

# KIC 007505644

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007505644-01	OBS	No	0.817461	131.516202	2165.2	2.500	8.9	-1.0	0.56	3683	2.52	261.47
007505644-02	OBS	No	0.816771	132.042656	27.2	0.975	18.6	0.3	0.56	3683	0.29	261.76

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007505644-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_NOFITS
007505644-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

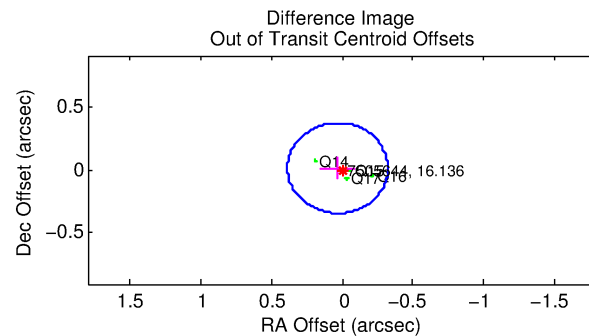
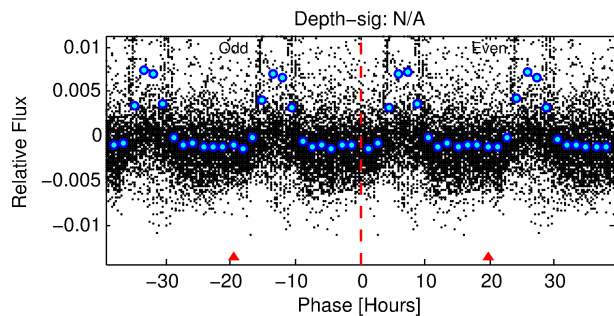
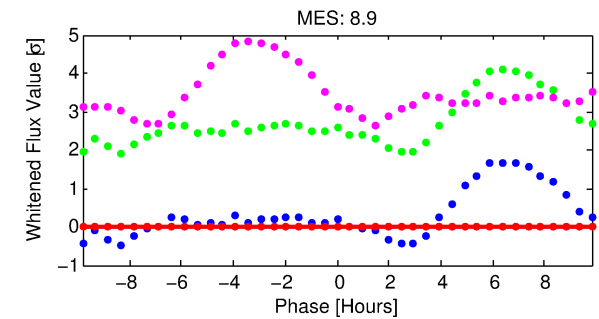
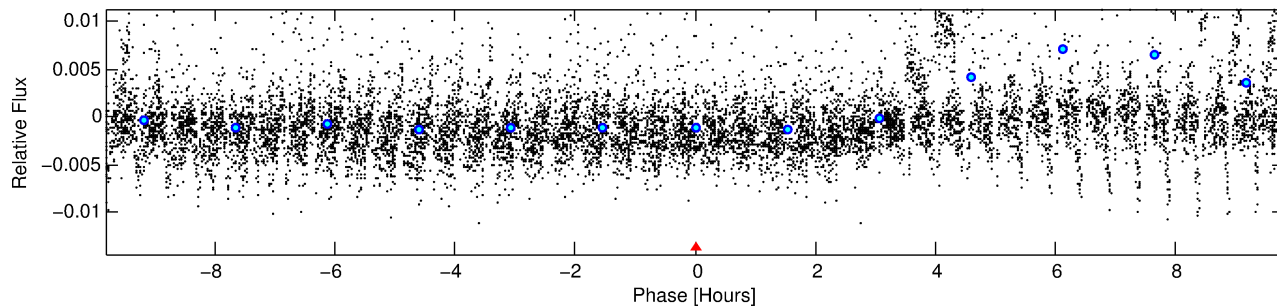
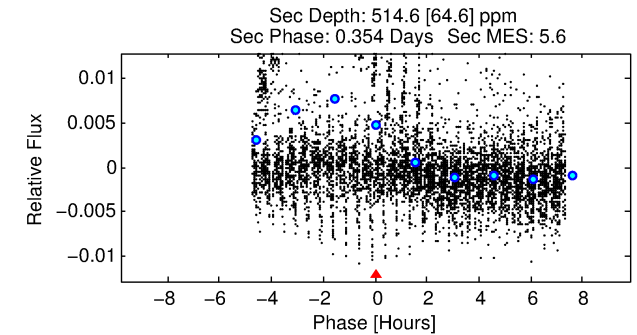
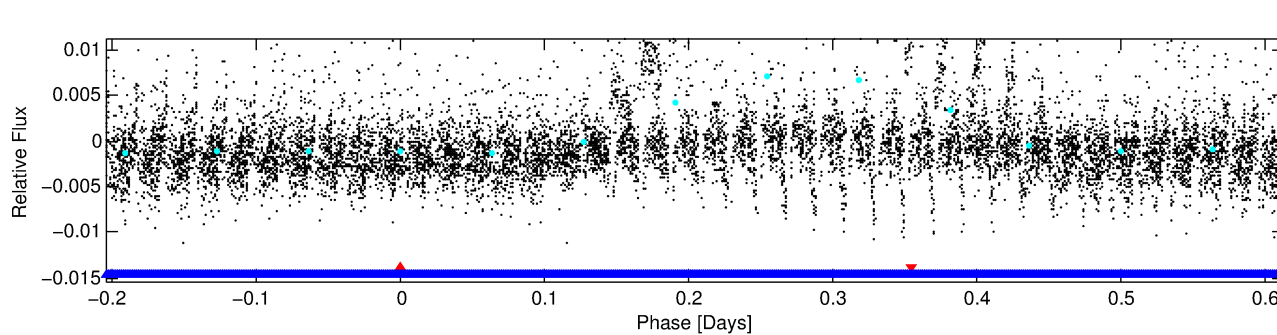
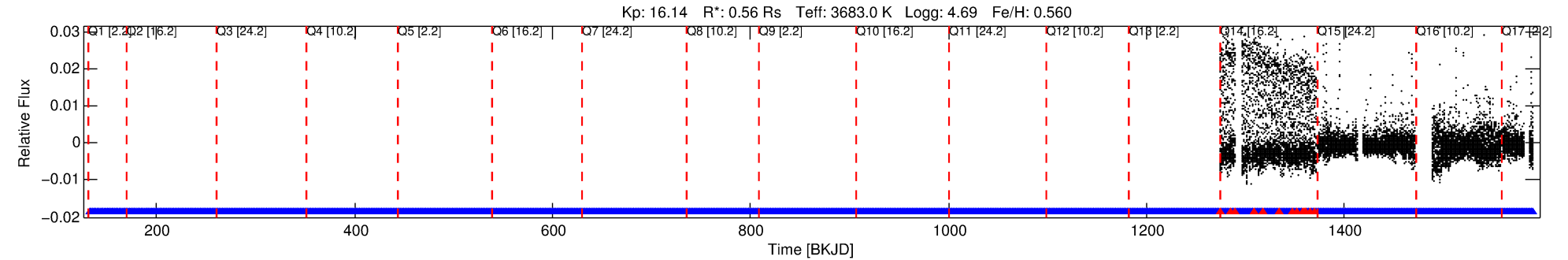
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007505644-01

No Significant Match Found

# DV One-Page Summary

KIC: 7505644 Candidate: 1 of 2 Period: 0.817 d



## TPS TCE Results:

Period = 0.81746 d  
Epoch = 131.5162 BKJD

DV fit results are unavailable

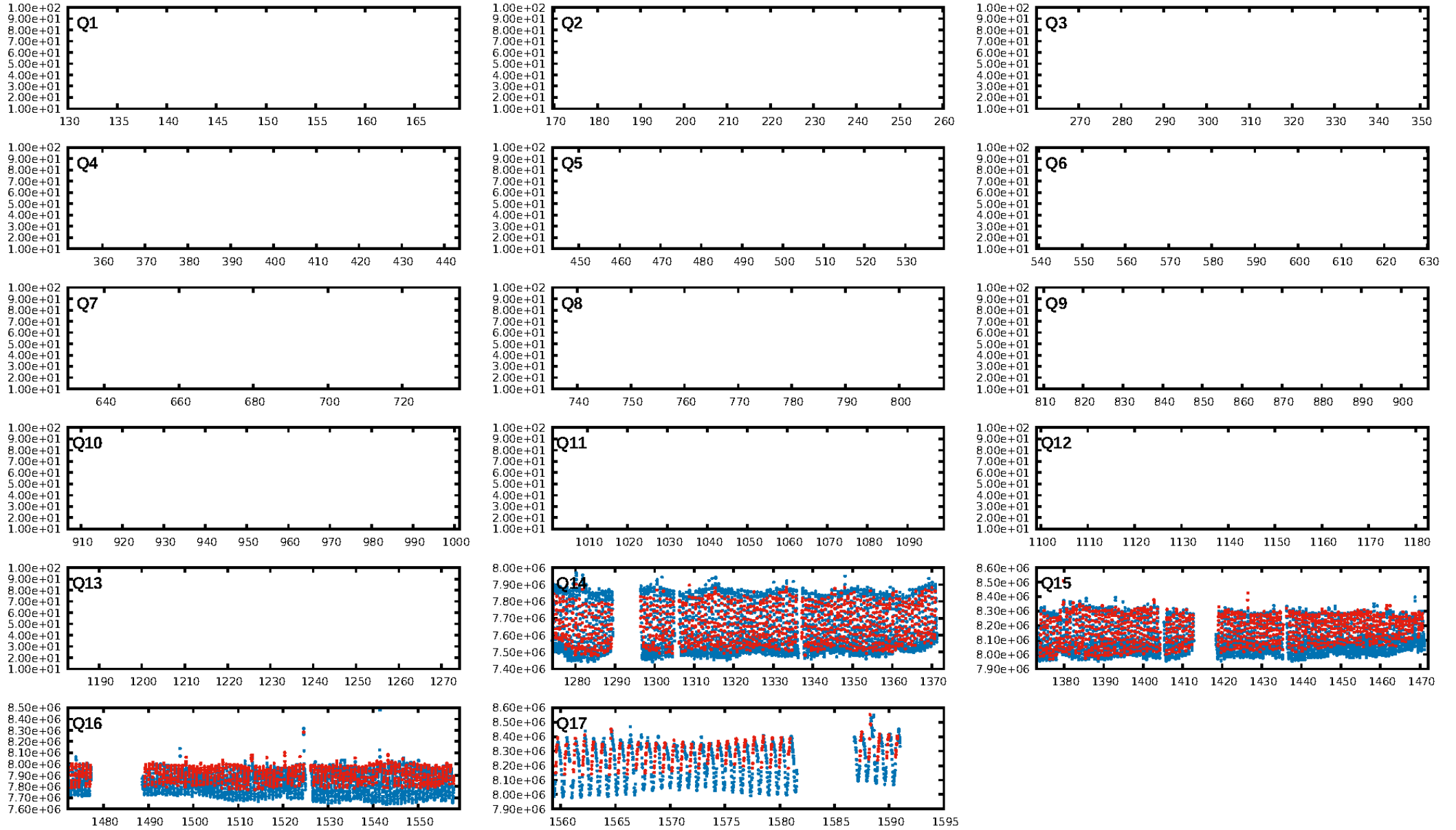
## DV Diagnostic Results:

ShortPeriod-sig: 0.5% [0.01 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.05e-47  
RollingBand-fgt: 0.95 [292/306]  
GhostDiagnostic-chr: 3.234  
Centroid-sig: 0.7%  
Centroid-so: 0.153 arcsec [2.14 $\sigma$ ]  
OotOffset-rm: 0.035 arcsec [0.29 $\sigma$ ]  
KicOffset-rm: 0.127 arcsec [0.90 $\sigma$ ]  
OotOffset-st: 1/1/1/1 [4]  
KicOffset-st: 1/1/1/1 [4]  
DiffImageQuality-fgm: 1.00 [4/4]  
DiffImageOverlap-fno: 0.00 [0/4]

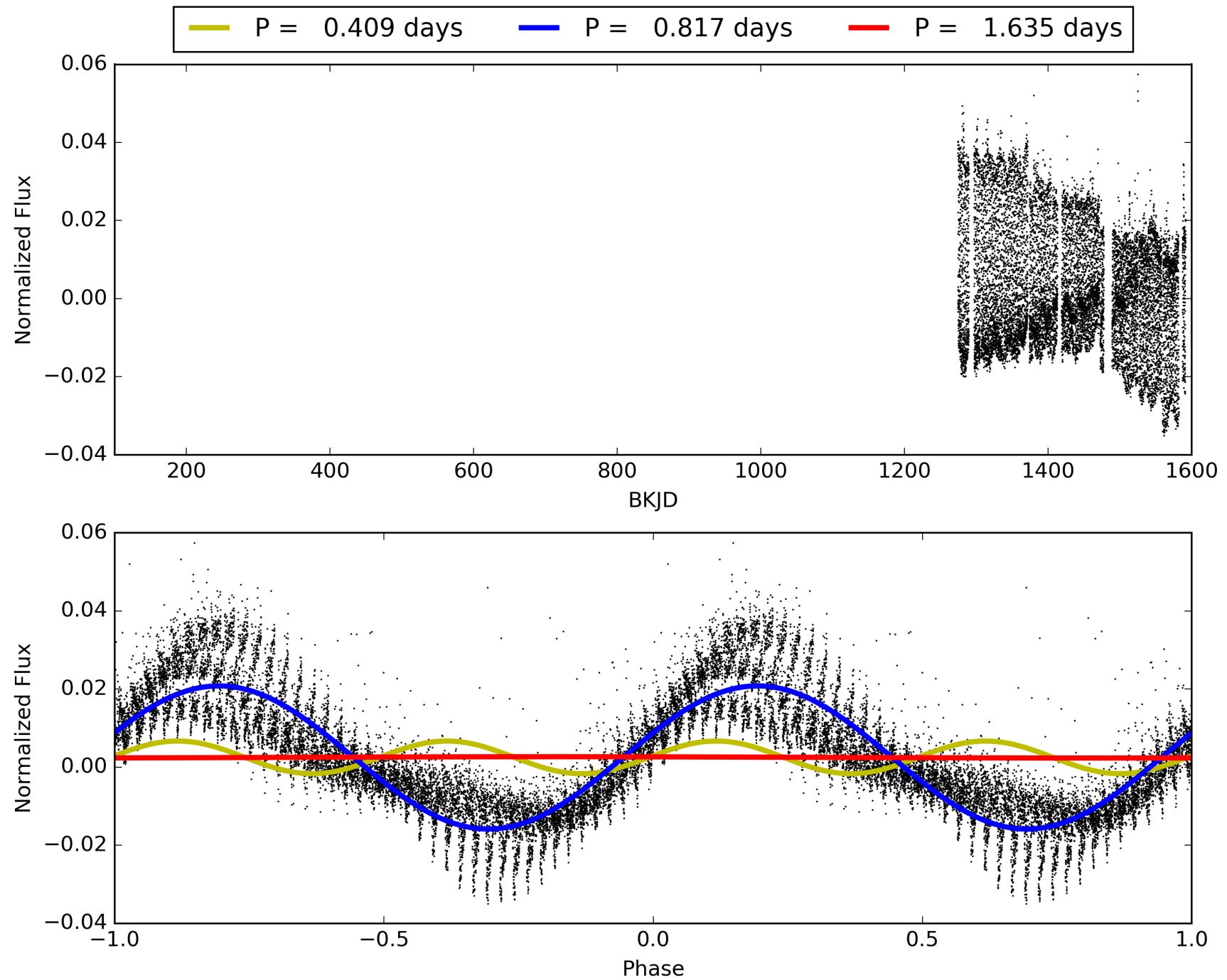
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:30:45 Z

