

# KIC 006753253

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006753253-01	OBS	No	1.807906	131.989045	730.8	5.988	282.0	15.5	0.73	4512	3.87	283.71
006753253-02	OBS	No	1.807808	132.893665	125909.2	4.500	773.7	-1.0	0.73	4512	25.00	283.73

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006753253-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_KIC_POS
006753253-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

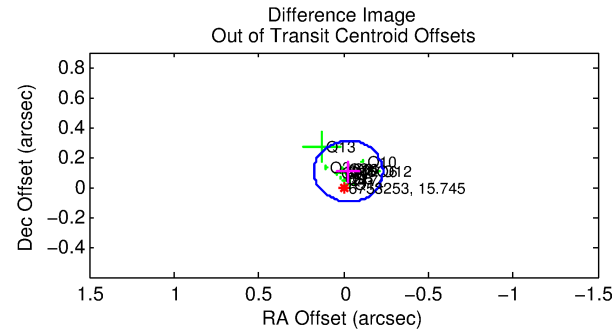
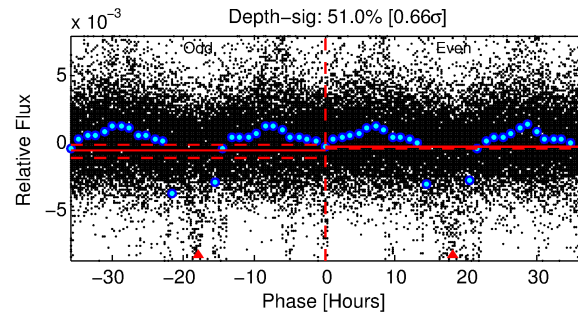
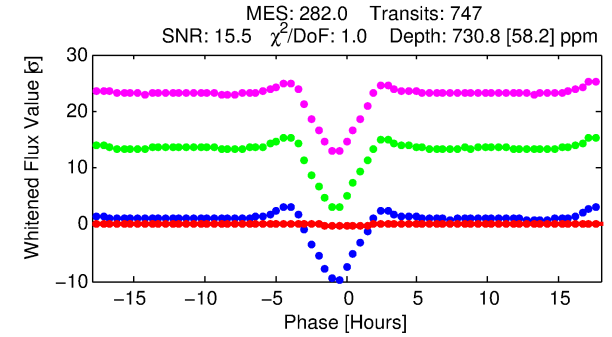
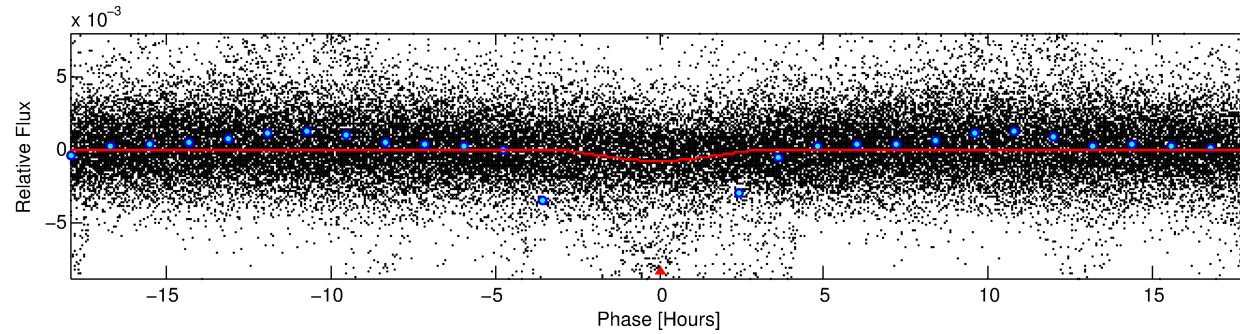
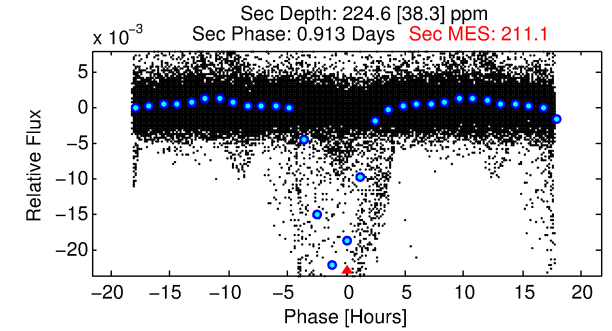
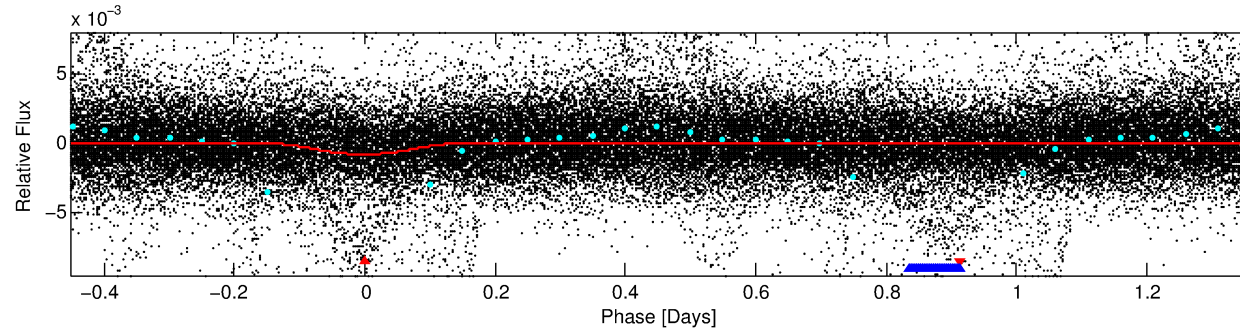
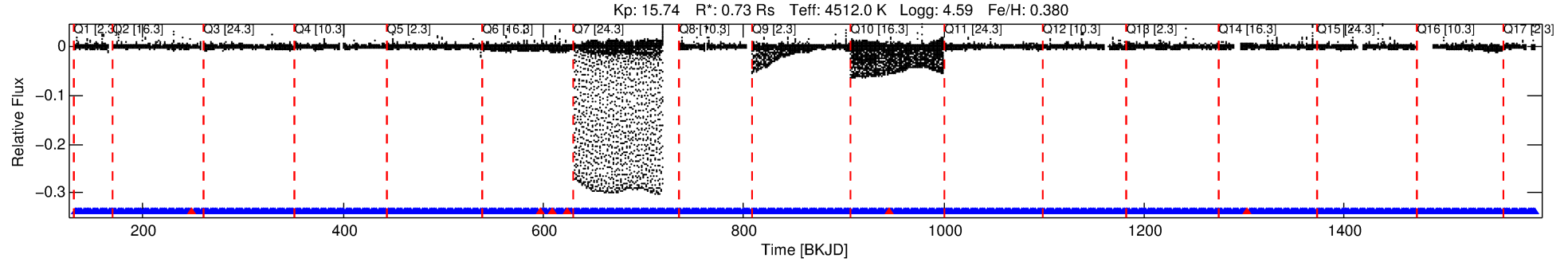
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006753253-01

No Significant Match Found

# DV One-Page Summary

KIC: 6753253 Candidate: 1 of 2 Period: 1.808 d



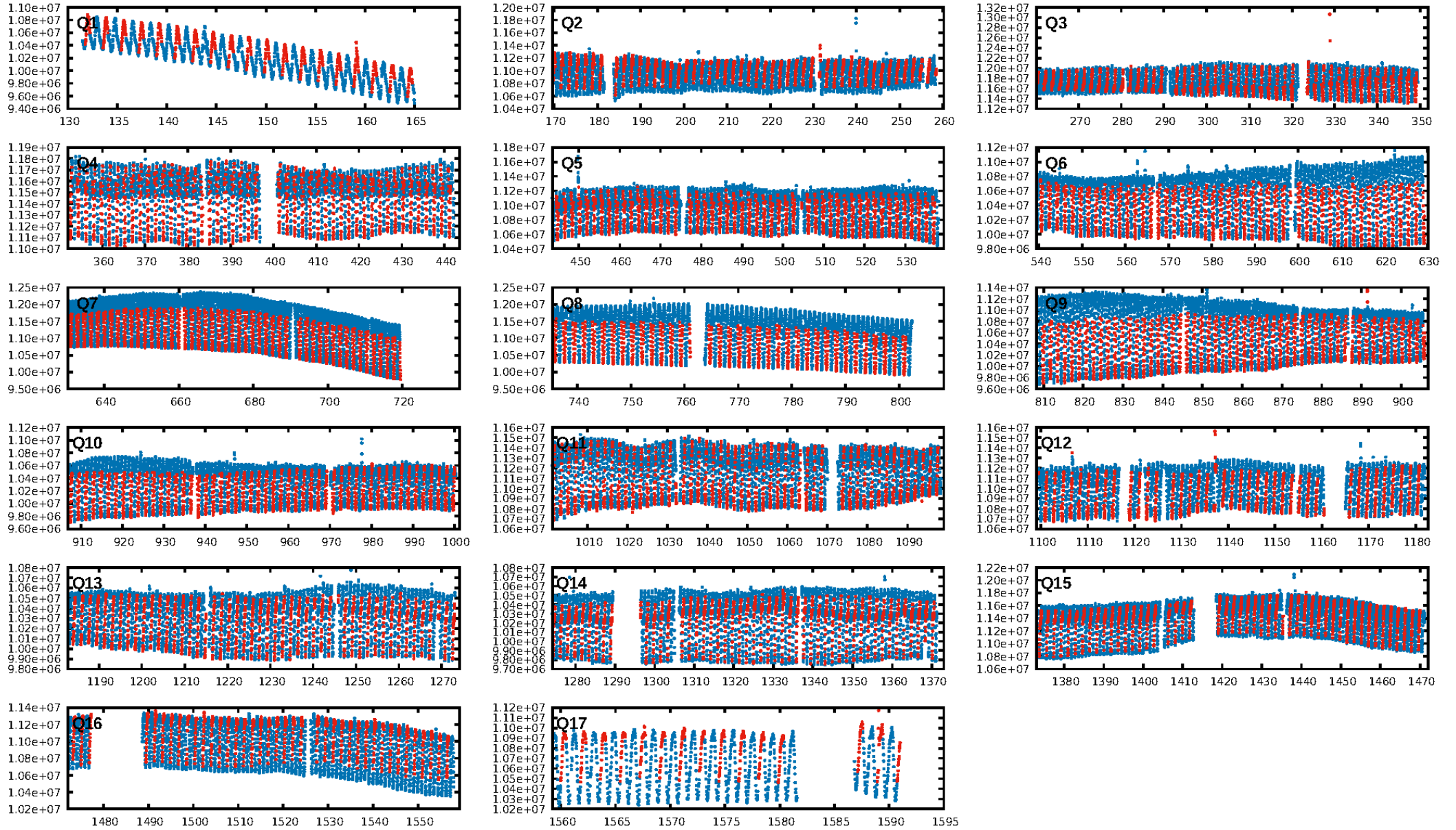
## DV Fit Results:

Period = 1.80791 [0.00001] d  
Epoch = 131.9890 [0.0051] BKJD  
Rp/R\* = 0.0483 [0.0448]  
a/R\* = 1.27 [0.07]  
b = 0.99 [0.07]  
Seff = 283.71 [46.66]  
Teff = 1047 [43] K  
Rp = 3.86 [3.59] Re  
a = 0.0265 [0.0015] AU  
Ag = 5.82 [10.84] [0.44σ]  
Teffp = 2513 [1173] K [1.25σ]

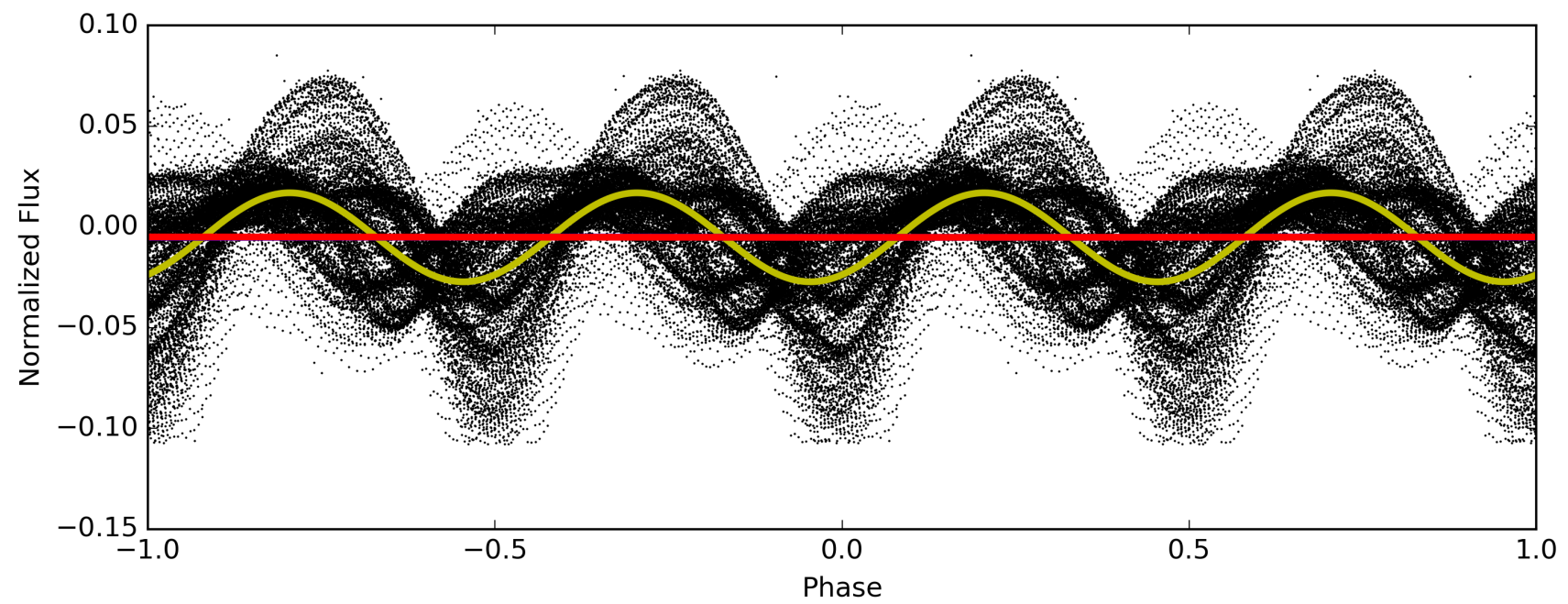
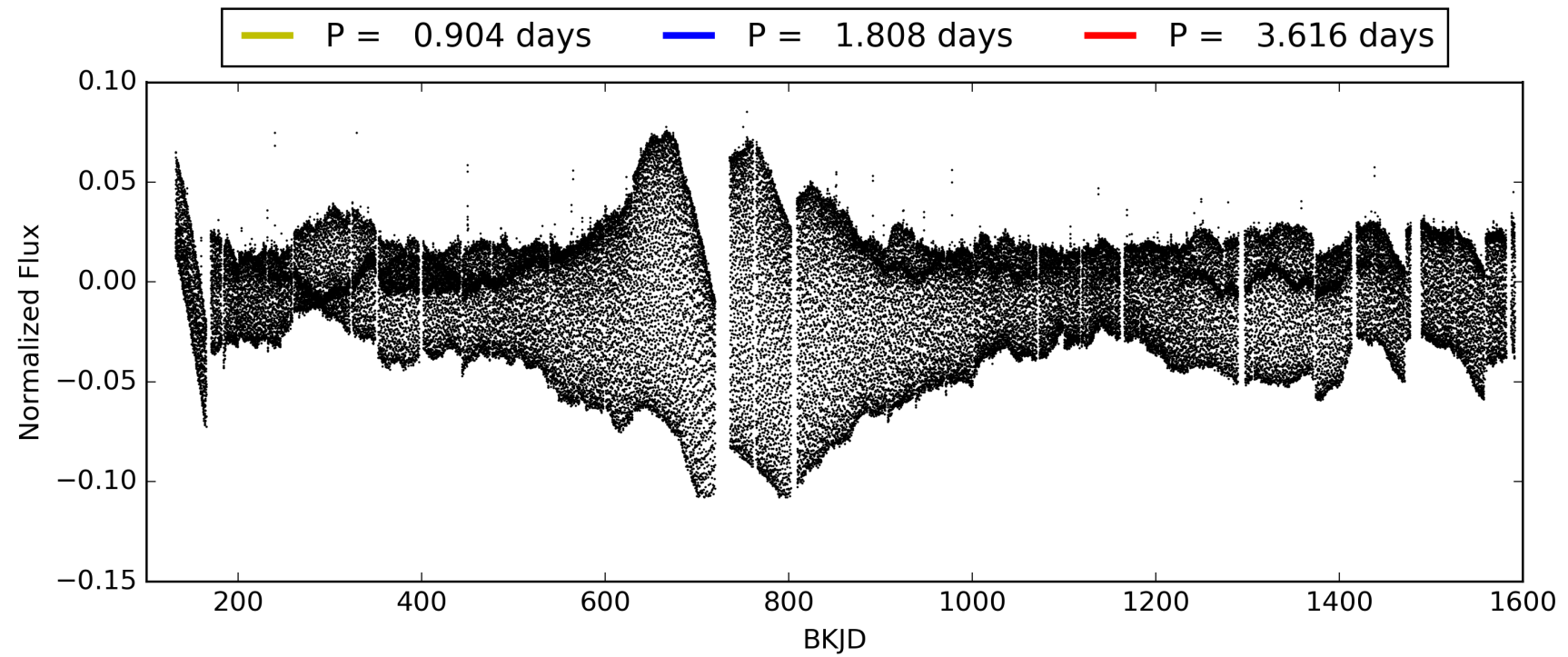
## DV Diagnostic Results:

**ShortPeriod-sig: 0.0% [0.00σ]**  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.99 [707/713]  
GhostDiagnostic-chr: 1.613  
Centroid-sig: 4.8%  
Centroid-so: 0.680 arcsec [2.80σ]  
OotOffset-rm: 0.109 arcsec [1.61σ]  
**KicOffset-rm: 0.662 arcsec [8.41σ]**  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.65 [11/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006753253-01, PDC Light Curves



