

# KIC 011395936

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011395936-01	OBS	No	1.455642	132.836869	26.4	4.582	9.7	7.7	2.65	7557	1.87	23254.28
011395936-02	OBS	No	1.487510	132.031827	120.2	2.500	7.9	-1.0	2.65	7557	2.91	22592.42
011395936-03	OBS	No	1.455685	131.732027	87.3	3.000	8.8	-1.0	2.65	7557	2.48	23253.37
011395936-04	OBS	No	21.470341	132.124001	130.7	3.500	8.0	-1.0	2.65	7557	3.03	642.87

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011395936-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
011395936-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
011395936-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
011395936-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

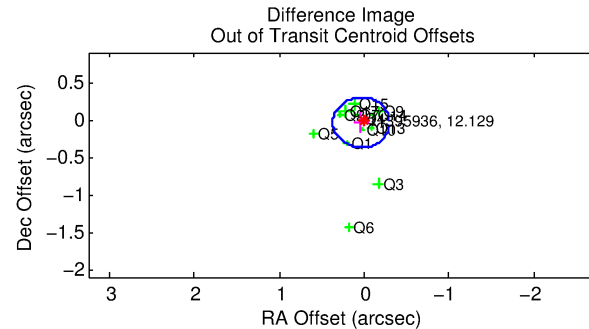
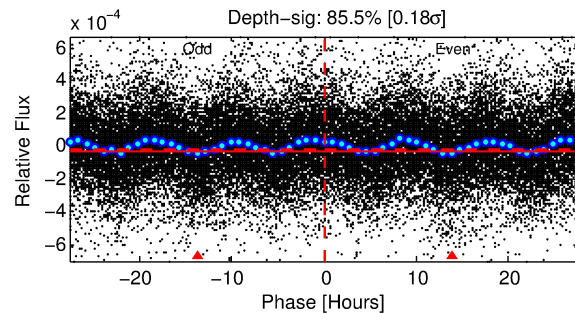
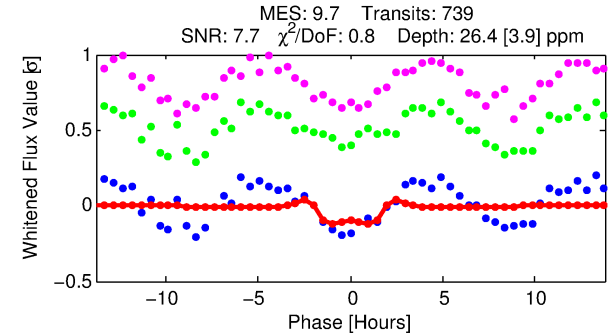
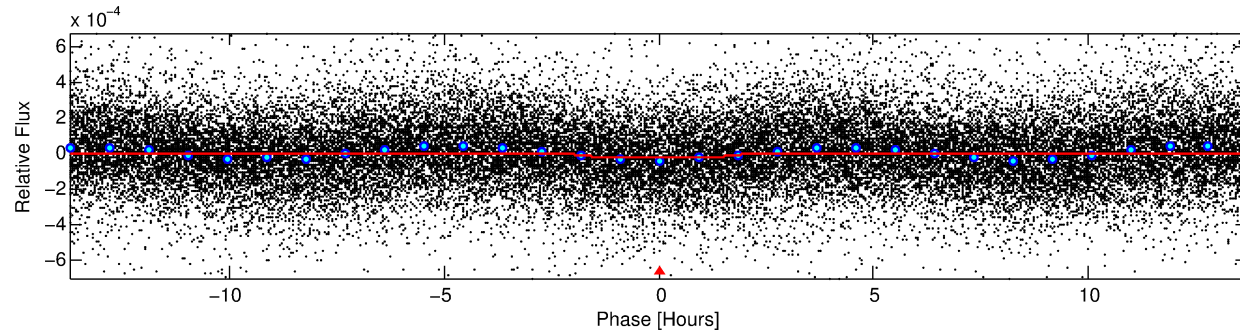
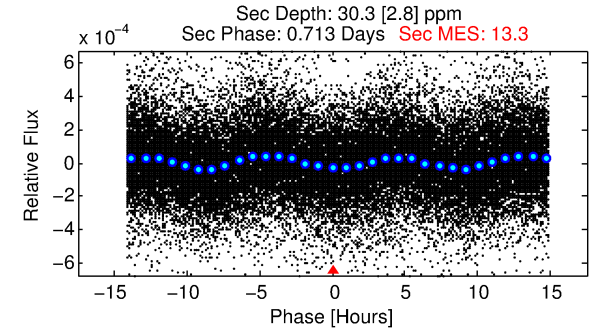
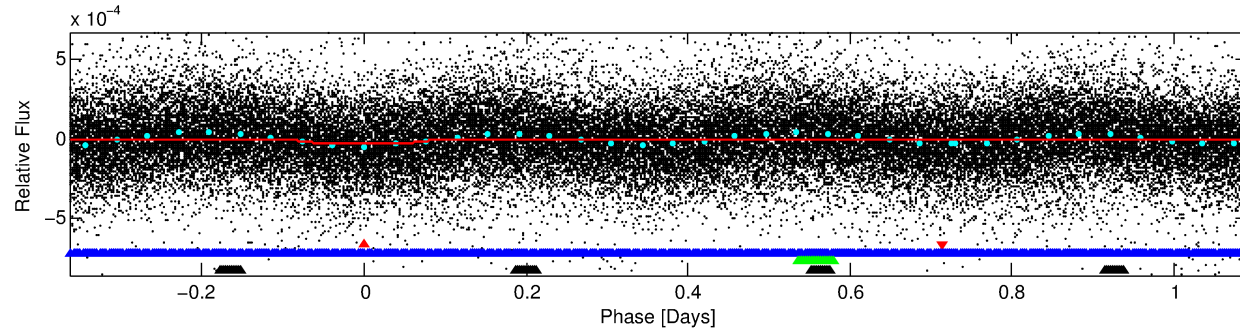
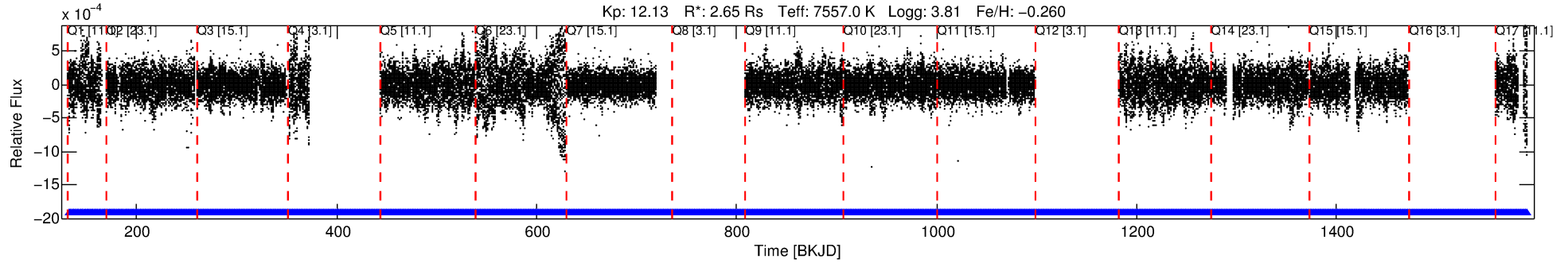
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 011395936-01

No Significant Match Found

# DV One-Page Summary

KIC: 11395936 Candidate: 1 of 4 Period: 1.456 d



## DV Fit Results:

Period = 1.45564 [0.00002] d  
Epoch = 132.8369 [0.0046] BKJD  
Rp/R\* = 0.0065 [0.0005]  
a/R\* = 1.10 [0.04]  
b = 0.99 [0.00]  
Seff = 23254.28 [16110.82]  
Teq = 3149 [545] K  
Rp = 1.87 [0.78] Re  
a = 0.0296 [0.0122] AU  
Ag = 4.21 [2.94] [1.09σ]  
**Teffp = 6974 [436] K [5.48σ]**

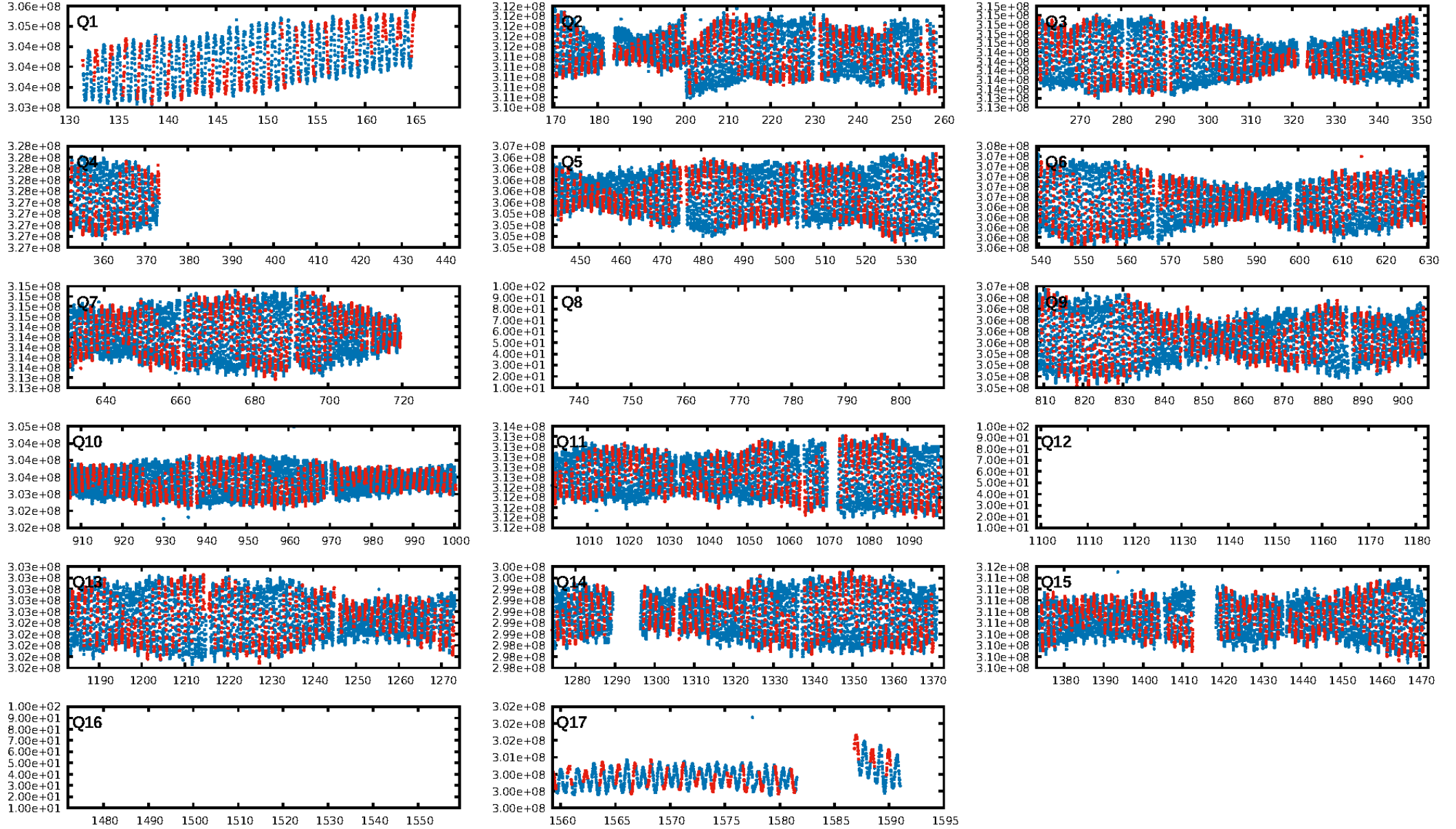
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
**LongPeriod-sig: 0.0% [0.00σ]**  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.19e-16  
RollingBand-fgt: 1.00 [682/682]  
GhostDiagnostic-chr: 2.753  
Centroid-sig: 22.1%  
Centroid-so: 0.658 arcsec [1.17σ]  
OotOffset-rm: 0.049 arcsec [0.44σ]  
KicOffset-rm: 0.266 arcsec [1.97σ]  
OotOffset-st: 4/3/1/5 [13]  
KicOffset-st: 4/3/1/5 [13]  
DiffImageQuality-fgm: 0.69 [9/13]  
DiffImageOverlap-fno: 1.00 [14/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:03:22 Z

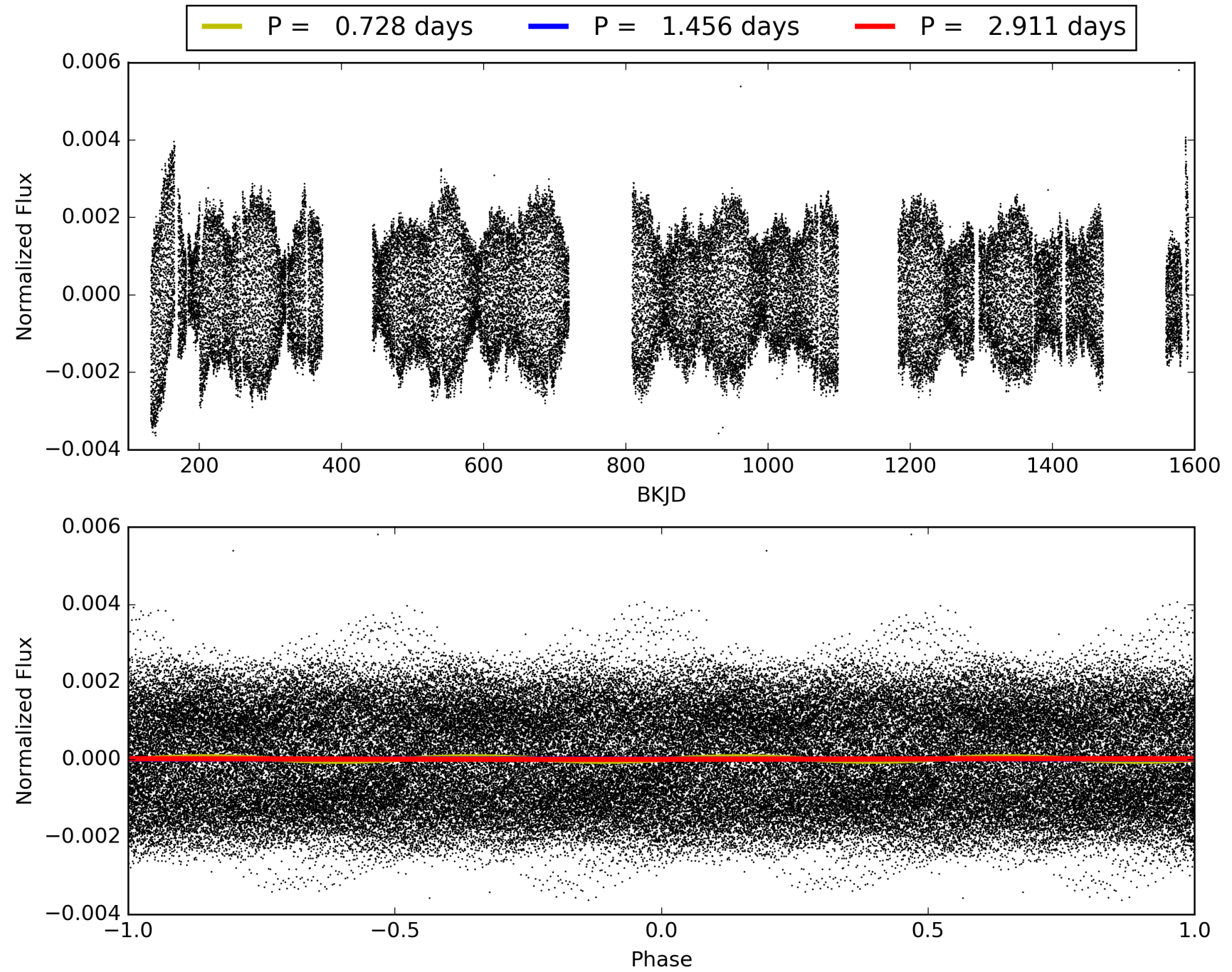
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011395936-01, PDC Light Curves





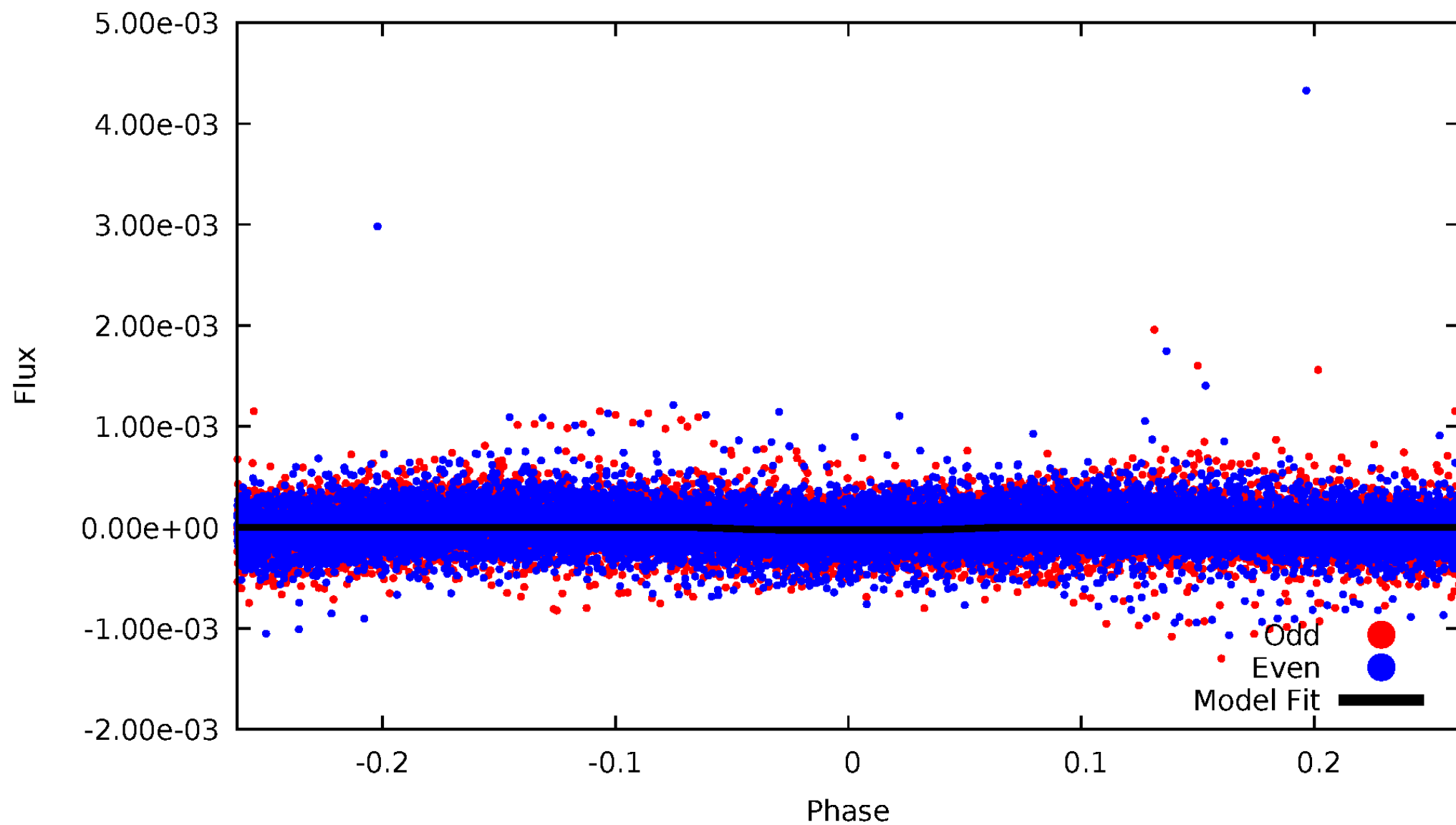
# TCE 011395936-01





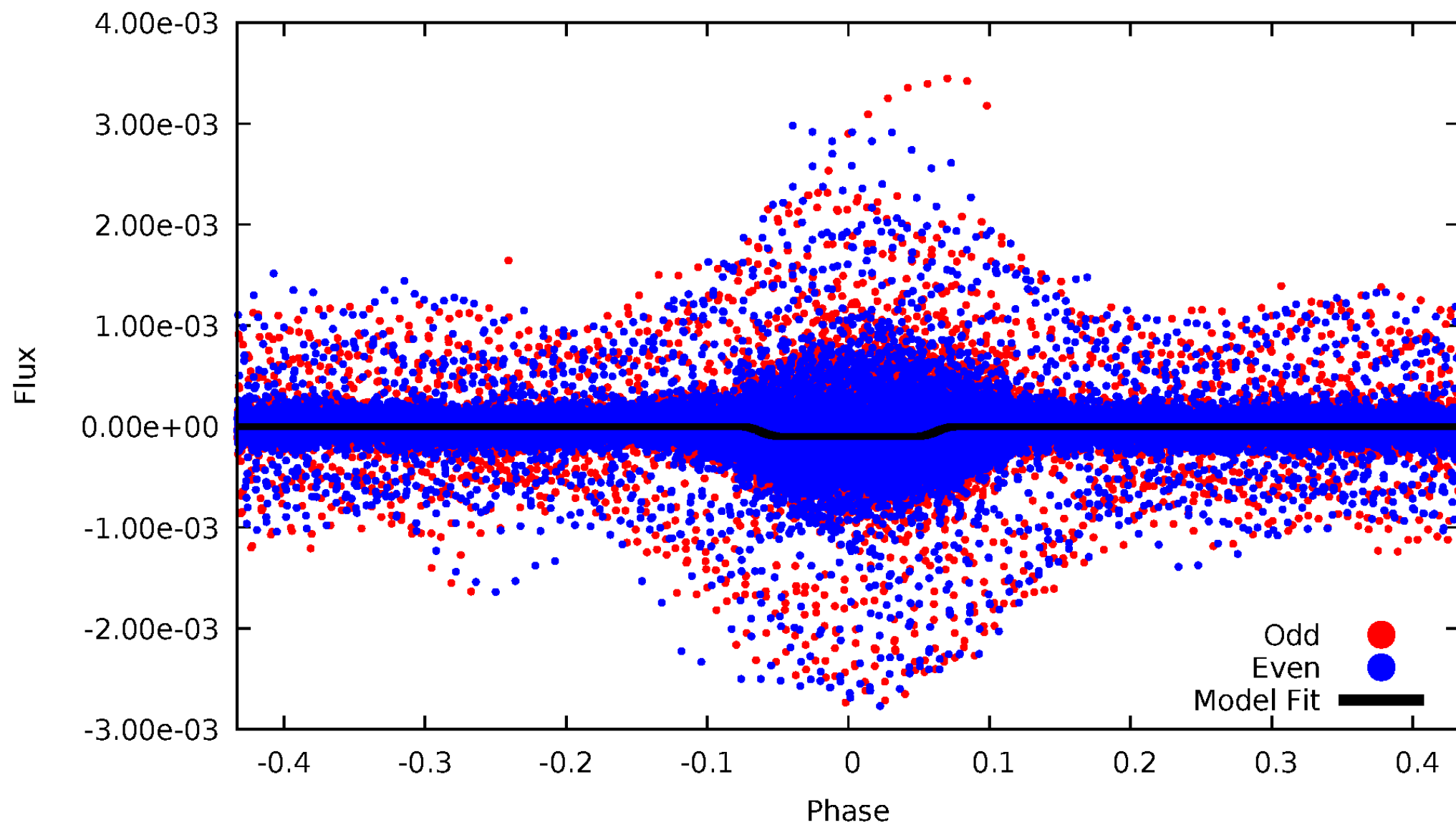
# DV Odd/Even

TCE 011395936-01

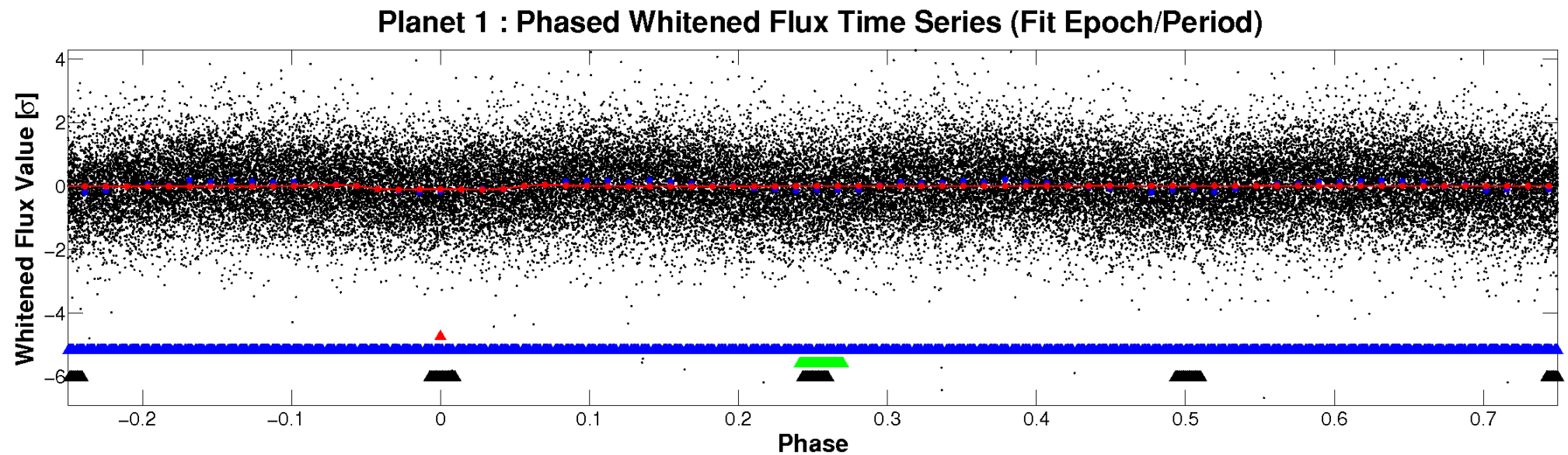
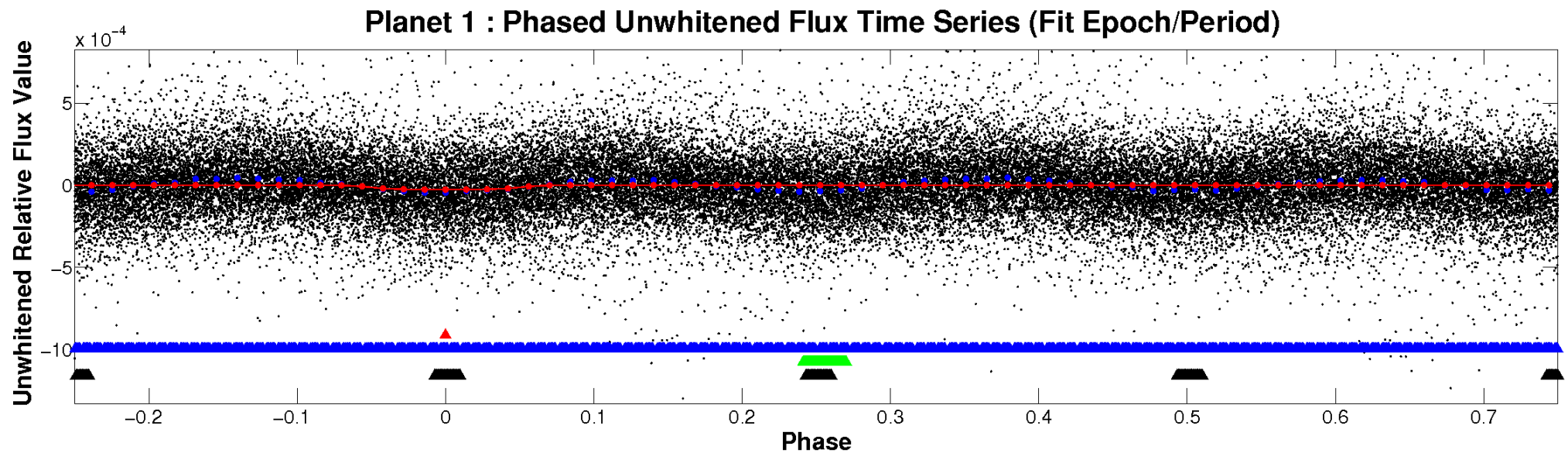


# ALT Odd/Even

TCE 011395936-01



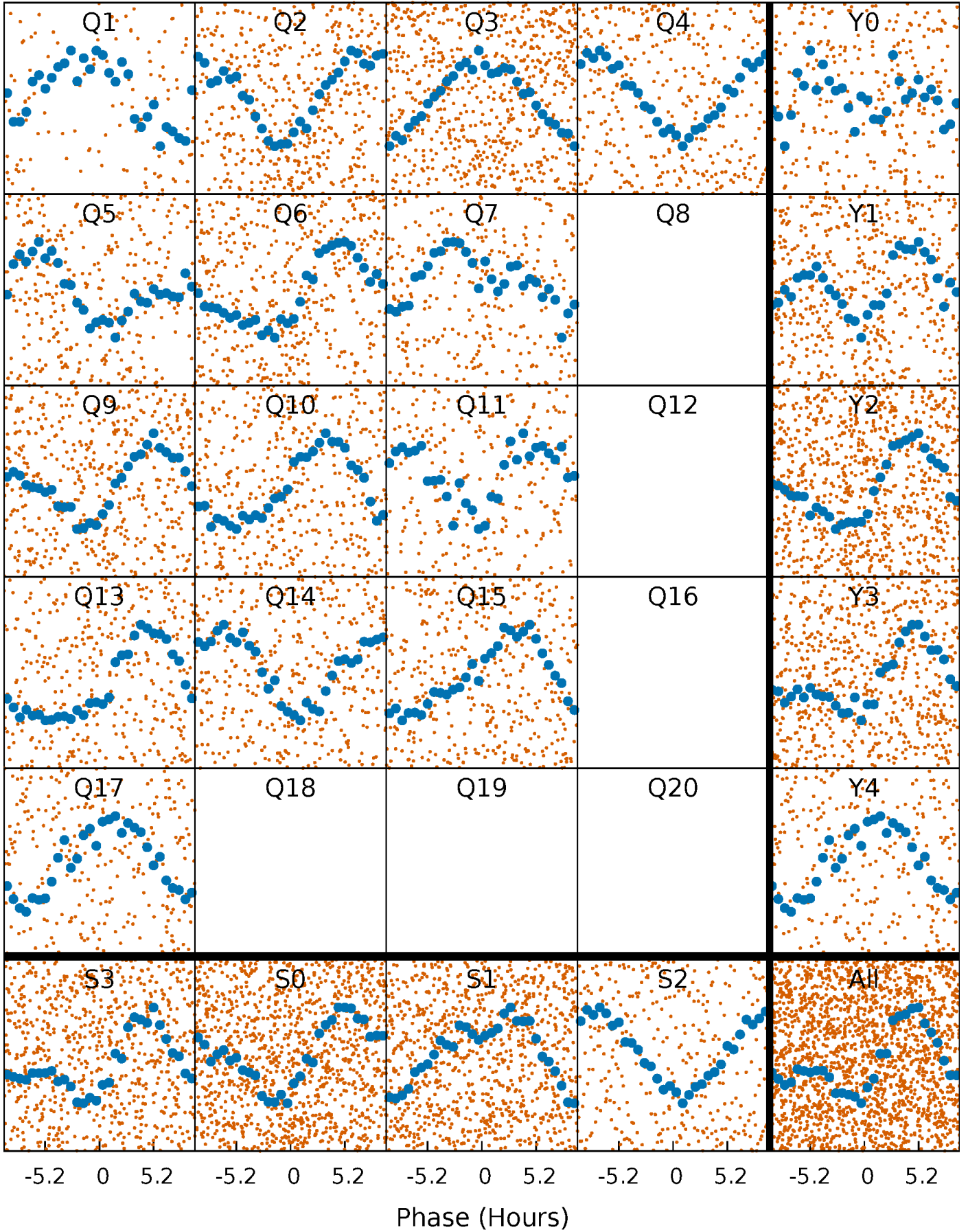
# Non-Whitened Vs. Whitened Light Curve





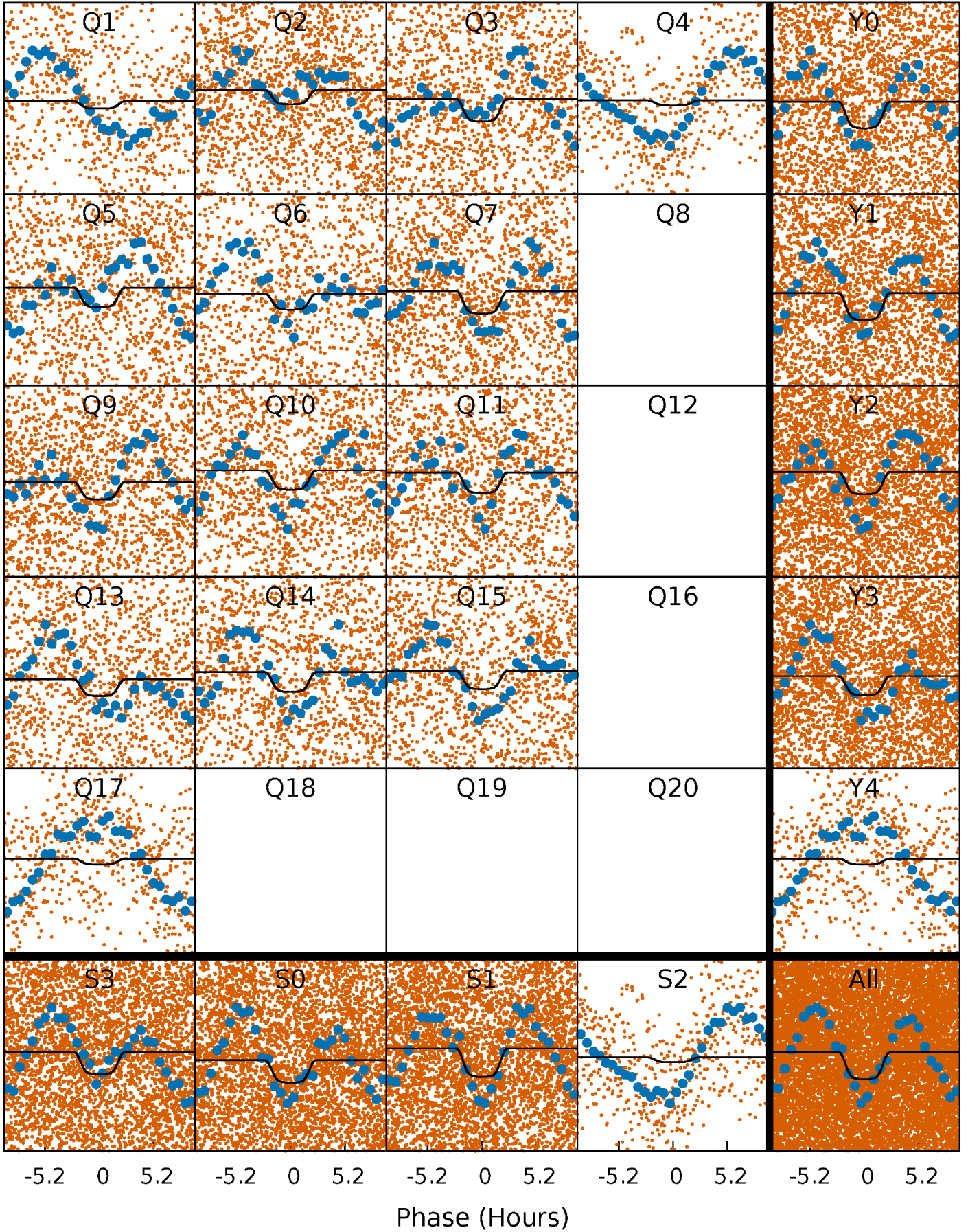
# PDC Quarter-Phased Transit Curves

TCE 011395936-01   P= 1.455642 Days    $T_0=132.836869$  (BKJD)



# DV Quarter-Phased Transit Curves

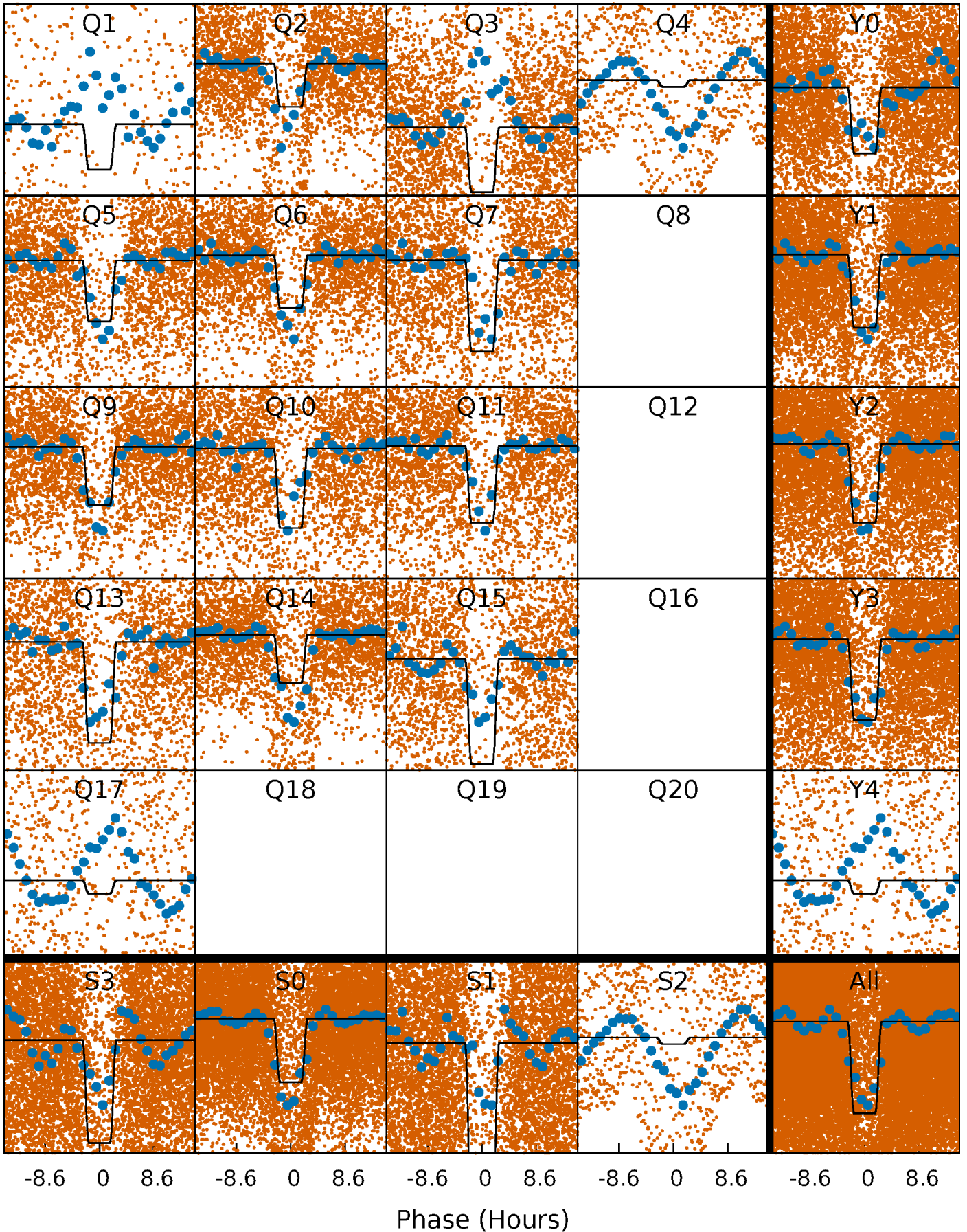
TCE 011395936-01   P= 1.455642 Days    $T_0=132.836869$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 011395936-01 P= 1.455664 Days  $T_0=132.815774$  (BKJD)

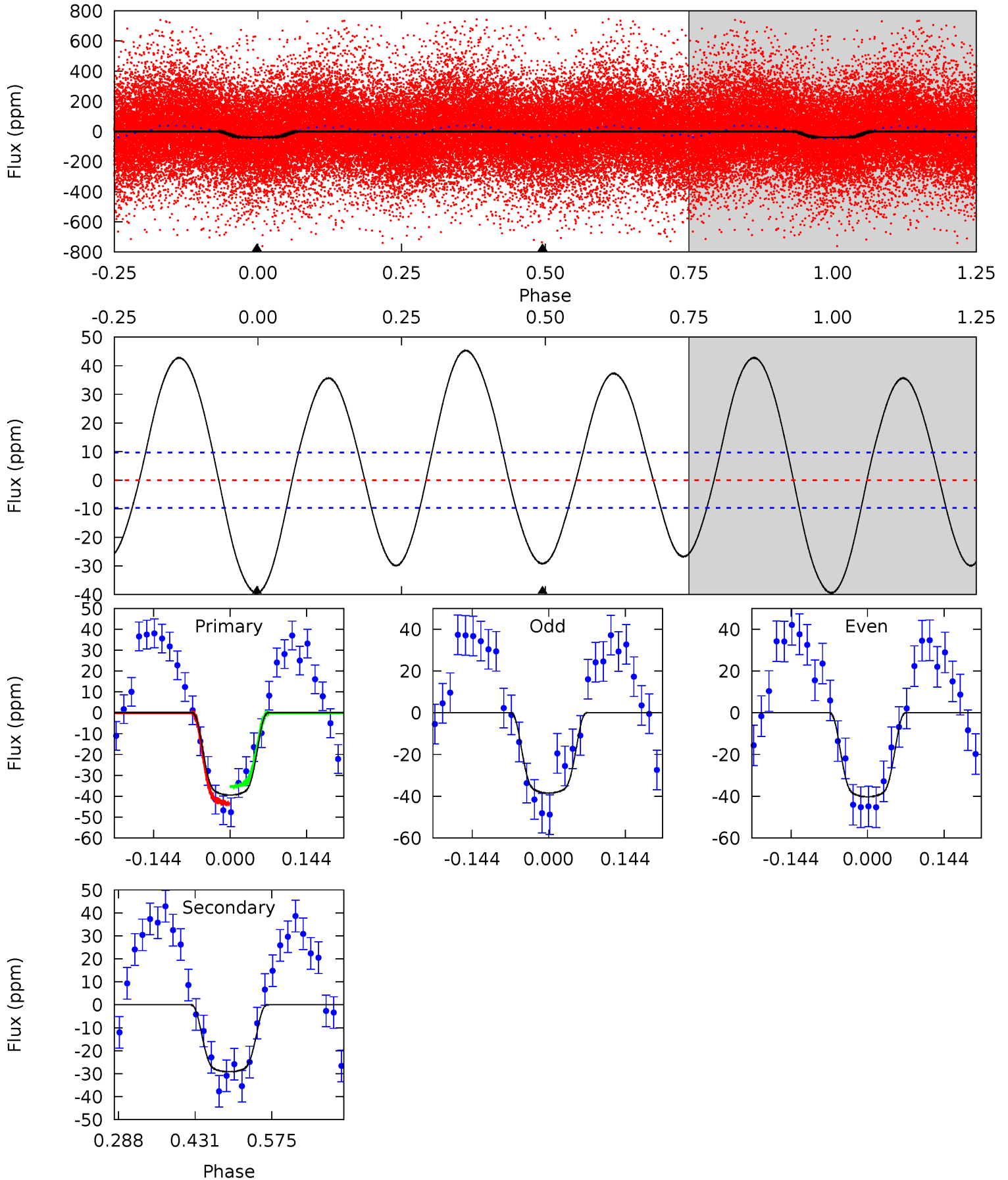




# DV Model-Shift Uniqueness Test

011395936-01, P = 1.455642 Days, E = 131.381227 Days

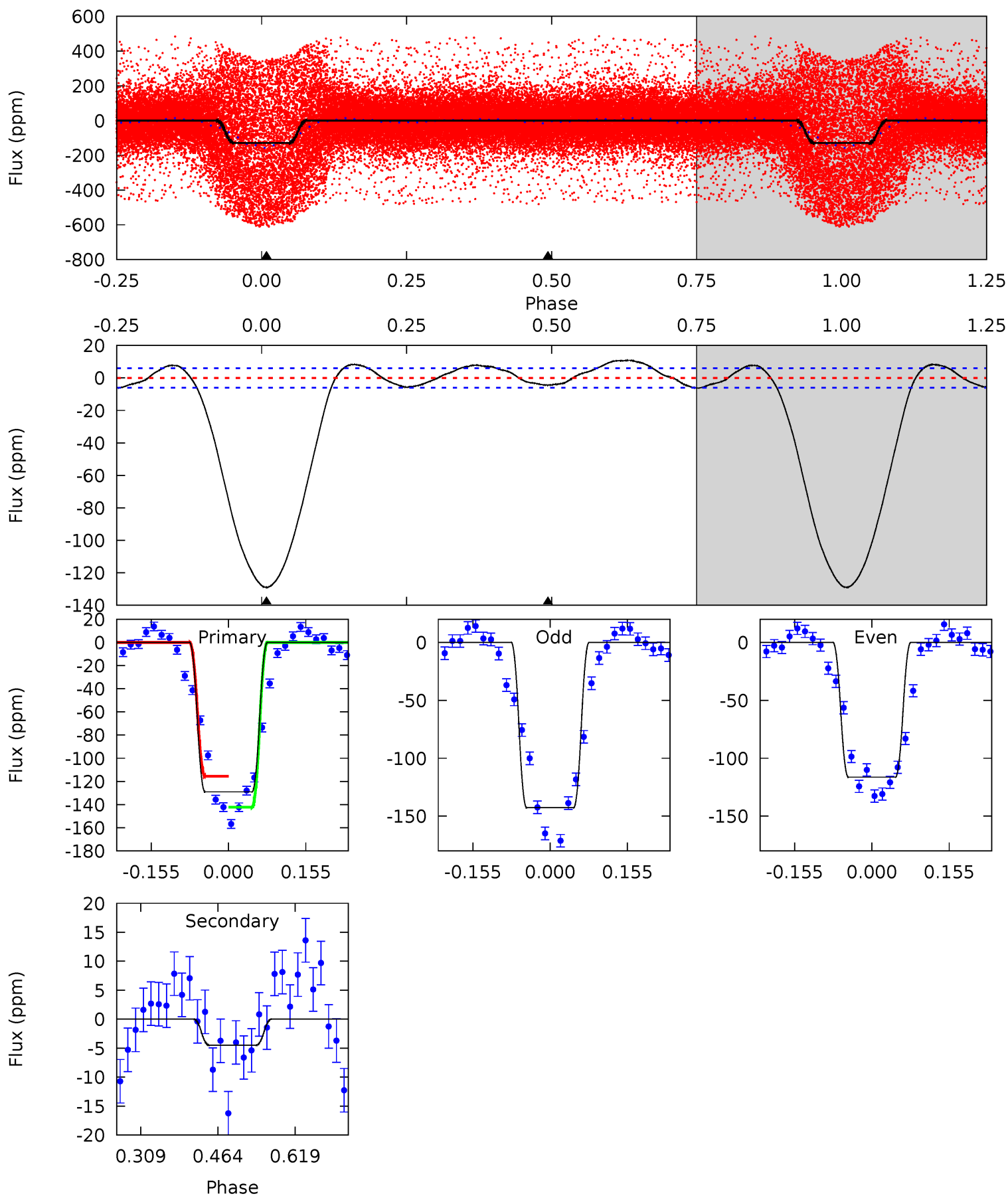
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	13.5	0	0	4.49	1.46	10.4	18.2	18.2	13.5	13.5	0.42	1.18	0.53	1.90



