

# KIC 008587439

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008587439-01	OBS	7899.01	8.391396	139.031014	130.8	1.286	8.7	9.4	0.94	5892	1.14	170.36

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008587439-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET

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

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

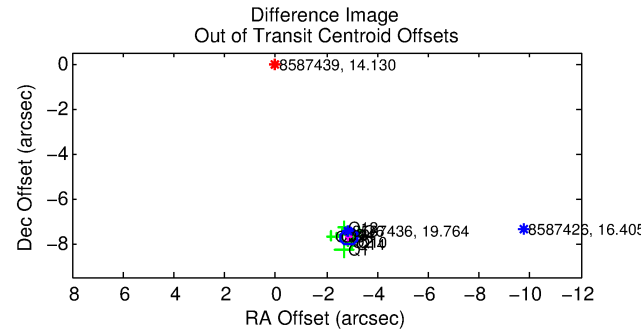
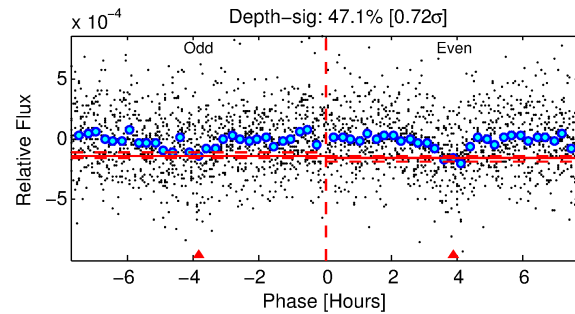
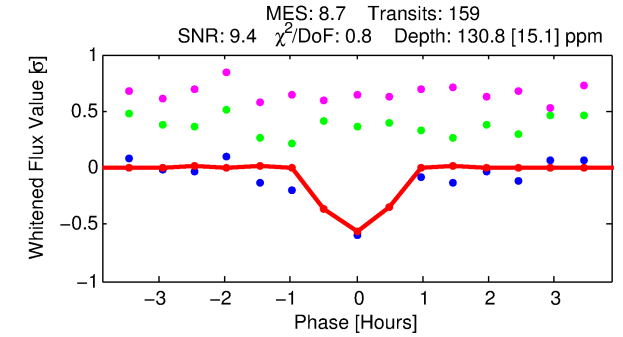
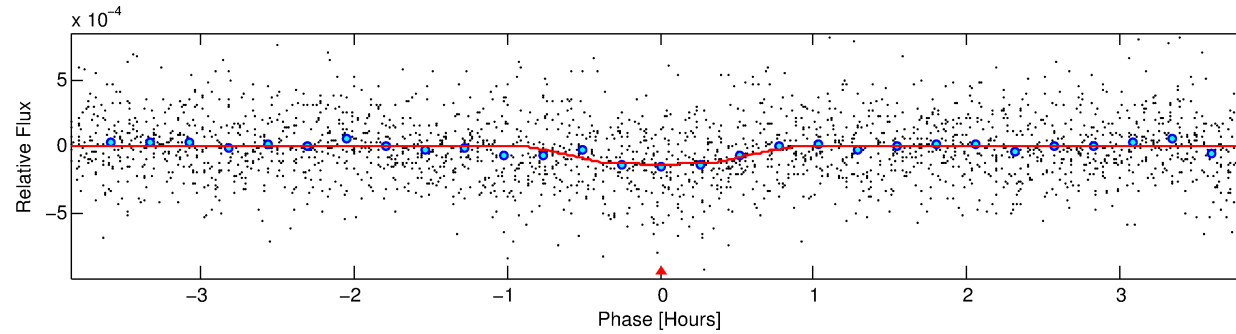
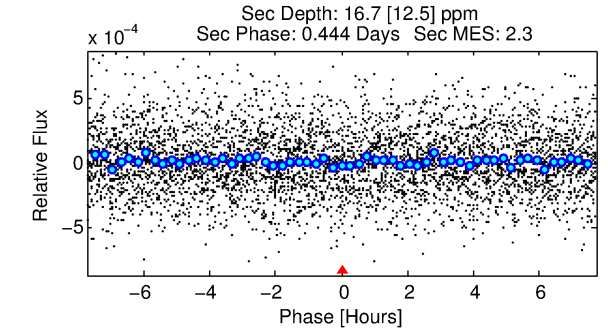
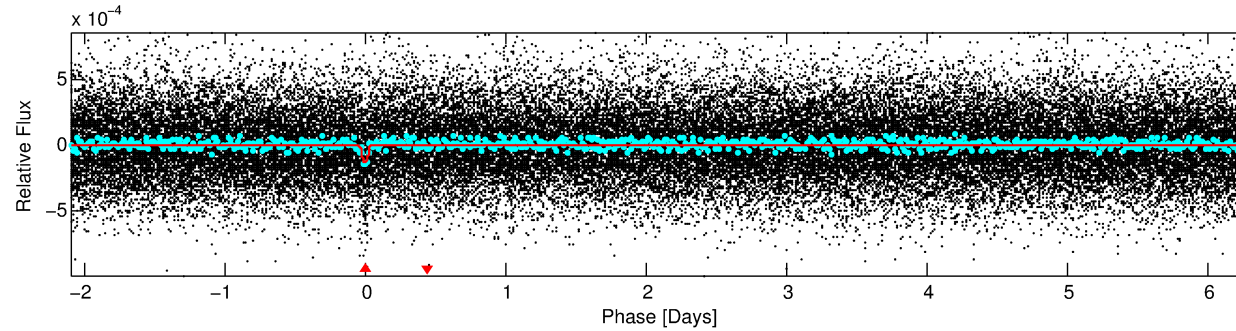
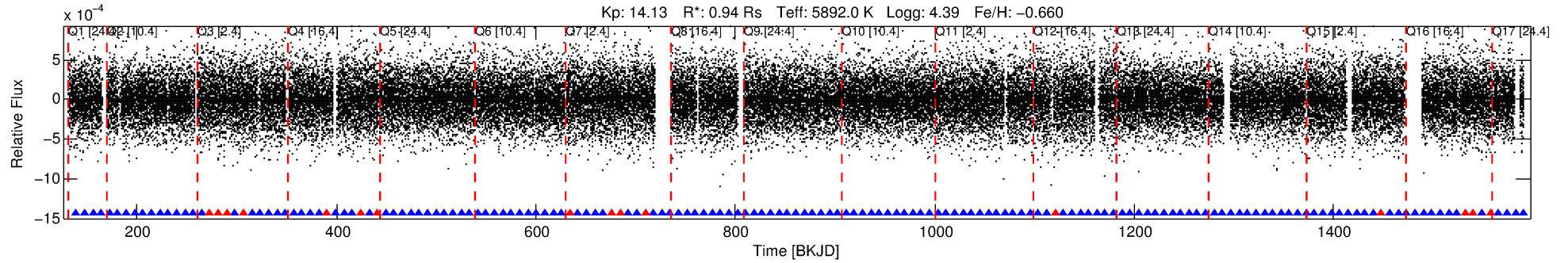
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008587439-01

No Significant Match Found

# DV One-Page Summary

KIC: 8587439 Candidate: 1 of 1 Period: 8.391 d



## DV Fit Results:

Period = 8.39140 [0.00004] d  
Epoch = 139.0310 [0.0037] BKJD  
Rp/R\* = 0.0112 [0.0054]  
a/R\* = 37.20 [89.37]  
b = 0.68 [1.90]  
Seff = 170.36 [57.45]  
Teq = 921 [78] K  
Rp = 1.14 [0.62] Re  
a = 0.0744 [0.0158] AU  
Ag = 38.98 [48.97] [0.78σ]  
Teffp = 3559 [1087] K [2.42σ]

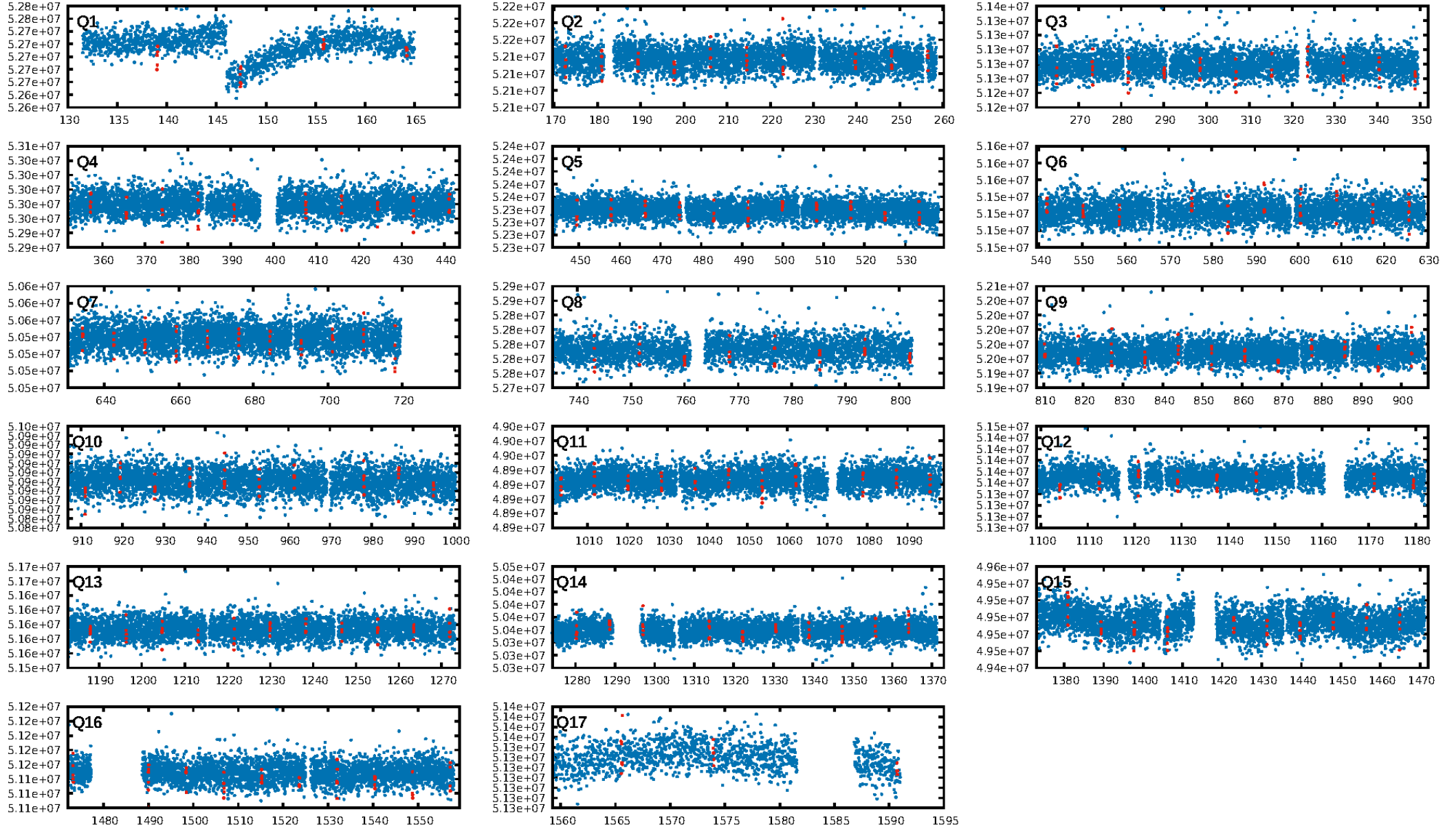
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 71.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 8.49e-18  
RollingBand-fgt: 0.89 [136/152]  
GhostDiagnostic-chr: -0.3276  
Centroid-sig: 0.0%  
Centroid-so: 29.703 arcsec [20.02σ]  
OotOffset-rm: 8.247 arcsec [70.39σ]  
KicOffset-rm: 8.203 arcsec [74.01σ]  
OotOffset-st: 4/0/4/2 [10]  
KicOffset-st: 4/0/4/2 [10]  
DiffImageQuality-fgm: 1.00 [10/10]  
DiffImageOverlap-fno: 1.00 [17/17]