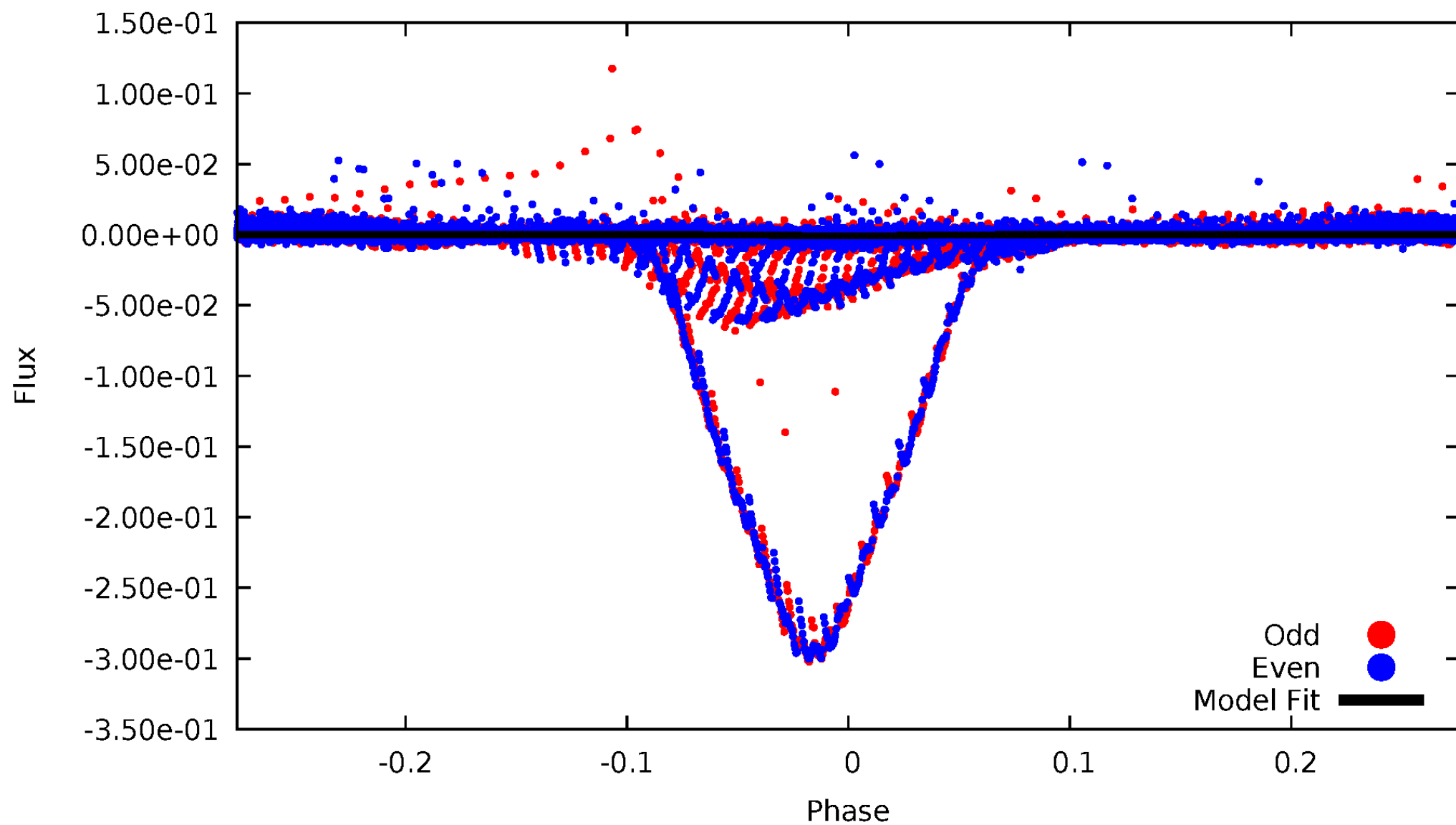
TCE 006753253-01





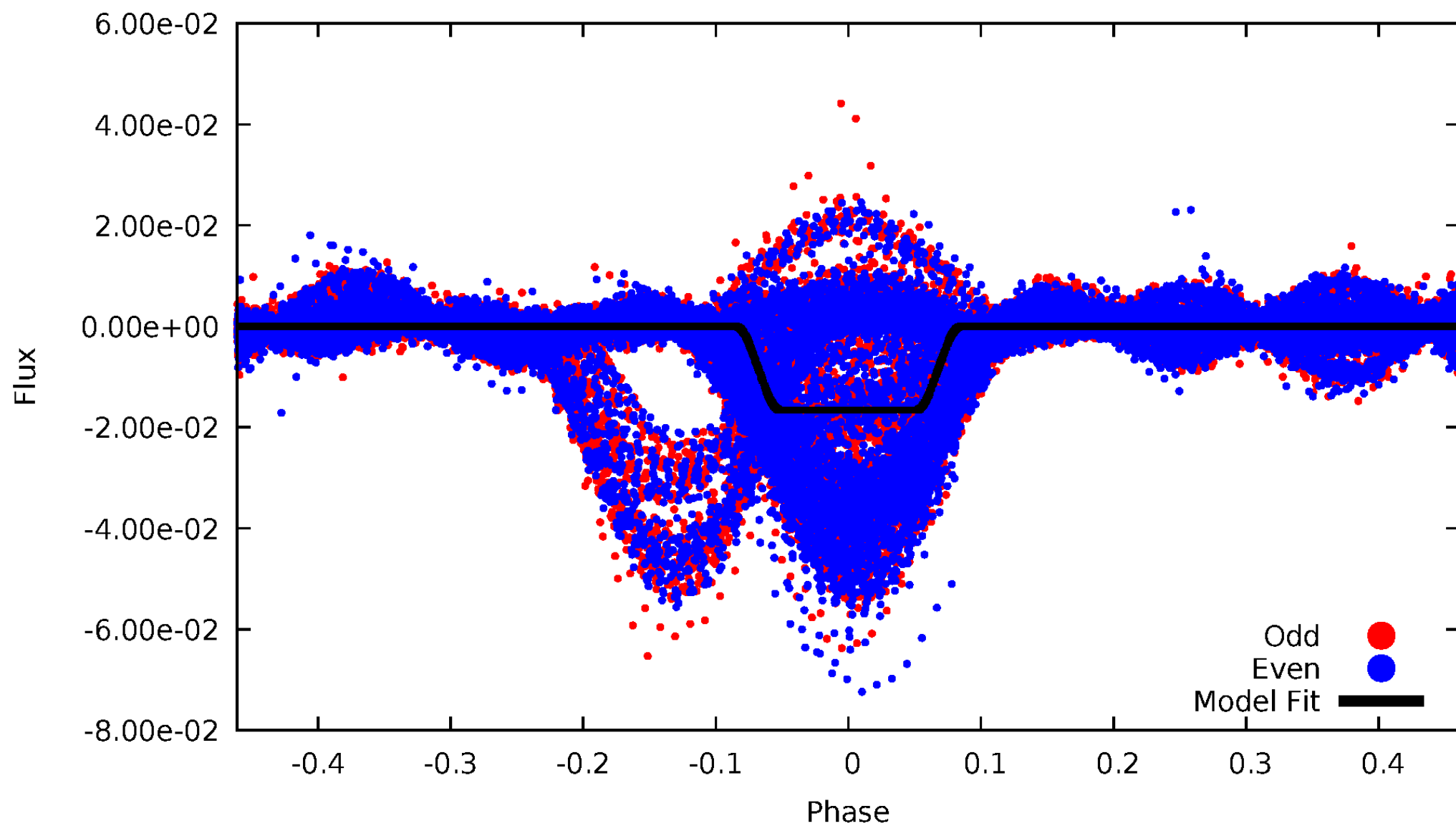
# DV Odd/Even

TCE 006753253-01



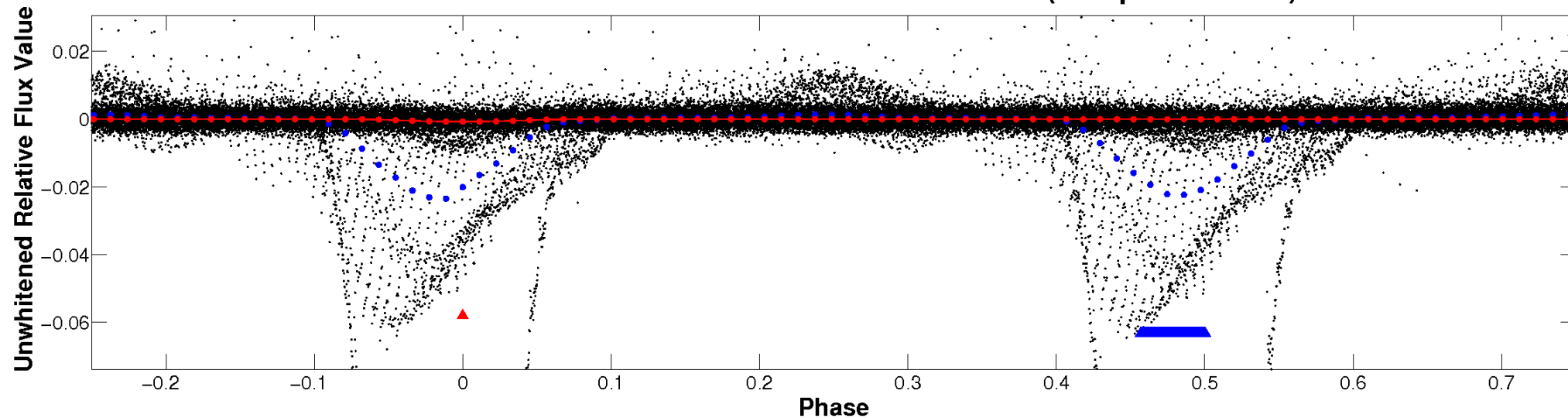
# ALT Odd/Even

TCE 006753253-01

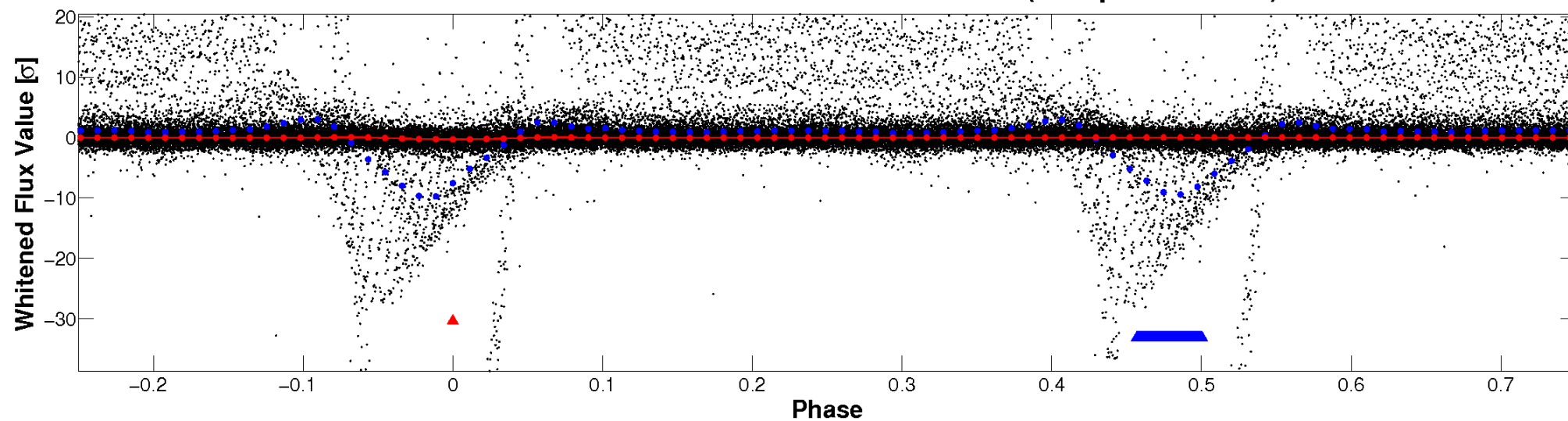


# Non-Whitened Vs. Whitened Light Curve

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

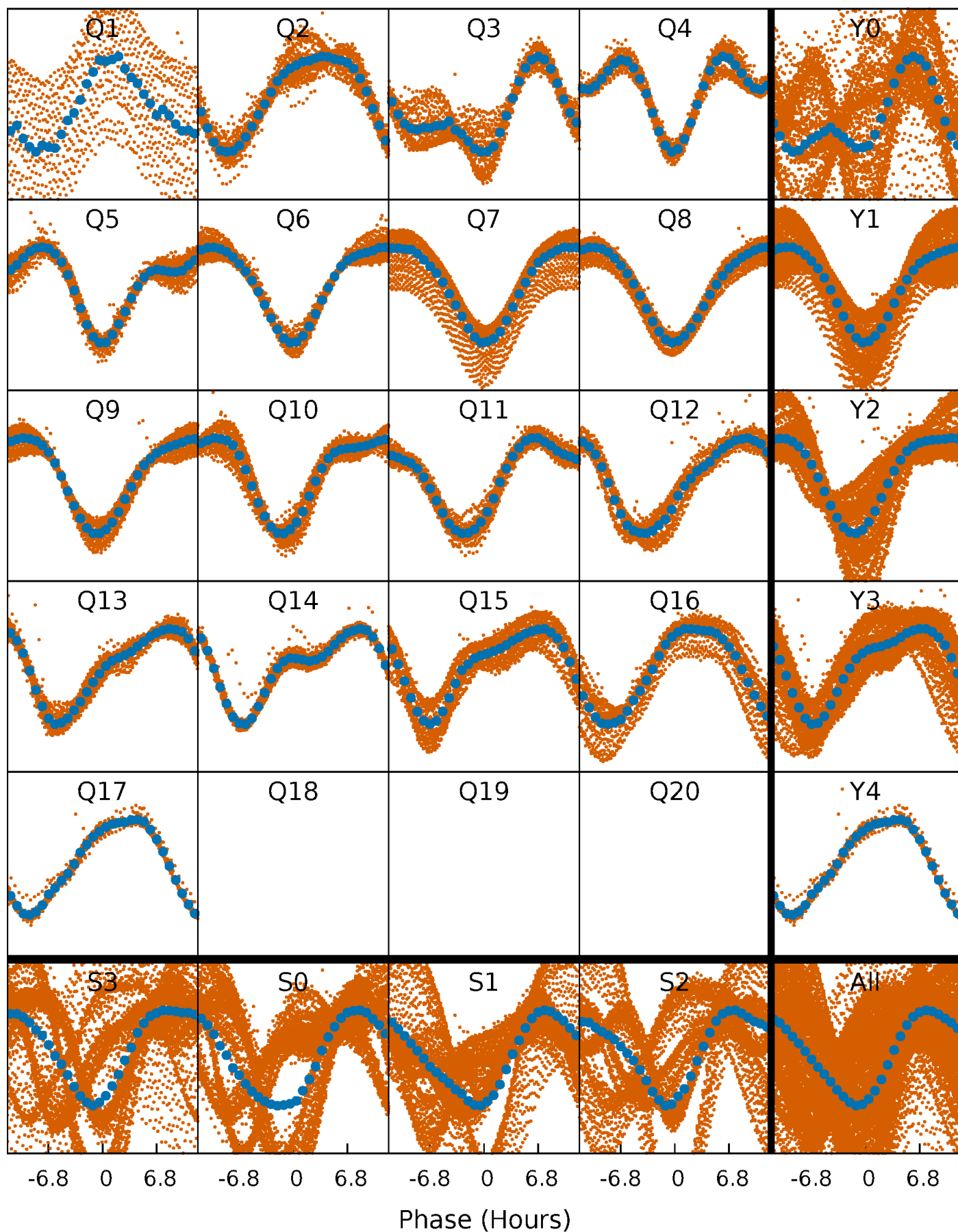


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

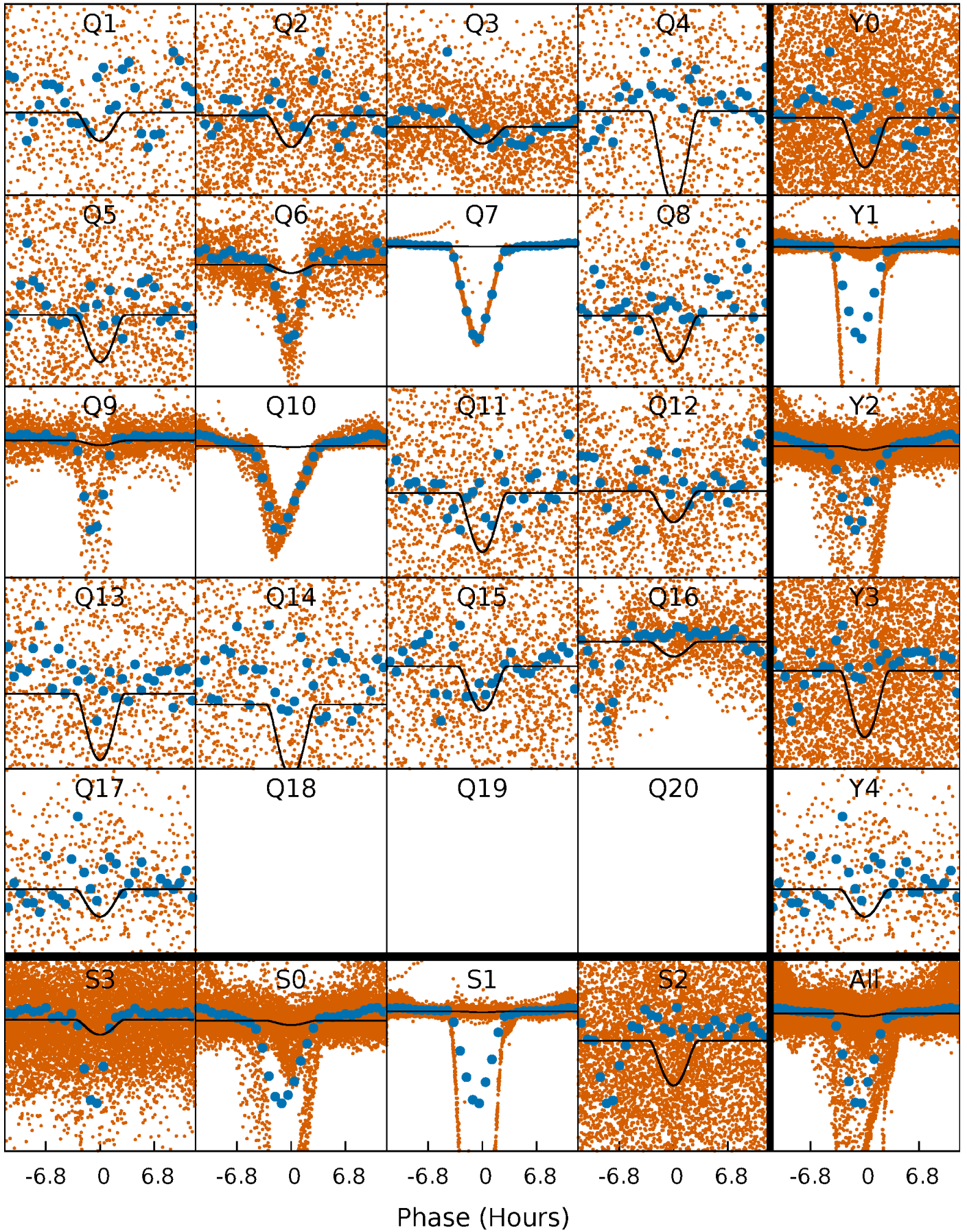
TCE 006753253-01 P= 1.807906 Days  $T_0=131.989045$  (BKJD)





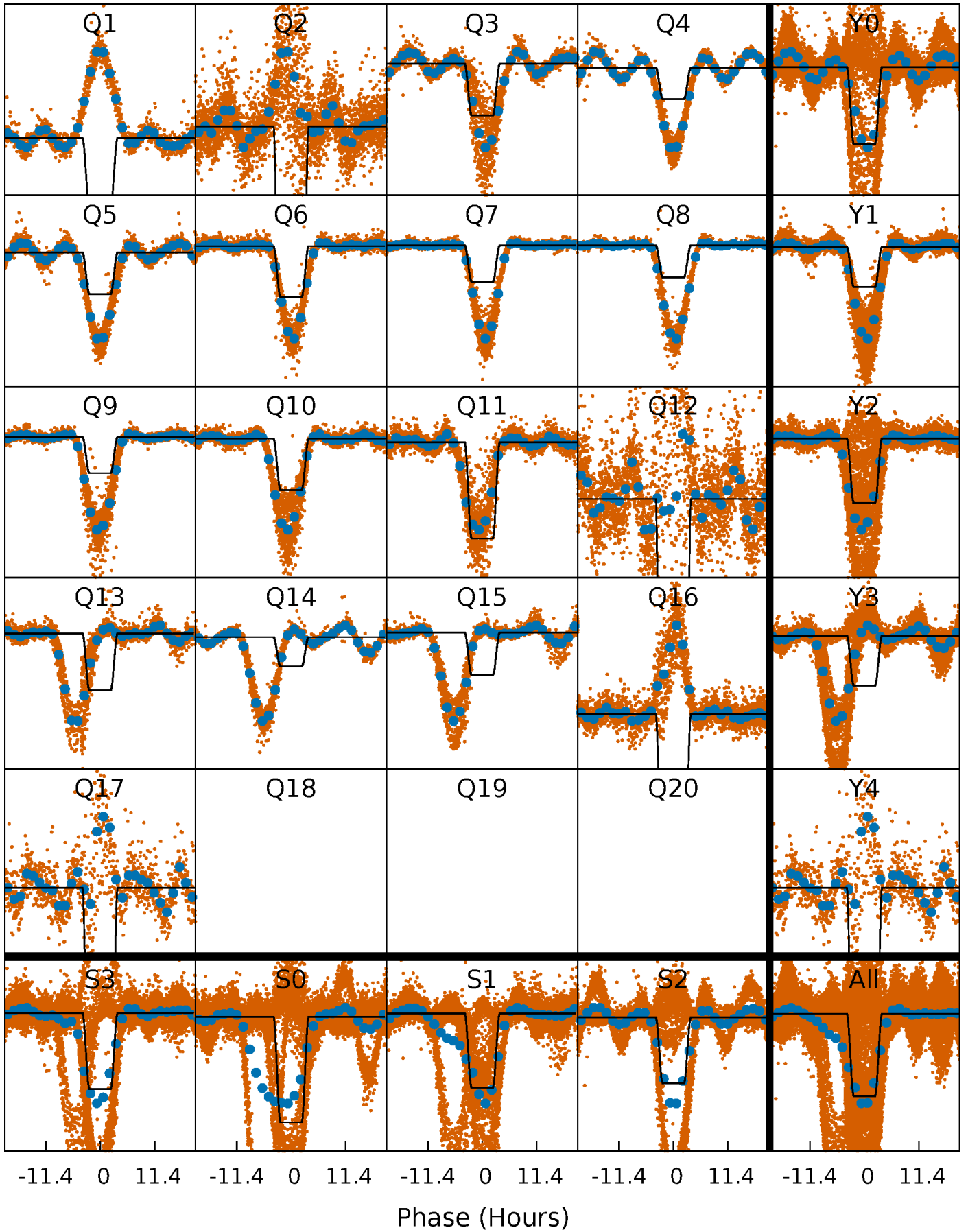
# DV Quarter-Phased Transit Curves

TCE 006753253-01 P= 1.807906 Days  $T_0=131.989045$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

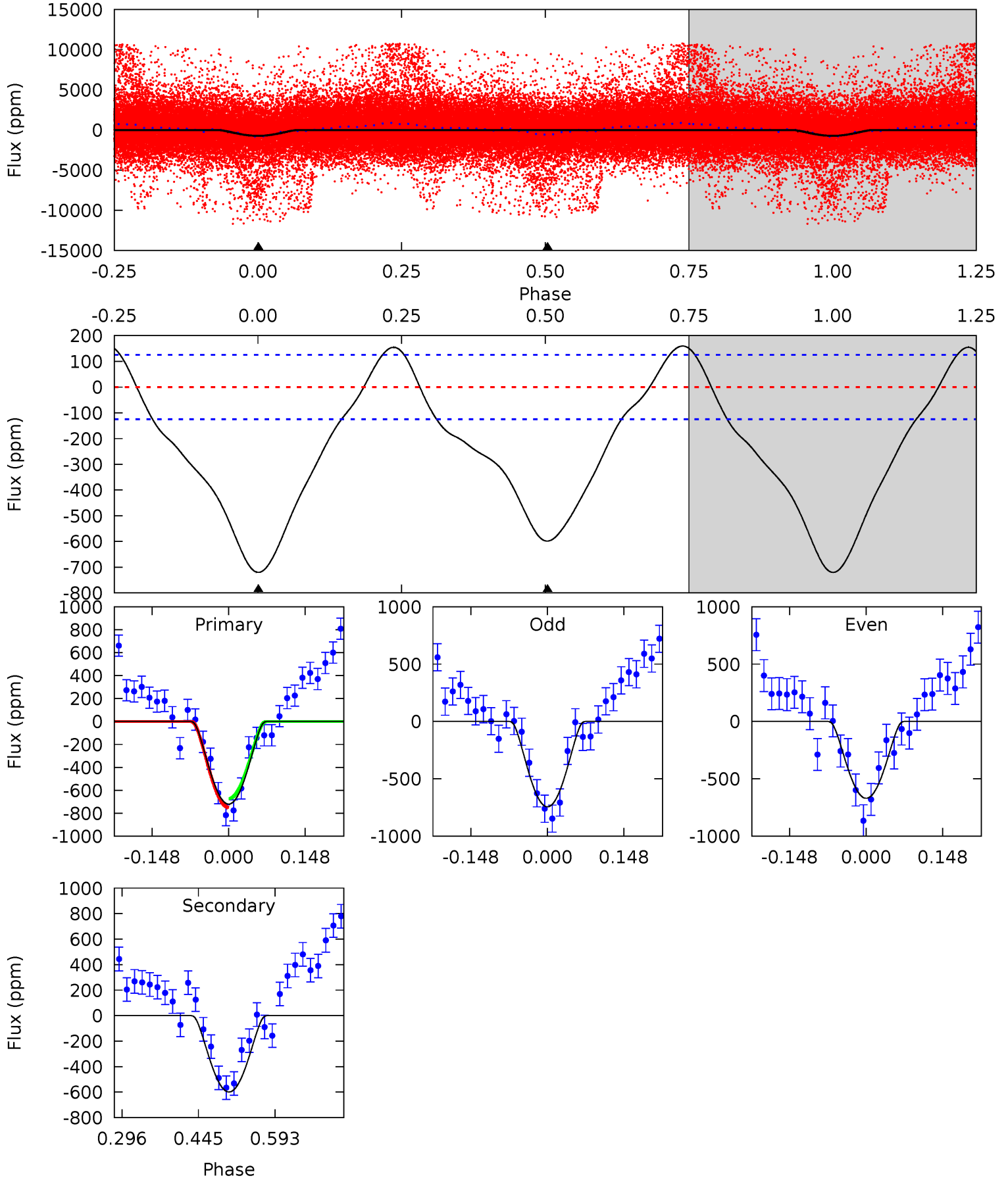
TCE 006753253-01 P= 1.807823 Days  $T_0=131.991894$  (BKJD)



