

# KIC 007501259

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007501259-01	OBS	No	0.892744	132.156818	26.3	4.259	8.8	9.3	0.81	5192	0.44	1546.07

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007501259-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_RESOLVED_OFFSET—EPHEM_MATCH

**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.

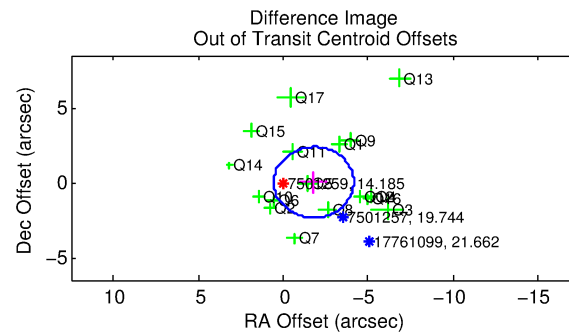
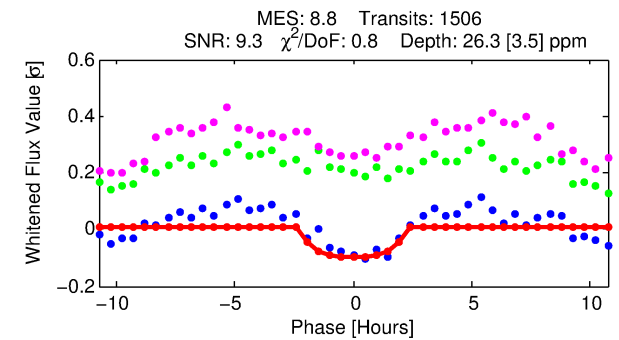
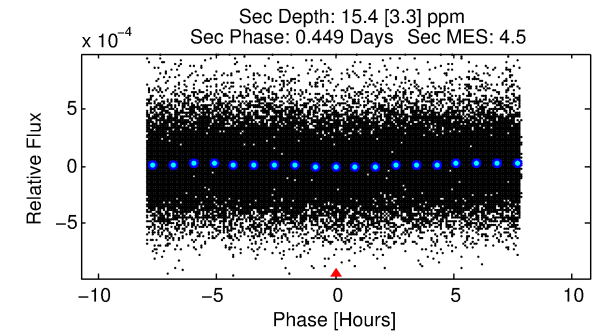
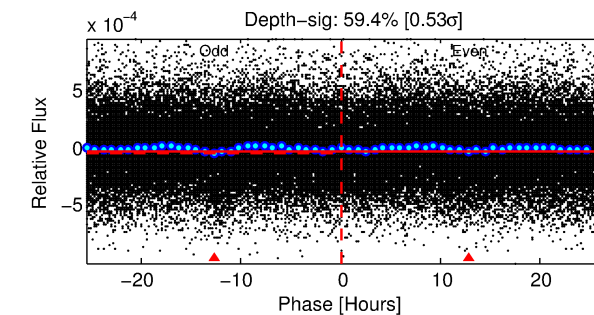
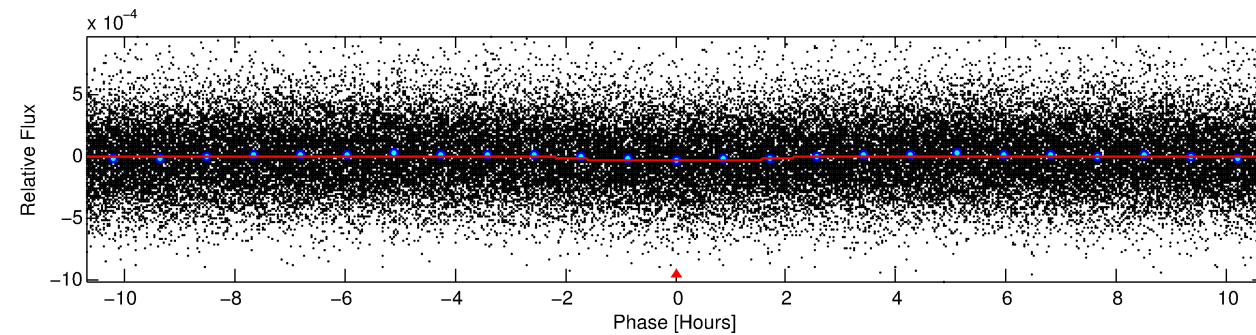
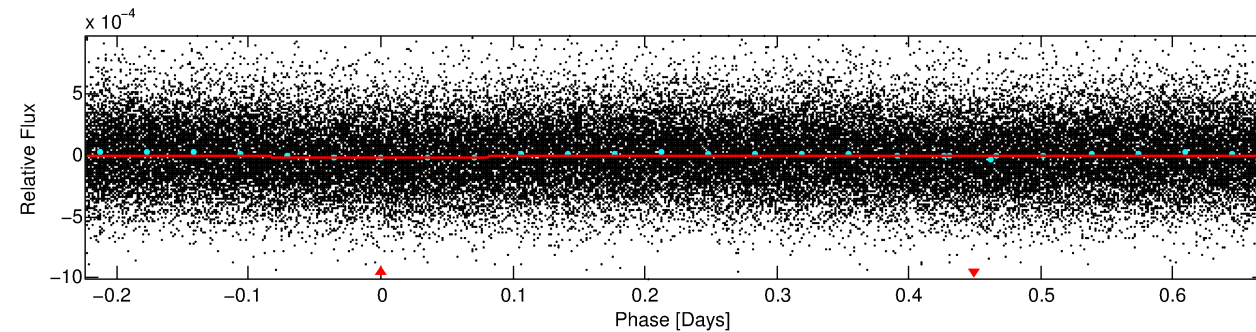
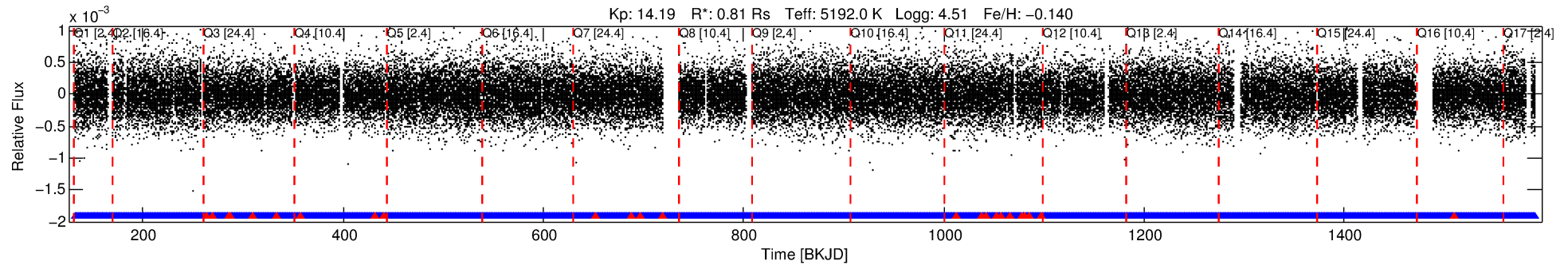
## Ephemeris Match Information For 007501259-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
007501259-01	7501259	007501230-pri	7501230	1:1	65.9	16	-4	12.45	14.19	12865.00	Direct-PRF	0	0.68	0.26

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 7501259 Candidate: 1 of 1 Period: 0.893 d



## DV Fit Results:

Period = 0.89274 [0.00001] d  
Epoch = 132.1568 [0.0056] BKJD  
Rp/R\* = 0.0050 [0.0036]  
a/R\* = 1.42 [1.94]  
b = 0.69 [2.06]  
Seff = 1546.07 [295.30]  
Teff = 1599 [76] K  
Rp = 0.44 [0.32] Re  
a = 0.0166 [0.0016] AU  
Ag = 11.95 [17.37] [0.63 $\sigma$ ]  
Teffp = 4597 [1666] K [1.80 $\sigma$ ]

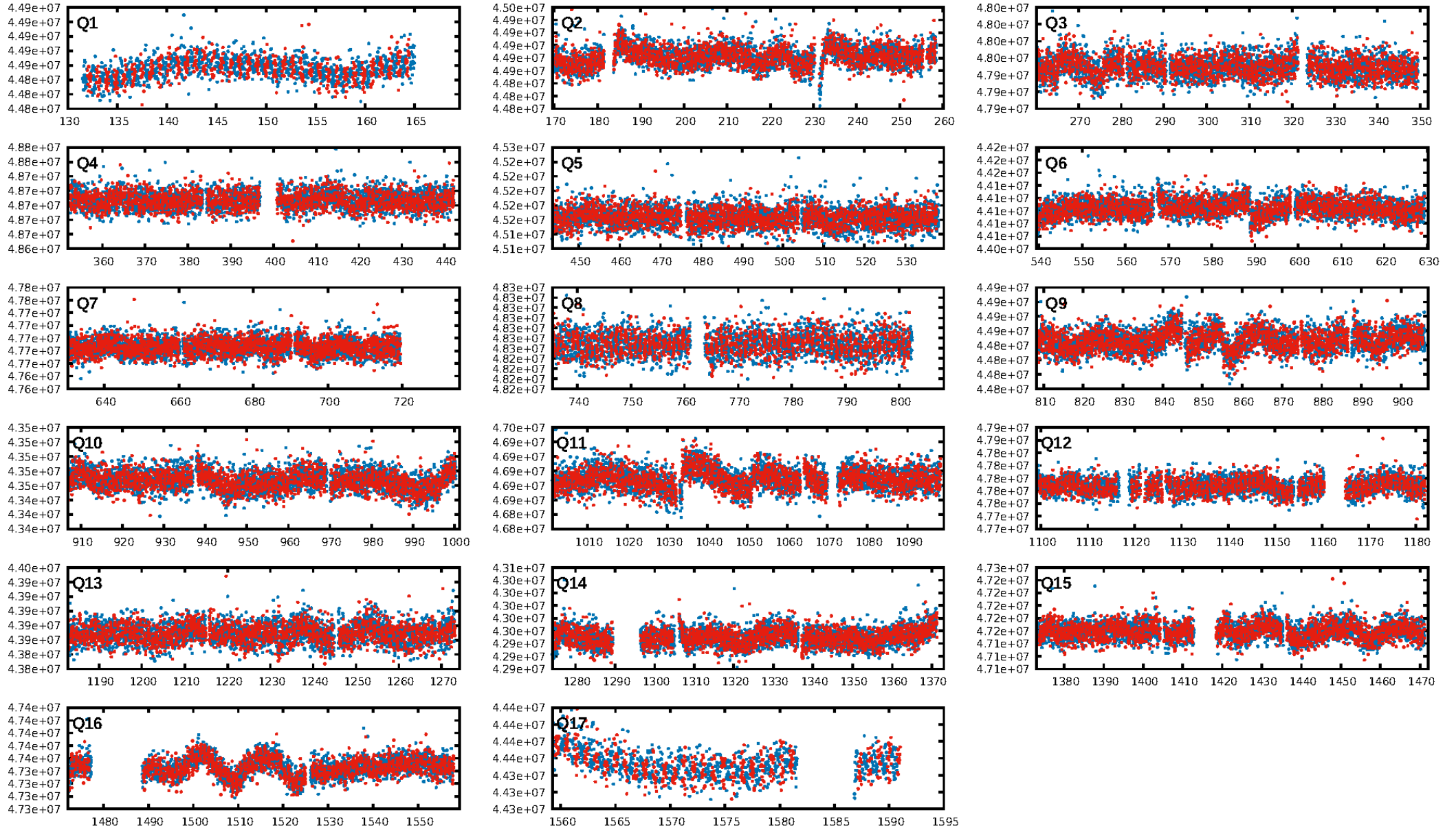
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.39e-16  
RollingBand-fgt: 0.98 [1414/1439]  
**GhostDiagnostic-chr: 0.5379**  
Centroid-sig: 52.9%  
Centroid-so: 1.510 arcsec [1.07 $\sigma$ ]  
OotOffset-rm: 1.807 arcsec [2.30 $\sigma$ ]  
KicOffset-rm: 1.692 arcsec [2.19 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.06 [1/17]  
DiffImageOverlap-fno: 1.00 [17/17]

