

# KIC 008818095

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008818095-01	OBS	No	1.087881	132.519090	6.4	7.351	8.3	4.9	1.06	5952	0.29	3131.79
008818095-02	OBS	No	36.309302	155.333361	142.7	2.589	9.4	7.1	1.06	5952	1.46	29.14
008818095-03	OBS	No	307.964099	219.876775	185.9	8.651	8.8	8.9	1.06	5952	1.70	1.69

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008818095-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST
008818095-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008818095-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

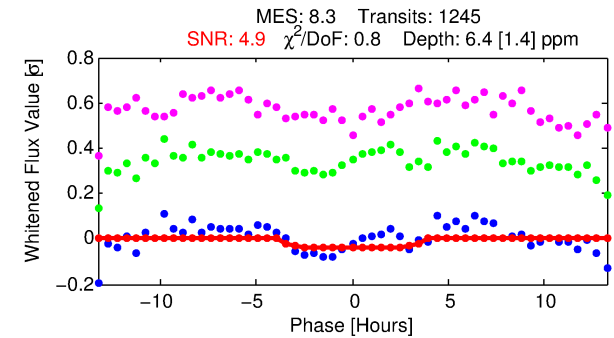
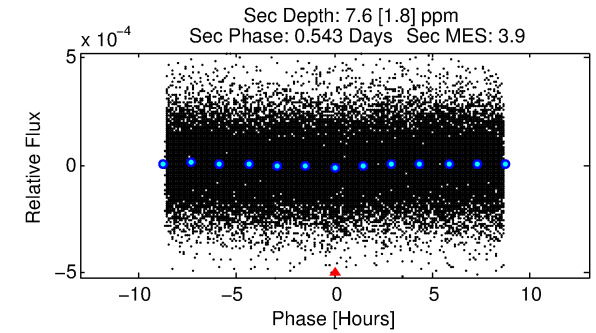
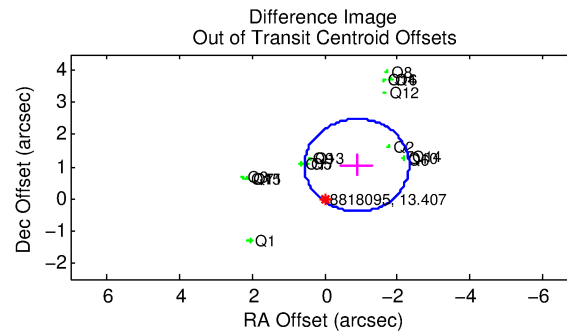
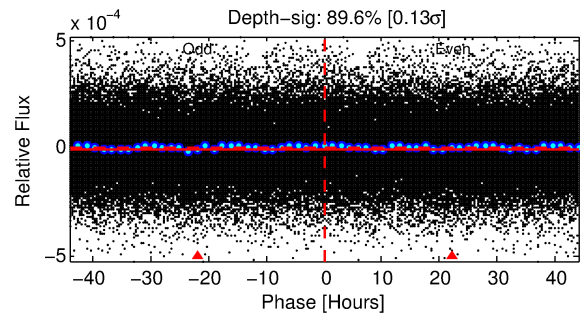
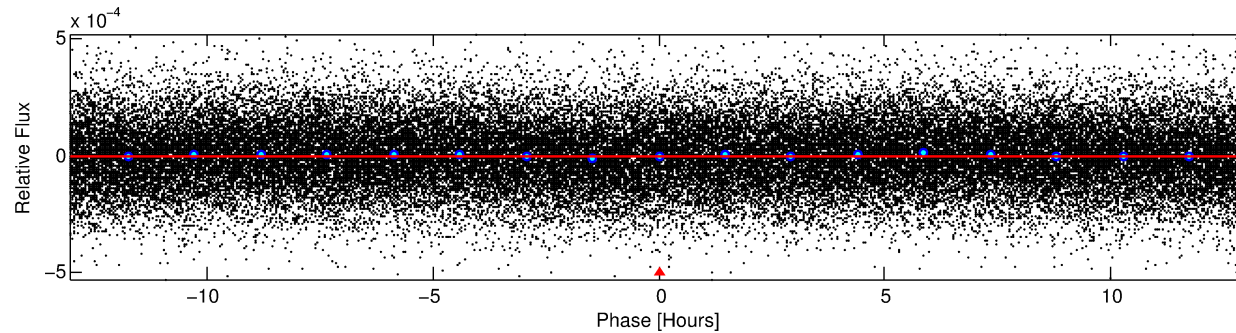
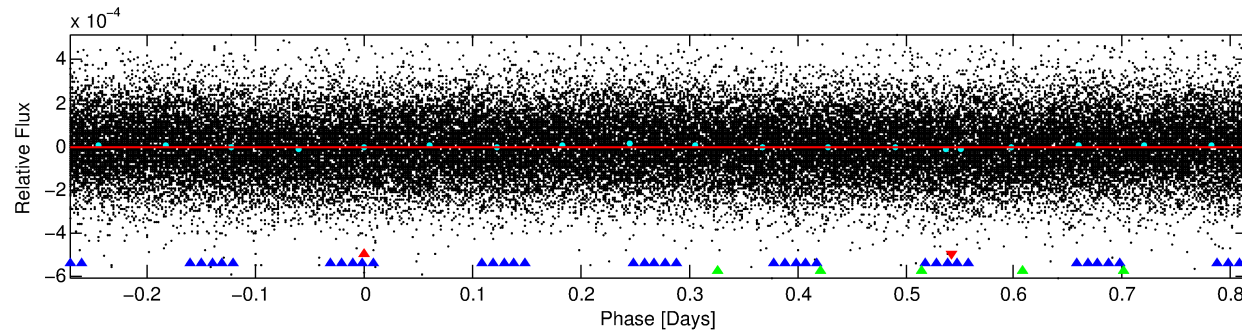
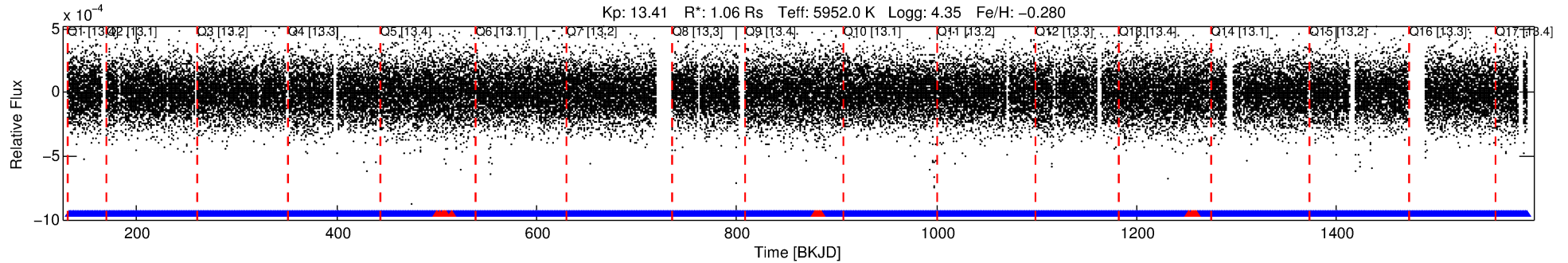
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008818095-01

No Significant Match Found

# DV One-Page Summary

KIC: 8818095 Candidate: 1 of 3 Period: 1.088 d



## DV Fit Results:

Period = 1.08788 [0.00004] d  
Epoch = 132.5191 [0.0147] BKJD  
Rp/R\* = 0.0025 [0.0027]  
a/R\* = 1.13 [1.25]  
b = 0.78 [2.63]  
Seff = 3131.79 [1131.25]  
T<sub>eq</sub> = 1908 [172] K  
Rp = 0.30 [0.32] R<sub>e</sub>  
a = 0.0201 [0.0047] AU  
Ag = 19.58 [42.16] [0.44 $\sigma$ ]  
T<sub>eff</sub> = 6204 [3302] K [1.30 $\sigma$ ]

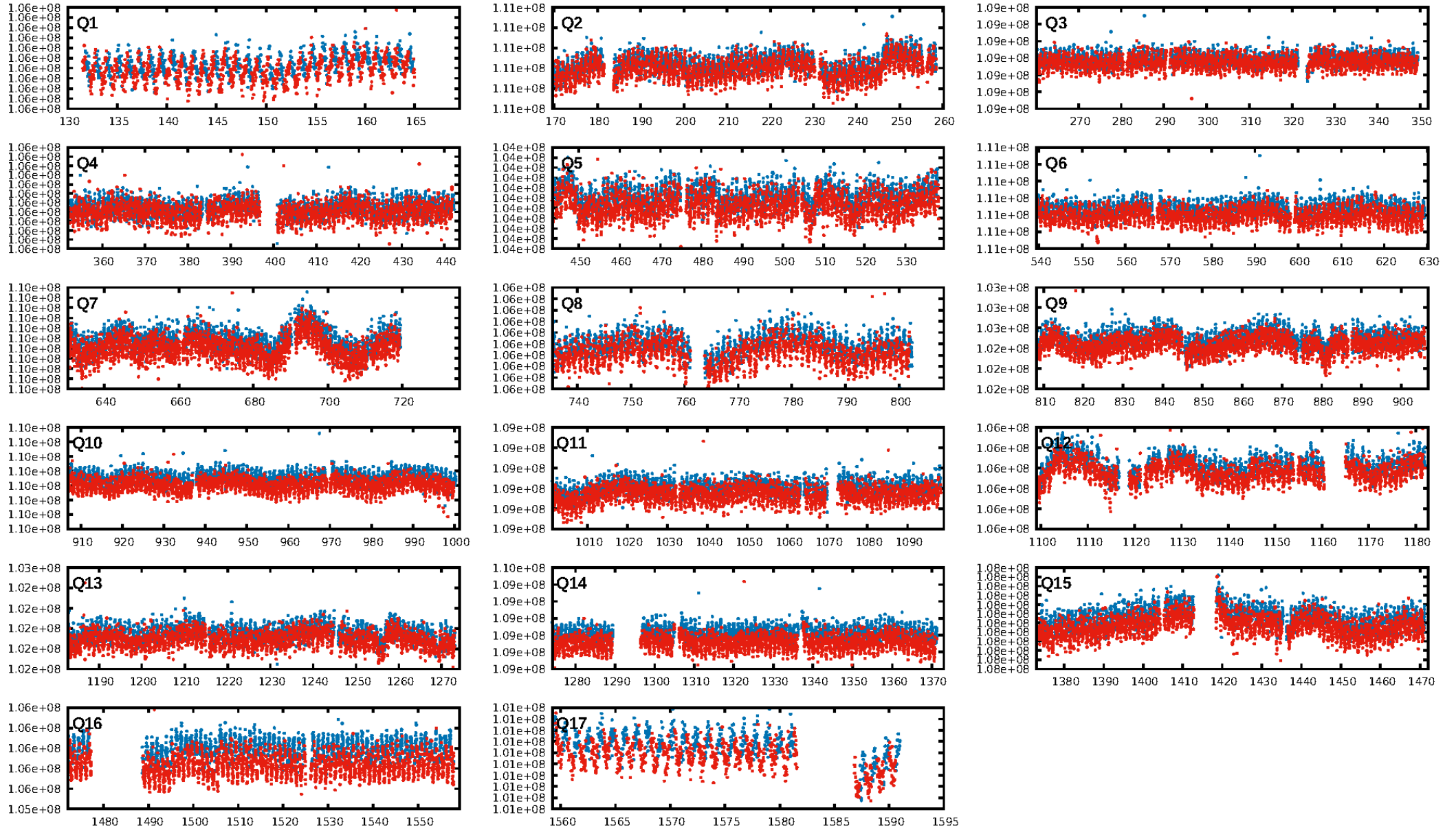
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [108.46 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
**Bootstrap-pfa: 5.14e-12**  
RollingBand-fgt: 0.98 [1170/1189]  
**GhostDiagnostic-chr: -0.1375**  
**Centroid-sig: 0.1%**  
Centroid-so: 4.705 arcsec [2.29 $\sigma$ ]  
OotOffset-rm: 1.369 arcsec [2.85 $\sigma$ ]  
**KicOffset-rm: 1.465 arcsec [3.28 $\sigma$ ]**  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 1.00 [17/17]

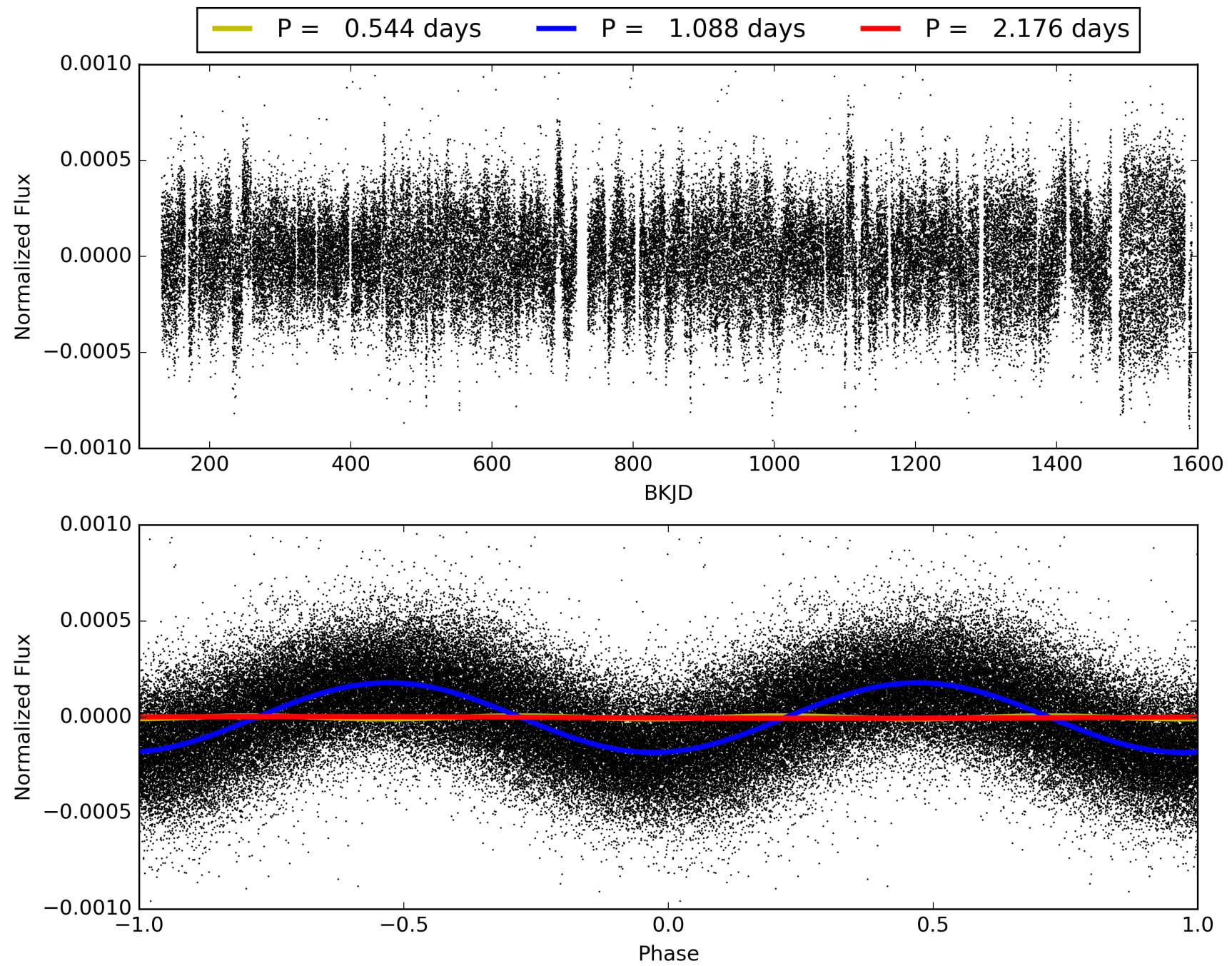
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:39:21 Z

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

# TCE 008818095-01, PDC Light Curves



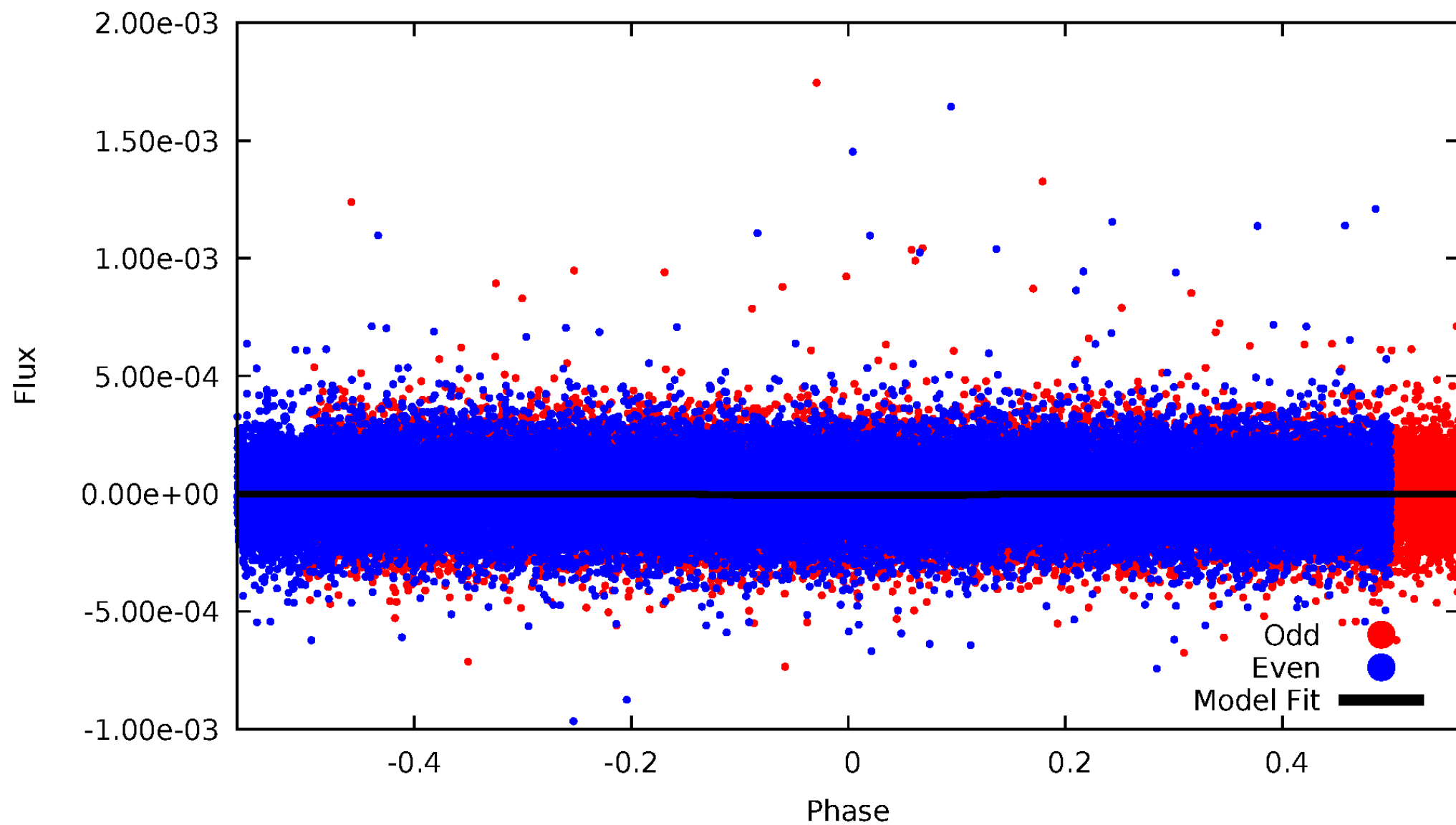
TCE 008818095-01





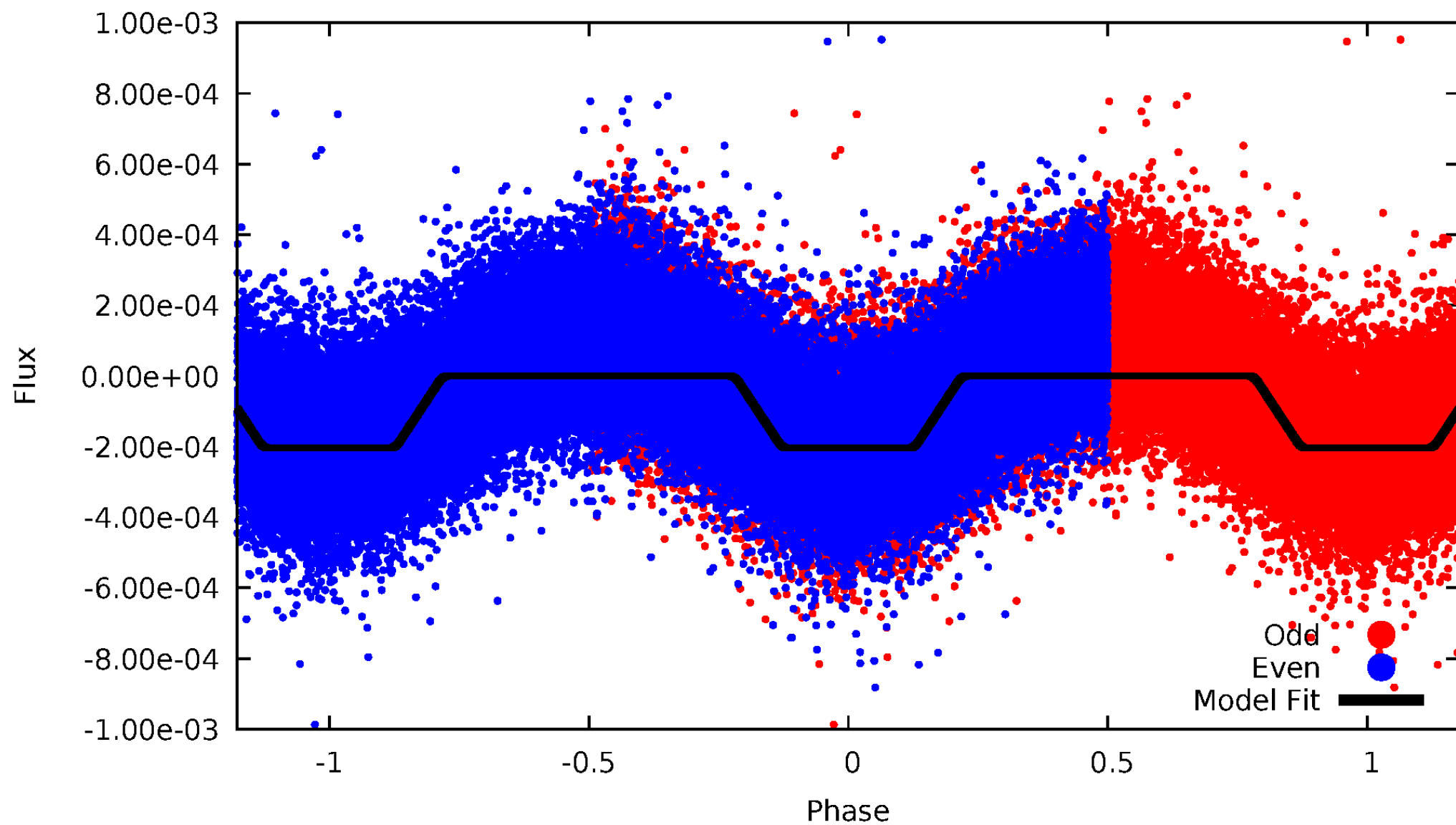
# DV Odd/Even

TCE 008818095-01

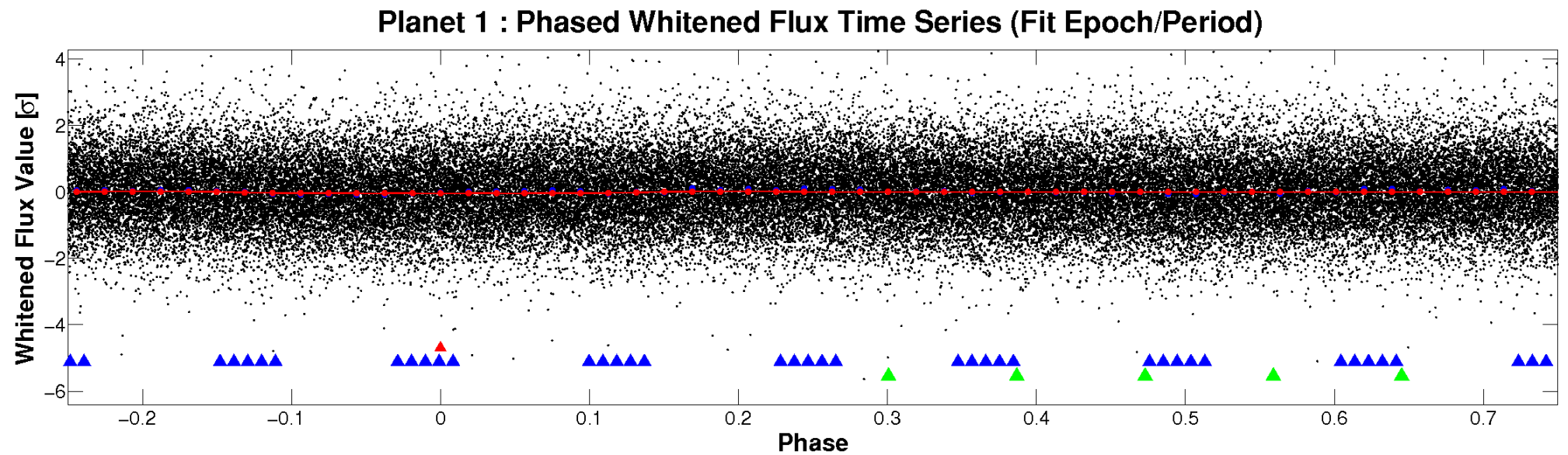
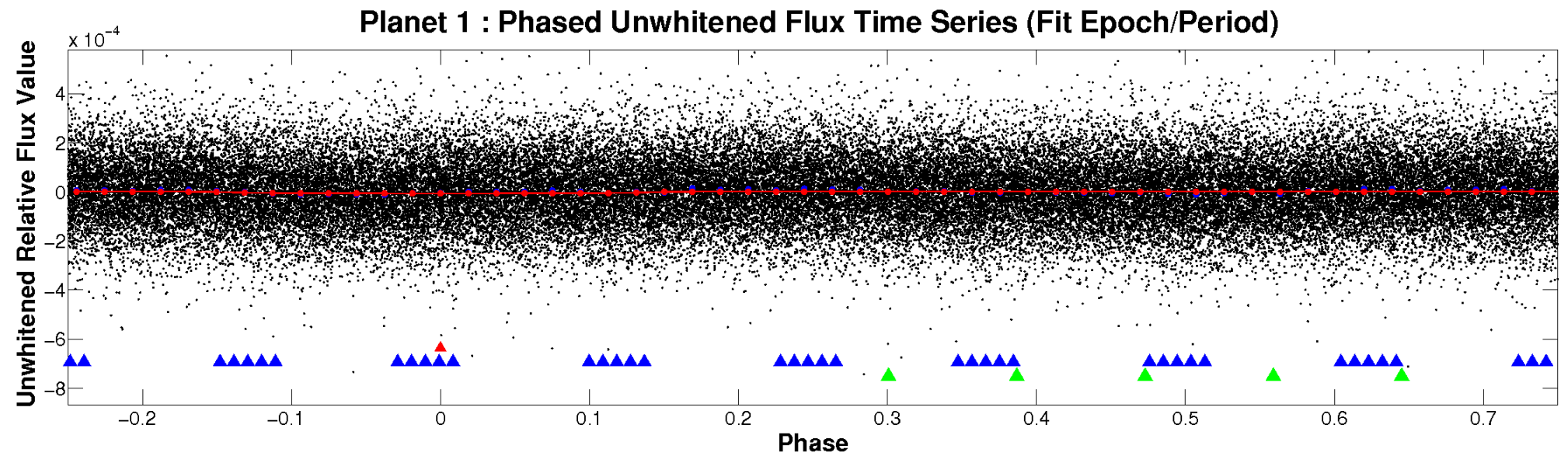


