

# KIC 003530387

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003530387-01	OBS	No	0.536625	131.913339	151.4	5.012	365.4	4.7	0.73	4491	1.56	1421.65

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003530387-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

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

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

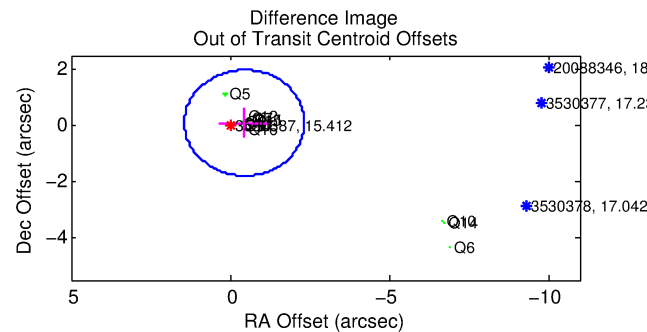
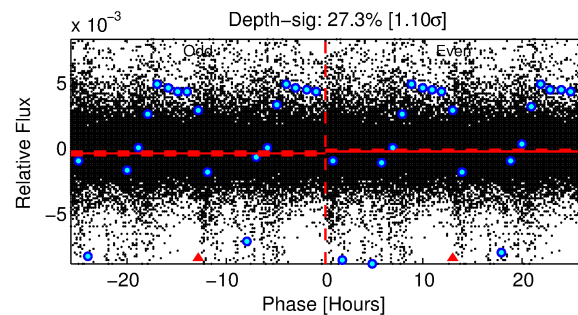
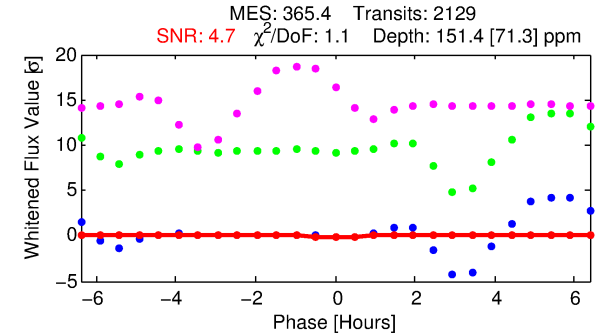
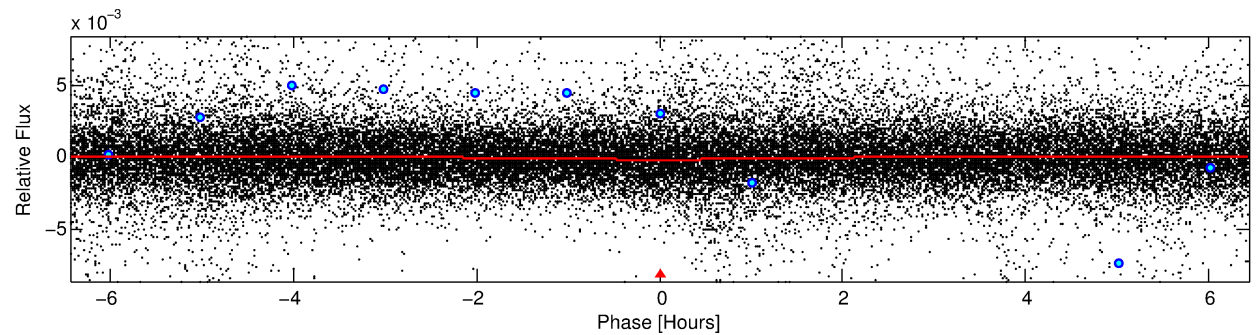
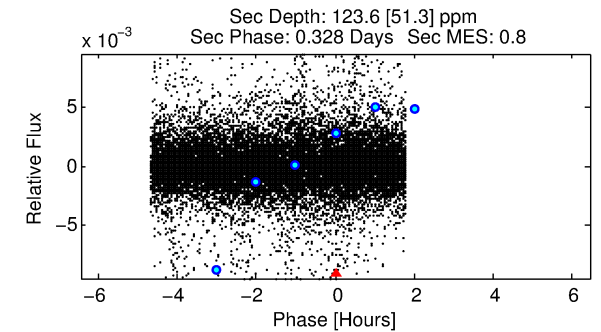
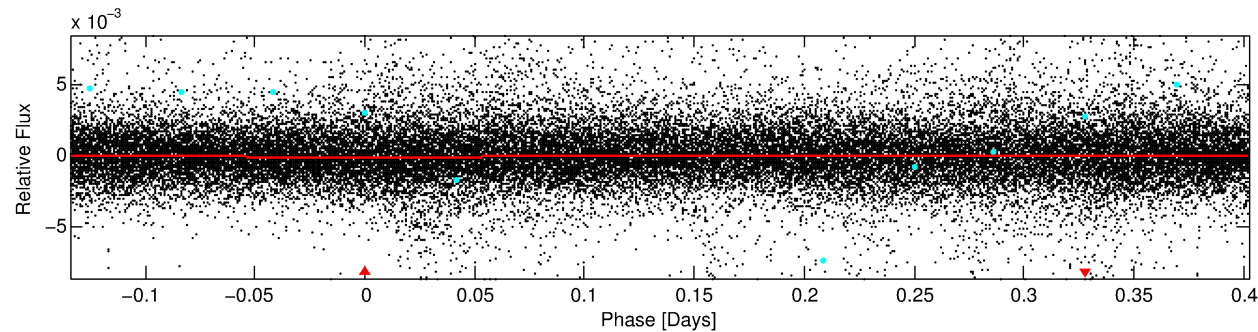
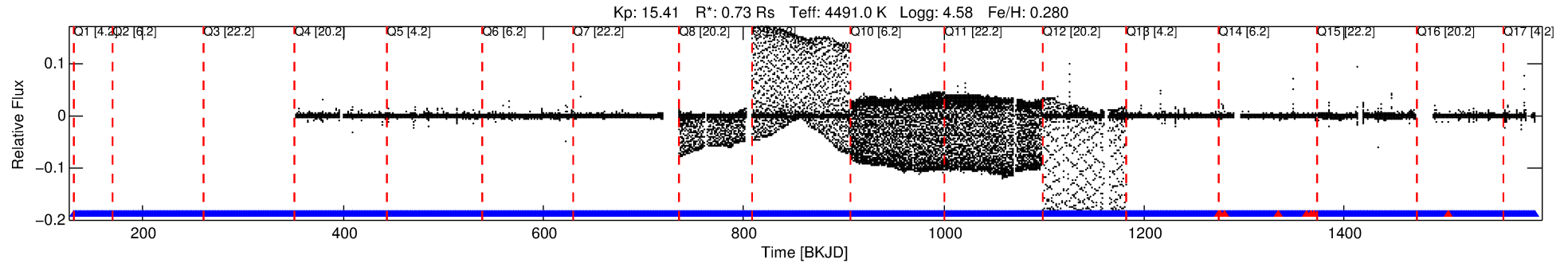
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003530387-01

No Significant Match Found

# DV One-Page Summary

KIC: 3530387 Candidate: 1 of 1 Period: 0.537 d



## DV Fit Results:

Period = 0.53663 [0.00002] d  
Epoch = 131.9133 [0.0100] BKJD  
Rp/R\* = 0.0197 [0.0209]  
a/R\* = 1.02 [0.01]  
b = 0.99 [0.04]  
Seff = 1421.65 [243.52]  
Teff = 1566 [67] K  
Rp = 1.56 [1.66] Re  
a = 0.0117 [0.0008] AU  
Ag = 3.79 [8.22] [0.34 $\sigma$ ]  
Teffp = 3378 [1833] K [0.99 $\sigma$ ]

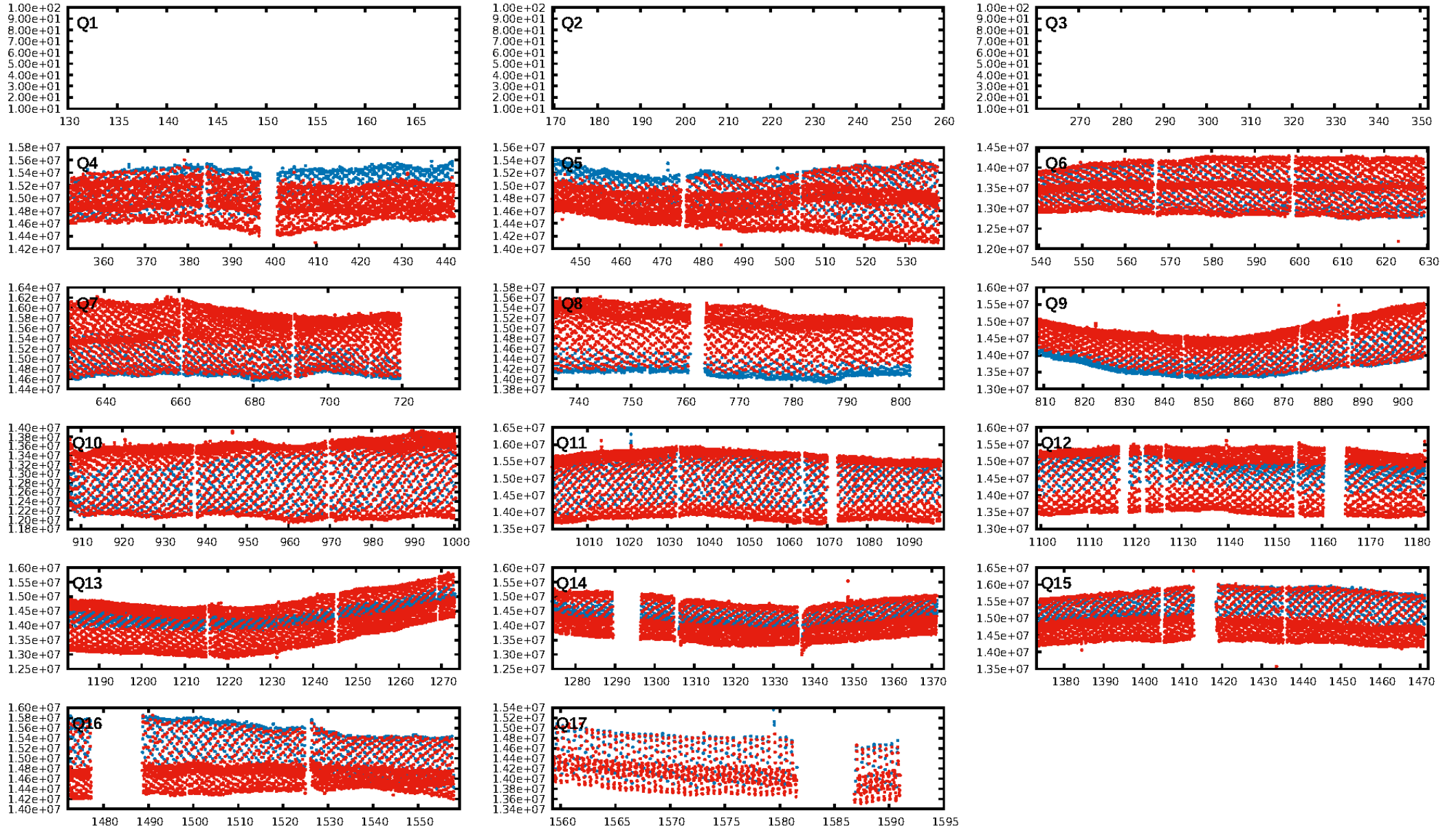
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2070/2079]  
GhostDiagnostic-chr: -10.02  
Centroid-sig: 28.4%  
Centroid-so: 1.181 arcsec [2.12 $\sigma$ ]  
OotOffset-rm: 0.458 arcsec [0.73 $\sigma$ ]  
KicOffset-rm: 0.301 arcsec [2.29 $\sigma$ ]  
OotOffset-st: 3/3/3/4 [13]  
KicOffset-st: 3/3/3/4 [13]  
DiffImageQuality-fgm: 0.46 [6/13]  
DiffImageOverlap-fno: 1.00 [14/14]

