

# KIC 003945892

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003945892-01	OBS	No	4.083247	133.571005	97.2	2.801	20.2	21.9	1.86	8041	3.63	3351.90
003945892-02	OBS	No	4.083270	132.696280	62.0	2.090	15.0	16.1	1.86	8041	1.70	3351.88
003945892-03	OBS	No	0.583302	131.799804	11.0	7.000	13.6	8.7	1.86	8041	0.77	44885.70

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003945892-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003945892-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003945892-03	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

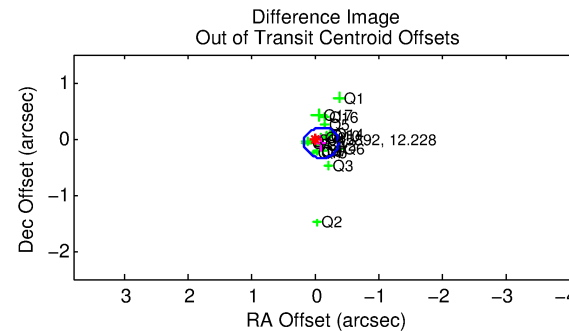
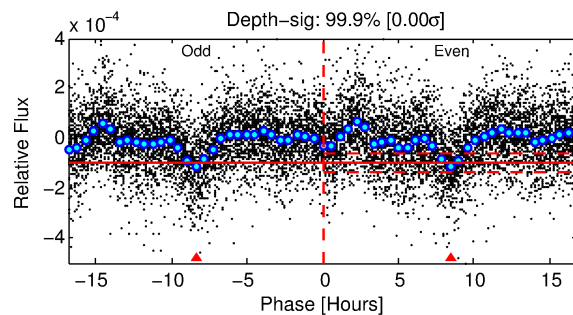
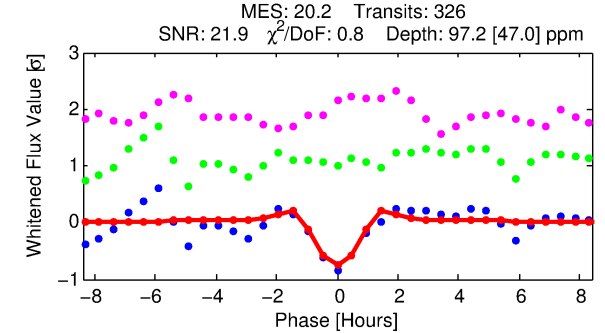
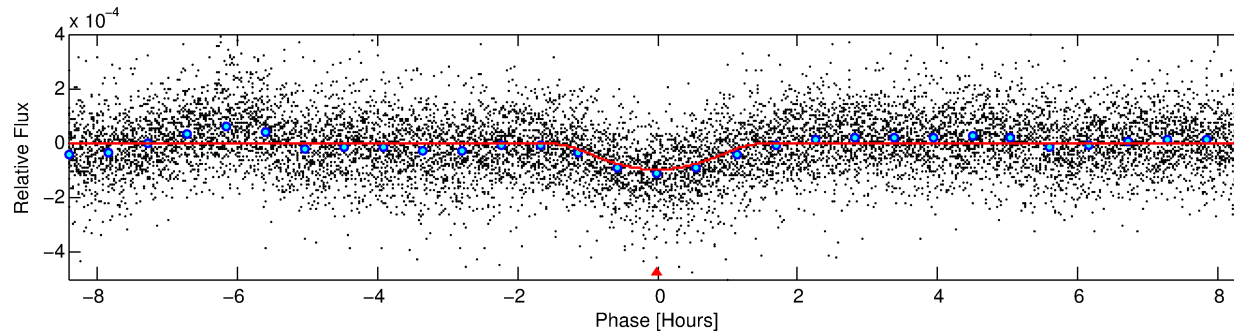
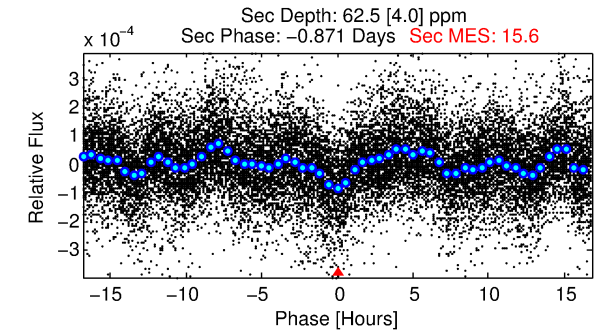
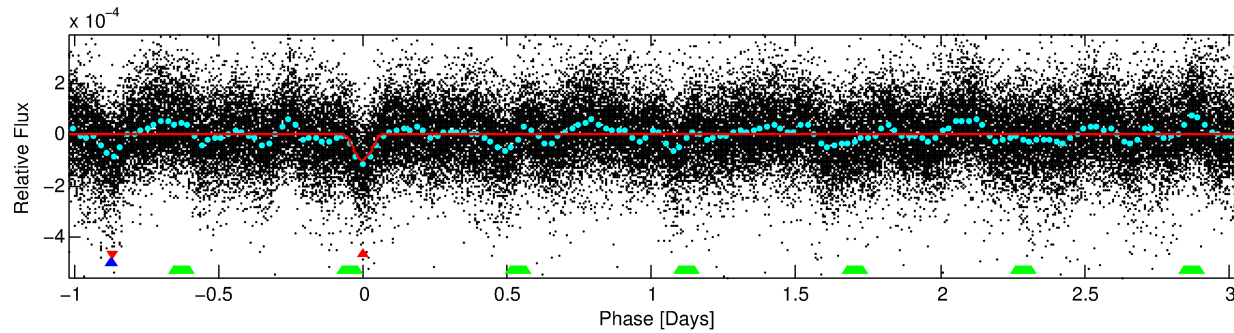
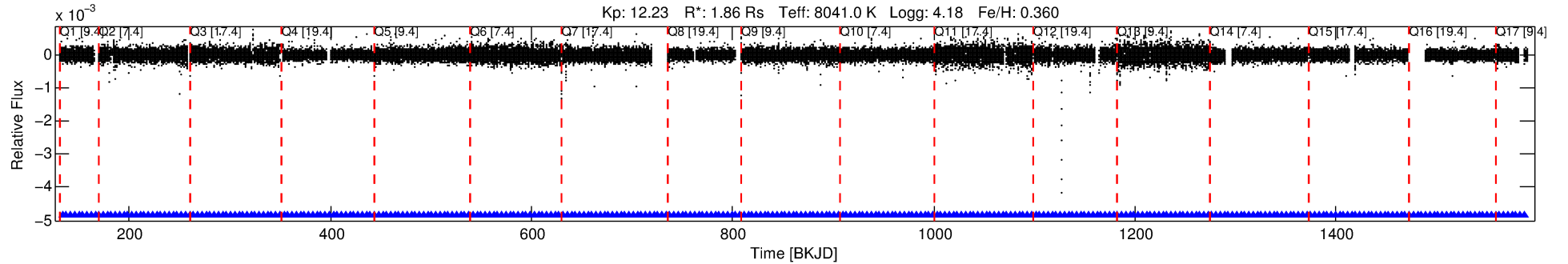
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 003945892-01

No Significant Match Found

# DV One-Page Summary

KIC: 3945892 Candidate: 1 of 3 Period: 4.083 d



## DV Fit Results:

Period = 4.08325 [0.00001] d  
Epoch = 133.5710 [0.0019] BKJD  
Rp/R\* = 0.0179 [0.0228]  
a/R\* = 2.34 [0.69]  
b = 1.00 [0.03]  
Seff = 3351.90 [1394.73]  
Teq = 1940 [202] K  
Rp = 3.63 [4.76] Re  
a = 0.0622 [0.0160] AU  
Ag = 10.08 [26.01] [0.35σ]  
Teffp = 5346 [3418] K [0.99σ]

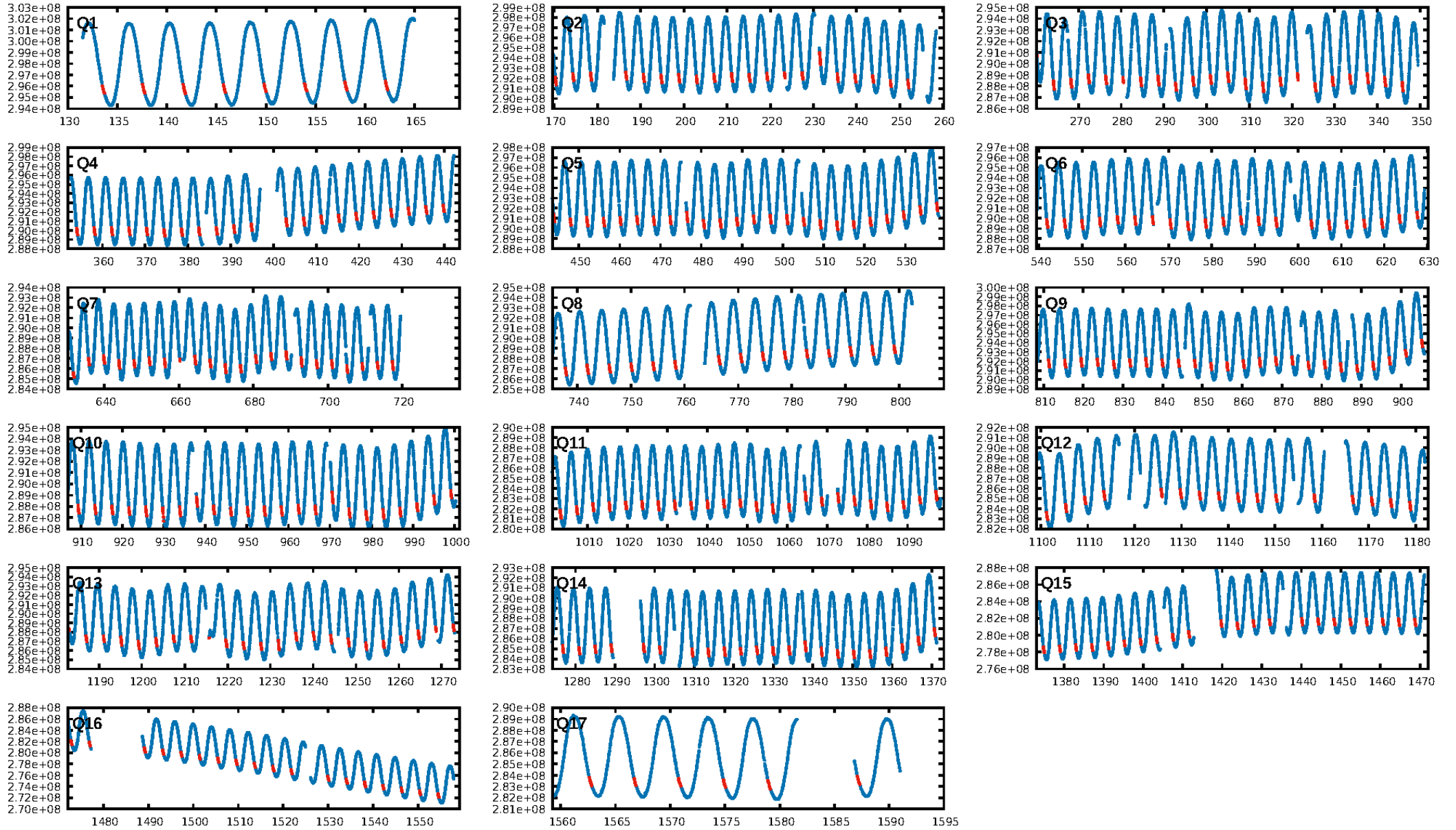
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [11.14σ]  
**LongPeriod-sig: 0.0% [0.00σ]**  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [312/312]  
**GhostDiagnostic-chr: 0.7406**  
Centroid-sig: 3.3%  
Centroid-so: 0.622 arcsec [1.68σ]  
OotOffset-rm: 0.128 arcsec [1.41σ]  
KicOffset-rm: 0.125 arcsec [0.95σ]  
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]

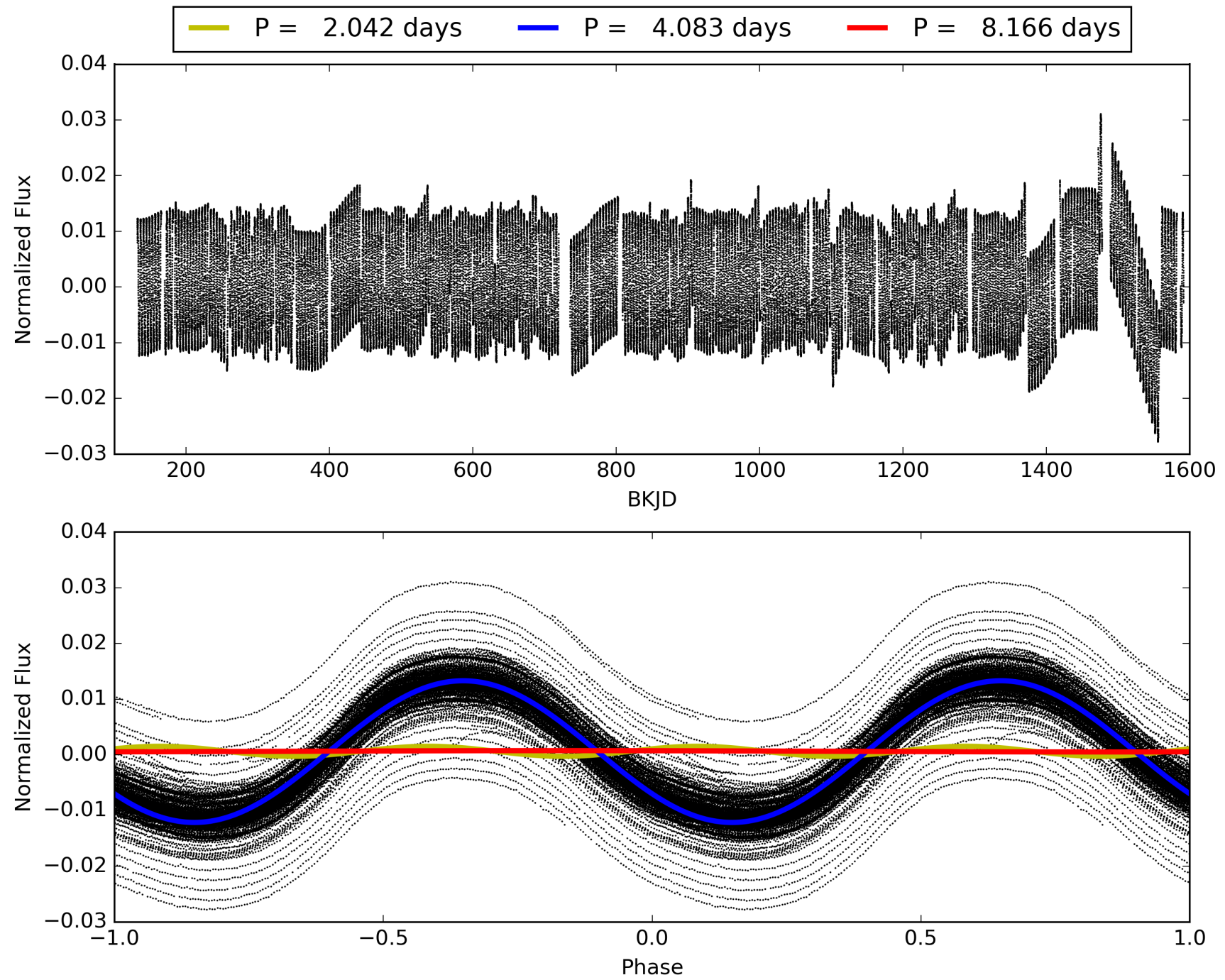
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003945892-01, PDC Light Curves



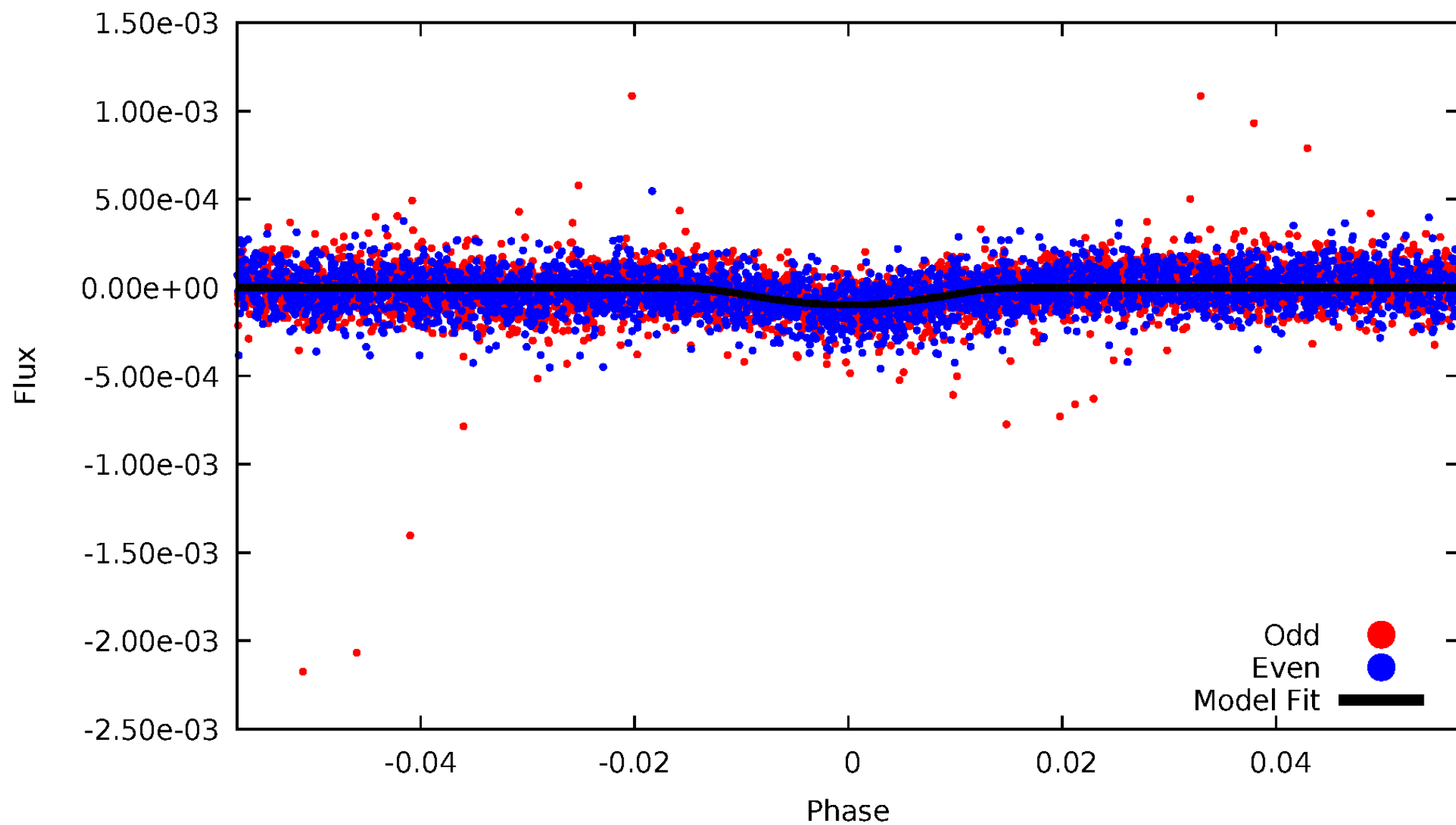
TCE 003945892-01





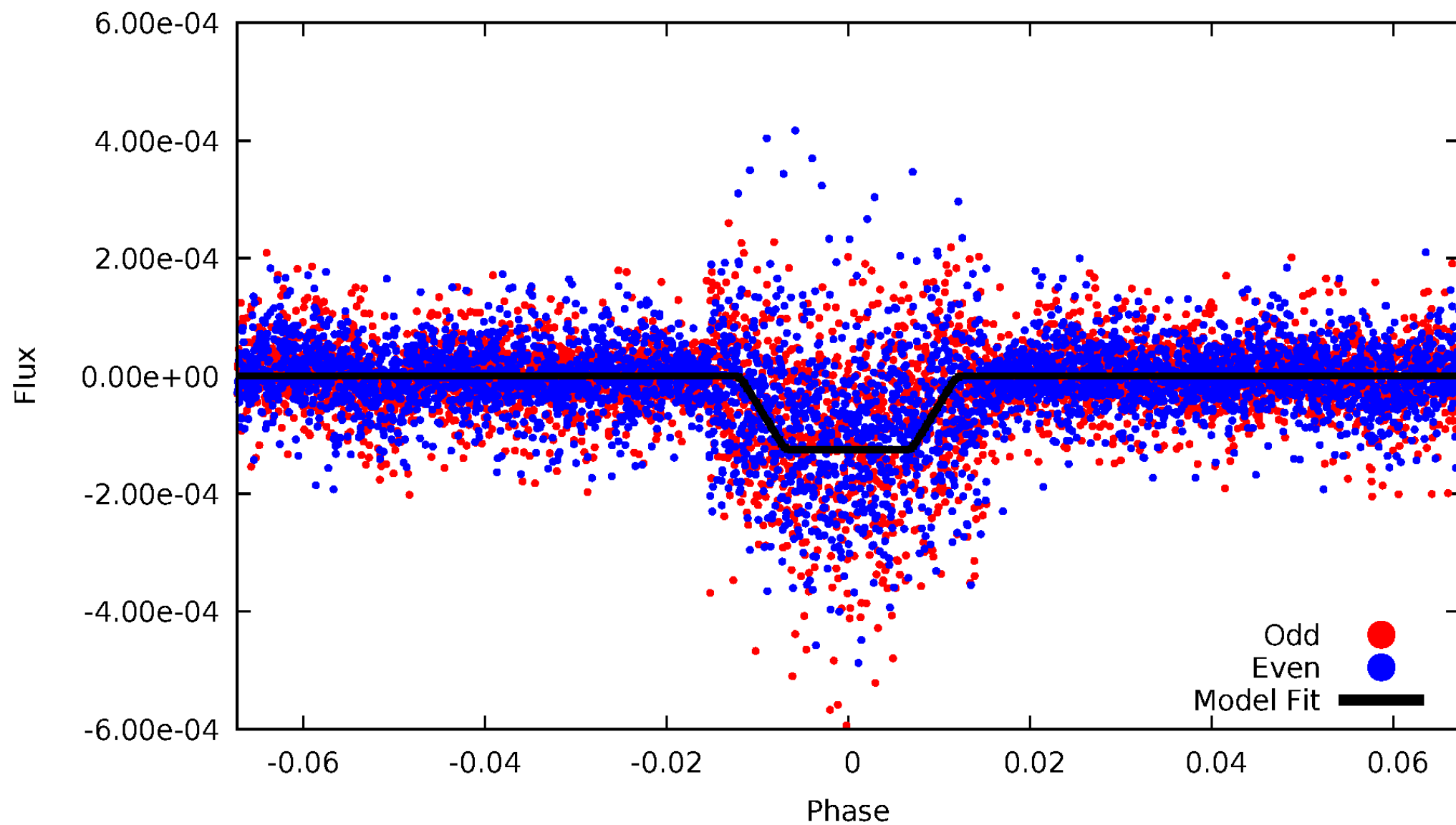
# DV Odd/Even

TCE 003945892-01



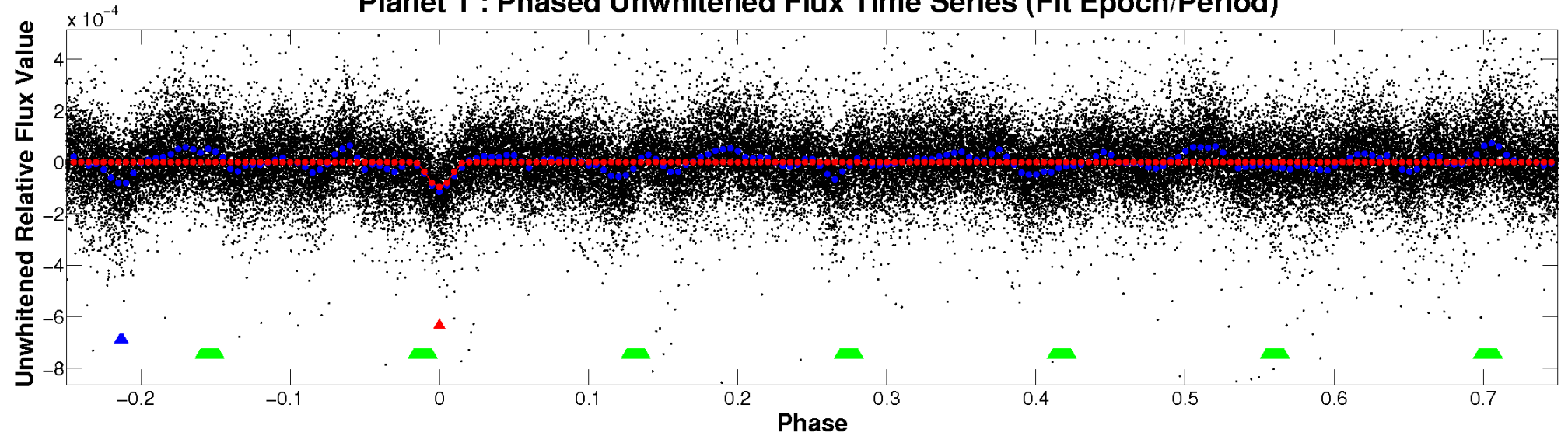
# ALT Odd/Even

TCE 003945892-01

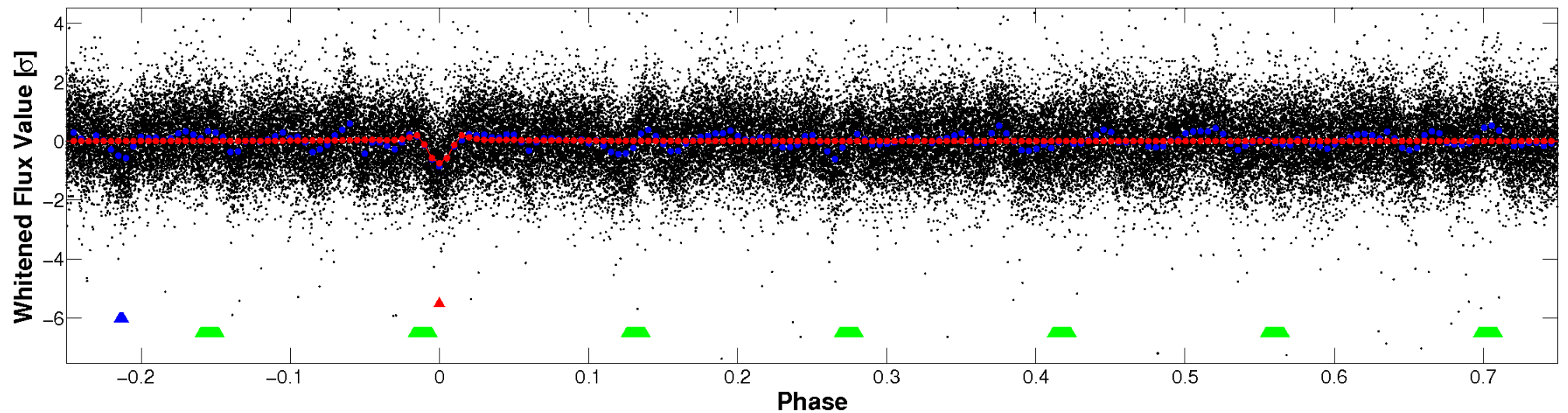


# Non-Whitened Vs. Whitened Light Curve

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

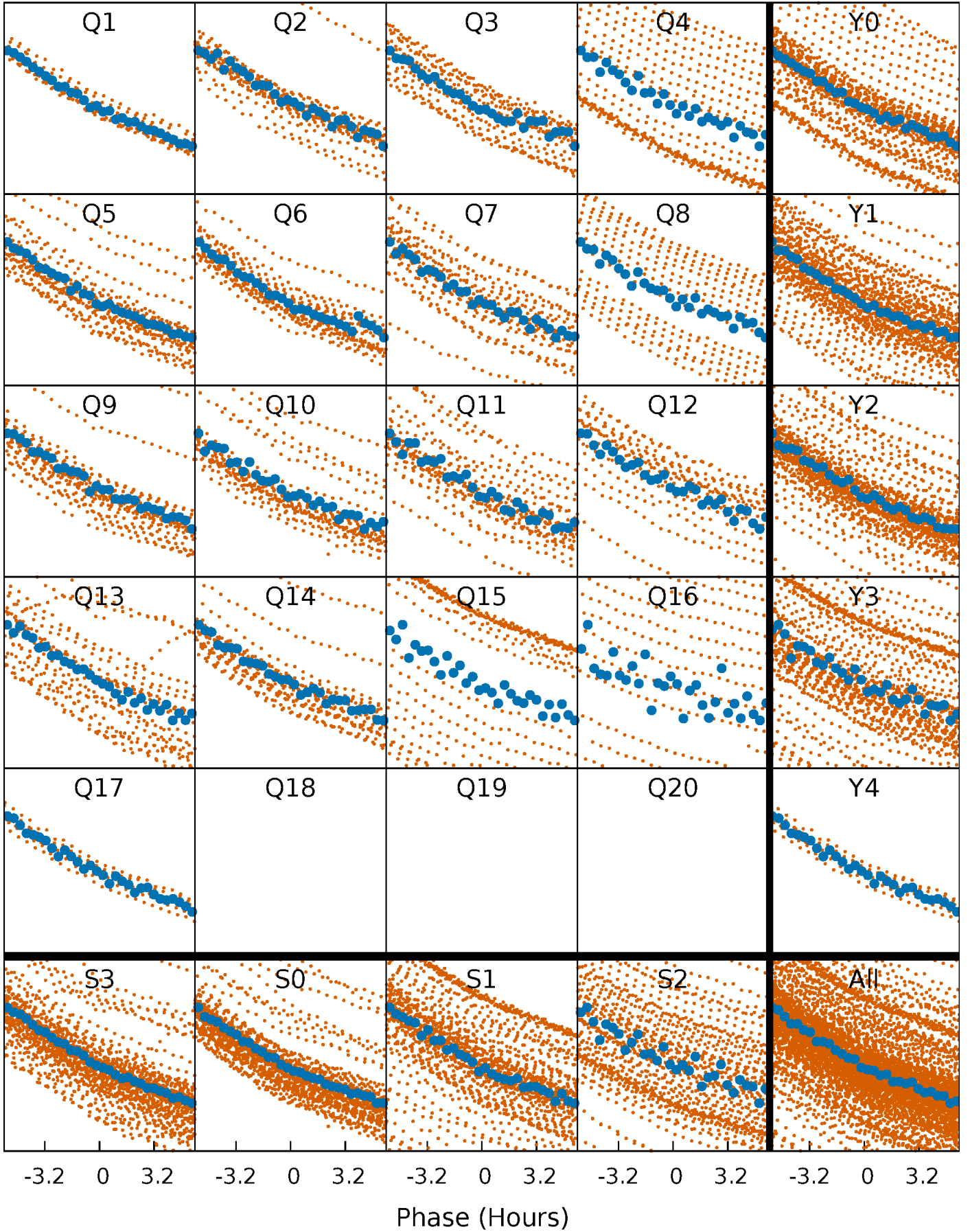


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

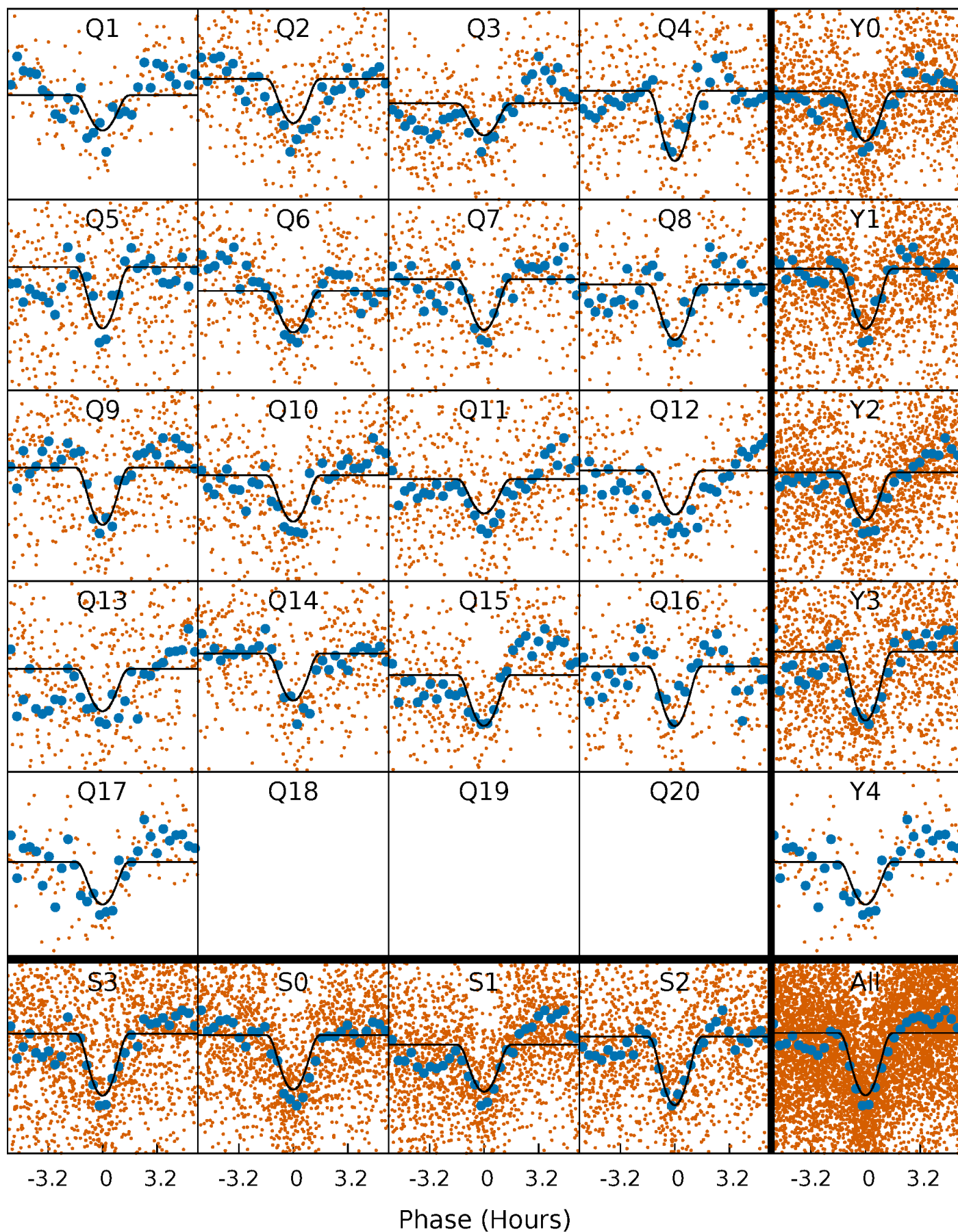
TCE 003945892-01 P= 4.083247 Days  $T_0=133.571005$  (BKJD)





