

# KIC 010091257

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010091257-01	OBS	7284.01	1.701924	131.955433	46122.2	3.027	7721.7	3873.1	1.26	5826	38.36	1994.48

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010091257-01	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.

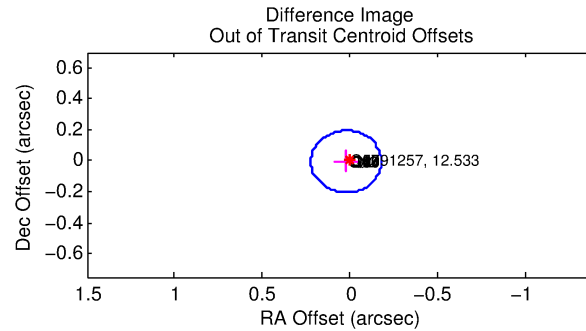
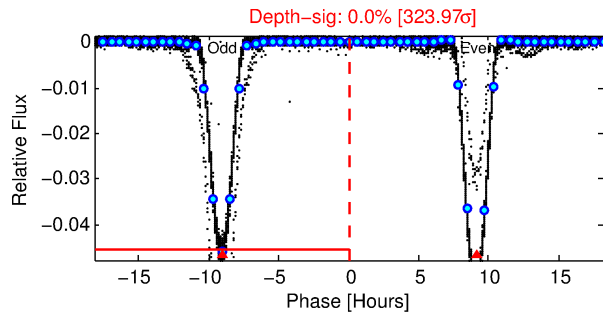
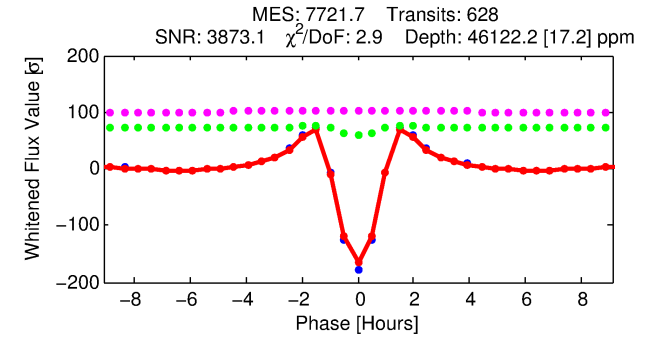
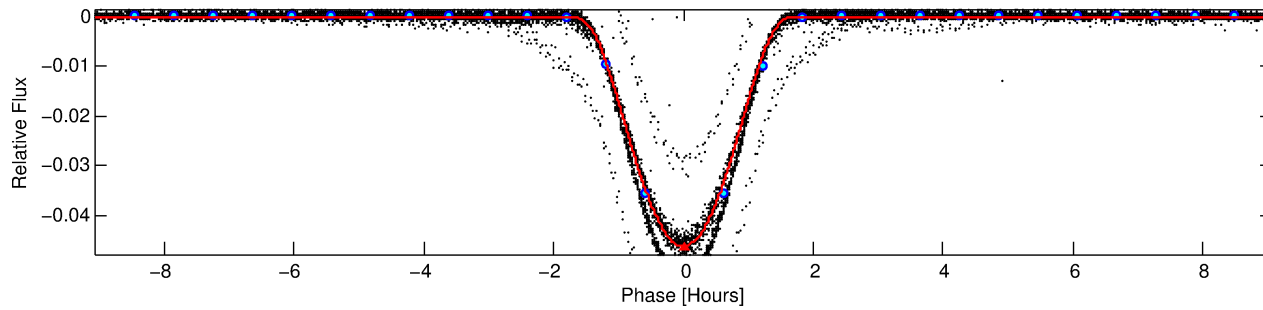
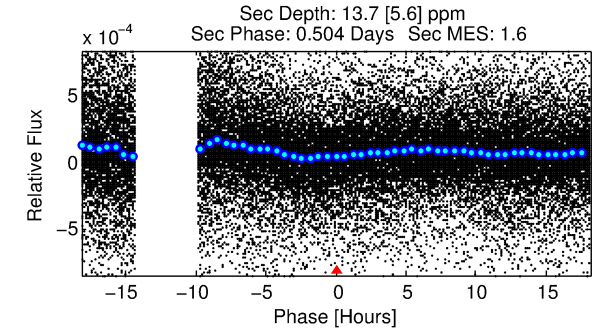
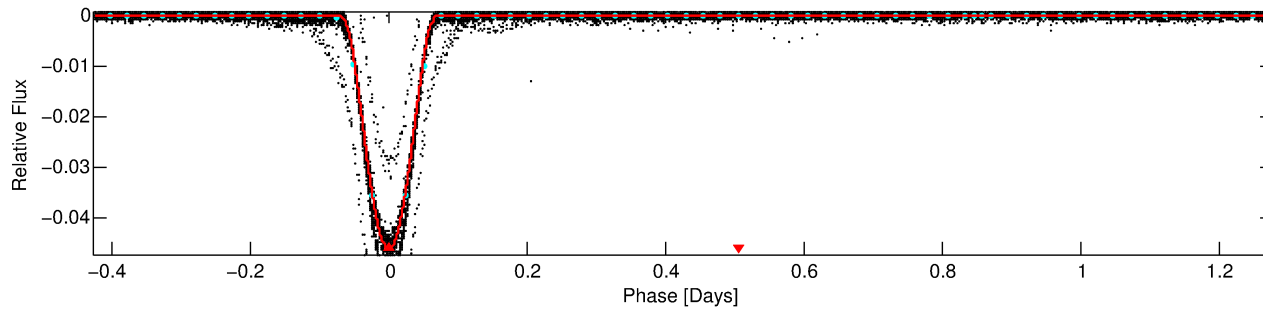
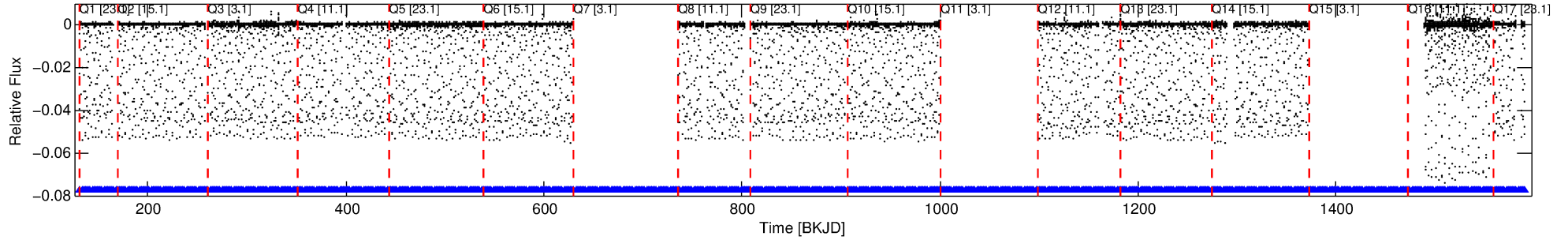
## Ephemeris Match Information For 010091257-01

No Significant Match Found

# DV One-Page Summary

KIC: 10091257 Candidate: 1 of 1 Period: 1.702 d  
KOI: K07284.01 Corr: 0.998

Kp: 12.53 R\*: 1.26 Rs Teff: 5826.0 K Logg: 4.27 Fe/H: 0.200



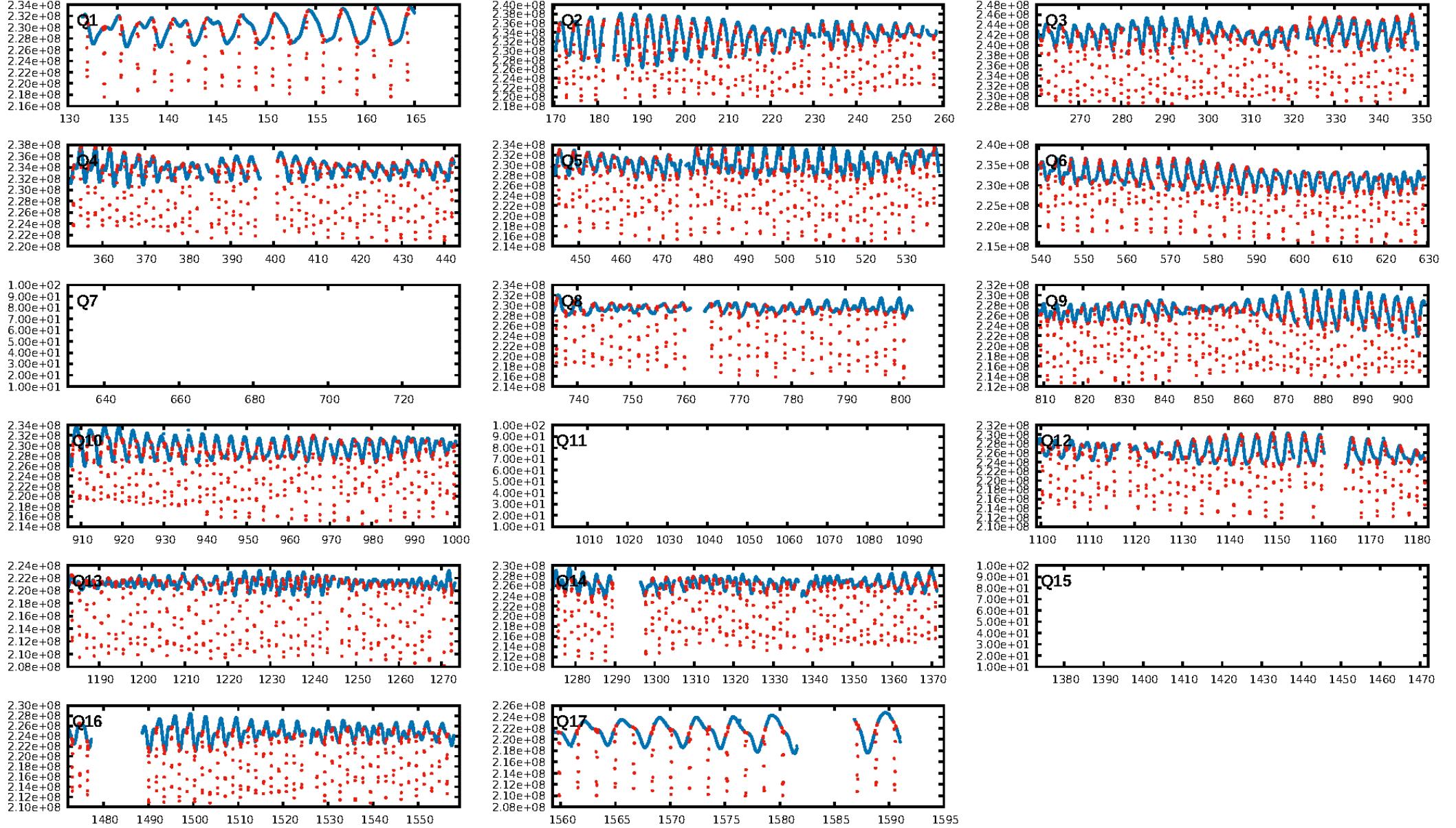
## DV Fit Results:

Period = 1.70192 [0.00000] d  
Epoch = 131.9554 [0.0000] BKJD  
Rp/R\* = 0.2786 [0.0019]  
a/R\* = 4.01 [0.00]  
b = 0.91 [0.00]  
Seff = 1994.48 [454.27]  
Teq = 1704 [97] K  
Rp = 38.36 [6.36] Re  
a = 0.0287 [0.0042] AU  
Ag = 0.00 [0.00] [-510.20σ]  
Teffp = 671 [69] K [-8.6σ]

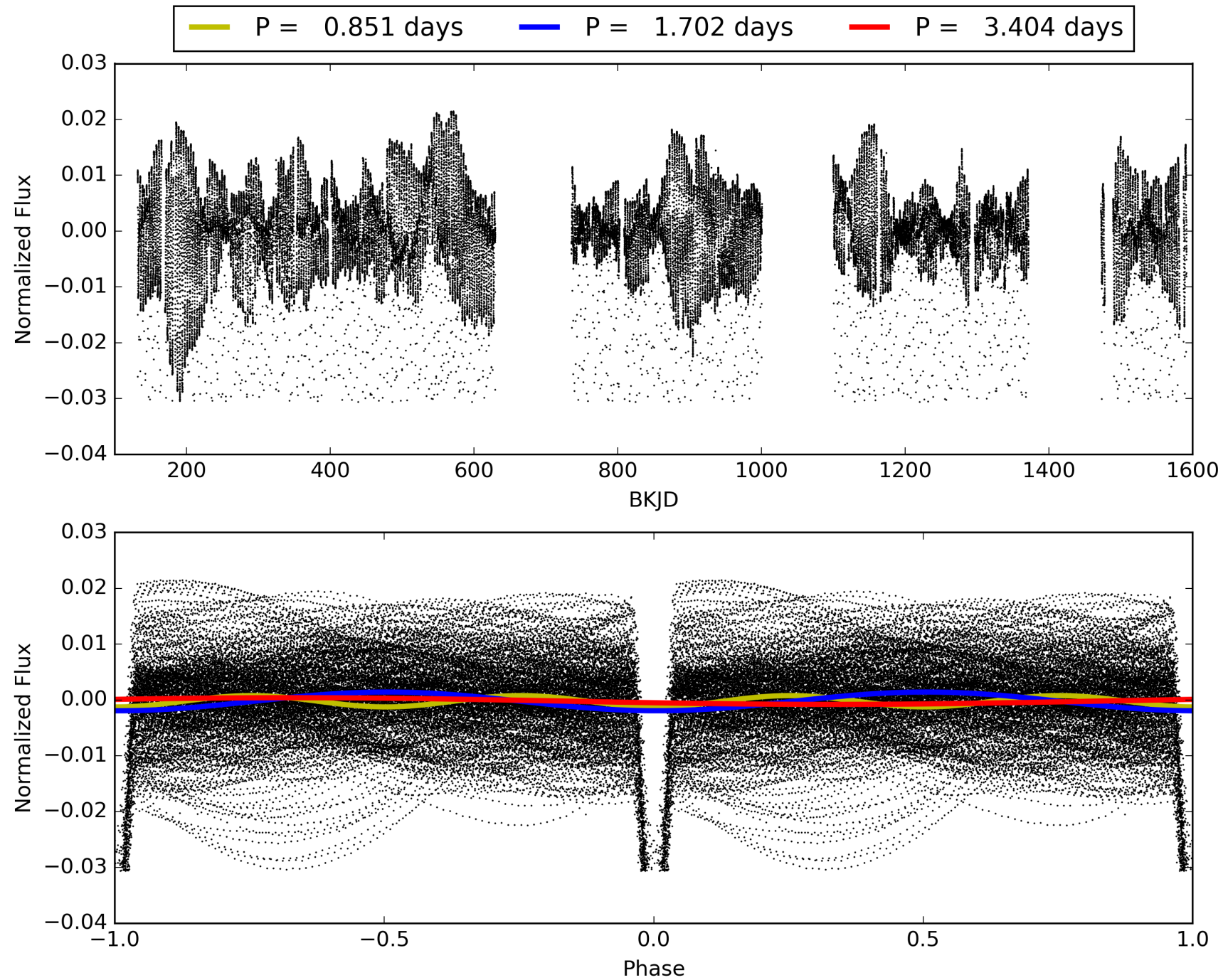
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [592/592]  
GhostDiagnostic-chr: 1.21  
Centroid-sig: N/A  
Centroid-so: 0.301 arcsec [455.32σ]  
OotOffset-rm: 0.023 arcsec [0.35σ]  
KicOffset-rm: 0.220 arcsec [3.20σ]  
OotOffset-st: 4/1/4/5 [14]  
KicOffset-st: 4/1/4/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 010091257-01, PDC Light Curves

