

# KIC 007445445

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007445445-01	OBS	0567.01	10.687573	137.868679	764.7	3.529	66.0	69.8	0.85	5788	2.75	87.52
007445445-02	OBS	0567.02	20.303070	136.195707	537.8	4.583	37.9	40.1	0.85	5788	2.24	37.20
007445445-03	OBS	0567.03	29.022313	140.325823	638.0	4.080	32.8	36.2	0.85	5788	2.56	23.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007445445-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007445445-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007445445-03	OBS	PC	1.00	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.

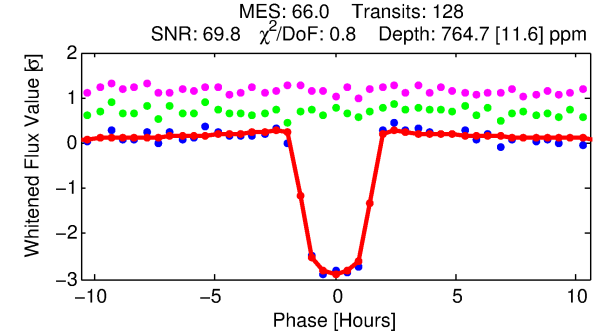
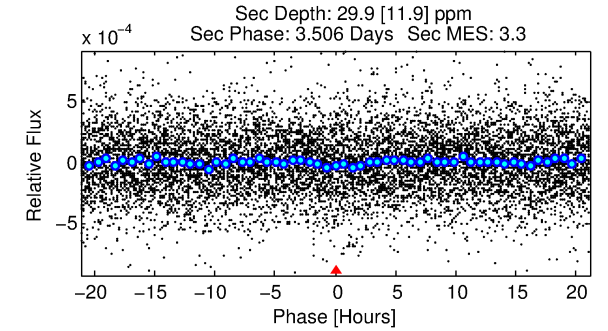
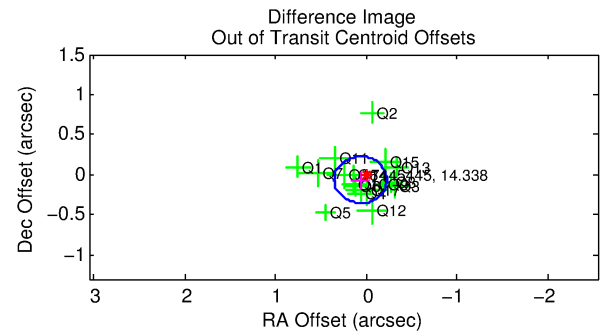
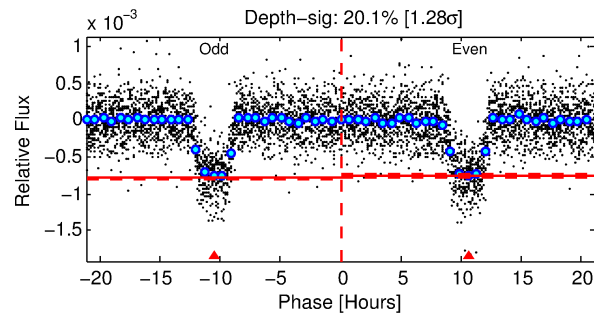
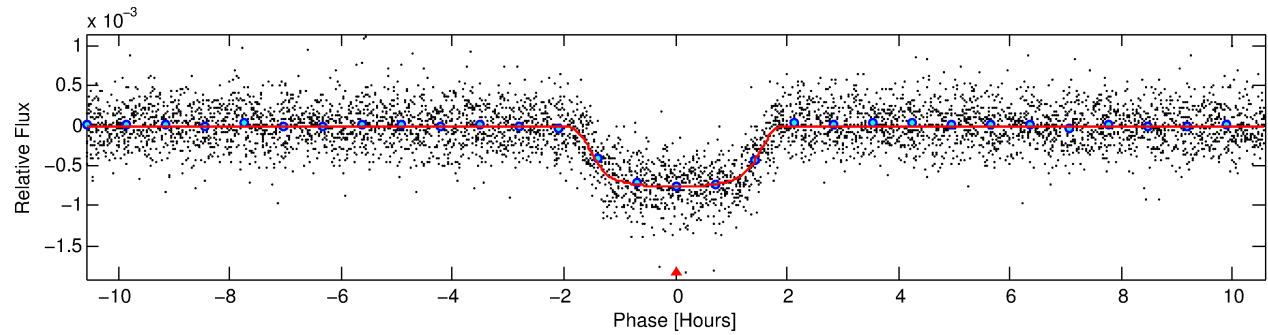
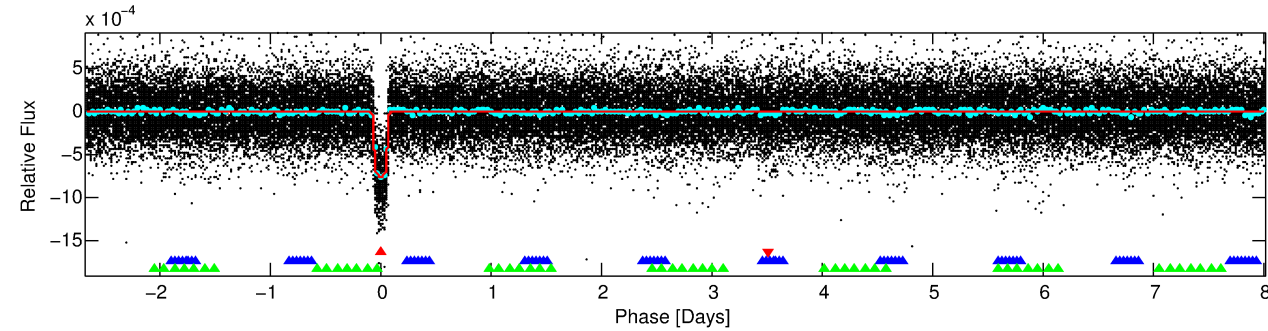
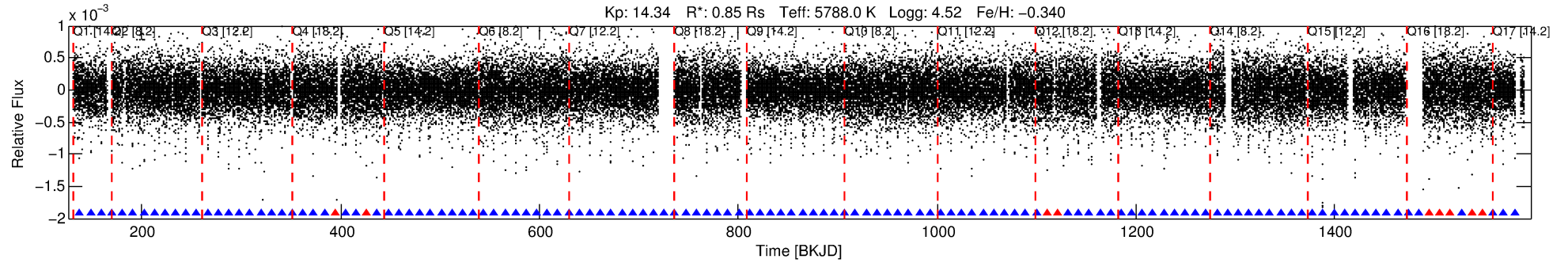
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007445445-01

No Significant Match Found

# DV One-Page Summary

KIC: 7445445 Candidate: 1 of 3 Period: 10.688 d  
KOI: K00567.01 Name: Kepler-184b Corr: 0.960



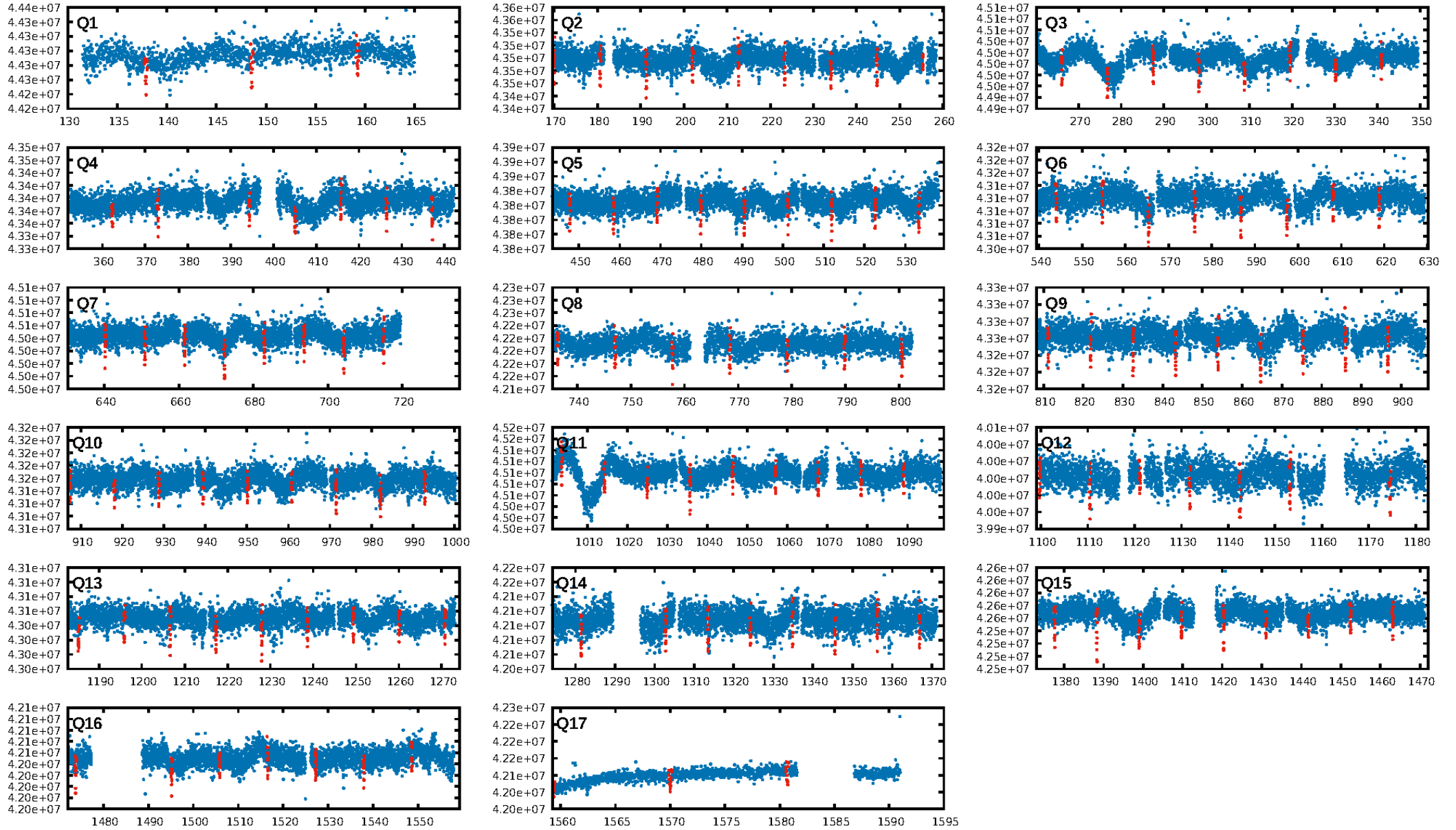
## DV Fit Results:

Period = 10.68757 [0.00001] d  
Epoch = 137.8687 [0.0011] BKJD  
Rp/R\* = 0.0297 [0.0010]  
a/R\* = 12.11 [1.88]  
b = 0.89 [0.04]  
Seff = 87.52 [30.06]  
Teff = 780 [67] K  
Rp = 2.75 [0.72] Re  
a = 0.0909 [0.0202] AU  
Ag = 18.02 [9.35] [1.82 $\sigma$ ]  
Teffp = 2484 [259] K [6.36 $\sigma$ ]

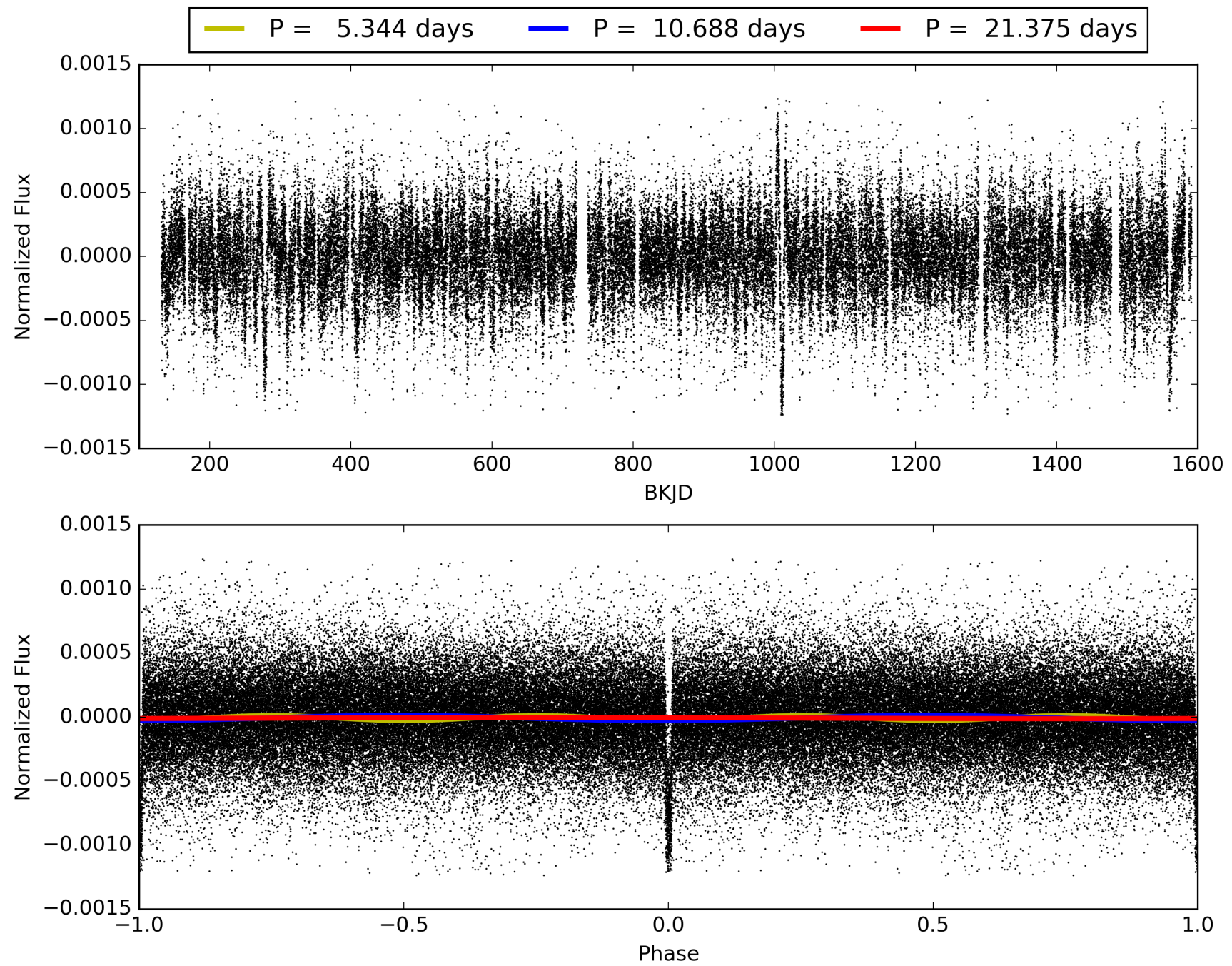
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [39.89 $\sigma$ ]  
ModelChiSquare2-sig: 98.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.93 [113/122]  
GhostDiagnostic-chr: 5.093  
Centroid-sig: 16.2%  
Centroid-so: 0.128 arcsec [0.86 $\sigma$ ]  
OotOffset-rm: 0.091 arcsec [0.94 $\sigma$ ]  
KicOffset-rm: 0.250 arcsec [2.56 $\sigma$ ]  
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]

# TCE 007445445-01, PDC Light Curves



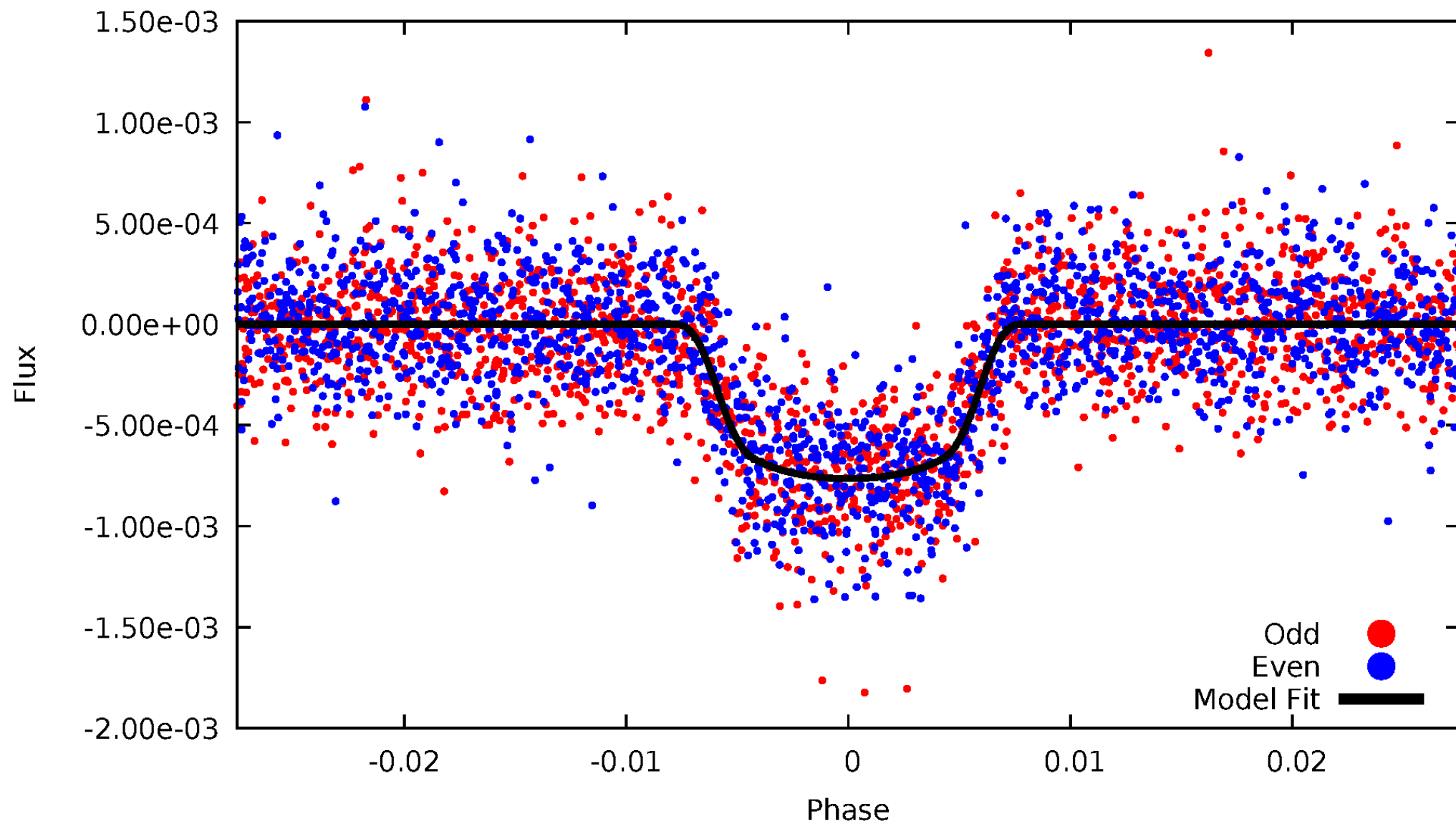
TCE 007445445-01





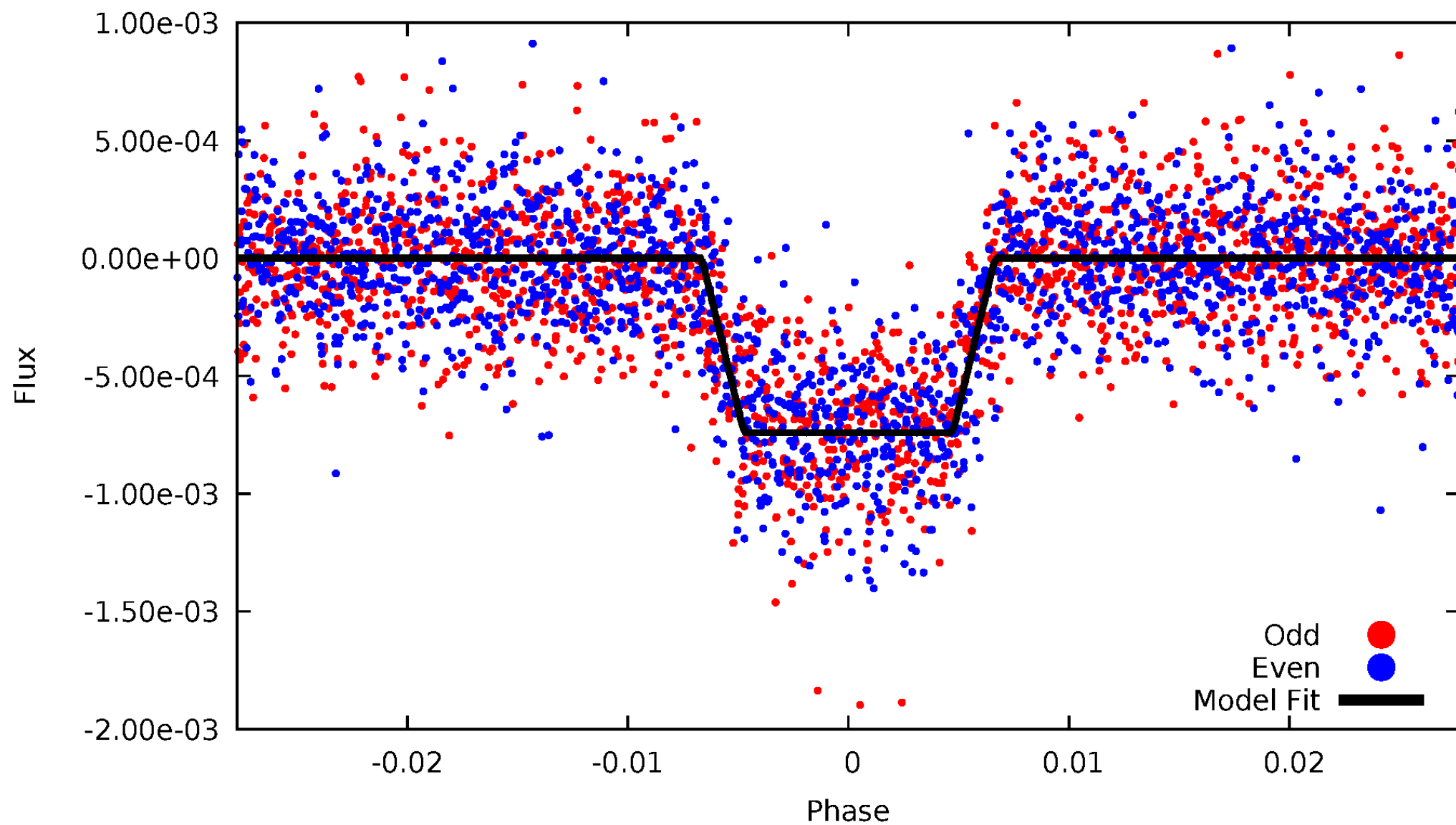
# DV Odd/Even

TCE 007445445-01



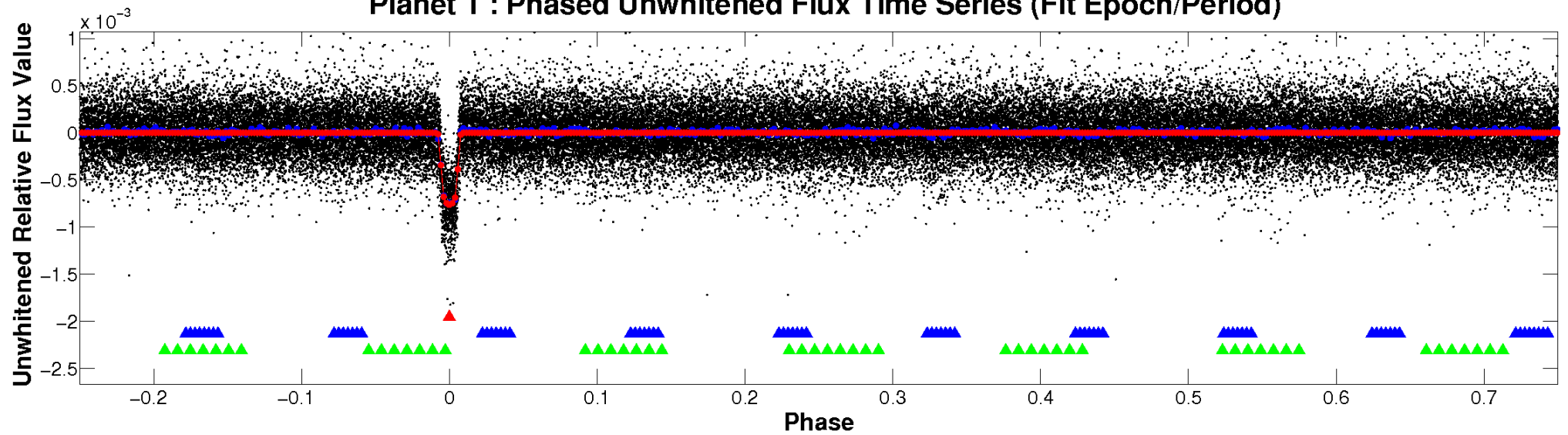
# ALT Odd/Even

TCE 007445445-01

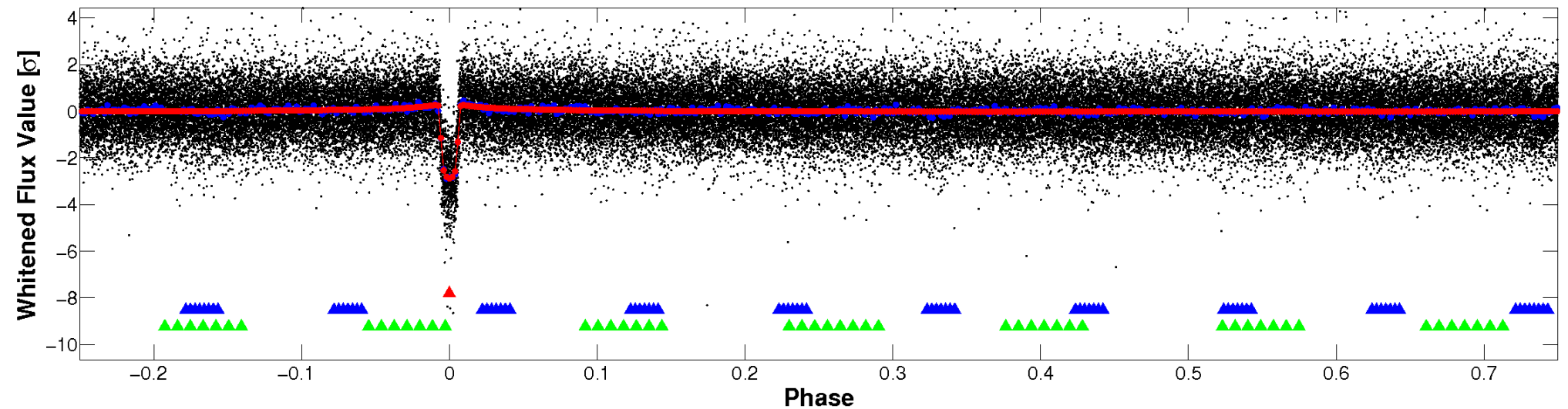


# Non-Whitened Vs. Whitened Light Curve

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

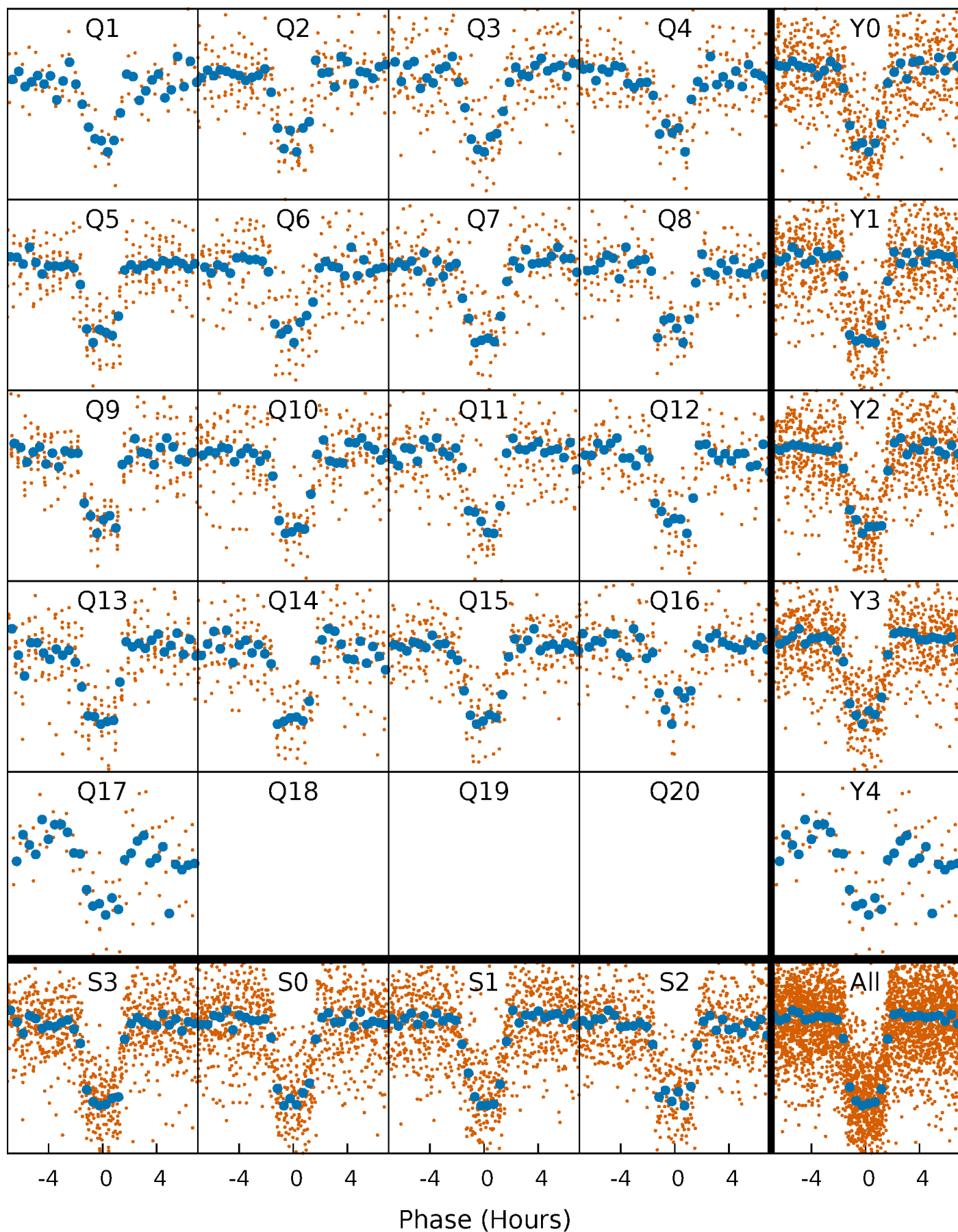


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

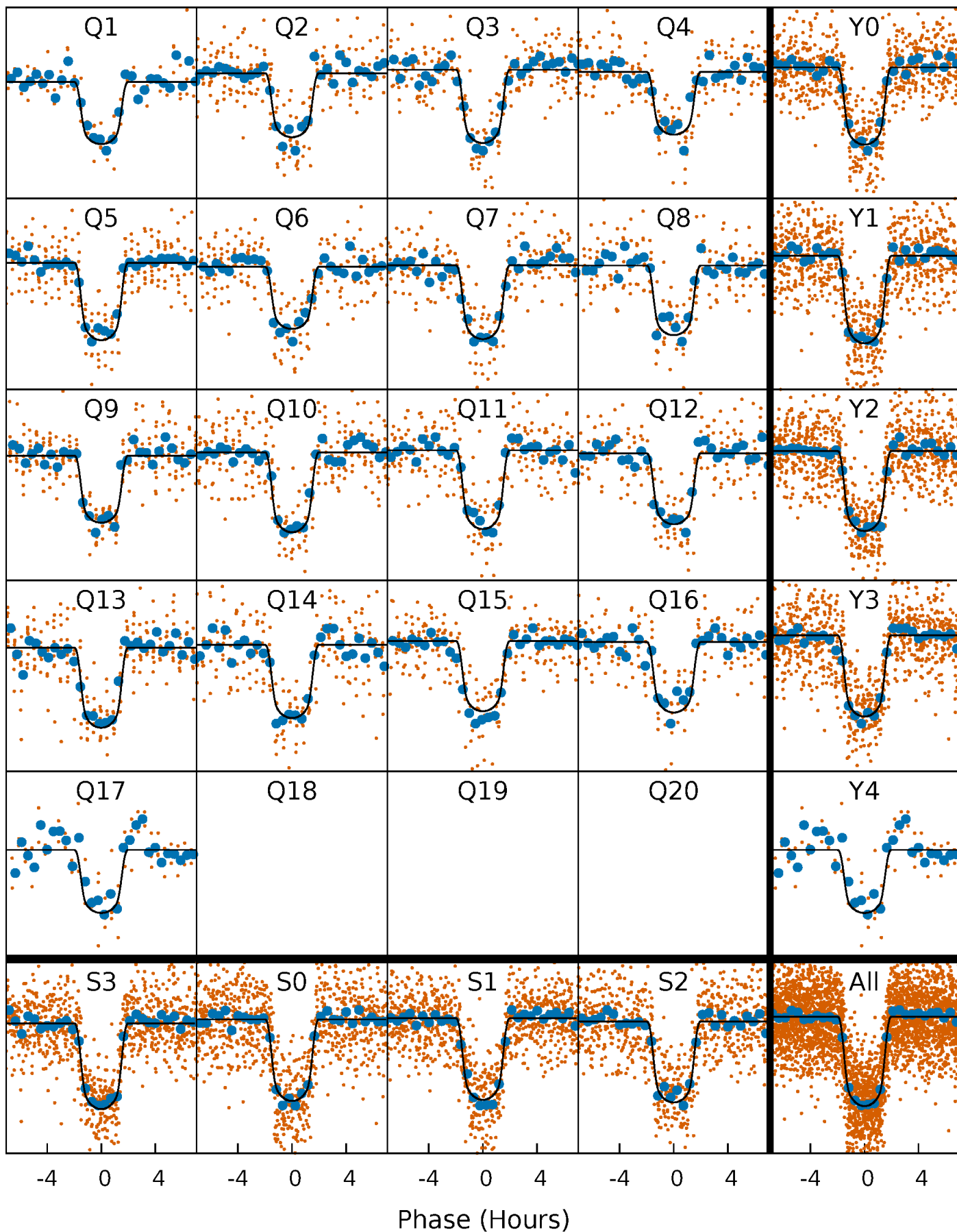
TCE 007445445-01 P= 10.687573 Days  $T_0=137.868679$  (BKJD)