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

# TCE 007505644-01, PDC Light Curves

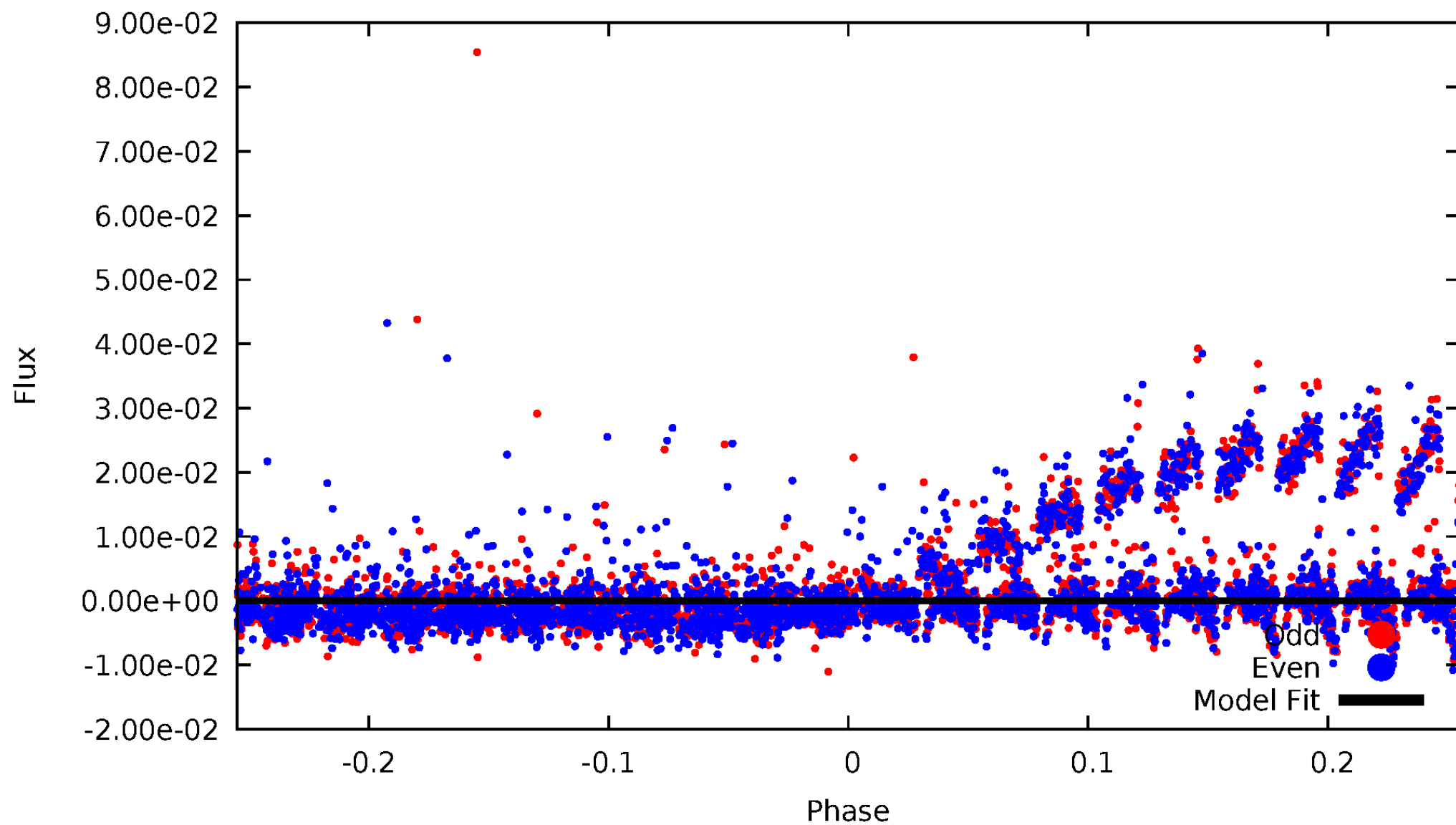


TCE 007505644-01



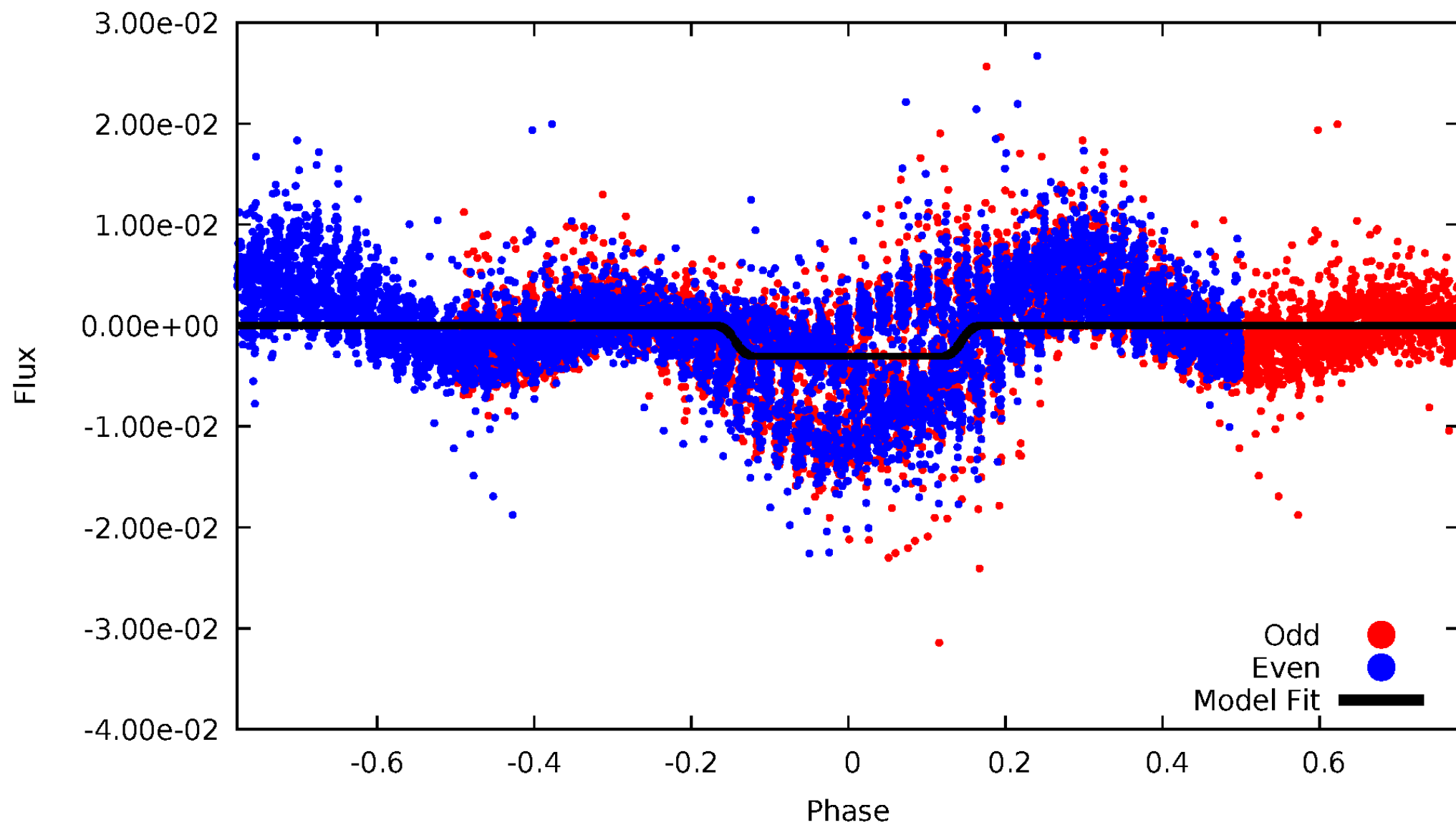
# DV Odd/Even

TCE 007505644-01



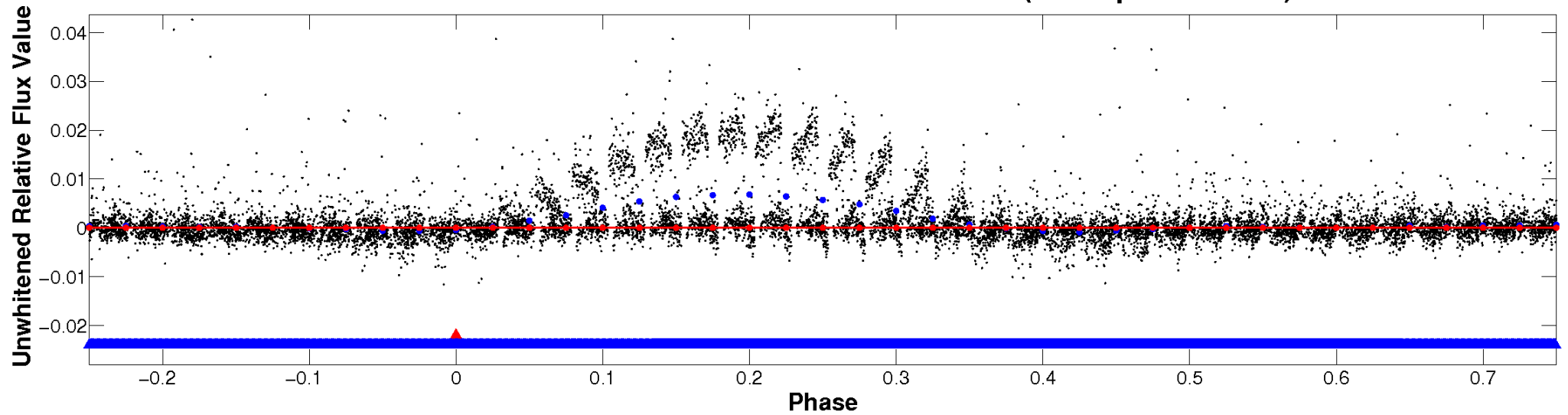
# ALT Odd/Even

TCE 007505644-01

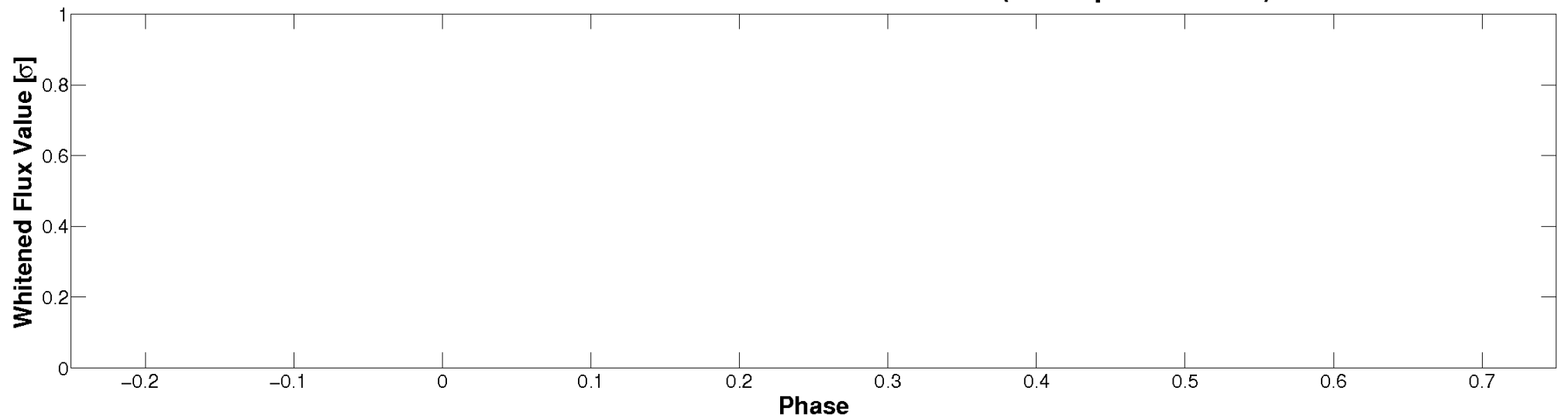


# Non-Whitened Vs. Whitened Light Curve

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

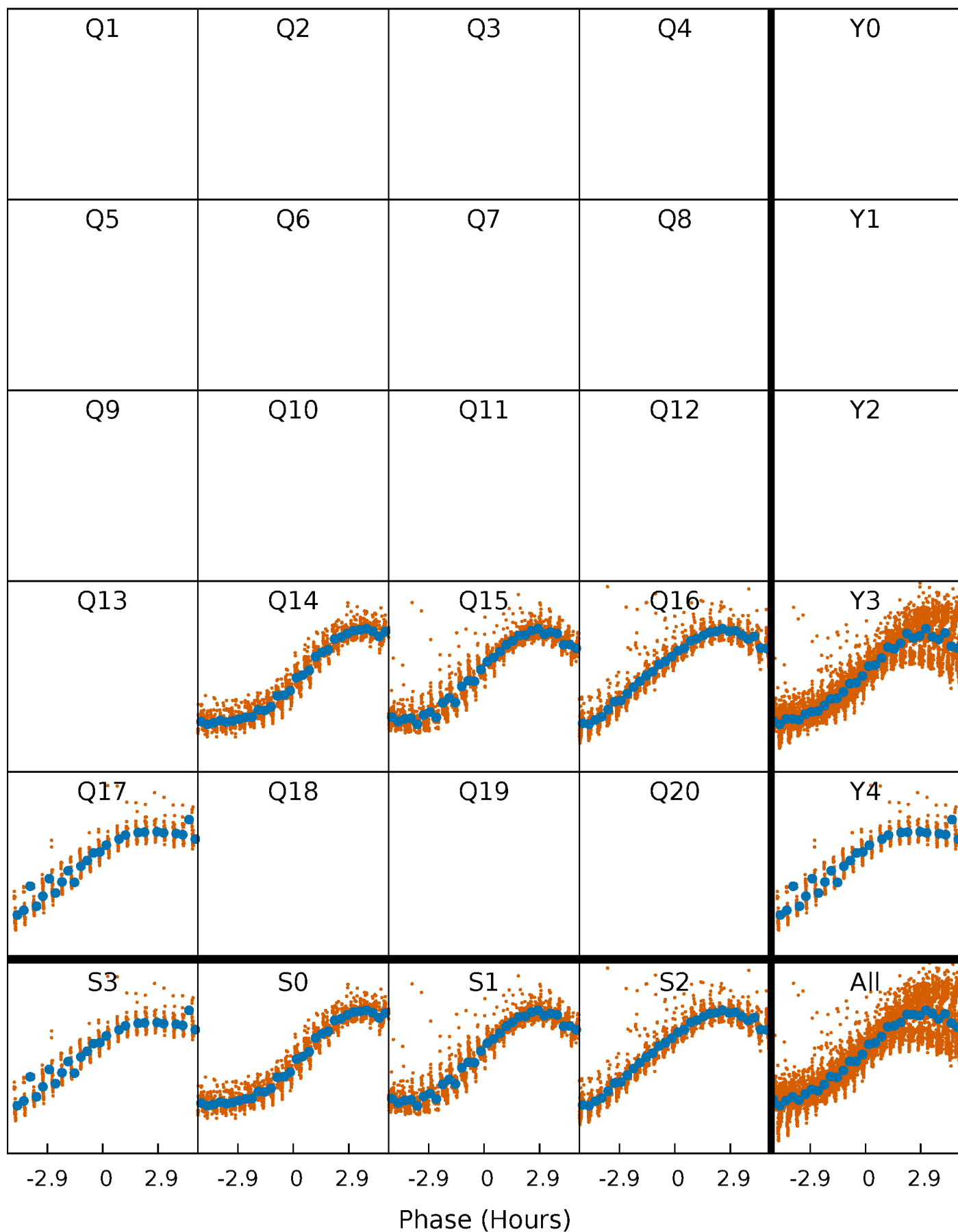


**Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

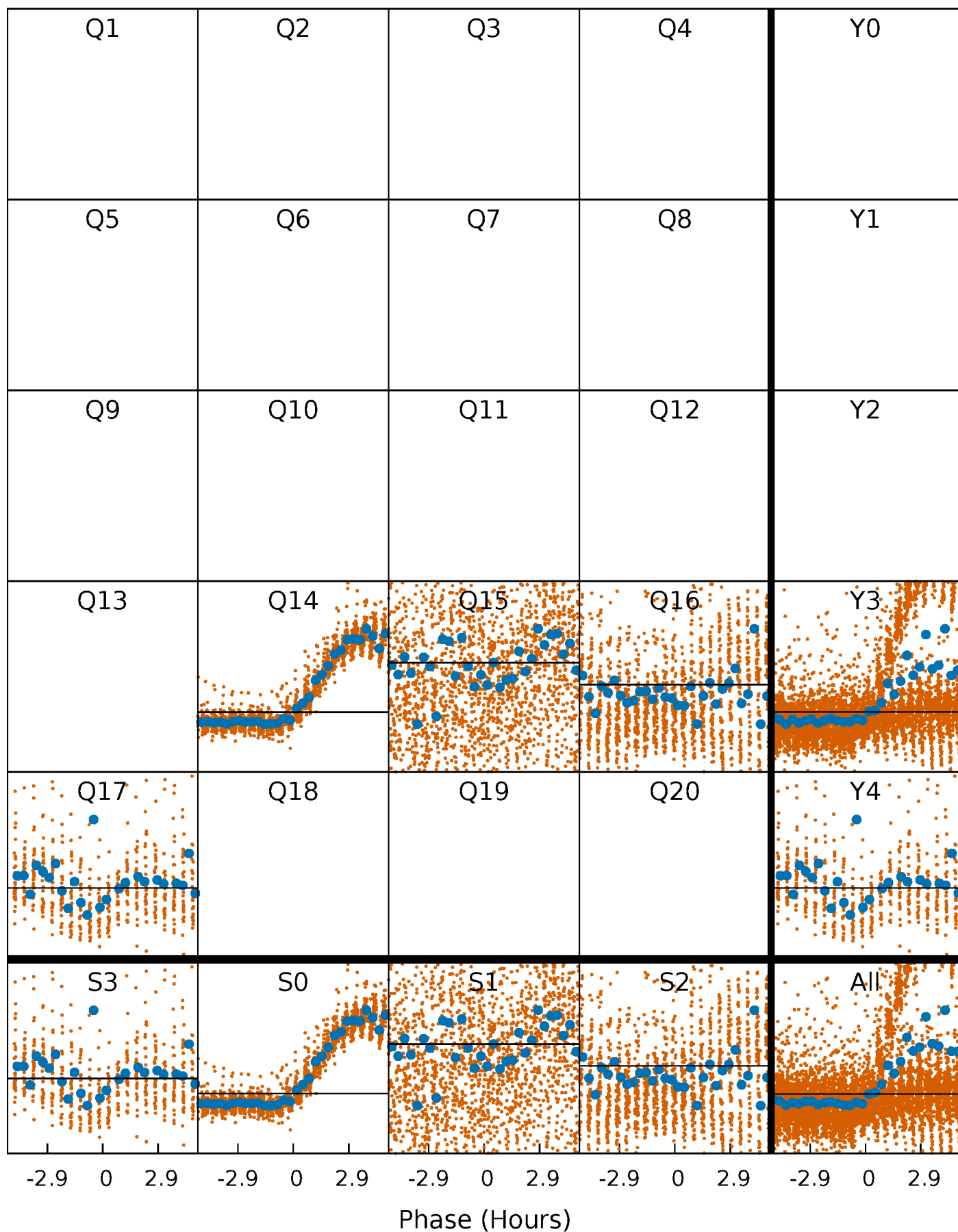
TCE 007505644-01   P= 0.817461 Days    $T_0=131.516202$  (BKJD)





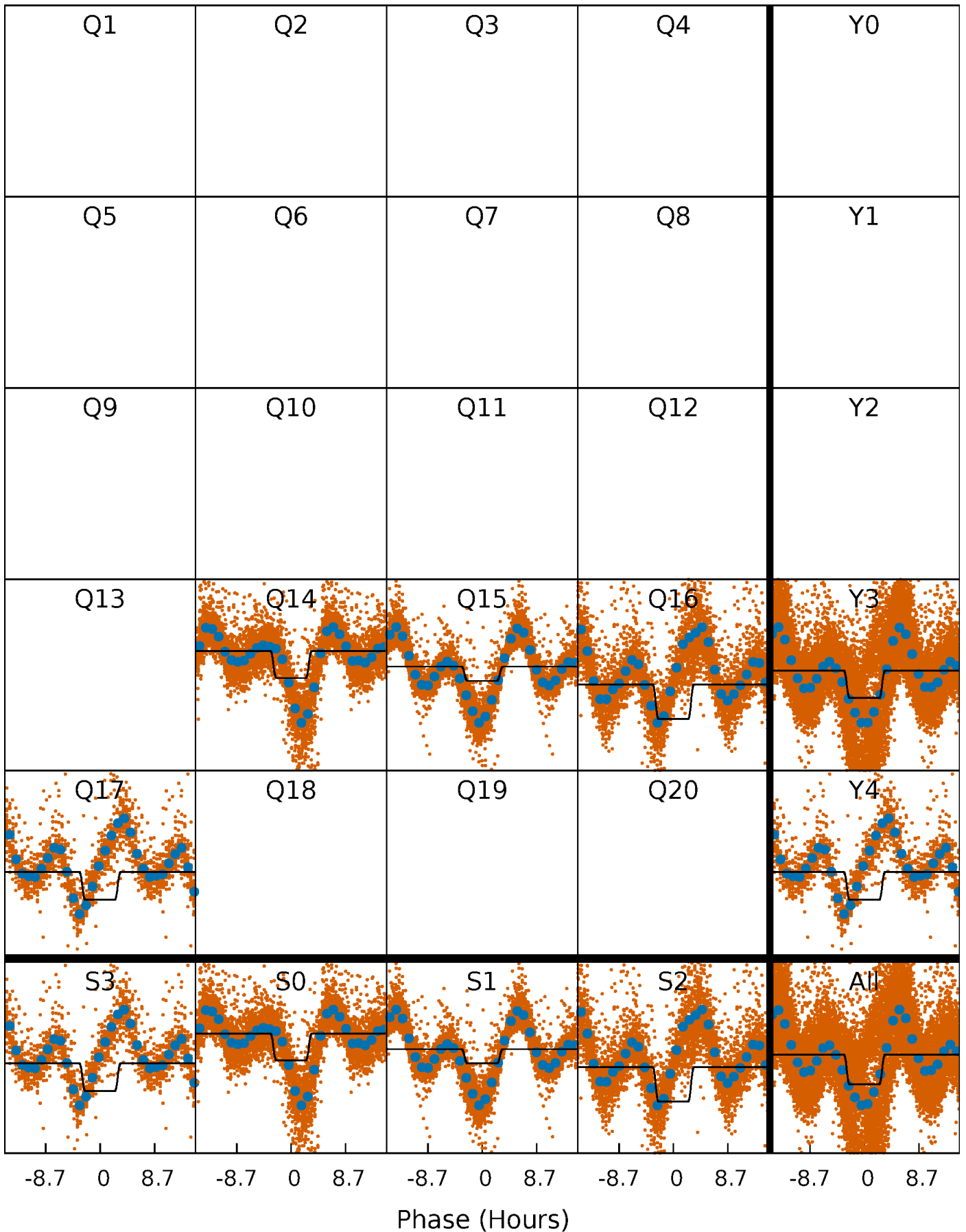
# DV Quarter-Phased Transit Curves

TCE 007505644-01 P= 0.817461 Days  $T_0=131.516202$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

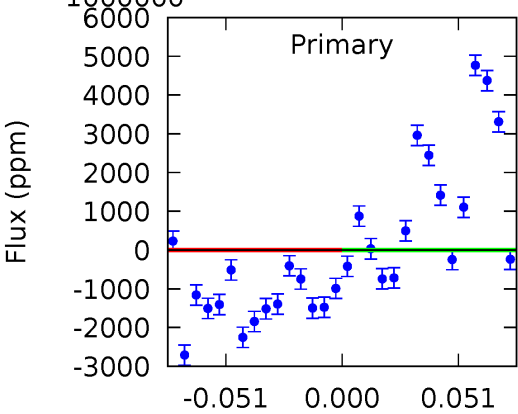
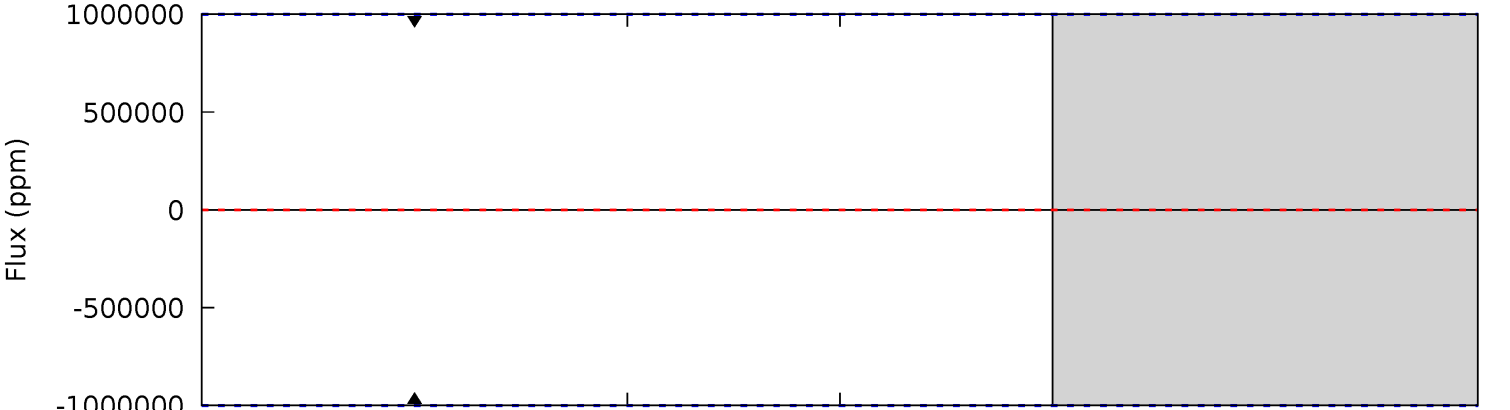
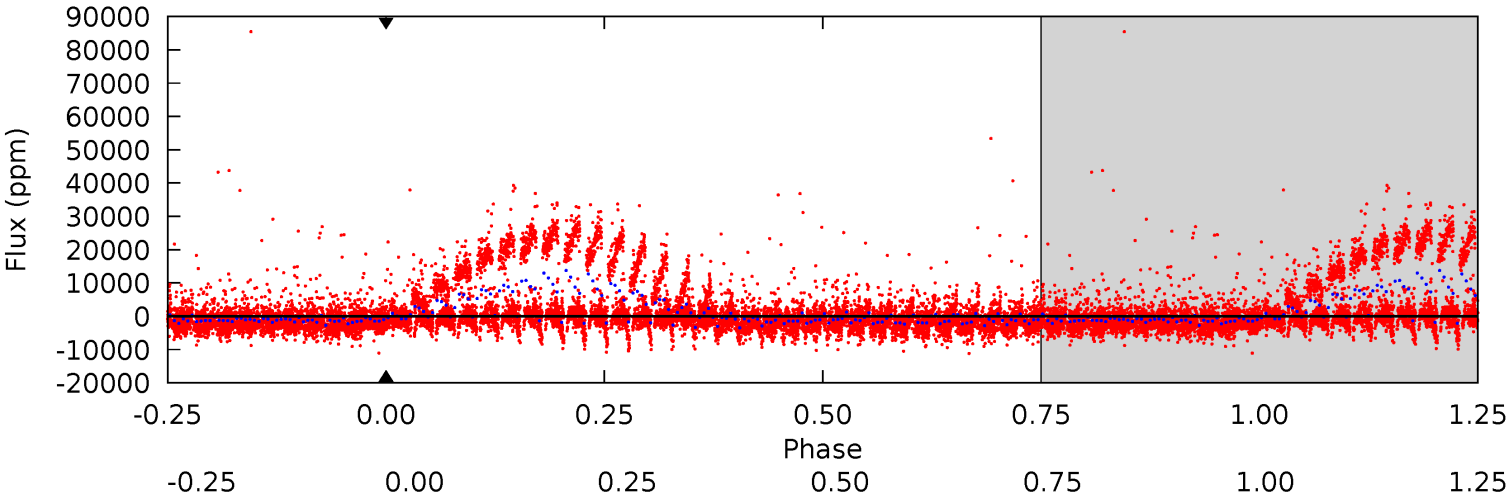
TCE 007505644-01   P= 0.817461 Days    $T_0=132.211960$  (BKJD)



