

# KIC 010657150

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010657150-01	OBS	No	0.704743	132.000226	8.5	5.582	7.7	6.3	1.53	6543	0.48	15057.59

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010657150-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS

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

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

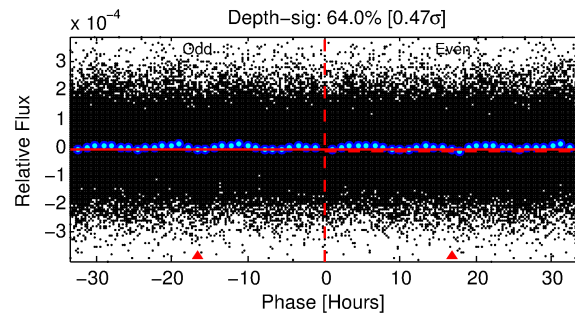
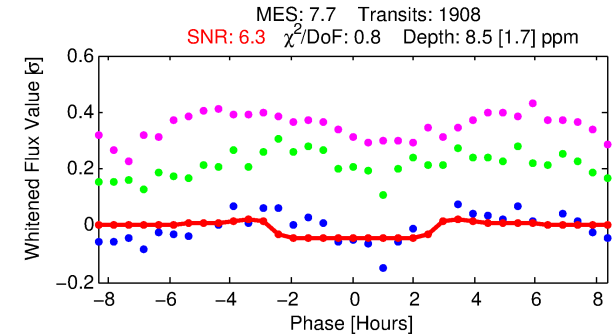
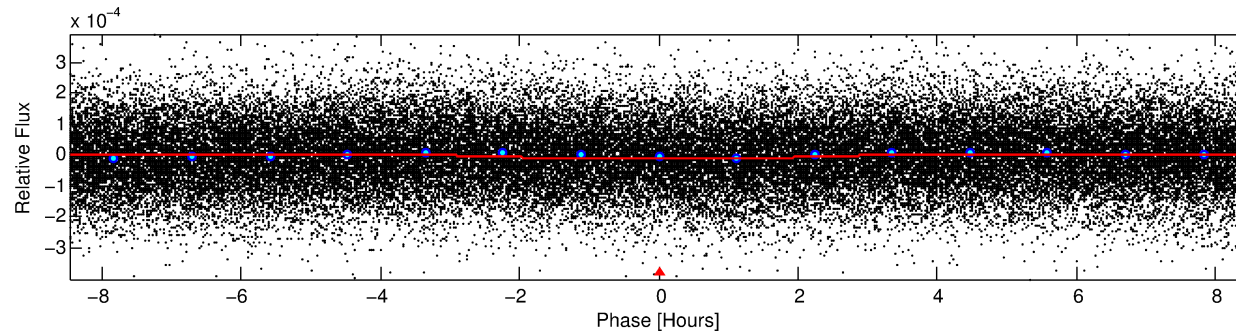
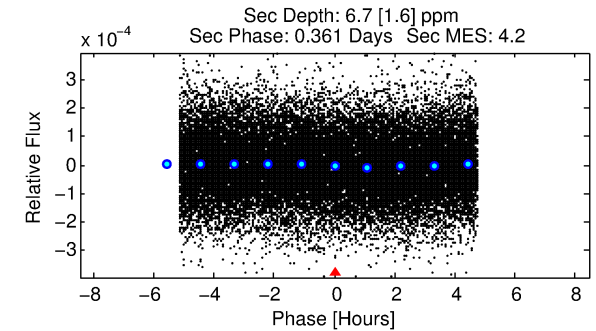
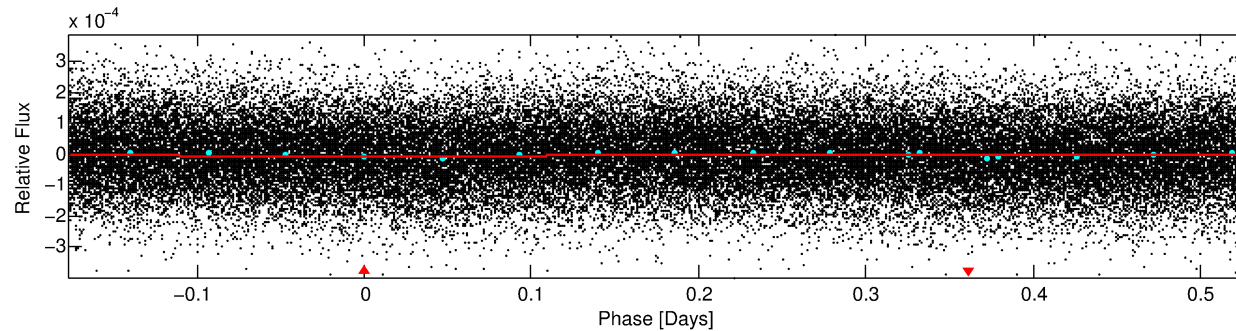
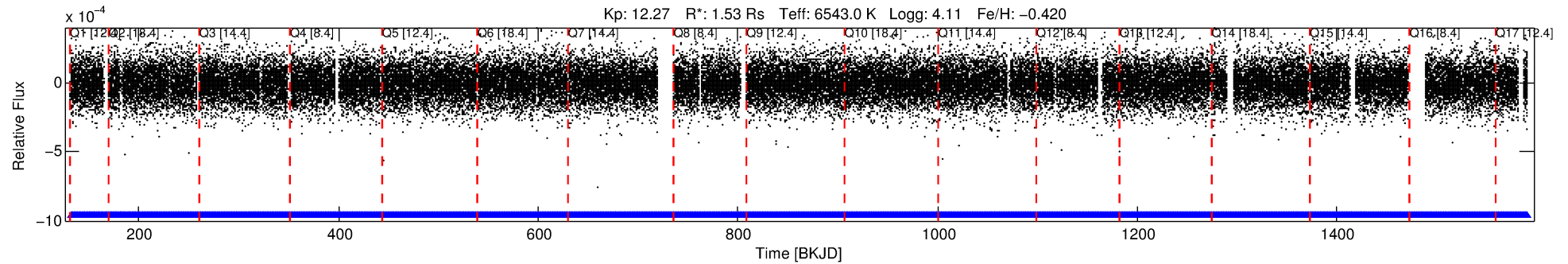
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010657150-01

No Significant Match Found

# DV One-Page Summary

KIC: 10657150 Candidate: 1 of 1 Period: 0.705 d



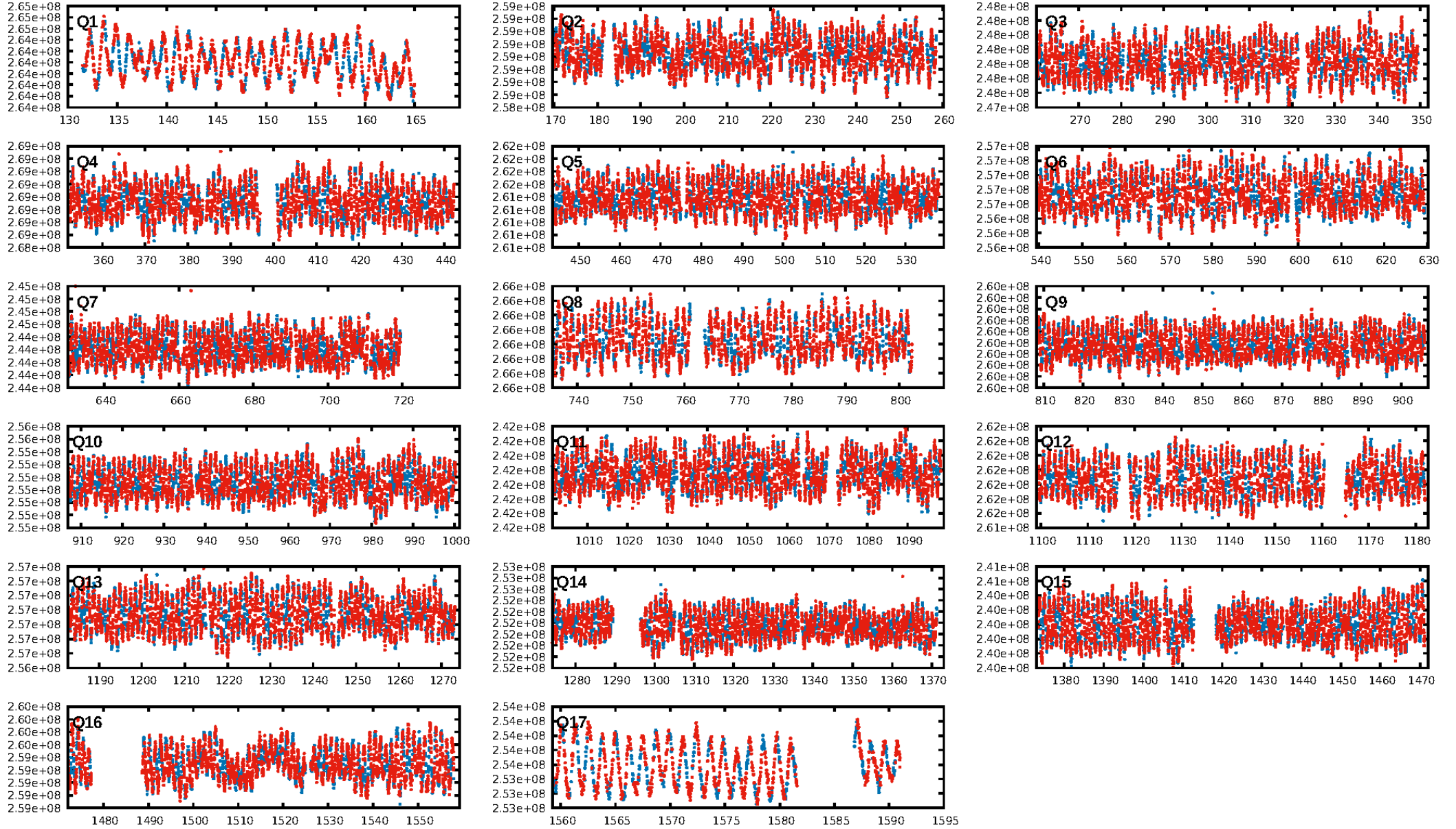
## DV Fit Results:

