

# KIC 007685307

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007685307-01	OBS	No	3.534128	134.837220	21.0	18.448	10.0	9.8	2.96	7333	1.92	6924.81

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007685307-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

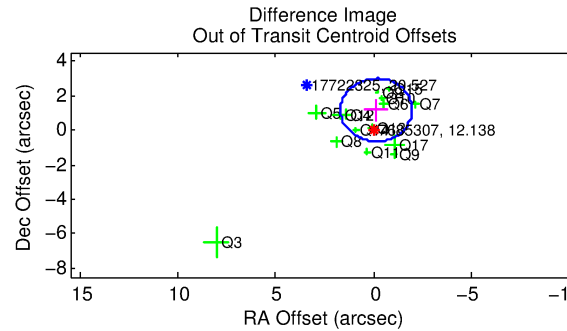
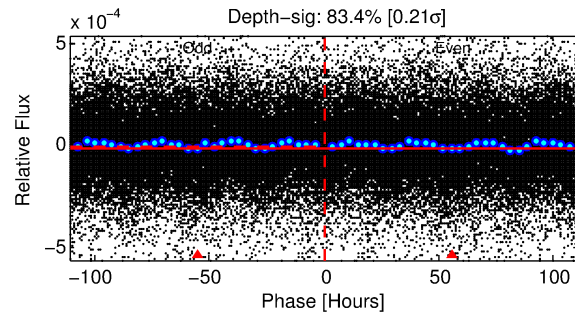
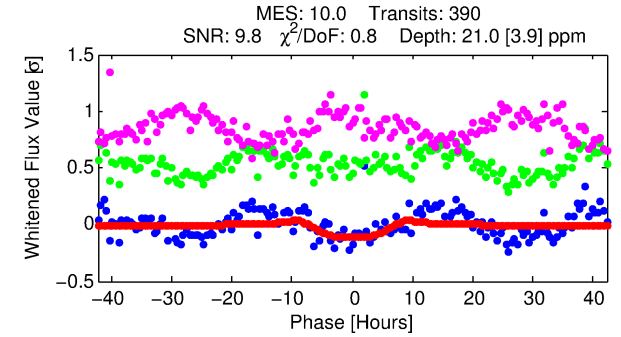
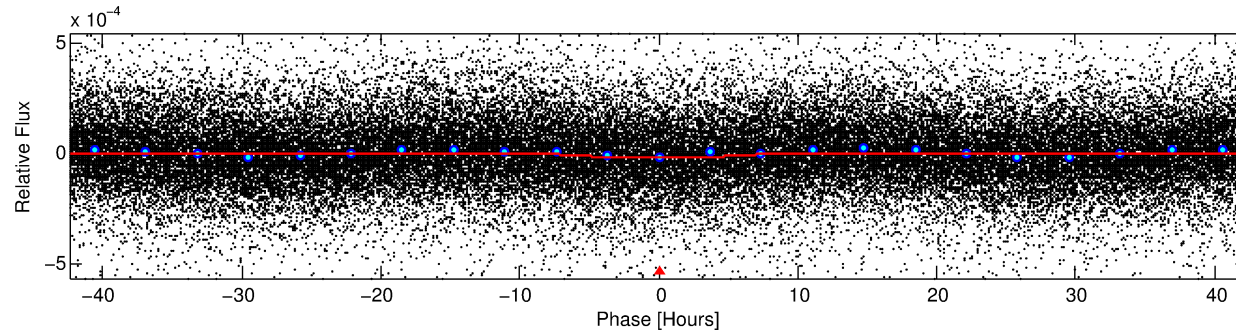
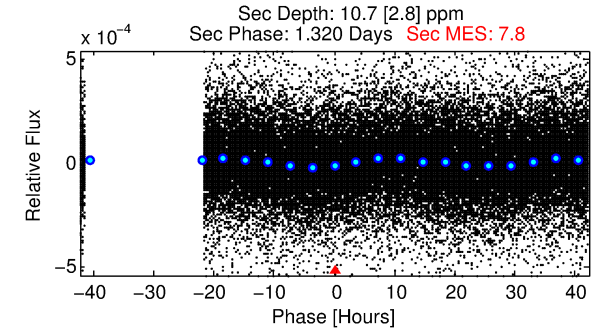
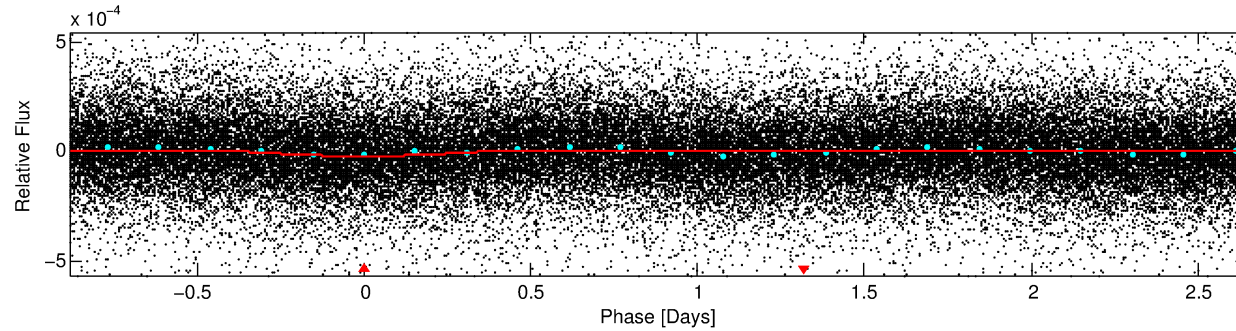
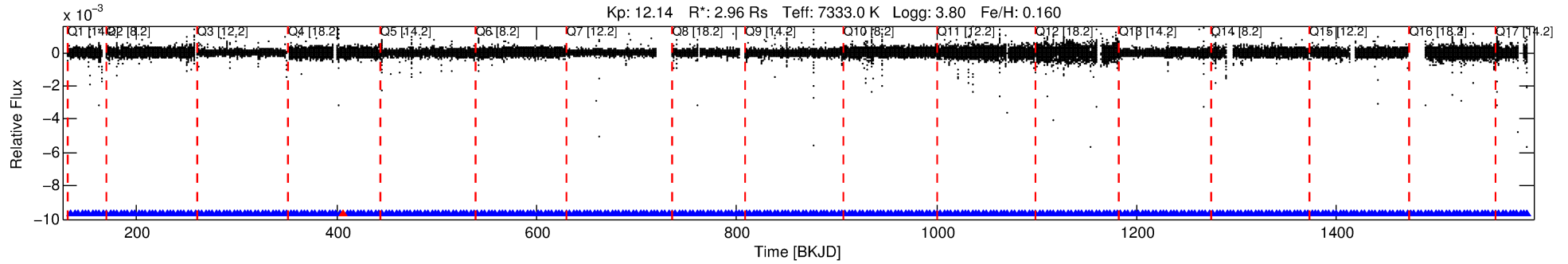
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007685307-01

No Significant Match Found

# DV One-Page Summary

KIC: 7685307 Candidate: 1 of 1 Period: 3.534 d



## DV Fit Results:

Period = 3.53413 [0.00015] d  
Epoch = 134.8372 [0.0322] BKJD  
Rp/R\* = 0.0059 [0.0007]  
a/R\* = 1.02 [0.01]  
b = 0.99 [0.00]  
Seff = 6924.81 [2332.18]  
Teq = 2326 [196] K  
Rp = 1.92 [0.53] Re  
a = 0.0572 [0.0126] AU  
Ag = 5.21 [2.53] [1.66σ]  
Teffp = 5433 [482] K [5.97σ]

