

# KIC 009579208

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009579208-01	OBS	3165.01	4.117501	132.801988	31.8	4.330	13.6	13.9	1.73	6263	1.14	1480.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009579208-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

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

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

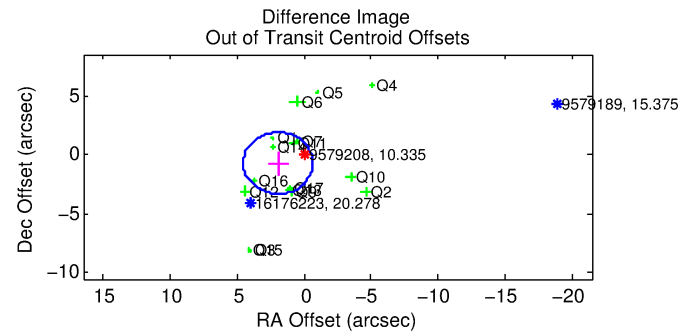
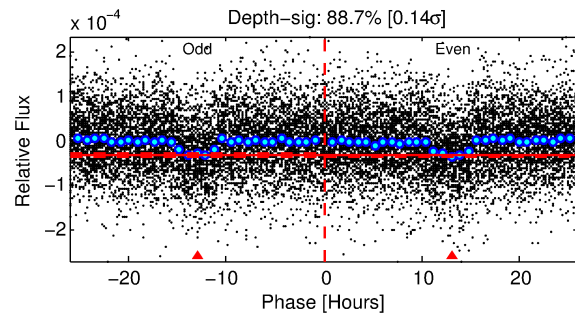
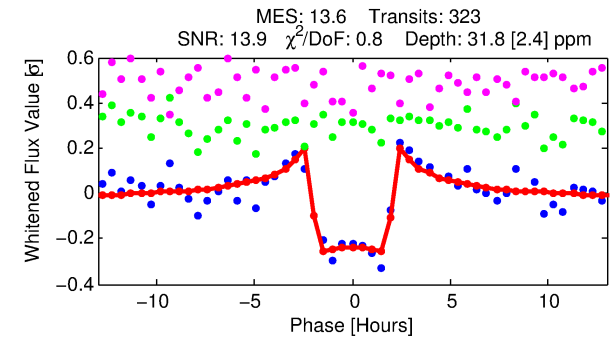
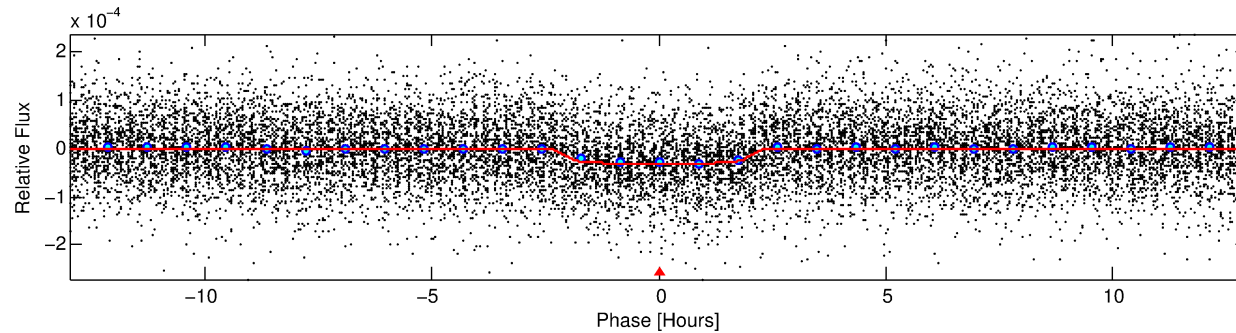
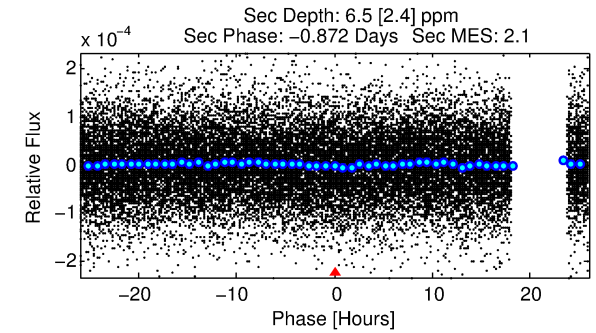
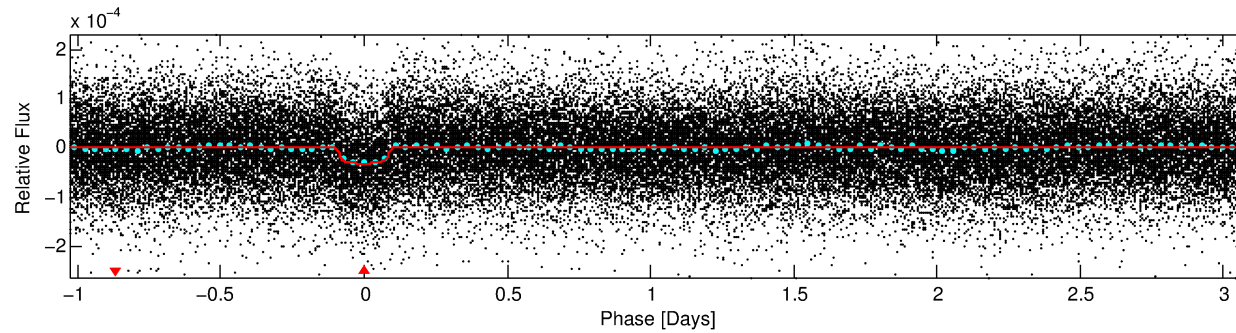
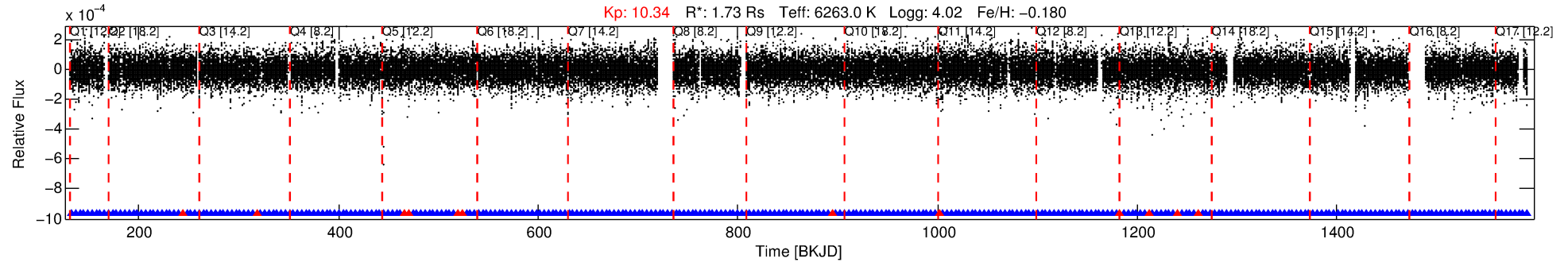
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009579208-01

No Significant Match Found

# DV One-Page Summary

KIC: 9579208 Candidate: 1 of 1 Period: 4.118 d  
KOI: K03165.01 Corr: 0.971



## DV Fit Results:

Period = 4.11750 [0.00002] d  
Epoch = 132.8020 [0.0024] BKJD  
Rp/R\* = 0.0061 [0.0008]  
a/R\* = 3.41 [2.23]  
b = 0.90 [0.15]  
Seff = 1480.95 [103.80]  
Teq = 1582 [28] K  
Rp = 1.14 [0.17] Re  
a = 0.0527 [0.0023] AU  
Ag = 7.65 [3.56] [1.87σ]  
Teffp = 4068 [474] K [5.24σ]

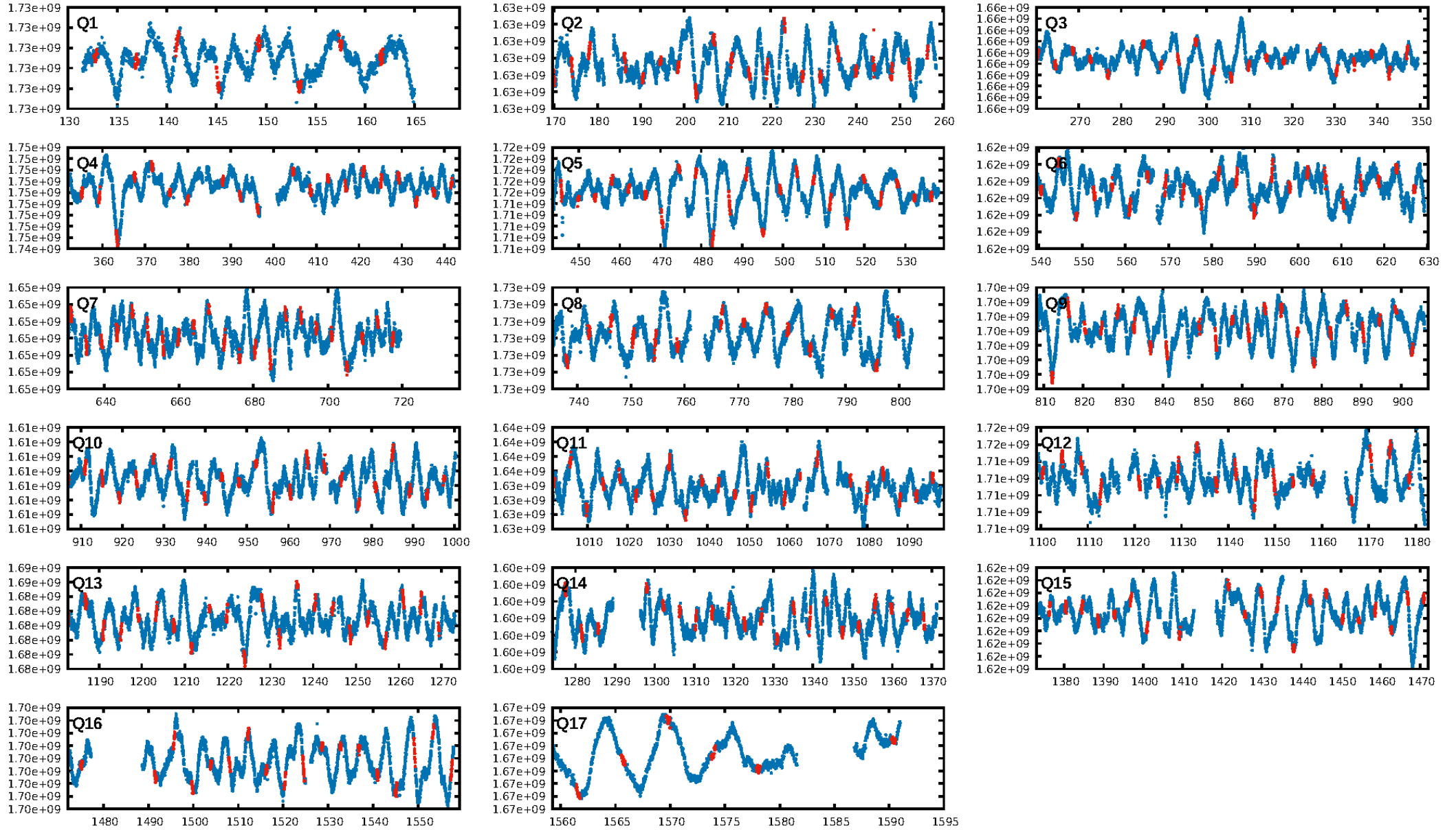
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.41e-38  
RollingBand-fgt: 0.96 [297/309]  
GhostDiagnostic-chr: 4.188  
Centroid-sig: 0.4%  
Centroid-so: 1.695 arcsec [2.64σ]  
OotOffset-rm: 2.084 arcsec [2.40σ]  
KicOffset-rm: 1.197 arcsec [1.84σ]  
OotOffset-st: 4/4/3/5 [16]  
KicOffset-st: 4/4/3/5 [16]  
DiffImageQuality-fgm: 0.56 [9/16]  
DiffImageOverlap-fno: 1.00 [17/17]

