

# KIC 008315761

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008315761-01	OBS	No	282.196341	152.399357	554.7	11.883	8.3	7.4	0.92	5880	2.32	1.26

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008315761-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—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.

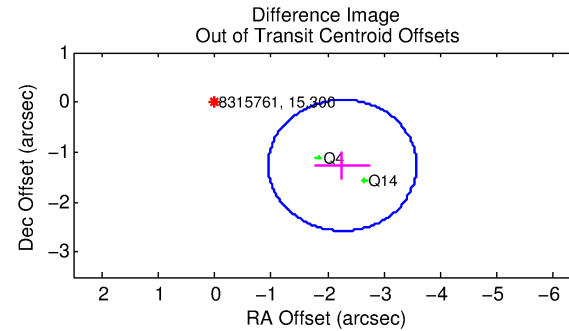
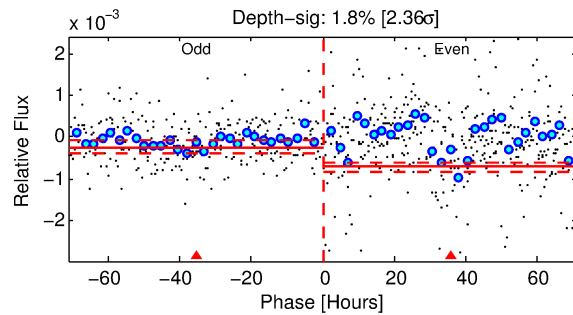
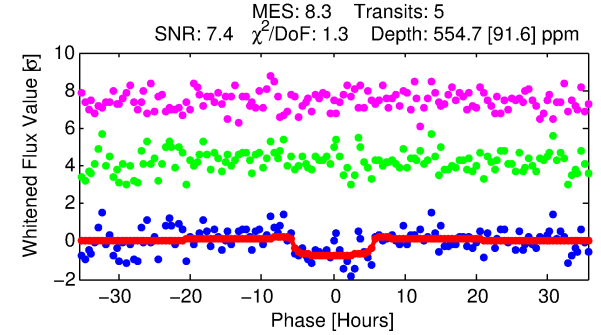
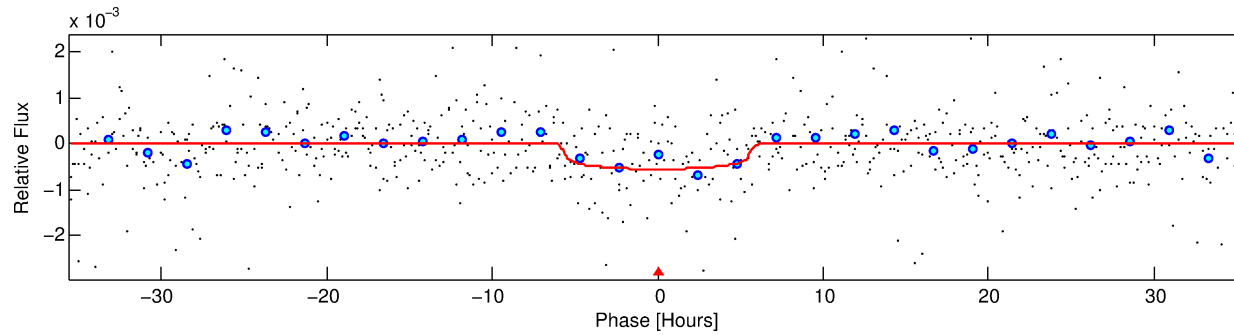
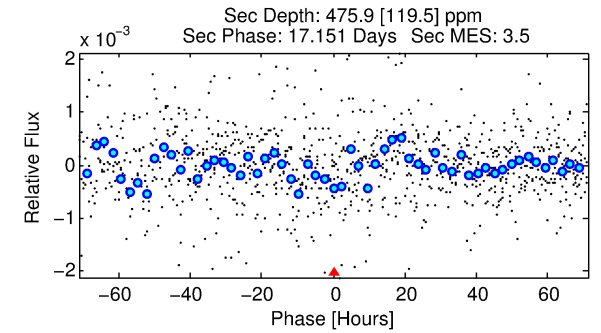
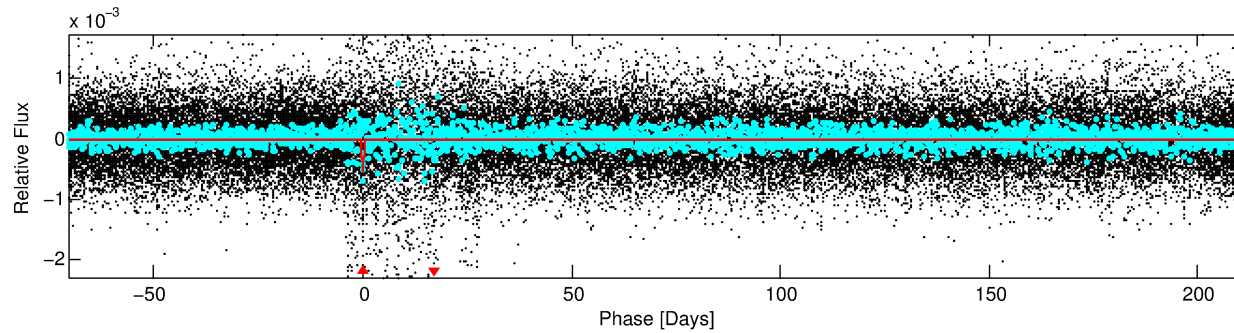
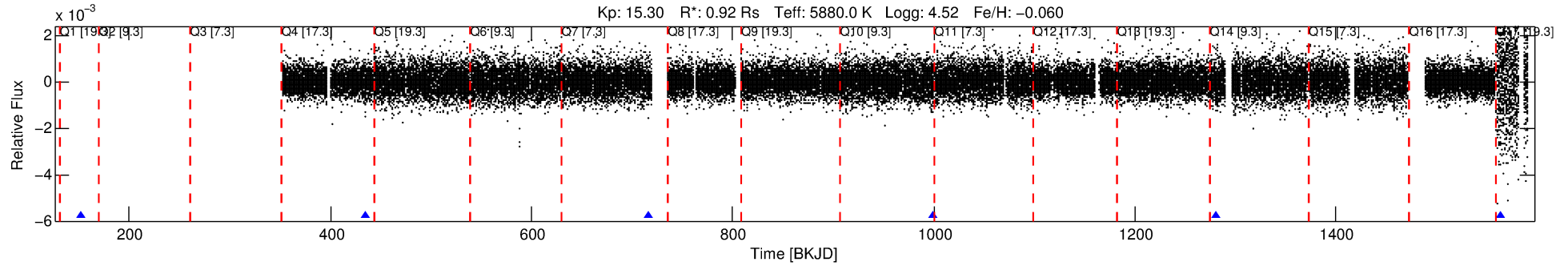
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008315761-01

No Significant Match Found

# DV One-Page Summary

KIC: 8315761 Candidate: 1 of 1 Period: 282.196 d



## DV Fit Results:

Period = 282.19634 [0.00969] d  
Epoch = 152.3994 [0.0278] BKJD  
Rp/R\* = 0.0232 [0.0105]  
a/R\* = 132.35 [267.37]  
b = 0.72 [1.38]  
Seff = 1.26 [0.54]  
Teq = 270 [29] K  
Rp = 2.32 [1.30] Re  
a = 0.8452 [0.2340] AU  
Ag = 34788.76 [35572.31] [0.98σ]  
Teffp = 5705 [1355] K [4.01σ]

