

# KIC 008015907

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008015907-01	OBS	0517.01	2.752350	132.729148	776.6	2.219	127.5	132.1	0.90	5461	2.92	456.64

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008015907-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

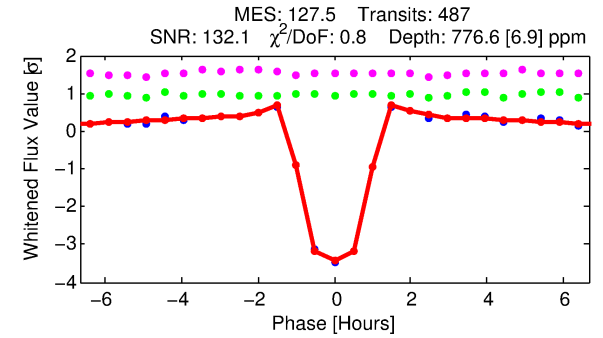
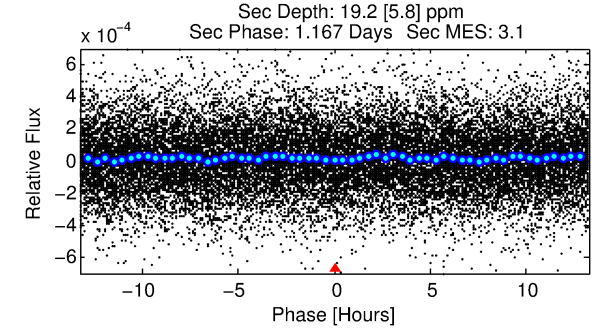
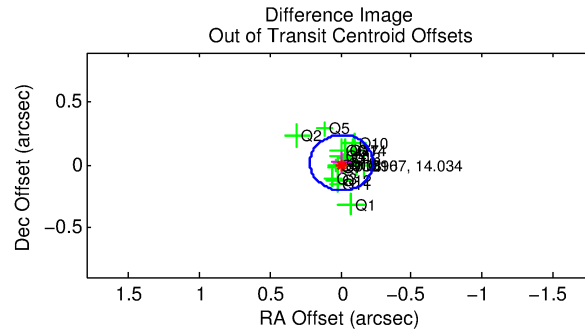
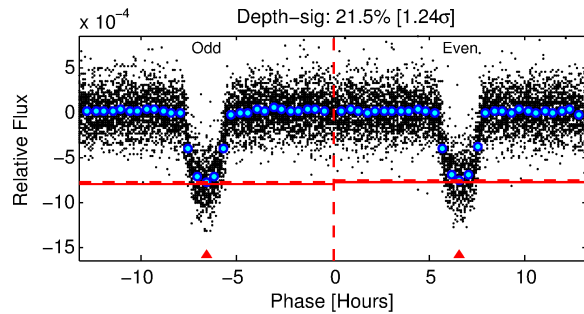
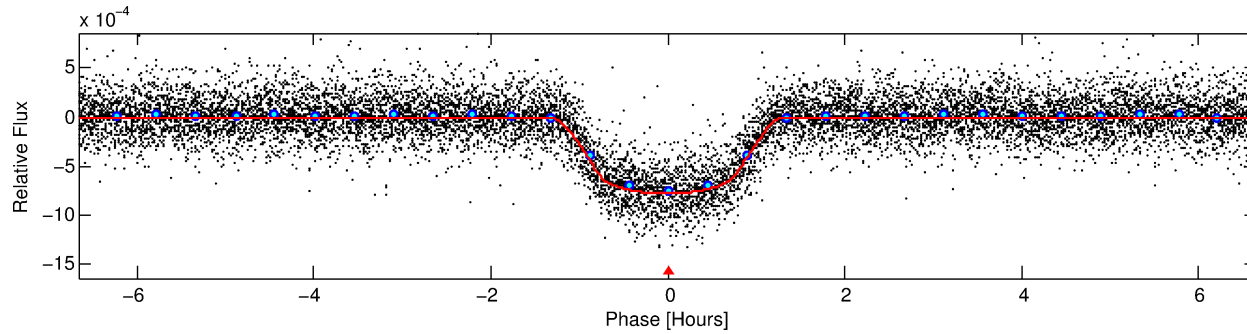
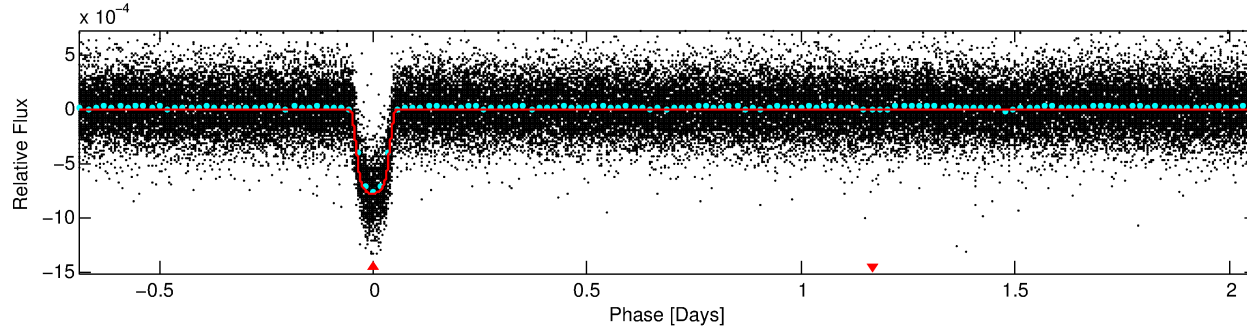
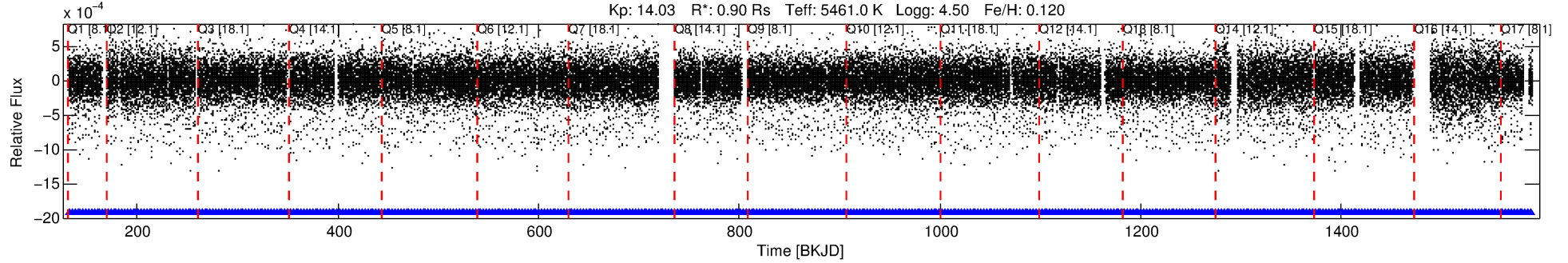
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008015907-01

No Significant Match Found

# DV One-Page Summary

KIC: 8015907 Candidate: 1 of 1 Period: 2.752 d  
KOI: K00517.01 Corr: 0.976



## DV Fit Results:

Period = 2.75235 [0.00000] d  
Epoch = 132.7291 [0.0002] BKJD  
Rp/R\* = 0.0299 [0.0012]  
a/R\* = 5.33 [0.81]  
b = 0.87 [0.05]  
Seff = 456.64 [81.67]  
Teq = 1179 [53] K  
Rp = 2.92 [0.35] Re  
a = 0.0375 [0.0040] AU  
Ag = 1.73 [0.61] [1.20 $\sigma$ ]  
Teffp = 2091 [165] K [5.27 $\sigma$ ]

