

# KIC 006887983

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006887983-01	OBS	No	0.610050	131.875292	8.9	2.127	9.1	9.0	2.30	8912	0.77	90088.13

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006887983-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

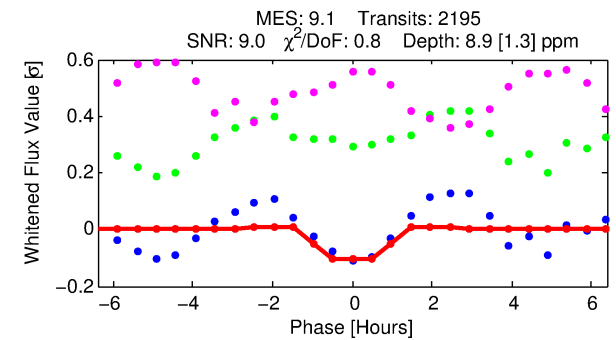
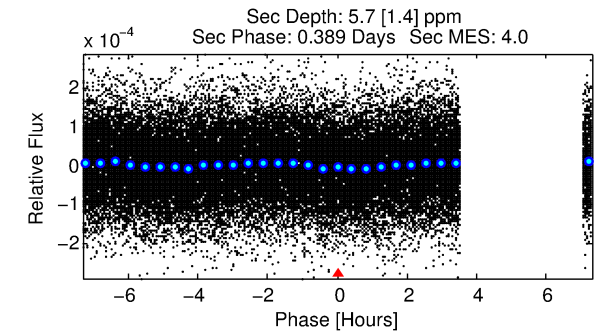
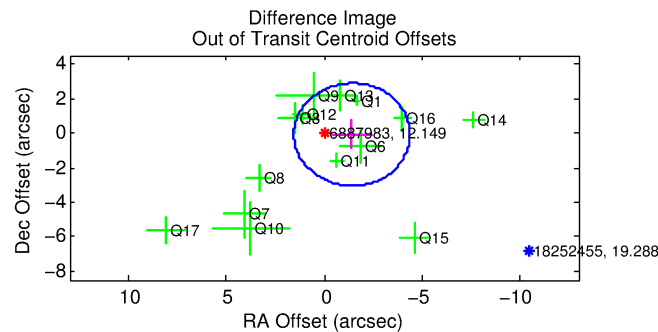
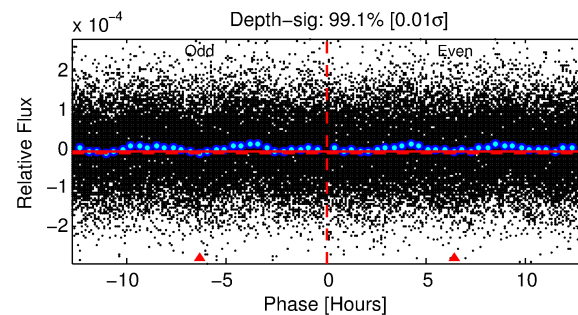
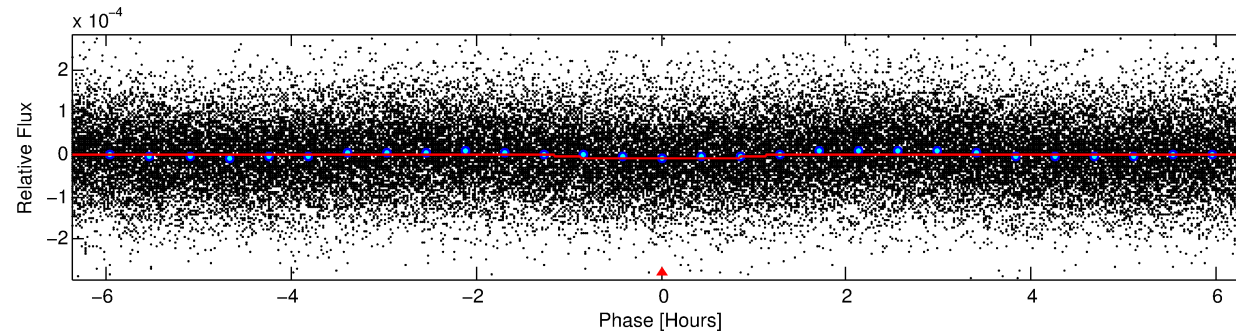
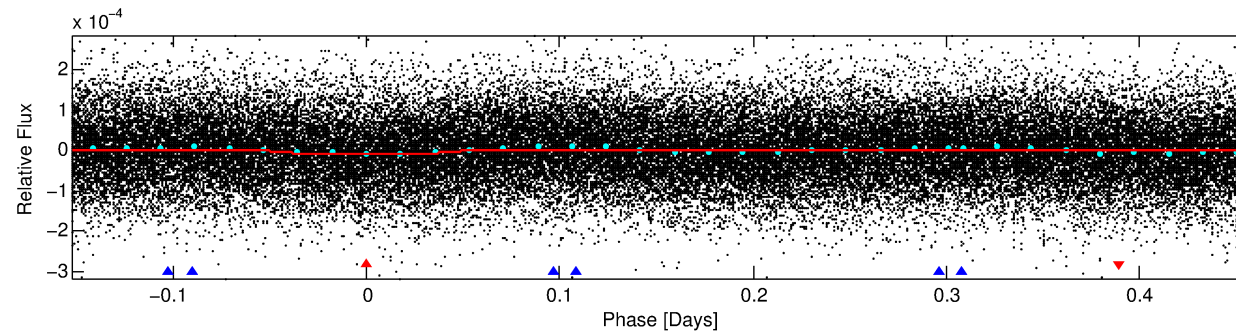
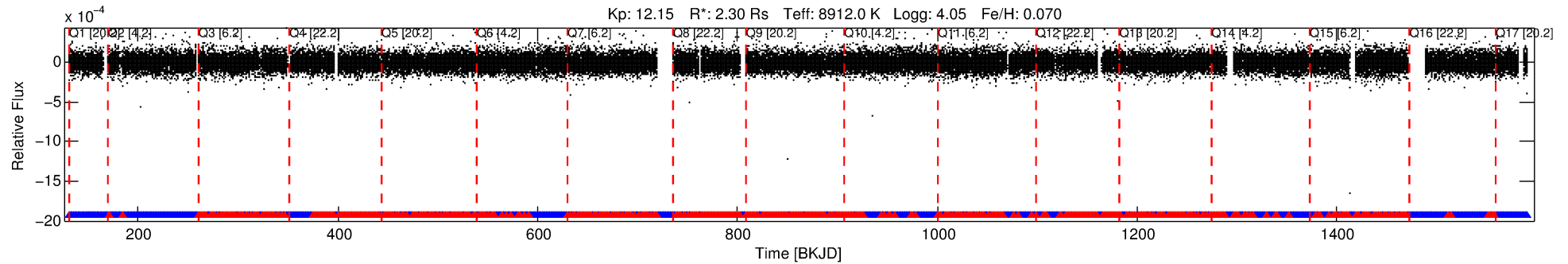
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006887983-01

No Significant Match Found

# DV One-Page Summary

KIC: 6887983 Candidate: 1 of 2 Period: 0.610 d



## DV Fit Results:

Period = 0.61005 [0.00001] d  
Epoch = 131.8753 [0.0030] BKJD  
Rp/R\* = 0.0031 [0.0004]  
a/R\* = 1.46 [0.61]  
b = 0.86 [0.25]  
Seff = 90088.13 [37241.29]  
Teq = 4418 [457] K  
Rp = 0.77 [0.29] Re  
a = 0.0182 [0.0049] AU  
Ag = 1.75 [0.90] [0.83 $\sigma$ ]  
Teffp = 7857 [799] K [3.74 $\sigma$ ]

