

# KIC 008580028

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008580028-01	OBS	No	0.654133	131.695698	14.8	3.808	9.9	5.4	3.12	7742	1.24	93286.15

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008580028-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

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

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

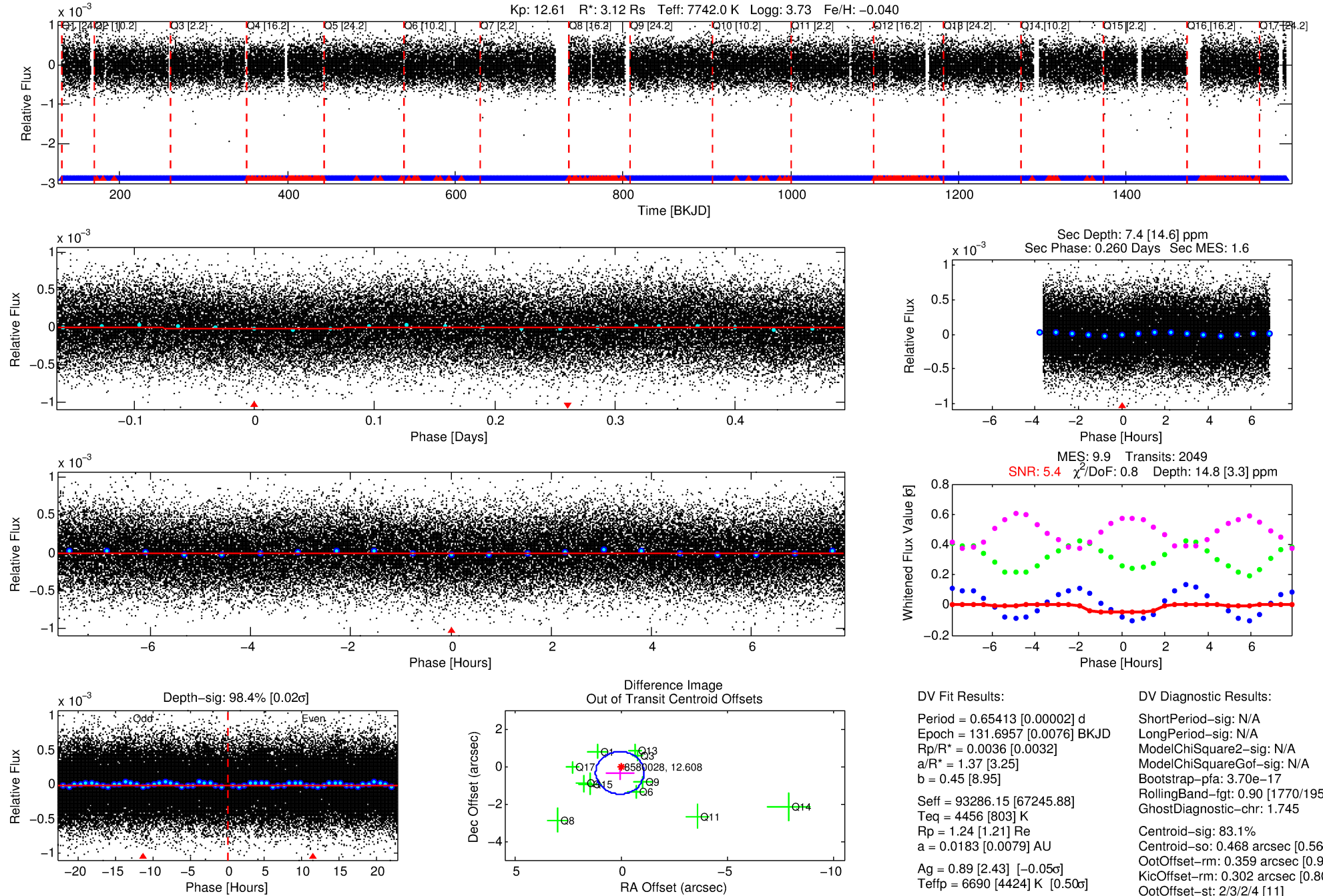
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008580028-01

No Significant Match Found

# DV One-Page Summary

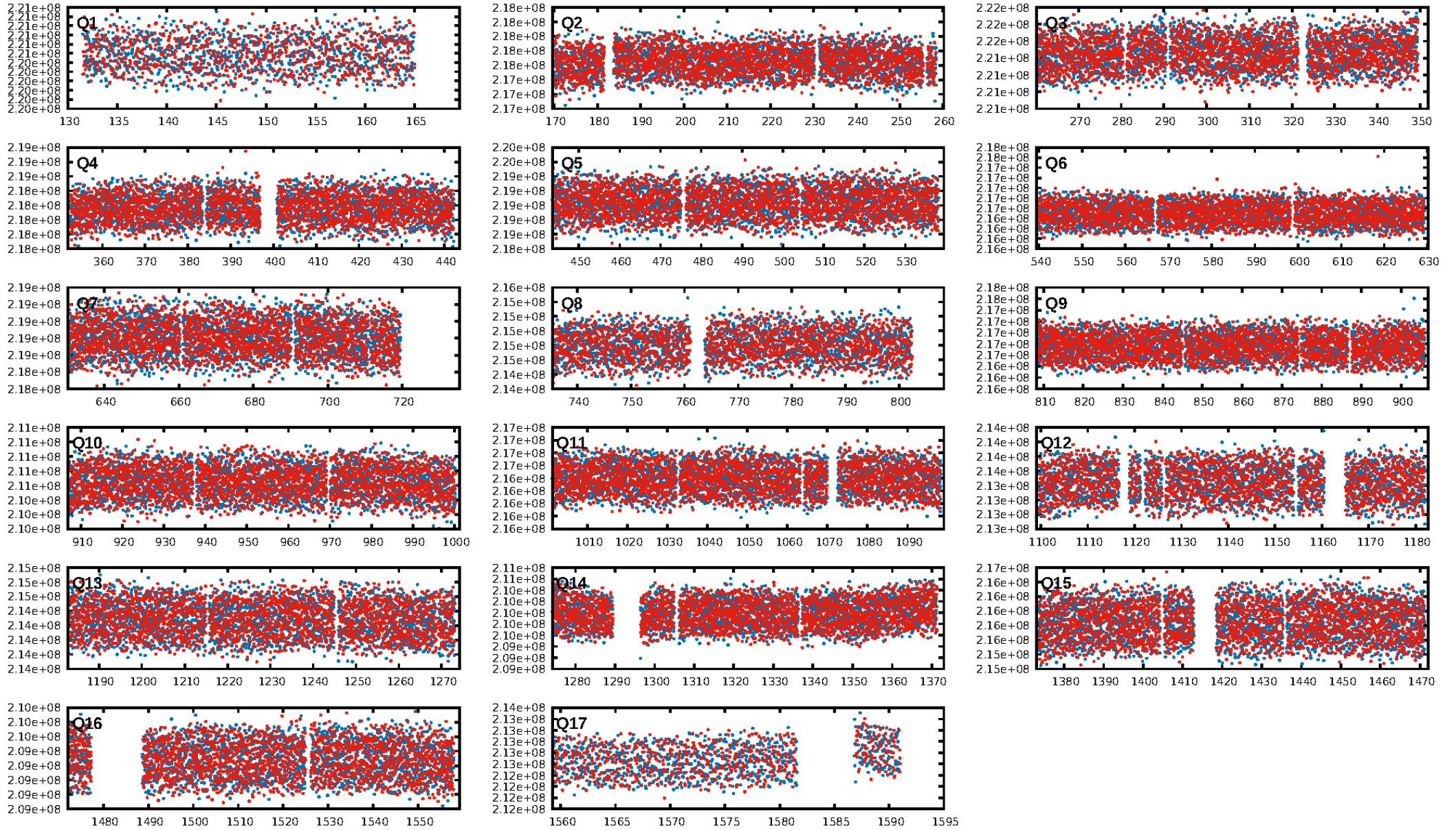
KIC: 8580028 Candidate: 1 of 1 Period: 0.654 d



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:24:46 Z

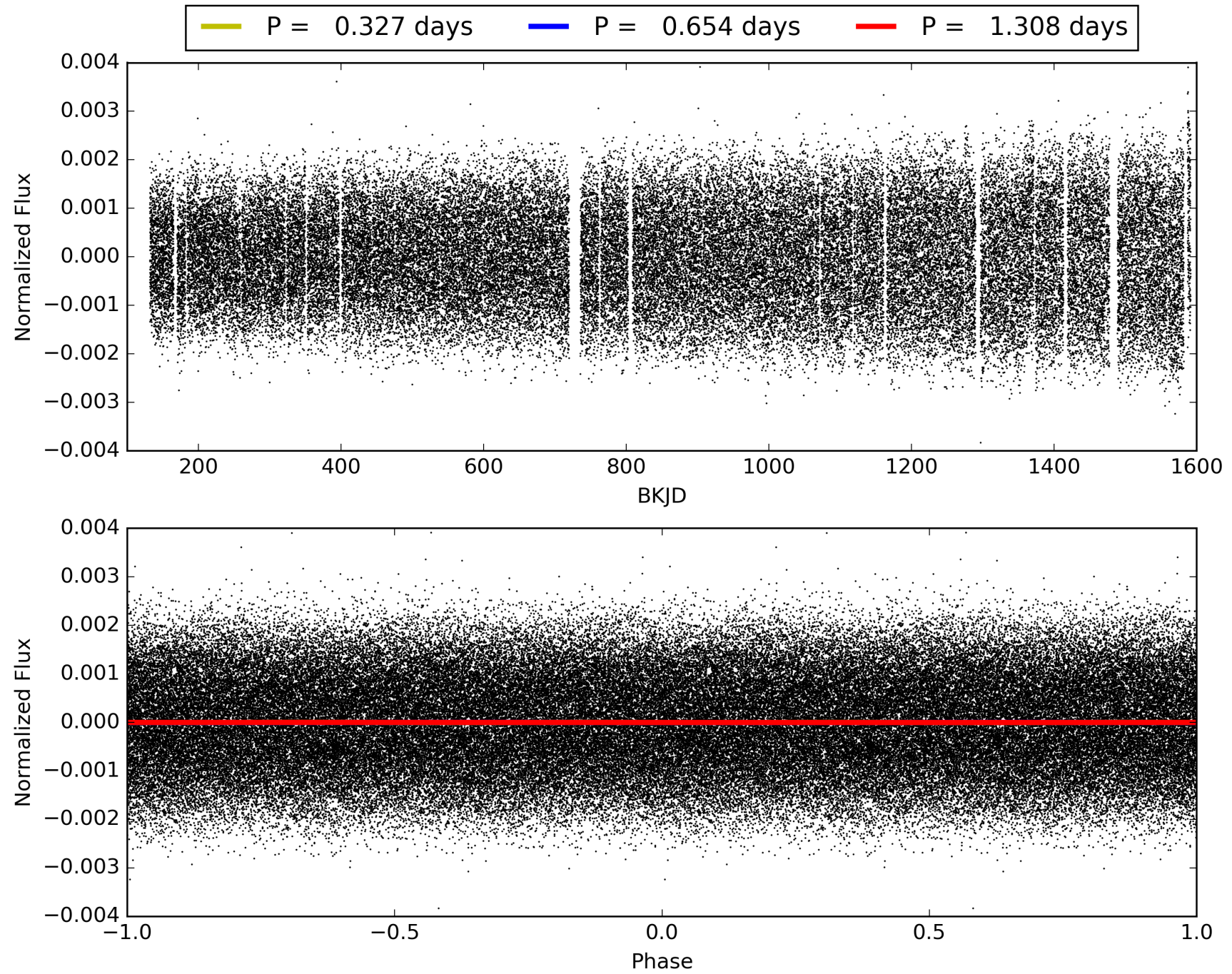
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008580028-01, PDC Light Curves



