

# KIC 011822666

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011822666-01	OBS	No	1.431749	132.299608	27.3	5.793	8.9	8.4	3.00	8615	1.77	45338.09
011822666-02	OBS	No	0.954468	132.326579	66.7	3.808	14.1	16.5	3.00	8615	2.49	77852.14
011822666-03	OBS	No	0.954489	131.842864	79.9	5.399	21.1	24.5	3.00	8615	2.75	77849.86

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011822666-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011822666-02	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
011822666-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

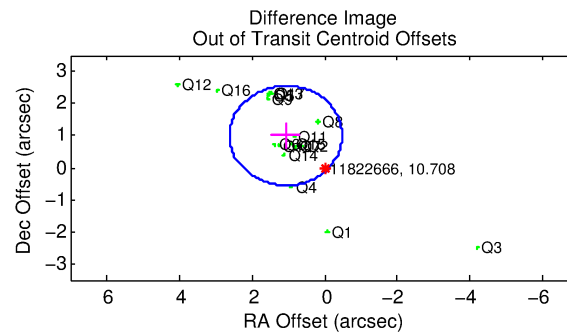
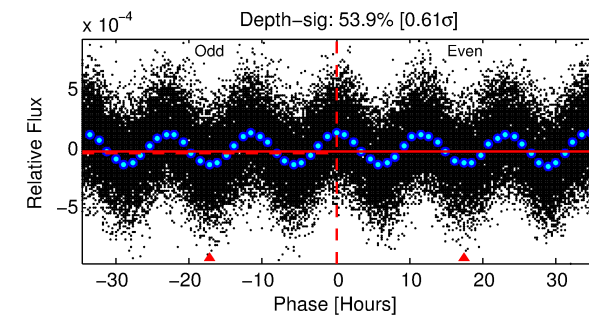
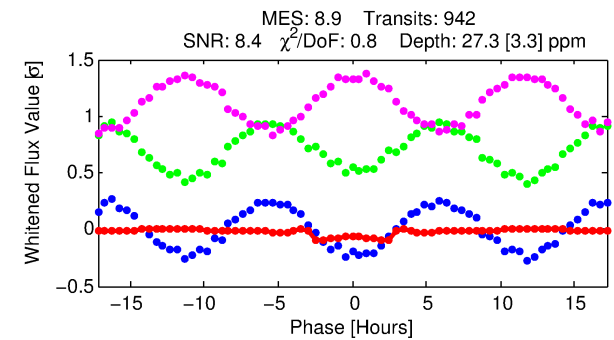
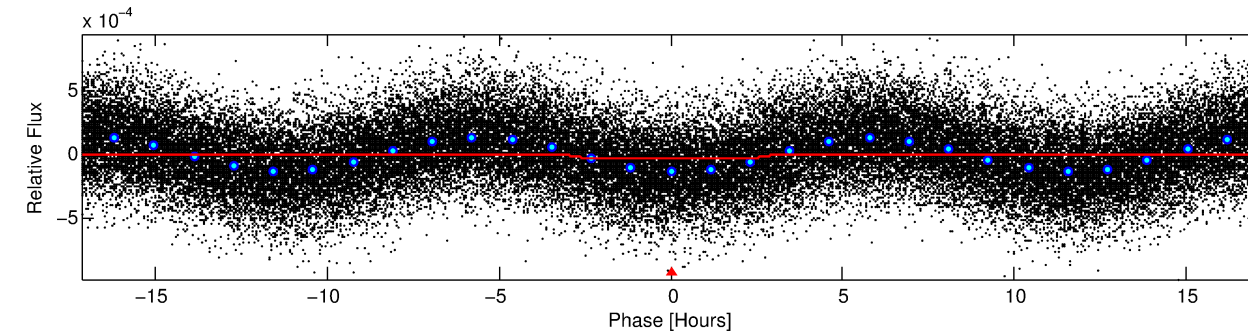
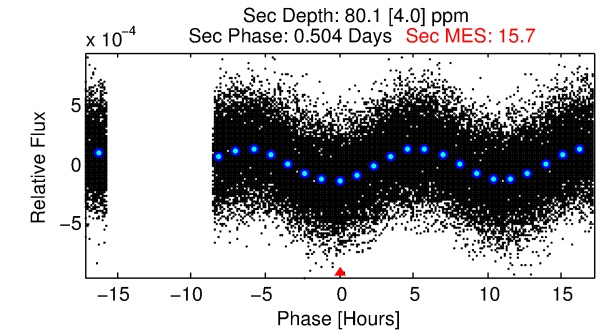
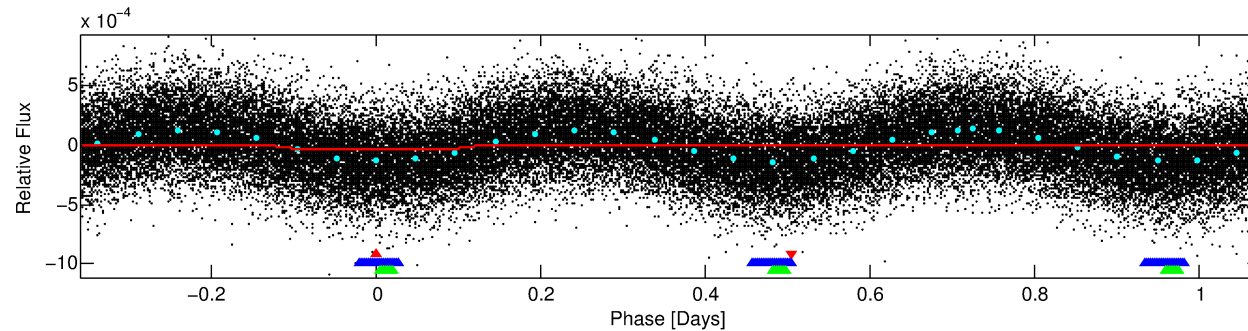
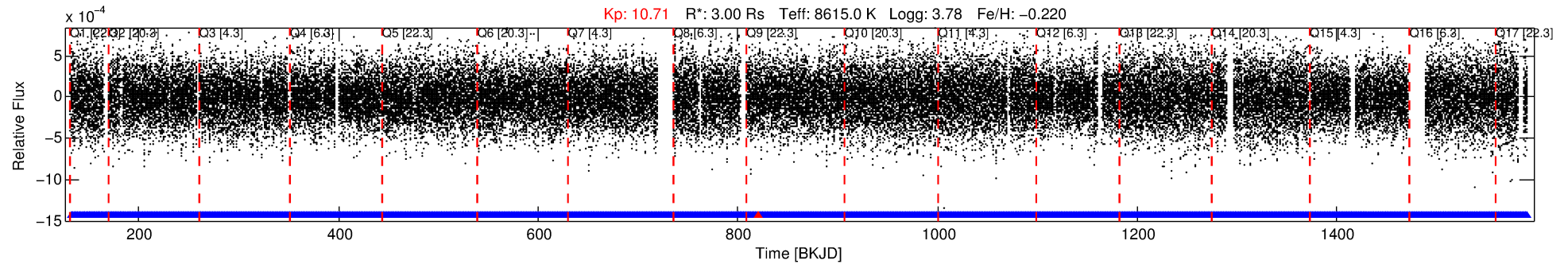
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 011822666-01

No Significant Match Found

# DV One-Page Summary

KIC: 11822666 Candidate: 1 of 3 Period: 1.432 d



## DV Fit Results:

Period = 1.43175 [0.00002] d  
Epoch = 132.2996 [0.0037] BKJD  
Rp/R\* = 0.0054 [0.0011]  
a/R\* = 1.35 [0.83]  
b = 0.85 [0.43]  
Seff = 45338.09 [32572.25]  
Teq = 3721 [668] K  
Rp = 1.77 [0.86] Re  
a = 0.0313 [0.0135] AU  
Ag = 13.83 [11.25] [1.14σ]  
Teffp = 11093 [1260] K [5.17σ]

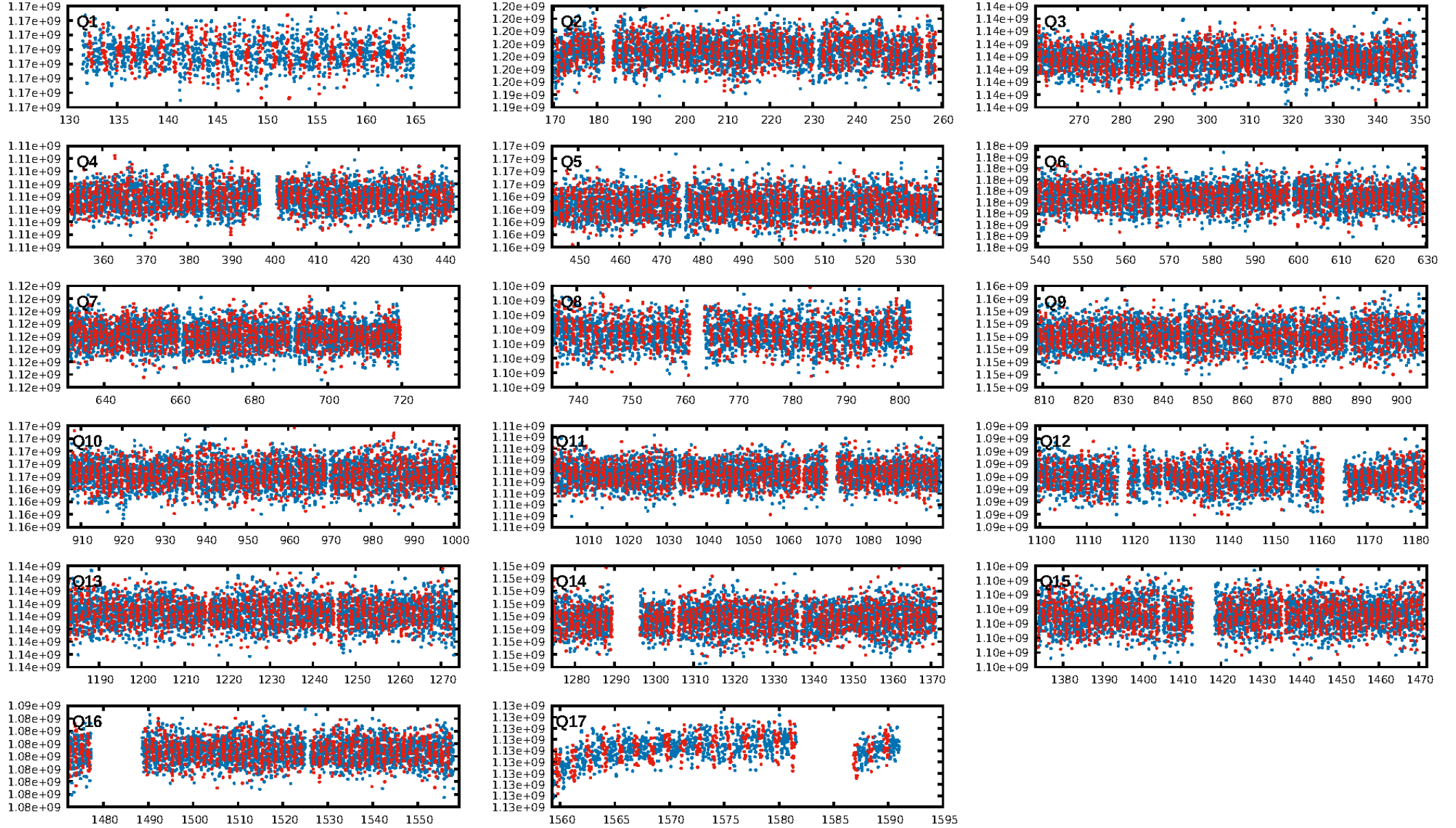
## DV Diagnostic Results:

ShortPeriod-sig: 85.2% [1.45σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [899/900]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 38.8%  
Centroid-so: 0.608 arcsec [1.04σ]  
OotOffset-rm: 1.461 arcsec [2.83σ]  
KicOffset-rm: 1.893 arcsec [3.78σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.71 [12/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:13:32 Z

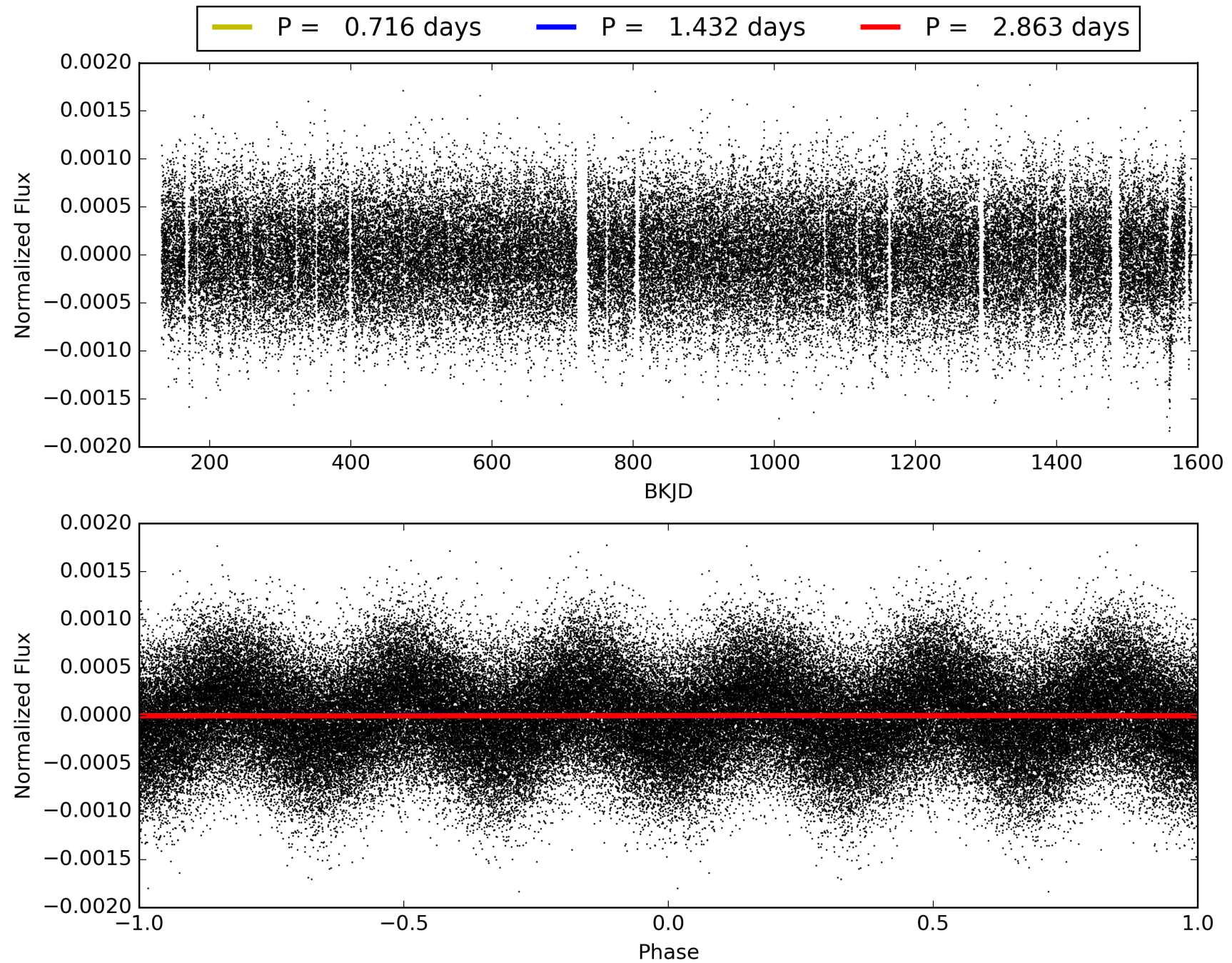
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011822666-01, PDC Light Curves





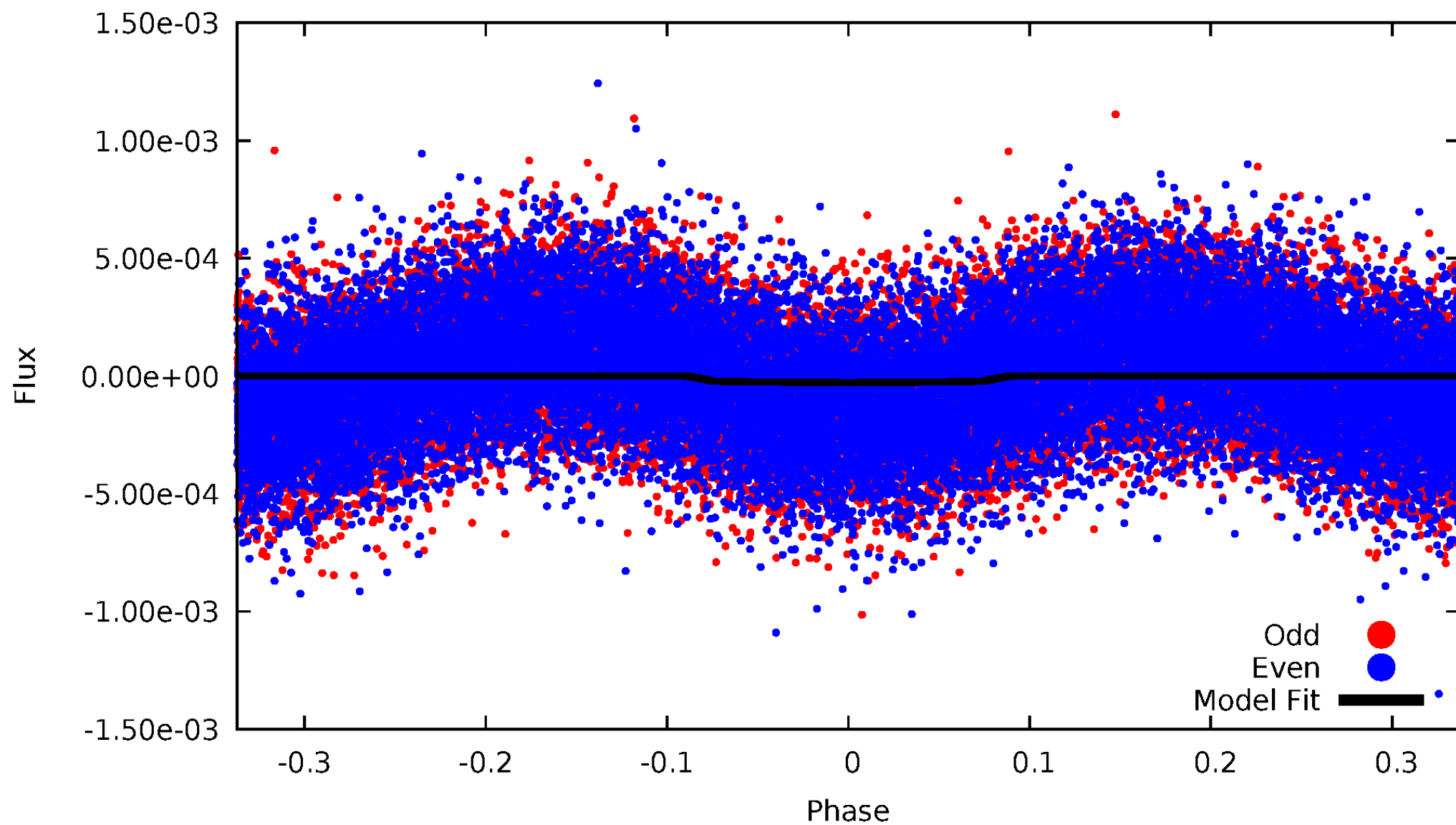
TCE 011822666-01





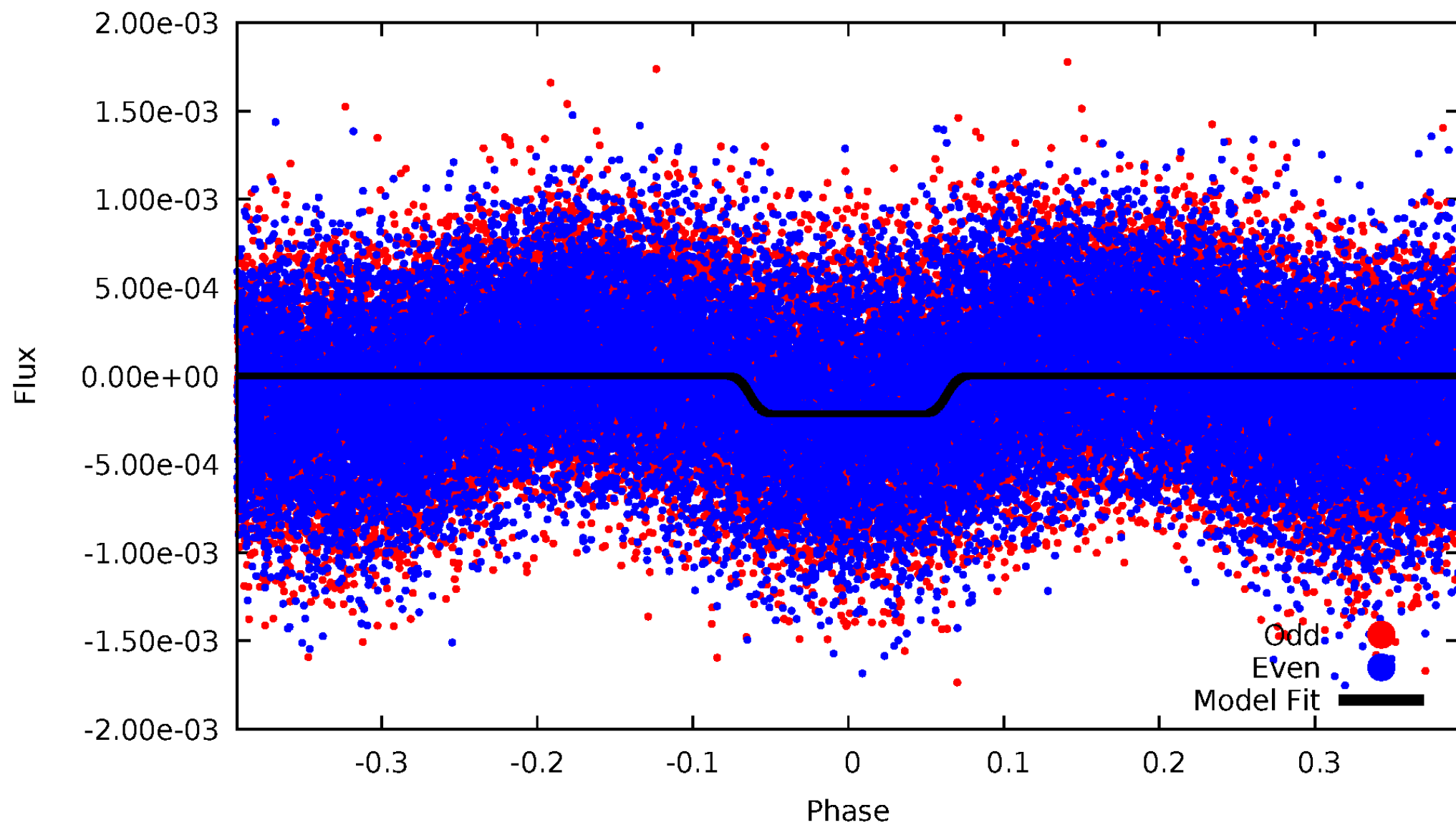
# DV Odd/Even

TCE 011822666-01



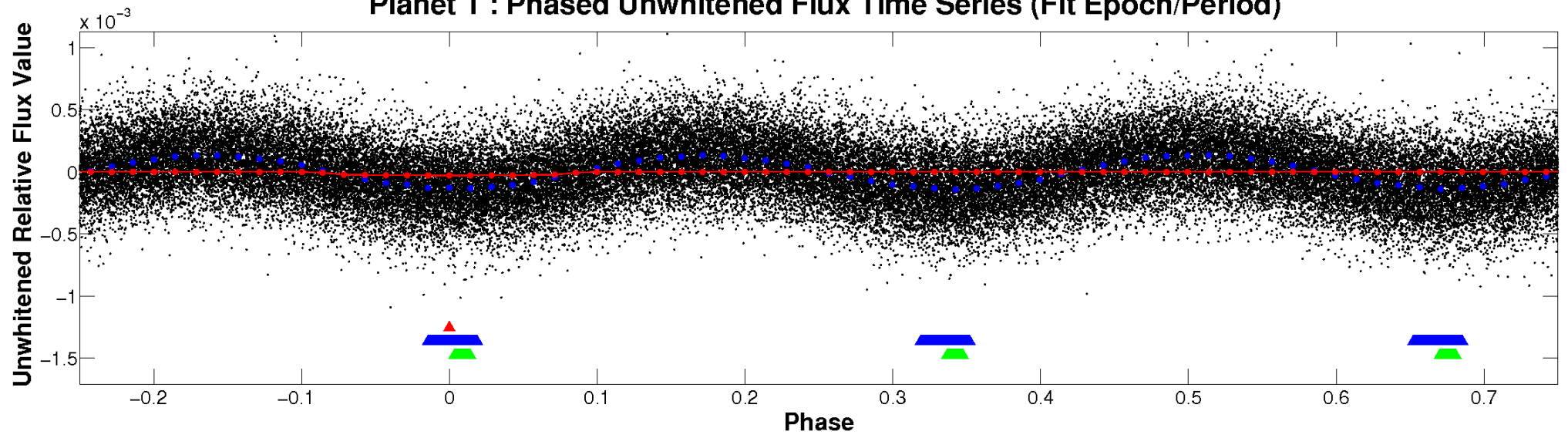
# ALT Odd/Even

TCE 011822666-01

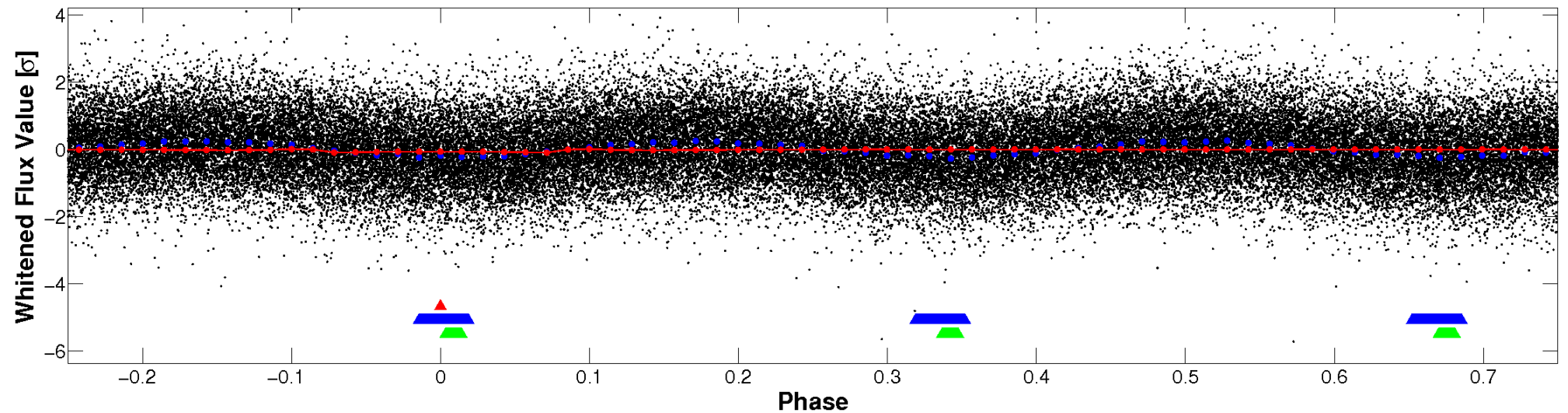


# Non-Whitened Vs. Whitened Light Curve

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



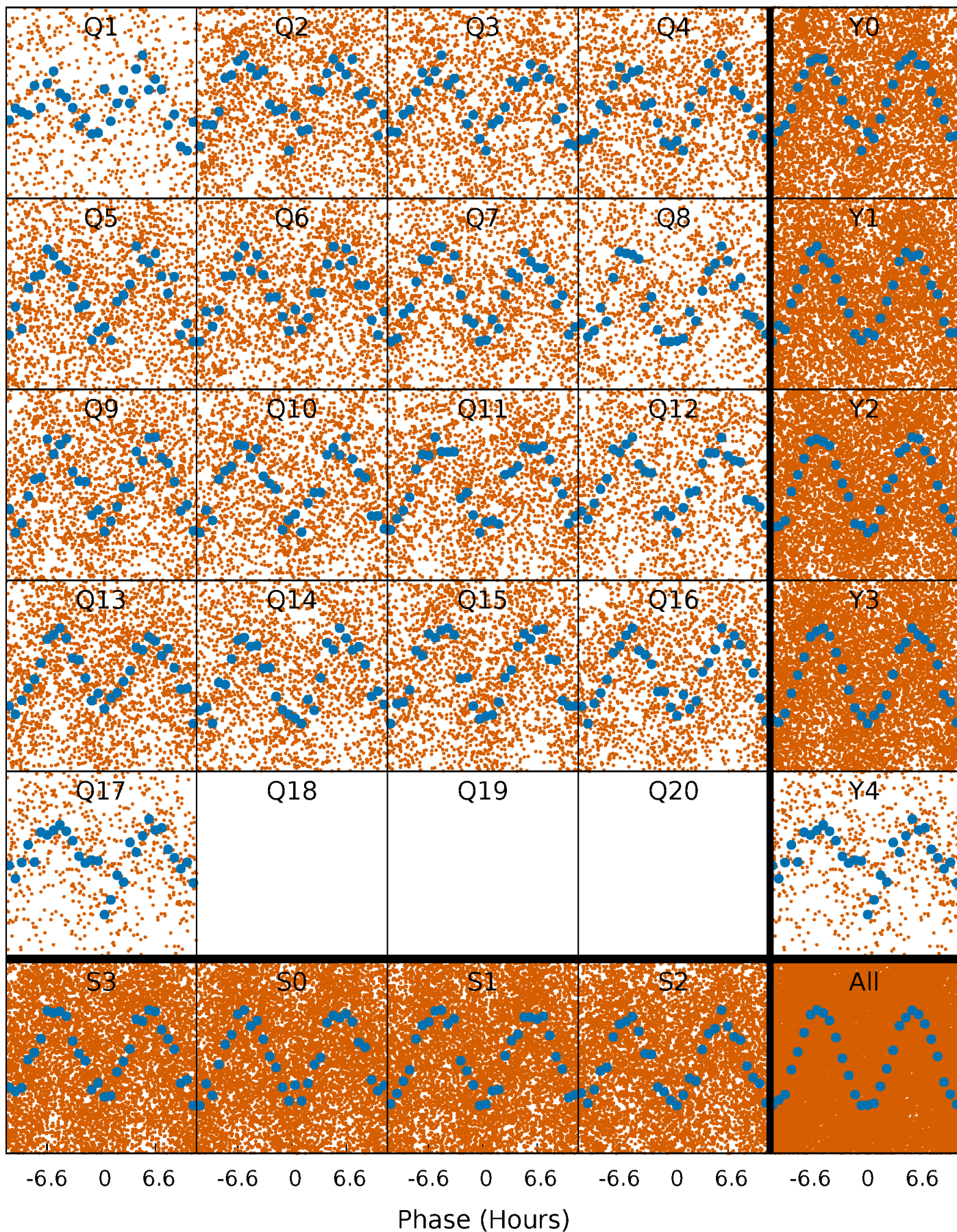
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