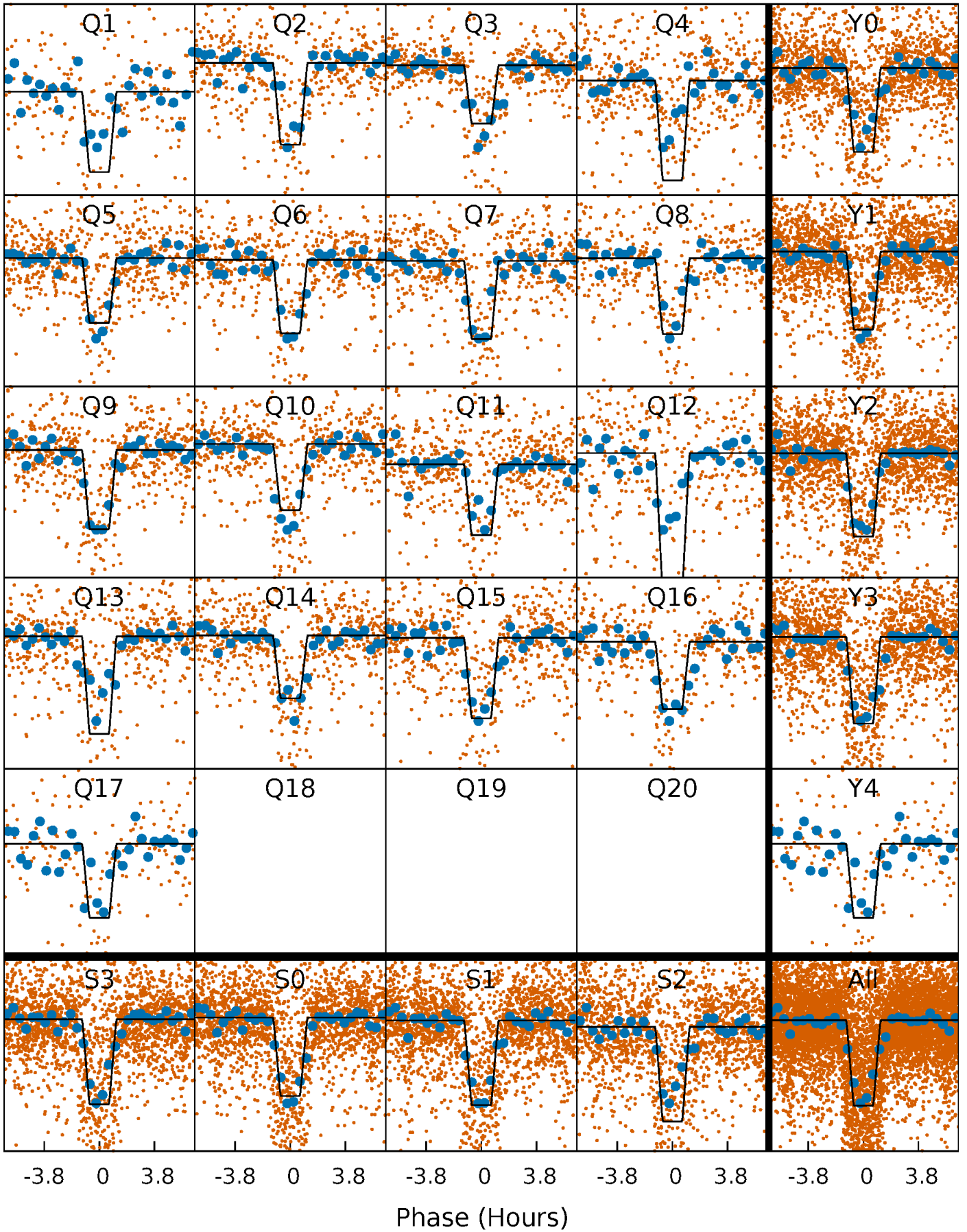
# DV Quarter-Phased Transit Curves

TCE 003945892-01   P= 4.083247 Days    $T_0=133.571005$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

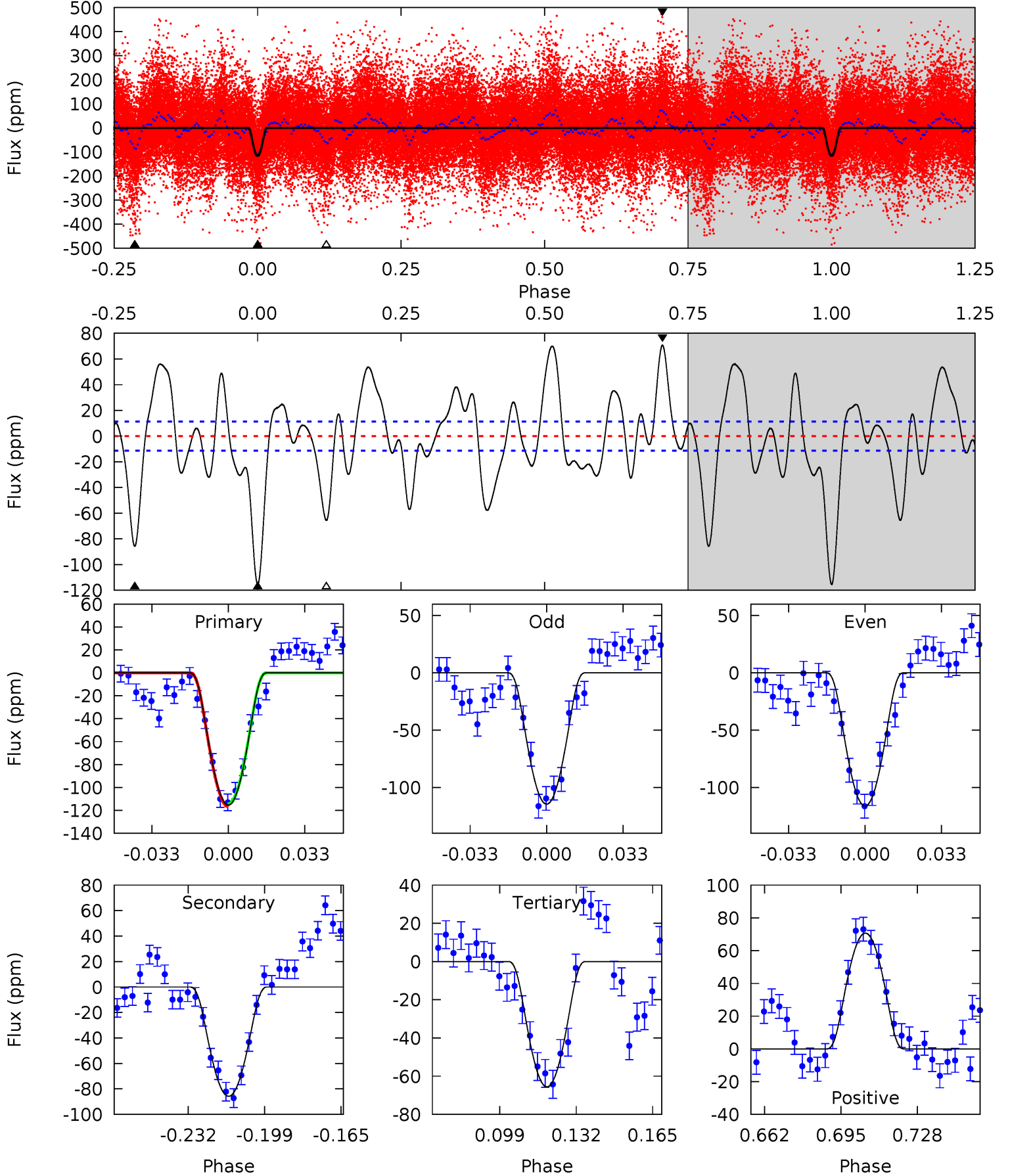
TCE 003945892-01 P= 4.083225 Days  $T_0=133.576964$  (BKJD)



# DV Model-Shift Uniqueness Test

003945892-01, P = 4.083247 Days, E = 129.487758 Days

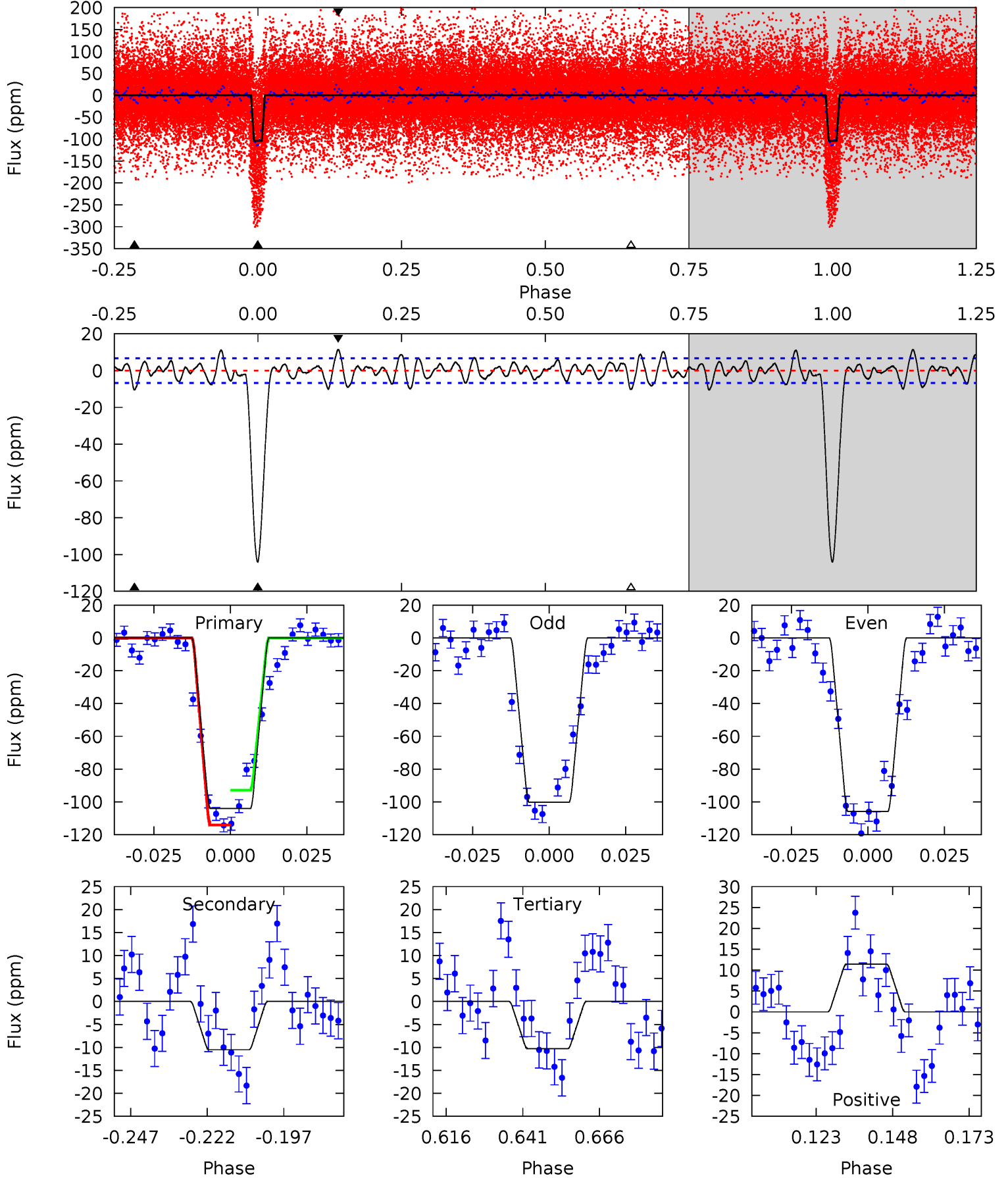
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.8	36.2	27.7	29.9	4.79	2.13	12.4	21.1	18.9	8.53	6.38	0.35	1.07	0.38	0.45



# Alt Model-Shift Uniqueness Test

003945892-01, P = 4.083225 Days, E = 129.493739 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
74.7	7.54	7.40	8.23	4.85	2.25	2.88	67.3	66.5	0.14	-0.68	2.01	1.00	0.10	7.63





### Stellar Parameters For KIC 003945892

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8041^{+224}_{-352}$	$4.183^{+0.065}_{-0.208}$	$0.360^{+0.050}_{-0.500}$	$1.861^{+0.562}_{-0.241}$	$1.923^{+0.282}_{-0.282}$	$0.420^{+0.117}_{-0.219}$
	+3%/-4%	+2%/-5%	+14%/-139%	+30%/-13%	+15%/-15%	+28%/-52%
Source	KIC0	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 003945892-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-86 \pm 2$	$5.13^{+4.55}_{-3.39}$	$2759^{+196}_{-148}$	$4898^{+3695}_{-1109}$	$7.031^{+53.044}_{-5.125}$
Alt.	$-11 \pm 1$	$4.28^{+4.26}_{-2.87}$	$2762^{+197}_{-158}$	$3417^{+2112}_{-5316}$	$1.177^{+10.403}_{-0.884}$

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

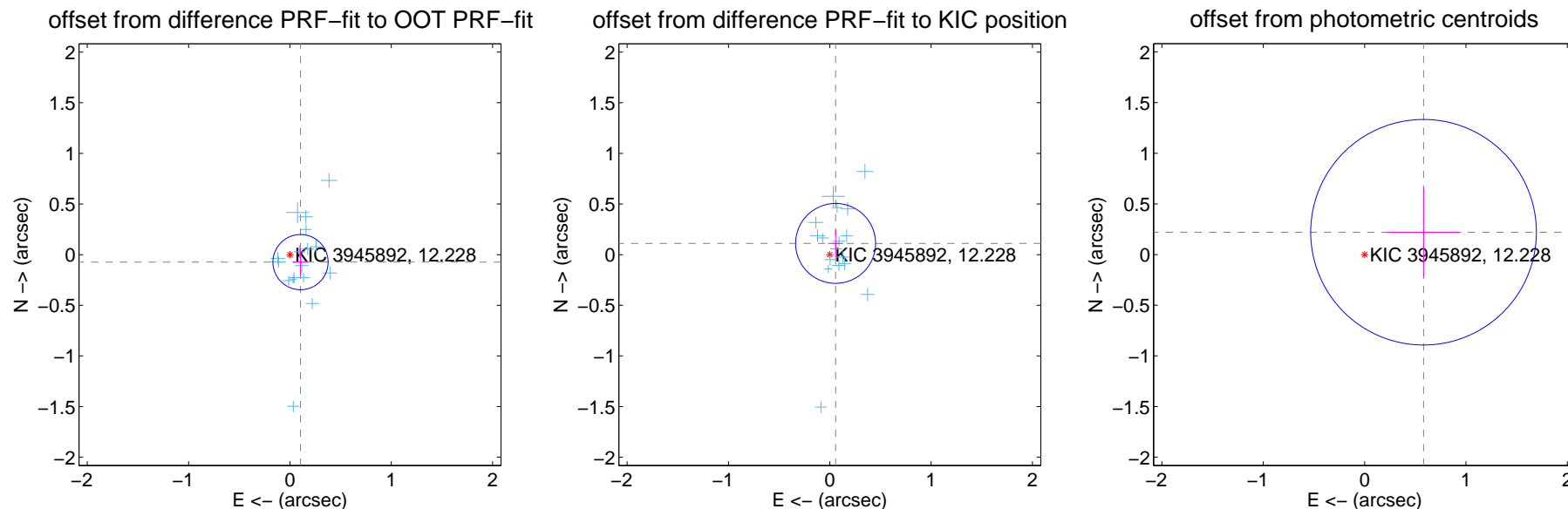
## DV Centroid Data

Supplemental centroid analysis for 003945892-01. Kepler magnitude: 12.23. Transit SNR 21.94

There are 17 quarters with good PRF difference image offsets

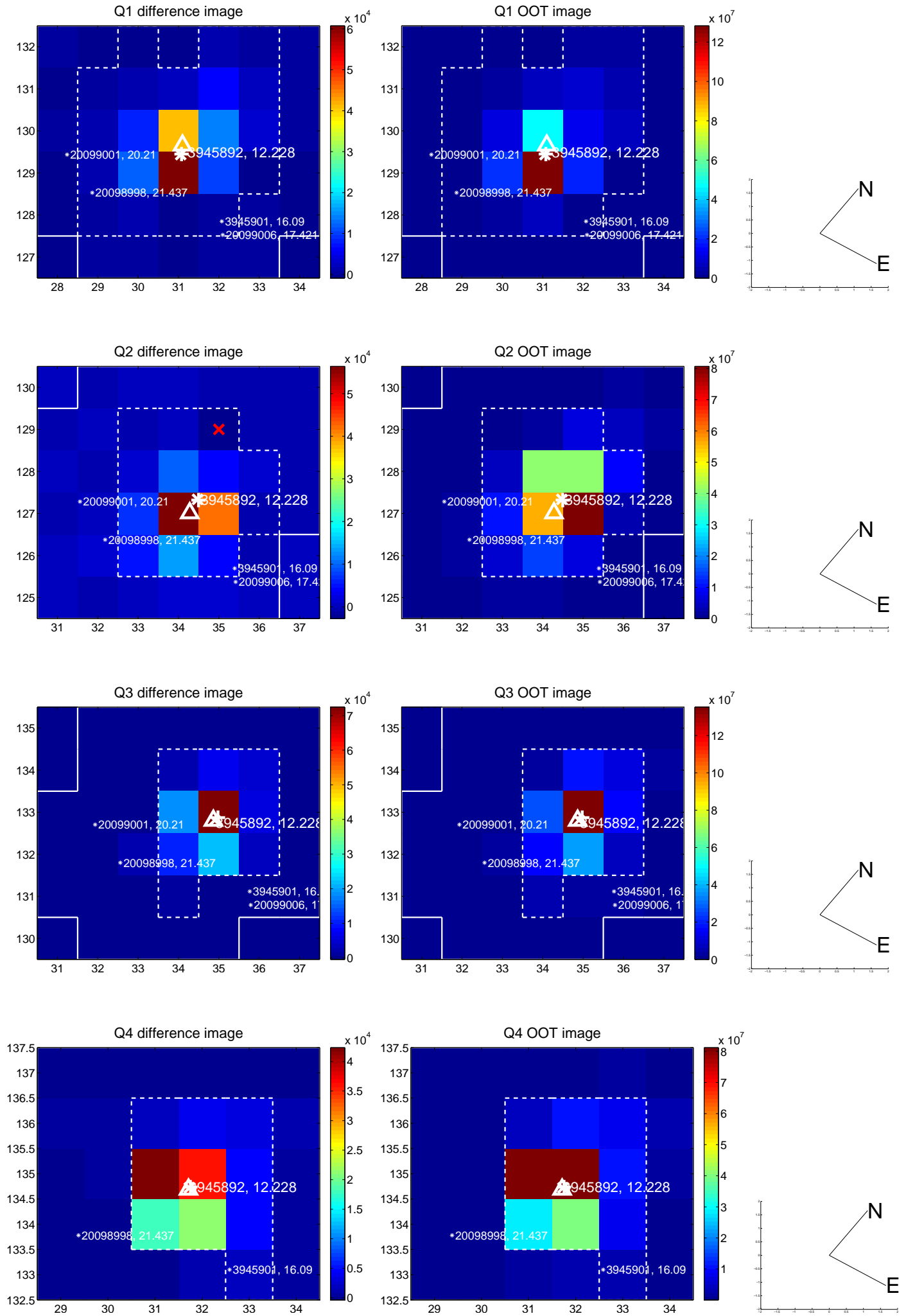
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.128 \pm 0.091$	1.41	$-0.104 \pm 0.075$	$-0.074 \pm 0.133$
PRF-fit source offset from KIC position	$0.125 \pm 0.131$	0.95	$-0.057 \pm 0.075$	$0.111 \pm 0.138$
photometric centroid source offset	$0.62 \pm 0.37$	1.68	$-0.58 \pm 0.36$	$0.22 \pm 0.44$

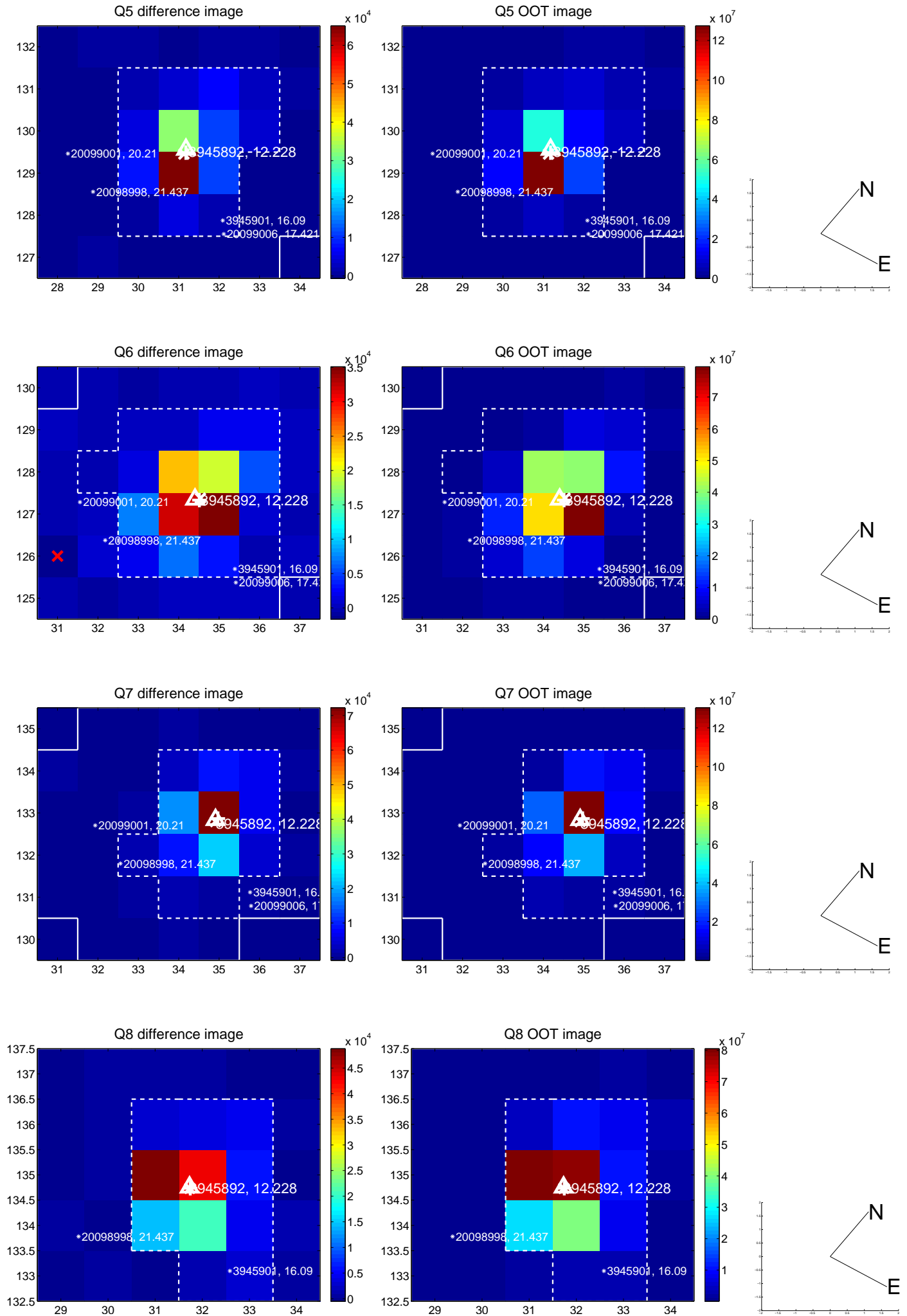


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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