Period = 0.70474 [0.00002] d  
Epoch = 132.0002 [0.0058] BKJD  
Rp/R\* = 0.0029 [0.0024]  
a/R\* = 1.08 [0.73]  
b = 0.73 [2.97]  
Seff = 15057.59 [7428.34]  
Teq = 2825 [348] K  
Rp = 0.48 [0.42] Re  
a = 0.0160 [0.0046] AU  
Ag = 4.01 [6.90] [0.44σ]  
Teffp = 6180 [2570] K [1.29σ]

## DV Diagnostic Results:

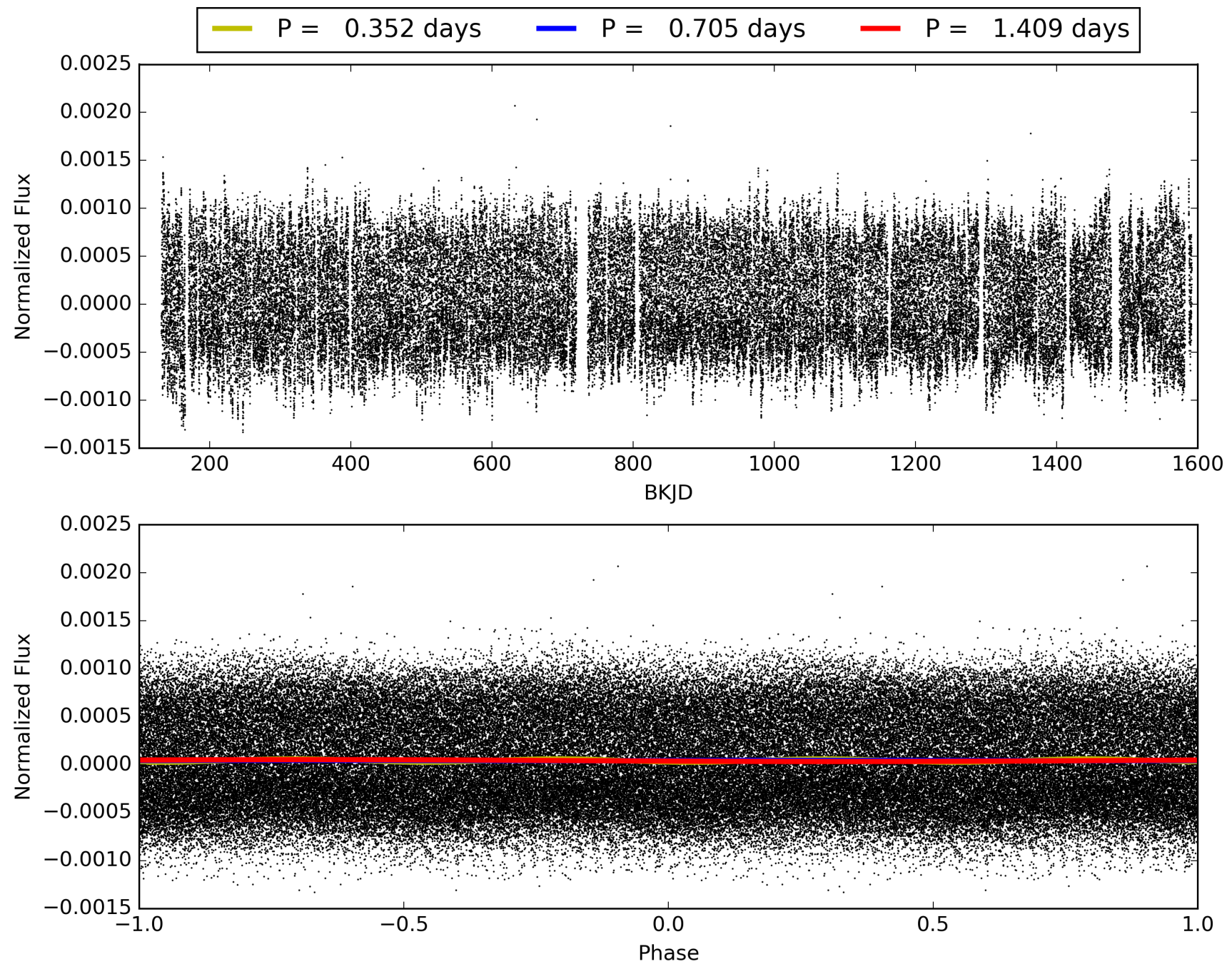
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1823/1823]  
GhostDiagnostic-chr: 6.485  
Centroid-sig: 58.5%  
Centroid-so: 0.586 arcsec [0.66σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 010657150-01, PDC Light Curves