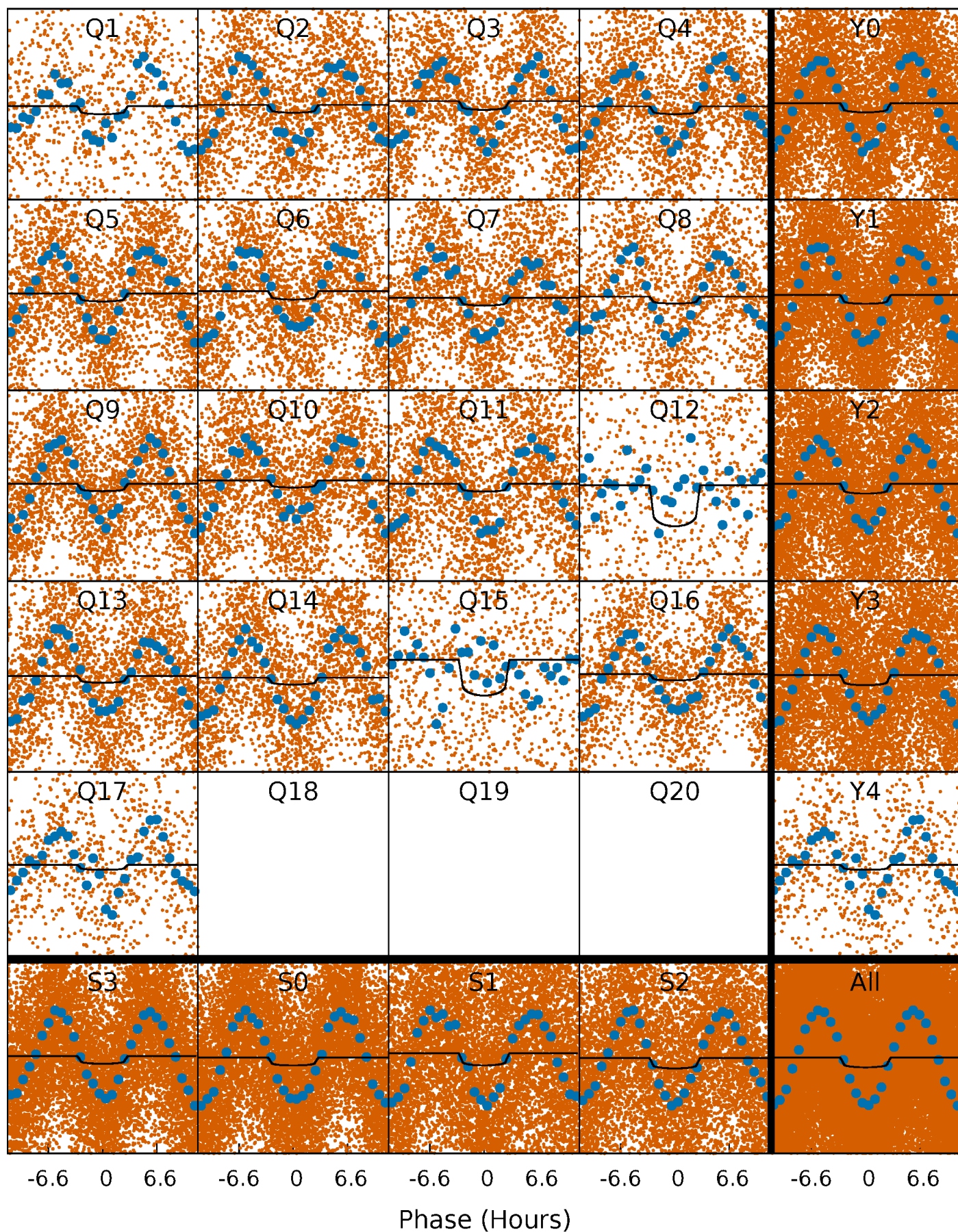
TCE 011822666-01 P= 1.431749 Days  $T_0=132.299609$  (BKJD)





# DV Quarter-Phased Transit Curves

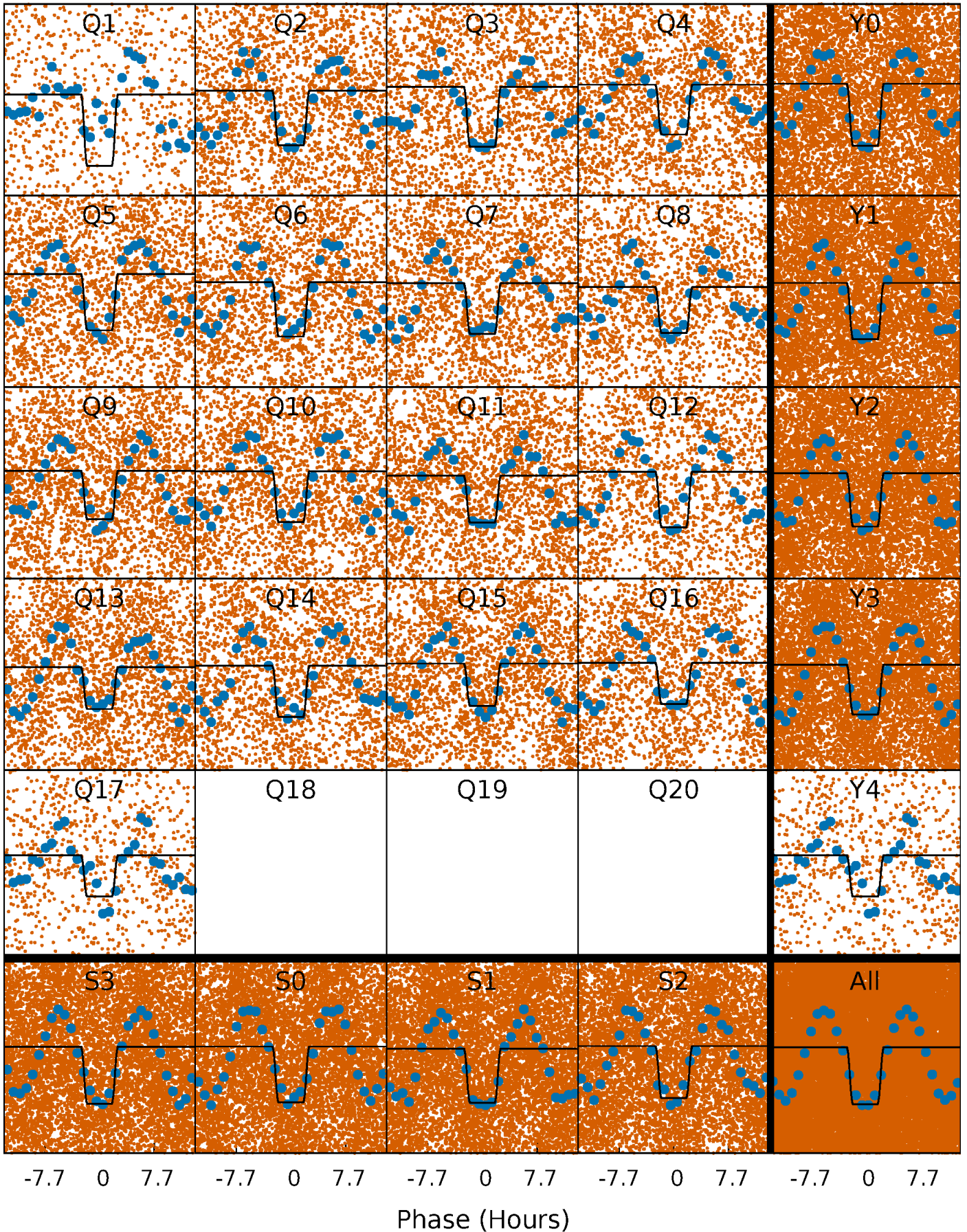
TCE 011822666-01 P= 1.431749 Days  $T_0=132.299609$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 011822666-01 P= 1.431751 Days  $T_0=132.307648$  (BKJD)

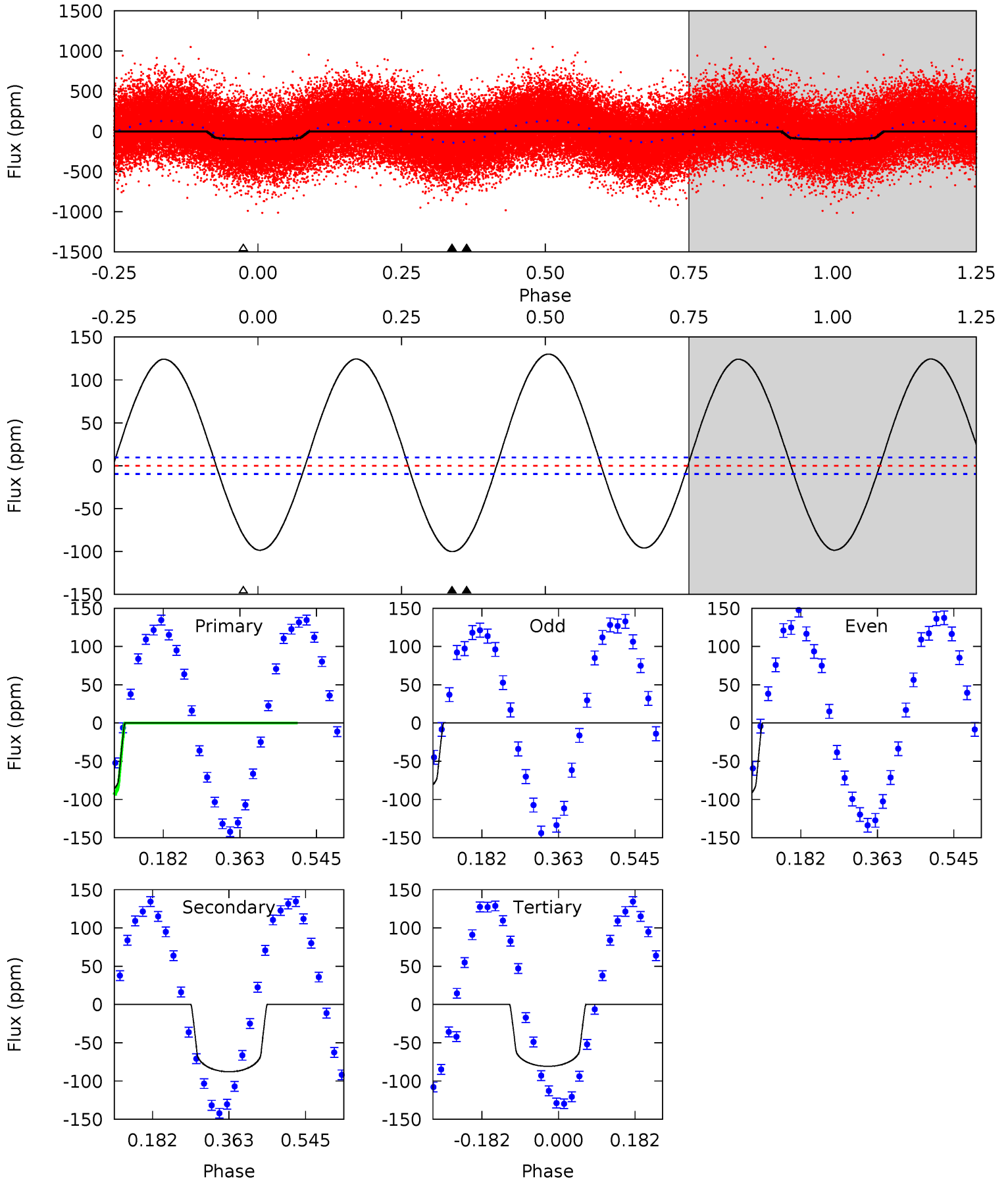




# DV Model-Shift Uniqueness Test

011822666-01, P = 1.431749 Days, E = 130.867860 Days

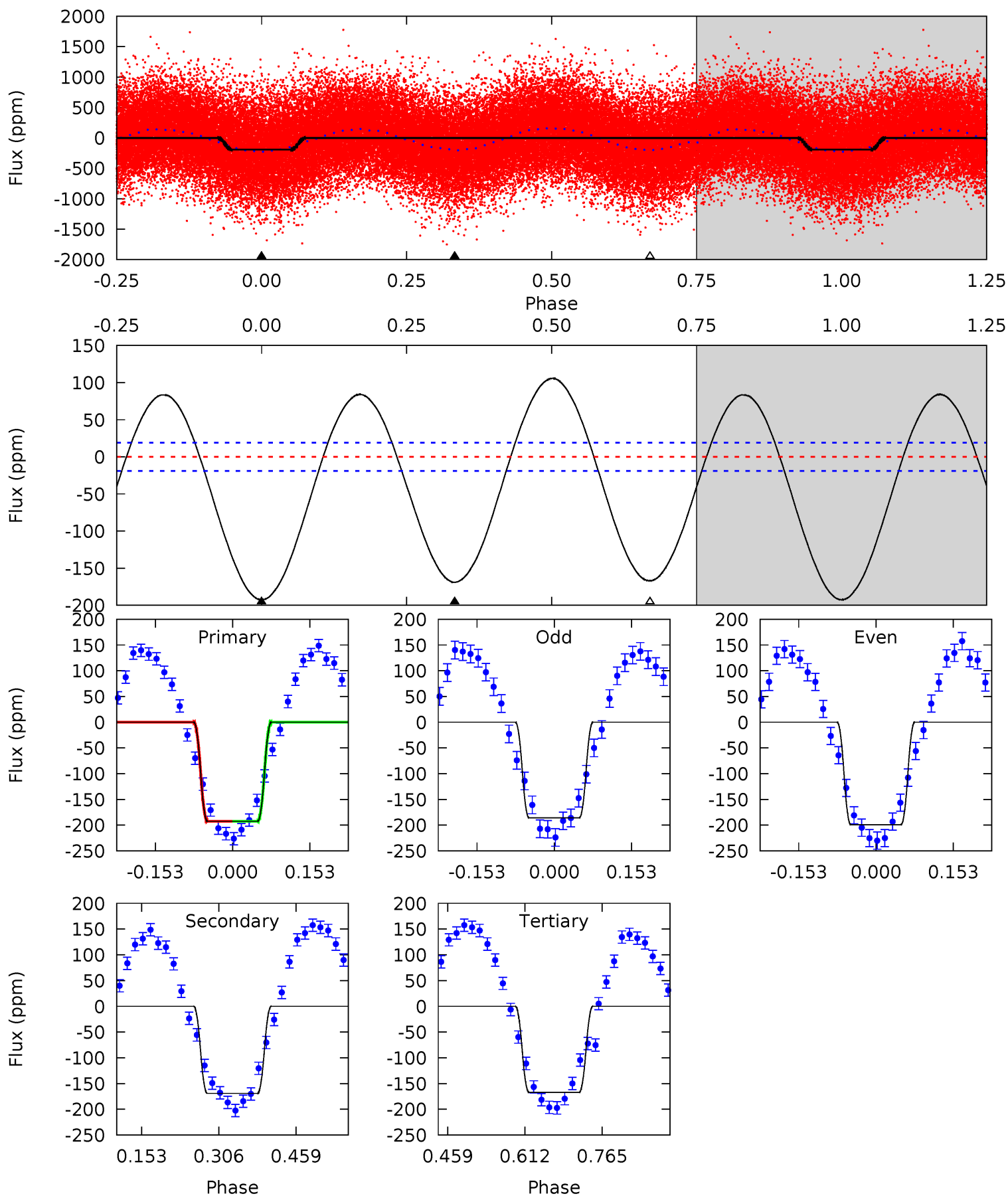
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.2	40.5	37.3	0	4.44	1.34	34.5	8.90	46.2	3.26	40.5	2.87	1.02	0.57	4.14



# Alt Model-Shift Uniqueness Test

011822666-01, P = 1.431751 Days, E = 130.875897 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
45.4	39.9	39.4	0	4.47	1.43	22.7	6.00	45.4	0.48	39.9	1.55	0.99	0.35	0.00



### Stellar Parameters For KIC 011822666

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8615^{+238}_{-374}$	$3.784^{+0.412}_{-0.137}$	$-0.220^{+0.450}_{-0.350}$	$3.003^{+0.881}_{-1.321}$	$2.002^{+0.428}_{-0.428}$	$0.104^{+0.349}_{-0.049}$
	+3%/-4%	+11%/-4%	+205%/-159%	+29%/-44%	+21%/-21%	+335%/-47%
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 011822666-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-88 \pm 2$	$1.65^{+0.52}_{-0.46}$	$5042^{+413}_{-557}$	$12832^{+3447}_{-1949}$	$17^{+16}_{-7}$
Alt.	$-169 \pm 4$	$4.61^{+0.87}_{-1.07}$	$5030^{+419}_{-586}$	$7772^{+491}_{-427}$	$4.404^{+2.769}_{-1.209}$

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



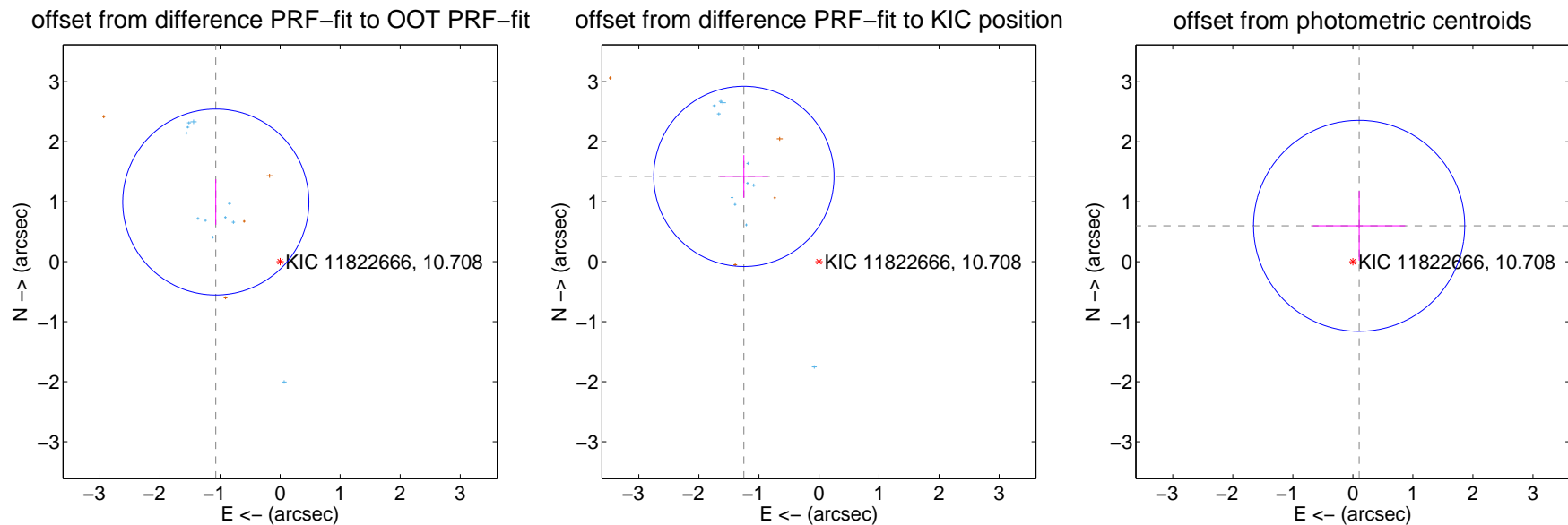
## DV Centroid Data

Supplemental centroid analysis for 011822666-01. **Kepler magnitude: 10.71.** Transit SNR 8.44

There are 12 quarters with good PRF difference image offsets

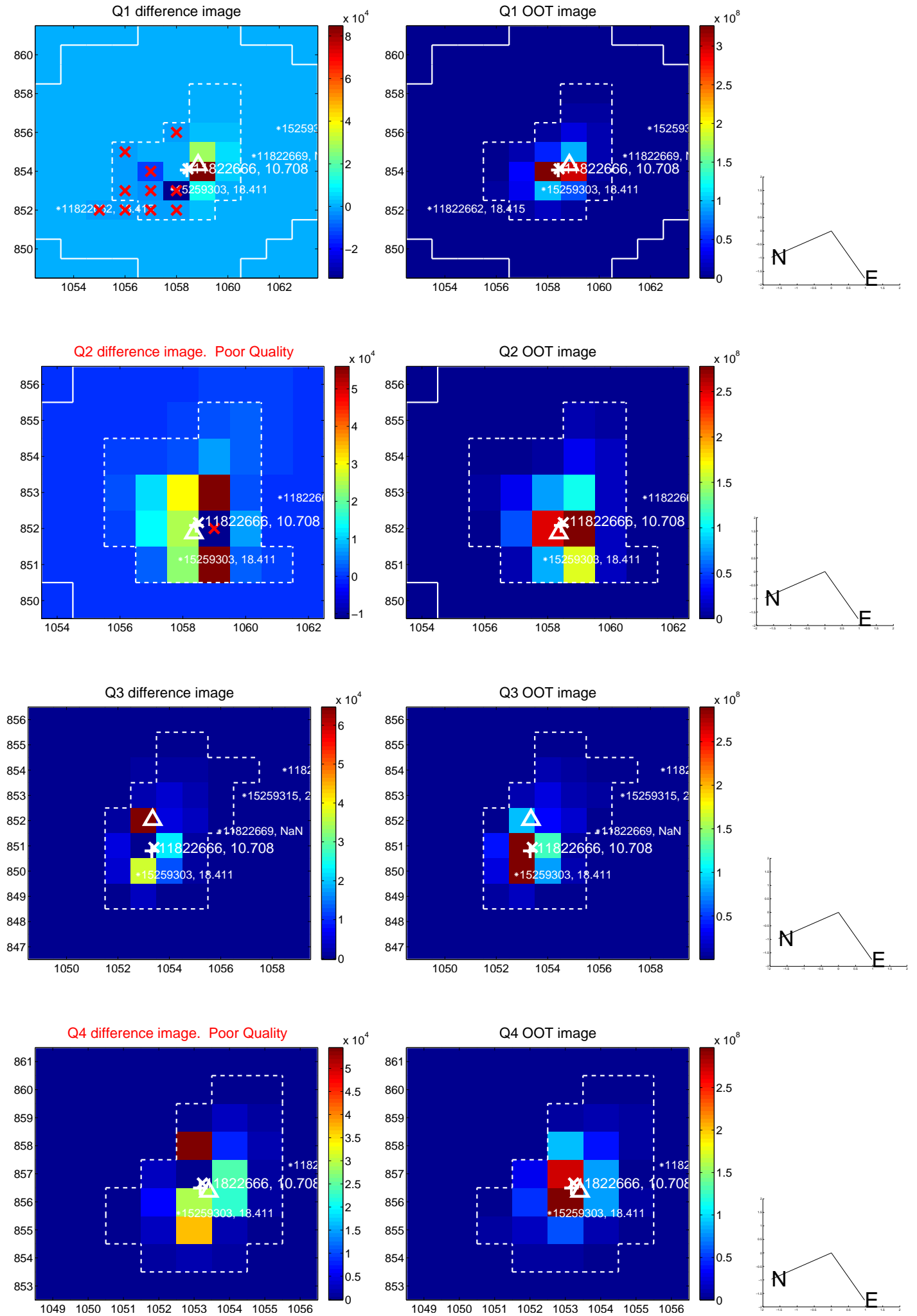
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.461 \pm 0.517$	2.83	$1.071 \pm 0.393$	$0.995 \pm 0.380$
PRF-fit source offset from KIC position	<b><math>1.893 \pm 0.501</math></b>	<b>3.78</b>	$1.251 \pm 0.403$	$1.421 \pm 0.355$
photometric centroid source offset	$0.61 \pm 0.59$	1.04	$-0.10 \pm 0.77$	$0.60 \pm 0.58$