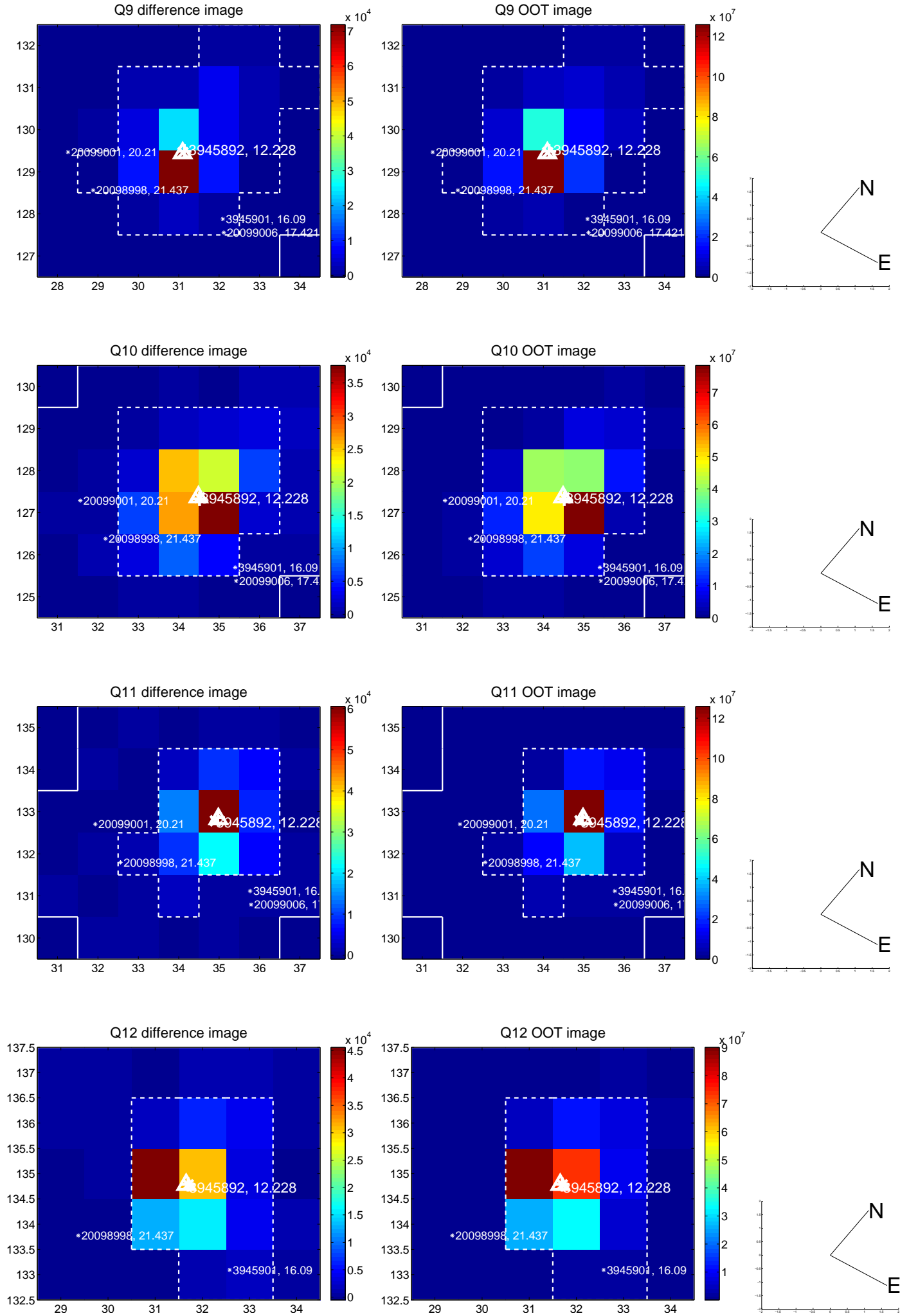


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

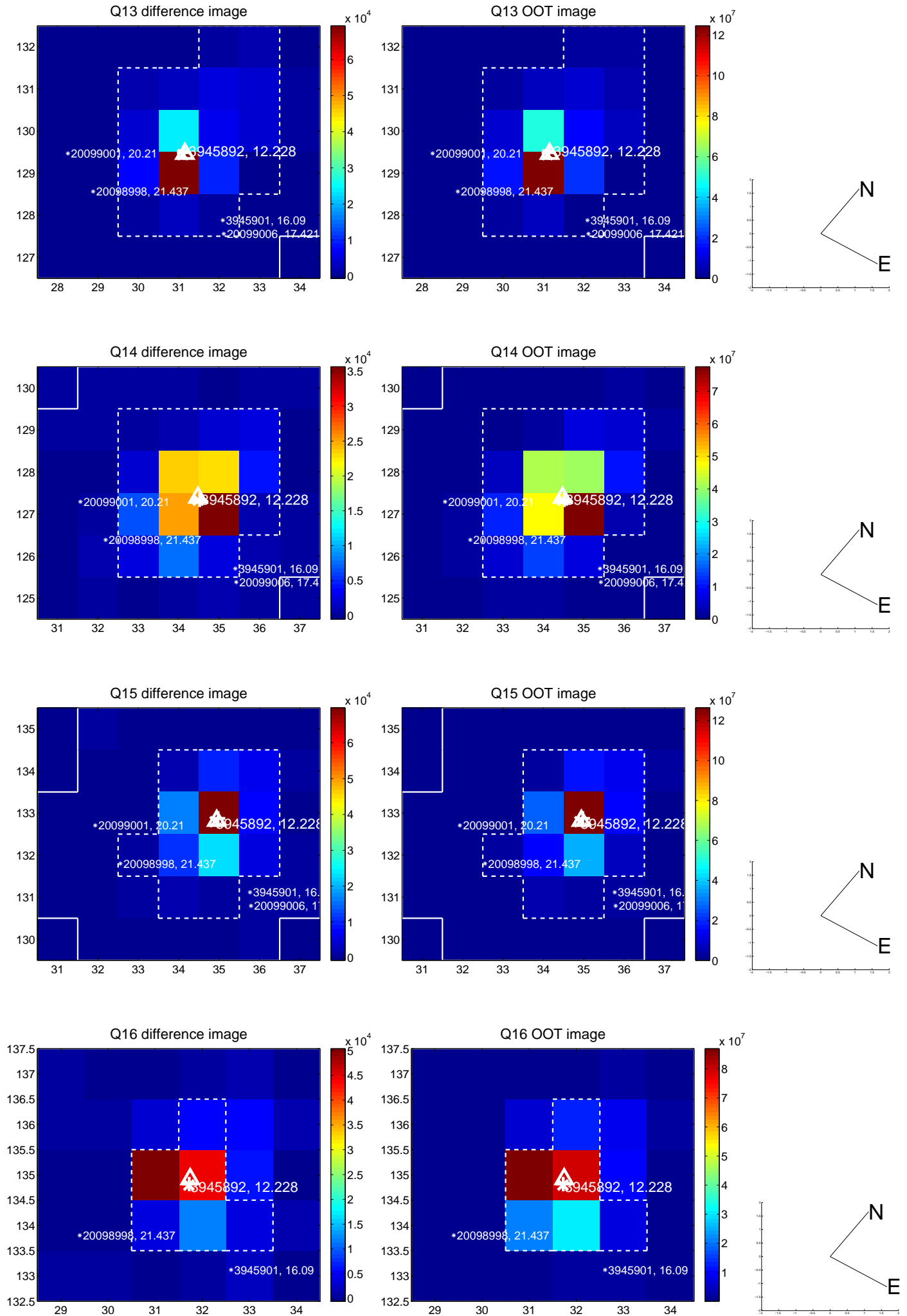




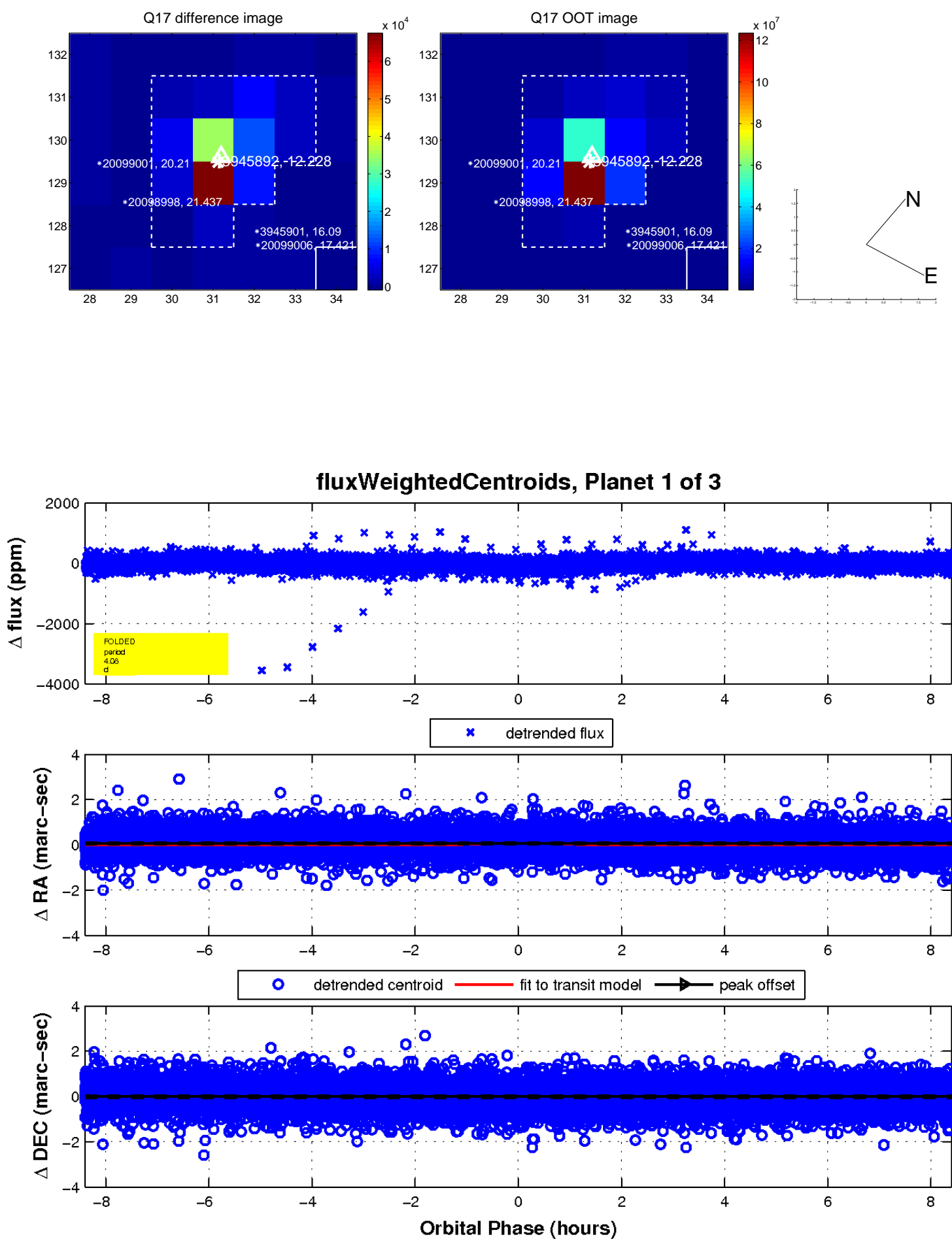
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

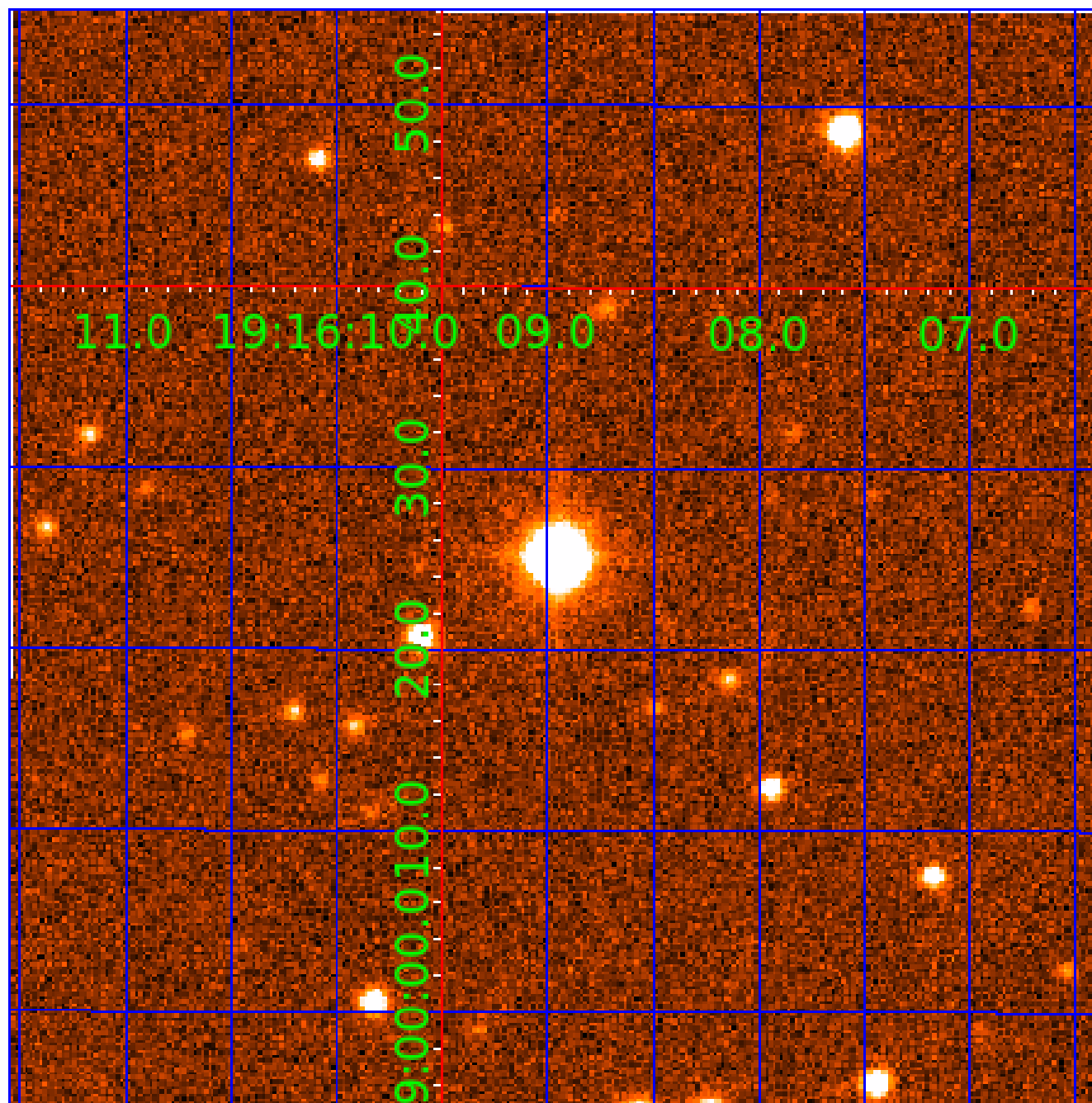


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 003945892

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003945892-01	OBS	No	4.083247	133.571005	97.2	2.801	20.2	21.9	1.86	8041	3.63	3351.90
003945892-02	OBS	No	4.083270	132.696280	62.0	2.090	15.0	16.1	1.86	8041	1.70	3351.88
003945892-03	OBS	No	0.583302	131.799804	11.0	7.000	13.6	8.7	1.86	8041	0.77	44885.70

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003945892-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003945892-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003945892-03	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

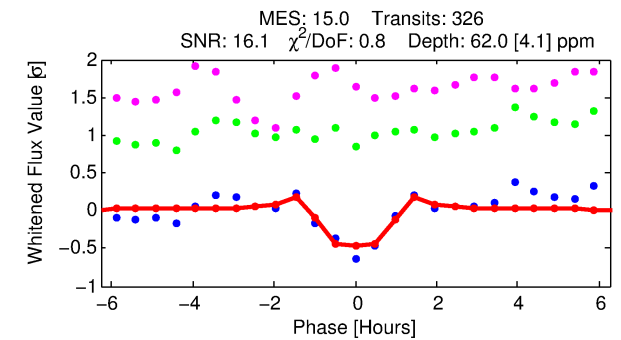
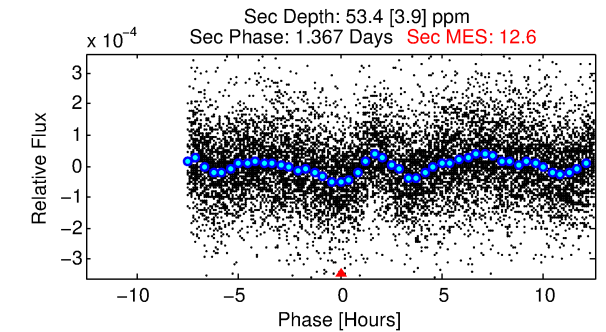
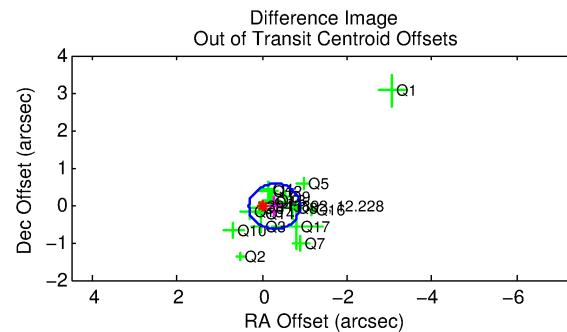
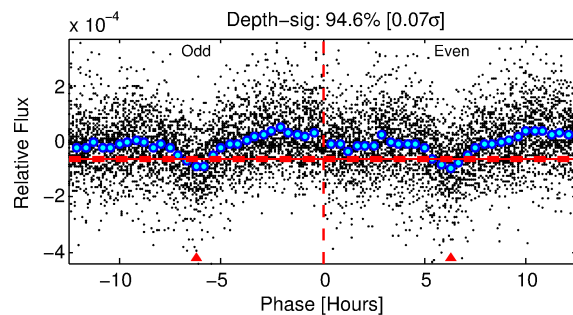
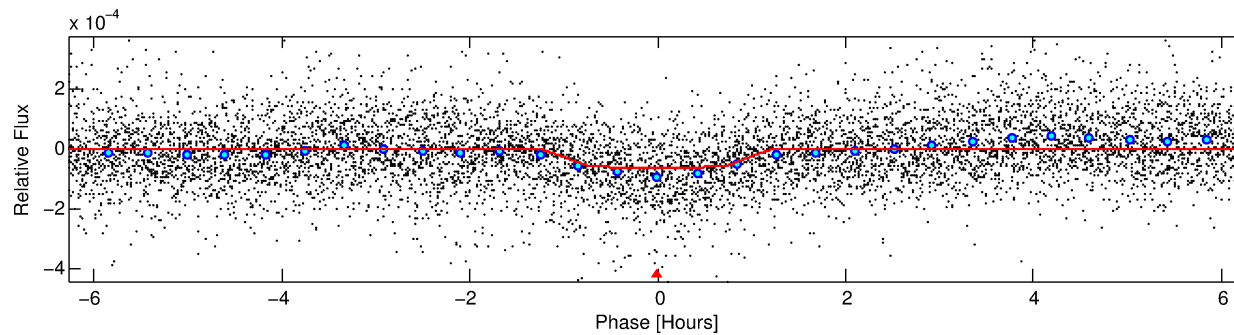
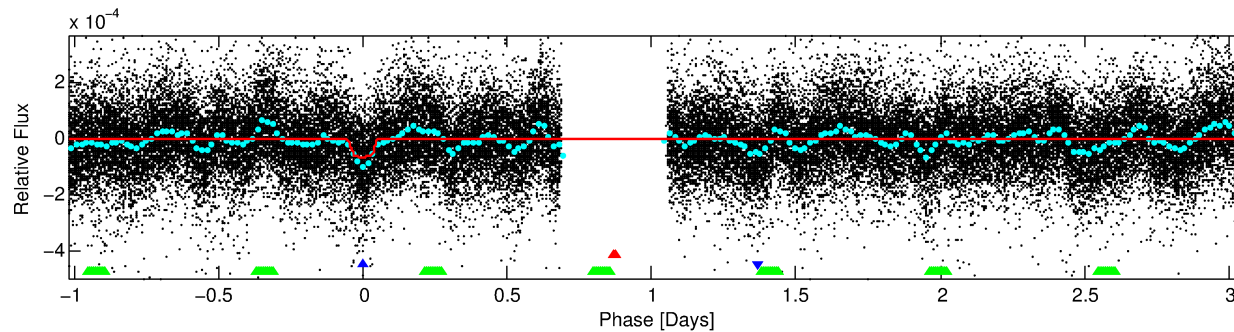
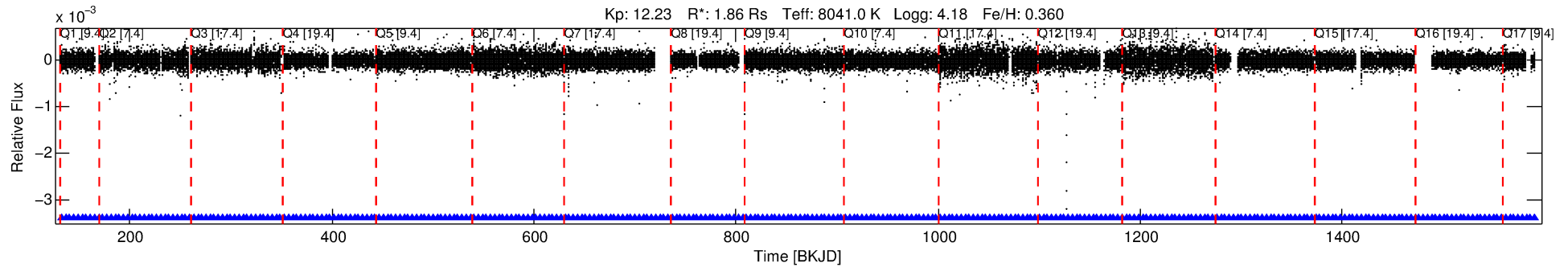
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003945892-02

No Significant Match Found

# DV One-Page Summary

KIC: 3945892 Candidate: 2 of 3 Period: 4.083 d



## DV Fit Results:

Period = 4.08327 [0.00001] d  
Epoch = 132.6963 [0.0016] BKJD  
Rp/R\* = 0.0084 [0.0014]  
a/R\* = 6.85 [6.85]  
b = 0.90 [0.22]  
Seff = 3351.88 [1394.72]  
Teq = 1940 [202] K  
Rp = 1.70 [0.58] Re  
a = 0.0622 [0.0160] AU  
Ag = 39.32 [19.82] [1.93σ]  
Teffp = 7512 [708] K [7.57σ]

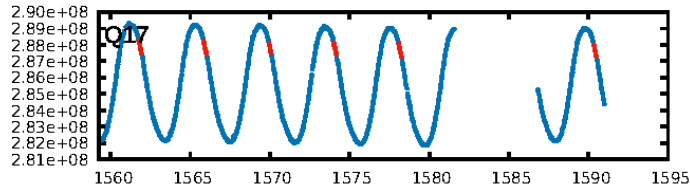
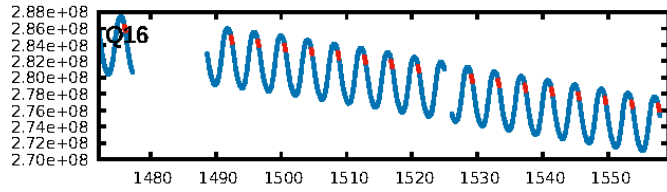
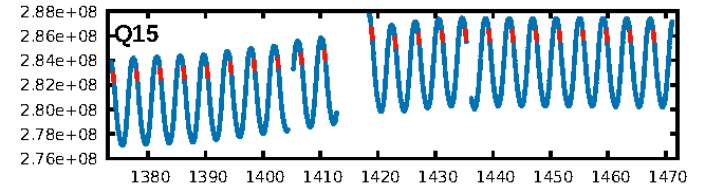
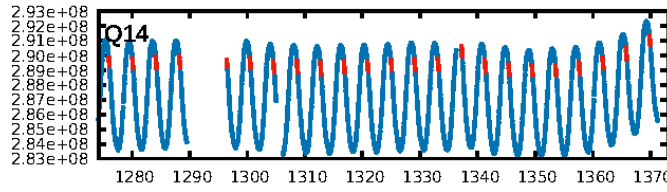
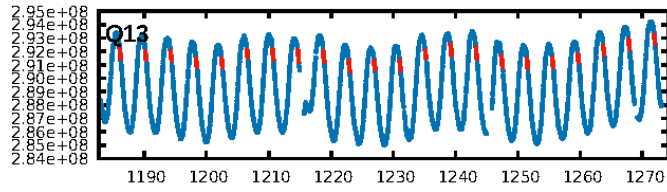
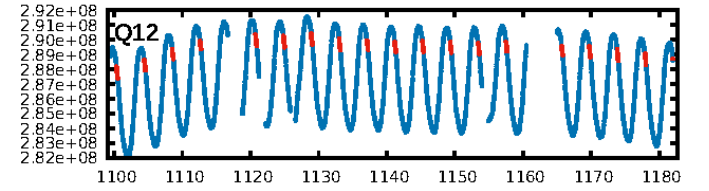
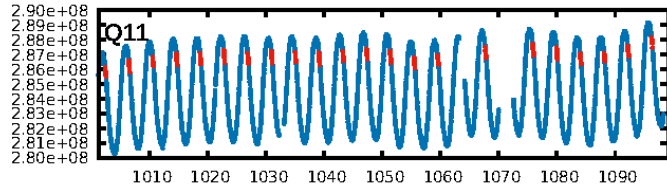
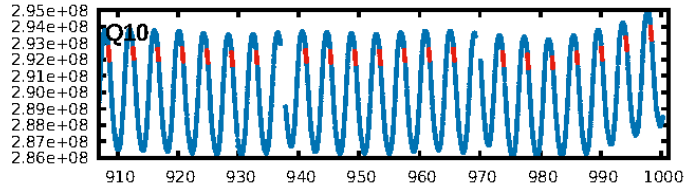
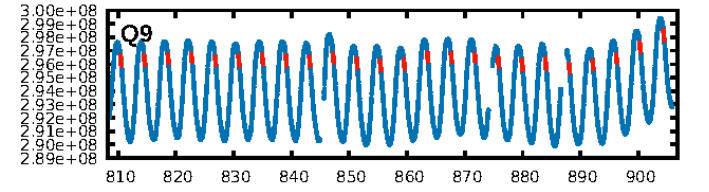
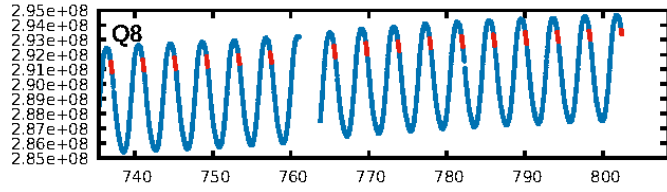
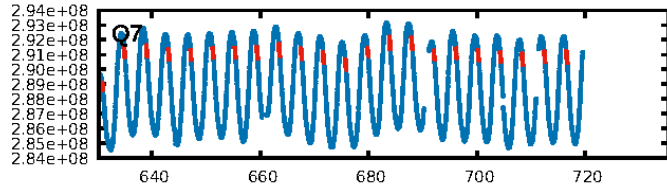
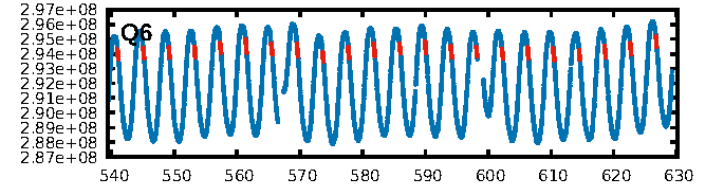
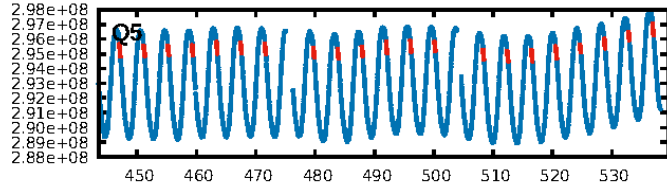
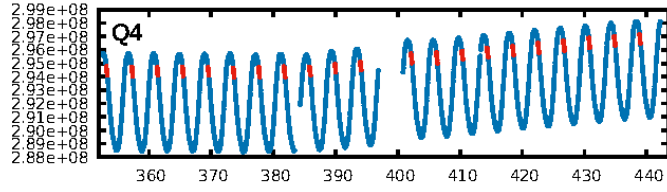
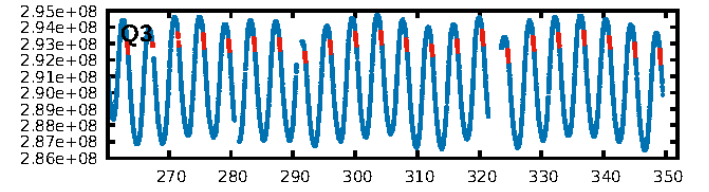
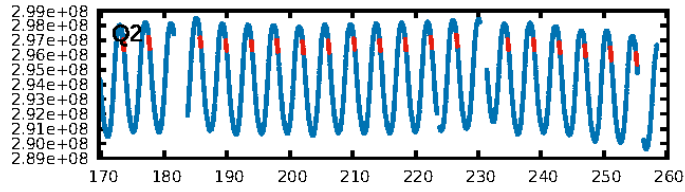
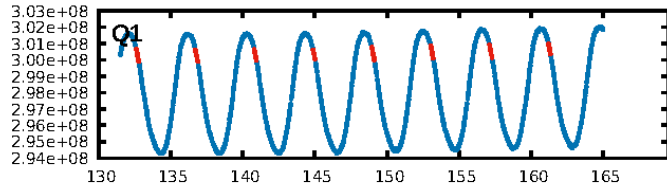
## DV Diagnostic Results:

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 [312/312]  
GhostDiagnostic-chr: -1.292  
Centroid-sig: 2.2%  
Centroid-so: 0.759 arcsec [1.27σ]  
OotOffset-rm: 0.293 arcsec [1.46σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.237 arcsec [0.88σ]  
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DiffImageOverlap-fno: 0.00 [0/17]

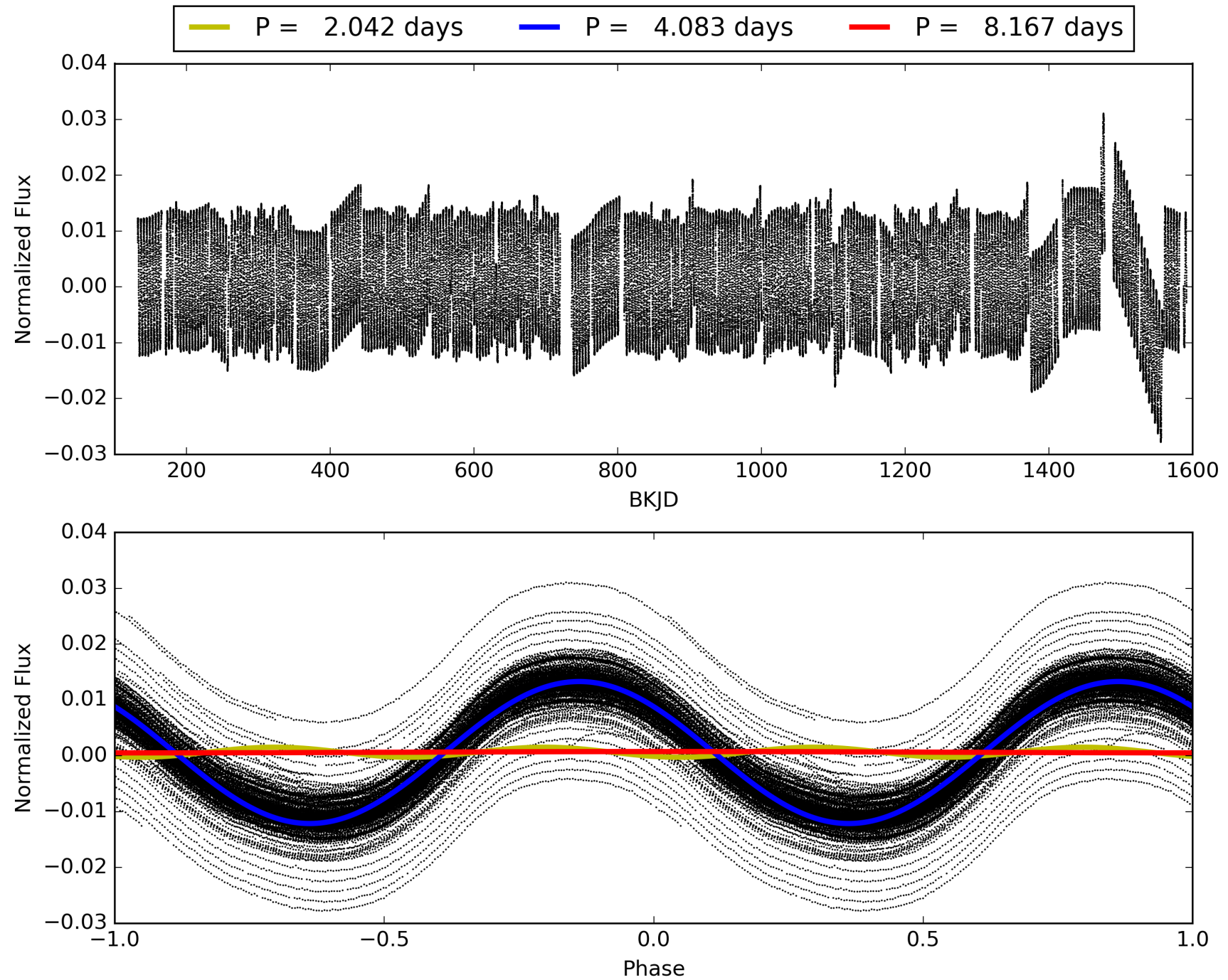
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 15:03:57 Z