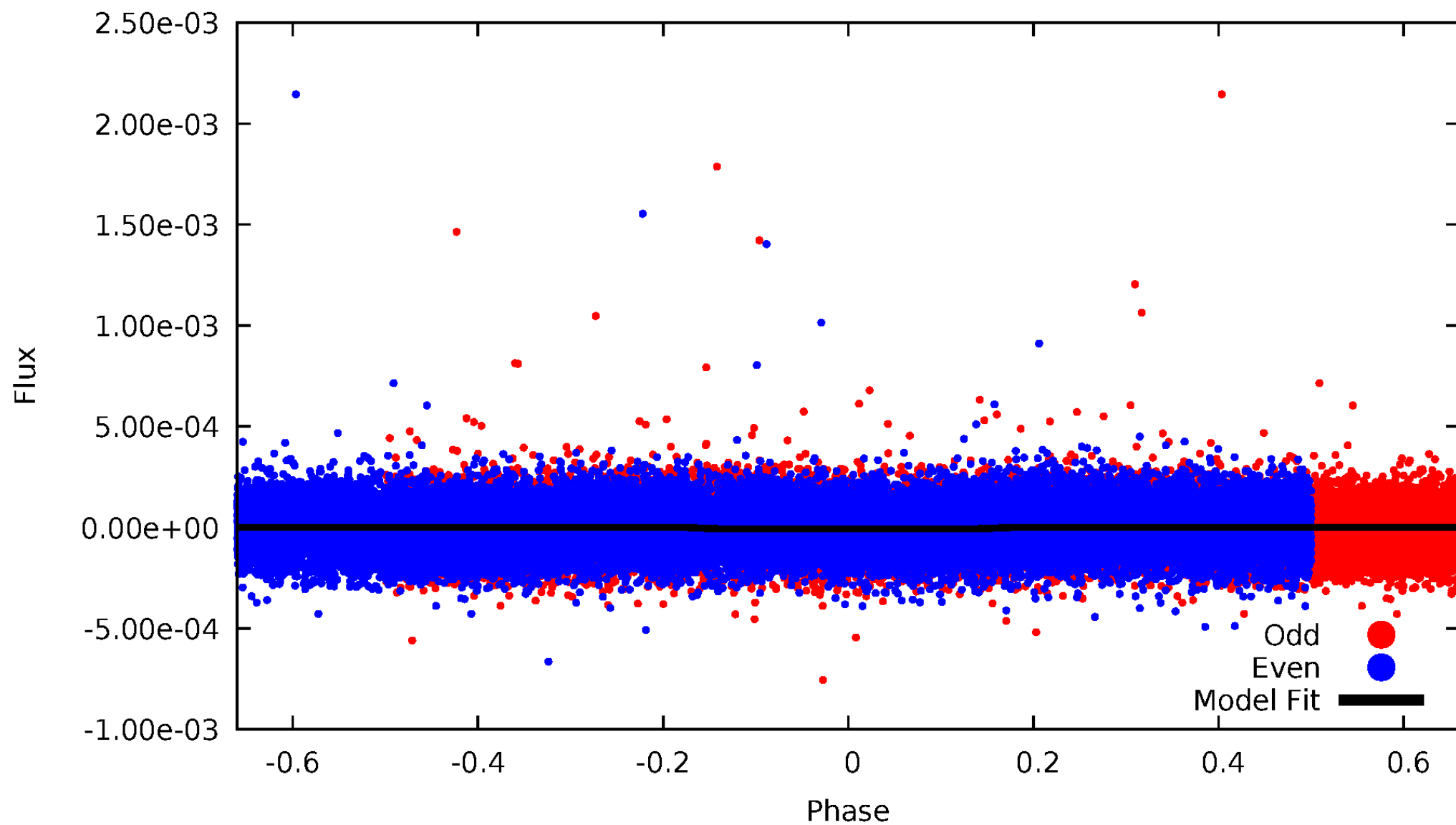


TCE 010657150-01



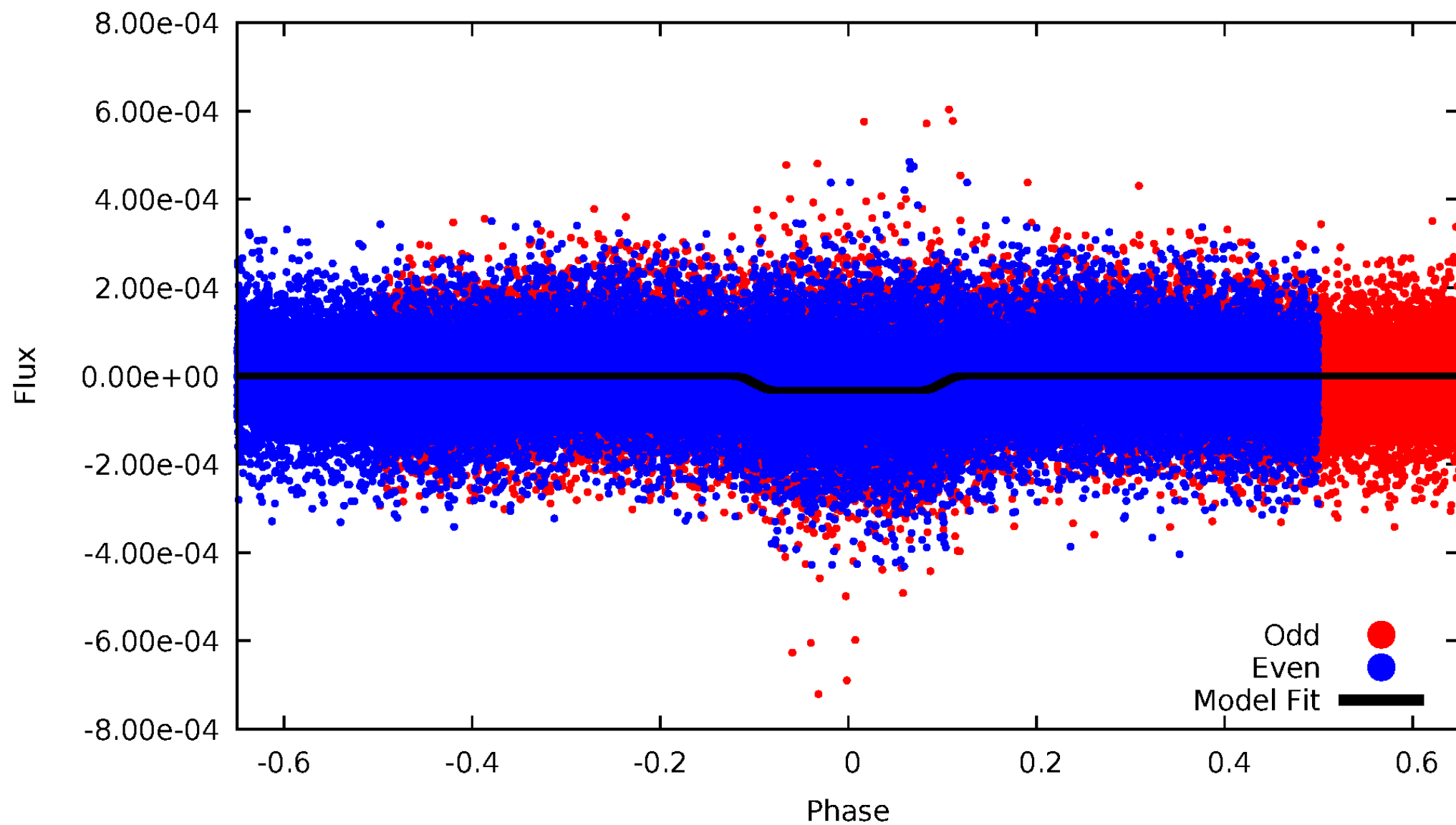
# DV Odd/Even

TCE 010657150-01



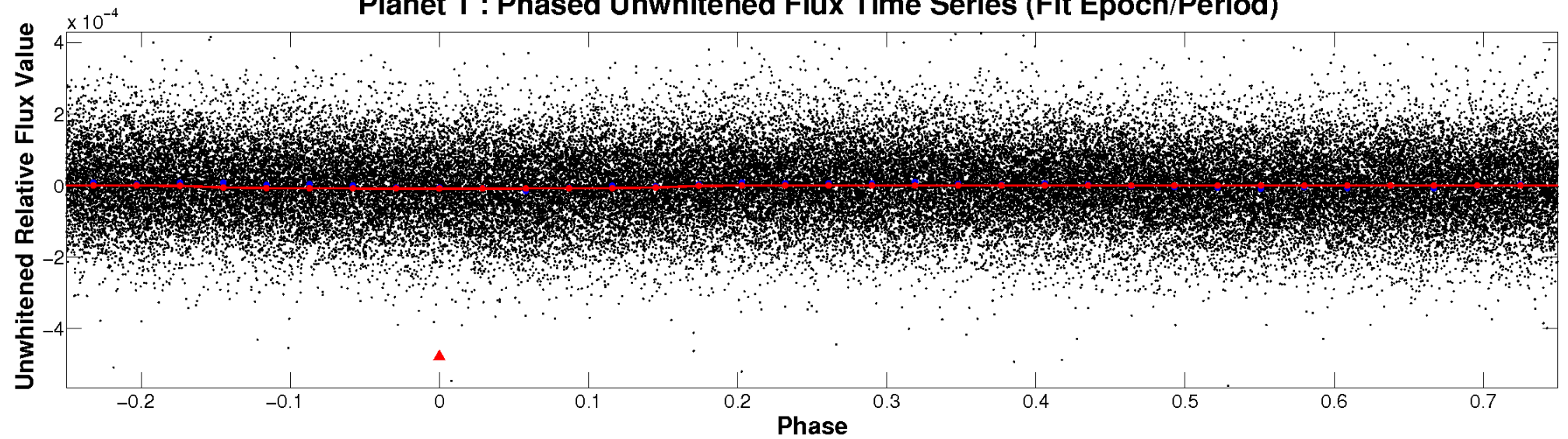
# ALT Odd/Even

TCE 010657150-01

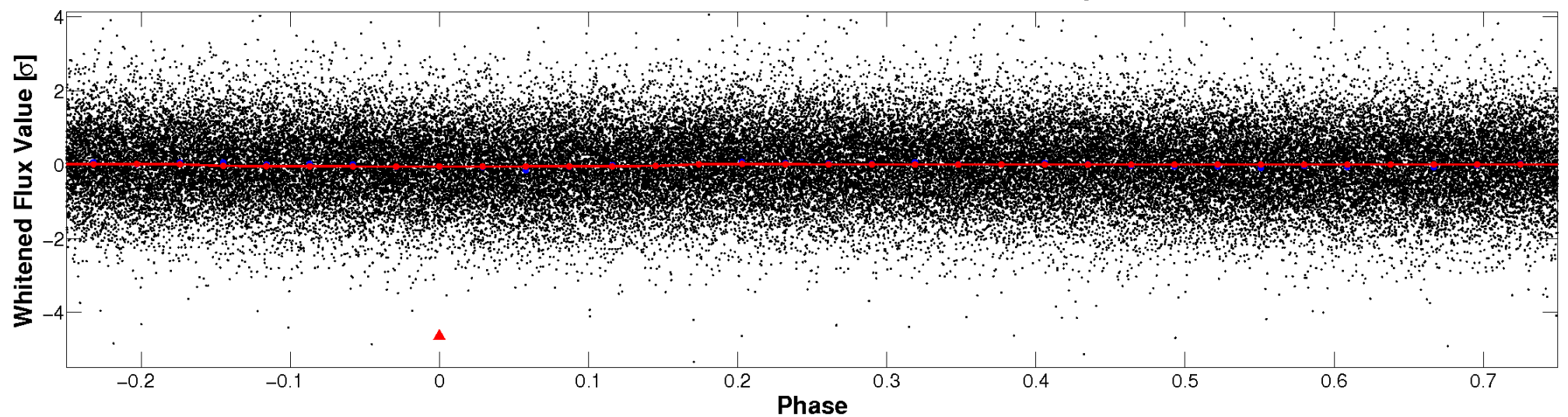


# Non-Whitened Vs. Whitened Light Curve

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



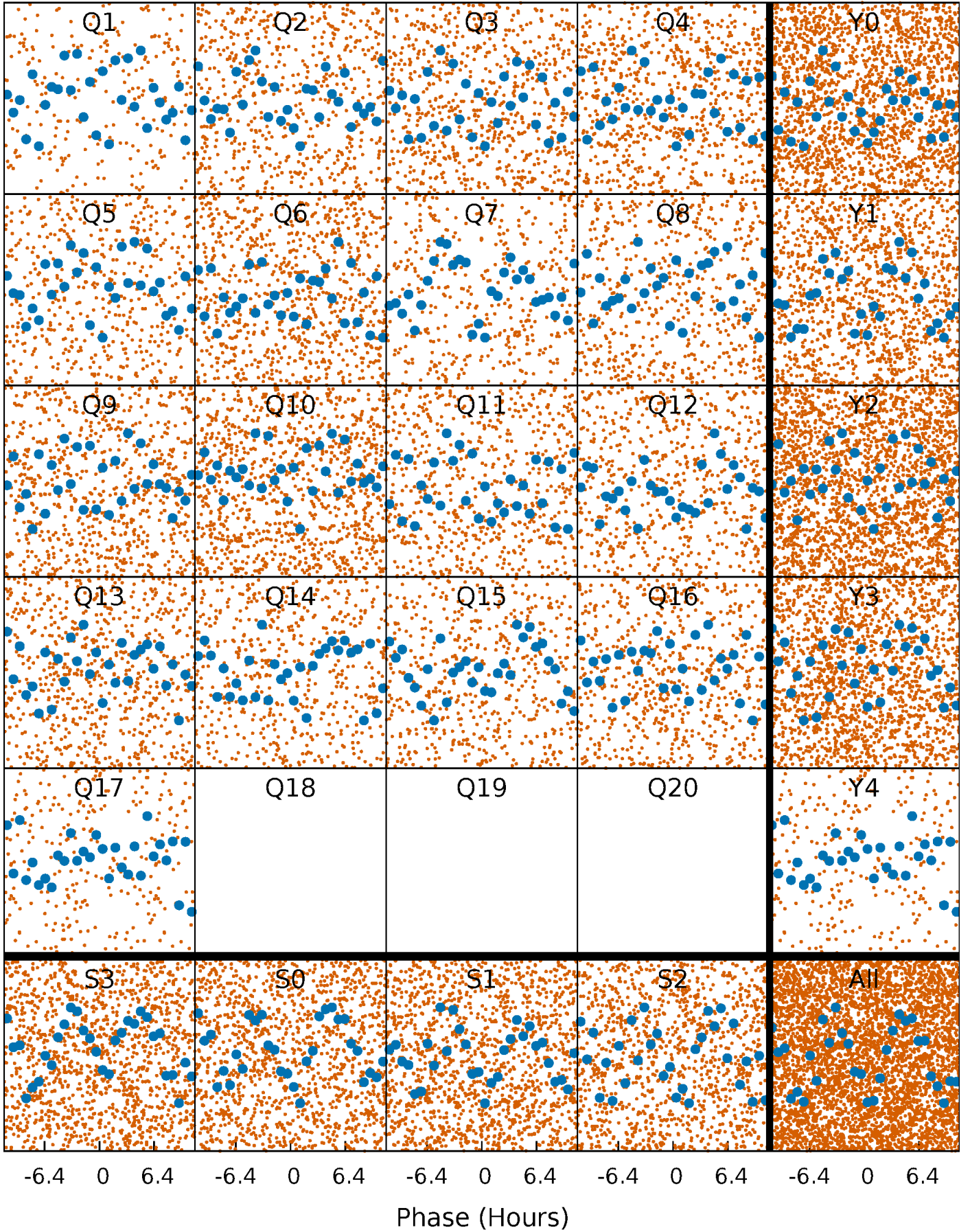
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