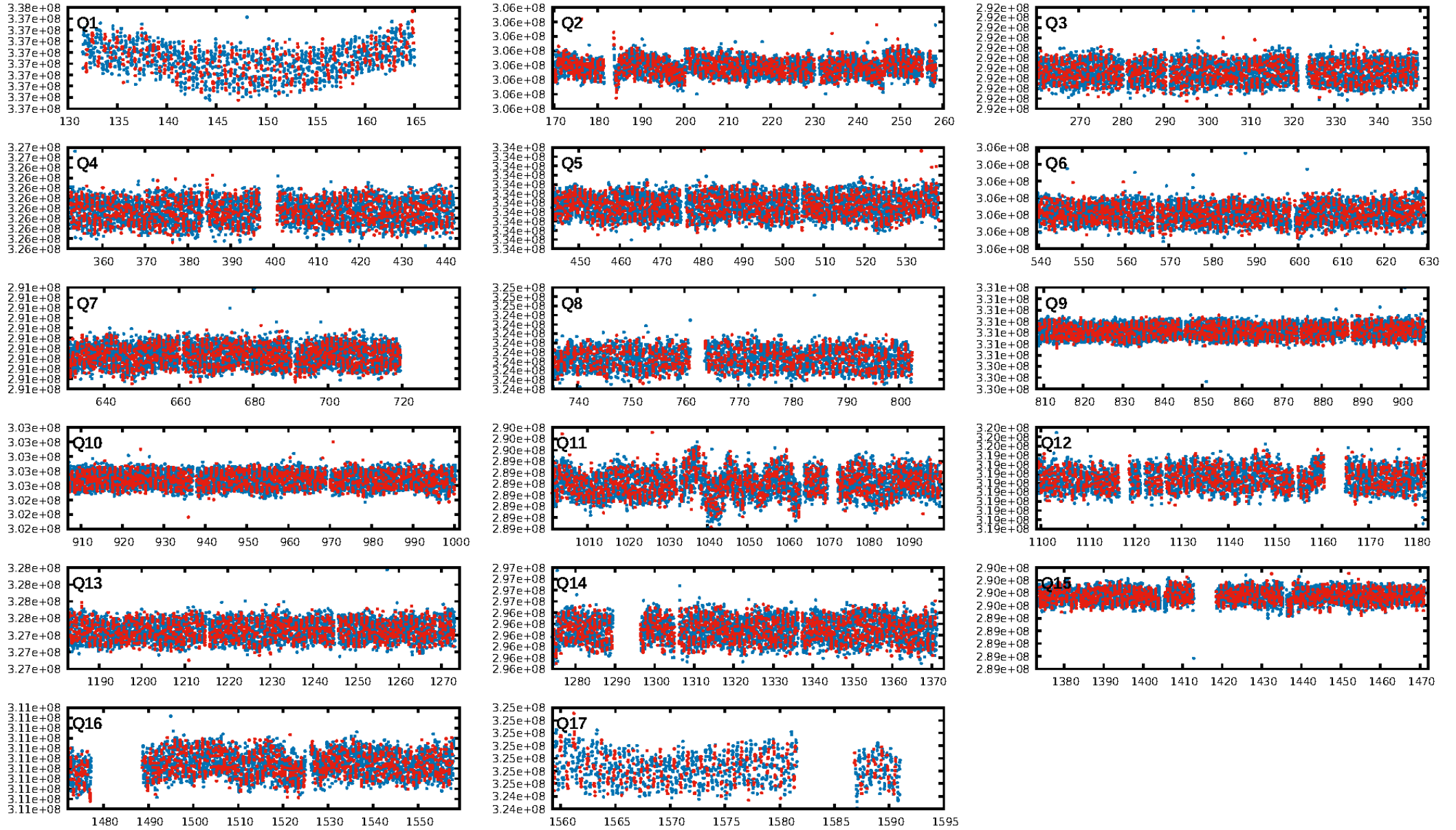
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [1621.65 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.17e-15  
RollingBand-igt: 0.62 [1298/2096]  
GhostDiagnostic-chr: 10.06  
Centroid-sig: 5.8%  
Centroid-so: 2.143 arcsec [1.39 $\sigma$ ]  
OotOffset-rm: 1.417 arcsec [1.43 $\sigma$ ]  
OotOffset-st: 3/4/3/4 [14]  
KicOffset-rm: 1.508 arcsec [1.44 $\sigma$ ]  
KicOffset-st: 3/4/3/4 [14]  
DiffImageQuality-fgm: 0.36 [5/14]  
DiffImageOverlap-fno: 1.00 [17/17]

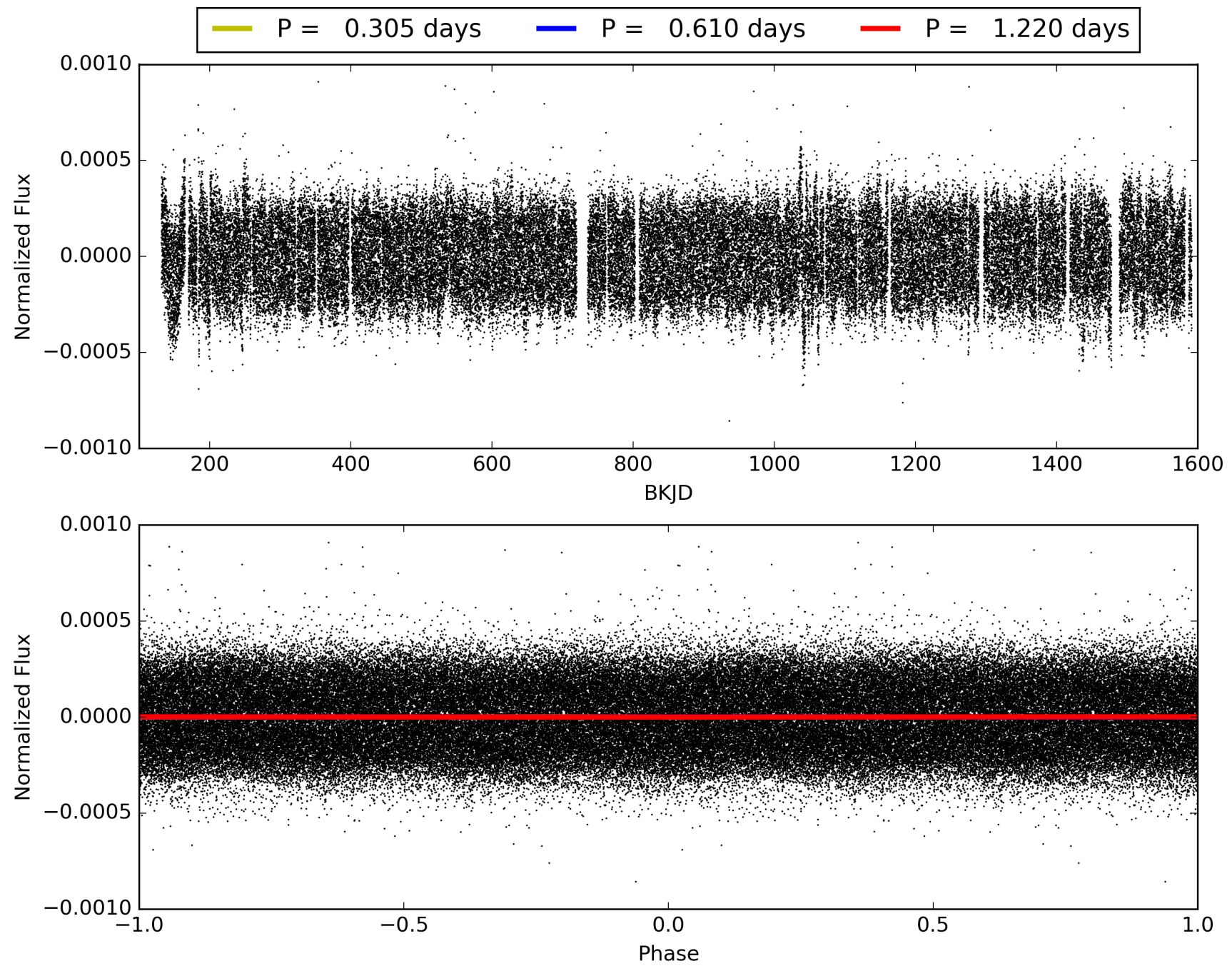
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:13:56 Z