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

# TCE 003945892-02, PDC Light Curves

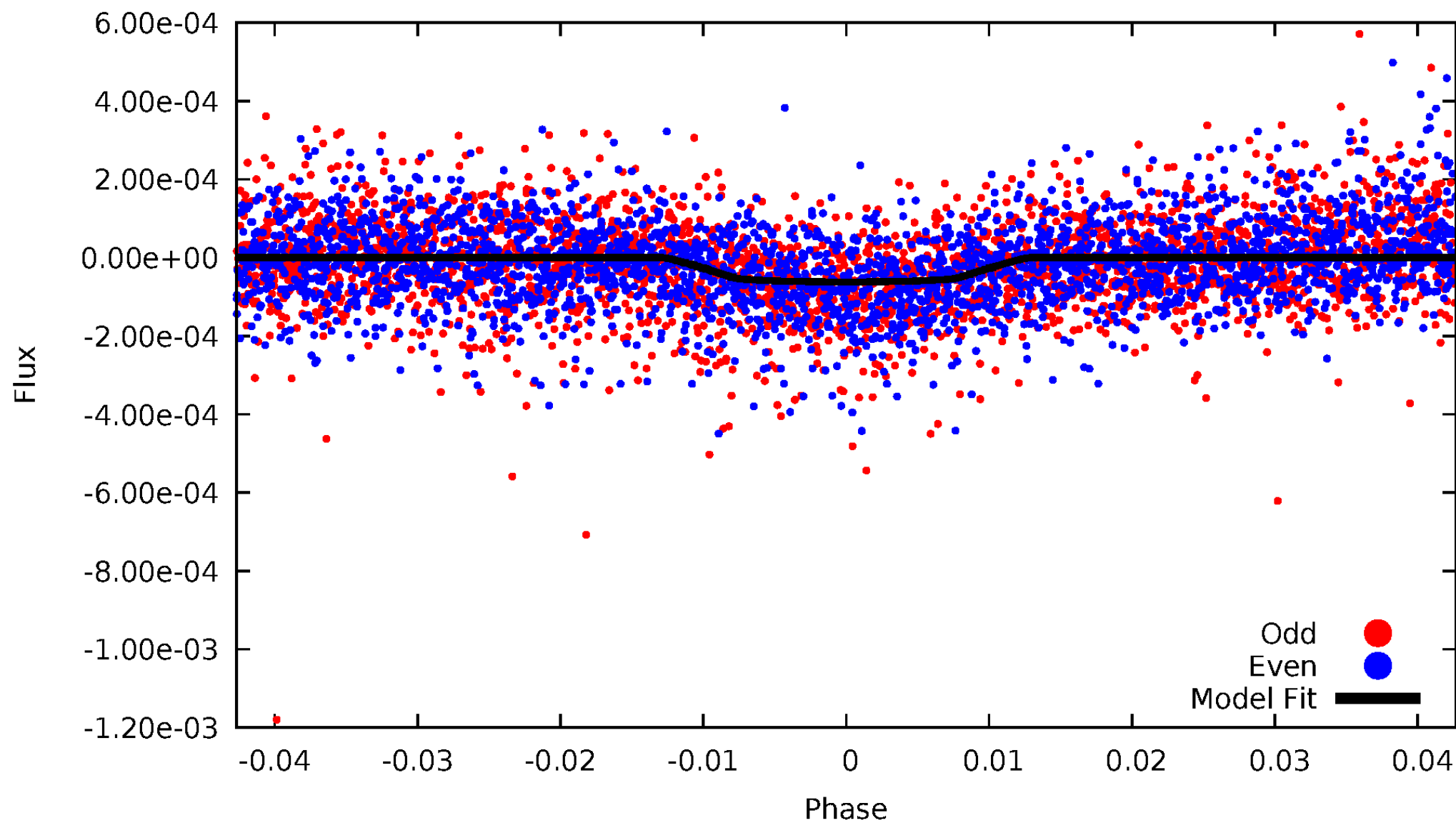


# TCE 003945892-02



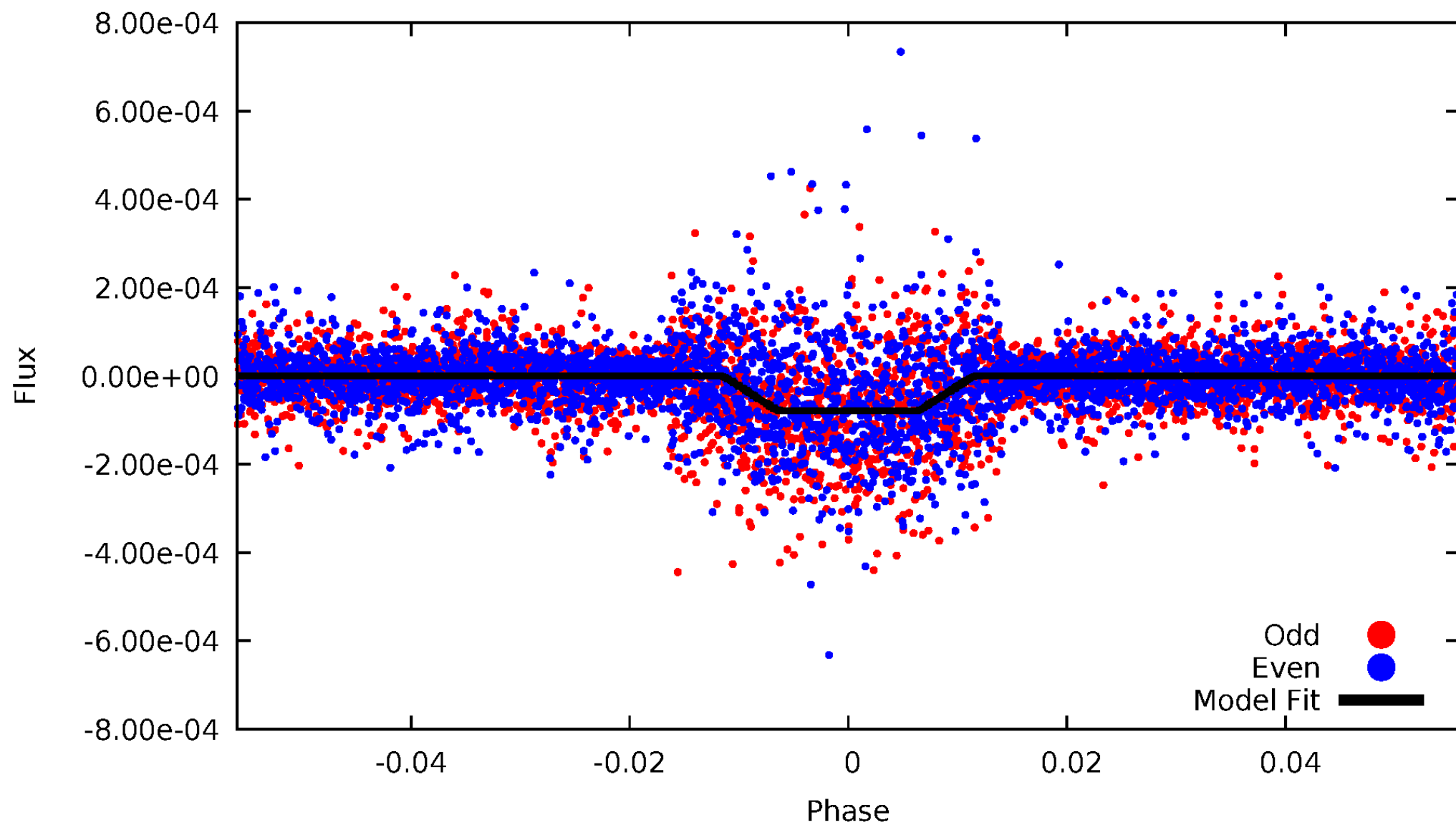
# DV Odd/Even

TCE 003945892-02



# ALT Odd/Even

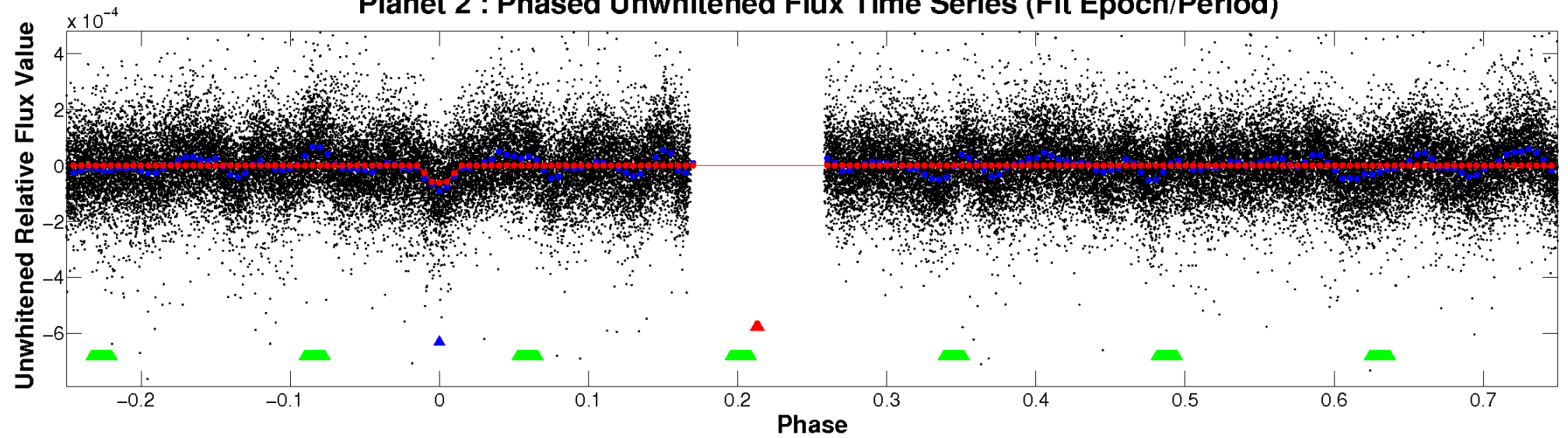
TCE 003945892-02



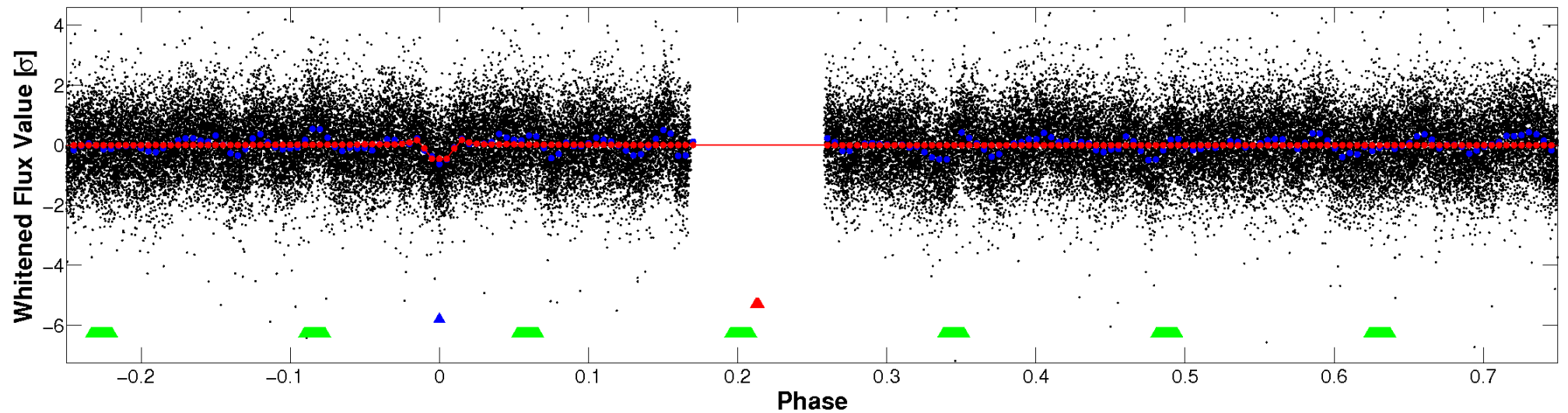


# Non-Whitened Vs. Whitened Light Curve

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



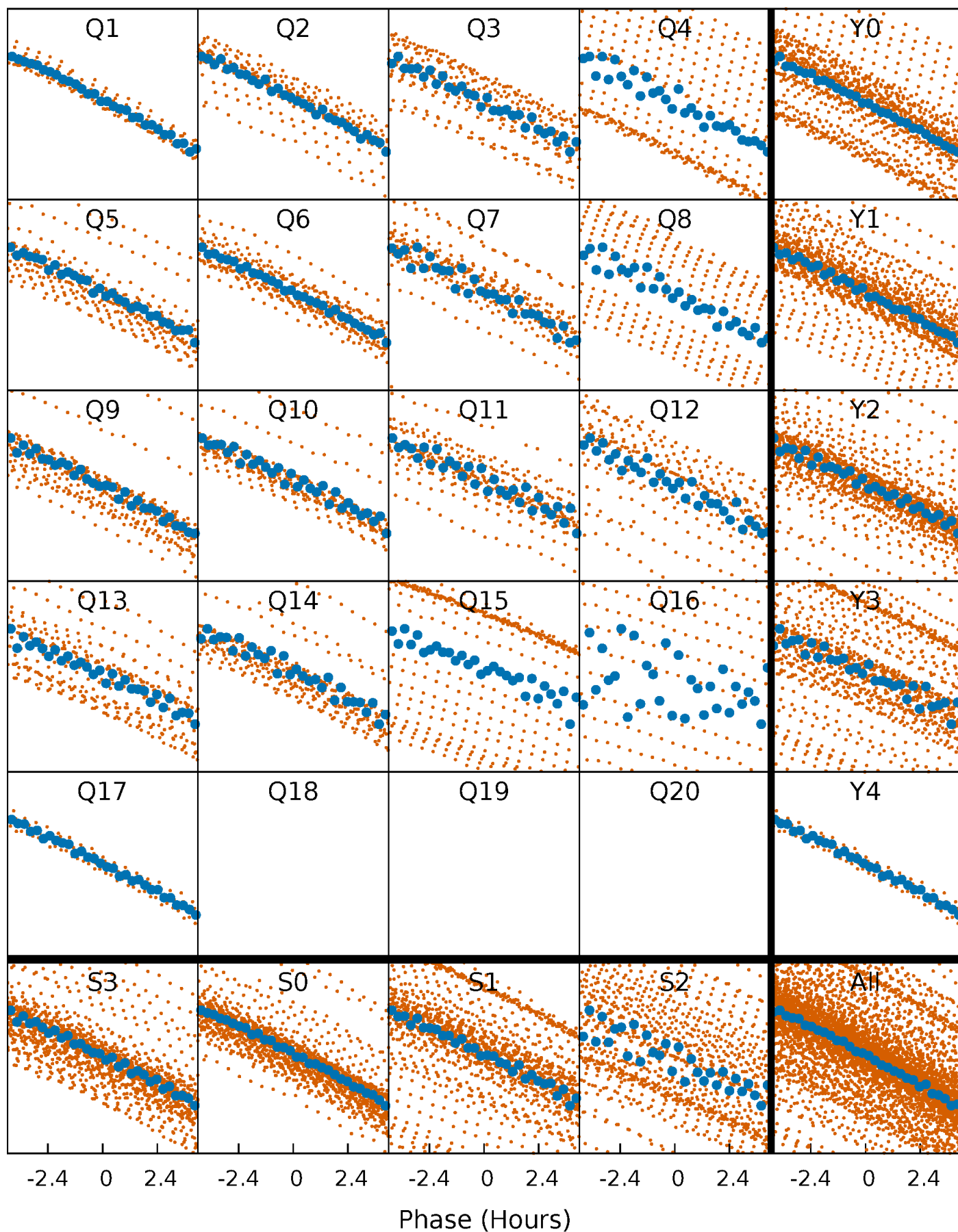
## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





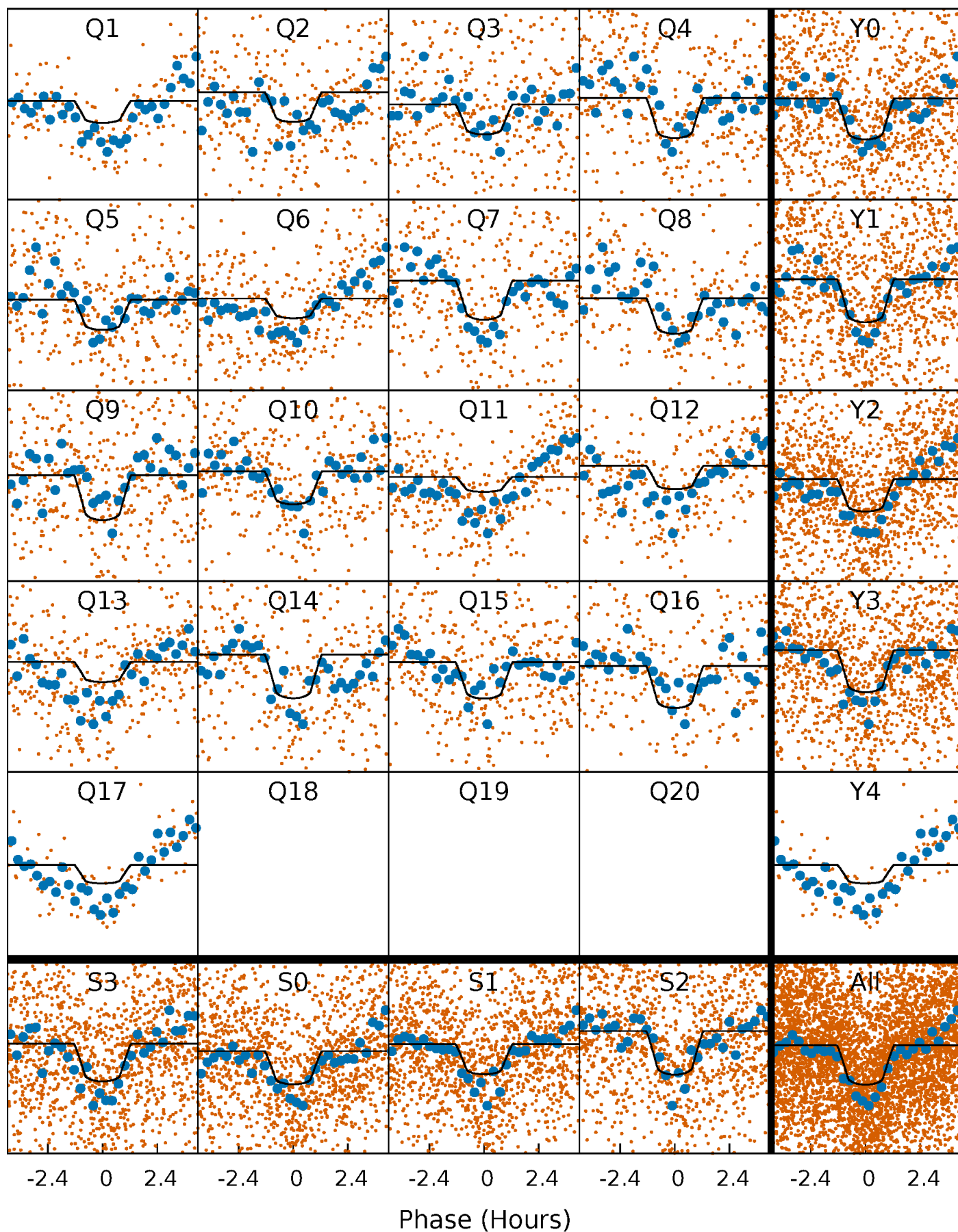
# PDC Quarter-Phased Transit Curves

TCE 003945892-02 P= 4.083270 Days  $T_0=132.696280$  (BKJD)



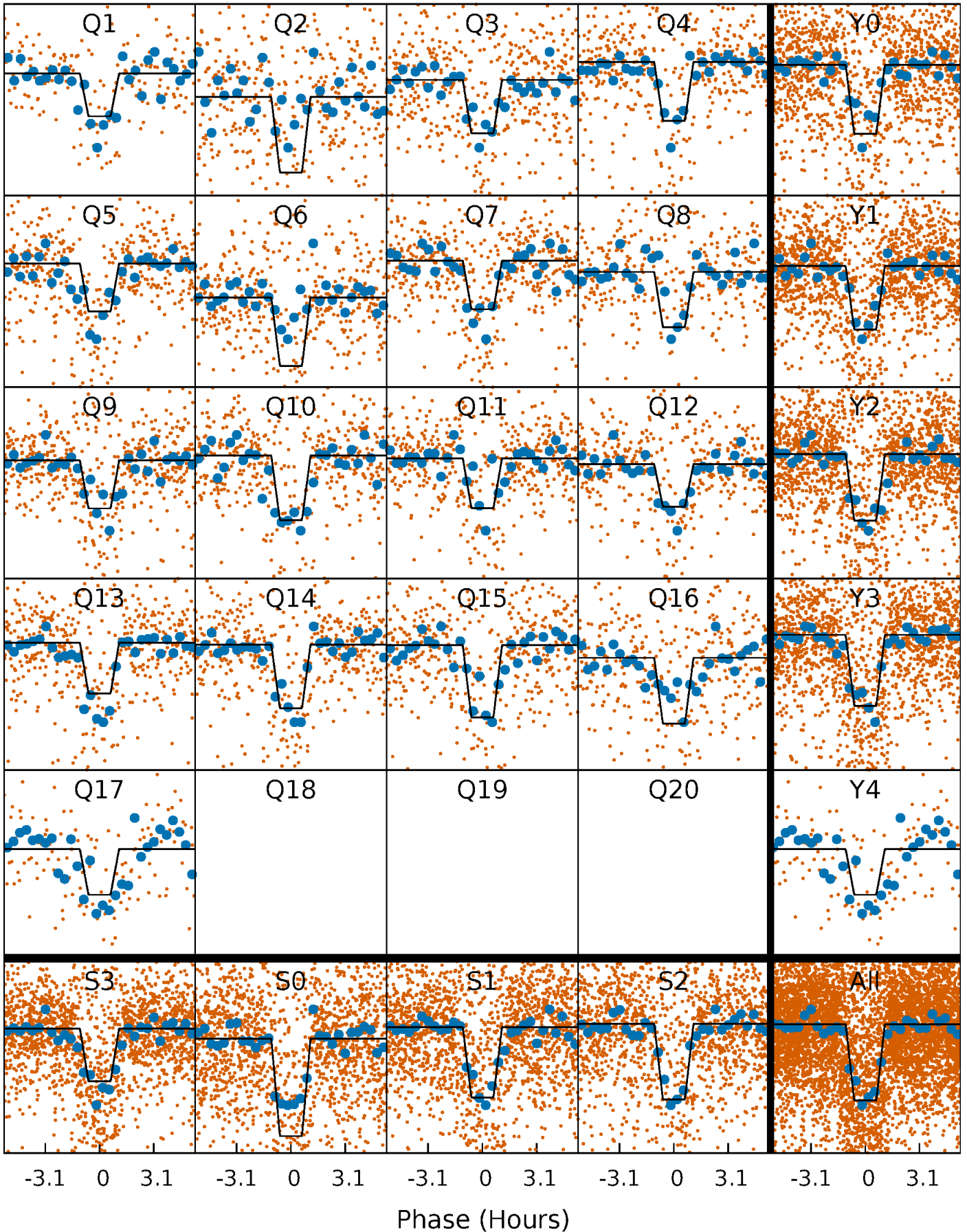
# DV Quarter-Phased Transit Curves

TCE 003945892-02   P= 4.083270 Days    $T_0=132.696280$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

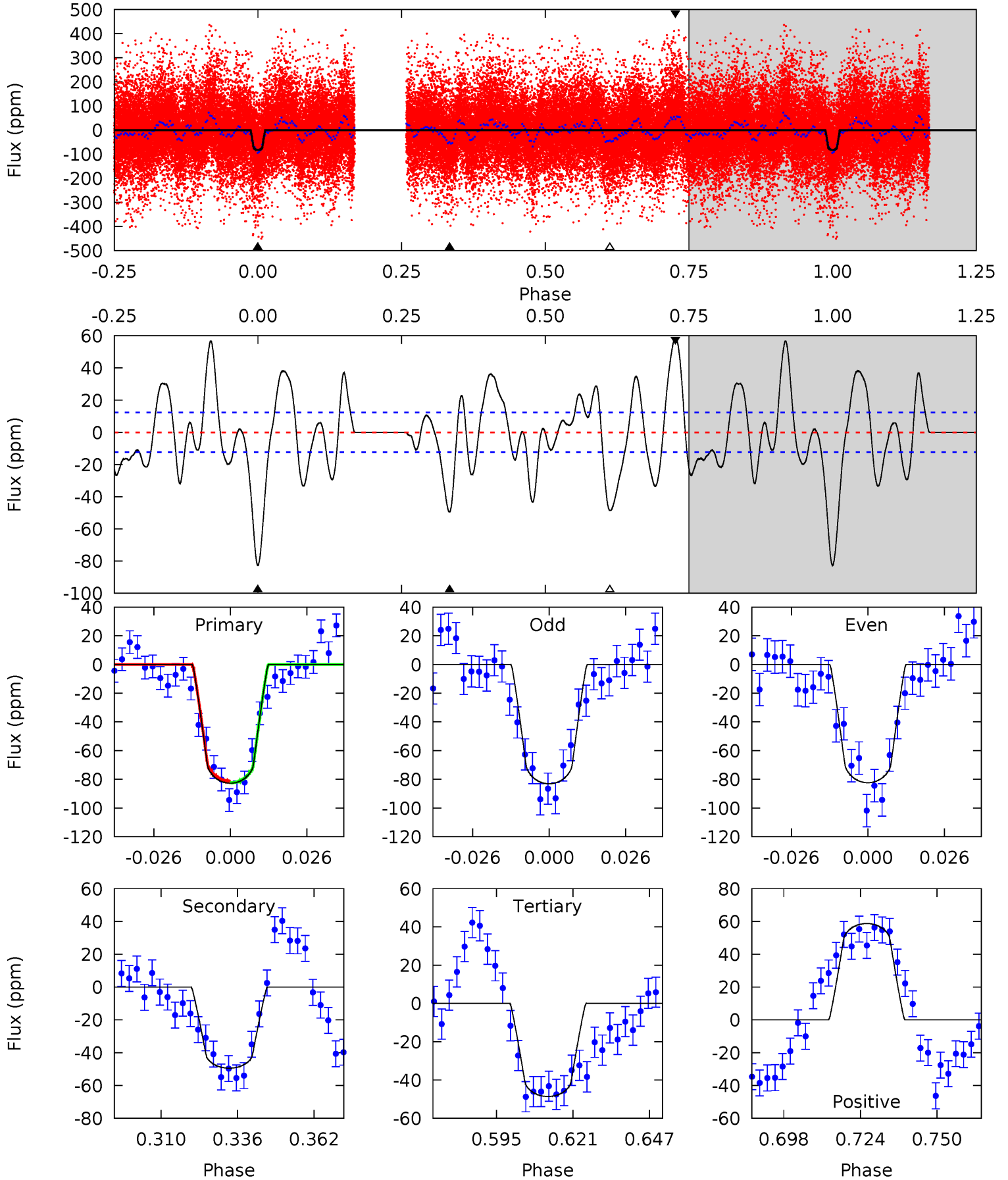
TCE 003945892-02     $P = 4.083225$  Days     $T_0 = 132.703013$  (BKJD)



# DV Model-Shift Uniqueness Test

003945892-02, P = 4.083270 Days, E = 128.613010 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
32.5	19.4	19.1	23.1	4.84	2.23	8.95	13.4	9.45	0.32	-3.63	0.14	1.17	0.41	0.24

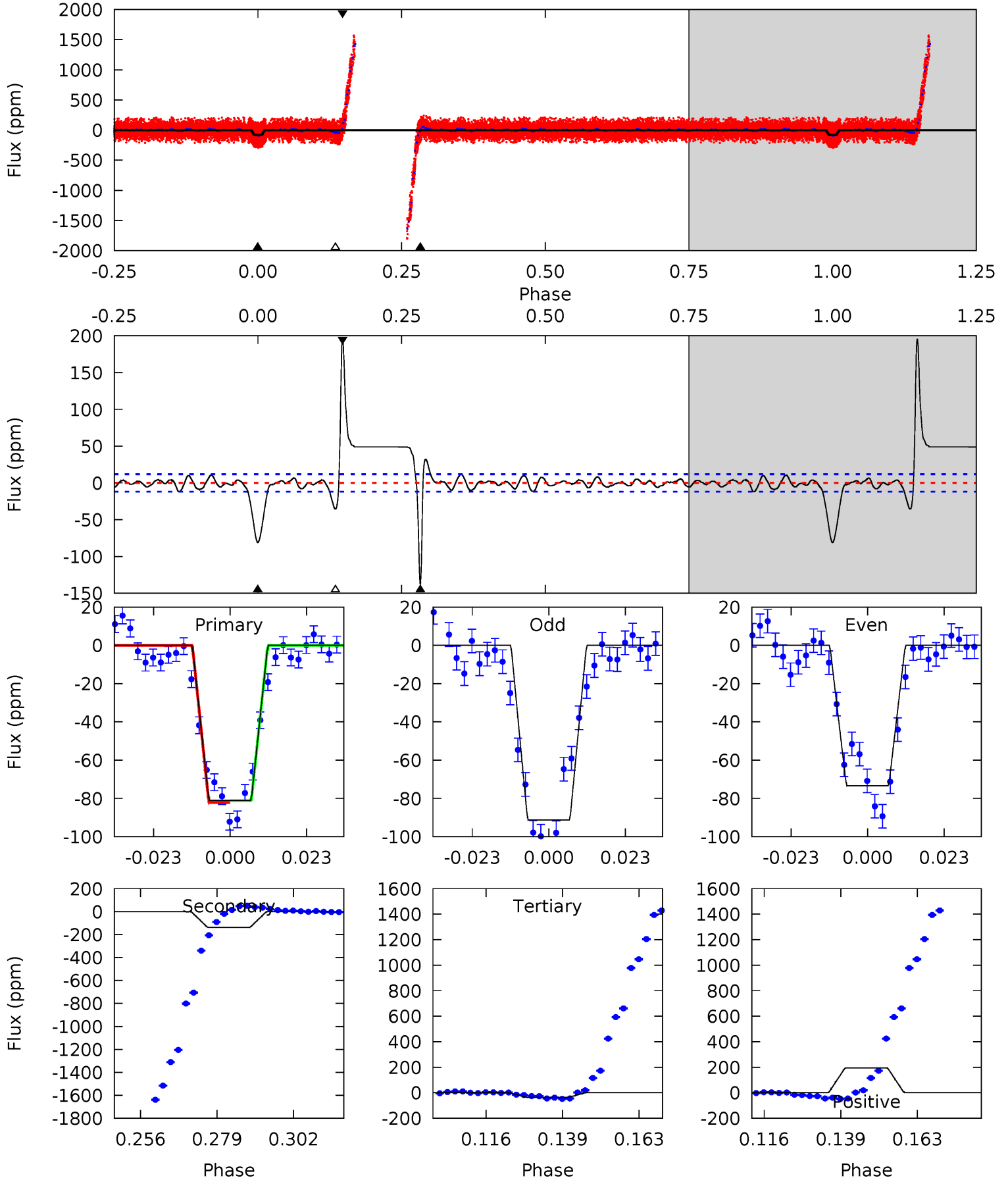




# Alt Model-Shift Uniqueness Test

003945892-02, P = 4.083225 Days, E = 128.619788 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
33.3	56.5	14.6	80.3	4.86	2.27	6.85	18.7	-47.0	41.9	-23.8	3.70	0.91	0.59	0



### Stellar Parameters For KIC 003945892

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8041^{+224}_{-352}$	$4.183^{+0.065}_{-0.208}$	$0.360^{+0.050}_{-0.500}$	$1.861^{+0.562}_{-0.241}$	$1.923^{+0.282}_{-0.282}$	$0.420^{+0.117}_{-0.219}$
	+3%/-4%	+2%/-5%	+14%/-139%	+30%/-13%	+15%/-15%	+28%/-52%
Source	KIC0	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 003945892-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-49 \pm 3$	$1.78^{+0.39}_{-0.34}$	$2759^{+206}_{-138}$	$7207^{+831}_{-596}$	$33^{+17}_{-10}$
Alt.	$-138 \pm 2$	$1.87^{+0.41}_{-0.32}$	$2762^{+200}_{-169}$	$9676^{+1133}_{-1029}$	$83^{+34}_{-26}$

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

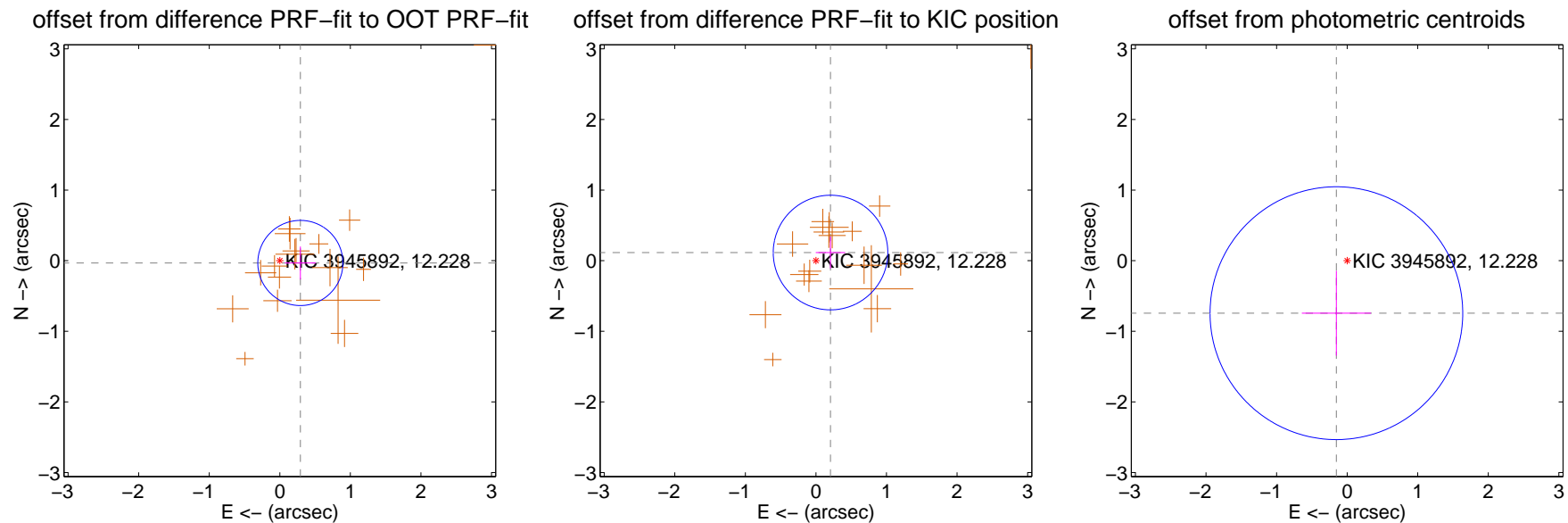
## DV Centroid Data

Supplemental centroid analysis for 003945892-02. Kepler magnitude: 12.23. Transit SNR 16.05