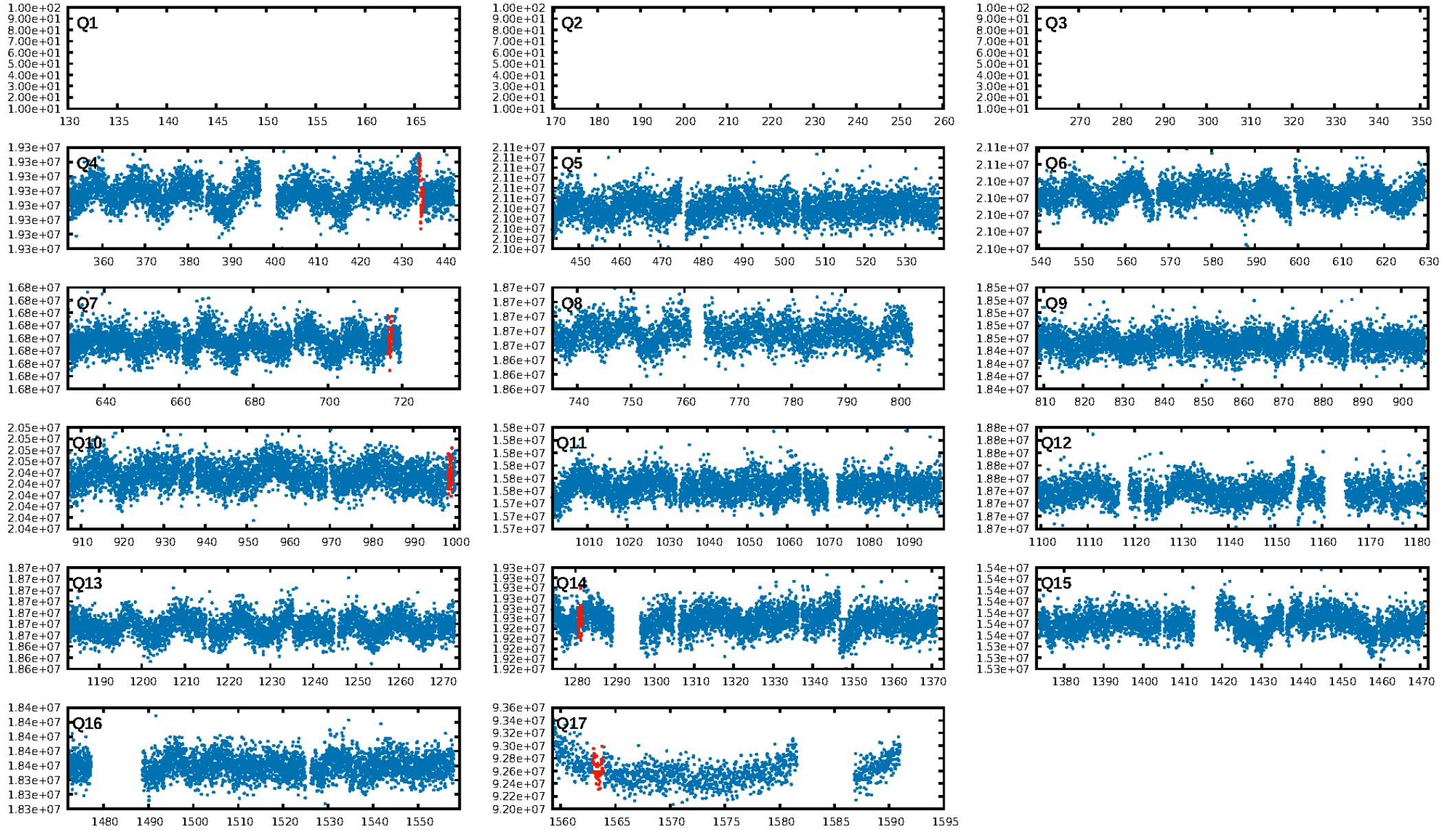
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 71.3%  
Bootstrap-pfa: 8.65e-14  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -0.6144  
Centroid-sig: 5.1%  
Centroid-so: 7.052 arcsec [6.54σ]  
OotOffset-rm: 2.593 arcsec [5.93σ]  
KicOffset-rm: 4.624 arcsec [9.12σ]  
OotOffset-st: 1/0/1/0 [2]  
KicOffset-st: 2/0/1/0 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [5/5]

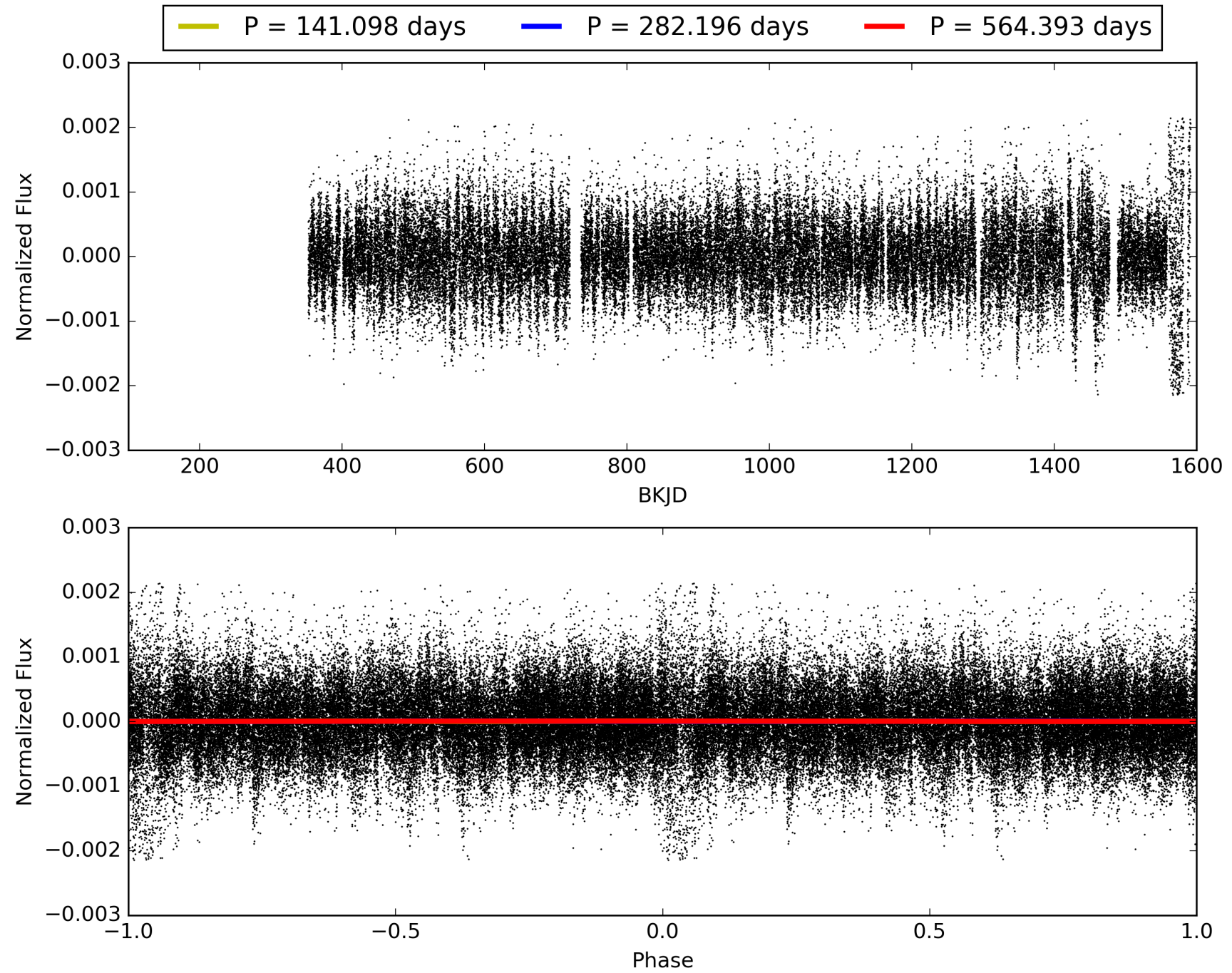
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:42:59 Z