# Alt Model-Shift Uniqueness Test

011395936-01, P = 1.455664 Days, E = 131.360110 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
96.3	3.35	0	0	4.47	1.42	3.53	96.3	96.3	3.35	3.35	9.87	0.78	0.08	0



### Stellar Parameters For KIC 011395936

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7557^{+235}_{-314}$	$3.808^{+0.400}_{-0.094}$	$-0.260^{+0.250}_{-0.350}$	$2.645^{+0.467}_{-1.089}$	$1.638^{+0.182}_{-0.311}$	$0.125^{+0.396}_{-0.038}$
	+3%/-4%	+11%/-2%	+96%/-135%	+18%/-41%	+11%/-19%	+317%/-30%
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 011395936-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-29 \pm 2$	$1.76^{+0.31}_{-0.38}$	$4263^{+317}_{-459}$	$6670^{+448}_{-405}$	$4.585^{+2.630}_{-1.255}$
Alt.	$-4 \pm 1$	$2.75^{+0.41}_{-0.63}$	$4288^{+287}_{-527}$	$-2412^{+5740}_{-924}$	$0.289^{+0.190}_{-0.099}$

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



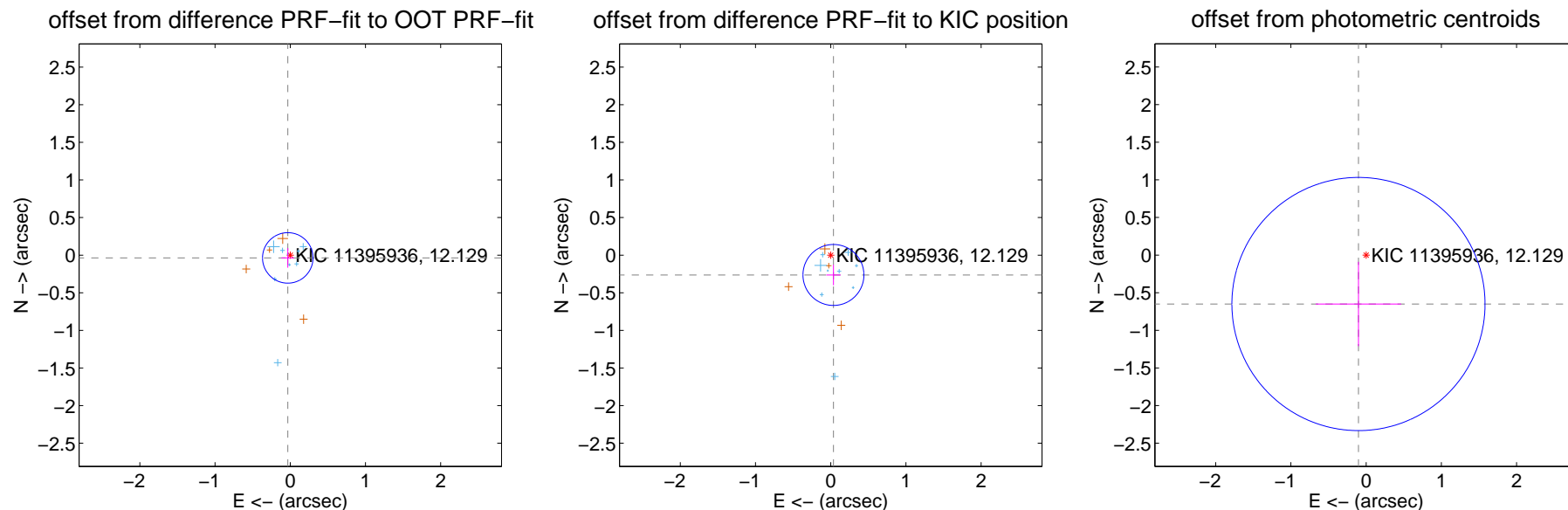
## DV Centroid Data

Supplemental centroid analysis for 011395936-01. Kepler magnitude: 12.13. Transit SNR 7.70

There are 9 quarters with good PRF difference image offsets

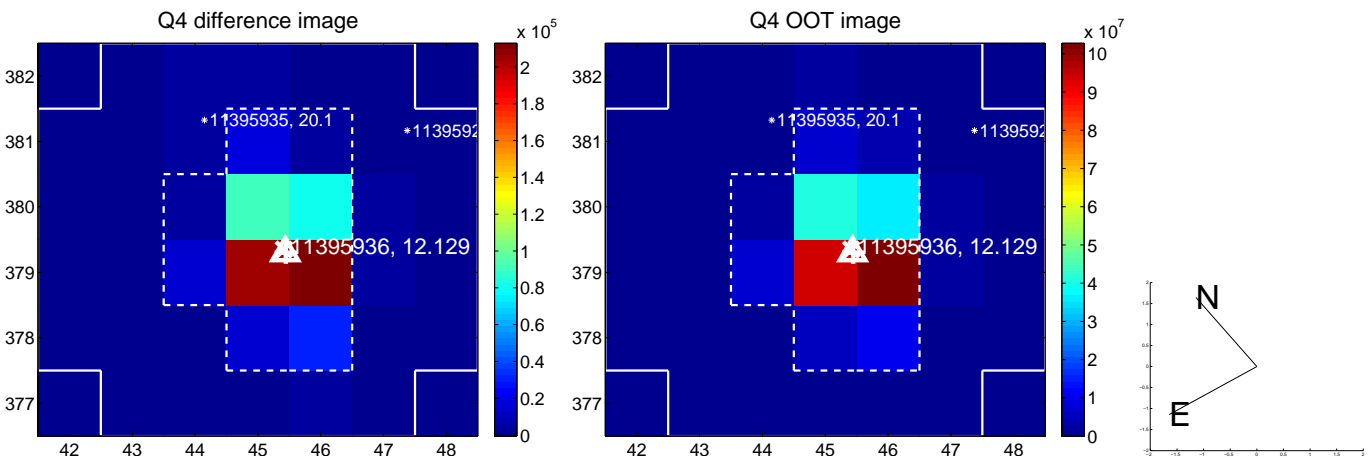
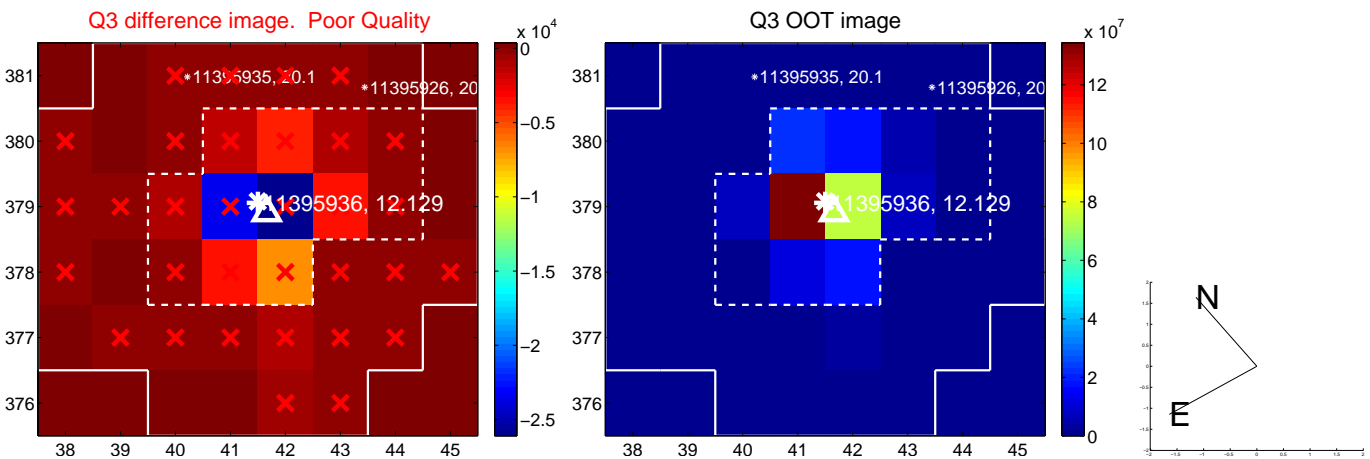
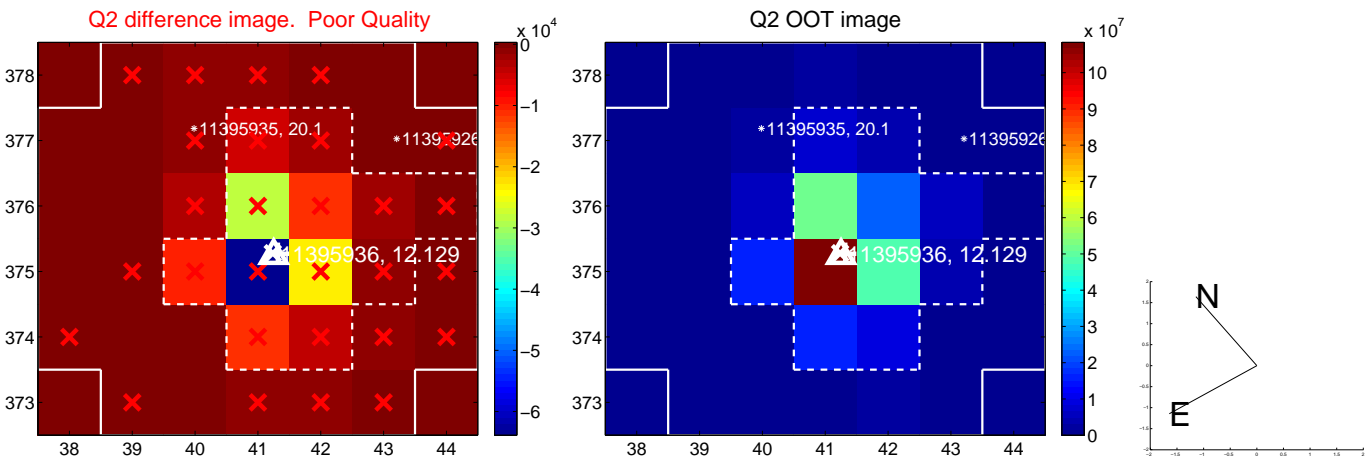
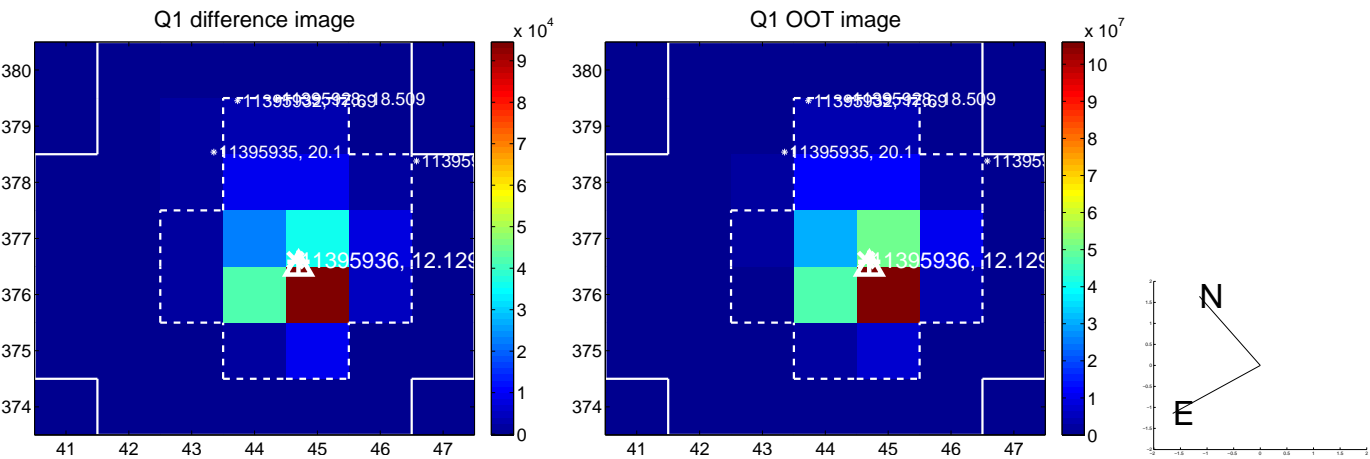
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.049 \pm 0.112$	0.44	$0.033 \pm 0.084$	$-0.037 \pm 0.130$
PRF-fit source offset from KIC position	$0.266 \pm 0.135$	1.97	$-0.036 \pm 0.094$	$-0.263 \pm 0.136$
photometric centroid source offset	$0.66 \pm 0.56$	1.17	$0.10 \pm 0.57$	$-0.65 \pm 0.56$

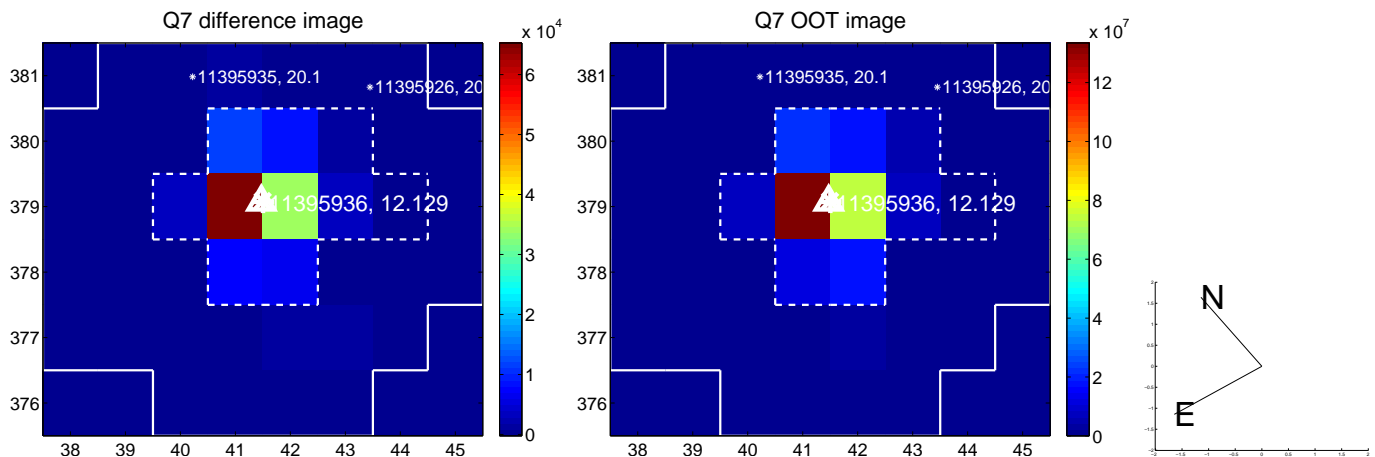
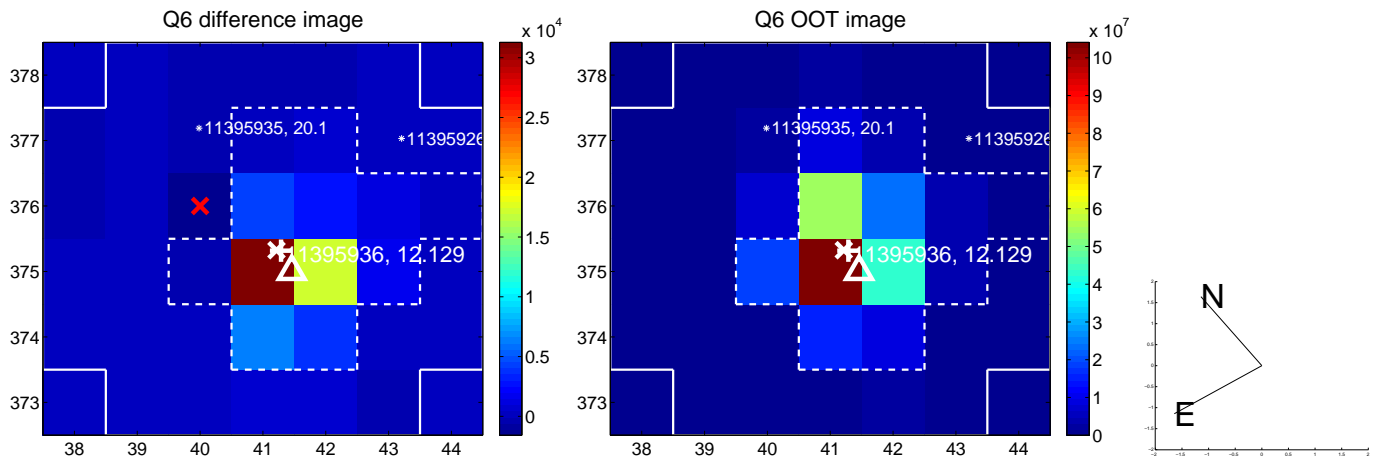
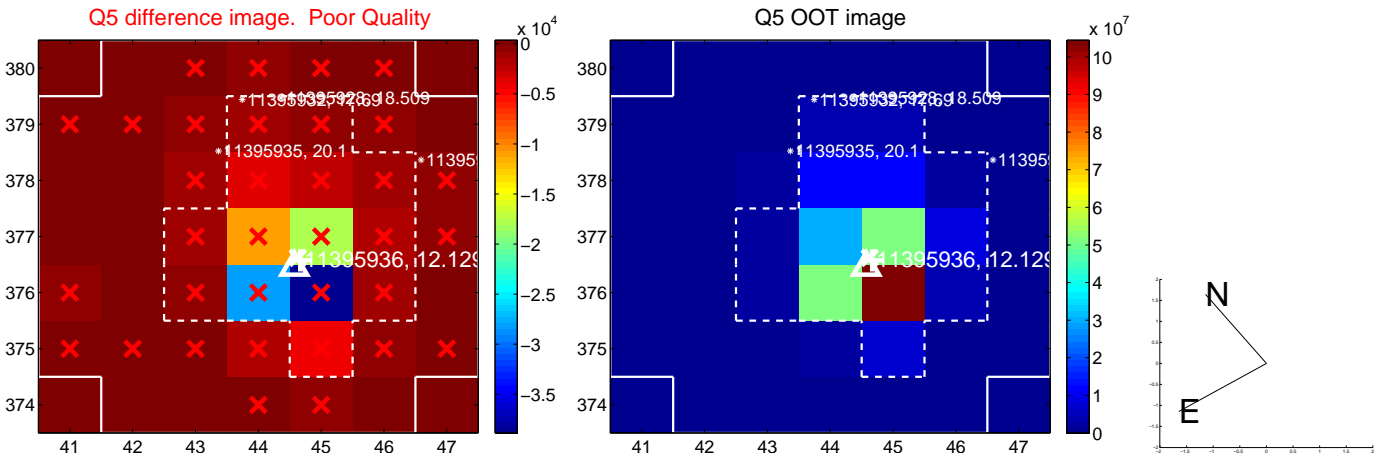


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

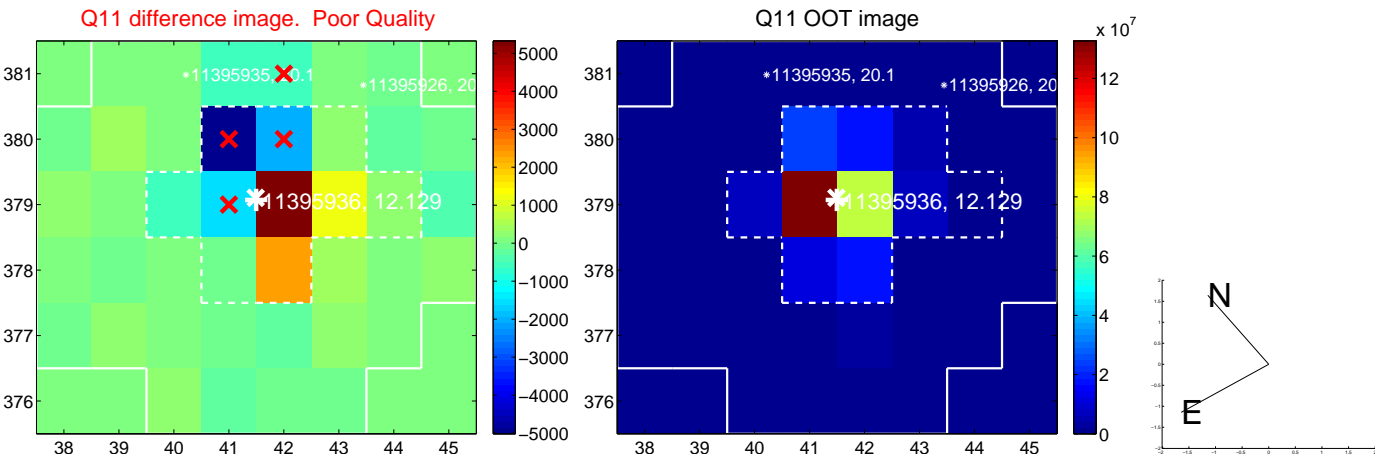
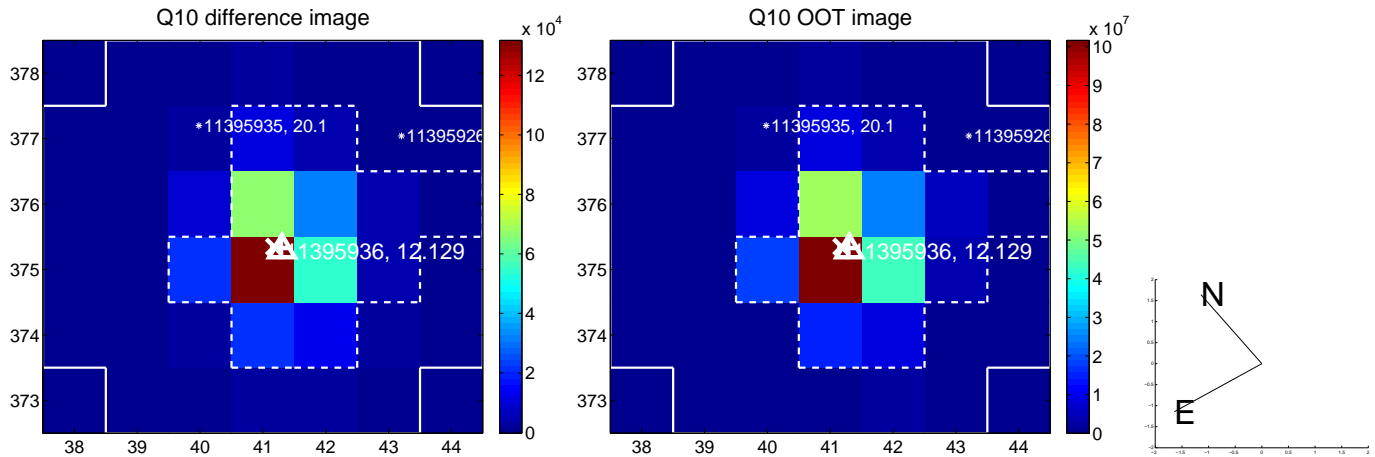
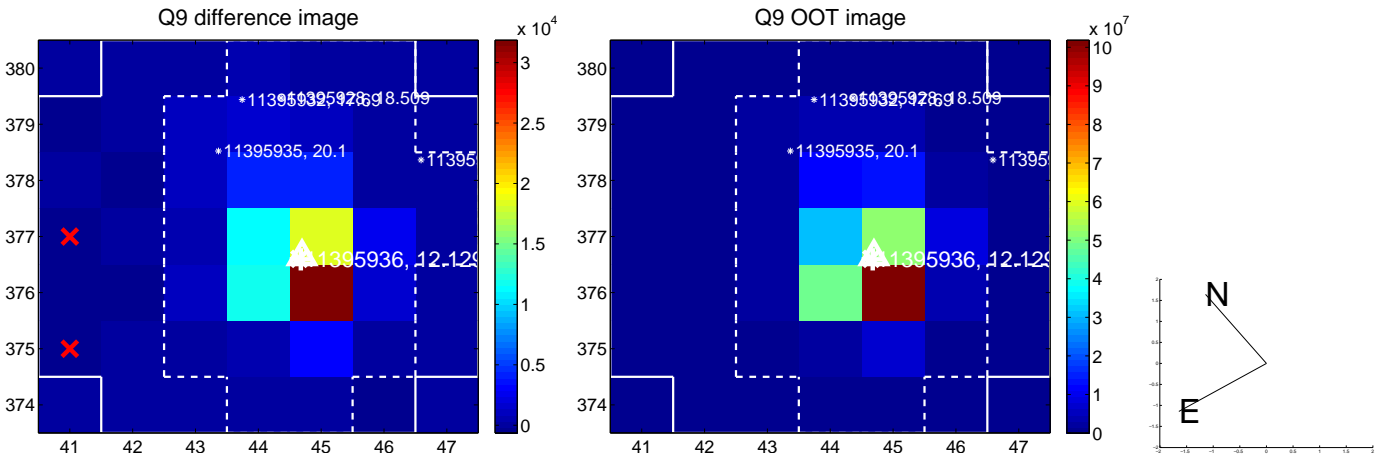


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

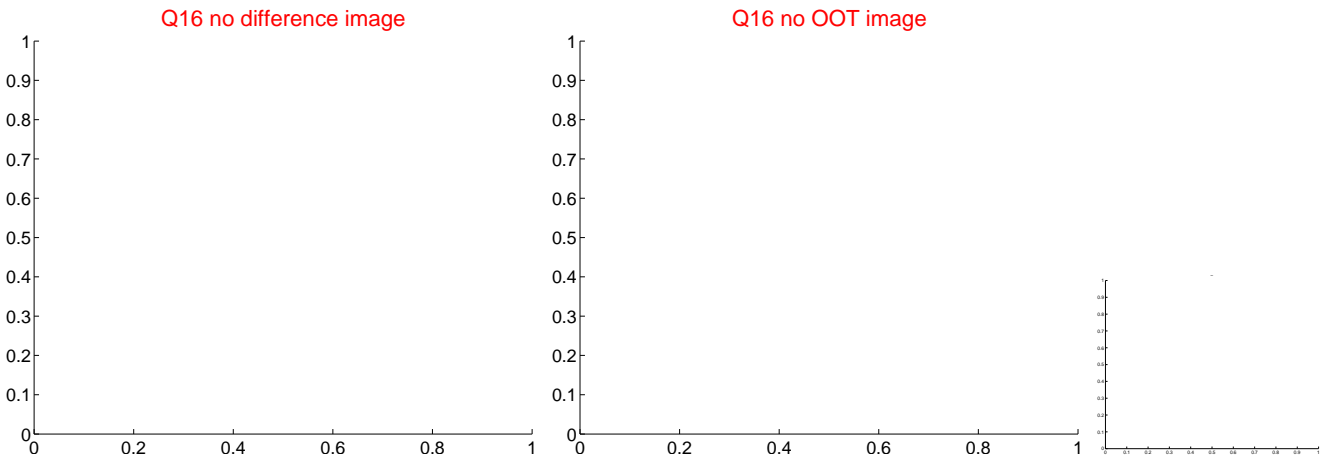
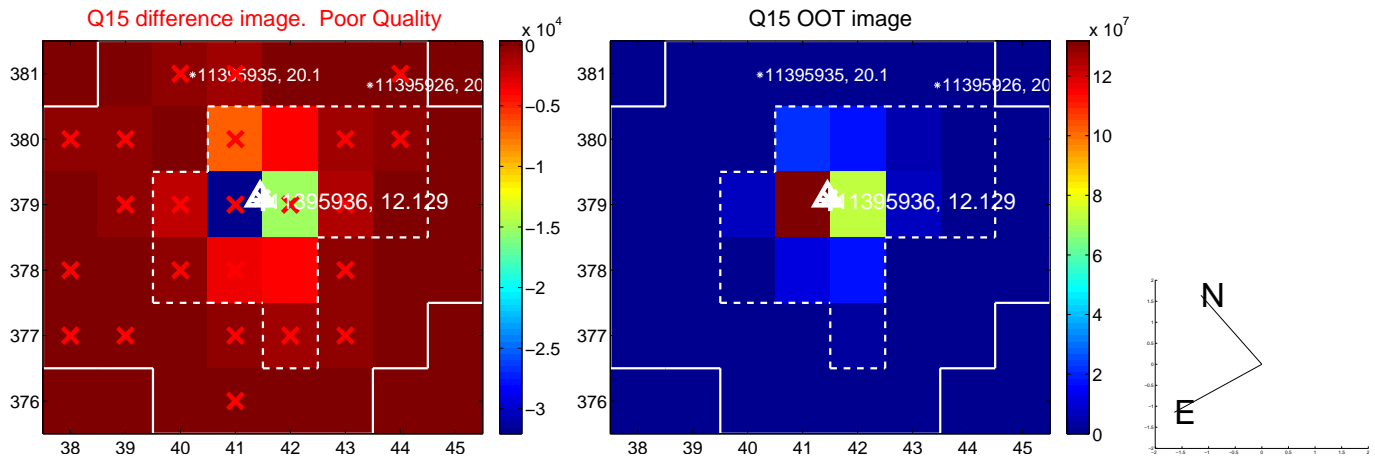
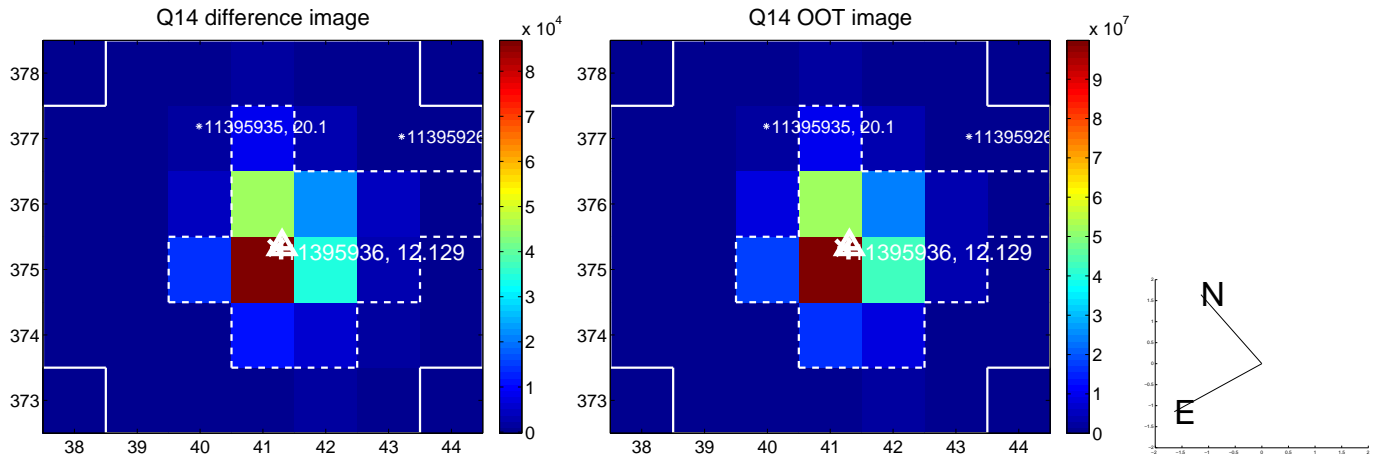
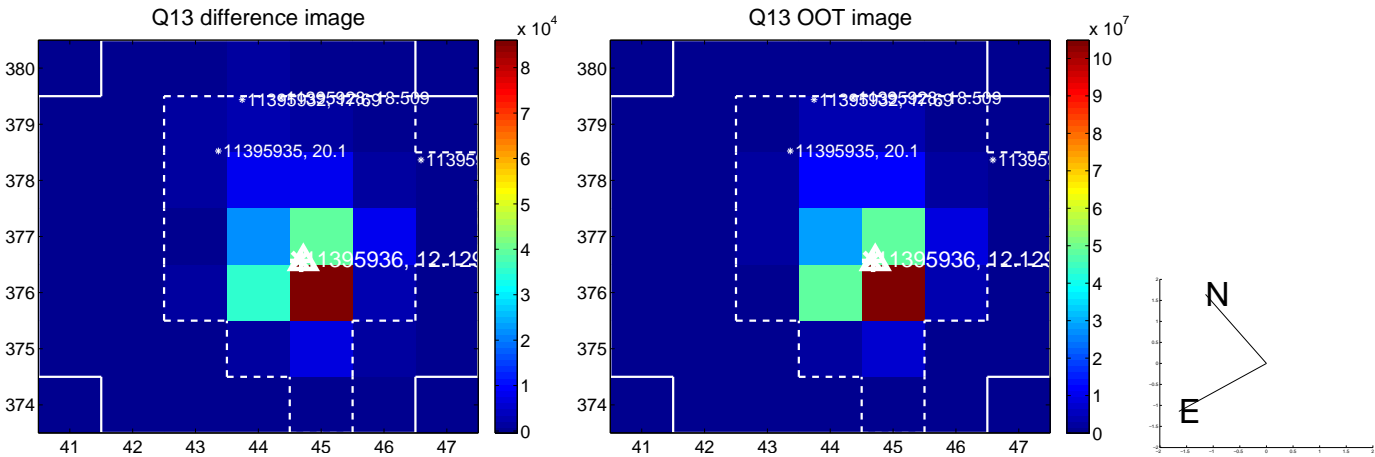




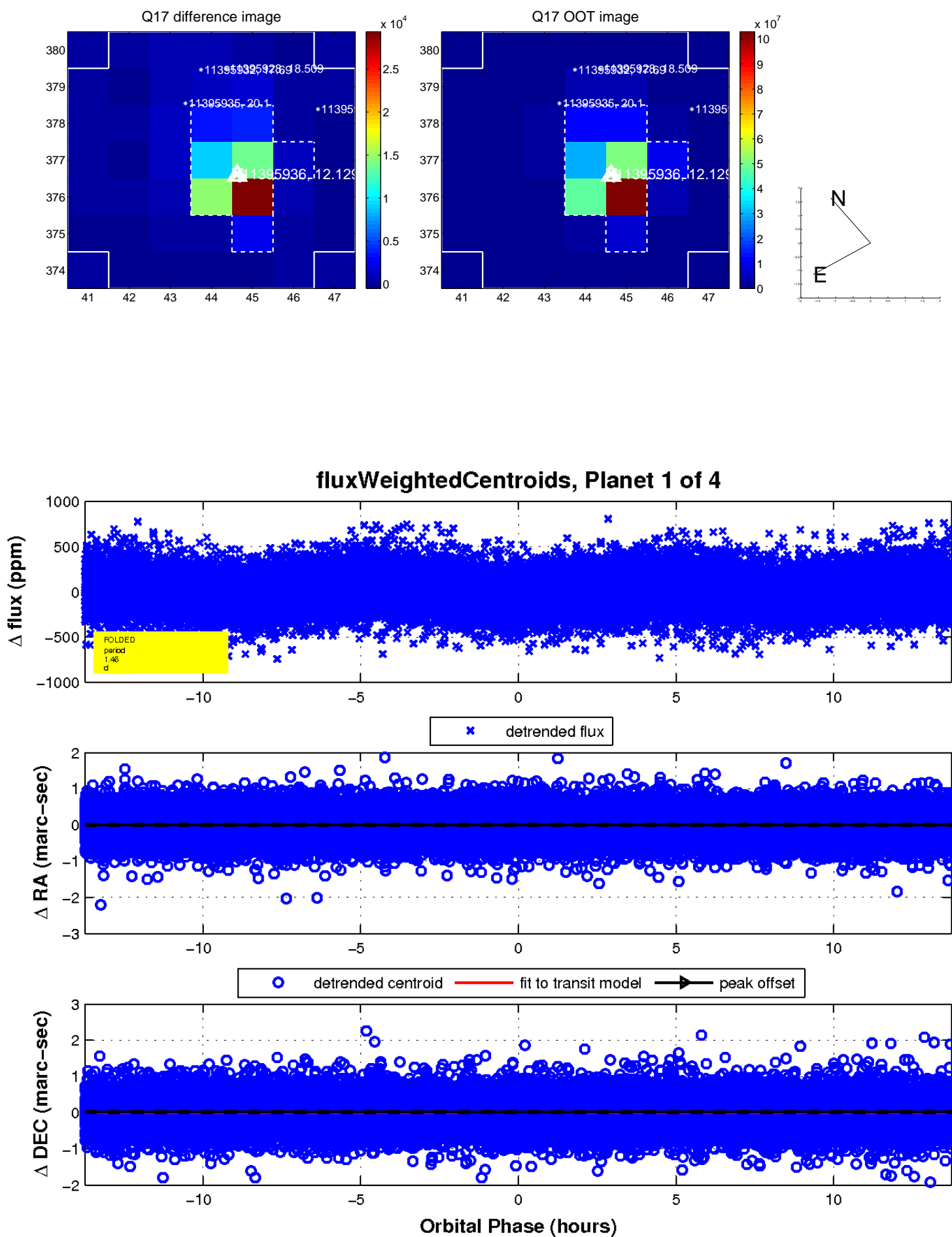
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



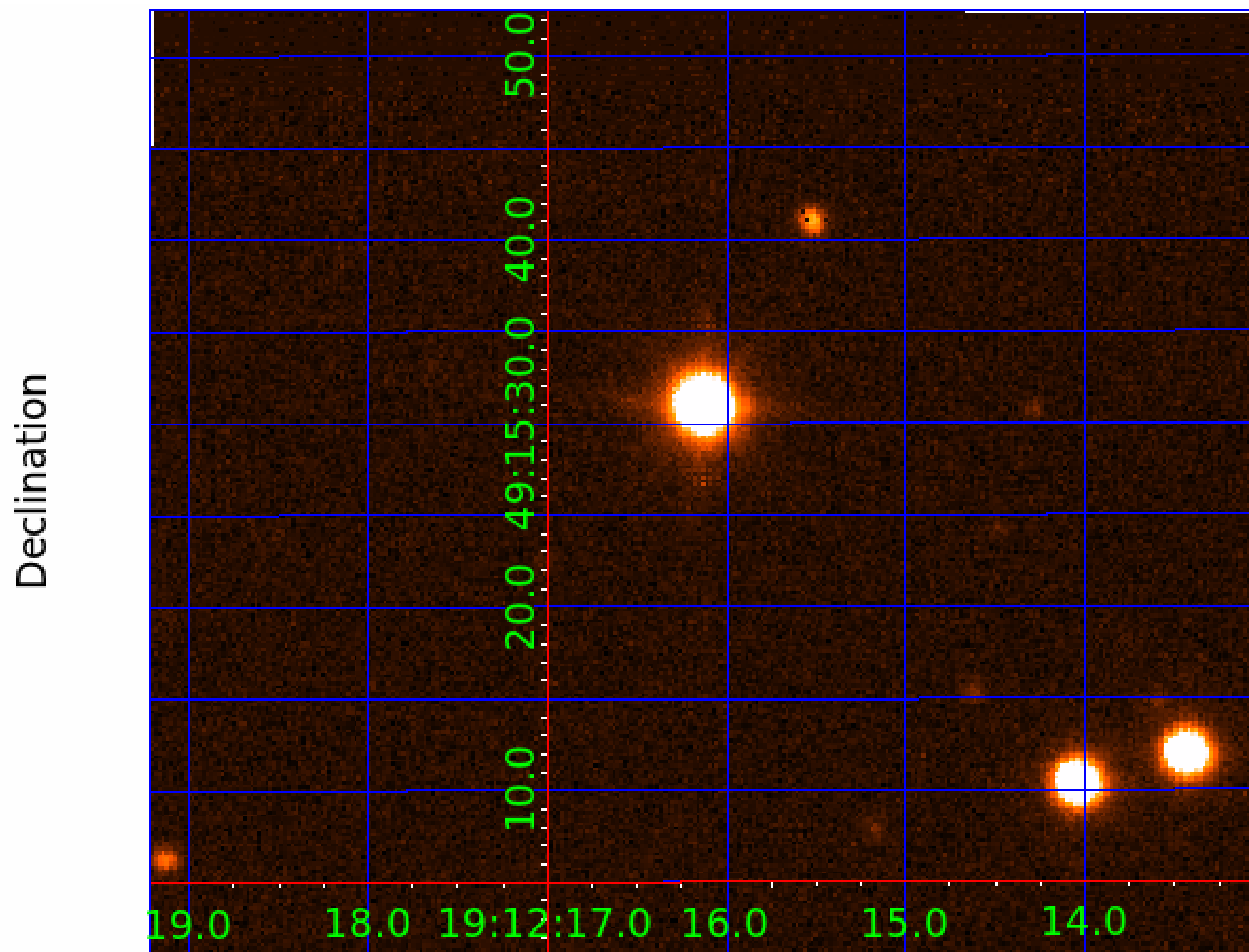
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image



# KIC 011395936

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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011395936-04	OBS	No	21.470341	132.124001	130.7	3.500	8.0	-1.0	2.65	7557	3.03	642.87

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011395936-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
011395936-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
011395936-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
011395936-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

