

# KIC 006867219

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006867219-01	OBS	6783.01	11.850104	140.340864	164.7	3.692	7.9	8.4	0.93	6032	1.36	97.98

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006867219-01	OBS	PC	0.87	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.

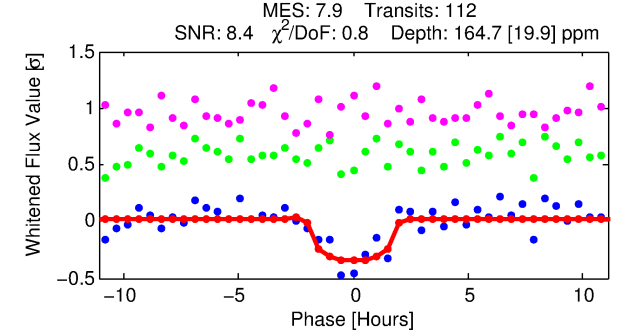
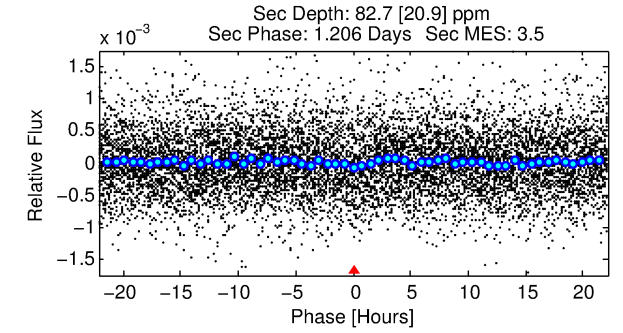
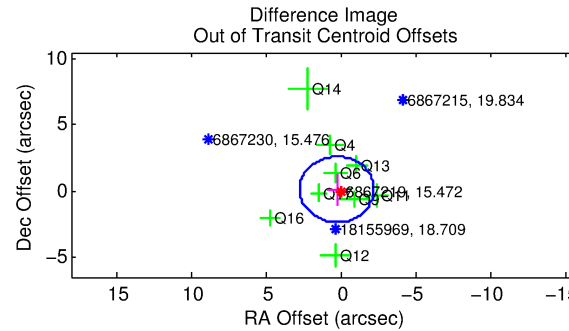
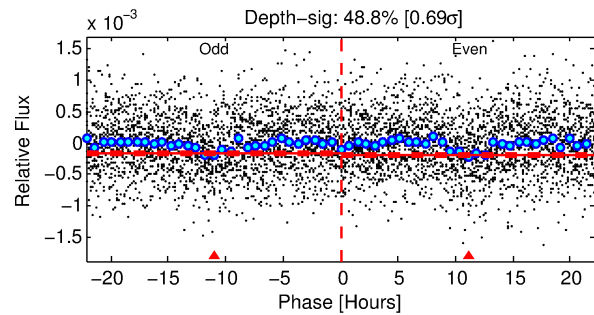
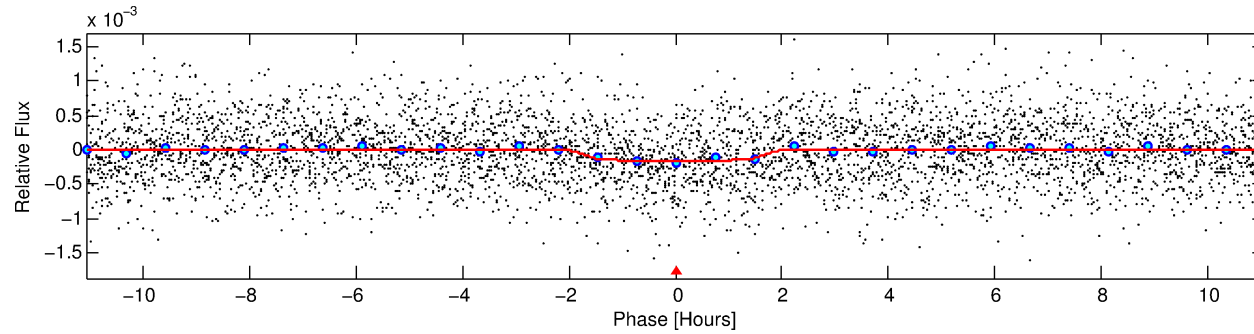
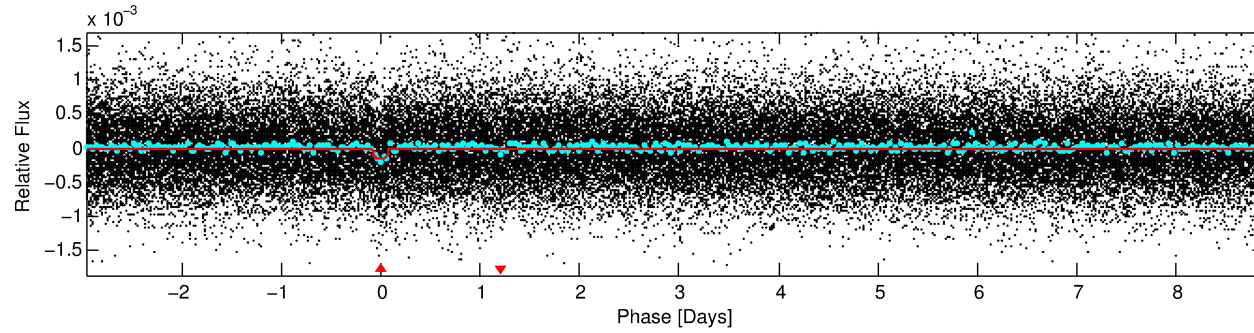
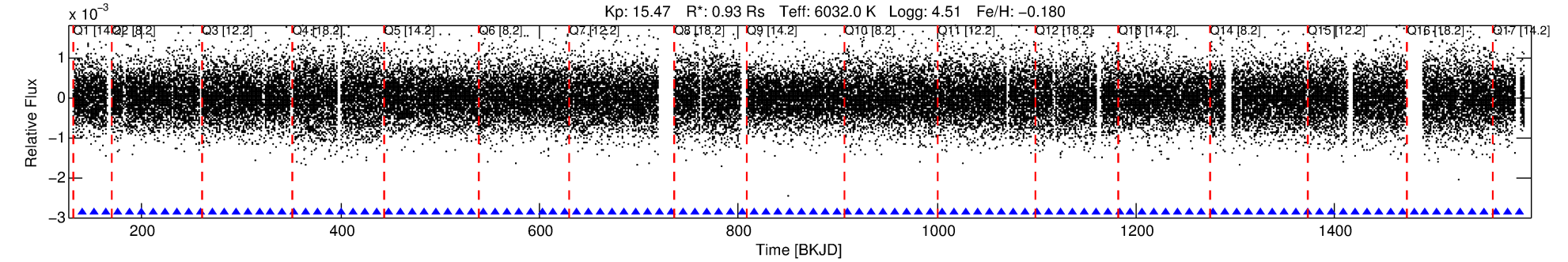
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006867219-01

No Significant Match Found

# DV One-Page Summary

KIC: 6867219 Candidate: 1 of 1 Period: 11.850 d  
KOI: K06783.01 Corr: 0.918



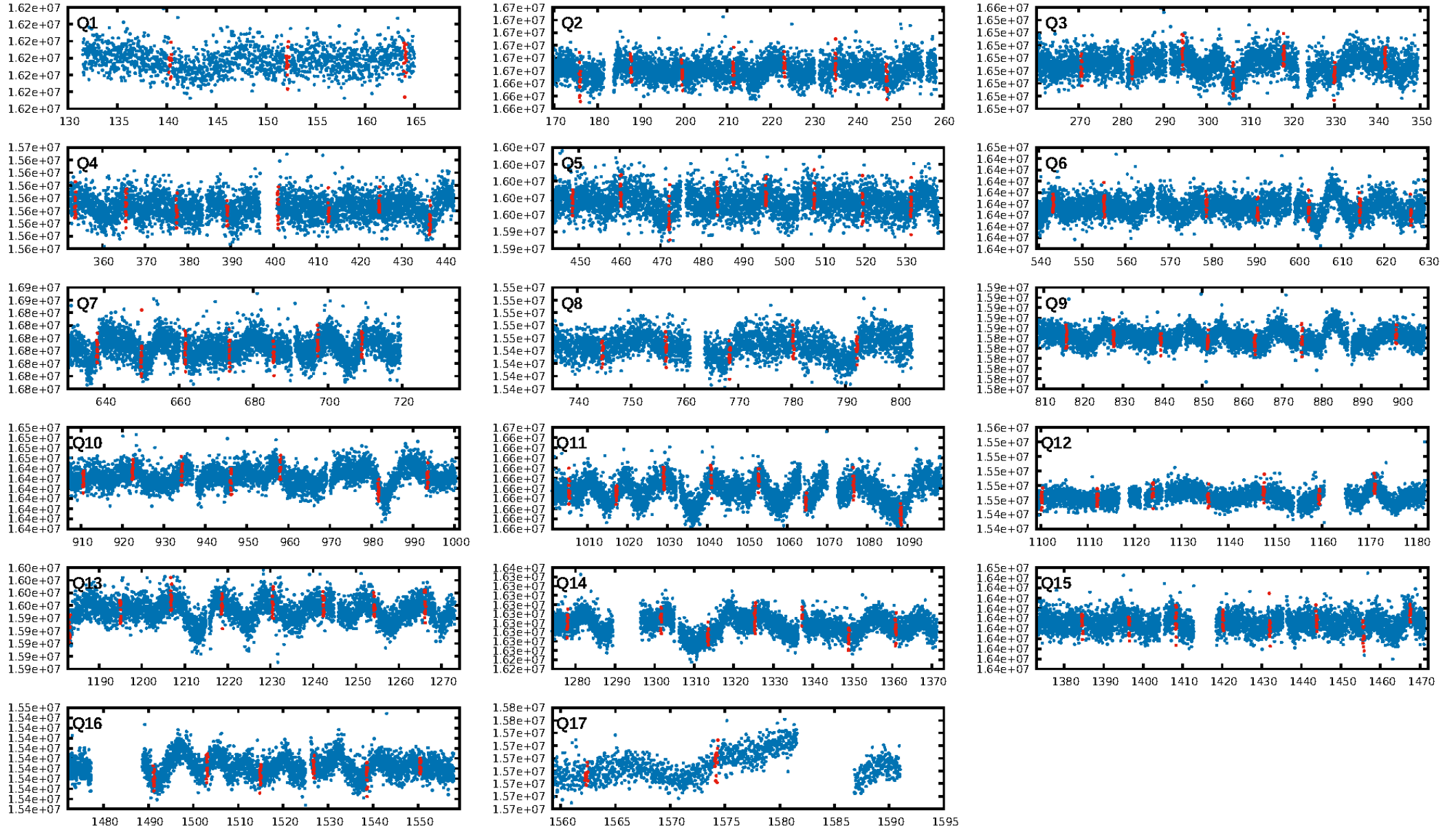
## DV Fit Results:

Period = 11.85010 [0.00014] d  
Epoch = 140.3409 [0.0090] BKJD  
Rp/R\* = 0.0134 [0.0097]  
a/R\* = 13.29 [48.69]  
b = 0.86 [1.15]  
Seff = 97.98 [38.11]  
Teff = 802 [78] K  
Rp = 1.36 [1.06] Re  
a = 0.1022 [0.0257] AU  
Ag = 256.81 [388.35] [0.66 $\sigma$ ]  
Teffp = 4965 [1829] K [2.27 $\sigma$ ]