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

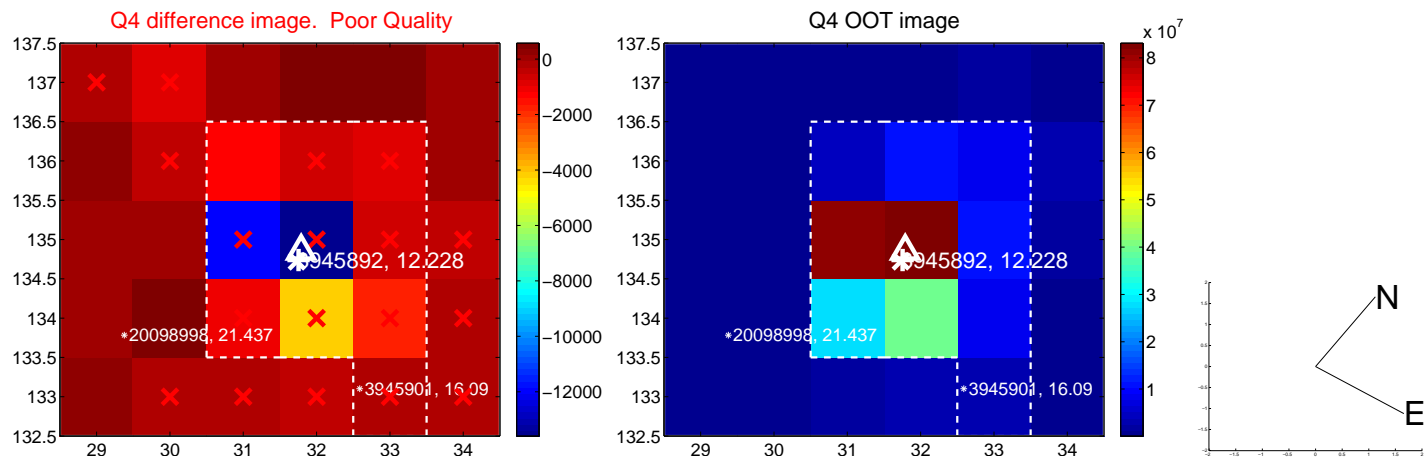
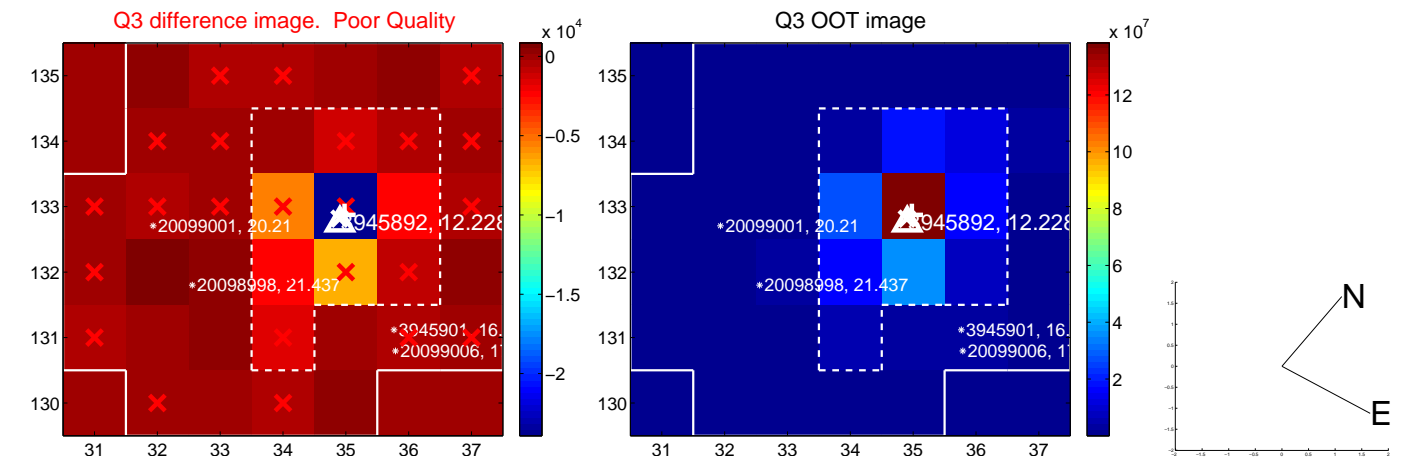
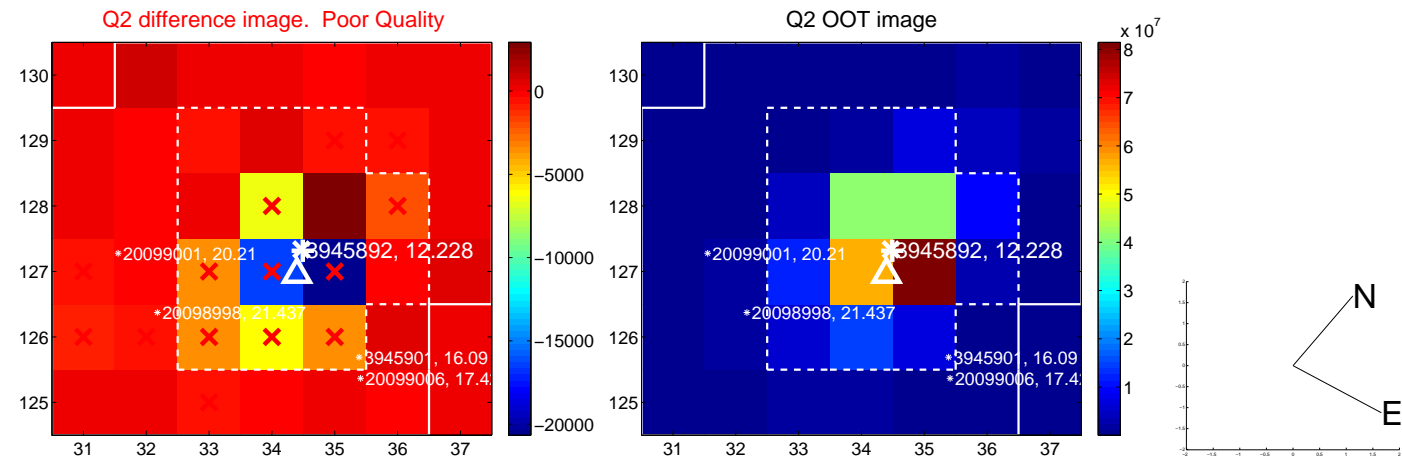
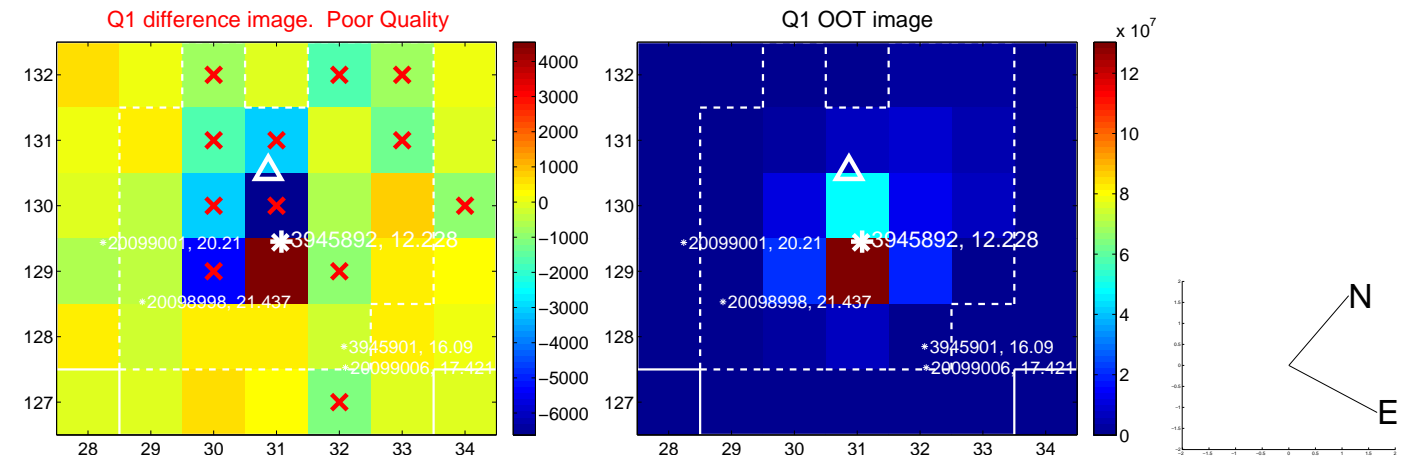
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.293 \pm 0.201$	1.46	$-0.291 \pm 0.219$	$-0.032 \pm 0.233$
PRF-fit source offset from KIC position	$0.237 \pm 0.271$	0.88	$-0.207 \pm 0.209$	$0.115 \pm 0.226$
photometric centroid source offset	$0.76 \pm 0.60$	1.27	$0.15 \pm 0.49$	$-0.74 \pm 0.60$



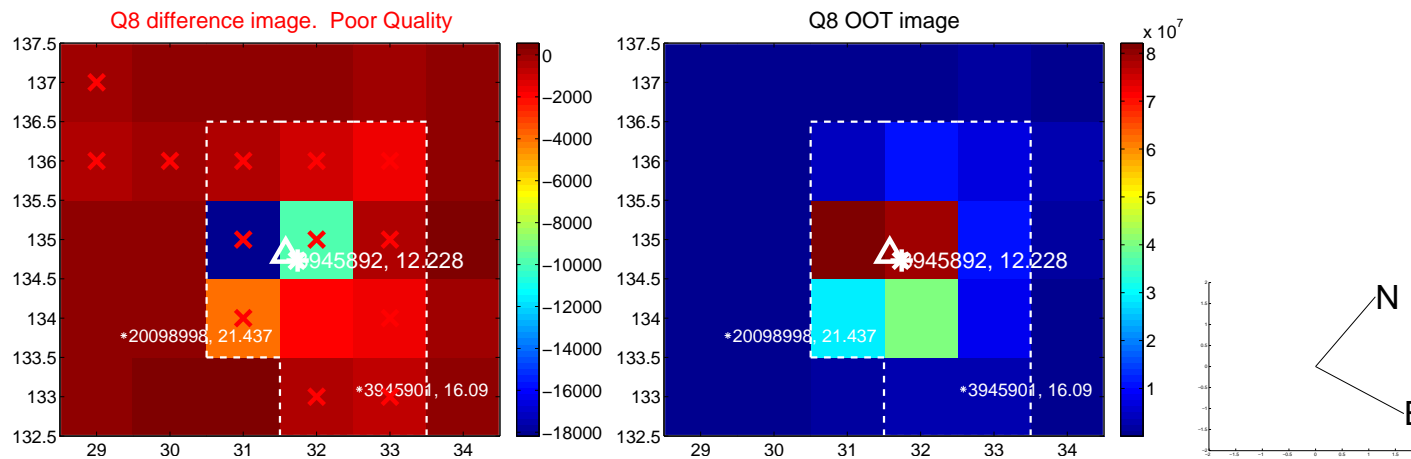
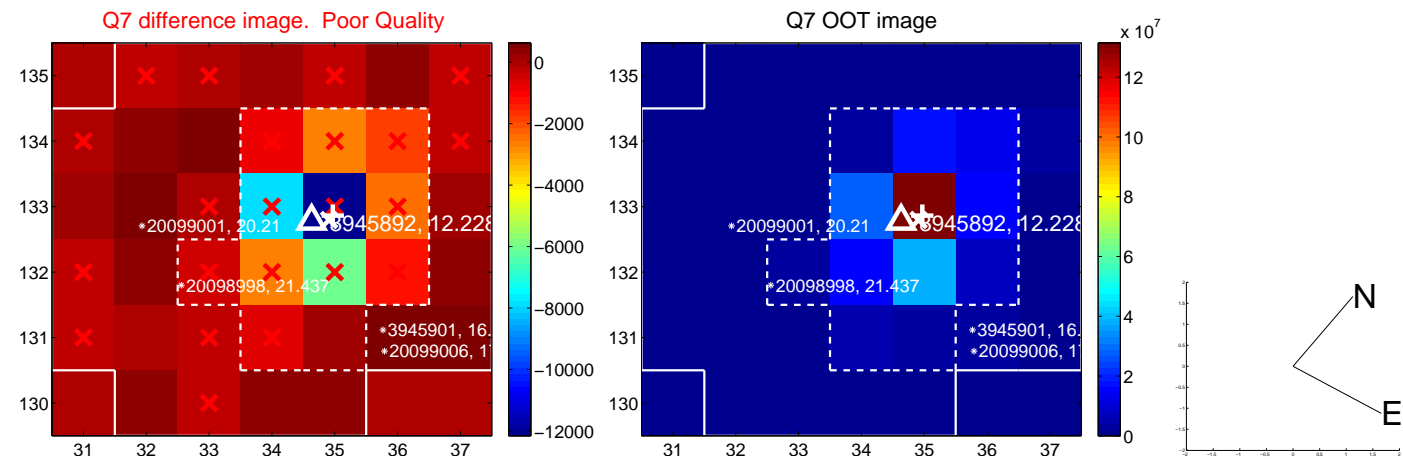
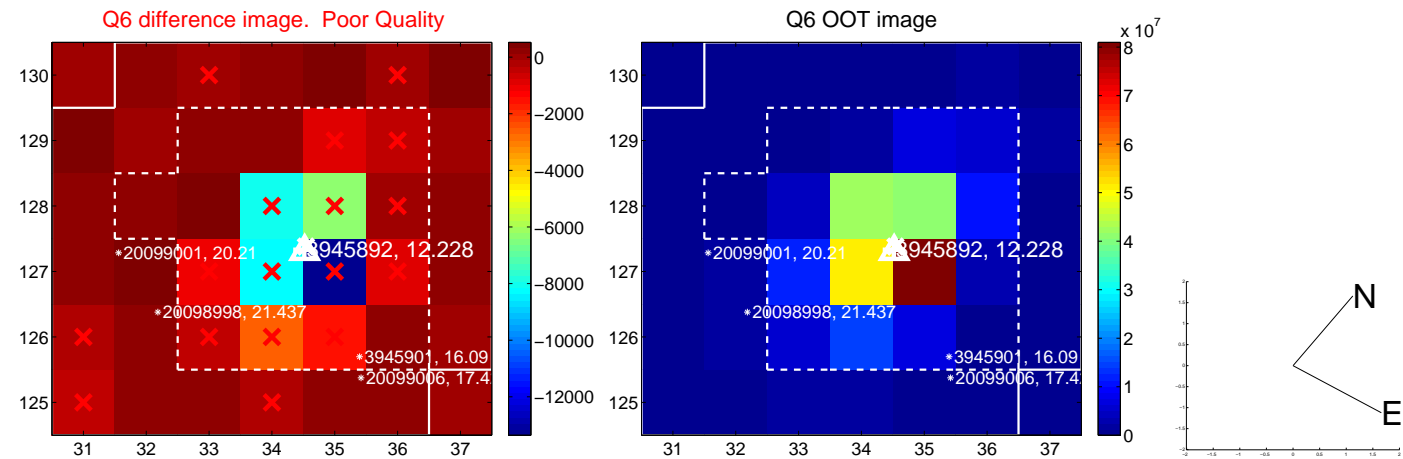
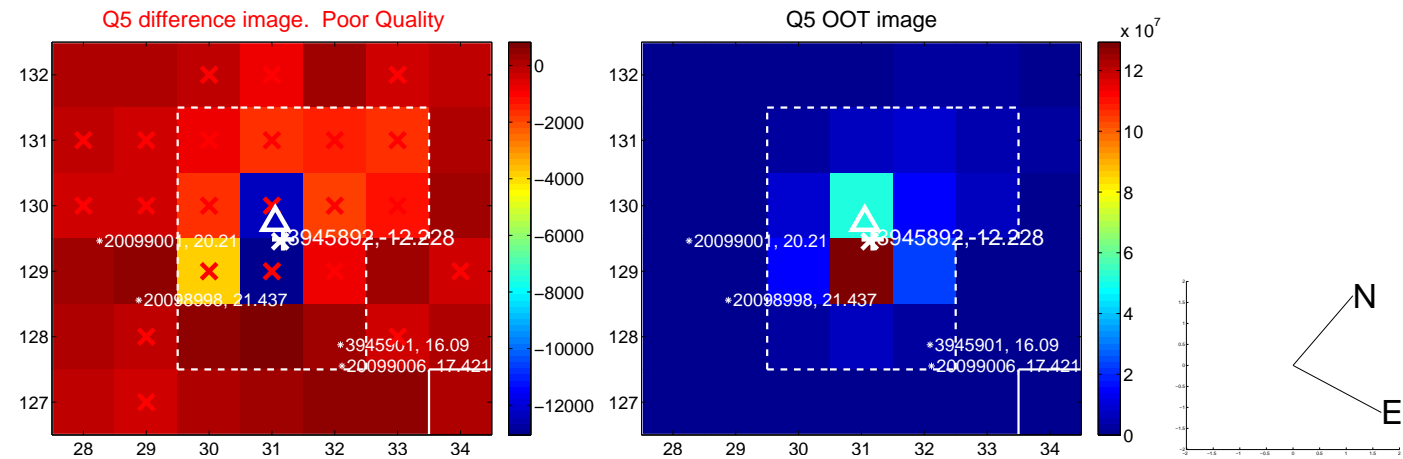
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.



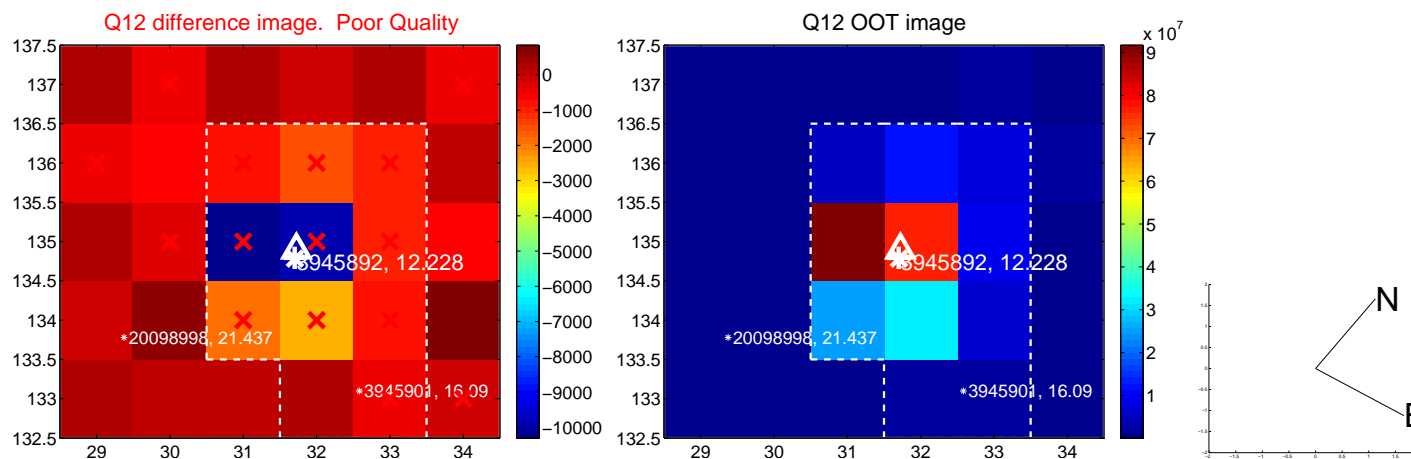
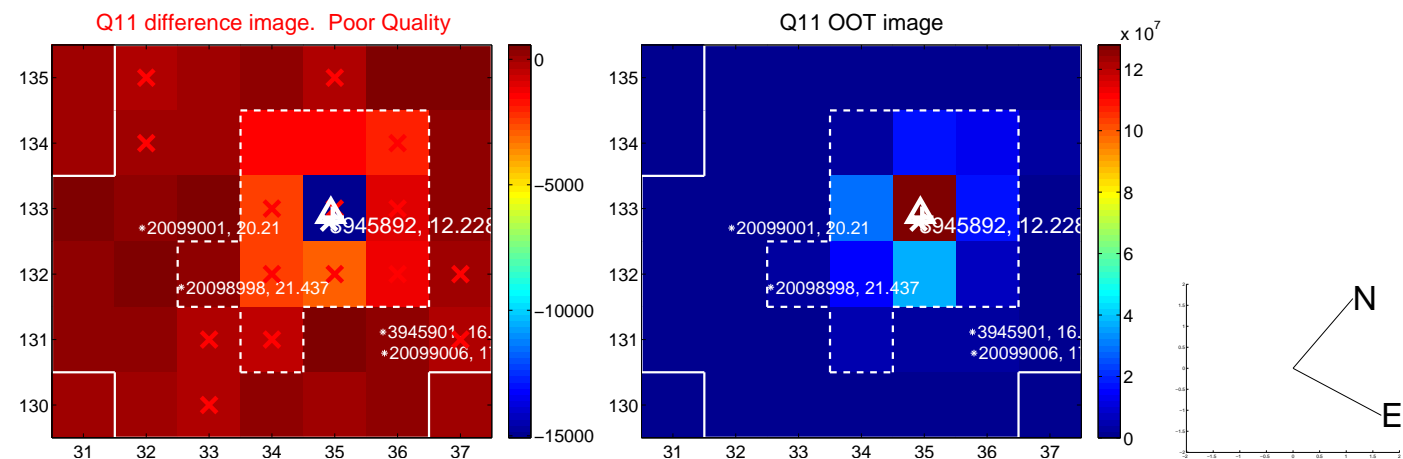
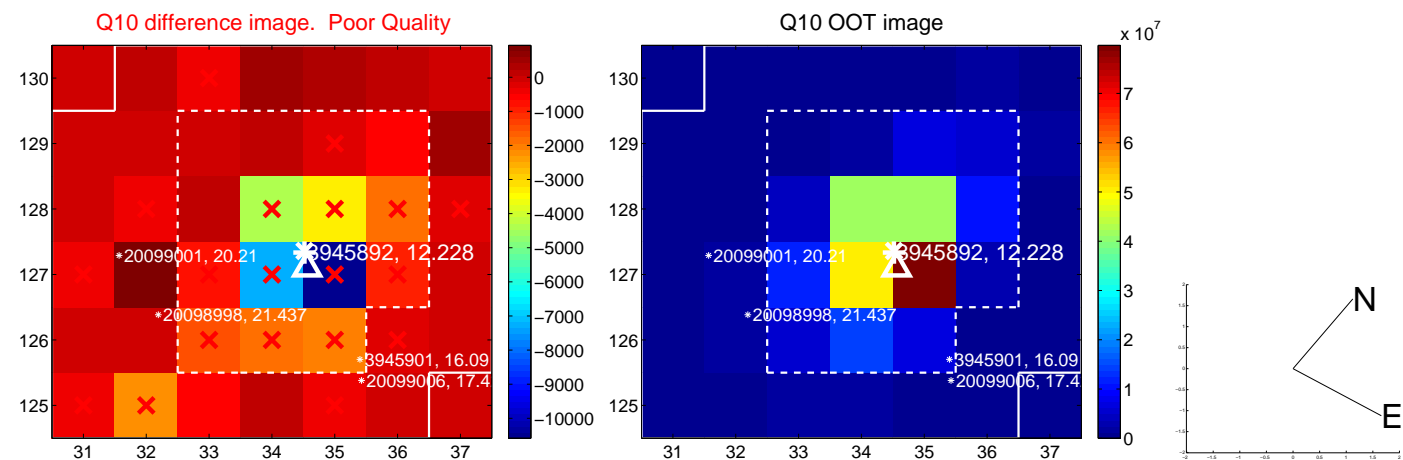
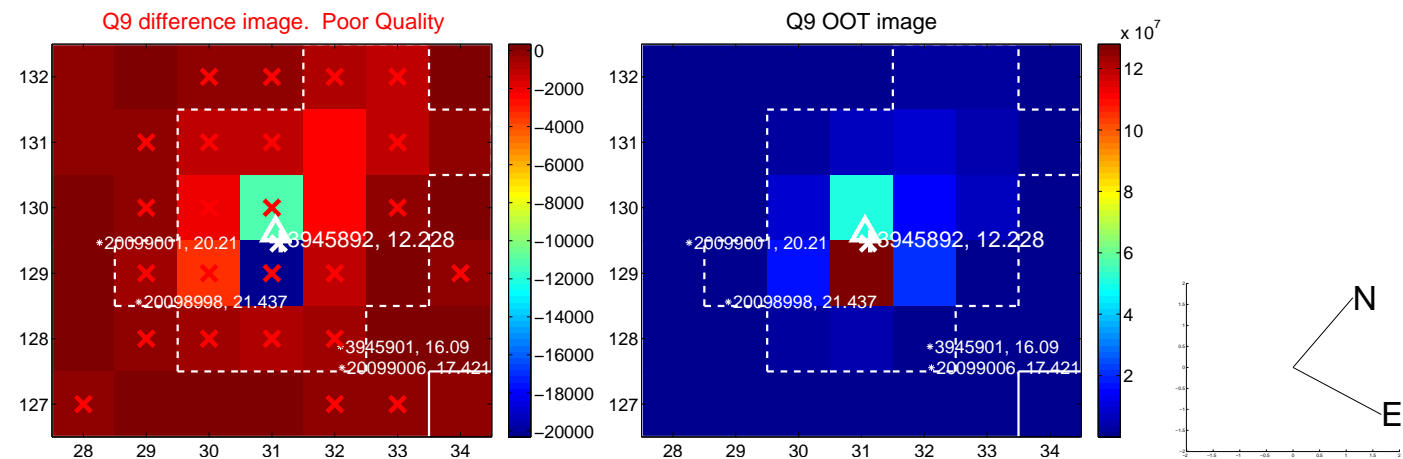
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



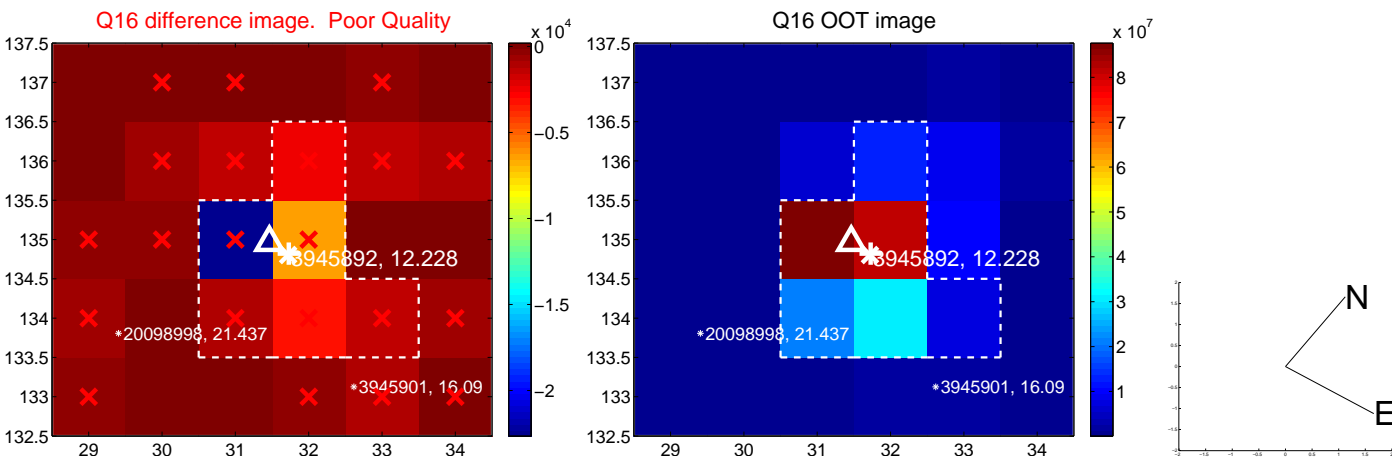
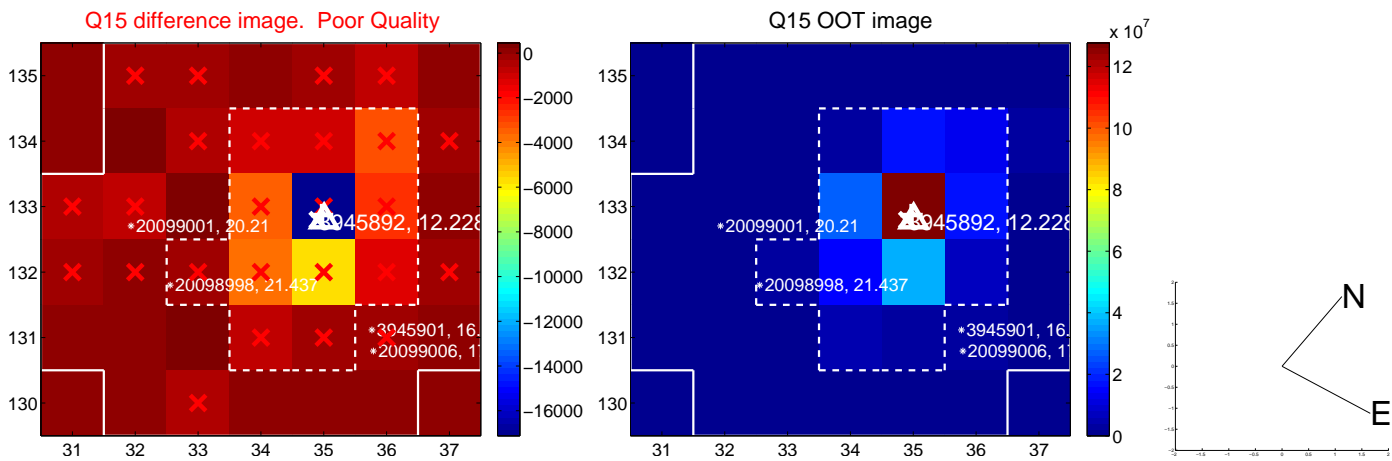
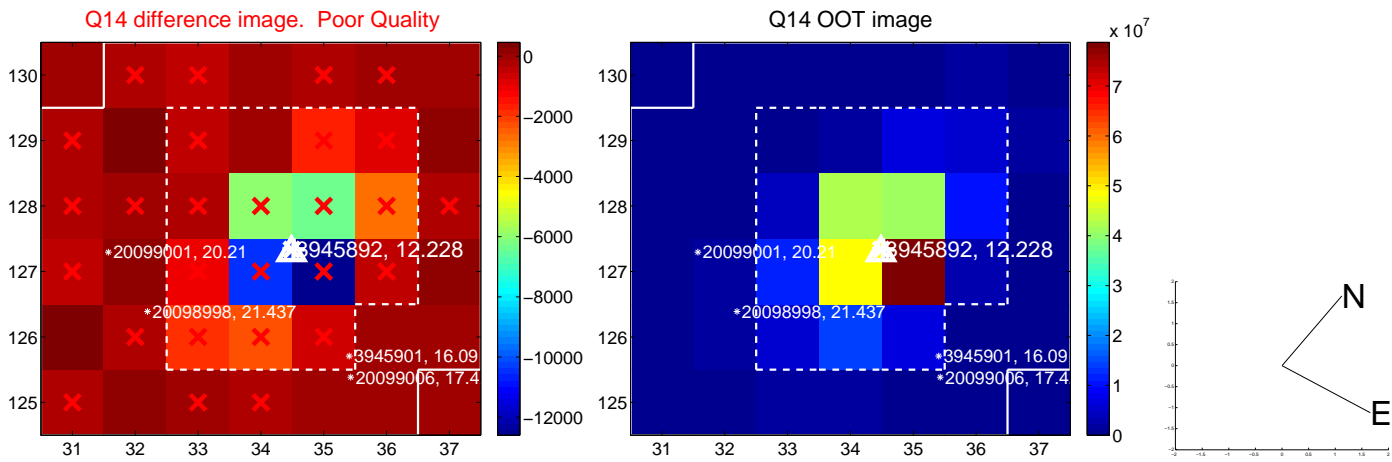
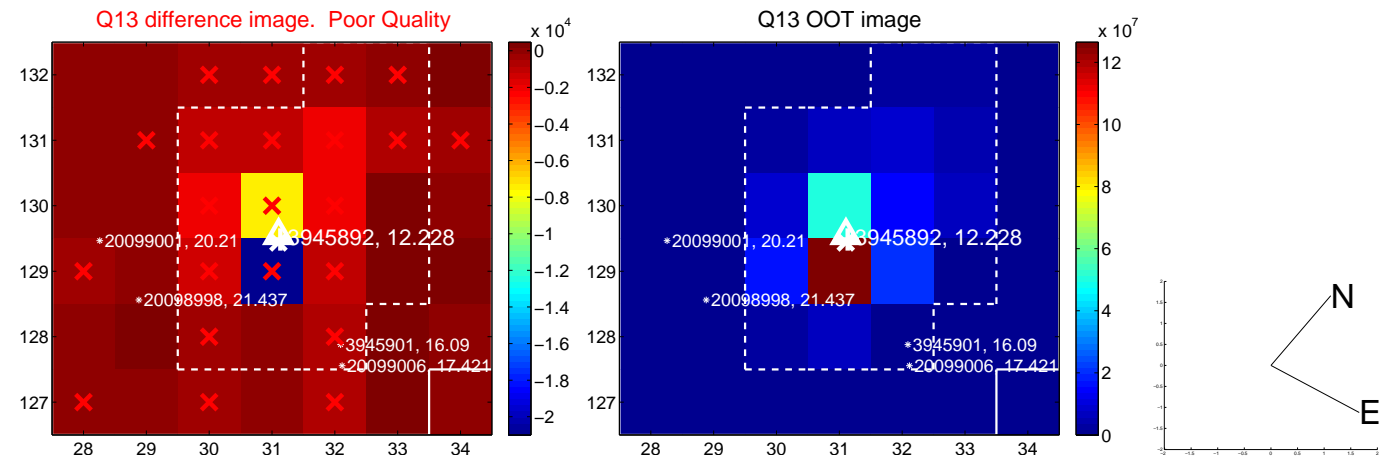
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