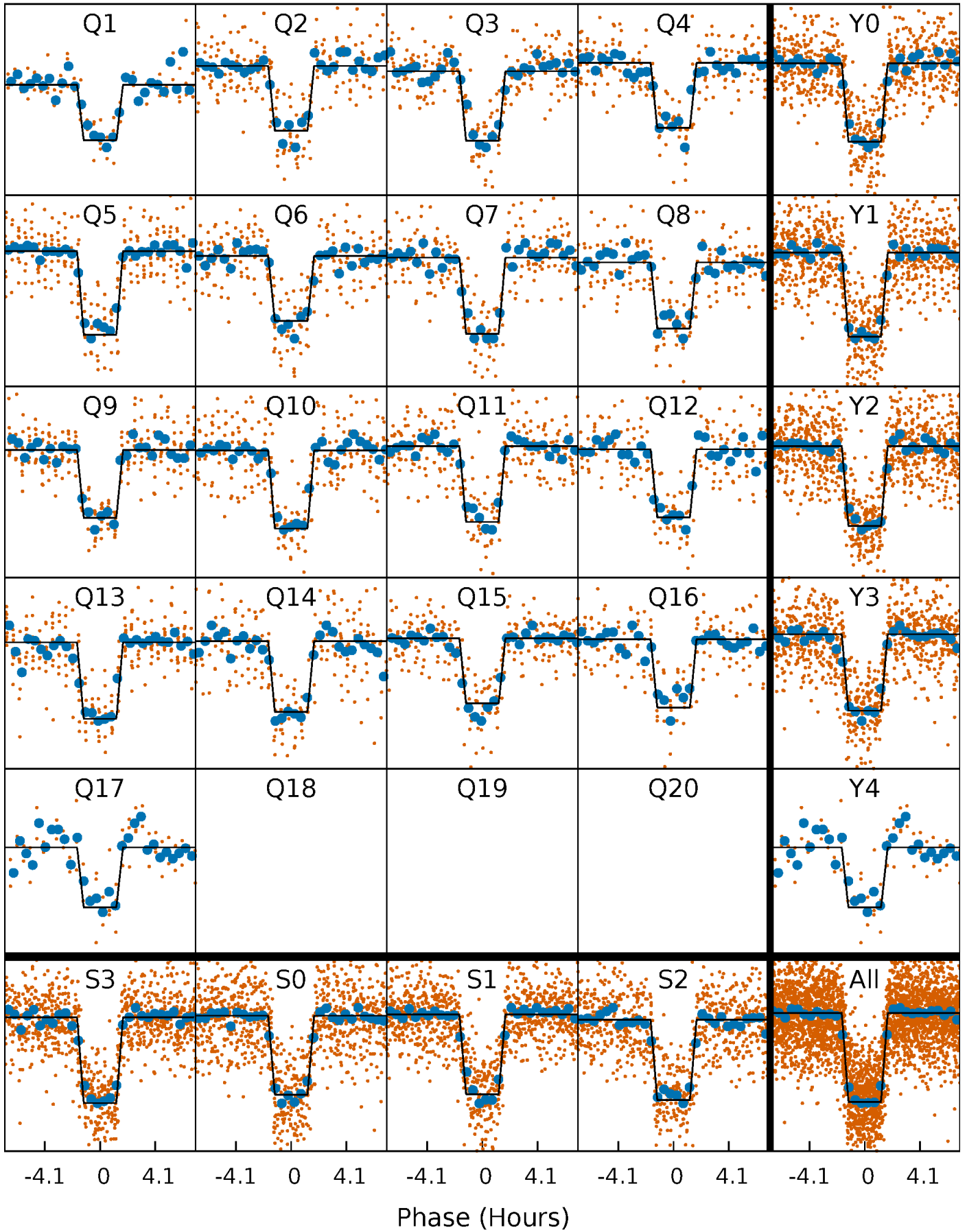
# DV Quarter-Phased Transit Curves

TCE 007445445-01 P= 10.687573 Days  $T_0=137.868679$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

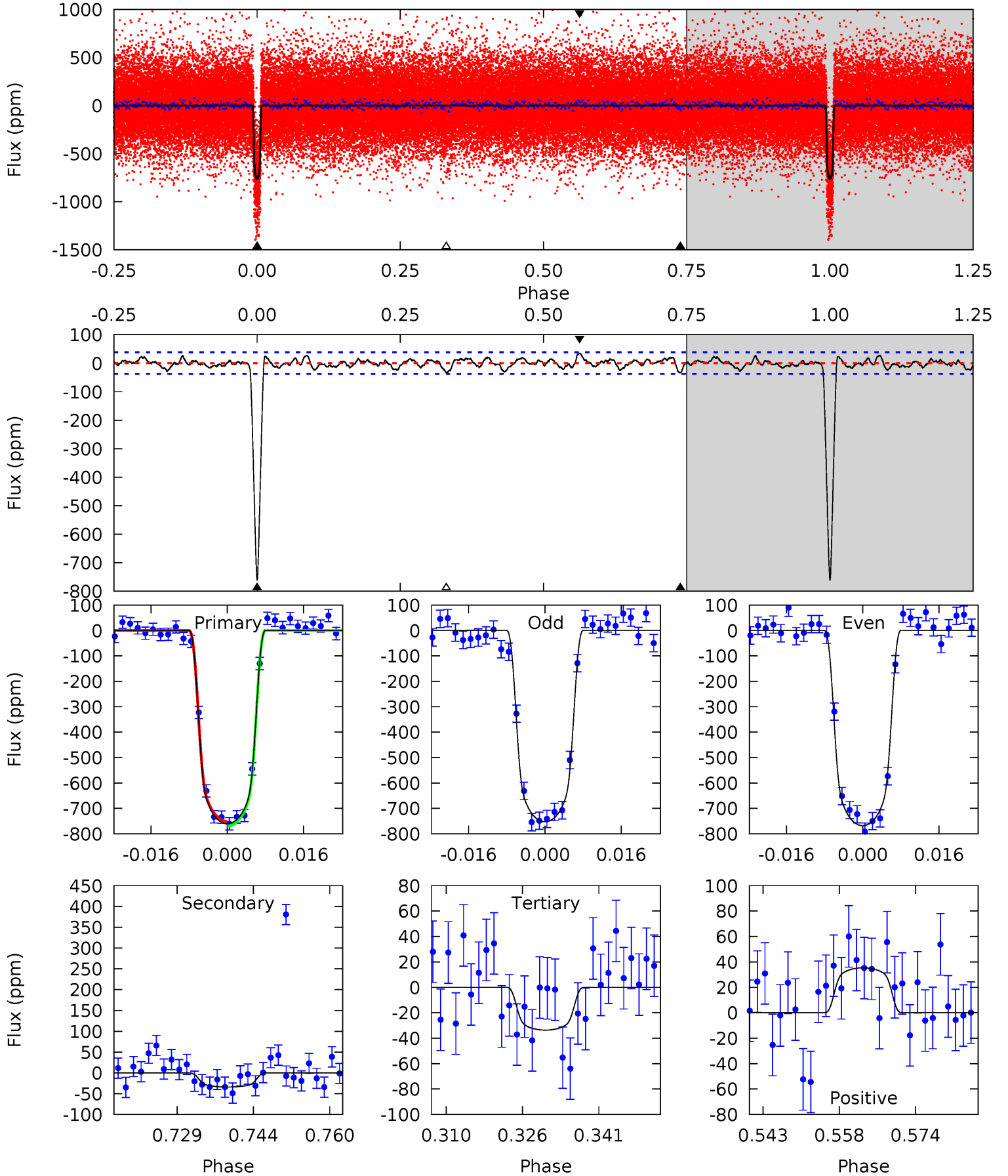
TCE 007445445-01 P= 10.687617 Days  $T_0=137.865808$  (BKJD)



# DV Model-Shift Uniqueness Test

007445445-01,  $P = 10.687573$  Days,  $E = 127.181106$  Days

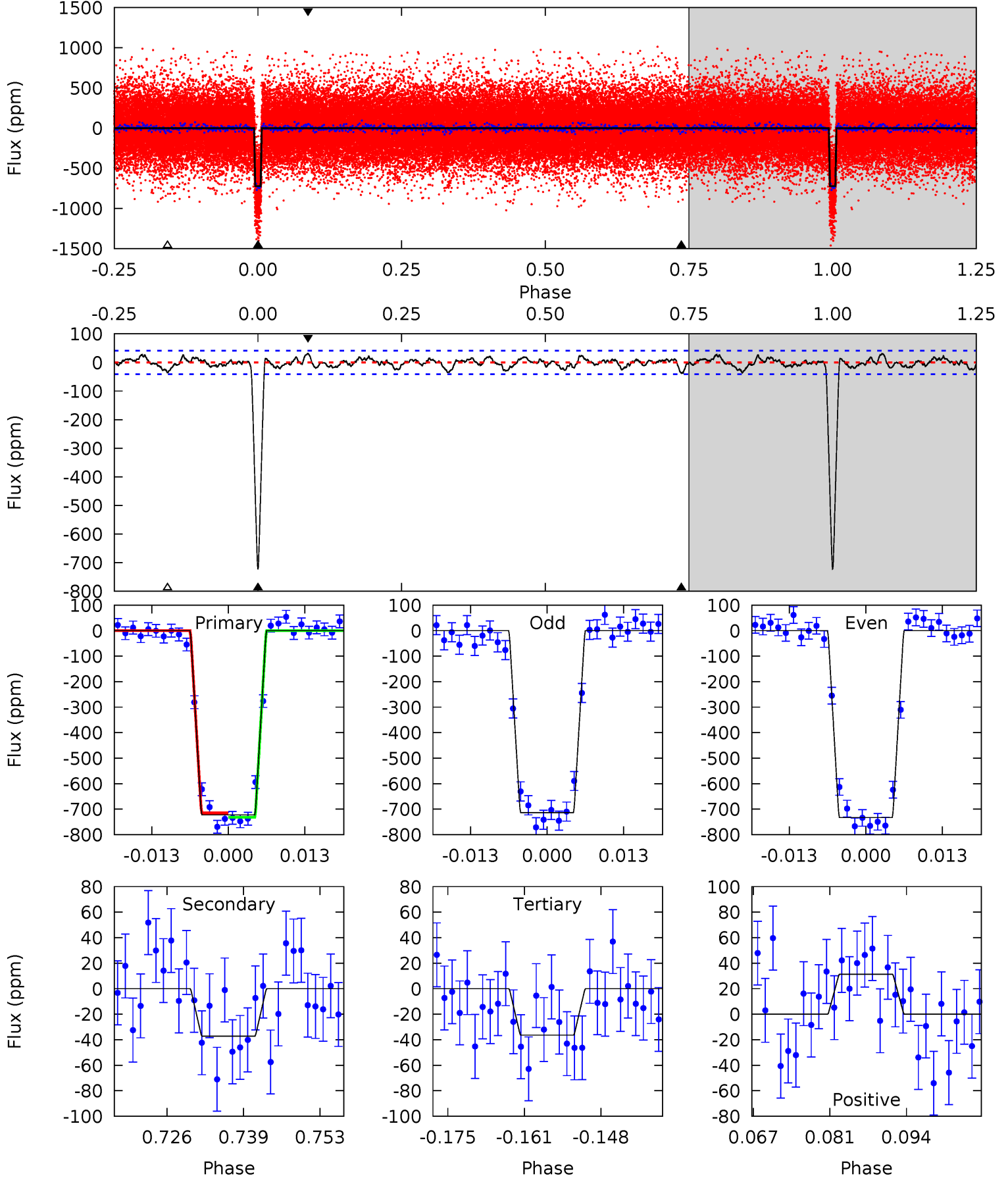
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
98.8	4.40	4.37	4.60	4.94	2.42	1.51	94.4	94.2	0.03	-0.19	1.00	1.00	0.04	1.16



# Alt Model-Shift Uniqueness Test

007445445-01, P = 10.687617 Days, E = 127.178191 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
87.8	4.52	4.42	3.81	4.97	2.47	1.47	83.3	83.9	0.10	0.71	1.21	1.01	0.04	1.02





### Stellar Parameters For KIC 007445445

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5788^{+155}_{-155}$	$4.524^{+0.060}_{-0.180}$	$-0.340^{+0.300}_{-0.300}$	$0.848^{+0.221}_{-0.095}$	$0.877^{+0.100}_{-0.090}$	$2.025^{+0.596}_{-0.956}$
	+3%/-3%	+1%/-4%	+88%/-88%	+26%/-11%	+11%/-10%	+29%/-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 007445445-01 / KOI 0567.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-34 \pm 8$	$2.84^{+0.42}_{-0.25}$	$1111^{+72}_{-52}$	$3152^{+121}_{-129}$	$18^{+6}_{-5}$
Alt.	$-37 \pm 8$	$2.59^{+0.34}_{-0.23}$	$1111^{+68}_{-51}$	$3291^{+126}_{-127}$	$24^{+7}_{-7}$

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

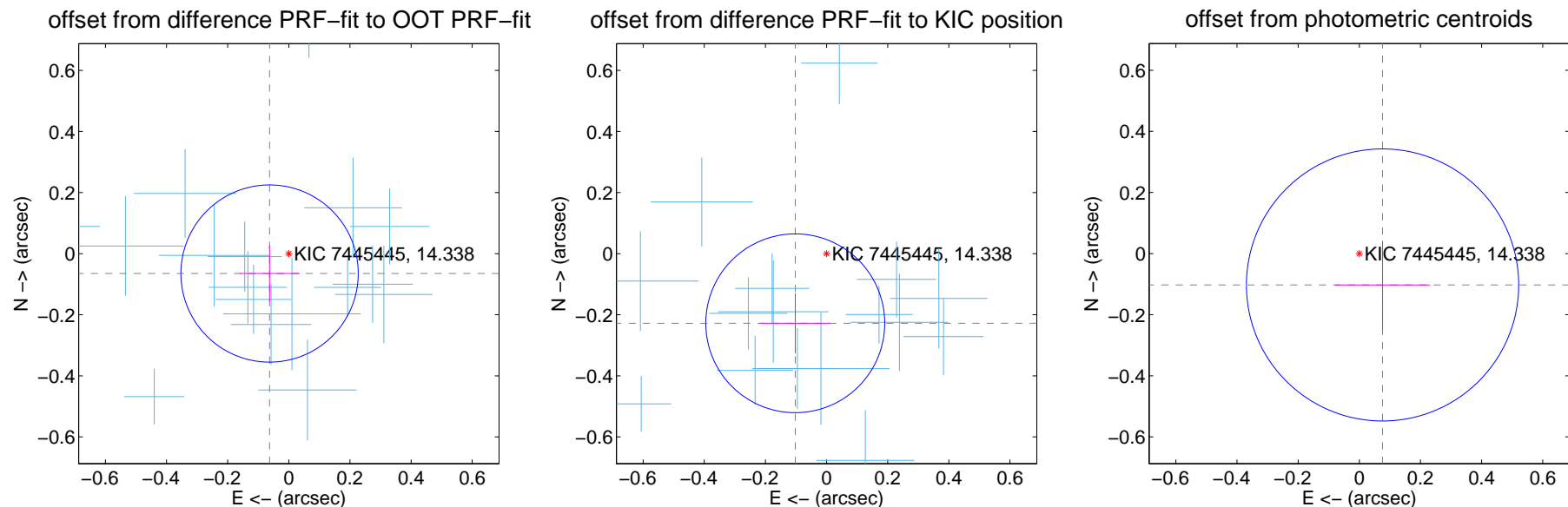
## DV Centroid Data

Supplemental centroid analysis for 007445445-01. Kepler magnitude: 14.34. Transit SNR 69.84

There are 17 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

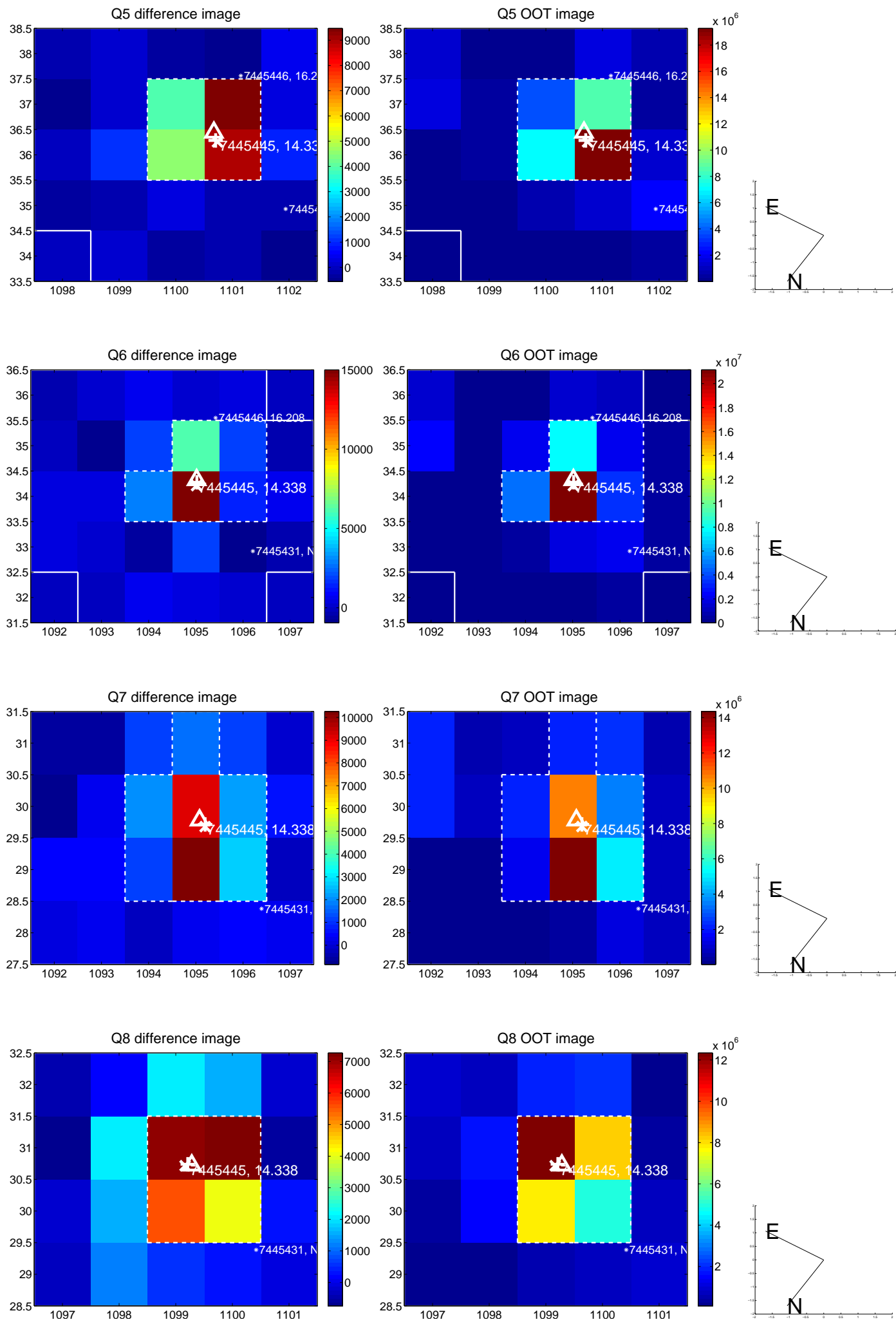
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.091 \pm 0.097$	0.94	$0.063 \pm 0.098$	$-0.065 \pm 0.092$
PRF-fit source offset from KIC position	$0.250 \pm 0.098$	2.56	$0.102 \pm 0.115$	$-0.228 \pm 0.098$
photometric centroid source offset	$0.13 \pm 0.15$	0.86	$-0.08 \pm 0.16$	$-0.10 \pm 0.14$



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.

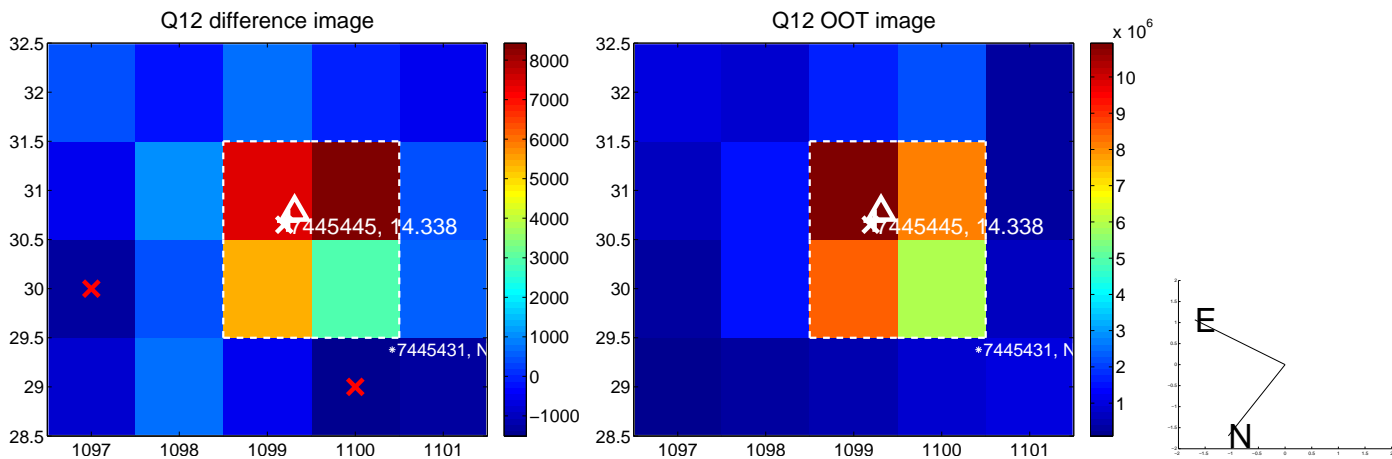
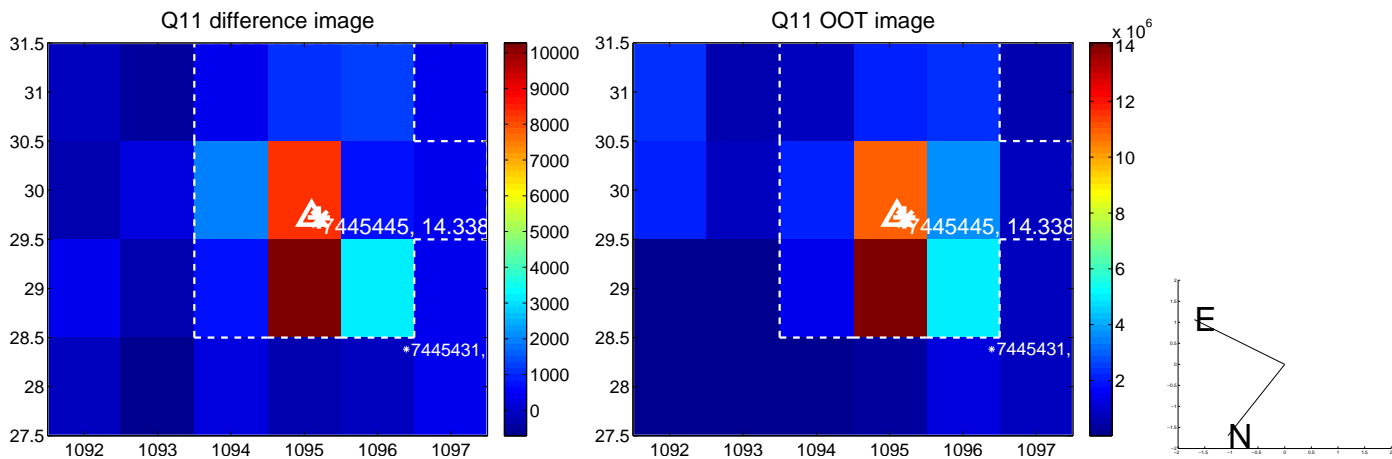
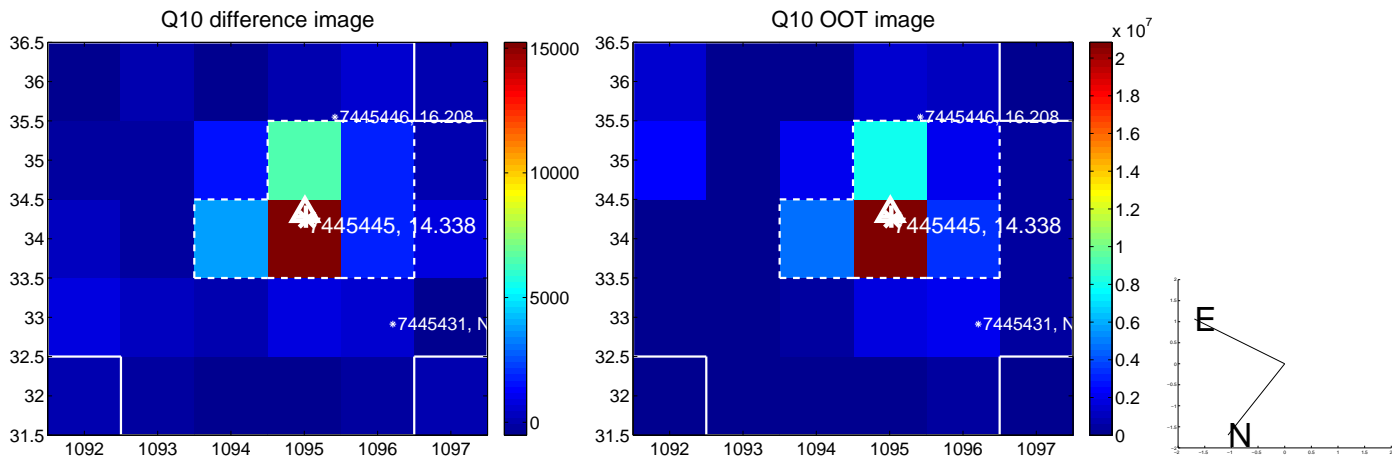
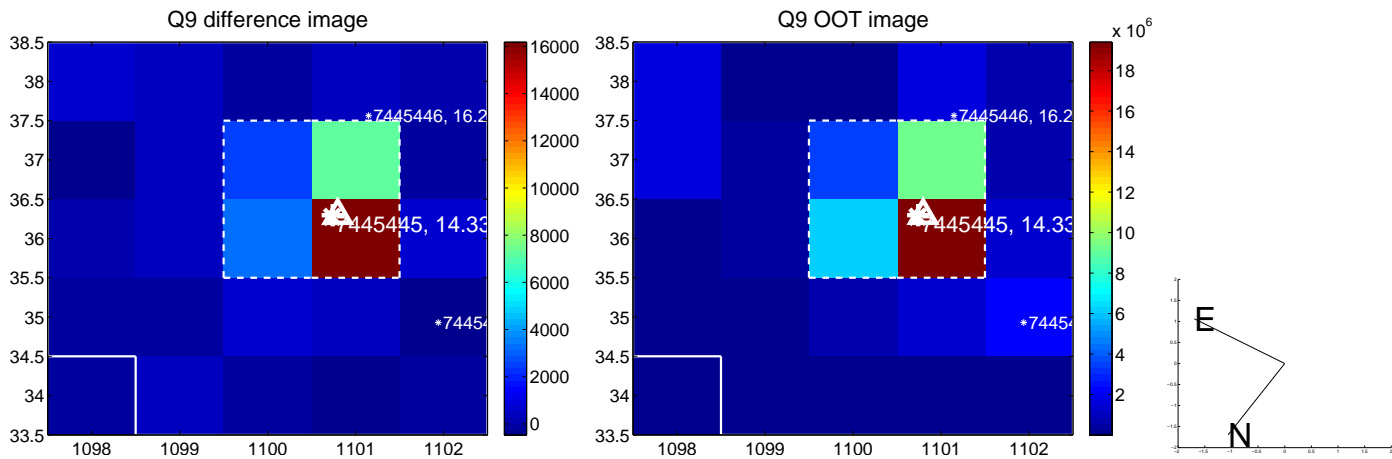