# DV Model-Shift Uniqueness Test

006753253-01, P = 1.807906 Days, E = 130.181139 Days

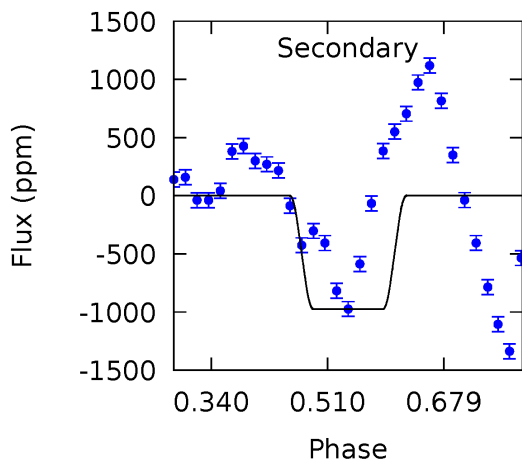
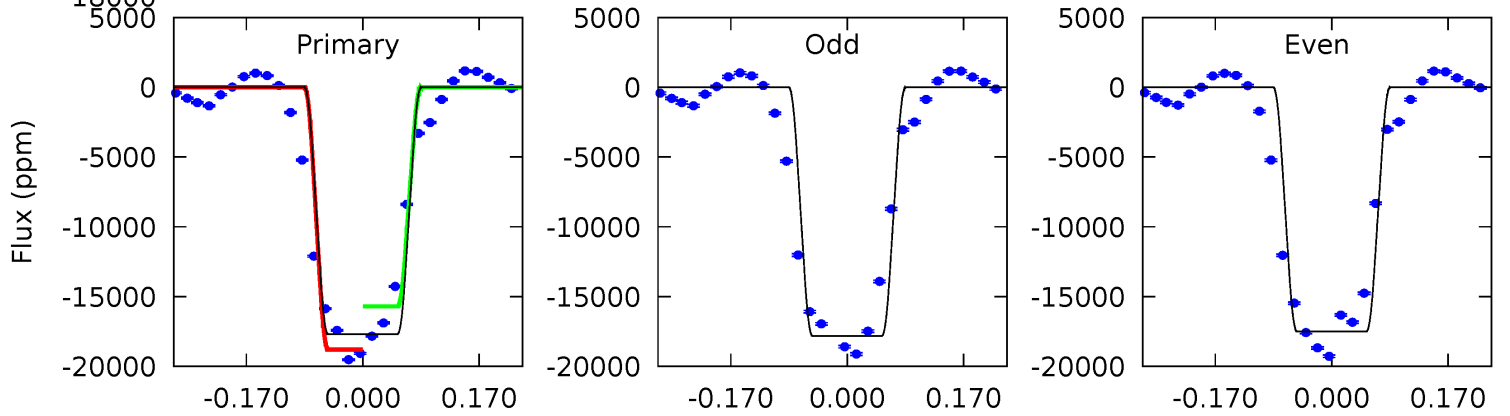
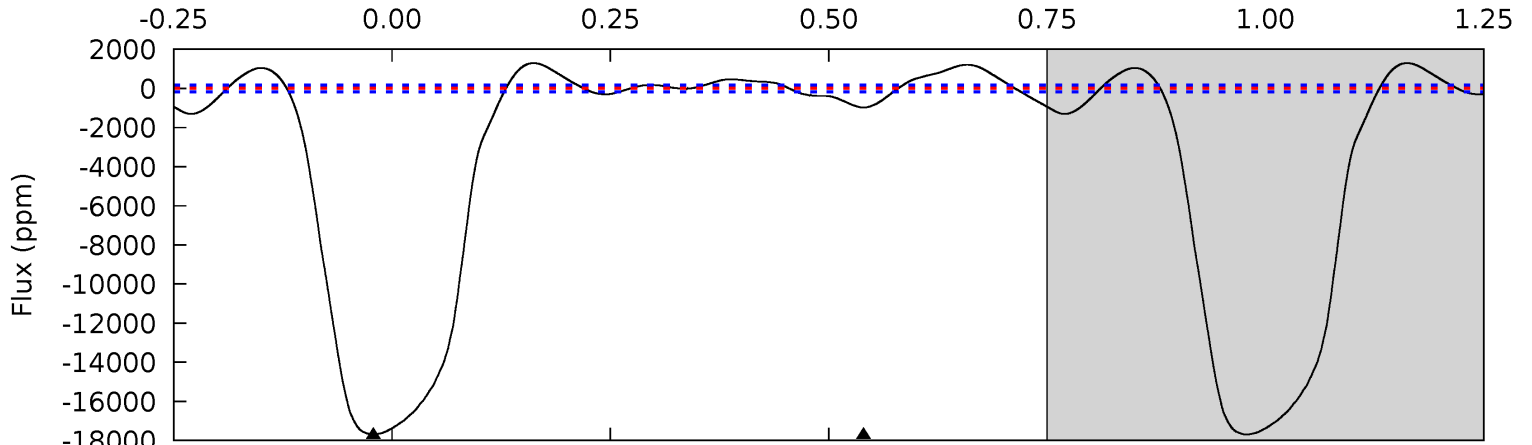
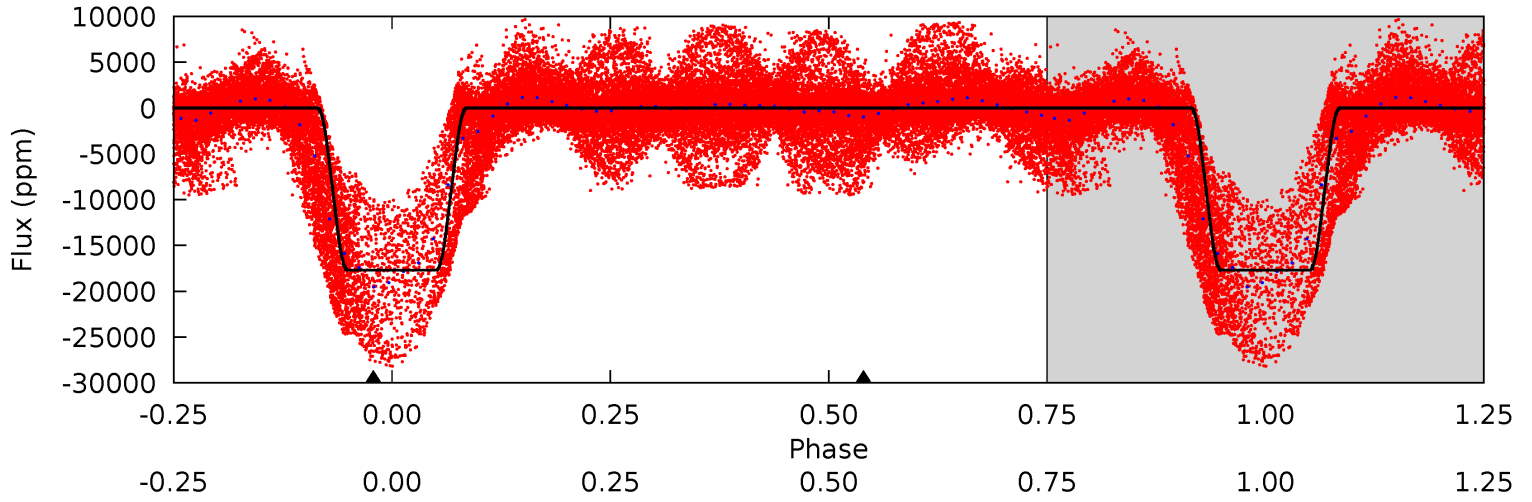
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.8	21.4	0	0	4.48	1.45	4.18	25.8	25.8	21.4	21.4	1.35	30.3	0.18	1.36



# Alt Model-Shift Uniqueness Test

006753253-01, P = 1.807823 Days, E = 130.184071 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
468.6	25.8	0	0	4.45	1.37	17.2	468.6	468.6	25.8	25.8	4.12	1.02	0.07	0



### Stellar Parameters For KIC 006753253

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4512^{+164}_{-164}$	$4.589^{+0.039}_{-0.028}$	$0.380^{+0.050}_{-0.300}$	$0.733^{+0.035}_{-0.053}$	$0.760^{+0.036}_{-0.056}$	$2.720^{+0.493}_{-0.286}$
	+4%/-4%	+1%/-1%	+13%/-79%	+5%/-7%	+5%/-7%	+18%/-11%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 006753253-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-599 \pm 28$	$4.53^{+3.09}_{-2.88}$	$1456^{+58}_{-54}$	$3359^{+1484}_{-505}$	$11^{+74}_{-8}$
Alt.	$-974 \pm 38$	$10.10^{+3.75}_{-3.83}$	$1457^{+55}_{-55}$	$2831^{+443}_{-252}$	$3.732^{+5.967}_{-1.748}$

$T_{\text{max}}$  = 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

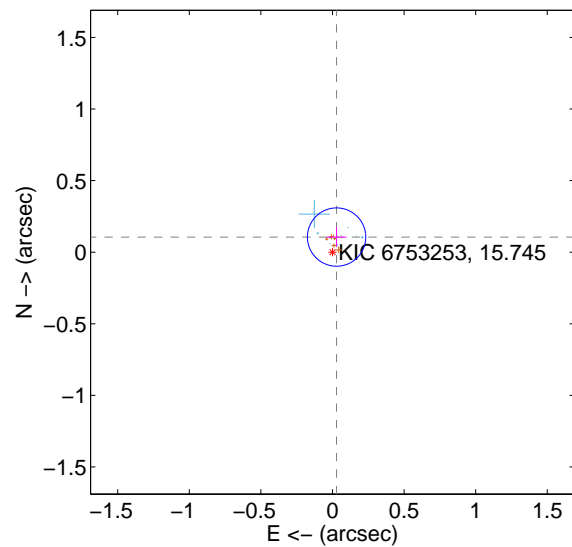
Supplemental centroid analysis for 006753253-01. Kepler magnitude: 15.74. Transit SNR 15.46

There are 11 quarters with good PRF difference image offsets

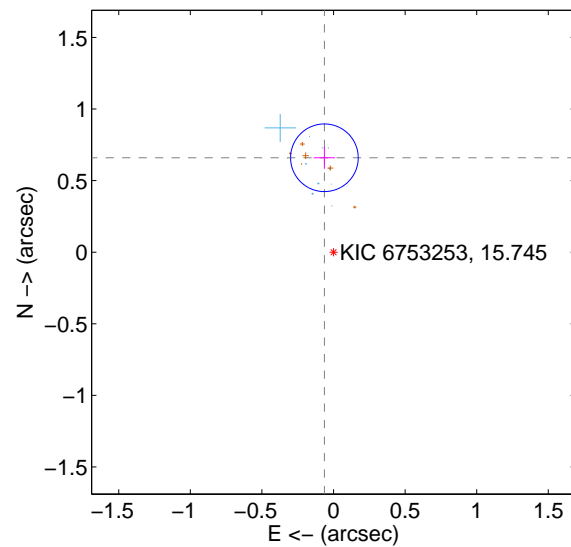
The direct PRF centroid is offset from the target star catalog position by about 0.75 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.109 \pm 0.068$	1.61	$-0.029 \pm 0.069$	$0.106 \pm 0.068$
PRF-fit source offset from KIC position	$0.662 \pm 0.079$	8.41	$0.064 \pm 0.075$	$0.659 \pm 0.078$
photometric centroid source offset	$0.68 \pm 0.24$	2.80	$-0.45 \pm 0.24$	$0.51 \pm 0.24$

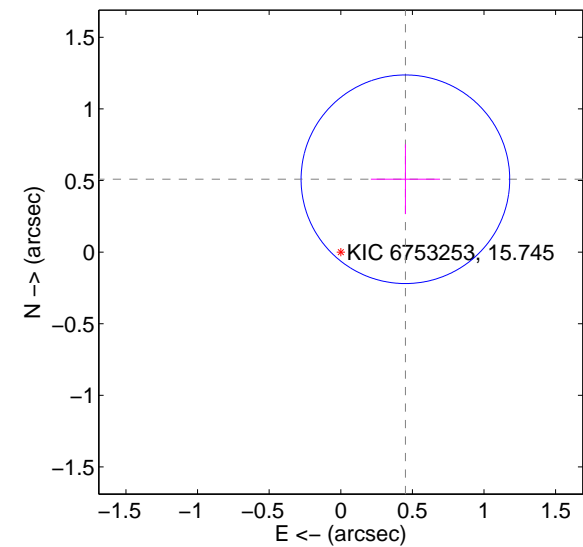
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

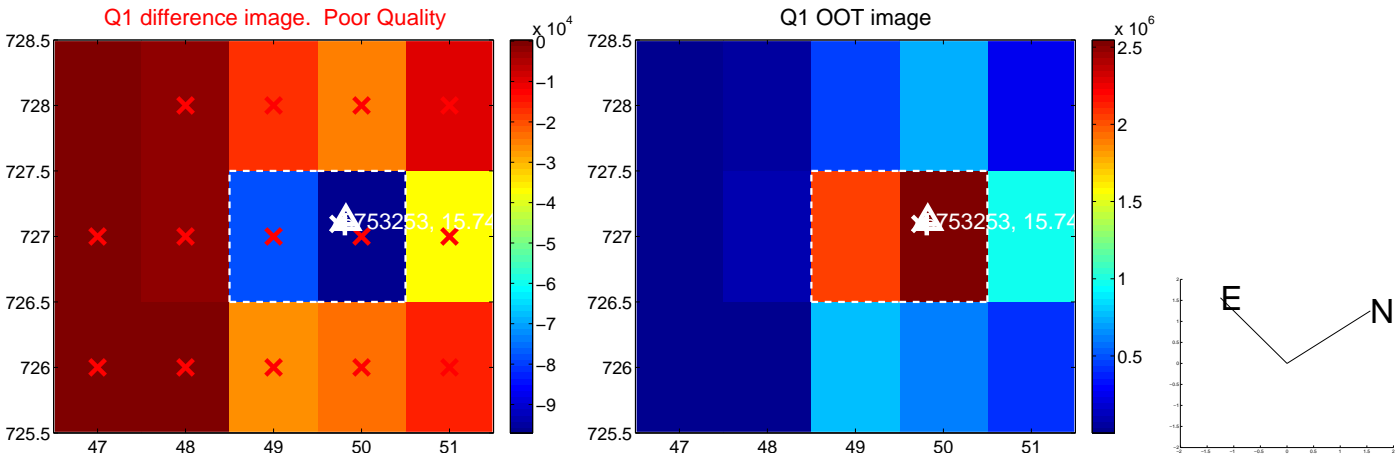


offset from photometric centroids

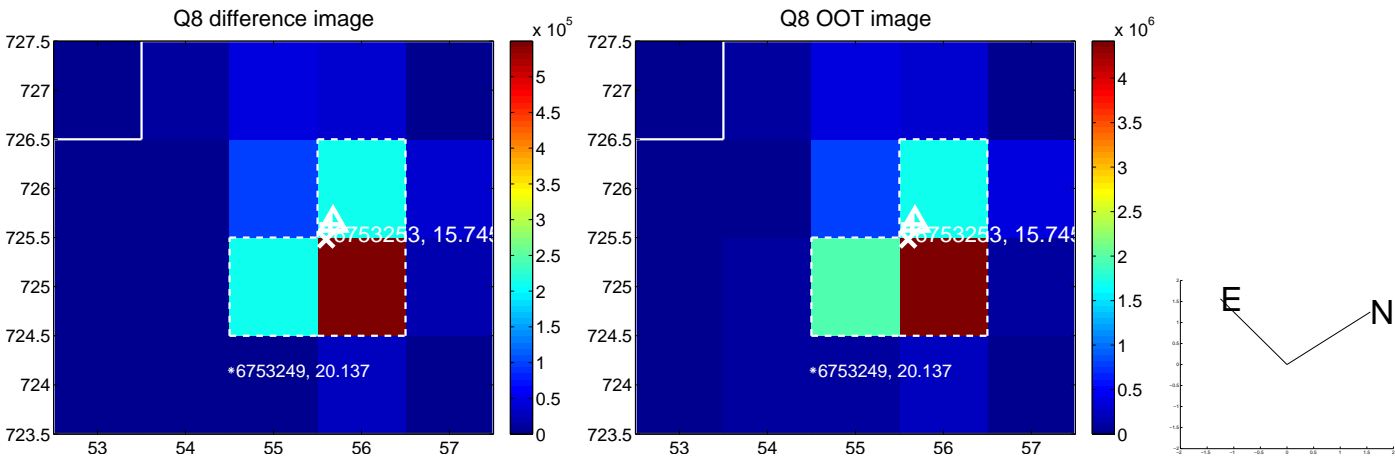
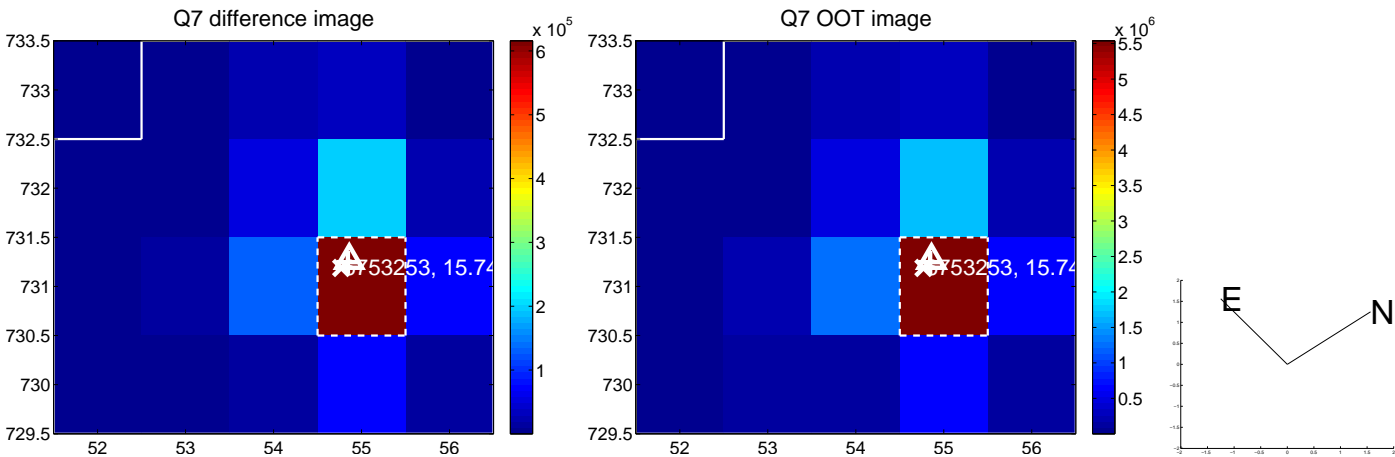
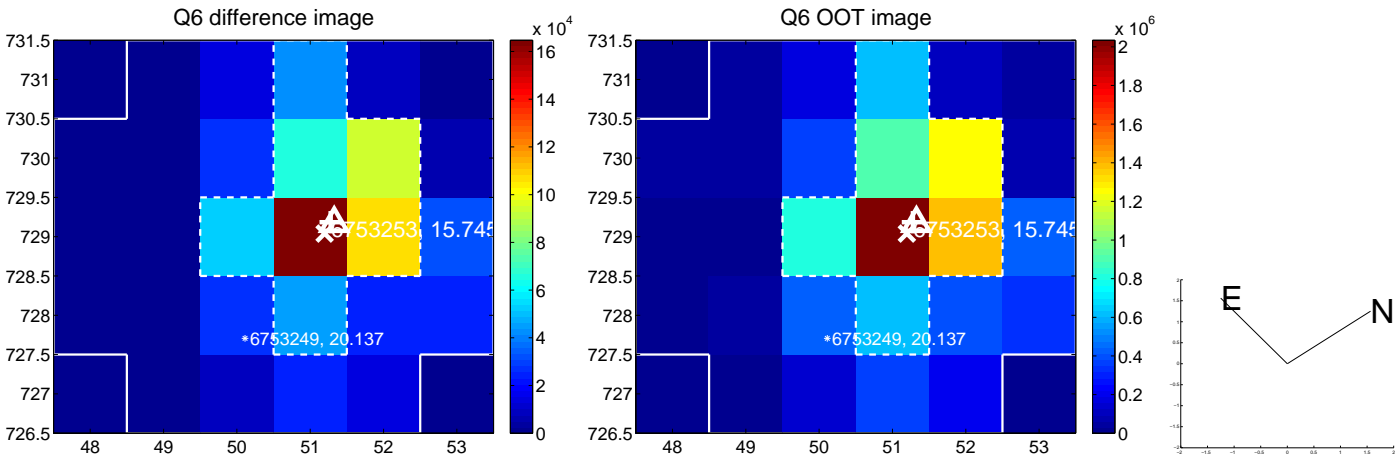
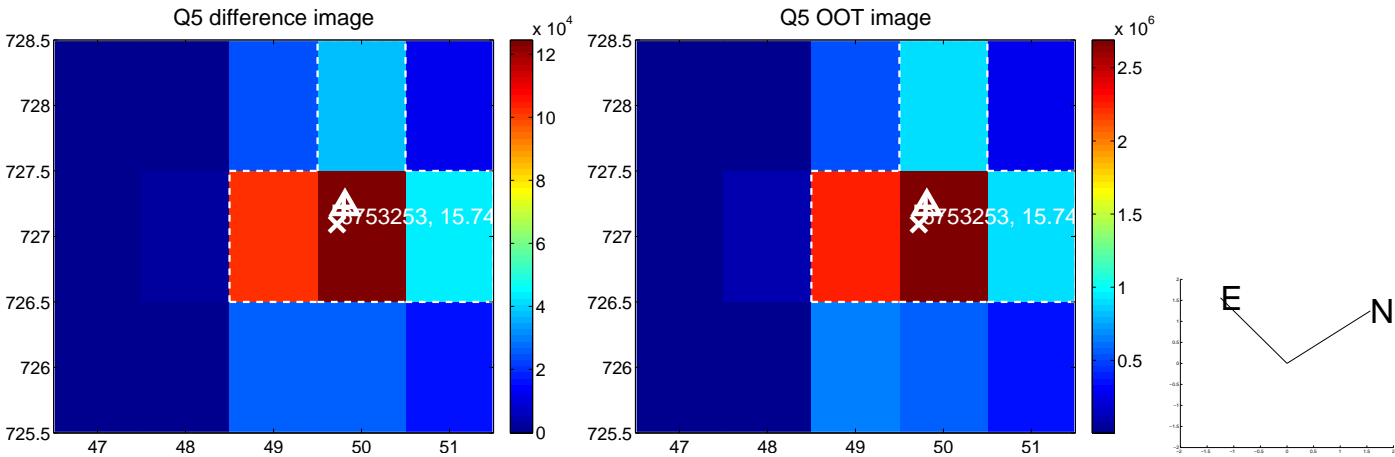