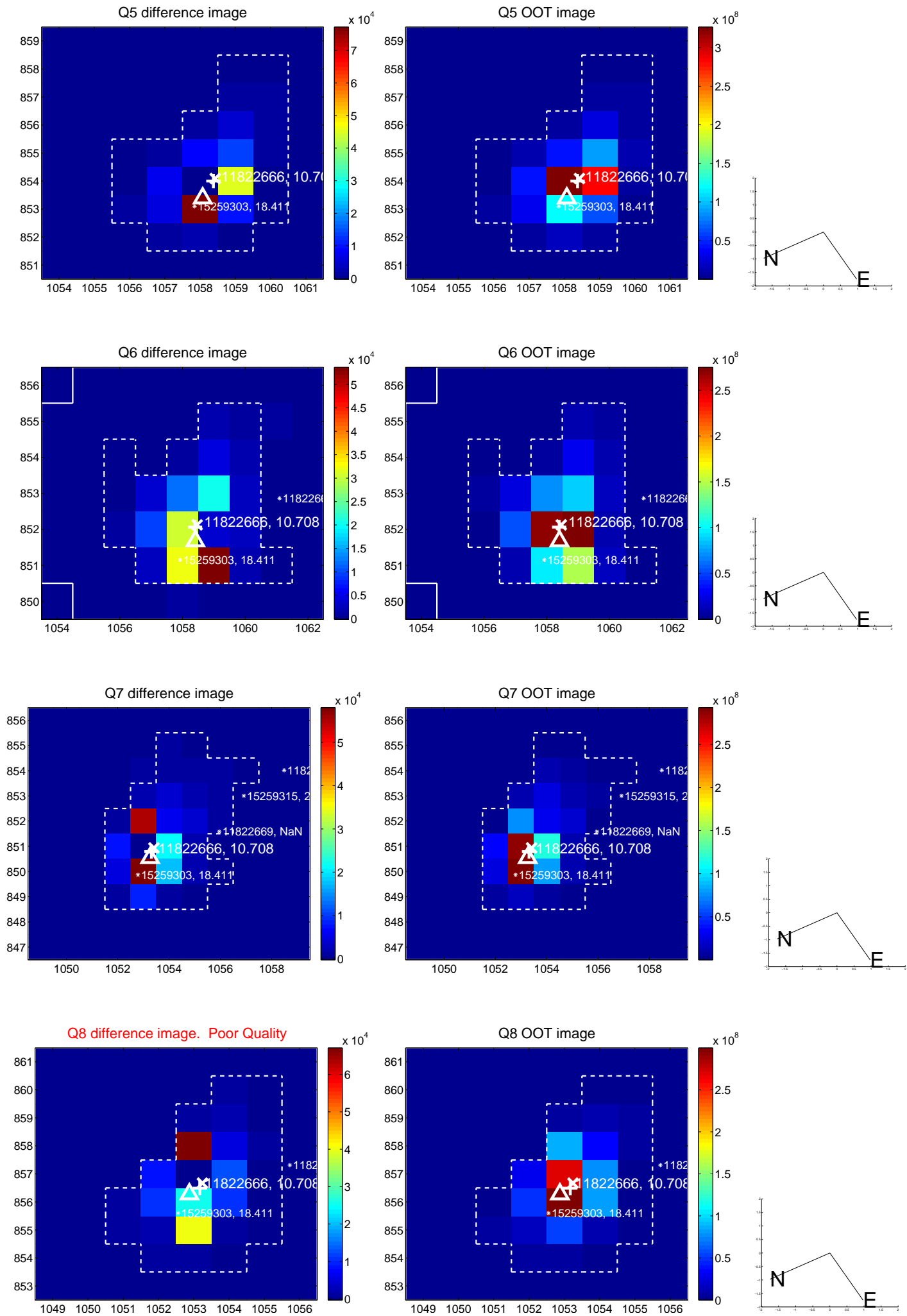


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

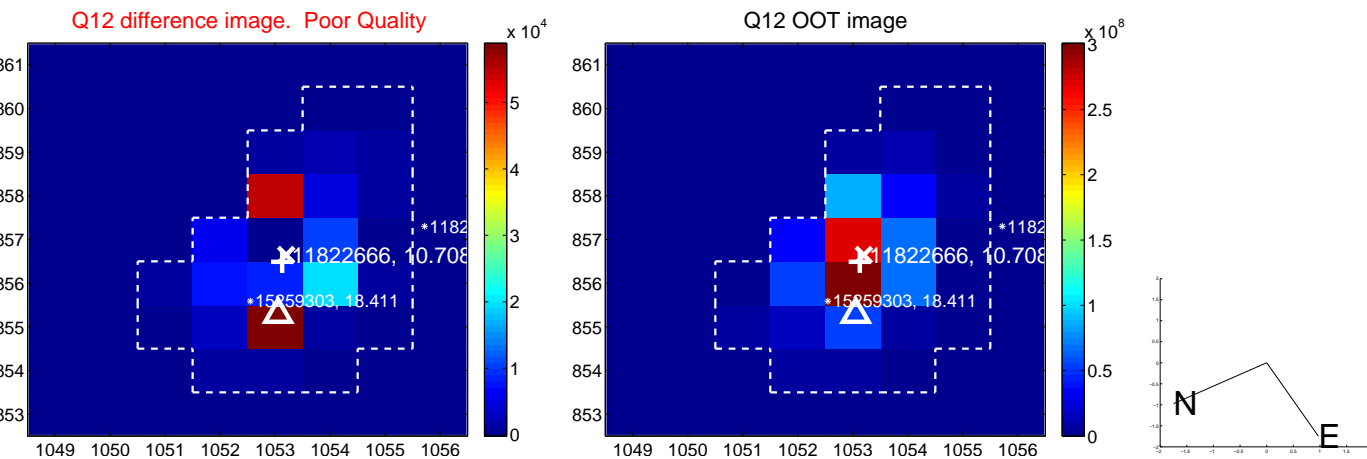
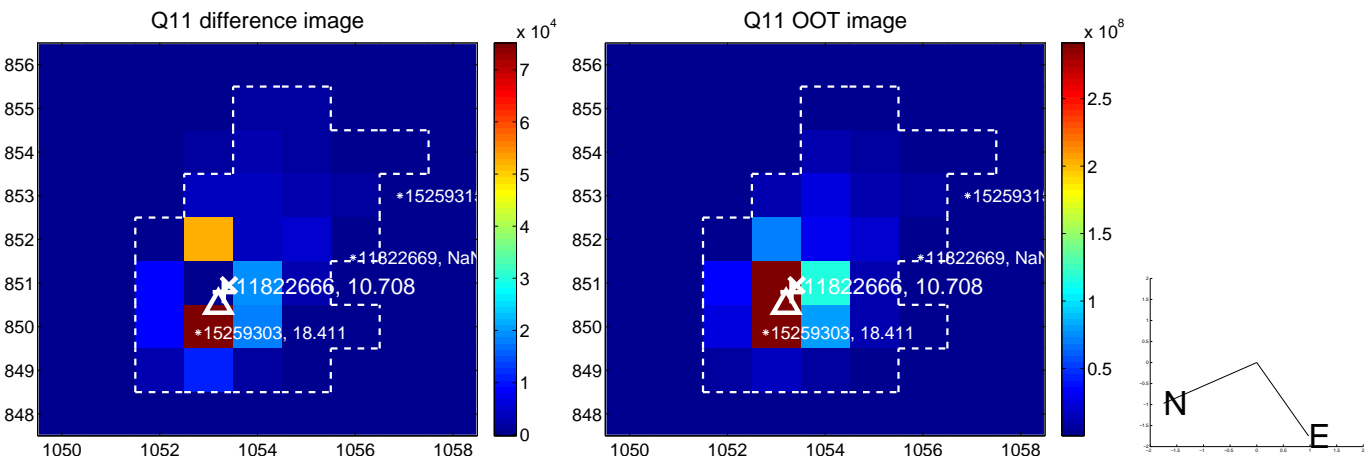
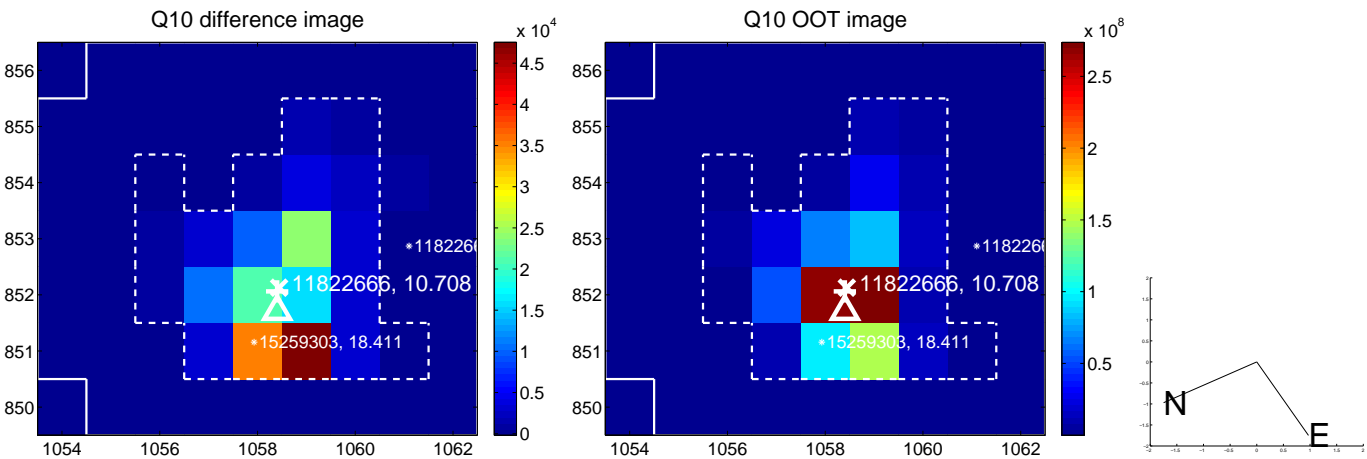
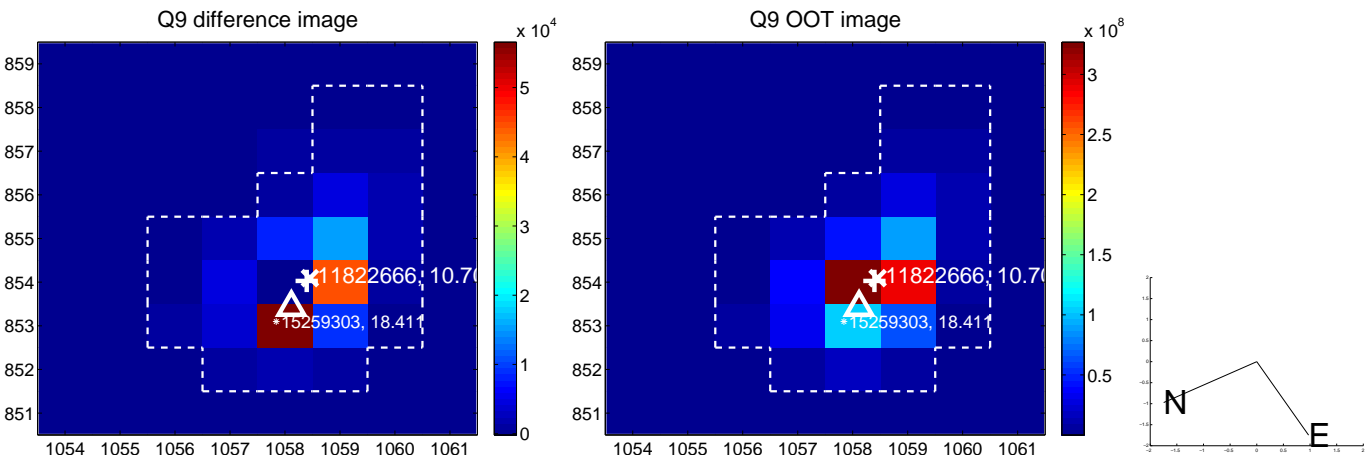


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

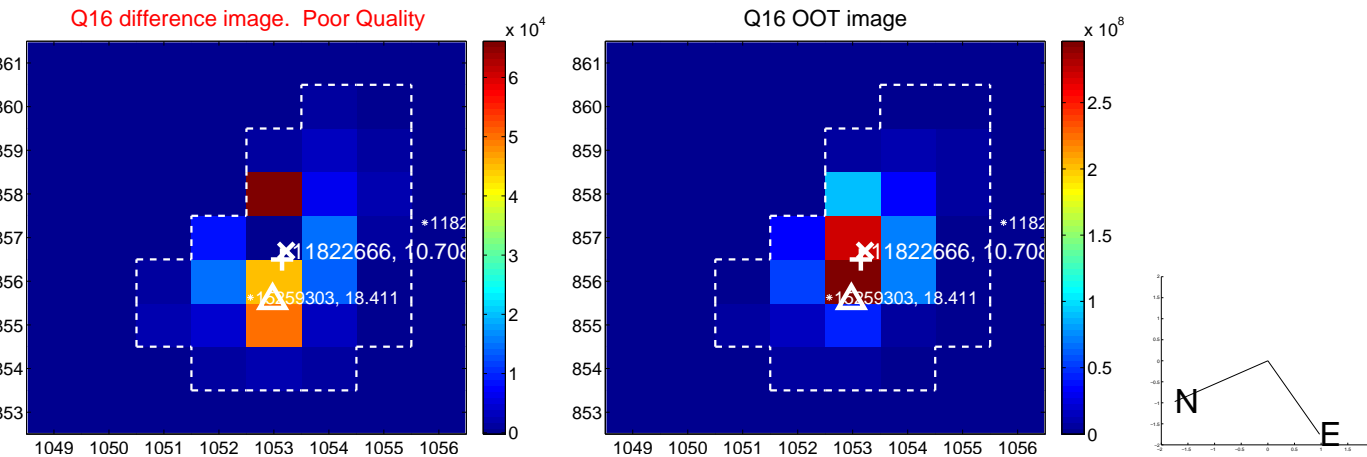
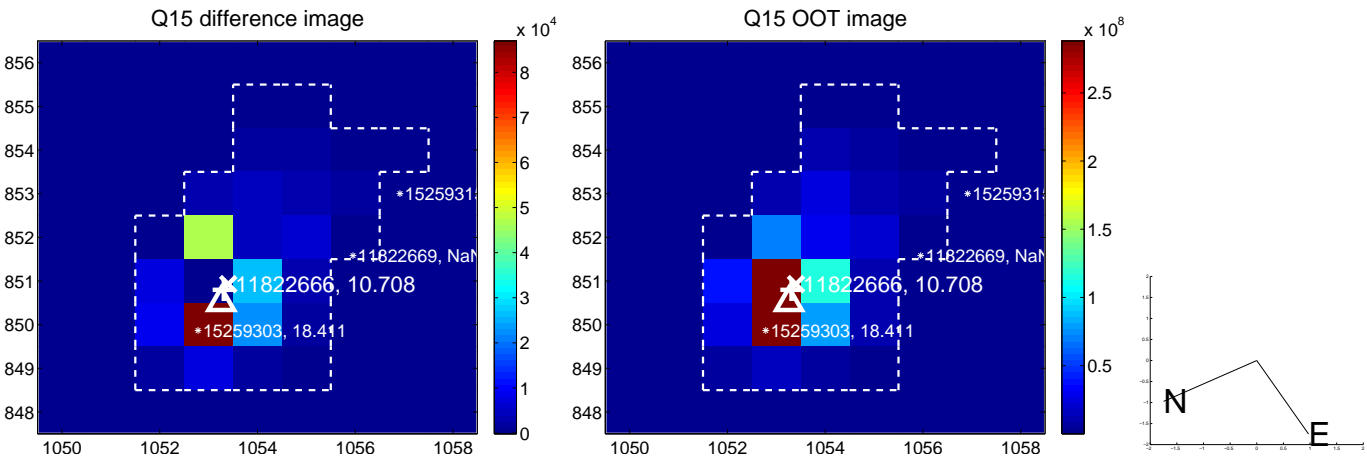
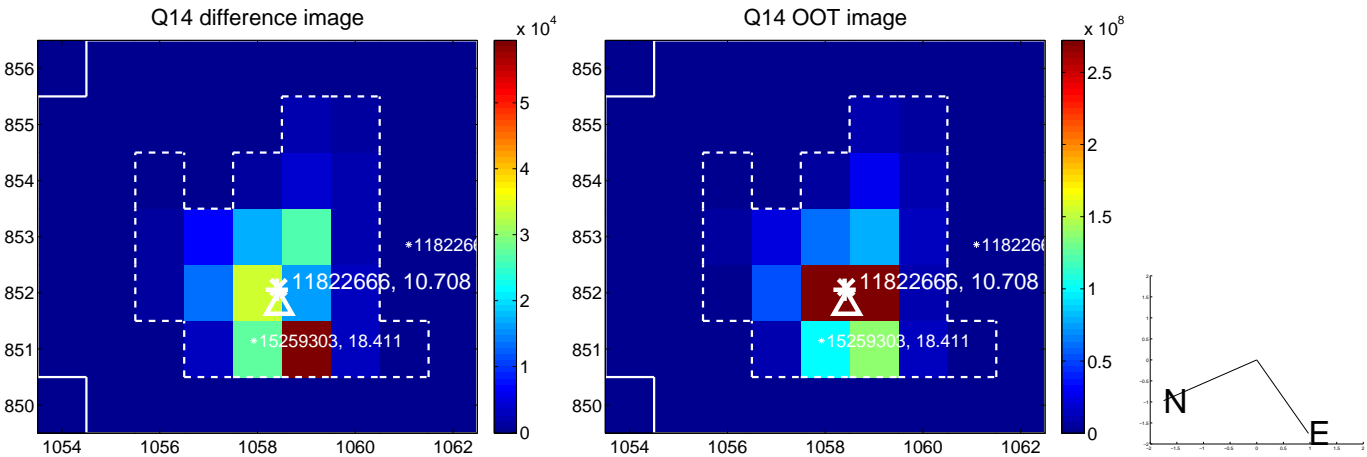
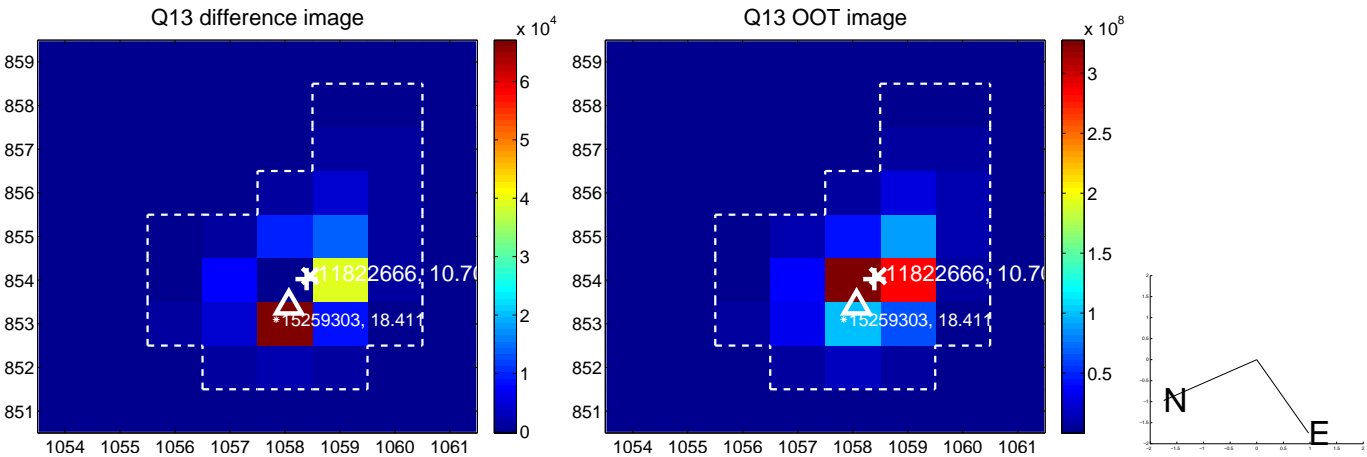




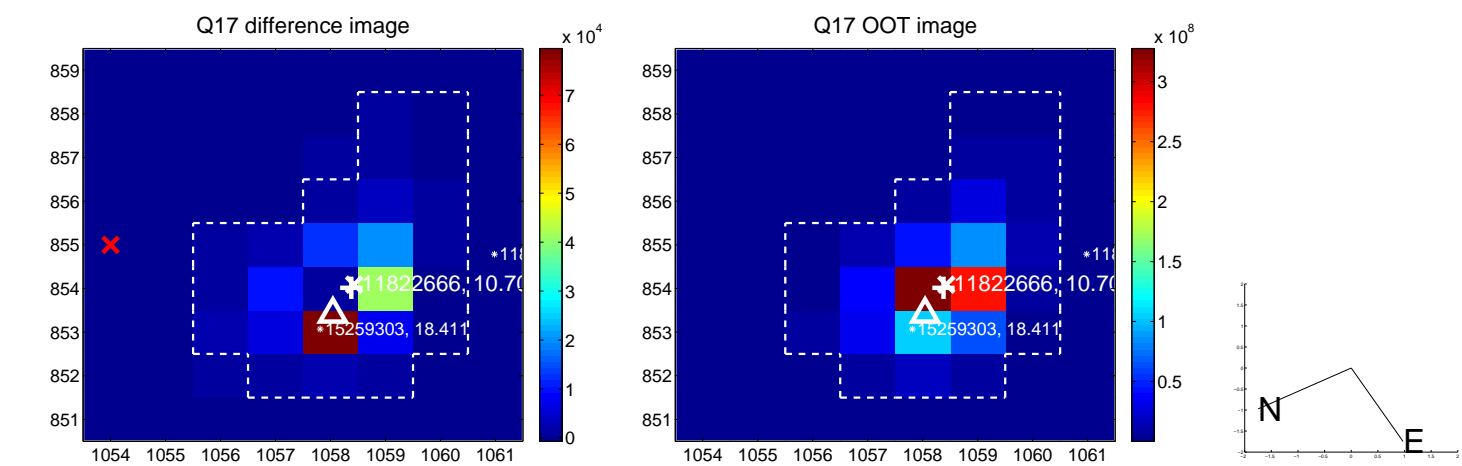
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



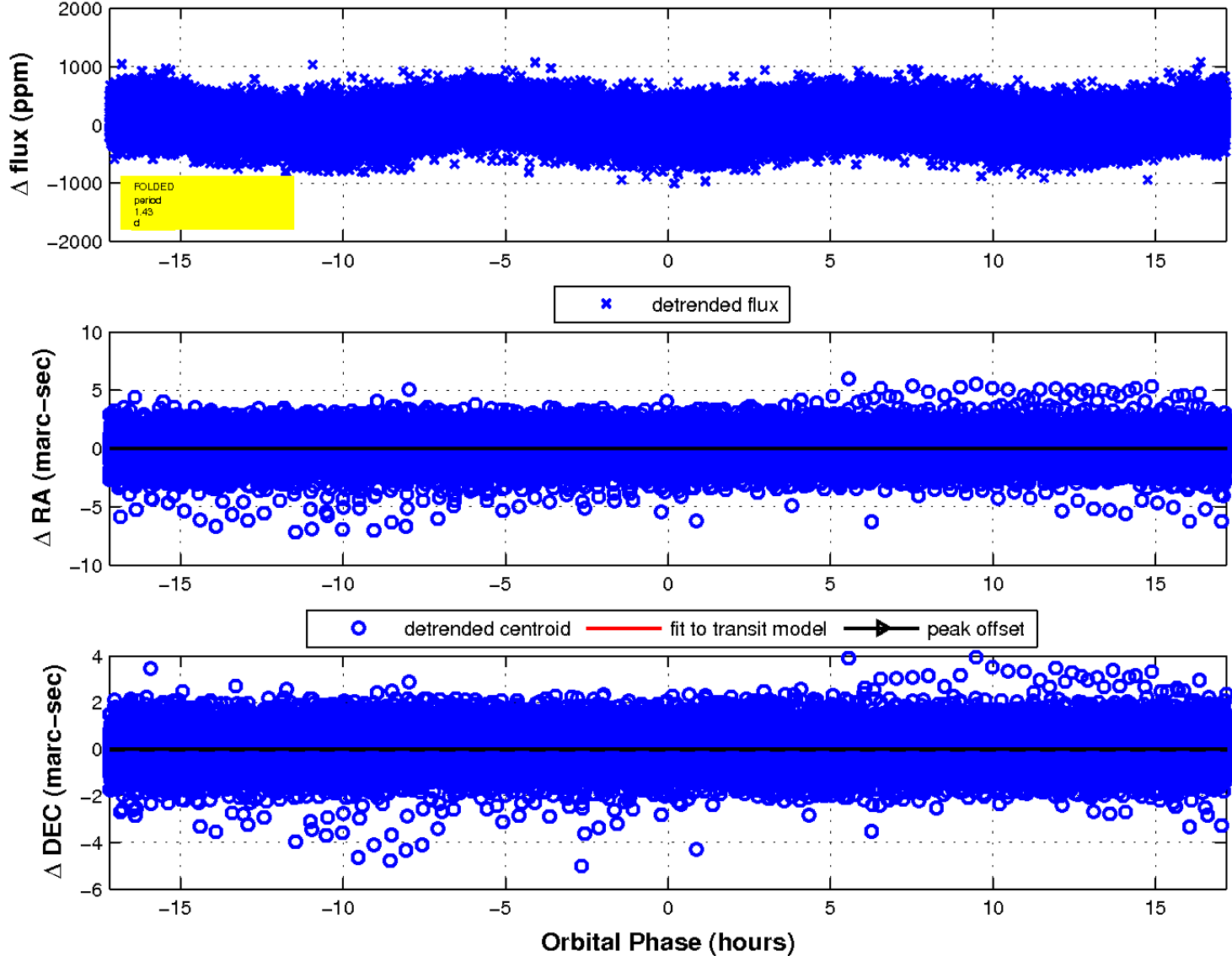
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

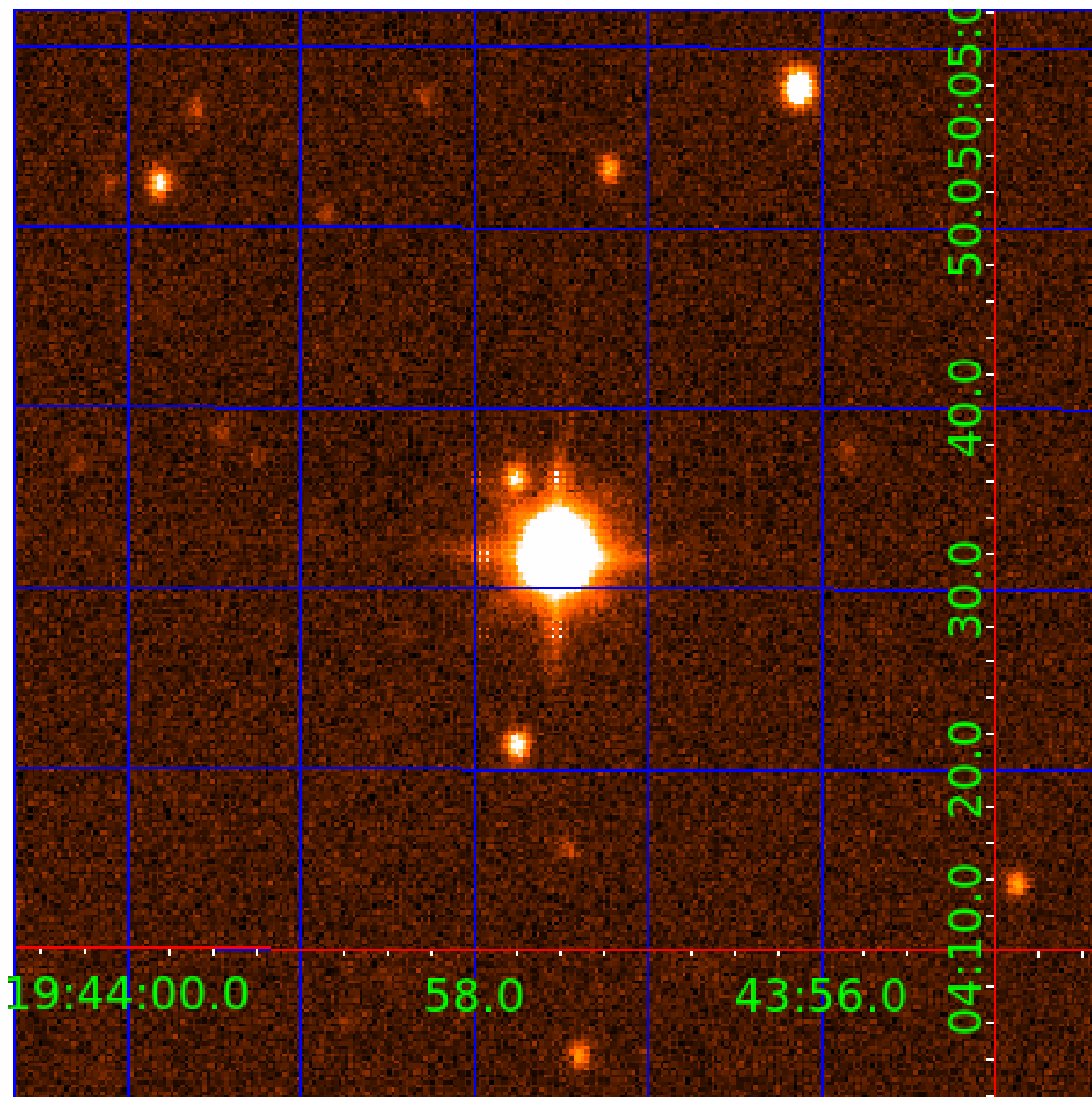


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



# KIC 011822666

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011822666-01	OBS	No	1.431749	132.299608	27.3	5.793	8.9	8.4	3.00	8615	1.77	45338.09
011822666-02	OBS	No	0.954468	132.326579	66.7	3.808	14.1	16.5	3.00	8615	2.49	77852.14
011822666-03	OBS	No	0.954489	131.842864	79.9	5.399	21.1	24.5	3.00	8615	2.75	77849.86

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011822666-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011822666-02	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
011822666-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

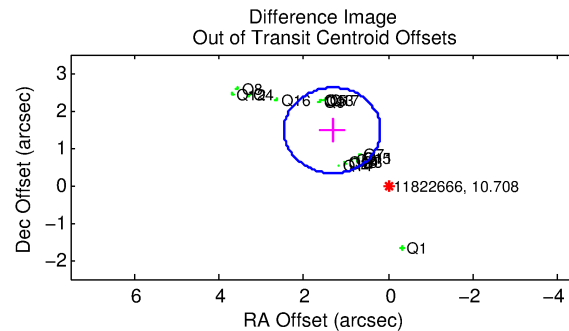
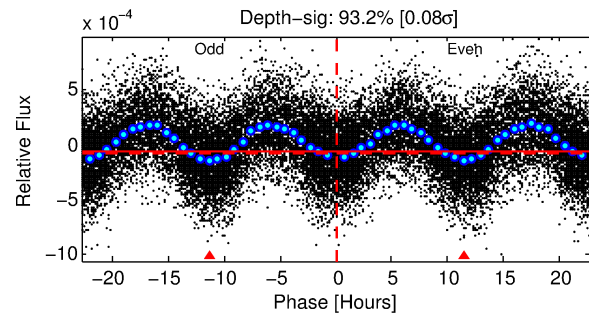
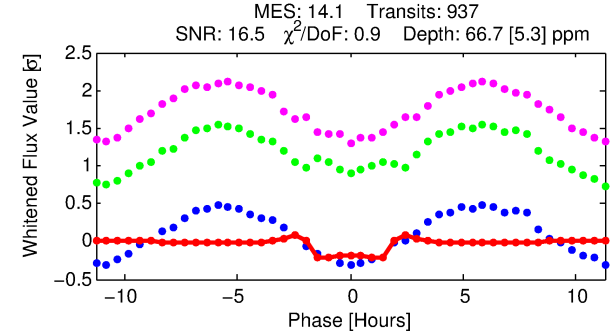
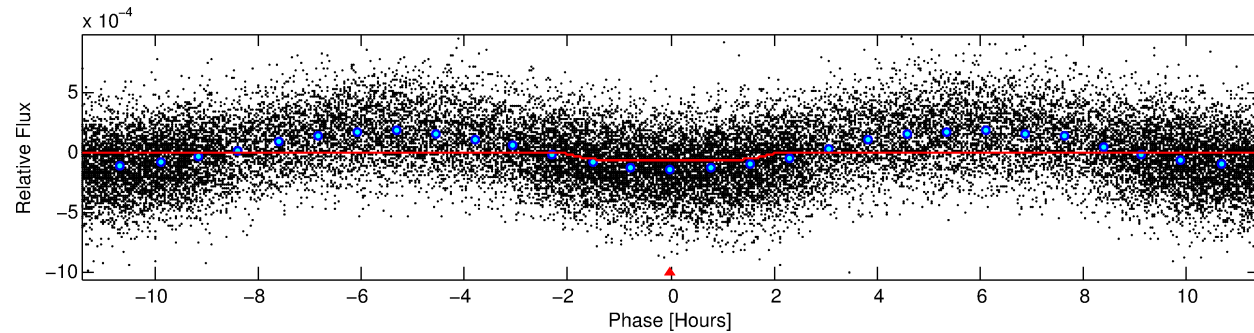
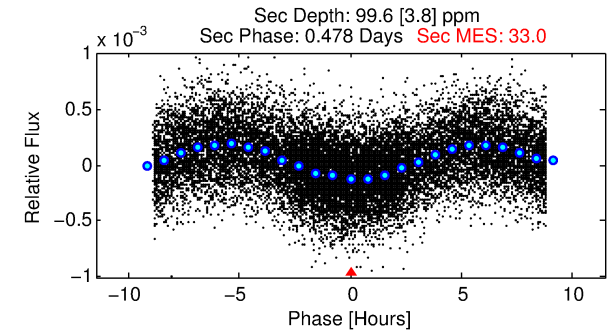
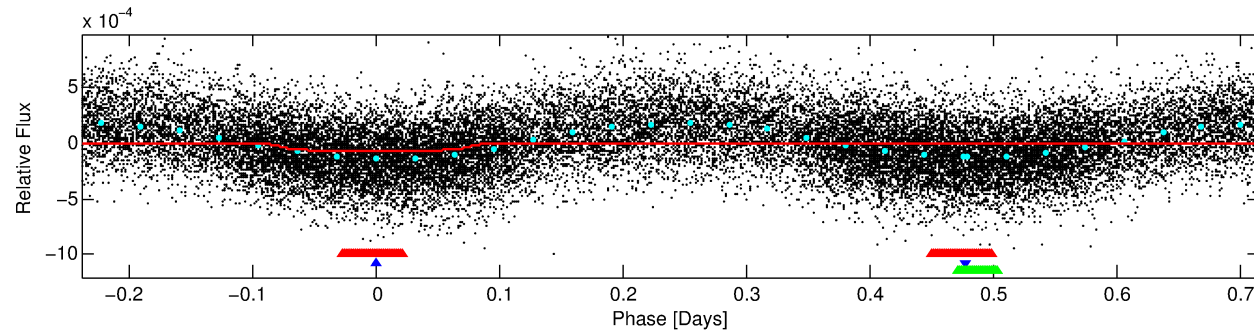
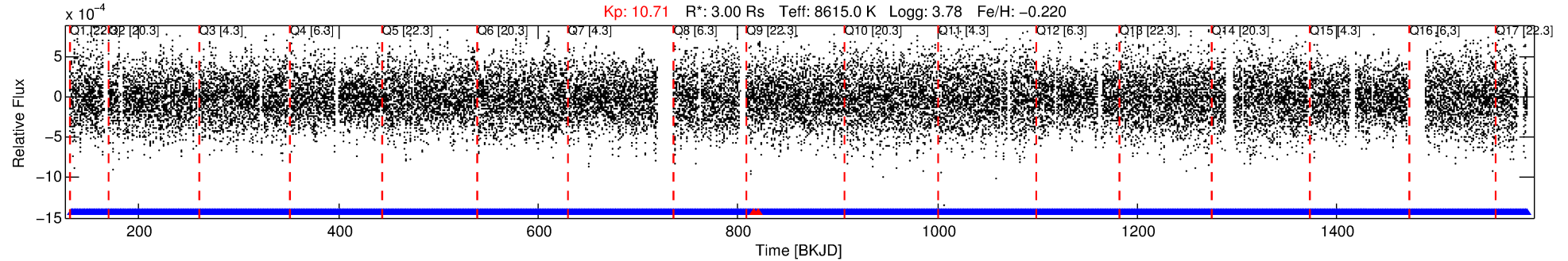
## Ephemeris Match Information For 011822666-02

No Significant Match Found



# DV One-Page Summary

KIC: 11822666 Candidate: 2 of 3 Period: 0.954 d



## DV Fit Results:

Period = 0.95447 [0.00001] d  
Epoch = 132.3266 [0.0017] BKJD  
Rp/R\* = 0.0076 [0.0028]  
a/R\* = 2.00 [3.34]  
b = 0.16 [14.08]  
Seff = 77852.14 [55931.33]  
Teq = 4259 [765] K  
Rp = 2.49 [1.43] Re  
a = 0.0239 [0.0103] AU  
Ag = 5.04 [5.11] [0.79σ]  
Teffp = 9865 [1866] K [2.78σ]

