

# KIC 007950644

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007950644-01	OBS	0192.01	10.290993	137.022101	9674.9	4.308	1185.7	1184.1	1.37	5803	13.50	233.35

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007950644-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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

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

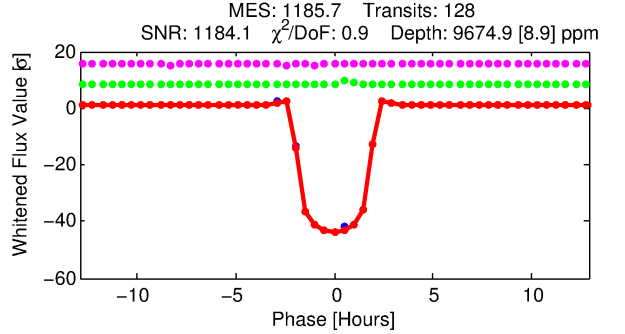
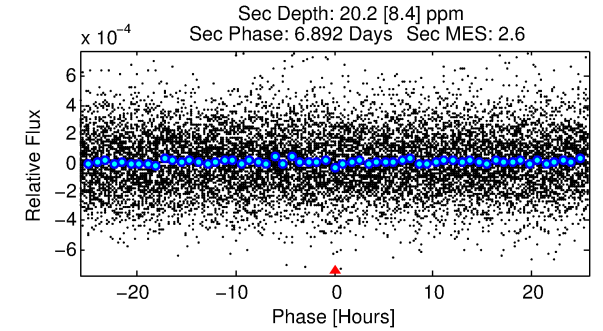
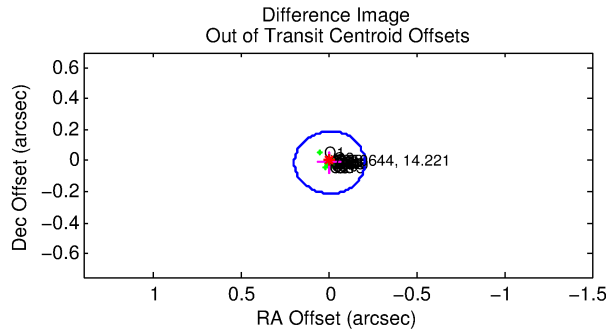
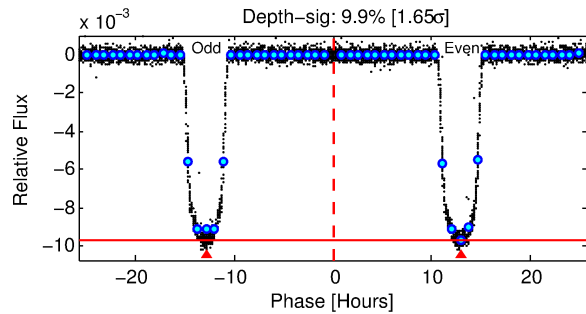
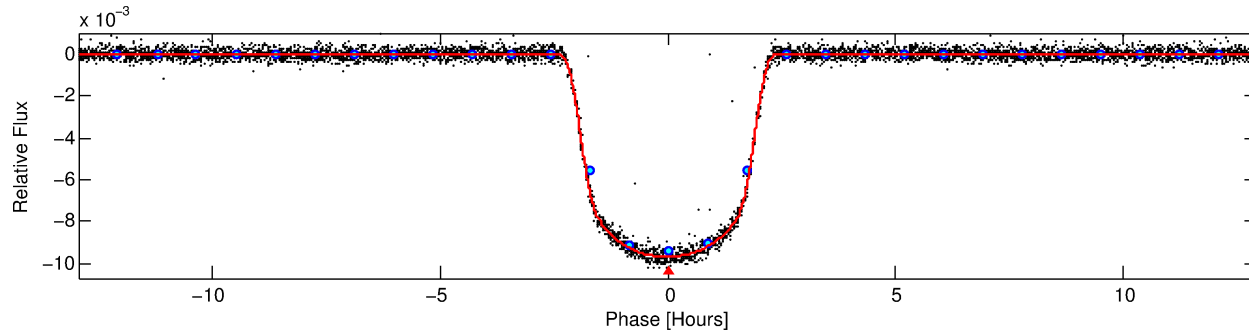
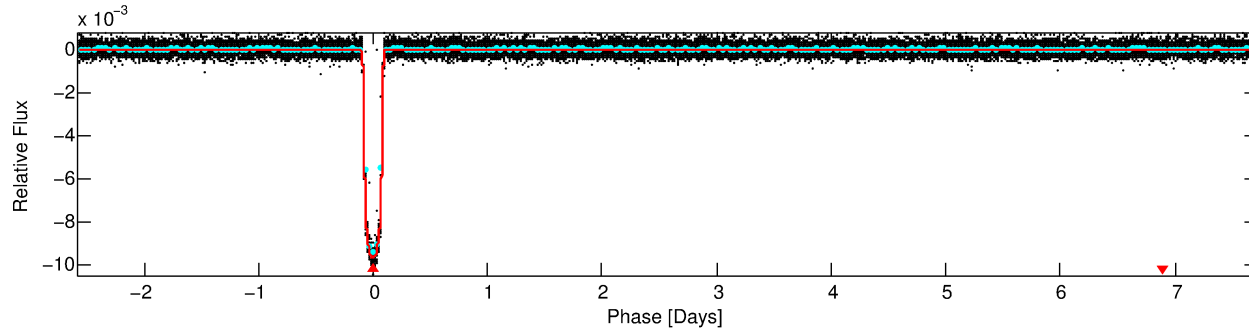
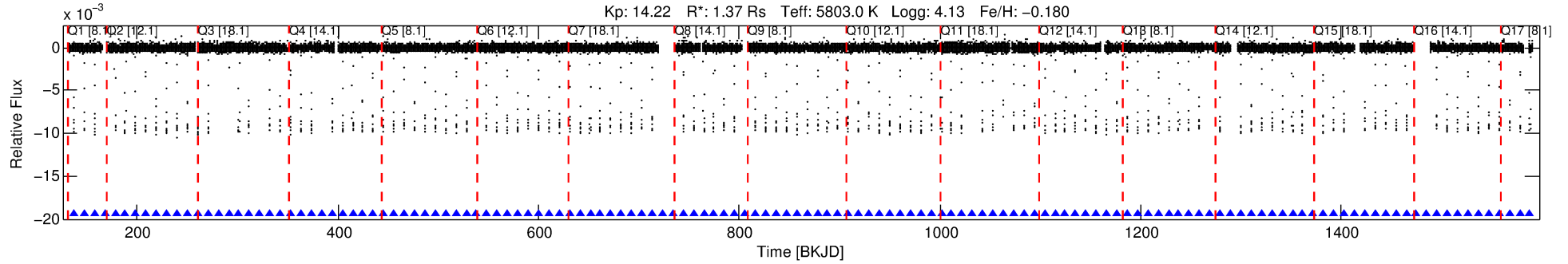
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007950644-01

No Significant Match Found

# DV One-Page Summary

KIC: 7950644 Candidate: 1 of 1 Period: 10.291 d  
KOI: K00192.01 Name: Kepler-427b Corr: 0.998



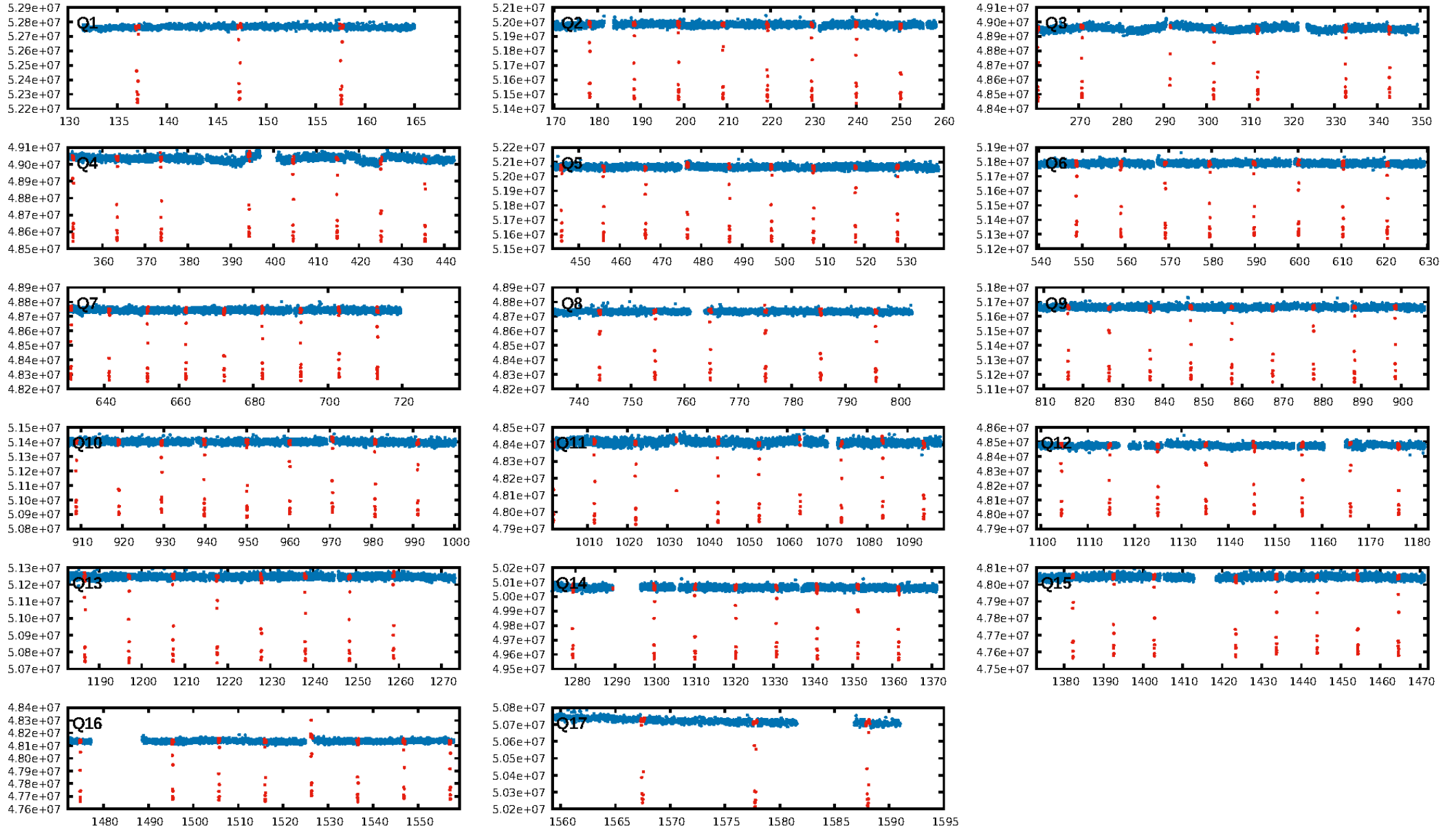
## DV Fit Results:

