

# KIC 010790812

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010790812-01	OBS	No	1.062542	131.610105	178.5	9.182	11.5	5.3	0.56	3875	0.72	221.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010790812-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_KIC_POS

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

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

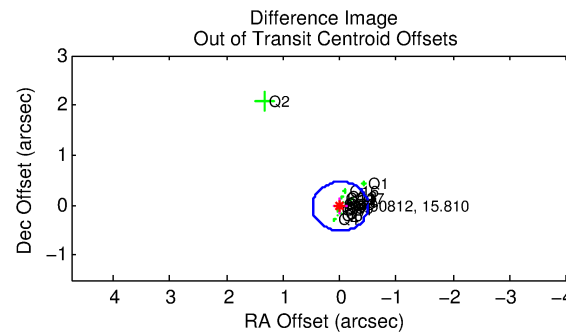
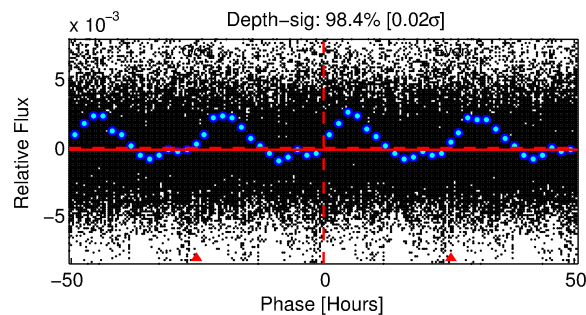
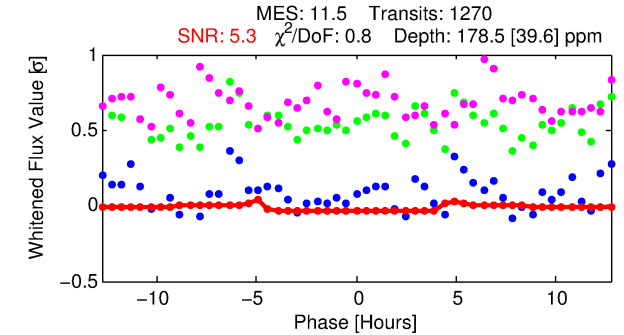
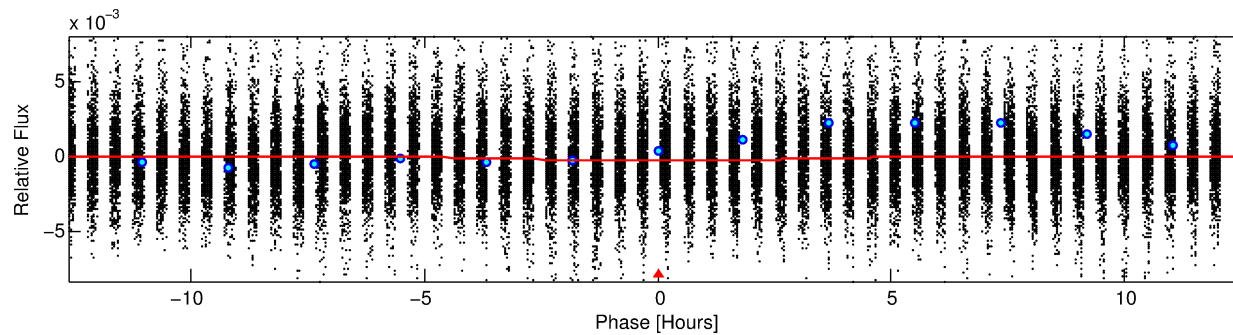
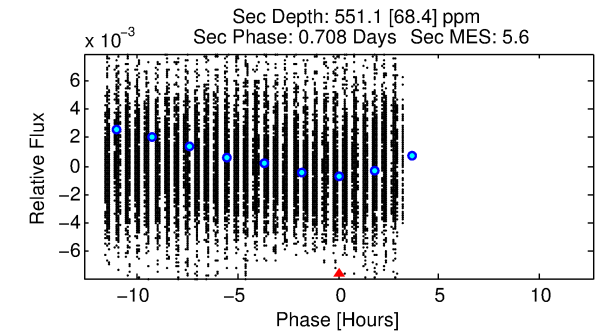
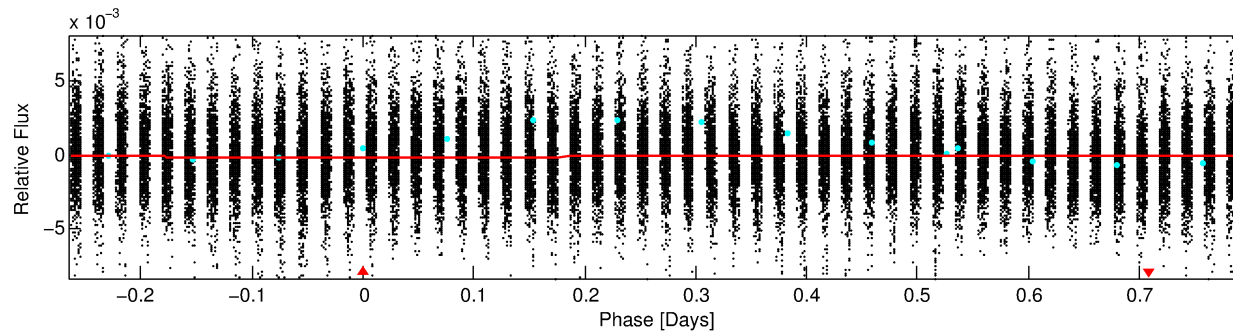
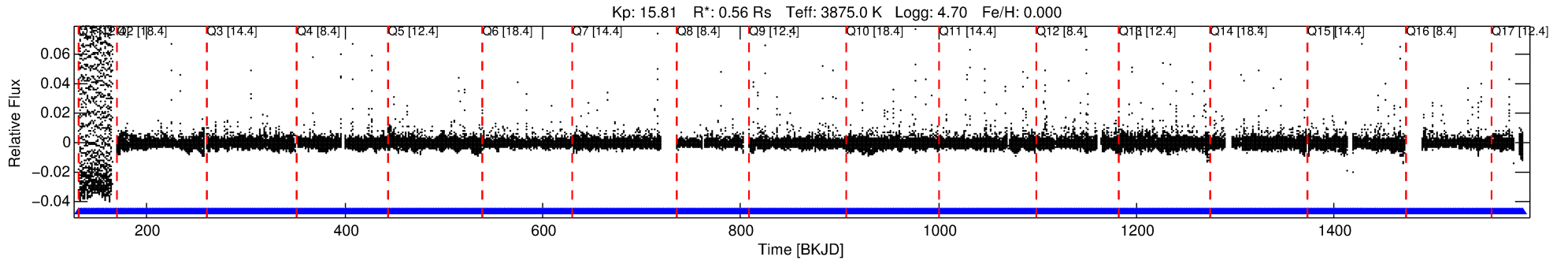
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010790812-01

No Significant Match Found

# DV One-Page Summary

KIC: 10790812 Candidate: 1 of 1 Period: 1.063 d



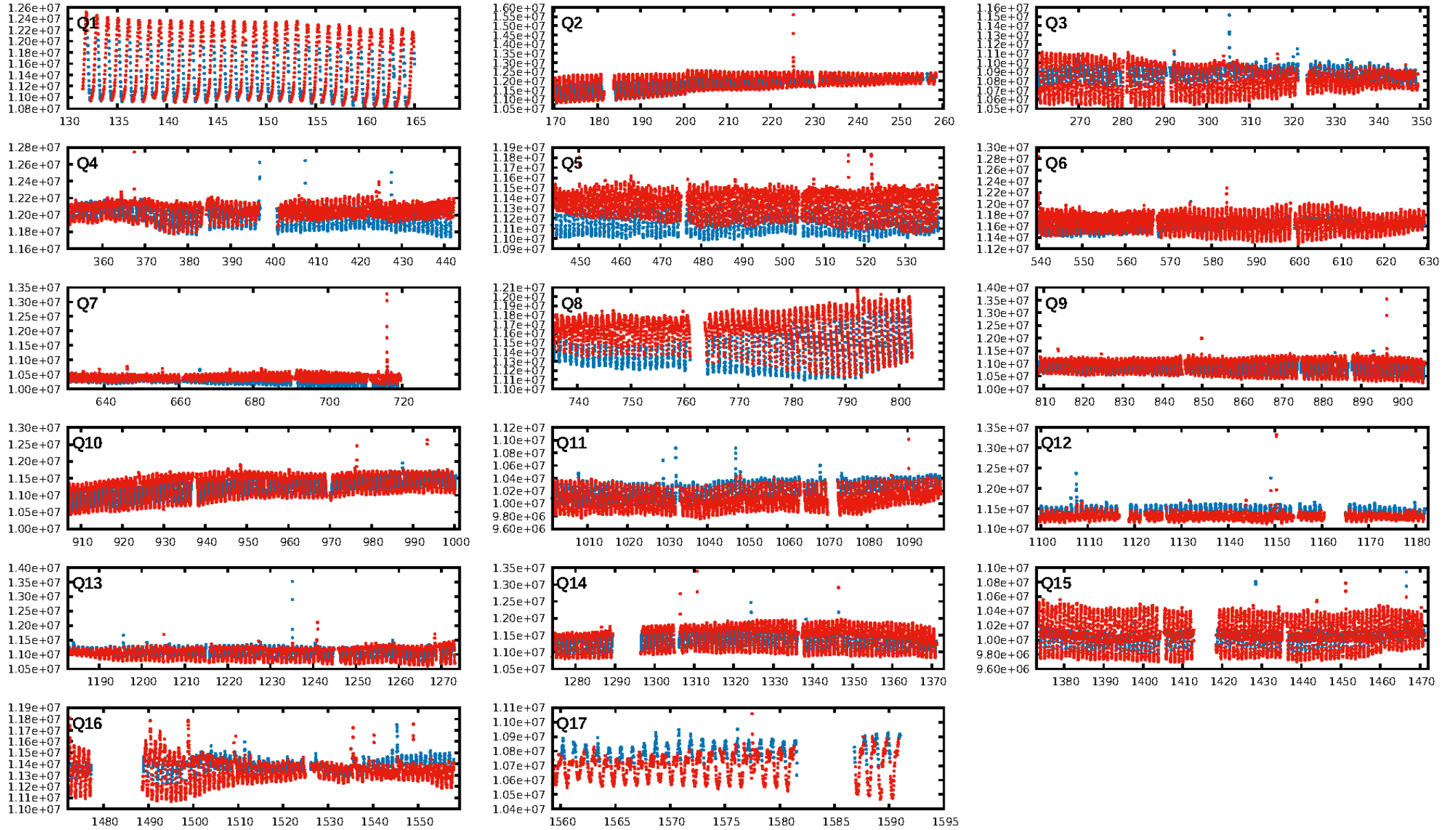
## DV Fit Results:

Period = 1.06254 [0.00002] d  
Epoch = 131.6101 [0.0053] BKJD  
Rp/R\* = 0.0120 [0.0100]  
a/R\* = 1.12 [0.72]  
b = 0.00 [685.28]  
Seff = 221.33 [16.80]  
Teq = 984 [19] K  
Rp = 0.72 [0.60] Re  
a = 0.0168 [0.0007] AU  
Ag = 162.26 [271.19] [0.59σ]  
Teffp = 5427 [2268] K [1.96σ]

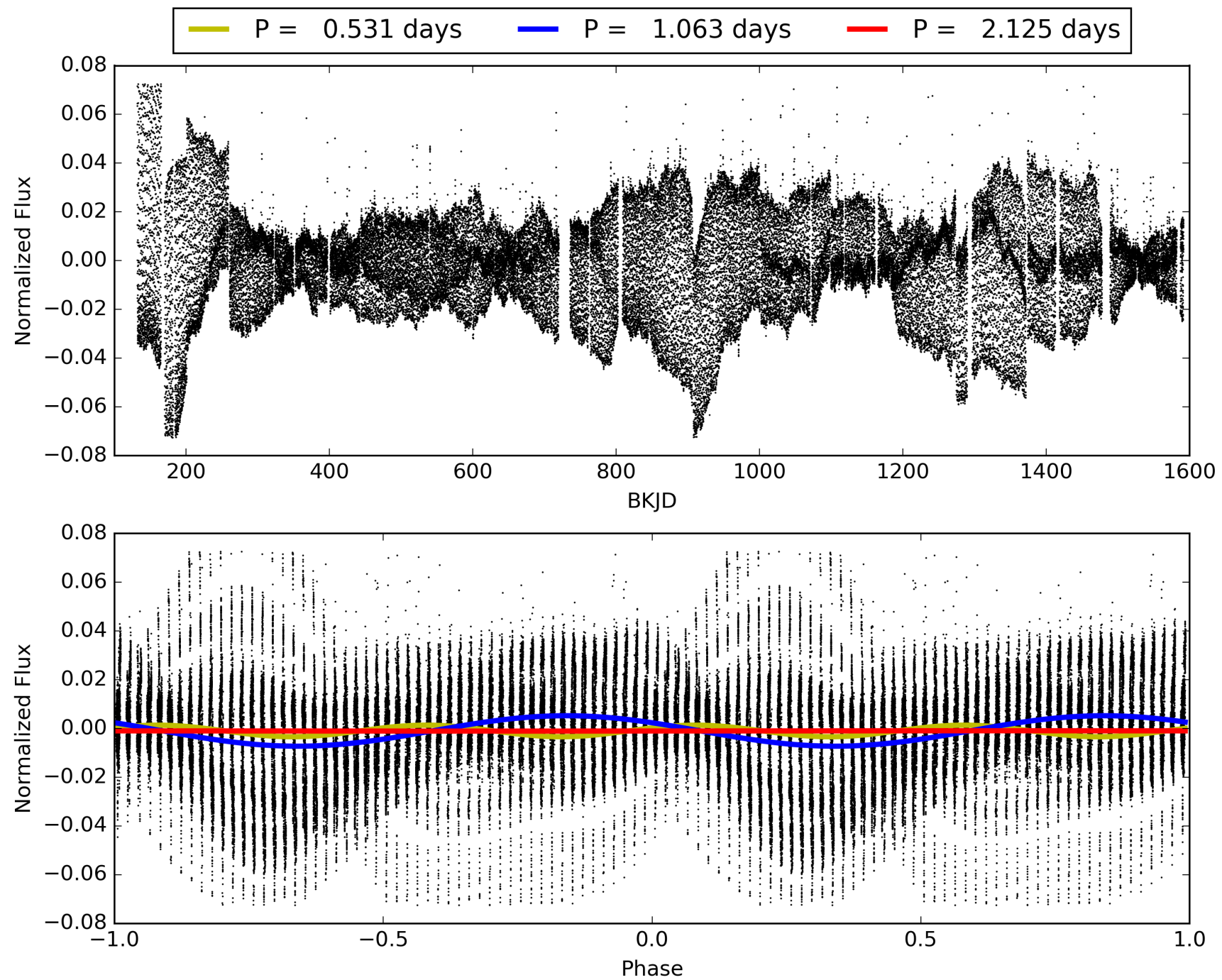
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1213/1213]  
**GhostDiagnostic-chr: -6.304**  
Centroid-sig: 19.4%  
Centroid-so: 0.811 arcsec [1.57σ]  
OotOffset-rm: 0.027 arcsec [0.16σ]  
KicOffset-rm: 0.297 arcsec [1.88σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.47 [8/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 010790812-01, PDC Light Curves