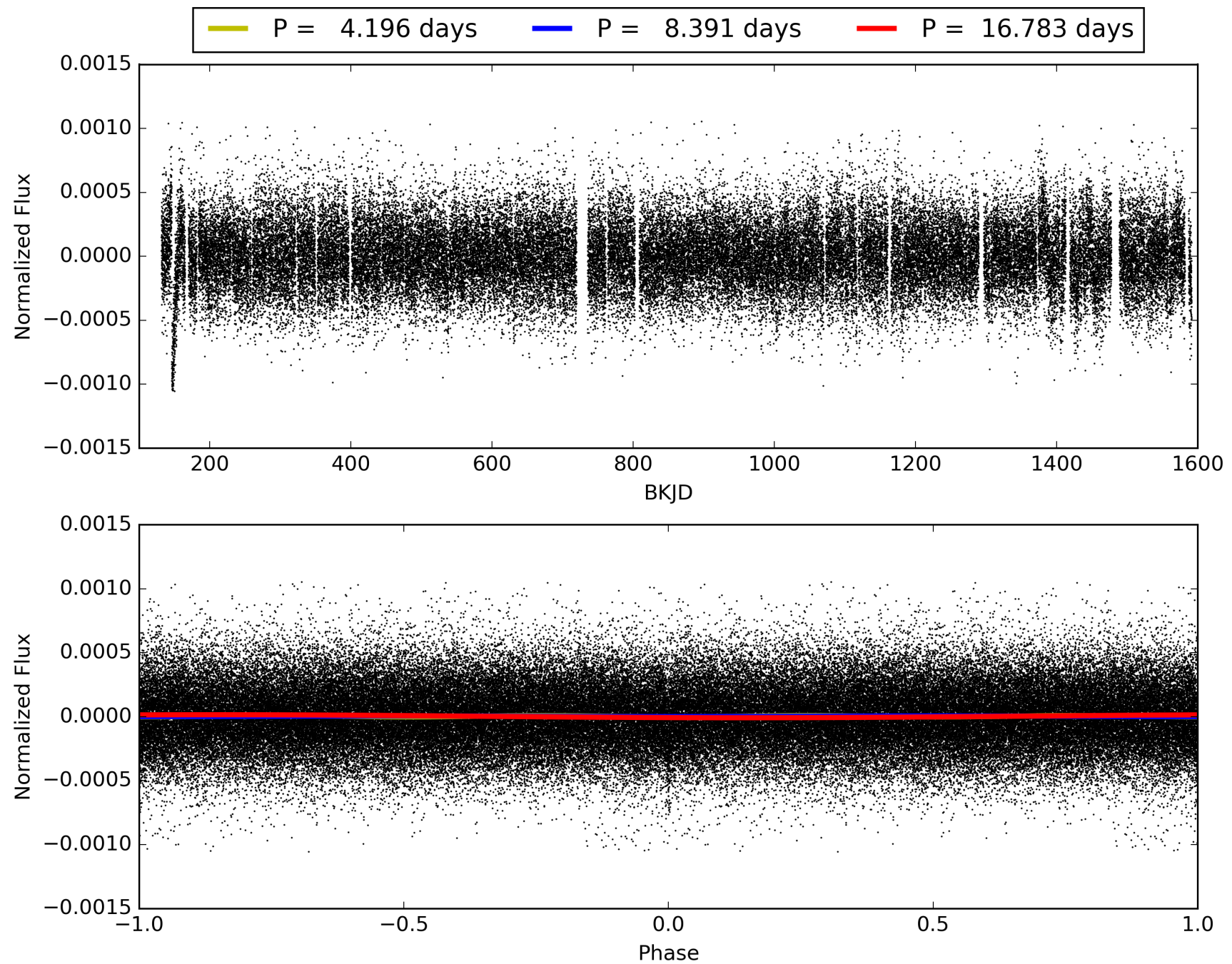
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:41:26 Z