Period = 10.29099 [0.00000] d  
Epoch = 137.0221 [0.0001] BKJD  
Rp/R\* = 0.0901 [0.0003]  
a/R\* = 19.40 [0.32]  
b = 0.24 [0.06]  
Seff = 233.35 [80.99]  
Teq = 997 [86] K  
Rp = 13.50 [3.03] Re  
a = 0.0906 [0.0195] AU  
Ag = 0.50 [0.27] [-1.85 $\sigma$ ]  
Teffp = 1296 [135] K [1.86 $\sigma$ ]

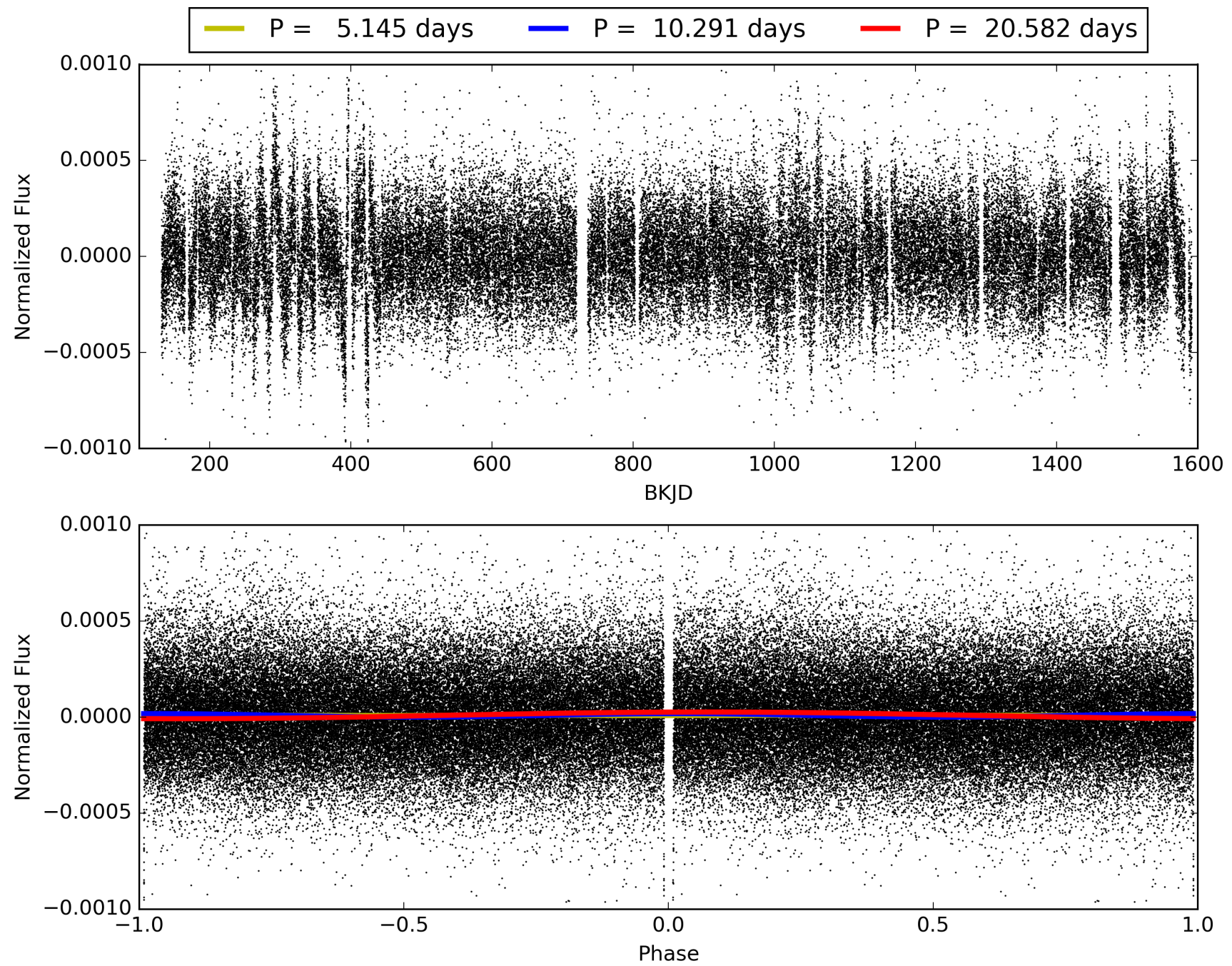
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [122/122]  
GhostDiagnostic-chr: 6.762  
Centroid-sig: 0.0%  
Centroid-so: 0.069 arcsec [7.05 $\sigma$ ]  
OotOffset-rm: 0.012 arcsec [0.18 $\sigma$ ]  
KicOffset-rm: 0.134 arcsec [1.98 $\sigma$ ]  
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]

