

# KIC 008701327

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008701327-01	OBS	7078.01	4.254423	133.827778	270441.8	6.598	32003.8	15064.9	1.24	6292	77.69	809.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008701327-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED

**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.

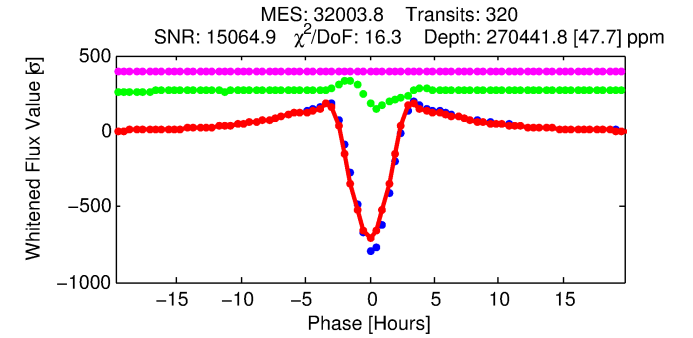
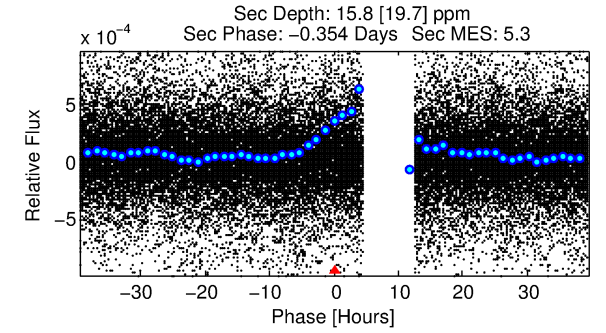
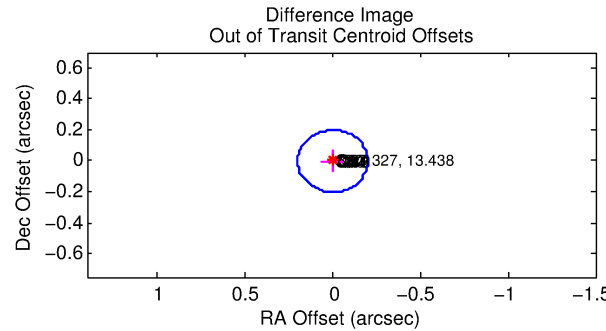
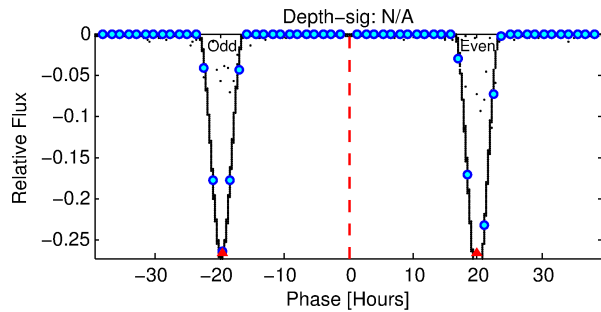
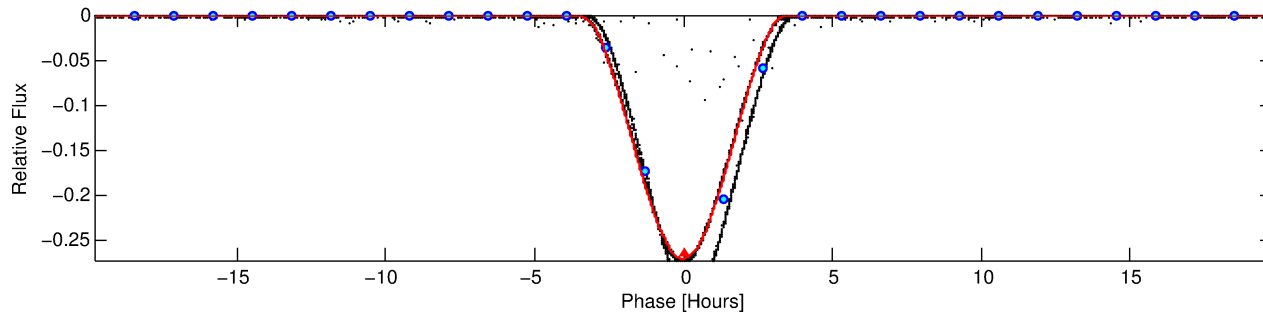
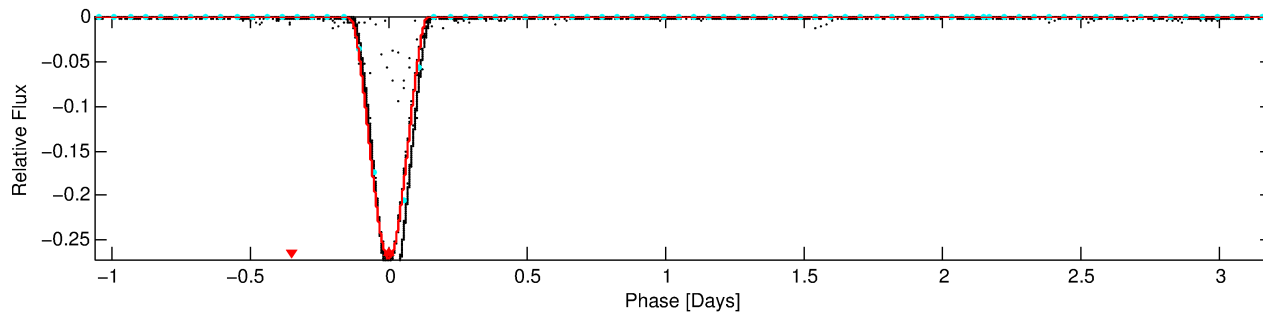
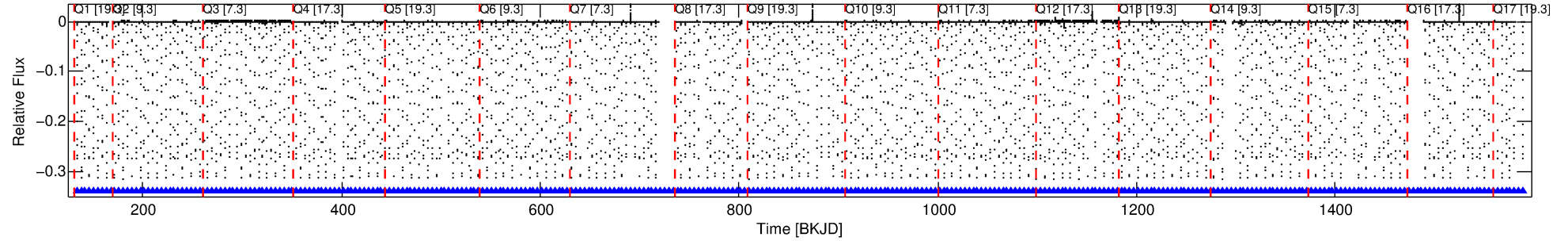
## Ephemeris Match Information For 008701327-01

No Significant Match Found

# DV One-Page Summary

KIC: 8701327 Candidate: 1 of 1 Period: 4.254 d  
KOI: K07078.01 Corr: 0.979

Kp: 13.44 R\*: 1.24 Rs Teff: 6292.0 K Logg: 4.26 Fe/H: -0.360



## DV Fit Results:

Period = 4.25442 [0.00000] d  
Epoch = 133.8278 [0.0000] BKJD  
Rp/R\* = 0.5765 [0.0060]  
a/R\* = 7.12 [0.01]  
b = 0.67 [0.01]  
Seff = 809.17 [300.81]  
Teq = 1360 [126] K  
Rp = 77.69 [21.47] Re  
a = 0.0514 [0.0120] AU  
Ag = 0.00 [0.00] [-202.36σ]  
Teffp = 523 [164] K [-4.05σ]