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

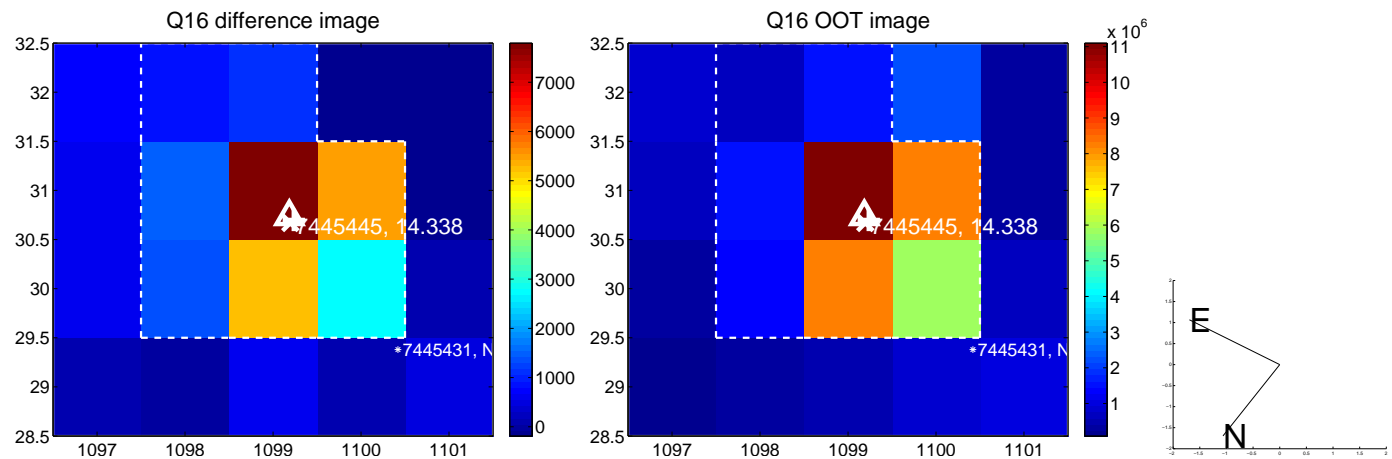
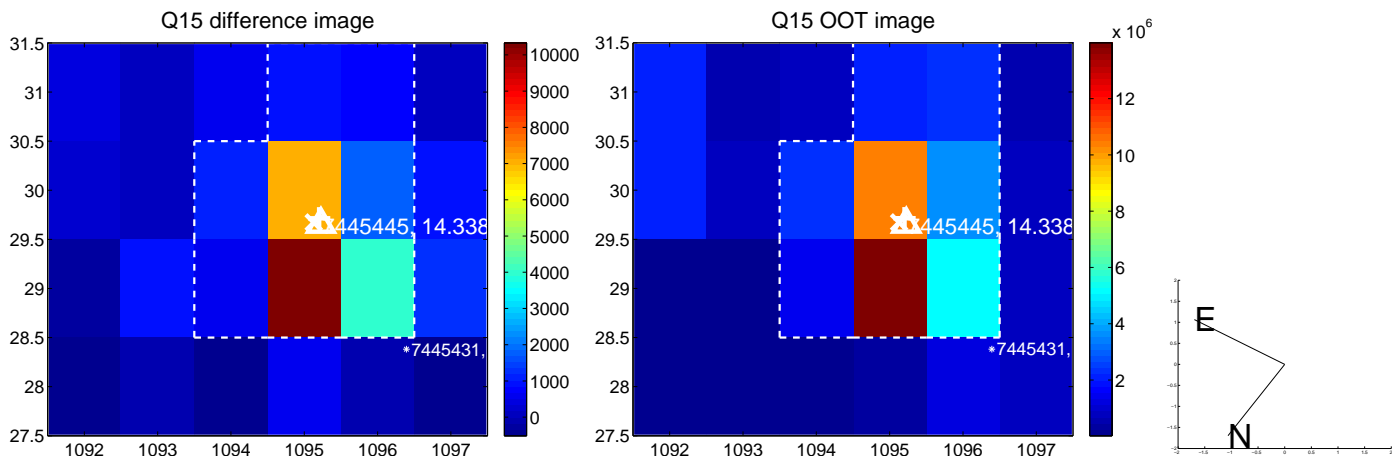
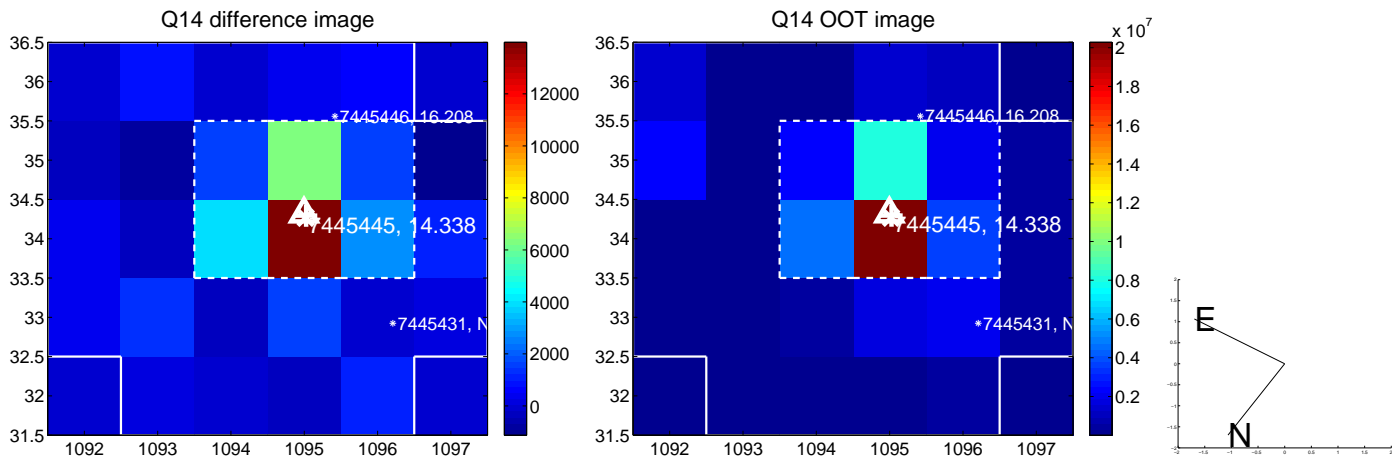
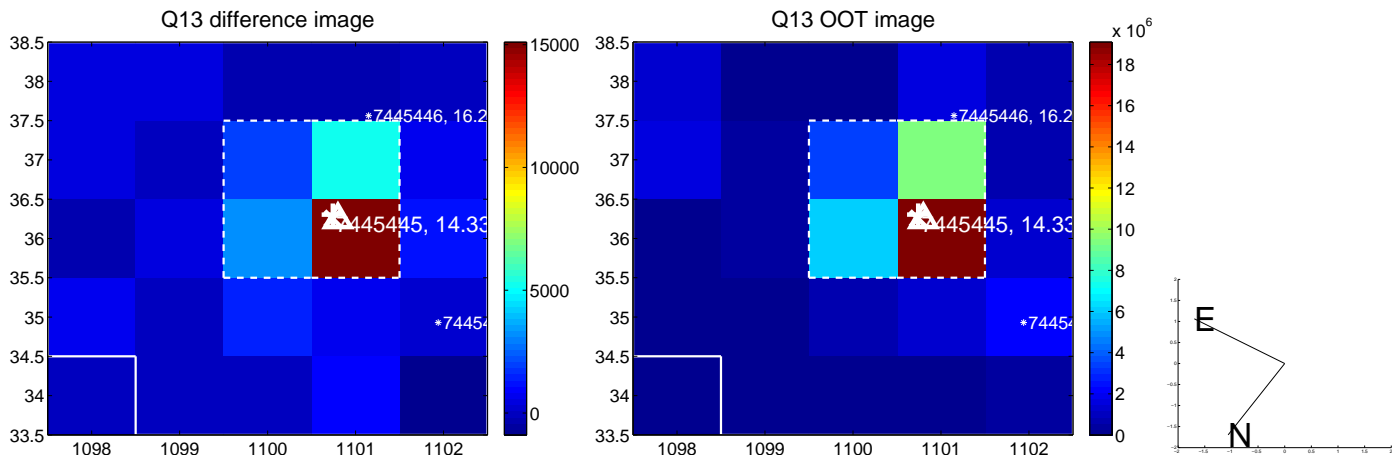




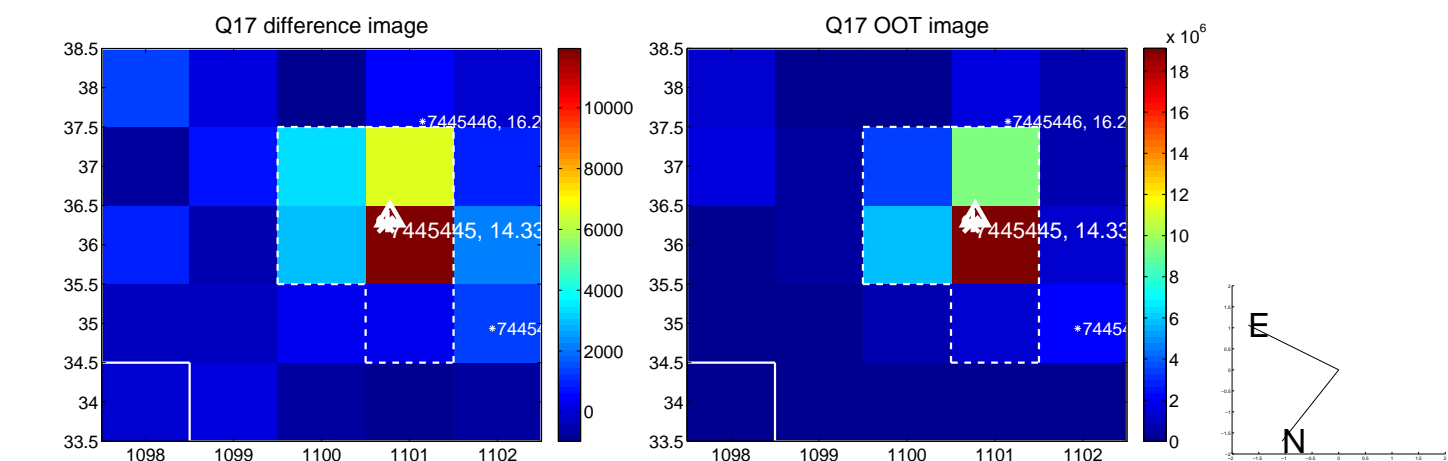
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



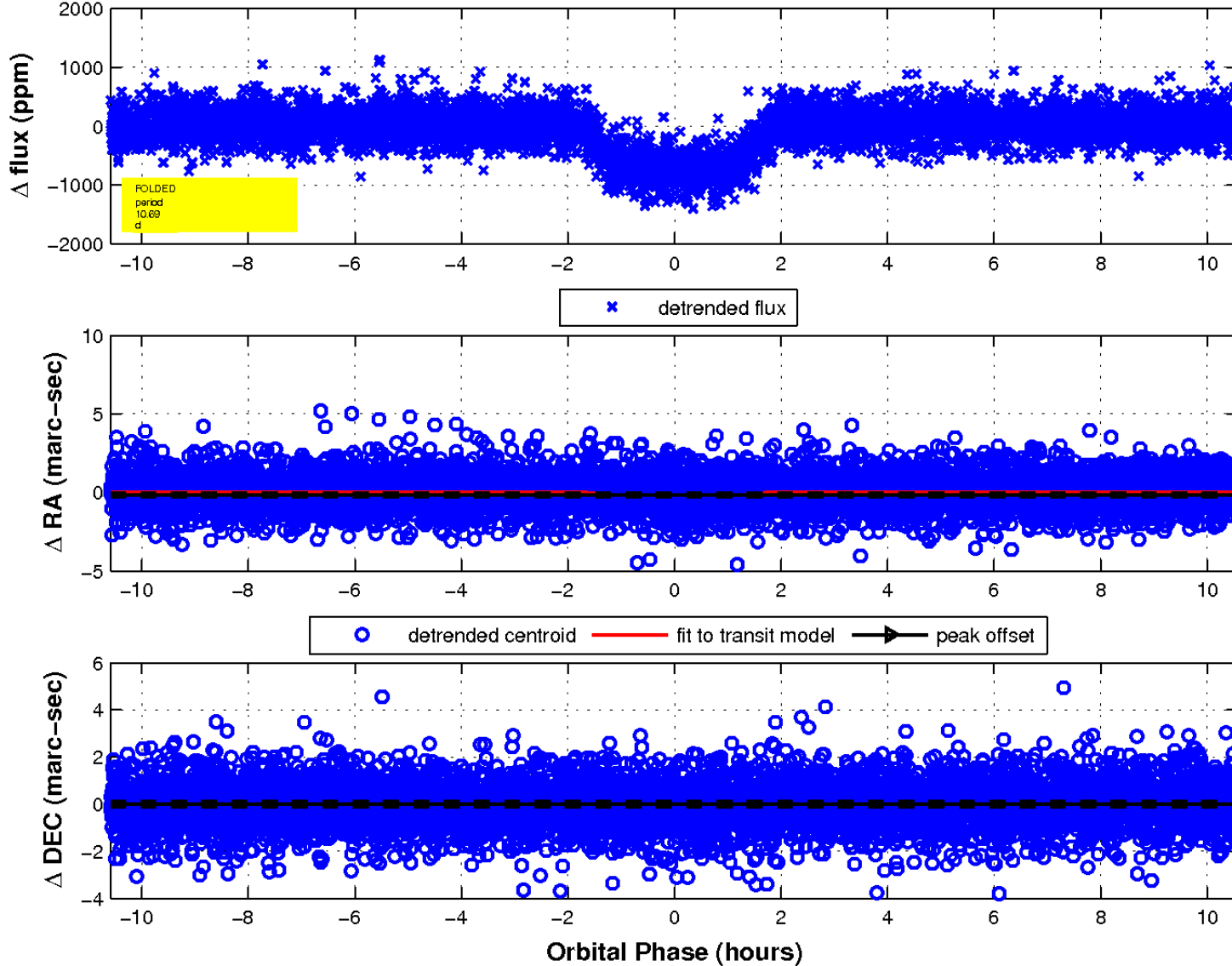
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

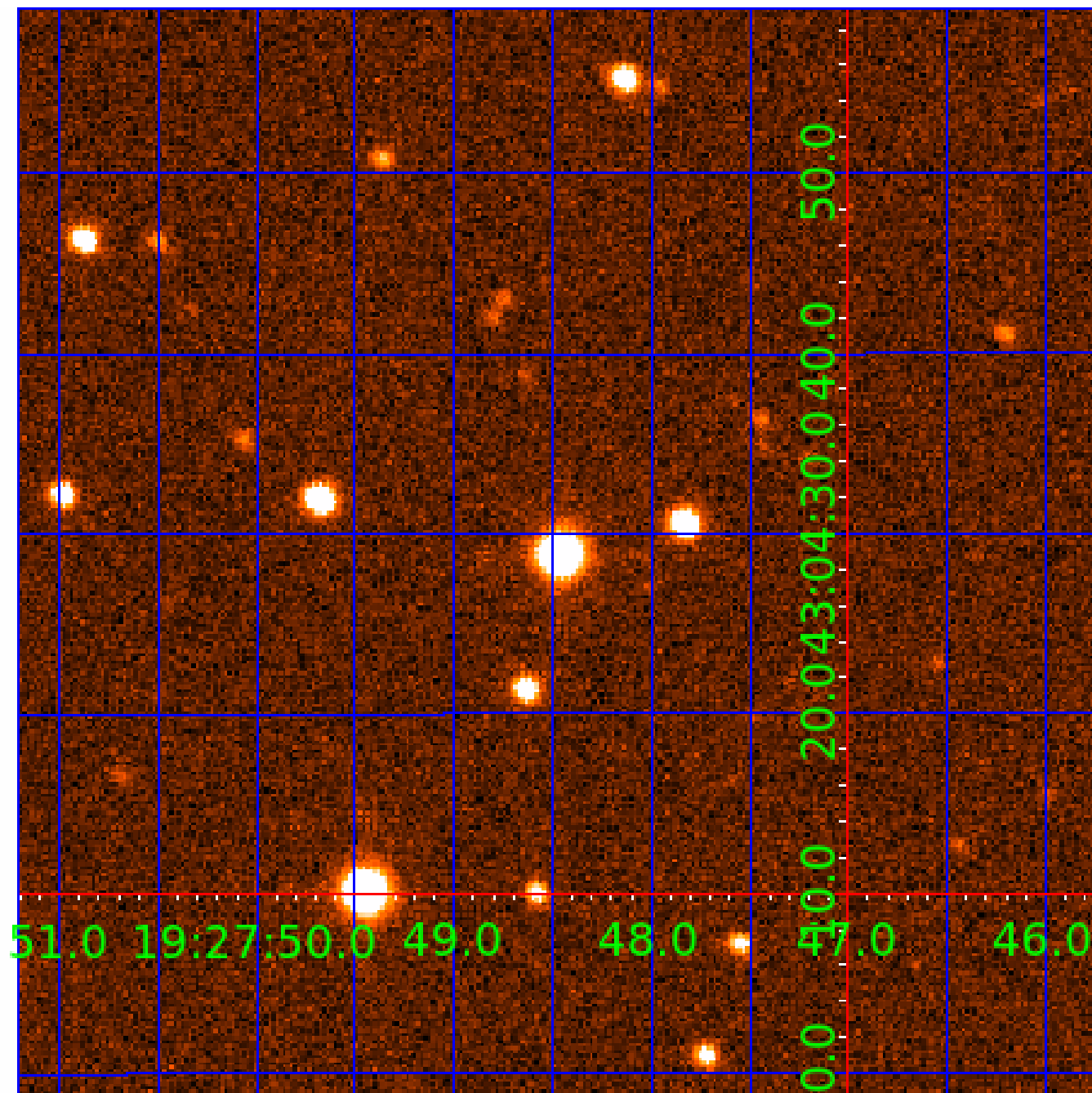


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination





# KIC 007445445

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007445445-01	OBS	0567.01	10.687573	137.868679	764.7	3.529	66.0	69.8	0.85	5788	2.75	87.52
007445445-02	OBS	0567.02	20.303070	136.195707	537.8	4.583	37.9	40.1	0.85	5788	2.24	37.20
007445445-03	OBS	0567.03	29.022313	140.325823	638.0	4.080	32.8	36.2	0.85	5788	2.56	23.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007445445-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007445445-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007445445-03	OBS	PC	1.00	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.

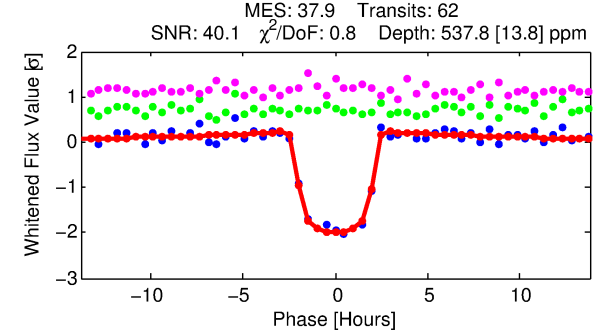
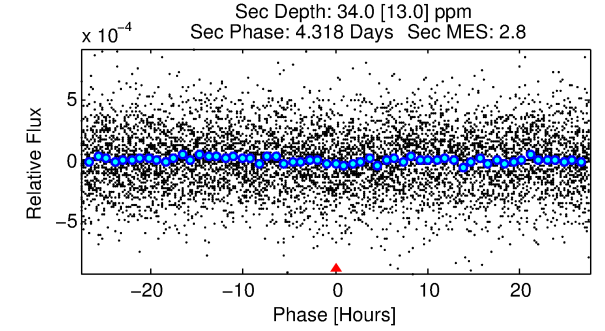
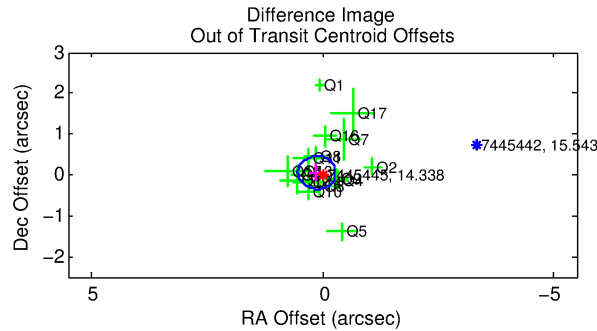
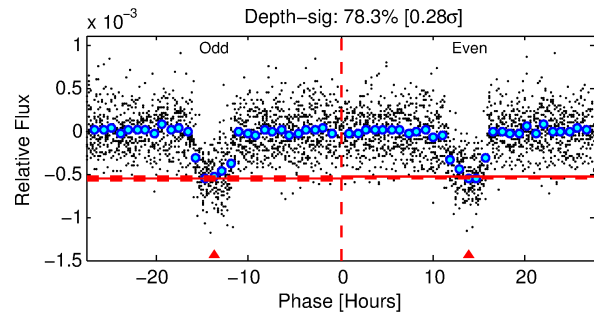
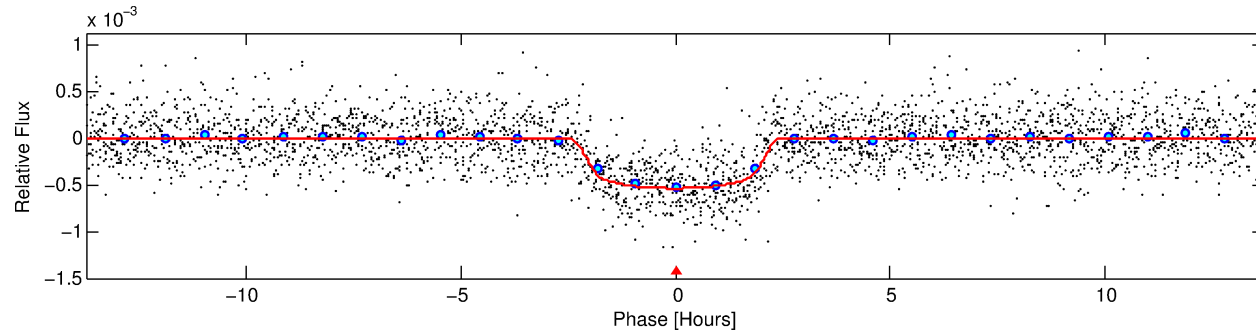
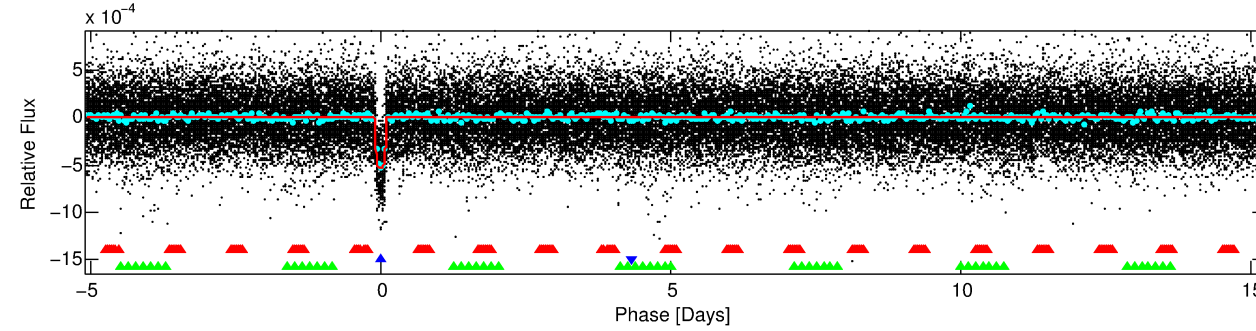
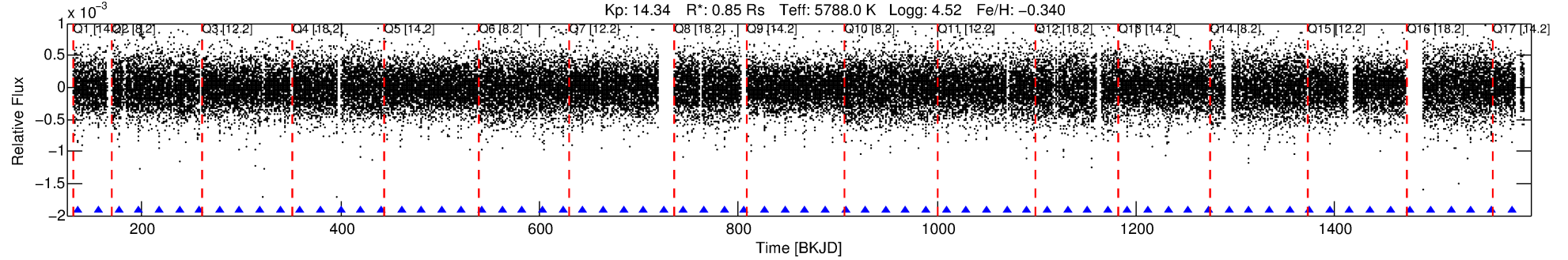
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007445445-02

No Significant Match Found

# DV One-Page Summary

KIC: 7445445 Candidate: 2 of 3 Period: 20.303 d  
KOI: K00567.02 Name: Kepler-184c Corr: 0.983



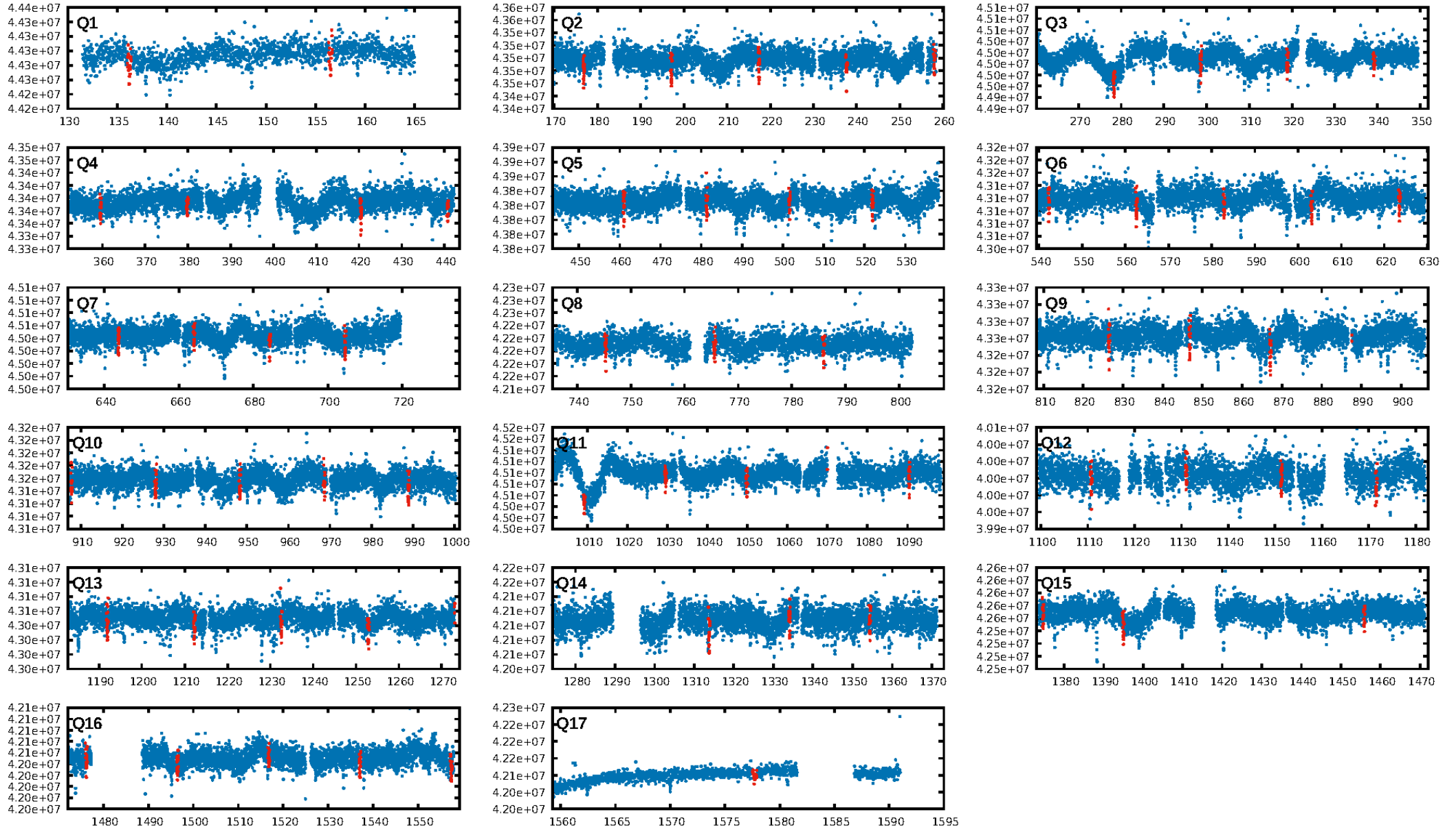
## DV Fit Results:

Period = 20.30307 [0.00006] d  
Epoch = 136.1957 [0.0022] BKJD  
Rp/R\* = 0.0242 [0.0021]  
a/R\* = 19.46 [8.12]  
b = 0.85 [0.14]  
Seff = 37.20 [12.78]  
Teff = 630 [54] K  
Rp = 2.24 [0.62] Re  
a = 0.1394 [0.0309] AU  
Ag = 72.80 [38.85] [1.85 $\sigma$ ]  
Teffp = 2844 [310] K [7.04 $\sigma$ ]