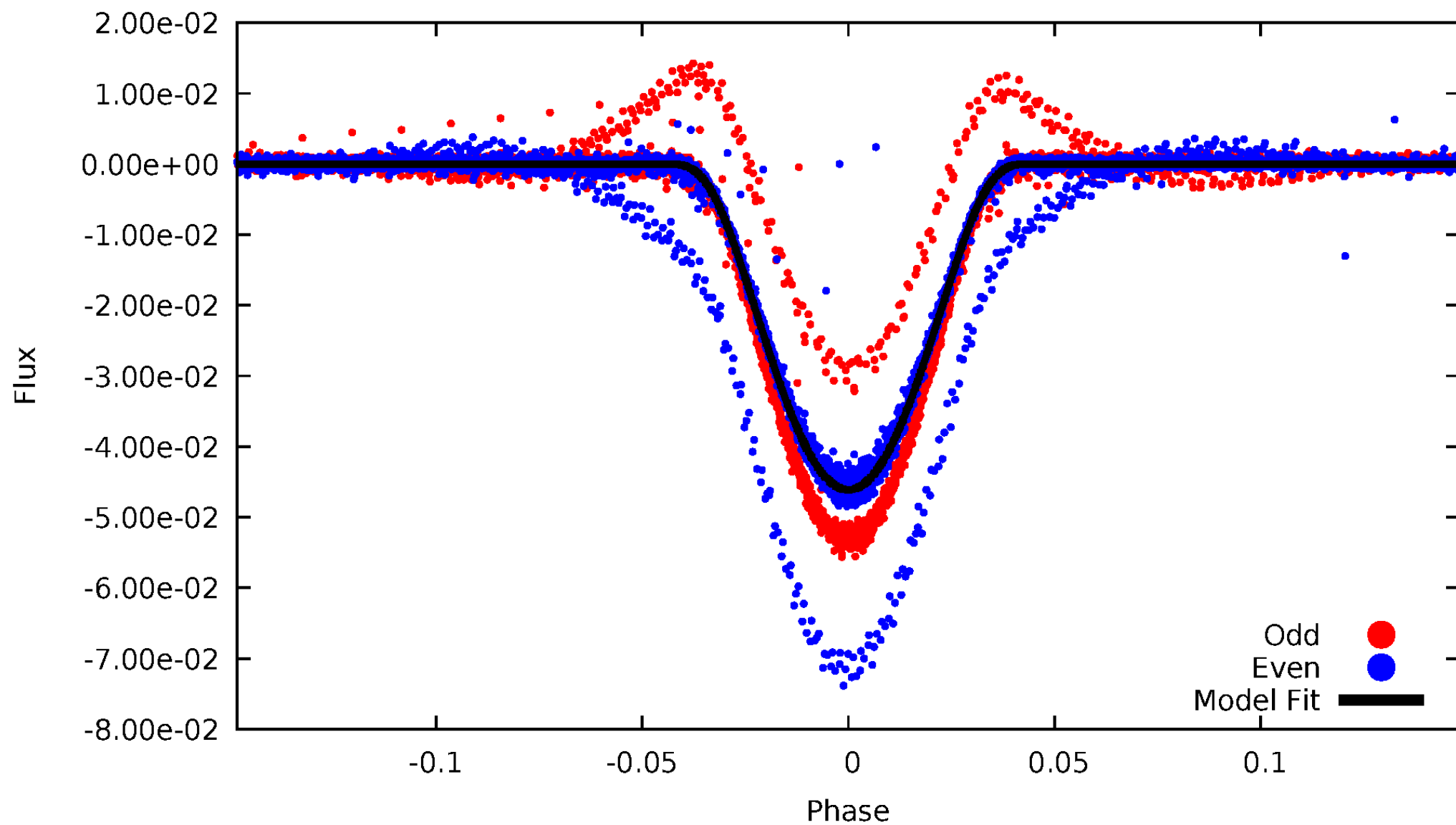


TCE 010091257-01



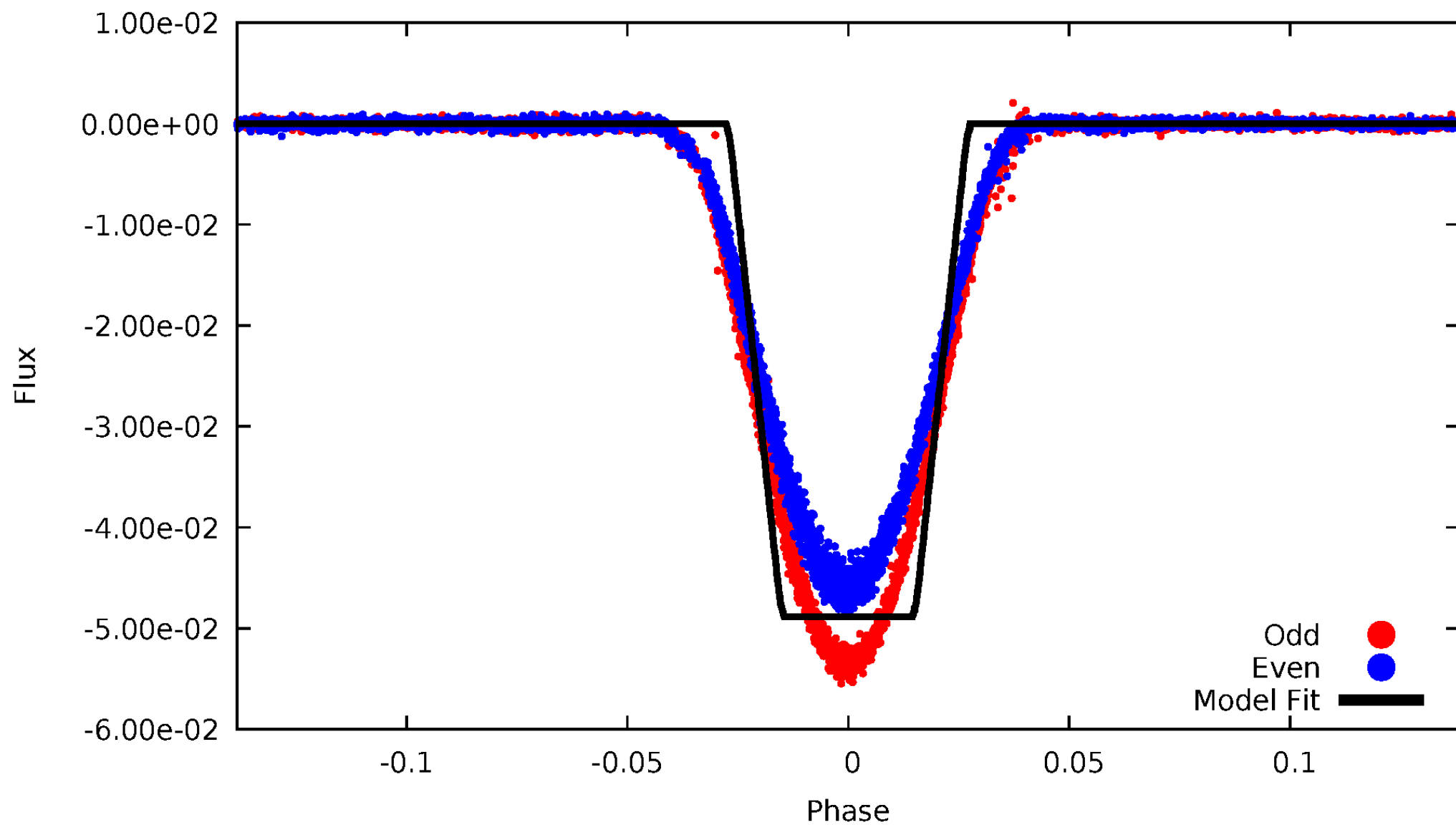
# DV Odd/Even

TCE 010091257-01



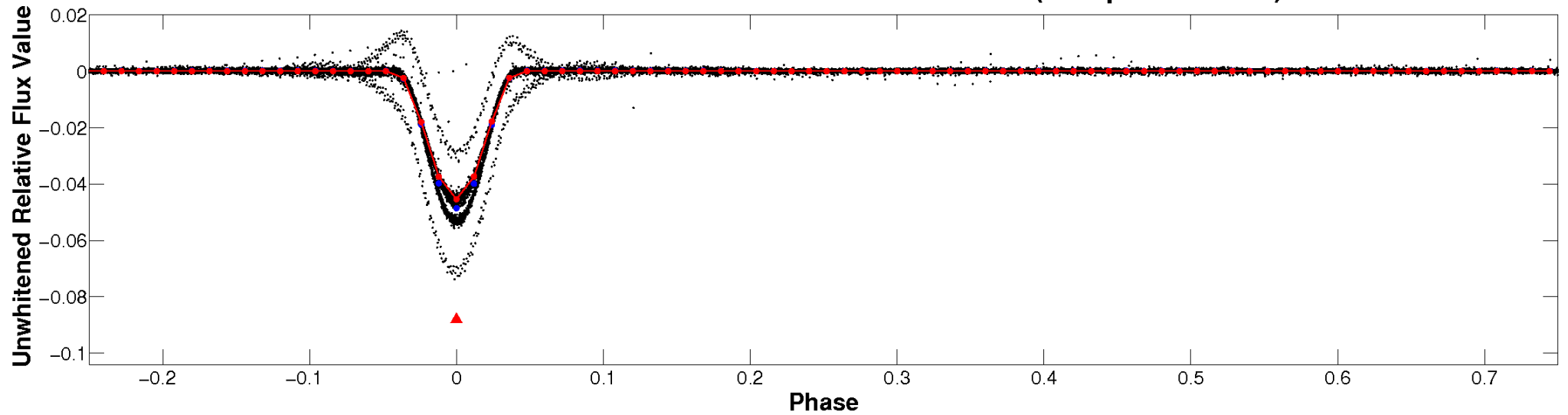
# ALT Odd/Even

TCE 010091257-01

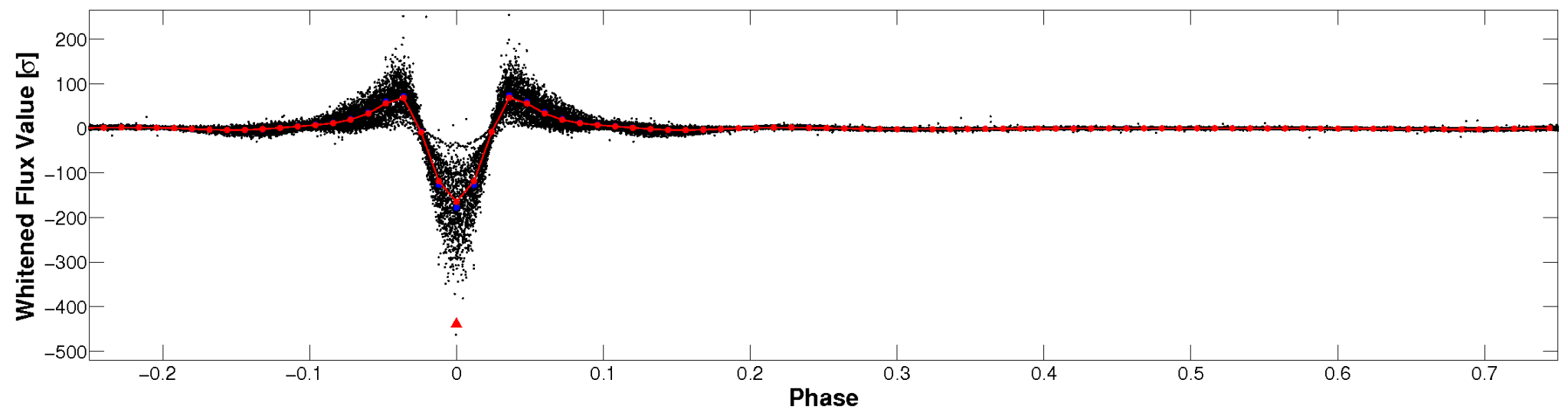


# Non-Whitened Vs. Whitened Light Curve

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



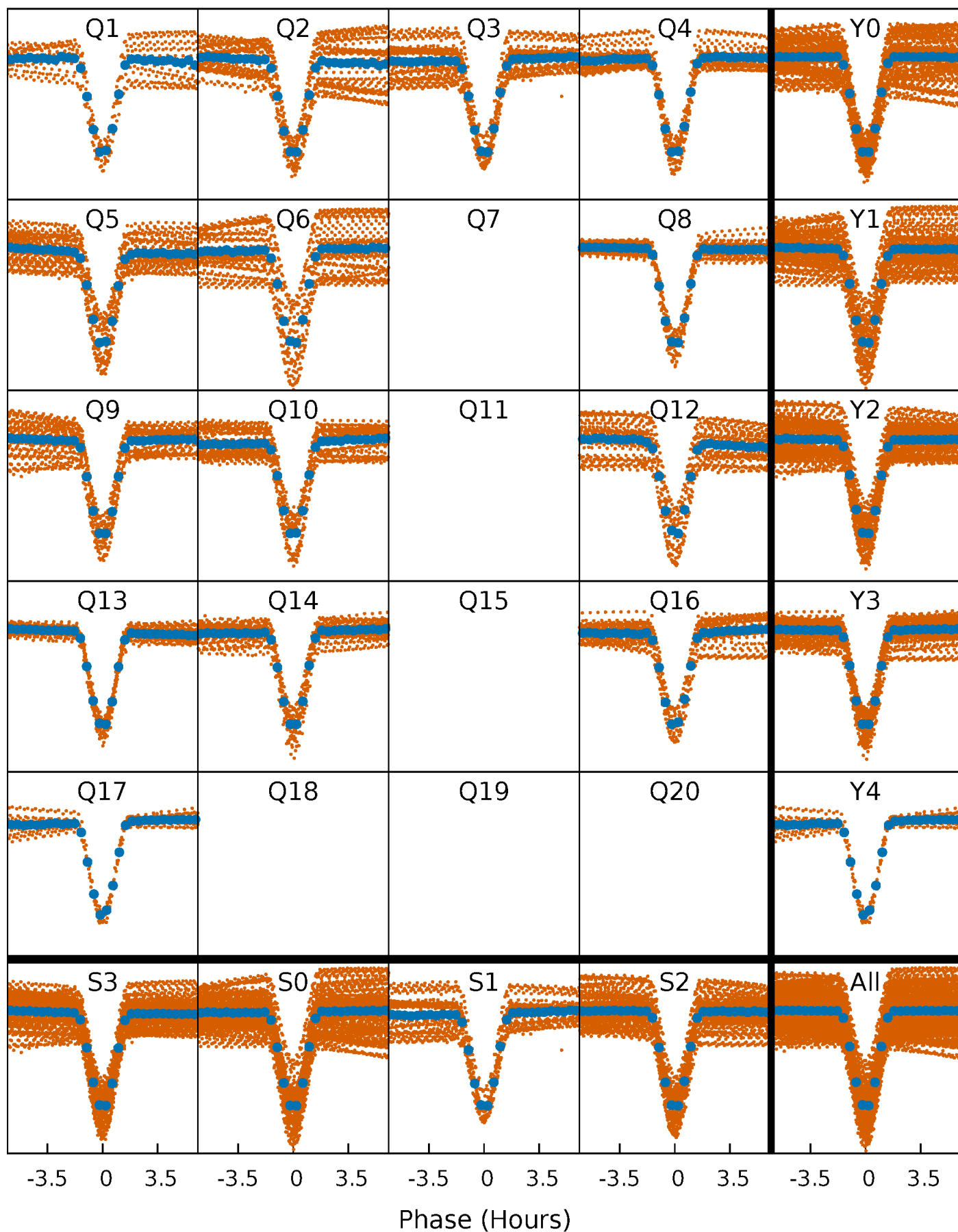
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