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

# TCE 008315761-01, PDC Light Curves

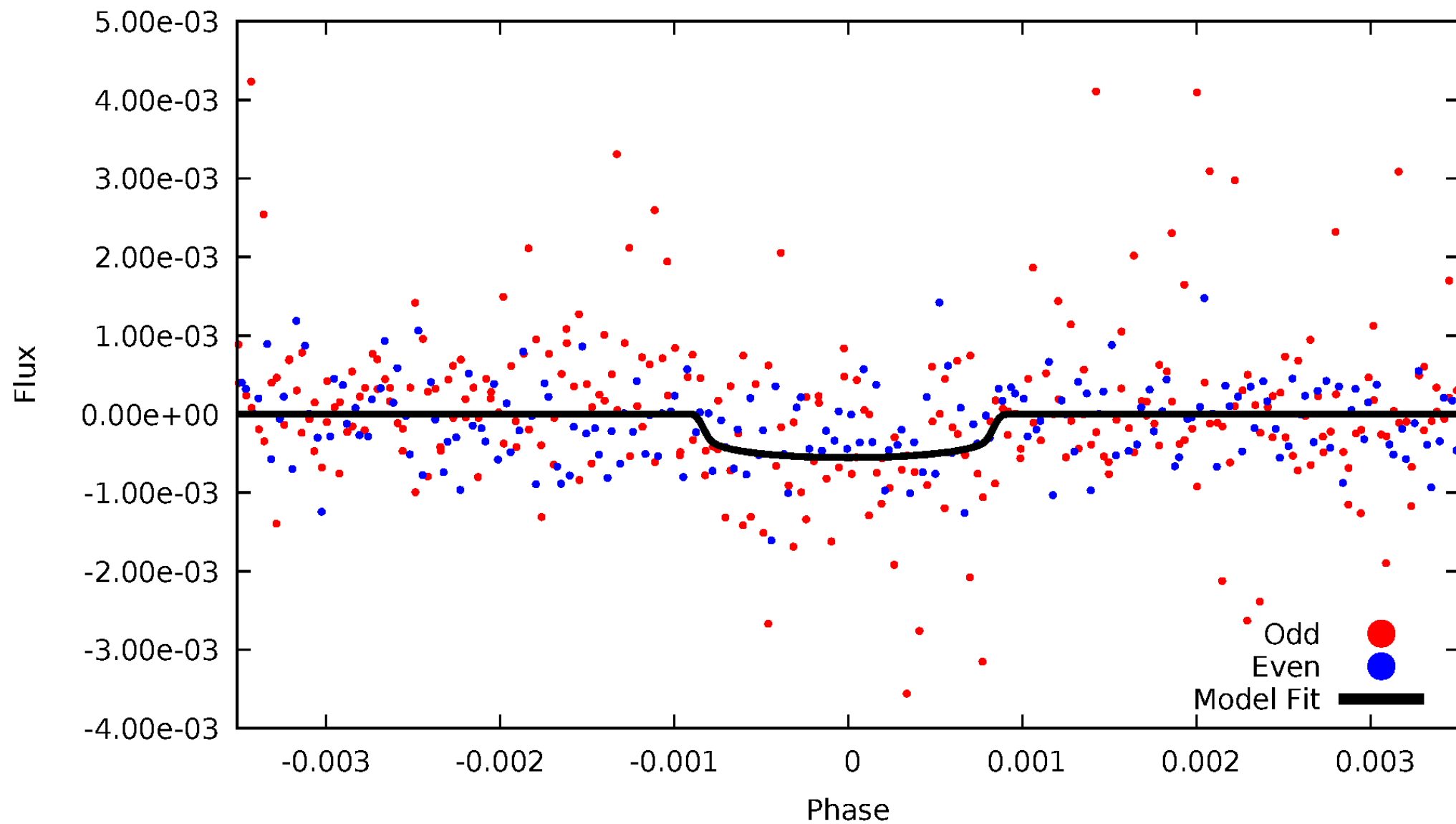


TCE 008315761-01



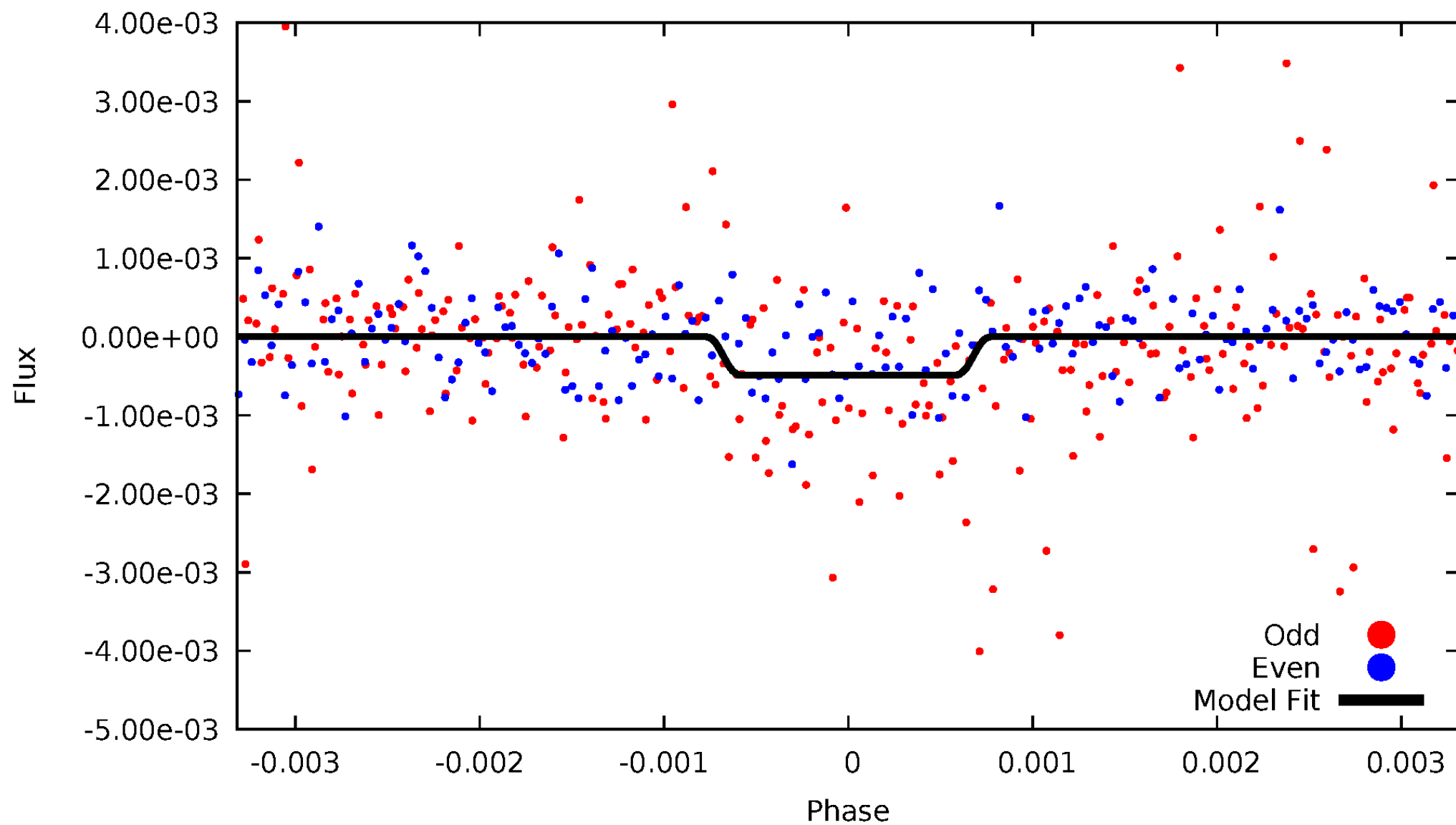
# DV Odd/Even

TCE 008315761-01



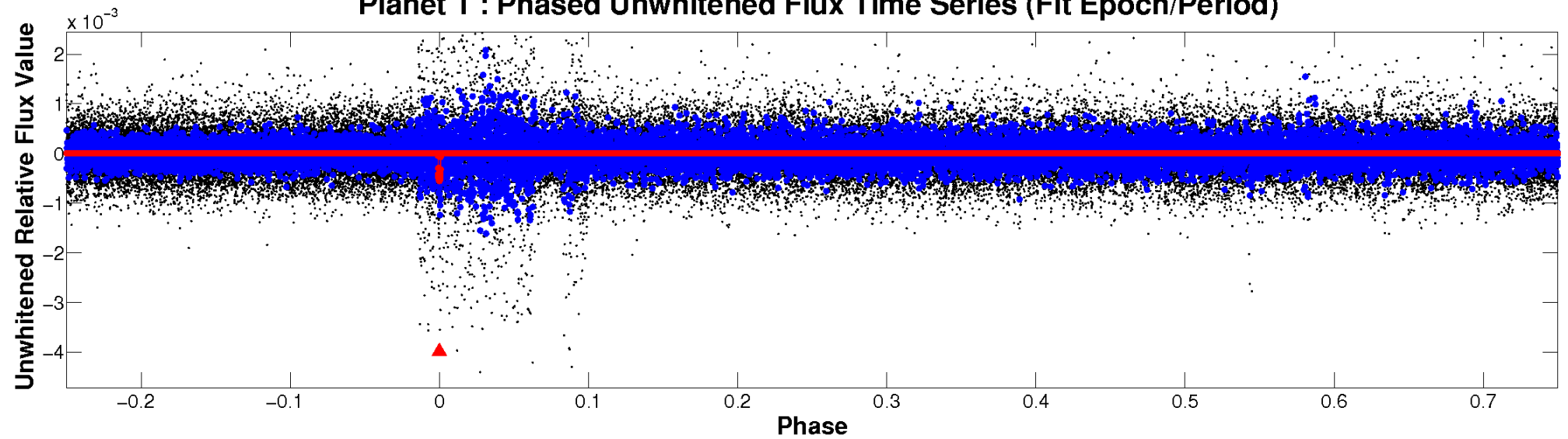
# ALT Odd/Even

TCE 008315761-01