# ALT Odd/Even

TCE 008818095-01

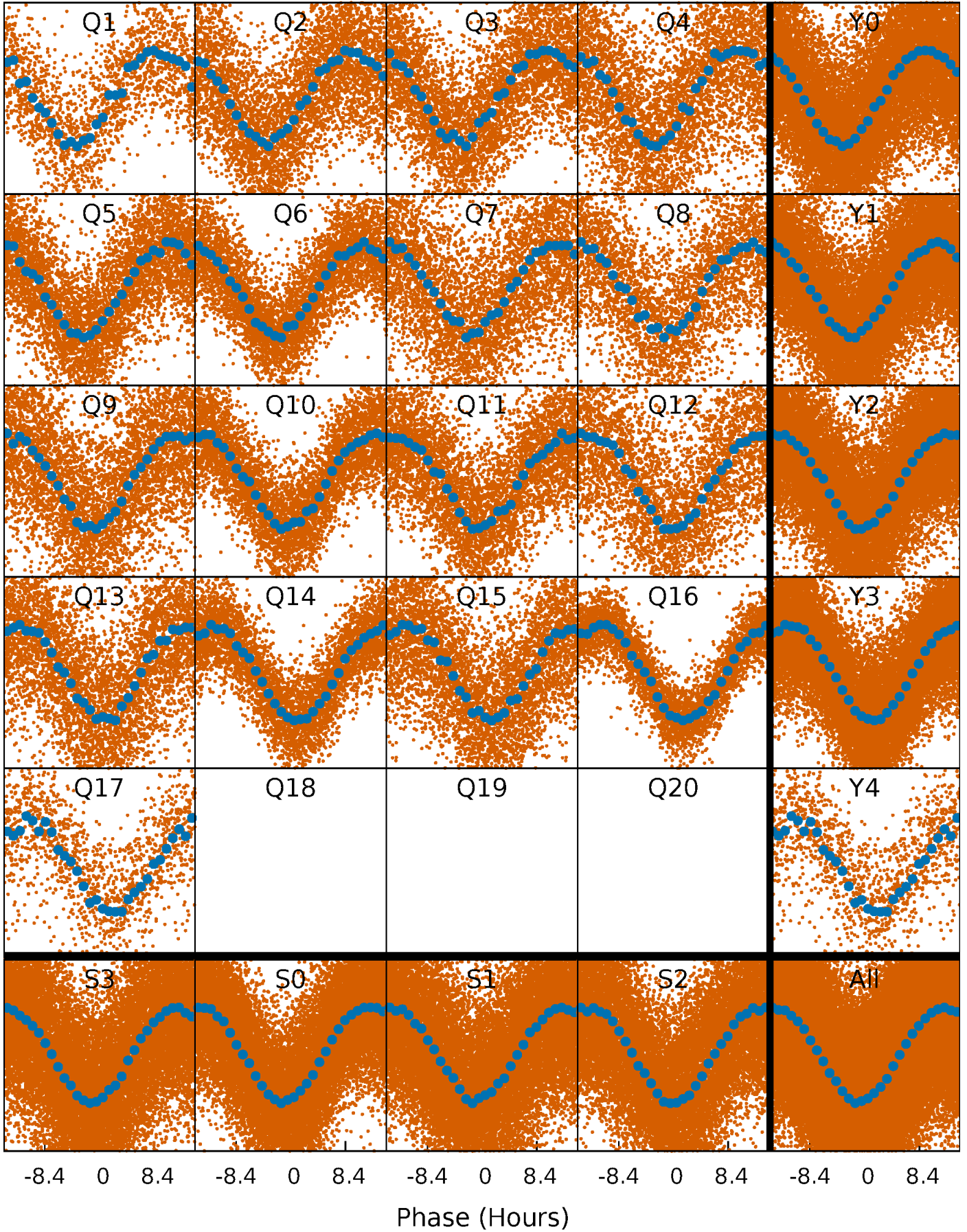


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

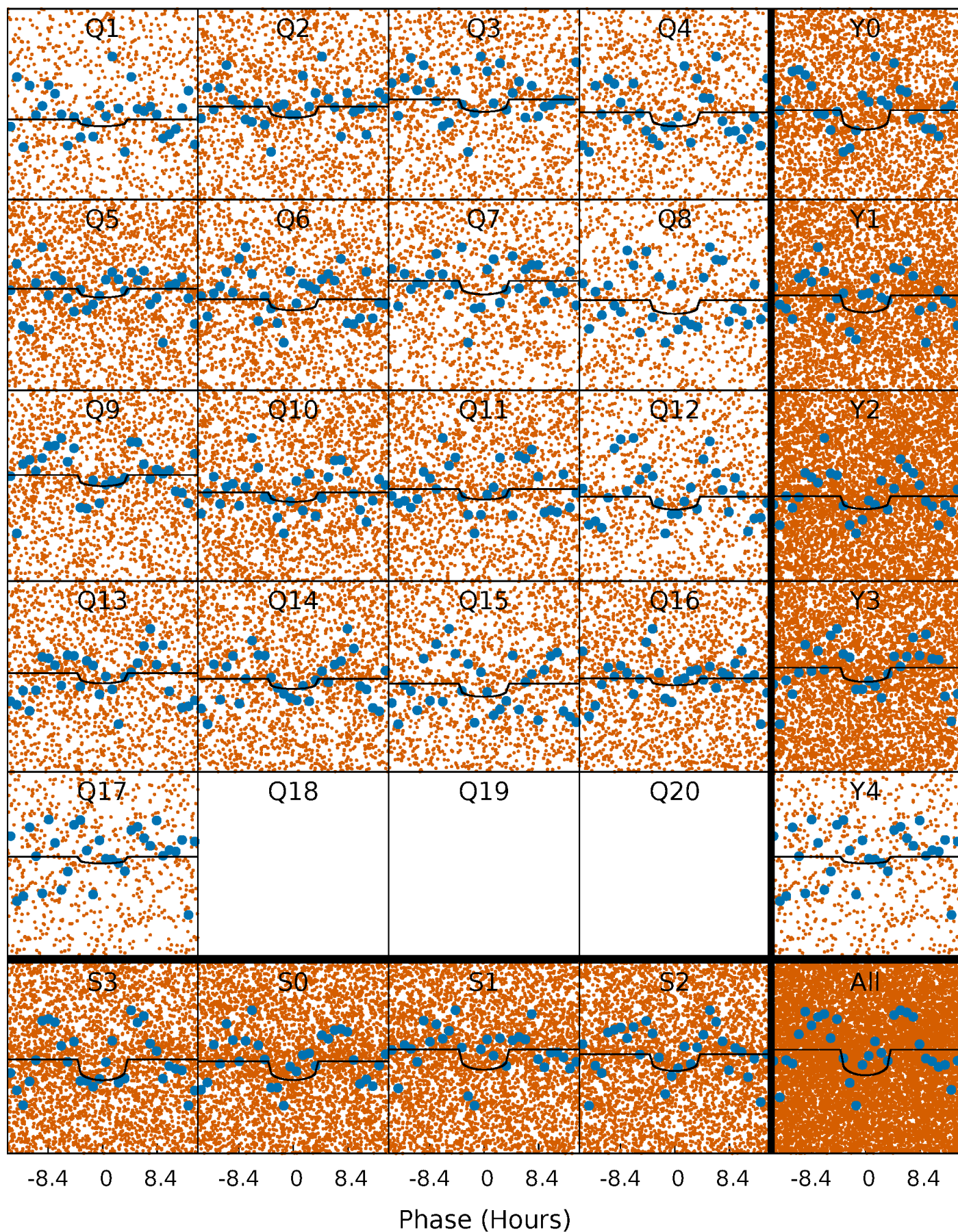
TCE 008818095-01 P= 1.087881 Days  $T_0=132.519090$  (BKJD)





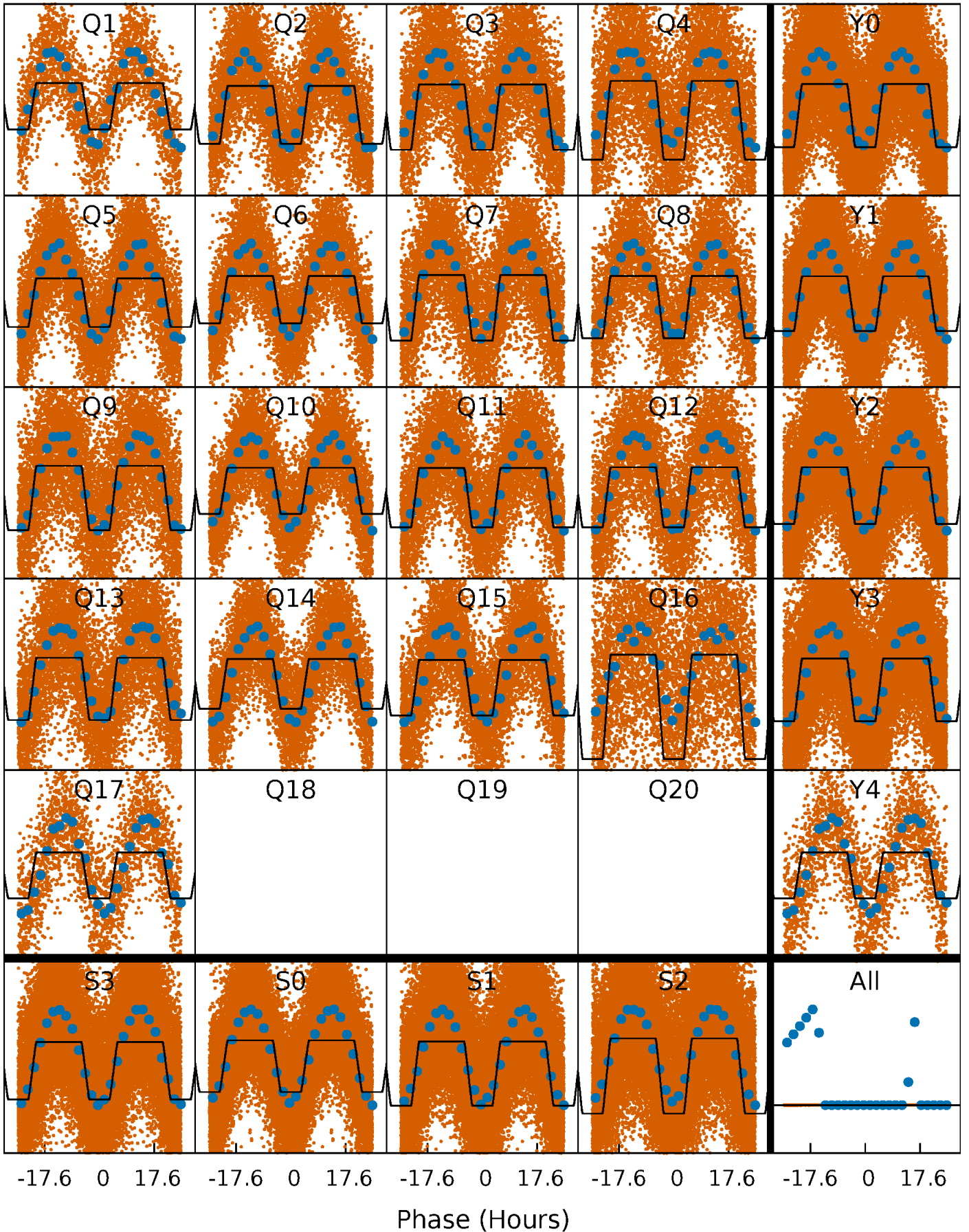
# DV Quarter-Phased Transit Curves

TCE 008818095-01 P= 1.087881 Days  $T_0=132.519090$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

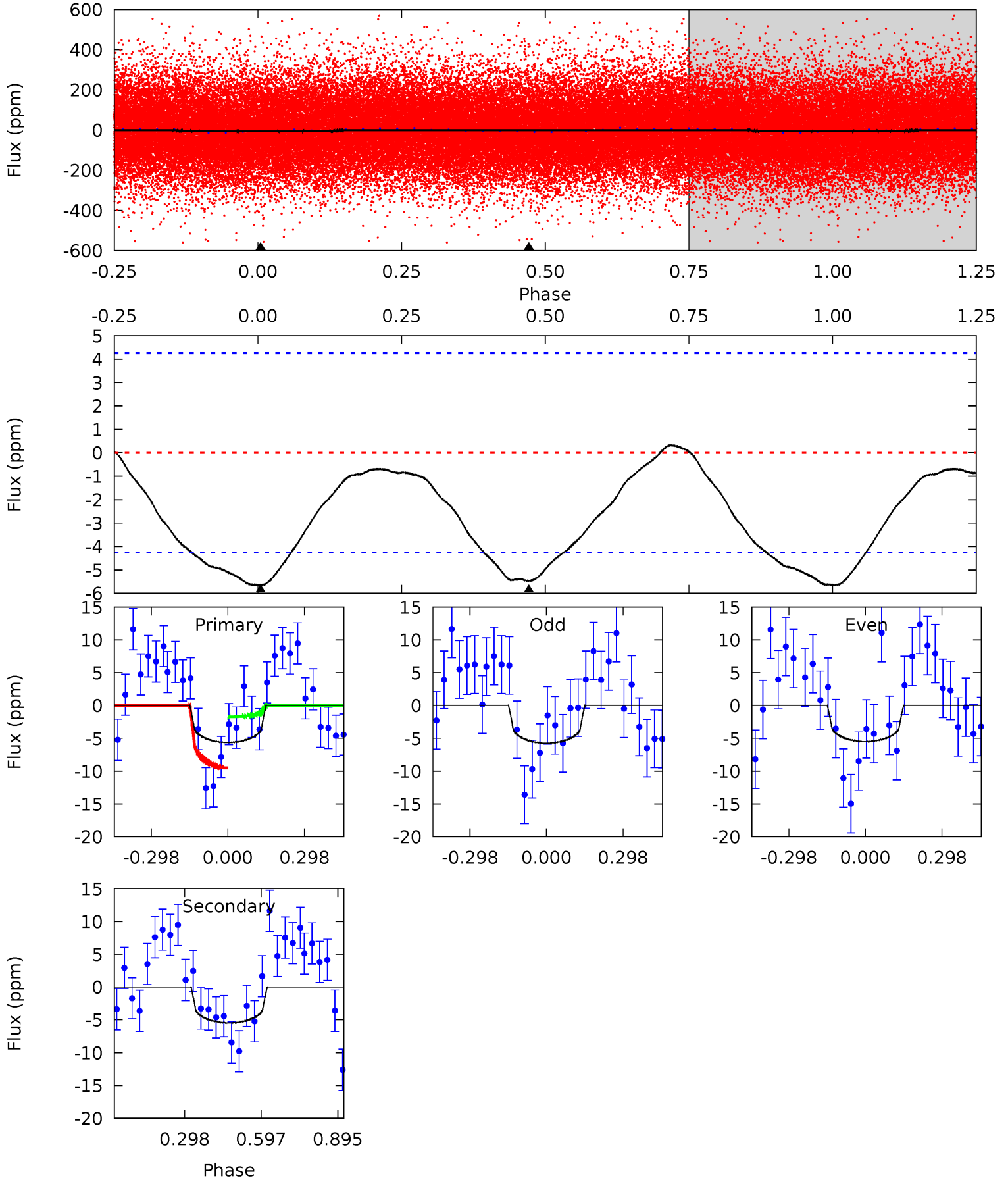
TCE 008818095-01   P= 1.087962 Days    $T_0=132.422114$  (BKJD)



# DV Model-Shift Uniqueness Test

008818095-01, P = 1.087881 Days, E = 131.431209 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
5.75	5.57	0	0	4.33	1.04	0.46	5.75	5.75	5.57	5.57	0.13	1.18	0.05	3.96

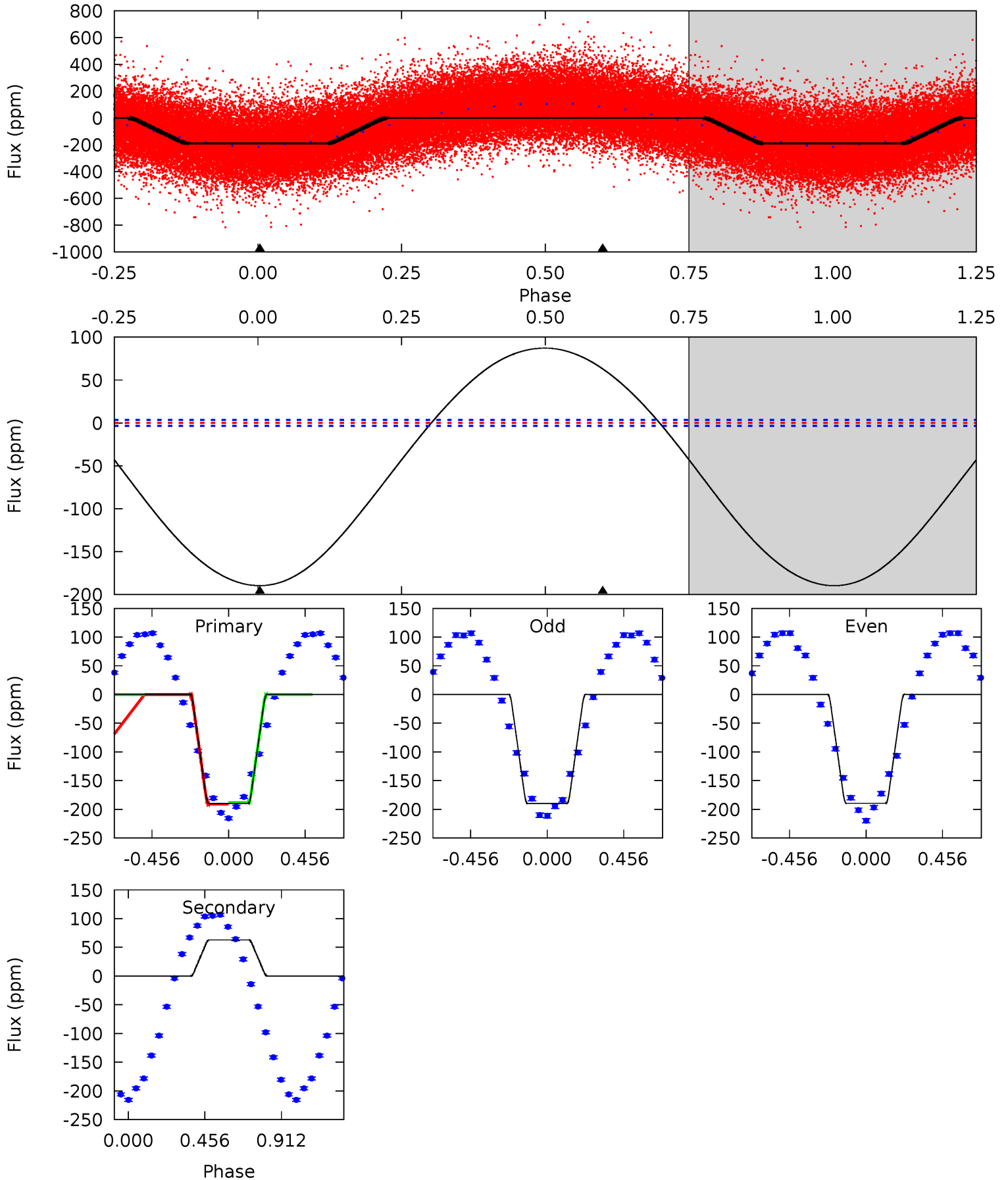




# Alt Model-Shift Uniqueness Test

008818095-01, P = 1.087962 Days, E = 131.334152 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
231.5	-76.8	0	0	4.24	0.75	27.5	231.5	231.5	-76.8	-76.8	0.13	1.00	0.31	1.66





### Stellar Parameters For KIC 008818095

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5952^{+161}_{-178}$	$4.349^{+0.153}_{-0.187}$	$-0.280^{+0.300}_{-0.300}$	$1.063^{+0.293}_{-0.195}$	$0.921^{+0.130}_{-0.095}$	$1.080^{+0.773}_{-0.516}$
	+3%/-3%	+4%/-4%	+107%/-107%	+28%/-18%	+14%/-10%	+72%/-48%
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 008818095-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-5 \pm 1$	$0.36^{+0.28}_{-0.22}$	$2685^{+191}_{-168}$	$5213^{+3862}_{-1141}$	$9.532^{+61.564}_{-6.595}$
Alt.	$63 \pm 1$	$1.68^{+0.41}_{-0.36}$	$2665^{+207}_{-162}$	$-4662^{+323}_{-377}$	$-5.105^{+1.864}_{-2.994}$

$T_{max}$  = 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

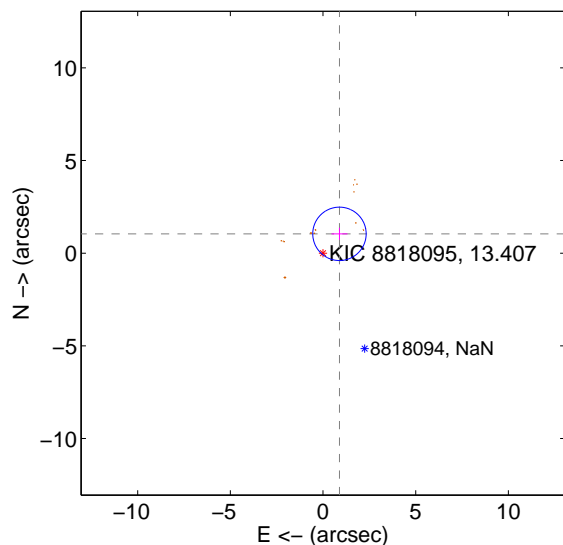
Supplemental centroid analysis for 008818095-01. Kepler magnitude: 13.41. Transit SNR 4.87

There are 0 quarters with good PRF difference image offsets

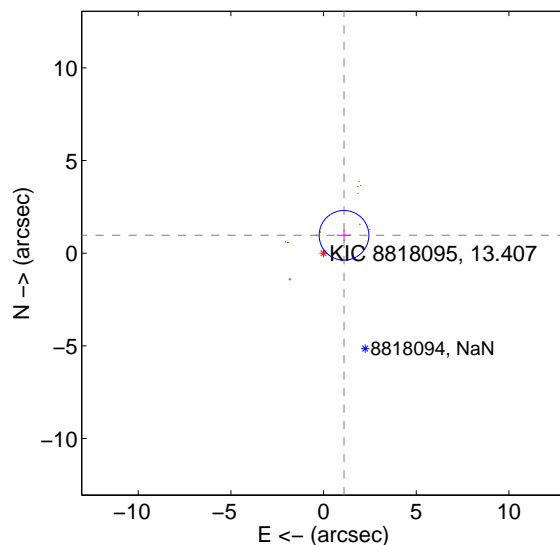
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.369 \pm 0.480$	2.85	$-0.886 \pm 0.432$	$1.043 \pm 0.330$
PRF-fit source offset from KIC position	$1.465 \pm 0.447$	3.28	$-1.102 \pm 0.389$	$0.965 \pm 0.316$
photometric centroid source offset	$4.70 \pm 2.06$	2.29	$2.32 \pm 1.97$	$-4.09 \pm 2.09$

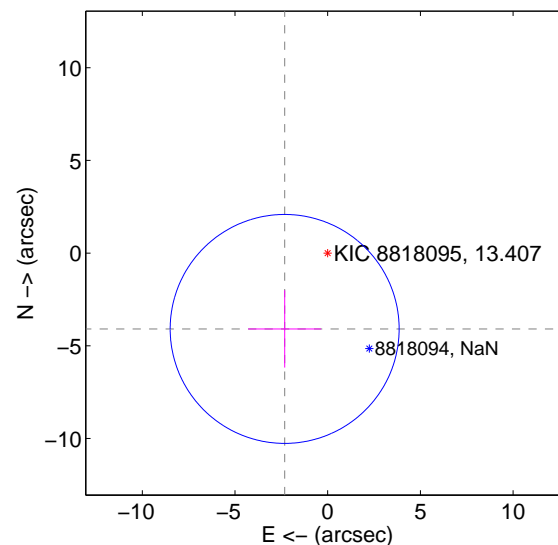
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

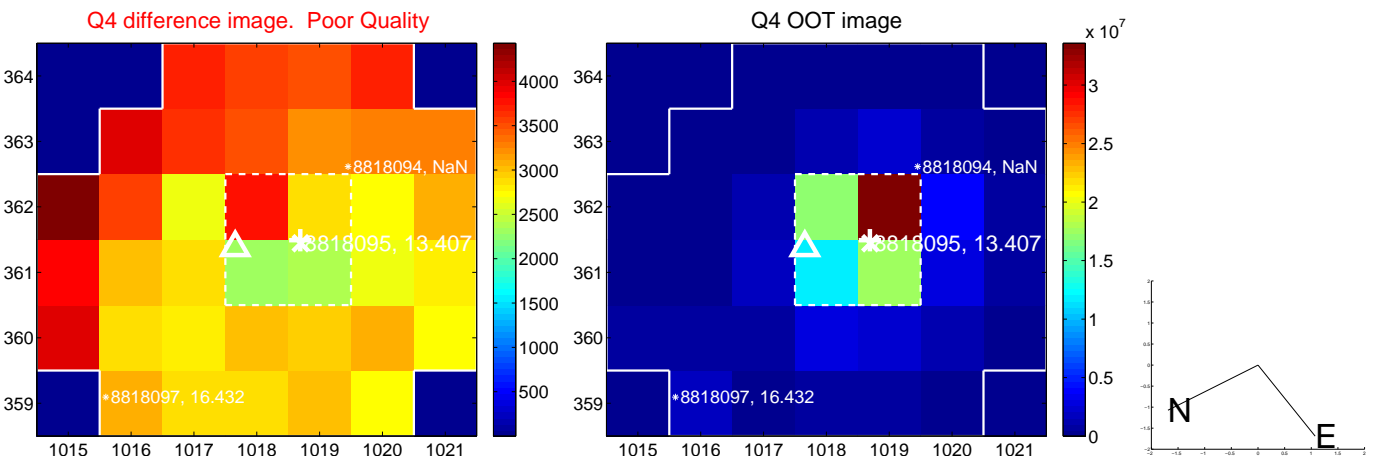
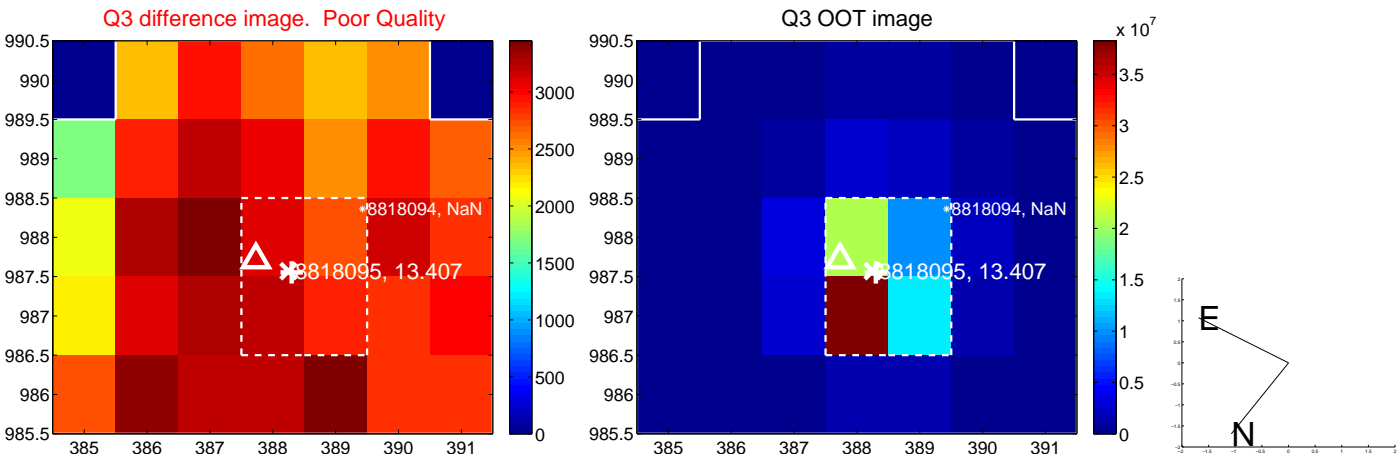
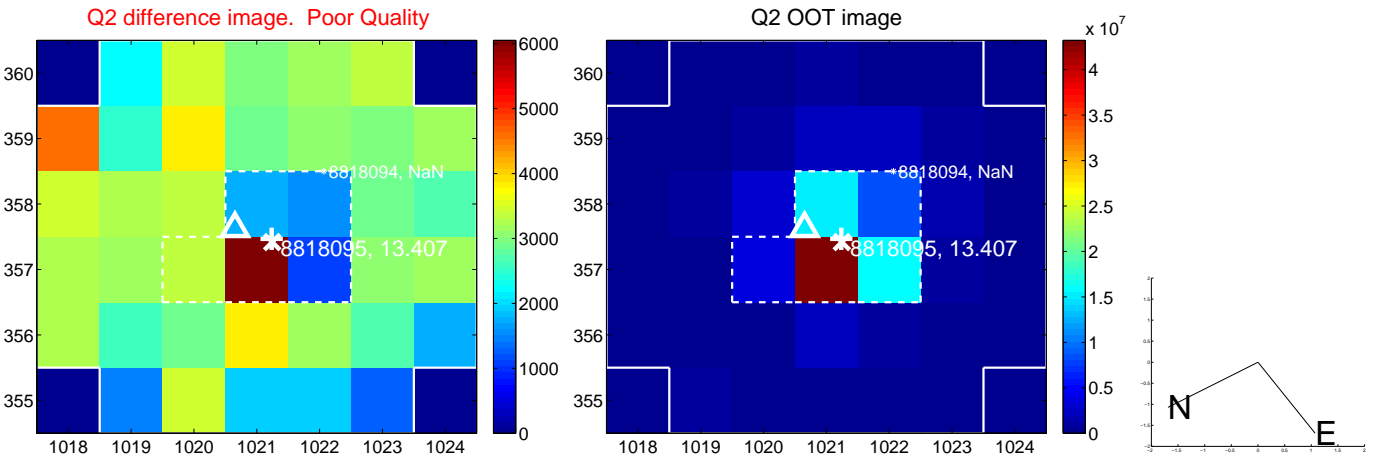
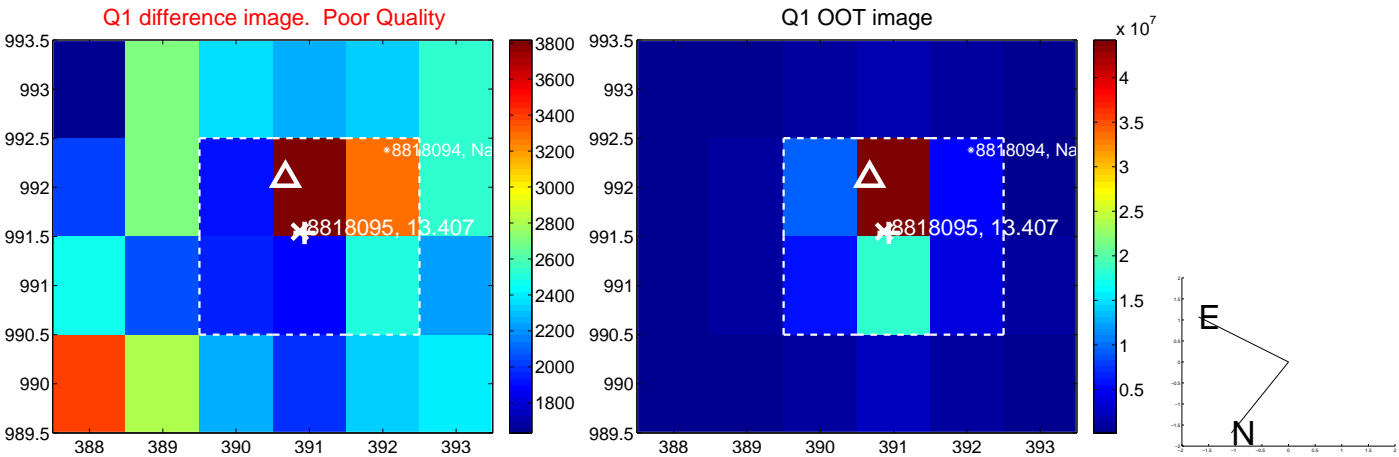