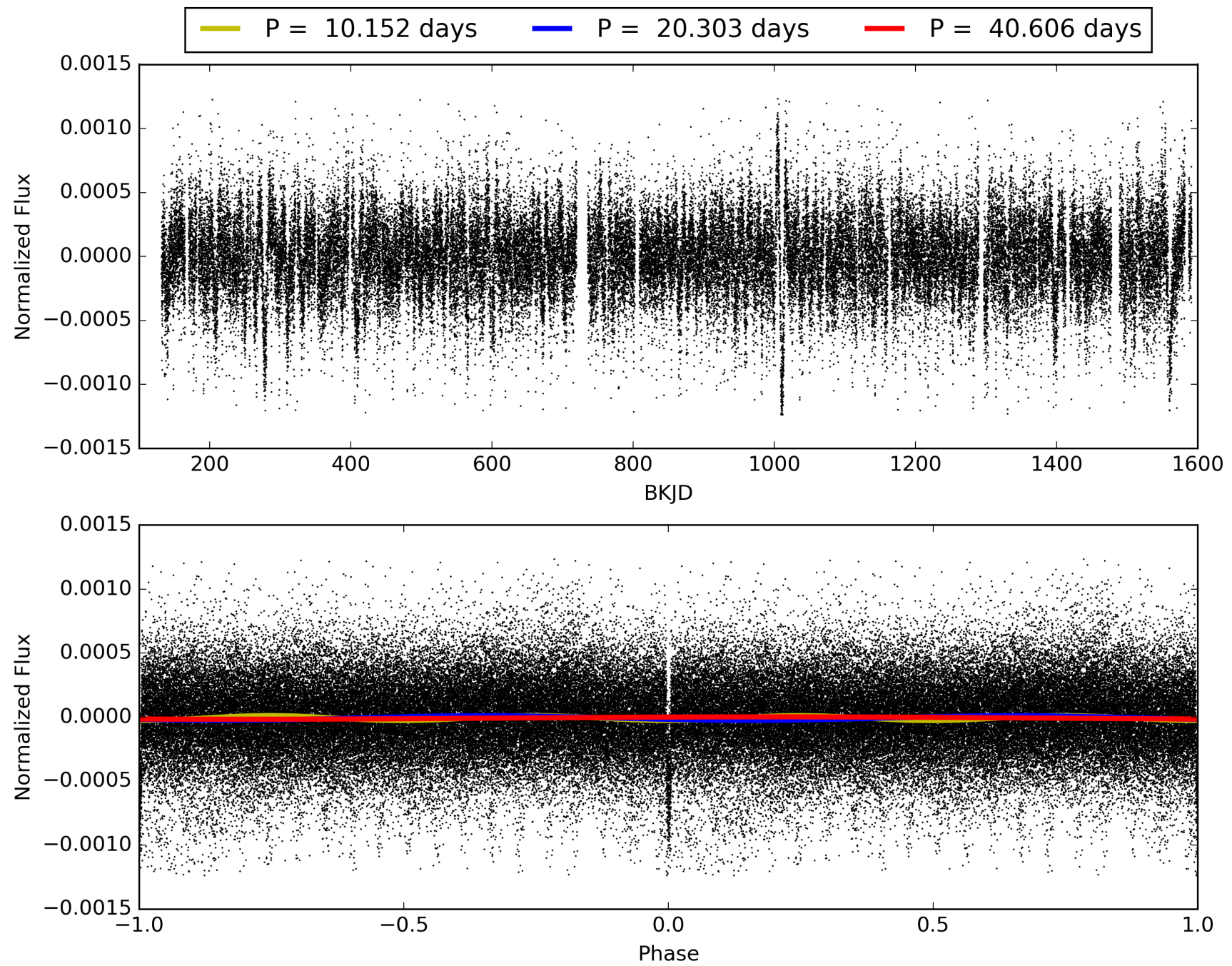
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [39.89 $\sigma$ ]  
LongPeriod-sig: 100.0% [34.10 $\sigma$ ]  
ModelChiSquare2-sig: 93.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.43e-305  
RollingBand-fgt: 1.00 [59/59]  
GhostDiagnostic-chr: 5.471  
Centroid-sig: 76.0%  
Centroid-so: 0.417 arcsec [1.52 $\sigma$ ]  
OotOffset-rm: 0.136 arcsec [1.01 $\sigma$ ]  
KicOffset-rm: 0.217 arcsec [1.38 $\sigma$ ]  
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]

# TCE 007445445-02, PDC Light Curves

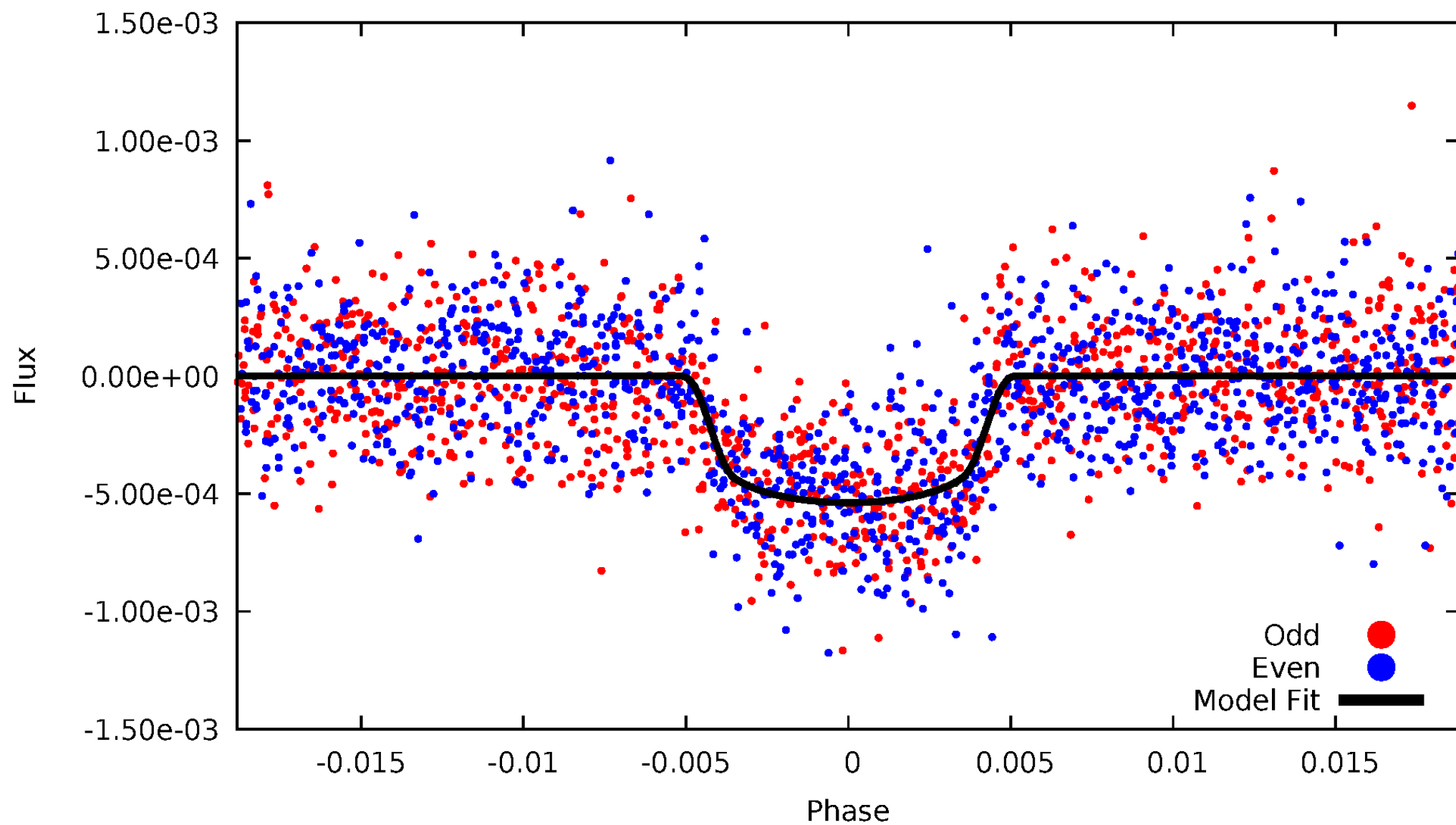


TCE 007445445-02



# DV Odd/Even

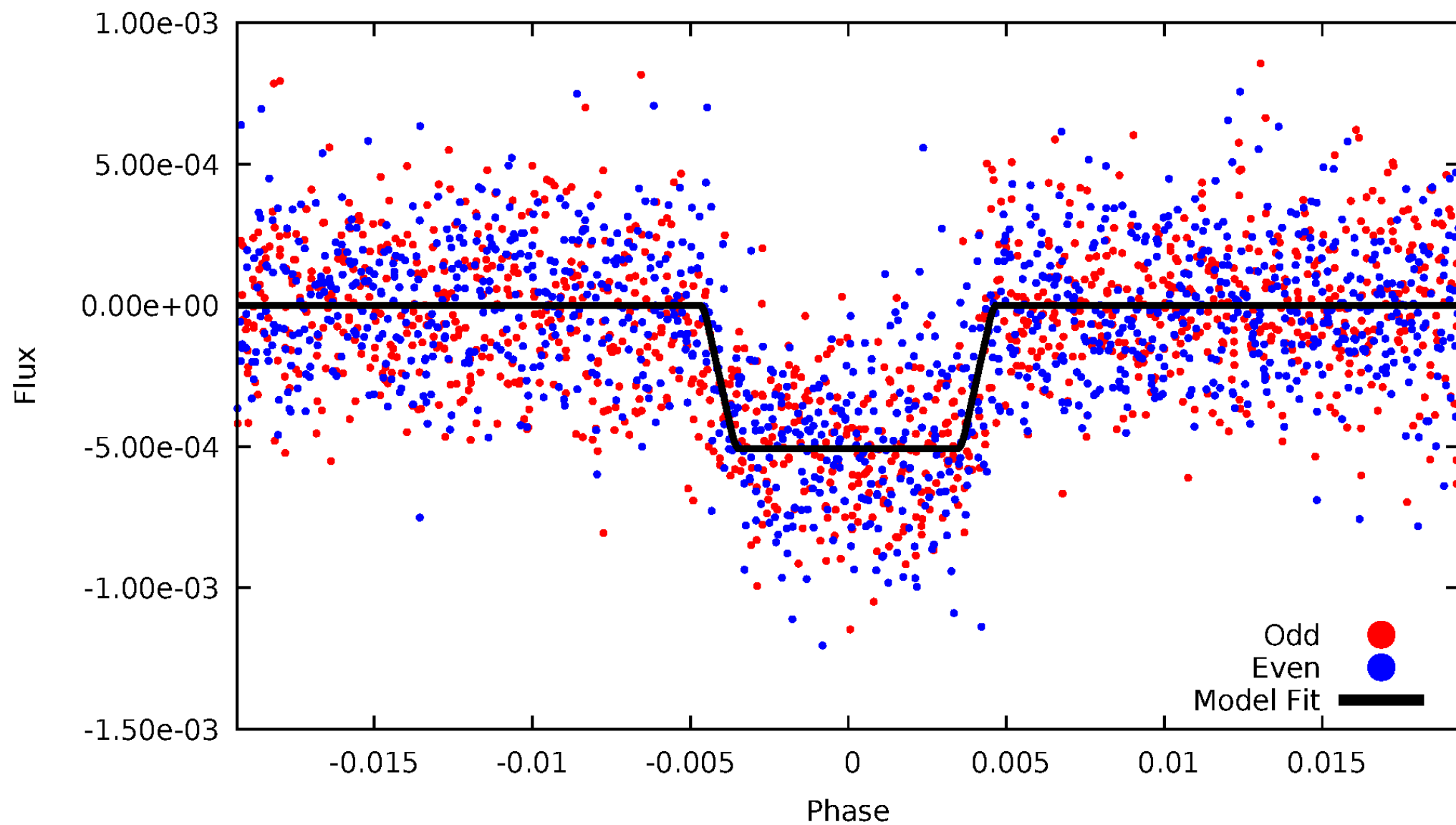
TCE 007445445-02





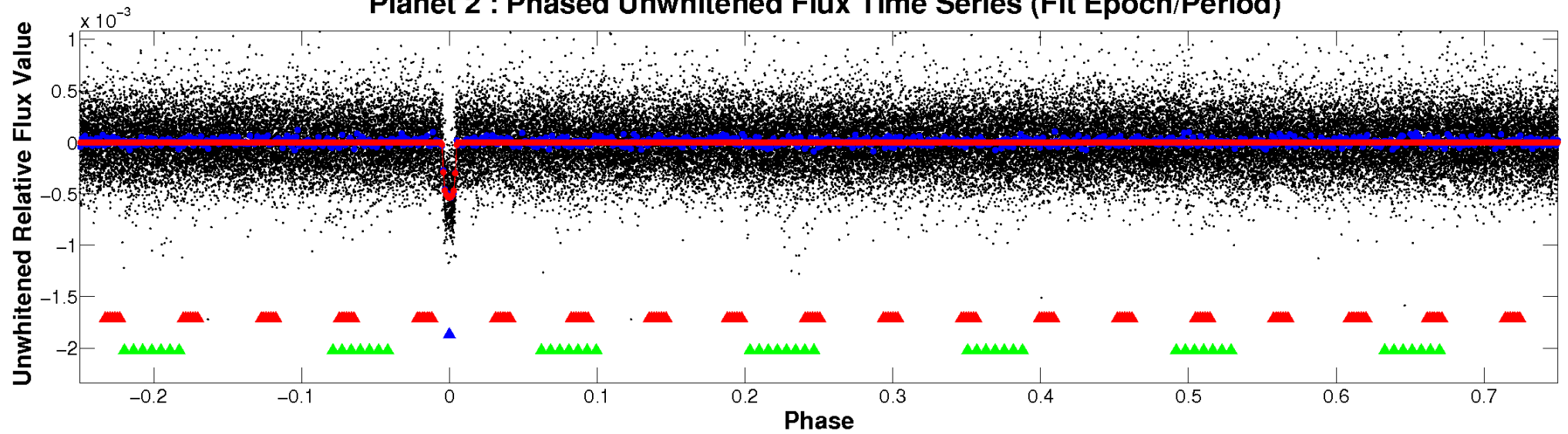
# ALT Odd/Even

TCE 007445445-02

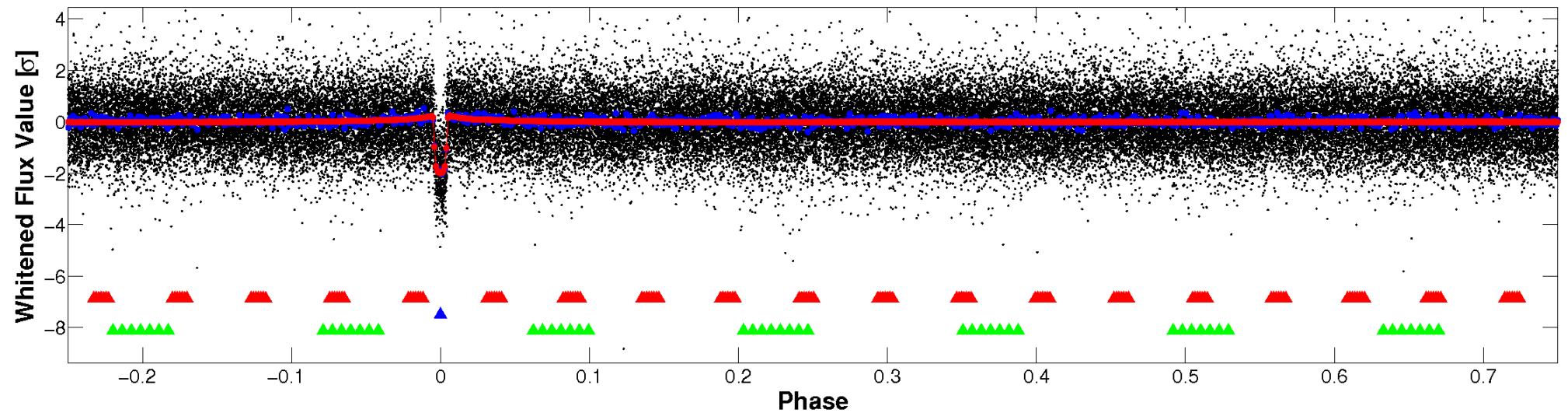


# Non-Whitened Vs. Whitened Light Curve

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

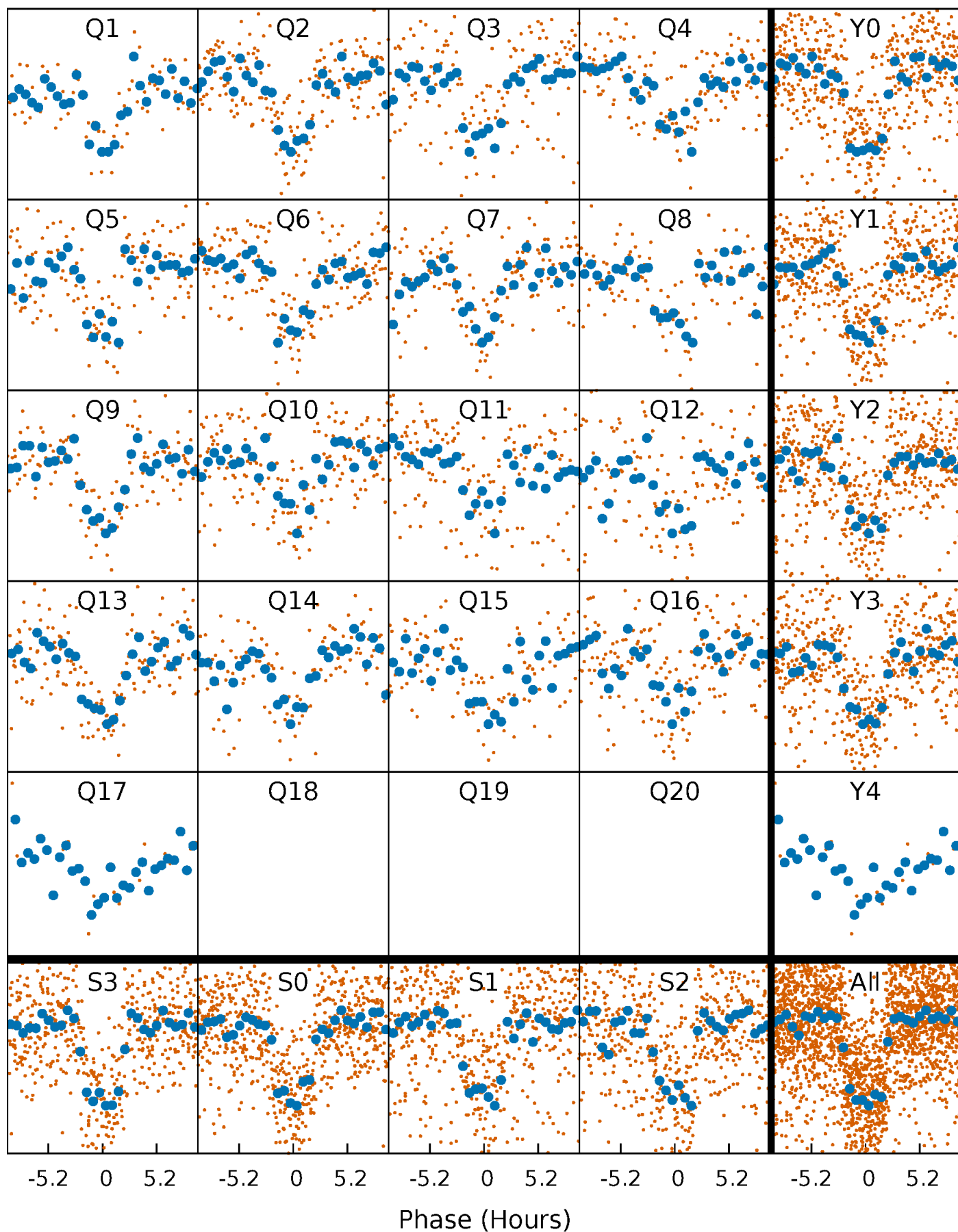


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

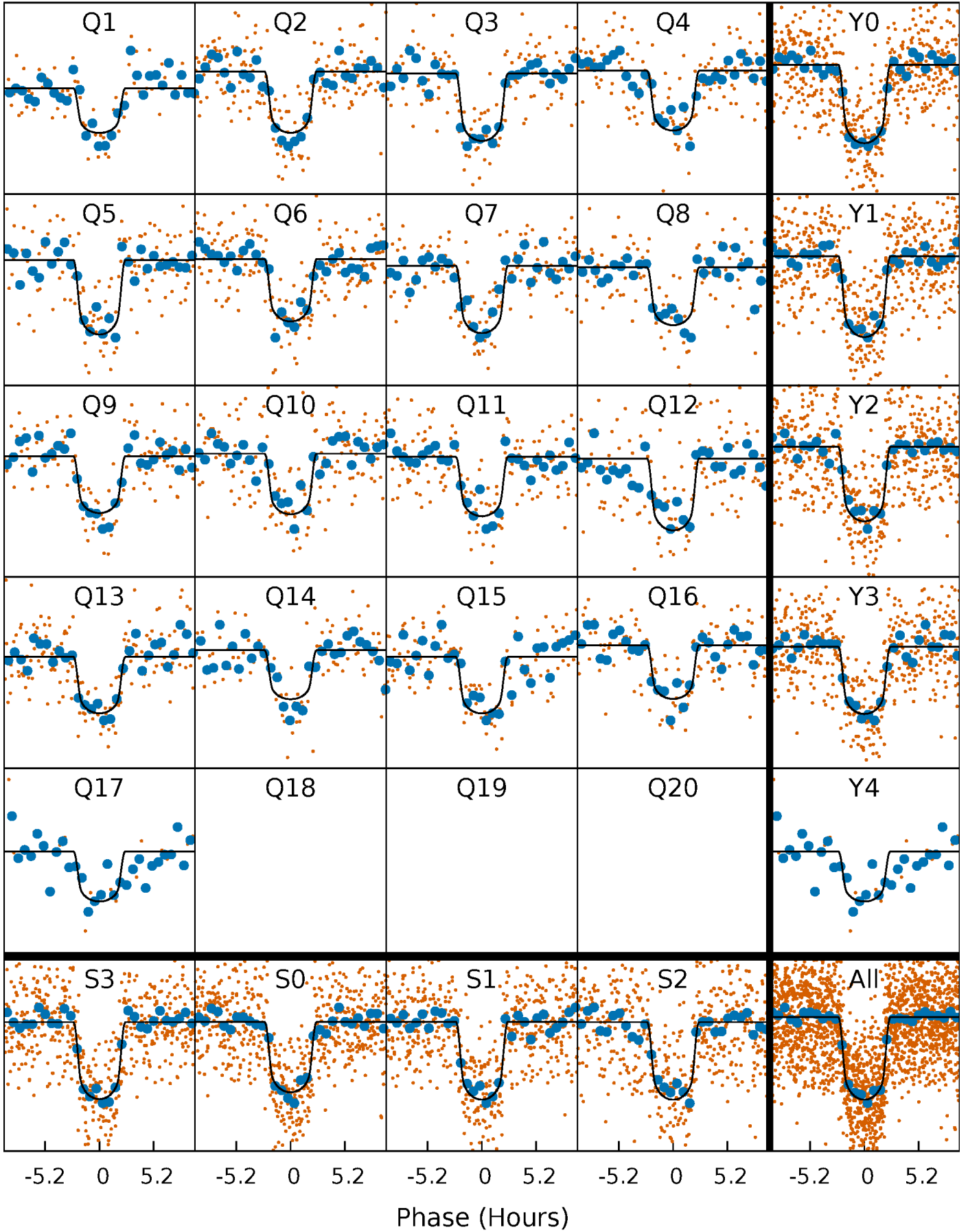
TCE 007445445-02   P= 20.303070 Days    $T_0=136.195707$  (BKJD)





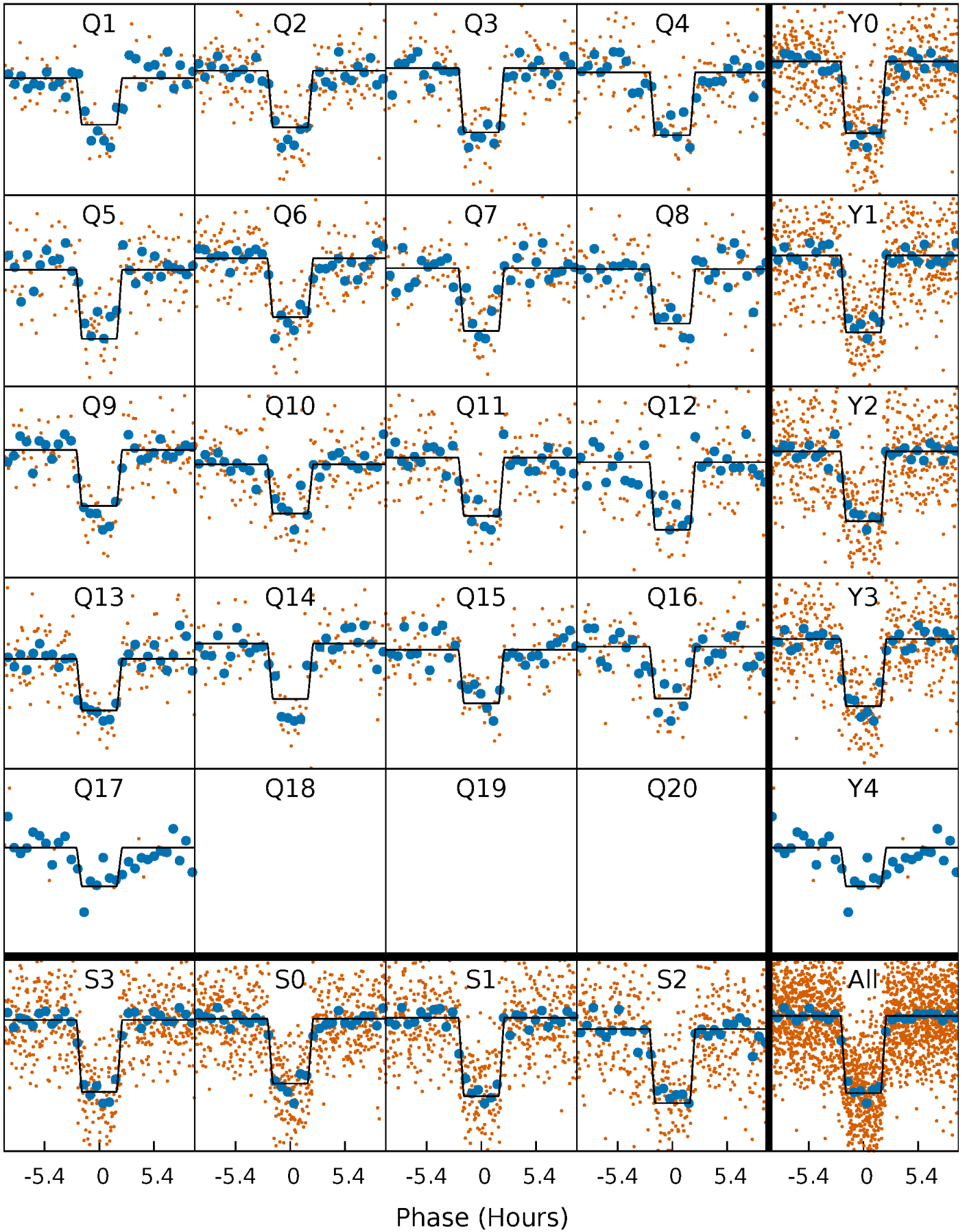
# DV Quarter-Phased Transit Curves

TCE 007445445-02   P= 20.303070 Days    $T_0=136.195707$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

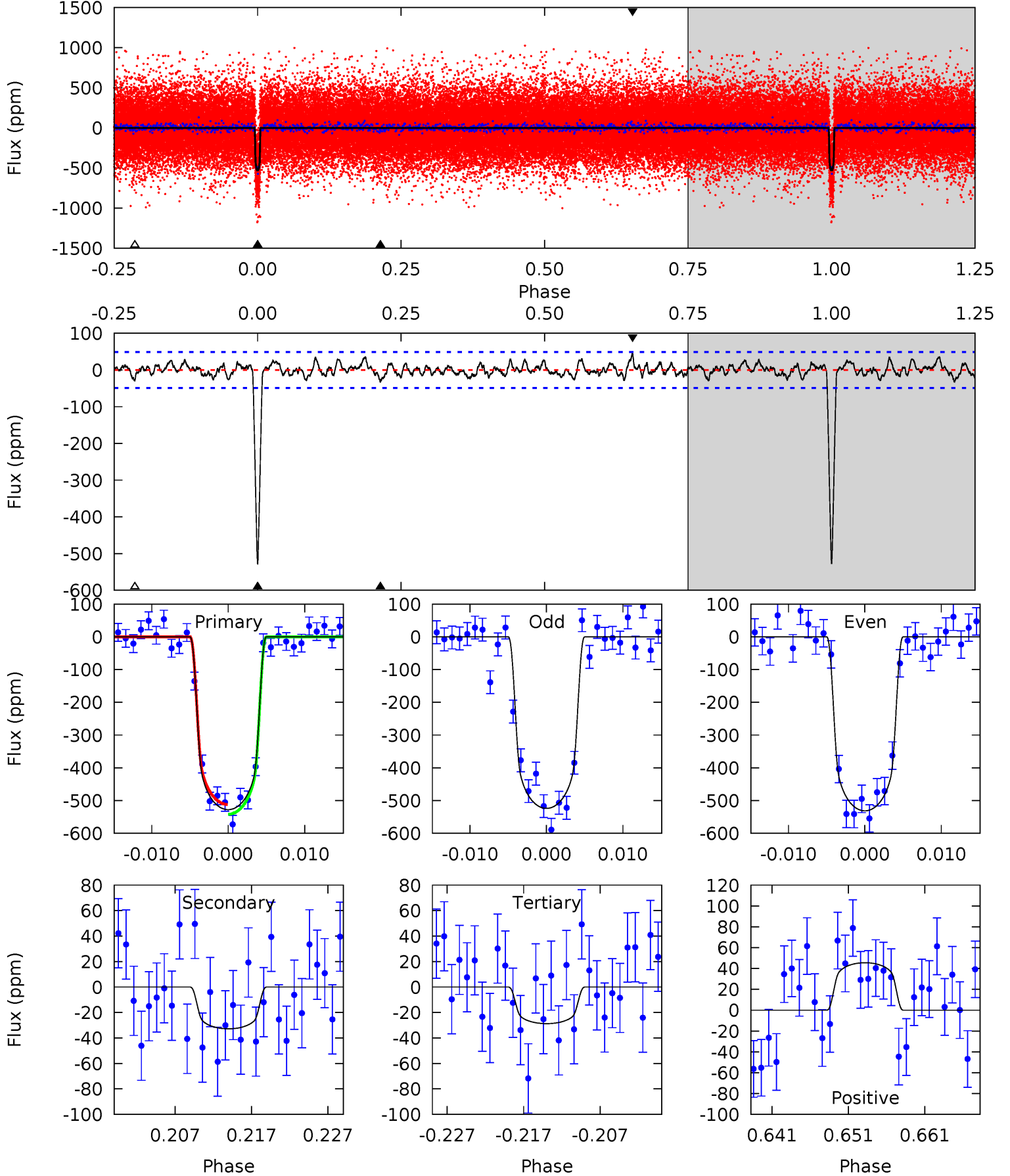
TCE 007445445-02 P= 20.303241 Days  $T_0=136.190144$  (BKJD)



