

# KIC 007467539

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007467539-01	OBS	No	1.470229	131.847210	46.3	3.518	11.4	11.9	2.37	7671	1.88	17866.66
007467539-02	OBS	No	1.470188	132.868985	39.9	4.308	8.9	10.1	2.37	7671	1.75	17867.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007467539-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
007467539-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

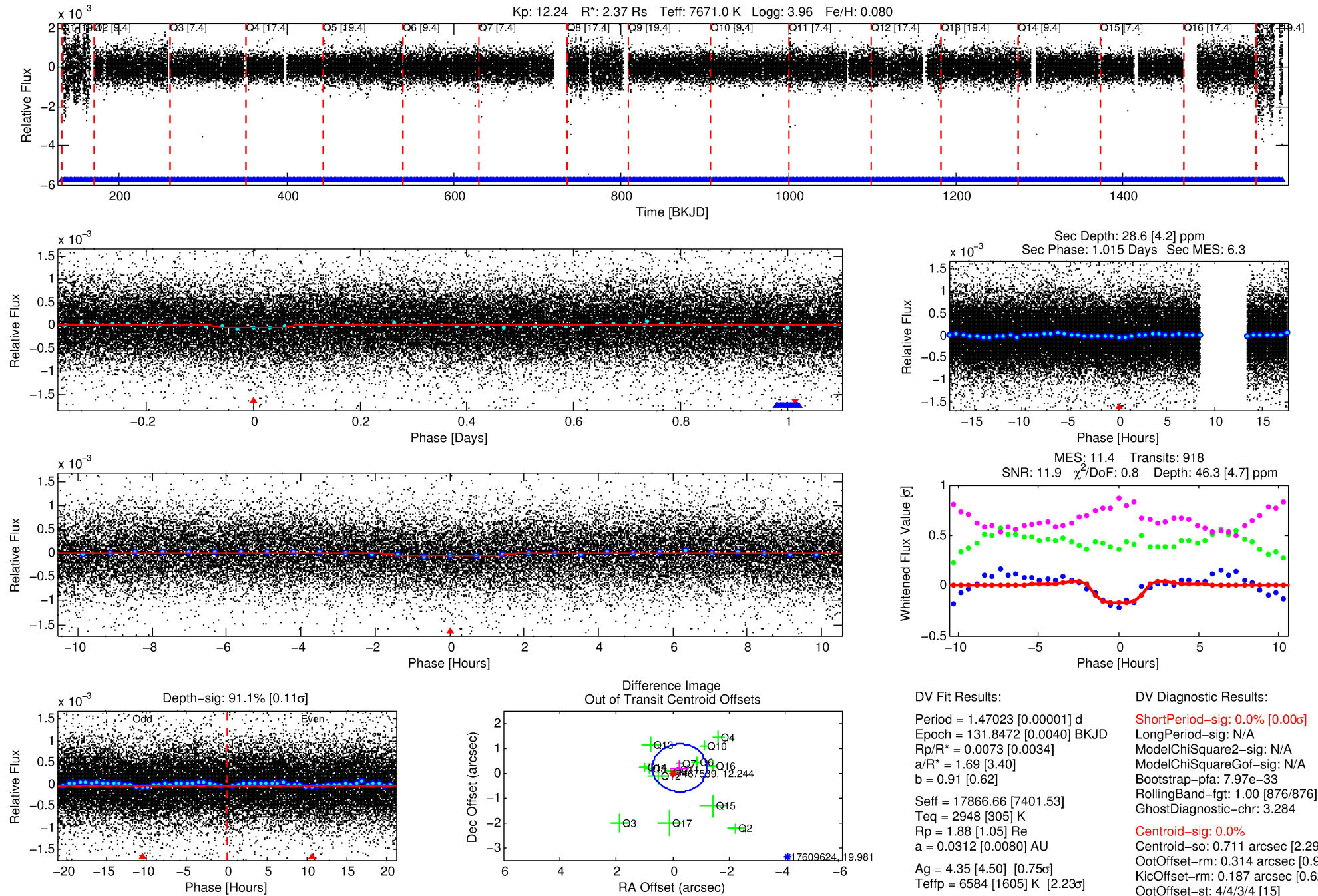
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007467539-01

