

# KIC 009907383

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009907383-01	OBS	No	0.693100	131.944908	15.0	1.172	12.5	1.7	1.81	7252	0.81	26009.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009907383-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_ALT—MOD_POS_ALT

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

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

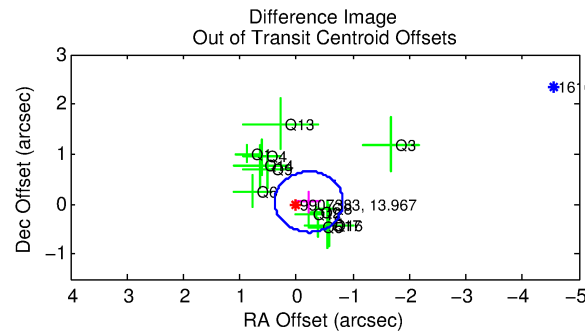
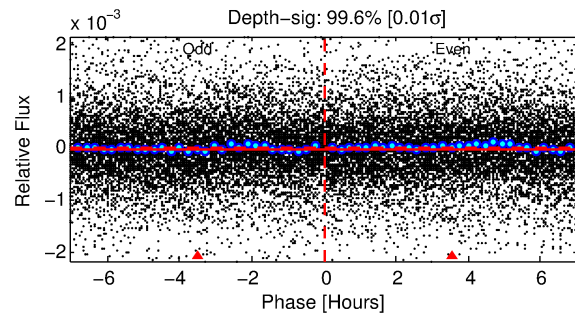
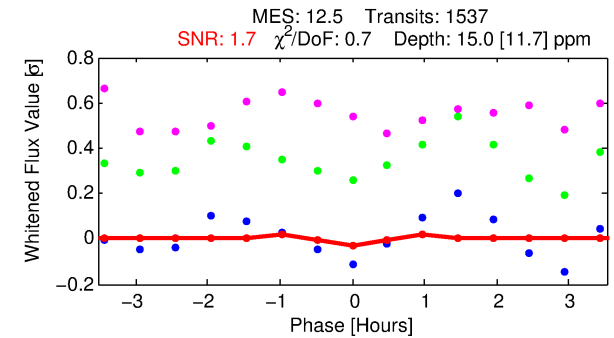
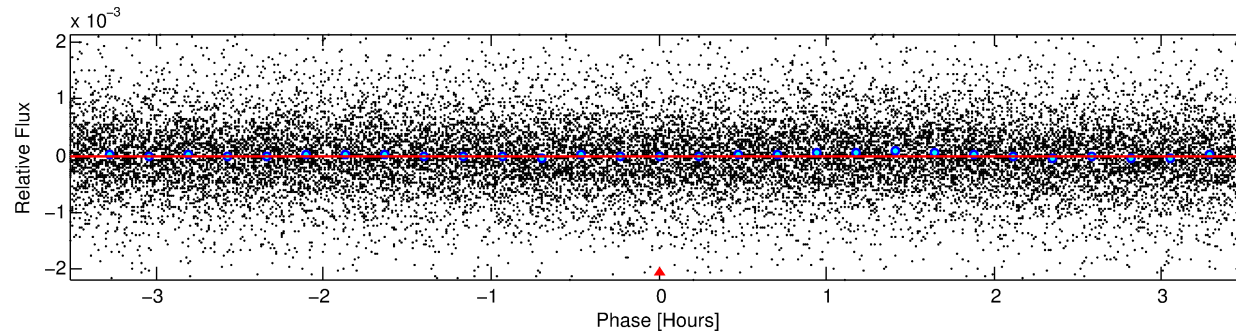
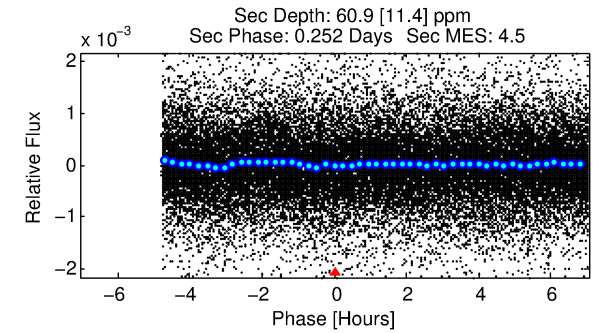
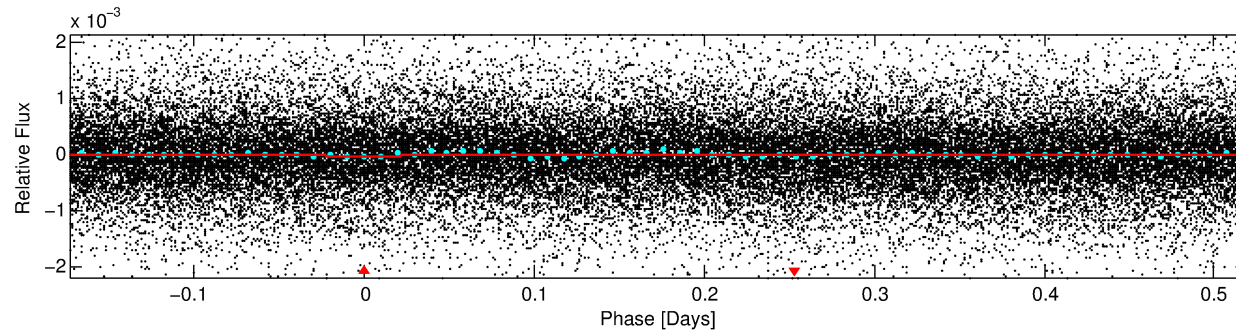
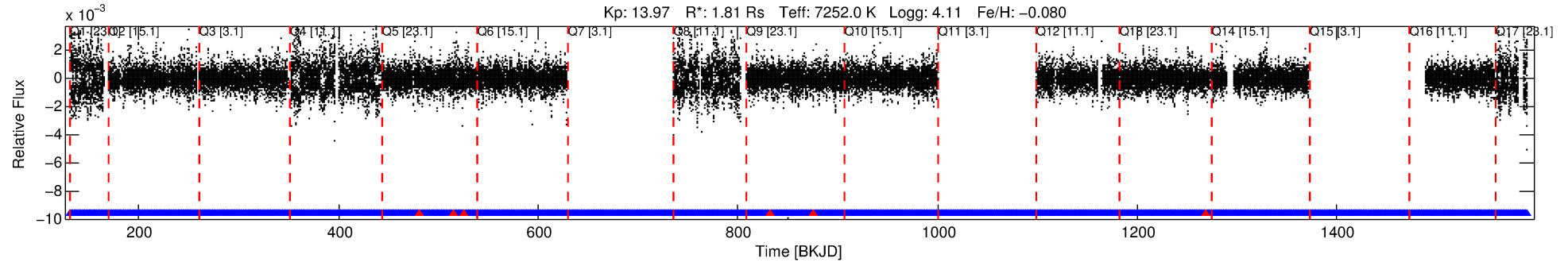
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009907383-01

No Significant Match Found

# DV One-Page Summary

KIC: 9907383 Candidate: 1 of 1 Period: 0.693 d



## DV Fit Results:

Period = 0.69310 [0.00006] d  
Epoch = 131.9449 [0.0066] BKJD  
Rp/R\* = 0.0041 [0.0025]  
a/R\* = 2.25 [5.60]  
b = 0.90 [0.69]  
Seff = 26009.37 [10124.59]  
Teq = 3238 [315] K  
Rp = 0.81 [0.56] Re  
a = 0.0176 [0.0044] AU  
Ag = 15.79 [20.43] [0.72σ]  
Teffp = 9981 [3140] K [2.14σ]

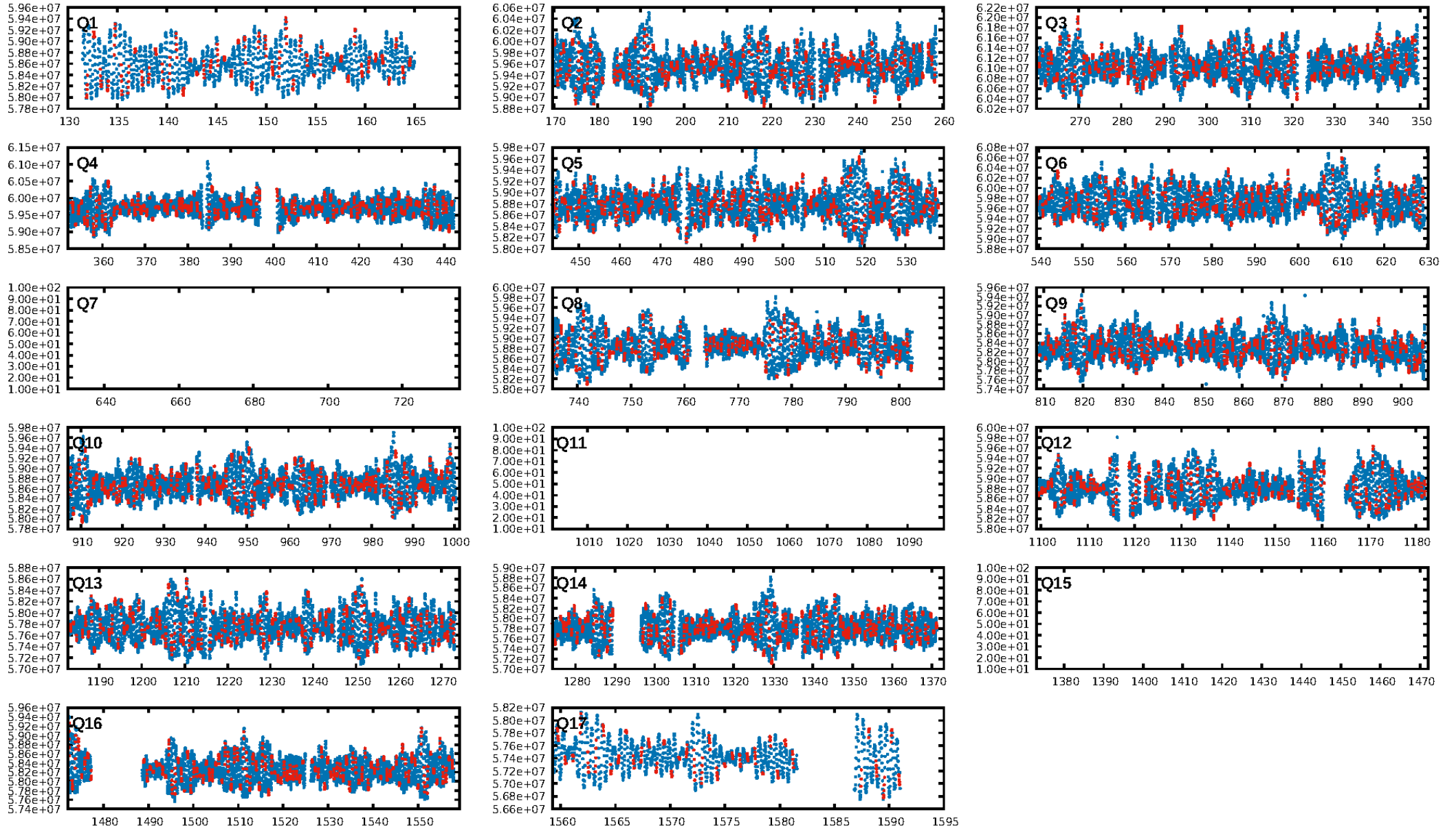
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.56e-48  
RollingBand-fgt: 1.00 [1445/1451]  
GhostDiagnostic-chr: -2.434  
Centroid-sig: 46.6%  
Centroid-so: 3.230 arcsec [0.95σ]  
OotOffset-rm: 0.222 arcsec [1.10σ]  
OotOffset-st: 3/1/4/5 [13]  
KicOffset-rm: 0.348 arcsec [1.70σ]  
KicOffset-st: 3/1/4/5 [13]  
DiffImageQuality-fgm: 0.62 [8/13]  
DiffImageOverlap-fno: 1.00 [14/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:34:07 Z