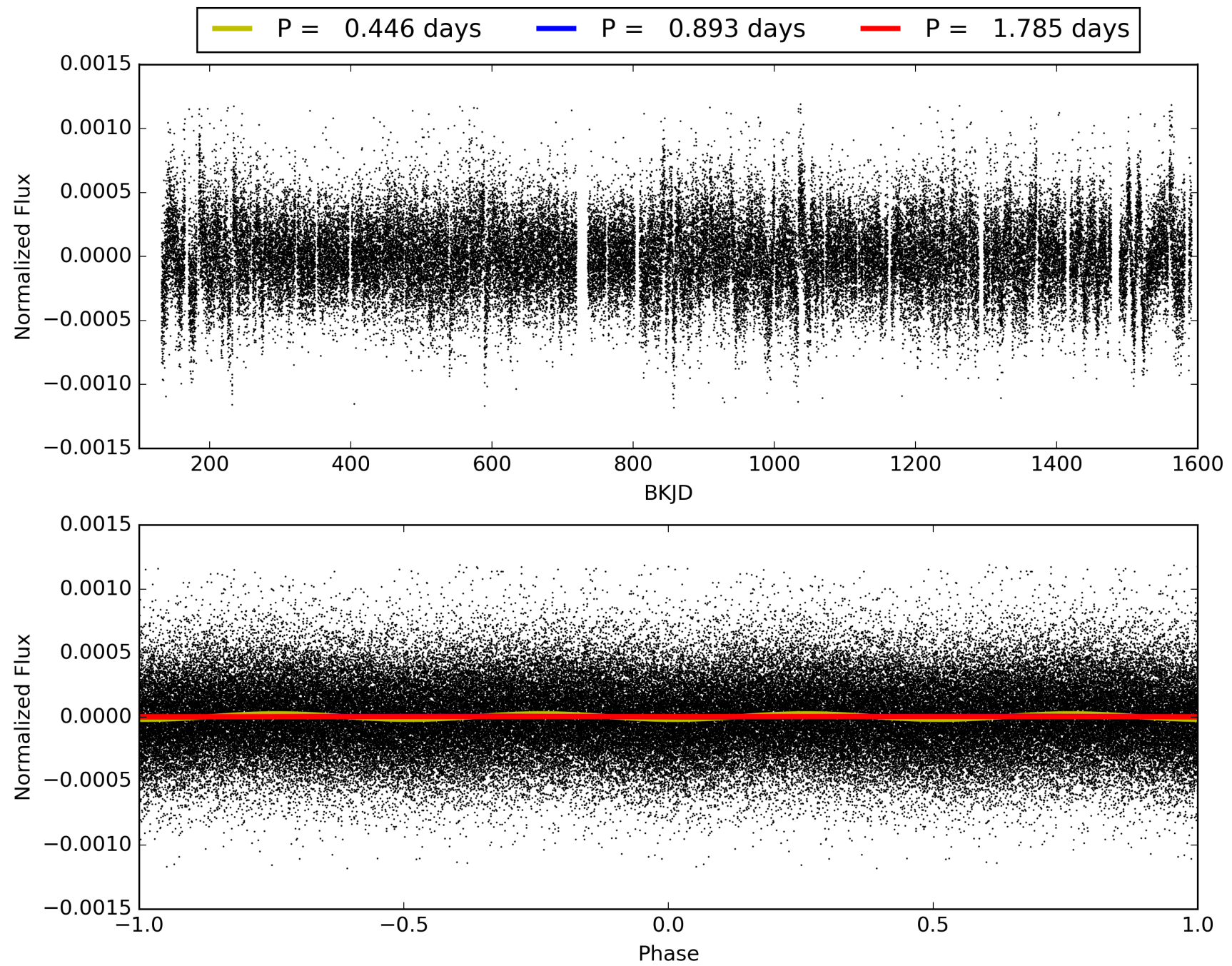
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:00:27 Z