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

# TCE 008587439-01, PDC Light Curves

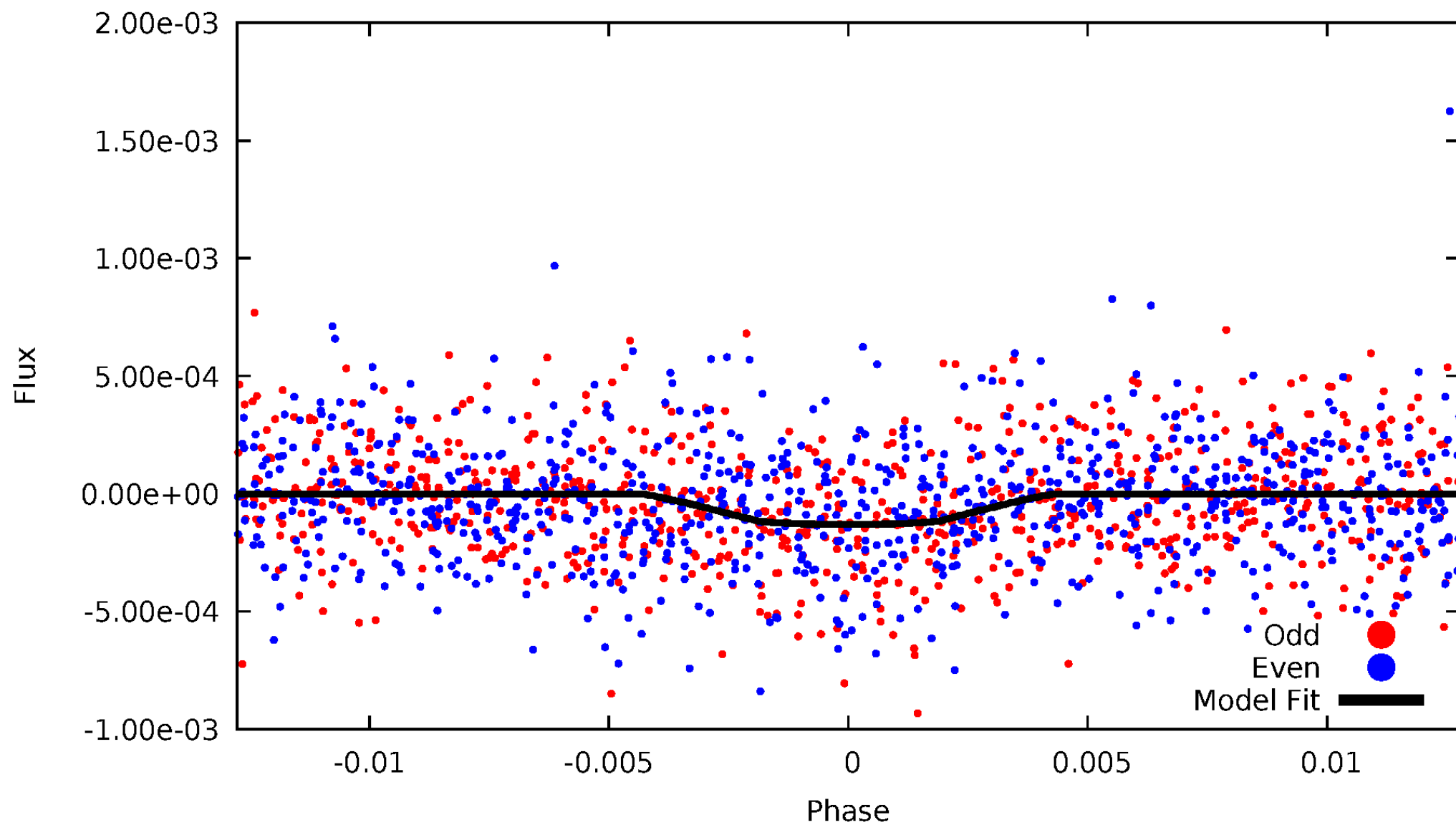


TCE 008587439-01



# DV Odd/Even

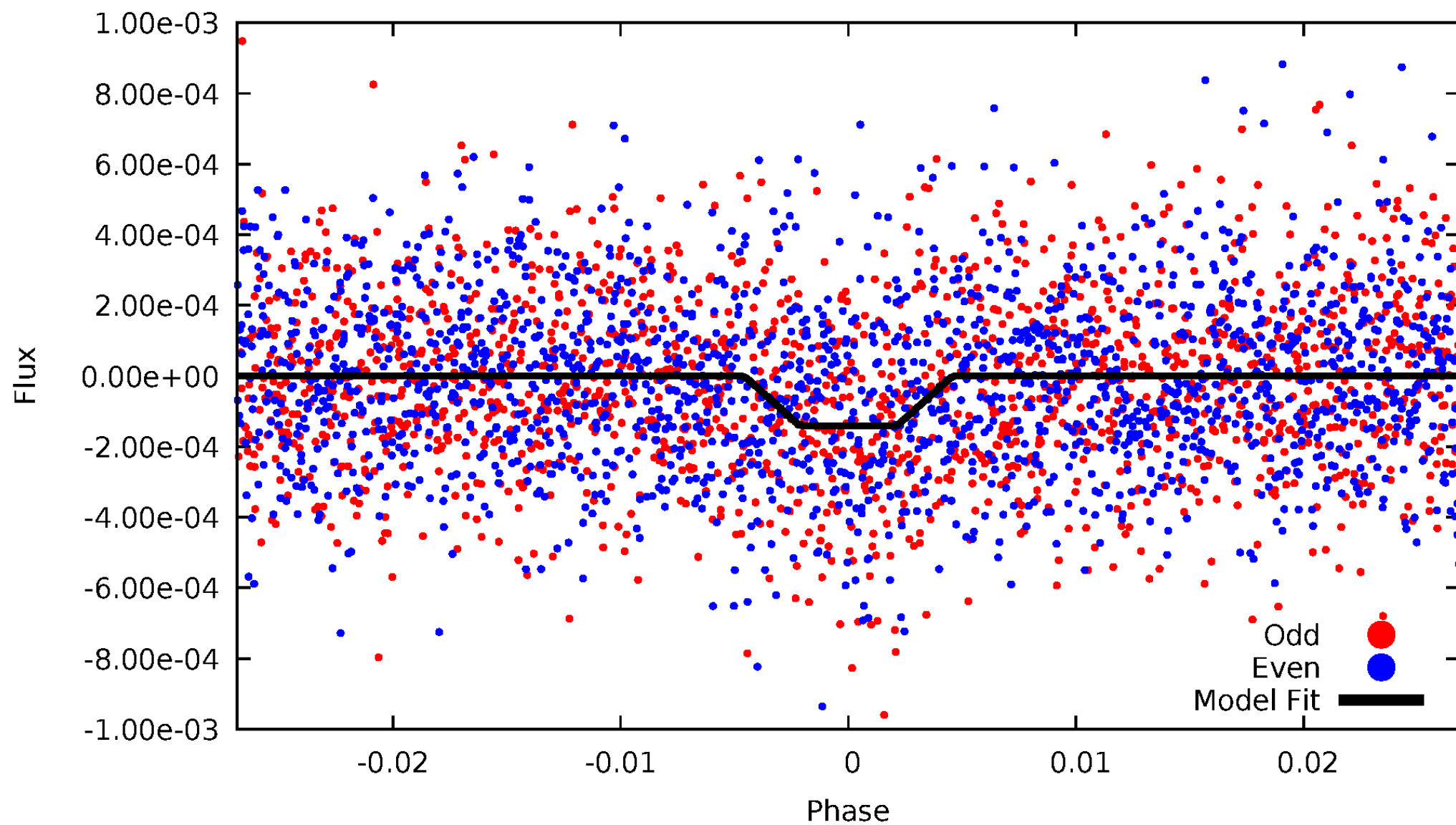
TCE 008587439-01



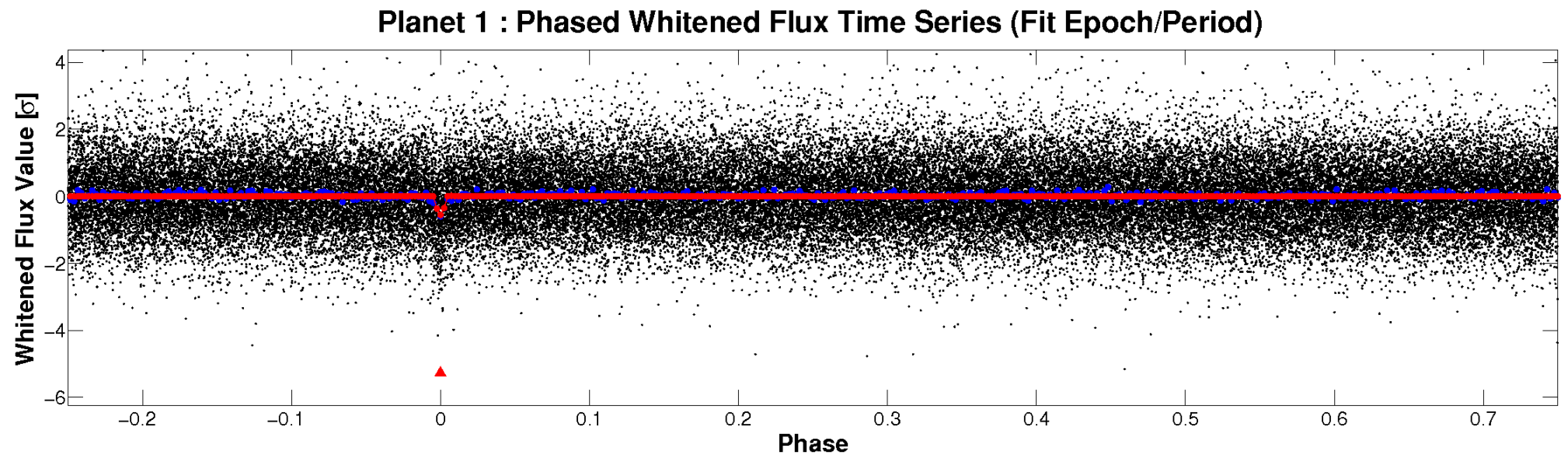
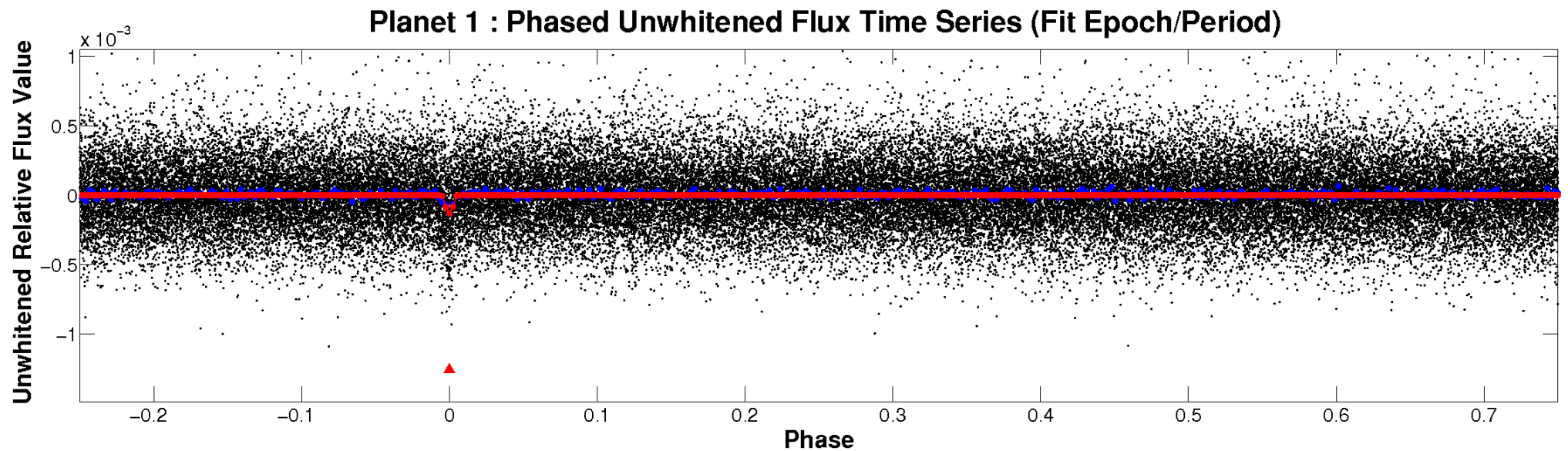