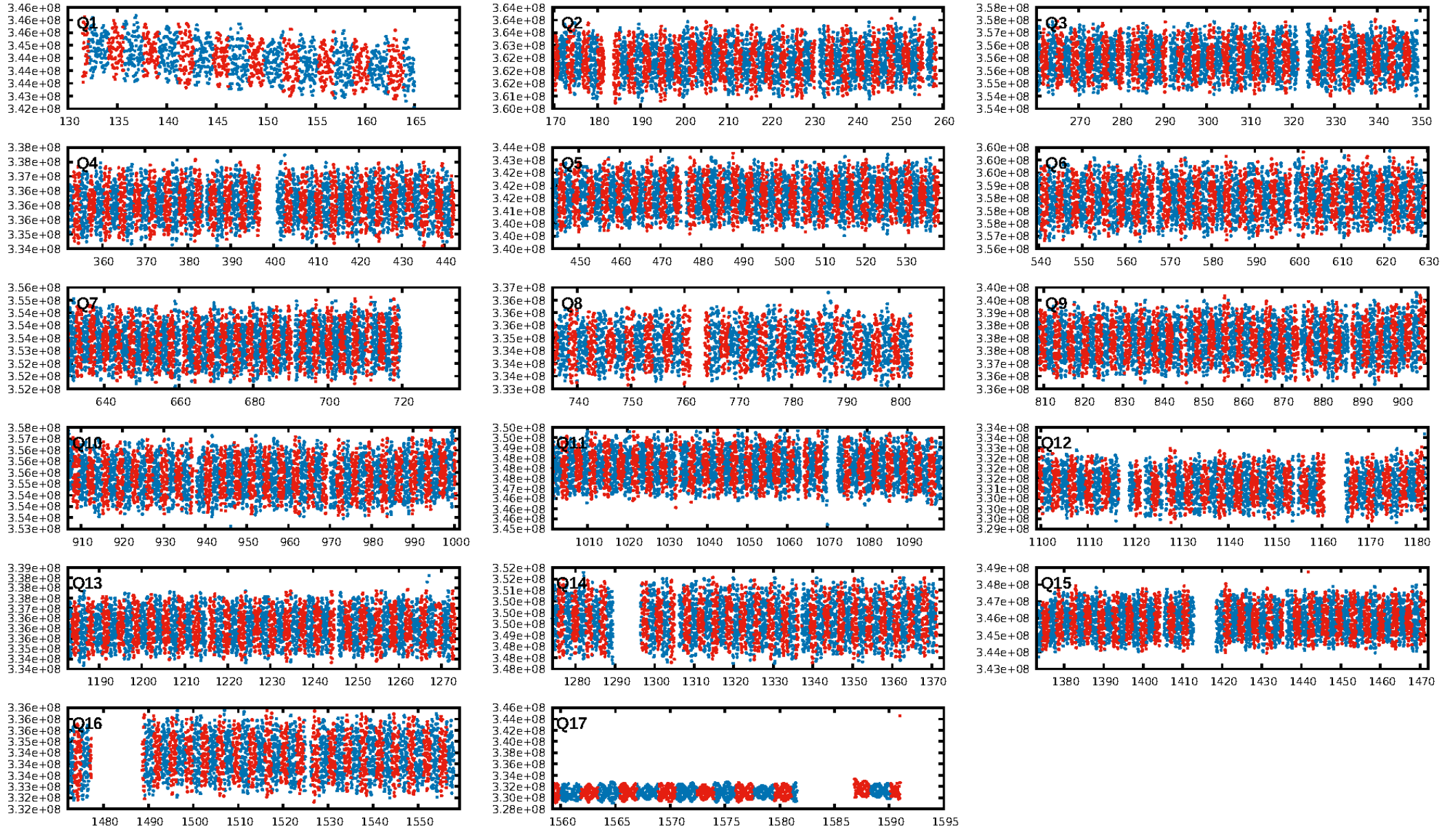
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 5.17e-13  
RollingBand-fgt: 1.00 [370/371]  
GhostDiagnostic-chr: 2.441  
Centroid-sig: 1.0%  
Centroid-so: 1.133 arcsec [1.80σ]  
OotOffset-rm: 1.168 arcsec [1.92σ]  
KicOffset-rm: 1.061 arcsec [1.79σ]  
OotOffset-st: 4/4/3/4 [15]  
KicOffset-st: 4/4/3/4 [15]  
DiffImageQuality-fgm: 0.73 [11/15]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:42:42 Z

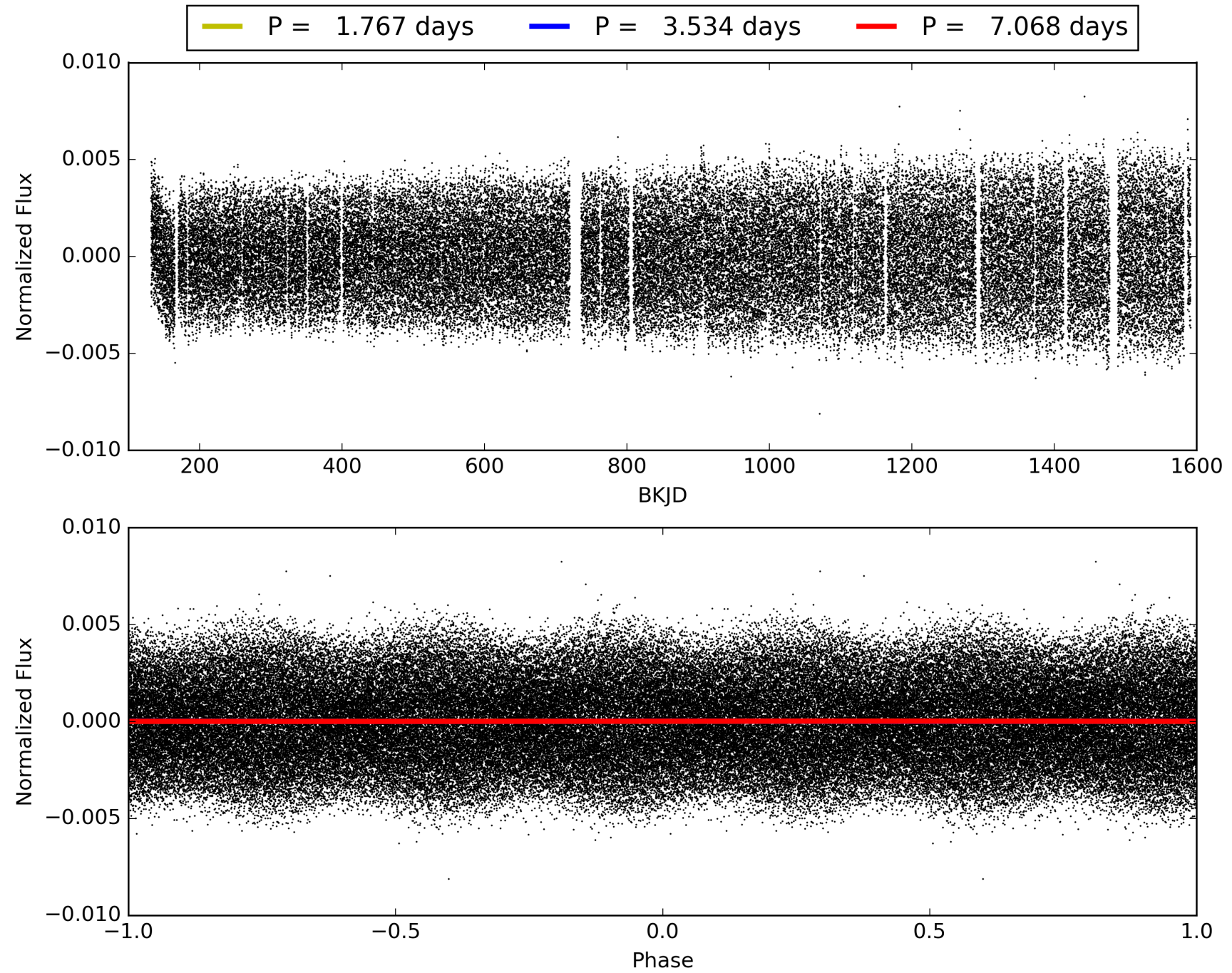
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007685307-01, PDC Light Curves