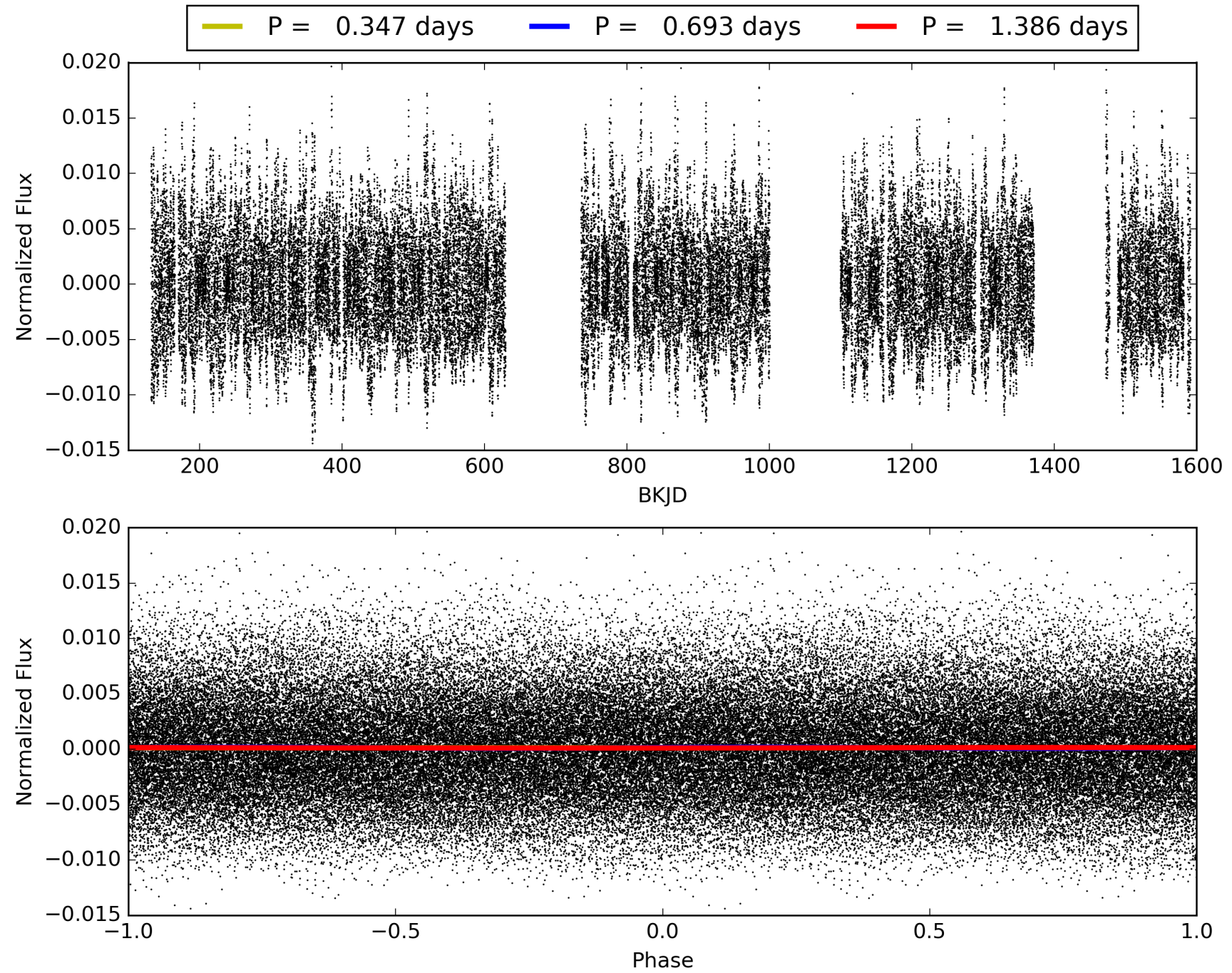
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 009907383-01, PDC Light Curves



