

# KIC 007830503

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007830503-01	OBS	No	109.553442	203.675581	759.5	1.943	12.7	4.8	0.70	5100	2.24	1.94

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007830503-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS

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

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

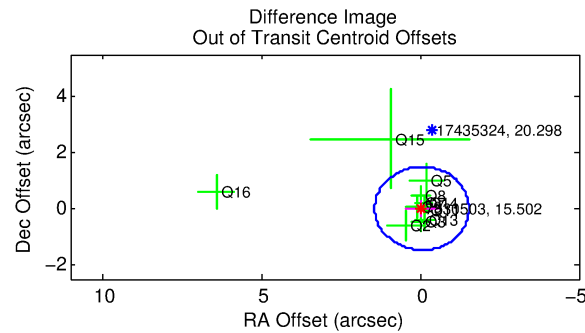
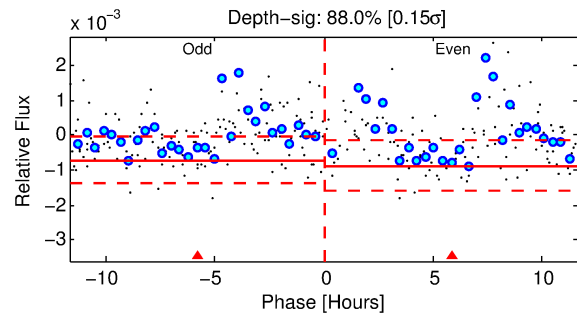
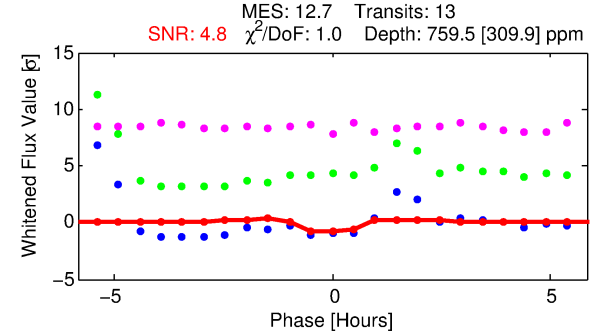
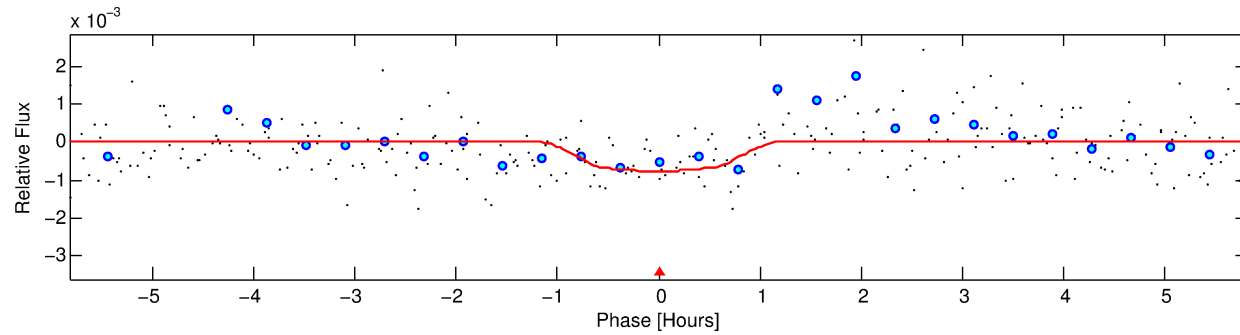
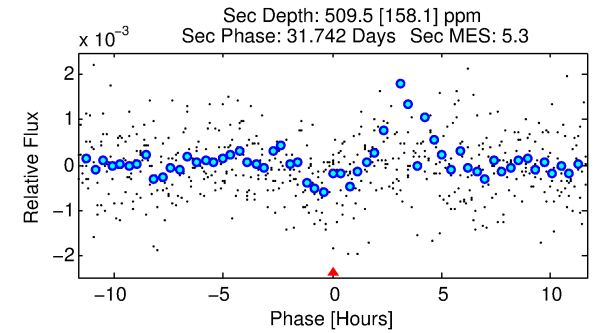
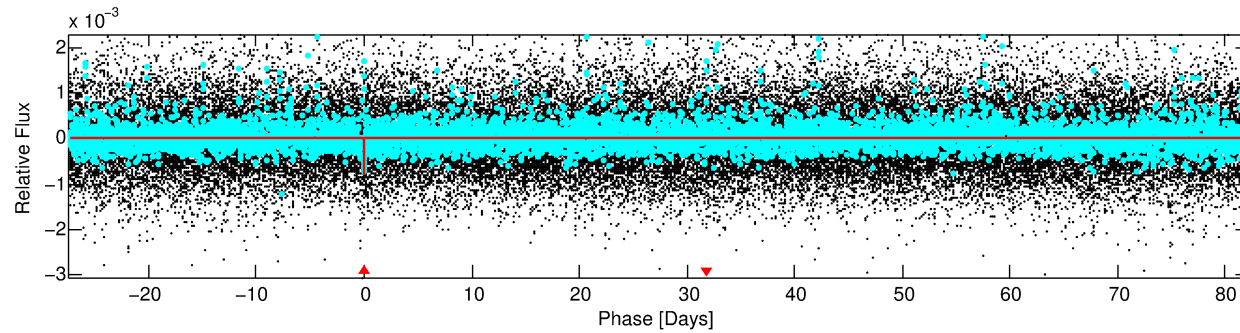
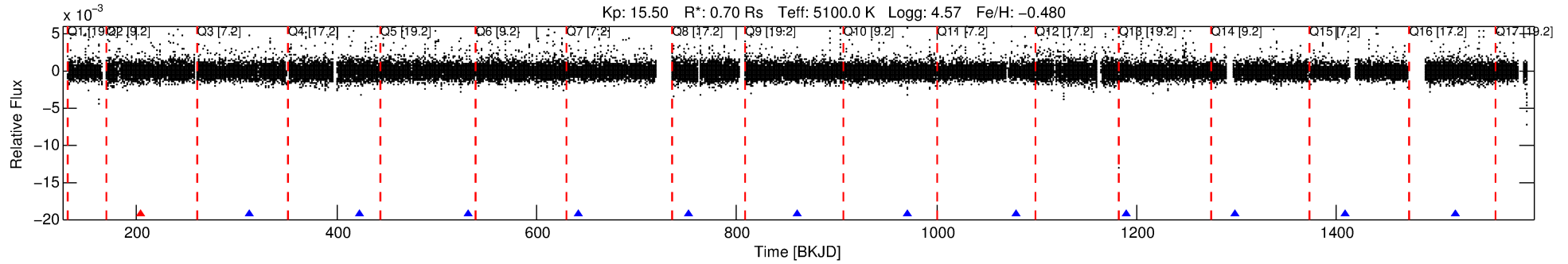
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007830503-01

No Significant Match Found

# DV One-Page Summary

KIC: 7830503 Candidate: 1 of 1 Period: 109.553 d



## DV Fit Results:

Period = 109.55344 [0.00200] d  
Epoch = 203.6756 [0.0142] BKJD  
Rp/R\* = 0.0292 [0.0794]  
a/R\* = 250.12 [2659.76]  
b = 0.85 [3.57]  
Seff = 1.94 [0.34]  
Teq = 301 [13] K  
Rp = 2.24 [6.10] Re  
a = 0.3931 [0.0354] AU  
Ag = 8618.72 [46980.96] [0.18σ]  
Teffp = 4485 [6112] K [0.68σ]

