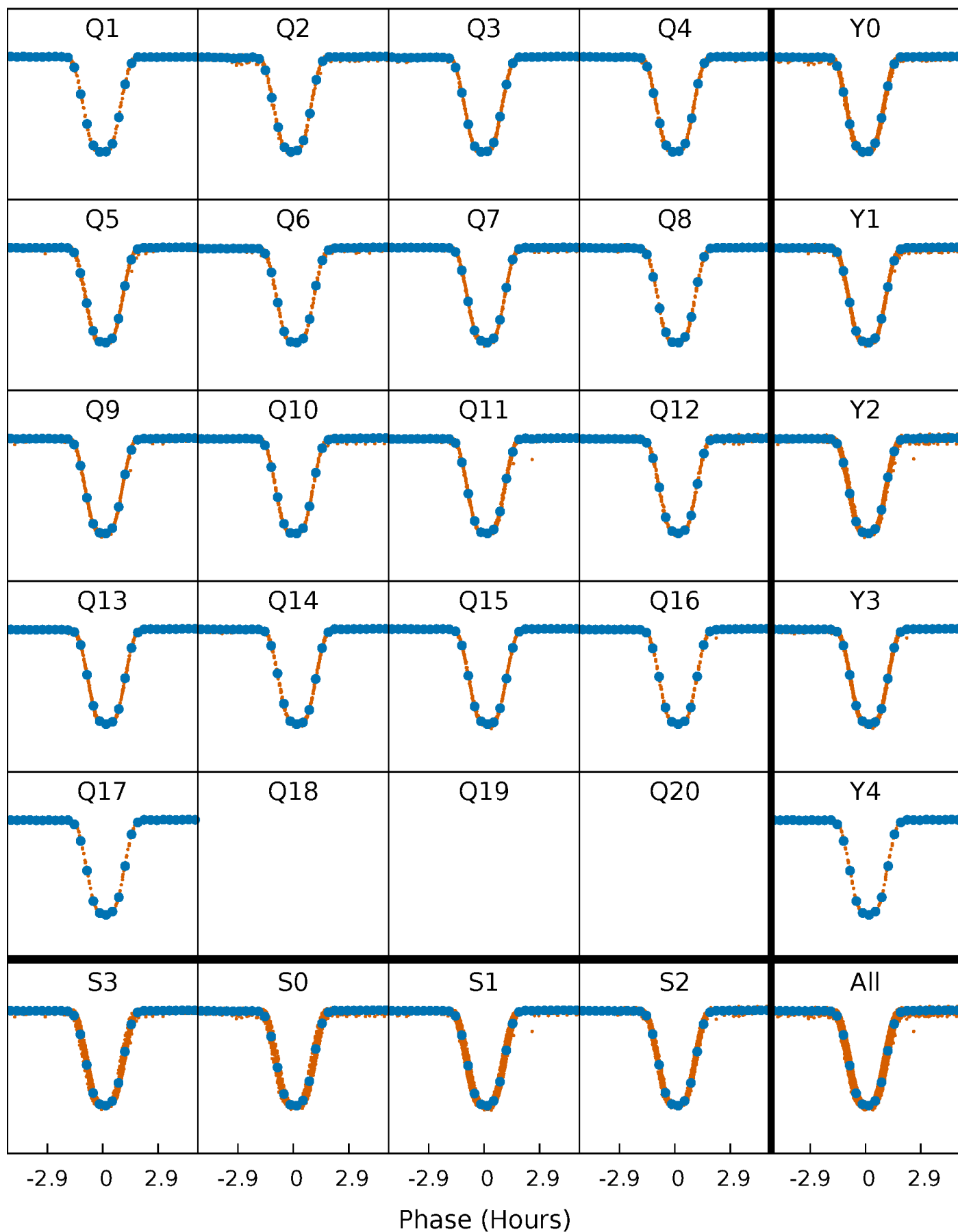


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



# PDC Quarter-Phased Transit Curves

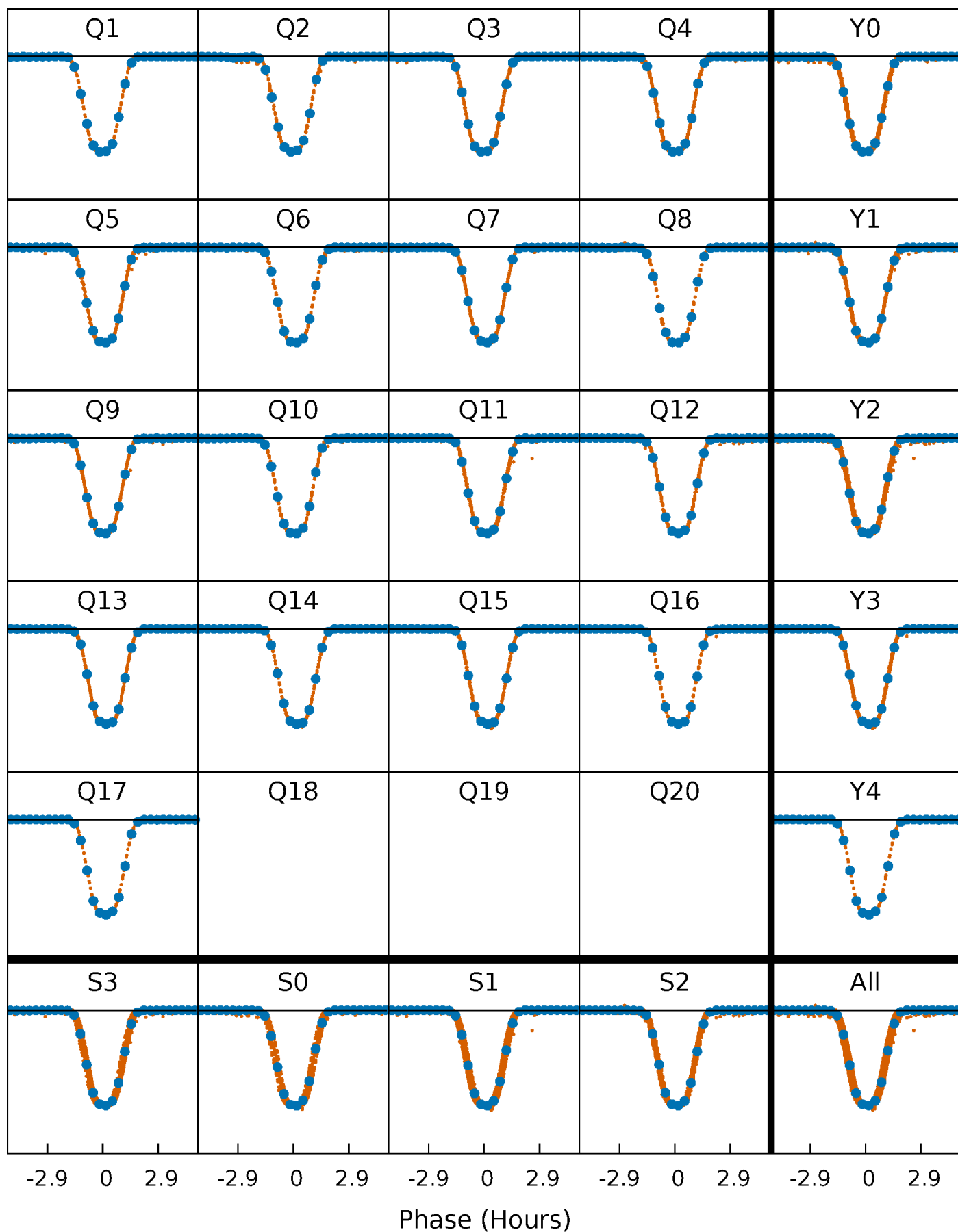
TCE 005039441-01 P= 2.151370 Days  $T_0=133.109952$  (BKJD)





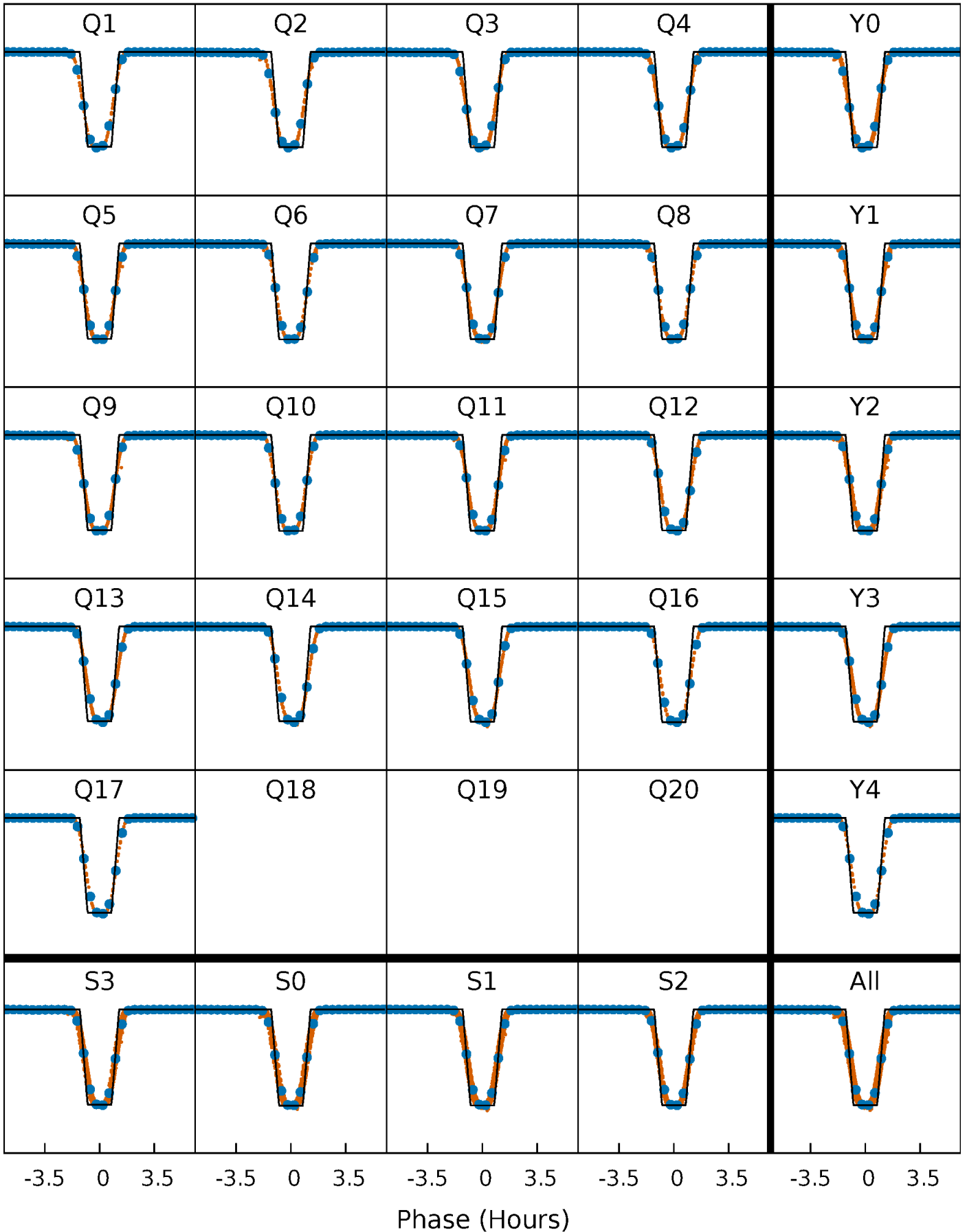
# DV Quarter-Phased Transit Curves

TCE 005039441-01 P= 2.151370 Days  $T_0=133.109952$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

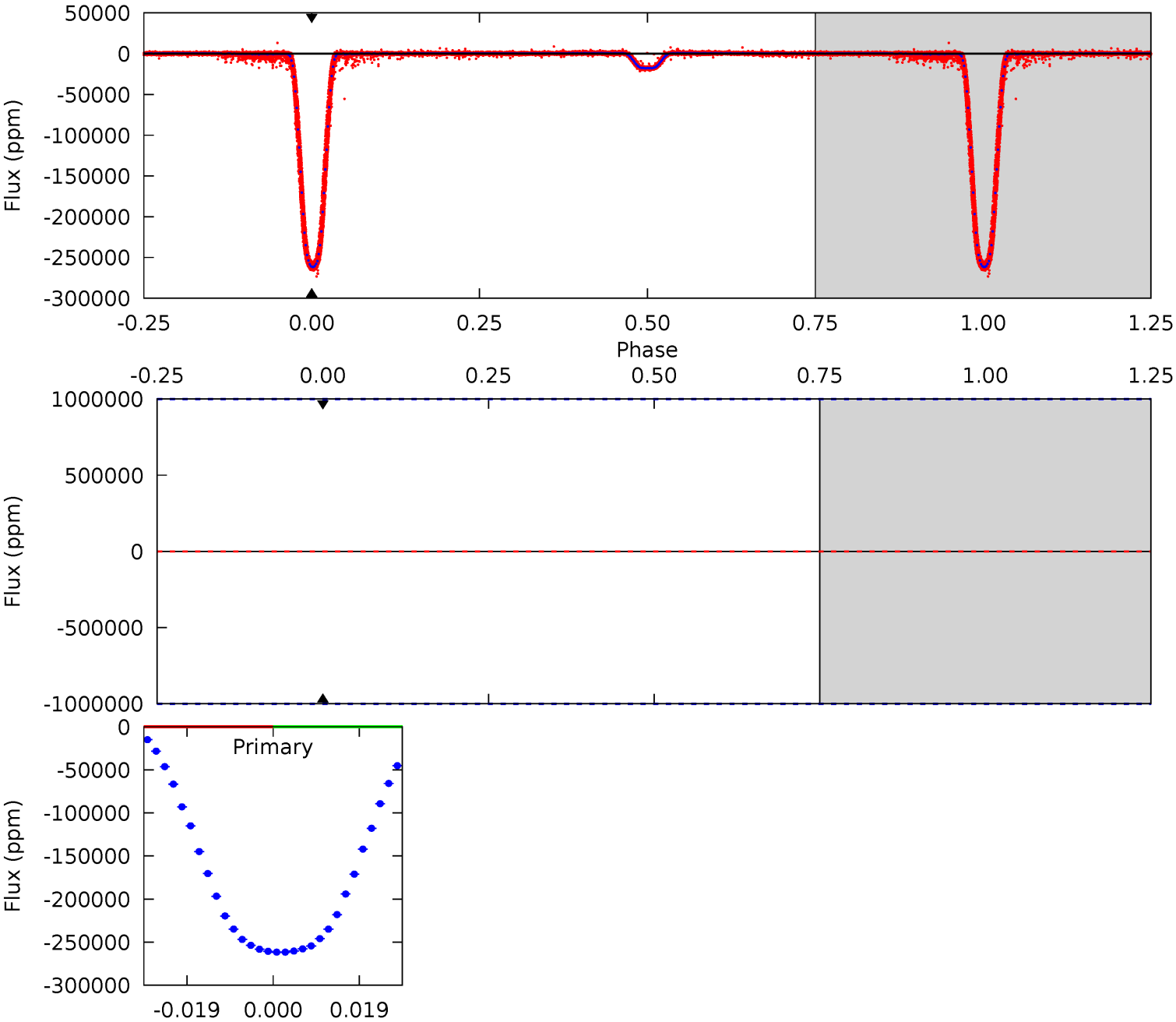
TCE 005039441-01 P= 2.151370 Days  $T_0=133.112731$  (BKJD)



# DV Model-Shift Uniqueness Test

005039441-01, P = 2.151370 Days, E = 130.958582 Days

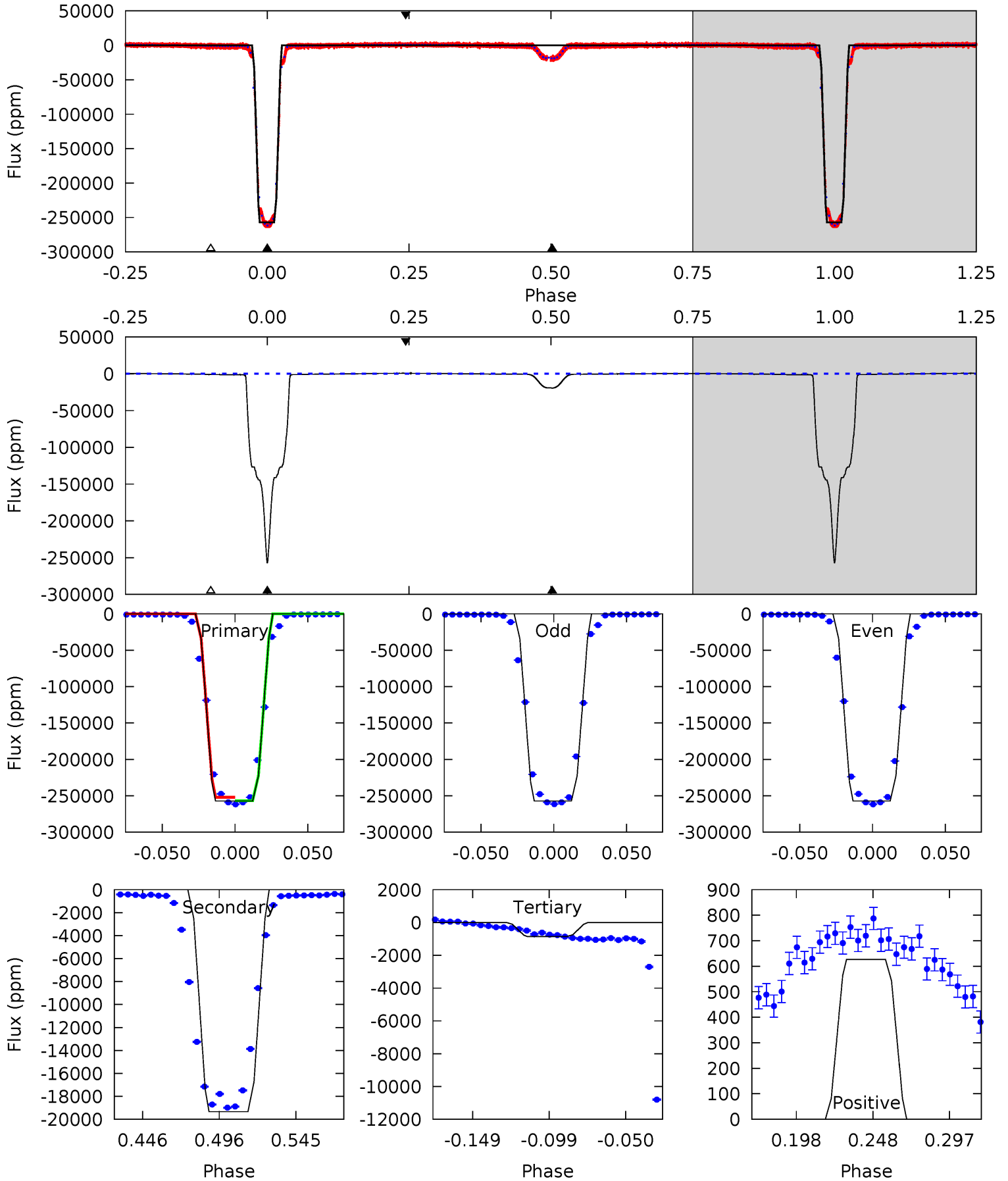
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

005039441-01, P = 2.151370 Days, E = 130.961361 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
8704	654.2	29.2	21.2	4.71	1.96	16.5	8674	8682	624.9	633.0	0.14	1.00	0.00	67.9



### Stellar Parameters For KIC 005039441

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6184^{+168}_{-186}$	$4.190^{+0.270}_{-0.180}$	$-0.600^{+0.300}_{-0.300}$	$1.257^{+0.346}_{-0.346}$	$0.891^{+0.126}_{-0.084}$	$0.632^{+1.020}_{-0.297}$
	+3%/-3%	+6%/-4%	+50%/-50%	+28%/-28%	+14%/-9%	+161%/-47%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 005039441-01 / KOI 6125.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$41.18^{+15.54}_{-14.82}$	$2391^{+208}_{-187}$	$-3219^{+9994}_{-3215}$	$-0.612^{+45.453}_{-35.394}$
Alt.	$-19331 \pm 30$	$69.56^{+16.80}_{-17.62}$	$2396^{+187}_{-205}$	$3591^{+287}_{-251}$	$2.236^{+1.719}_{-0.780}$

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

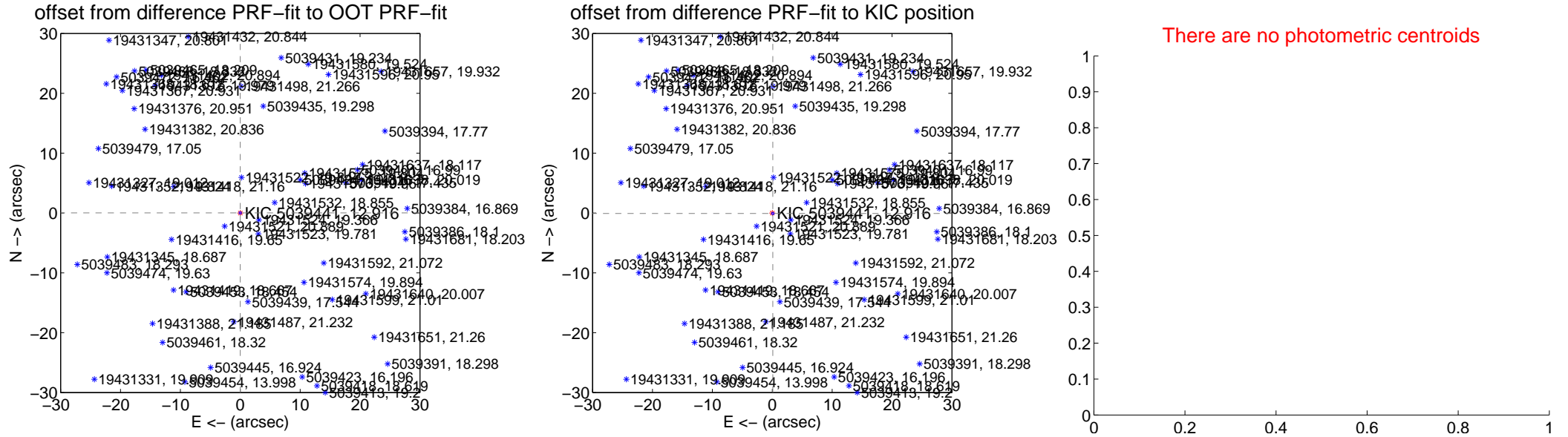
# DV Centroid Data

Supplemental centroid analysis for 005039441-01. Kepler magnitude: 12.92. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