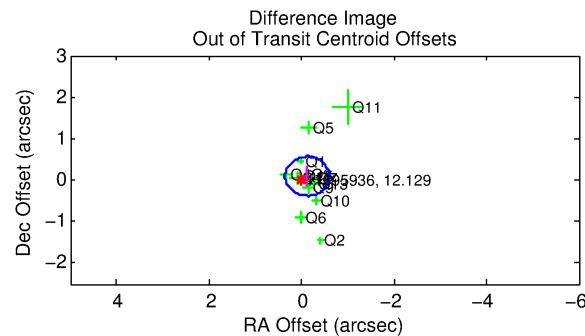
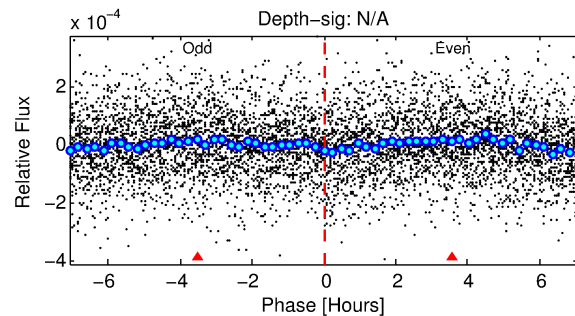
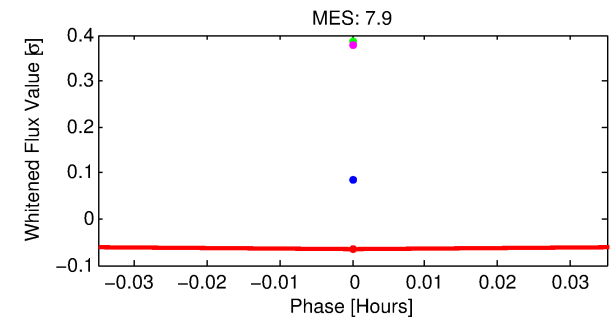
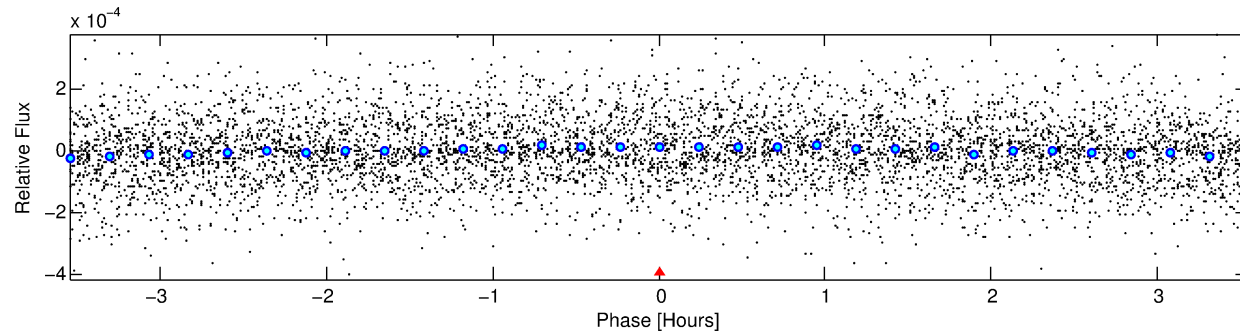
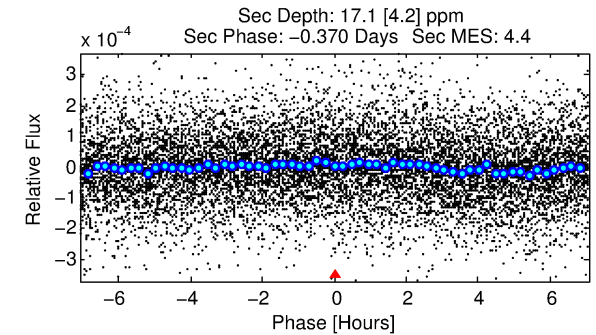
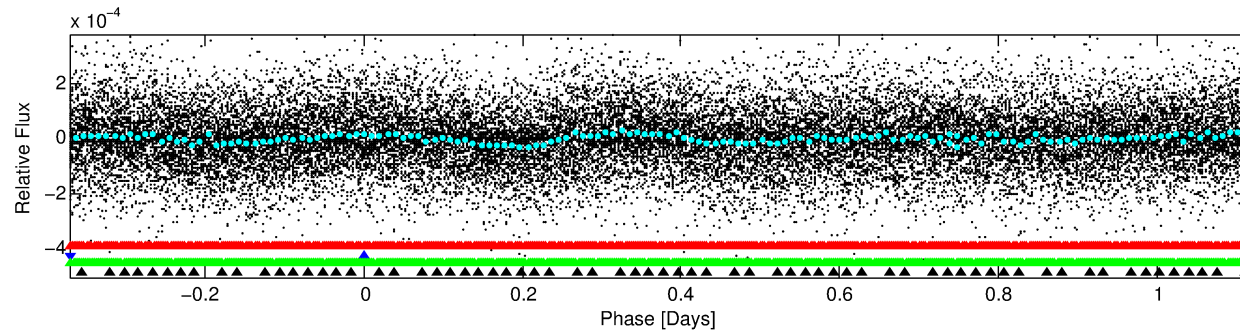
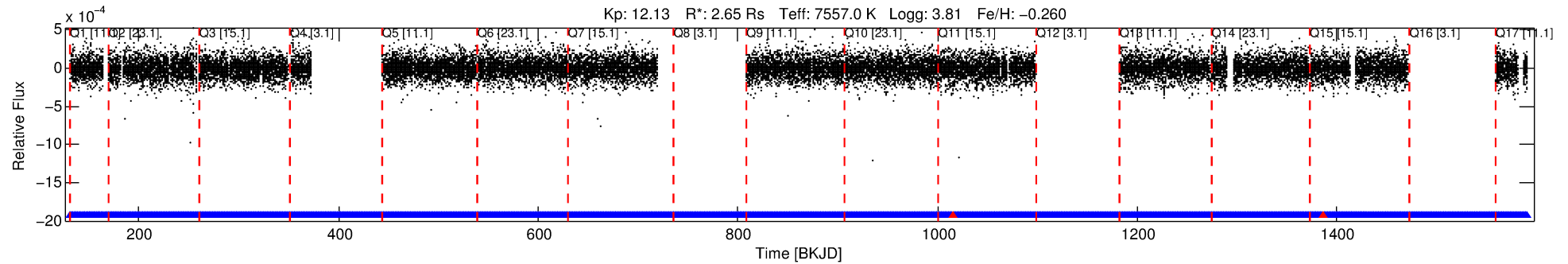
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011395936-02

No Significant Match Found

# DV One-Page Summary

KIC: 11395936 Candidate: 2 of 4 Period: 1.488 d



## TPS TCE Results:

Period = 1.48751 d  
Epoch = 132.0318 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

ShortPeriod-sig: 15.5% [0.20σ]  
LongPeriod-sig: 100.0% [111.50σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.12e-14  
RollingBand-fgt: 1.00 [417/419]  
GhostDiagnostic-chr: 0.5431

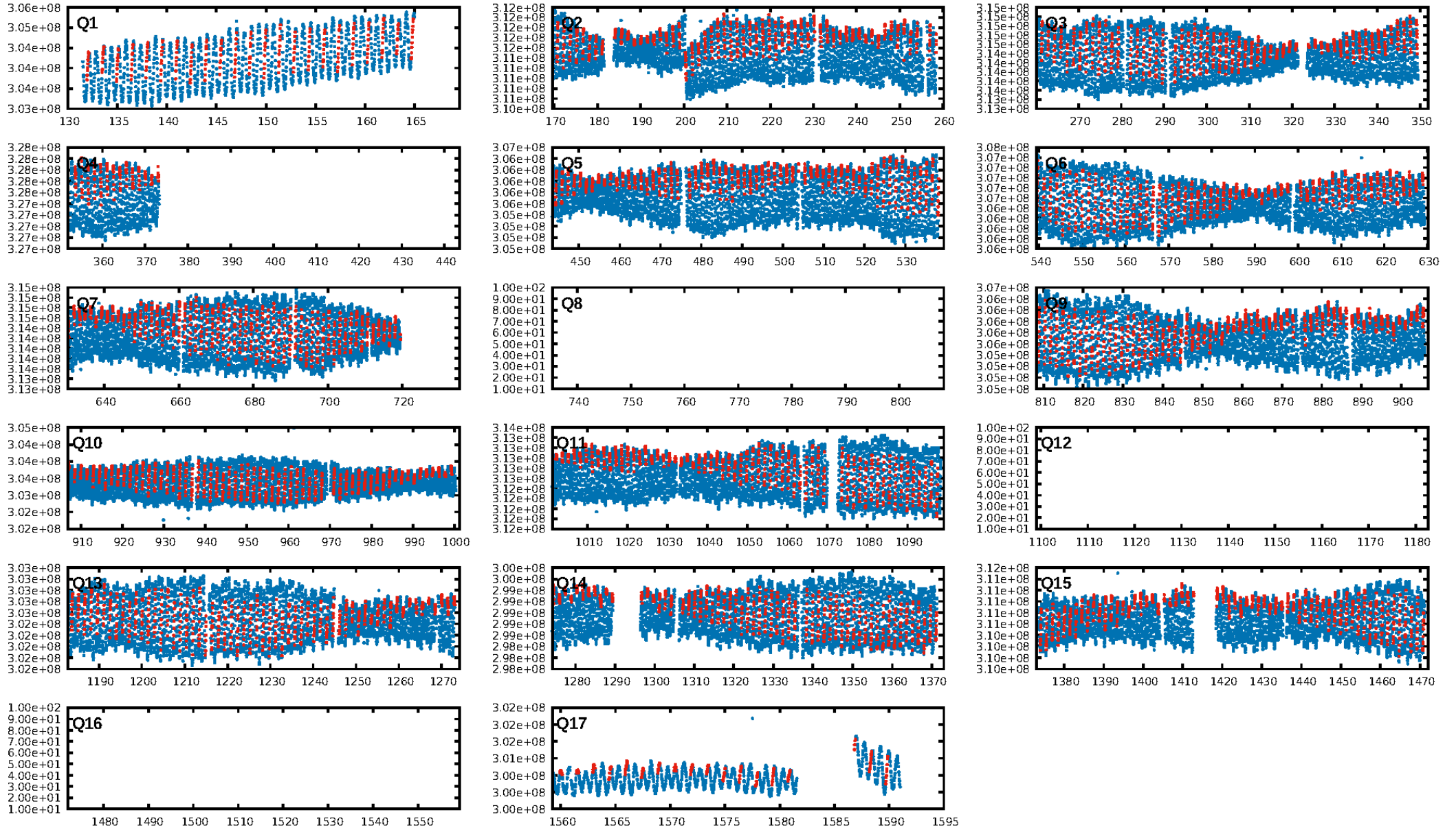
Centroid-sig: 0.0%  
Centroid-so: 2.732 arcsec [2.75σ]  
OotOffset-rm: 0.153 arcsec [0.96σ]  
KicOffset-rm: 0.140 arcsec [1.27σ]  
OotOffset-st: 4/4/1/5 [14]  
KicOffset-st: 4/4/1/5 [14]  
DiffImageQuality-fgm: 0.79 [11/14]  
DiffImageOverlap-fno: 1.00 [14/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:03:31 Z

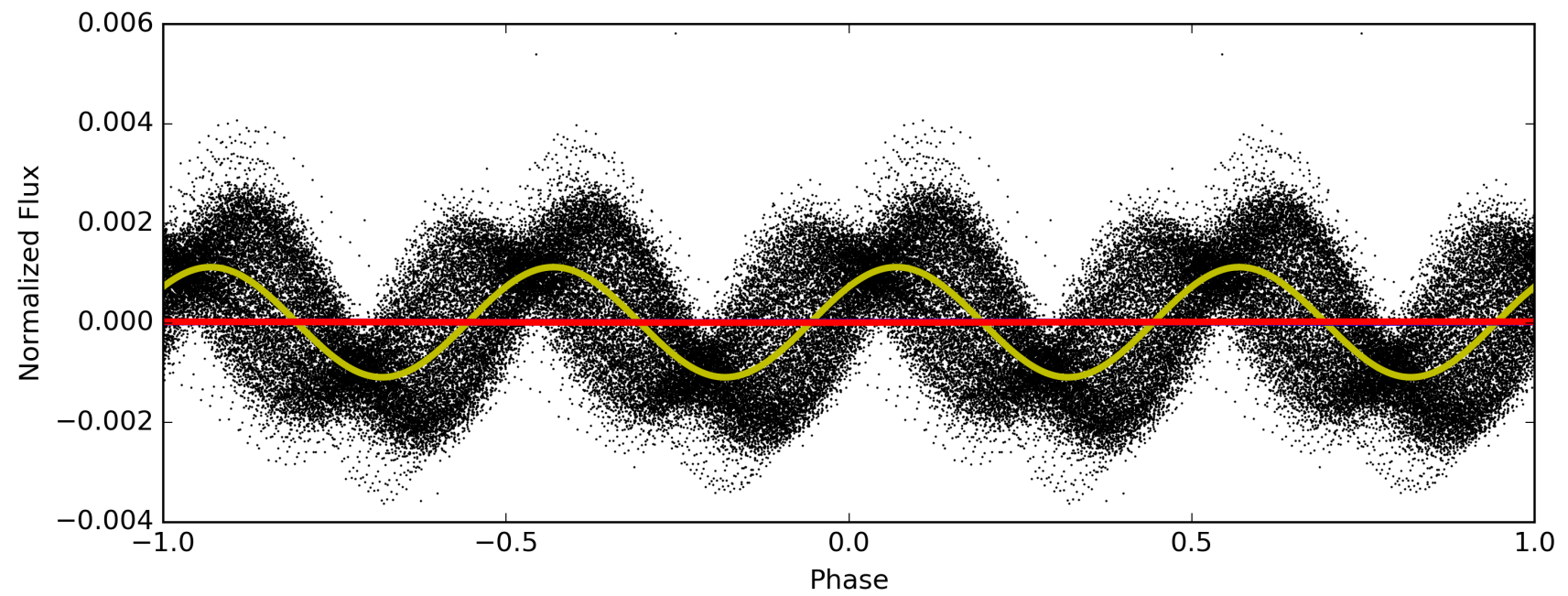
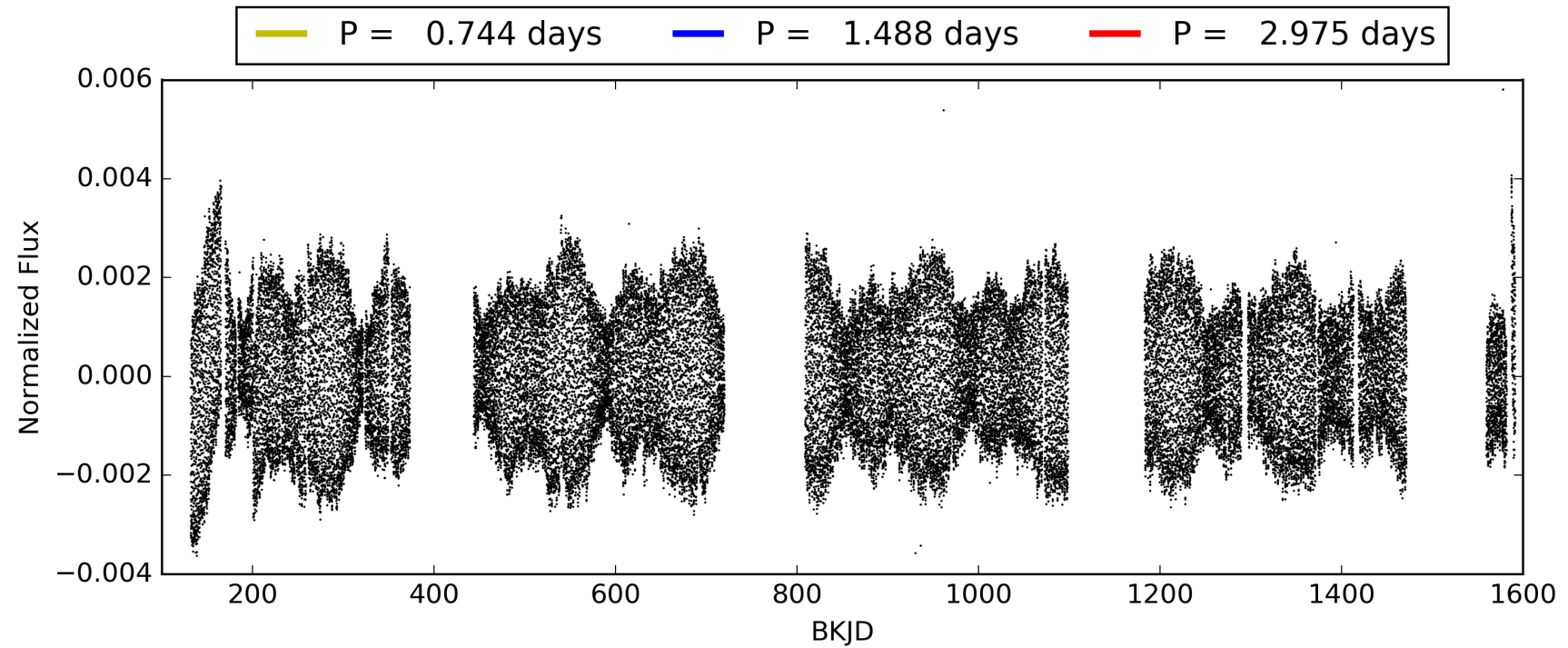
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 011395936-02, PDC Light Curves

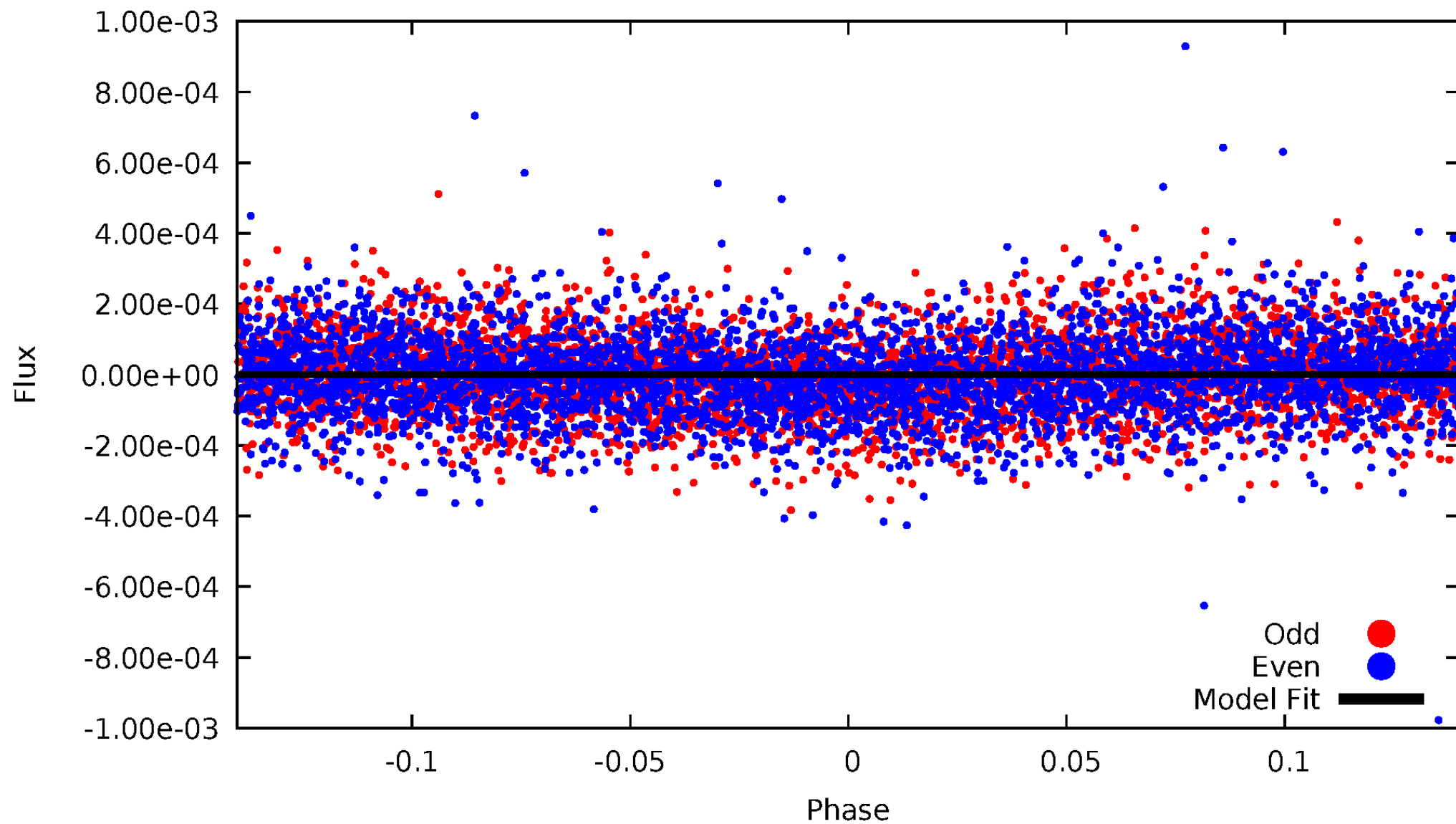


TCE 011395936-02



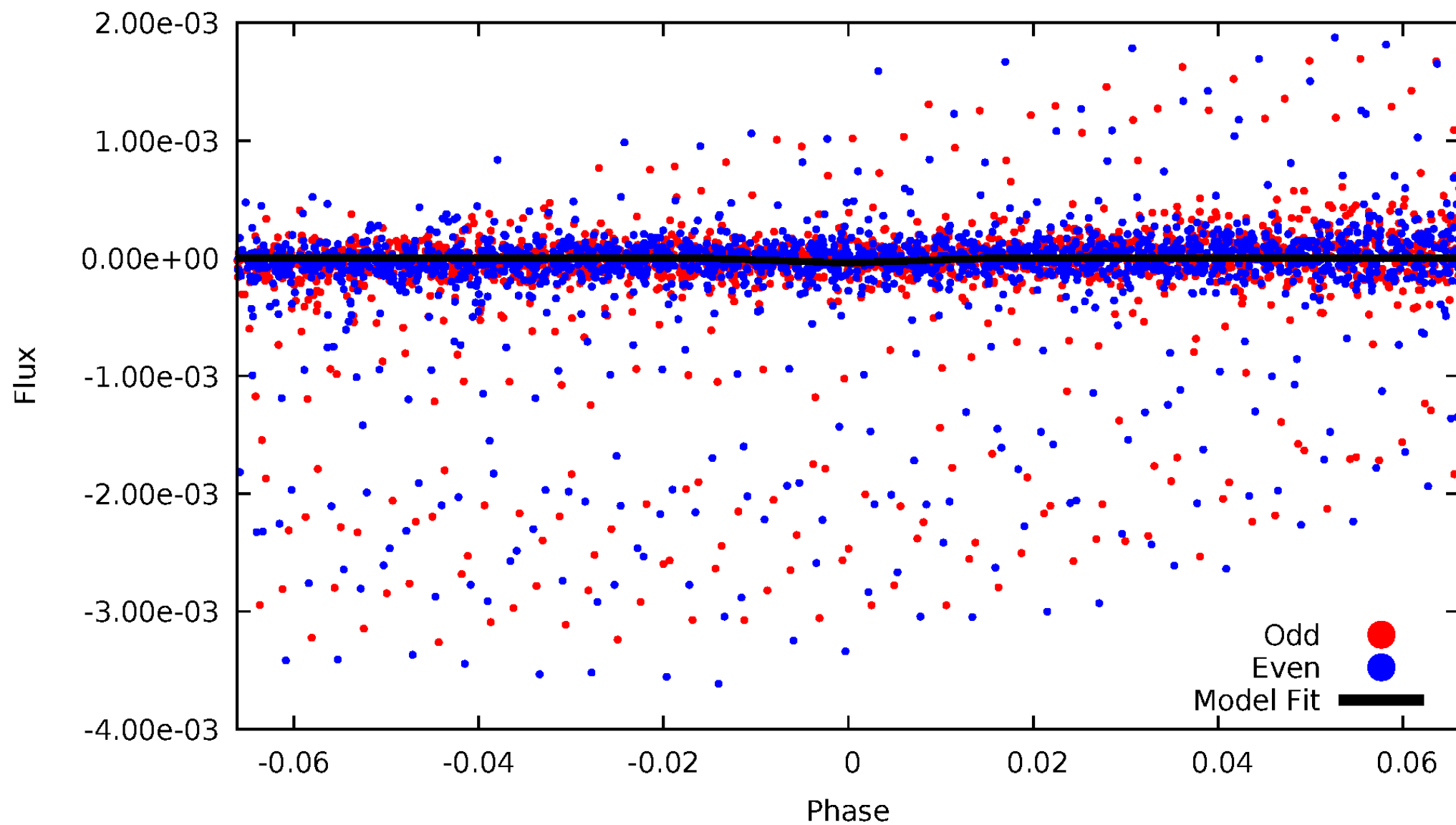
# DV Odd/Even

TCE 011395936-02



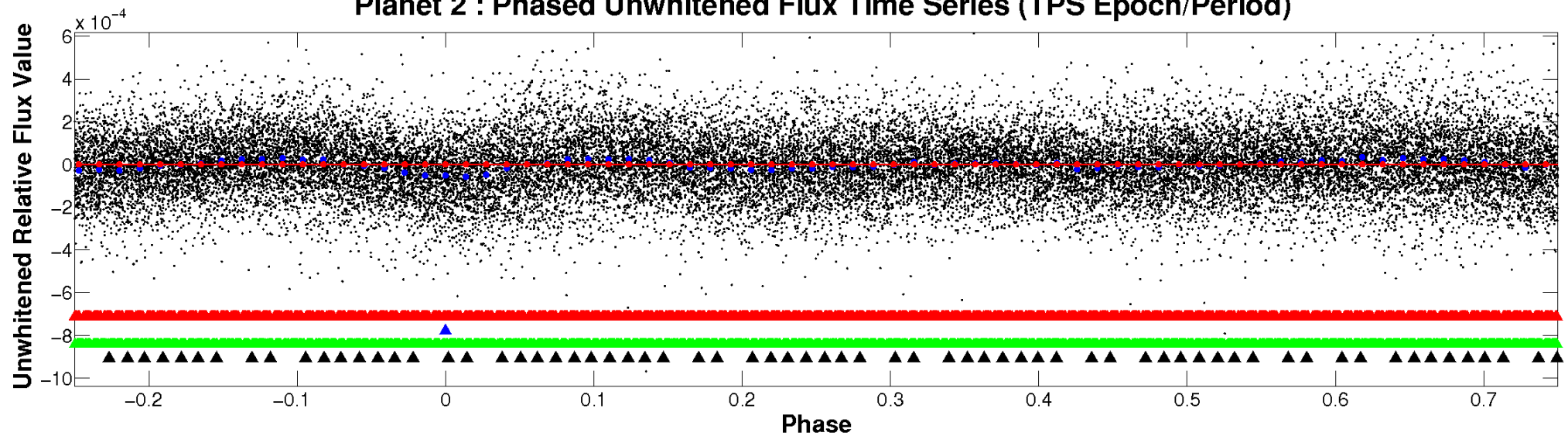
# ALT Odd/Even

TCE 011395936-02

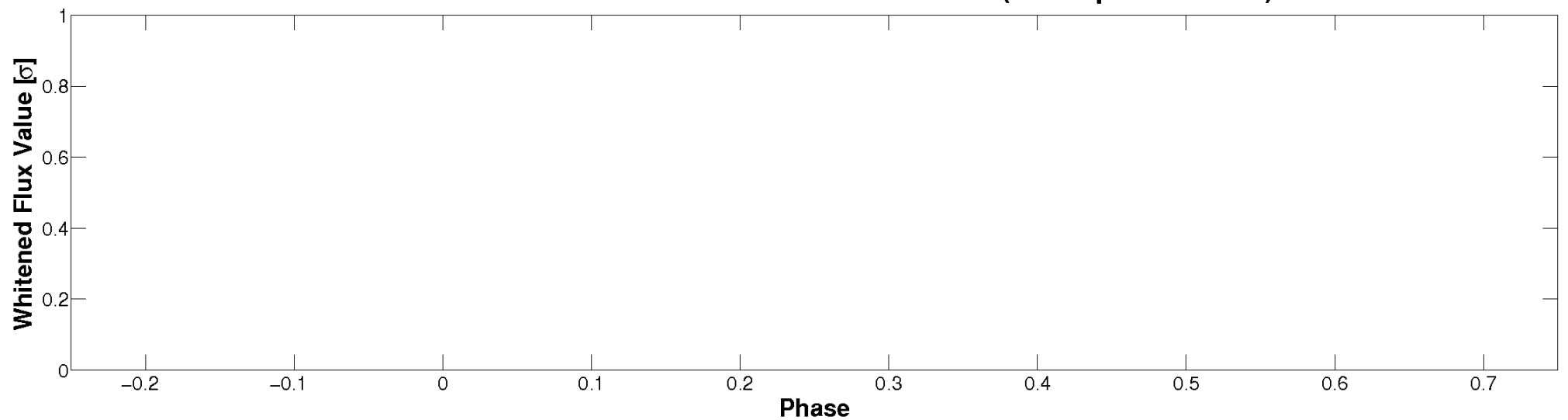


# Non-Whitened Vs. Whitened Light Curve

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



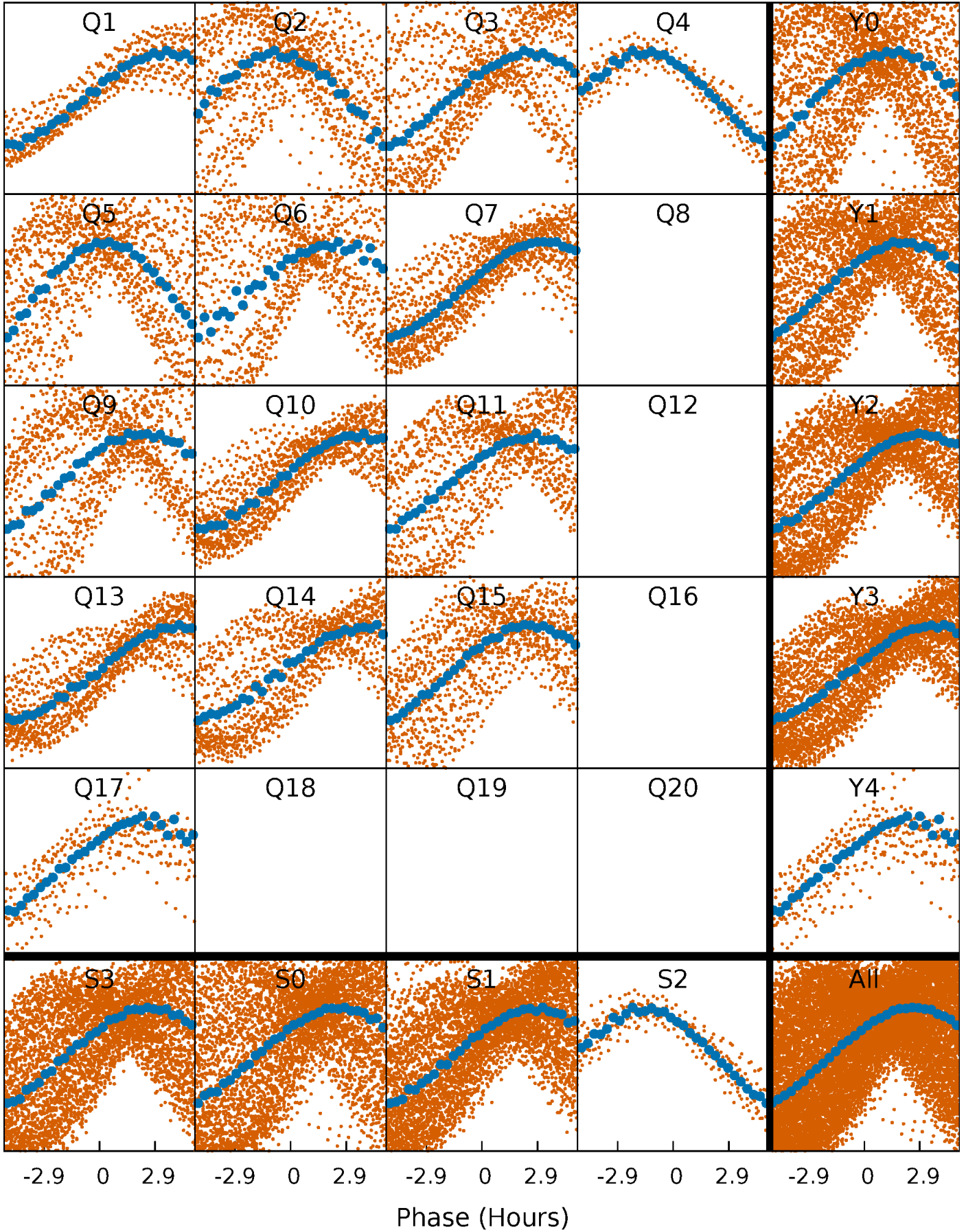
**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**





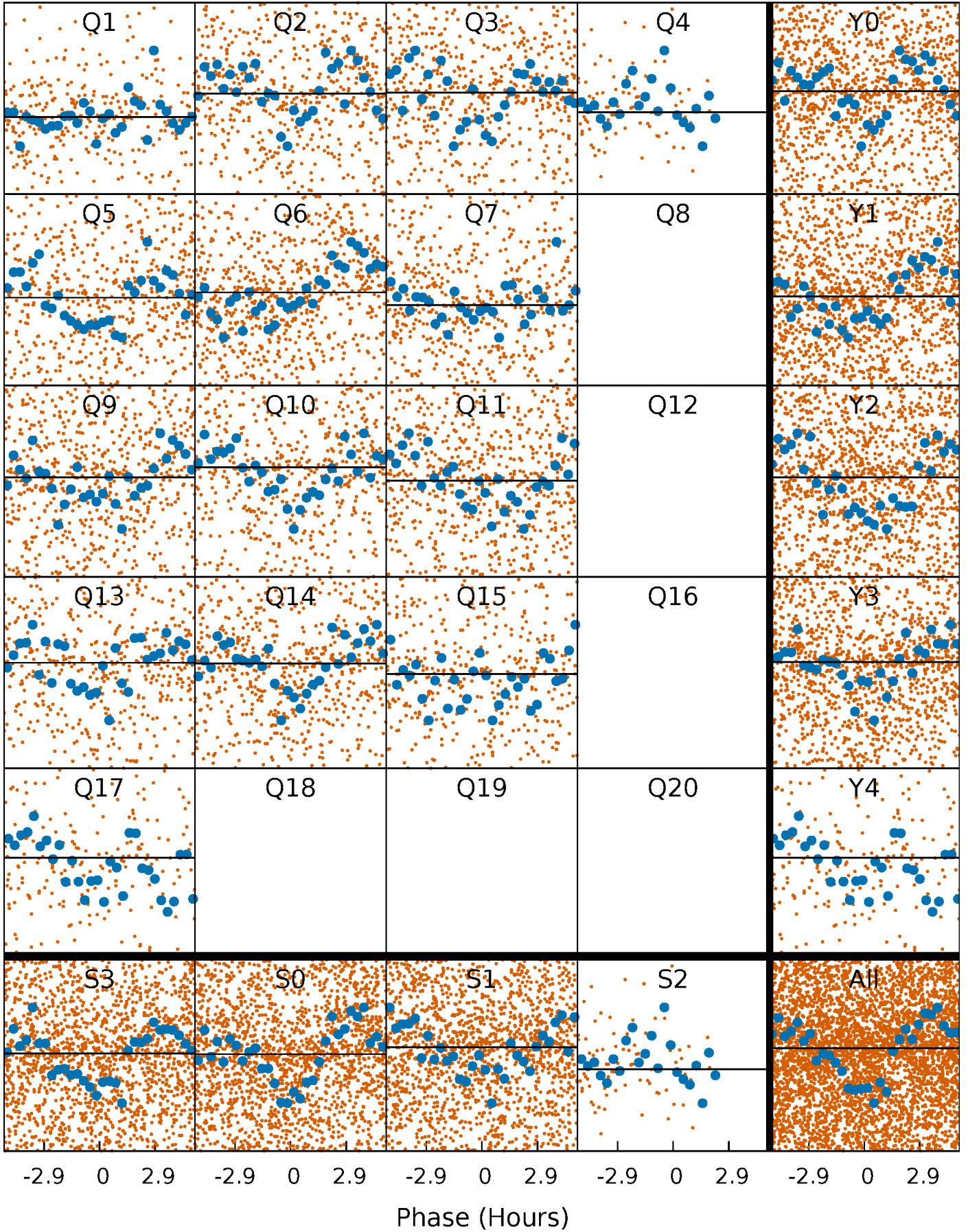
# PDC Quarter-Phased Transit Curves

TCE 011395936-02   P= 1.487510 Days    $T_0=132.031827$  (BKJD)



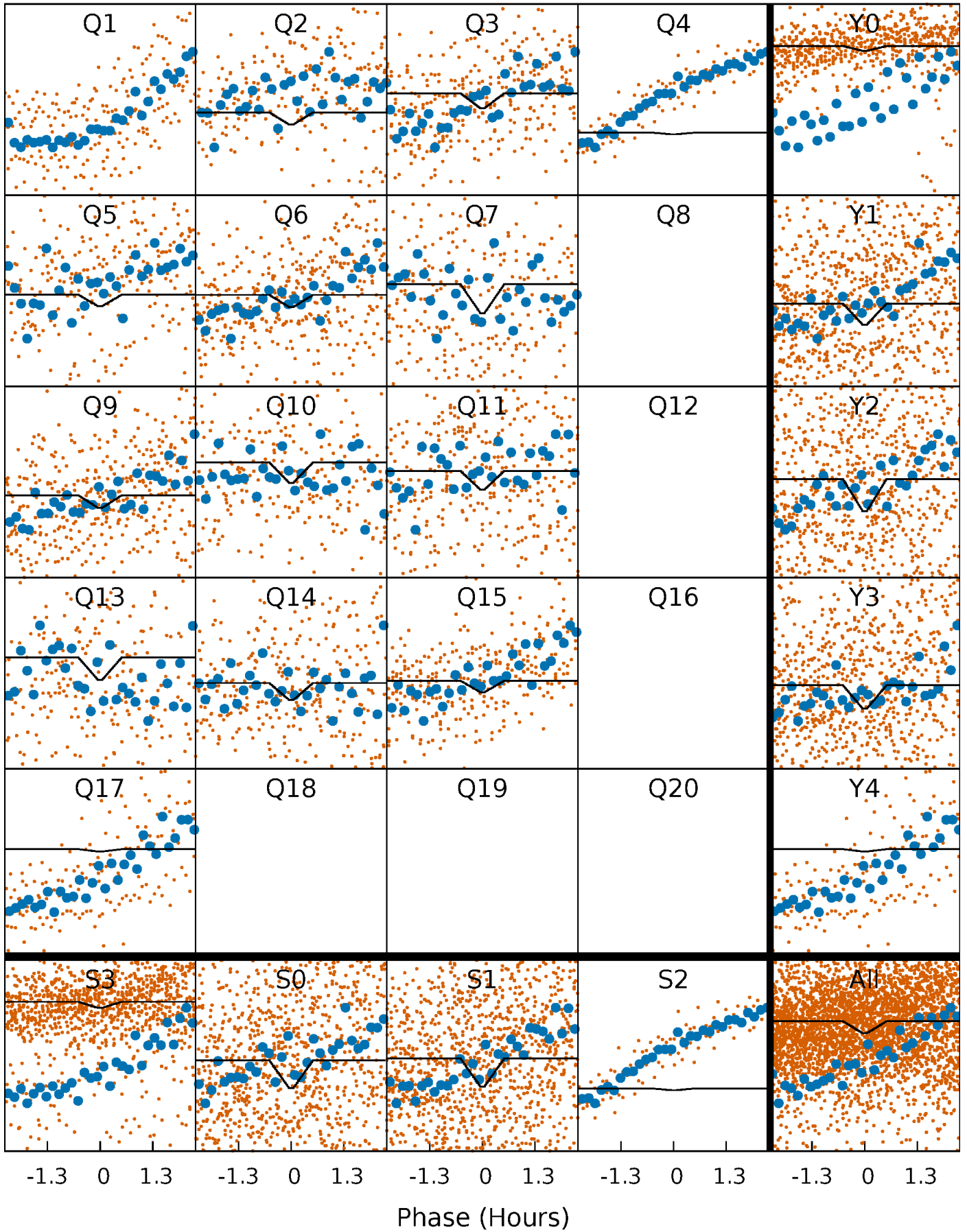
# DV Quarter-Phased Transit Curves

TCE 011395936-02   P= 1.487510 Days    $T_0=132.031827$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

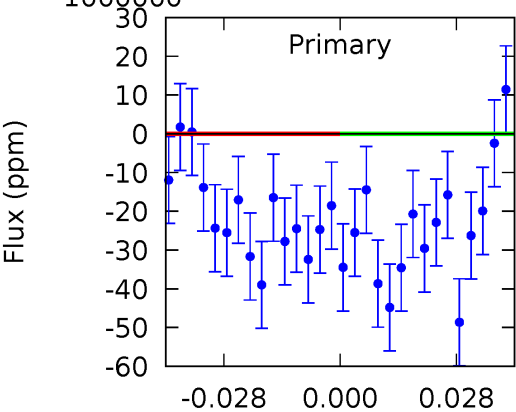
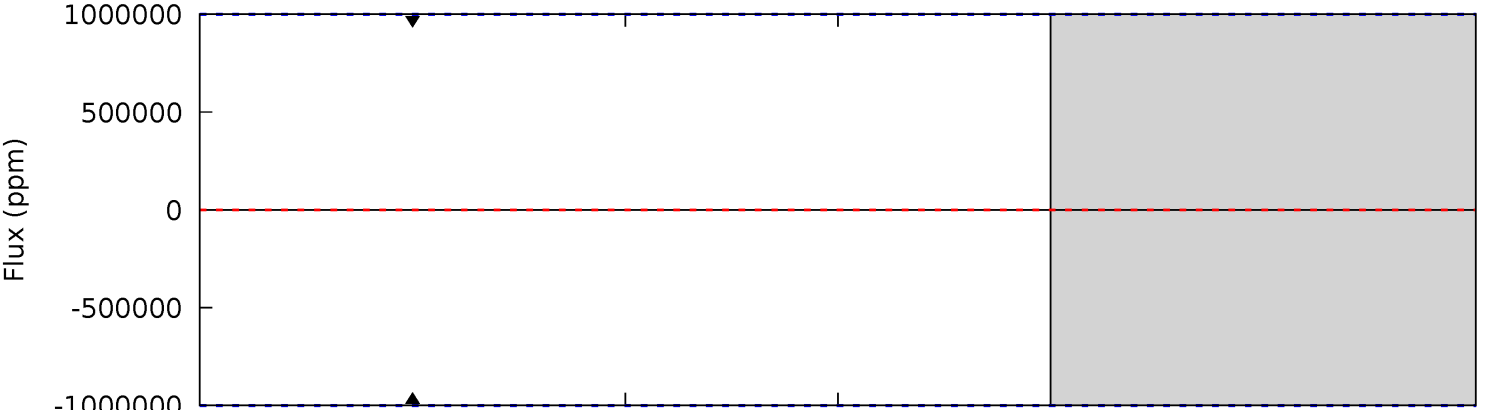
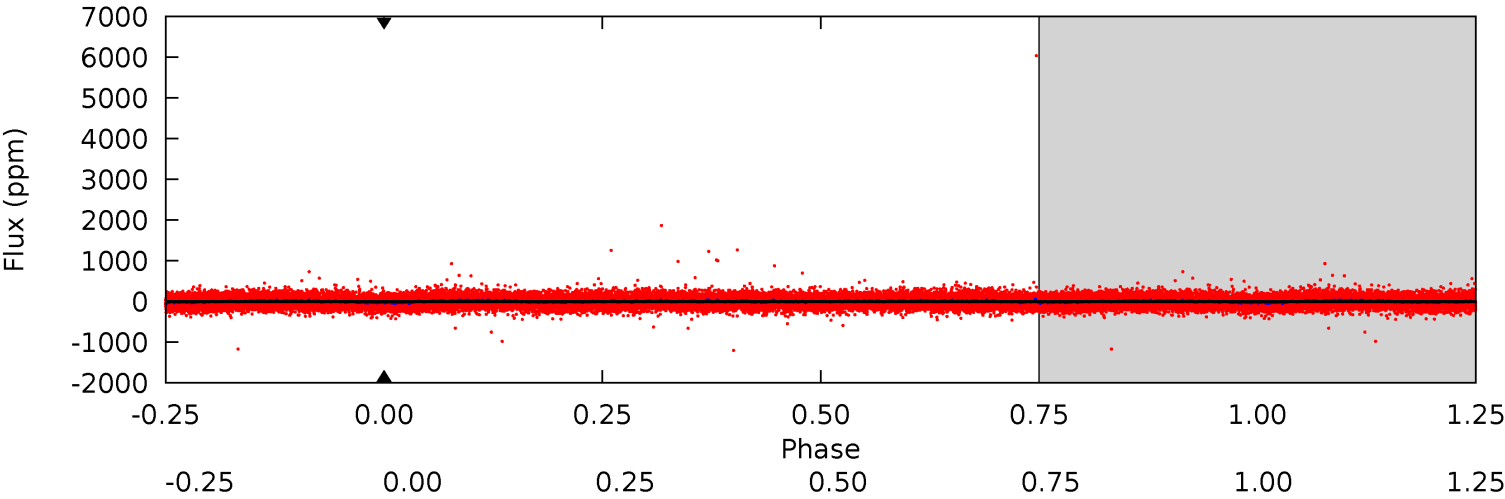
TCE 011395936-02   P= 1.487510 Days    $T_0=131.849038$  (BKJD)