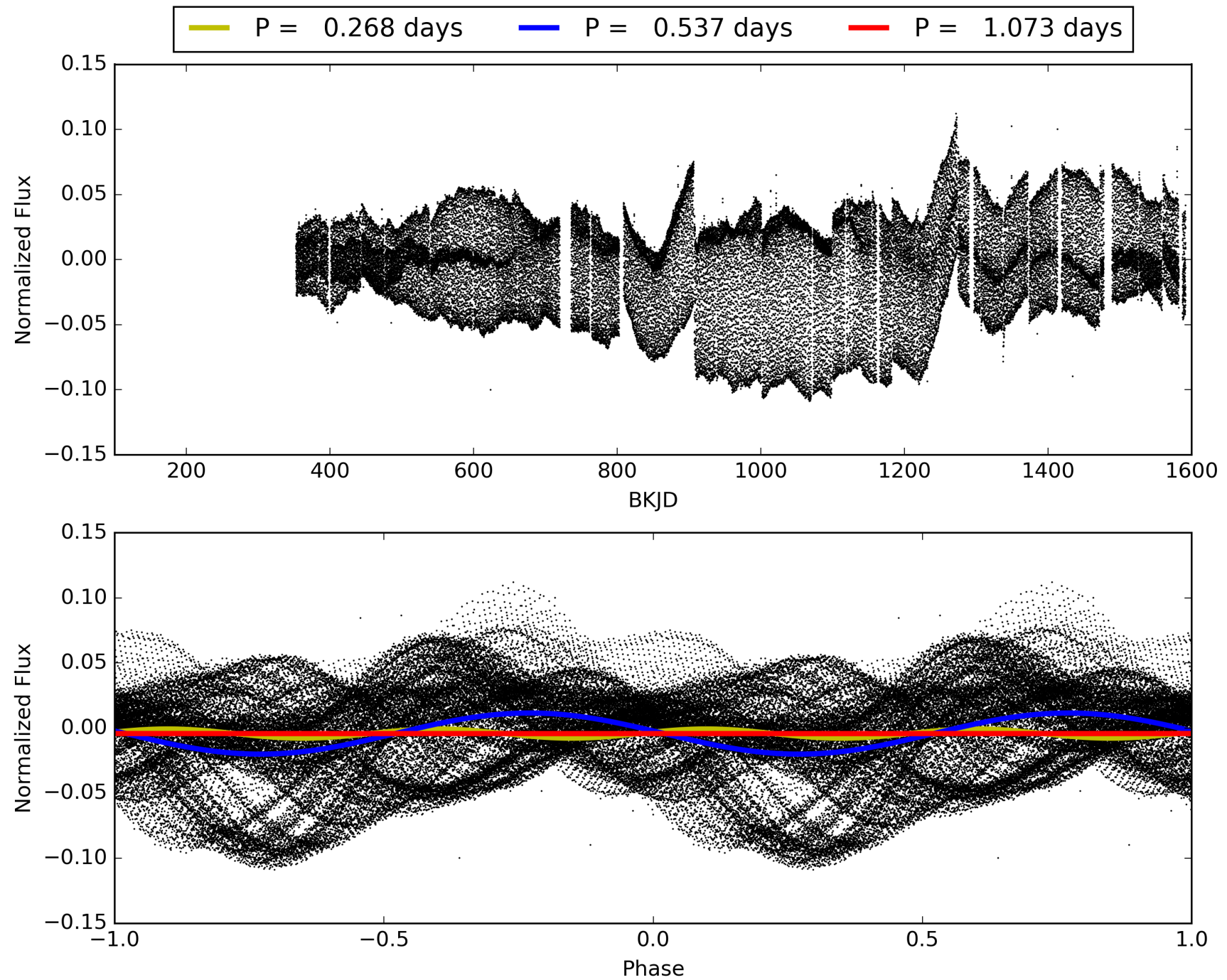
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 22:56:54 Z