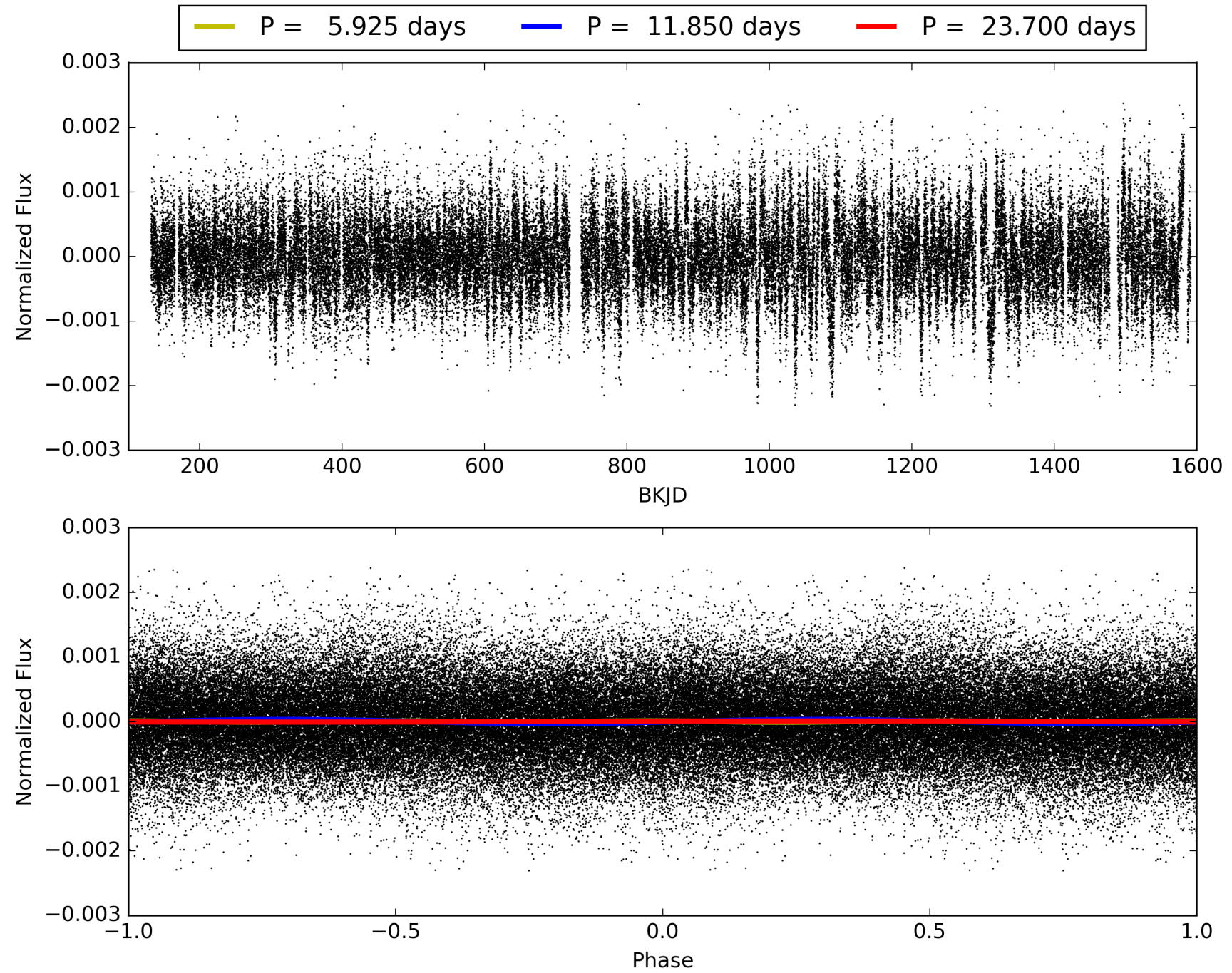
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.05e-15  
RollingBand-fgt: 1.00 [107/107]  
GhostDiagnostic-chr: -6.018  
Centroid-sig: 0.0%  
Centroid-so: 2.746 arcsec [2.10 $\sigma$ ]  
OotOffset-rm: 0.276 arcsec [0.33 $\sigma$ ]  
KicOffset-rm: 0.804 arcsec [1.06 $\sigma$ ]  
OotOffset-st: 2/1/3/3 [9]  
KicOffset-st: 2/1/3/3 [9]  
DiffImageQuality-fgm: 0.22 [2/9]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006867219-01, PDC Light Curves