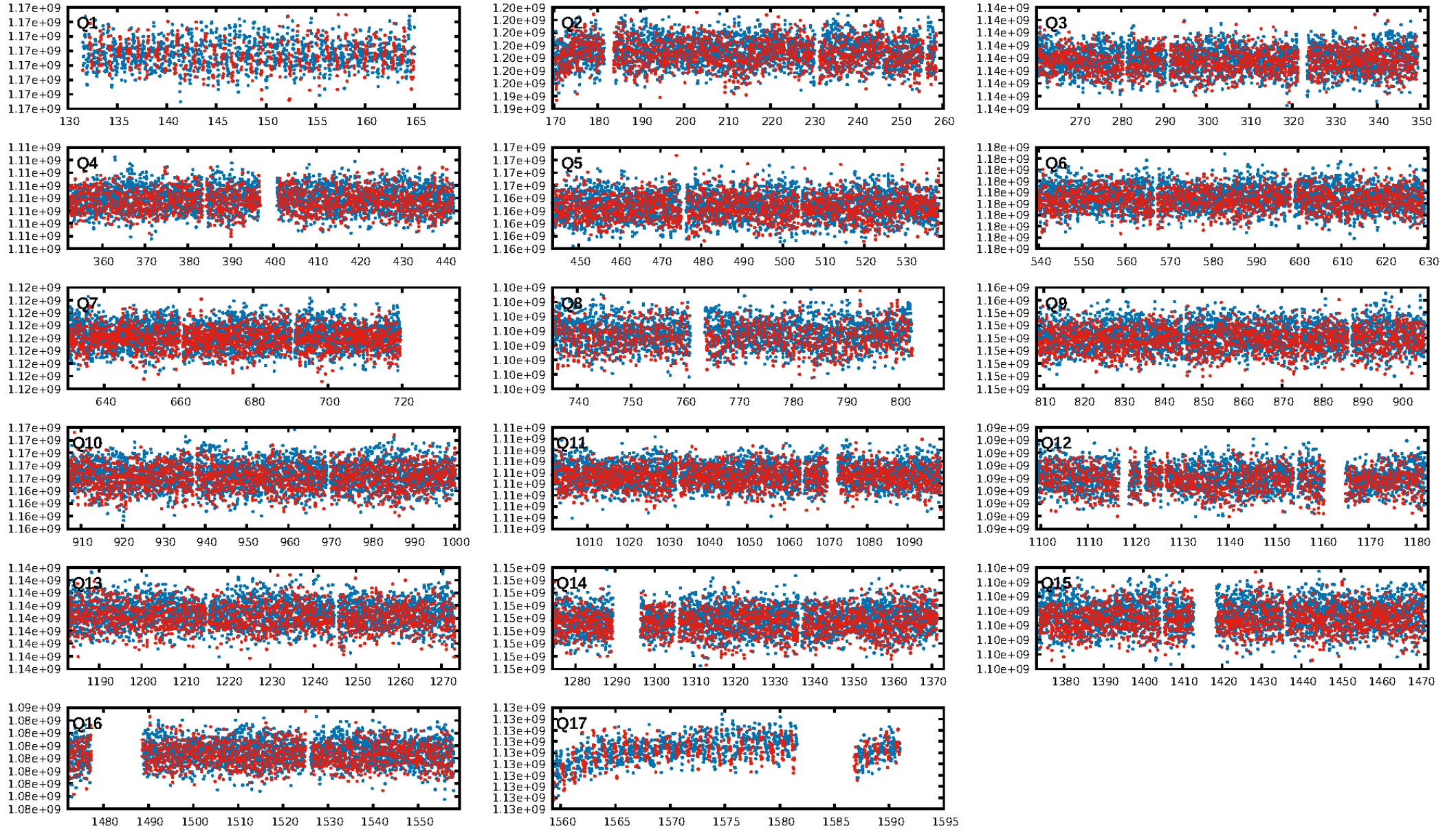
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [893/895]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 0.1%  
Centroid-so: 0.462 arcsec [1.89σ]  
OotOffset-rm: 1.973 arcsec [5.18σ]  
KicOffset-rm: 2.310 arcsec [6.11σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.71 [12/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:13:45 Z

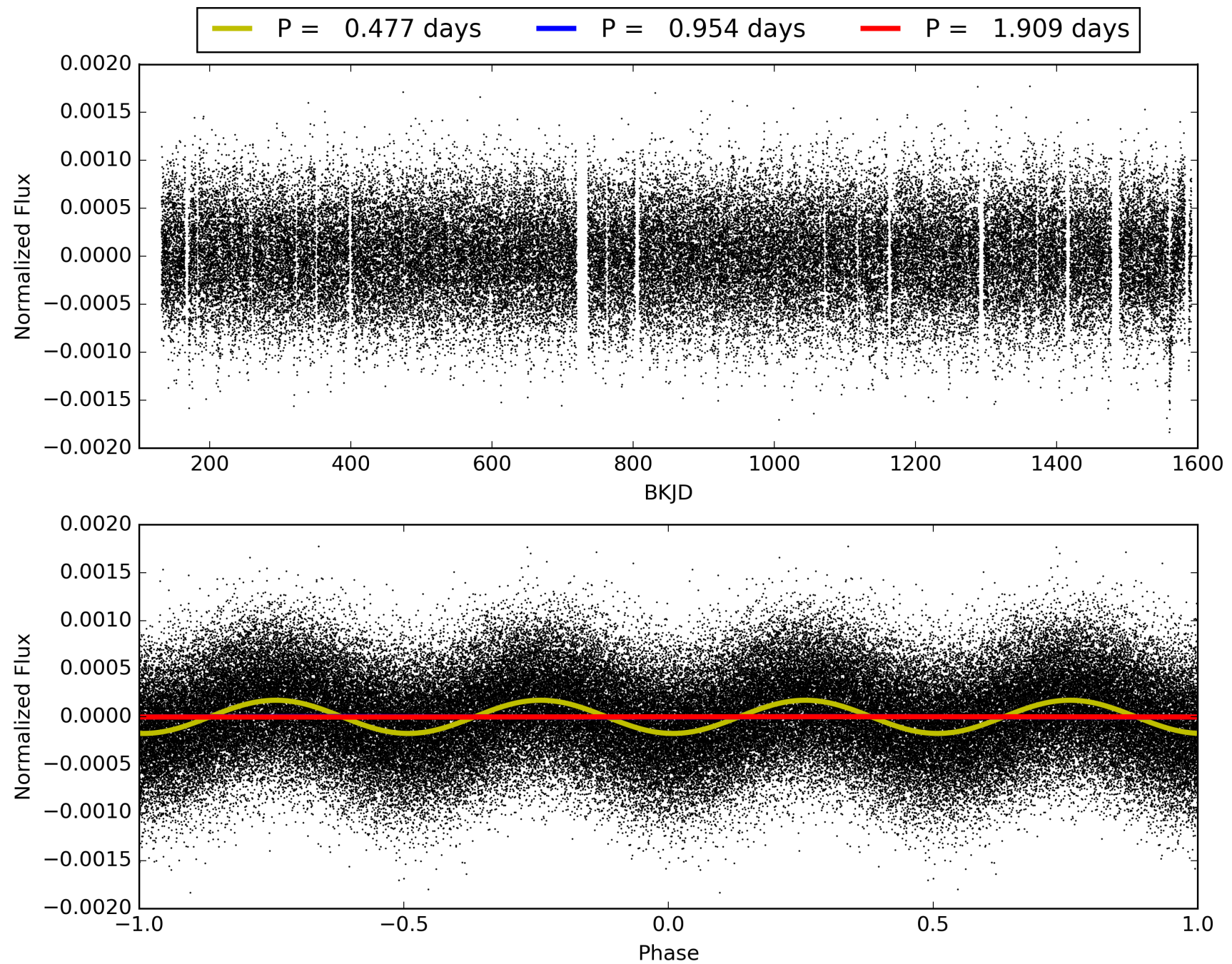
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011822666-02, PDC Light Curves



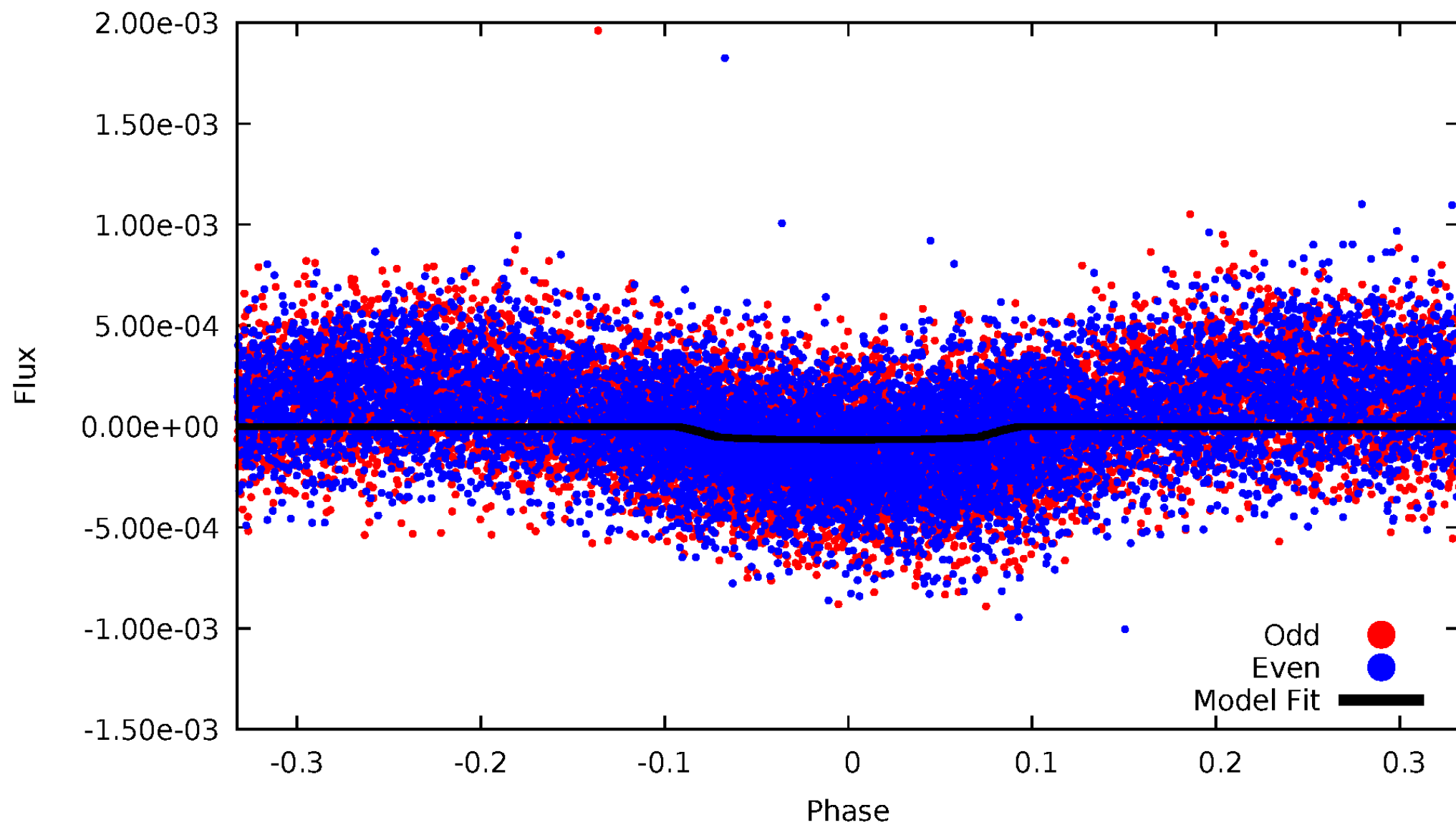


TCE 011822666-02



# DV Odd/Even

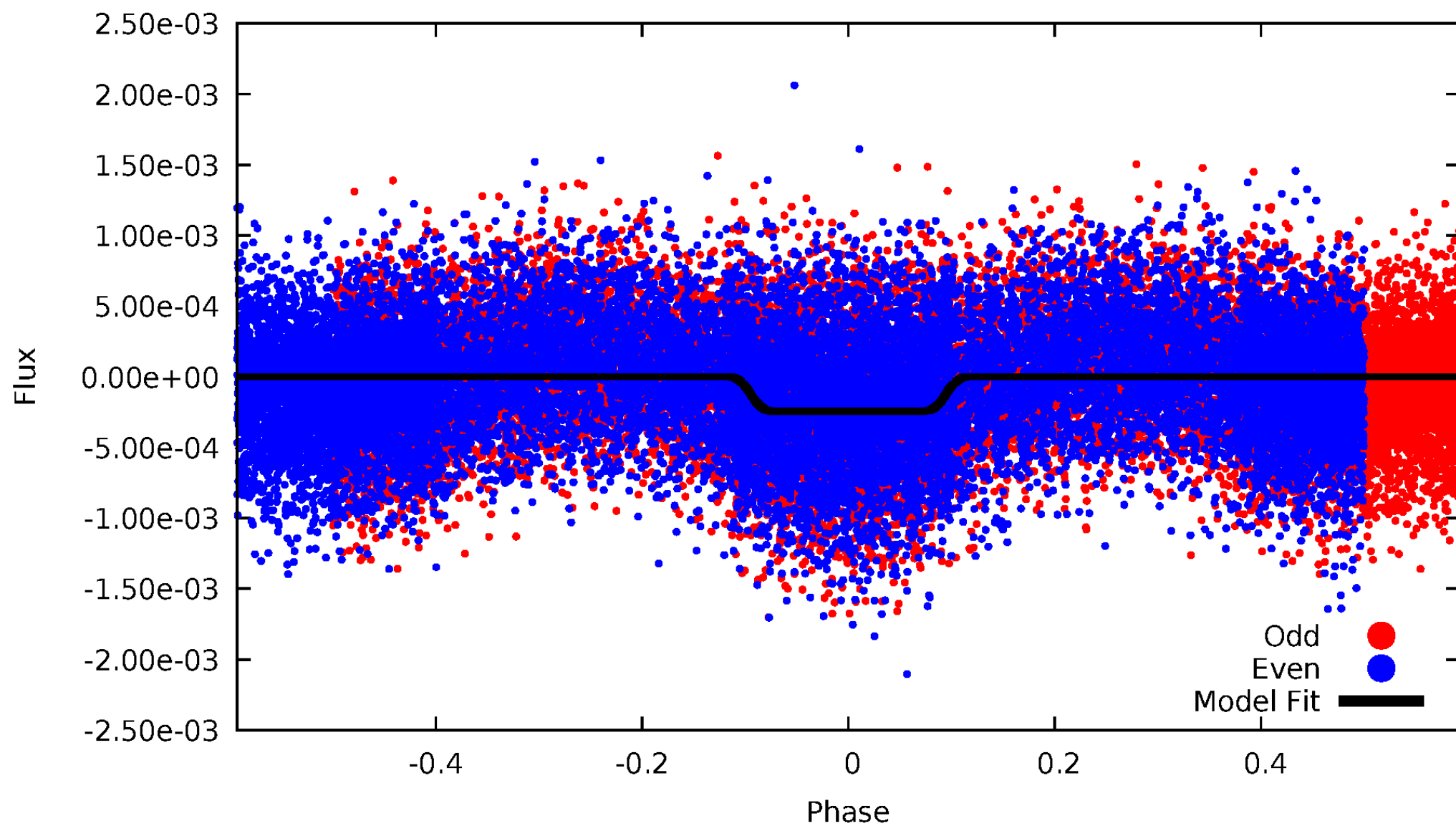
TCE 011822666-02





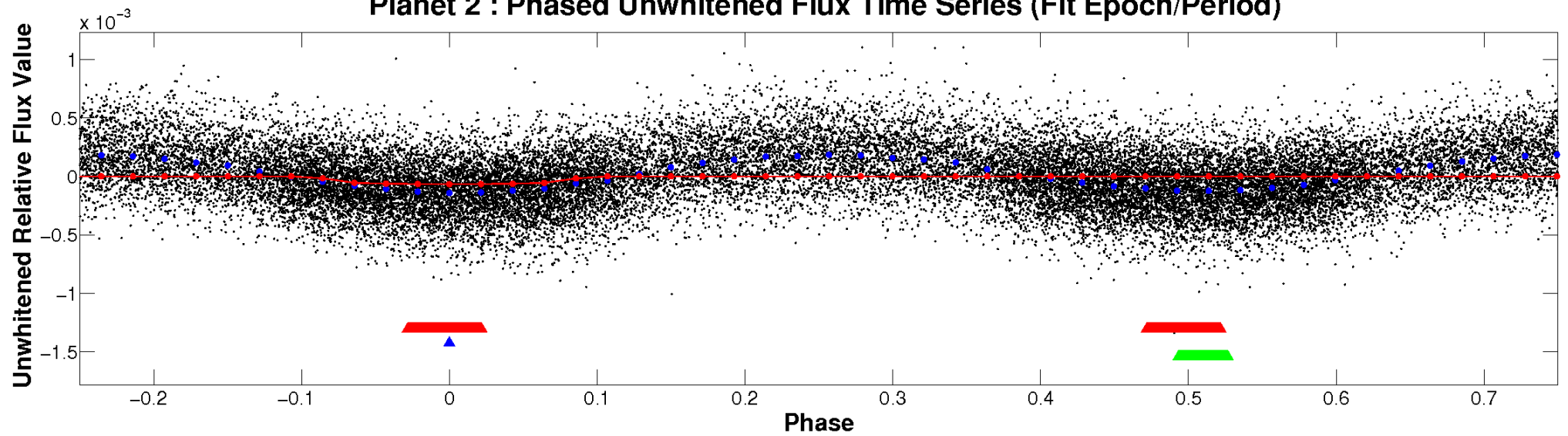
# ALT Odd/Even

TCE 011822666-02

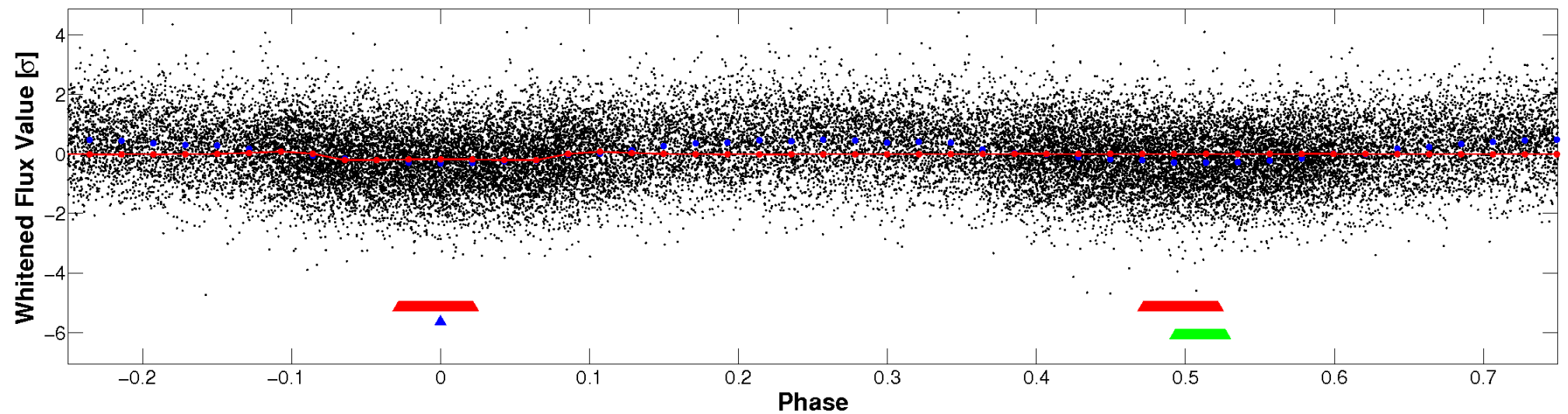


# Non-Whitened Vs. Whitened Light Curve

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

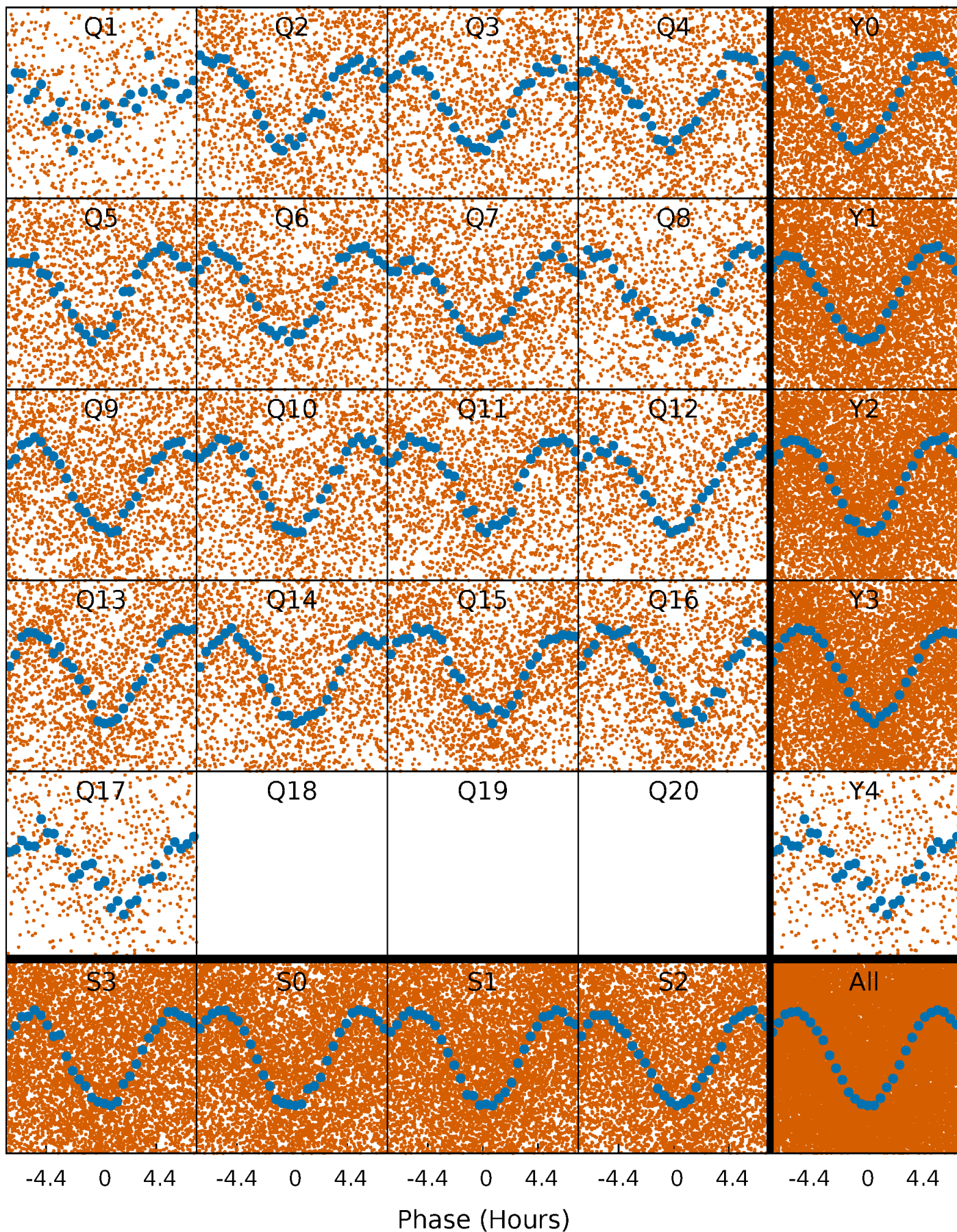


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

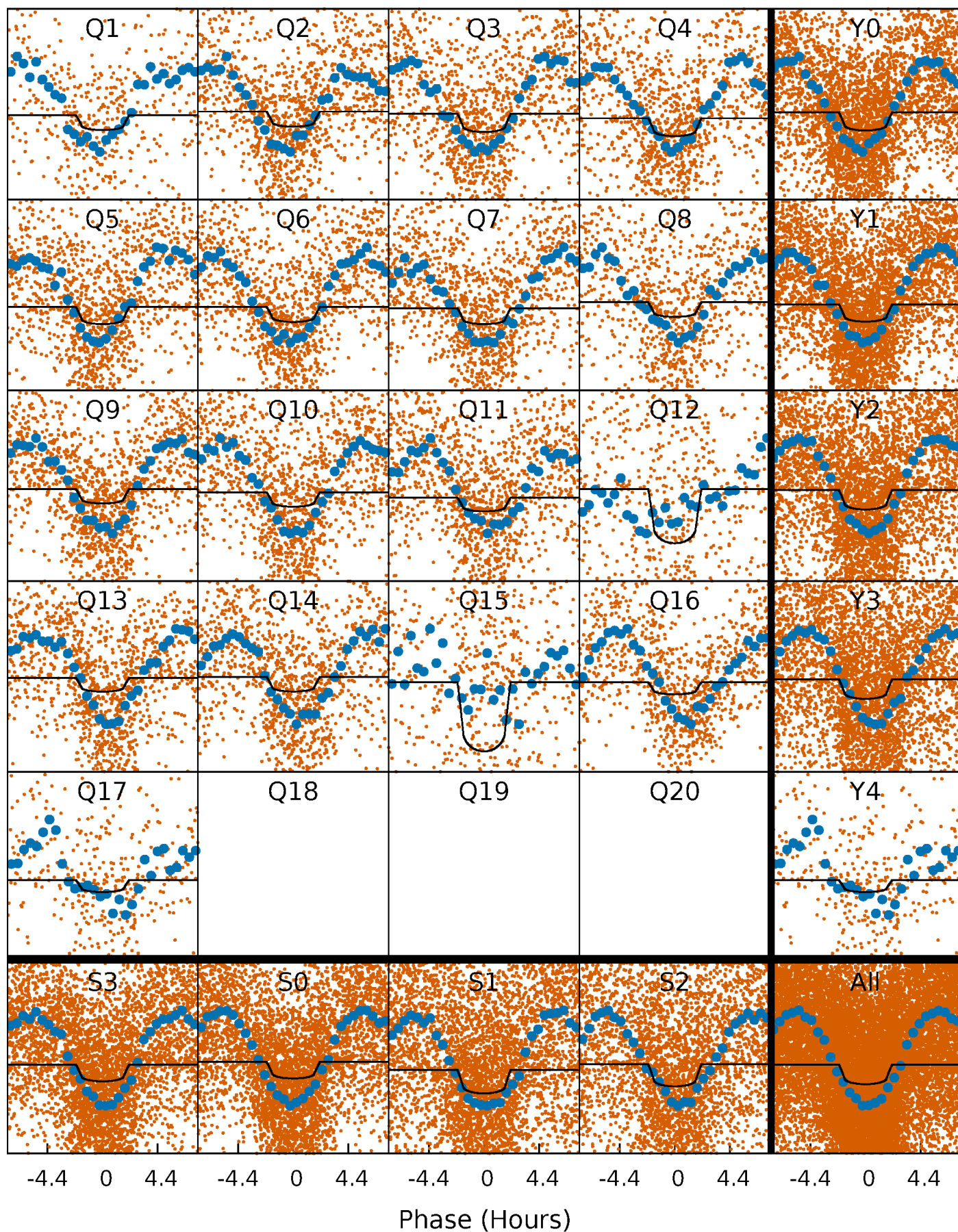
TCE 011822666-02   P= 0.954468 Days    $T_0=132.326579$  (BKJD)





# DV Quarter-Phased Transit Curves

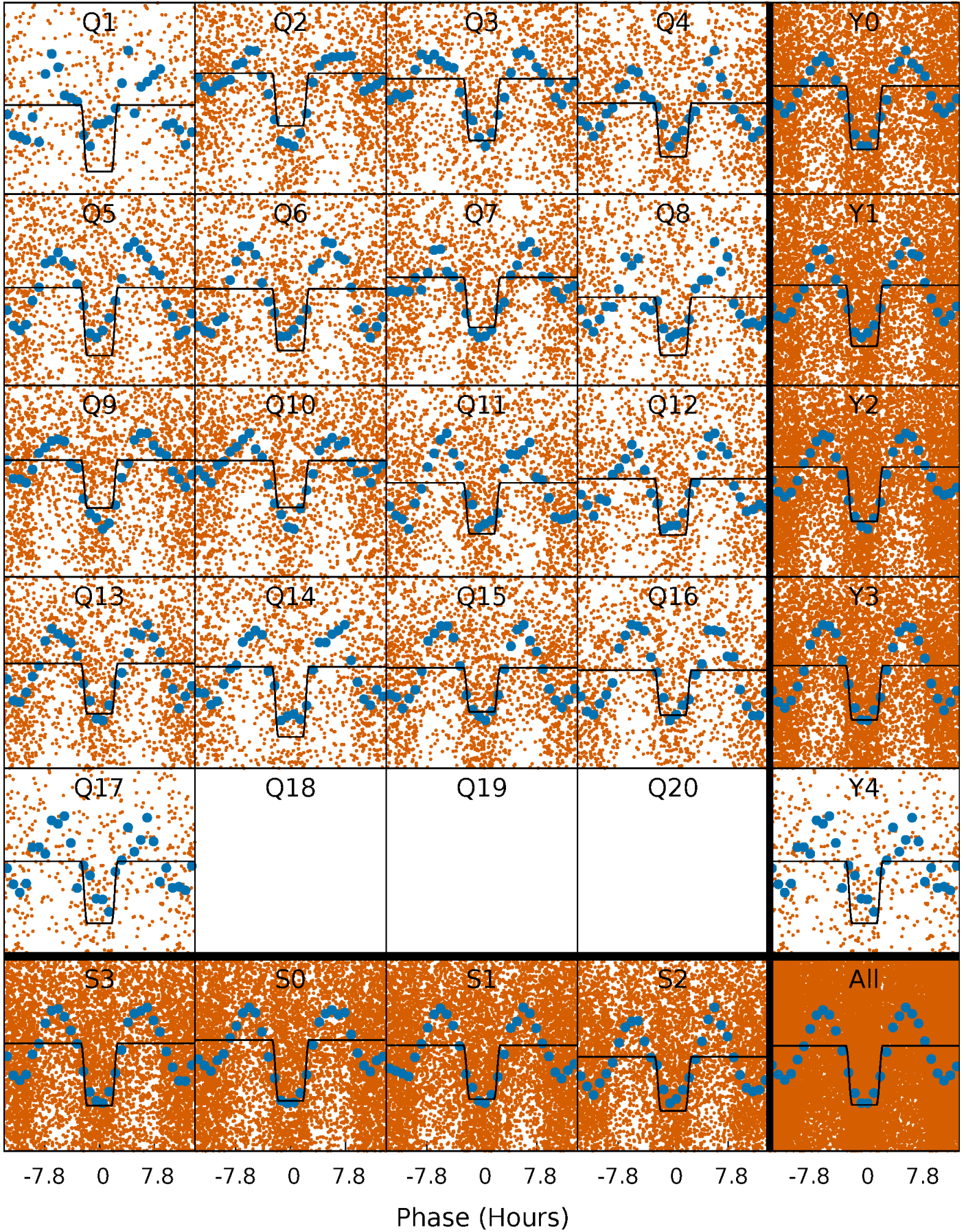
TCE 011822666-02 P= 0.954468 Days  $T_0=132.326579$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