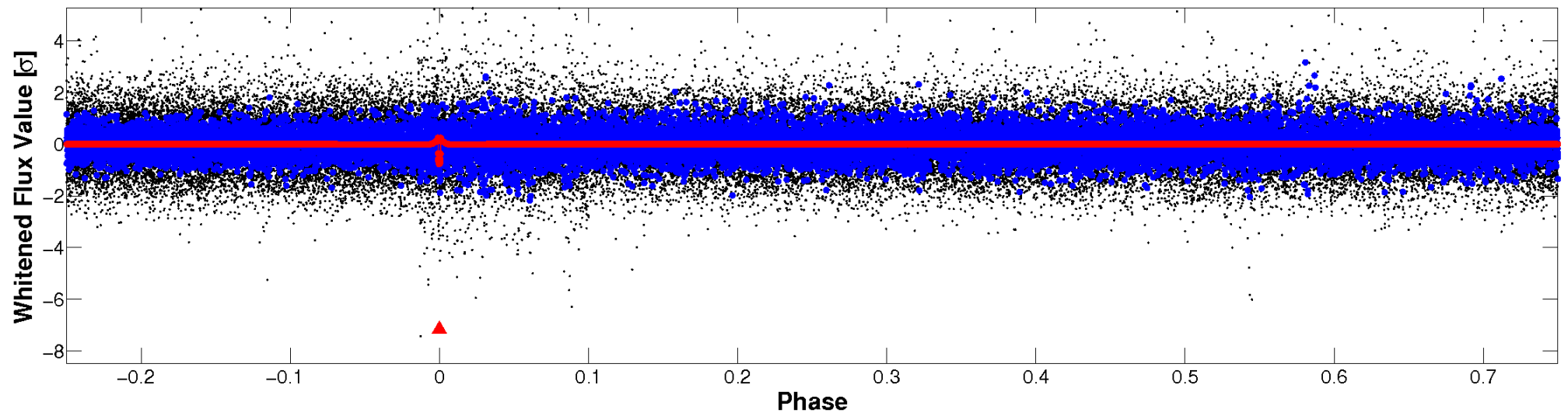


# Non-Whitened Vs. Whitened Light Curve

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



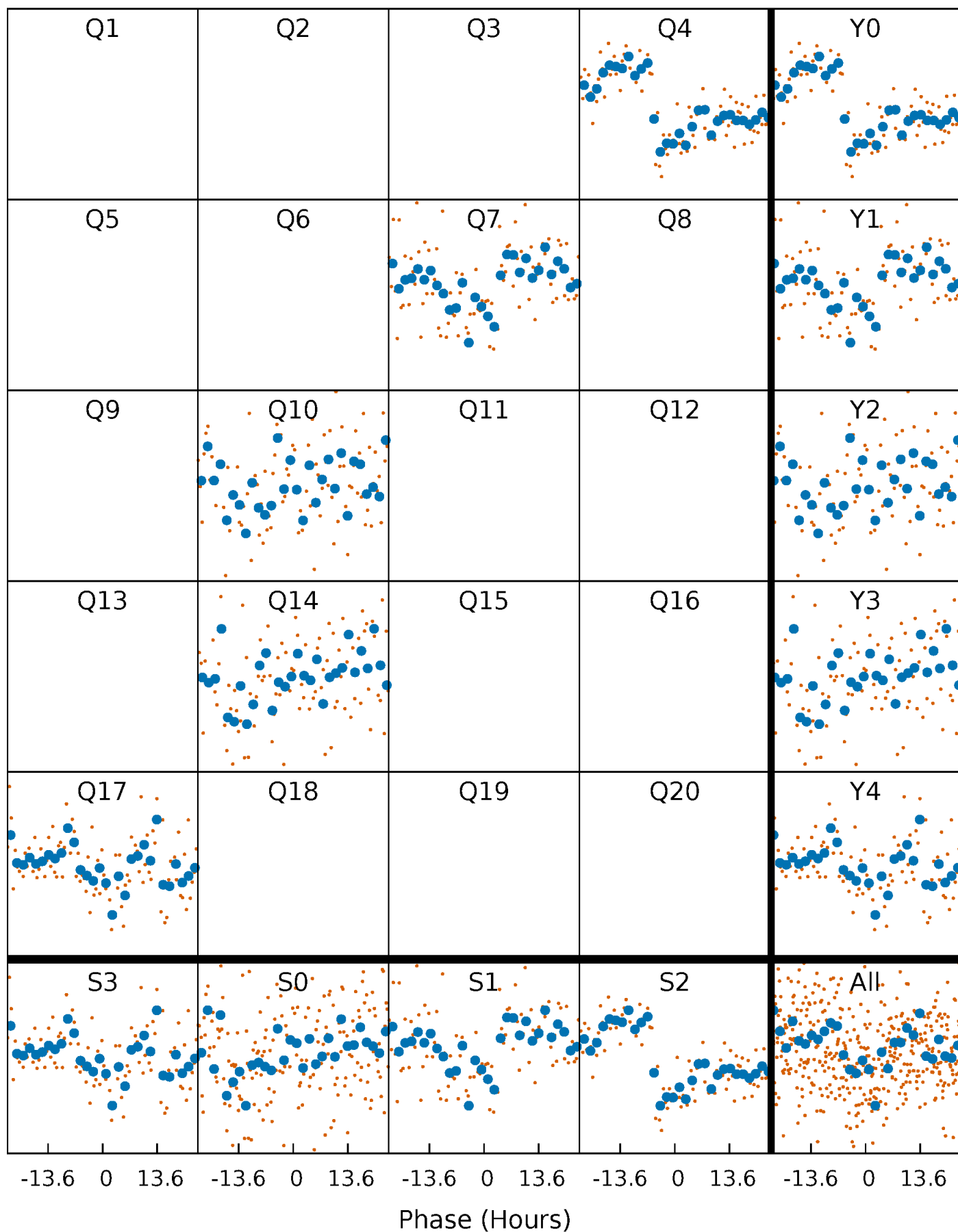
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

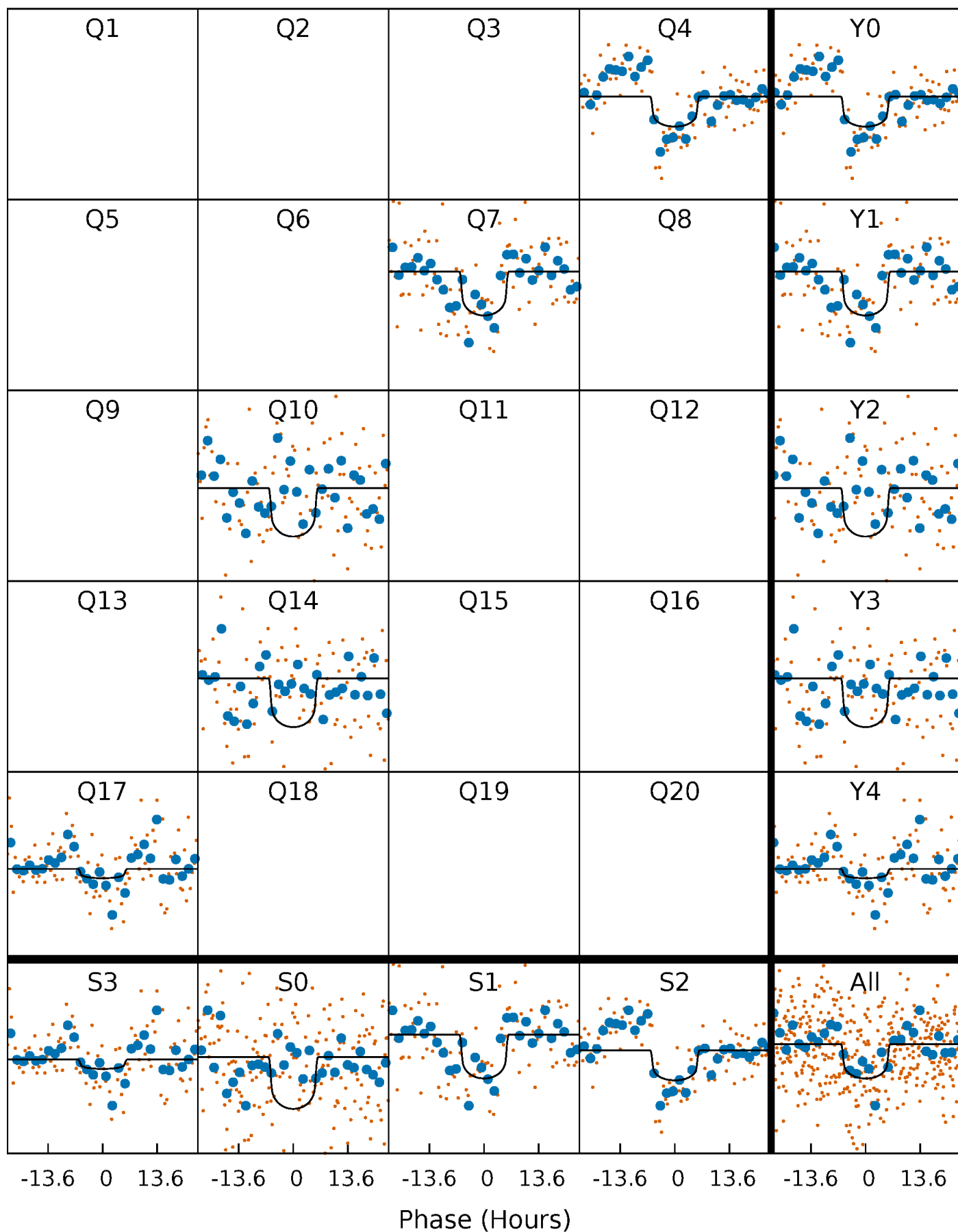
TCE 008315761-01 P=282.196341 Days  $T_0=152.399357$  (BKJD)