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

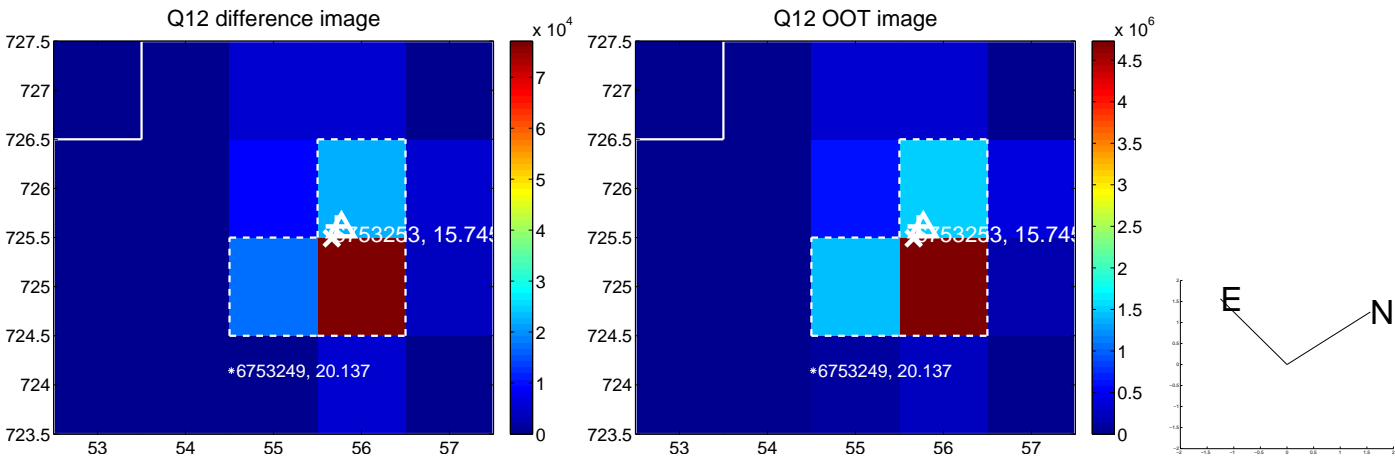
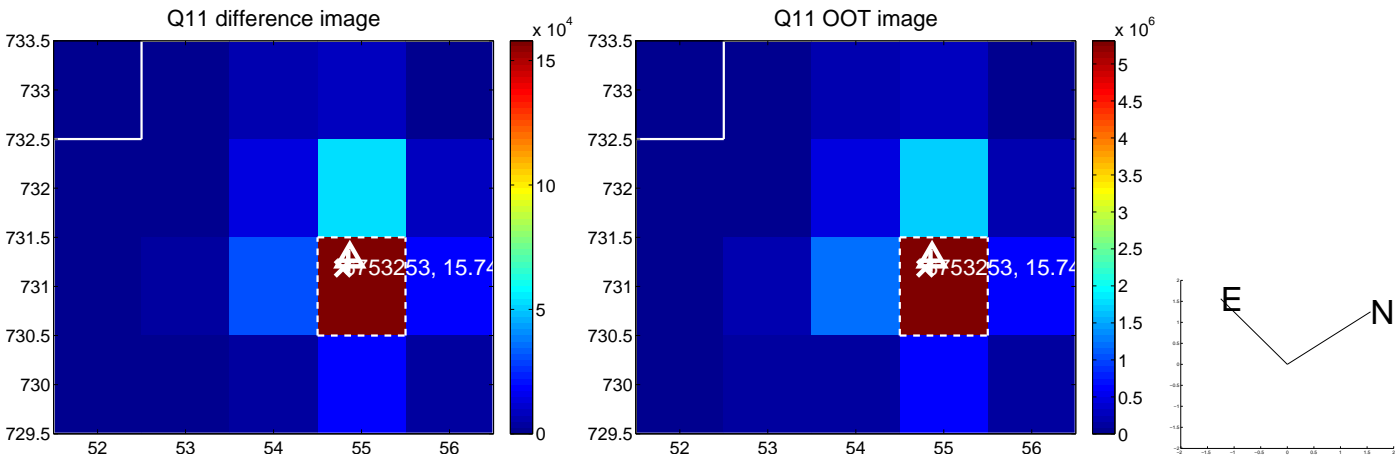
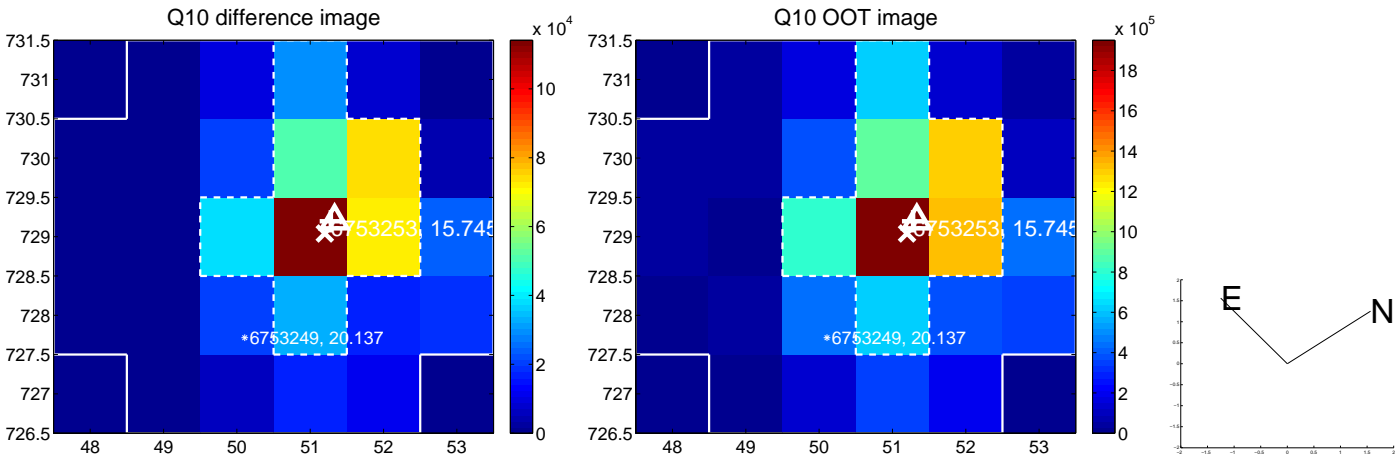
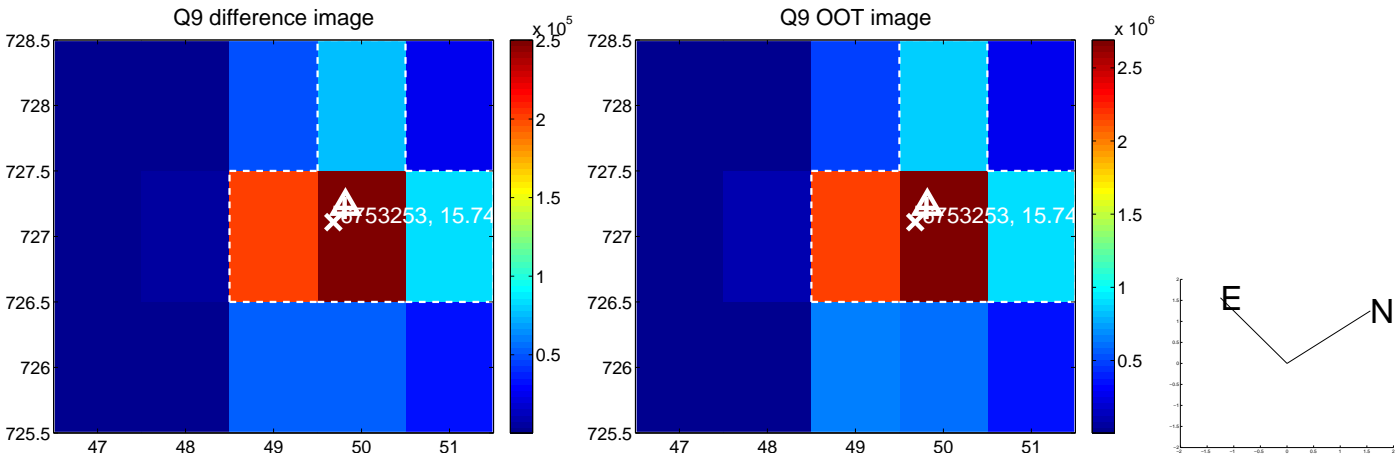
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



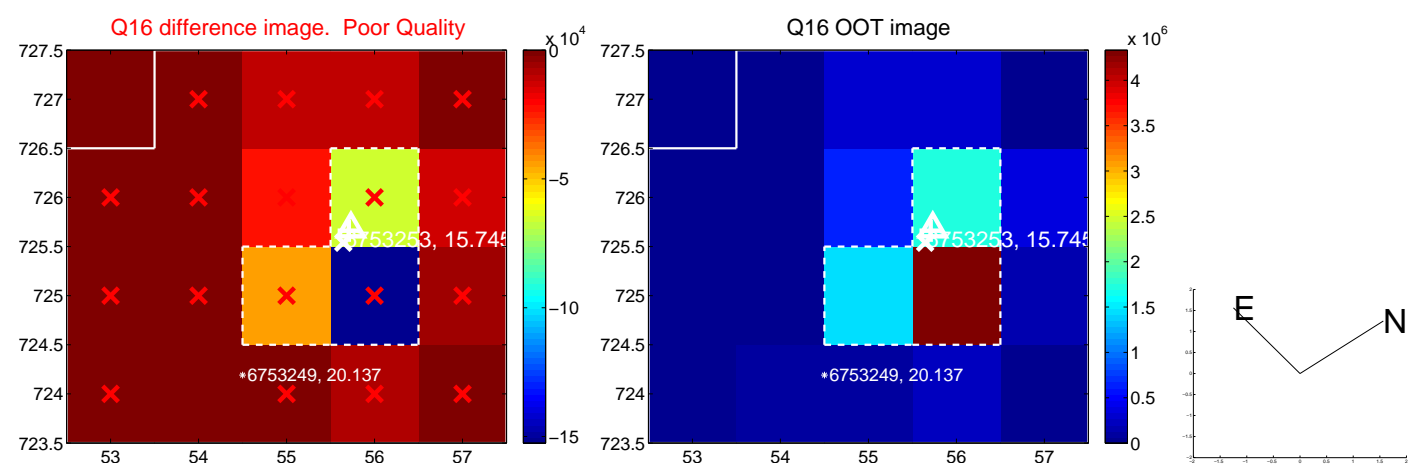
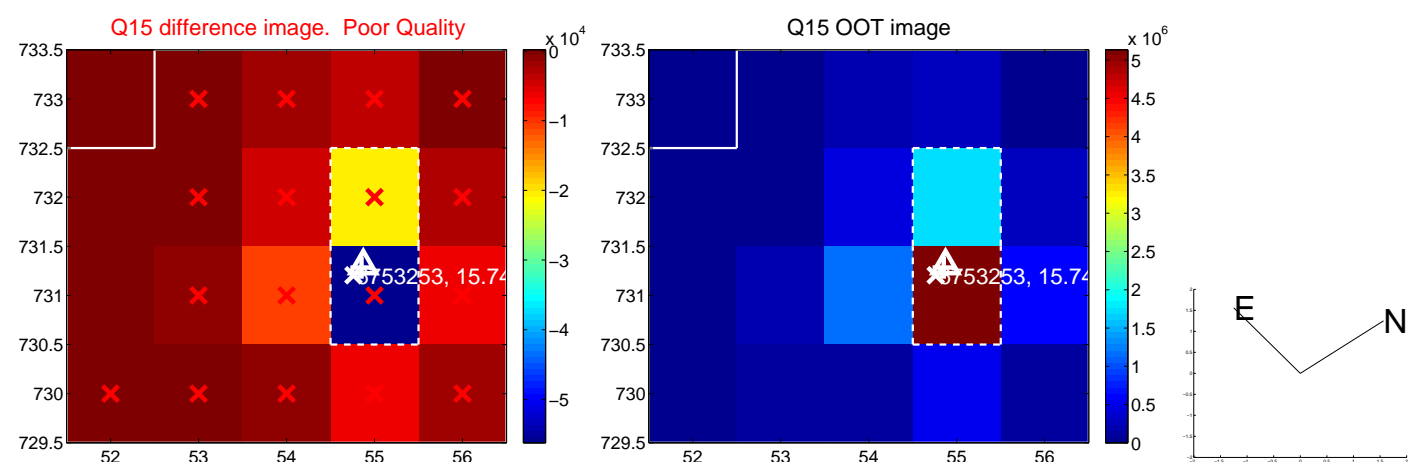
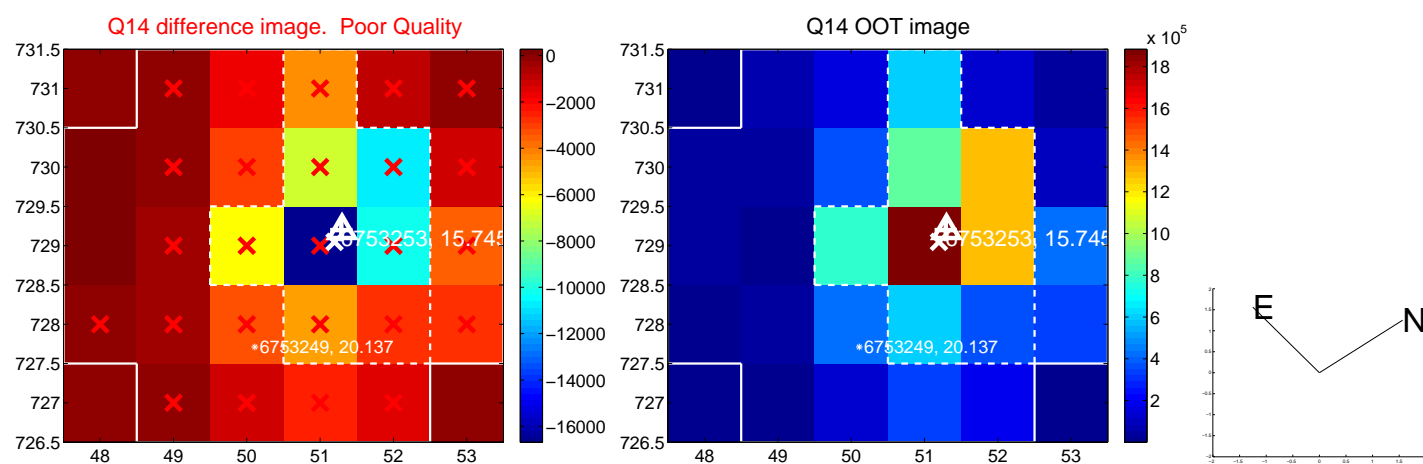
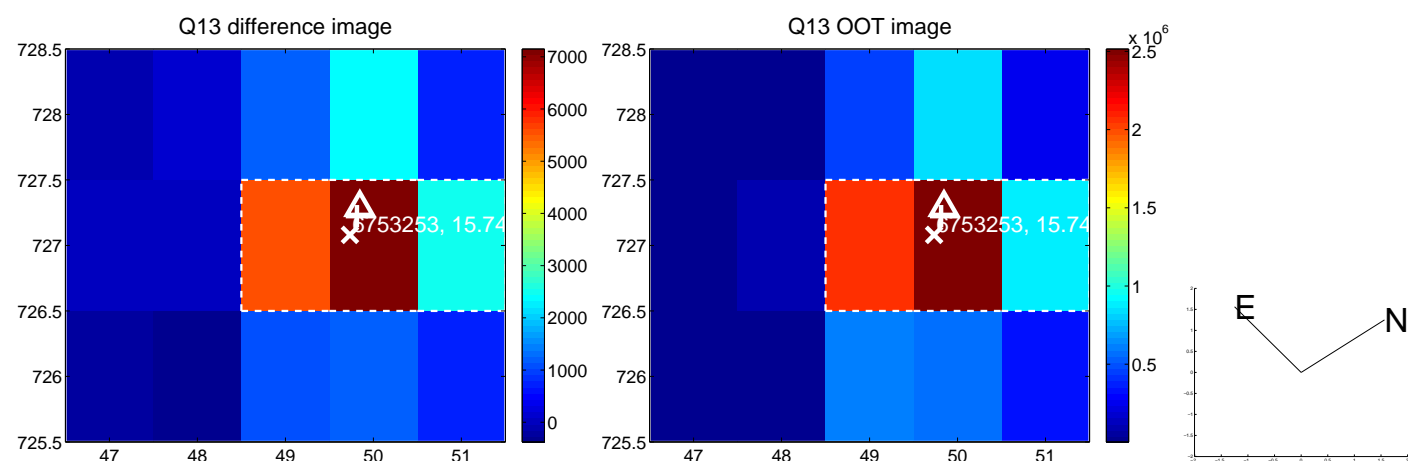
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

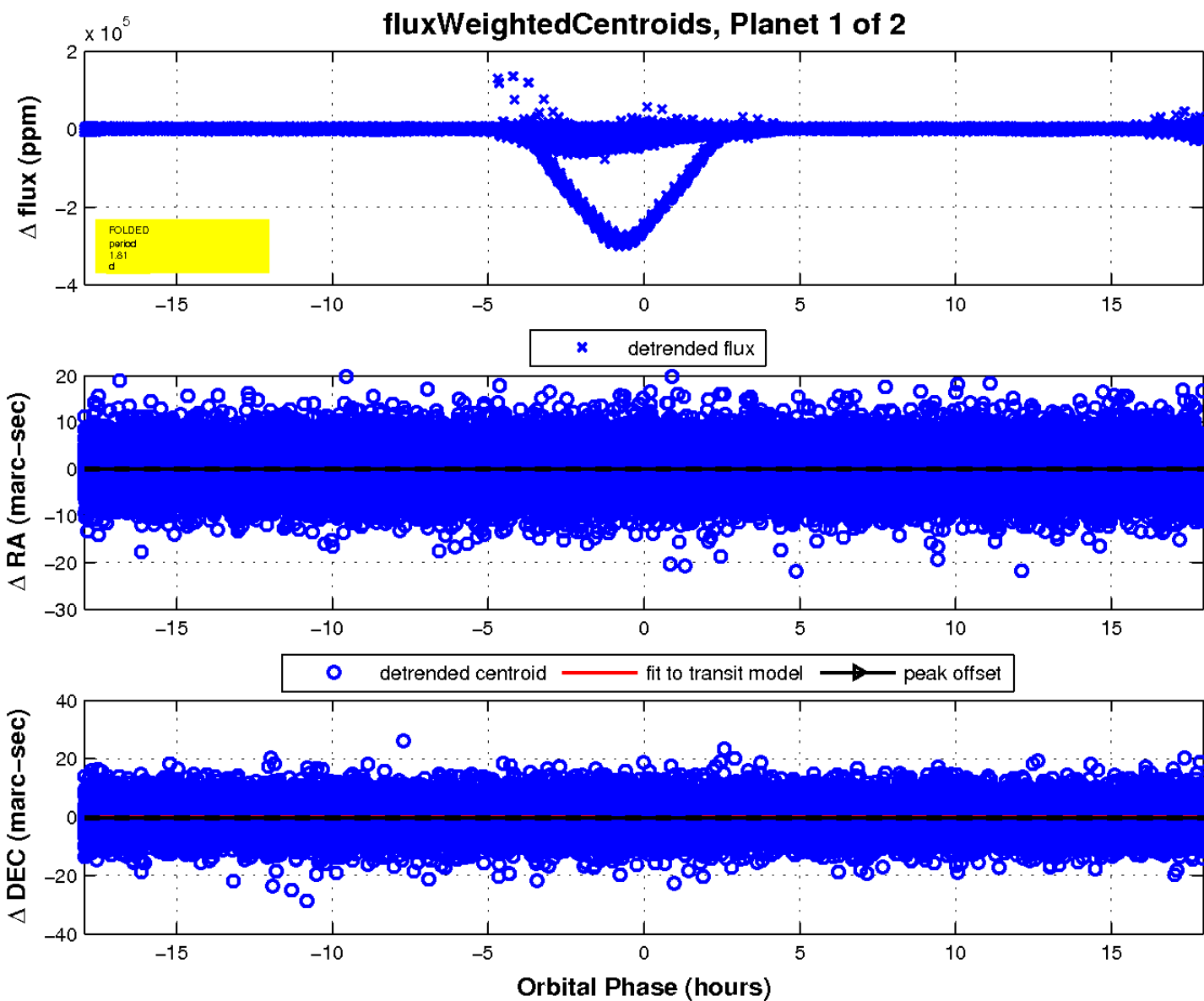
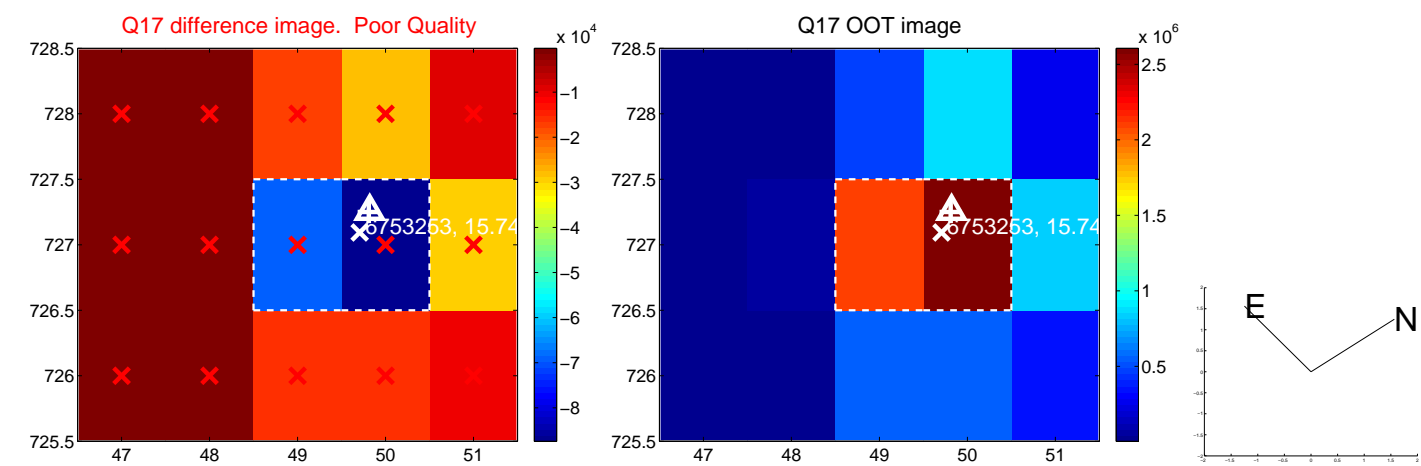