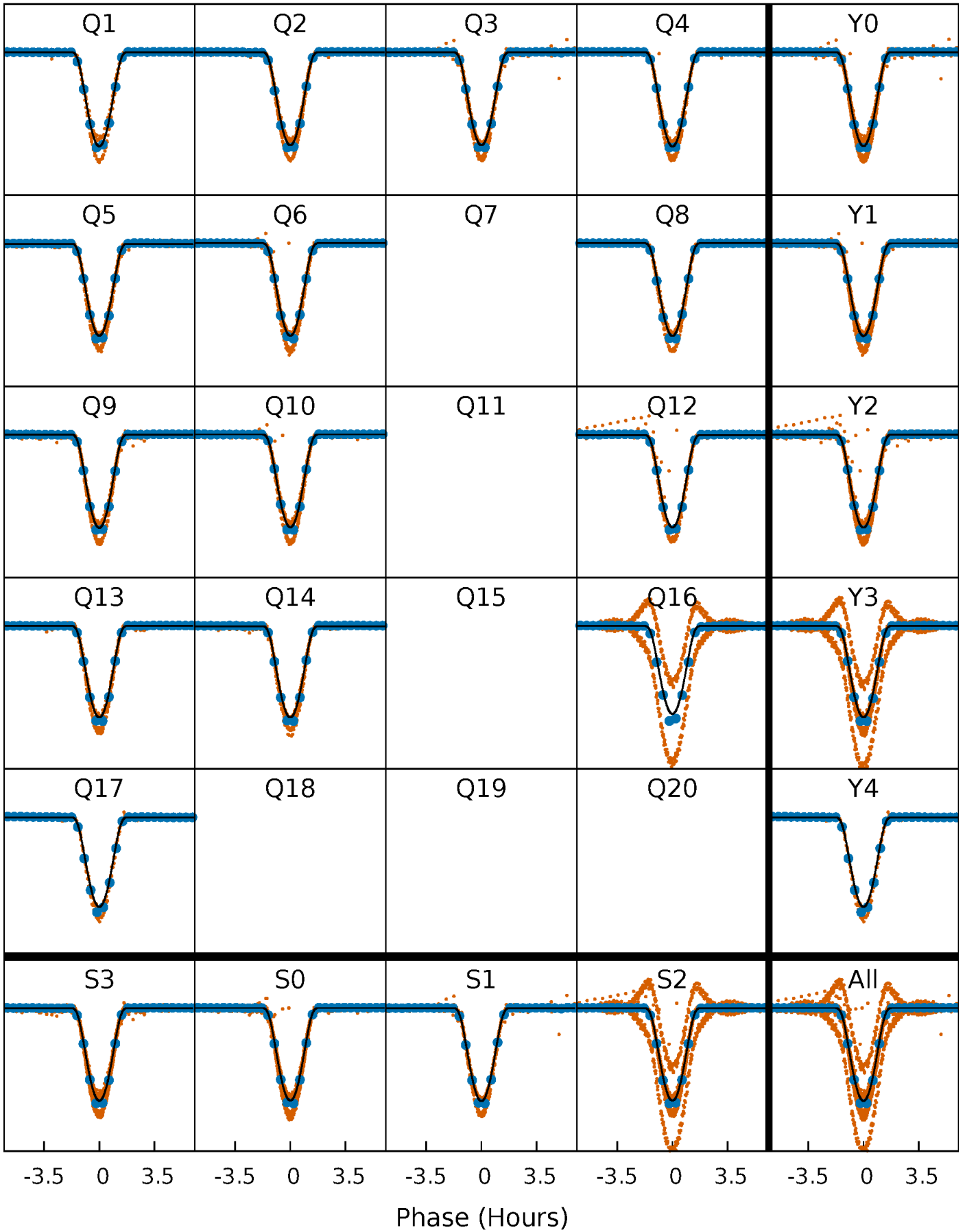
TCE 010091257-01 P= 1.701924 Days  $T_0=131.955433$  (BKJD)





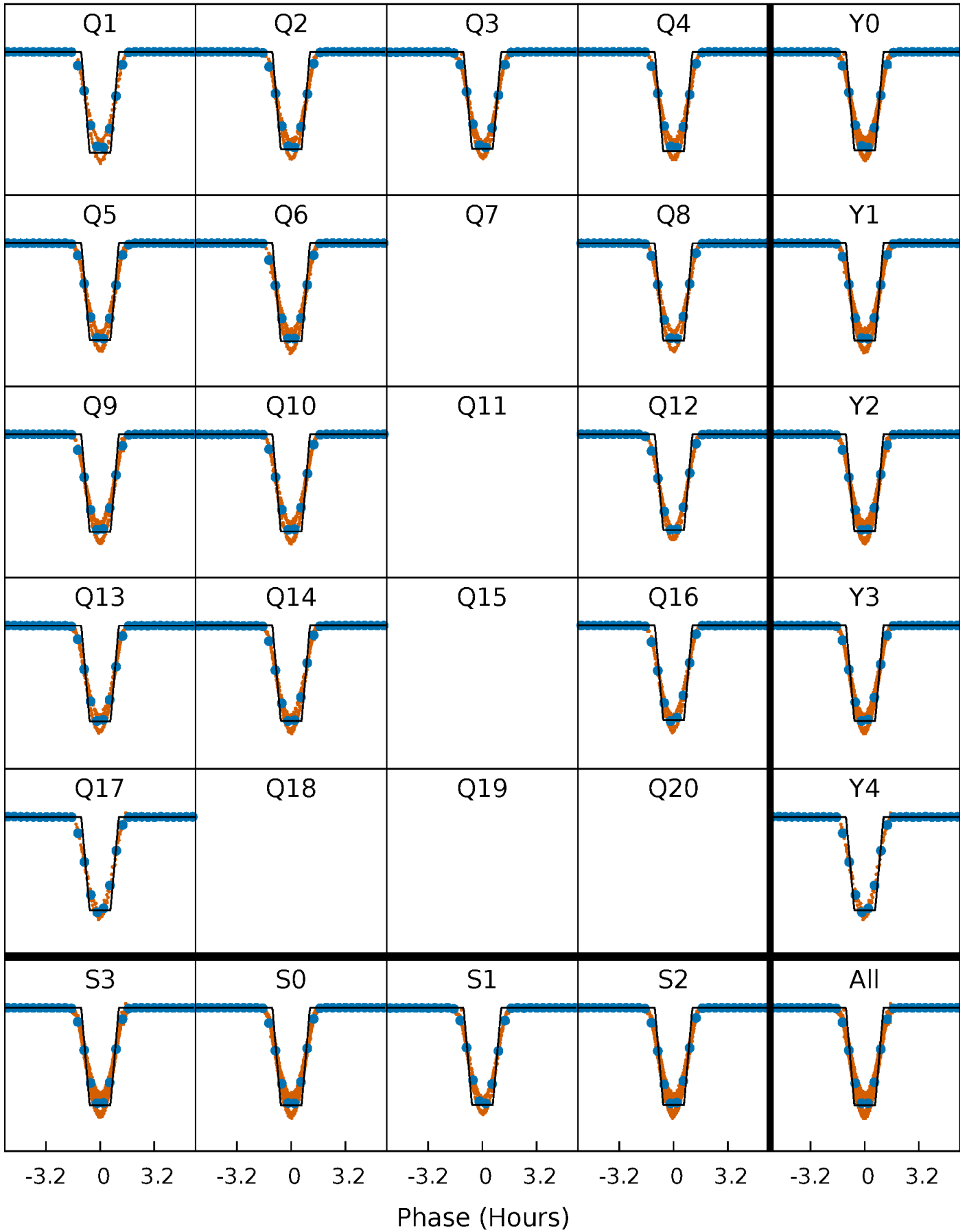
# DV Quarter-Phased Transit Curves

TCE 010091257-01 P= 1.701924 Days  $T_0=131.955433$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

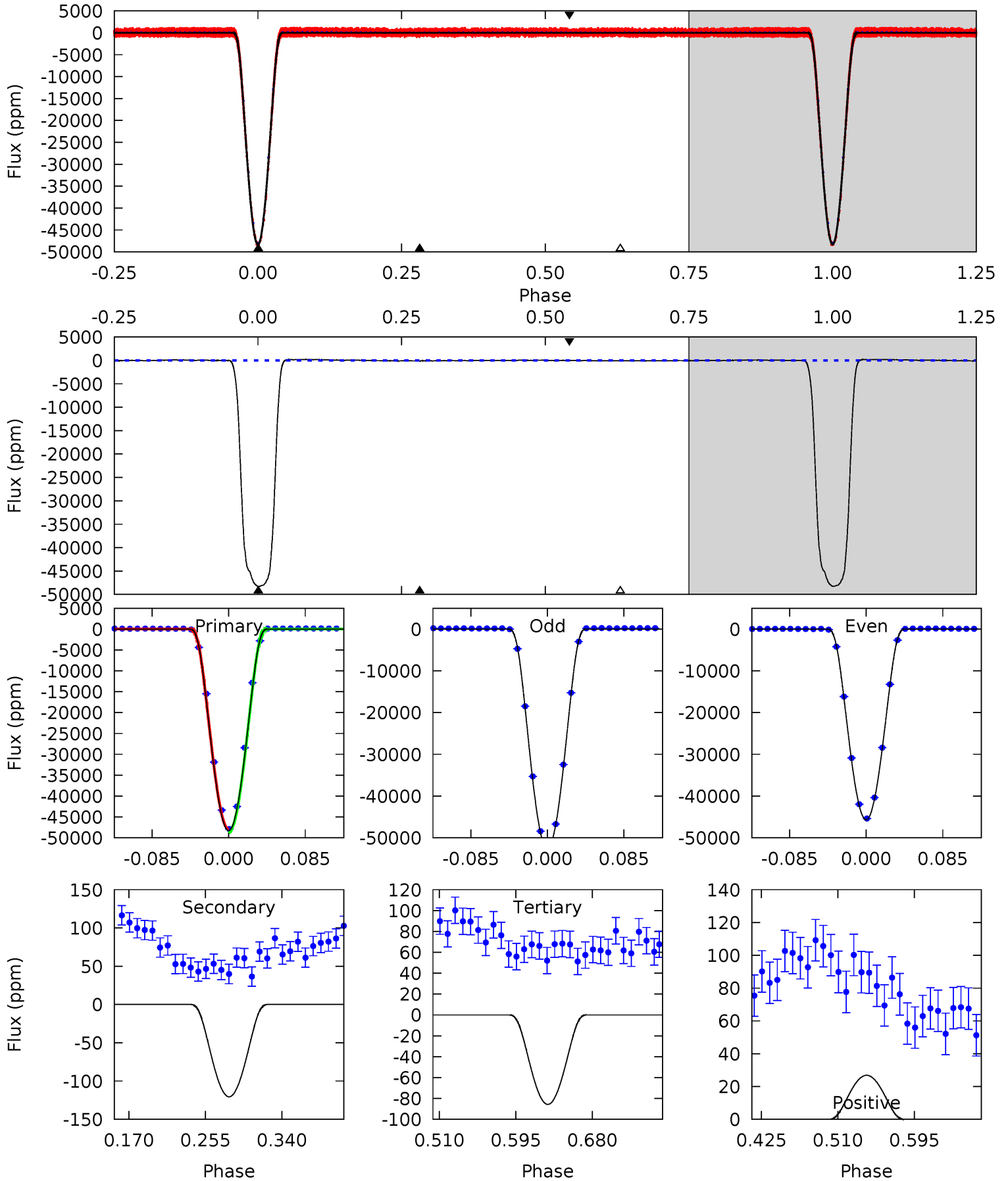
TCE 010091257-01   P= 1.701927 Days    $T_0=131.954266$  (BKJD)



