

# KIC 010526549

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010526549-01	OBS	0746.01	9.273583	136.163487	1232.9	3.559	71.5	77.3	0.70	4856	2.86	41.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010526549-01	OBS	PC	1.00	0	0	0	0	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.

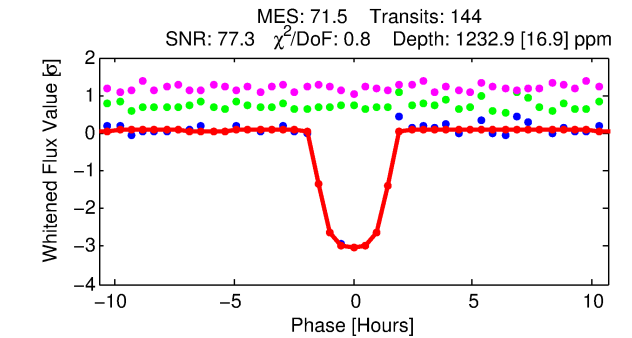
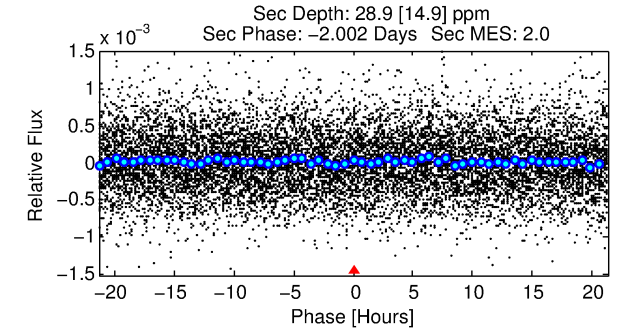
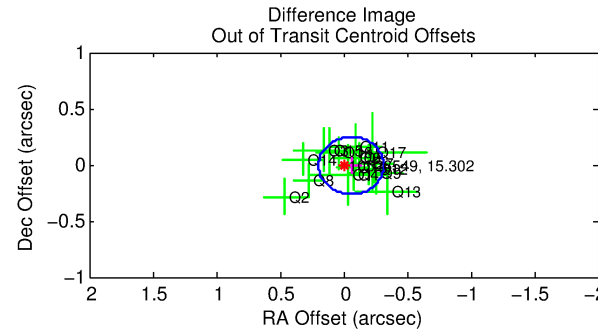
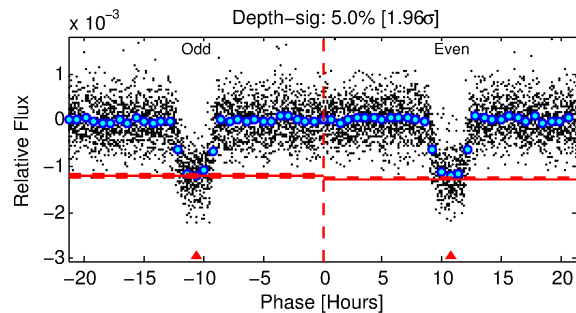
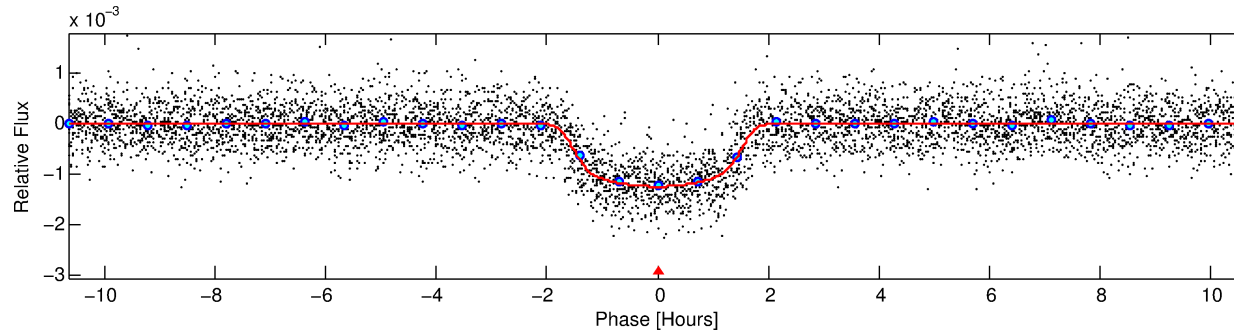
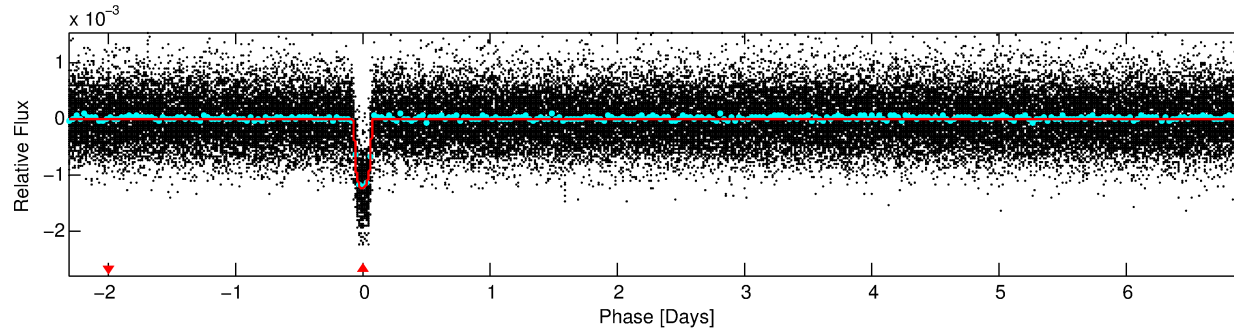
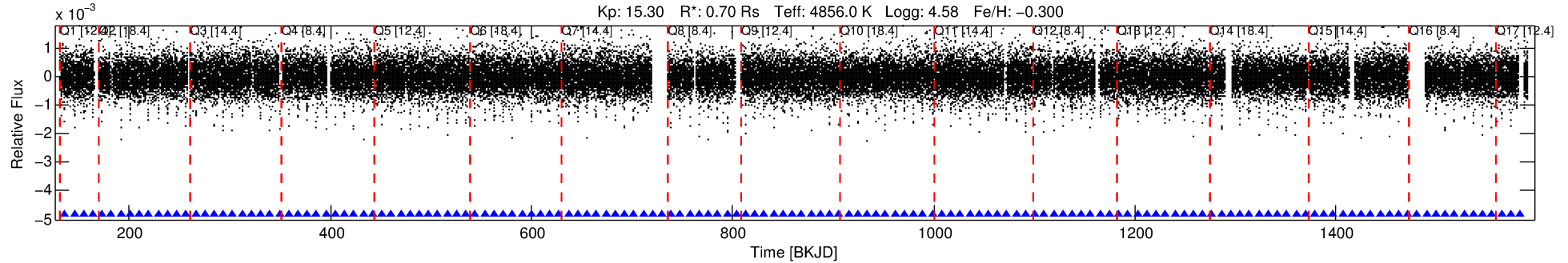
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010526549-01

No Significant Match Found

# DV One-Page Summary

KIC: 10526549 Candidate: 1 of 1 Period: 9.274 d  
KOI: K00746.01 Corr: 0.963



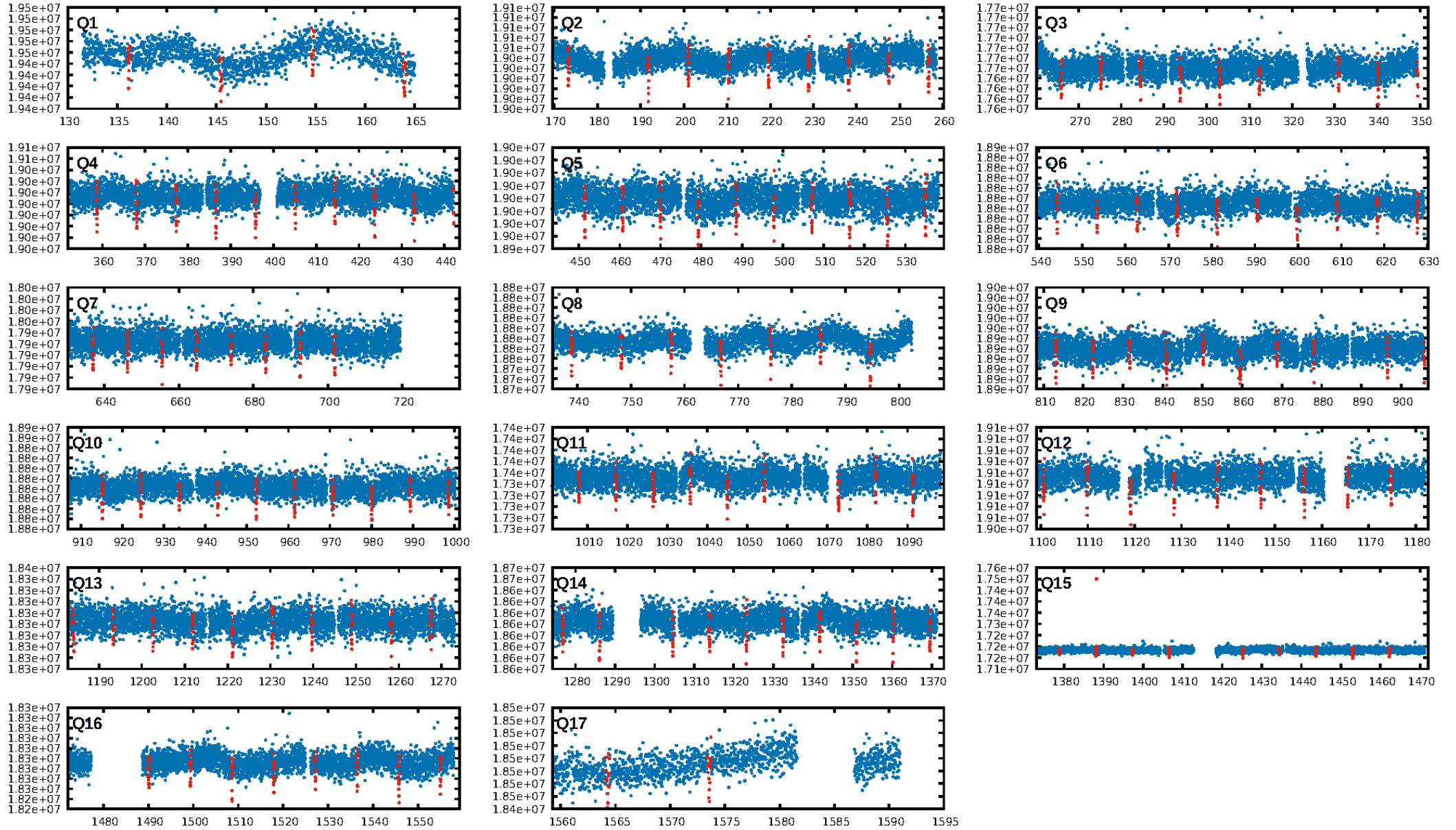
## DV Fit Results:

Period = 9.27358 [0.00001] d  
Epoch = 136.1635 [0.0010] BKJD  
Rp/R\* = 0.0376 [0.0019]  
a/R\* = 11.70 [2.07]  
b = 0.86 [0.06]  
Seff = 41.95 [7.10]  
Teq = 649 [27] K  
Rp = 2.86 [0.31] Re  
a = 0.0758 [0.0062] AU  
Ag = 11.22 [6.03] [1.69 $\sigma$ ]  
Teffp = 1836 [247] K [4.78 $\sigma$ ]