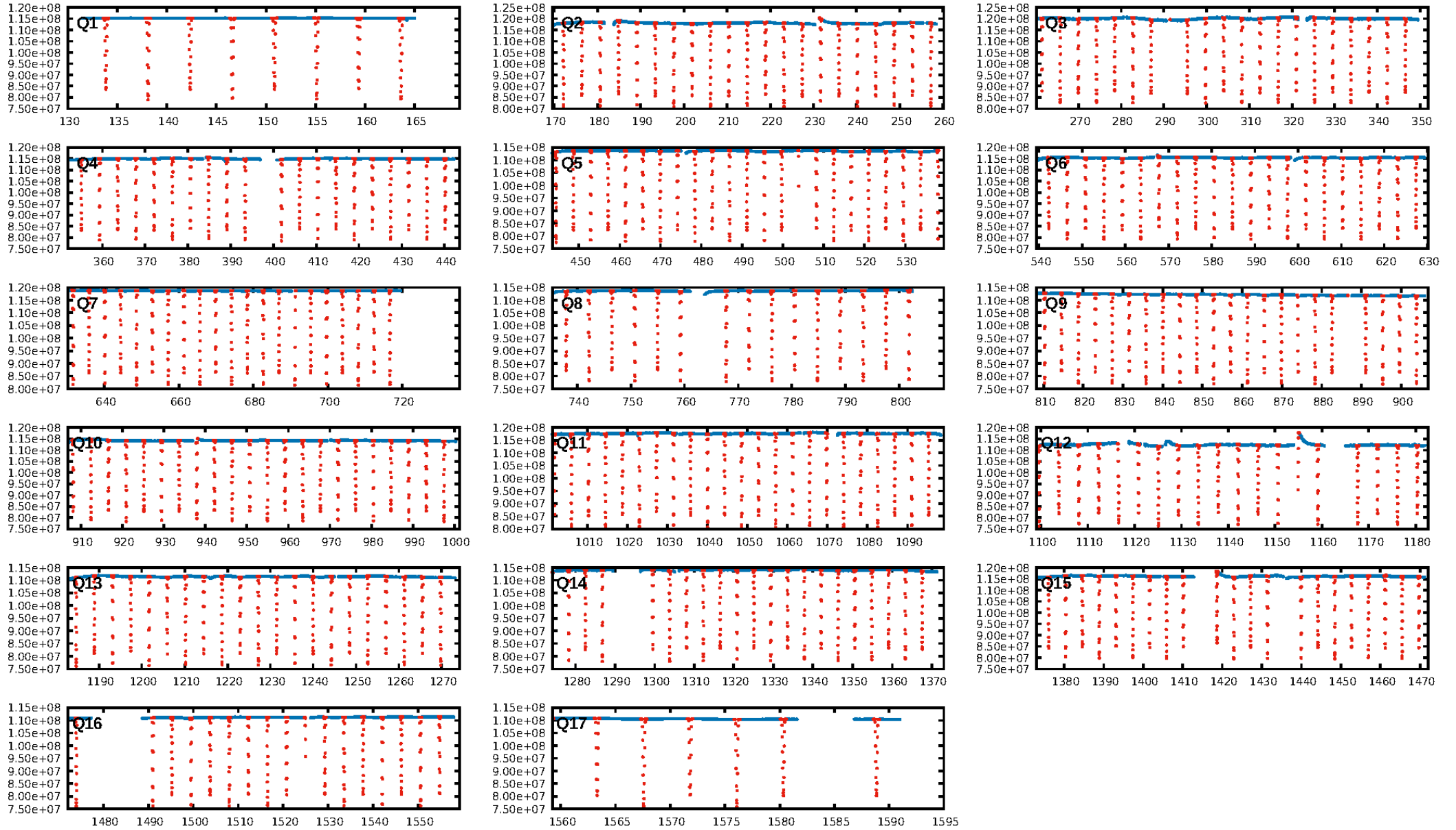
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [306/306]  
GhostDiagnostic-chr: 2.547  
Centroid-sig: 0.0%  
Centroid-so: 0.087 arcsec [345.70σ]  
OotOffset-rm: 0.003 arcsec [0.04σ]  
KicOffset-rm: 0.029 arcsec [0.43σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

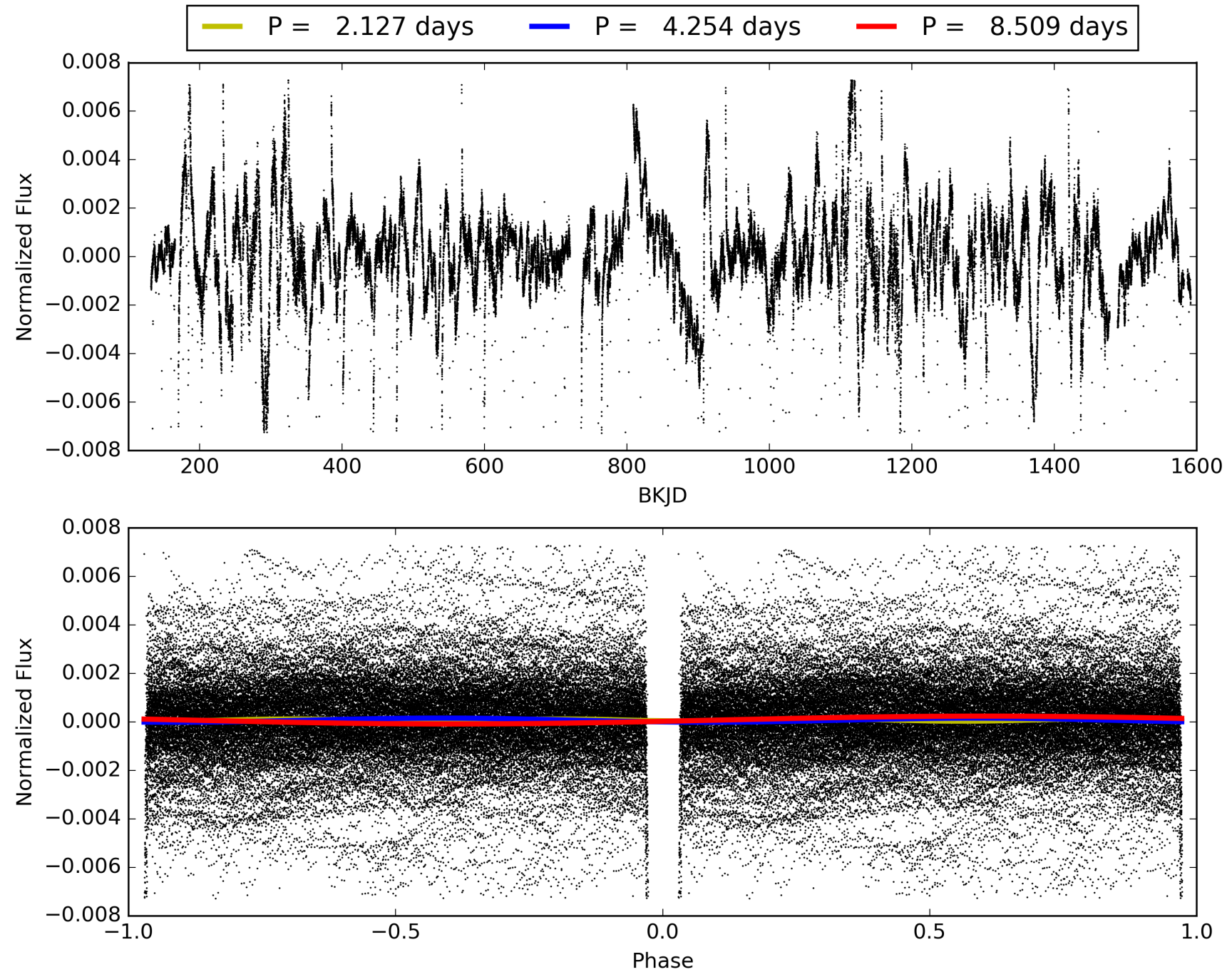
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:54:27 Z