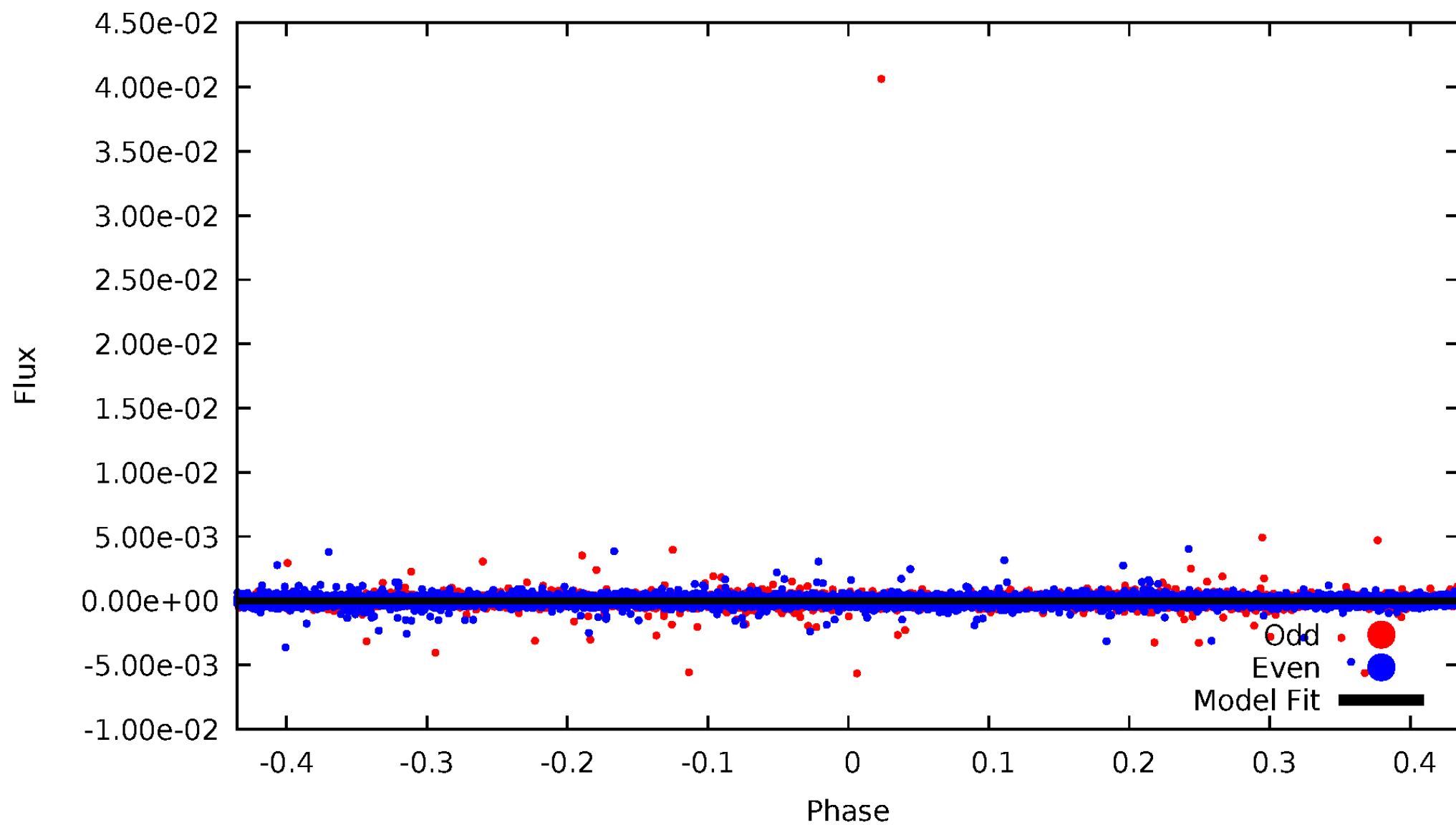


TCE 007685307-01



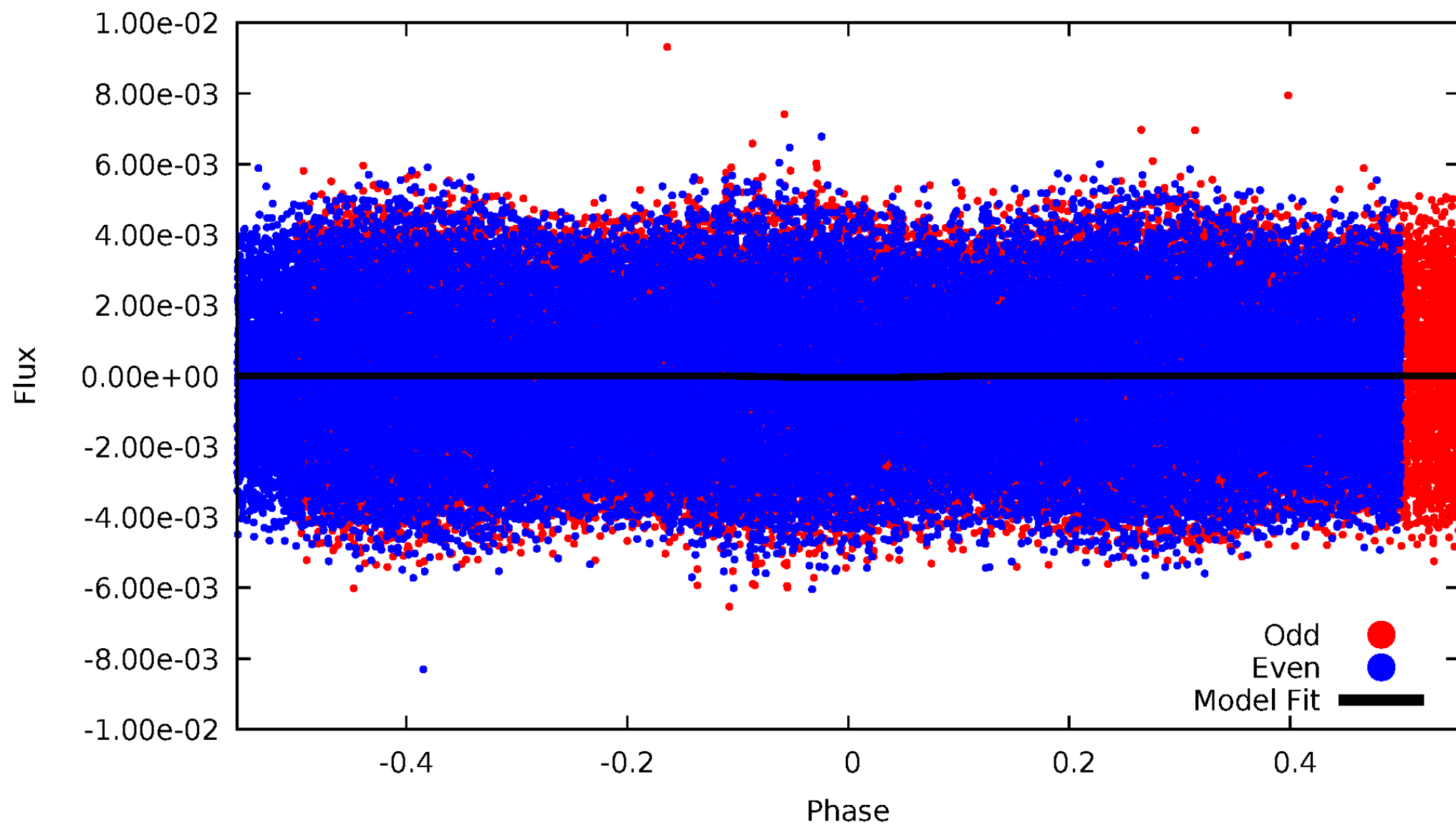
# DV Odd/Even

TCE 007685307-01



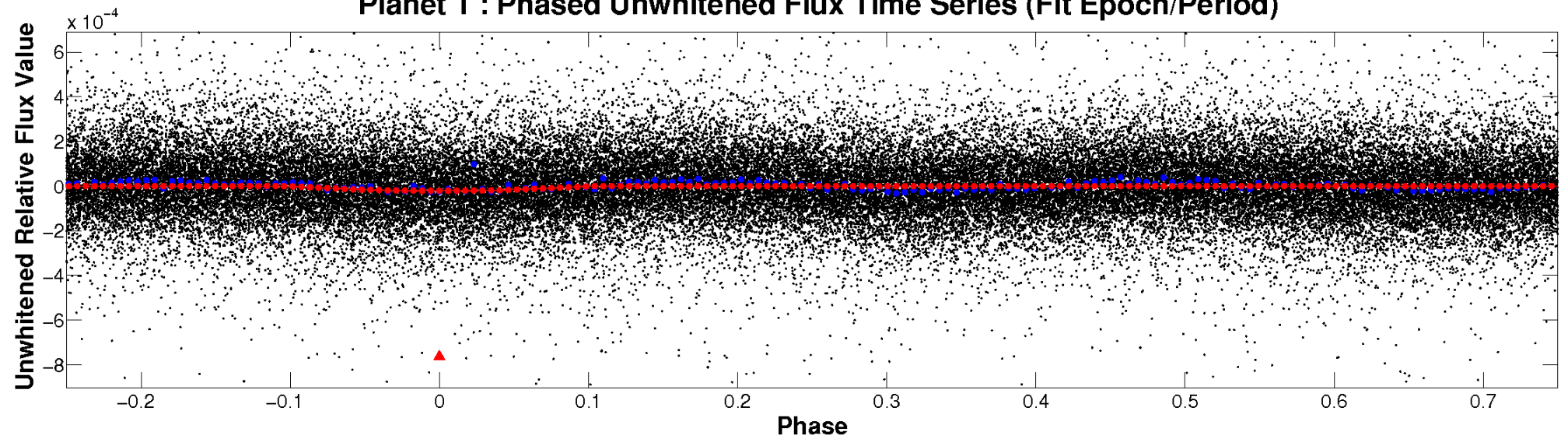
# ALT Odd/Even

TCE 007685307-01

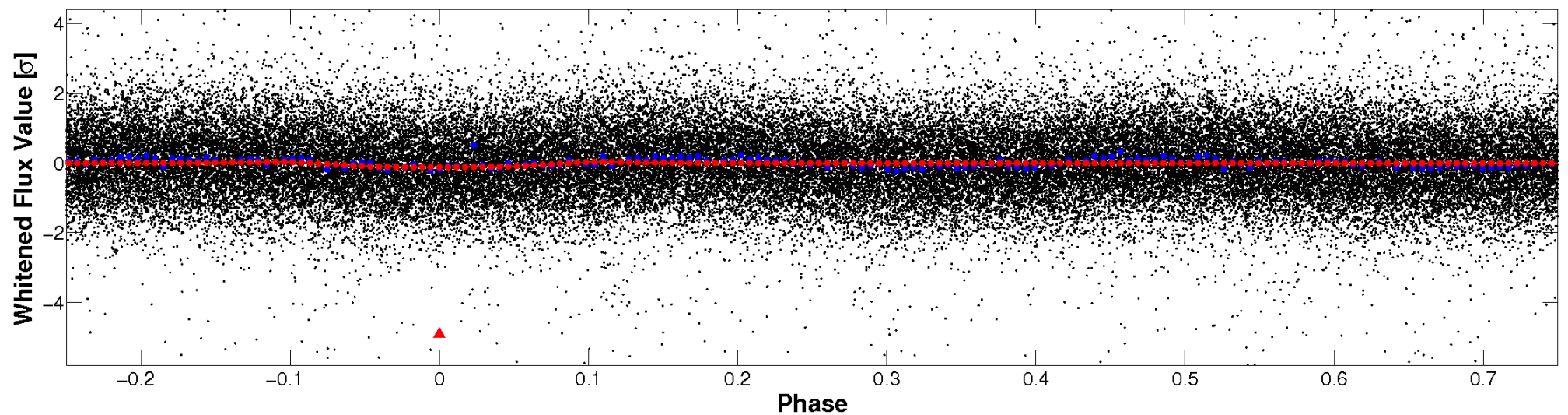