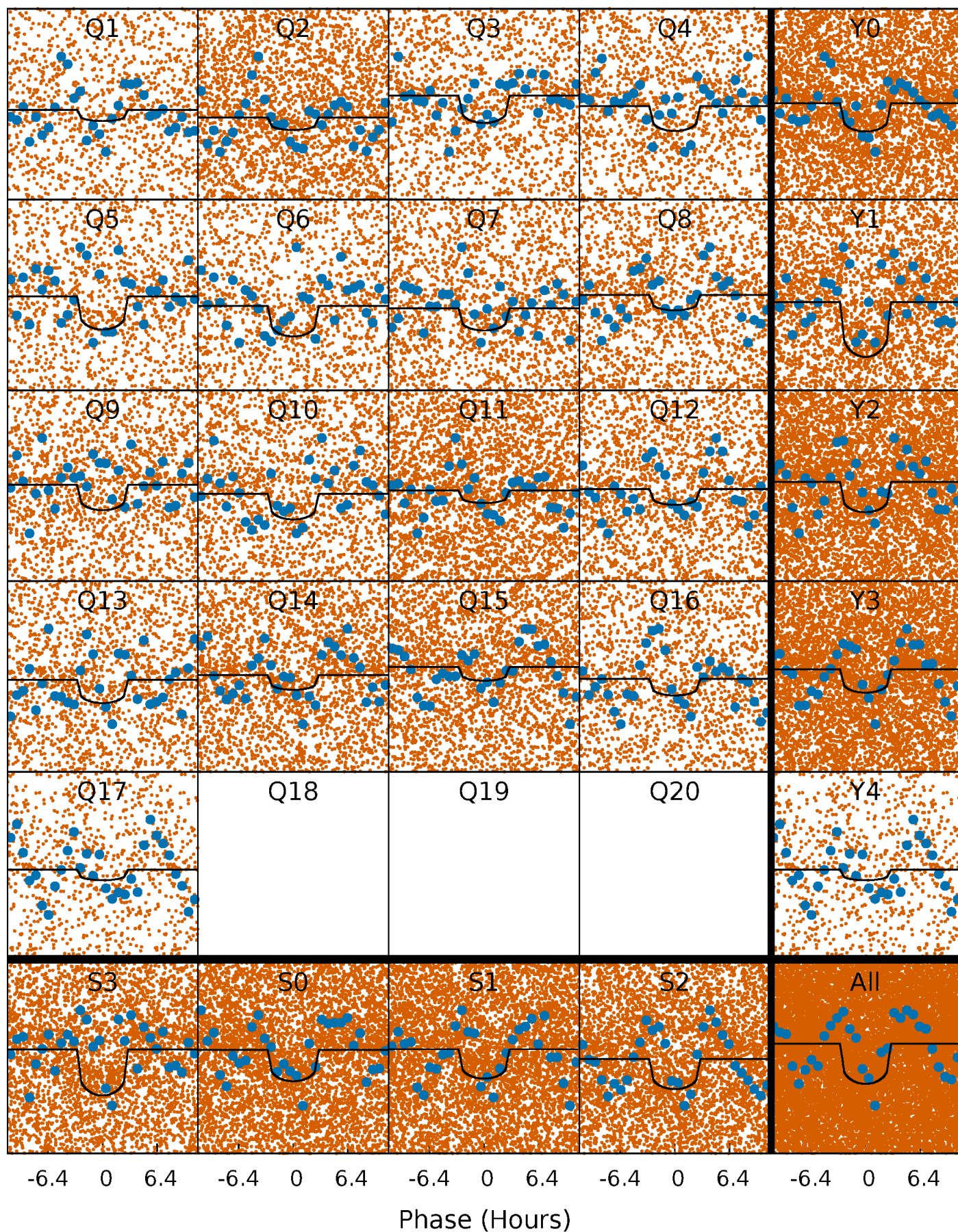
TCE 010657150-01 P= 0.704743 Days  $T_0=132.000226$  (BKJD)





# DV Quarter-Phased Transit Curves

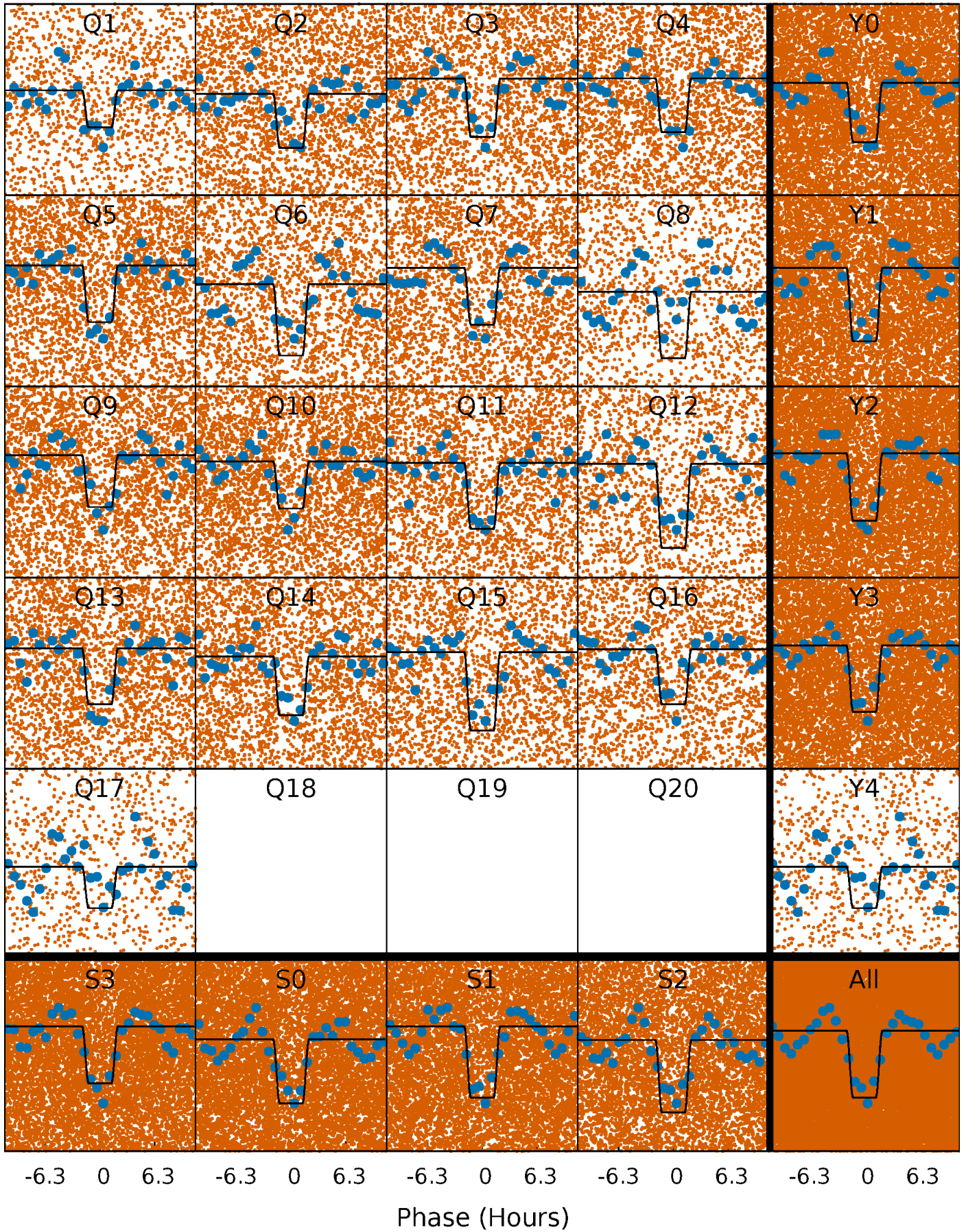
TCE 010657150-01 P= 0.704743 Days  $T_0=132.000226$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

