

# KIC 009974142

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009974142-01	OBS	No	8.046620	136.485702	206.6	28.676	11.3	14.9	2.52	6049	7.25	1069.81

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009974142-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV

**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 009974142-01

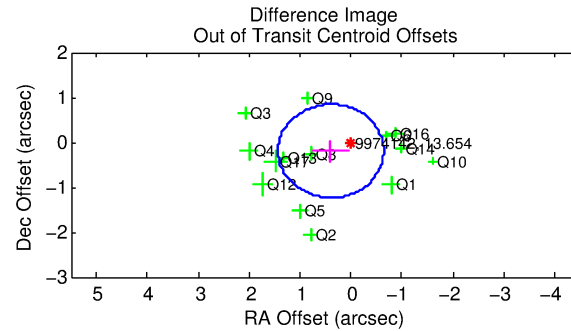
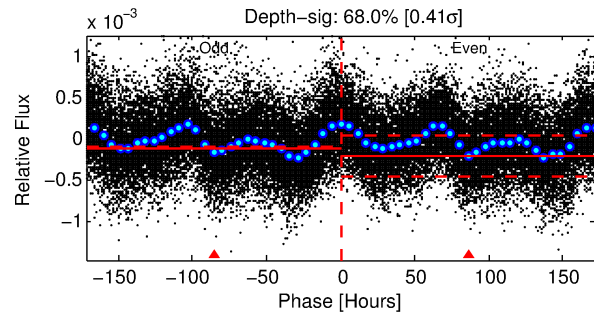
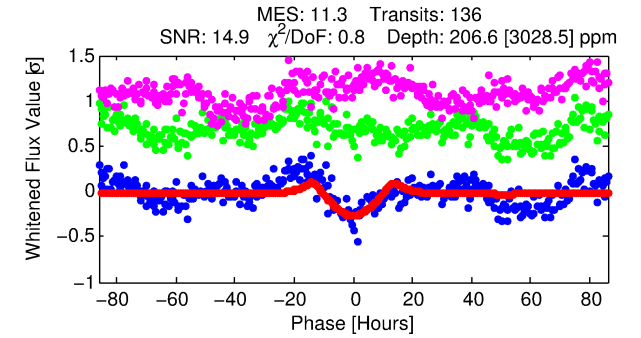
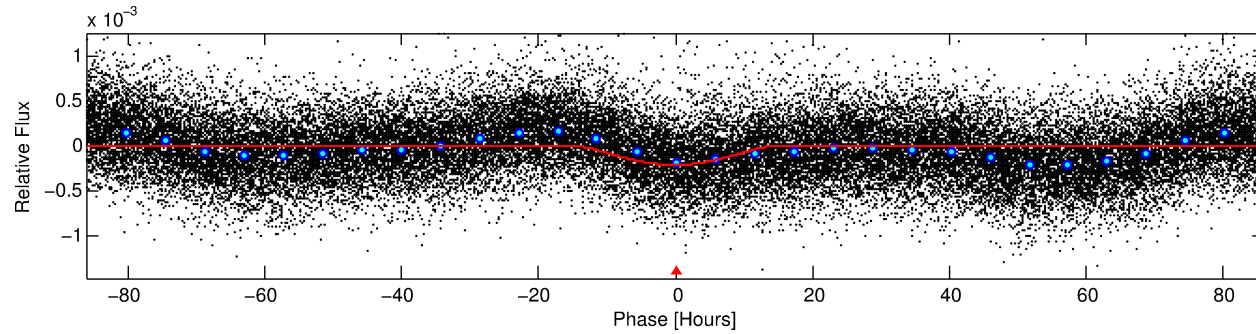
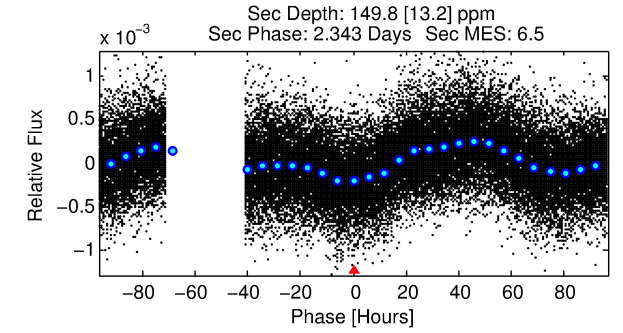
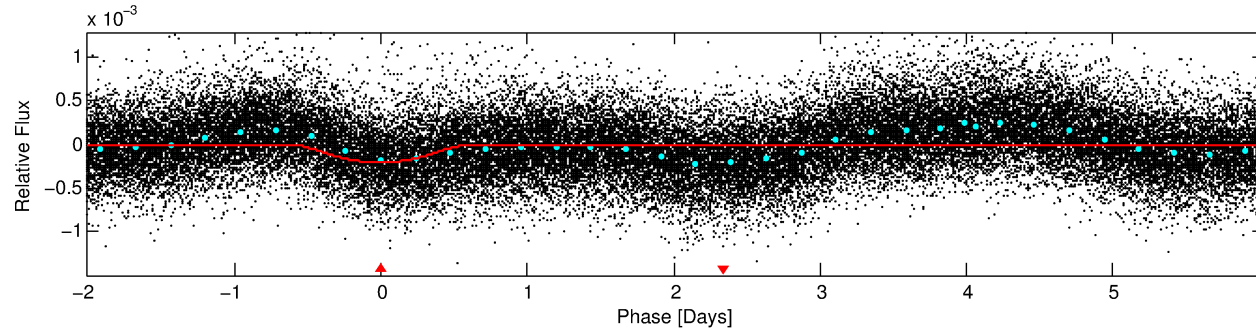
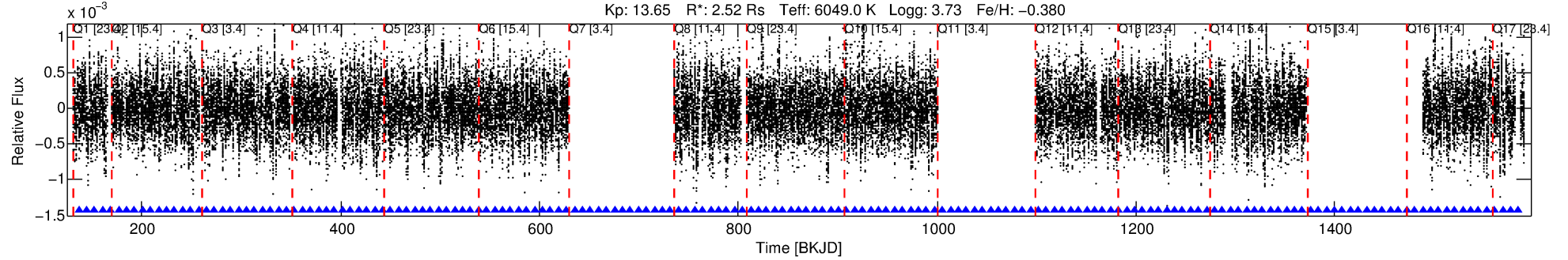
No Significant Match Found

# DV One-Page Summary

KIC: 9974142 Candidate: 1 of 1 Period: 8.047 d

KOI: K06214 Corr: No Ephemeris Match

Kp: 13.65 R\*: 2.52 Rs Teff: 6049.0 K Logg: 3.73 Fe/H: -0.380



## DV Fit Results:

Period = 8.04662 [0.00031] d  
Epoch = 136.4857 [0.0289] BKJD  
Rp/R\* = 0.0263 [0.0272]  
a/R\* = 1.12 [0.03]  
b = 1.00 [0.23]  
Seff = 1069.81 [1084.10]  
Teq = 1458 [369] K  
Rp = 7.25 [8.66] Re  
a = 0.0845 [0.0515] AU  
Ag = 11.19 [25.73] [0.40σ]  
Teffp = 4124 [2138] K [1.23σ]

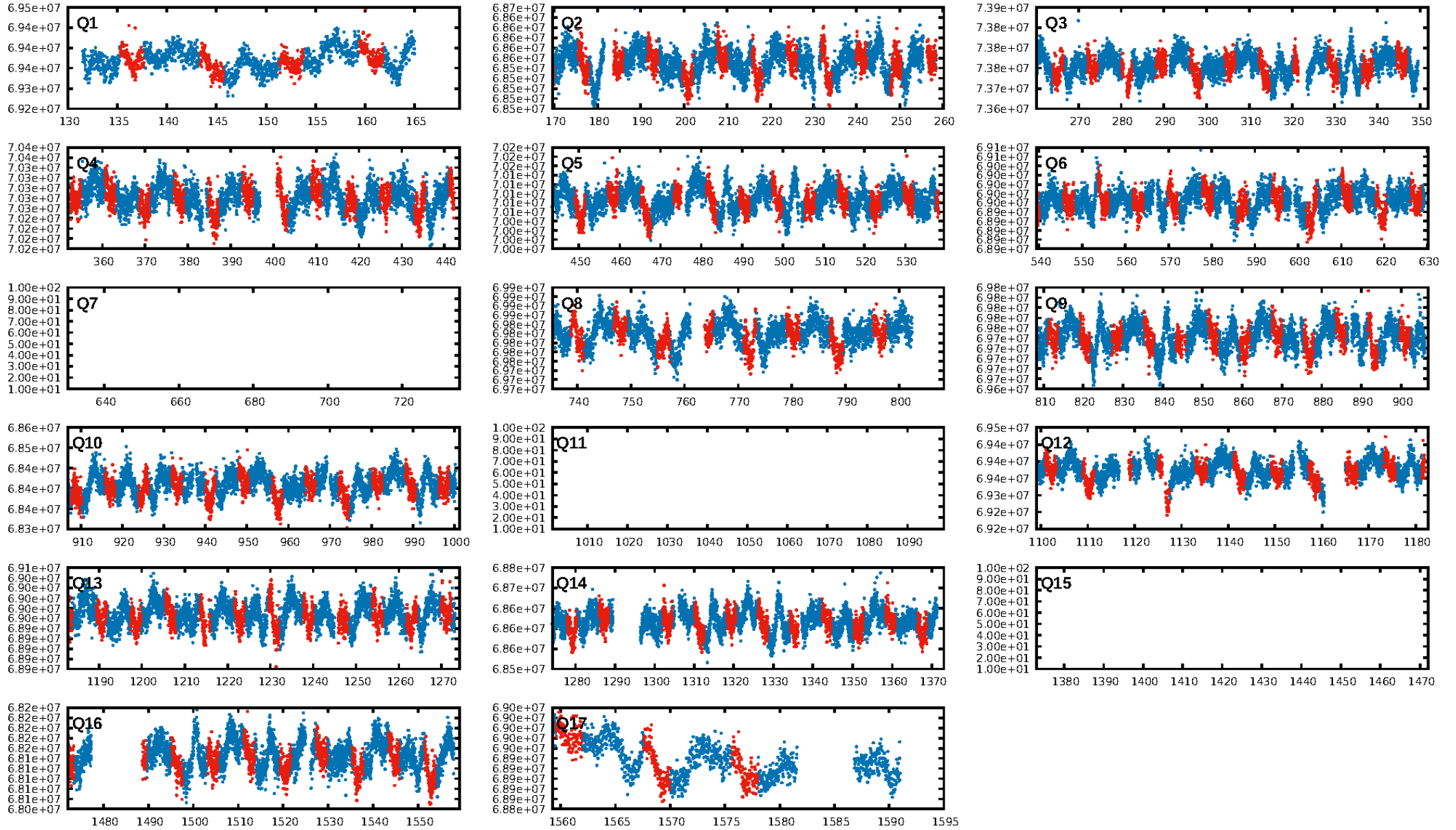
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.5%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.29e-30  
RollingBand-fgt: 1.00 [129/129]  
GhostDiagnostic-chr: 1.457  
Centroid-sig: 81.5%  
Centroid-so: 0.208 arcsec [0.73σ]  
OotOffset-rm: 0.440 arcsec [1.27σ]  
KicOffset-rm: 0.460 arcsec [1.31σ]  
OotOffset-st: 4/1/4/5 [14]  
KicOffset-st: 4/1/4/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

