

# KIC 007183123

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007183123-01	OBS	No	6.304610	136.618321	15.8	18.038	9.3	7.3	3.21	8220	1.32	5909.28
007183123-02	OBS	No	6.302156	133.562225	0.0	39.295	9.8	0.0	3.21	8220	0.02	5912.35

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007183123-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
007183123-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

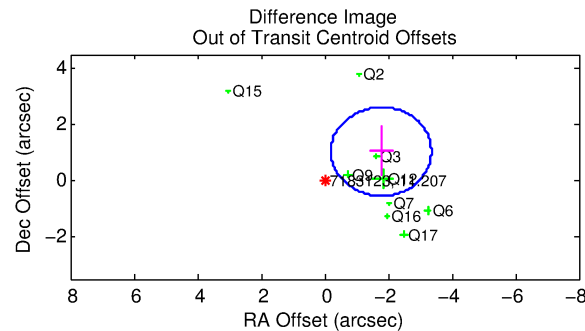
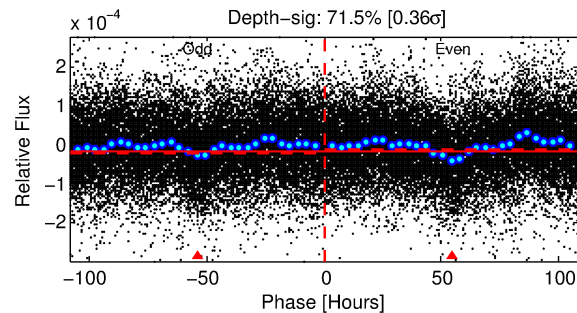
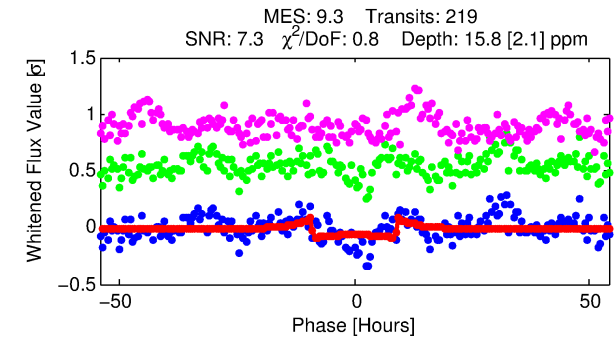
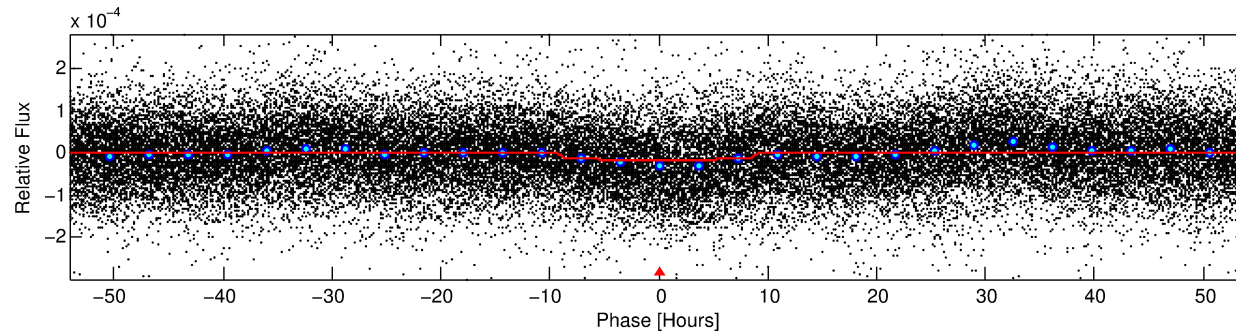
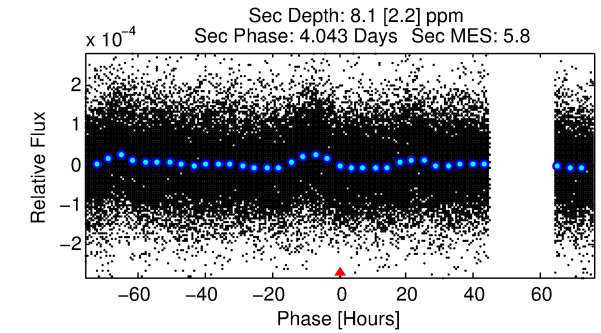
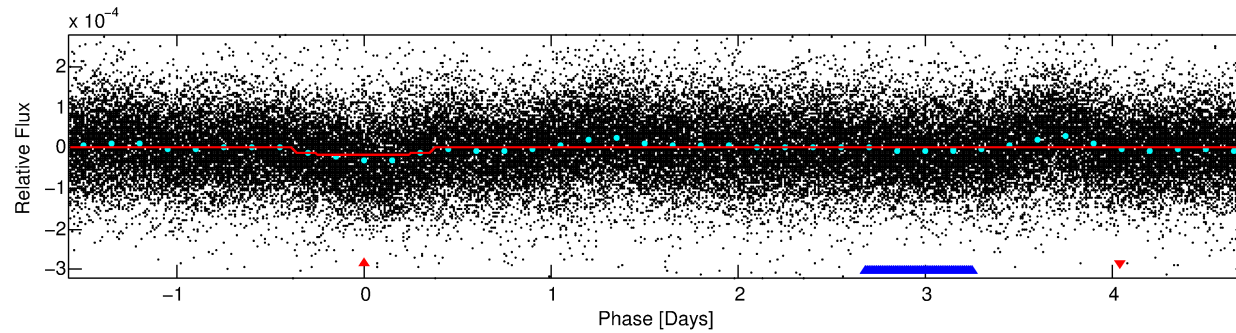
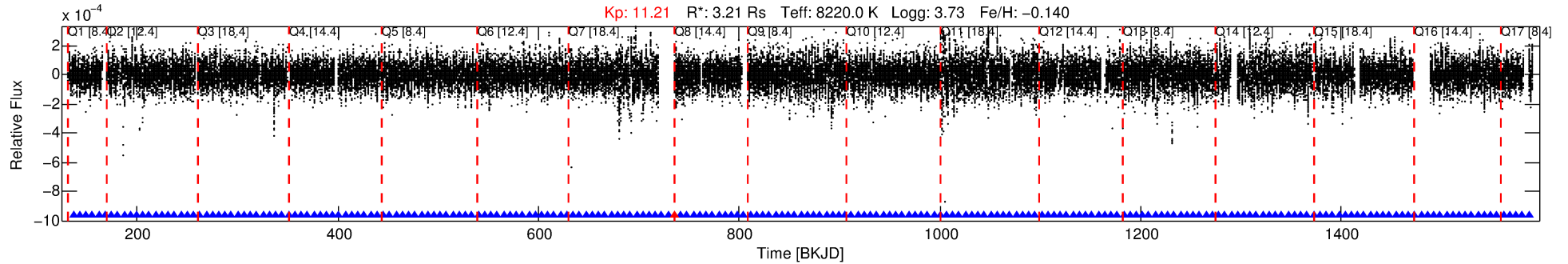
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007183123-01

No Significant Match Found

# DV One-Page Summary

KIC: 7183123 Candidate: 1 of 2 Period: 6.305 d



## DV Fit Results:

Period = 6.30461 [0.00007] d  
Epoch = 136.6183 [0.0078] BKJD  
Rp/R\* = 0.0038 [0.0006]  
a/R\* = 2.50 [1.75]  
b = 0.44 [1.51]  
Seff = 5909.28 [4500.23]  
Teq = 2236 [426] K  
Rp = 1.32 [0.65] Re  
a = 0.0846 [0.0387] AU  
Ag = 18.31 [15.56] [1.11σ]  
Teffp = 7151 [795] K [5.45σ]

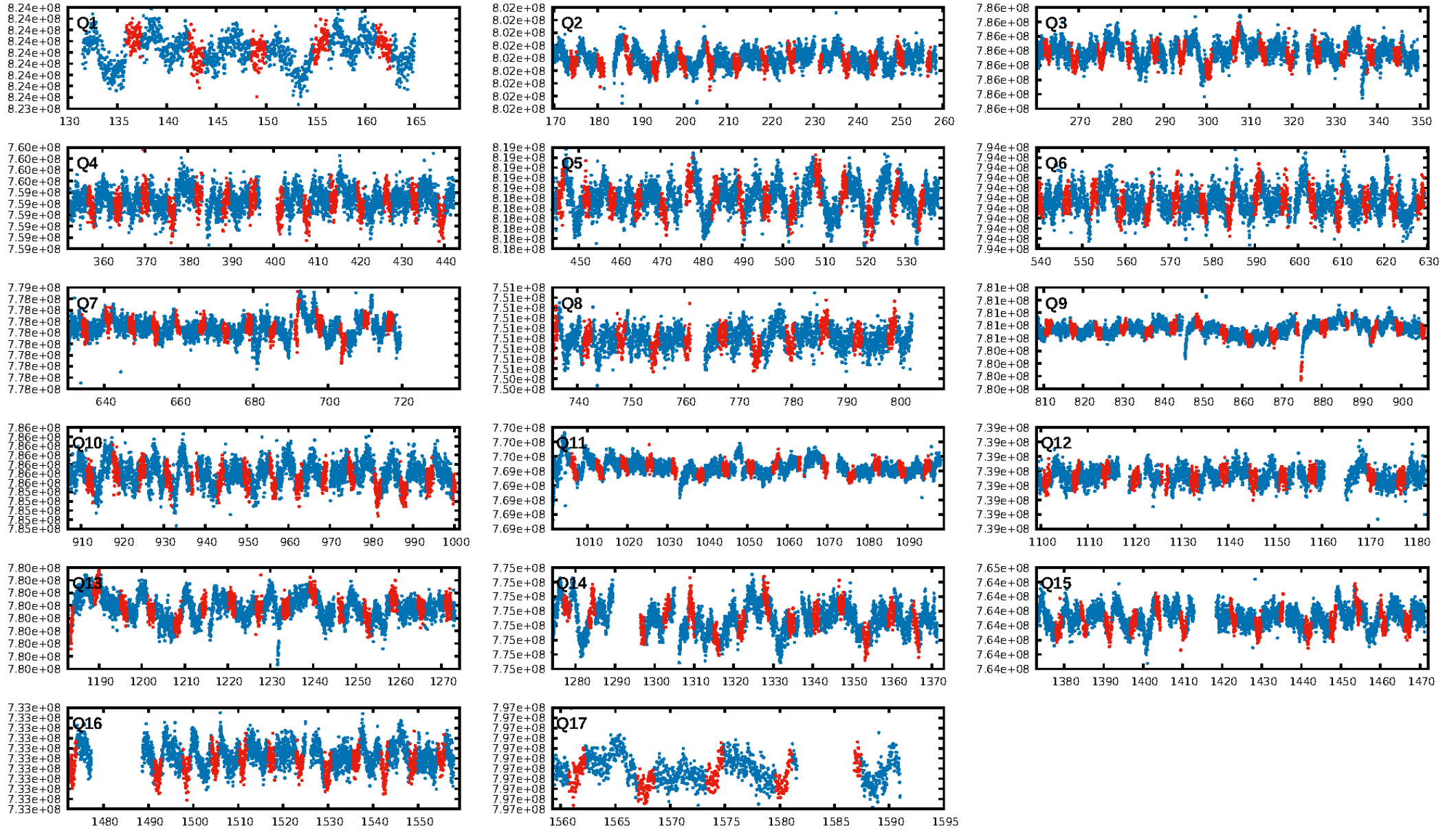
## DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [208/209]  
GhostDiagnostic-chr: 1.245  
Centroid-sig: 0.1%  
Centroid-so: 1.894 arcsec [2.29σ]  
OotOffset-rm: 2.058 arcsec [3.91σ]  
KicOffset-rm: 2.046 arcsec [4.29σ]  
OotOffset-st: 2/3/2/2 [9]  
KicOffset-st: 2/3/2/2 [9]  
DiffImageQuality-fgm: 0.67 [6/9]  
DiffImageOverlap-fno: 1.00 [17/17]

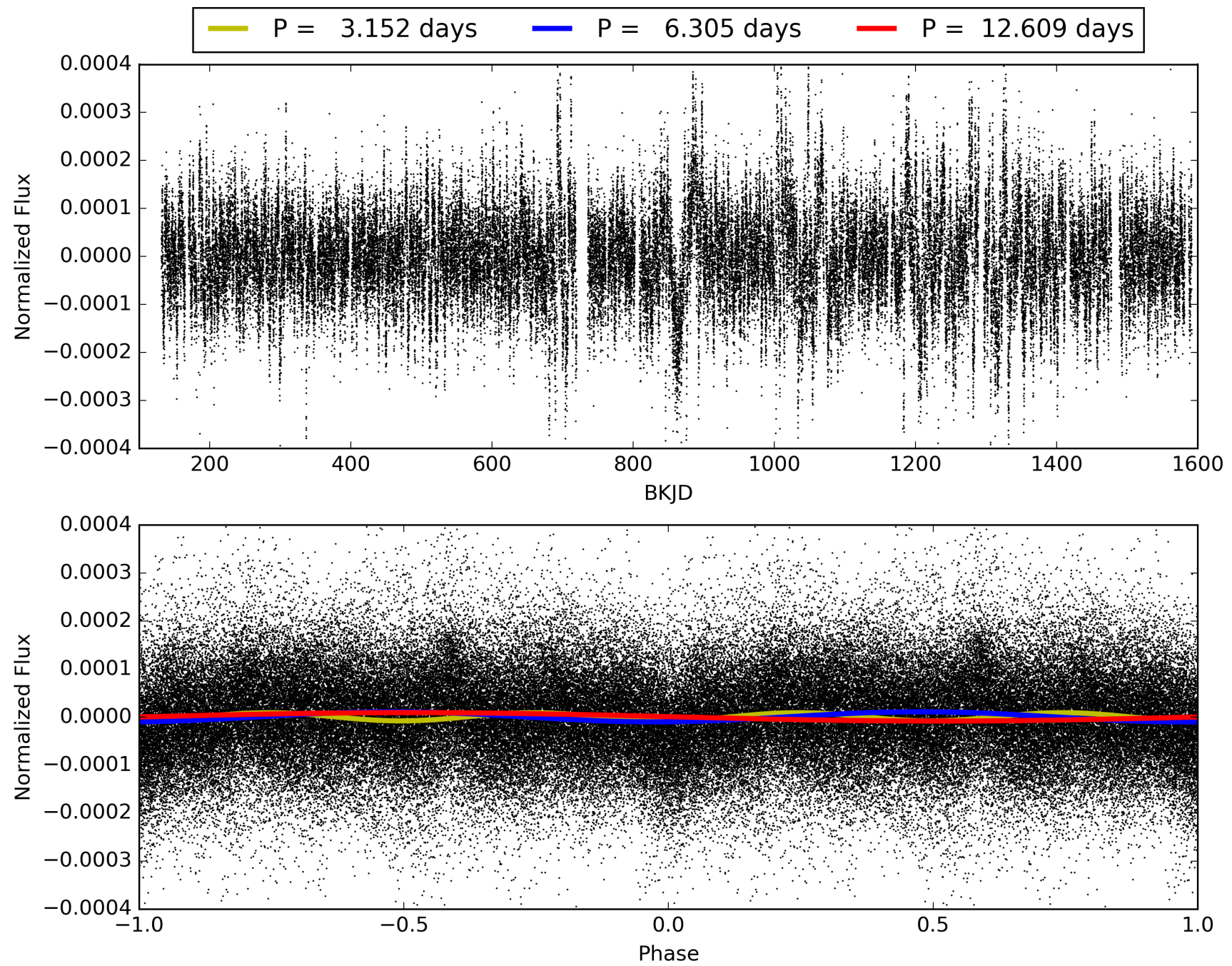
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007183123-01, PDC Light Curves