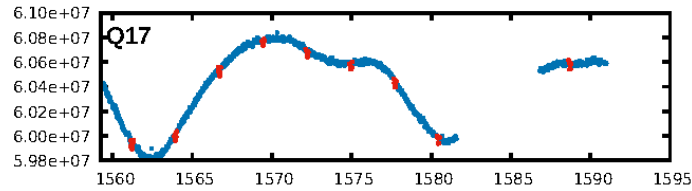
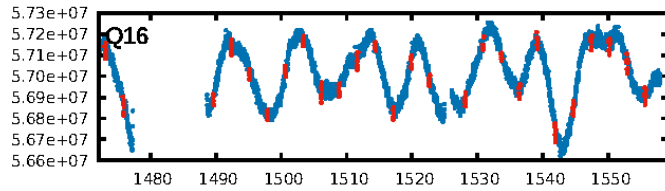
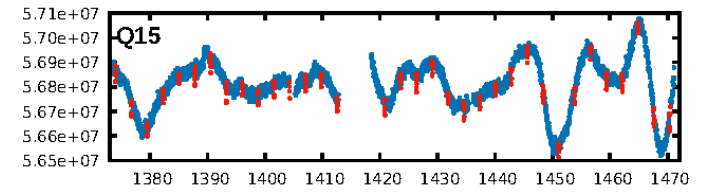
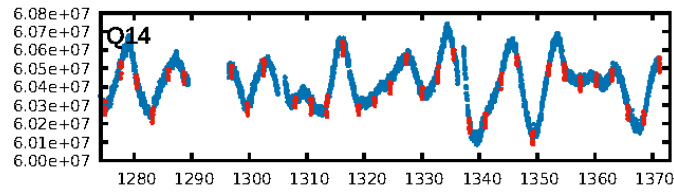
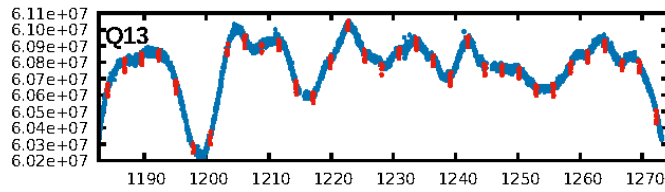
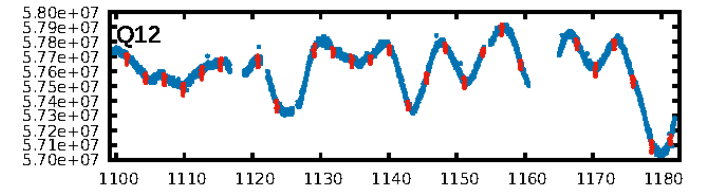
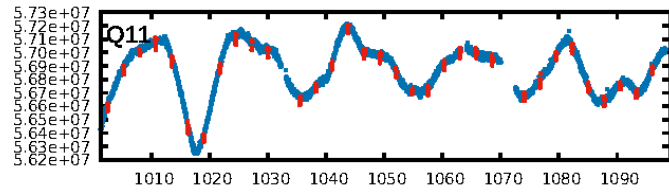
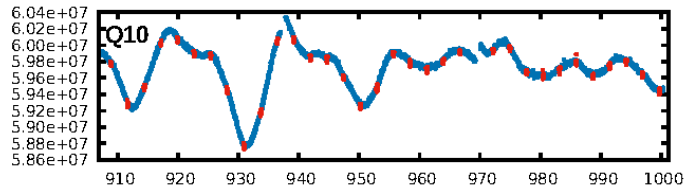
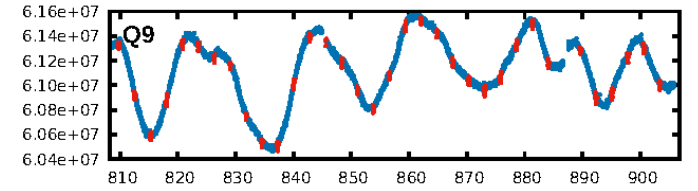
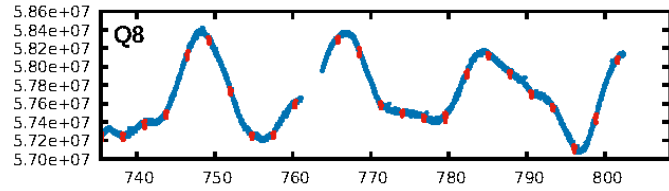
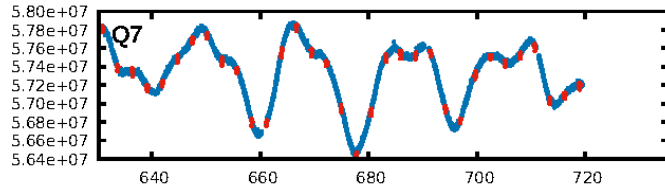
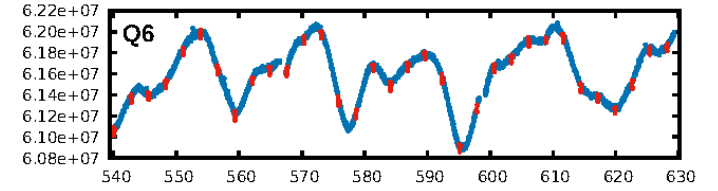
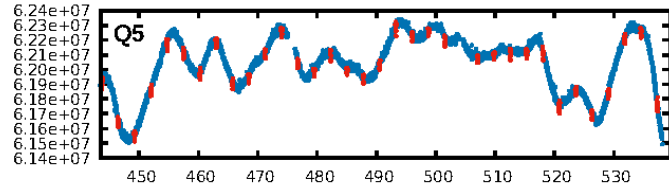
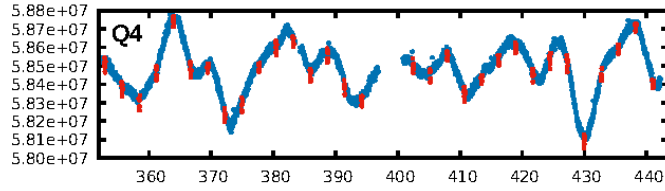
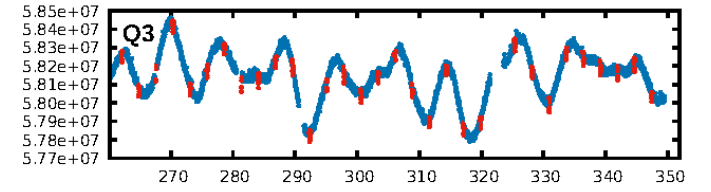
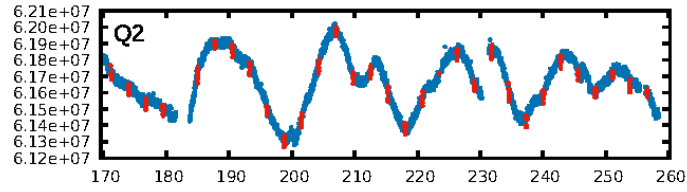
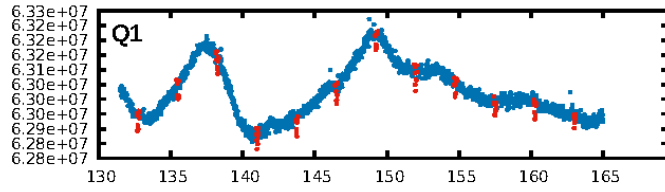
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [466/466]  
GhostDiagnostic-chr: 4.31  
Centroid-sig: 45.7%  
Centroid-so: 0.055 arcsec [0.72 $\sigma$ ]  
OotOffset-rm: 0.016 arcsec [0.22 $\sigma$ ]  
KicOffset-rm: 0.045 arcsec [0.60 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

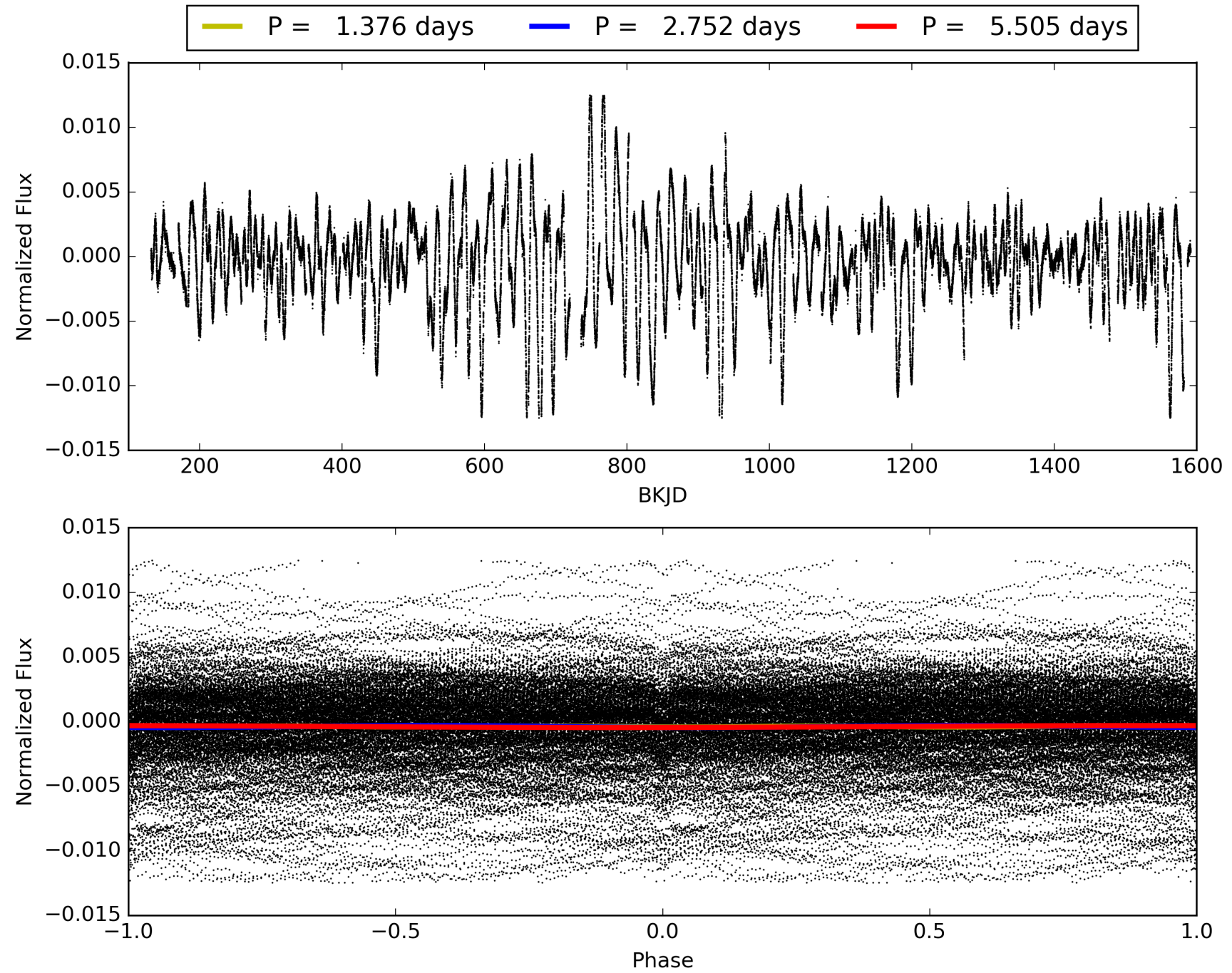
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:13:23 Z