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

# TCE 007501259-01, PDC Light Curves



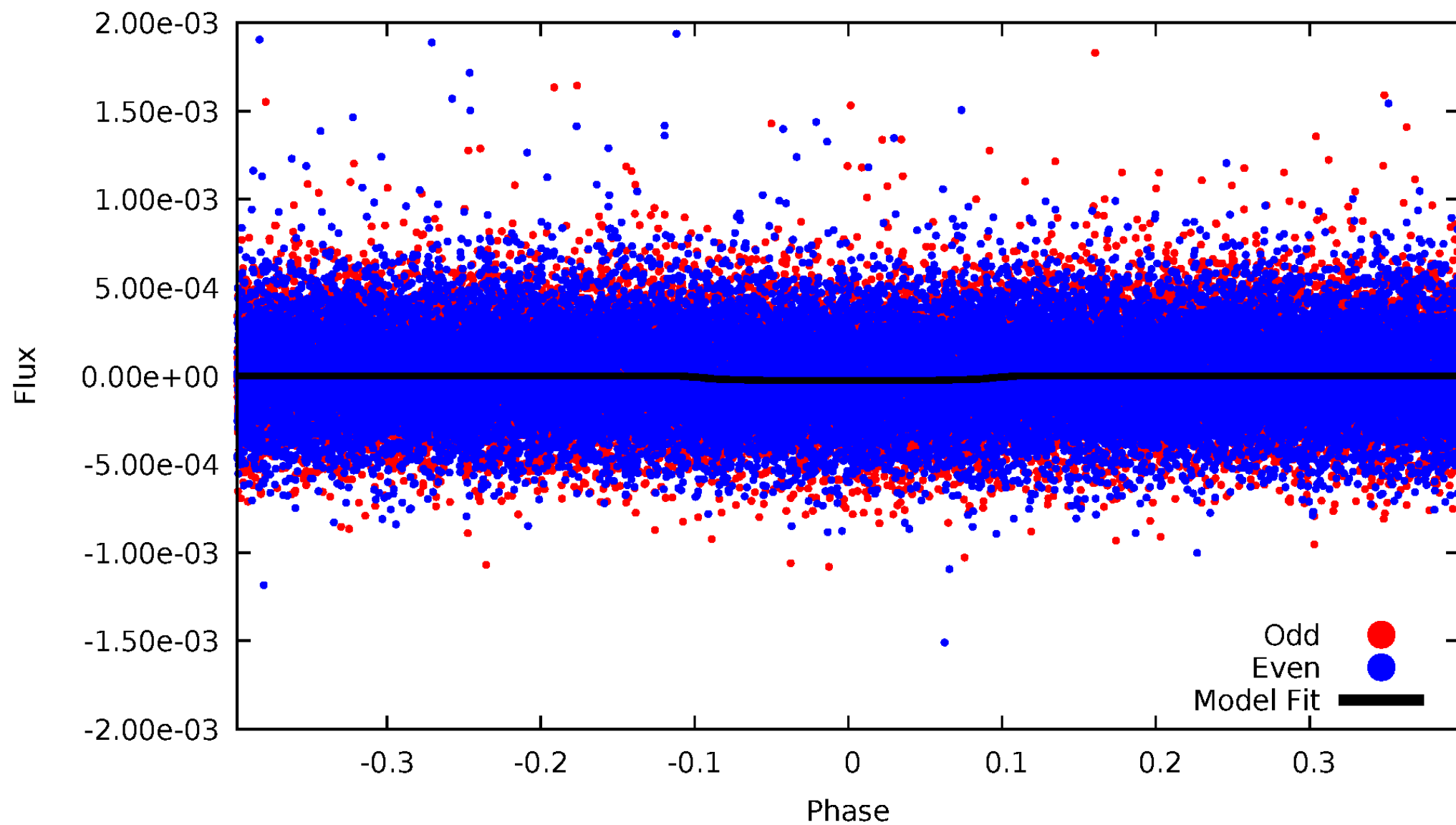
TCE 007501259-01





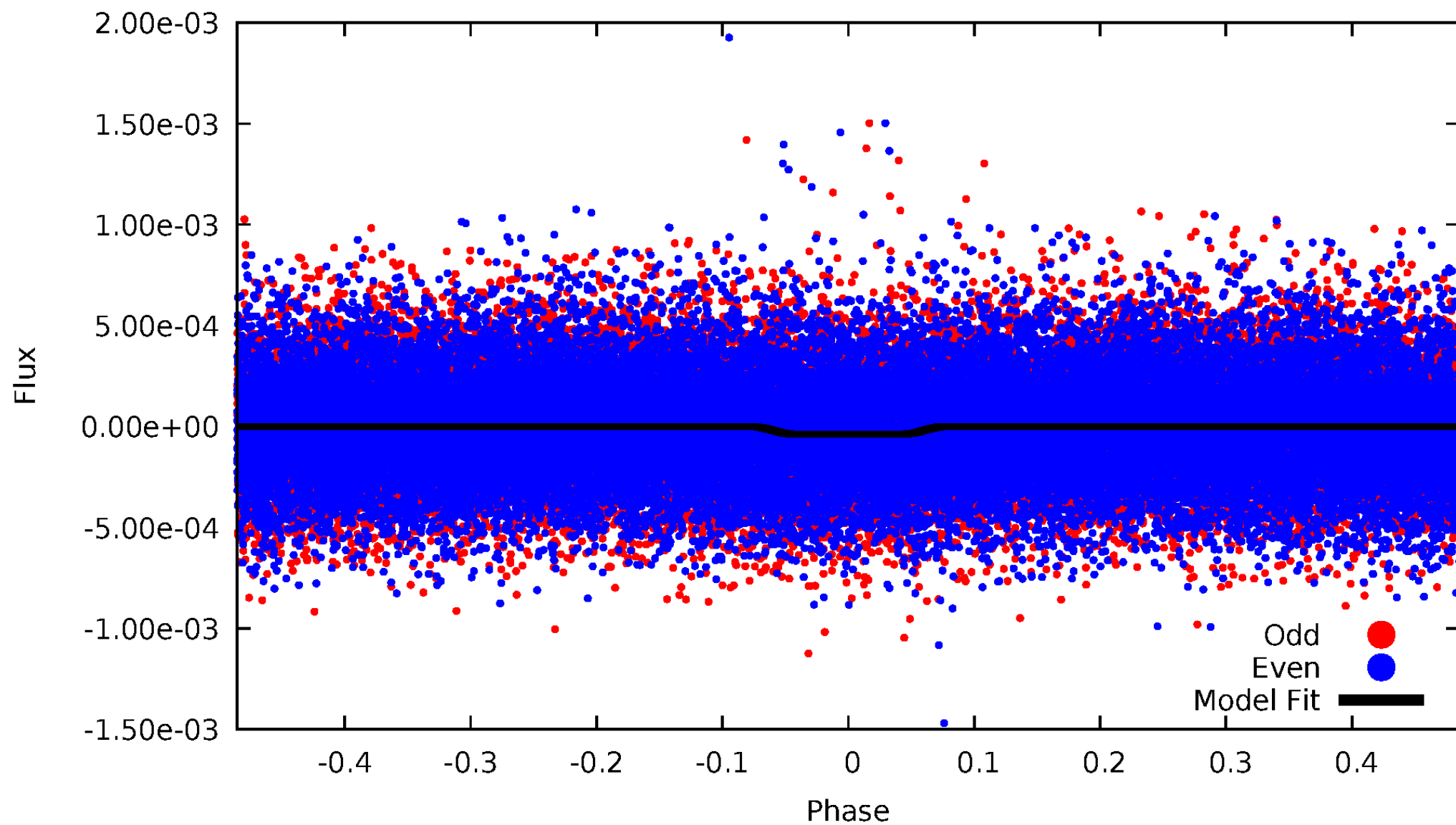
# DV Odd/Even

TCE 007501259-01



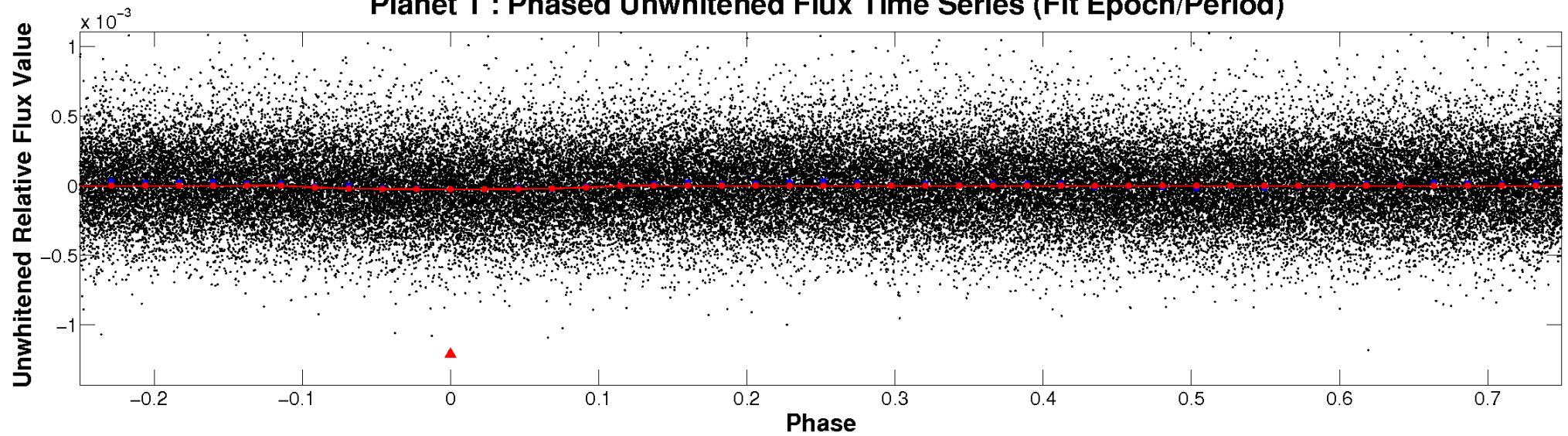
# ALT Odd/Even

TCE 007501259-01

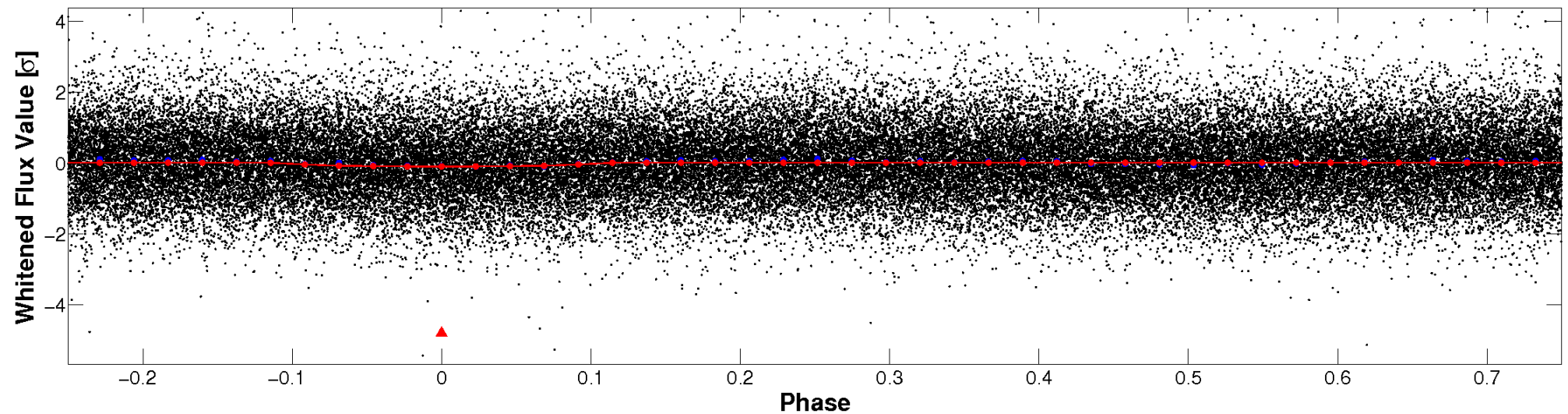


# Non-Whitened Vs. Whitened Light Curve

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

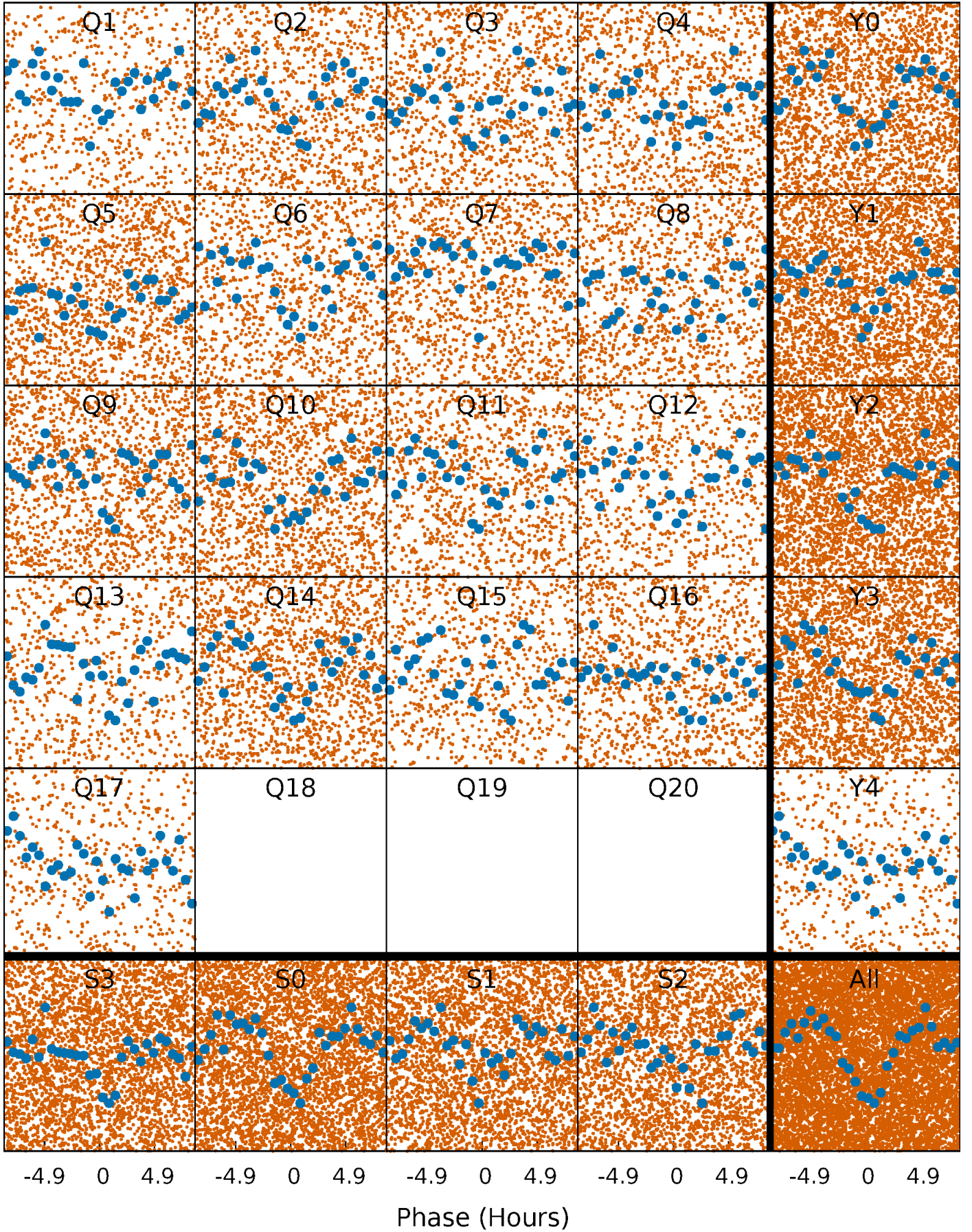