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

# TCE 003530387-01, PDC Light Curves

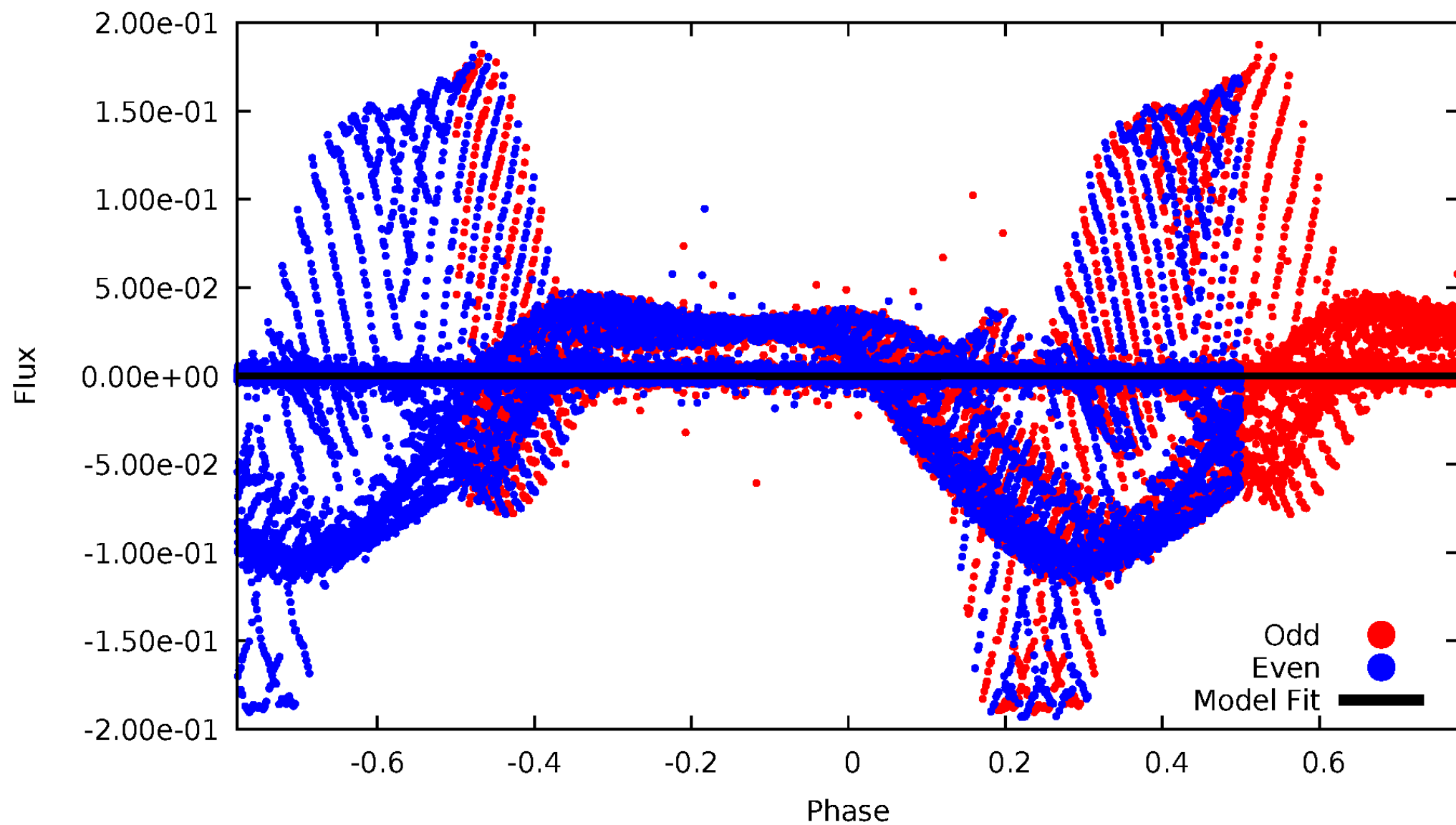


TCE 003530387-01



DV Odd/Even

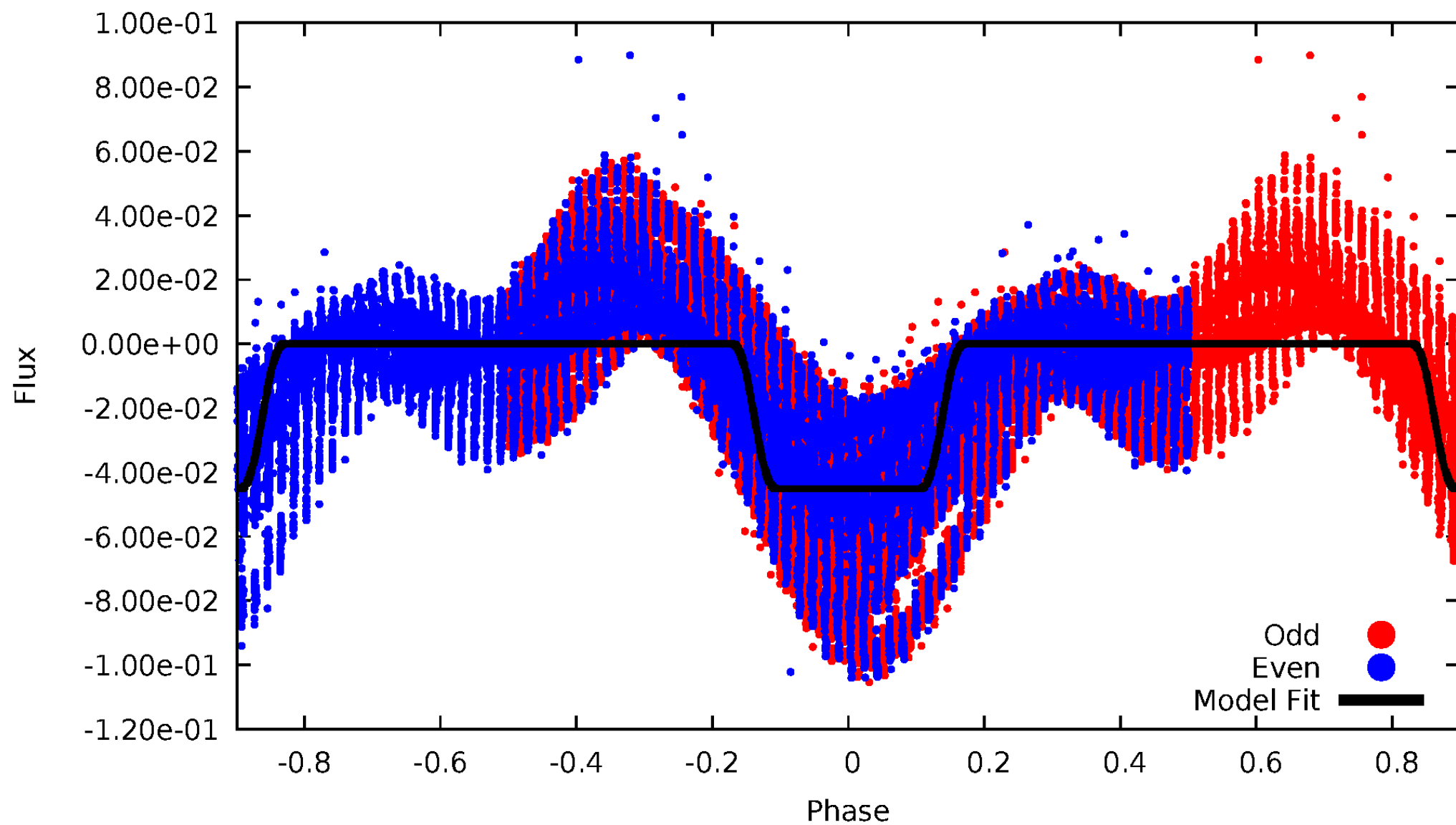
TCE 003530387-01





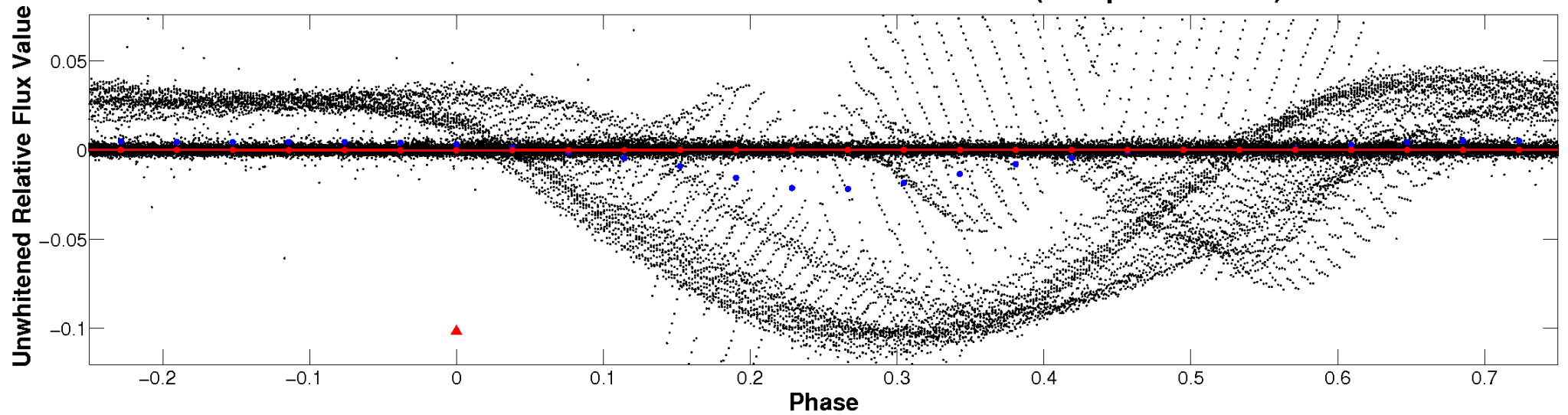
# ALT Odd/Even

TCE 003530387-01

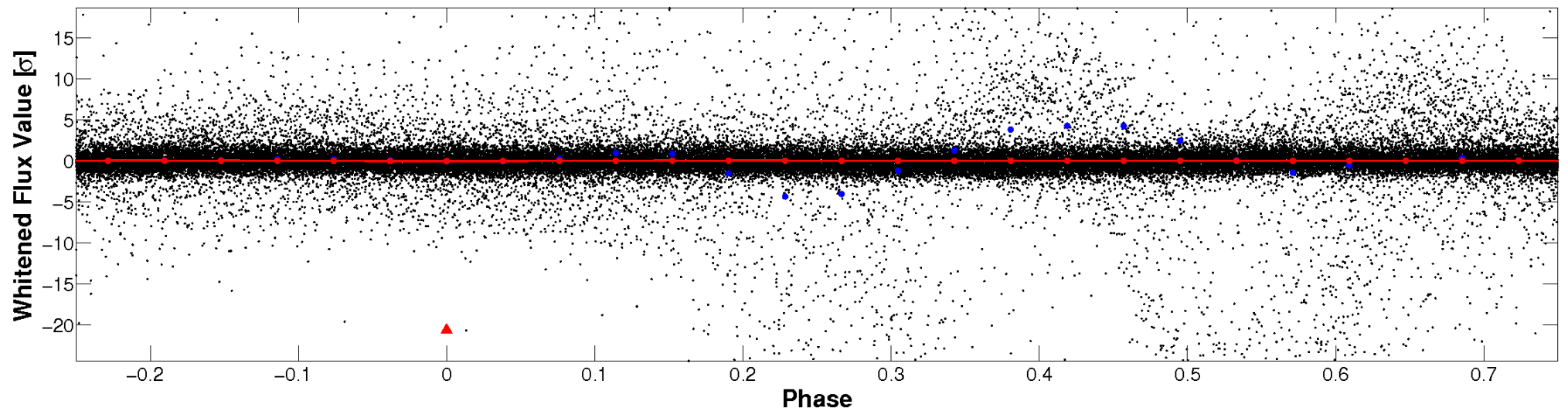


# Non-Whitened Vs. Whitened Light Curve

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