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

# TCE 008701327-01, PDC Light Curves

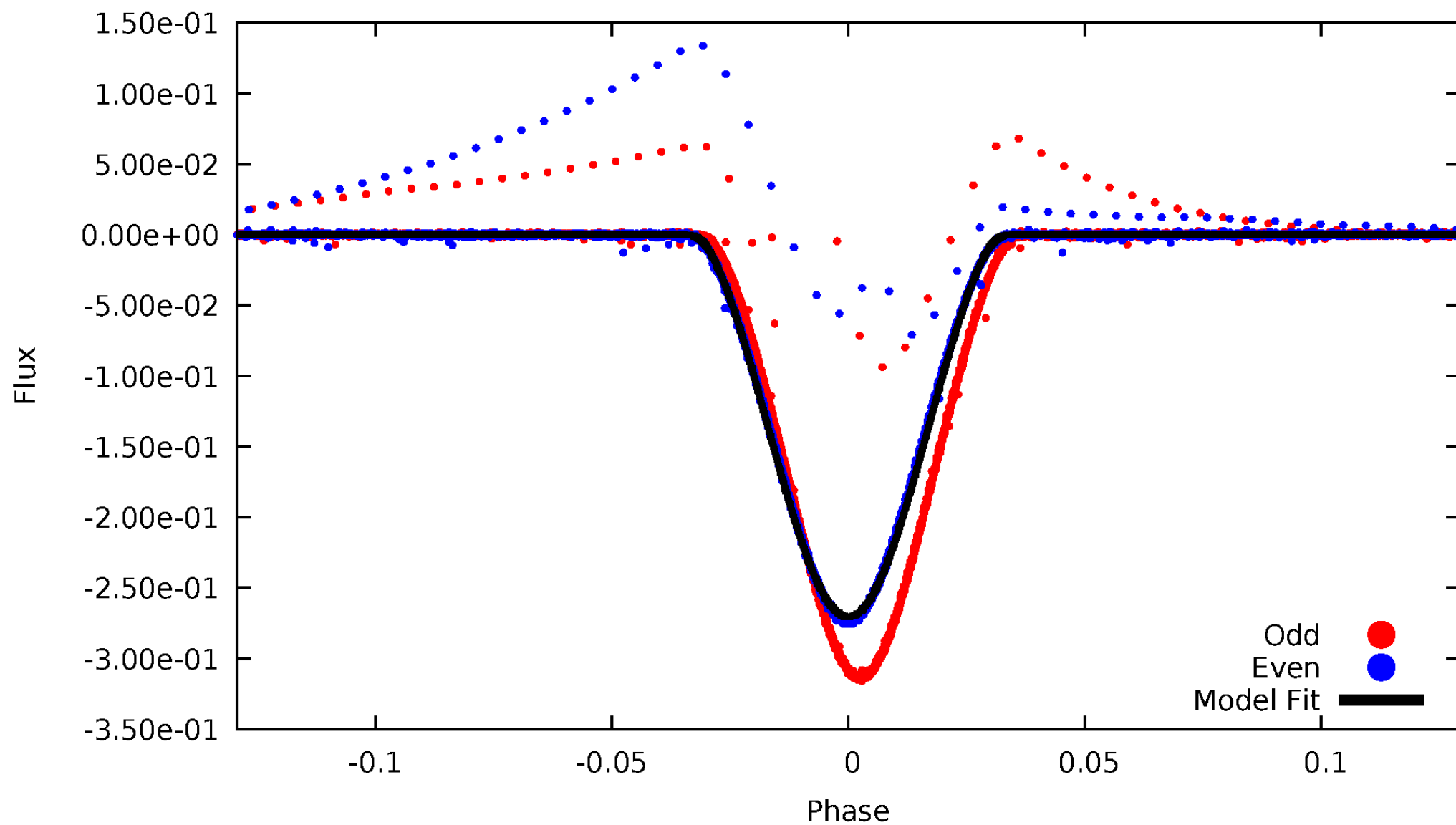


TCE 008701327-01



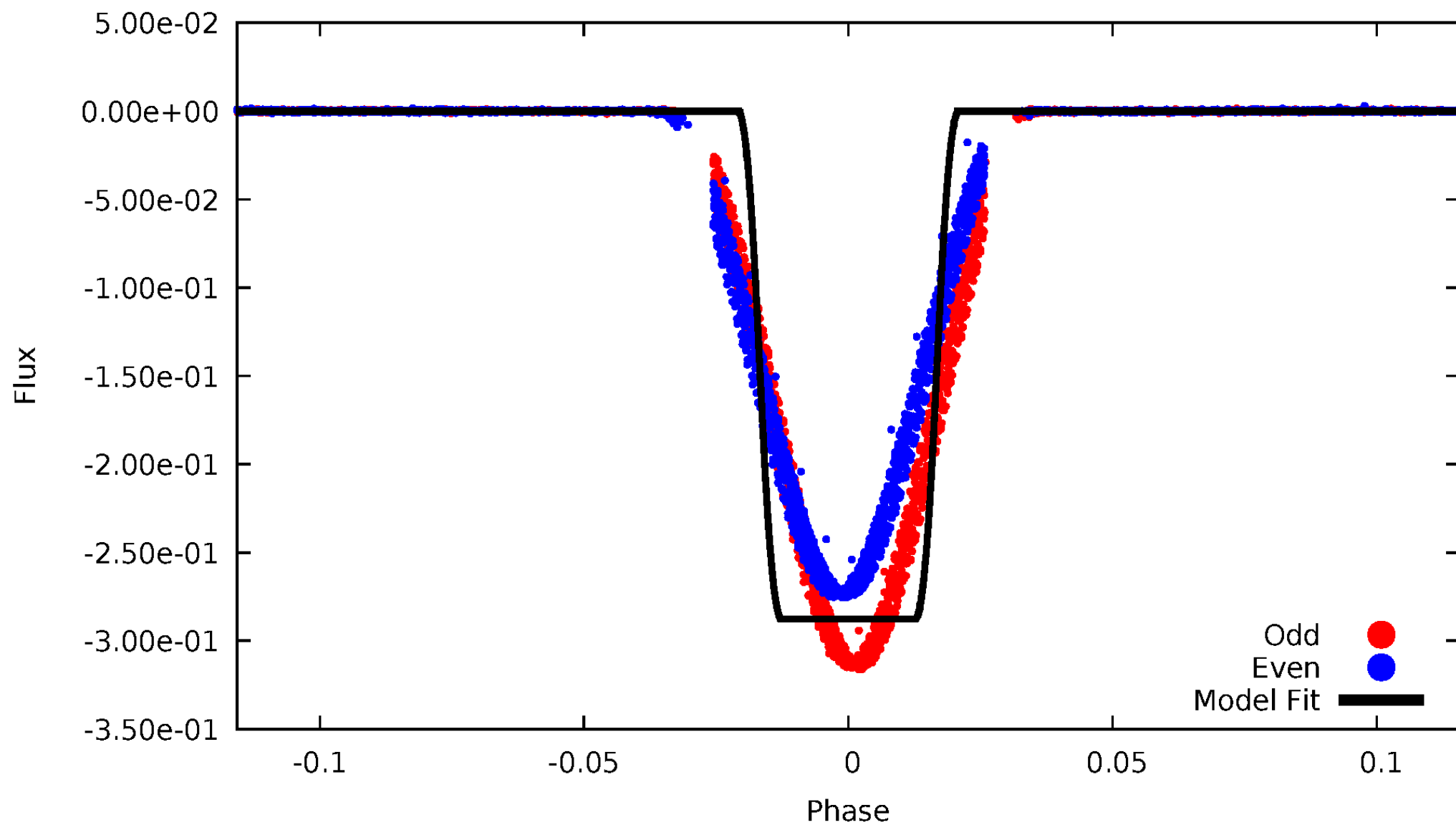
# DV Odd/Even

TCE 008701327-01



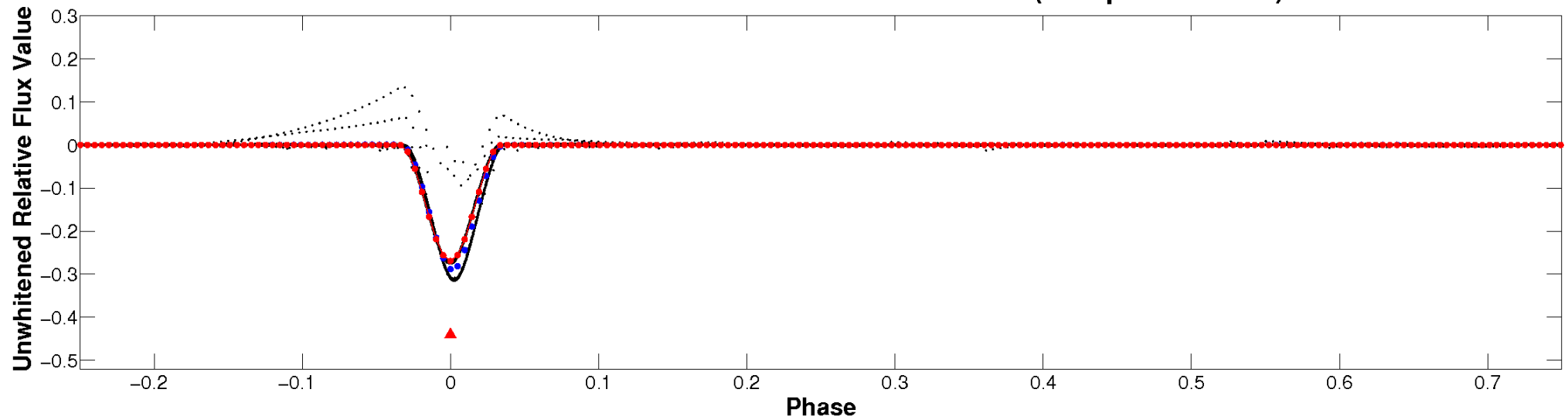
# ALT Odd/Even

TCE 008701327-01