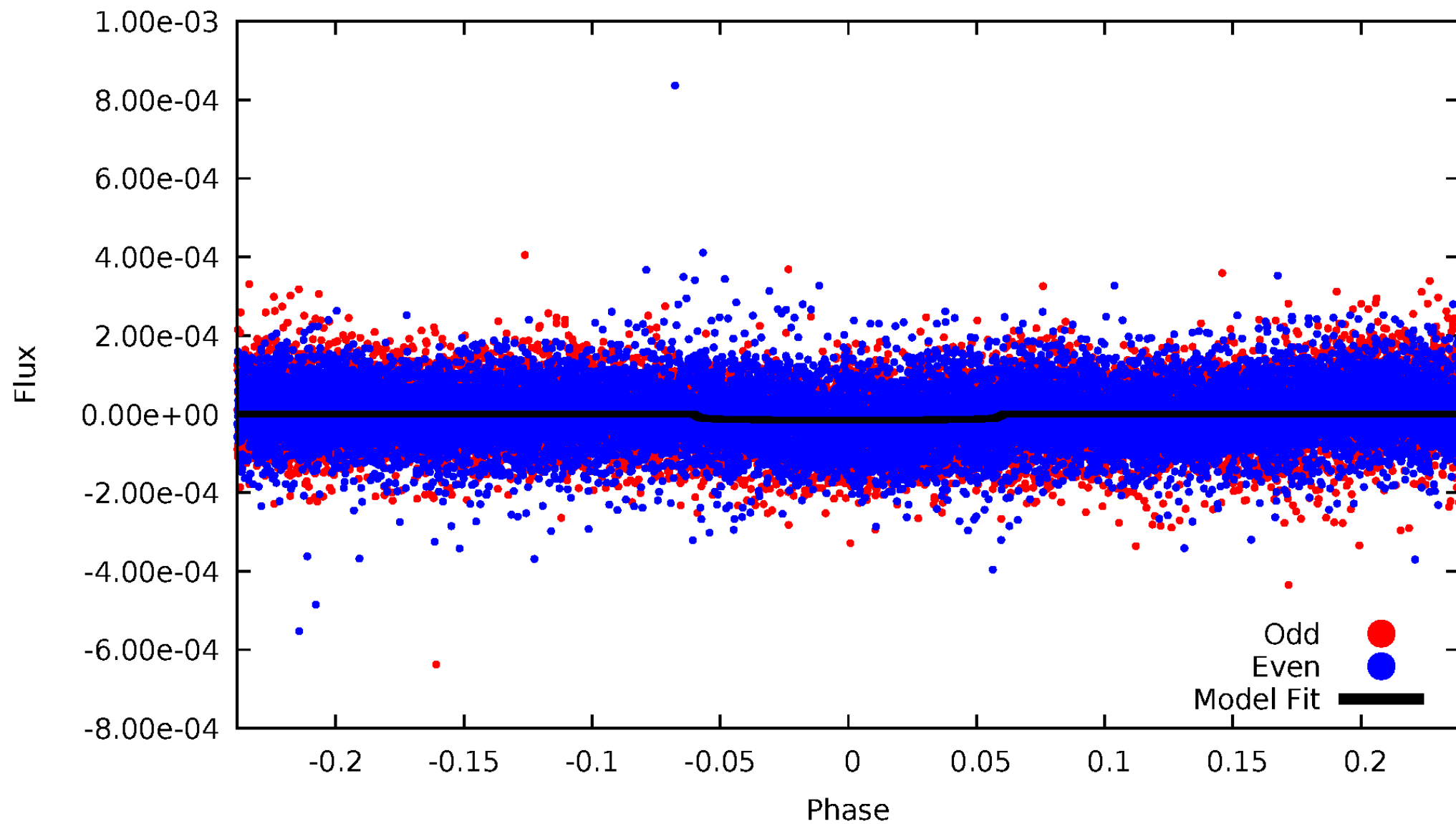
# TCE 007183123-01





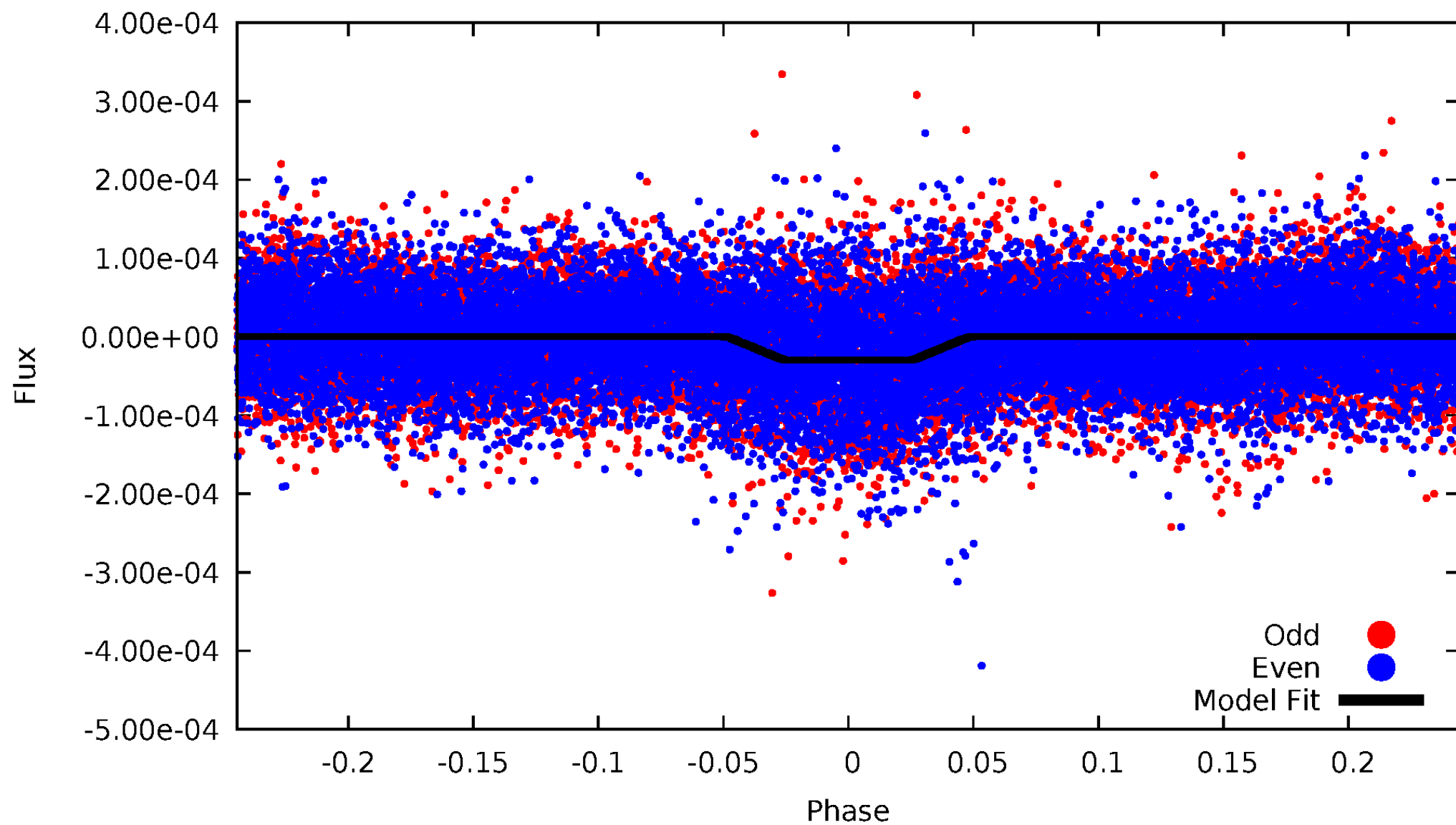
# DV Odd/Even

TCE 007183123-01



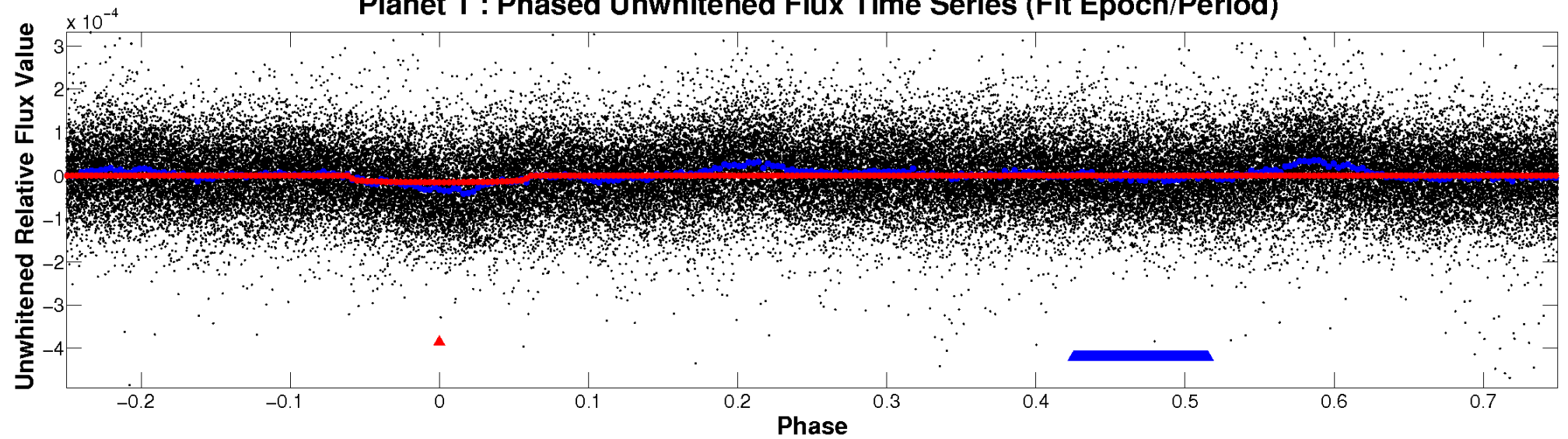
# ALT Odd/Even

TCE 007183123-01

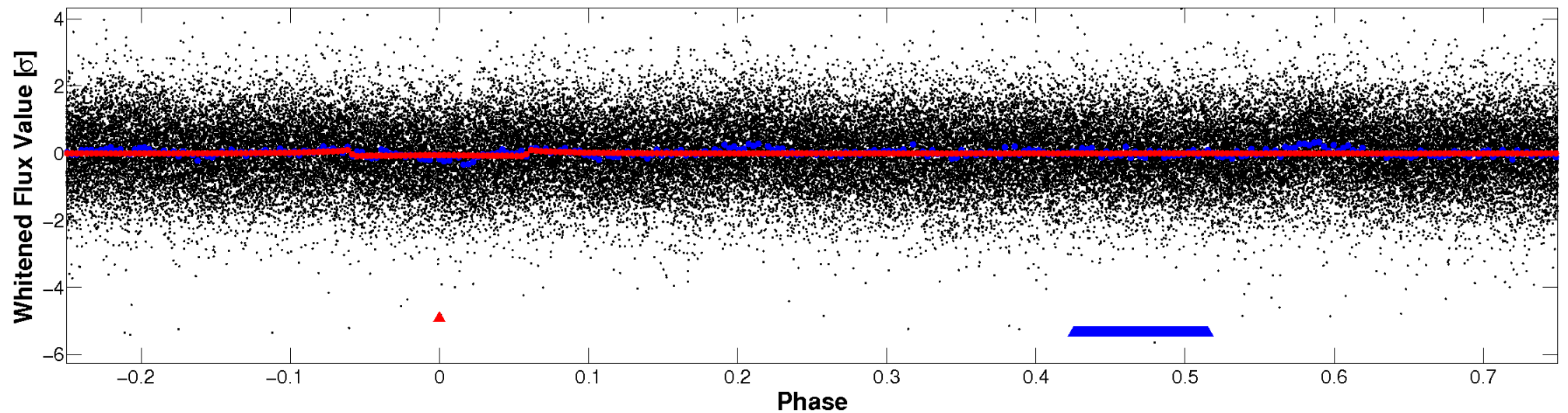


# Non-Whitened Vs. Whitened Light Curve

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

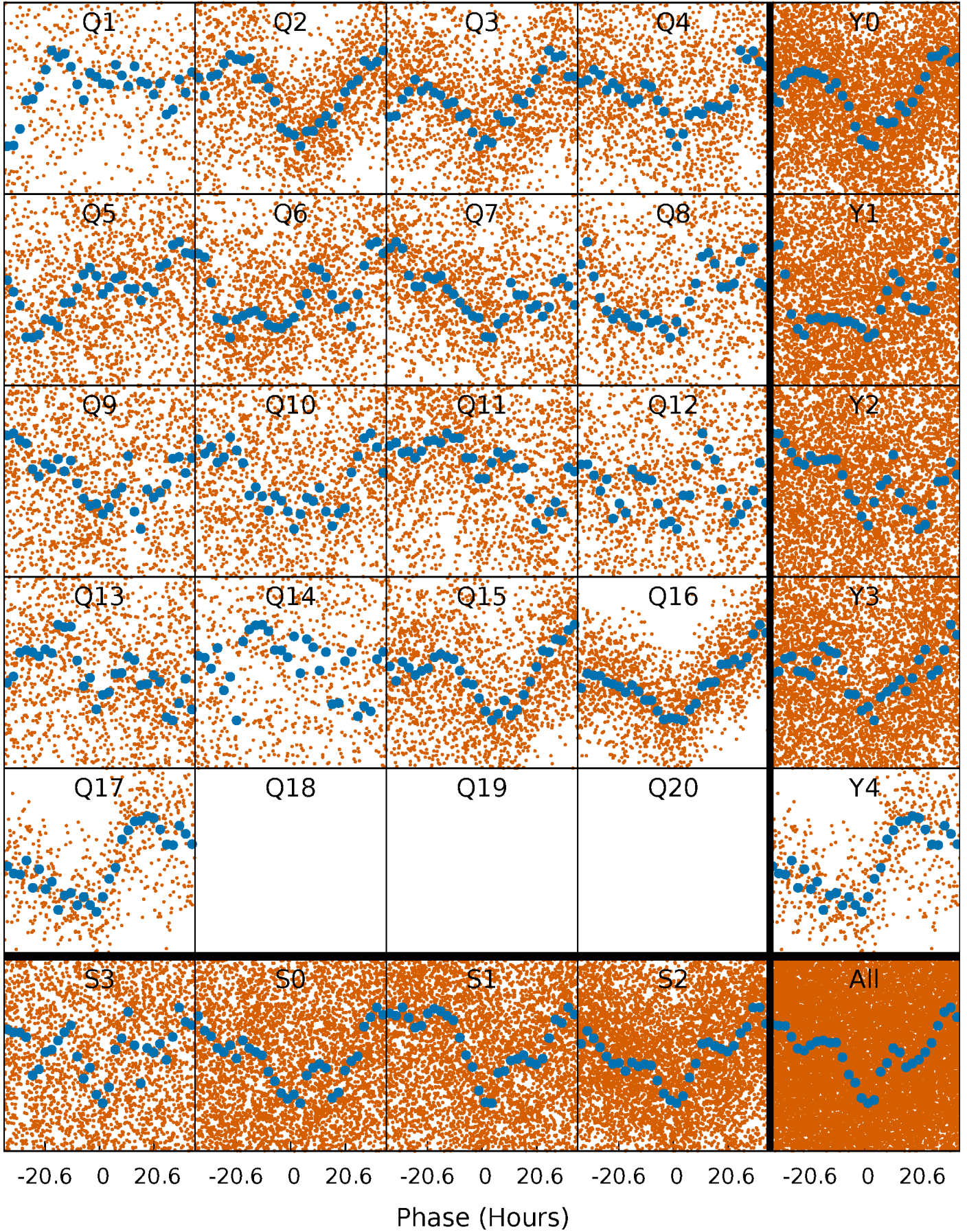


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

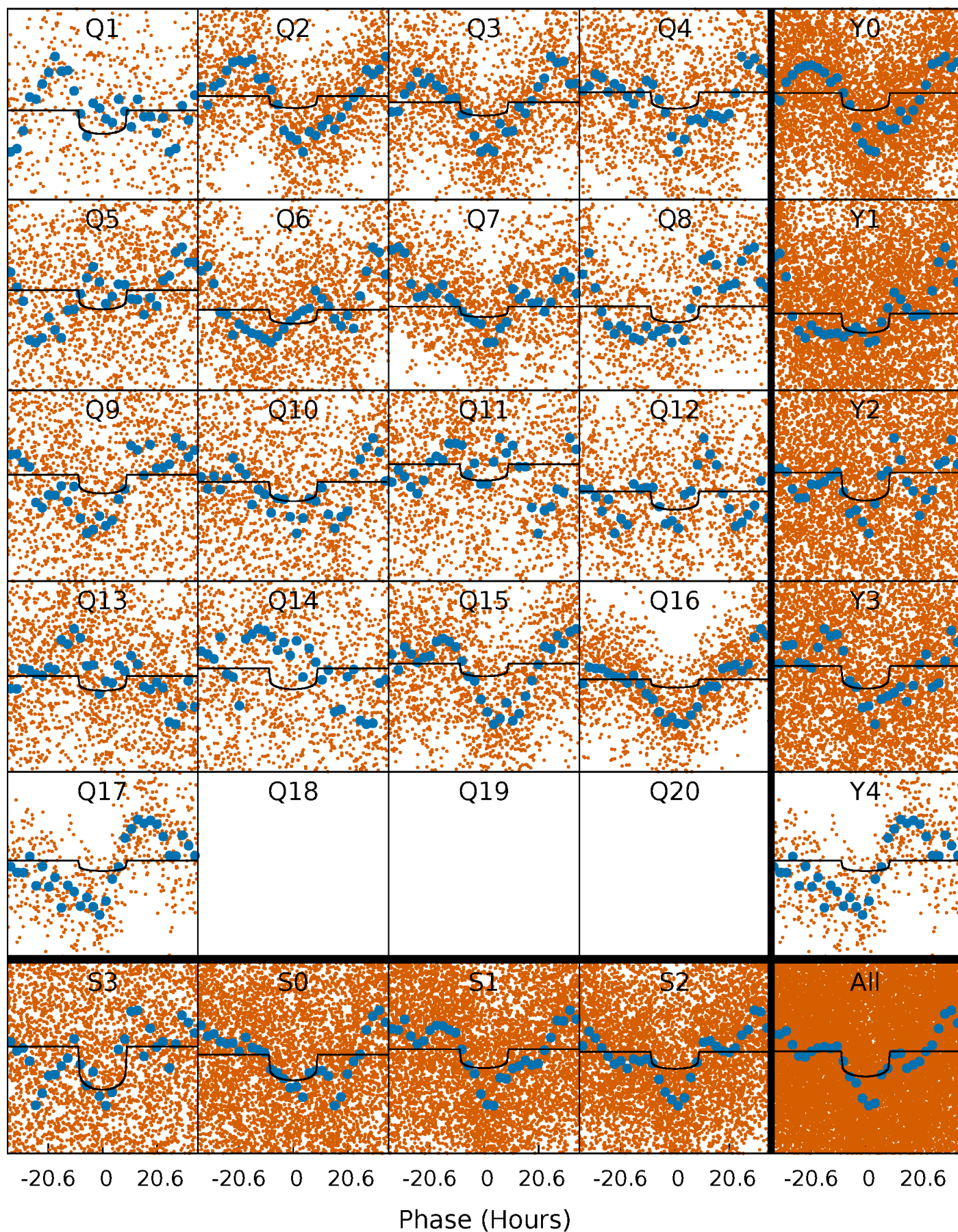
TCE 007183123-01 P= 6.304610 Days  $T_0=136.618321$  (BKJD)





# DV Quarter-Phased Transit Curves

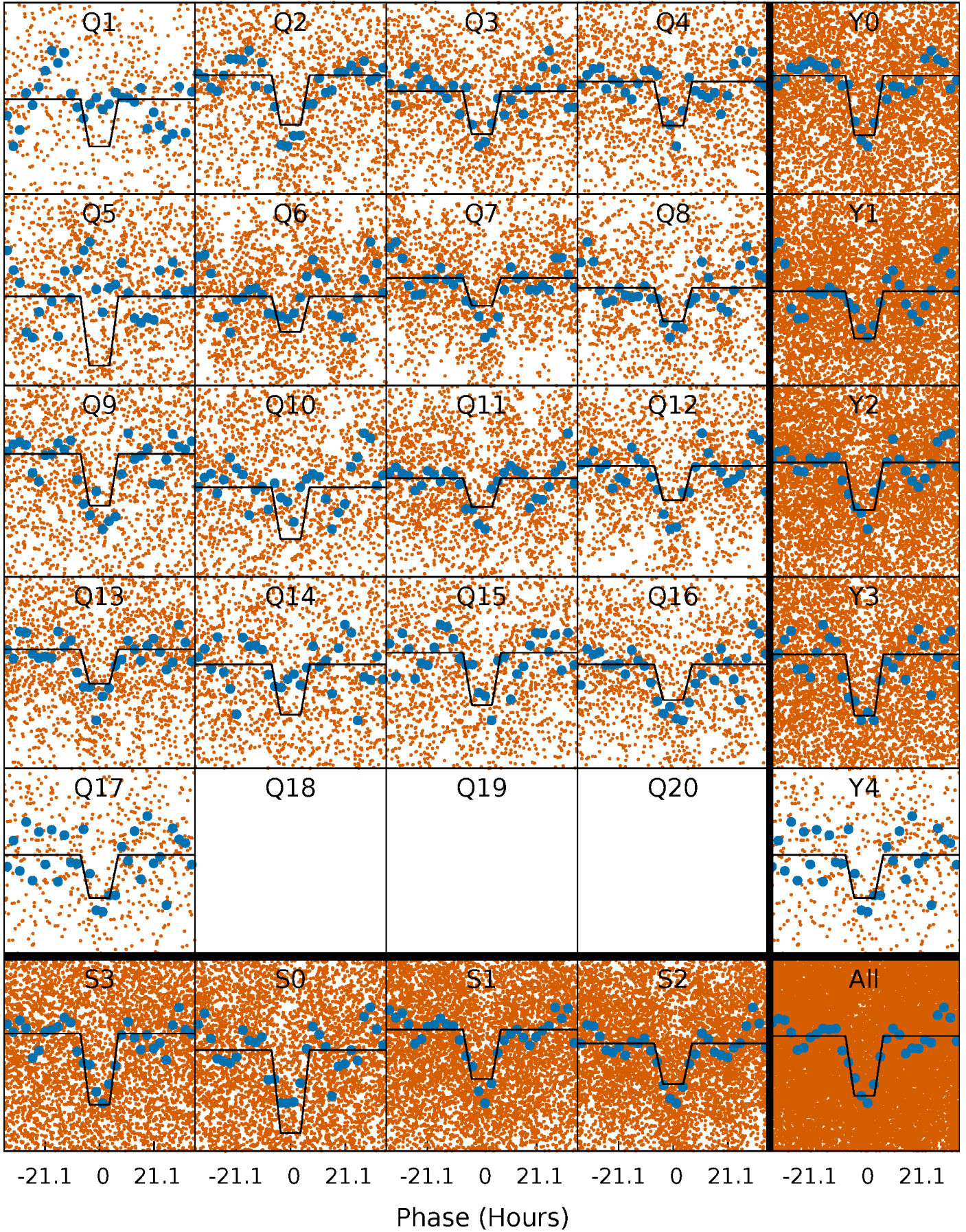
TCE 007183123-01 P= 6.304610 Days  $T_0=136.618321$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

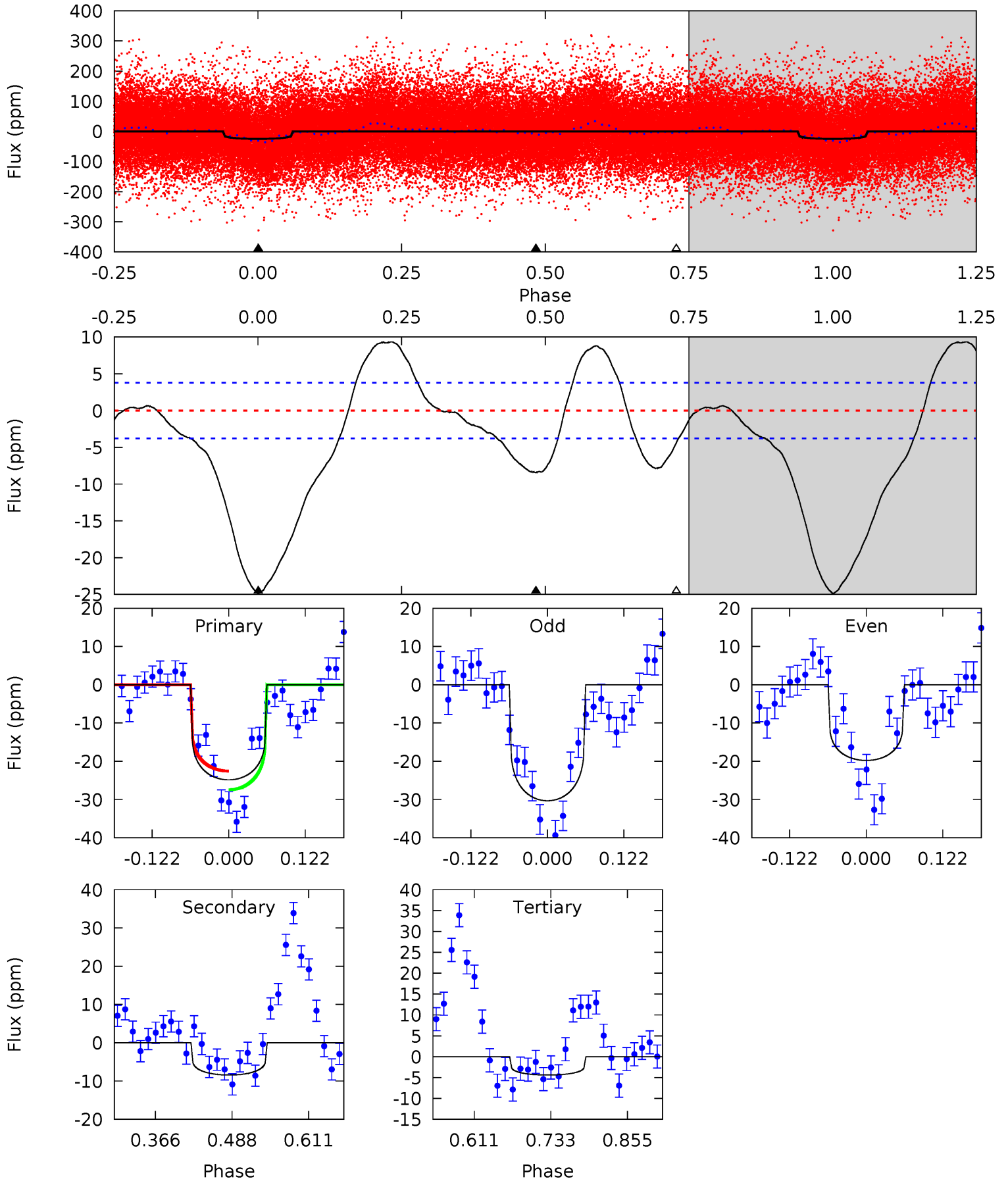
TCE 007183123-01 P= 6.304617 Days  $T_0=136.637042$  (BKJD)