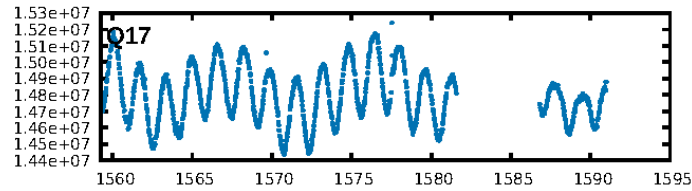
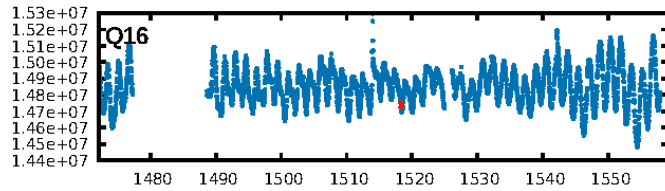
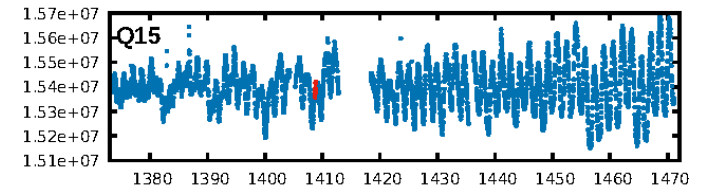
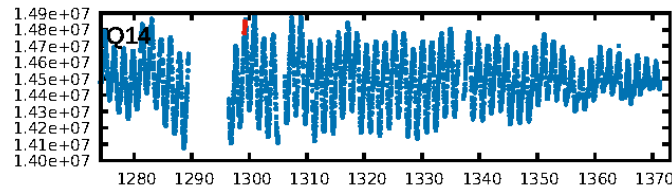
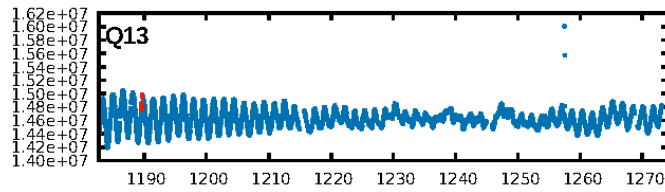
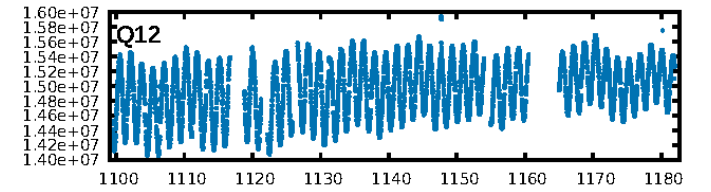
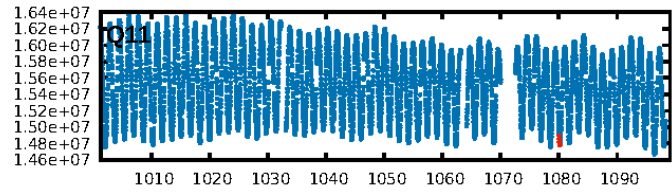
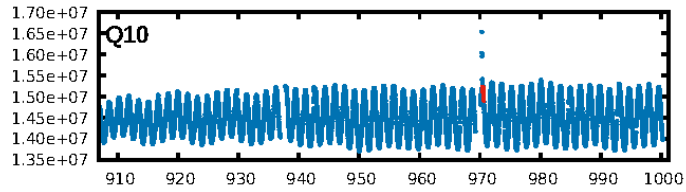
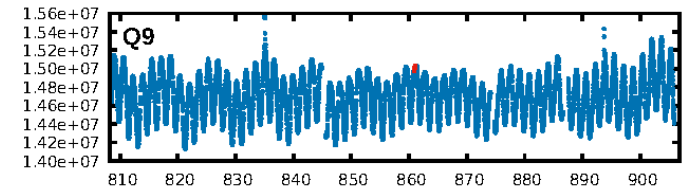
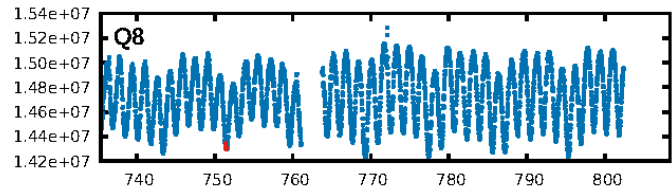
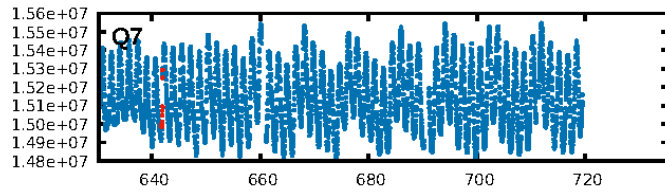
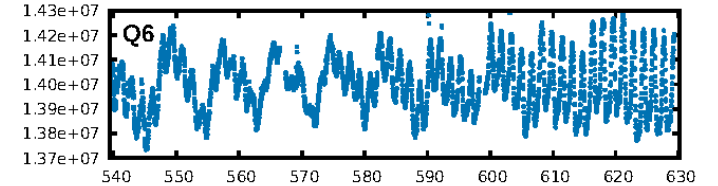
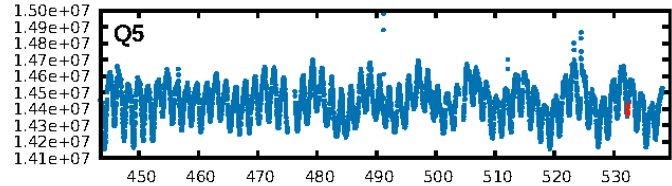
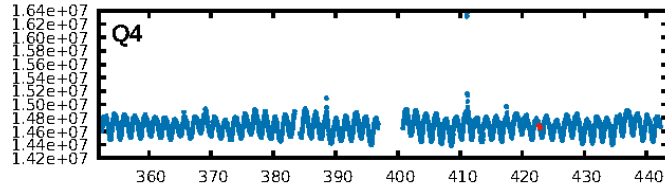
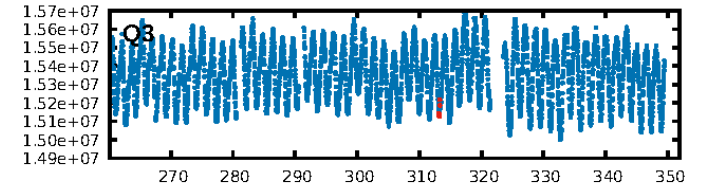
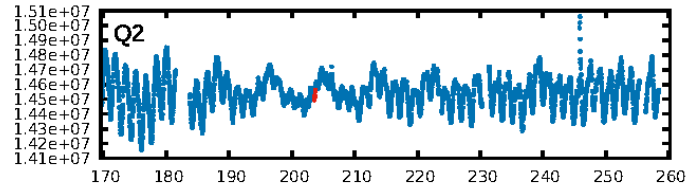
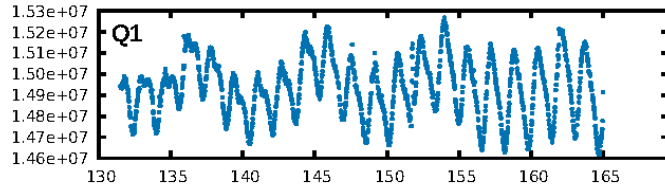
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.9%  
ModelChiSquareGof-sig: 95.6%  
Bootstrap-pfa: 1.82e-14  
RollingBand-fgt: 0.92 [12/13]  
GhostDiagnostic-chr: 3.032  
Centroid-sig: 29.7%  
Centroid-so: 2.135 arcsec [0.89σ]  
OotOffset-rm: 0.054 arcsec [0.11σ]  
OotOffset-st: 2/4/2/3 [11]  
KicOffset-rm: 0.125 arcsec [0.33σ]  
KicOffset-st: 2/4/2/3 [11]  
DiffImageQuality-fgm: 0.55 [6/11]  
DiffImageOverlap-fno: 1.00 [12/12]

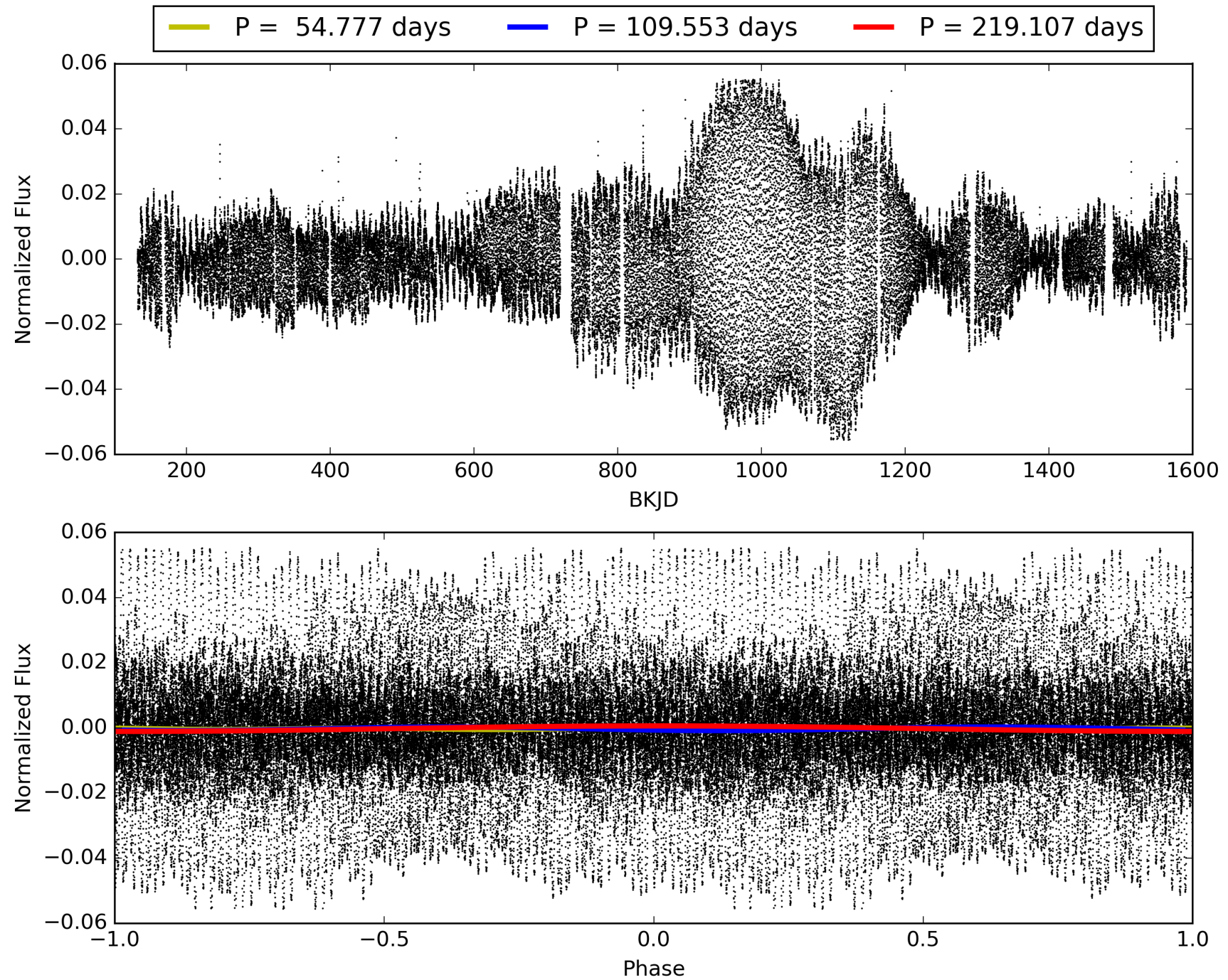
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:22:17 Z