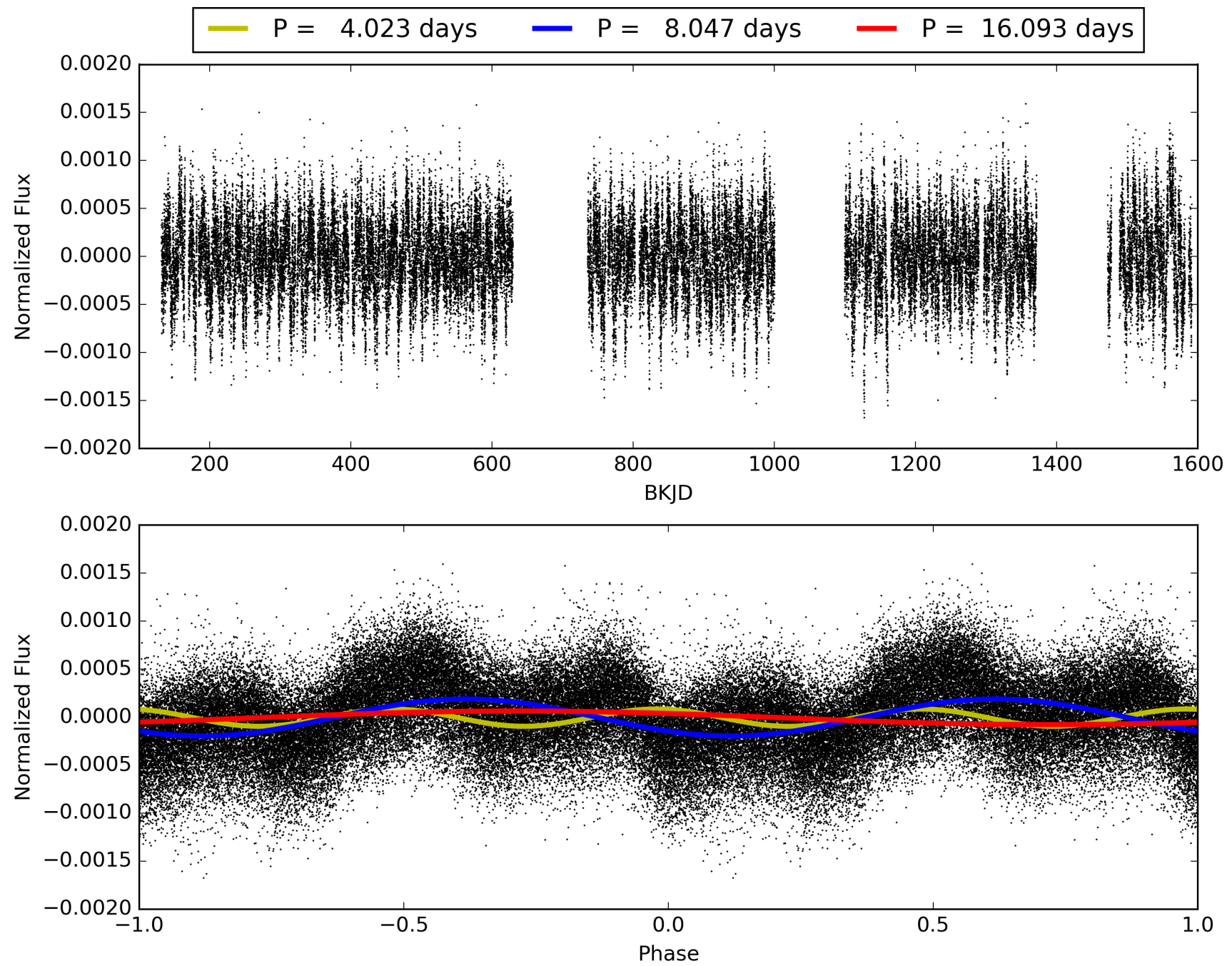
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:19:20 Z