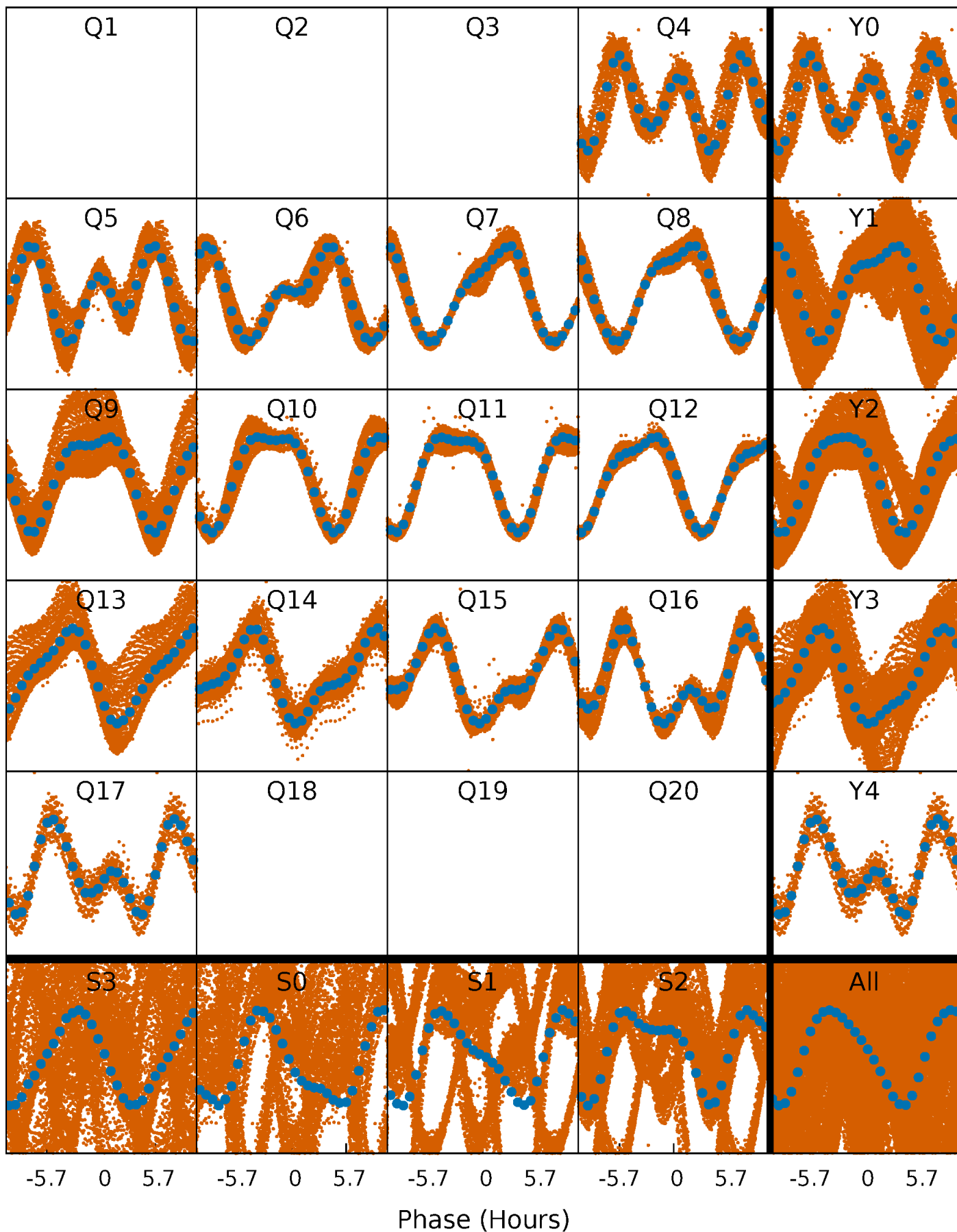


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

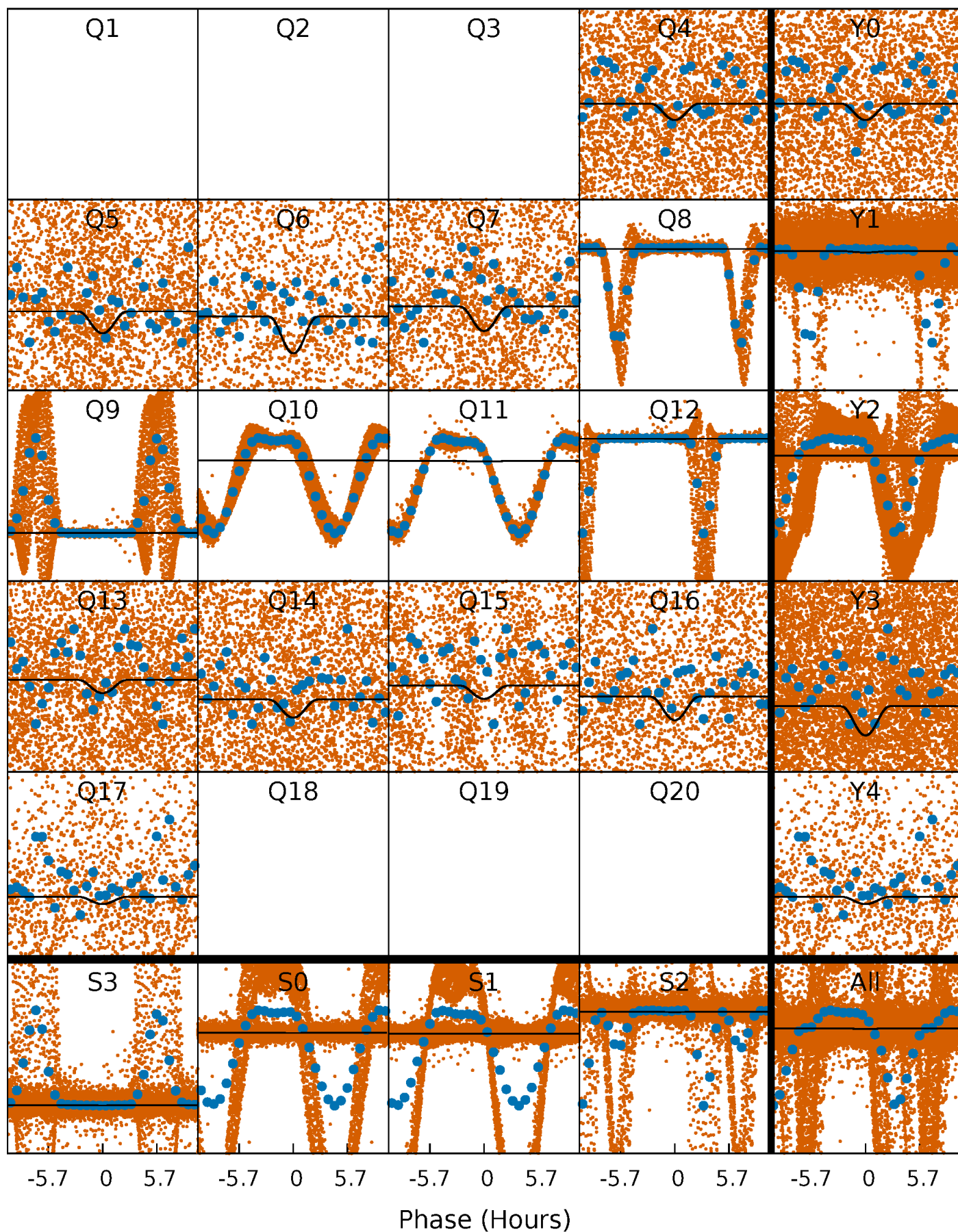
TCE 003530387-01   P= 0.536625 Days    $T_0=131.913339$  (BKJD)





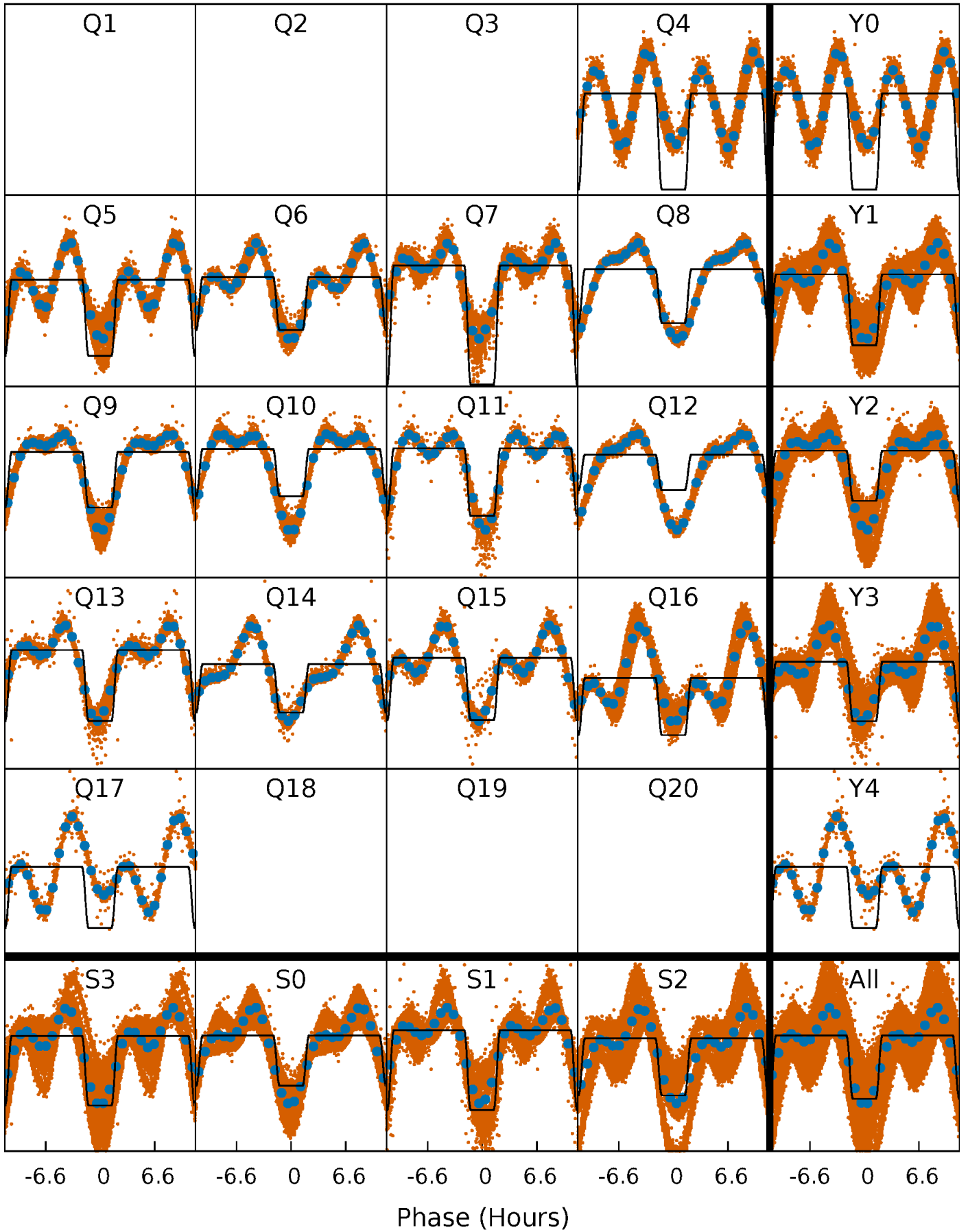
# DV Quarter-Phased Transit Curves

TCE 003530387-01   P= 0.536625 Days    $T_0=131.913339$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