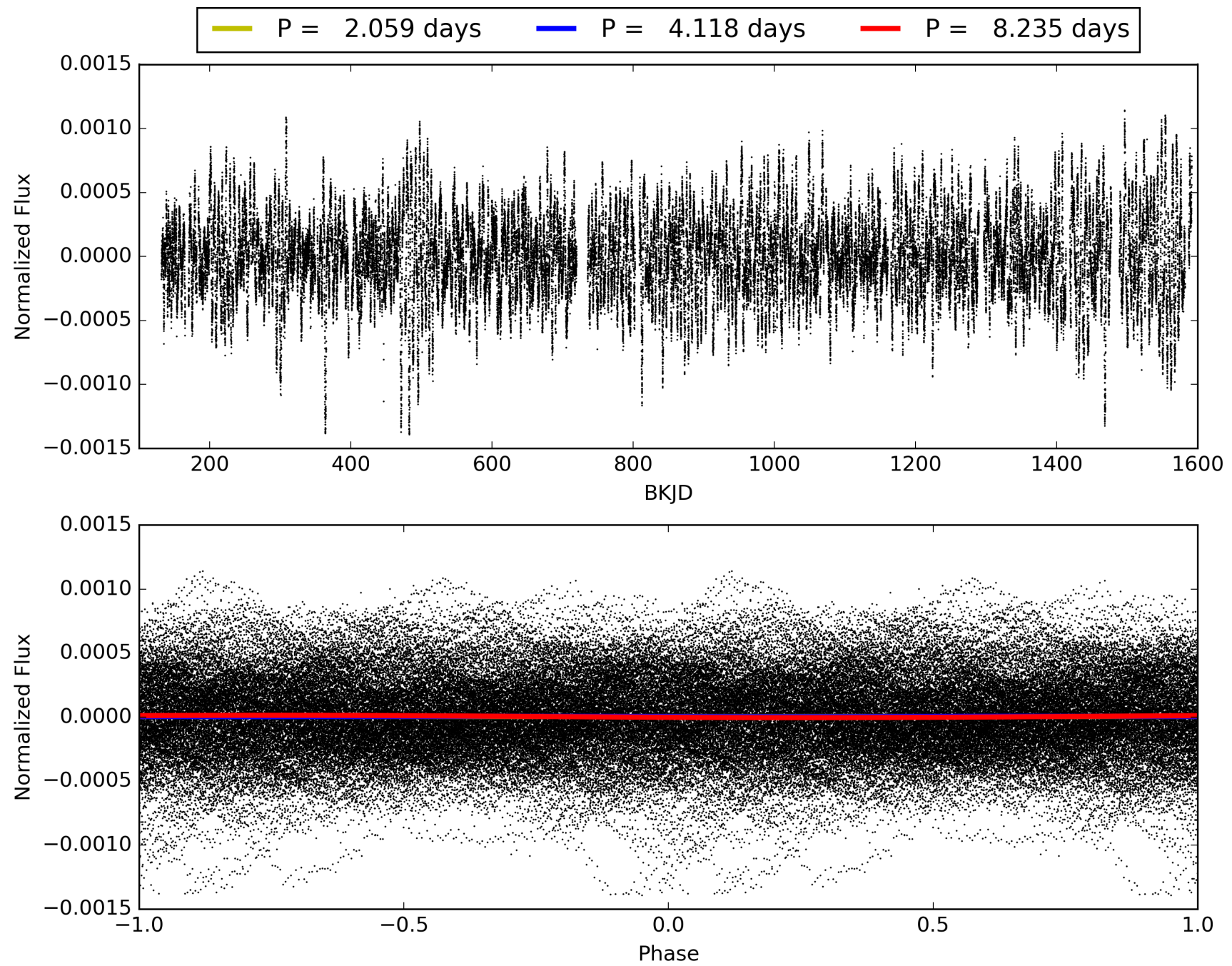
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:16:08 Z