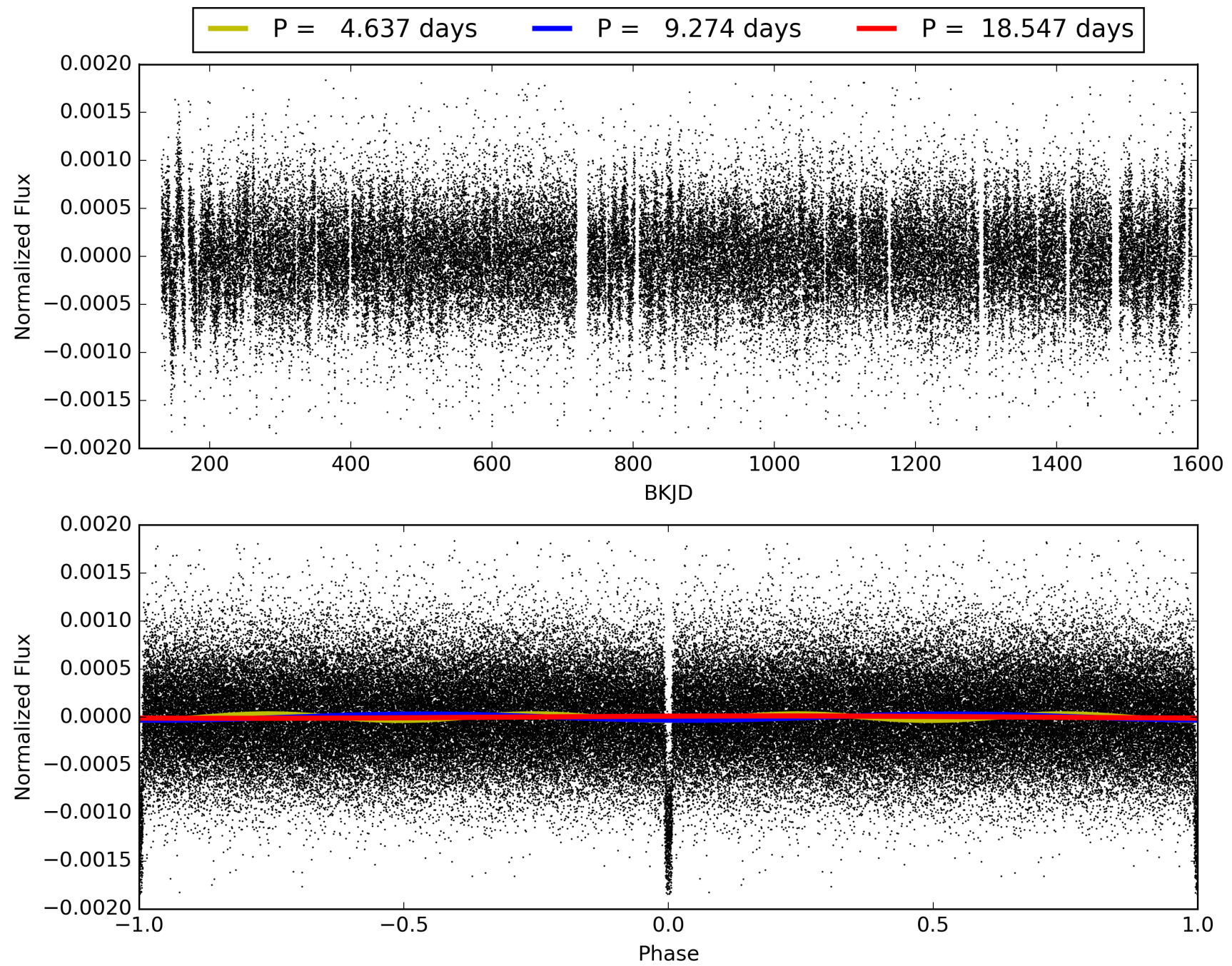
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [138/138]  
GhostDiagnostic-chr: 6.756  
Centroid-sig: 3.7%  
Centroid-so: 0.208 arcsec [1.25 $\sigma$ ]  
OotOffset-rm: 0.059 arcsec [0.70 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.346 arcsec [4.28 $\sigma$ ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 010526549-01, PDC Light Curves