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



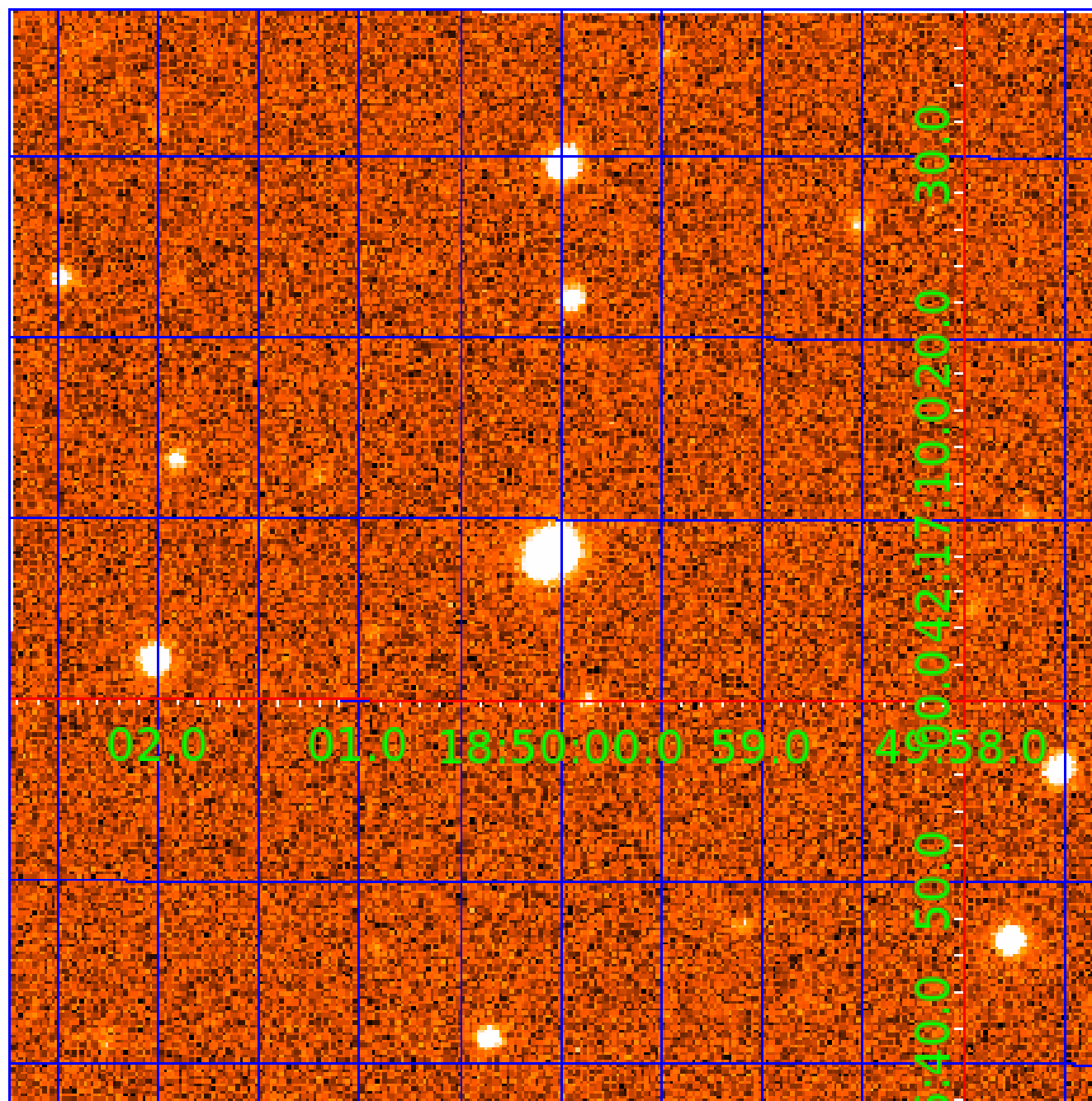


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 006753253

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006753253-01	OBS	No	1.807906	131.989045	730.8	5.988	282.0	15.5	0.73	4512	3.87	283.71
006753253-02	OBS	No	1.807808	132.893665	125909.2	4.500	773.7	-1.0	0.73	4512	25.00	283.73

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006753253-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_KIC_POS
006753253-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

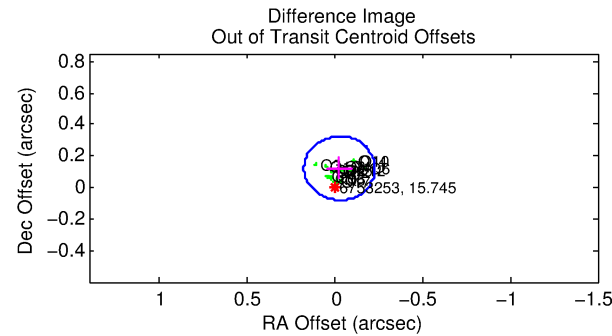
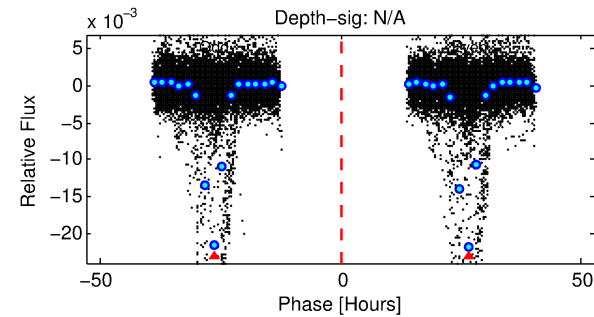
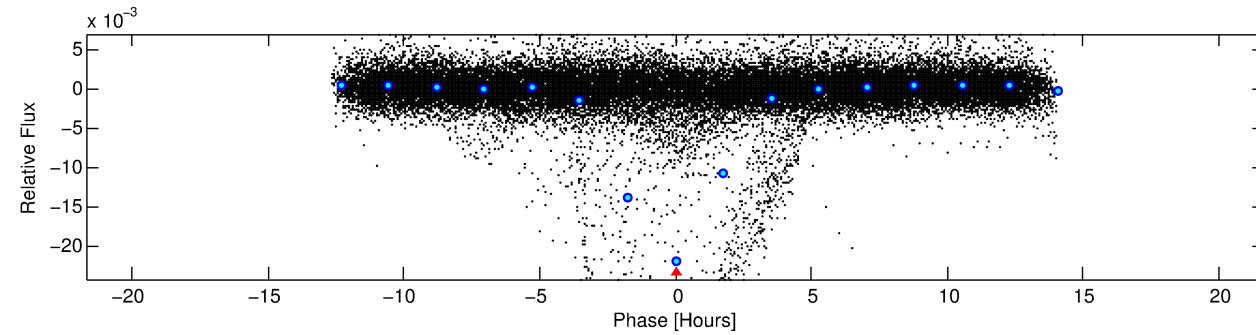
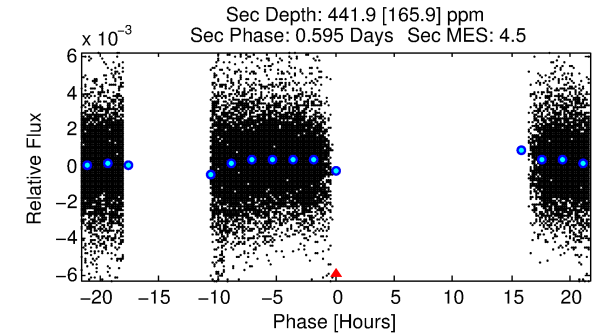
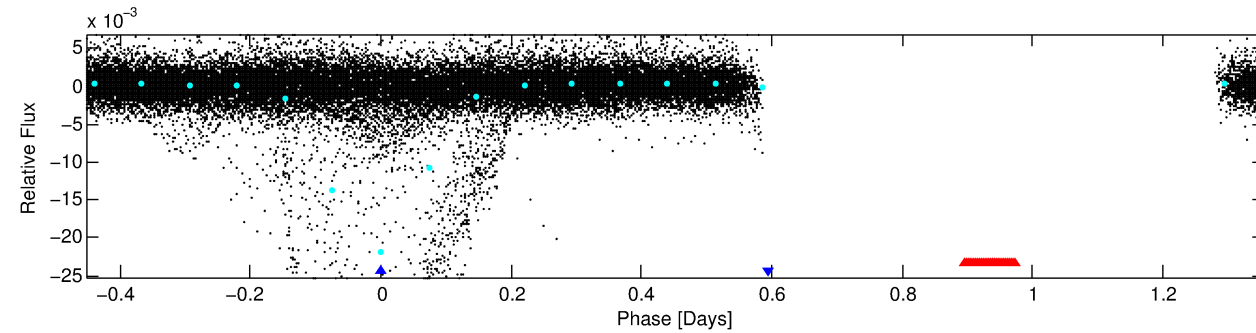
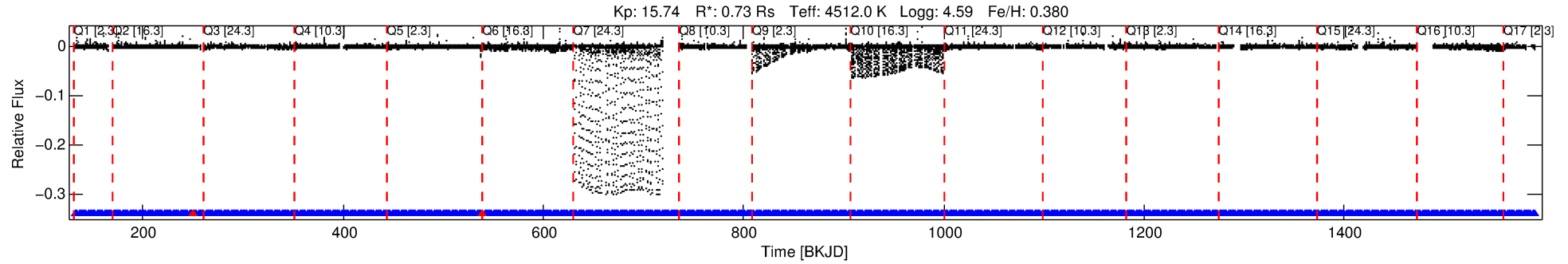
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006753253-02

No Significant Match Found

# DV One-Page Summary

KIC: 6753253 Candidate: 2 of 2 Period: 1.808 d



## TPS TCE Results:

Period = 1.80781 d  
Epoch = 132.8937 BKJD

DV fit results are unavailable

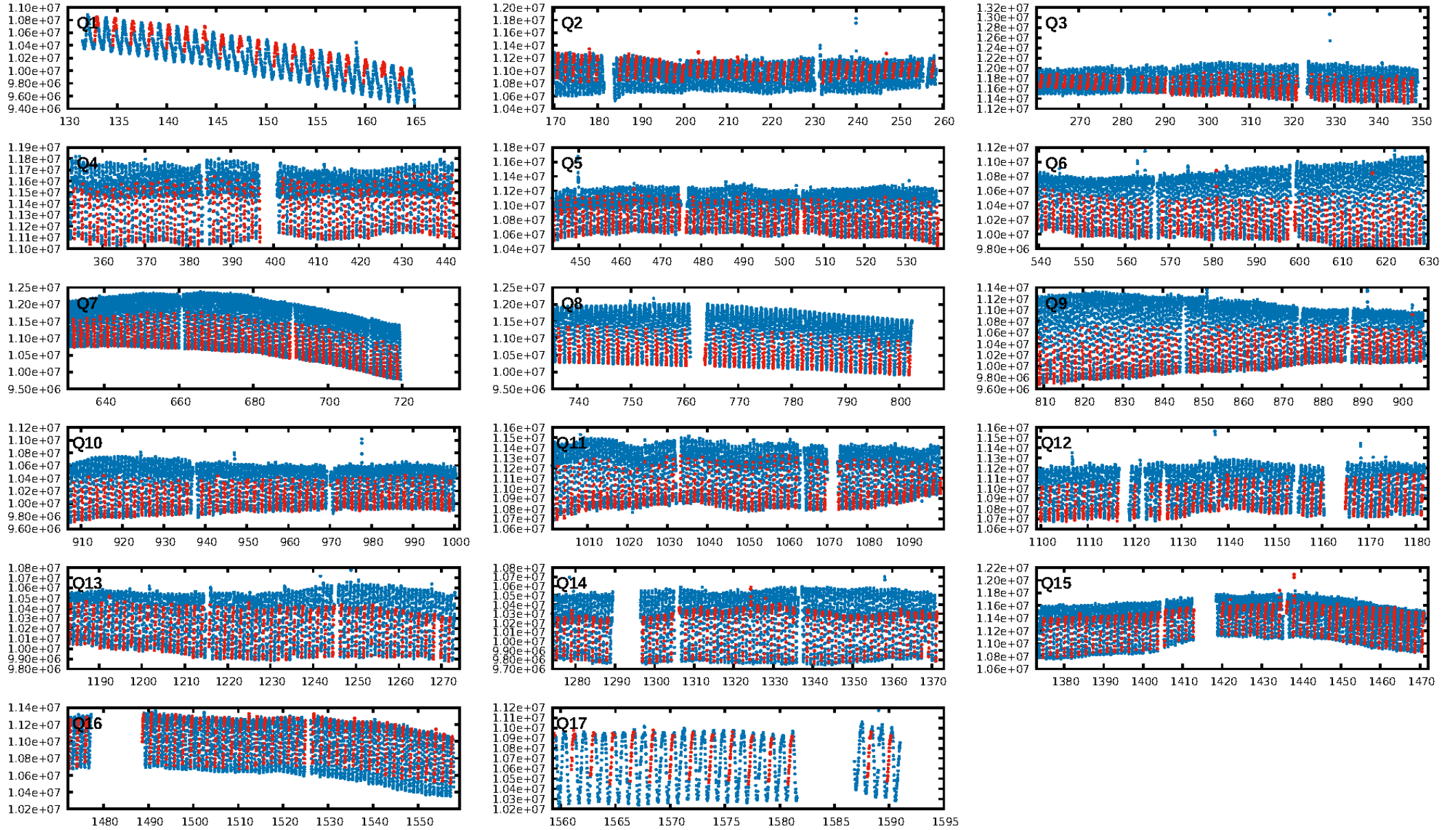
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [710/712]  
GhostDiagnostic-chr: 1.129  
Centroid-sig: 8.4%  
Centroid-so: 0.443 arcsec [58.24 $\sigma$ ]  
OotOffset-rm: 0.125 arcsec [1.85 $\sigma$ ]  
KicOffset-rm: 0.664 arcsec [8.59 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.76 [13/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 08:00:24 Z

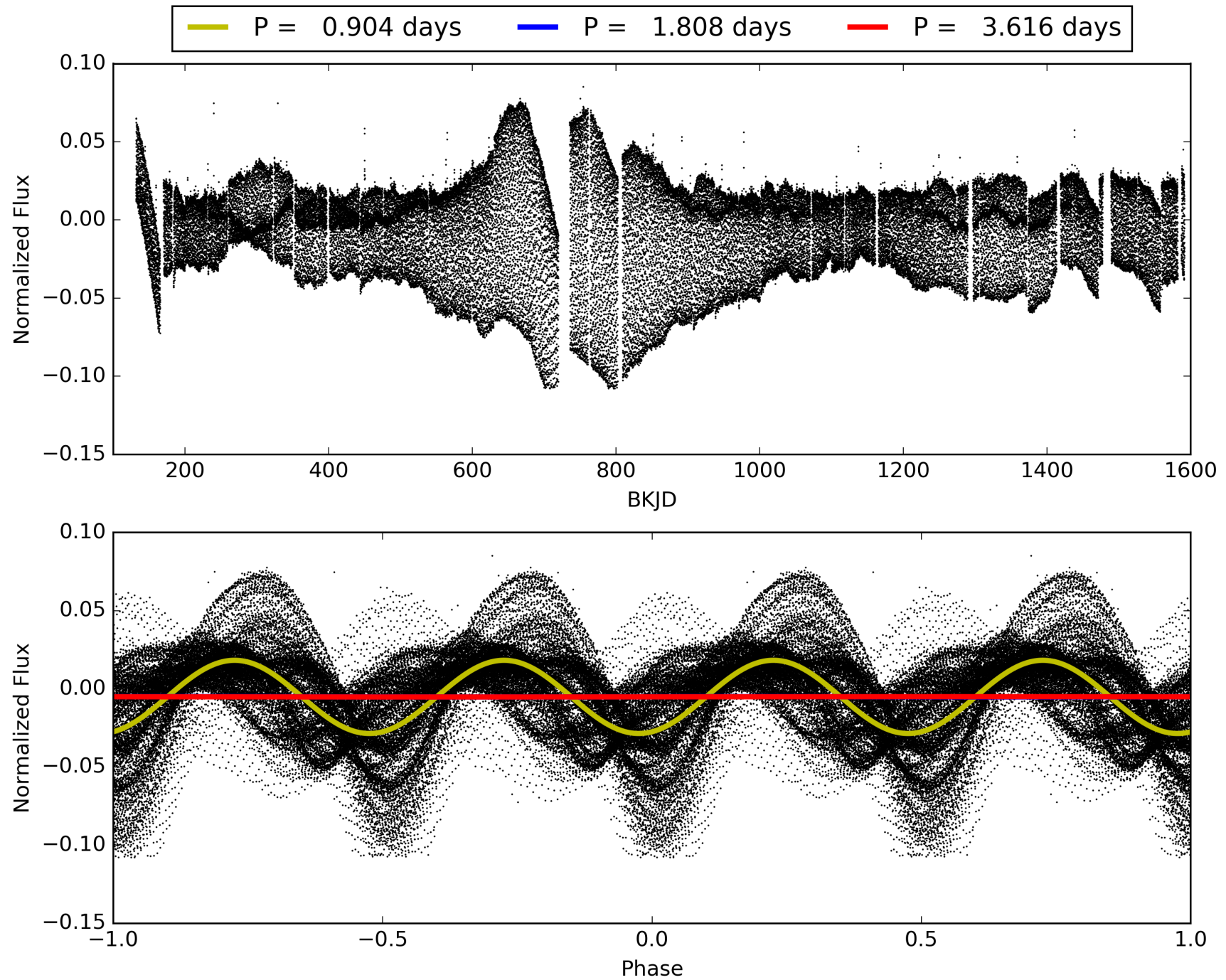
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006753253-02, PDC Light Curves