# ALT Odd/Even

TCE 008587439-01

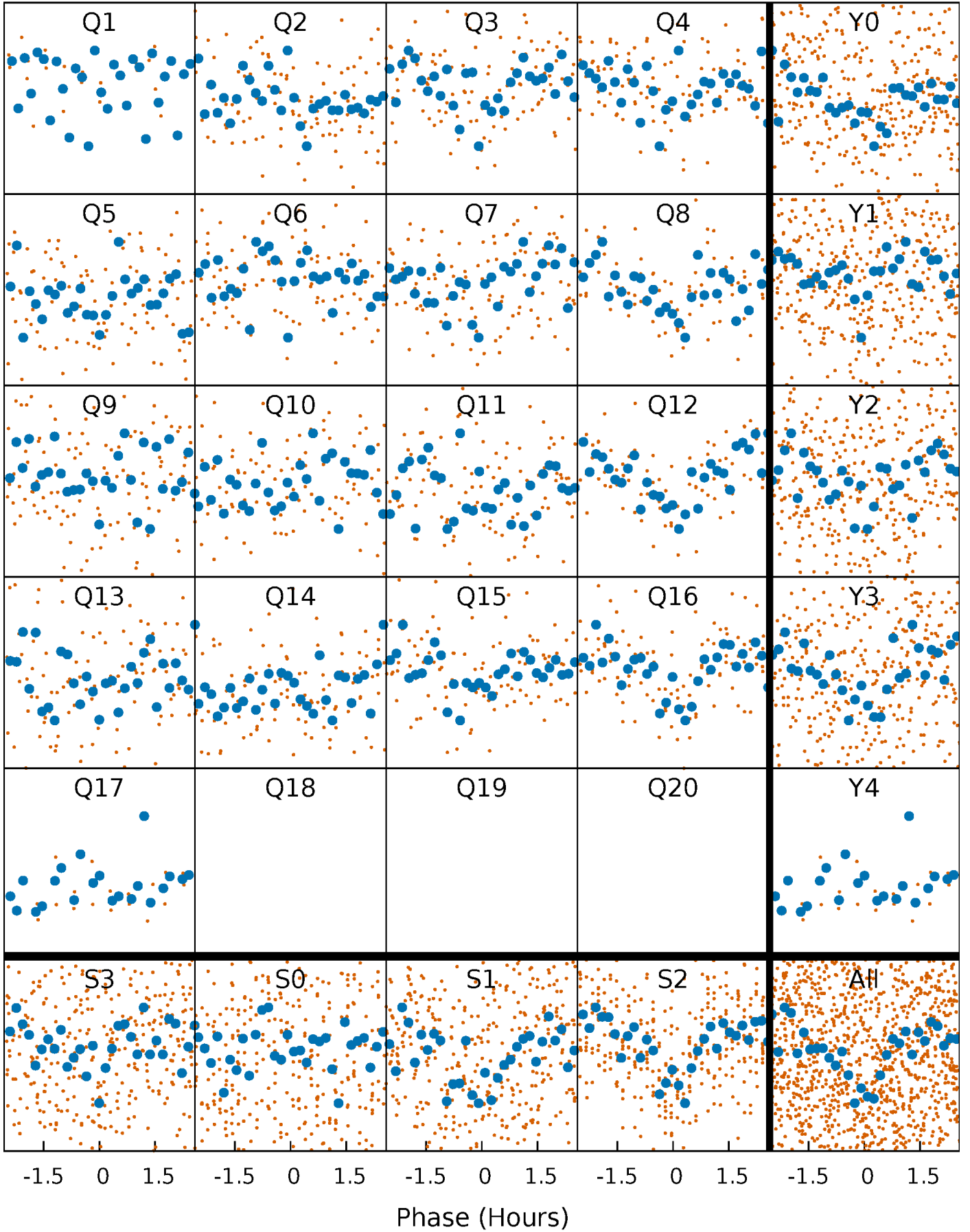


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

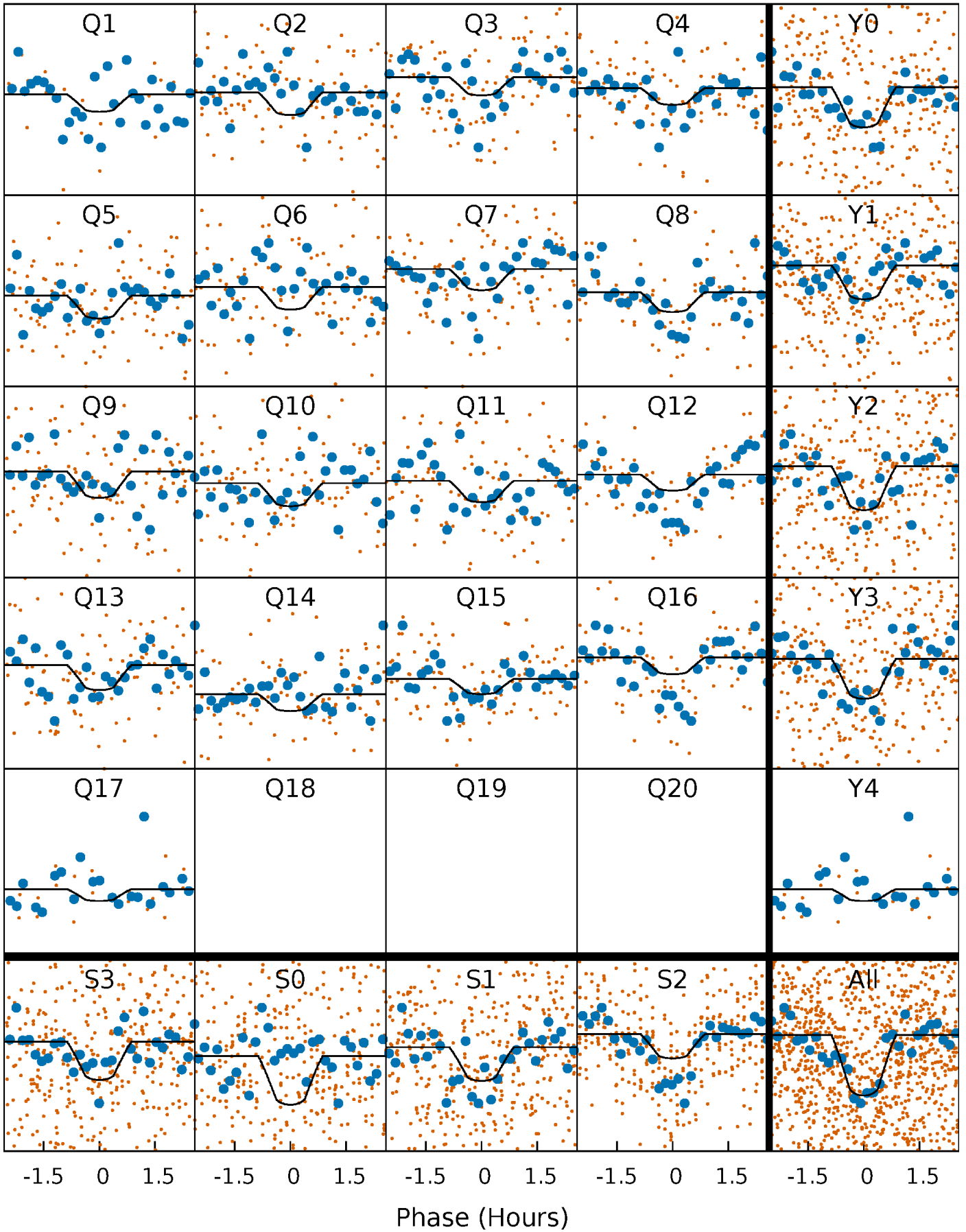
TCE 008587439-01   P= 8.391396 Days    $T_0=139.031014$  (BKJD)





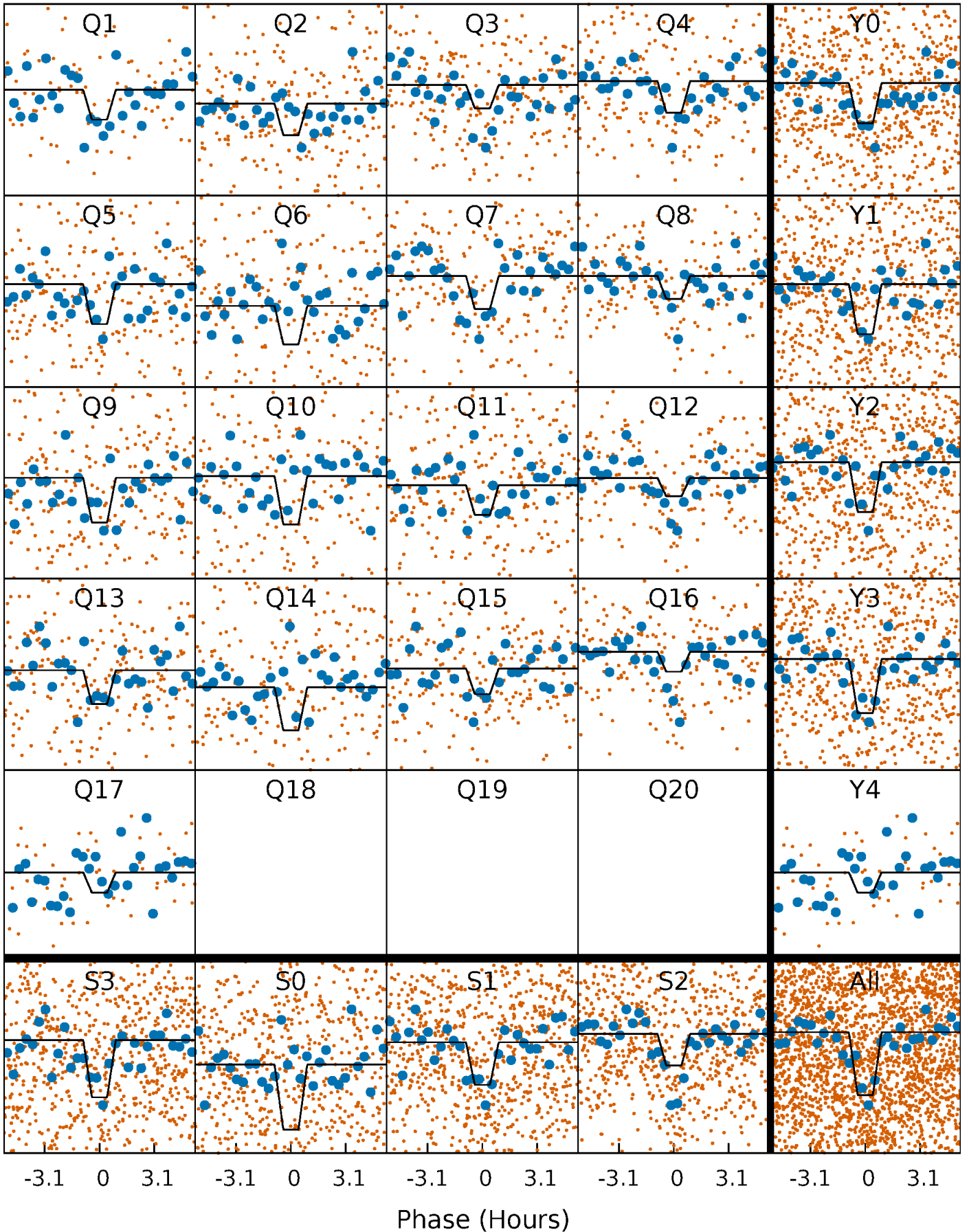
# DV Quarter-Phased Transit Curves

TCE 008587439-01   P= 8.391396 Days    $T_0=139.031014$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

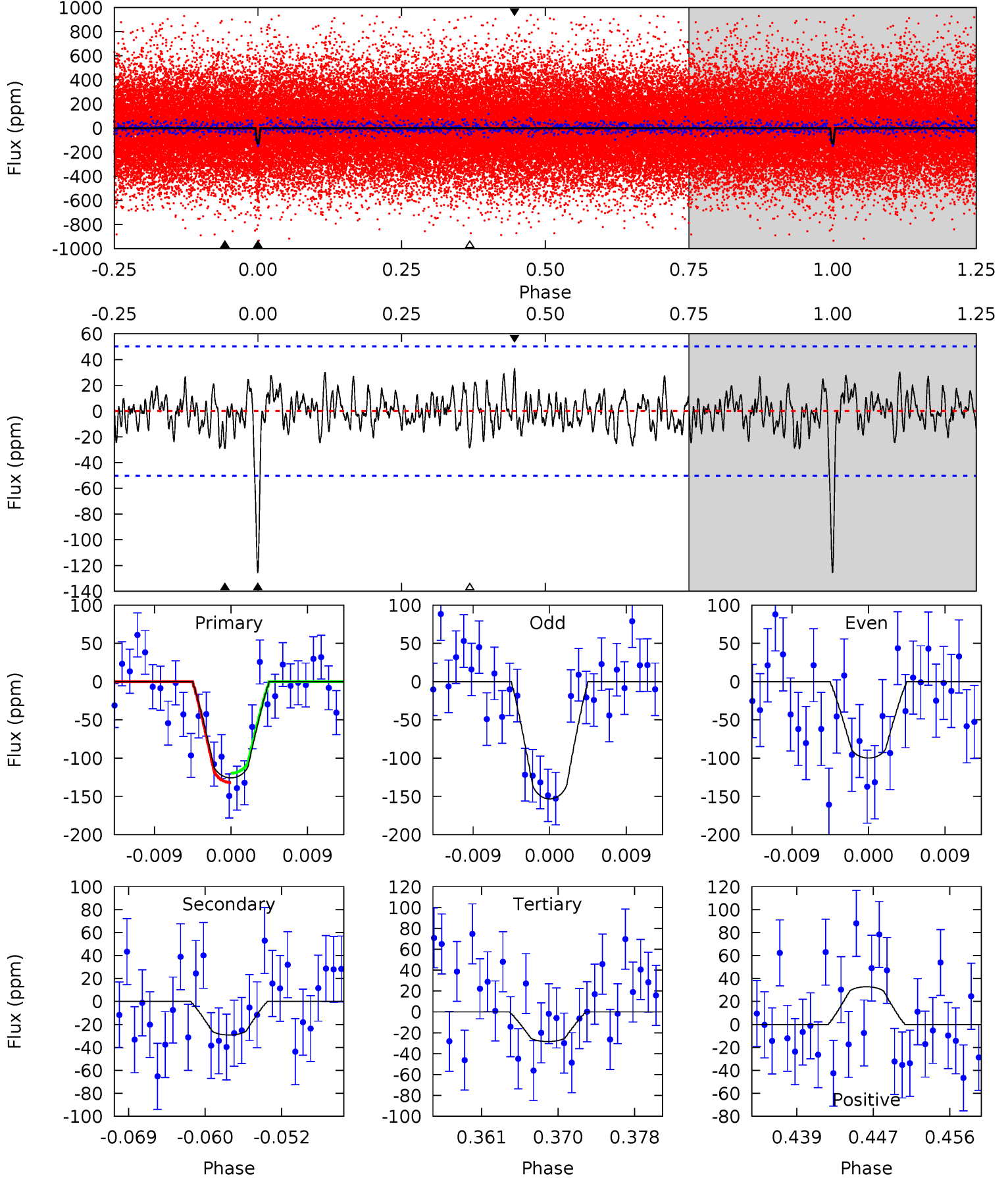
TCE 008587439-01 P= 8.391431 Days  $T_0=139.024212$  (BKJD)