offset from photometric centroids

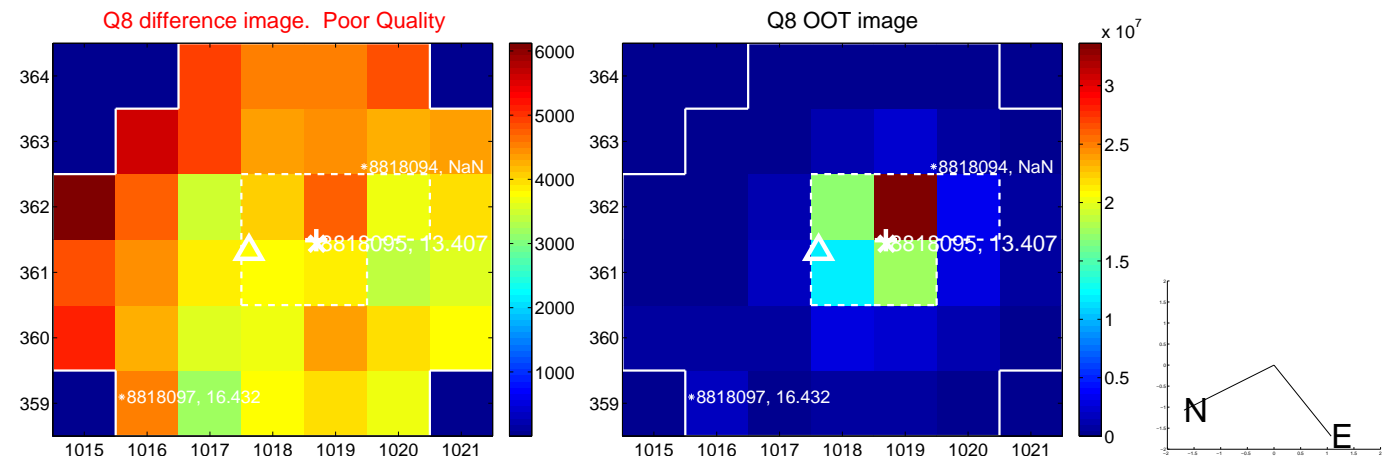
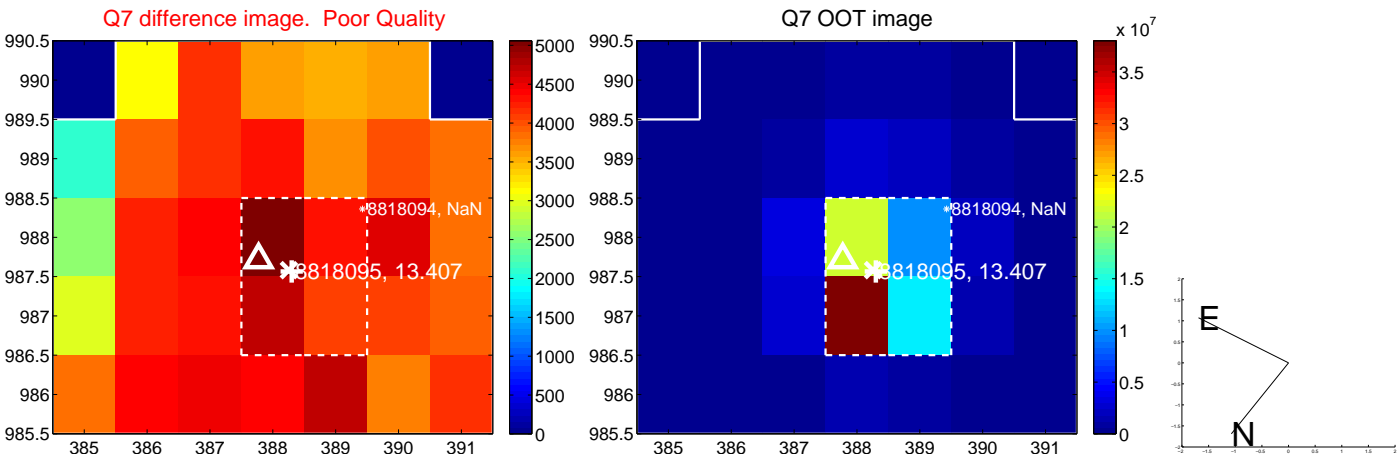
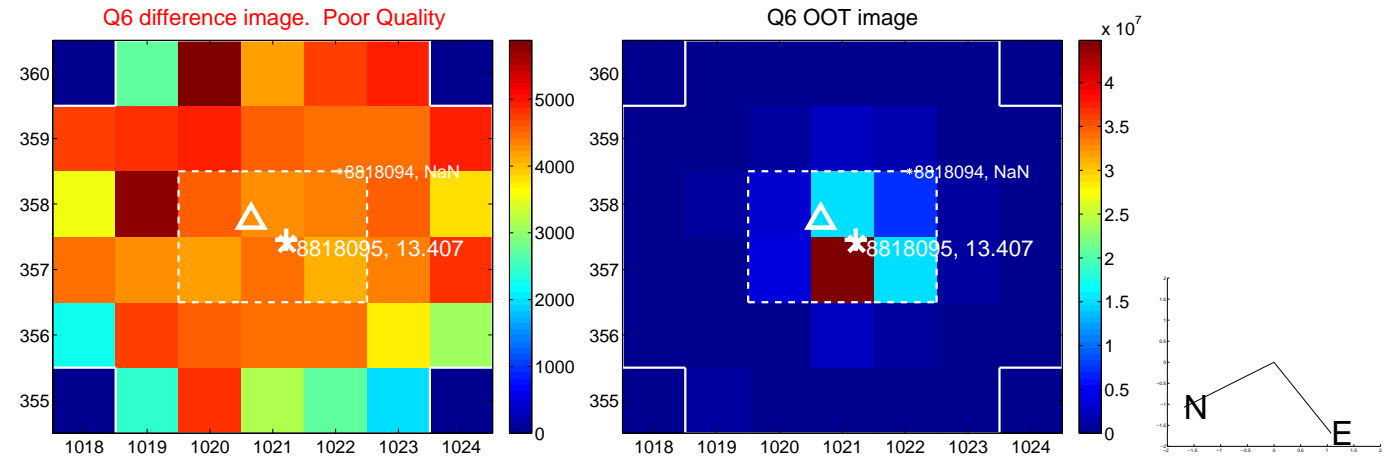
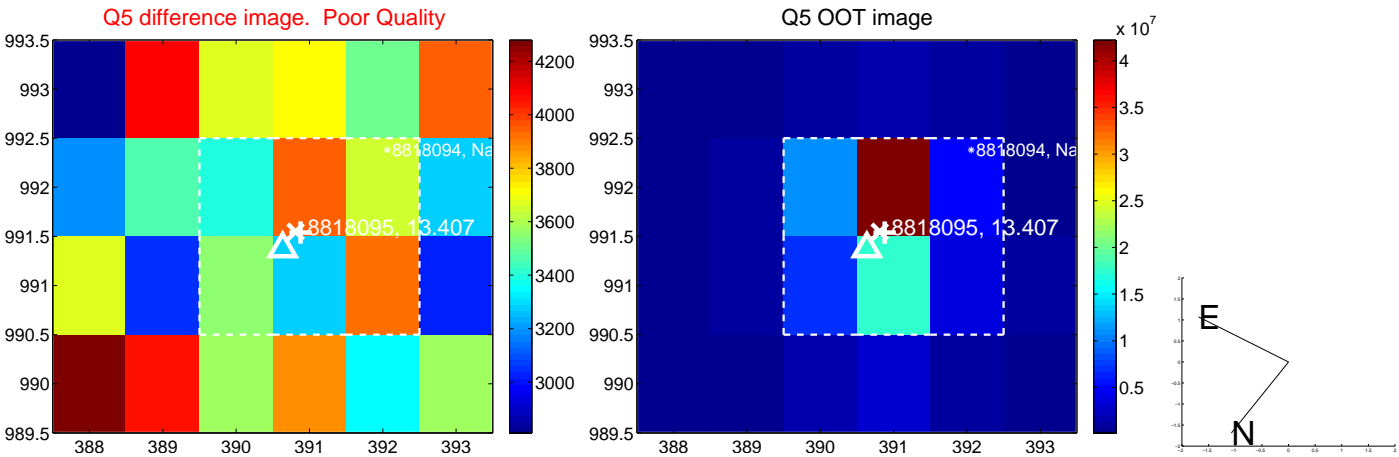


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

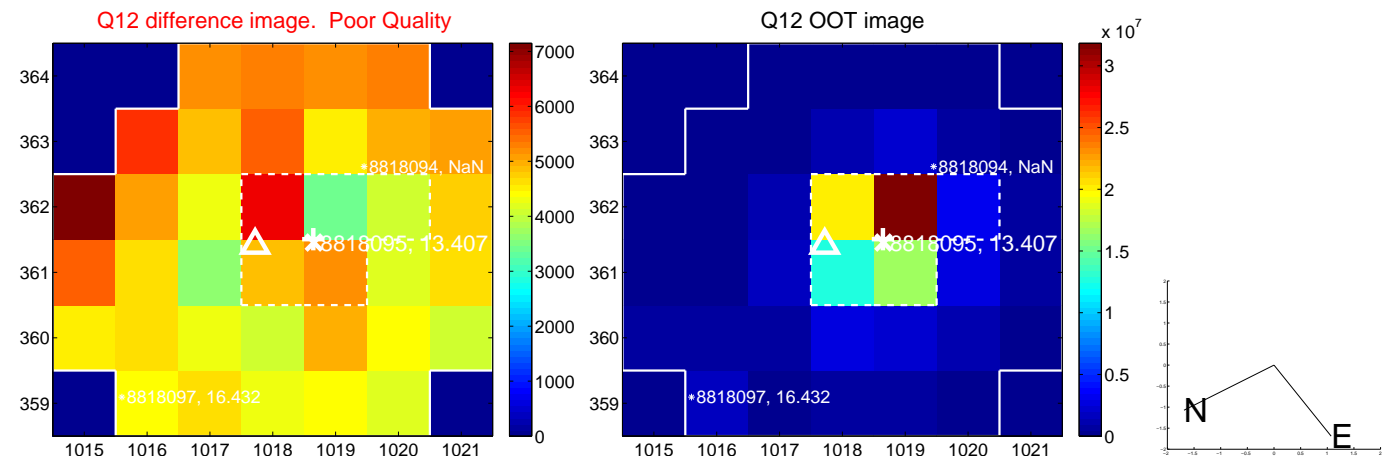
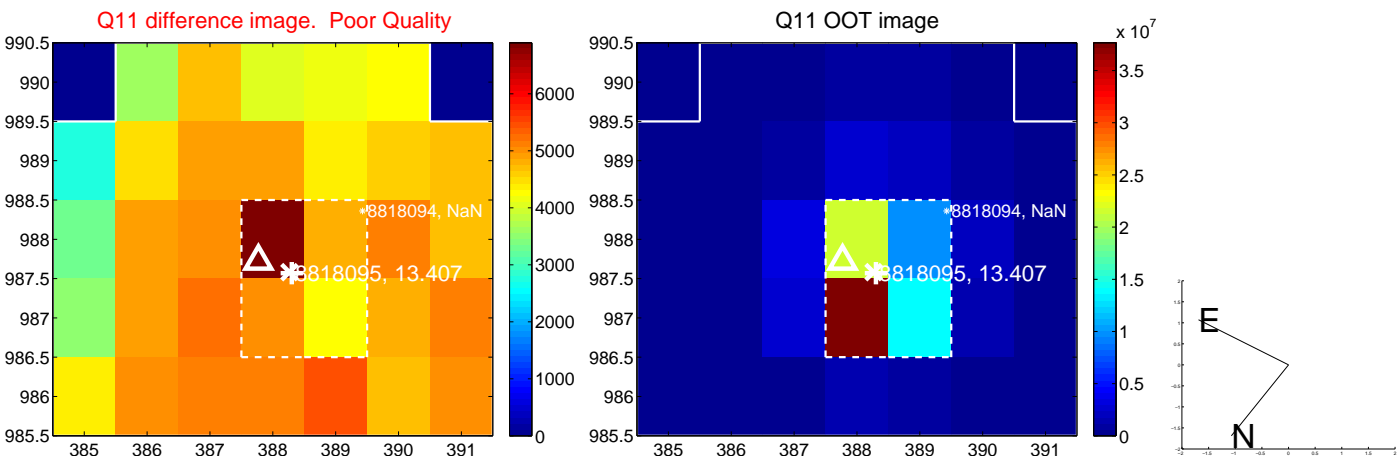
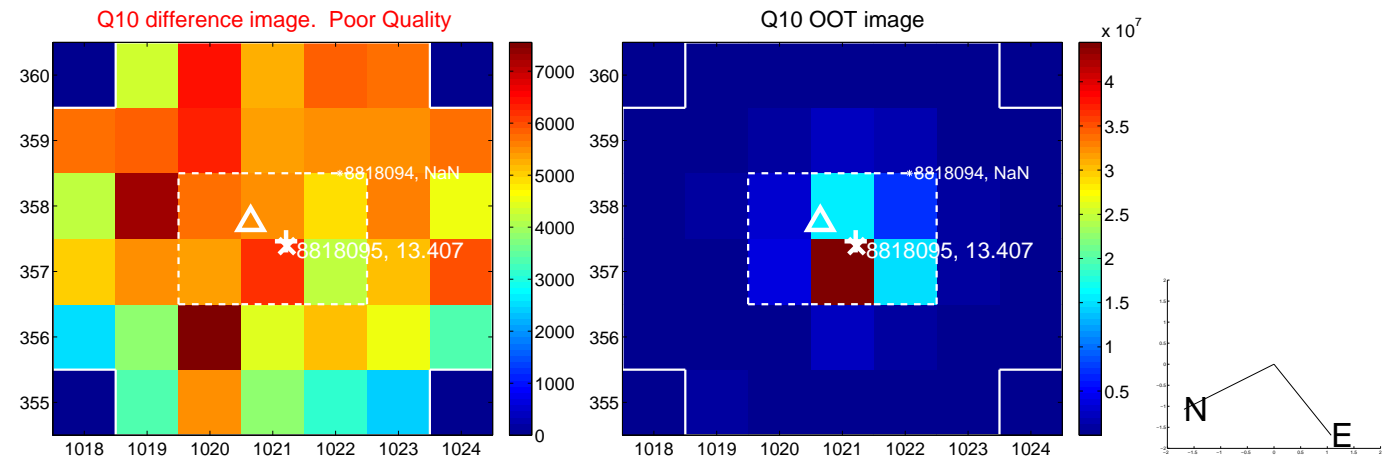
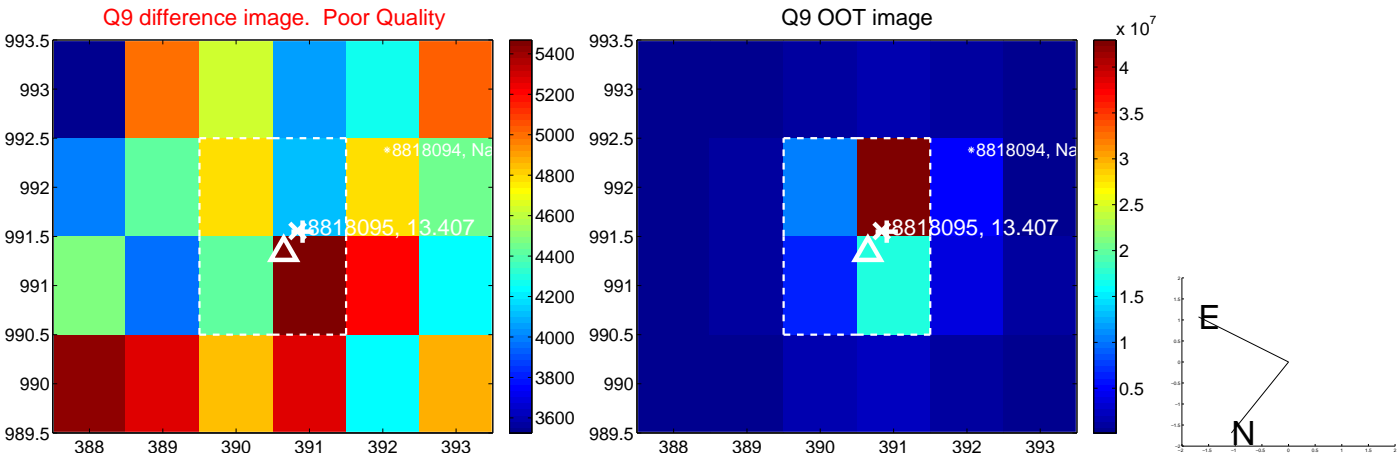


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

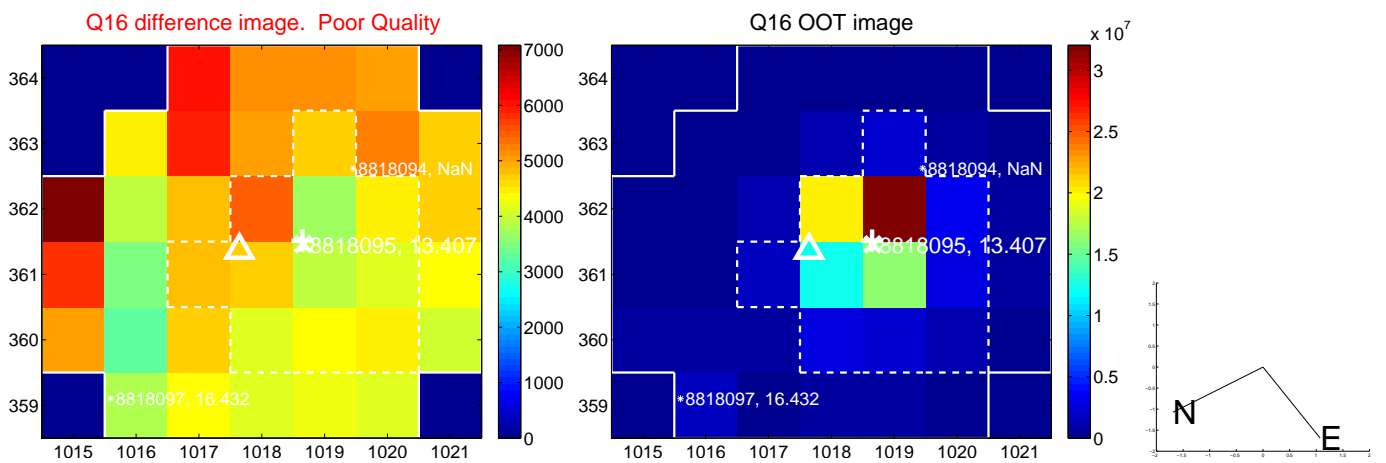
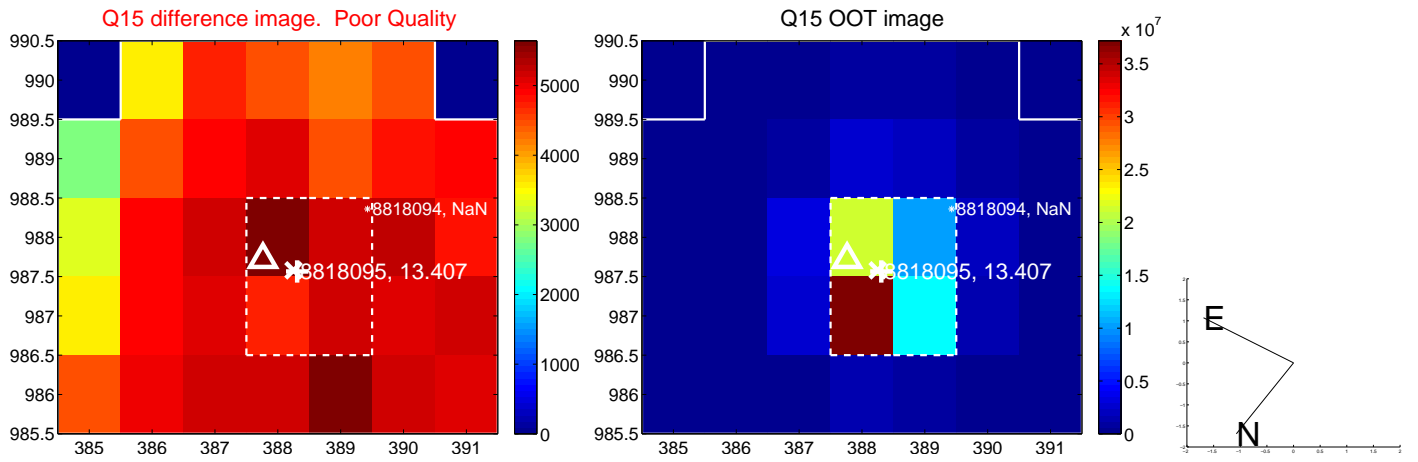
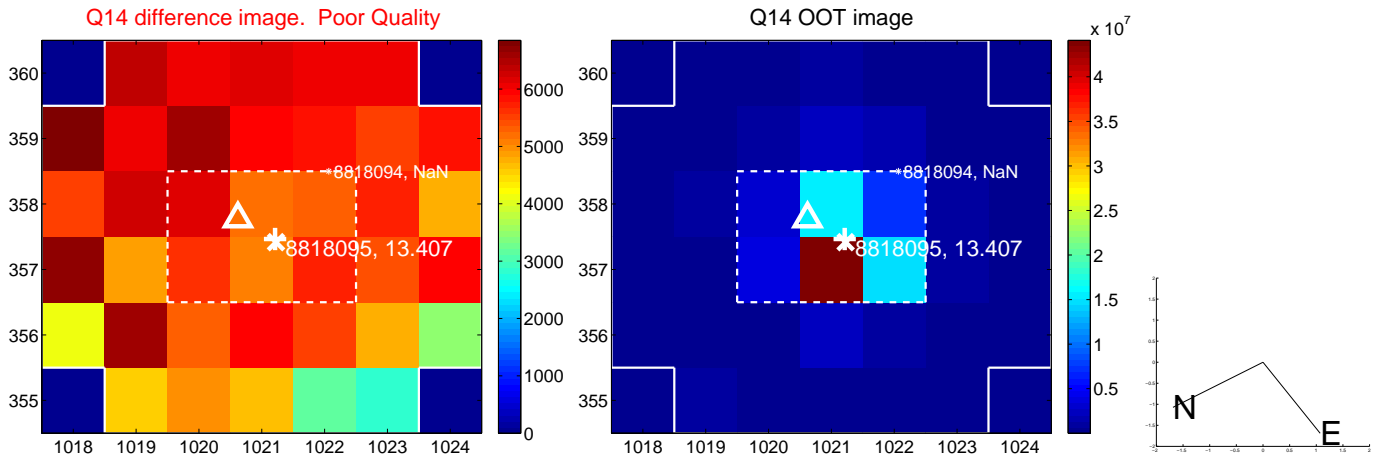
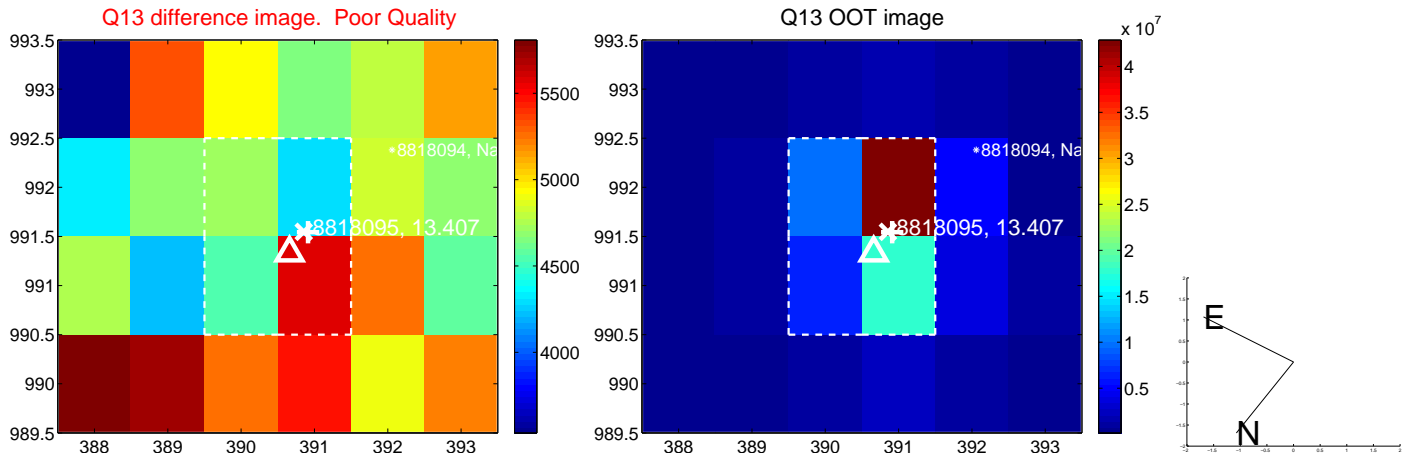




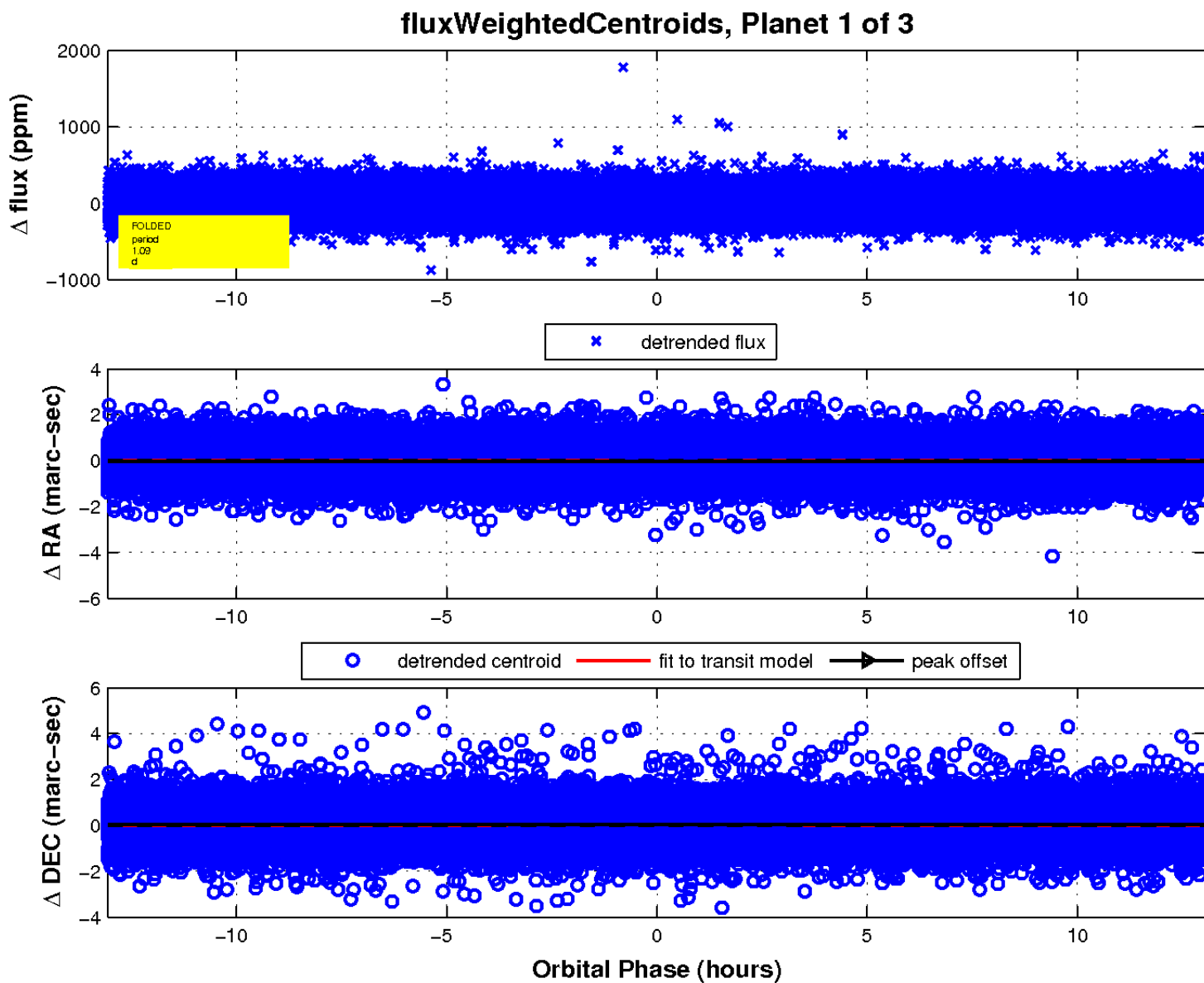
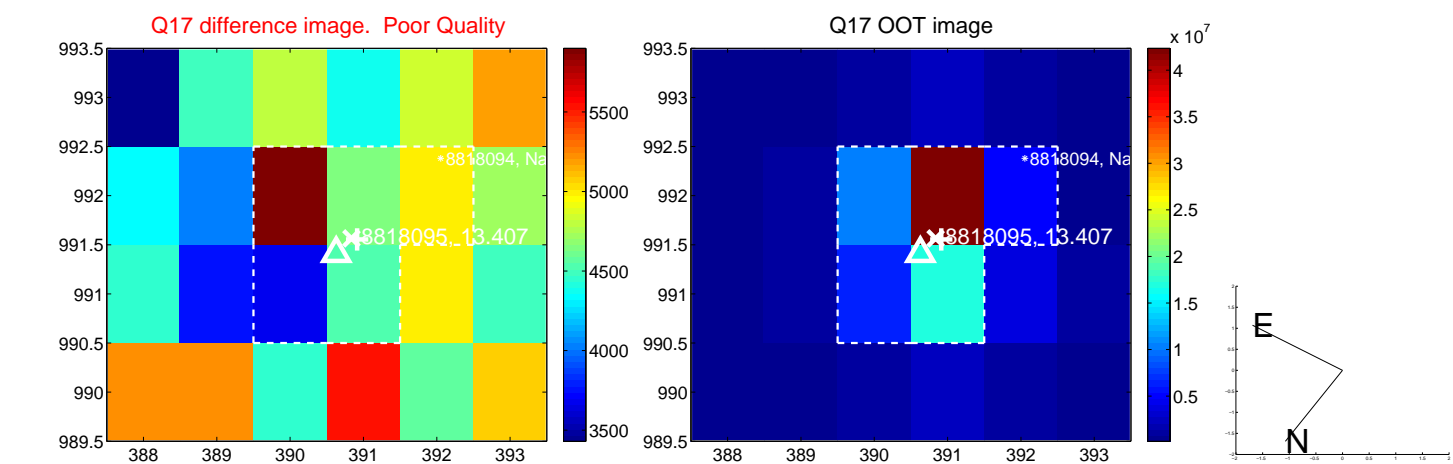
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

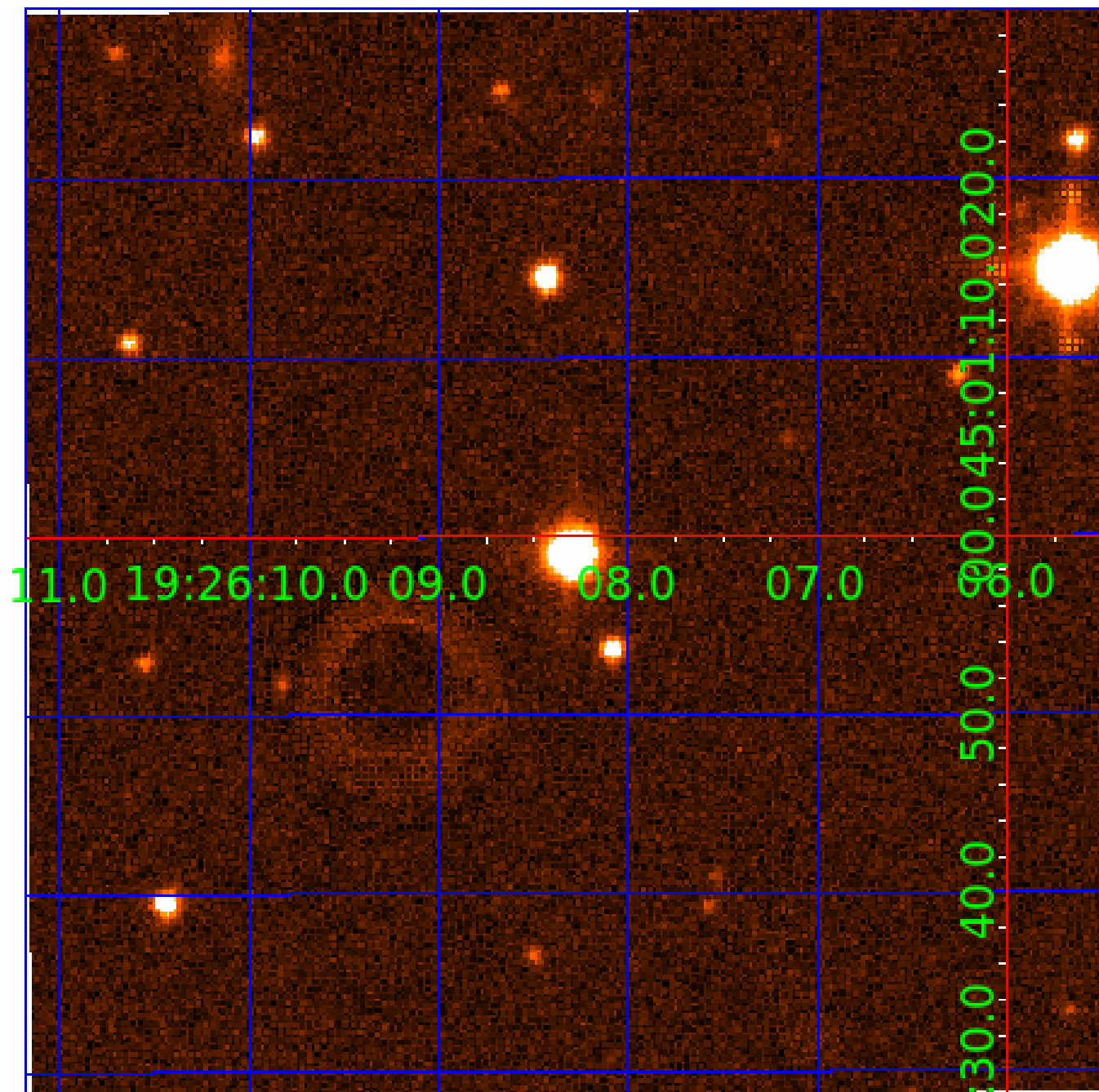


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008818095

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008818095-01	OBS	No	1.087881	132.519090	6.4	7.351	8.3	4.9	1.06	5952	0.29	3131.79
008818095-02	OBS	No	36.309302	155.333361	142.7	2.589	9.4	7.1	1.06	5952	1.46	29.14
008818095-03	OBS	No	307.964099	219.876775	185.9	8.651	8.8	8.9	1.06	5952	1.70	1.69