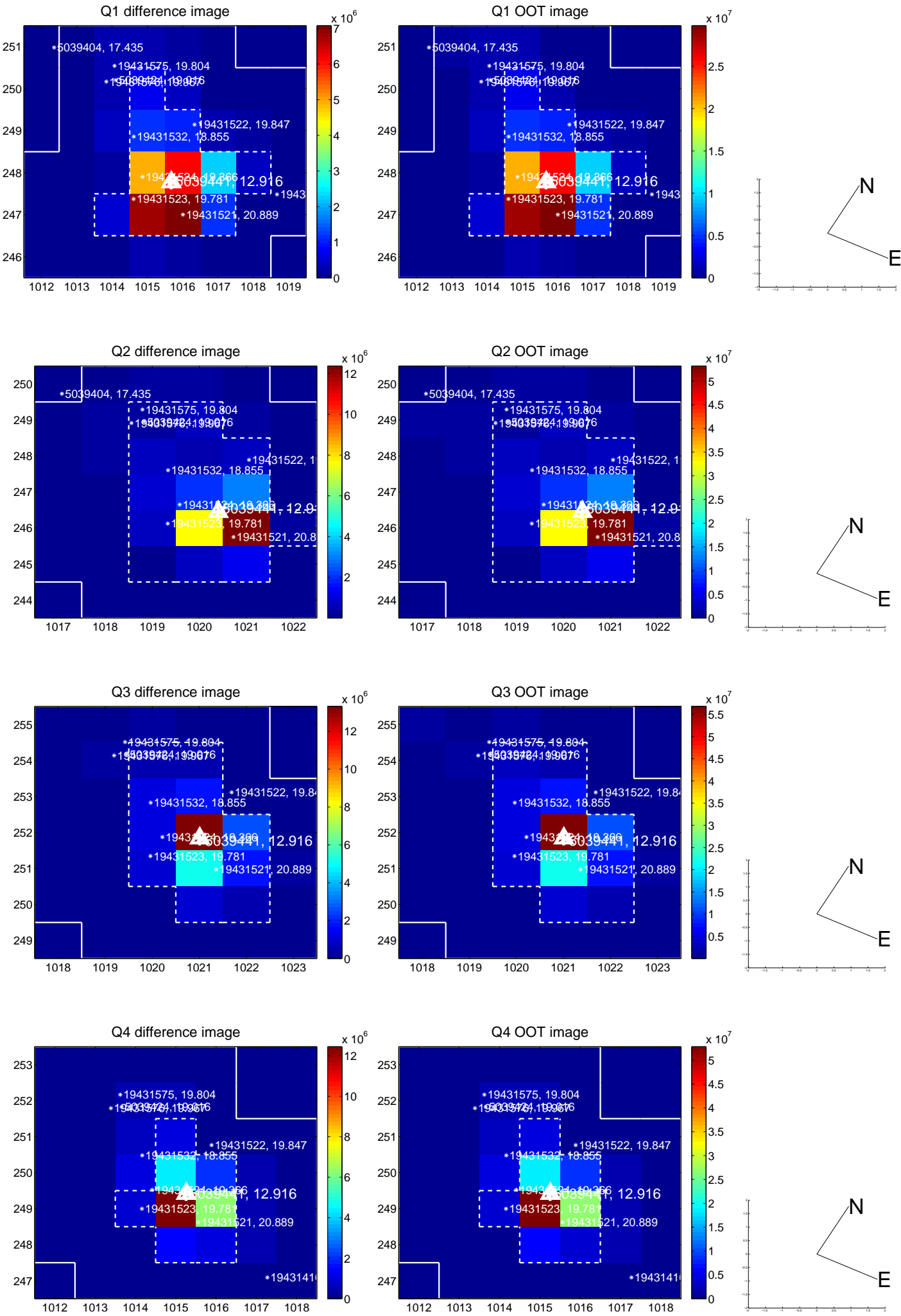
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.018 \pm 0.067$	0.26	$0.007 \pm 0.067$	$0.016 \pm 0.067$
PRF-fit source offset from KIC position	$0.118 \pm 0.068$	1.75	$-0.091 \pm 0.068$	$-0.075 \pm 0.067$
photometric centroid source offset	—	—	—	—

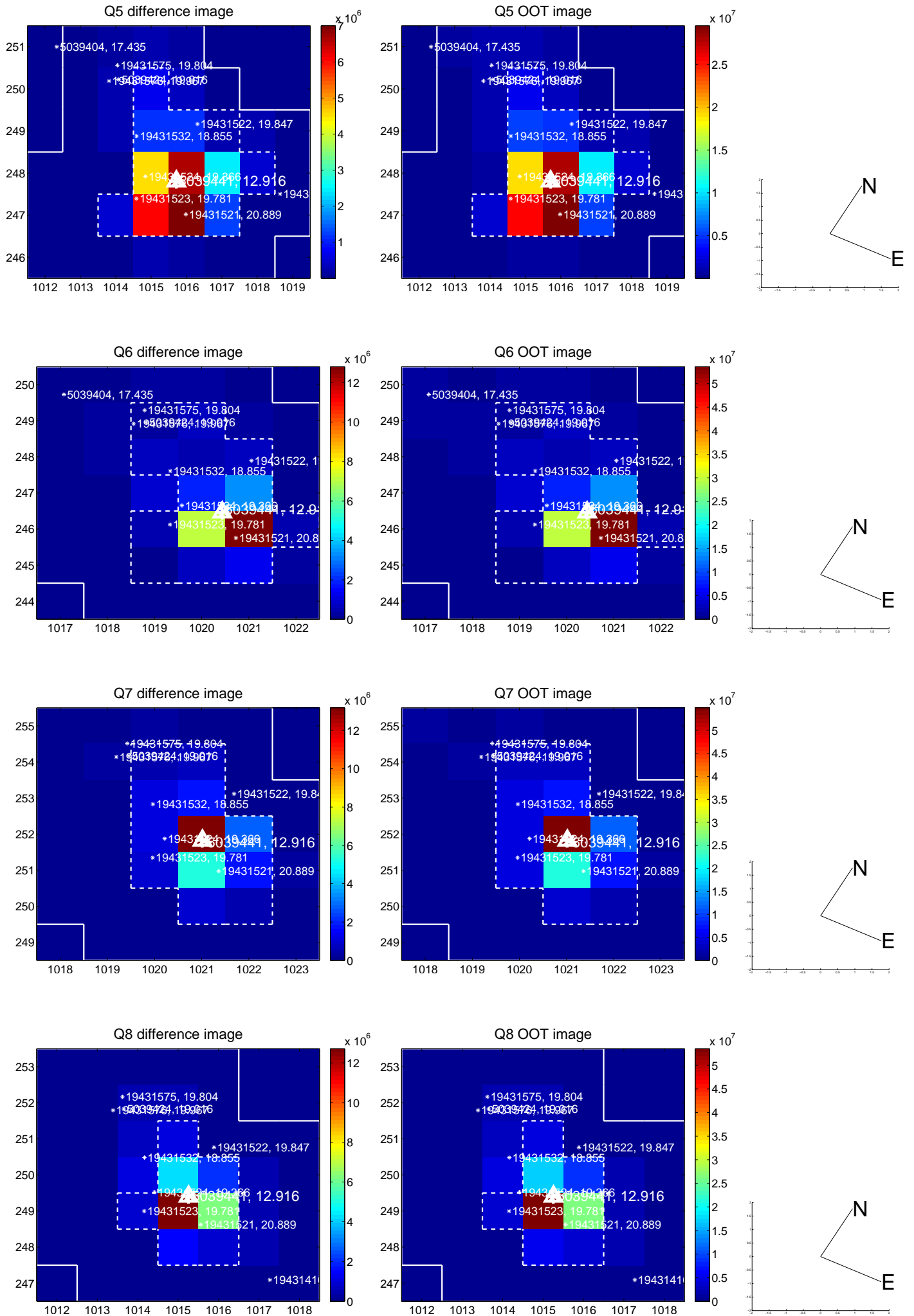


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

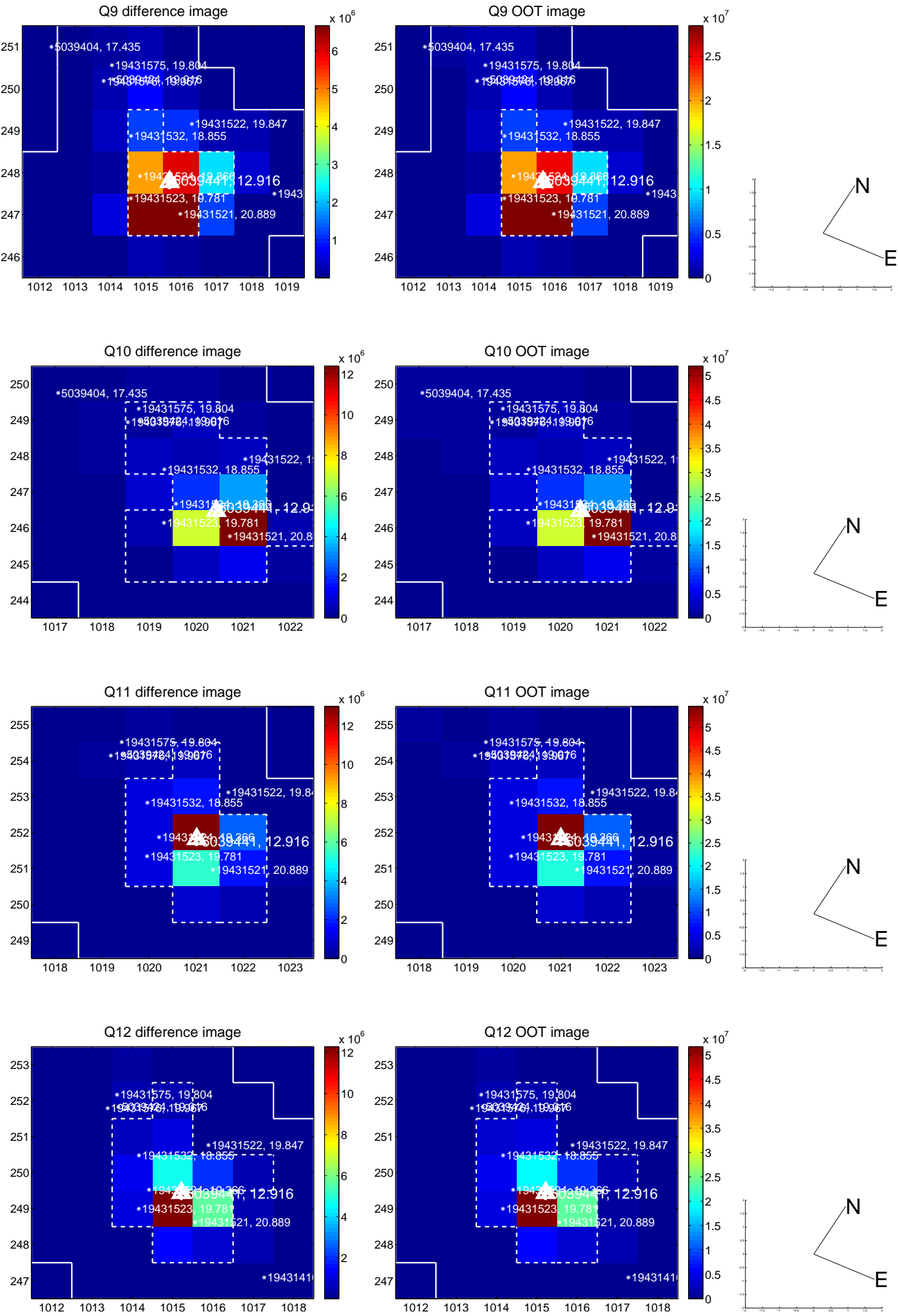


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

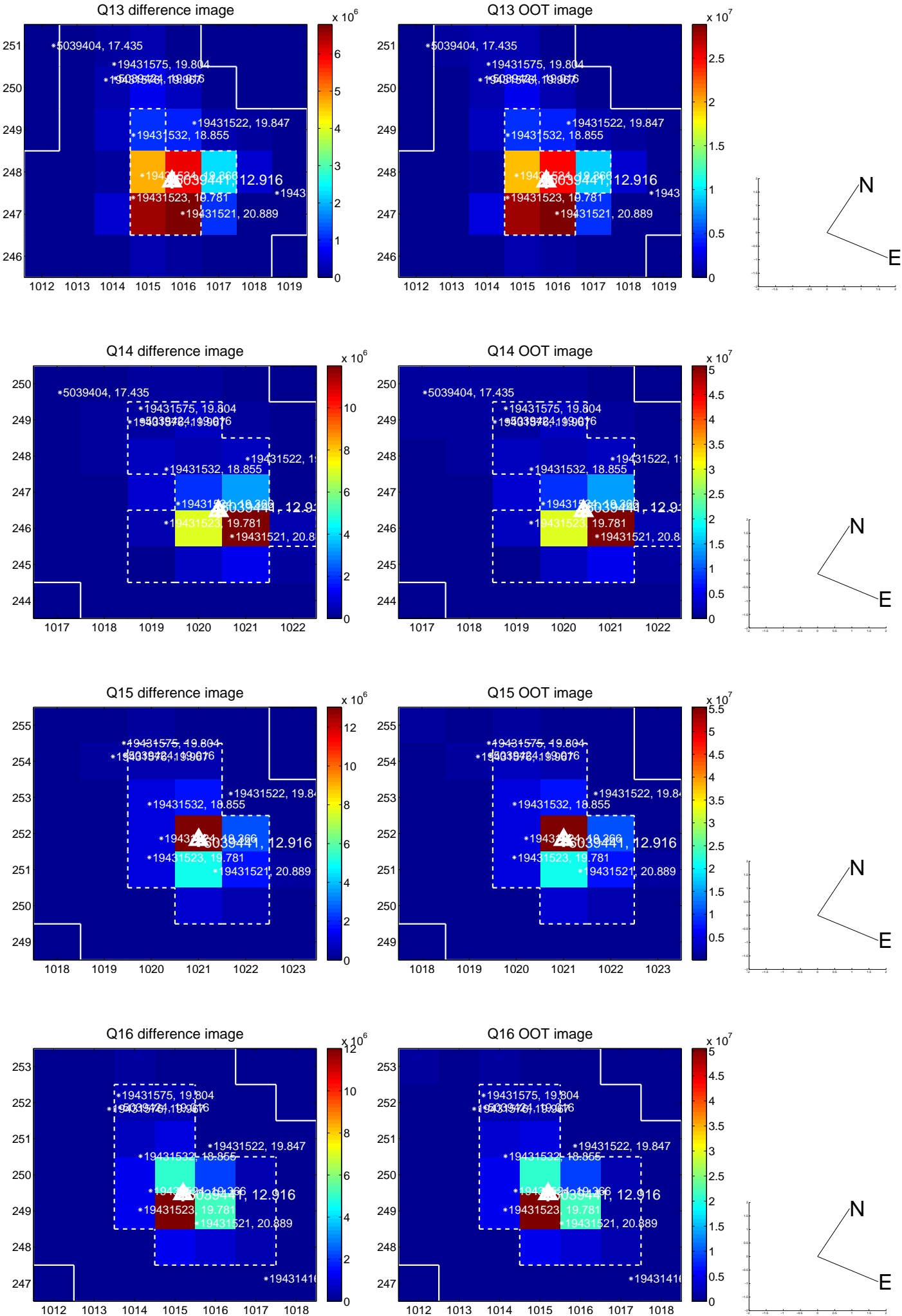




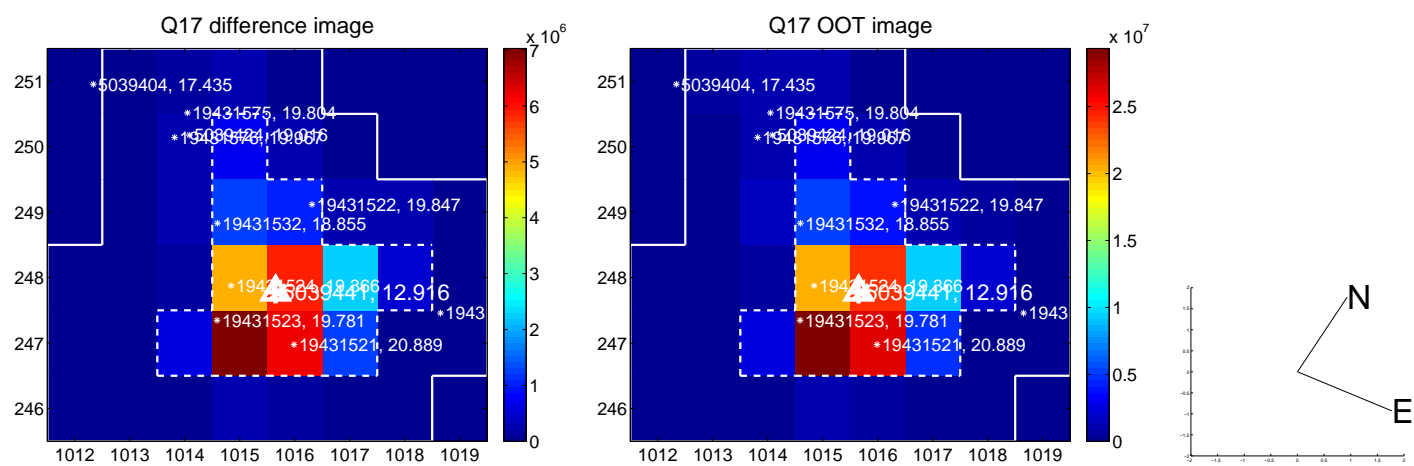
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



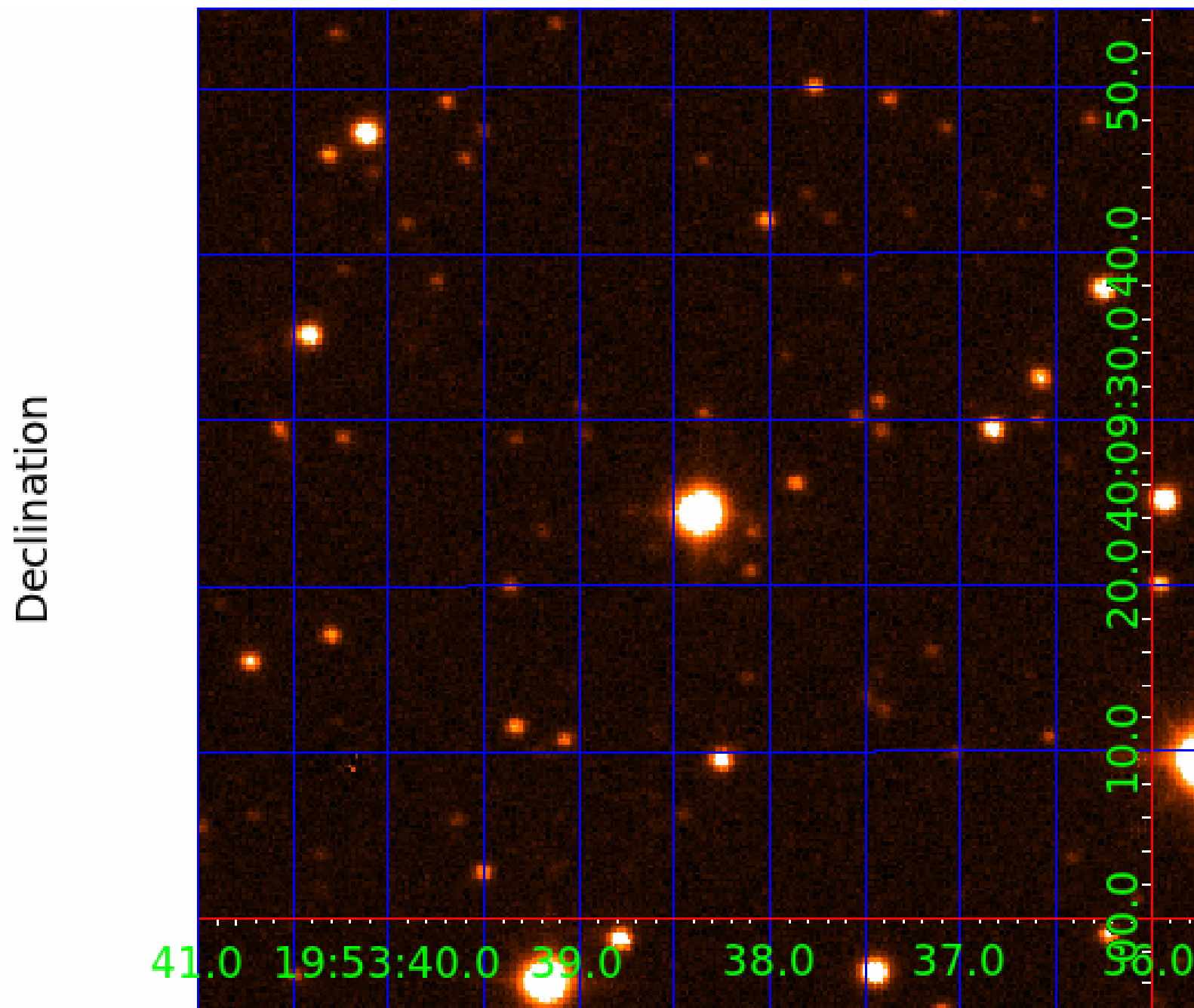
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.