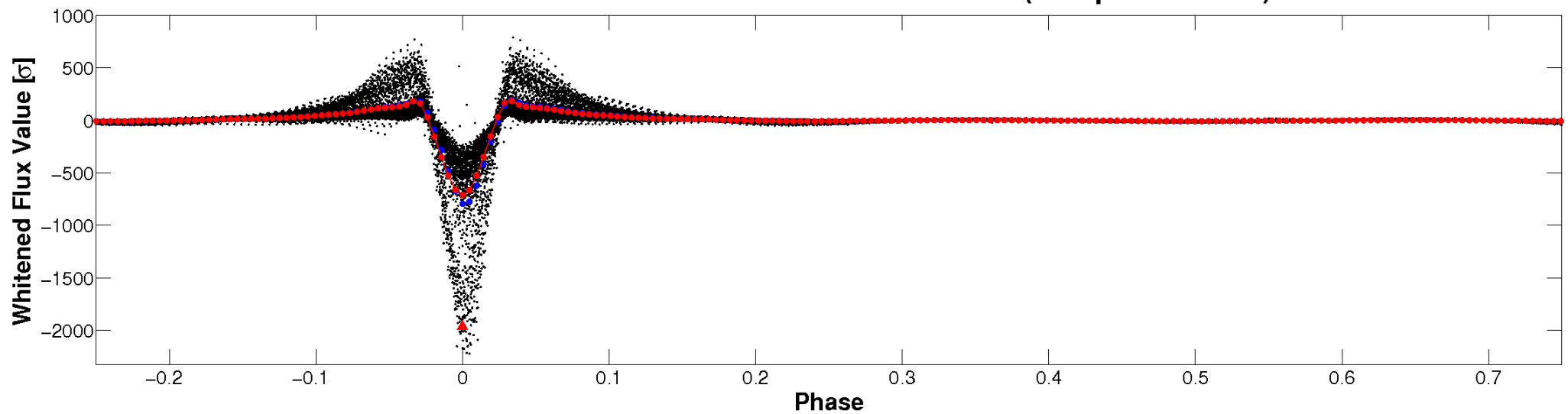


# Non-Whitened Vs. Whitened Light Curve

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

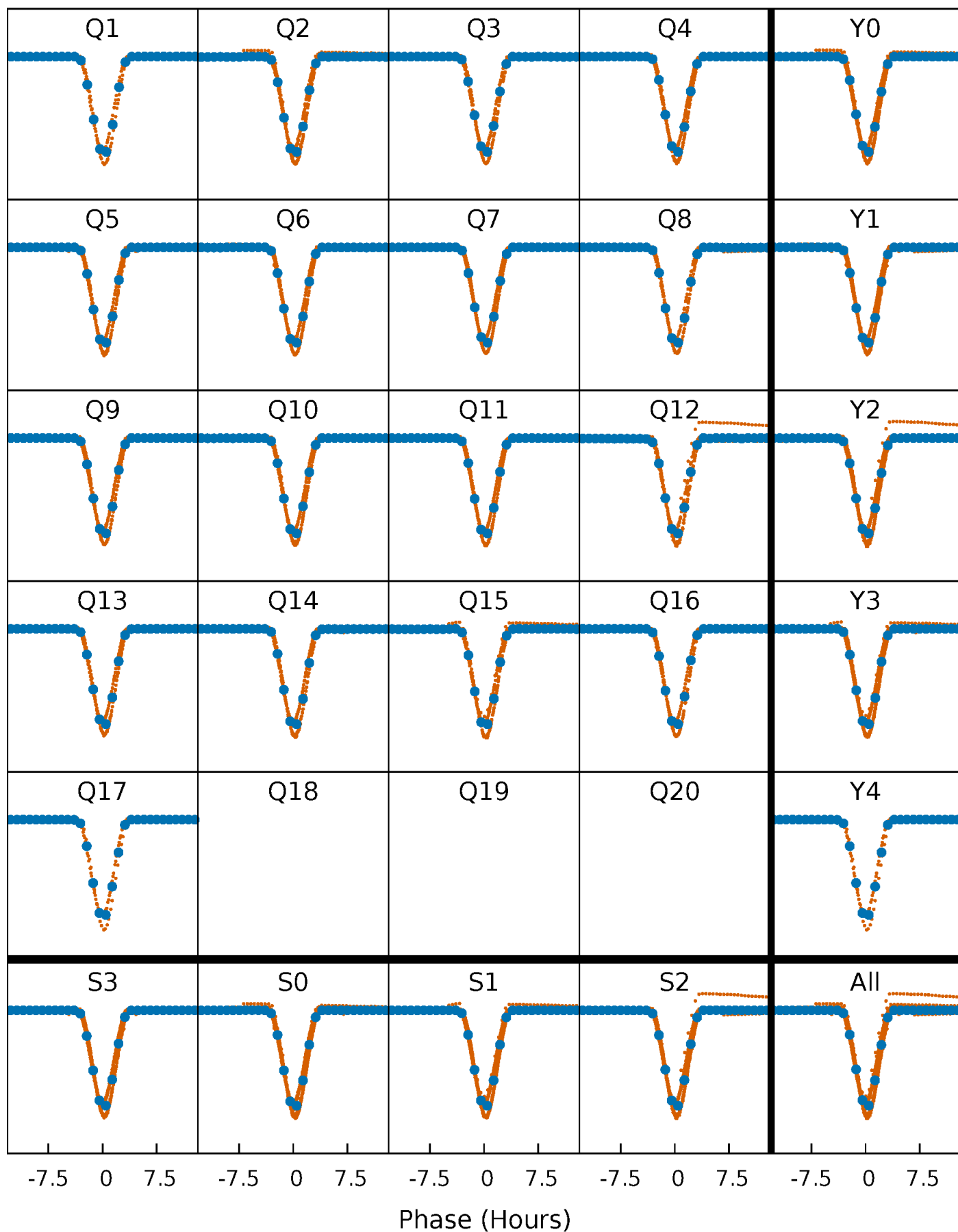


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

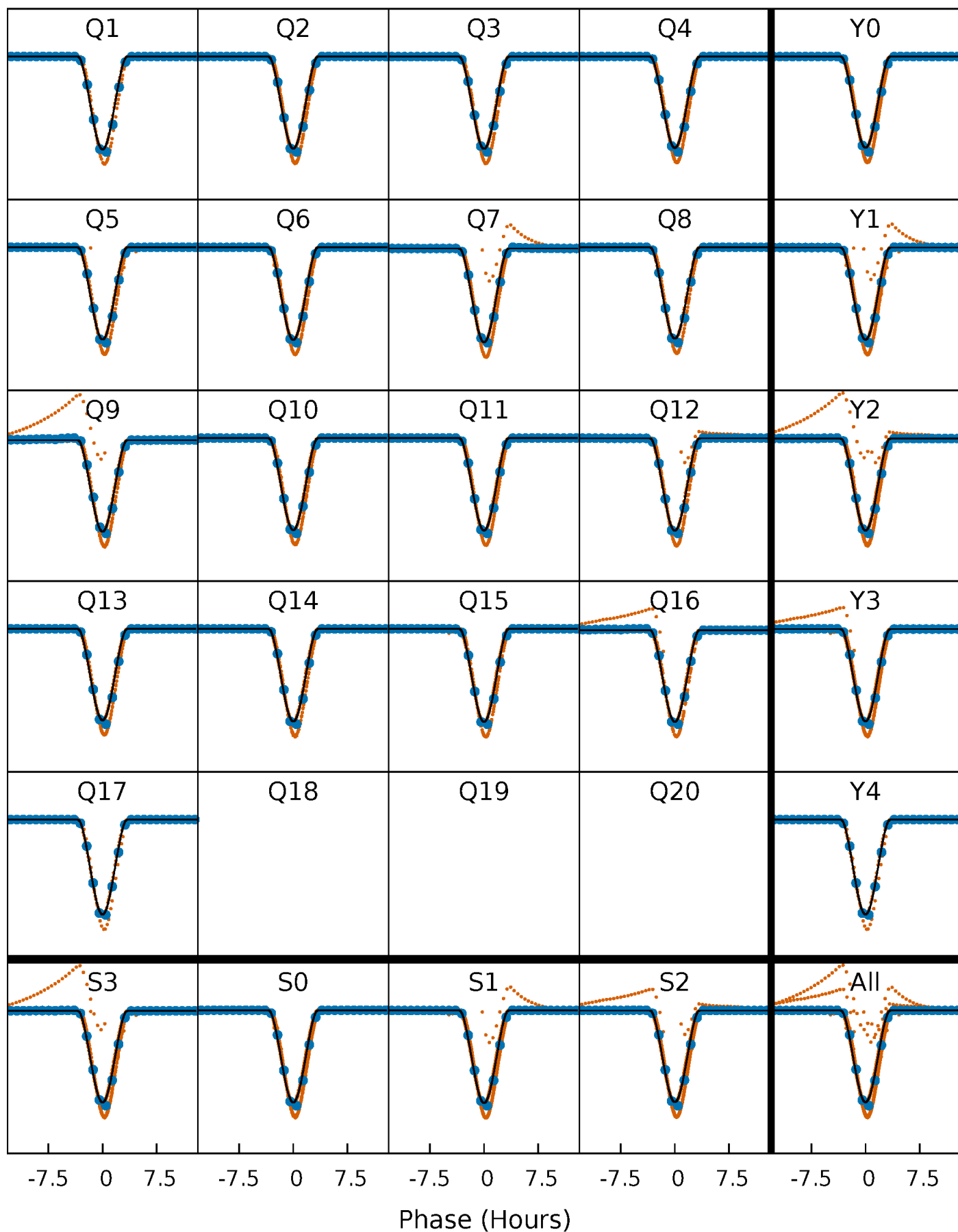
TCE 008701327-01   P= 4.254423 Days    $T_0=133.827778$  (BKJD)