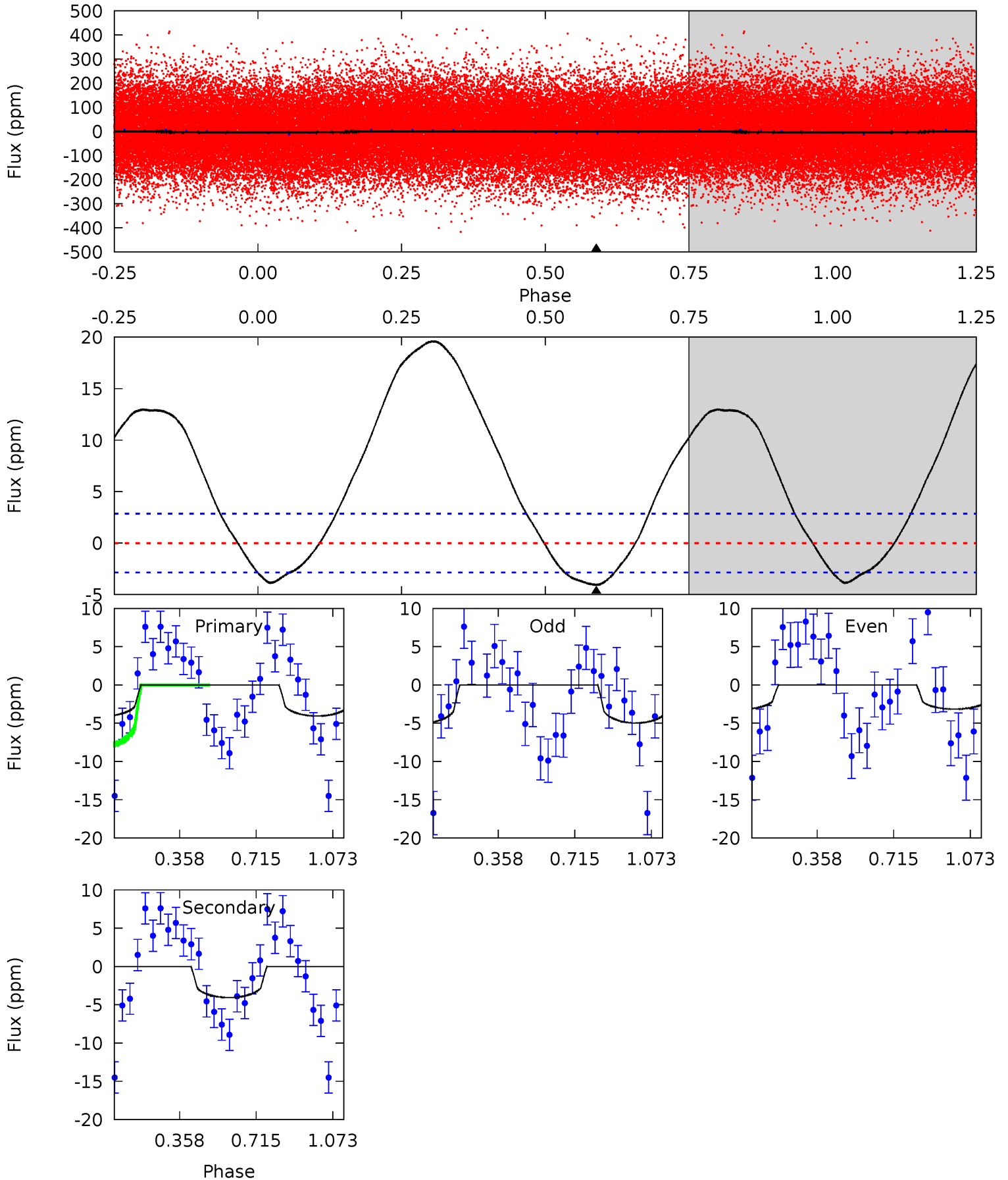
TCE 010657150-01 P= 0.704774 Days  $T_0=131.995929$  (BKJD)



# DV Model-Shift Uniqueness Test

010657150-01, P = 0.704743 Days, E = 131.295483 Days

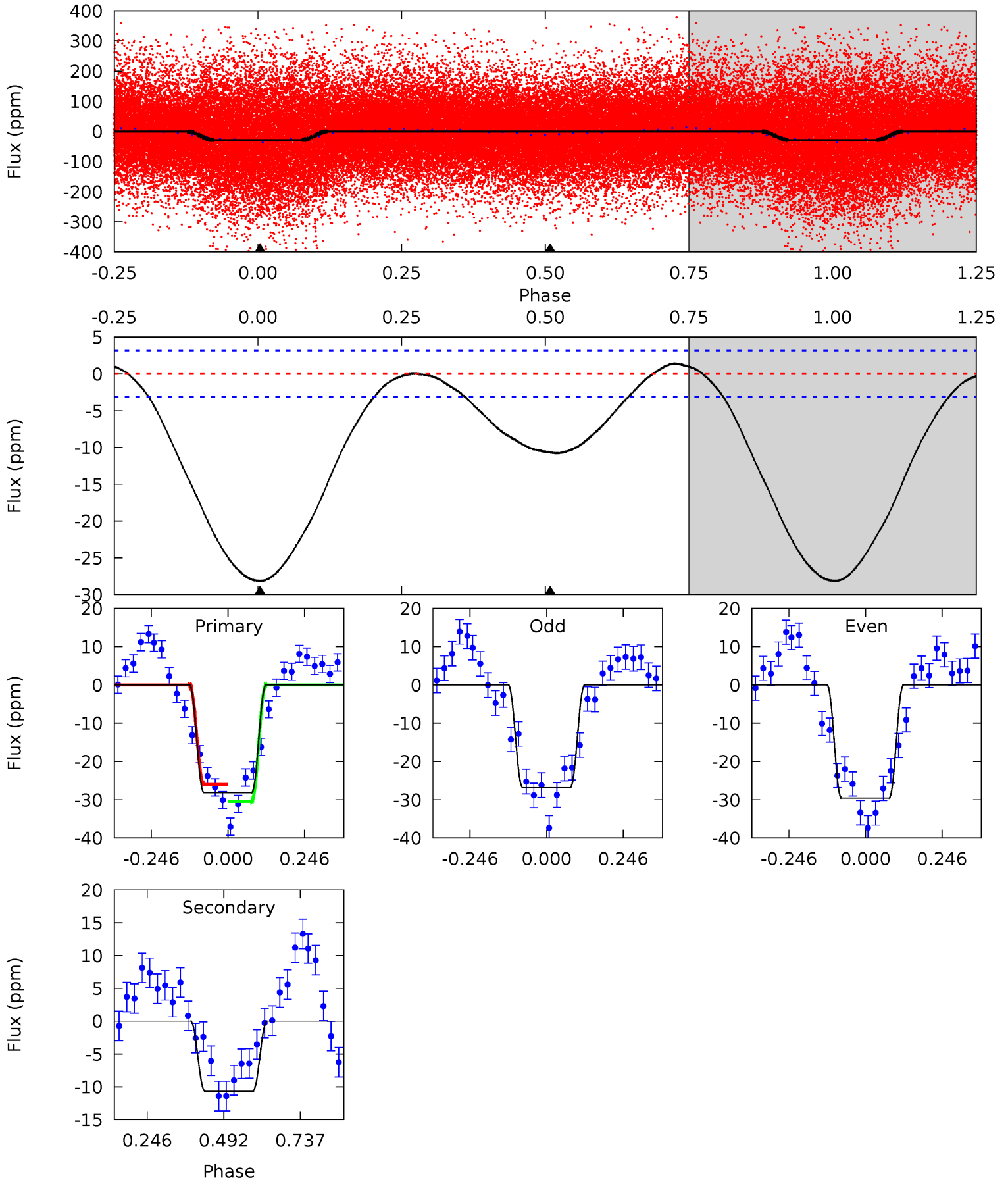
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.09	6.09	0	0	4.29	0.92	8.22	6.09	6.09	6.09	6.09	1.37	0.82	0.83	5.90



# Alt Model-Shift Uniqueness Test

010657150-01, P = 0.704774 Days, E = 131.291155 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
39.3	14.9	0	0	4.37	1.16	0.90	39.3	39.3	14.9	14.9	1.95	1.01	0.05	3.13





### Stellar Parameters For KIC 010657150

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6543^{+181}_{-250}$	$4.108^{+0.279}_{-0.150}$	$-0.420^{+0.300}_{-0.300}$	$1.530^{+0.395}_{-0.439}$	$1.096^{+0.174}_{-0.139}$	$0.431^{+0.681}_{-0.203}$
	+3%/-4%	+7%/-4%	+71%/-71%	+26%/-29%	+16%/-13%	+158%/-47%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 010657150-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-4 \pm 1$	$0.52^{+0.37}_{-0.29}$	$3877^{+300}_{-316}$	$5015^{+2763}_{-1168}$	$2.171^{+9.087}_{-1.434}$
Alt.	$-11 \pm 1$	$0.93^{+0.46}_{-0.40}$	$3880^{+276}_{-329}$	$4761^{+1430}_{-805}$	$1.730^{+3.545}_{-0.922}$

$T_{max}$  = 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

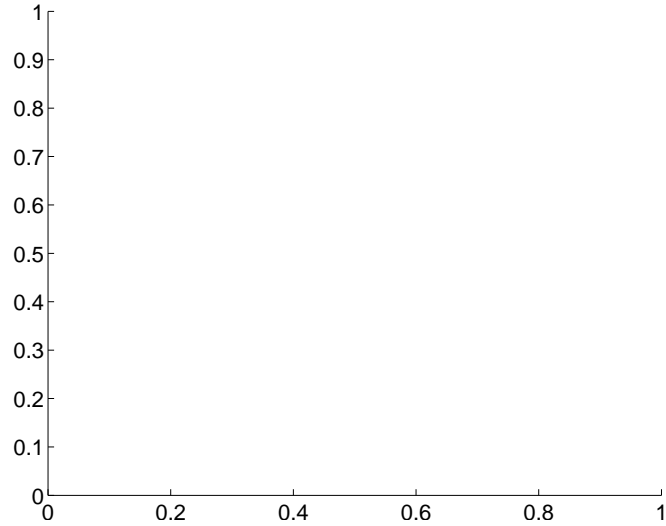
Supplemental centroid analysis for 010657150-01. Kepler magnitude: 12.27. Transit SNR 6.25