# DV Model-Shift Uniqueness Test

011395936-02, P = 1.487510 Days, E = 130.544317 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
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0

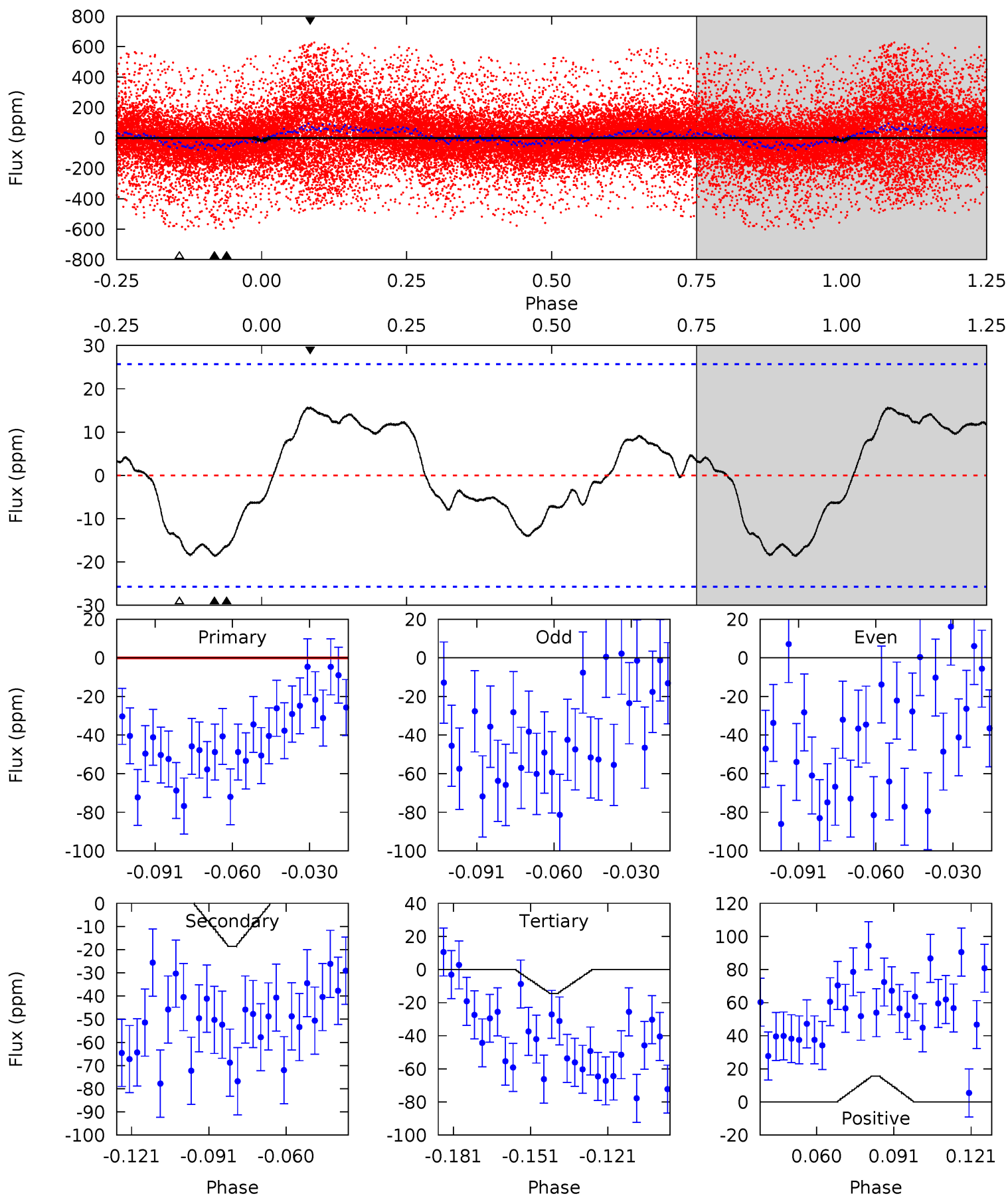




# Alt Model-Shift Uniqueness Test

011395936-02, P = 1.487510 Days, E = 130.361528 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
3.07	3.48	2.71	2.93	4.81	2.17	1.64	0.36	0.15	0.77	0.55	0.62	8.67	0.46	0





### Stellar Parameters For KIC 011395936

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7557^{+235}_{-314}$	$3.808^{+0.400}_{-0.094}$	$-0.260^{+0.250}_{-0.350}$	$2.645^{+0.467}_{-1.089}$	$1.638^{+0.182}_{-0.311}$	$0.125^{+0.396}_{-0.038}$
	+3%/-4%	+11%/-2%	+96%/-135%	+18%/-41%	+11%/-19%	+317%/-30%
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 011395936-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$18.09^{+21.55}_{-12.46}$	$4199^{+306}_{-442}$	$5669^{+37715}_{-40150}$	$2.577^{+289.455}_{-191.583}$
Alt.	$-19 \pm 5$	$17.99^{+20.83}_{-12.65}$	$4239^{+311}_{-477}$	$-3631^{+6196}_{-275}$	$0.026^{+0.294}_{-0.021}$

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

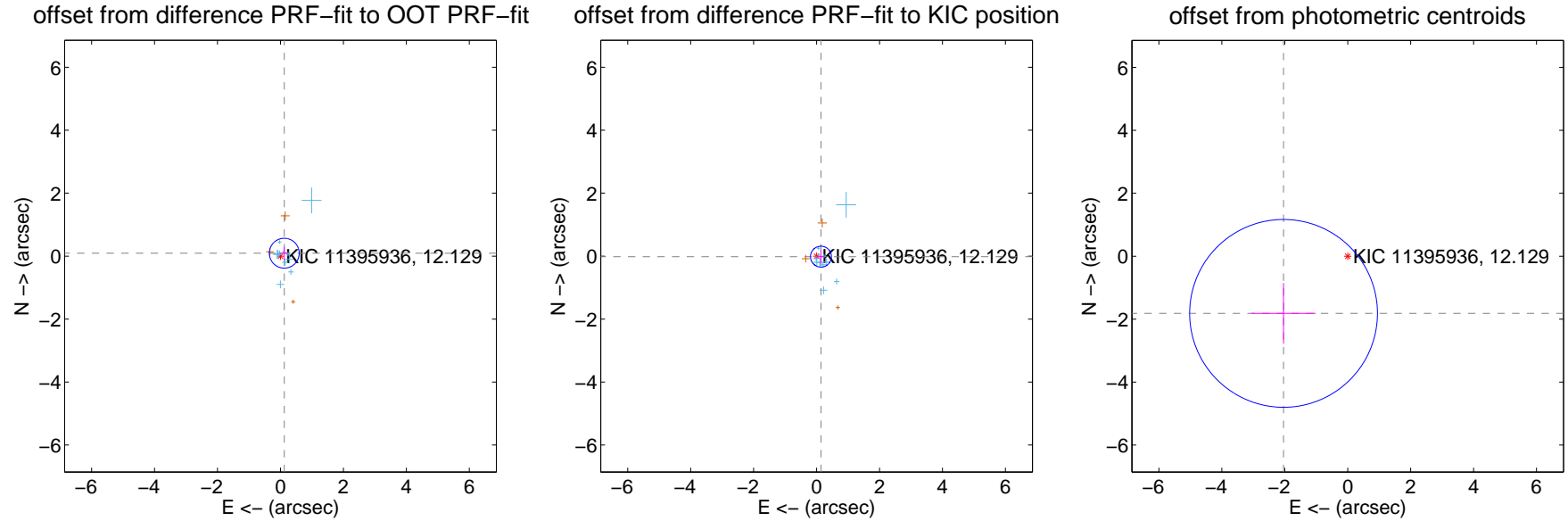
## DV Centroid Data

Supplemental centroid analysis for 011395936-02. Kepler magnitude: 12.13. Transit SNR -1.00

There are 11 quarters with good PRF difference image offsets

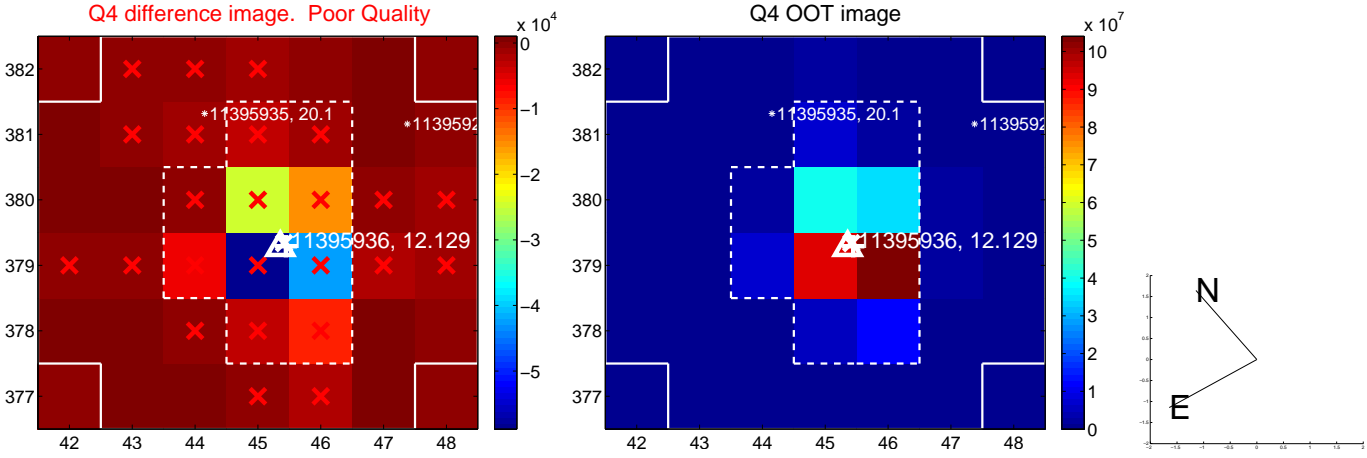
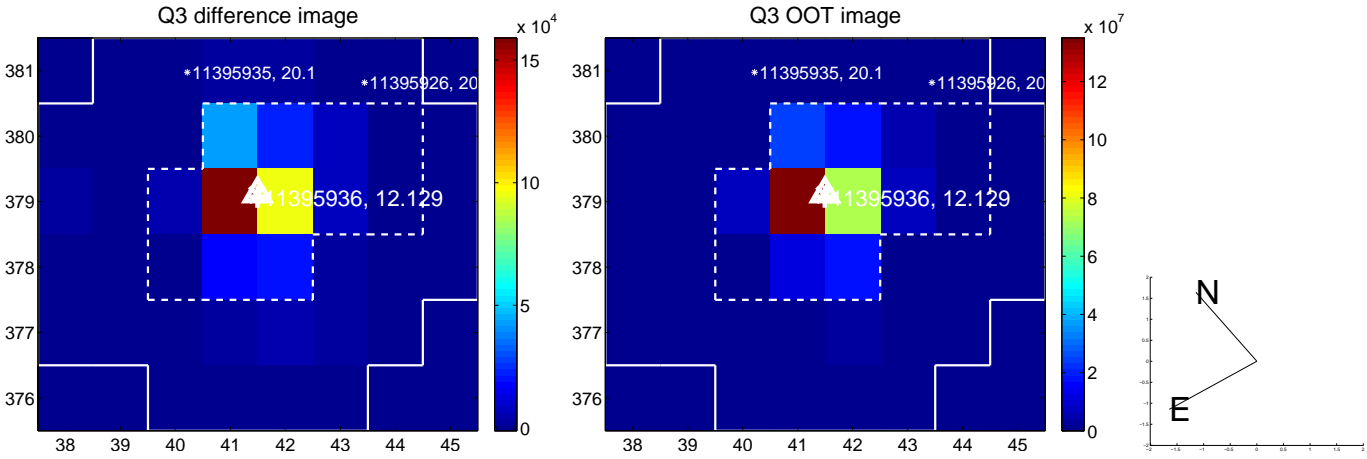
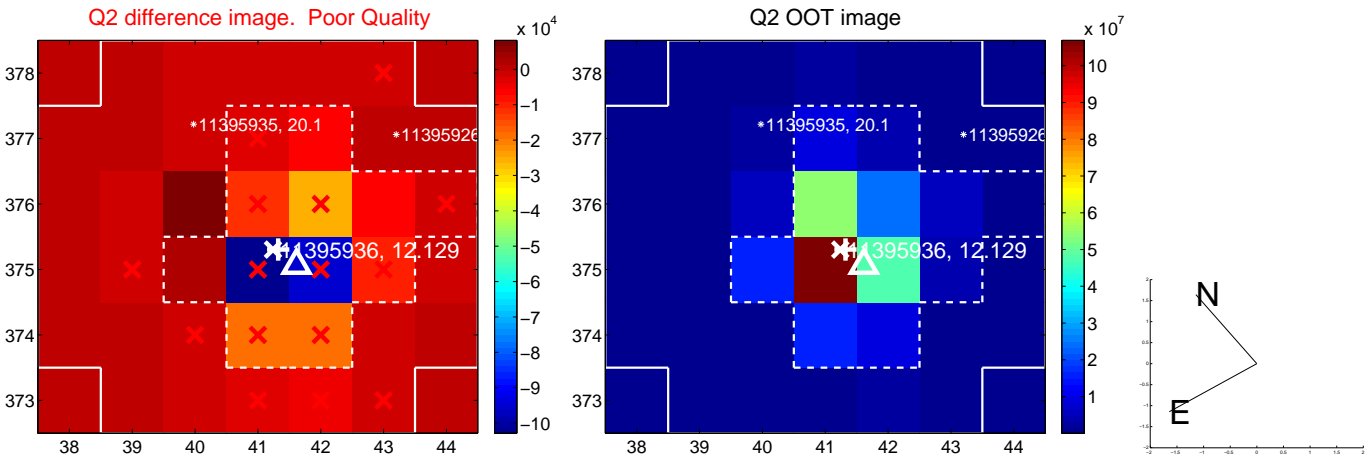
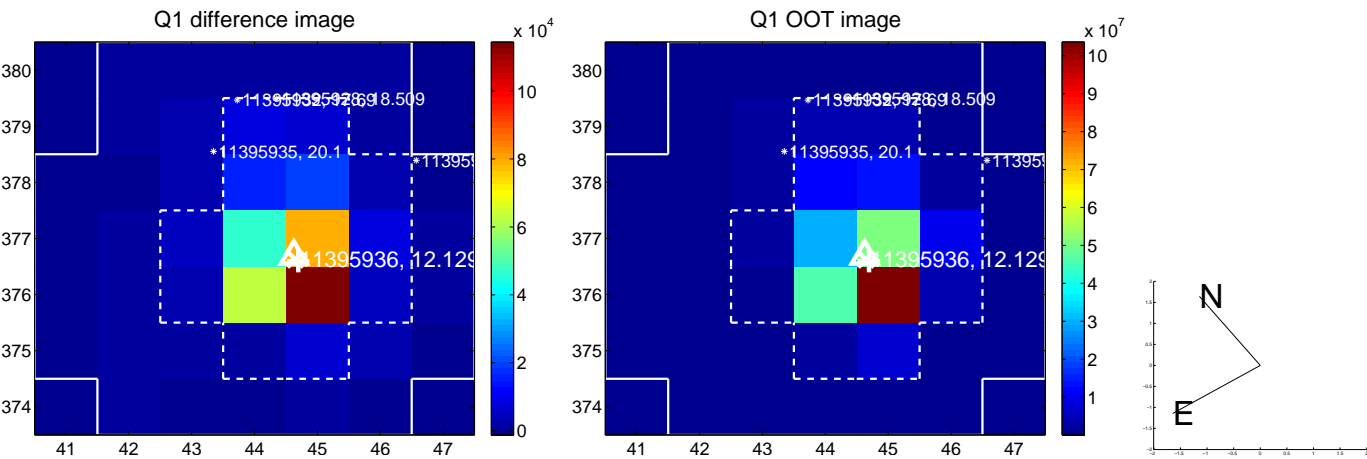
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.153 \pm 0.158$	0.96	$-0.121 \pm 0.102$	$0.093 \pm 0.205$
PRF-fit source offset from KIC position	$0.140 \pm 0.111$	1.27	$-0.139 \pm 0.111$	$-0.017 \pm 0.215$
photometric centroid source offset	$2.73 \pm 0.99$	2.75	$2.04 \pm 1.02$	$-1.82 \pm 0.97$

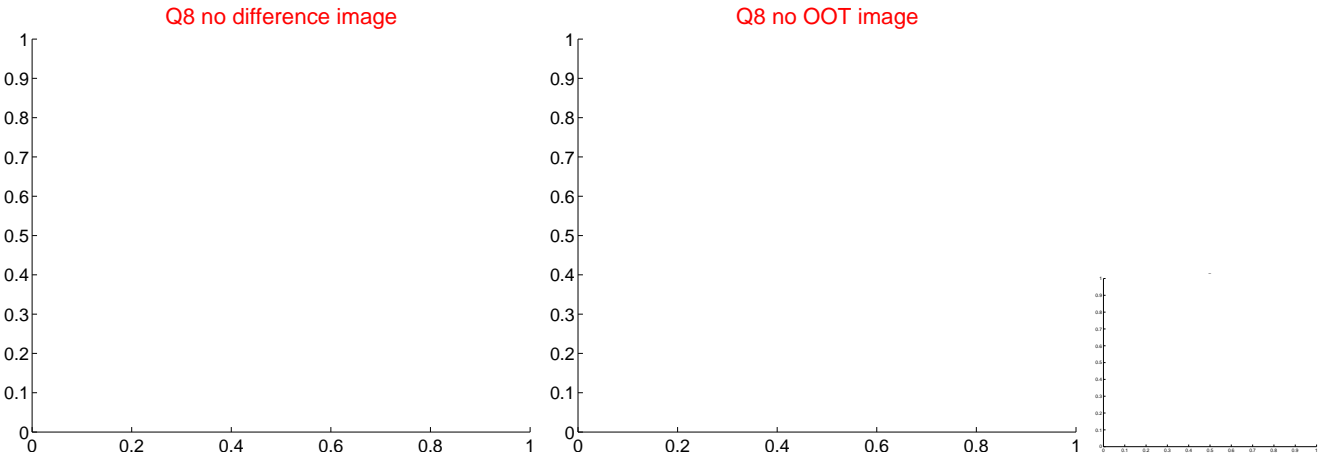
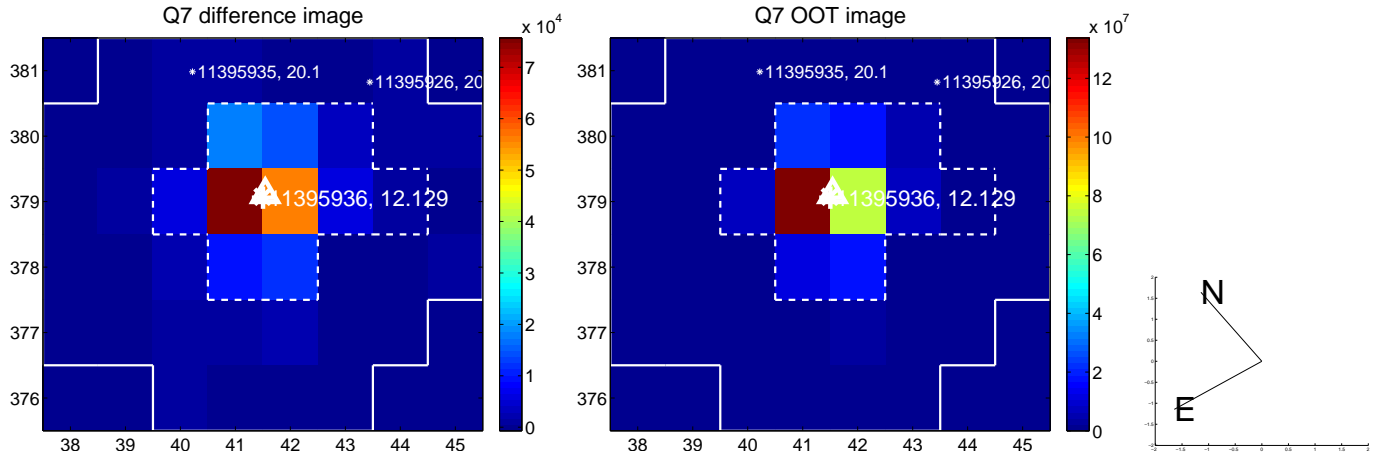
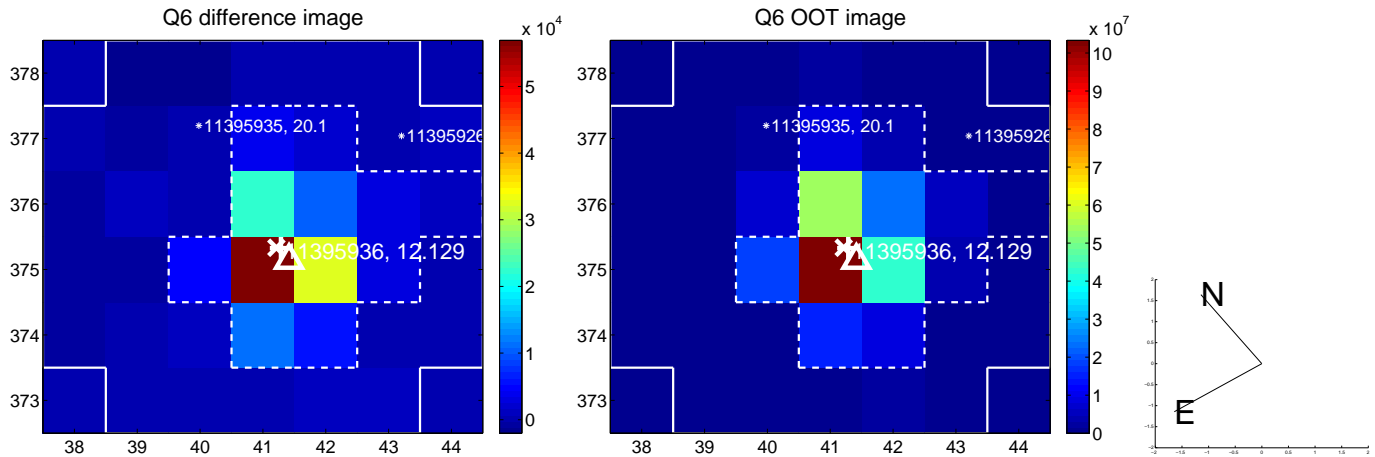
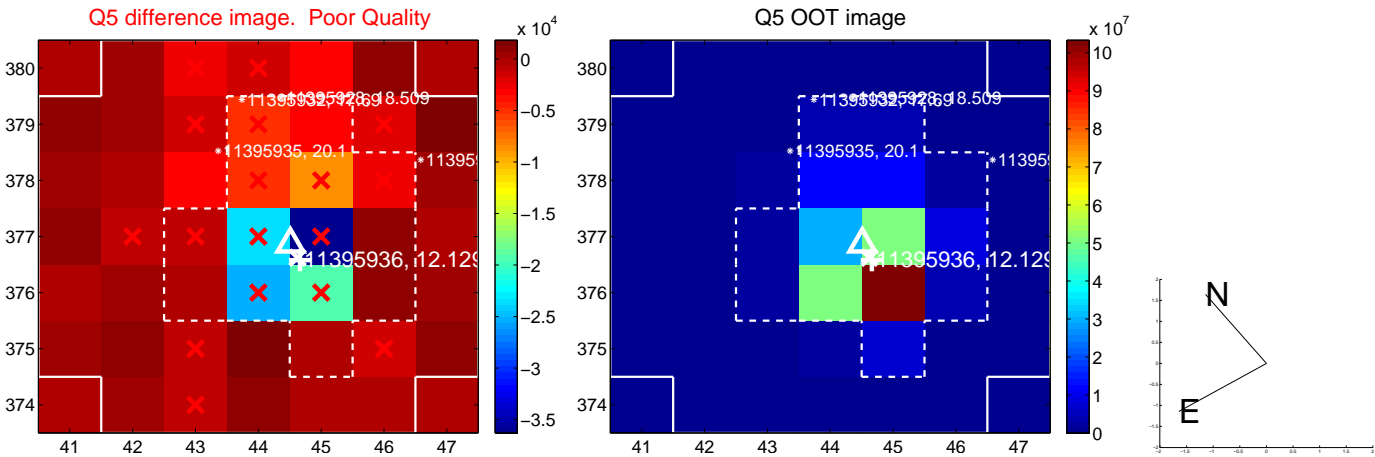


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

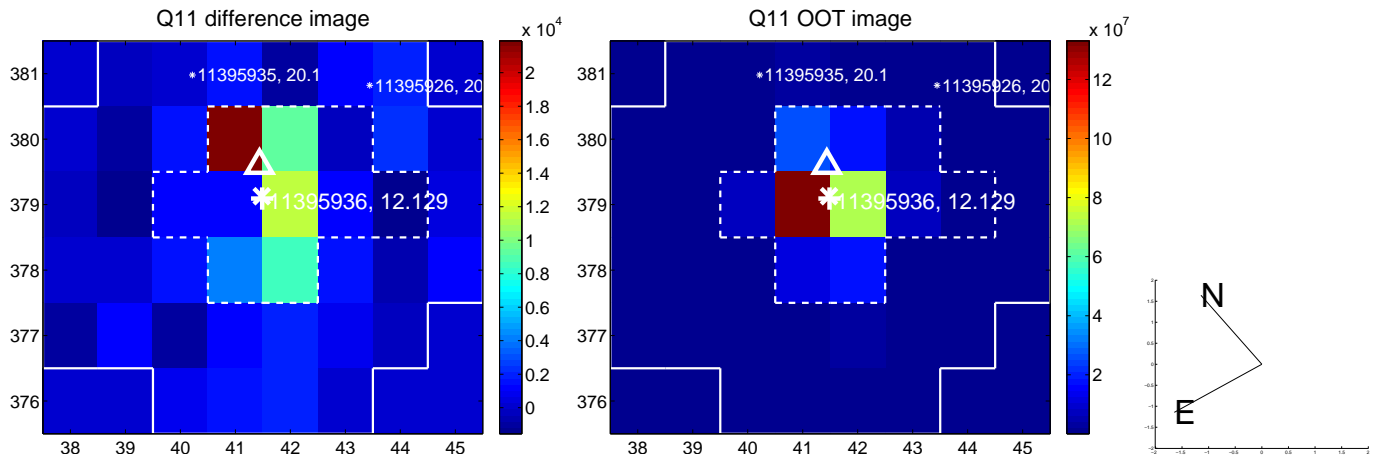
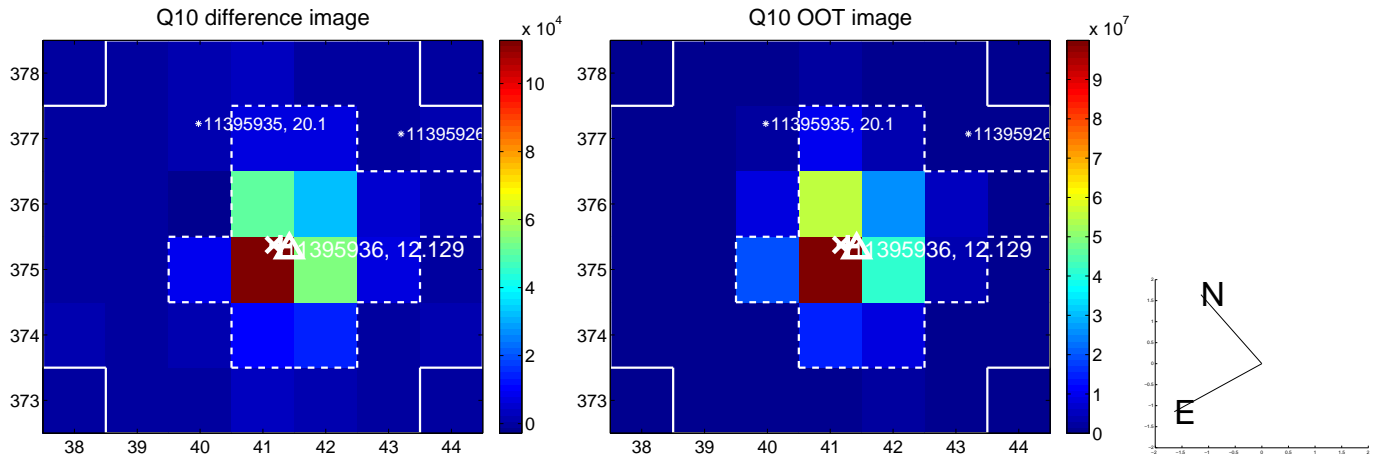
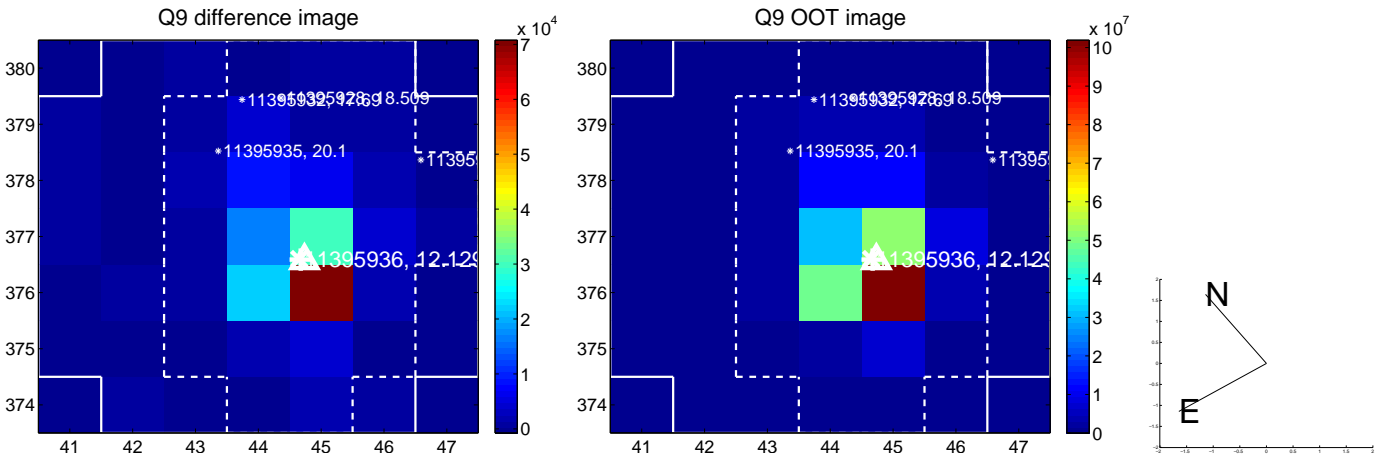
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

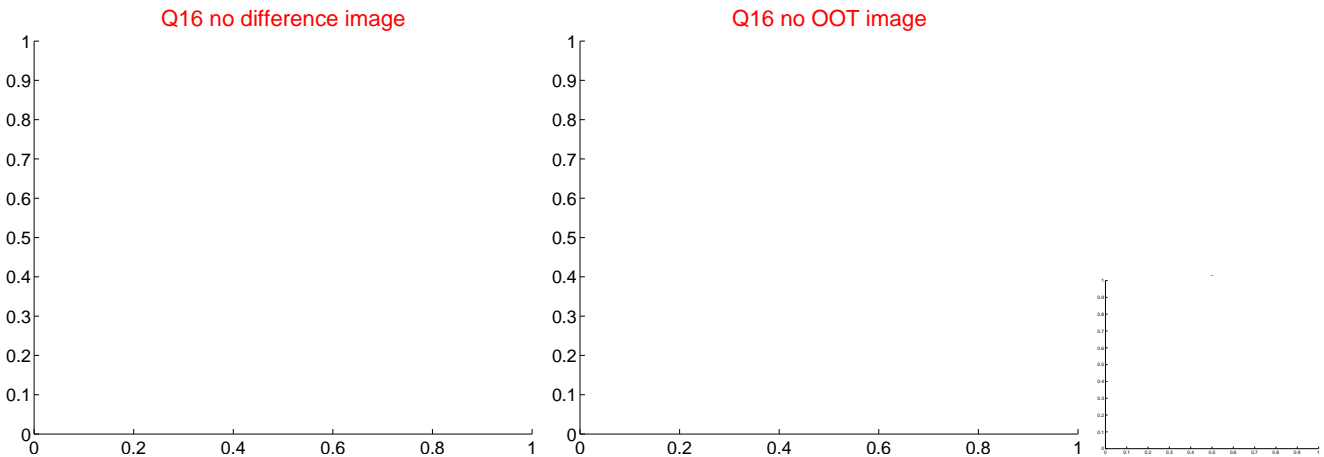
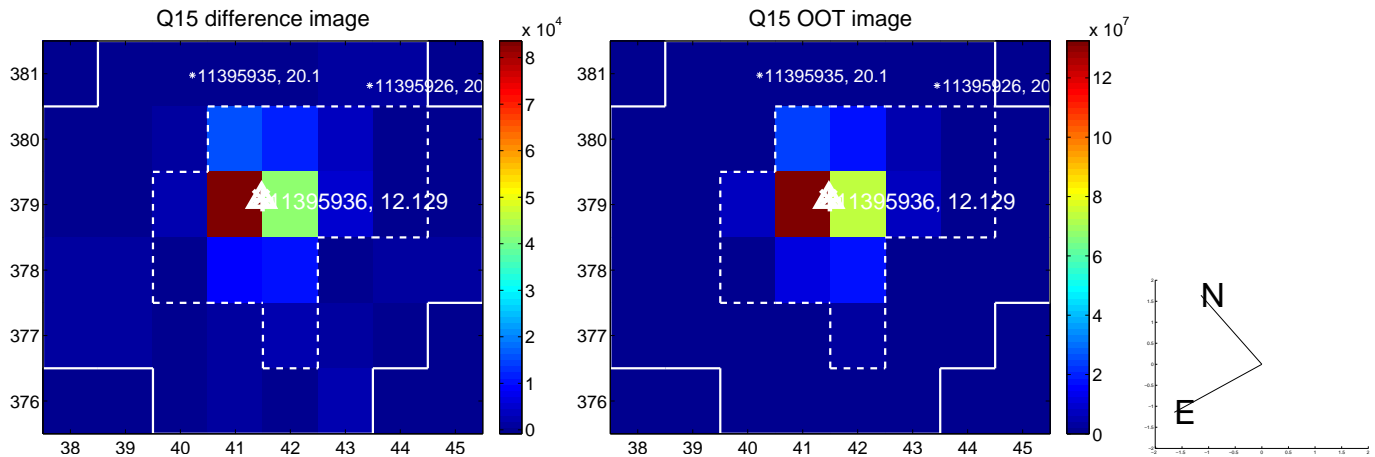
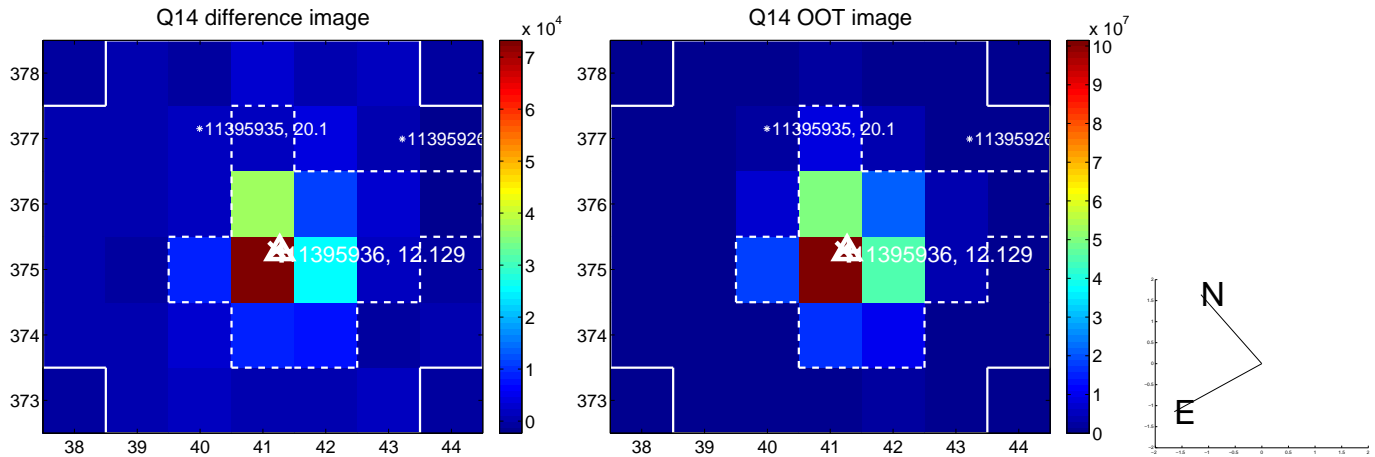
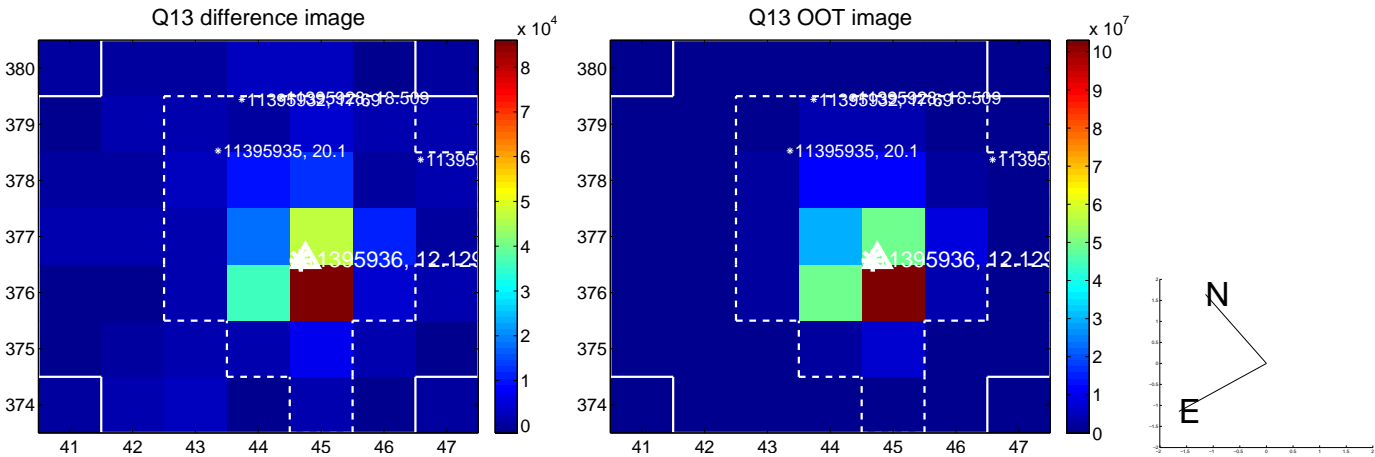


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

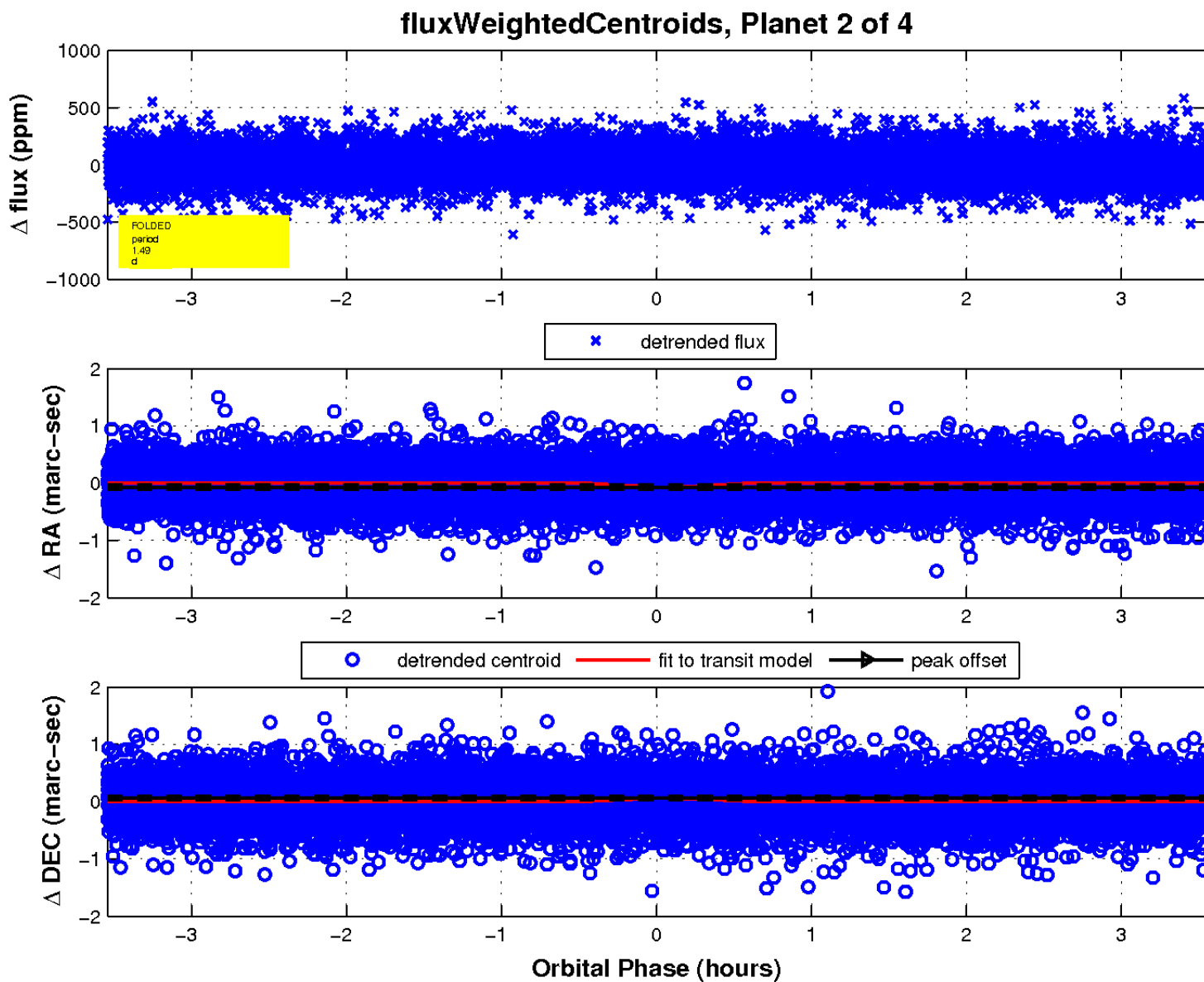
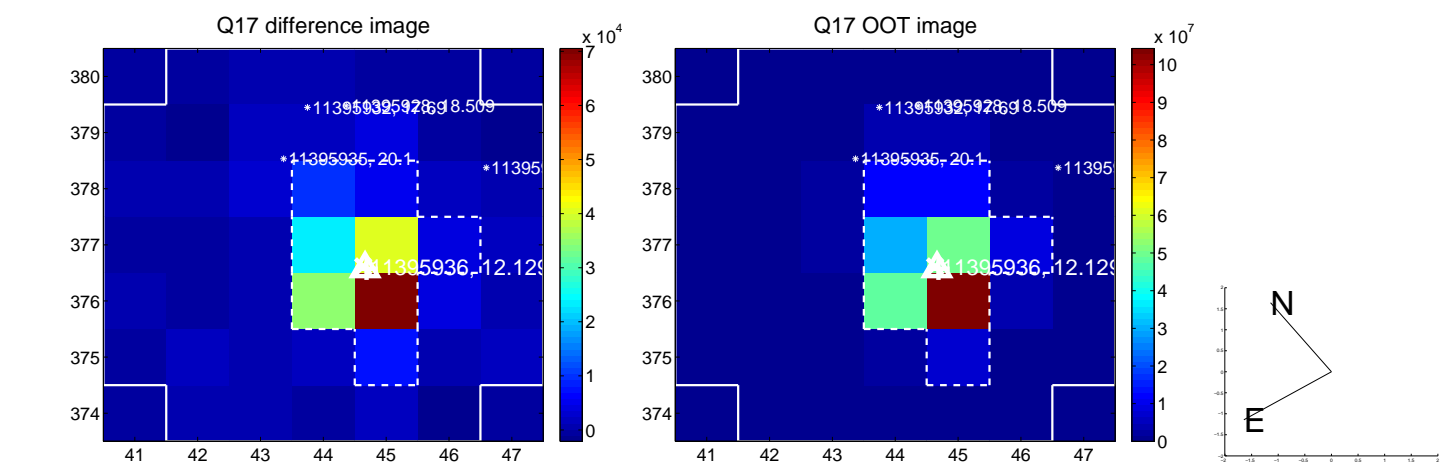