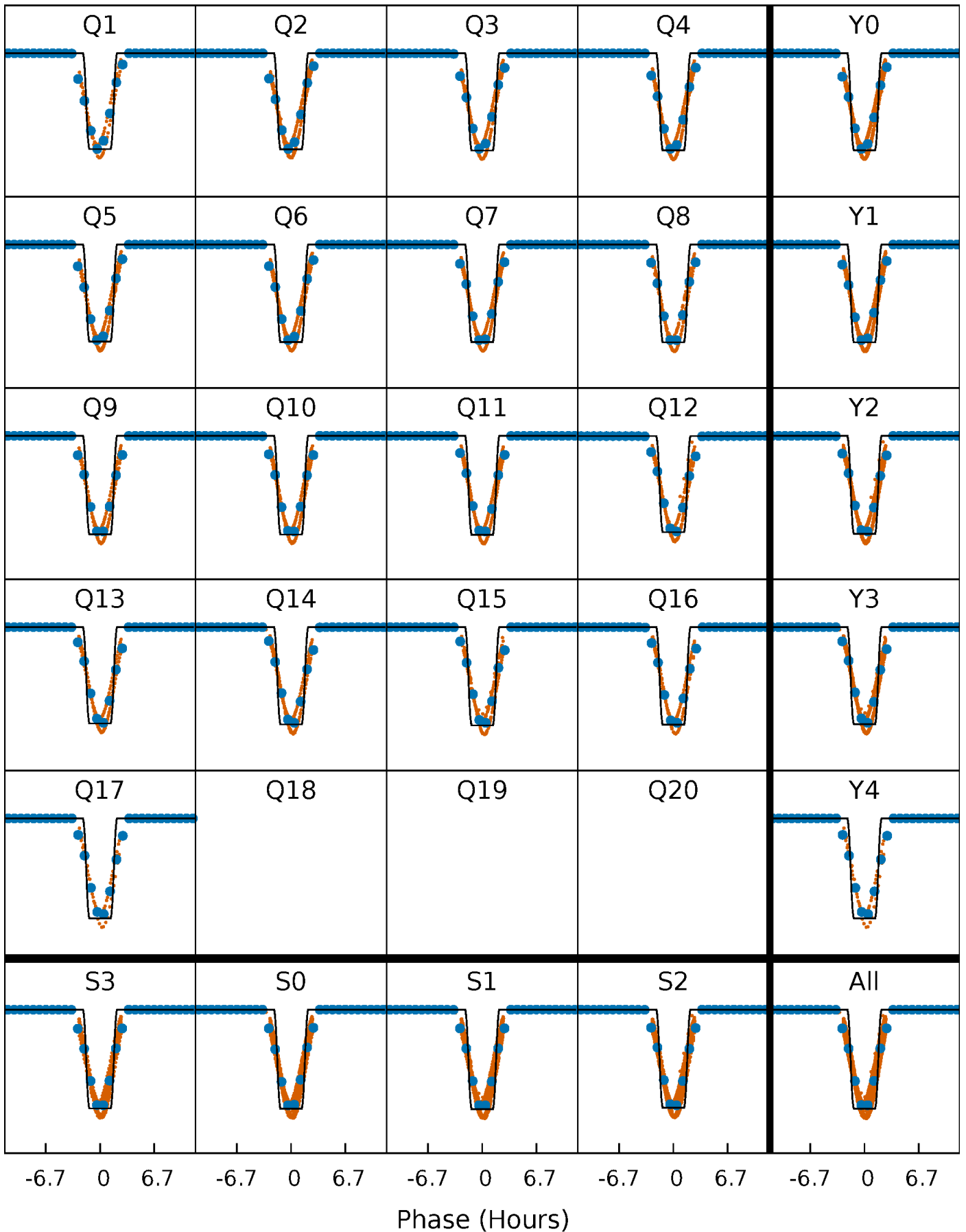
# DV Quarter-Phased Transit Curves

TCE 008701327-01 P= 4.254423 Days  $T_0=133.827778$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

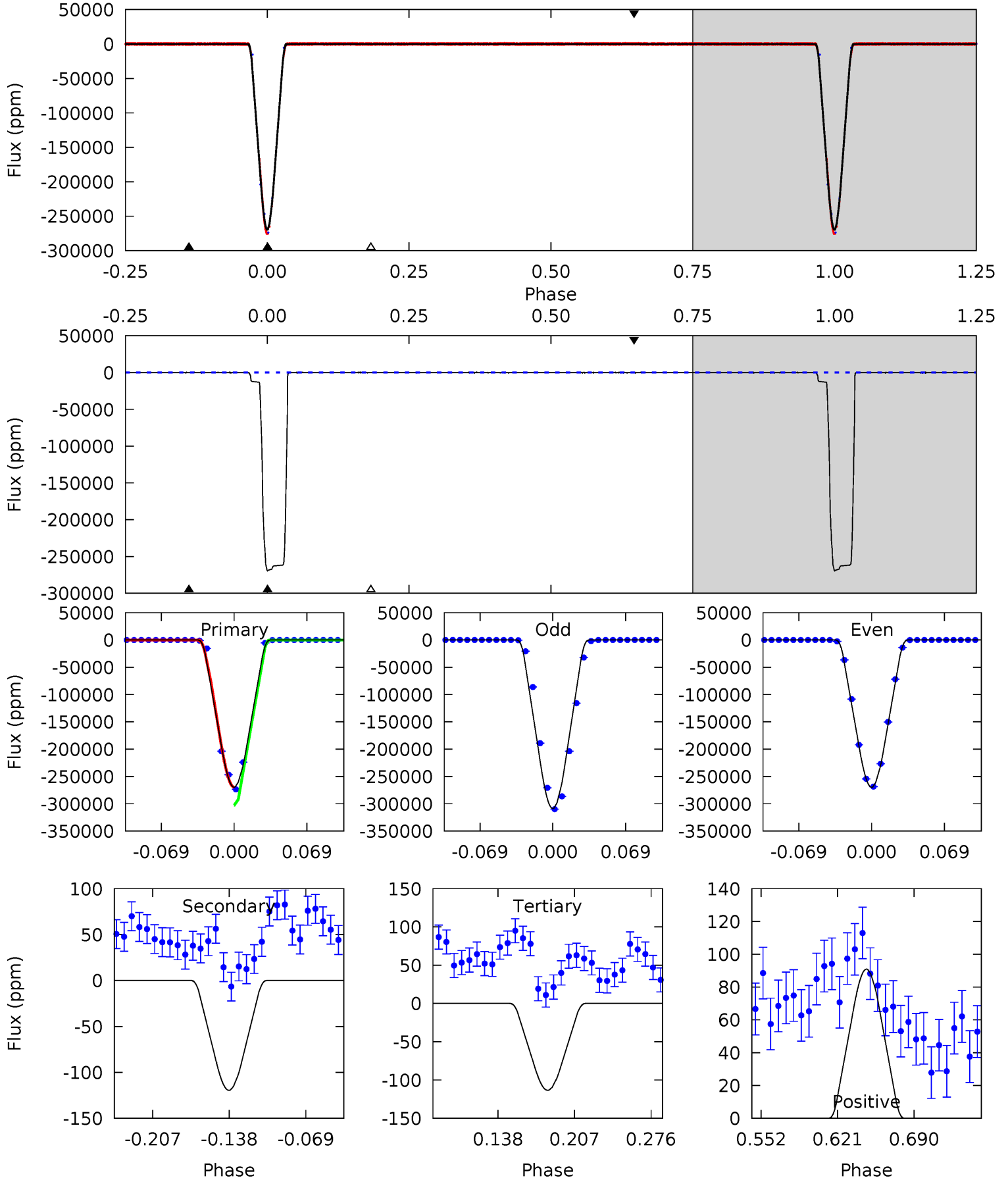
TCE 008701327-01   P= 4.254377 Days    $T_0=133.841131$  (BKJD)