# DV Model-Shift Uniqueness Test

008587439-01, P = 8.391396 Days, E = 130.639618 Days

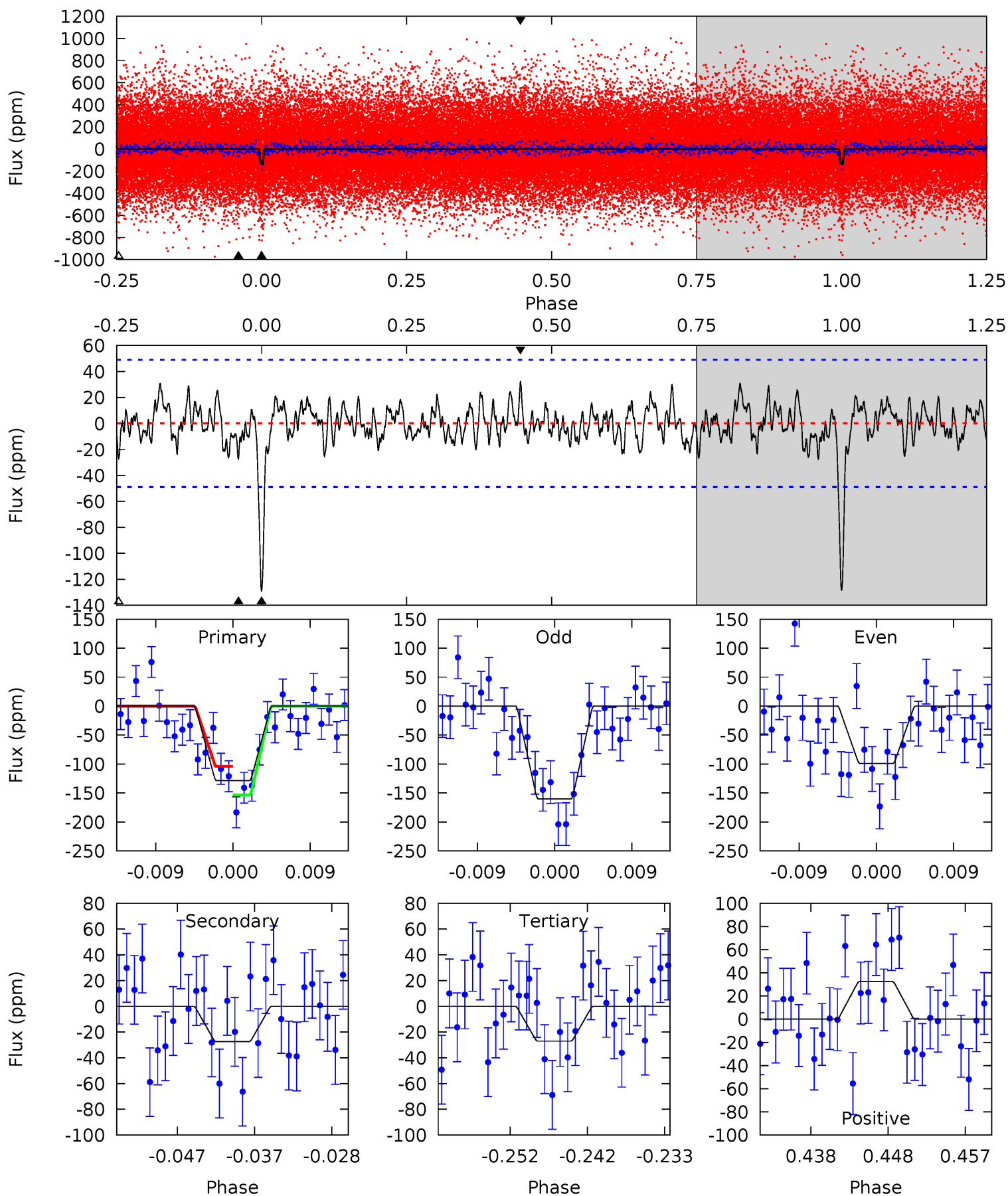
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	2.94	2.86	3.30	5.06	2.63	1.08	9.79	9.35	0.08	-0.36	2.69	1.09	0.21	0.61



# Alt Model-Shift Uniqueness Test

008587439-01, P = 8.391431 Days, E = 130.632781 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
13.2	2.83	2.79	3.33	5.04	2.60	1.13	10.5	9.91	0.04	-0.50	3.14	1.12	0.20	2.54



### Stellar Parameters For KIC 008587439

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5892^{+177}_{-159}$	$4.389^{+0.175}_{-0.175}$	$-0.660^{+0.300}_{-0.300}$	$0.935^{+0.231}_{-0.168}$	$0.781^{+0.103}_{-0.047}$	$1.347^{+1.159}_{-0.622}$
	+3%/-3%	+4%/-4%	+45%/-45%	+25%/-18%	+13%/-6%	+86%/-46%
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 008587439-01 / KOI 7899.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-29 \pm 10$	$1.14^{+0.57}_{-0.53}$	$1285^{+88}_{-74}$	$4337^{+1295}_{-657}$	$67^{+164}_{-40}$
Alt.	$-27 \pm 10$	$1.21^{+0.62}_{-0.54}$	$1286^{+97}_{-74}$	$4156^{+1169}_{-560}$	$56^{+143}_{-34}$

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



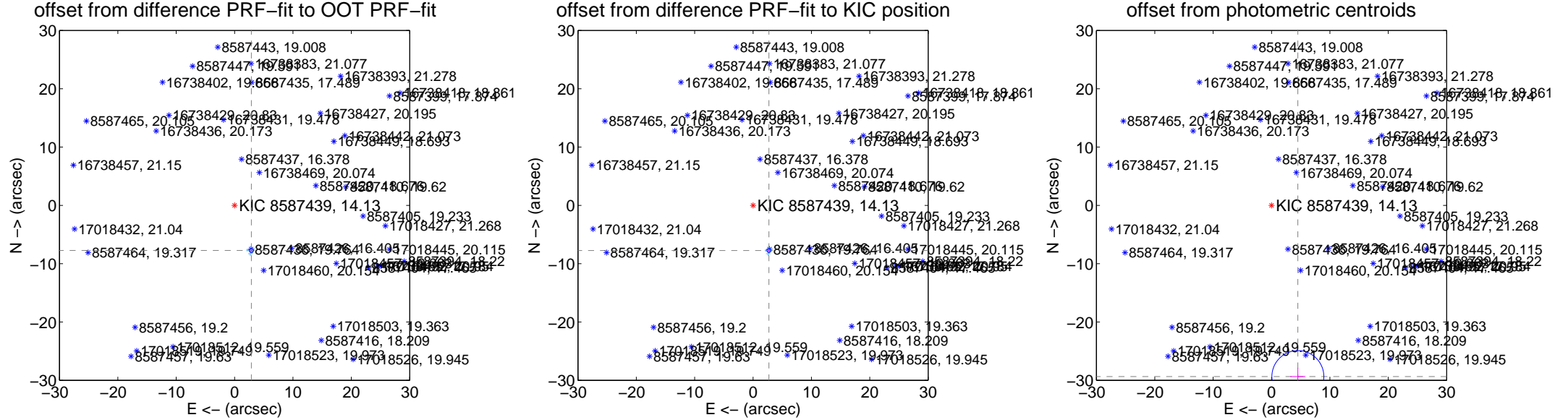
## DV Centroid Data

Supplemental centroid analysis for 008587439-01. Kepler magnitude: 14.13. Transit SNR 9.42

There are 10 quarters with good PRF difference image offsets

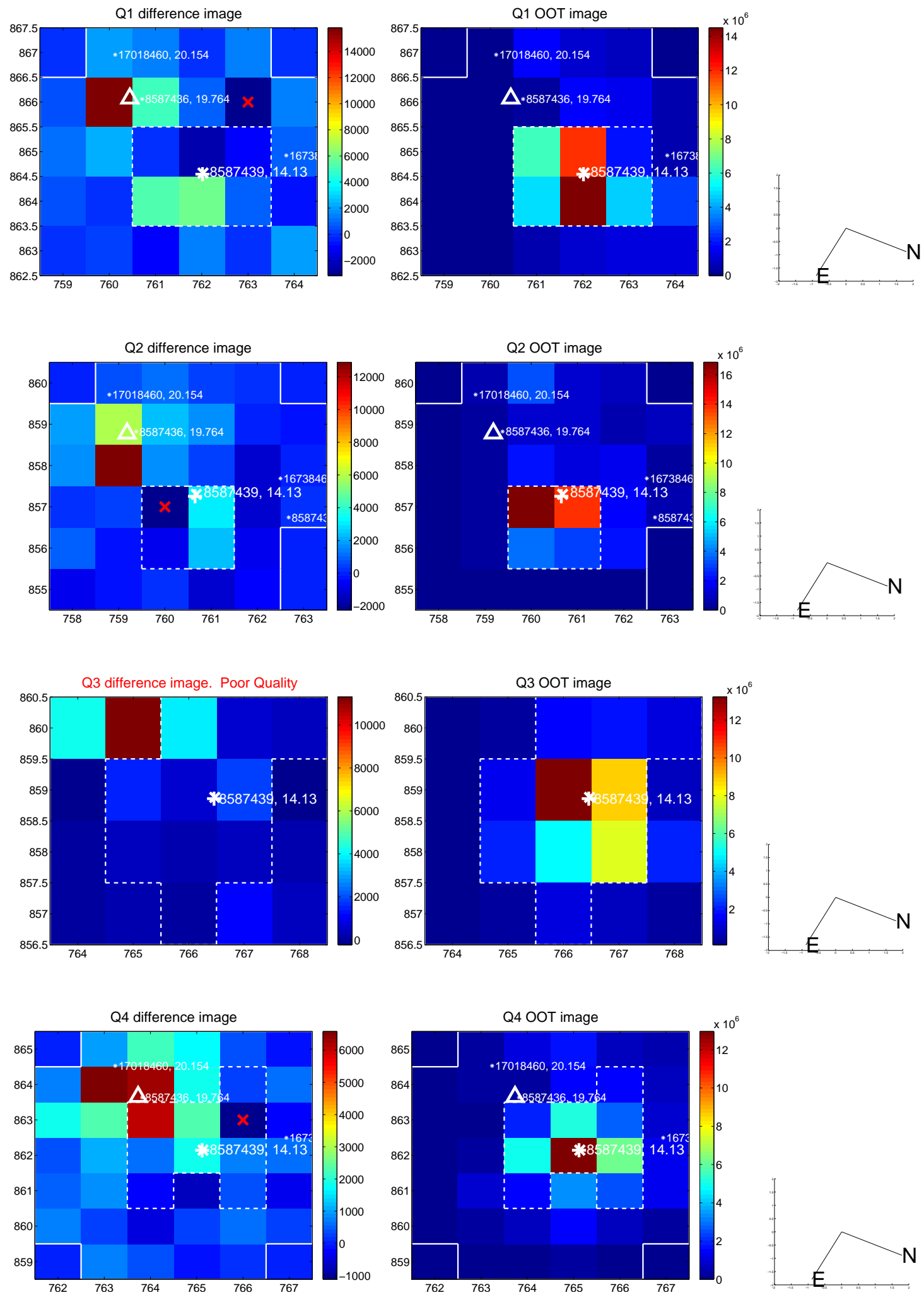
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$8.247 \pm 0.117$	70.39	$-2.873 \pm 0.121$	$-7.730 \pm 0.113$
PRF-fit source offset from KIC position	$8.203 \pm 0.111$	74.01	$-2.712 \pm 0.115$	$-7.742 \pm 0.110$
photometric centroid source offset	$29.70 \pm 1.48$	20.02	$-4.51 \pm 1.29$	$-29.36 \pm 1.49$