# DV Model-Shift Uniqueness Test

007505644-01, P = 0.817461 Days, E = 131.516202 Days

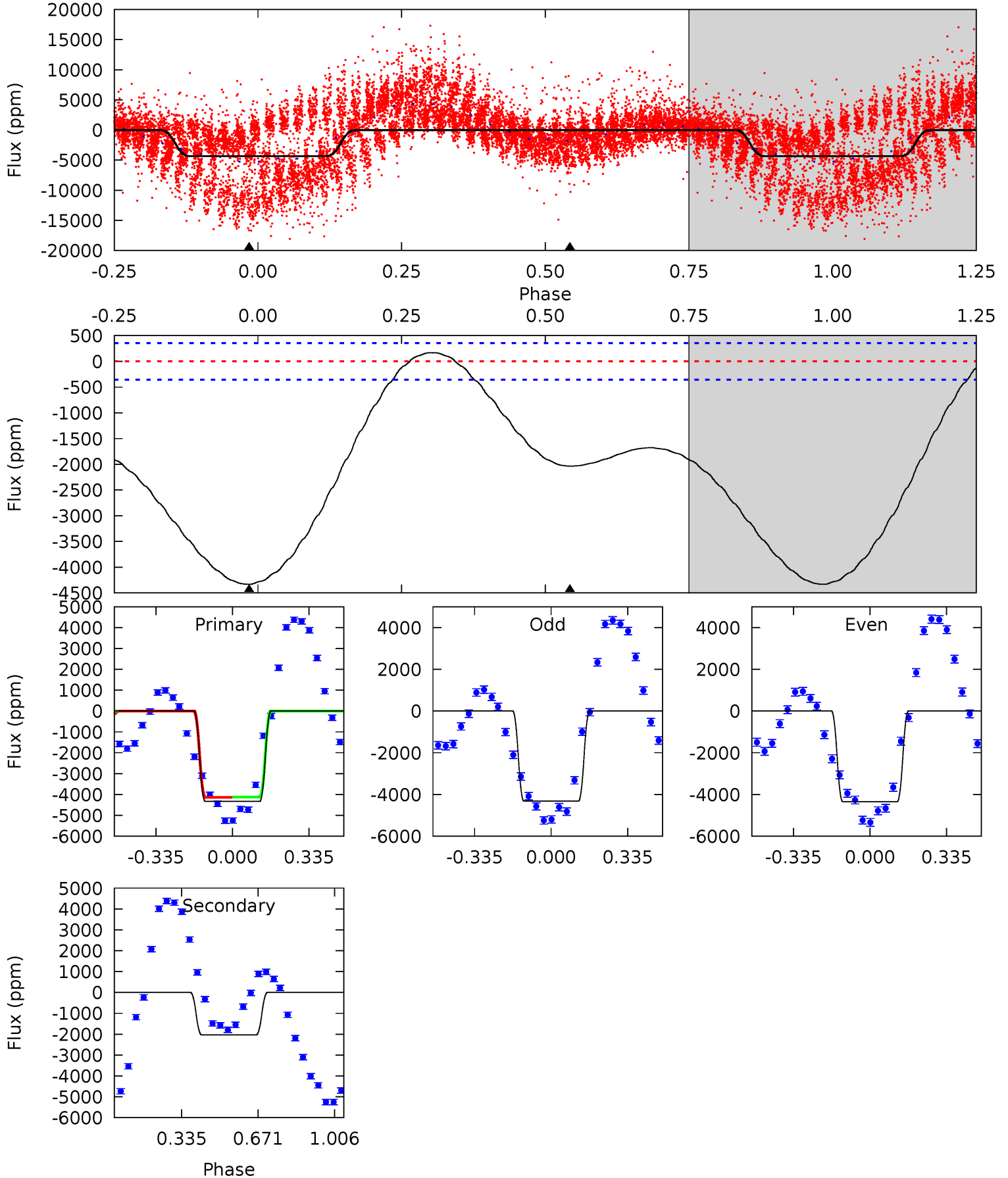
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

007505644-01, P = 0.817461 Days, E = 132.211960 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
52.5	24.7	0	0	4.30	0.96	3.22	52.5	52.5	24.7	24.7	0.12	1.03	0.04	0.09



### Stellar Parameters For KIC 007505644

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3683^{+117}_{-147}$	$4.688^{+0.075}_{-0.020}$	$0.560^{+0.050}_{-0.300}$	$0.563^{+0.033}_{-0.076}$	$0.564^{+0.036}_{-0.067}$	$4.449^{+1.735}_{-0.434}$
	+3%/-4%	+2%/-0%	+9%/-54%	+6%/-13%	+6%/-12%	+39%/-10%
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 007505644-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$5.18^{+4.46}_{-3.54}$	$1414^{+54}_{-64}$	$-3086^{+10152}_{-4170}$	$-12.081^{+666.405}_{-707.881}$
Alt.	$-2036 \pm 83$	$5.52^{+5.02}_{-3.70}$	$1415^{+54}_{-60}$	$2944^{+1330}_{-493}$	$7.425^{+61.365}_{-5.368}$

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

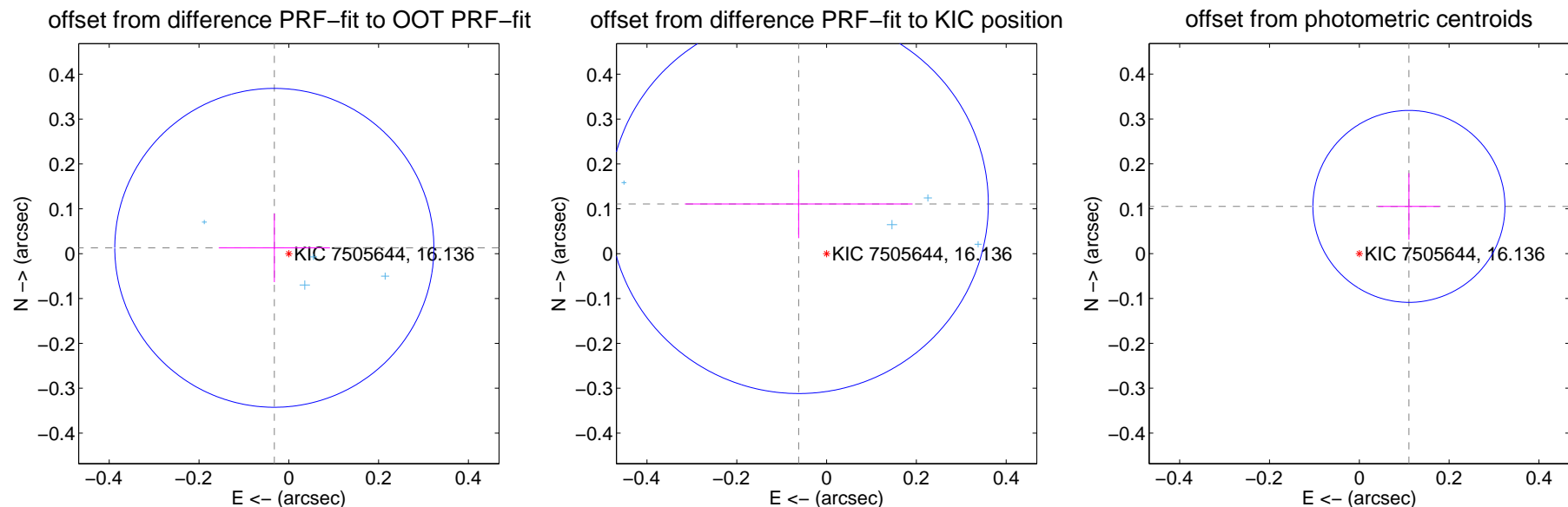
## DV Centroid Data

Supplemental centroid analysis for 007505644-01. Kepler magnitude: 16.14. Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.035 \pm 0.118$	0.29	$0.032 \pm 0.124$	$0.013 \pm 0.076$
PRF-fit source offset from KIC position	$0.127 \pm 0.141$	0.90	$0.062 \pm 0.254$	$0.111 \pm 0.076$
photometric centroid source offset	$0.15 \pm 0.07$	2.14	$-0.11 \pm 0.07$	$0.11 \pm 0.07$



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.

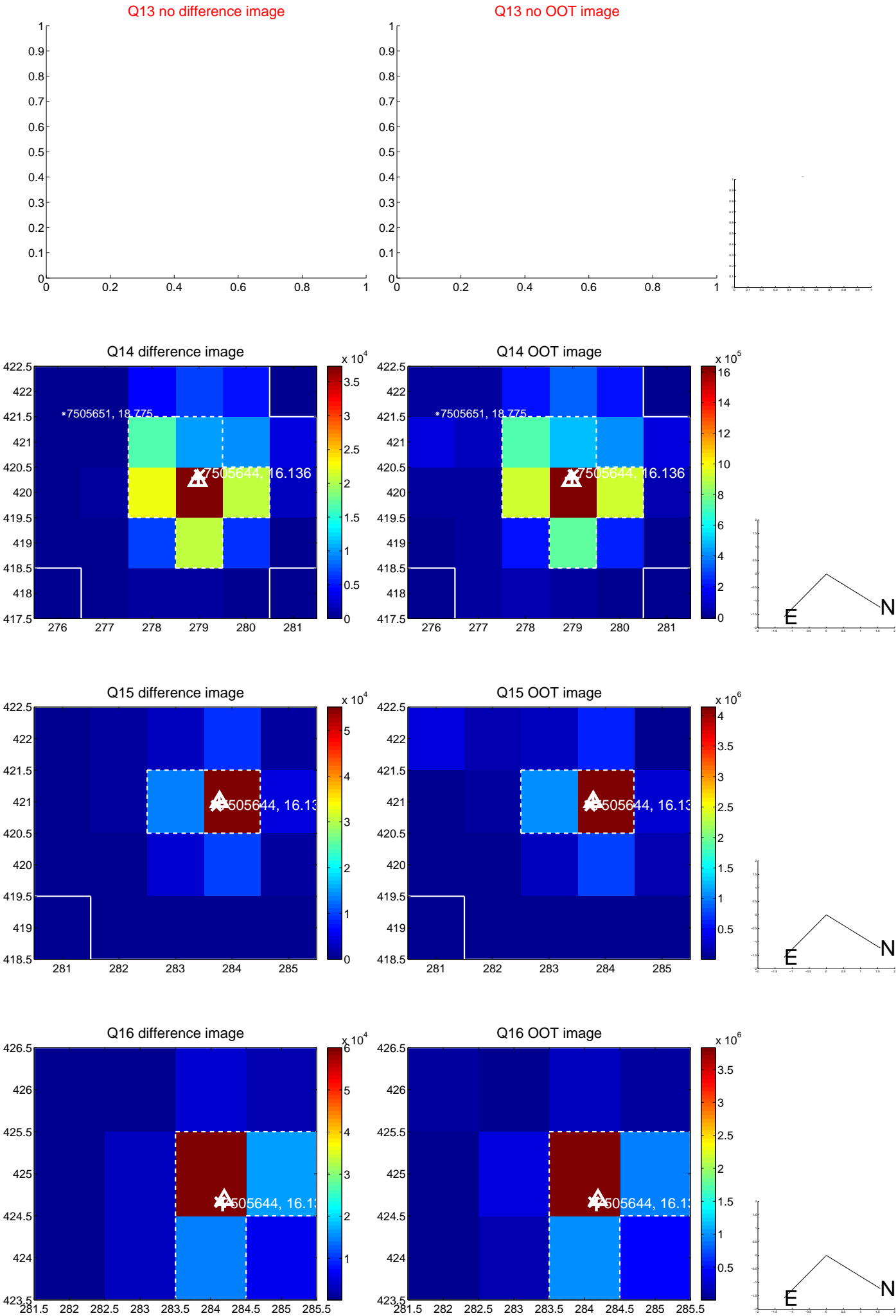




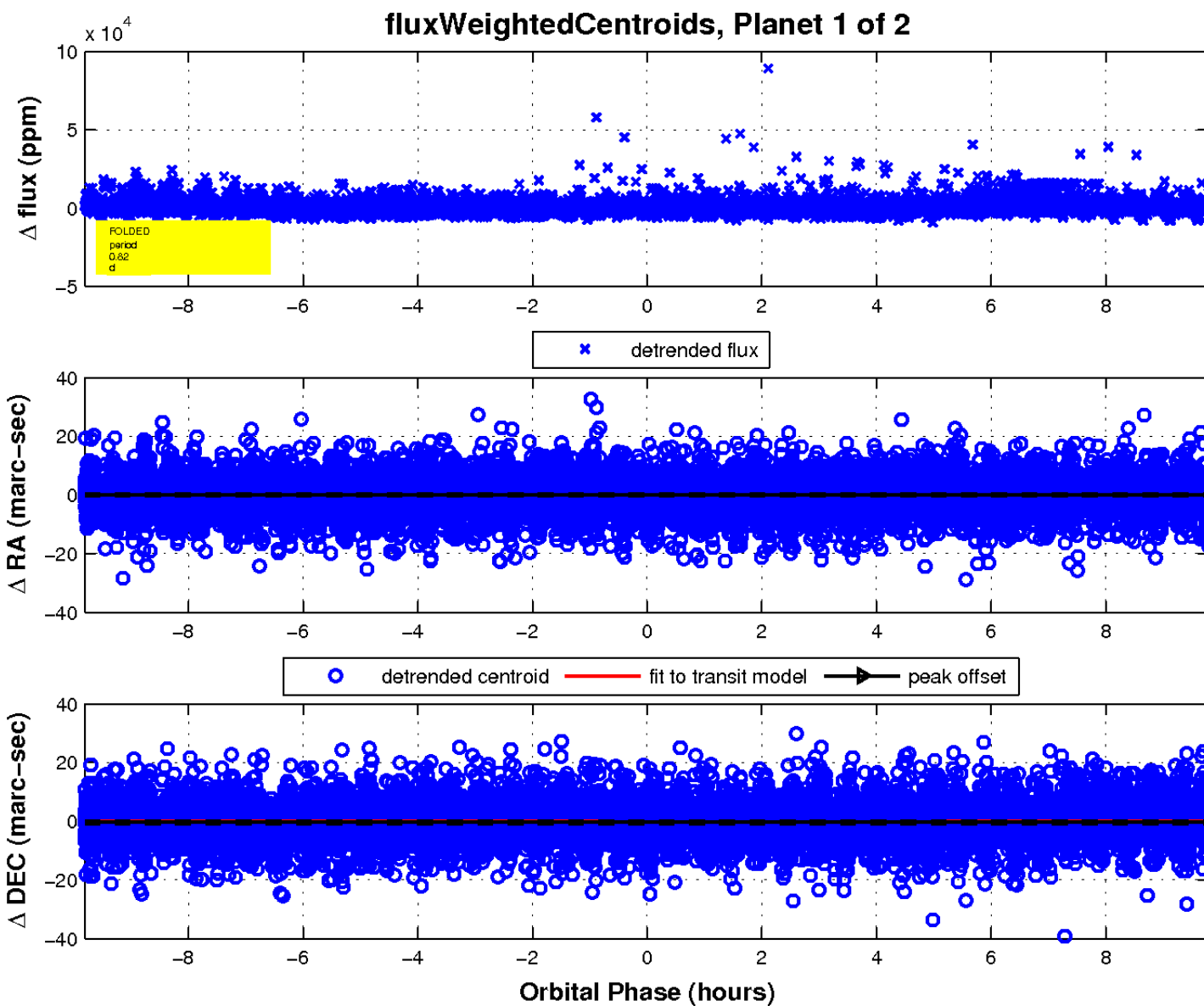
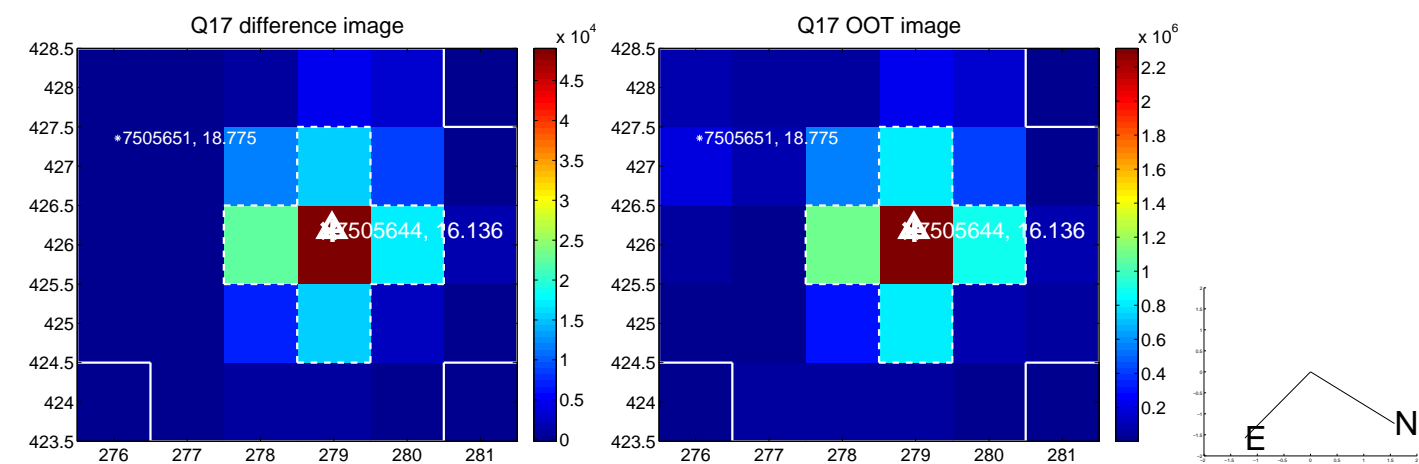
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