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

# TCE 007830503-01, PDC Light Curves

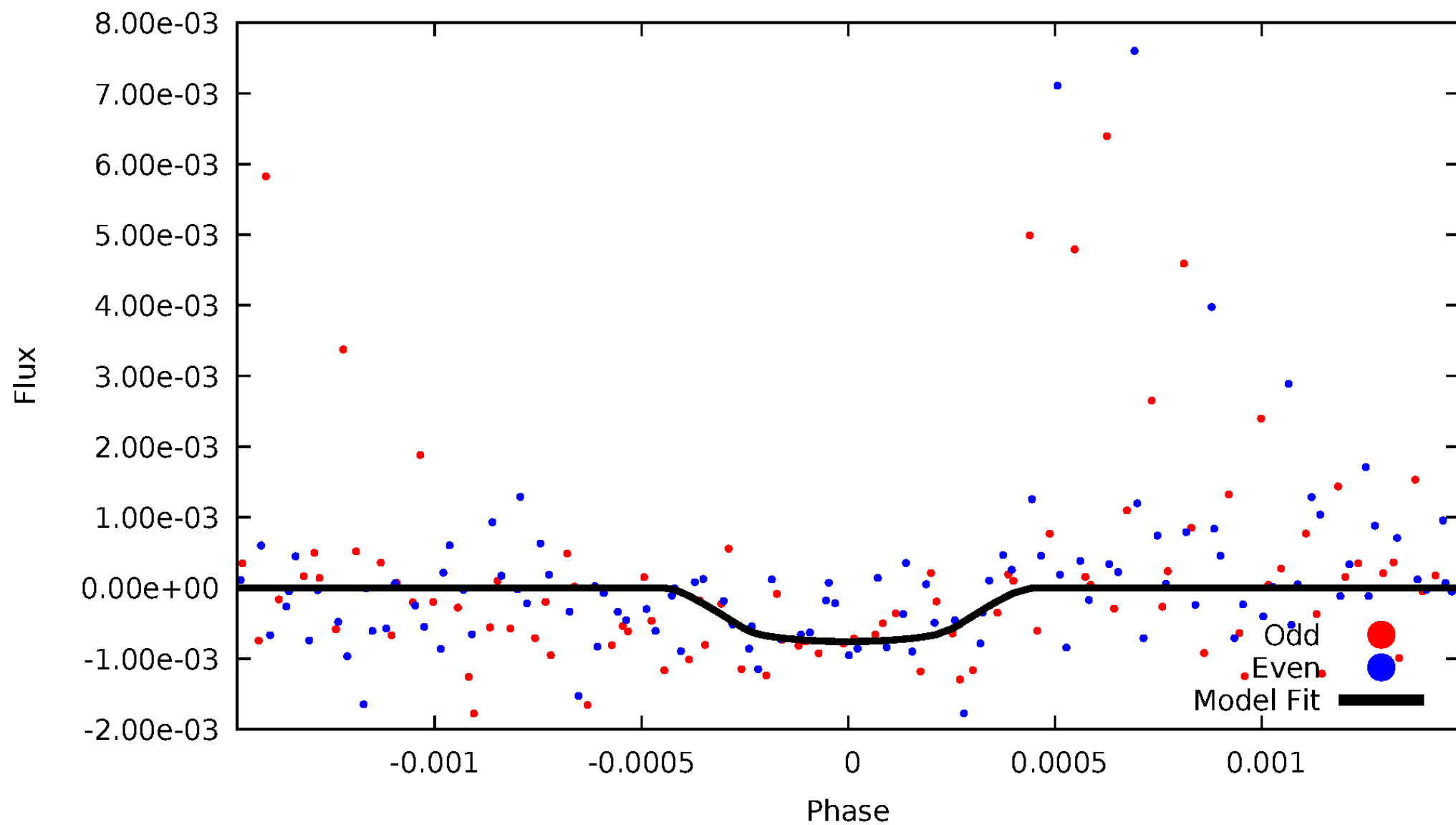


TCE 007830503-01



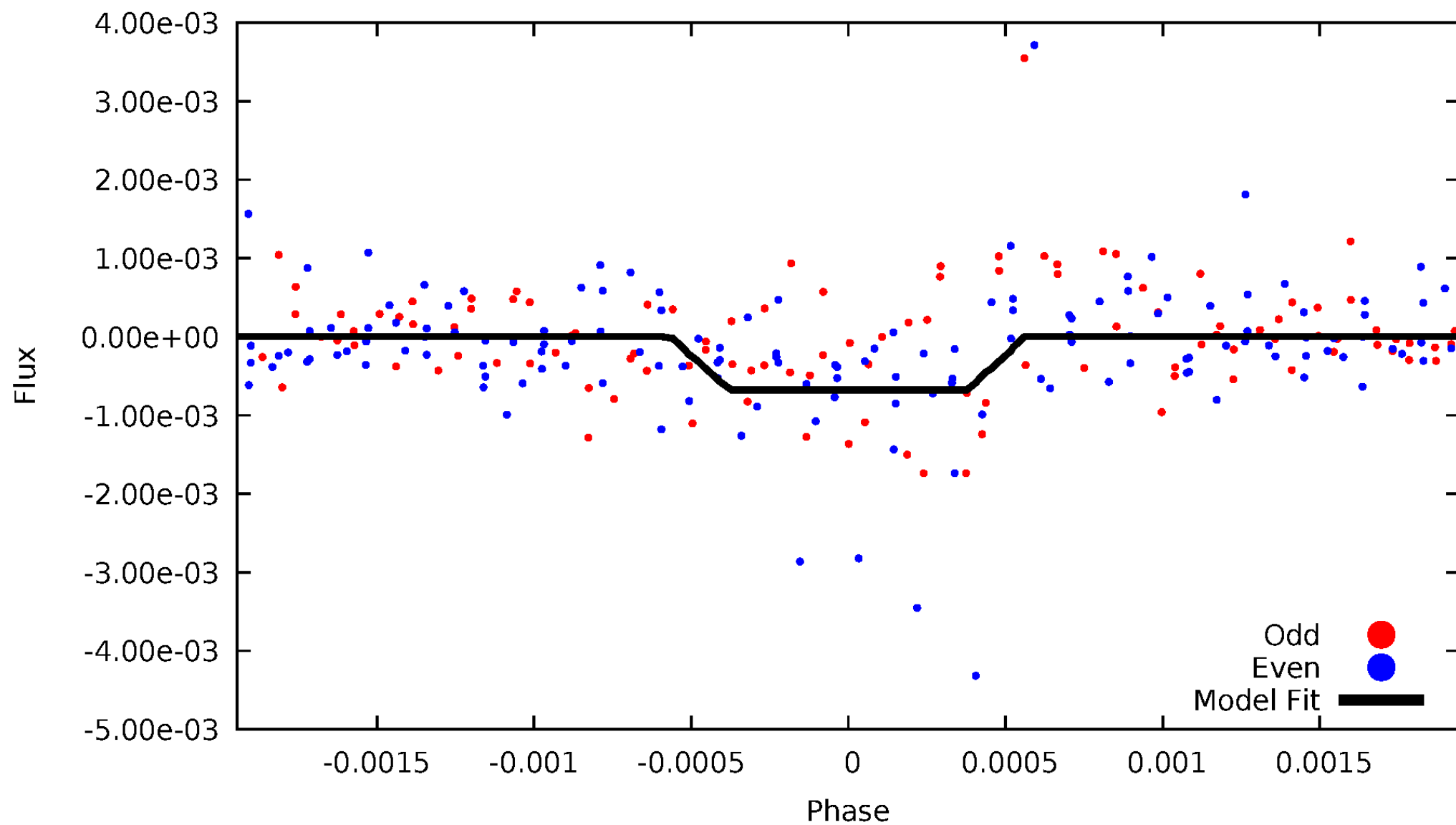
# DV Odd/Even

TCE 007830503-01



# ALT Odd/Even

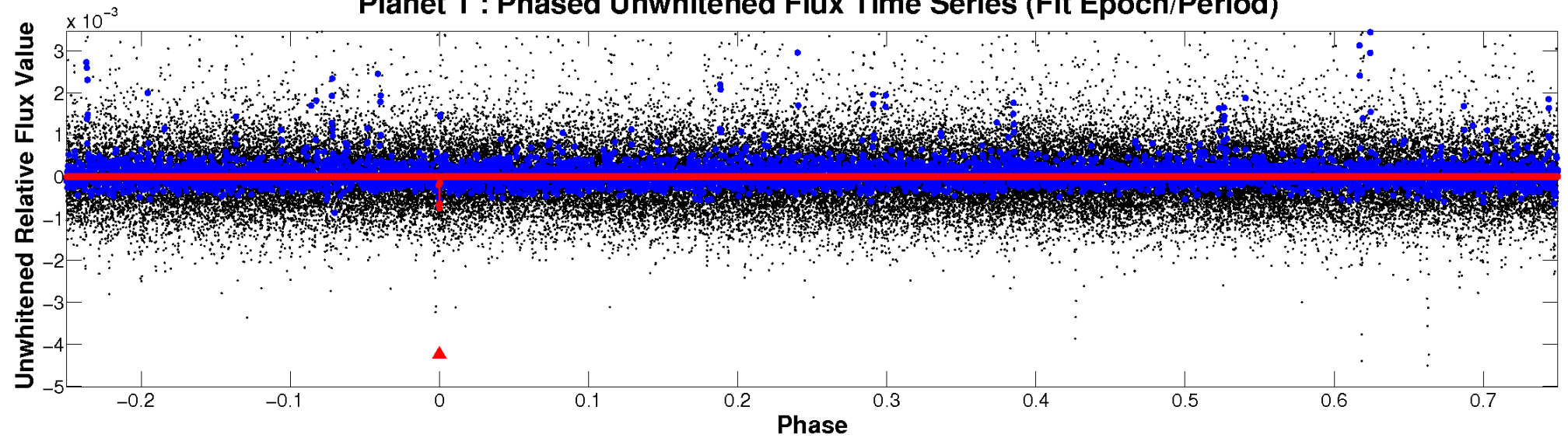
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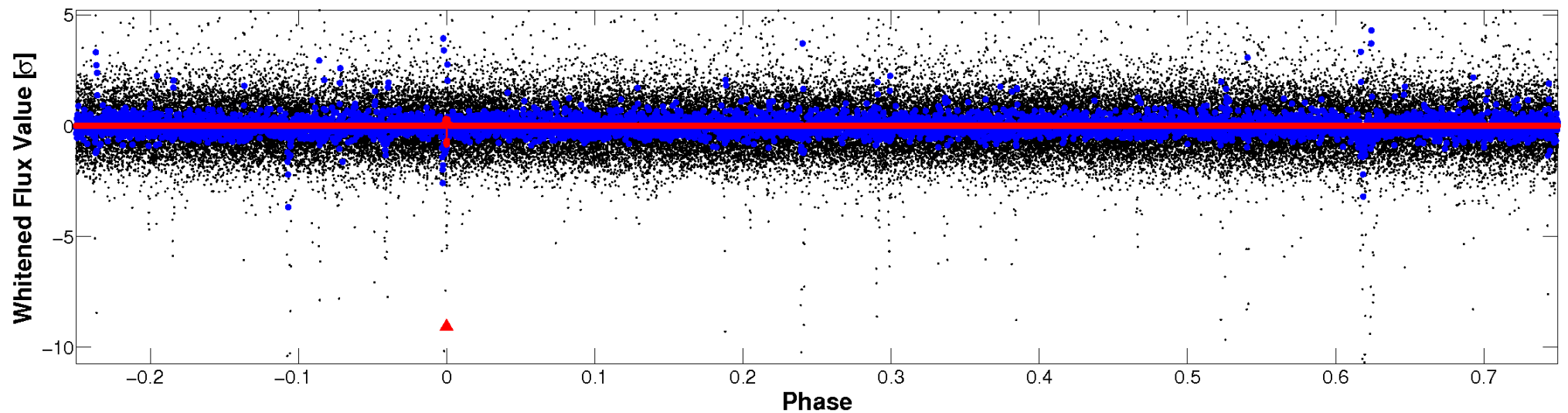