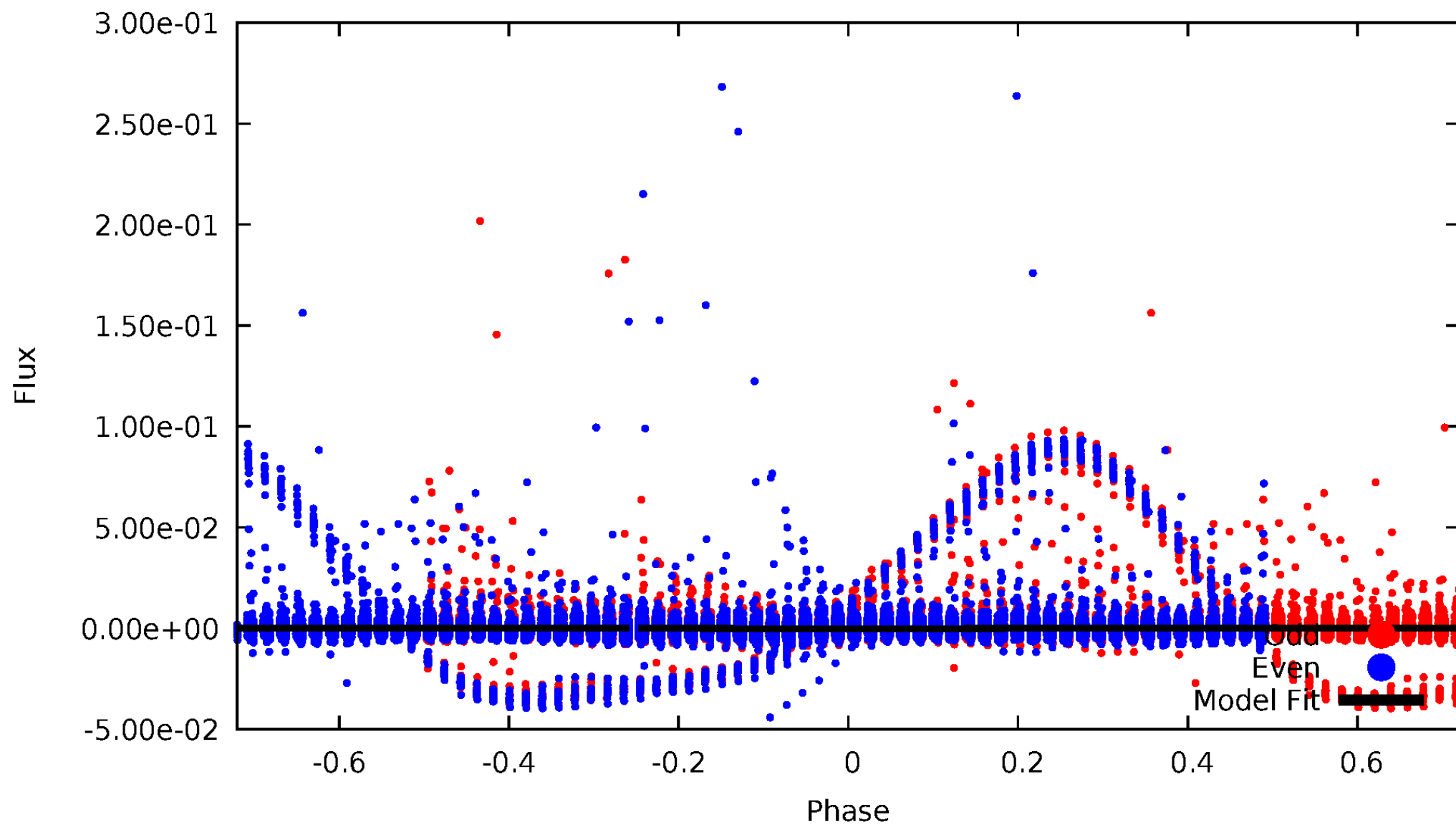


TCE 010790812-01



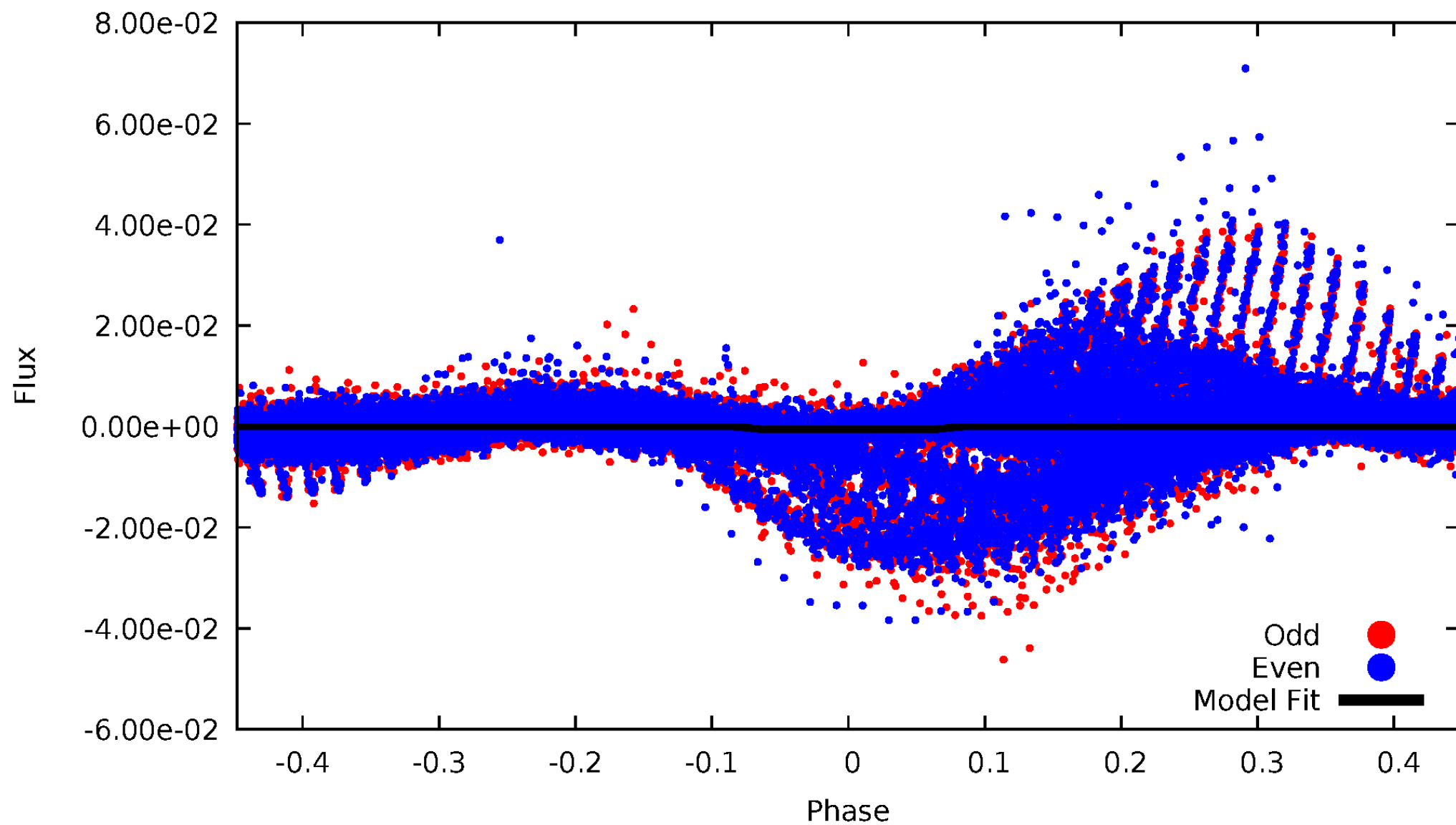
# DV Odd/Even

TCE 010790812-01



# ALT Odd/Even

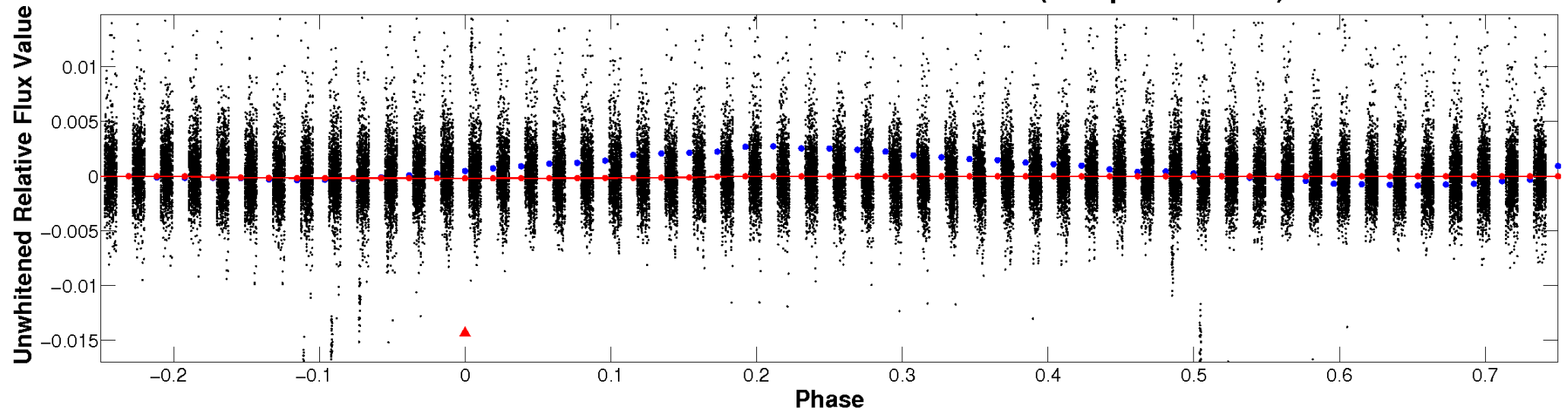
TCE 010790812-01



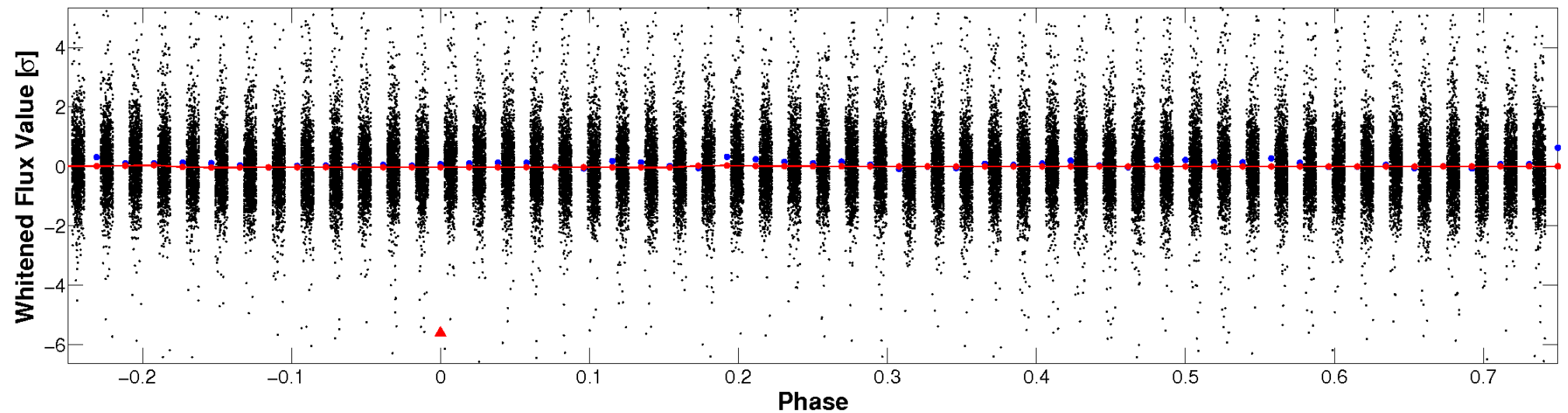


# Non-Whitened Vs. Whitened Light Curve

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

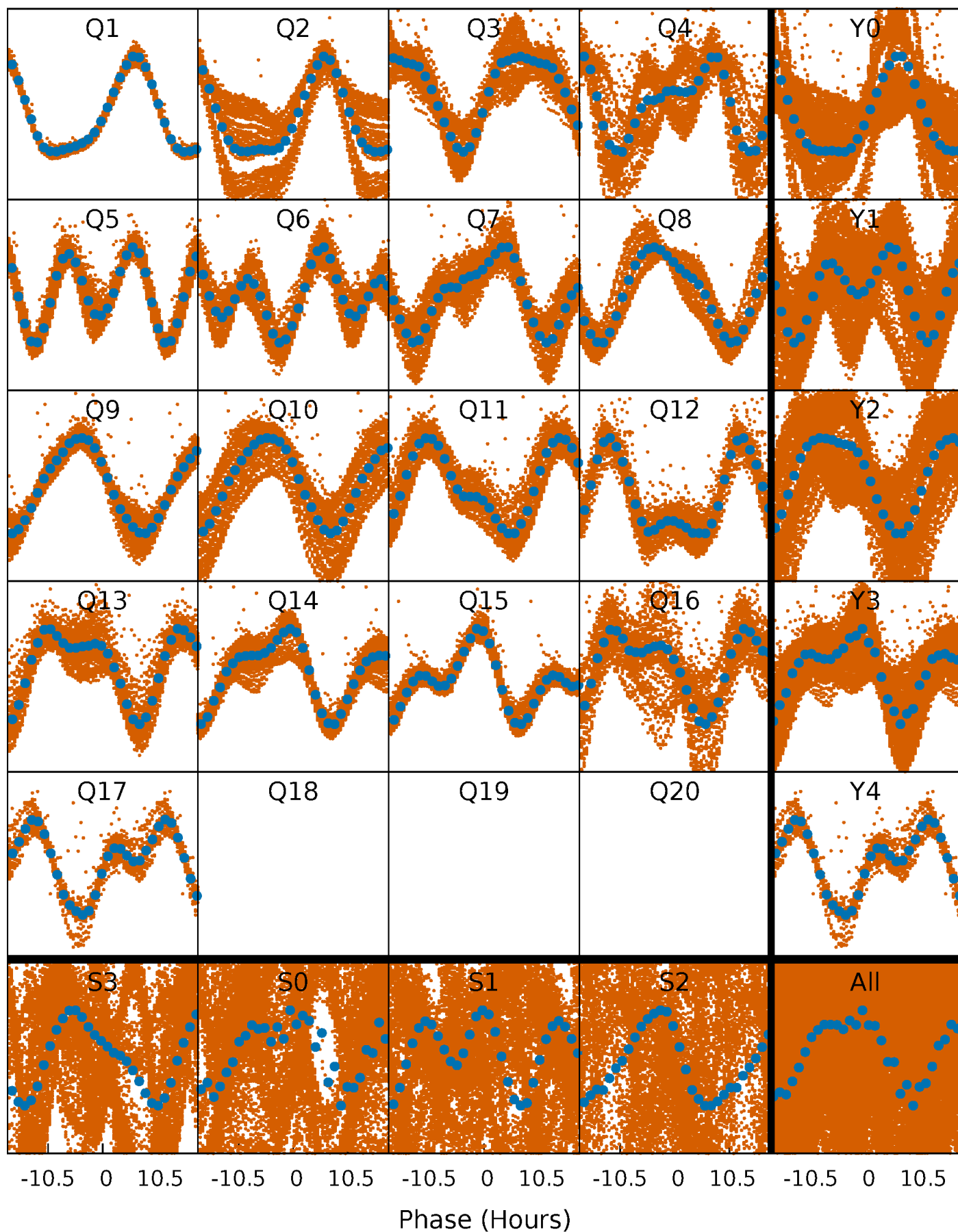


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