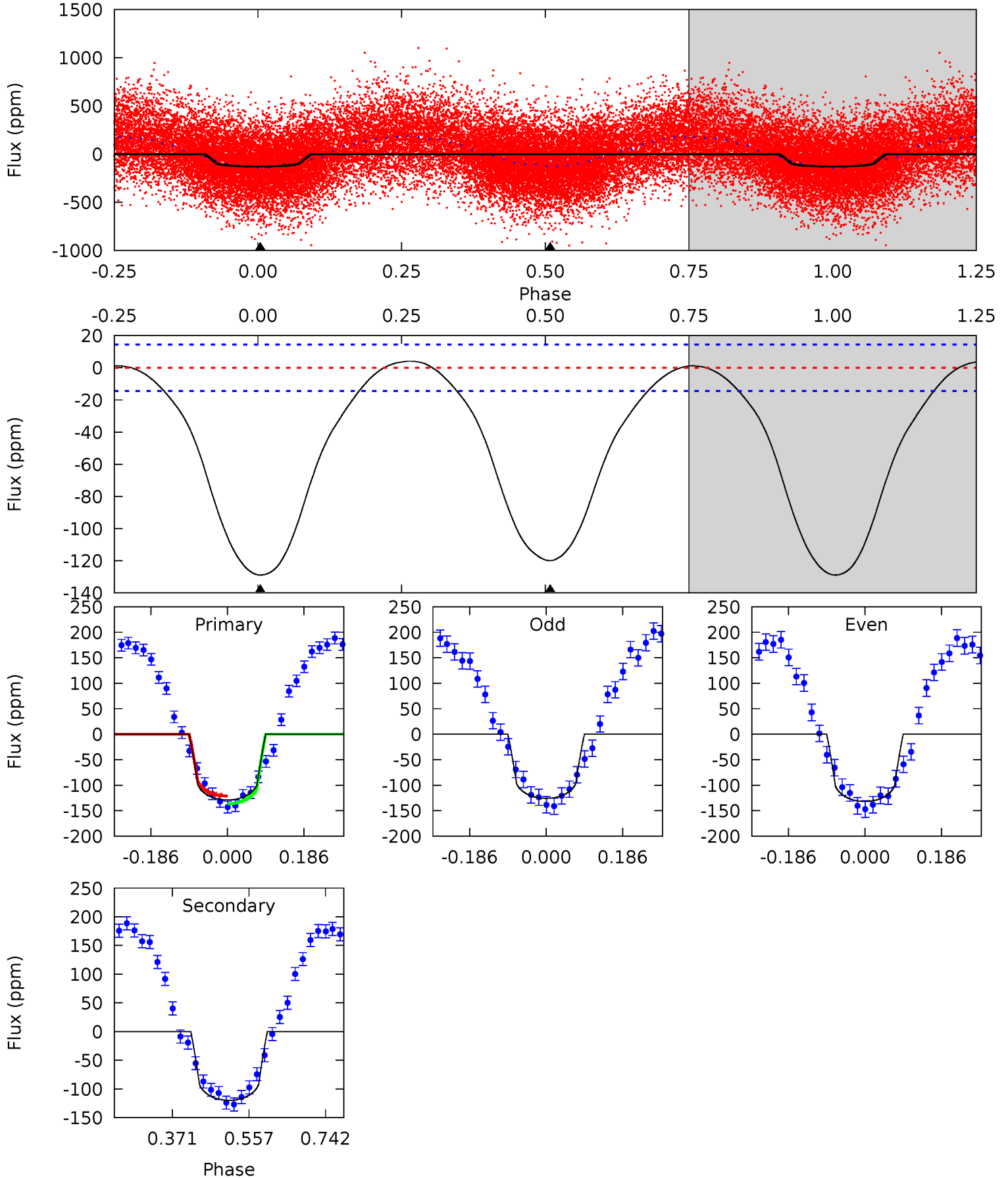
TCE 011822666-02 P= 0.954506 Days  $T_0=132.304085$  (BKJD)



# DV Model-Shift Uniqueness Test

011822666-02, P = 0.954468 Days, E = 131.372111 Days

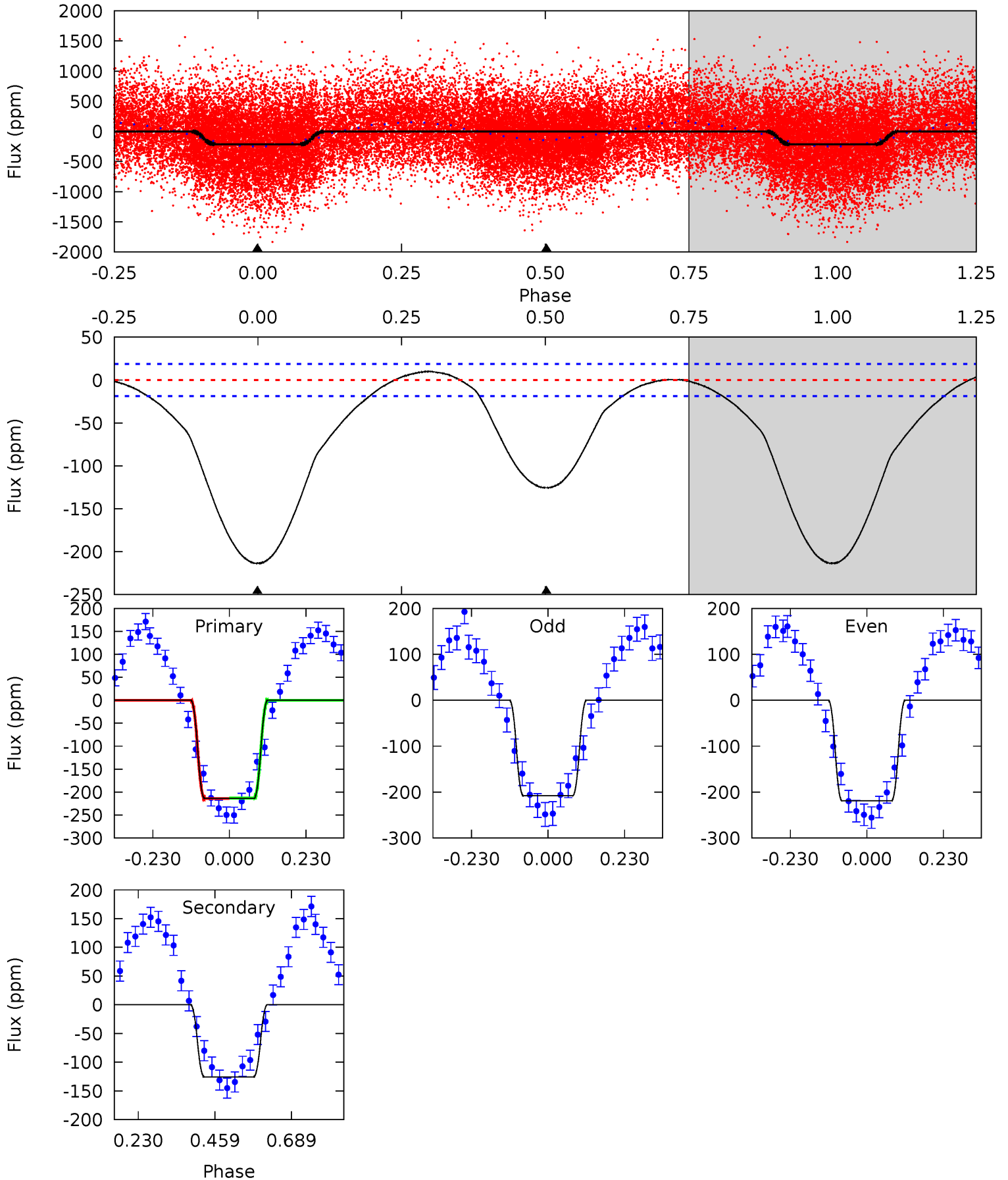
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.6	36.9	0	0	4.43	1.32	1.04	39.6	39.6	36.9	36.9	0.93	1.05	0.03	2.32



# Alt Model-Shift Uniqueness Test

011822666-02, P = 0.954506 Days, E = 131.349579 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.3	29.5	0	0	4.39	1.20	1.23	50.3	50.3	29.5	29.5	1.35	1.01	0.04	0.13



### Stellar Parameters For KIC 011822666

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8615^{+238}_{-374}$	$3.784^{+0.412}_{-0.137}$	$-0.220^{+0.450}_{-0.350}$	$3.003^{+0.881}_{-1.321}$	$2.002^{+0.428}_{-0.428}$	$0.104^{+0.349}_{-0.049}$
	+3%/-4%	+11%/-4%	+205%/-159%	+29%/-44%	+21%/-21%	+335%/-47%
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 011822666-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-120 \pm 3$	$2.27^{+1.04}_{-0.94}$	$5742^{+496}_{-661}$	$11002^{+6617}_{-2503}$	$7.575^{+13.405}_{-3.942}$
Alt.	$-126 \pm 4$	$4.77^{+1.41}_{-1.38}$	$5737^{+520}_{-717}$	$6648^{+960}_{-739}$	$1.753^{+1.591}_{-0.667}$

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



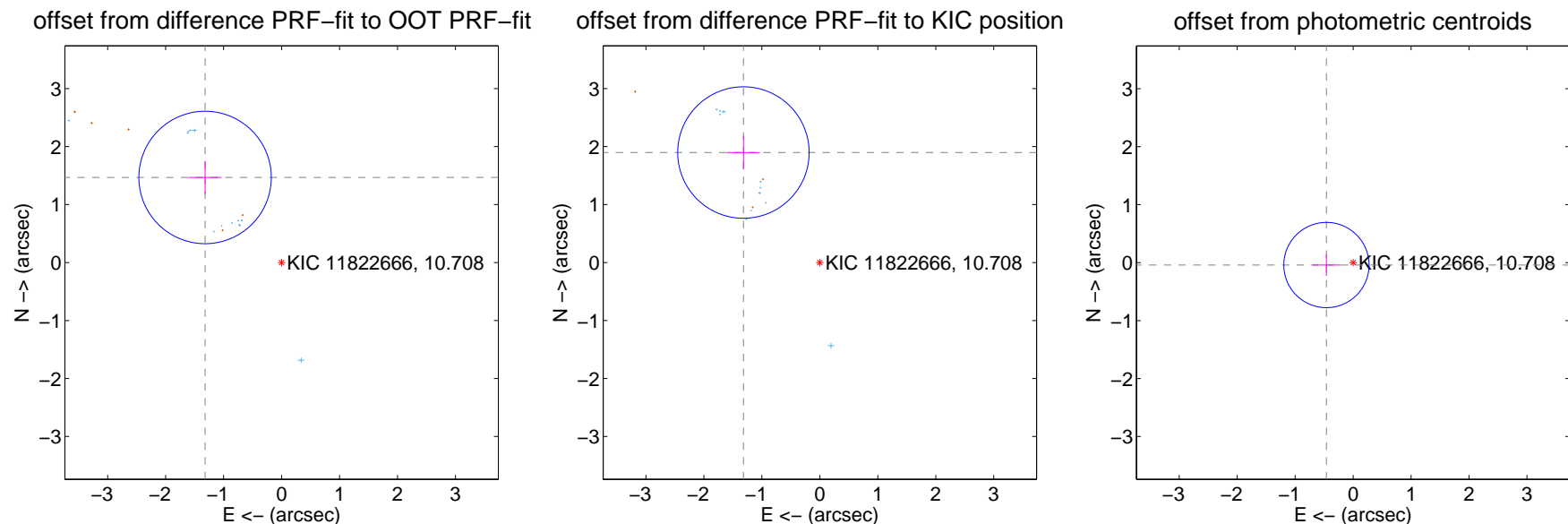
## DV Centroid Data

Supplemental centroid analysis for 011822666-02. **Kepler magnitude: 10.71.** Transit SNR 16.46

There are 12 quarters with good PRF difference image offsets

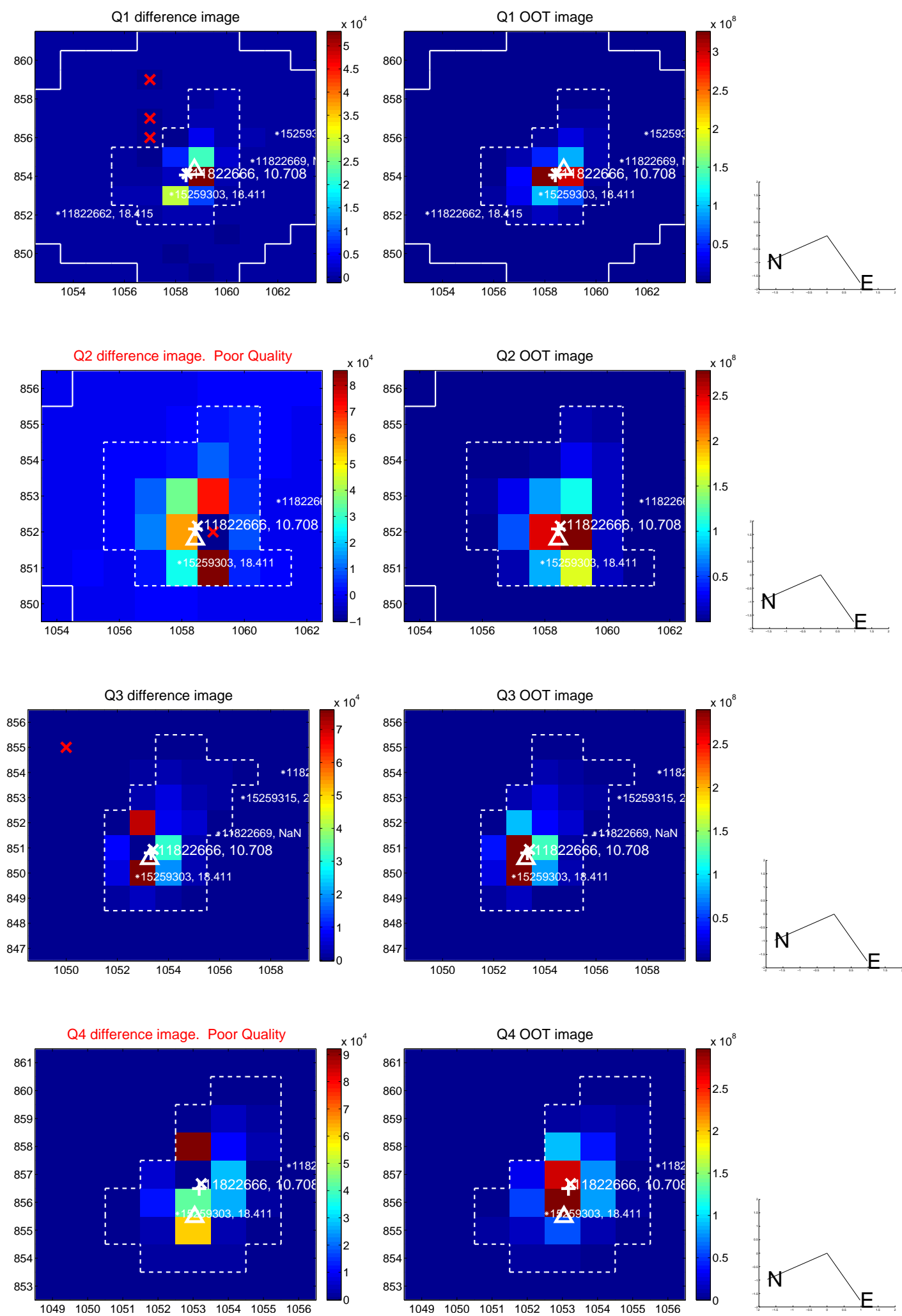
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>1.973 \pm 0.381</math></b>	<b>5.18</b>	$1.319 \pm 0.284$	$1.467 \pm 0.284$
PRF-fit source offset from KIC position	<b><math>2.310 \pm 0.378</math></b>	<b>6.11</b>	$1.318 \pm 0.286$	$1.897 \pm 0.288$
photometric centroid source offset	$0.46 \pm 0.25$	1.89	$0.46 \pm 0.25$	$-0.04 \pm 0.19$

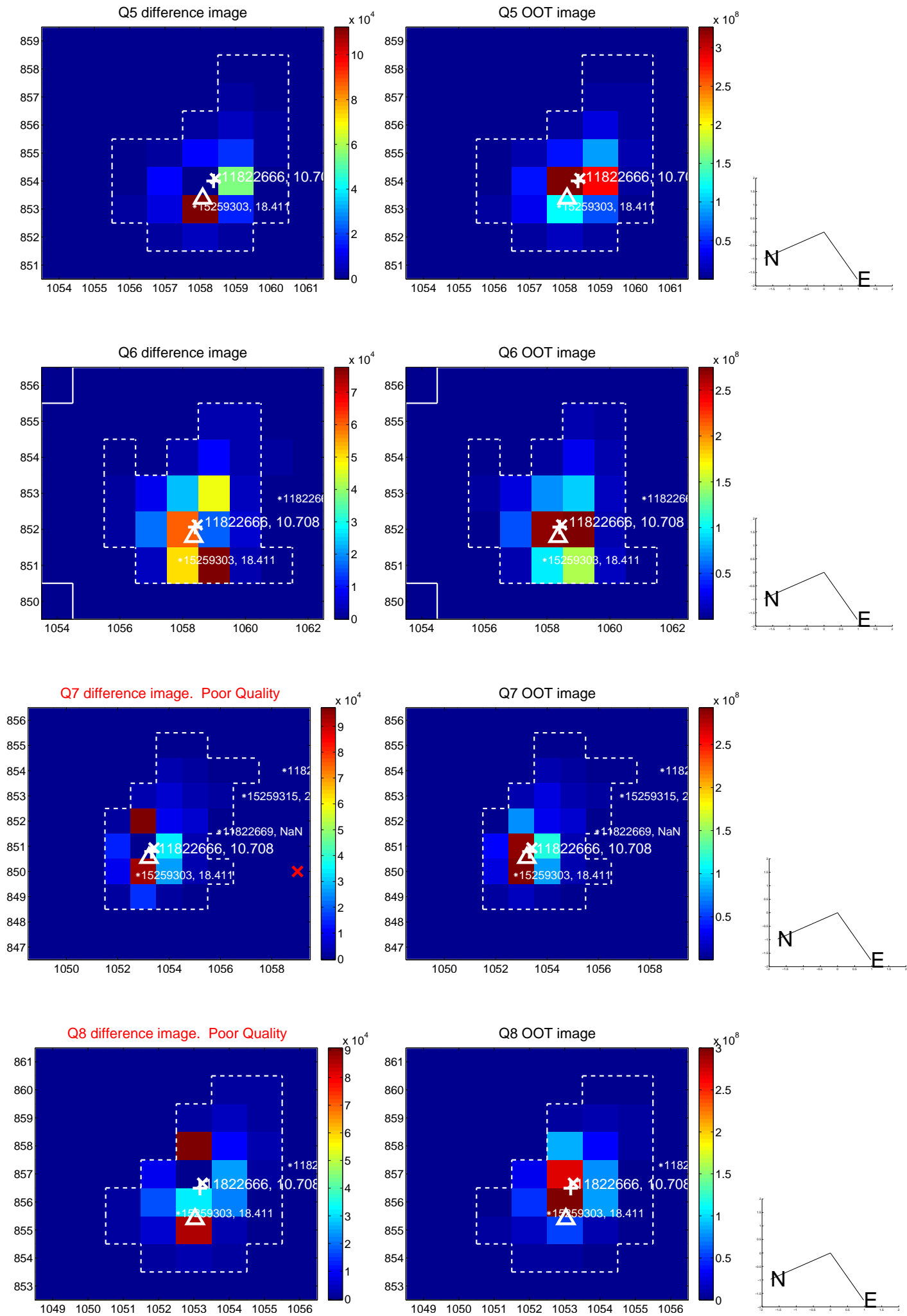


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

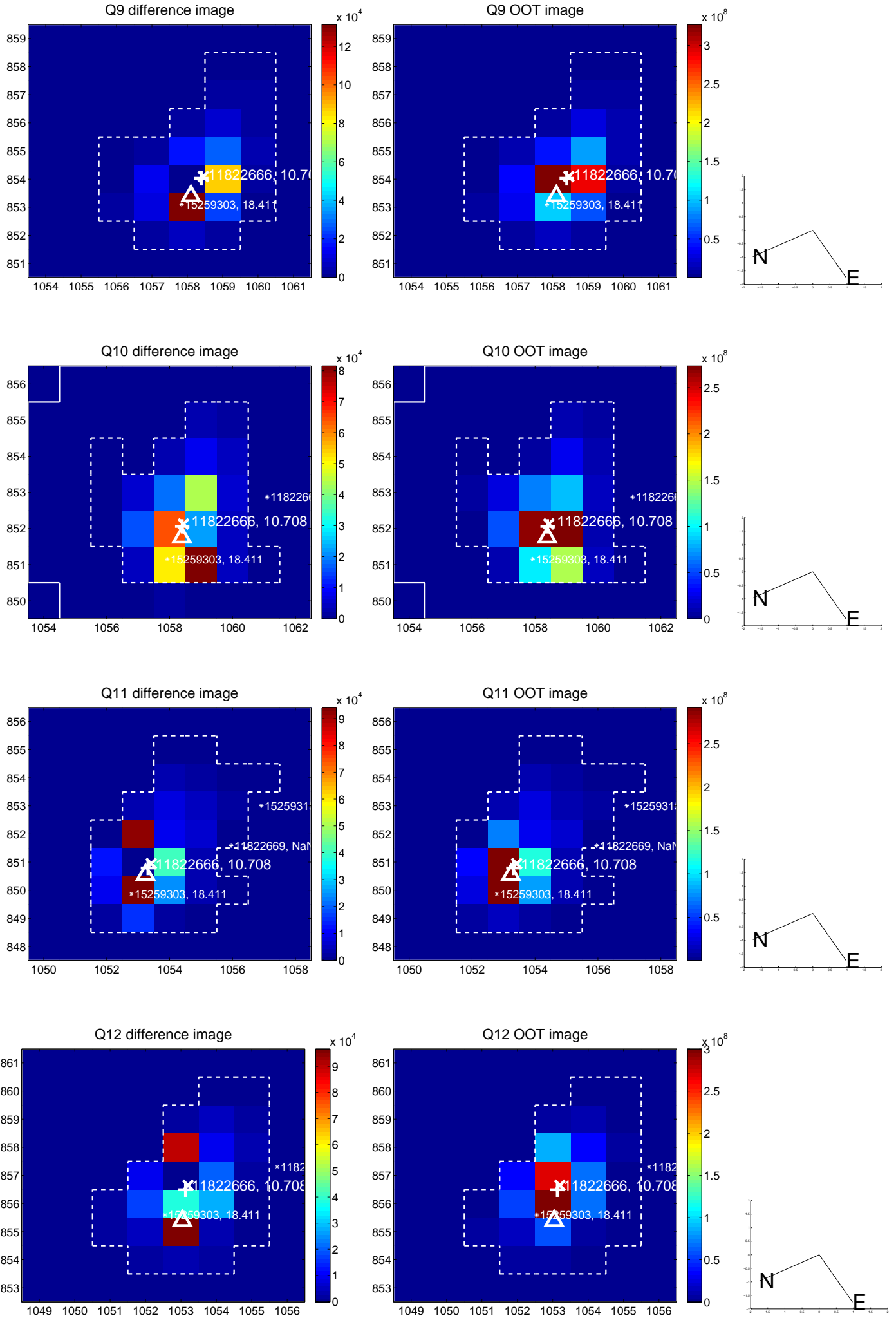
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



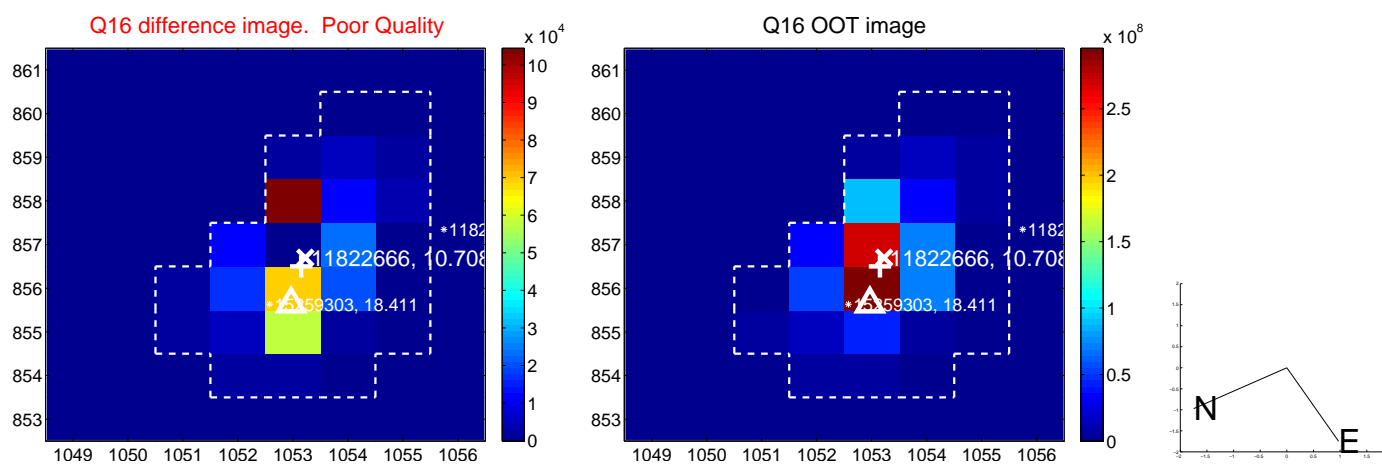
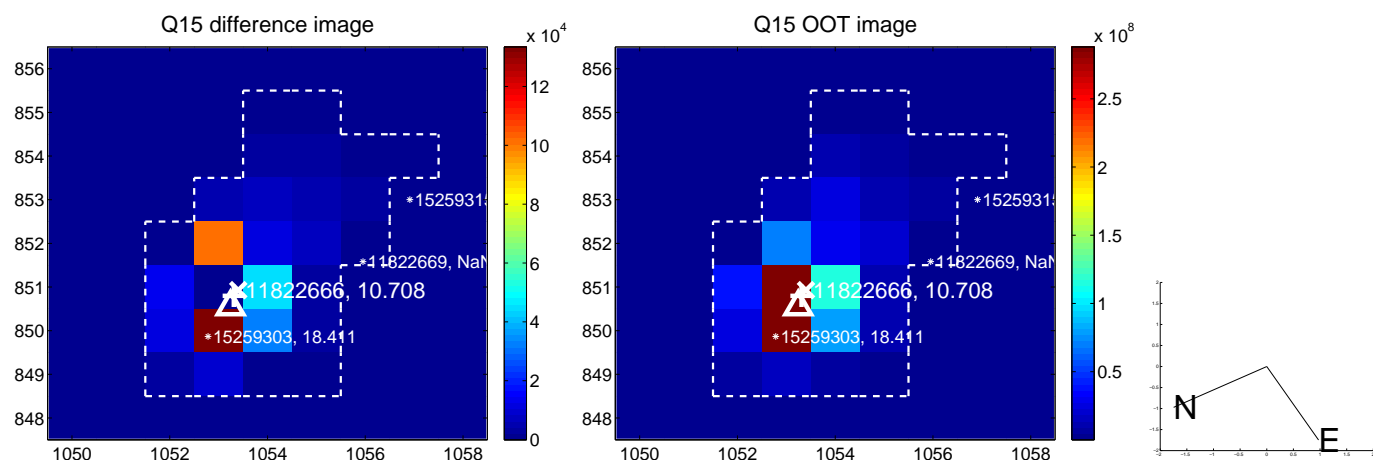
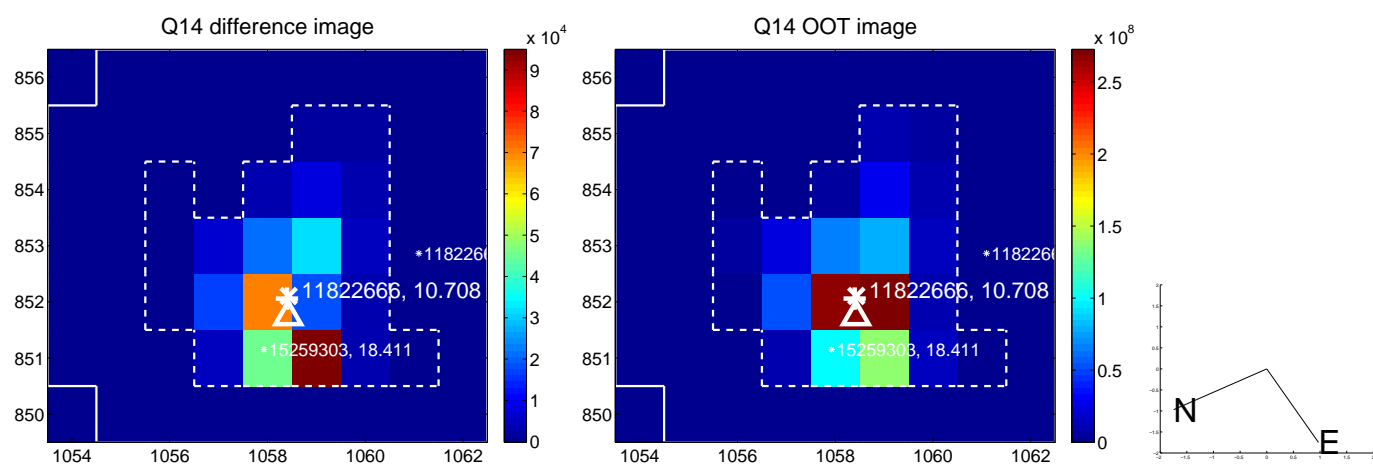
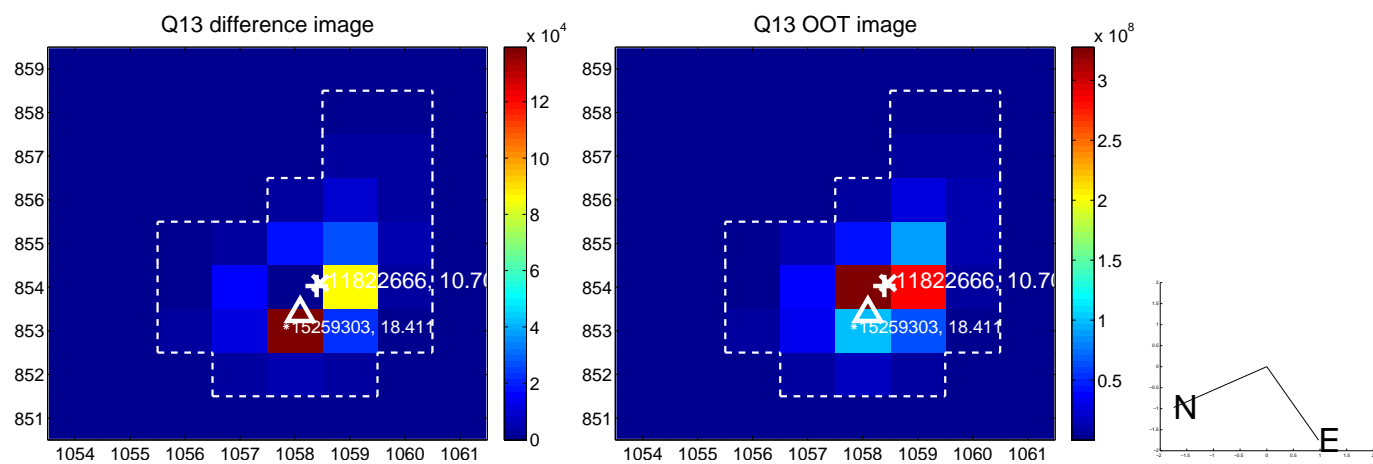
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