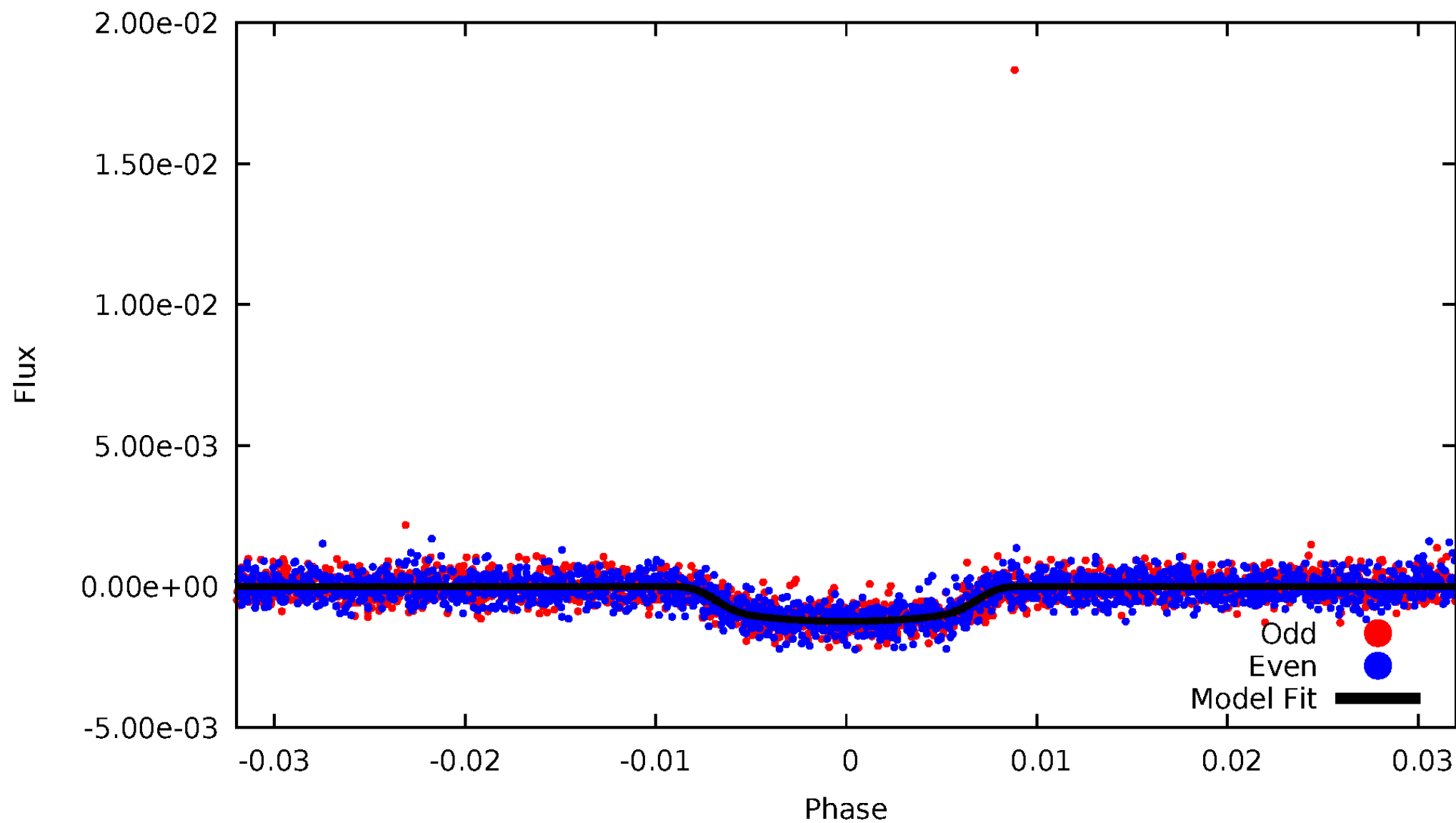


TCE 010526549-01



# DV Odd/Even

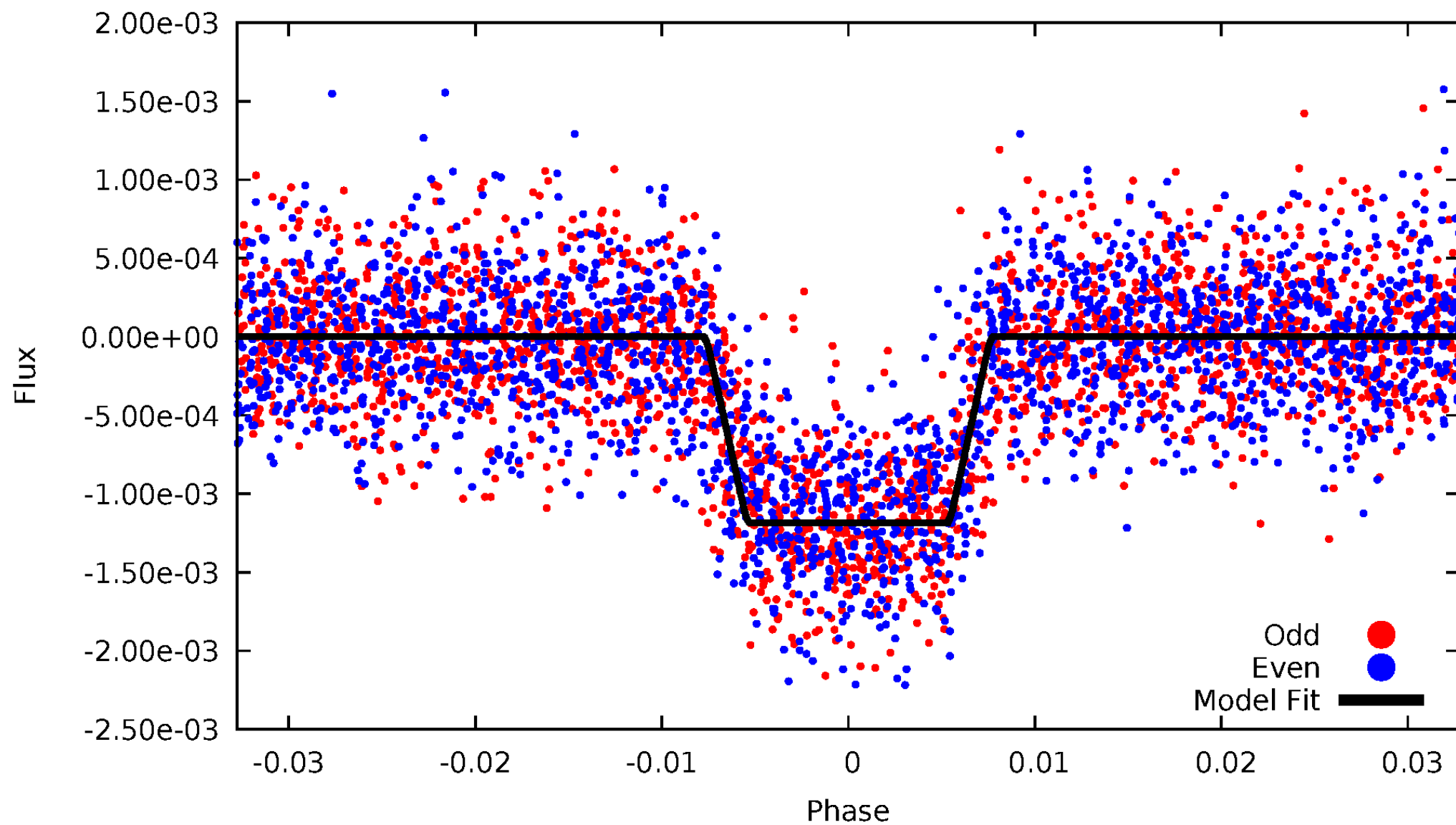
TCE 010526549-01





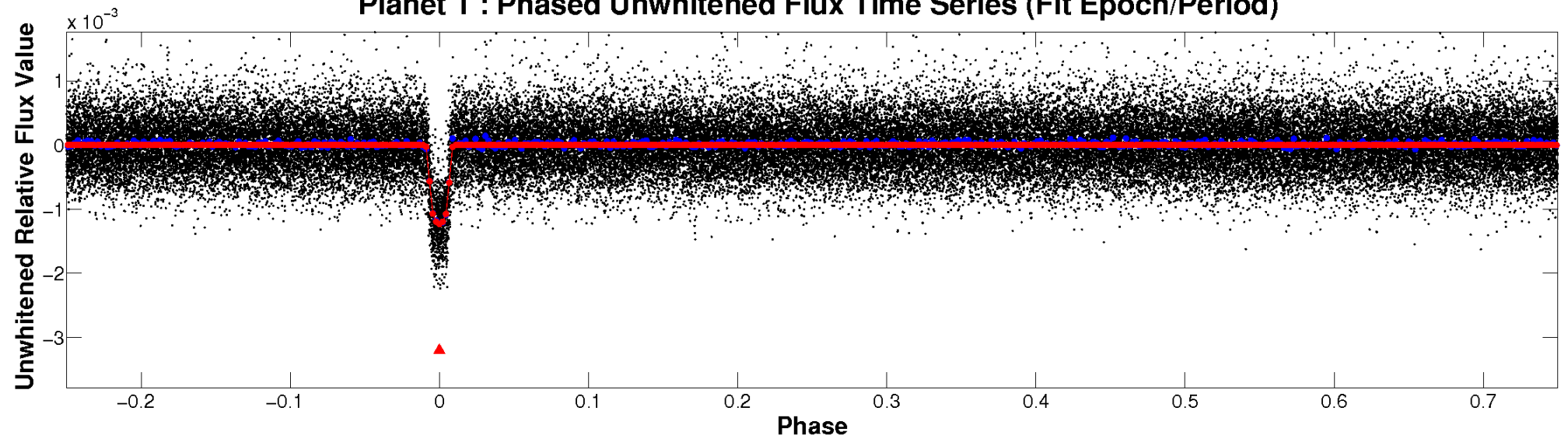
# ALT Odd/Even

TCE 010526549-01

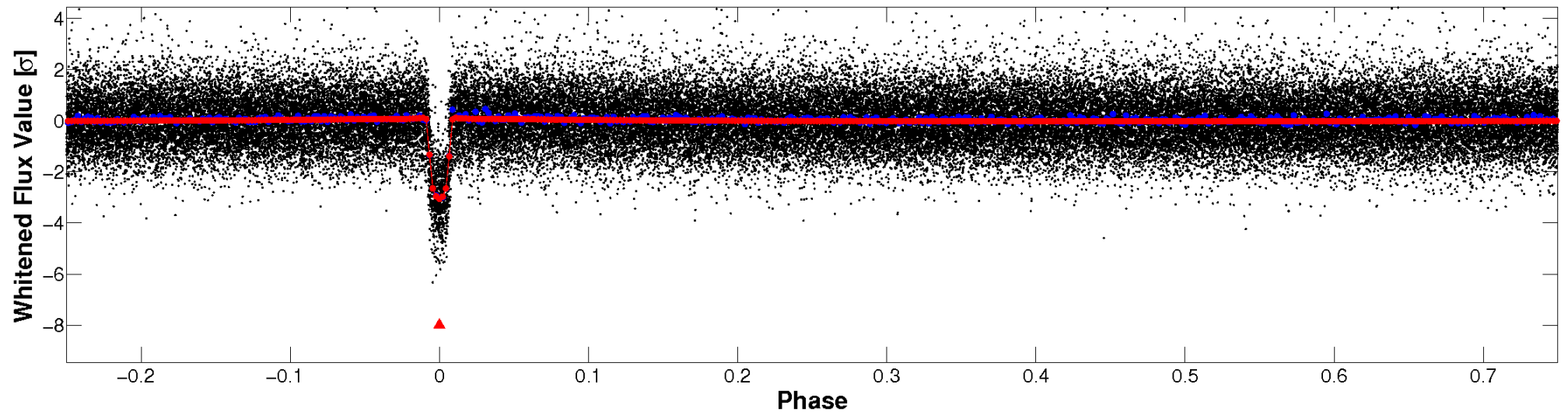


# Non-Whitened Vs. Whitened Light Curve

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

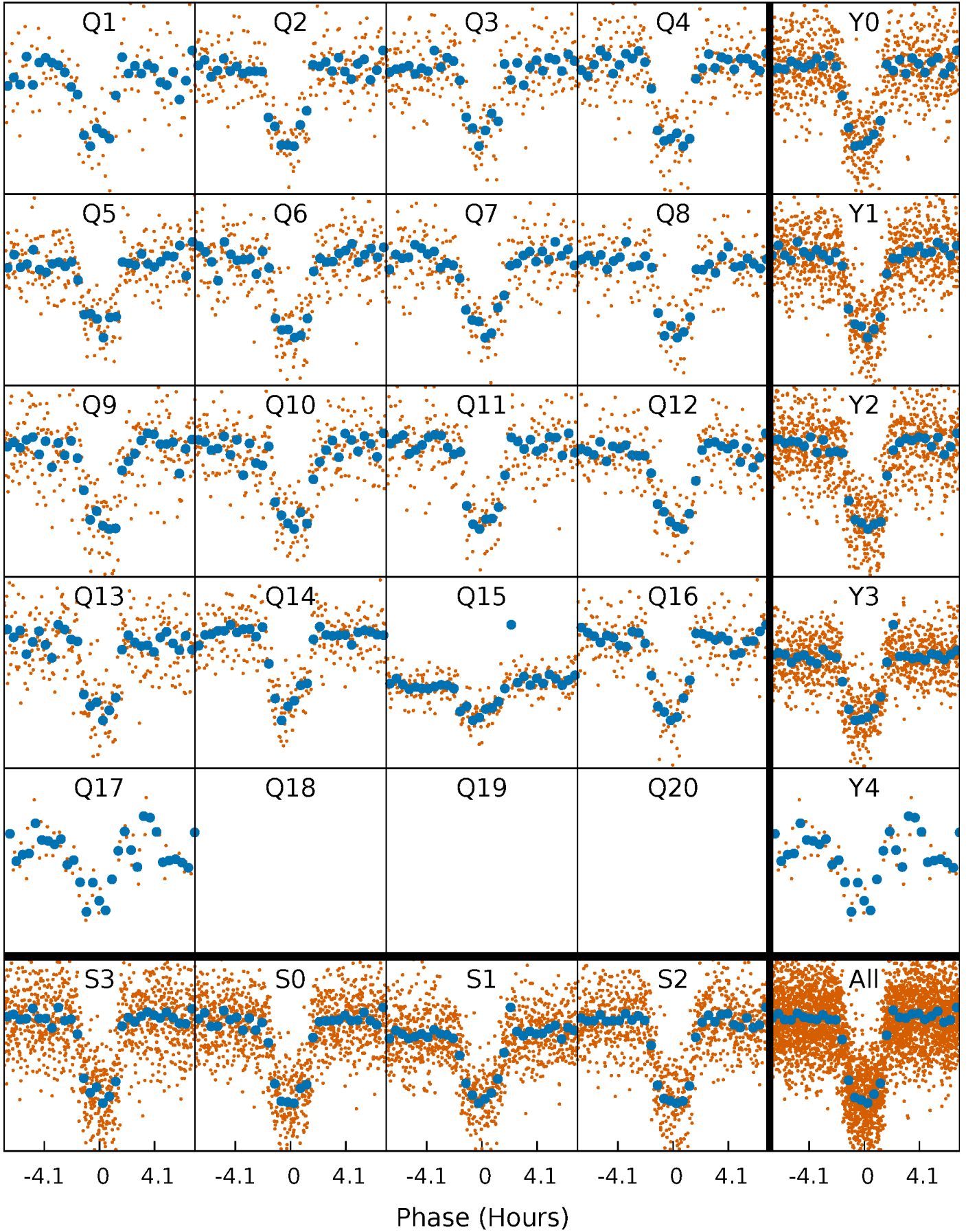


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

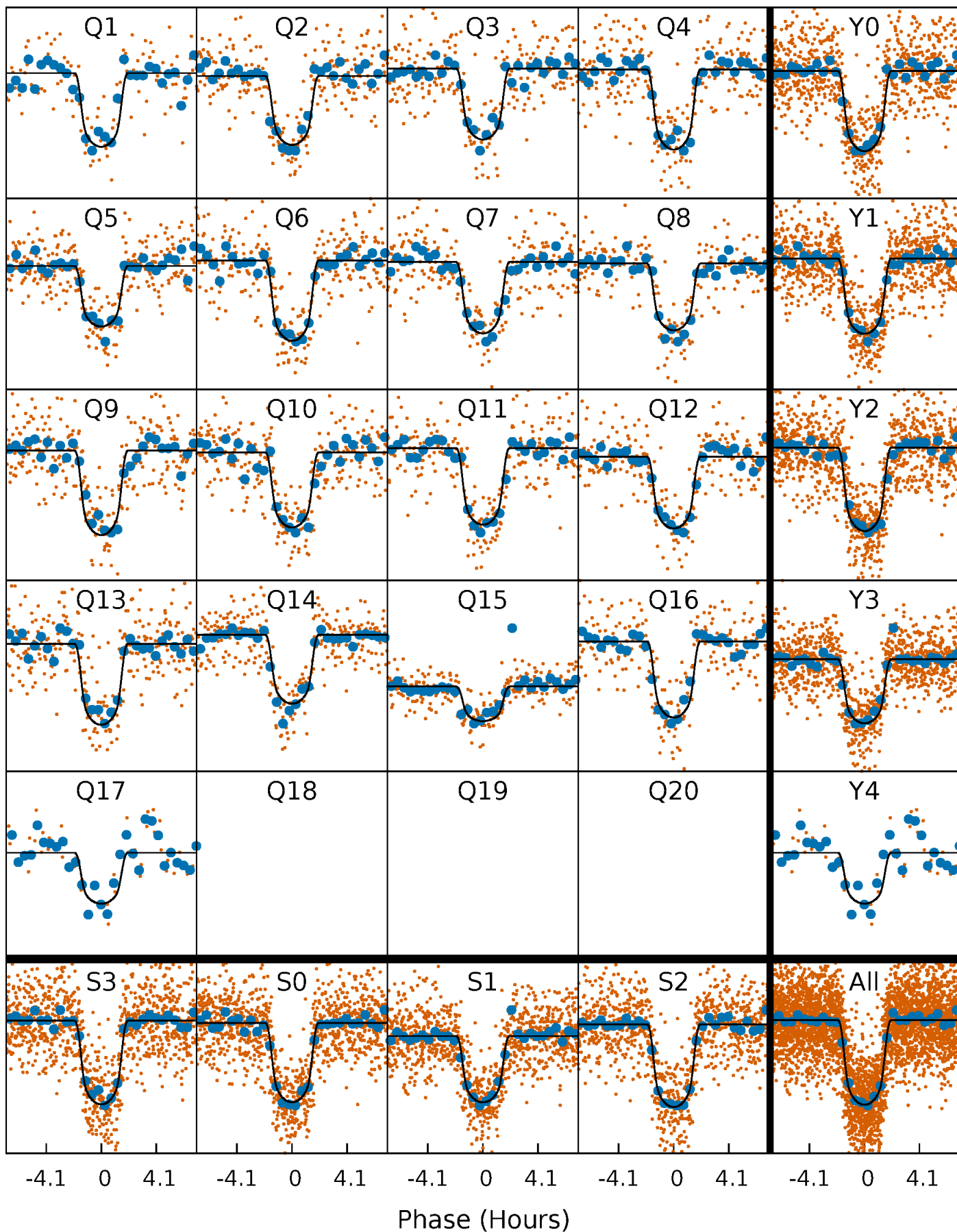
TCE 010526549-01 P= 9.273583 Days  $T_0=136.163487$  (BKJD)