# DV Model-Shift Uniqueness Test

008701327-01, P = 4.254423 Days, E = 129.573355 Days

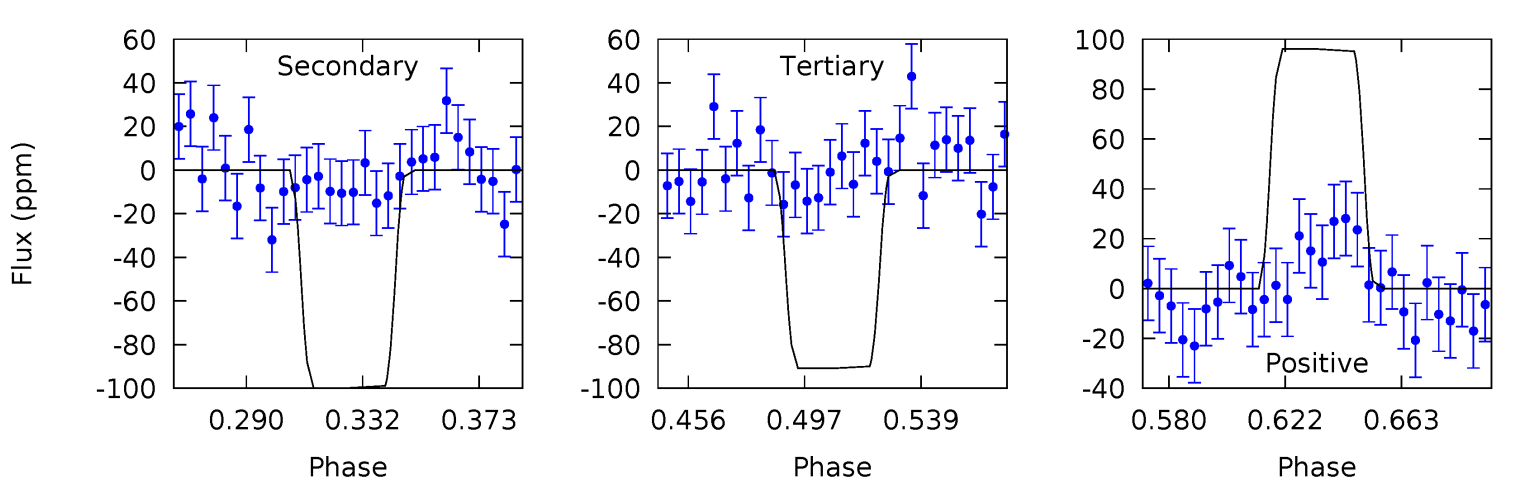
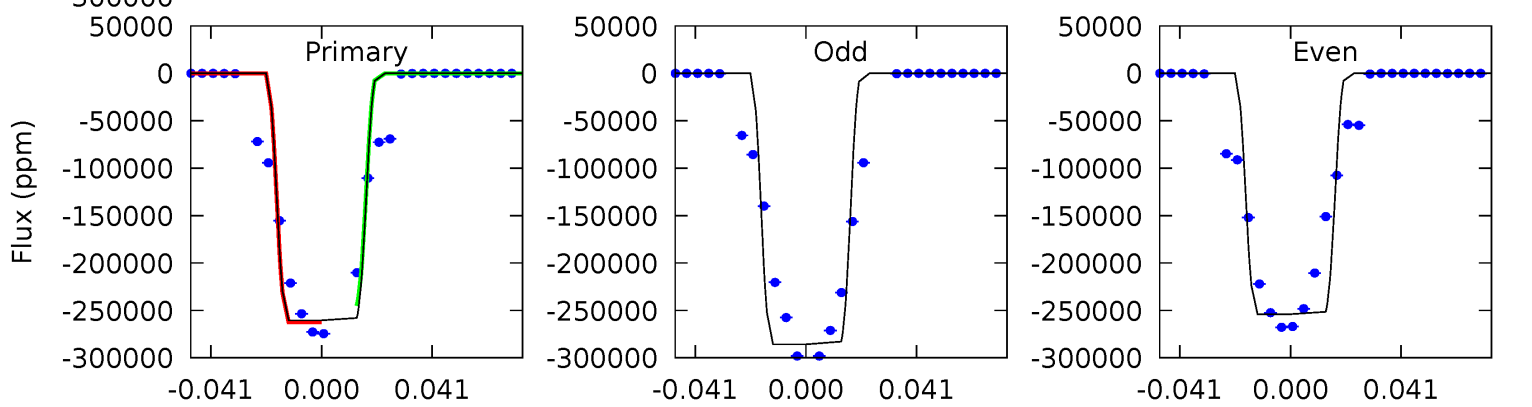
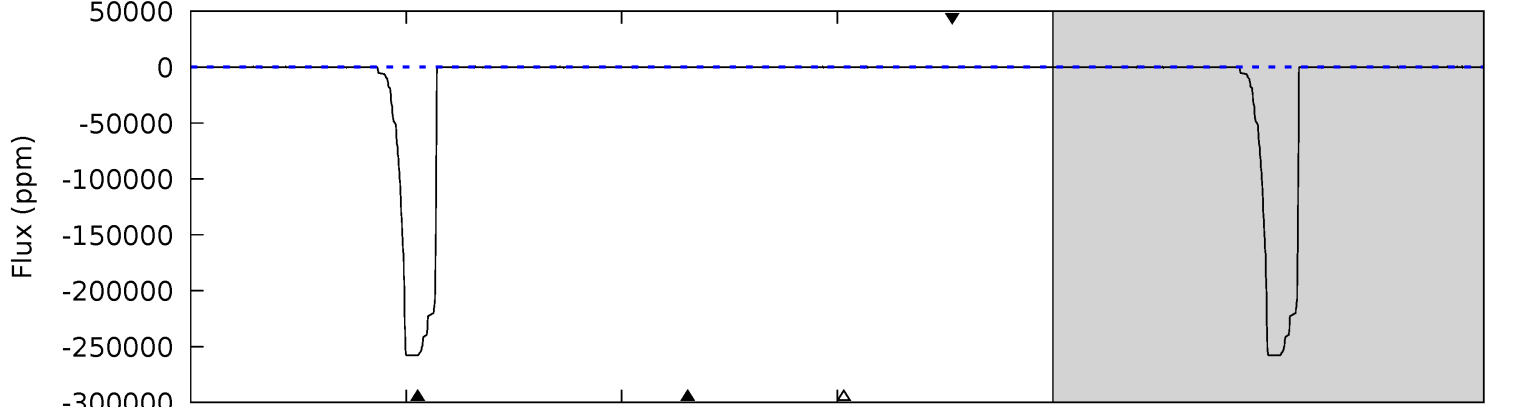
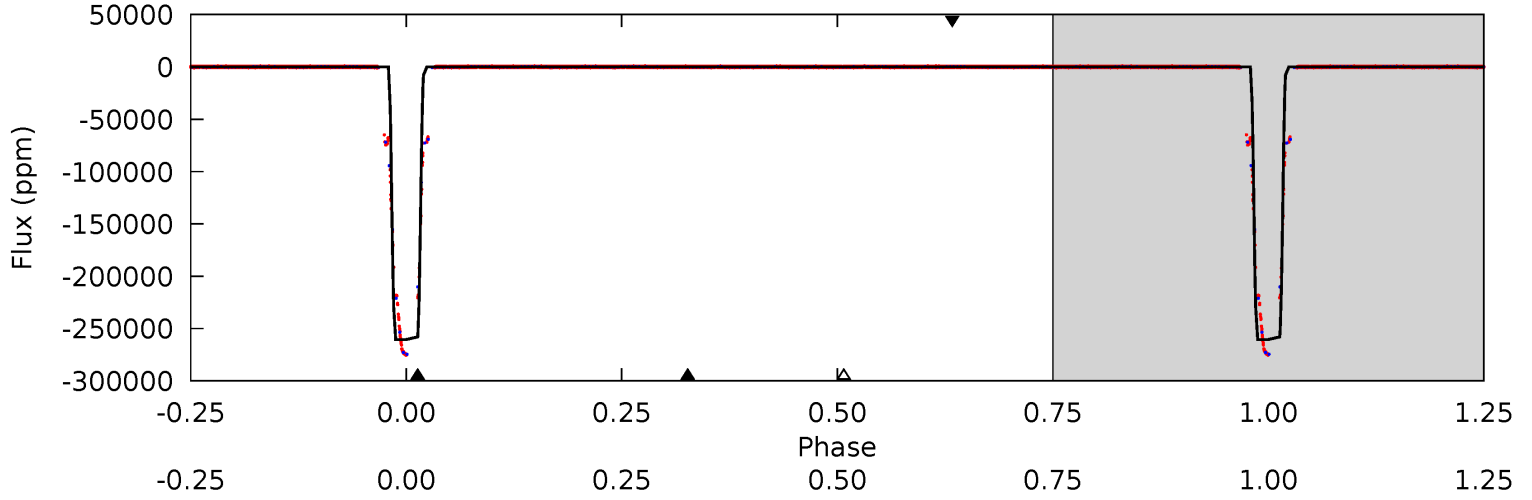
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19802	8.78	8.33	6.68	4.64	1.82	2.08	19793	19795	0.45	2.10	3165	1.04	0.00	0



# Alt Model-Shift Uniqueness Test

008701327-01, P = 4.254377 Days, E = 129.586754 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
11062	4.24	3.86	4.08	4.75	2.04	2.02	11058	11058	0.38	0.16	825.5	1.04	0.00	0



### Stellar Parameters For KIC 008701327

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6292^{+198}_{-242}$	$4.256^{+0.185}_{-0.185}$	$-0.360^{+0.300}_{-0.300}$	$1.235^{+0.341}_{-0.248}$	$1.002^{+0.158}_{-0.115}$	$0.750^{+0.681}_{-0.353}$
	+3%/-4%	+4%/-4%	+83%/-83%	+28%/-20%	+16%/-11%	+91%/-47%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008701327-01 / KOI 7078.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-120 \pm 14$	$77.58^{+13.18}_{-9.75}$	$1897^{+147}_{-130}$	$-2403^{+86}_{-95}$	$0.029^{+0.010}_{-0.007}$
Alt.	$-99 \pm 23$	$72.07^{+11.87}_{-8.47}$	$1893^{+149}_{-130}$	$-2403^{+88}_{-94}$	$0.027^{+0.011}_{-0.008}$

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

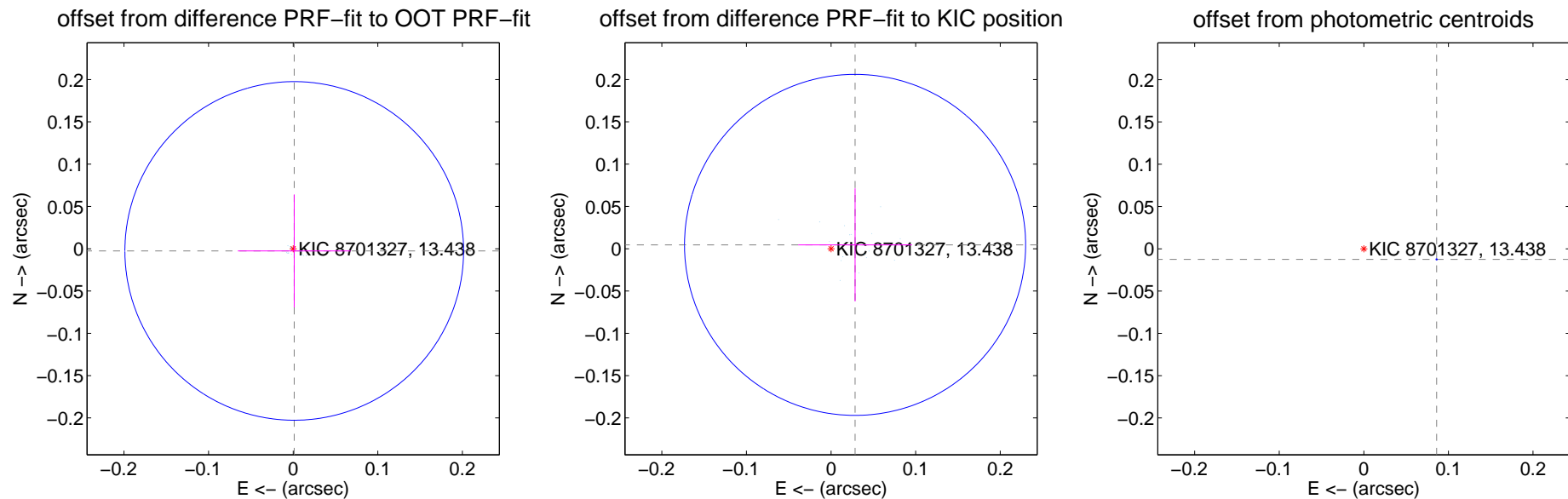
## DV Centroid Data

Supplemental centroid analysis for 008701327-01. Kepler magnitude: 13.44. Transit SNR 15064.89

There are 17 quarters with good PRF difference image offsets

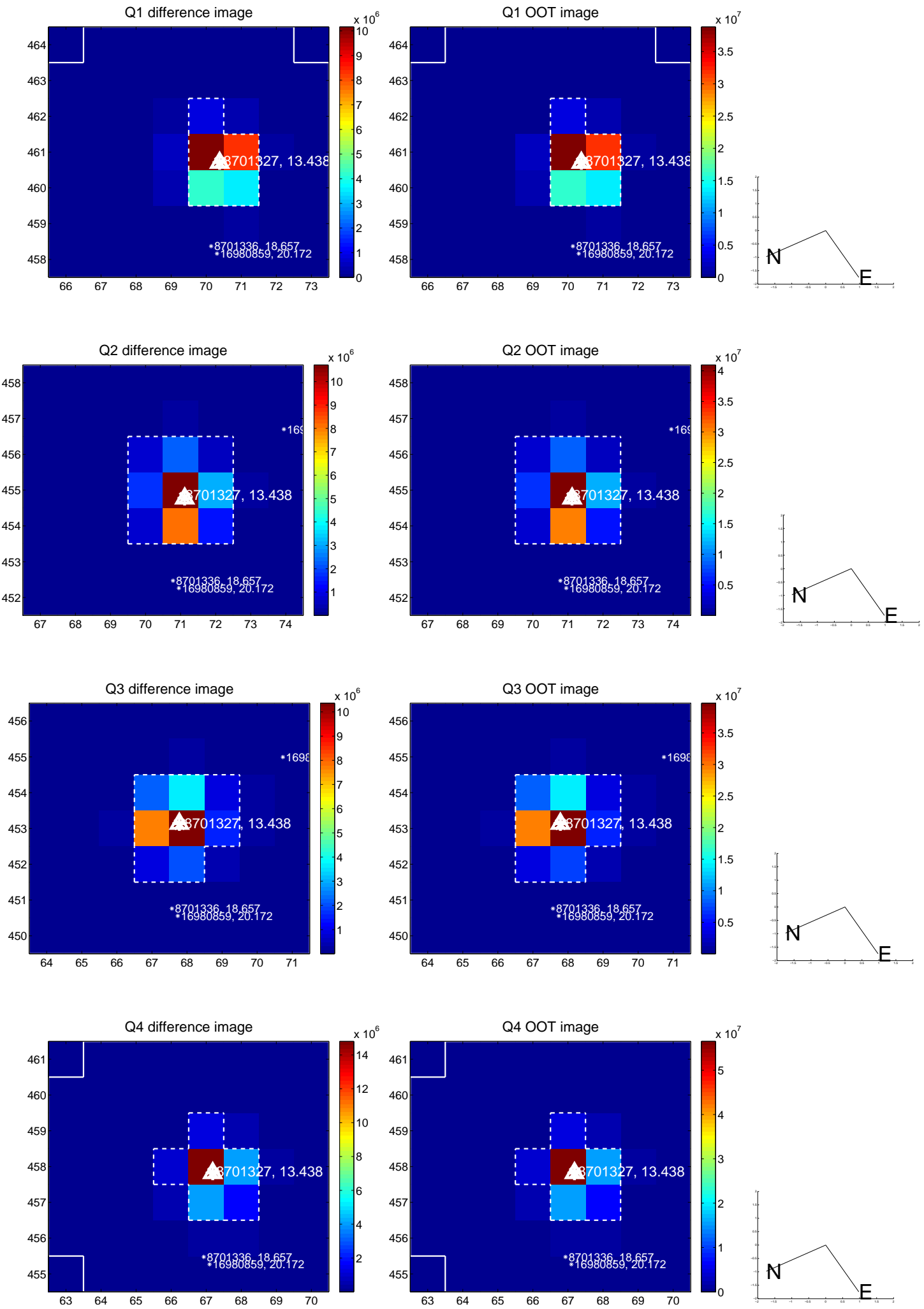
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.003 \pm 0.067$	0.04	$-0.001 \pm 0.067$	$-0.003 \pm 0.067$
PRF-fit source offset from KIC position	$0.029 \pm 0.067$	0.43	$-0.028 \pm 0.067$	$0.005 \pm 0.067$
photometric centroid source offset	$0.09 \pm 0.00$	<b>345.70</b>	$-0.09 \pm 0.00$	$-0.01 \pm 0.00$