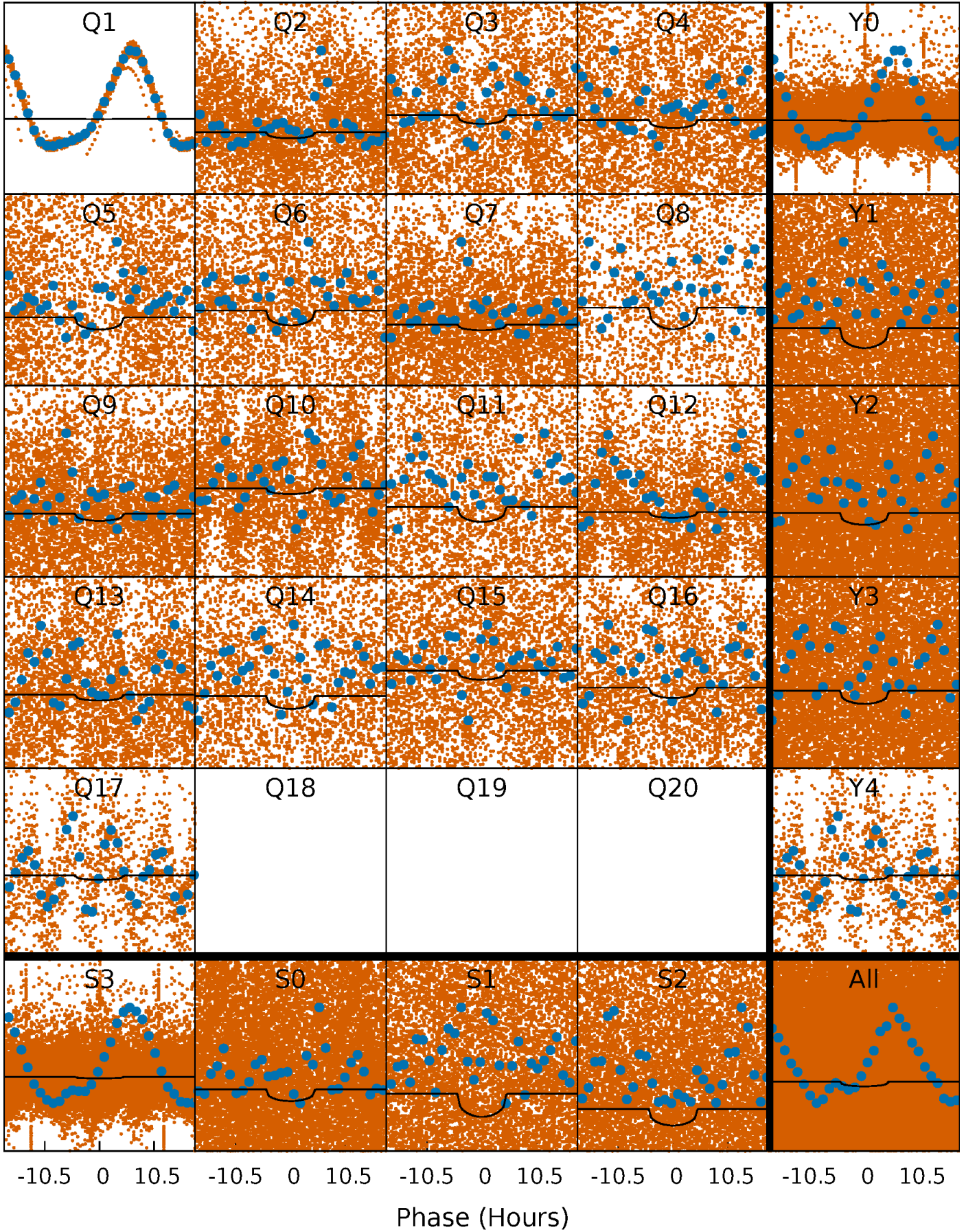
TCE 010790812-01 P= 1.062542 Days  $T_0=131.610106$  (BKJD)





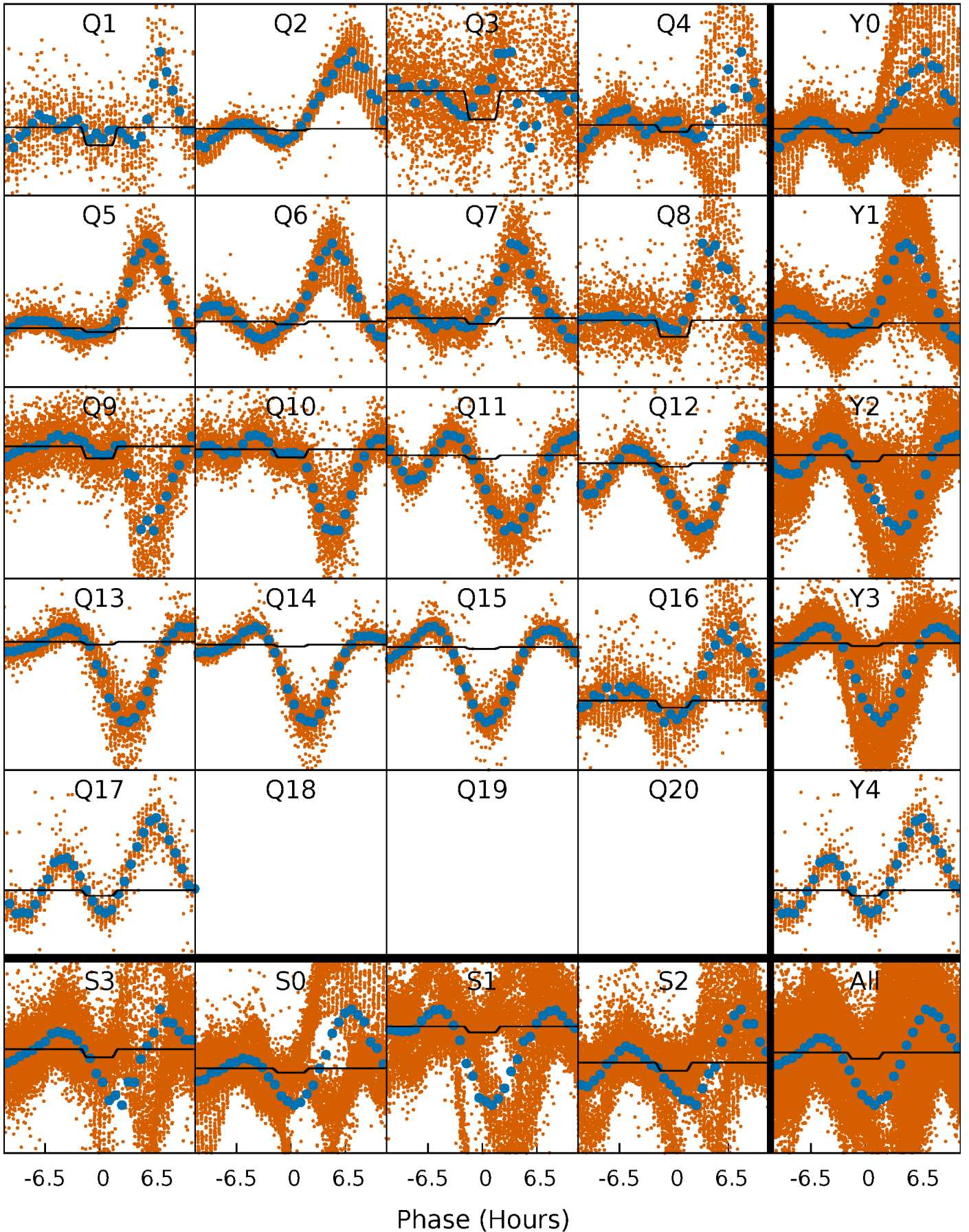
# DV Quarter-Phased Transit Curves

TCE 010790812-01   P= 1.062542 Days    $T_0=131.610106$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

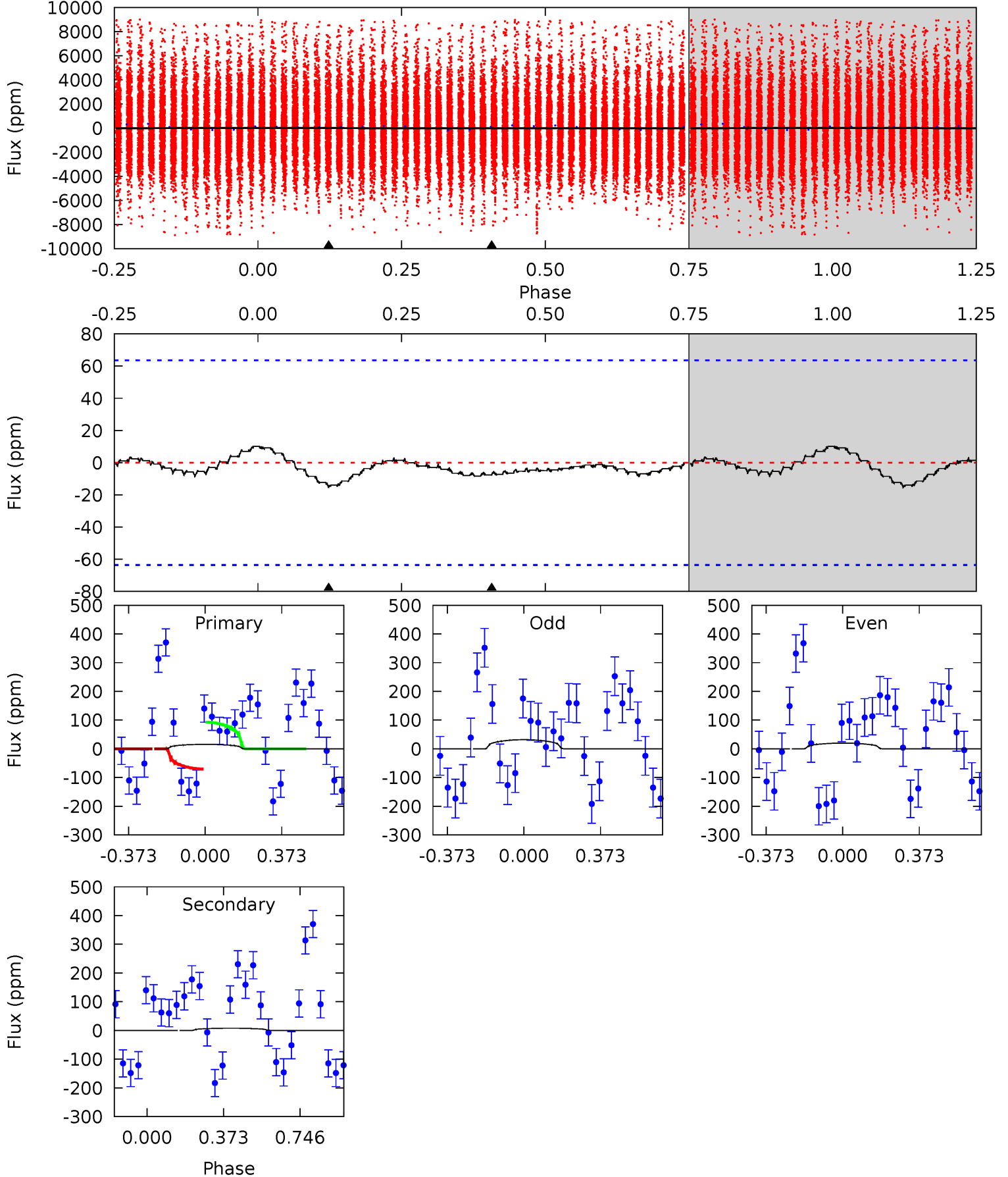
TCE 010790812-01   P= 1.062765 Days    $T_0=131.553063$  (BKJD)