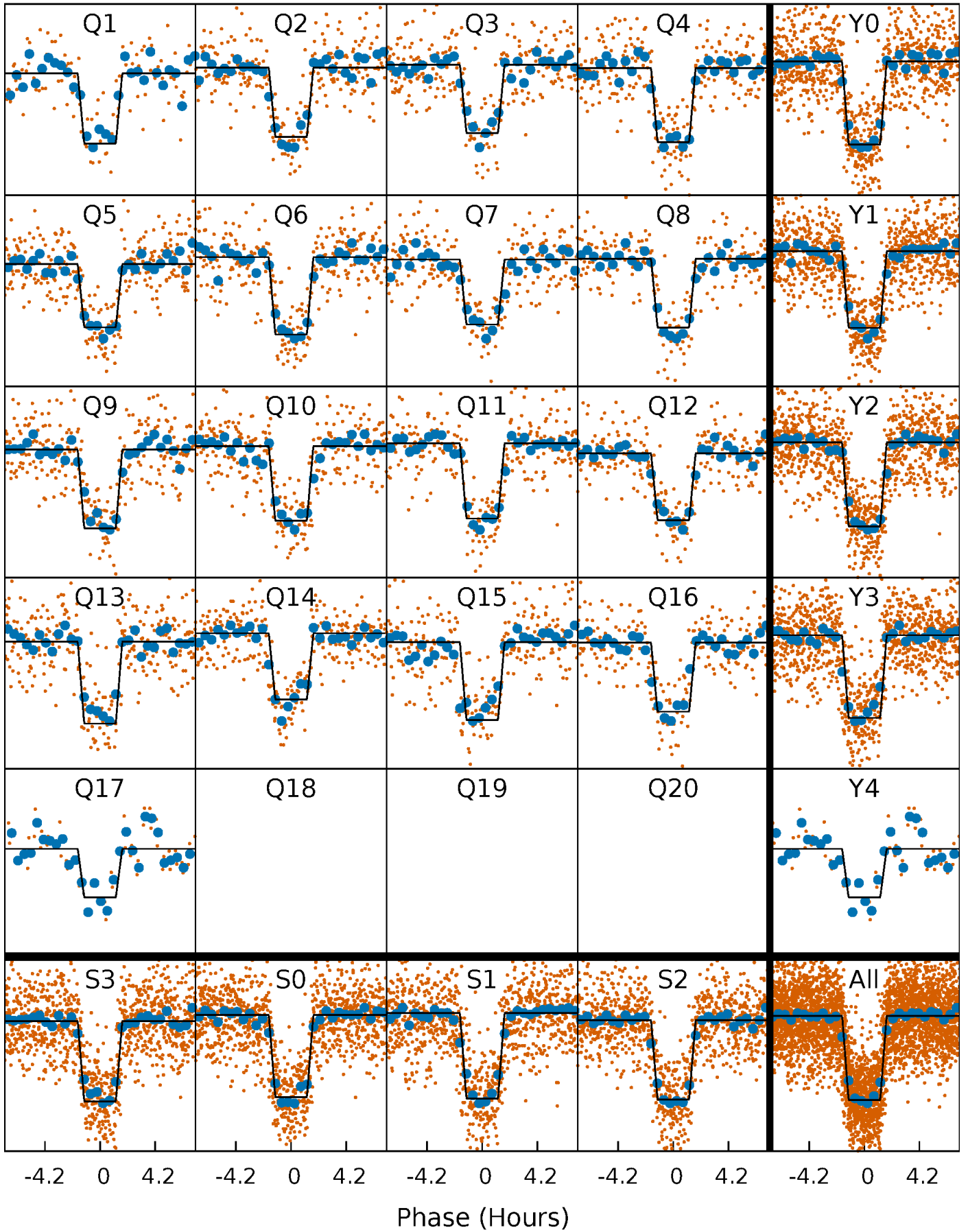
# DV Quarter-Phased Transit Curves

TCE 010526549-01 P= 9.273583 Days  $T_0=136.163487$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

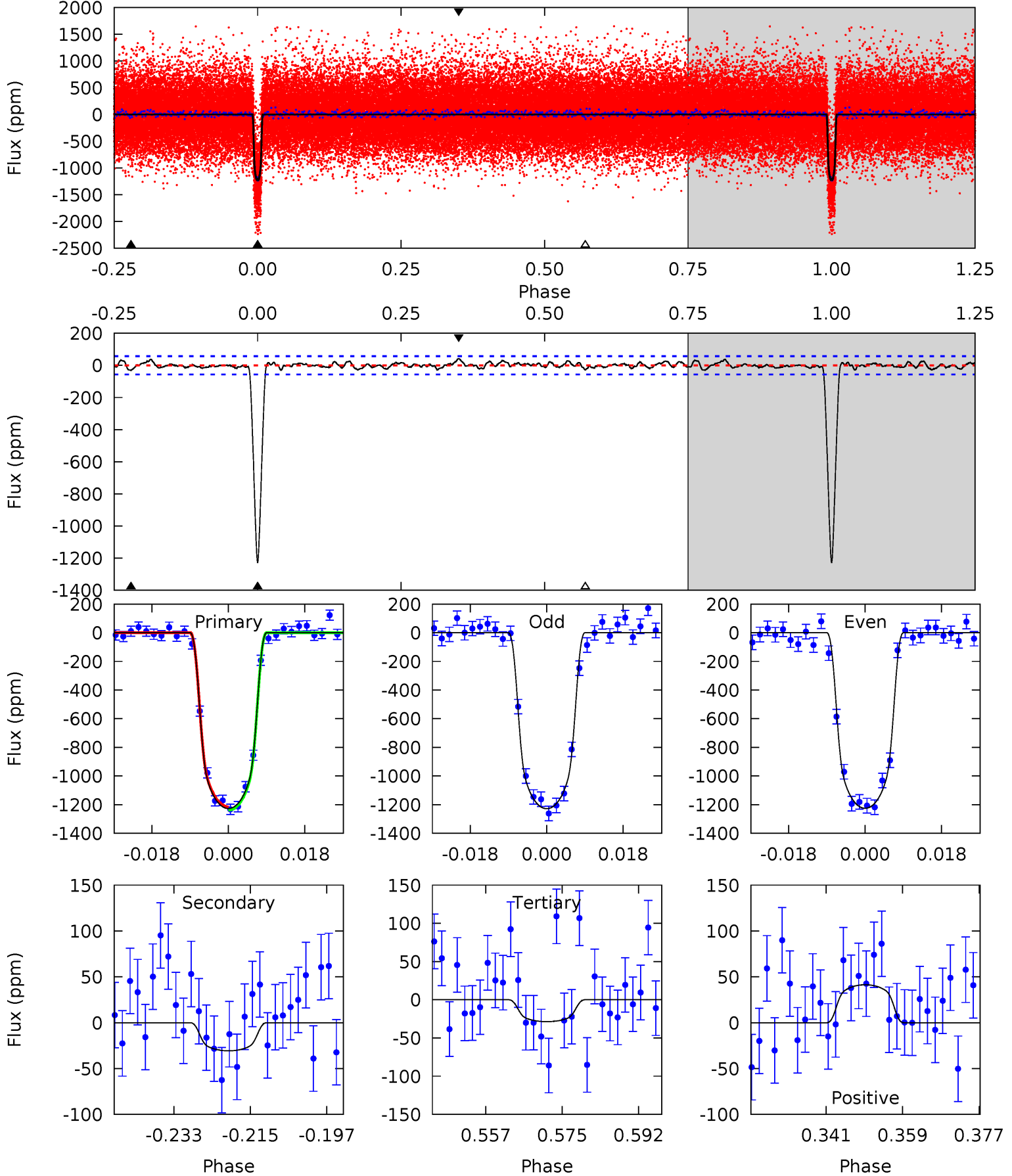
TCE 010526549-01 P= 9.273627 Days  $T_0=136.160391$  (BKJD)



# DV Model-Shift Uniqueness Test

010526549-01, P = 9.273583 Days, E = 126.889904 Days

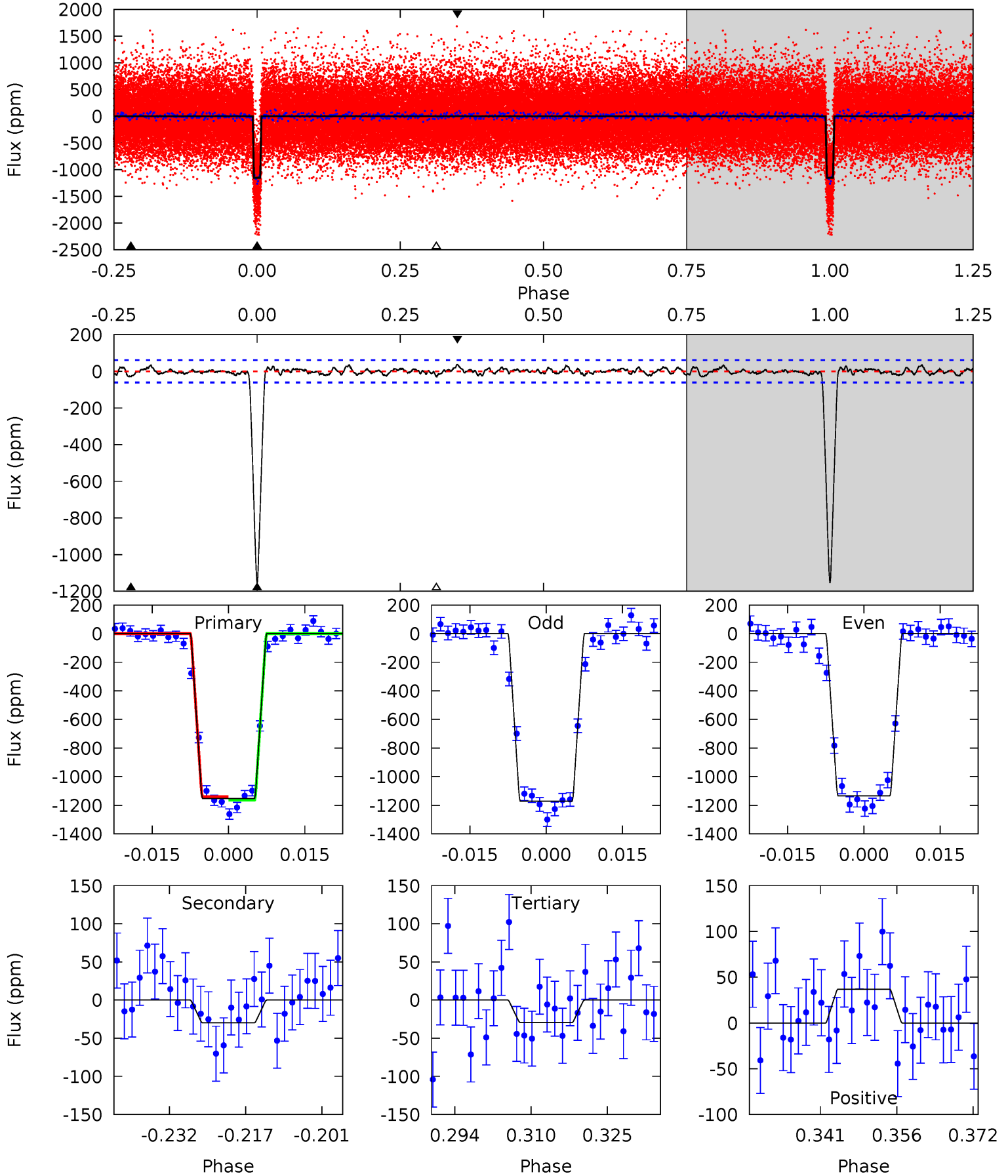
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
105.5	2.64	2.46	3.56	4.91	2.37	1.08	103.1	102.0	0.17	-0.92	0.13	0.99	0.03	0.93