# DV Model-Shift Uniqueness Test

010091257-01, P = 1.701924 Days, E = 130.253509 Days

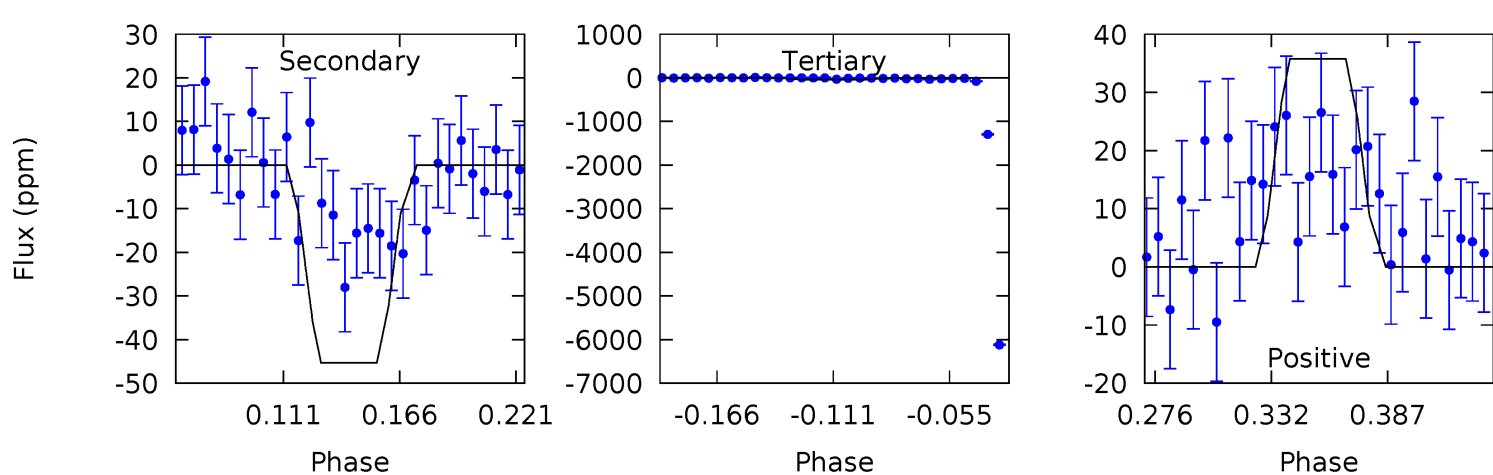
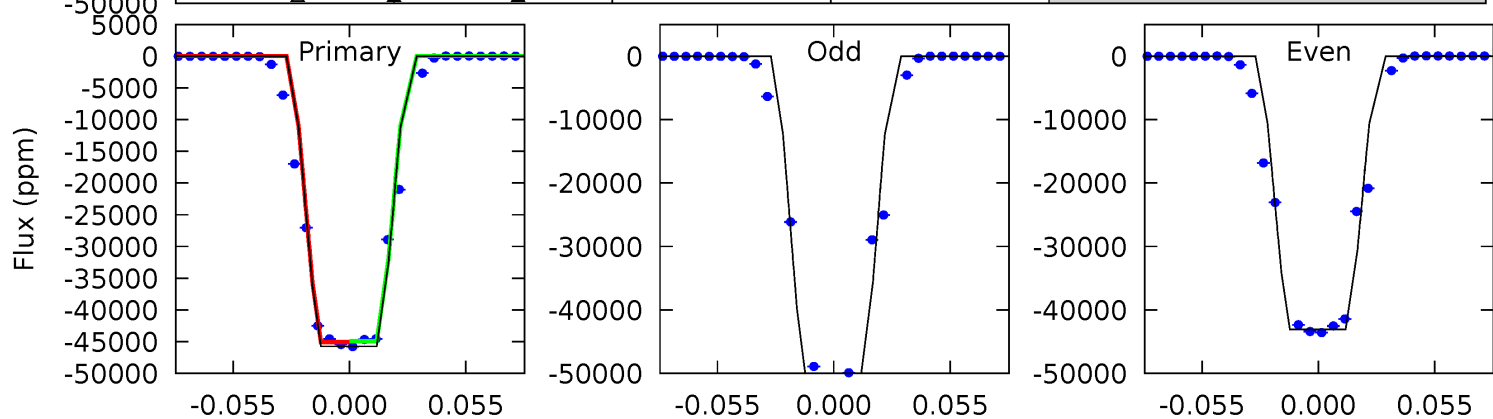
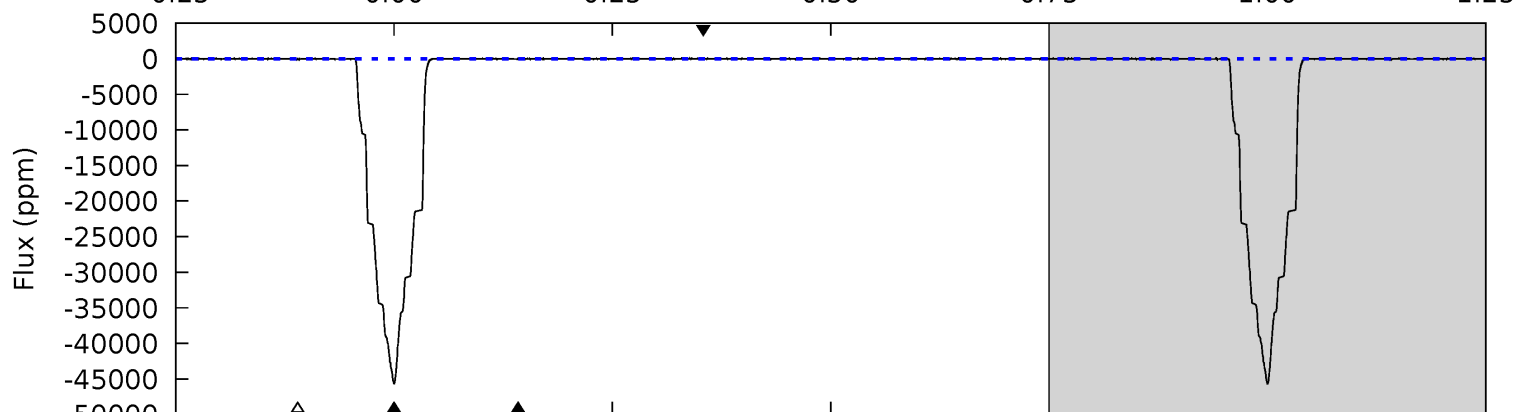
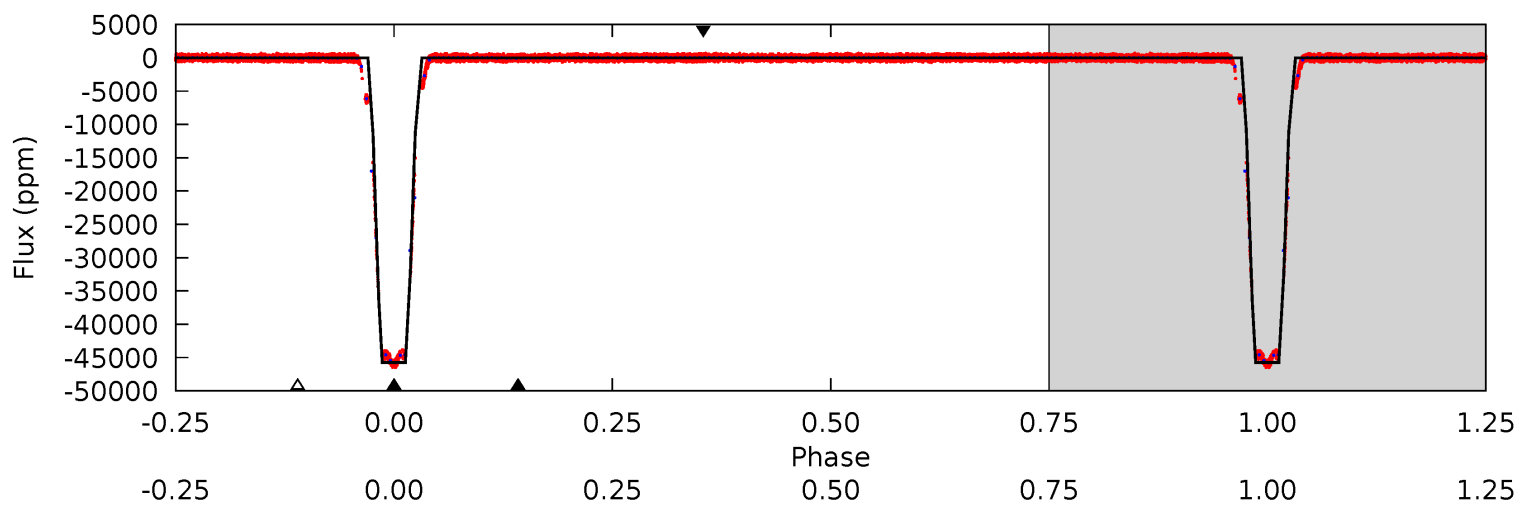
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6449	16.1	11.4	3.58	4.60	1.72	8.19	6437	6445	4.66	12.5	667.6	1.02	0.00	0