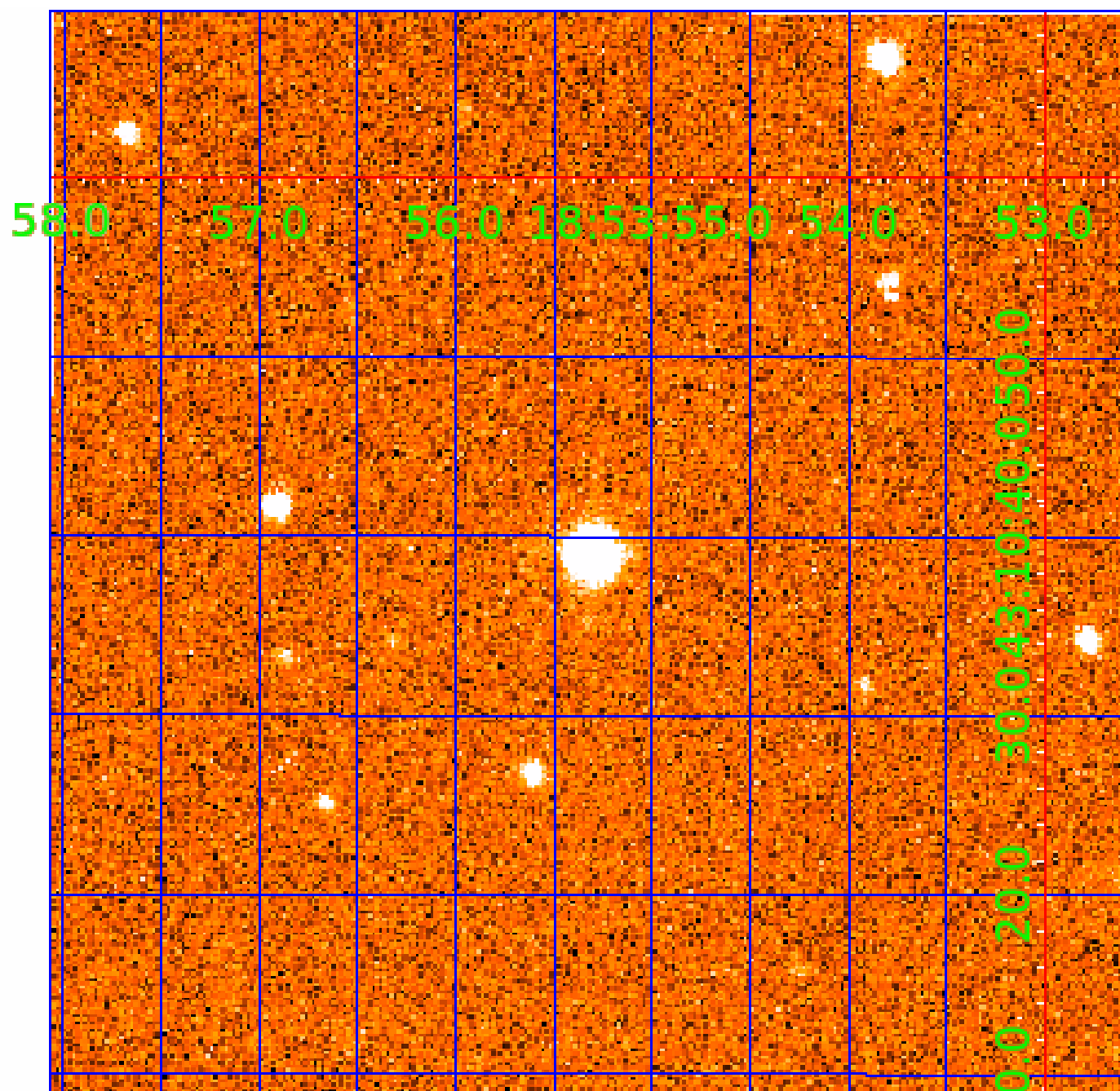


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007505644

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007505644-01	OBS	No	0.817461	131.516202	2165.2	2.500	8.9	-1.0	0.56	3683	2.52	261.47
007505644-02	OBS	No	0.816771	132.042656	27.2	0.975	18.6	0.3	0.56	3683	0.29	261.76

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007505644-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_NOFITS
007505644-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

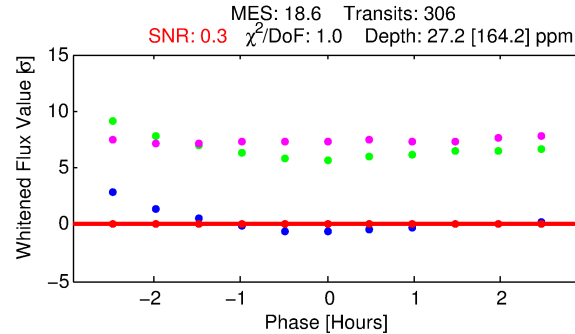
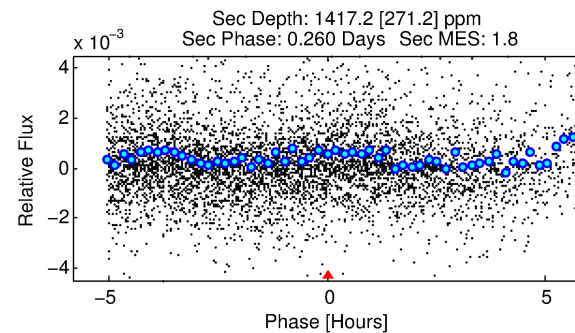
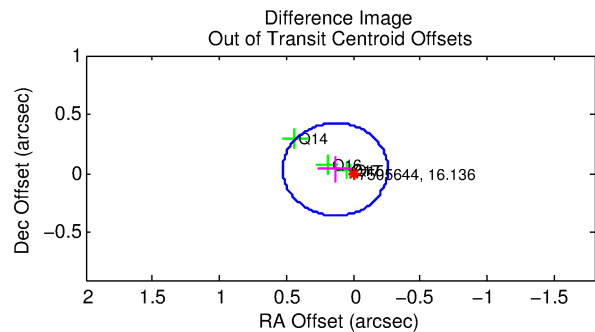
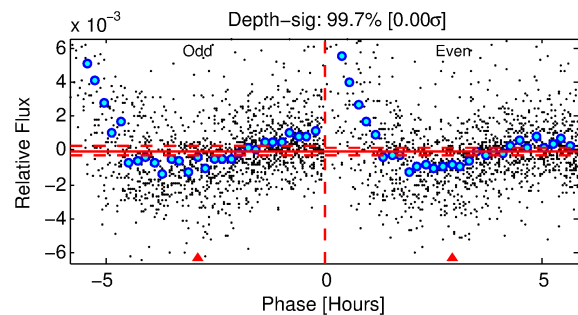
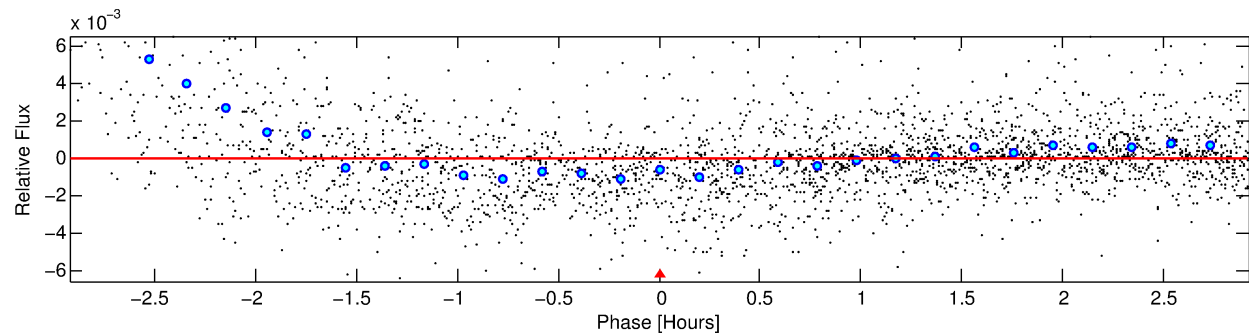
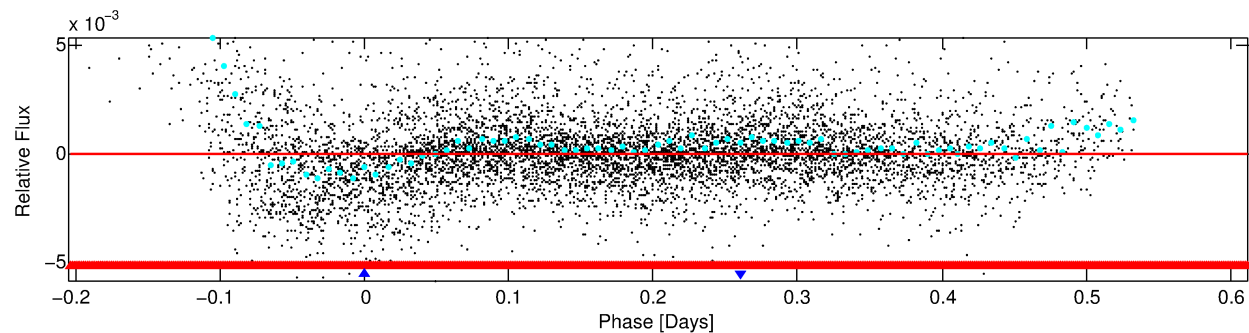
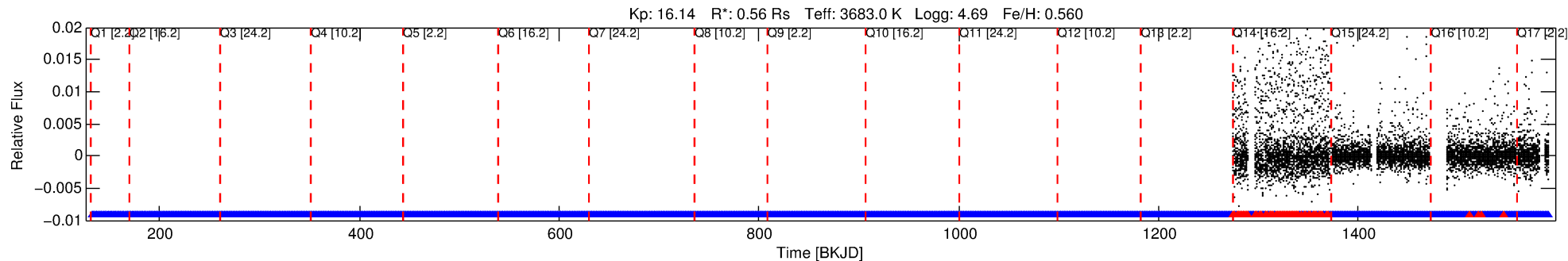
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007505644-02

No Significant Match Found

# DV One-Page Summary

KIC: 7505644 Candidate: 2 of 2 Period: 0.817 d



## DV Fit Results:

Period = 0.81677 [0.00038] d  
Epoch = 132.0427 [0.0618] BKJD  
Rp/R\* = 0.0047 [0.2137]  
a/R\* = 6.31 [870.80]  
b = 0.21 [641.27]  
Seff = 261.76 [56.65]  
Teq = 1026 [55] K  
Rp = 0.29 [13.13] Re  
a = 0.0141 [0.0015] AU  
Ag = 1878.16 [171294.96] [0.01σ]  
Teff = 10439 [238028] K [0.04σ]