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

# TCE 008015907-01, PDC Light Curves

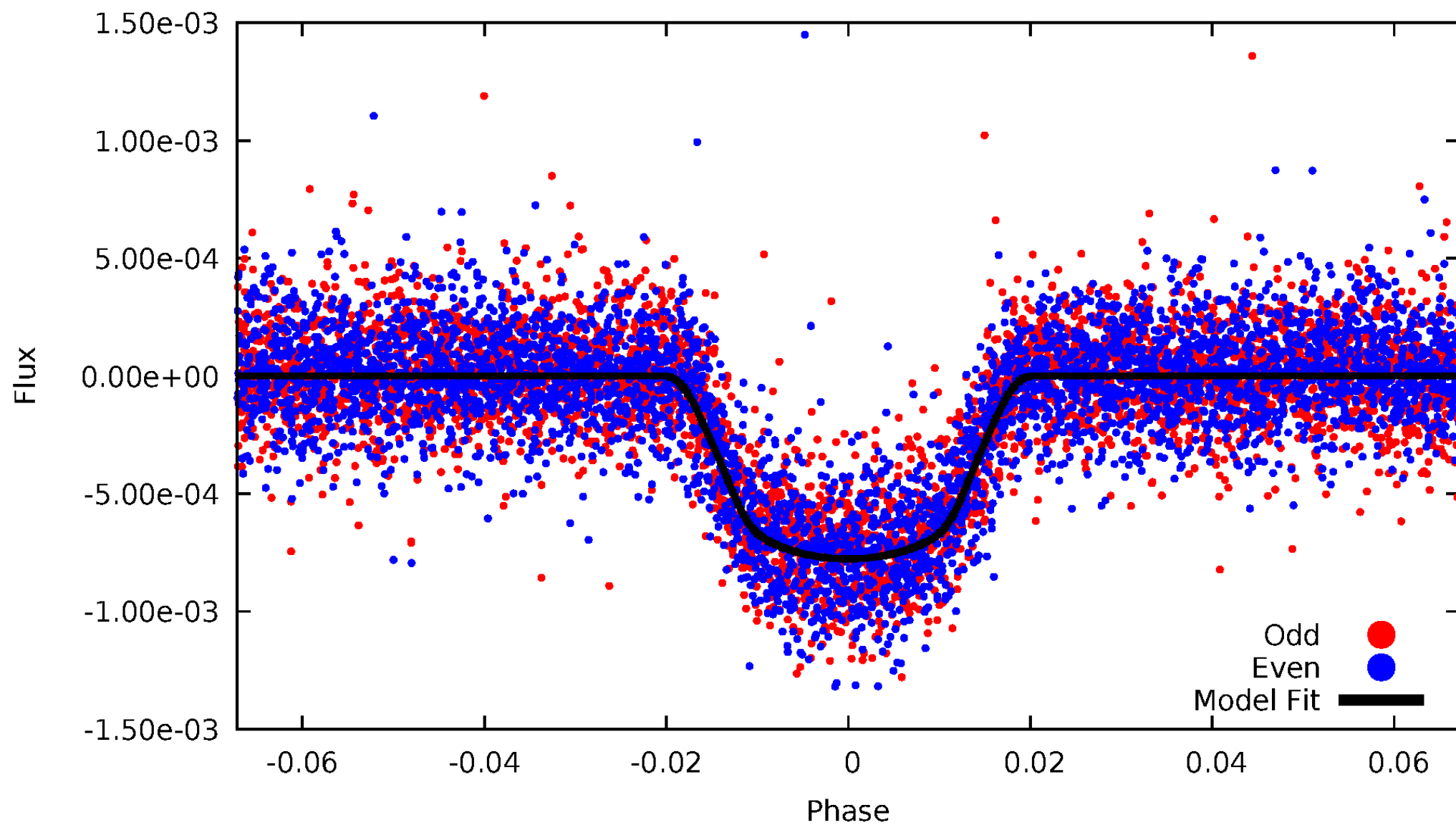


TCE 008015907-01



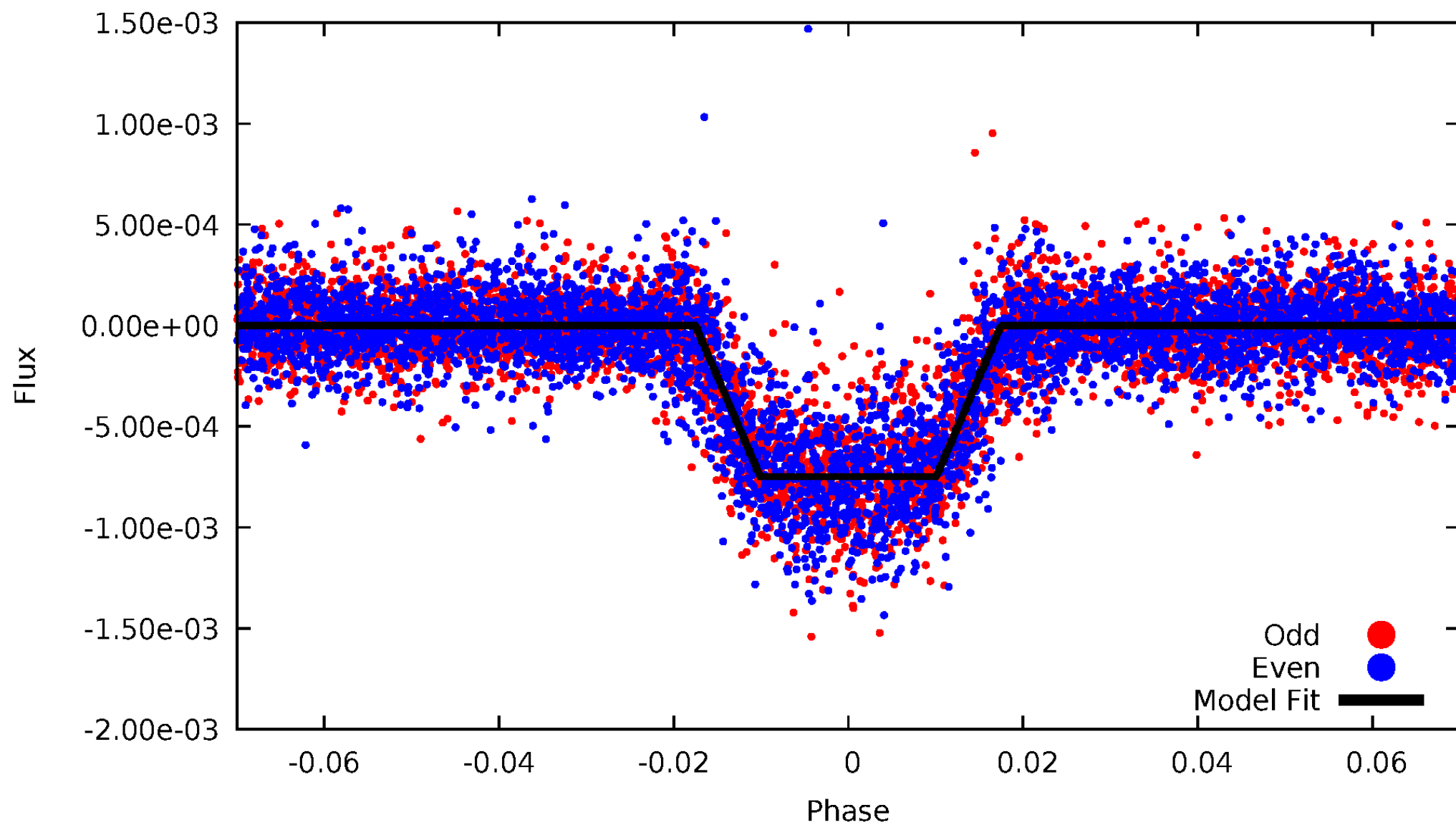
# DV Odd/Even

TCE 008015907-01



# ALT Odd/Even

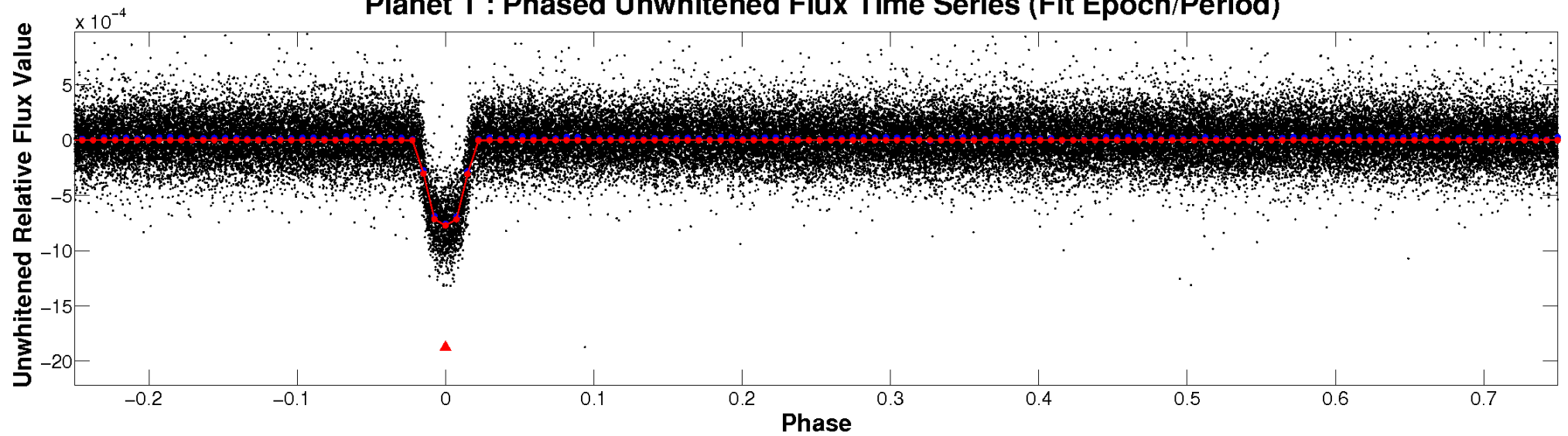
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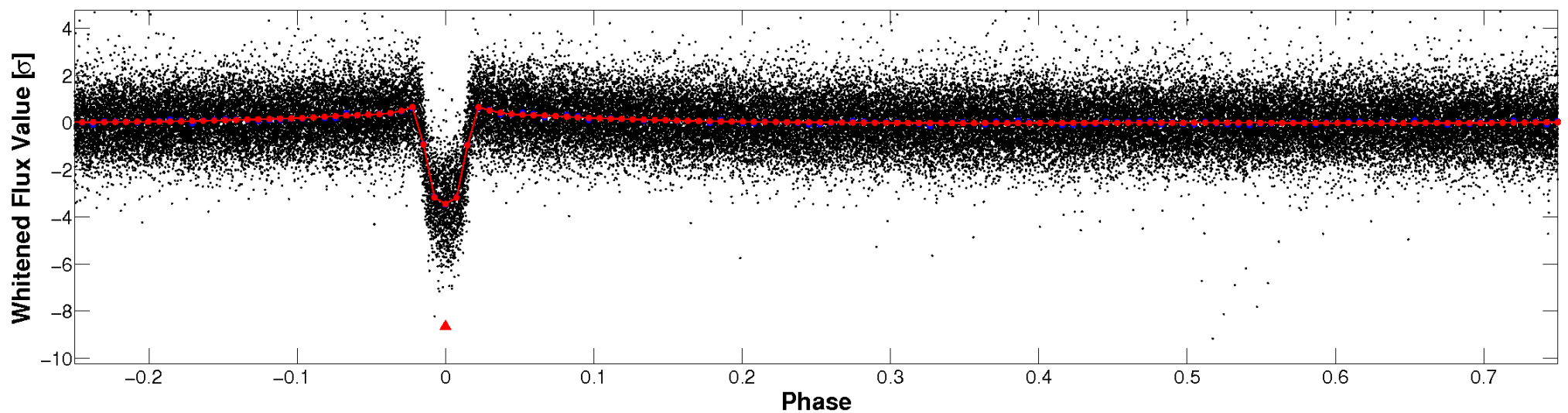