# Alt Model-Shift Uniqueness Test

010091257-01, P = 1.701927 Days, E = 130.252339 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
4181	4.14	3.99	3.27	4.69	1.92	1.19	4177	4178	0.15	0.87	403.4	0.99	0.00	0



### Stellar Parameters For KIC 010091257

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5826^{+78}_{-78}$	$4.273^{+0.125}_{-0.112}$	$0.200^{+0.150}_{-0.150}$	$1.262^{+0.209}_{-0.209}$	$1.091^{+0.071}_{-0.079}$	$0.764^{+0.473}_{-0.272}$
	+1%/-1%	+3%/-3%	+75%/-75%	+17%/-17%	+7%/-7%	+62%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 010091257-01 / KOI 7284.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-121 \pm 7$	$38.30^{+3.49}_{-3.50}$	$2377^{+110}_{-106}$	$-2674^{+71}_{-74}$	$0.037^{+0.008}_{-0.006}$
Alt.	$-45 \pm 11$	$30.35^{+3.01}_{-2.59}$	$2378^{+113}_{-107}$	$-2695^{+68}_{-70}$	$0.023^{+0.007}_{-0.007}$

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

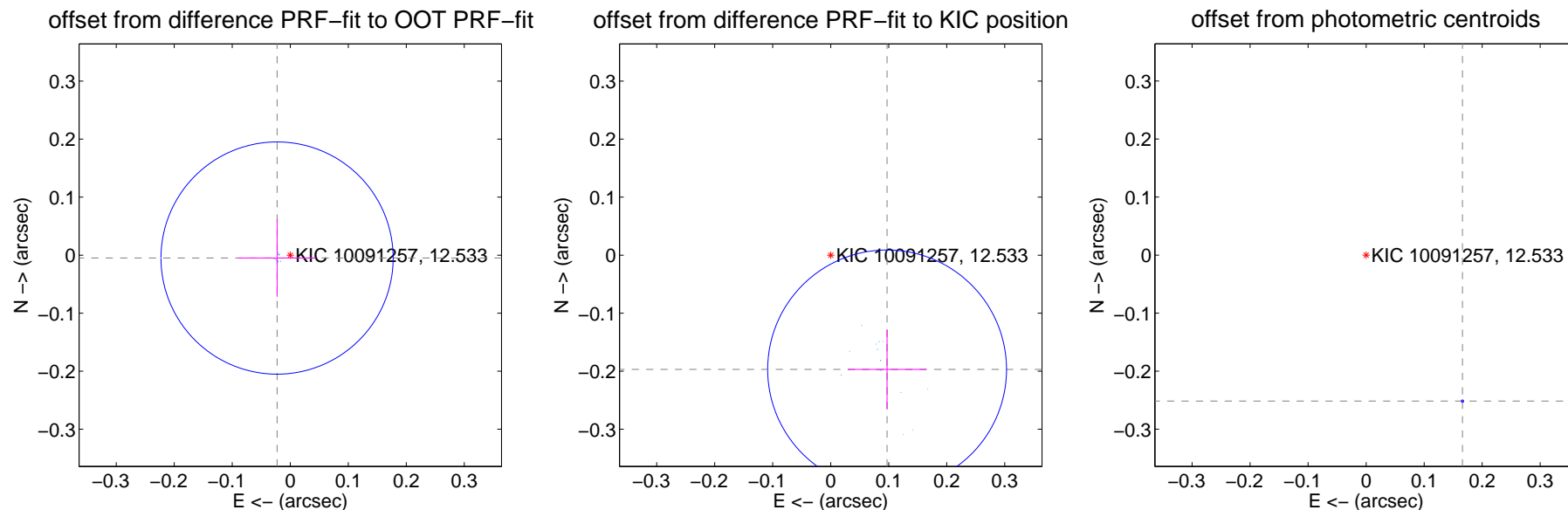
## DV Centroid Data

Supplemental centroid analysis for 010091257-01. Kepler magnitude: 12.53. Transit SNR 3873.14

There are 14 quarters with good PRF difference image offsets

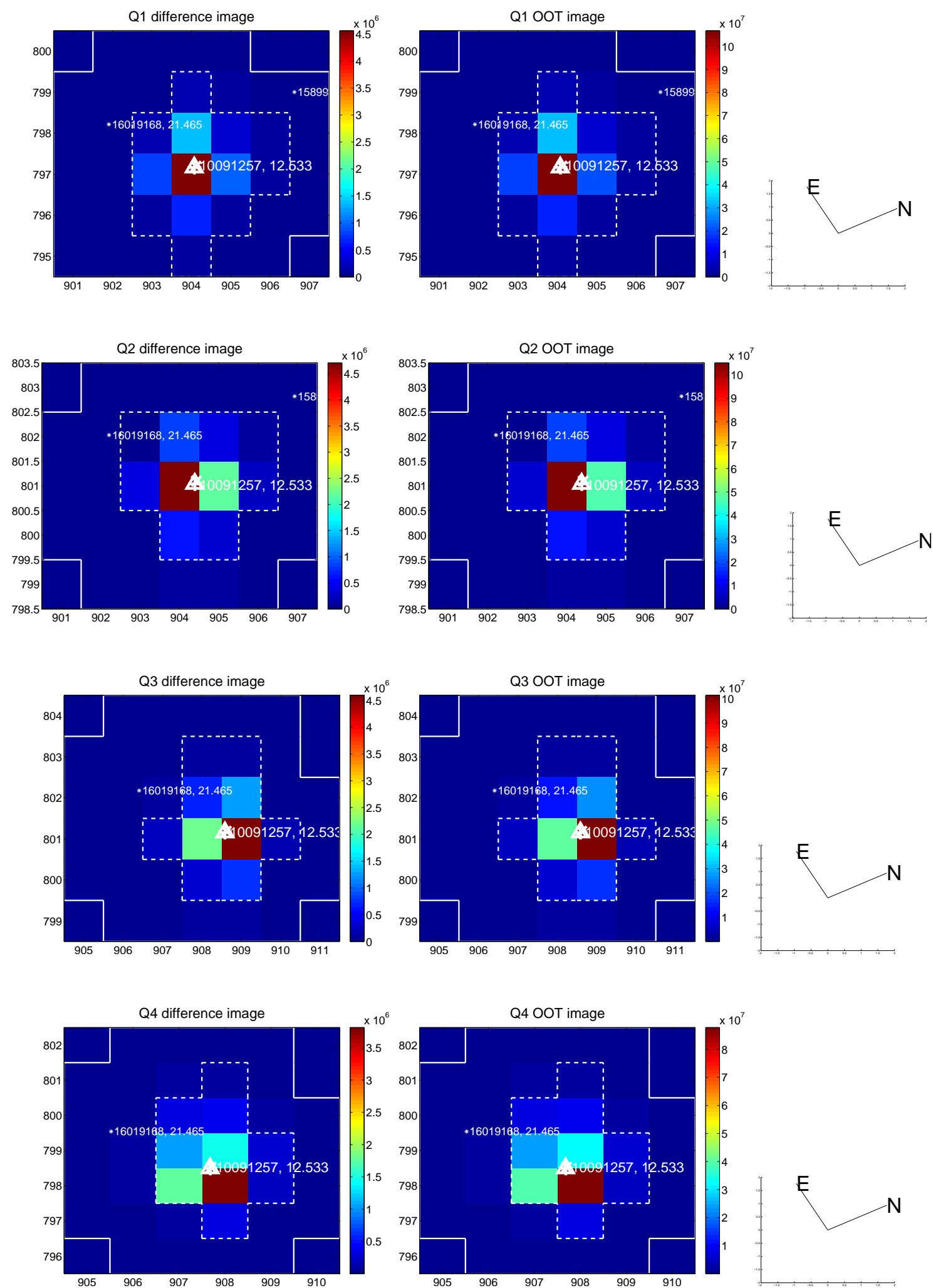
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.023 \pm 0.067$	0.35	$0.023 \pm 0.067$	$-0.005 \pm 0.067$
PRF-fit source offset from KIC position	$0.220 \pm 0.069$	3.20	$-0.097 \pm 0.068$	$-0.197 \pm 0.069$
photometric centroid source offset	$0.30 \pm 0.00$	455.32	$-0.17 \pm 0.00$	$-0.25 \pm 0.00$