# DV Model-Shift Uniqueness Test

007183123-01, P = 6.304610 Days, E = 130.313711 Days

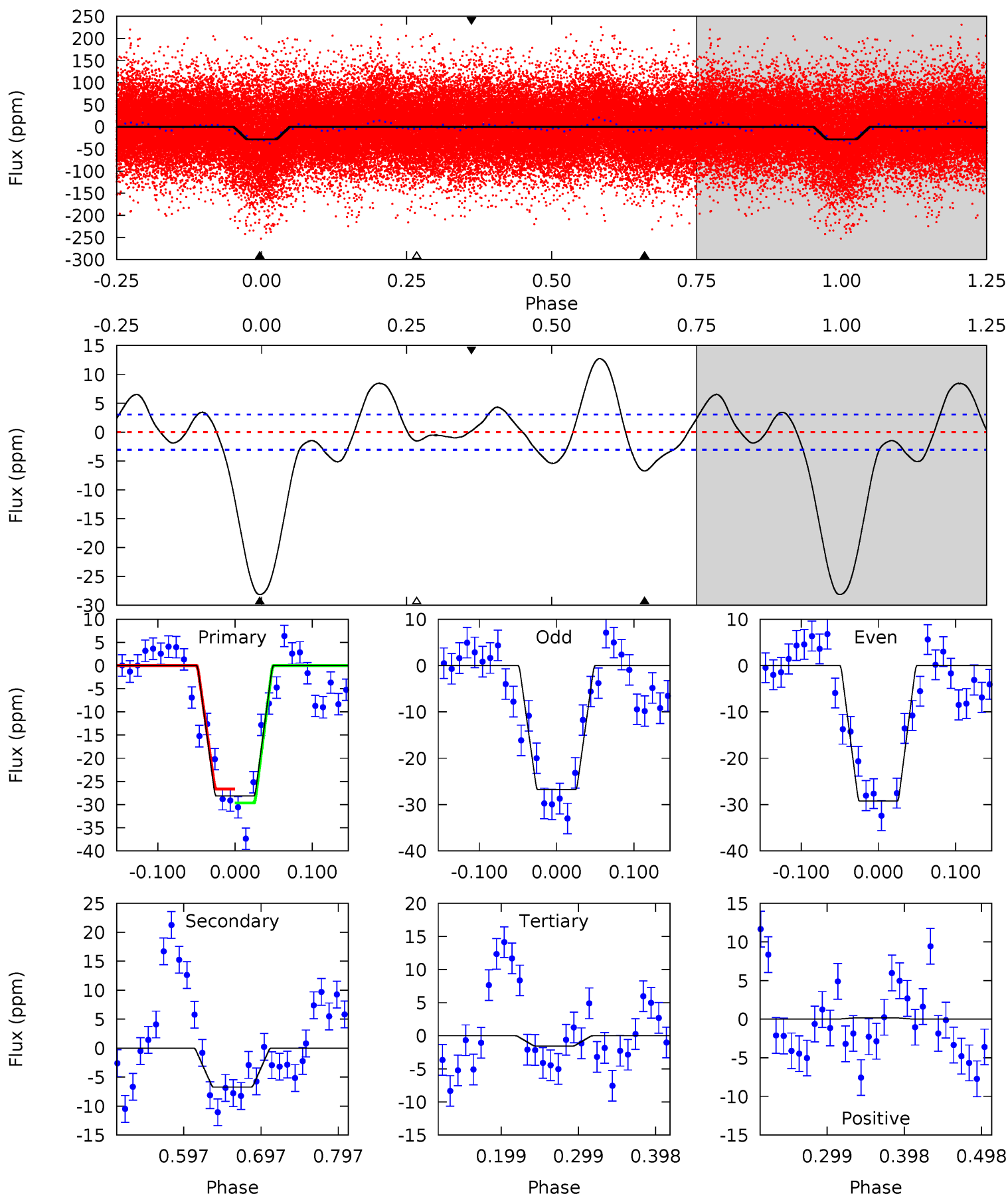
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.8	10.1	5.26	0	4.52	1.55	5.75	24.5	29.8	4.84	10.1	6.28	0.94	0.27	2.93



# Alt Model-Shift Uniqueness Test

007183123-01, P = 6.304617 Days, E = 130.332425 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
41.9	10.0	2.32	0.28	4.57	1.65	5.47	39.6	41.7	7.71	9.75	1.84	0.95	0.31	2.23





### Stellar Parameters For KIC 007183123

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8220^{+229}_{-343}$	$3.731^{+0.440}_{-0.110}$	$-0.140^{+0.250}_{-0.350}$	$3.214^{+0.804}_{-1.493}$	$2.031^{+0.388}_{-0.474}$	$0.086^{+0.325}_{-0.035}$
	+3%/-4%	+12%/-3%	+179%/-250%	+25%/-46%	+19%/-23%	+377%/-40%
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 007183123-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-8 \pm 1$	$1.22^{+0.31}_{-0.32}$	$3014^{+236}_{-371}$	$7024^{+727}_{-626}$	$23^{+18}_{-8}$
Alt.	$-7 \pm 1$	$1.78^{+0.42}_{-0.44}$	$3010^{+265}_{-347}$	$5469^{+389}_{-317}$	$8.541^{+5.849}_{-2.674}$

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

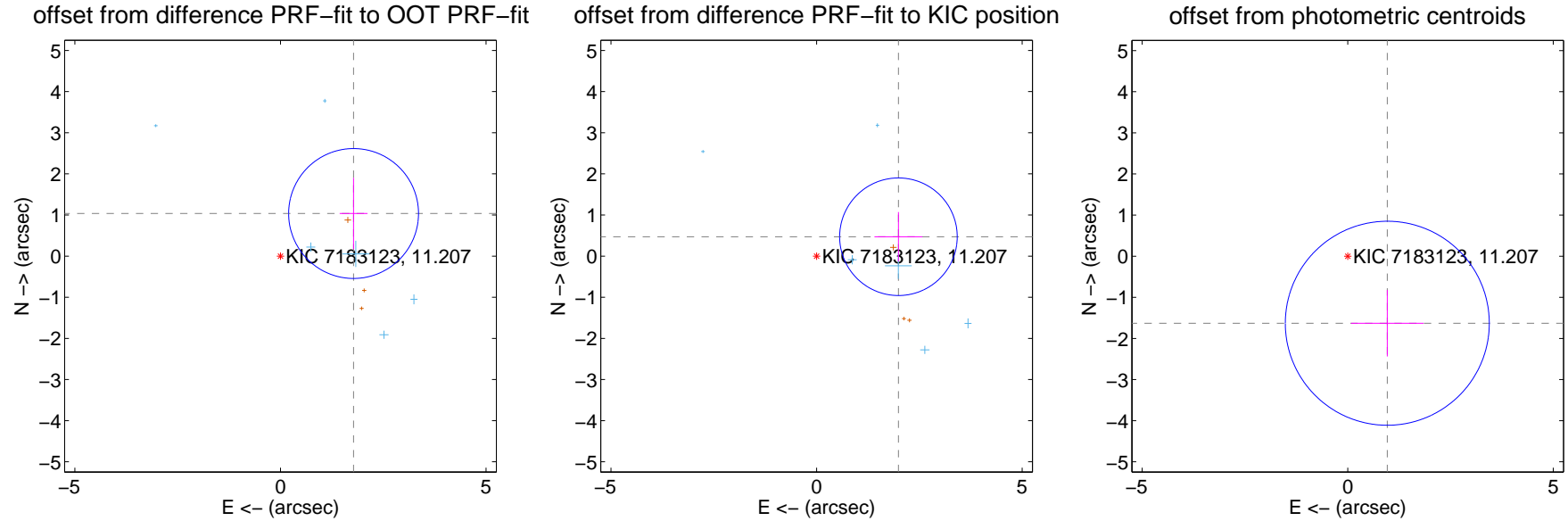
## DV Centroid Data

Supplemental centroid analysis for 007183123-01. **Kepler magnitude: 11.21.** Transit SNR 7.26

There are 6 quarters with good PRF difference image offsets

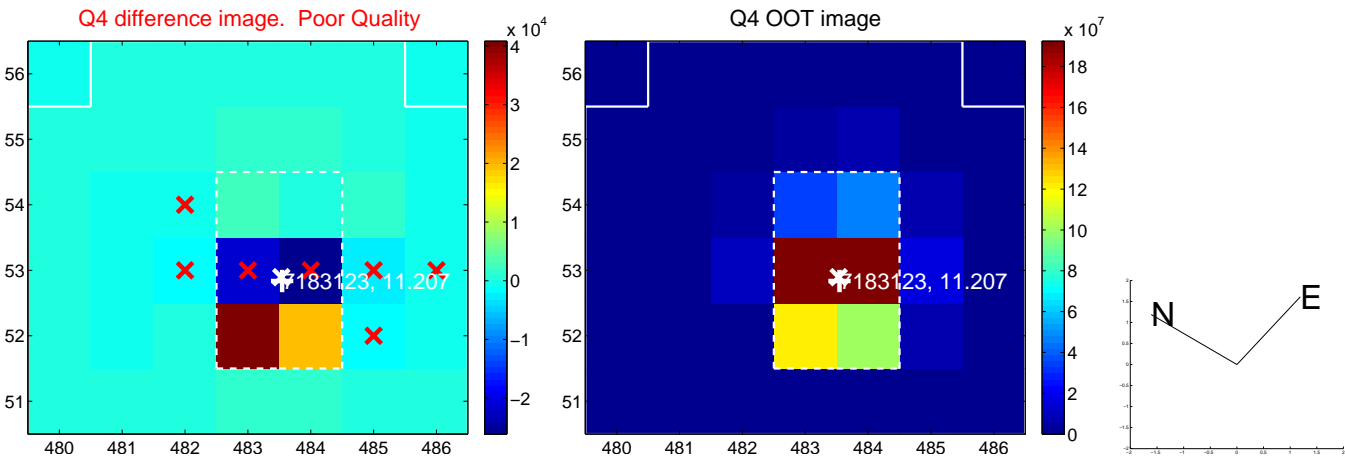
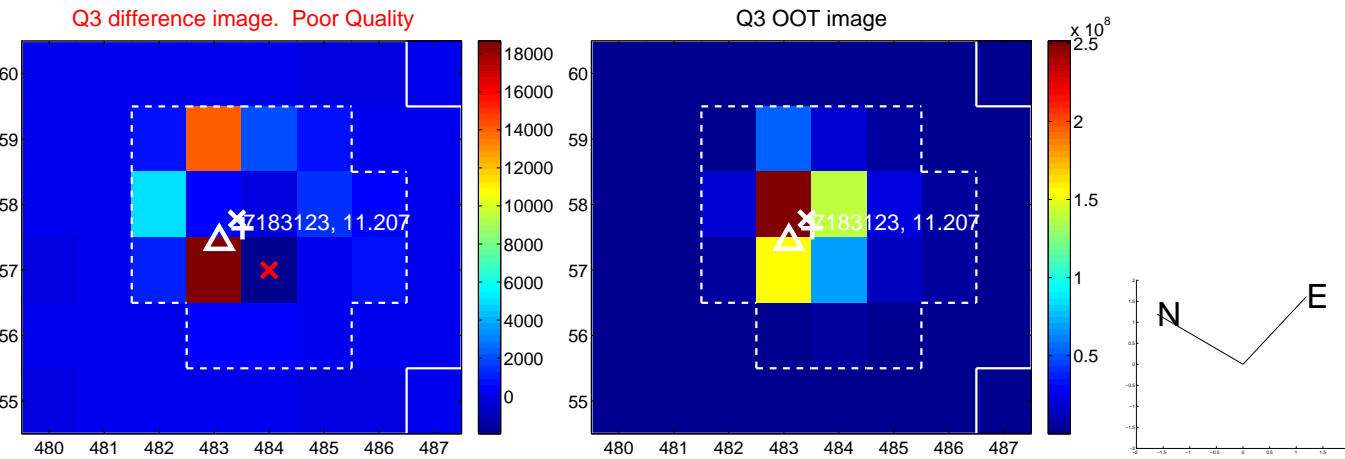
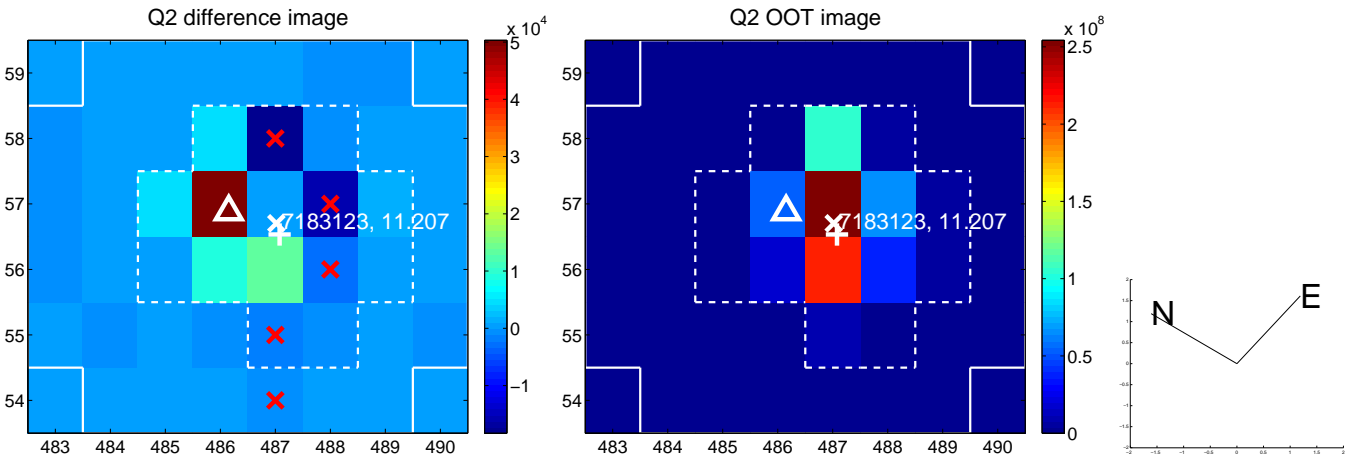
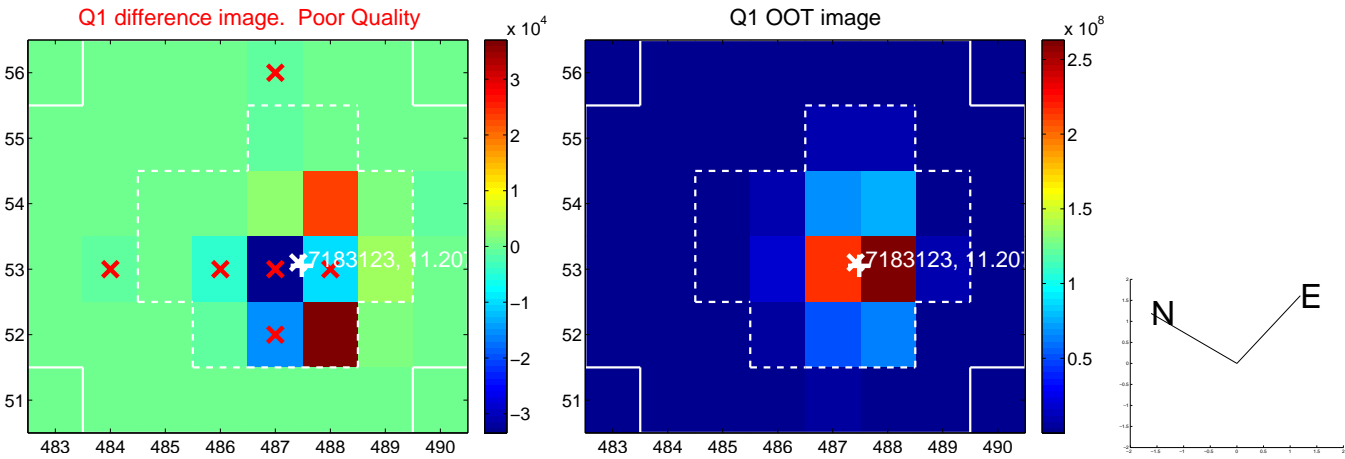
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>2.058 \pm 0.526</math></b>	<b>3.91</b>	$-1.778 \pm 0.339$	$1.036 \pm 0.868$
PRF-fit source offset from KIC position	<b><math>2.046 \pm 0.477</math></b>	<b>4.29</b>	$-1.991 \pm 0.583$	$0.472 \pm 0.600$
photometric centroid source offset	$1.89 \pm 0.83$	2.29	$-0.96 \pm 0.88$	$-1.63 \pm 0.81$

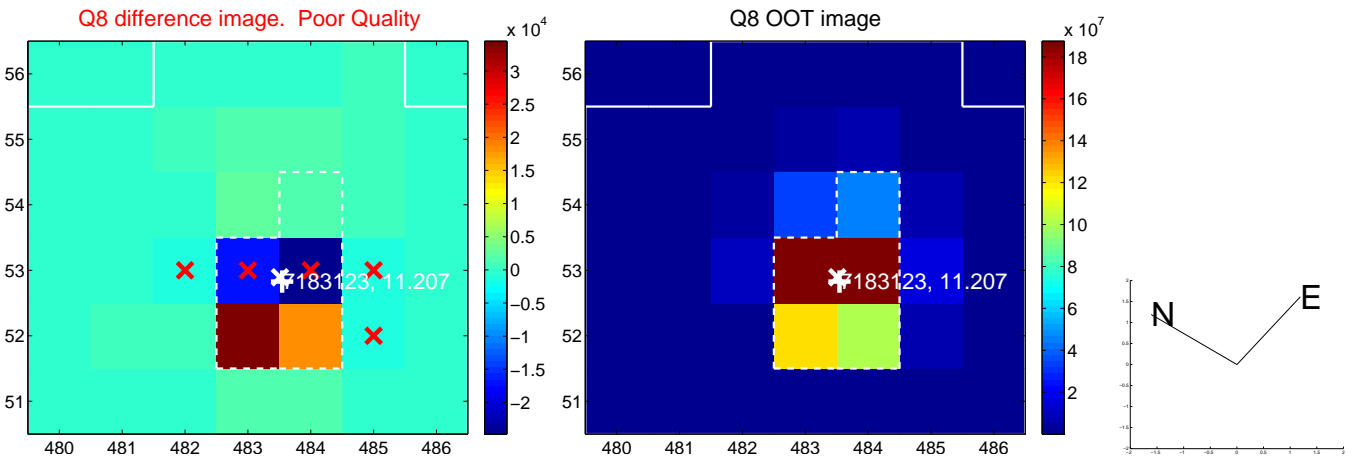
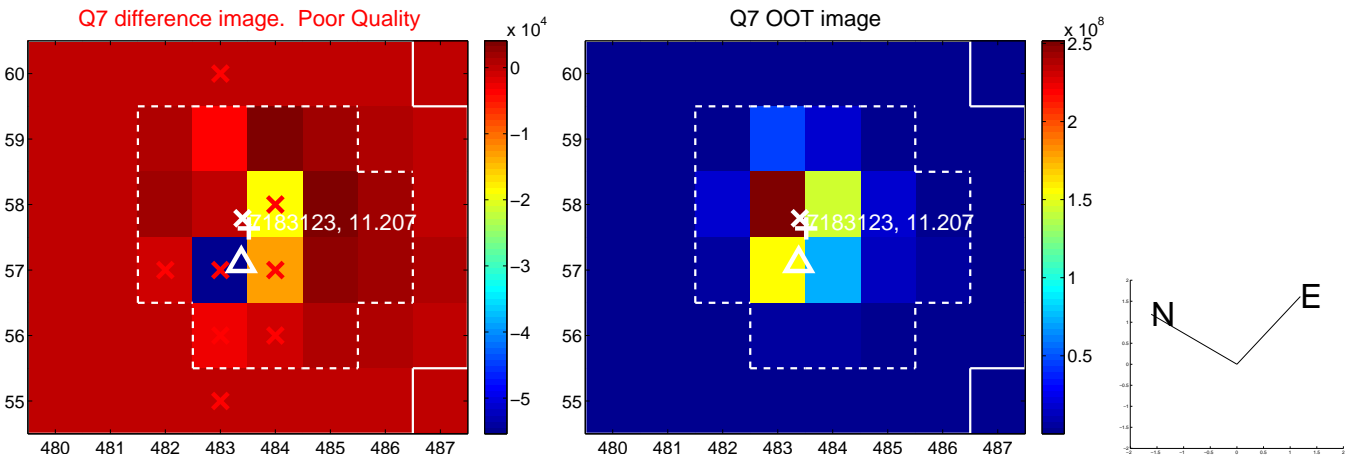
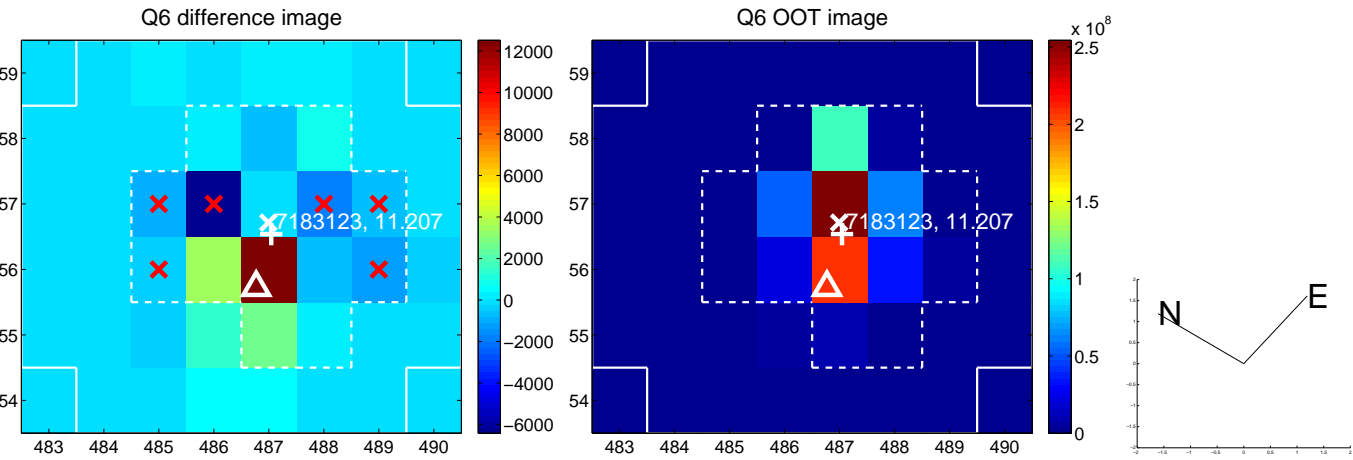
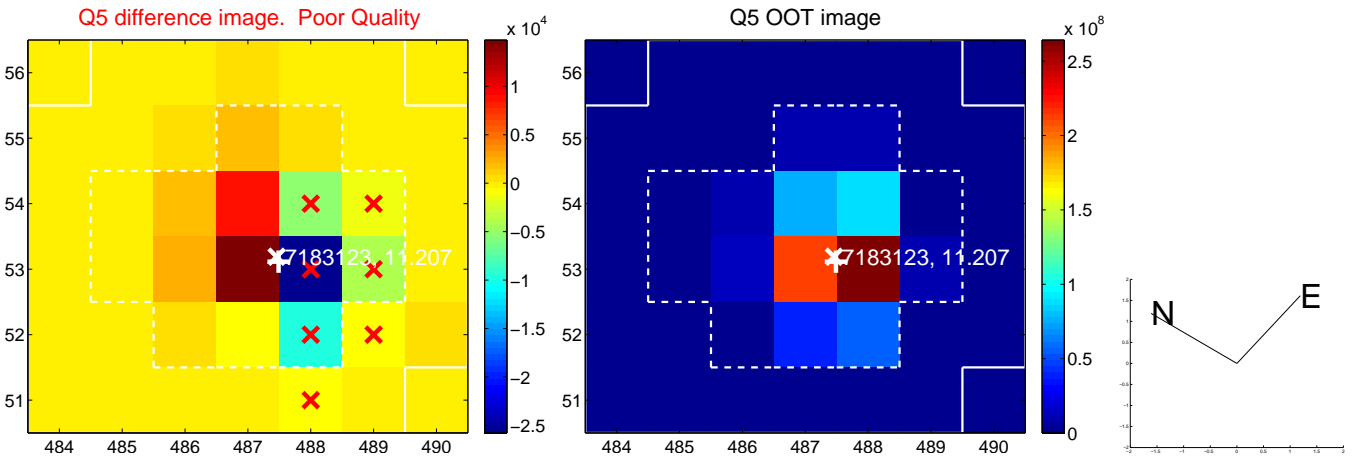