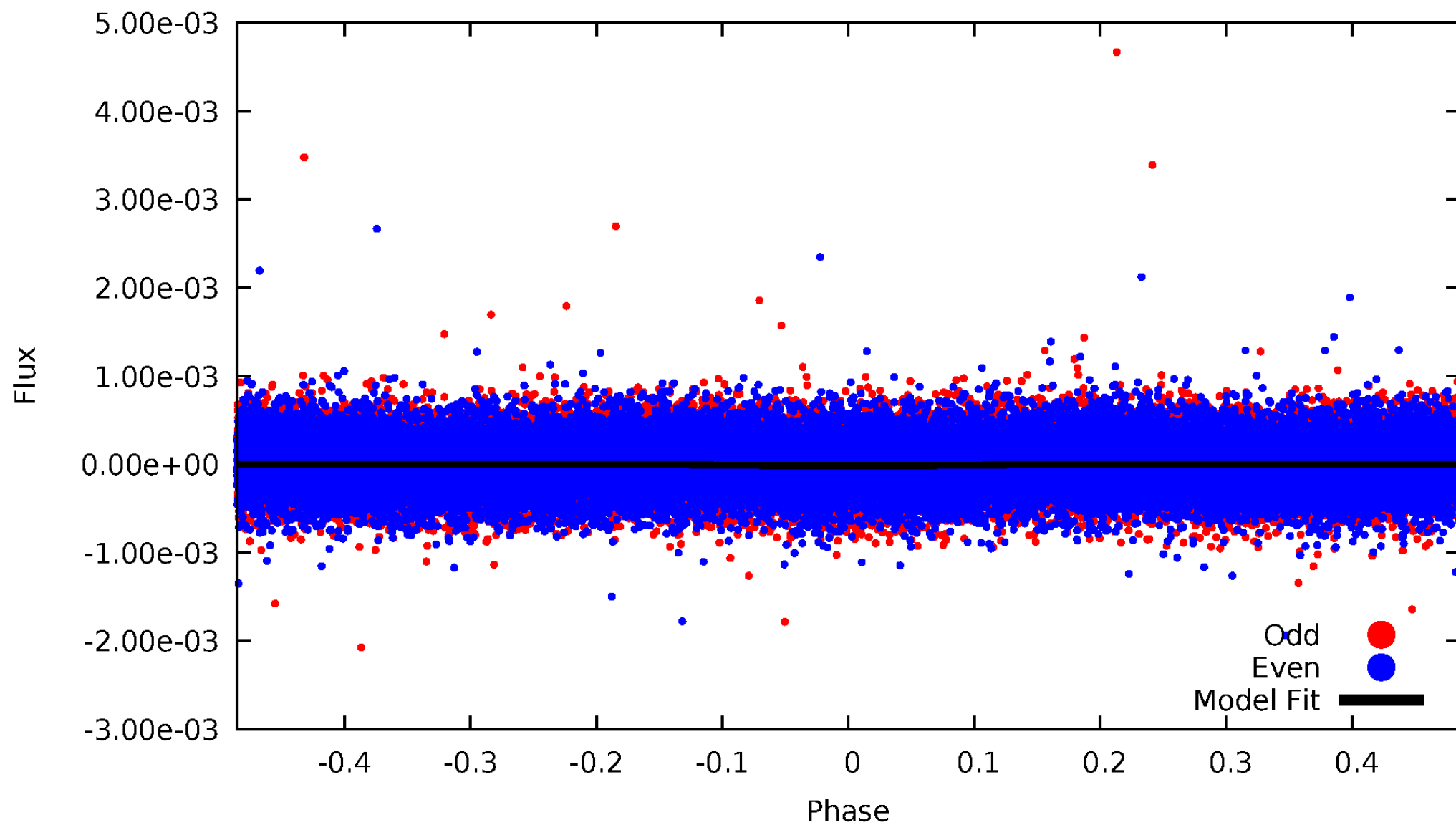


TCE 008580028-01



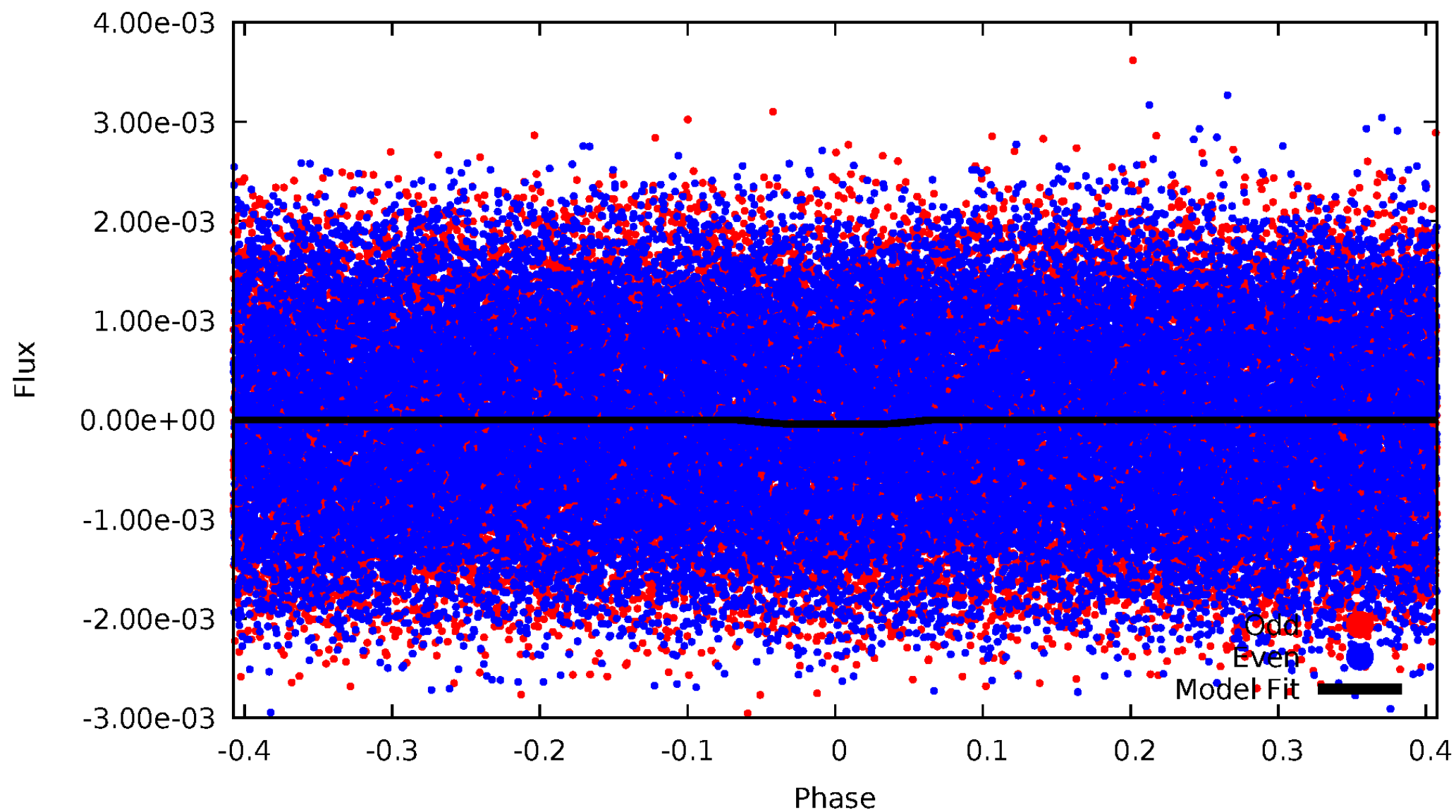
# DV Odd/Even

TCE 008580028-01



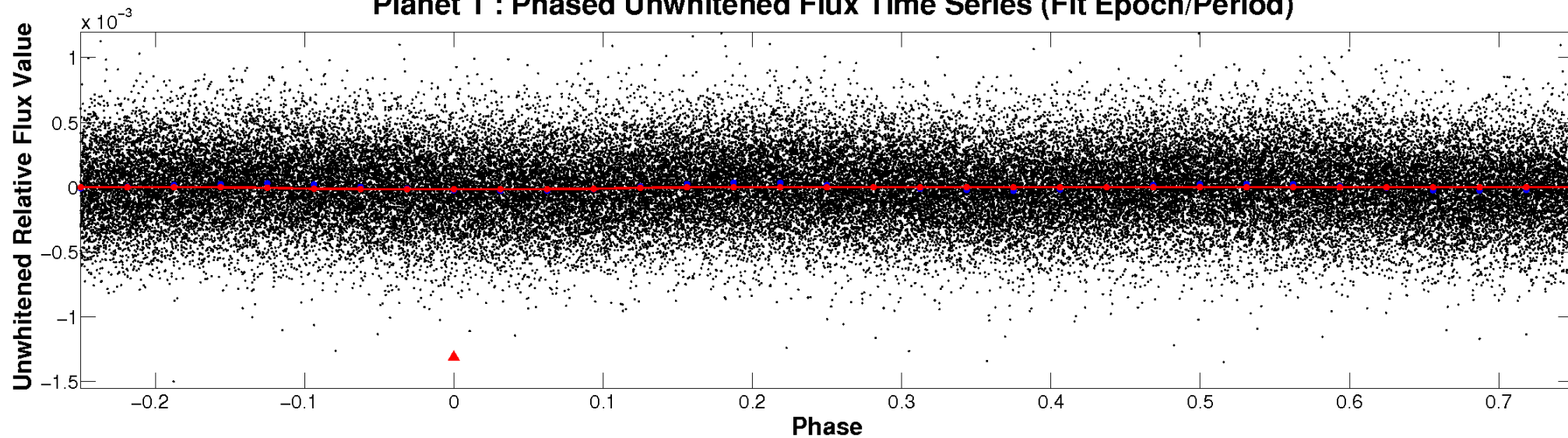
# ALT Odd/Even

TCE 008580028-01

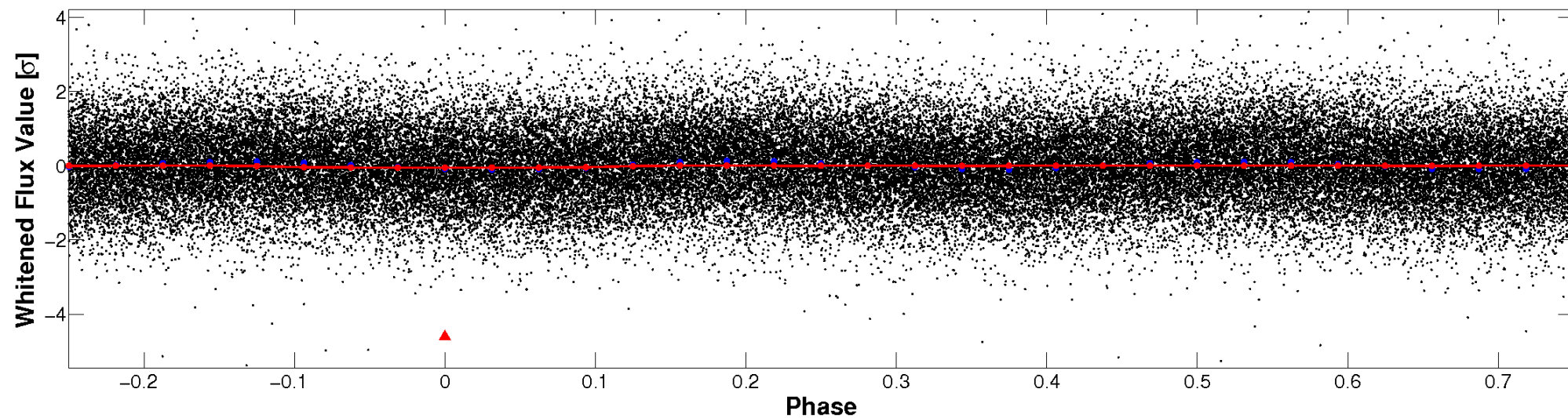