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

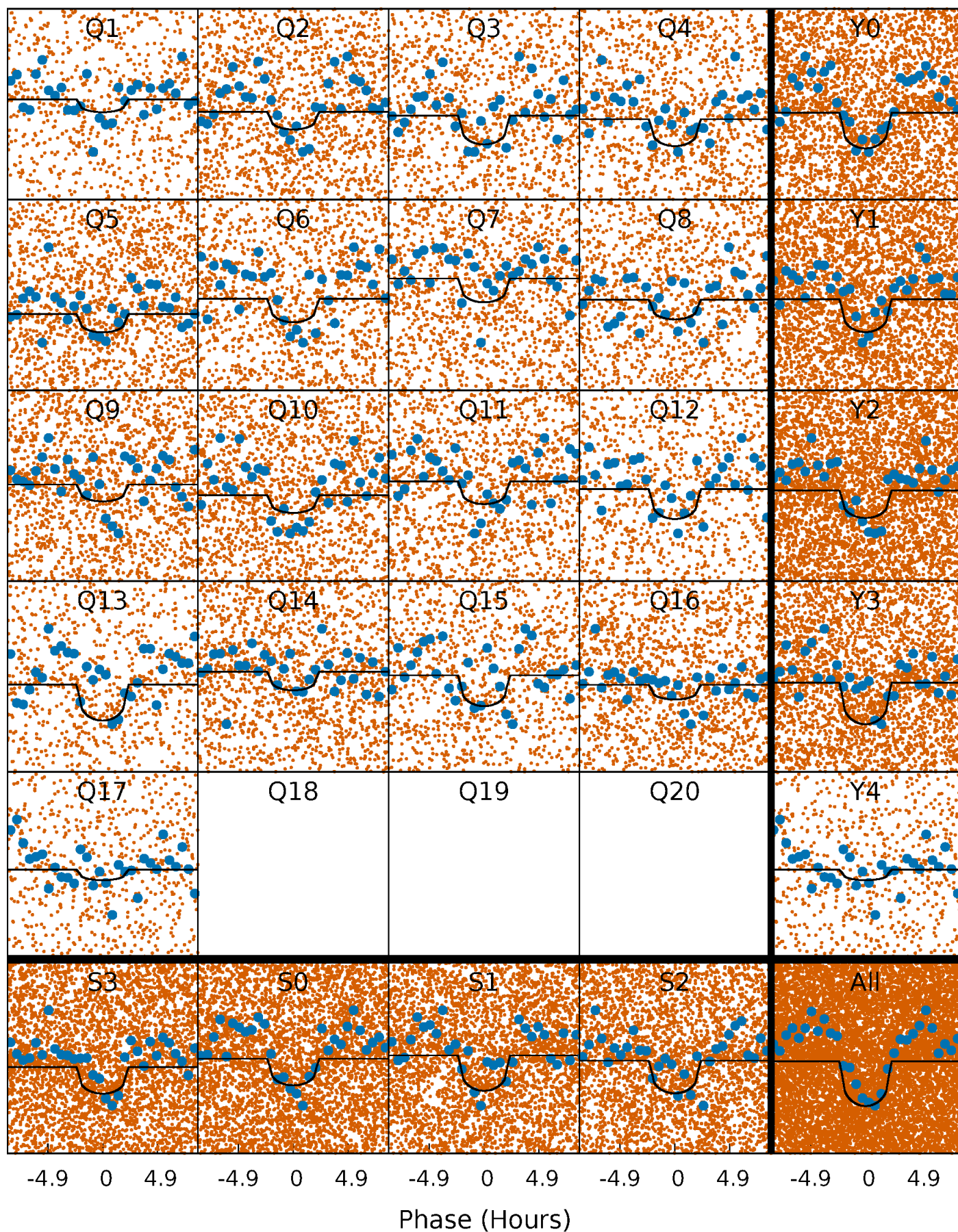
TCE 007501259-01   P= 0.892744 Days    $T_0=132.156818$  (BKJD)





# DV Quarter-Phased Transit Curves

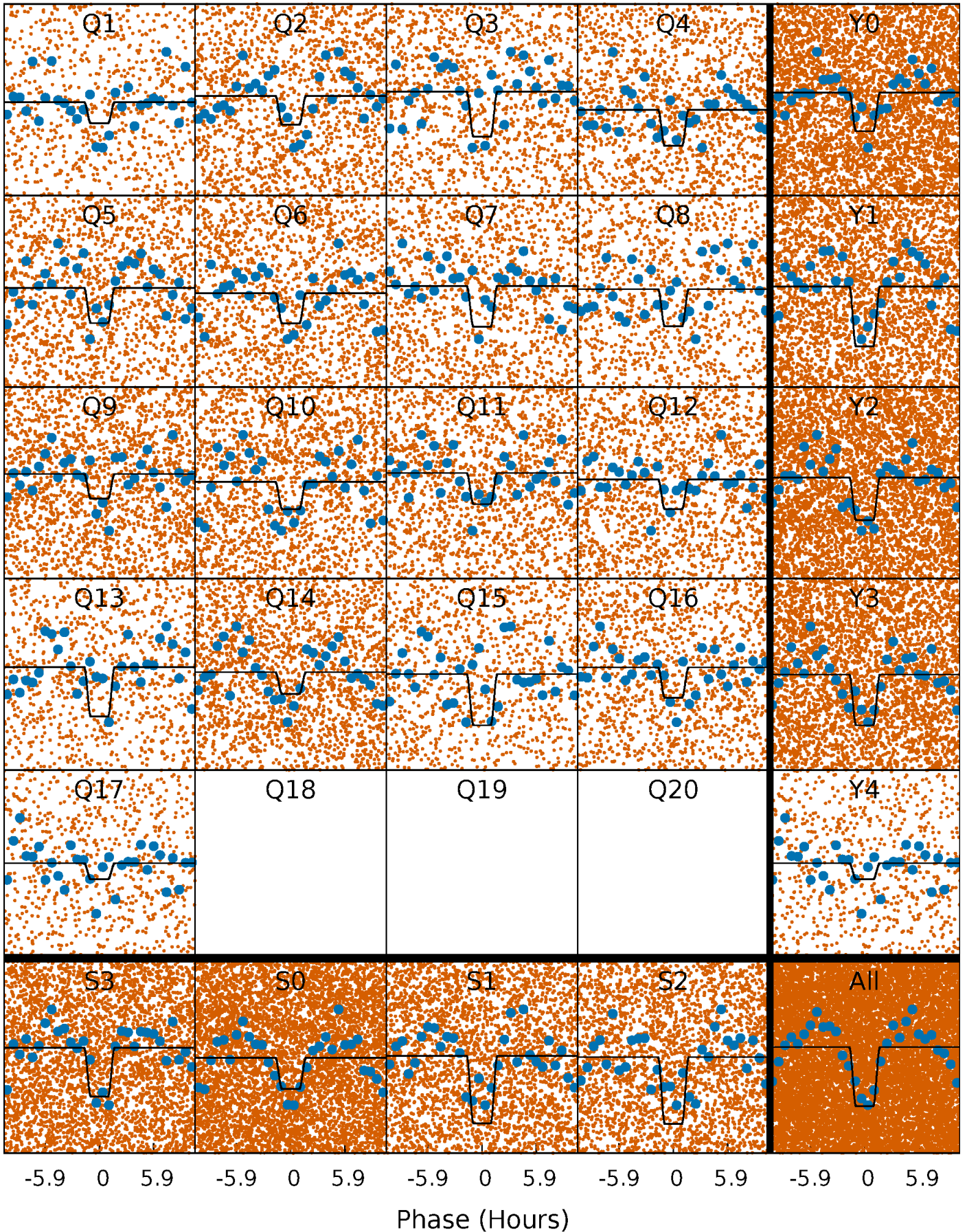
TCE 007501259-01 P= 0.892744 Days  $T_0=132.156818$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

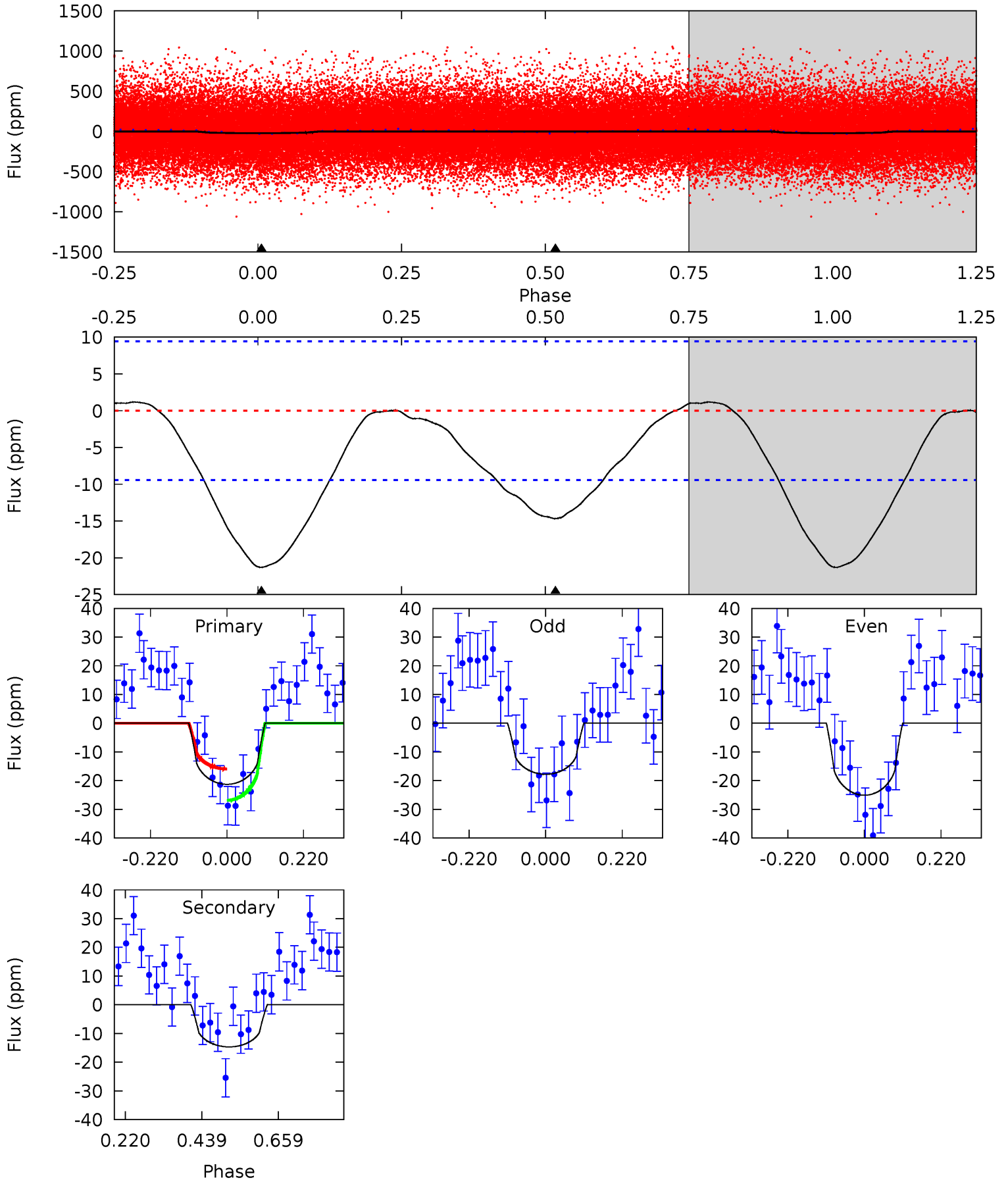
TCE 007501259-01 P= 0.892782 Days  $T_0=132.139807$  (BKJD)