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

# TCE 009579208-01, PDC Light Curves

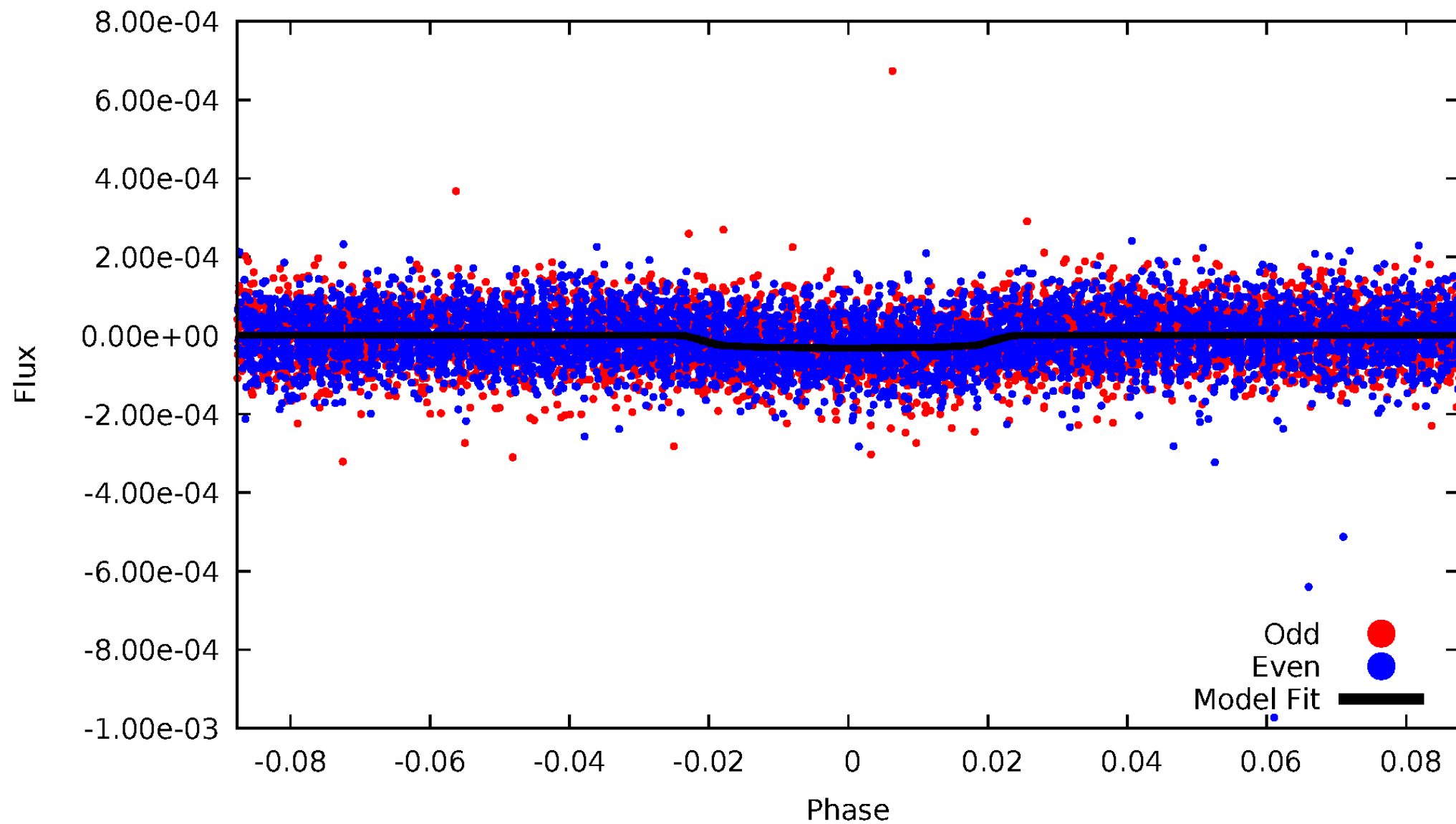


TCE 009579208-01



# DV Odd/Even

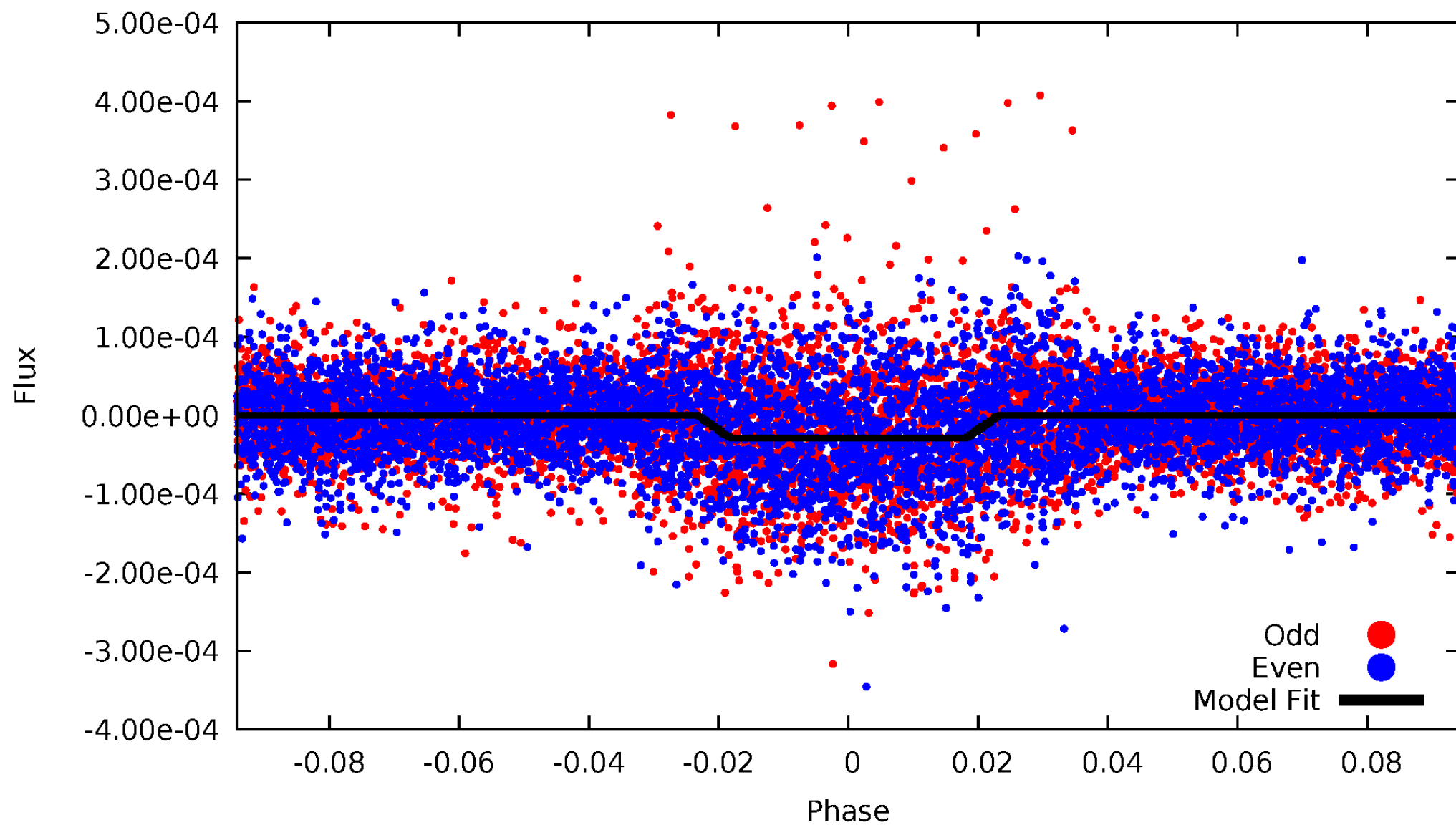
TCE 009579208-01



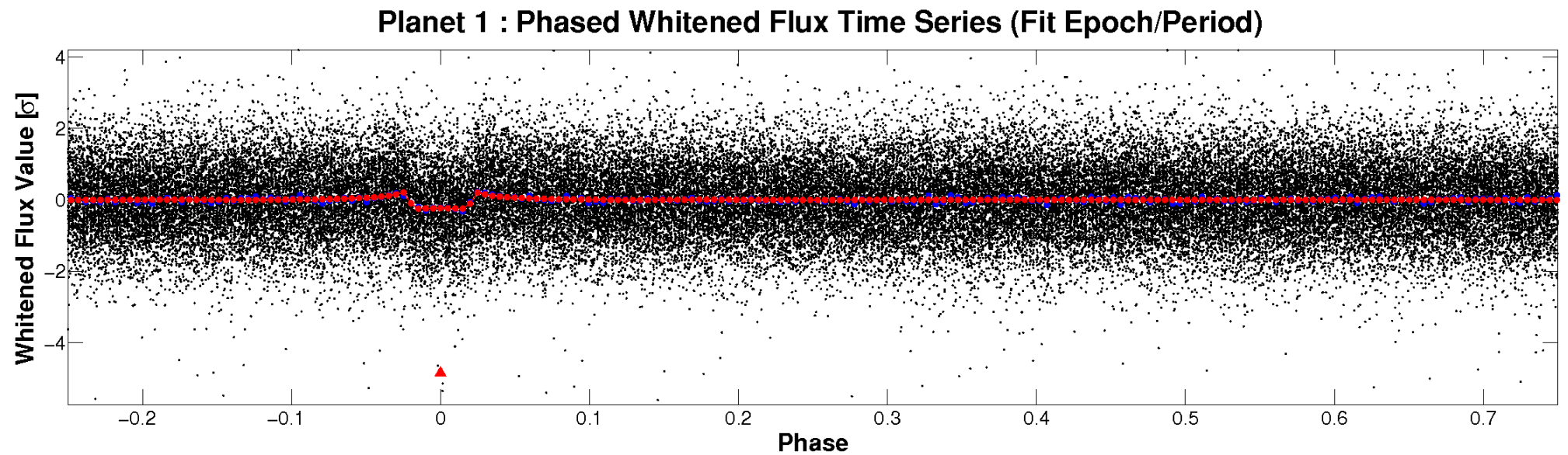
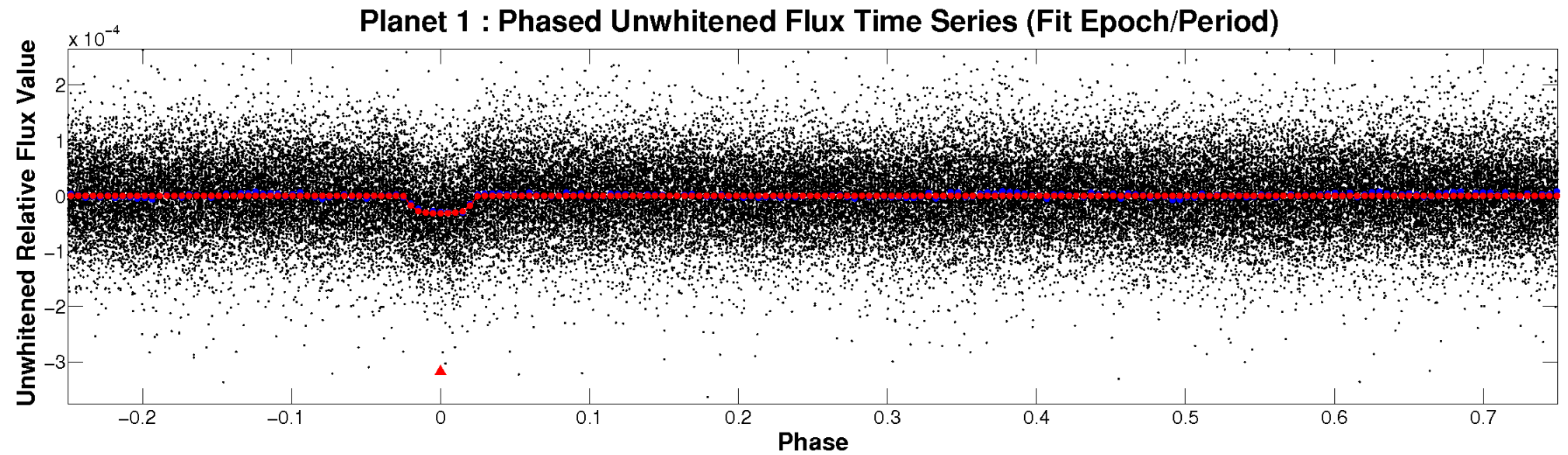


# ALT Odd/Even

TCE 009579208-01

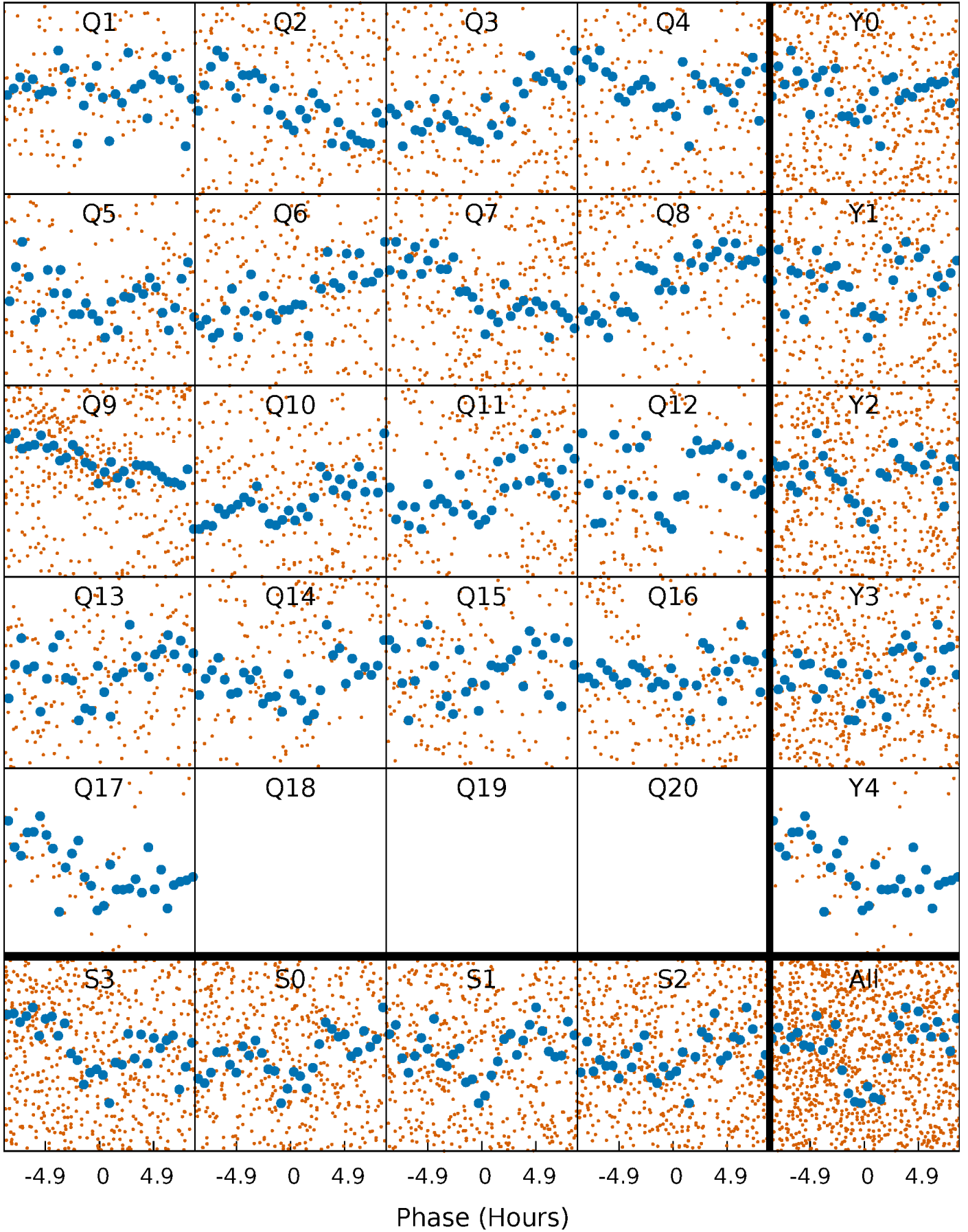


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

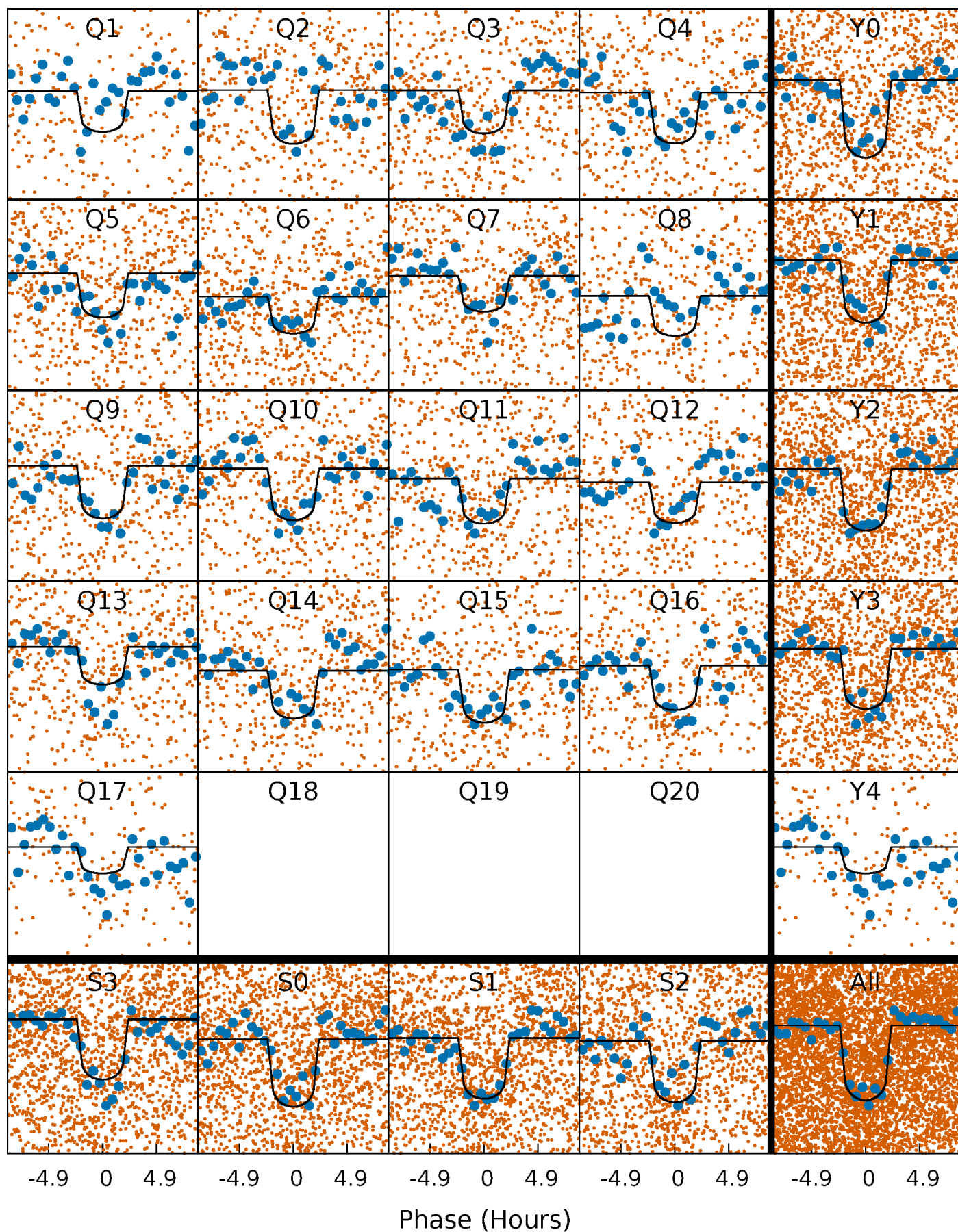
TCE 009579208-01     $P = 4.117501$  Days     $T_0 = 132.801988$  (BKJD)