# Non-Whitened Vs. Whitened Light Curve

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



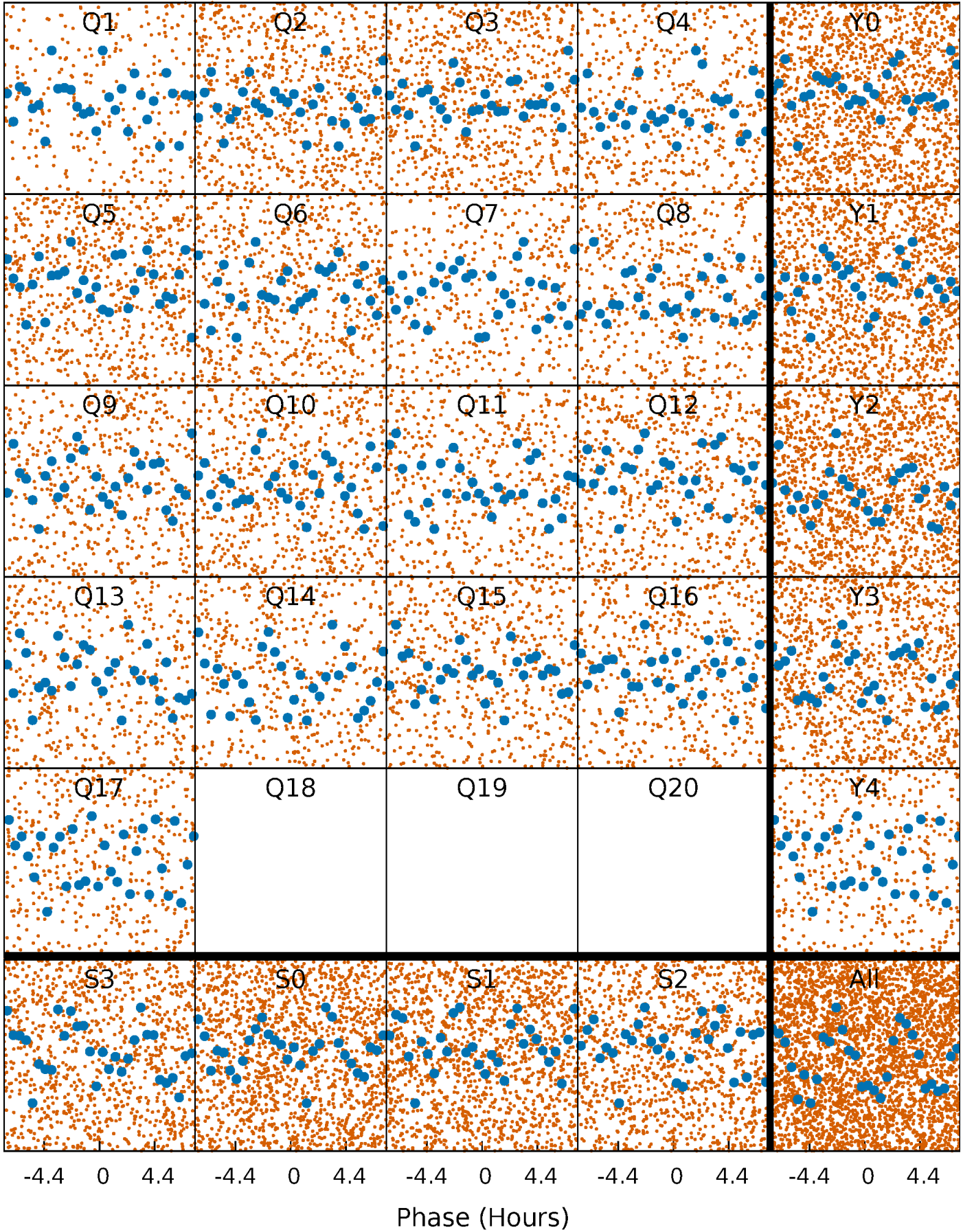
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

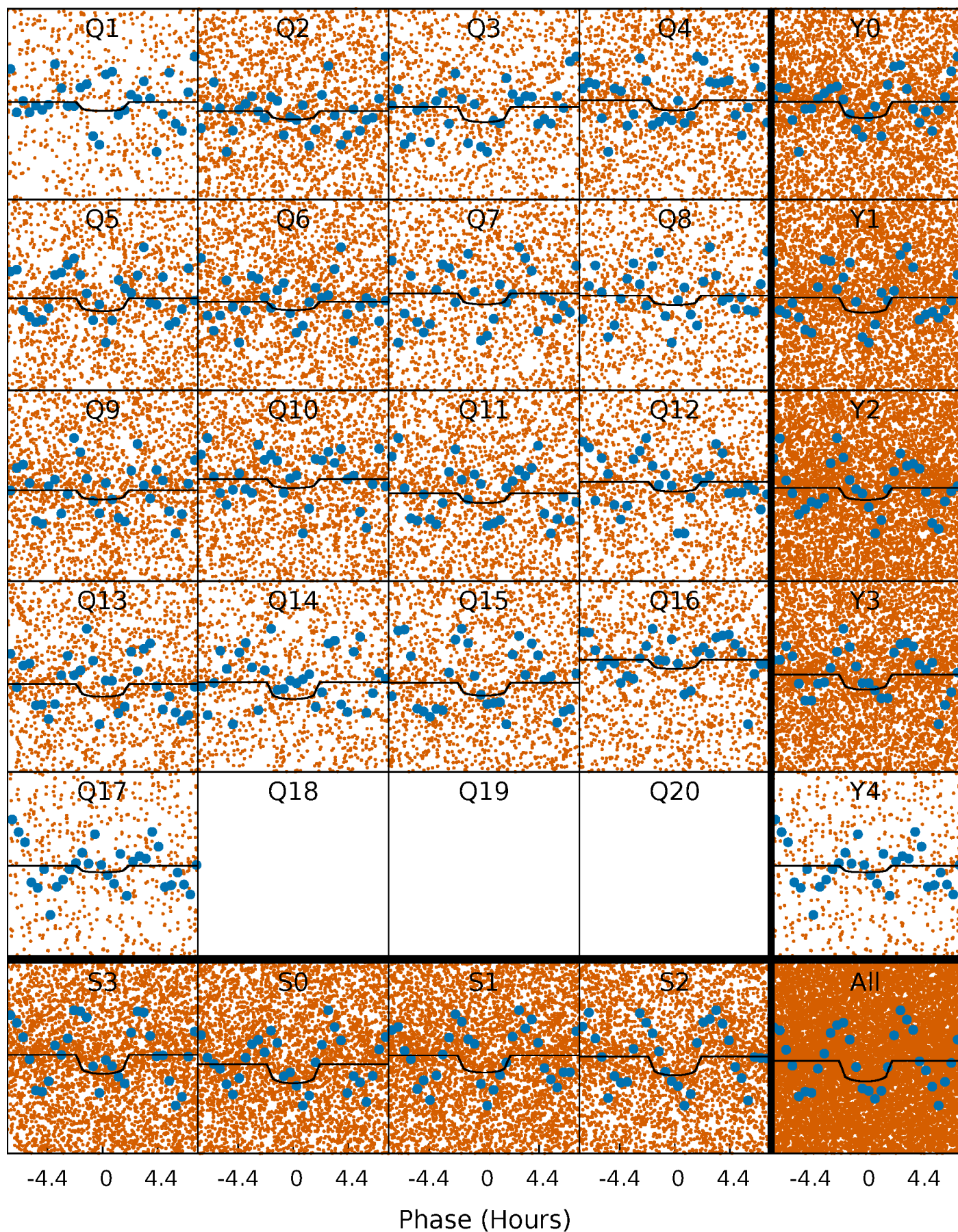
TCE 008580028-01 P= 0.654133 Days  $T_0=131.695698$  (BKJD)