# Alt Model-Shift Uniqueness Test

010526549-01, P = 9.273627 Days, E = 126.886764 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
93.0	2.41	2.38	2.97	4.94	2.42	0.94	90.6	90.0	0.03	-0.56	1.54	0.99	0.03	0.98



### Stellar Parameters For KIC 010526549

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4856^{+131}_{-146}$	$4.583^{+0.065}_{-0.035}$	$-0.300^{+0.300}_{-0.300}$	$0.696^{+0.056}_{-0.068}$	$0.676^{+0.088}_{-0.047}$	$2.828^{+0.794}_{-0.380}$
	+3%/-3%	+1%/-1%	+100%/-100%	+8%/-10%	+13%/-7%	+28%/-13%
Source	PHO1	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 010526549-01 / KOI 0746.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-31 \pm 12$	$2.85^{+0.22}_{-0.21}$	$902^{+30}_{-33}$	$2623^{+131}_{-177}$	$12^{+5}_{-5}$
Alt.	$-30 \pm 12$	$2.61^{+0.20}_{-0.20}$	$900^{+30}_{-33}$	$2664^{+145}_{-175}$	$14^{+7}_{-6}$

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



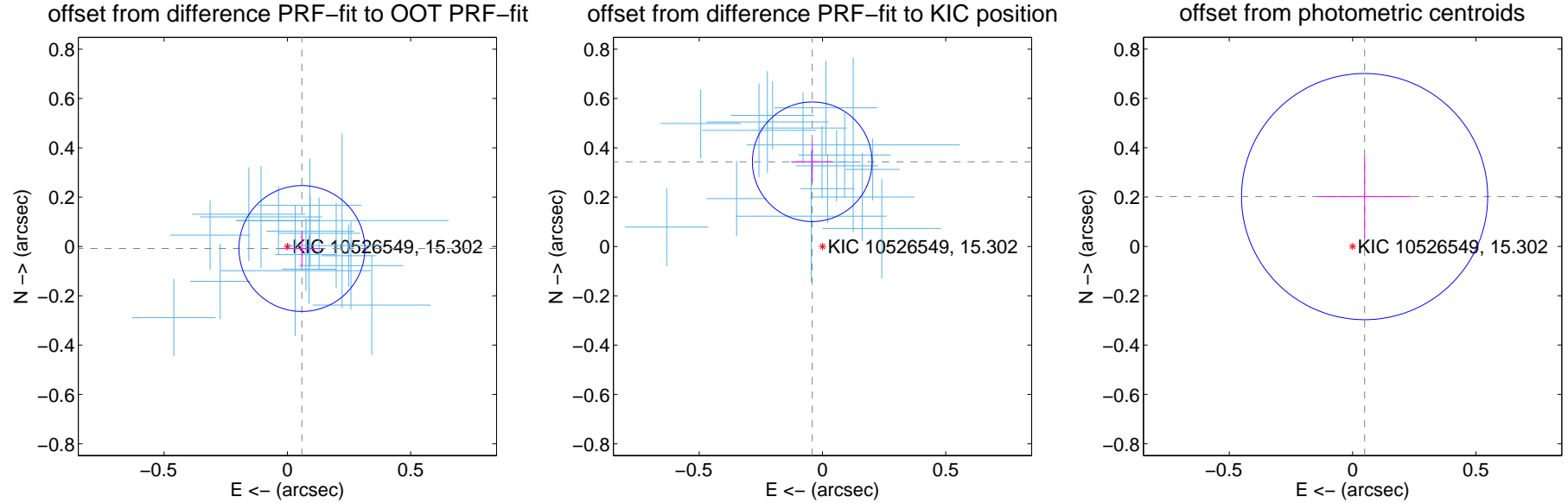
## DV Centroid Data

Supplemental centroid analysis for 010526549-01. Kepler magnitude: 15.30. Transit SNR 77.26

There are 17 quarters with good PRF difference image offsets

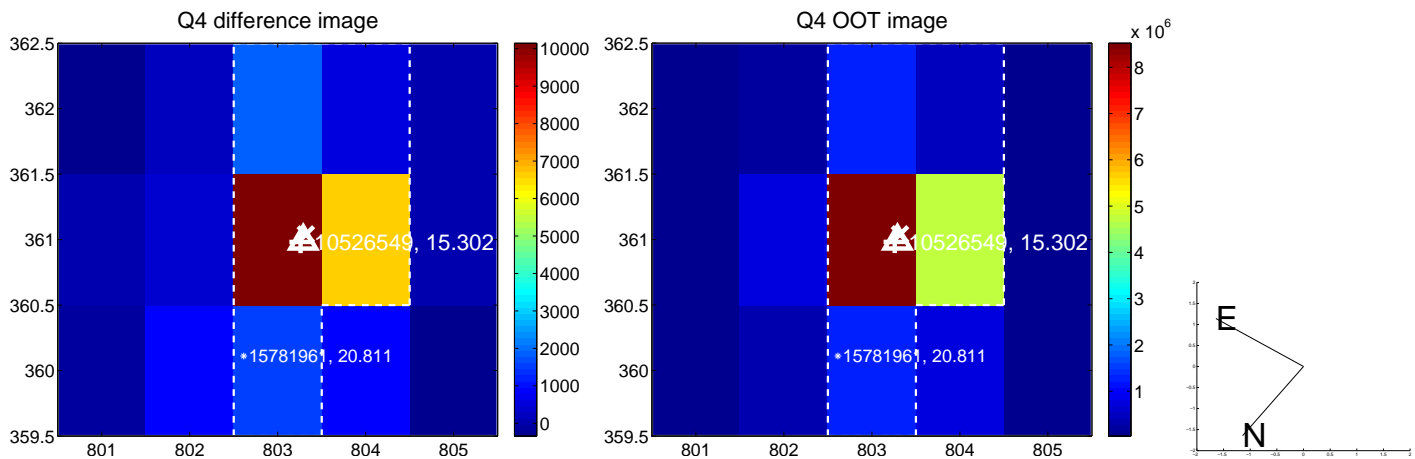
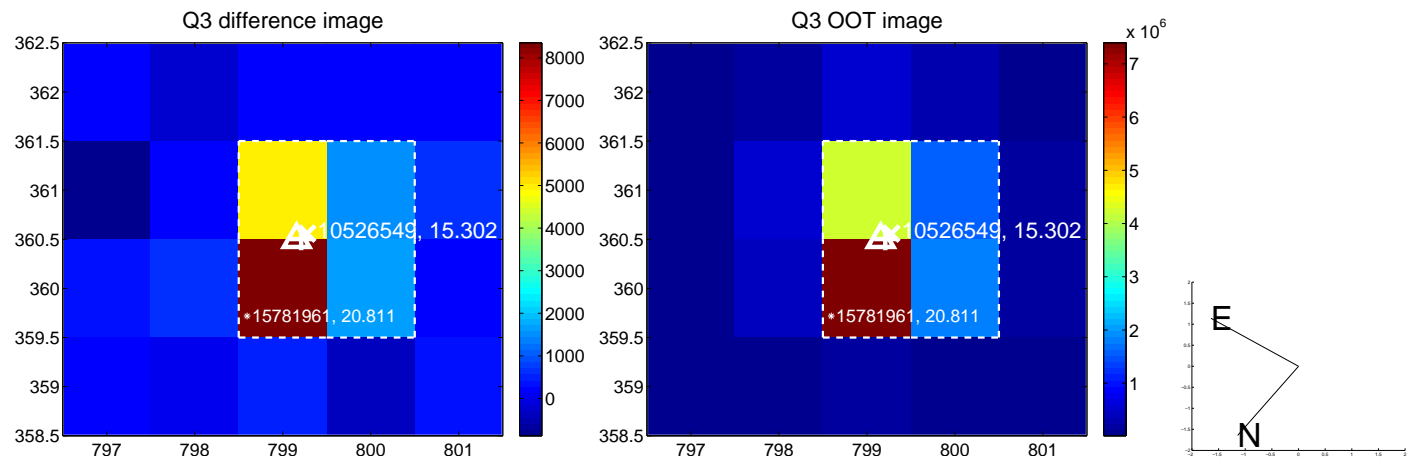
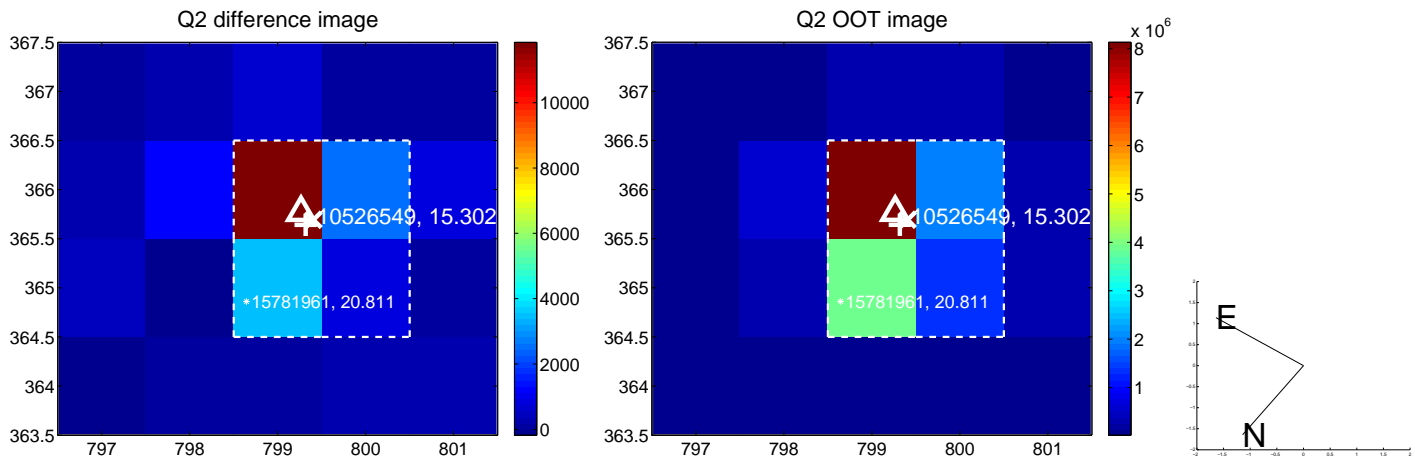
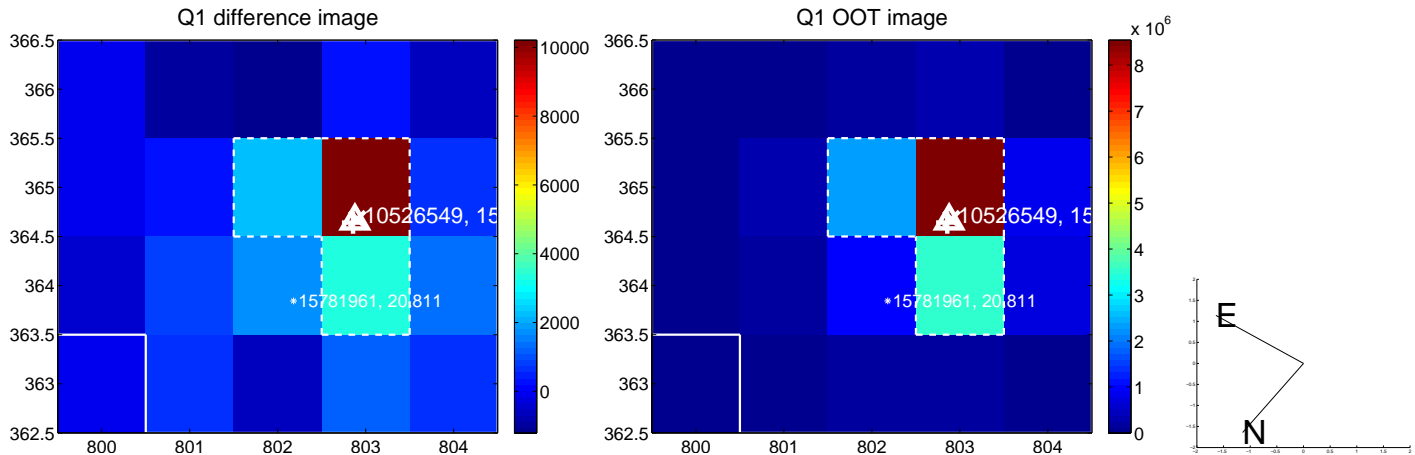
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.059 \pm 0.085$	0.70	$-0.059 \pm 0.085$	$-0.008 \pm 0.073$
PRF-fit source offset from KIC position	$0.346 \pm 0.081$	4.28	$0.042 \pm 0.084$	$0.344 \pm 0.081$
photometric centroid source offset	$0.21 \pm 0.17$	1.25	$-0.05 \pm 0.19$	$0.20 \pm 0.16$