No Significant Match Found

# DV One-Page Summary

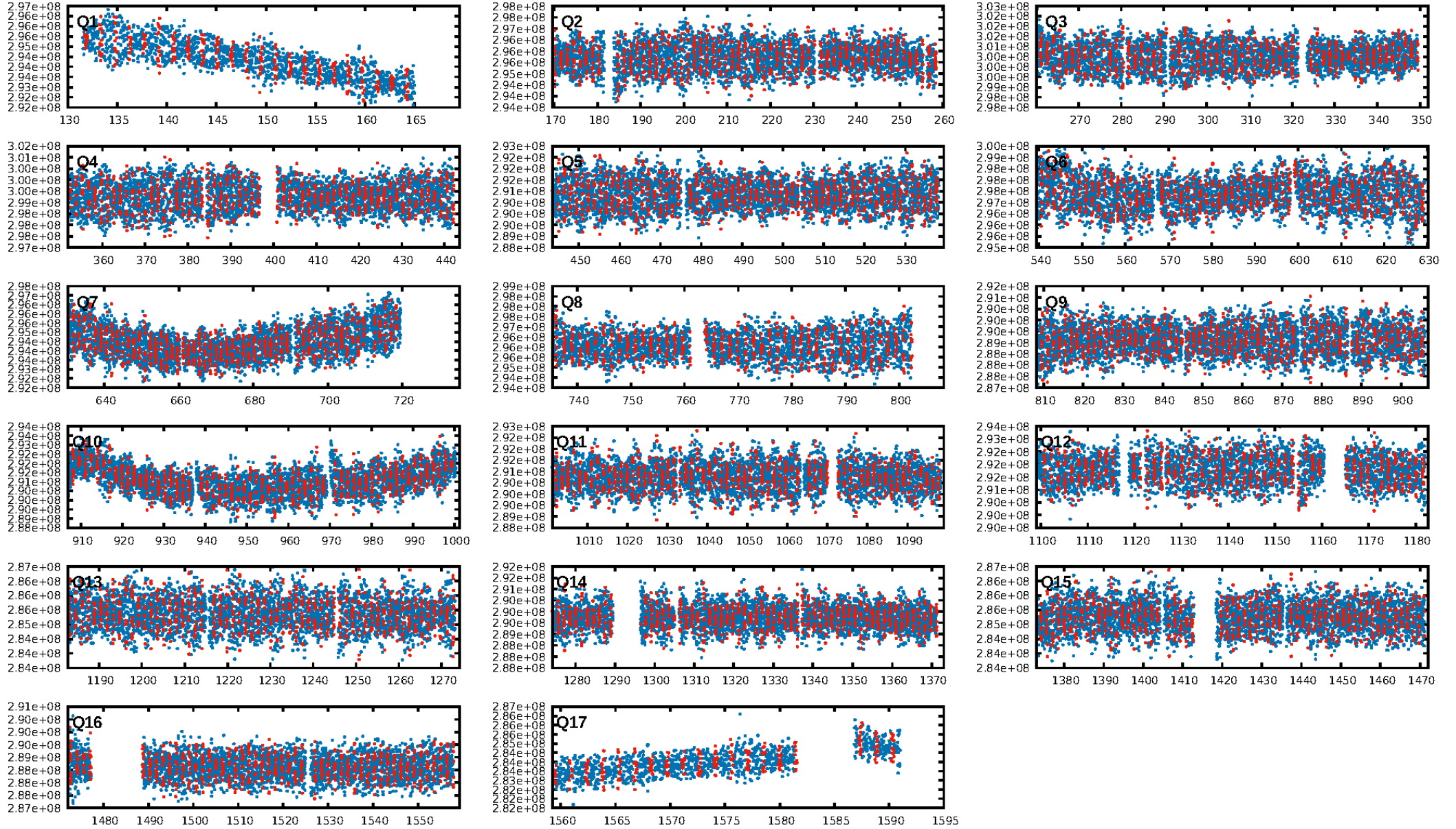
KIC: 7467539 Candidate: 1 of 2 Period: 1.470 d