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

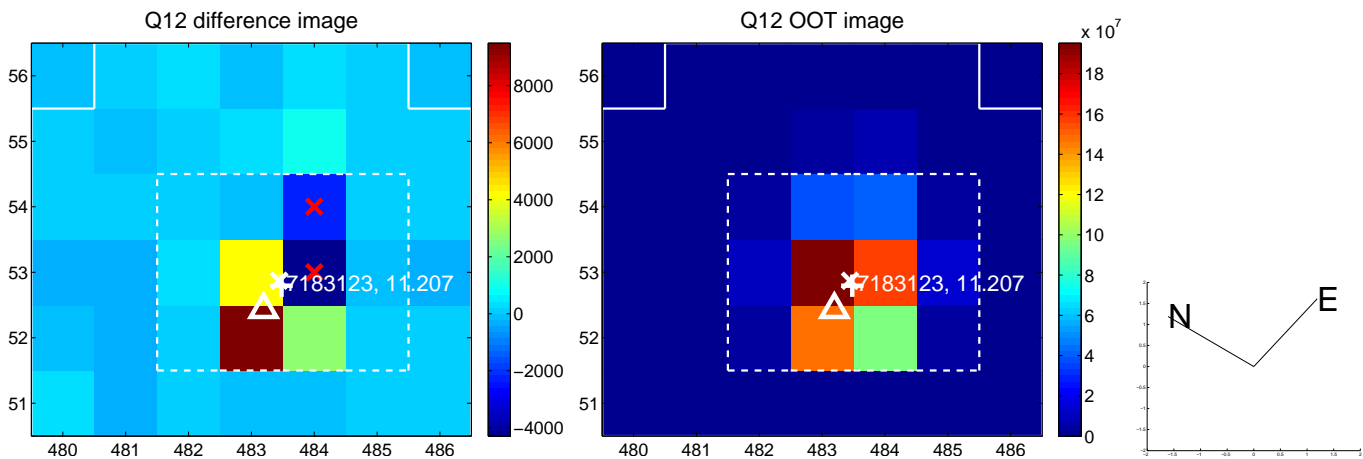
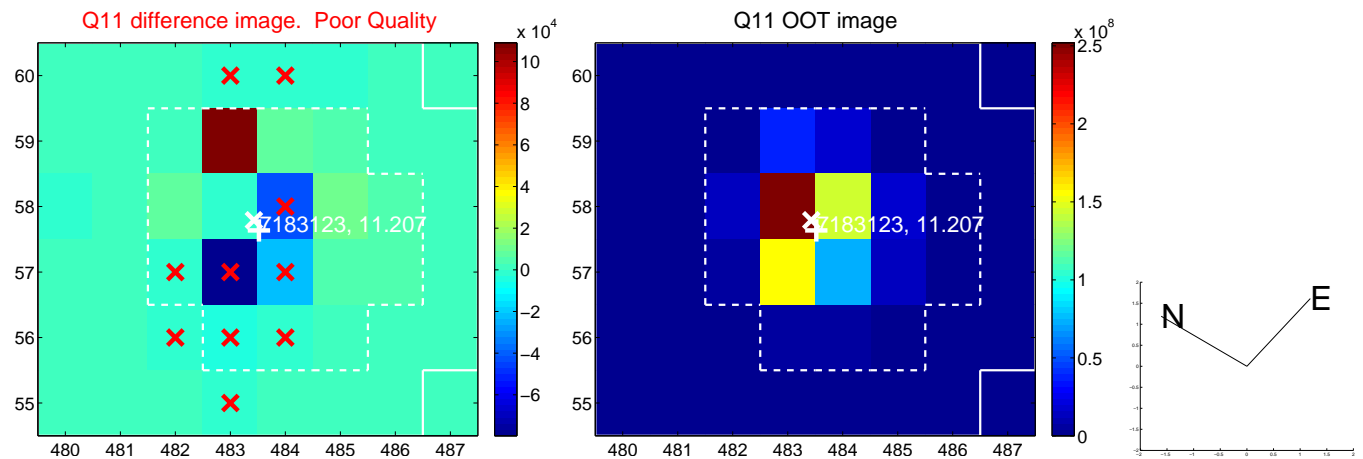
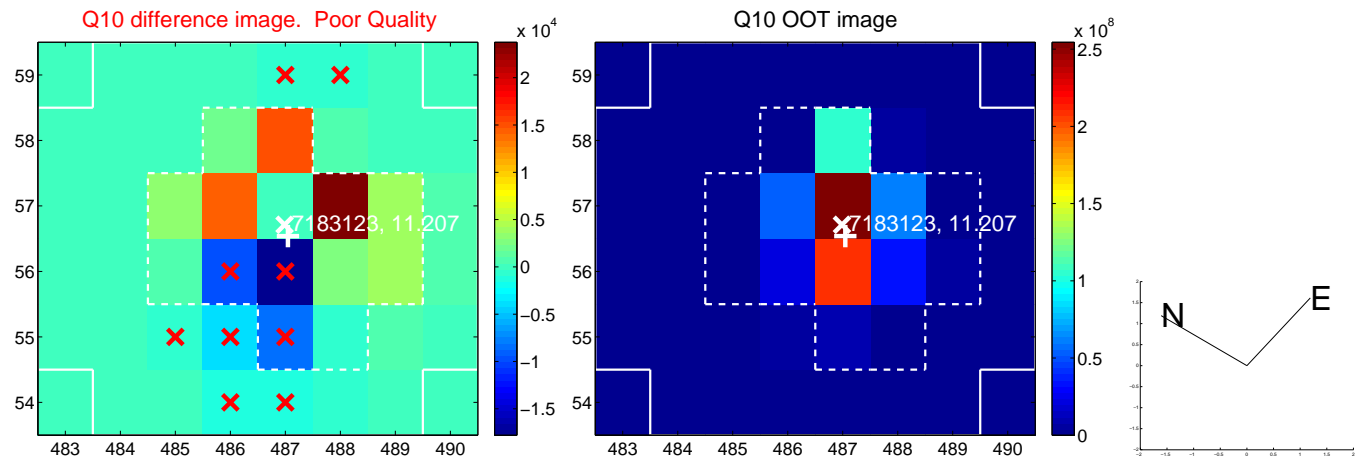
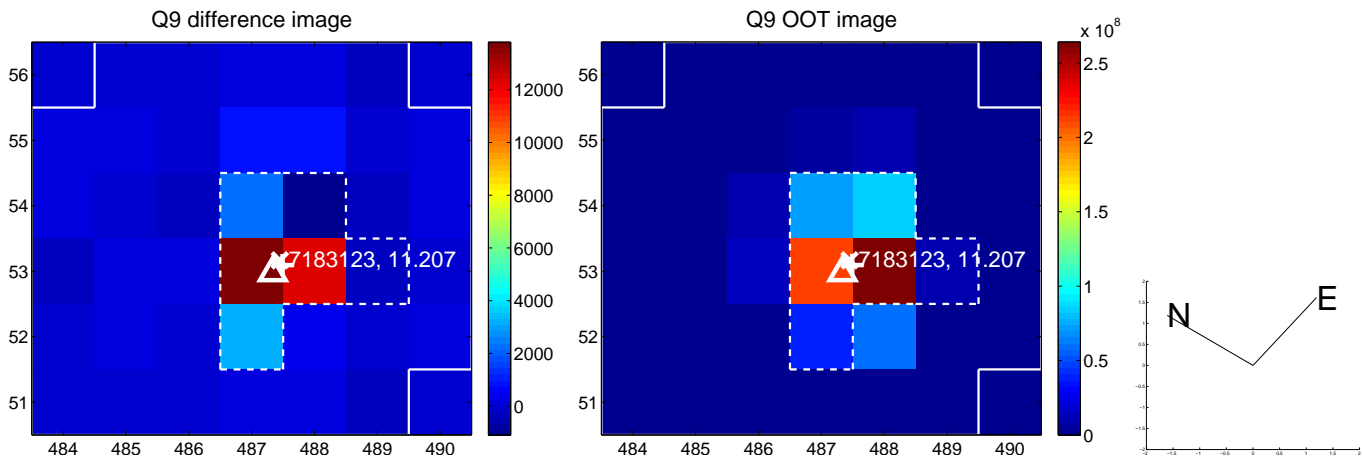


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

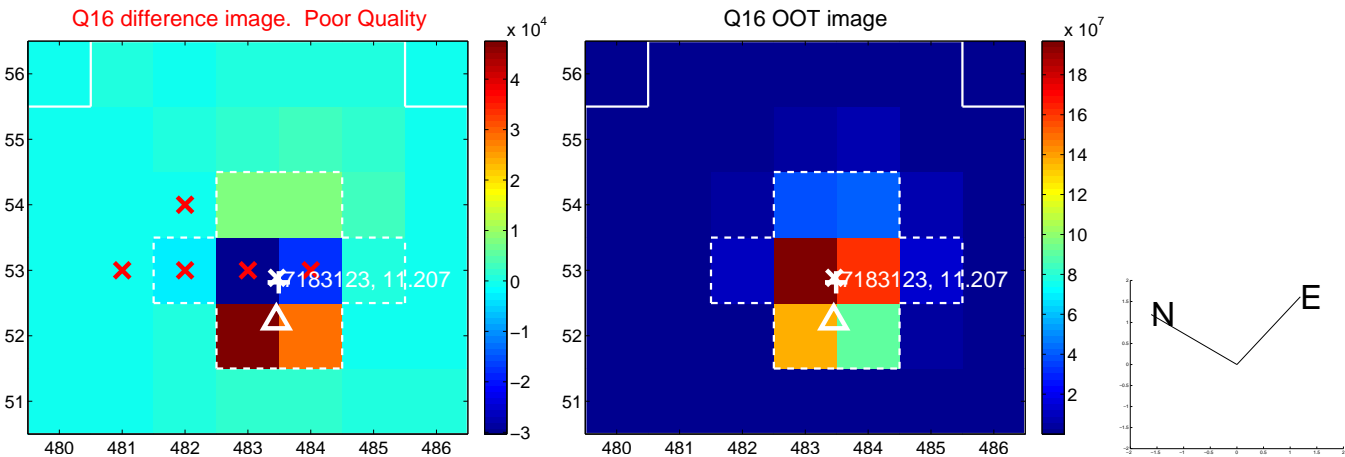
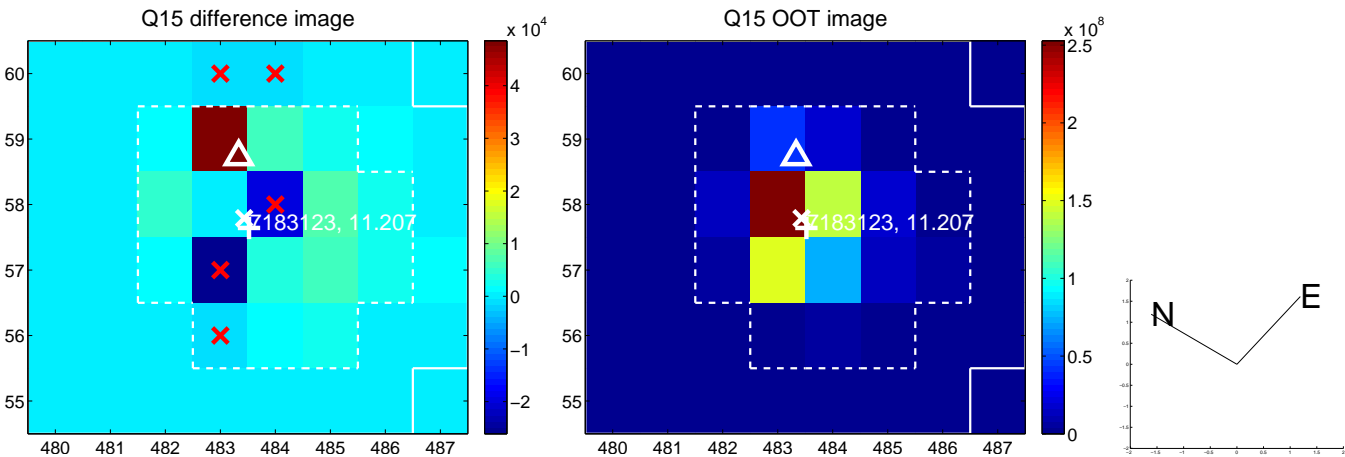
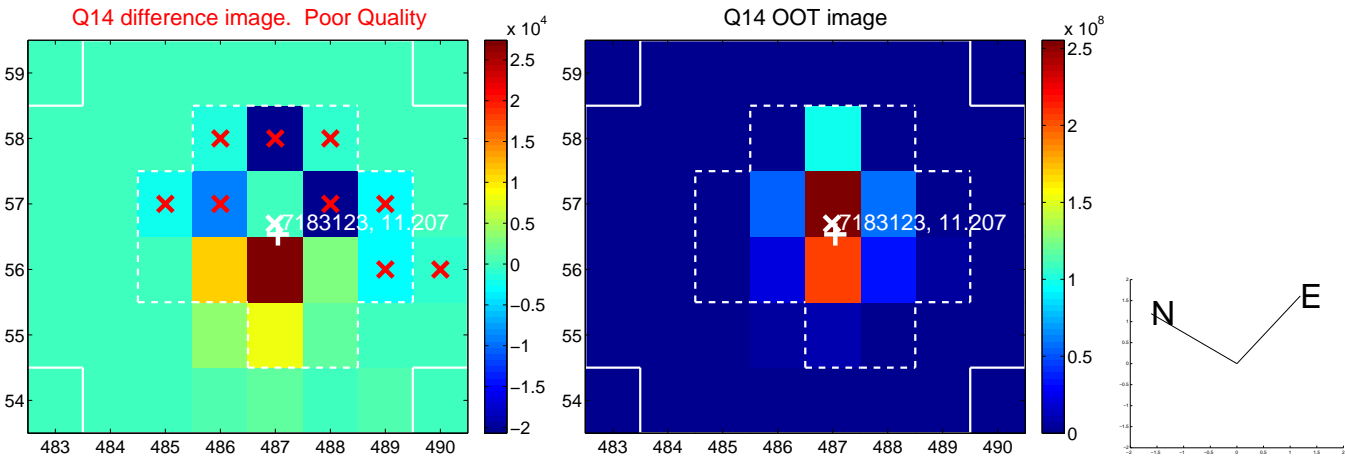
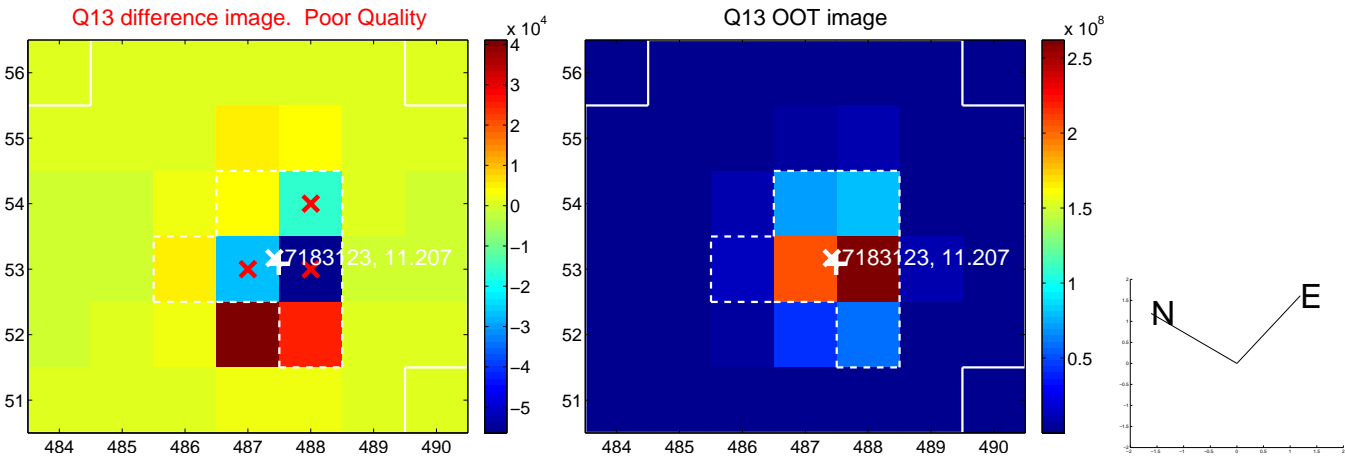




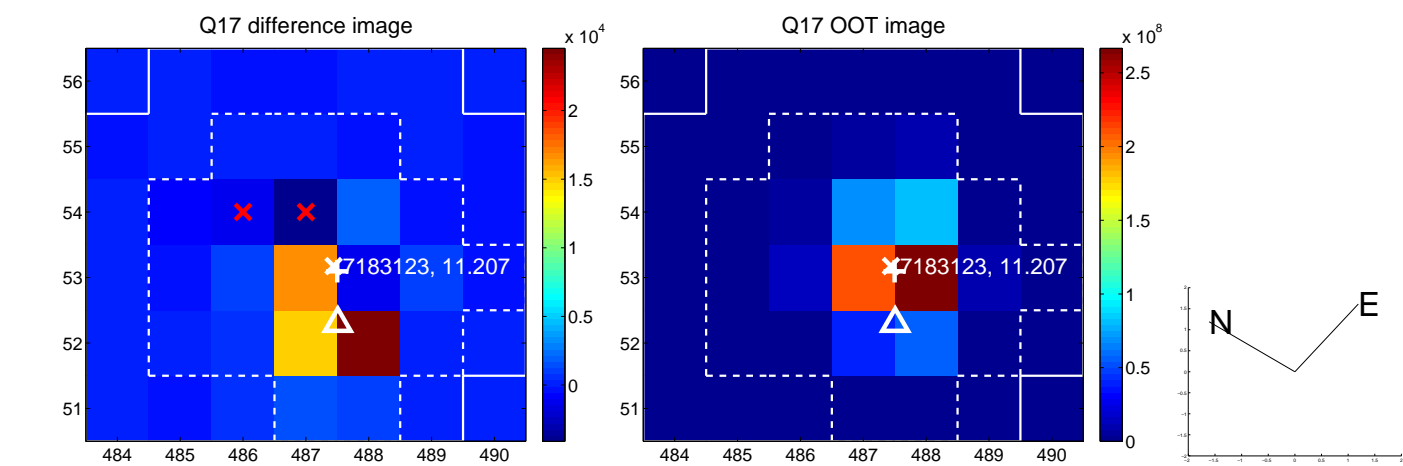
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



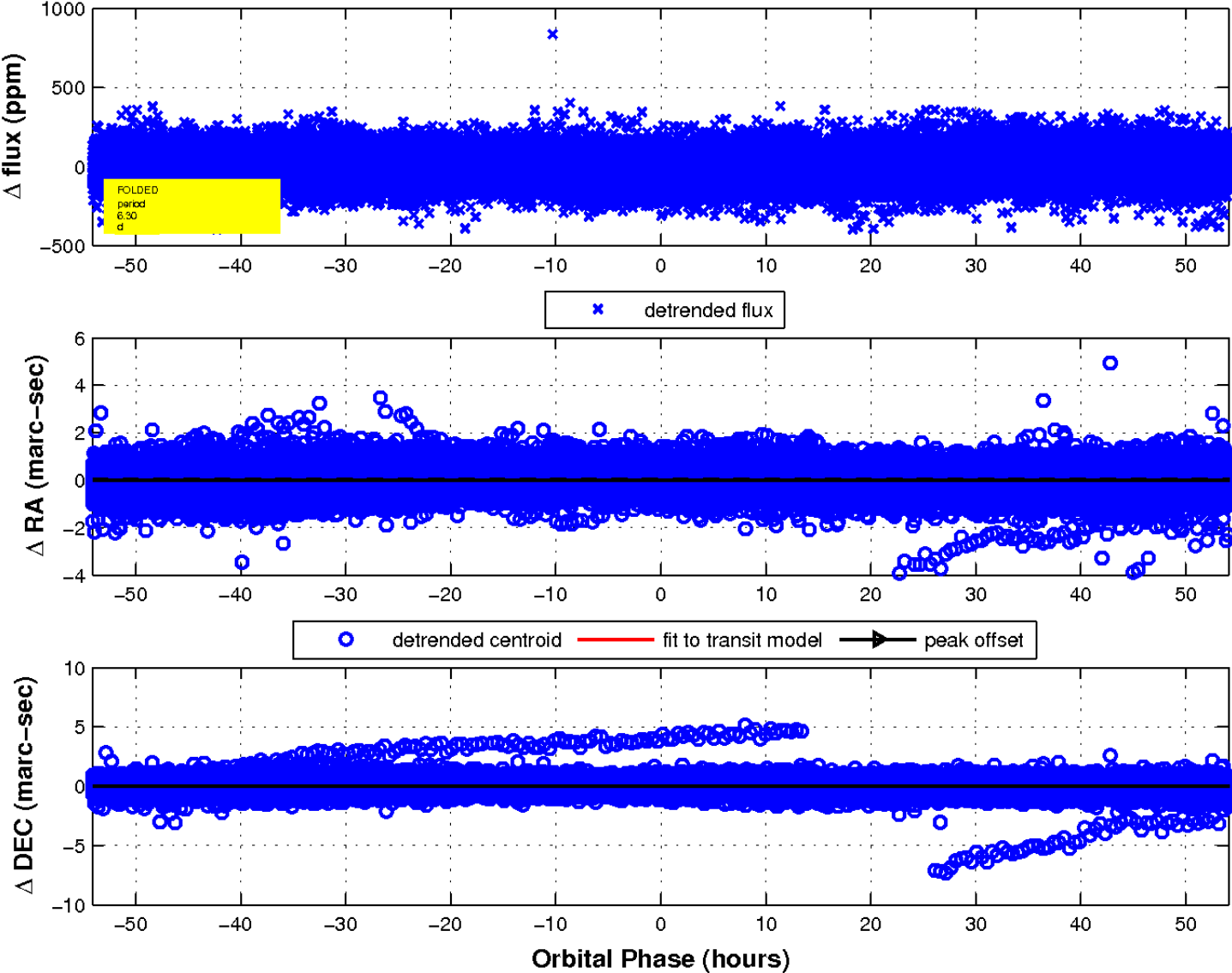
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