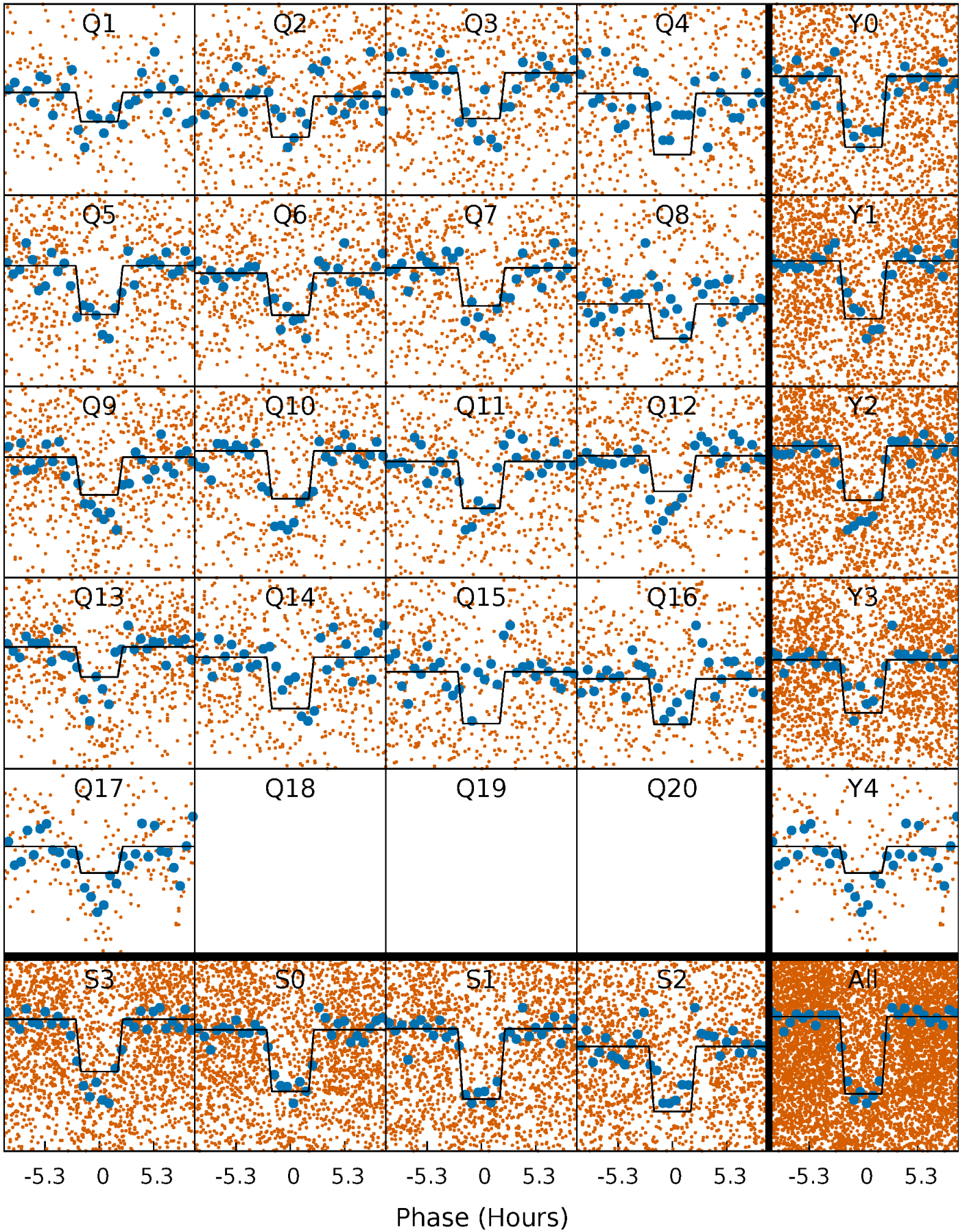
# DV Quarter-Phased Transit Curves

TCE 009579208-01 P= 4.117501 Days  $T_0=132.801988$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

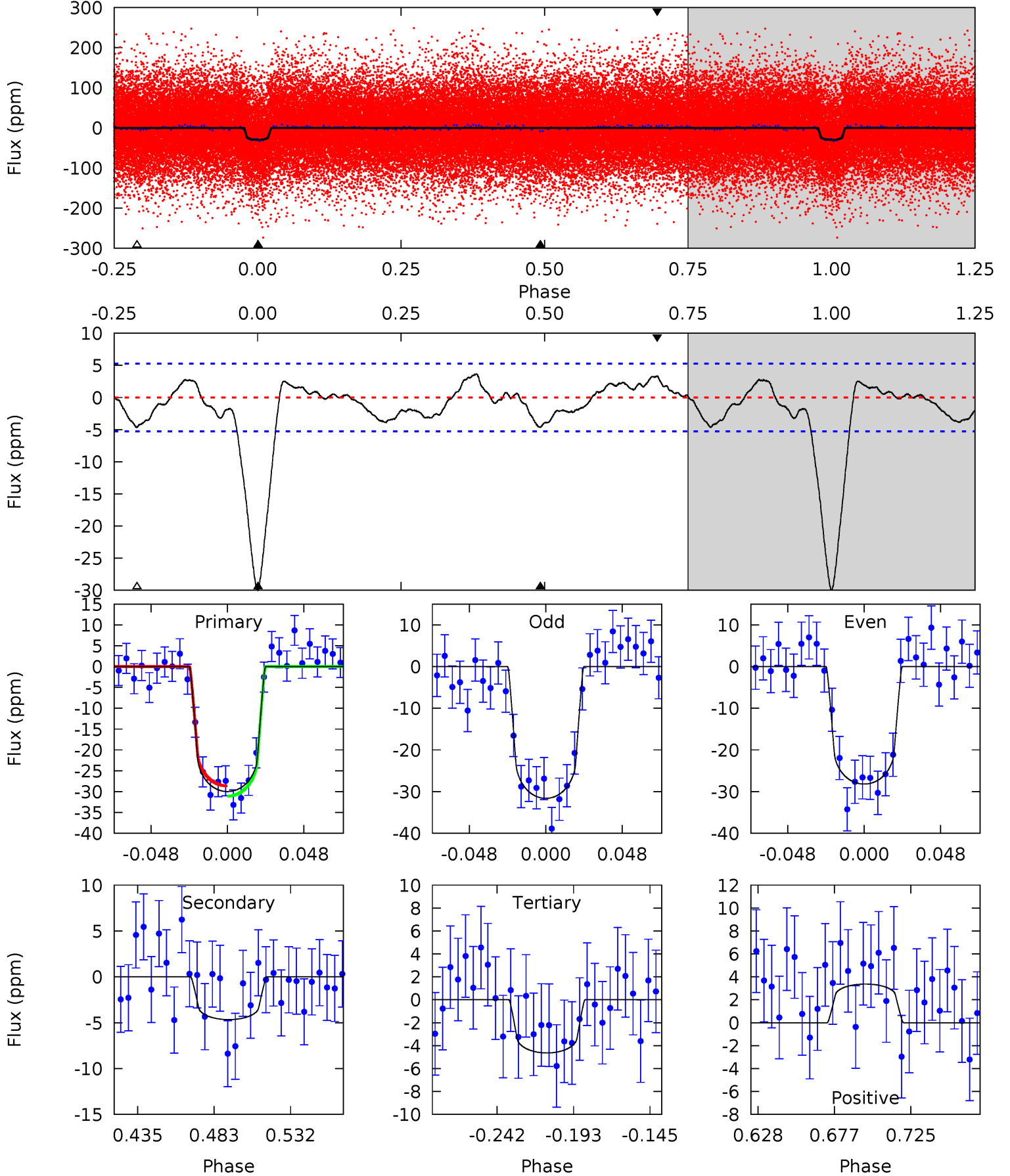
TCE 009579208-01 P= 4.117541 Days  $T_0=132.793646$  (BKJD)



# DV Model-Shift Uniqueness Test

009579208-01, P = 4.117501 Days, E = 128.684487 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
26.8	4.17	4.15	3.01	4.72	1.97	1.82	22.7	23.8	0.02	1.16	1.53	0.99	0.11	1.10