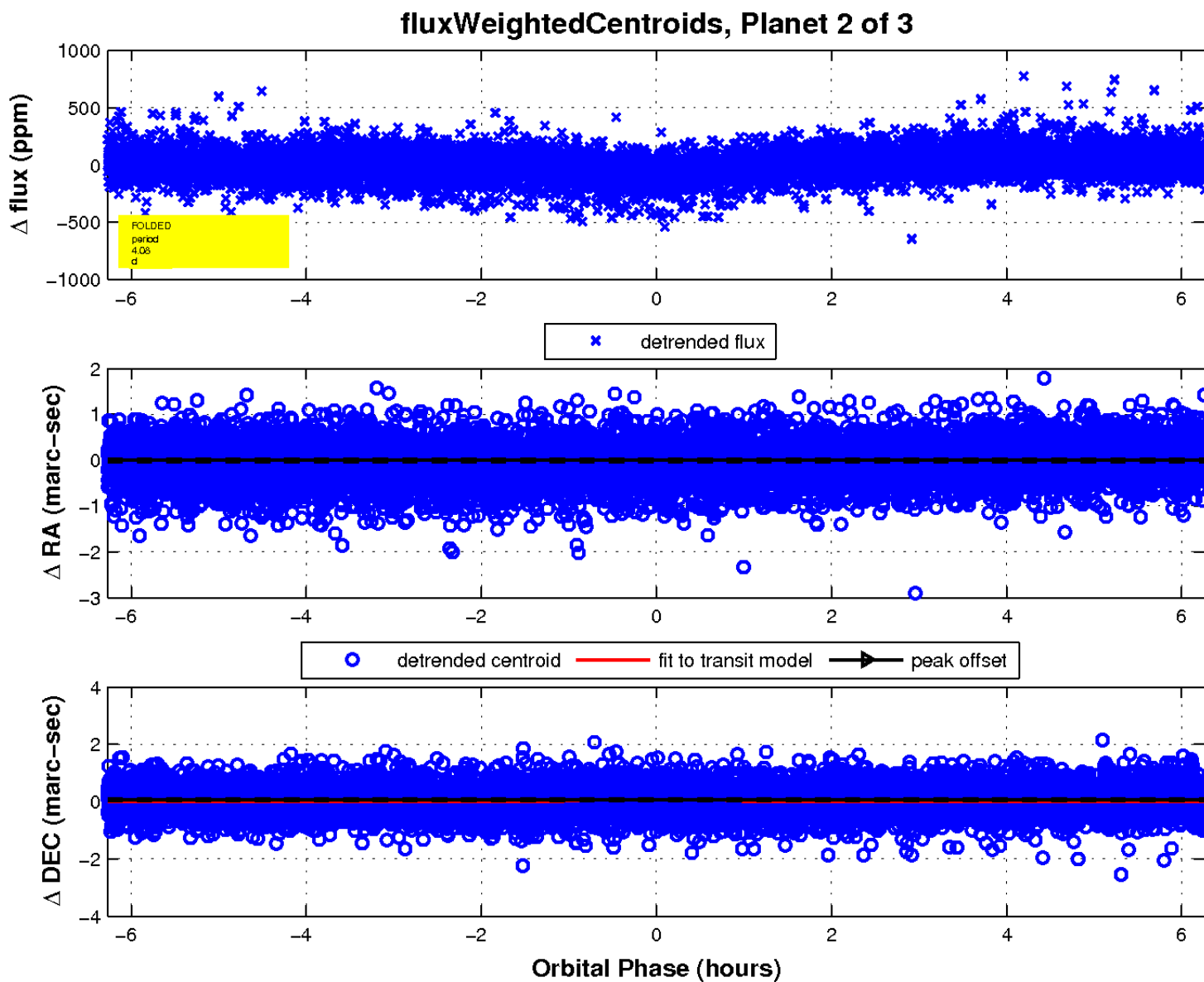
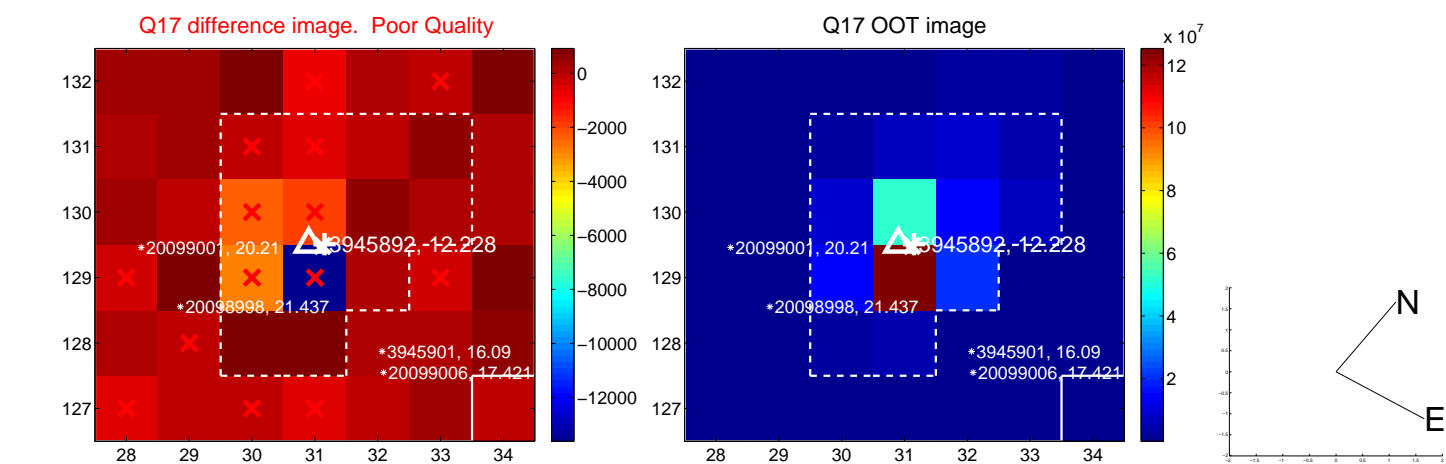
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

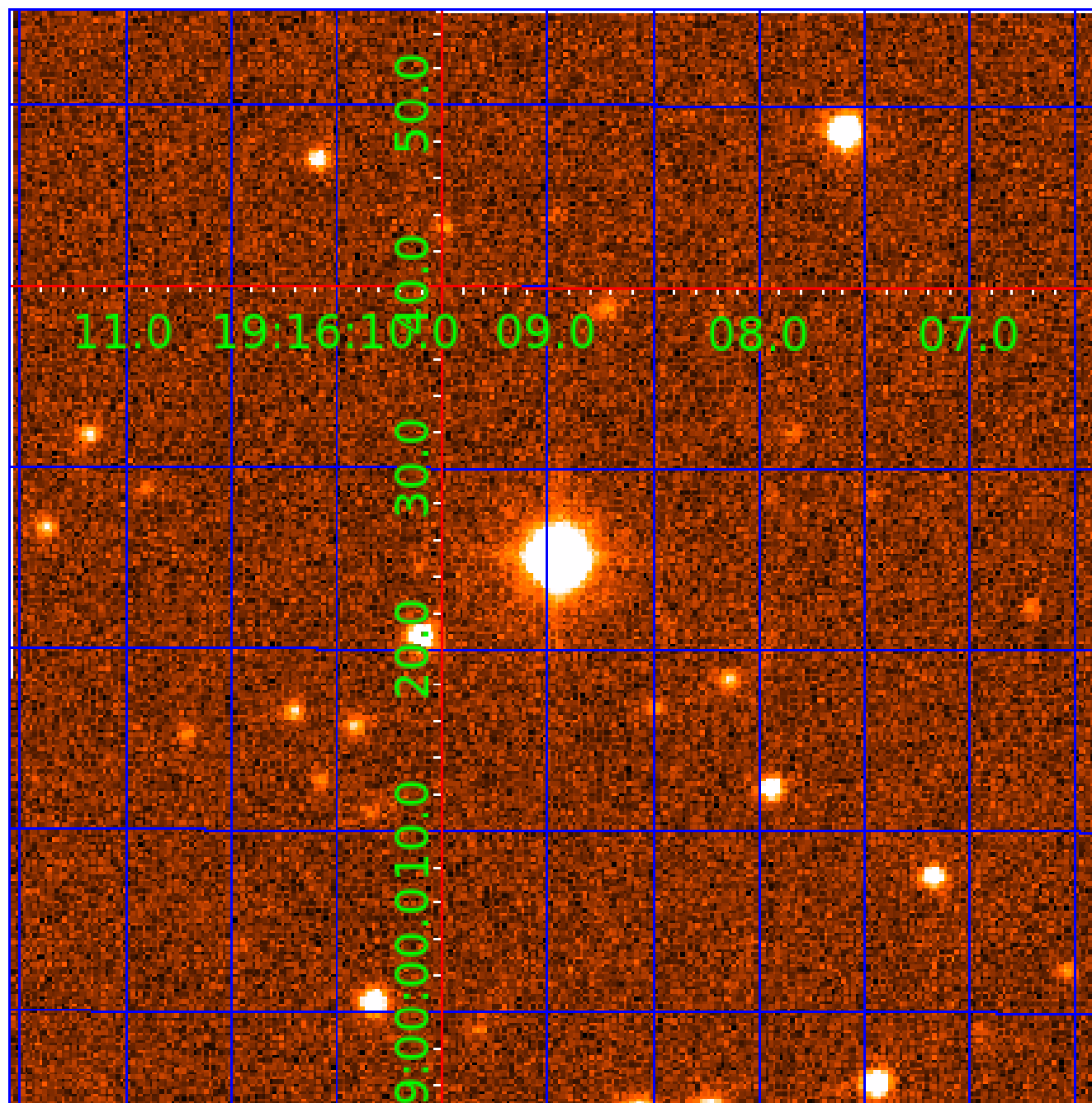


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 003945892

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003945892-01	OBS	No	4.083247	133.571005	97.2	2.801	20.2	21.9	1.86	8041	3.63	3351.90
003945892-02	OBS	No	4.083270	132.696280	62.0	2.090	15.0	16.1	1.86	8041	1.70	3351.88
003945892-03	OBS	No	0.583302	131.799804	11.0	7.000	13.6	8.7	1.86	8041	0.77	44885.70

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003945892-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003945892-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003945892-03	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS

**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.

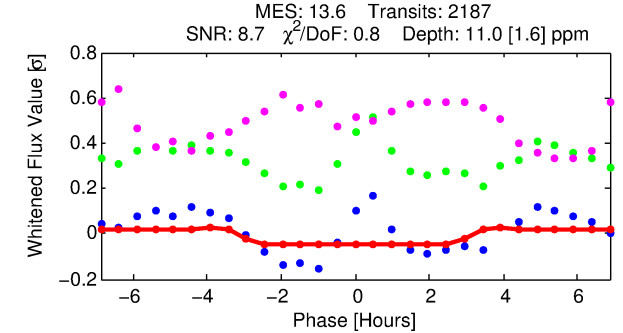
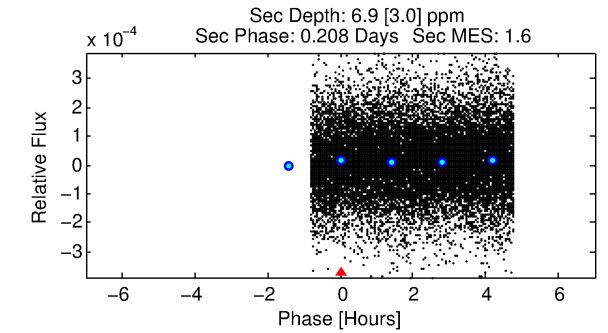
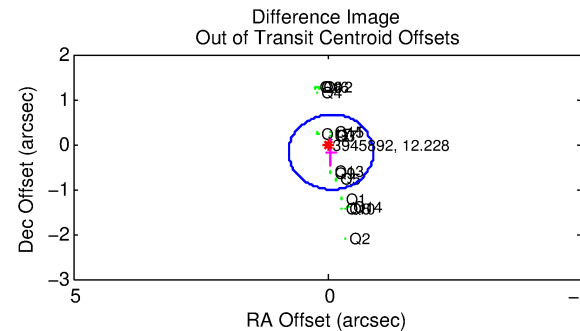
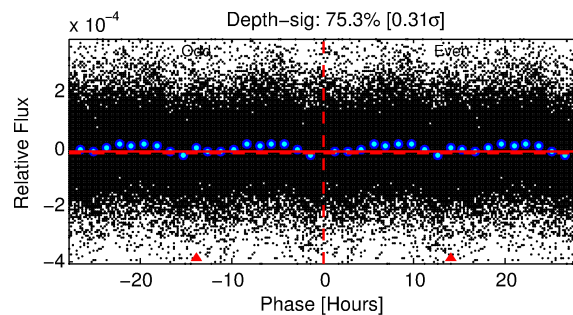
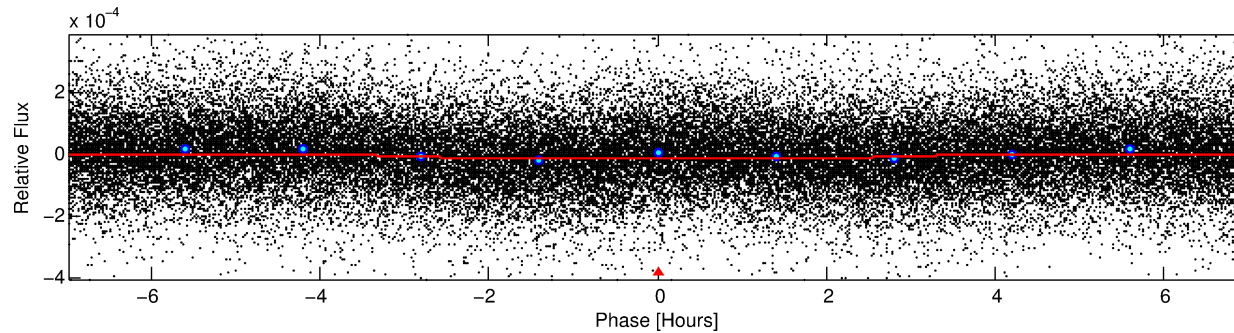
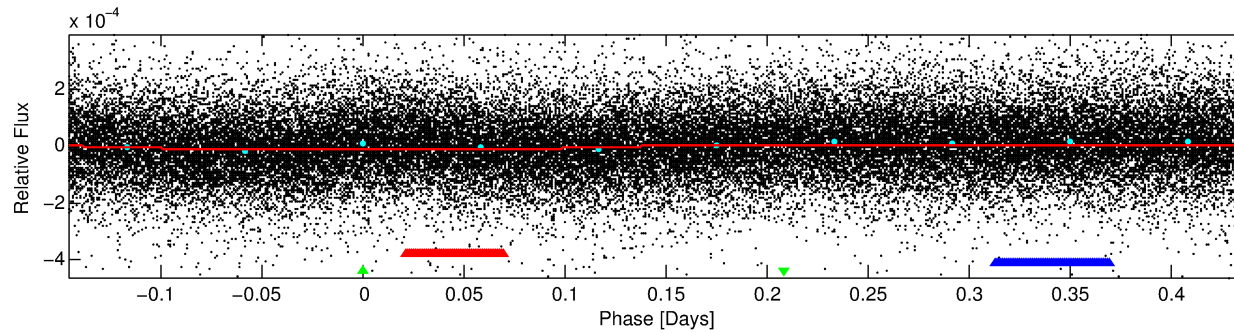
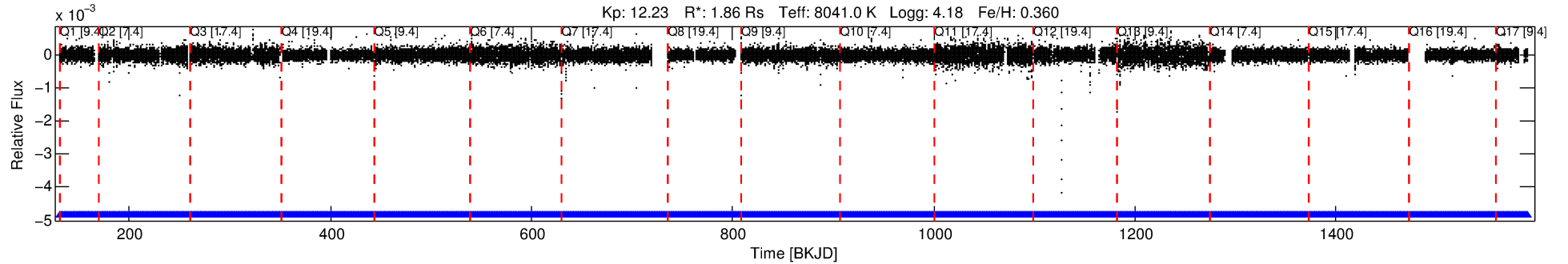
## Ephemeris Match Information For 003945892-03

No Significant Match Found



# DV One-Page Summary

KIC: 3945892 Candidate: 3 of 3 Period: 0.583 d



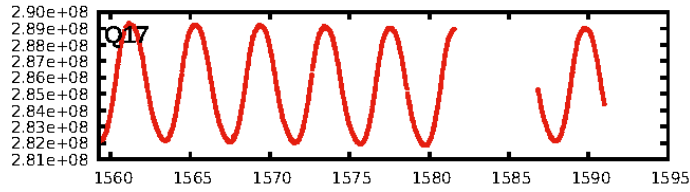
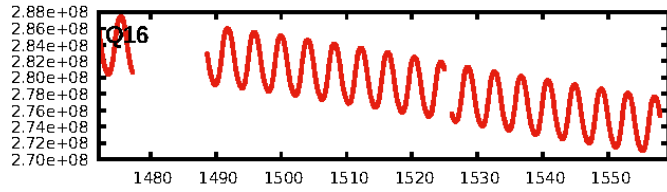
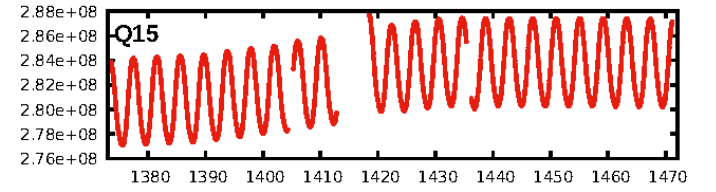
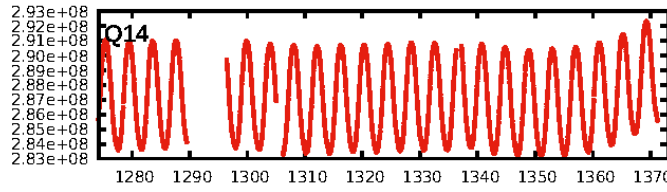
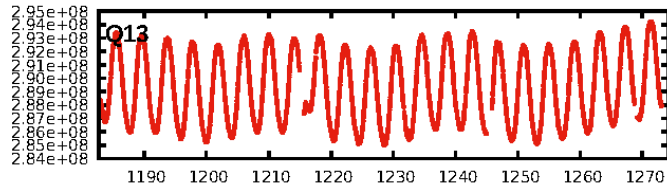
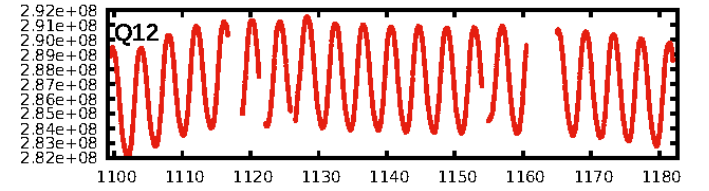
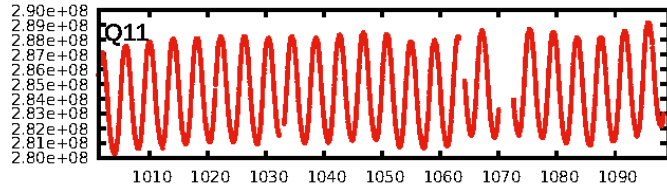
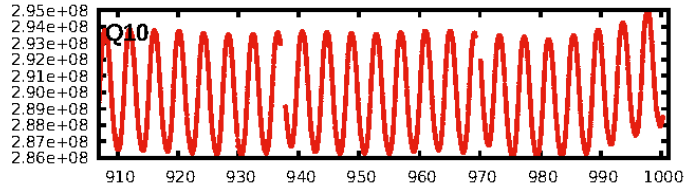
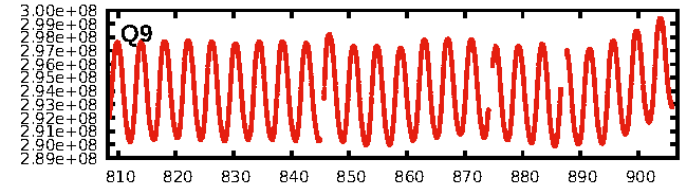
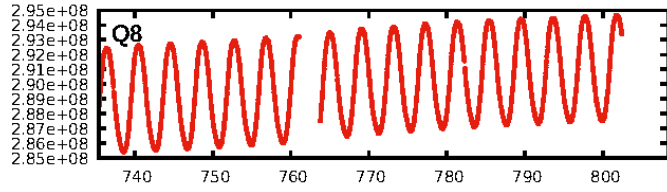
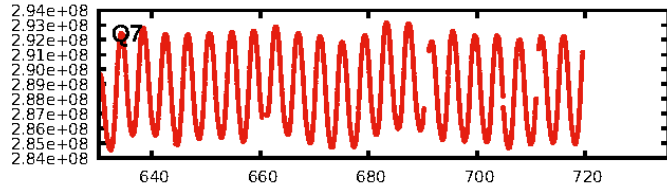
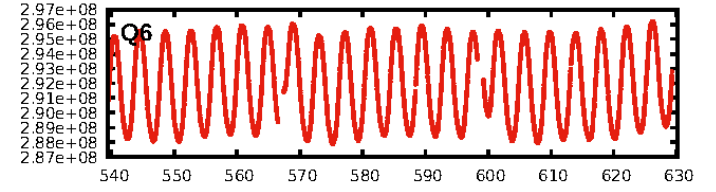
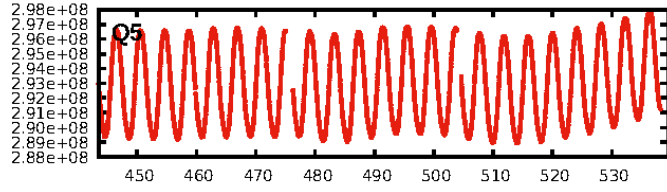
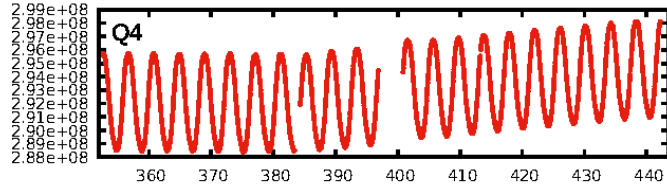
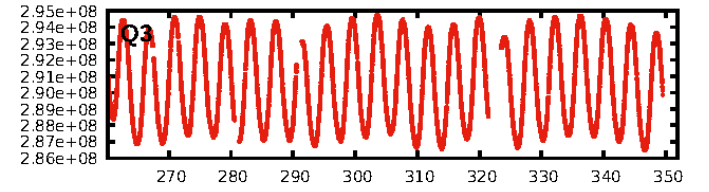
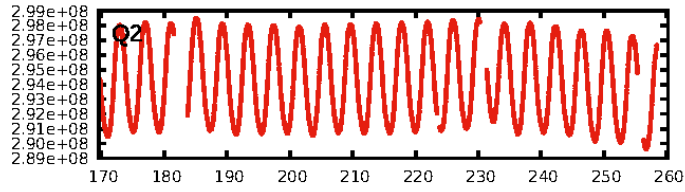
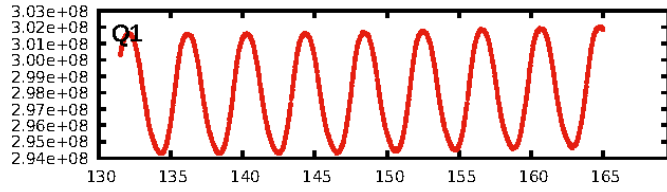
## DV Fit Results:

Period = 0.58330 [0.00001] d  
Epoch = 131.7998 [0.0064] BKJD  
Rp/R\* = 0.0038 [0.0004]  
a/R\* = 1.00 [0.00]  
b = 0.96 [0.04]  
Seff = 44885.70 [18676.99]  
Teq = 3712 [386] K  
Rp = 0.77 [0.24] Re  
a = 0.0170 [0.0044] AU  
Ag = 1.86 [1.14] [0.76 $\sigma$ ]  
Teffp = 6705 [860] K [3.18 $\sigma$ ]

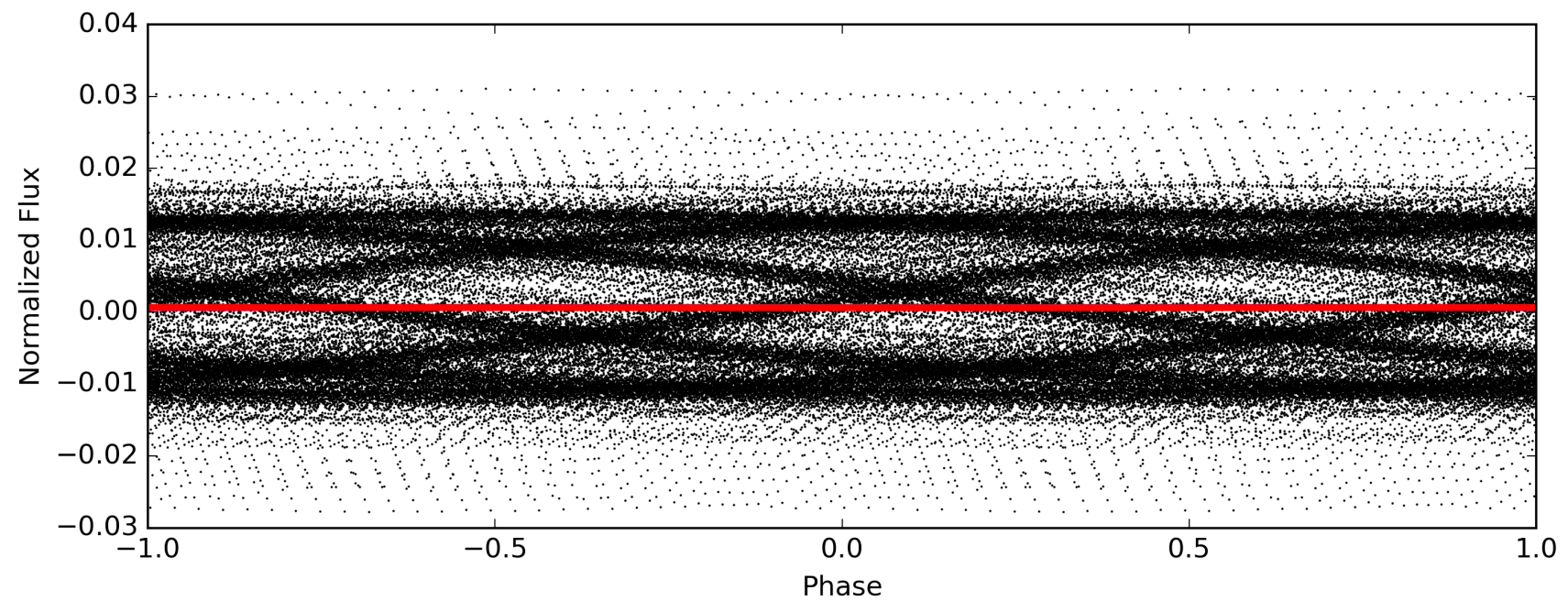
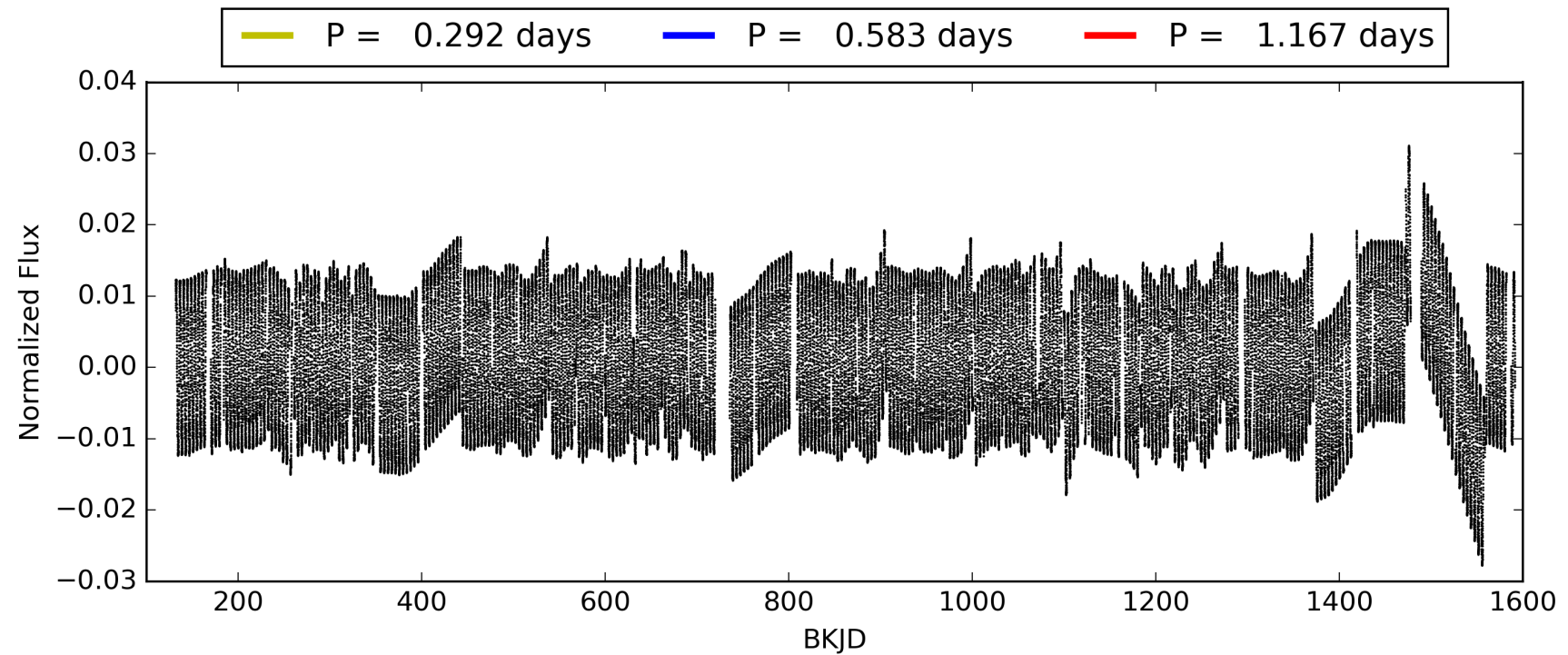
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [11.14 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2091/2091]  
**GhostDiagnostic-chr: 0.313**  
Centroid-sig: 0.0%  
Centroid-so: 2.025 arcsec [2.68 $\sigma$ ]  
OotOffset-rm: 0.189 arcsec [0.68 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.024 arcsec [0.25 $\sigma$ ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 003945892-03, PDC Light Curves