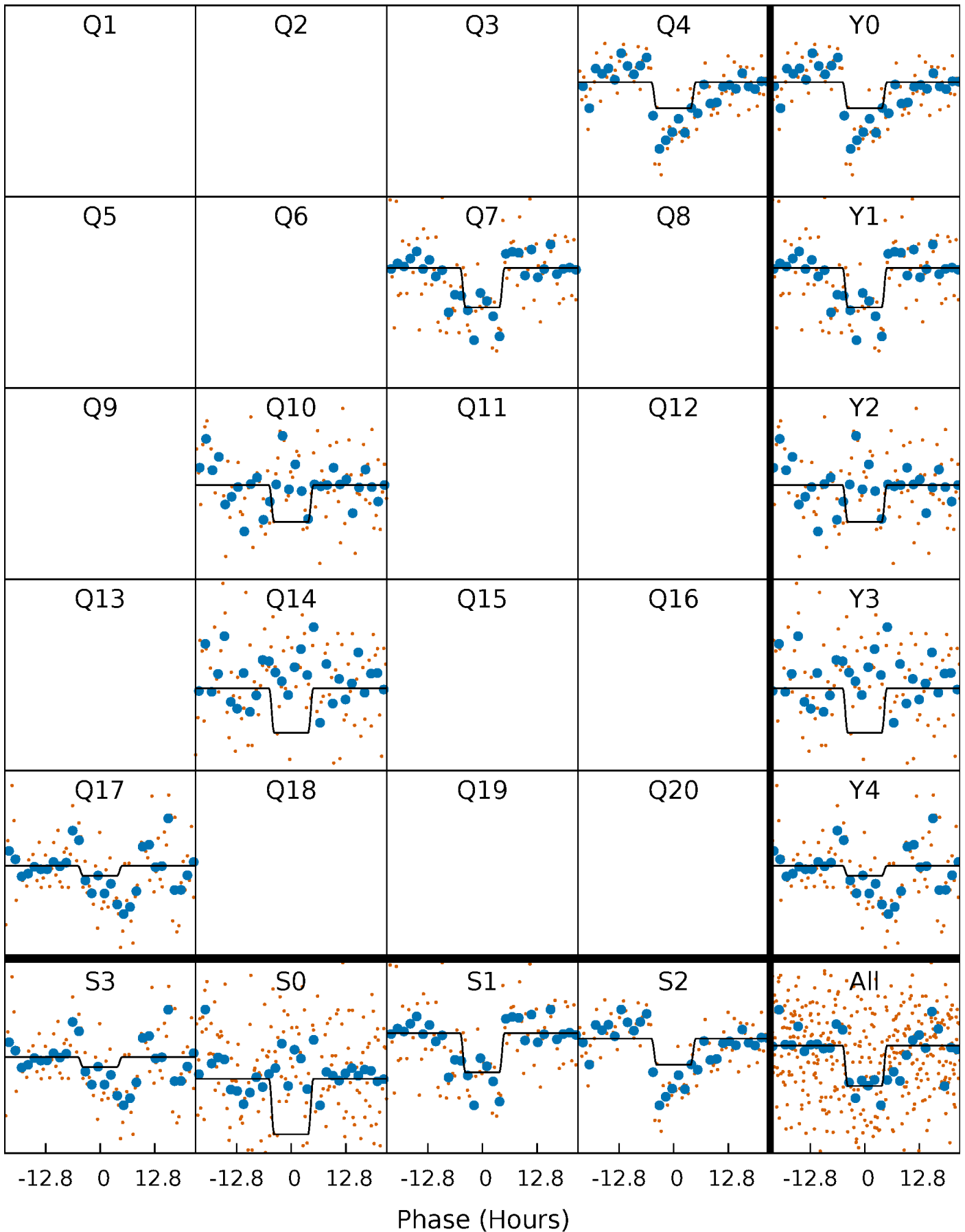
# DV Quarter-Phased Transit Curves

TCE 008315761-01 P=282.196341 Days  $T_0=152.399357$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

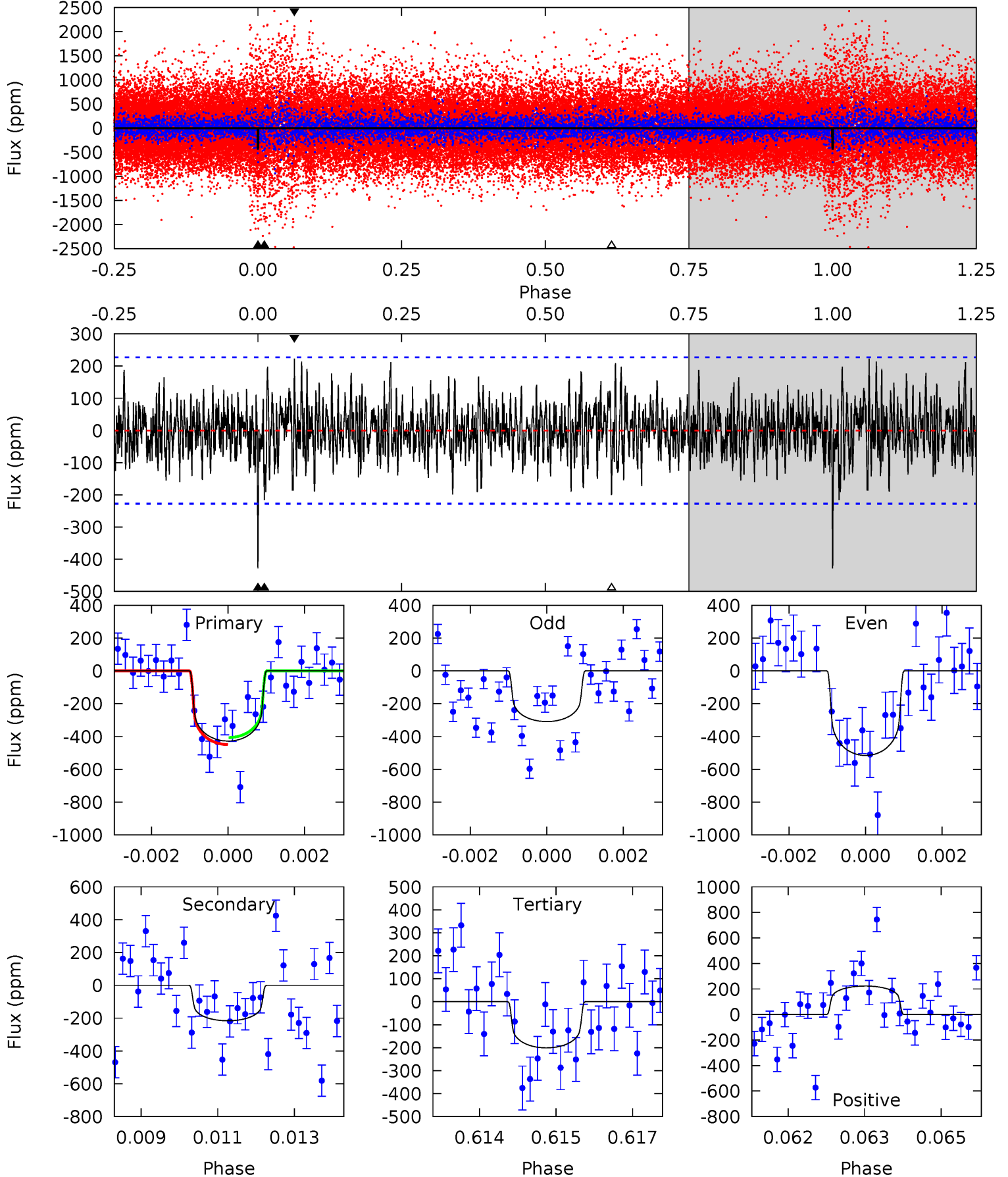
TCE 008315761-01 P=282.173841 Days  $T_0=152.405779$  (BKJD)



# DV Model-Shift Uniqueness Test

008315761-01, P = 282.196341 Days, E = 152.399357 Days

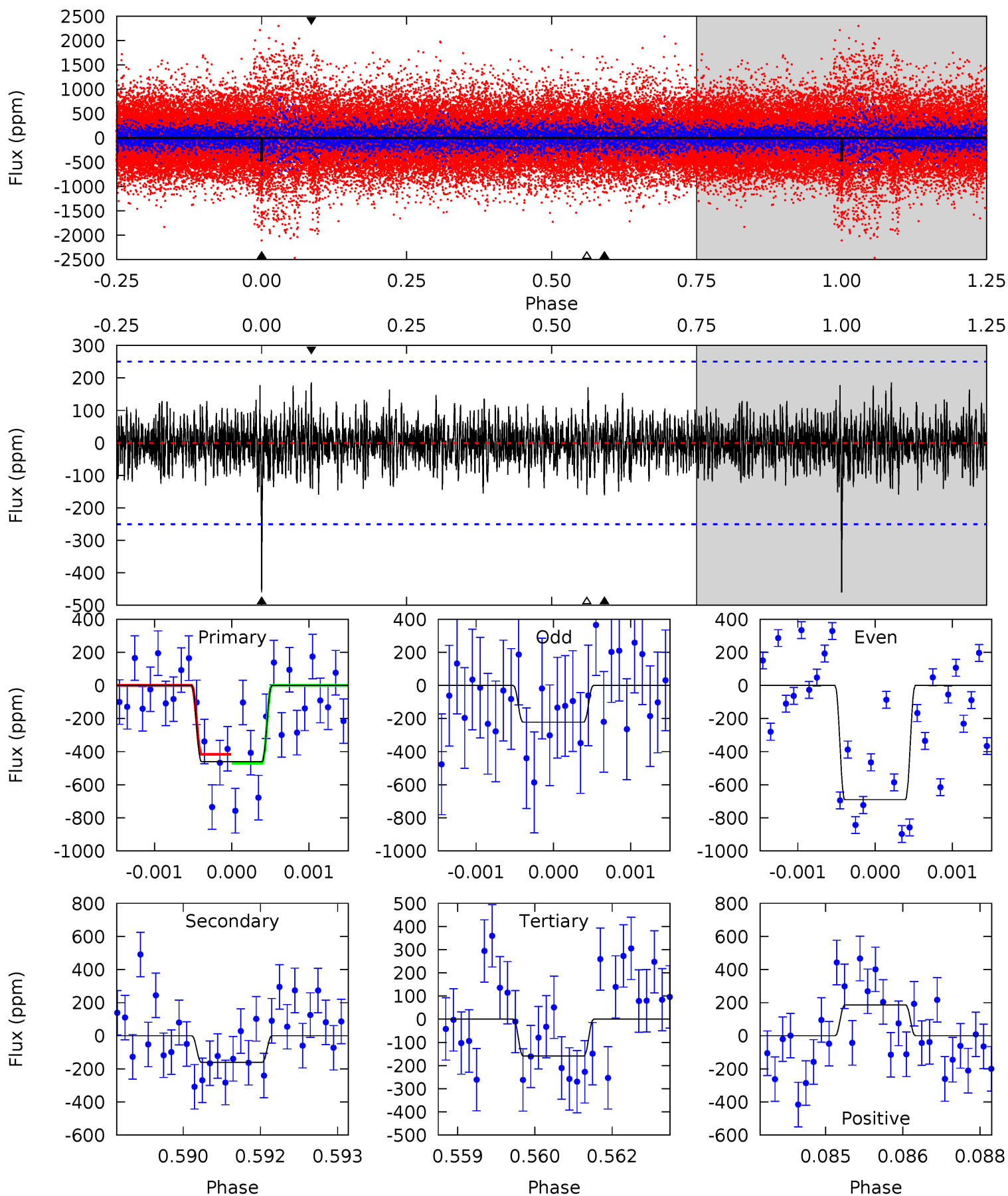
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	5.08	4.72	5.24	5.34	3.12	1.54	5.33	4.81	0.36	-0.16	2.43	0.98	0.34	0.50