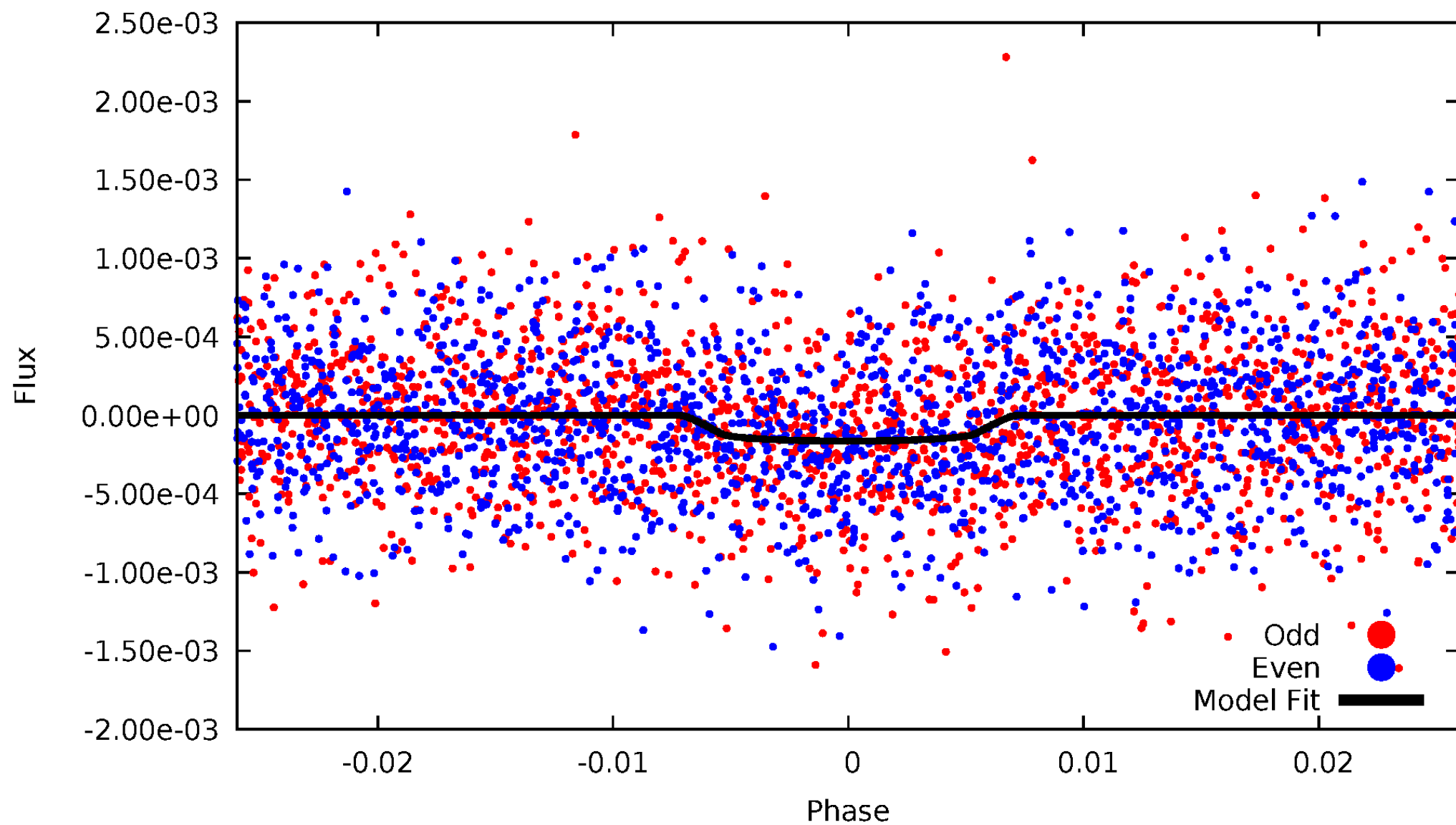


TCE 006867219-01



# DV Odd/Even

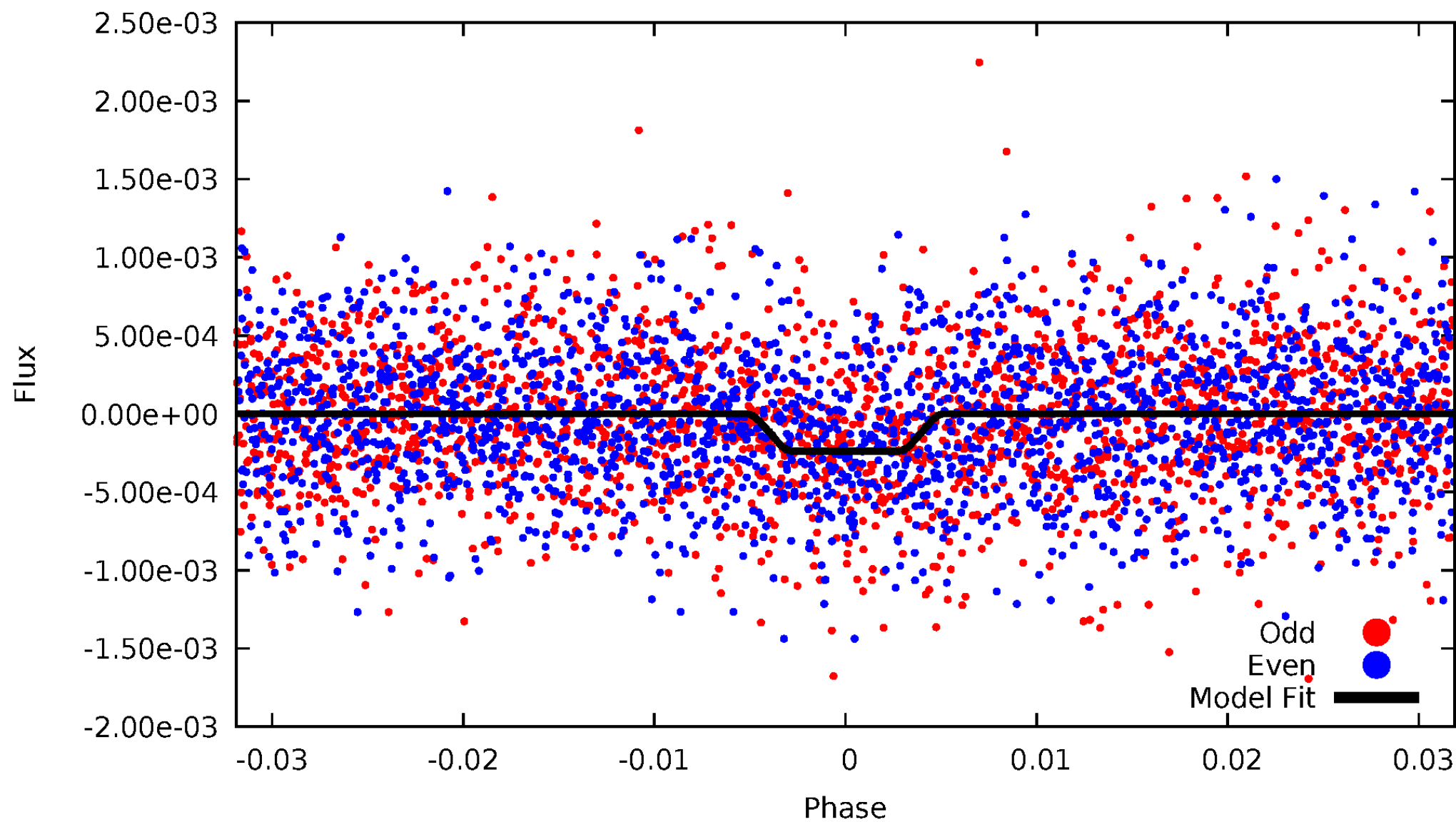
TCE 006867219-01





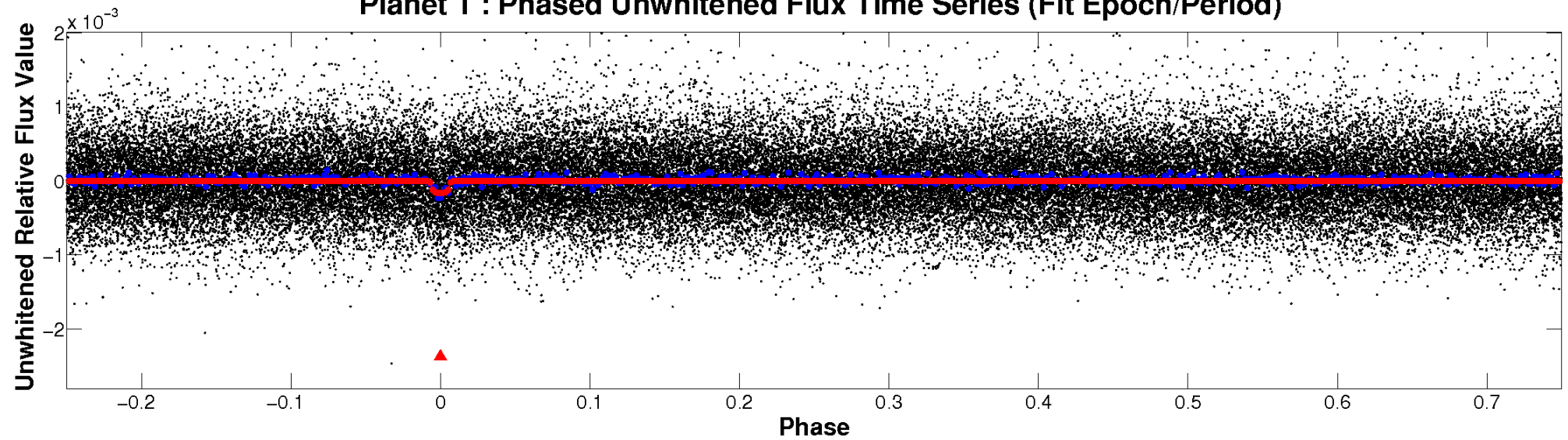
# ALT Odd/Even

TCE 006867219-01

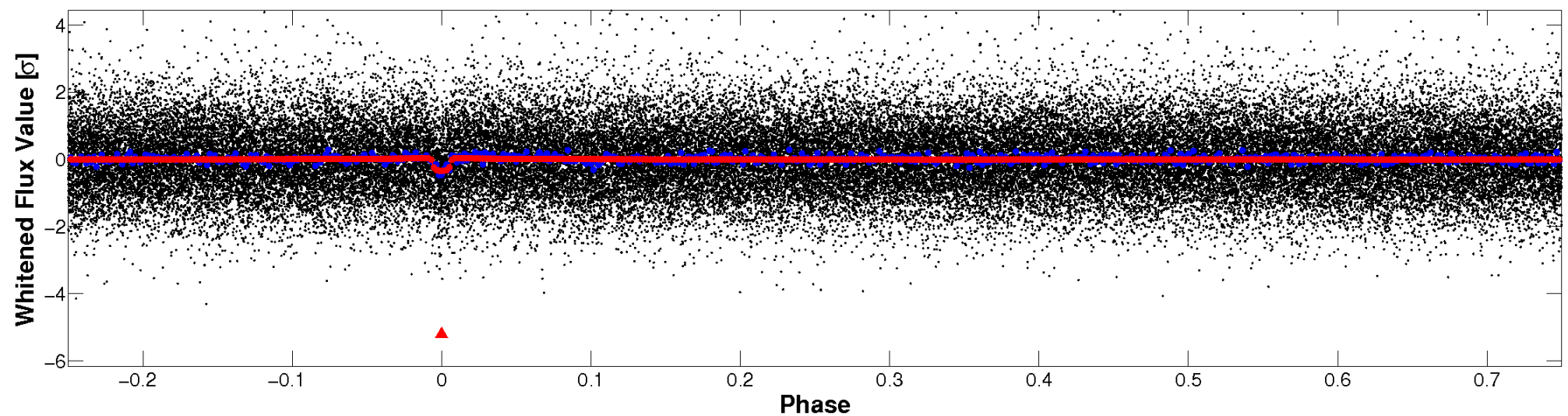


# Non-Whitened Vs. Whitened Light Curve

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

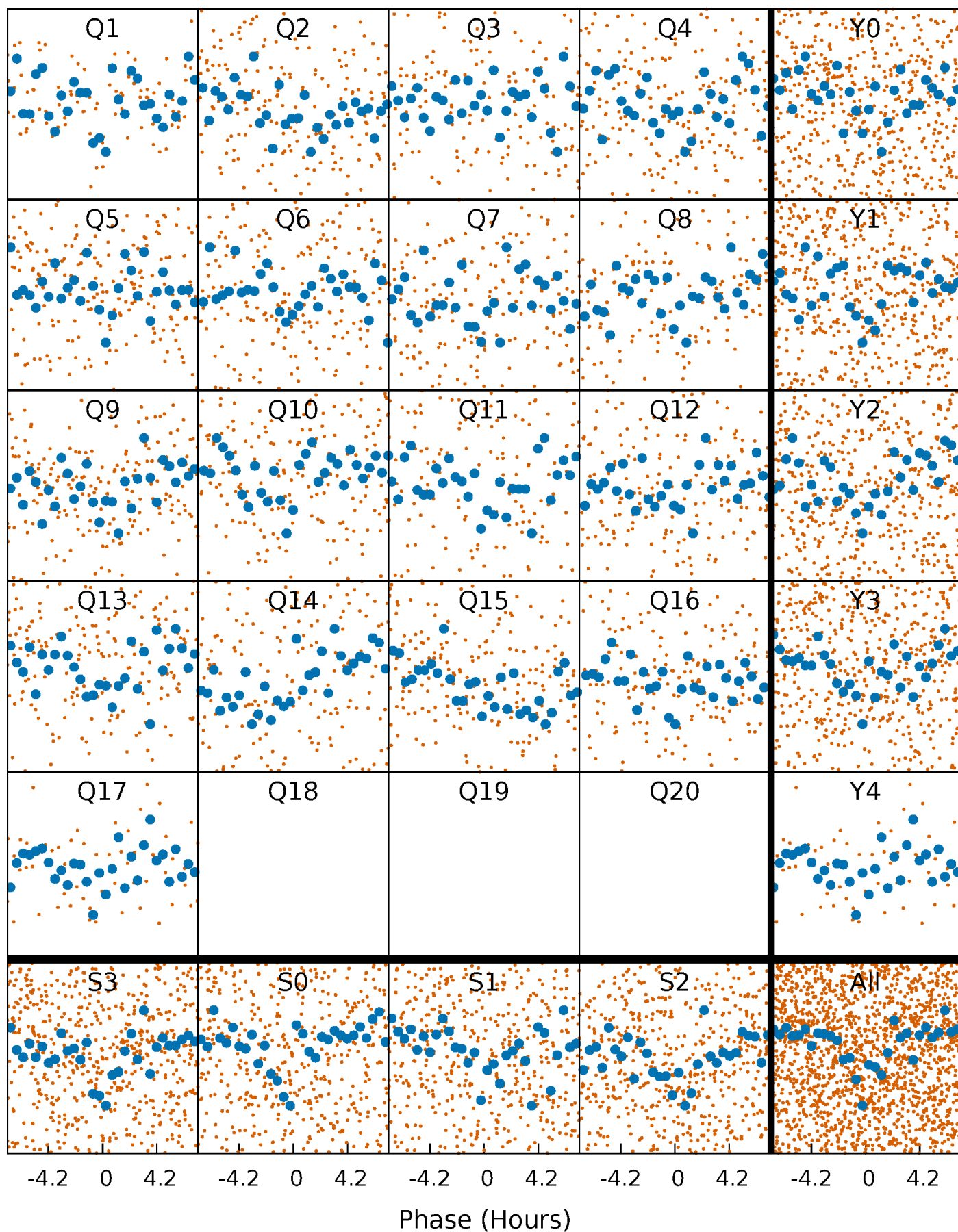


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

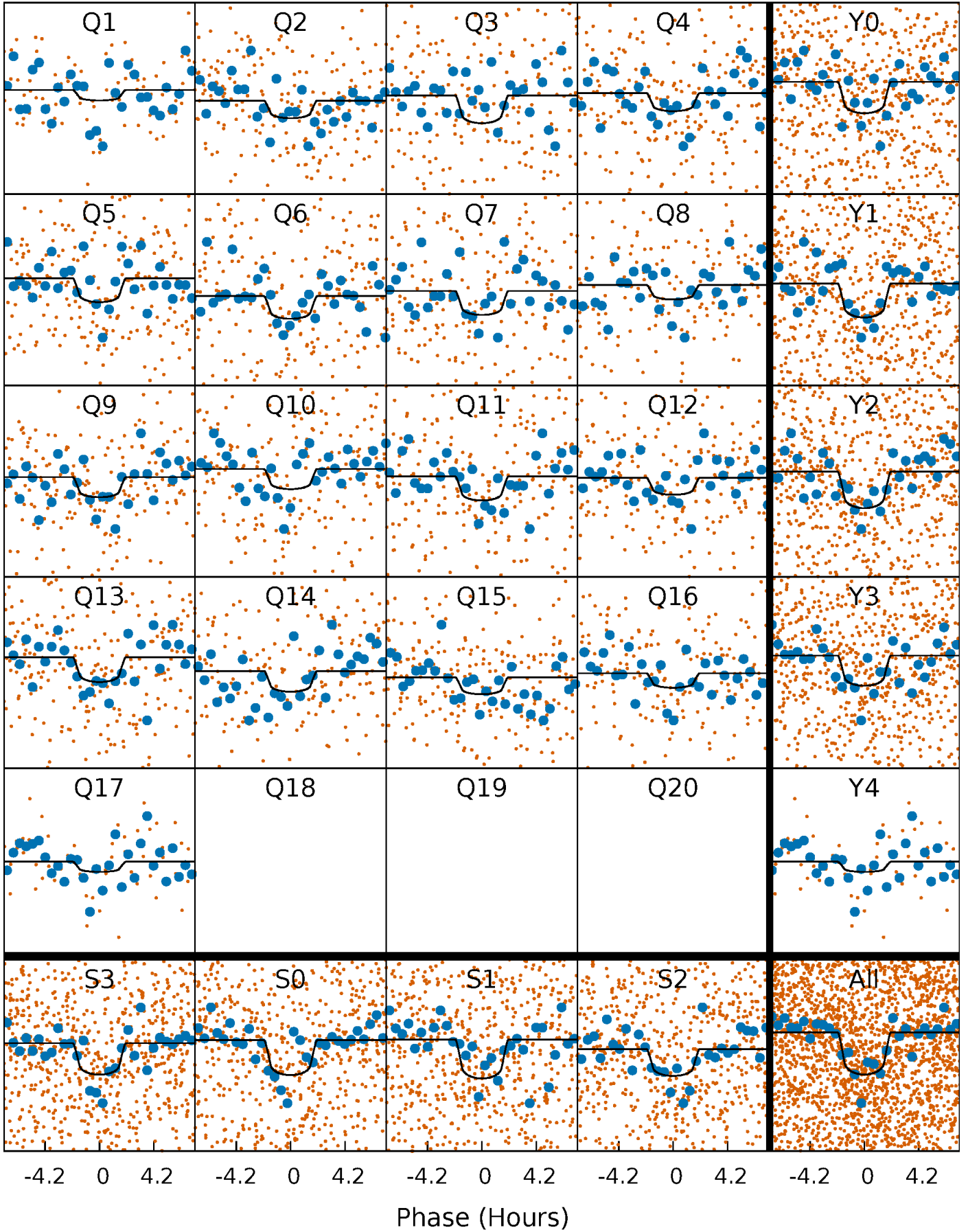
TCE 006867219-01 P= 11.850104 Days  $T_0=140.340864$  (BKJD)