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

# TCE 006887983-01, PDC Light Curves

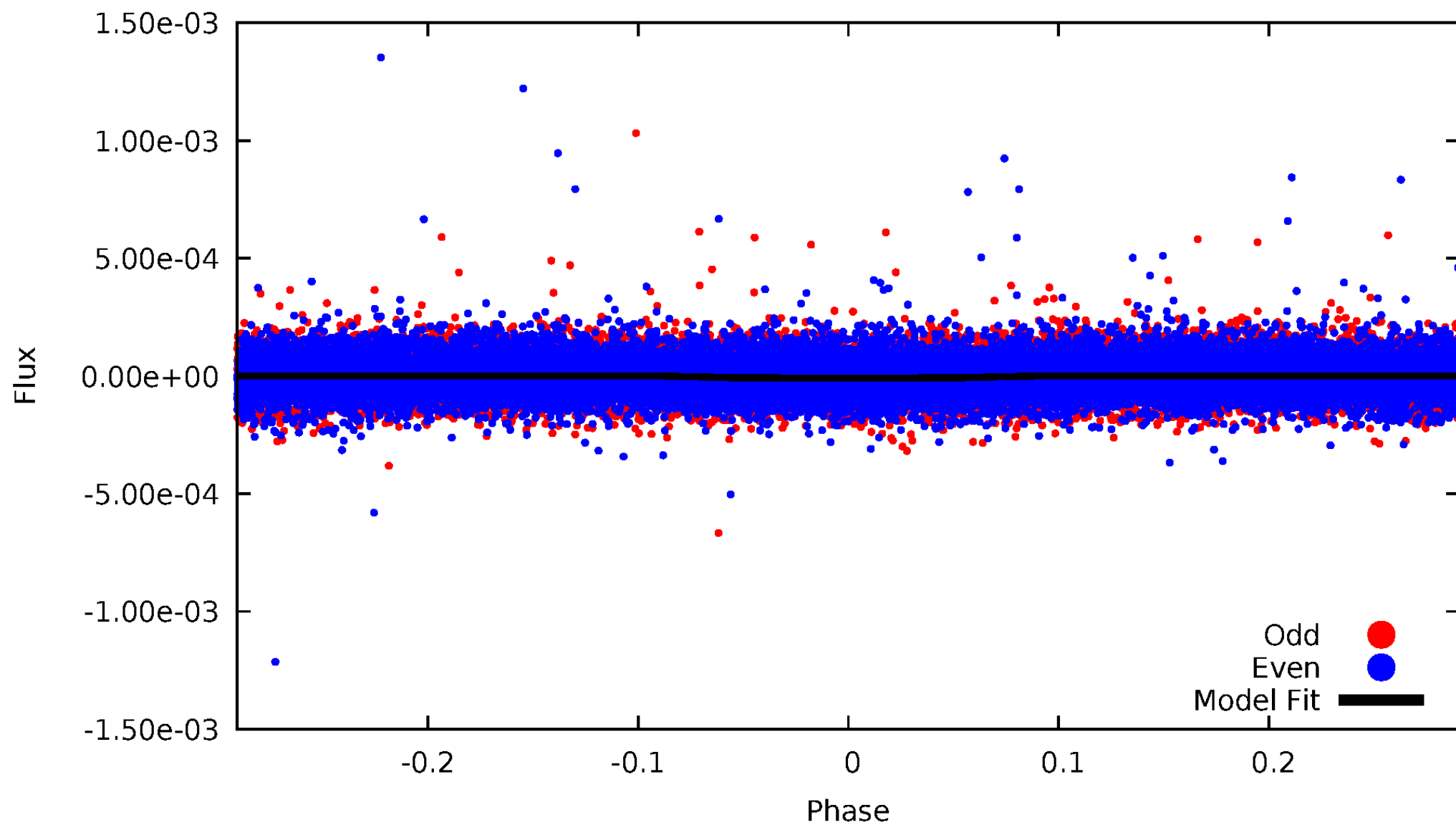


TCE 006887983-01



# DV Odd/Even

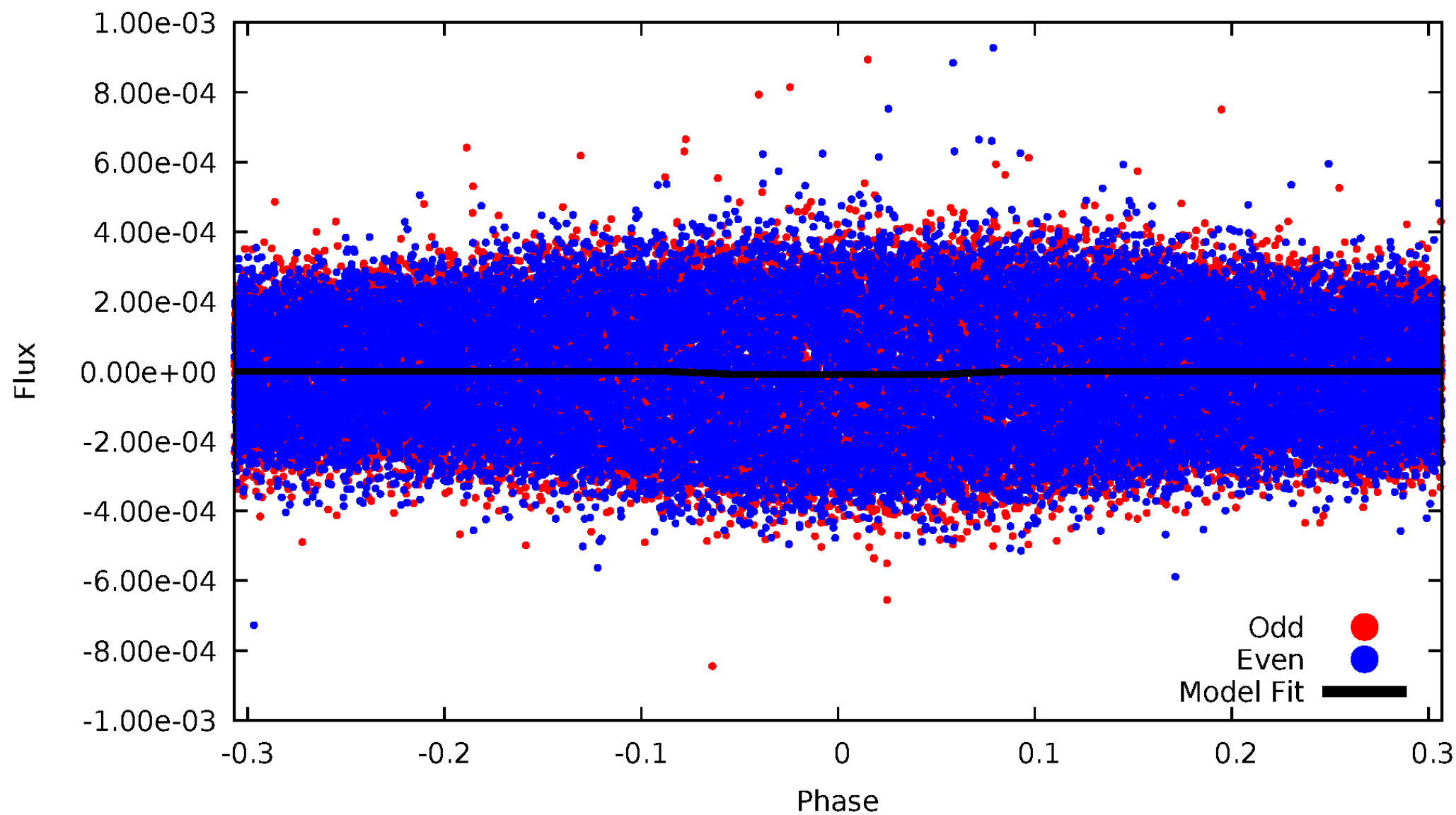
TCE 006887983-01





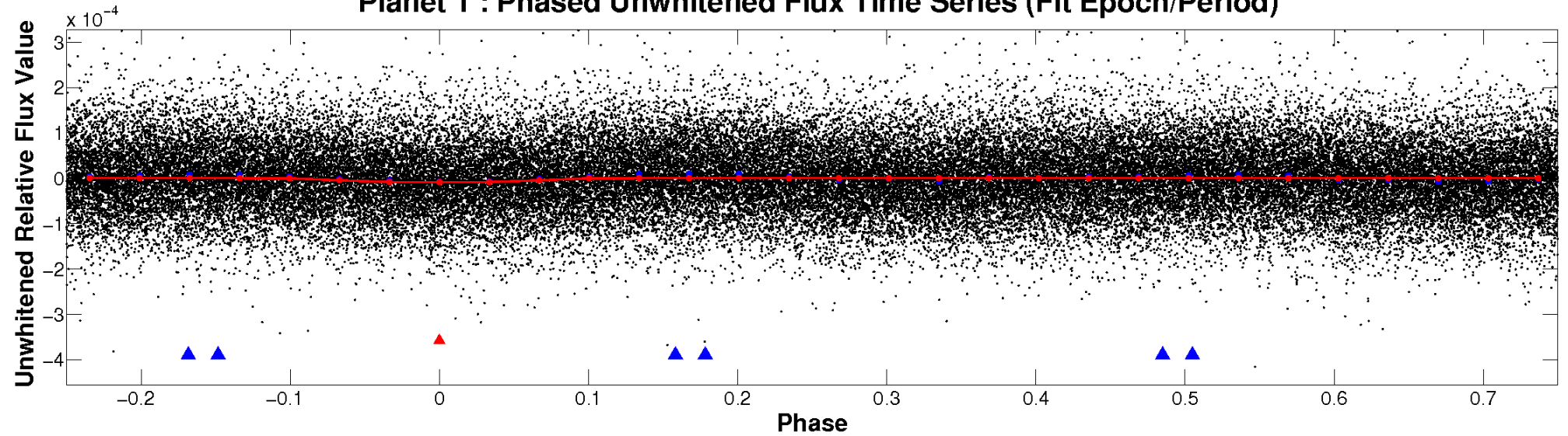
# ALT Odd/Even

TCE 006887983-01