# DV Model-Shift Uniqueness Test

010790812-01, P = 1.062542 Days, E = 130.547564 Days

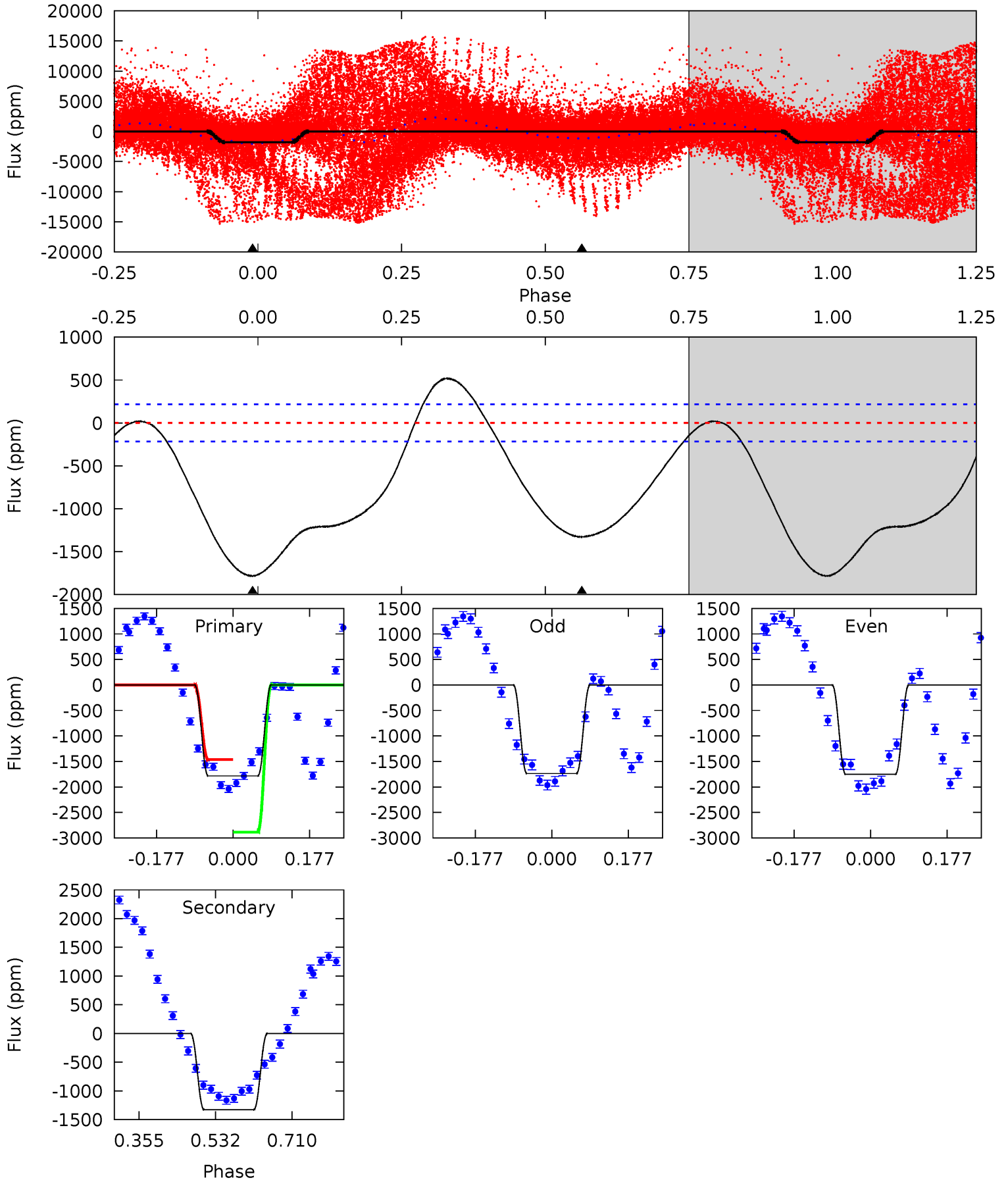
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.04	0.51	0	0	4.28	0.89	0.16	1.04	1.04	0.51	0.51	0.42	5.06	0.40	0.74



# Alt Model-Shift Uniqueness Test

010790812-01, P = 1.062765 Days, E = 130.490298 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
36.5	27.2	0	0	4.44	1.35	10.2	36.5	36.5	27.2	27.2	0.15	6.15	0.23	0





### Stellar Parameters For KIC 010790812

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$3875^{+50}_{-46}$	$4.695^{+0.030}_{-0.012}$	$0.000^{+0.100}_{-0.100}$	$0.555^{+0.017}_{-0.026}$	$0.557^{+0.025}_{-0.020}$	$4.584^{+0.547}_{-0.251}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+3%/-5%	+4%/-4%	+12%/-5%
Source	PHO2	PHO2	PHO2	DSEP		

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

### Secondary Eclipse Parameters for KIC 010790812-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-8 \pm 15$	$0.81^{+0.55}_{-0.49}$	$1370^{+20}_{-20}$	$2320^{+799}_{-4773}$	$1.349^{+10.038}_{-2.776}$
Alt.	$-1328 \pm 49$	$1.46^{+0.60}_{-0.55}$	$1370^{+21}_{-22}$	$4517^{+1000}_{-559}$	$97^{+155}_{-49}$

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

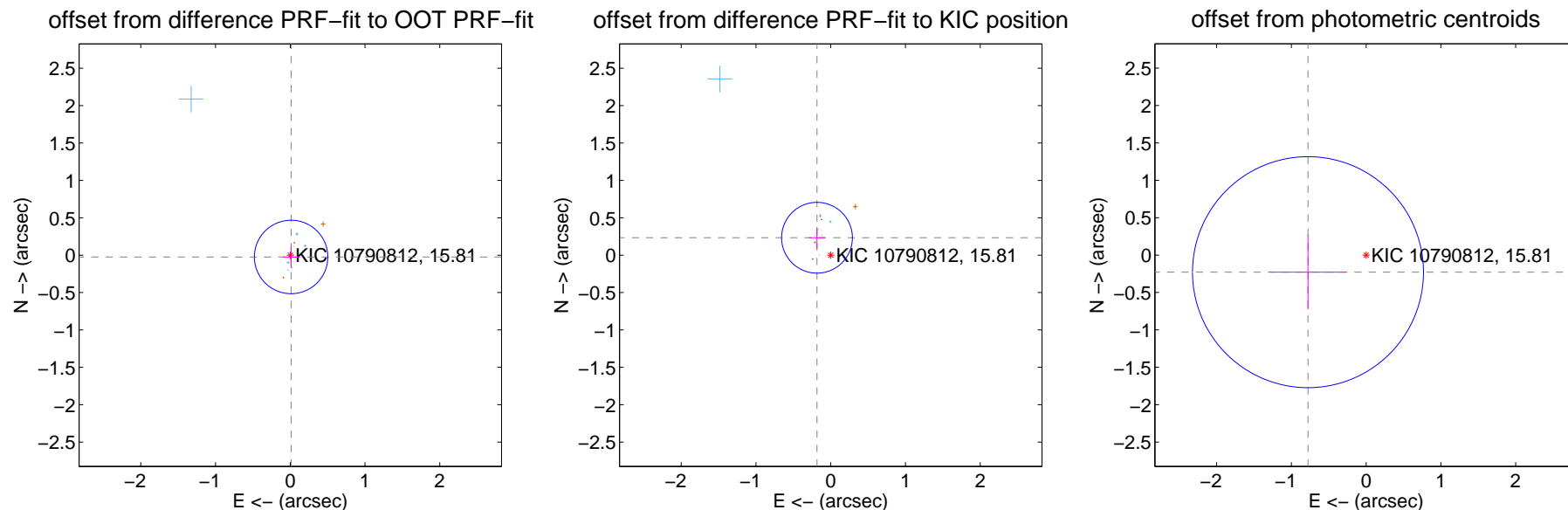
## DV Centroid Data

Supplemental centroid analysis for 010790812-01. Kepler magnitude: 15.81. Transit SNR 5.28