# Non-Whitened Vs. Whitened Light Curve

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

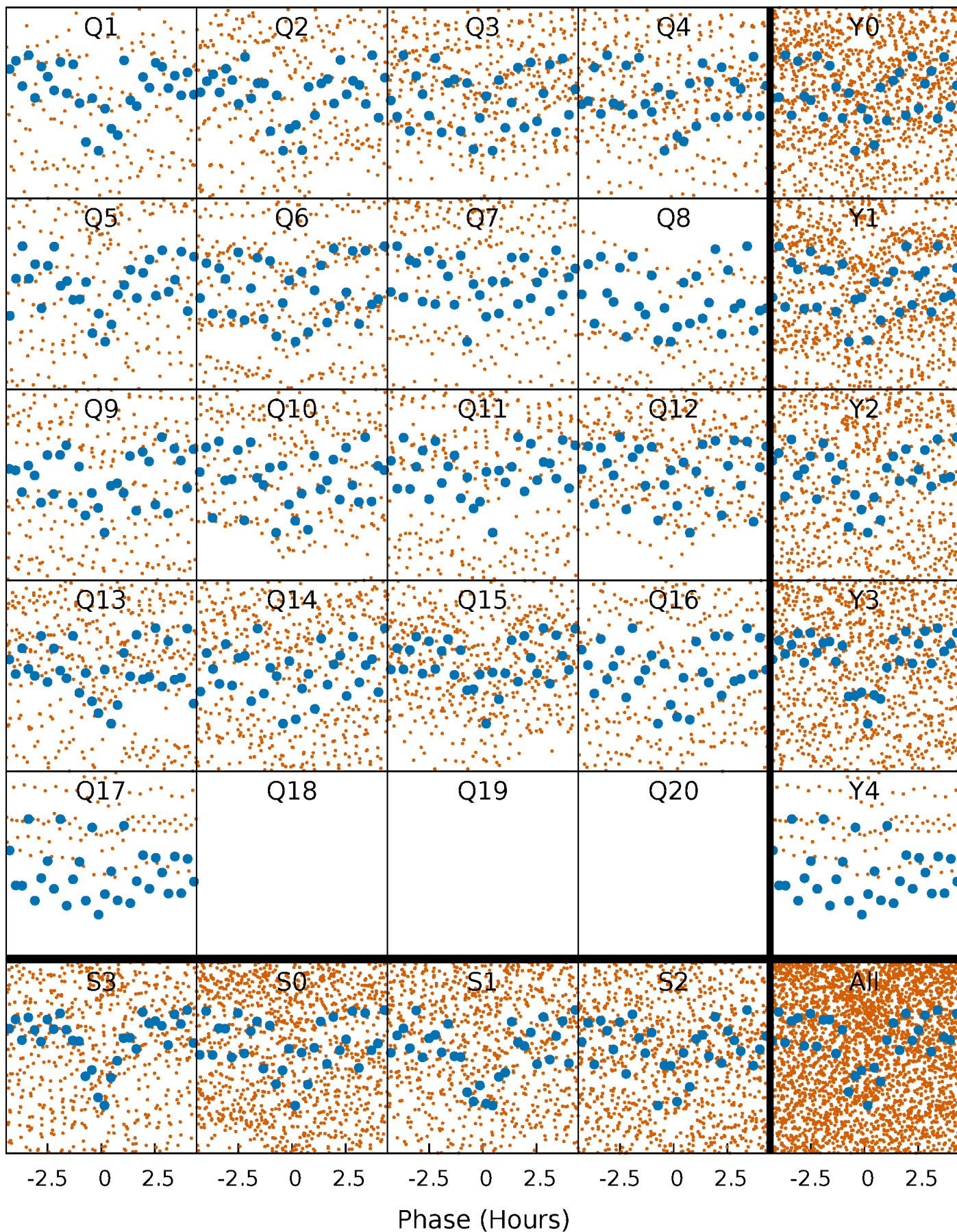


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

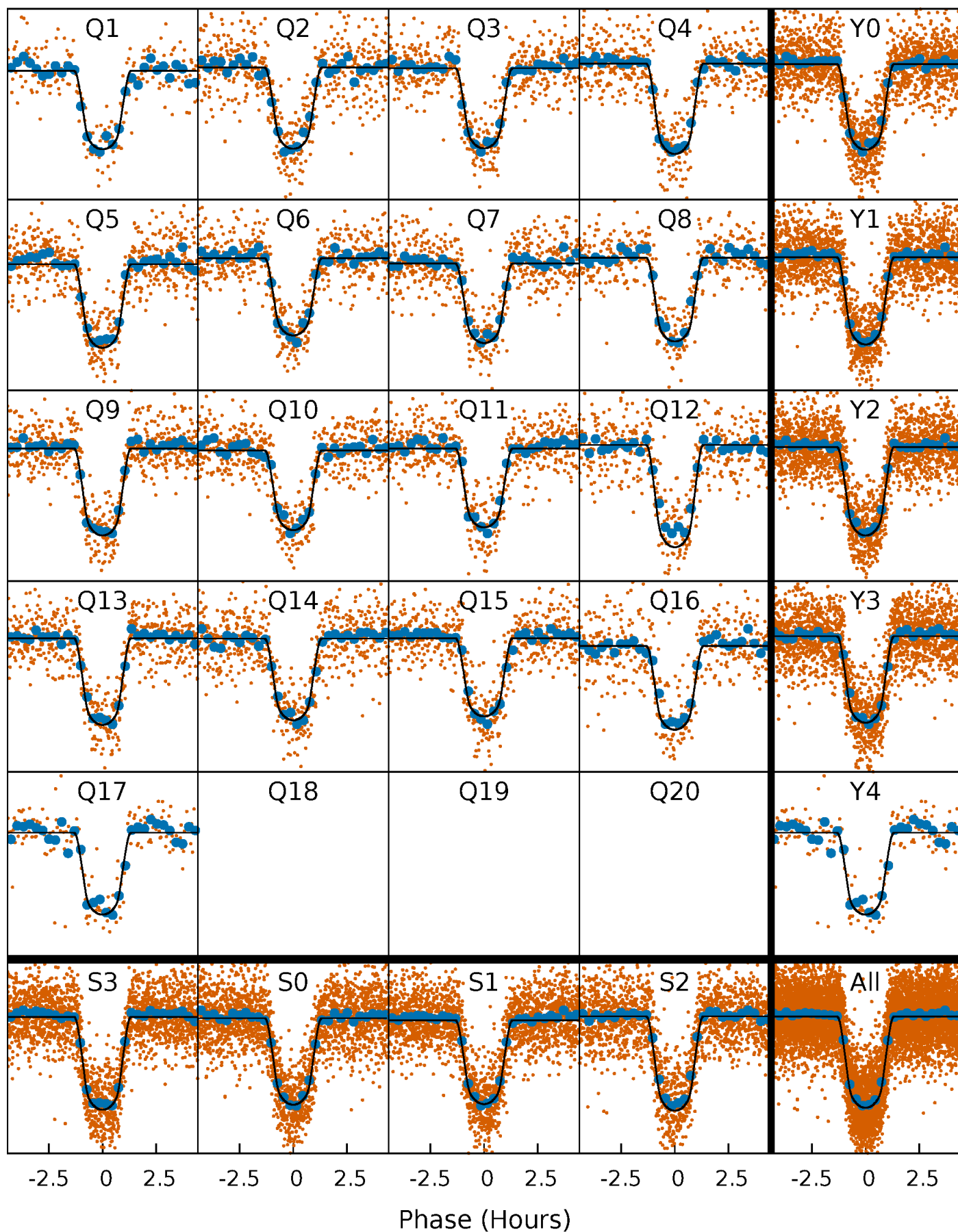
TCE 008015907-01 P= 2.752350 Days  $T_0=132.729148$  (BKJD)





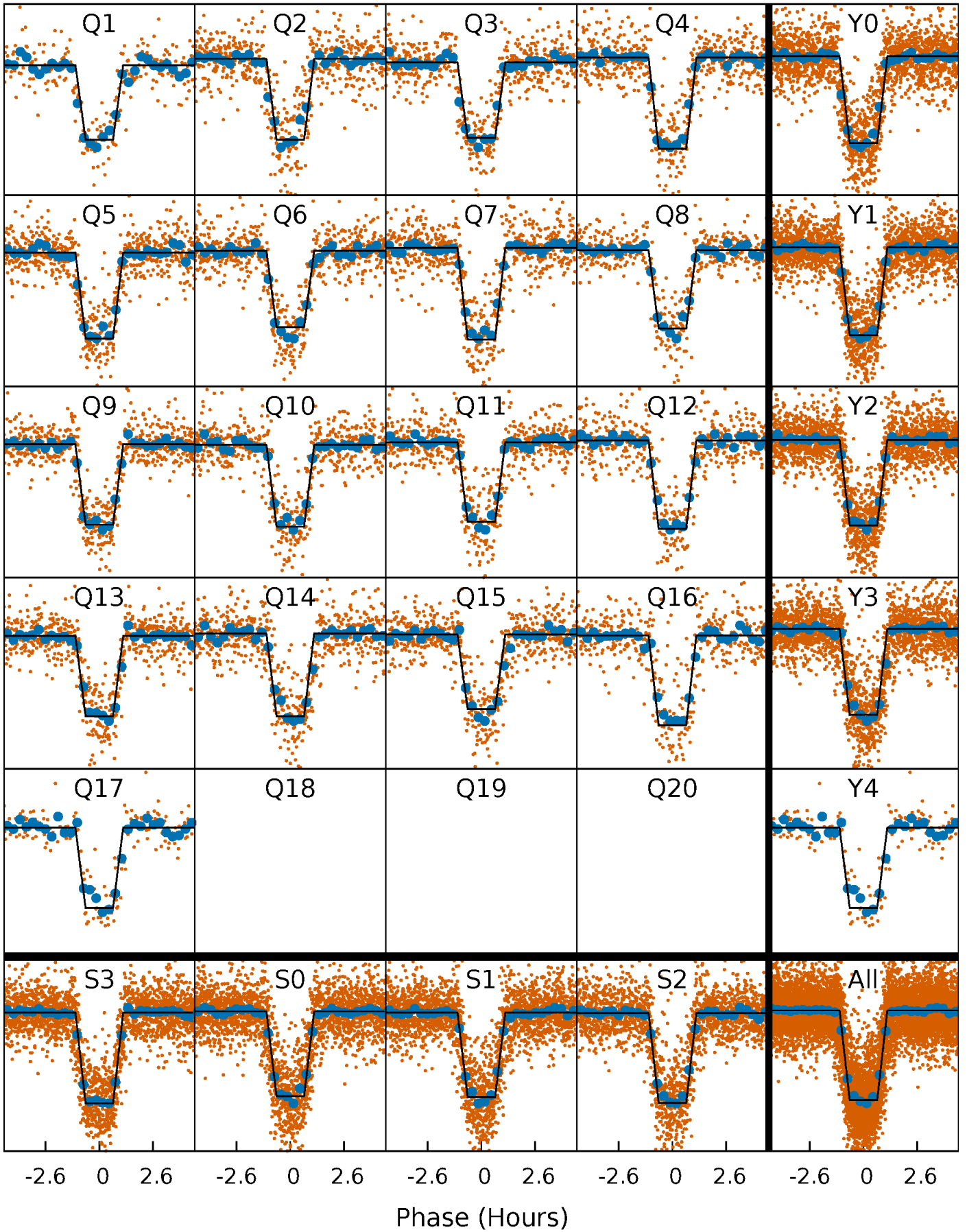
# DV Quarter-Phased Transit Curves

TCE 008015907-01 P= 2.752350 Days  $T_0=132.729148$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

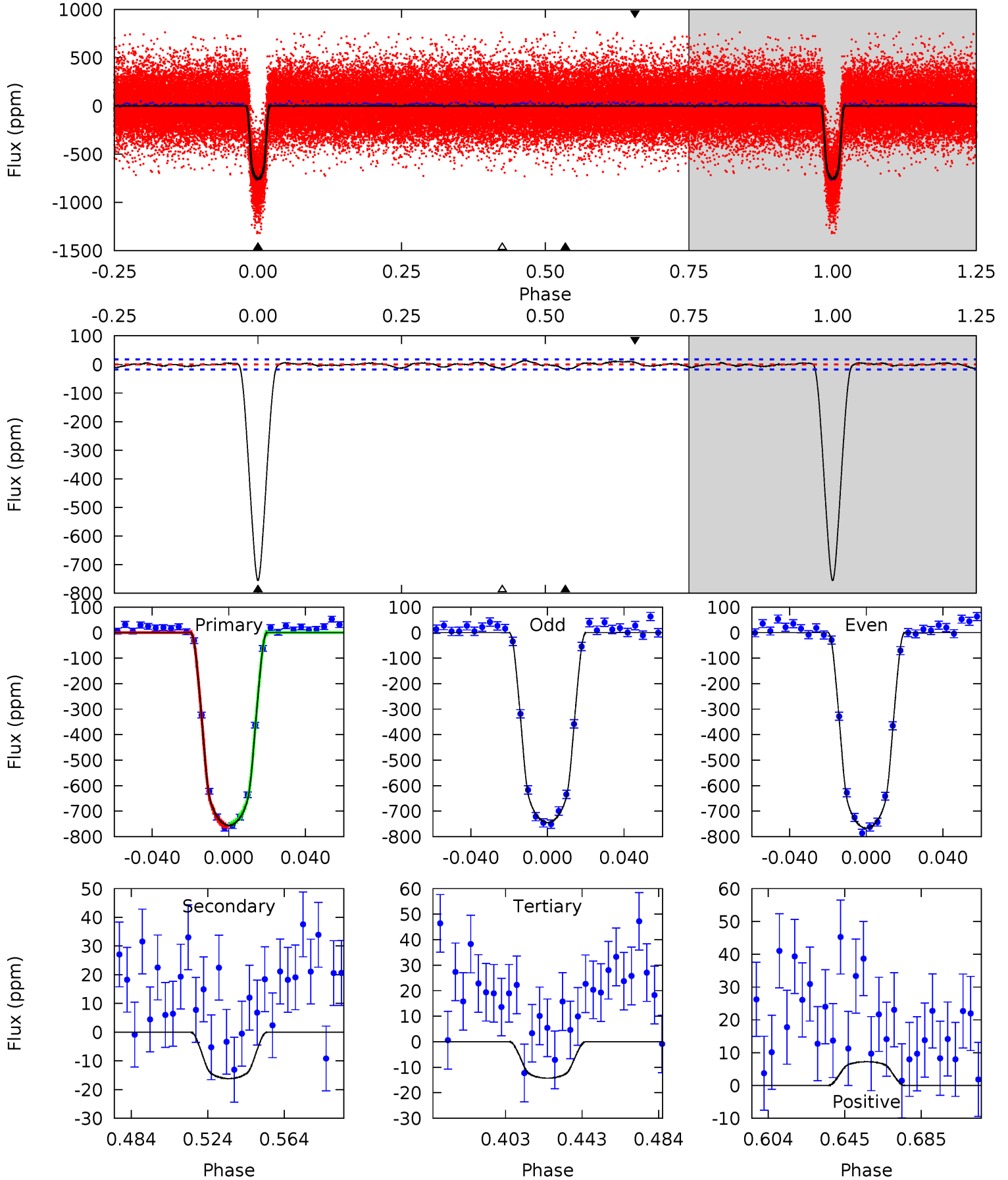
TCE 008015907-01   P= 2.752340 Days    $T_0=132.732035$  (BKJD)