# TCE 007950644-01, PDC Light Curves

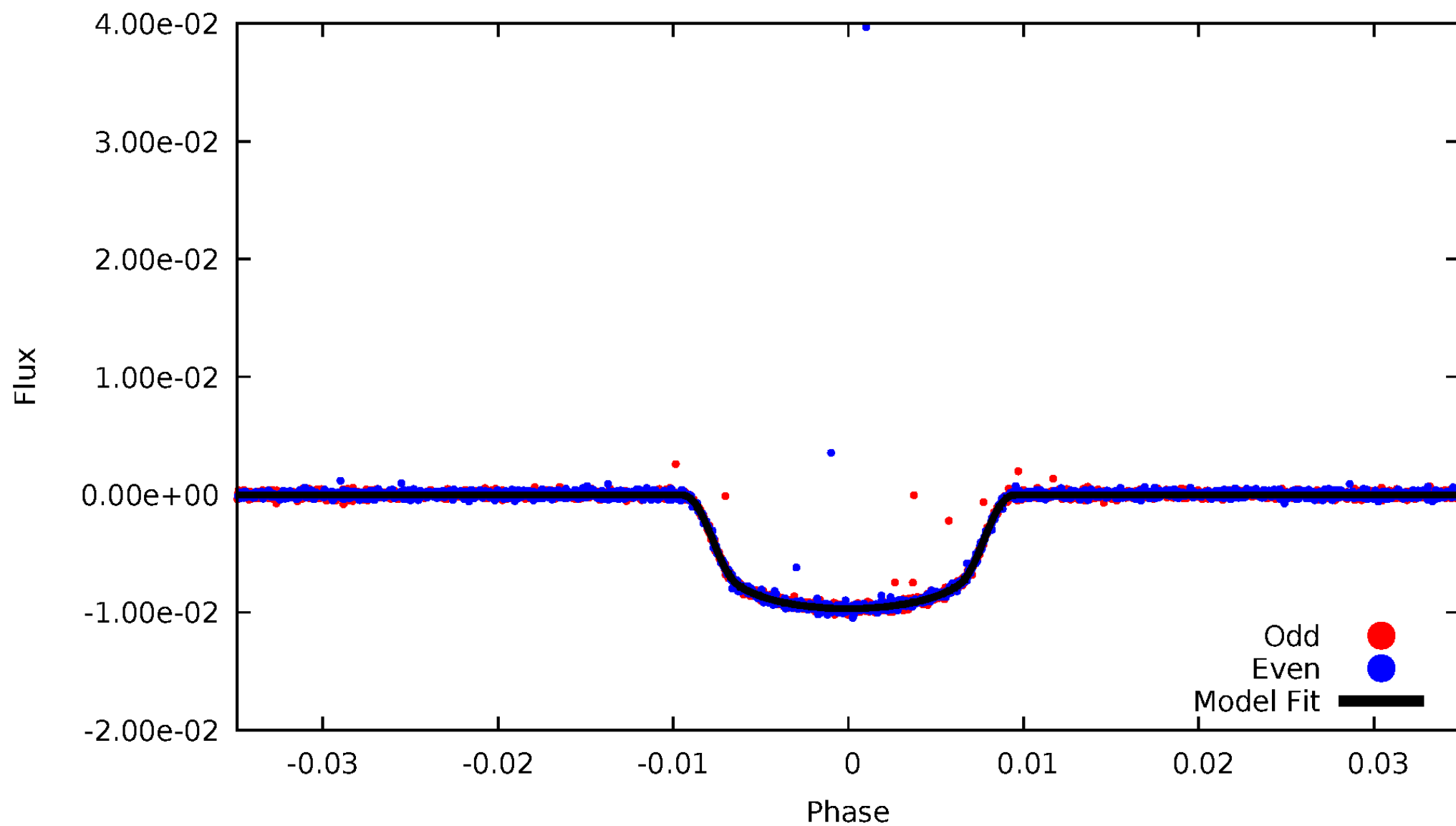


TCE 007950644-01



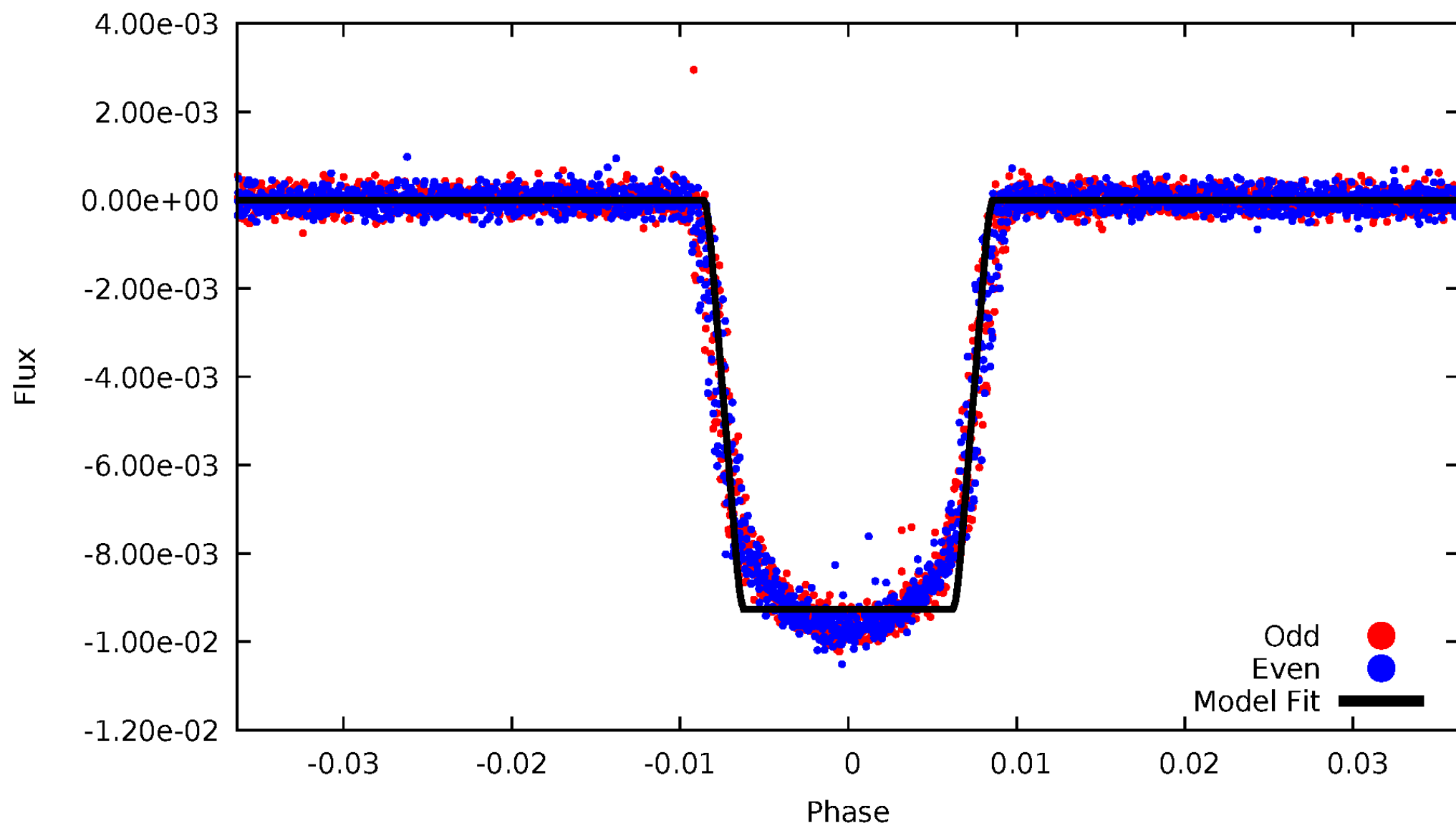
# DV Odd/Even

TCE 007950644-01



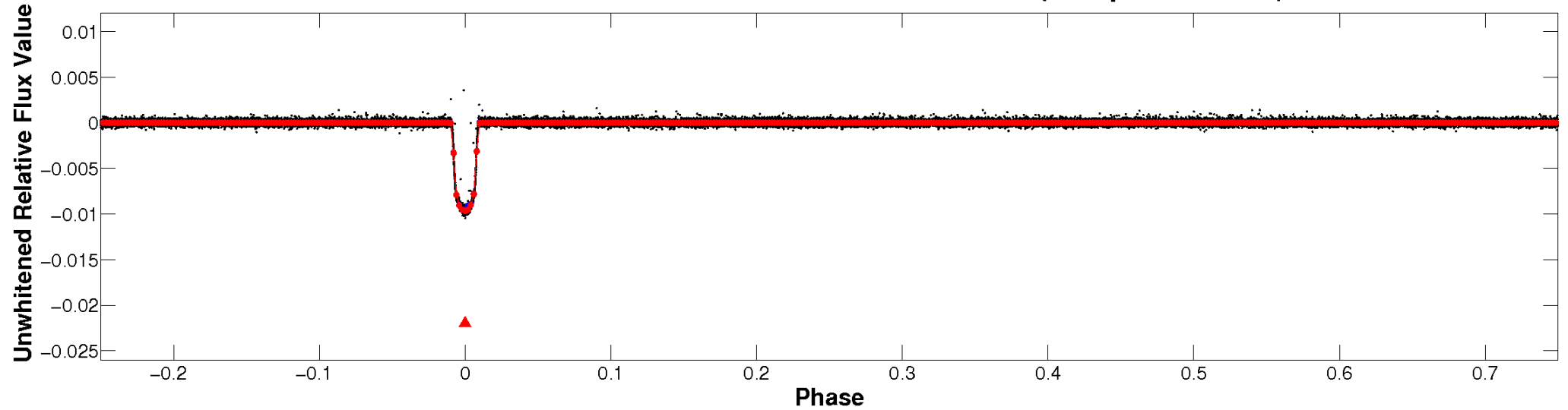
# ALT Odd/Even

TCE 007950644-01

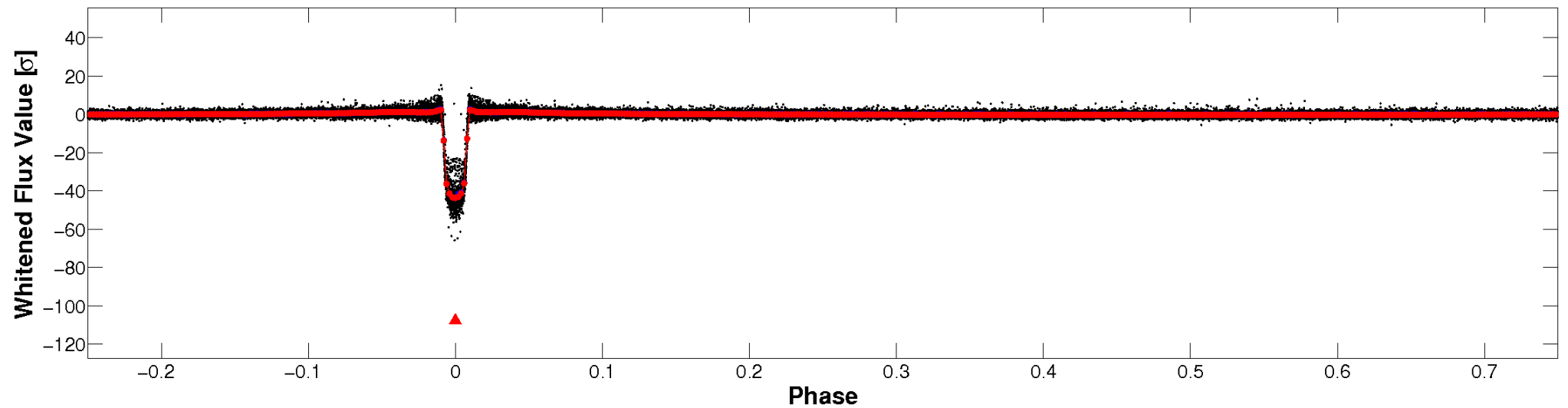


# Non-Whitened Vs. Whitened Light Curve

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