There are 8 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

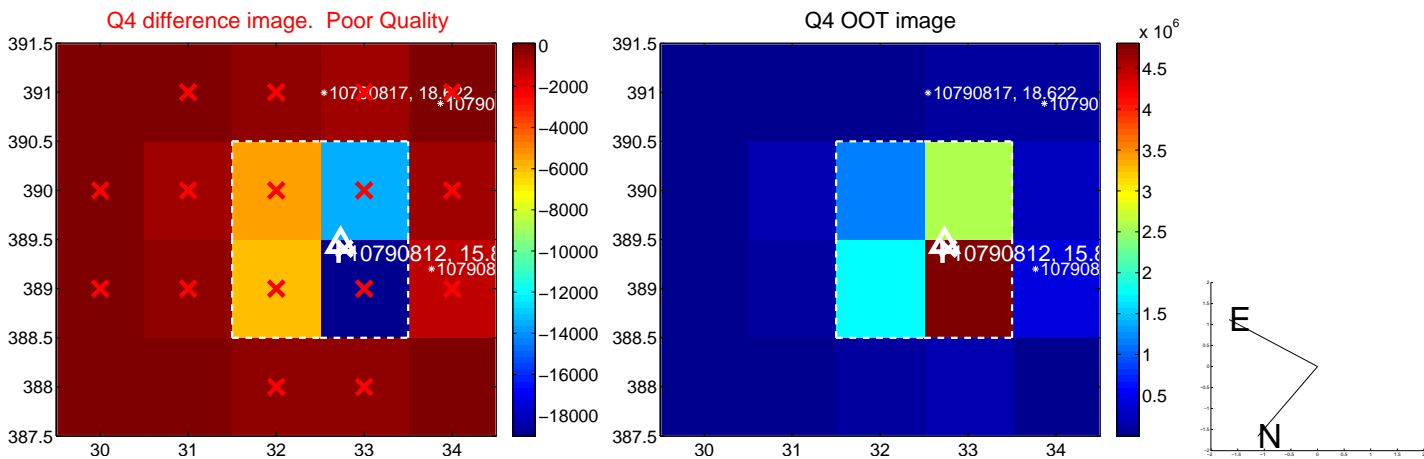
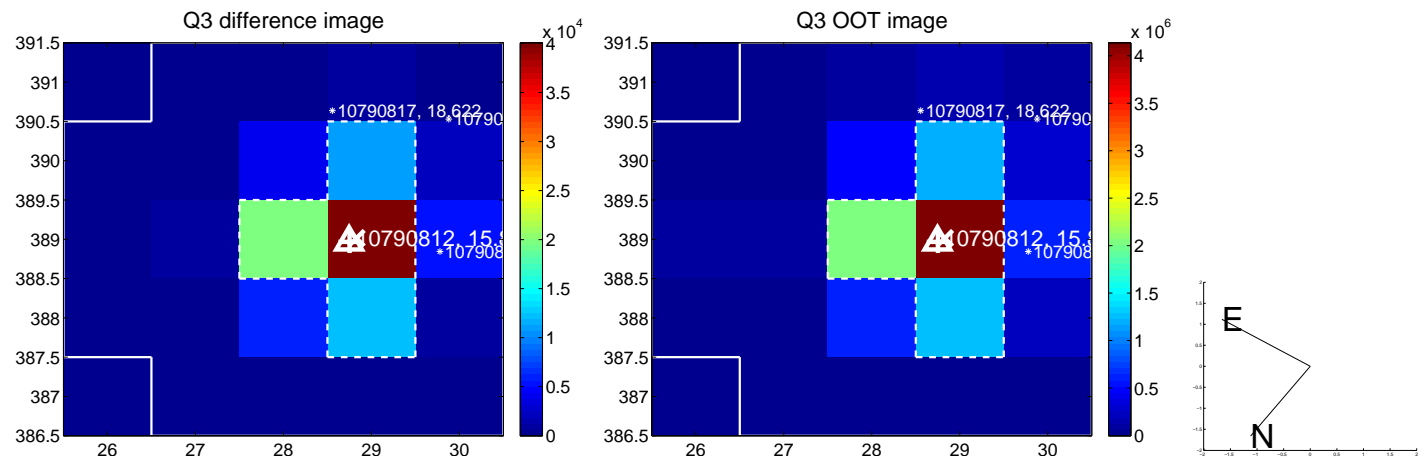
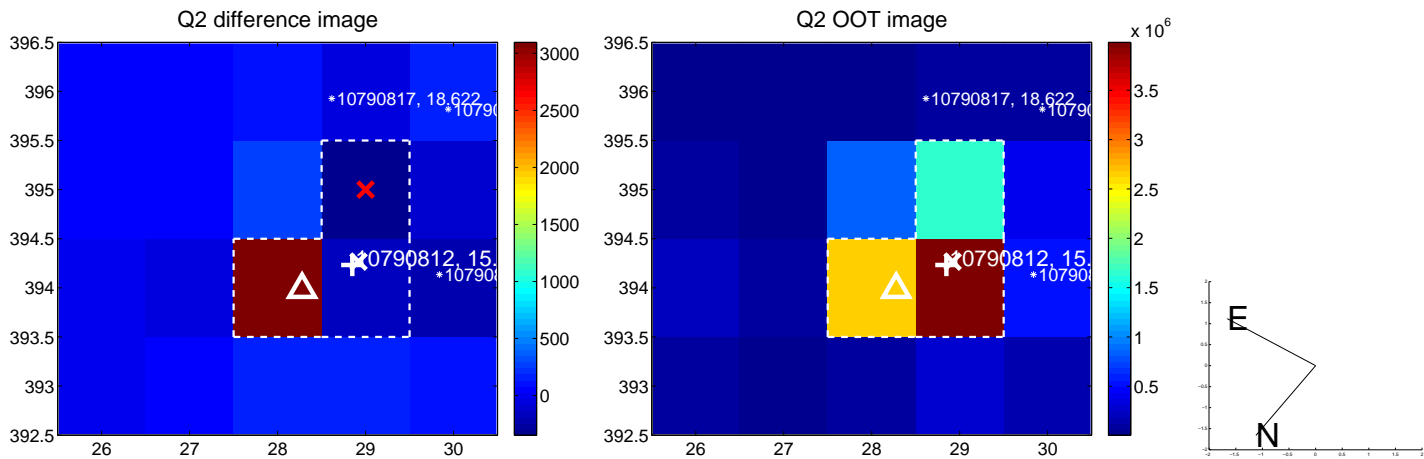
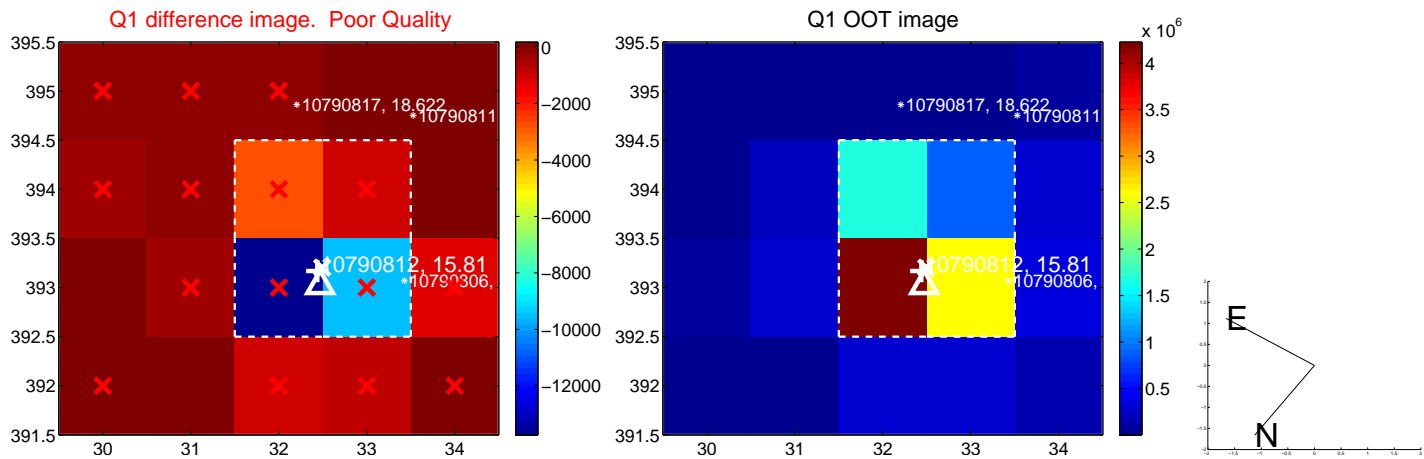
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.027 \pm 0.164$	0.16	$-0.011 \pm 0.112$	$-0.024 \pm 0.146$
PRF-fit source offset from KIC position	$0.297 \pm 0.158$	1.88	$0.184 \pm 0.107$	$0.233 \pm 0.144$
photometric centroid source offset	$0.81 \pm 0.51$	1.57	$0.78 \pm 0.52$	$-0.23 \pm 0.50$



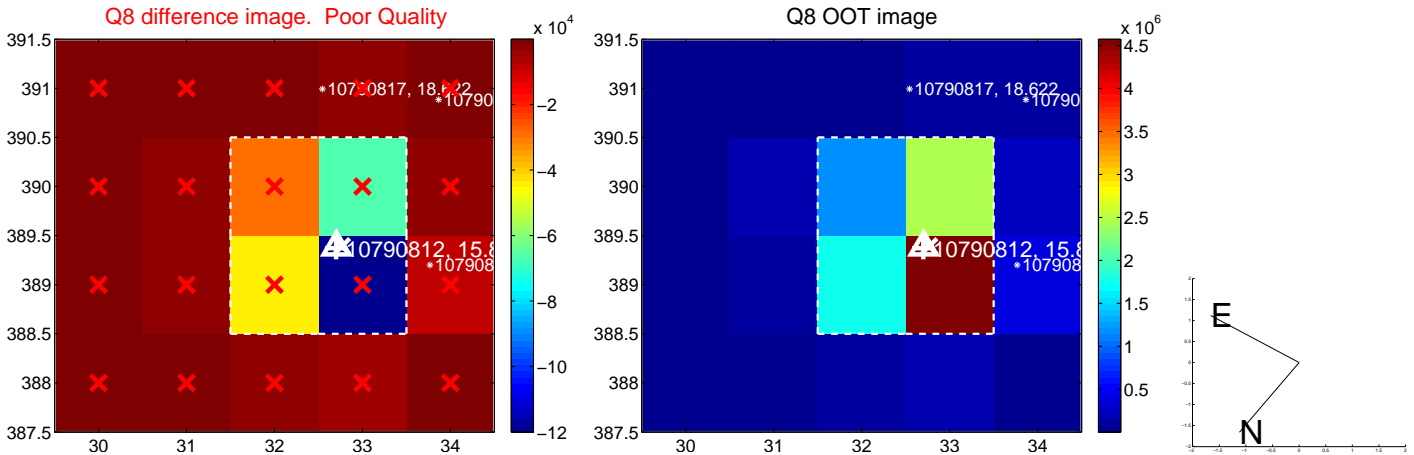
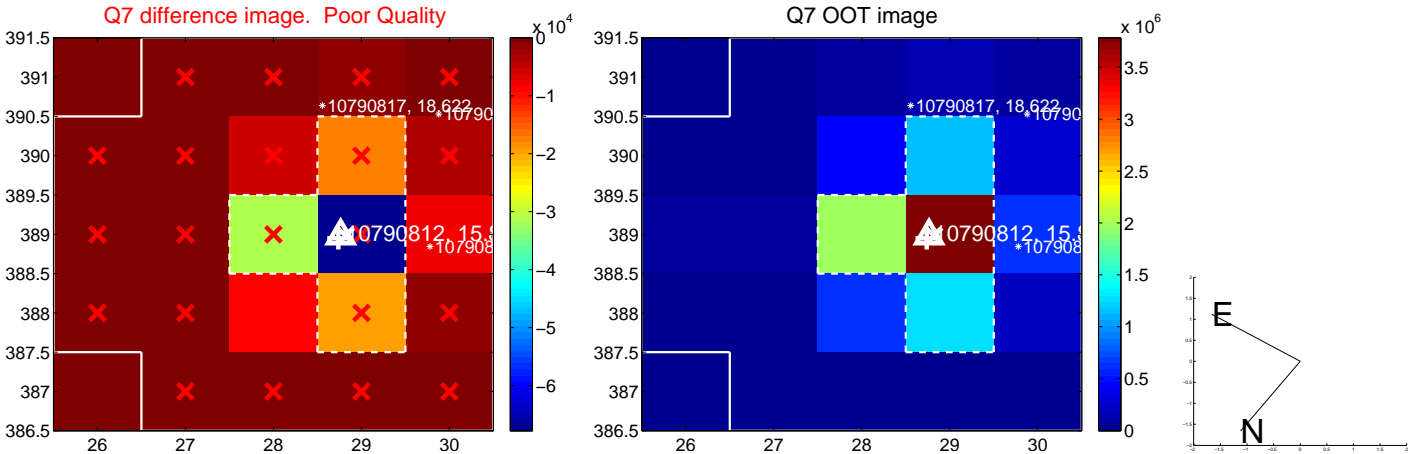
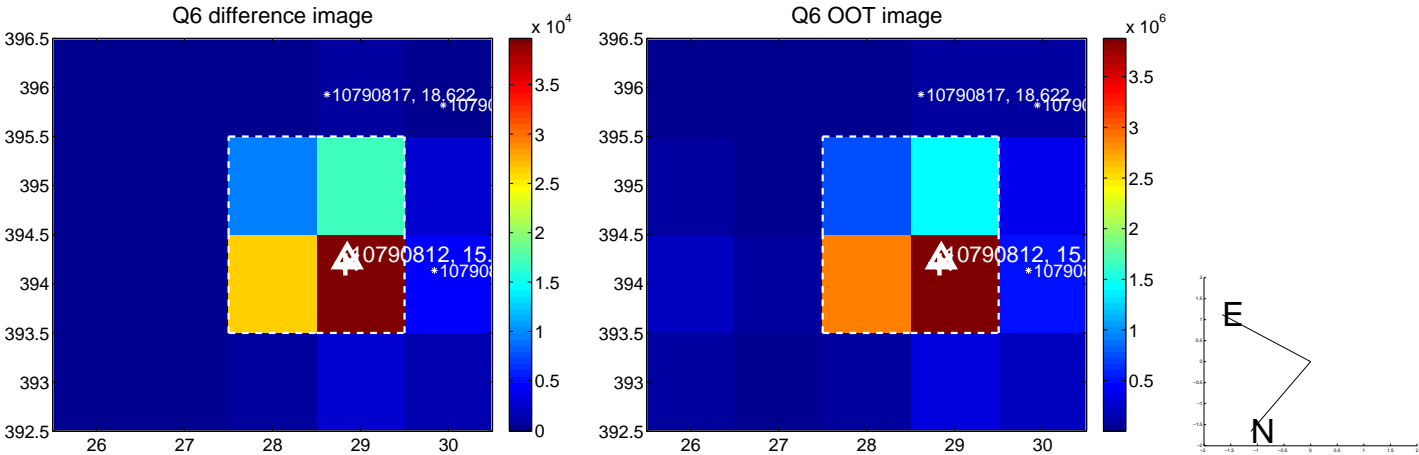
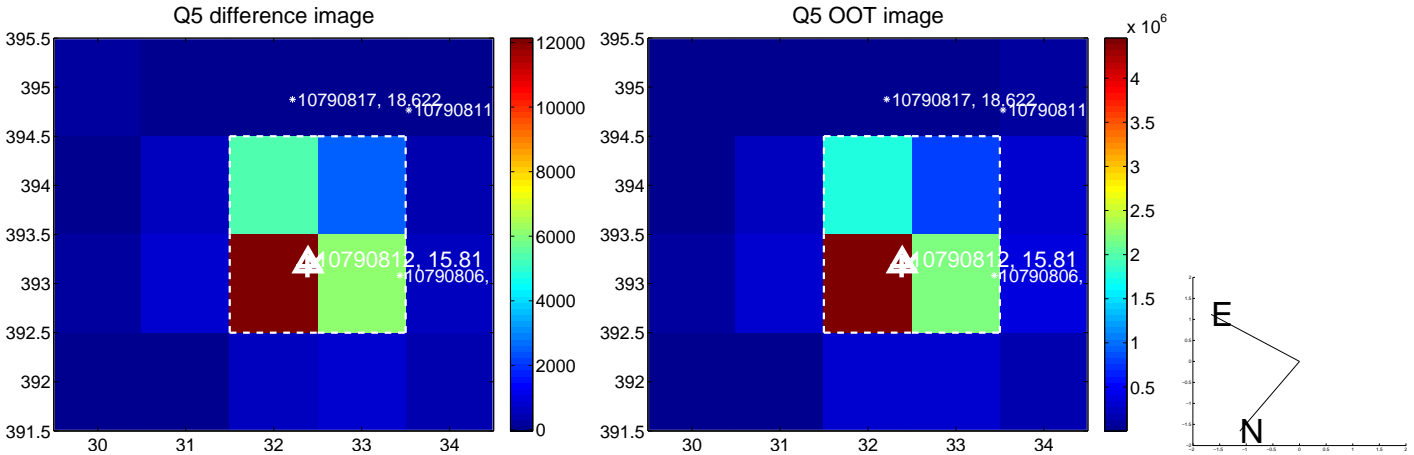
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