# DV Model-Shift Uniqueness Test

007501259-01, P = 0.892744 Days, E = 131.264074 Days

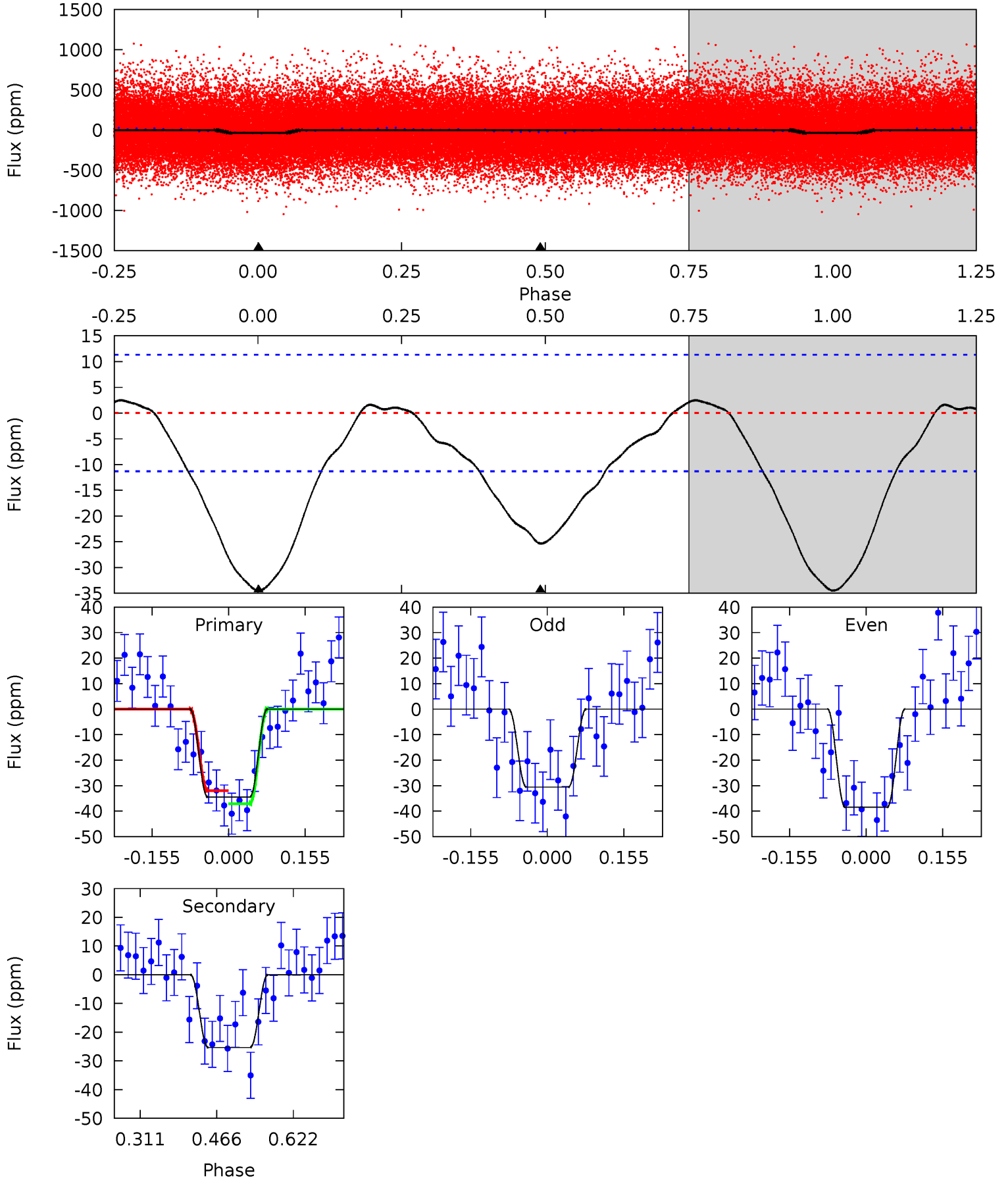
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.93	6.84	0	0	4.40	1.23	0.42	9.93	9.93	6.84	6.84	1.70	0.94	0.05	2.56



# Alt Model-Shift Uniqueness Test

007501259-01, P = 0.892782 Days, E = 131.247025 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
13.6	10.0	0	0	4.47	1.42	1.07	13.6	13.6	10.0	10.0	1.56	1.00	0.07	1.02





### Stellar Parameters For KIC 007501259

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5192^{+154}_{-154}$	$4.506^{+0.085}_{-0.076}$	$-0.140^{+0.300}_{-0.300}$	$0.809^{+0.089}_{-0.089}$	$0.766^{+0.107}_{-0.058}$	$2.034^{+0.788}_{-0.477}$
	+3%/-3%	+2%/-2%	+214%/-214%	+11%/-11%	+14%/-8%	+39%/-23%
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 007501259-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-15 \pm 2$	$0.45^{+0.34}_{-0.26}$	$2228^{+101}_{-95}$	$4584^{+2319}_{-898}$	$11^{+52}_{-8}$
Alt.	$-25 \pm 3$	$0.55^{+0.32}_{-0.29}$	$2232^{+95}_{-93}$	$4727^{+1994}_{-757}$	$13^{+43}_{-8}$

$T_{max}$  = 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

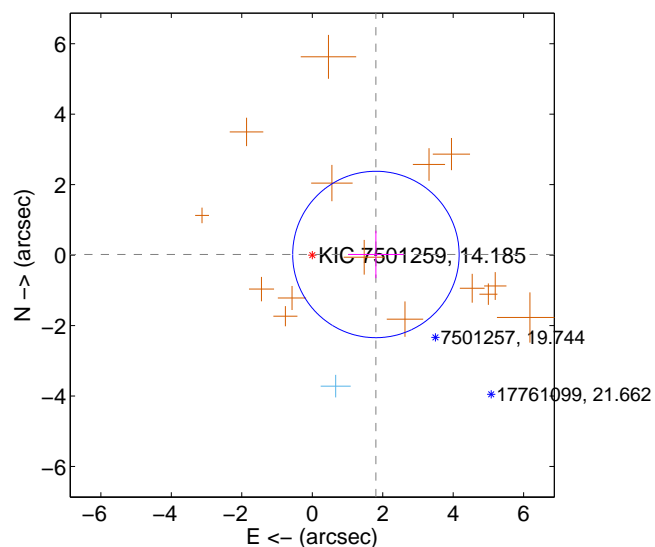
Supplemental centroid analysis for 007501259-01. Kepler magnitude: 14.19. Transit SNR 9.27

There are 1 quarters with good PRF difference image offsets

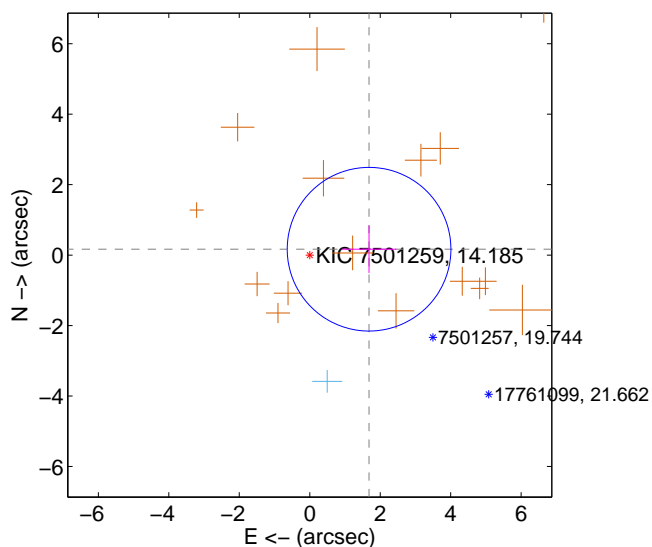
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.807 \pm 0.787$	2.30	$-1.807 \pm 0.787$	$0.018 \pm 0.672$
PRF-fit source offset from KIC position	$1.692 \pm 0.774$	2.19	$-1.684 \pm 0.775$	$0.167 \pm 0.674$
photometric centroid source offset	$1.51 \pm 1.40$	1.07	$-1.35 \pm 1.38$	$-0.68 \pm 1.49$

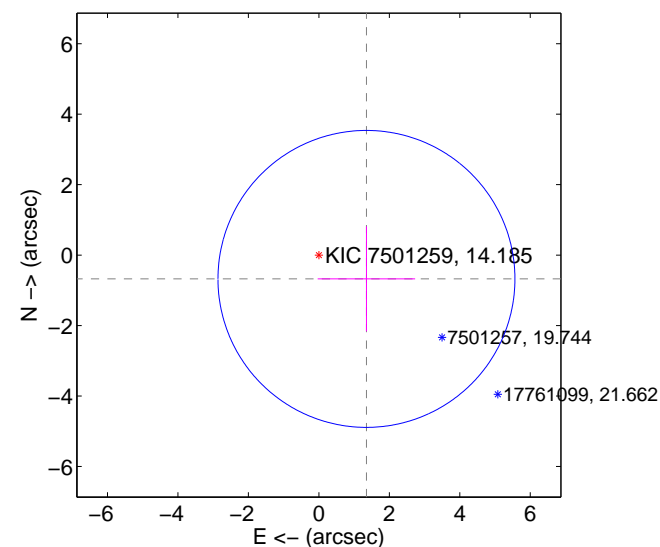
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