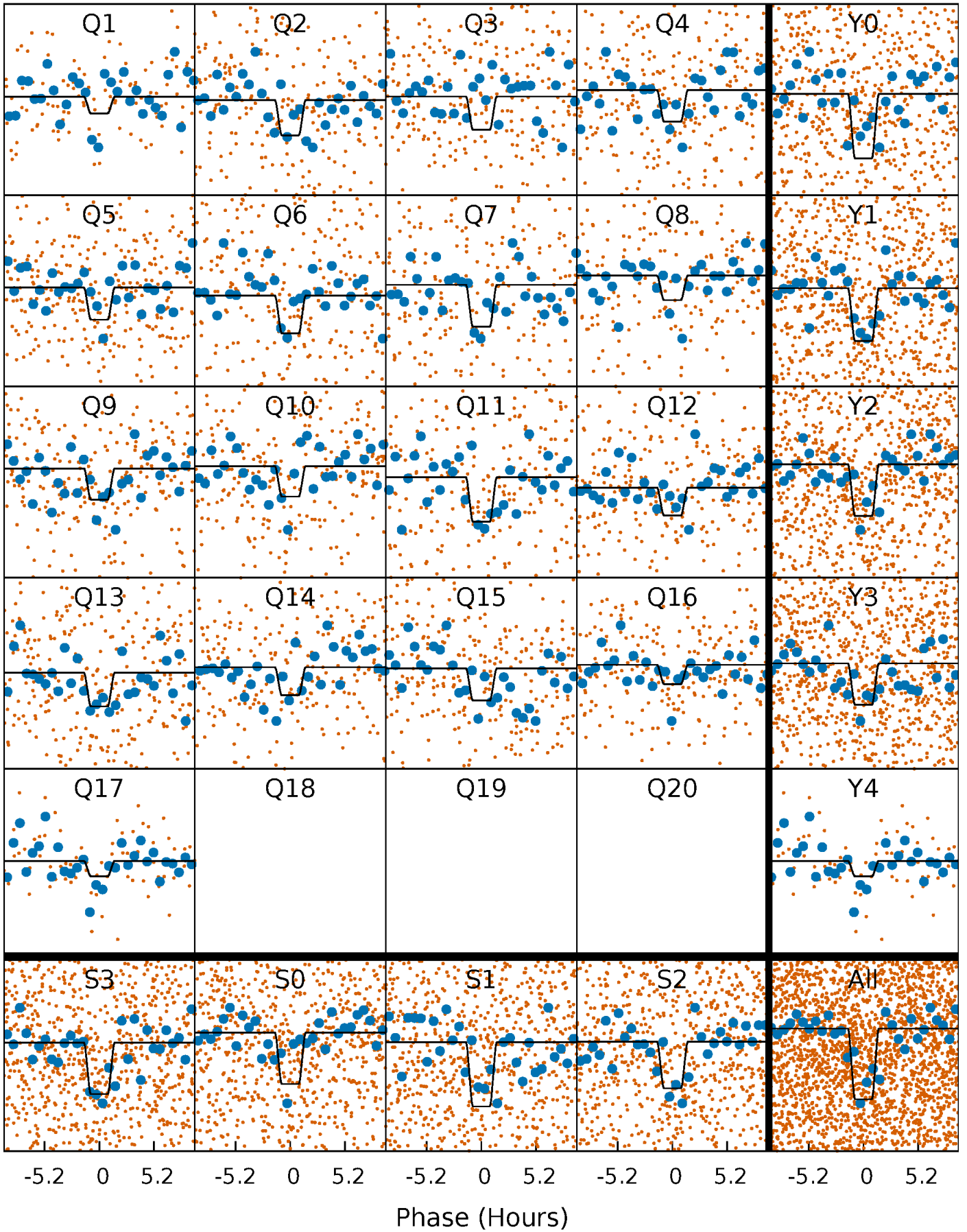
# DV Quarter-Phased Transit Curves

TCE 006867219-01 P= 11.850104 Days  $T_0=140.340864$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

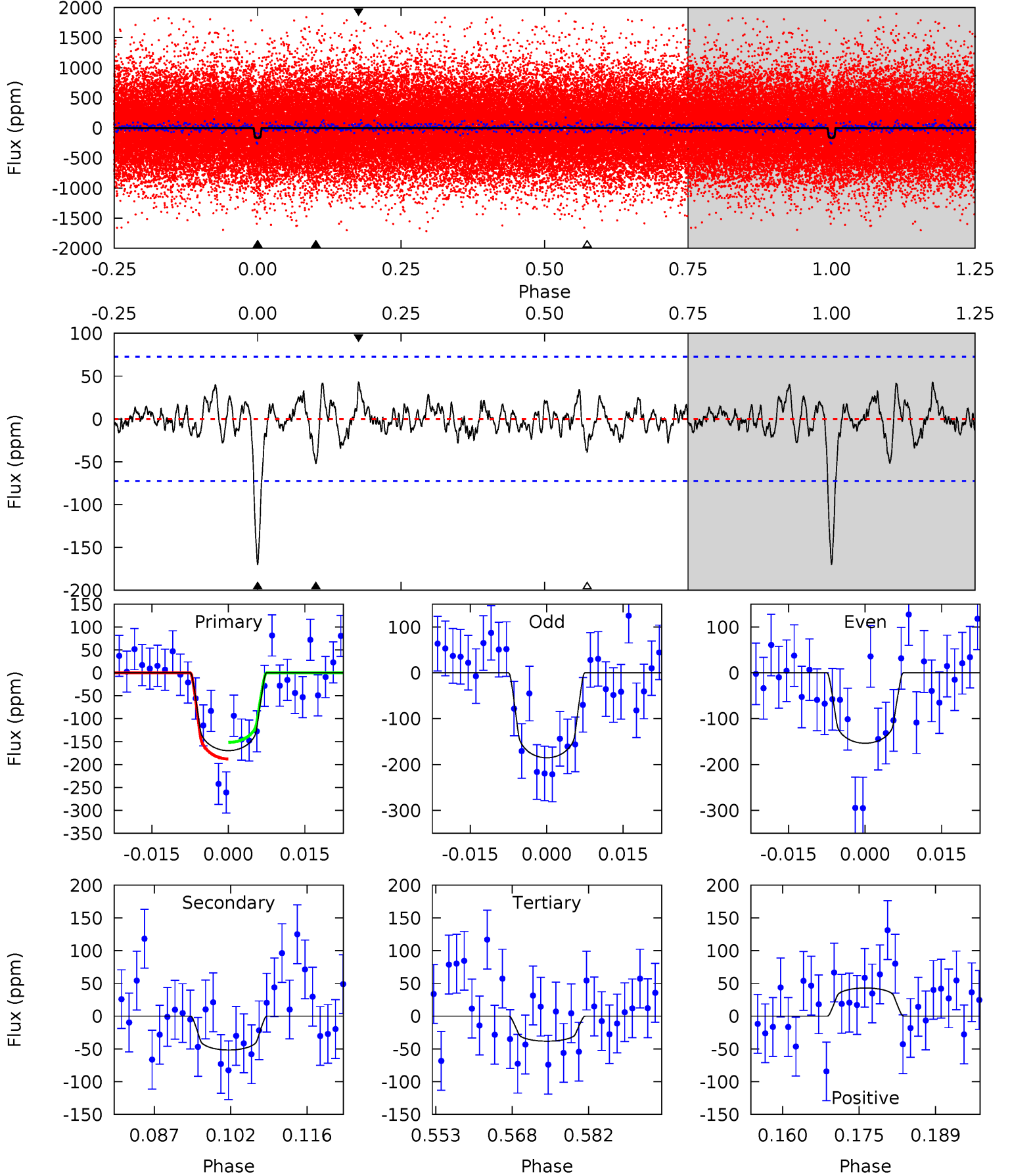
TCE 006867219-01 P= 11.850016 Days  $T_0=140.341091$  (BKJD)



# DV Model-Shift Uniqueness Test

006867219-01, P = 11.850104 Days, E = 128.490760 Days

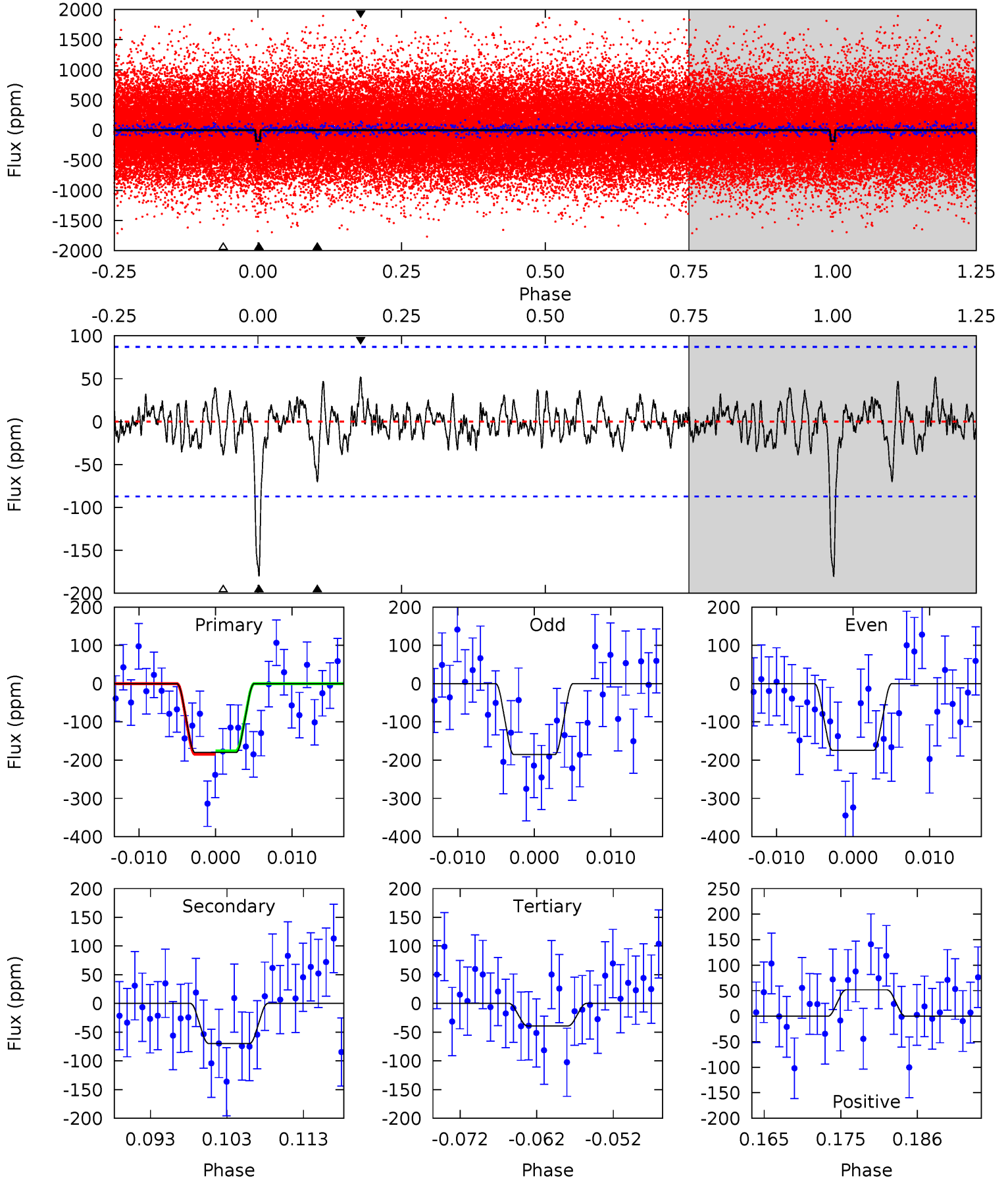
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	3.53	2.61	2.94	4.95	2.44	0.90	8.98	8.66	0.92	0.60	1.08	1.07	0.20	1.24