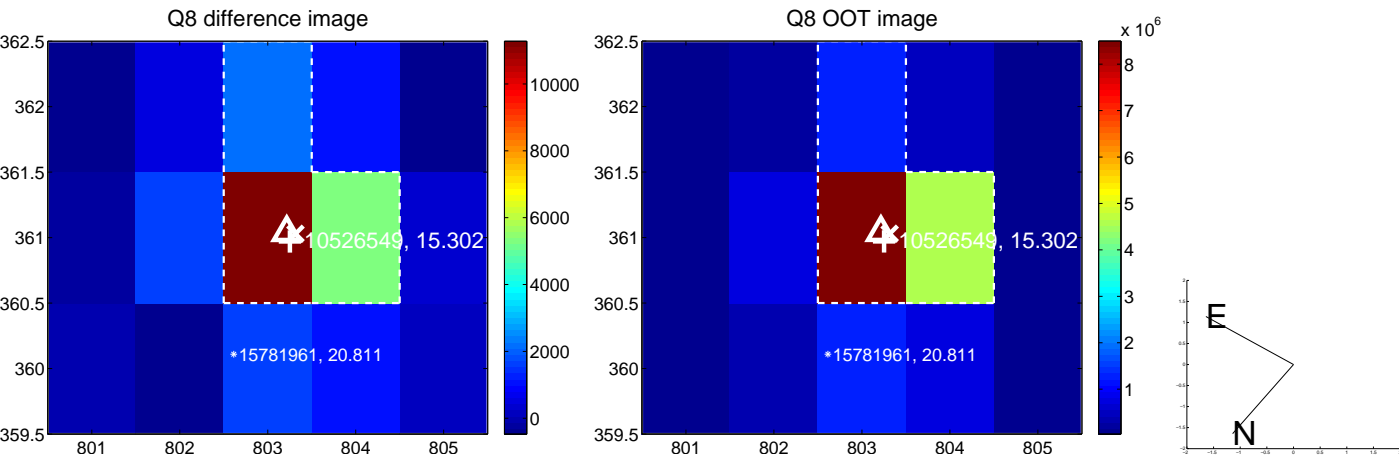
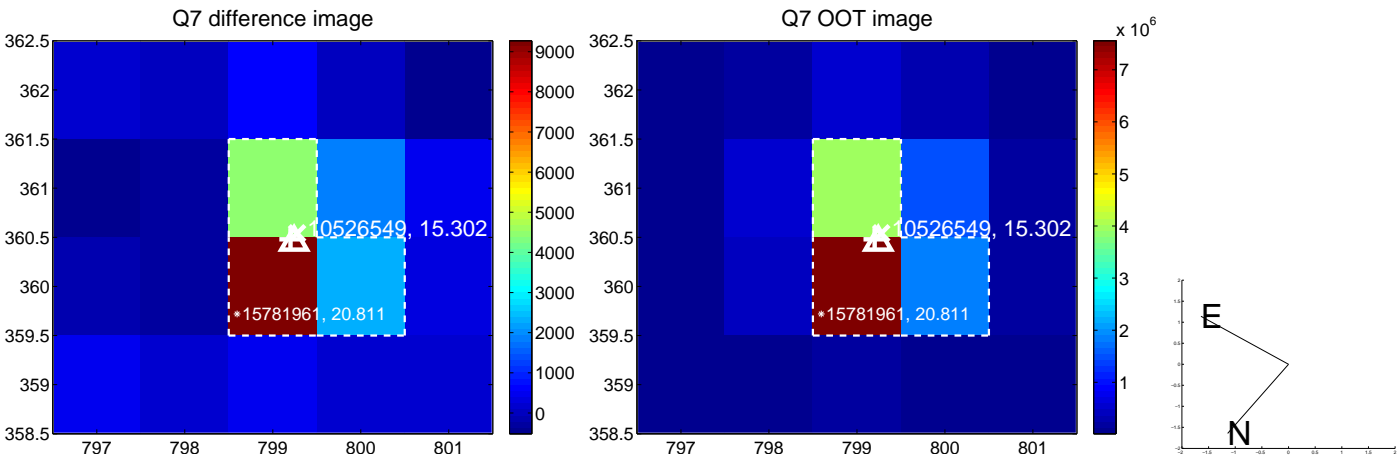
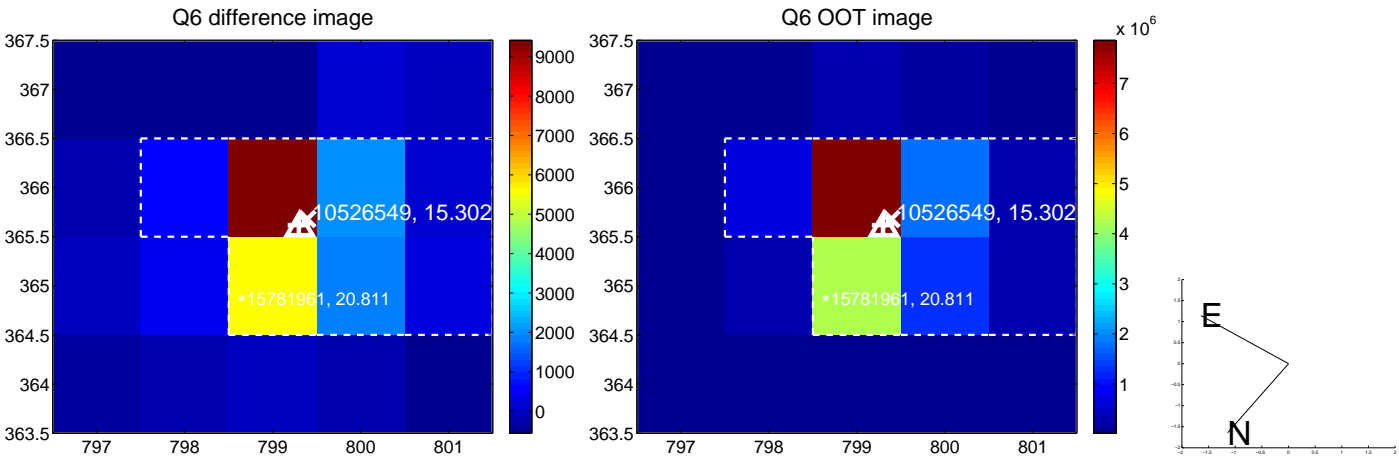
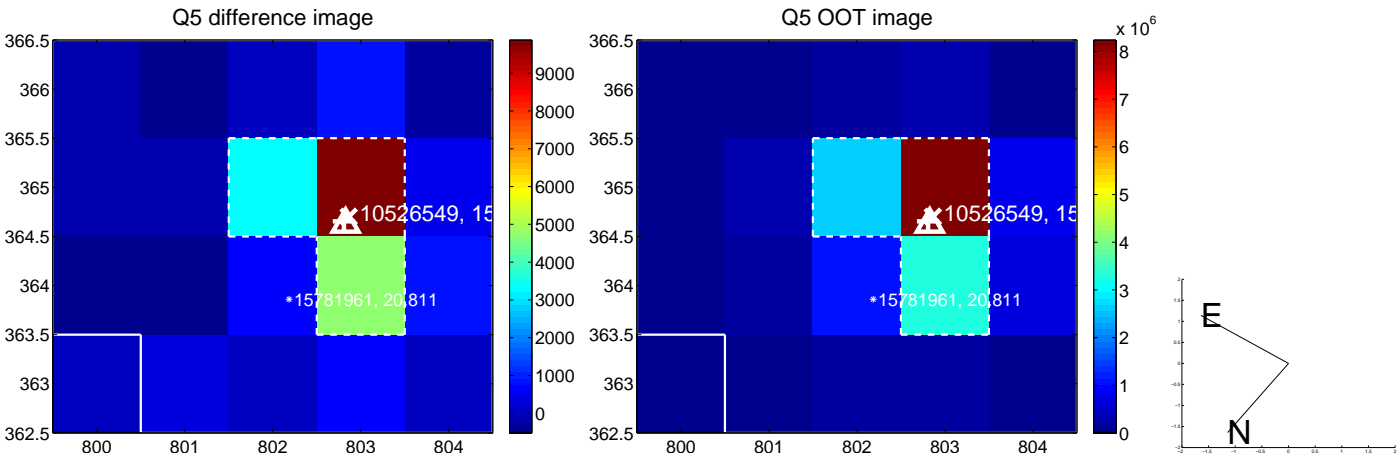