# Non-Whitened Vs. Whitened Light Curve

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

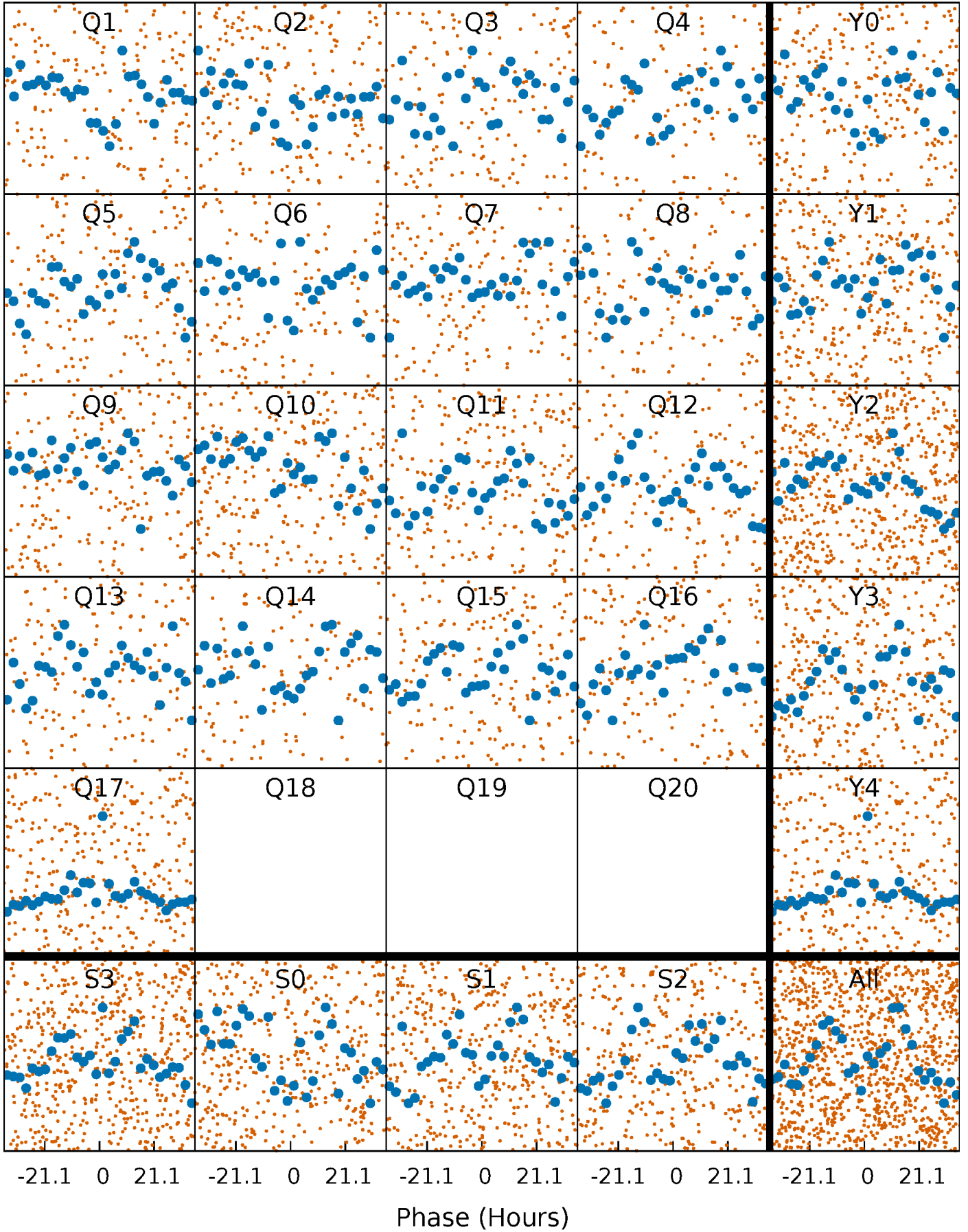


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

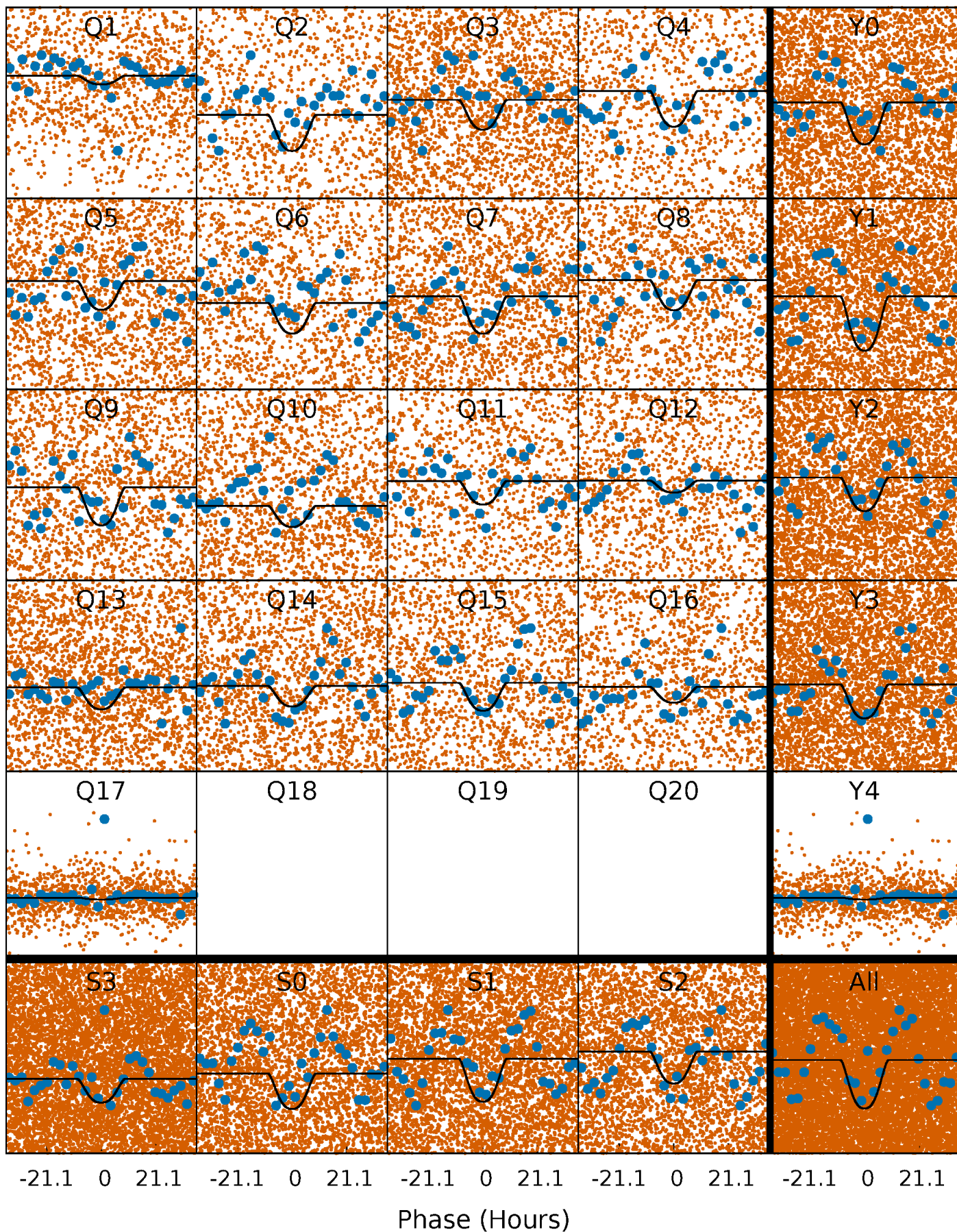
TCE 007685307-01   P= 3.534128 Days    $T_0=134.837220$  (BKJD)