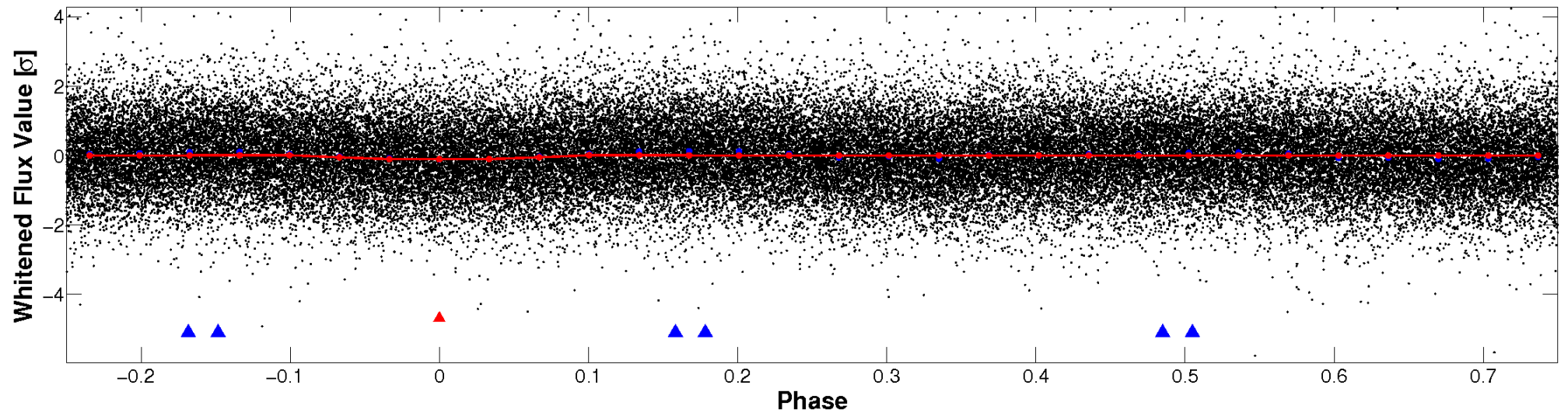


# Non-Whitened Vs. Whitened Light Curve

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

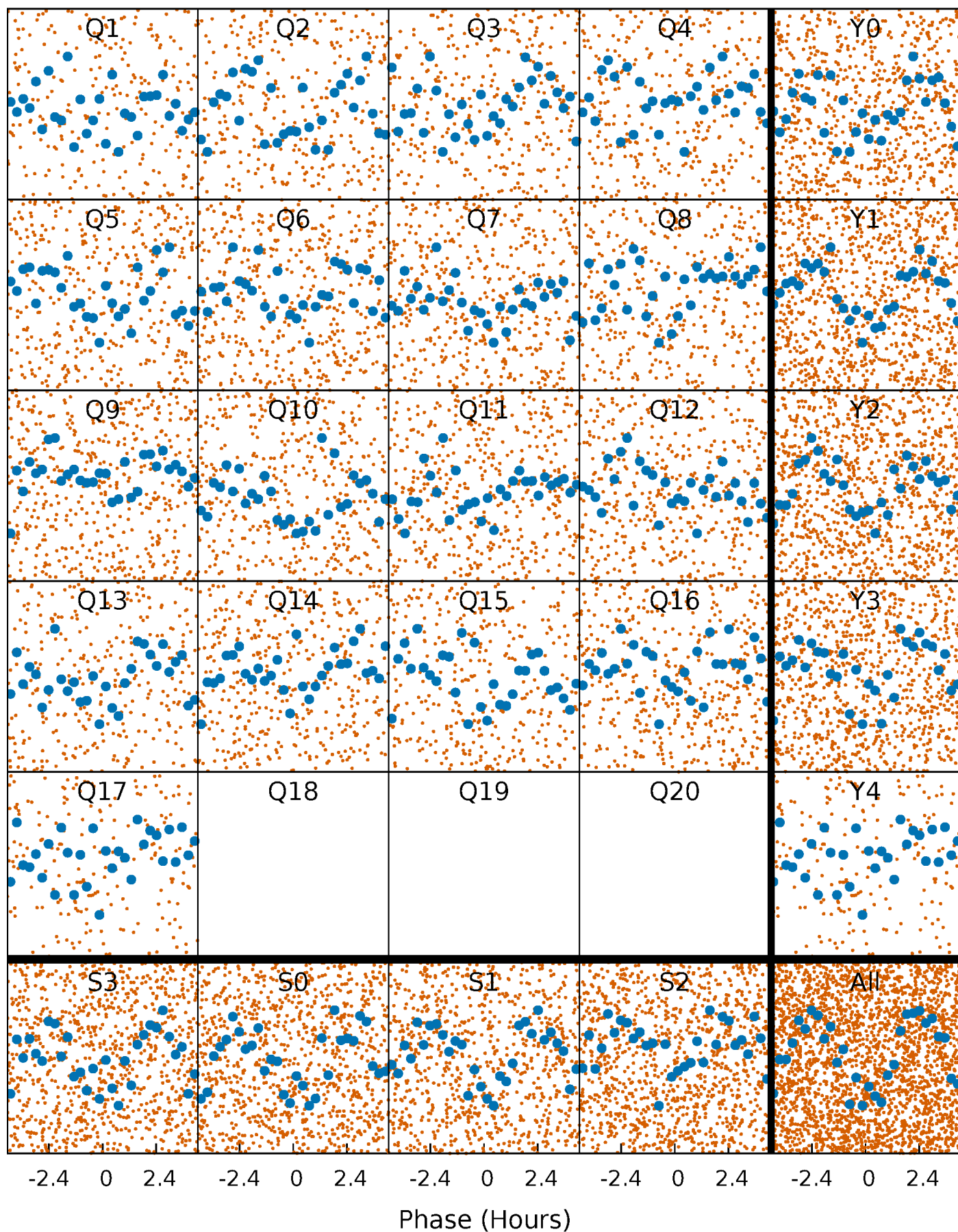


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

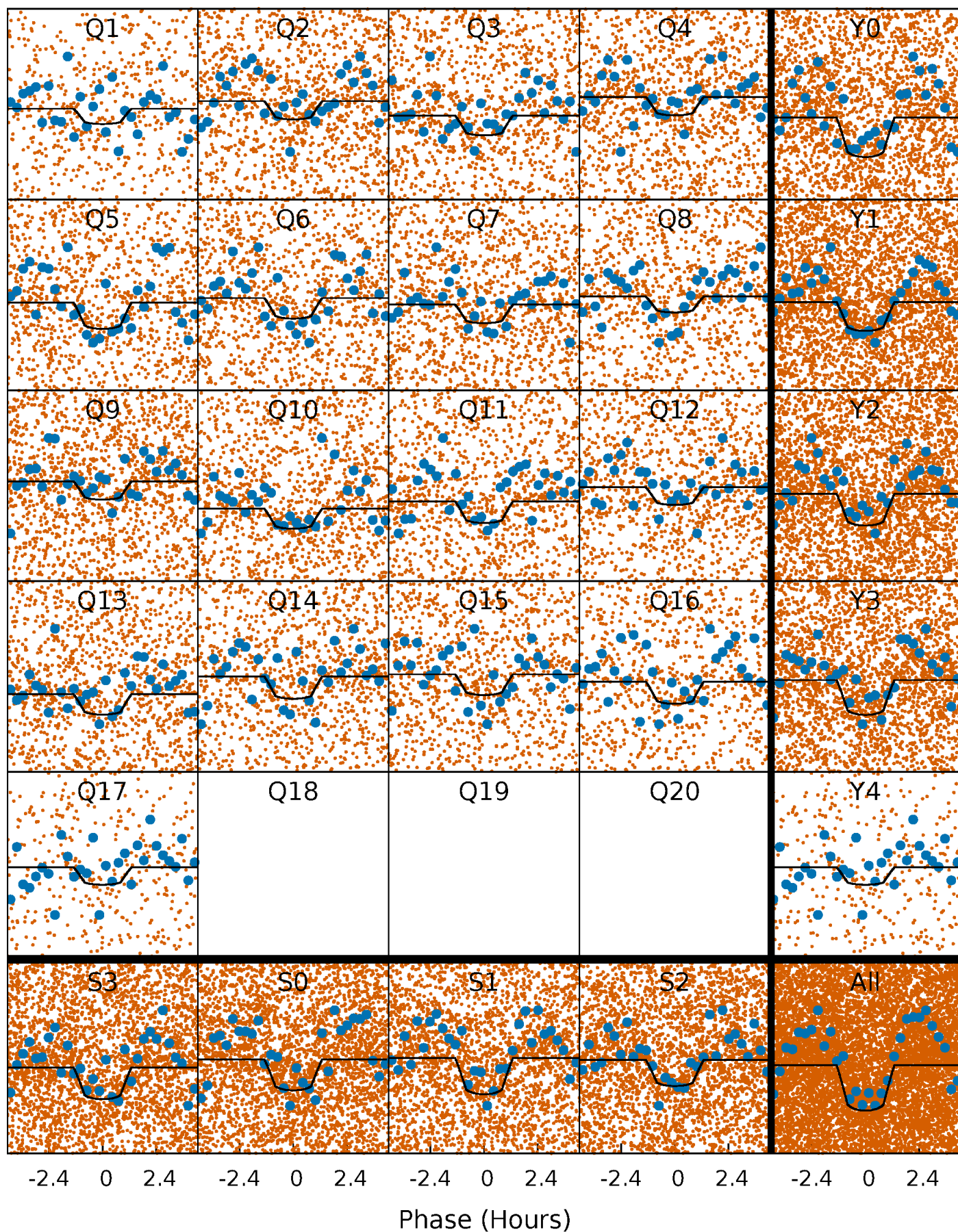
TCE 006887983-01 P= 0.610050 Days  $T_0=131.875292$  (BKJD)