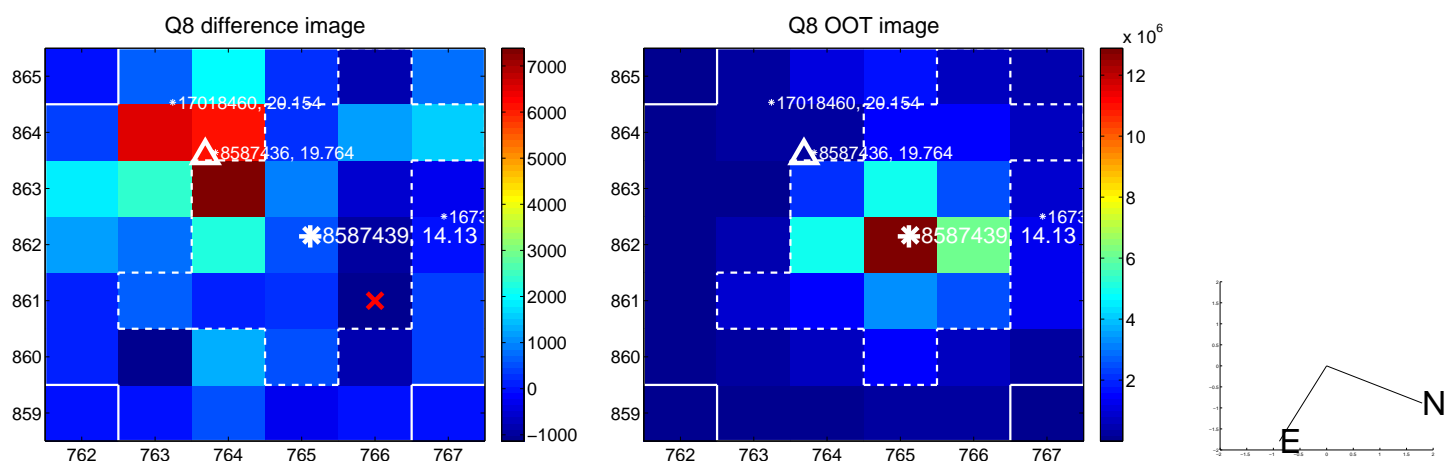
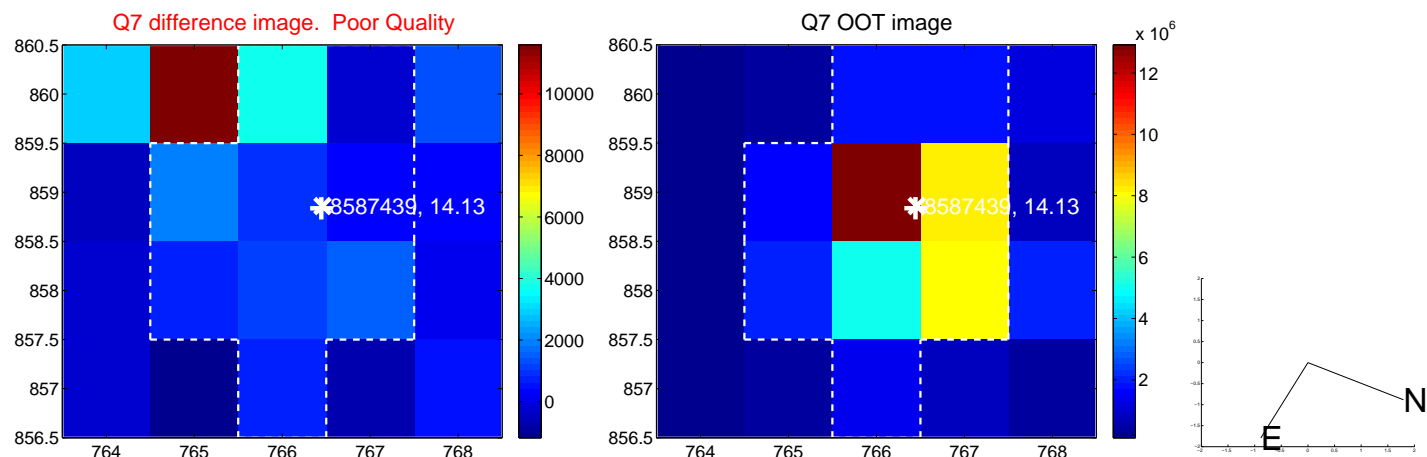
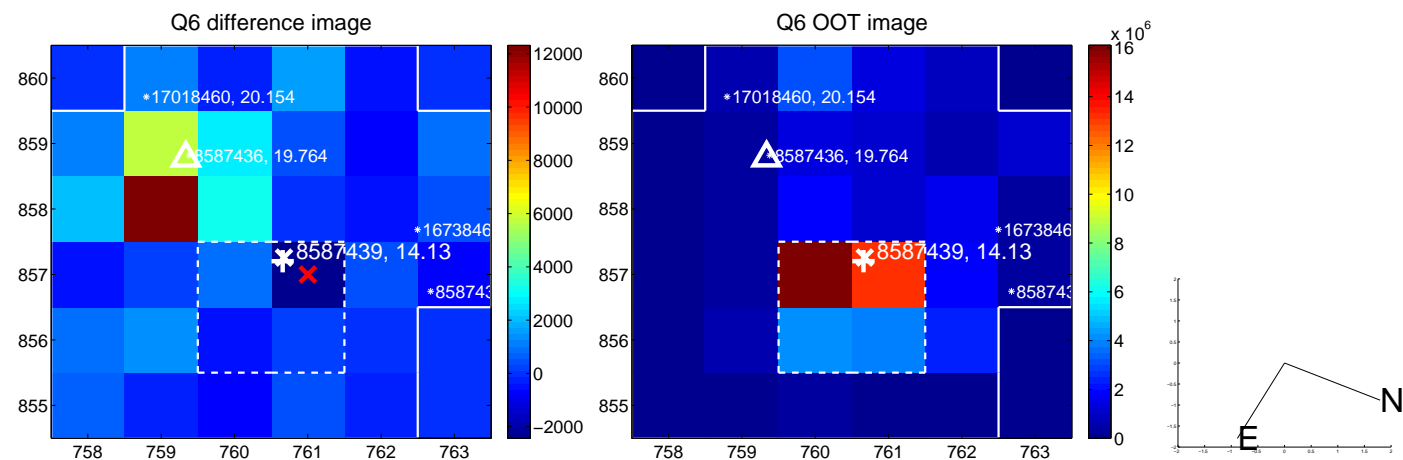
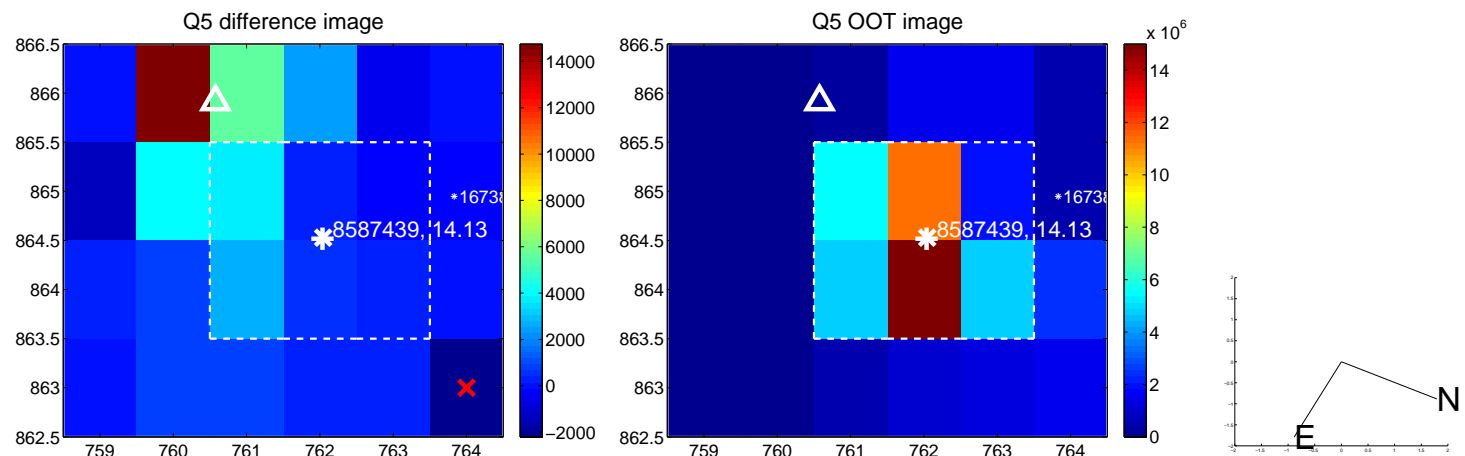