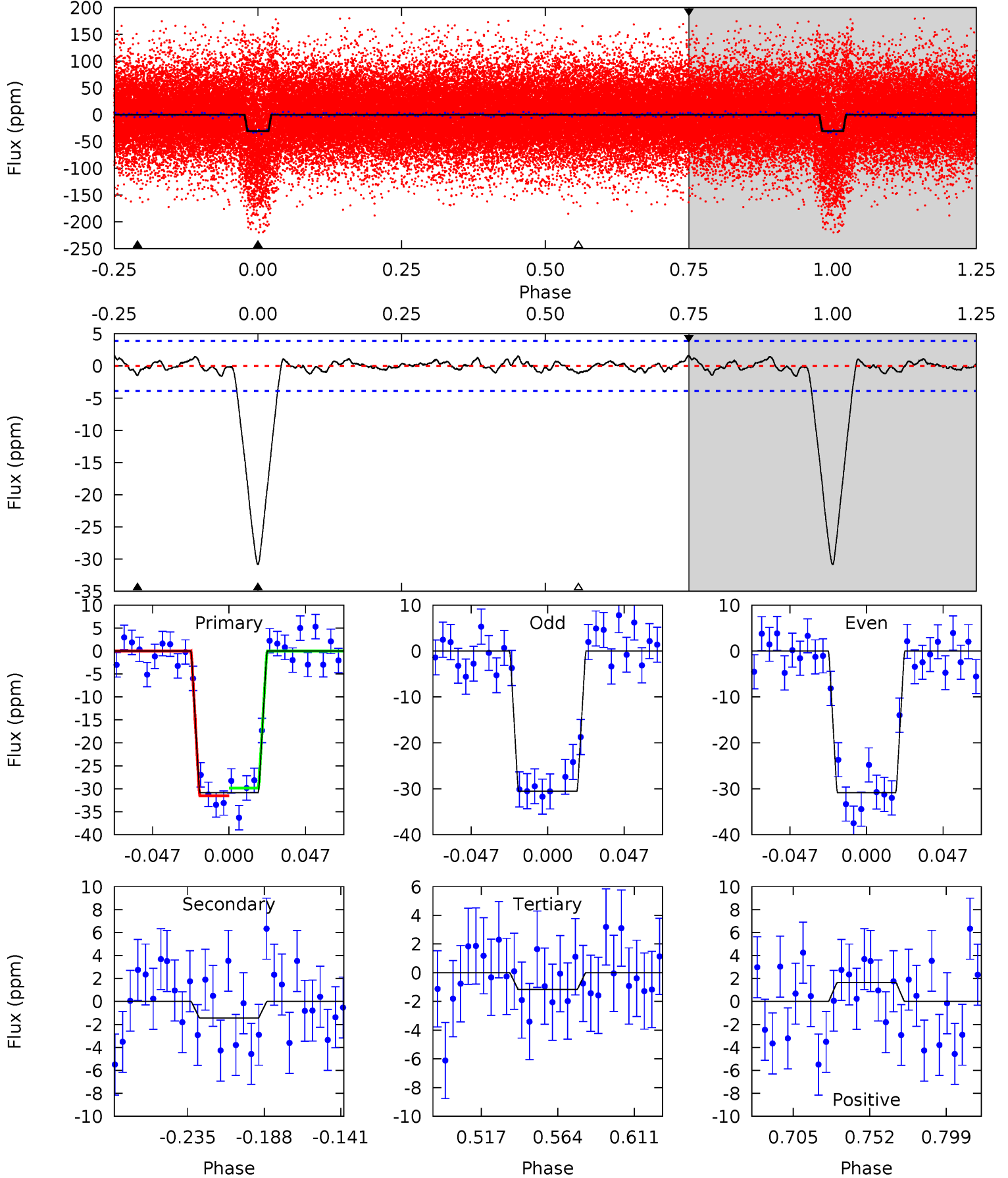




# Alt Model-Shift Uniqueness Test

009579208-01, P = 4.117541 Days, E = 128.676105 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
37.6	1.75	1.41	2.00	4.72	1.99	0.71	36.1	35.6	0.34	-0.24	0.20	0.99	0.05	1.04



### Stellar Parameters For KIC 009579208

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6263^{+81}_{-74}$	$4.024^{+0.013}_{-0.013}$	$-0.180^{+0.150}_{-0.150}$	$1.726^{+0.111}_{-0.068}$	$1.147^{+0.156}_{-0.078}$	$0.314^{+0.020}_{-0.023}$
	+1%/-1%	+0%/-0%	+83%/-83%	+6%/-4%	+14%/-7%	+6%/-7%
Source	SPE72	AST10	SPE72	DSEP		

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

### Secondary Eclipse Parameters for KIC 009579208-01 / KOI 3165.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-5 \pm 1$	$1.15^{+0.16}_{-0.16}$	$2212^{+34}_{-29}$	$4002^{+287}_{-272}$	$5.447^{+2.324}_{-1.815}$
Alt.	$-1 \pm 1$	$1.02^{+0.15}_{-0.16}$	$2209^{+32}_{-29}$	$3388^{+350}_{-524}$	$2.178^{+1.576}_{-1.284}$

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



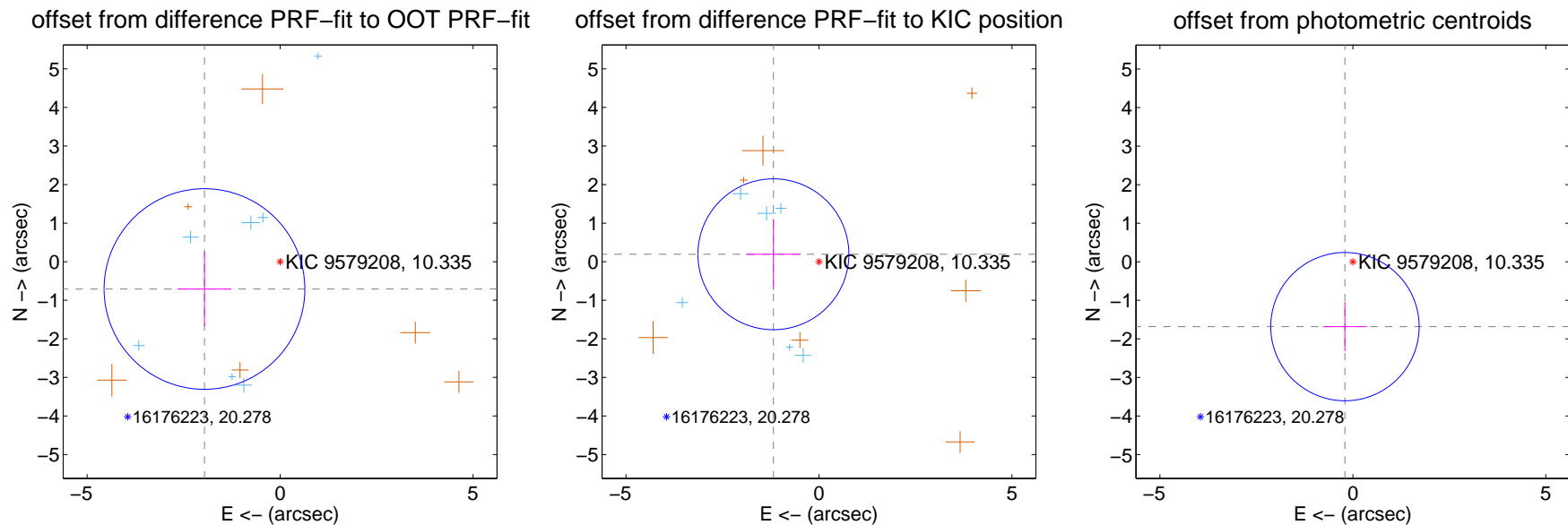
## DV Centroid Data

Supplemental centroid analysis for 009579208-01. **Kepler magnitude: 10.34**. Transit SNR 13.94

There are 9 quarters with good PRF difference image offsets

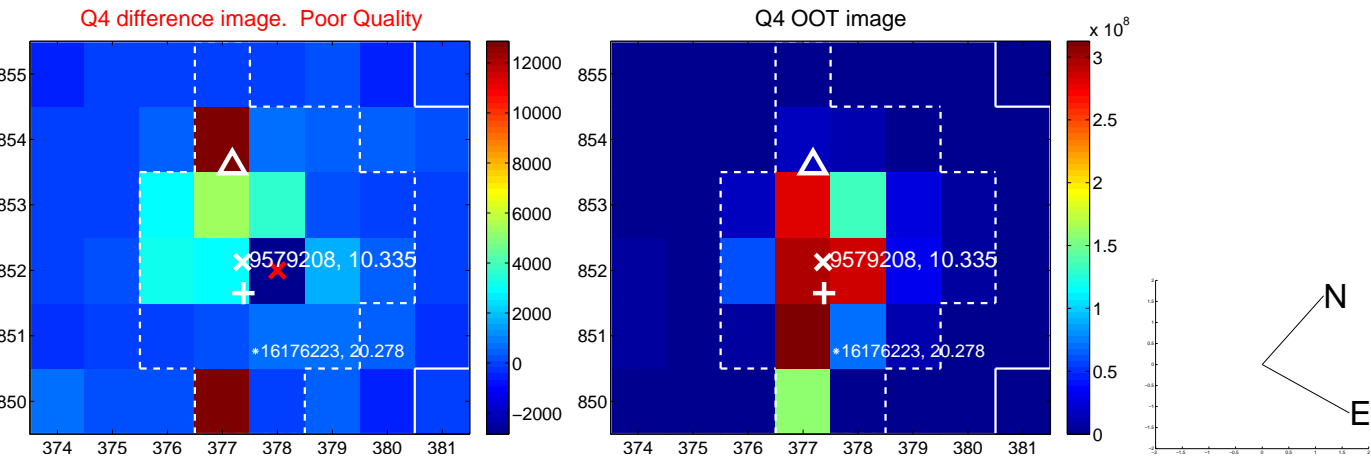
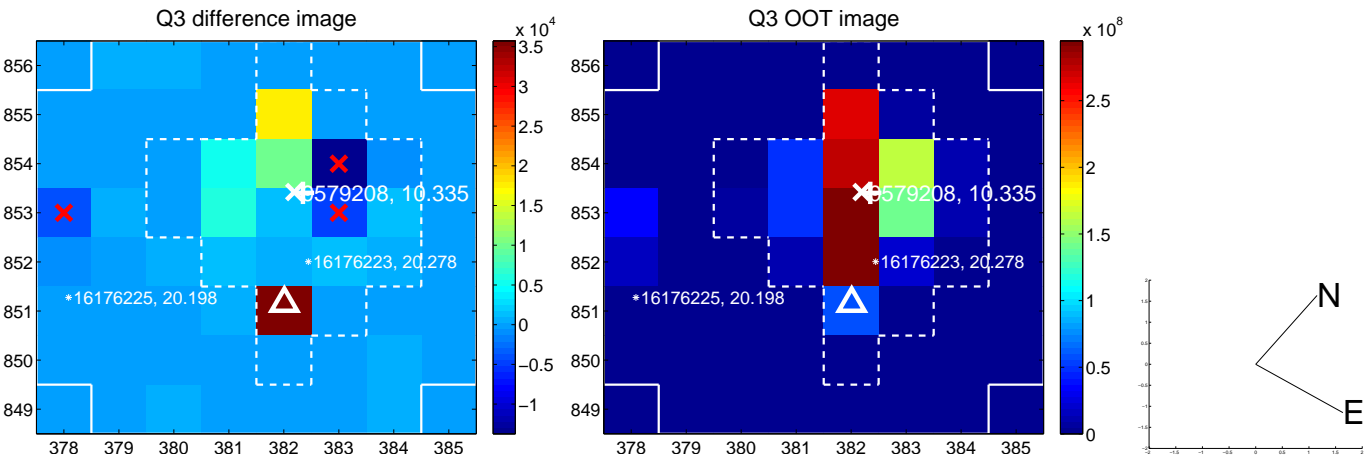
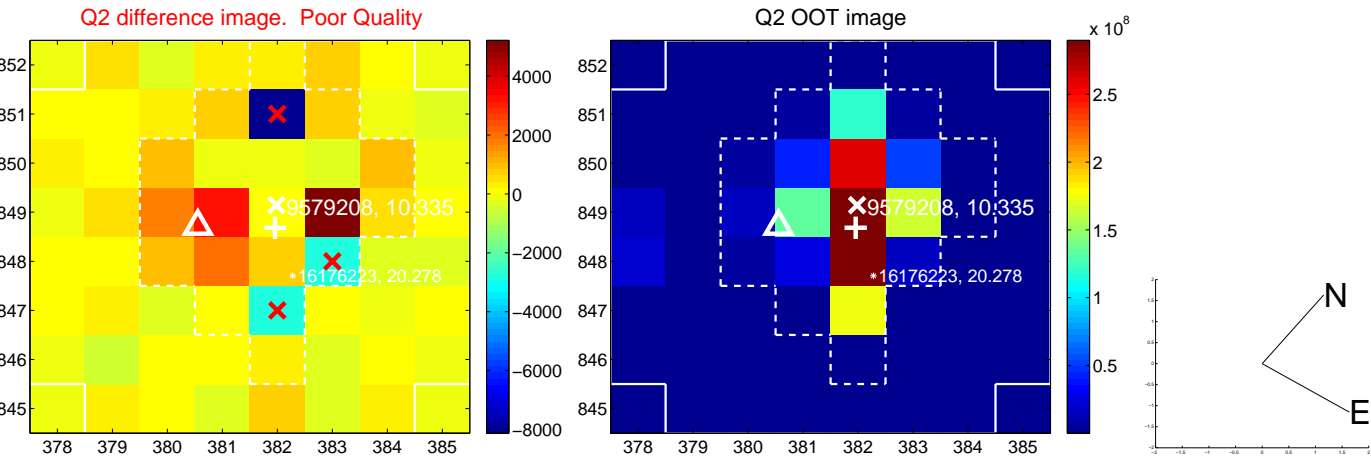
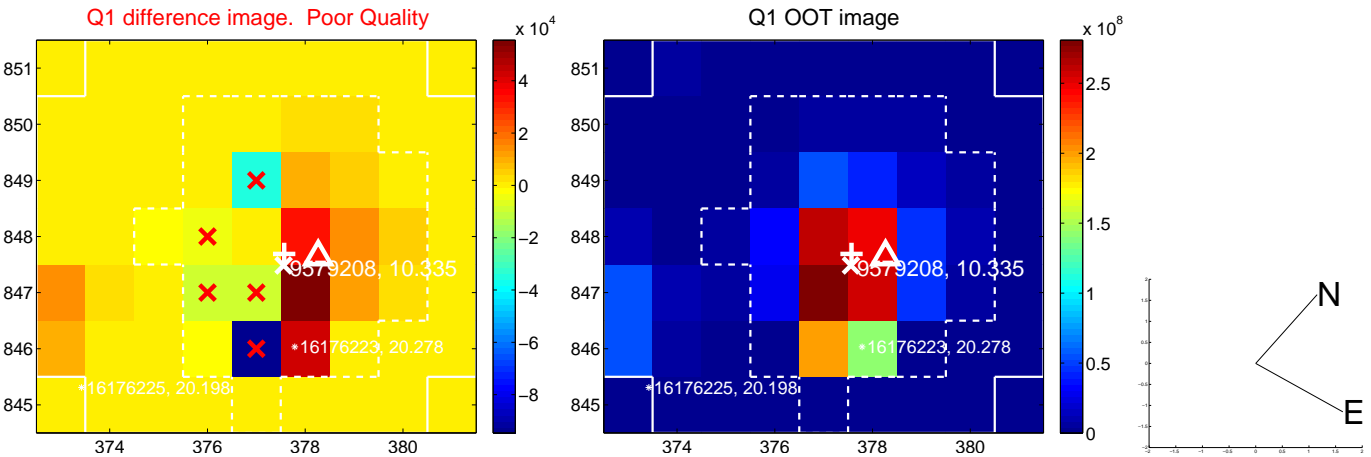
The direct PRF centroid is offset from the target star catalog position by about 0.95 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.084 \pm 0.867$	2.40	$1.960 \pm 0.699$	$-0.709 \pm 0.958$
PRF-fit source offset from KIC position	$1.197 \pm 0.652$	1.84	$1.181 \pm 0.713$	$0.192 \pm 0.912$
photometric centroid source offset	$1.69 \pm 0.64$	2.64	$0.21 \pm 0.57$	$-1.68 \pm 0.64$