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

# TCE 009974142-01, PDC Light Curves

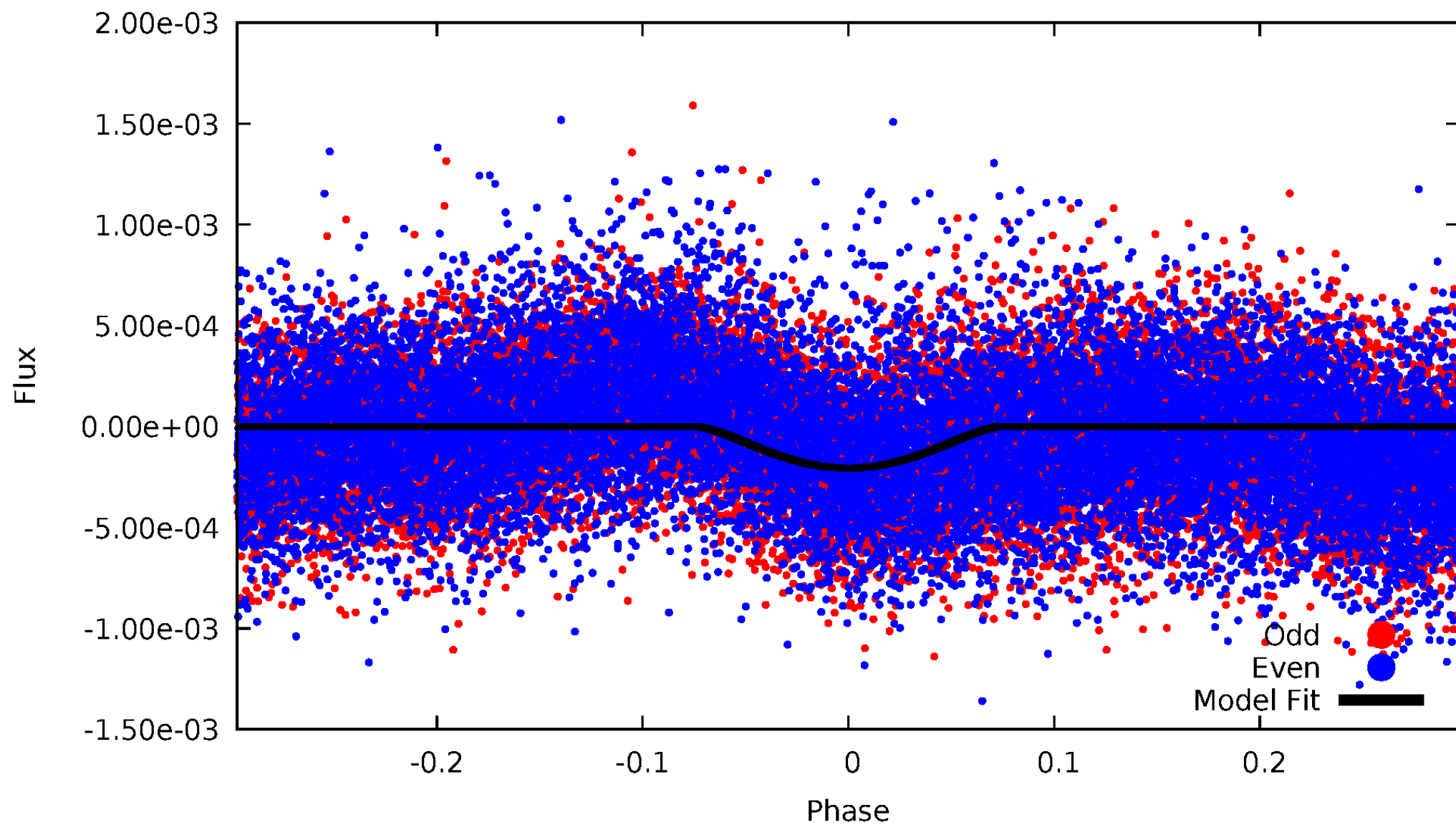


TCE 009974142-01



# DV Odd/Even

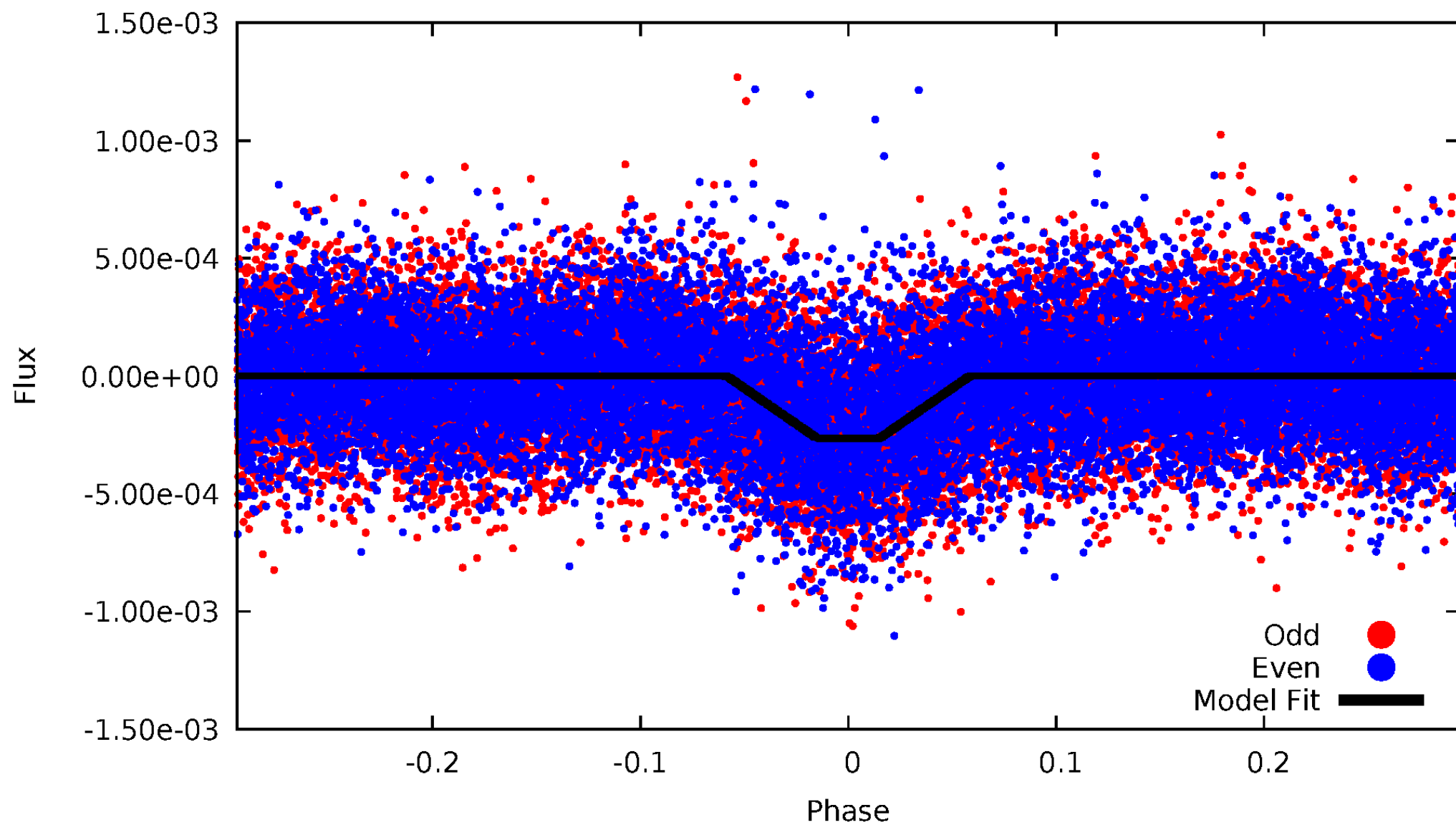
TCE 009974142-01



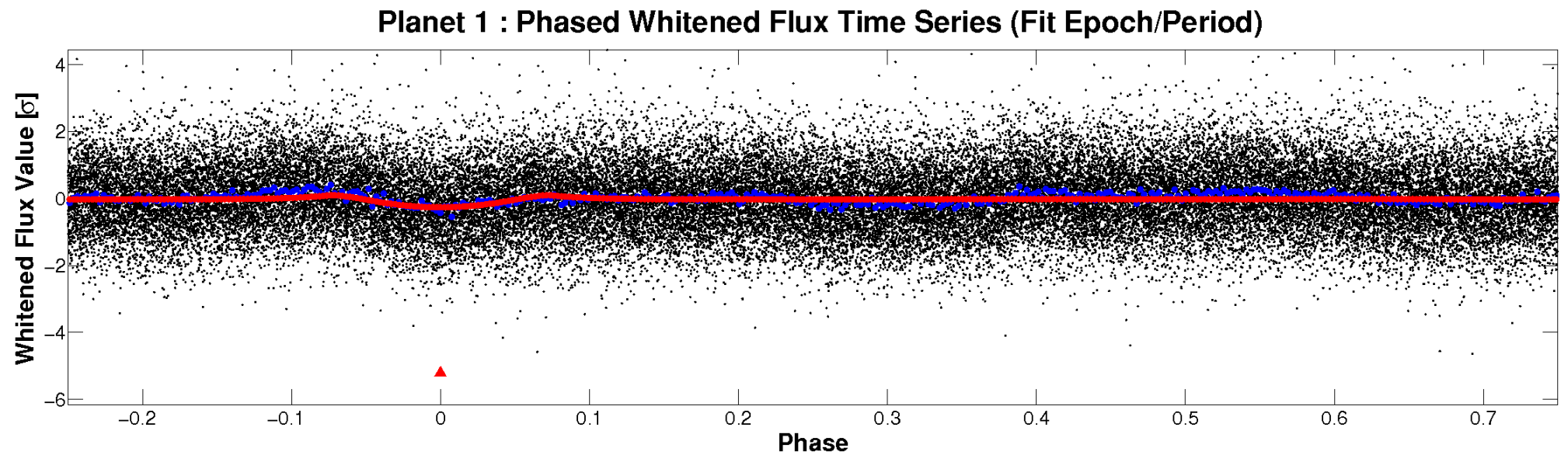
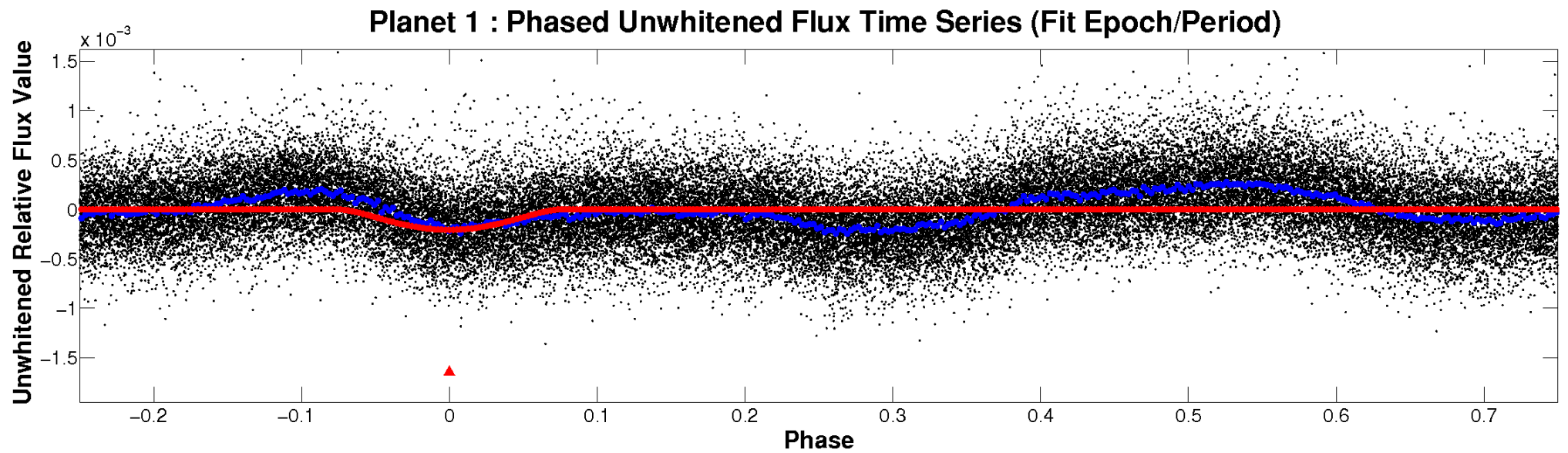


# ALT Odd/Even

TCE 009974142-01

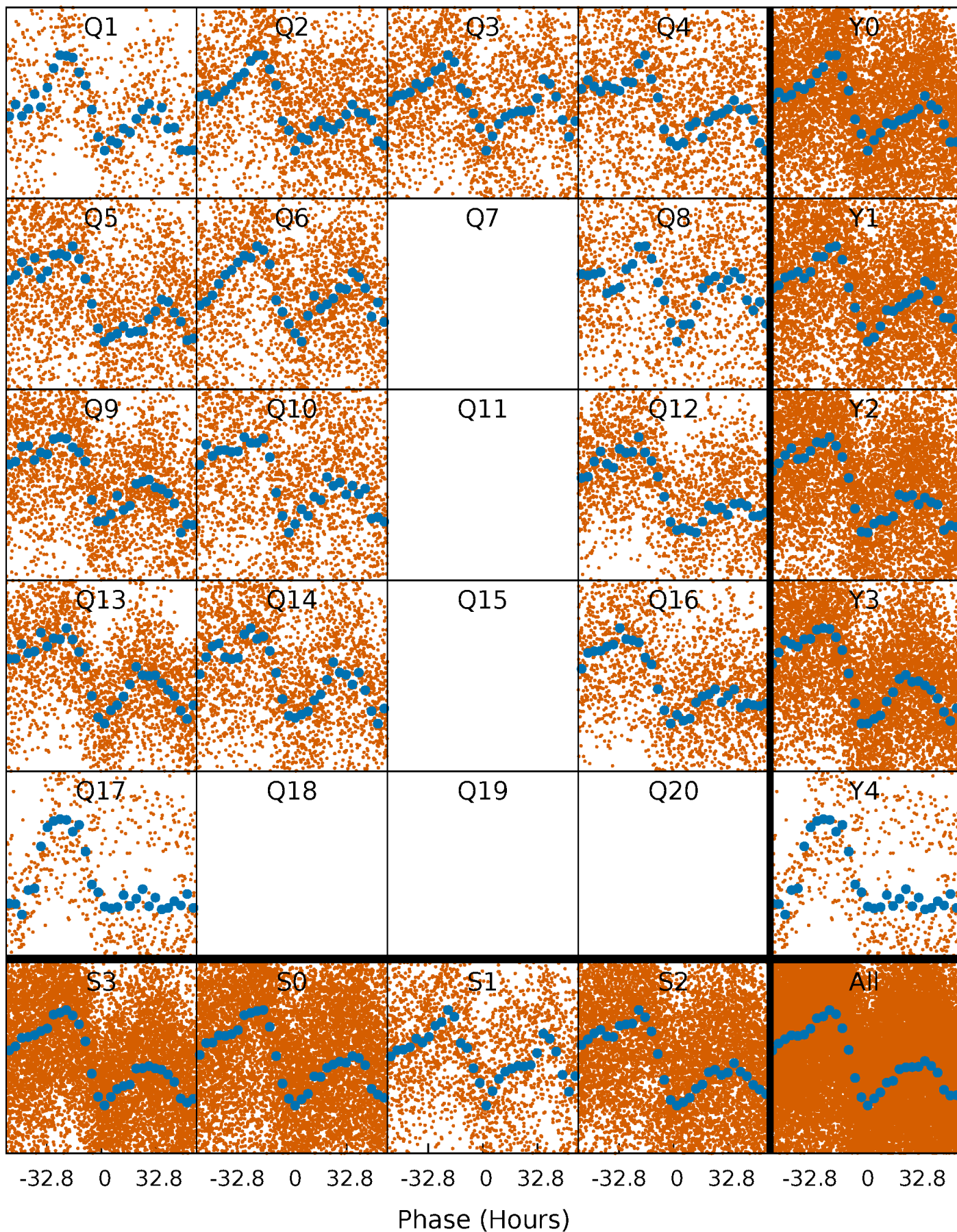


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

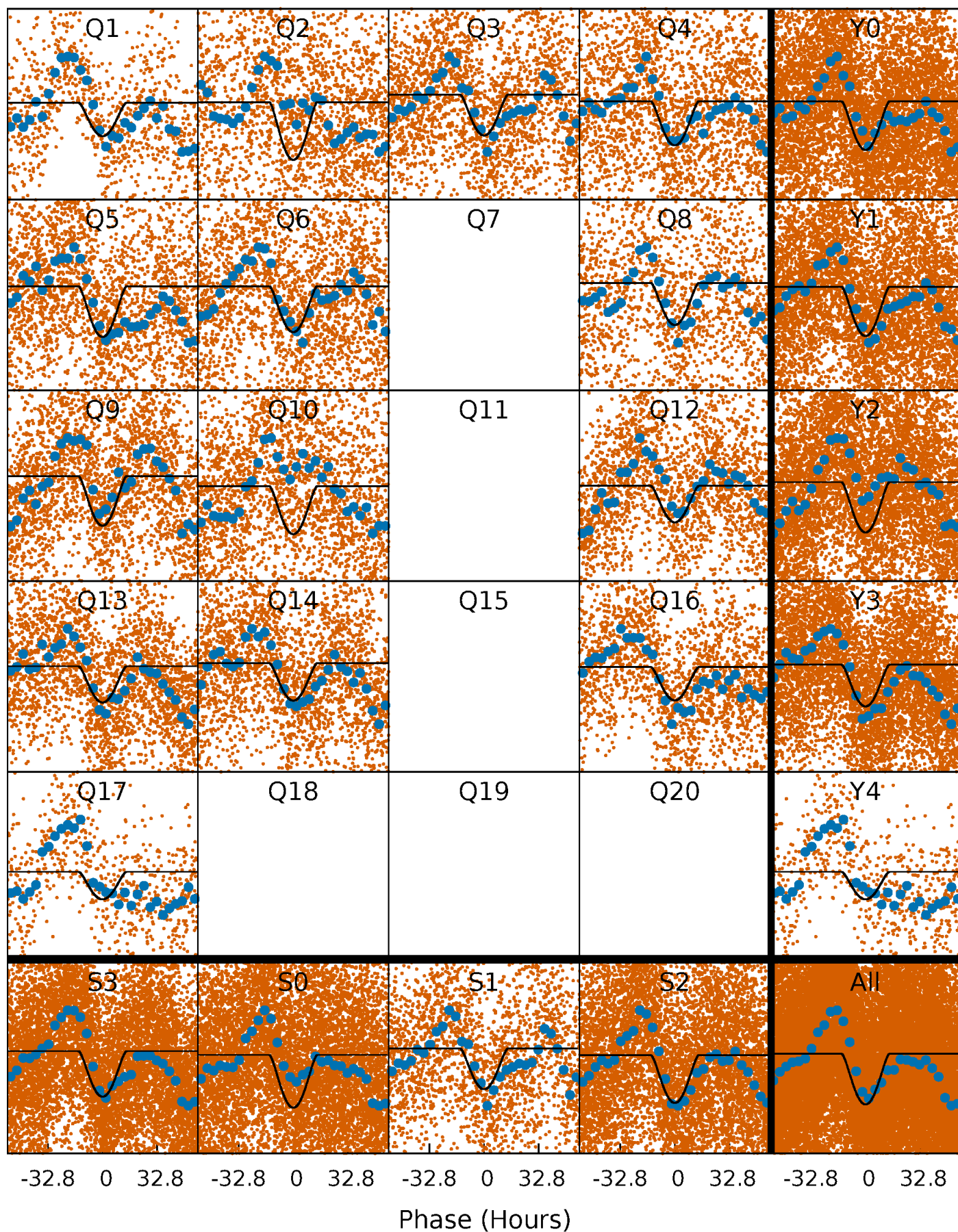
TCE 009974142-01 P= 8.046620 Days  $T_0=136.485702$  (BKJD)





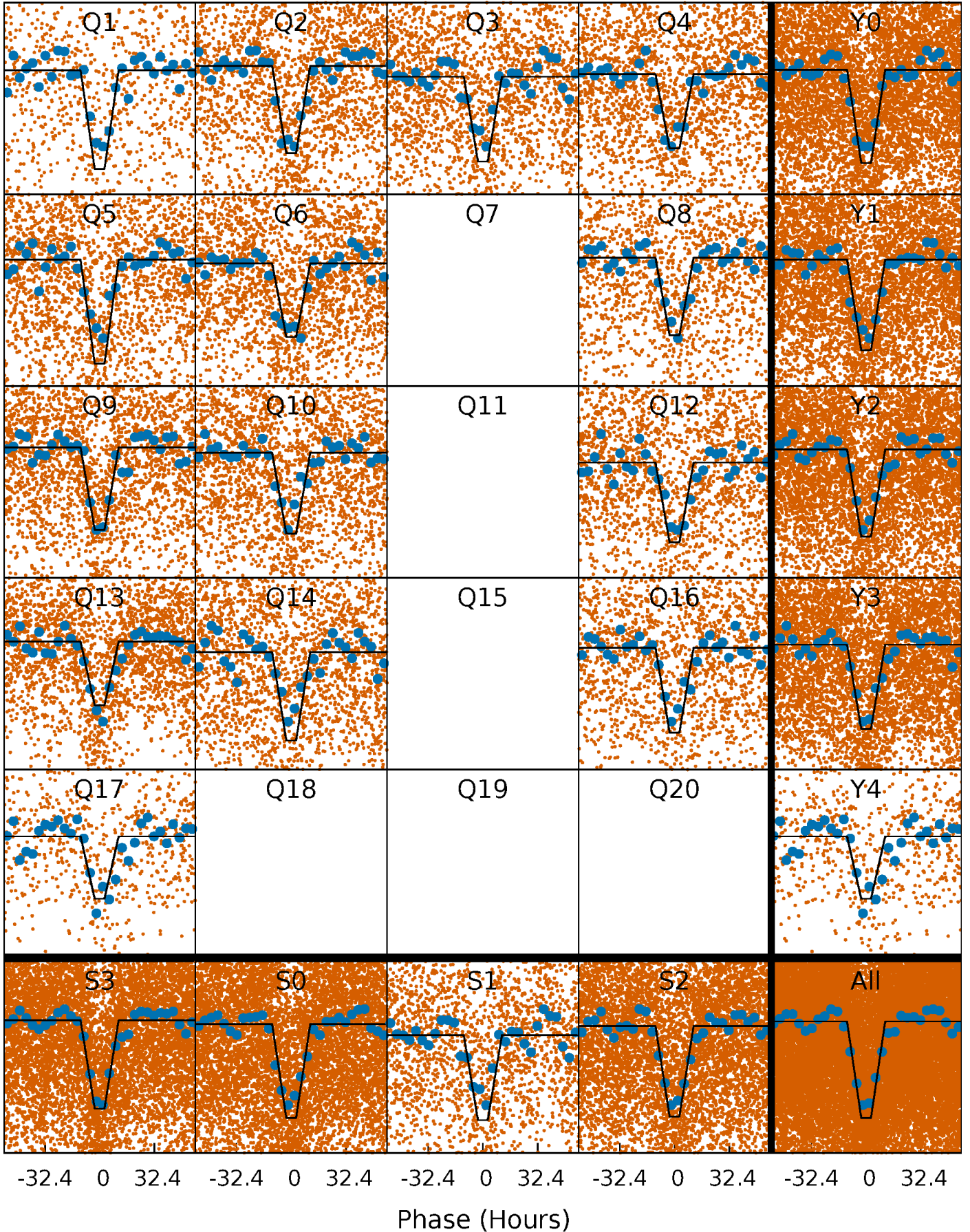
# DV Quarter-Phased Transit Curves

TCE 009974142-01 P= 8.046620 Days  $T_0=136.485702$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 009974142-01 P= 8.046006 Days  $T_0=136.531350$  (BKJD)