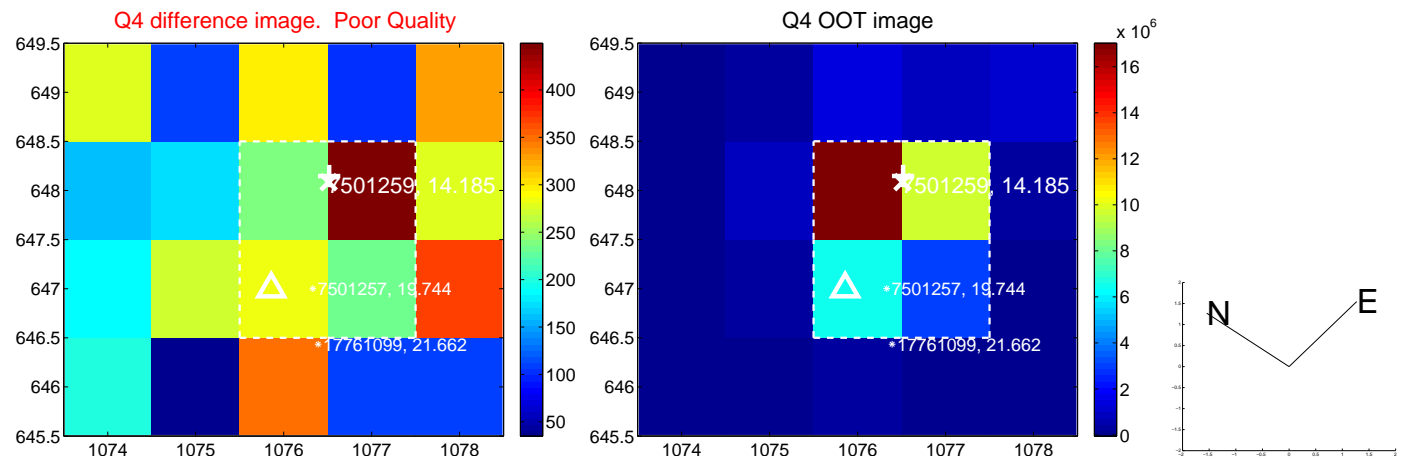
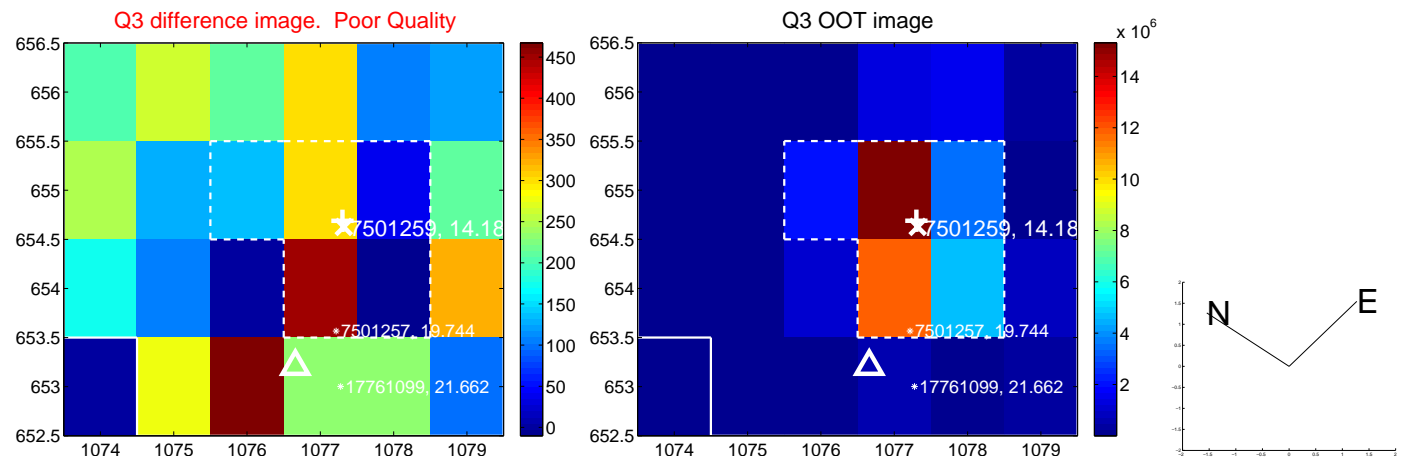
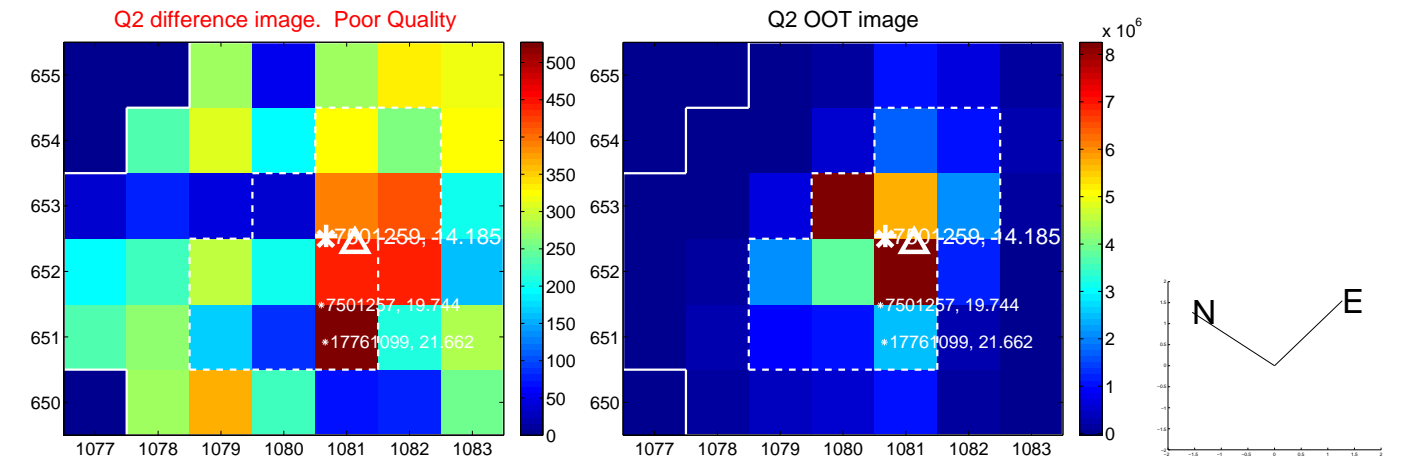
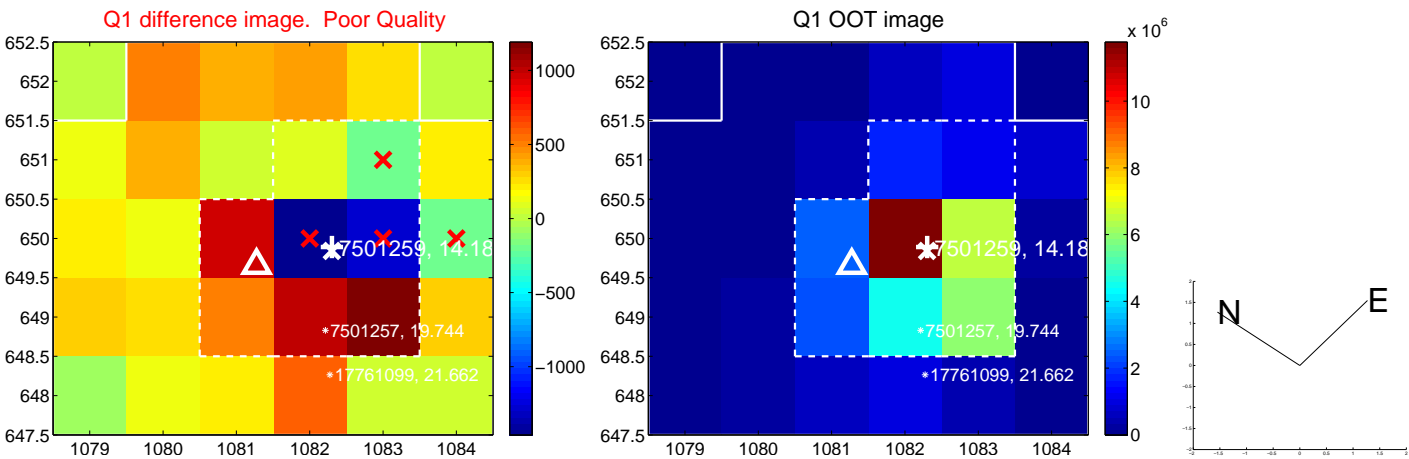