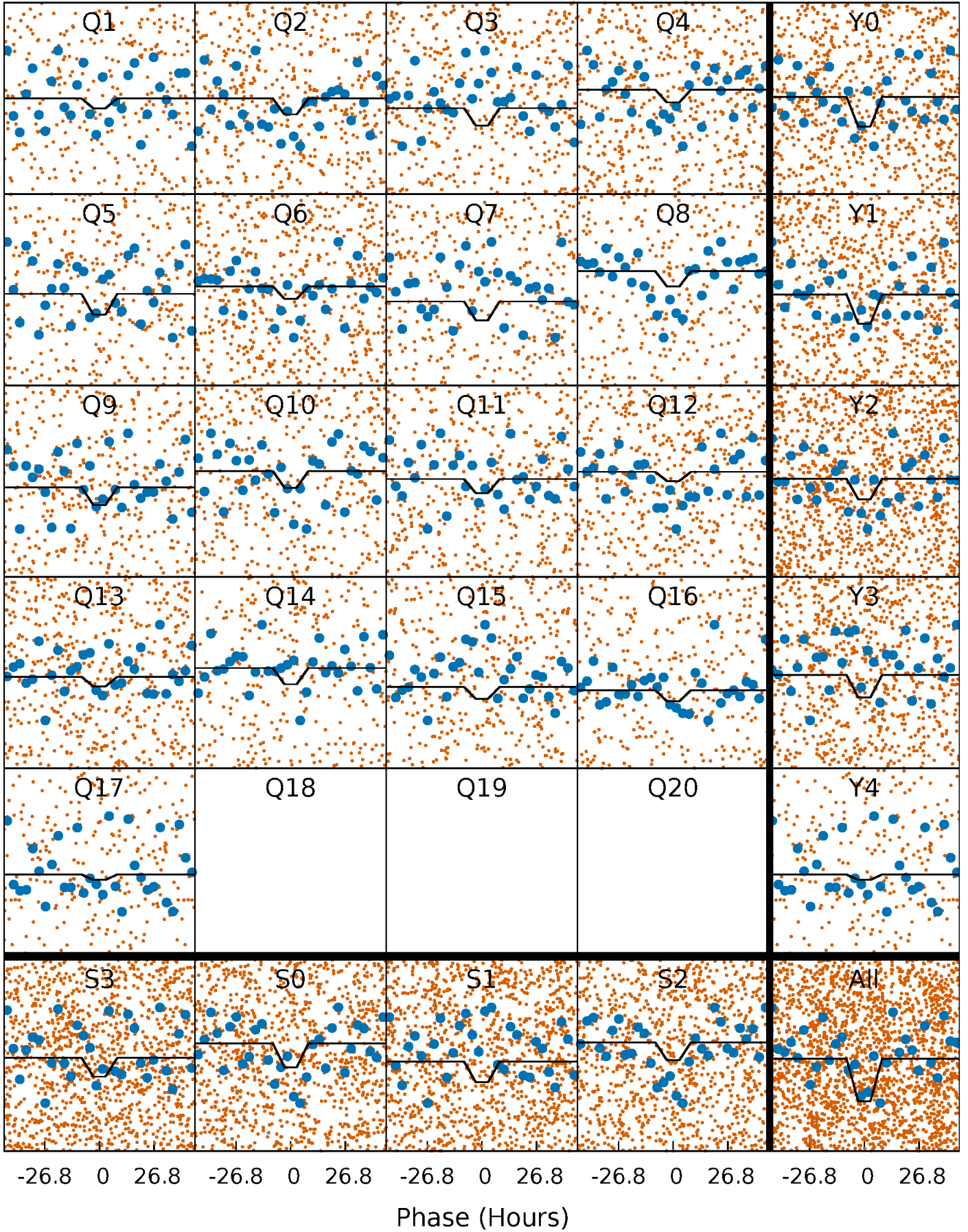
# DV Quarter-Phased Transit Curves

TCE 007685307-01 P= 3.534128 Days  $T_0=134.837220$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

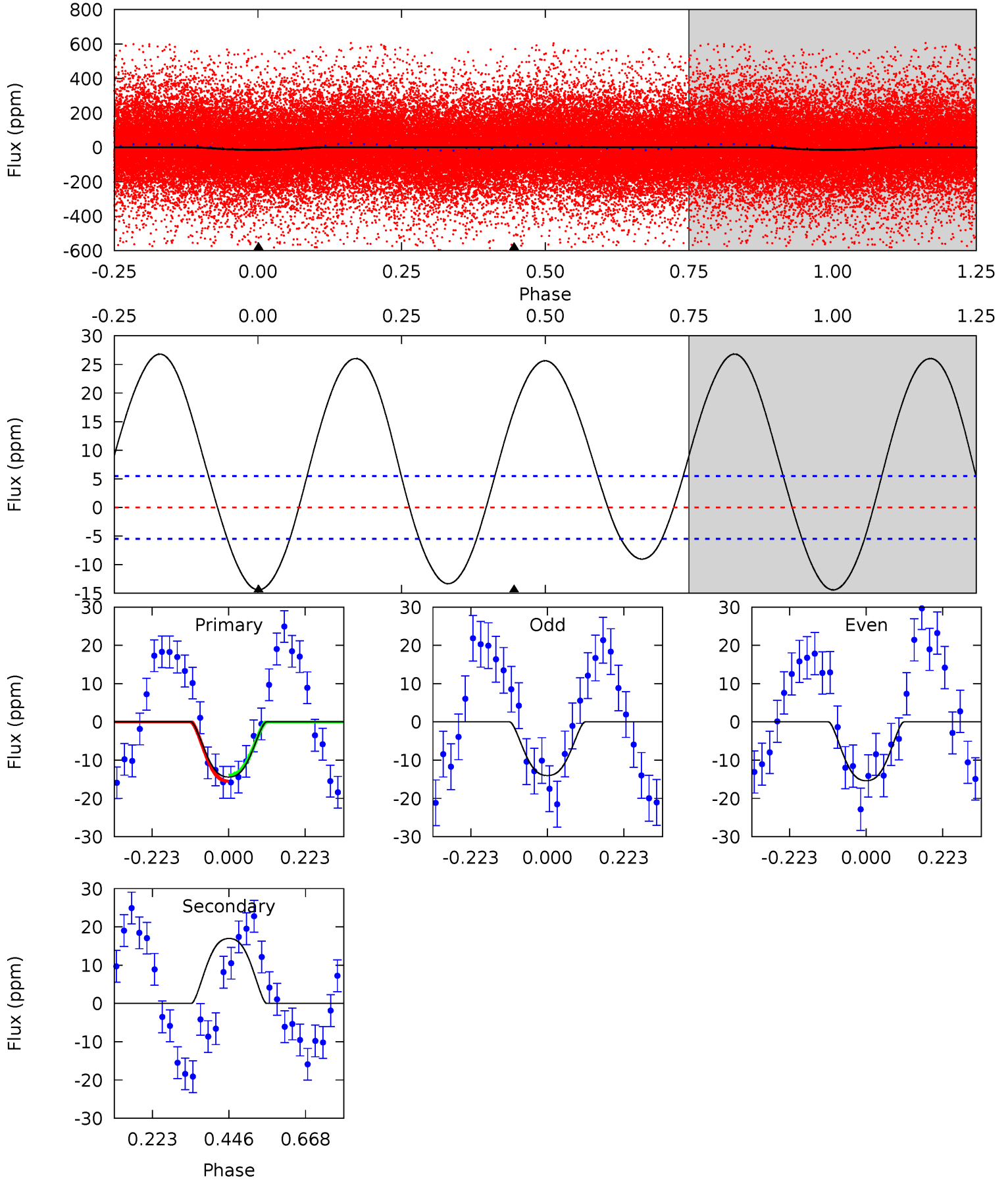
TCE 007685307-01   P= 3.533811 Days    $T_0=134.863786$  (BKJD)



# DV Model-Shift Uniqueness Test

007685307-01, P = 3.534128 Days, E = 131.303092 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
11.6	-13.6	0	0	4.39	1.22	7.05	11.6	11.6	-13.6	-13.6	0.52	0.75	0.65	0.64