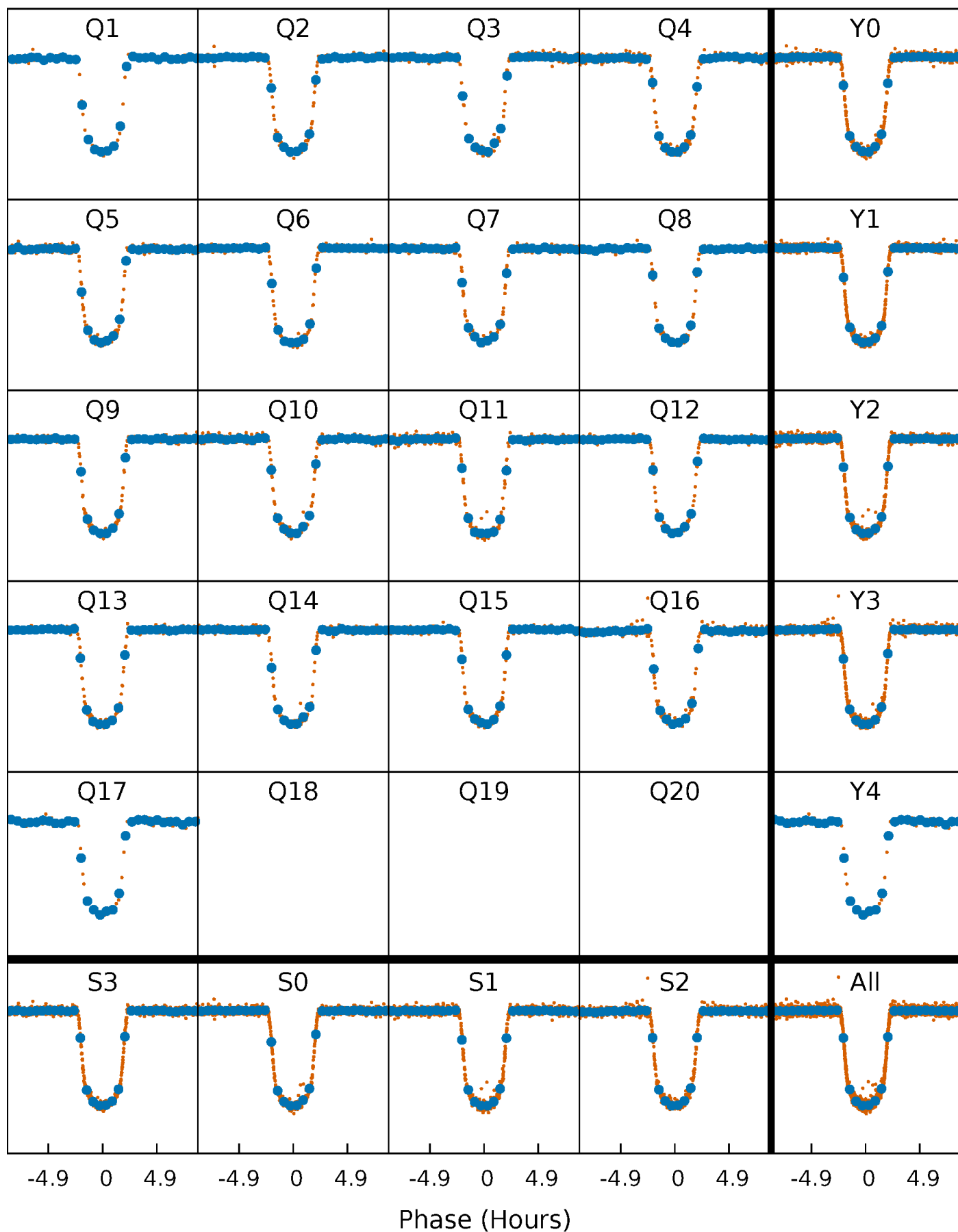


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

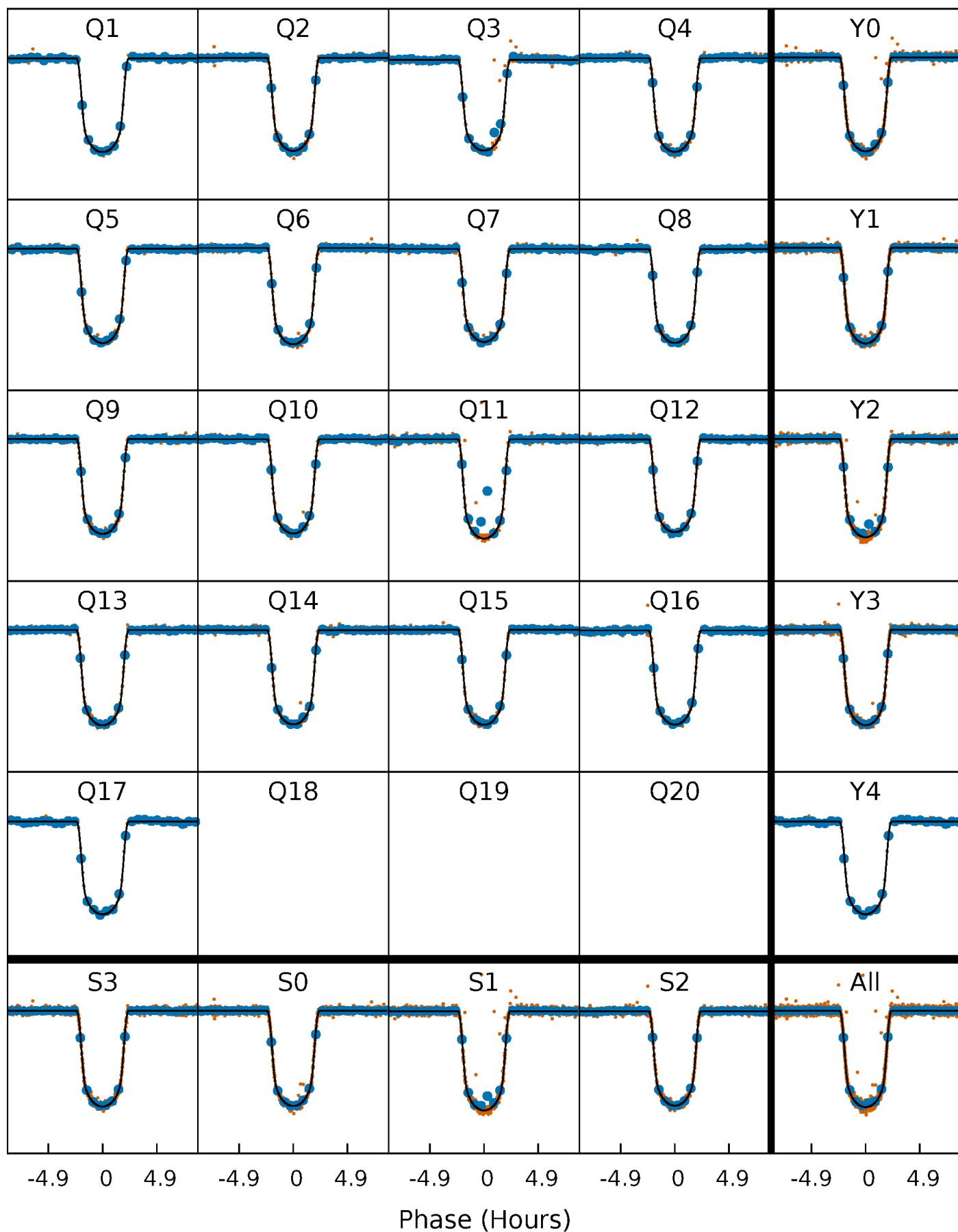
TCE 007950644-01 P= 10.290993 Days  $T_0=137.022101$  (BKJD)





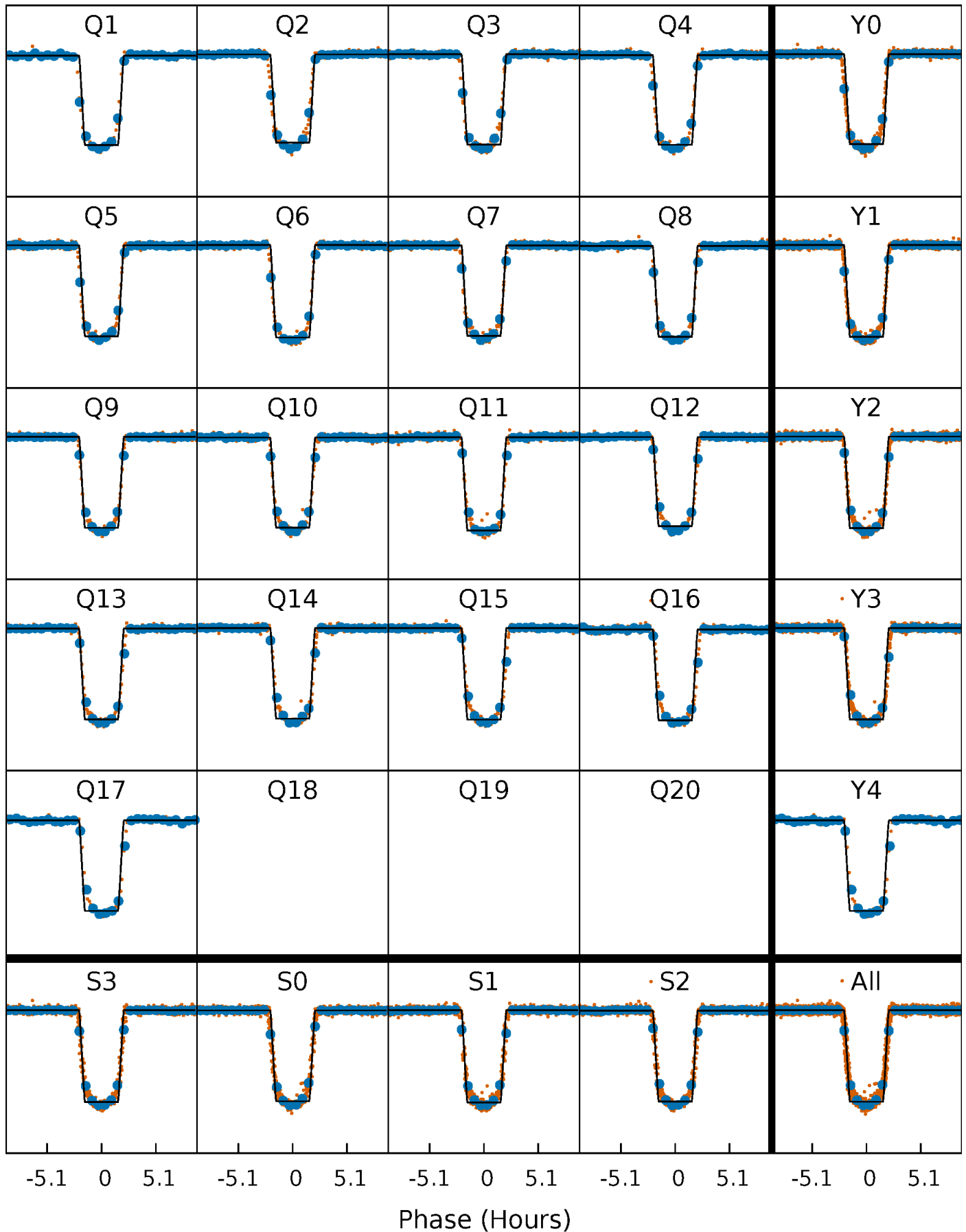
# DV Quarter-Phased Transit Curves

TCE 007950644-01 P= 10.290993 Days  $T_0=137.022101$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