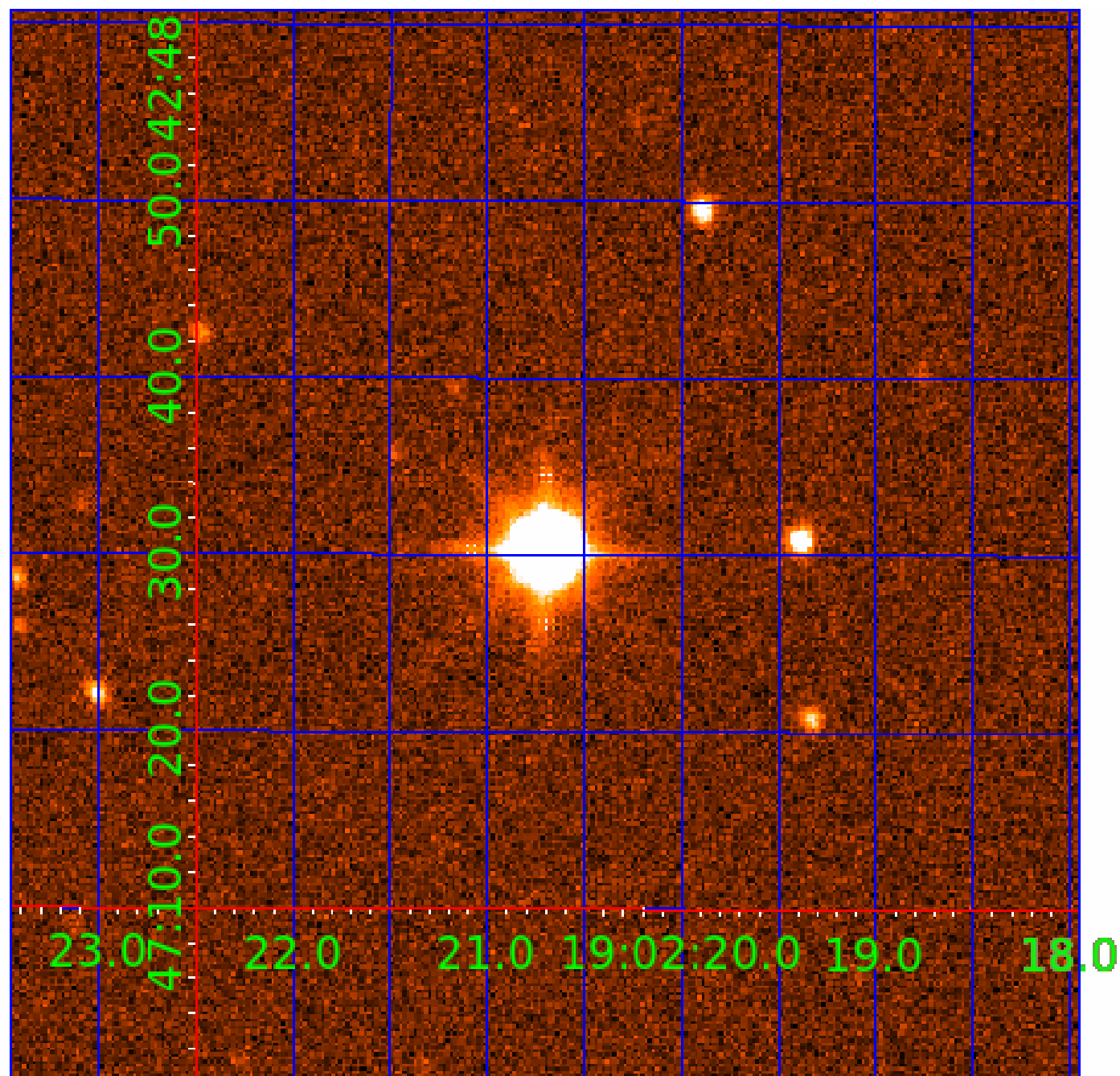


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination





# KIC 007183123

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007183123-01	OBS	No	6.304610	136.618321	15.8	18.038	9.3	7.3	3.21	8220	1.32	5909.28
007183123-02	OBS	No	6.302156	133.562225	0.0	39.295	9.8	0.0	3.21	8220	0.02	5912.35

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007183123-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
007183123-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

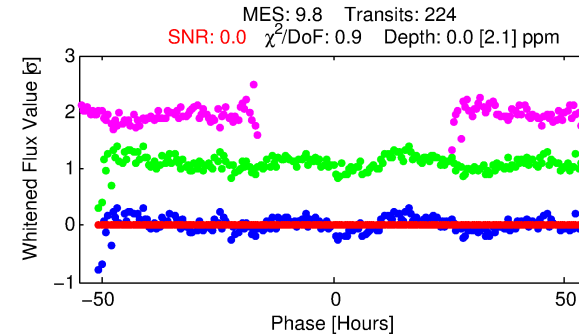
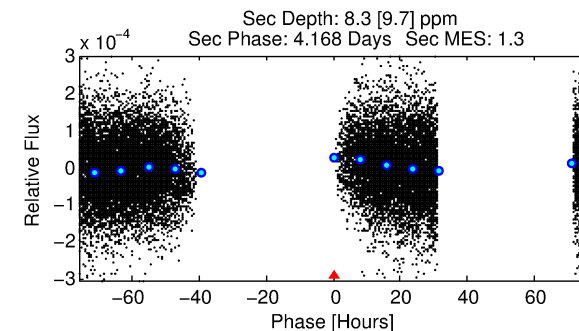
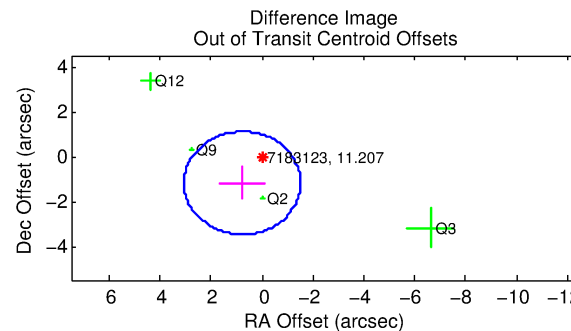
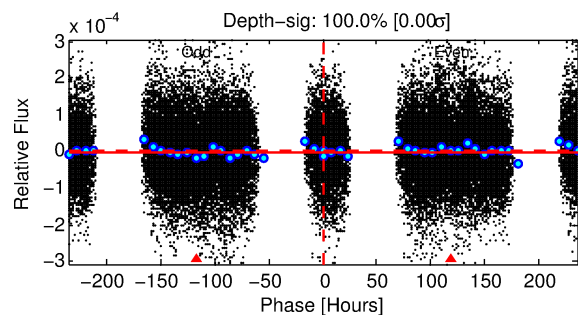
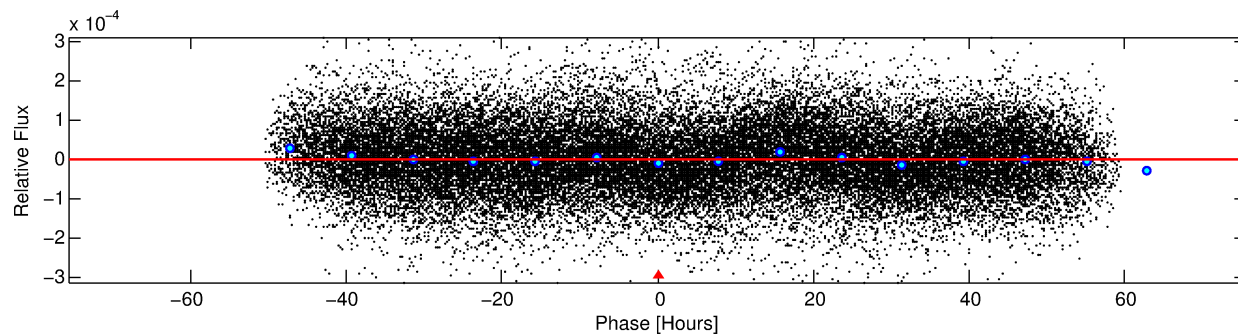
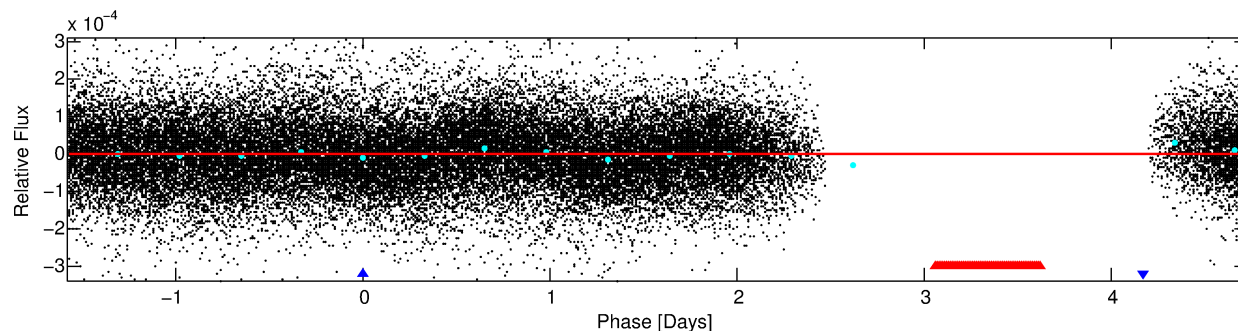
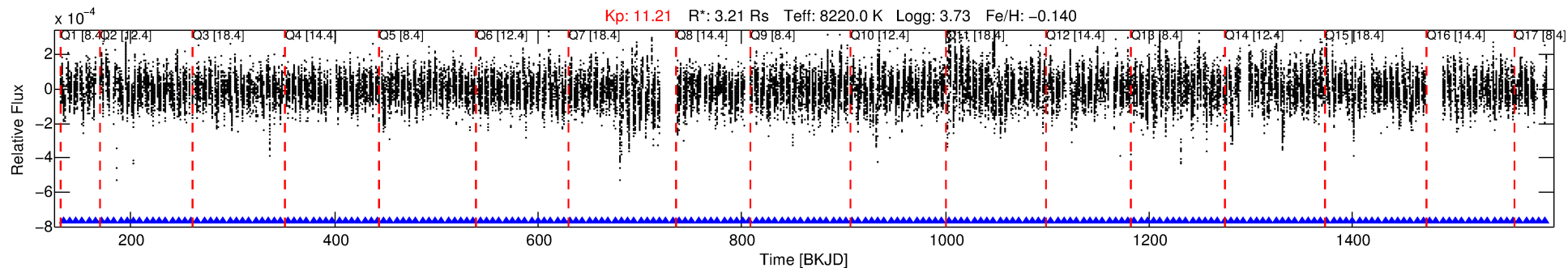
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007183123-02

No Significant Match Found

# DV One-Page Summary

KIC: 7183123 Candidate: 2 of 2 Period: 6.302 d



## DV Fit Results:

Period = 6.30216 [0.27533] d  
Epoch = 133.5622 [31.0052] BKJD  
Rp/R\* = 0.0001 [0.0143]  
a/R\* = 1.35 [45.50]  
b = 0.26 [272.41]  
Seff = 5912.35 [4515.72]  
Teq = 2236 [427] K  
Rp = 0.02 [5.00] Re  
a = 0.0845 [0.0388] AU  
Ag = 66651.93 [30069342.88] [0.00 $\sigma$ ]  
Teffp = 55547 [6264953] K [0.01 $\sigma$ ]

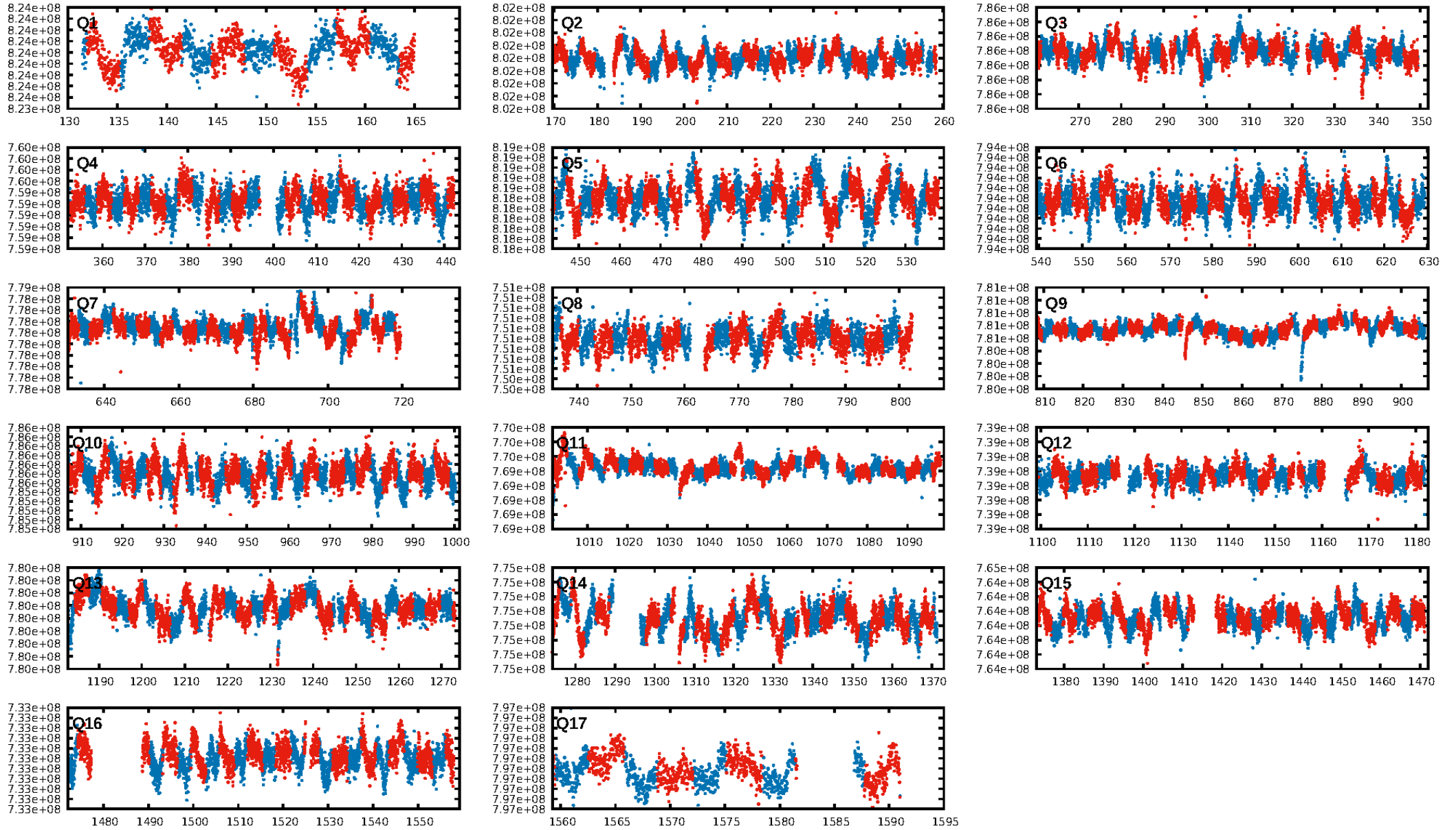
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.1% [0.00 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [214/214]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 1.417 arcsec [1.86 $\sigma$ ]  
KicOffset-rm: 1.770 arcsec [1.56 $\sigma$ ]  
OotOffset-st: 1/1/1/1 [4]  
KicOffset-st: 1/1/1/1 [4]  
DiffImageQuality-fgm: 0.25 [1/4]  
DiffImageOverlap-fno: 0.53 [9/17]

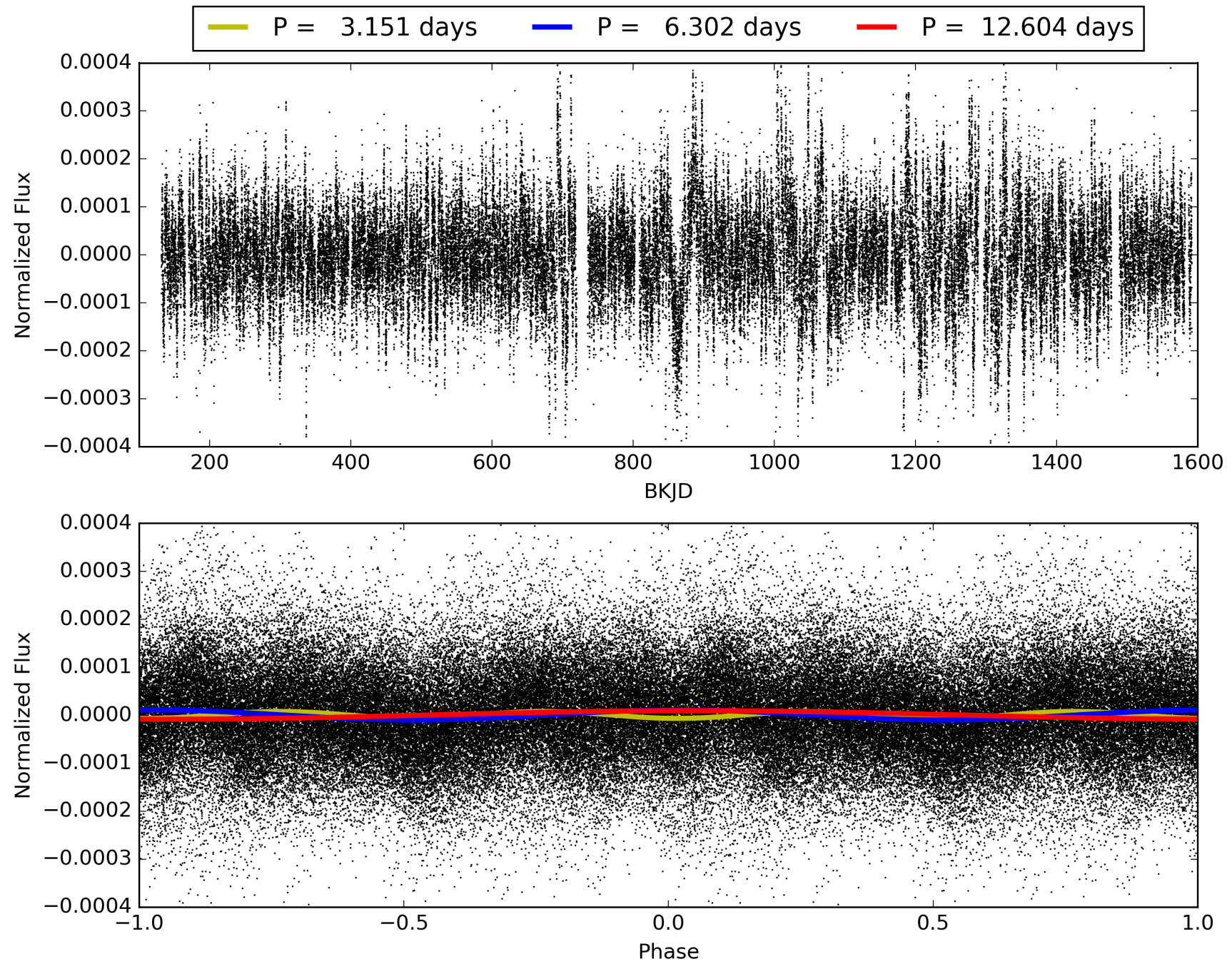
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:42:23 Z