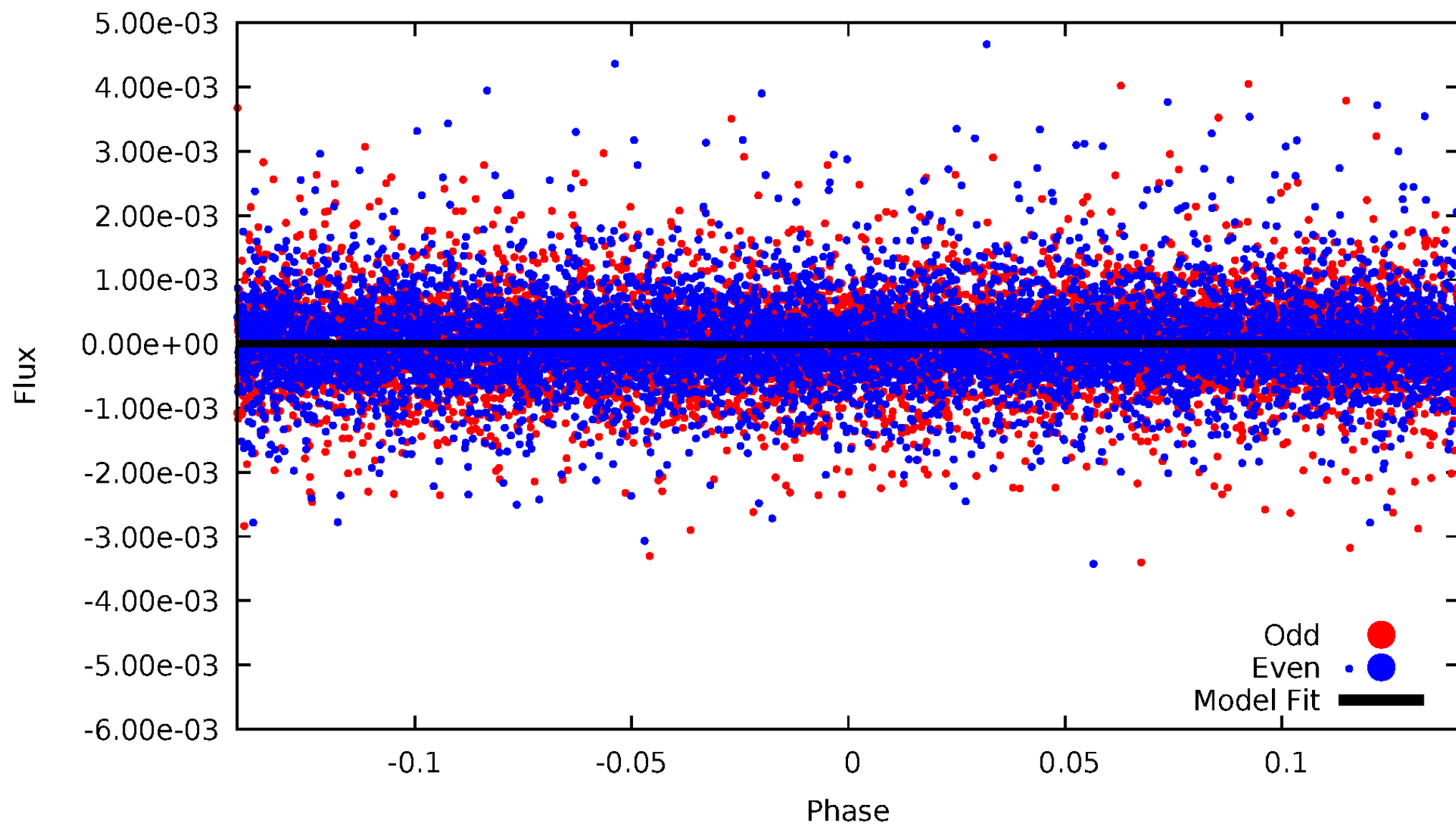


TCE 009907383-01



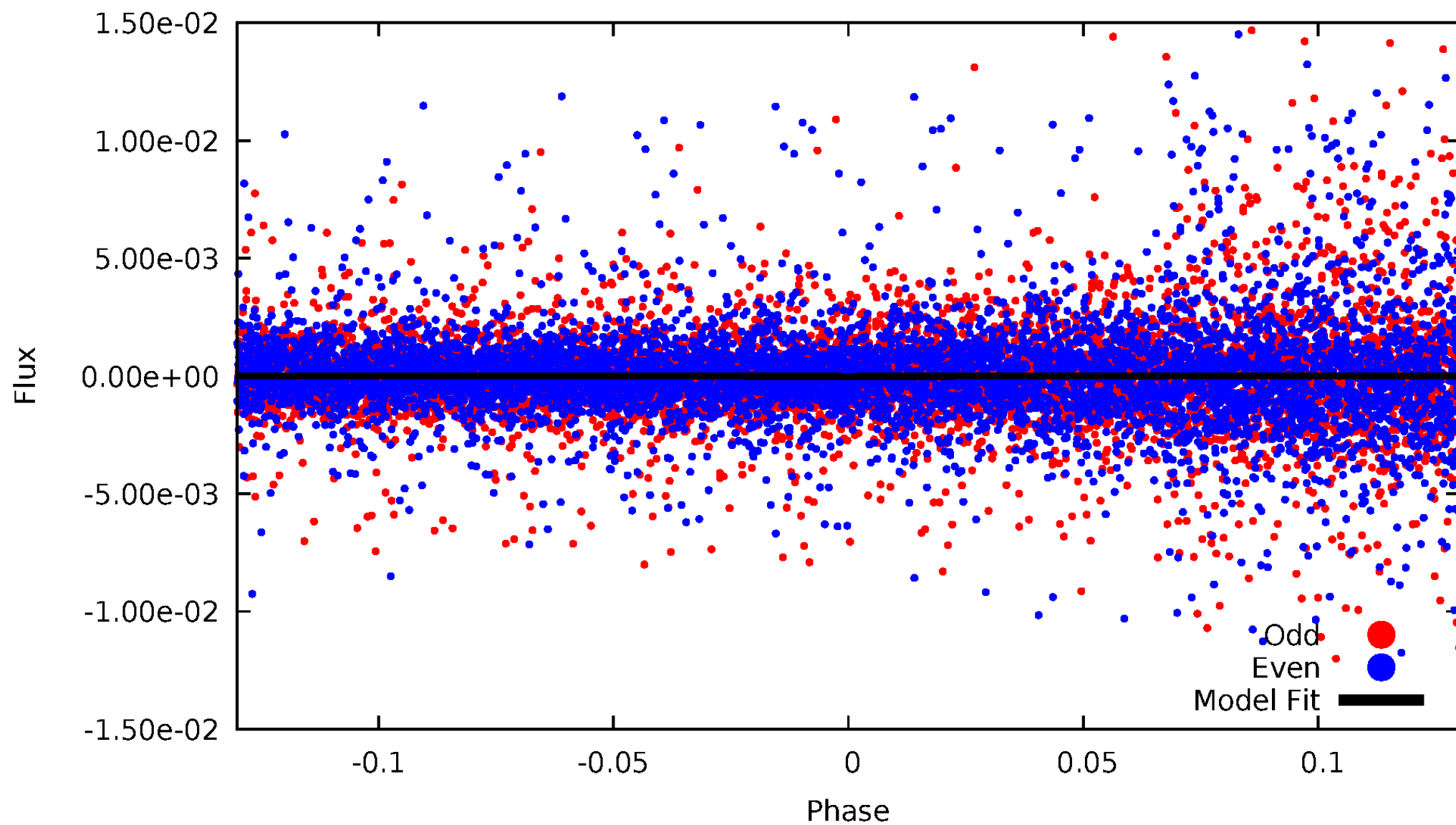
# DV Odd/Even

TCE 009907383-01



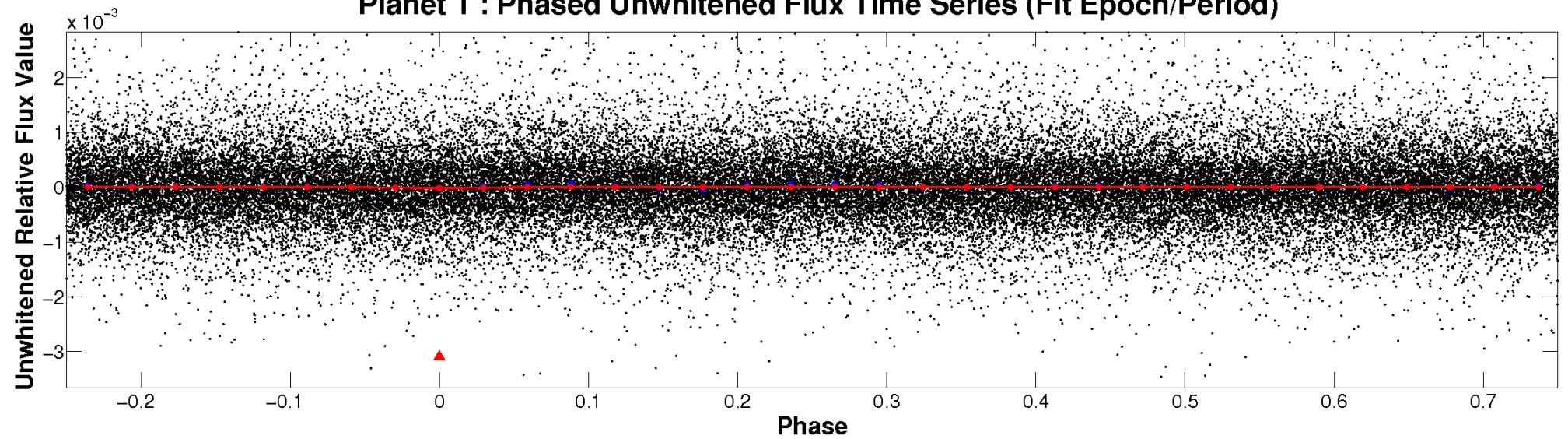
# ALT Odd/Even

TCE 009907383-01

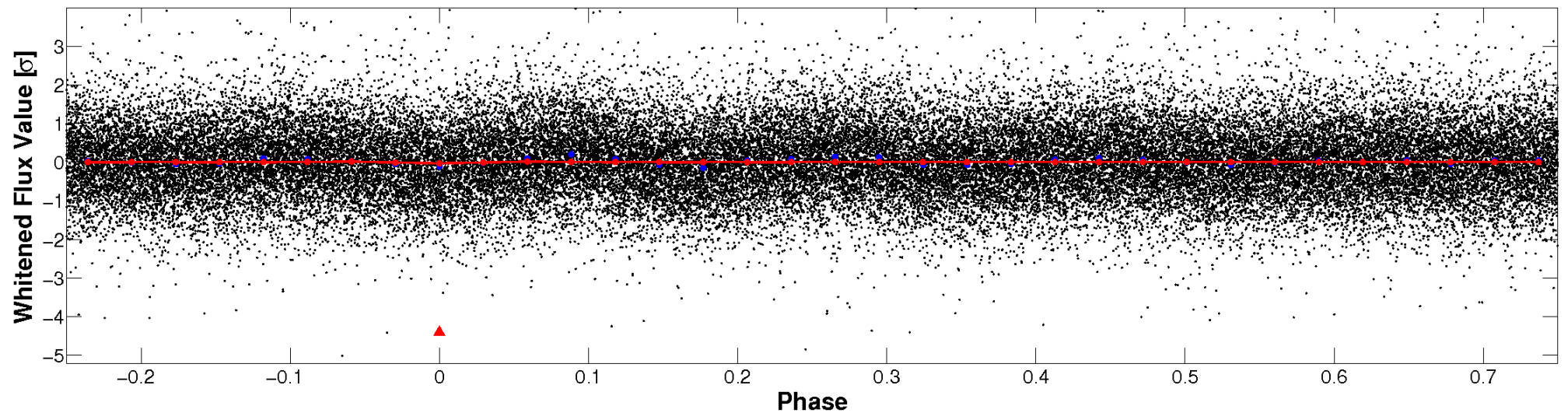


# Non-Whitened Vs. Whitened Light Curve

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