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

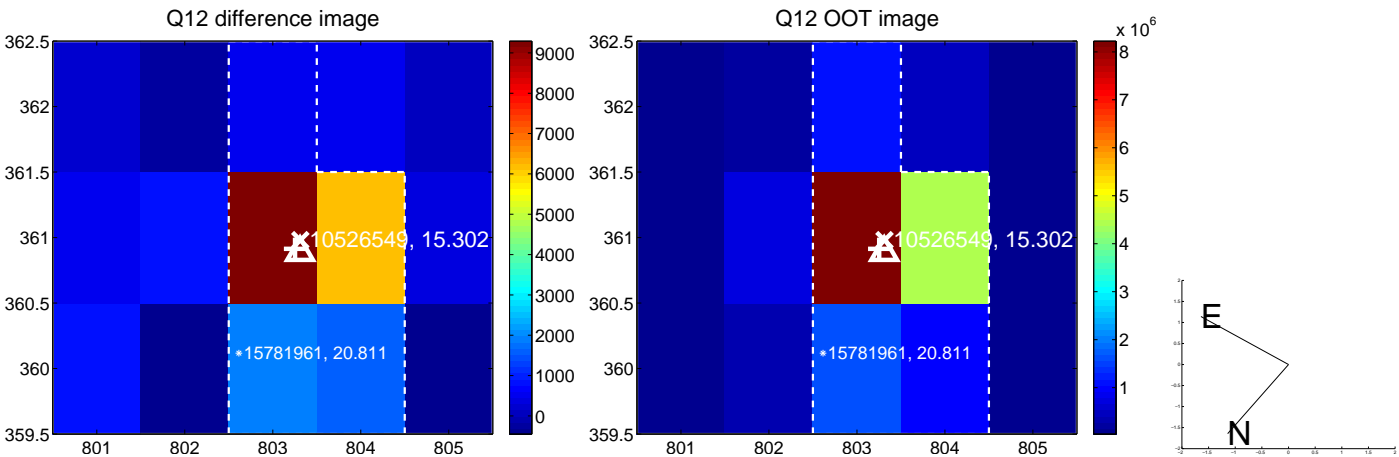
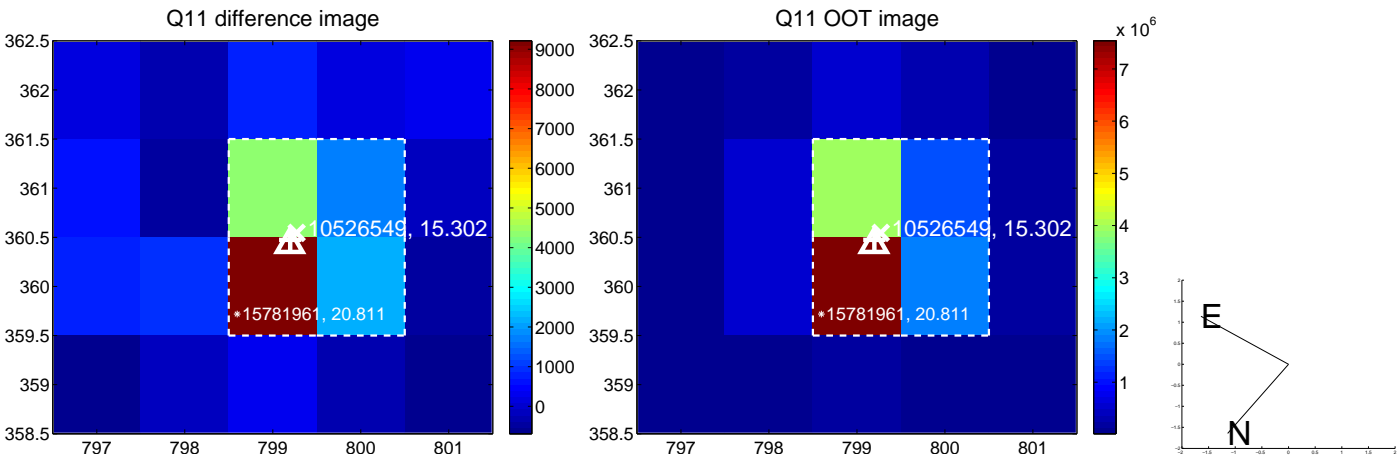
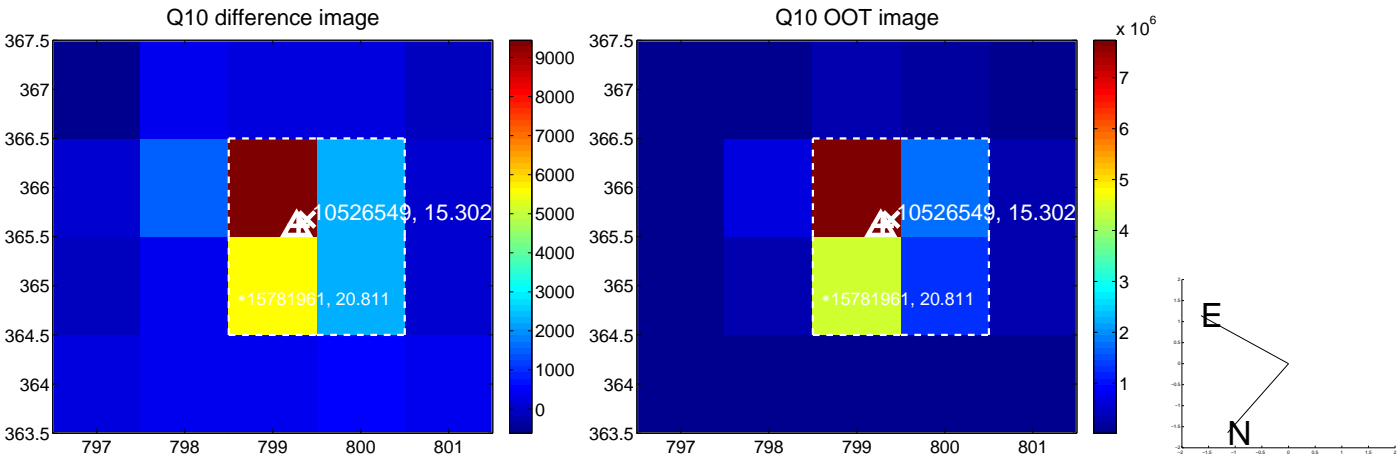
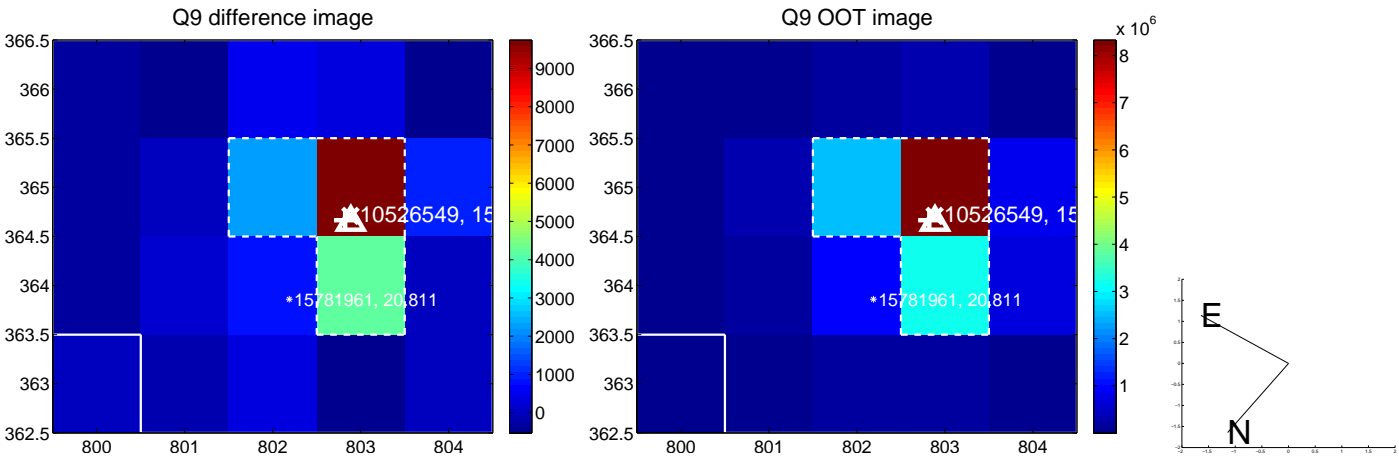
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