# DV Model-Shift Uniqueness Test

008015907-01, P = 2.752350 Days, E = 129.976798 Days

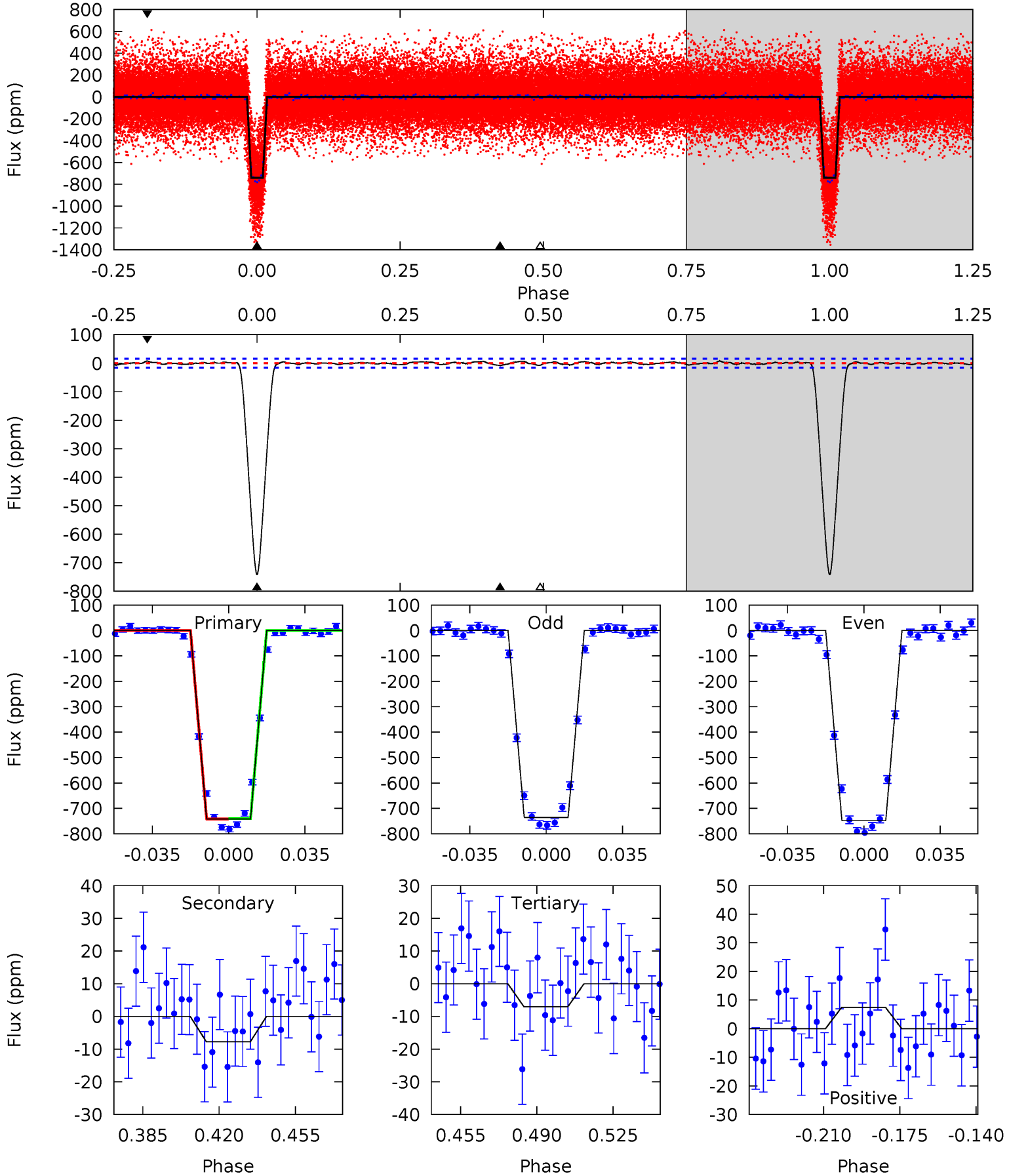
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
203.5	4.36	3.85	1.95	4.75	2.05	1.46	199.7	201.6	0.51	2.41	2.95	1.00	0.02	1.10



# Alt Model-Shift Uniqueness Test

008015907-01, P = 2.752340 Days, E = 129.979695 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
227.6	2.39	2.17	2.28	4.78	2.11	0.89	225.5	225.3	0.22	0.11	1.91	1.02	0.01	0.25



### Stellar Parameters For KIC 008015907

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$5461^{+73}_{-82}$	$4.499^{+0.042}_{-0.098}$	$0.120^{+0.150}_{-0.150}$	$0.897^{+0.102}_{-0.047}$	$0.926^{+0.048}_{-0.053}$	$1.808^{+0.284}_{-0.522}$
	+1%/-2%	+1%/-2%	+125%/-125%	+11%/-5%	+5%/-6%	+16%/-29%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 008015907-01 / KOI 0517.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-16 \pm 4$	$2.95^{+0.22}_{-0.16}$	$1655^{+49}_{-42}$	$2670^{+99}_{-116}$	$1.419^{+0.387}_{-0.349}$
Alt.	$-8 \pm 3$	$2.71^{+0.21}_{-0.17}$	$1654^{+51}_{-38}$	$2420^{+166}_{-277}$	$0.812^{+0.367}_{-0.351}$

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



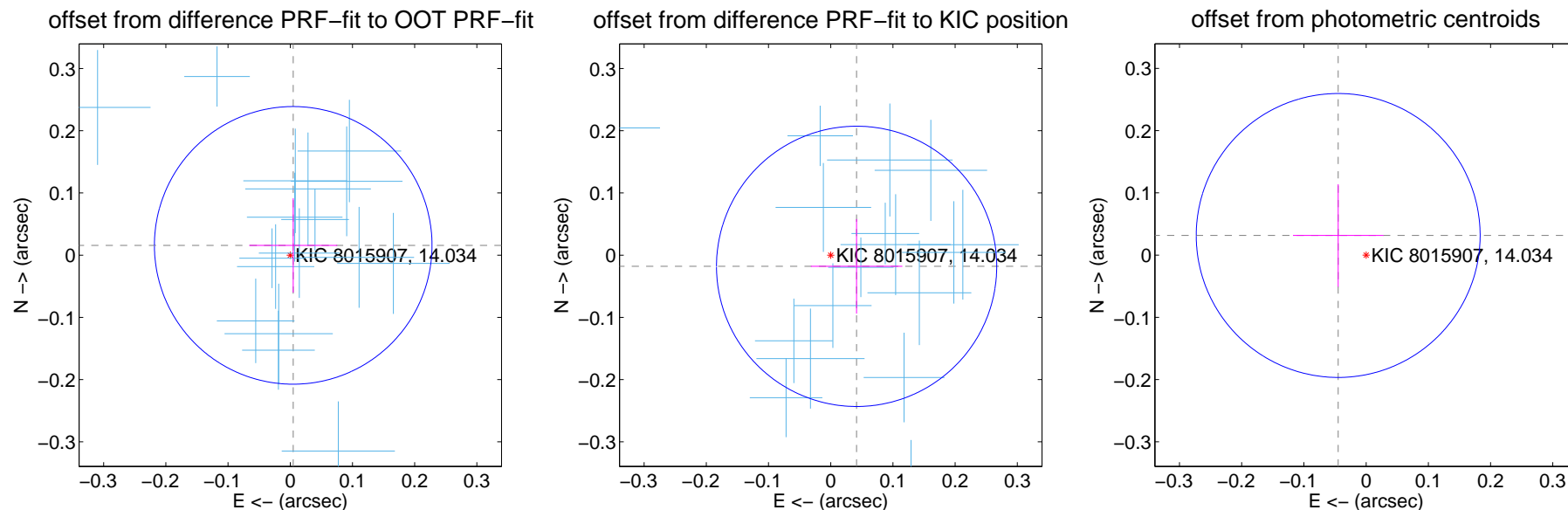
## DV Centroid Data

Supplemental centroid analysis for 008015907-01. Kepler magnitude: 14.03. Transit SNR 132.08