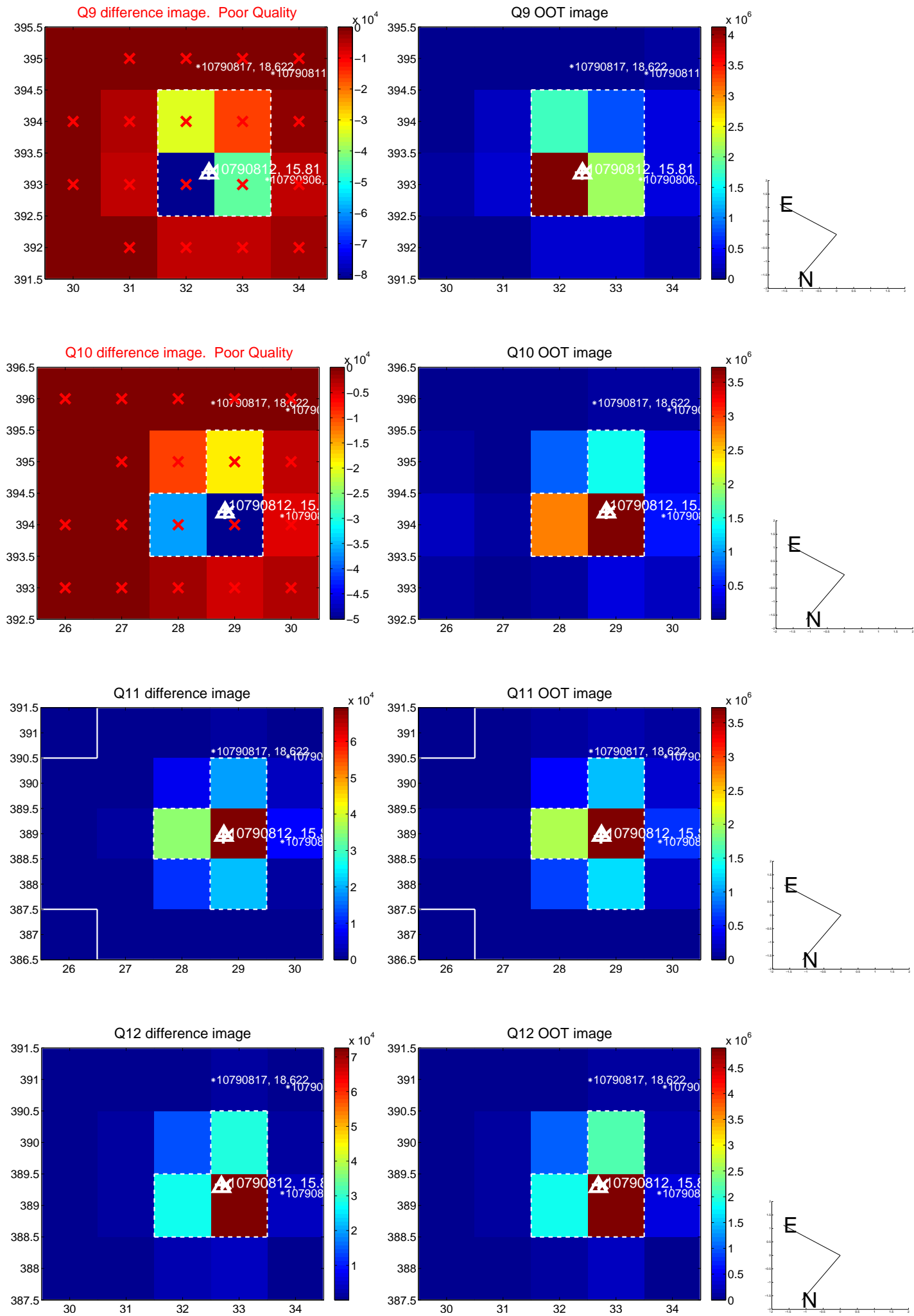
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