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

# TCE 007183123-02, PDC Light Curves



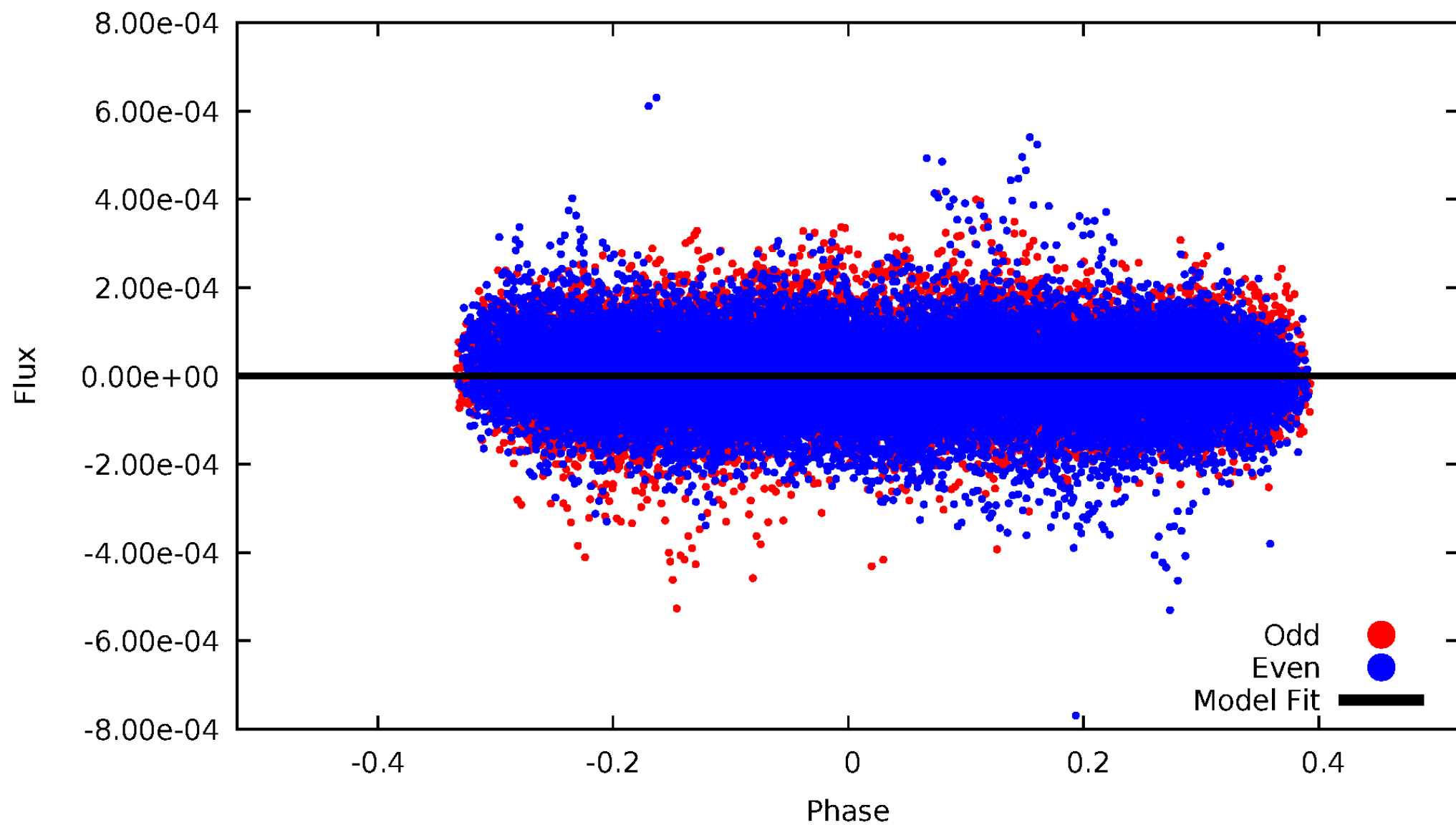
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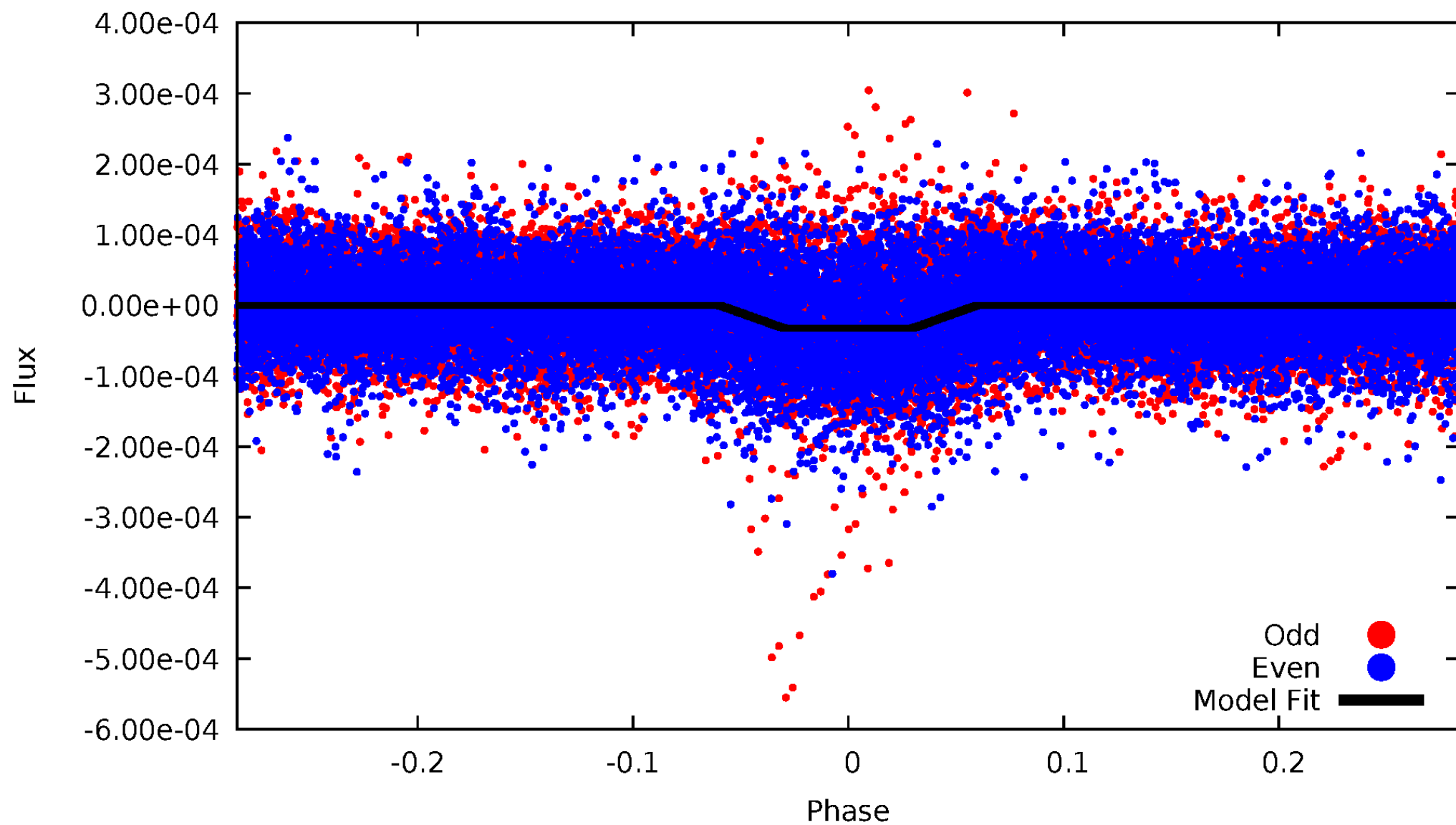
# DV Odd/Even

TCE 007183123-02



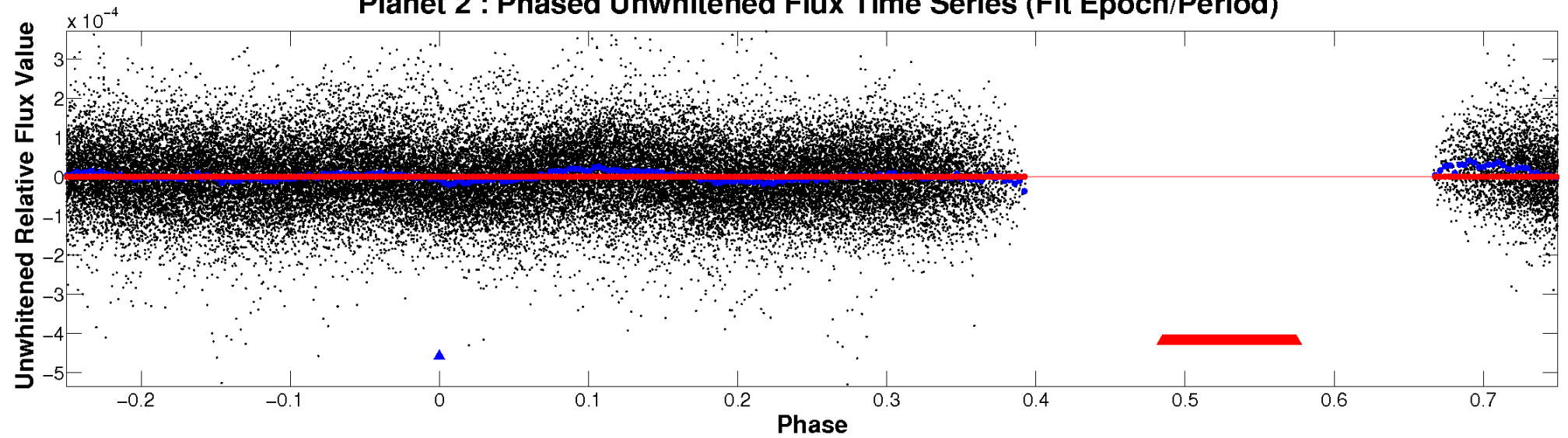
# ALT Odd/Even

TCE 007183123-02

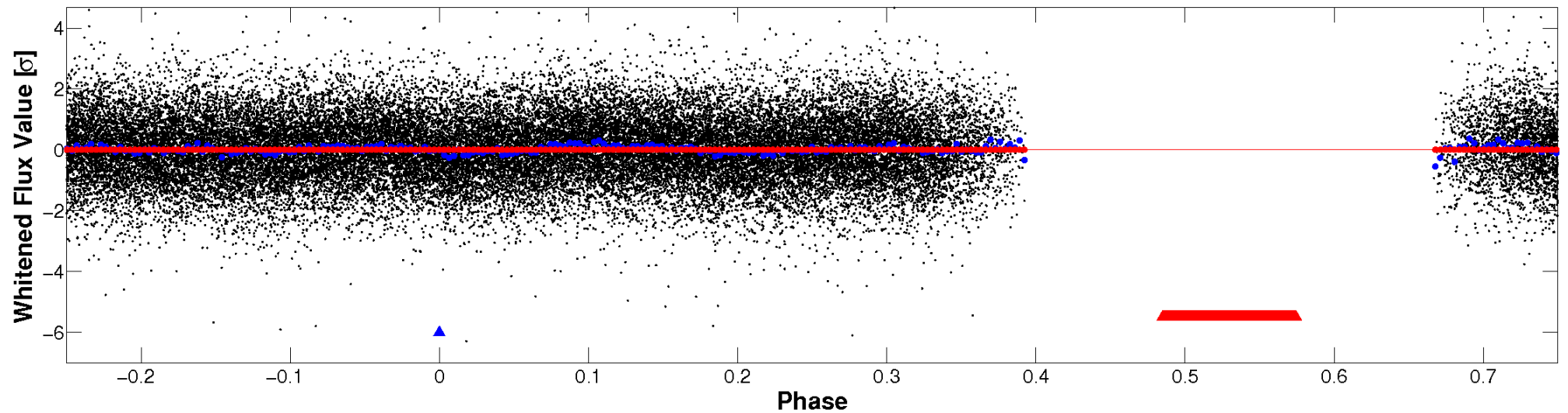


# Non-Whitened Vs. Whitened Light Curve

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

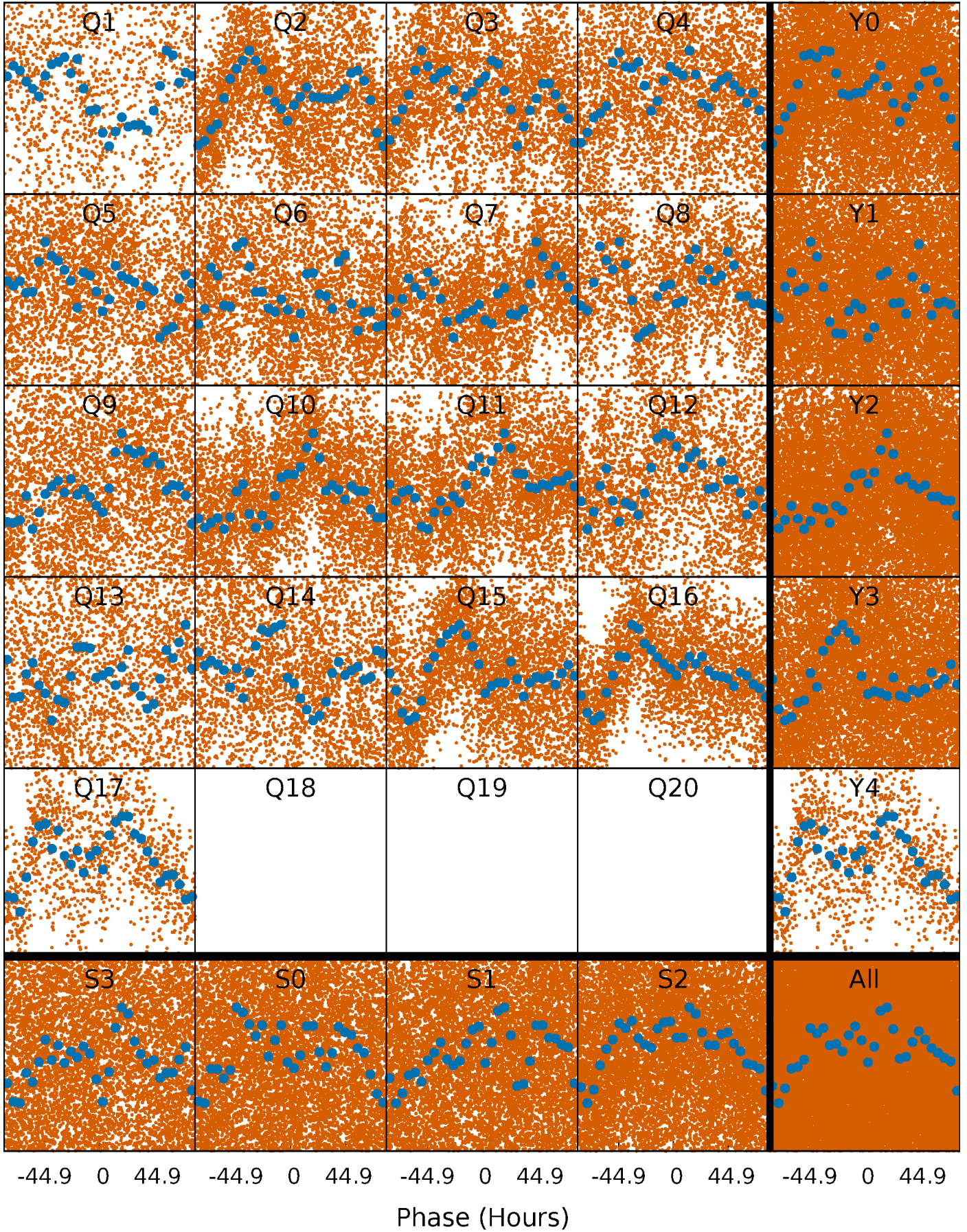


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

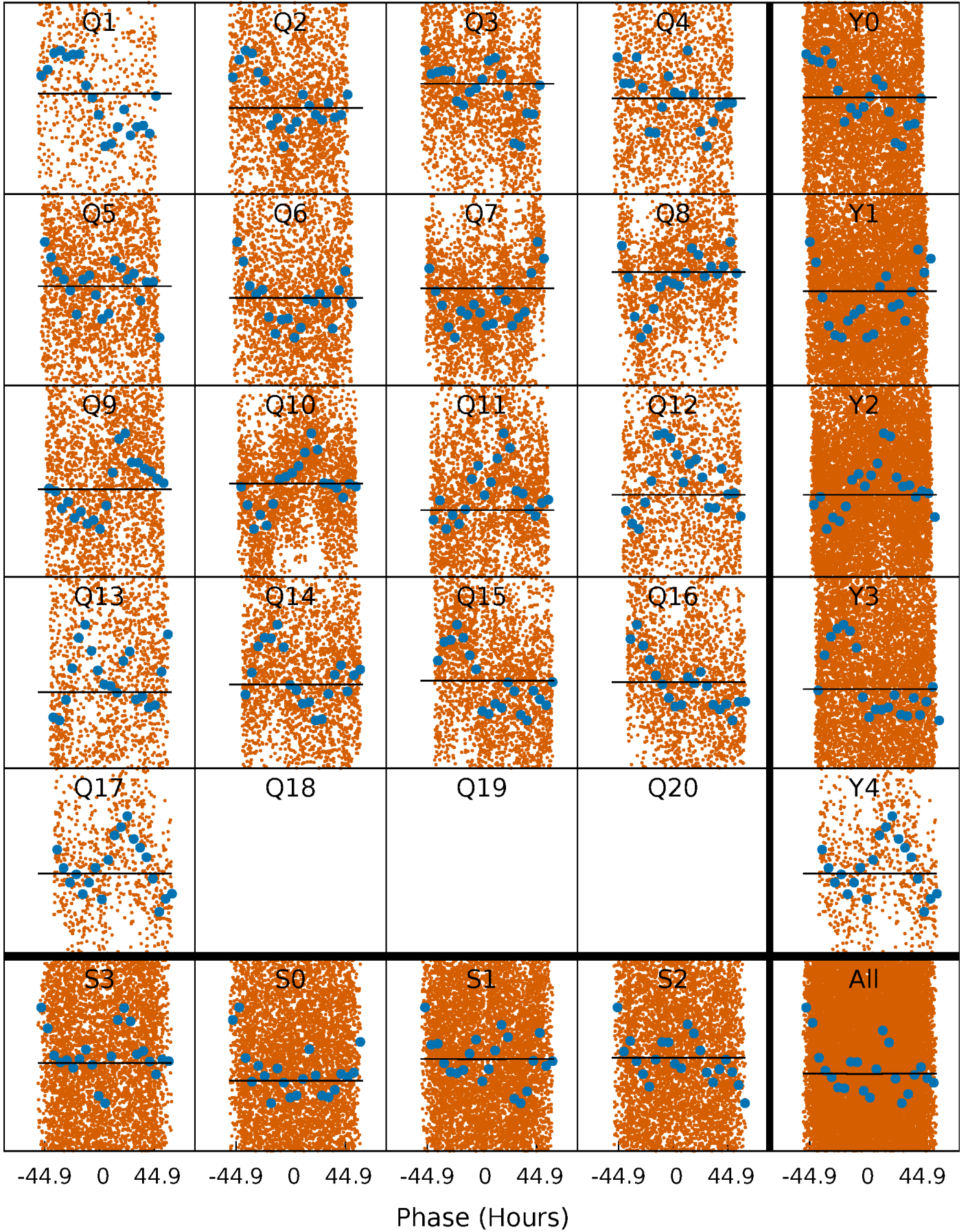
TCE 007183123-02 P= 6.302156 Days  $T_0=133.562225$  (BKJD)





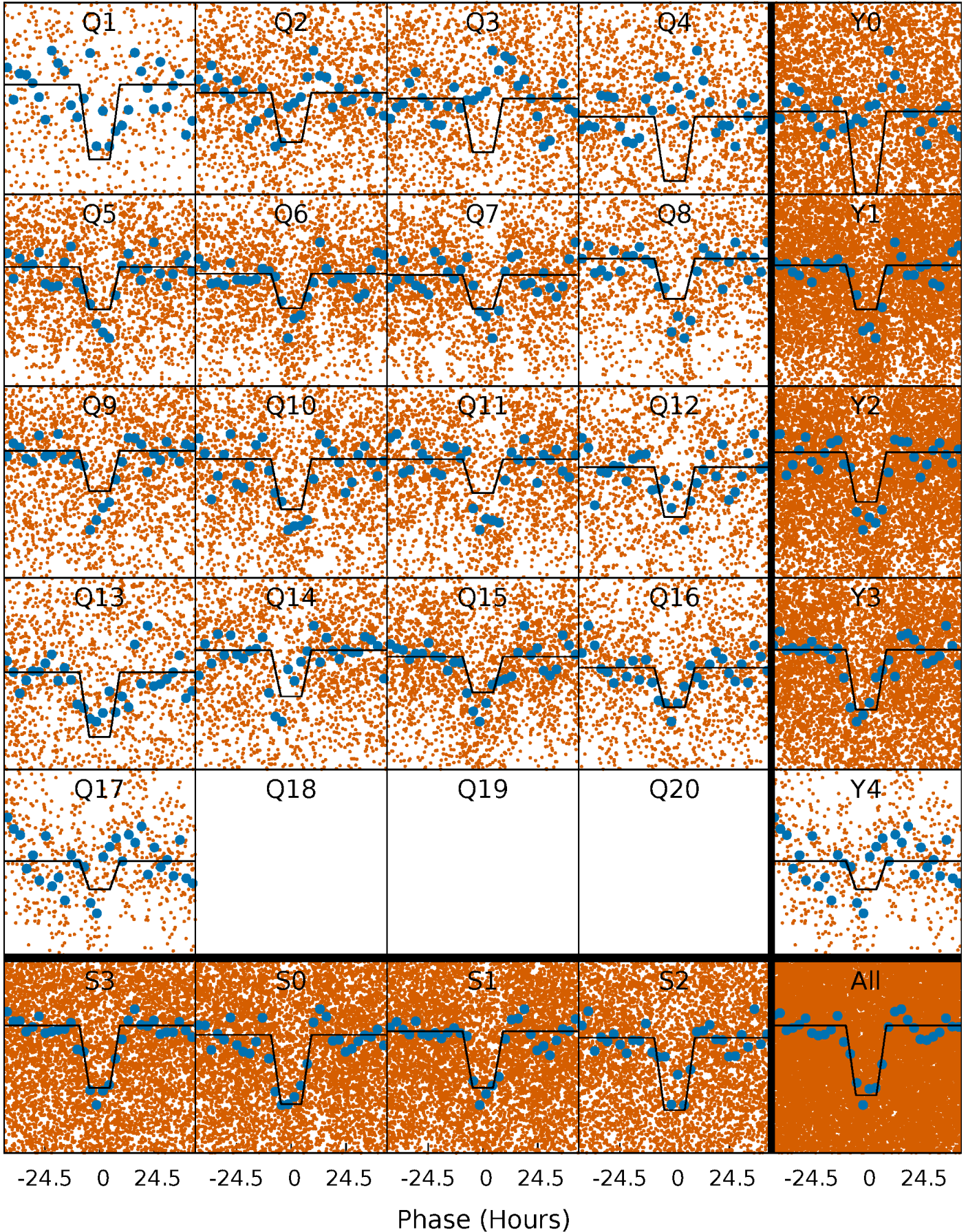
# DV Quarter-Phased Transit Curves

TCE 007183123-02   P= 6.302156 Days    $T_0=133.562225$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007183123-02 P= 6.302888 Days  $T_0=133.622384$  (BKJD)