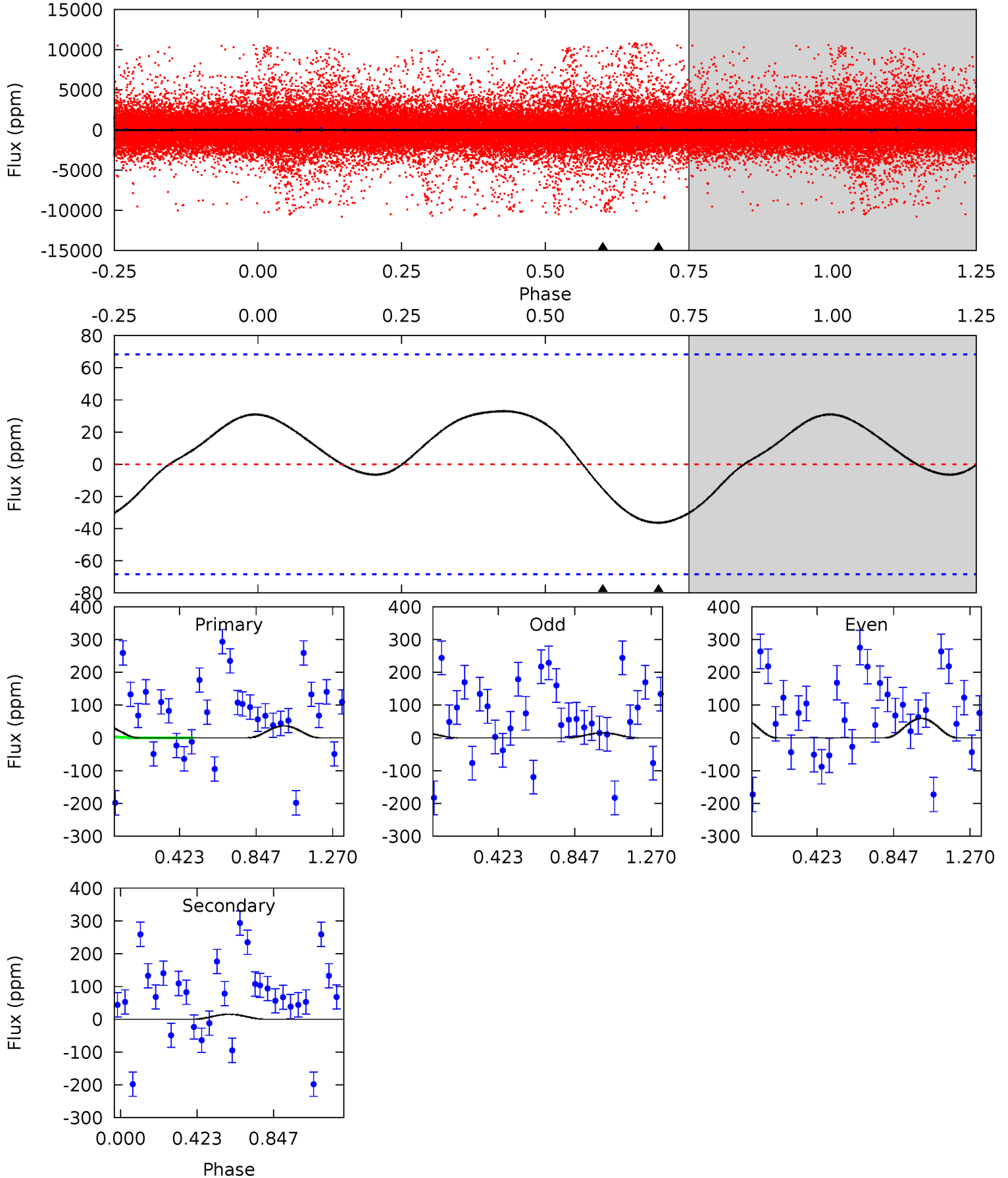
TCE 003530387-01   P= 0.536397 Days    $T_0=131.912467$  (BKJD)



# DV Model-Shift Uniqueness Test

003530387-01, P = 0.536625 Days, E = 131.913339 Days

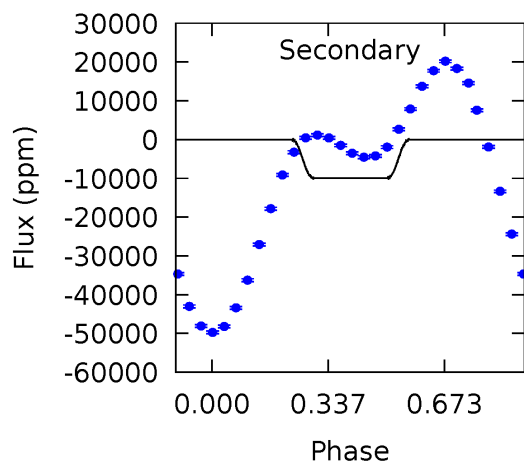
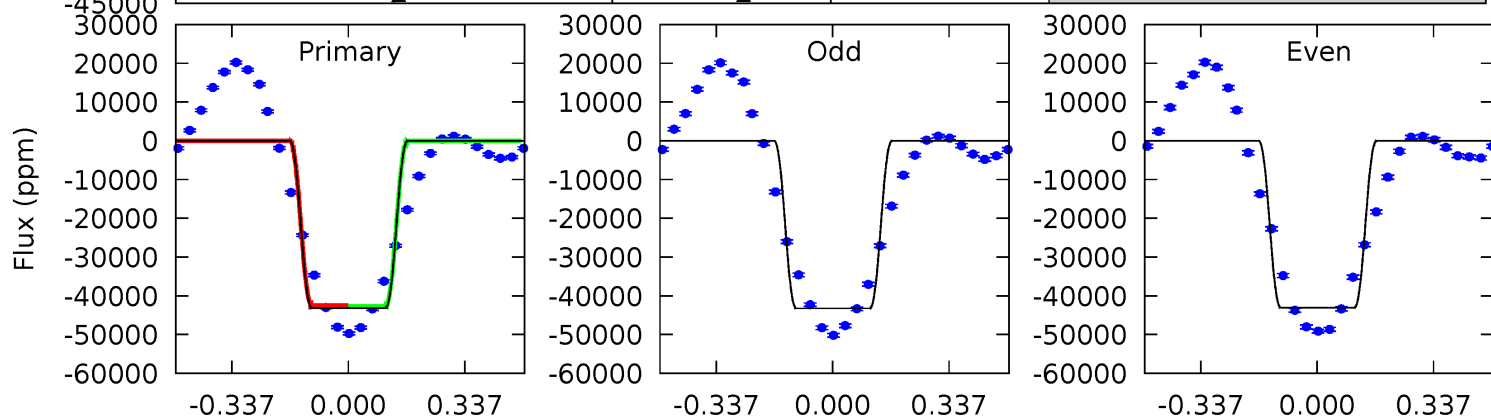
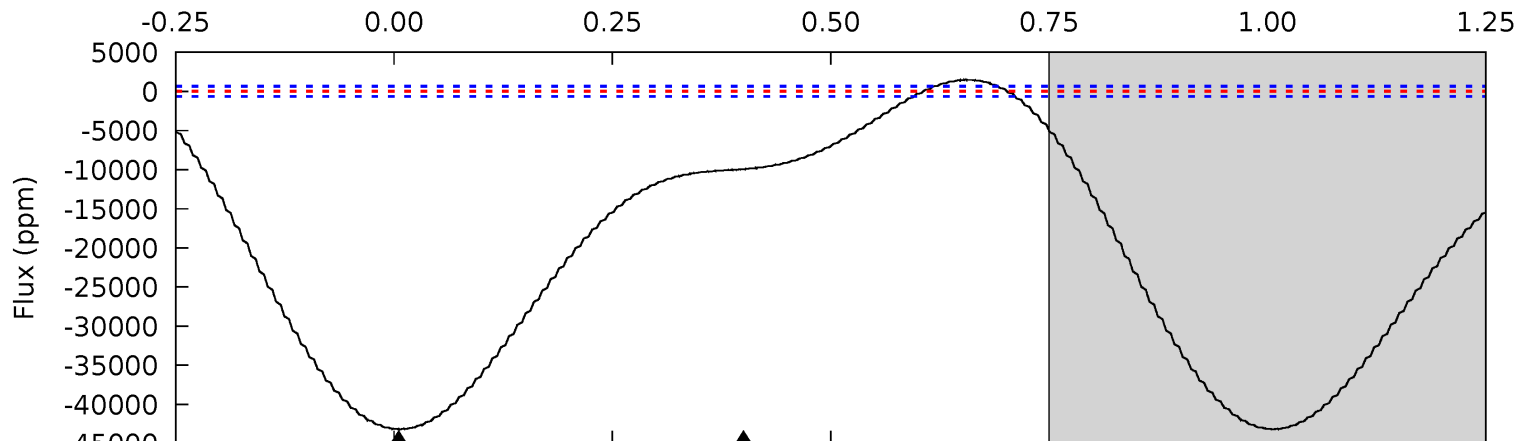
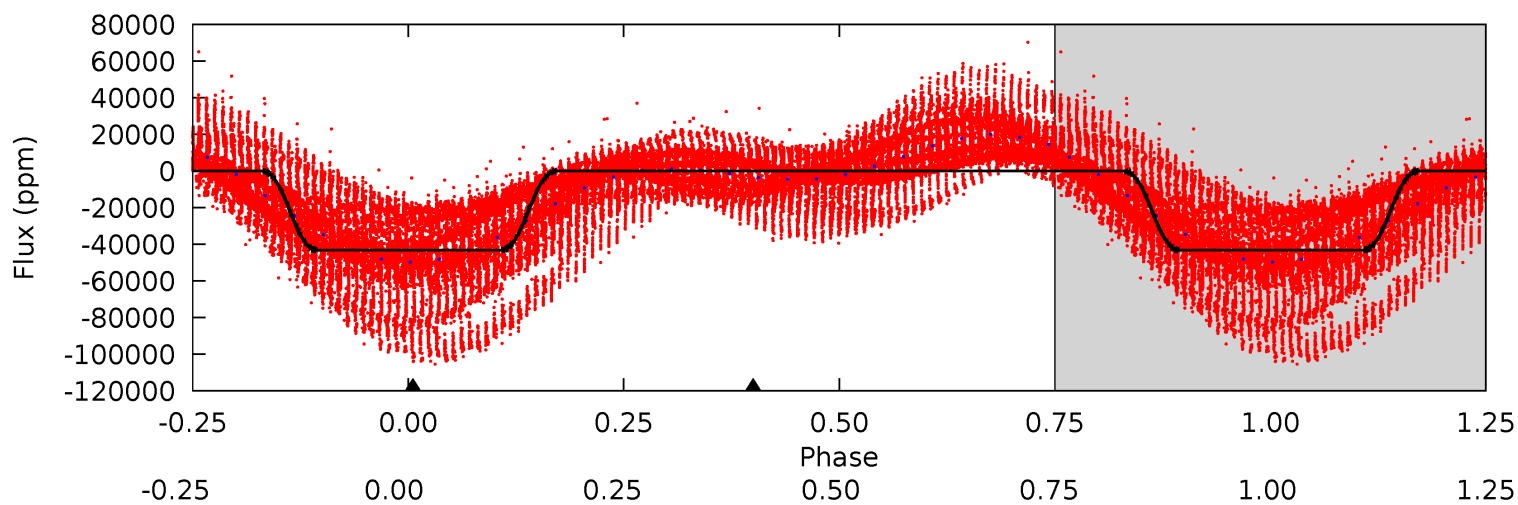
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.27	0.94	0	0	4.25	0.80	0.34	2.27	2.27	0.94	0.94	1.38	10.4	0.48	2.83