# DV Model-Shift Uniqueness Test

007445445-02,  $P = 20.303070$  Days,  $E = 115.892637$  Days

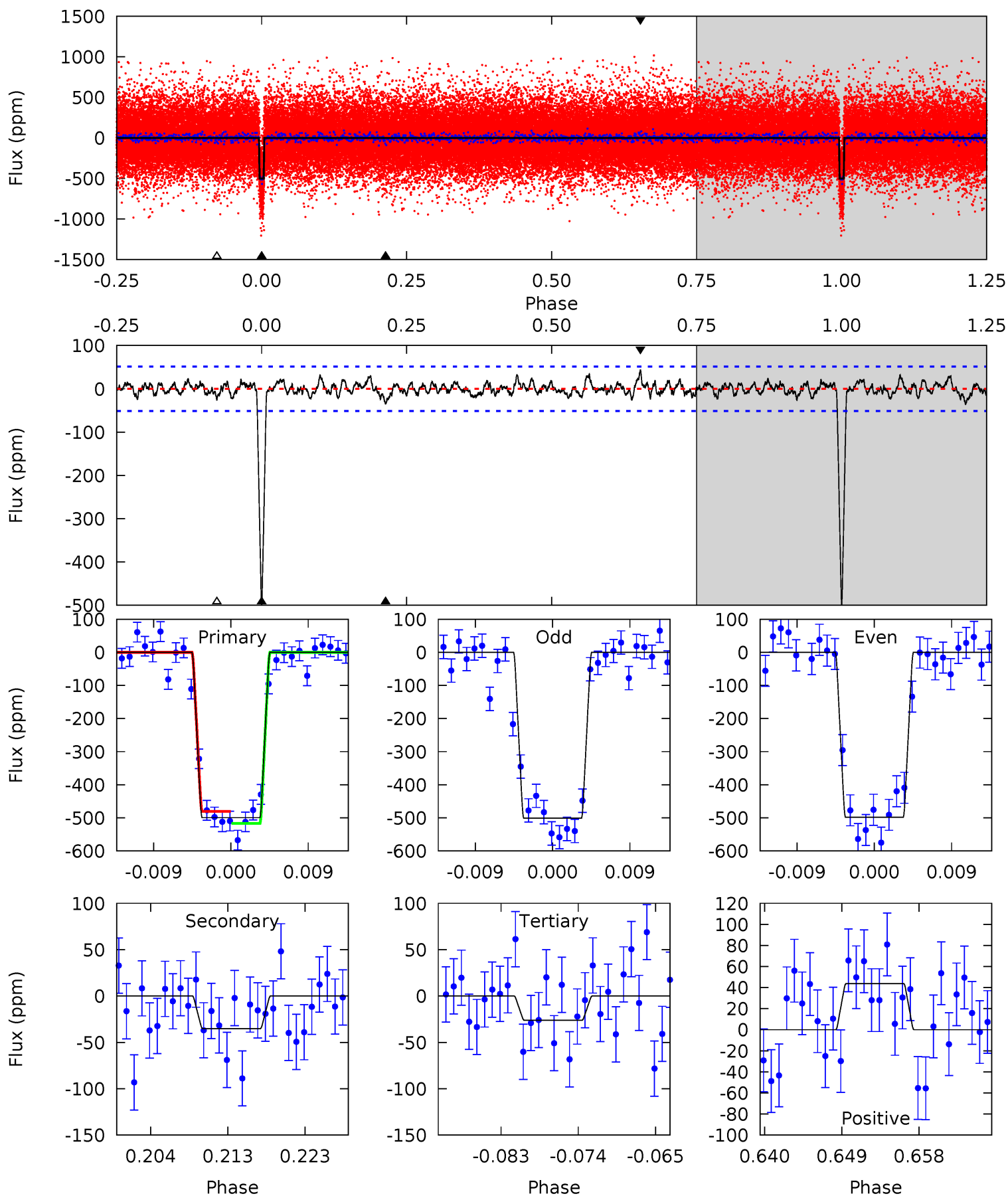
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.3	3.37	2.96	4.69	5.02	2.56	1.27	51.3	49.6	0.42	-1.31	0.39	1.00	0.08	1.53



# Alt Model-Shift Uniqueness Test

007445445-02, P = 20.303241 Days, E = 115.886903 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
49.2	3.46	2.58	4.30	5.04	2.60	1.07	46.6	44.9	0.88	-0.84	0.12	1.03	0.08	1.81



### Stellar Parameters For KIC 007445445

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5788^{+155}_{-155}$	$4.524^{+0.060}_{-0.180}$	$-0.340^{+0.300}_{-0.300}$	$0.848^{+0.221}_{-0.095}$	$0.877^{+0.100}_{-0.090}$	$2.025^{+0.596}_{-0.956}$
	+3%/-3%	+1%/-4%	+88%/-88%	+26%/-11%	+11%/-10%	+29%/-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 007445445-02 / KOI 0567.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-33 \pm 10$	$2.33^{+0.37}_{-0.28}$	$895^{+63}_{-41}$	$3349^{+186}_{-179}$	$63^{+29}_{-21}$
Alt.	$-35 \pm 10$	$2.18^{+0.34}_{-0.29}$	$899^{+59}_{-41}$	$3462^{+209}_{-213}$	$78^{+36}_{-29}$

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

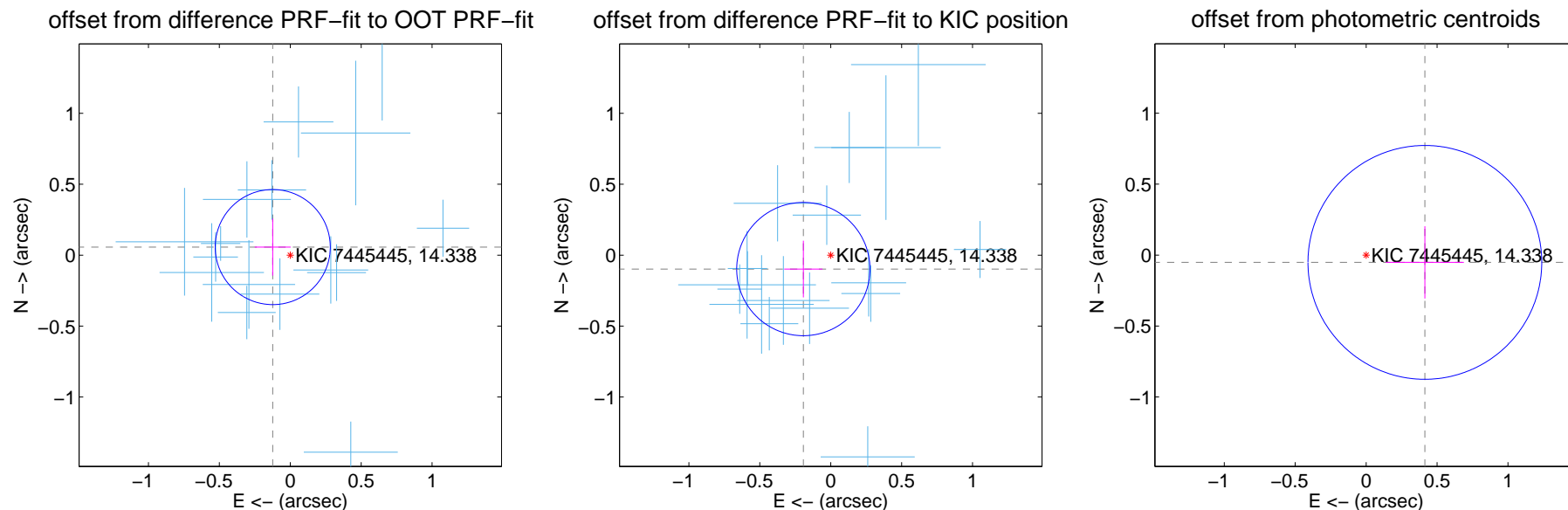
## DV Centroid Data

Supplemental centroid analysis for 007445445-02. Kepler magnitude: 14.34. Transit SNR 40.06

There are 17 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.136 \pm 0.135$	1.01	$0.124 \pm 0.127$	$0.057 \pm 0.201$
PRF-fit source offset from KIC position	$0.217 \pm 0.157$	1.38	$0.193 \pm 0.135$	$-0.098 \pm 0.200$
photometric centroid source offset	$0.42 \pm 0.27$	1.52	$-0.41 \pm 0.28$	$-0.05 \pm 0.25$

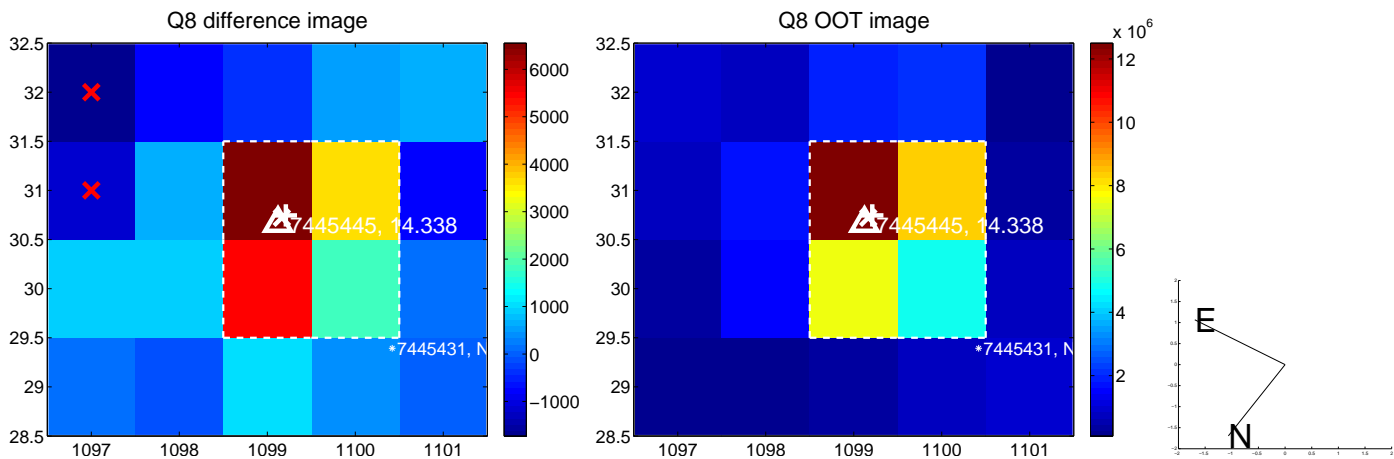
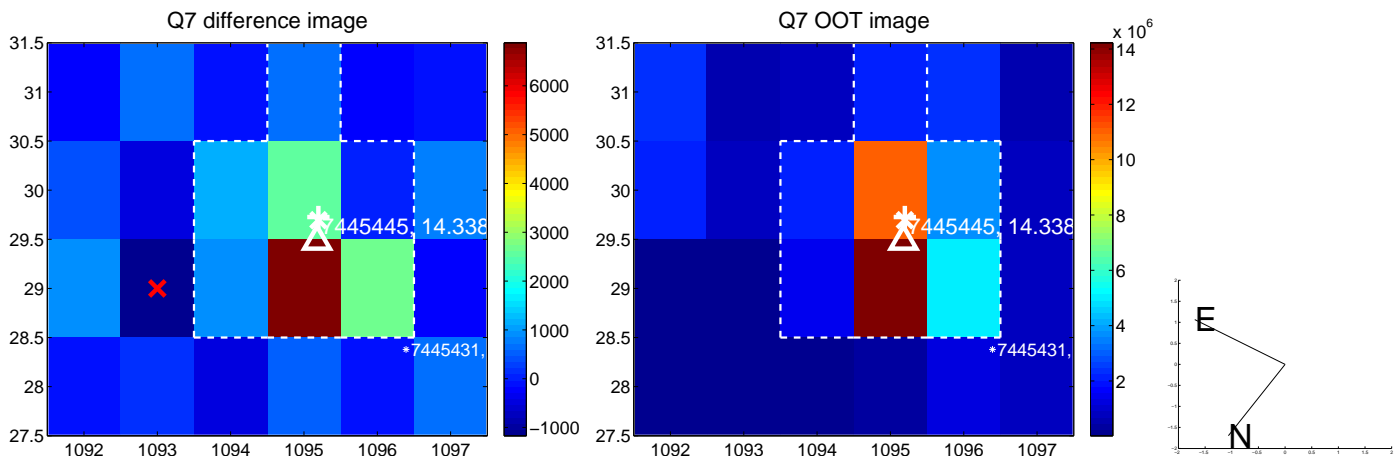
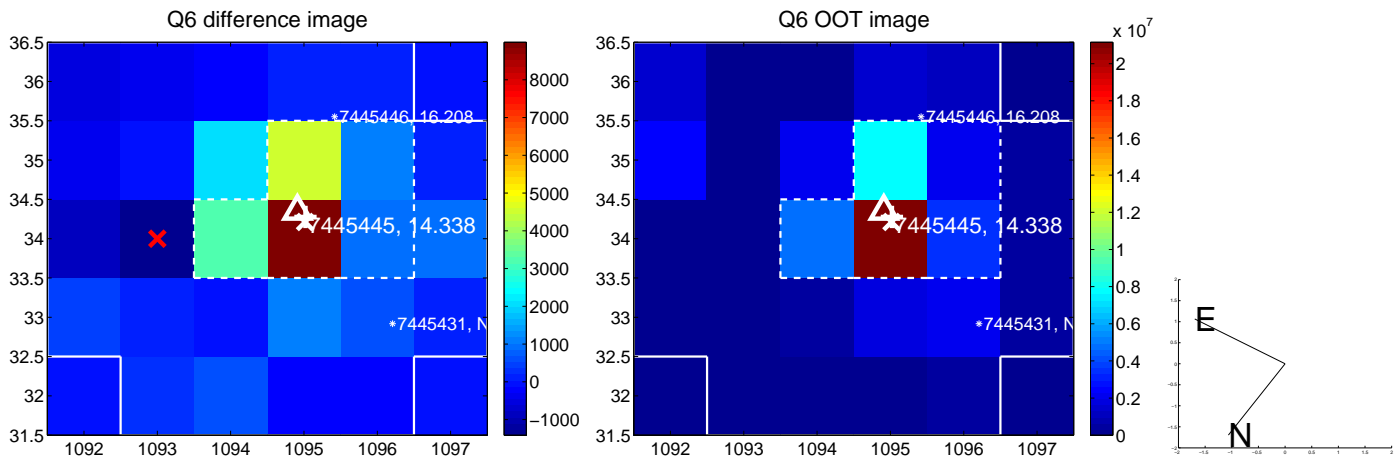
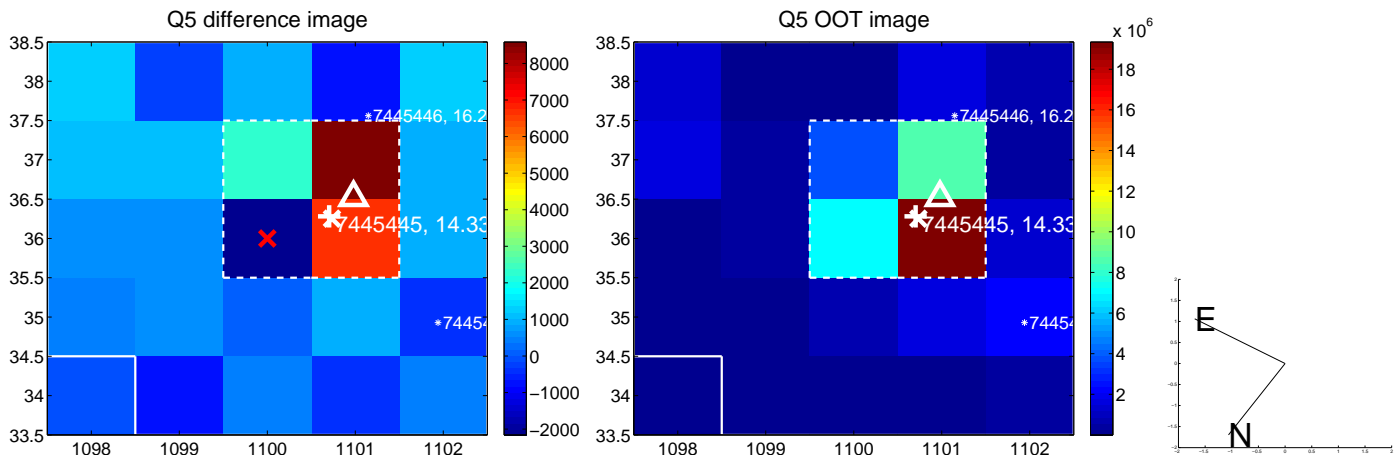


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

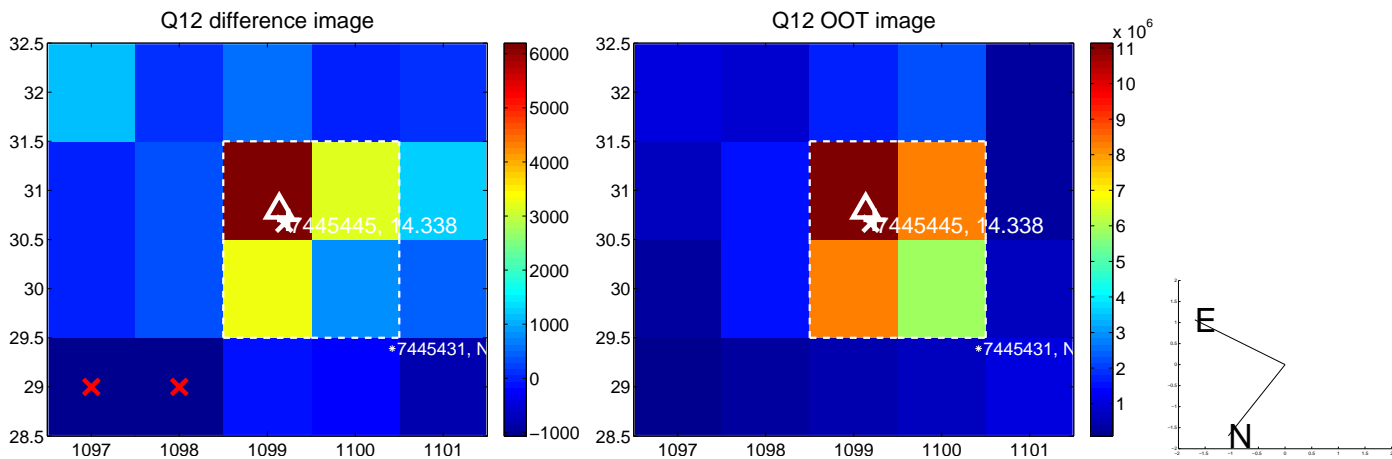
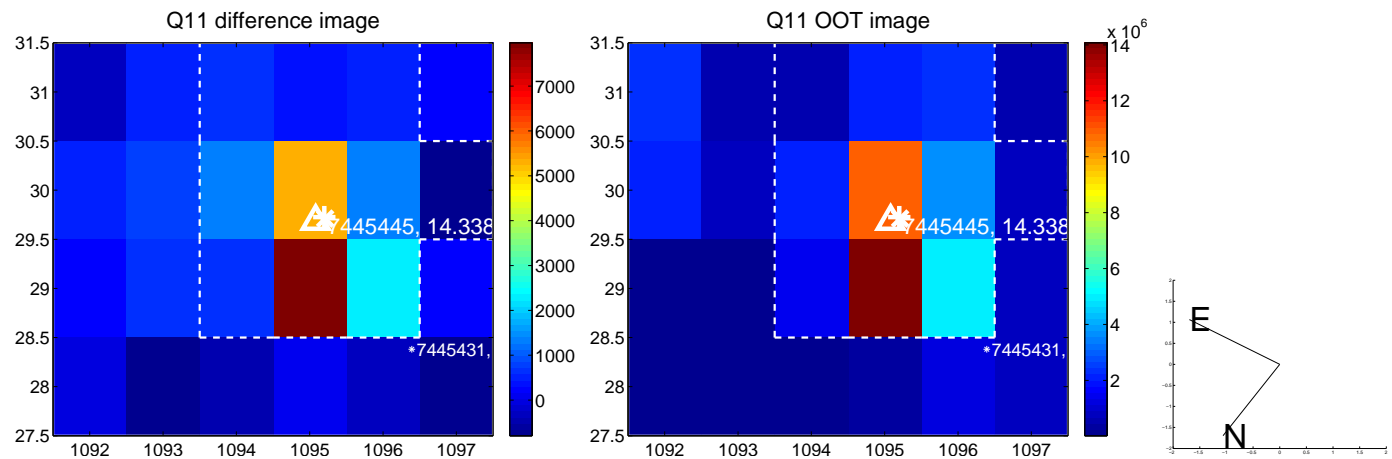
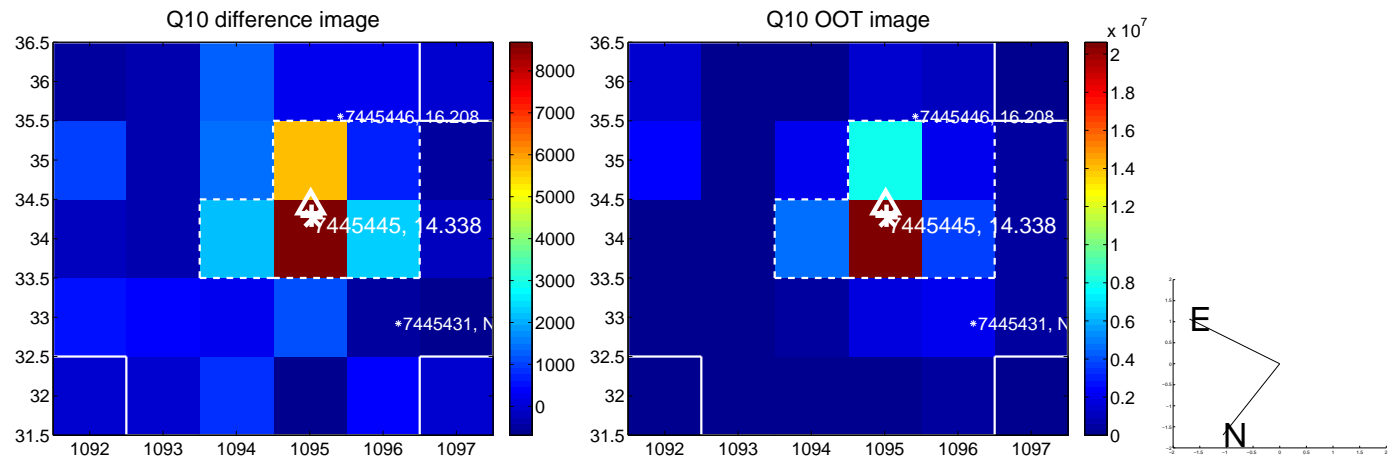
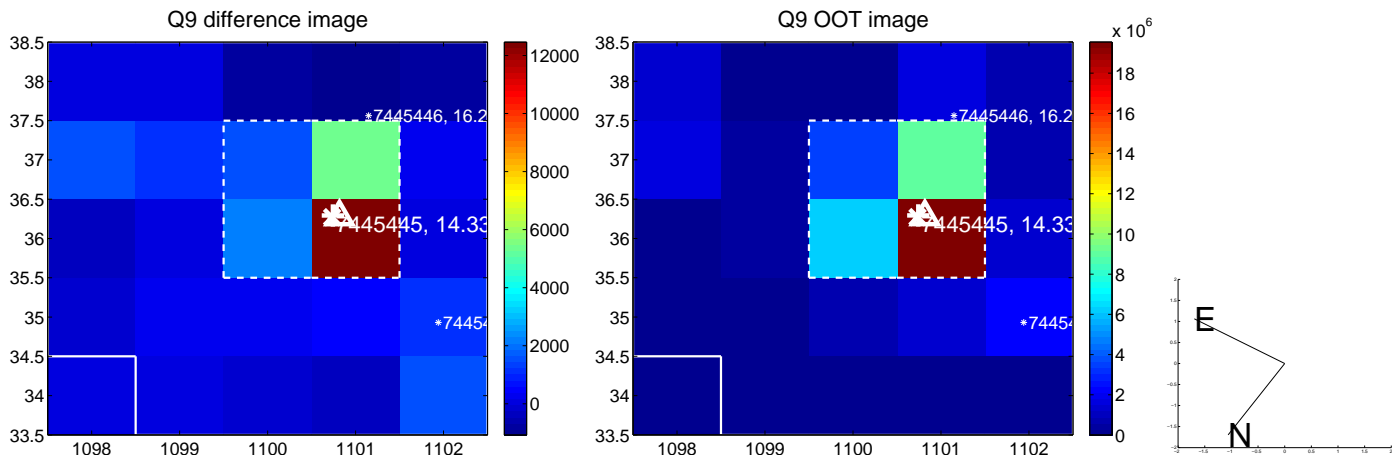




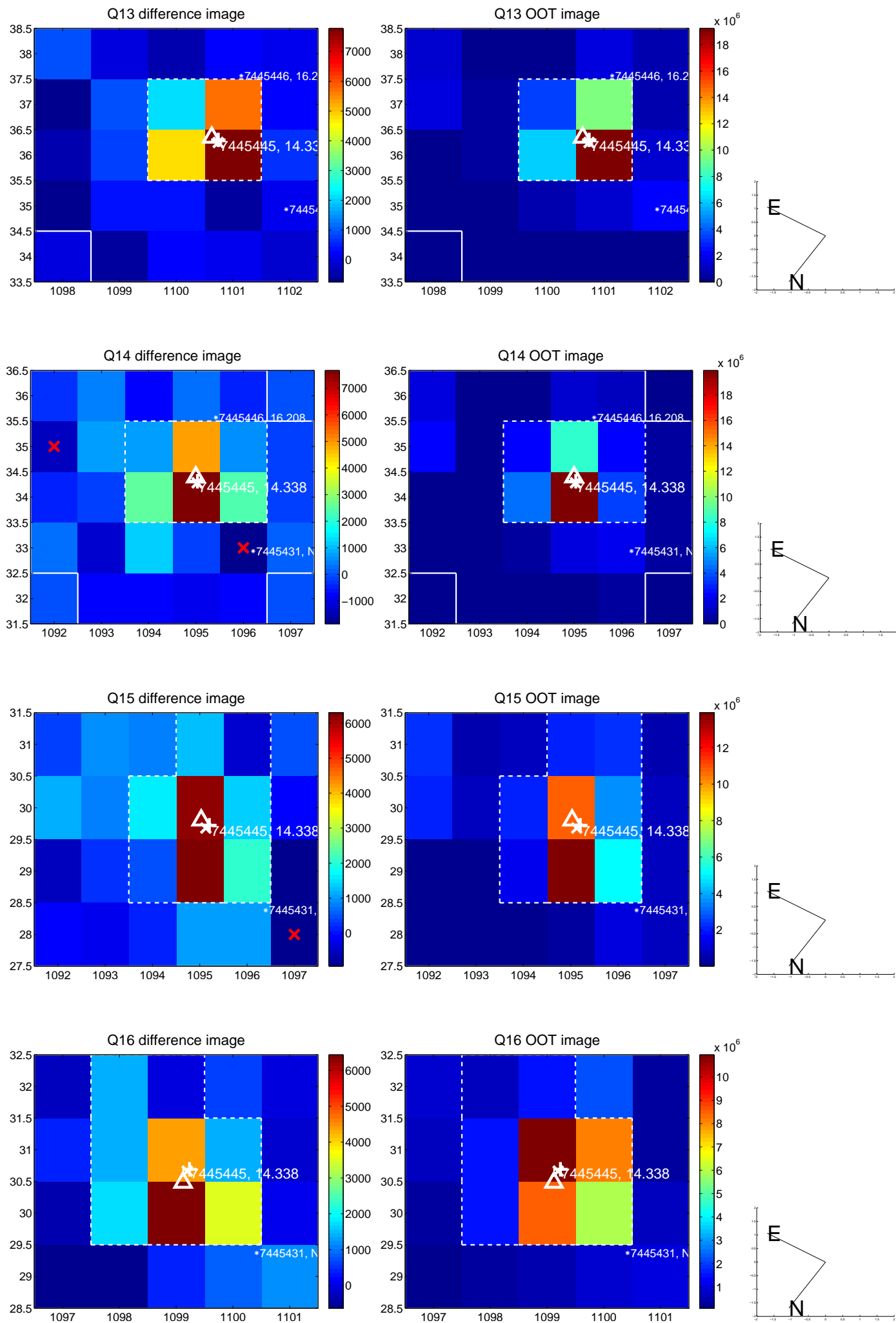
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



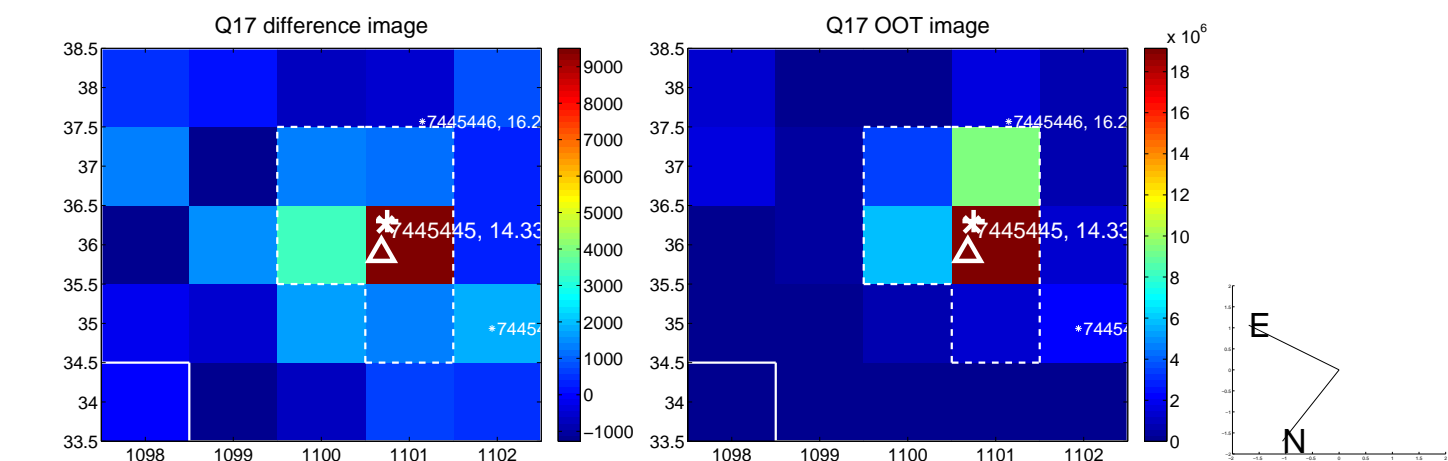
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