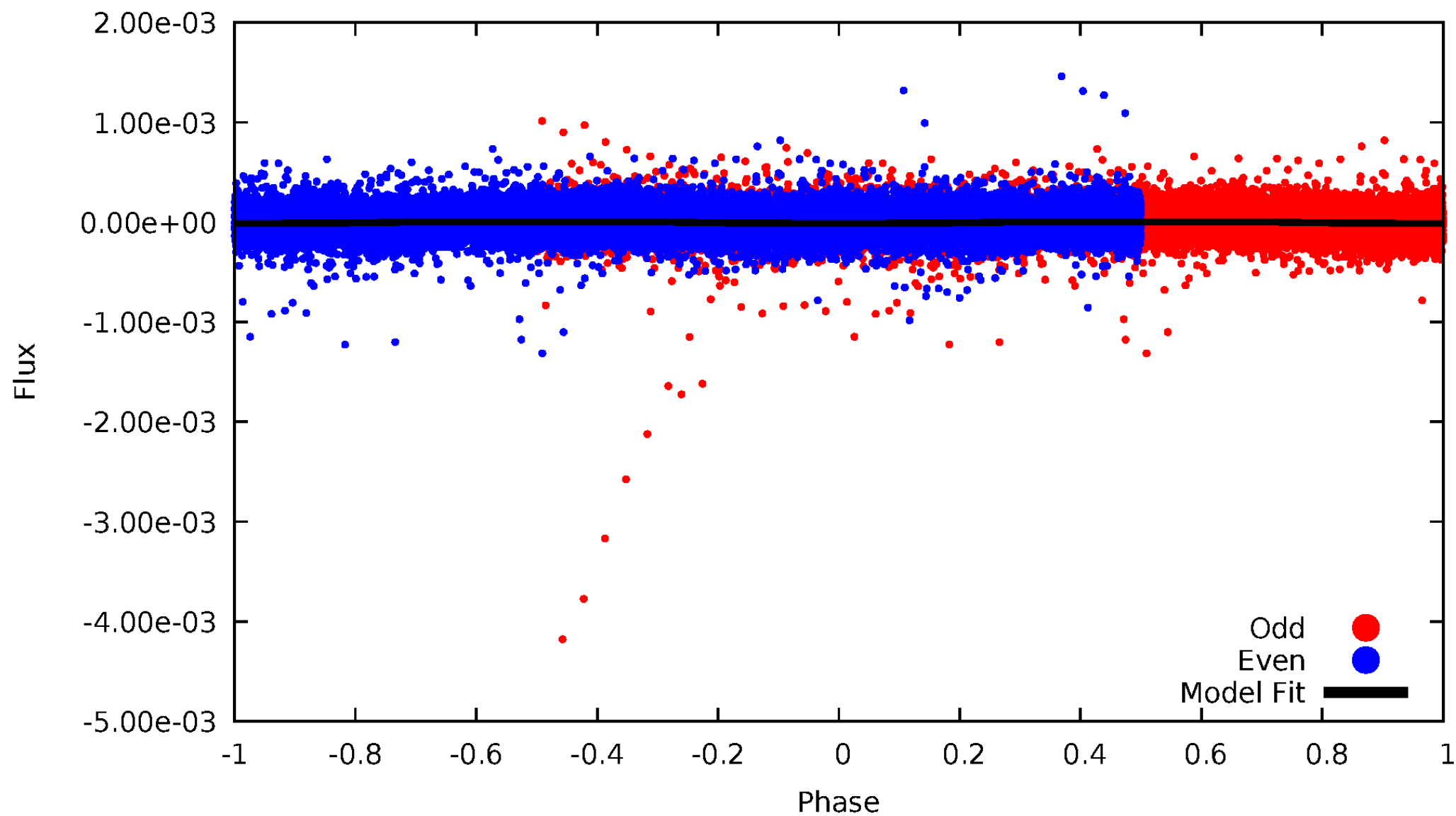


TCE 003945892-03



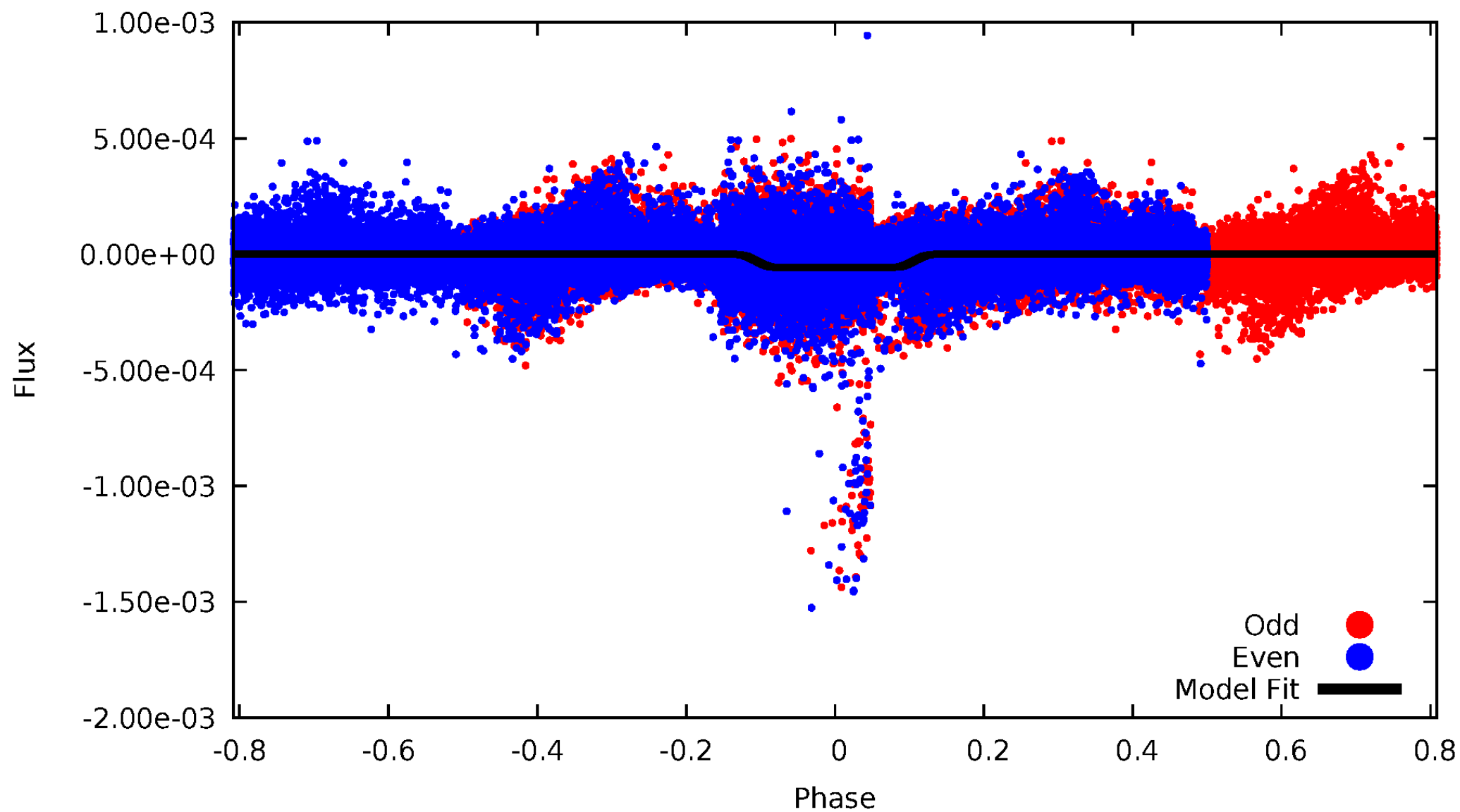
# DV Odd/Even

TCE 003945892-03



# ALT Odd/Even

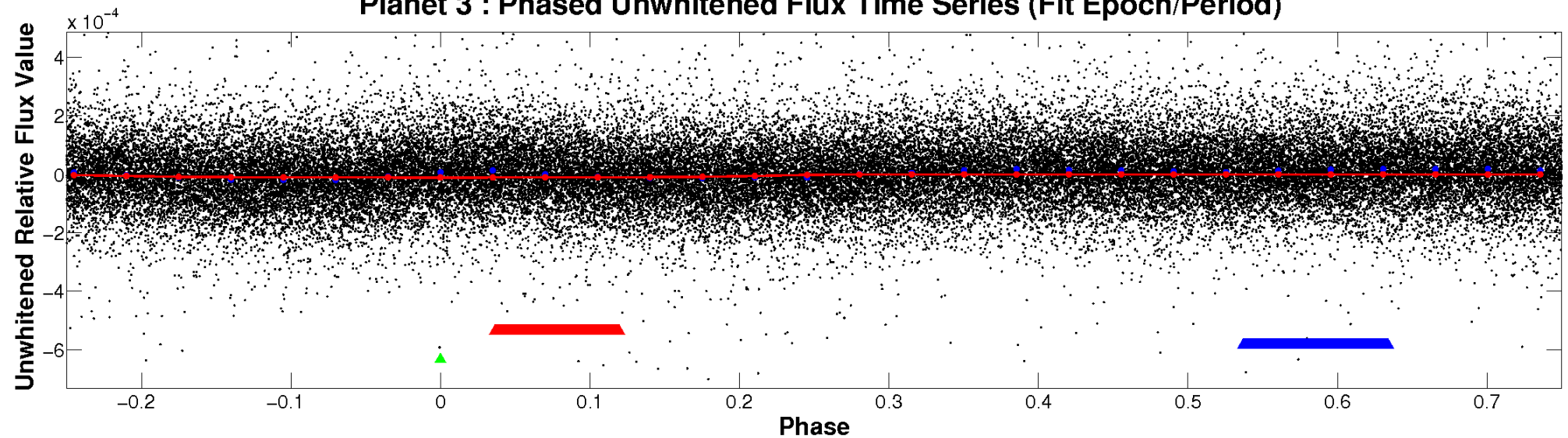
TCE 003945892-03



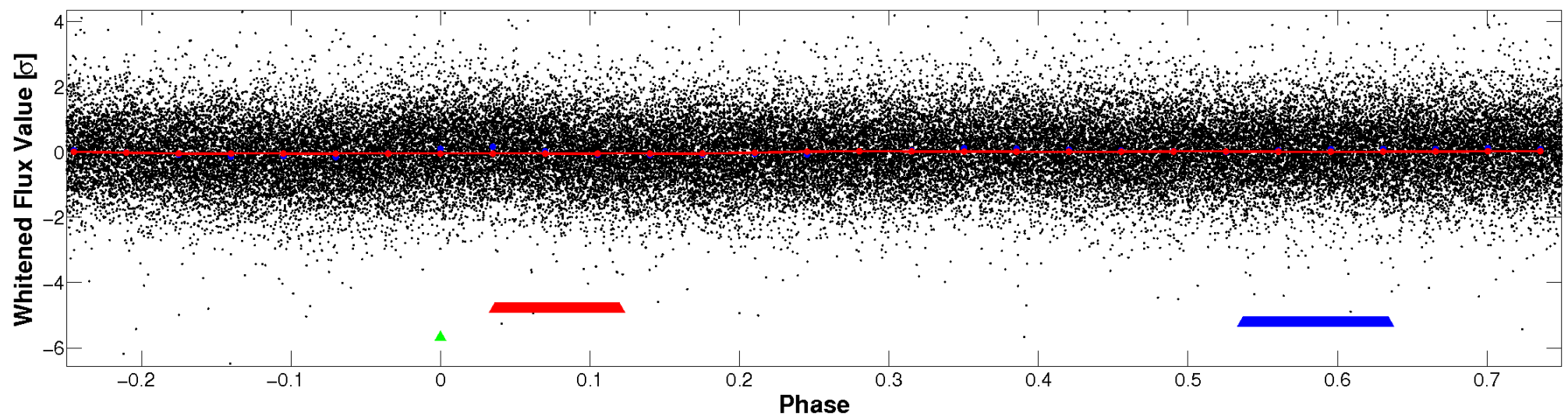


# Non-Whitened Vs. Whitened Light Curve

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



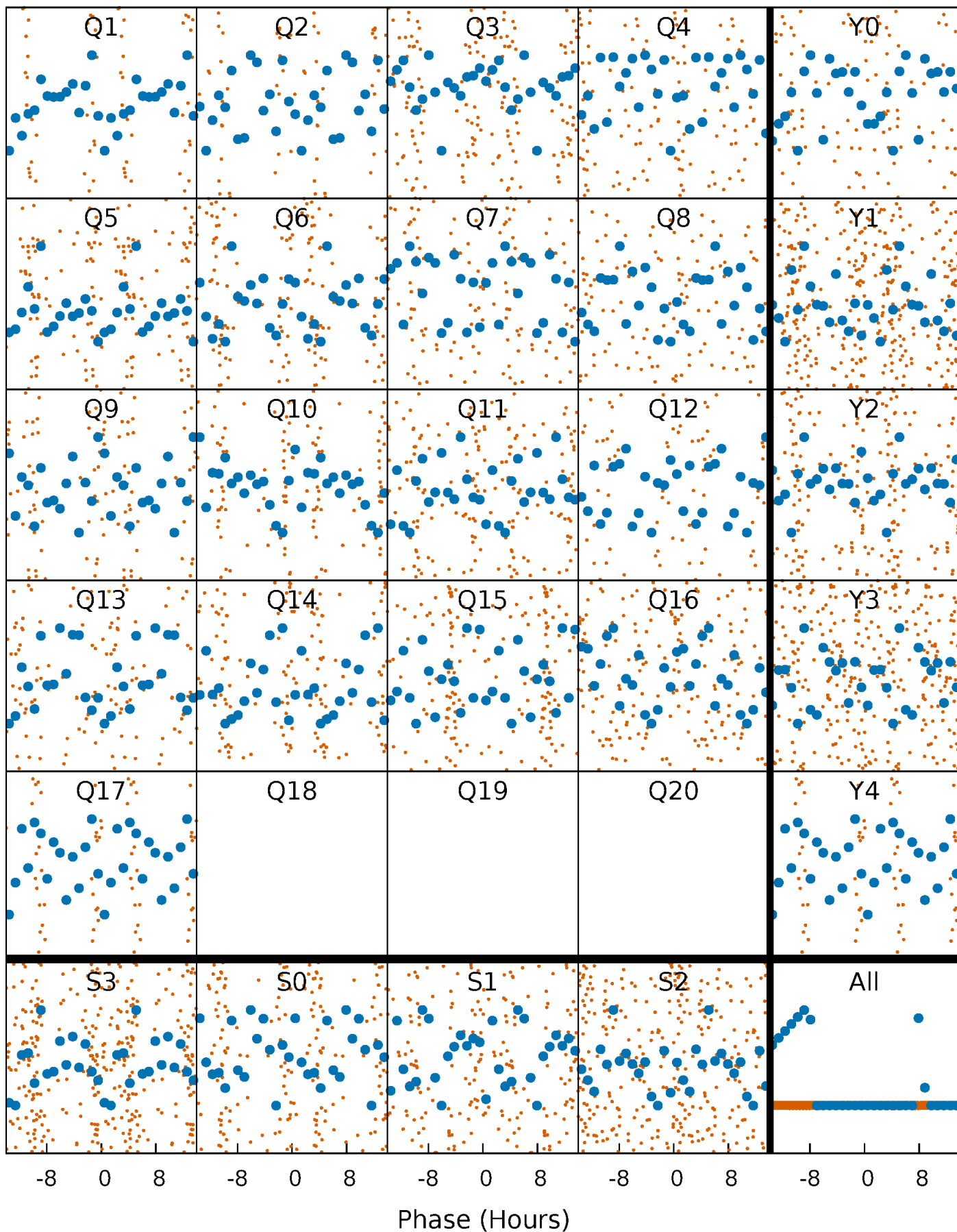
**Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





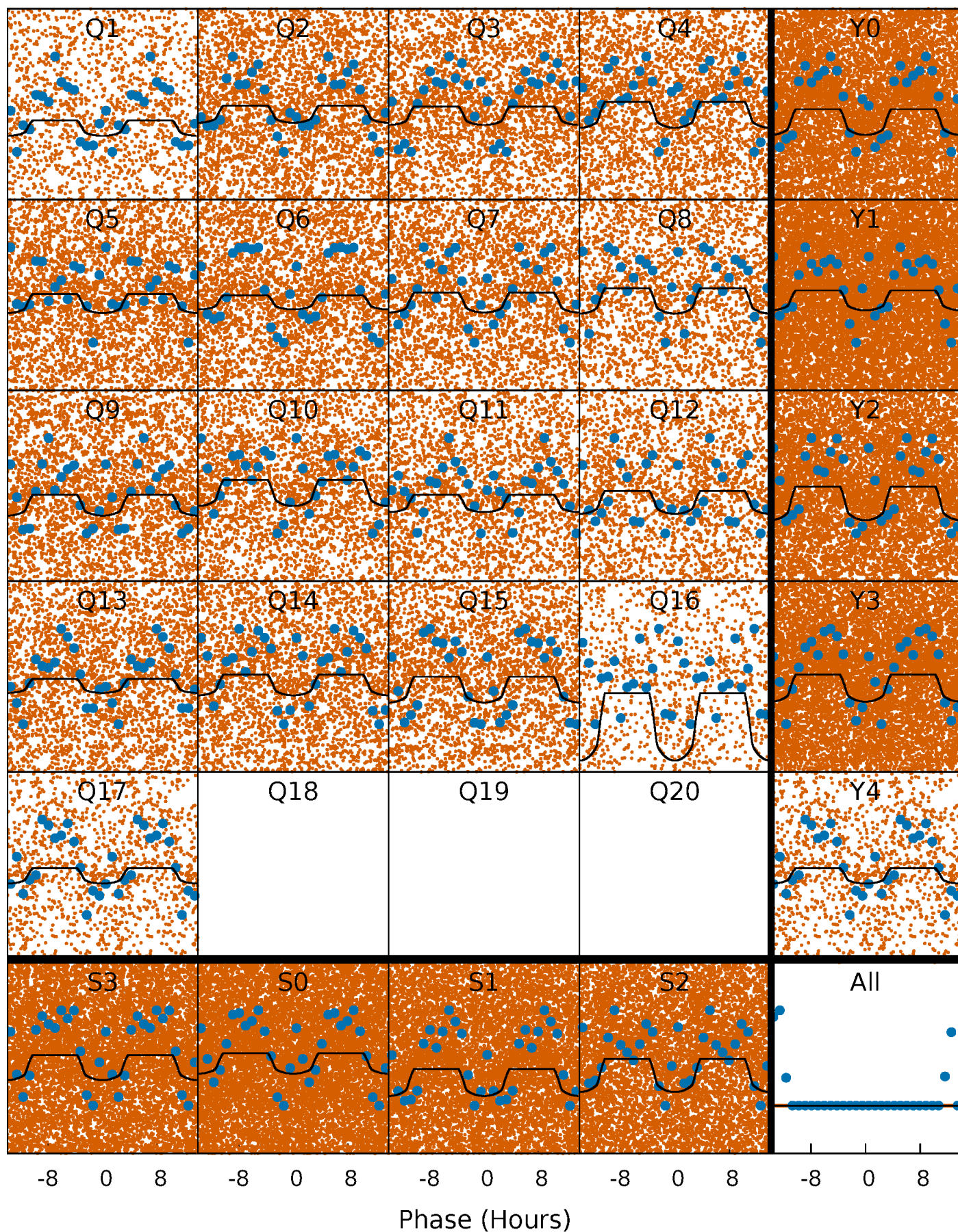
# PDC Quarter-Phased Transit Curves

TCE 003945892-03 P= 0.583302 Days  $T_0=131.799803$  (BKJD)



# DV Quarter-Phased Transit Curves

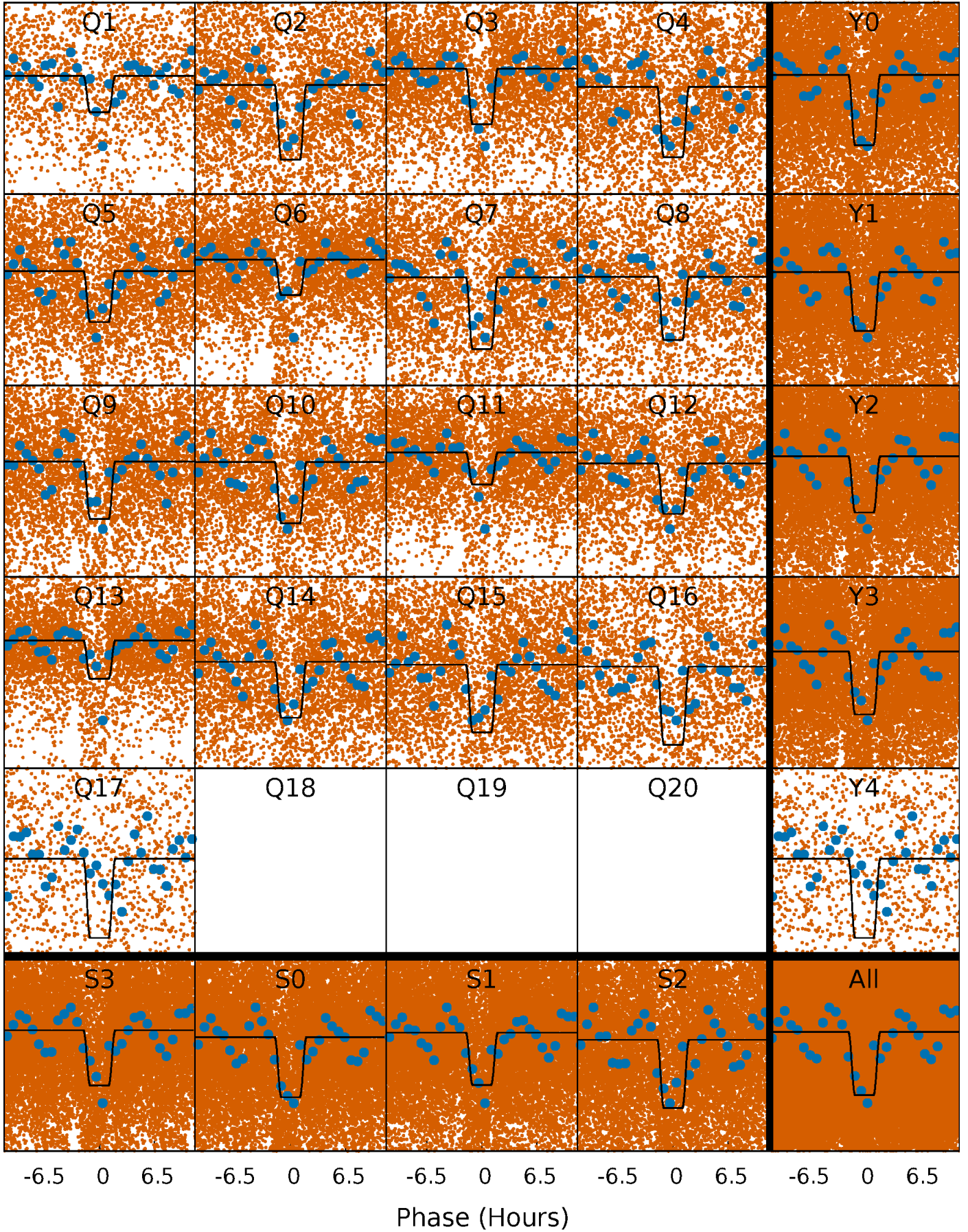
TCE 003945892-03   P= 0.583302 Days    $T_0=131.799803$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

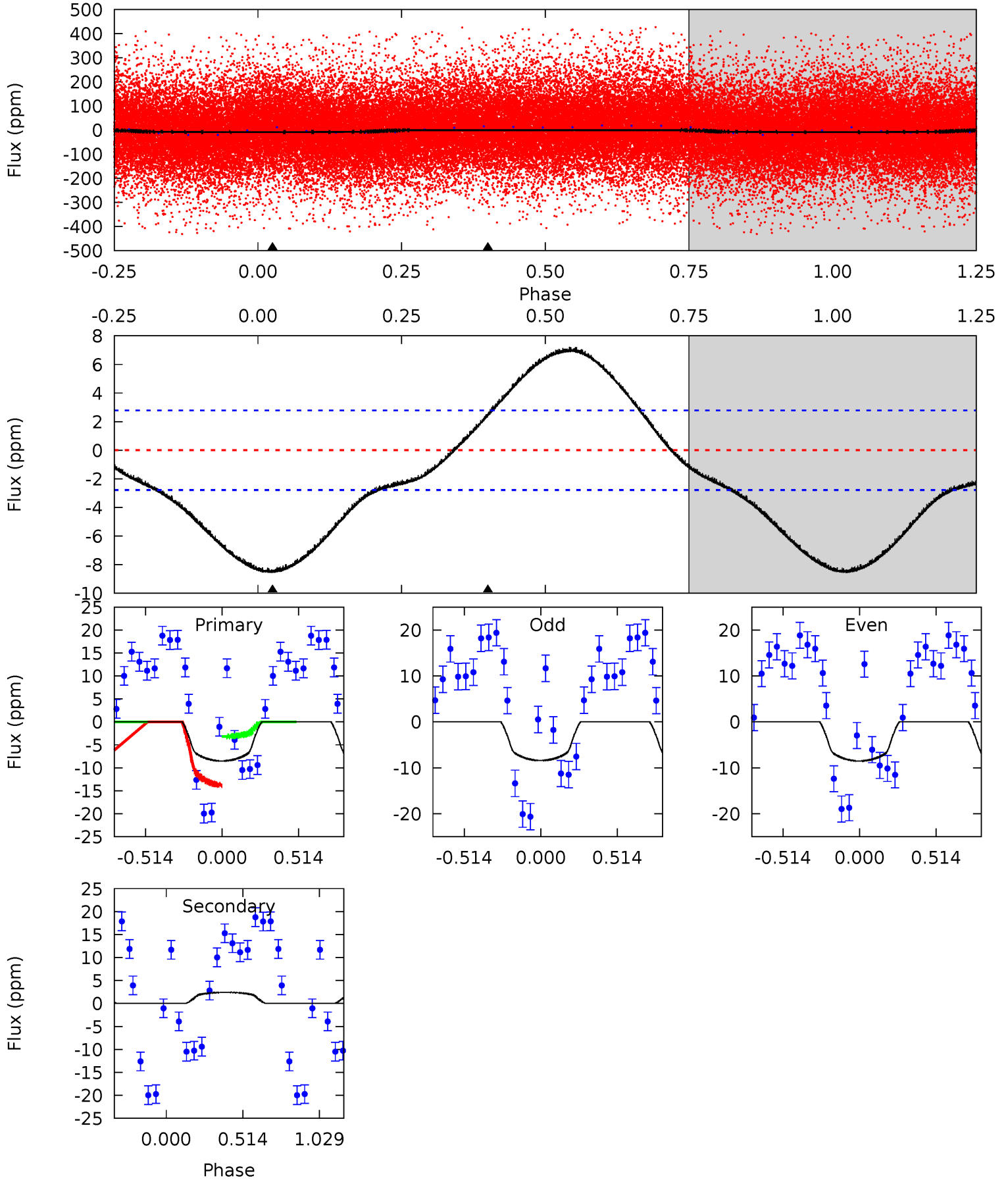
TCE 003945892-03   P= 0.583312 Days    $T_0=131.751535$  (BKJD)