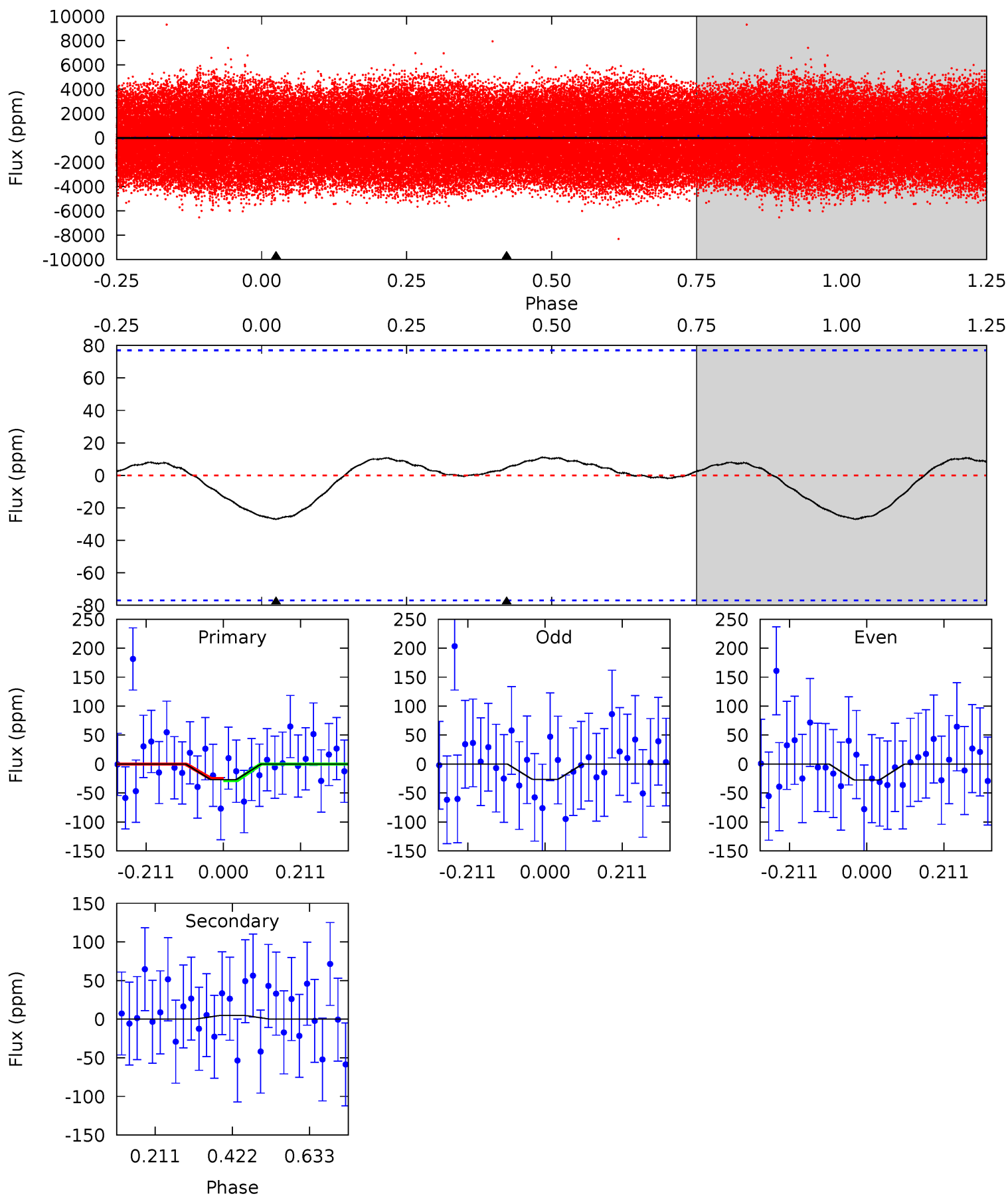




# Alt Model-Shift Uniqueness Test

007685307-01, P = 3.533811 Days, E = 131.329975 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
1.54	-0.27	0	0	4.41	1.25	0.19	1.54	1.54	-0.27	-0.27	0.03	0.96	0.29	0.11





### Stellar Parameters For KIC 007685307

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7333^{+73}_{-80}$	$3.797^{+0.189}_{-0.081}$	$0.160^{+0.100}_{-0.200}$	$2.959^{+0.315}_{-0.734}$	$2.001^{+0.028}_{-0.248}$	$0.109^{+0.120}_{-0.028}$
	+1%/-1%	+5%/-2%	+62%/-125%	+11%/-25%	+1%/-12%	+110%/-26%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 007685307-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$17 \pm 1$	$1.86^{+0.30}_{-0.32}$	$3233^{+116}_{-190}$	$-6095^{+351}_{-431}$	$-8.753^{+2.322}_{-3.722}$
Alt.	$5 \pm 17$	$1.99^{+0.30}_{-0.30}$	$3236^{+118}_{-218}$	$-4508^{+9881}_{-1785}$	$-2.107^{+7.868}_{-8.437}$

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

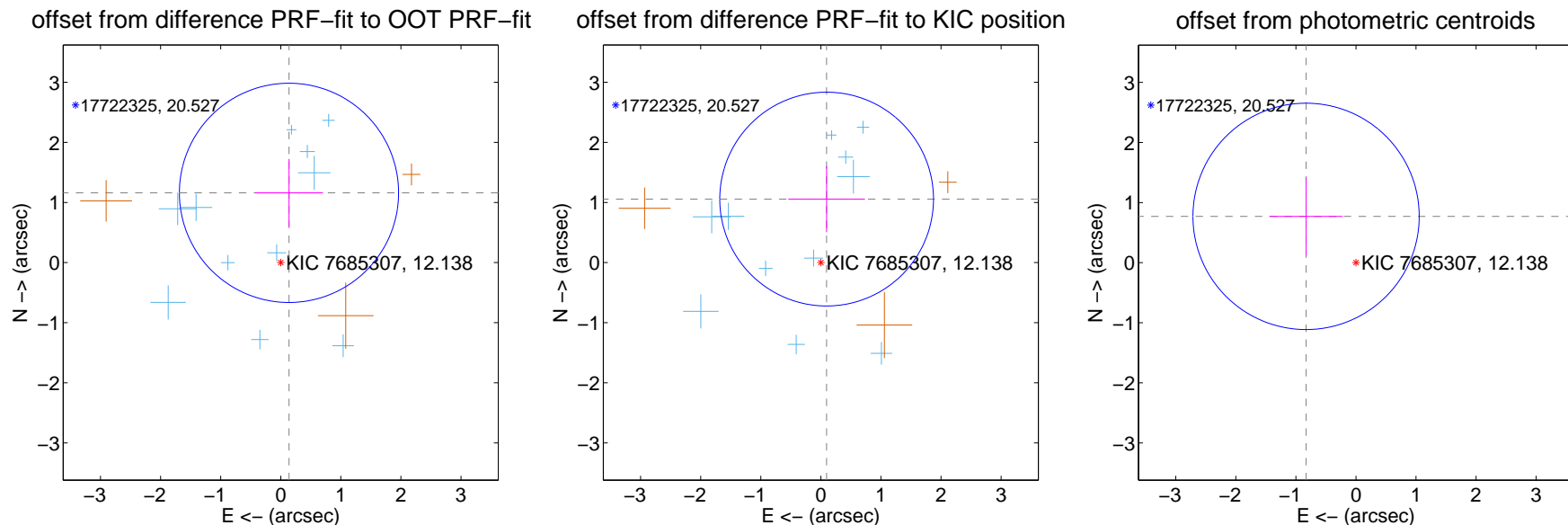
## DV Centroid Data

Supplemental centroid analysis for 007685307-01. Kepler magnitude: 12.14. Transit SNR 9.80

There are 11 quarters with good PRF difference image offsets

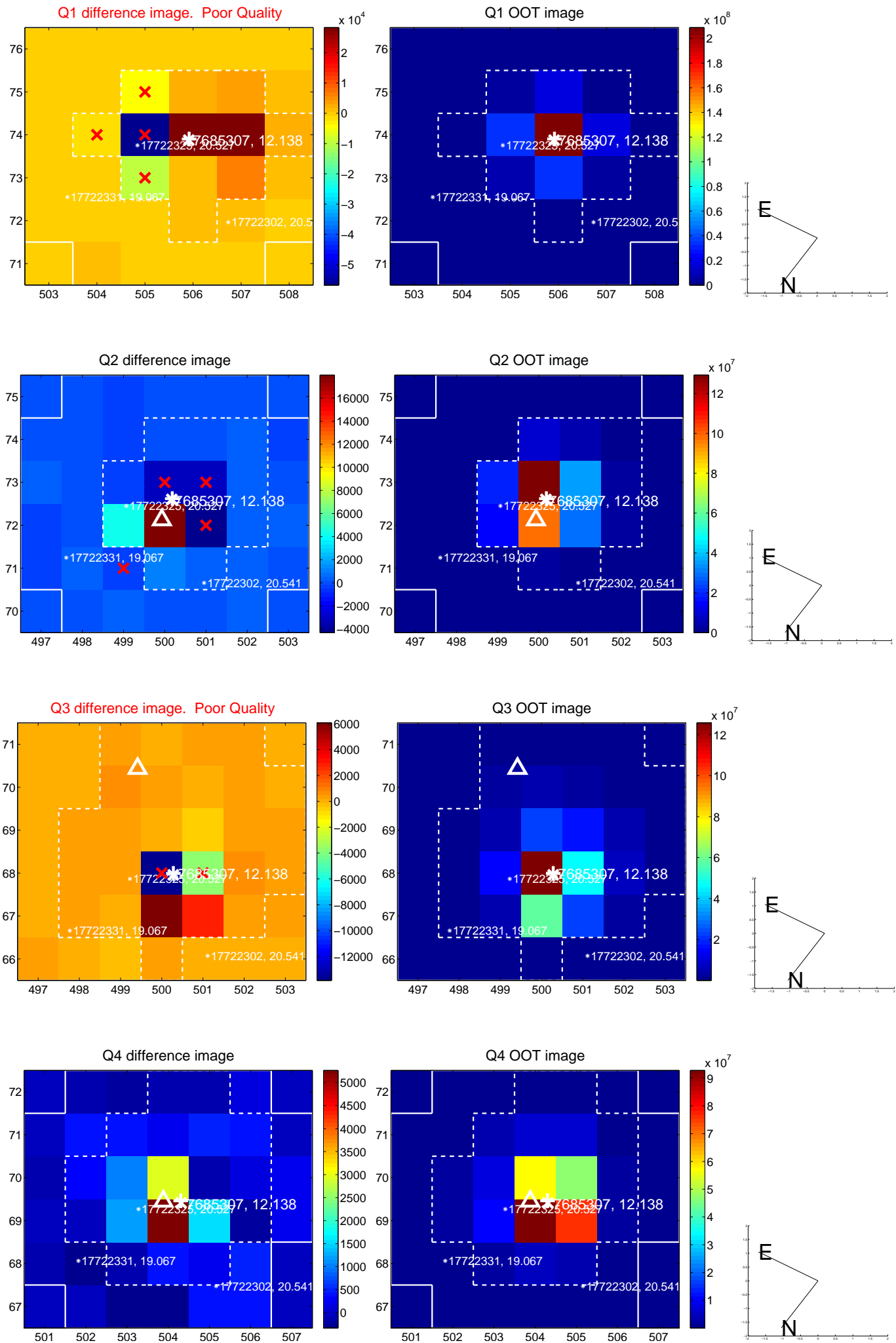
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.168 \pm 0.608$	1.92	$-0.137 \pm 0.566$	$1.160 \pm 0.564$
PRF-fit source offset from KIC position	$1.061 \pm 0.593$	1.79	$-0.096 \pm 0.639$	$1.057 \pm 0.550$
photometric centroid source offset	$1.13 \pm 0.63$	1.80	$0.83 \pm 0.61$	$0.77 \pm 0.65$