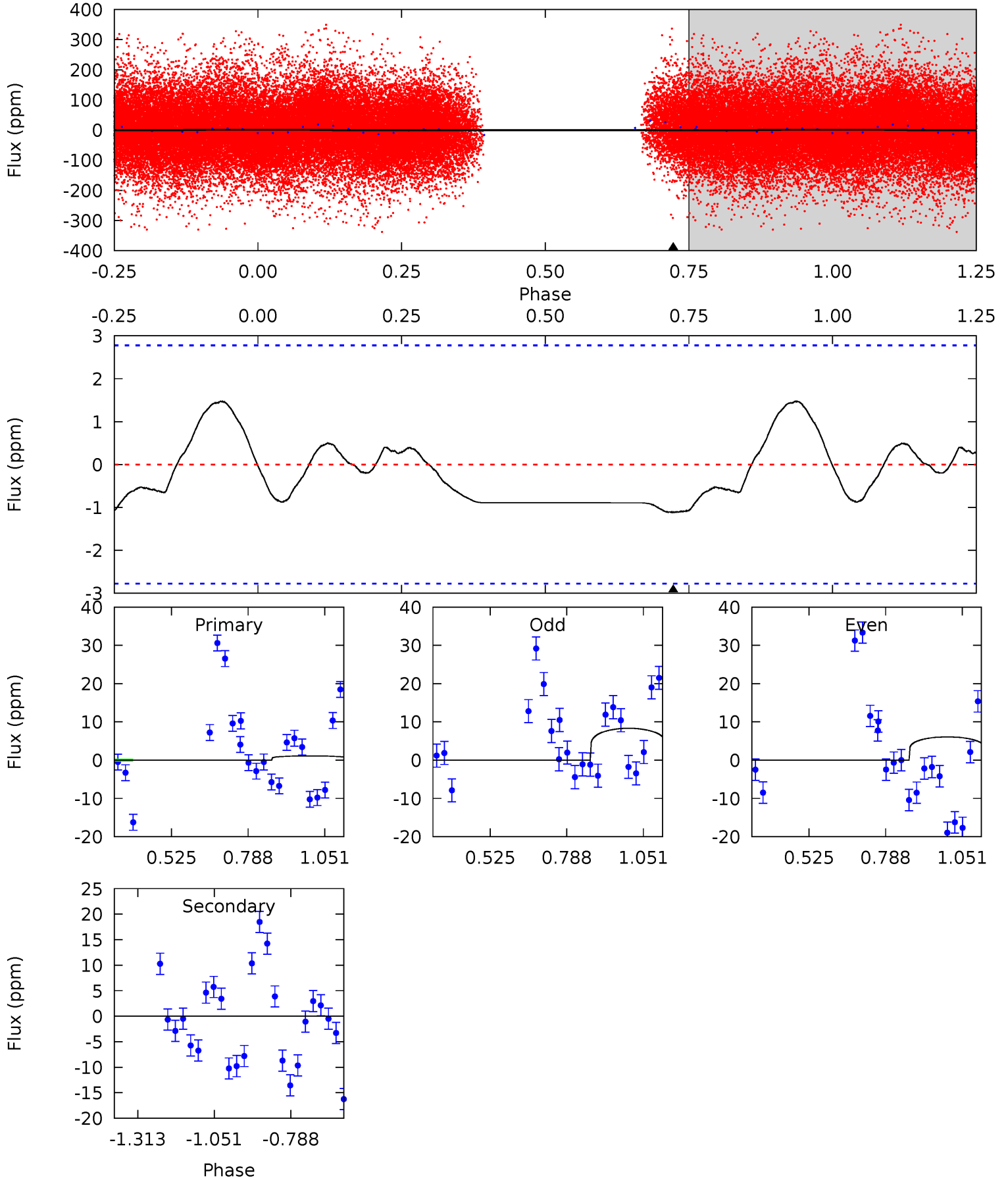




# DV Model-Shift Uniqueness Test

007183123-02, P = 6.302156 Days, E = 127.260069 Days

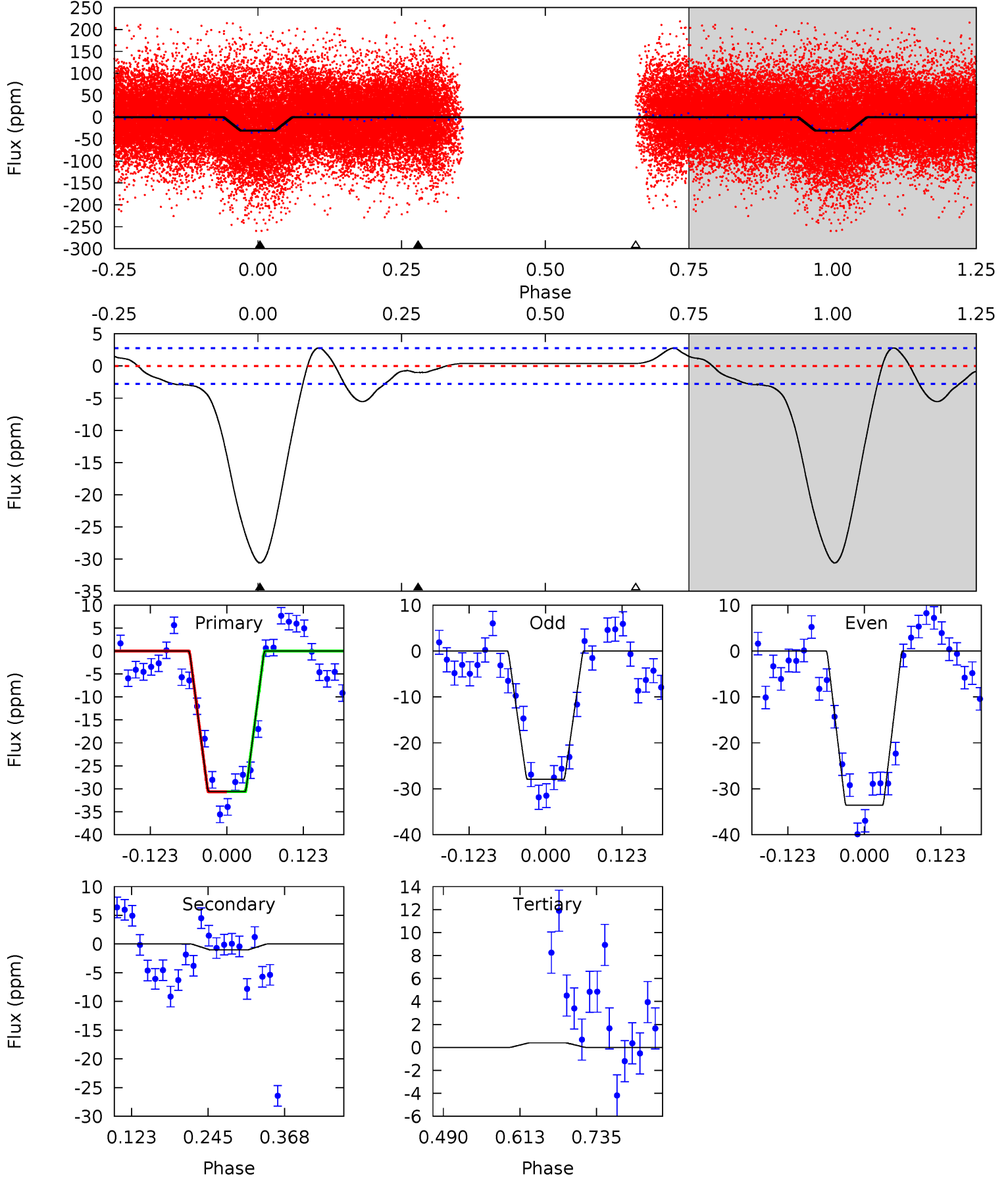
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.74	0	0	0	4.36	1.12	0.64	1.74	1.74	0	0	1.86	2.47	0.57	0.14



# Alt Model-Shift Uniqueness Test

007183123-02, P = 6.302888 Days, E = 127.319496 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
49.8	1.67	-0.64	0	4.52	1.54	3.17	50.4	49.8	2.31	1.67	4.60	0.97	0.08	0.03



### Stellar Parameters For KIC 007183123

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8220^{+229}_{-343}$	$3.731^{+0.440}_{-0.110}$	$-0.140^{+0.250}_{-0.350}$	$3.214^{+0.804}_{-1.493}$	$2.031^{+0.388}_{-0.474}$	$0.086^{+0.325}_{-0.035}$
	+3%/-4%	+12%/-3%	+179%/-250%	+25%/-46%	+19%/-23%	+377%/-40%
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 007183123-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1$	$3.09^{+3.52}_{-2.27}$	$3019^{+235}_{-351}$	$-3045^{+5954}_{-493}$	$0.001^{+0.530}_{-0.480}$
Alt.	$-1 \pm 1$	$3.77^{+3.94}_{-2.66}$	$3003^{+248}_{-355}$	$-2435^{+6675}_{-603}$	$0.234^{+2.497}_{-0.195}$

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

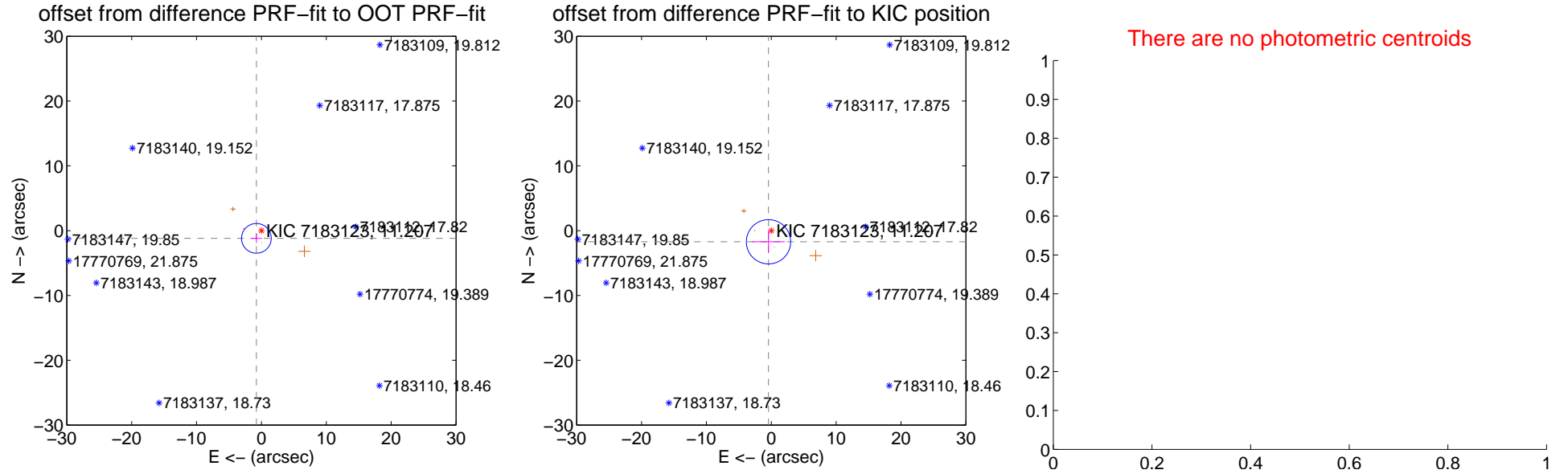
## DV Centroid Data

Supplemental centroid analysis for 007183123-02. **Kepler magnitude: 11.21.** Transit SNR 0.00

**There are 1 quarters with good PRF difference image offsets**

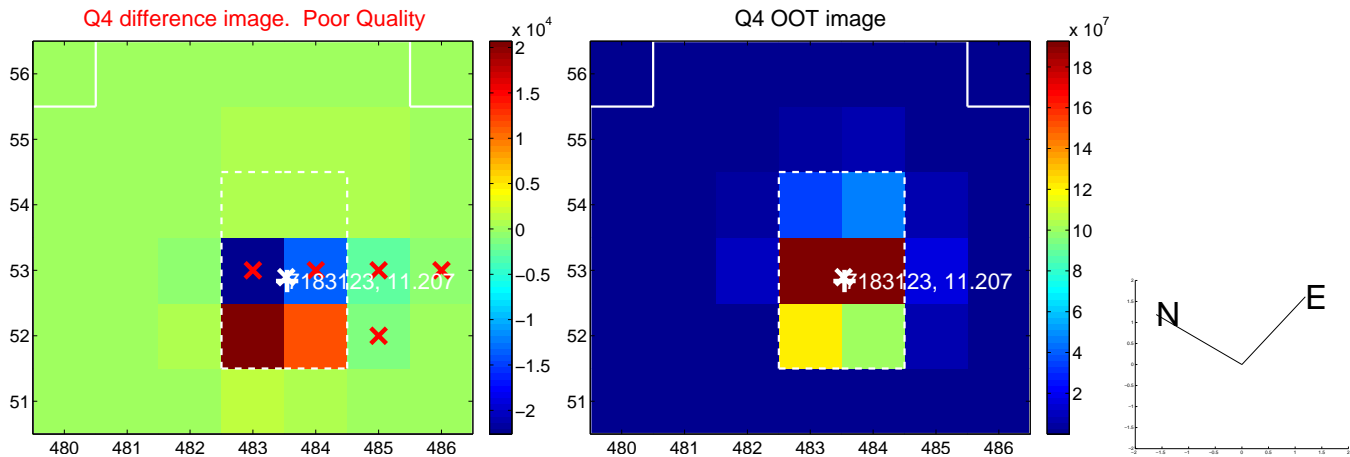
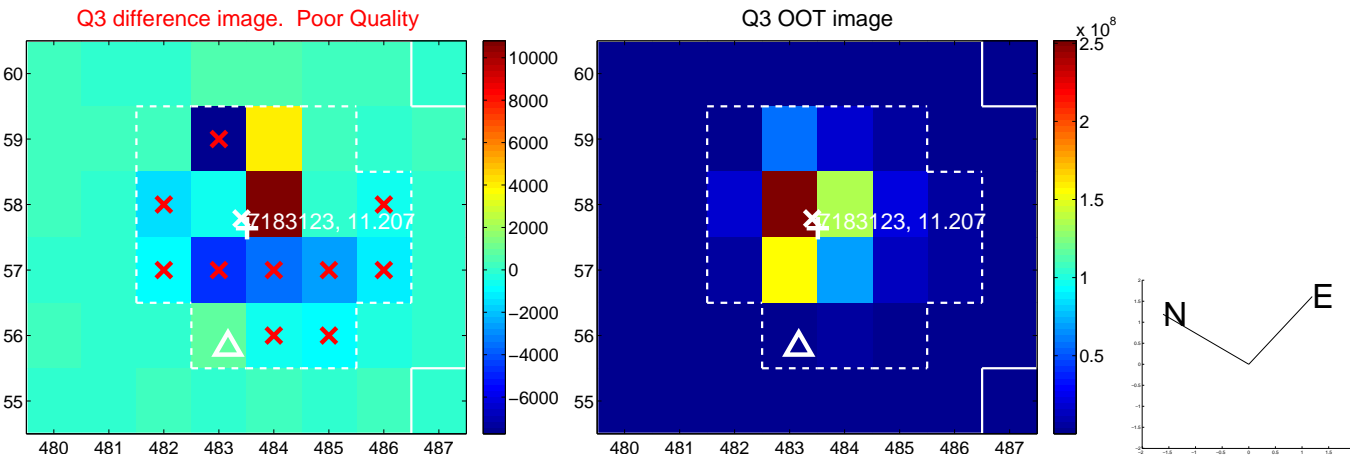
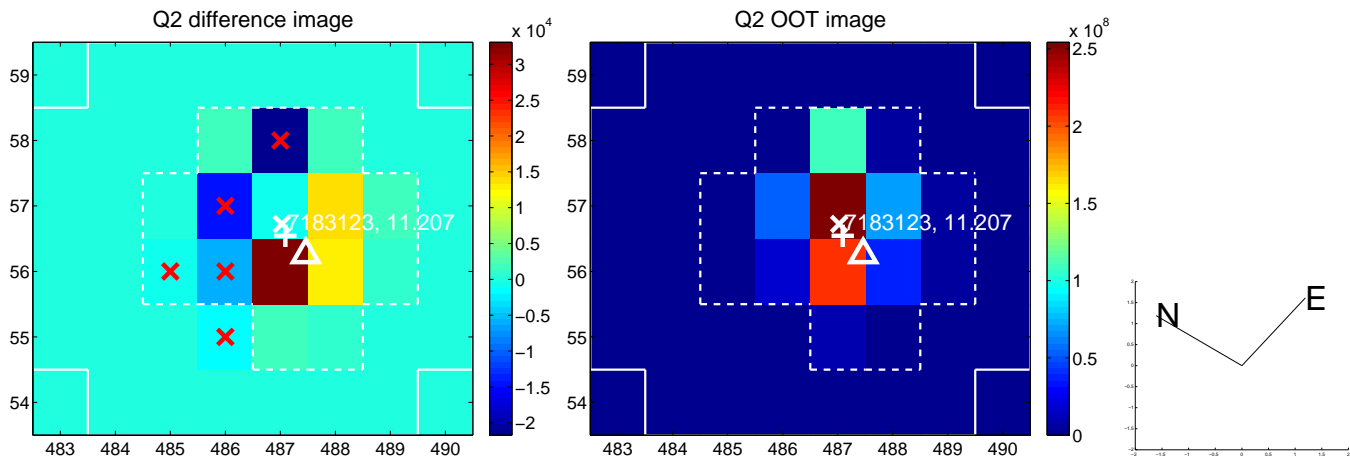
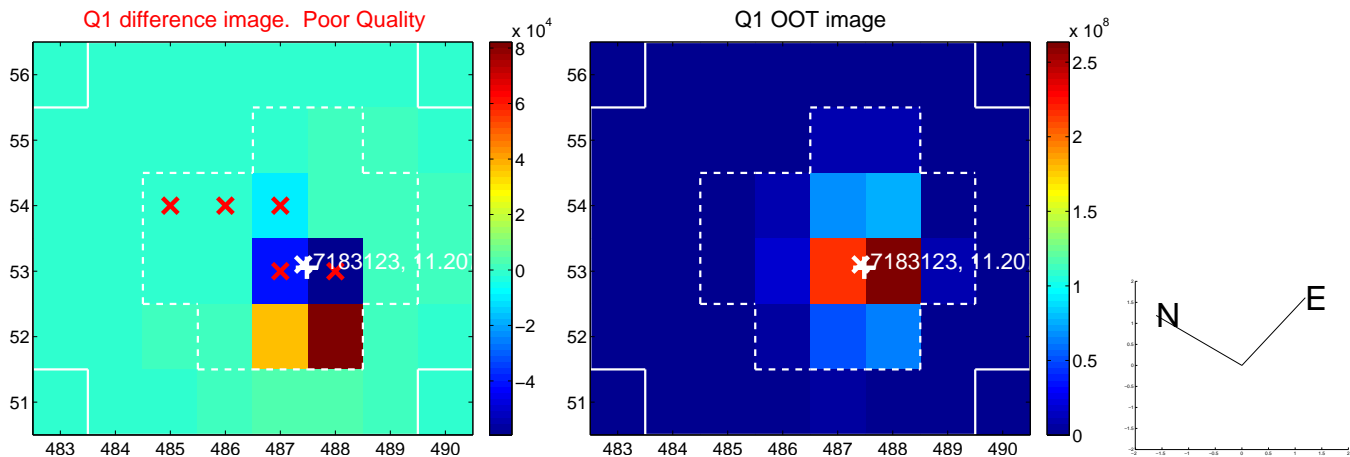
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.417 \pm 0.764$	1.86	$0.777 \pm 0.873$	$-1.186 \pm 0.712$
PRF-fit source offset from KIC position	$1.770 \pm 1.138$	1.56	$0.429 \pm 2.543$	$-1.717 \pm 1.743$
photometric centroid source offset	—	—	—	—

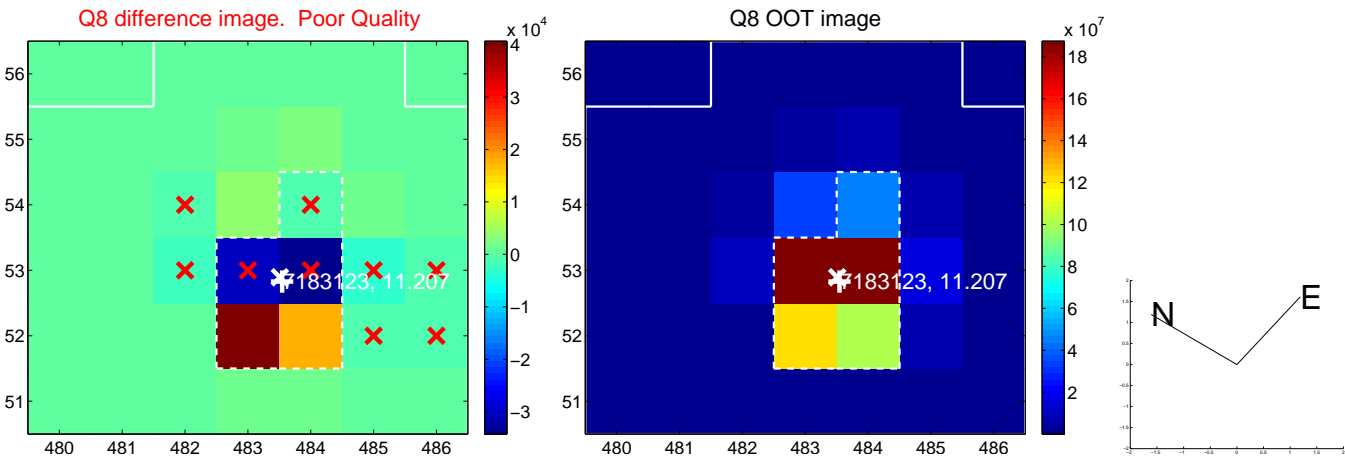
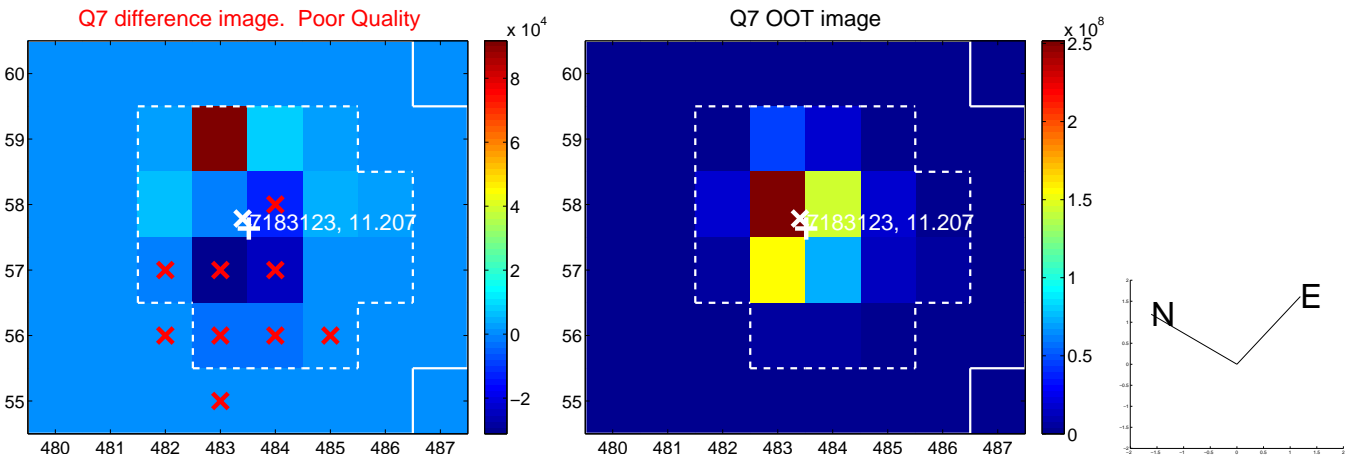
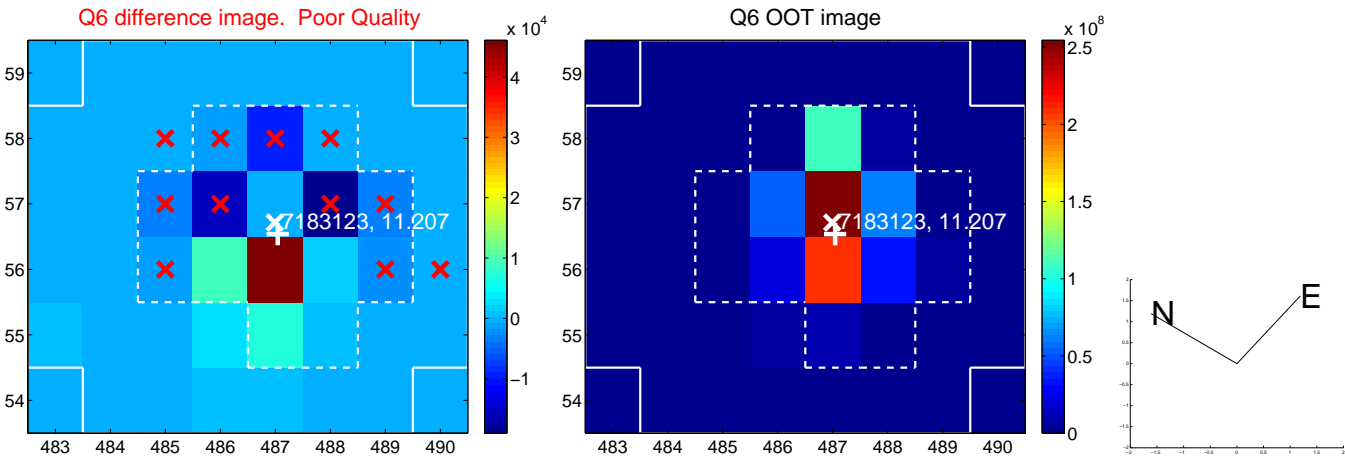
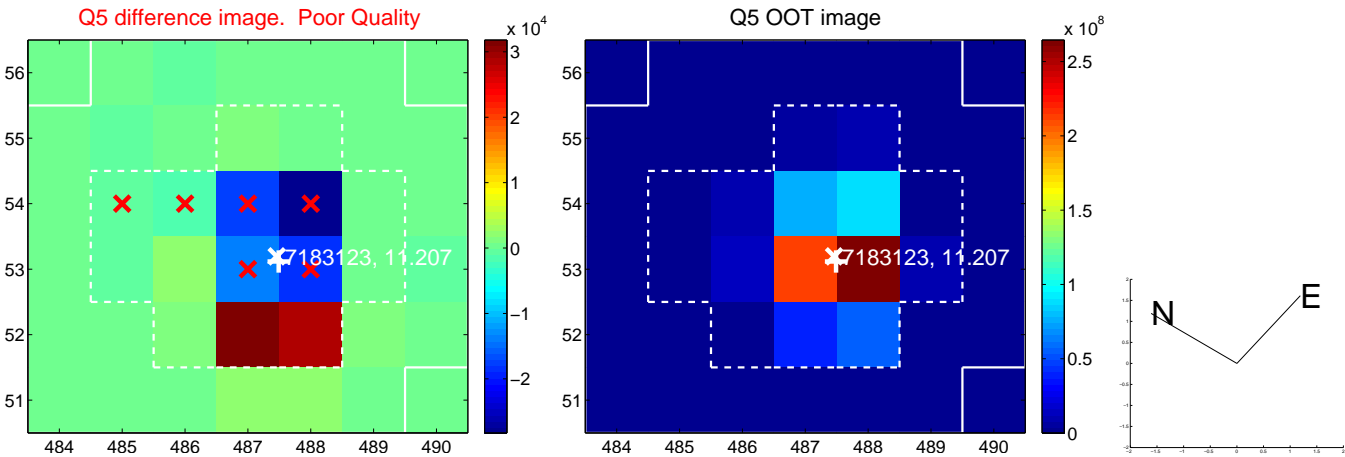