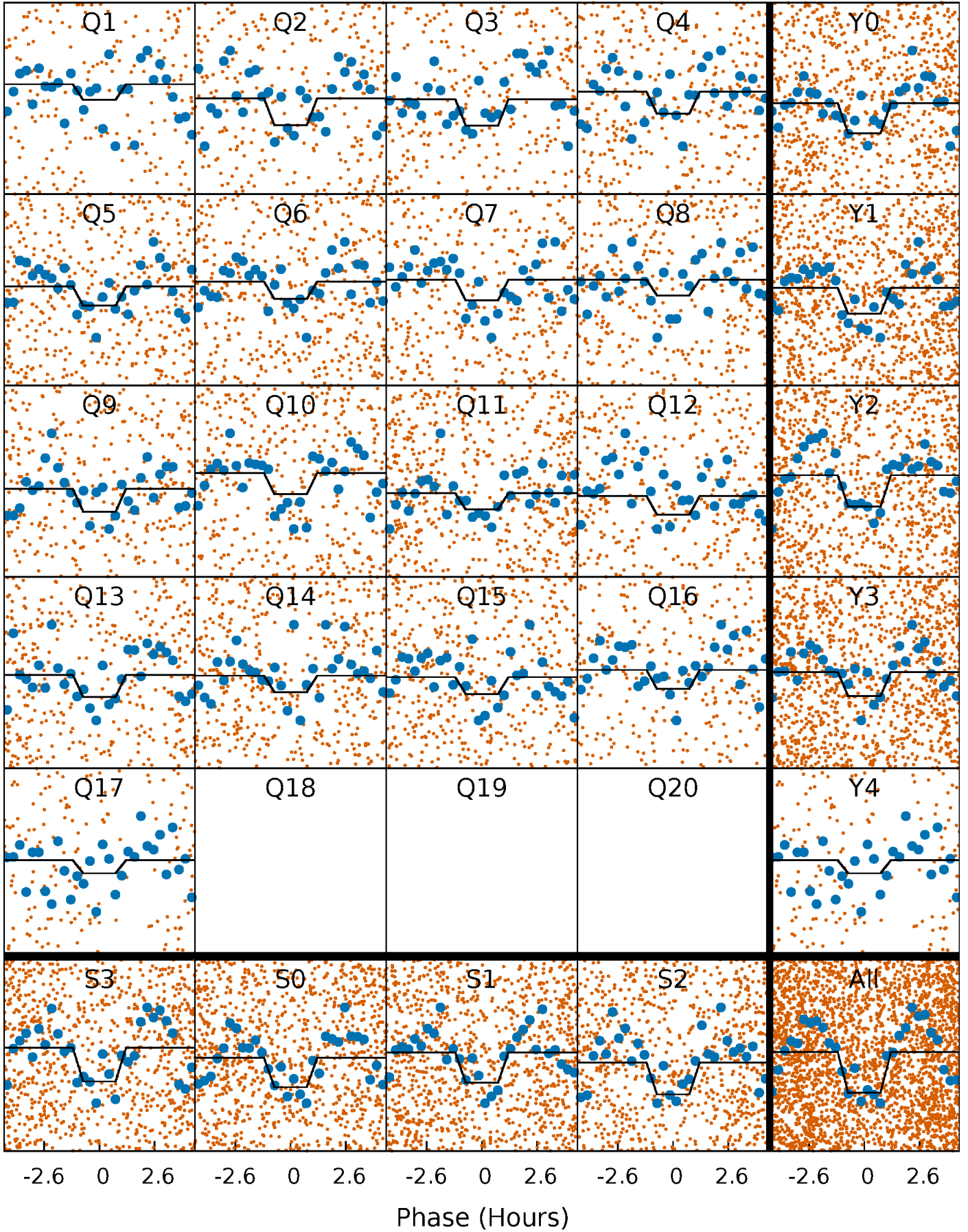
# DV Quarter-Phased Transit Curves

TCE 006887983-01 P= 0.610050 Days  $T_0=131.875292$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

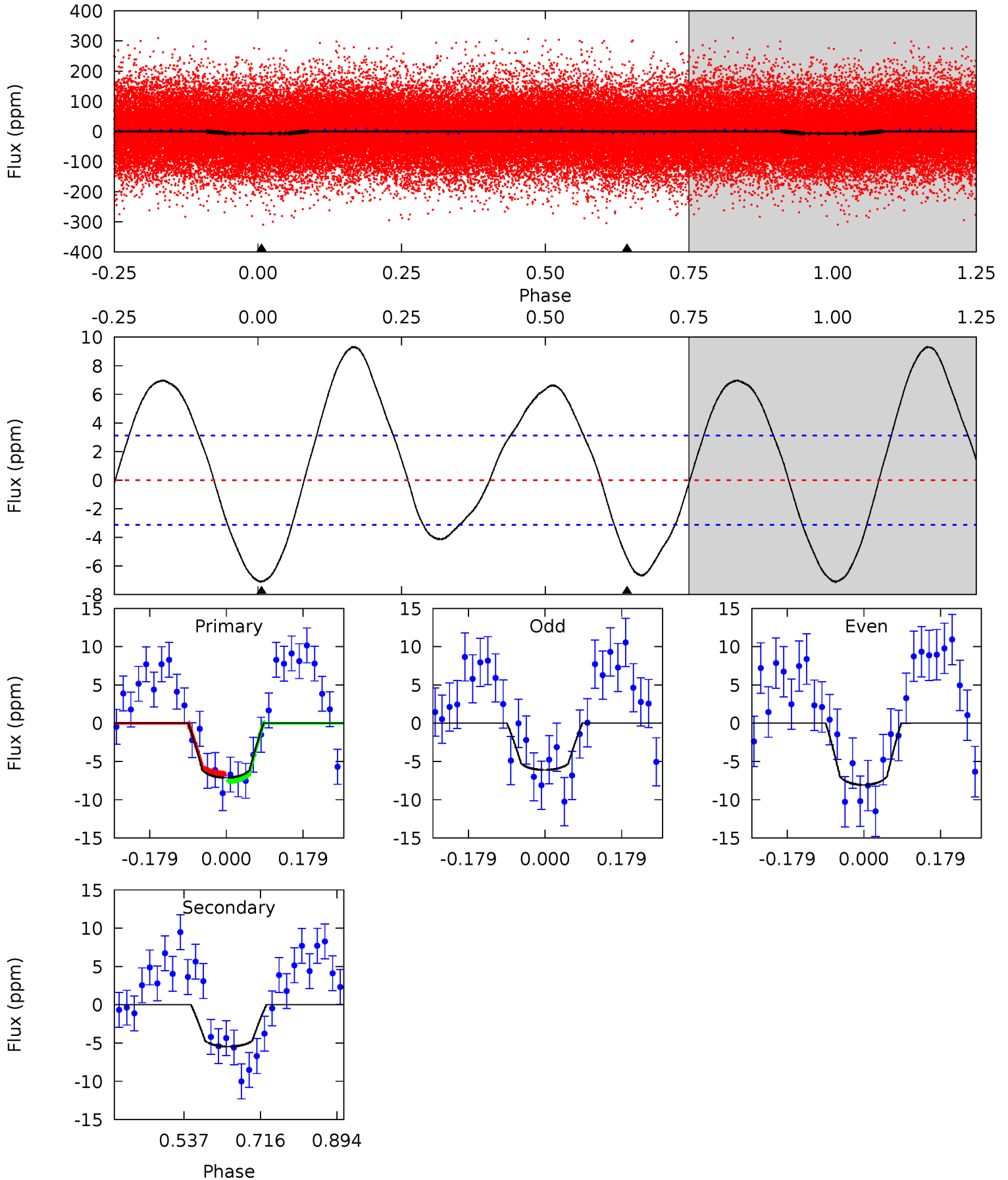
TCE 006887983-01 P= 0.610053 Days  $T_0=131.872145$  (BKJD)