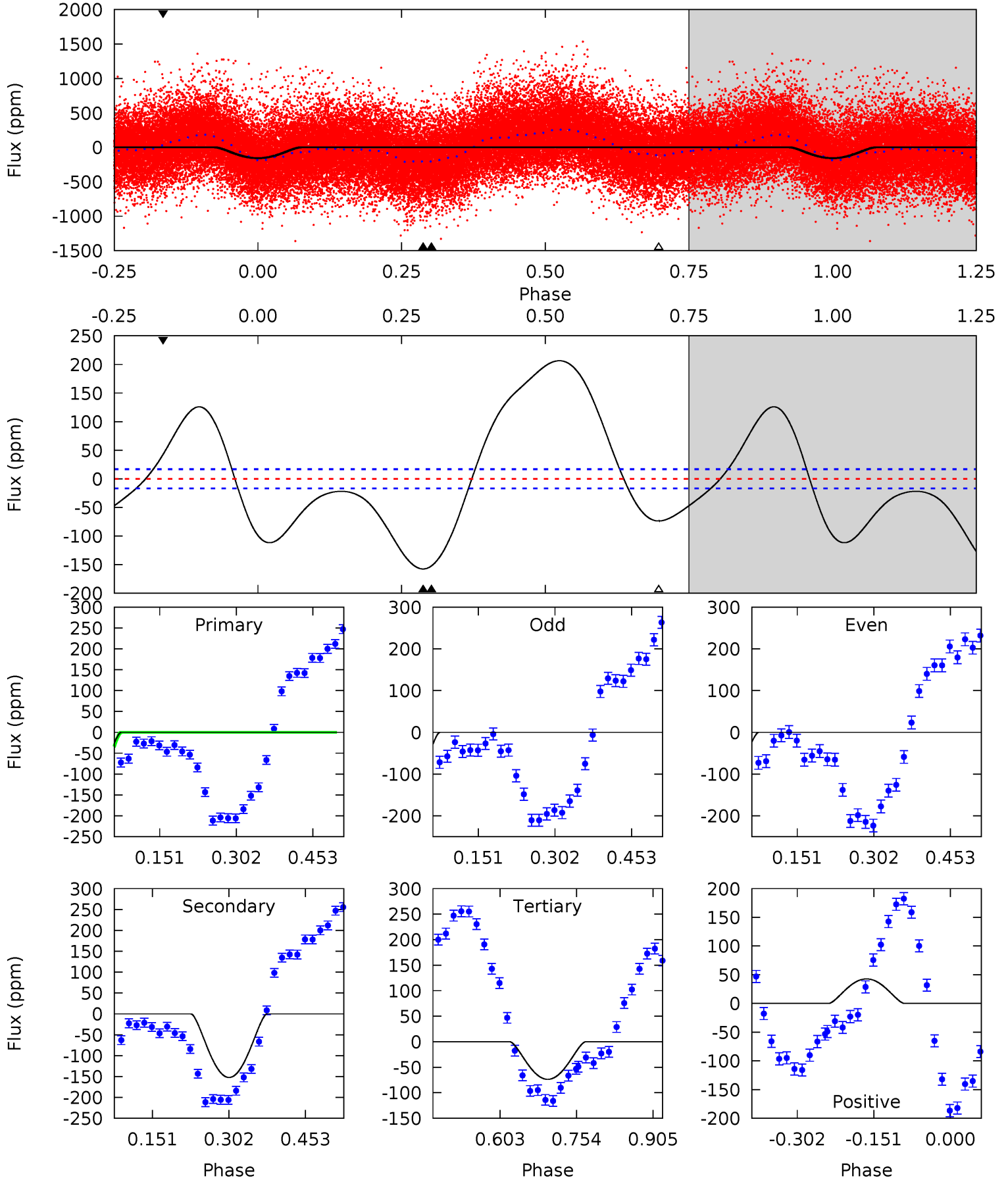




# DV Model-Shift Uniqueness Test

009974142-01, P = 8.046620 Days, E = 128.439082 Days

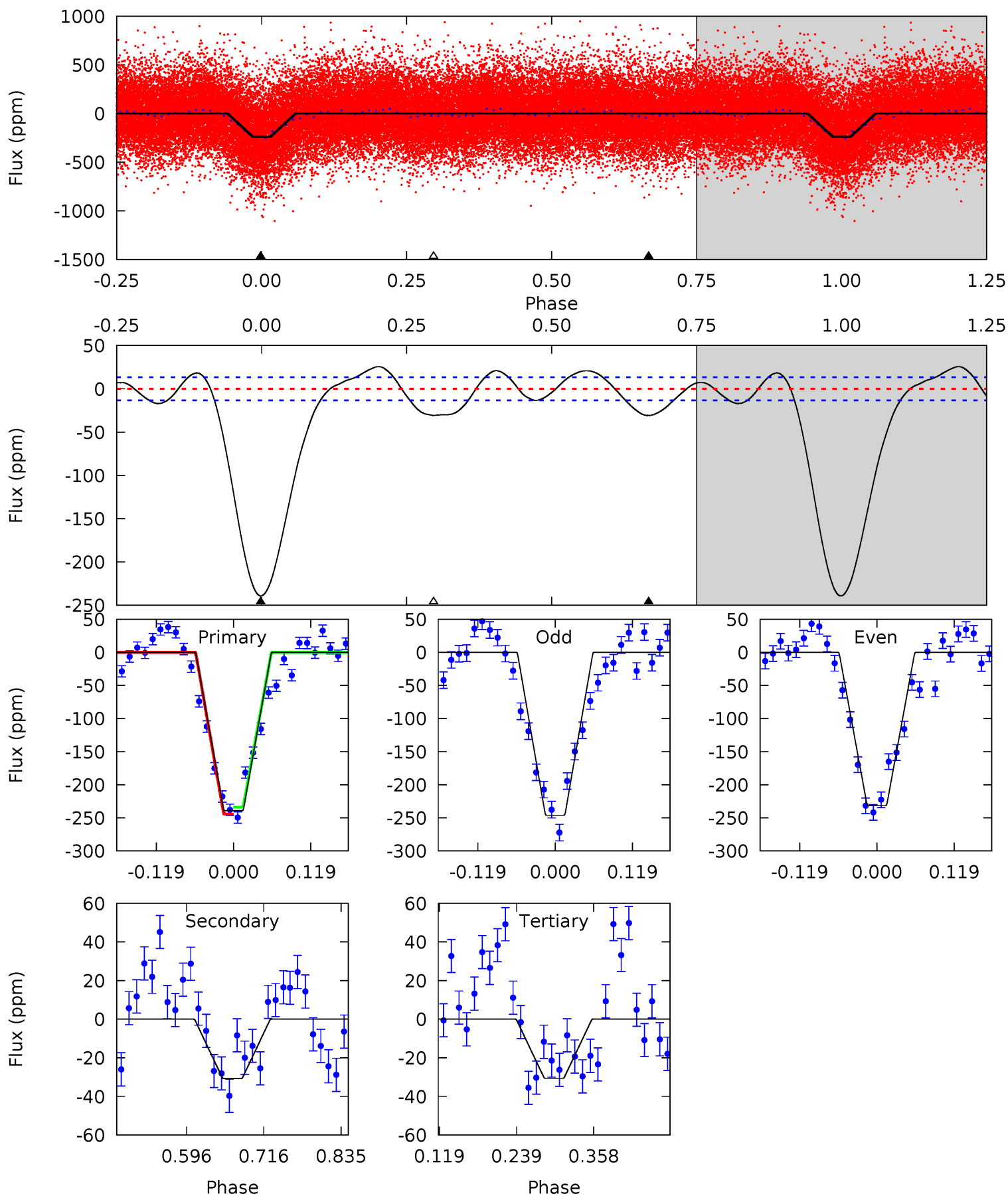
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.2	40.8	19.7	11.5	4.48	1.44	26.7	22.5	30.7	21.1	29.3	3.59	0.93	0.57	12.0



# Alt Model-Shift Uniqueness Test

009974142-01, P = 8.046006 Days, E = 128.485344 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
81.4	10.5	10.4	0	4.53	1.56	5.69	70.9	81.4	0.03	10.5	2.47	1.02	0.10	1.79





### Stellar Parameters For KIC 009974142

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6049^{+211}_{-190}$	$3.728^{+0.600}_{-0.150}$	$-0.380^{+0.350}_{-0.300}$	$2.522^{+0.503}_{-1.509}$	$1.241^{+0.184}_{-0.342}$	$0.109^{+1.049}_{-0.046}$
	+3%/-3%	+16%/-4%	+92%/-79%	+20%/-60%	+15%/-28%	+962%/-42%
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 009974142-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-152 \pm 4$	$7.49^{+7.20}_{-5.12}$	$2005^{+171}_{-281}$	$4127^{+2719}_{-833}$	$11^{+91}_{-8}$
Alt.	$-31 \pm 3$	$6.17^{+6.10}_{-4.26}$	$2002^{+165}_{-308}$	$3350^{+1678}_{-725}$	$3.350^{+29.144}_{-2.562}$

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

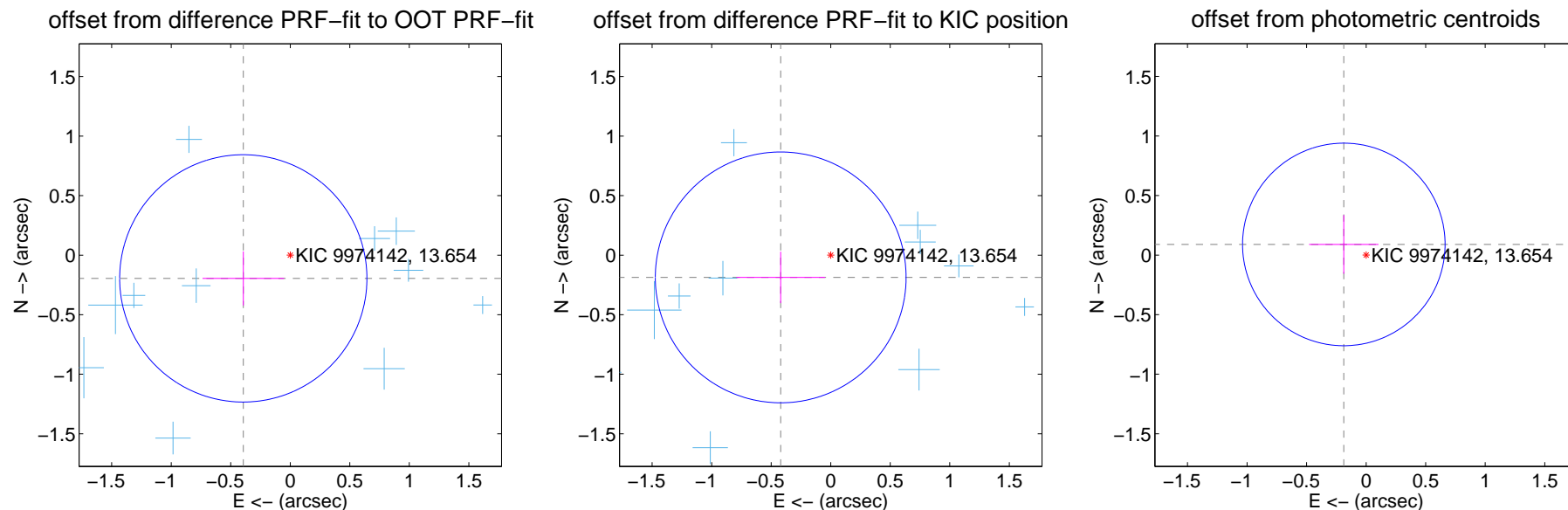
## DV Centroid Data

Supplemental centroid analysis for 009974142-01. Kepler magnitude: 13.65. Transit SNR 14.88