UKIRT Image



# KIC 005039441

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005039441-01	OBS	6125.01	2.151370	133.109953	262110.9	2.500	19467.6	-1.0	1.26	6184	41.80	2098.50
005039441-02	OBS	No	4.302773	134.180033	19200.3	3.258	3812.8	1040.8	1.26	6184	19.51	832.78
005039441-03	OBS	No	4.302955	133.336392	9932.9	15.000	3619.6	-1.0	1.26	6184	12.58	832.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005039441-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
005039441-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005039441-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—RESIDUAL_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 005039441-02

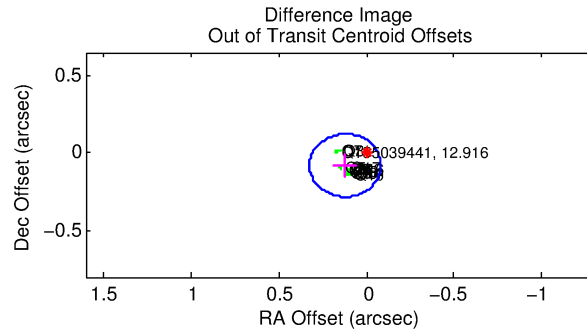
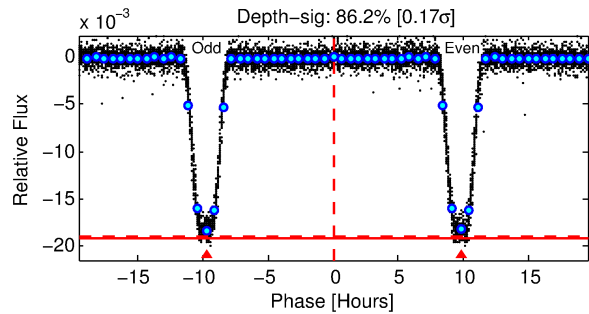
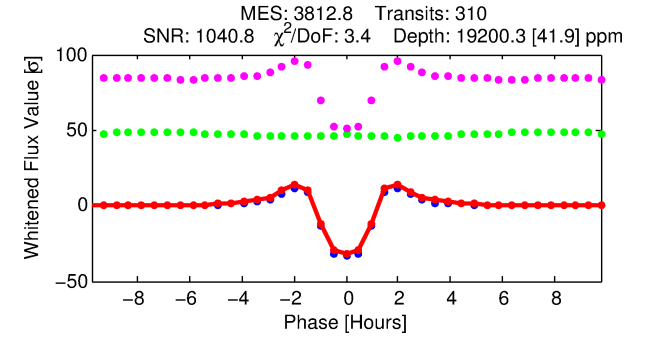
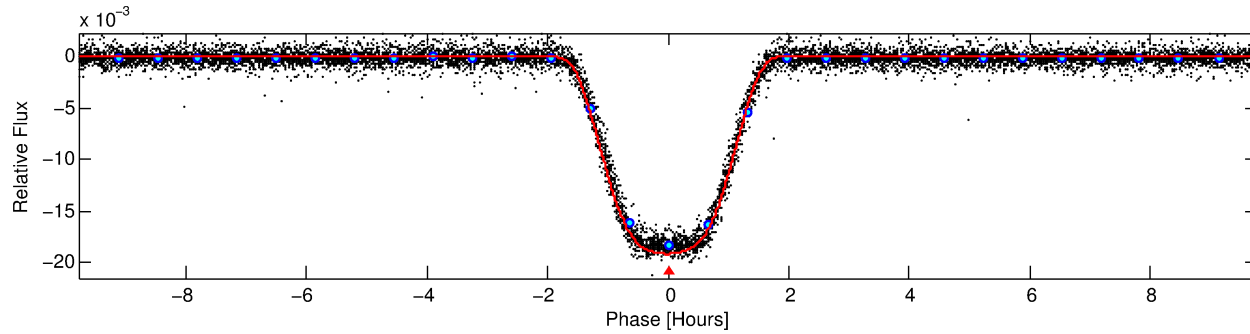
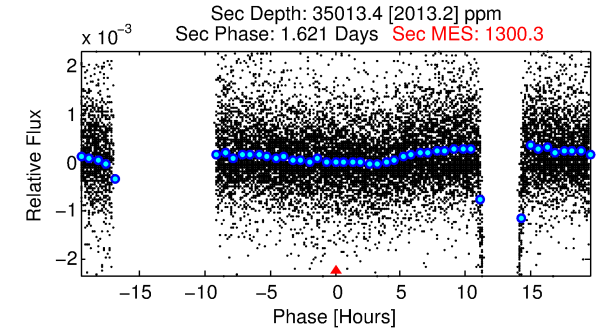
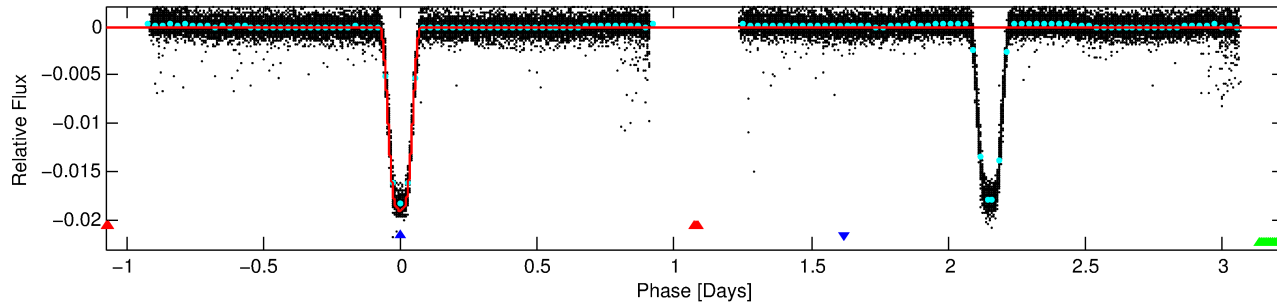
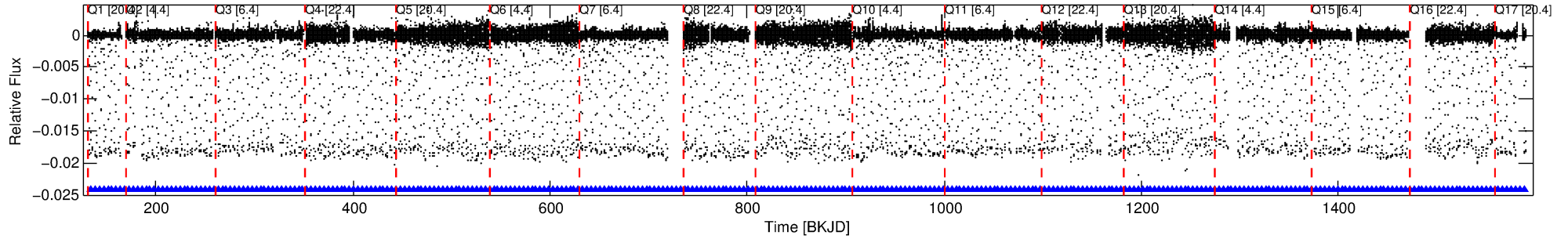
No Significant Match Found

# DV One-Page Summary

KIC: 5039441 Candidate: 2 of 3 Period: 4.303 d

KOI: K06125 Corr: No Ephemeris Match

Kp: 12.92 R\*: 1.26 Rs Teff: 6184.0 K Logg: 4.19 Fe/H: -0.600



## DV Fit Results:

Period = 4.30277 [0.00000] d  
Epoch = 134.1800 [0.0001] BKJD  
Rp/R\* = 0.1423 [0.0002]  
a/R\* = 8.16 [0.03]  
b = 0.81 [0.00]  
Seff = 832.78 [390.55]  
Teq = 1370 [161] K  
Rp = 19.51 [5.37] Re  
a = 0.0499 [0.0138] AU  
Ag = 125.76 [57.46] [2.17σ]  
Teff = 7092 [236] K [20.02σ]

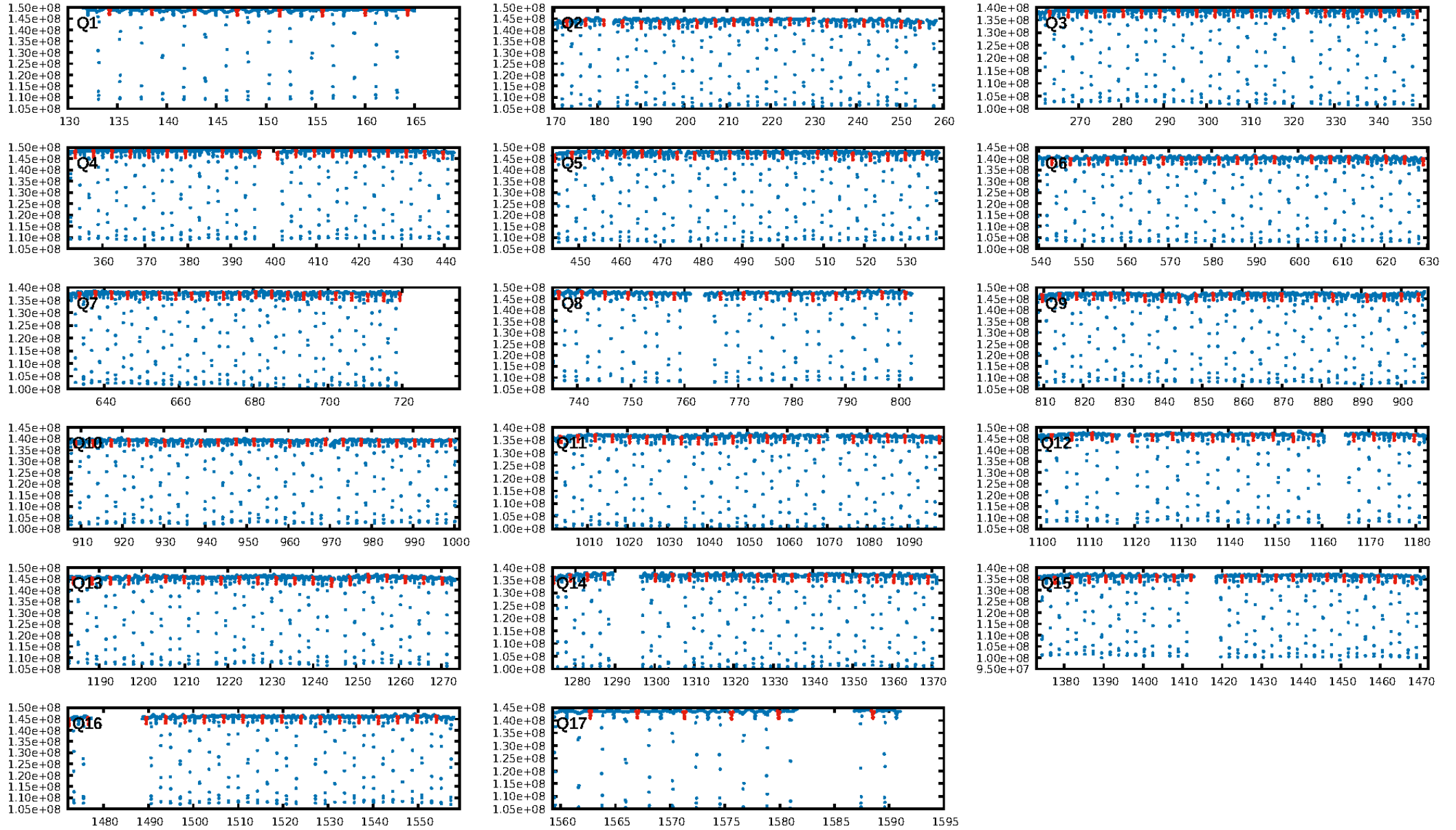
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.57σ]  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [296/296]  
GhostDiagnostic-chr: 2.407  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.146 arcsec [2.16σ]  
KicOffset-rm: 0.165 arcsec [2.34σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:30:46 Z

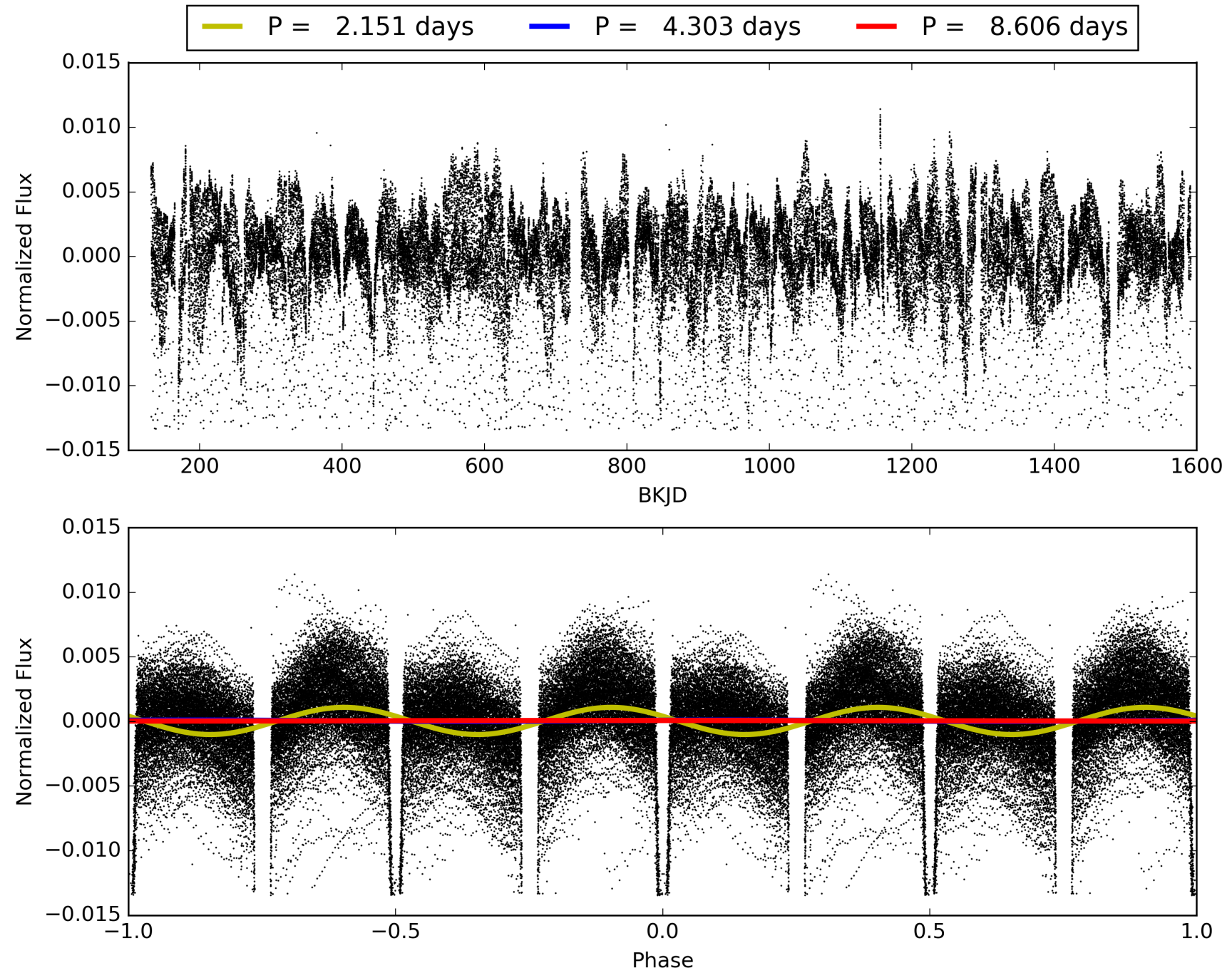
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005039441-02, PDC Light Curves