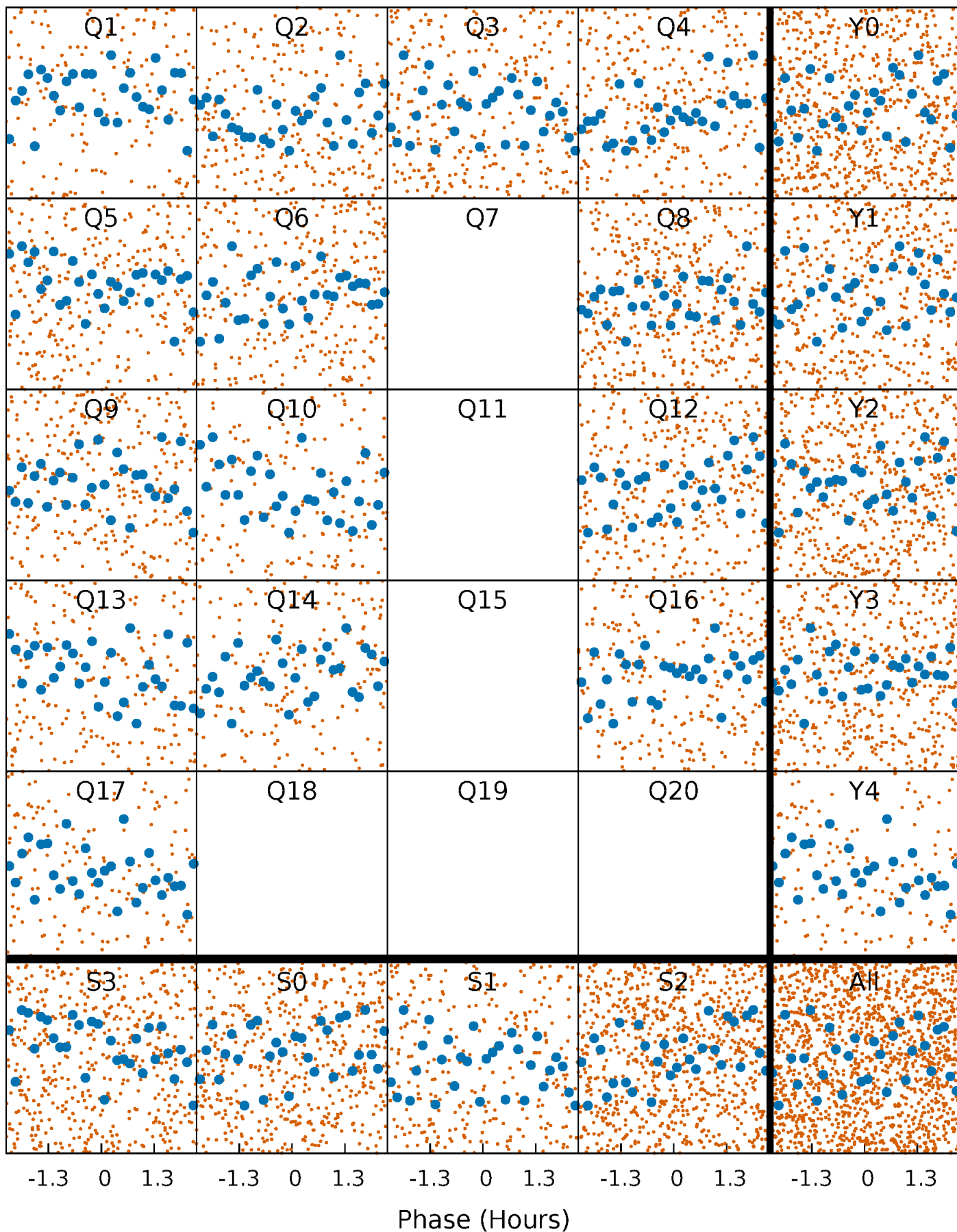
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

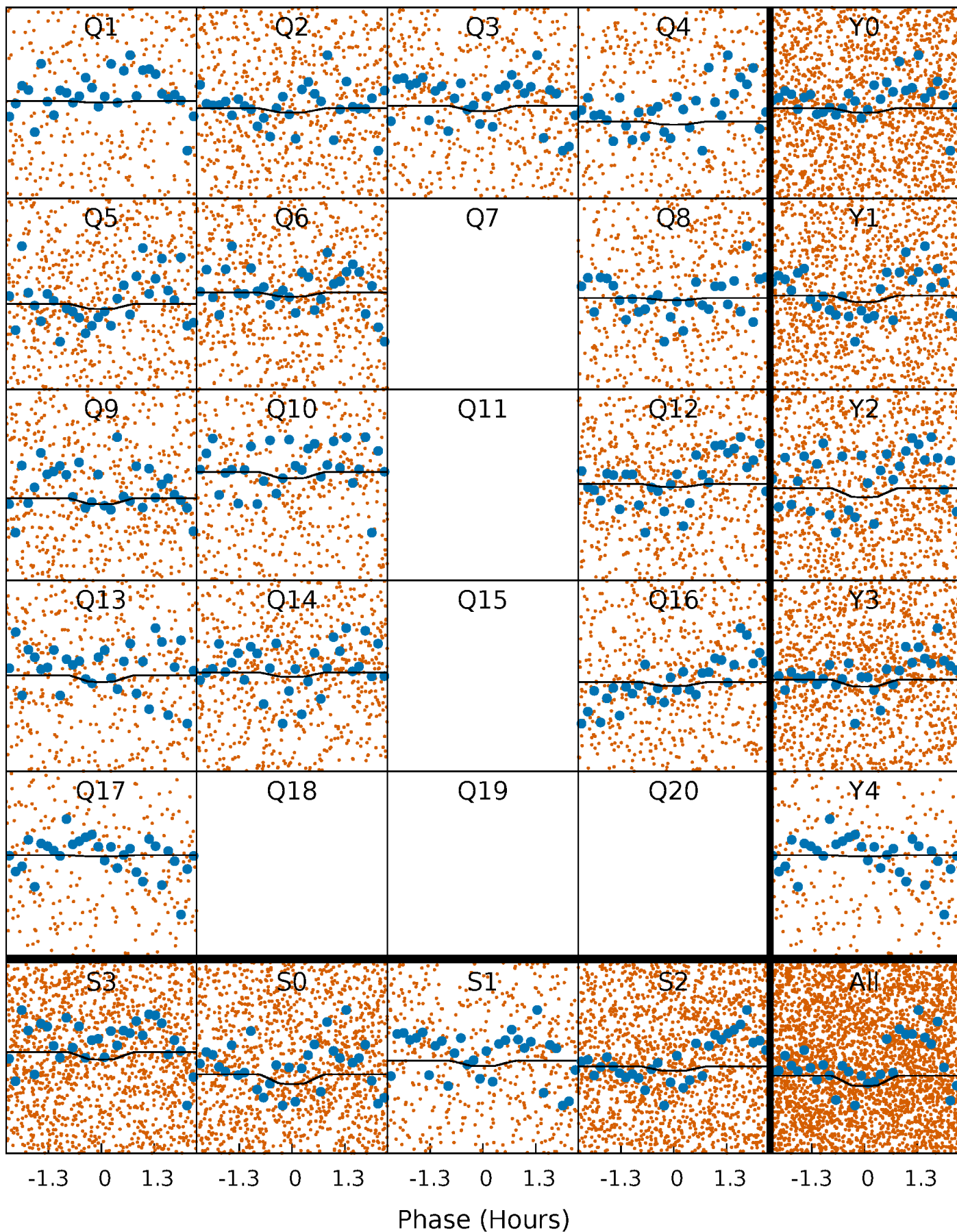
TCE 009907383-01 P= 0.693100 Days  $T_0=131.944907$  (BKJD)





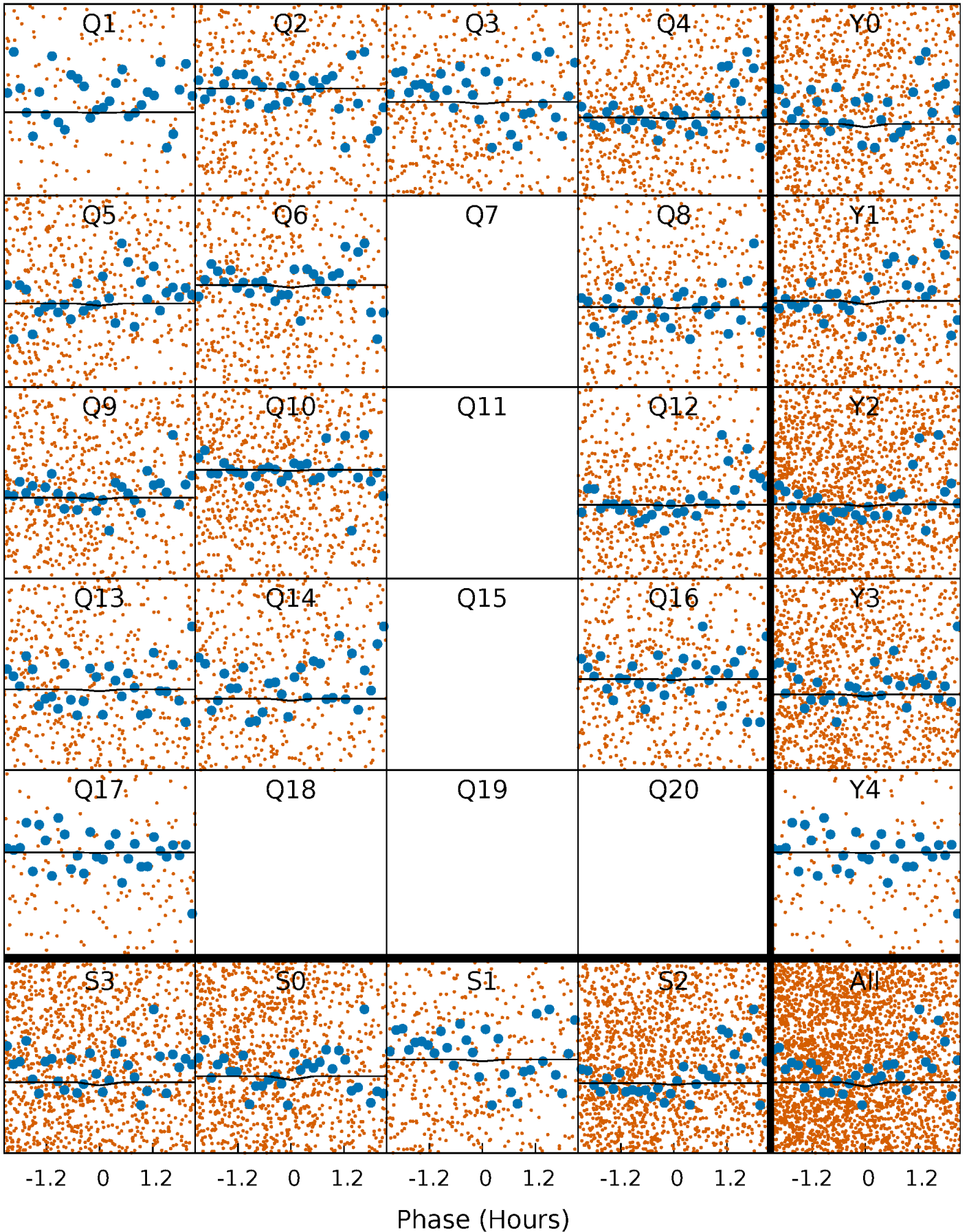
# DV Quarter-Phased Transit Curves

TCE 009907383-01 P= 0.693100 Days  $T_0=131.944907$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