There are 0 quarters with good PRF difference image offsets

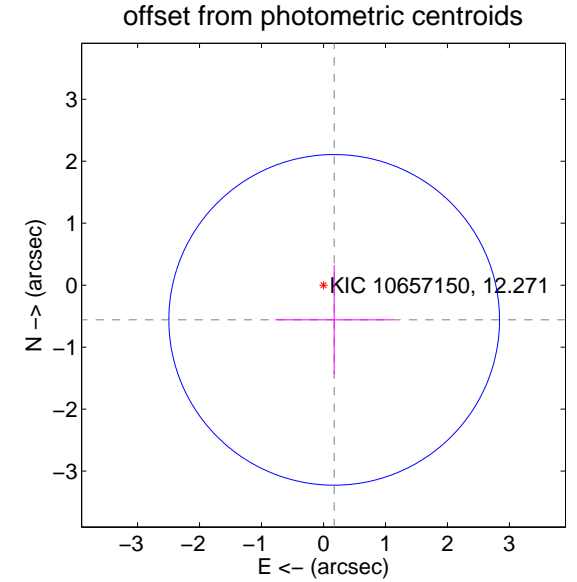
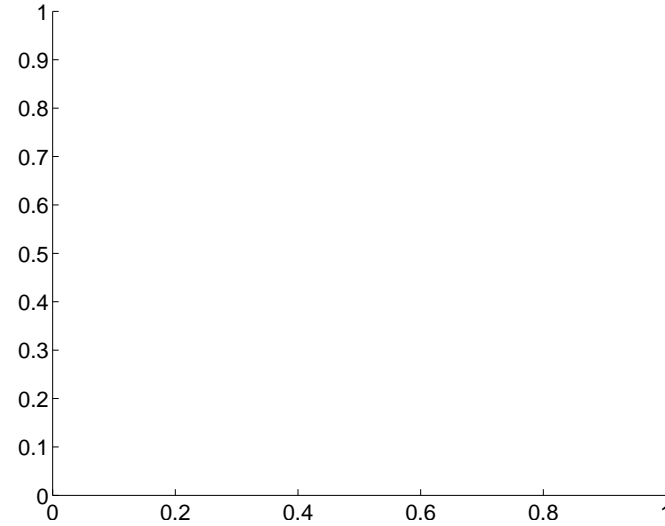
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$0.59 \pm 0.89$	0.66	$-0.17 \pm 0.95$	$-0.56 \pm 0.88$