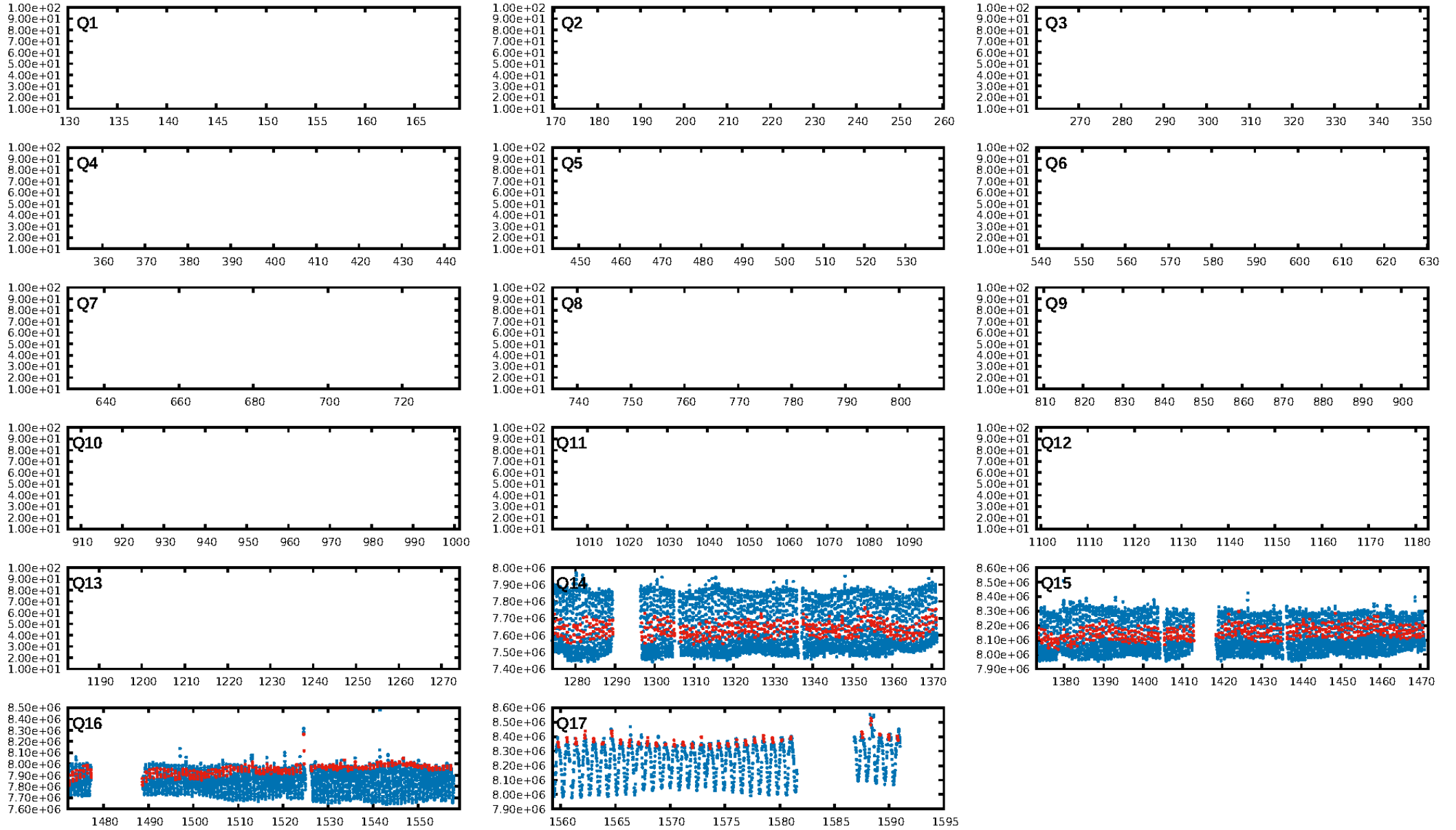
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.5% [0.01σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.80e-92  
RollingBand-fgt: 0.79 [239/304]  
GhostDiagnostic-chr: -5.951  
Centroid-sig: 72.9%  
Centroid-so: 9.919 arcsec [0.44σ]  
OotOffset-rm: 0.142 arcsec [1.08σ]  
KicOffset-rm: 0.171 arcsec [1.20σ]  
OotOffset-st: 1/1/1/1 [4]  
KicOffset-st: 1/1/1/1 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
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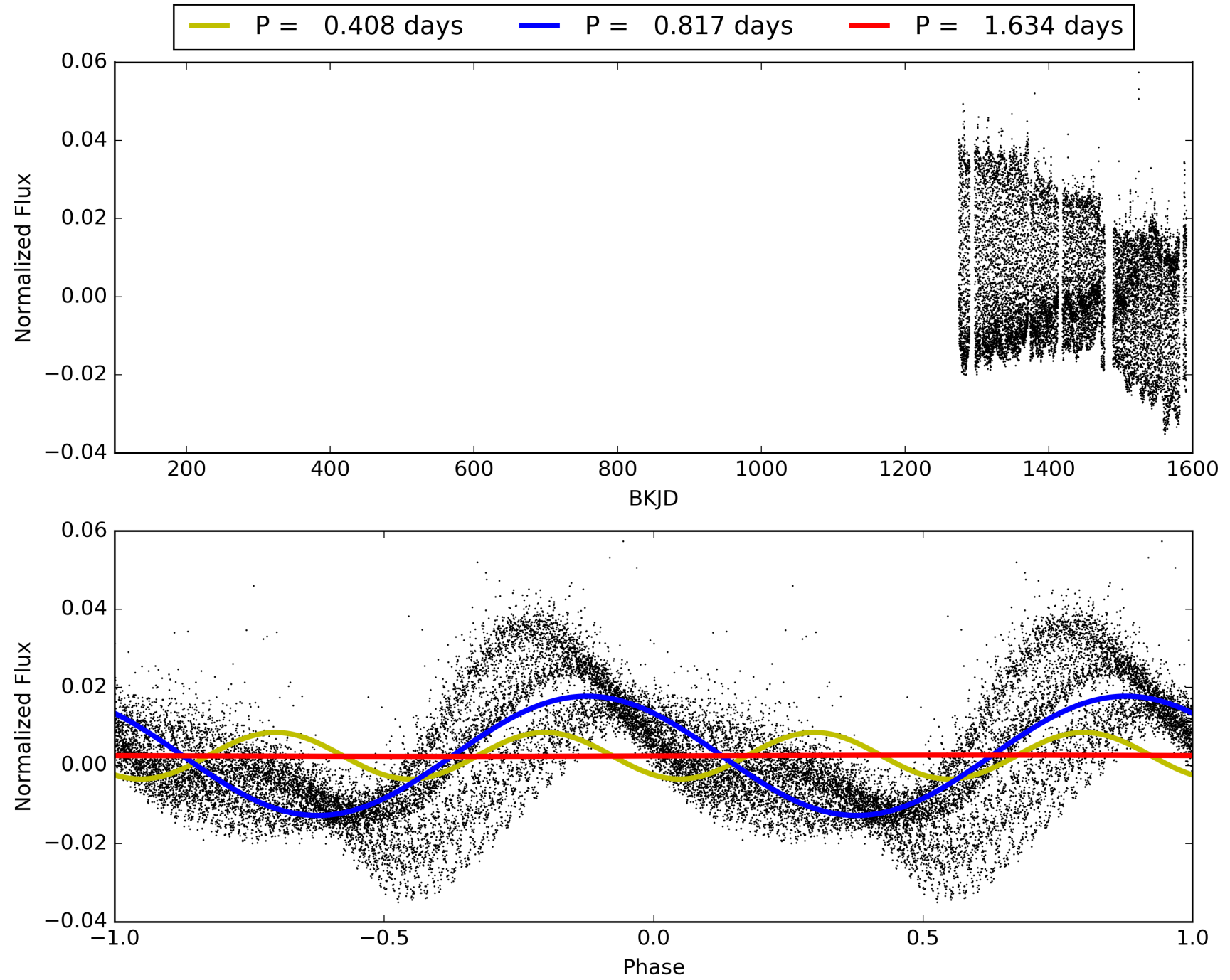
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:30:51 Z

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

# TCE 007505644-02, PDC Light Curves



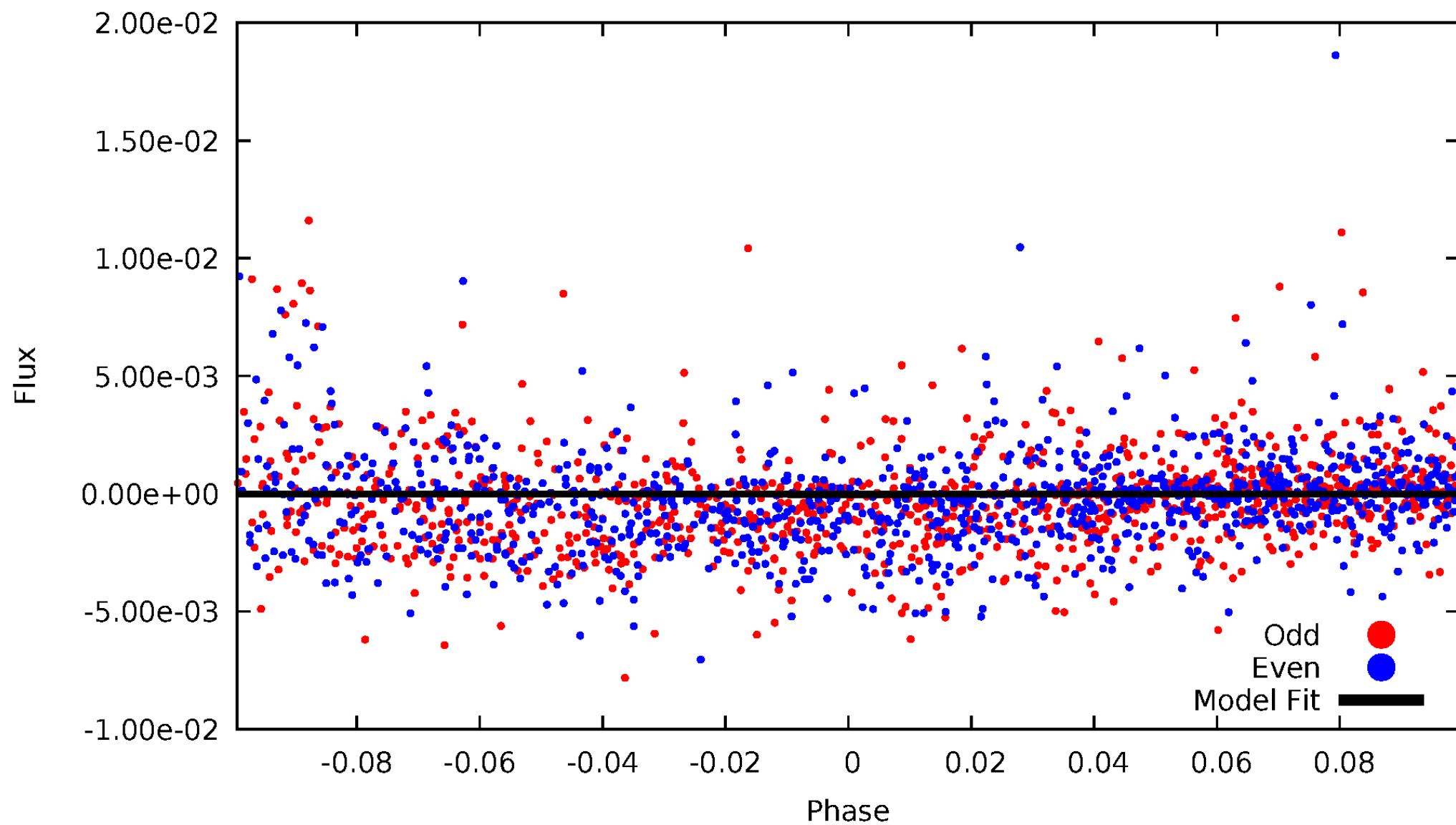
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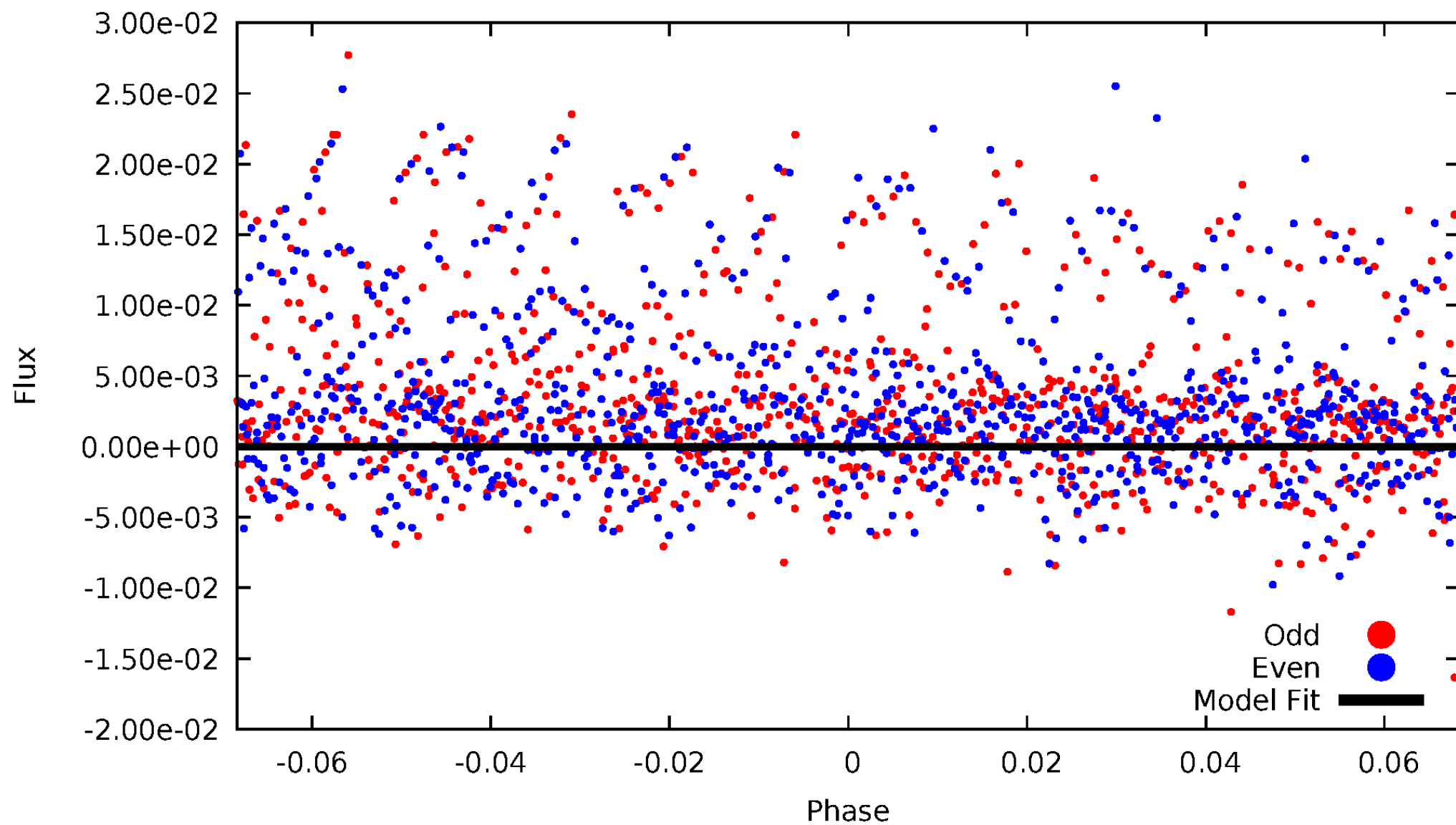
# DV Odd/Even