offset from photometric centroids

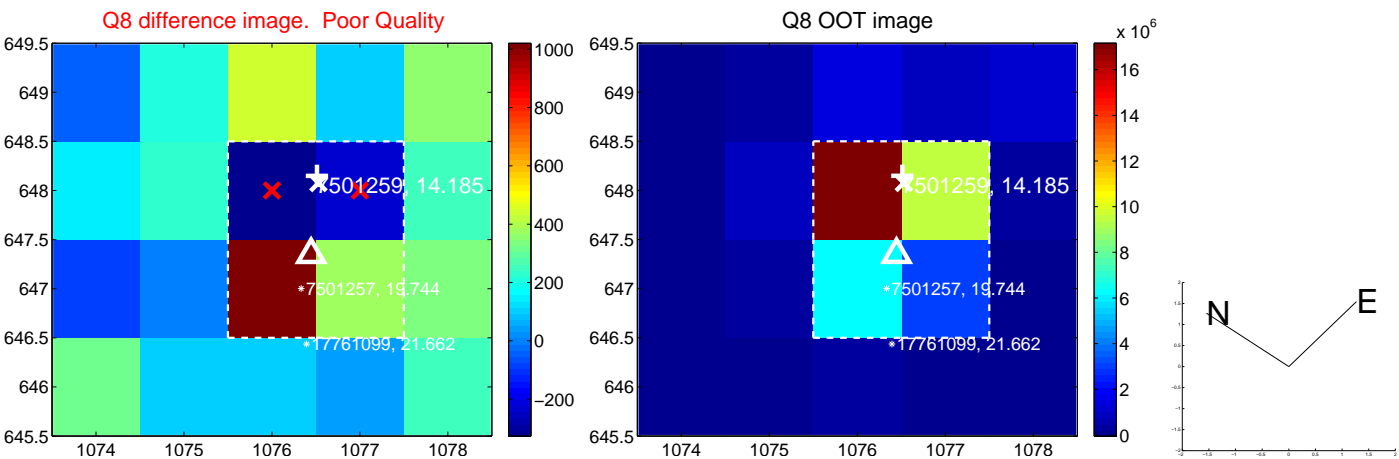
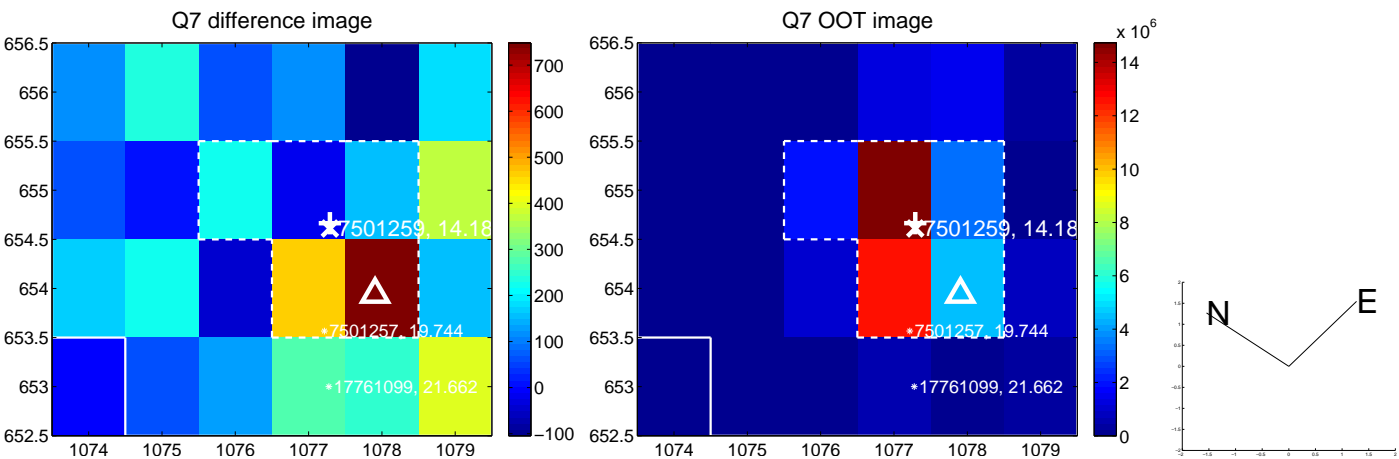
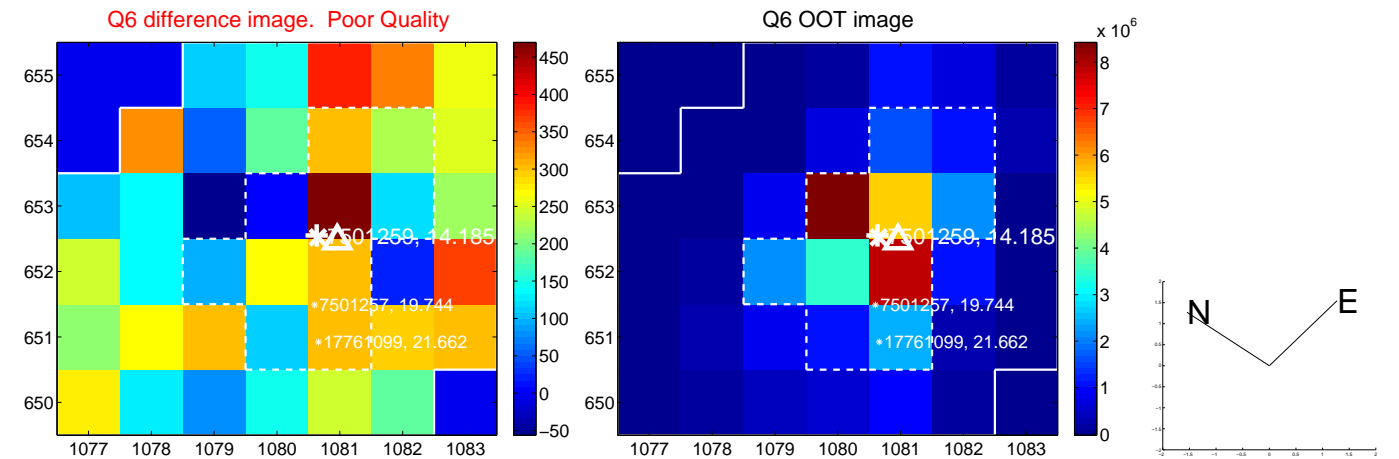
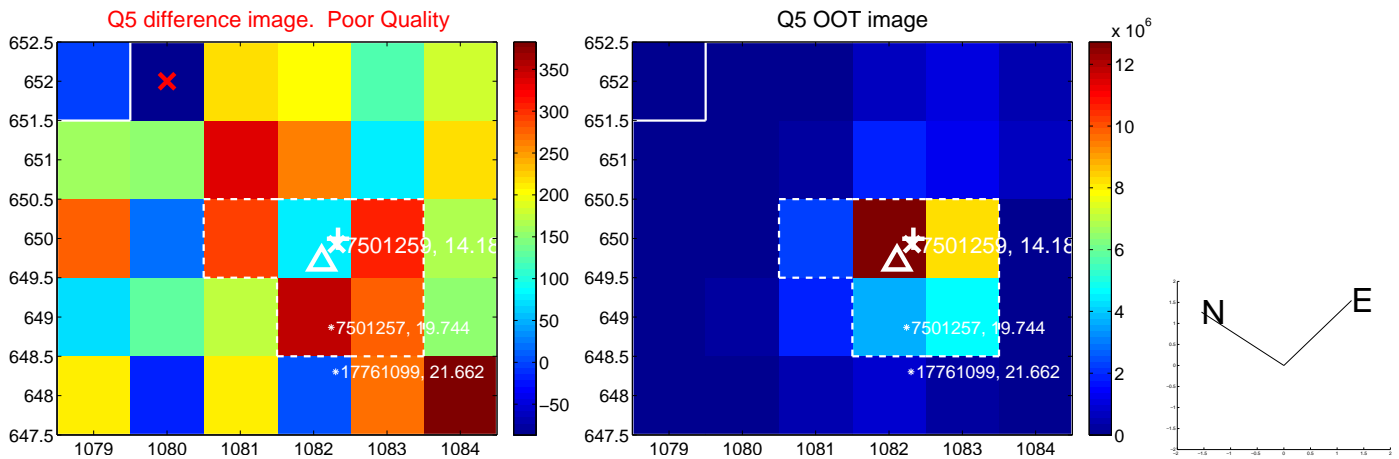