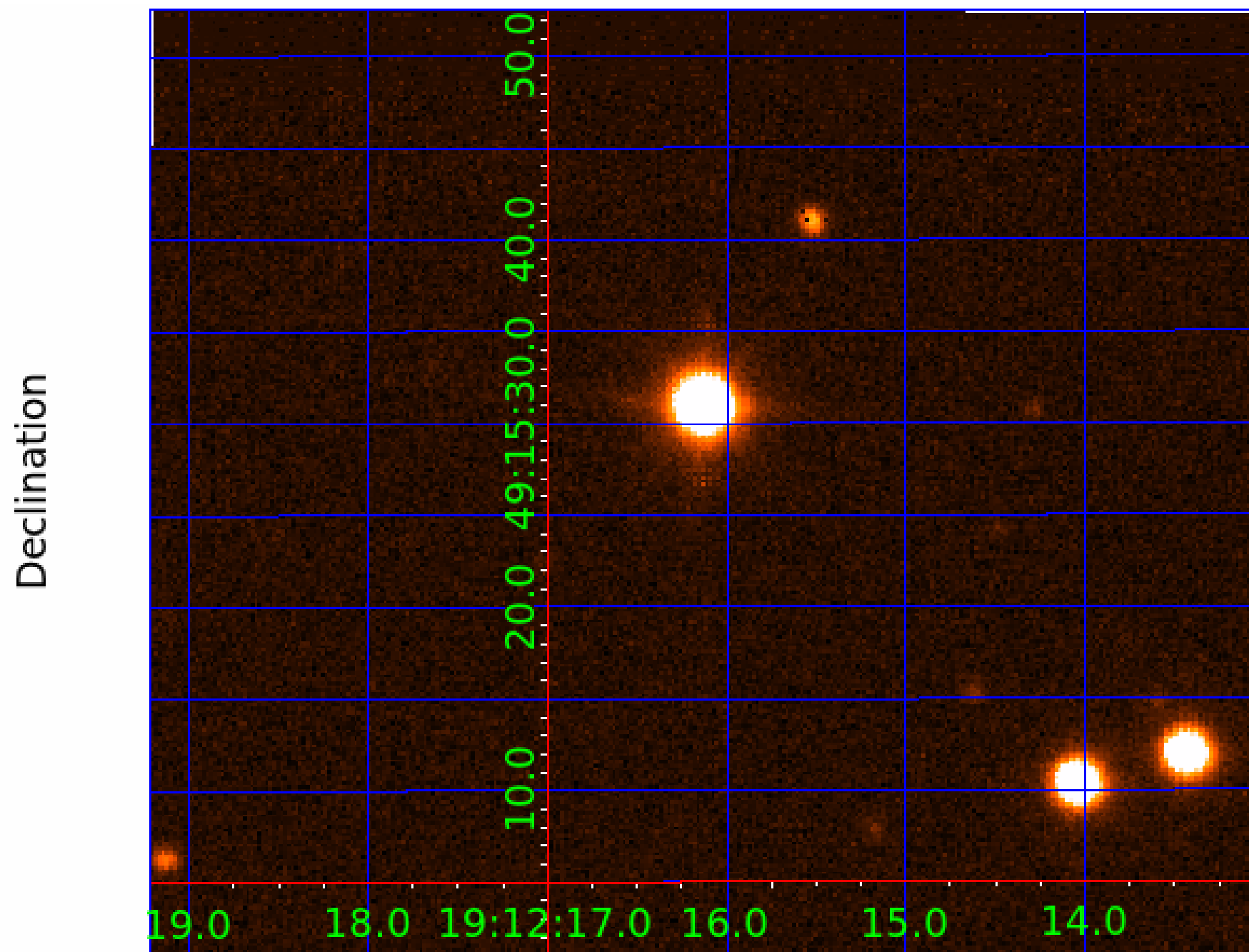
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image



# KIC 011395936

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011395936-01	OBS	No	1.455642	132.836869	26.4	4.582	9.7	7.7	2.65	7557	1.87	23254.28
011395936-02	OBS	No	1.487510	132.031827	120.2	2.500	7.9	-1.0	2.65	7557	2.91	22592.42
011395936-03	OBS	No	1.455685	131.732027	87.3	3.000	8.8	-1.0	2.65	7557	2.48	23253.37
011395936-04	OBS	No	21.470341	132.124001	130.7	3.500	8.0	-1.0	2.65	7557	3.03	642.87

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011395936-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
011395936-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
011395936-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
011395936-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

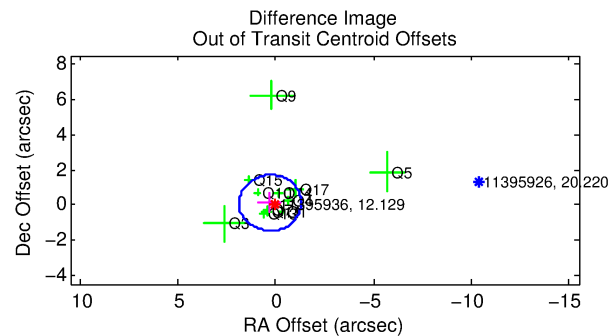
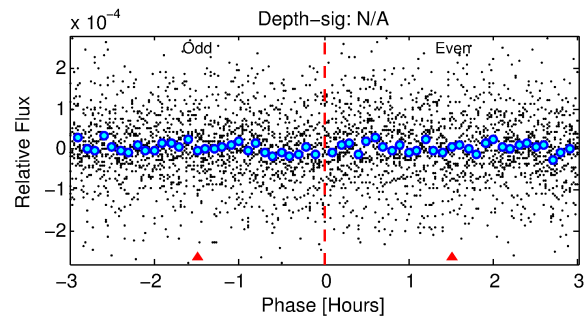
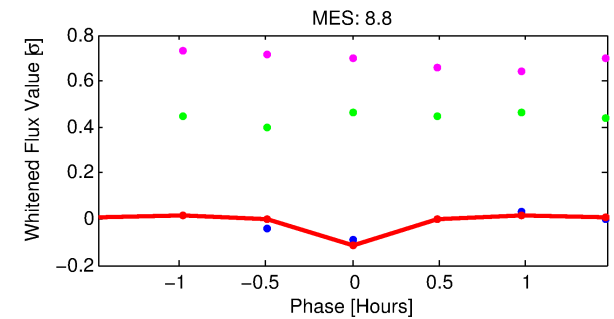
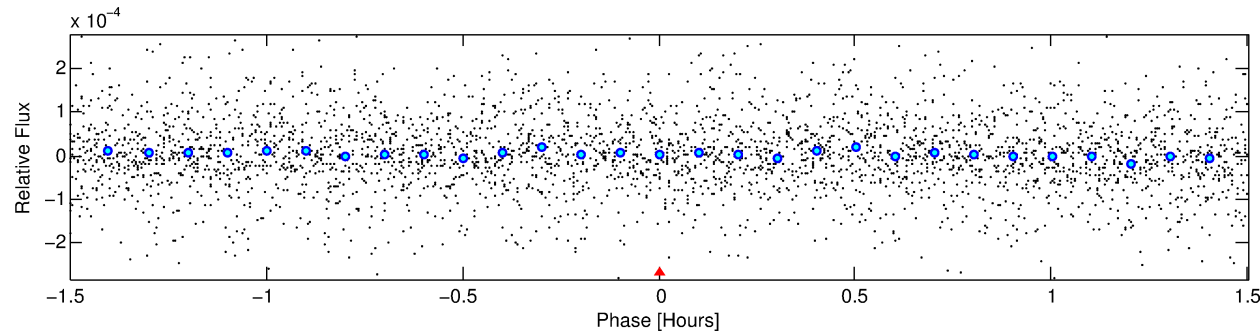
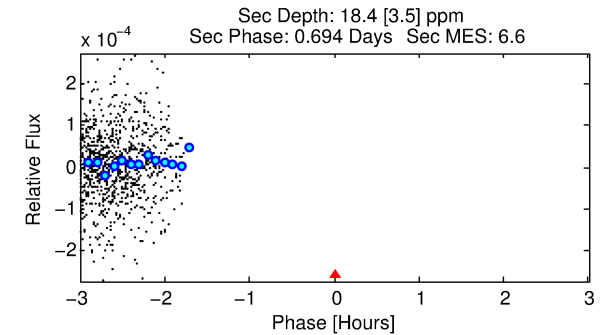
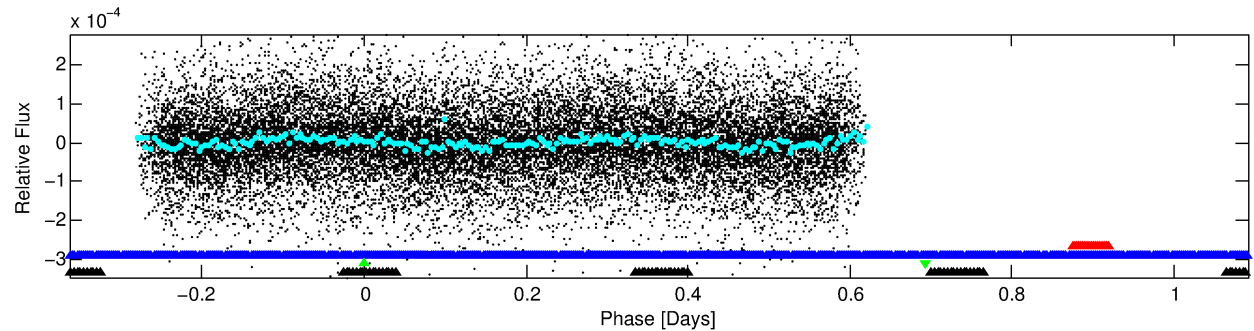
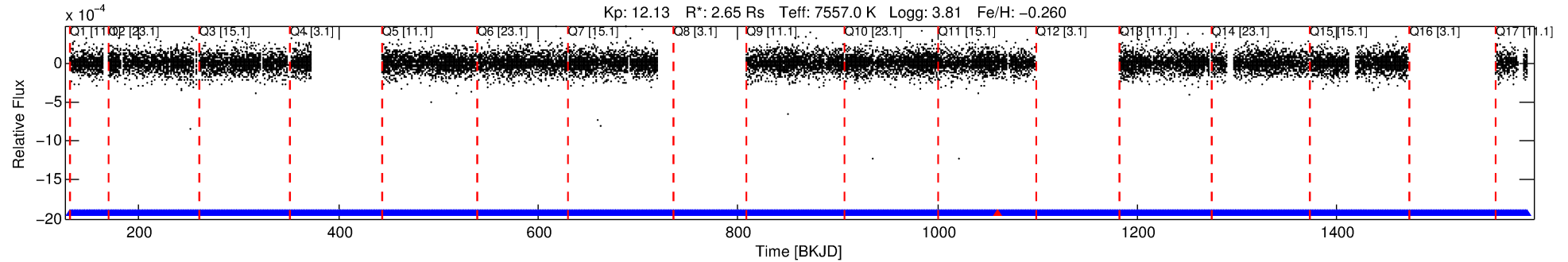
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 011395936-03

No Significant Match Found

# DV One-Page Summary

KIC: 11395936 Candidate: 3 of 4 Period: 1.456 d



## TPS TCE Results:

Period = 1.45568 d  
Epoch = 131.7320 BKJD

DV fit results are unavailable

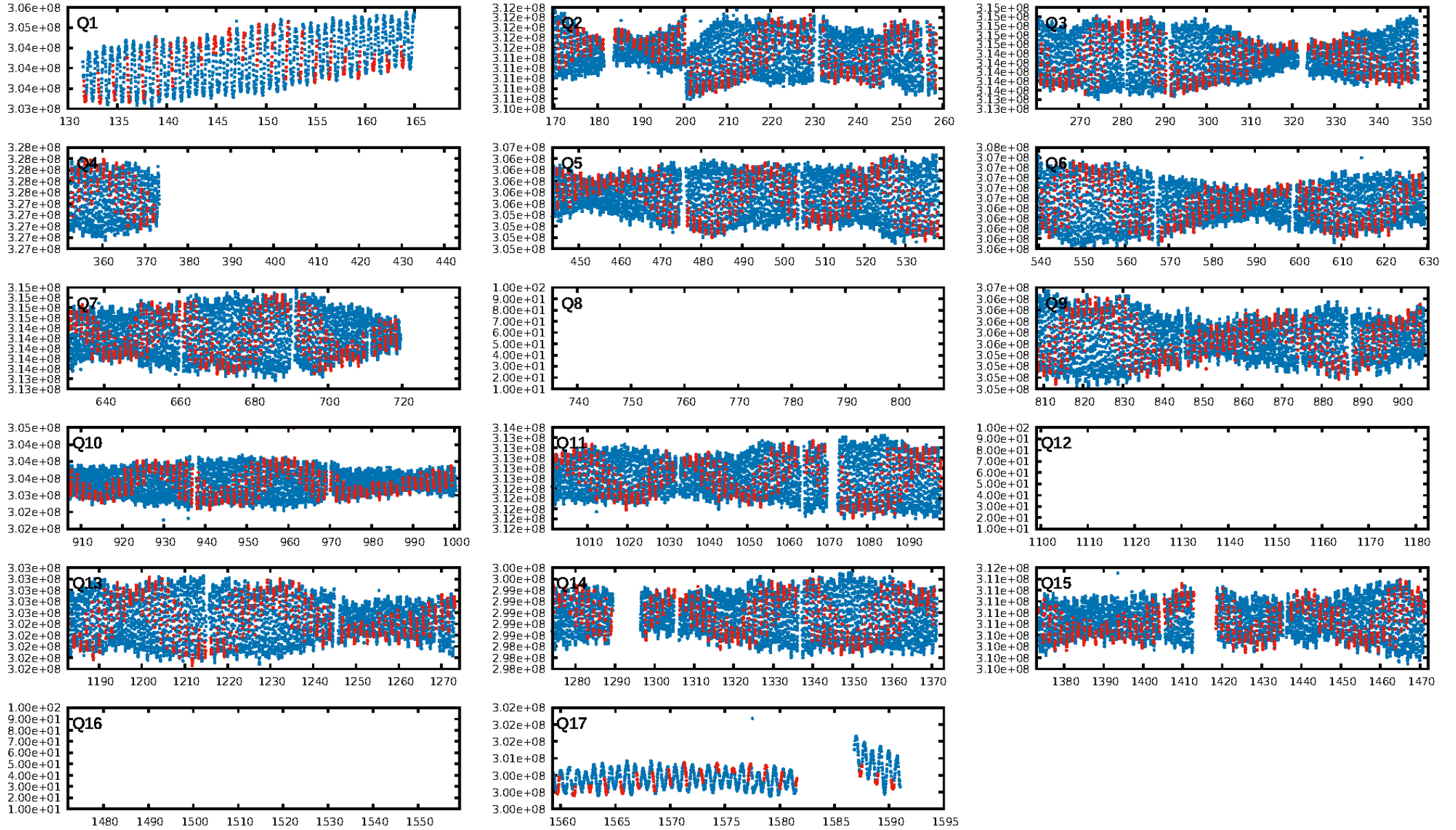
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 15.5% [0.20σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 5.36e-17  
RollingBand-fgt: 1.00 [549/550]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.312 arcsec [0.59σ]  
KicOffset-rm: 0.216 arcsec [0.37σ]  
OotOffset-st: 2/4/1/5 [12]  
KicOffset-st: 2/4/1/5 [12]  
DiffImageQuality-fgm: 0.08 [1/12]  
DiffImageOverlap-fno: 1.00 [14/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:03:37 Z

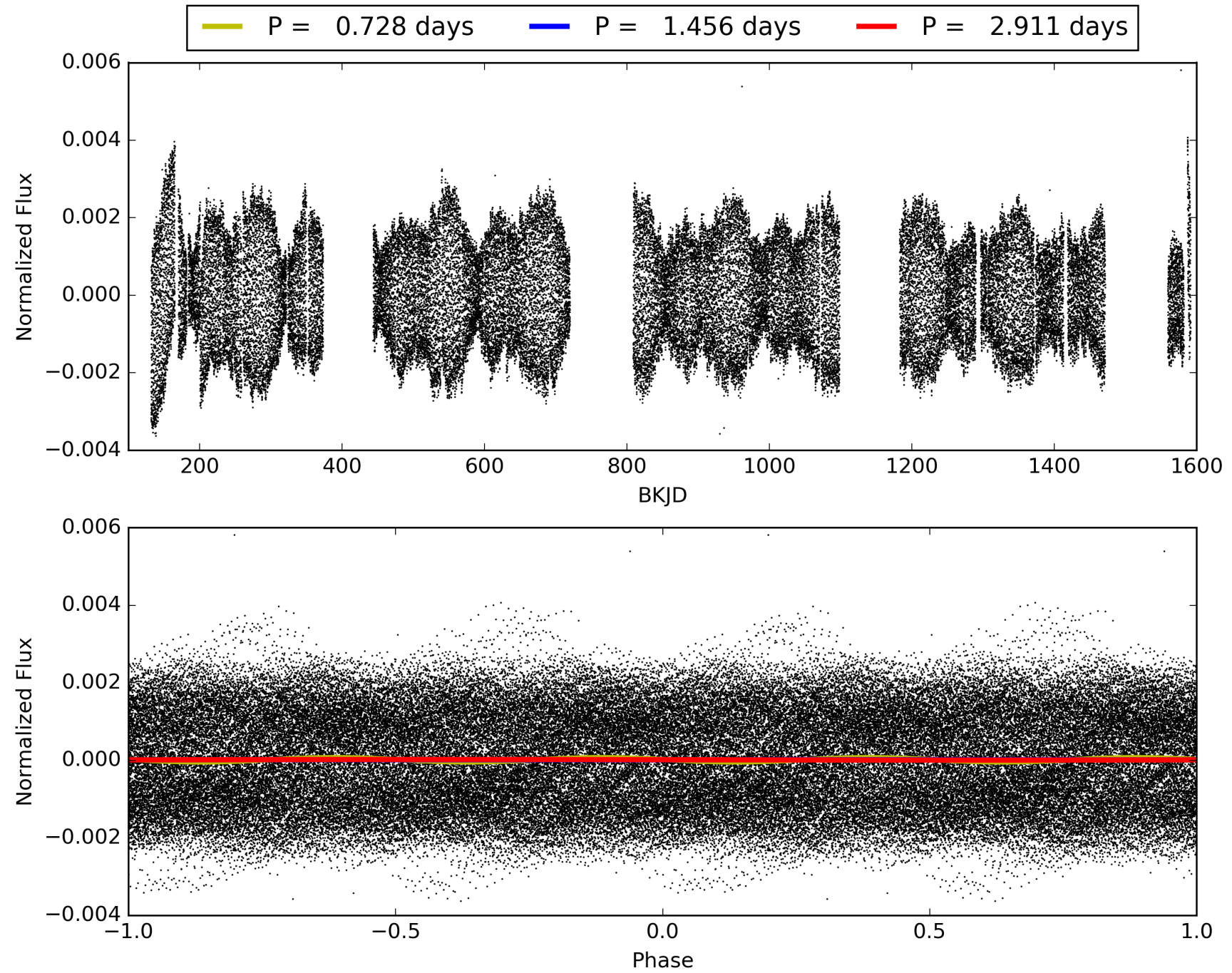
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011395936-03, PDC Light Curves



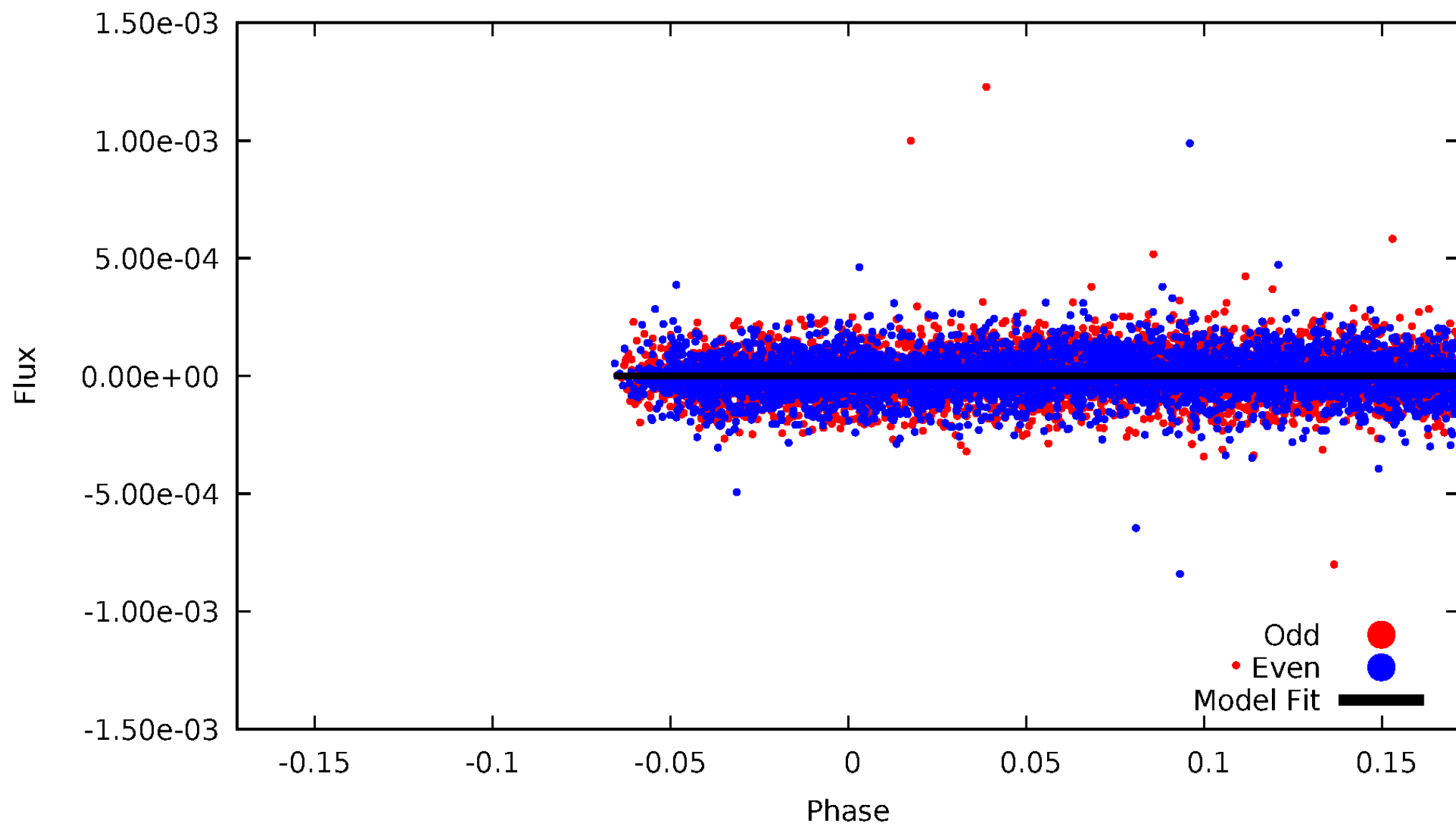


TCE 011395936-03



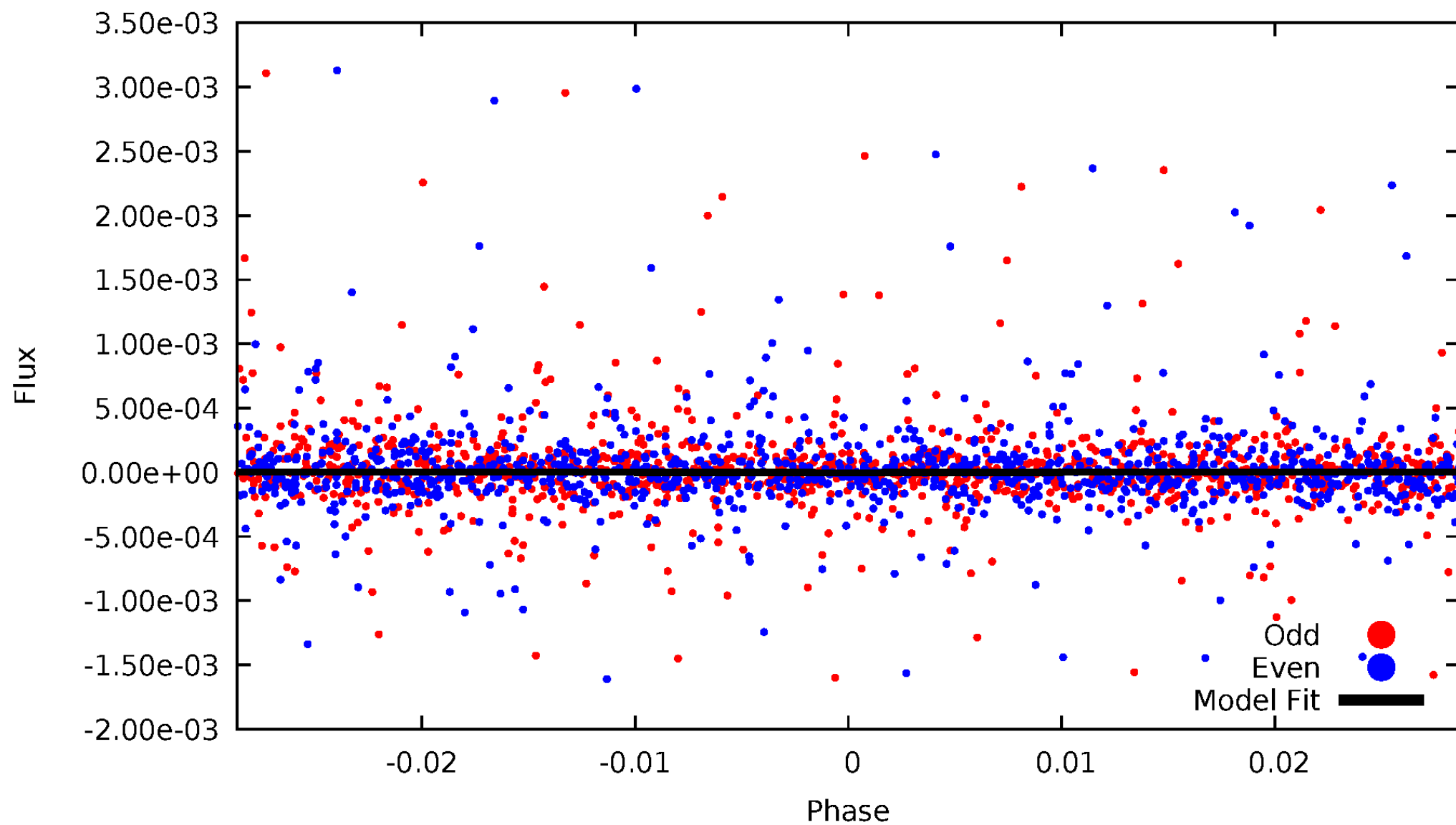
# DV Odd/Even

TCE 011395936-03

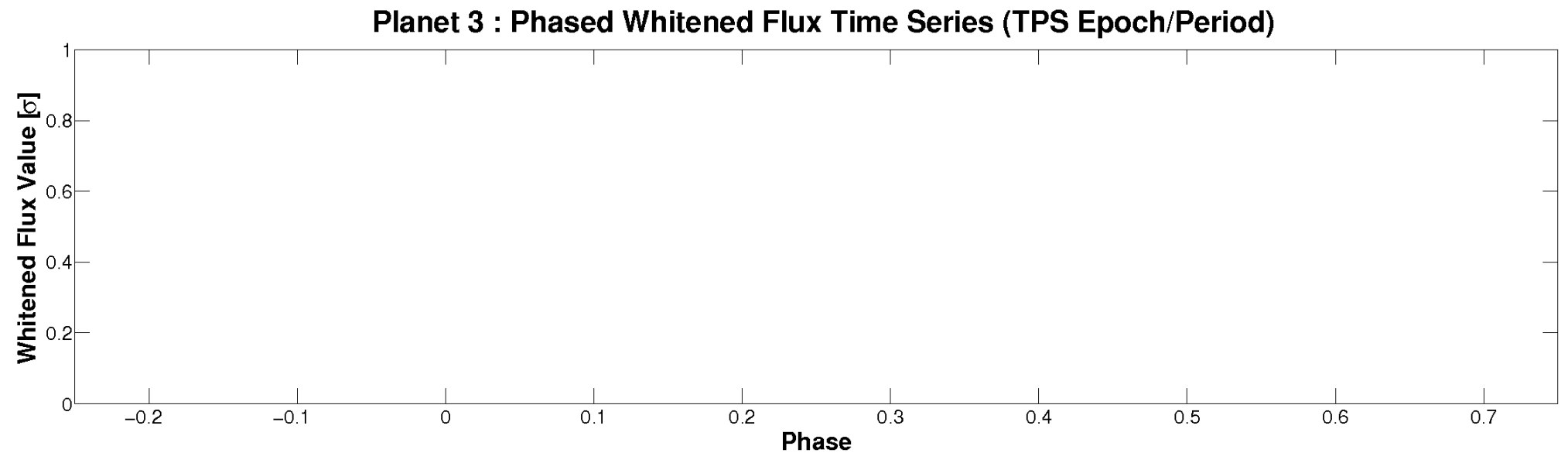
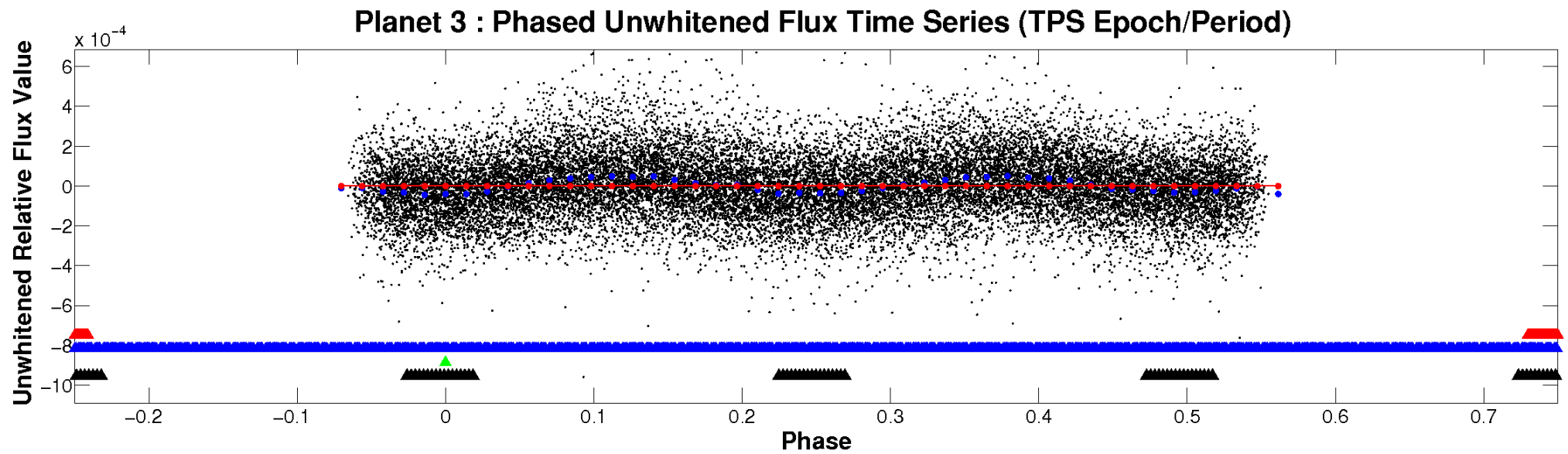


# ALT Odd/Even

TCE 011395936-03

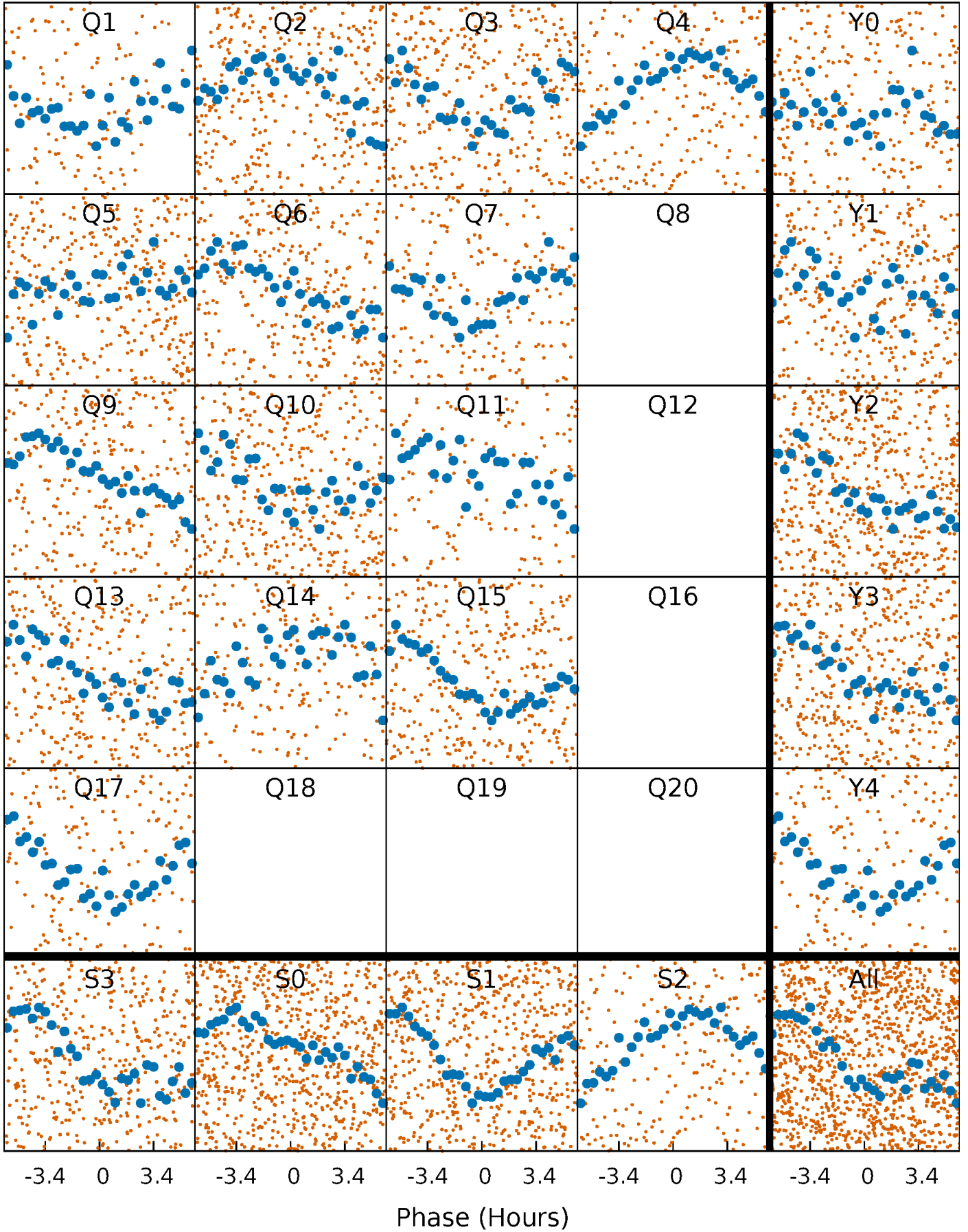


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

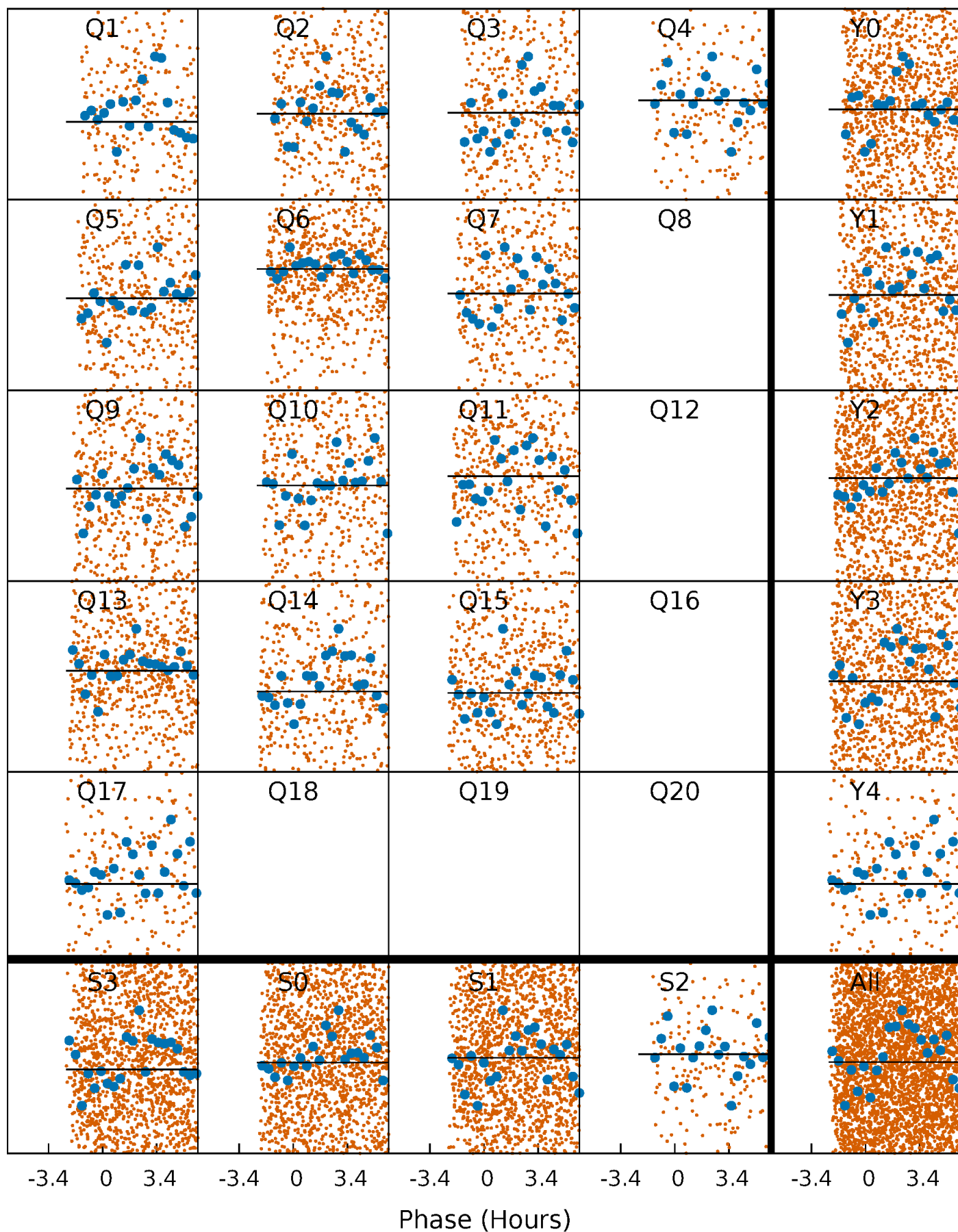
TCE 011395936-03   P= 1.455685 Days    $T_0=131.732027$  (BKJD)





# DV Quarter-Phased Transit Curves

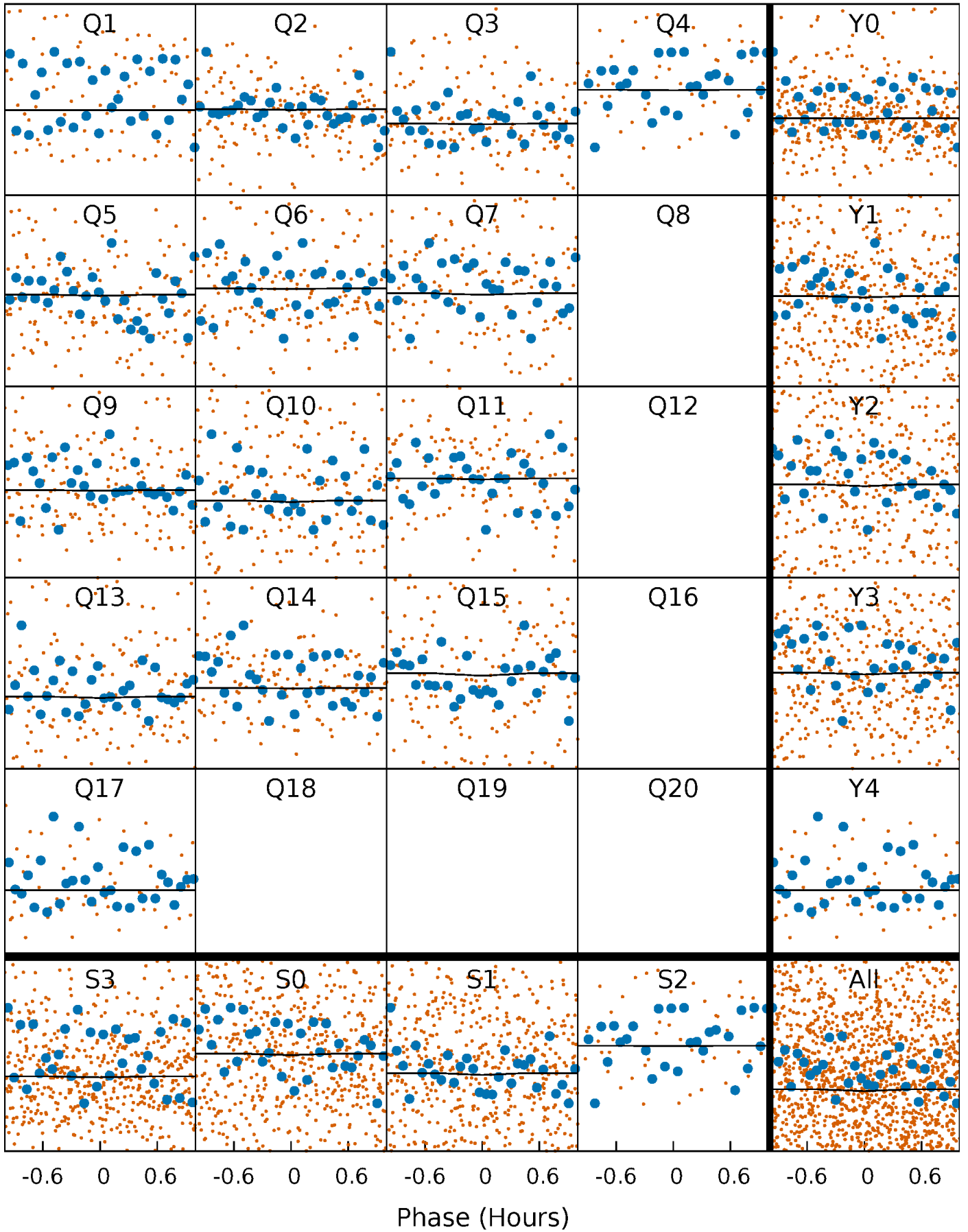
TCE 011395936-03   P= 1.455685 Days    $T_0=131.732027$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