There are 14 quarters with good PRF difference image offsets

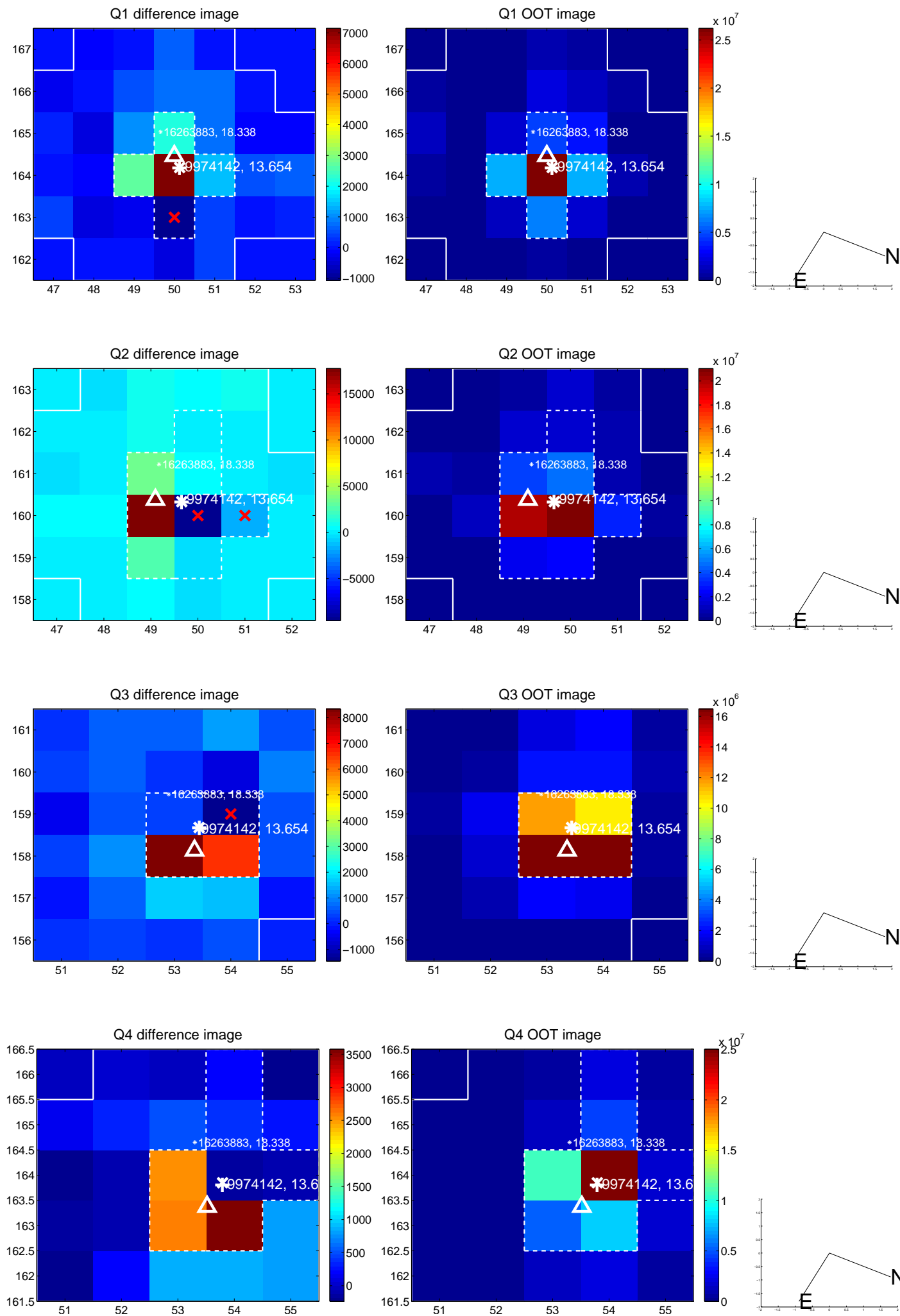
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.440 \pm 0.346$	1.27	$0.395 \pm 0.342$	$-0.195 \pm 0.227$
PRF-fit source offset from KIC position	$0.460 \pm 0.351$	1.31	$0.420 \pm 0.372$	$-0.187 \pm 0.216$
photometric centroid source offset	$0.21 \pm 0.28$	0.73	$0.19 \pm 0.29$	$0.09 \pm 0.25$