# Alt Model-Shift Uniqueness Test

003530387-01, P = 0.536397 Days, E = 131.912467 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
285.7	65.7	0	0	4.30	0.96	13.5	285.7	285.7	65.7	65.7	0.54	1.03	0.03	0.70



### Stellar Parameters For KIC 003530387

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4491^{+158}_{-158}$	$4.579^{+0.053}_{-0.021}$	$0.280^{+0.150}_{-0.300}$	$0.728^{+0.029}_{-0.059}$	$0.733^{+0.043}_{-0.054}$	$2.676^{+0.621}_{-0.229}$
	+4%/-4%	+1%/-0%	+54%/-107%	+4%/-8%	+6%/-7%	+23%/-9%
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 003530387-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-15 \pm 16$	$2.00^{+1.43}_{-1.28}$	$2168^{+87}_{-82}$	$-2122^{+5303}_{-436}$	$0.234^{+1.656}_{-0.241}$
Alt.	$-9935 \pm 151$	$16.72^{+1.79}_{-1.72}$	$2169^{+88}_{-76}$	$3392^{+149}_{-137}$	$2.705^{+0.641}_{-0.509}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$



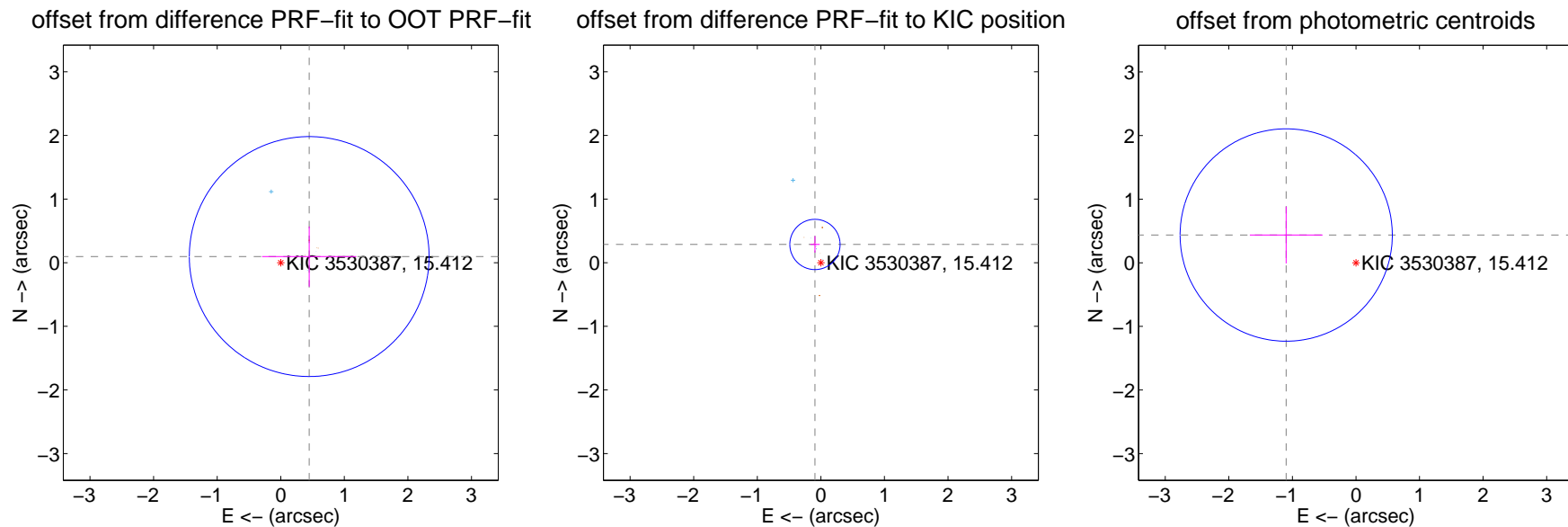
## DV Centroid Data

Supplemental centroid analysis for 003530387-01. Kepler magnitude: 15.41. Transit SNR 4.69

There are 6 quarters with good PRF difference image offsets

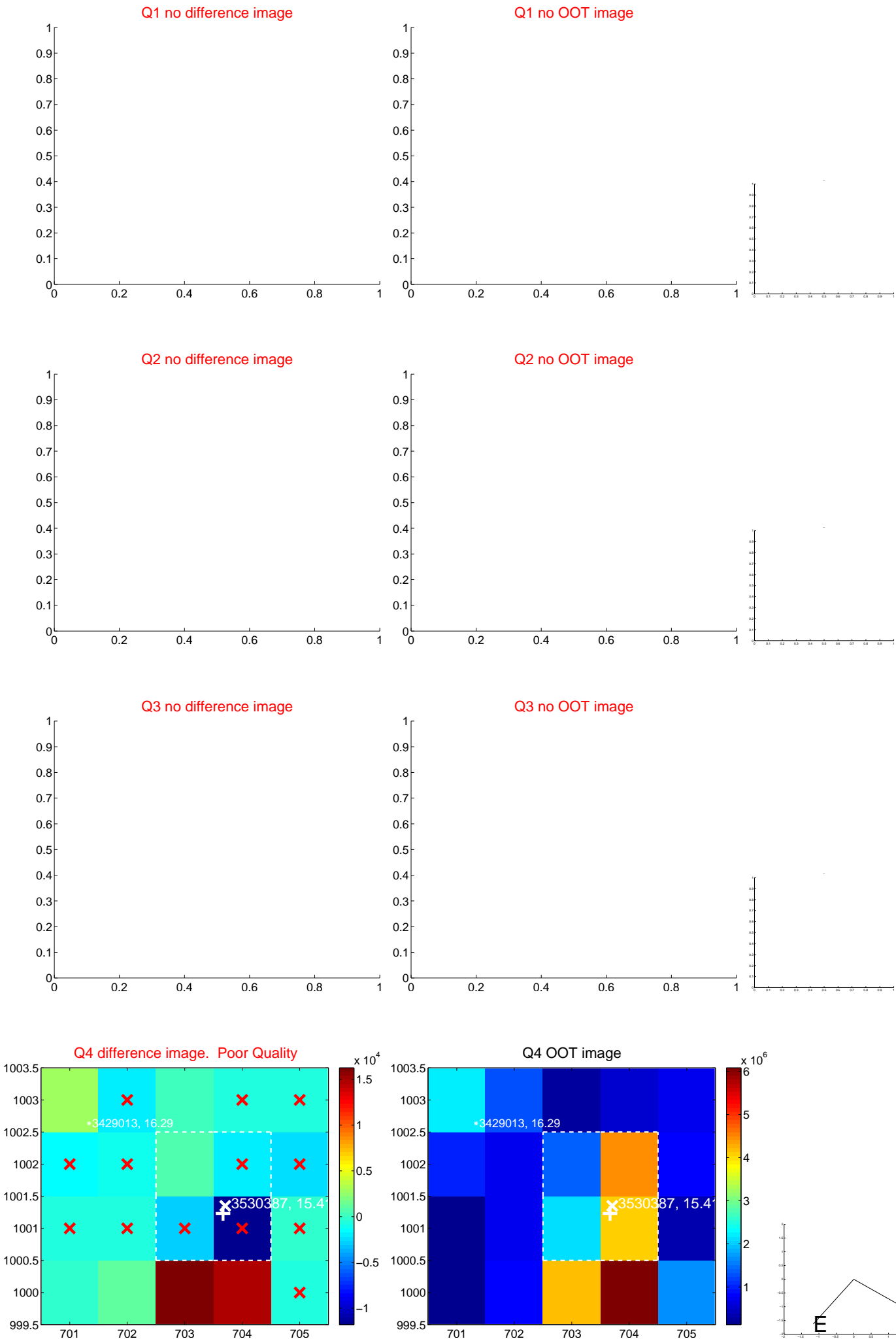
The direct PRF centroid is offset from the target star catalog position by about 0.45 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.458 \pm 0.629$	0.73	$-0.448 \pm 0.742$	$0.097 \pm 0.473$
PRF-fit source offset from KIC position	$0.301 \pm 0.132$	2.29	$0.093 \pm 0.075$	$0.287 \pm 0.129$
photometric centroid source offset	$1.18 \pm 0.56$	2.12	$1.10 \pm 0.57$	$0.44 \pm 0.45$