# Alt Model-Shift Uniqueness Test

008315761-01, P = 282.173841 Days, E = 152.405779 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.89	3.47	3.42	4.00	5.38	3.18	1.08	6.47	5.89	0.04	-0.54	5.03	0.83	0.29	0



### Stellar Parameters For KIC 008315761

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5880^{+184}_{-205}$	$4.518^{+0.039}_{-0.221}$	$-0.060^{+0.250}_{-0.300}$	$0.917^{+0.301}_{-0.094}$	$1.010^{+0.127}_{-0.127}$	$1.844^{+0.397}_{-0.992}$
	+3%/-3%	+1%/-5%	+417%/-500%	+33%/-10%	+13%/-13%	+22%/-54%
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 008315761-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-216 \pm 43$	$2.41^{+1.39}_{-1.06}$	$387^{+30}_{-18}$	$4830^{+1472}_{-749}$	$14150^{+33522}_{-8534}$
Alt.	$-161 \pm 47$	$2.33^{+1.23}_{-1.09}$	$390^{+31}_{-21}$	$4622^{+1505}_{-672}$	$11173^{+30111}_{-6454}$

$T_{max}$  = 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

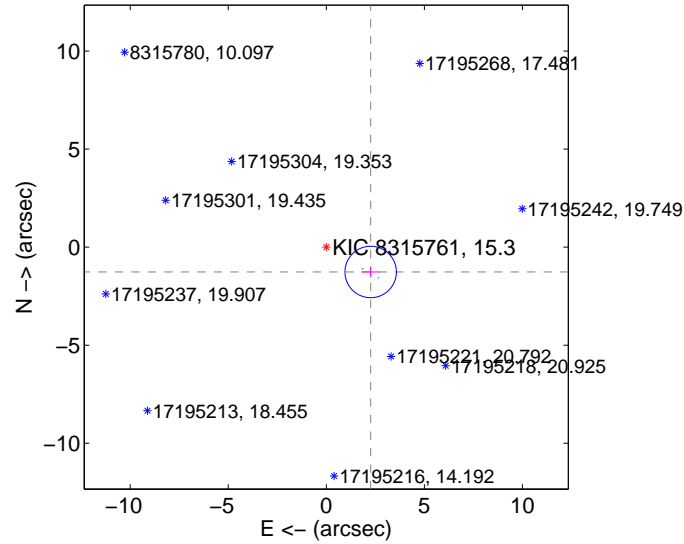
Supplemental centroid analysis for 008315761-01. Kepler magnitude: 15.30. Transit SNR 7.41

There are 1 quarters with good PRF difference image offsets

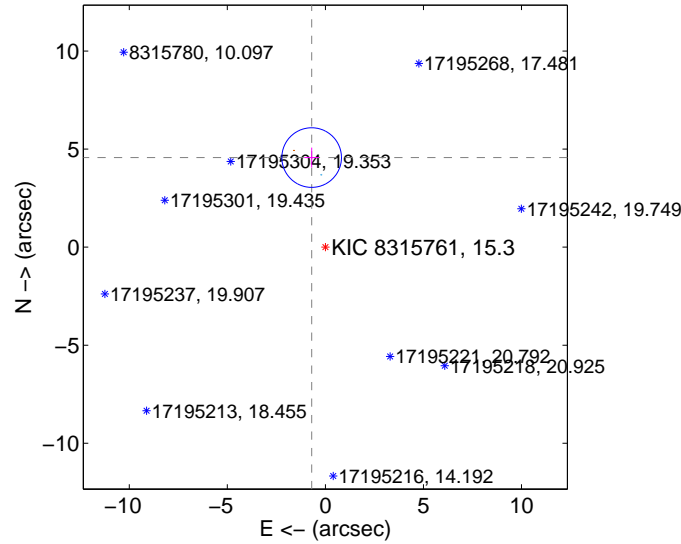
The OOT PRF centroid is offset from the target star catalog position by about 6.00 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.593 \pm 0.437$	5.93	$-2.263 \pm 0.478$	$-1.265 \pm 0.268$
PRF-fit source offset from KIC position	$4.624 \pm 0.507$	9.12	$0.700 \pm 0.375$	$4.570 \pm 0.508$
photometric centroid source offset	$7.05 \pm 1.08$	6.54	$3.31 \pm 0.96$	$6.23 \pm 1.11$

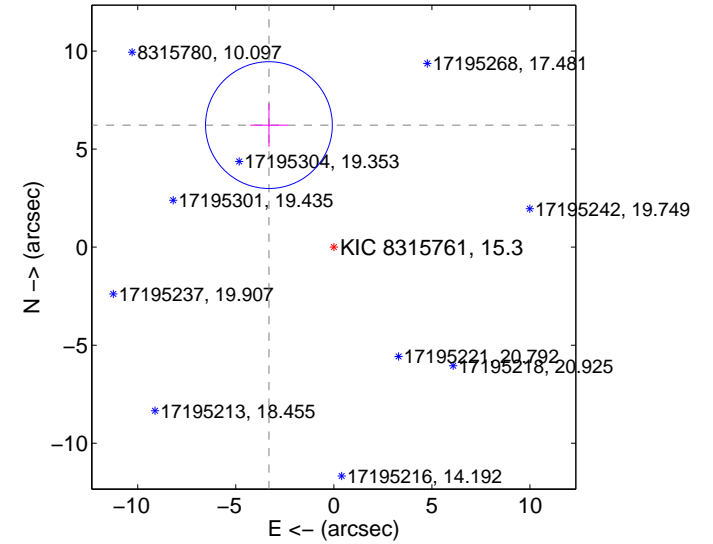
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

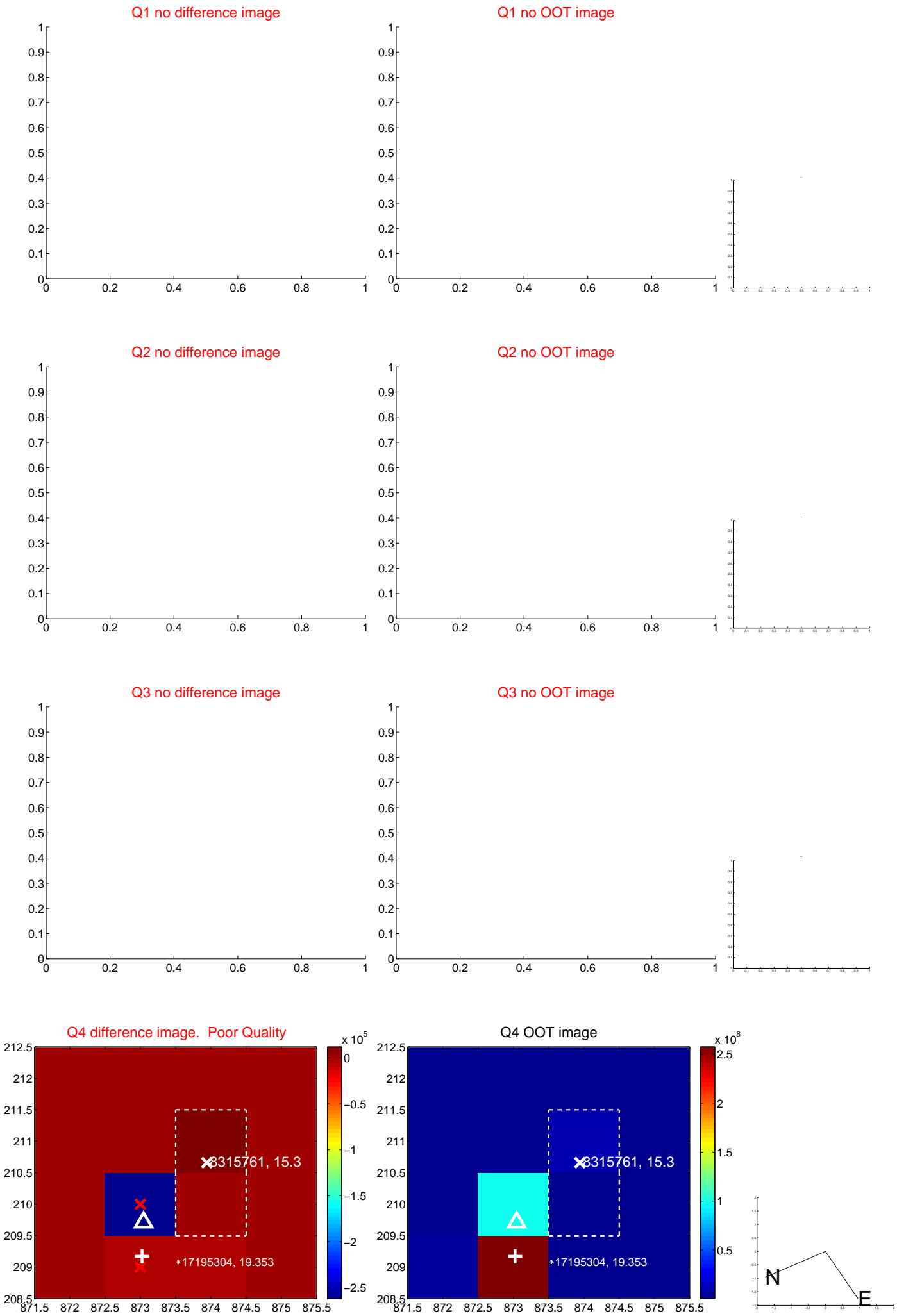


offset from photometric centroids



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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