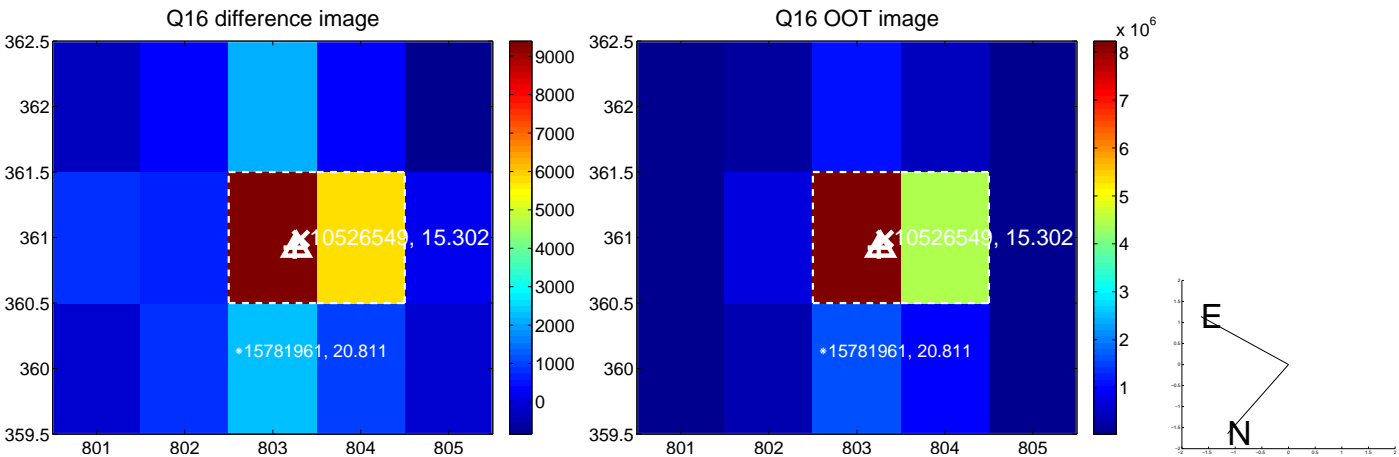
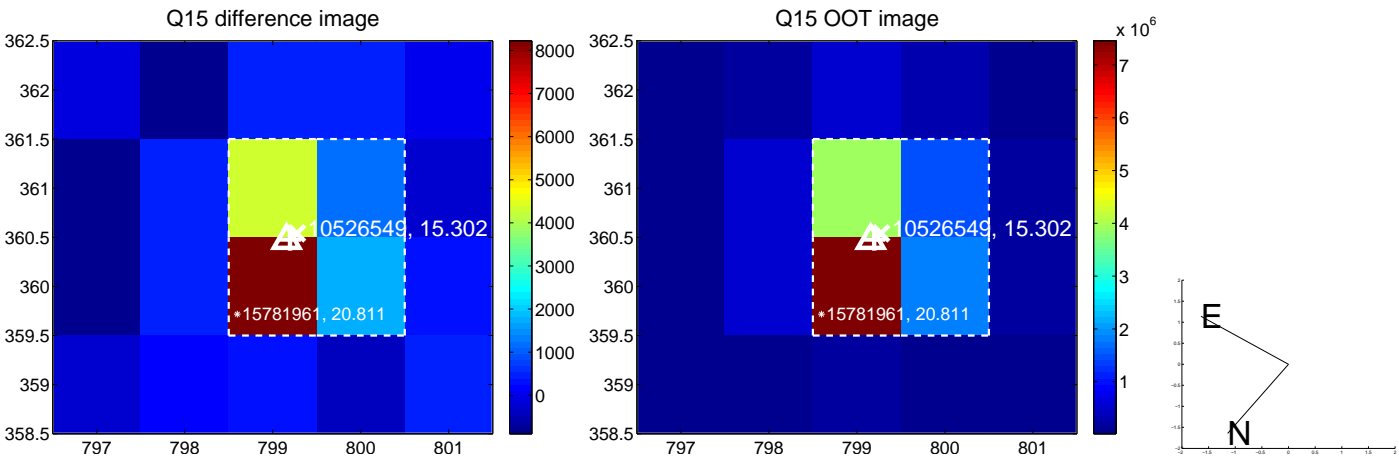
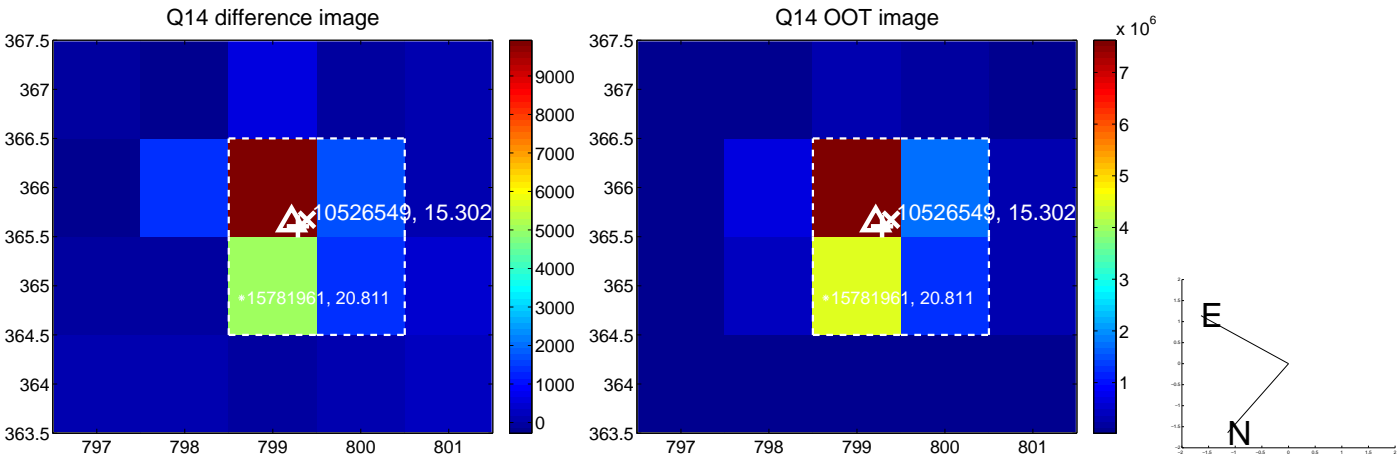
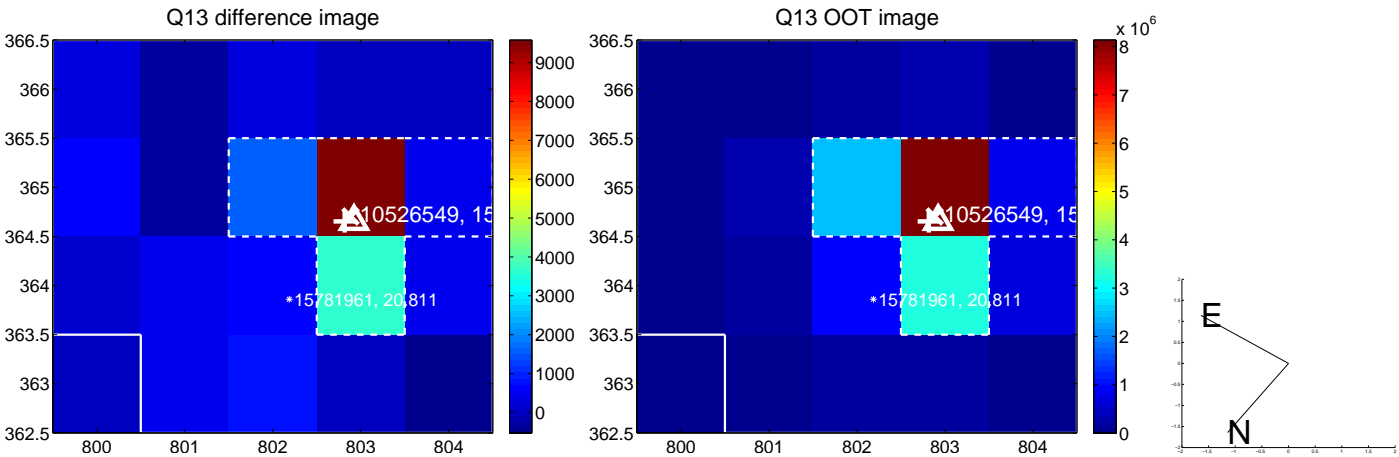
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

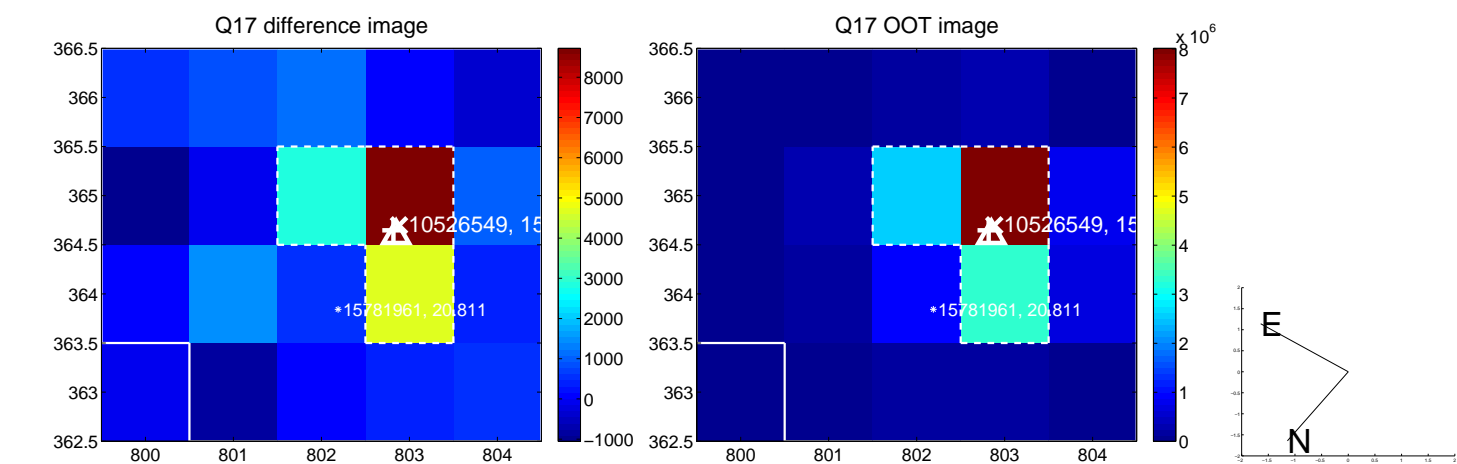


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

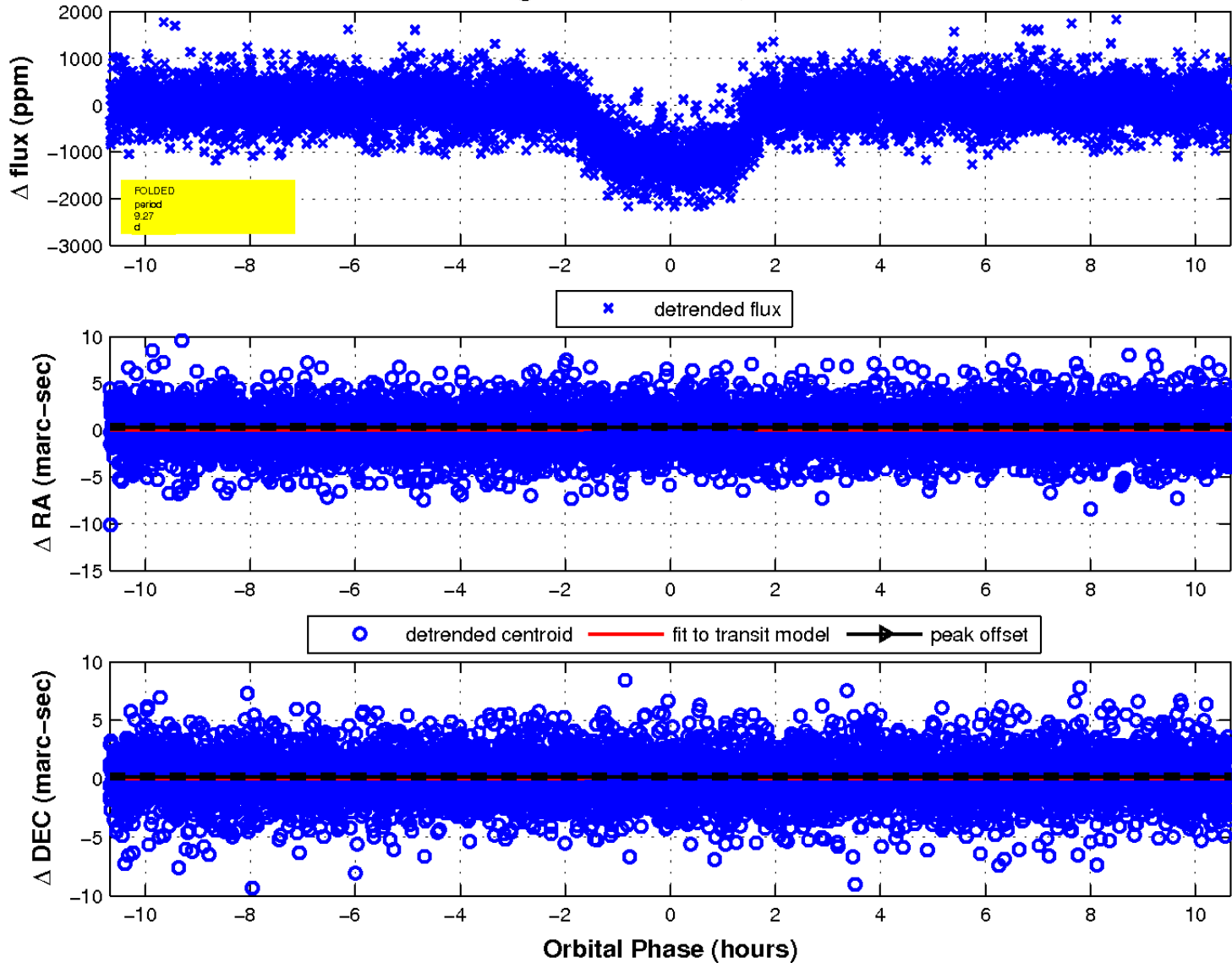




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



### fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