# DV Model-Shift Uniqueness Test

006887983-01, P = 0.610050 Days, E = 131.265242 Days

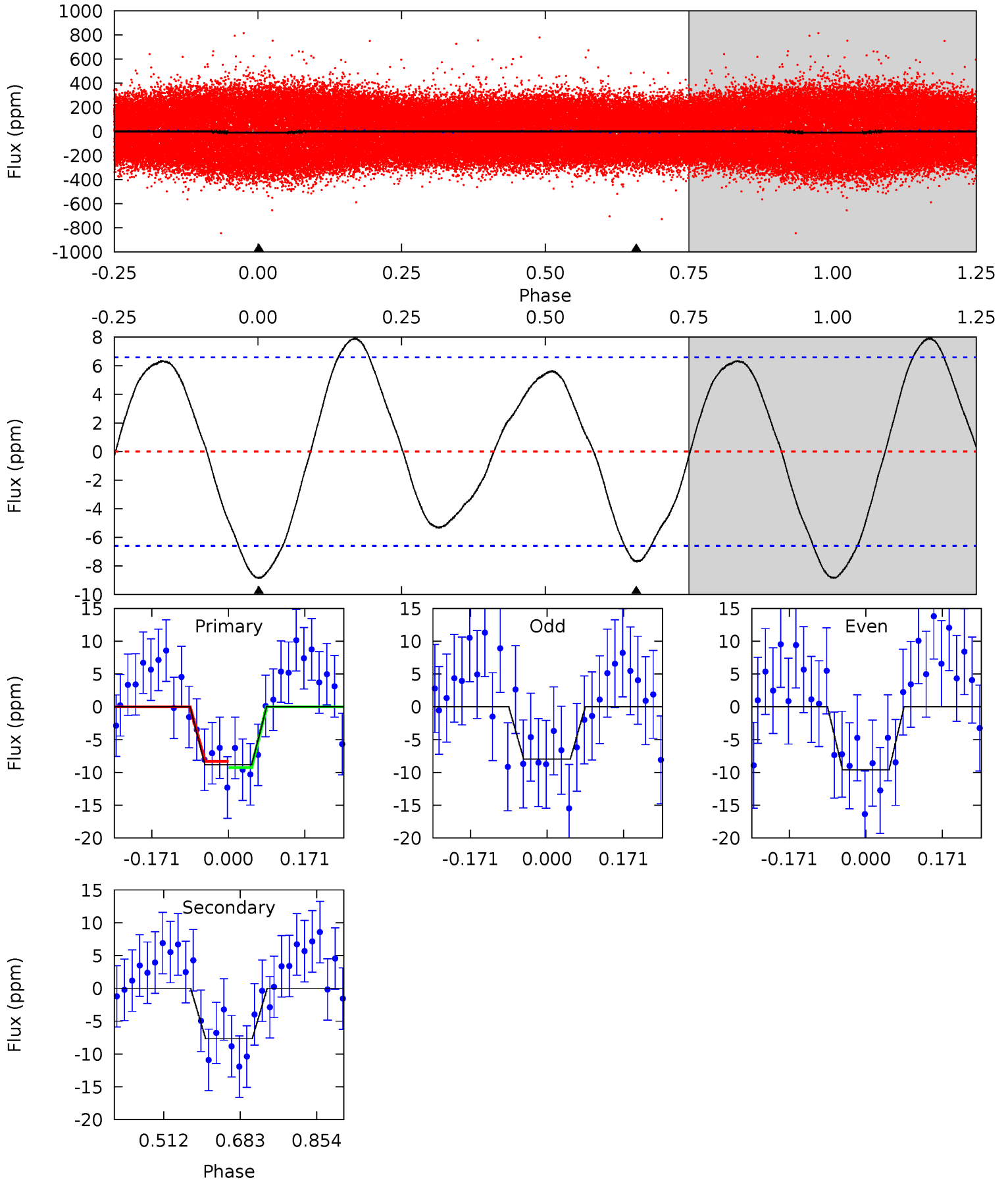
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	7.76	0	0	4.44	1.34	5.27	10.1	10.1	7.76	7.76	1.39	0.99	0.57	0.65



# Alt Model-Shift Uniqueness Test

006887983-01, P = 0.610053 Days, E = 131.262092 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
5.98	5.19	0	0	4.45	1.37	2.71	5.98	5.98	5.19	5.19	0.54	1.18	0.47	0.27





### Stellar Parameters For KIC 006887983

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8912^{+246}_{-422}$	$4.050^{+0.153}_{-0.187}$	$0.070^{+0.300}_{-0.600}$	$2.299^{+0.791}_{-0.593}$	$2.164^{+0.392}_{-0.523}$	$0.251^{+0.210}_{-0.133}$
	+3%/-5%	+4%/-5%	+429%/-857%	+34%/-26%	+18%/-24%	+84%/-53%
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 006887983-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-5 \pm 1$	$0.77^{+0.17}_{-0.15}$	$6154^{+494}_{-458}$	$7050^{+840}_{-714}$	$1.669^{+0.924}_{-0.573}$
Alt.	$-8 \pm 1$	$0.76^{+0.17}_{-0.15}$	$6190^{+519}_{-422}$	$8010^{+1231}_{-898}$	$2.378^{+1.394}_{-0.870}$

$T_{max}$  = 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

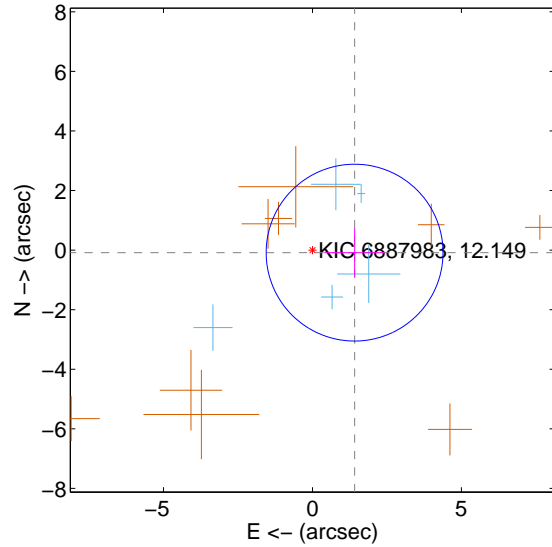
Supplemental centroid analysis for 006887983-01. Kepler magnitude: 12.15. Transit SNR 8.97

There are 5 quarters with good PRF difference image offsets

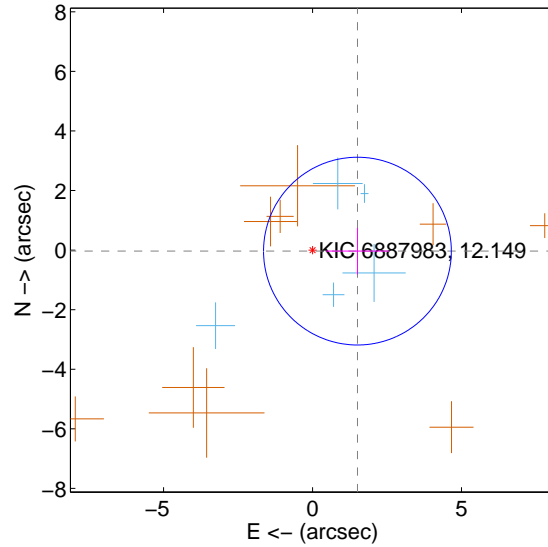
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.417 \pm 0.989$	1.43	$-1.415 \pm 1.015$	$-0.085 \pm 0.826$
PRF-fit source offset from KIC position	$1.508 \pm 1.051$	1.44	$-1.508 \pm 1.059$	$-0.034 \pm 0.781$
photometric centroid source offset	$2.14 \pm 1.54$	1.39	$-1.67 \pm 1.67$	$-1.34 \pm 1.32$

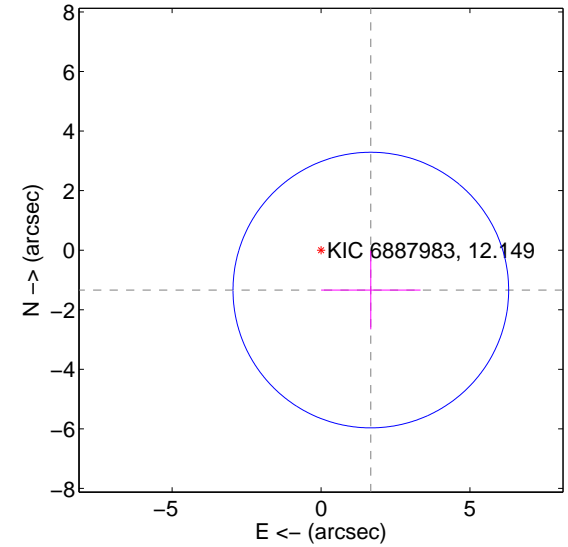
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