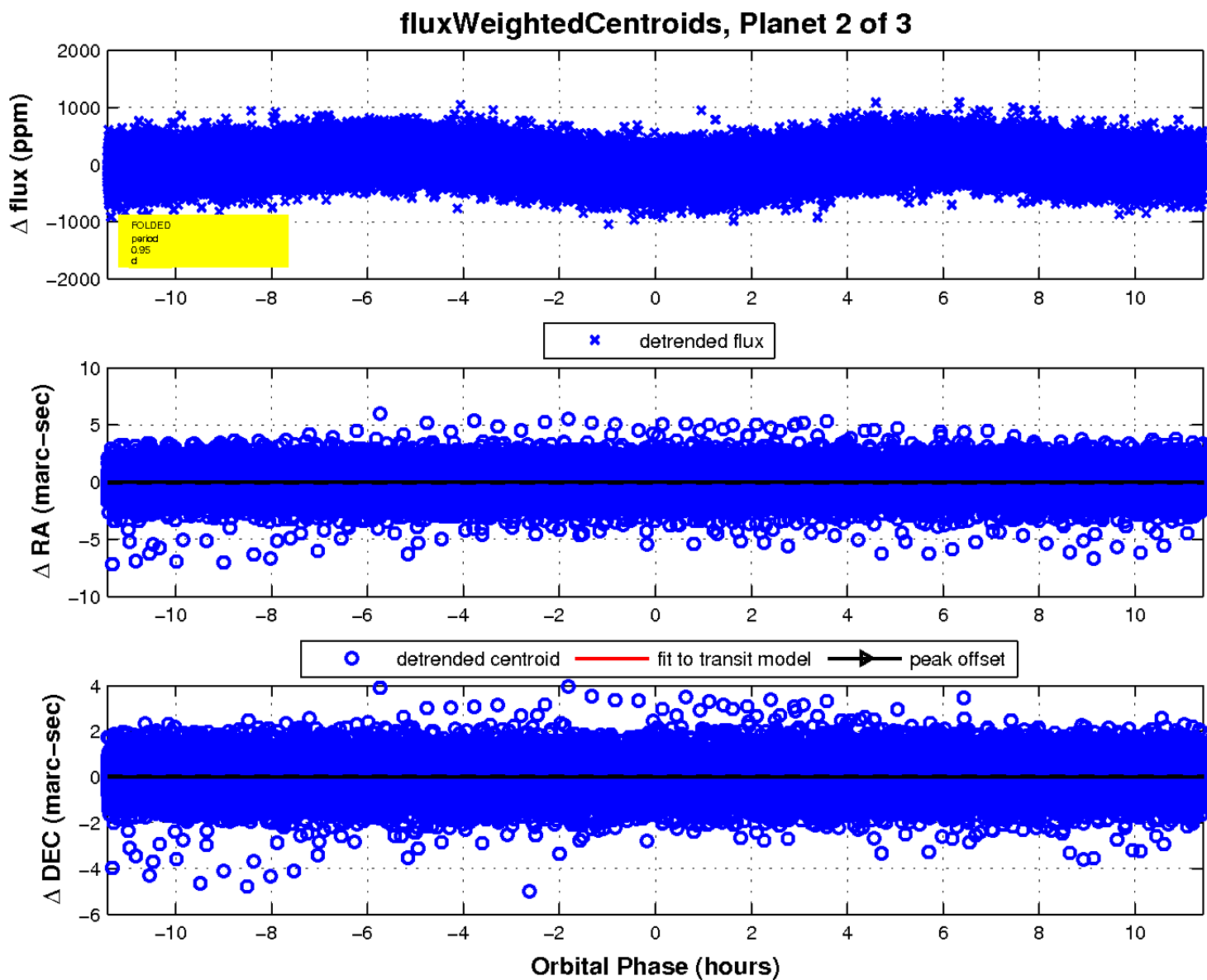
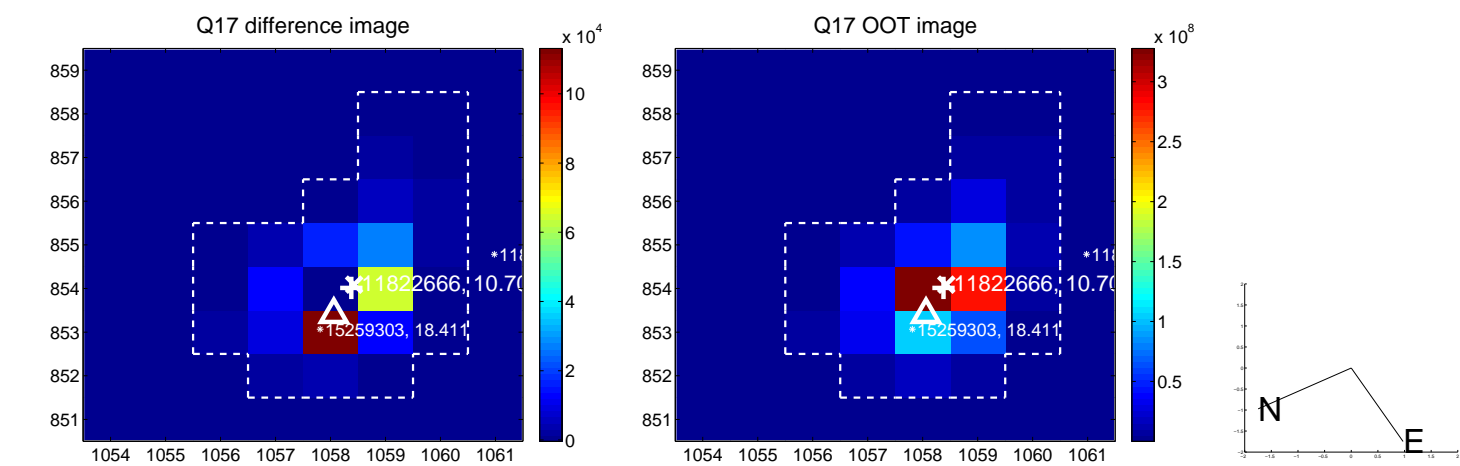


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



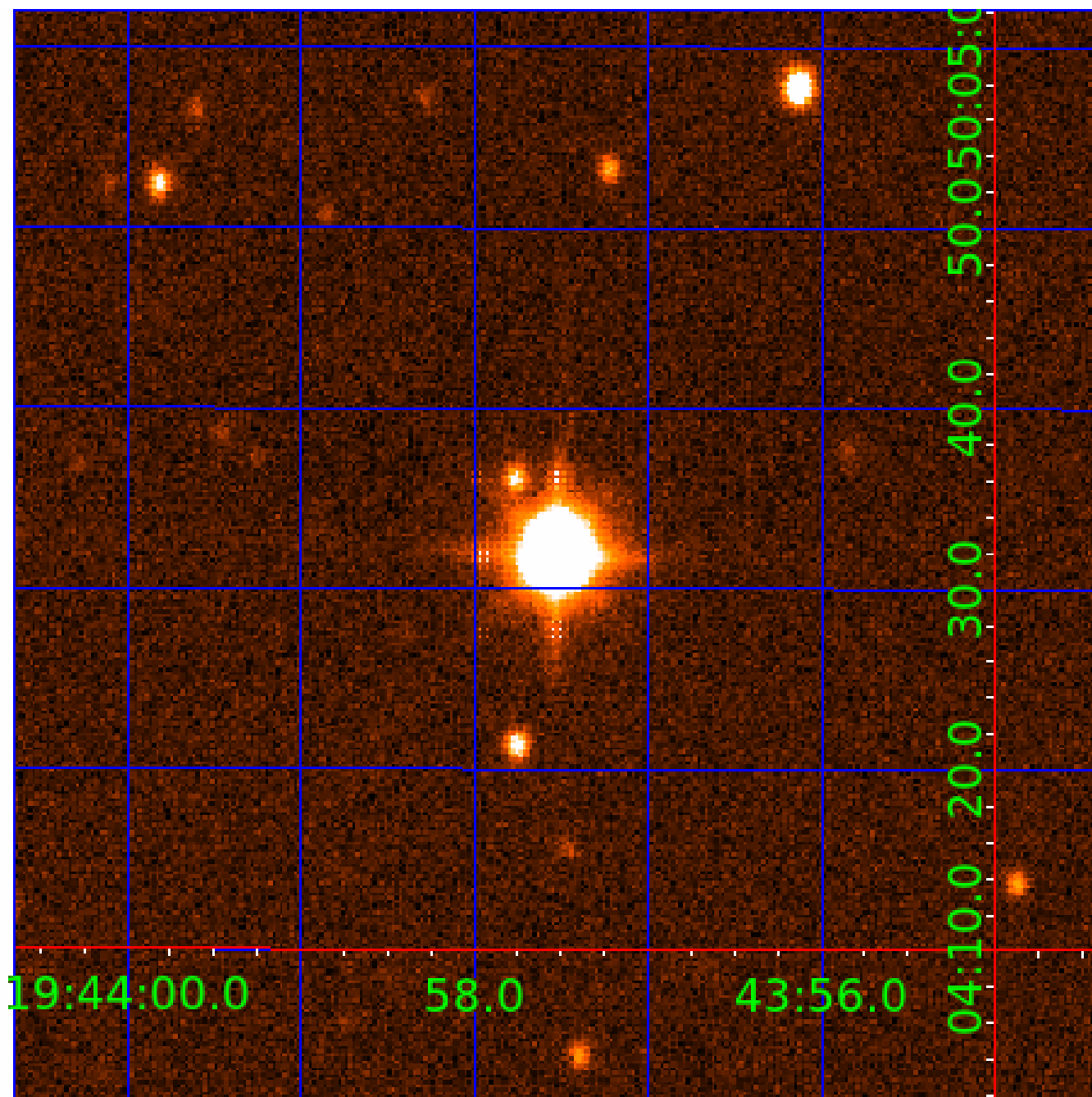


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 011822666

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011822666-01	OBS	No	1.431749	132.299608	27.3	5.793	8.9	8.4	3.00	8615	1.77	45338.09
011822666-02	OBS	No	0.954468	132.326579	66.7	3.808	14.1	16.5	3.00	8615	2.49	77852.14
011822666-03	OBS	No	0.954489	131.842864	79.9	5.399	21.1	24.5	3.00	8615	2.75	77849.86

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011822666-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011822666-02	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
011822666-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

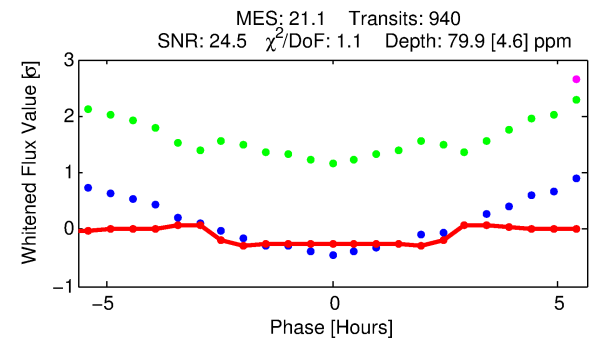
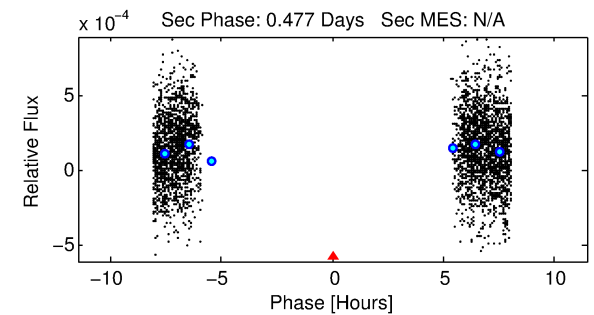
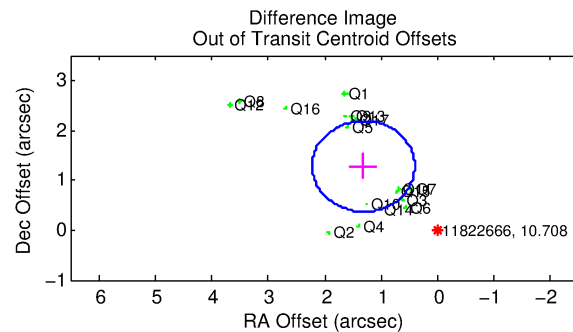
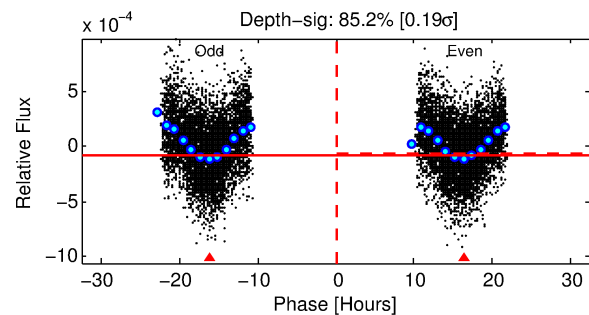
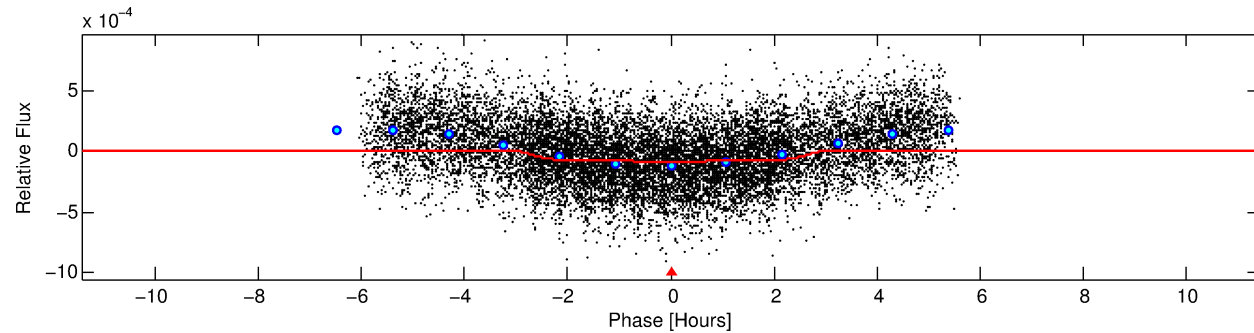
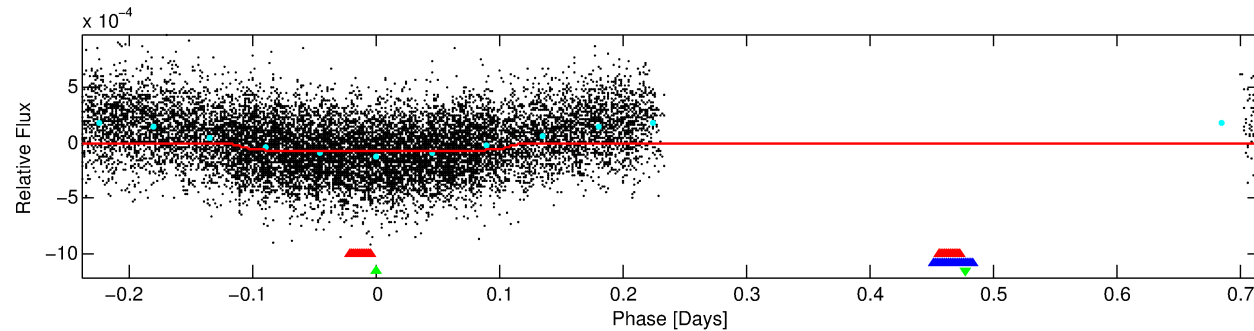
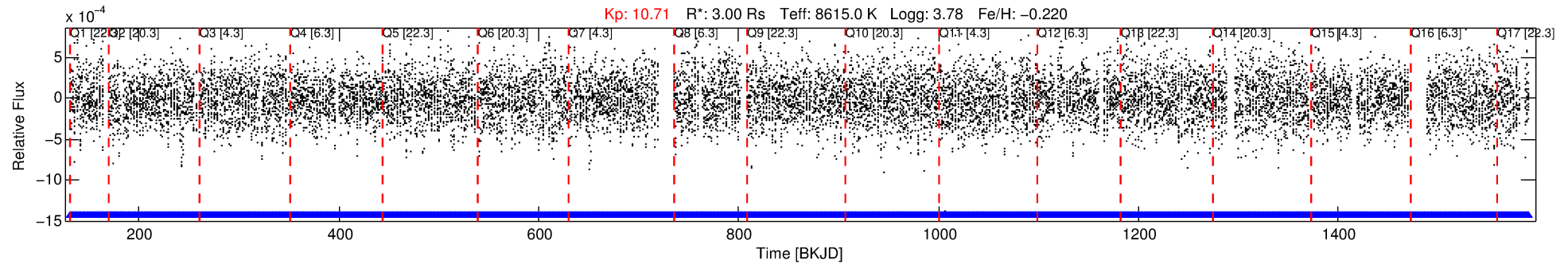
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011822666-03

No Significant Match Found

# DV One-Page Summary

KIC: 11822666 Candidate: 3 of 3 Period: 0.954 d



## DV Fit Results:

Period = 0.95449 [0.00001] d  
Epoch = 131.8429 [0.0019] BKJD  
 $R_p/R^*$  = 0.0084 [0.0031]  
 $a/R^*$  = 1.44 [1.71]  
 $b$  = 0.35 [5.71]  
 $S_{\text{eff}}$  = 77849.86 [55929.69]  
 $T_{\text{eq}}$  = 4259 [765] K  
 $R_p$  = 2.75 [1.59]  $R_e$   
 $a$  = 0.0239 [0.0103] AU

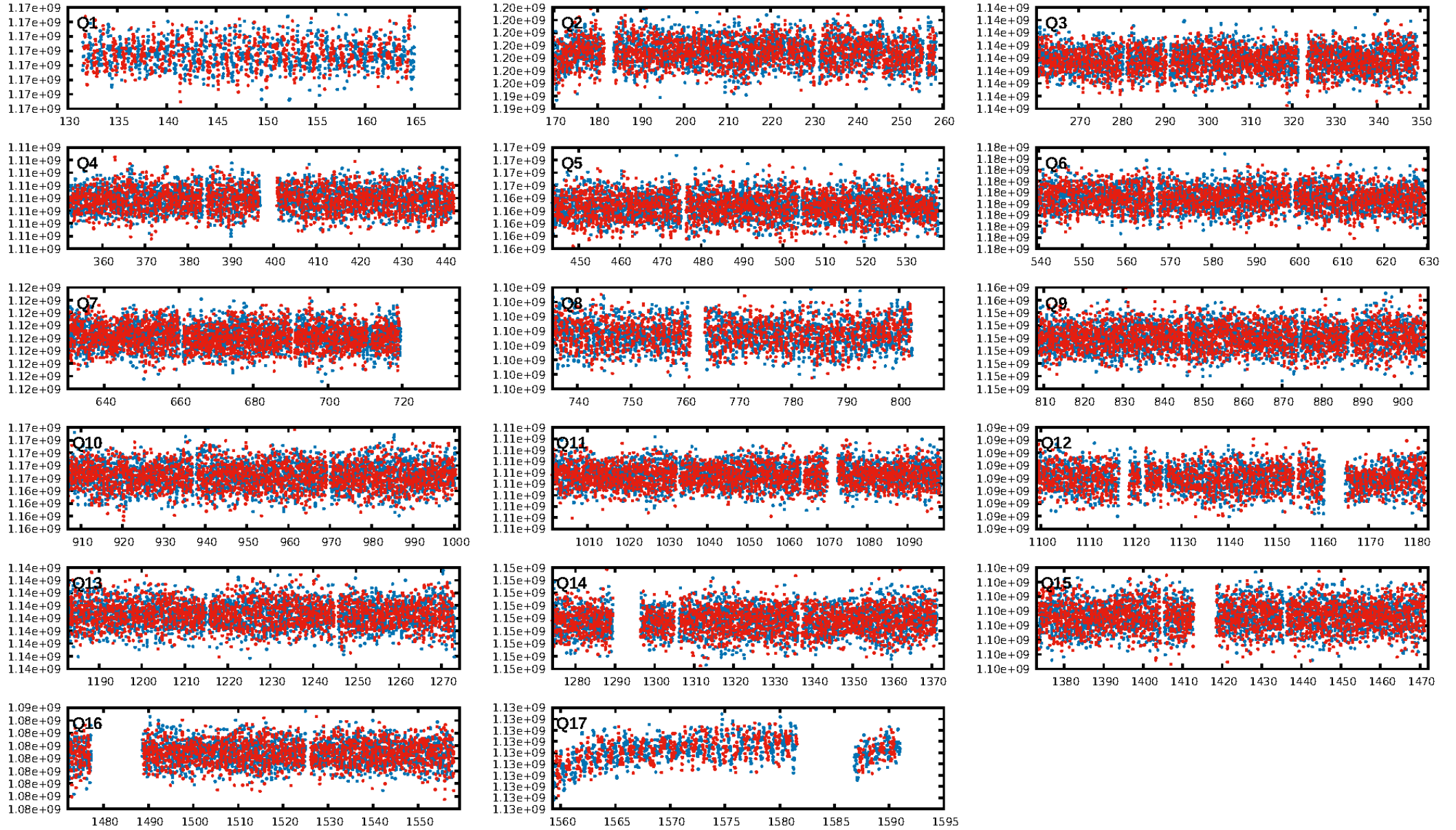
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: 85.2% [1.45 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [898/898]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 38.4%  
Centroid-so: 0.183 arcsec [1.14 $\sigma$ ]  
OotOffset-rm: 1.832 arcsec [6.05 $\sigma$ ]  
KicOffset-rm: 2.271 arcsec [7.55 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.59 [10/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:13:55 Z

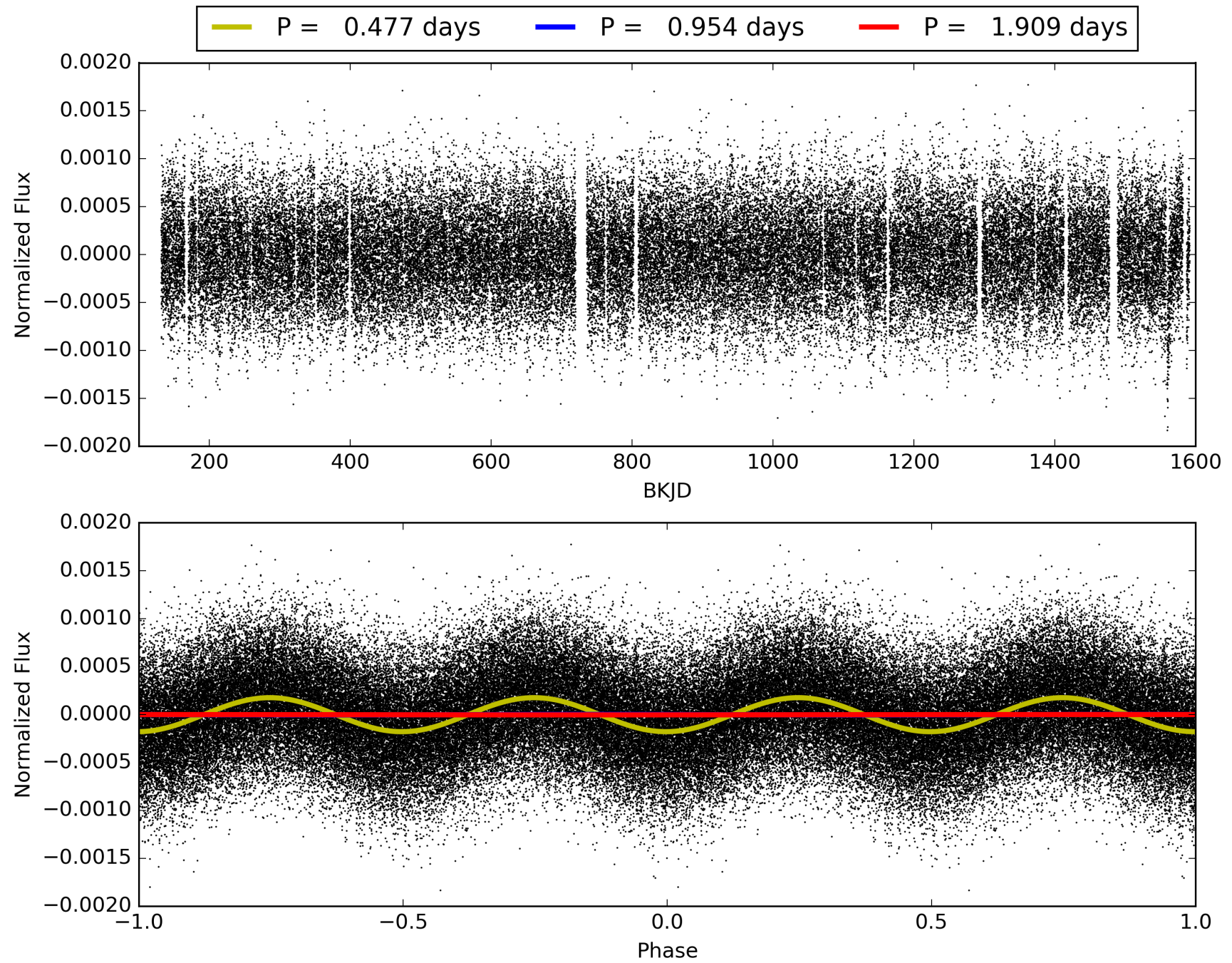
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011822666-03, PDC Light Curves