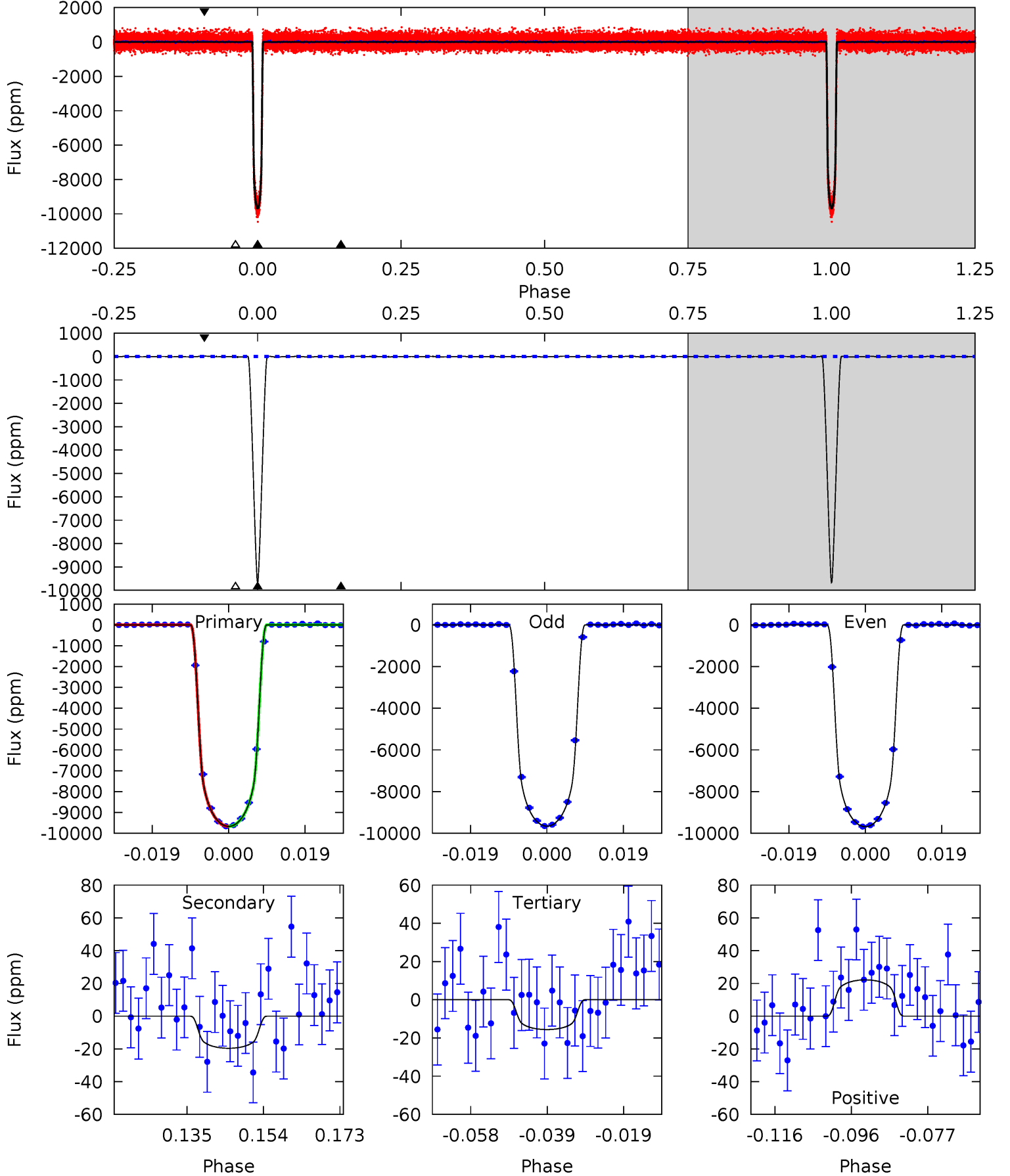
TCE 007950644-01 P= 10.290887 Days  $T_0=137.029558$  (BKJD)



# DV Model-Shift Uniqueness Test

007950644-01, P = 10.290993 Days, E = 126.731108 Days

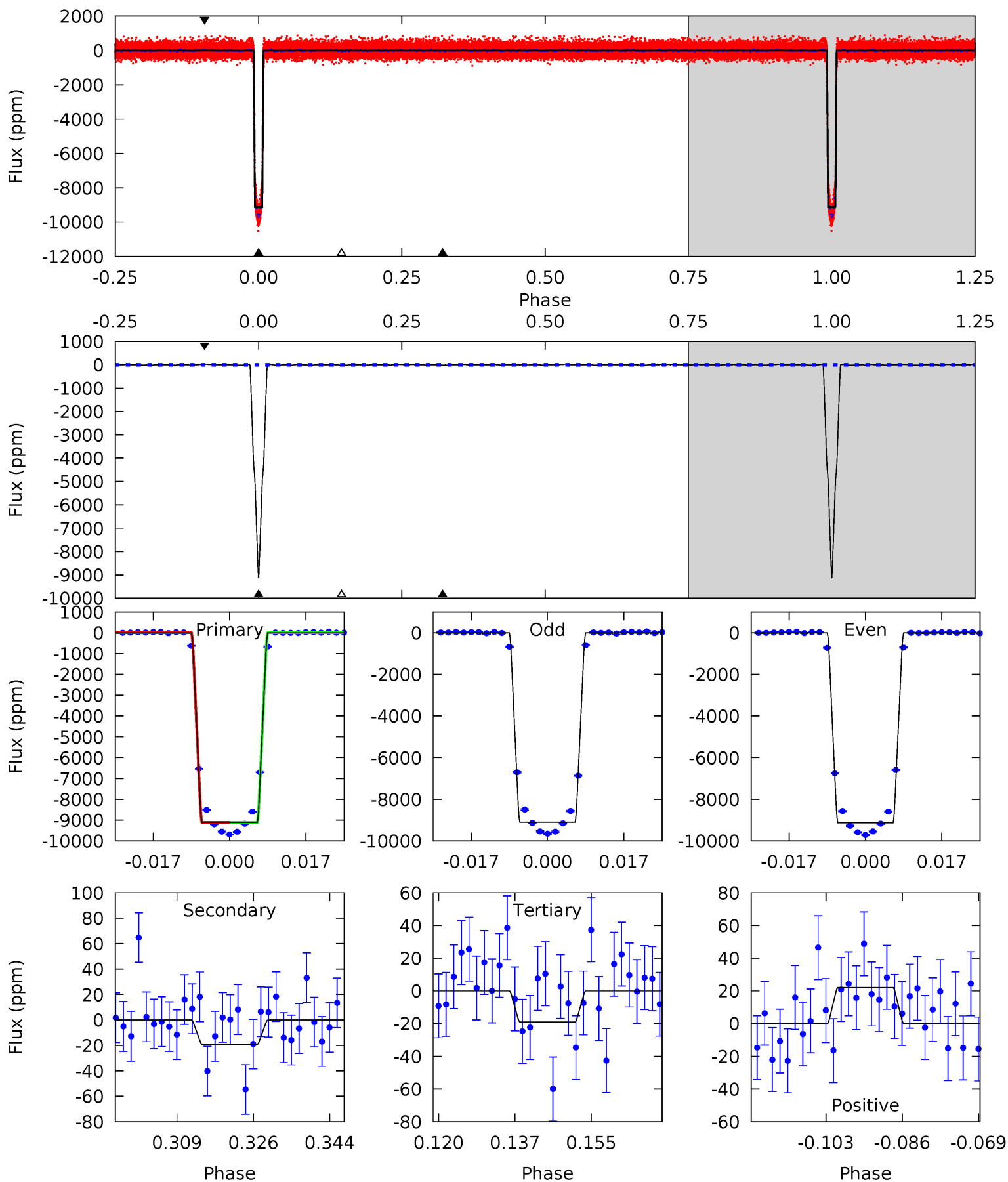
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1643	3.34	2.65	3.76	4.90	2.34	1.28	1641	1640	0.68	-0.43	2.15	0.97	0.00	0.06



# Alt Model-Shift Uniqueness Test

007950644-01, P = 10.290887 Days, E = 126.738671 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
1327	2.78	2.78	3.21	4.92	2.38	1.09	1324	1324	0.01	-0.43	1.91	1.00	0.00	0.14



### Stellar Parameters For KIC 007950644

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5803^{+78}_{-78}$	$4.134^{+0.201}_{-0.093}$	$-0.180^{+0.150}_{-0.150}$	$1.373^{+0.206}_{-0.308}$	$0.937^{+0.073}_{-0.065}$	$0.510^{+0.526}_{-0.163}$
	+1%/-1%	+5%/-2%	+83%/-83%	+15%/-22%	+8%/-7%	+103%/-32%
Source	SPE77	SPE77	SPE77	DSEP		

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

### Secondary Eclipse Parameters for KIC 007950644-01 / KOI 0192.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-20 \pm 6$	$13.42^{+1.15}_{-1.58}$	$1382^{+60}_{-79}$	$2031^{+119}_{-270}$	$0.508^{+0.200}_{-0.163}$
Alt.	$-19 \pm 7$	$14.37^{+1.20}_{-1.84}$	$1385^{+58}_{-88}$	$1930^{+183}_{-3662}$	$0.426^{+0.217}_{-0.162}$