# Alt Model-Shift Uniqueness Test

006867219-01, P = 11.850016 Days, E = 128.491075 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
10.4	4.02	2.25	2.98	5.02	2.57	0.89	8.14	7.41	1.77	1.04	0.31	0.97	0.22	0.27



### Stellar Parameters For KIC 006867219

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6032^{+180}_{-198}$	$4.508^{+0.050}_{-0.200}$	$-0.180^{+0.300}_{-0.300}$	$0.929^{+0.278}_{-0.093}$	$1.014^{+0.131}_{-0.131}$	$1.783^{+0.465}_{-0.895}$
	+3%/-3%	+1%/-4%	+167%/-167%	+30%/-10%	+13%/-13%	+26%/-50%
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 006867219-01 / KOI 6783.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-52 \pm 15$	$1.51^{+1.02}_{-0.86}$	$1145^{+88}_{-56}$	$4478^{+1957}_{-768}$	$124^{+552}_{-81}$
Alt.	$-70 \pm 17$	$1.68^{+1.05}_{-0.89}$	$1147^{+76}_{-55}$	$4524^{+1988}_{-703}$	$133^{+508}_{-82}$

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



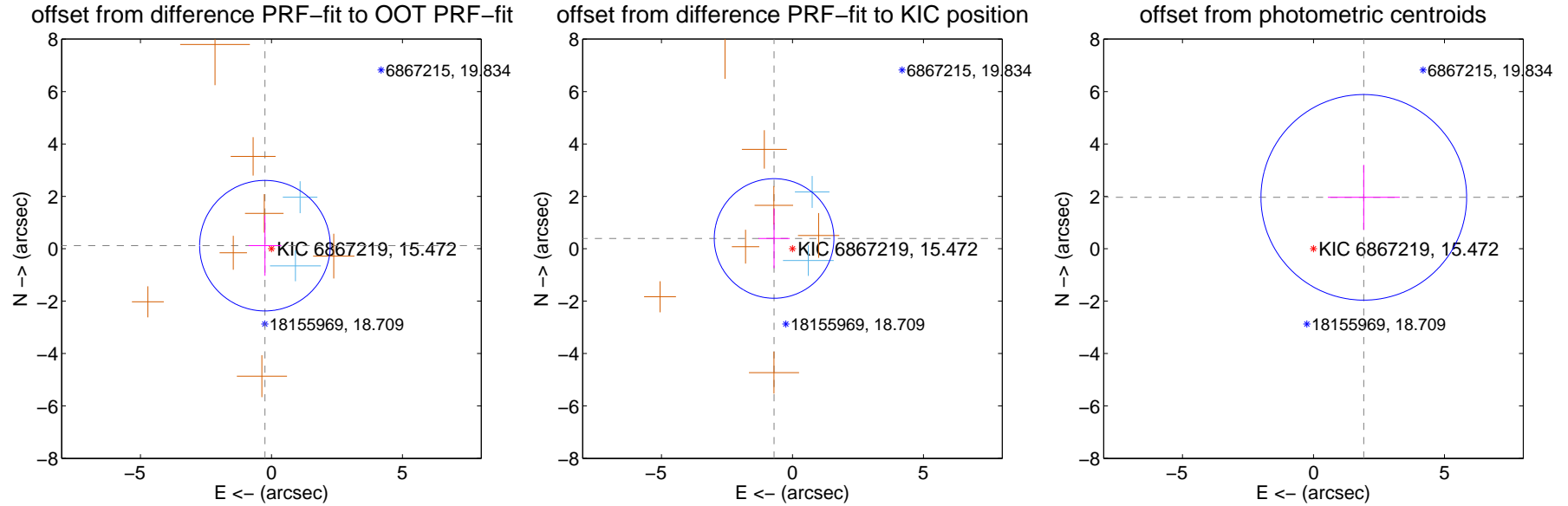
## DV Centroid Data

Supplemental centroid analysis for 006867219-01. Kepler magnitude: 15.47. Transit SNR 8.40

There are 2 quarters with good PRF difference image offsets

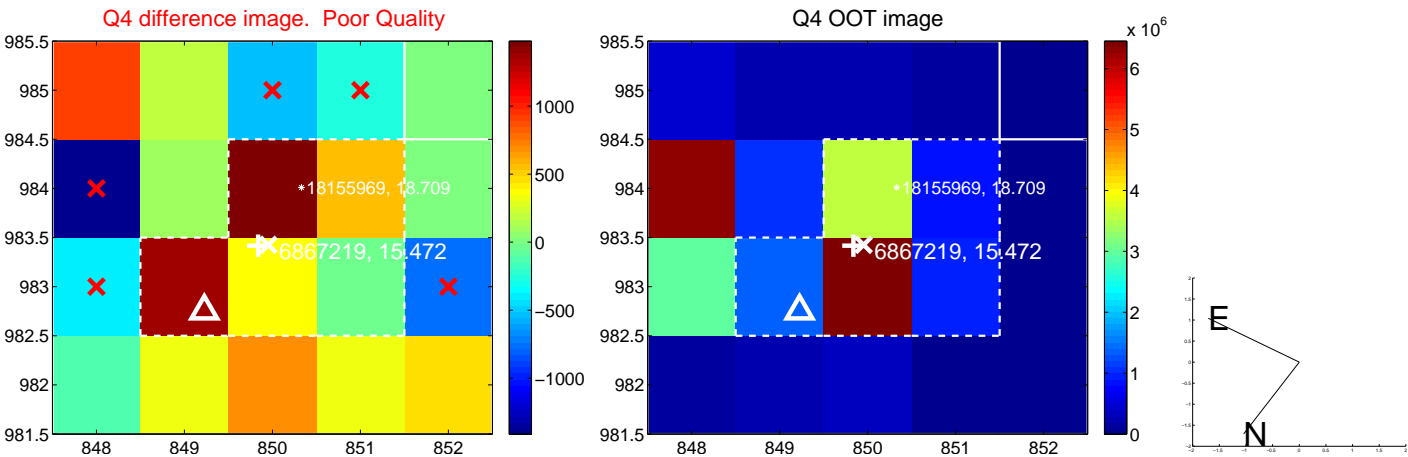
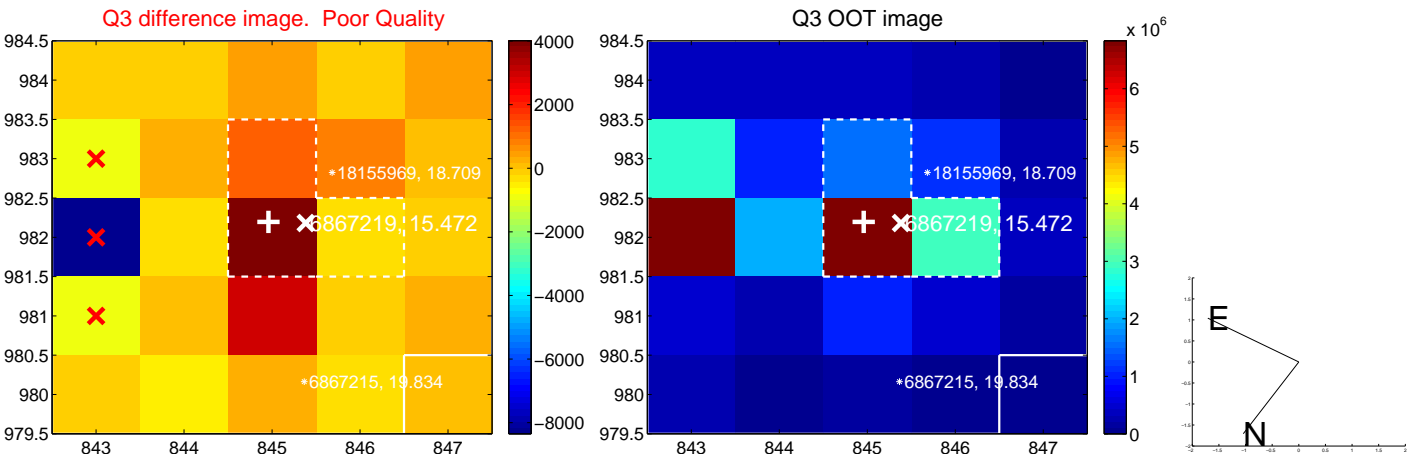
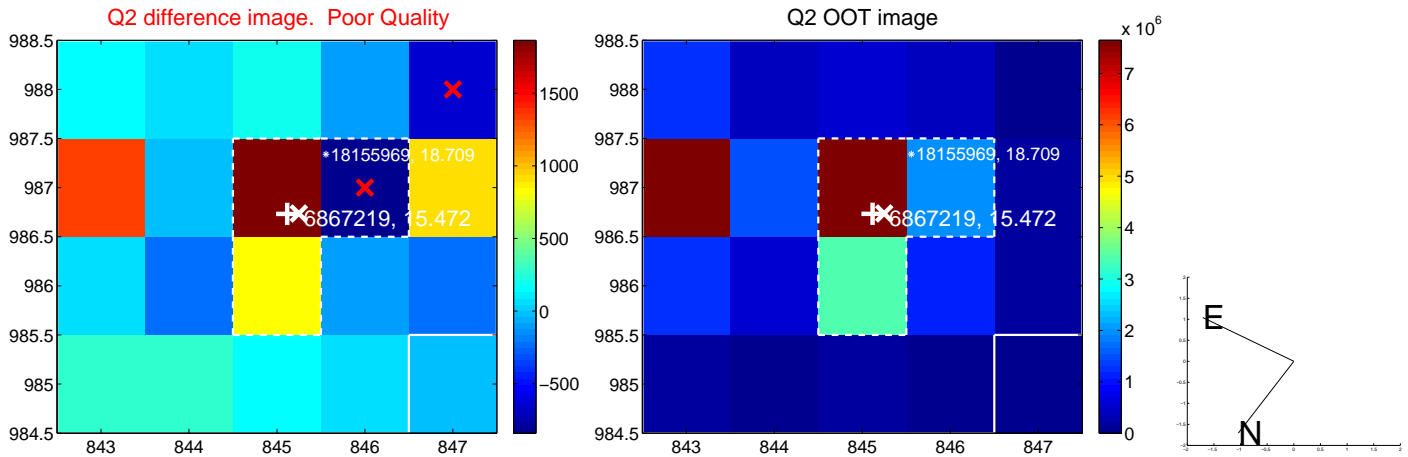
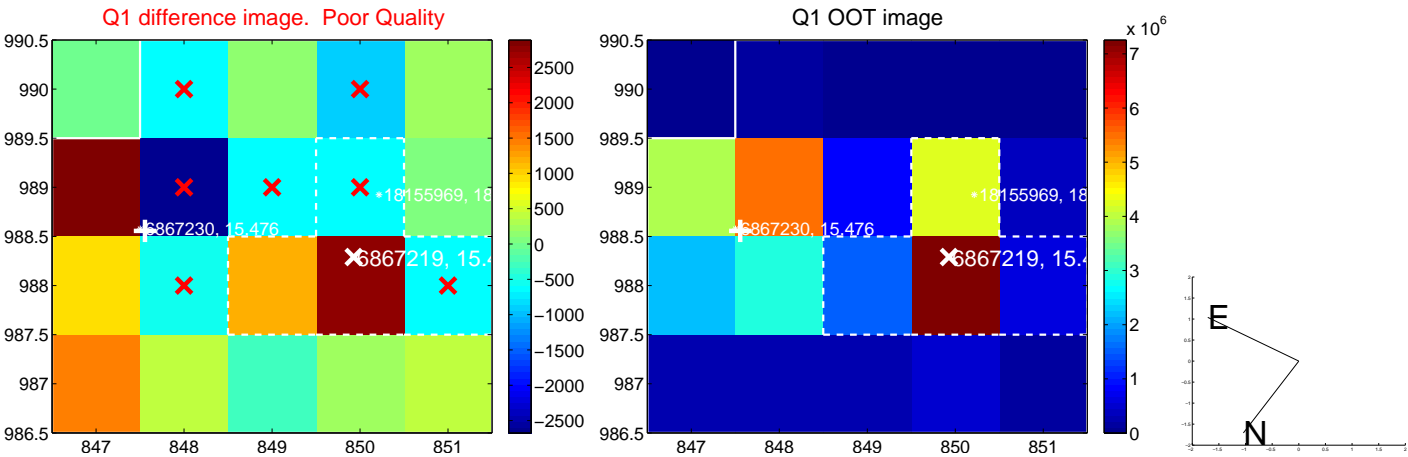
The direct PRF centroid is offset from the target star catalog position by about 0.41 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.276 \pm 0.830$	0.33	$0.249 \pm 0.623$	$0.117 \pm 1.151$
PRF-fit source offset from KIC position	$0.804 \pm 0.761$	1.06	$0.701 \pm 0.592$	$0.393 \pm 1.139$
photometric centroid source offset	$2.75 \pm 1.31$	2.10	$-1.92 \pm 1.37$	$1.96 \pm 1.24$