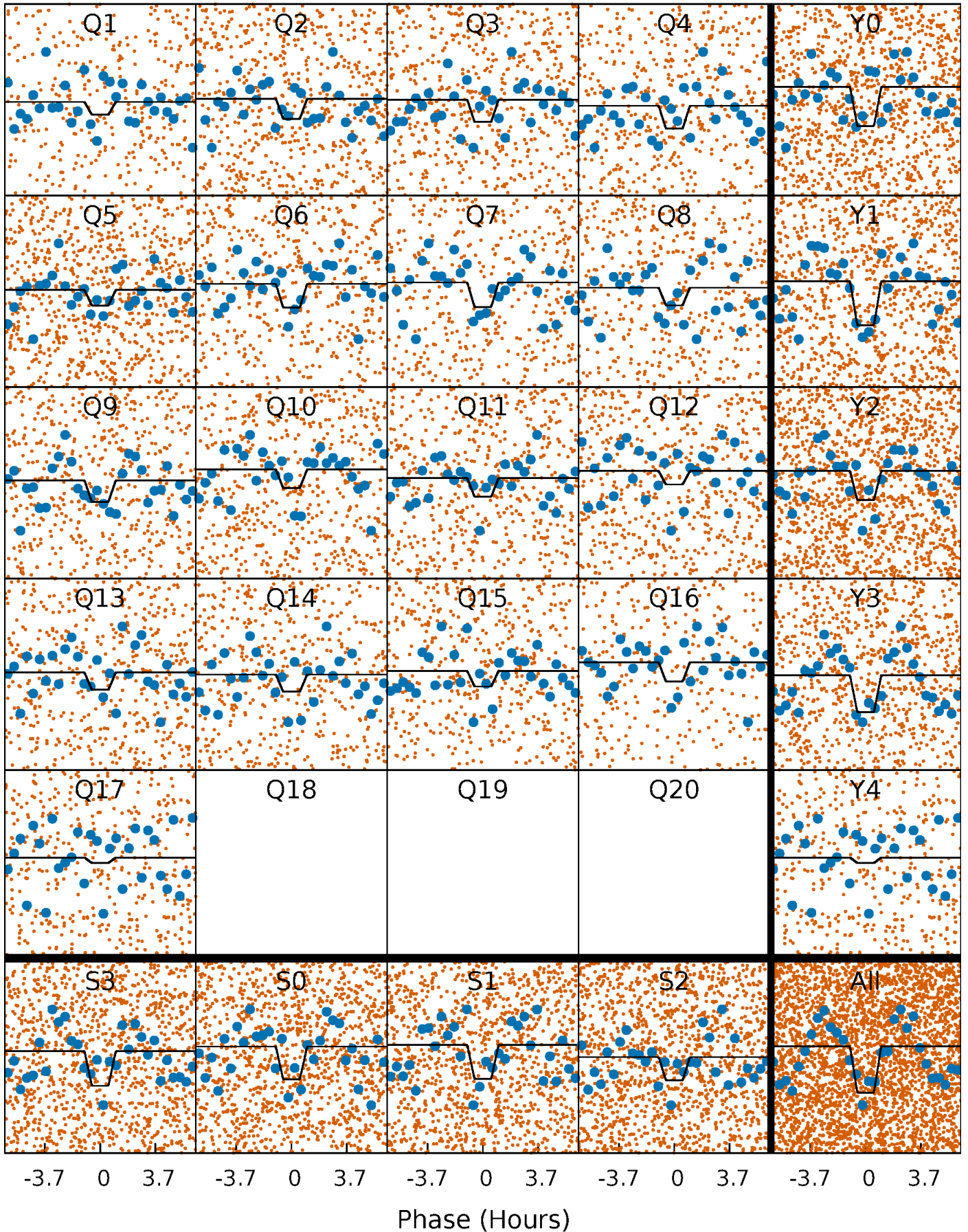
# DV Quarter-Phased Transit Curves

TCE 008580028-01 P= 0.654133 Days  $T_0=131.695698$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

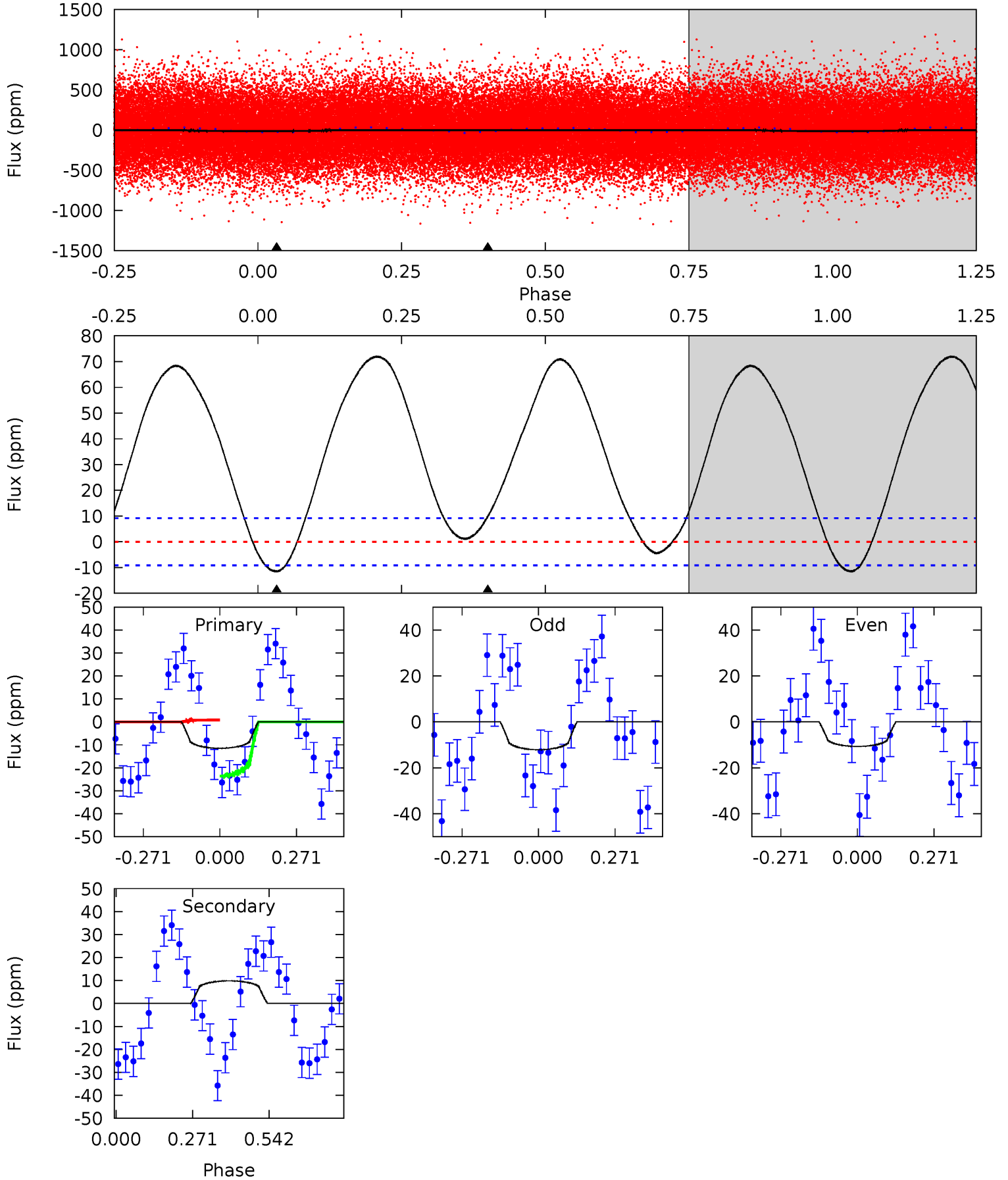
TCE 008580028-01 P= 0.654152 Days  $T_0=131.695558$  (BKJD)



# DV Model-Shift Uniqueness Test

008580028-01, P = 0.654133 Days, E = 131.041565 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
5.47	-4.68	0	0	4.35	1.10	3.70	5.47	5.47	-4.68	-4.68	0.34	1.54	0.86	5.39

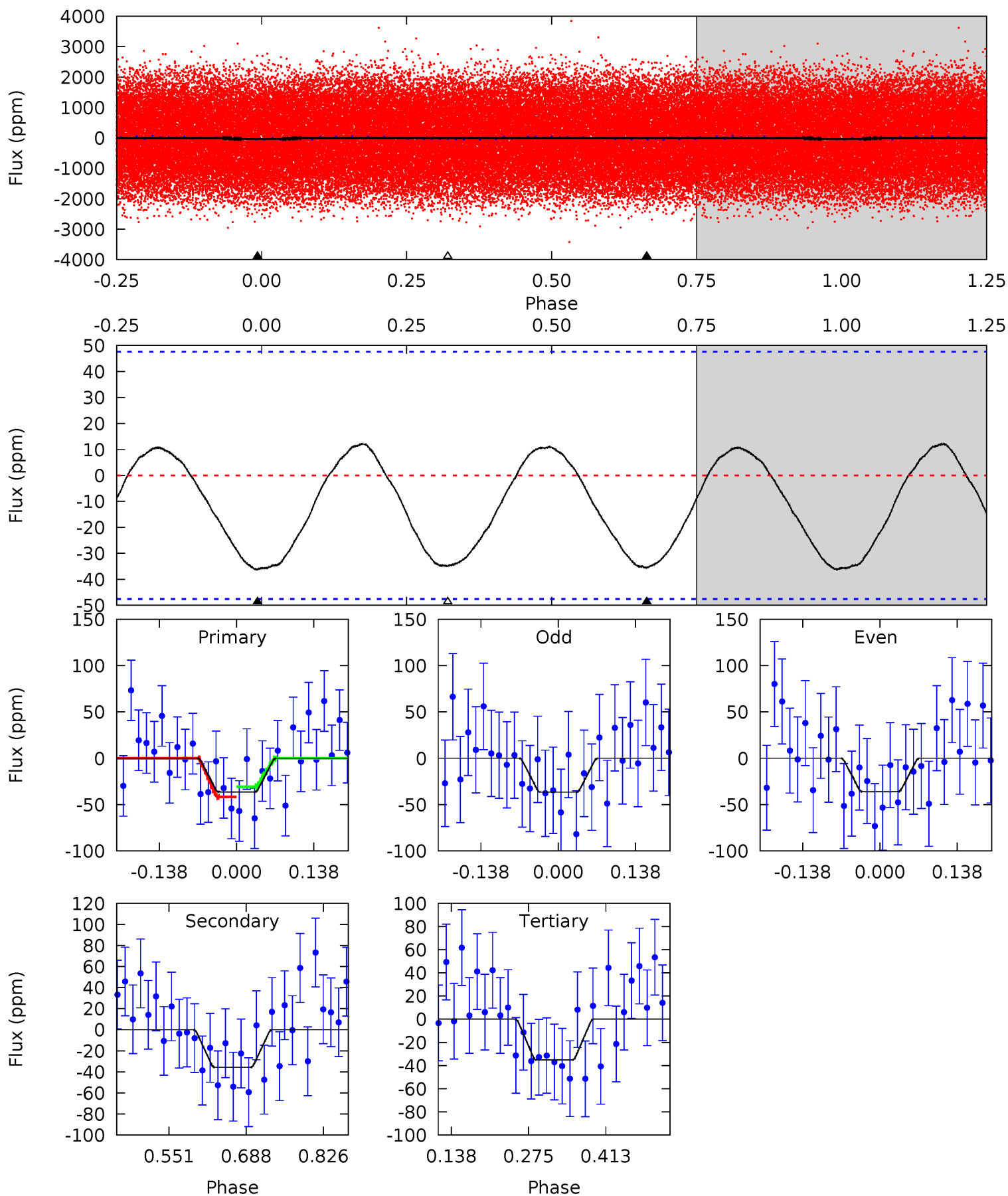




# Alt Model-Shift Uniqueness Test

008580028-01, P = 0.654152 Days, E = 131.041406 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
3.44	3.37	3.32	0	4.50	1.48	1.61	0.12	3.44	0.05	3.37	0.02	0.75	0.25	0.52