# Non-Whitened Vs. Whitened Light Curve

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

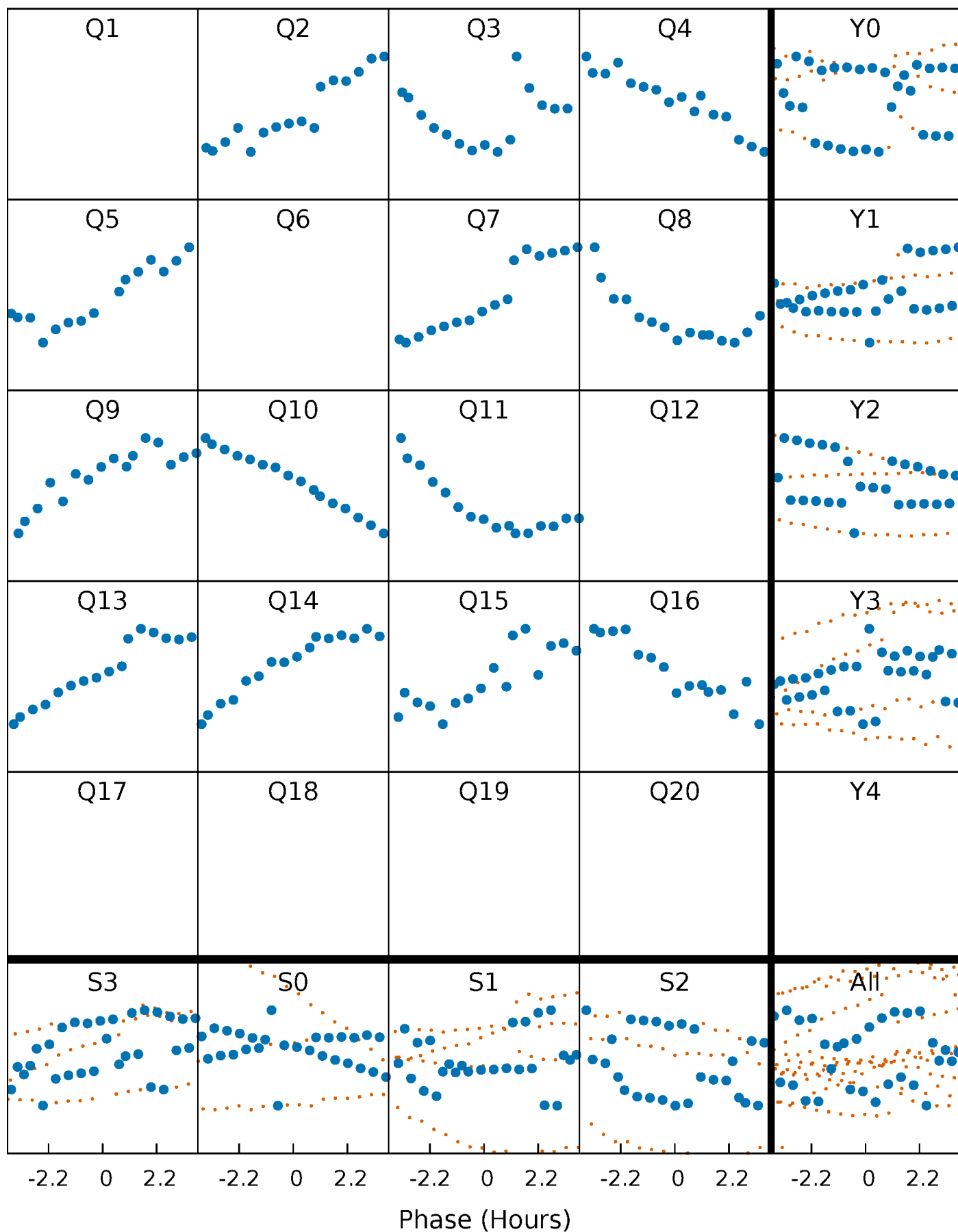


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

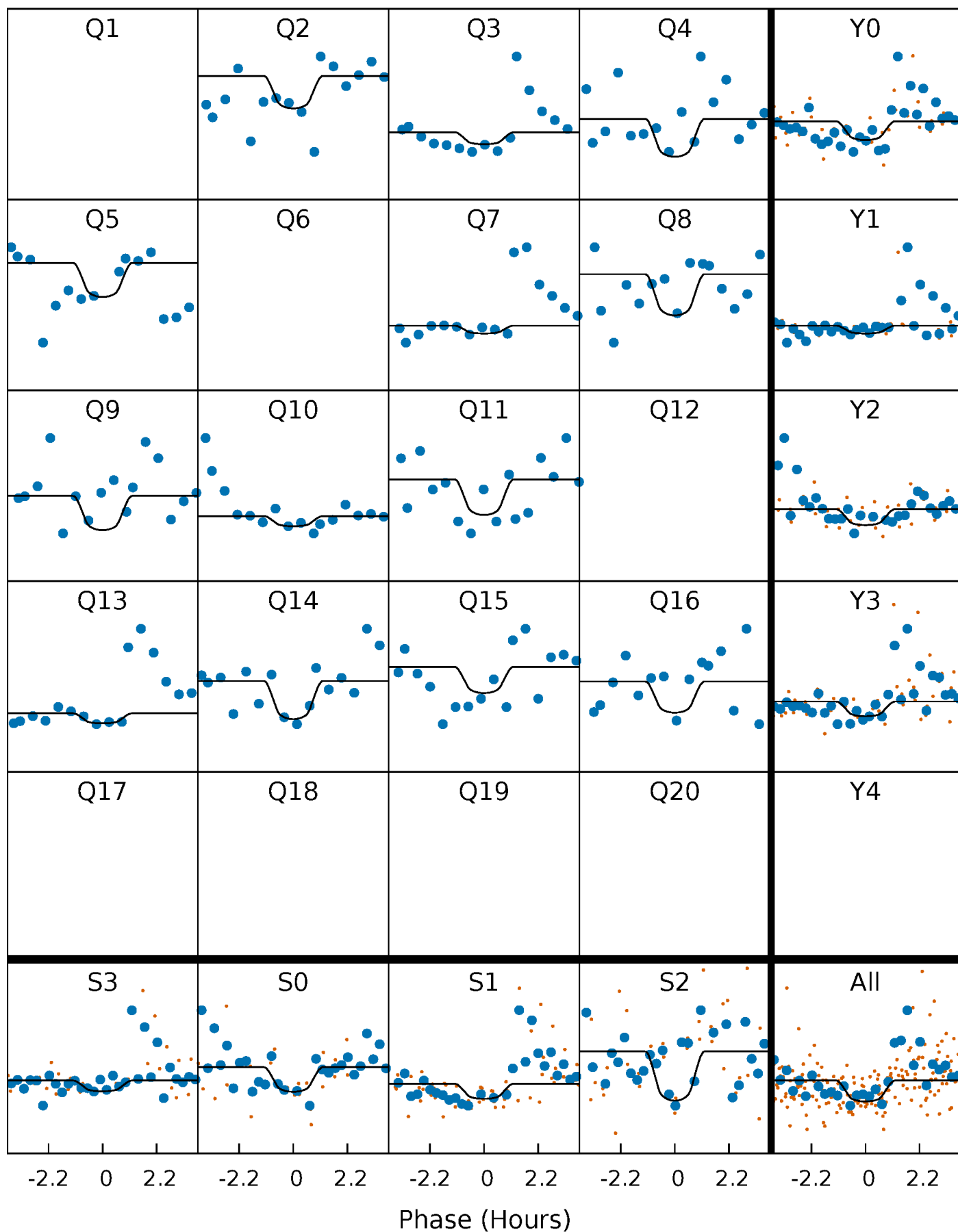
TCE 007830503-01 P=109.553442 Days  $T_0=203.675581$  (BKJD)





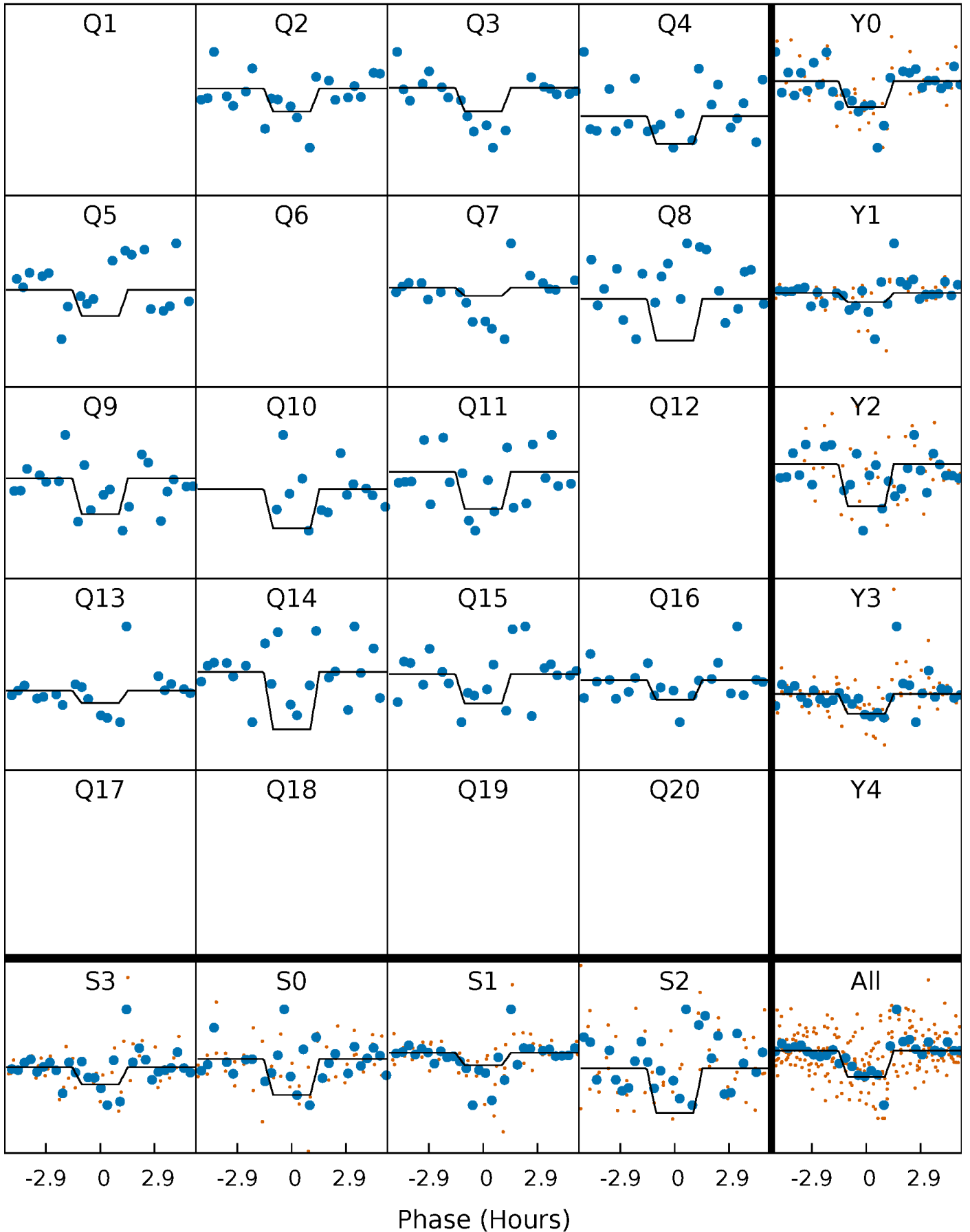
# DV Quarter-Phased Transit Curves

TCE 007830503-01 P=109.553442 Days  $T_0=203.675581$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