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

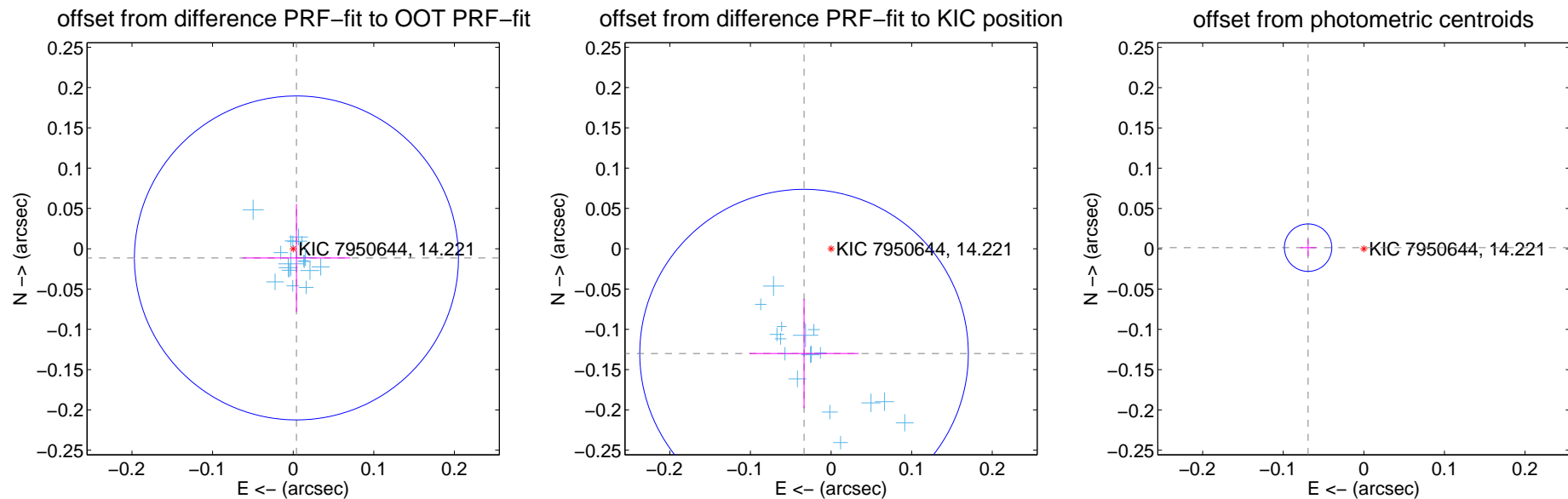
## DV Centroid Data

Supplemental centroid analysis for 007950644-01. Kepler magnitude: 14.22. Transit SNR 1184.08

There are 17 quarters with good PRF difference image offsets

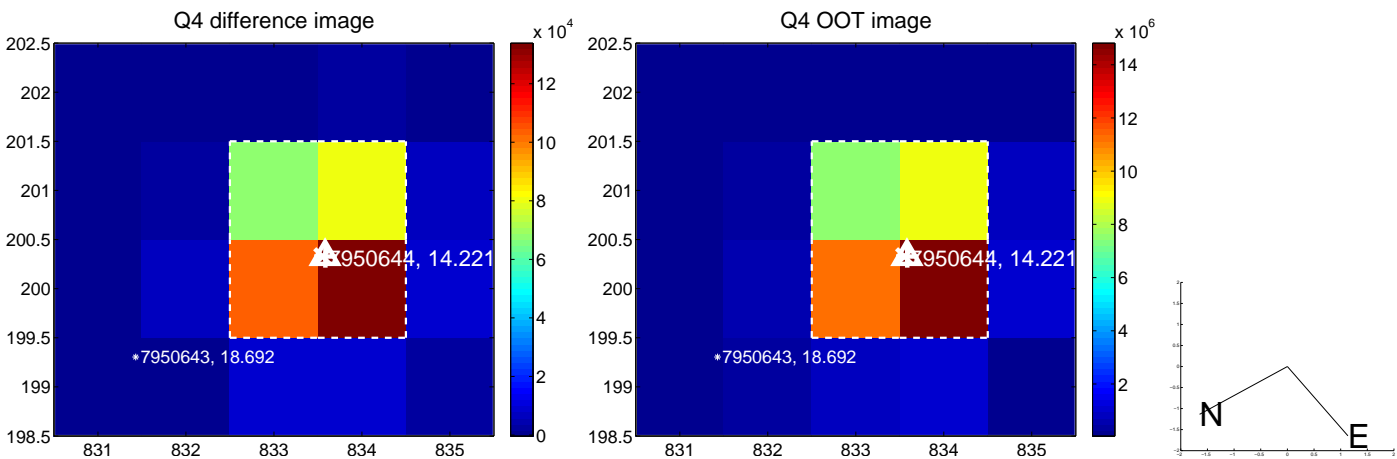
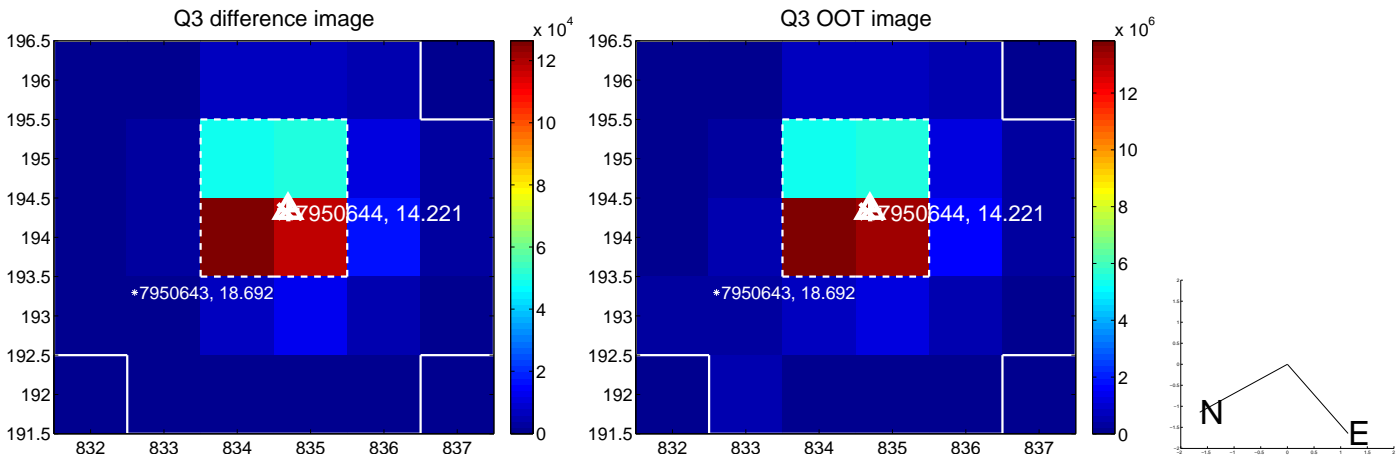
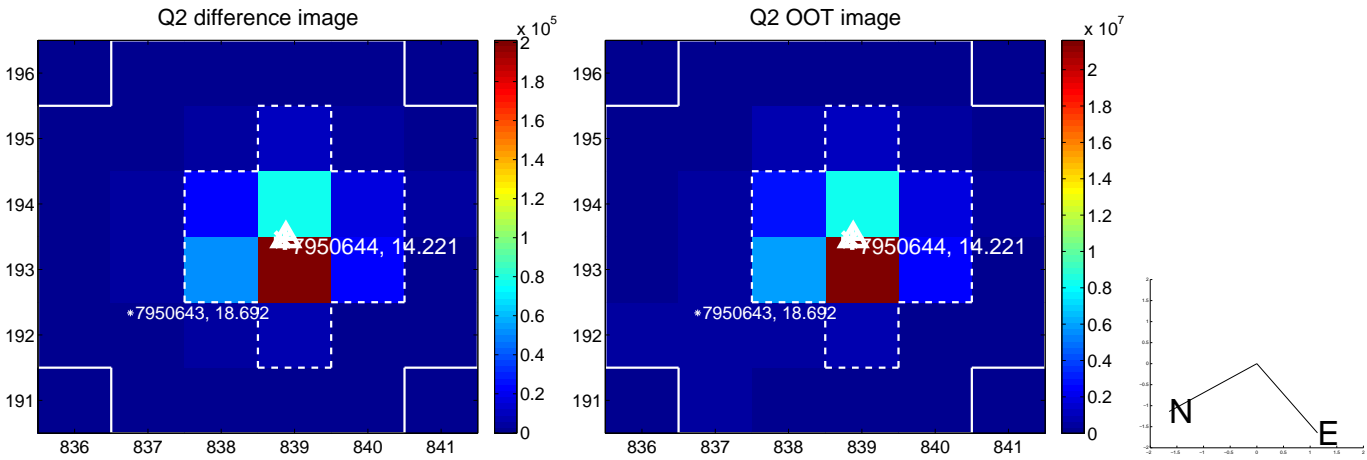
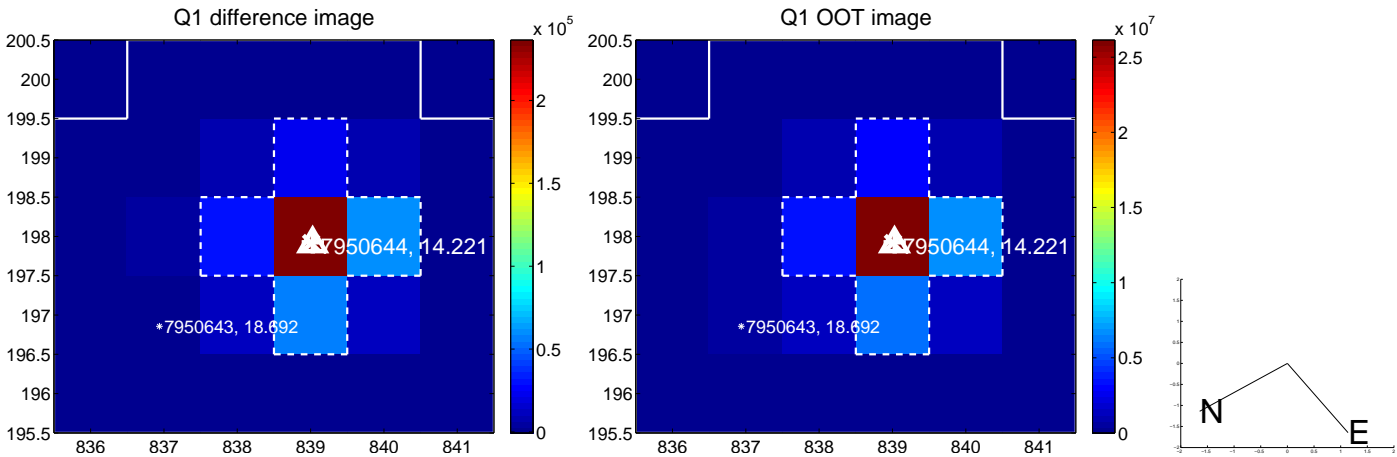
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.012 \pm 0.067$	0.18	$-0.004 \pm 0.067$	$-0.011 \pm 0.067$
PRF-fit source offset from KIC position	$0.134 \pm 0.068$	1.98	$0.033 \pm 0.068$	$-0.130 \pm 0.068$
photometric centroid source offset	$0.07 \pm 0.01$	7.05	$0.07 \pm 0.01$	$0.00 \pm 0.01$