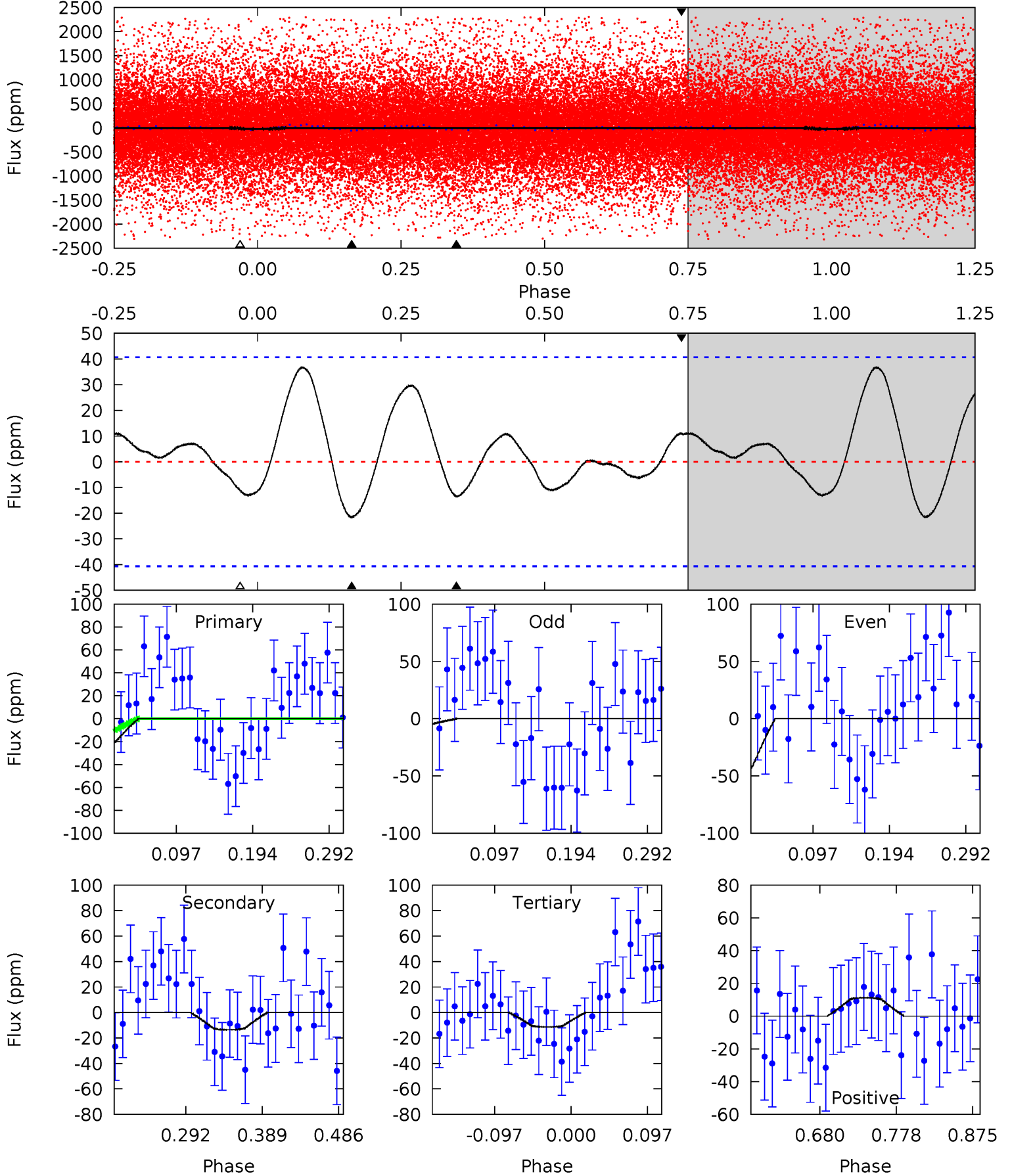
TCE 009907383-01 P= 0.693118 Days  $T_0=131.949342$  (BKJD)



# DV Model-Shift Uniqueness Test

009907383-01, P = 0.693100 Days, E = 131.251807 Days

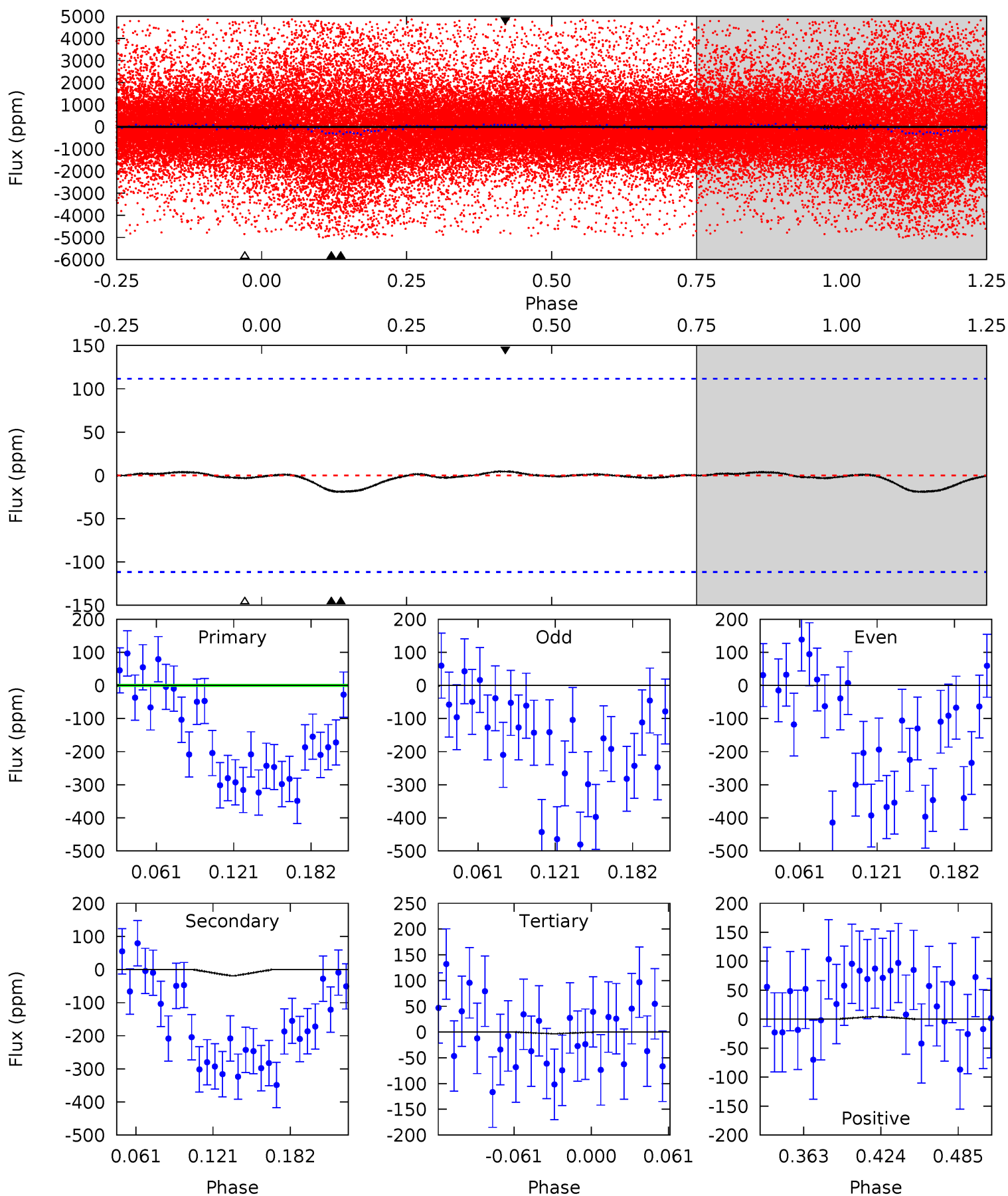
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.44	1.53	1.28	1.26	4.57	1.66	0.95	1.16	1.18	0.25	0.27	2.32	0.48	0.63	1.18



# Alt Model-Shift Uniqueness Test

009907383-01, P = 0.693118 Days, E = 131.256224 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
0.75	0.79	0.14	0.19	4.67	1.88	0.10	0.61	0.55	0.65	0.60	0.70	0.06	0.20	1.84





### Stellar Parameters For KIC 009907383

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7252^{+230}_{-316}$	$4.107^{+0.149}_{-0.182}$	$-0.080^{+0.250}_{-0.350}$	$1.808^{+0.563}_{-0.422}$	$1.522^{+0.212}_{-0.236}$	$0.362^{+0.279}_{-0.182}$
	+3%/-4%	+4%/-4%	+312%/-438%	+31%/-23%	+14%/-16%	+77%/-50%
Source	KIC0	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 009907383-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-14 \pm 9$	$0.81^{+0.56}_{-0.45}$	$4536^{+352}_{-305}$	$6304^{+4947}_{-2085}$	$2.893^{+12.994}_{-2.198}$
Alt.	$-19 \pm 24$	$0.77^{+0.53}_{-0.40}$	$4541^{+385}_{-300}$	$7120^{+7075}_{-12340}$	$4.397^{+22.884}_{-5.158}$