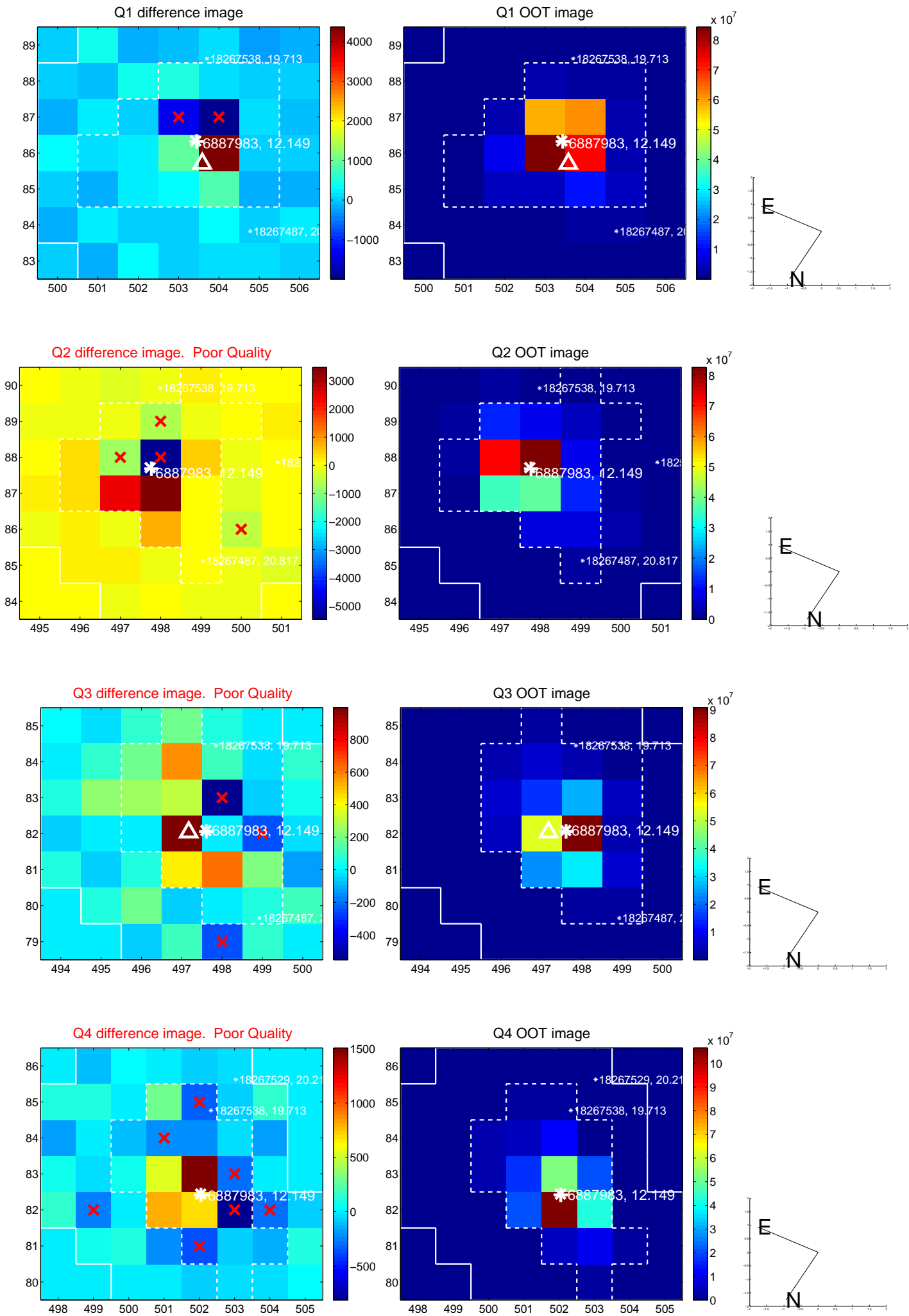


offset from photometric centroids

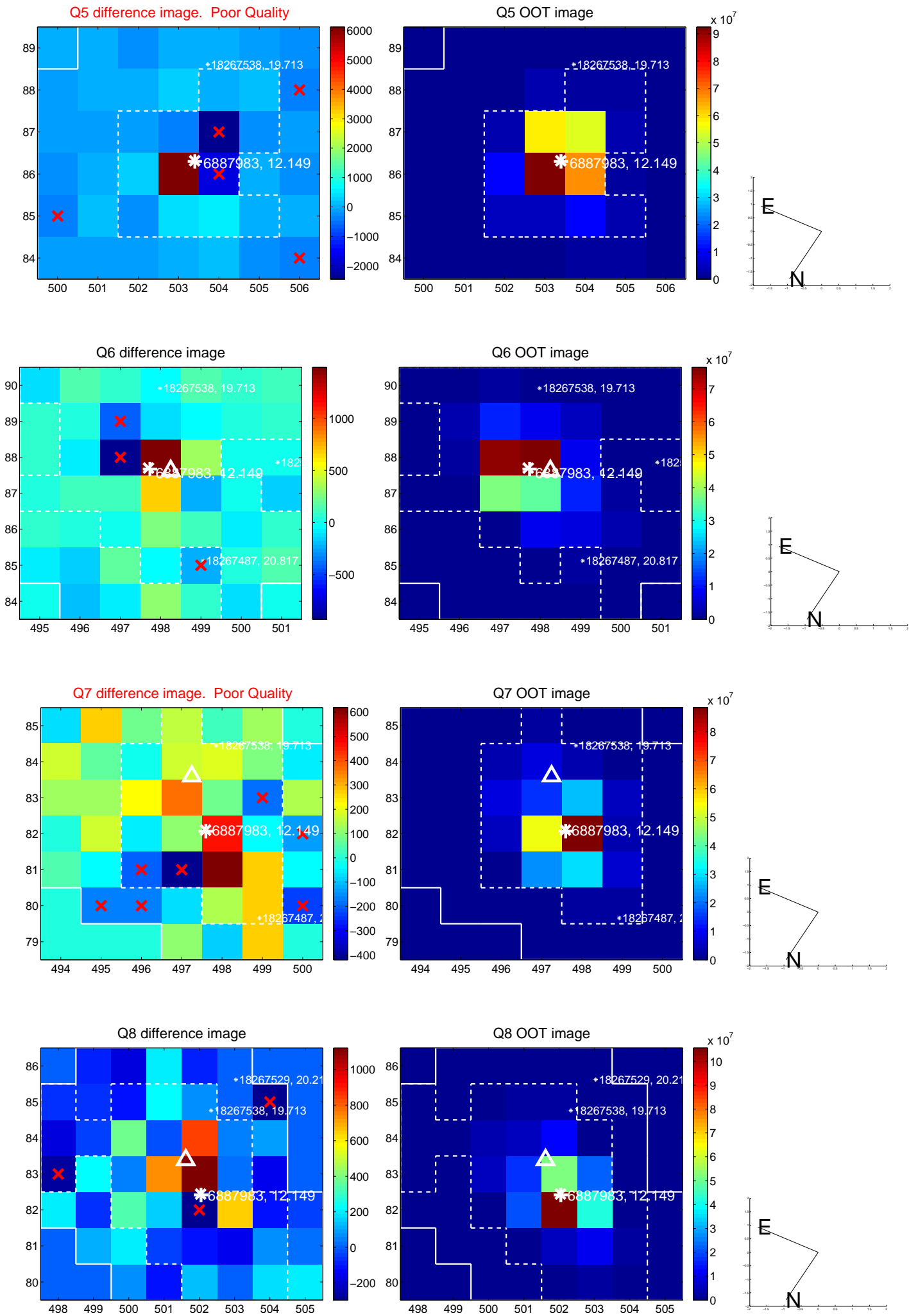


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

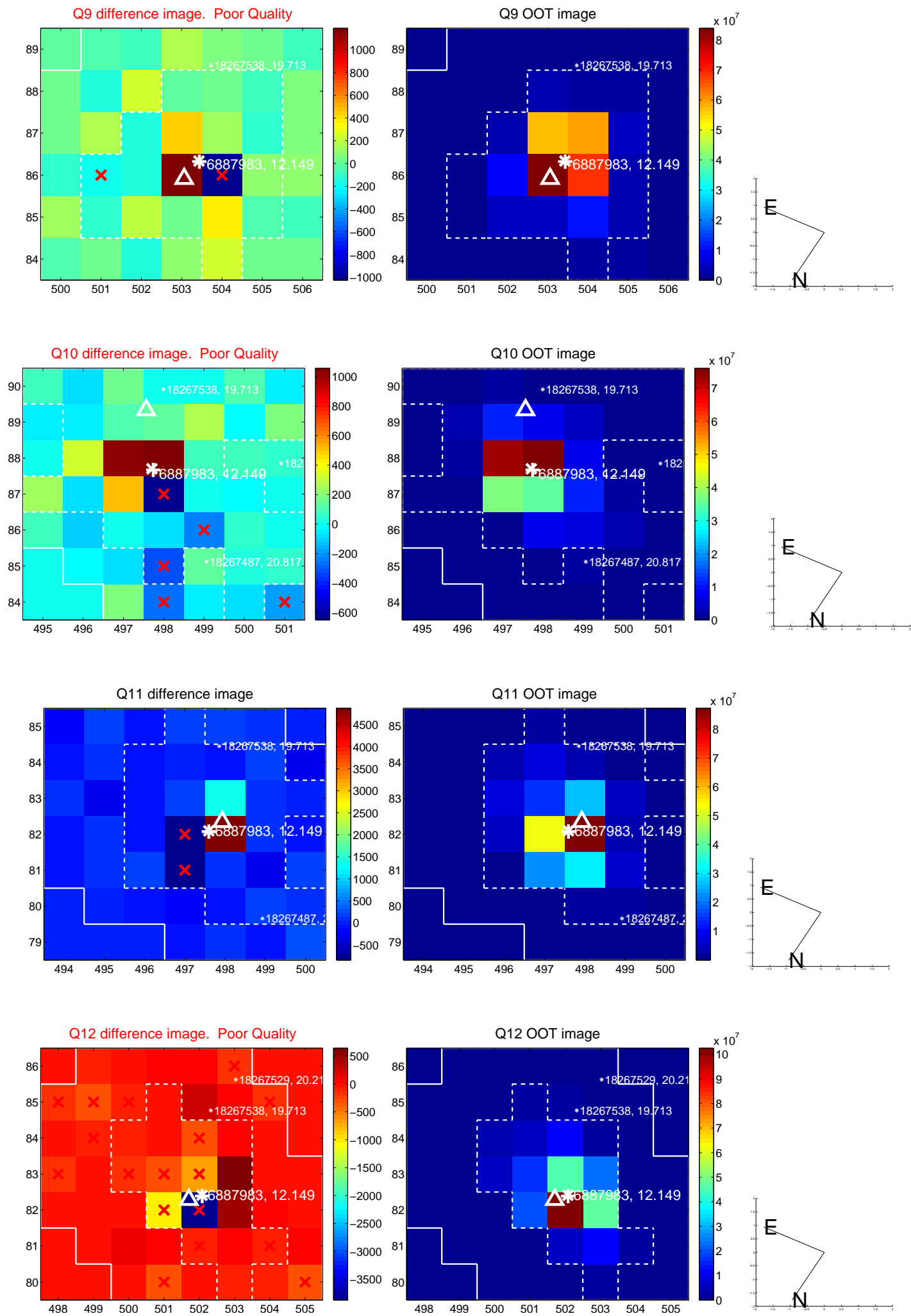
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