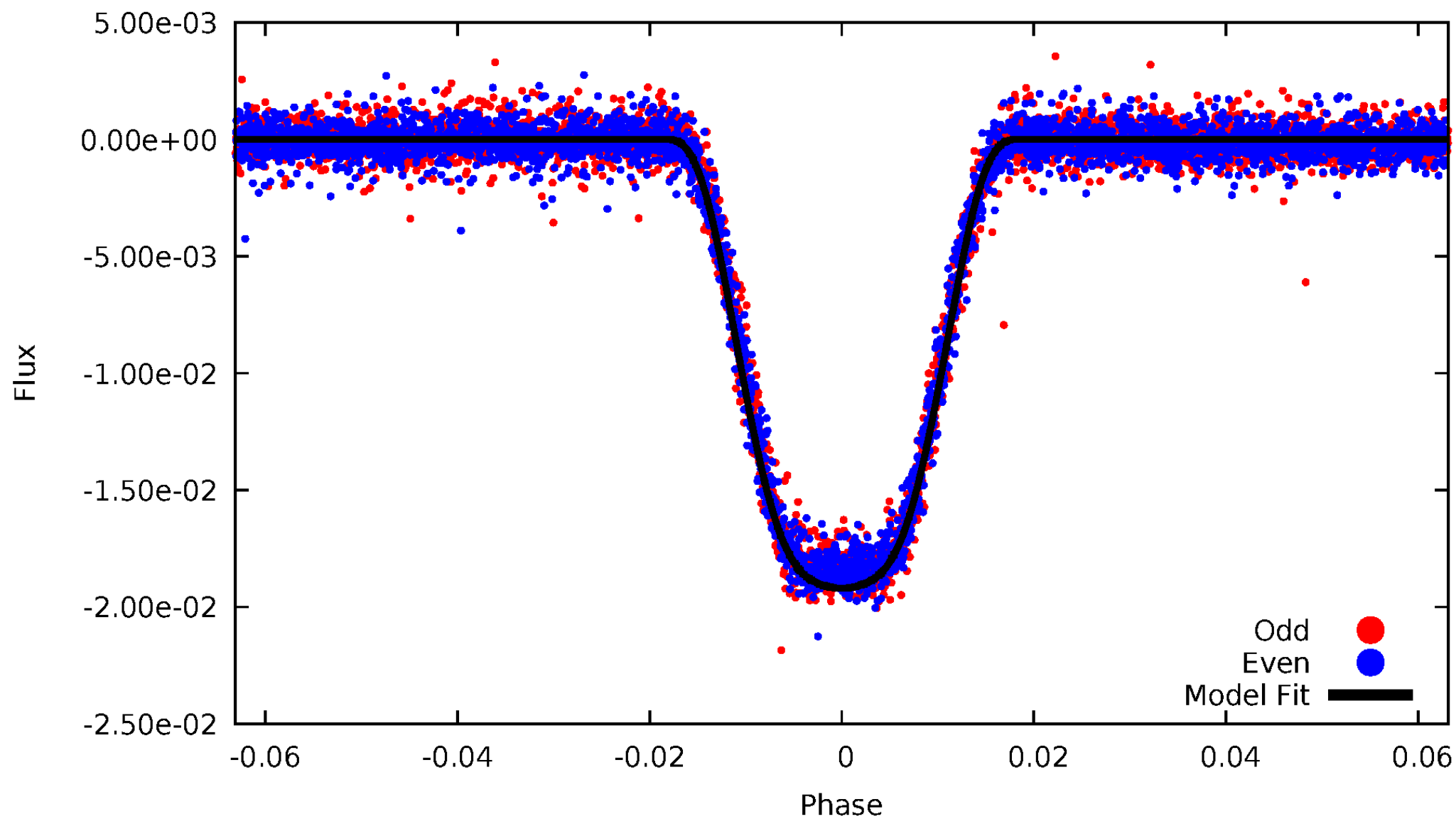
TCE 005039441-02





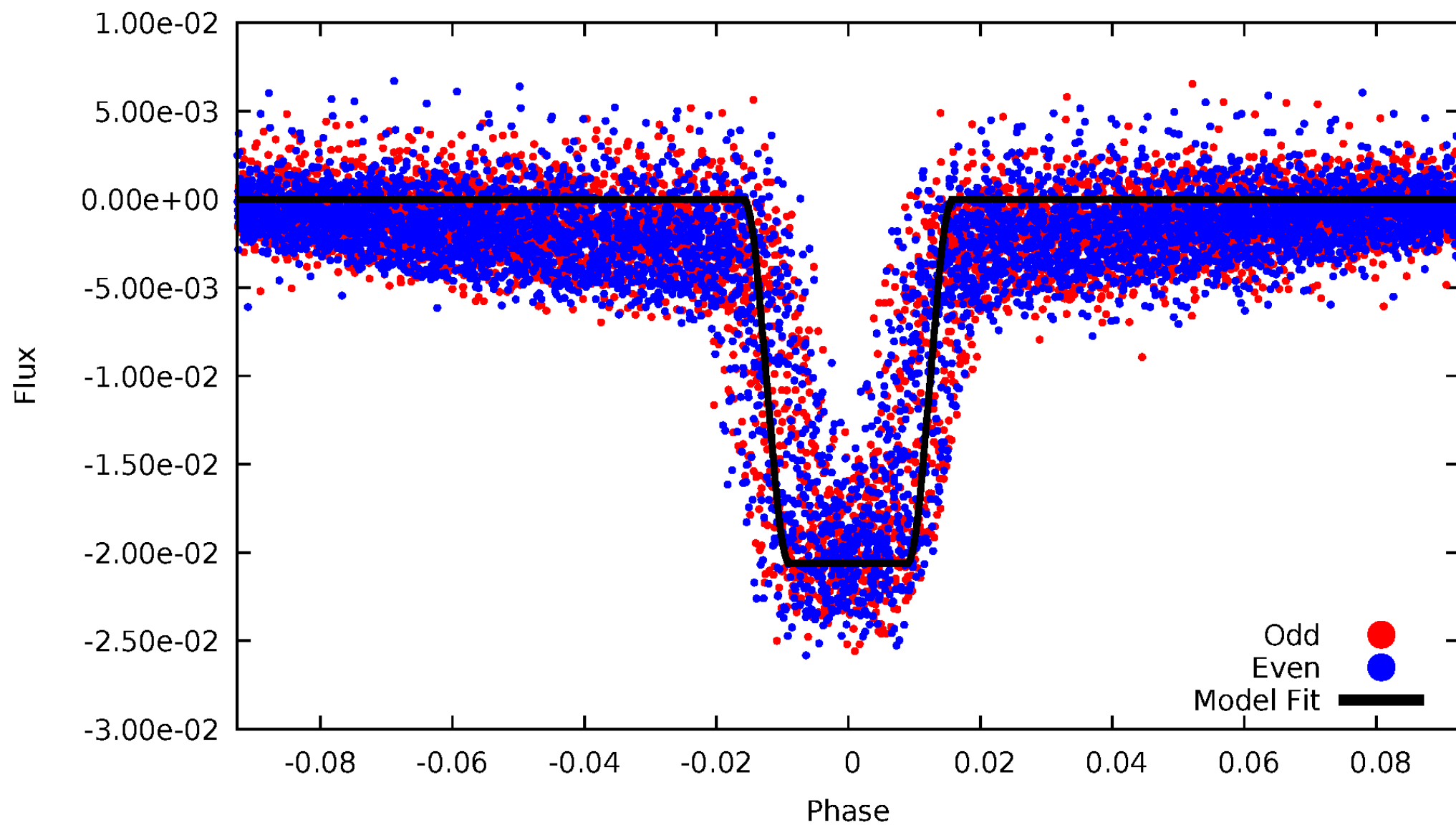
# DV Odd/Even

TCE 005039441-02



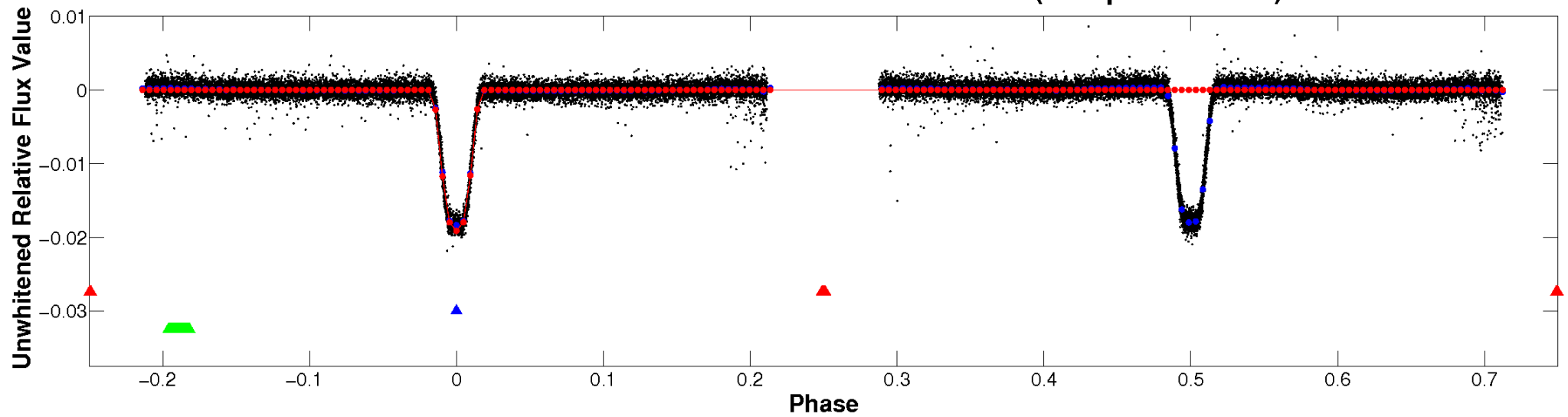
# ALT Odd/Even

TCE 005039441-02

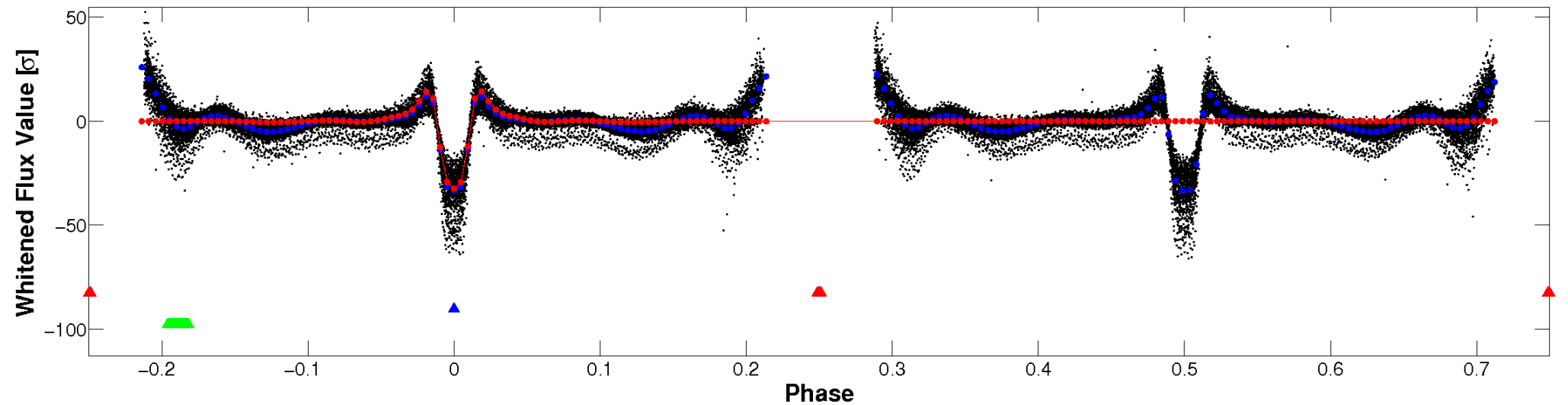


# Non-Whitened Vs. Whitened Light Curve

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

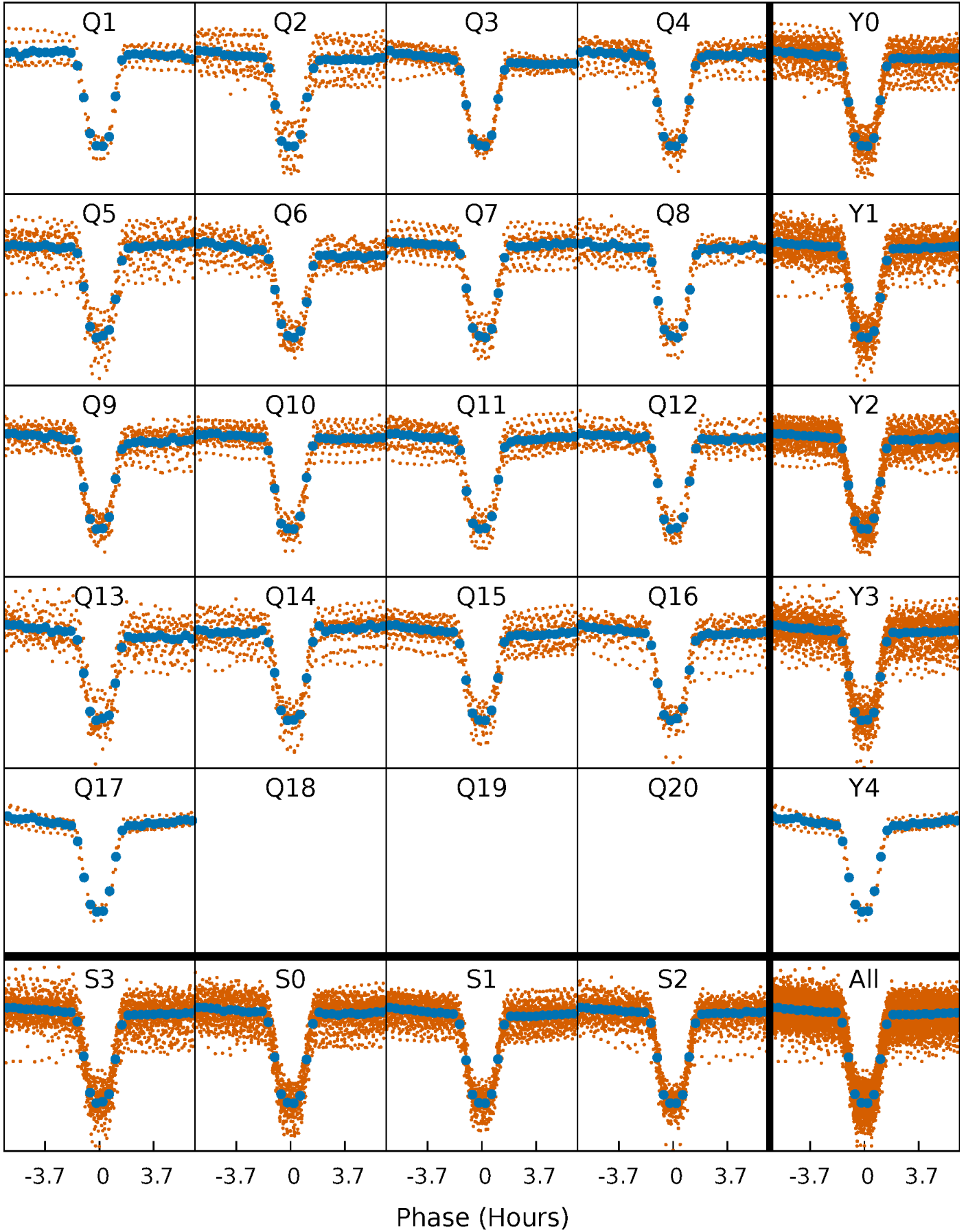


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



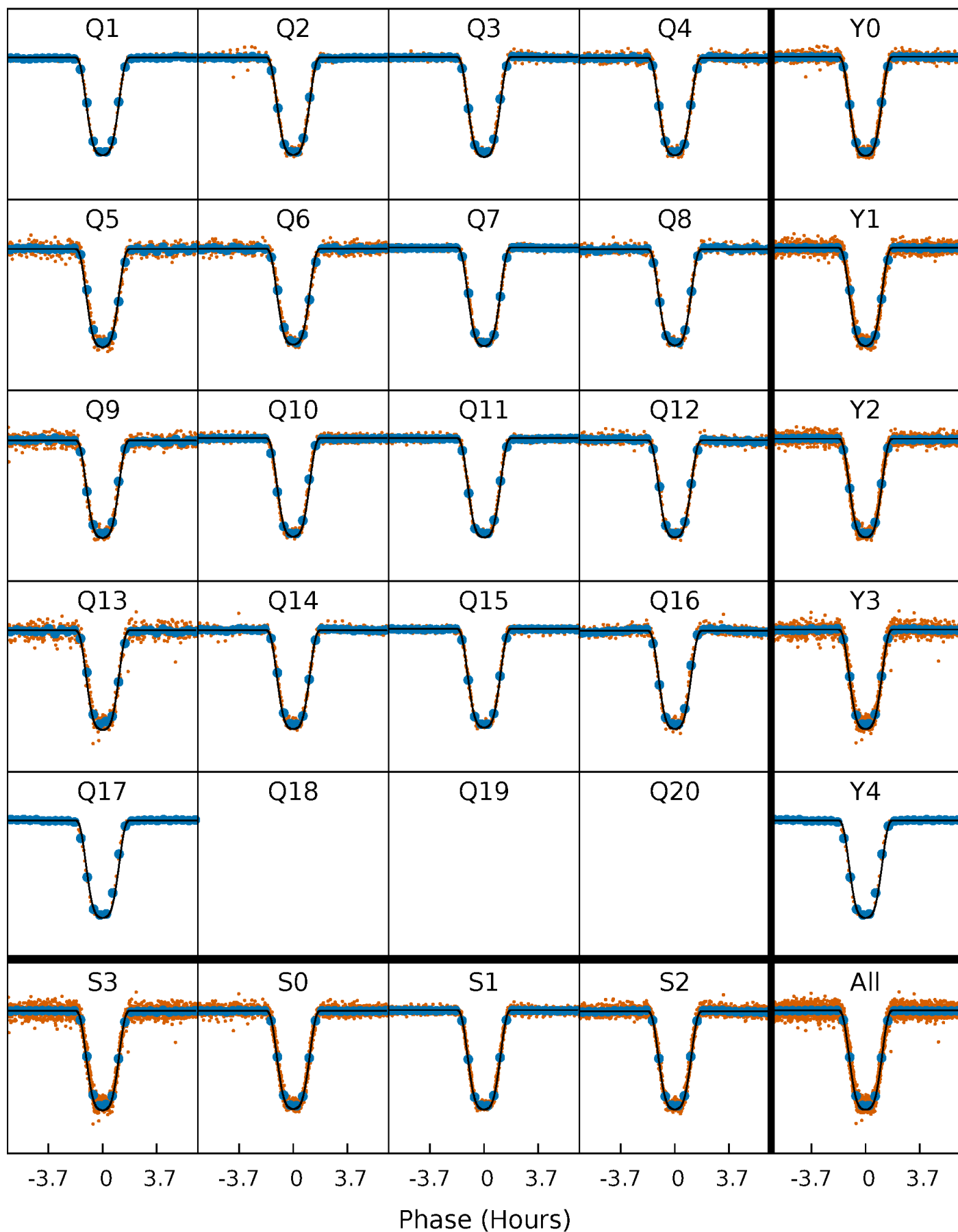
# PDC Quarter-Phased Transit Curves

TCE 005039441-02   P= 4.302773 Days    $T_0=134.180033$  (BKJD)



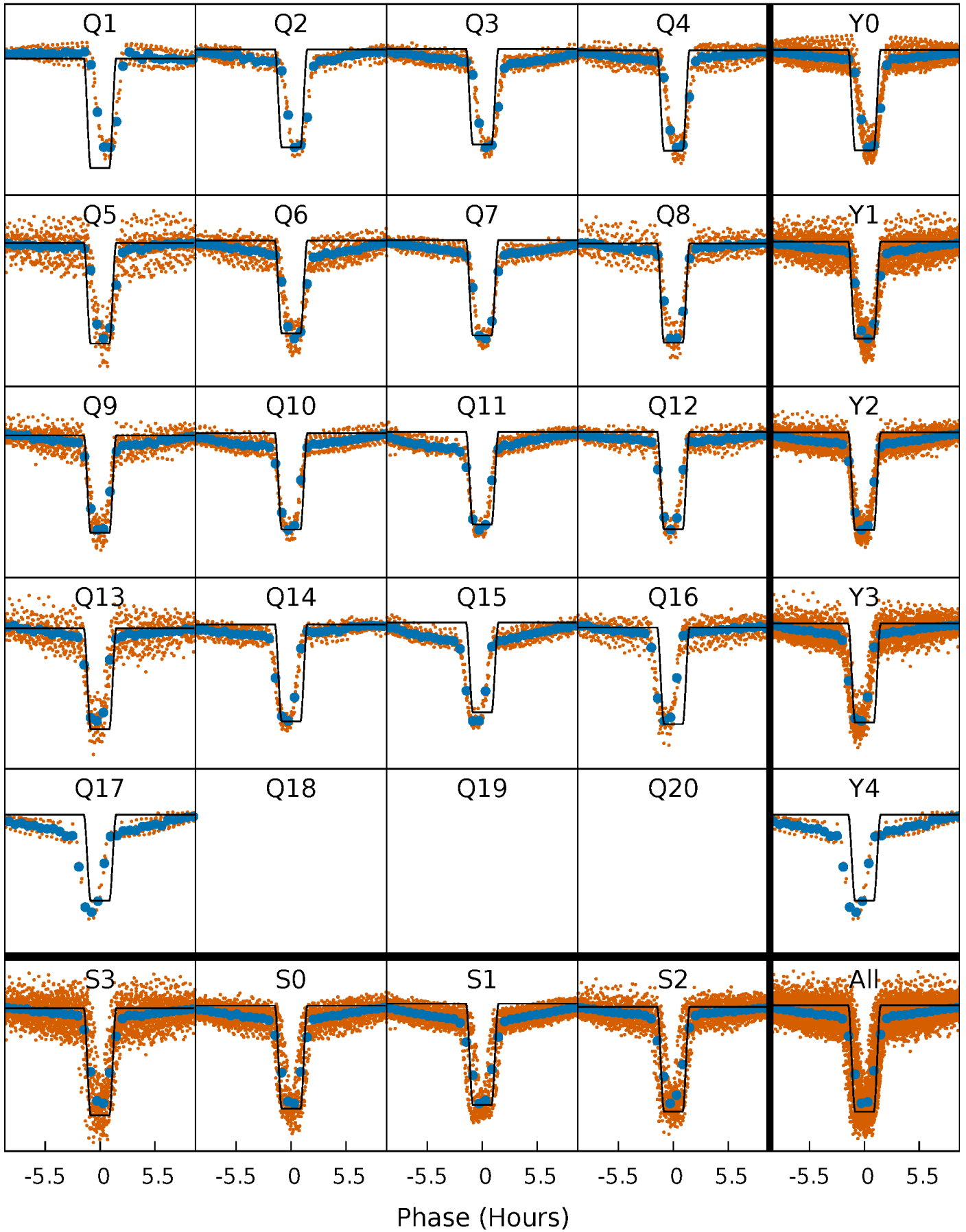
# DV Quarter-Phased Transit Curves

TCE 005039441-02   P= 4.302773 Days    $T_0=134.180033$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

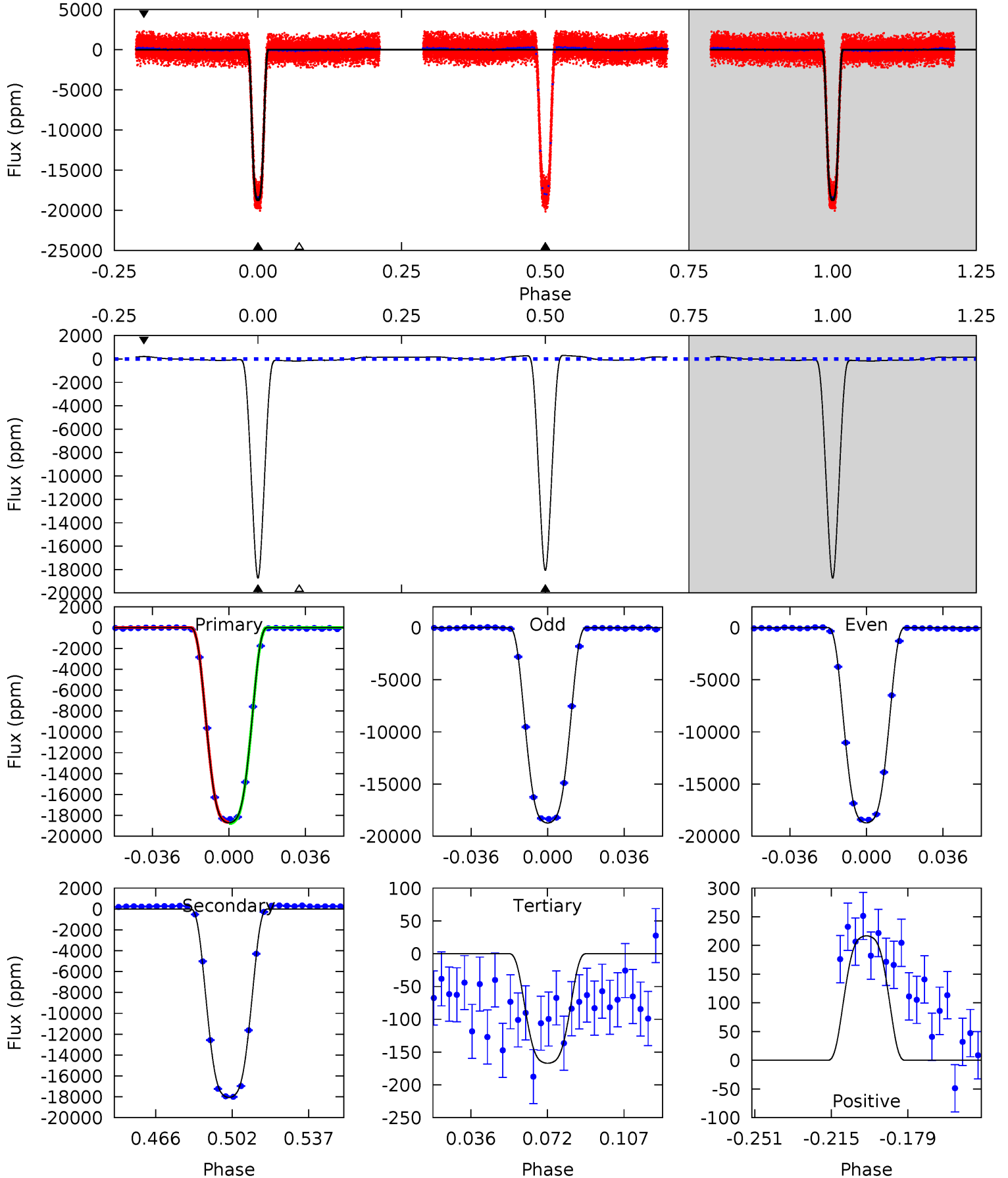
TCE 005039441-02     $P = 4.302955$  Days     $T_0 = 134.150018$  (BKJD)



# DV Model-Shift Uniqueness Test

005039441-02, P = 4.302773 Days, E = 129.877260 Days

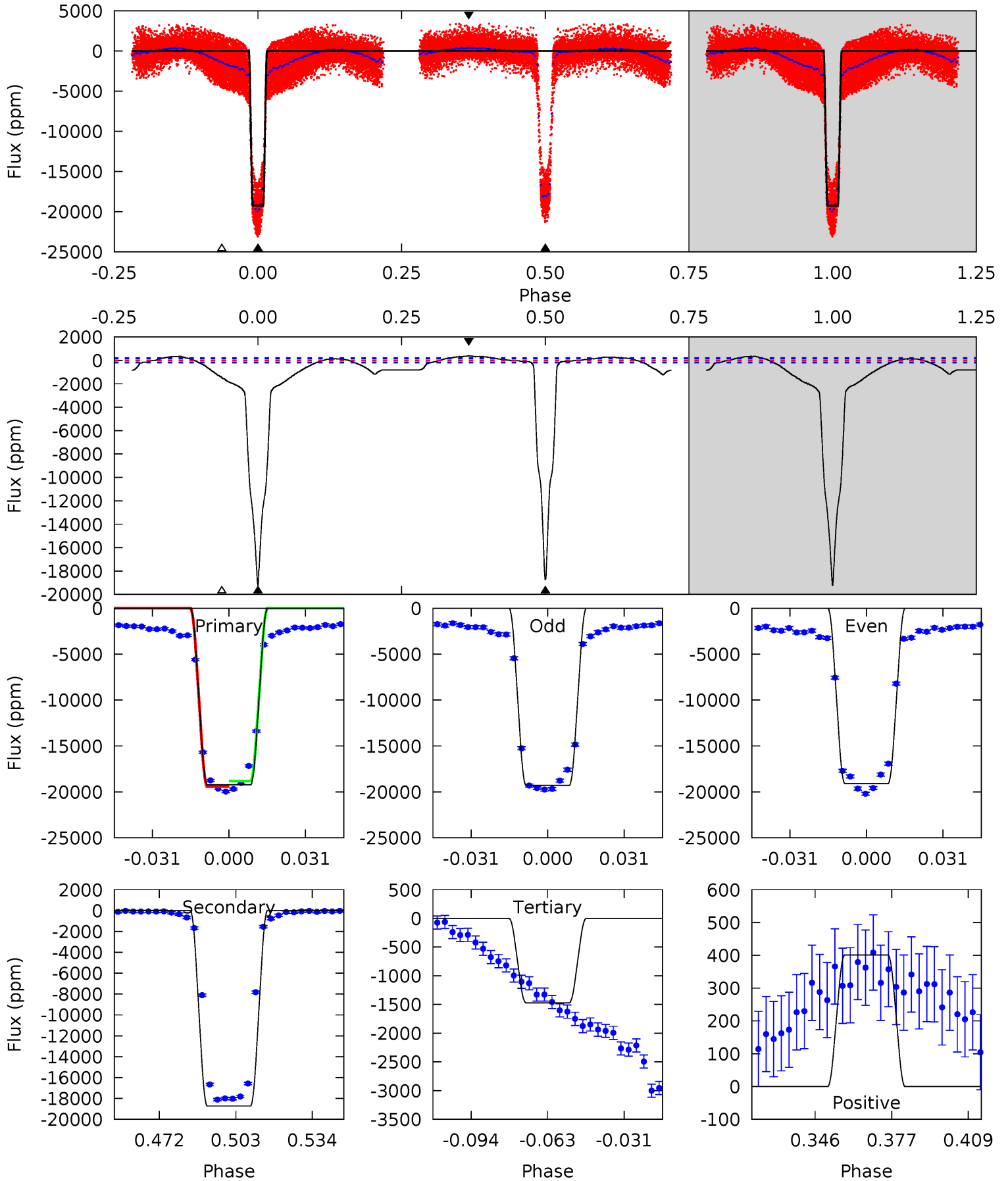
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1502	1450	13.4	17.4	4.78	2.10	9.88	1489	1485	1437	1433	0.25	0.99	0.02	4.62



# Alt Model-Shift Uniqueness Test

005039441-02, P = 4.302955 Days, E = 129.847063 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
500.9	487.4	38.3	10.4	4.80	2.15	15.7	462.6	490.4	449.2	477.0	2.66	0.99	0.02	8.15