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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008818095-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008818095-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

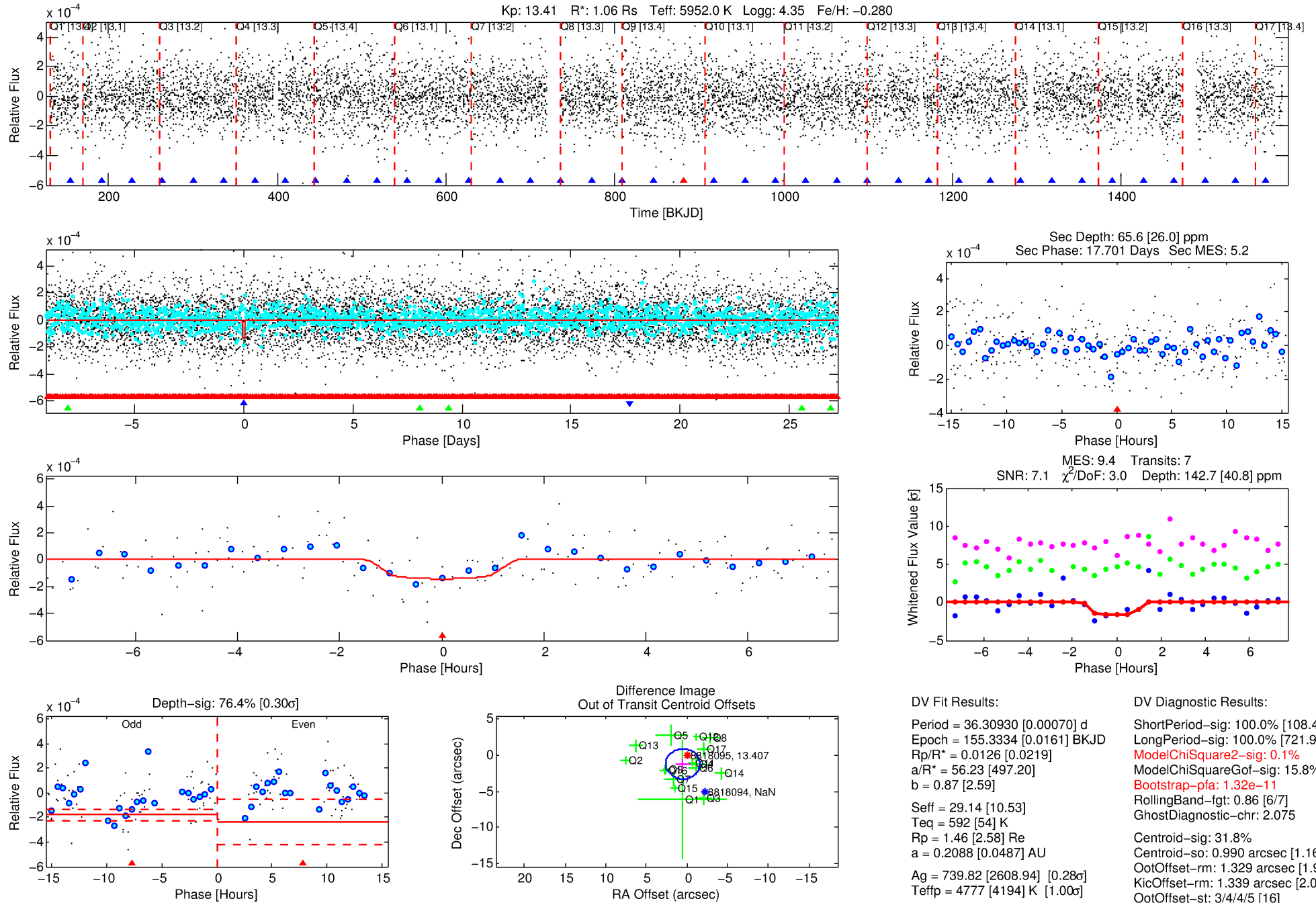
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008818095-02

No Significant Match Found

# DV One-Page Summary

KIC: 8818095 Candidate: 2 of 3 Period: 36.309 d



## DV Fit Results:

Period = 36.30930 [0.00070] d  
Epoch = 155.3334 [0.0161] BKJD  
Rp/R\* = 0.0126 [0.0219]  
a/R\* = 56.23 [497.20]  
b = 0.87 [2.59]  
Seff = 29.14 [10.53]  
Teq = 592 [54] K  
Rp = 1.46 [2.58] Re  
a = 0.2088 [0.0487] AU  
Ag = 739.82 [2608.94] [0.28σ]  
Teffp = 4777 [4194] K [1.00σ]

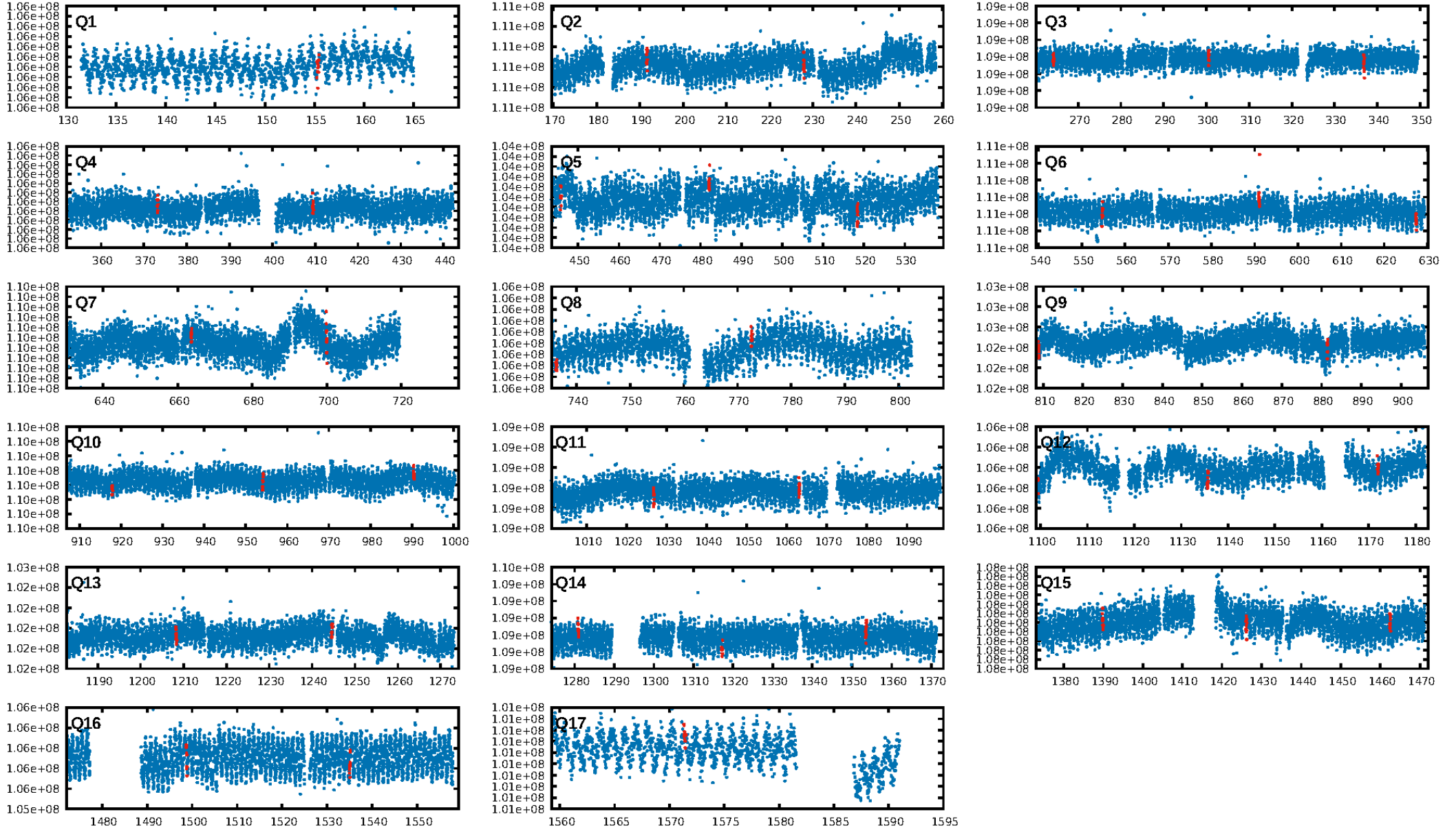
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [108.46σ]  
LongPeriod-sig: 100.0% [721.98σ]  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 15.8%  
Bootstrap-pfa: 1.32e-11  
RollingBand-fgt: 0.86 [6/7]  
GhostDiagnostic-chr: 2.075  
Centroid-sig: 31.8%  
Centroid-so: 0.990 arcsec [1.16σ]  
OotOffset-rm: 1.329 arcsec [1.90σ]  
KicOffset-rm: 1.339 arcsec [2.06σ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.00 [0/16]  
DiffImageOverlap-fno: 0.24 [4/17]

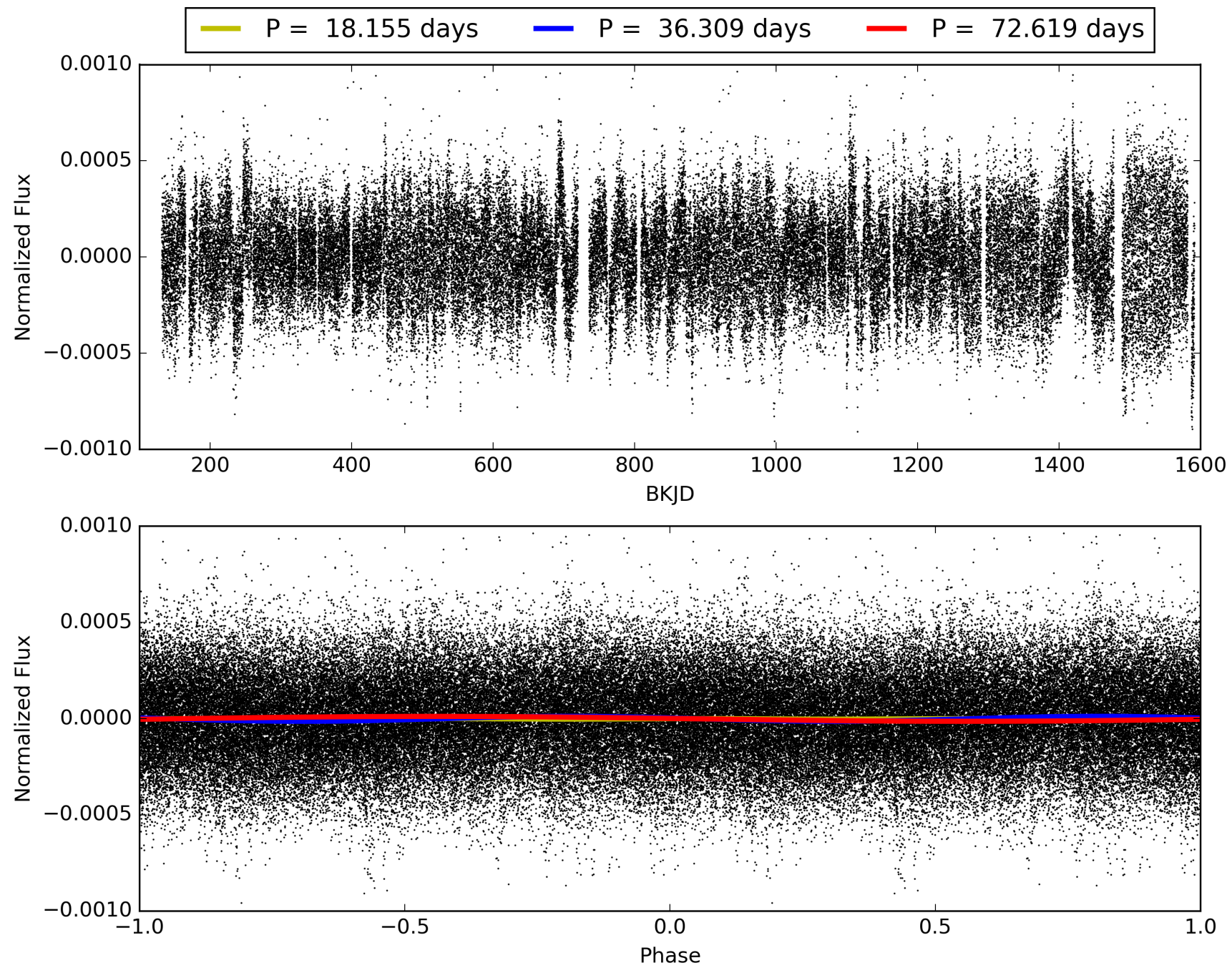
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:39:32 Z

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

# TCE 008818095-02, PDC Light Curves



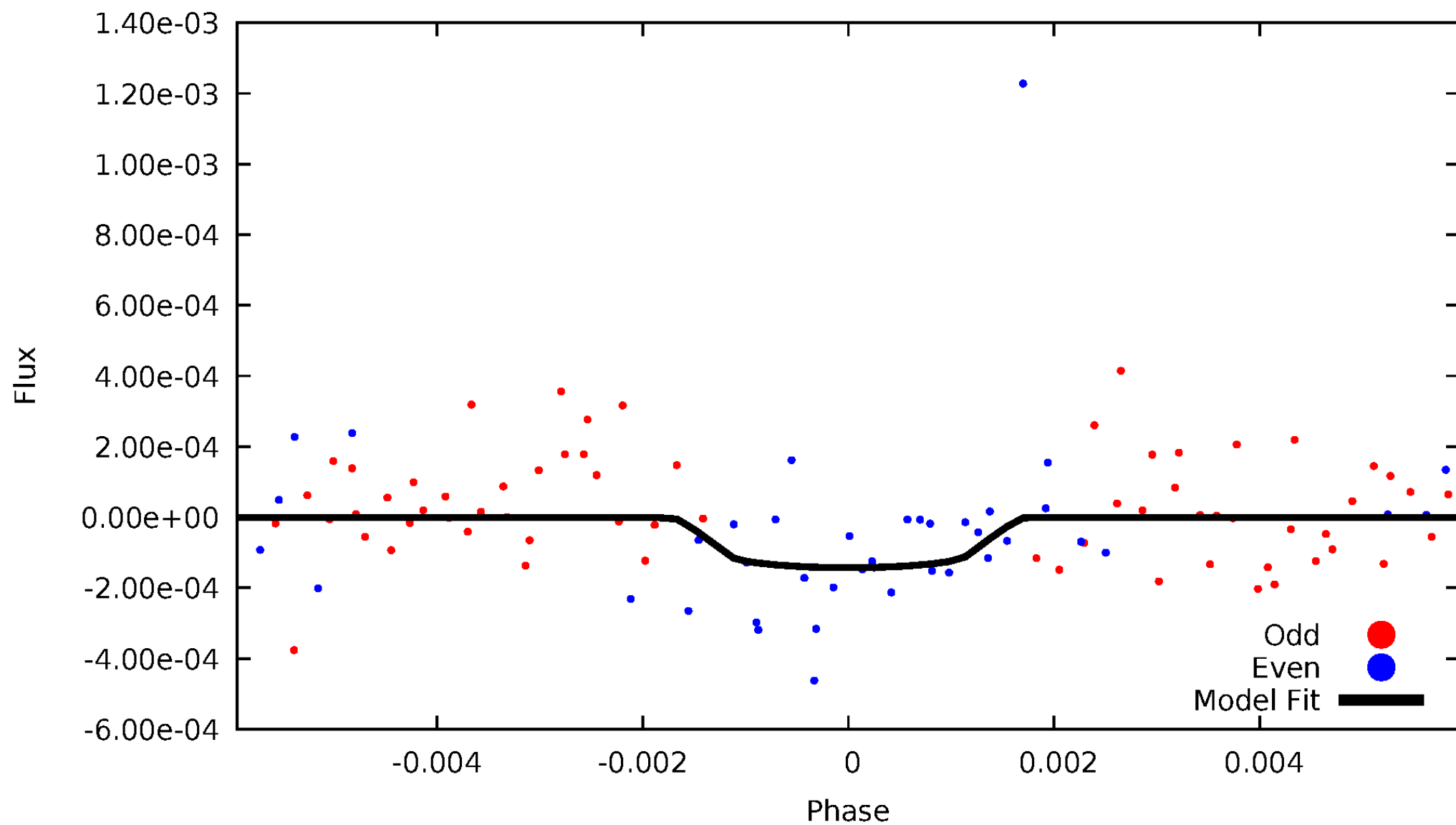
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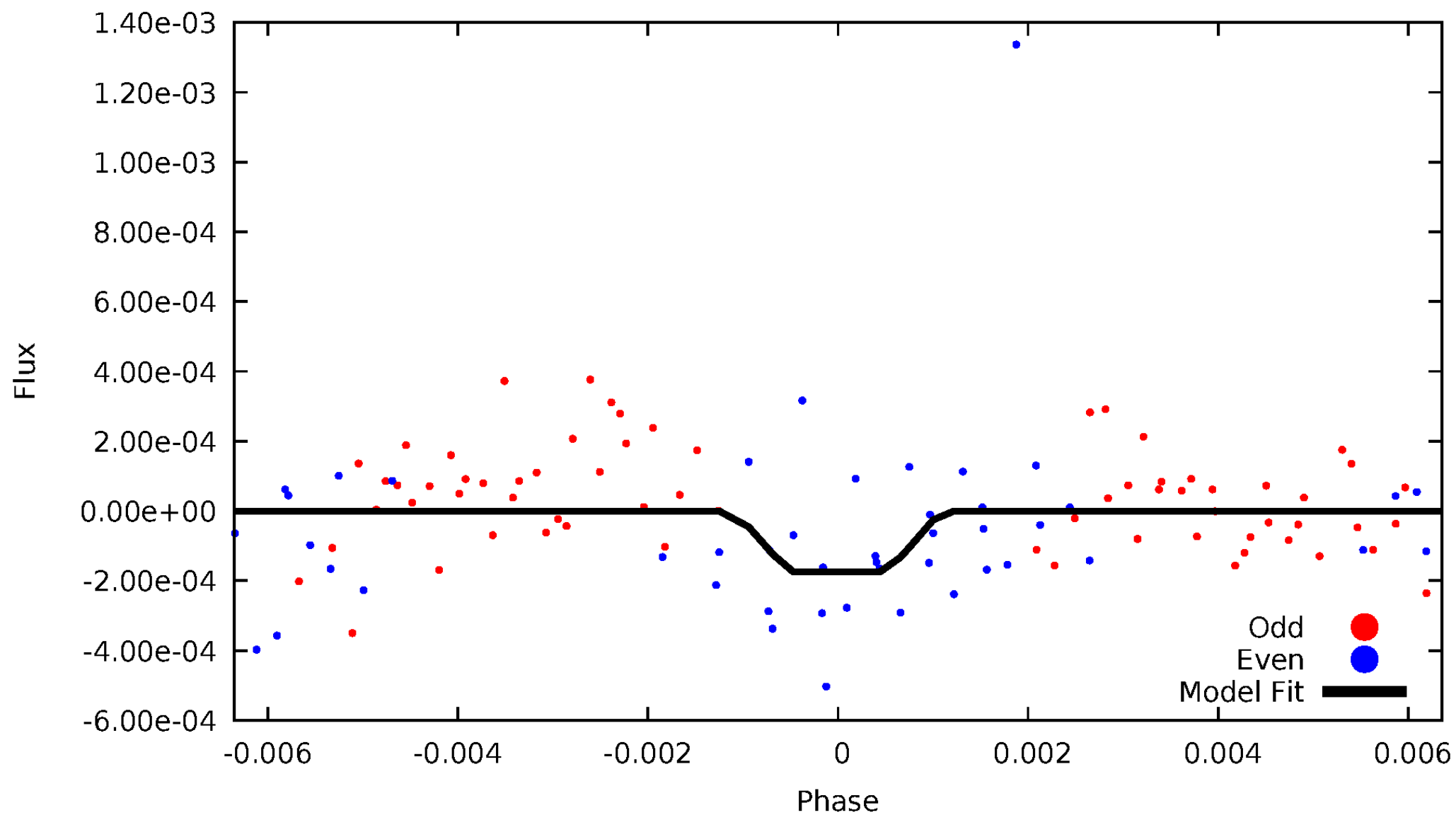
# DV Odd/Even

TCE 008818095-02



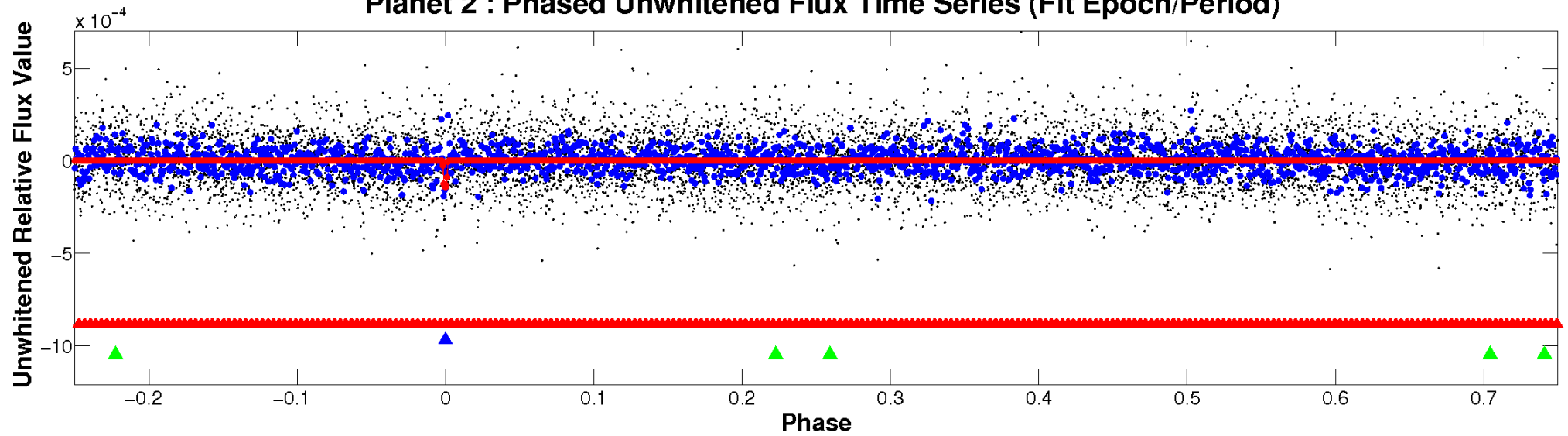
# ALT Odd/Even

TCE 008818095-02

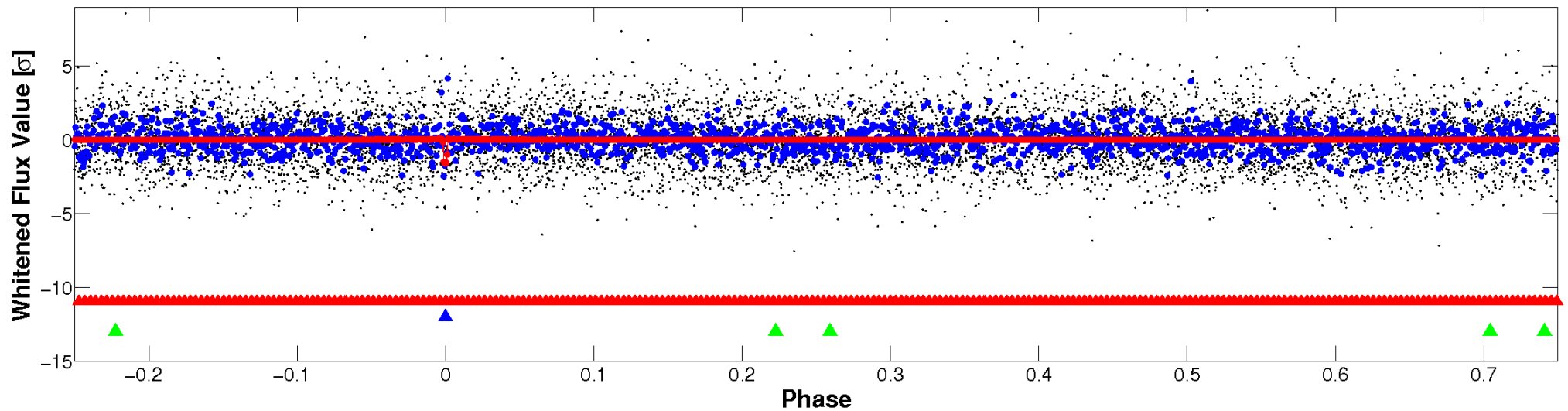


# Non-Whitened Vs. Whitened Light Curve

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

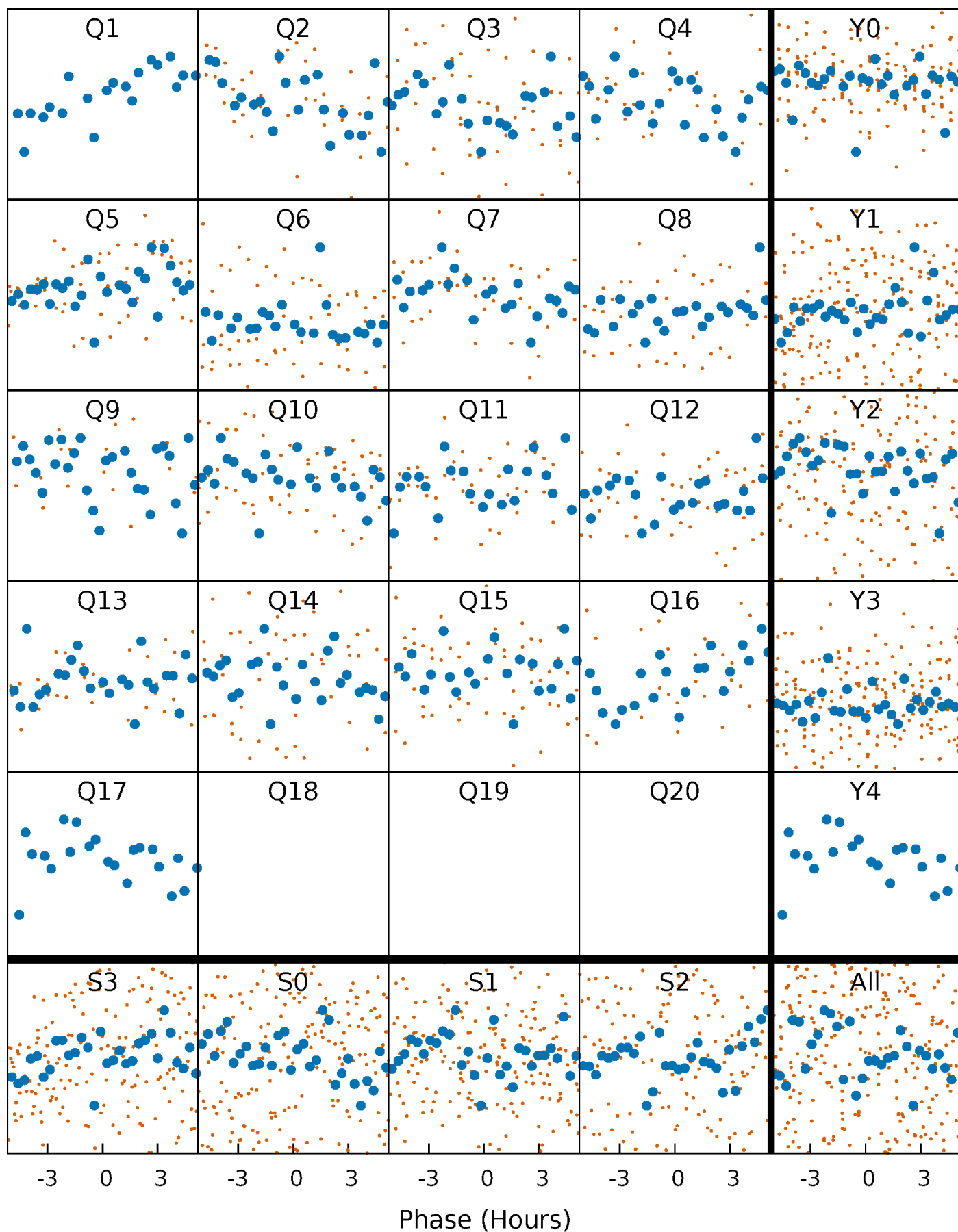


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



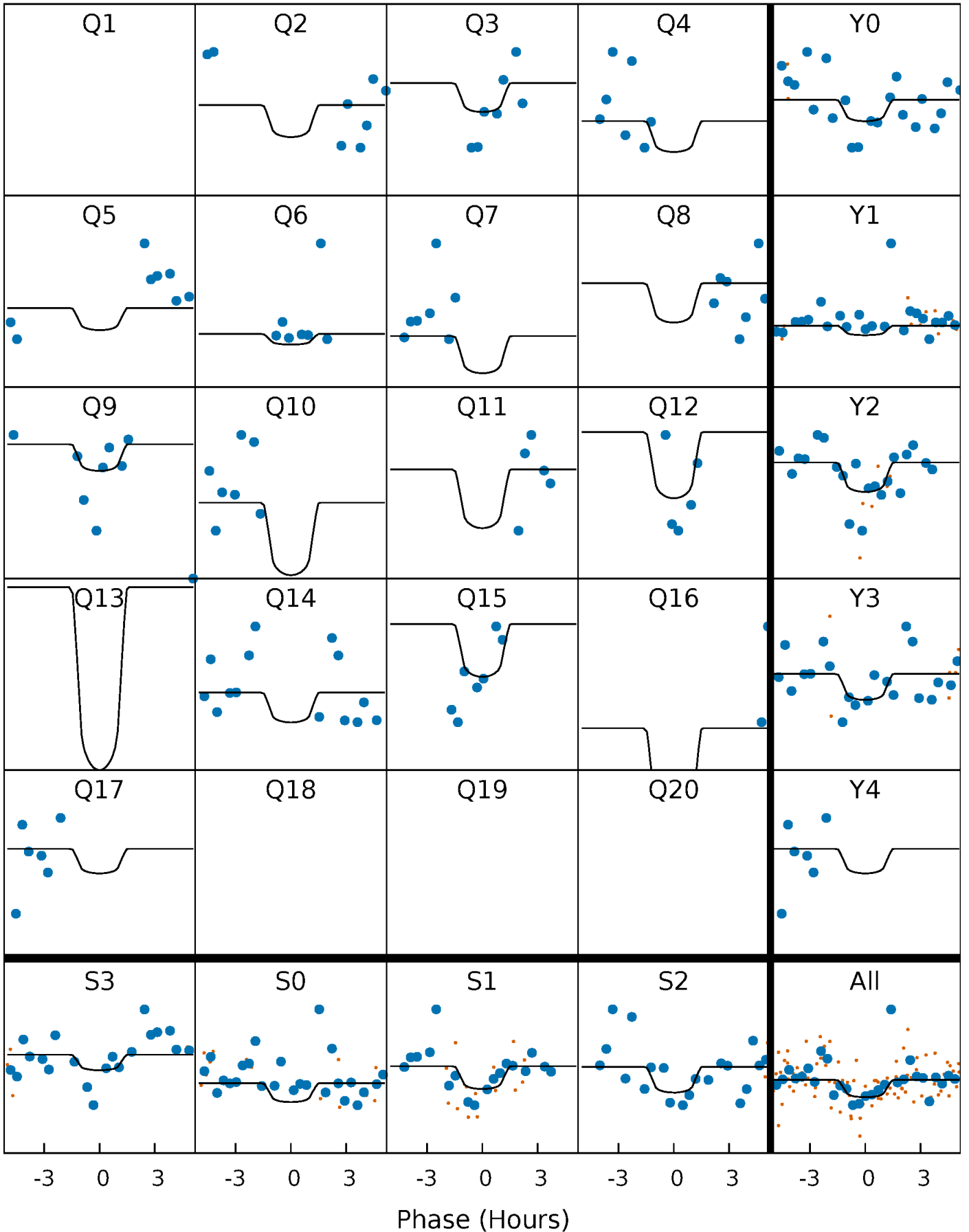
# PDC Quarter-Phased Transit Curves

TCE 008818095-02 P= 36.309302 Days  $T_0=155.333361$  (BKJD)