### Stellar Parameters For KIC 008580028

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7742^{+214}_{-322}$	$3.732^{+0.416}_{-0.073}$	$-0.040^{+0.200}_{-0.350}$	$3.116^{+0.452}_{-1.356}$	$1.912^{+0.097}_{-0.411}$	$0.089^{+0.331}_{-0.027}$
	+3%/-4%	+11%/-2%	+500%/-875%	+15%/-44%	+5%/-21%	+372%/-31%
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 008580028-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$10 \pm 2$	$1.24^{+0.98}_{-0.75}$	$6016^{+406}_{-648}$	$-7068^{+1311}_{-5329}$	$-1.144^{+0.812}_{-6.352}$
Alt.	$-36 \pm 11$	$2.08^{+1.07}_{-0.99}$	$5991^{+434}_{-616}$	$6663^{+3712}_{-1776}$	$1.458^{+3.841}_{-0.846}$

$T_{max}$  = 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

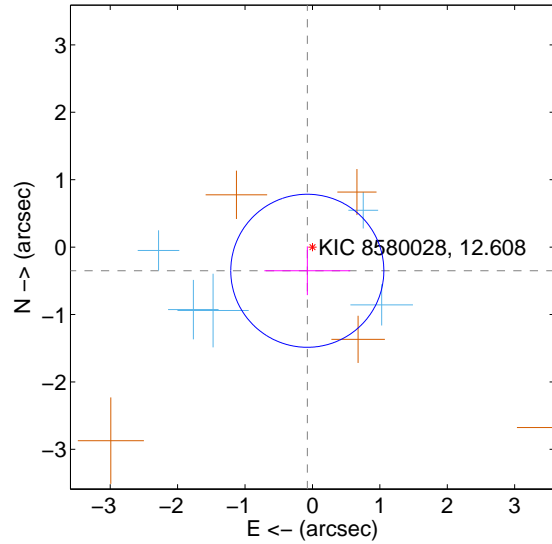
Supplemental centroid analysis for 008580028-01. Kepler magnitude: 12.61. Transit SNR 5.44

There are 5 quarters with good PRF difference image offsets

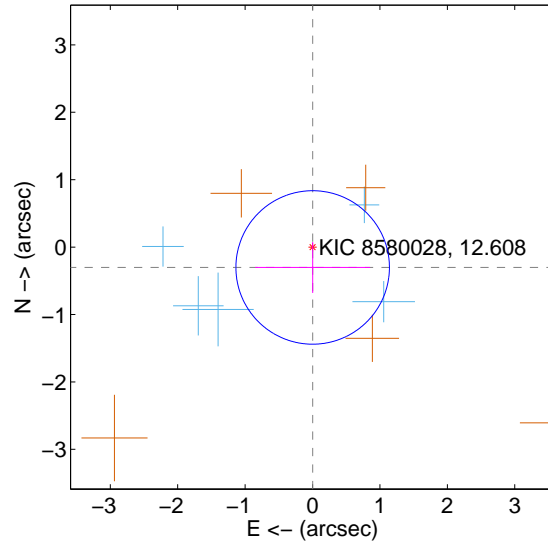
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.359 \pm 0.378$	0.95	$0.076 \pm 0.636$	$-0.351 \pm 0.362$
PRF-fit source offset from KIC position	$0.302 \pm 0.379$	0.80	$-0.002 \pm 0.852$	$-0.302 \pm 0.378$
photometric centroid source offset	$0.47 \pm 0.84$	0.56	$0.46 \pm 0.84$	$0.06 \pm 0.80$

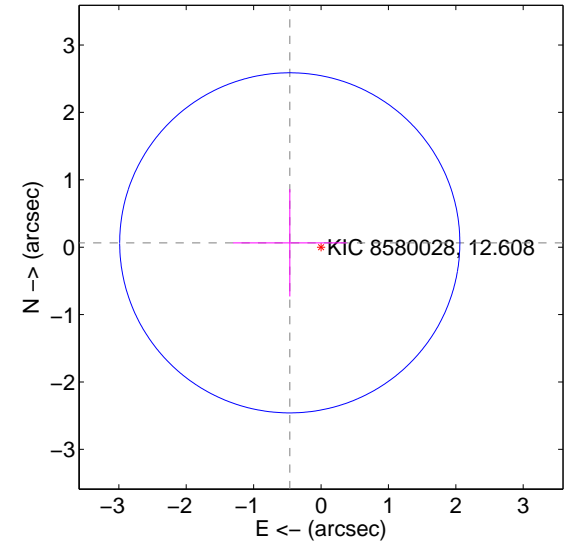
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

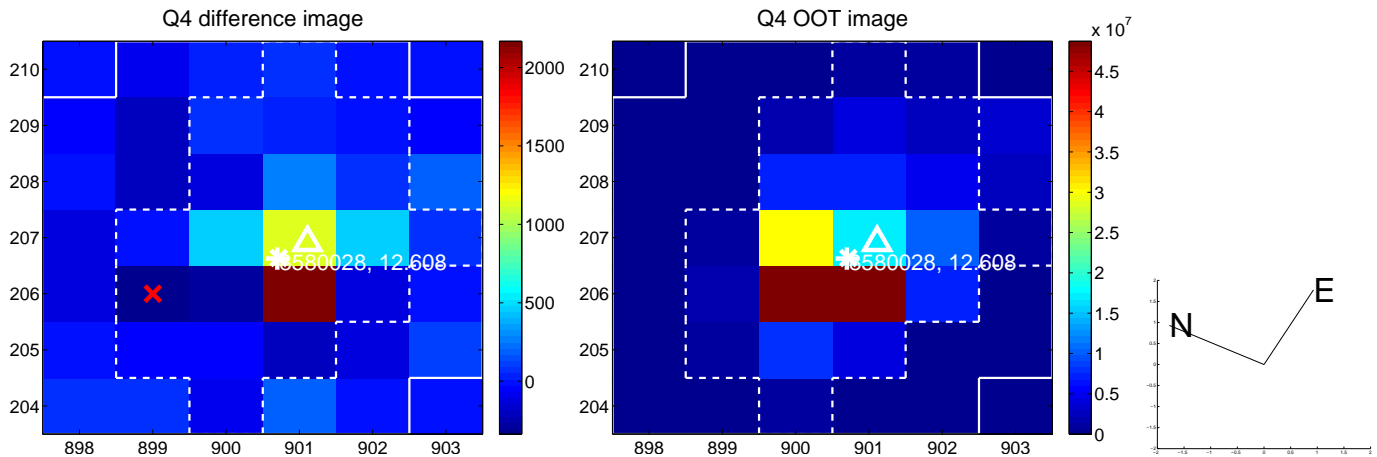
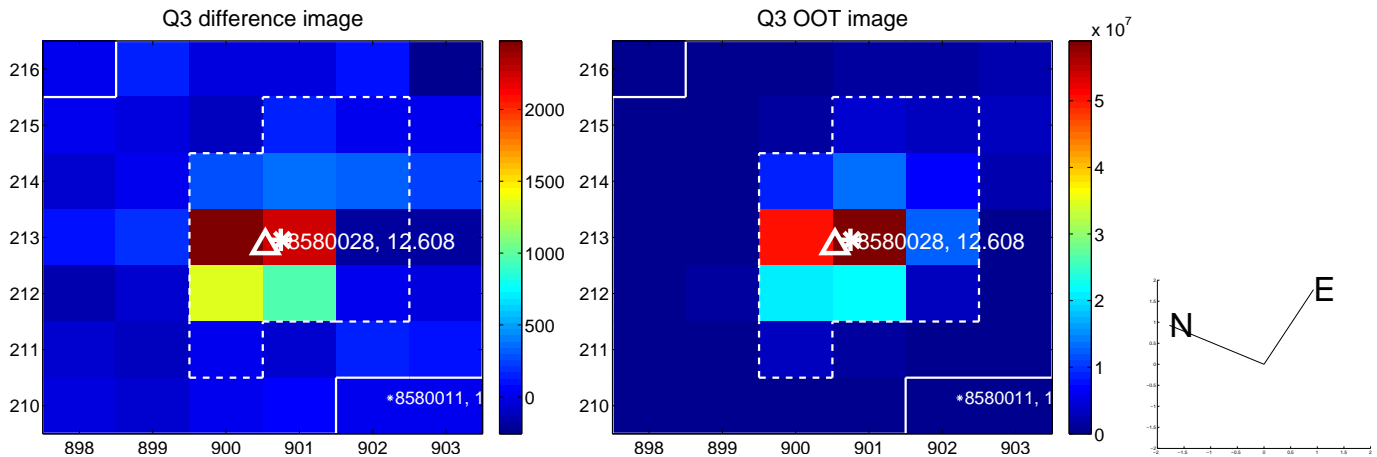
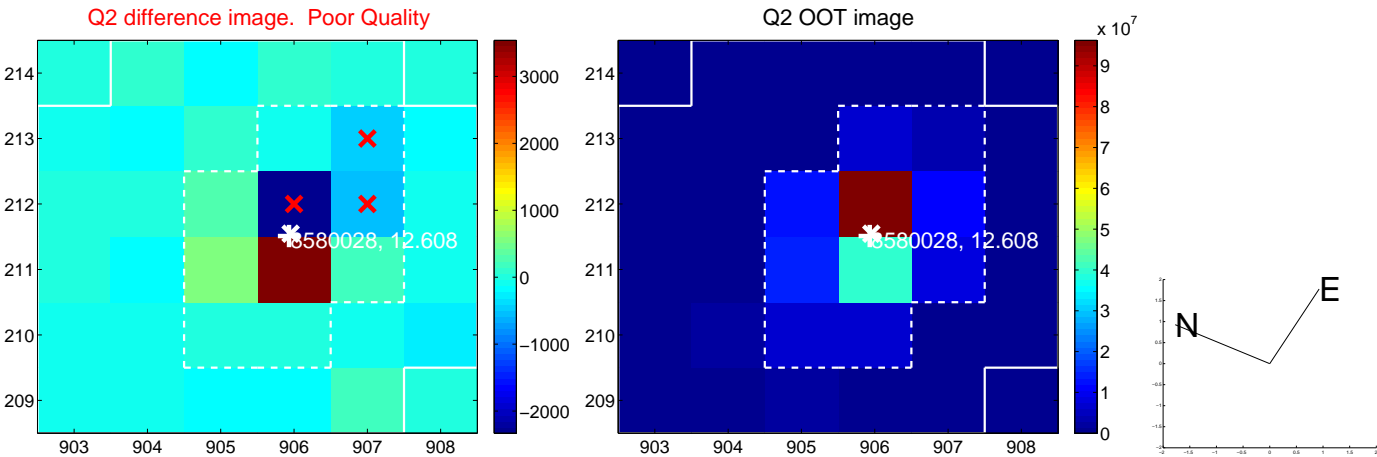
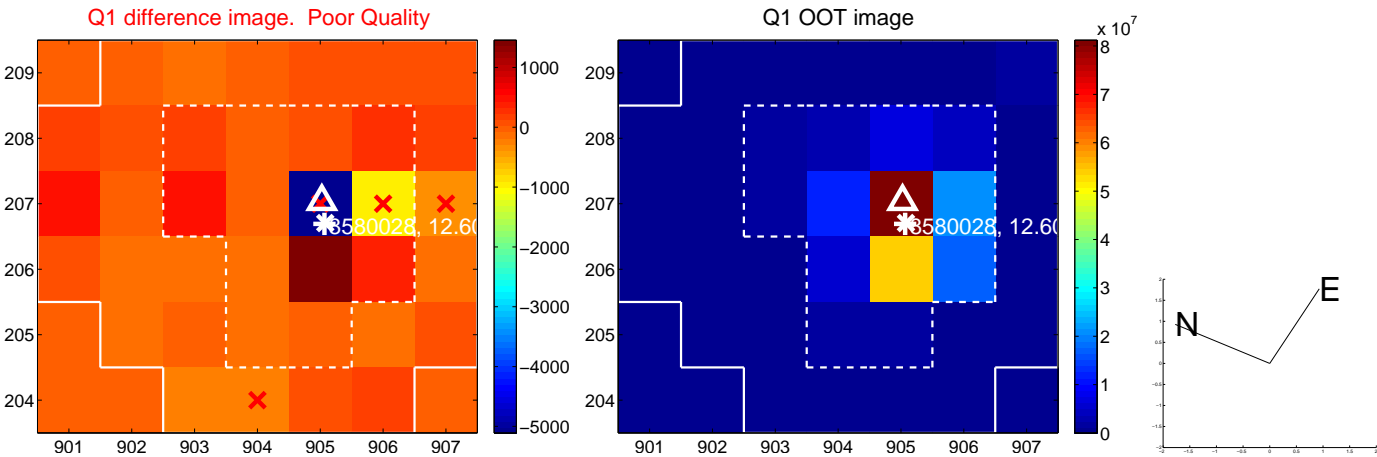