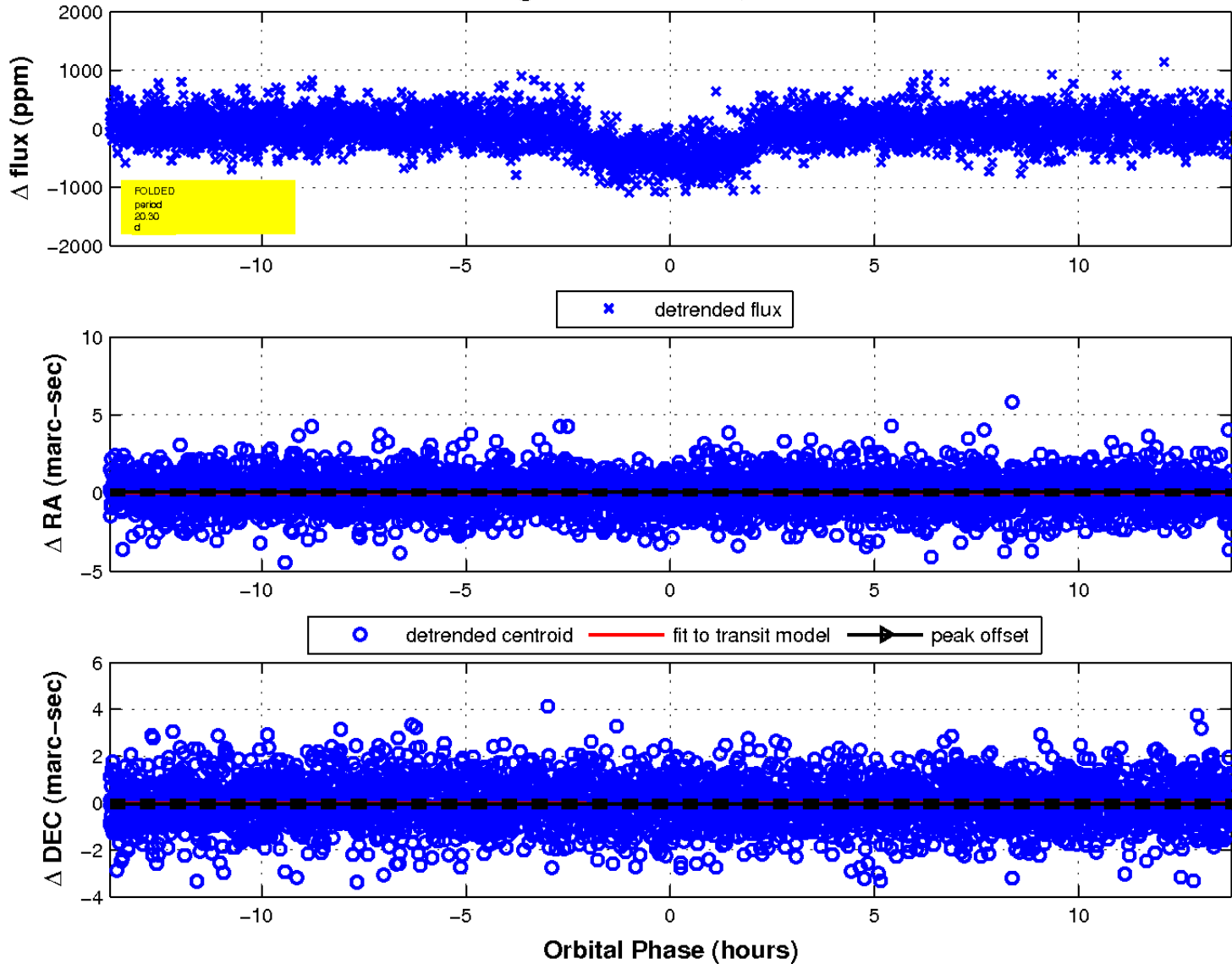
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

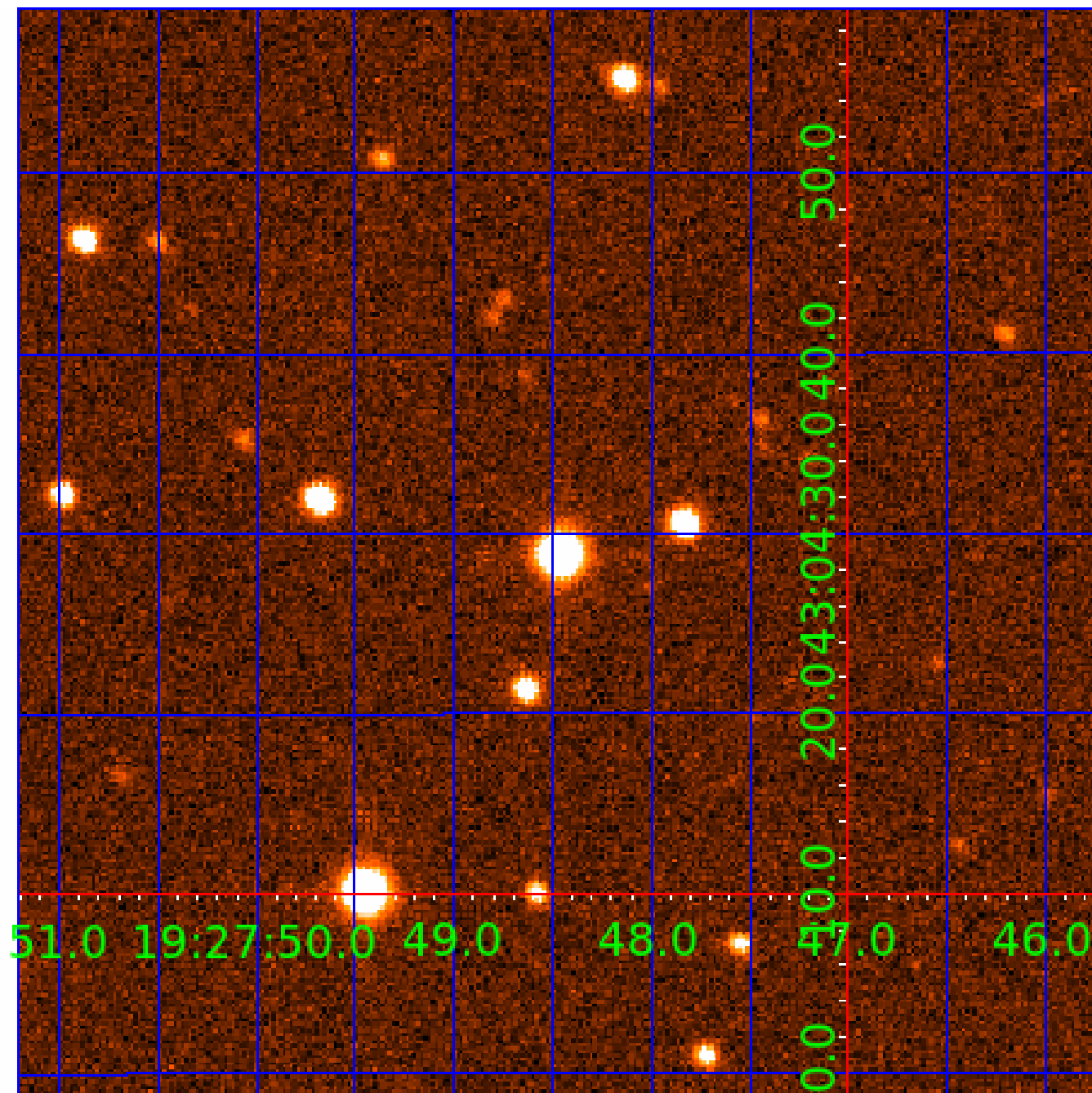


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



# KIC 007445445

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007445445-01	OBS	0567.01	10.687573	137.868679	764.7	3.529	66.0	69.8	0.85	5788	2.75	87.52
007445445-02	OBS	0567.02	20.303070	136.195707	537.8	4.583	37.9	40.1	0.85	5788	2.24	37.20
007445445-03	OBS	0567.03	29.022313	140.325823	638.0	4.080	32.8	36.2	0.85	5788	2.56	23.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007445445-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007445445-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007445445-03	OBS	PC	1.00	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.

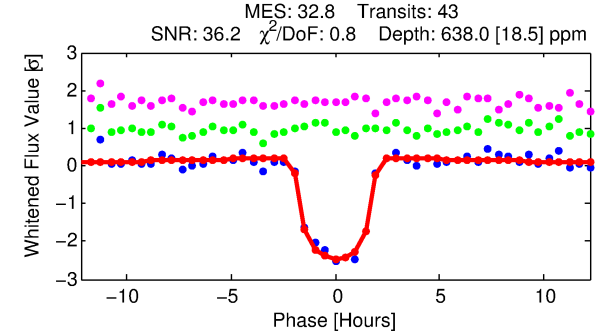
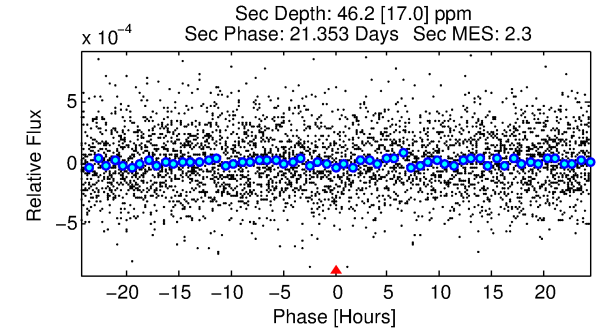
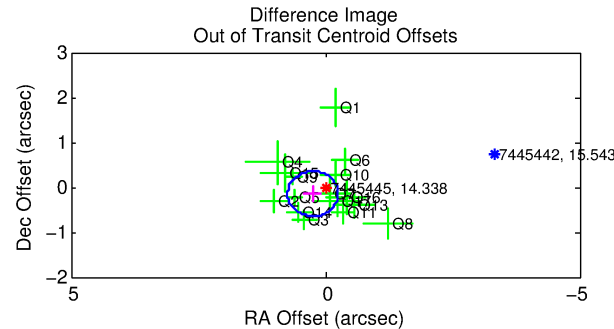
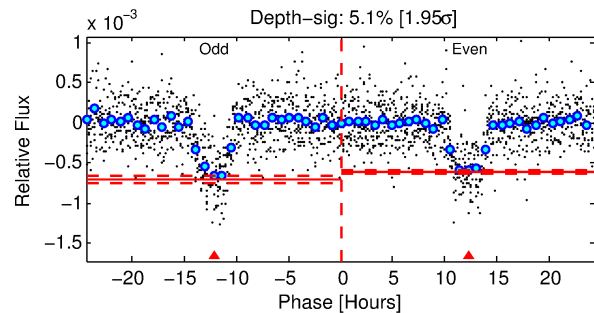
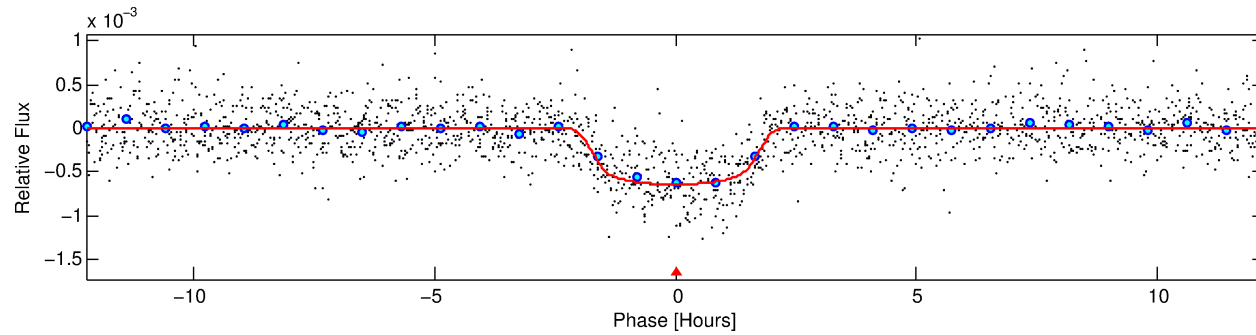
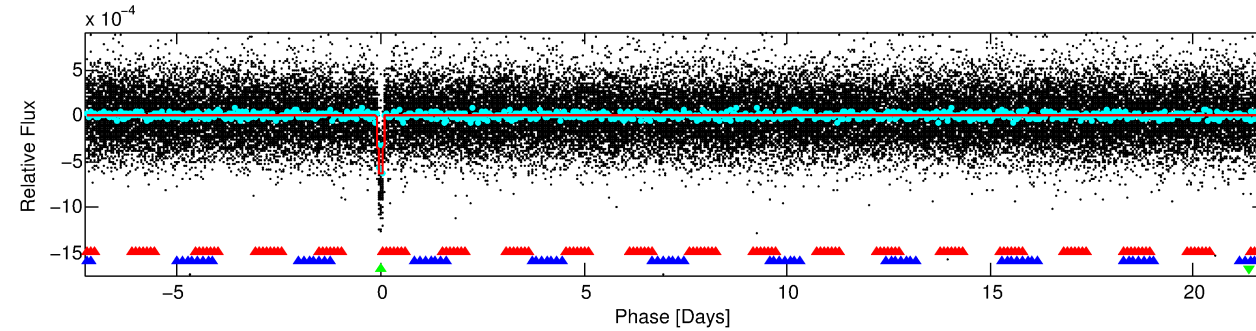
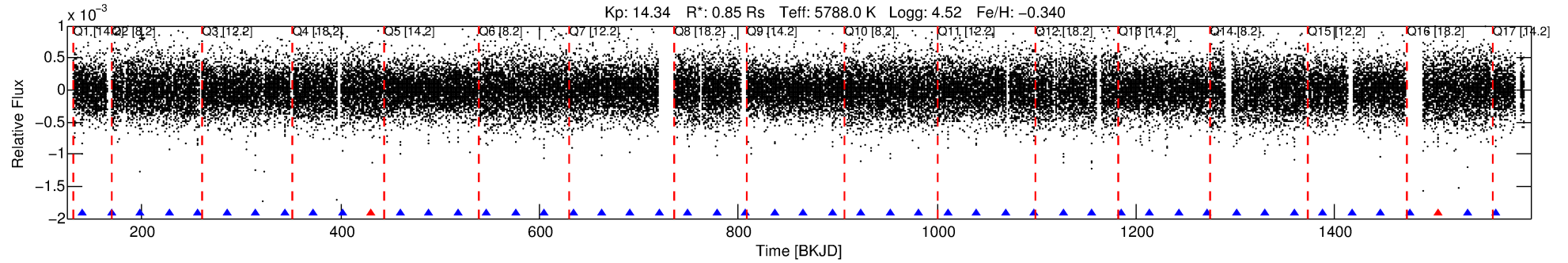
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007445445-03

No Significant Match Found

# DV One-Page Summary

KIC: 7445445 Candidate: 3 of 3 Period: 29.022 d  
KOI: K00567.03 Name: Kepler-184d Corr: 0.986



## DV Fit Results:

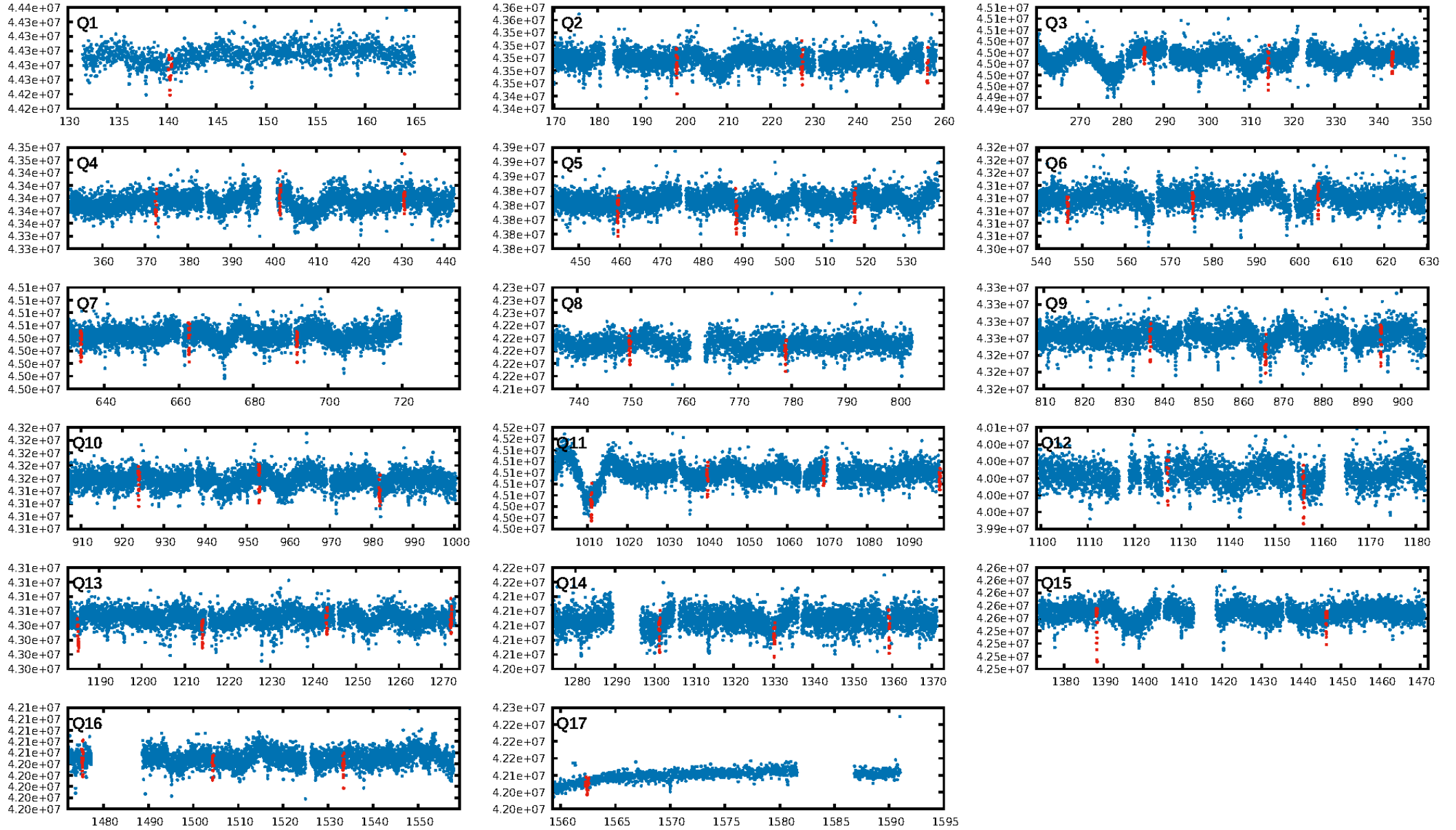
Period = 29.02231 [0.00009] d  
Epoch = 140.3258 [0.0024] BKJD  
Rp/R\* = 0.0277 [0.0013]  
a/R\* = 25.97 [5.36]  
b = 0.91 [0.04]  
Seff = 23.10 [7.94]  
Teff = 559 [48] K  
Rp = 2.56 [0.68] Re  
a = 0.1769 [0.0393] AU  
Ag = 121.51 [60.84] [1.98σ]  
Teffp = 2870 [283] K [8.05σ]

## DV Diagnostic Results:

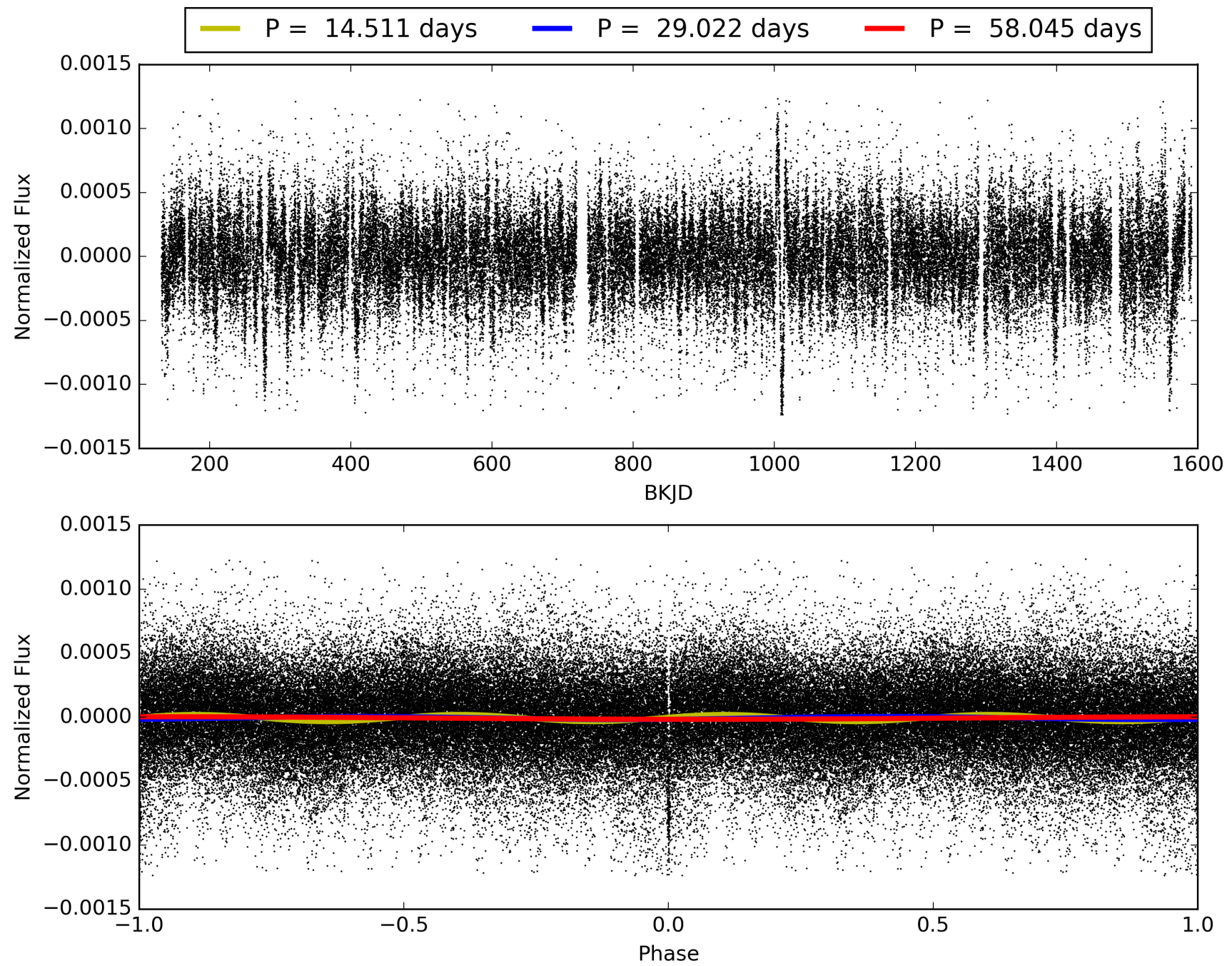
ShortPeriod-sig: 100.0% [34.10σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 77.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.39e-232  
RollingBand-fgt: 0.95 [39/41]  
GhostDiagnostic-chr: 4.948  
Centroid-sig: 81.7%  
Centroid-so: 0.471 arcsec [1.59σ]  
OotOffset-rm: 0.288 arcsec [1.73σ]  
KicOffset-rm: 0.407 arcsec [2.58σ]  
OotOffset-st: 4/4/3/5 [16]  
KicOffset-st: 4/4/3/5 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 1.00 [16/16]