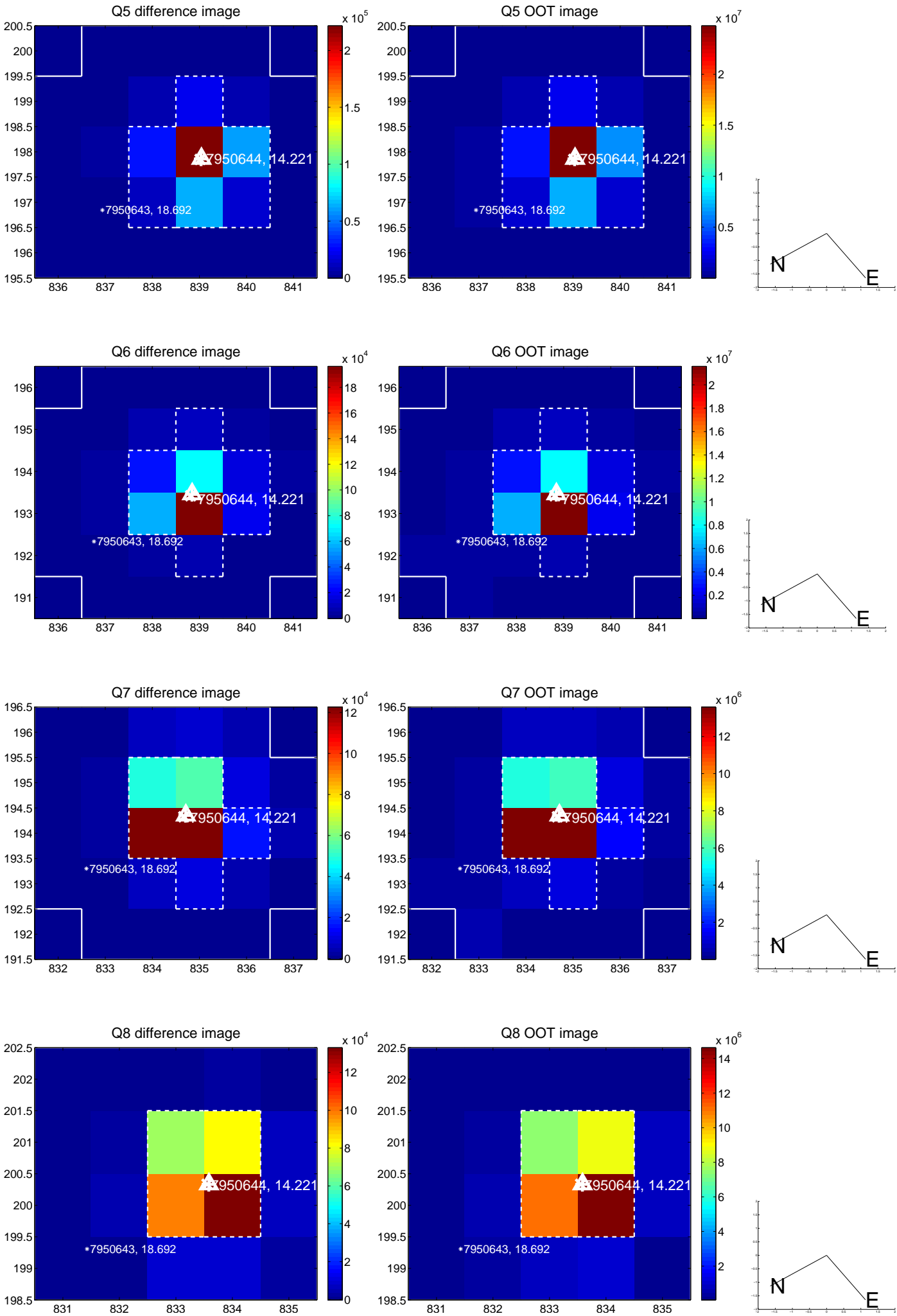


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

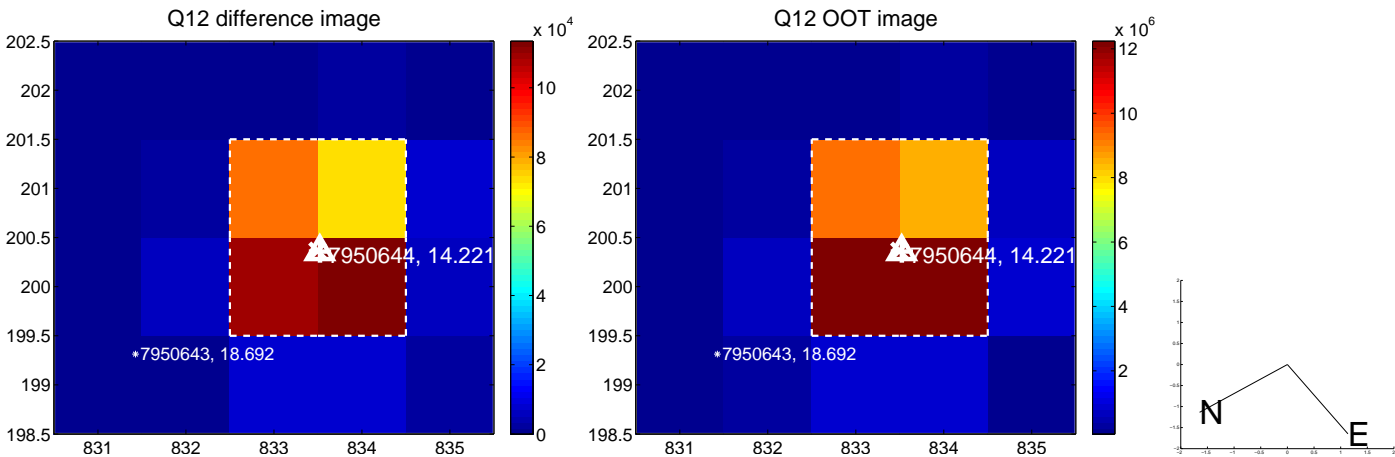
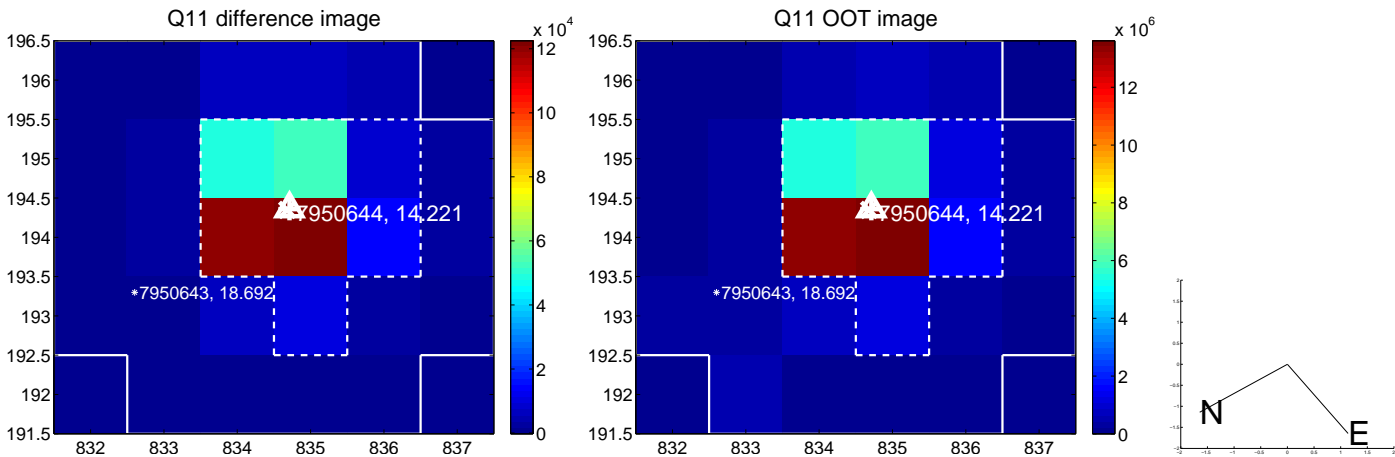
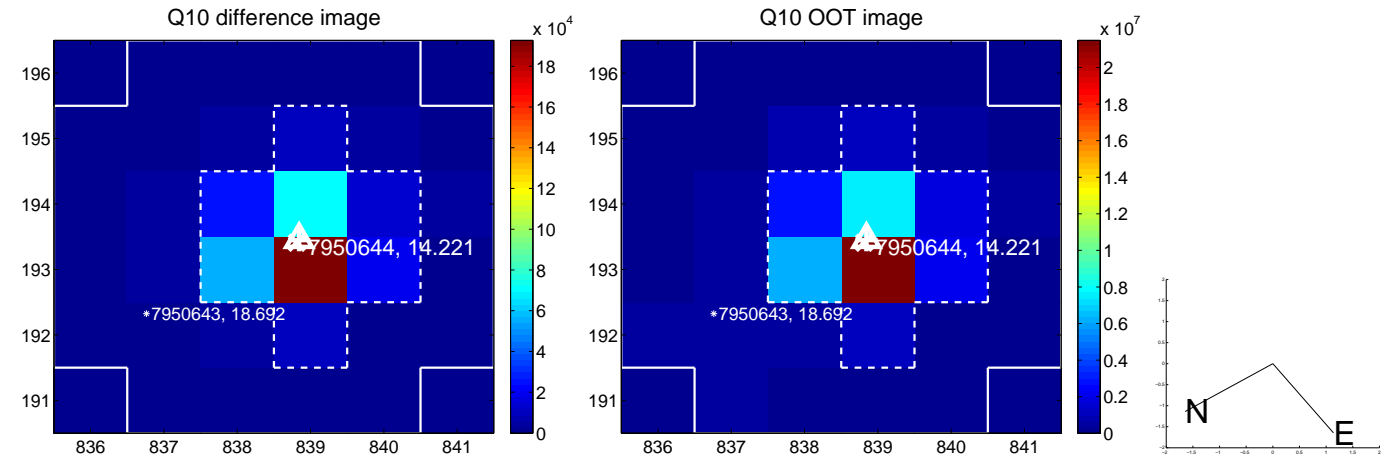
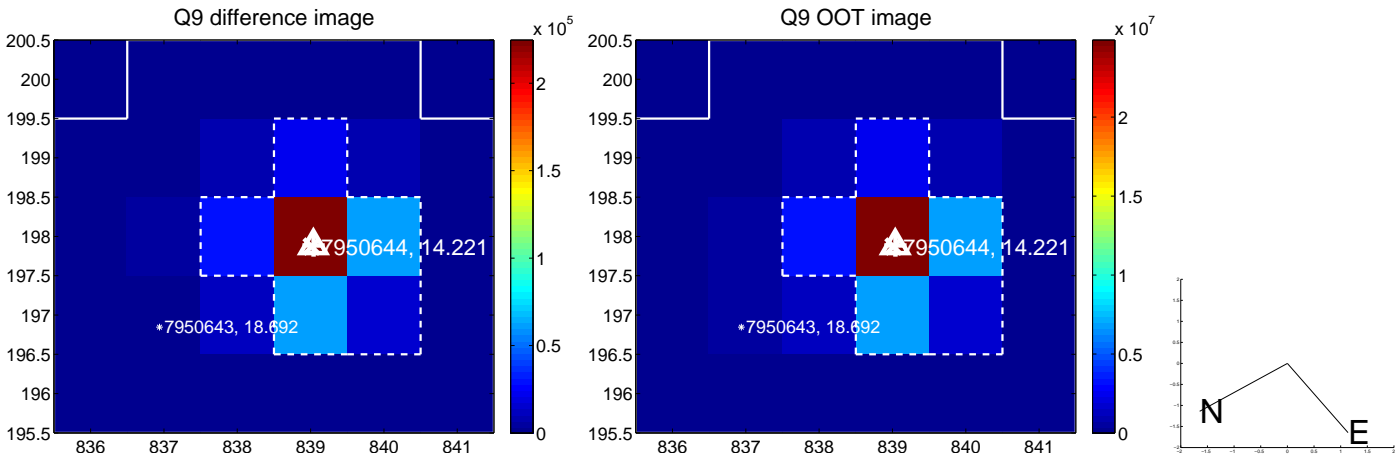