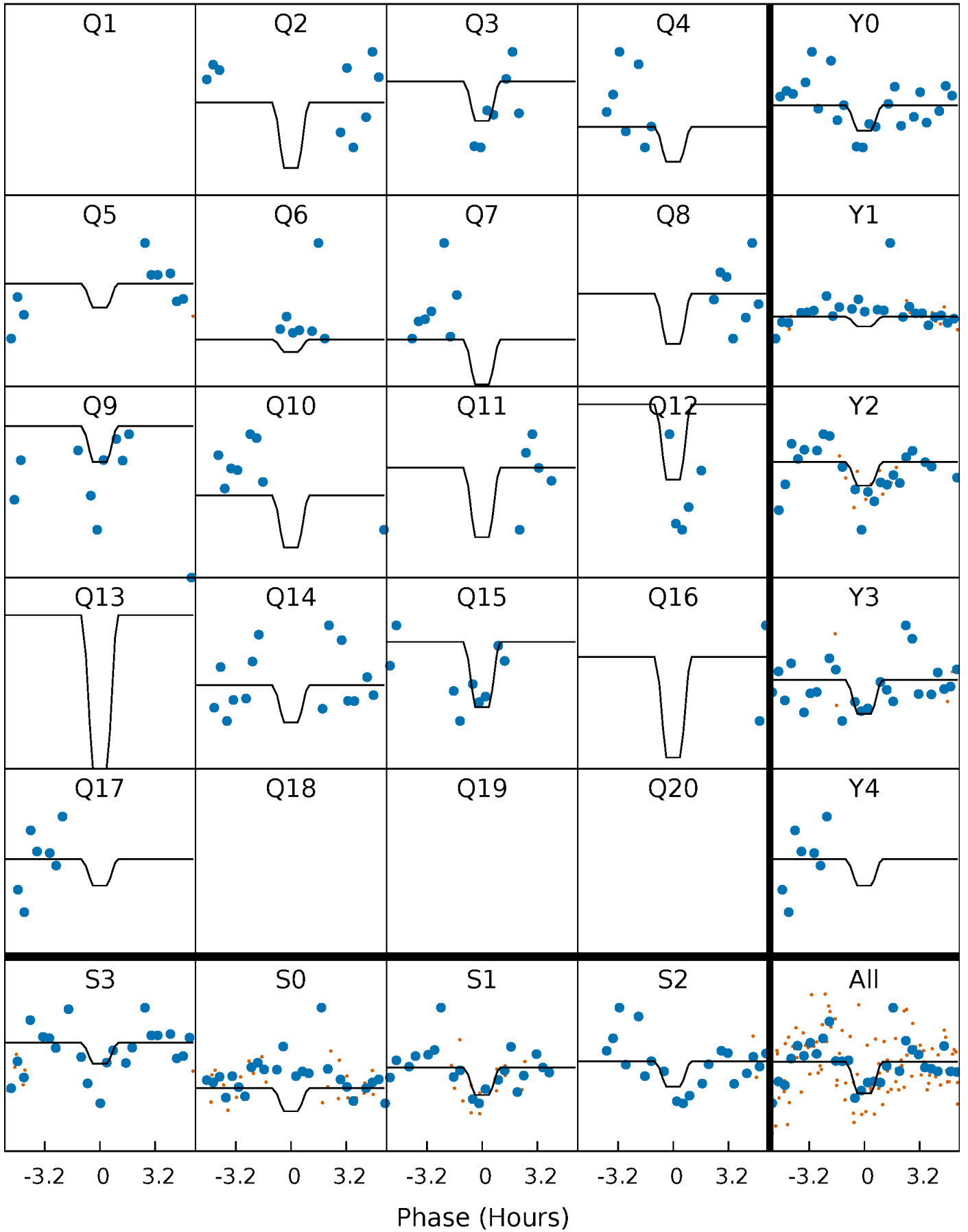
# DV Quarter-Phased Transit Curves

TCE 008818095-02 P= 36.309302 Days  $T_0=155.333361$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008818095-02 P= 36.309158 Days  $T_0=155.328737$  (BKJD)

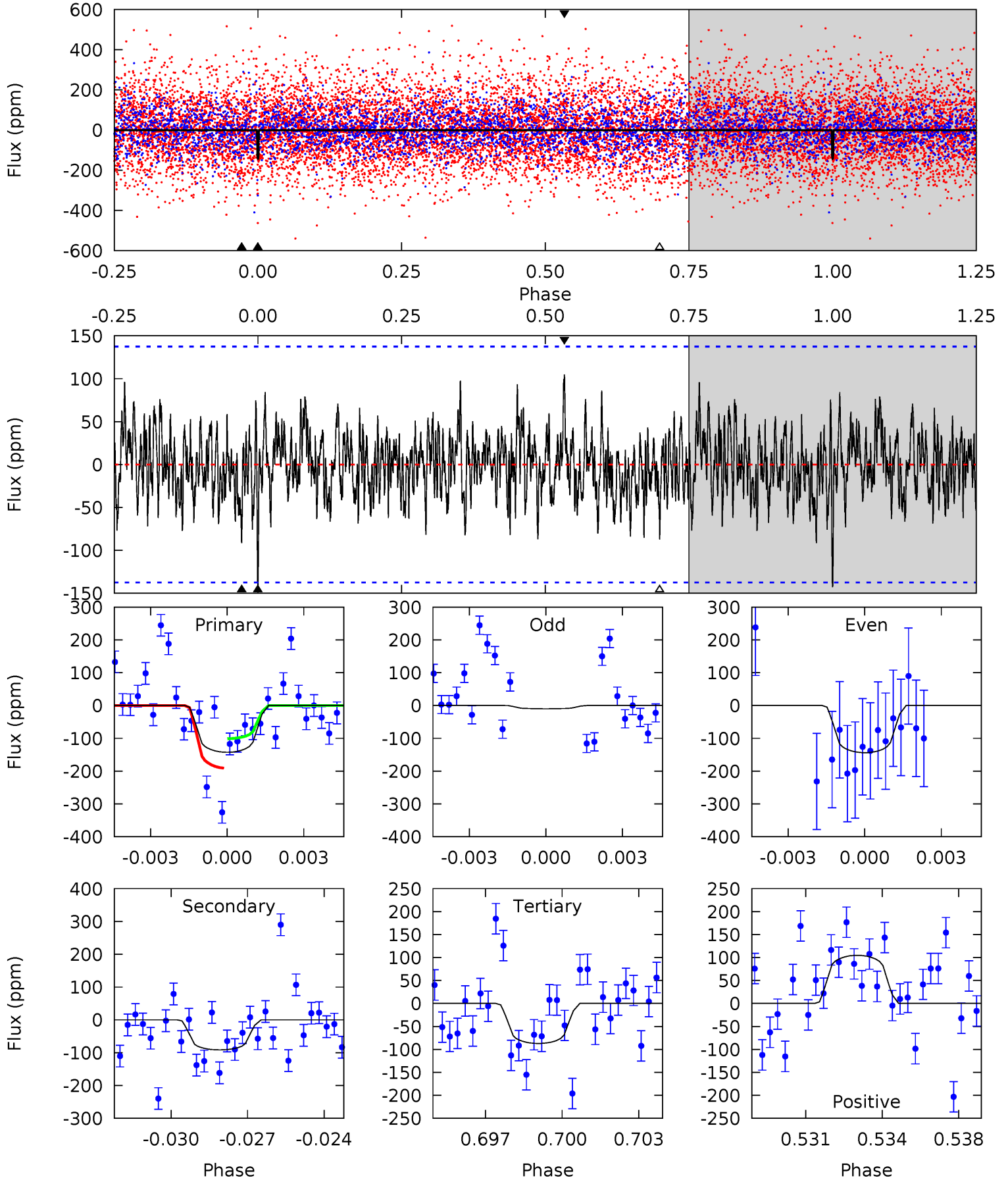




# DV Model-Shift Uniqueness Test

008818095-02,  $P = 36.309302$  Days,  $E = 119.024059$  Days

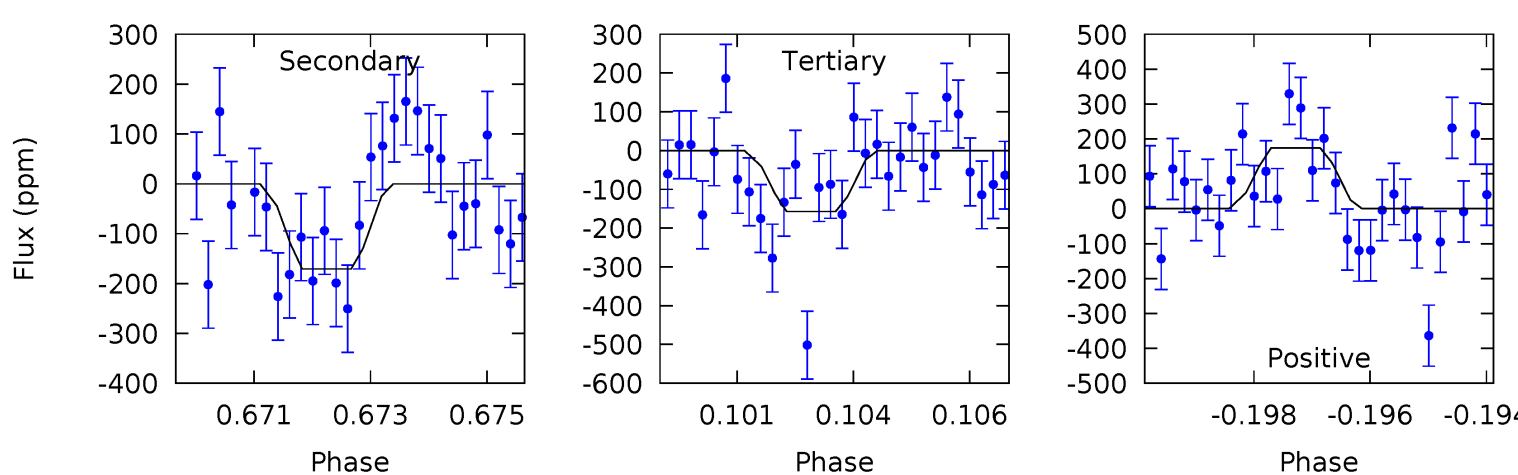
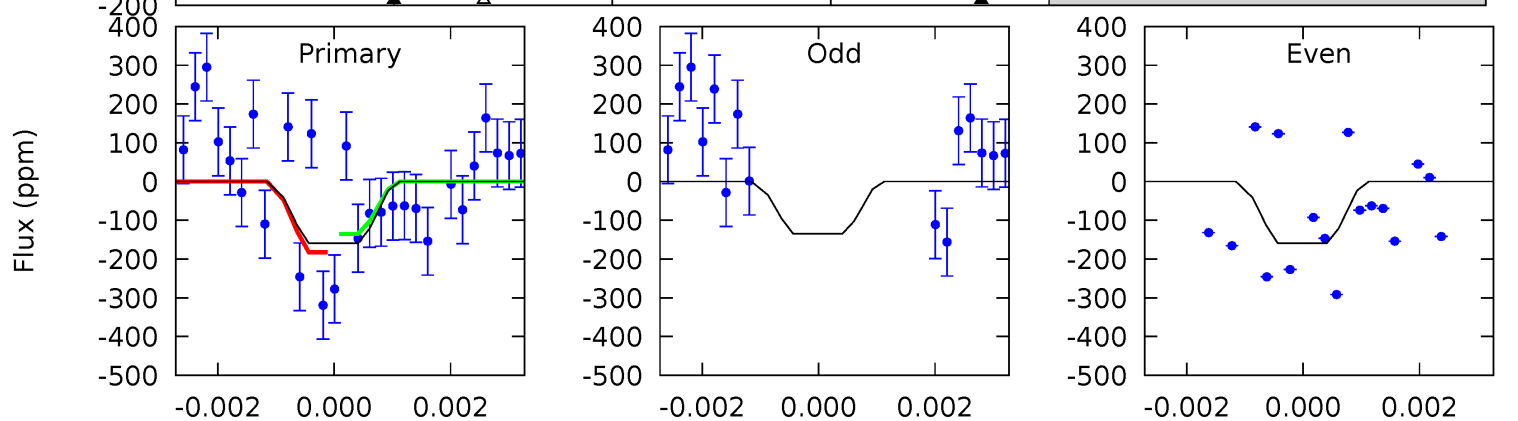
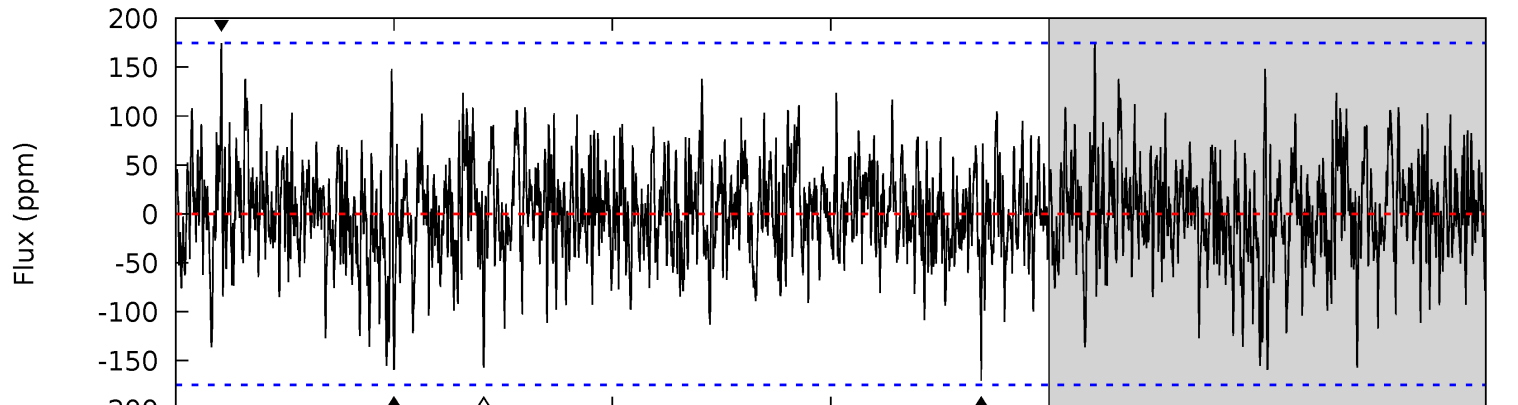
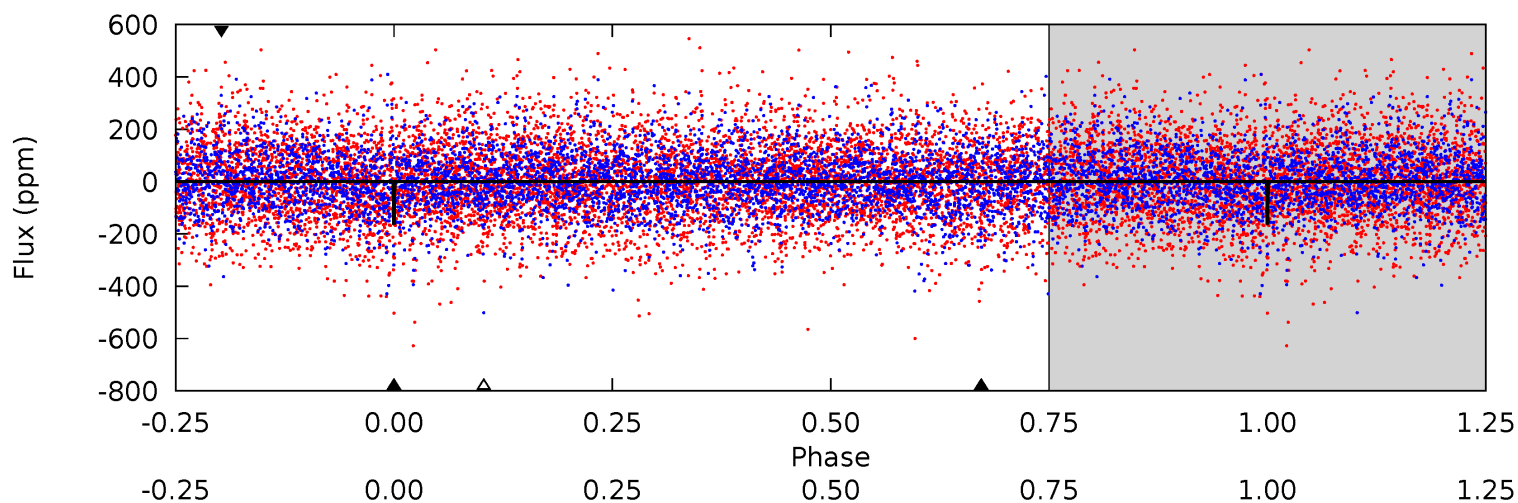
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.43	3.49	3.32	3.99	5.23	2.93	1.22	2.12	1.44	0.17	-0.50	0.99	0.94	0.42	1.70



# Alt Model-Shift Uniqueness Test

008818095-02, P = 36.309158 Days, E = 119.019579 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
4.85	5.19	4.77	5.30	5.31	3.07	1.32	0.07	-0.45	0.41	-0.11	0.45	0.71	0.51	0.72



### Stellar Parameters For KIC 008818095

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5952^{+161}_{-178}$	$4.349^{+0.153}_{-0.187}$	$-0.280^{+0.300}_{-0.300}$	$1.063^{+0.293}_{-0.195}$	$0.921^{+0.130}_{-0.095}$	$1.080^{+0.773}_{-0.516}$
	+3%/-3%	+4%/-4%	+107%/-107%	+28%/-18%	+14%/-10%	+72%/-48%
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 008818095-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-92 \pm 26$	$2.37^{+2.18}_{-1.62}$	$829^{+57}_{-52}$	$4343^{+2946}_{-933}$	$409^{+3390}_{-315}$
Alt.	$-171 \pm 33$	$2.40^{+2.30}_{-1.53}$	$833^{+59}_{-51}$	$4795^{+3347}_{-973}$	$669^{+4777}_{-485}$

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

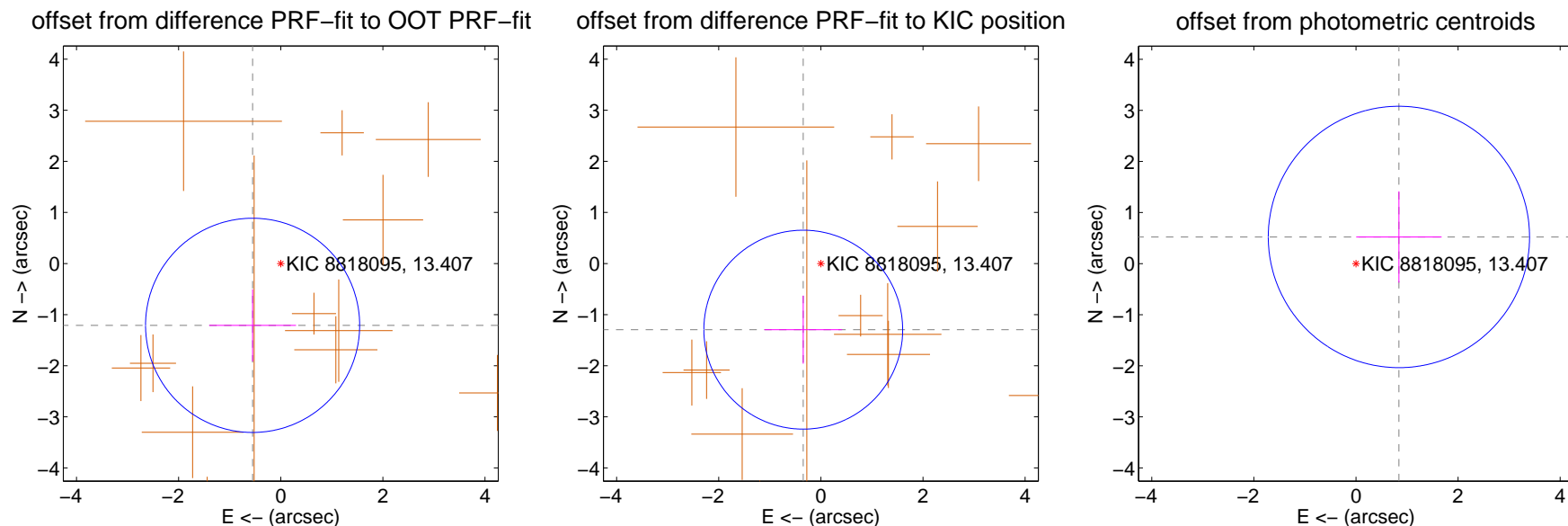
## DV Centroid Data

Supplemental centroid analysis for 008818095-02. Kepler magnitude: 13.41. Transit SNR 7.10

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

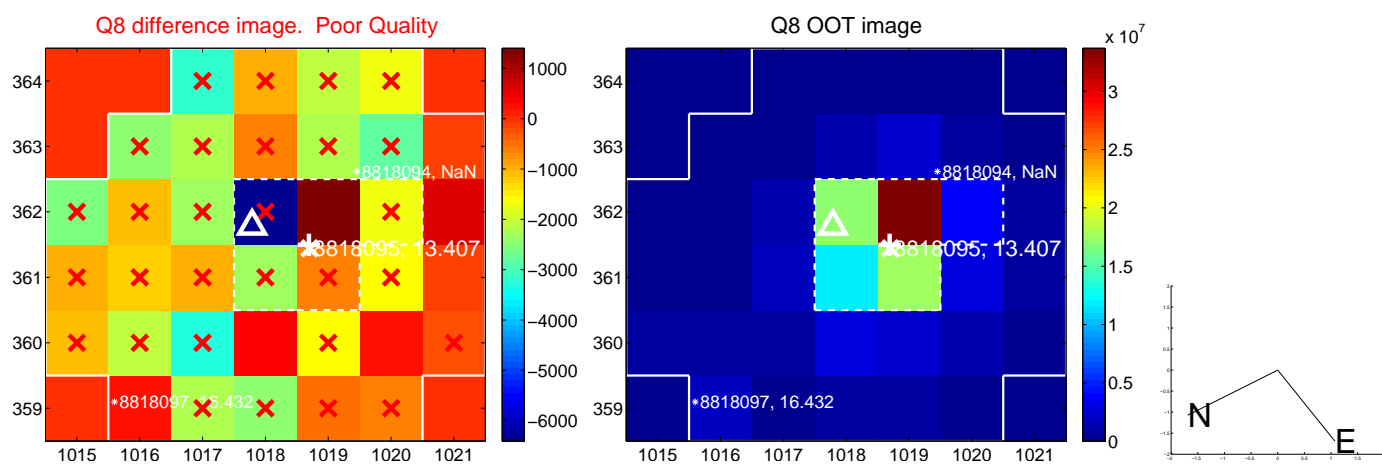
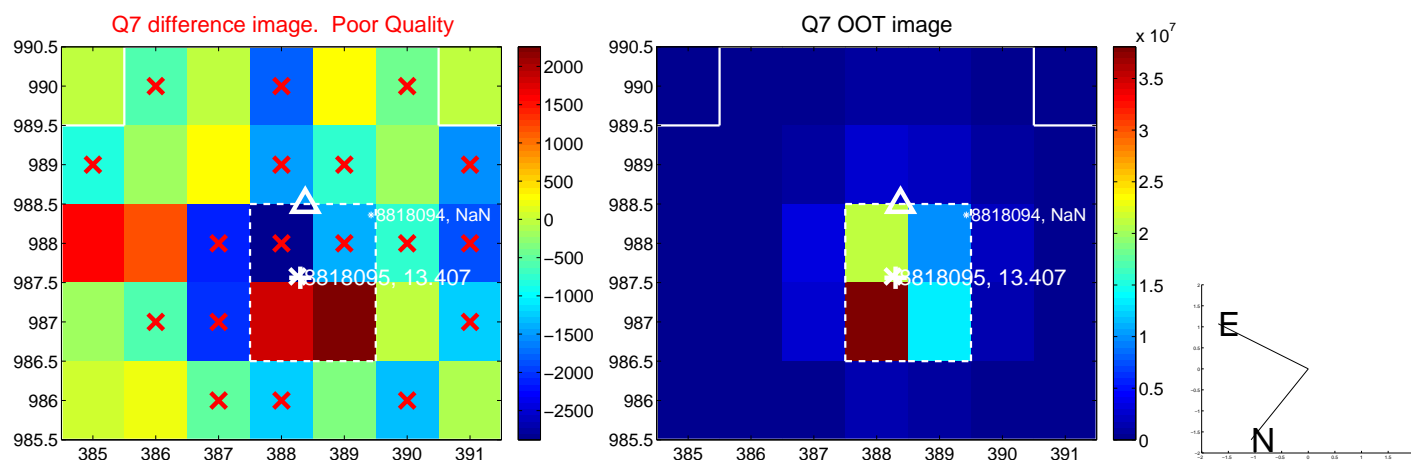
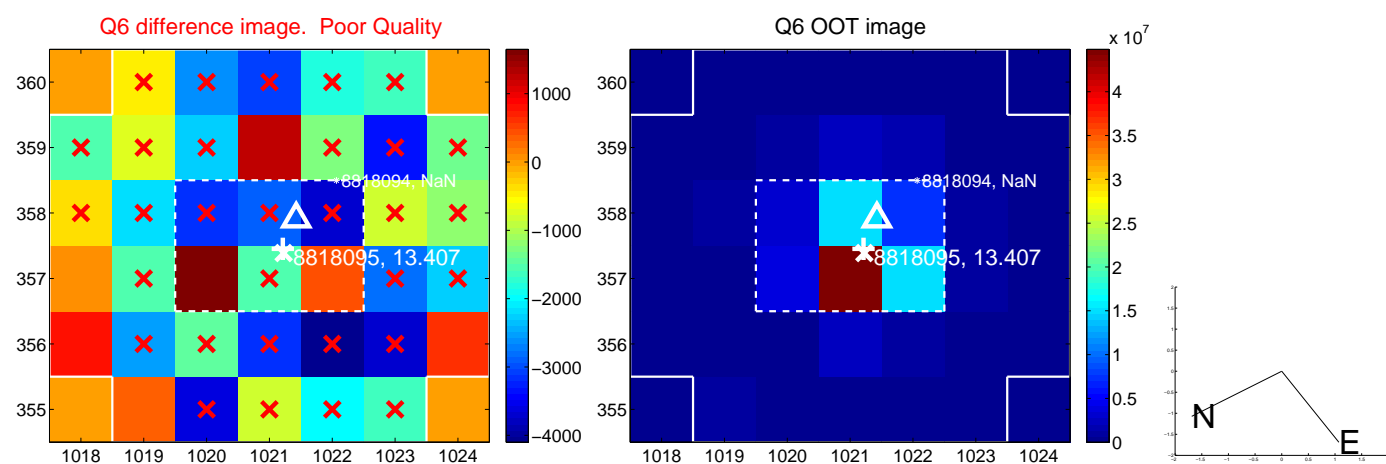
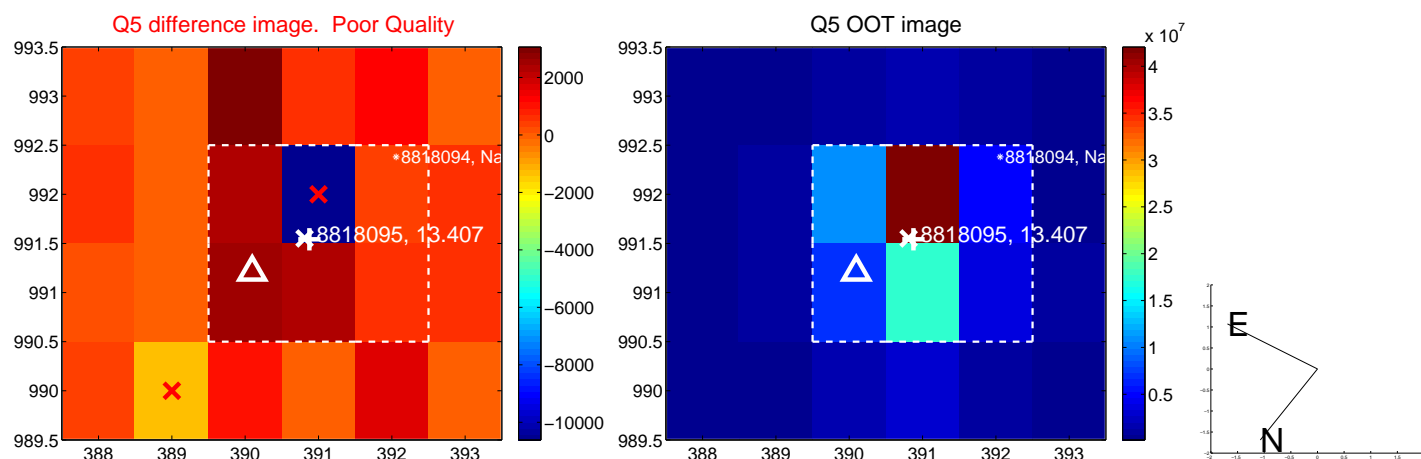
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.329 \pm 0.699$	1.90	$0.551 \pm 0.850$	$-1.210 \pm 0.706$
PRF-fit source offset from KIC position	$1.339 \pm 0.649$	2.06	$0.345 \pm 0.758$	$-1.294 \pm 0.667$
photometric centroid source offset	$0.99 \pm 0.85$	1.16	$-0.84 \pm 0.84$	$0.52 \pm 0.89$



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.