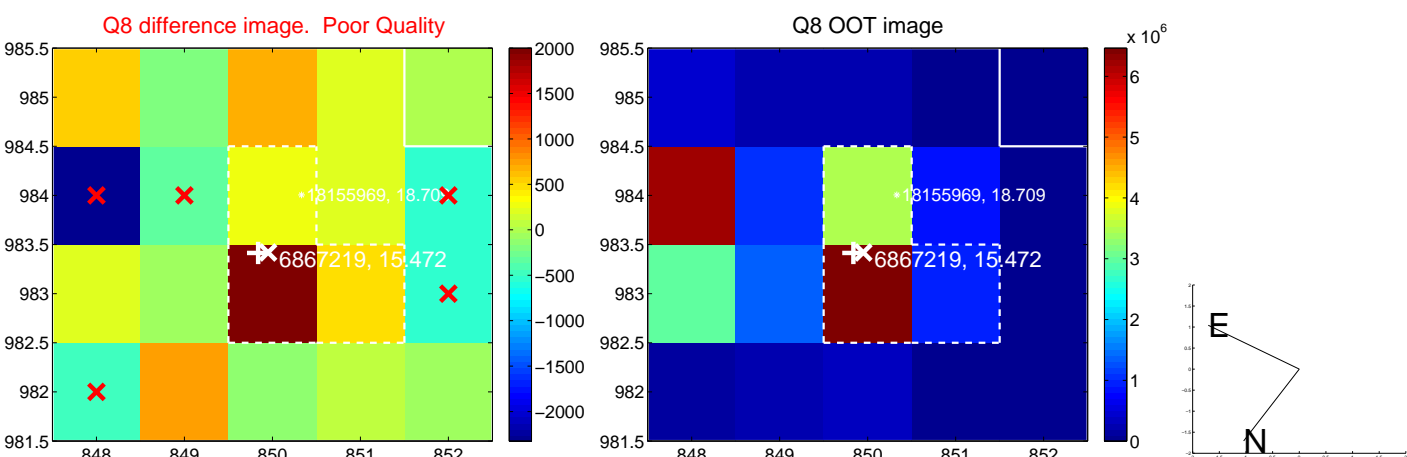
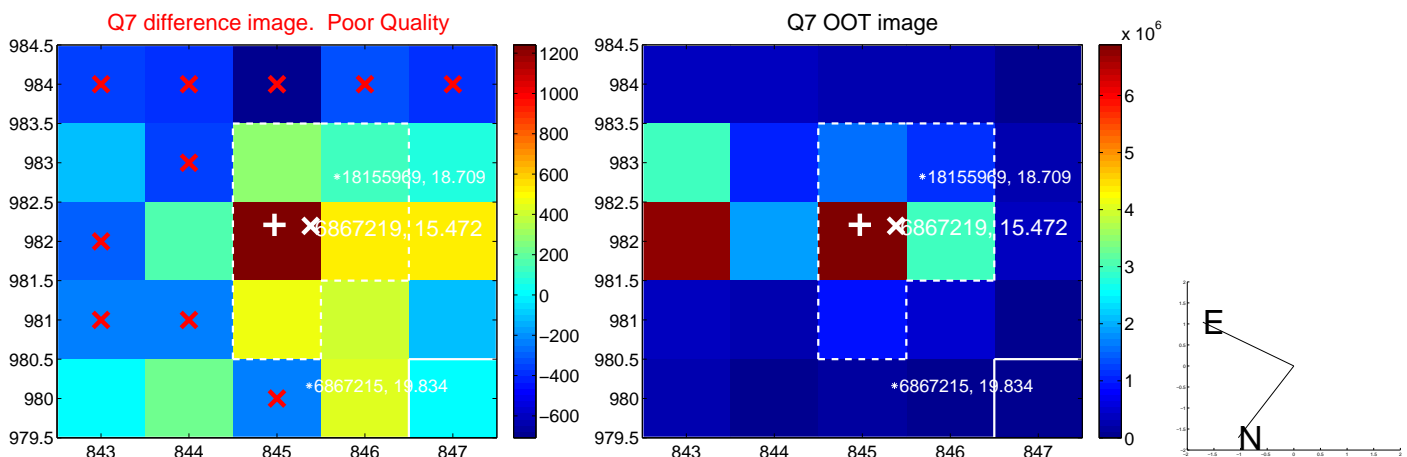
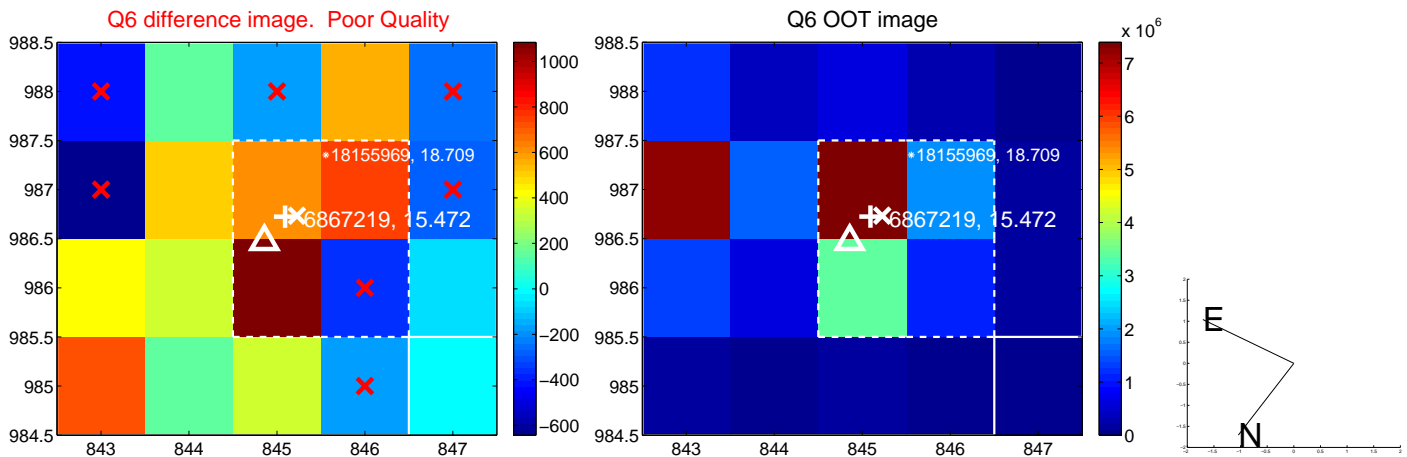
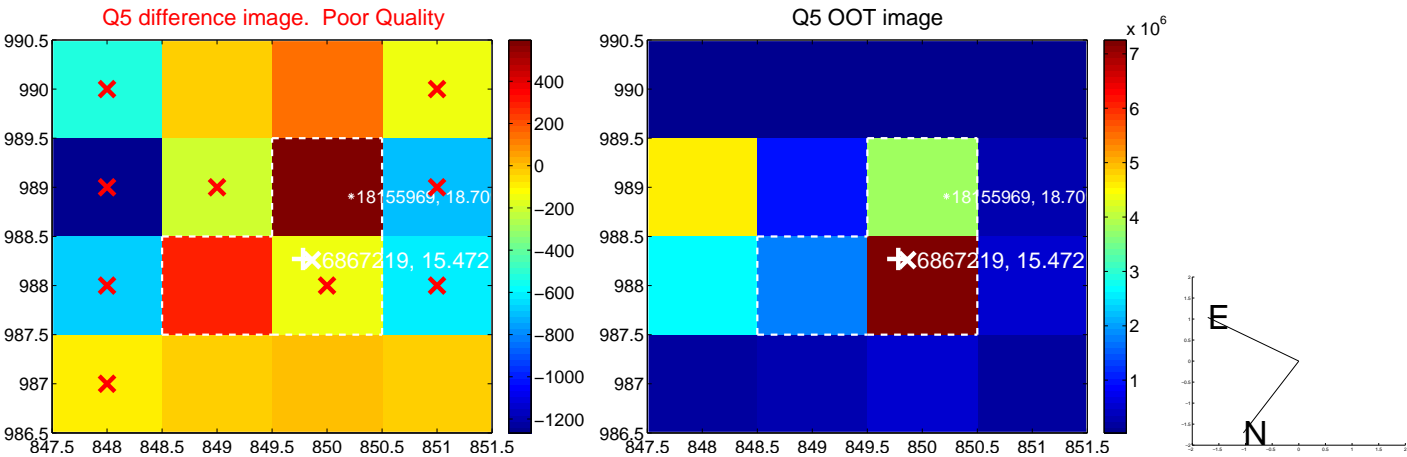