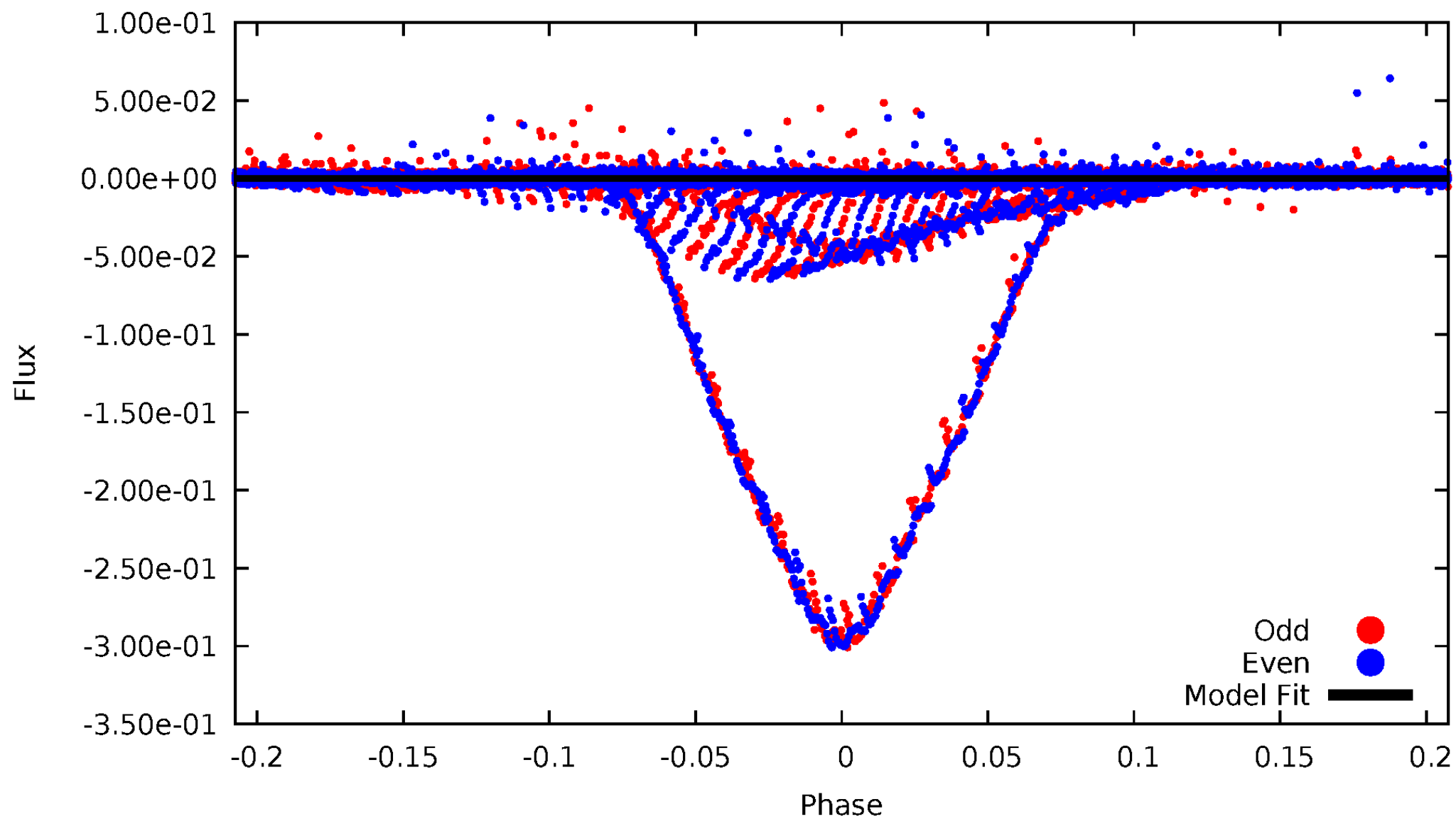


TCE 006753253-02



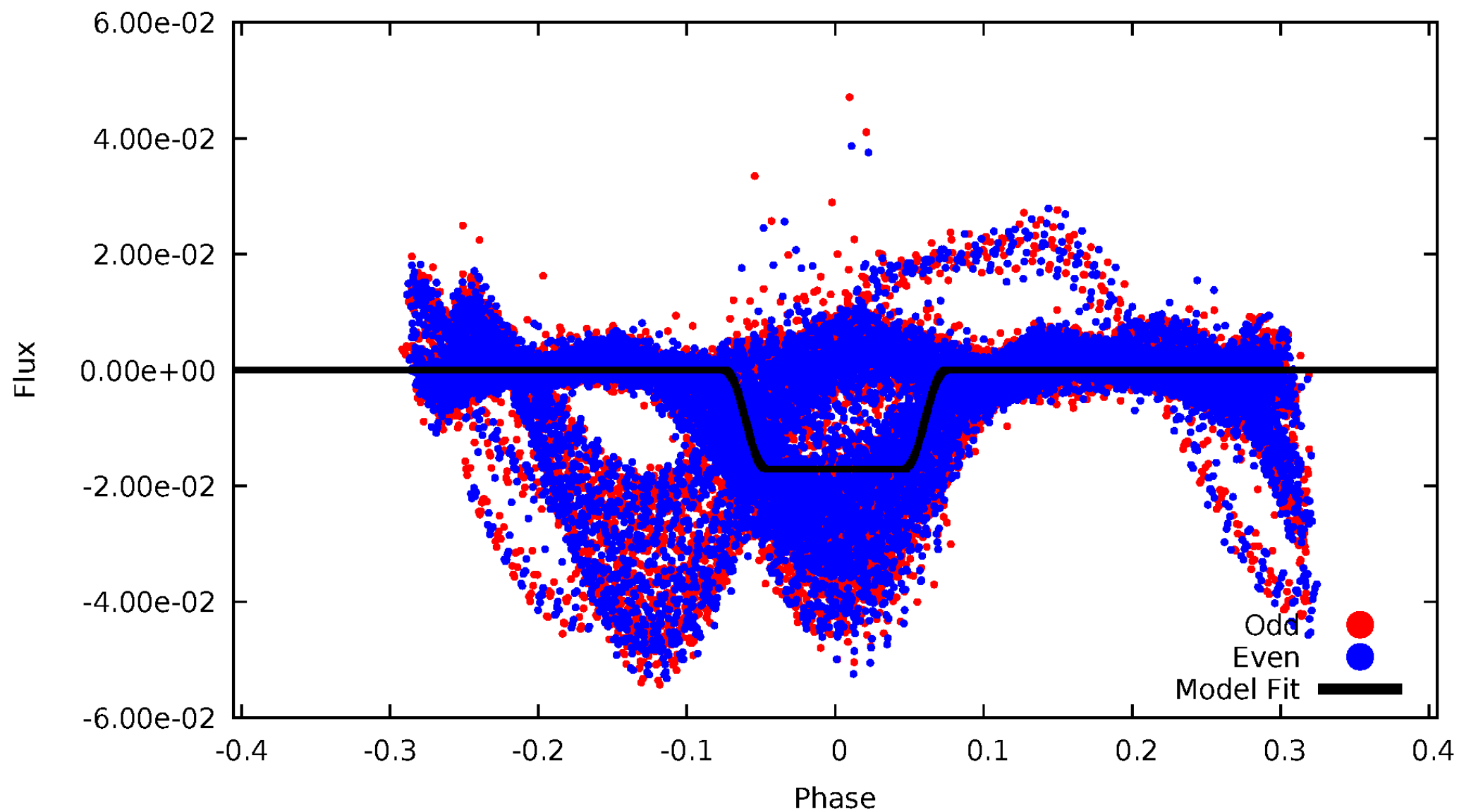
DV Odd/Even

TCE 006753253-02



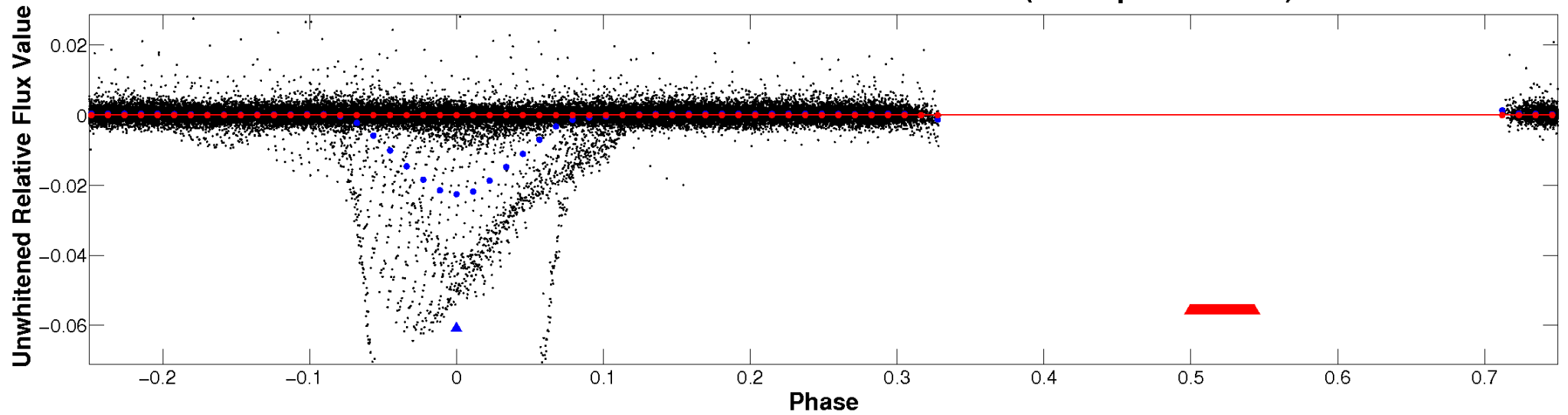
# ALT Odd/Even

TCE 006753253-02

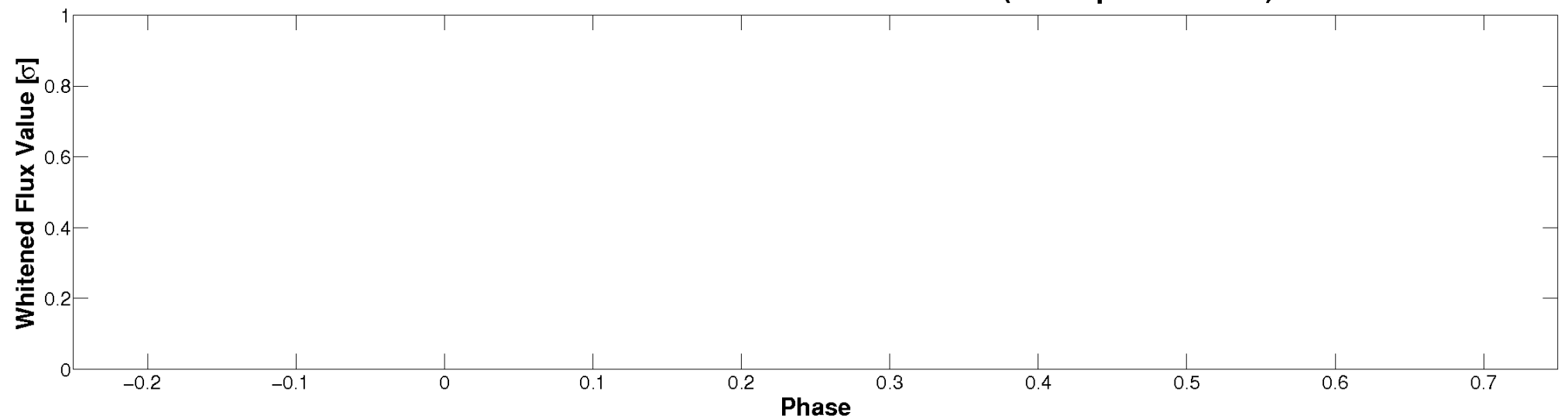


# Non-Whitened Vs. Whitened Light Curve

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

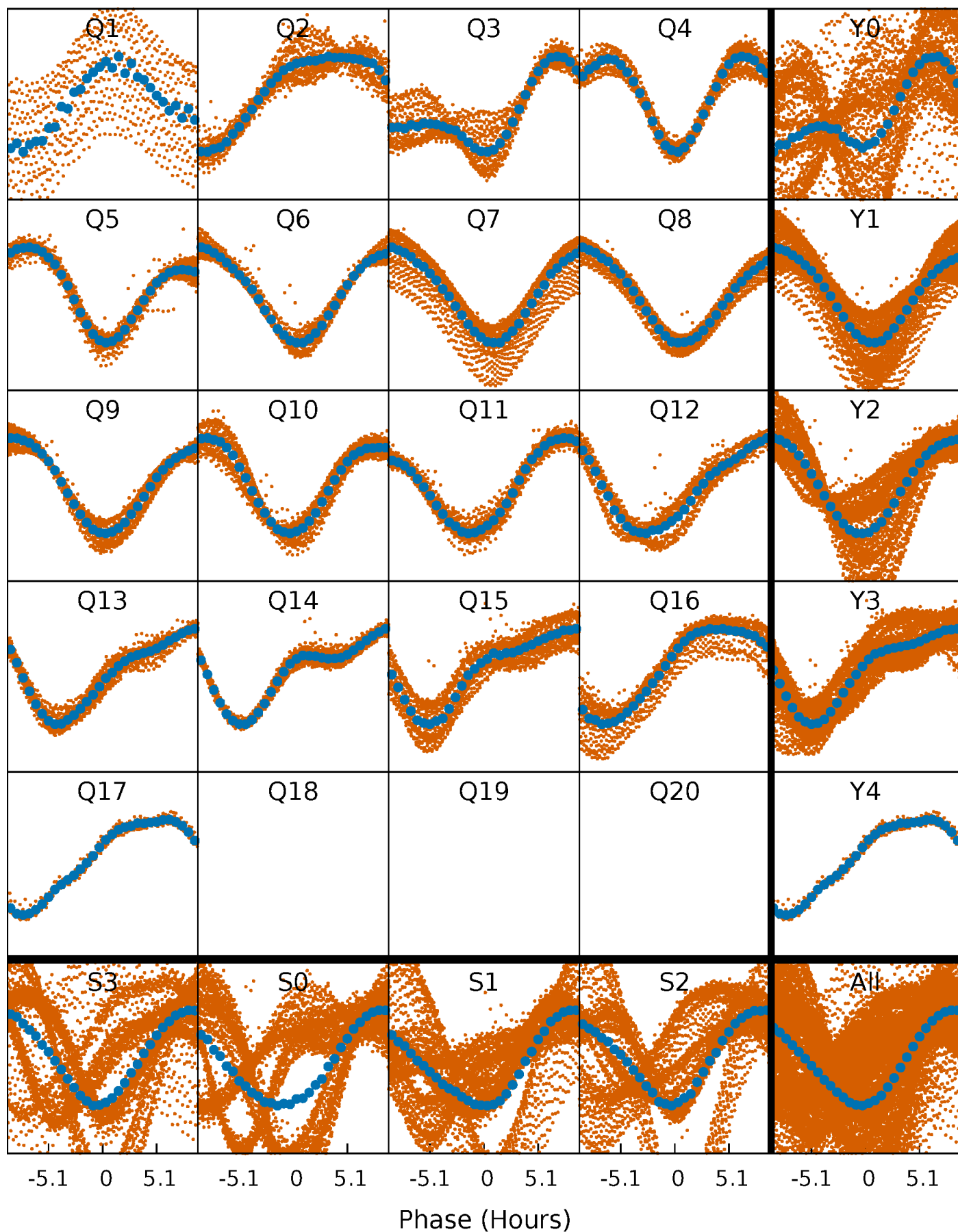


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

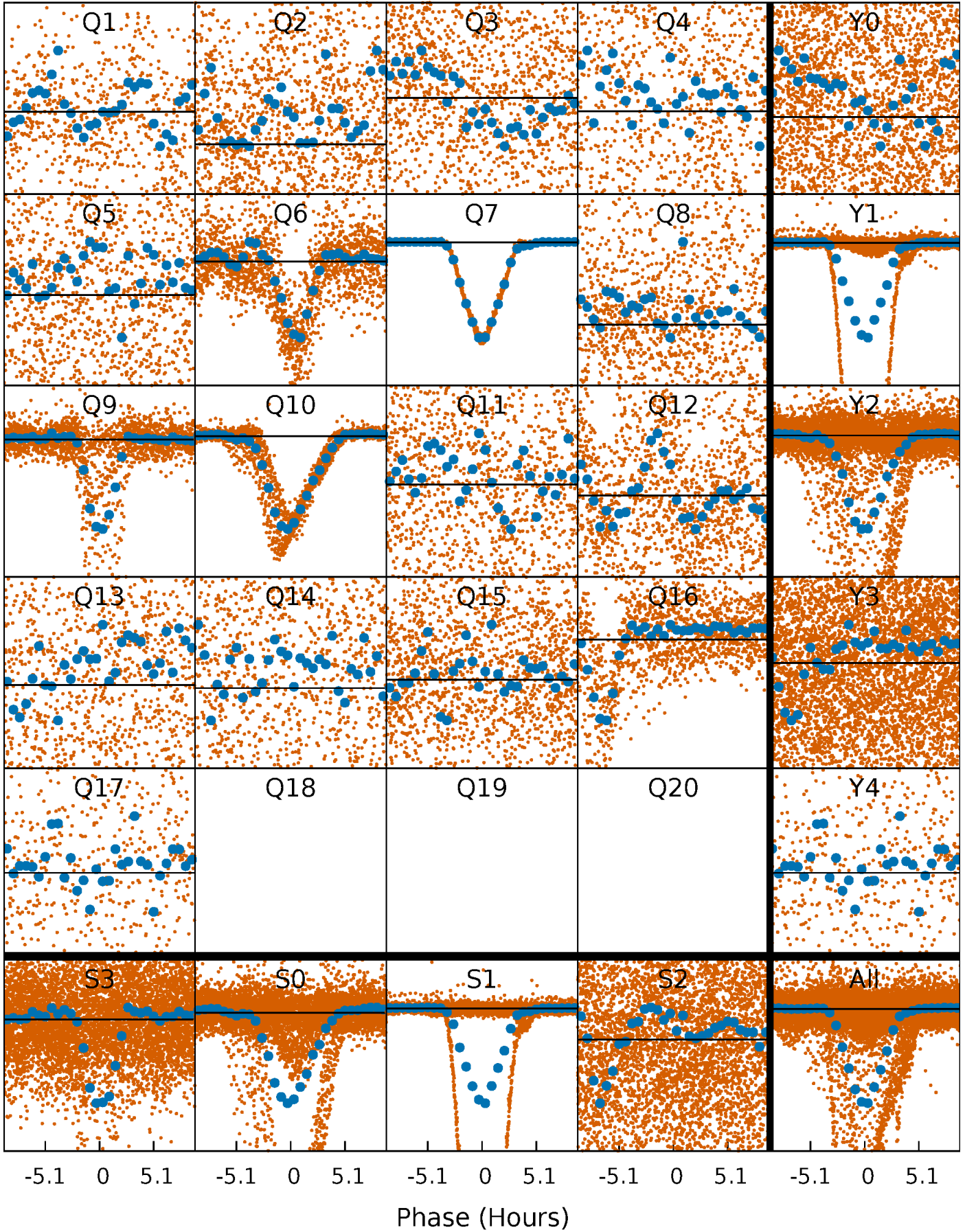
TCE 006753253-02 P= 1.807808 Days  $T_0=132.893665$  (BKJD)





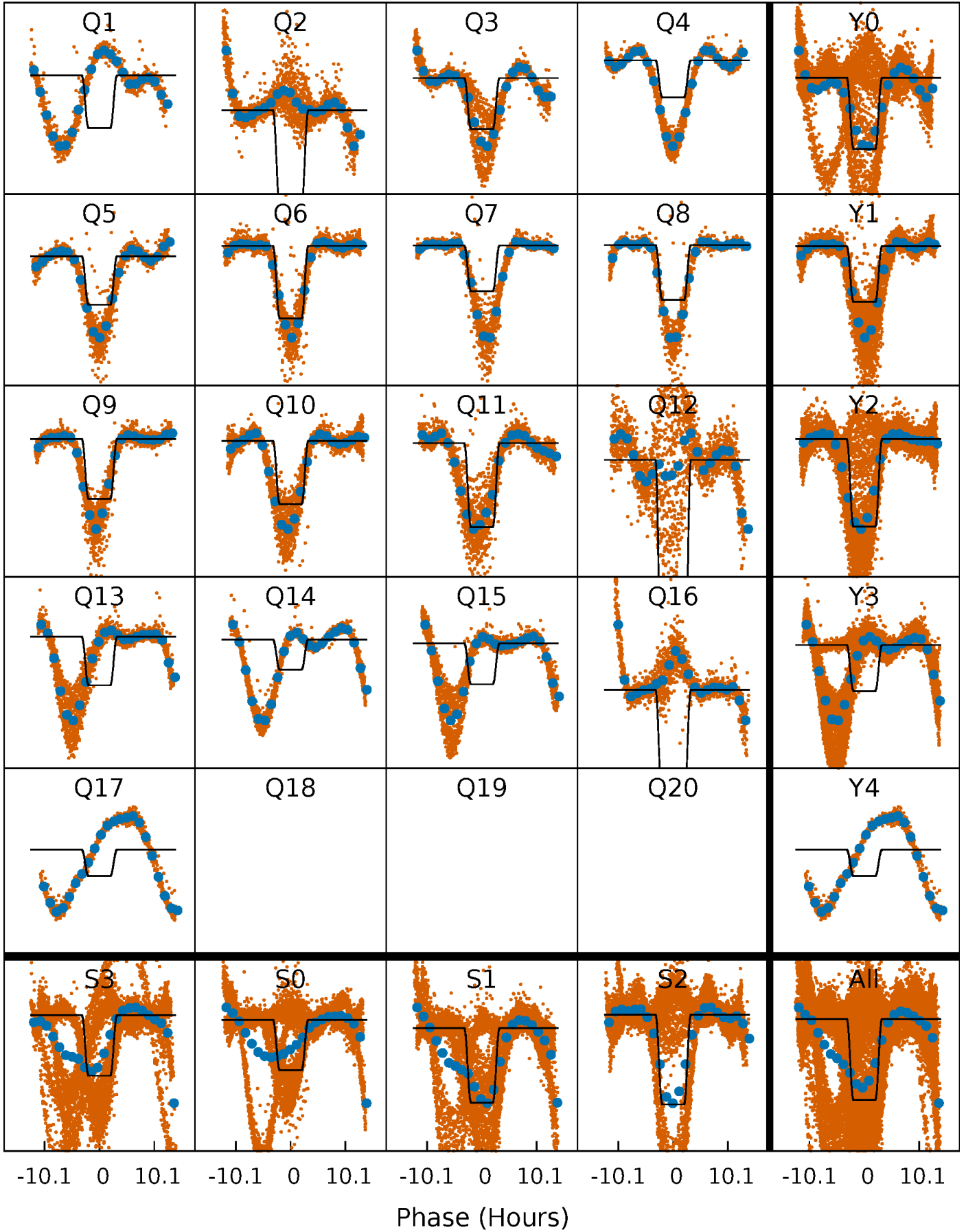
# DV Quarter-Phased Transit Curves

TCE 006753253-02 P= 1.807808 Days  $T_0=132.893665$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

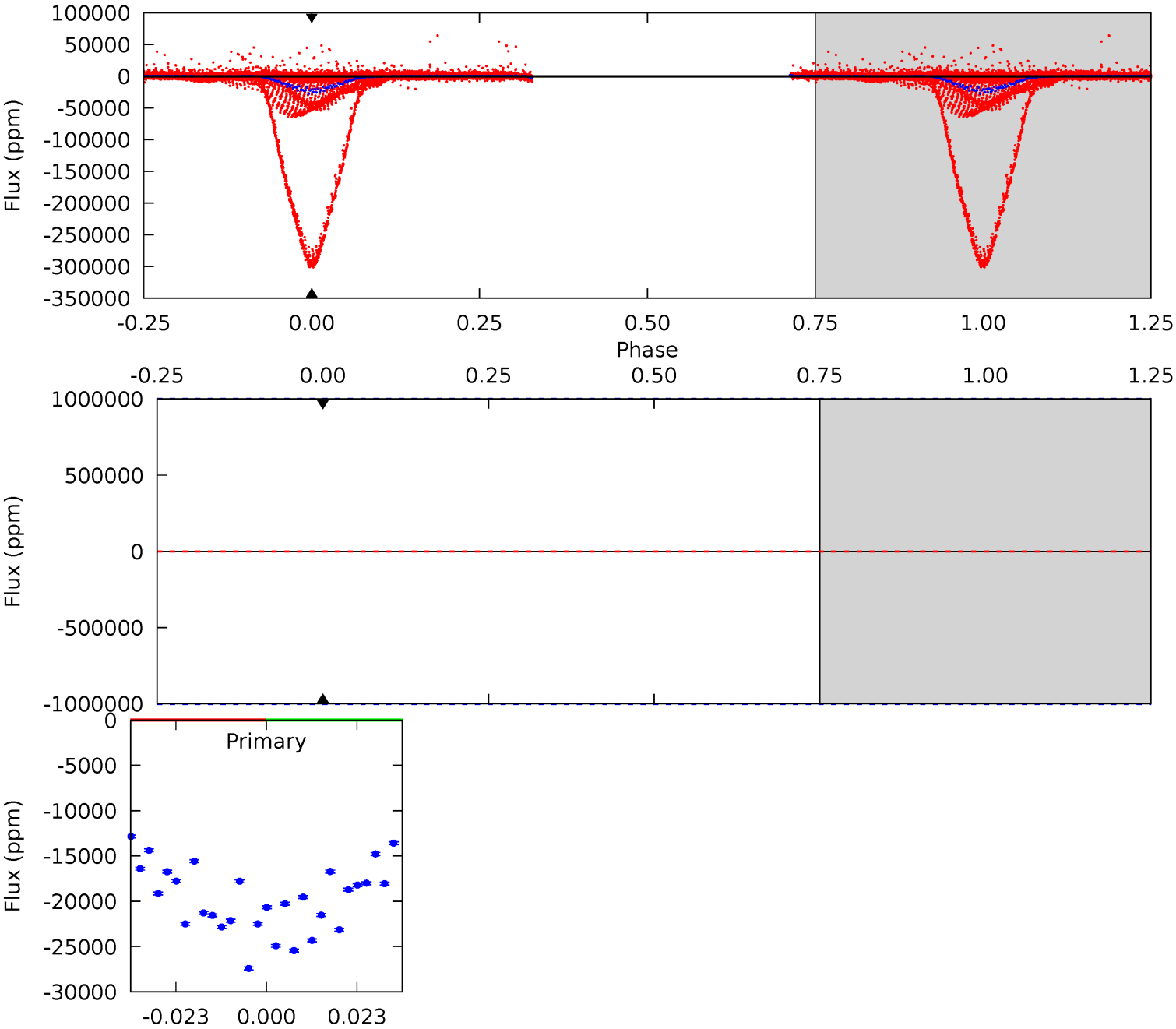
TCE 006753253-02   P= 1.807808 Days    $T_0=132.902259$  (BKJD)