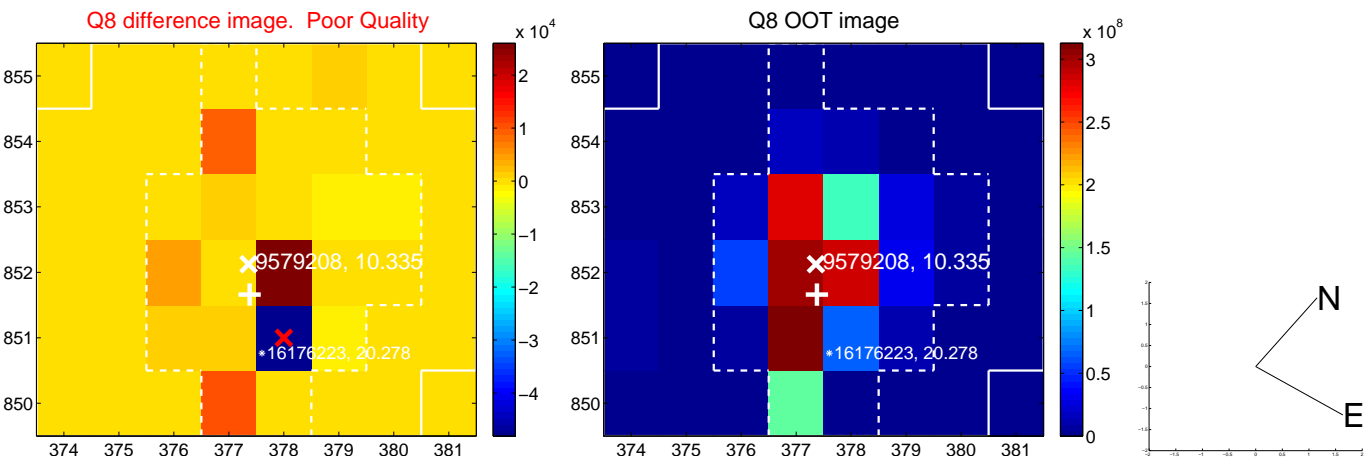
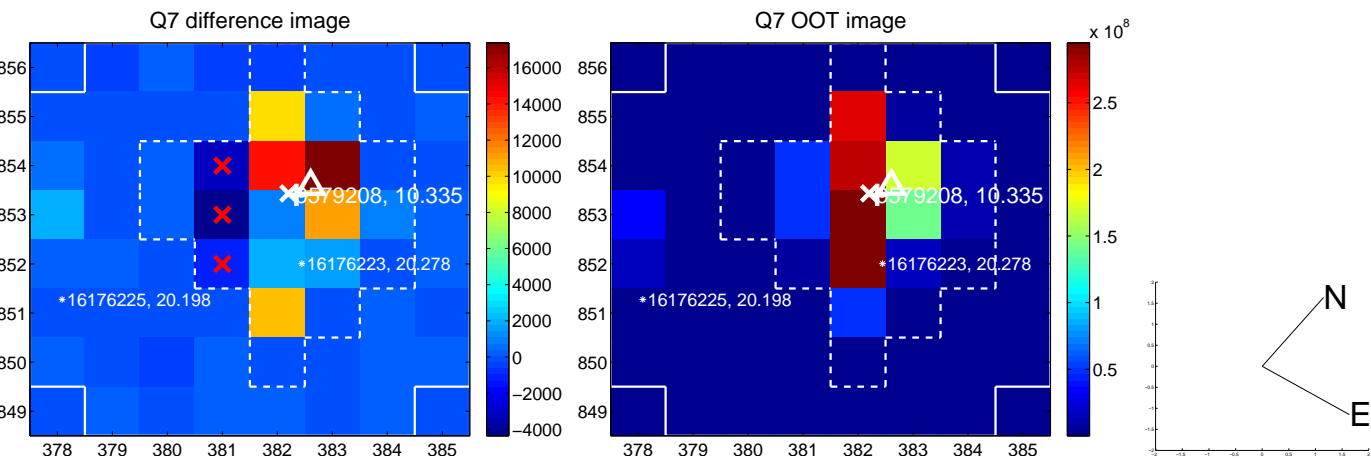
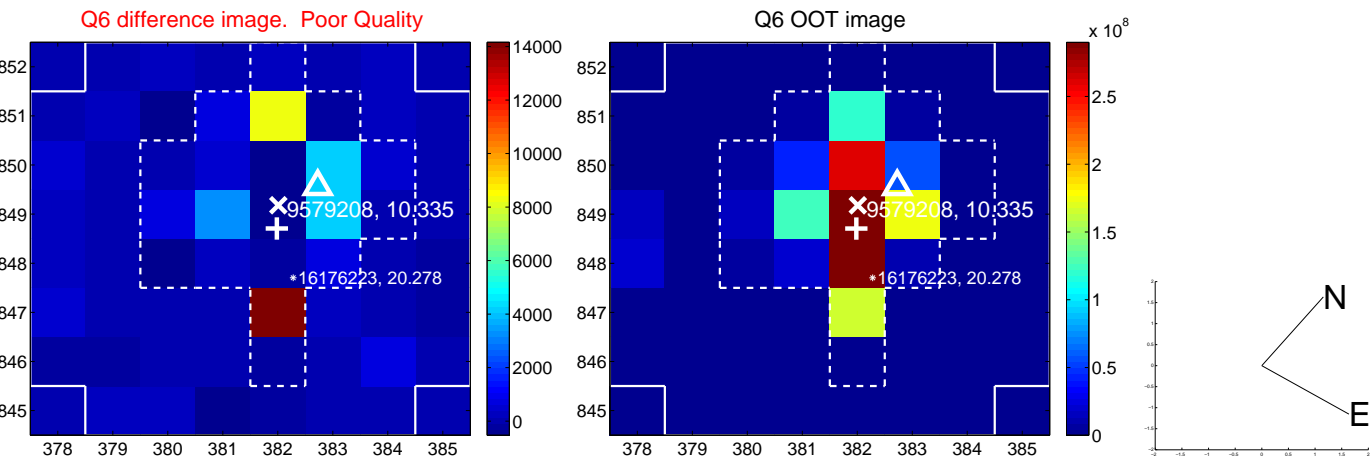
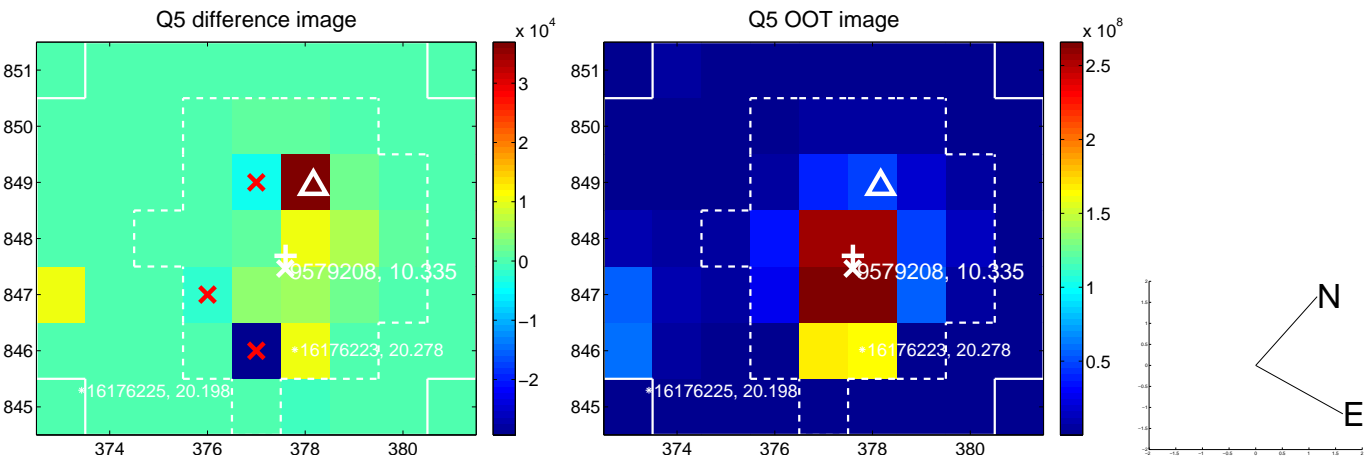