TCE 007505644-02



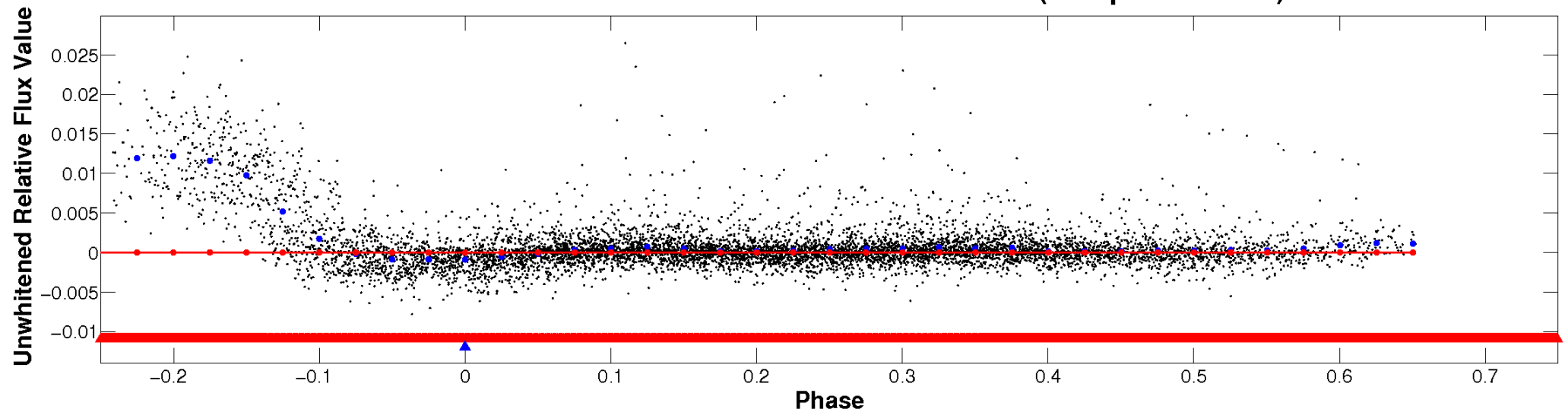
# ALT Odd/Even

TCE 007505644-02

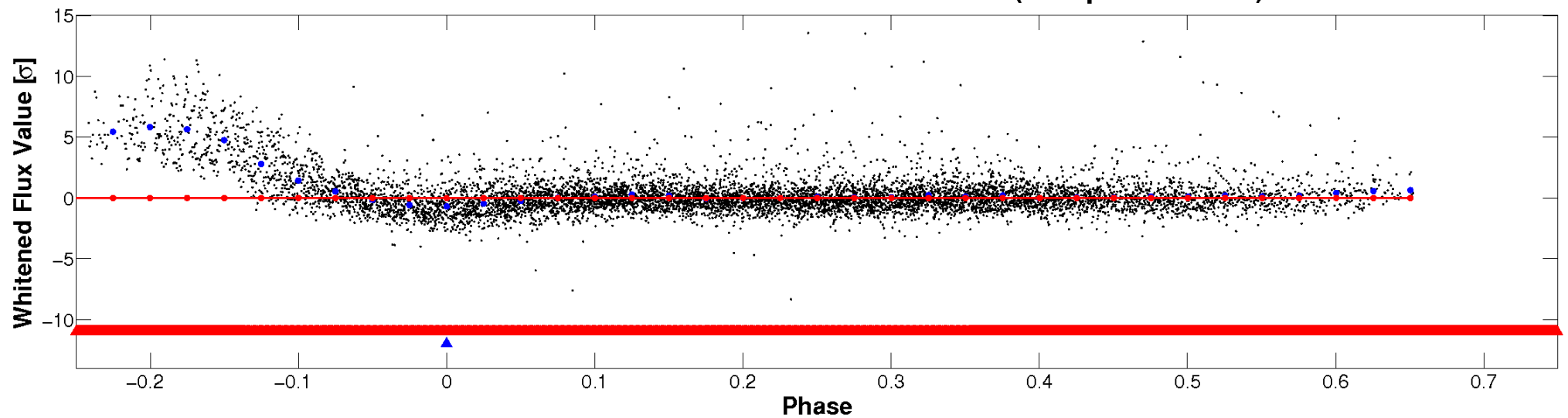


# Non-Whitened Vs. Whitened Light Curve

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

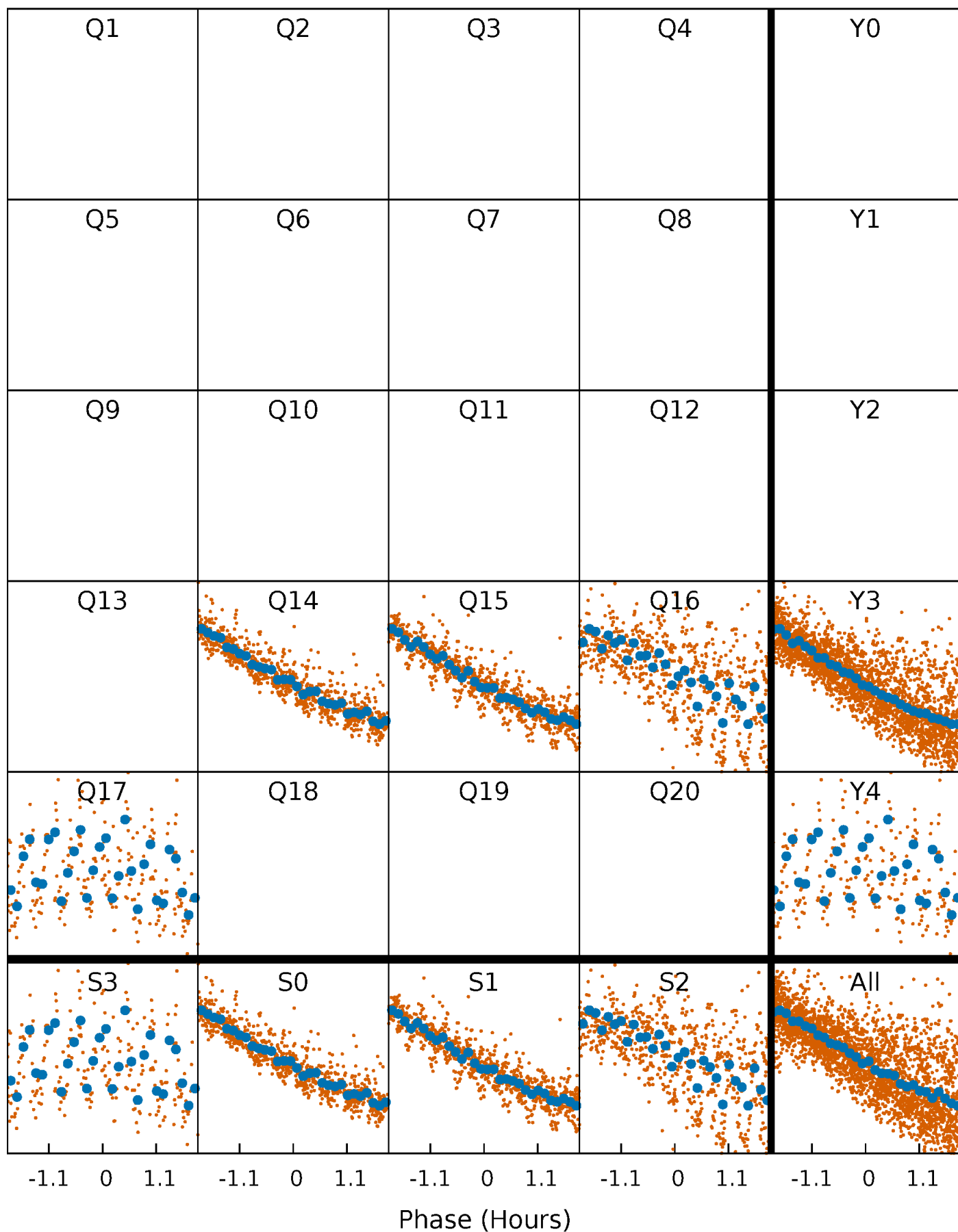


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

TCE 007505644-02   P= 0.816771 Days    $T_0=132.042656$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007505644-02   P= 0.816771 Days    $T_0=132.042656$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

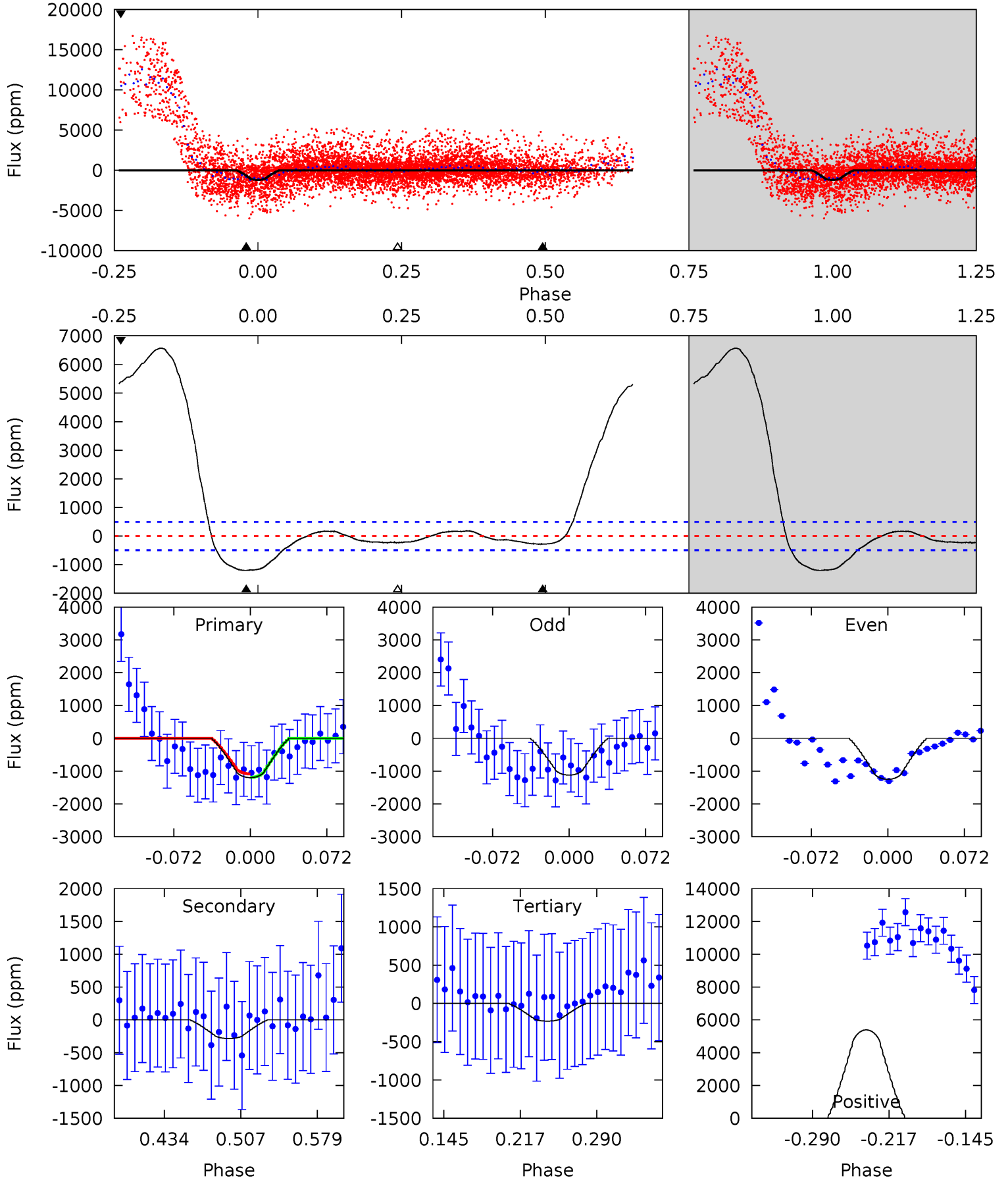
TCE 007505644-02 P= 0.816855 Days  $T_0=132.057246$  (BKJD)



# DV Model-Shift Uniqueness Test

007505644-02, P = 0.816771 Days, E = 132.042656 Days

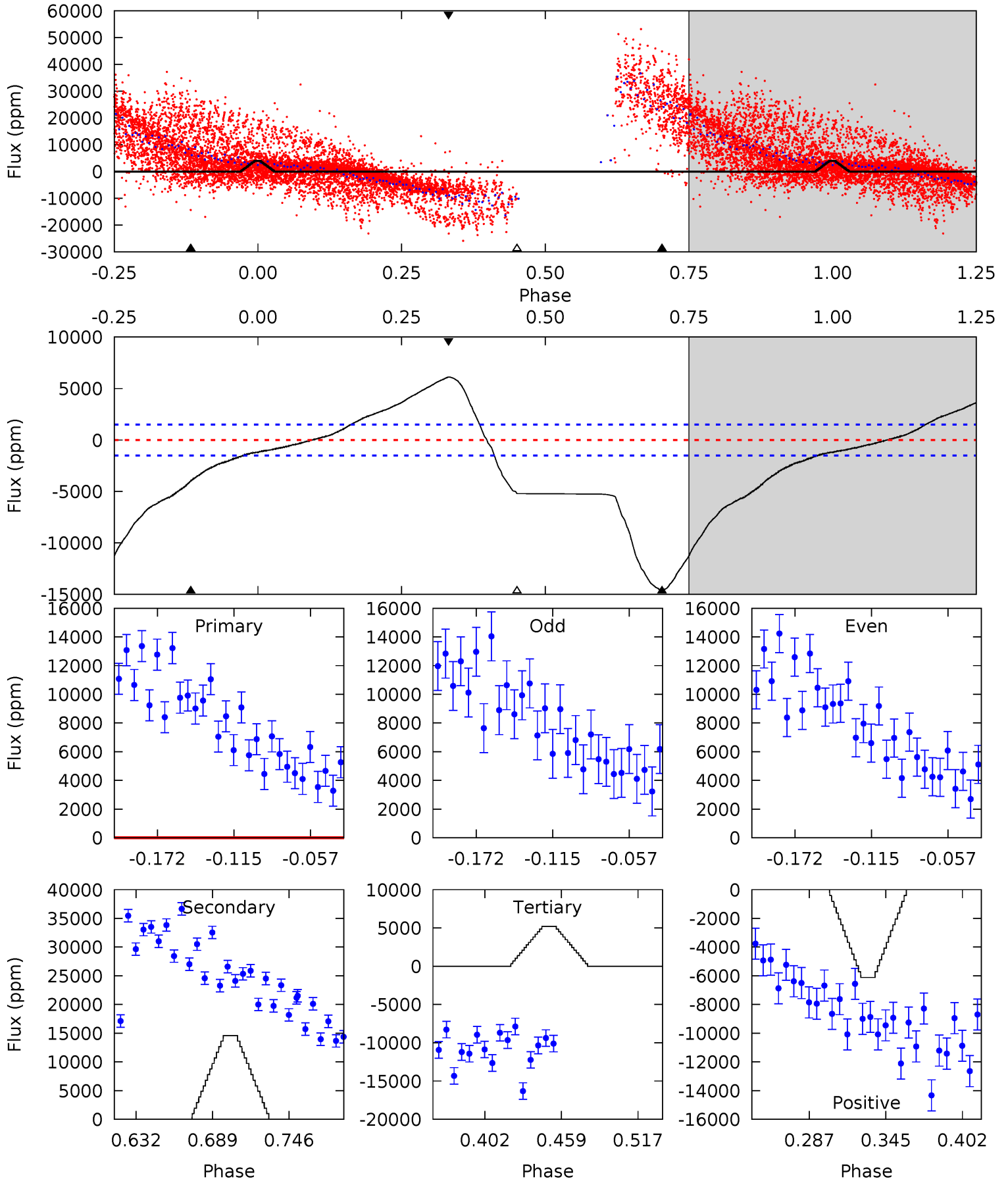
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	2.68	2.18	50.7	4.63	1.80	14.9	9.12	-39.4	0.50	-48.0	0.59	1.11	0.85	0.22