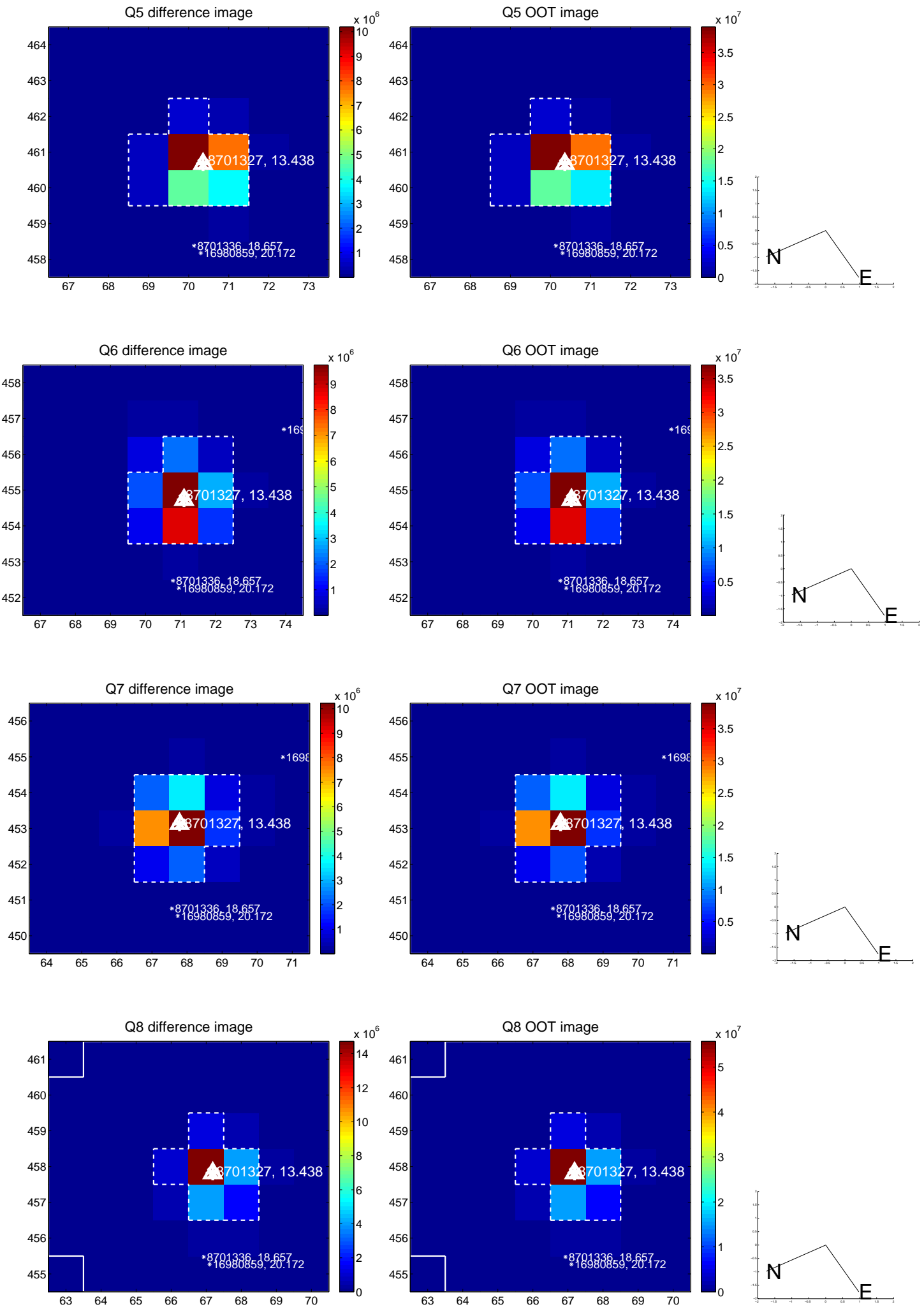


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

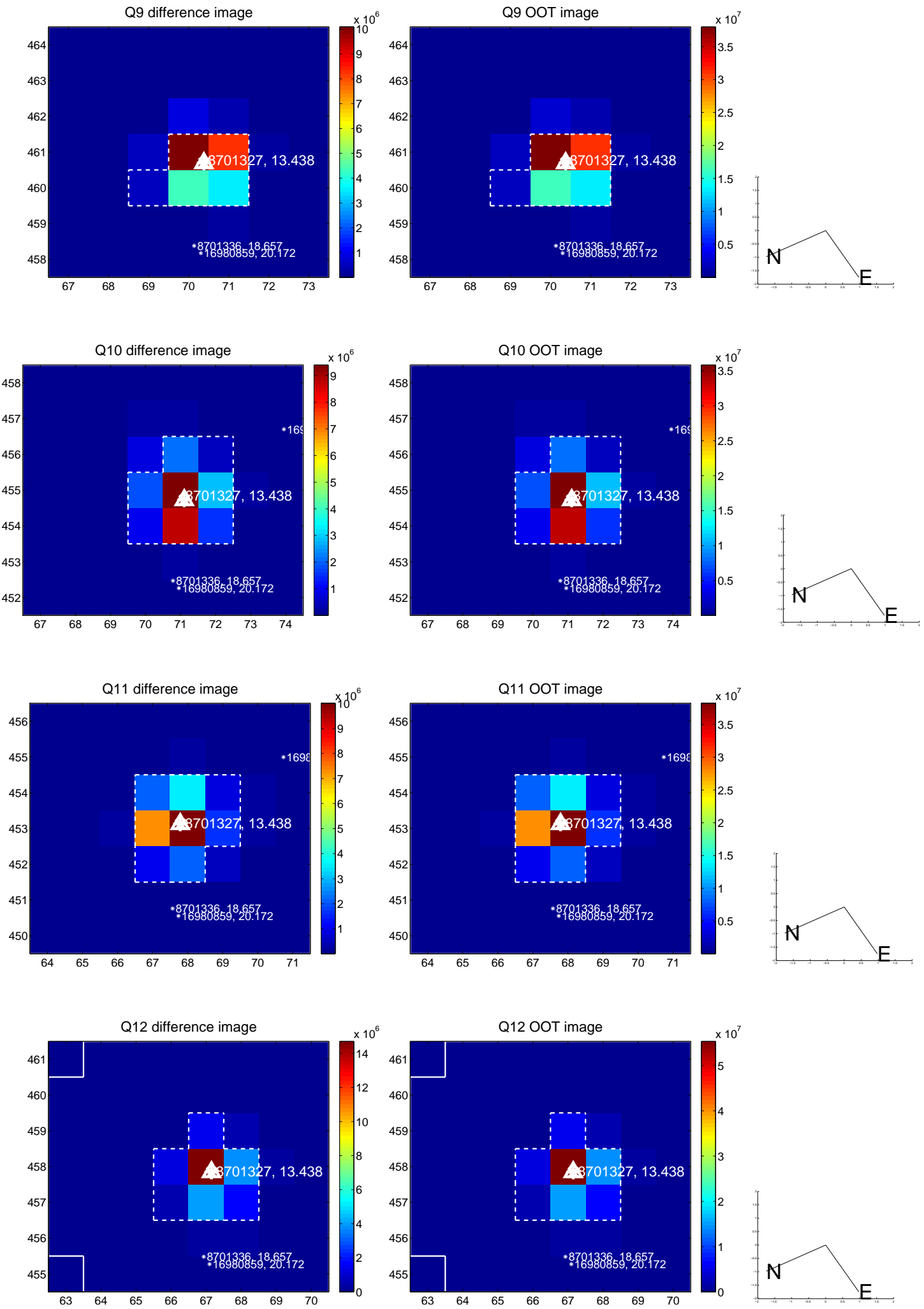


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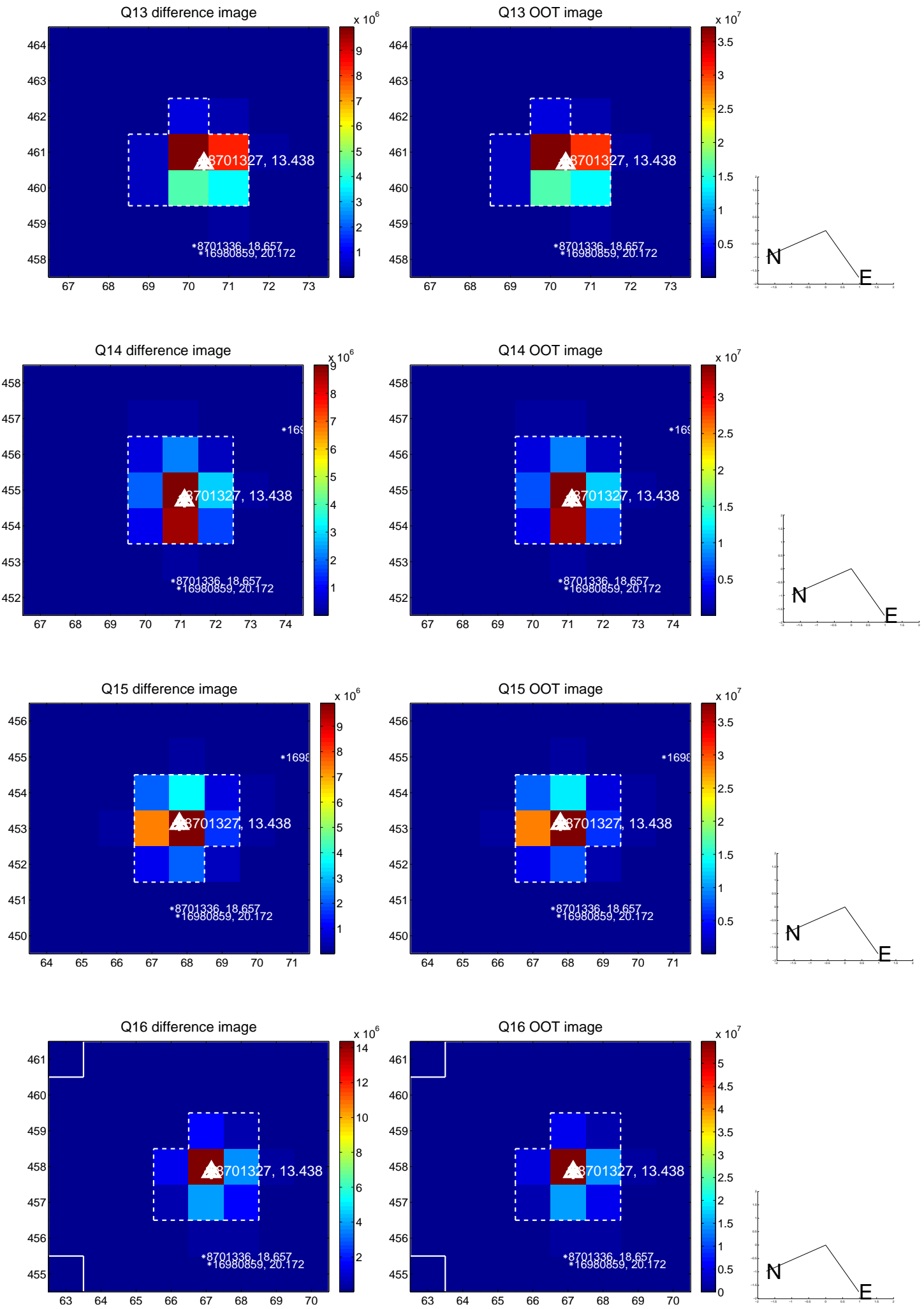




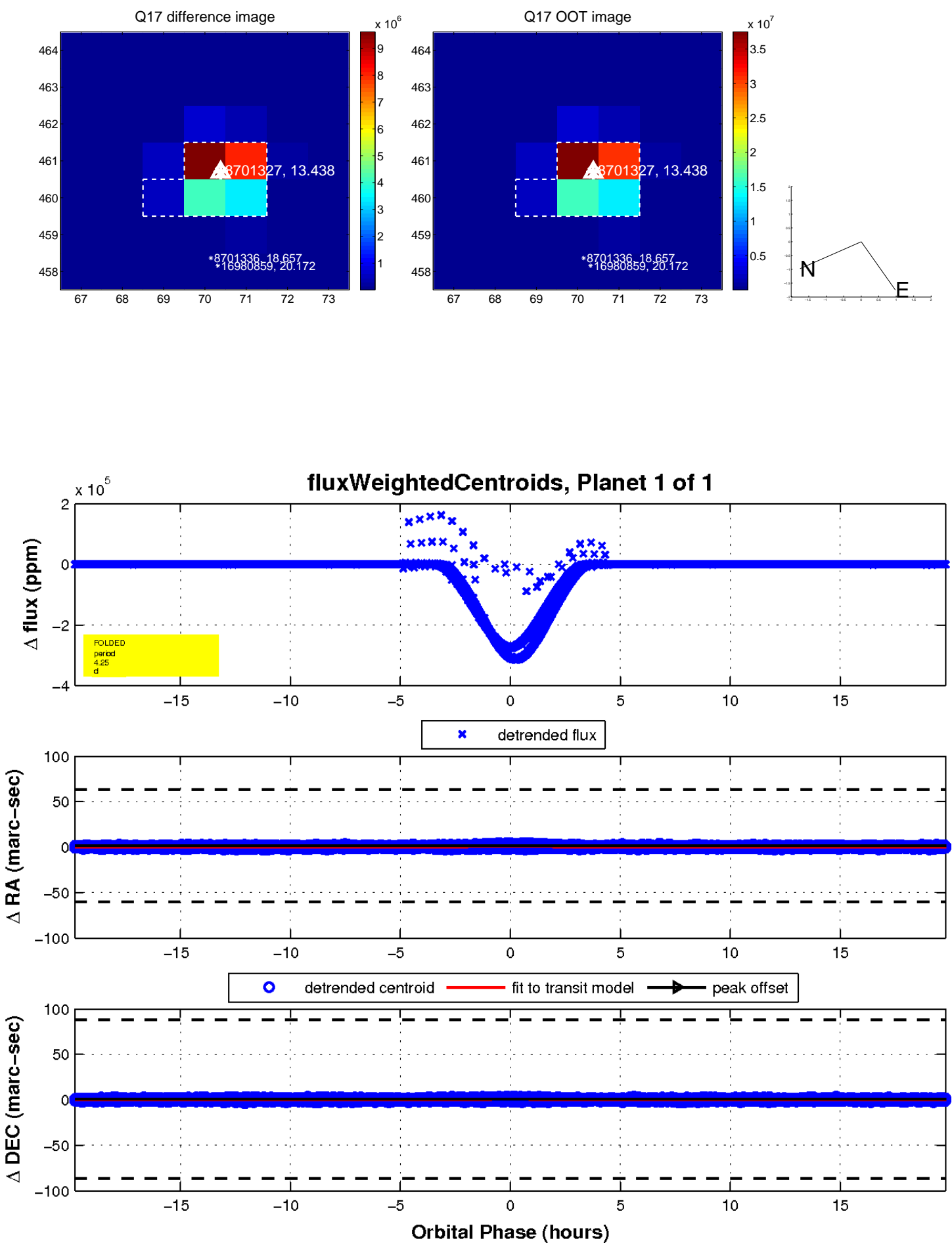
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