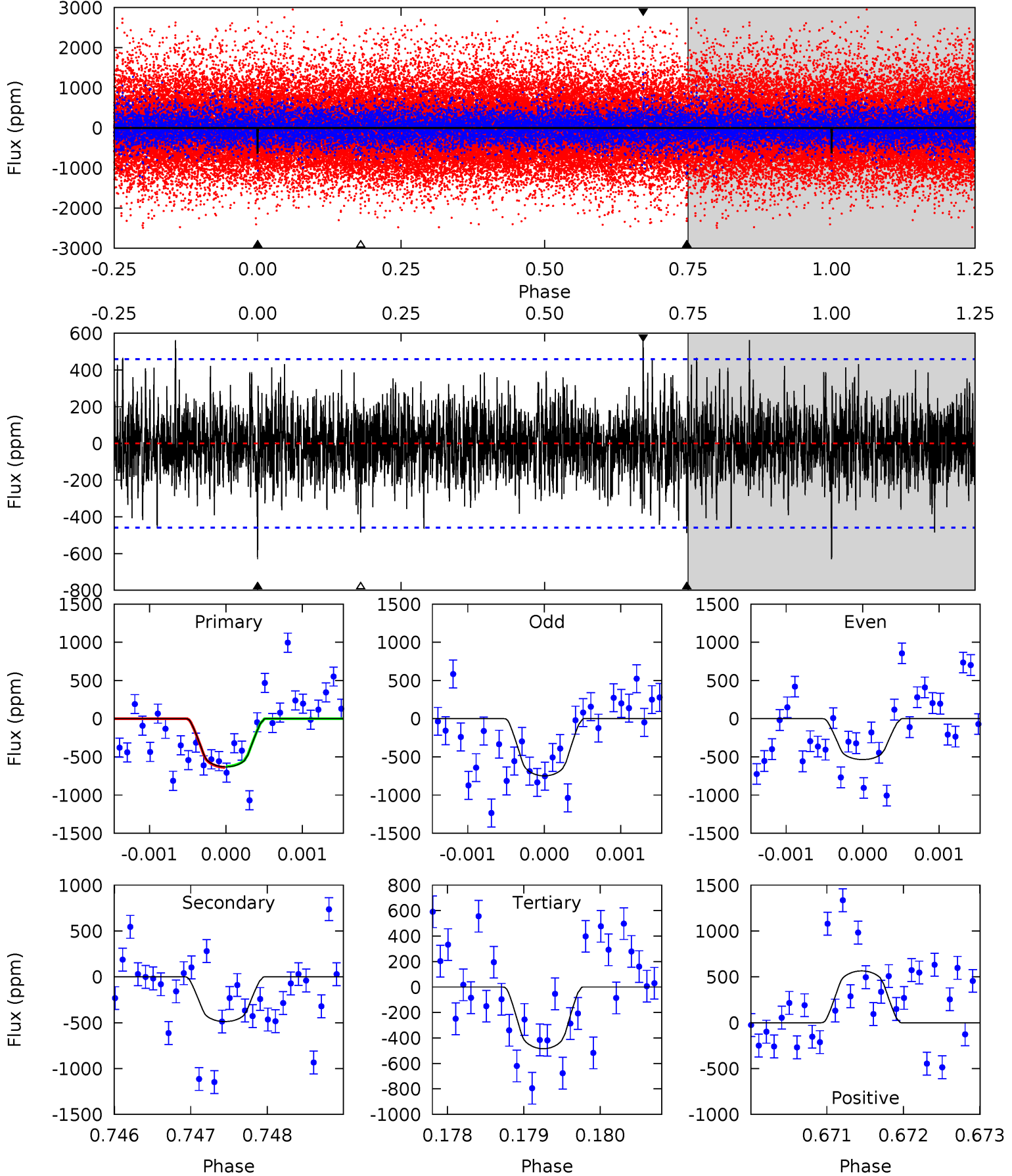
TCE 007830503-01 P=109.552663 Days  $T_0=203.669251$  (BKJD)



# DV Model-Shift Uniqueness Test

007830503-01, P = 109.553442 Days, E = 94.122139 Days

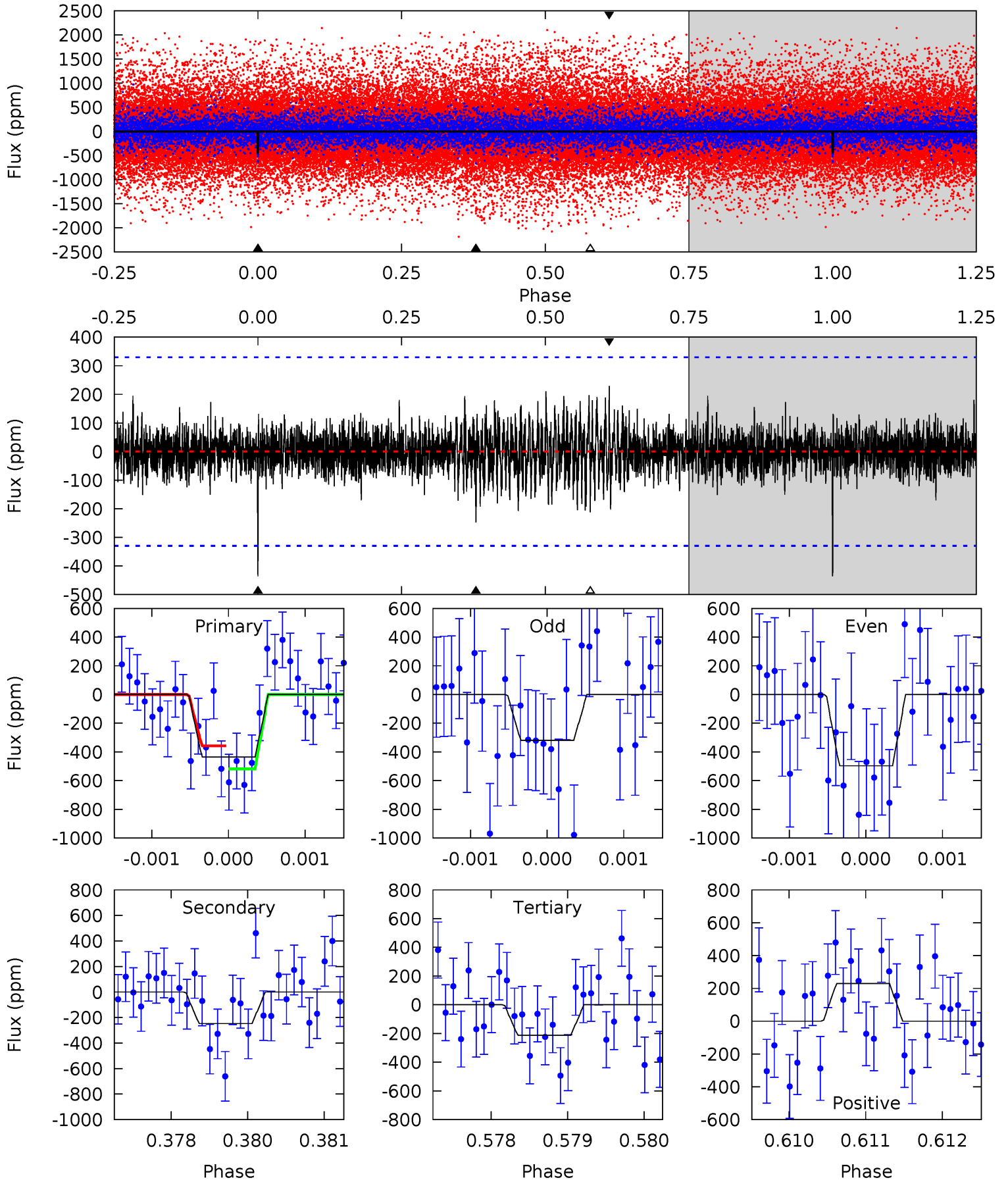
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.53	5.83	5.78	6.74	5.47	3.33	1.63	1.75	0.79	0.05	-0.91	1.27	0.96	0.47	0.07



# Alt Model-Shift Uniqueness Test

007830503-01, P = 109.552663 Days, E = 94.116588 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
7.19	4.08	3.50	3.77	5.44	3.27	0.95	3.69	3.42	0.58	0.30	1.46	1.36	0.34	1.33



### Stellar Parameters For KIC 007830503

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5100^{+152}_{-152}$	$4.572^{+0.072}_{-0.048}$	$-0.480^{+0.300}_{-0.300}$	$0.704^{+0.075}_{-0.068}$	$0.675^{+0.092}_{-0.042}$	$2.725^{+0.835}_{-0.482}$
	+3%/-3%	+2%/-1%	+62%/-62%	+11%/-10%	+14%/-6%	+31%/-18%
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 007830503-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-489 \pm 84$	$5.48^{+4.89}_{-3.83}$	$419^{+16}_{-16}$	$3373^{+1935}_{-597}$	$1459^{+15069}_{-1064}$
Alt.	$-247 \pm 61$	$4.88^{+5.04}_{-3.17}$	$419^{+15}_{-15}$	$3111^{+1324}_{-544}$	$858^{+6420}_{-656}$