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

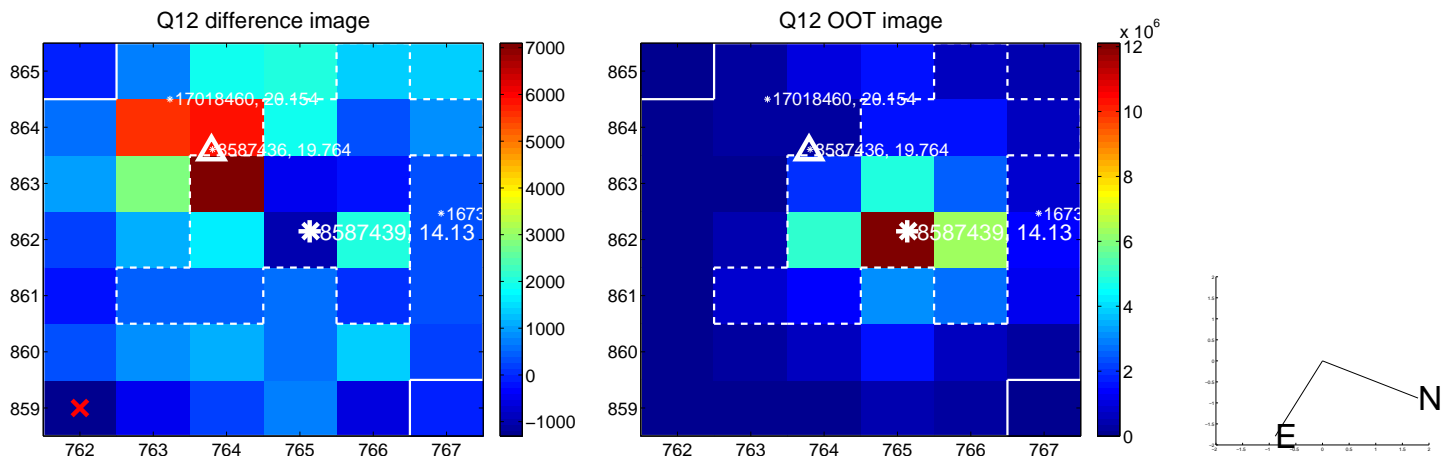
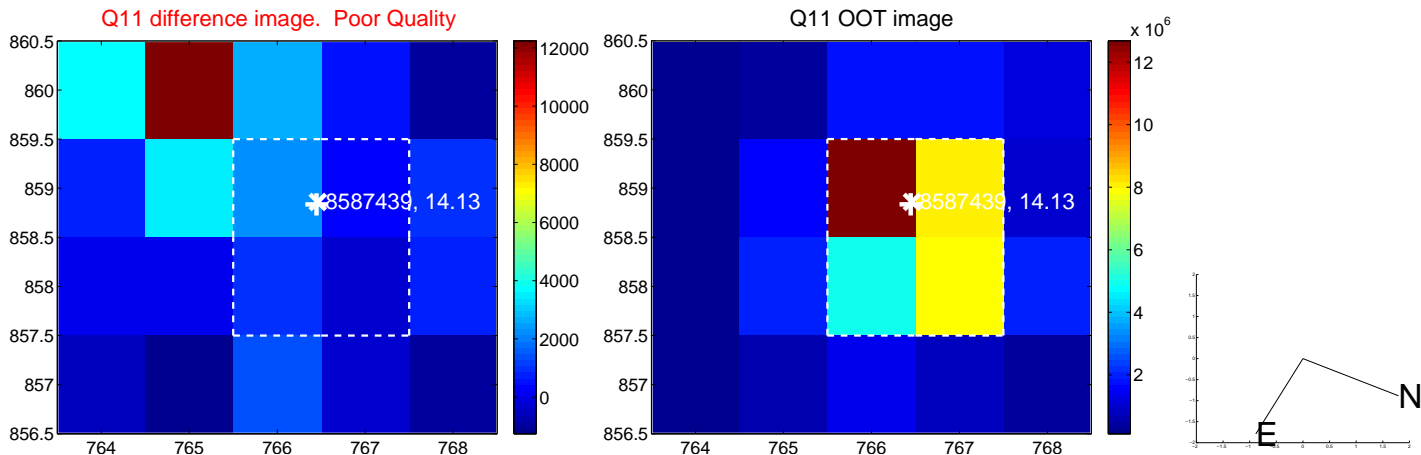
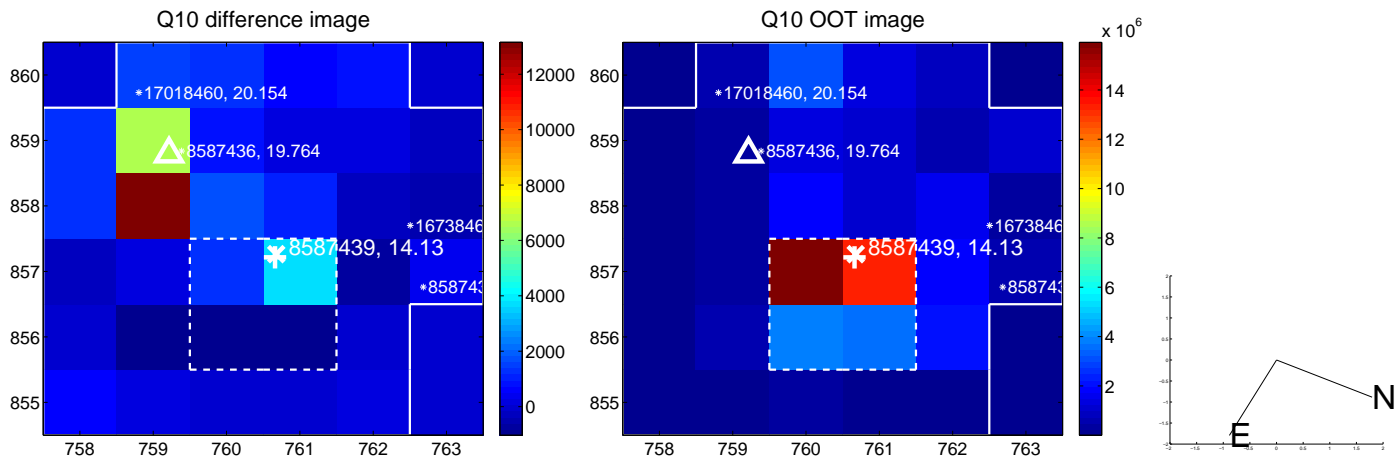
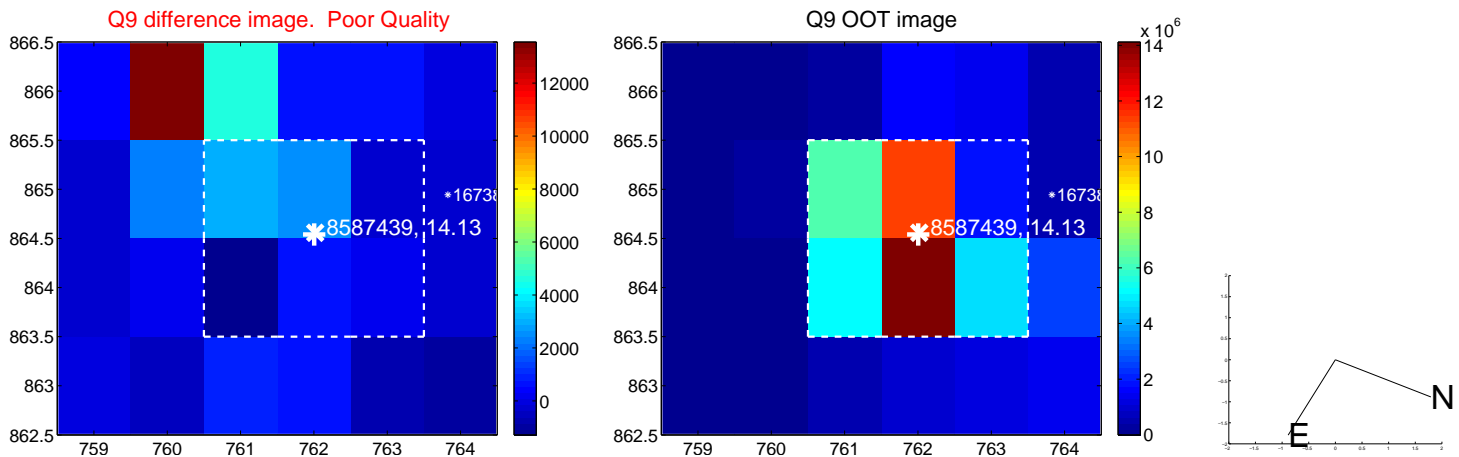
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