There are 17 quarters with good PRF difference image offsets

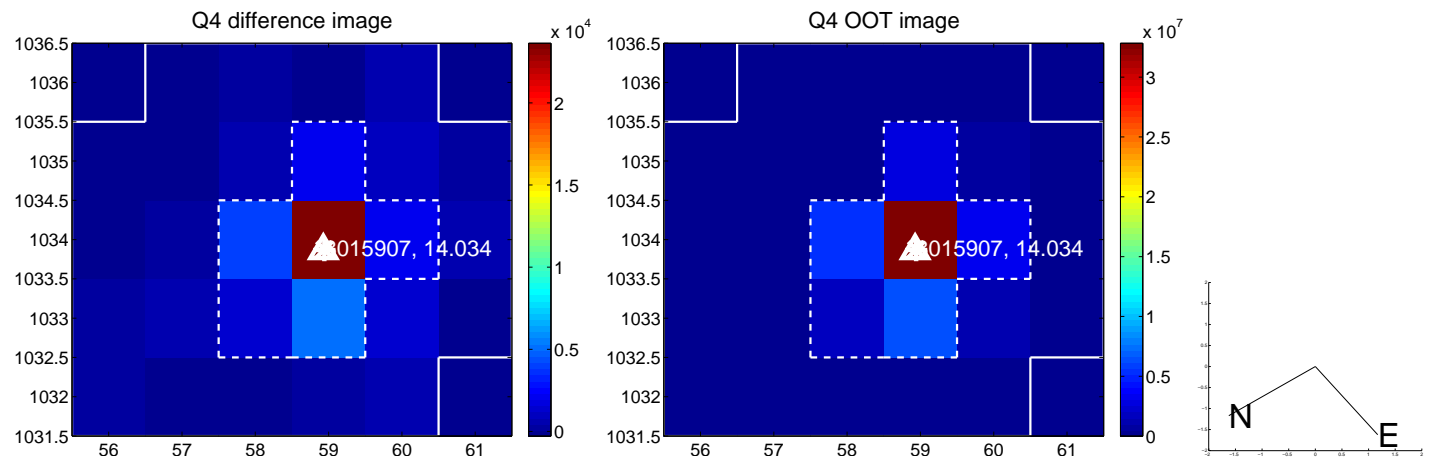
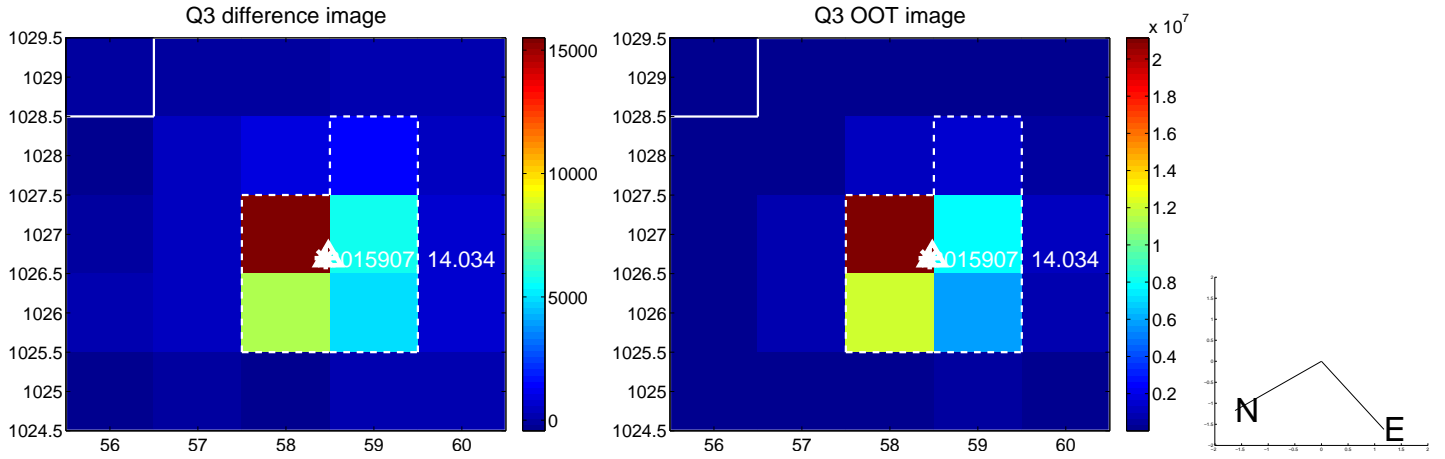
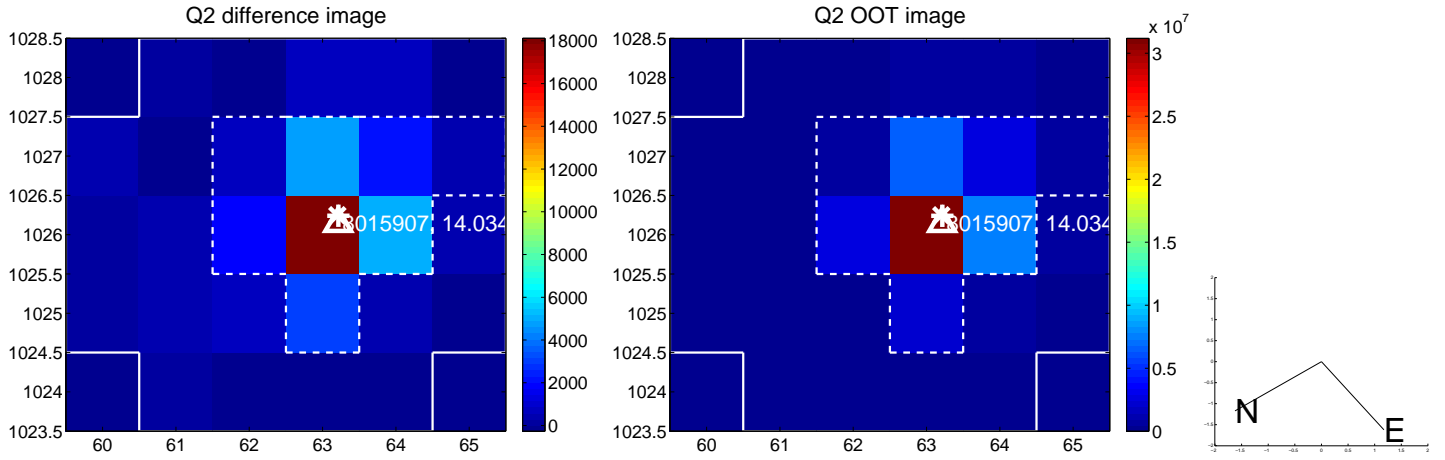
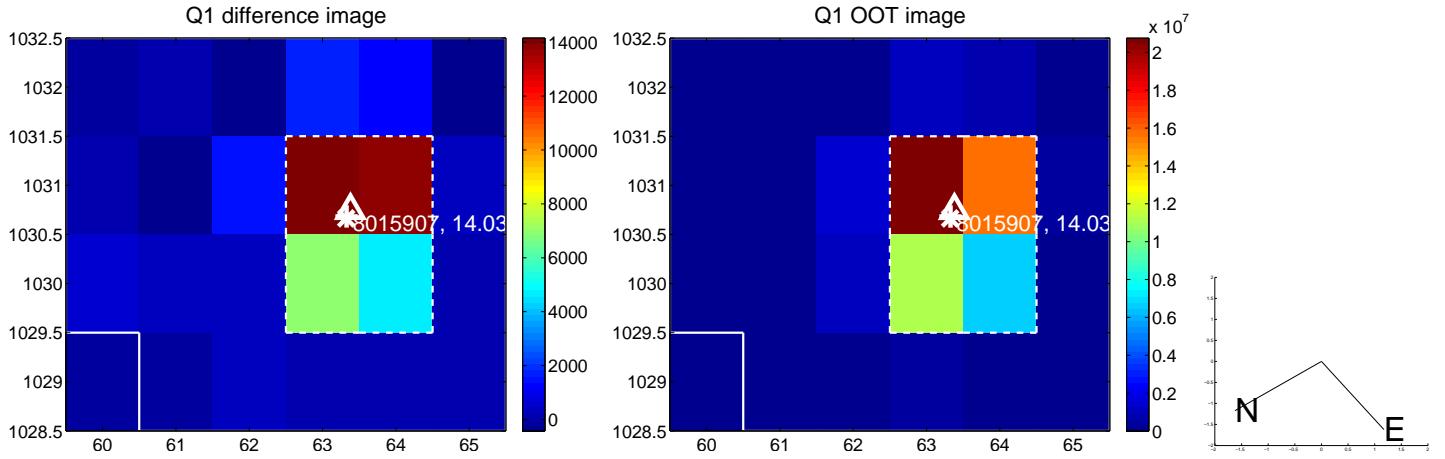
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.016 \pm 0.074$	0.22	$-0.005 \pm 0.071$	$0.016 \pm 0.076$
PRF-fit source offset from KIC position	$0.045 \pm 0.075$	0.60	$-0.042 \pm 0.074$	$-0.018 \pm 0.076$
photometric centroid source offset	$0.05 \pm 0.08$	0.72	$0.04 \pm 0.07$	$0.03 \pm 0.08$

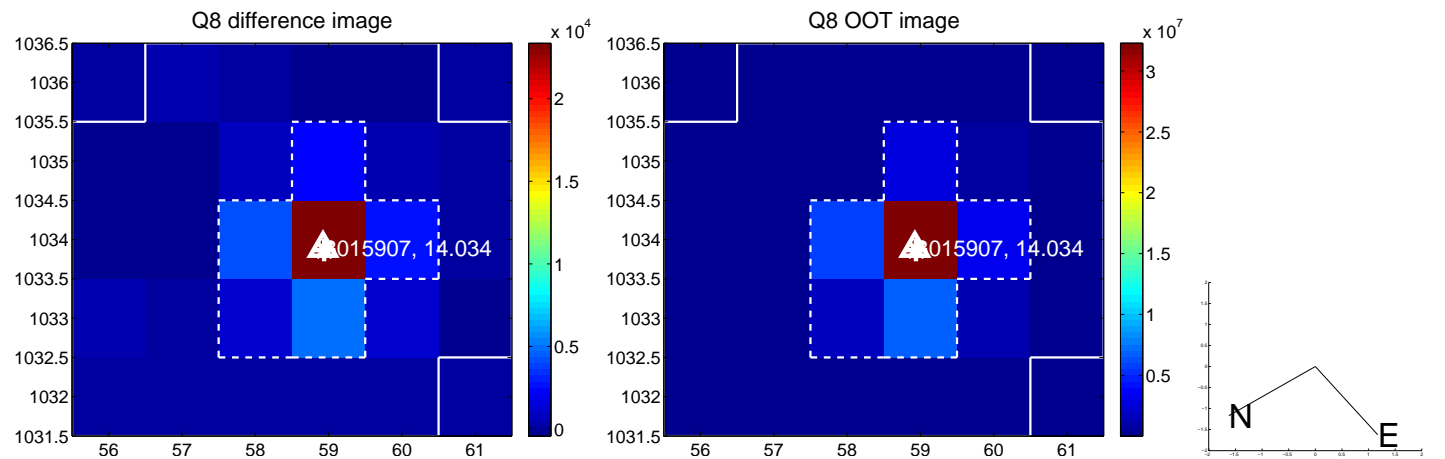
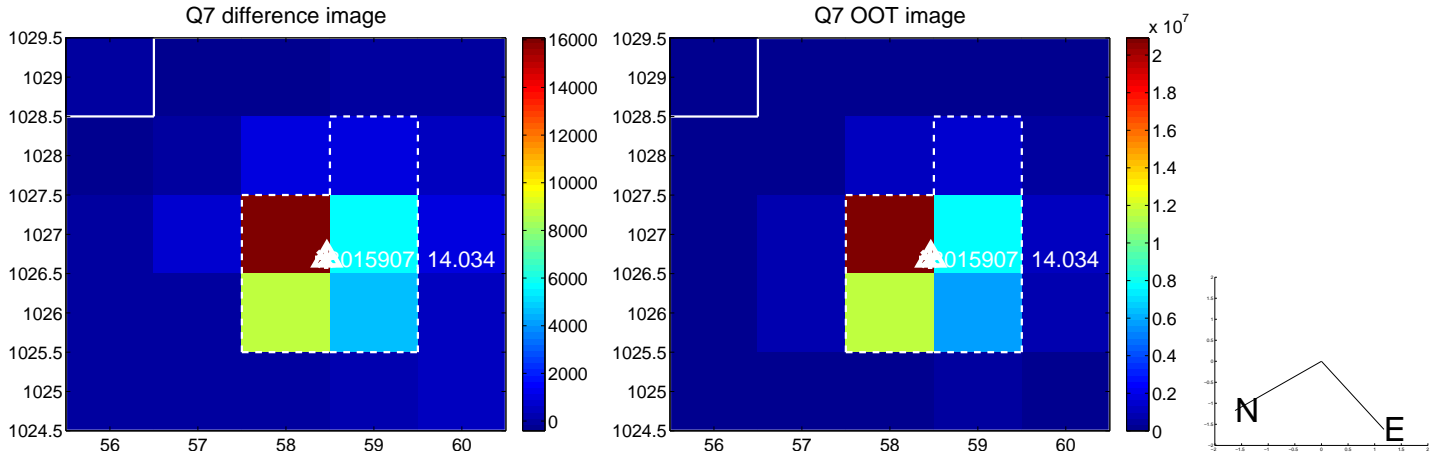
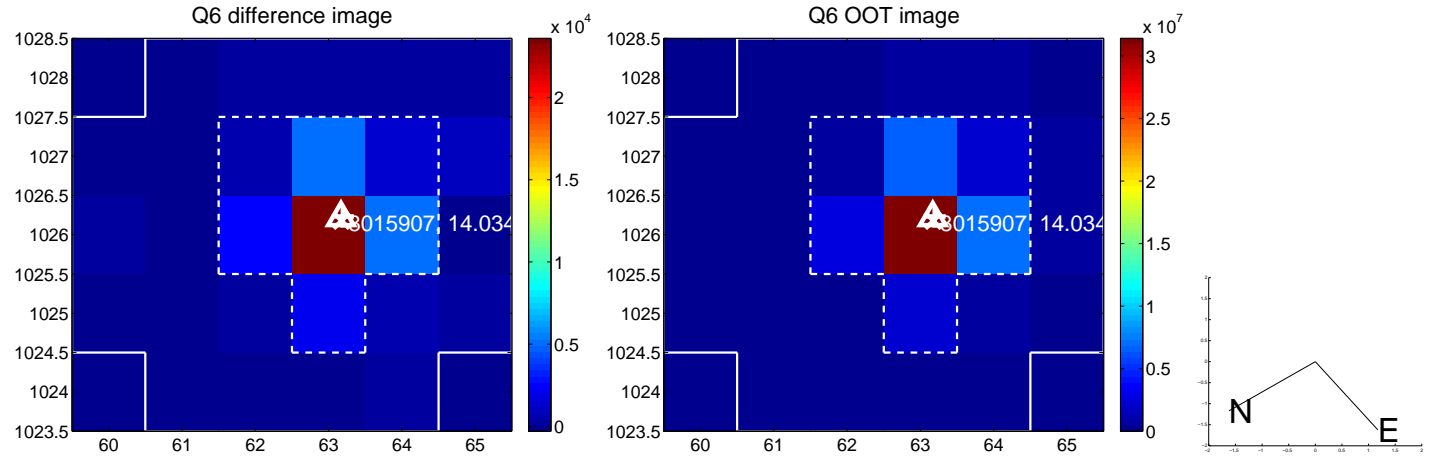
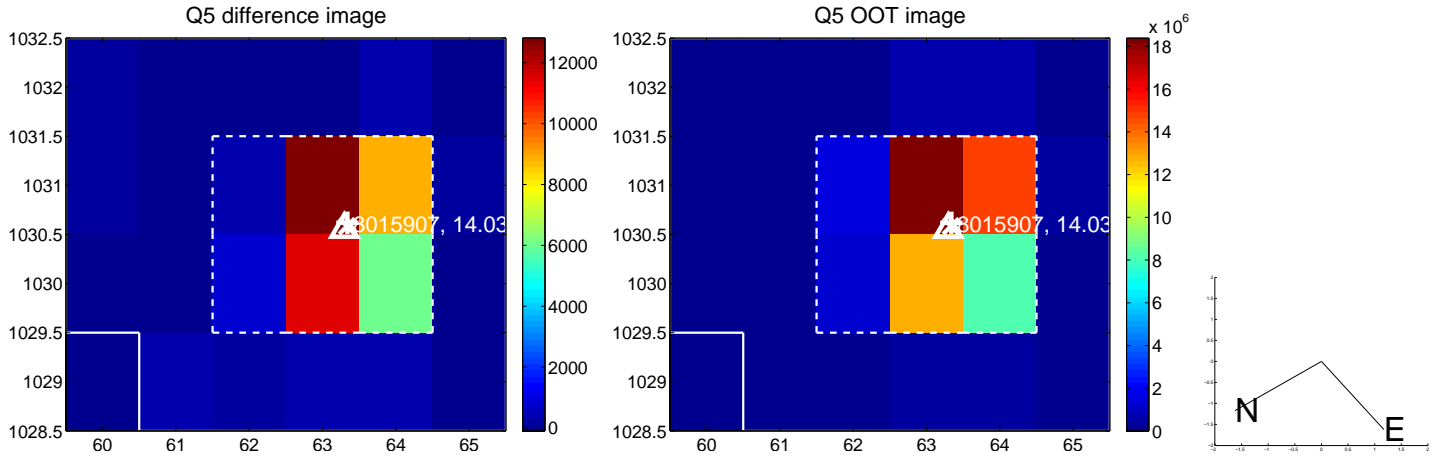