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

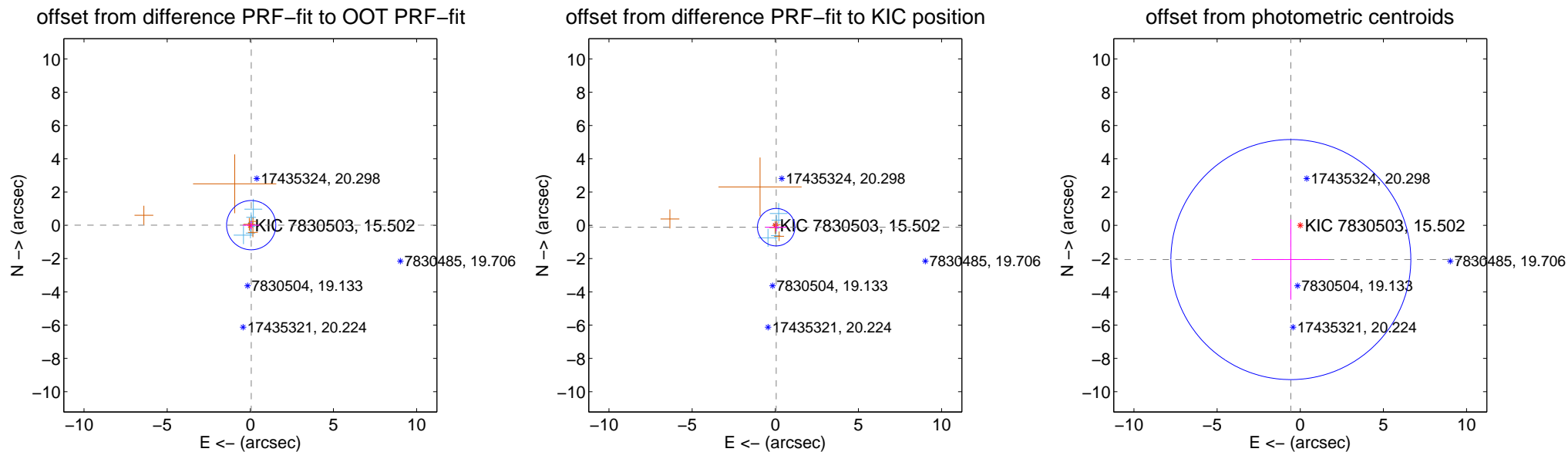
## DV Centroid Data

Supplemental centroid analysis for 007830503-01. Kepler magnitude: 15.50. Transit SNR 4.82

There are 6 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

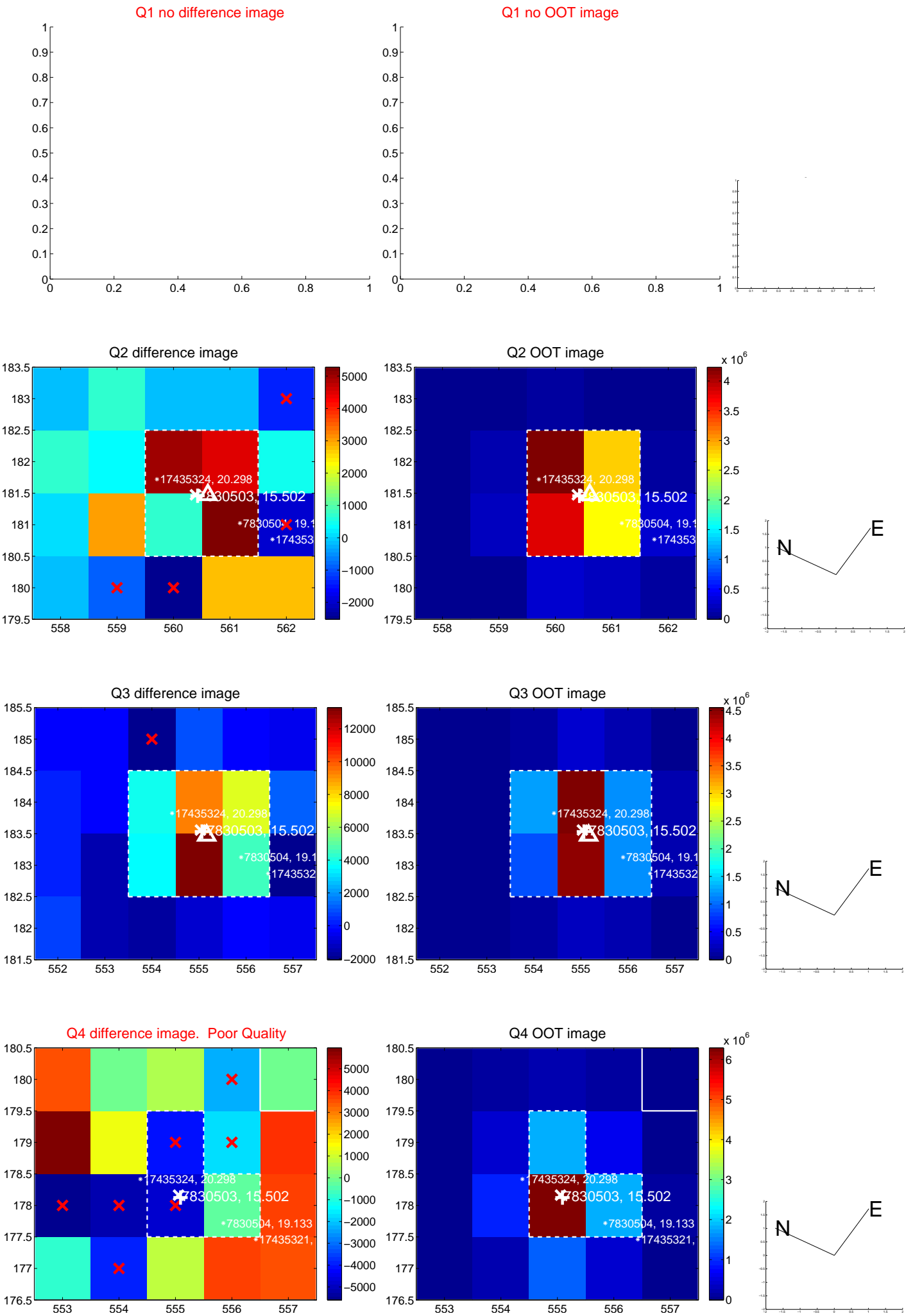
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.054 \pm 0.494$	0.11	$-0.054 \pm 0.510$	$0.009 \pm 0.260$
PRF-fit source offset from KIC position	$0.125 \pm 0.375$	0.33	$-0.054 \pm 0.642$	$-0.113 \pm 0.239$
photometric centroid source offset	$2.14 \pm 2.41$	0.89	$0.57 \pm 2.27$	$-2.06 \pm 2.41$