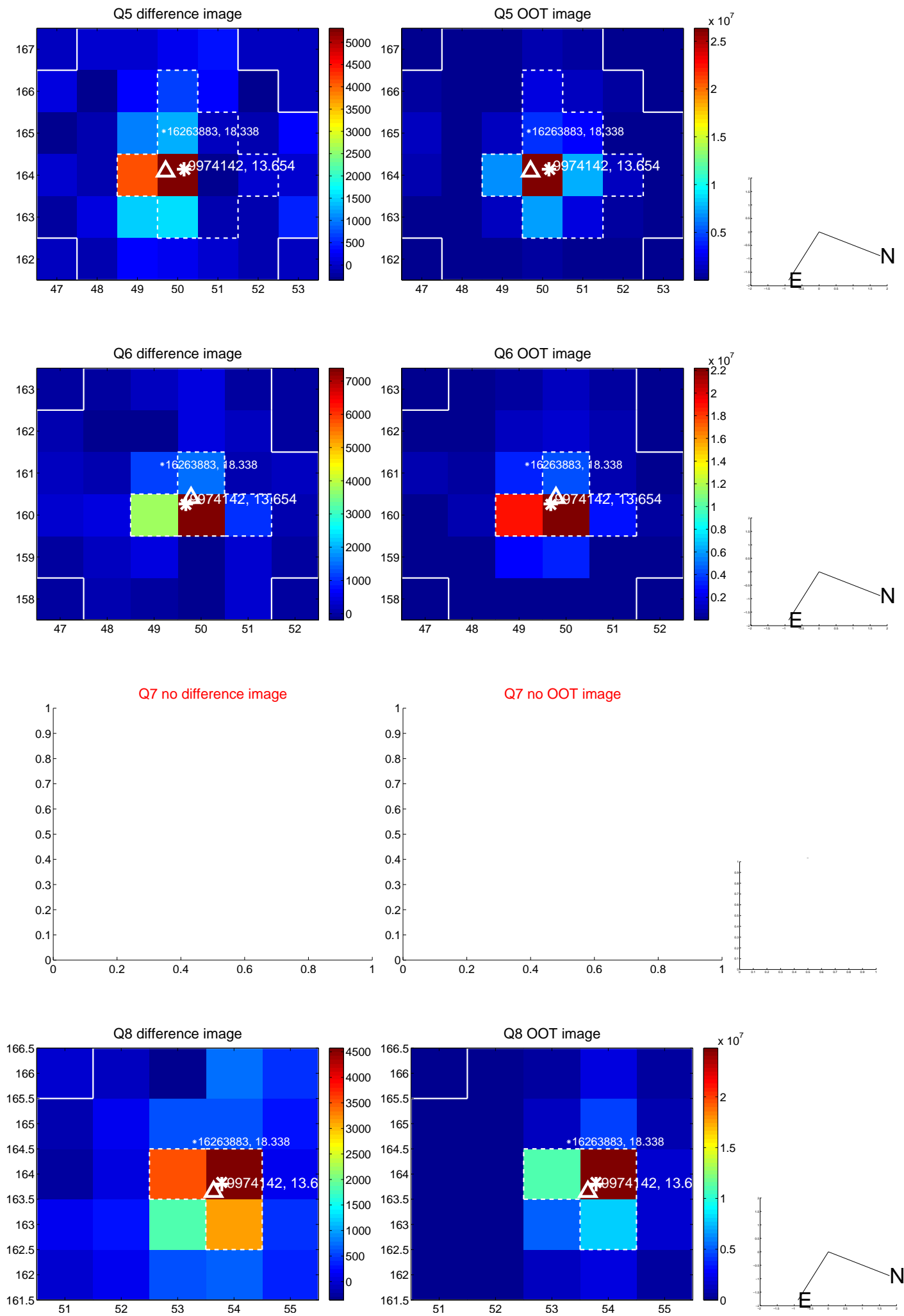


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

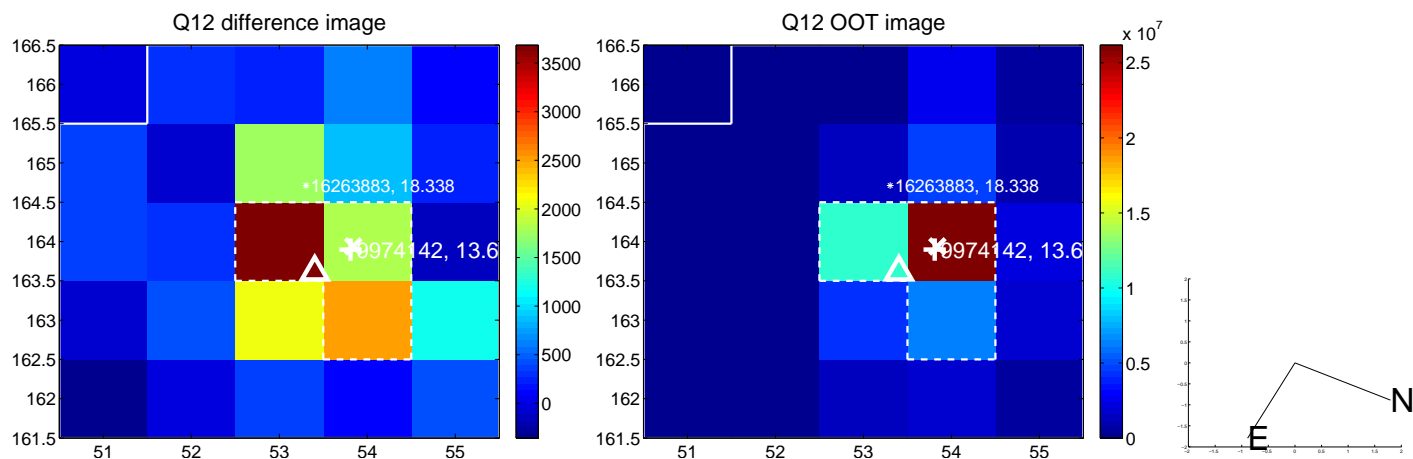
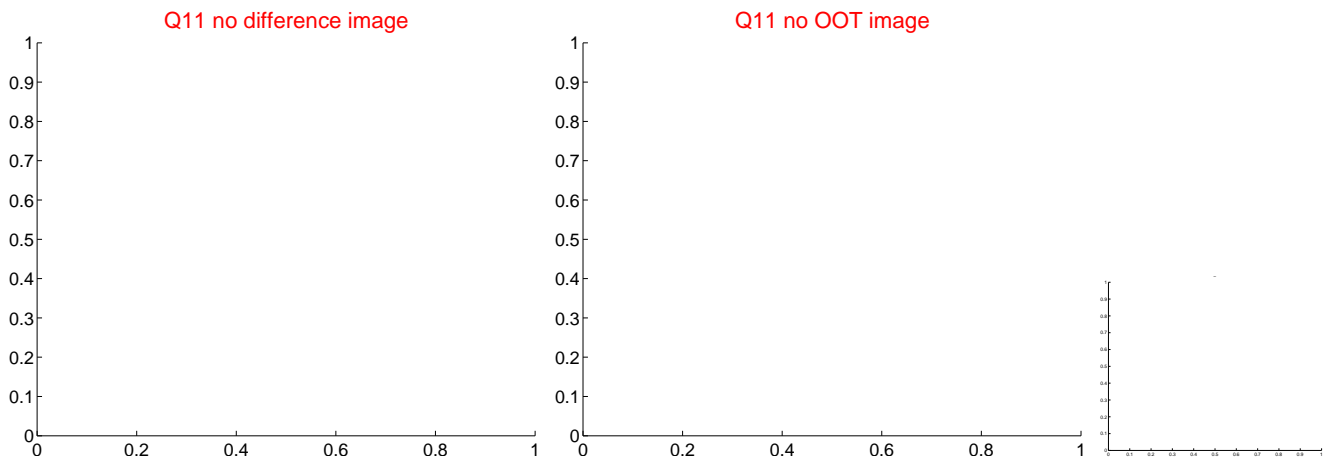
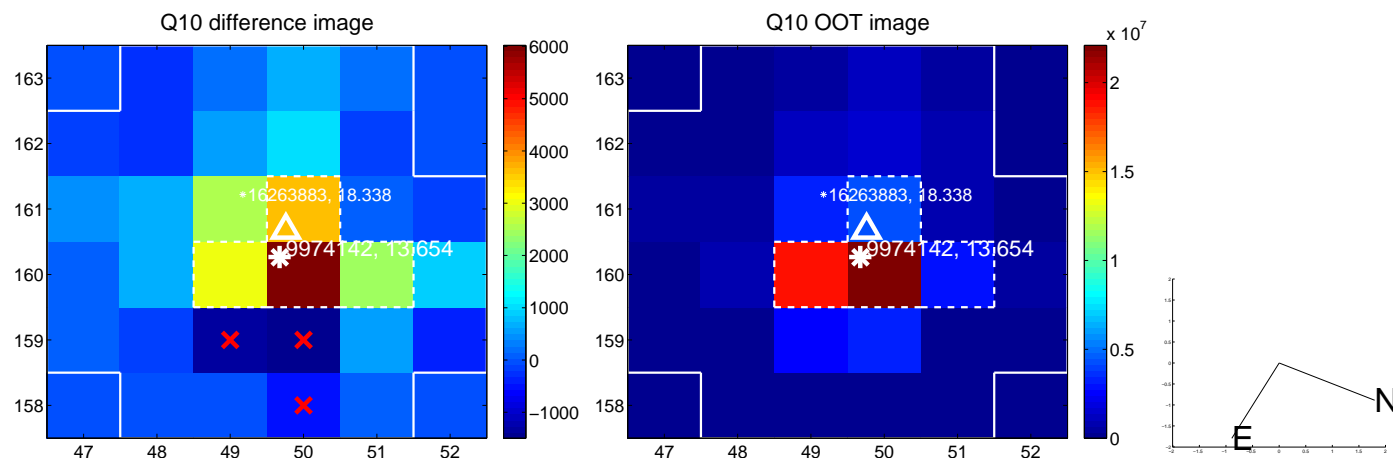
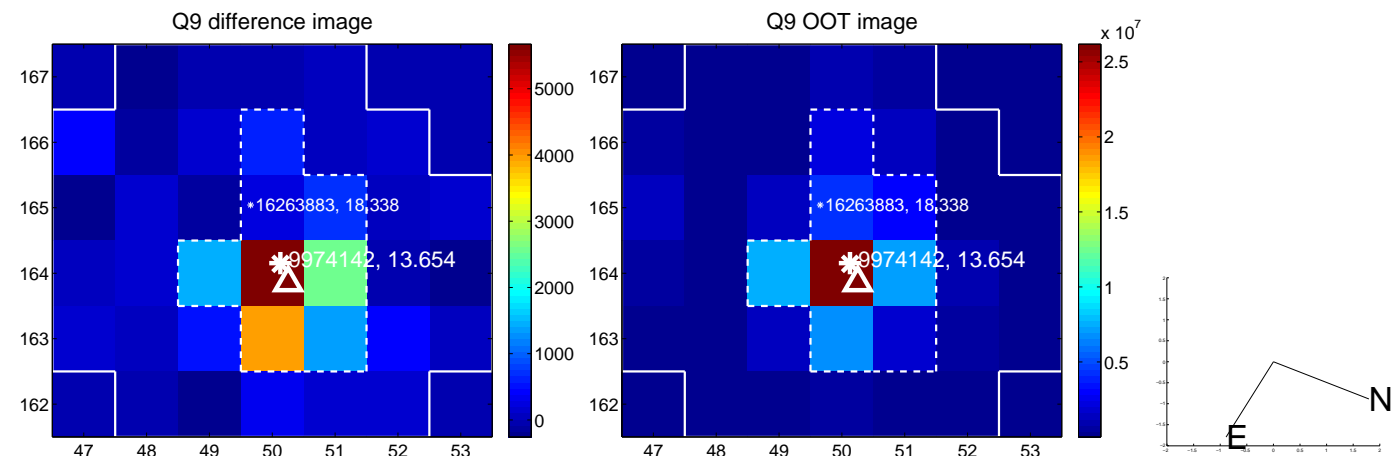