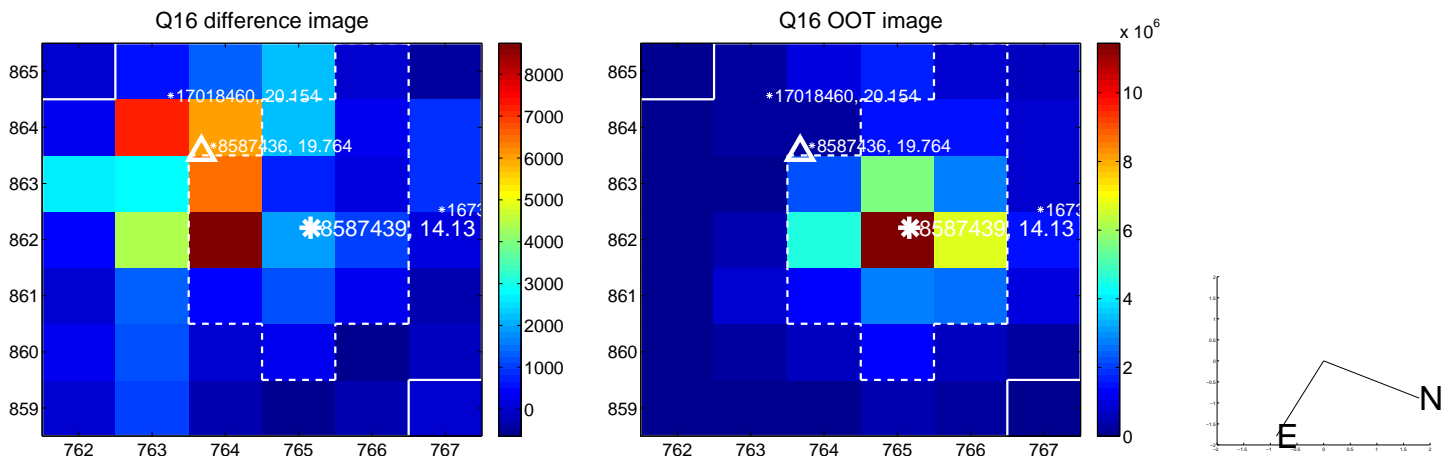
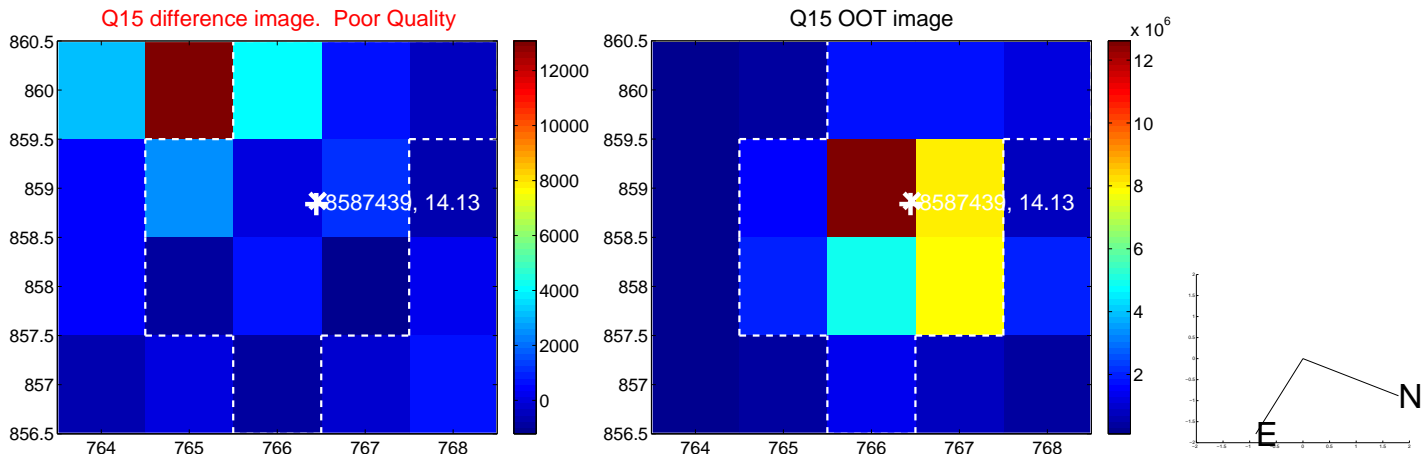
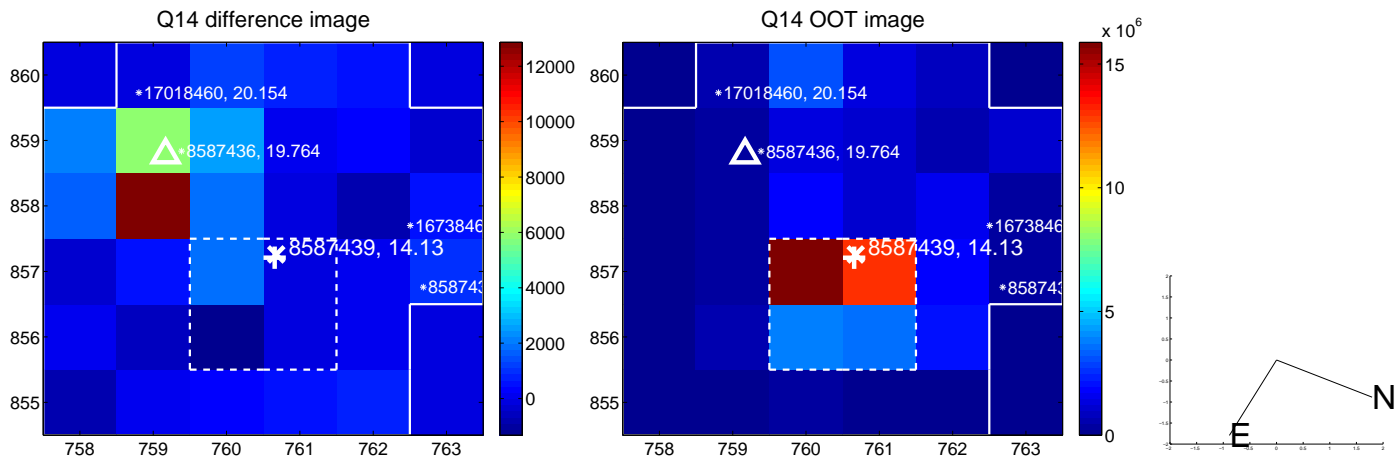
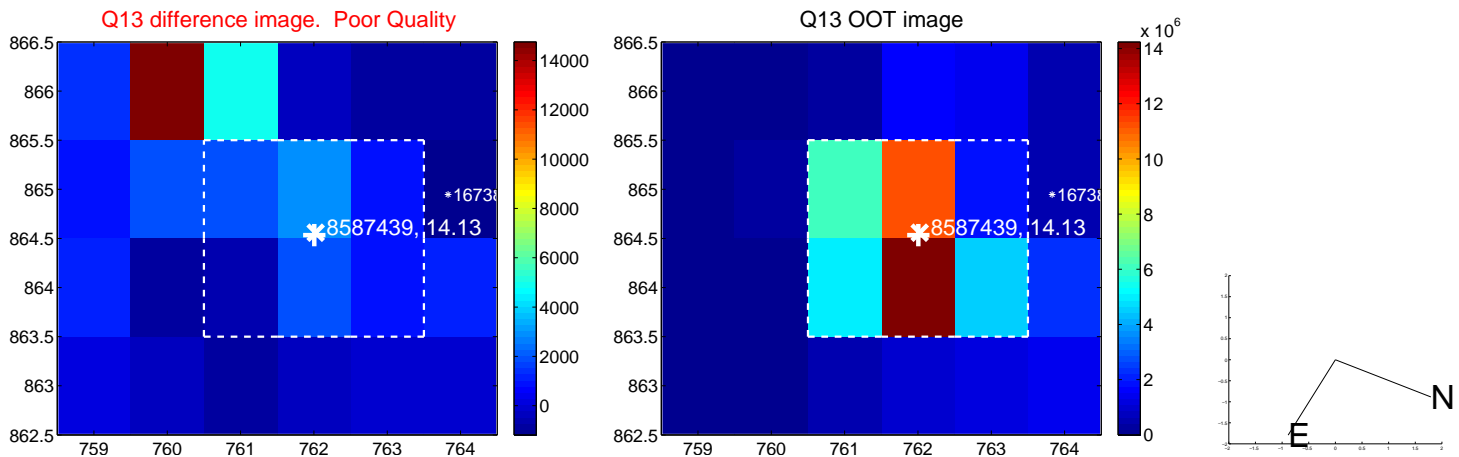
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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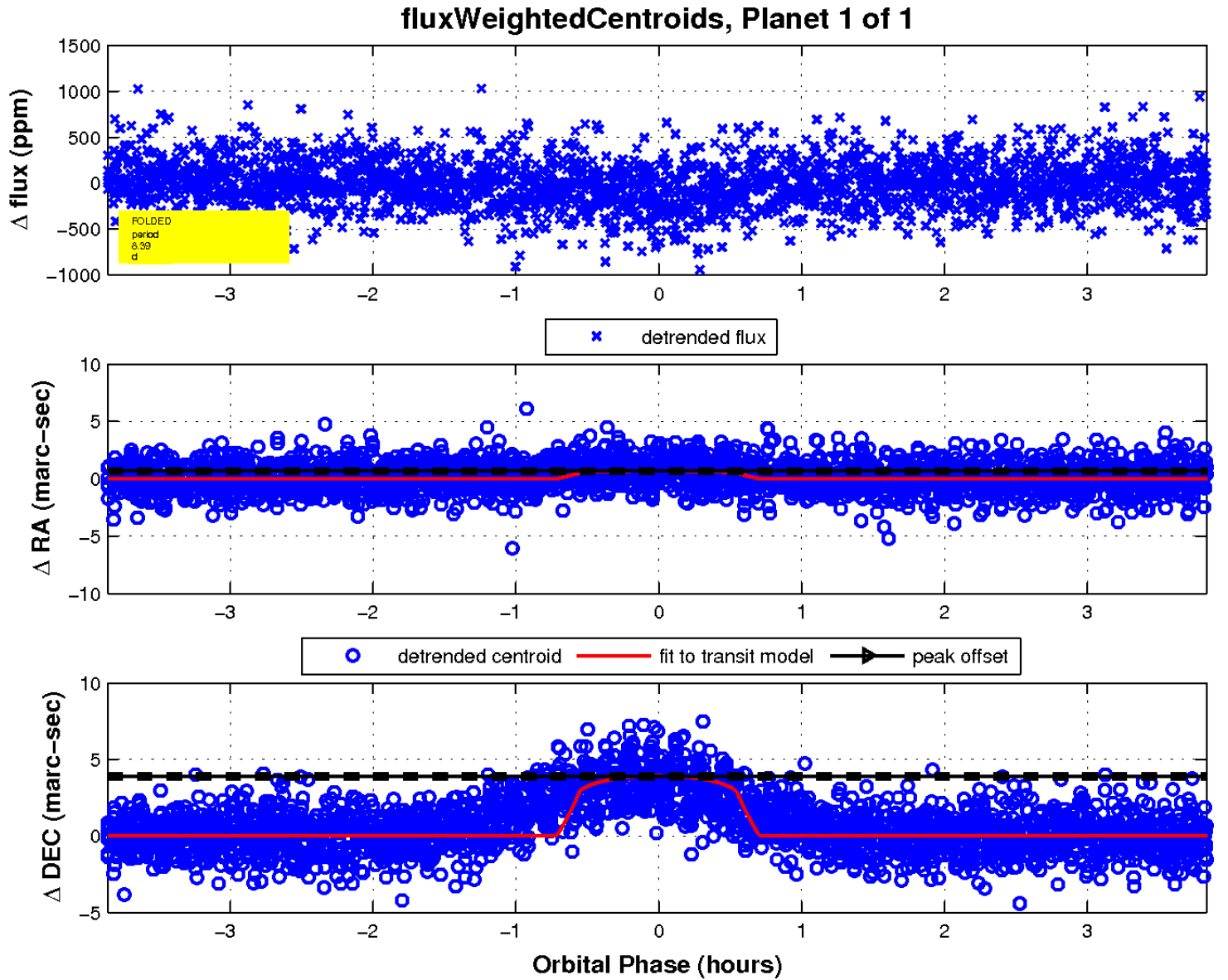
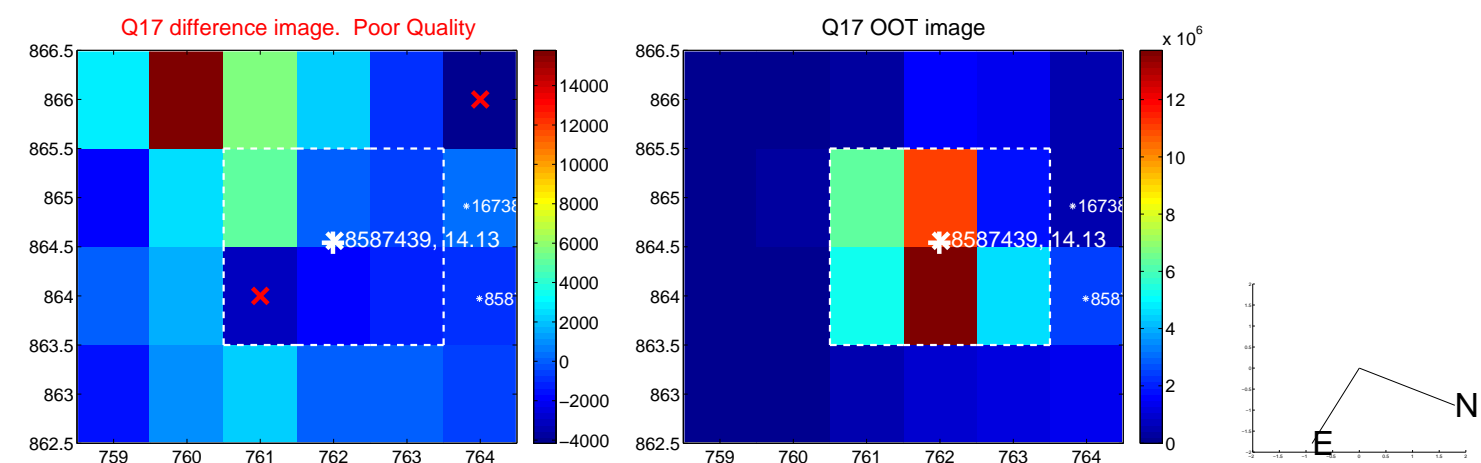


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