# TCE 007445445-03, PDC Light Curves

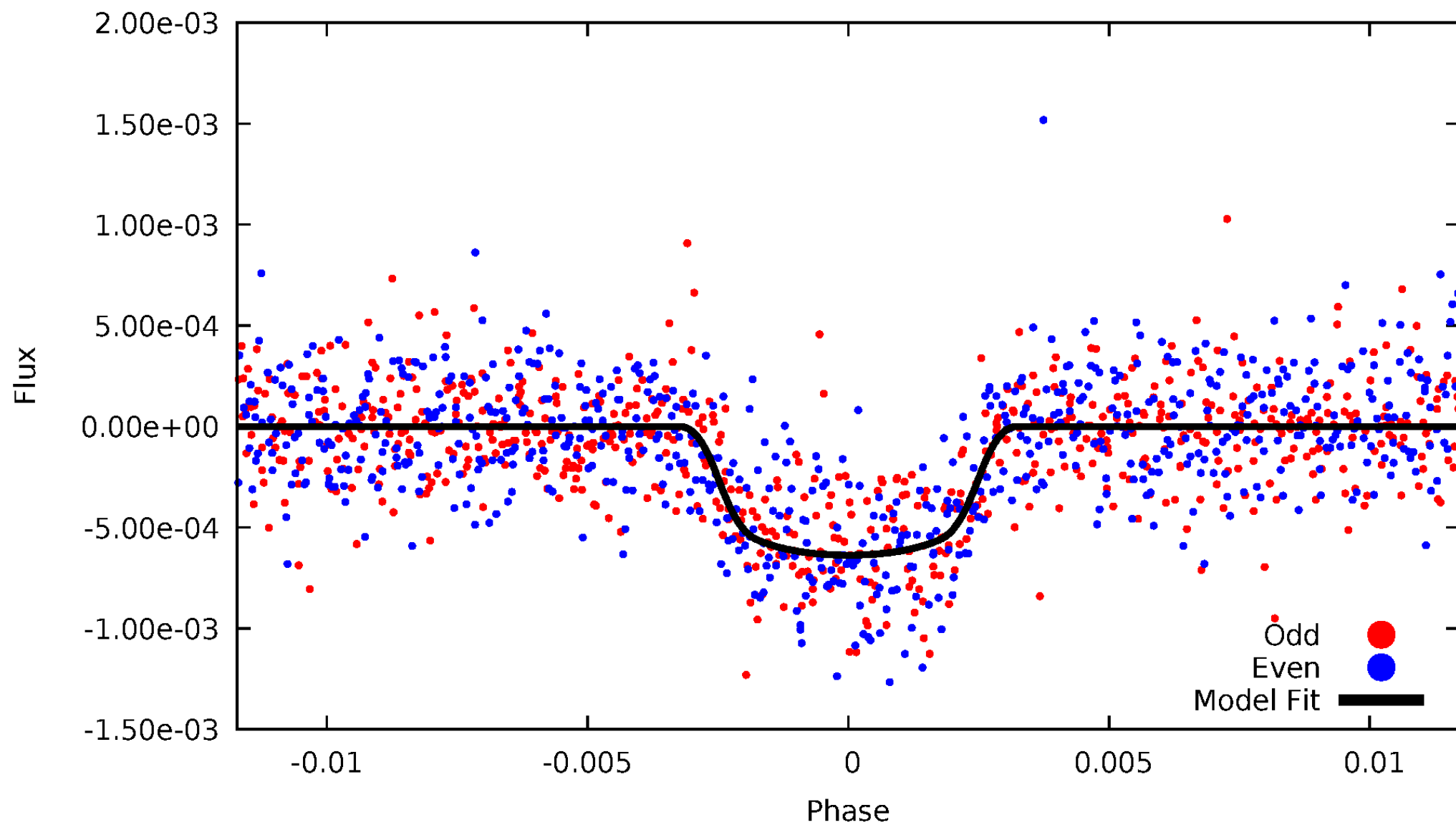


TCE 007445445-03



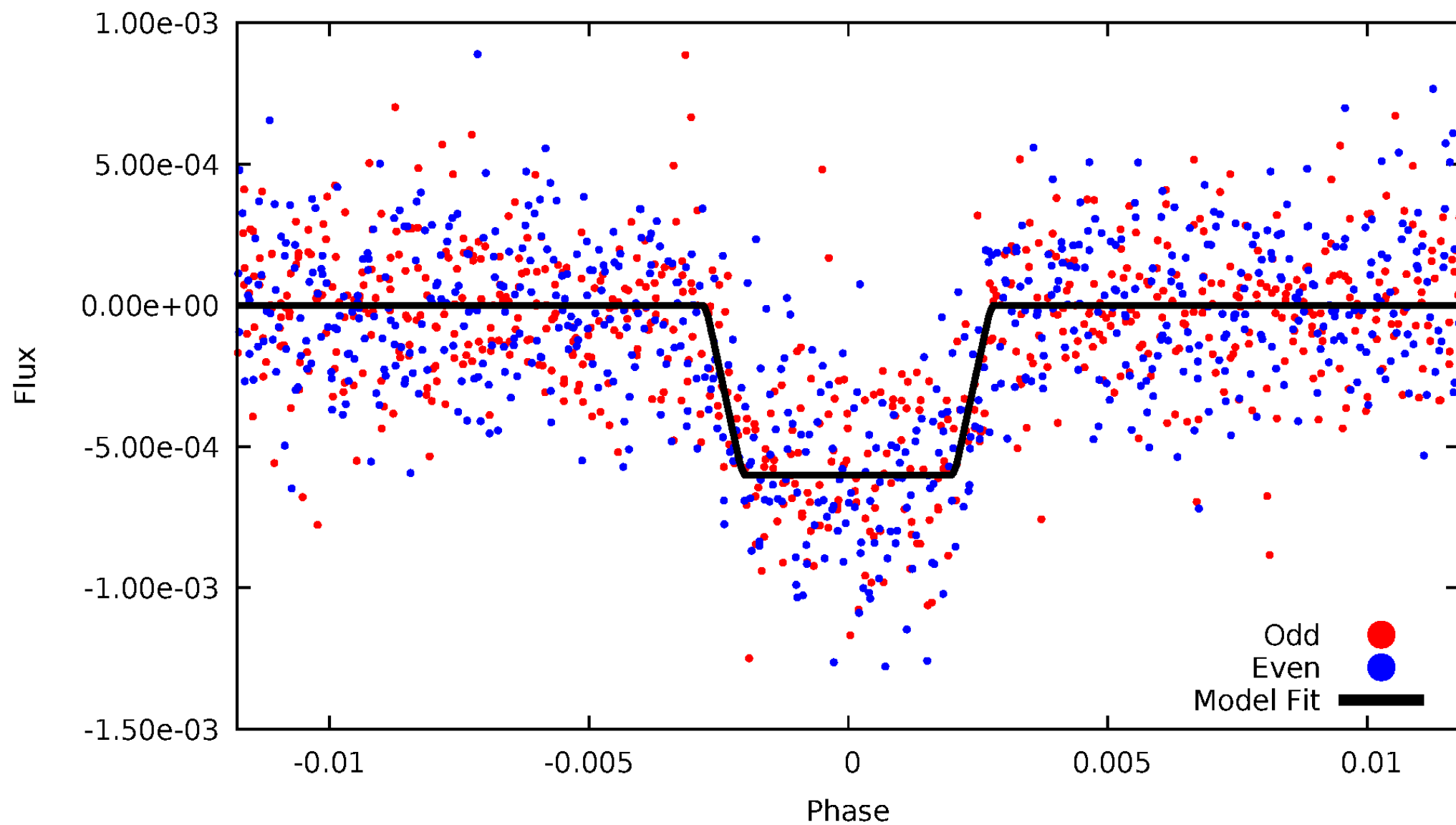
# DV Odd/Even

TCE 007445445-03



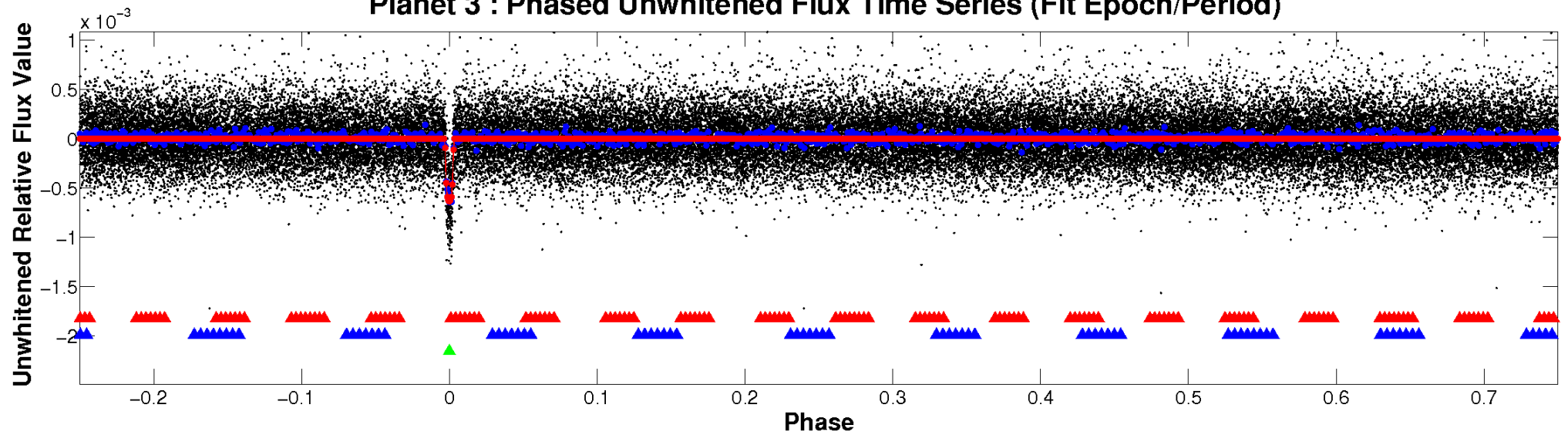
# ALT Odd/Even

TCE 007445445-03

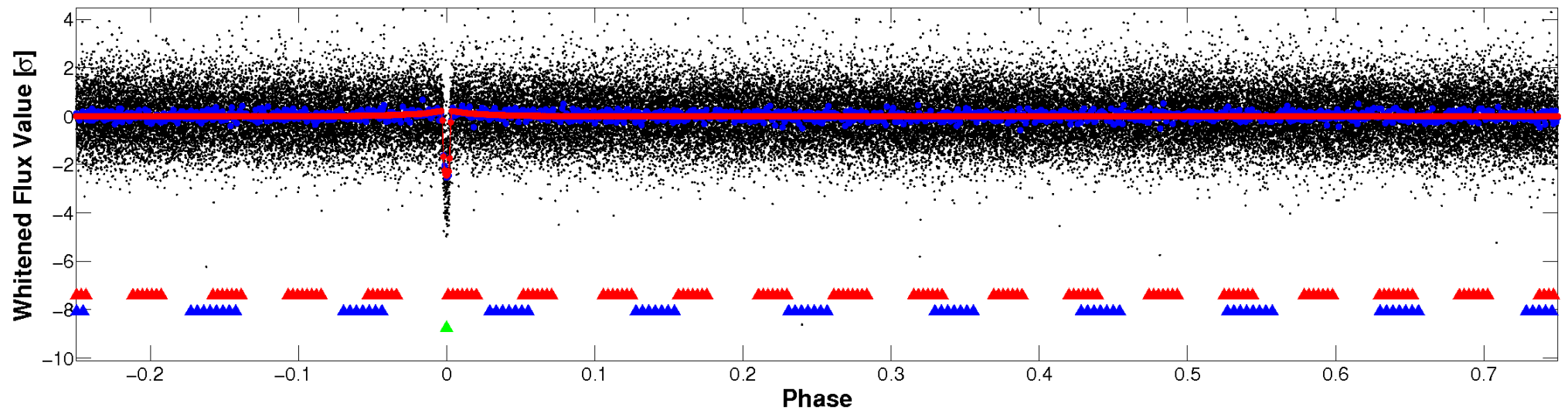


# Non-Whitened Vs. Whitened Light Curve

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

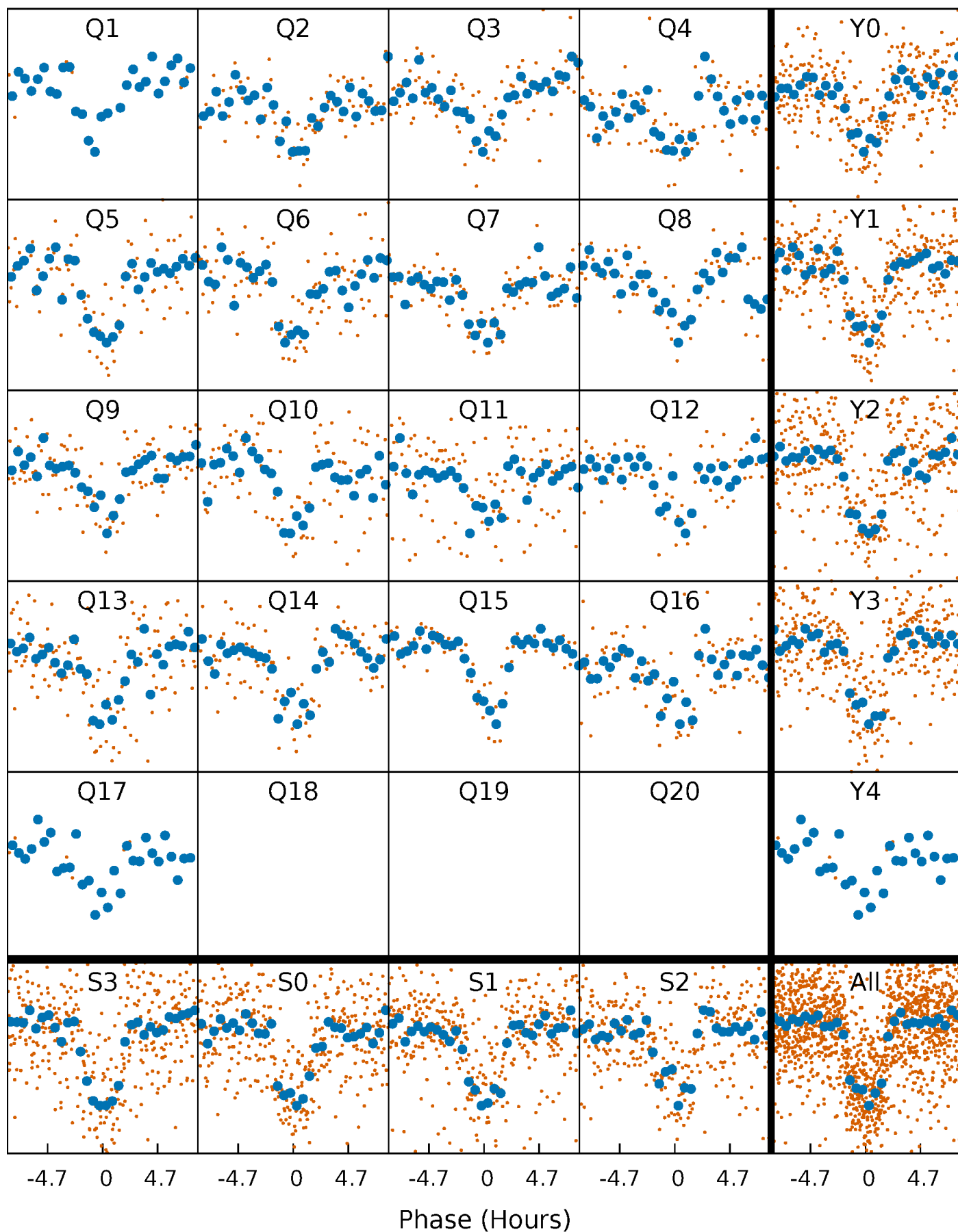


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

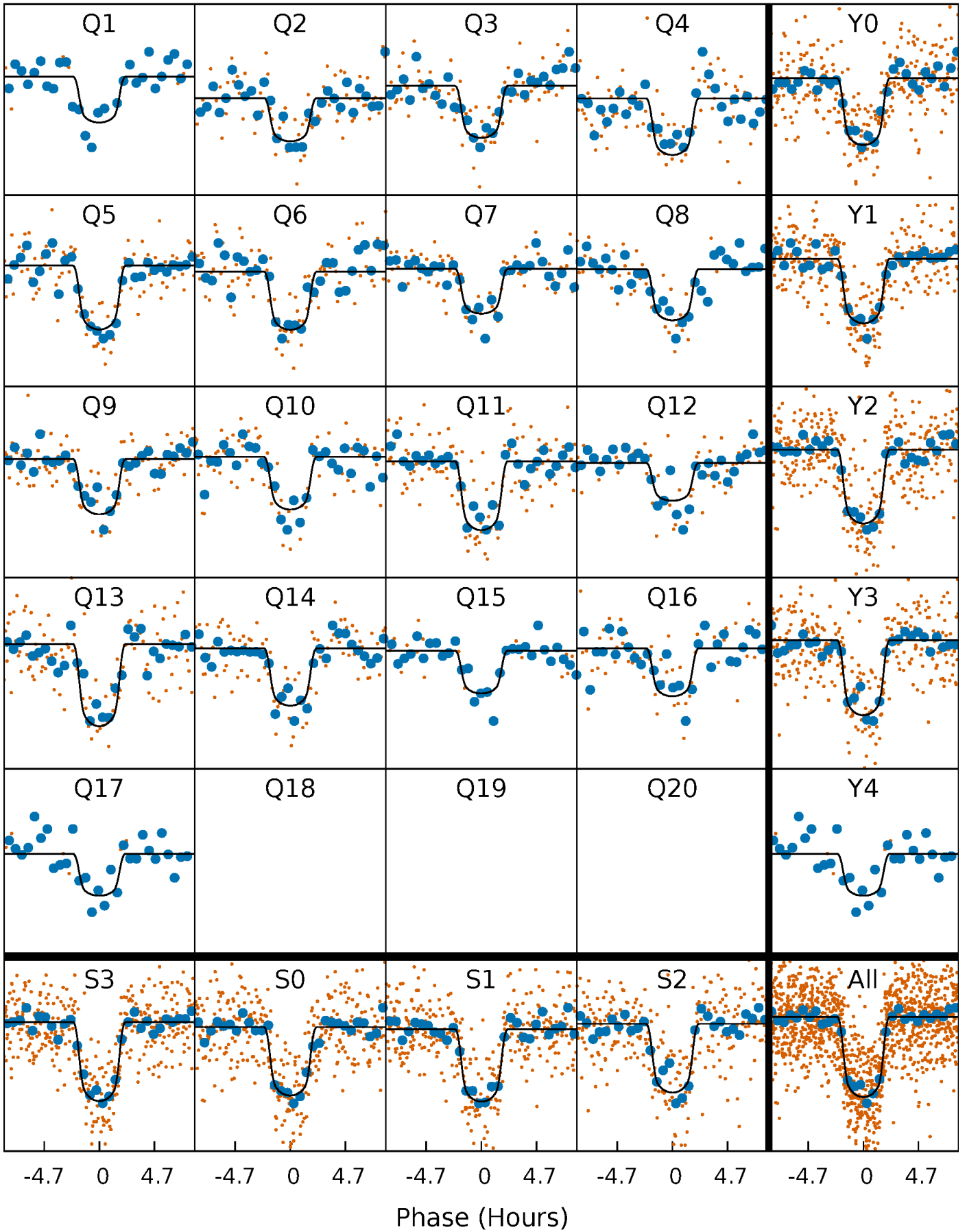
TCE 007445445-03 P= 29.022313 Days  $T_0=140.325823$  (BKJD)





# DV Quarter-Phased Transit Curves

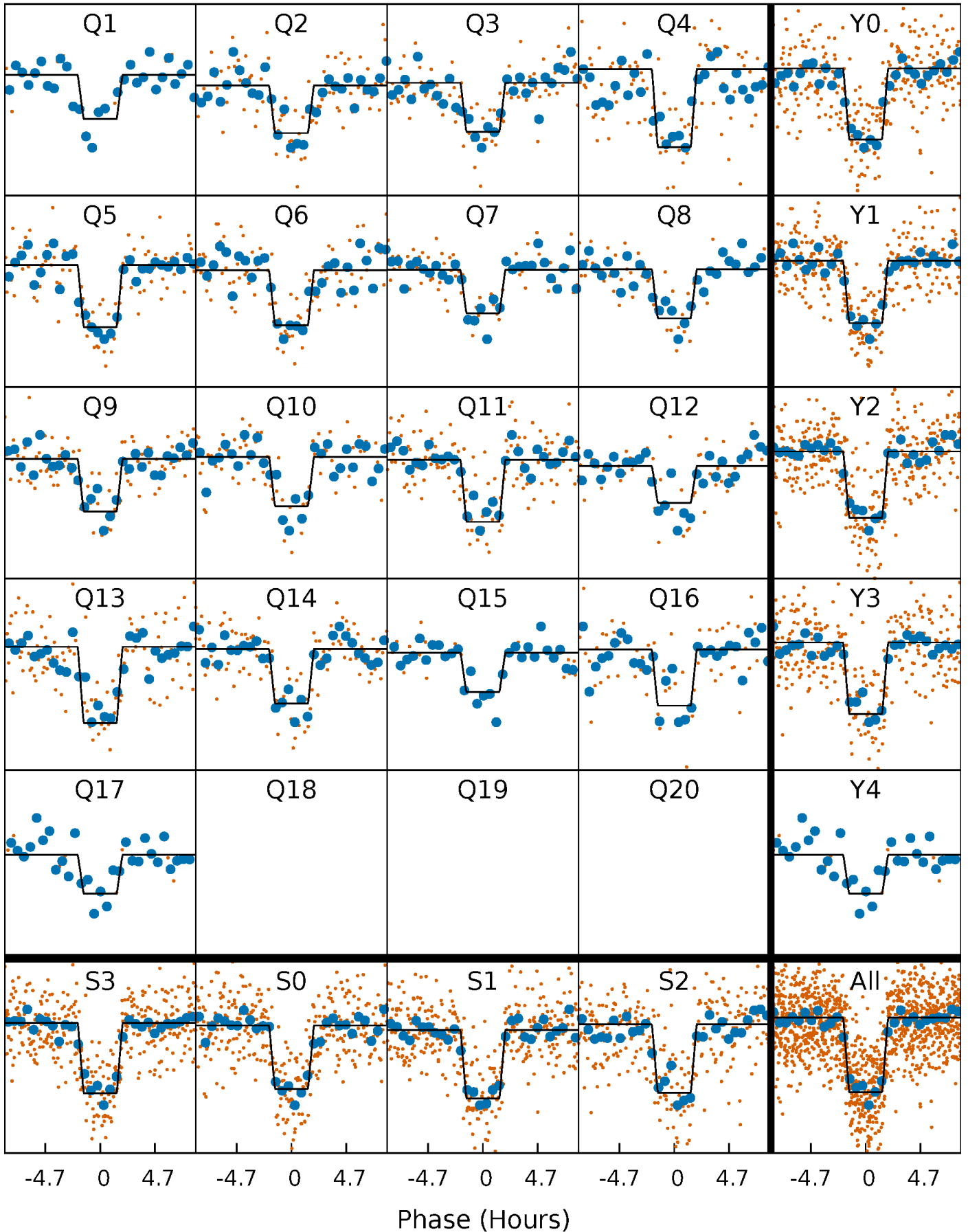
TCE 007445445-03 P= 29.022313 Days  $T_0=140.325823$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

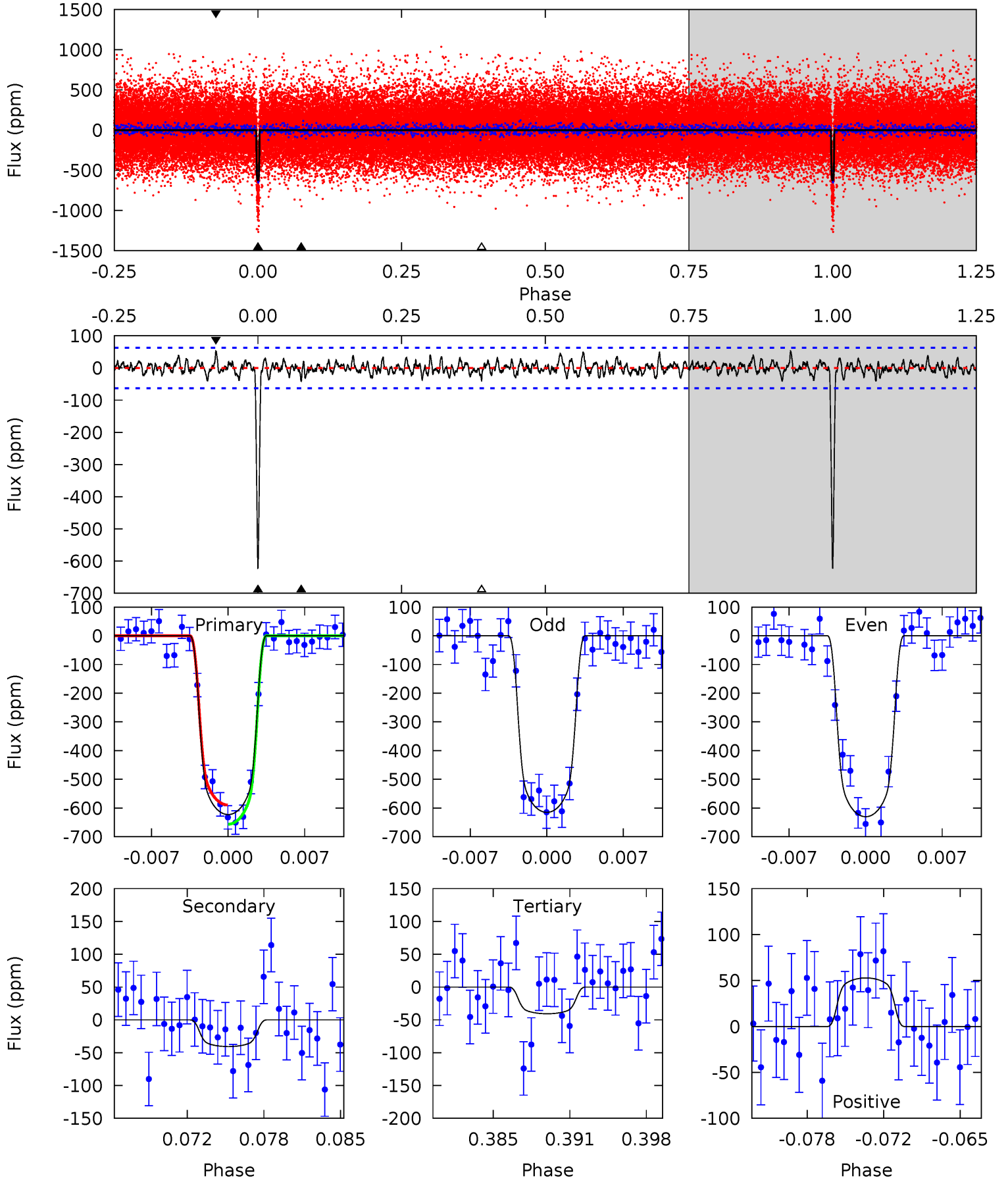
TCE 007445445-03 P= 29.022201 Days  $T_0=140.328386$  (BKJD)



# DV Model-Shift Uniqueness Test

007445445-03, P = 29.022313 Days, E = 111.303510 Days

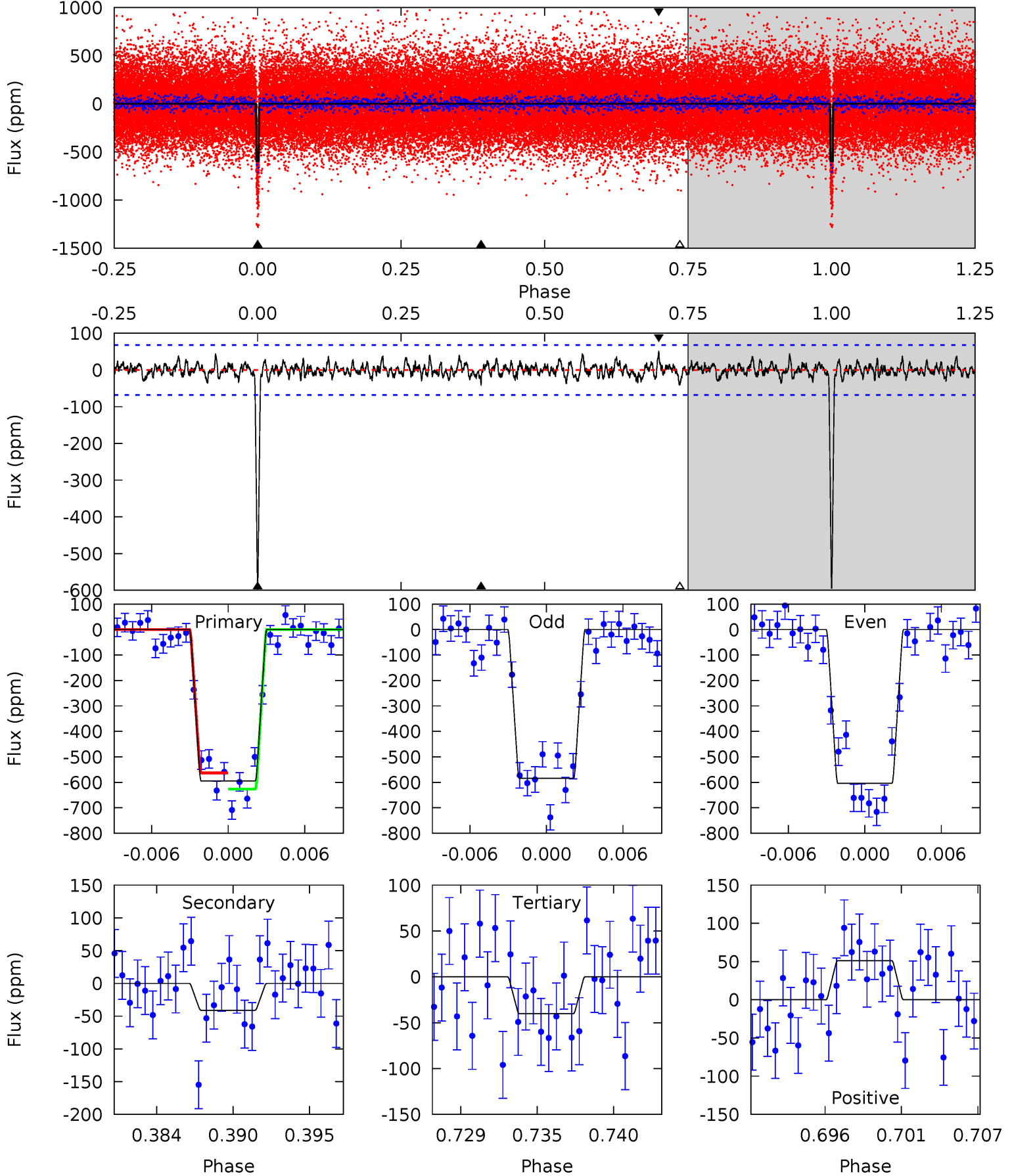
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.6	3.31	3.30	4.28	5.11	2.72	1.20	47.3	46.3	0.00	-0.98	0.61	0.98	0.08	2.71



# Alt Model-Shift Uniqueness Test

007445445-03, P = 29.022201 Days, E = 111.306185 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
44.9	3.10	3.04	3.86	5.14	2.77	1.04	41.9	41.1	0.06	-0.77	0.75	0.99	0.08	2.41



### Stellar Parameters For KIC 007445445

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5788^{+155}_{-155}$	$4.524^{+0.060}_{-0.180}$	$-0.340^{+0.300}_{-0.300}$	$0.848^{+0.221}_{-0.095}$	$0.877^{+0.100}_{-0.090}$	$2.025^{+0.596}_{-0.956}$
	+3%/-3%	+1%/-4%	+88%/-88%	+26%/-11%	+11%/-10%	+29%/-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 007445445-03 / KOI 0567.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-41 \pm 12$	$2.64^{+0.38}_{-0.25}$	$796^{+54}_{-36}$	$3314^{+162}_{-184}$	$95^{+40}_{-34}$
Alt.	$-41 \pm 13$	$2.33^{+0.32}_{-0.23}$	$793^{+51}_{-35}$	$3450^{+186}_{-226}$	$122^{+59}_{-44}$

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

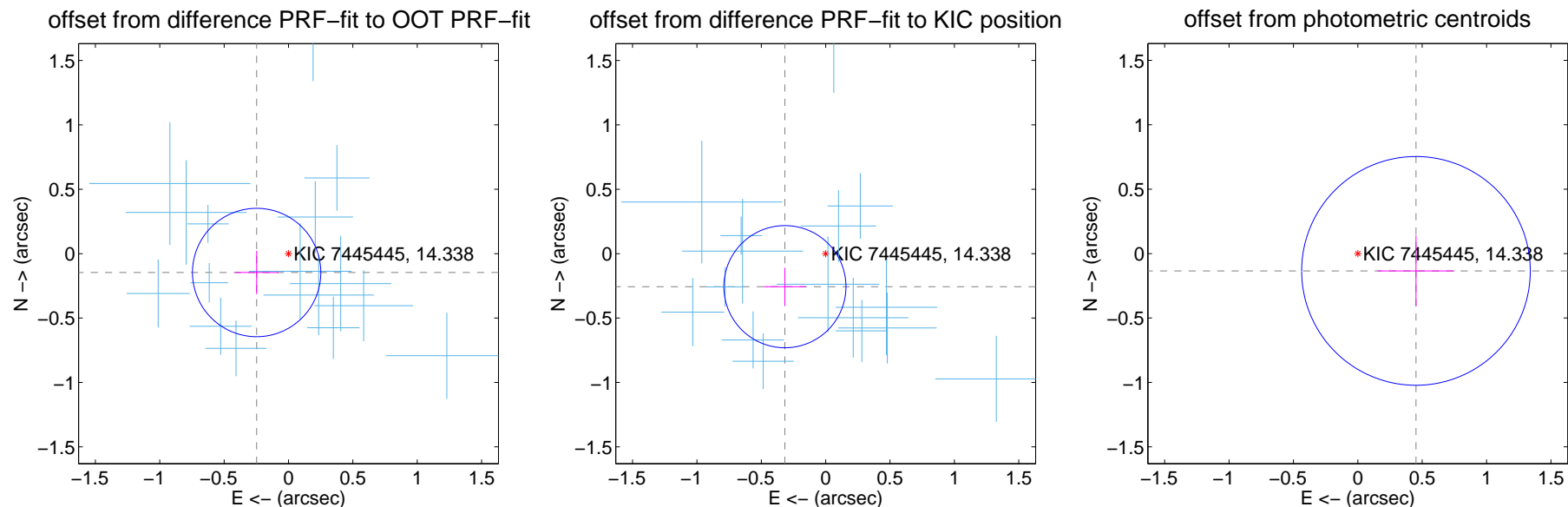
## DV Centroid Data

Supplemental centroid analysis for 007445445-03. Kepler magnitude: 14.34. Transit SNR 36.18