### Stellar Parameters For KIC 005039441

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6184^{+168}_{-186}$	$4.190^{+0.270}_{-0.180}$	$-0.600^{+0.300}_{-0.300}$	$1.257^{+0.346}_{-0.346}$	$0.891^{+0.126}_{-0.084}$	$0.632^{+1.020}_{-0.297}$
	+3%/-3%	+6%/-4%	+50%/-50%	+28%/-28%	+14%/-9%	+161%/-47%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 005039441-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-18072 \pm 12$	$19.28^{+3.31}_{-3.00}$	$1899^{+156}_{-163}$	$6036^{+159}_{-175}$	$67^{+30}_{-17}$
Alt.	$-18723 \pm 38$	$19.75^{+3.07}_{-3.00}$	$1905^{+144}_{-157}$	$6054^{+162}_{-180}$	$67^{+26}_{-16}$

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

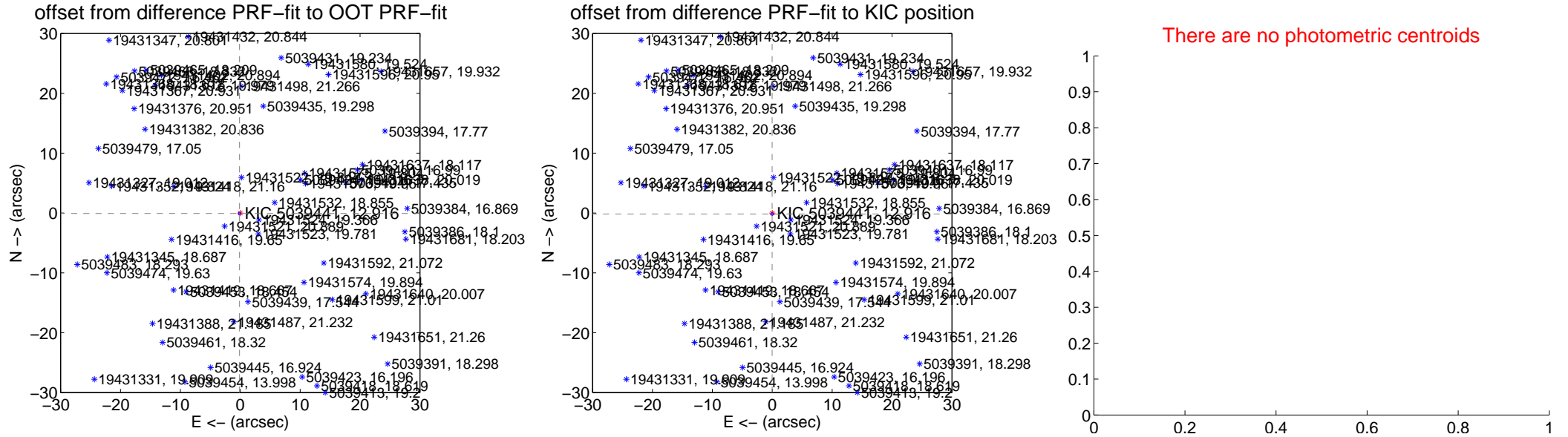
## DV Centroid Data

Supplemental centroid analysis for 005039441-02. Kepler magnitude: 12.92. Transit SNR 1040.75

There are 17 quarters with good PRF difference image offsets

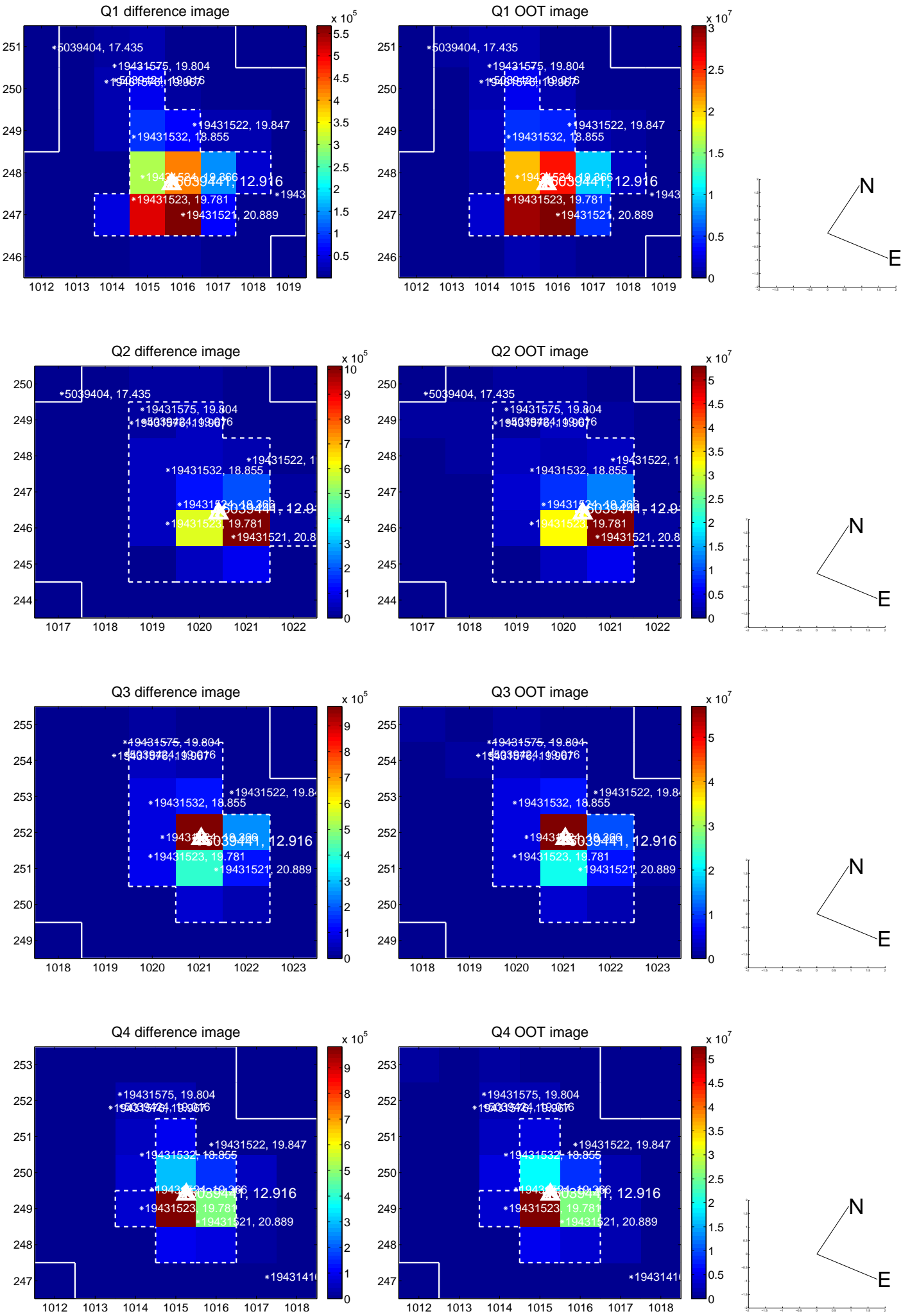
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.146 \pm 0.068$	2.16	$0.122 \pm 0.067$	$-0.080 \pm 0.069$
PRF-fit source offset from KIC position	$0.165 \pm 0.070$	2.34	$0.026 \pm 0.068$	$-0.163 \pm 0.071$
photometric centroid source offset	—	—	—	—

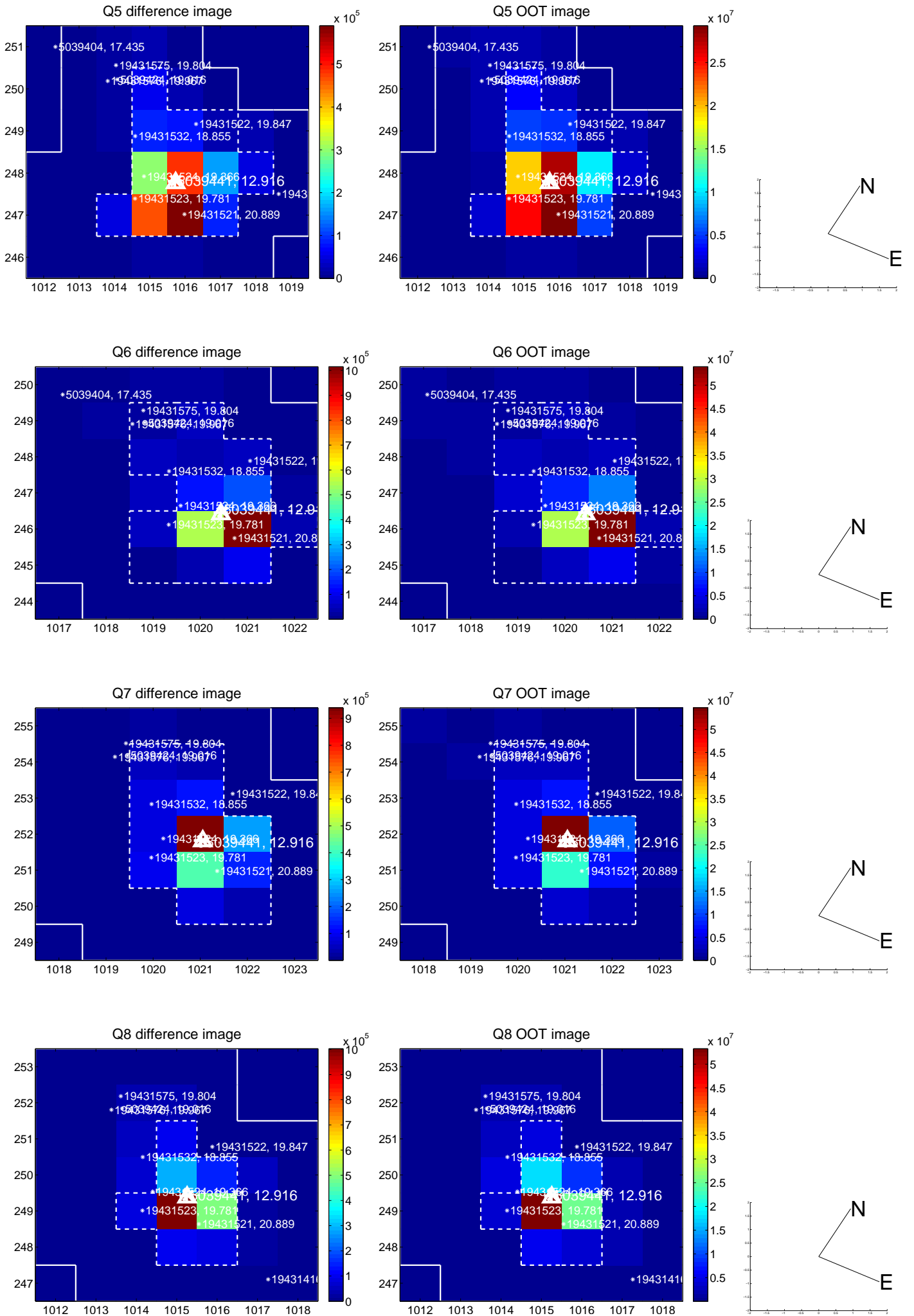


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

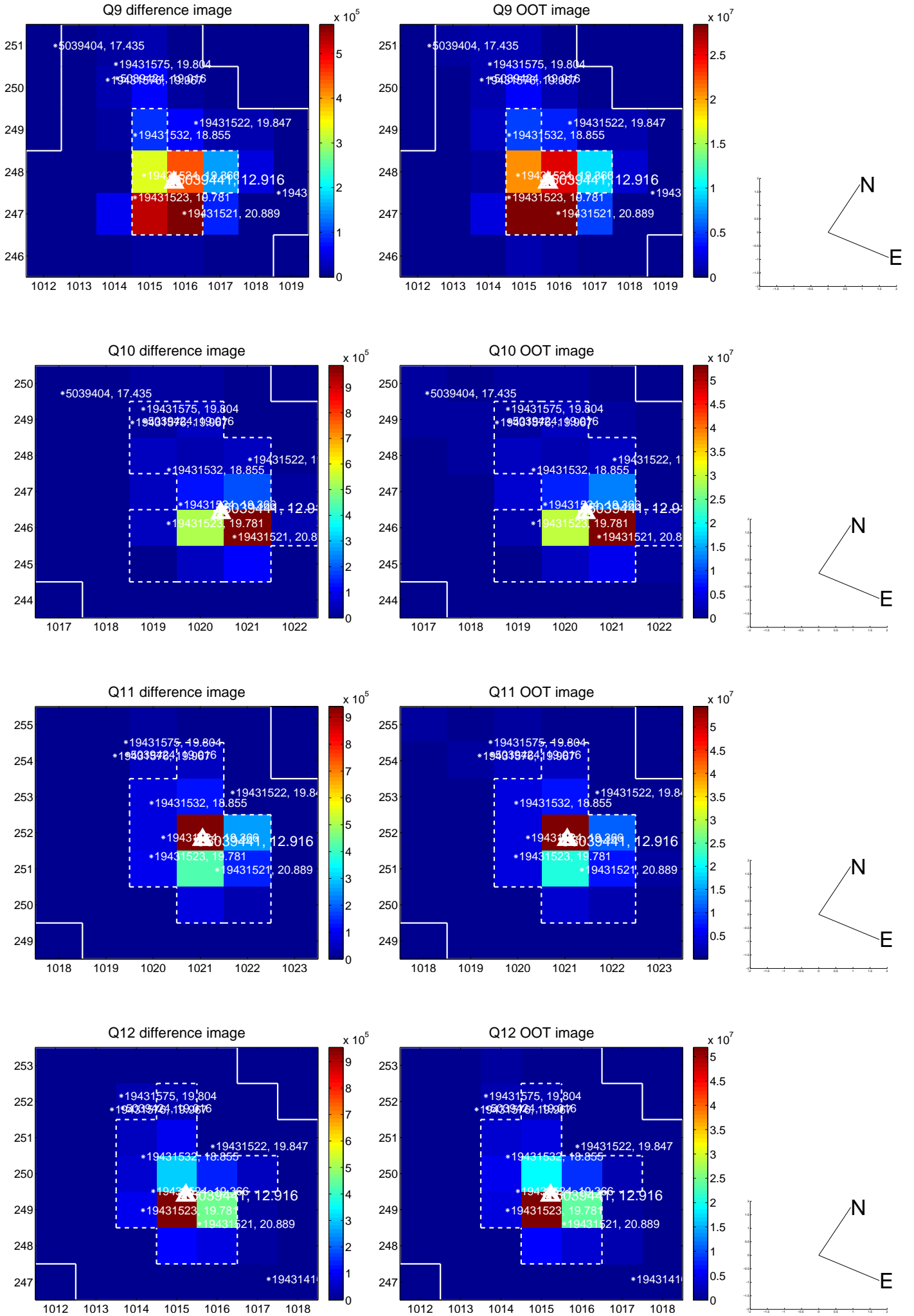
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



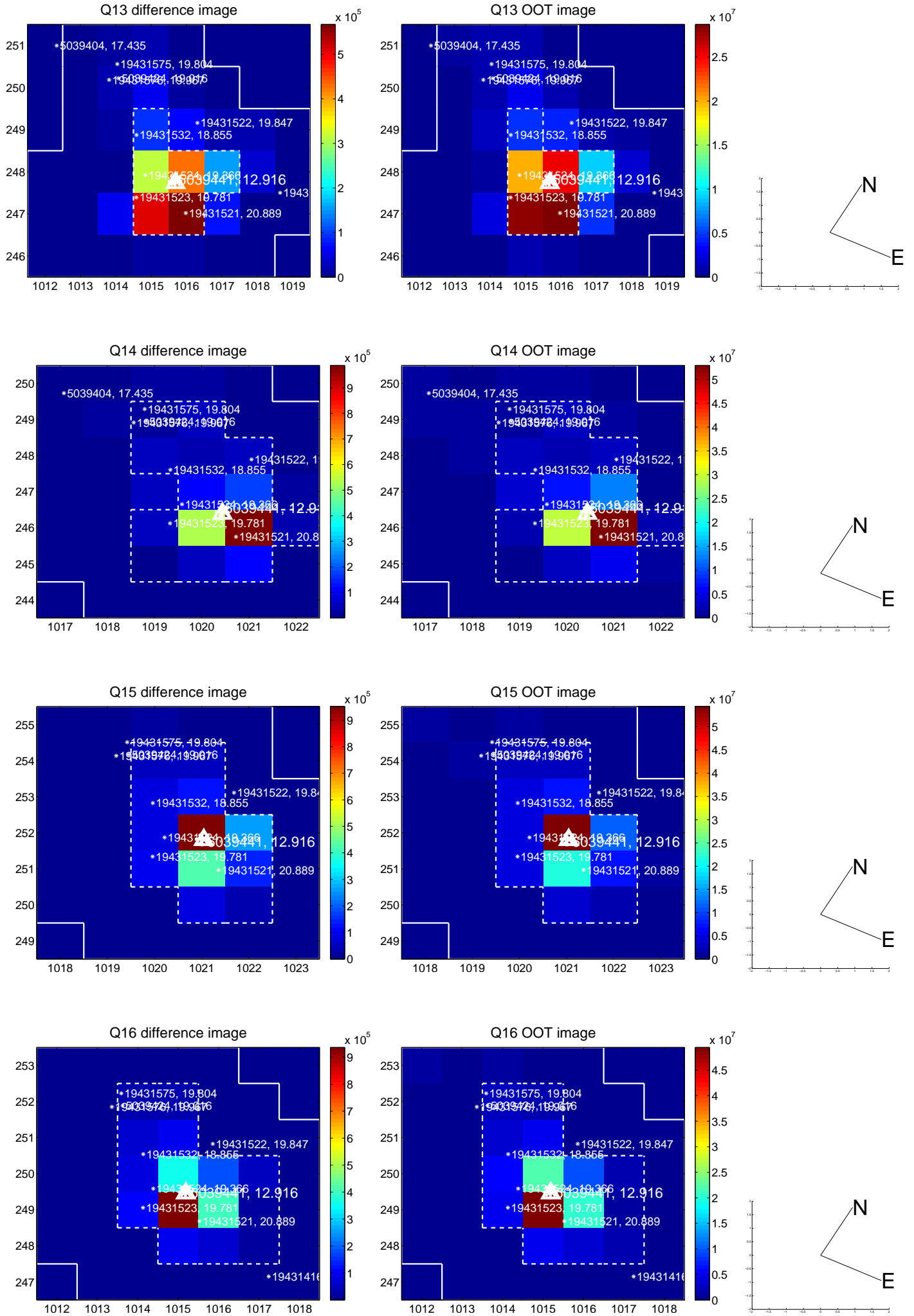
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



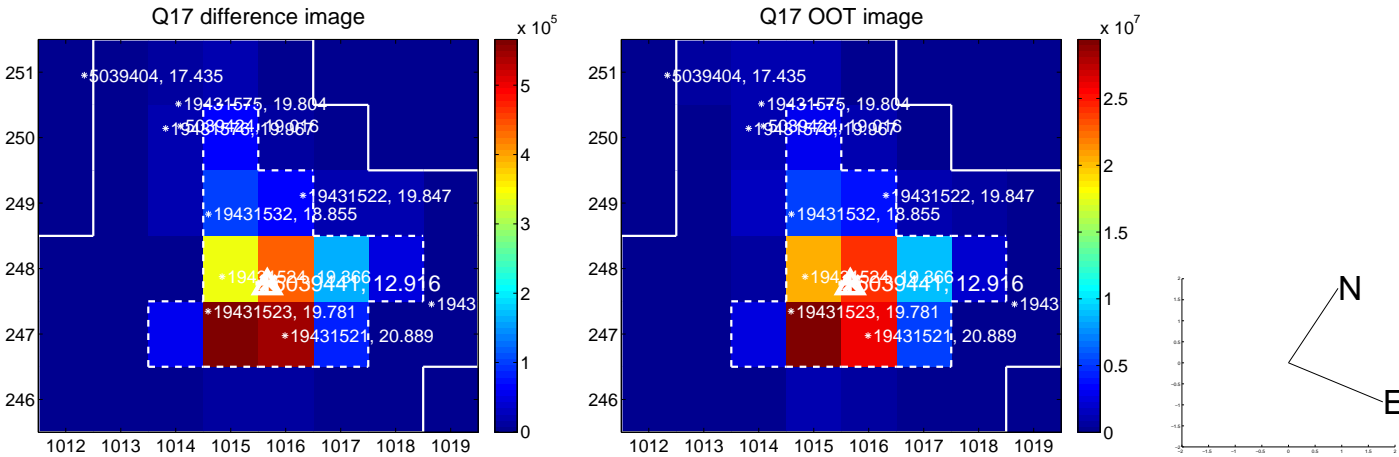
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

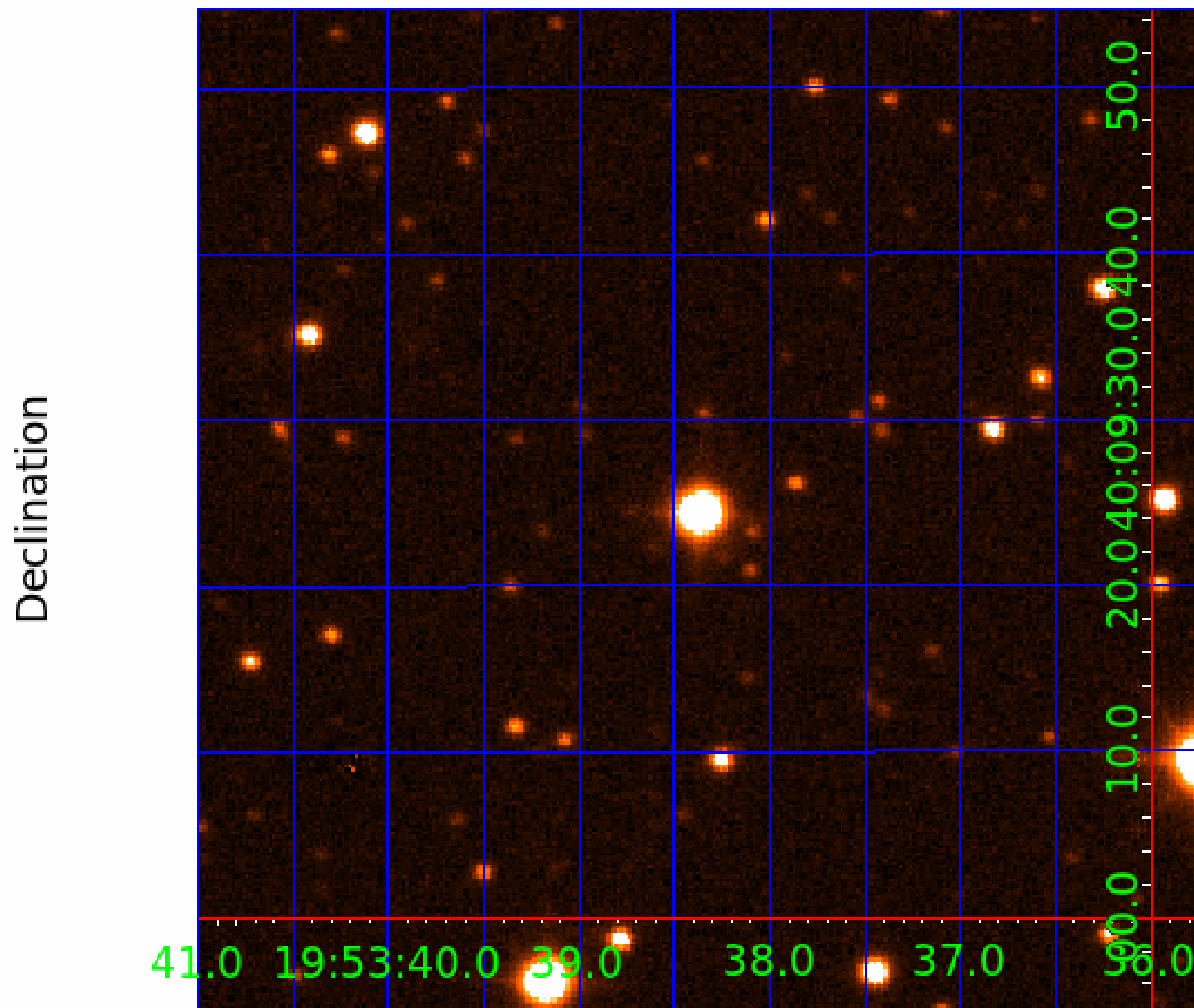


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image





# KIC 005039441

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005039441-01	OBS	6125.01	2.151370	133.109953	262110.9	2.500	19467.6	-1.0	1.26	6184	41.80	2098.50
005039441-02	OBS	No	4.302773	134.180033	19200.3	3.258	3812.8	1040.8	1.26	6184	19.51	832.78
005039441-03	OBS	No	4.302955	133.336392	9932.9	15.000	3619.6	-1.0	1.26	6184	12.58	832.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005039441-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
005039441-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005039441-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—RESIDUAL_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 005039441-03