# DV Model-Shift Uniqueness Test

003945892-03, P = 0.583302 Days, E = 131.216501 Days

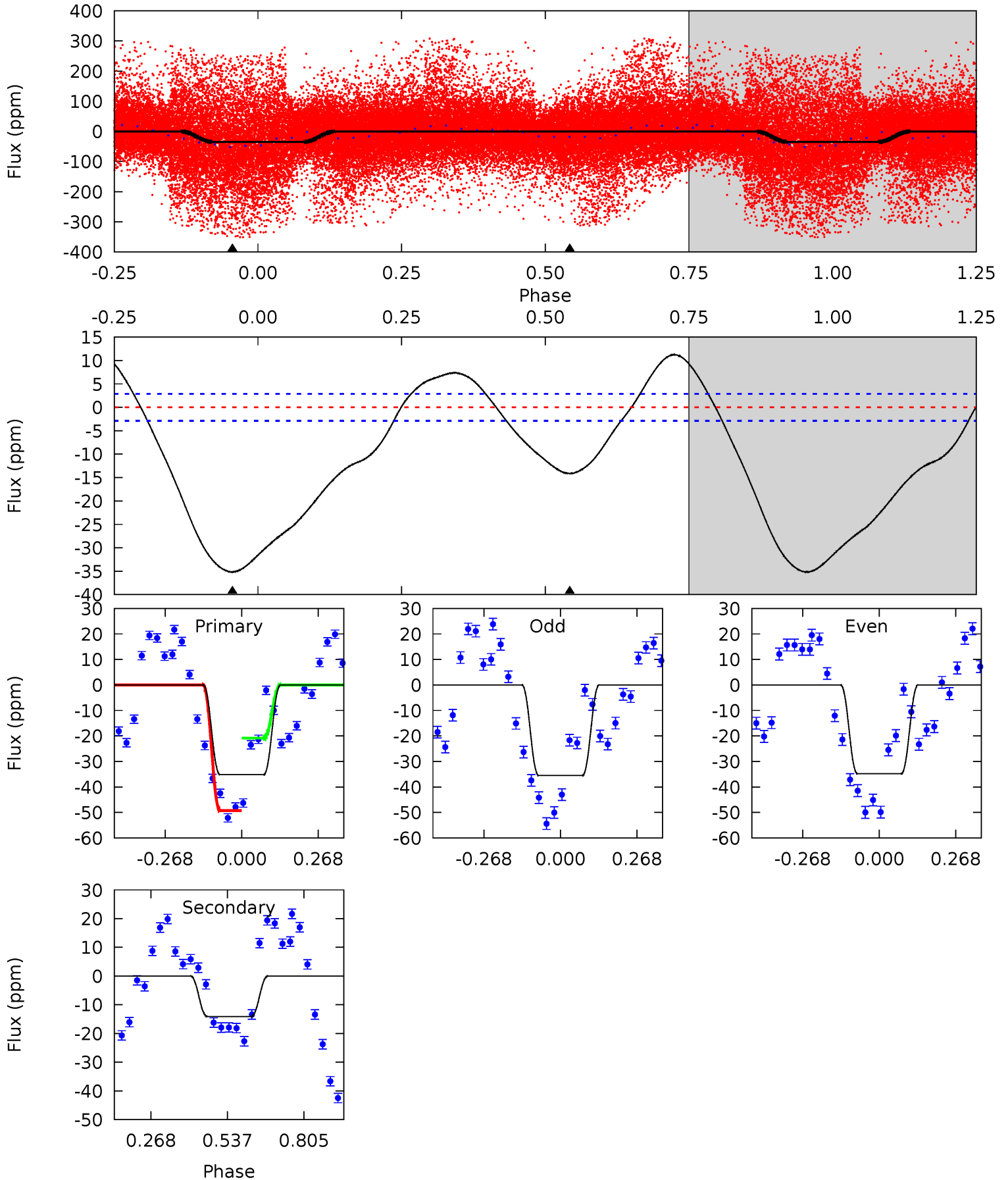
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	-3.65	0	0	4.21	0.65	1.97	12.8	12.8	-3.65	-3.65	0.08	2.26	0.46	8.13



# Alt Model-Shift Uniqueness Test

003945892-03, P = 0.583312 Days, E = 131.168223 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
53.2	21.4	0	0	4.35	1.11	7.07	53.2	53.2	21.4	21.4	0.52	1.79	0.24	17.1



### Stellar Parameters For KIC 003945892

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8041^{+224}_{-352}$	$4.183^{+0.065}_{-0.208}$	$0.360^{+0.050}_{-0.500}$	$1.861^{+0.562}_{-0.241}$	$1.923^{+0.282}_{-0.282}$	$0.420^{+0.117}_{-0.219}$
	+3%/-4%	+2%/-5%	+14%/-139%	+30%/-13%	+15%/-15%	+28%/-52%
Source	KIC0	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 003945892-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$2\pm 1$	$0.80^{+0.14}_{-0.11}$	$5262^{+366}_{-300}$	$-5541^{+329}_{-384}$	$-0.579^{+0.205}_{-0.264}$
Alt.	$-14\pm 1$	$1.60^{+0.27}_{-0.18}$	$5264^{+387}_{-293}$	$4976^{+258}_{-276}$	$0.862^{+0.202}_{-0.220}$

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



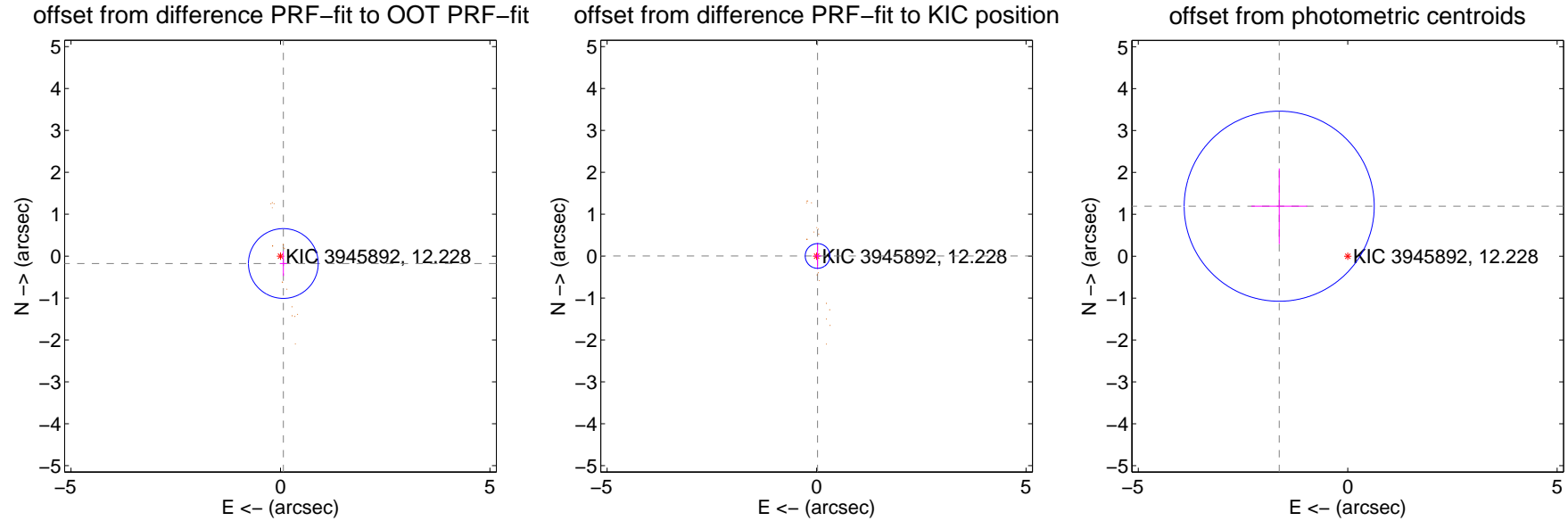
## DV Centroid Data

Supplemental centroid analysis for 003945892-03. Kepler magnitude: 12.23. Transit SNR 8.68

There are 0 quarters with good PRF difference image offsets

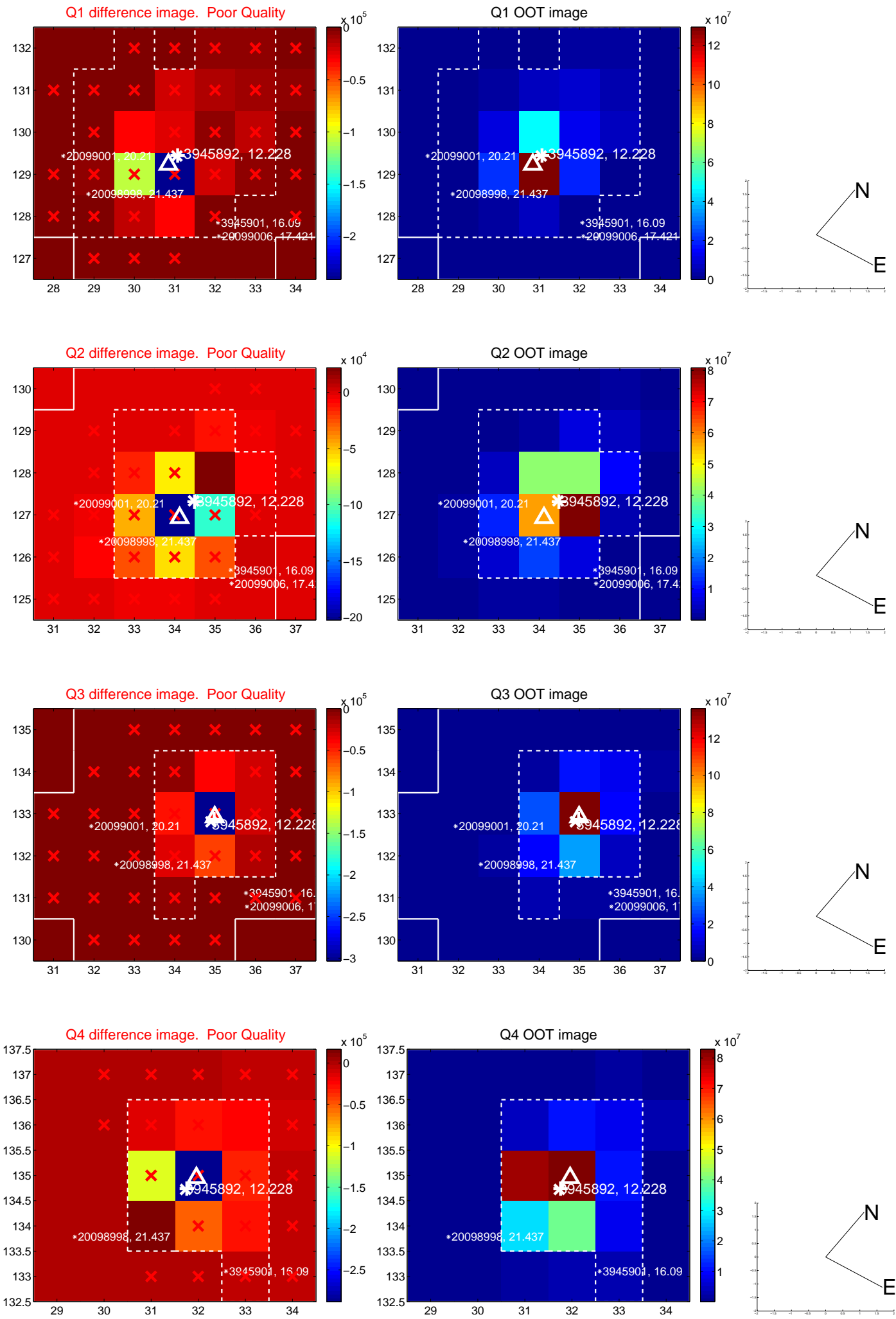
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.189 \pm 0.278$	0.68	$-0.068 \pm 0.085$	$-0.176 \pm 0.296$
PRF-fit source offset from KIC position	$0.024 \pm 0.098$	0.25	$-0.024 \pm 0.082$	$0.004 \pm 0.314$
photometric centroid source offset	$2.03 \pm 0.76$	2.68	$1.64 \pm 0.67$	$1.19 \pm 0.90$

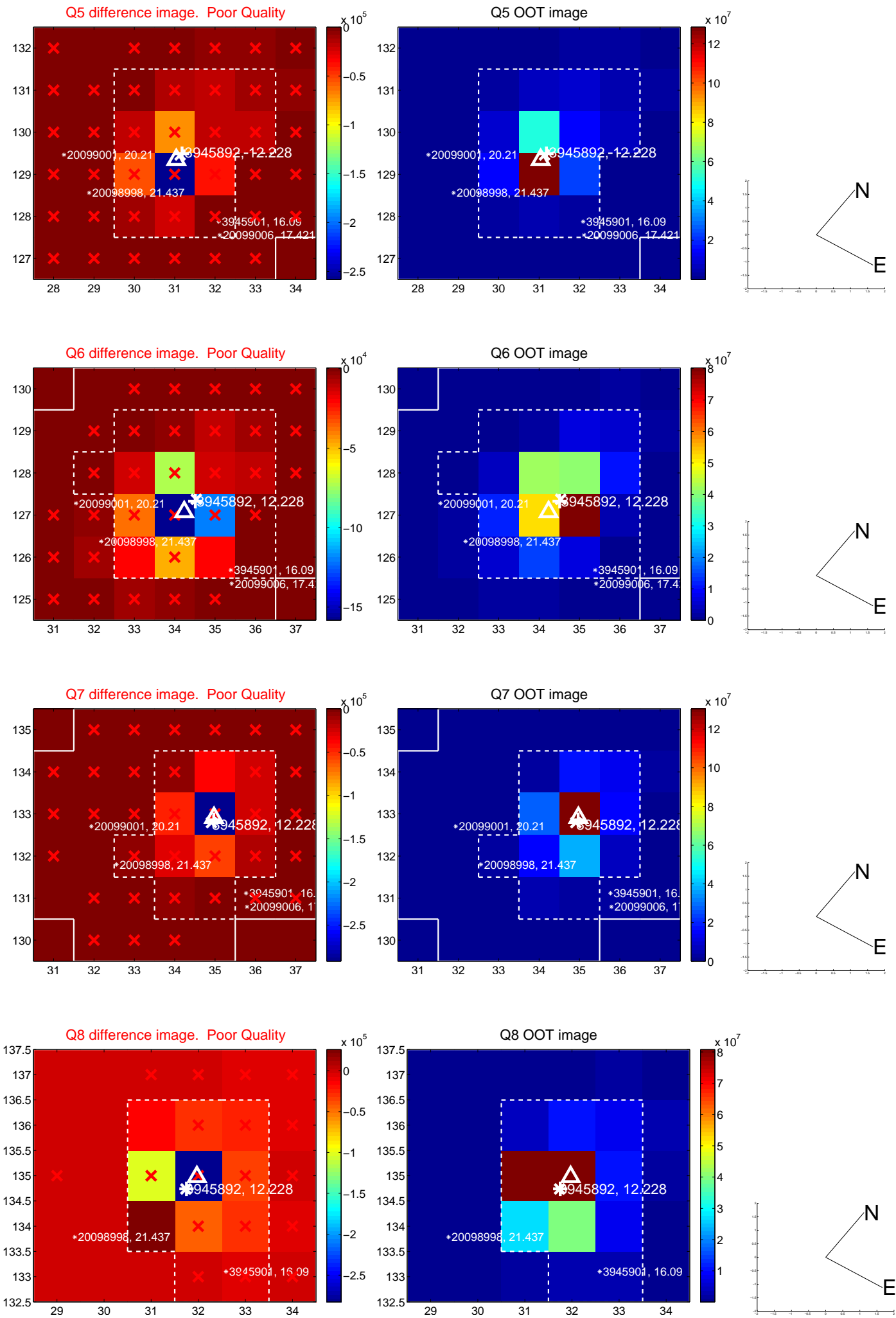


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

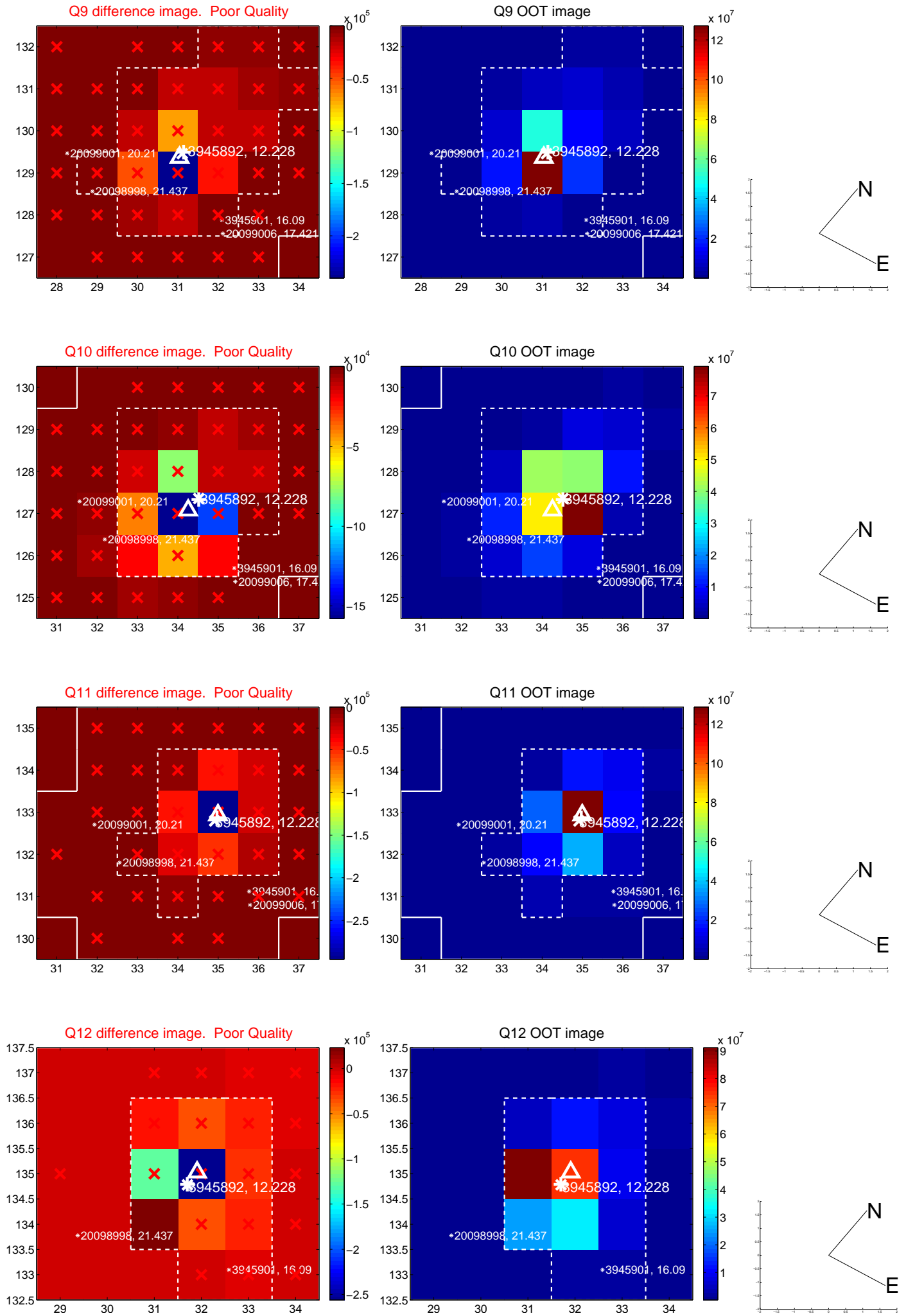
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



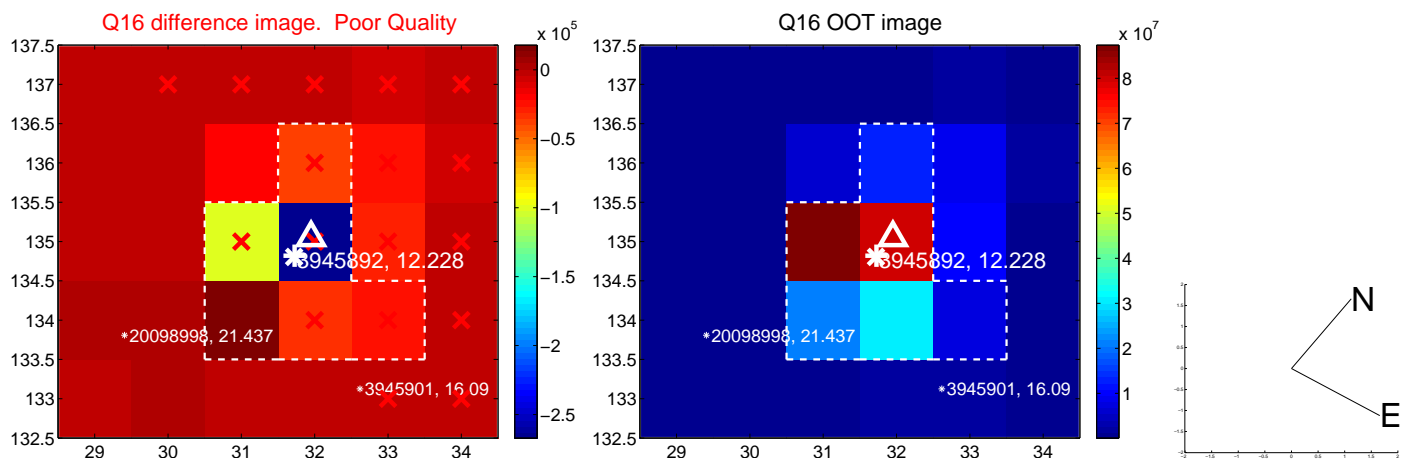
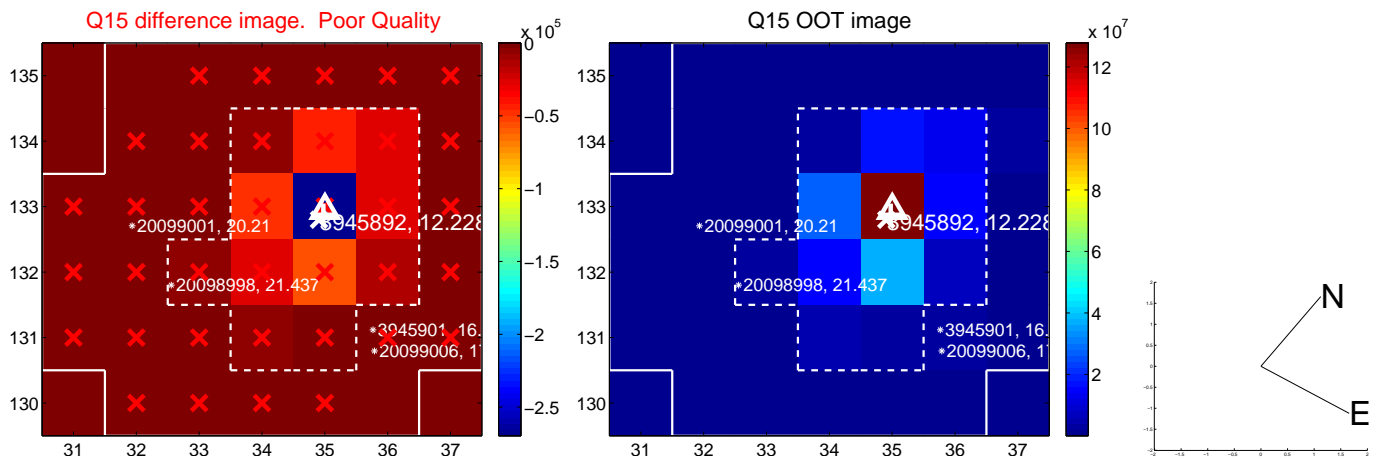
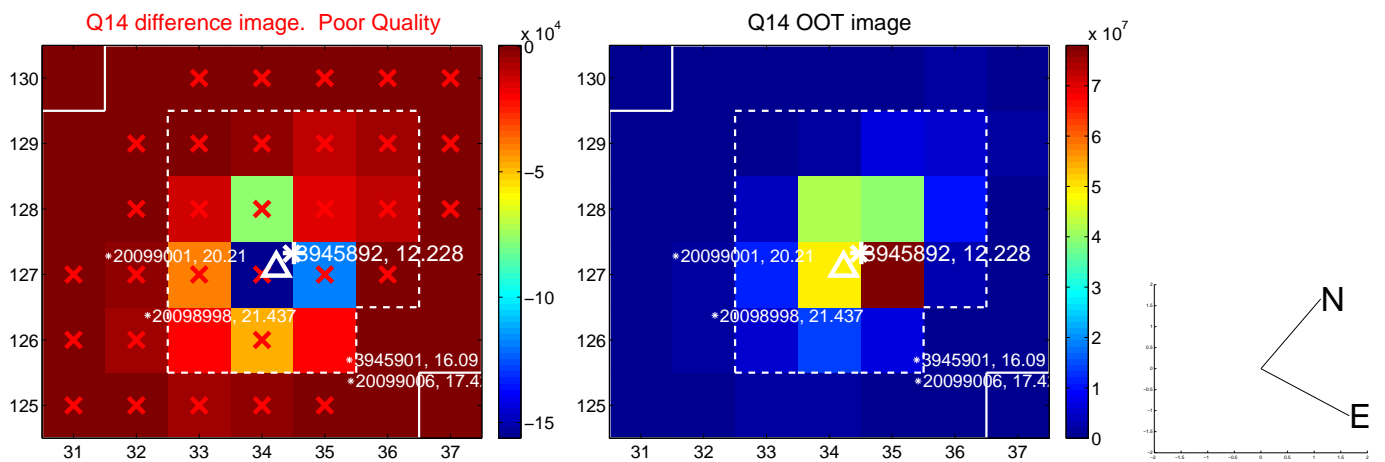
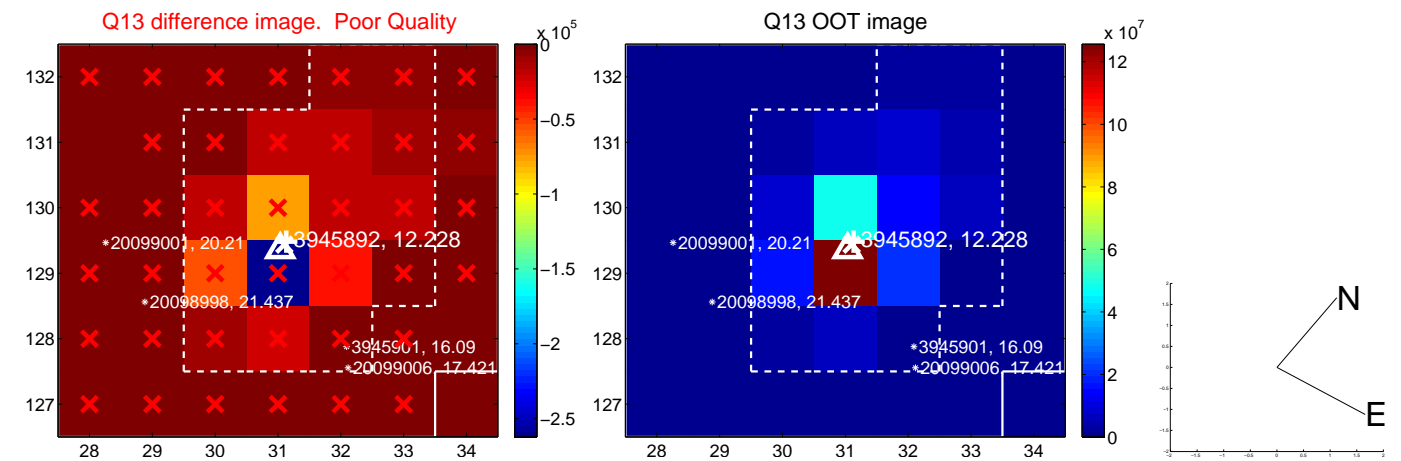
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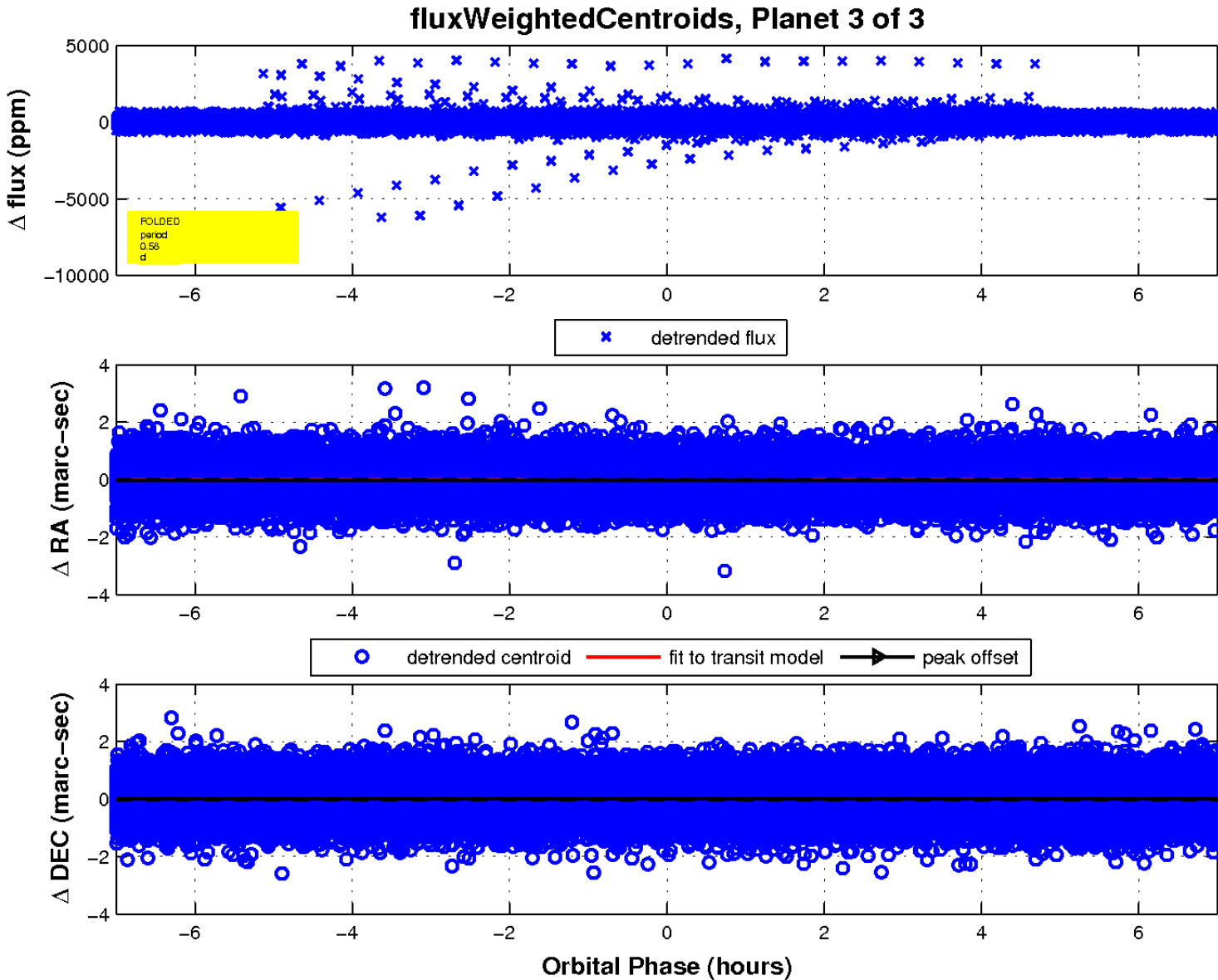
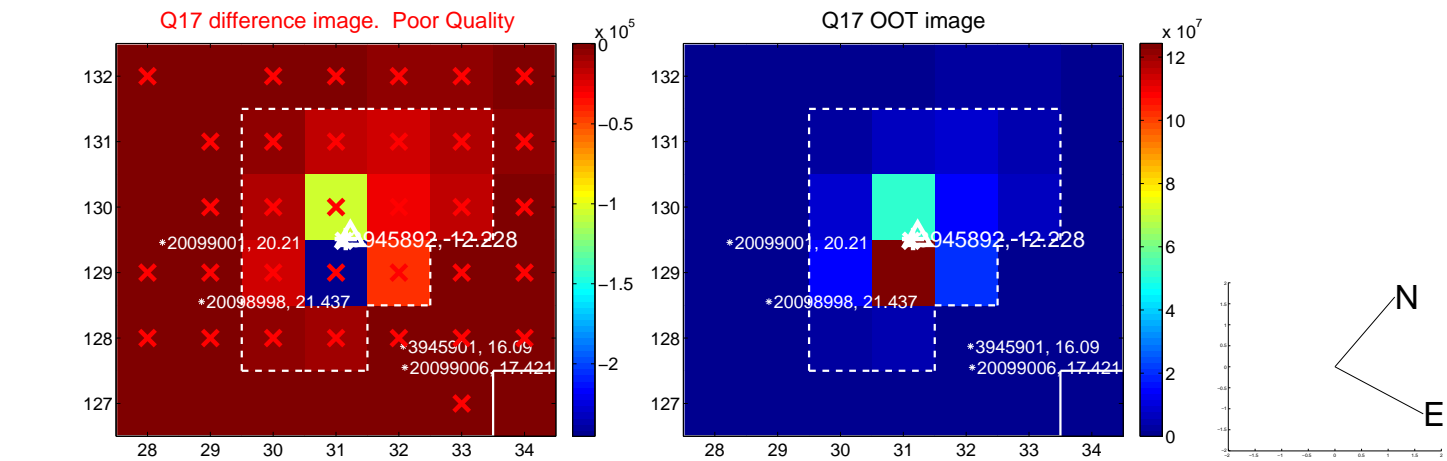
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination