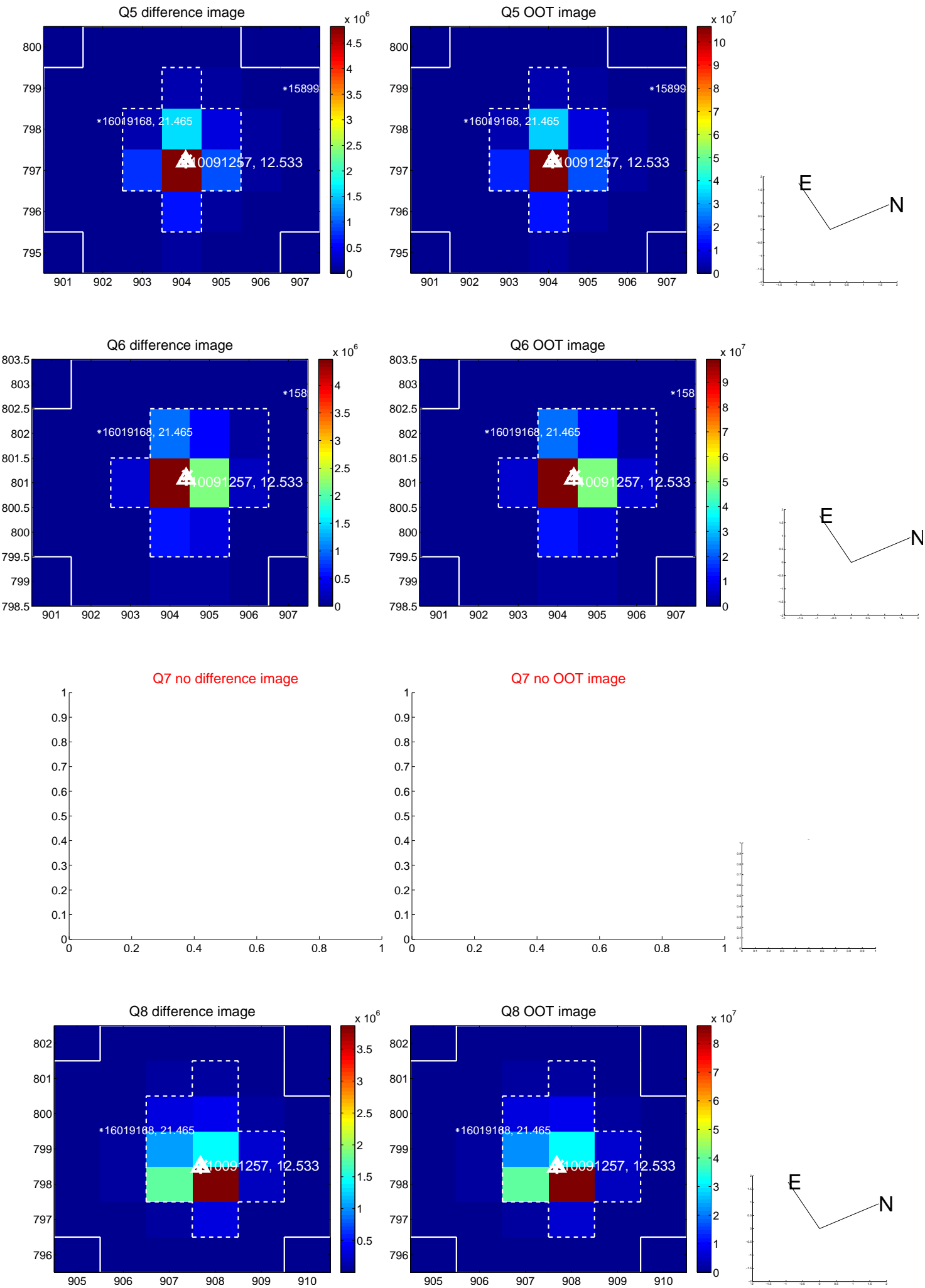
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

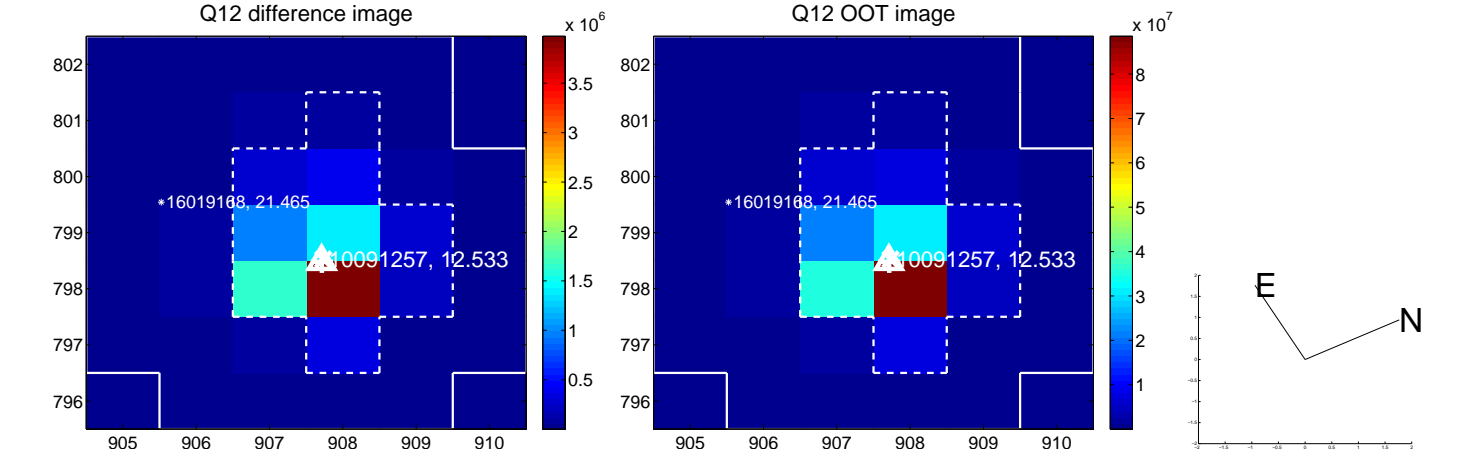
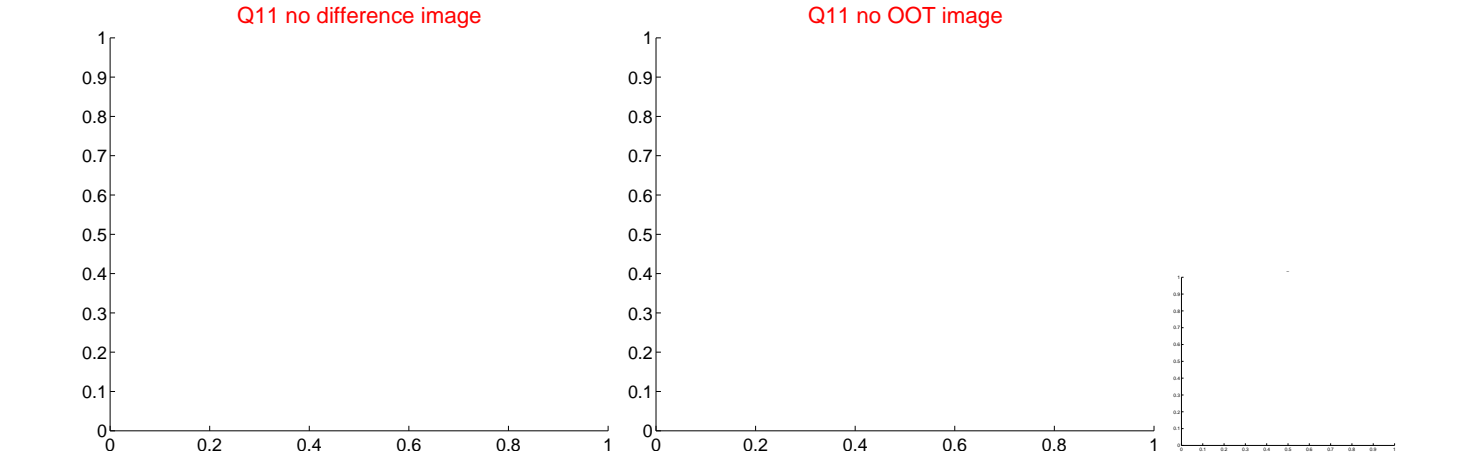
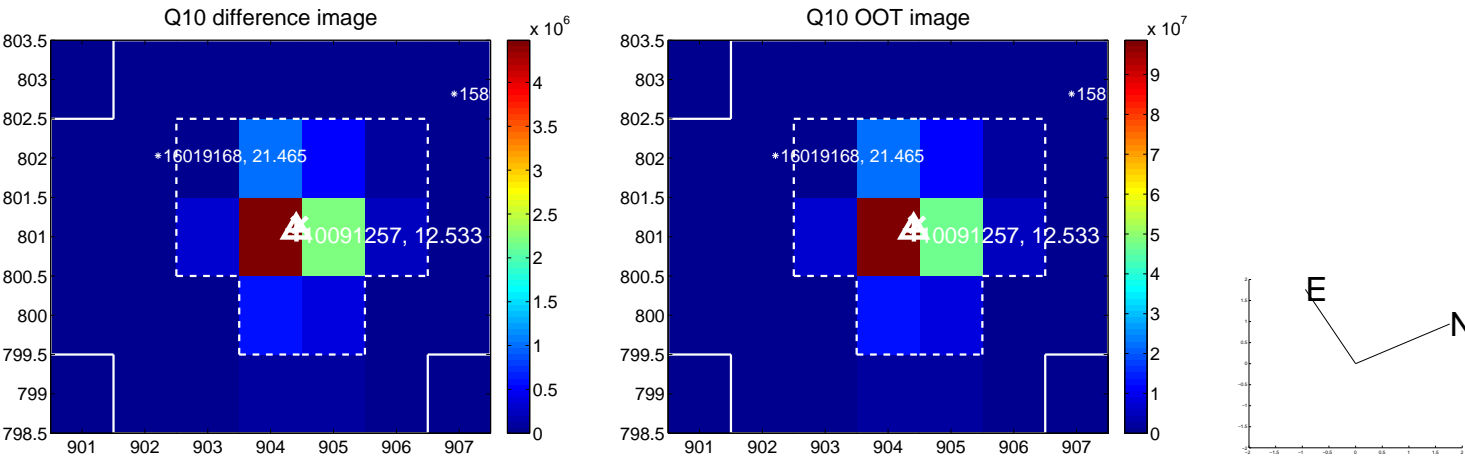
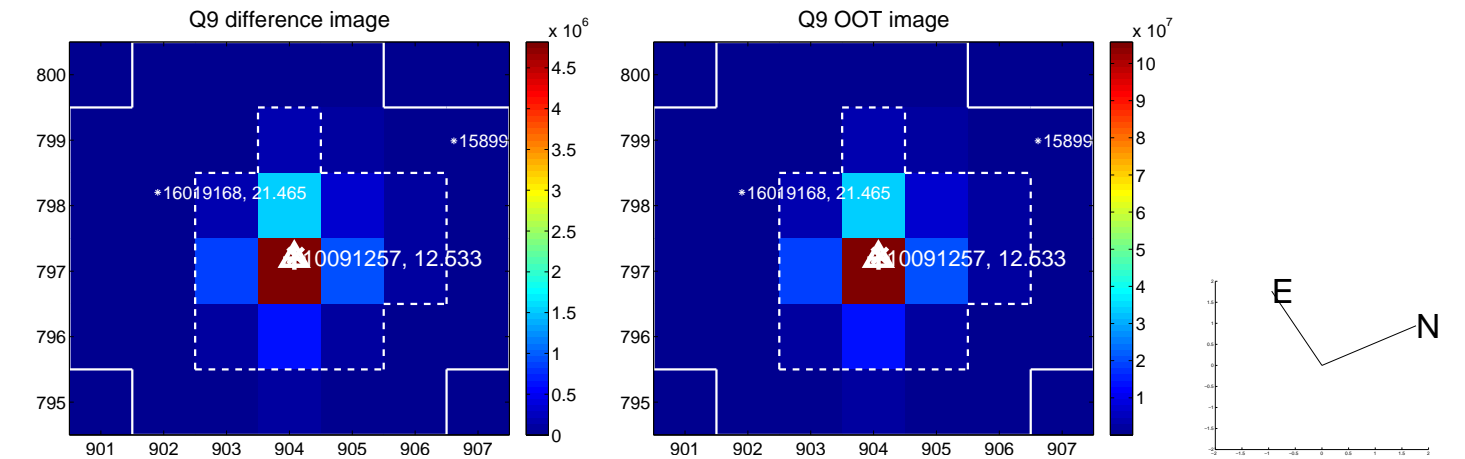