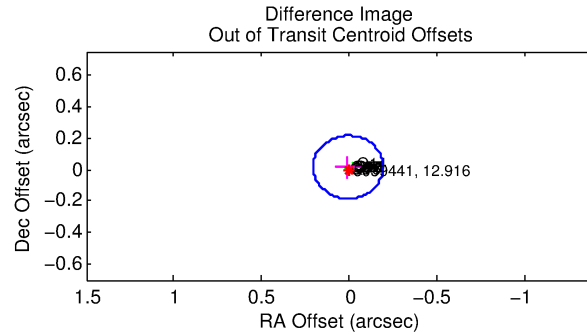
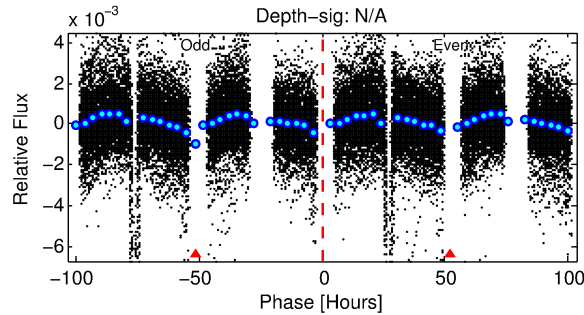
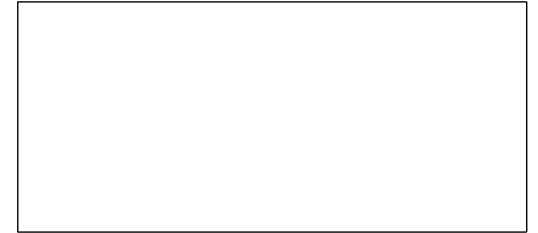
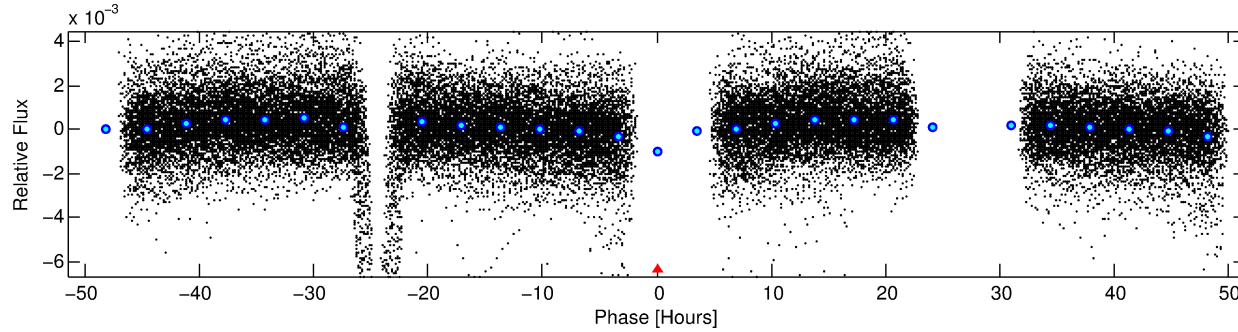
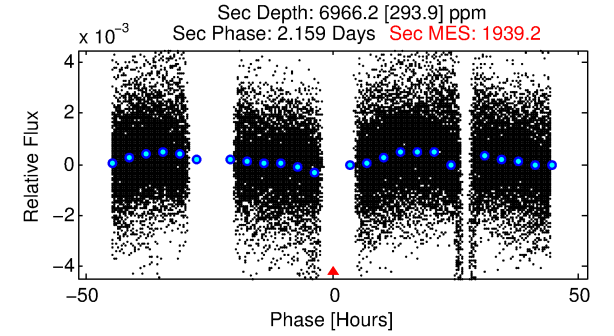
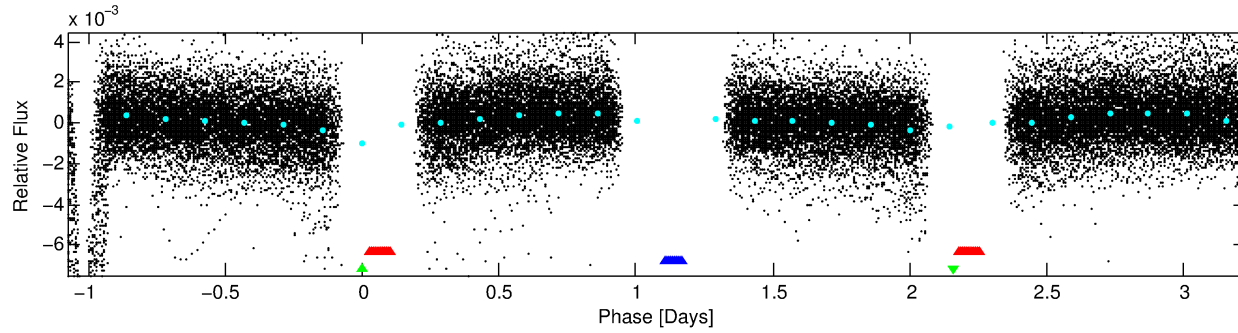
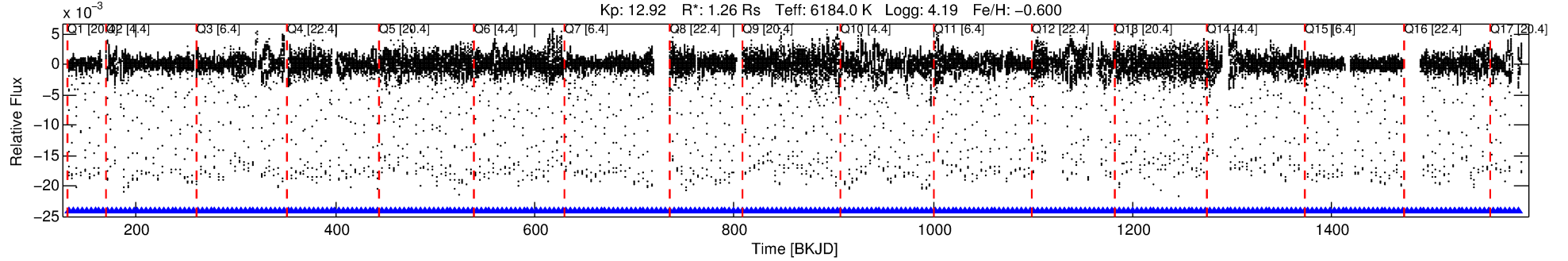
No Significant Match Found

# DV One-Page Summary

KIC: 5039441 Candidate: 3 of 3 Period: 4.303 d

KOI: K06125 Corr: No Ephemeris Match

Kp: 12.92 R\*: 1.26 Rs Teff: 6184.0 K Logg: 4.19 Fe/H: -0.600



## TPS TCE Results:

Period = 4.30295 d  
Epoch = 133.3364 BKJD

DV fit results are unavailable

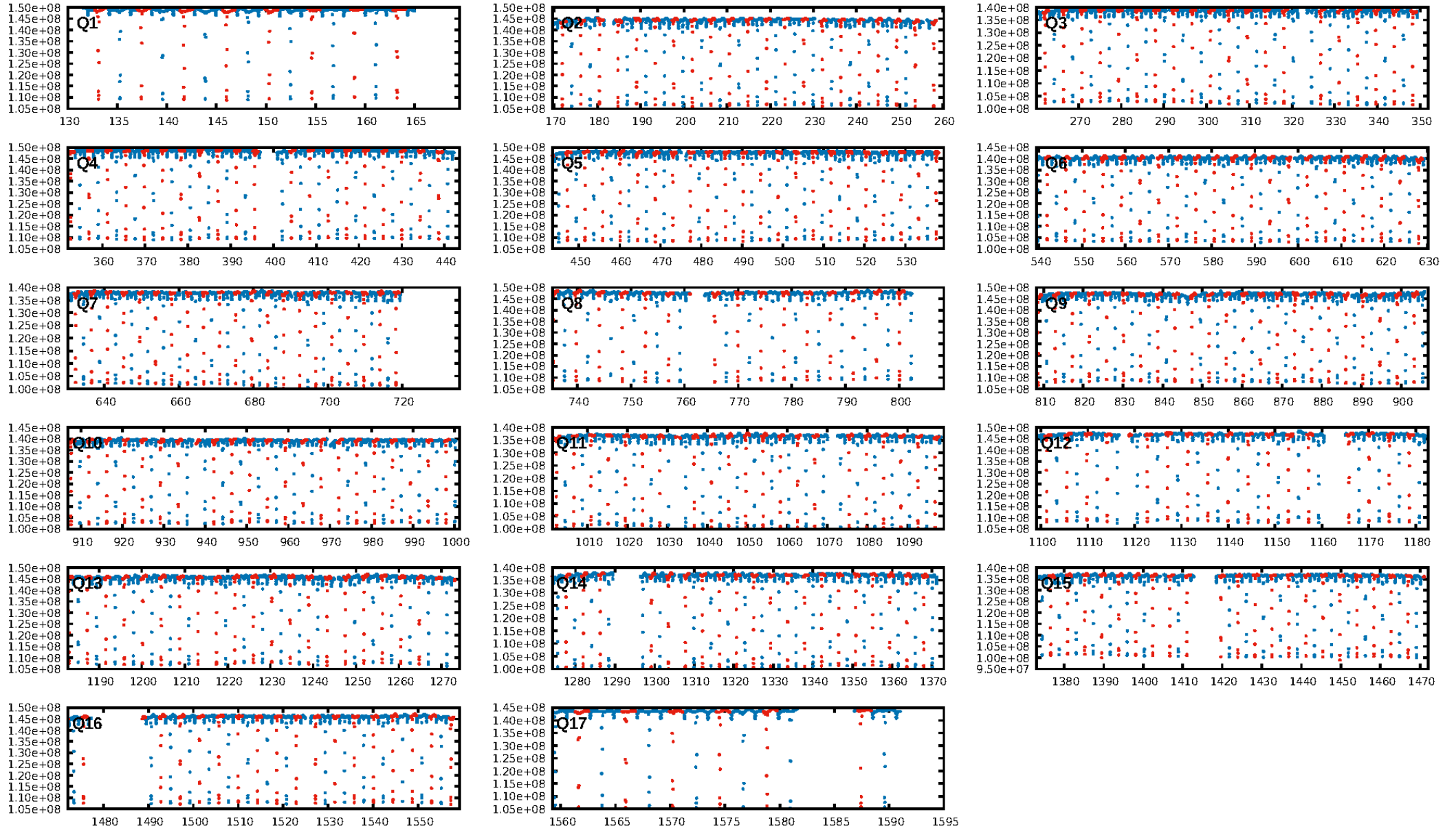
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [306/306]  
GhostDiagnostic-chr: 4.898  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.018 arcsec [0.27σ]  
KicOffset-rm: 0.117 arcsec [1.73σ]  
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]

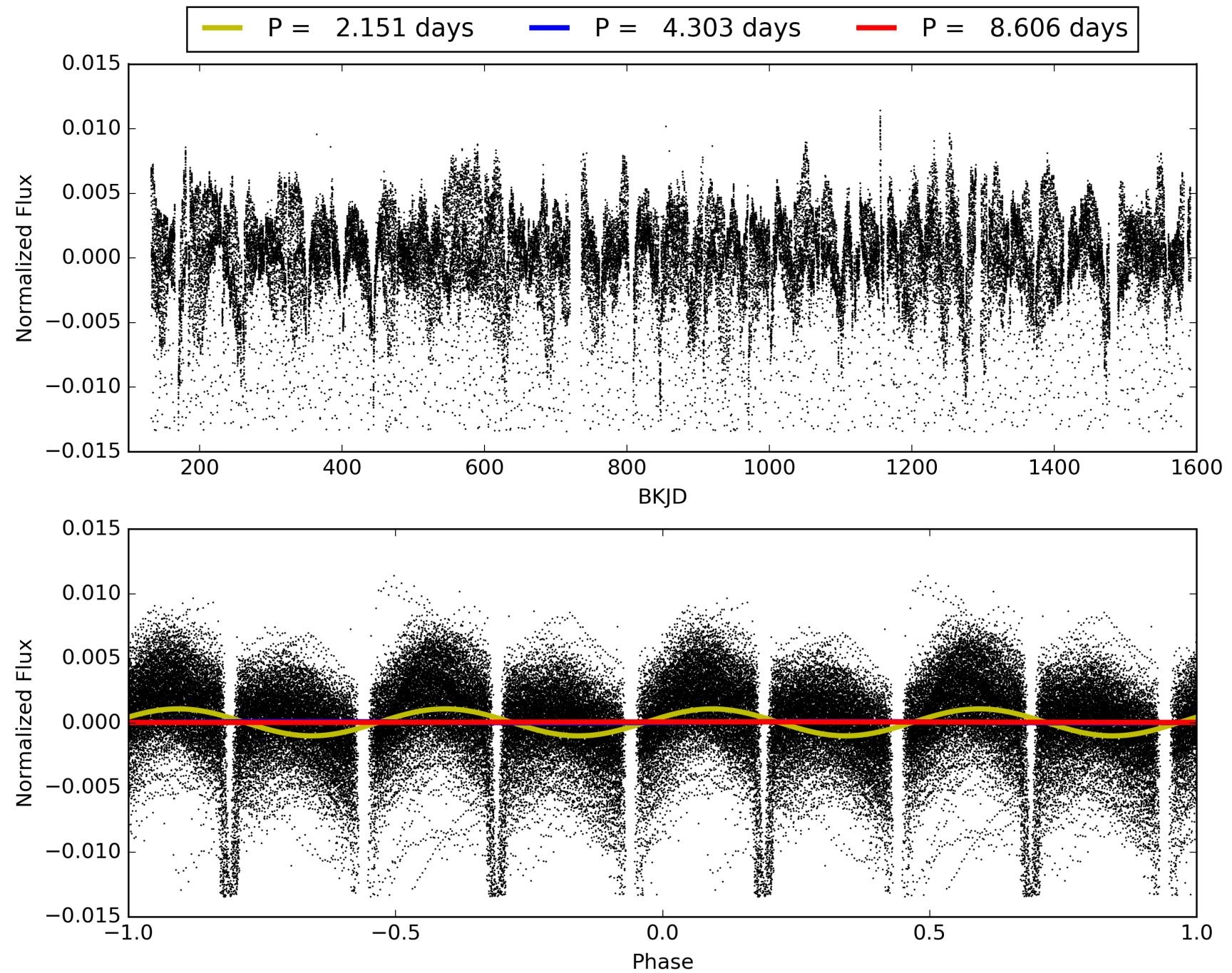
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:30:53 Z