# Alt Model-Shift Uniqueness Test

007505644-02, P = 0.816855 Days, E = 132.057246 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
12.4	45.4	16.2	19.0	4.68	1.90	11.1	-3.78	-6.61	29.2	26.4	0.09	1.74	0.30	0.57





### Stellar Parameters For KIC 007505644

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3683^{+117}_{-147}$	$4.688^{+0.075}_{-0.020}$	$0.560^{+0.050}_{-0.300}$	$0.563^{+0.033}_{-0.076}$	$0.564^{+0.036}_{-0.067}$	$4.449^{+1.735}_{-0.434}$
	+3%/-4%	+2%/-0%	+9%/-54%	+6%/-13%	+6%/-12%	+39%/-10%
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 007505644-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	-284±106	$9.35^{+8.78}_{-6.89}$	$1414^{+55}_{-63}$	$1660^{+1140}_{-3617}$	$0.337^{+4.530}_{-0.259}$
Alt.	-14592±321	$8.20^{+9.72}_{-5.87}$	$1410^{+57}_{-59}$	$3492^{+2288}_{-709}$	$25^{+274}_{-19}$

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

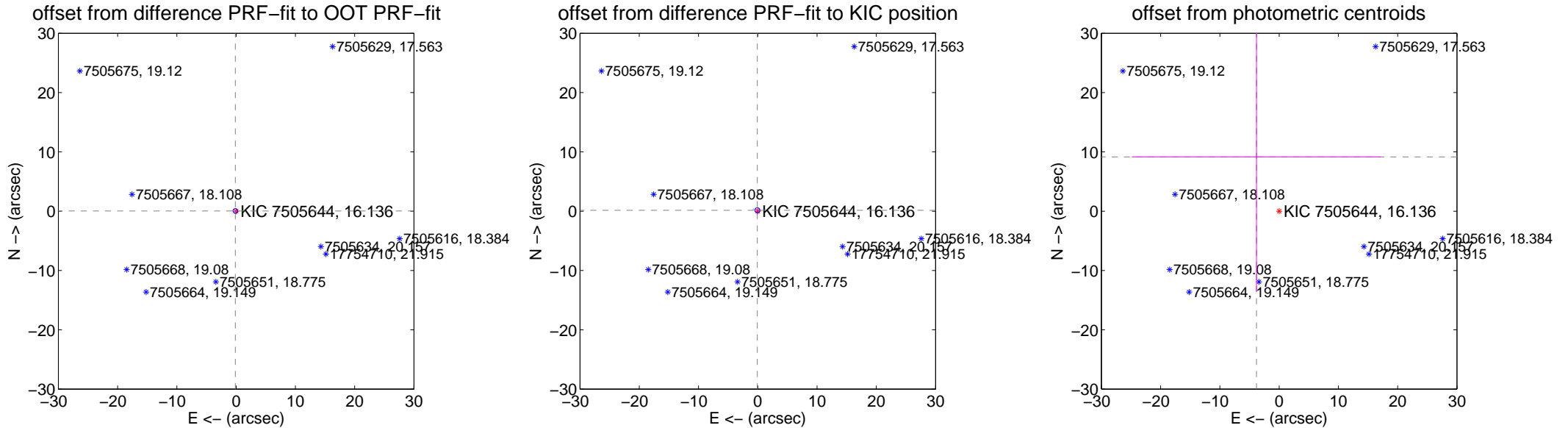
## DV Centroid Data

Supplemental centroid analysis for 007505644-02. Kepler magnitude: 16.14. Transit SNR 0.25

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.142 \pm 0.131$	1.08	$0.137 \pm 0.119$	$0.035 \pm 0.097$
PRF-fit source offset from KIC position	$0.171 \pm 0.142$	1.20	$0.072 \pm 0.237$	$0.155 \pm 0.111$
photometric centroid source offset	$9.92 \pm 22.47$	0.44	$3.82 \pm 21.02$	$9.15 \pm 22.72$



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.



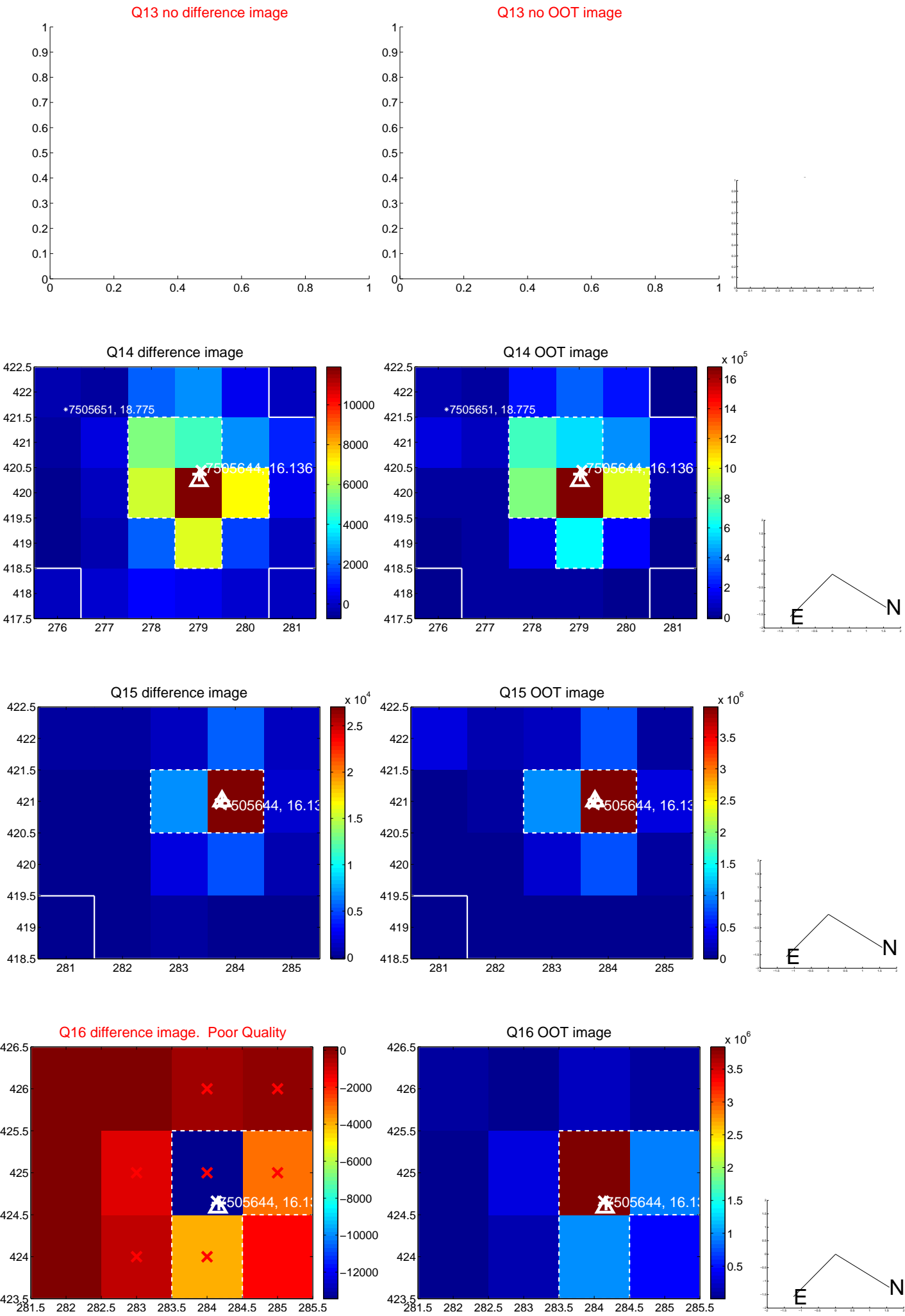
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



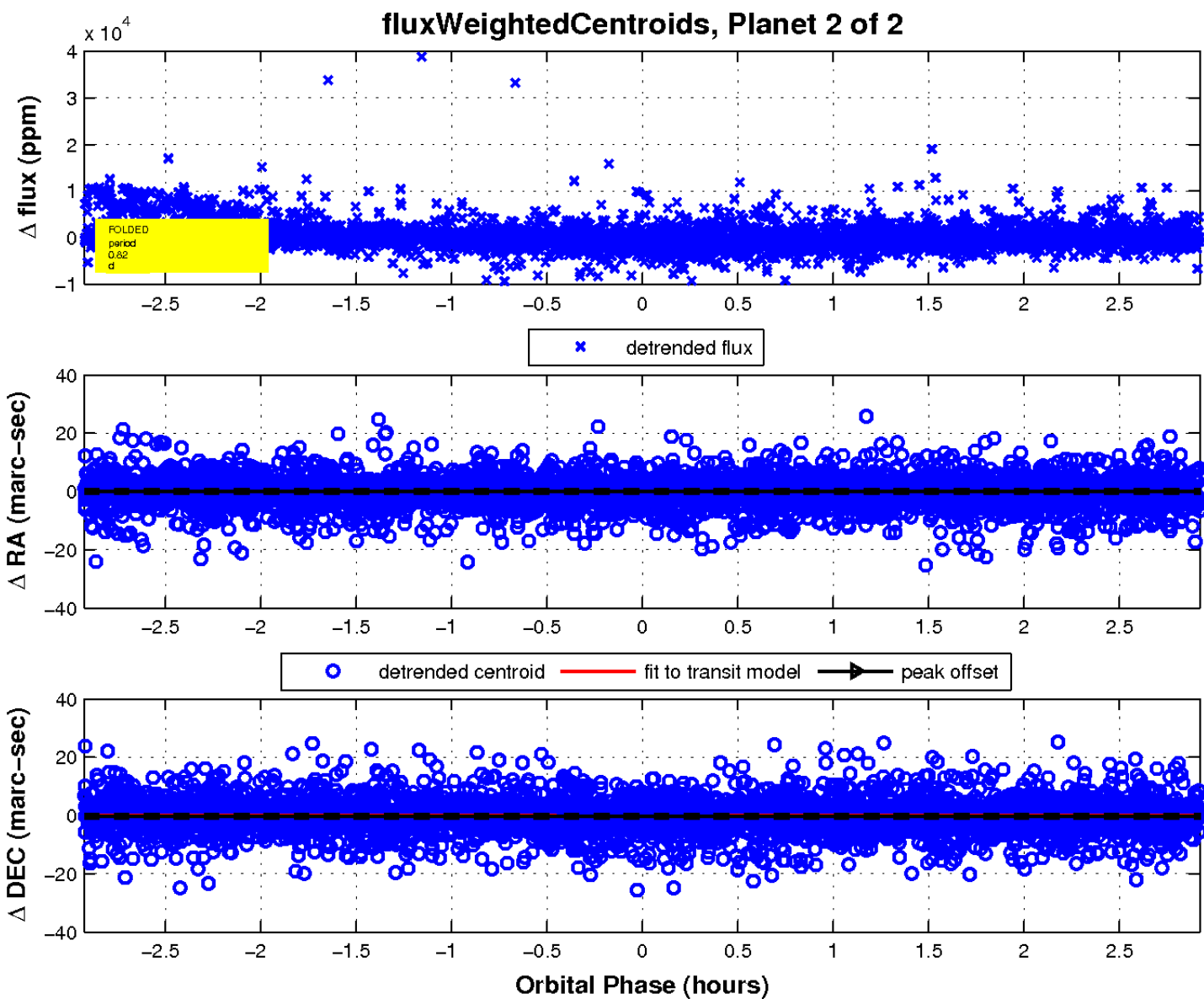
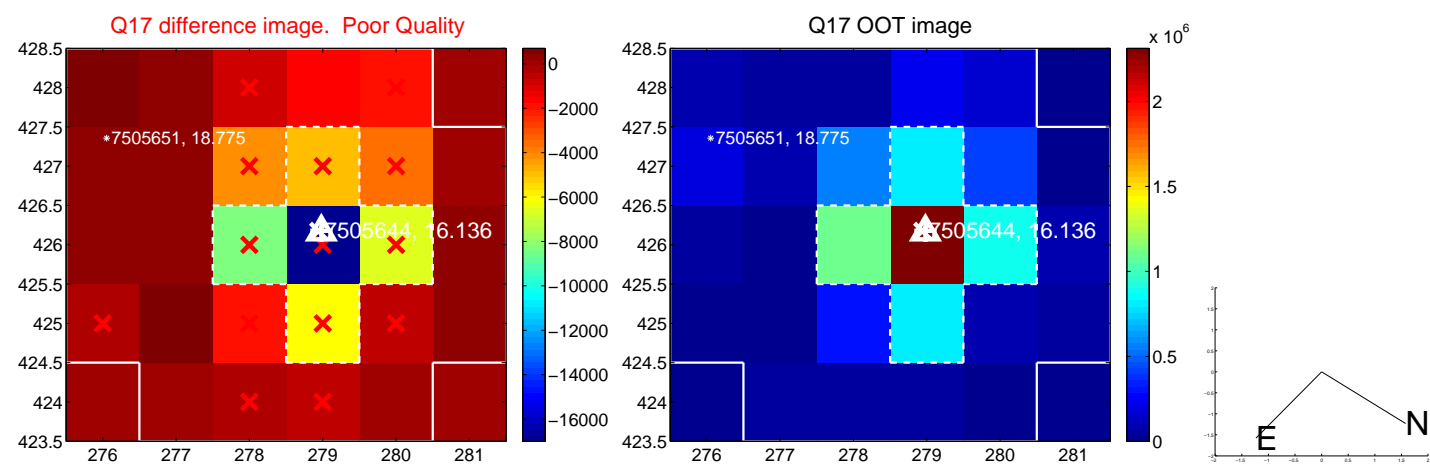
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