There is no PRF-fit offset from OOT-fit

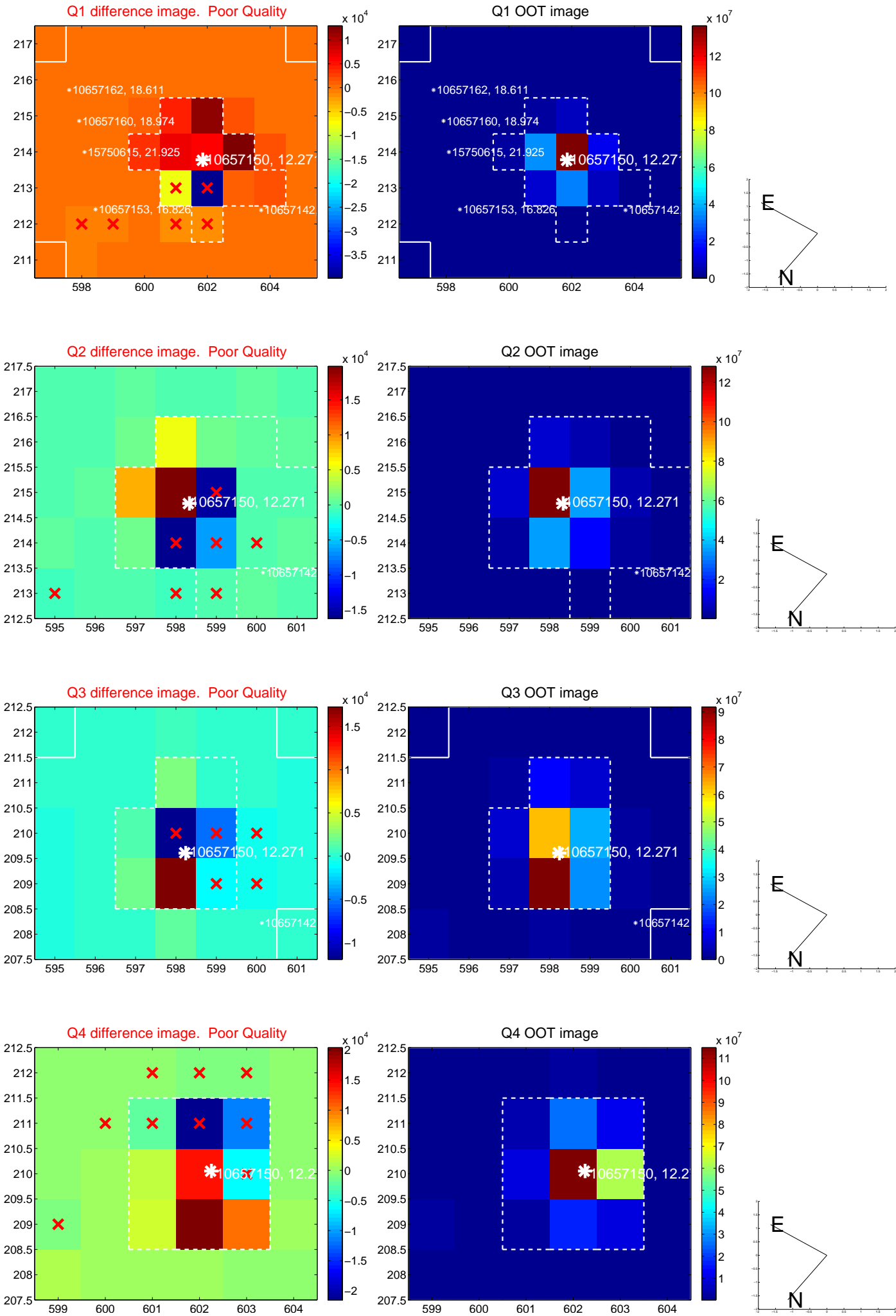


There is no PRF-fit offset from KIC

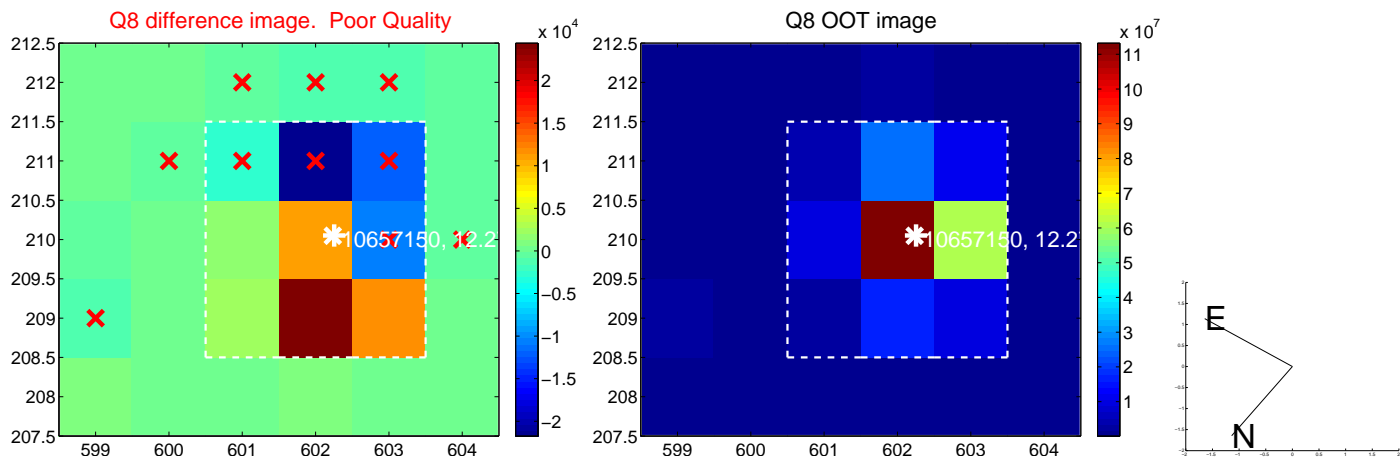
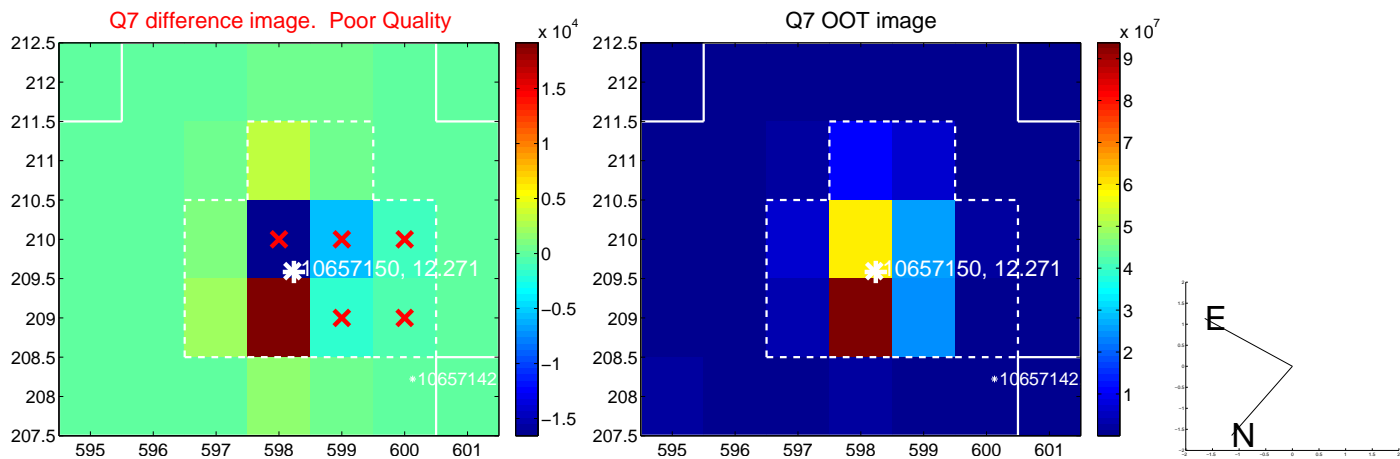
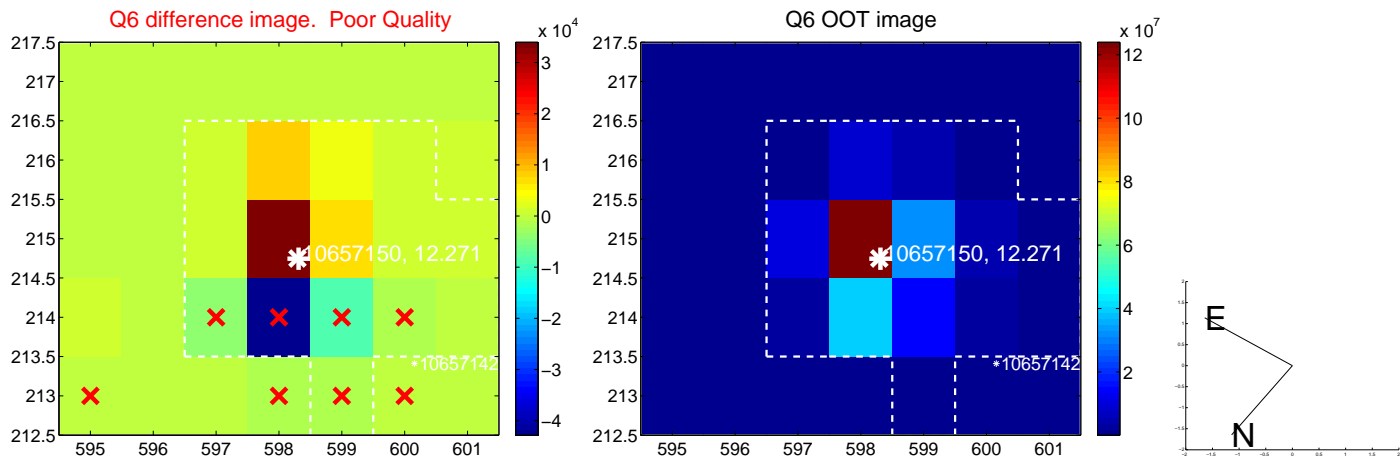
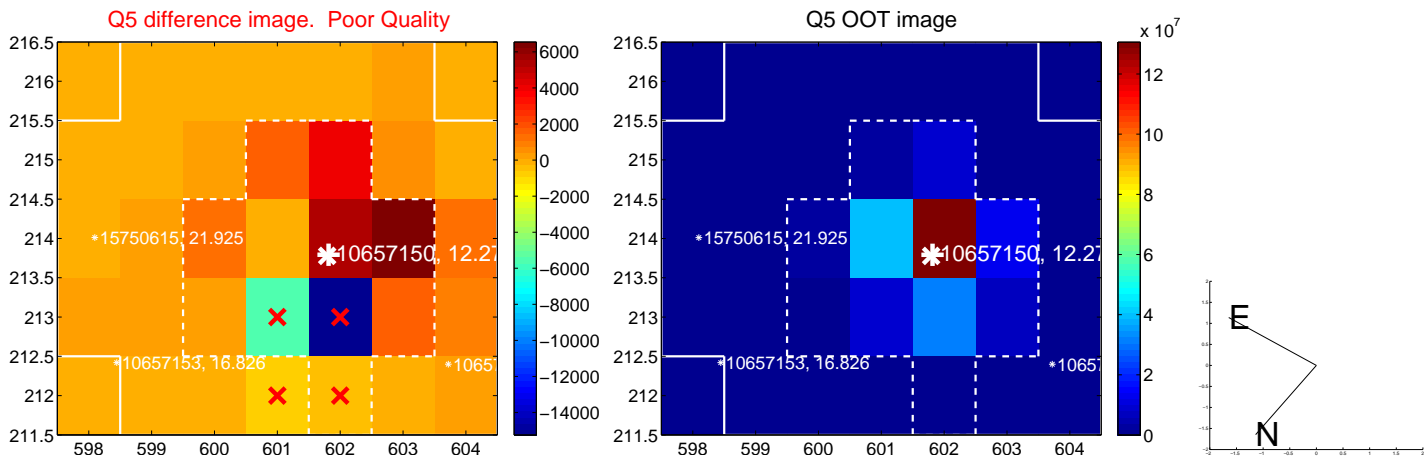


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

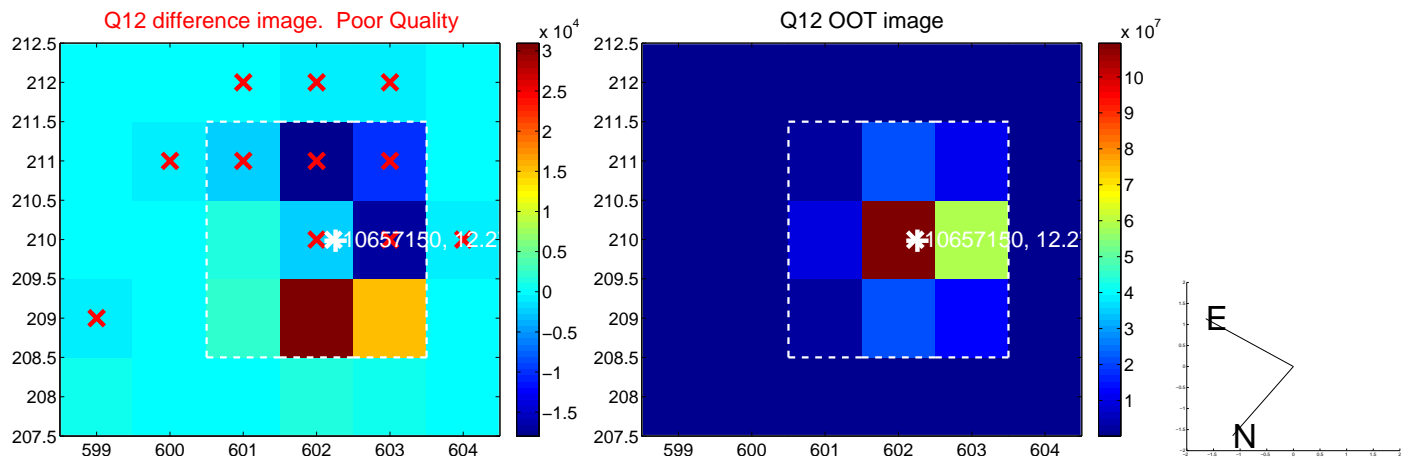
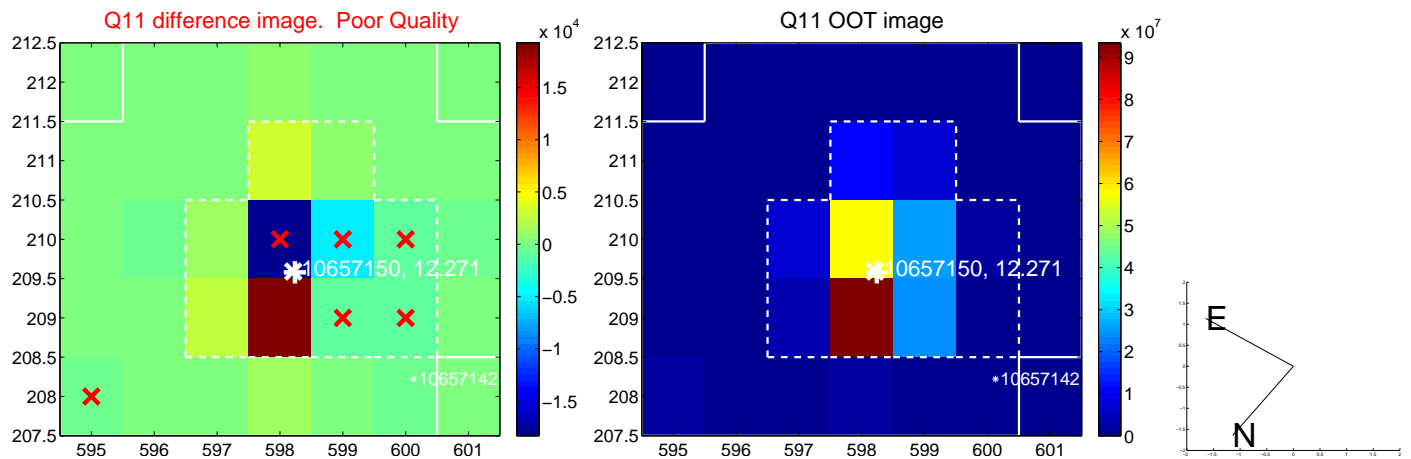
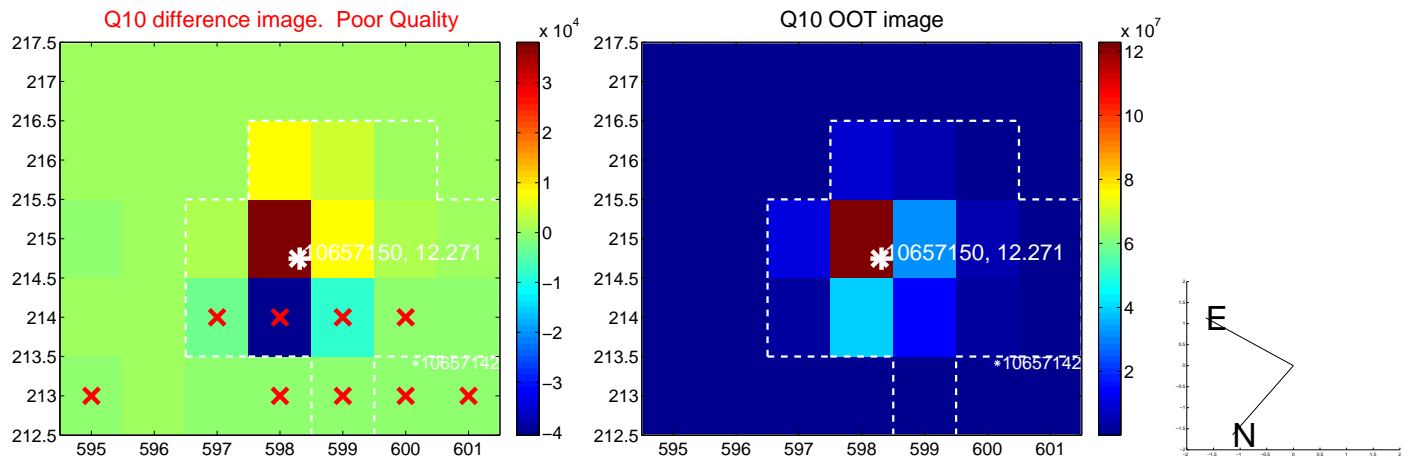
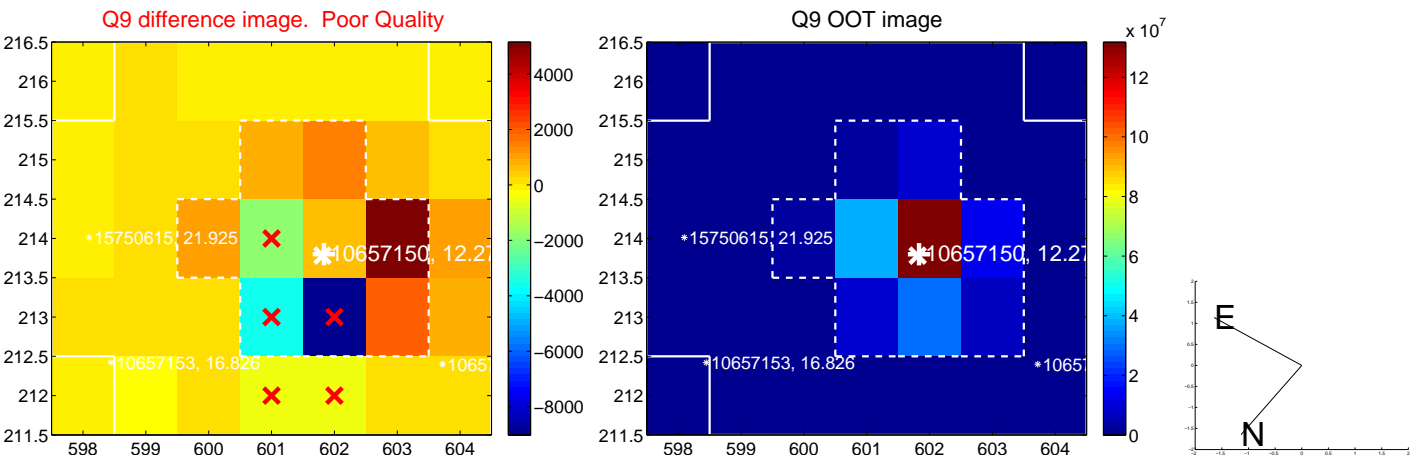