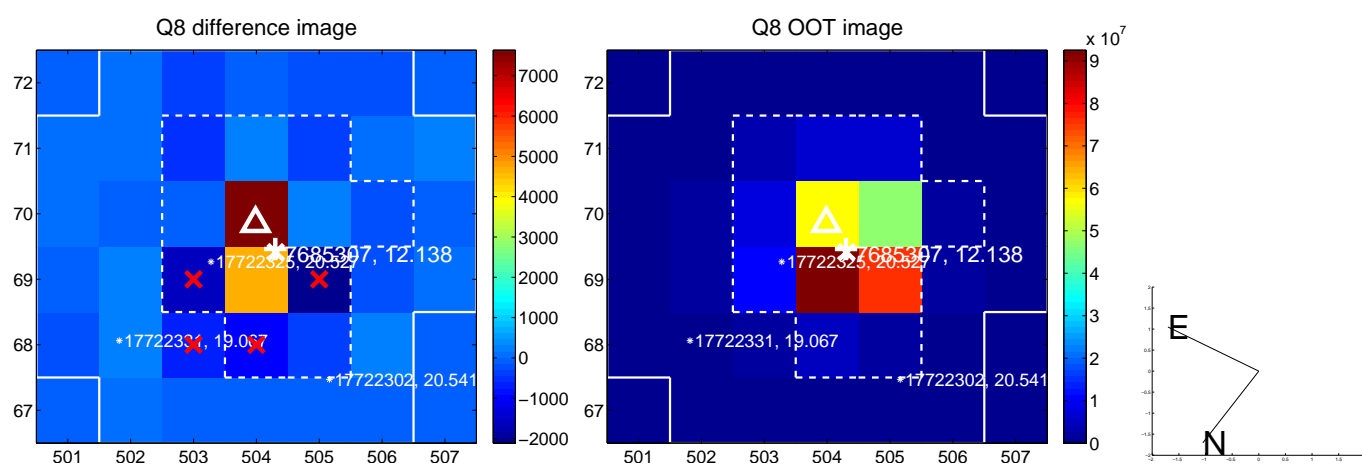
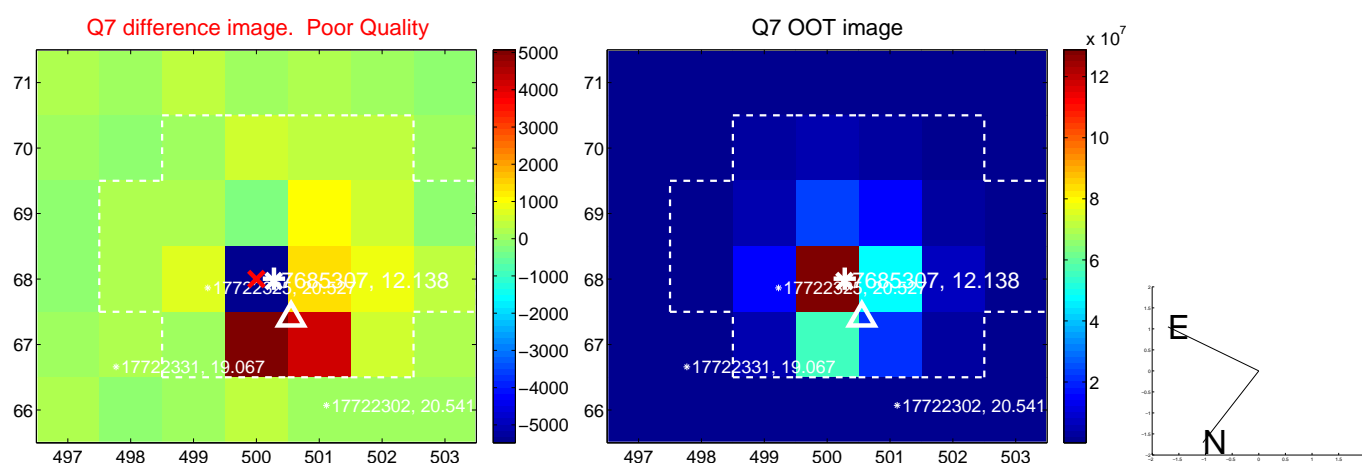
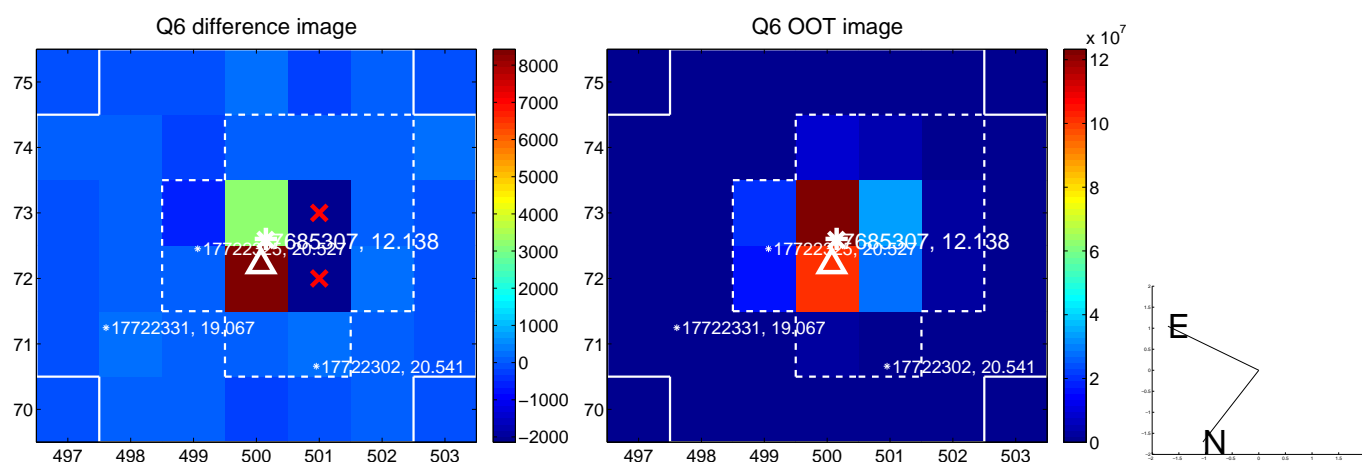
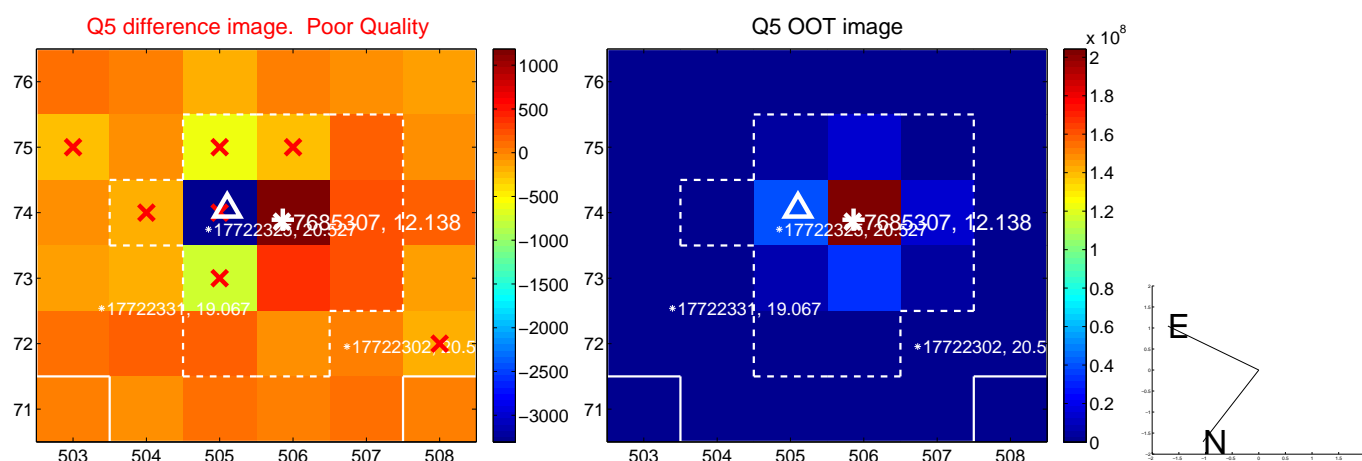