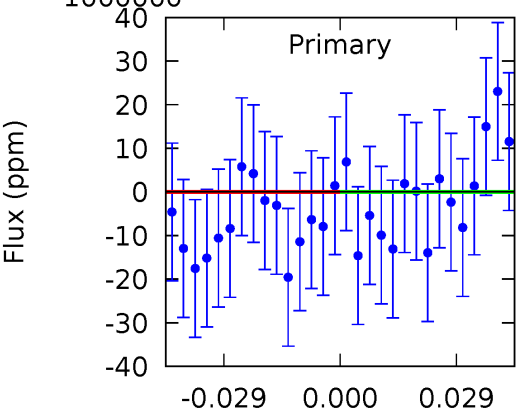
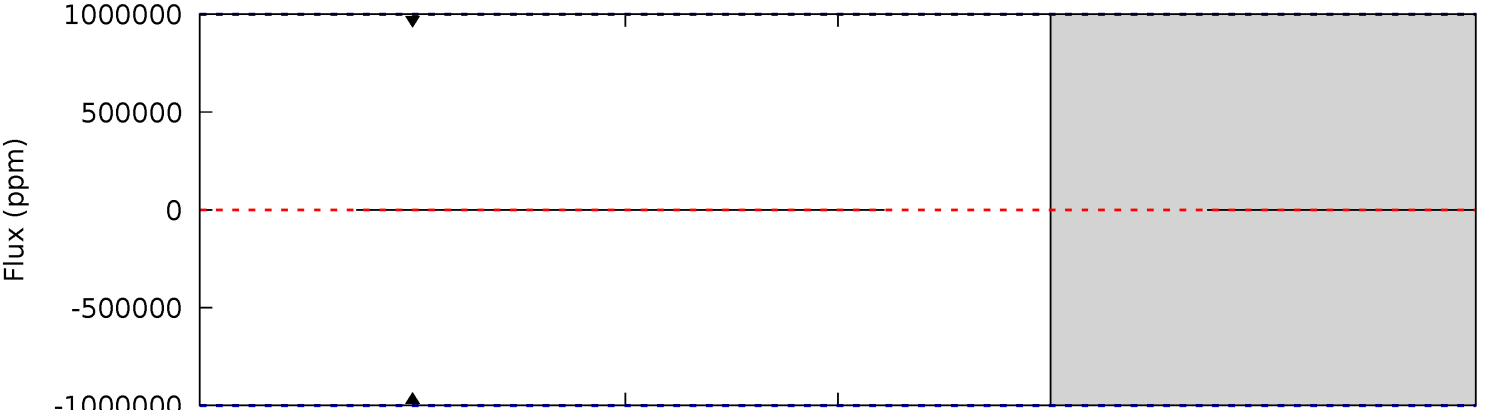
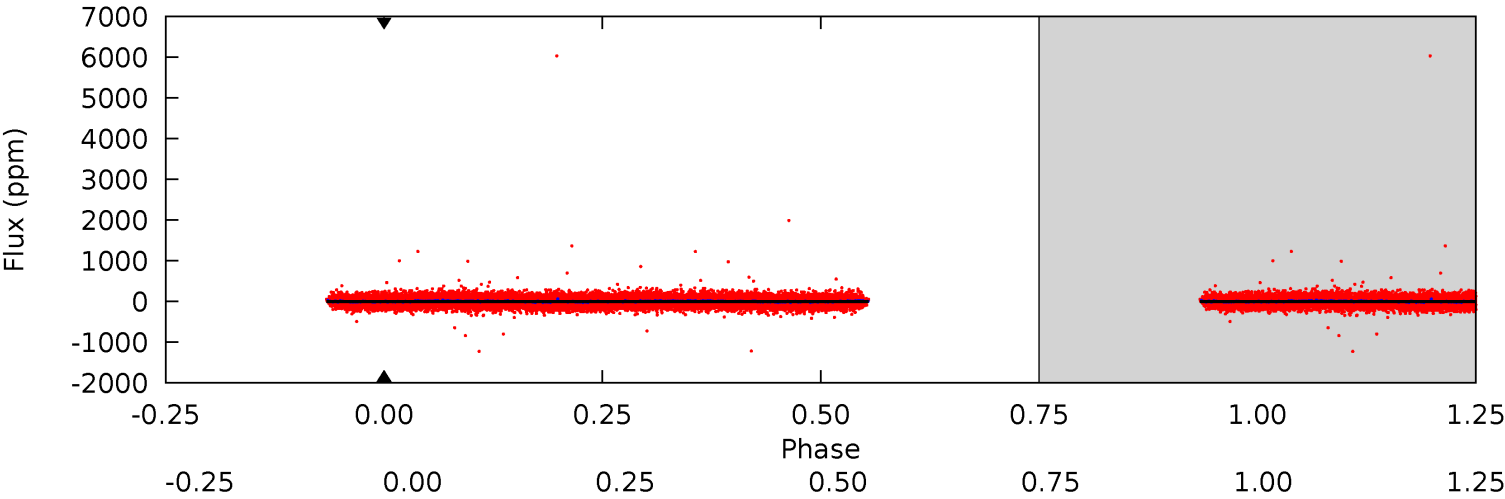
TCE 011395936-03 P= 1.455685 Days  $T_0=131.917993$  (BKJD)



# DV Model-Shift Uniqueness Test

011395936-03, P = 1.455685 Days, E = 130.276342 Days

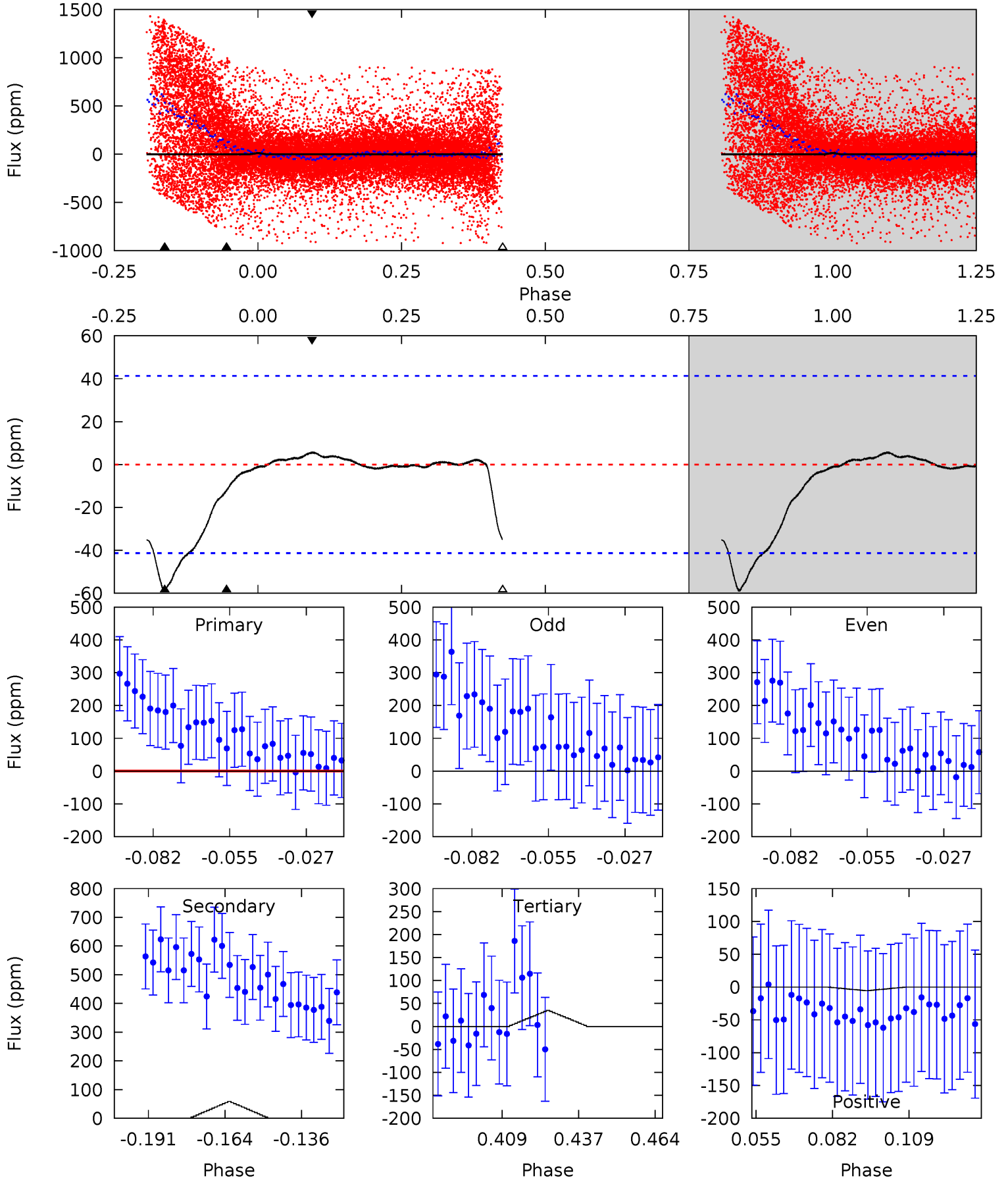
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

011395936-03, P = 1.455685 Days, E = 130.462308 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
1.42	6.87	4.08	0.65	4.83	2.21	1.33	-2.66	0.77	2.79	6.22	0.13	16.4	0.09	1.15



### Stellar Parameters For KIC 011395936

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7557^{+235}_{-314}$	$3.808^{+0.400}_{-0.094}$	$-0.260^{+0.250}_{-0.350}$	$2.645^{+0.467}_{-1.089}$	$1.638^{+0.182}_{-0.311}$	$0.125^{+0.396}_{-0.038}$
	+3%/-4%	+11%/-2%	+96%/-135%	+18%/-41%	+11%/-19%	+317%/-30%
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 011395936-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$18.39^{+19.45}_{-12.65}$	$4260^{+309}_{-490}$	$-4962^{+55538}_{-34471}$	$-1.174^{+341.069}_{-204.618}$
Alt.	$-59 \pm 9$	$17.04^{+21.57}_{-12.21}$	$4285^{+305}_{-418}$	$-3478^{+7875}_{-379}$	$0.102^{+1.102}_{-0.083}$

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

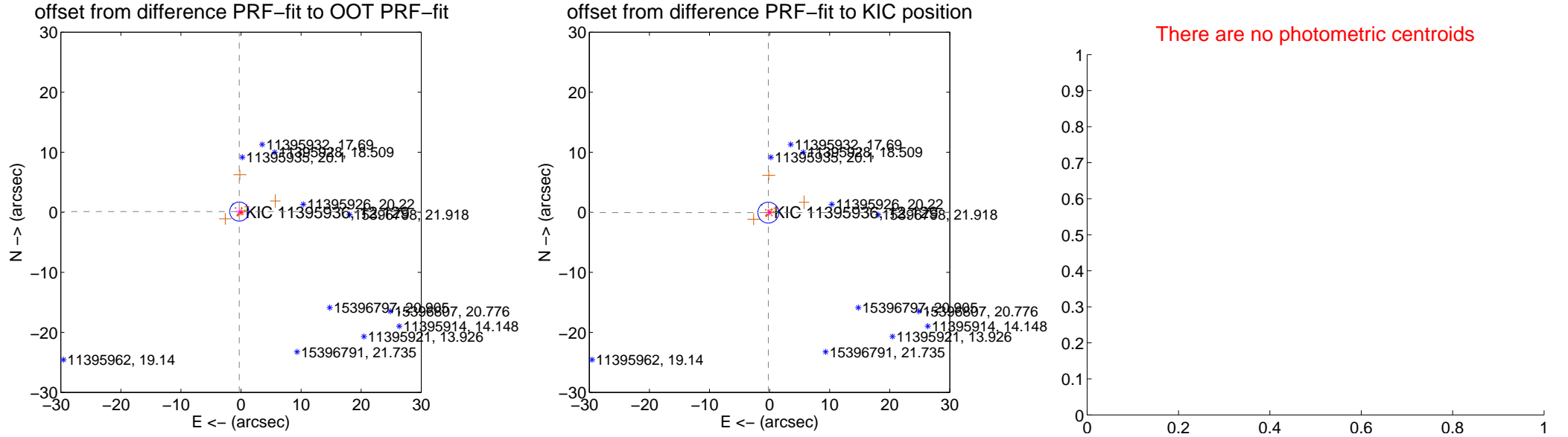
## DV Centroid Data

Supplemental centroid analysis for 011395936-03. Kepler magnitude: 12.13. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

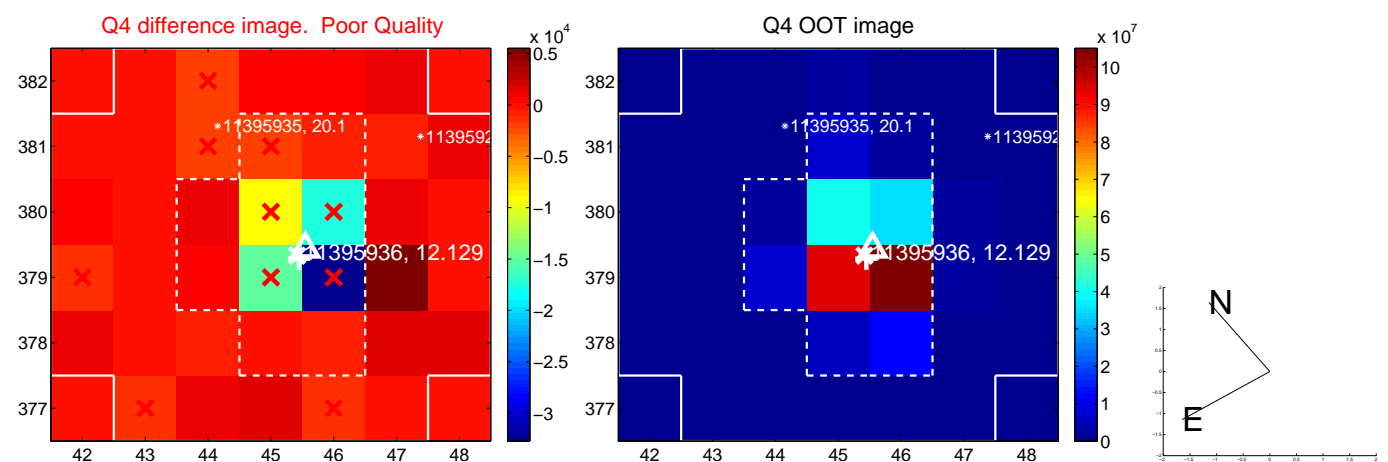
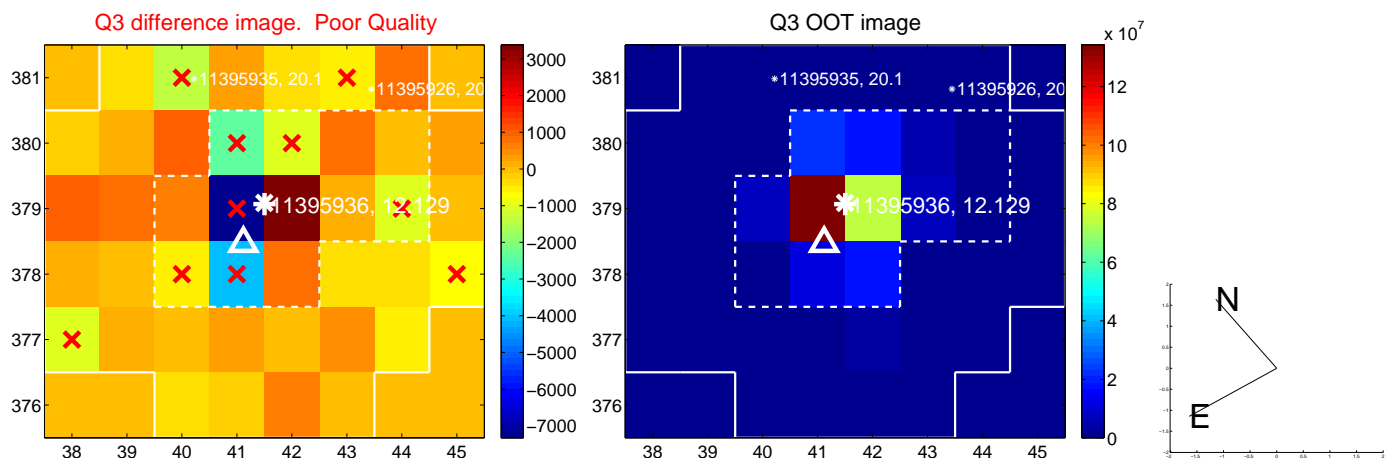
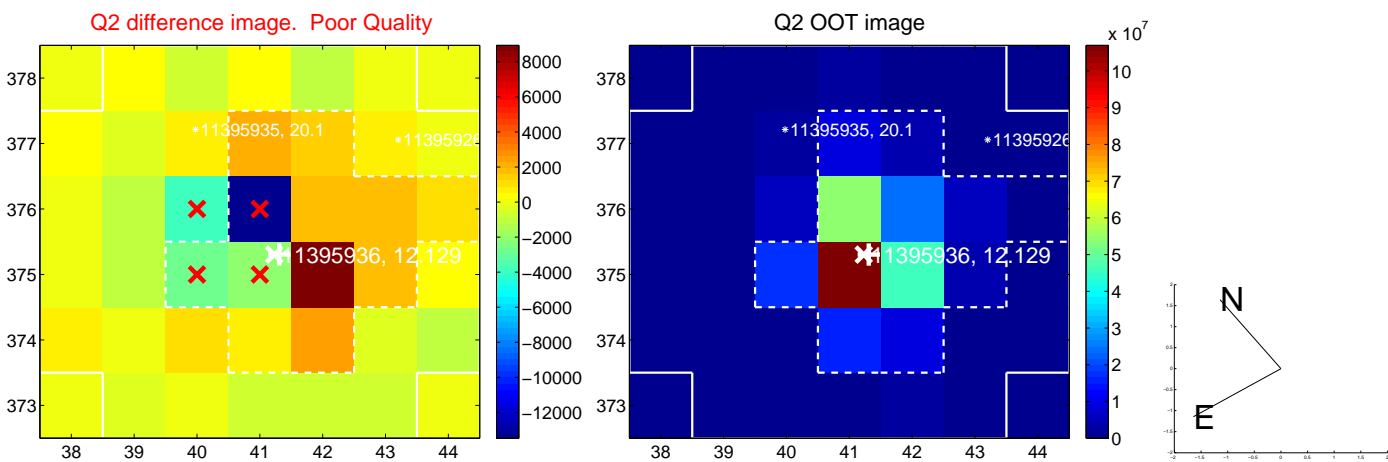
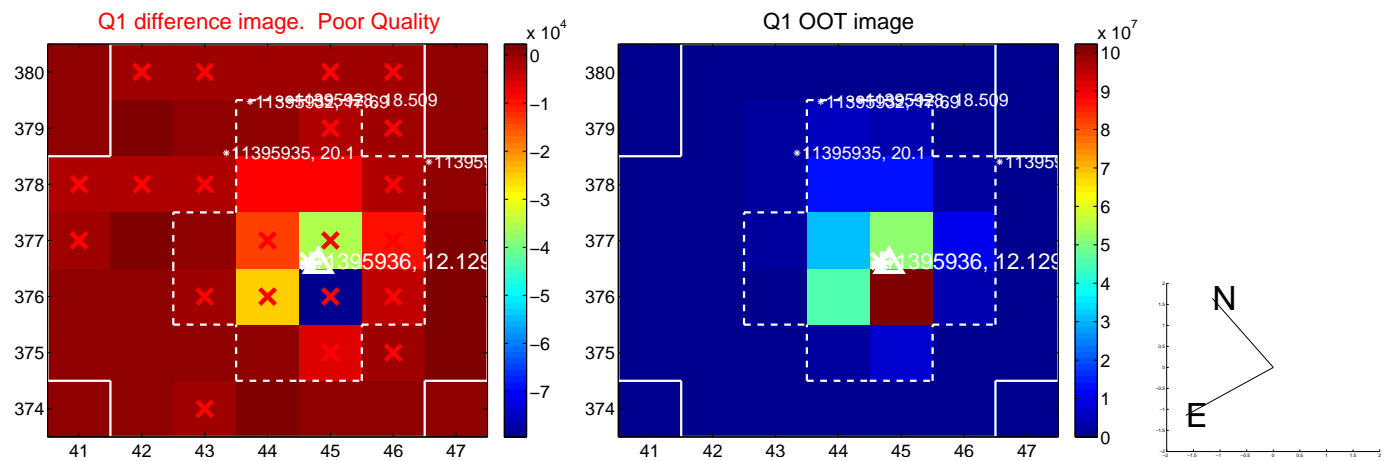
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.312 \pm 0.530$	0.59	$0.289 \pm 0.573$	$0.117 \pm 0.546$
PRF-fit source offset from KIC position	$0.216 \pm 0.580$	0.37	$0.209 \pm 0.525$	$-0.053 \pm 0.556$
photometric centroid source offset	—	—	—	—



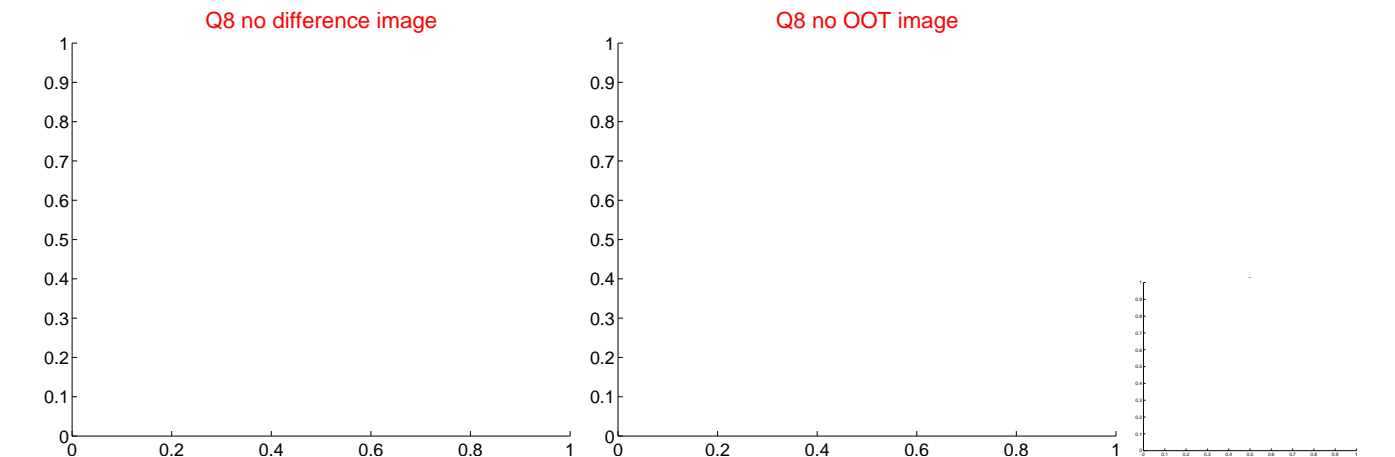
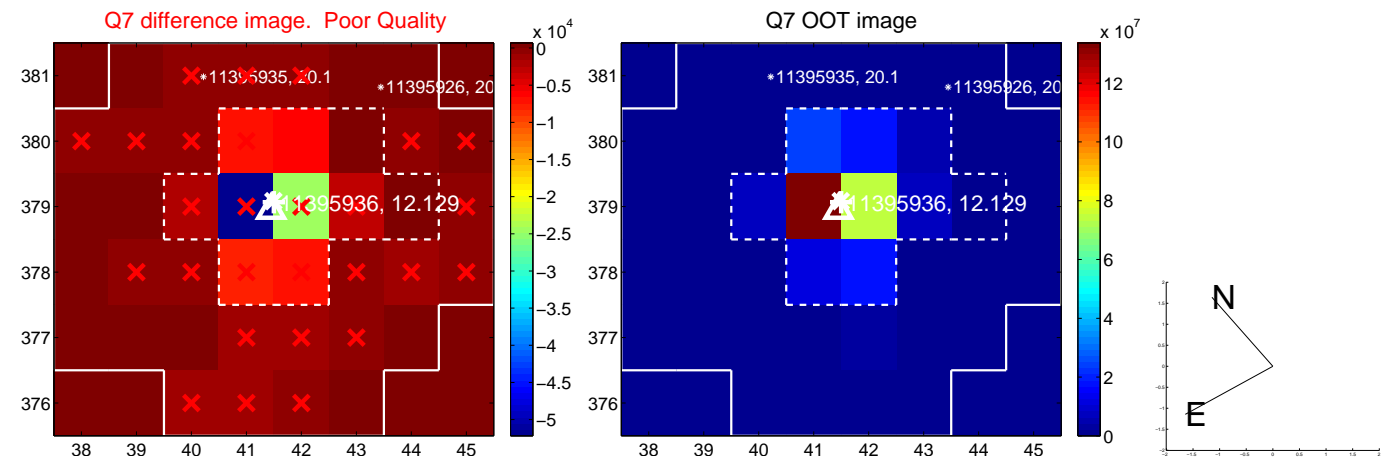
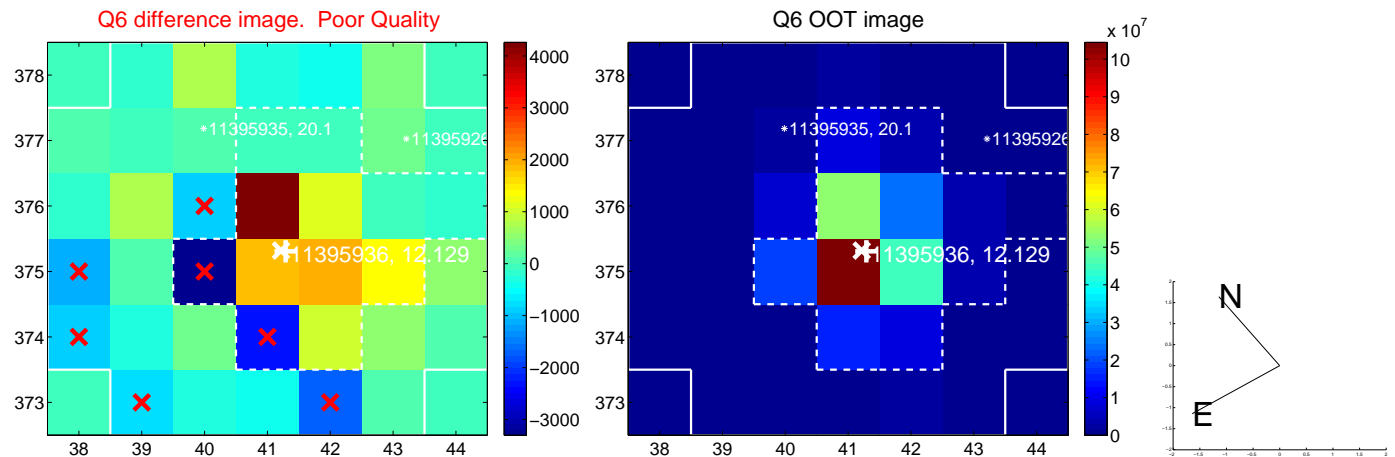
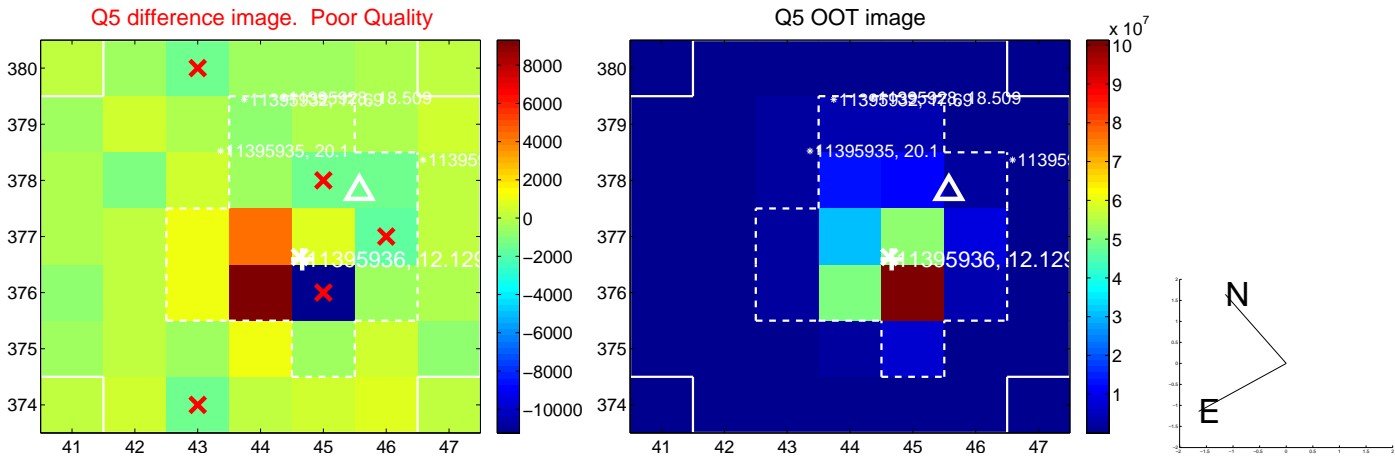
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

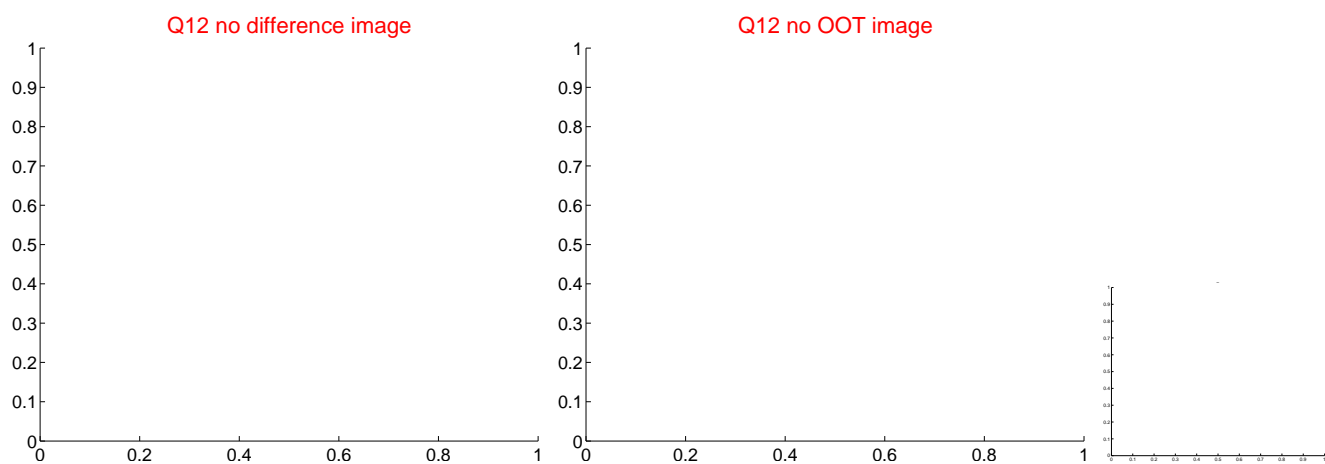
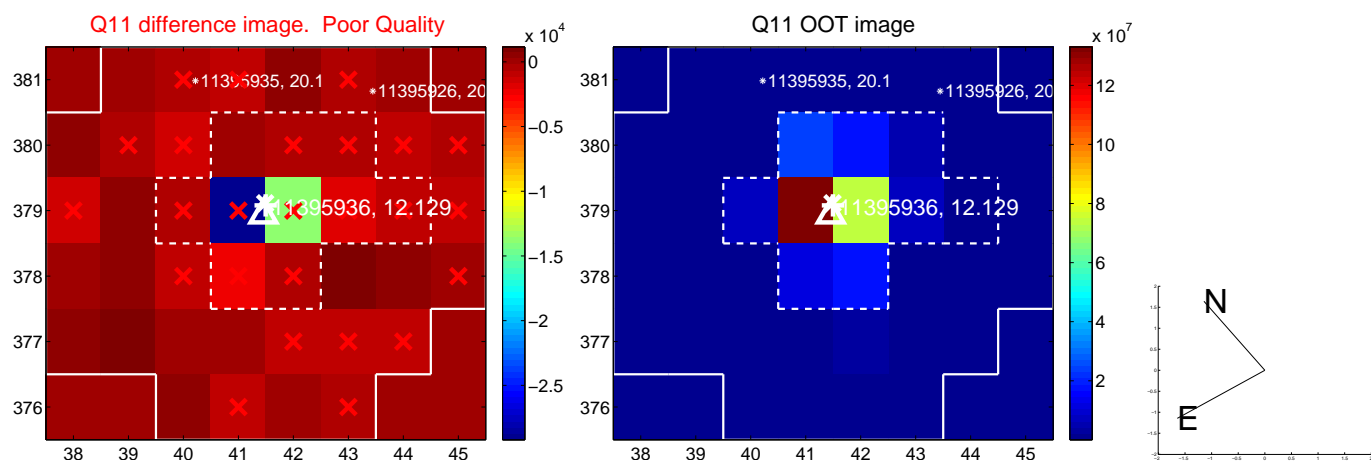
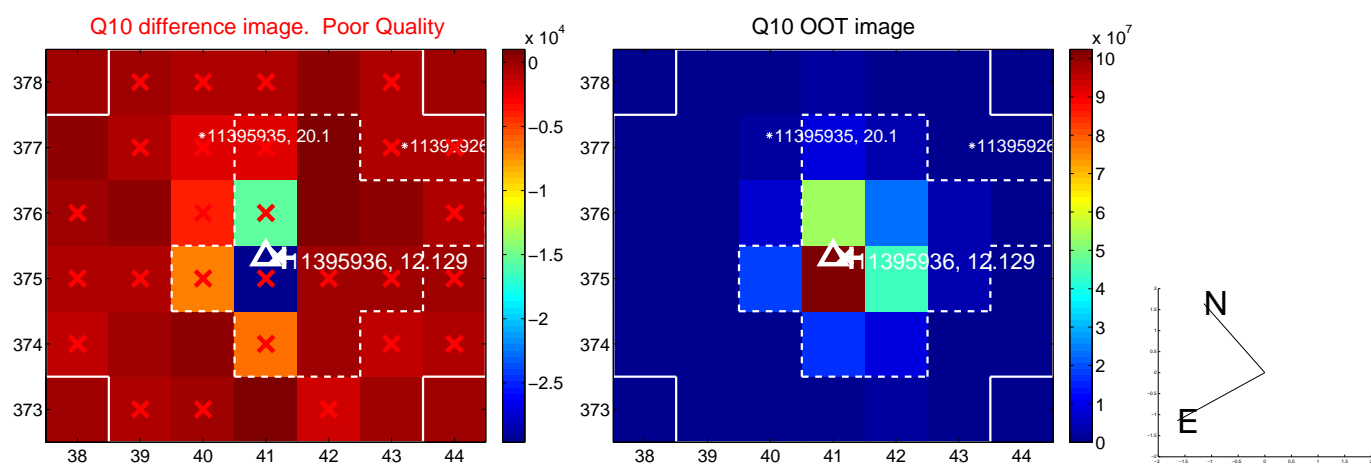
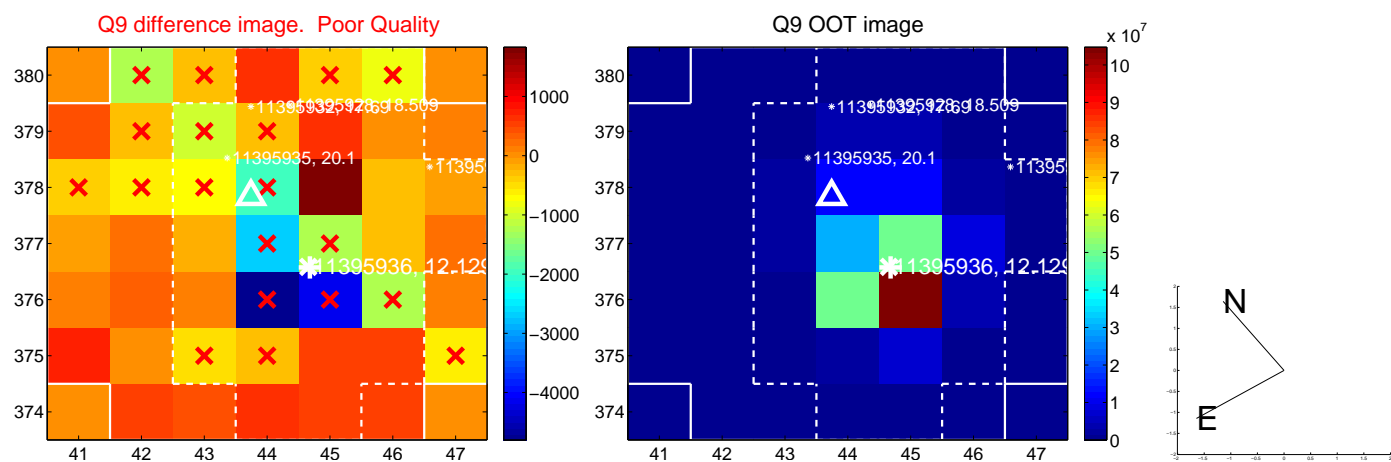




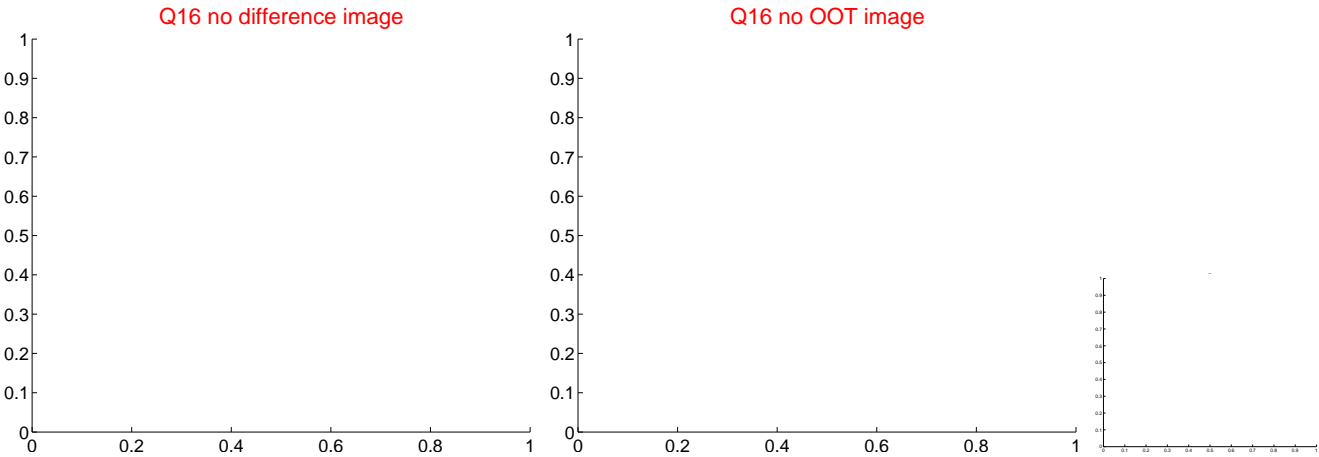
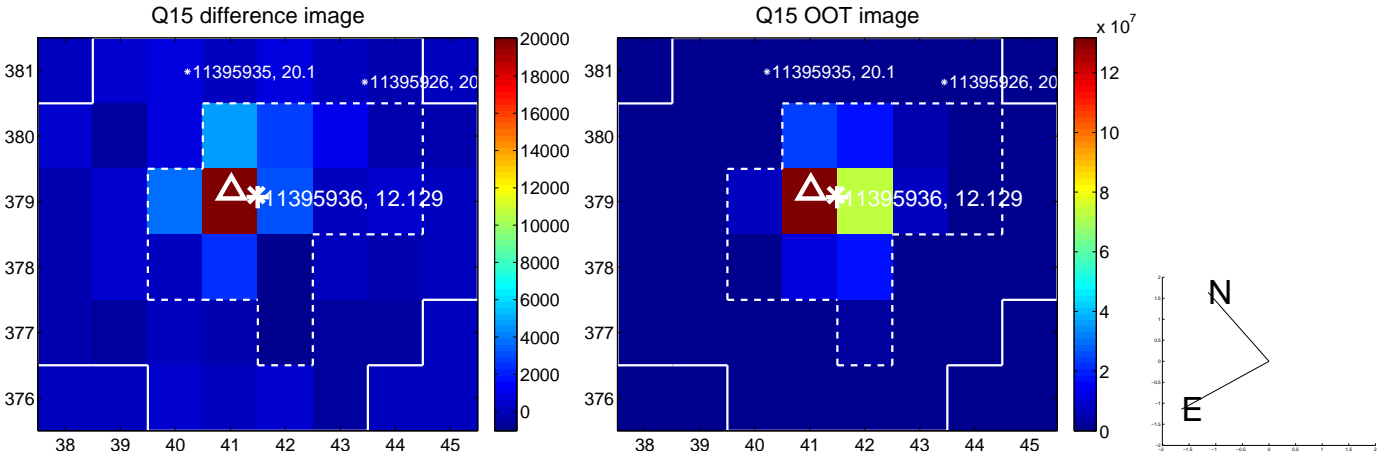
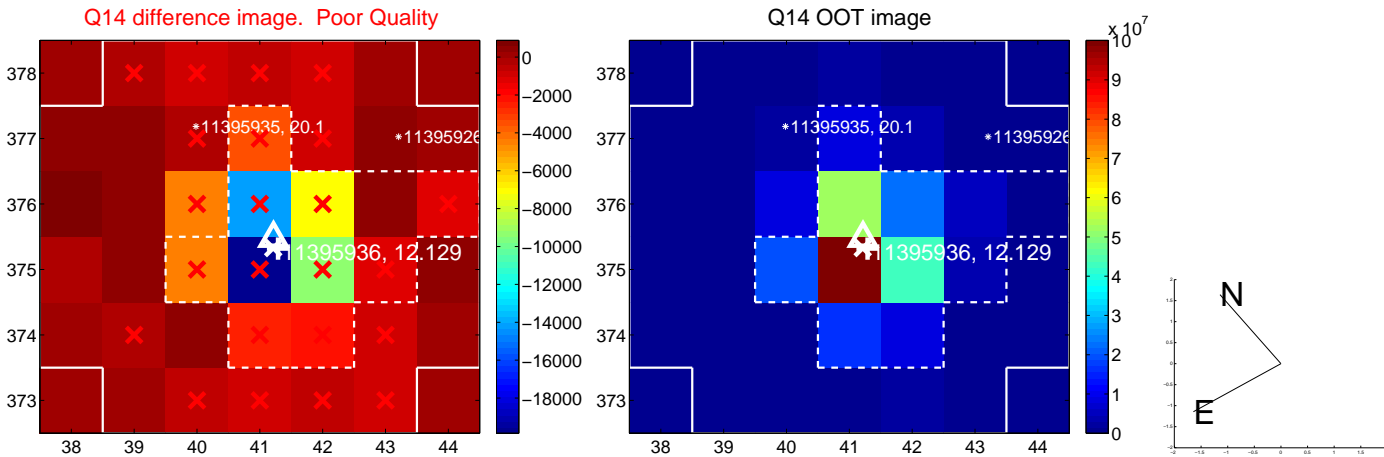
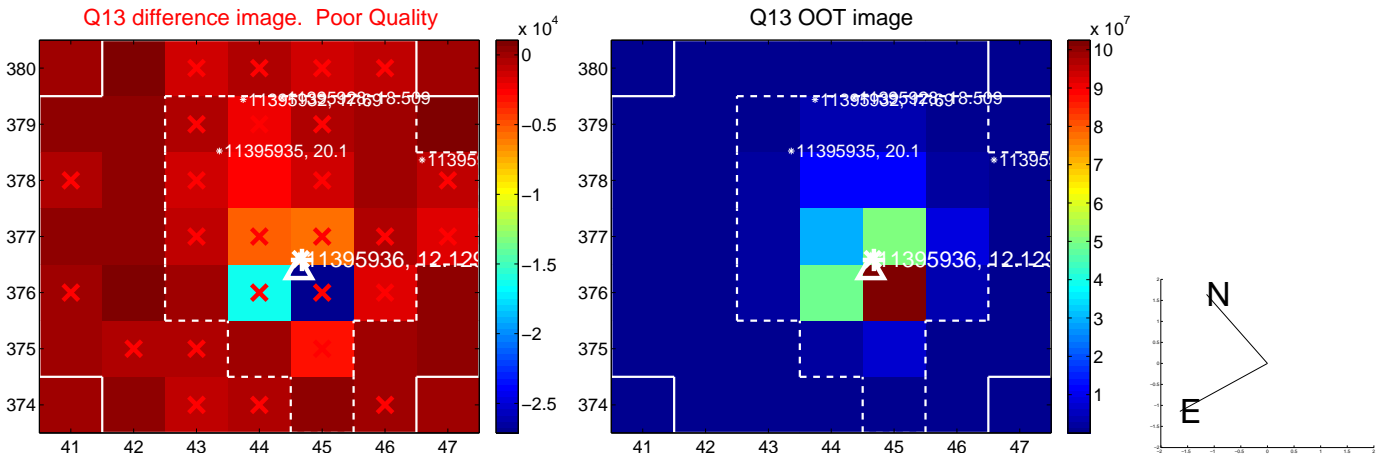
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



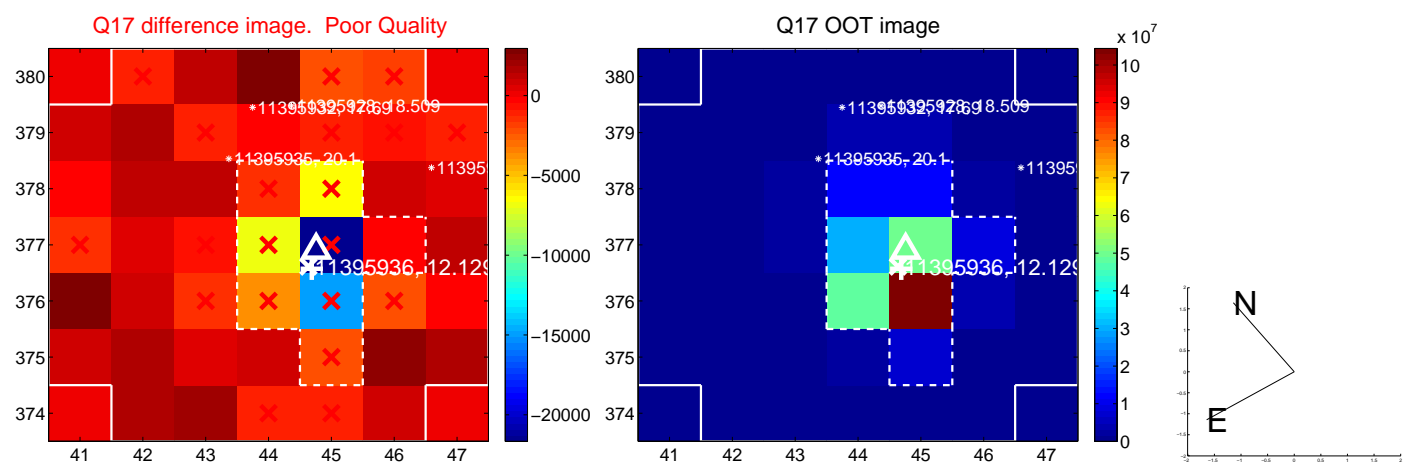
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