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

# TCE 005039441-03, PDC Light Curves

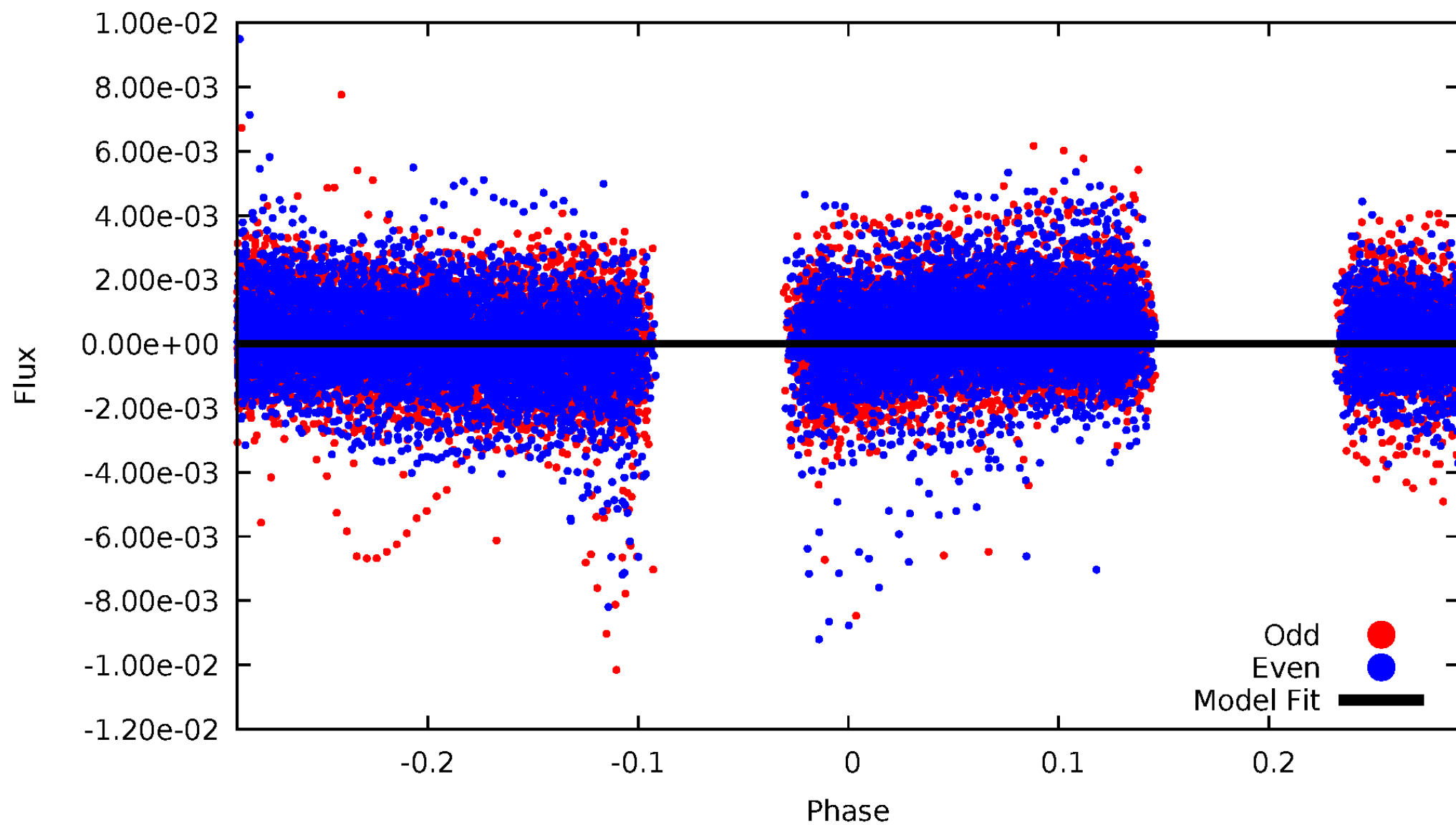


TCE 005039441-03



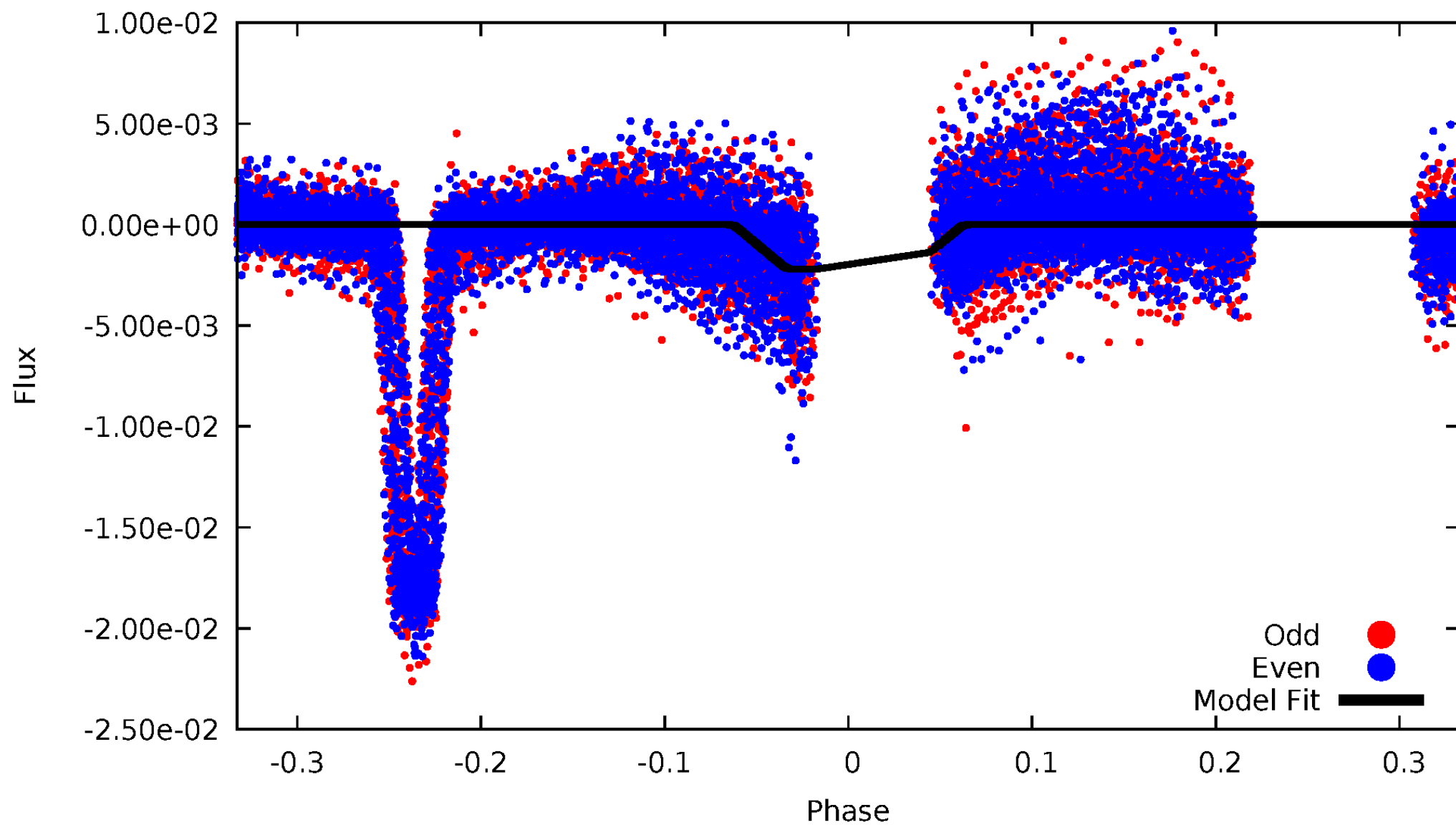
DV Odd/Even

TCE 005039441-03



# ALT Odd/Even

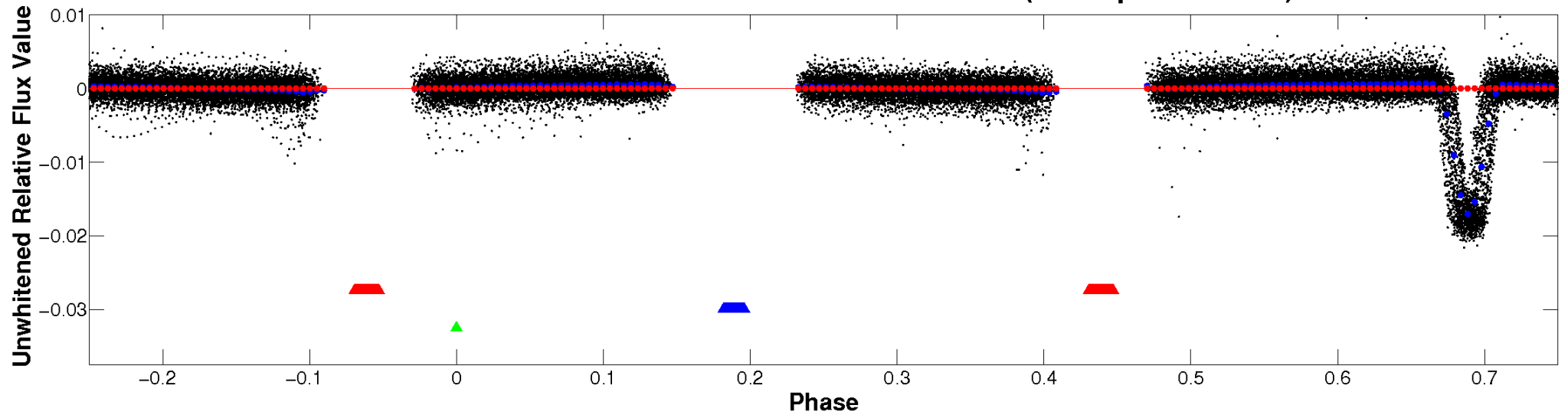
TCE 005039441-03



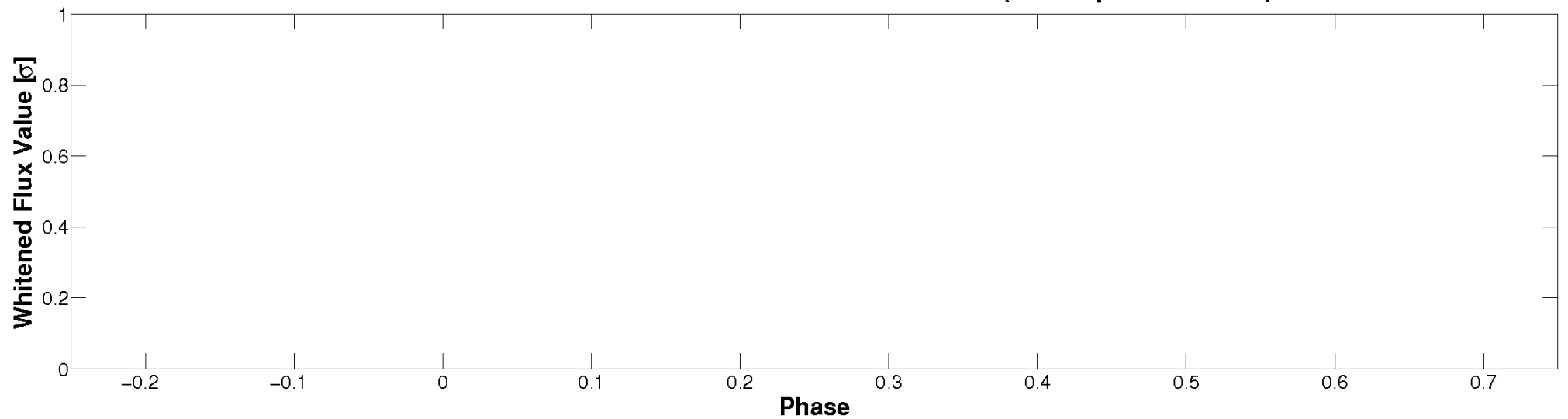


# Non-Whitened Vs. Whitened Light Curve

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

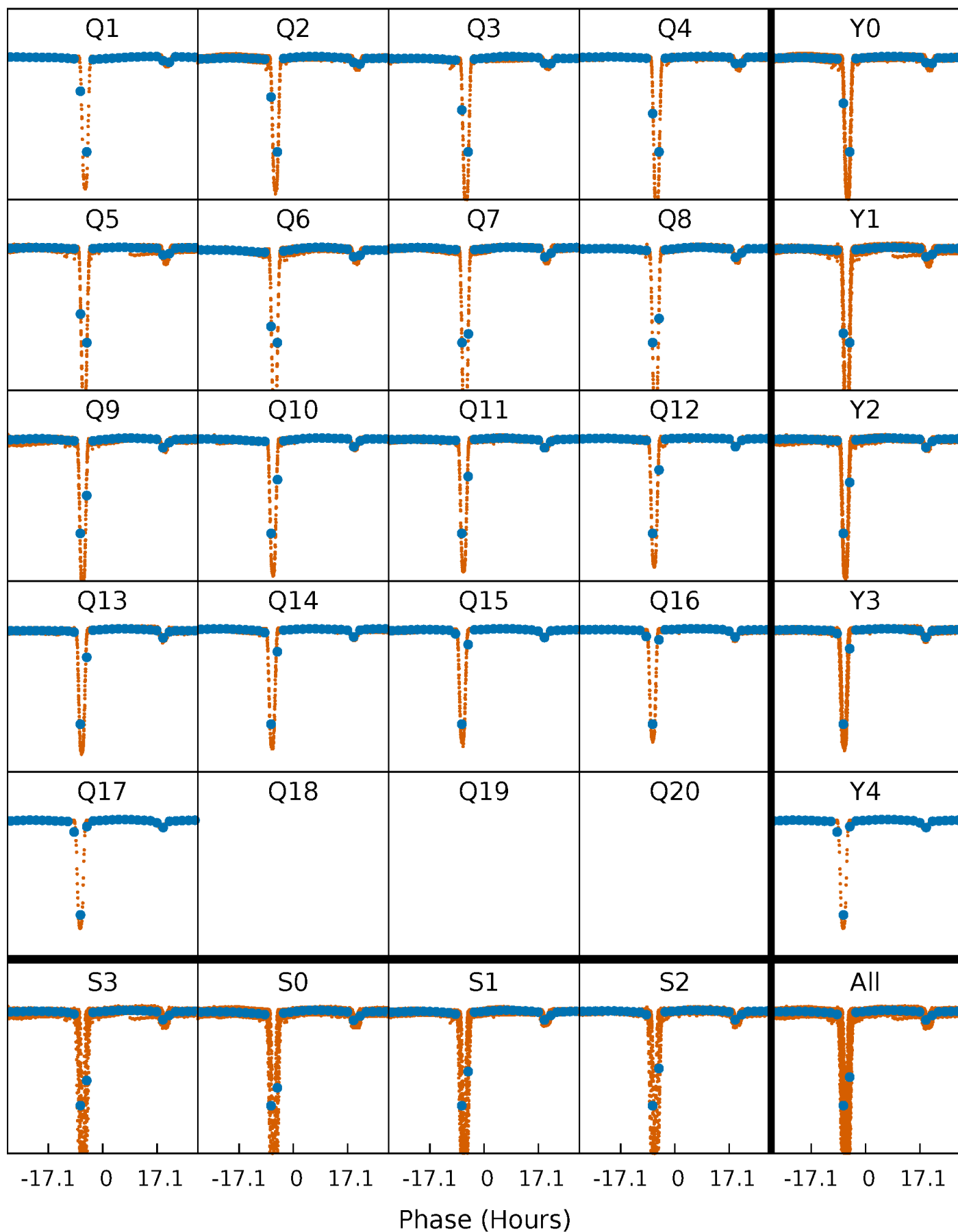


**Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

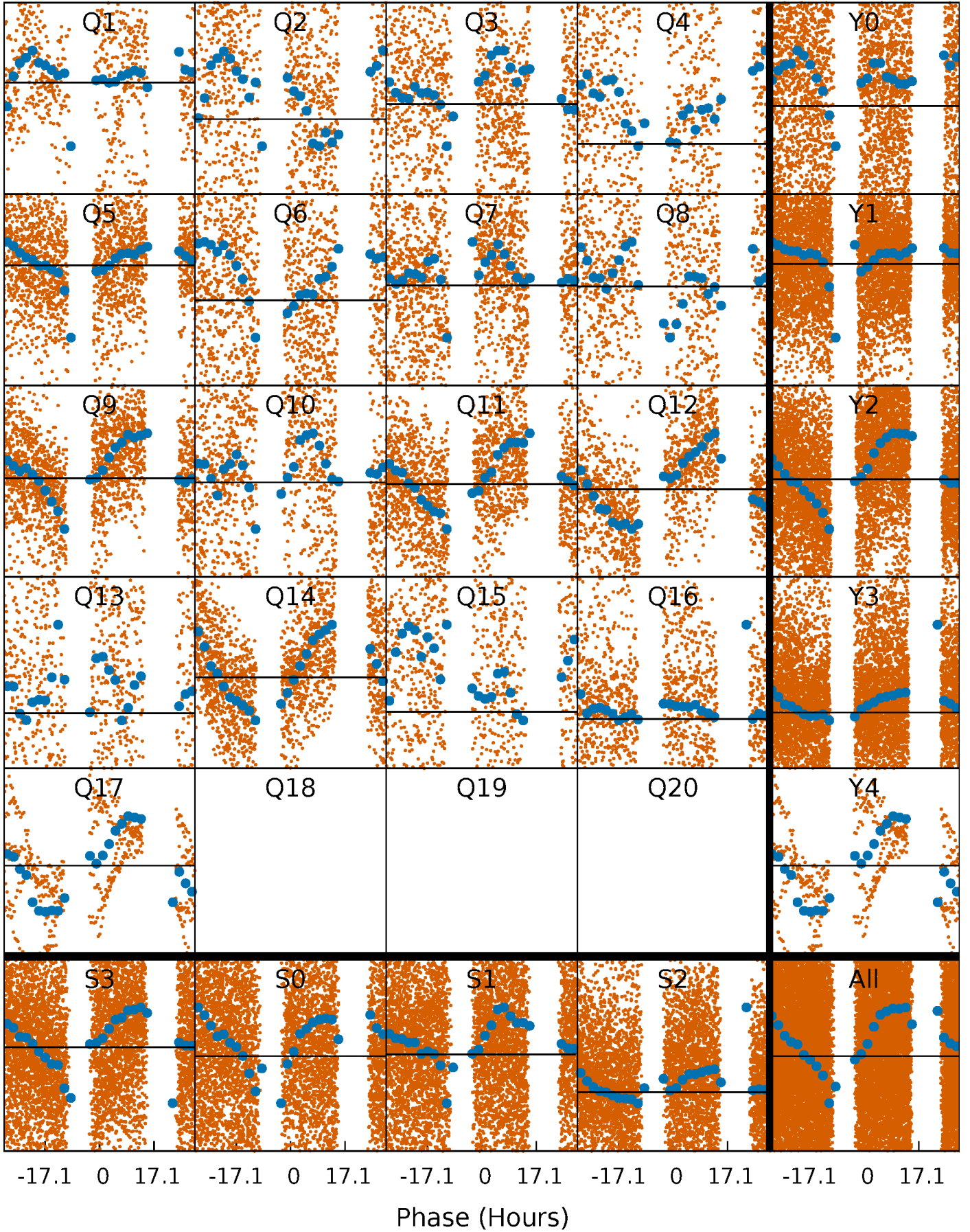
TCE 005039441-03   P= 4.302955 Days    $T_0=133.336392$  (BKJD)





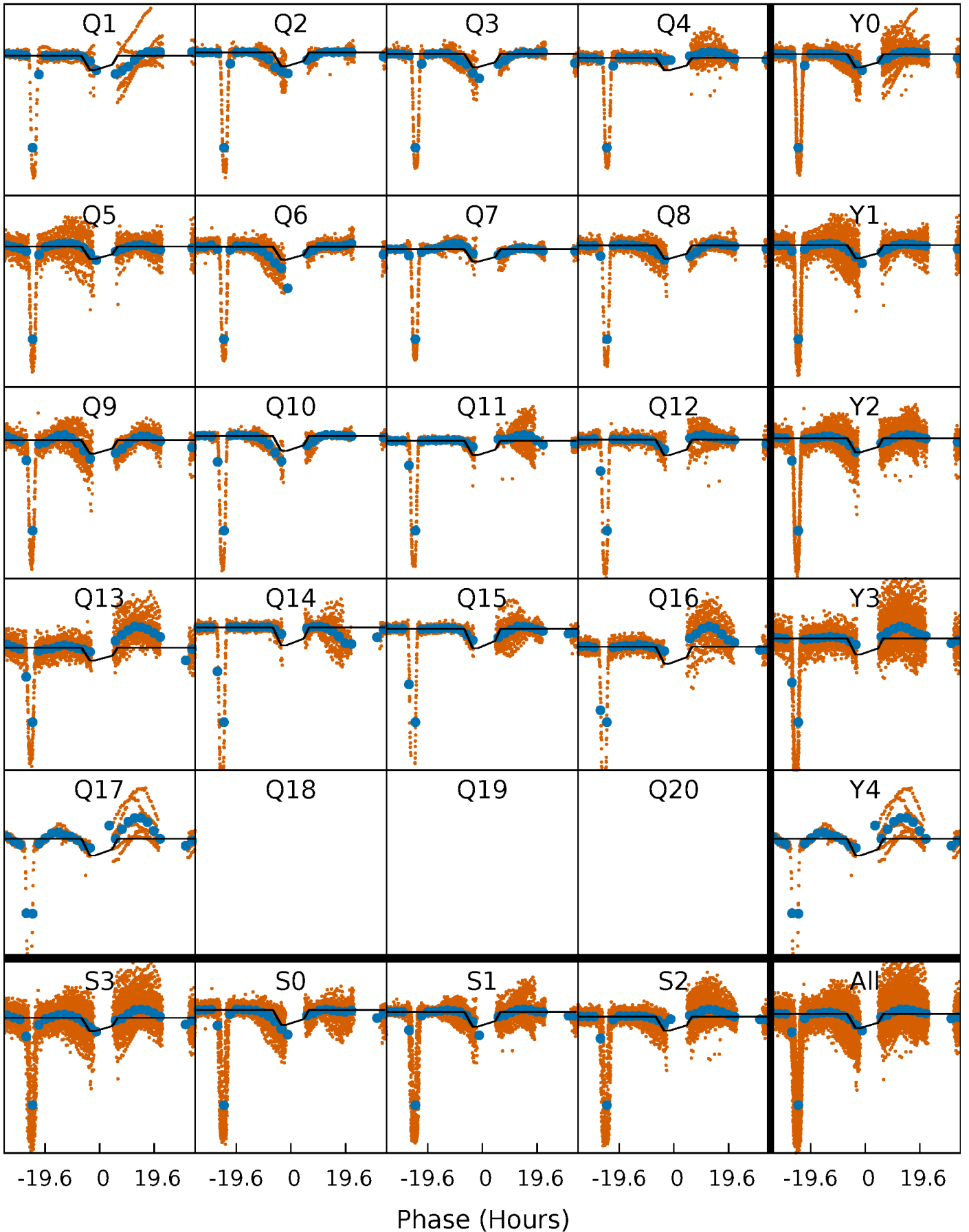
# DV Quarter-Phased Transit Curves

TCE 005039441-03   P= 4.302955 Days    $T_0=133.336392$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

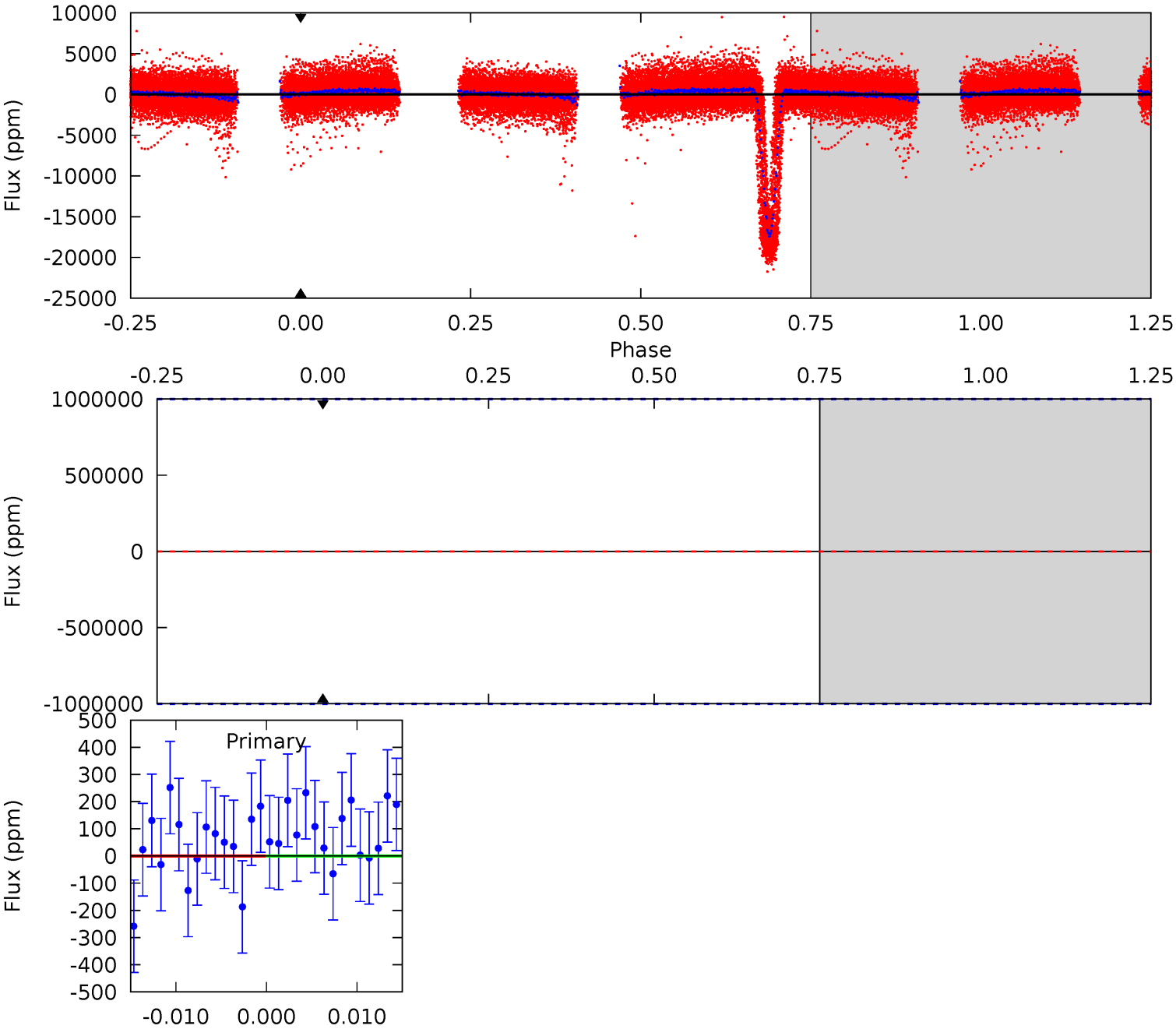
TCE 005039441-03     $P = 4.302955$  Days     $T_0 = 133.012907$  (BKJD)



# DV Model-Shift Uniqueness Test

005039441-03, P = 4.302955 Days, E = 129.033437 Days

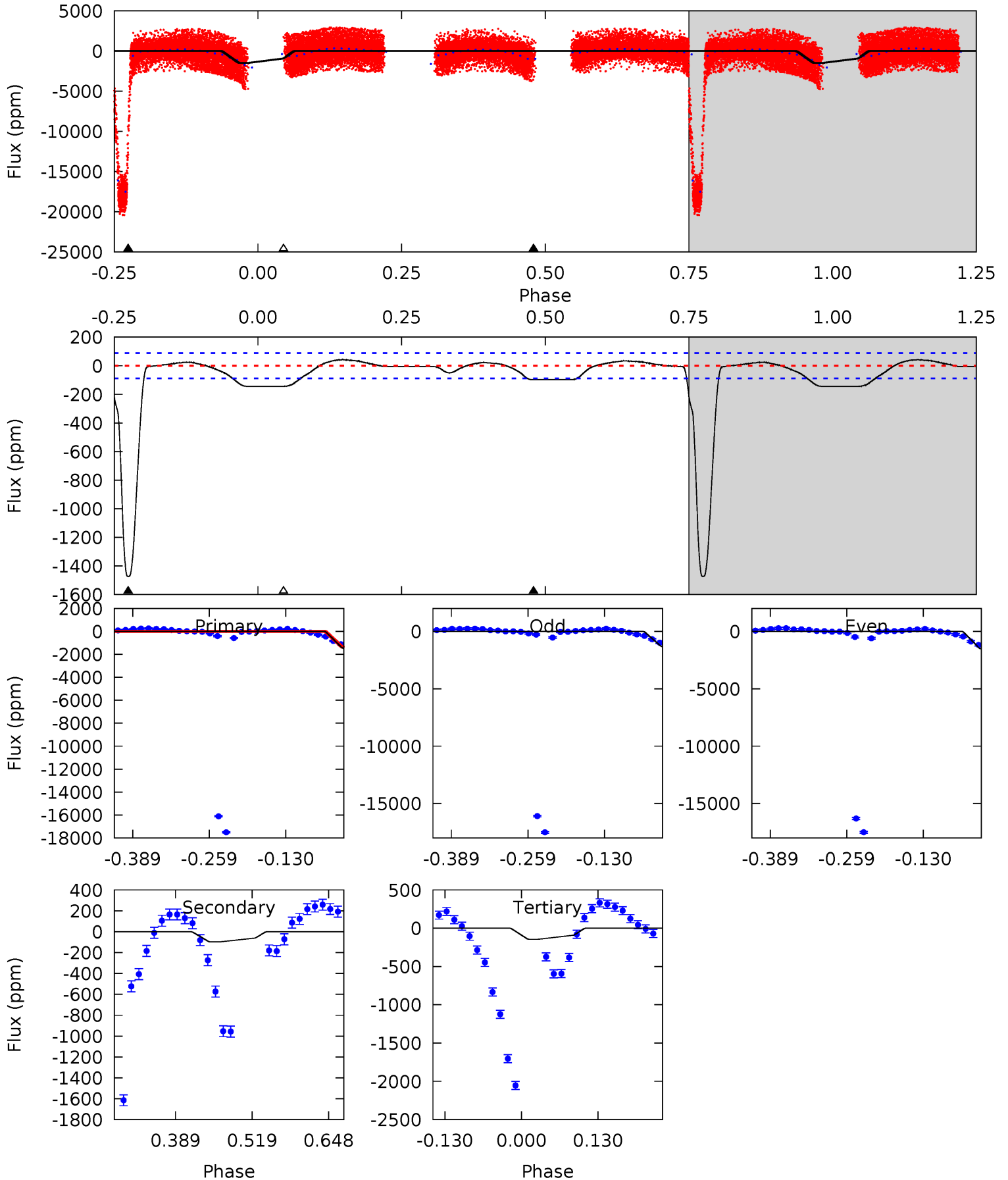
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