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

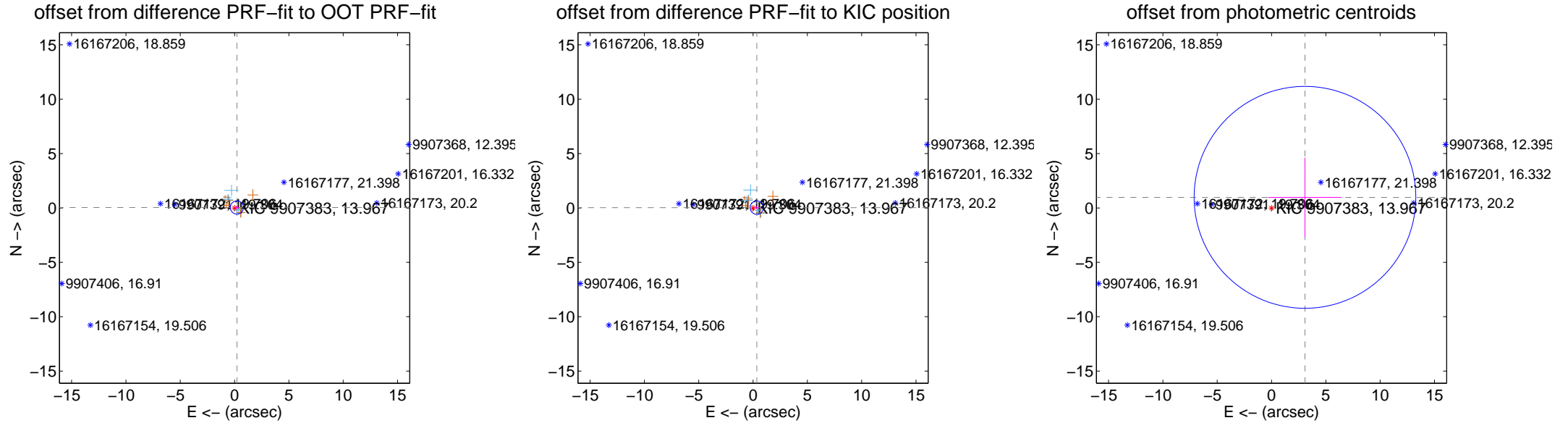
## DV Centroid Data

Supplemental centroid analysis for 009907383-01. Kepler magnitude: 13.97. Transit SNR 1.68

There are 8 quarters with good PRF difference image offsets

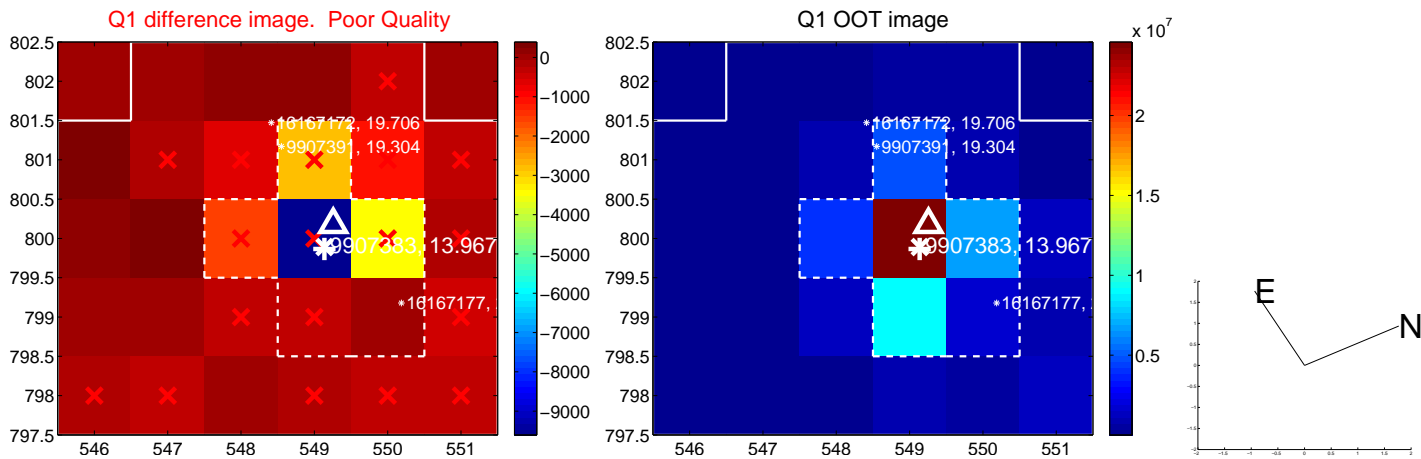
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.222 \pm 0.202$	1.10	$-0.218 \pm 0.211$	$0.043 \pm 0.196$
PRF-fit source offset from KIC position	$0.348 \pm 0.205$	1.70	$-0.347 \pm 0.210$	$0.029 \pm 0.197$
photometric centroid source offset	$3.23 \pm 3.40$	0.95	$-3.08 \pm 3.37$	$0.98 \pm 3.65$