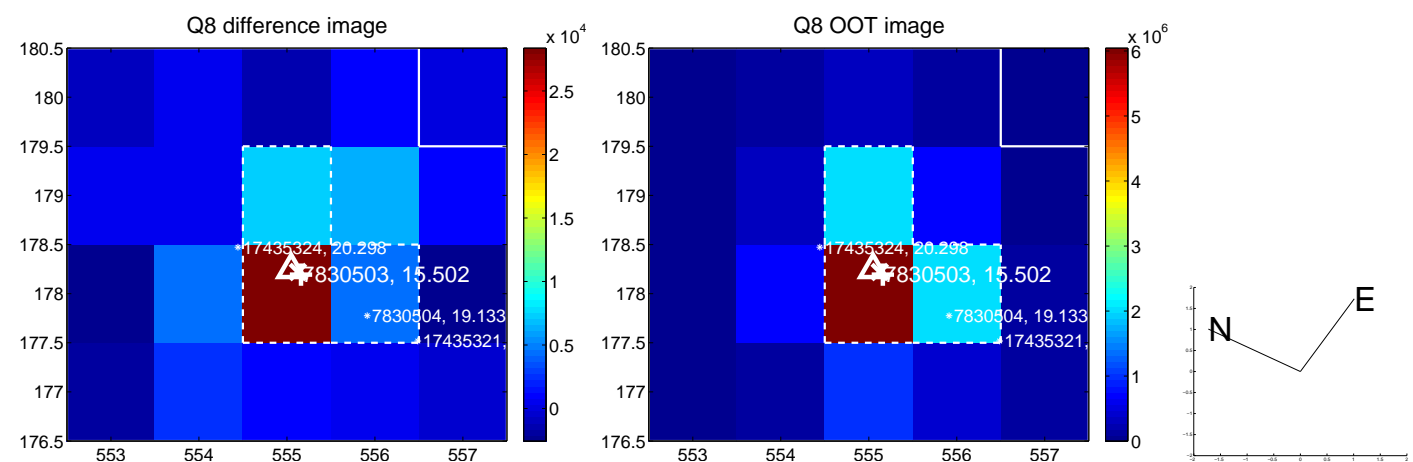
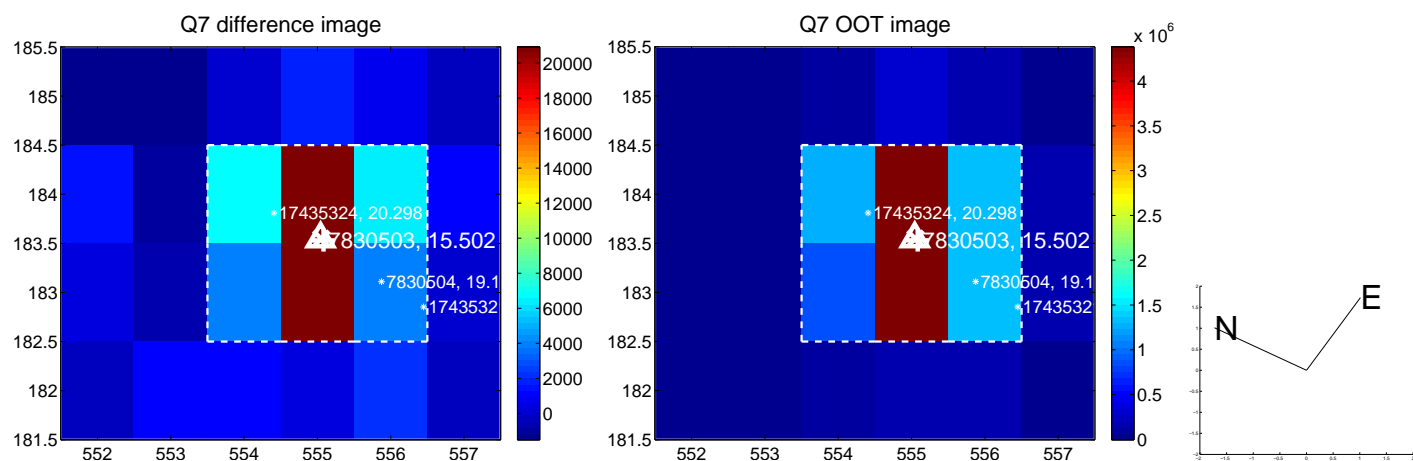
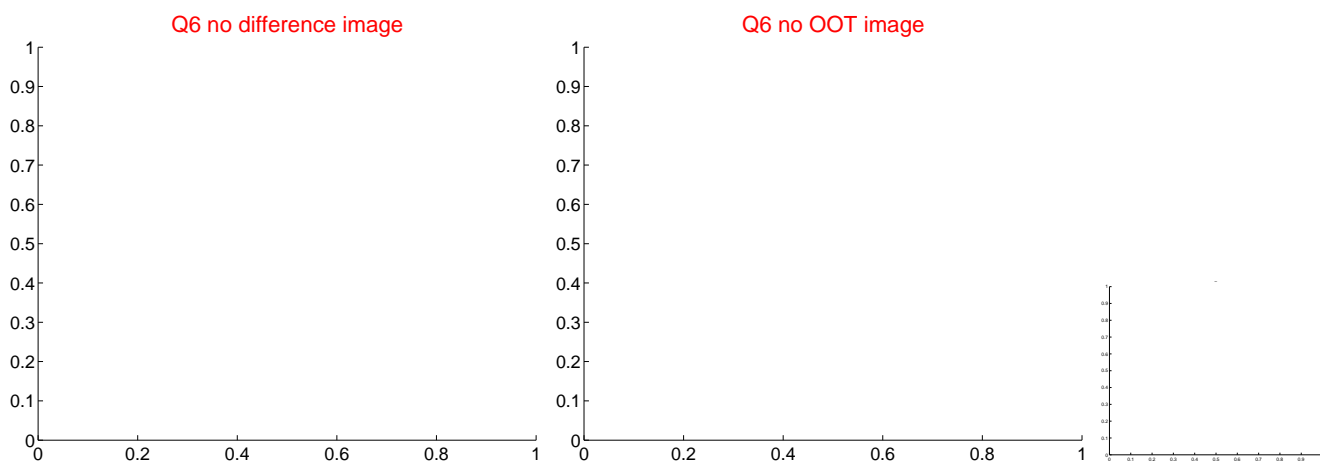
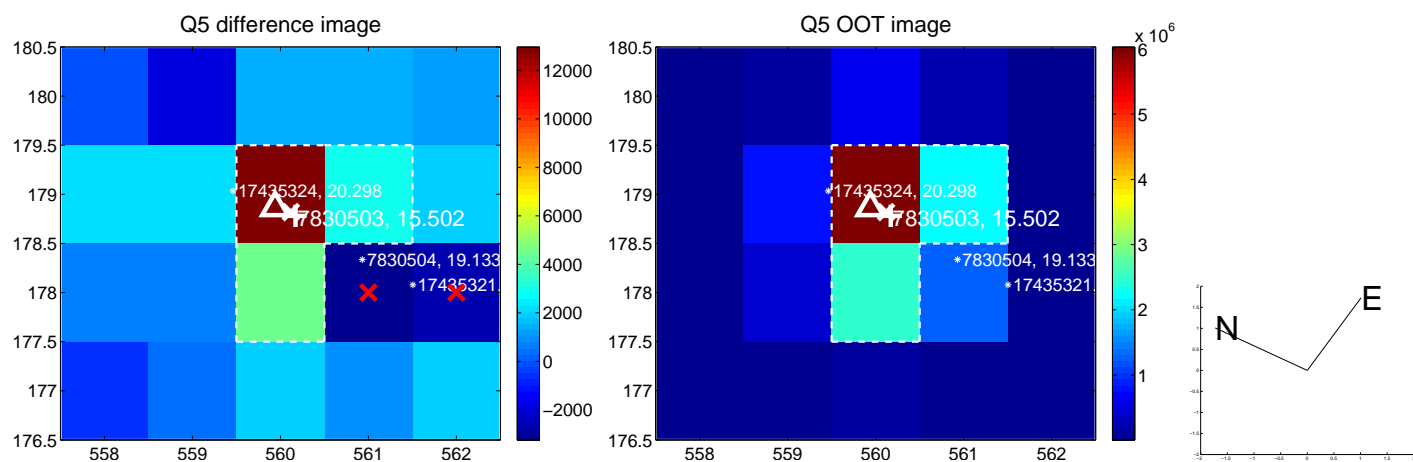
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



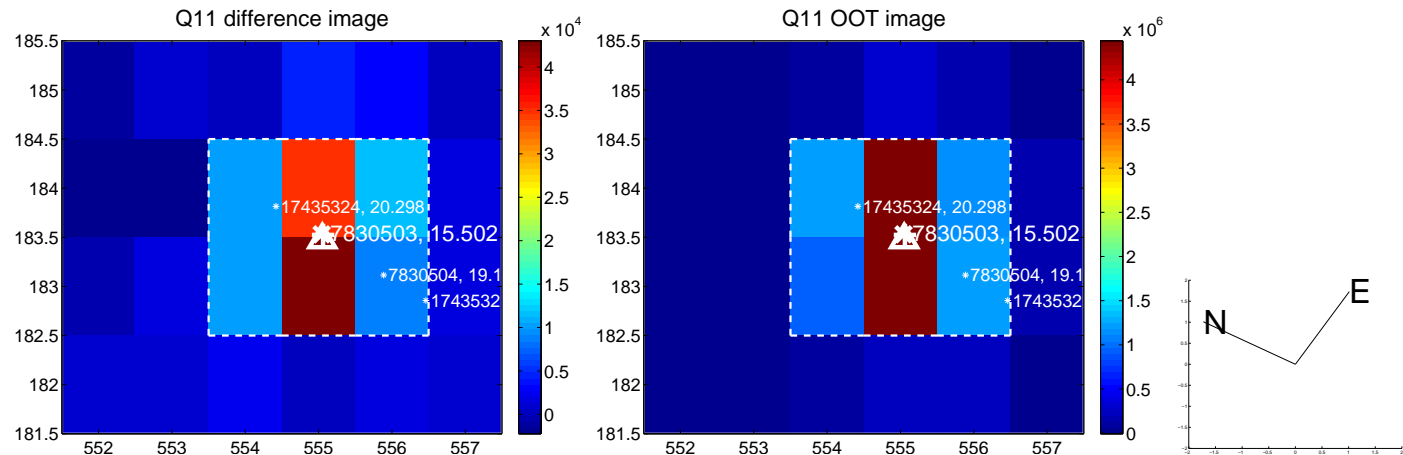
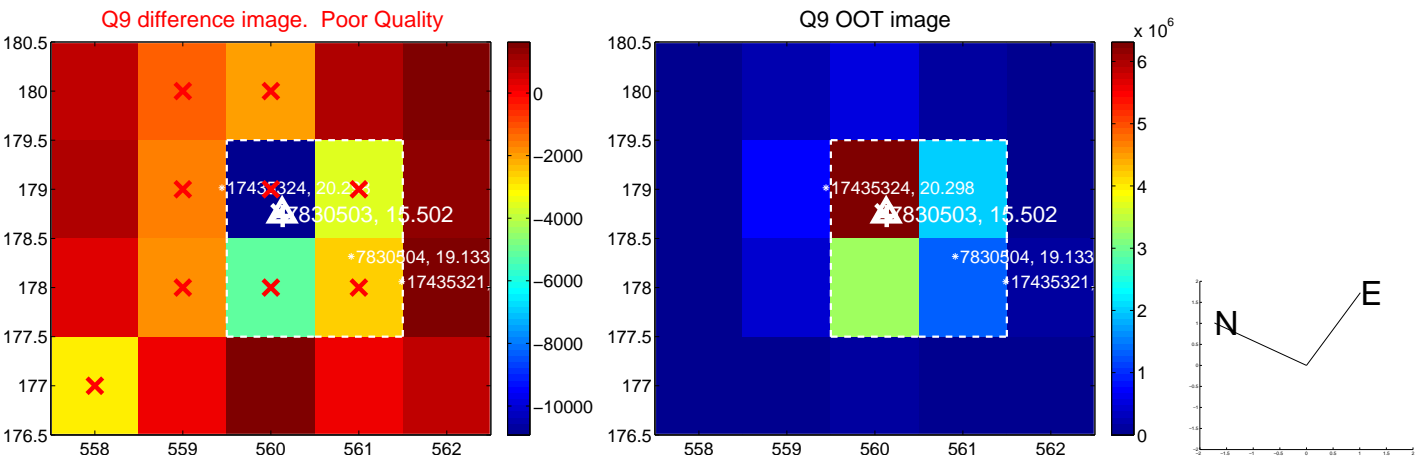
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