005039441-03, P = 4.302955 Days, E = 128.709952 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
75.0	4.98	7.36	0	4.51	1.52	2.60	67.6	75.0	-2.38	4.98	5.26	1.45	0.03	8.09



### Stellar Parameters For KIC 005039441

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6184^{+168}_{-186}$	$4.190^{+0.270}_{-0.180}$	$-0.600^{+0.300}_{-0.300}$	$1.257^{+0.346}_{-0.346}$	$0.891^{+0.126}_{-0.084}$	$0.632^{+1.020}_{-0.297}$
	+3%/-3%	+6%/-4%	+50%/-50%	+28%/-28%	+14%/-9%	+161%/-47%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 005039441-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$15.66^{+12.31}_{-10.08}$	$1900^{+151}_{-160}$	$-3619^{+19570}_{-9221}$	$-3.237^{+1161.728}_{-732.617}$
Alt.	$-98 \pm 20$	$12.07^{+11.78}_{-8.38}$	$1904^{+145}_{-147}$	$2668^{+1386}_{-4746}$	$0.949^{+9.206}_{-0.720}$

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

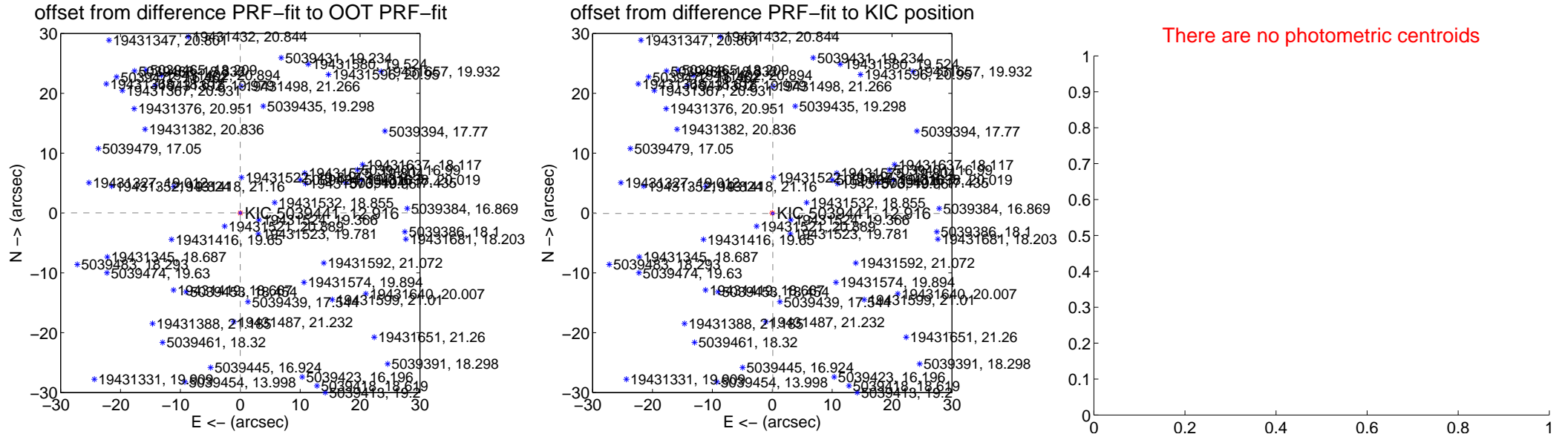
# DV Centroid Data

Supplemental centroid analysis for 005039441-03. Kepler magnitude: 12.92. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

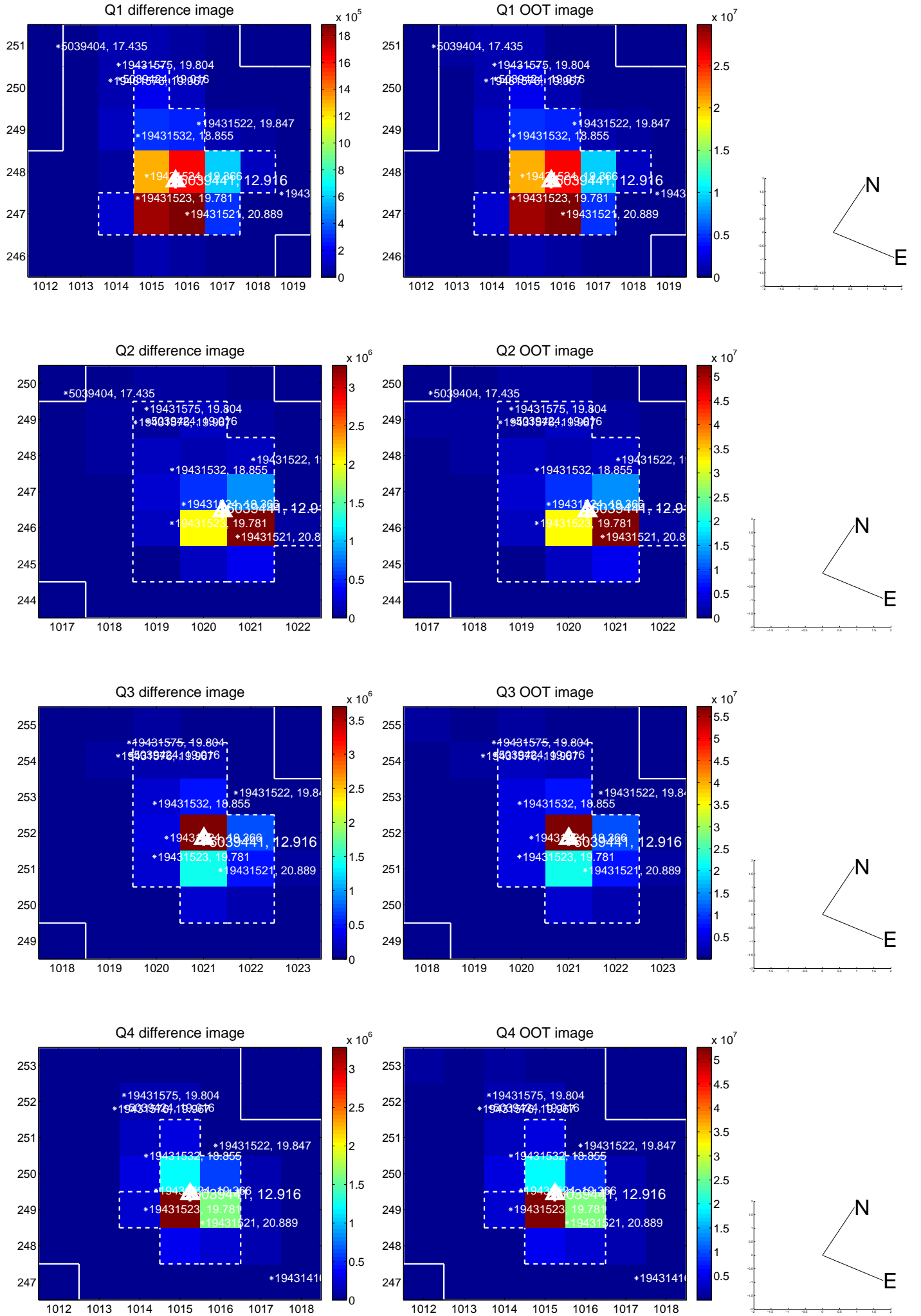
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.018 \pm 0.067$	0.27	$0.008 \pm 0.067$	$0.016 \pm 0.067$
PRF-fit source offset from KIC position	$0.117 \pm 0.068$	1.73	$-0.092 \pm 0.068$	$-0.073 \pm 0.067$
photometric centroid source offset	—	—	—	—



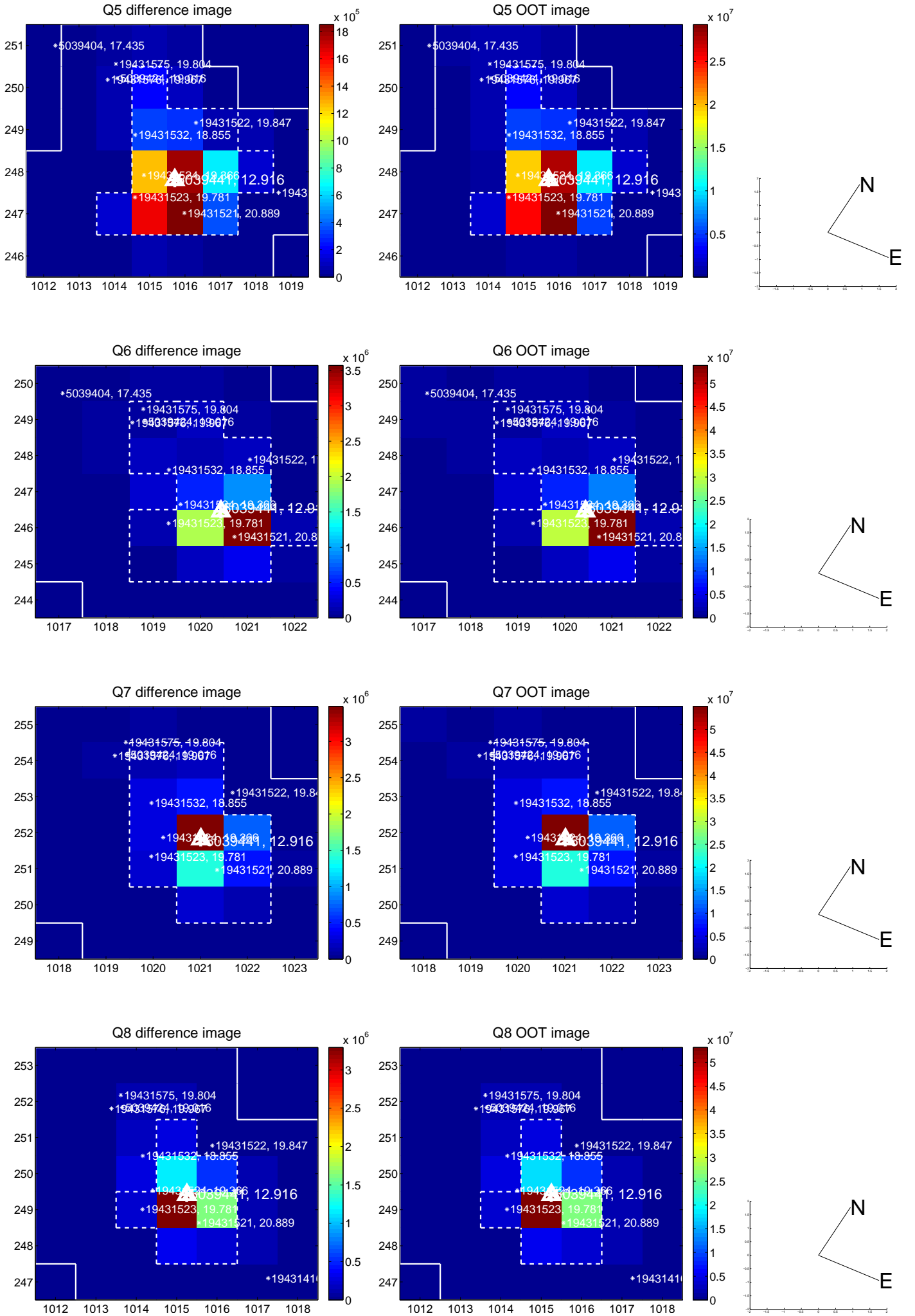
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



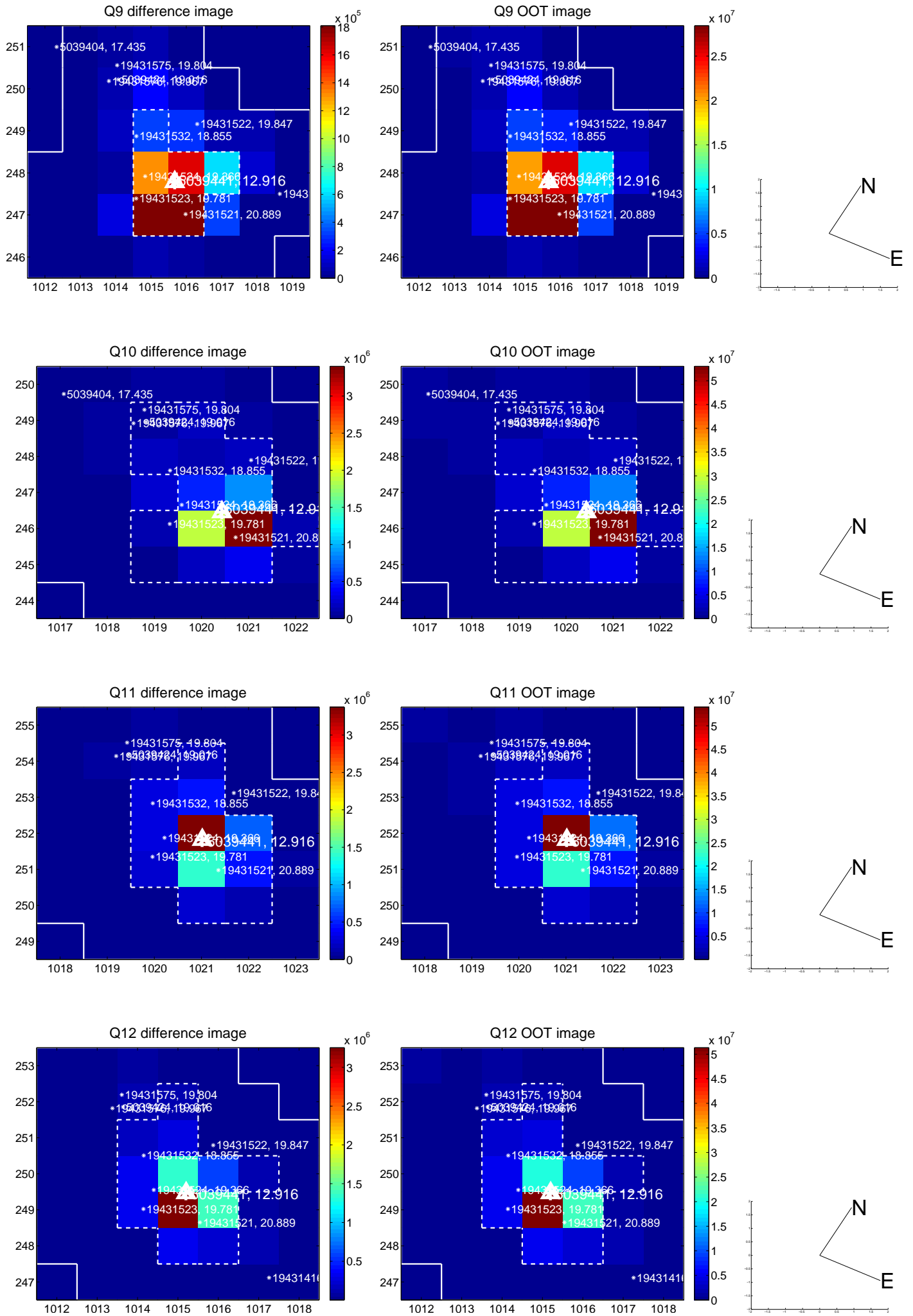


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

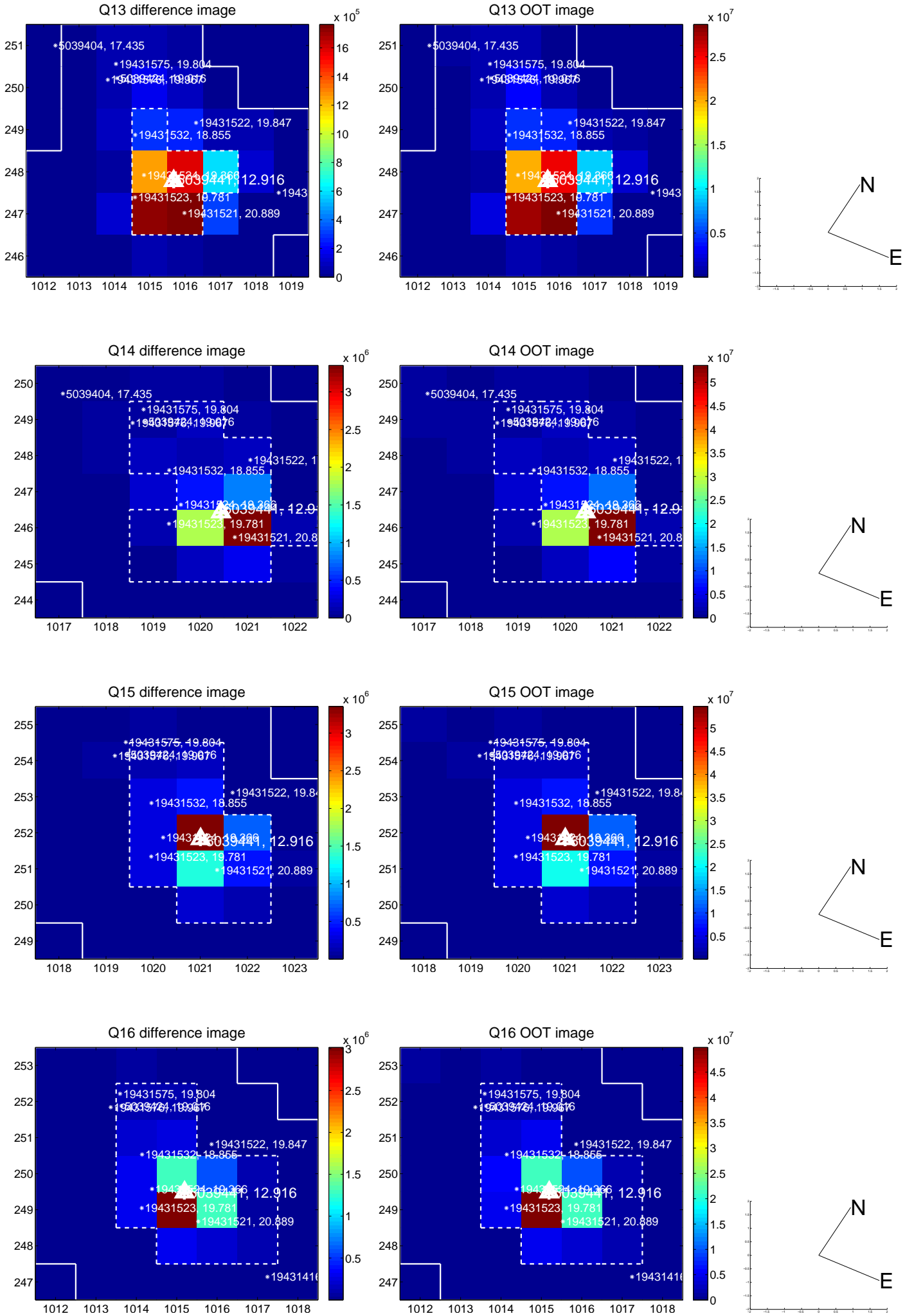




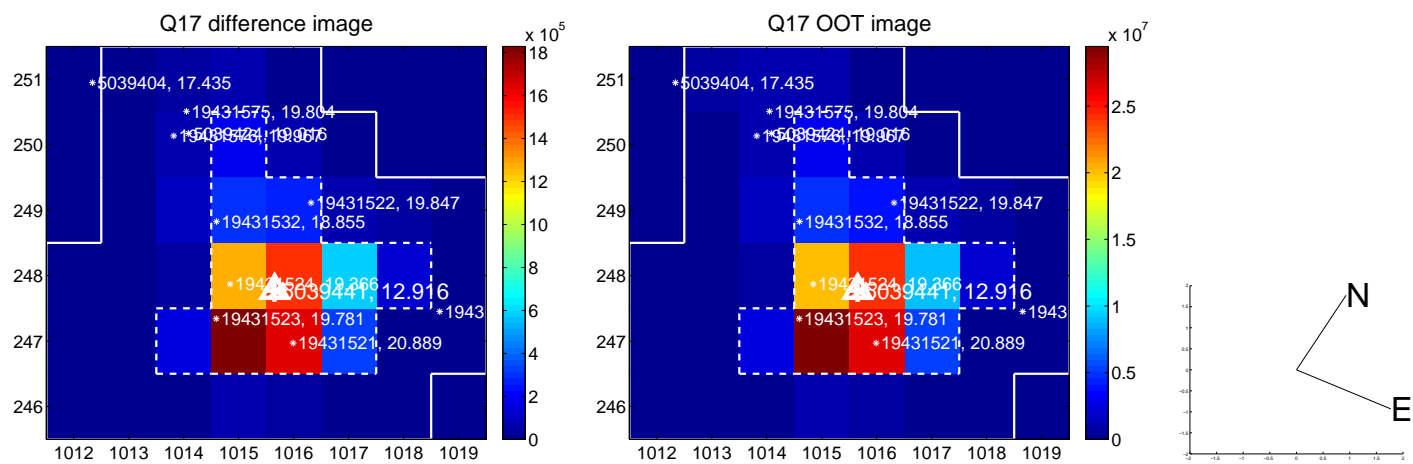
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



folded centroid time series figure for this object.



UKIRT Image