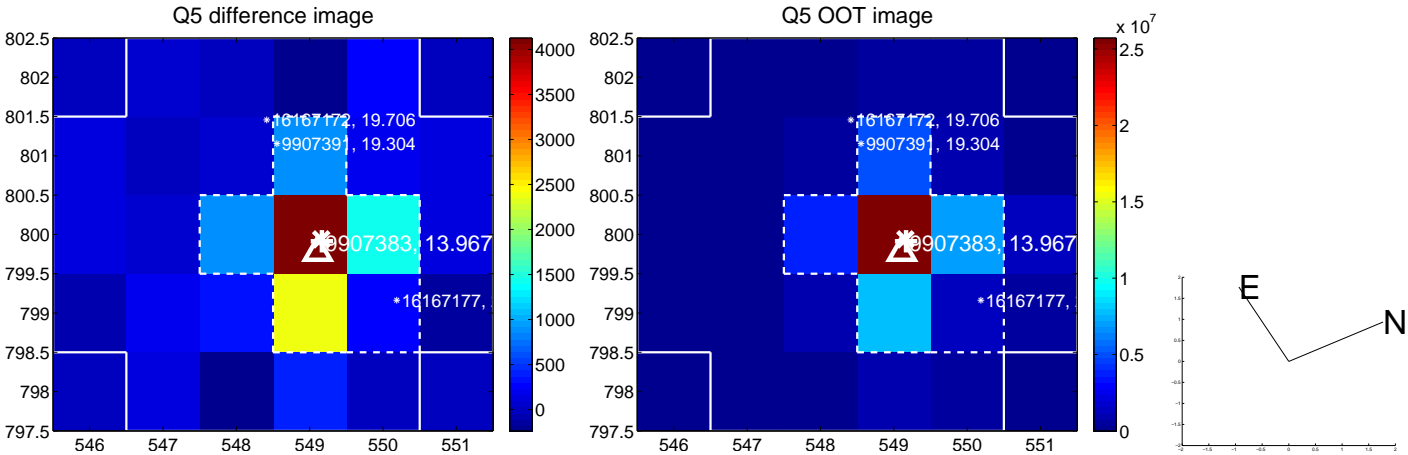


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

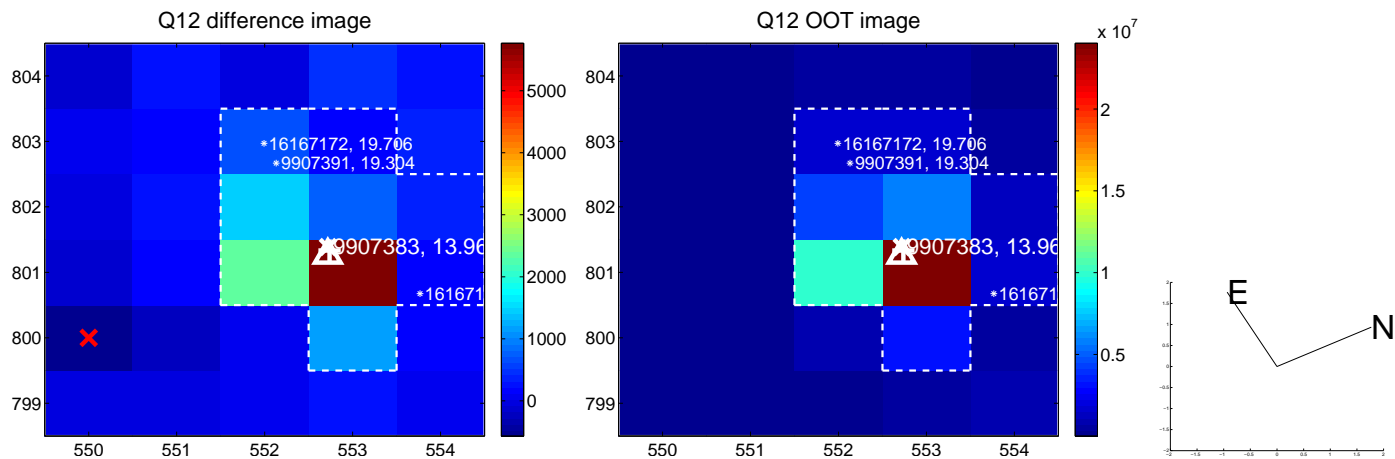
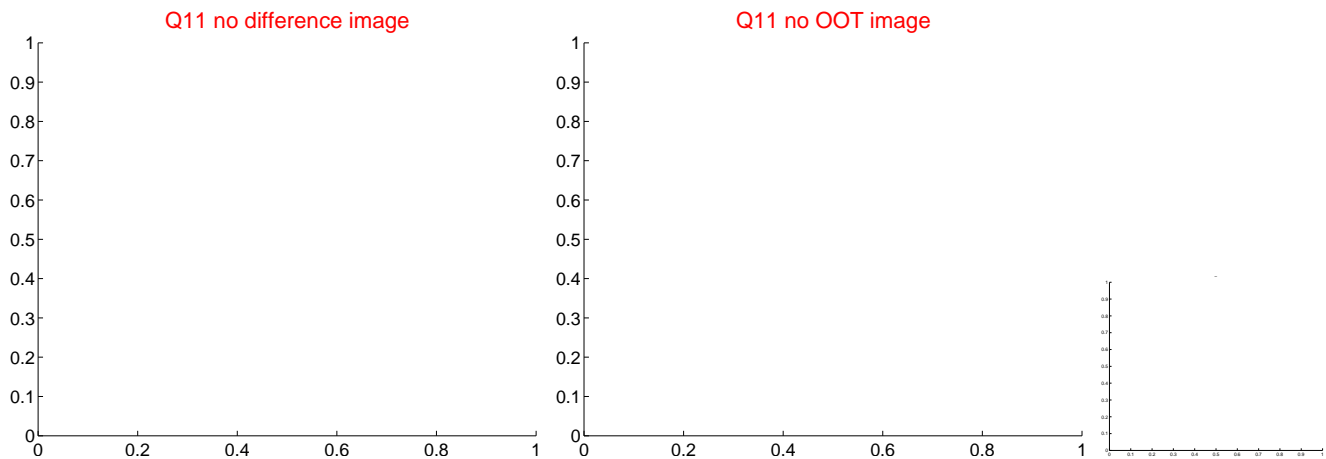
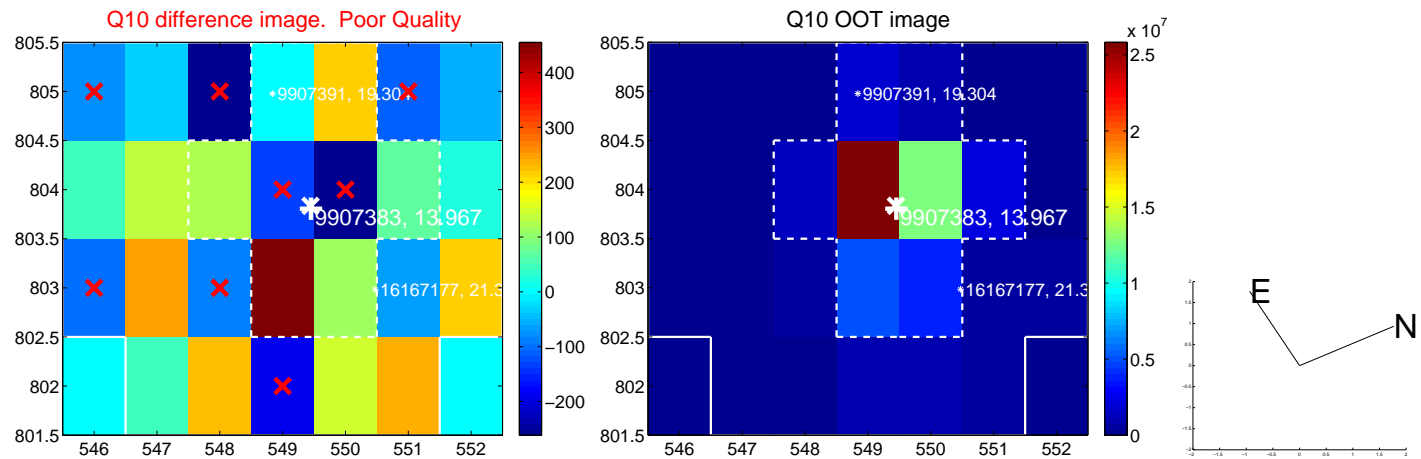
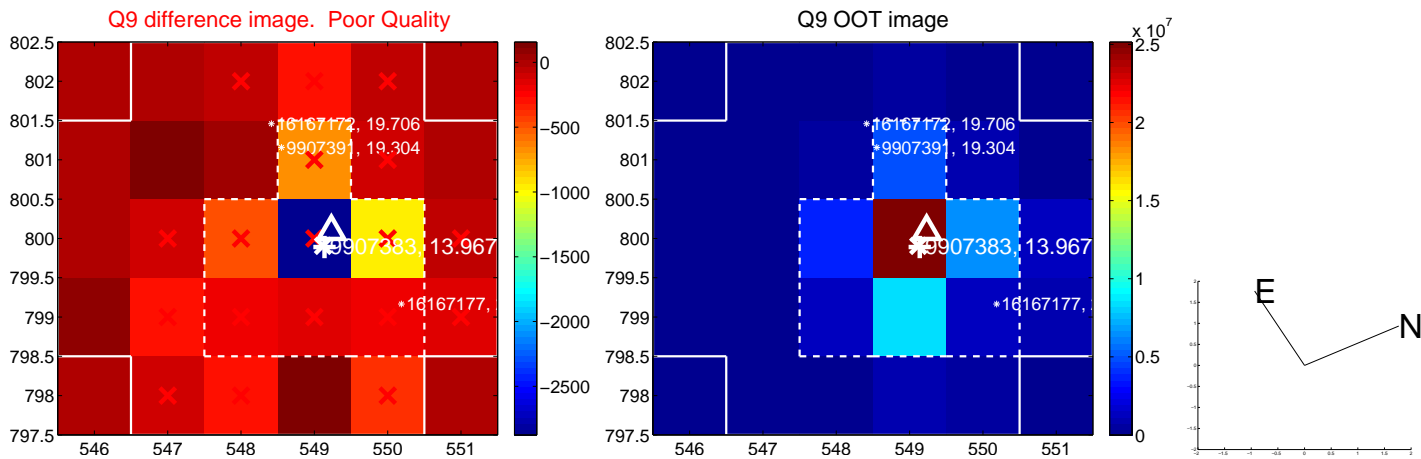


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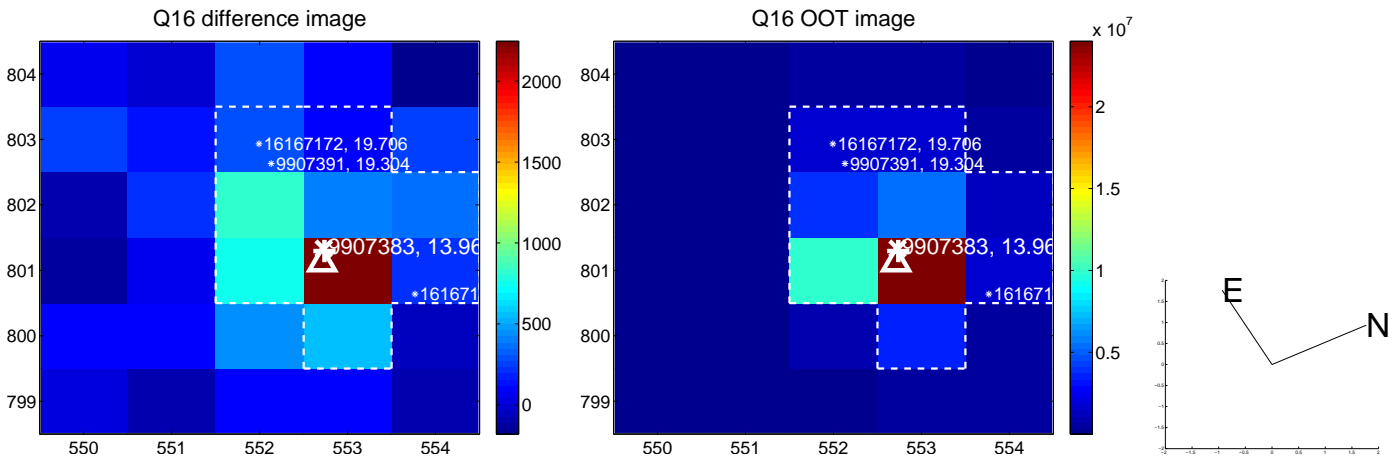
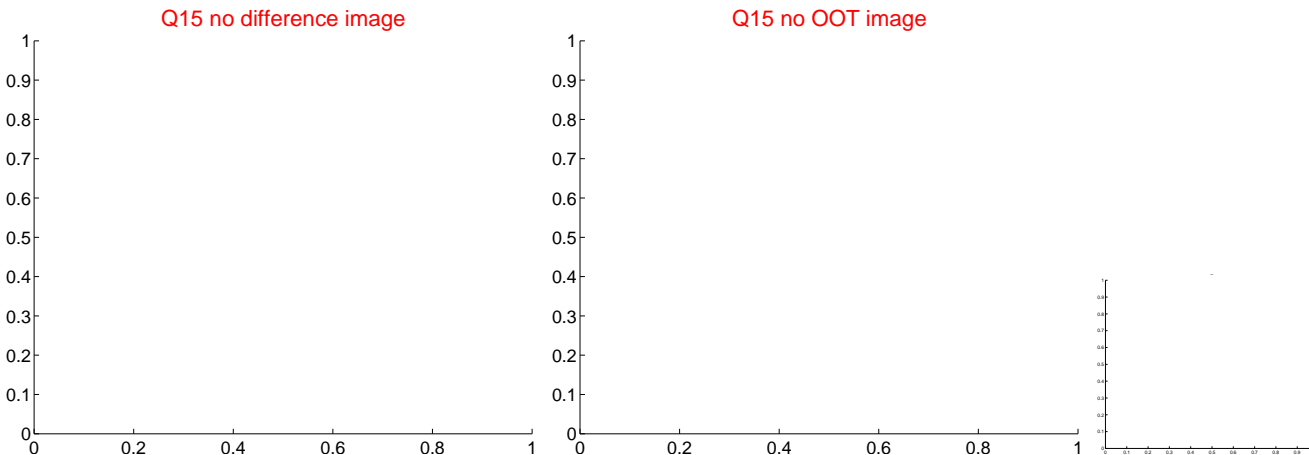
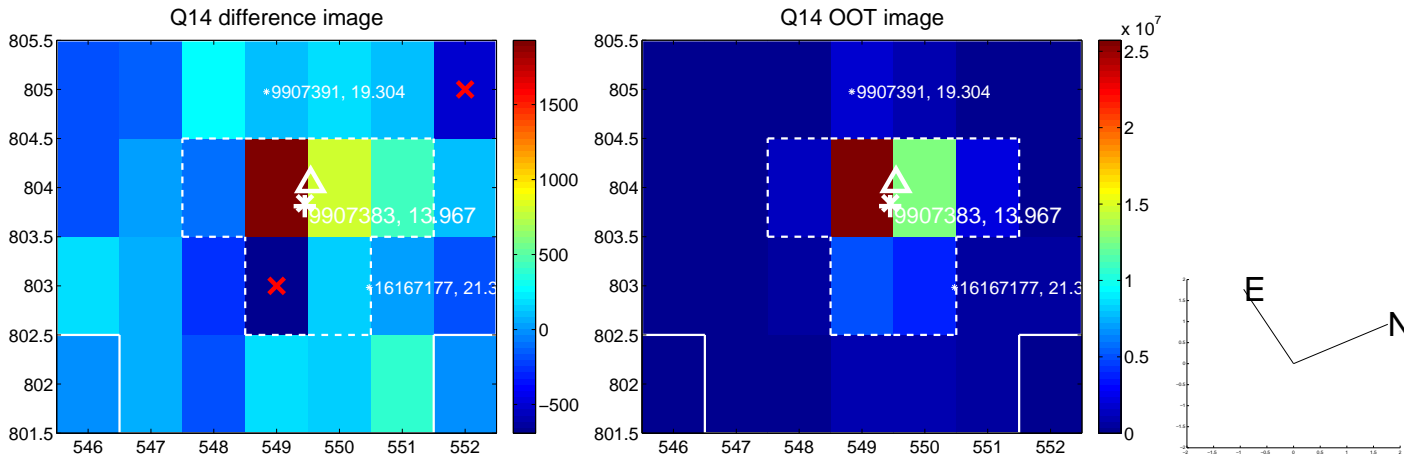
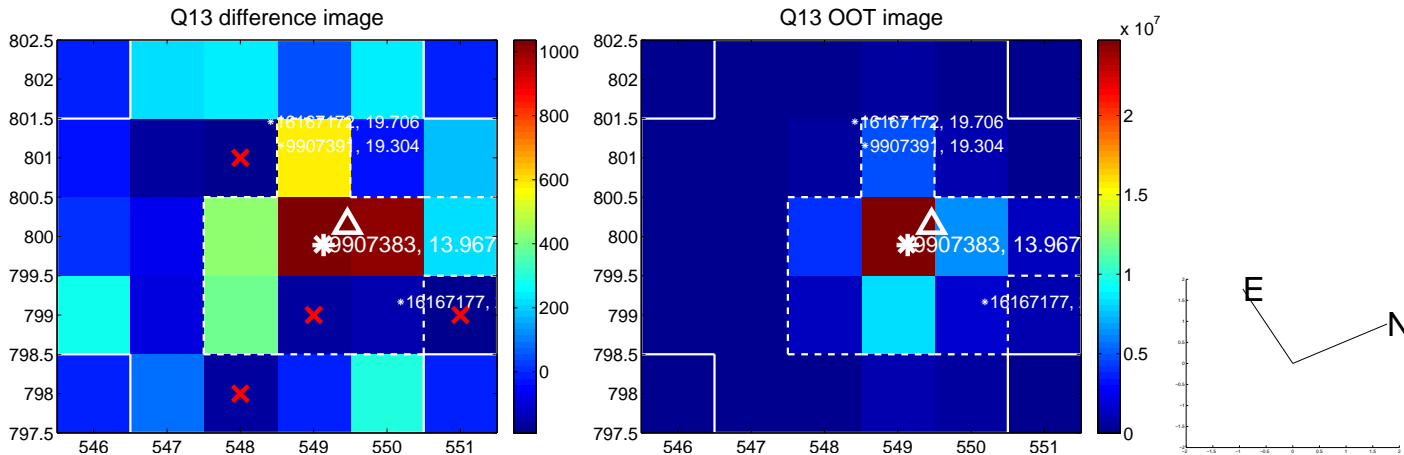