There are 16 quarters with good PRF difference image offsets

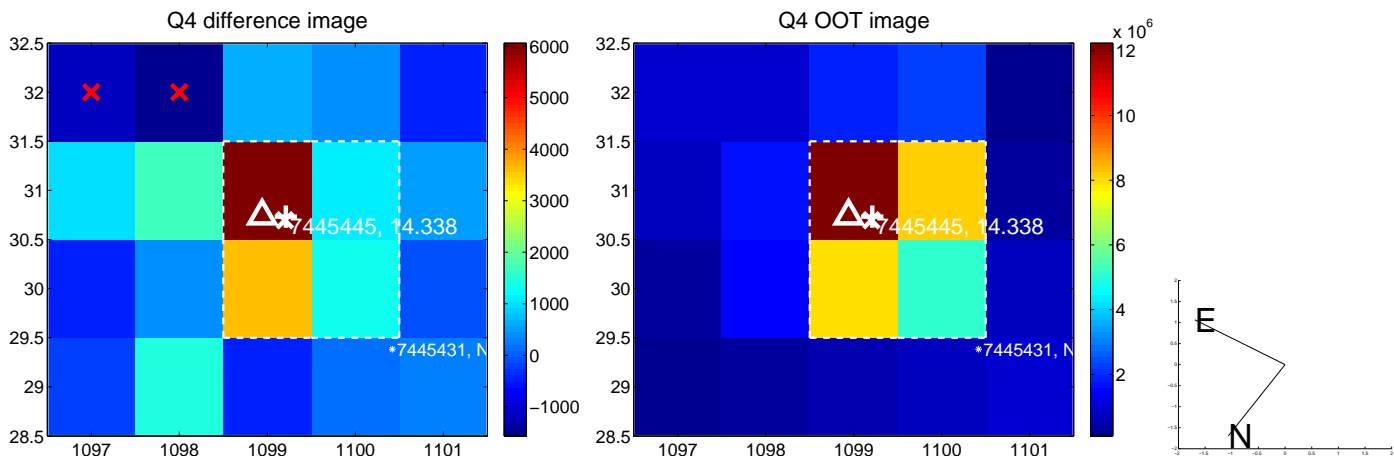
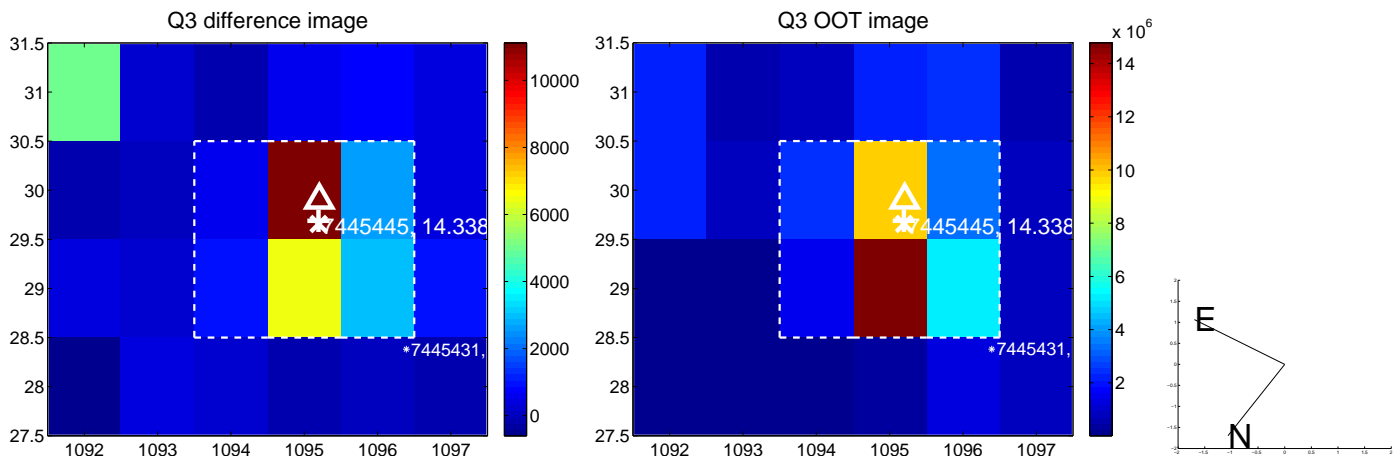
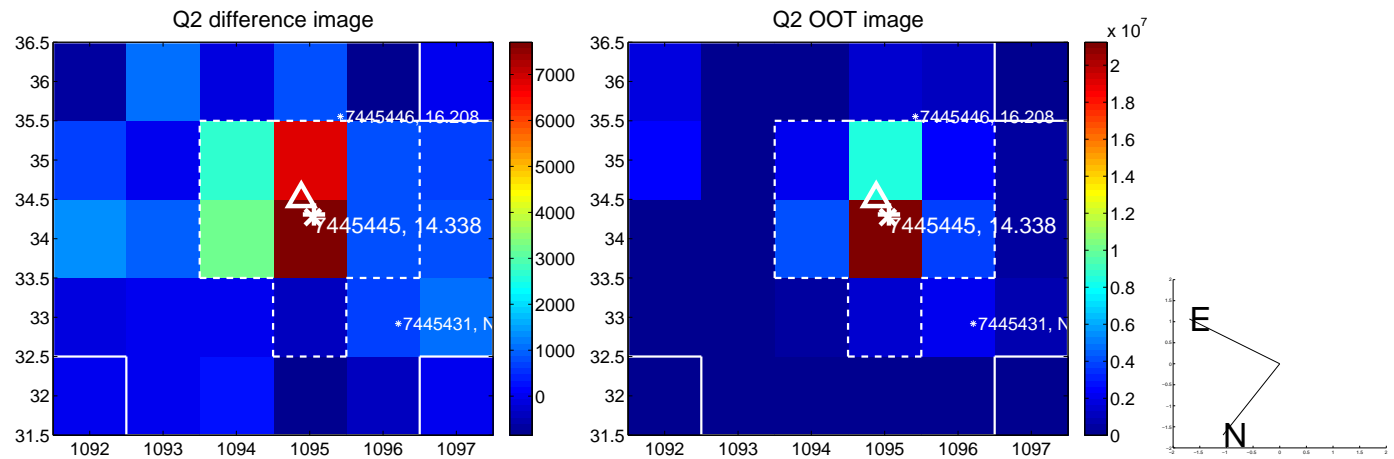
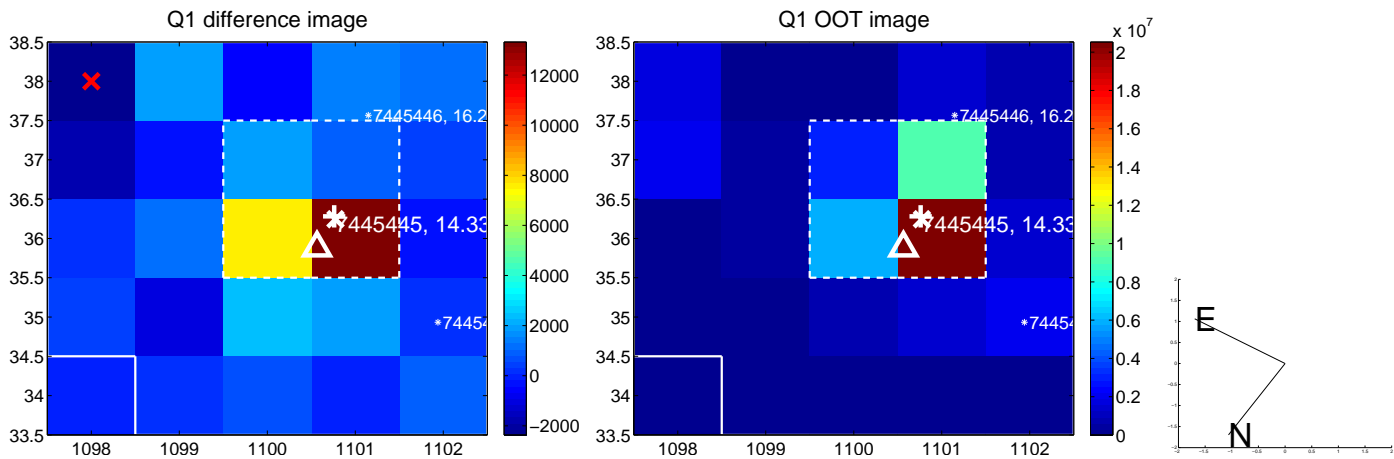
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.288 \pm 0.166$	1.73	$0.247 \pm 0.169$	$-0.146 \pm 0.168$
PRF-fit source offset from KIC position	$0.407 \pm 0.158$	2.58	$0.317 \pm 0.165$	$-0.256 \pm 0.147$
photometric centroid source offset	$0.47 \pm 0.30$	1.59	$-0.45 \pm 0.30$	$-0.13 \pm 0.28$

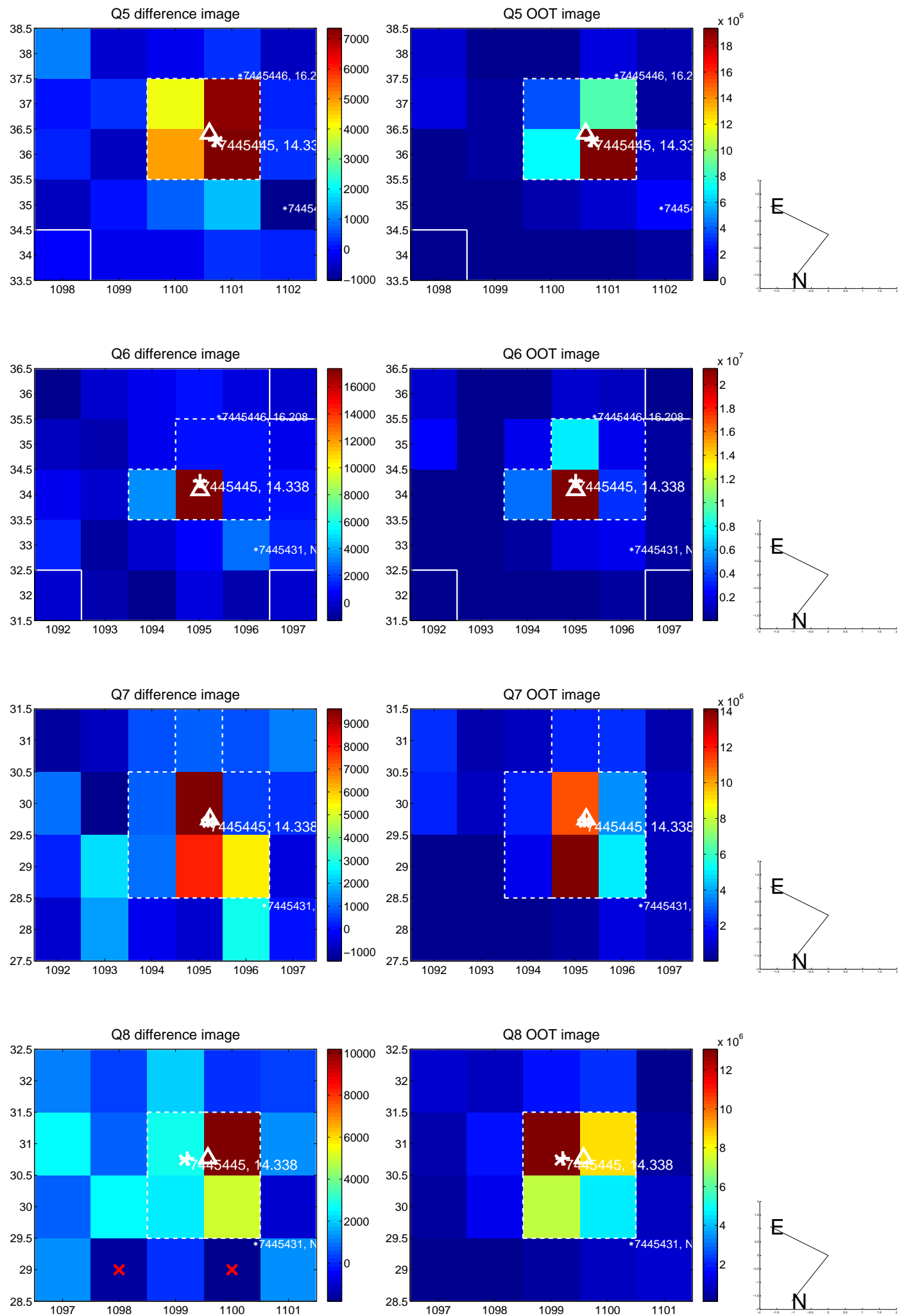


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

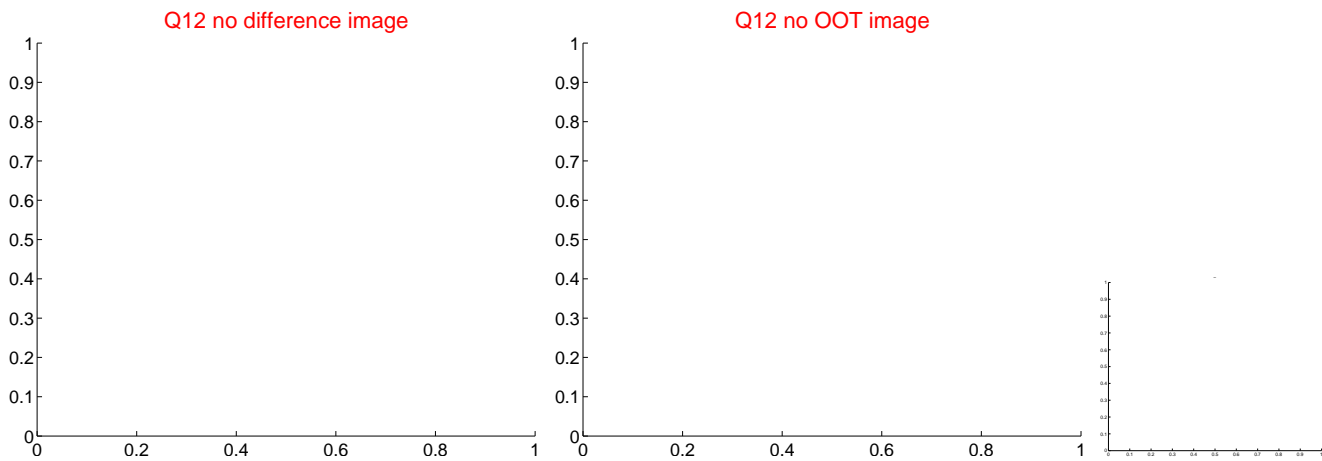
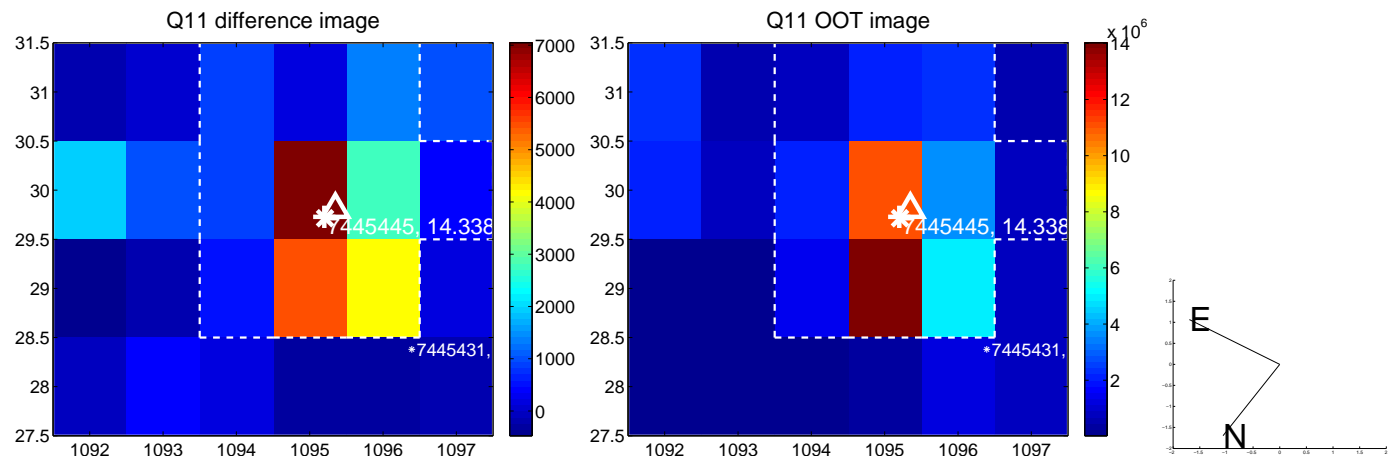
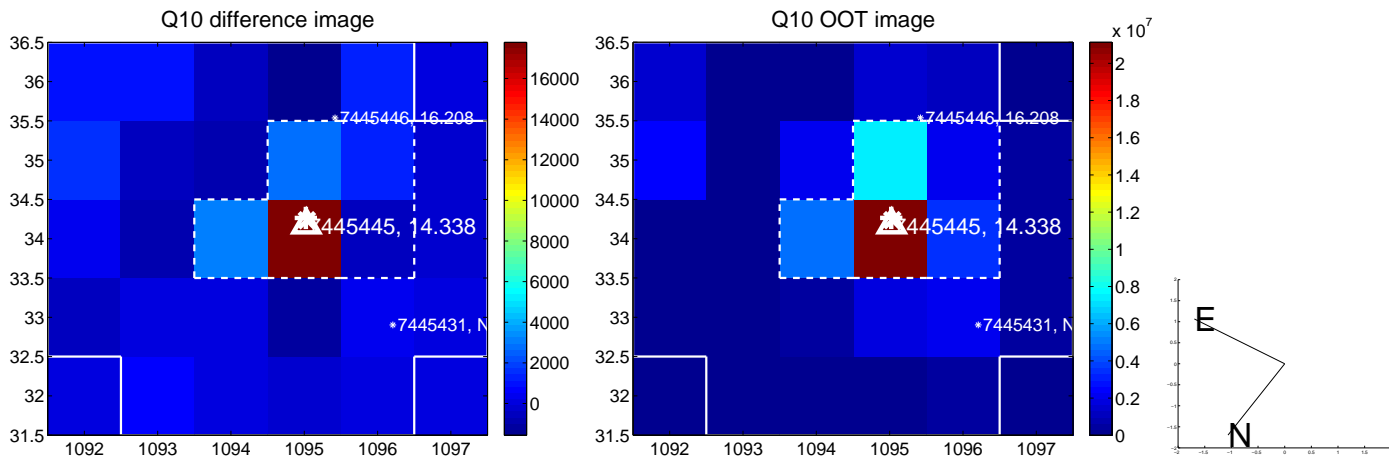
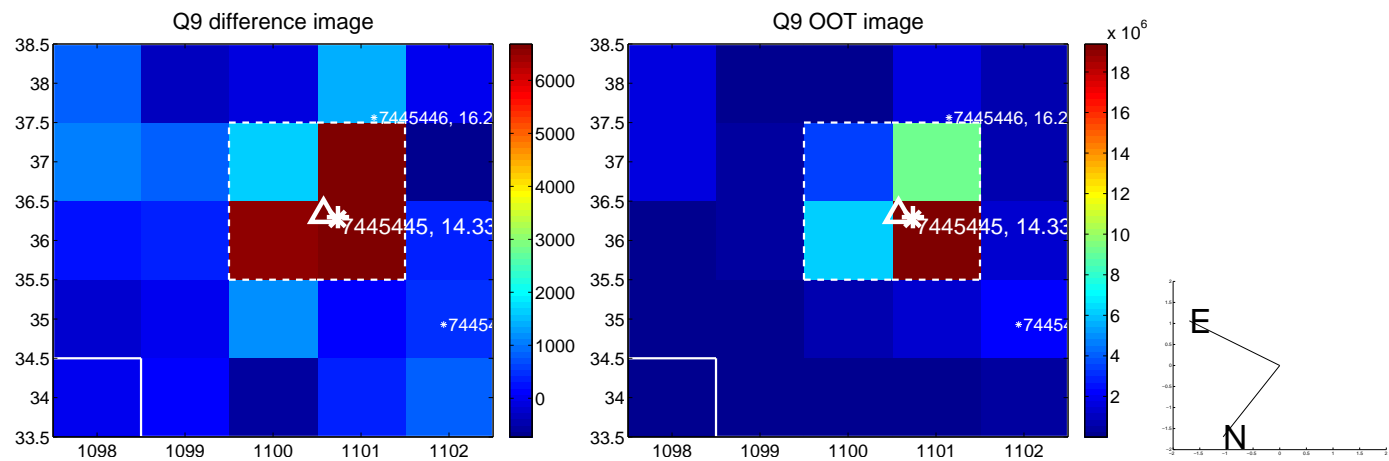


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

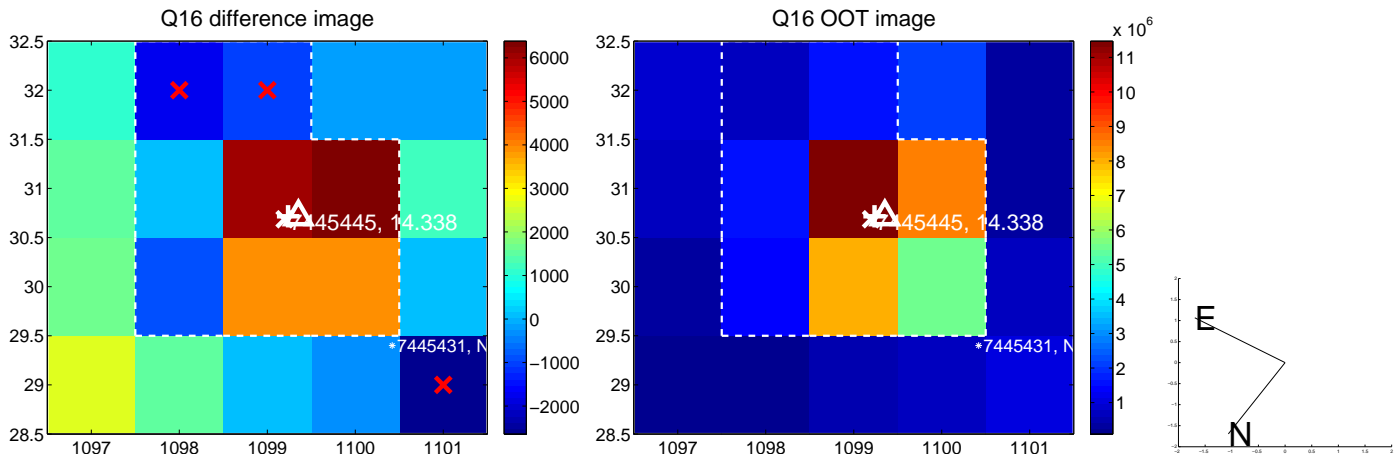
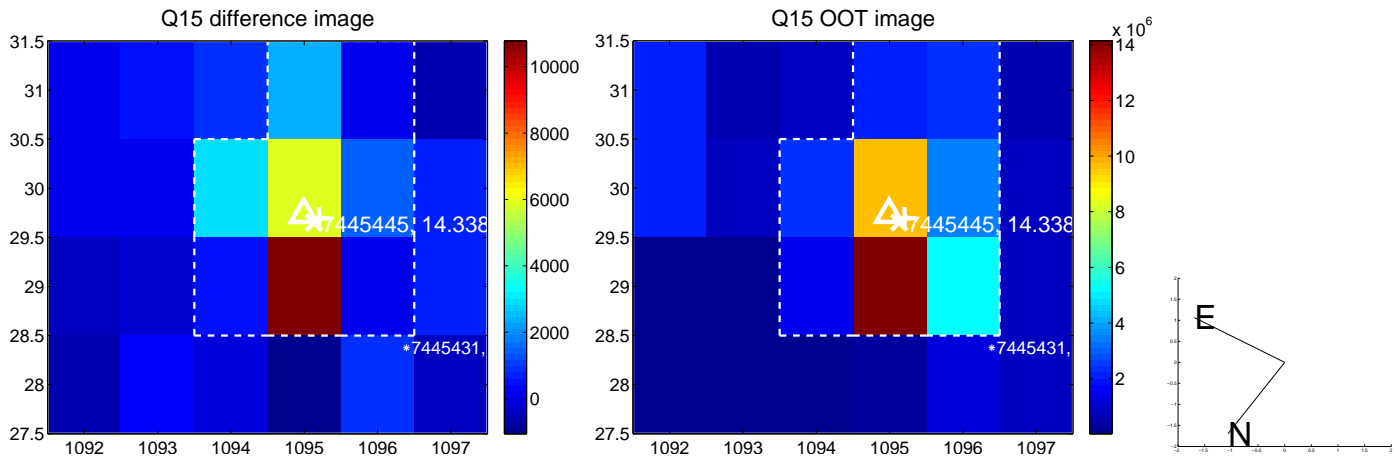
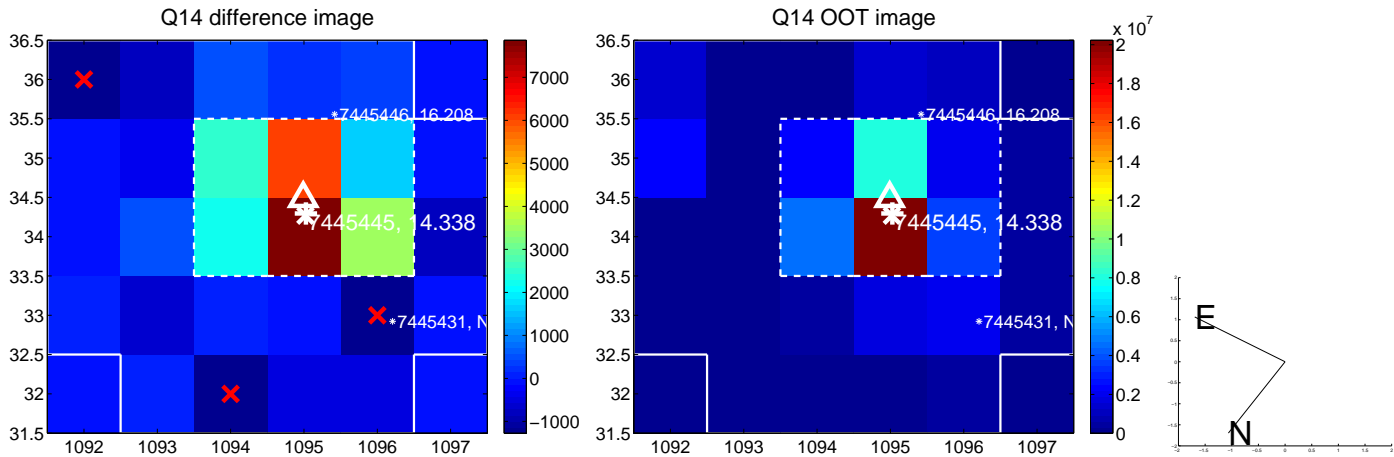
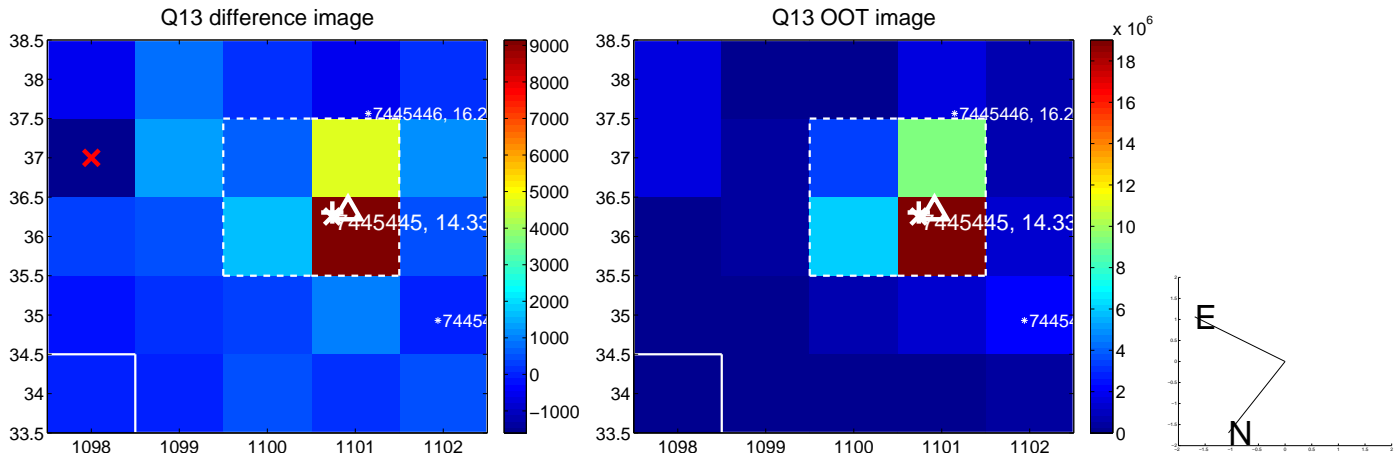




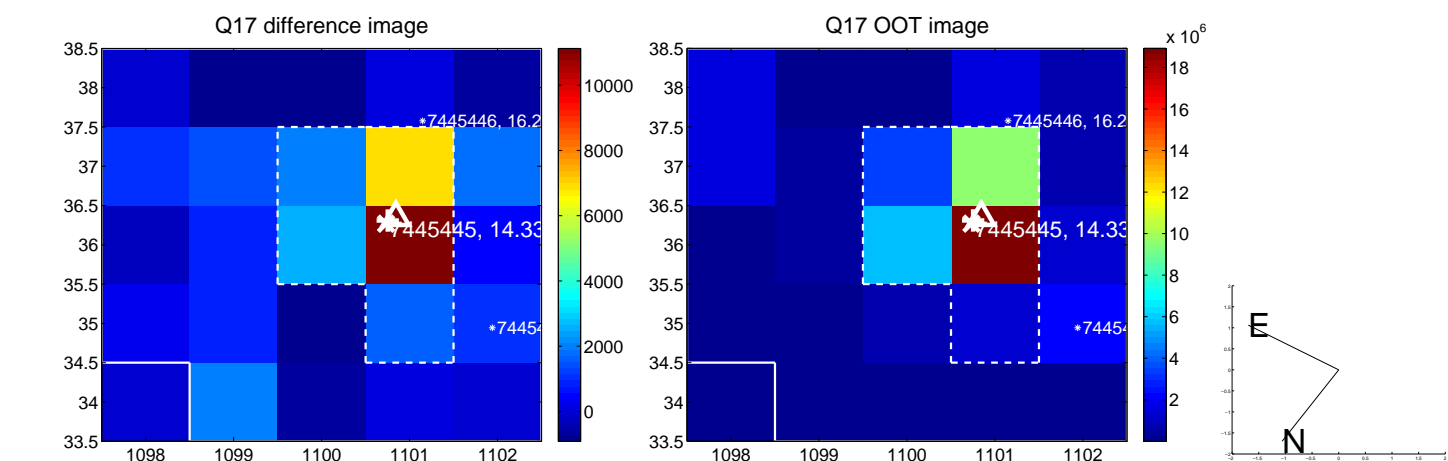
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



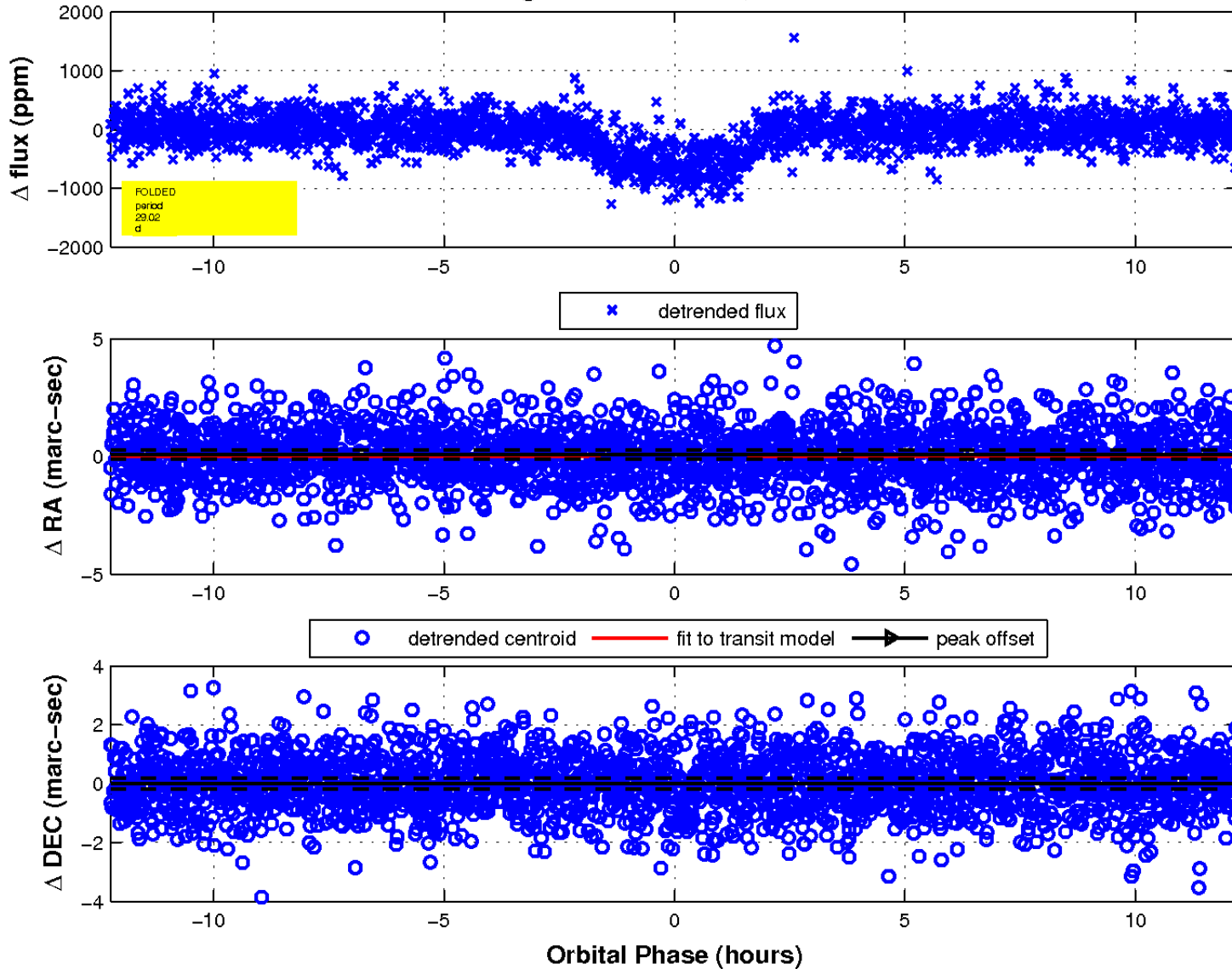
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