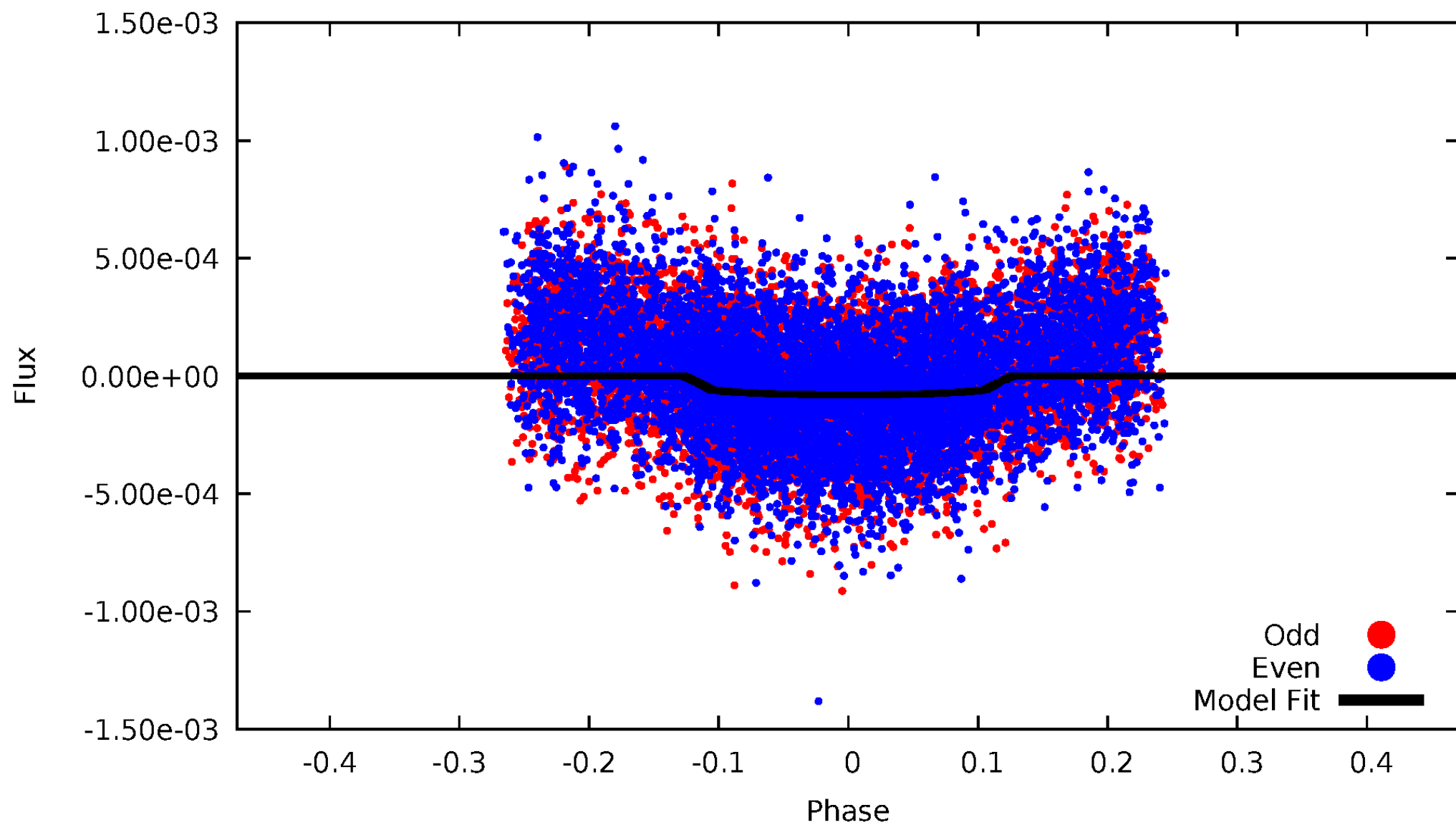


TCE 011822666-03



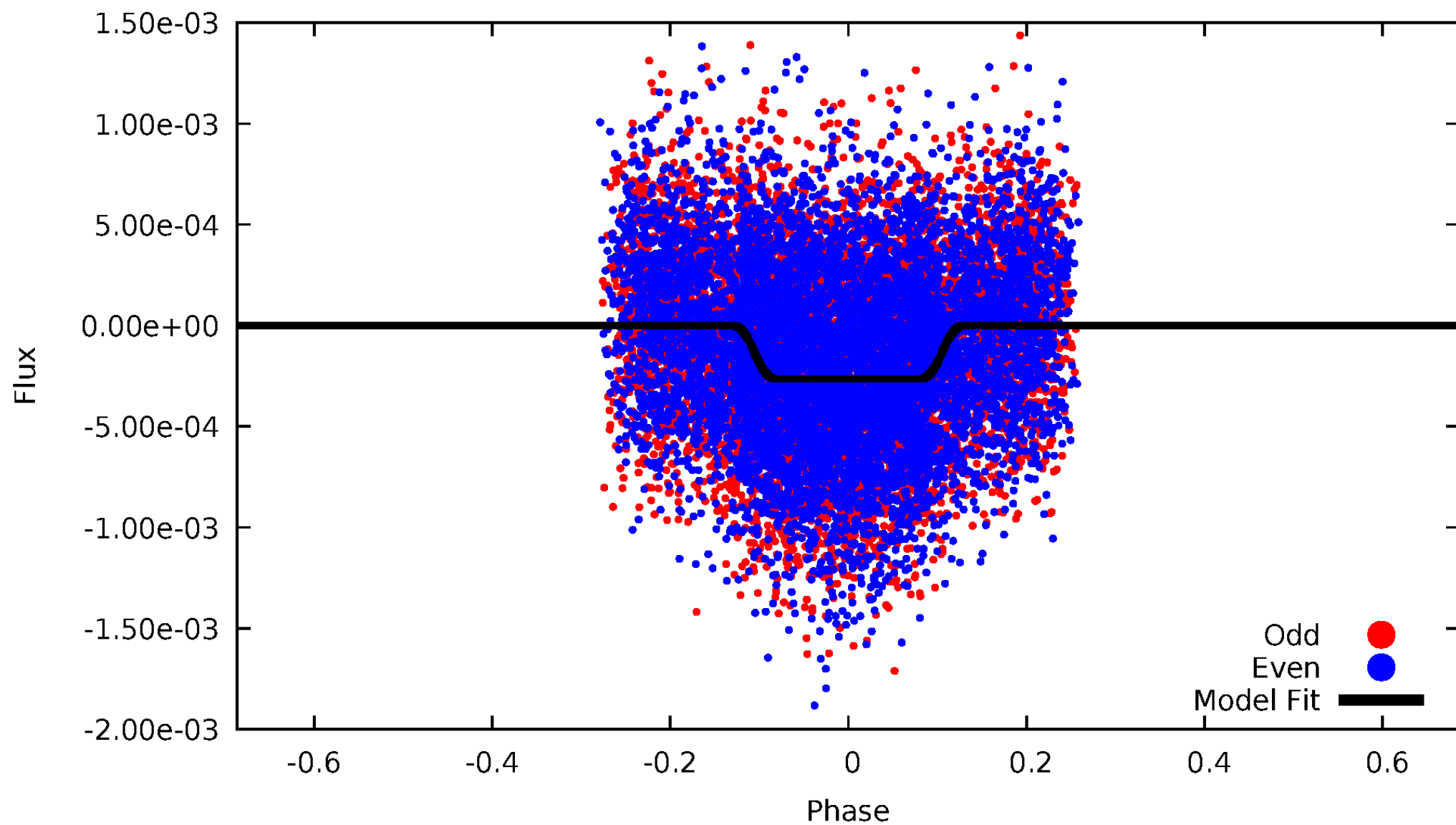
DV Odd/Even

TCE 011822666-03



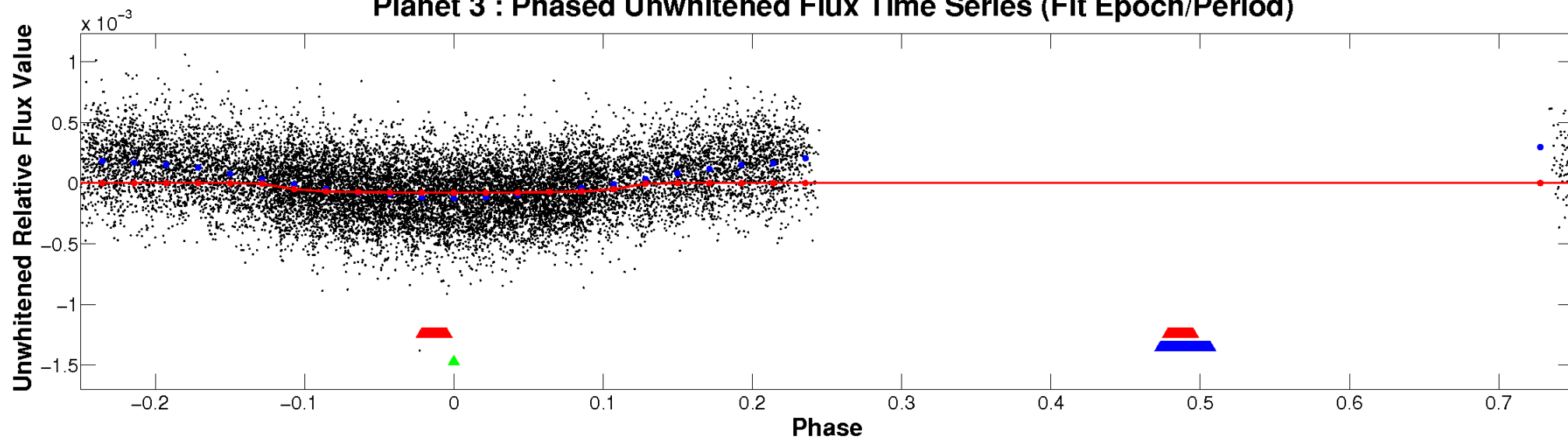
# ALT Odd/Even

TCE 011822666-03

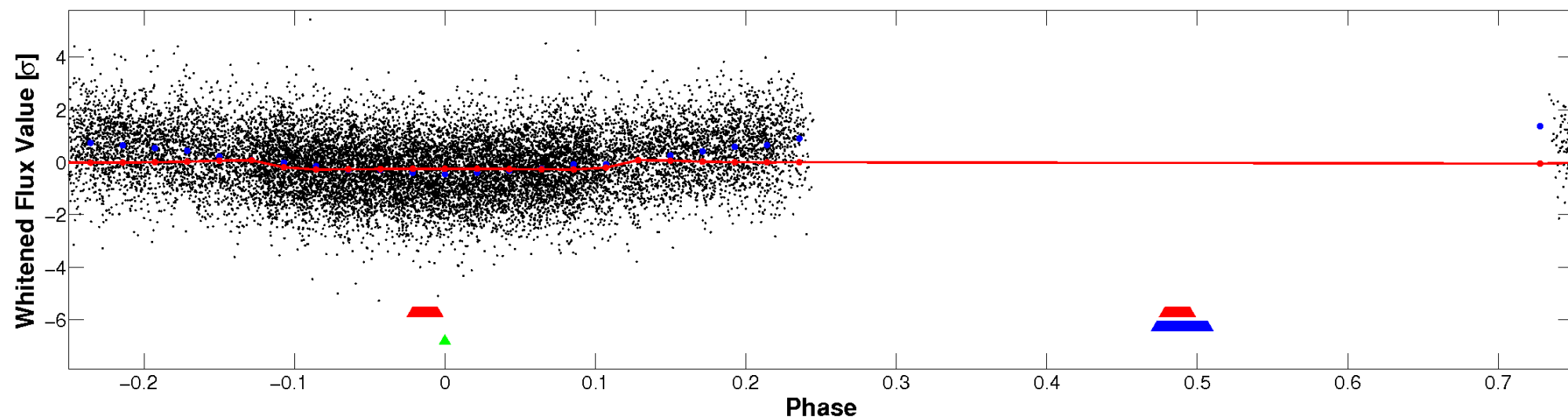


# Non-Whitened Vs. Whitened Light Curve

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



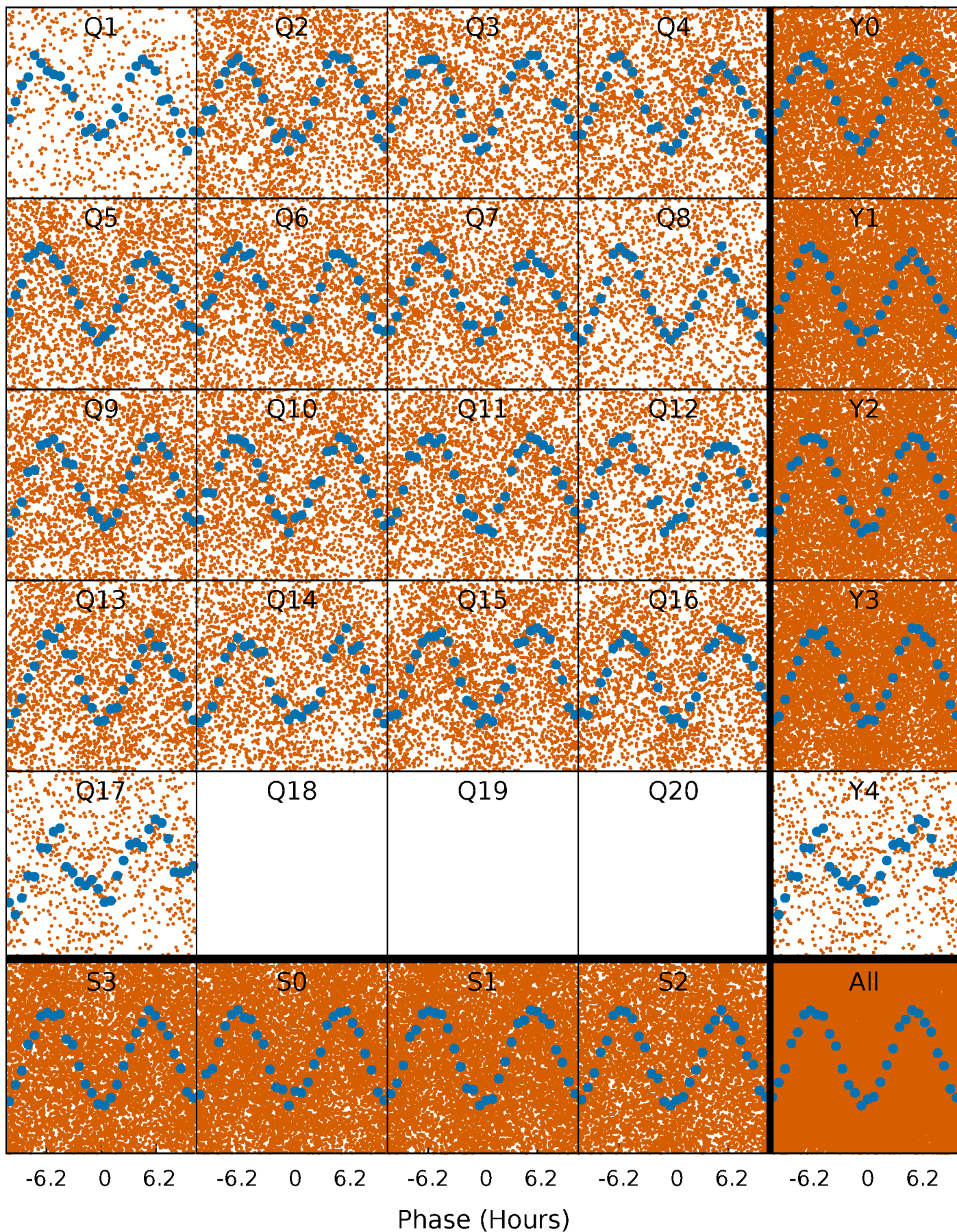
## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





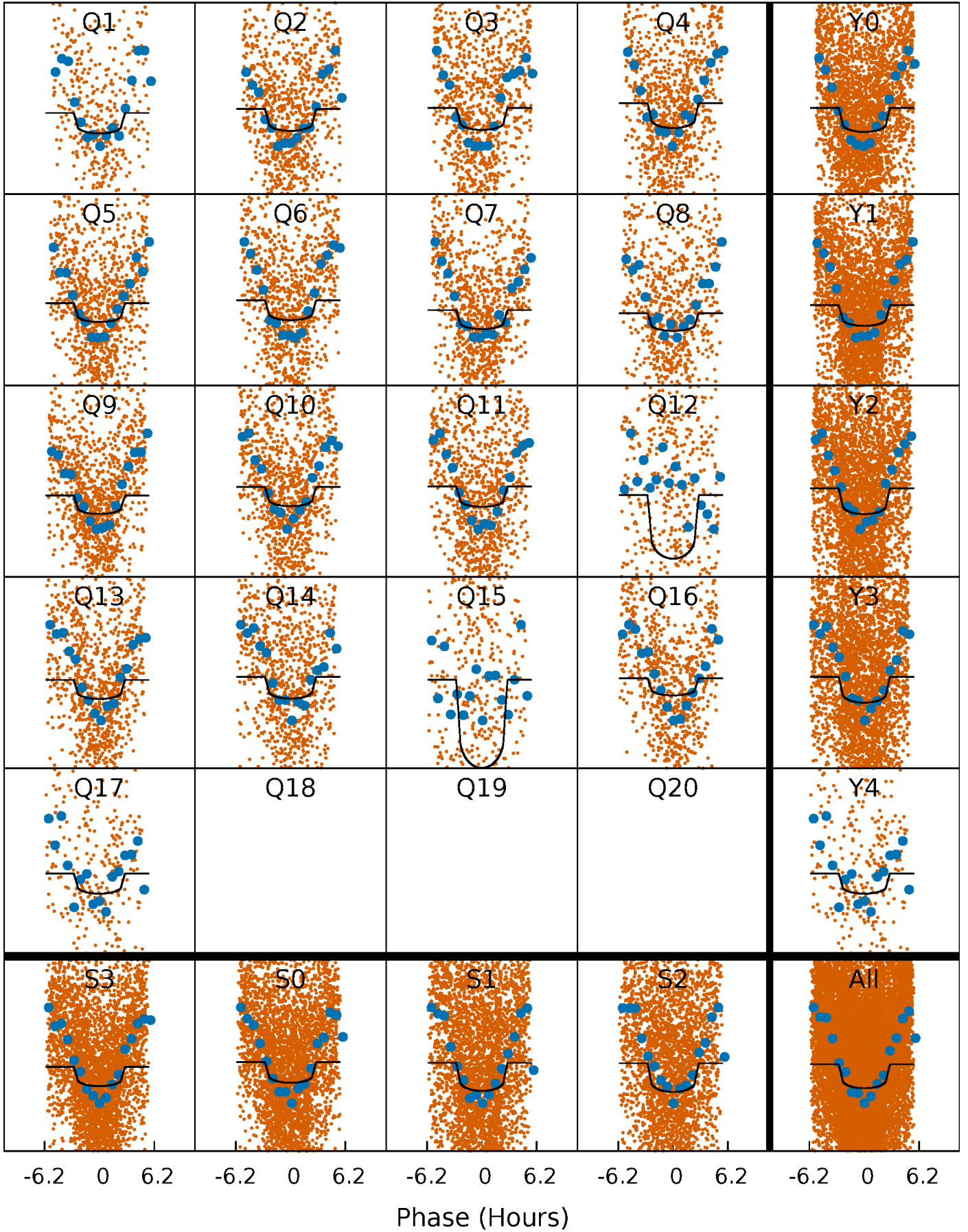
# PDC Quarter-Phased Transit Curves

TCE 011822666-03 P= 0.954489 Days  $T_0=131.842864$  (BKJD)



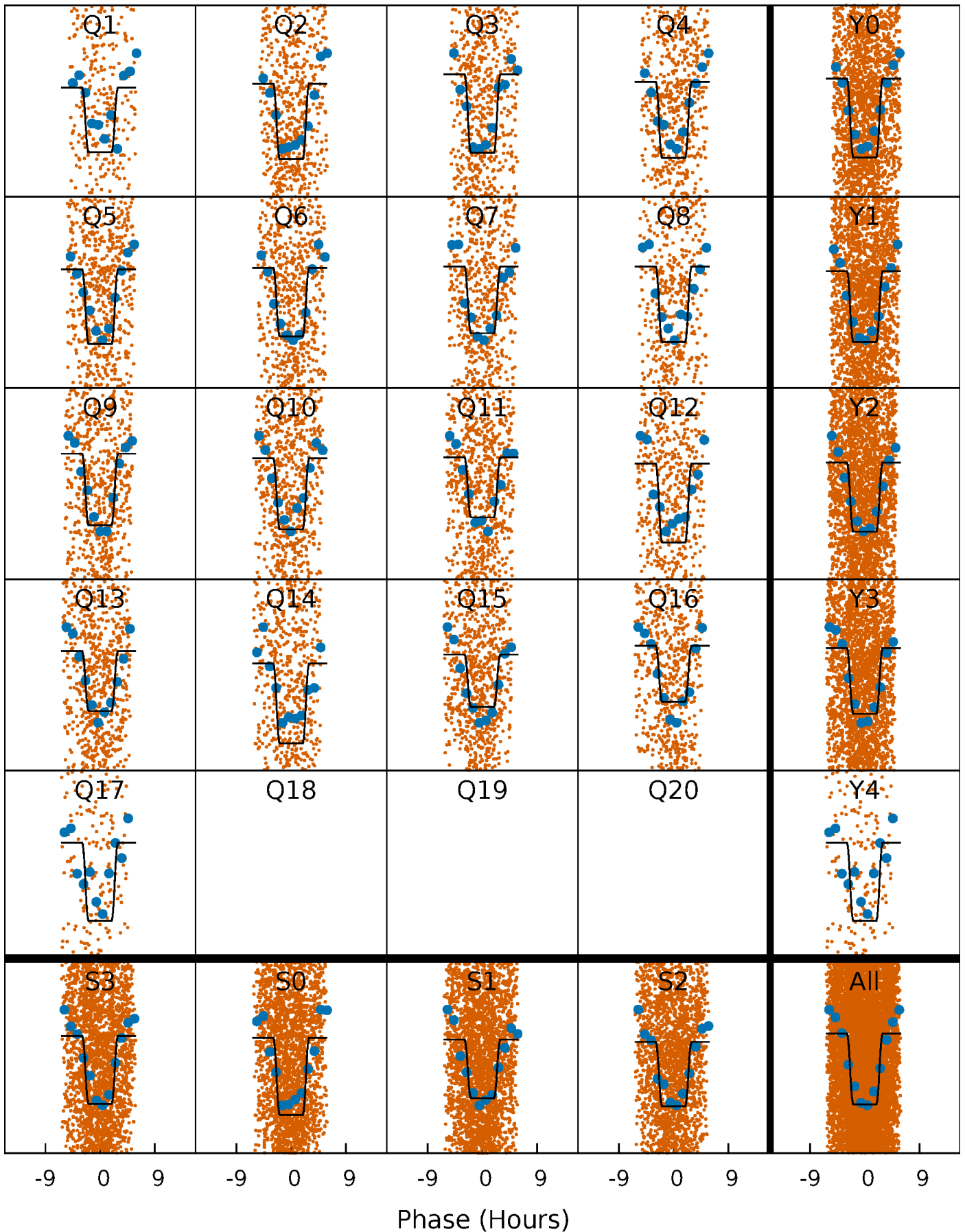
# DV Quarter-Phased Transit Curves

TCE 011822666-03    P= 0.954489 Days     $T_0=131.842864$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 011822666-03   P= 0.954506 Days    $T_0=131.829624$  (BKJD)

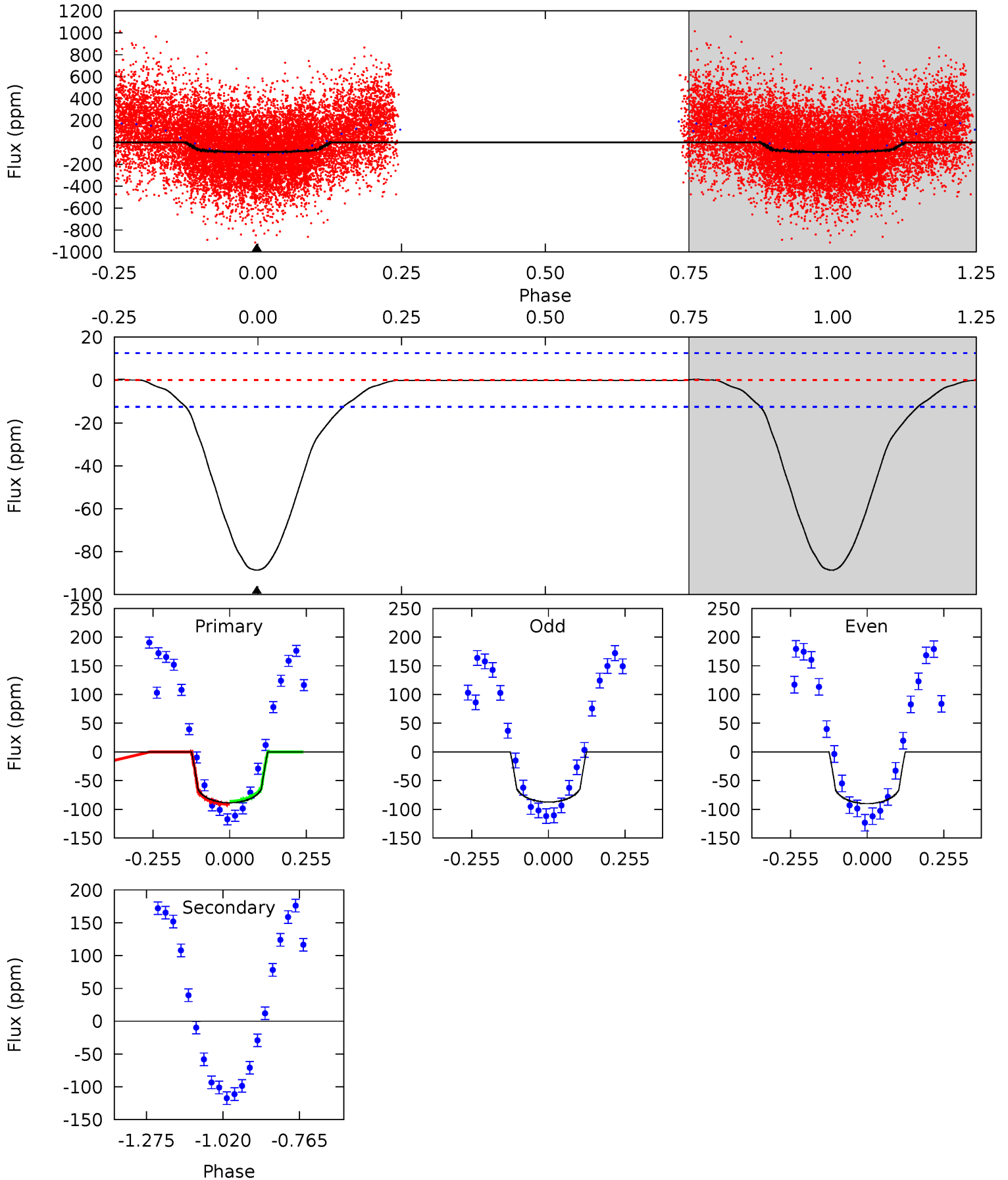




# DV Model-Shift Uniqueness Test

011822666-03, P = 0.954489 Days, E = 130.888375 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
30.9	0	0	0	4.36	1.14	0.35	30.9	30.9	0	0	0.48	1.00	0.00	0.87

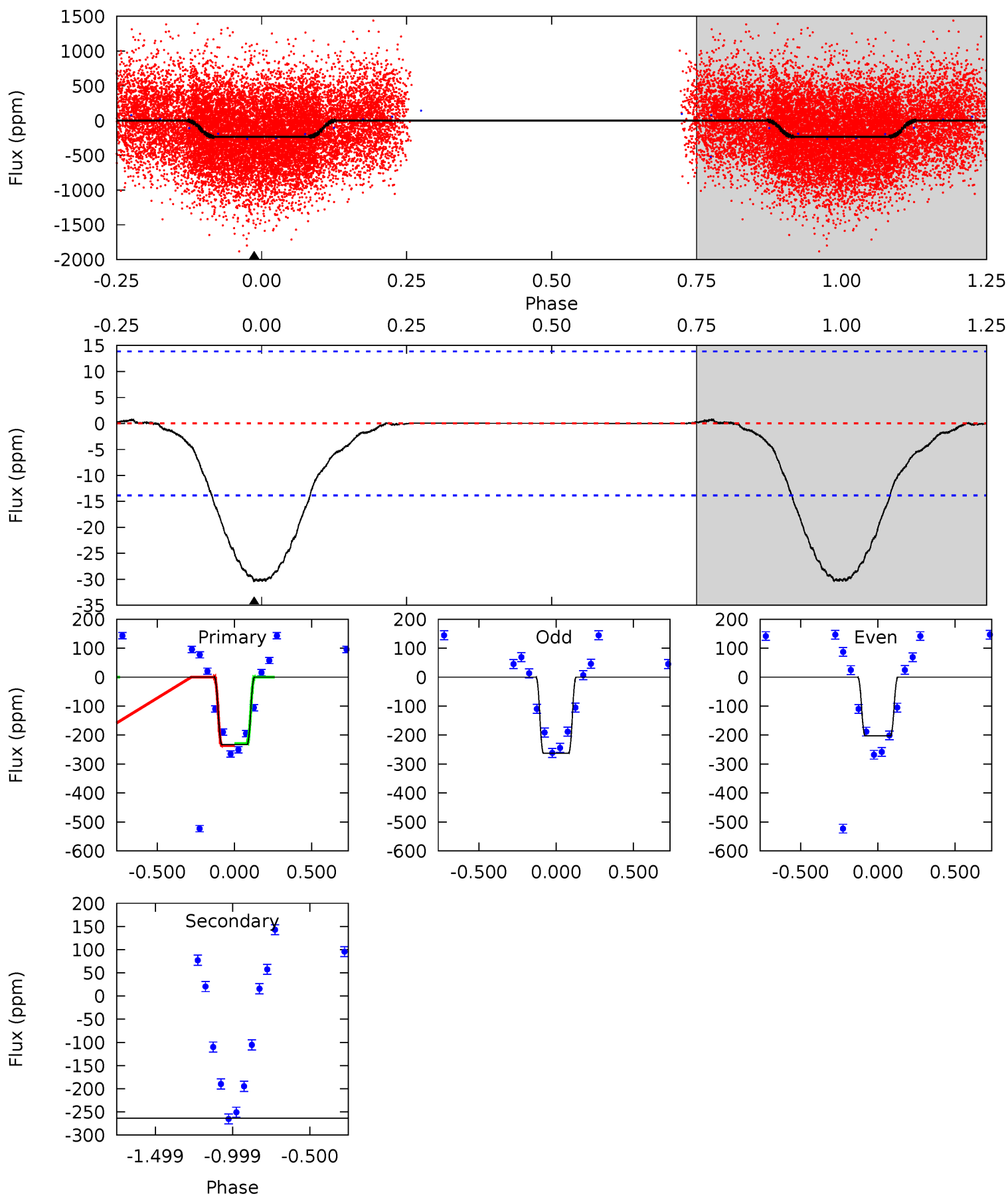




# Alt Model-Shift Uniqueness Test

011822666-03, P = 0.954506 Days, E = 130.875118 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
9.23	0	0	0	4.21	0.68	0.15	9.23	9.23	0	0	1.19	0	0.02	1.03



### Stellar Parameters For KIC 011822666

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8615^{+238}_{-374}$	$3.784^{+0.412}_{-0.137}$	$-0.220^{+0.450}_{-0.350}$	$3.003^{+0.881}_{-1.321}$	$2.002^{+0.428}_{-0.428}$	$0.104^{+0.349}_{-0.049}$
	+3%/-4%	+11%/-4%	+205%/-159%	+29%/-44%	+21%/-21%	+335%/-47%
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 011822666-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 3$	$2.49^{+1.26}_{-1.07}$	$5805^{+467}_{-677}$	$-4707^{+953}_{-569}$	$0.002^{+0.173}_{-0.160}$
Alt.	$0 \pm 3$	$4.92^{+1.53}_{-1.35}$	$5798^{+481}_{-649}$	$-4707^{+455}_{-341}$	$-0.002^{+0.044}_{-0.046}$

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

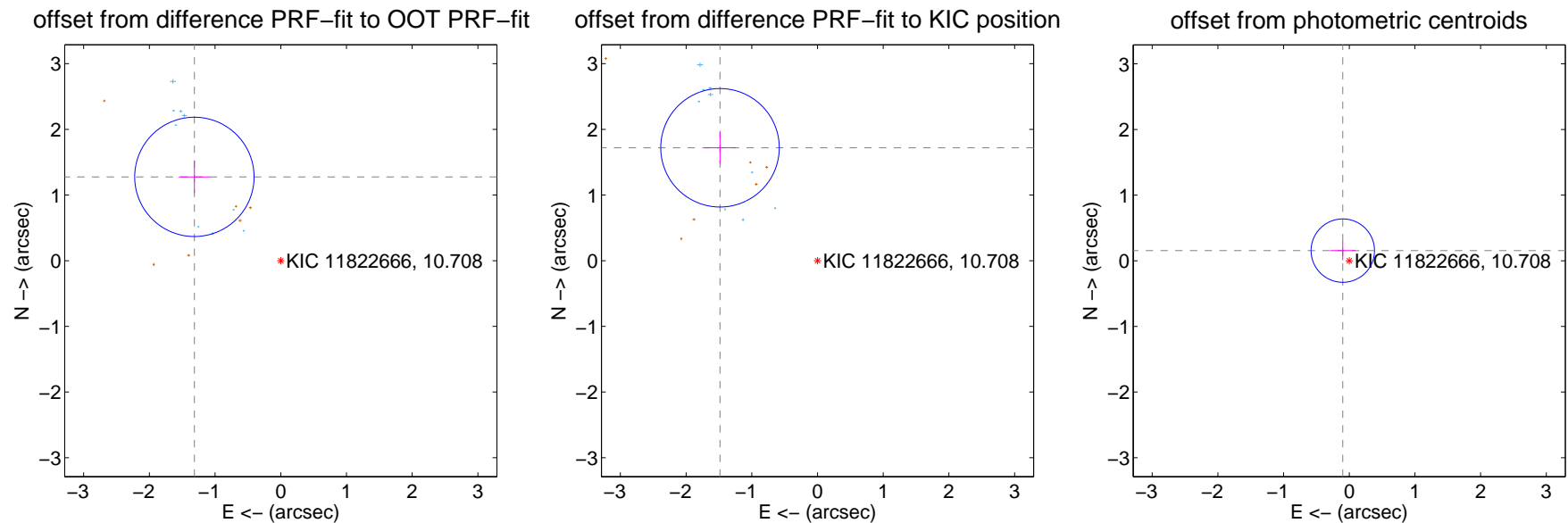
## DV Centroid Data

Supplemental centroid analysis for 011822666-03. **Kepler magnitude: 10.71.** Transit SNR 24.49