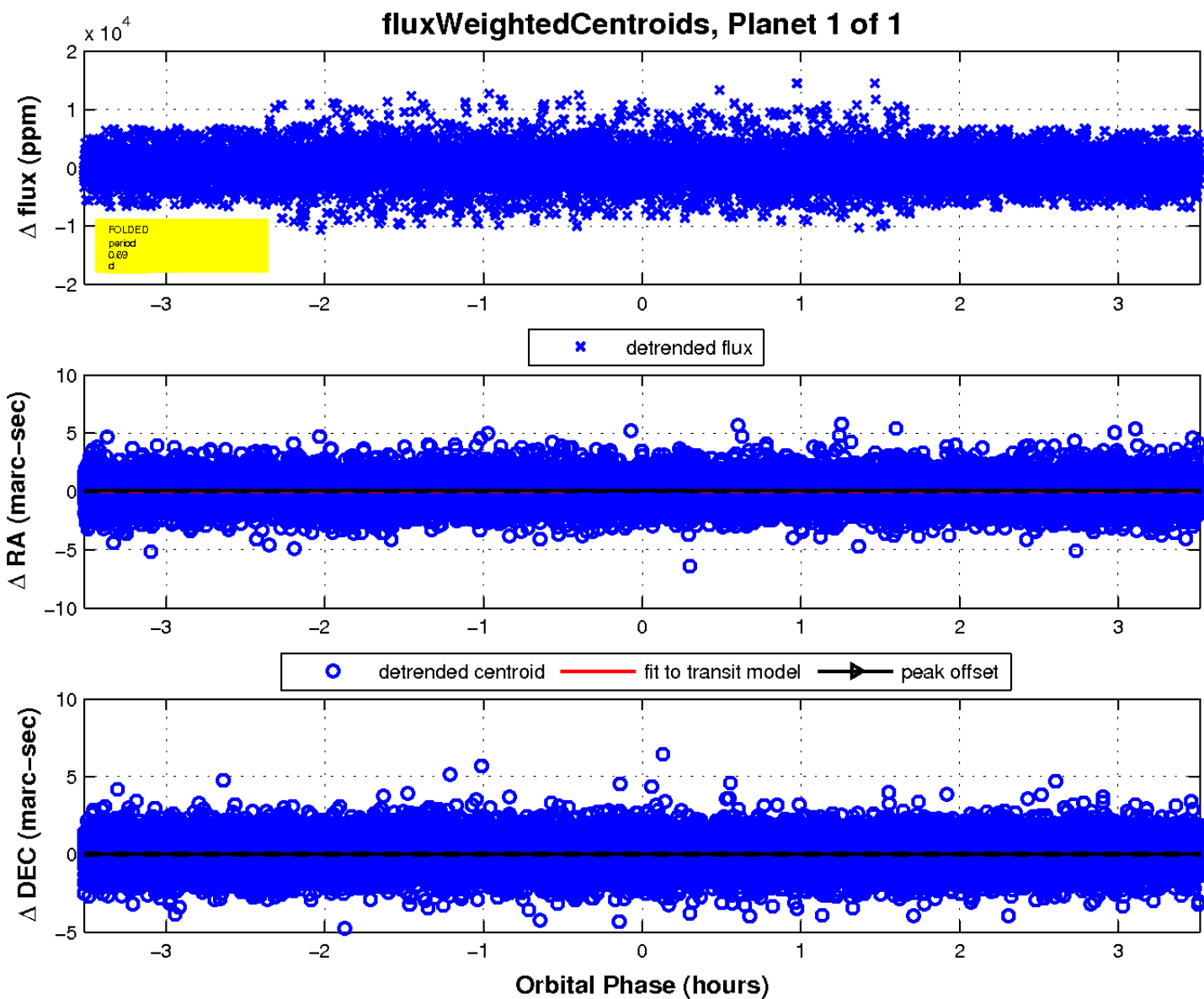
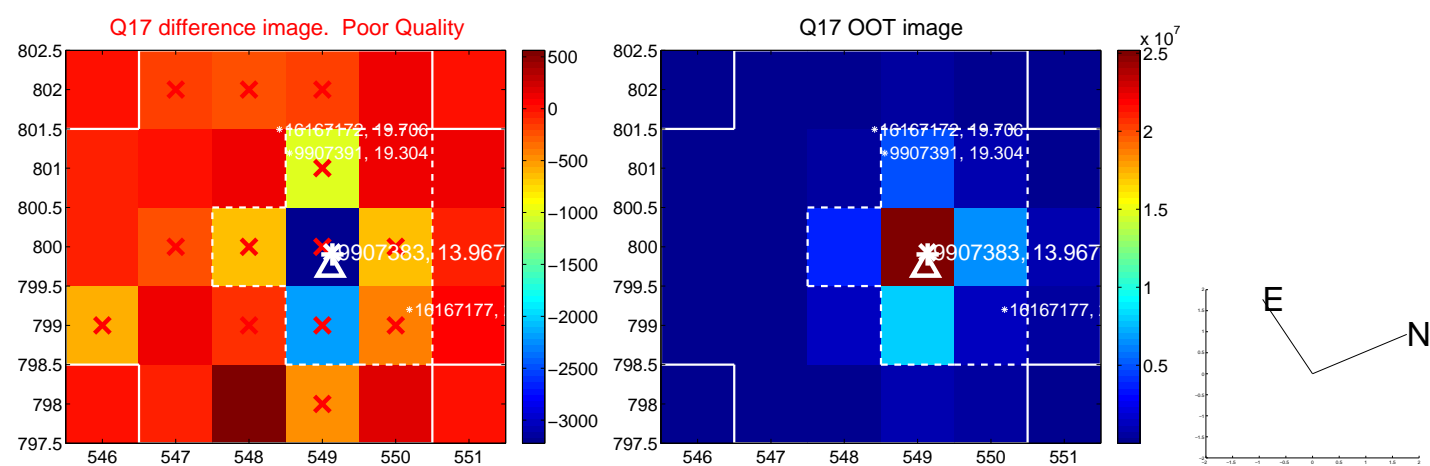
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

Declination