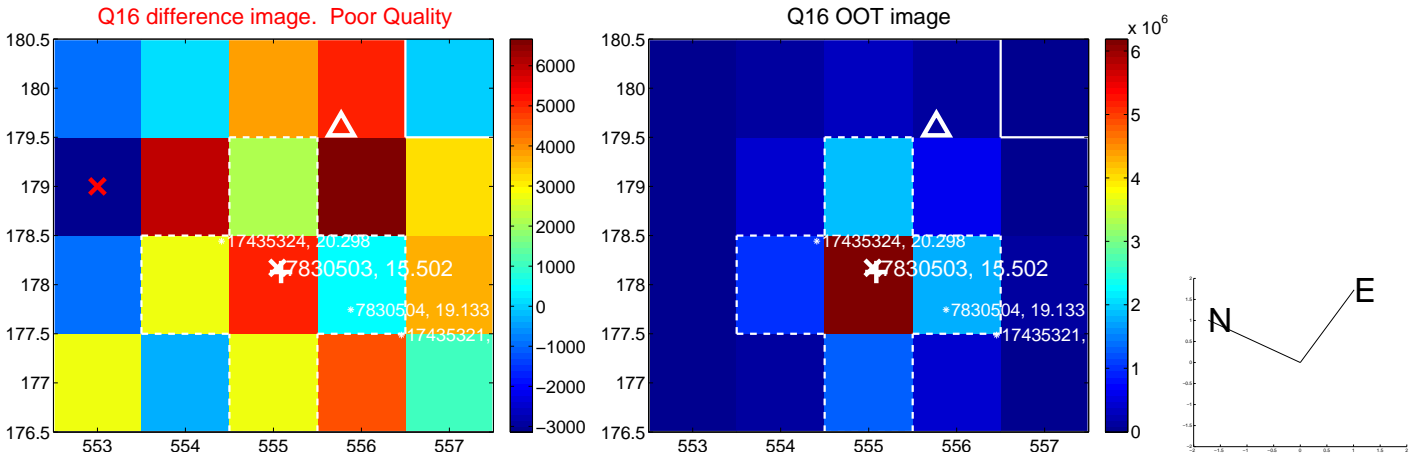
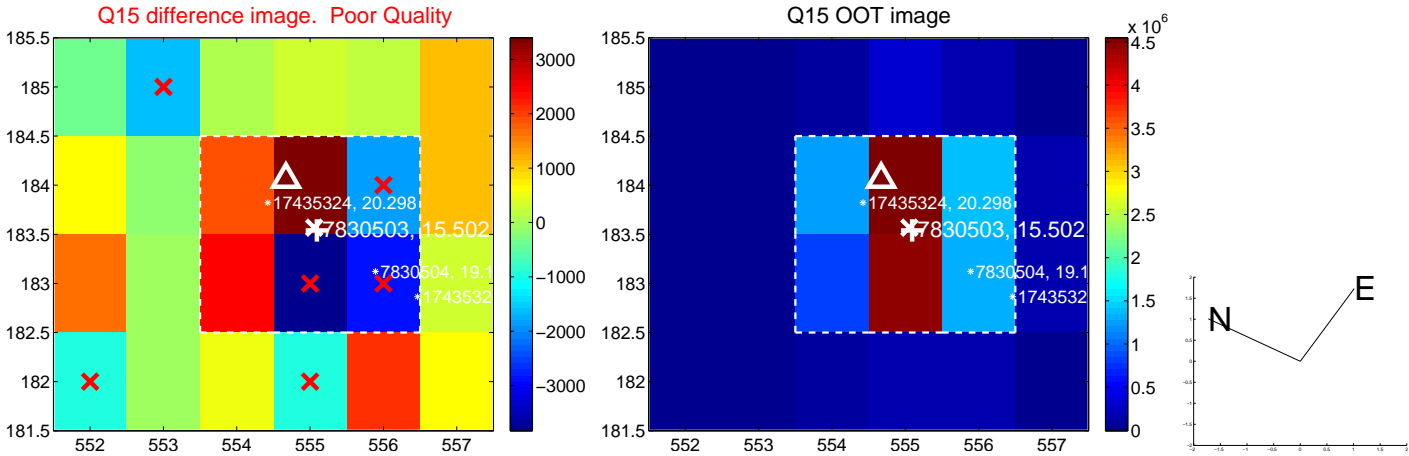
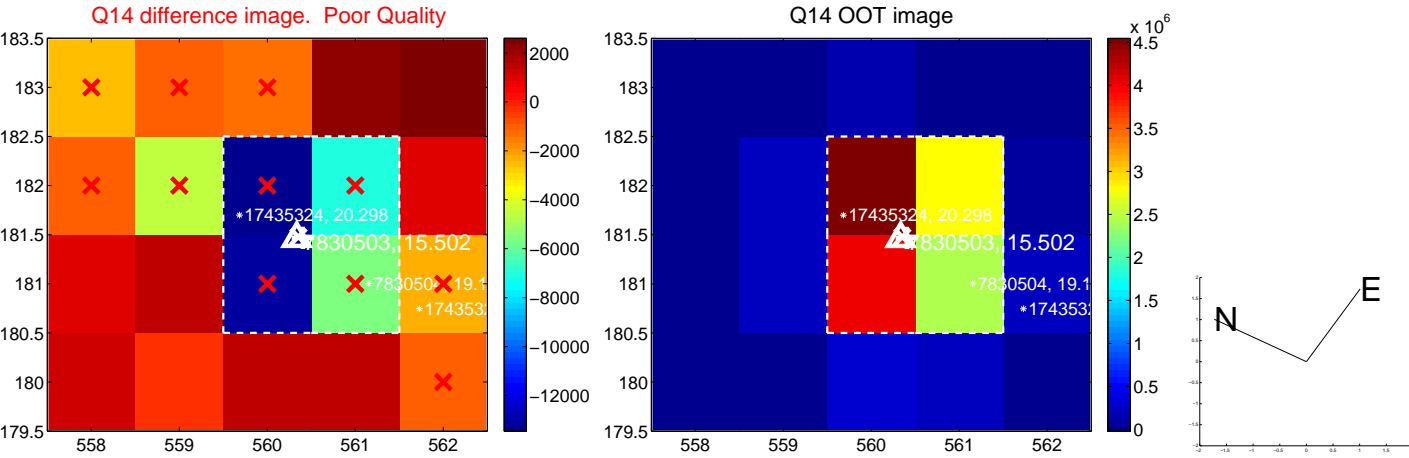
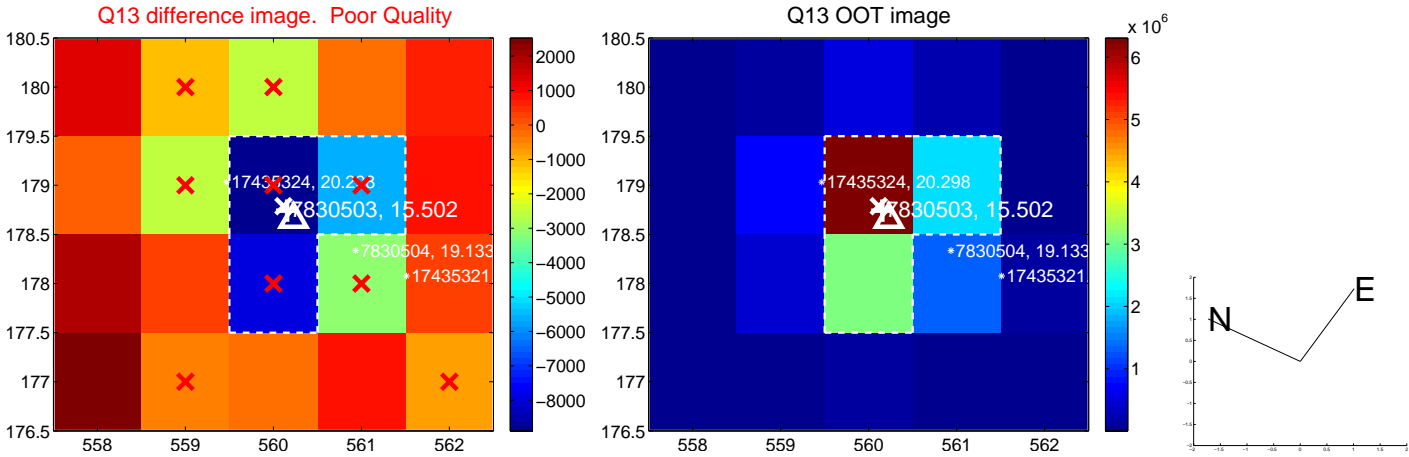
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



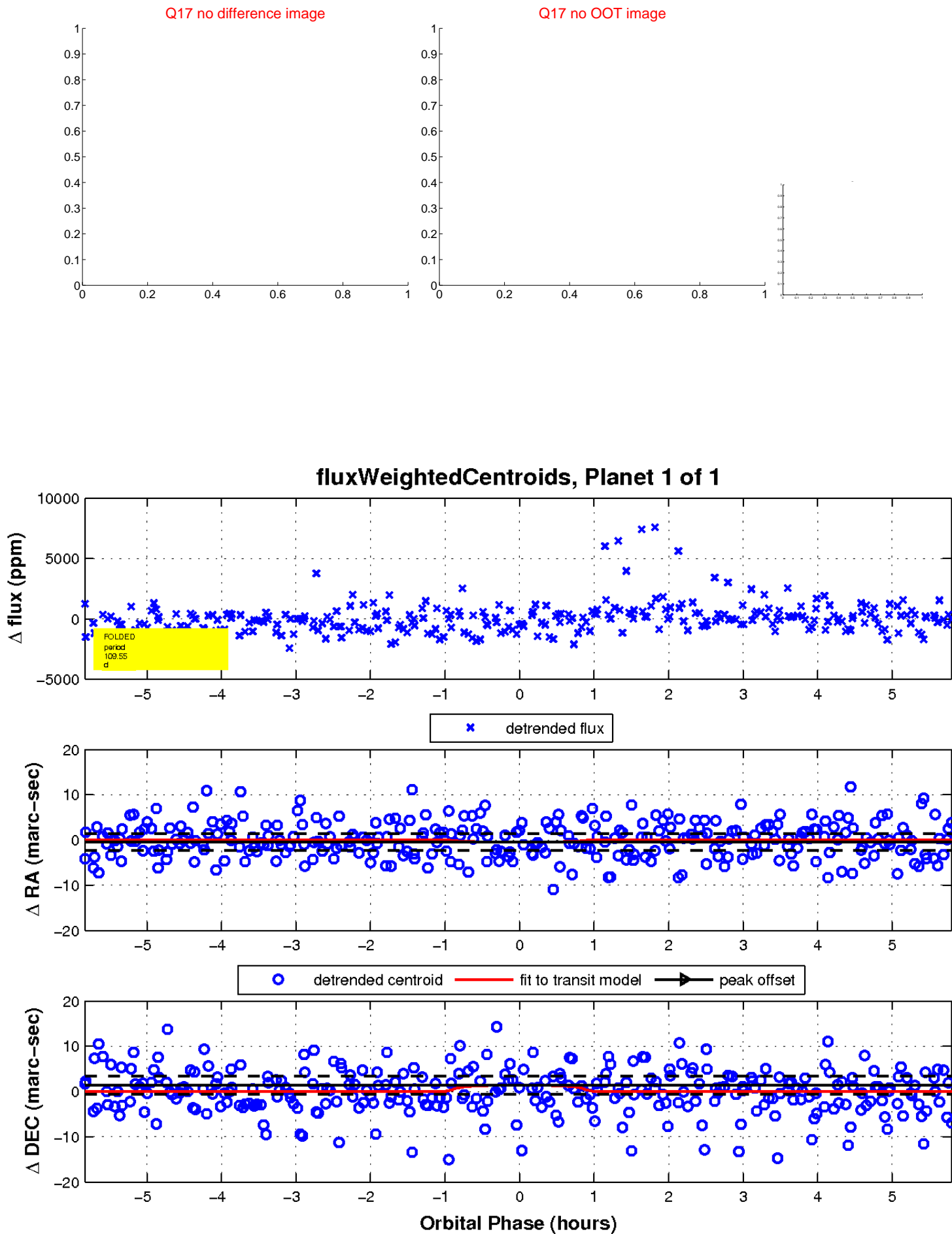
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UKIRT Image

Declination