offset from photometric centroids

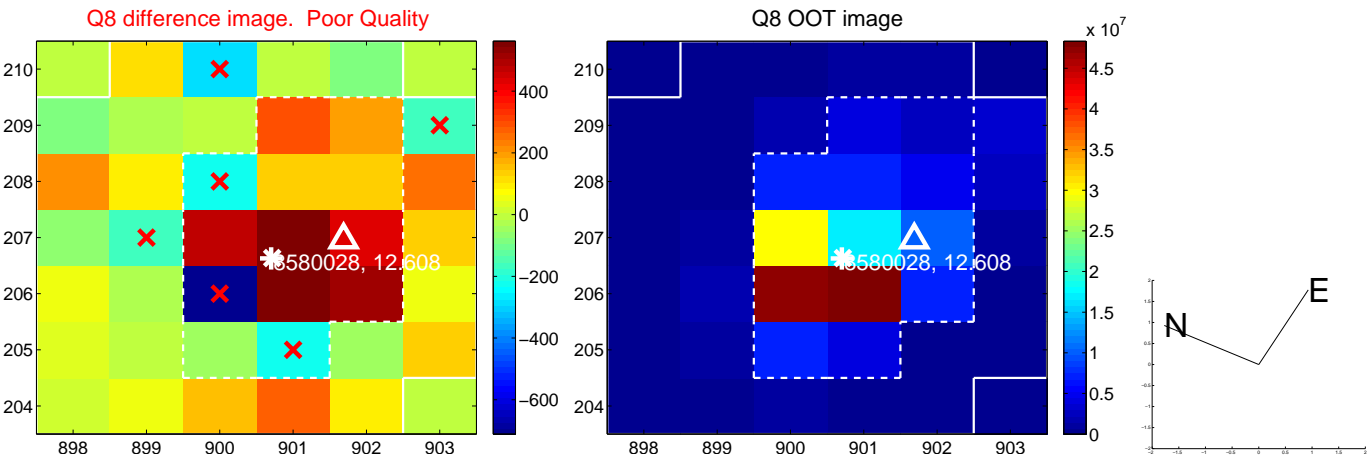
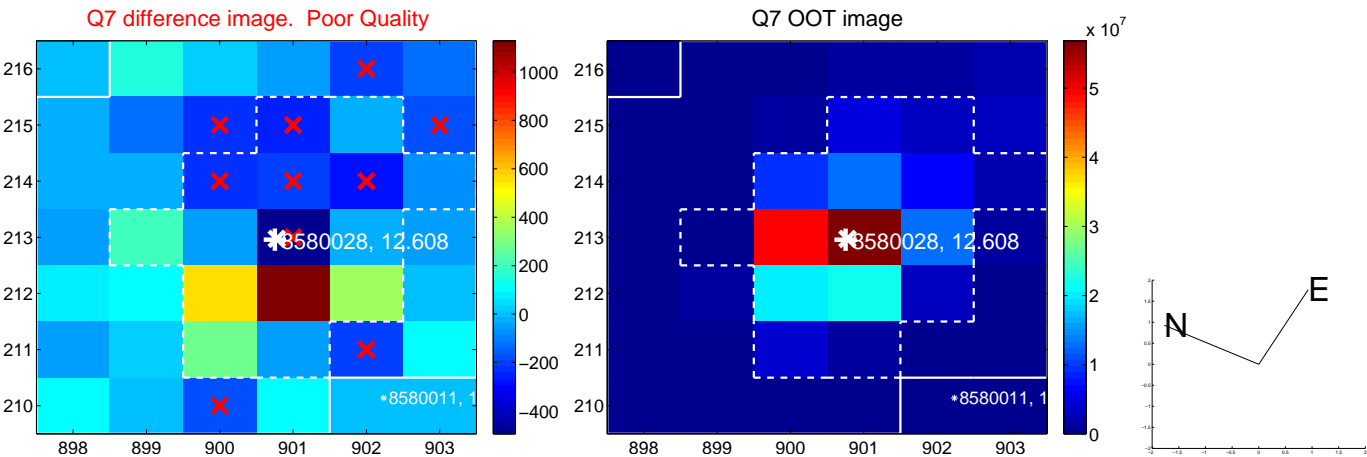
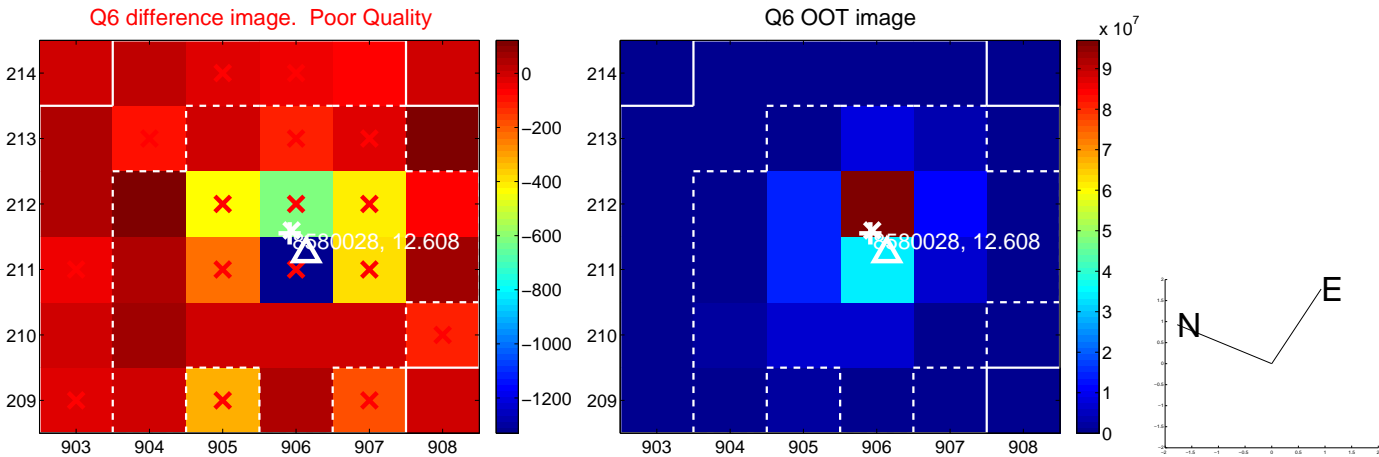
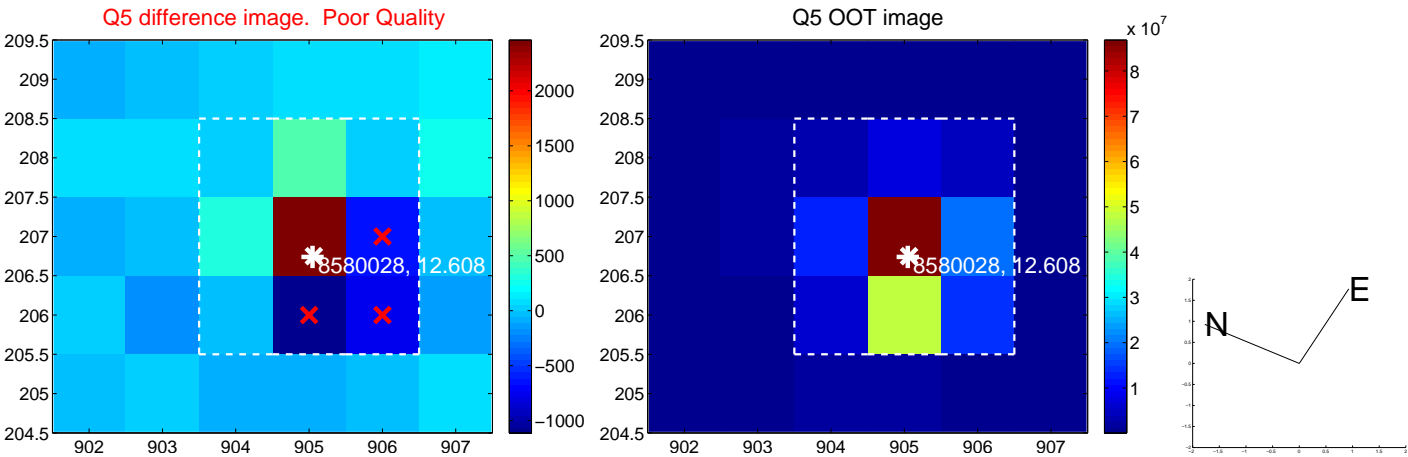