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

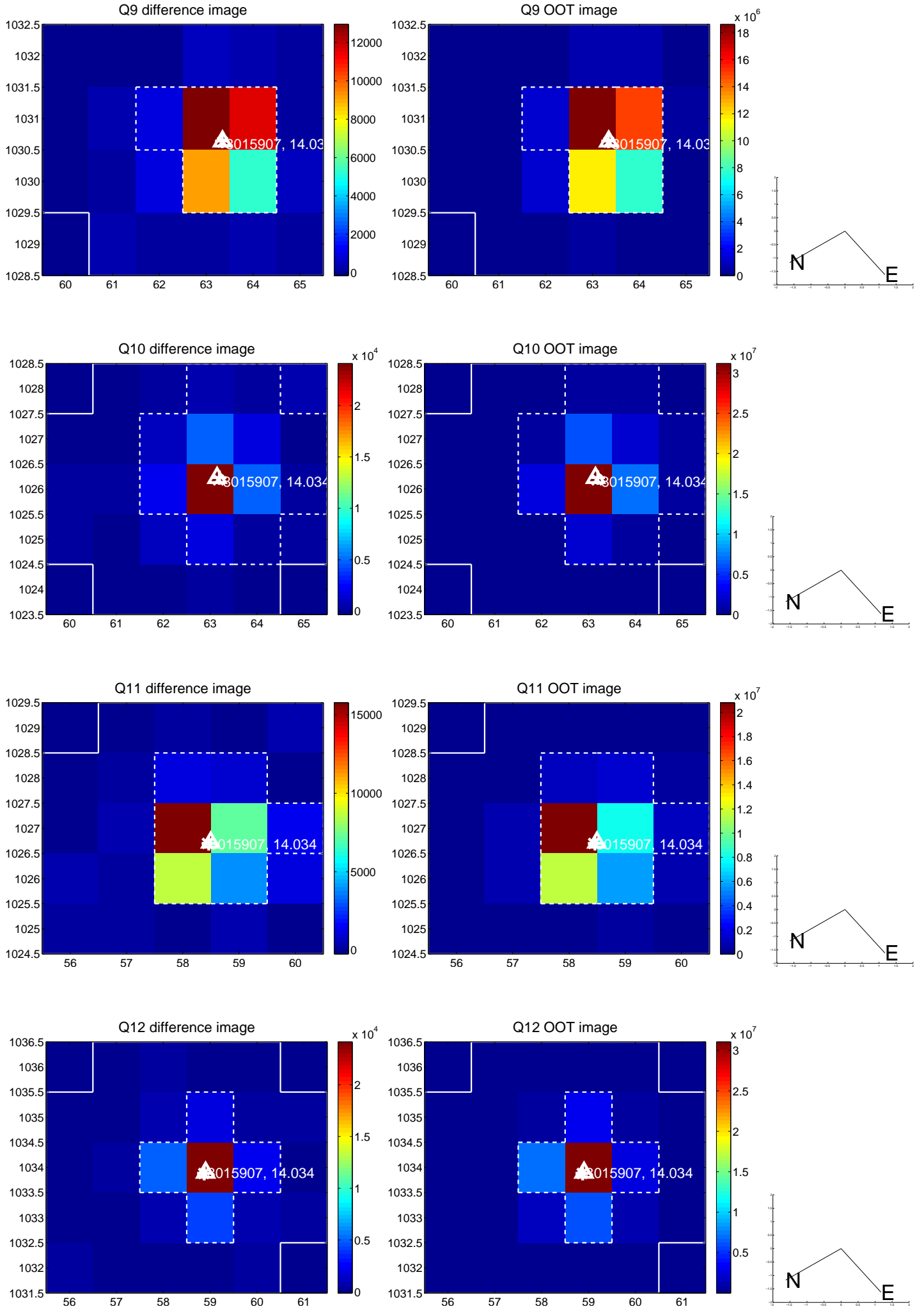
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