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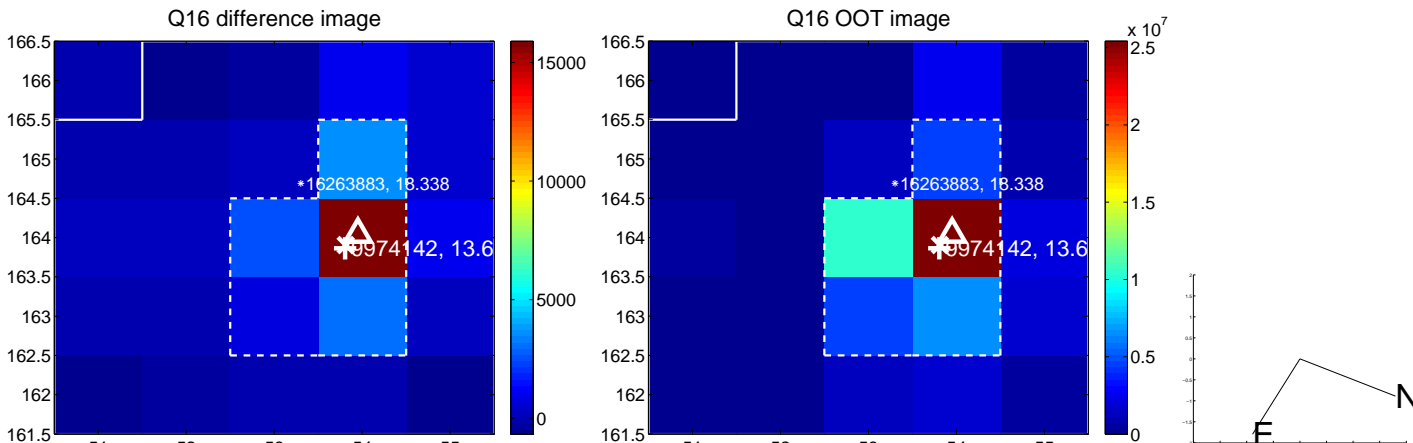
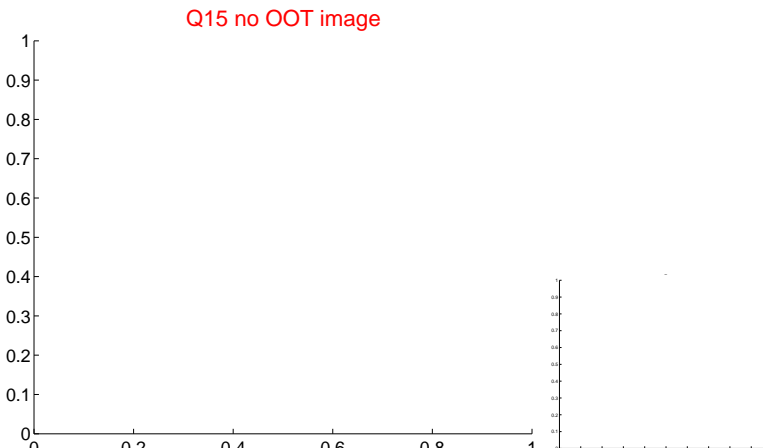
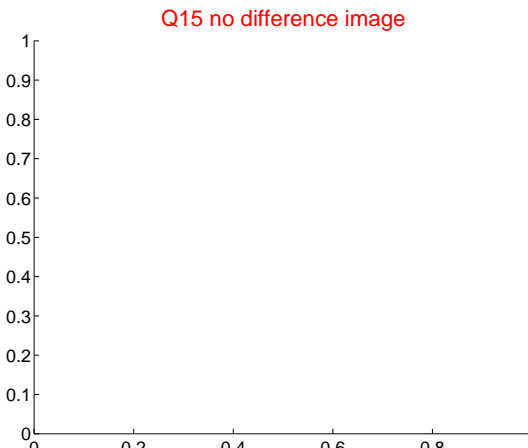
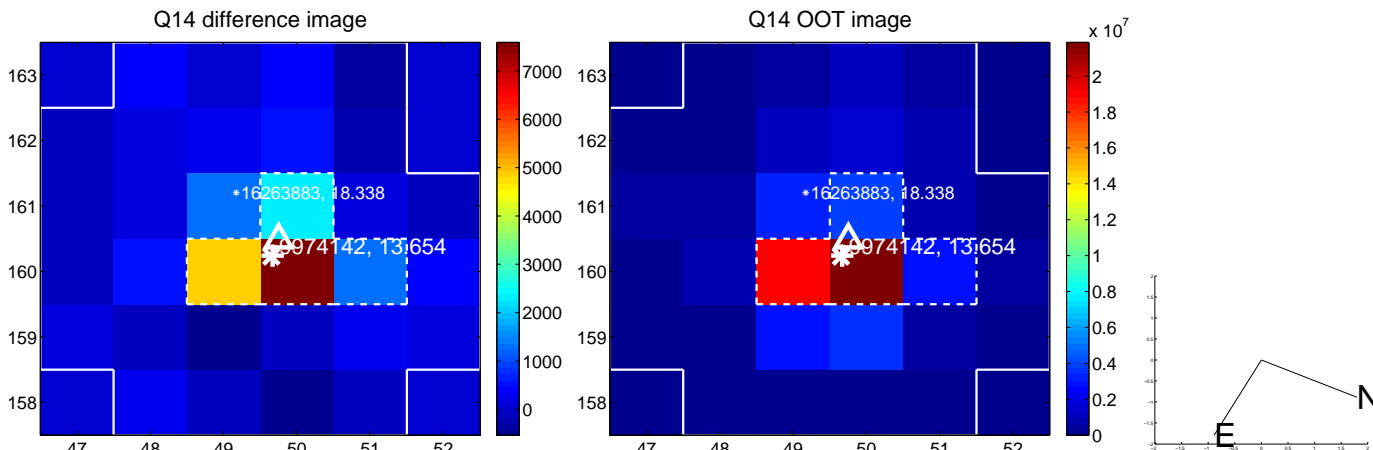
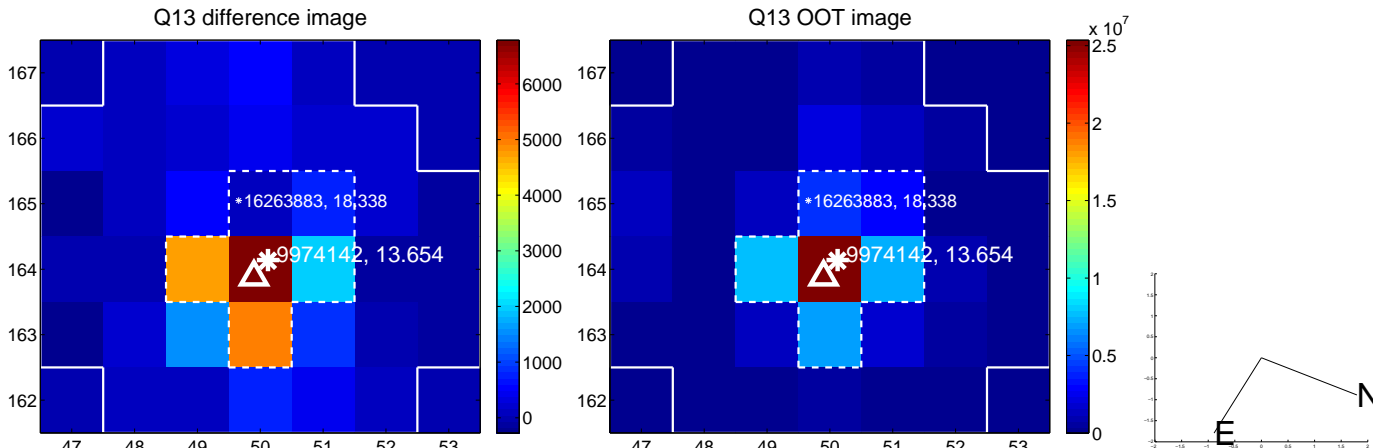




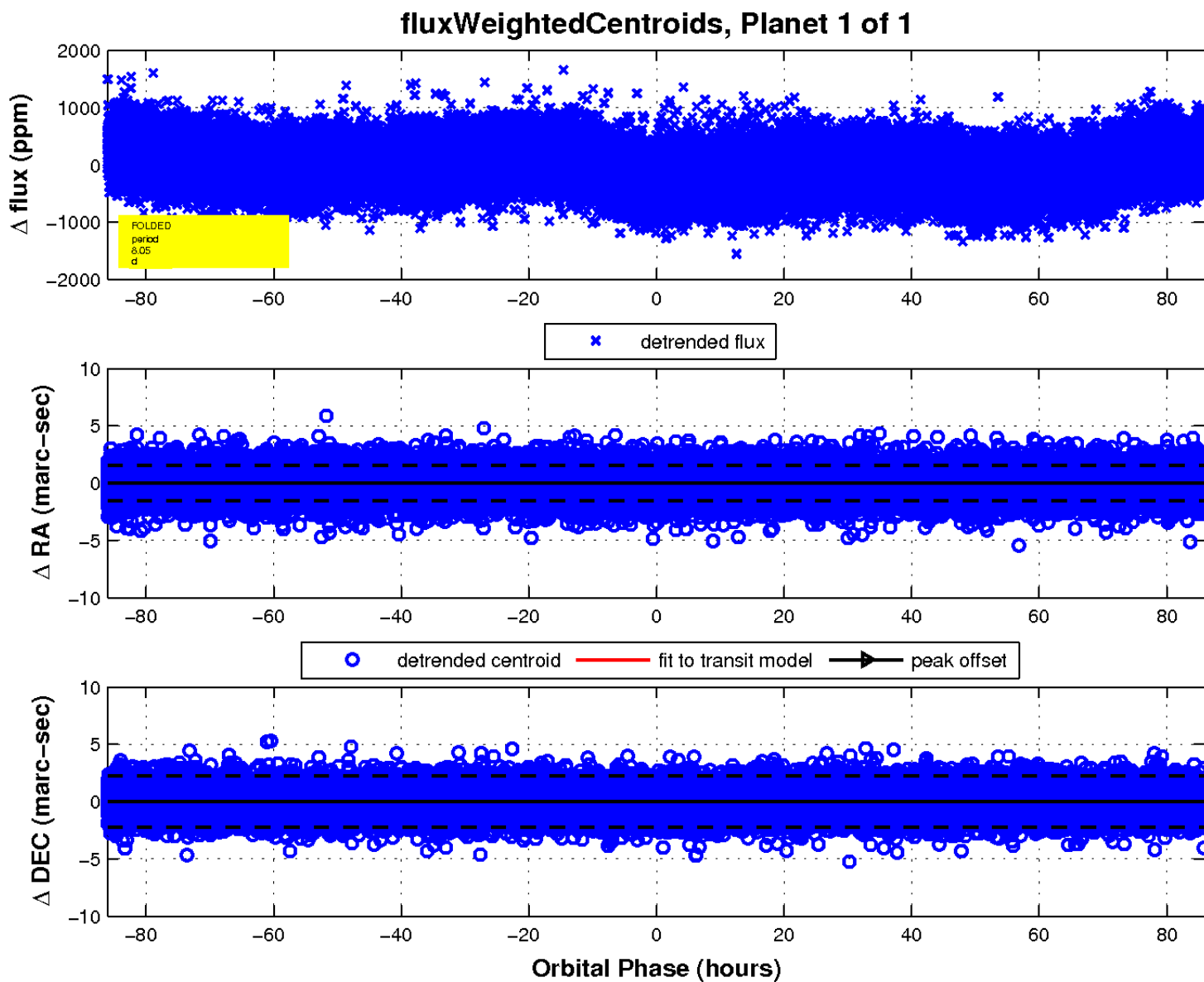
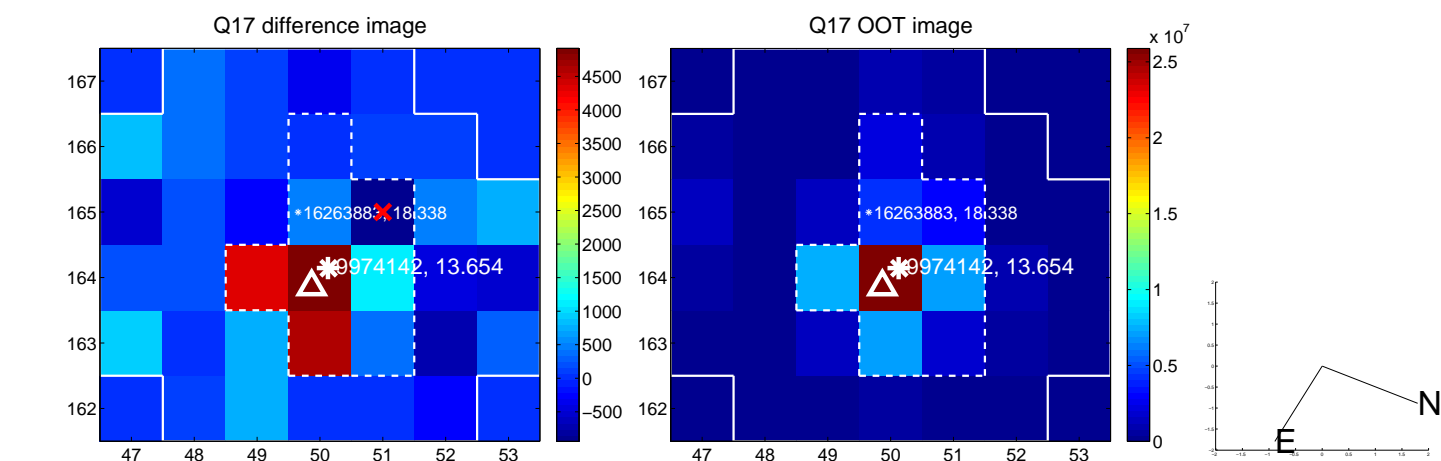
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