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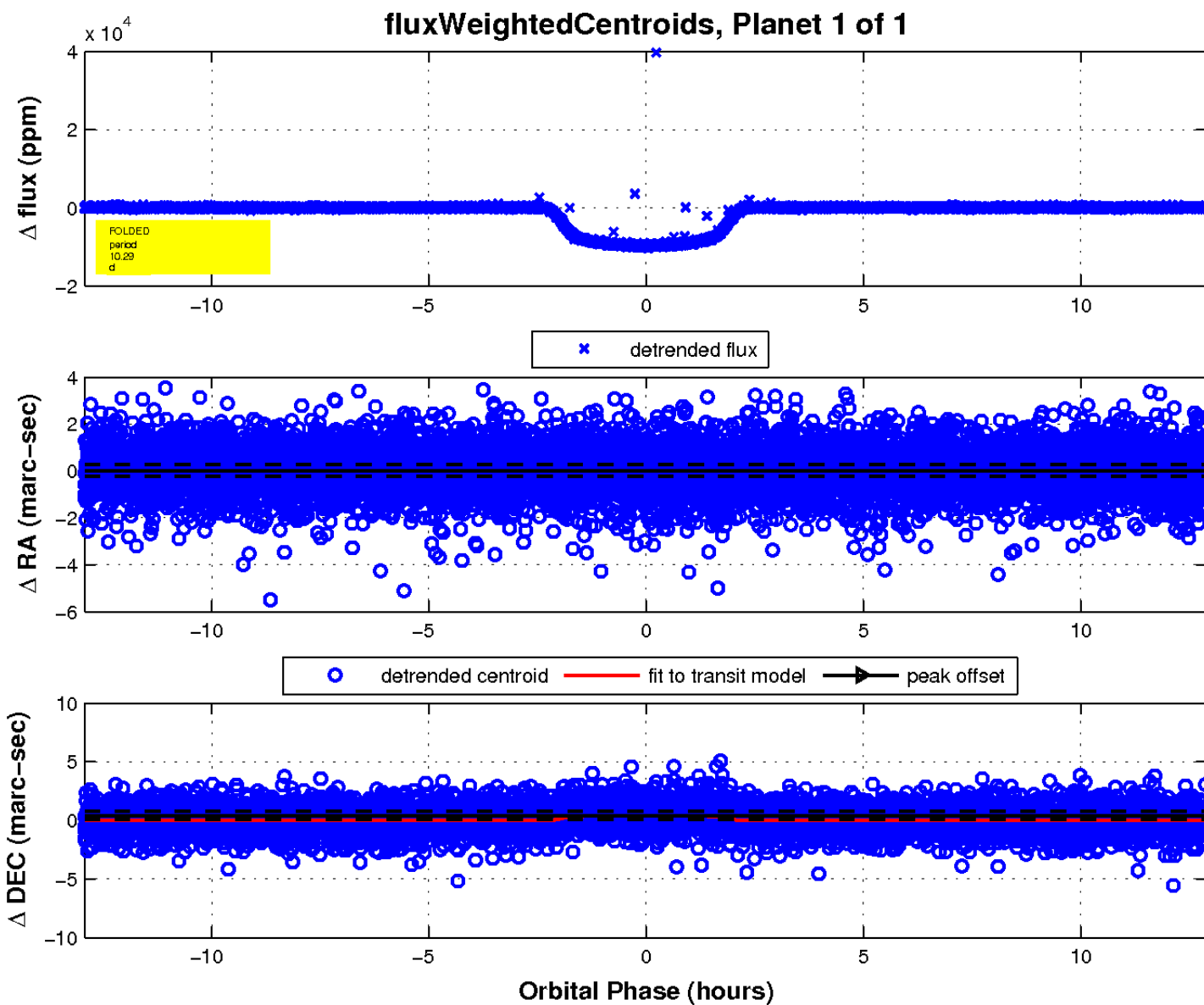
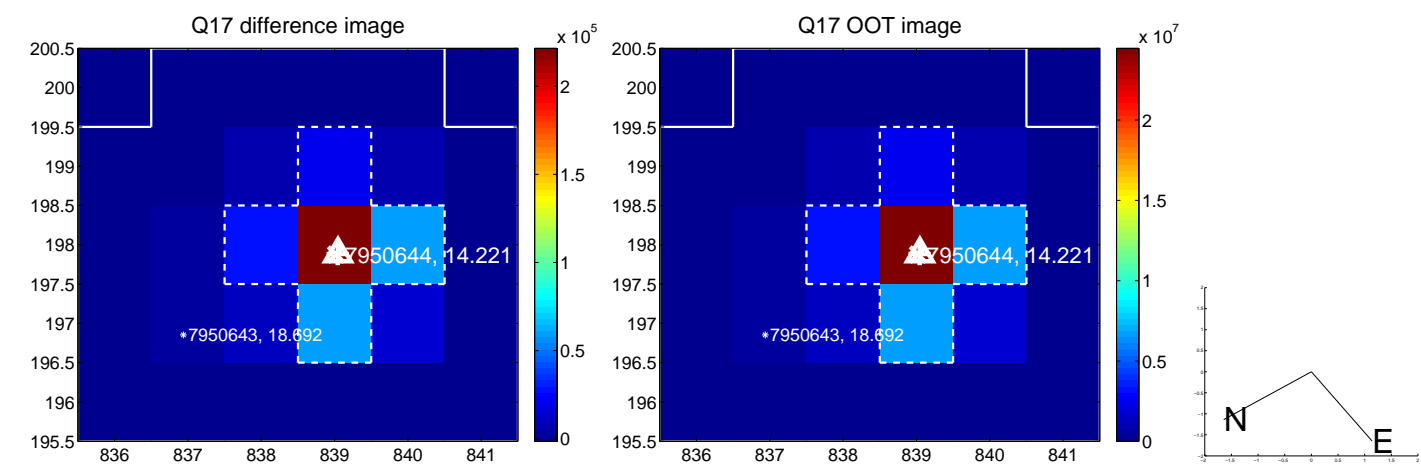


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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination