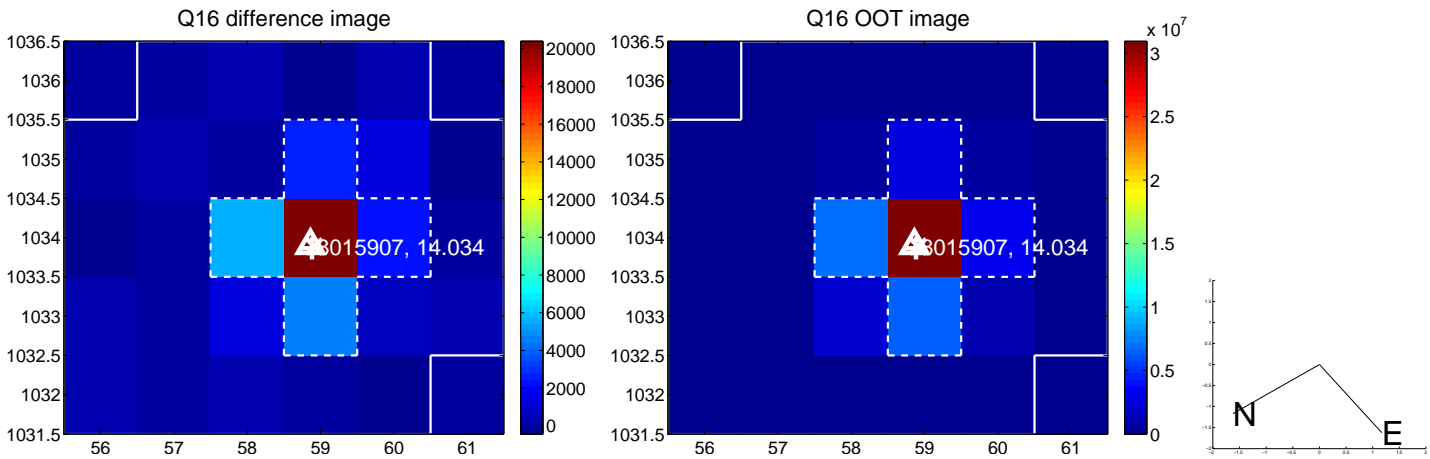
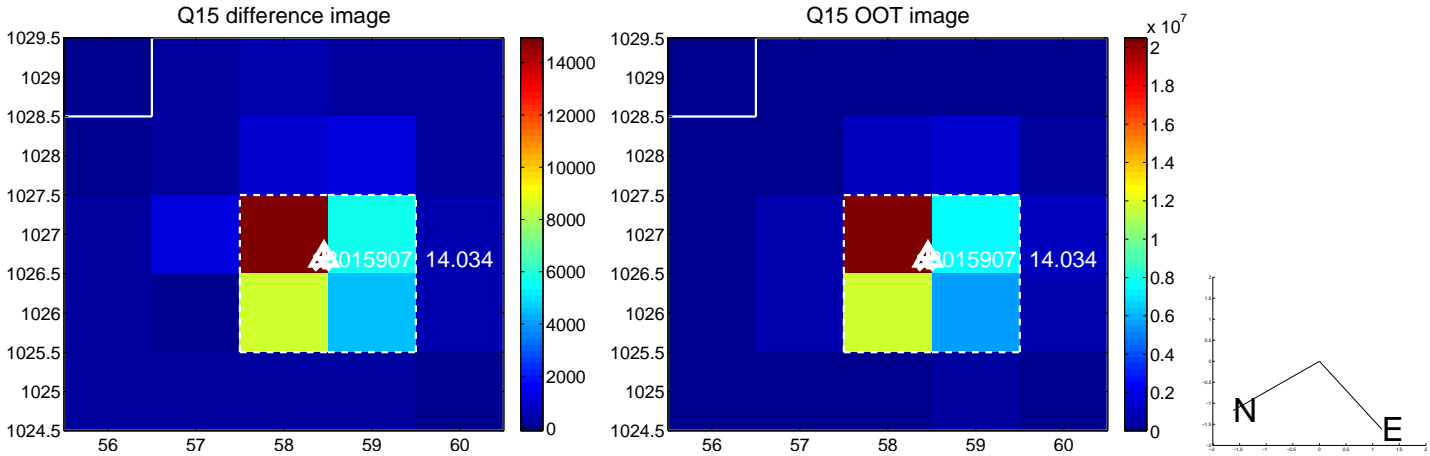
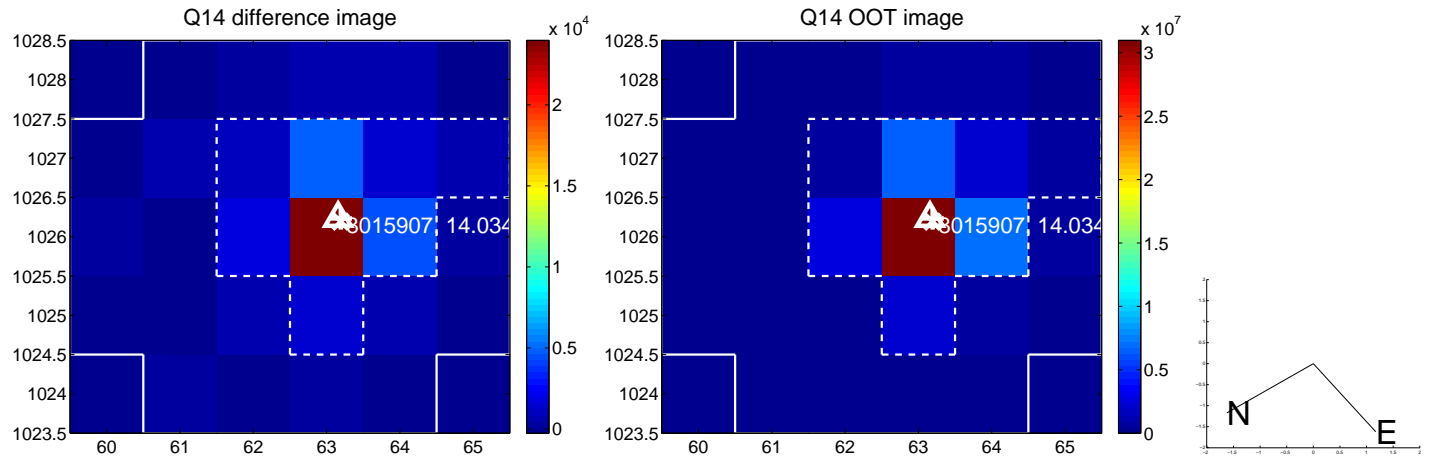
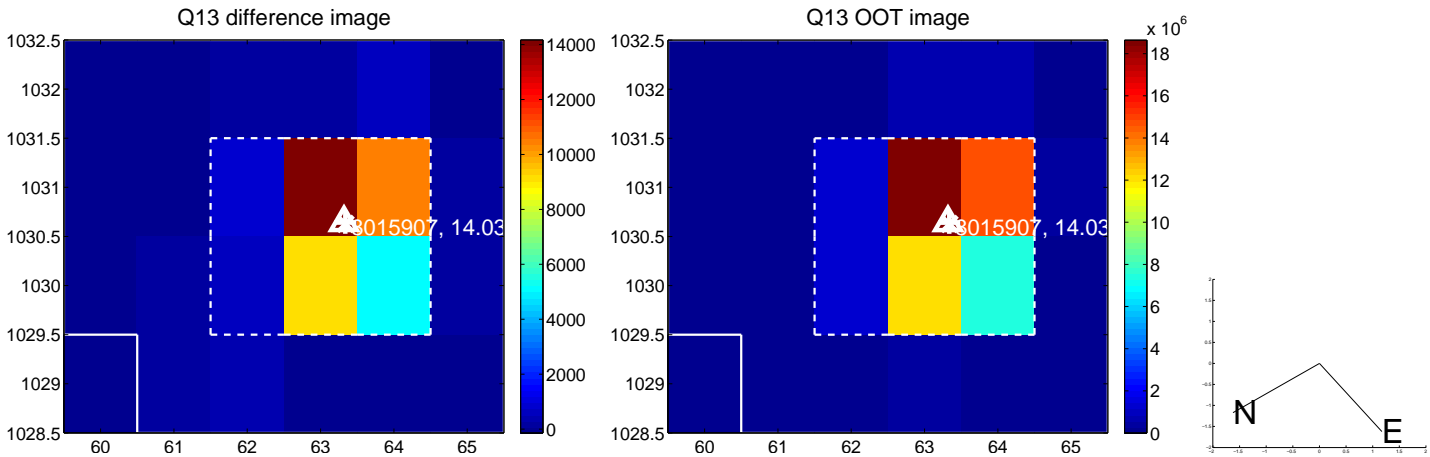
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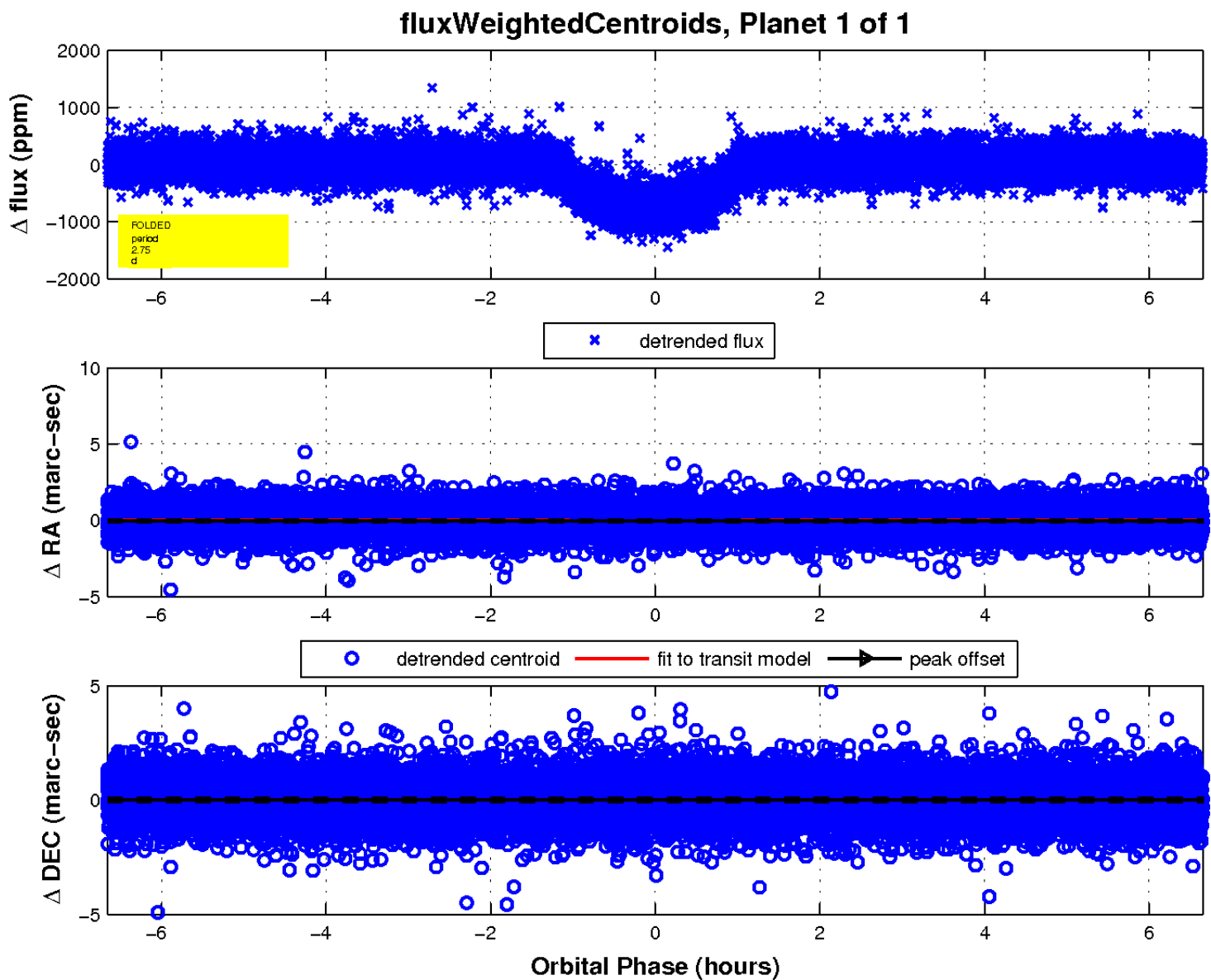
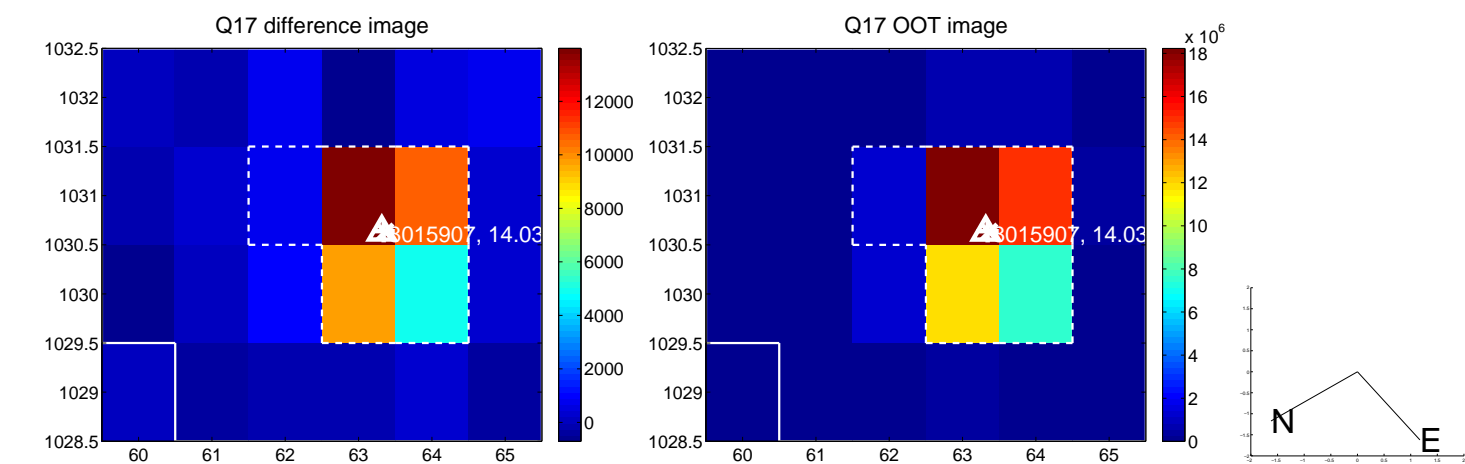


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