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

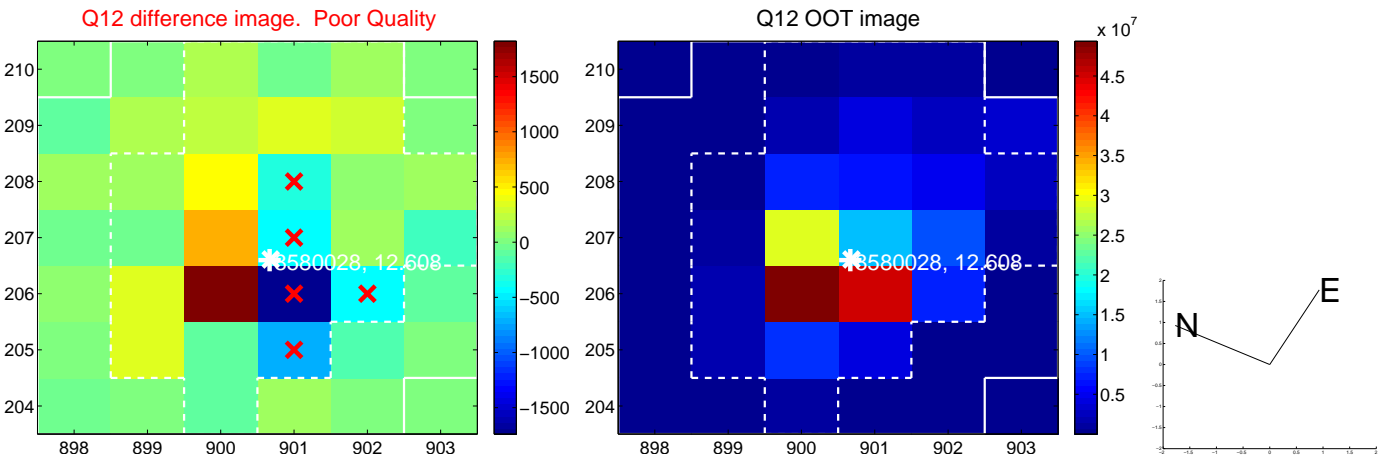
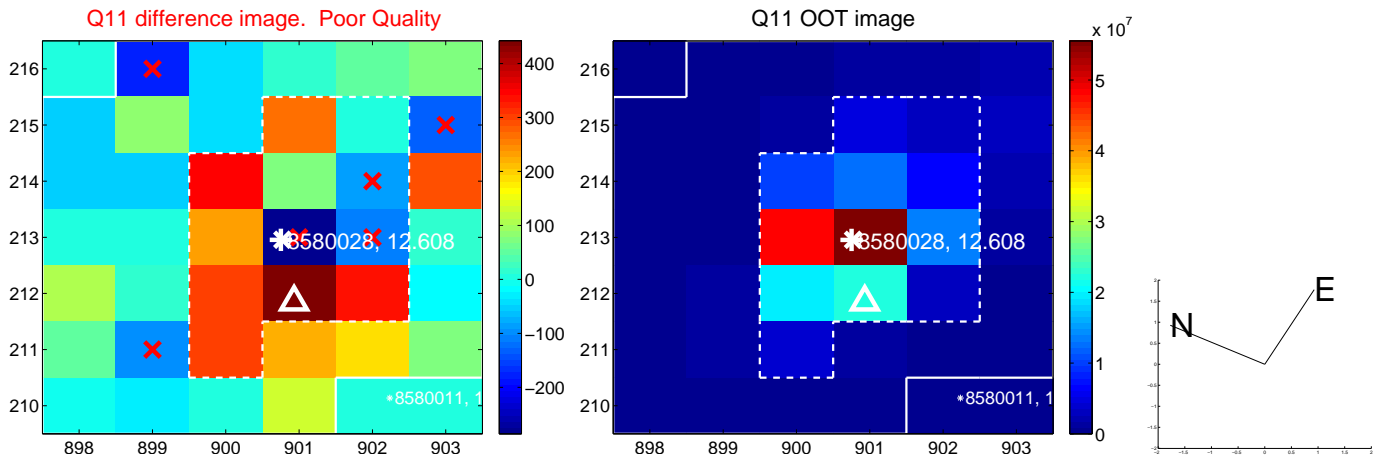
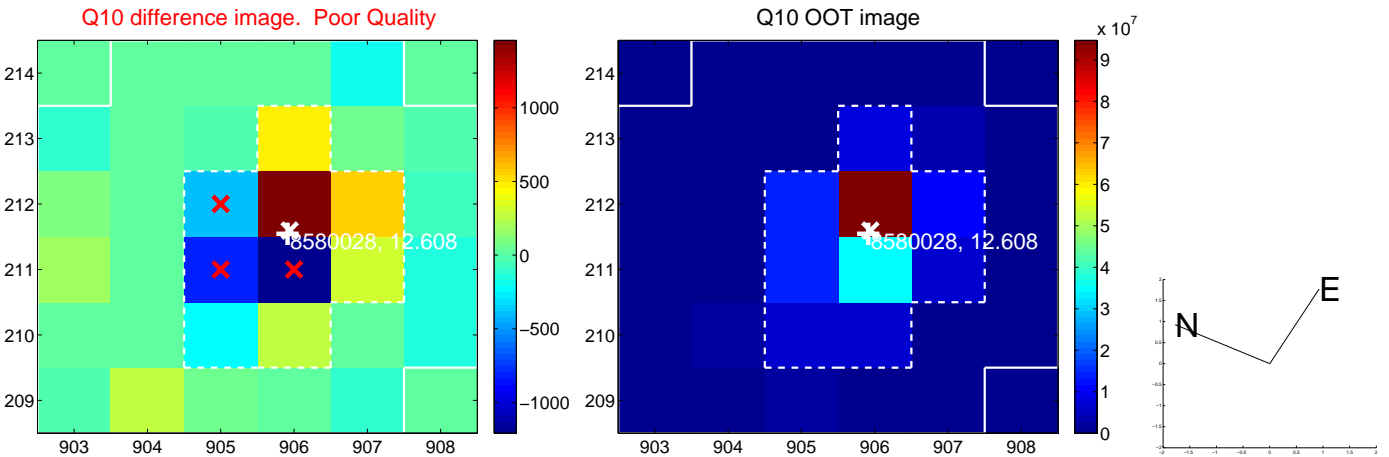
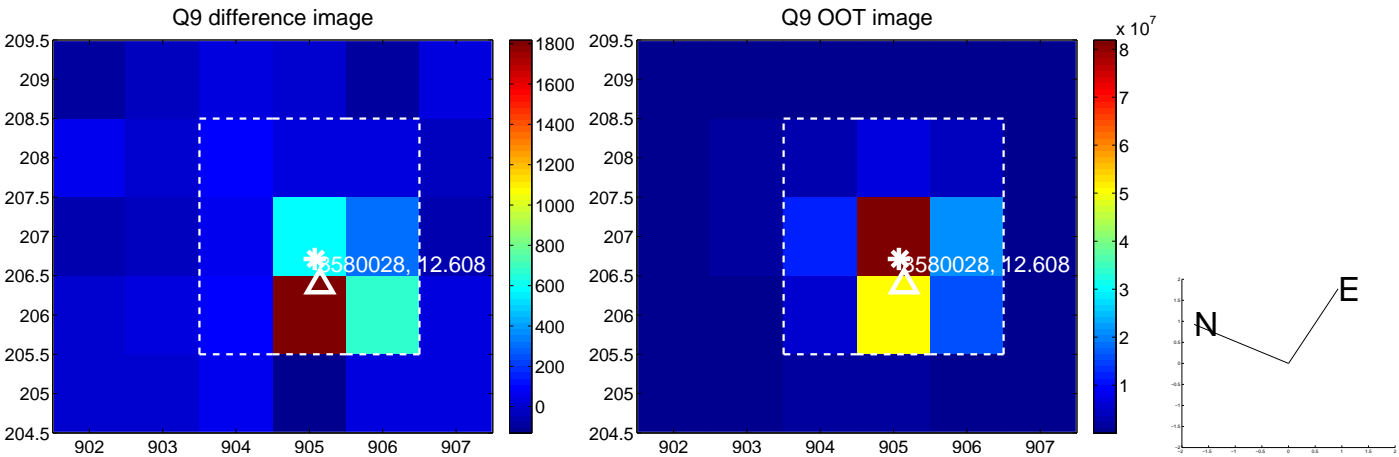