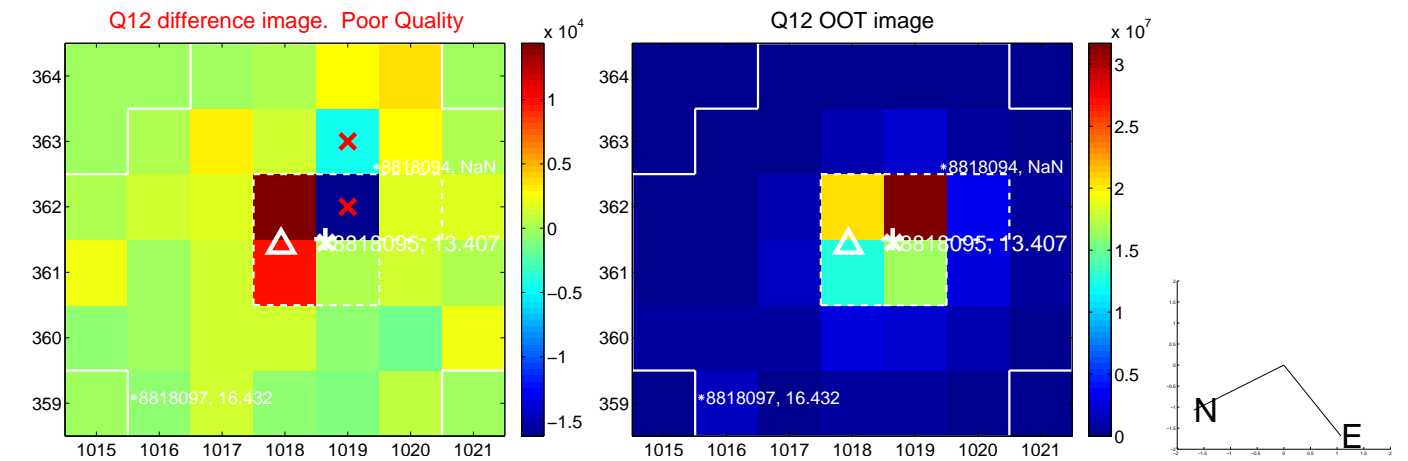
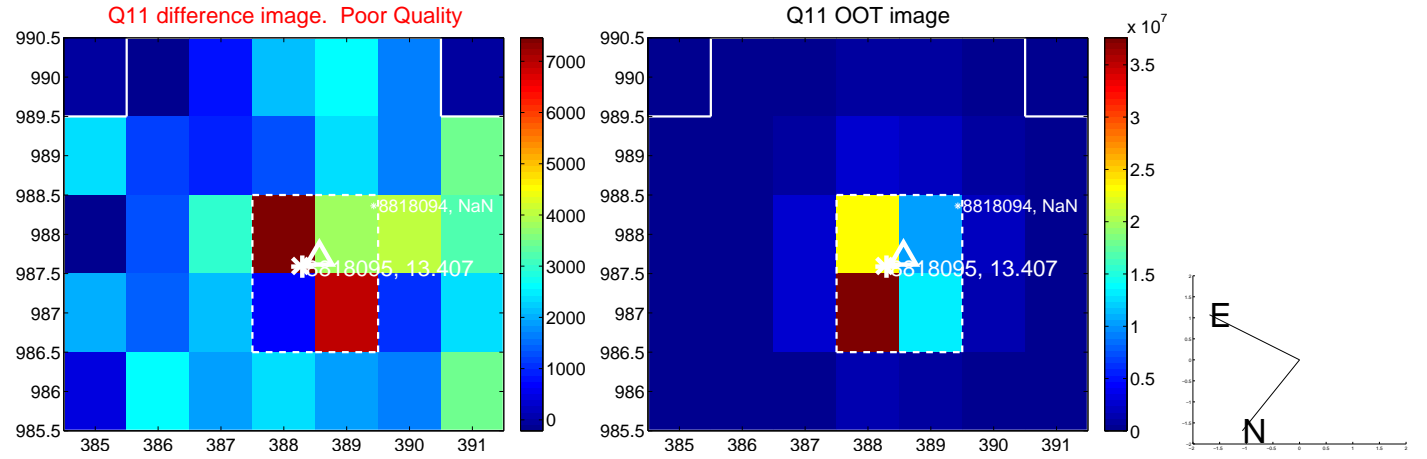
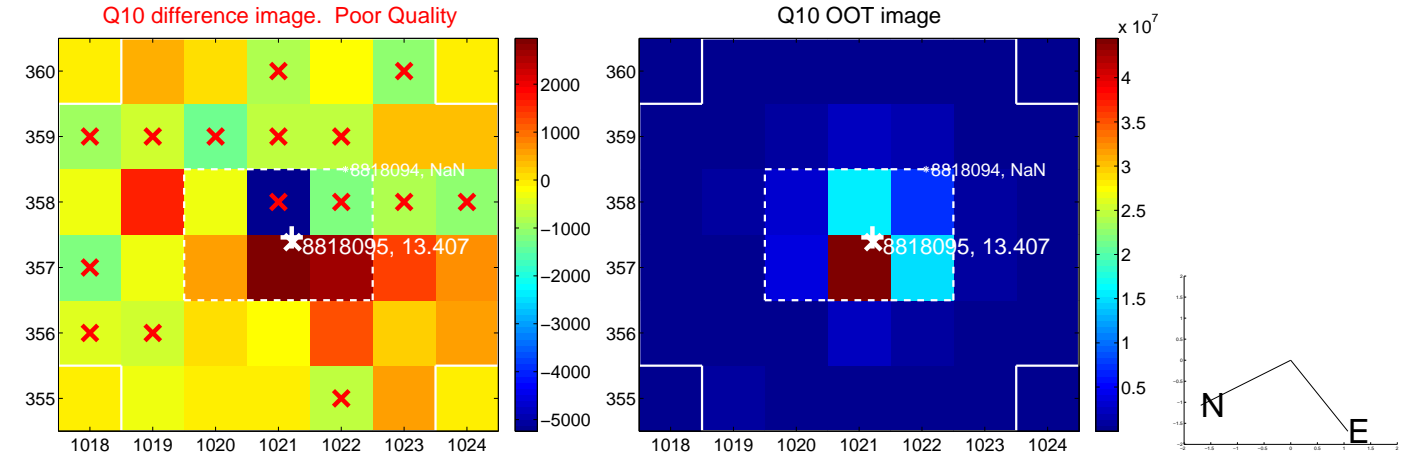
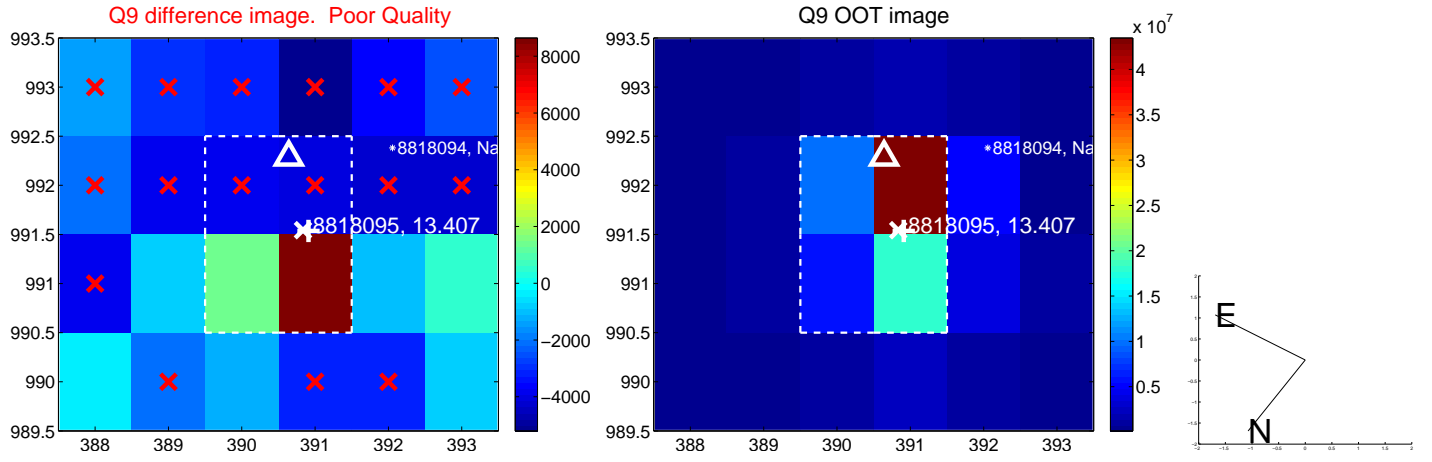


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



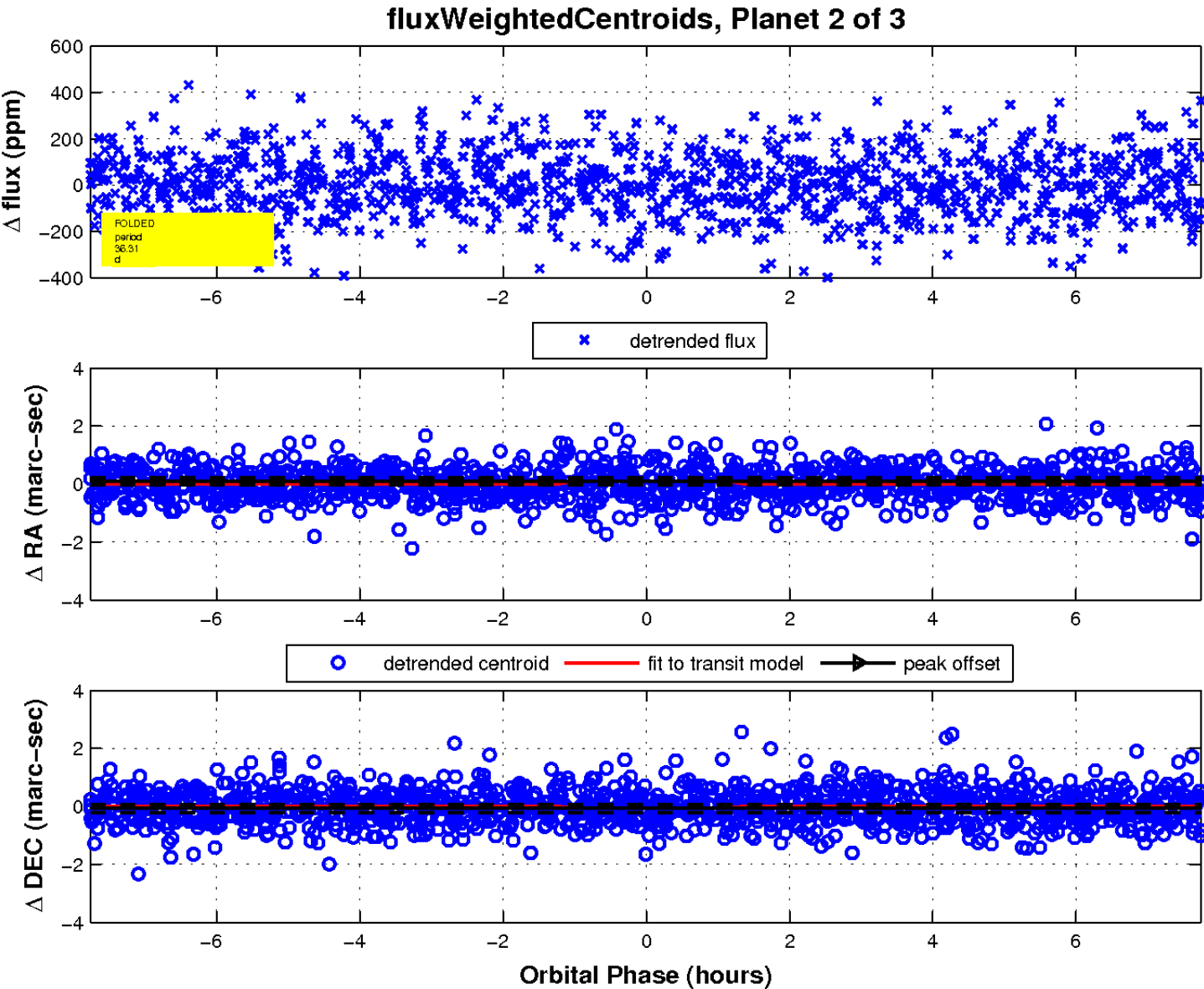
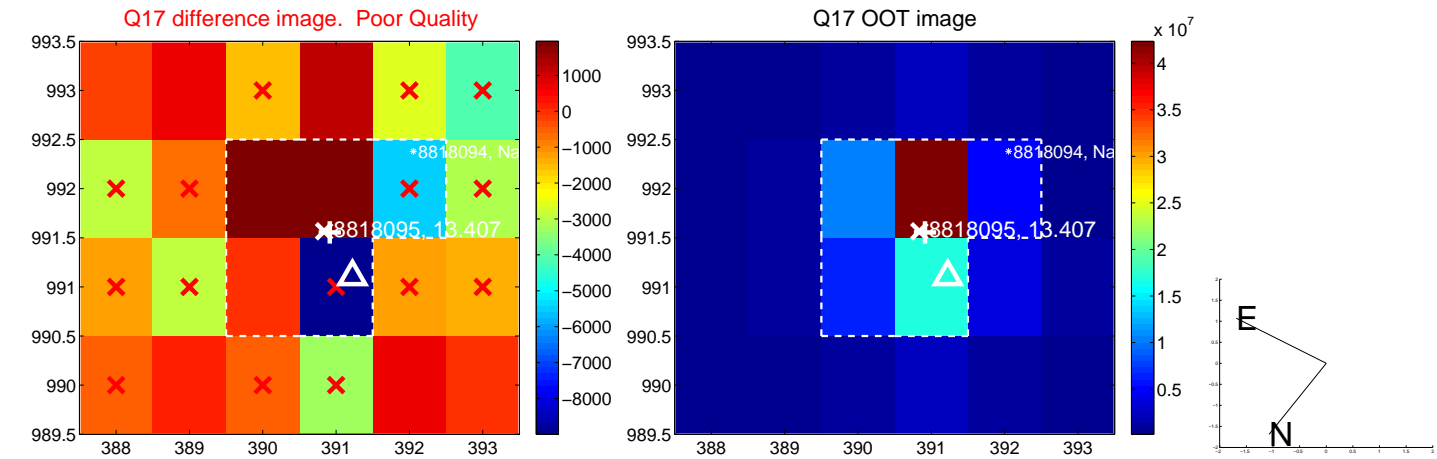


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



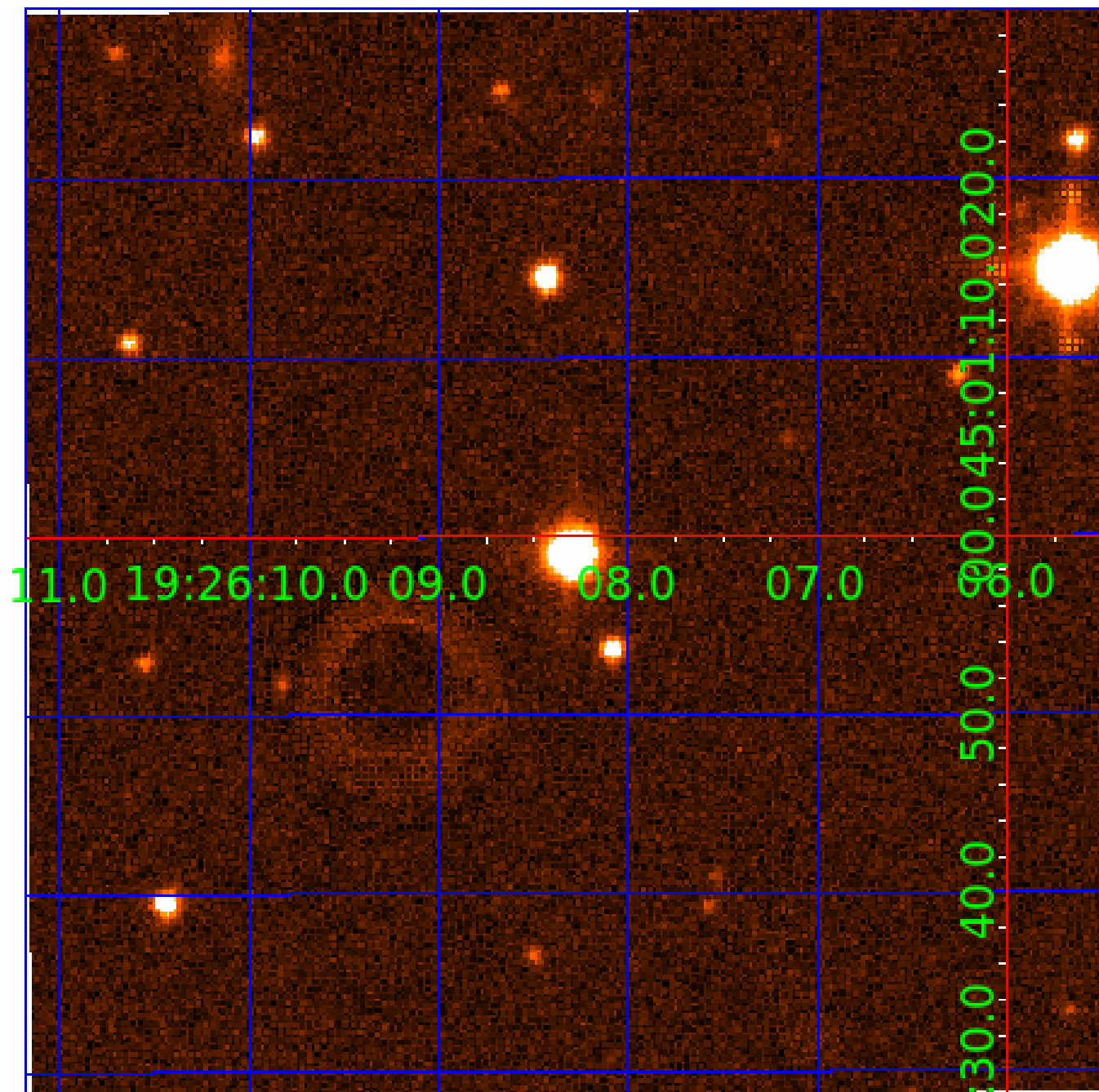


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 008818095

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008818095-01	OBS	No	1.087881	132.519090	6.4	7.351	8.3	4.9	1.06	5952	0.29	3131.79
008818095-02	OBS	No	36.309302	155.333361	142.7	2.589	9.4	7.1	1.06	5952	1.46	29.14
008818095-03	OBS	No	307.964099	219.876775	185.9	8.651	8.8	8.9	1.06	5952	1.70	1.69

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008818095-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST
008818095-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008818095-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

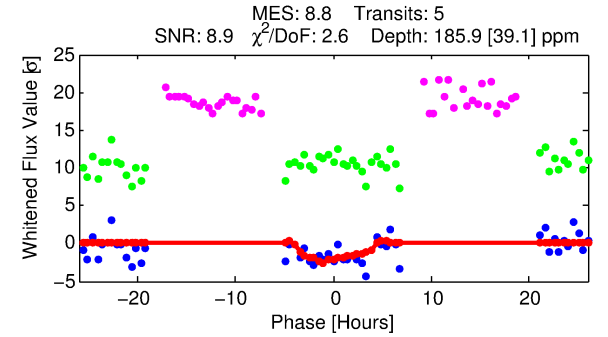
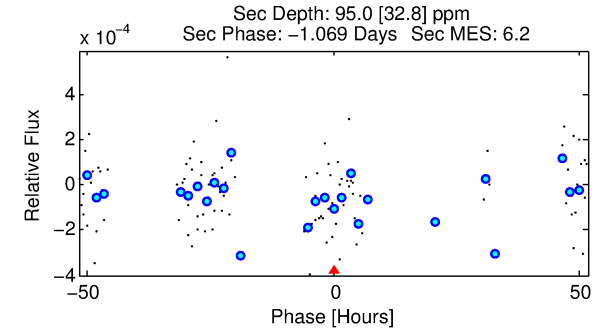
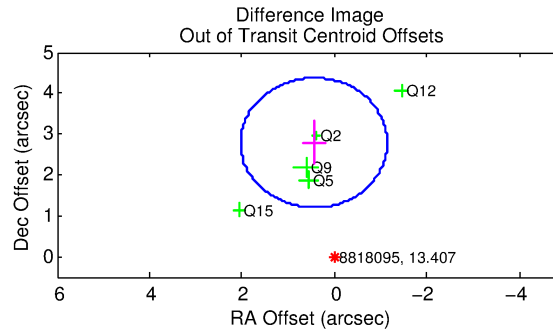
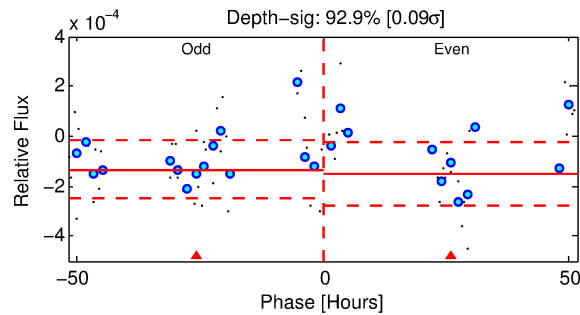
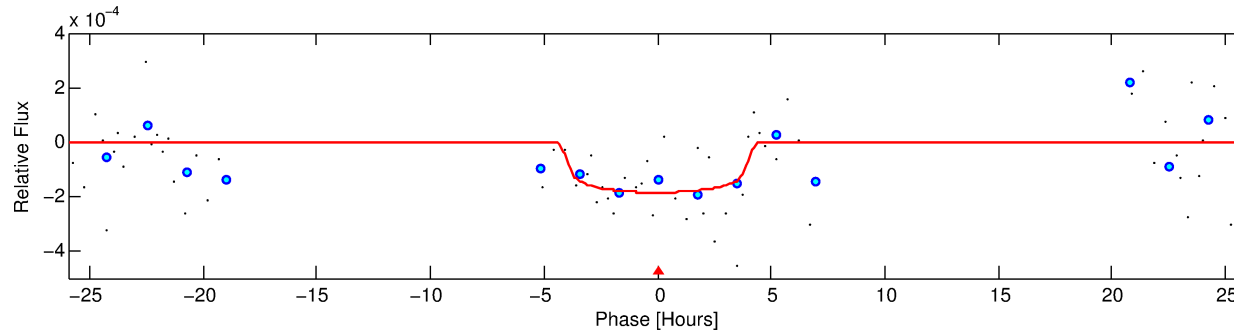
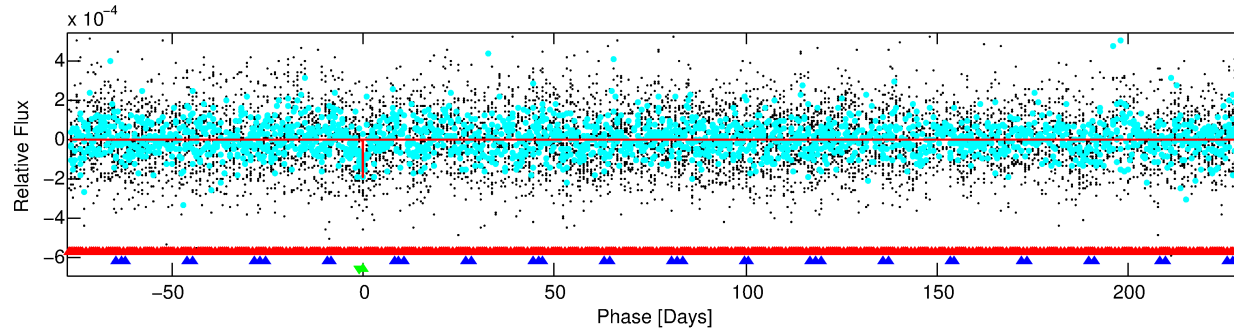
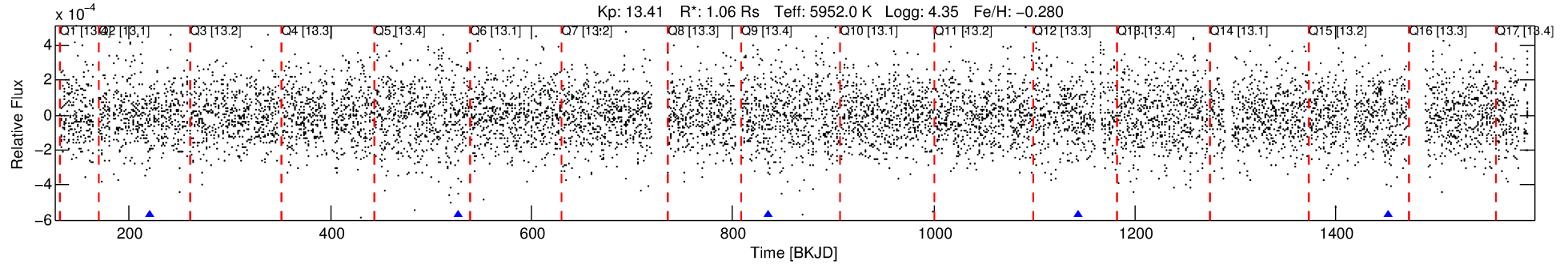
## Ephemeris Match Information For 008818095-03

No Significant Match Found



# DV One-Page Summary

KIC: 8818095 Candidate: 3 of 3 Period: 307.964 d



## DV Fit Results:

Period = 307.96410 [0.03833] d  
Epoch = 219.8768 [0.0870] BKJD  
Rp/R\* = 0.0147 [0.0077]  
a/R\* = 128.53 [363.71]  
b = 0.90 [0.57]  
Seff = 1.68 [0.61]  
Teq = 291 [26] K  
Rp = 1.70 [1.01] Re  
a = 0.8684 [0.2025] AU  
Ag = 13567.23 [15702.38] [0.86 $\sigma$ ]  
Teffp = 4848 [1348] K [3.38 $\sigma$ ]

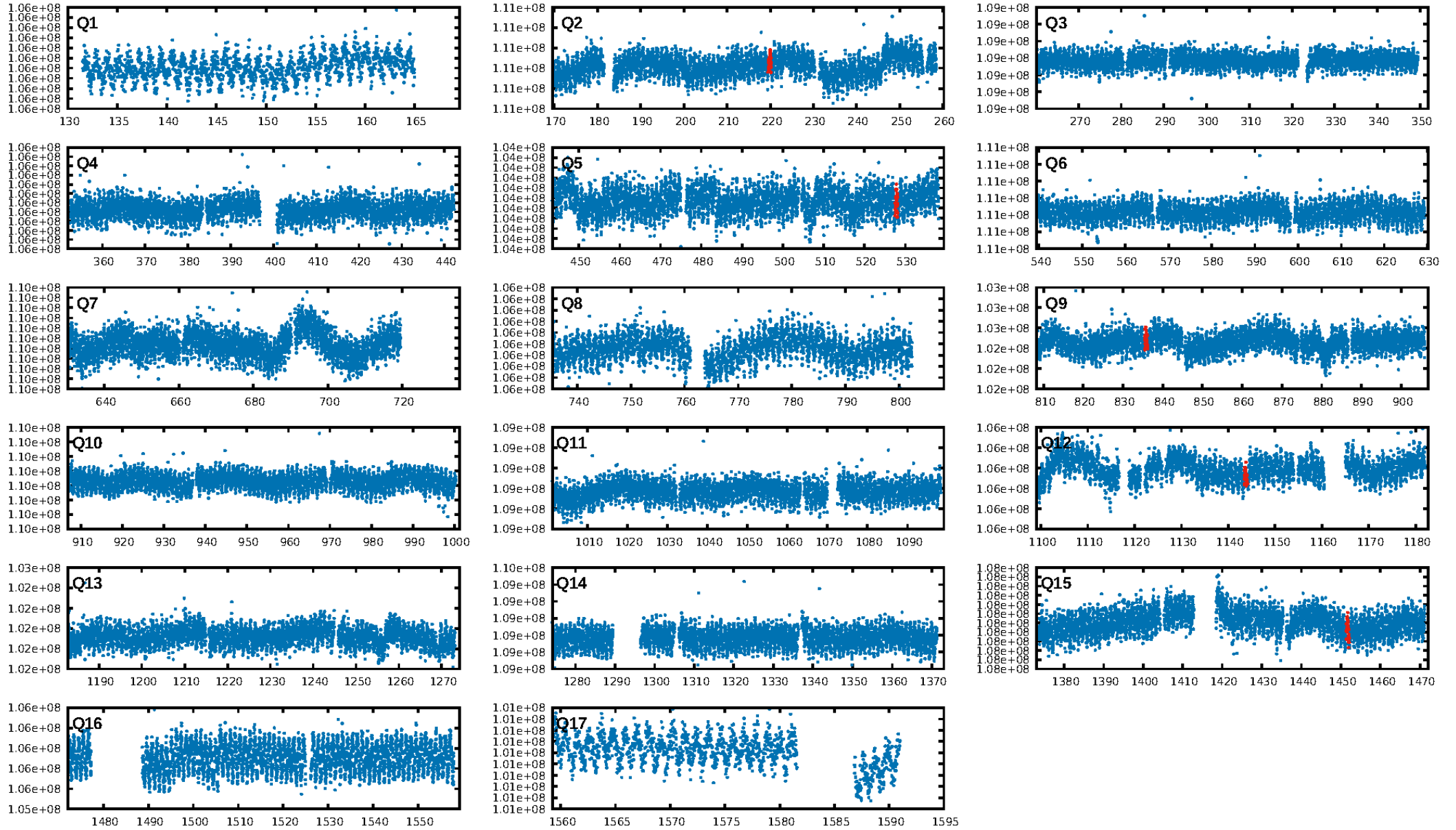
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [721.98 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.9%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 2.03e-09**  
RollingBand-fgt: 1.00 [5/5]  
**GhostDiagnostic-chr: 0.4146**  
Centroid-sig: 69.6%  
Centroid-so: 0.512 arcsec [0.45 $\sigma$ ]  
**OotOffset-rm: 2.823 arcsec [5.34 $\sigma$ ]**  
**KicOffset-rm: 2.707 arcsec [5.12 $\sigma$ ]**  
OotOffset-st: 1/1/1/2 [5]  
KicOffset-st: 1/1/1/2 [5]  
DiffImageQuality-fgm: 0.00 [0/5]  
DiffImageOverlap-fno: 0.00 [0/5]