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

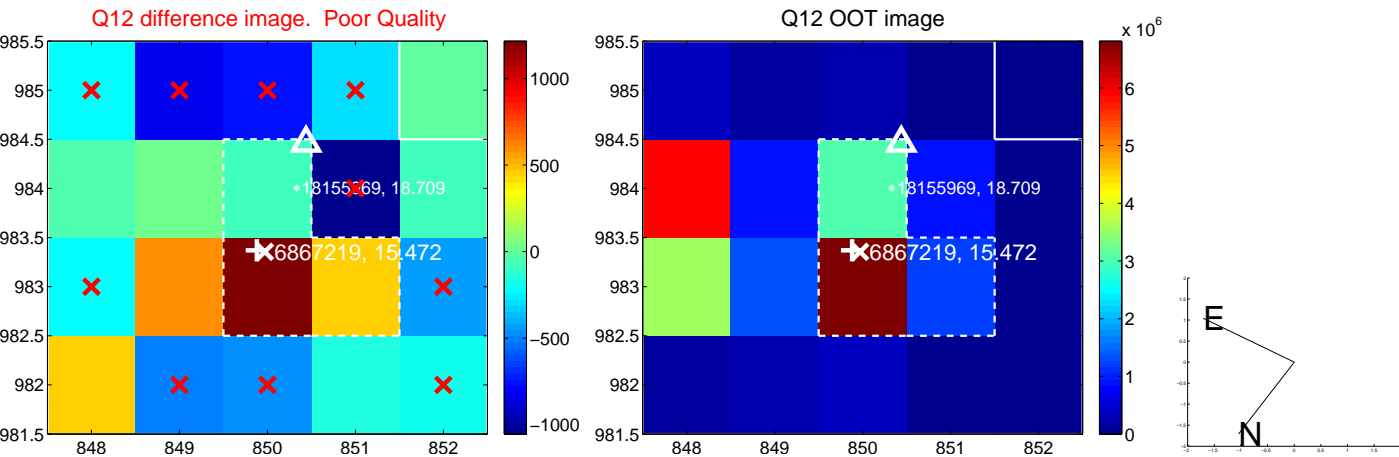
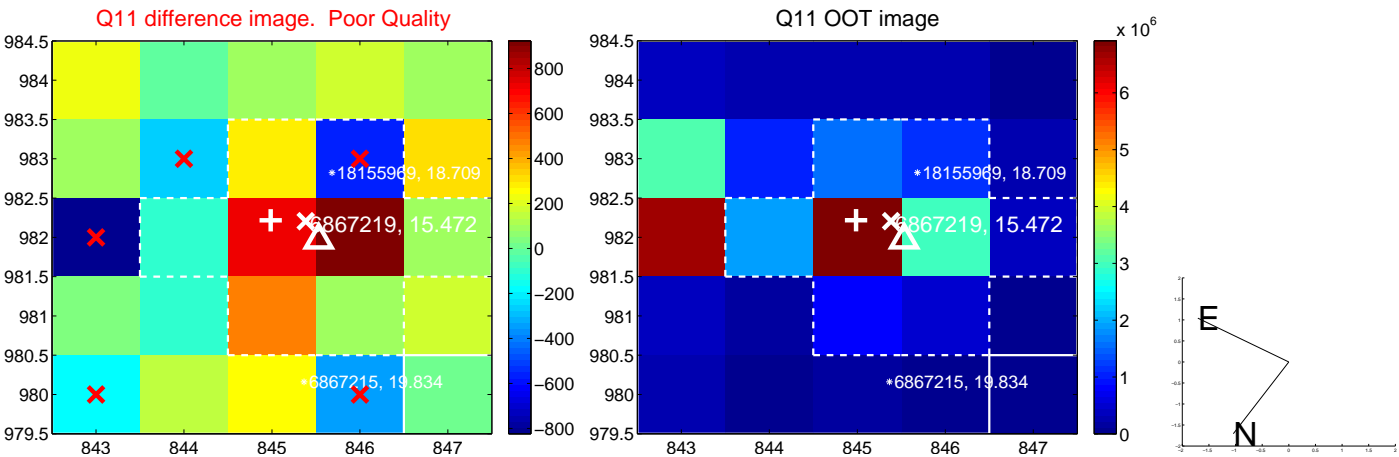
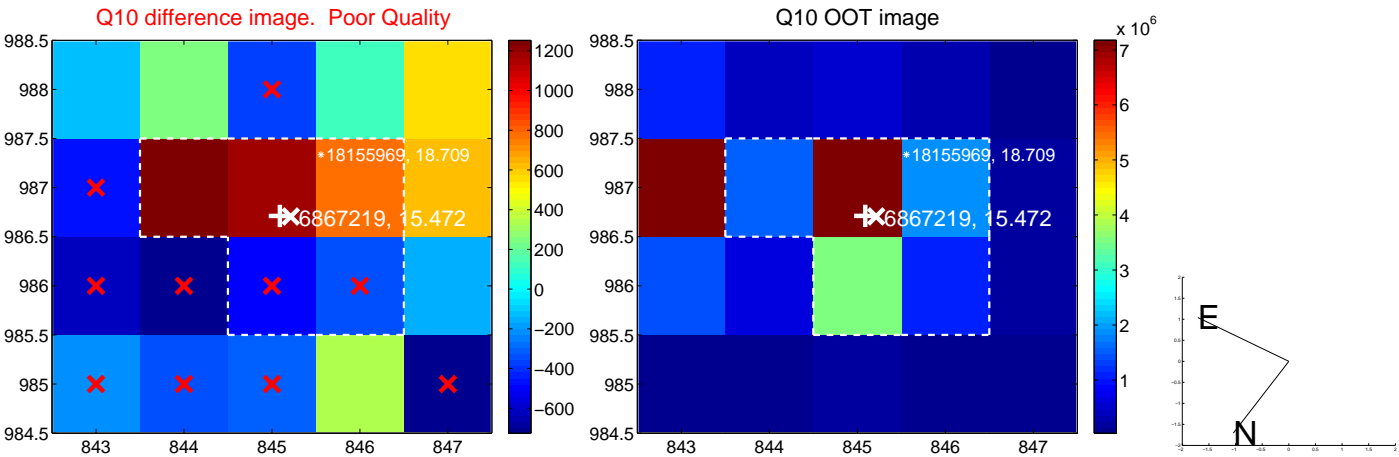
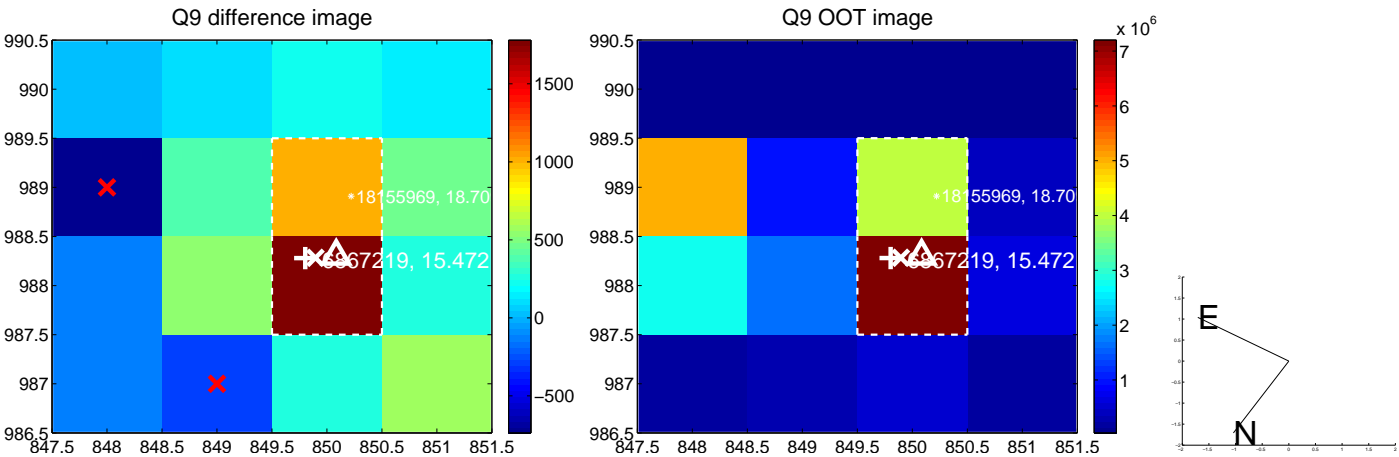
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