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

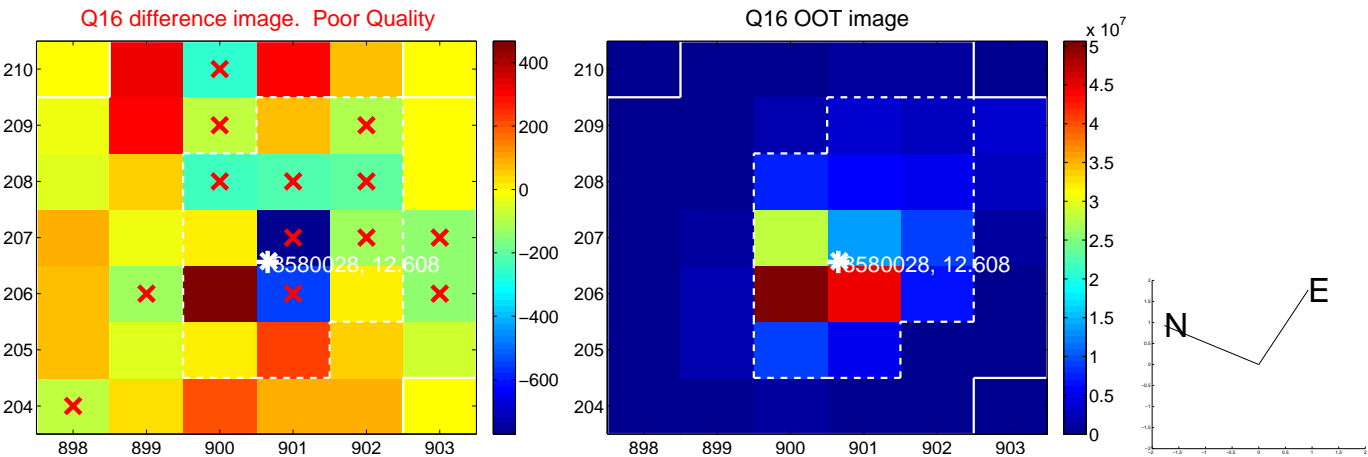
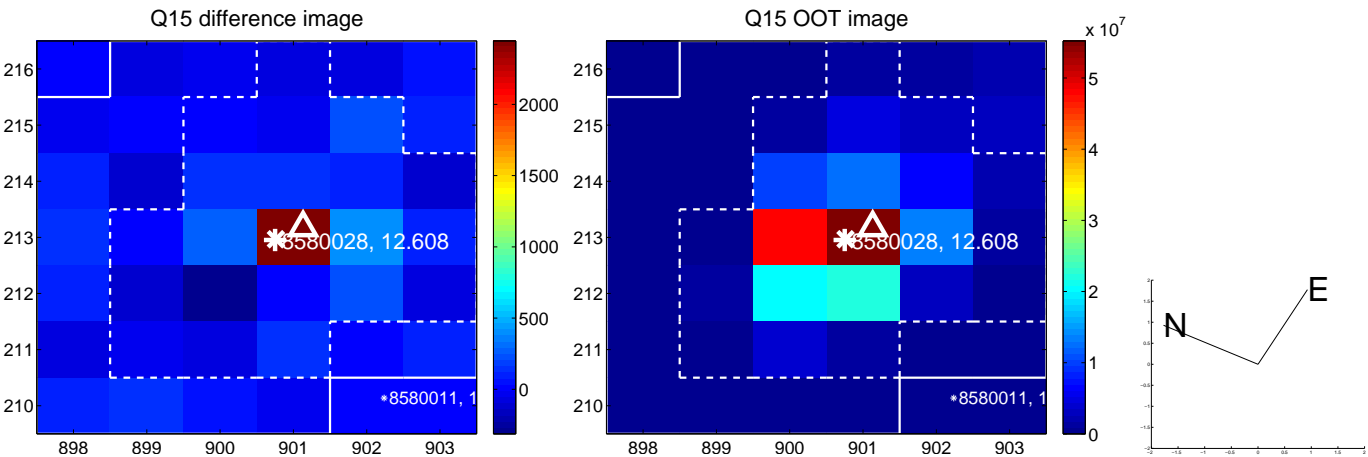
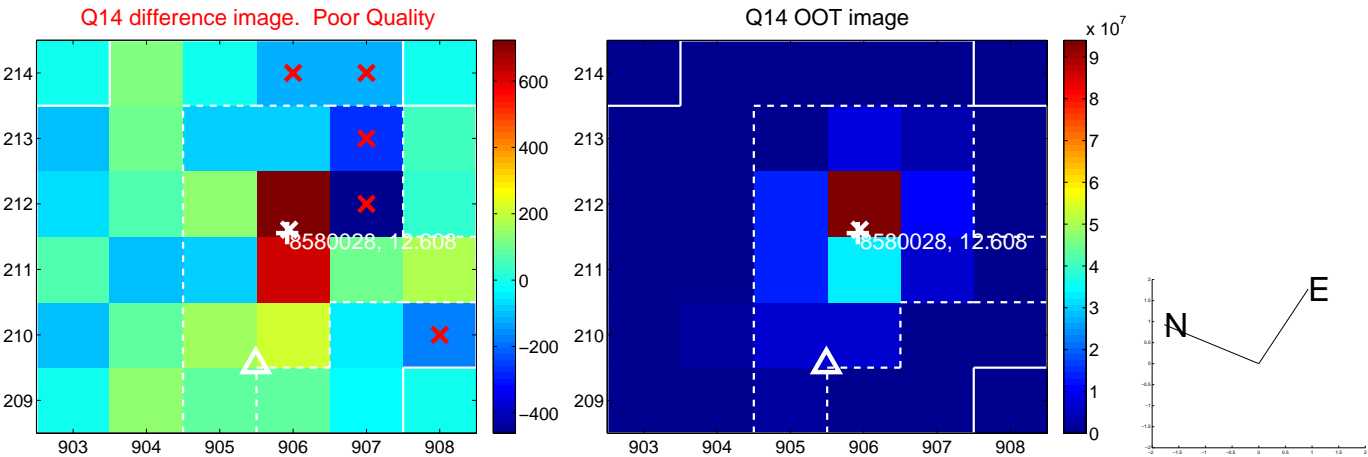
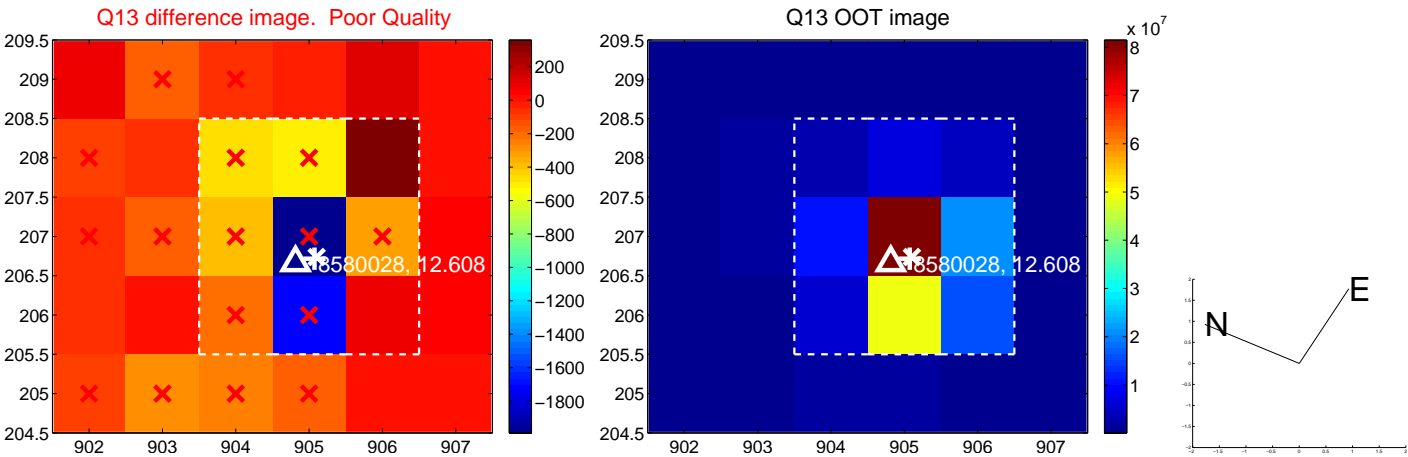




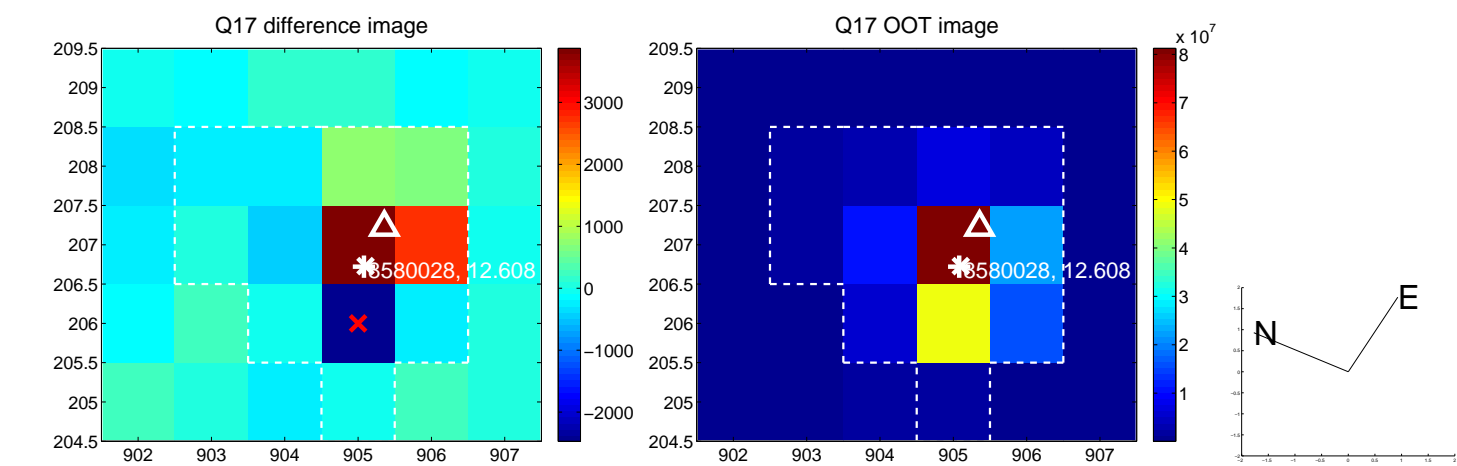
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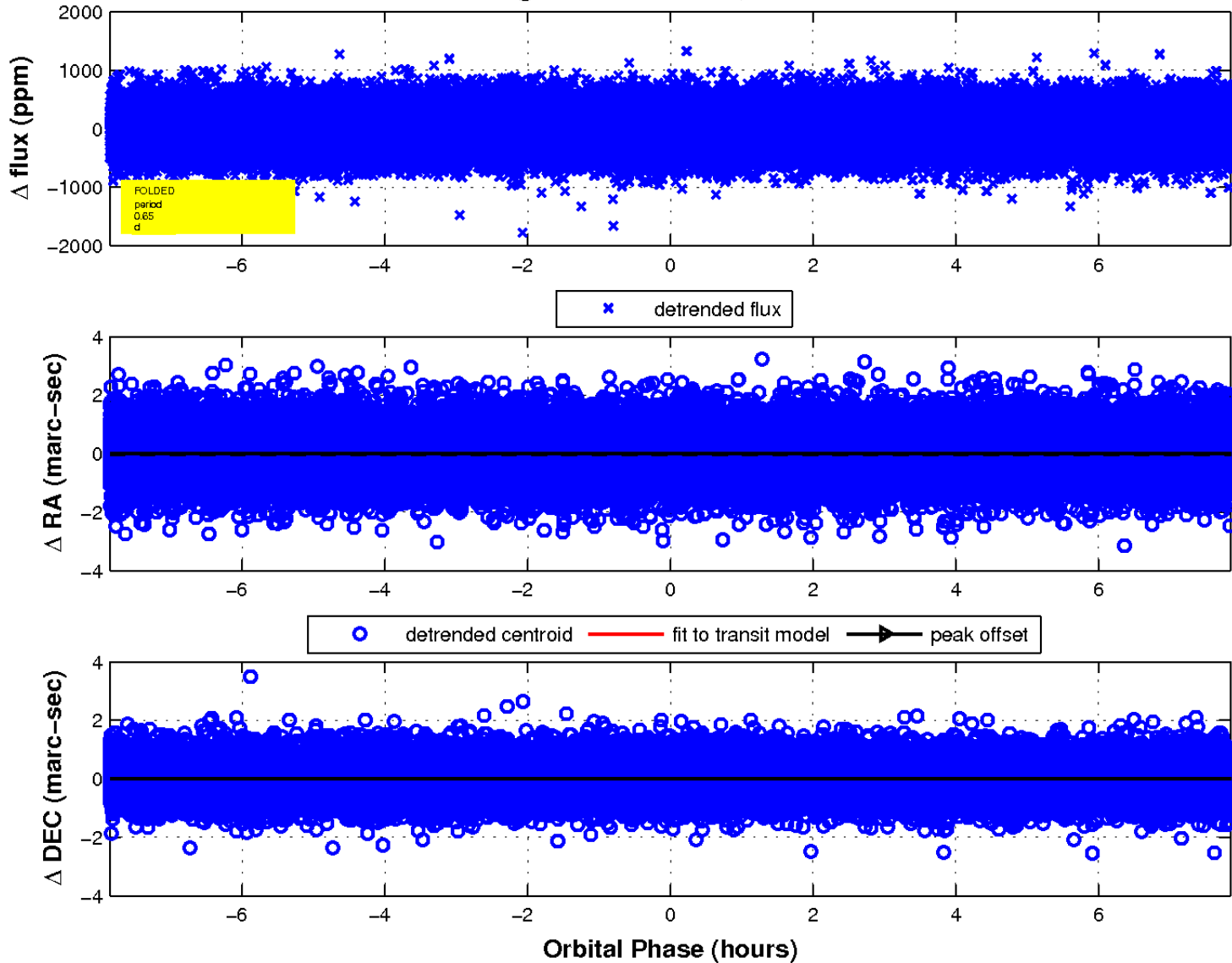
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