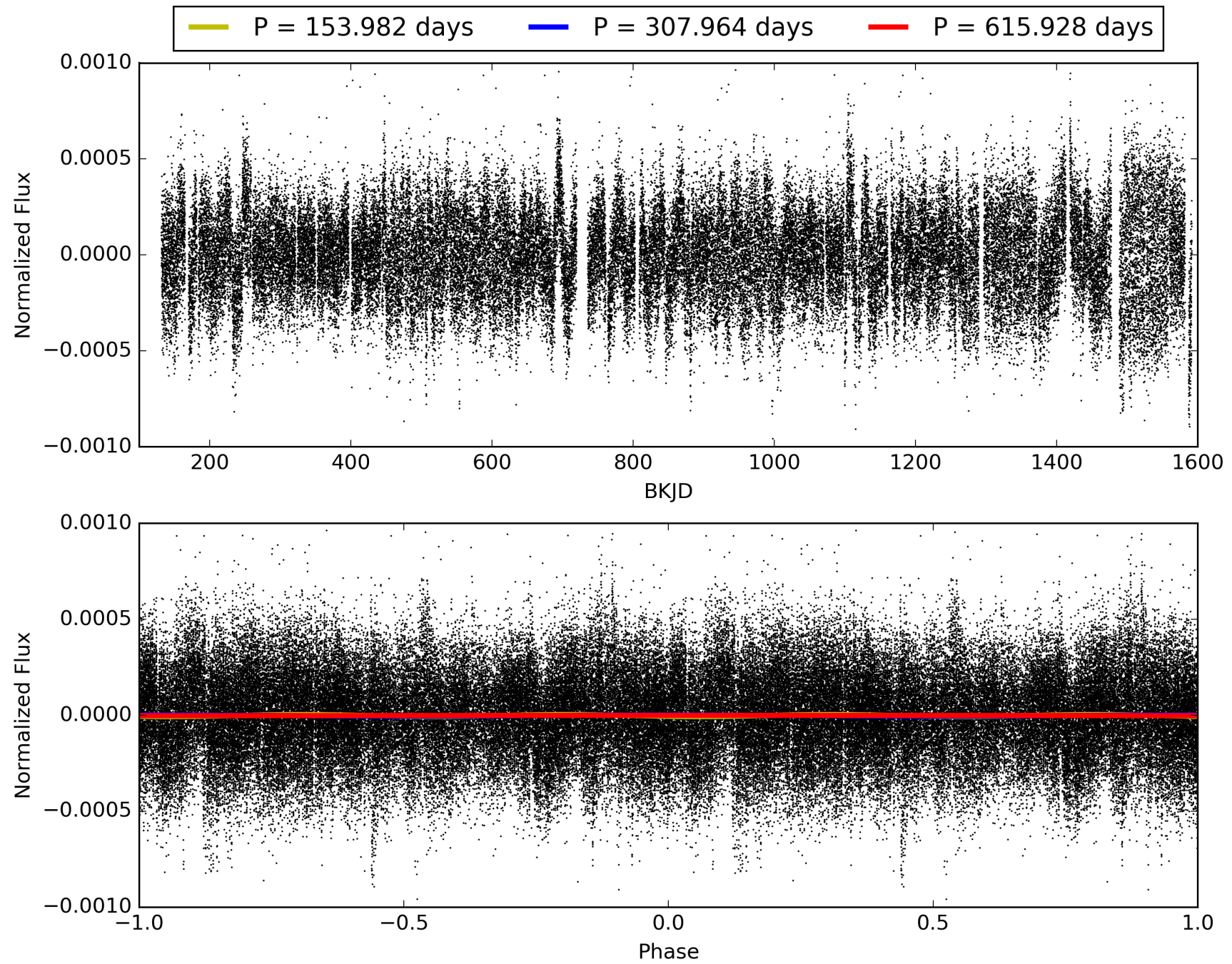
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:39:36 Z

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

# TCE 008818095-03, PDC Light Curves

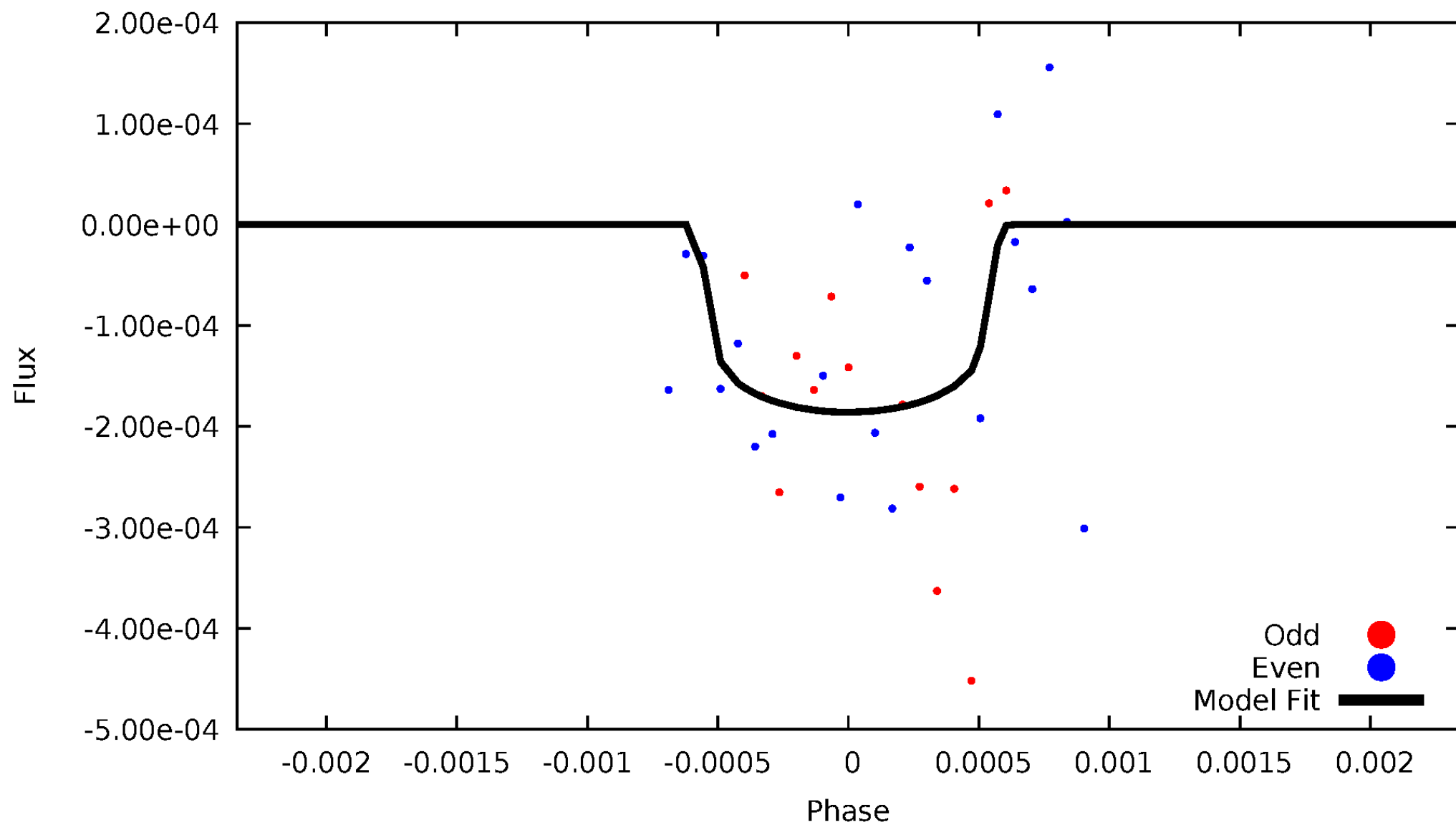


TCE 008818095-03



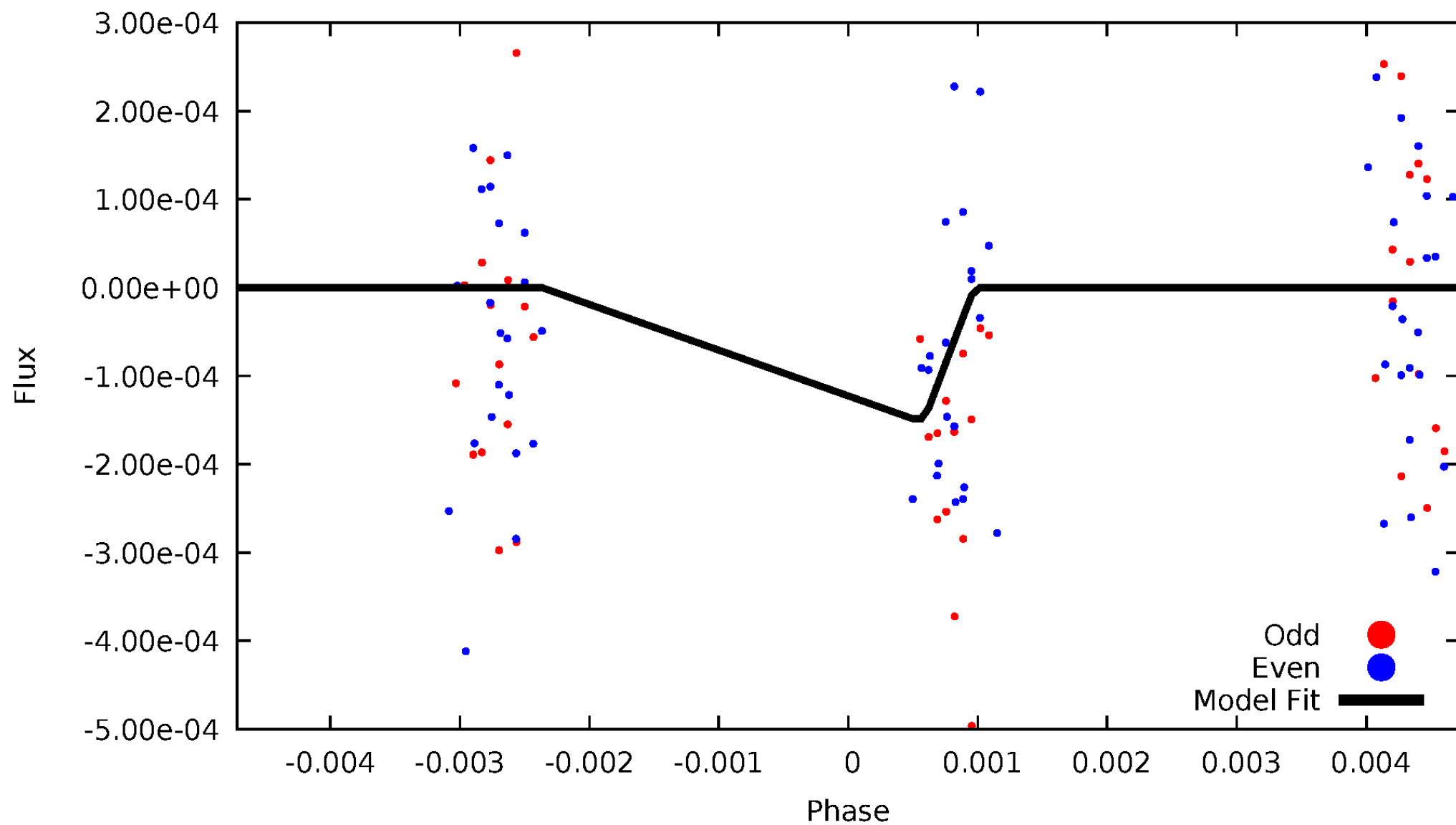
# DV Odd/Even

TCE 008818095-03



# ALT Odd/Even

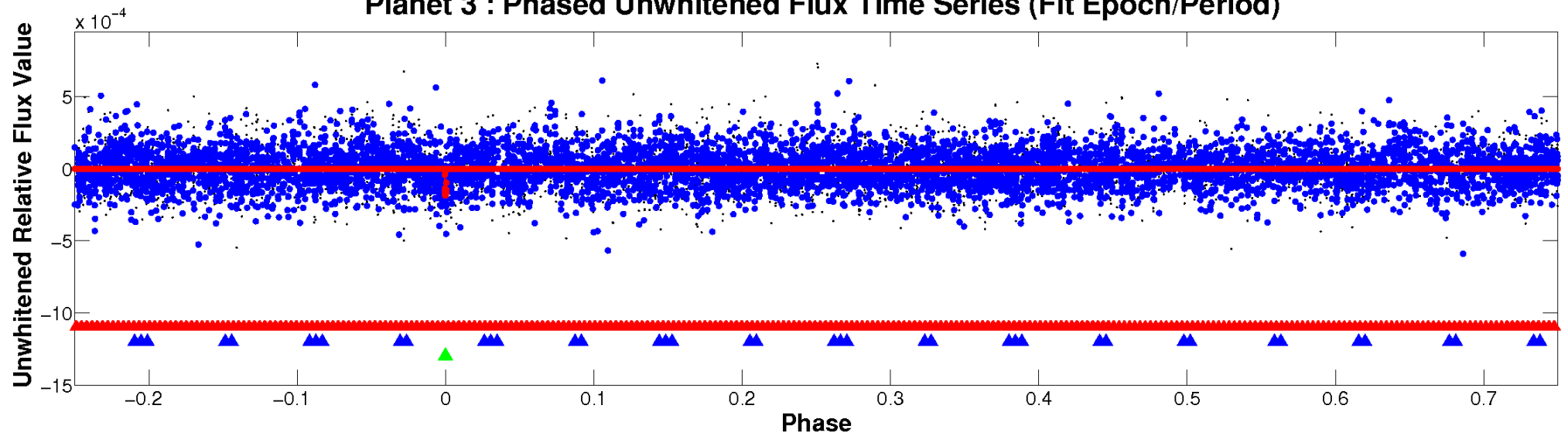
TCE 008818095-03



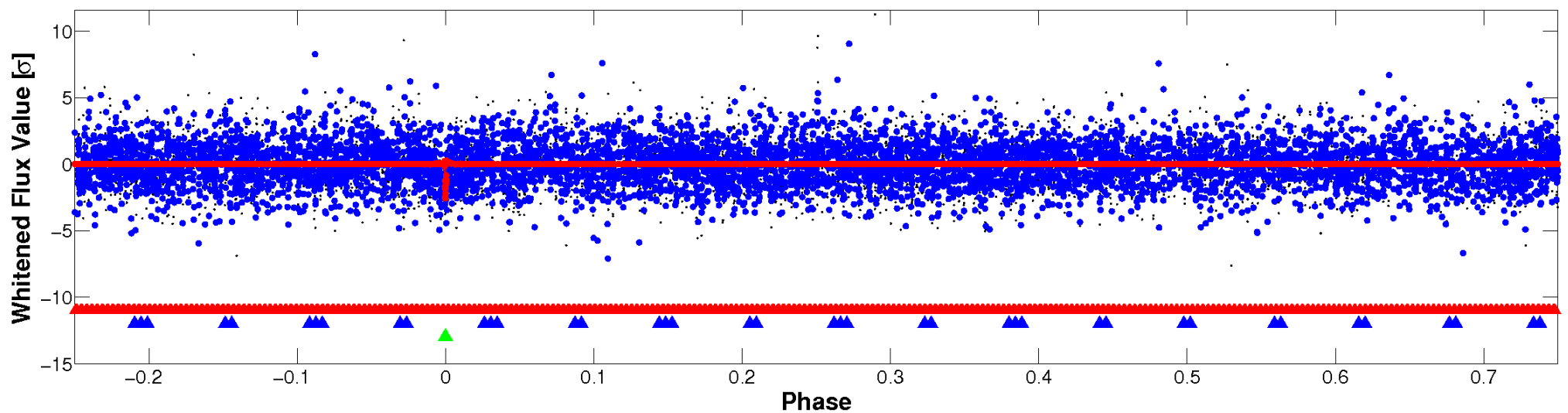


# Non-Whitened Vs. Whitened Light Curve

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

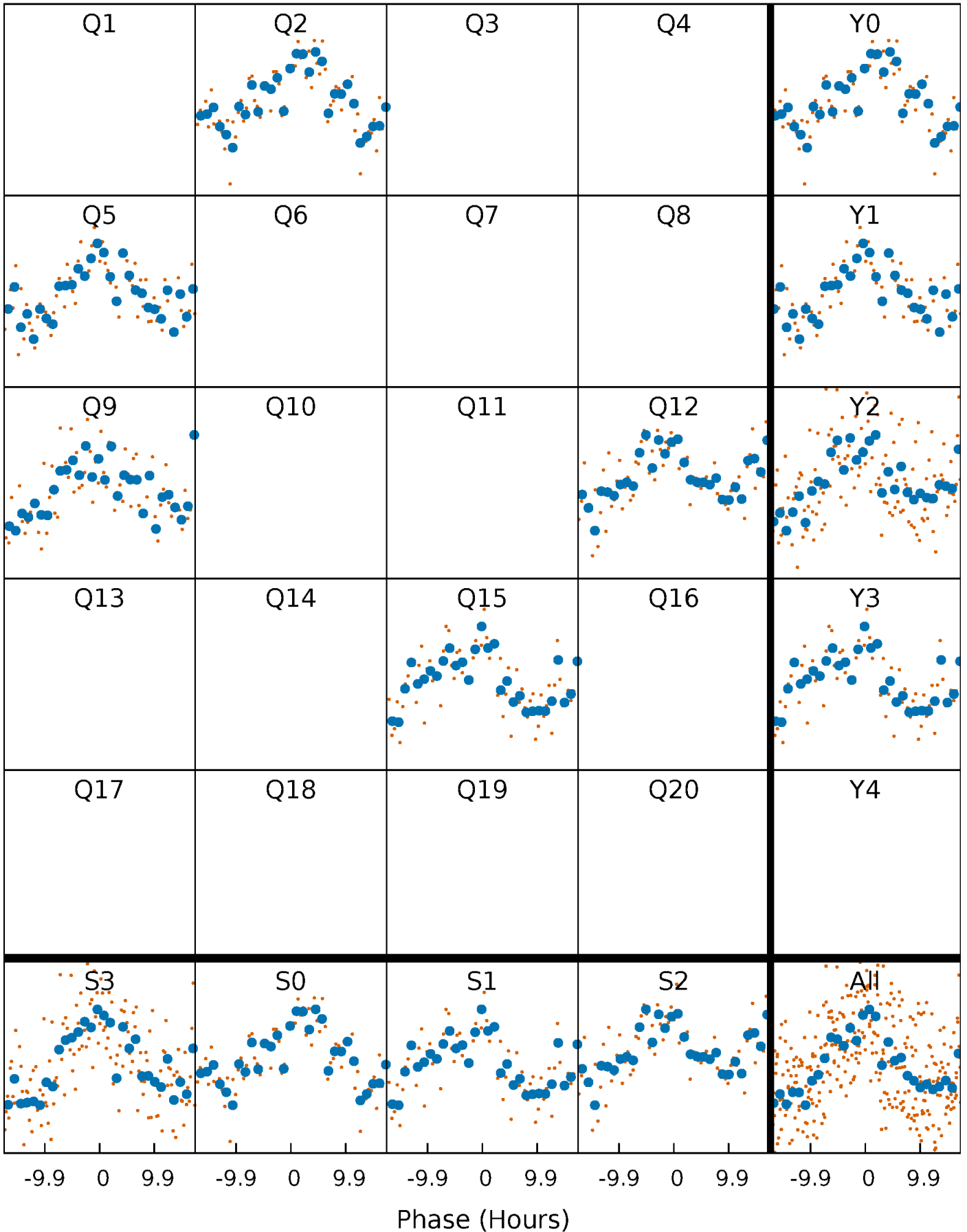


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



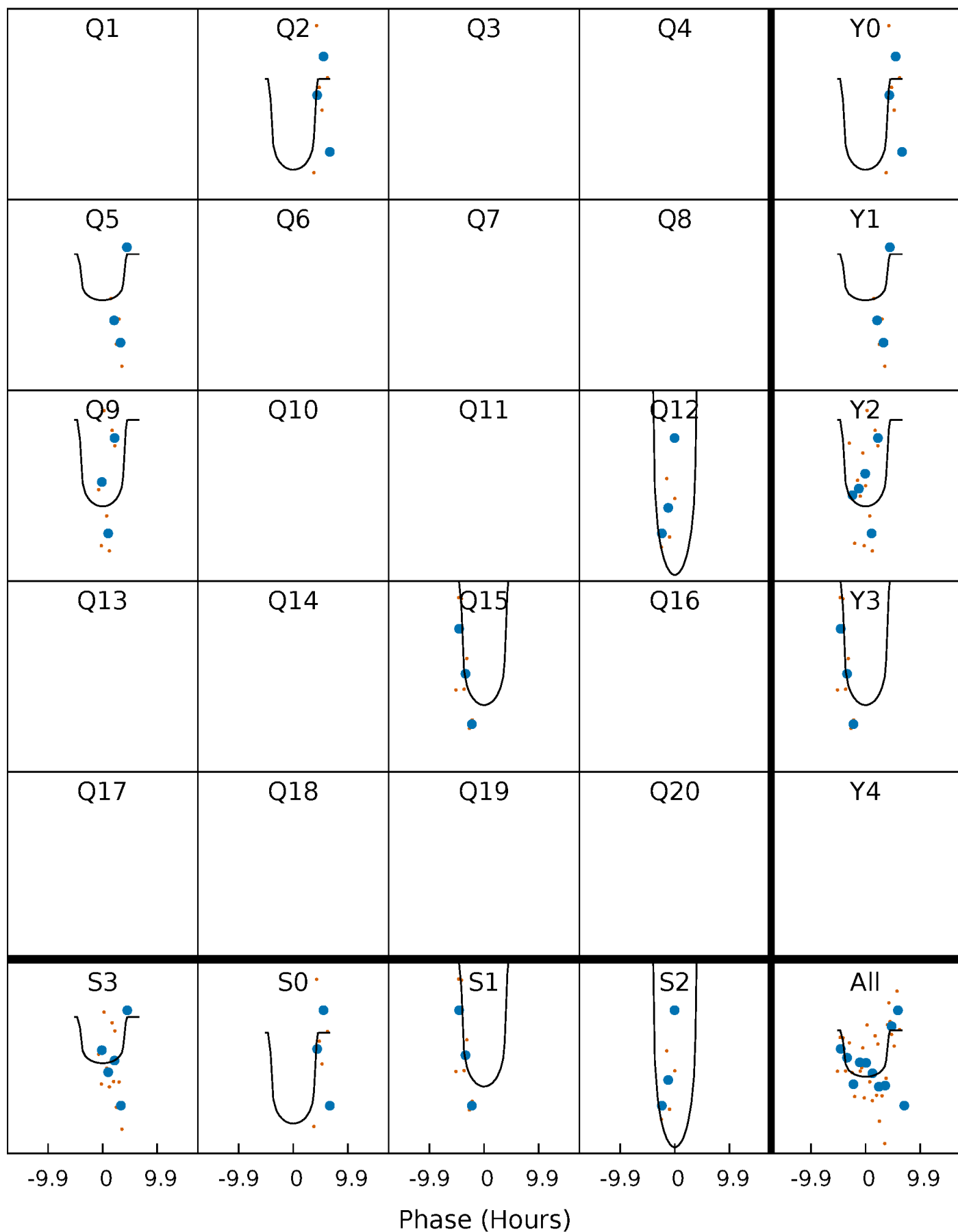
# PDC Quarter-Phased Transit Curves

TCE 008818095-03     $P=307.964099$  Days     $T_0=219.876775$  (BKJD)



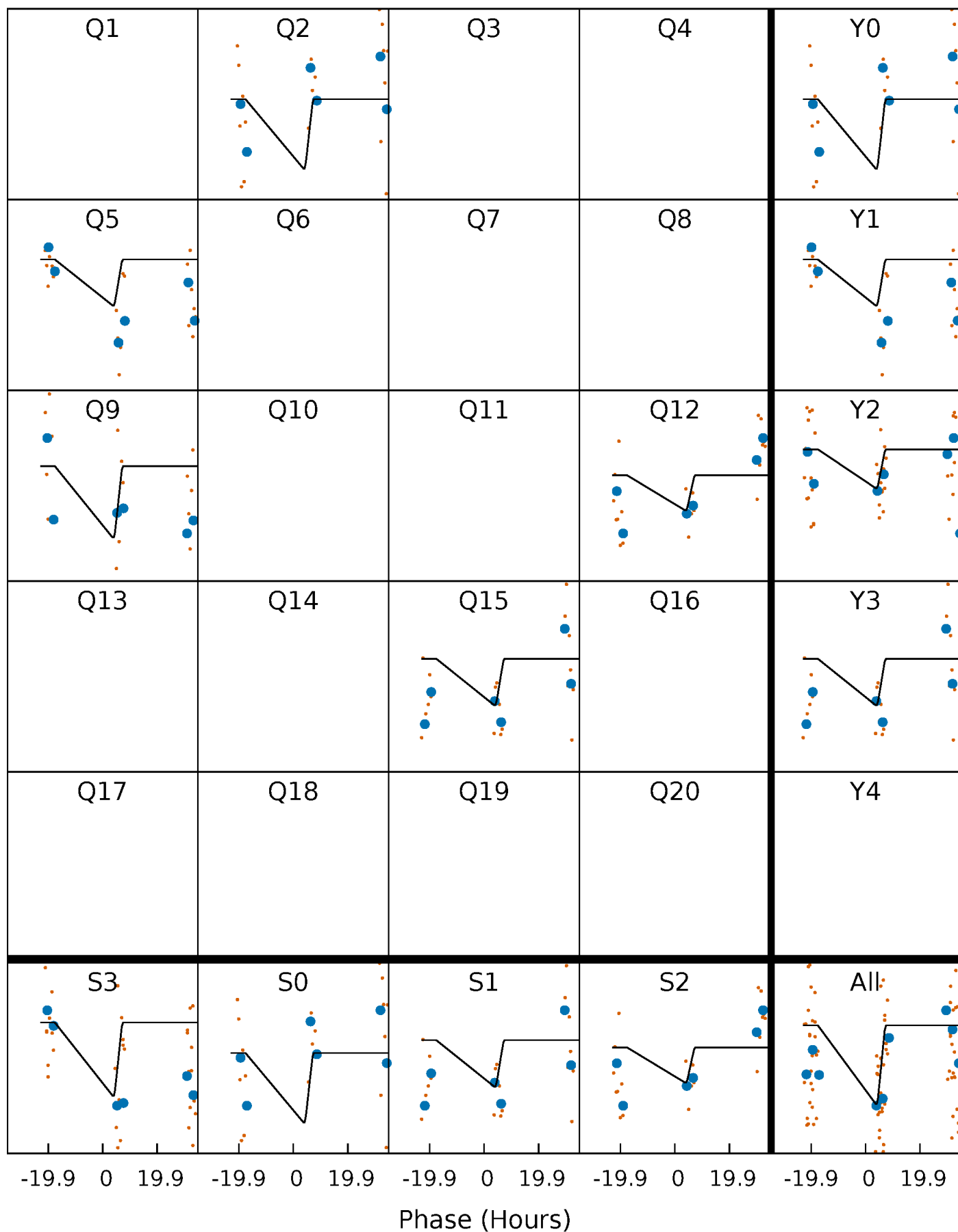
# DV Quarter-Phased Transit Curves

TCE 008818095-03 P=307.964099 Days  $T_0=219.876775$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

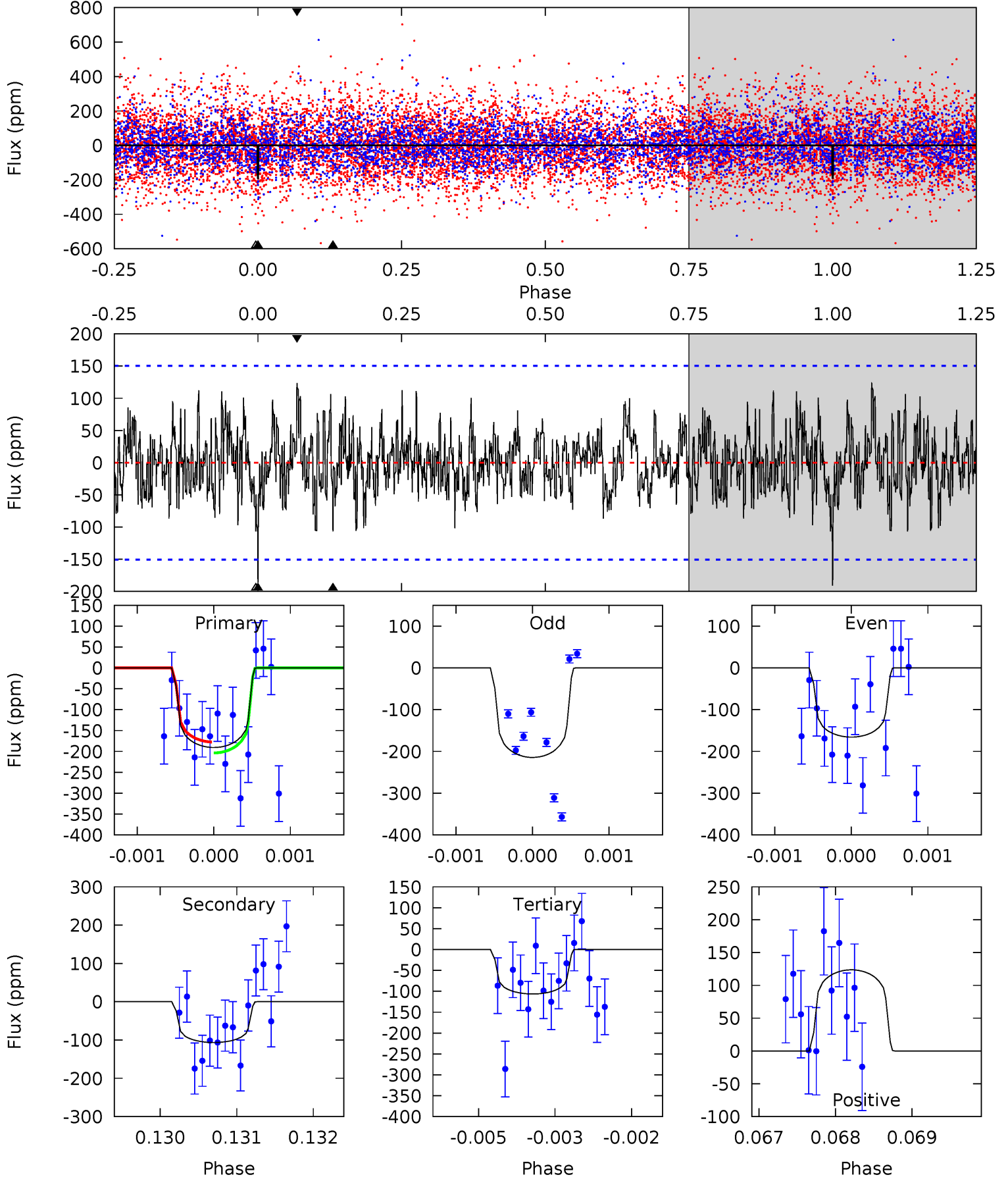
TCE 008818095-03 P=307.891807 Days  $T_0=219.800870$  (BKJD)