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

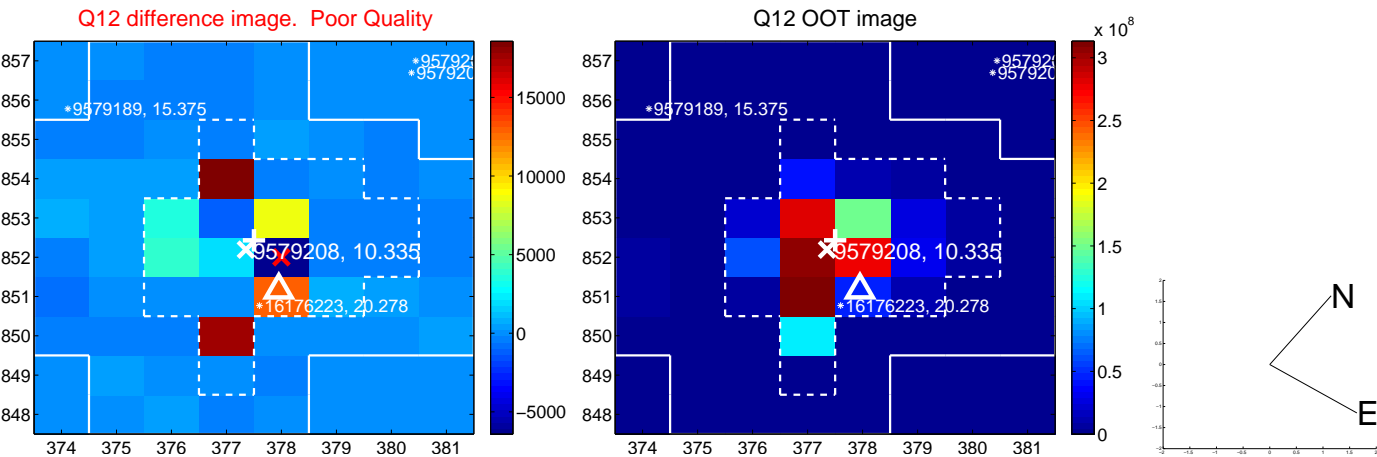
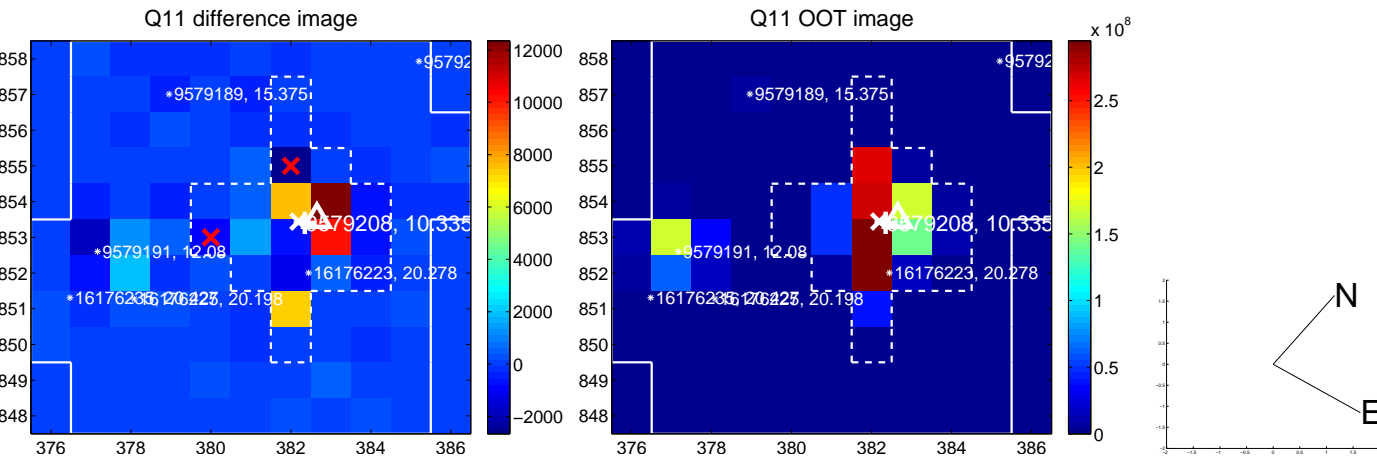
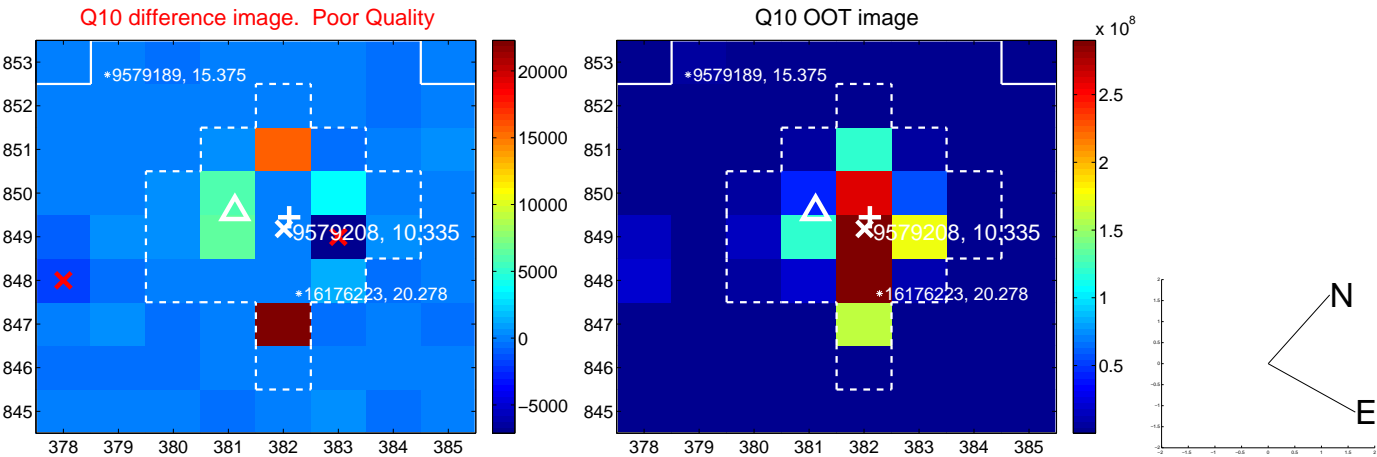
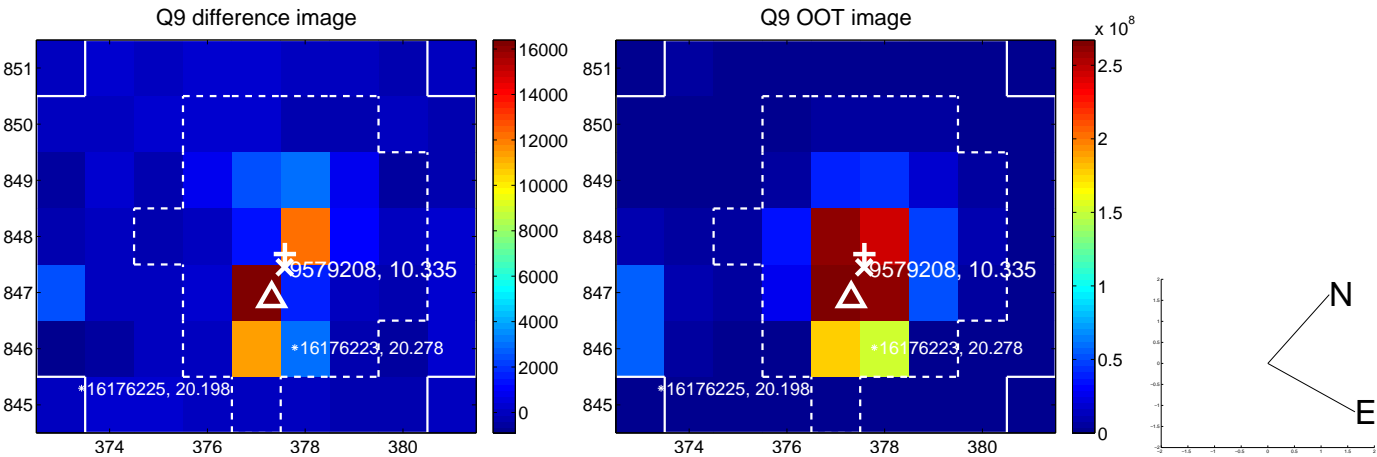
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