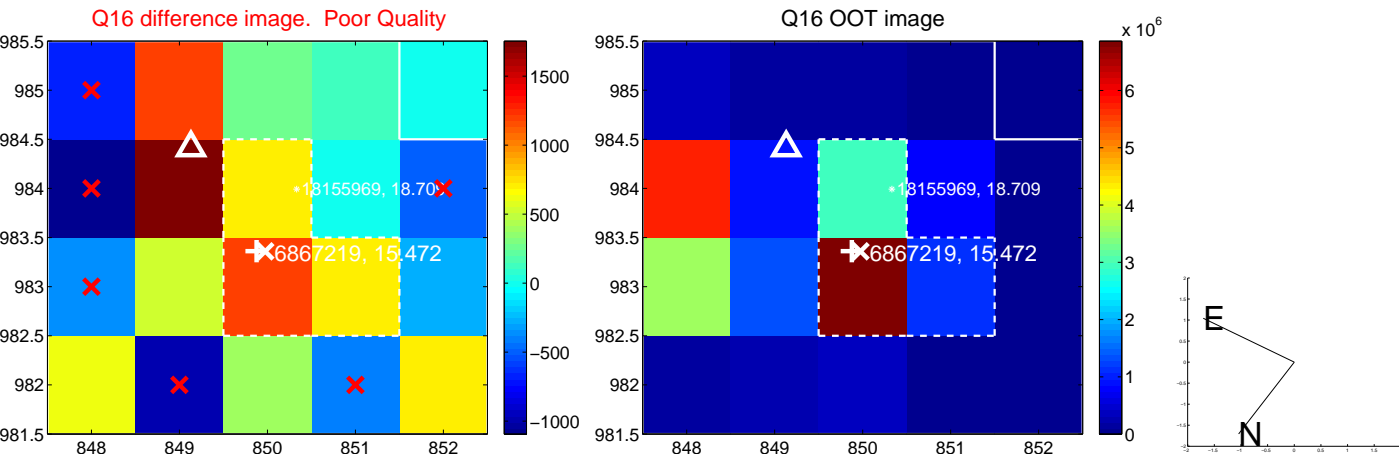
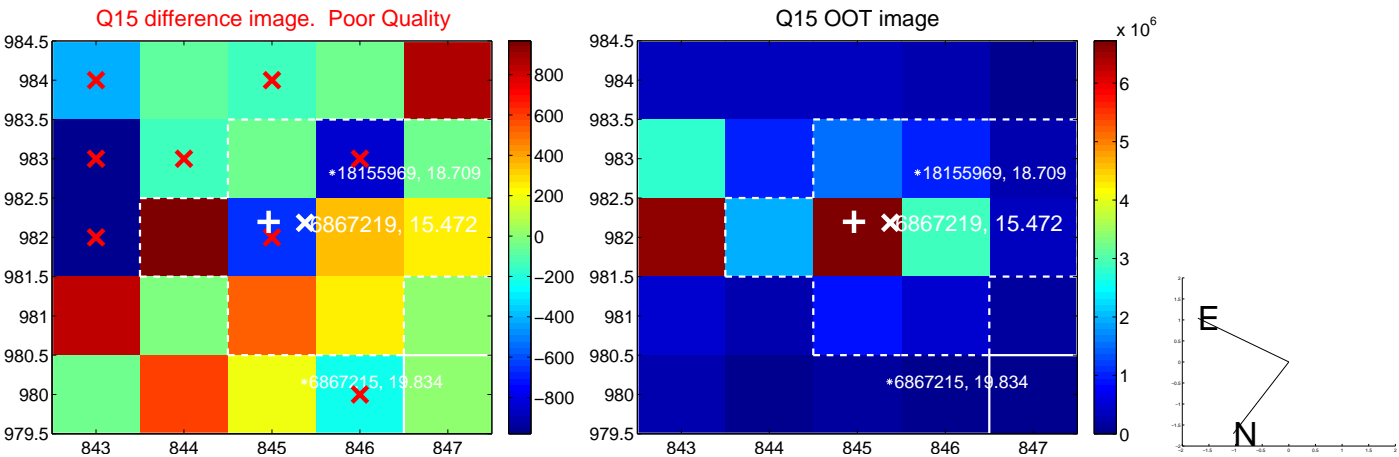
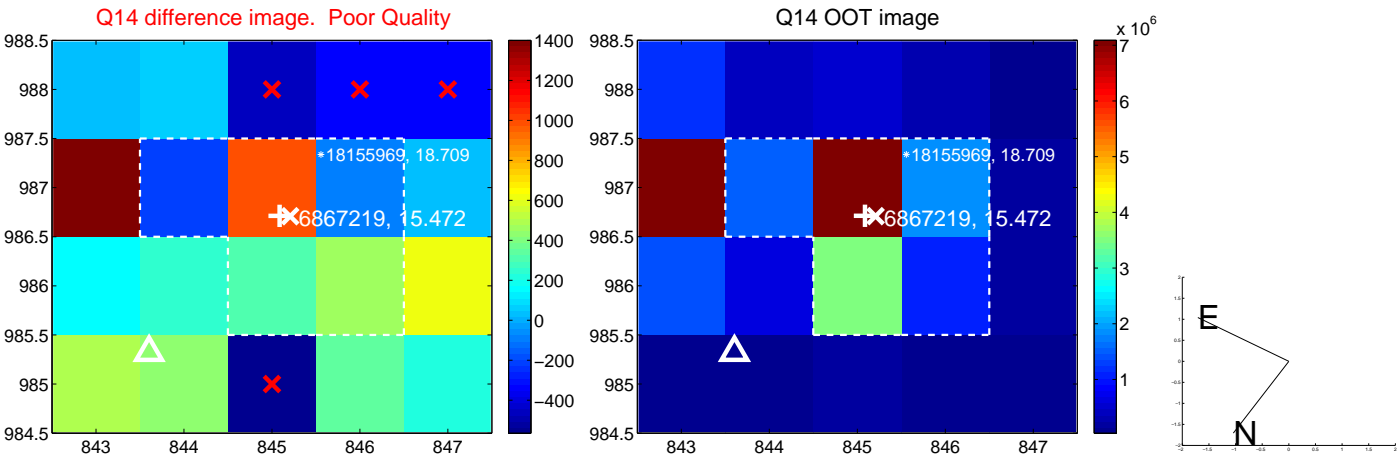
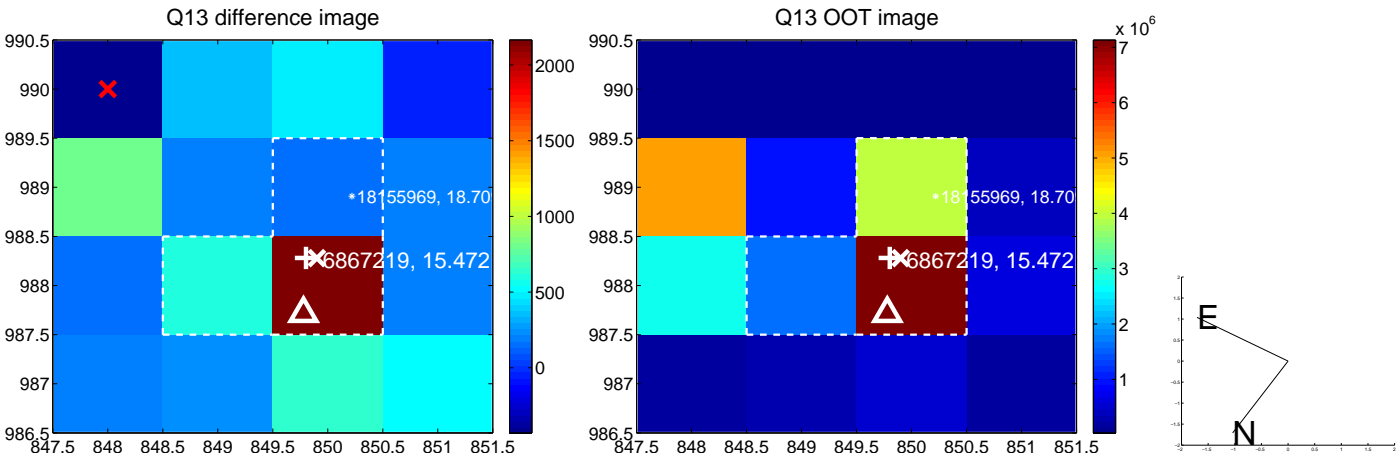
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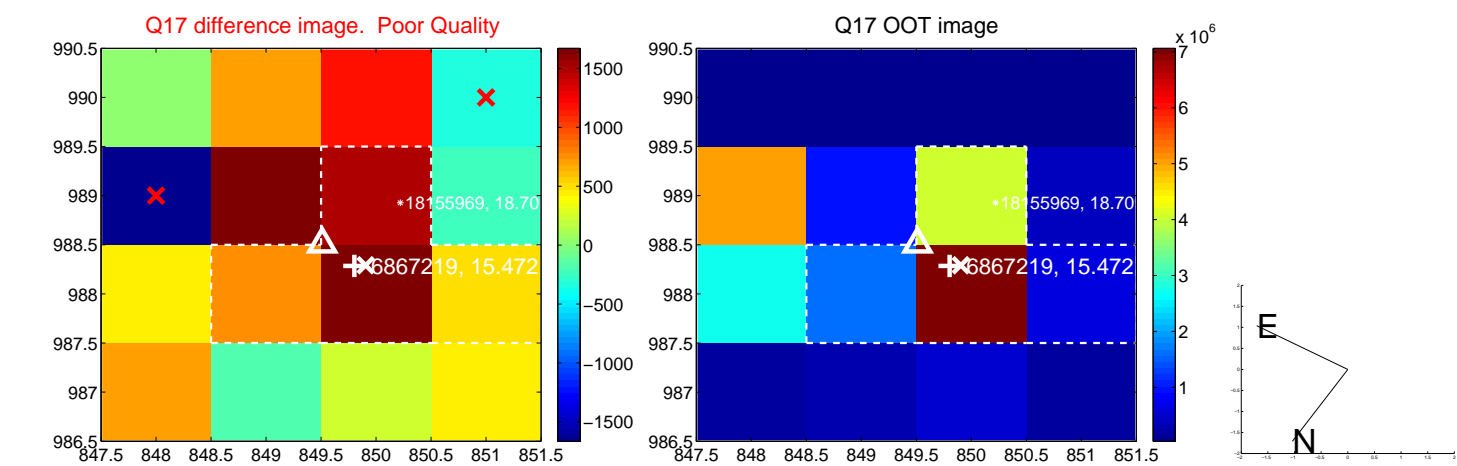


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

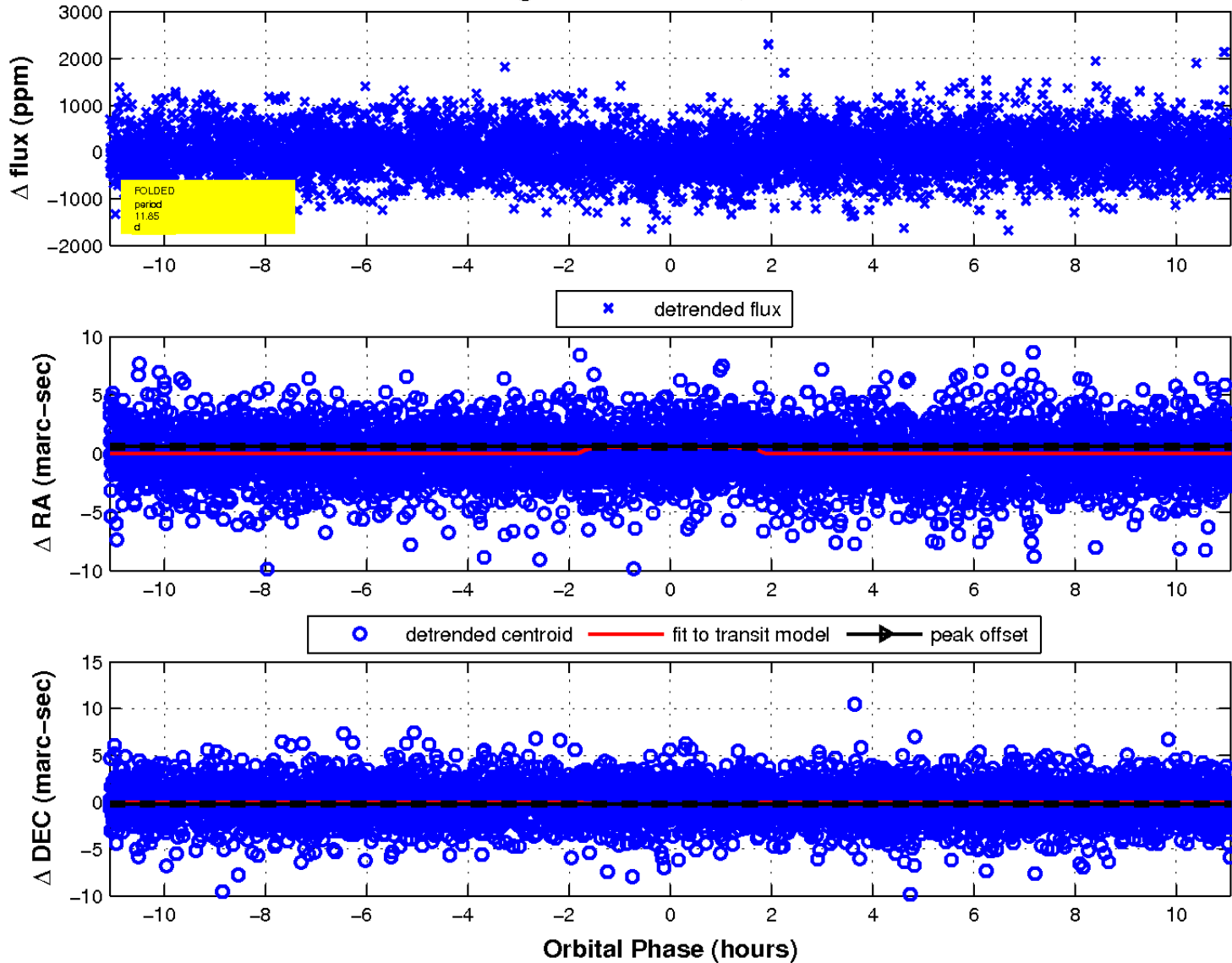




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