# DV Model-Shift Uniqueness Test

008818095-03, P = 307.964099 Days, E = 219.876775 Days

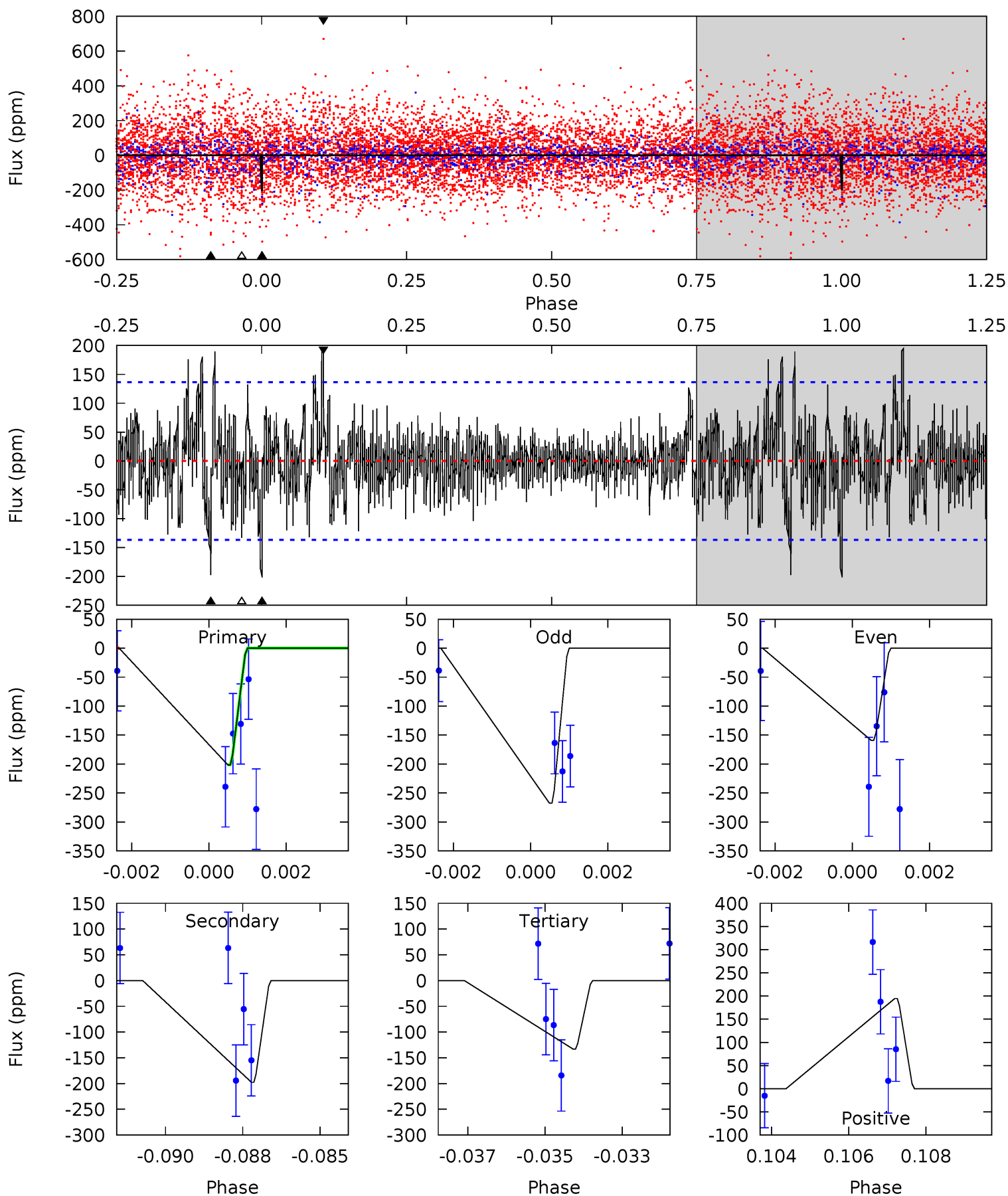
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.88	3.85	3.84	4.46	5.43	3.26	1.36	3.04	2.42	0.01	-0.61	0.87	1.04	0.39	0.47



# Alt Model-Shift Uniqueness Test

008818095-03, P = 307.891807 Days, E = 219.800870 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
7.85	7.70	5.19	7.59	5.32	3.09	1.65	2.66	0.26	2.51	0.11	2.08	0.91	0.49	0





### Stellar Parameters For KIC 008818095

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5952^{+161}_{-178}$	$4.349^{+0.153}_{-0.187}$	$-0.280^{+0.300}_{-0.300}$	$1.063^{+0.293}_{-0.195}$	$0.921^{+0.130}_{-0.095}$	$1.080^{+0.773}_{-0.516}$
	+3%/-3%	+4%/-4%	+107%/-107%	+28%/-18%	+14%/-10%	+72%/-48%
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 008818095-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-107 \pm 28$	$1.76^{+0.96}_{-0.81}$	$406^{+31}_{-25}$	$4924^{+1697}_{-736}$	$13983^{+33619}_{-8535}$
Alt.	$-198 \pm 26$	$1.57^{+0.81}_{-0.87}$	$406^{+30}_{-24}$	$6150^{+3822}_{-1125}$	$33871^{+137557}_{-19464}$

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

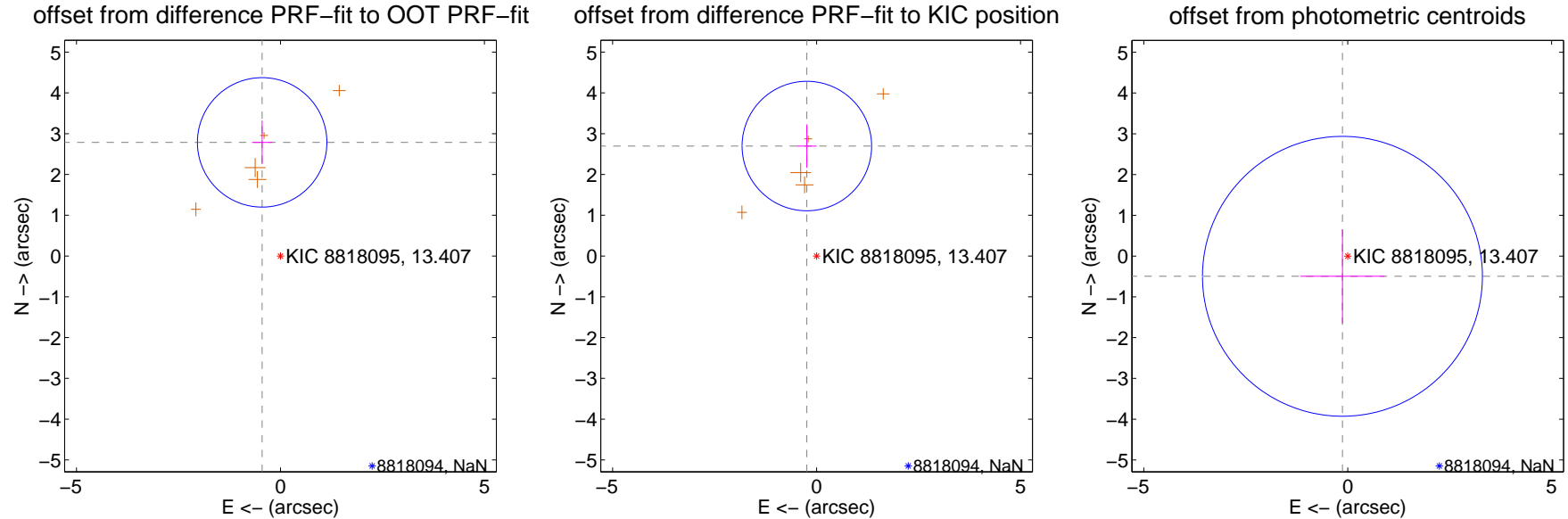
## DV Centroid Data

Supplemental centroid analysis for 008818095-03. Kepler magnitude: 13.41. Transit SNR 8.87

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.823 \pm 0.529$	5.34	$0.449 \pm 0.248$	$2.787 \pm 0.534$
PRF-fit source offset from KIC position	$2.707 \pm 0.529$	5.12	$0.238 \pm 0.241$	$2.697 \pm 0.531$
photometric centroid source offset	$0.51 \pm 1.14$	0.45	$0.13 \pm 1.03$	$-0.50 \pm 1.15$



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.

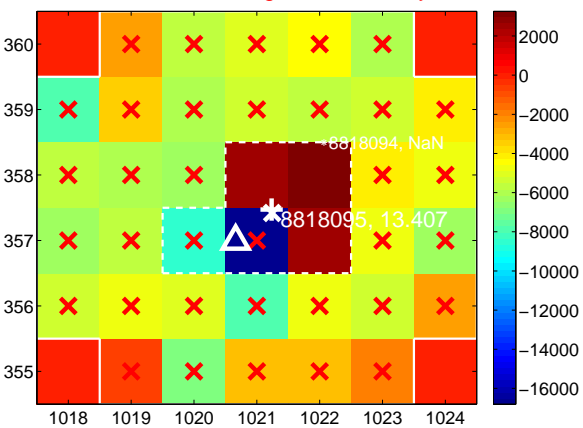
Q1 no difference image



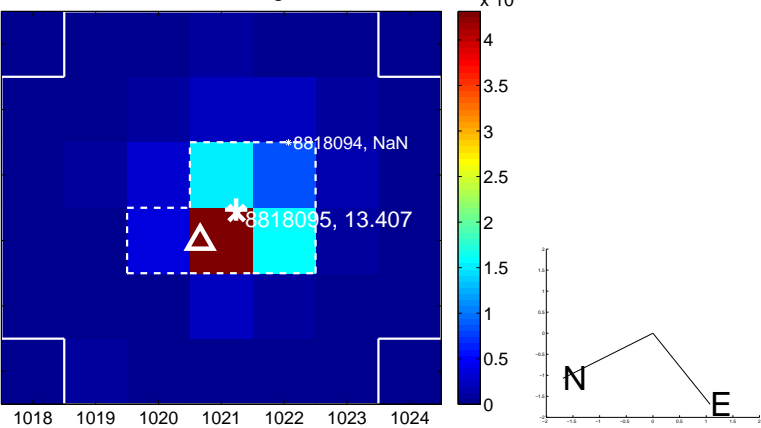
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



Q3 no difference image



Q3 no OOT image



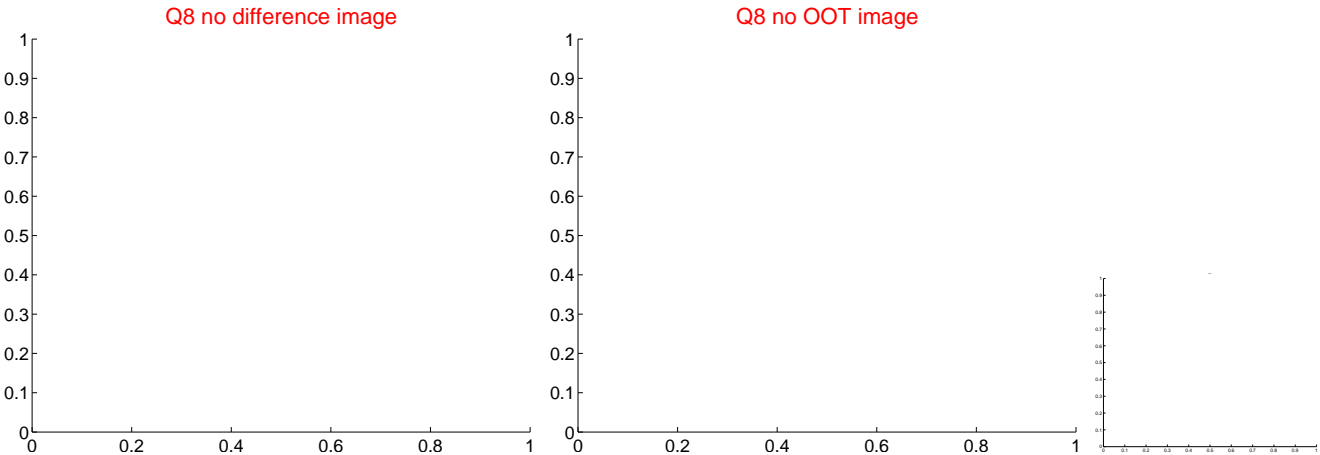
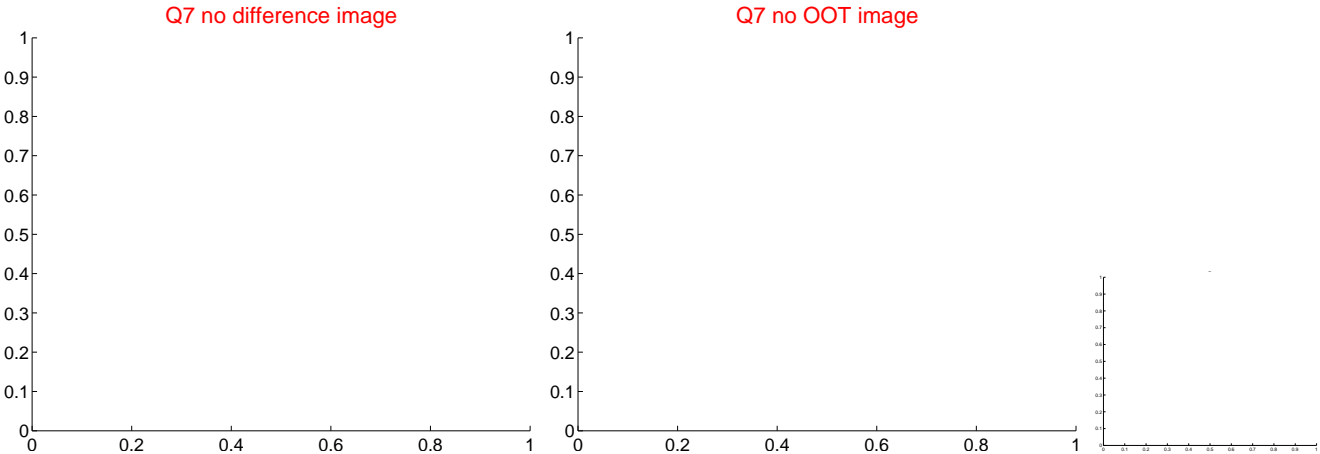
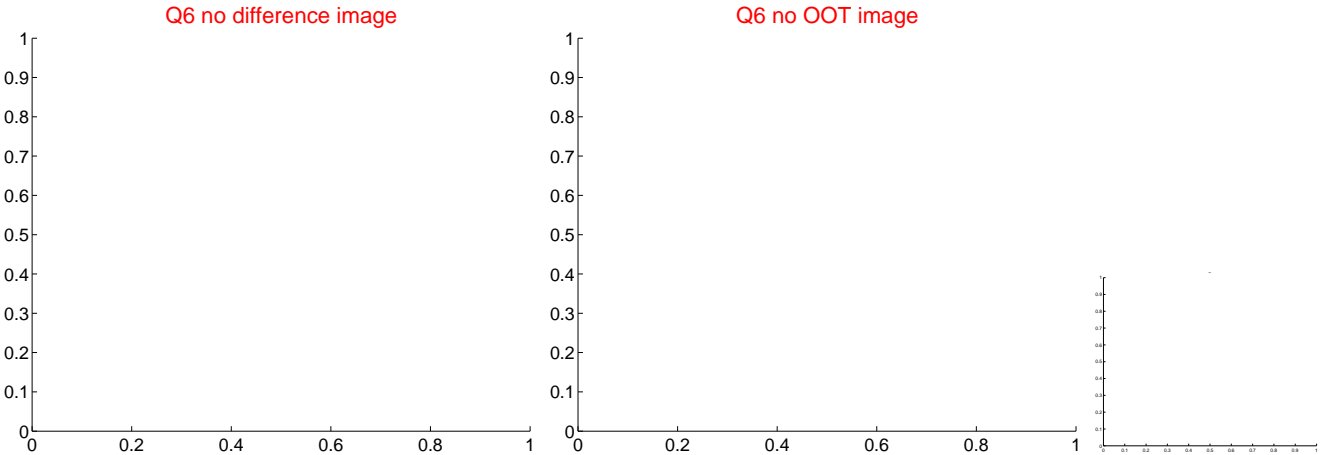
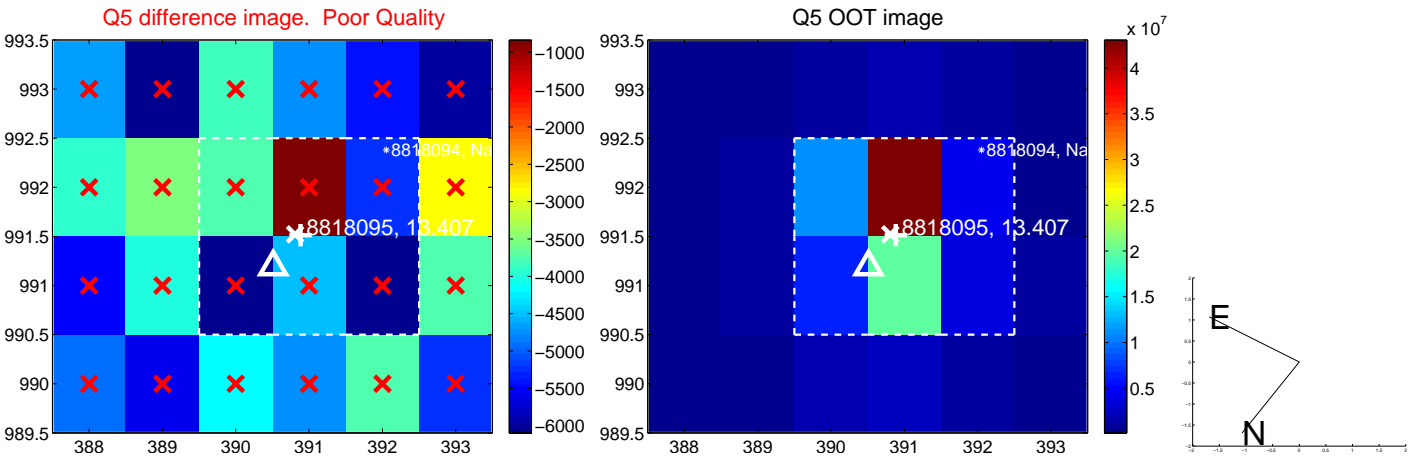
Q4 no difference image



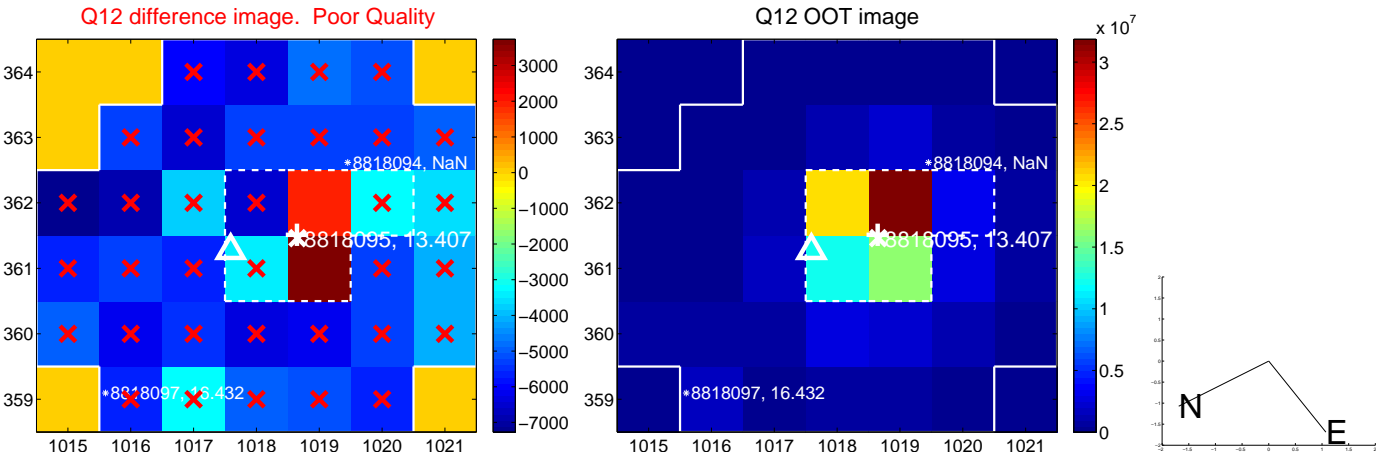
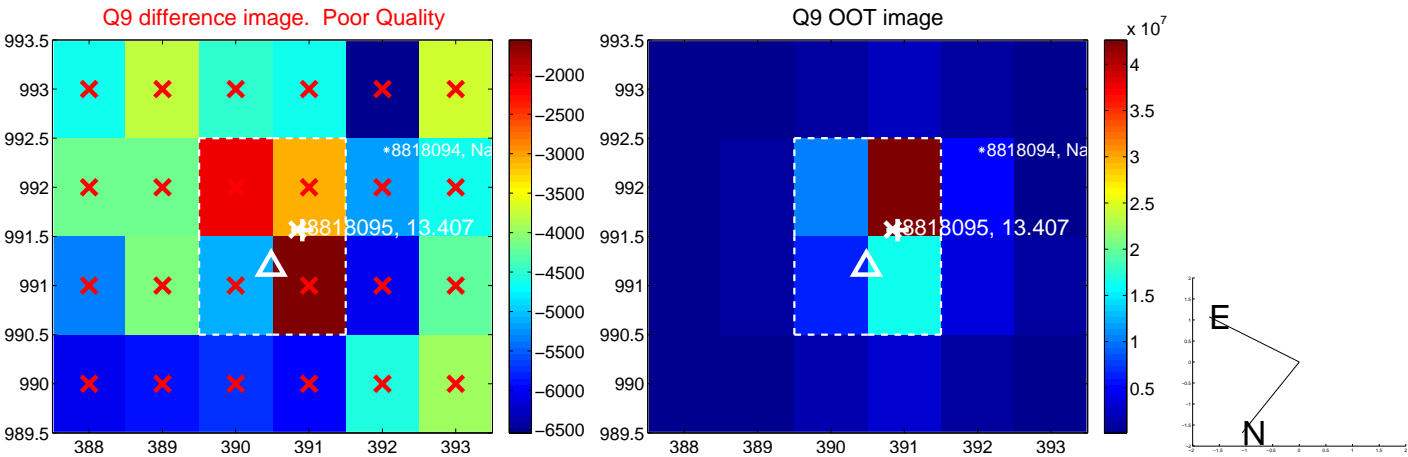
Q4 no OOT image



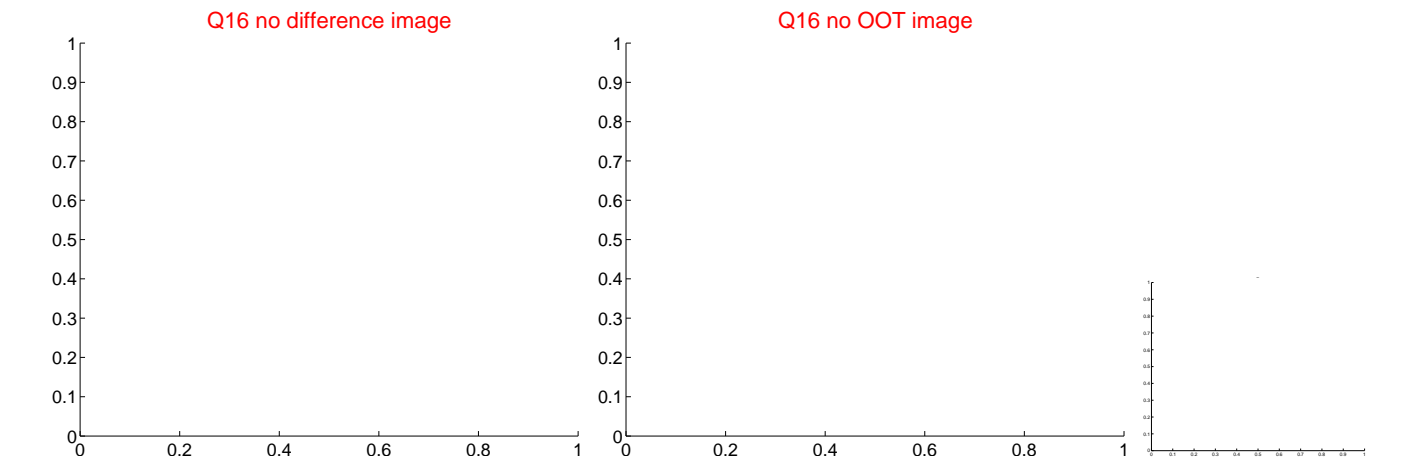
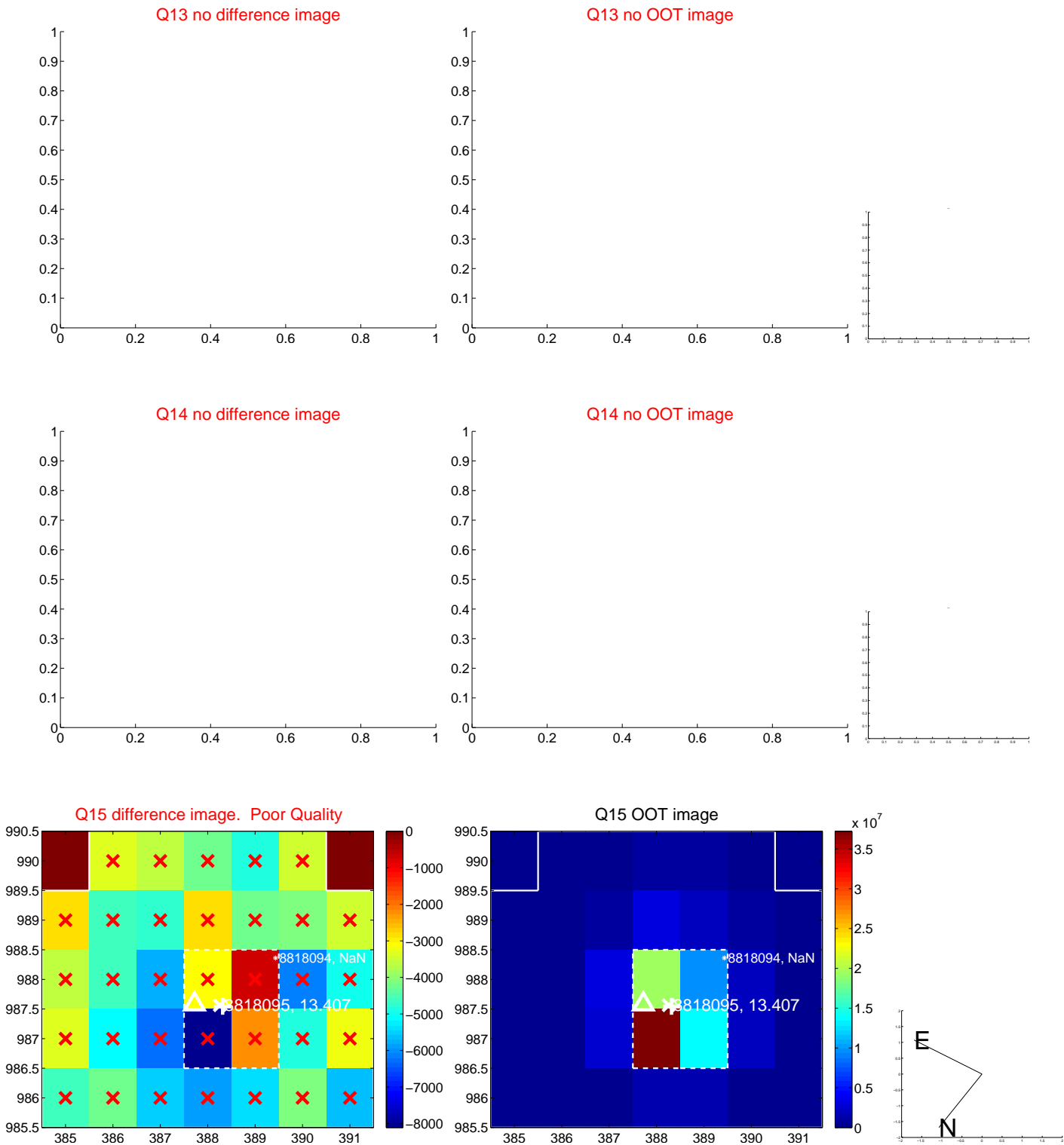
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

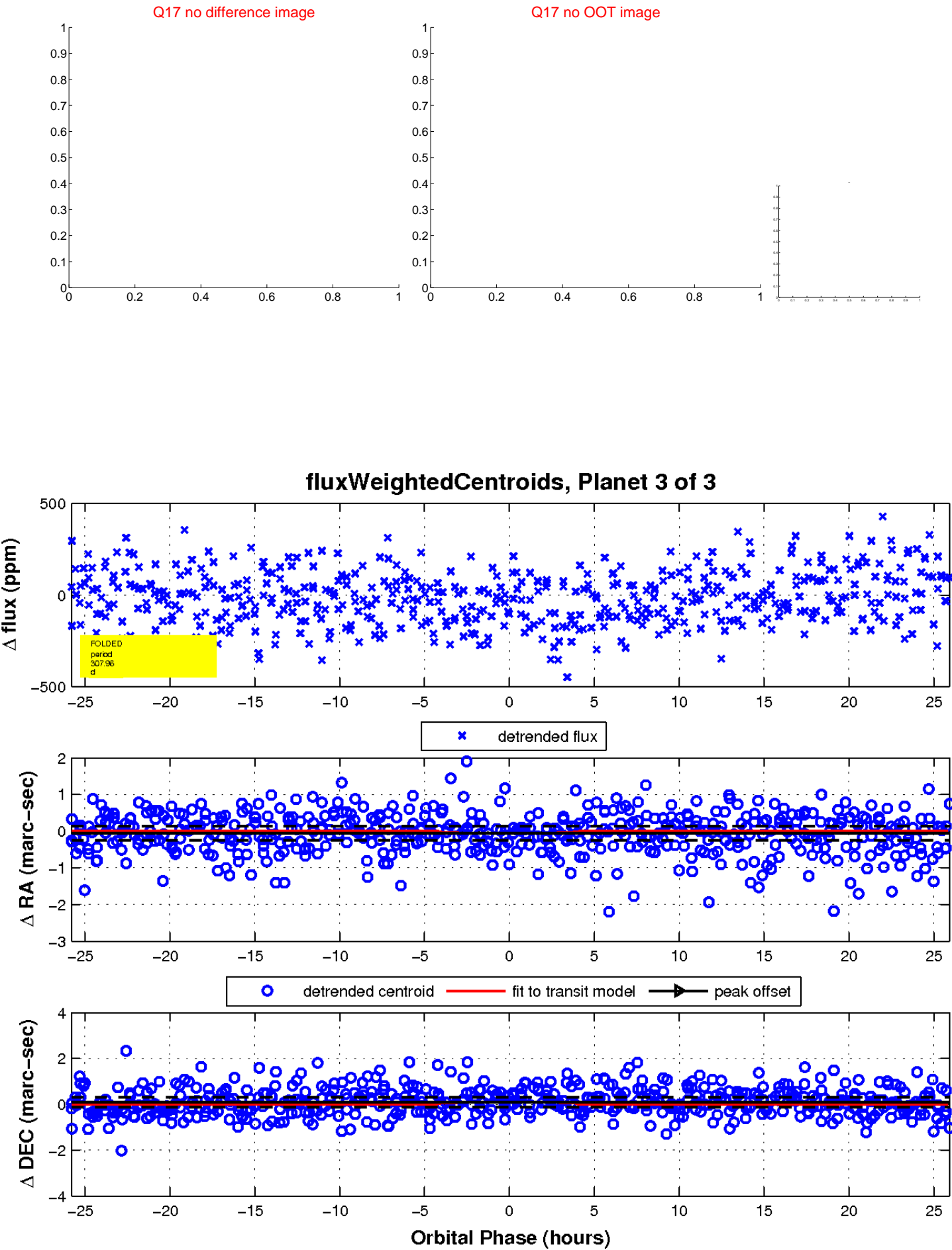


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