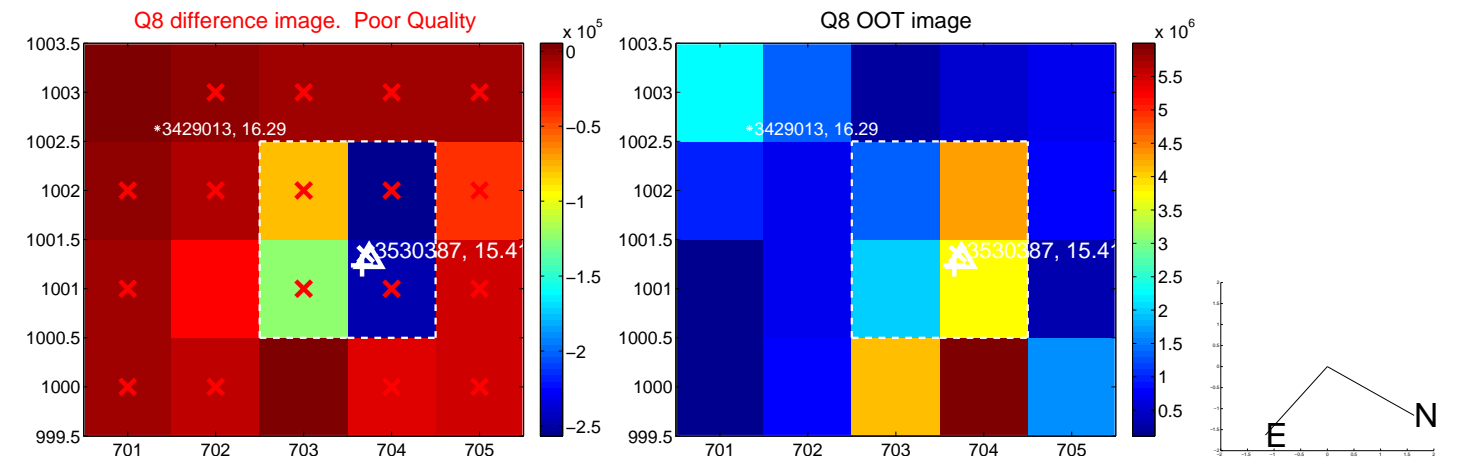
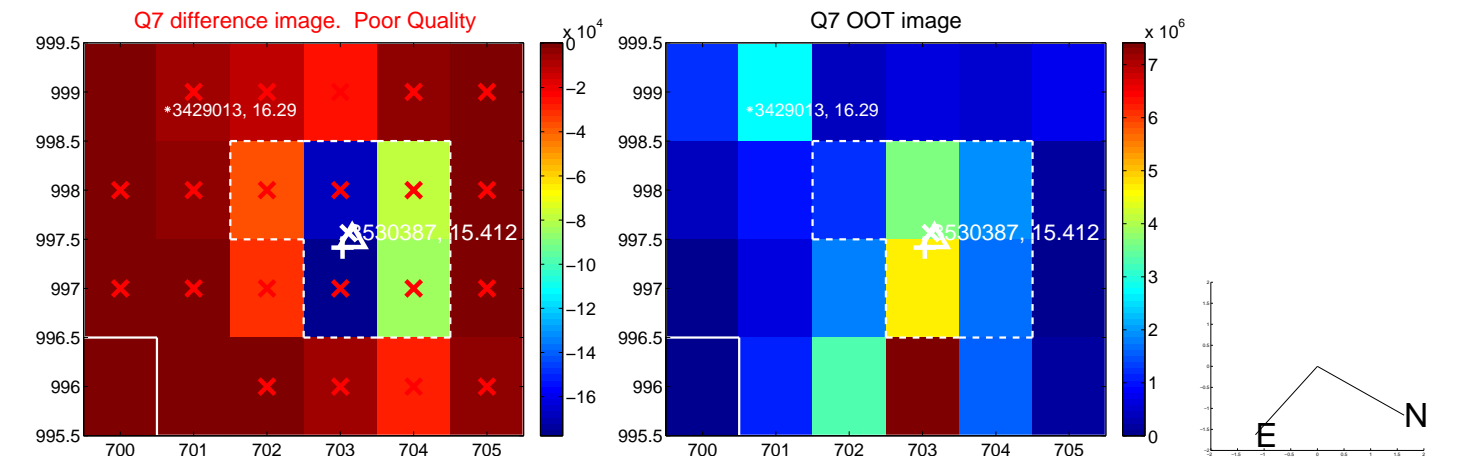
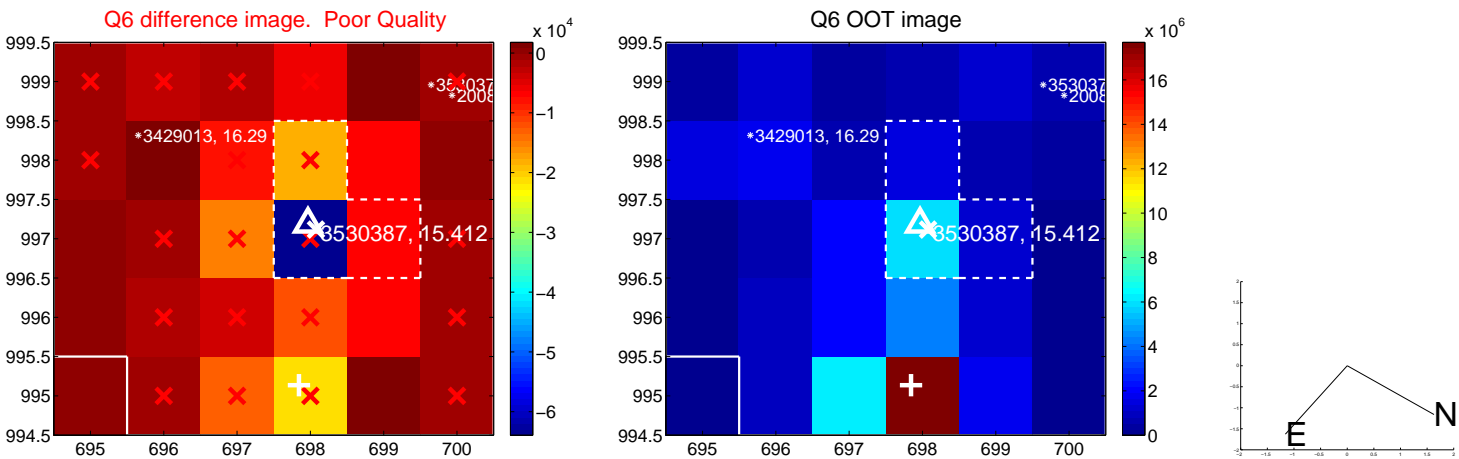
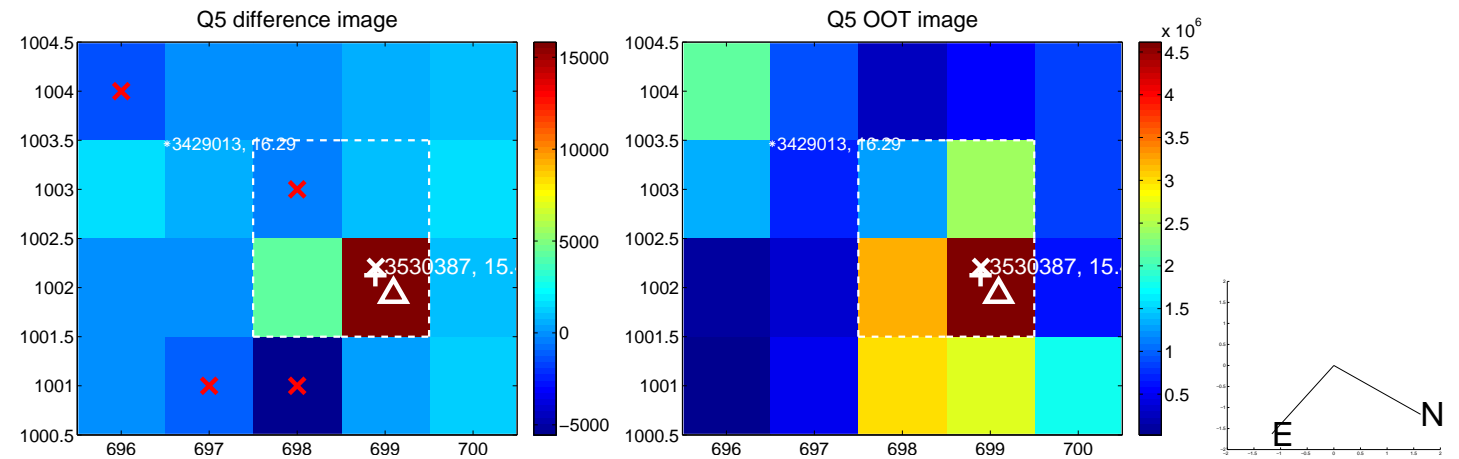


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

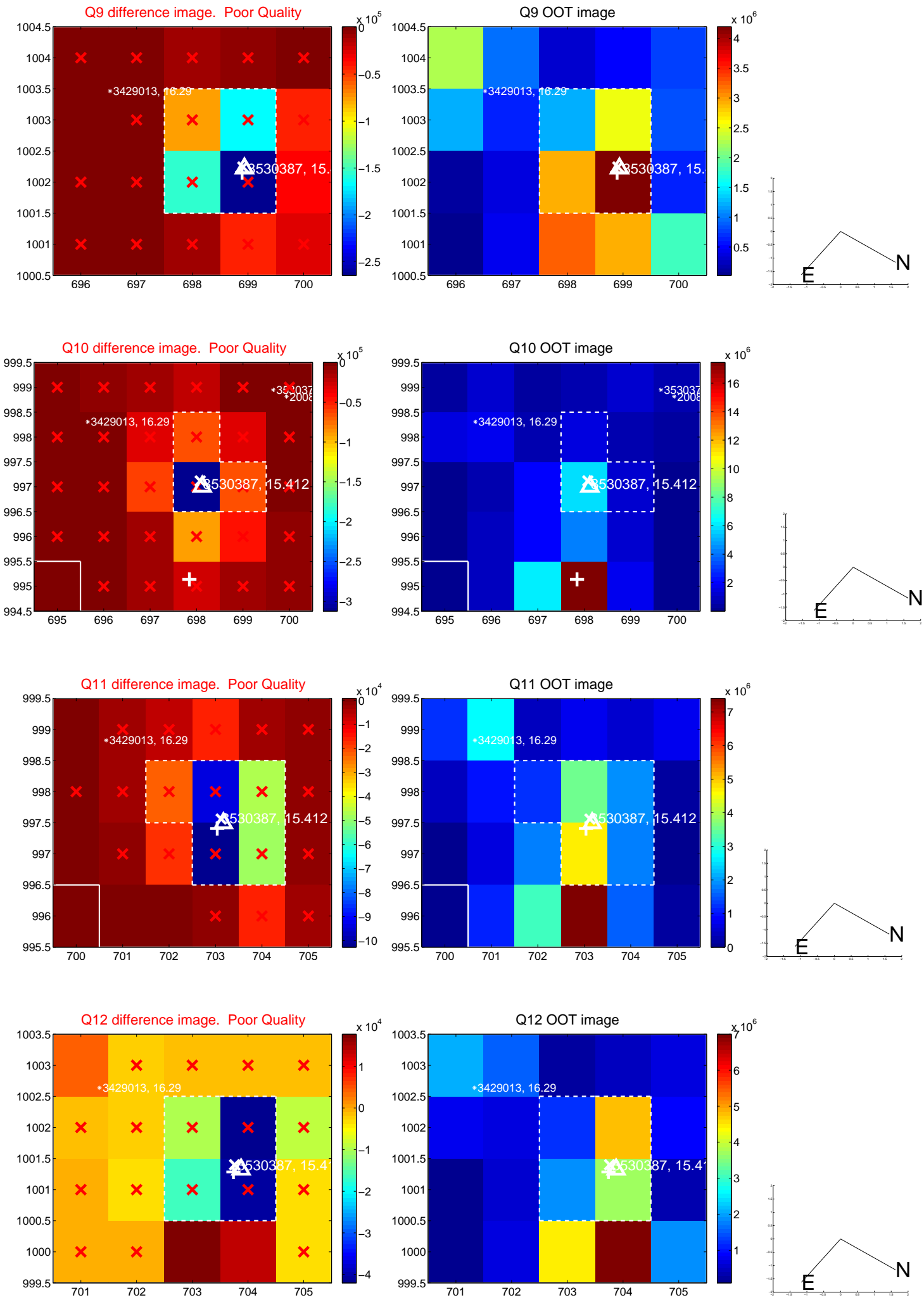
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