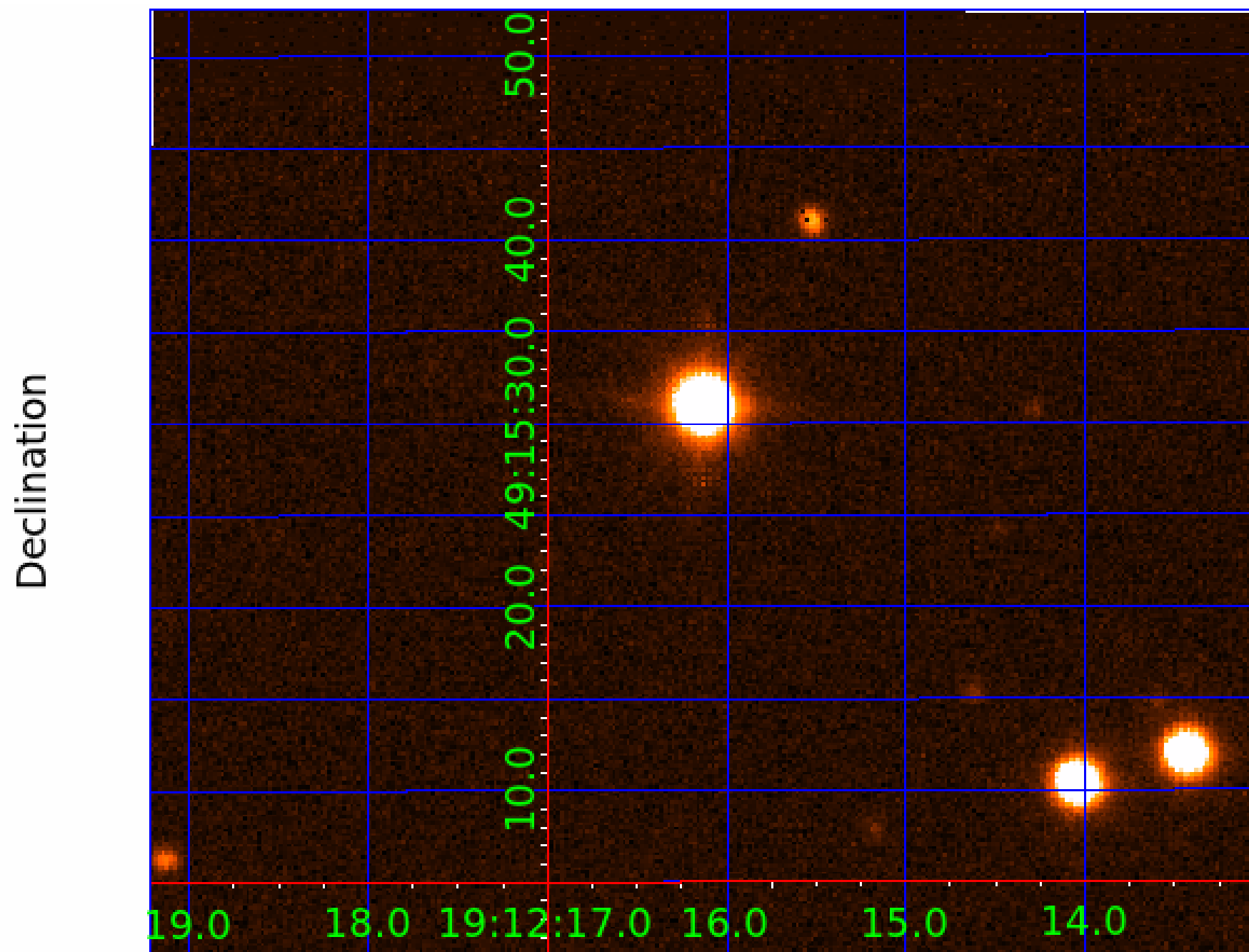


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image



# KIC 011395936

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011395936-01	OBS	No	1.455642	132.836869	26.4	4.582	9.7	7.7	2.65	7557	1.87	23254.28
011395936-02	OBS	No	1.487510	132.031827	120.2	2.500	7.9	-1.0	2.65	7557	2.91	22592.42
011395936-03	OBS	No	1.455685	131.732027	87.3	3.000	8.8	-1.0	2.65	7557	2.48	23253.37
011395936-04	OBS	No	21.470341	132.124001	130.7	3.500	8.0	-1.0	2.65	7557	3.03	642.87

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011395936-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
011395936-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
011395936-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
011395936-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

**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.

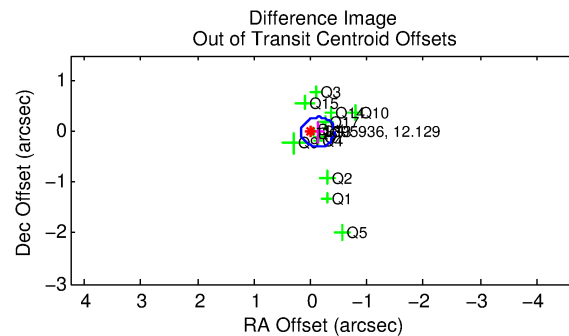
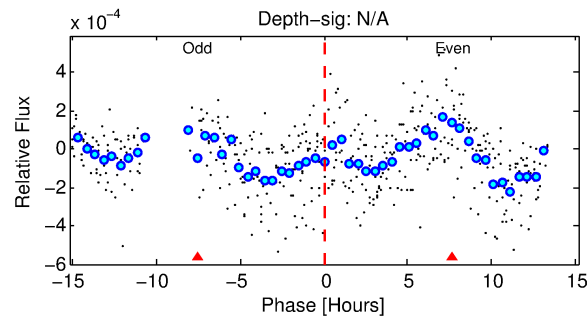
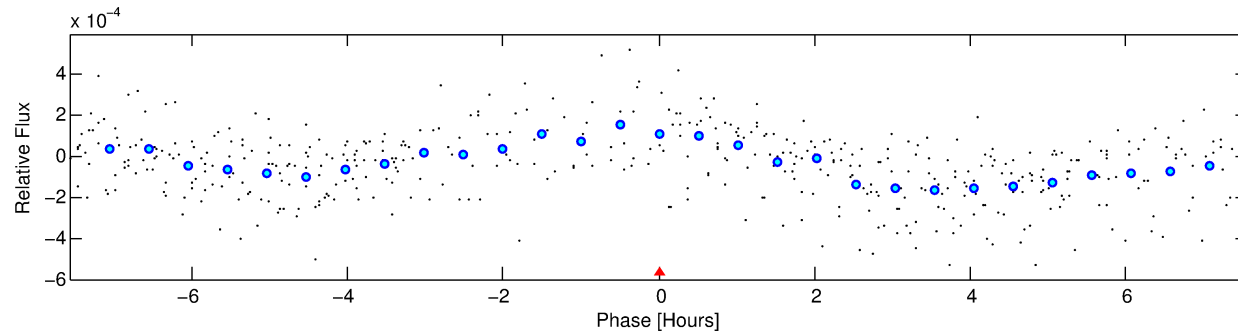
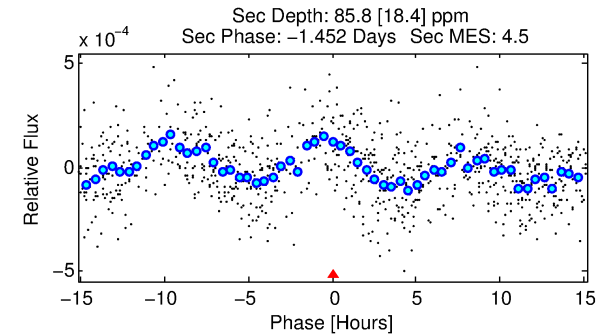
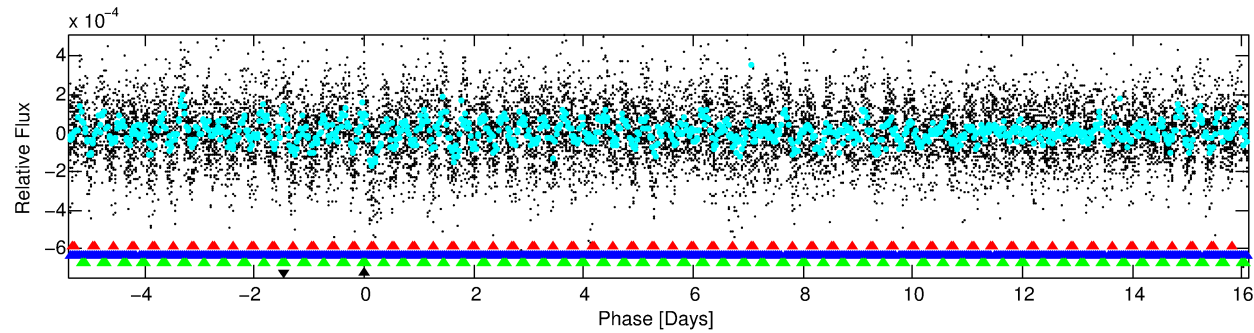
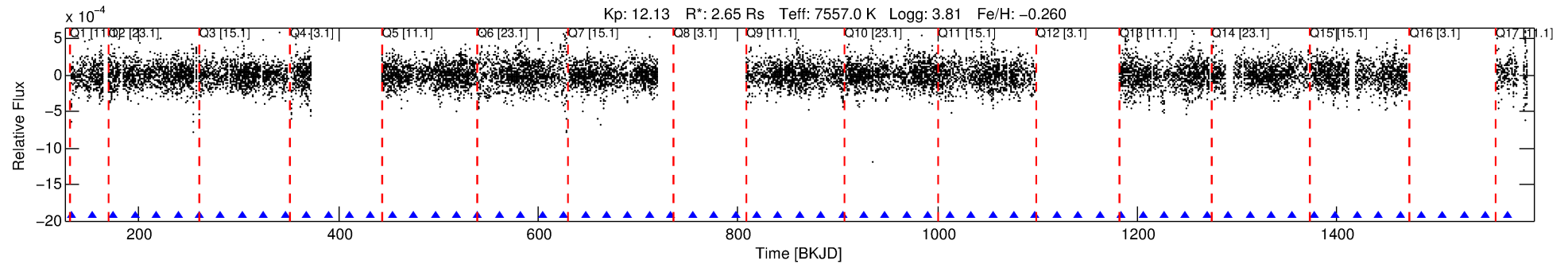
Ephemeris Match Information For 011395936-04

No Significant Match Found



# DV One-Page Summary

KIC: 11395936 Candidate: 4 of 4 Period: 21.470 d



## TPS TCE Results:

Period = 21.47034 d  
Epoch = 132.1240 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

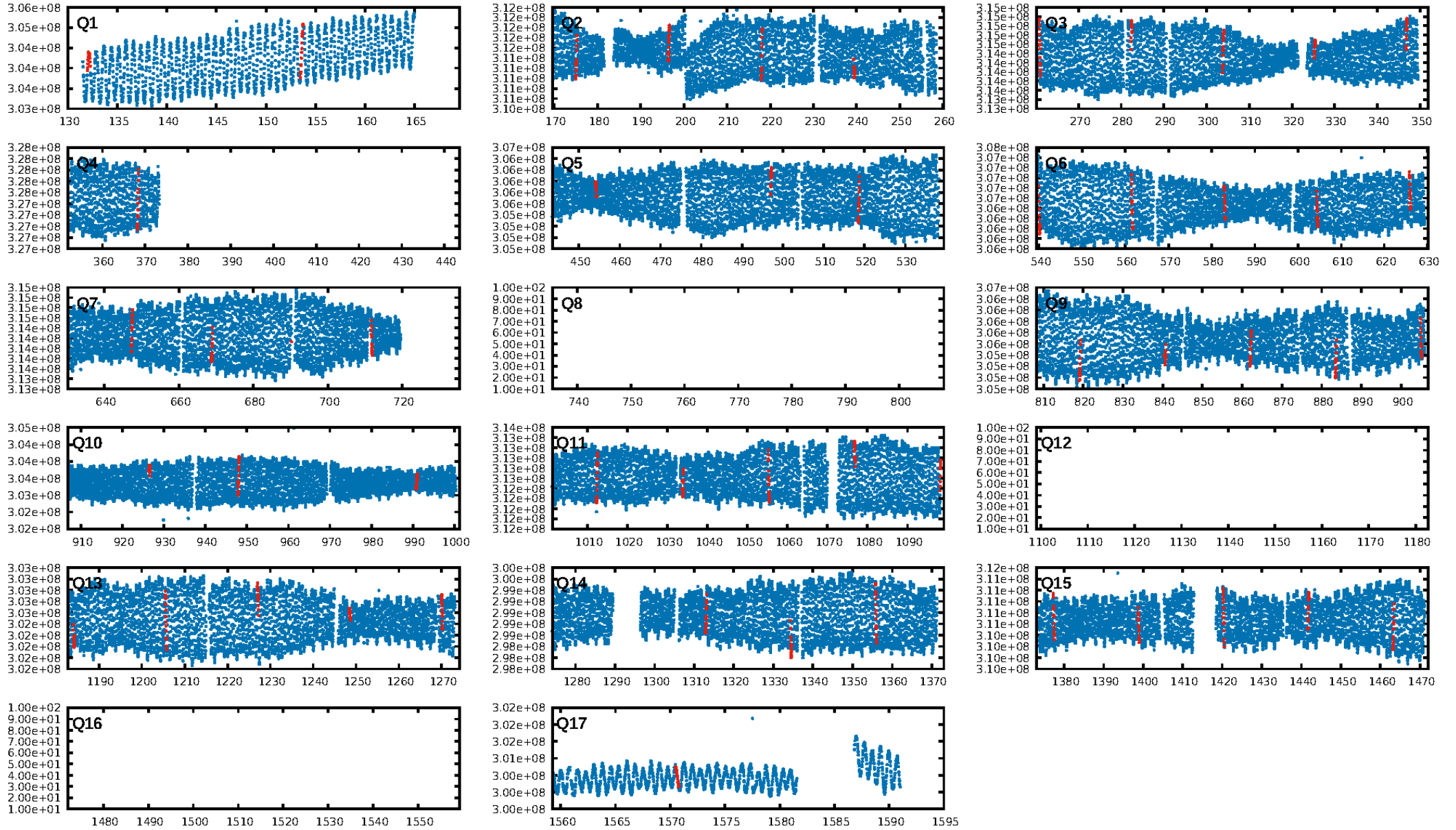
ShortPeriod-sig: 100.0% [111.50σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 5.32e-12  
RollingBand-fgt: 1.00 [17/17]  
GhostDiagnostic-chr: 25.47

Centroid-sig: 7.6%  
Centroid-so: 0.842 arcsec [1.01σ]  
OotOffset-rm: 0.131 arcsec [1.34σ]  
KicOffset-rm: 0.253 arcsec [1.52σ]  
OotOffset-st: 4/4/1/5 [14]  
KicOffset-st: 4/4/1/5 [14]  
DiffImageQuality-fgm: 0.43 [6/14]  
DiffImageOverlap-fno: 0.43 [6/14]

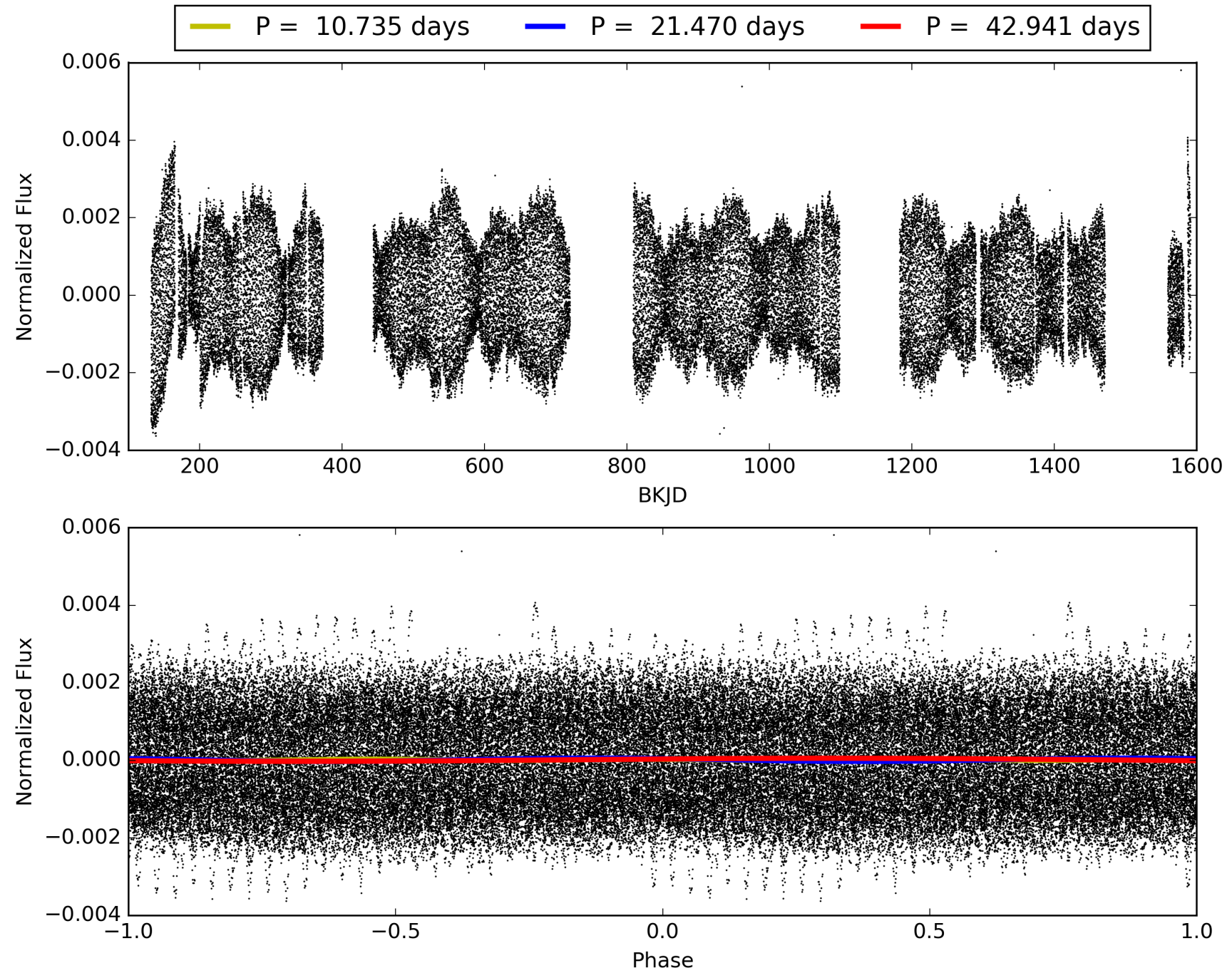
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:03:41 Z

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

# TCE 011395936-04, PDC Light Curves

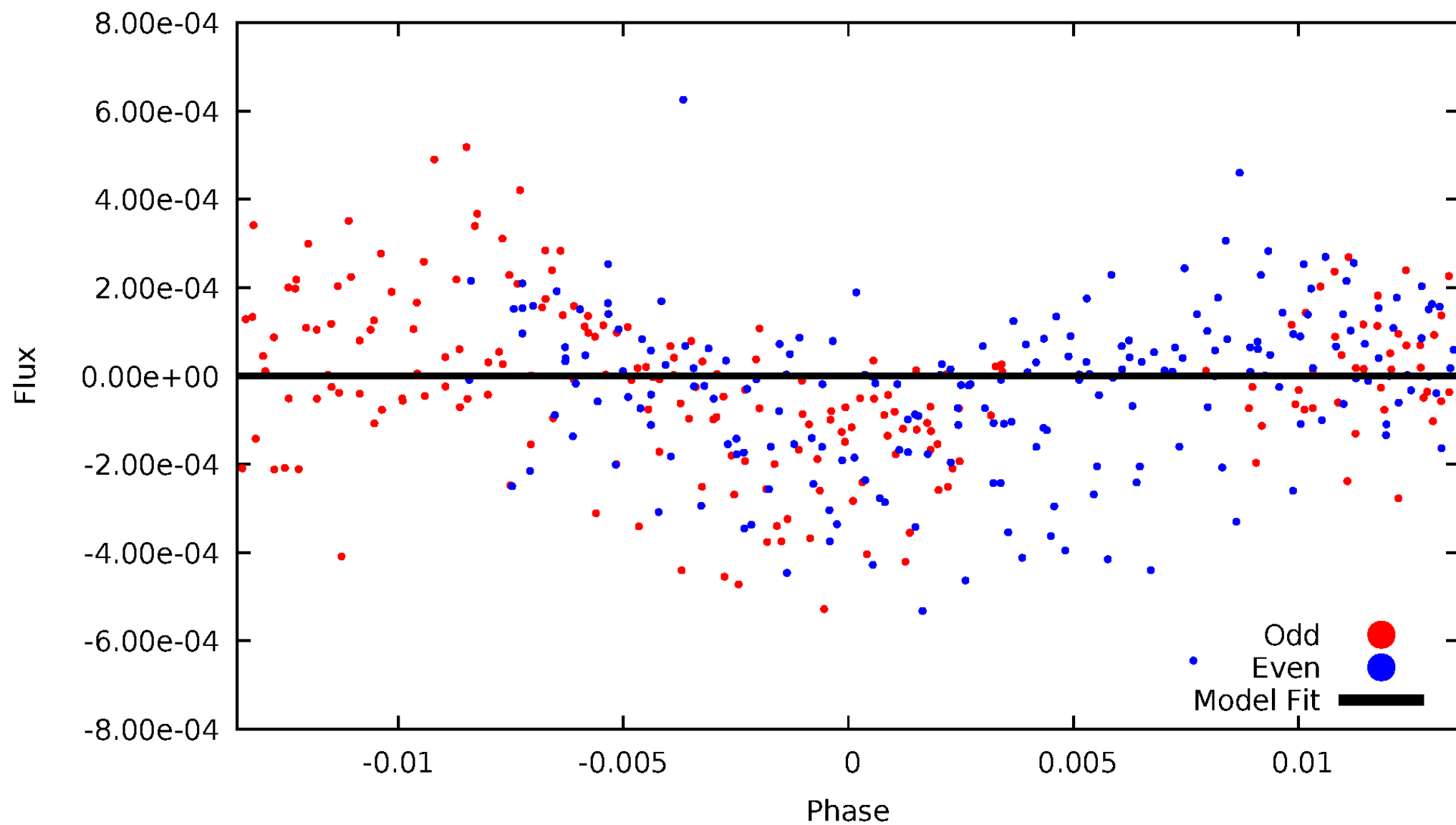


TCE 011395936-04



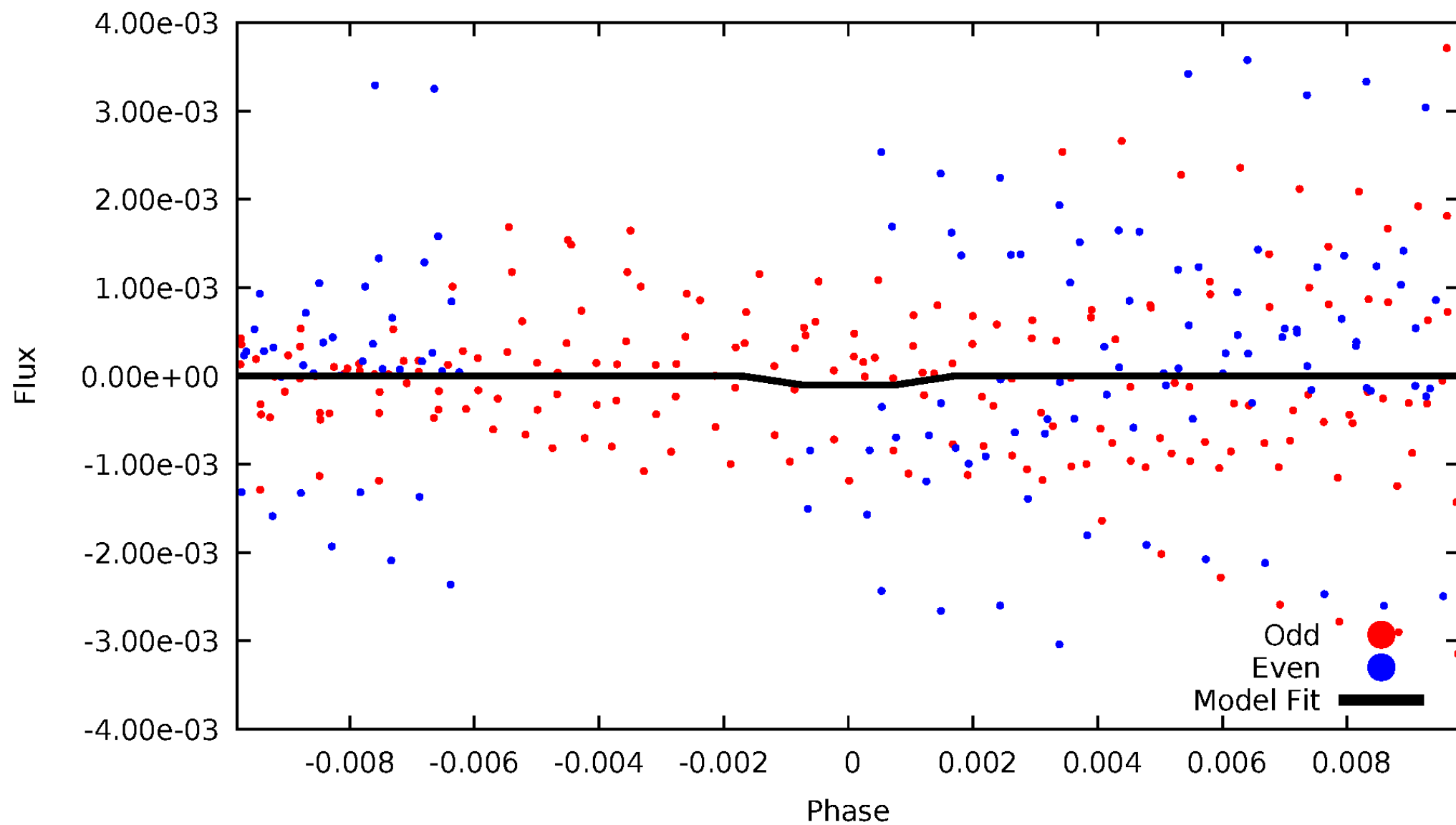
# DV Odd/Even

TCE 011395936-04



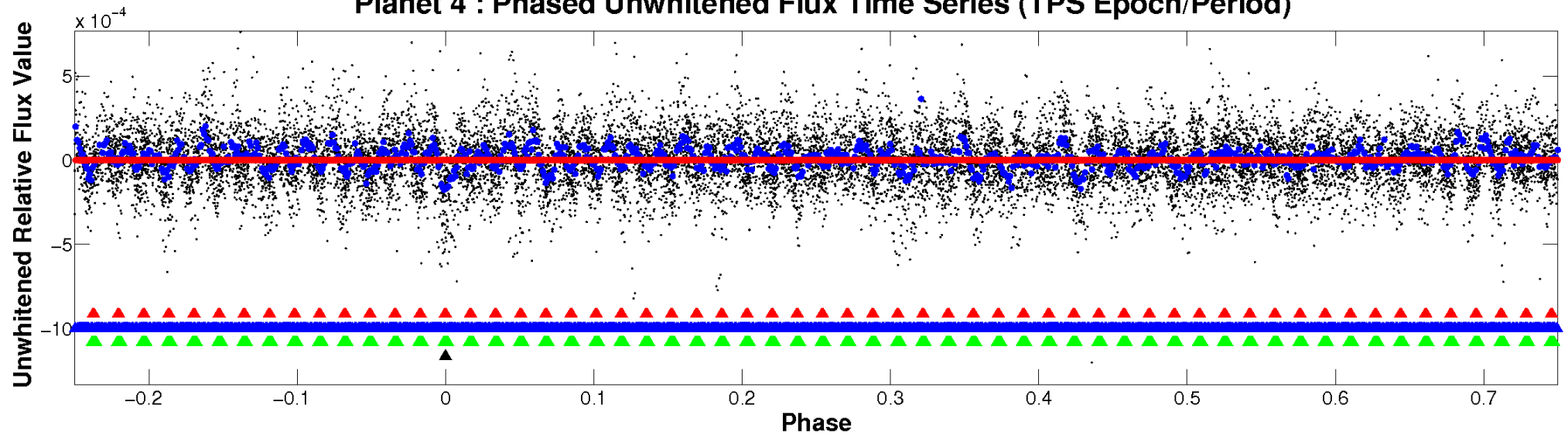
# ALT Odd/Even

TCE 011395936-04

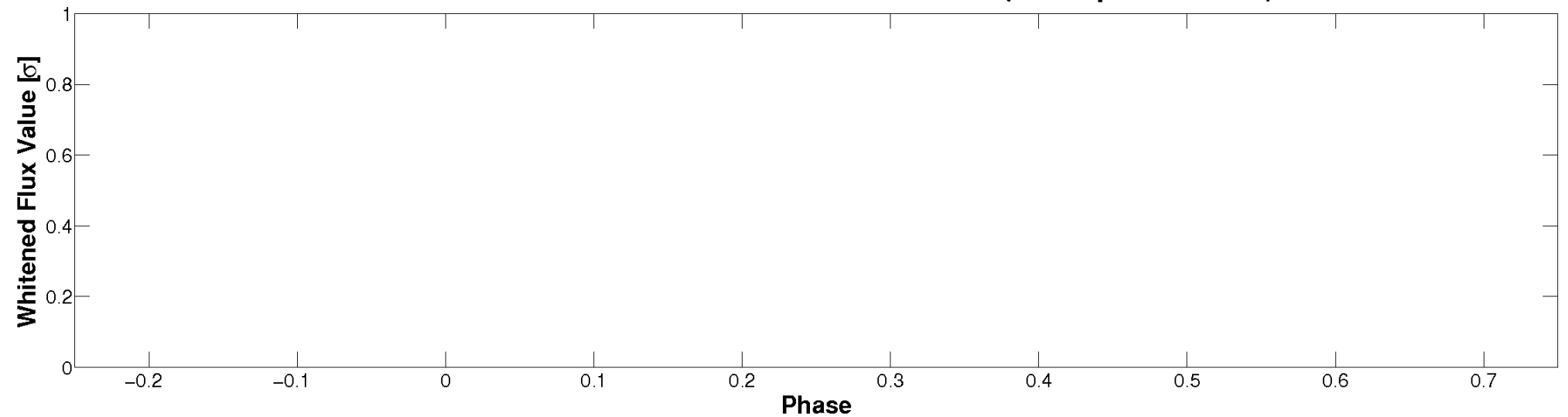


# Non-Whitened Vs. Whitened Light Curve

**Planet 4 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**



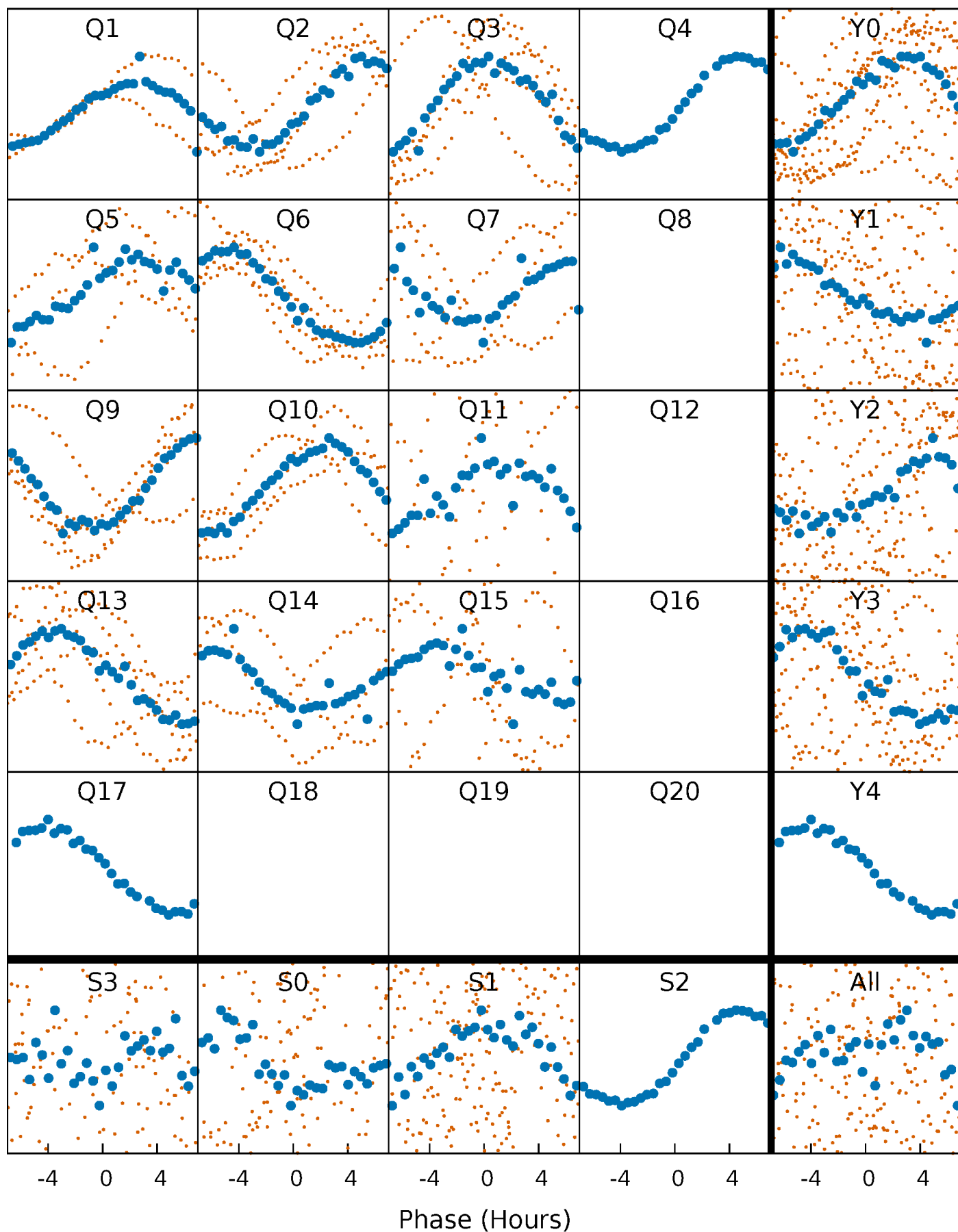
**Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)**





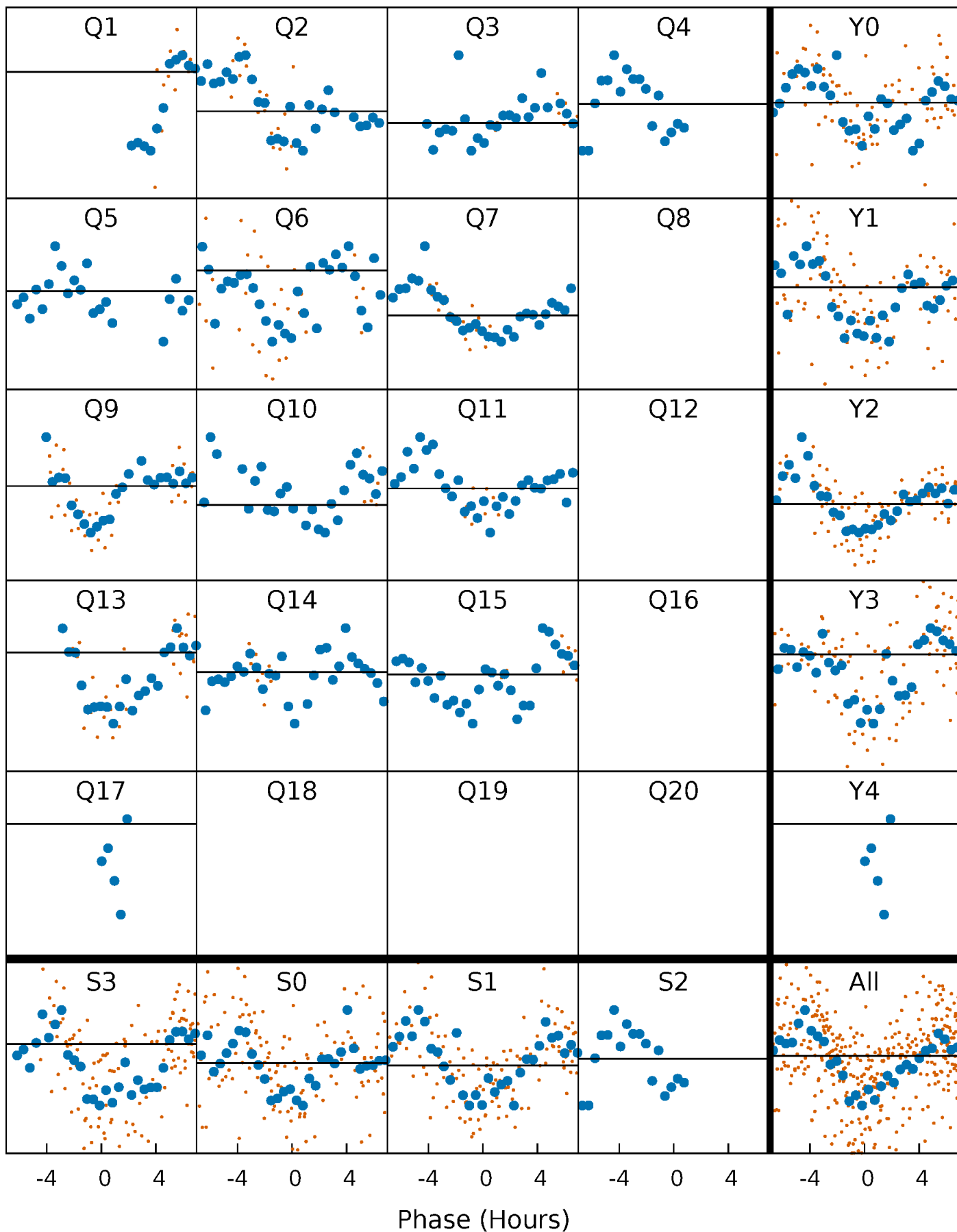
# PDC Quarter-Phased Transit Curves

TCE 011395936-04 P= 21.470341 Days  $T_0=132.124001$  (BKJD)



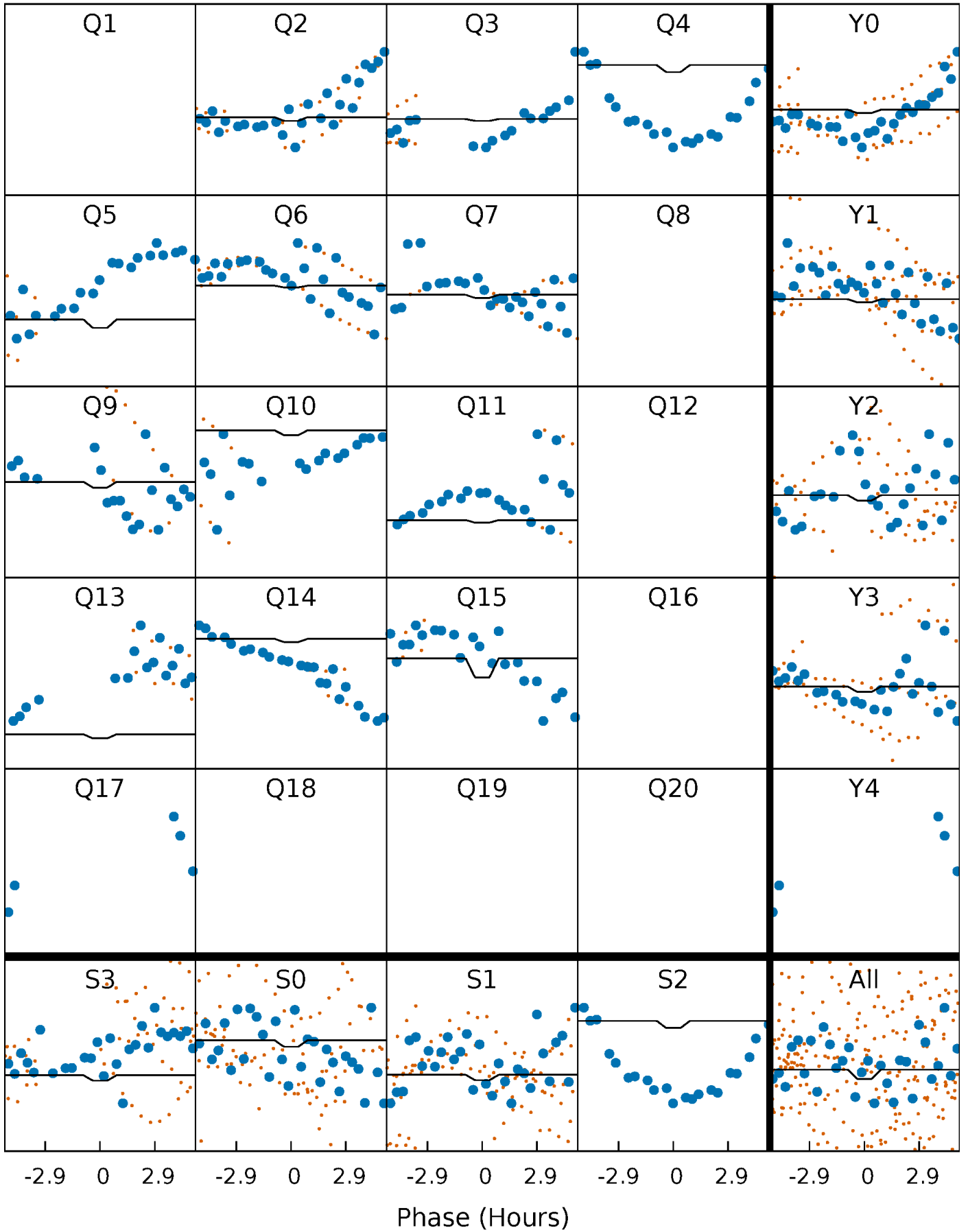
# DV Quarter-Phased Transit Curves

TCE 011395936-04   P= 21.470341 Days    $T_0=132.124001$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