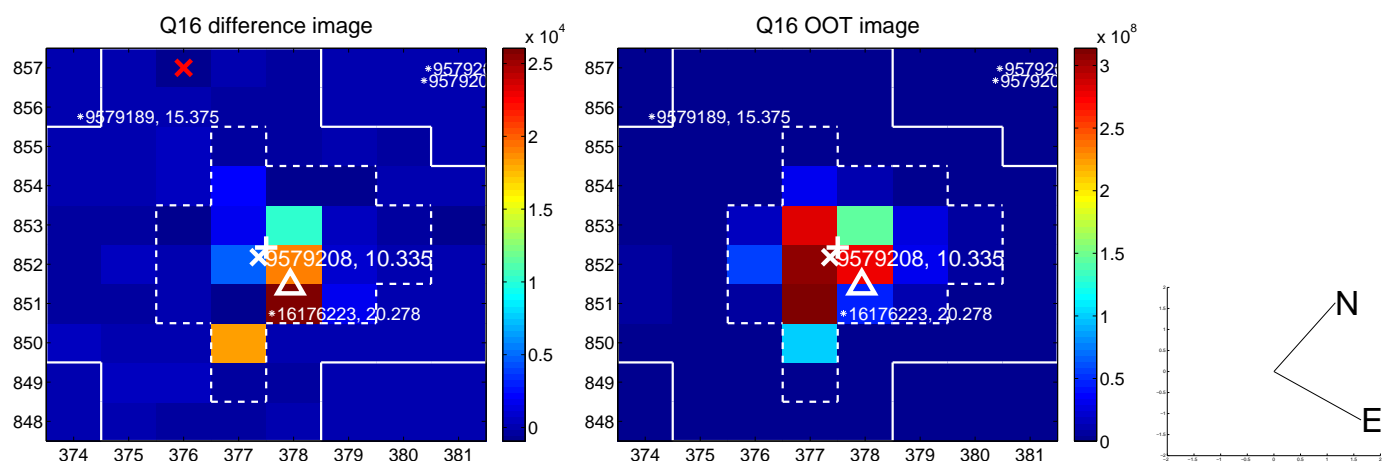
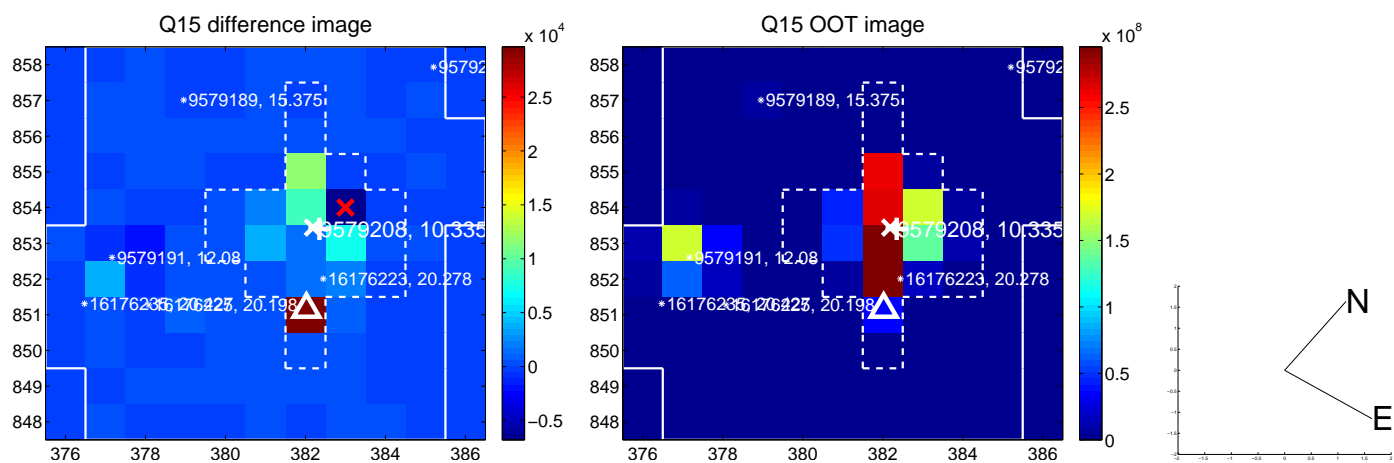
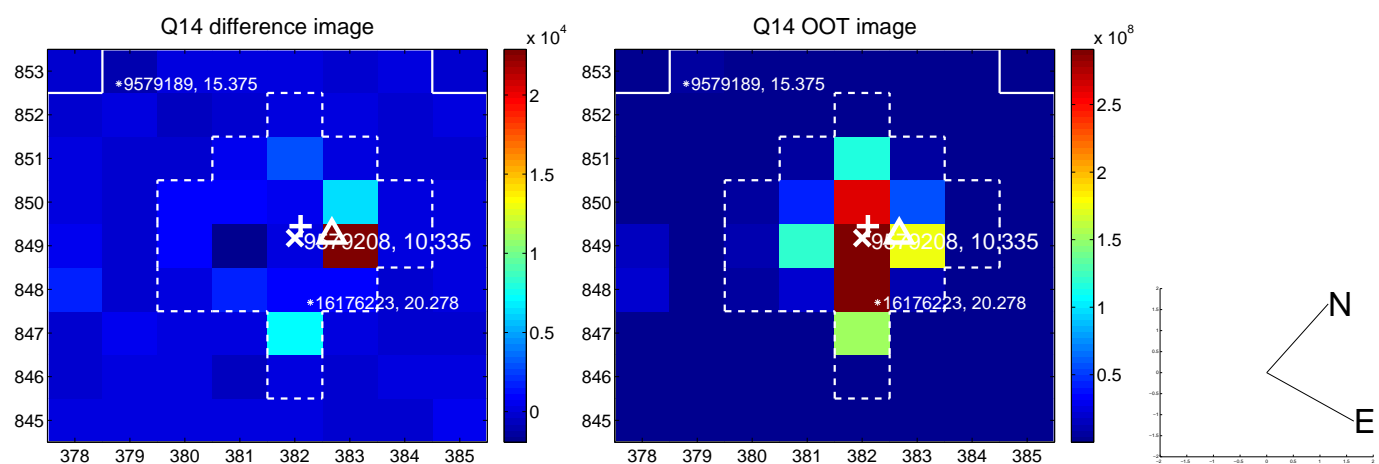
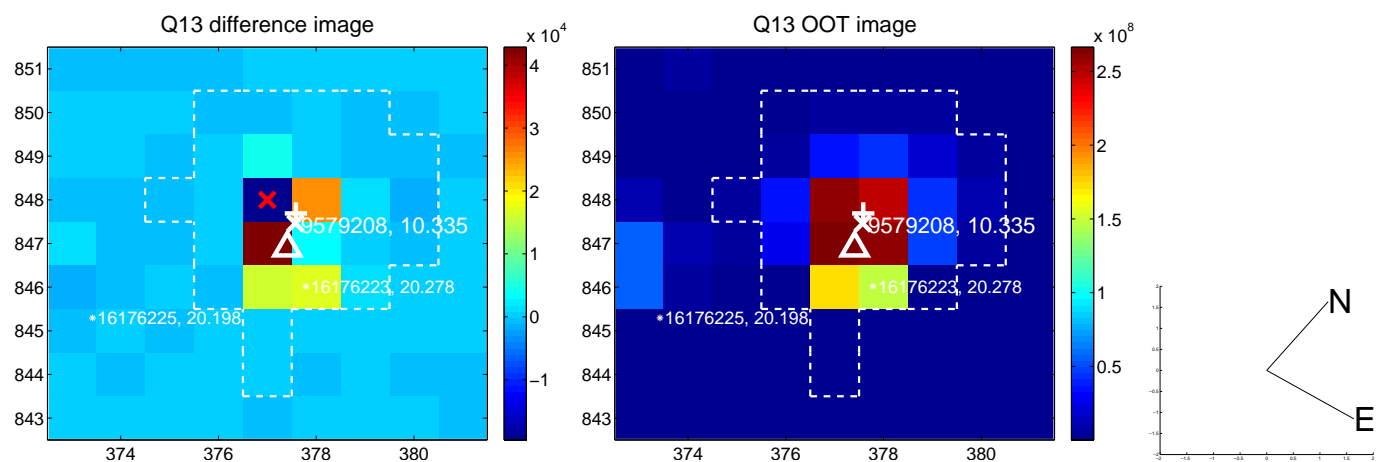
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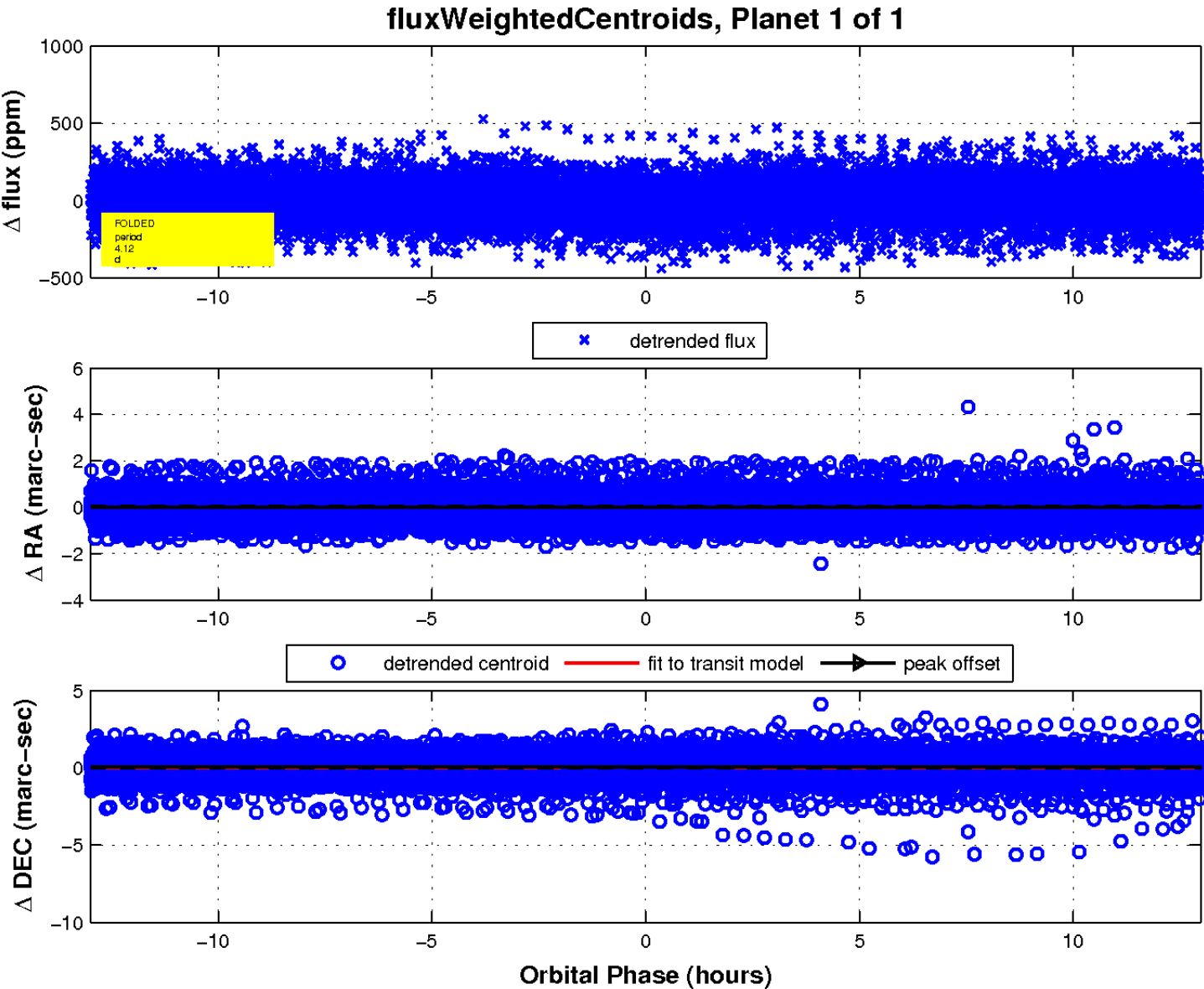
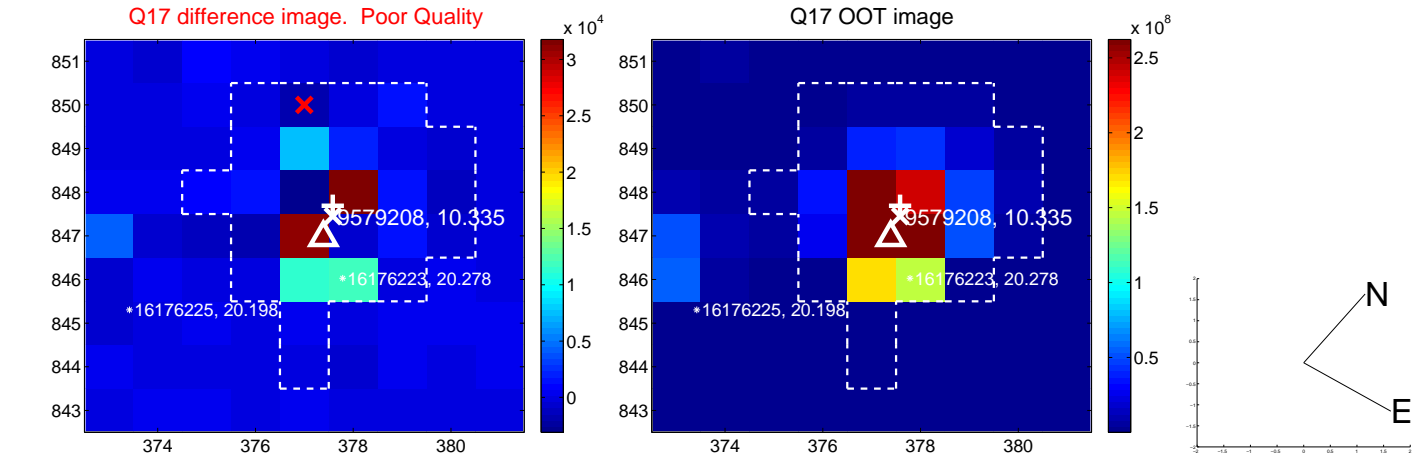


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