DV Model-Shift Uniqueness Test

006753253-02, P = 1.807808 Days, E = 131.085857 Days

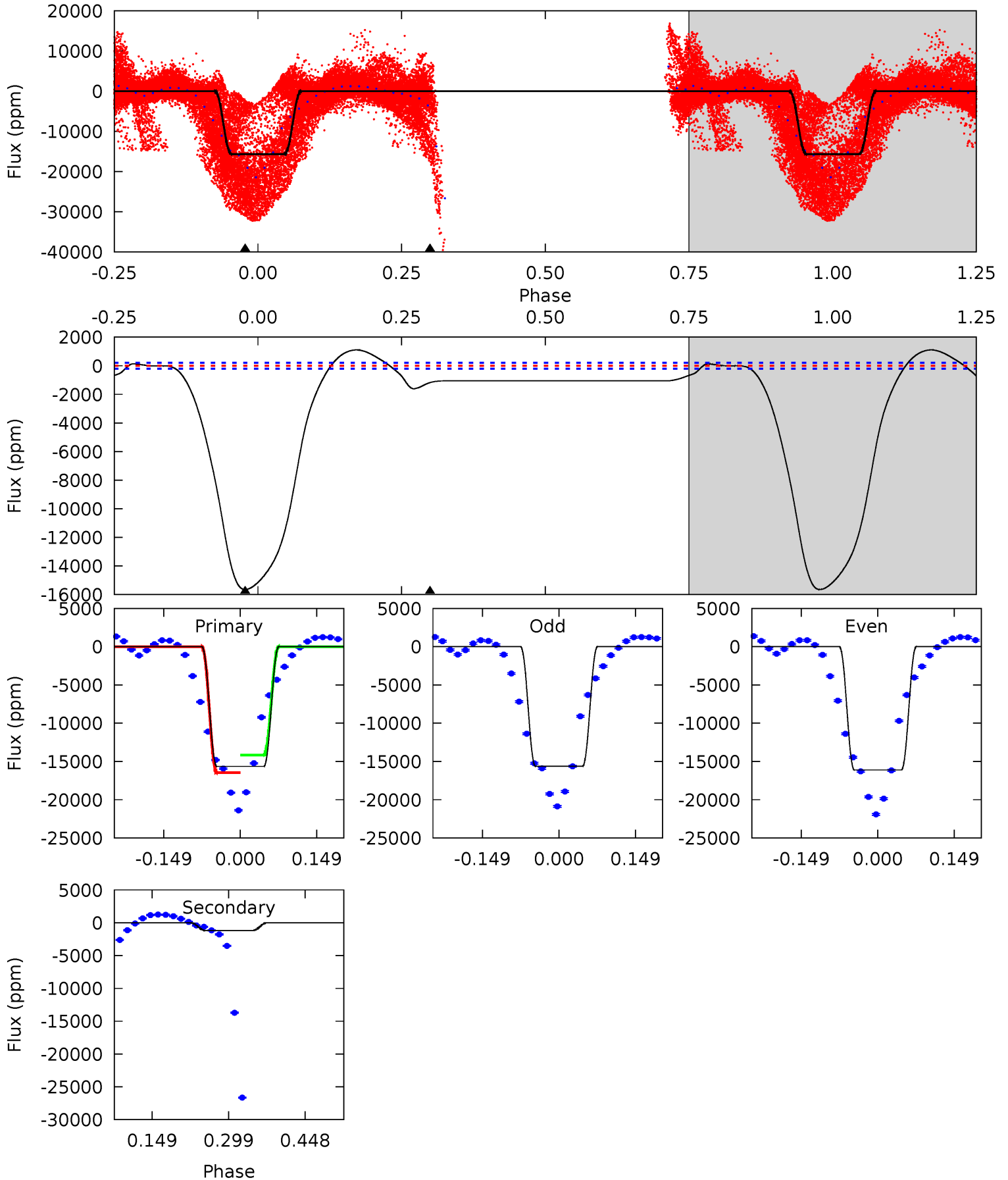
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

006753253-02, P = 1.807808 Days, E = 131.094451 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
336.7	25.4	0	0	4.48	1.44	10.2	336.7	336.7	25.4	25.4	5.14	0.84	0.07	19.5



### Stellar Parameters For KIC 006753253

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4512^{+164}_{-164}$	$4.589^{+0.039}_{-0.028}$	$0.380^{+0.050}_{-0.300}$	$0.733^{+0.035}_{-0.053}$	$0.760^{+0.036}_{-0.056}$	$2.720^{+0.493}_{-0.286}$
	+4%/-4%	+1%/-1%	+13%/-79%	+5%/-7%	+5%/-7%	+18%/-11%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 006753253-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$24.73^{+8.06}_{-8.44}$	$1461^{+57}_{-57}$	$-2336^{+7138}_{-2151}$	$-0.529^{+84.301}_{-60.232}$
Alt.	$-1179 \pm 46$	$11.47^{+7.33}_{-6.54}$	$1456^{+57}_{-53}$	$2805^{+823}_{-378}$	$3.520^{+15.255}_{-2.231}$

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

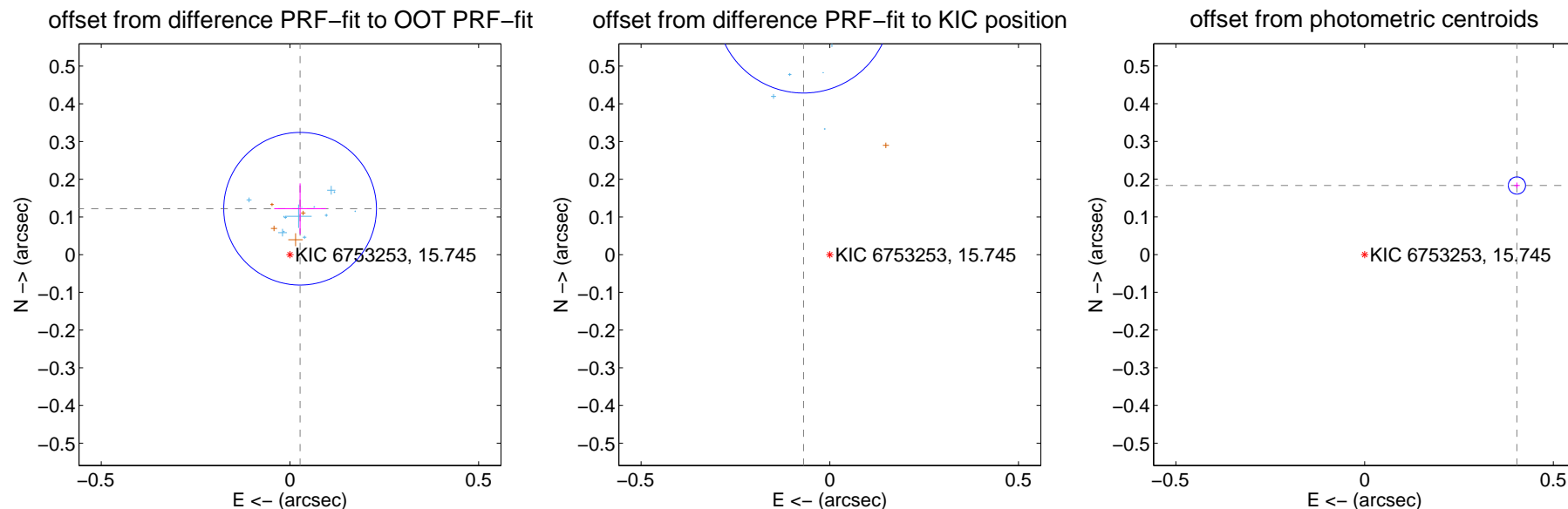
## DV Centroid Data

Supplemental centroid analysis for 006753253-02. Kepler magnitude: 15.74. Transit SNR -1.00

There are 13 quarters with good PRF difference image offsets

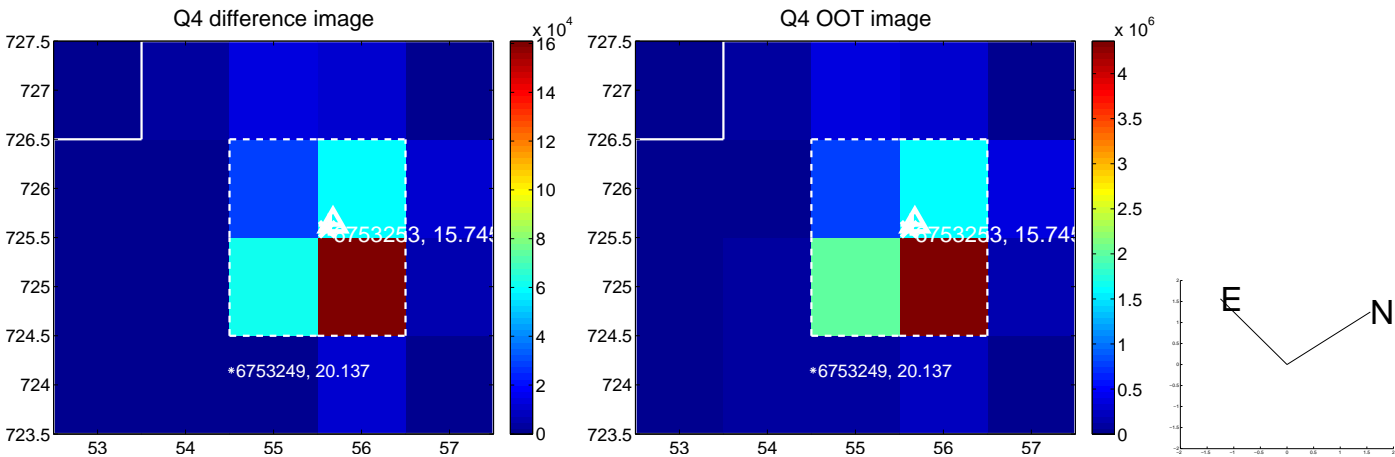
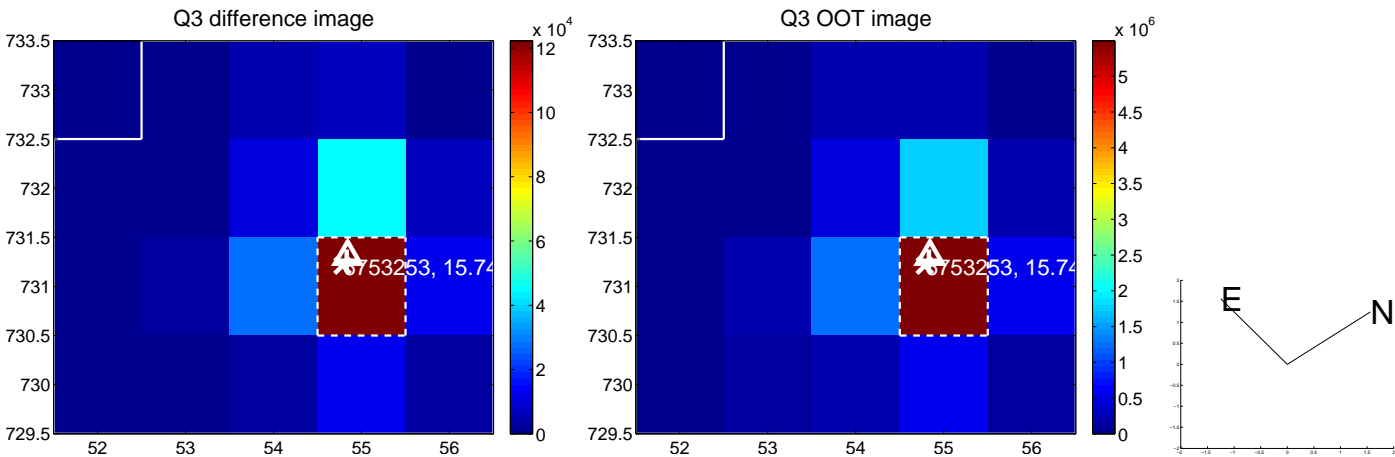
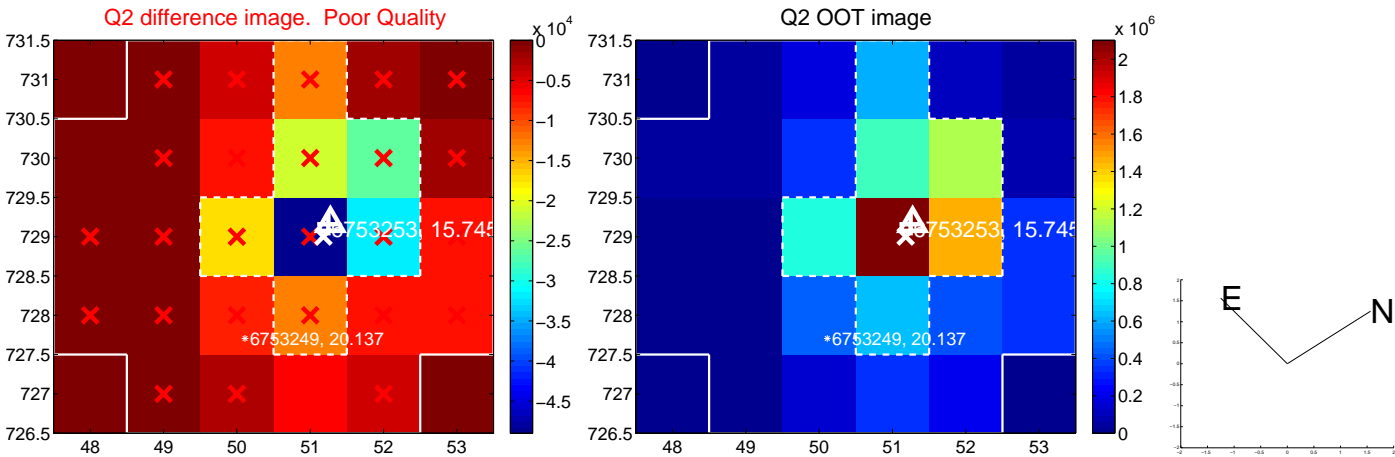
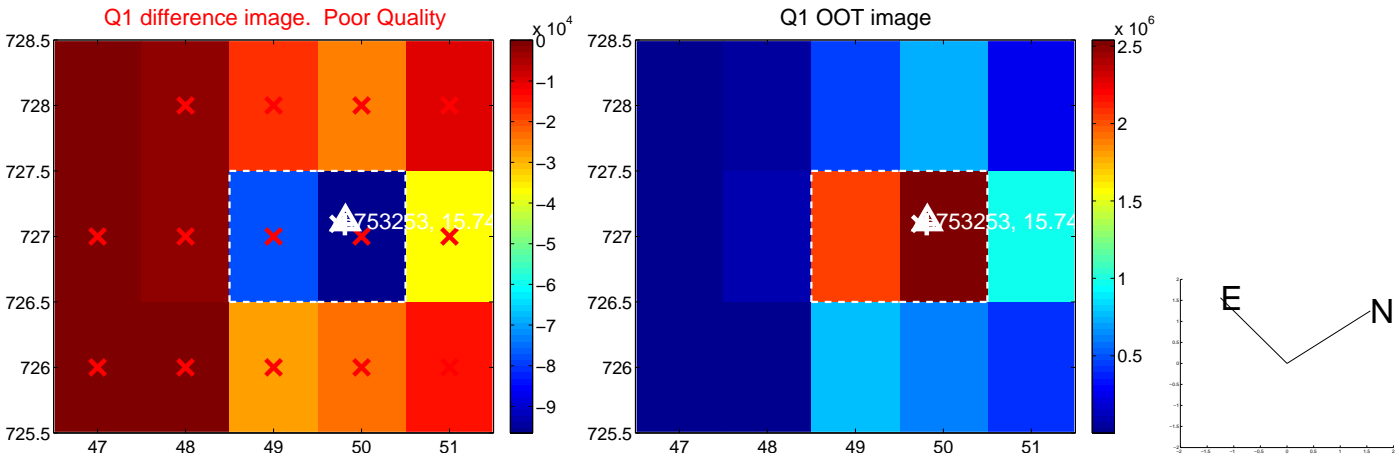
The direct PRF centroid is offset from the target star catalog position by about 0.75 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.125 \pm 0.067$	1.85	$-0.027 \pm 0.069$	$0.122 \pm 0.067$
PRF-fit source offset from KIC position	$0.664 \pm 0.077$	8.59	$0.070 \pm 0.073$	$0.660 \pm 0.076$
photometric centroid source offset	$0.44 \pm 0.01$	58.24	$-0.40 \pm 0.01$	$0.18 \pm 0.01$



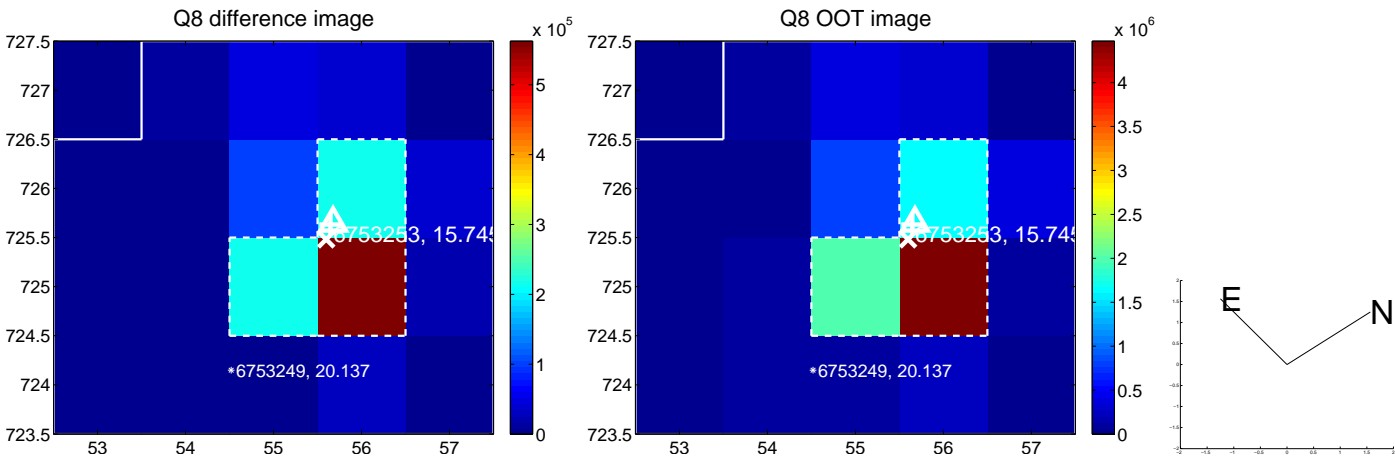
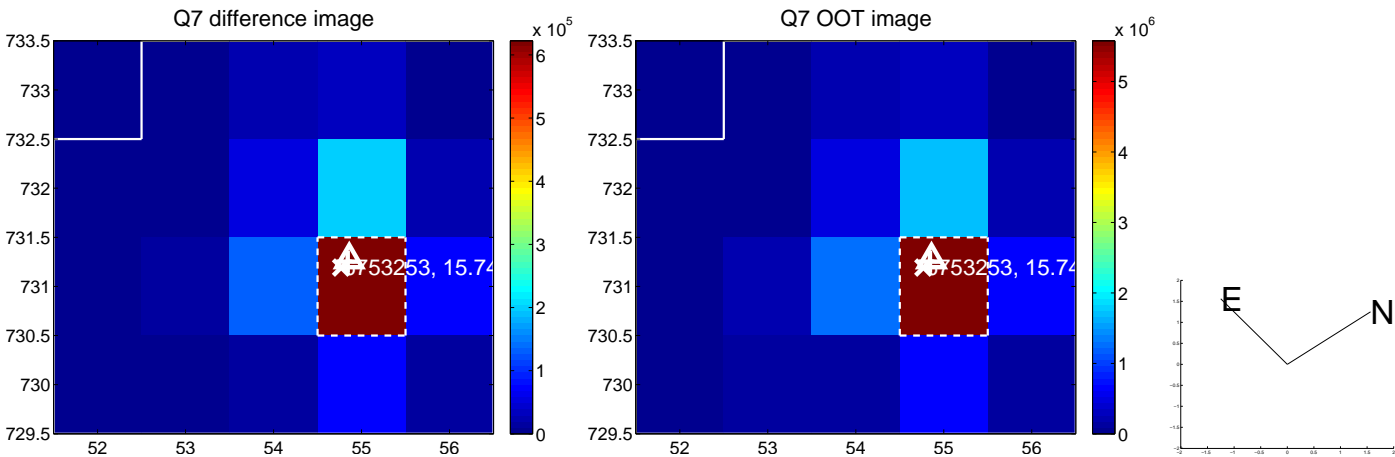
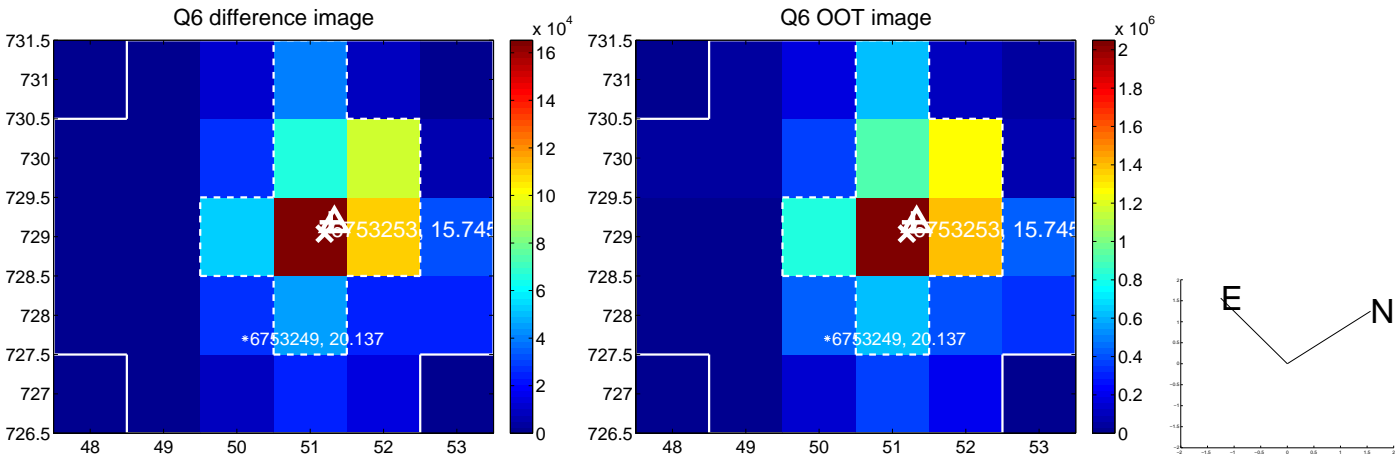
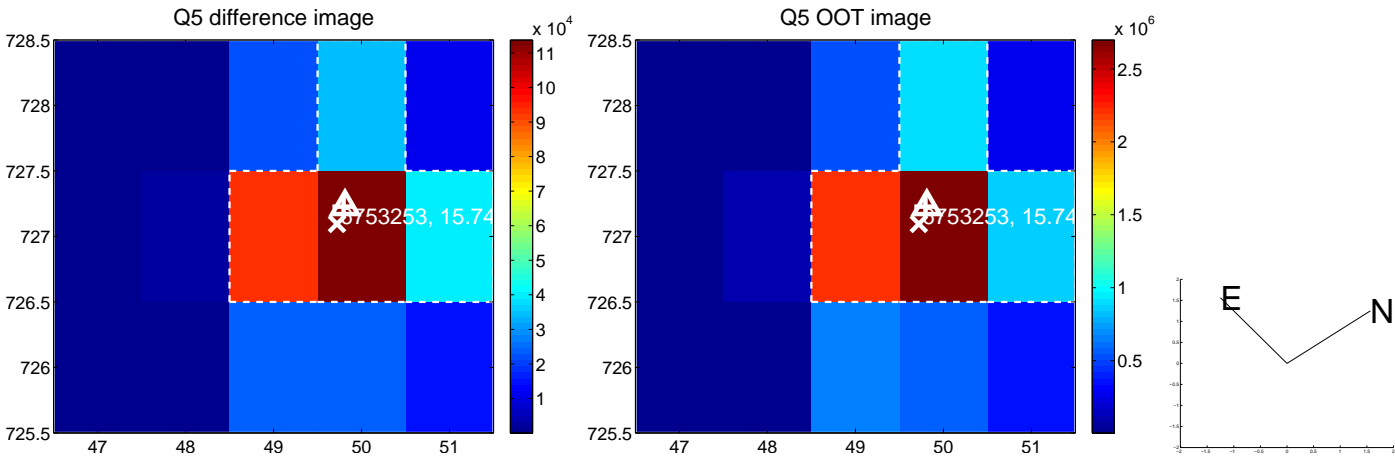
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