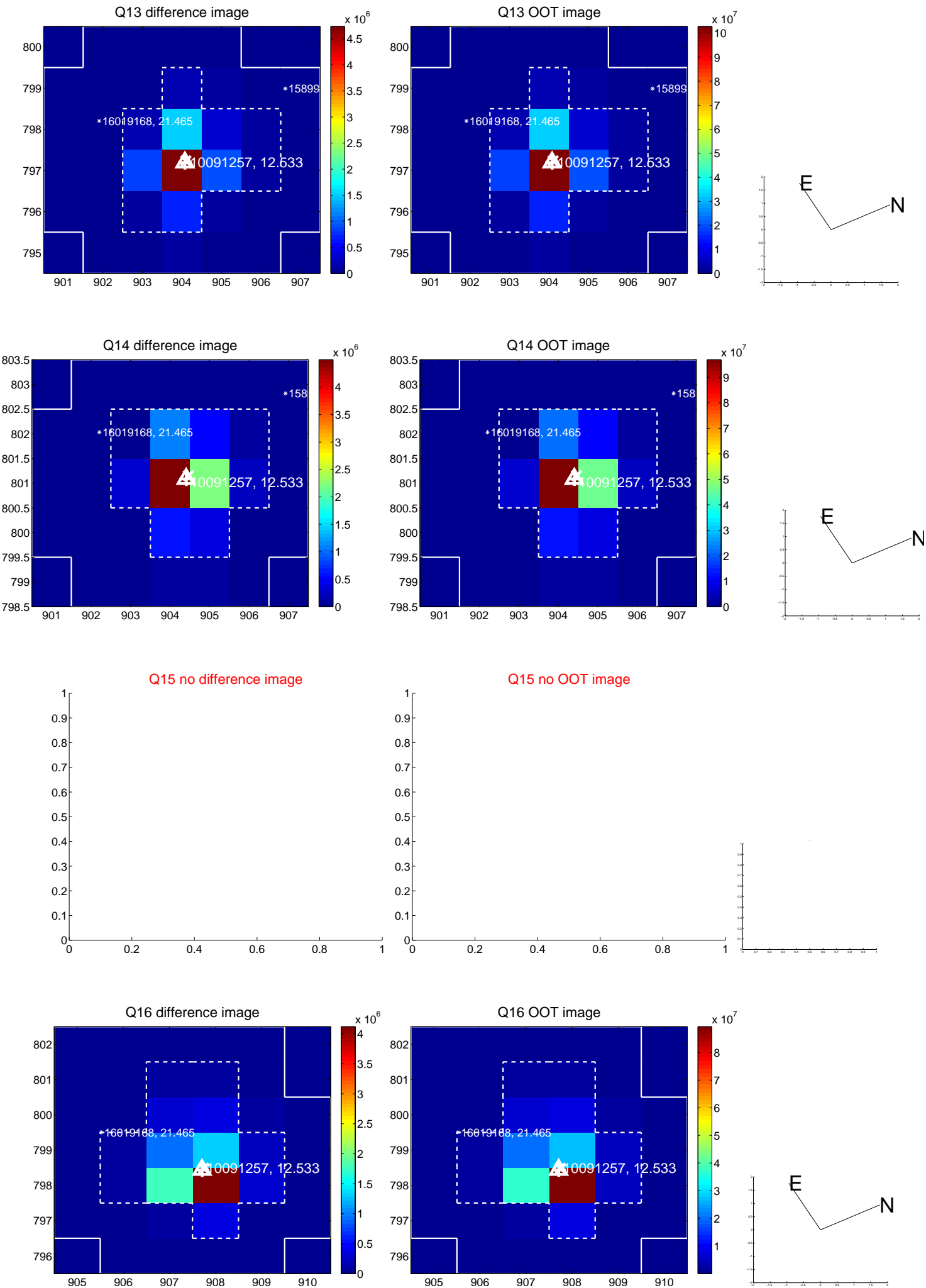
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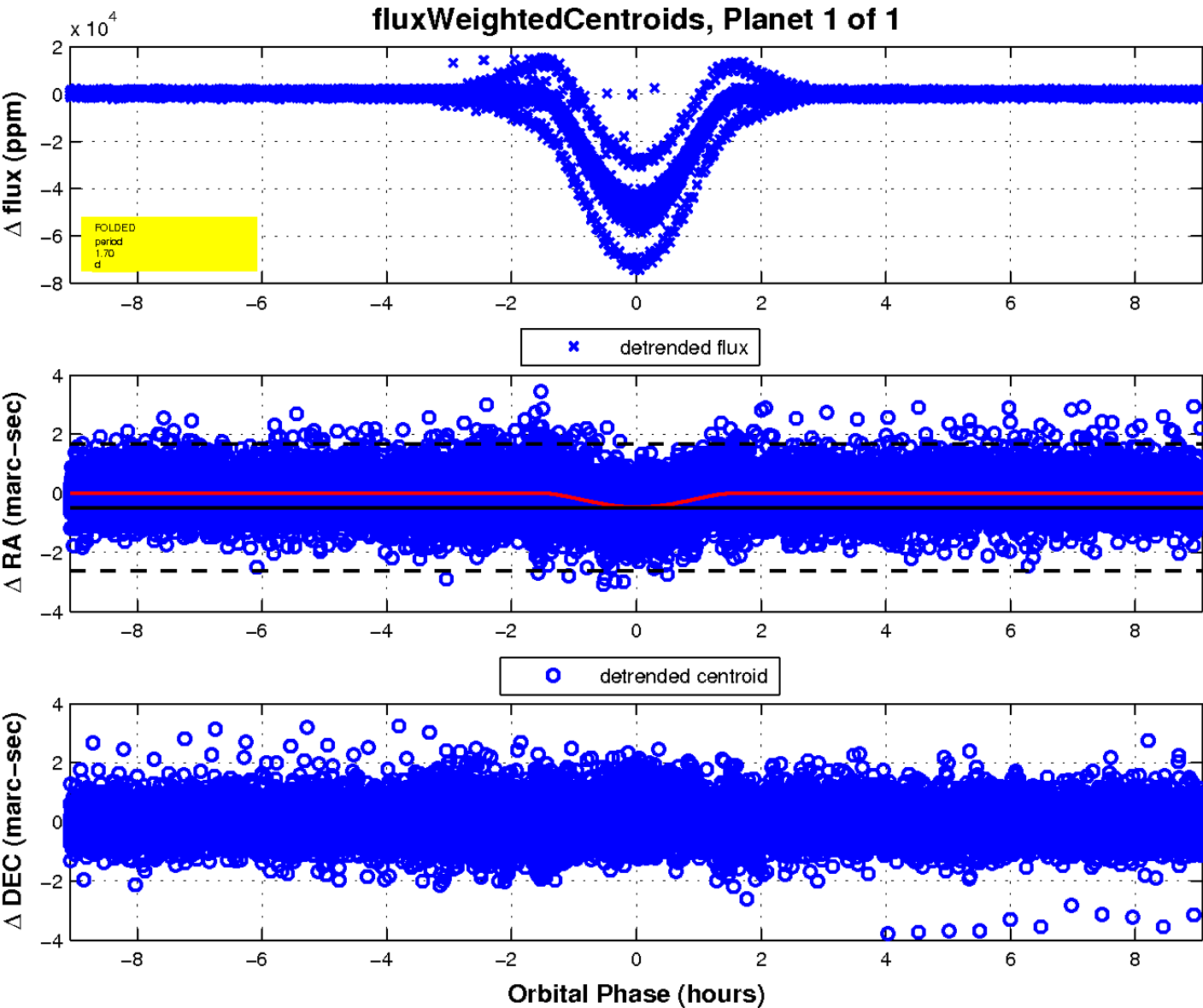
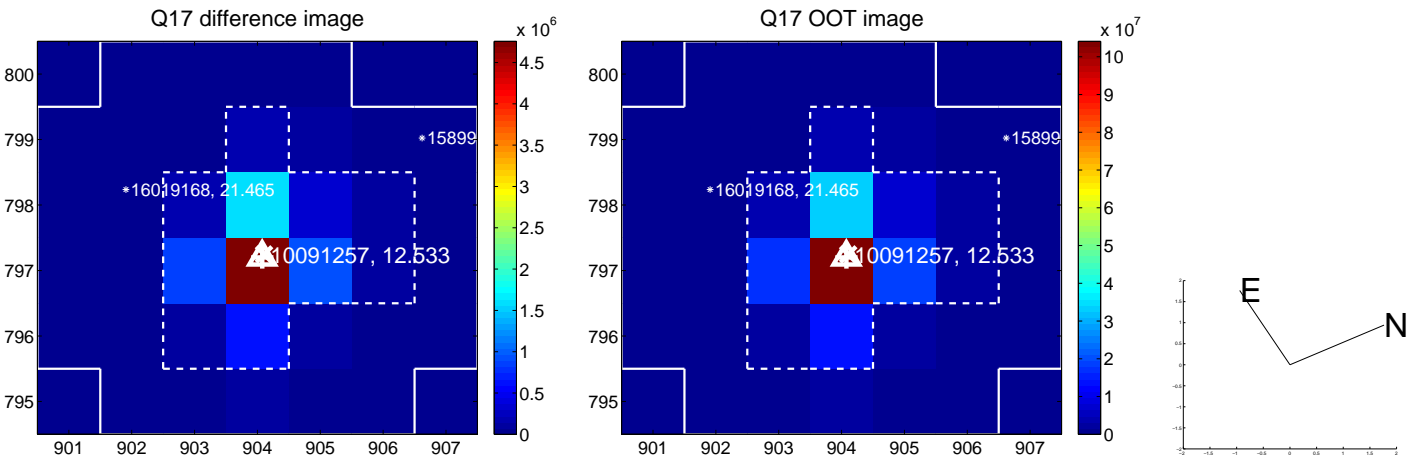
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UKIRT Image