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

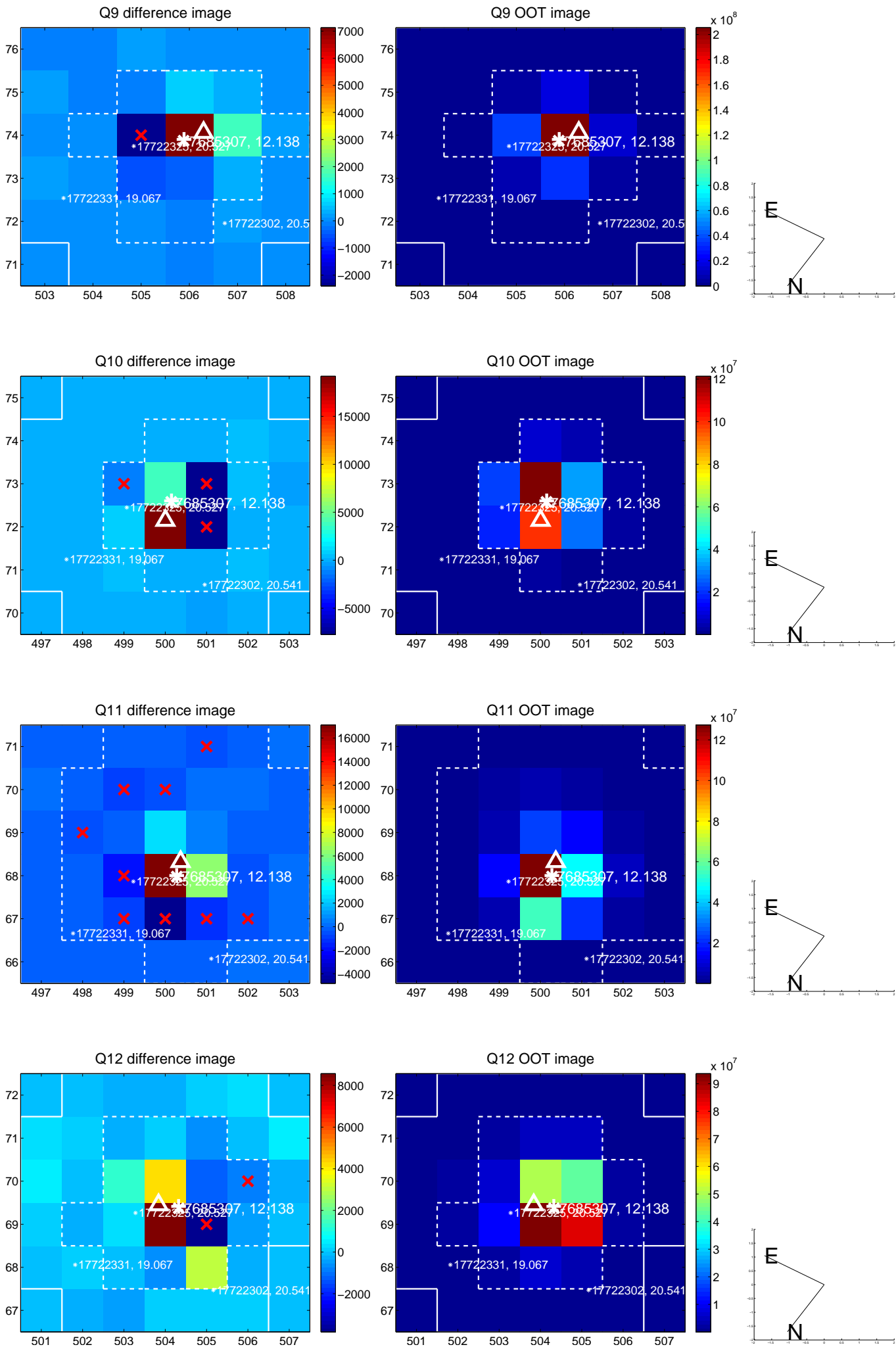


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

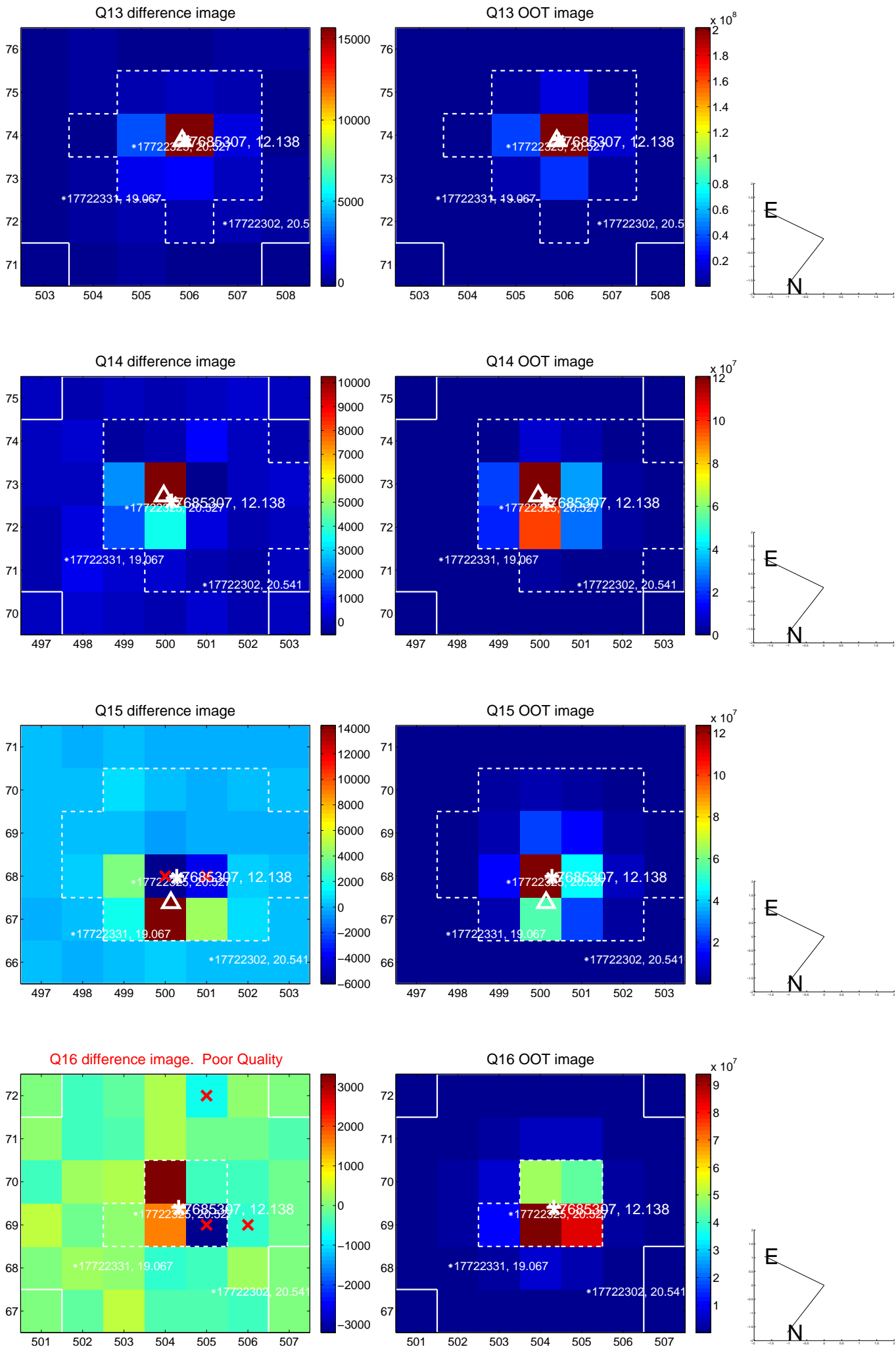




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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





UKIRT Image

Declination