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



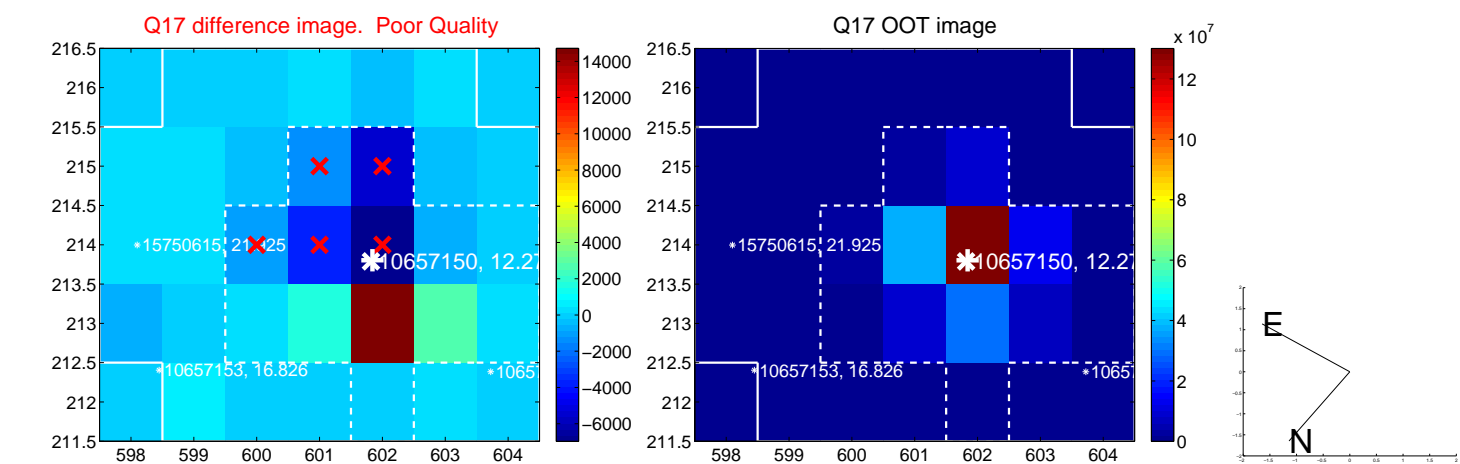


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

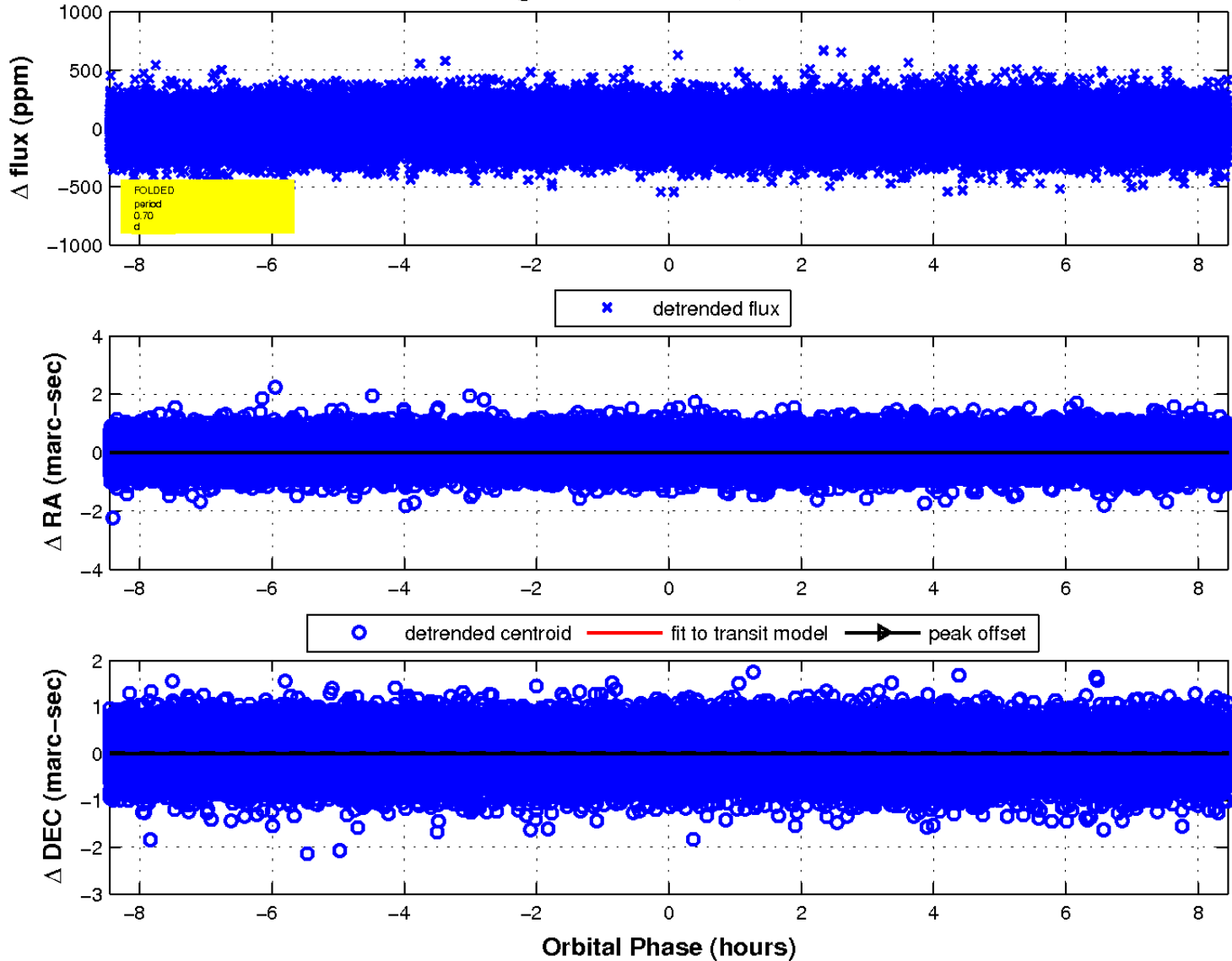




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