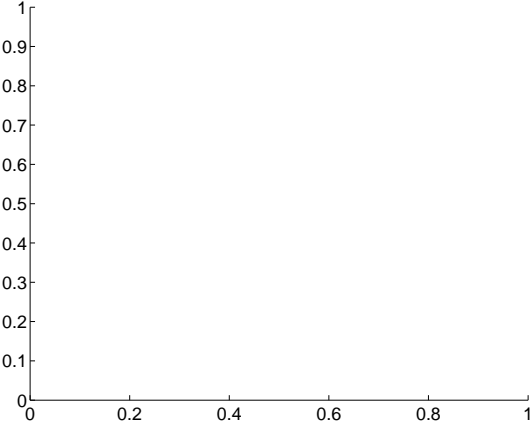
Q5 no difference image



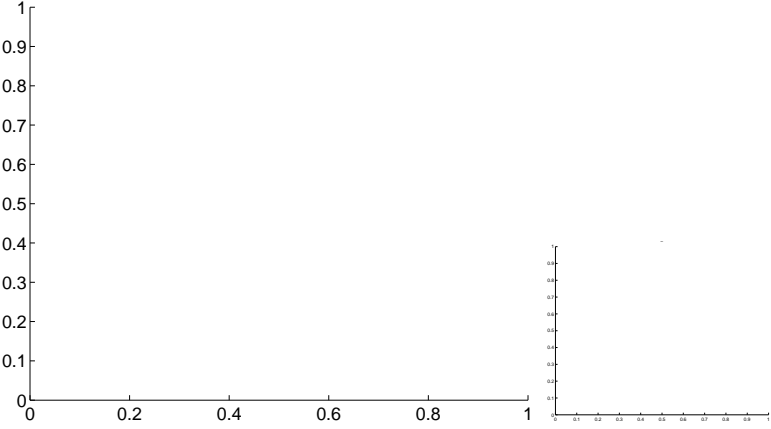
Q5 no OOT image



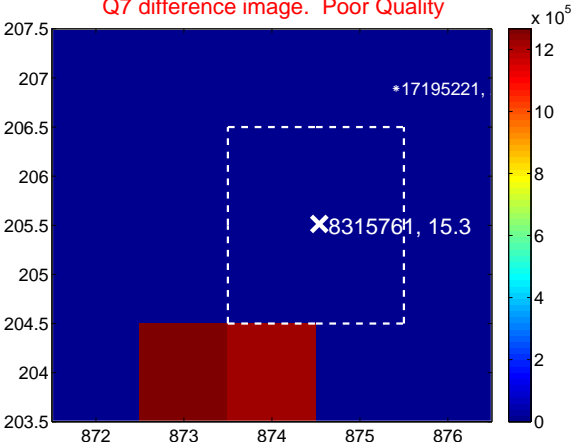
Q6 no difference image



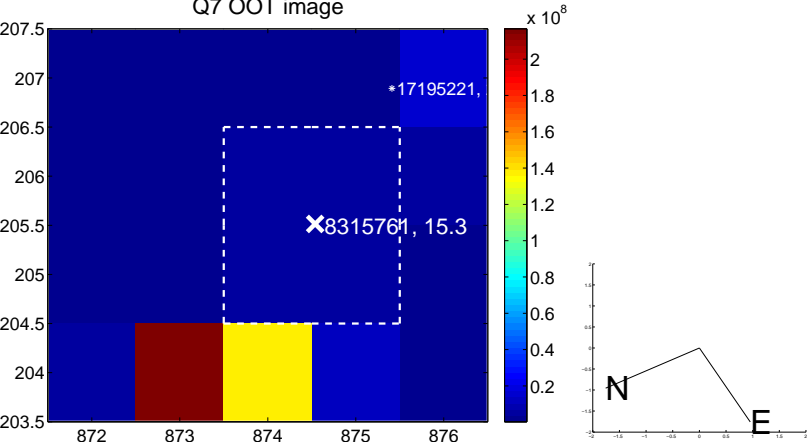
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