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

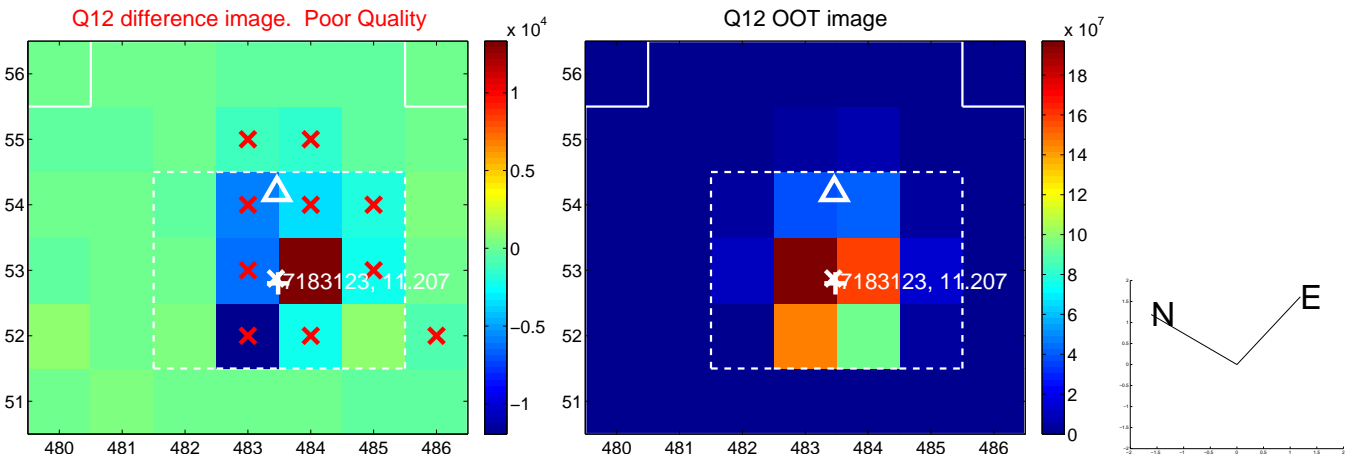
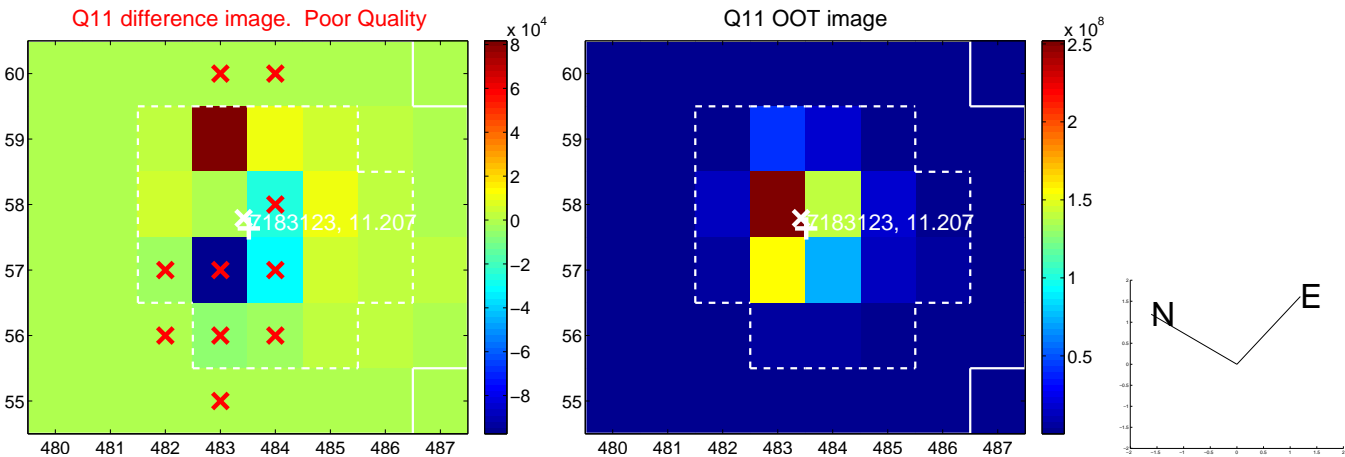
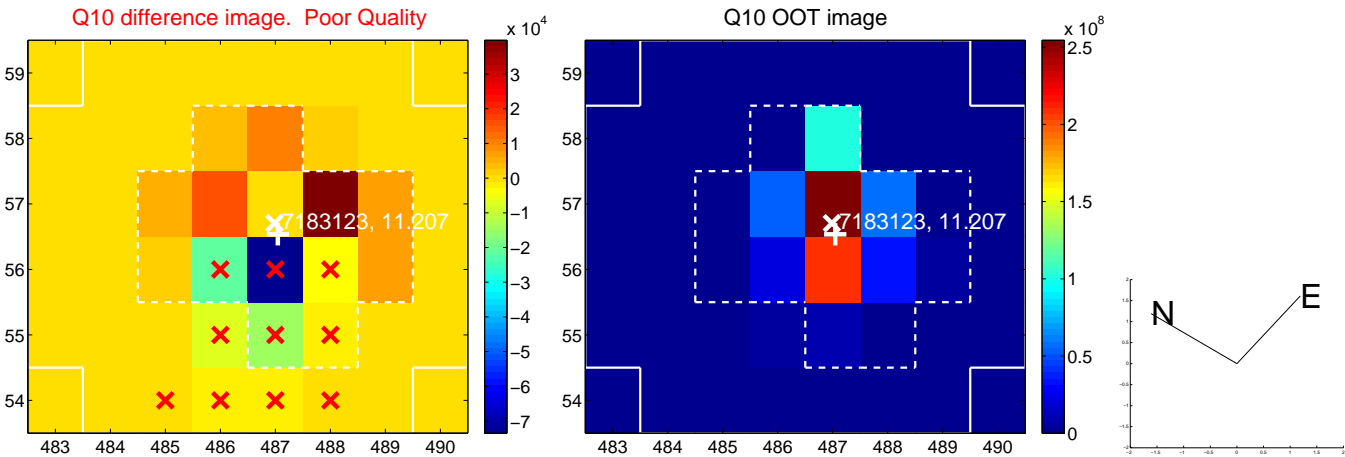
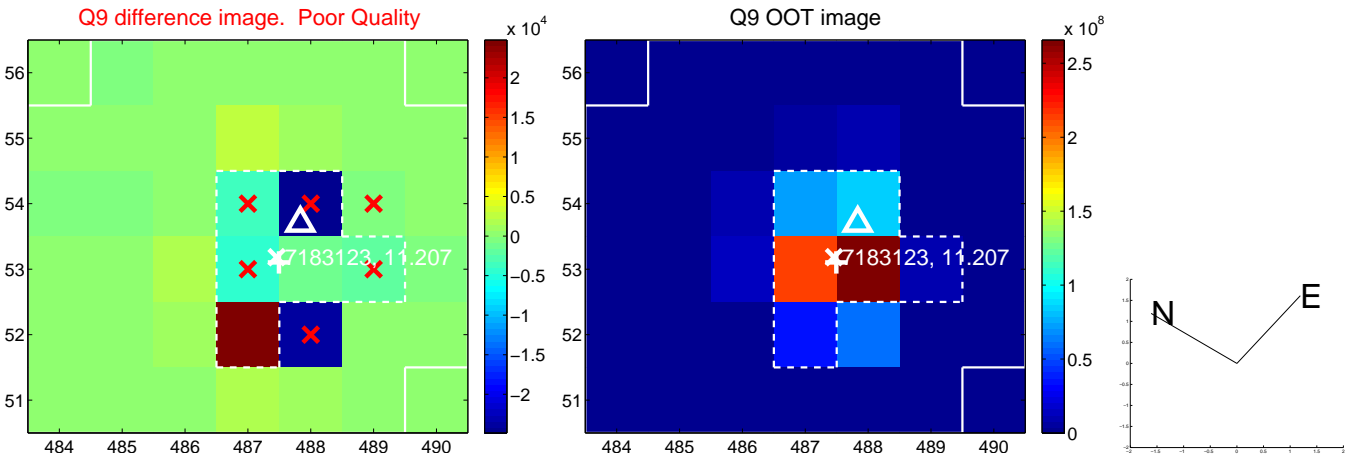


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

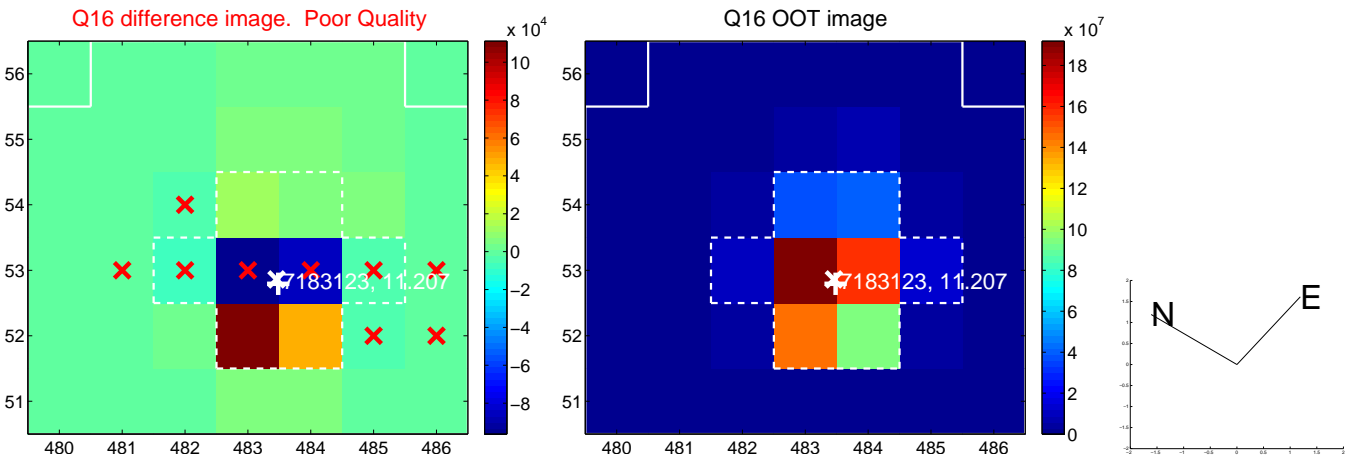
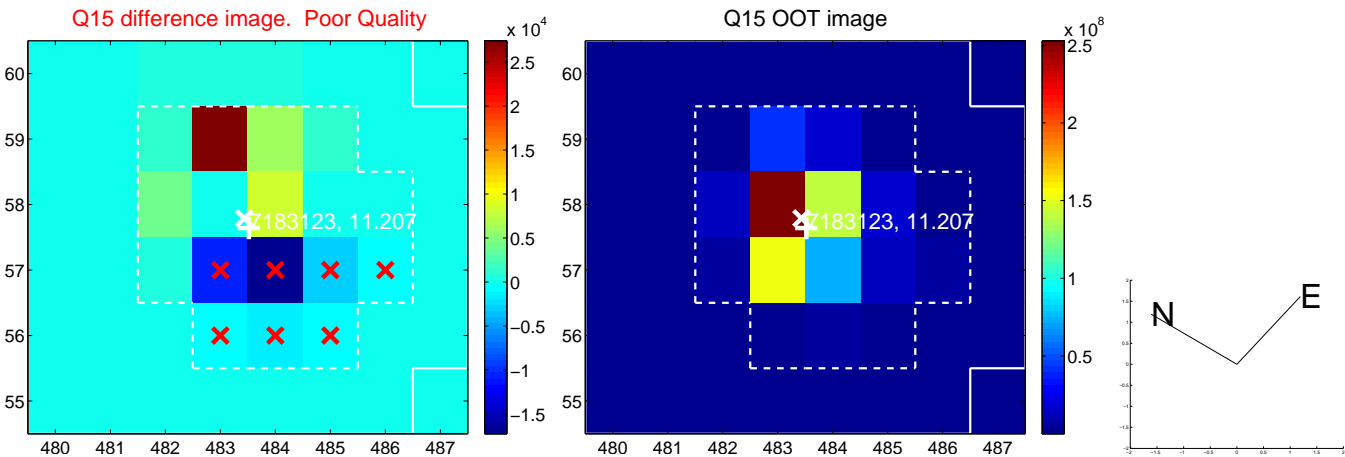
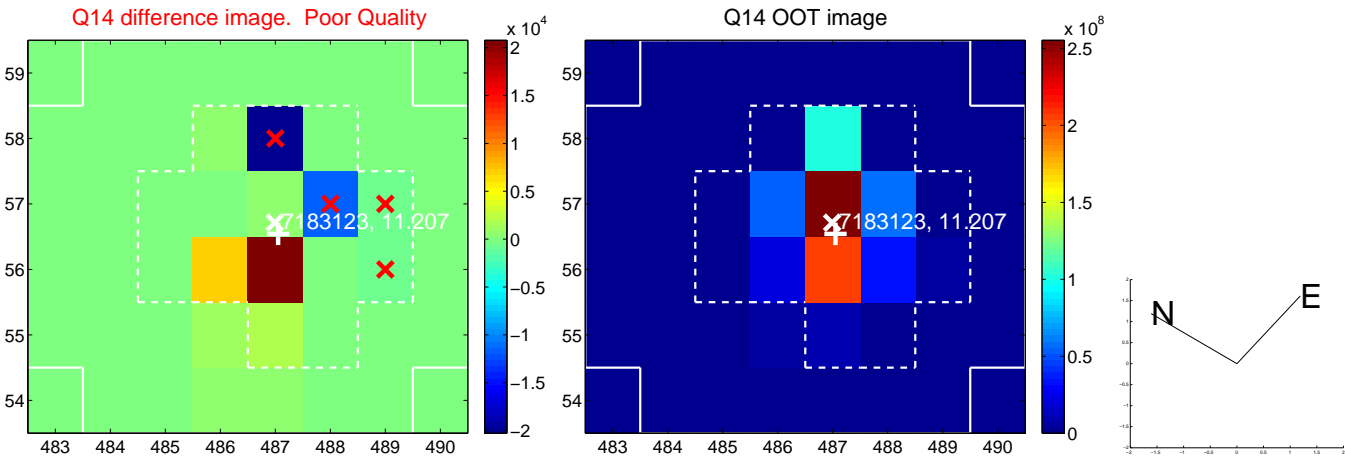
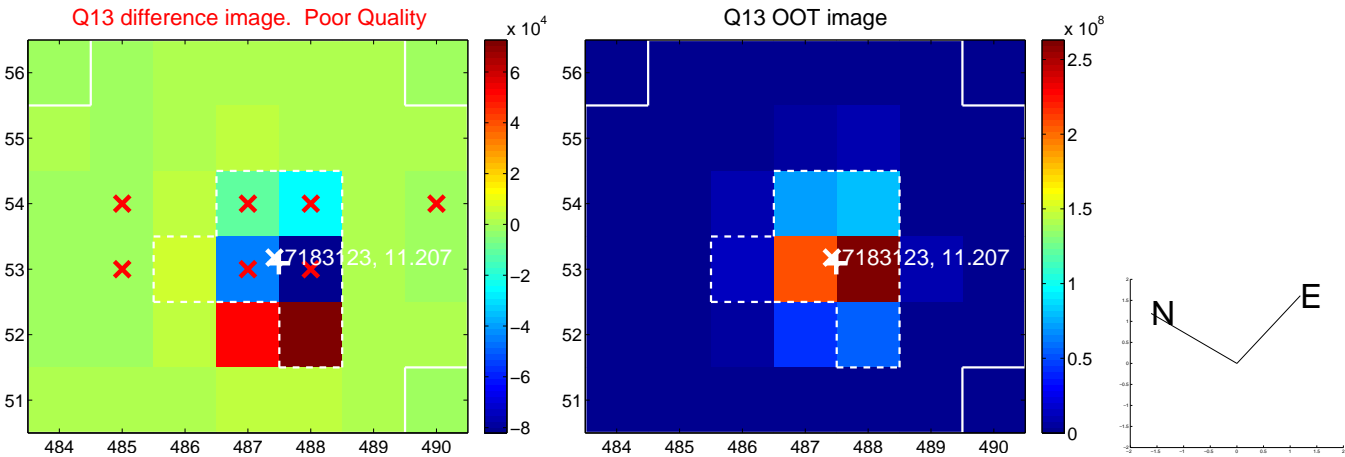




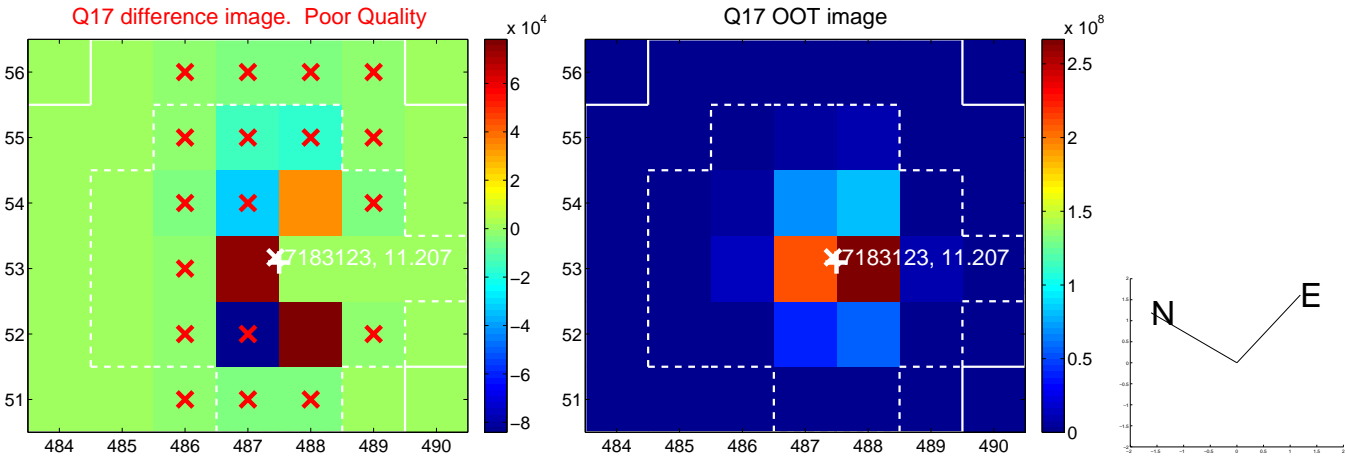
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



folded centroid time series figure for this object.

UKIRT Image

Declination