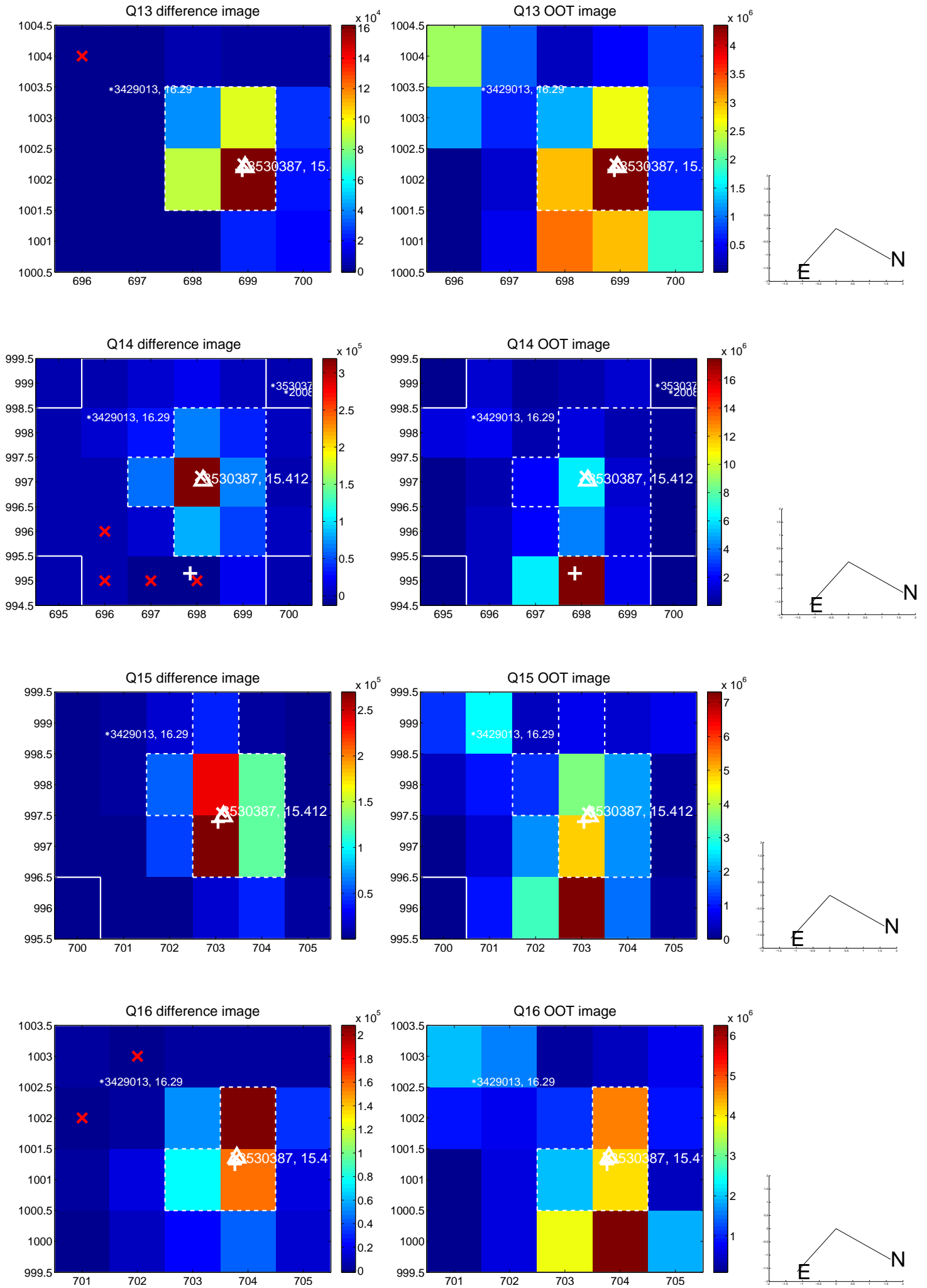
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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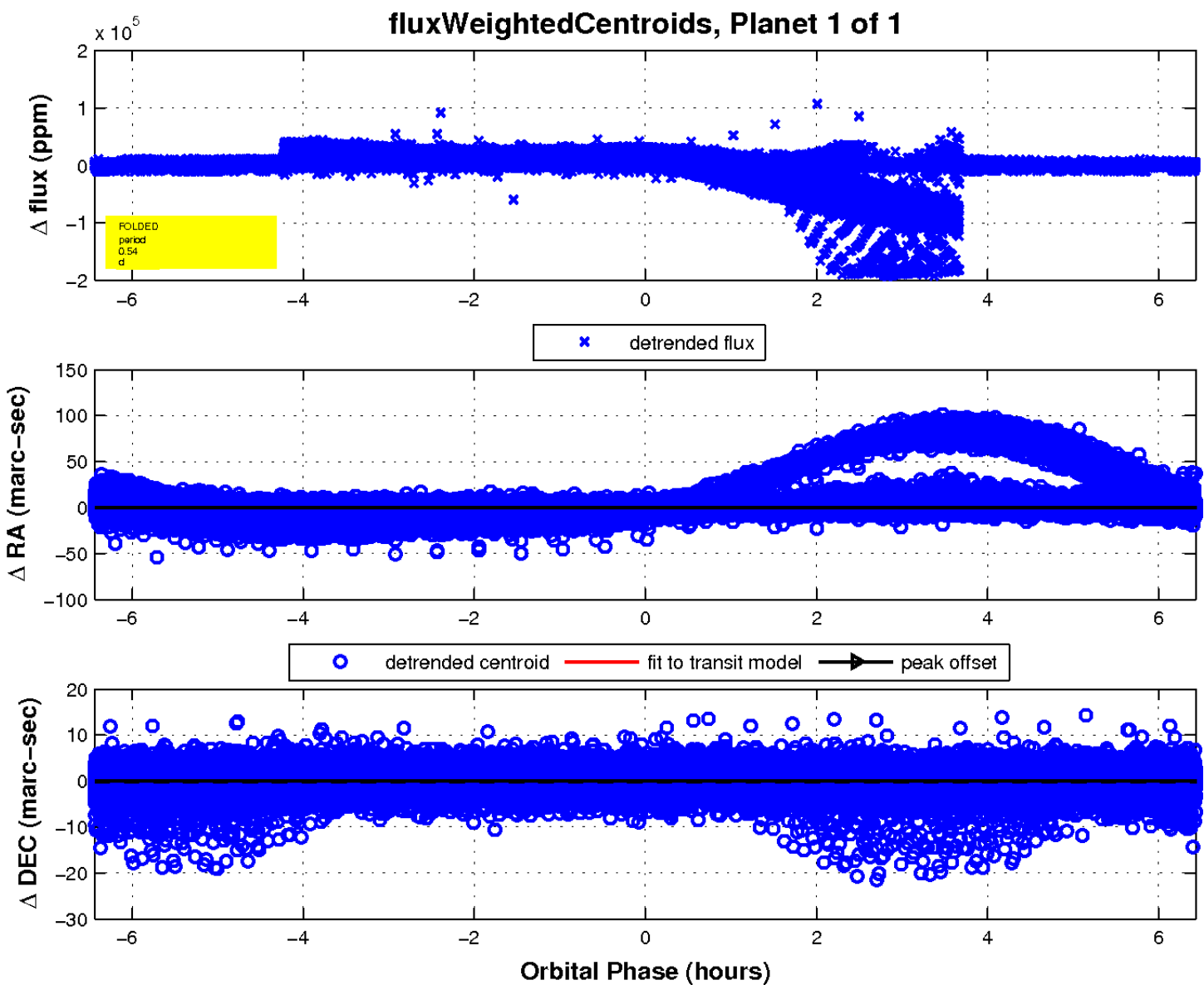
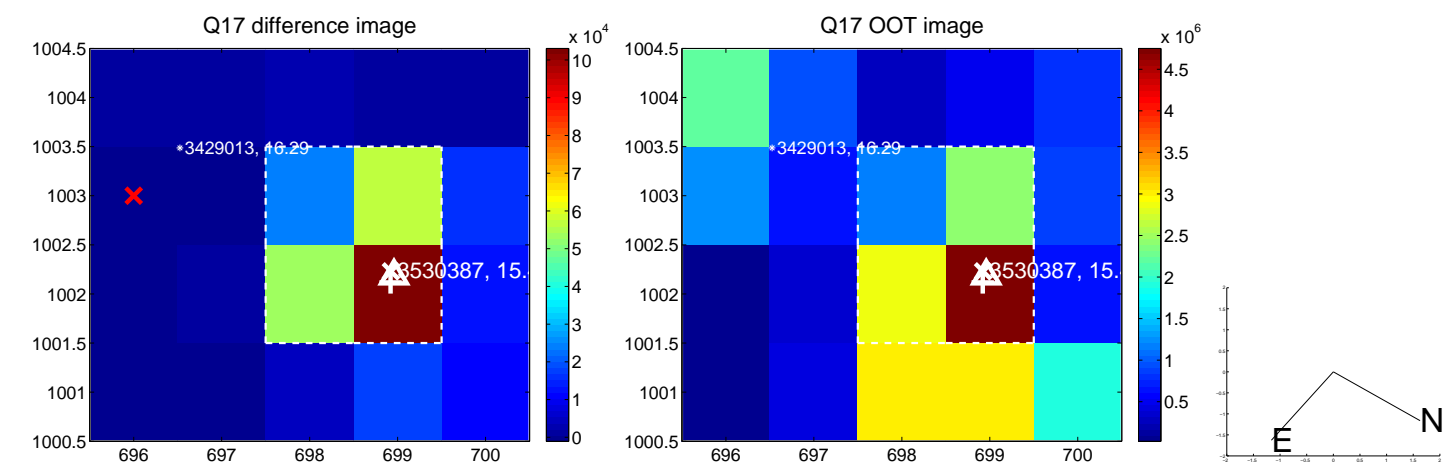


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