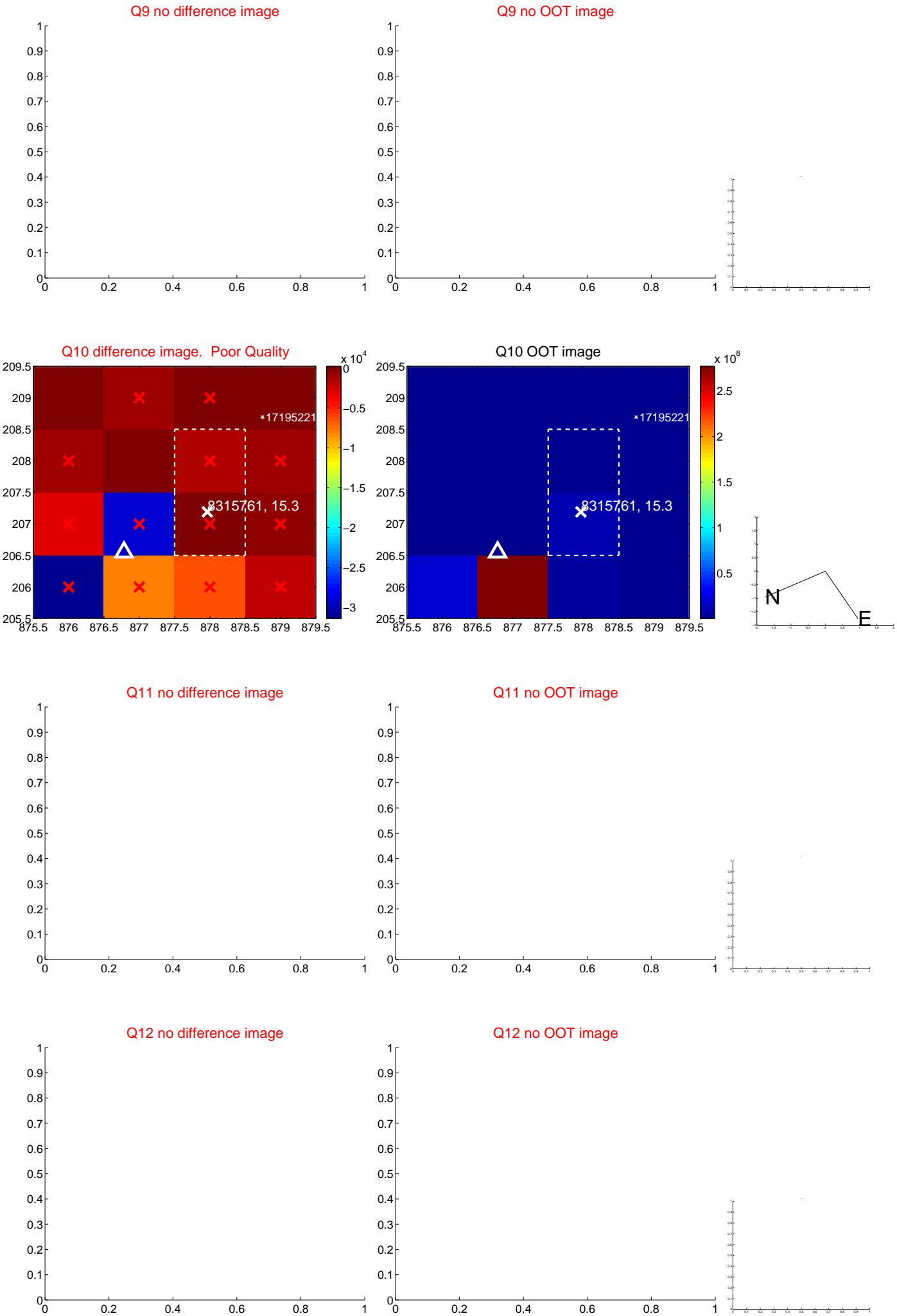
Q8 no difference image



Q8 no OOT image

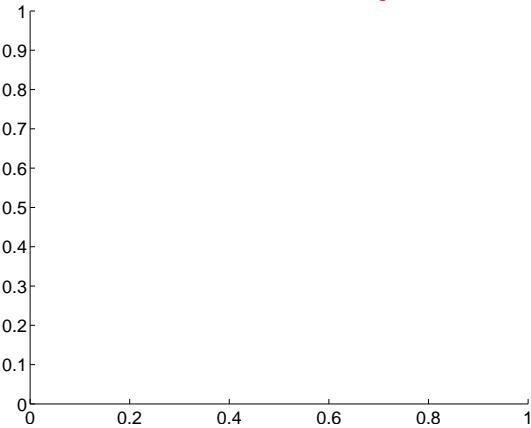


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

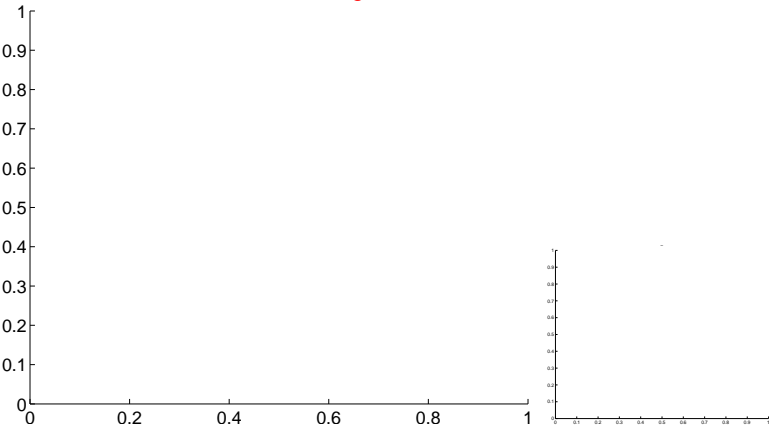


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

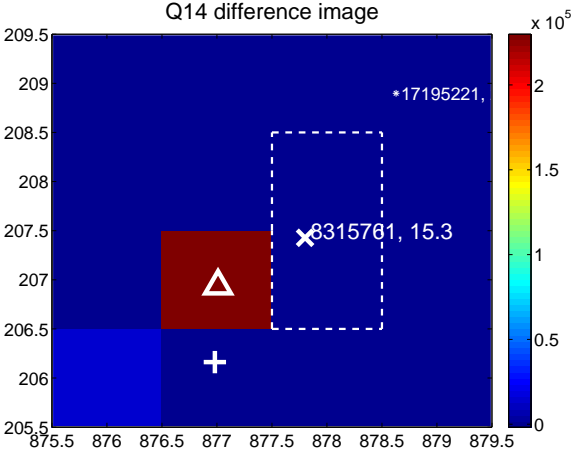
Q13 no difference image



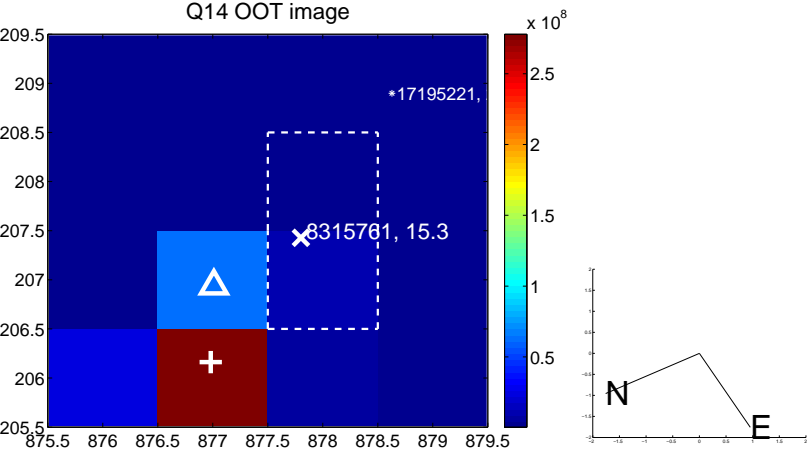
Q13 no OOT image



Q14 difference image



Q14 OOT image



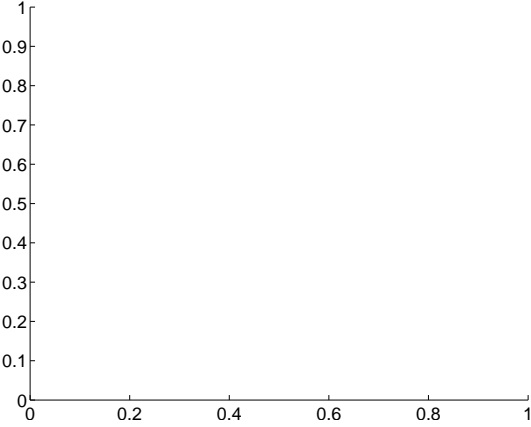
Q15 no difference image



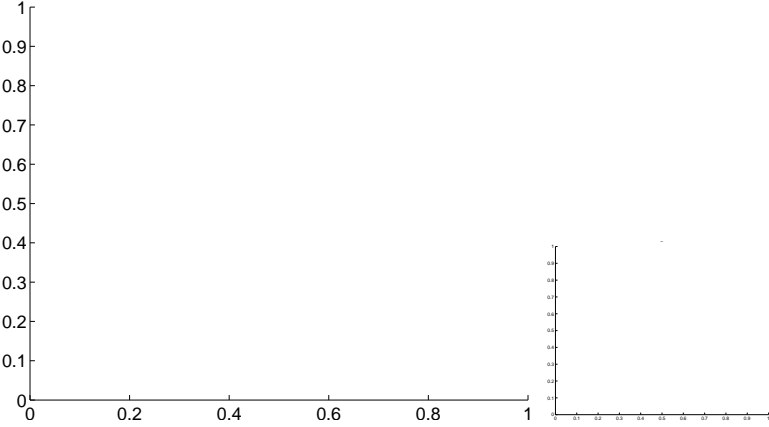
Q15 no OOT image



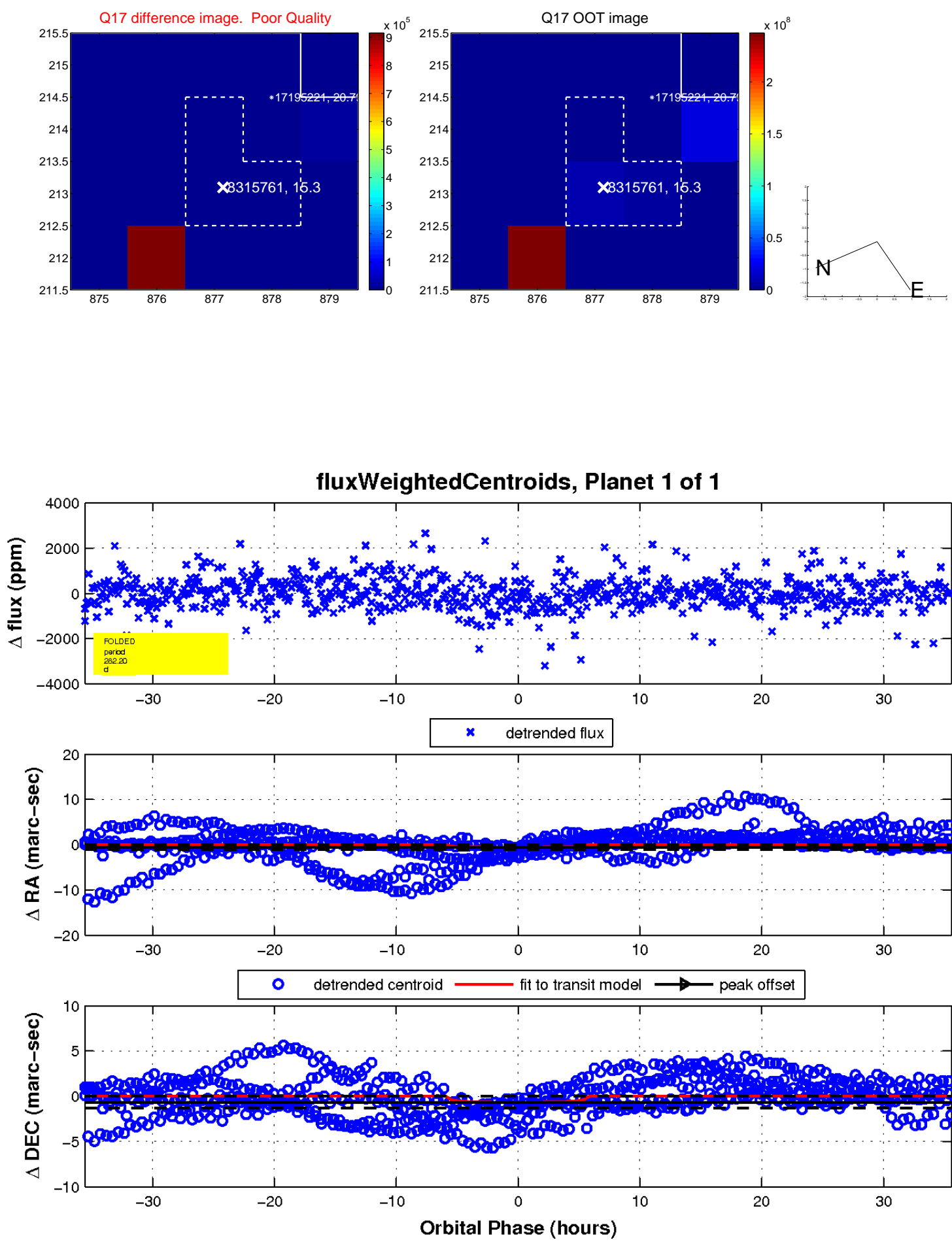
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