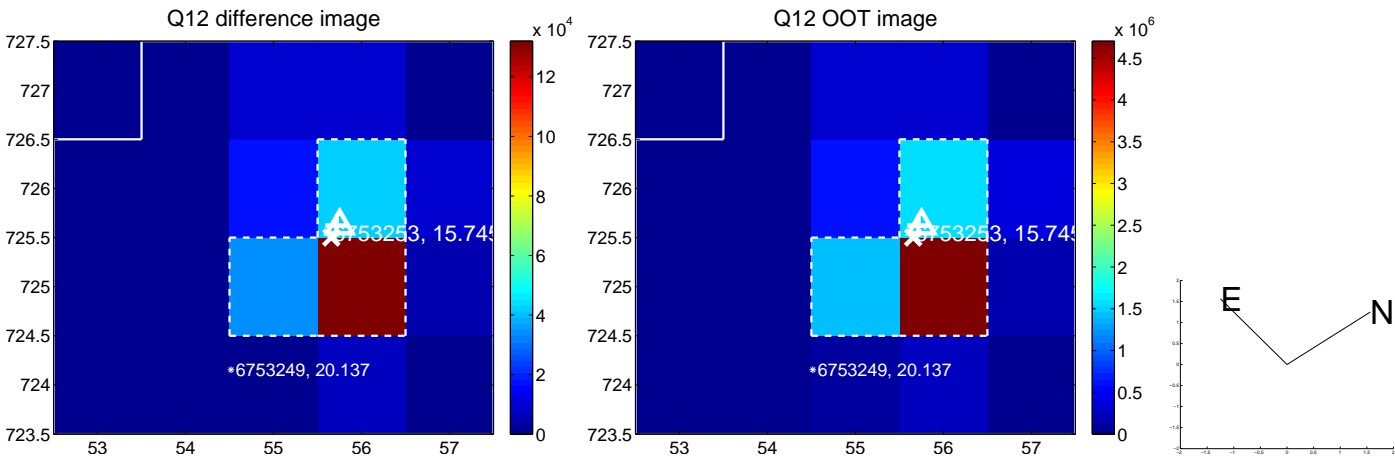
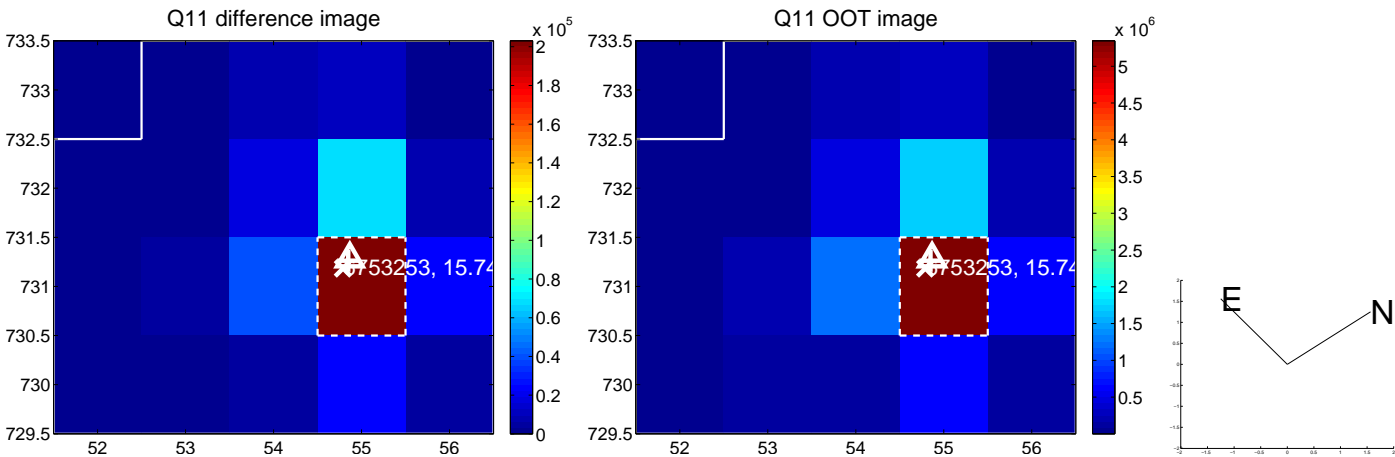
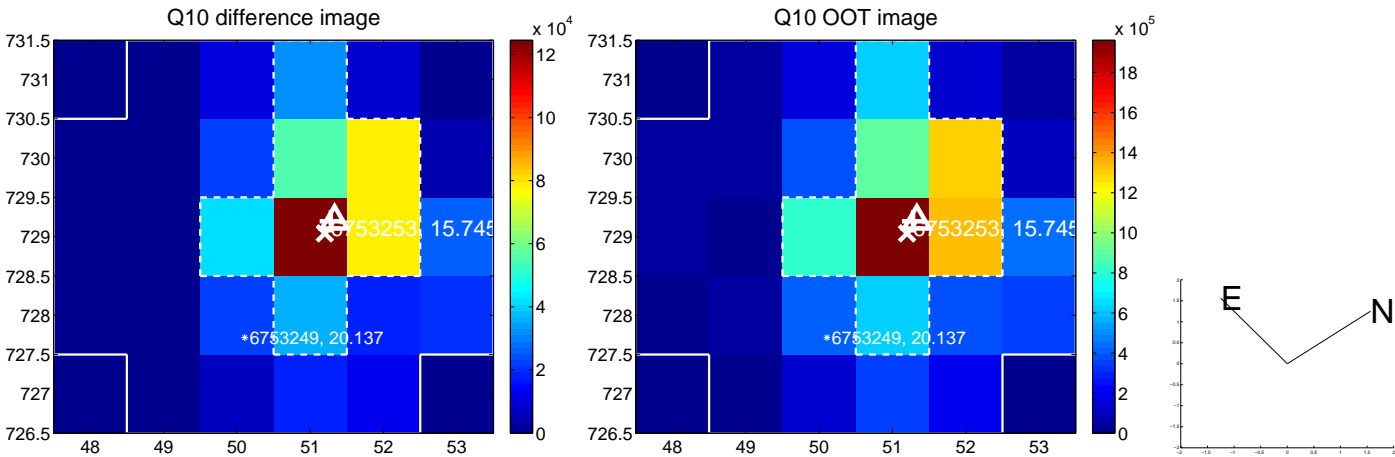
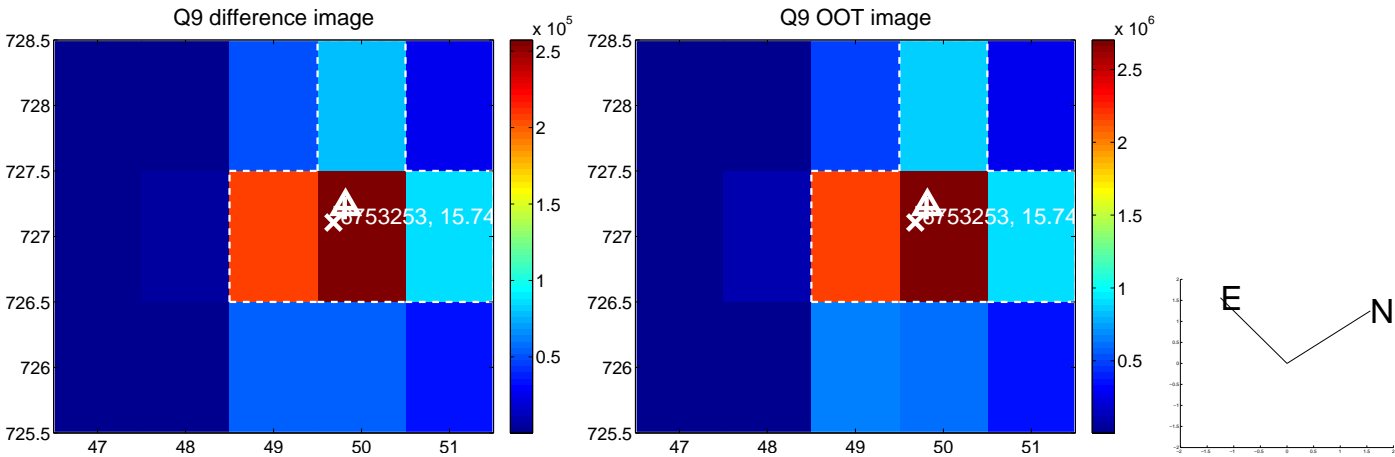




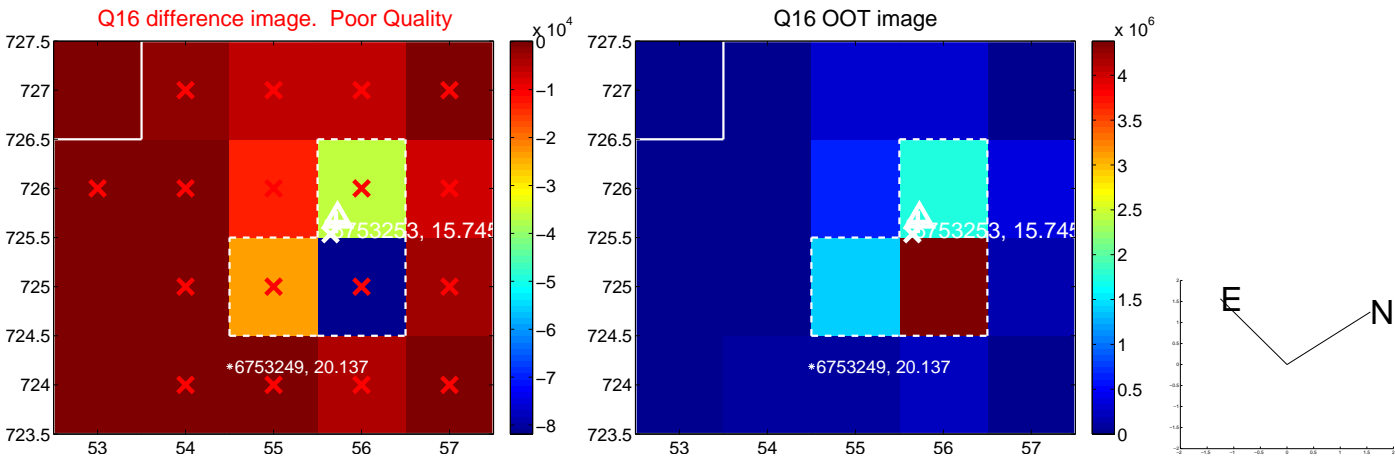
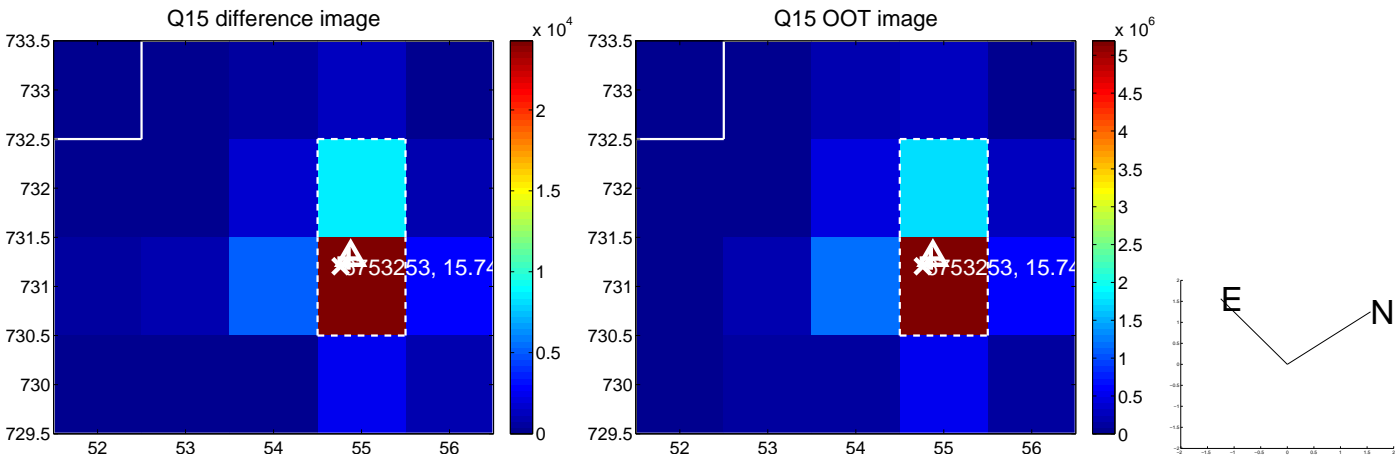
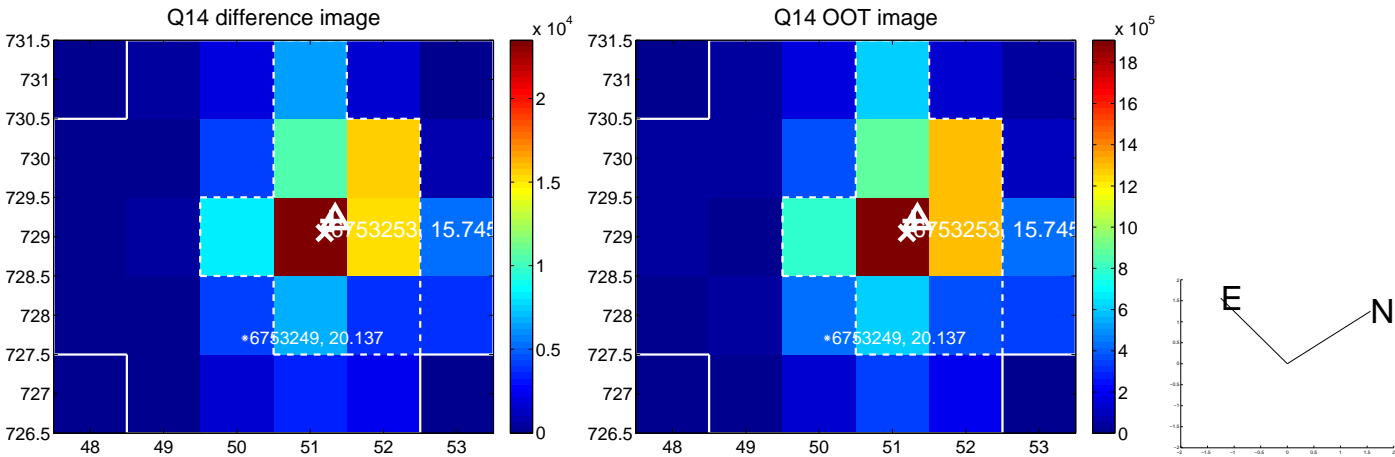
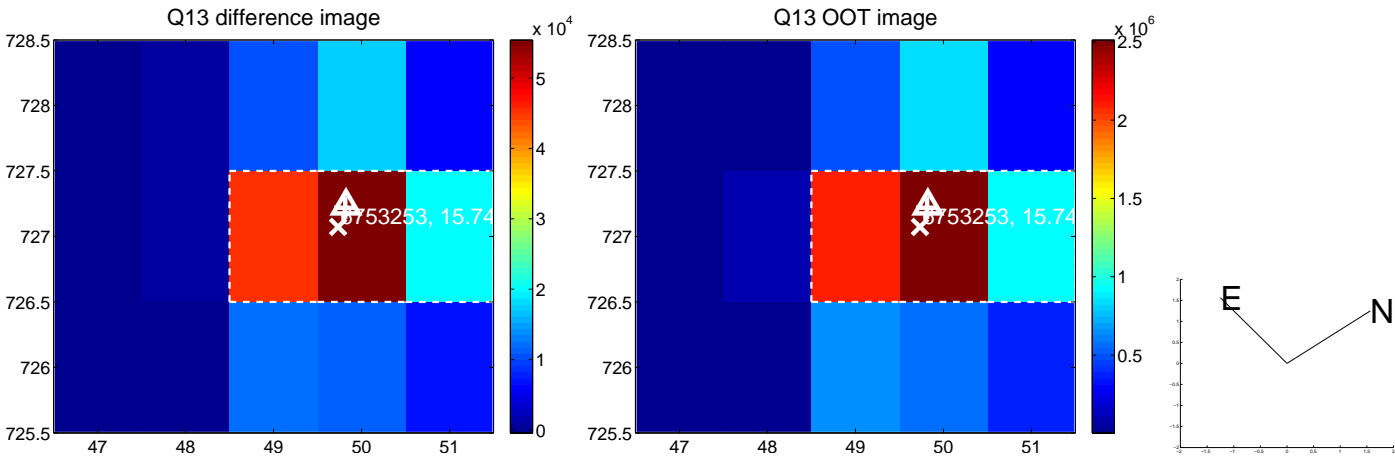
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



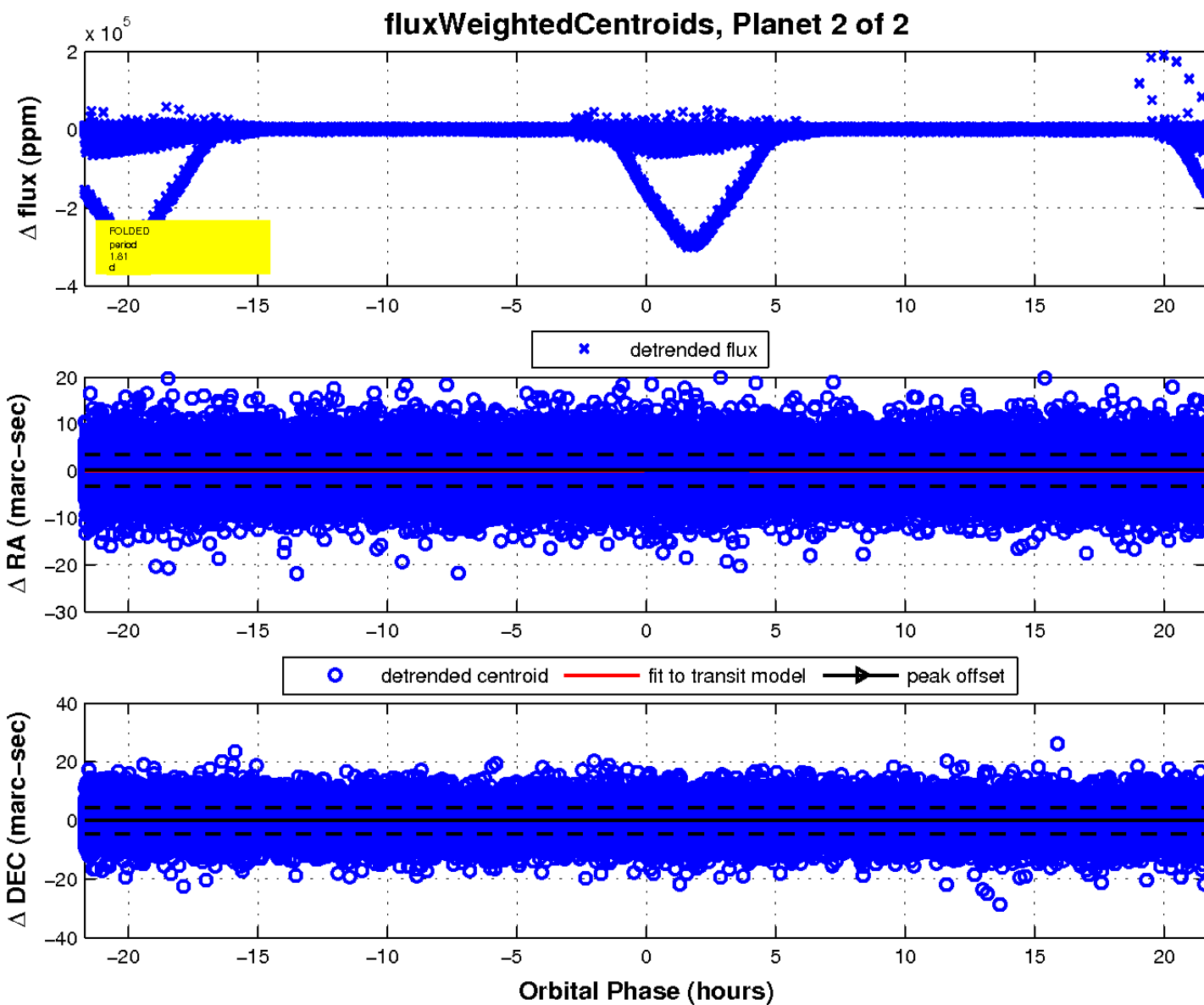
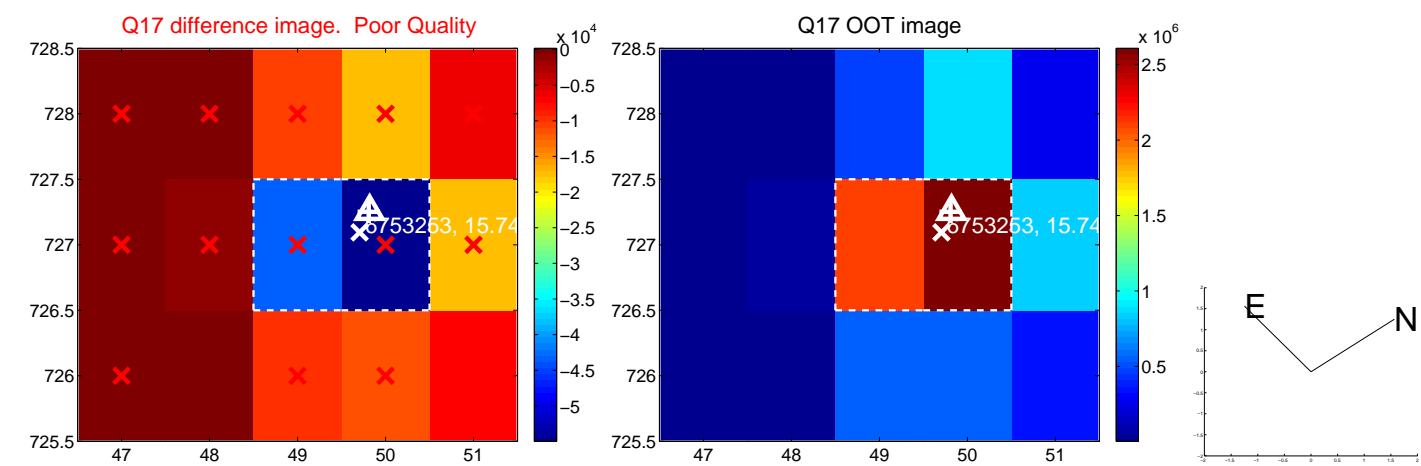
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



# UKIRT Image

Declination