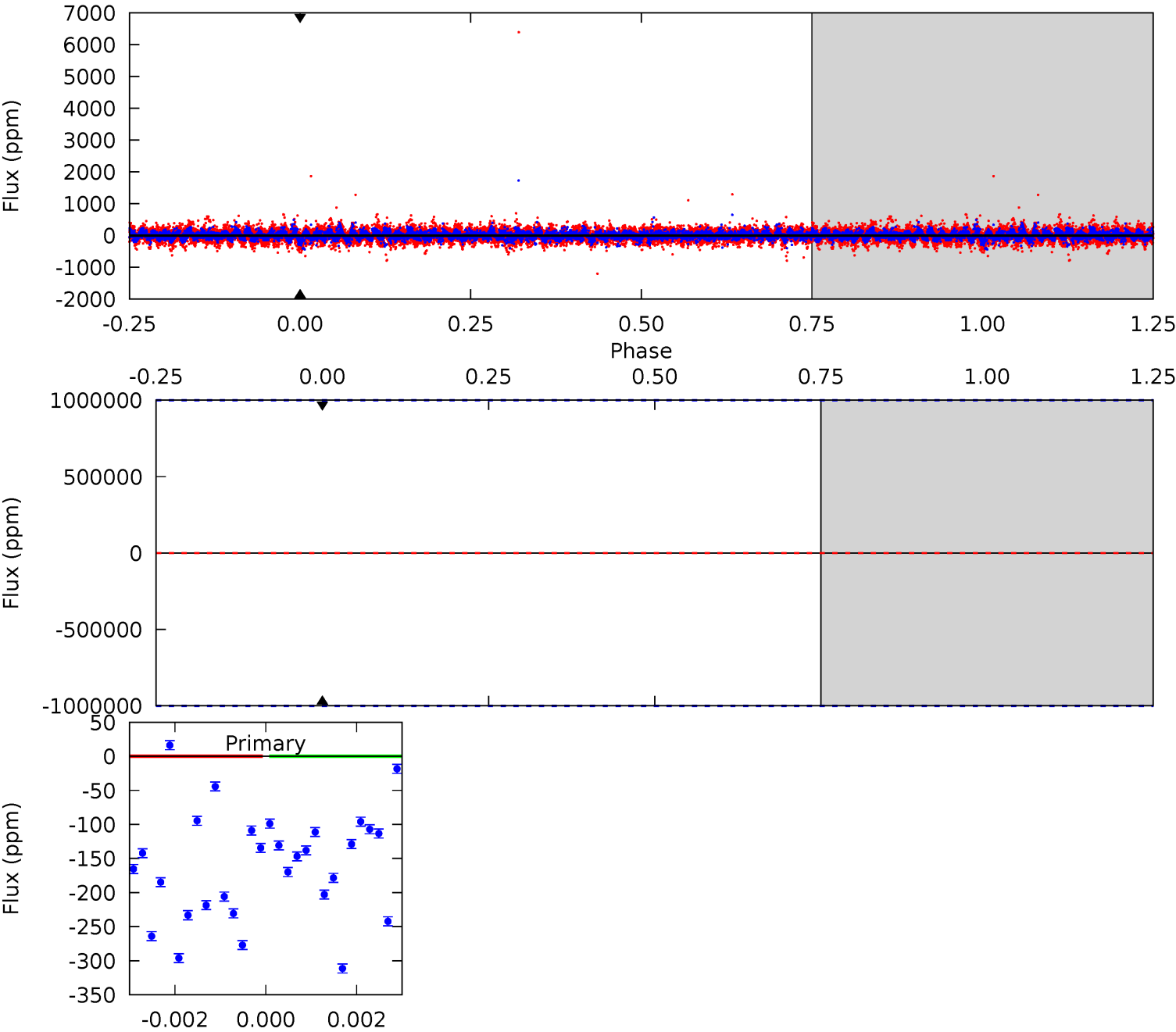
TCE 011395936-04 P= 21.470341 Days  $T_0=131.957038$  (BKJD)



# DV Model-Shift Uniqueness Test

011395936-04, P = 21.470341 Days, E = 132.124001 Days

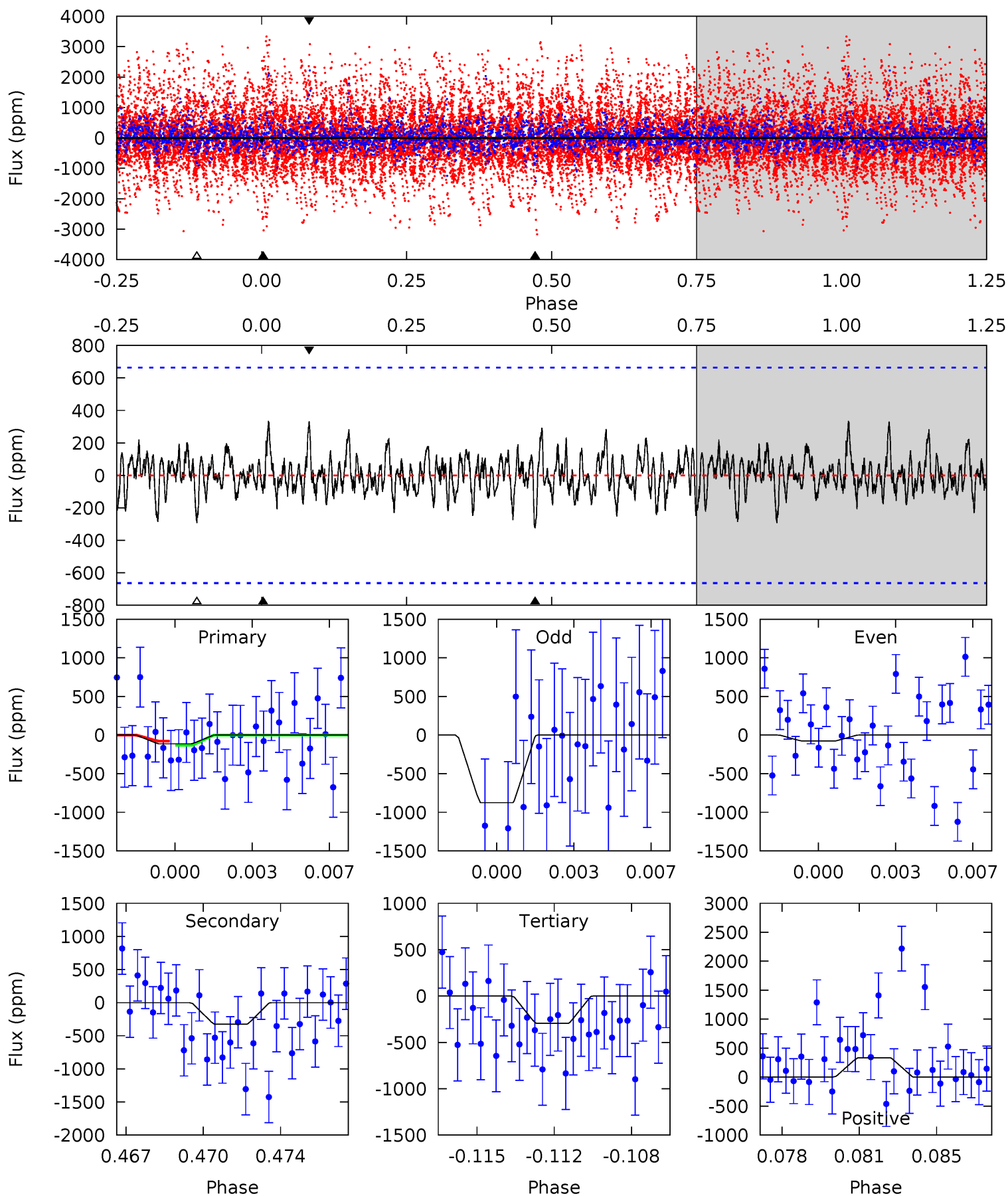
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

011395936-04, P = 21.470341 Days, E = 131.957038 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
0.89	2.57	2.31	2.62	5.23	2.93	0.79	-1.42	-1.73	0.25	-0.06	2.84	-0.74	0.51	0.21



### Stellar Parameters For KIC 011395936

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7557^{+235}_{-314}$	$3.808^{+0.400}_{-0.094}$	$-0.260^{+0.250}_{-0.350}$	$2.645^{+0.467}_{-1.089}$	$1.638^{+0.182}_{-0.311}$	$0.125^{+0.396}_{-0.038}$
	+3%/-4%	+11%/-2%	+96%/-135%	+18%/-41%	+11%/-19%	+317%/-30%
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 011395936-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$18.12^{+22.71}_{-12.49}$	$1737^{+128}_{-172}$	$-4222^{+48919}_{-35356}$	$-28.638^{+9407.523}_{-8360.129}$
Alt.	$-325 \pm 127$	$17.98^{+20.92}_{-13.00}$	$1742^{+121}_{-204}$	$4014^{+3076}_{-921}$	$15^{+204}_{-12}$

$T_{\text{max}}$  = 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

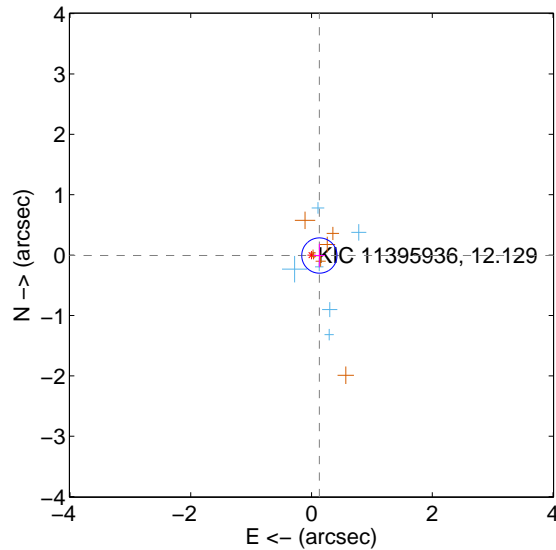
Supplemental centroid analysis for 011395936-04. Kepler magnitude: 12.13. Transit SNR -1.00

There are 6 quarters with good PRF difference image offsets

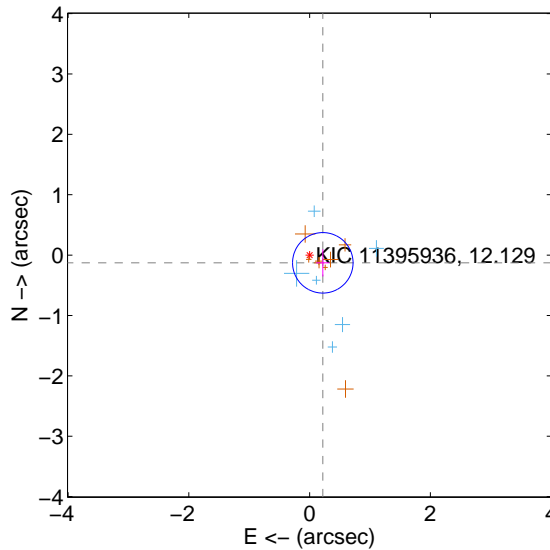
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.131 \pm 0.097$	1.34	$-0.131 \pm 0.095$	$-0.007 \pm 0.194$
PRF-fit source offset from KIC position	$0.253 \pm 0.167$	1.52	$-0.219 \pm 0.109$	$-0.128 \pm 0.225$
photometric centroid source offset	$0.84 \pm 0.83$	1.01	$0.15 \pm 0.90$	$0.83 \pm 0.83$

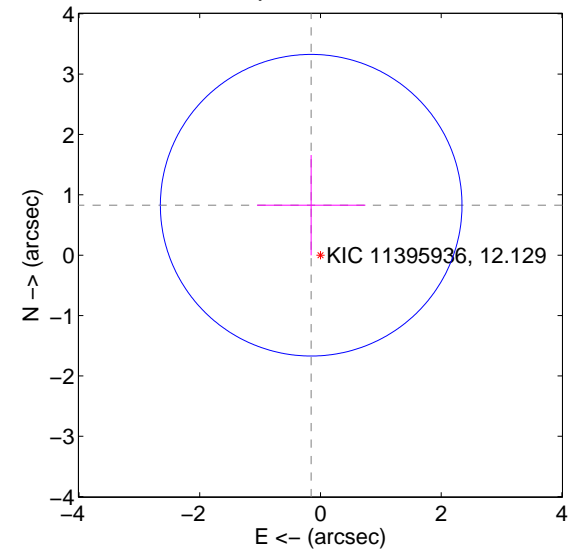
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

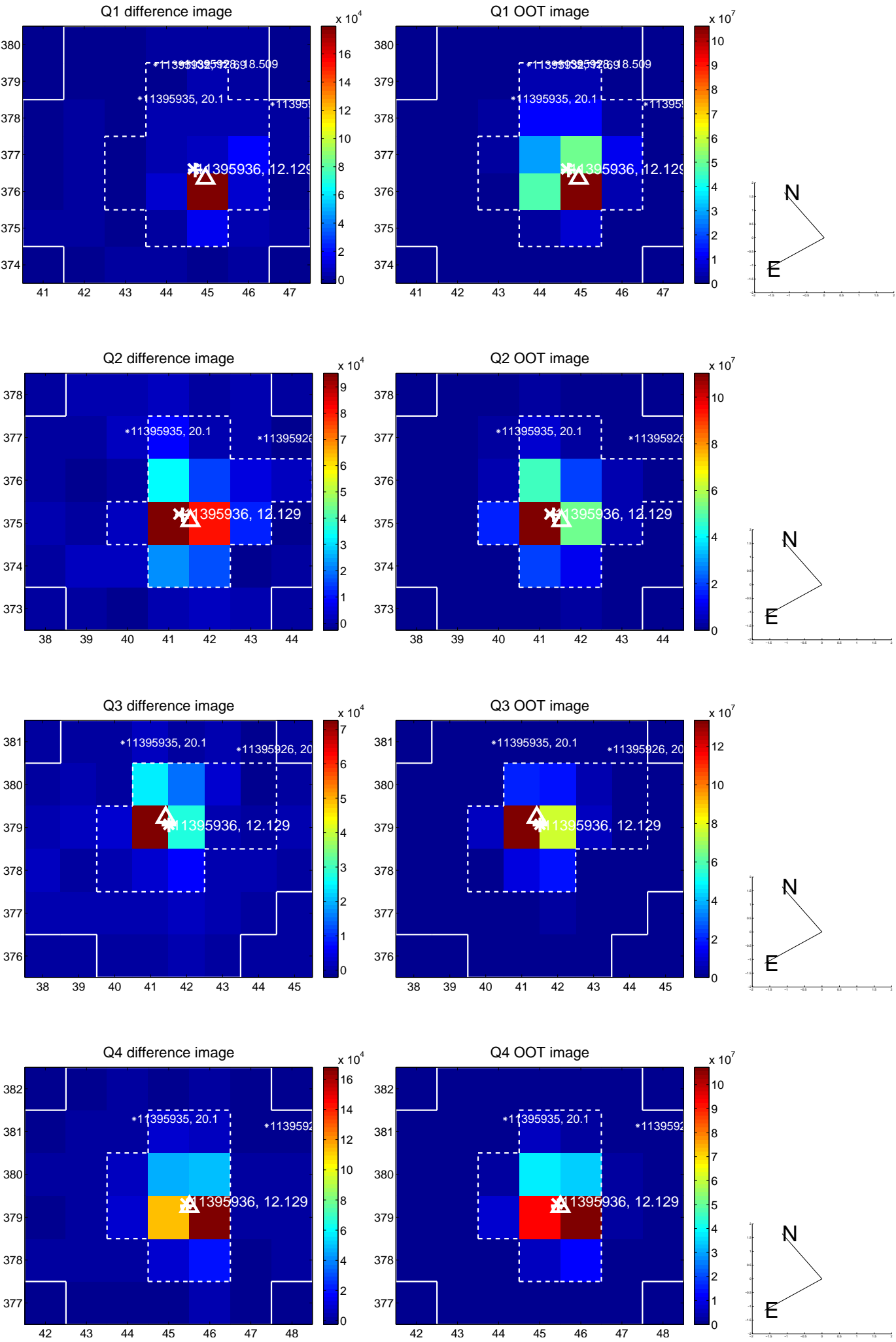


offset from photometric centroids

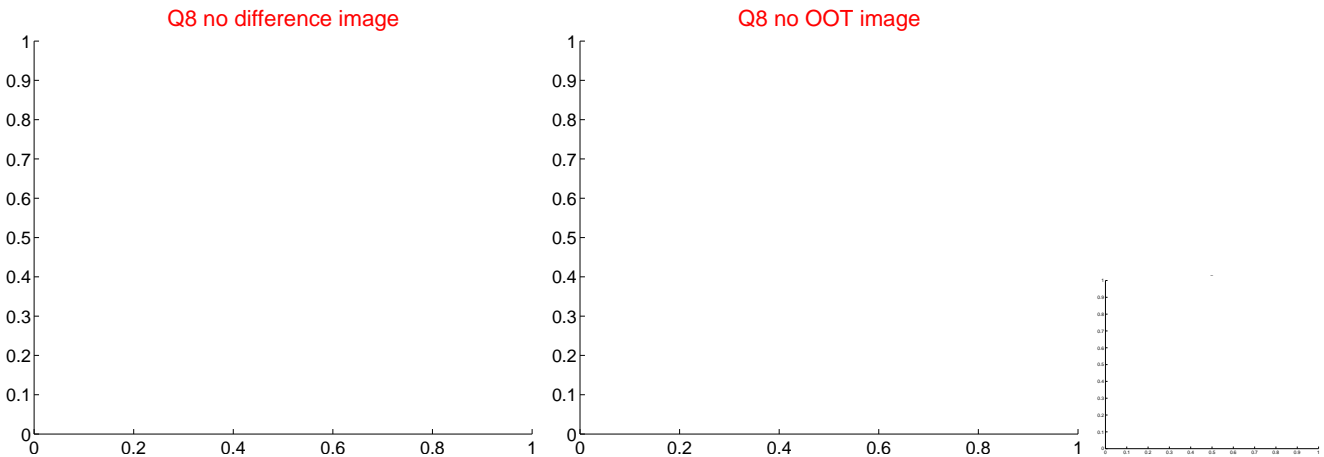
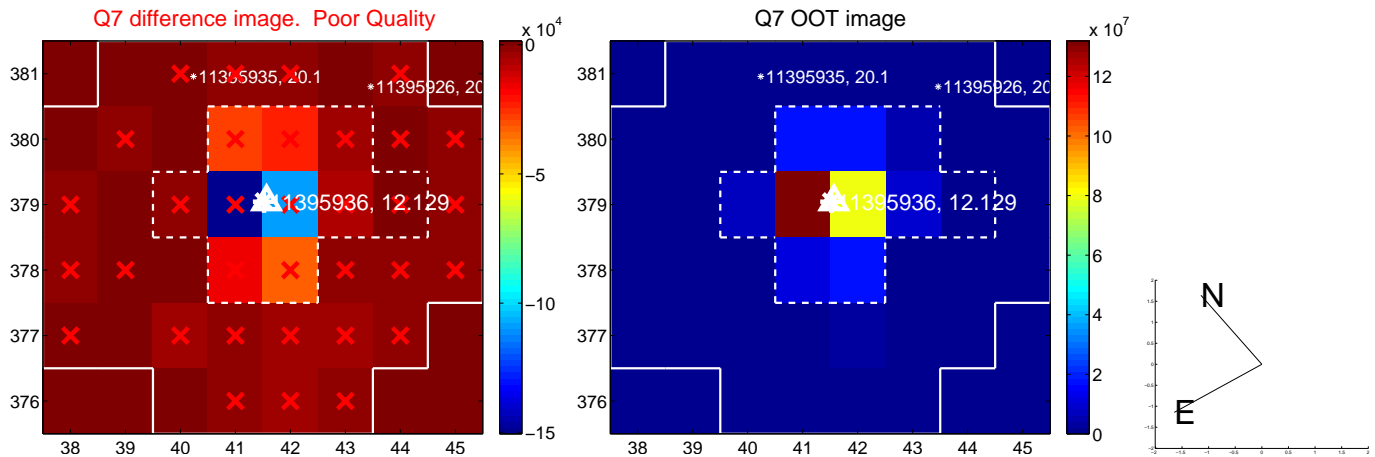
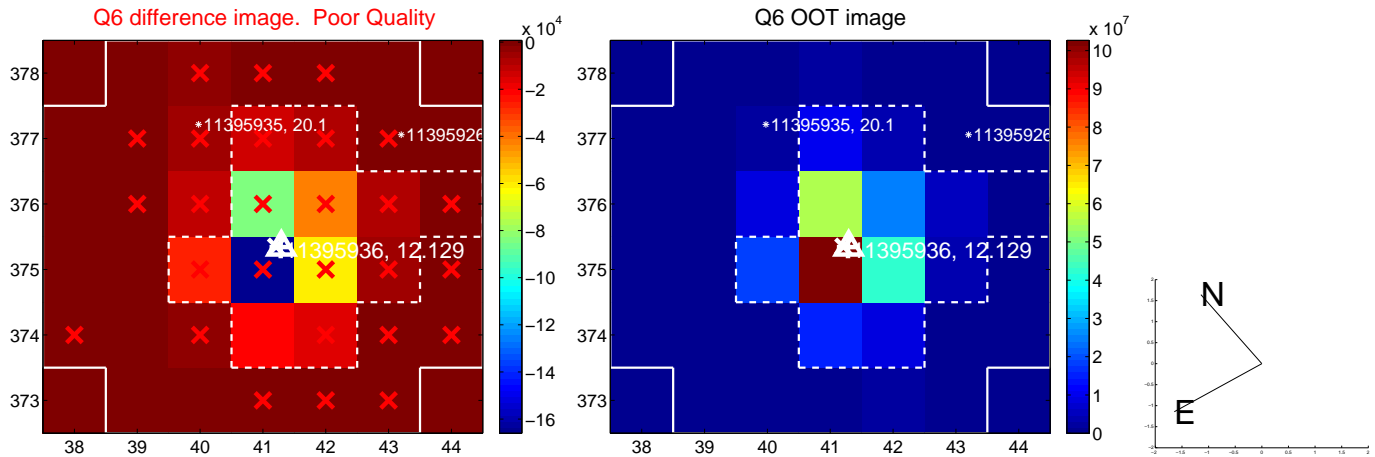
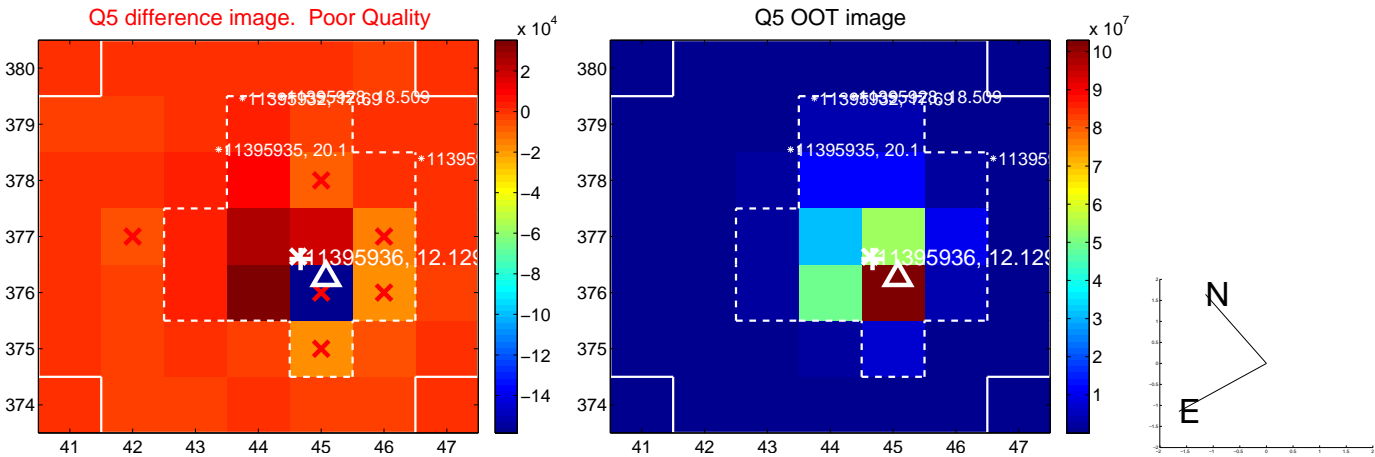


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

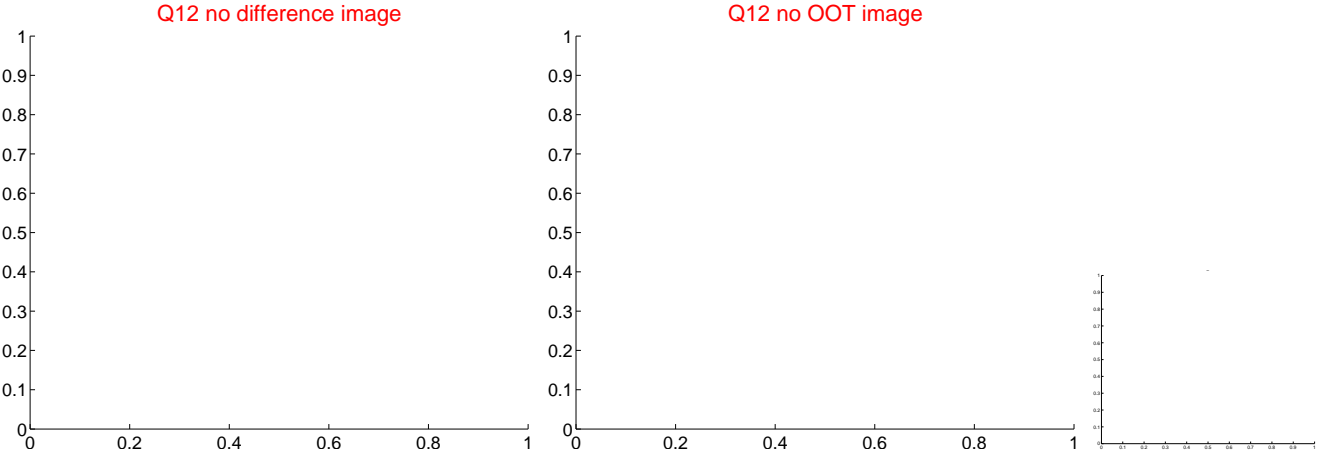
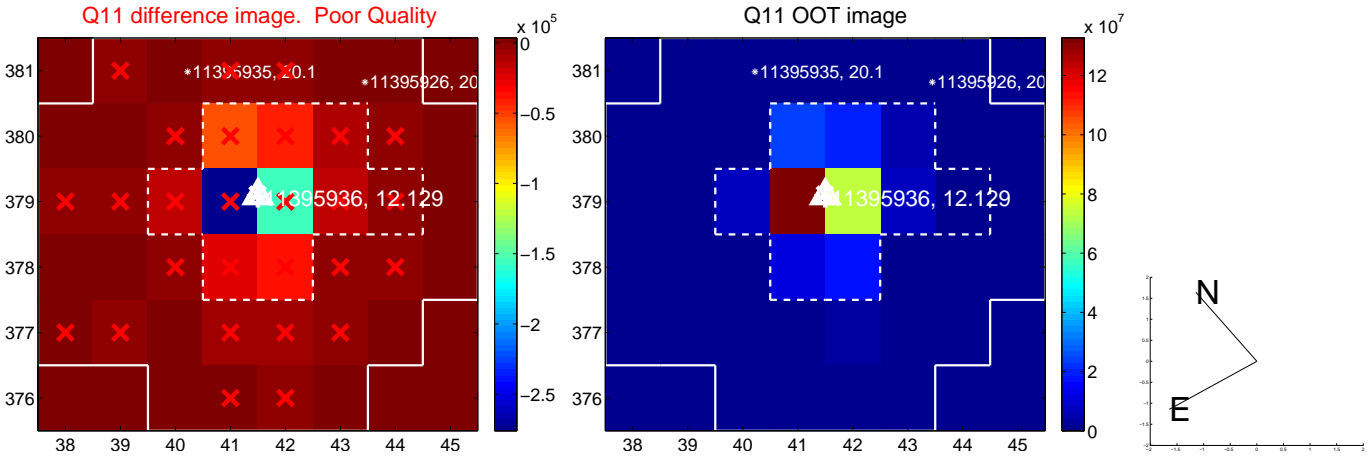
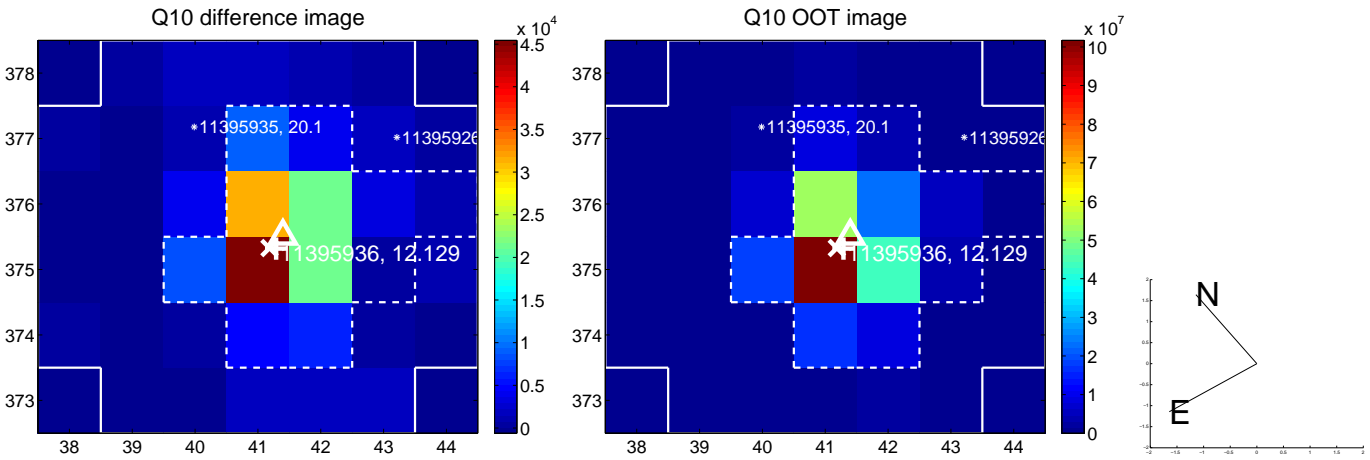
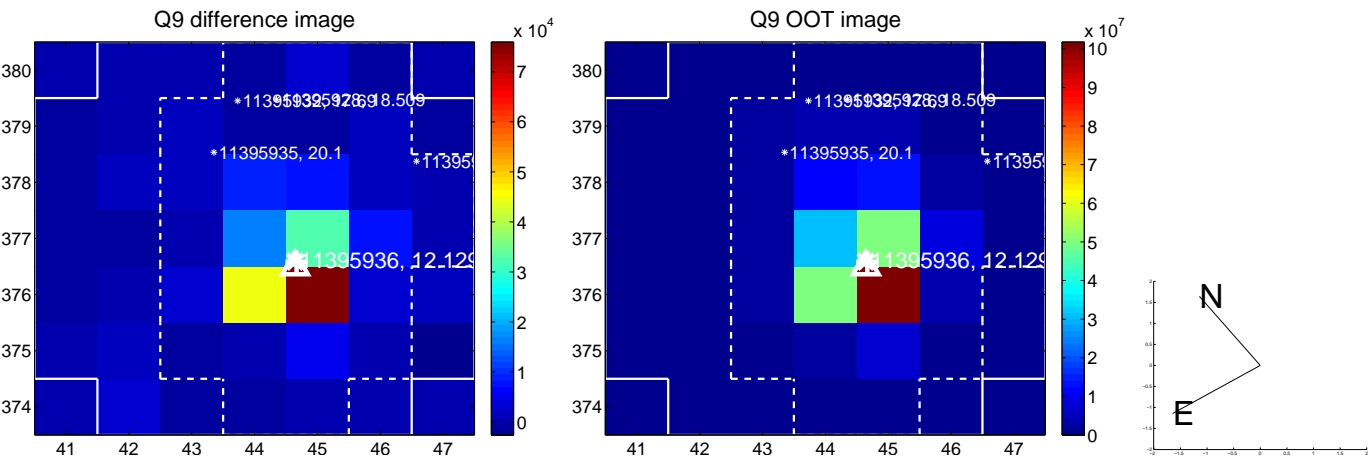
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



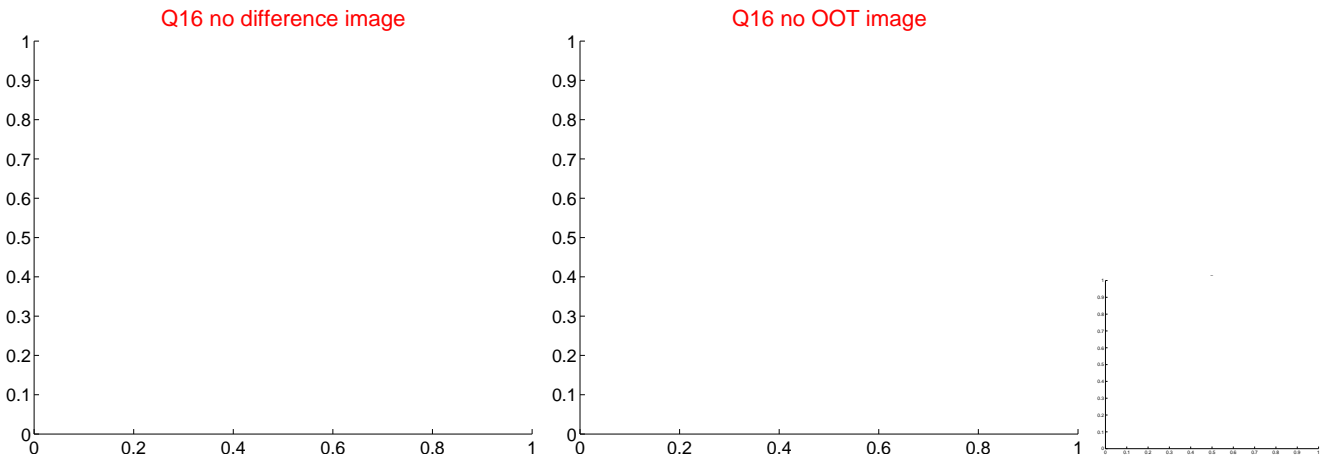
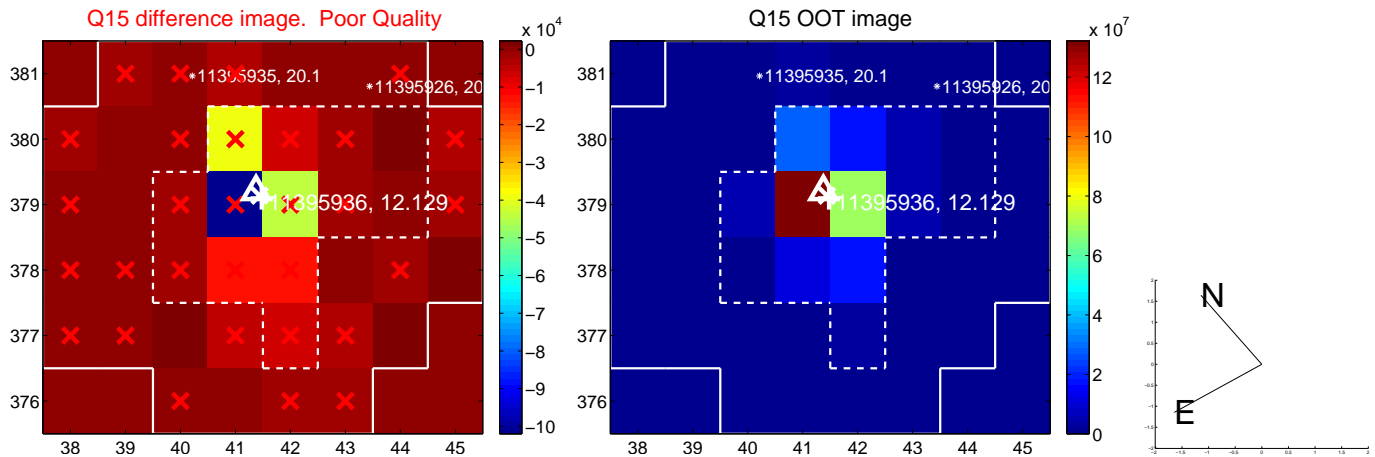
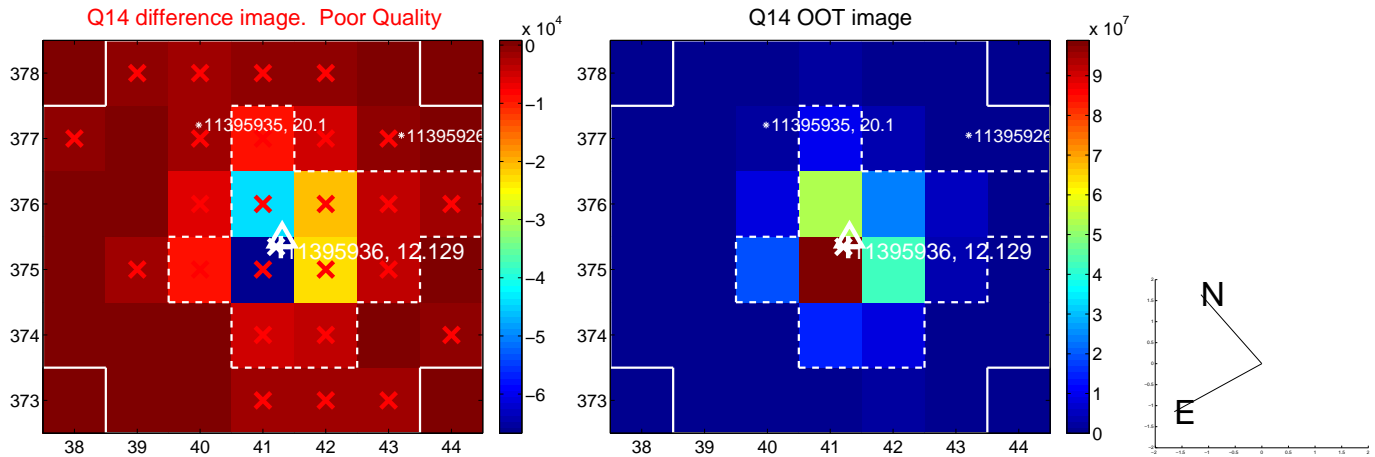
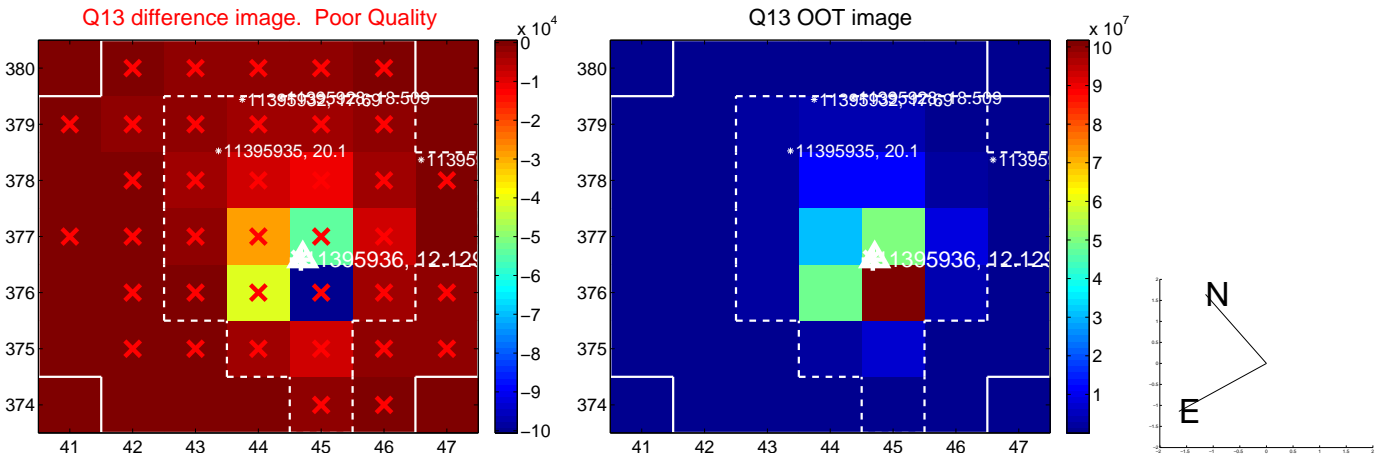
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



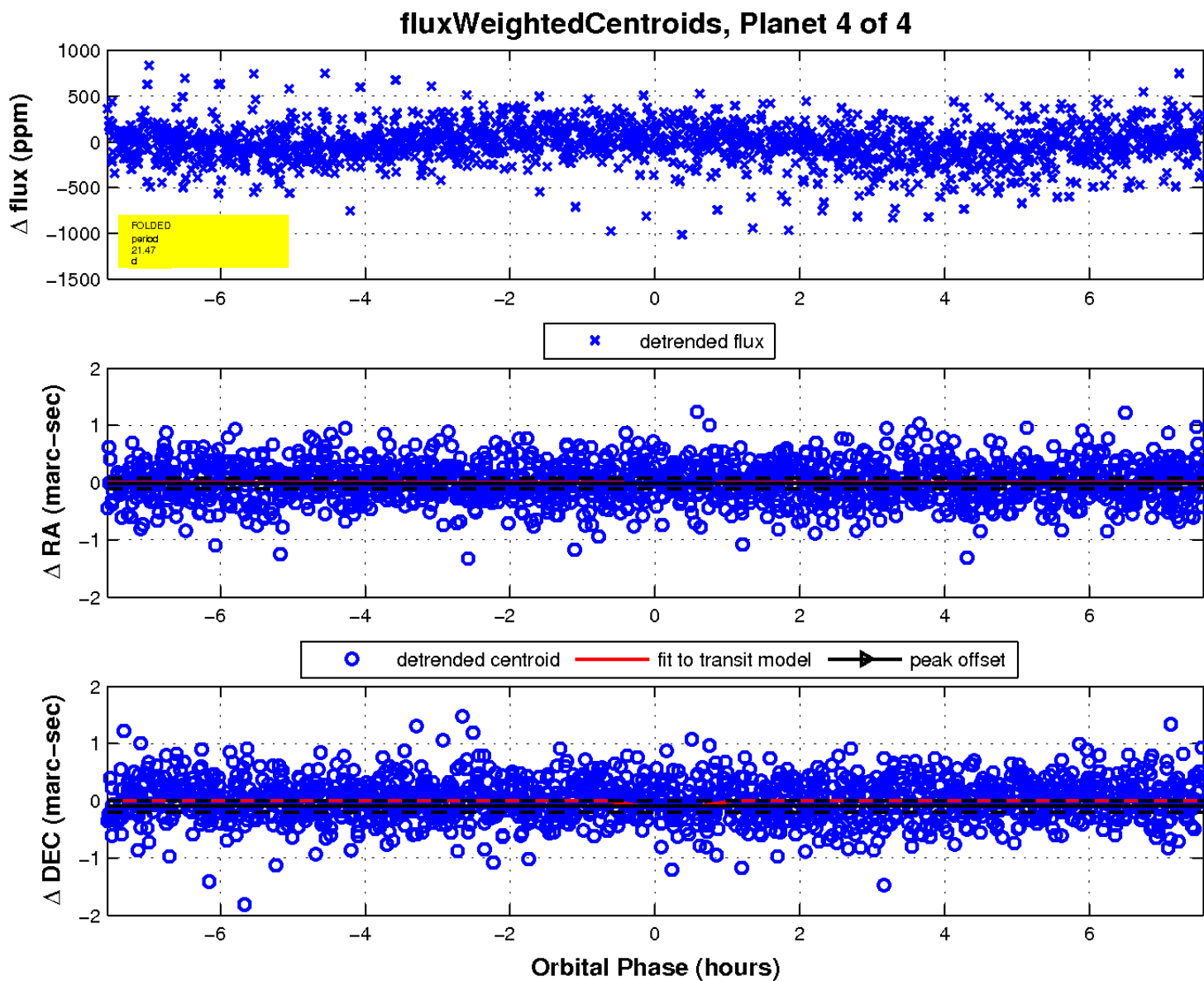
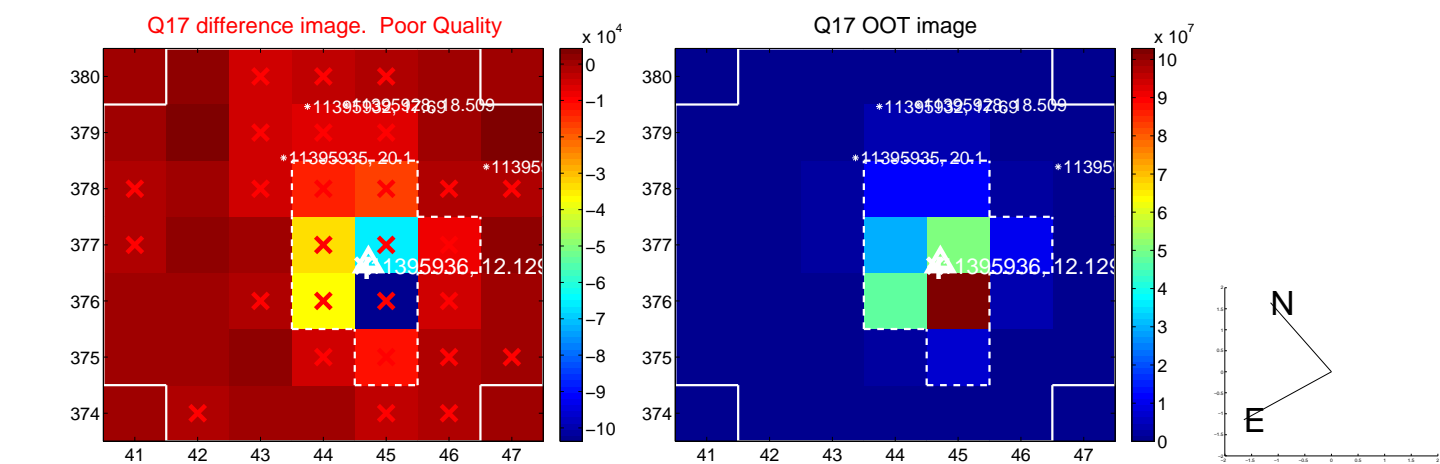
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