There are 10 quarters with good PRF difference image offsets

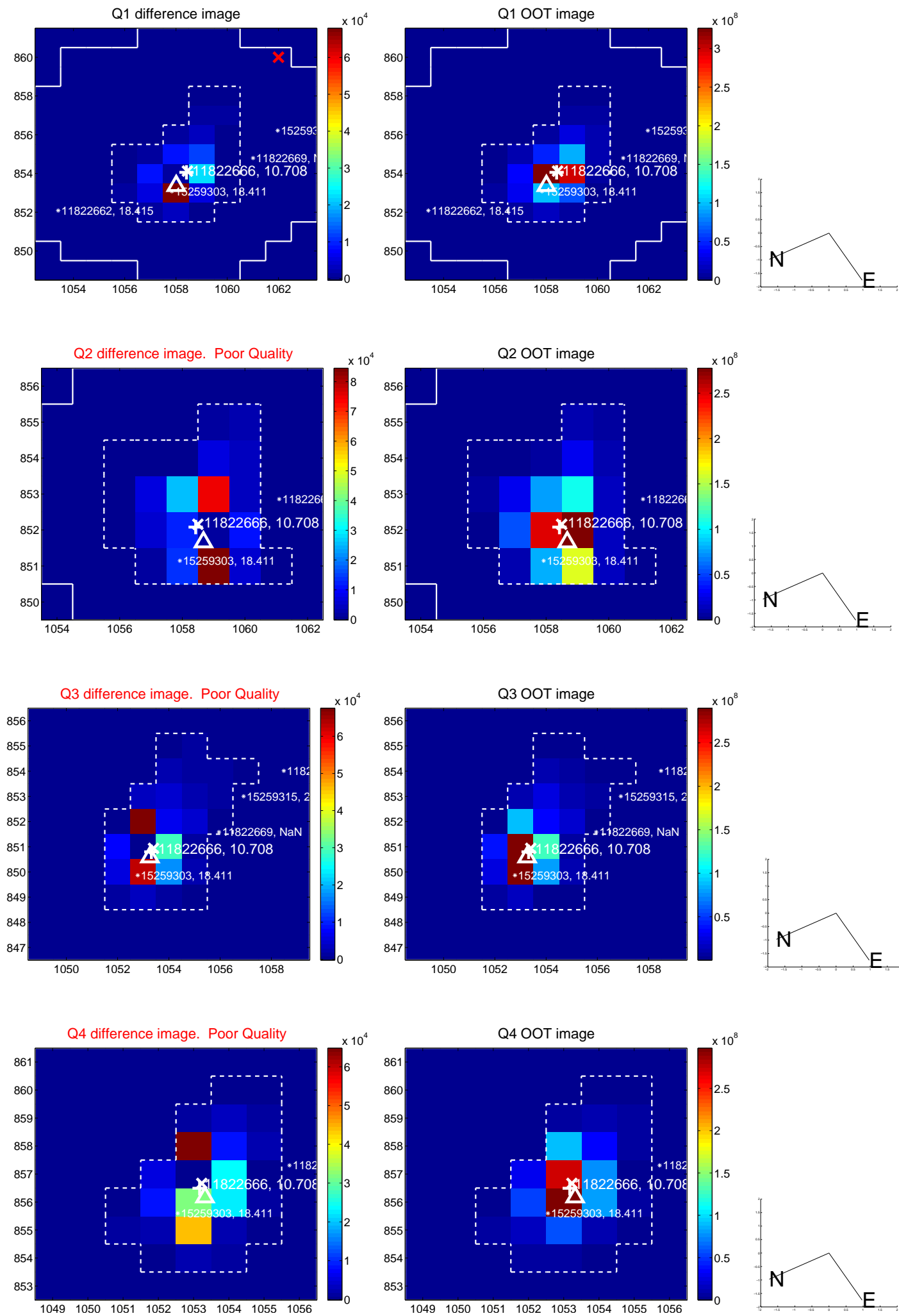
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>1.832 \pm 0.303</math></b>	<b>6.05</b>	$1.315 \pm 0.236$	$1.276 \pm 0.245$
PRF-fit source offset from KIC position	<b><math>2.271 \pm 0.301</math></b>	<b>7.55</b>	$1.484 \pm 0.240$	$1.719 \pm 0.240$
photometric centroid source offset	$0.18 \pm 0.16$	1.14	$0.10 \pm 0.19$	$0.15 \pm 0.15$

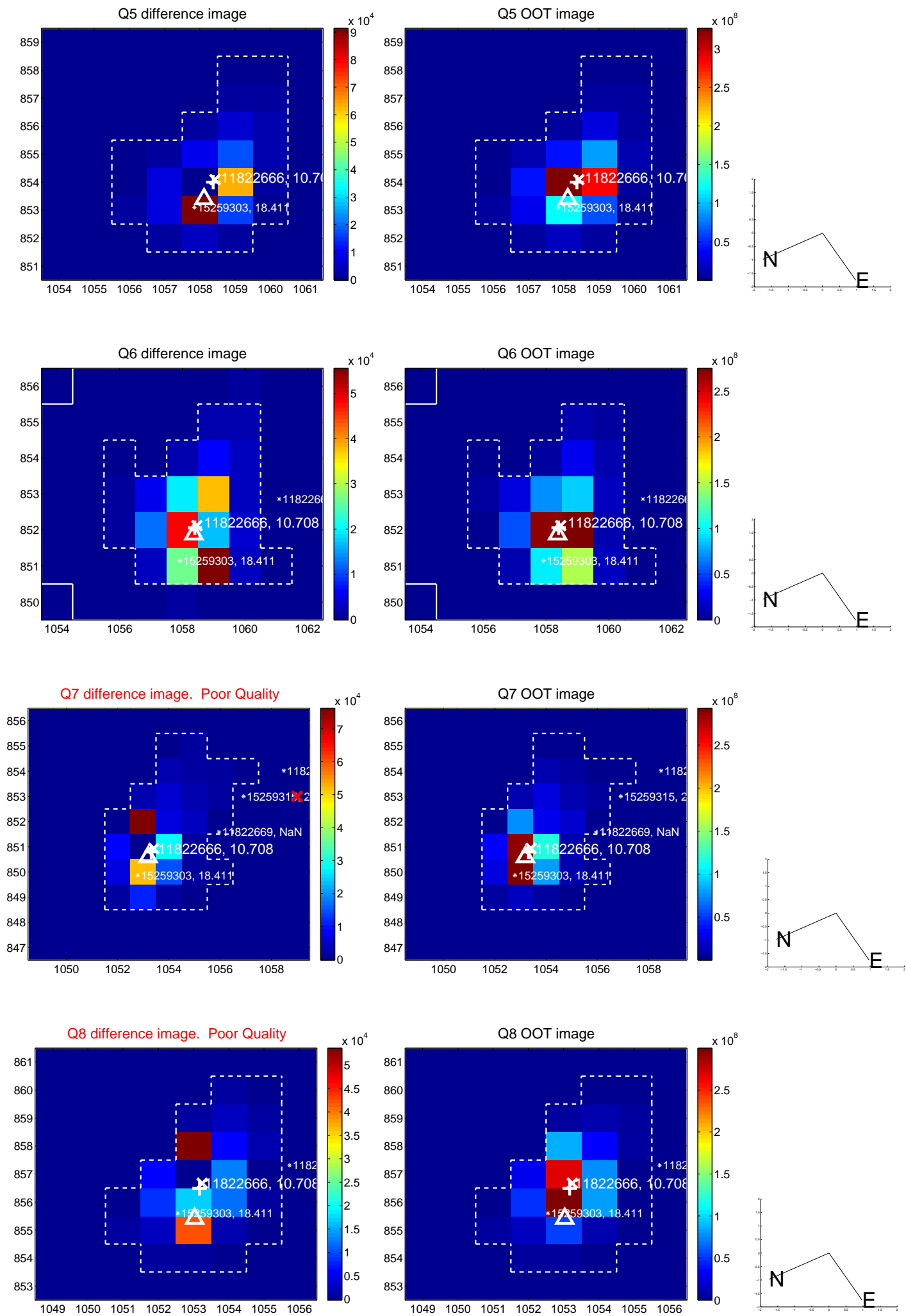


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

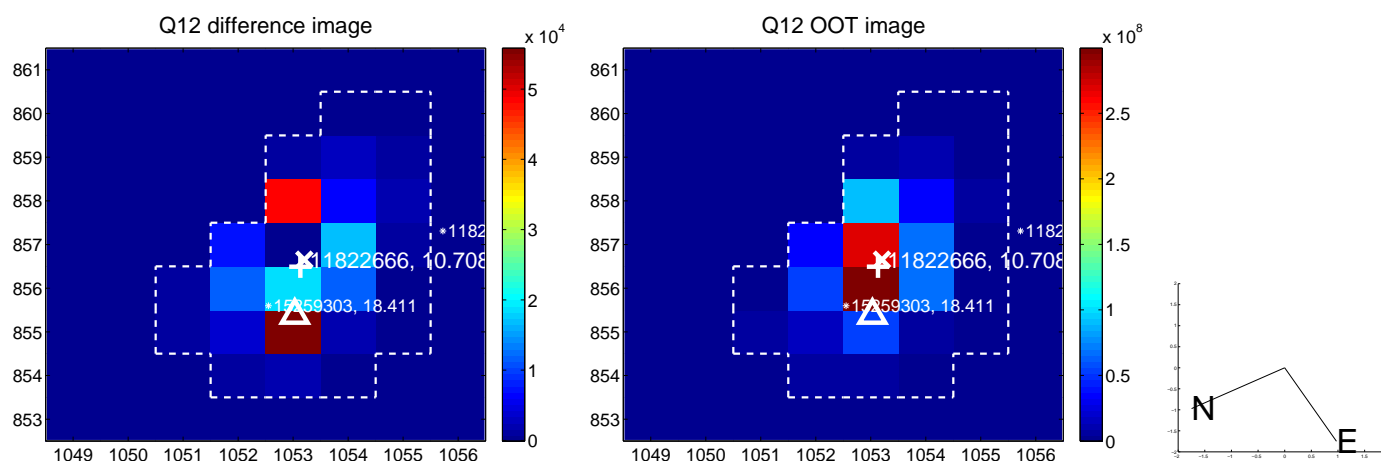
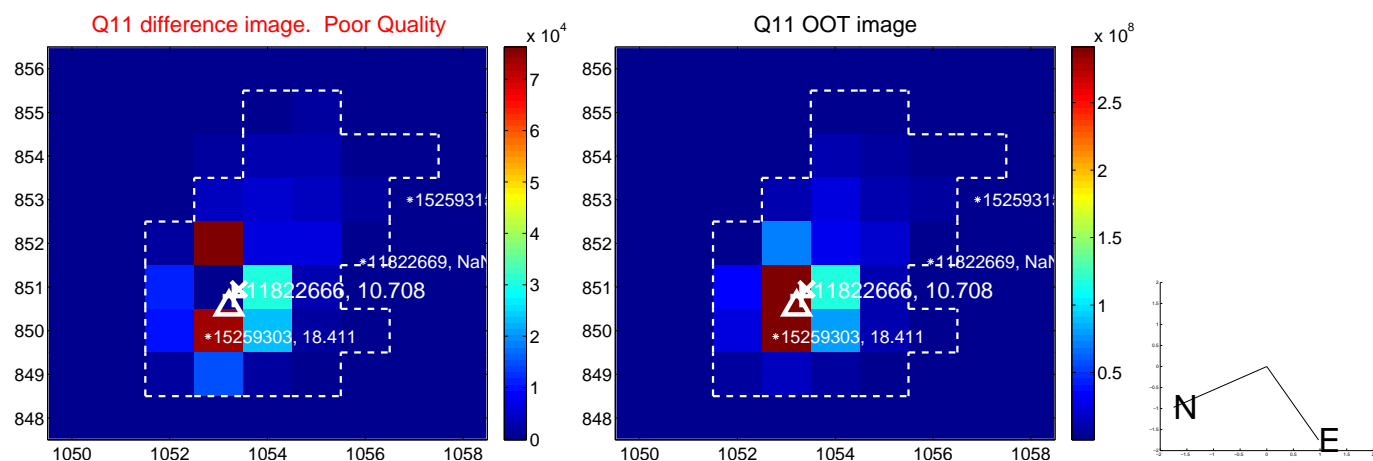
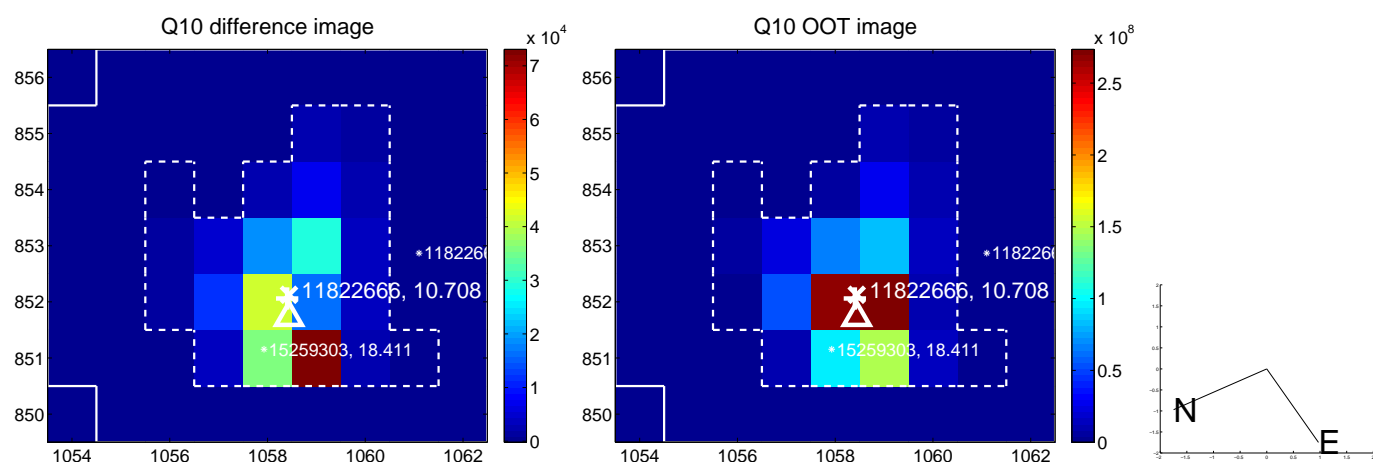
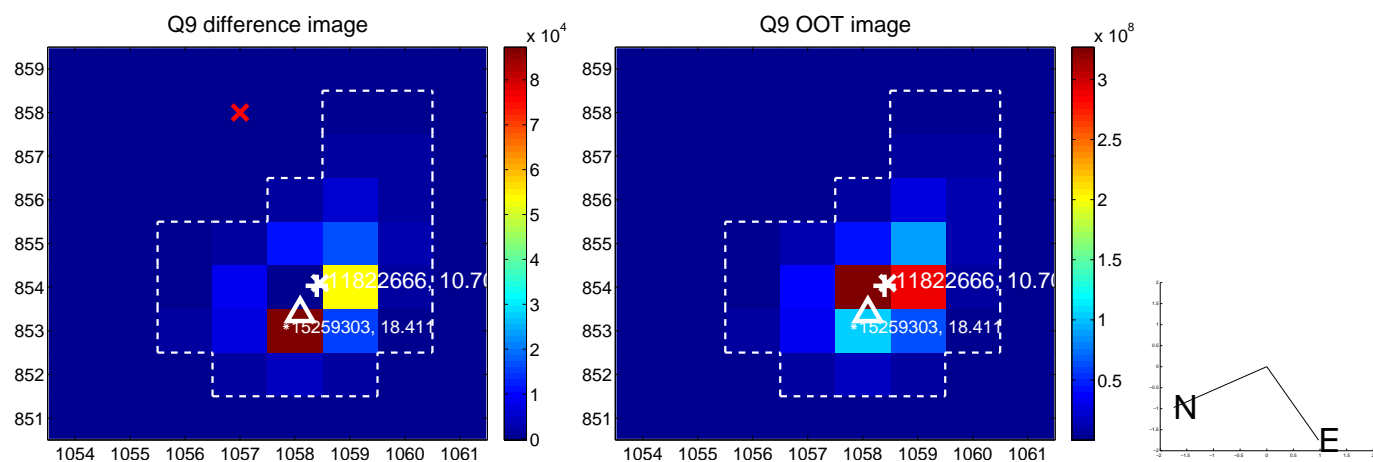


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

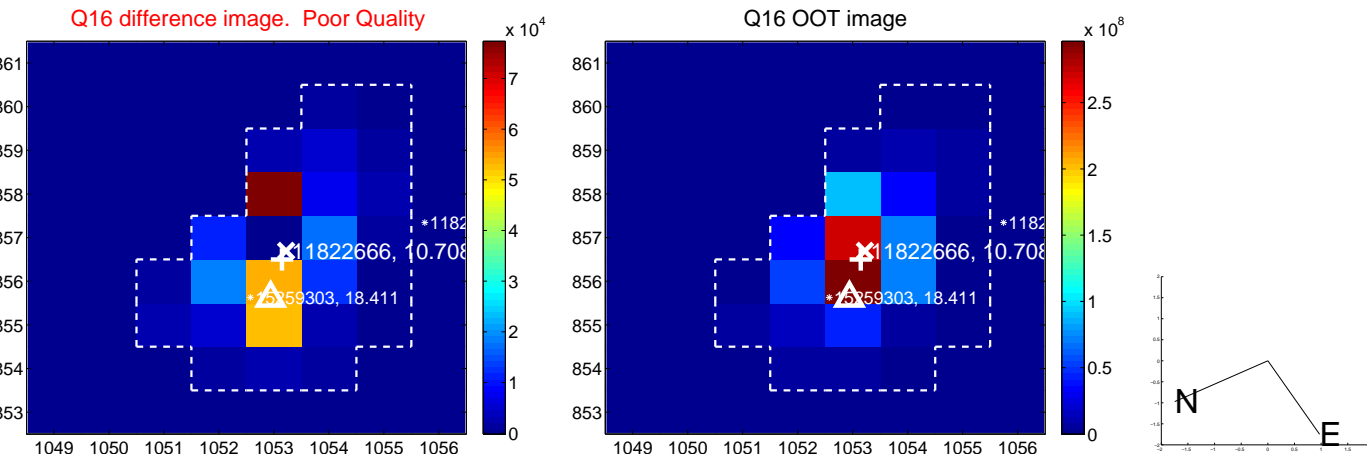
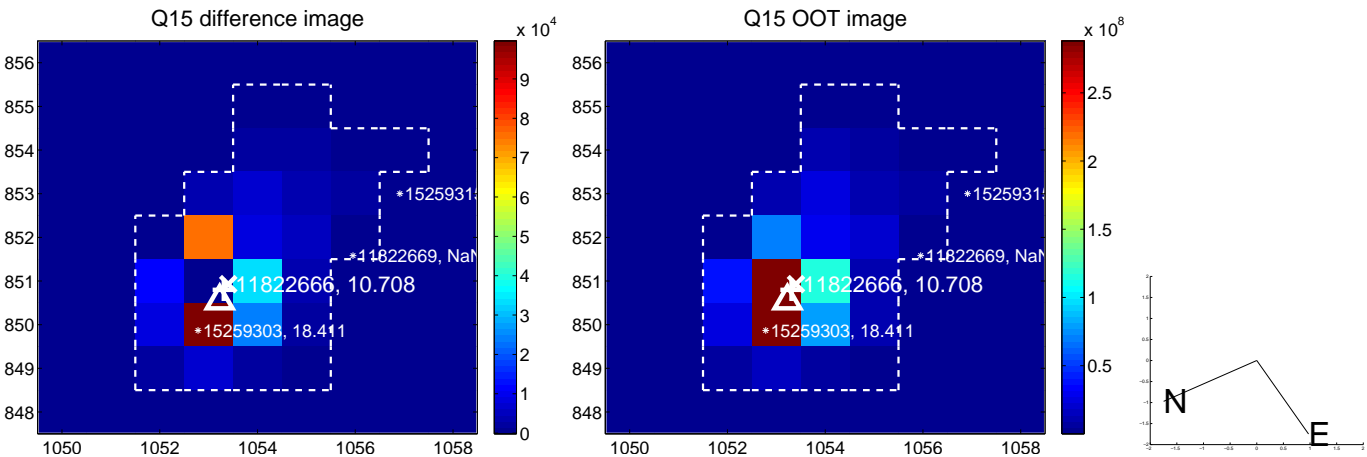
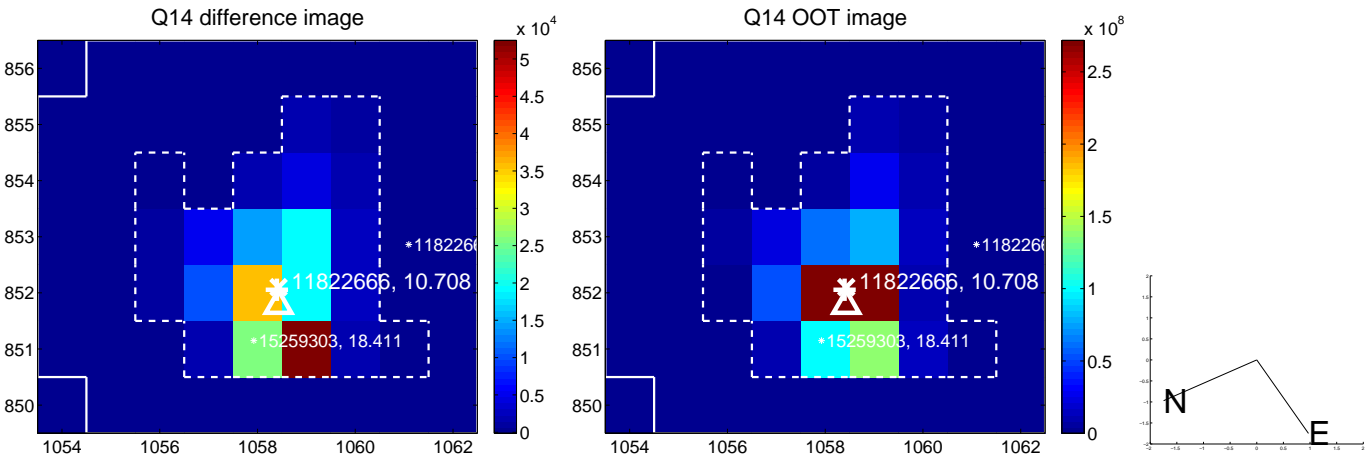
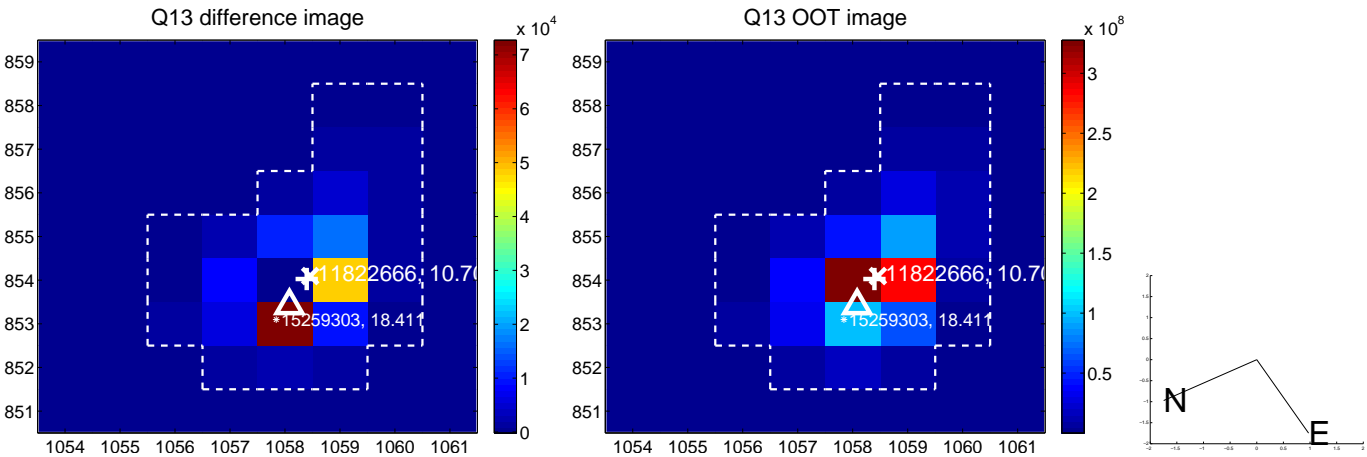




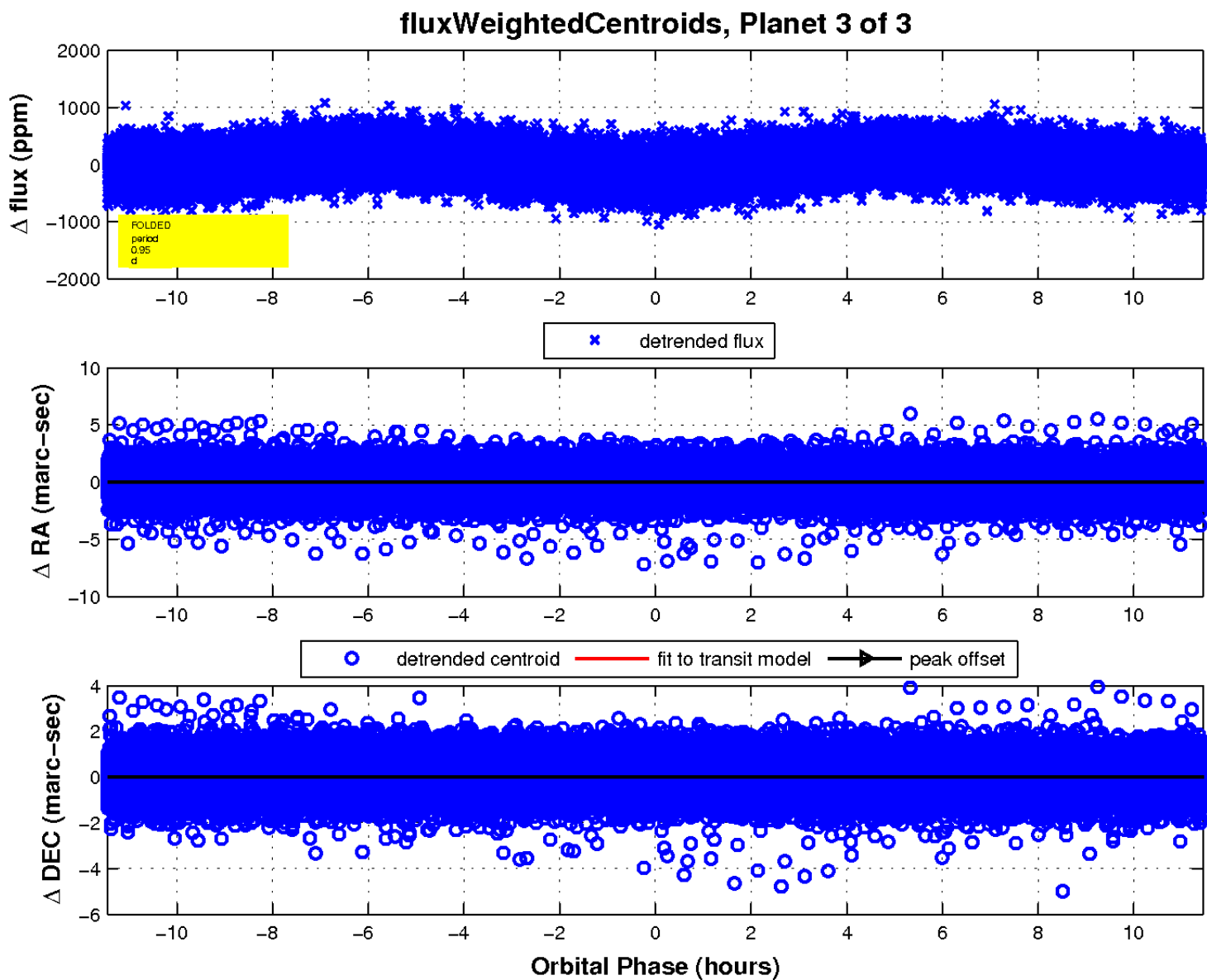
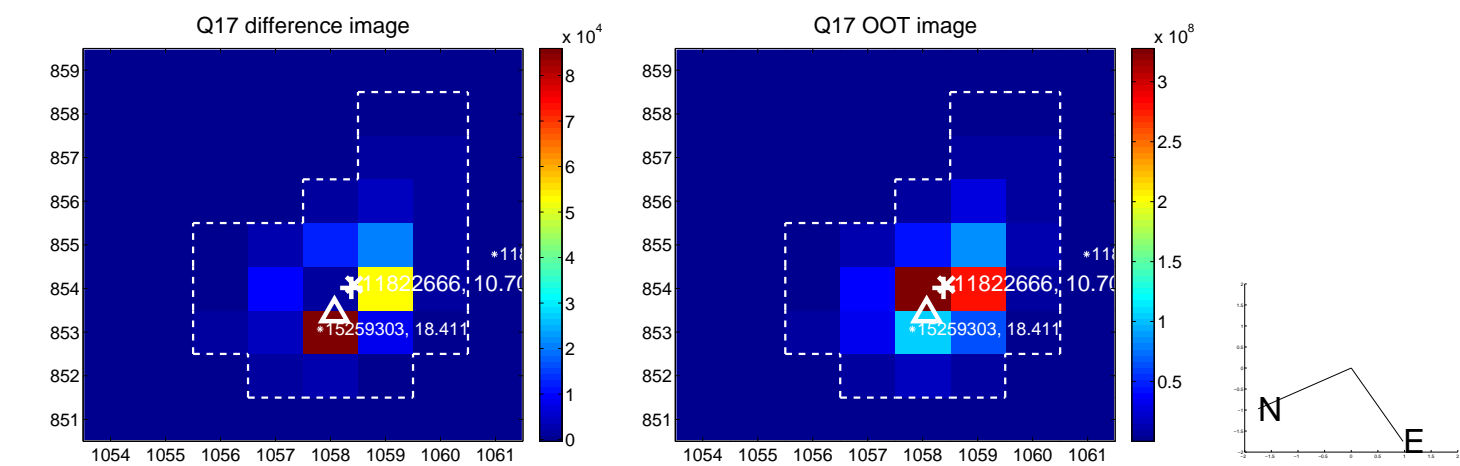
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