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

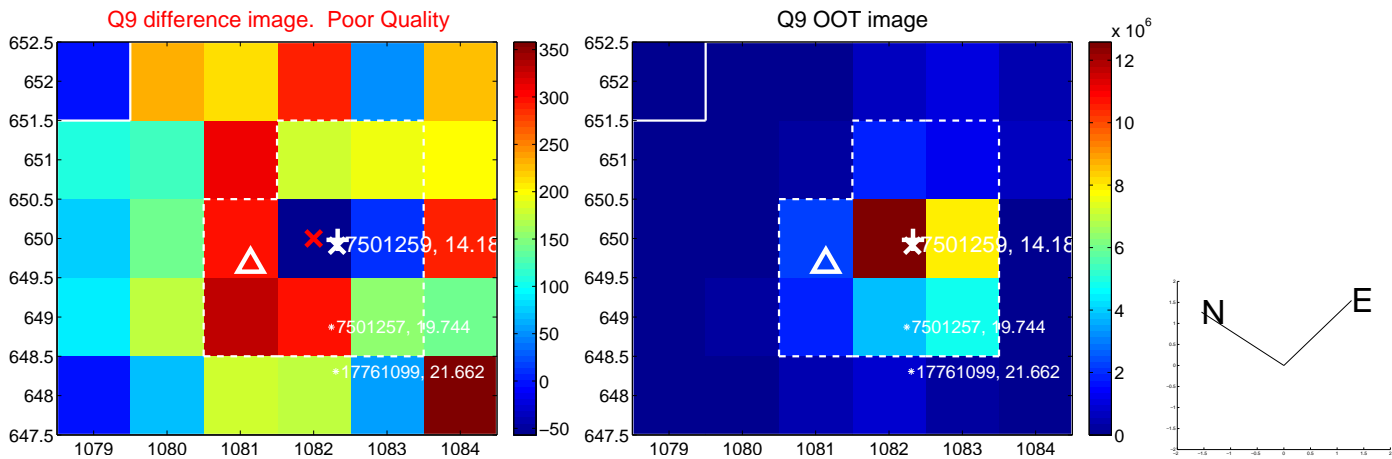


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

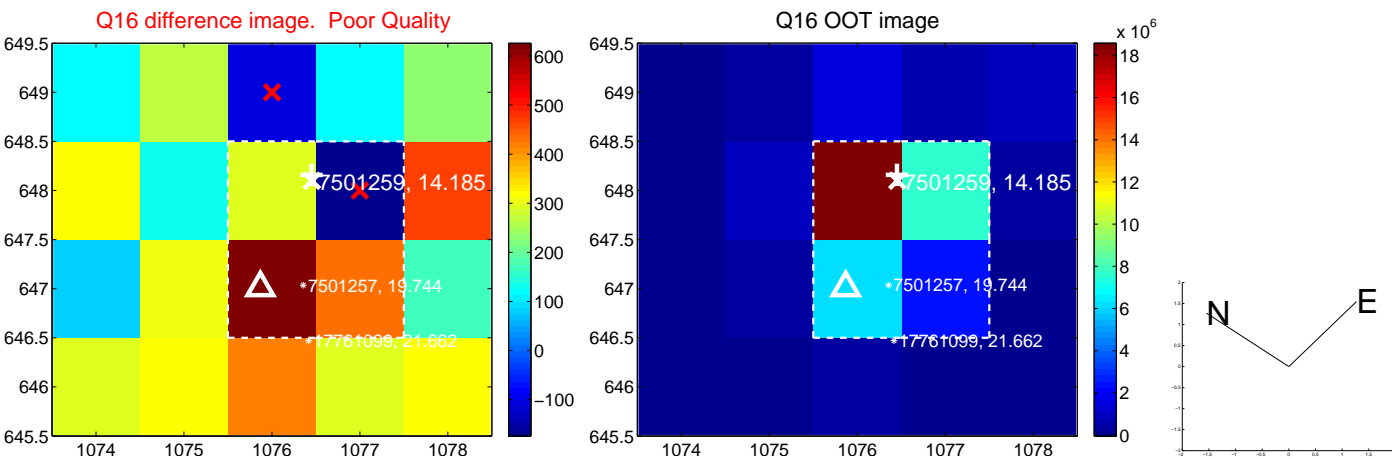
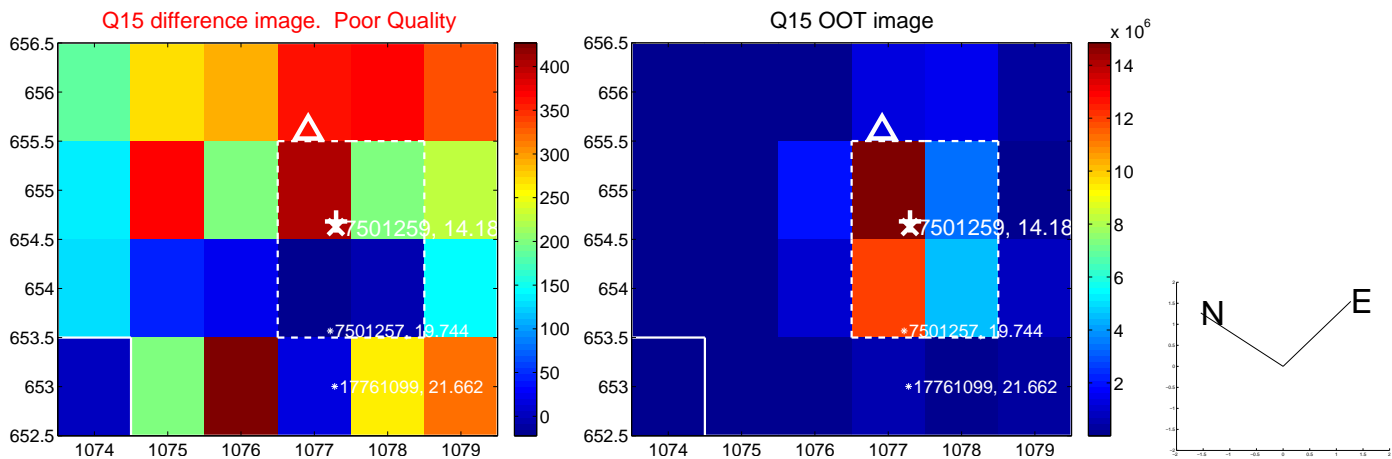
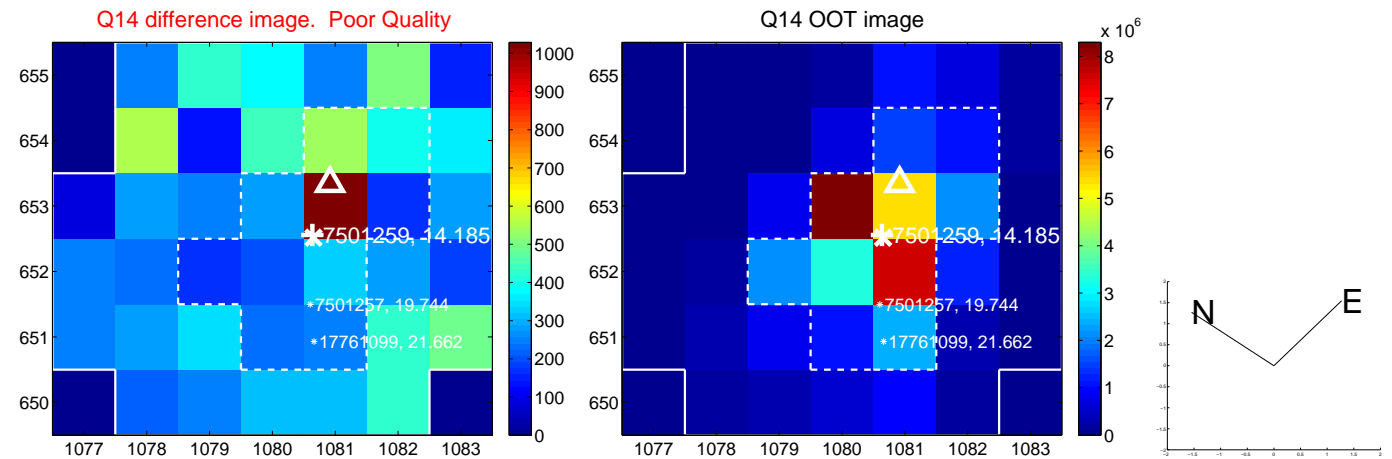
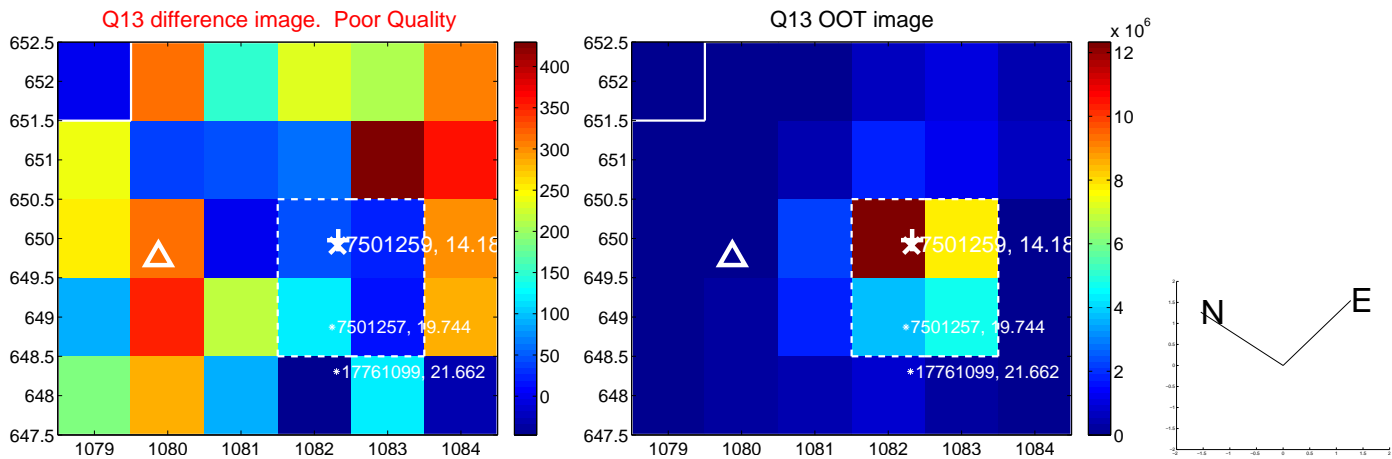




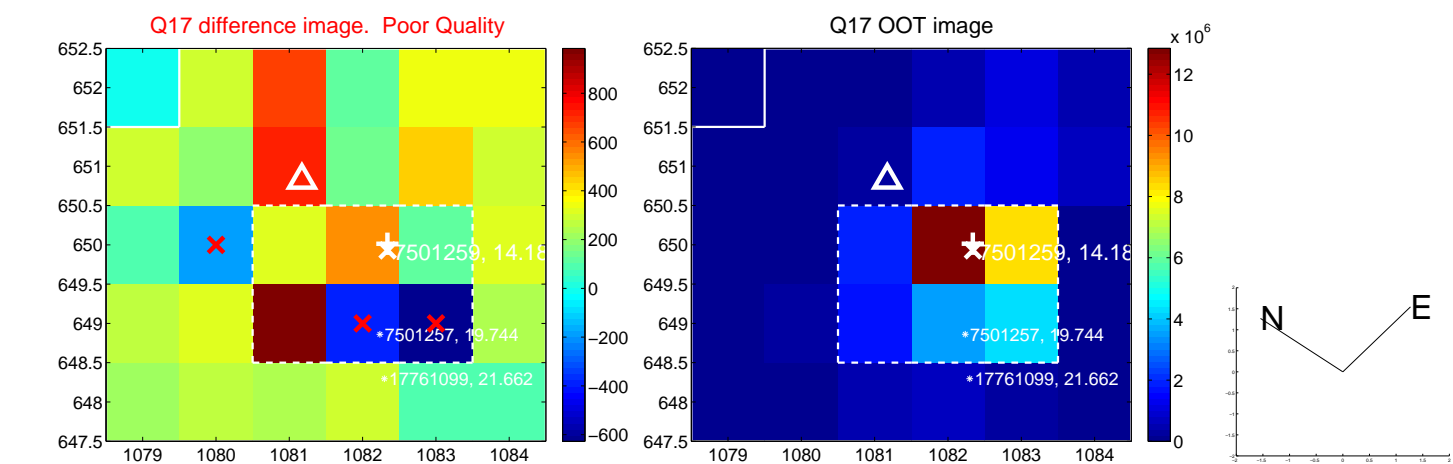
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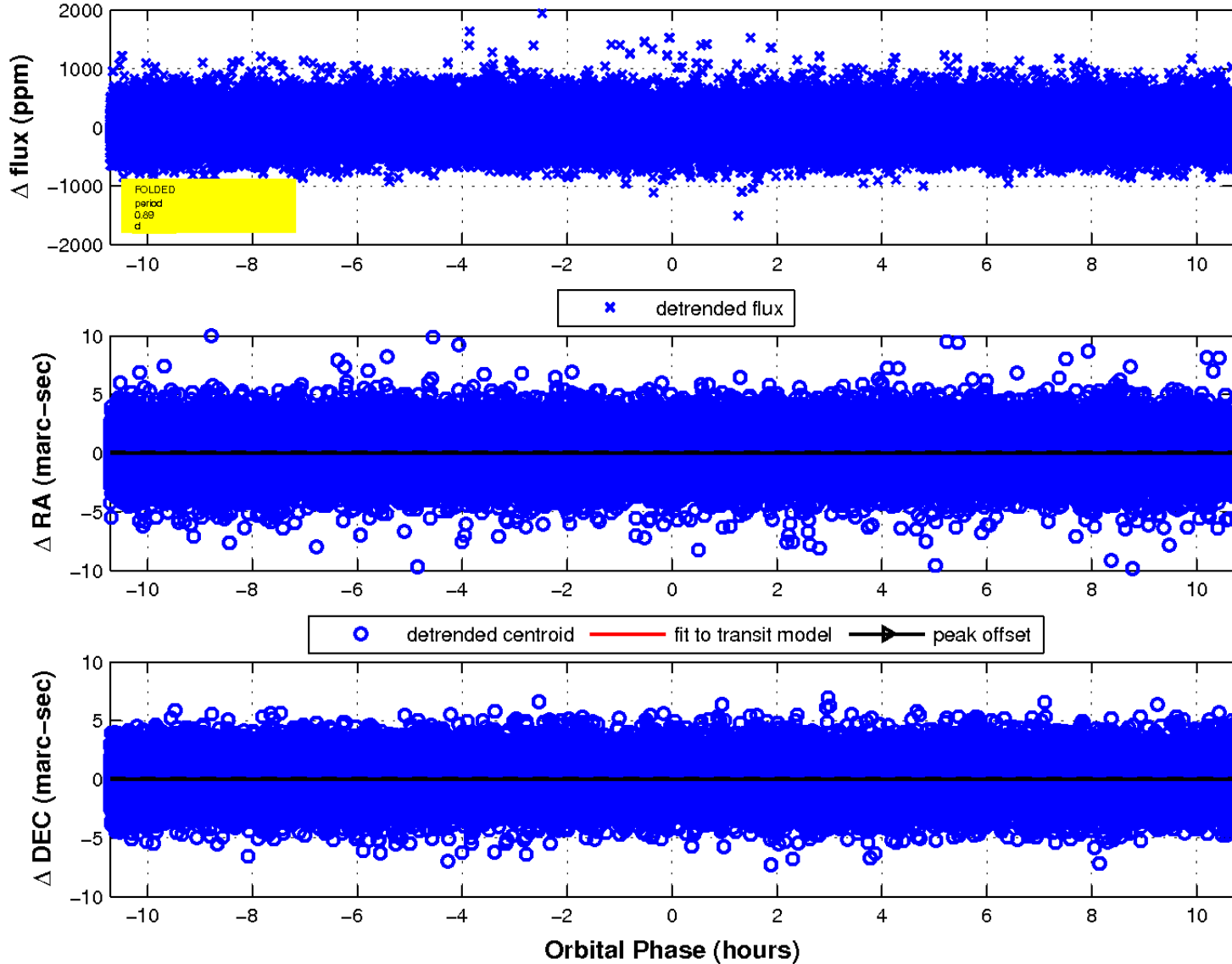
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