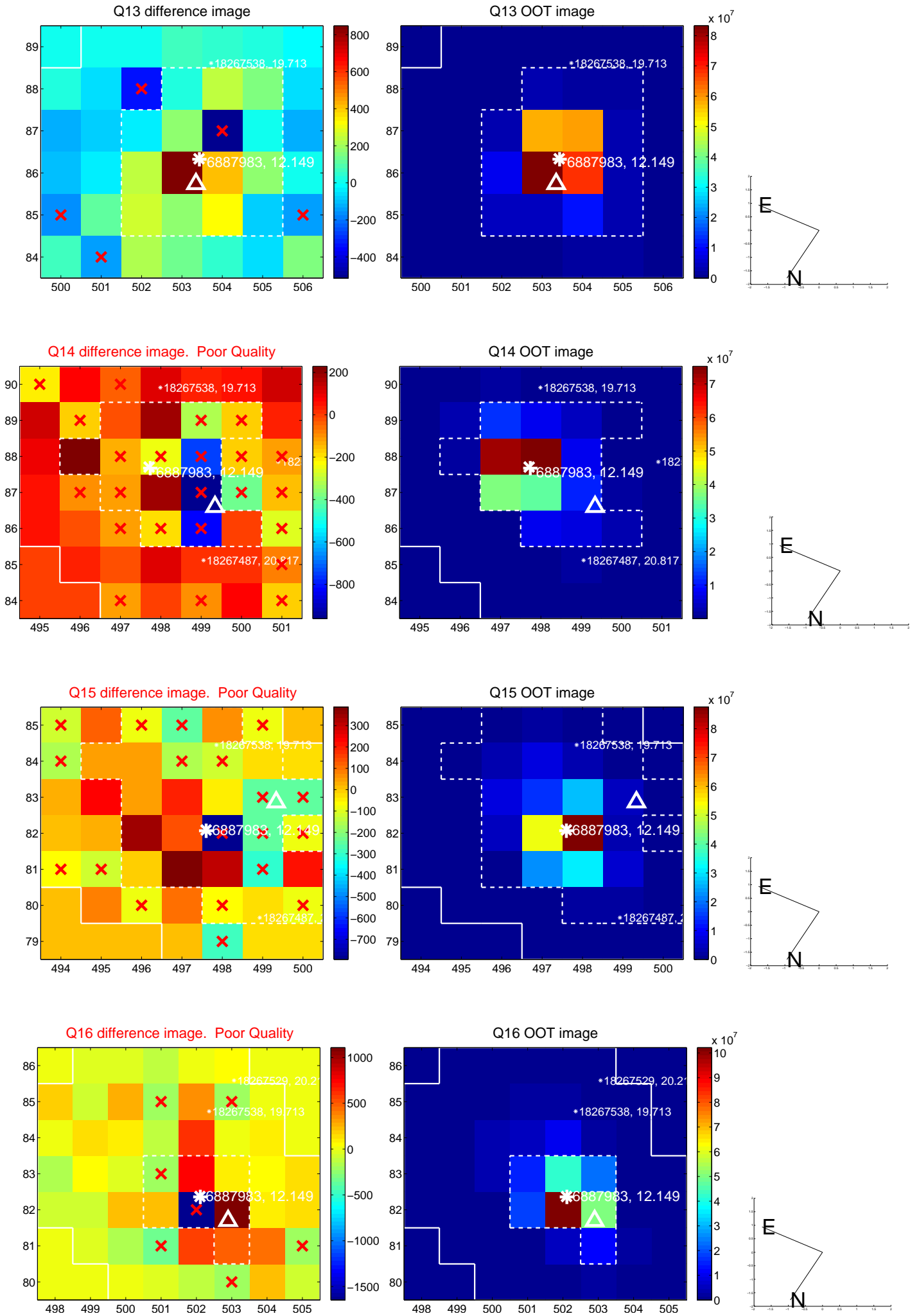
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

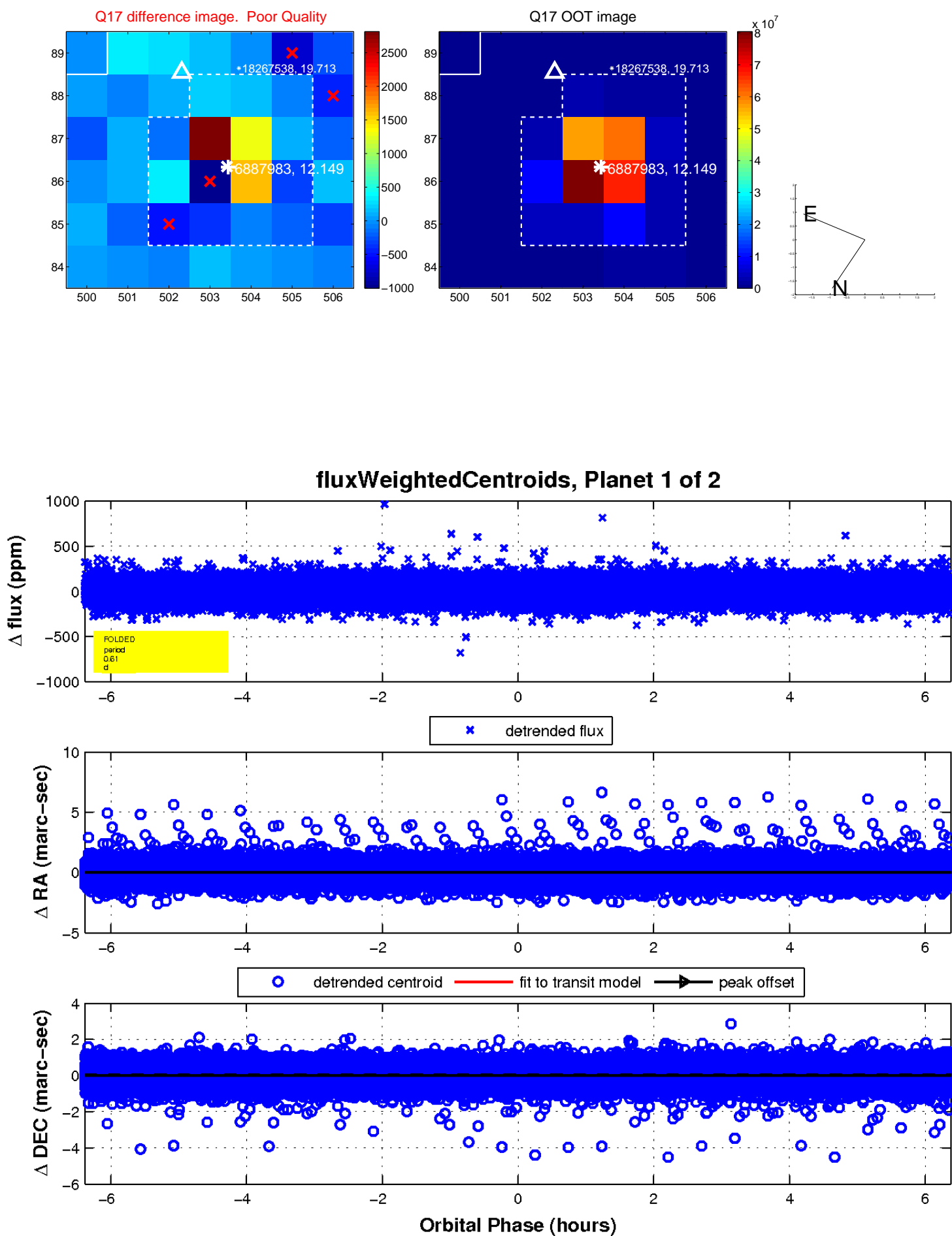


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