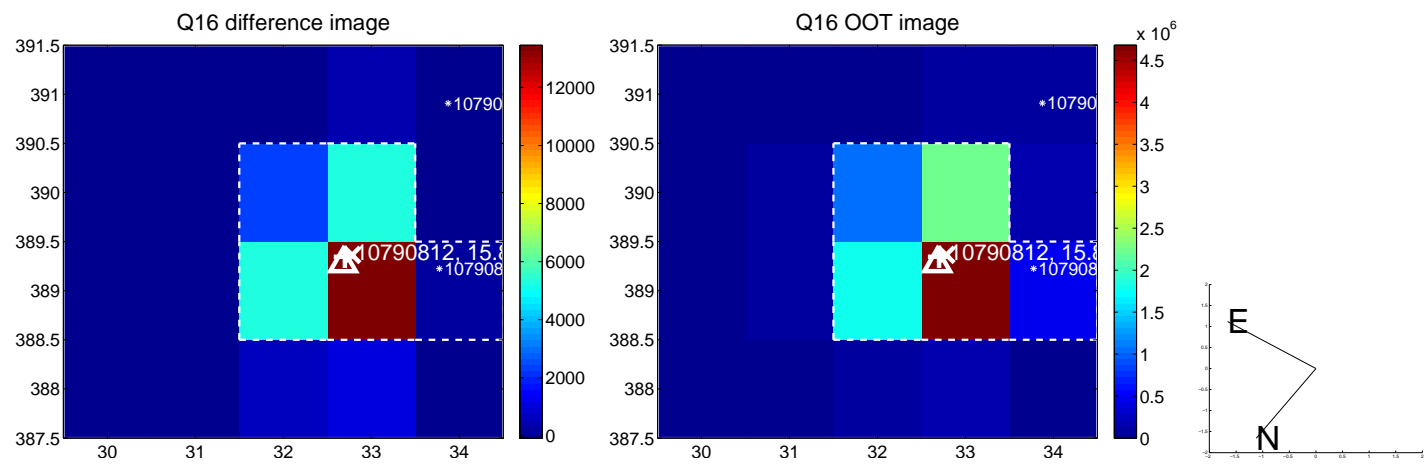
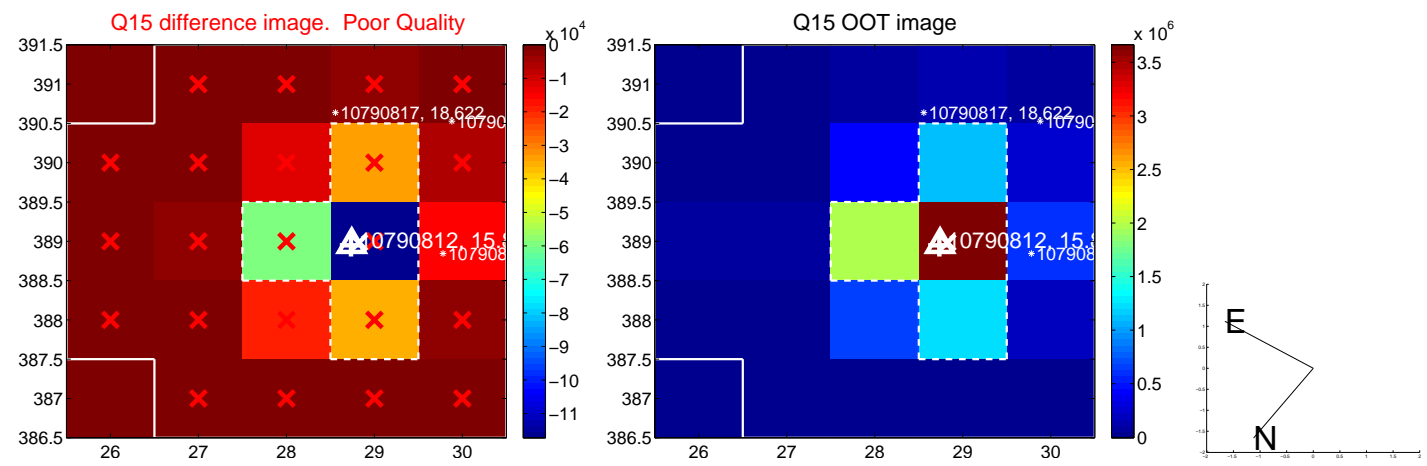
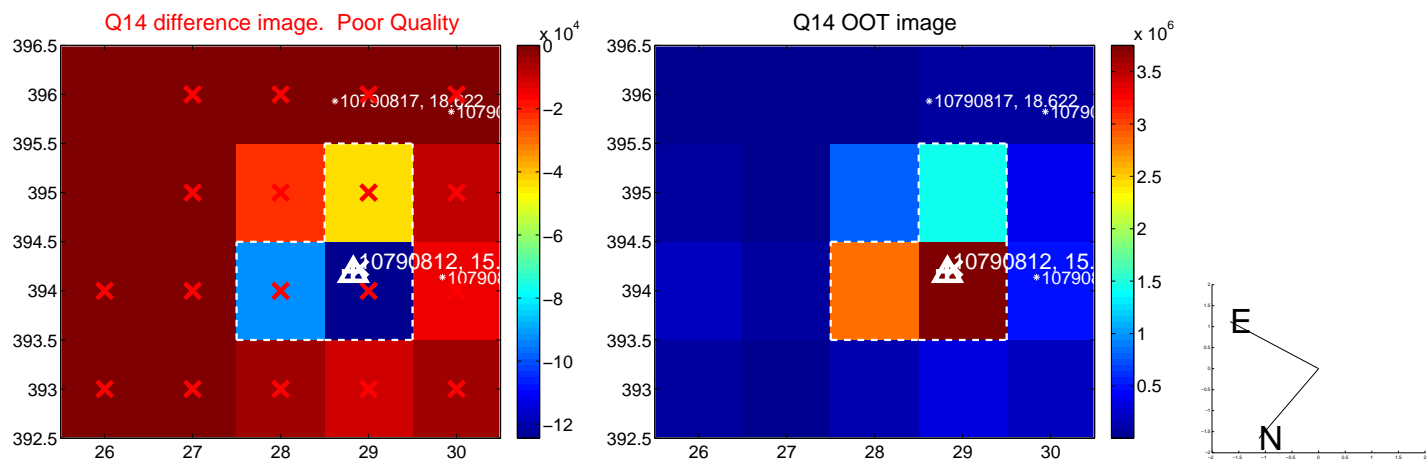
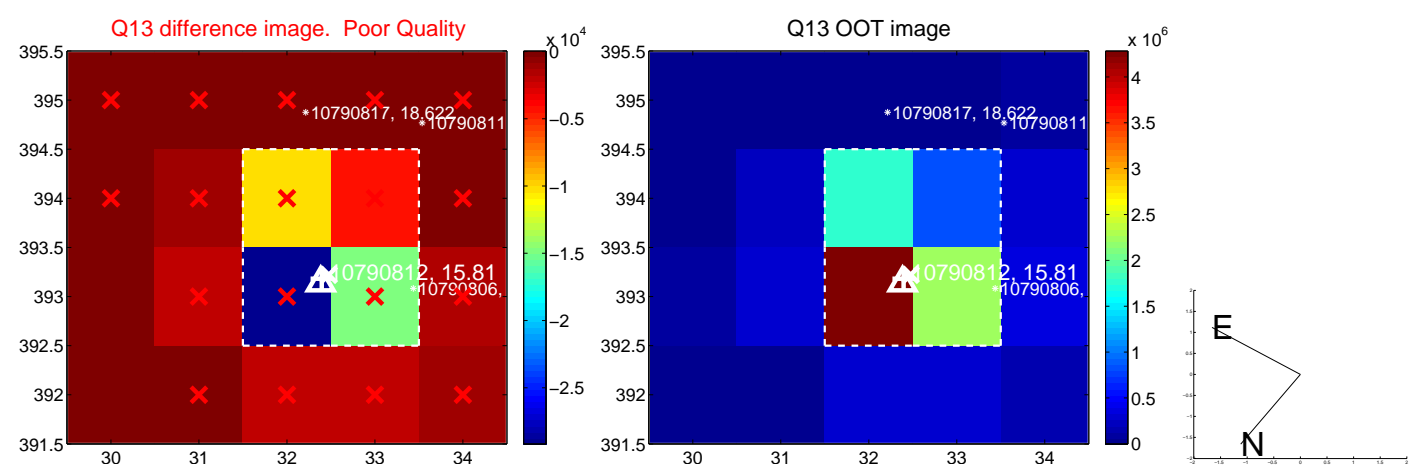
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



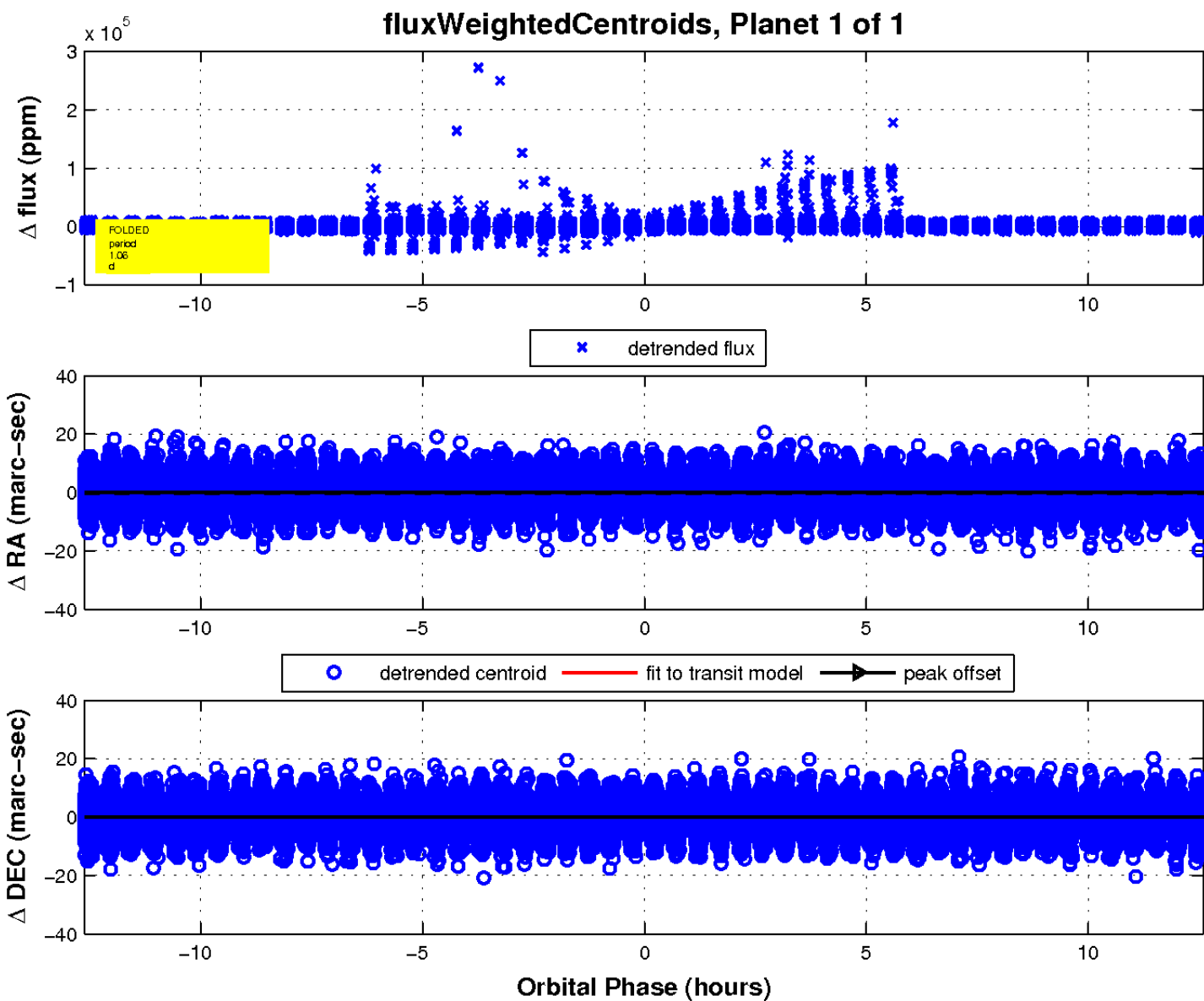
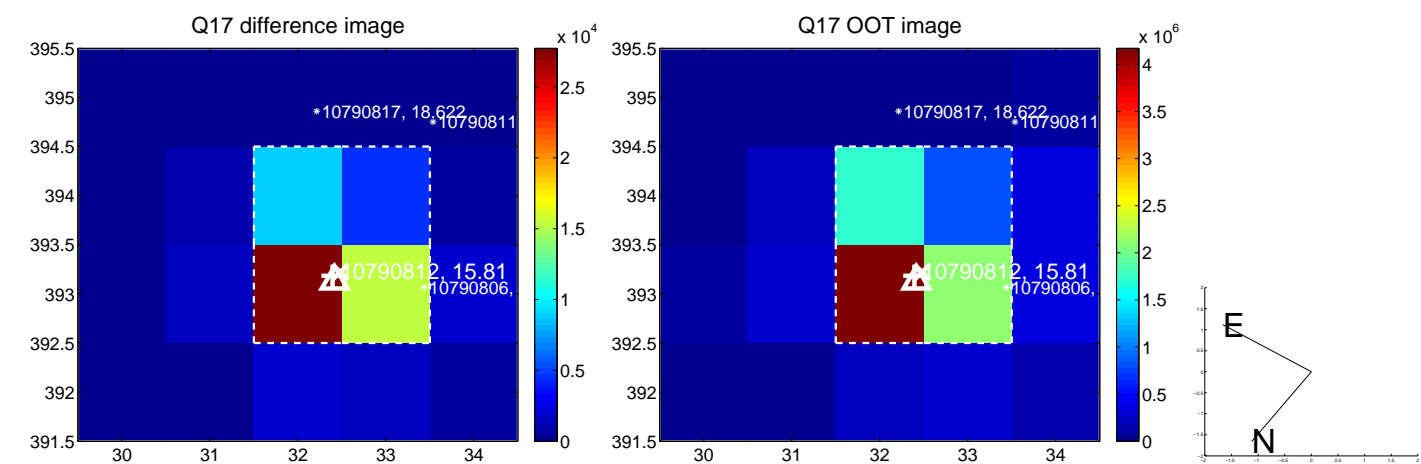
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination