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:50:55 Z

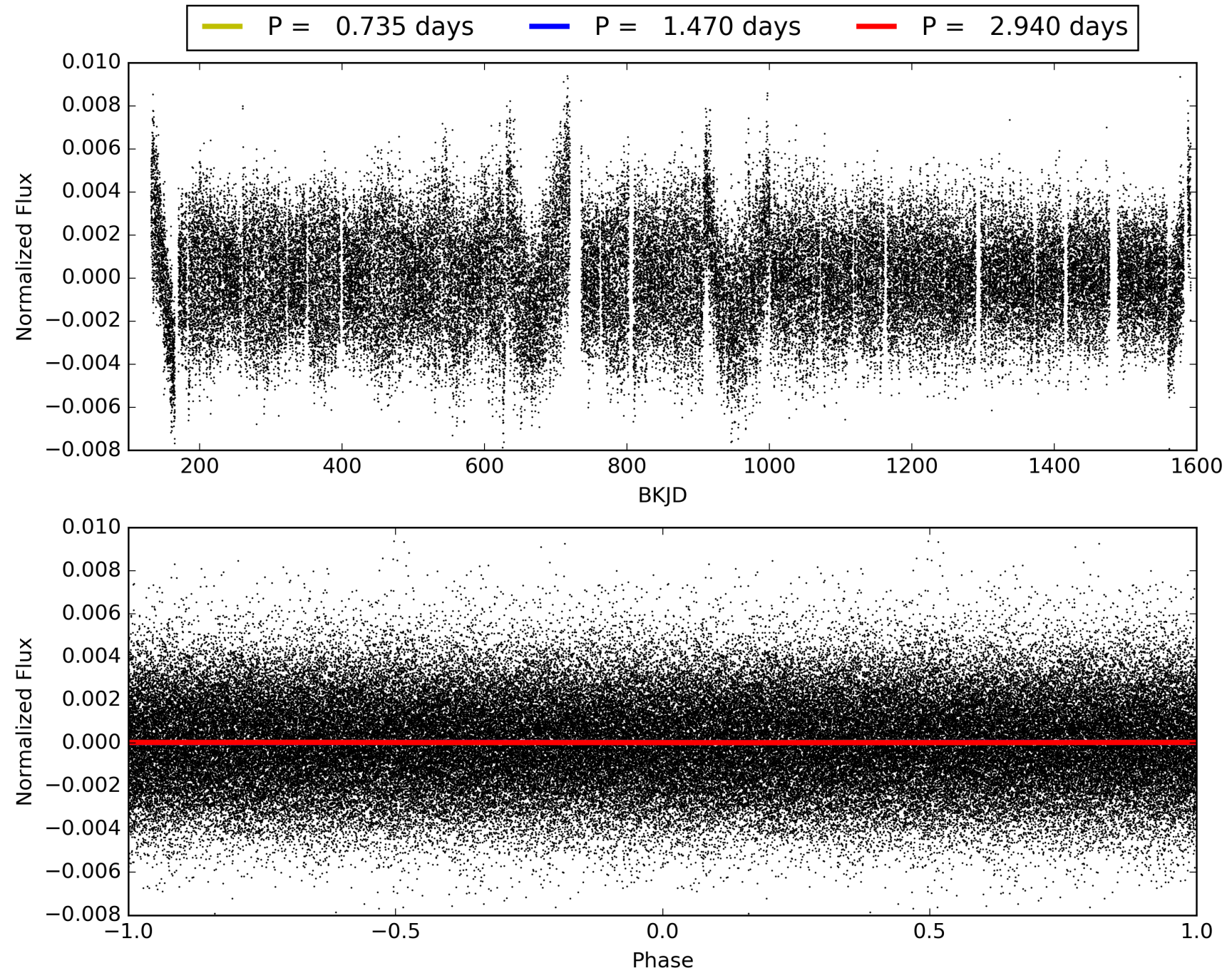
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007467539-01, PDC Light Curves



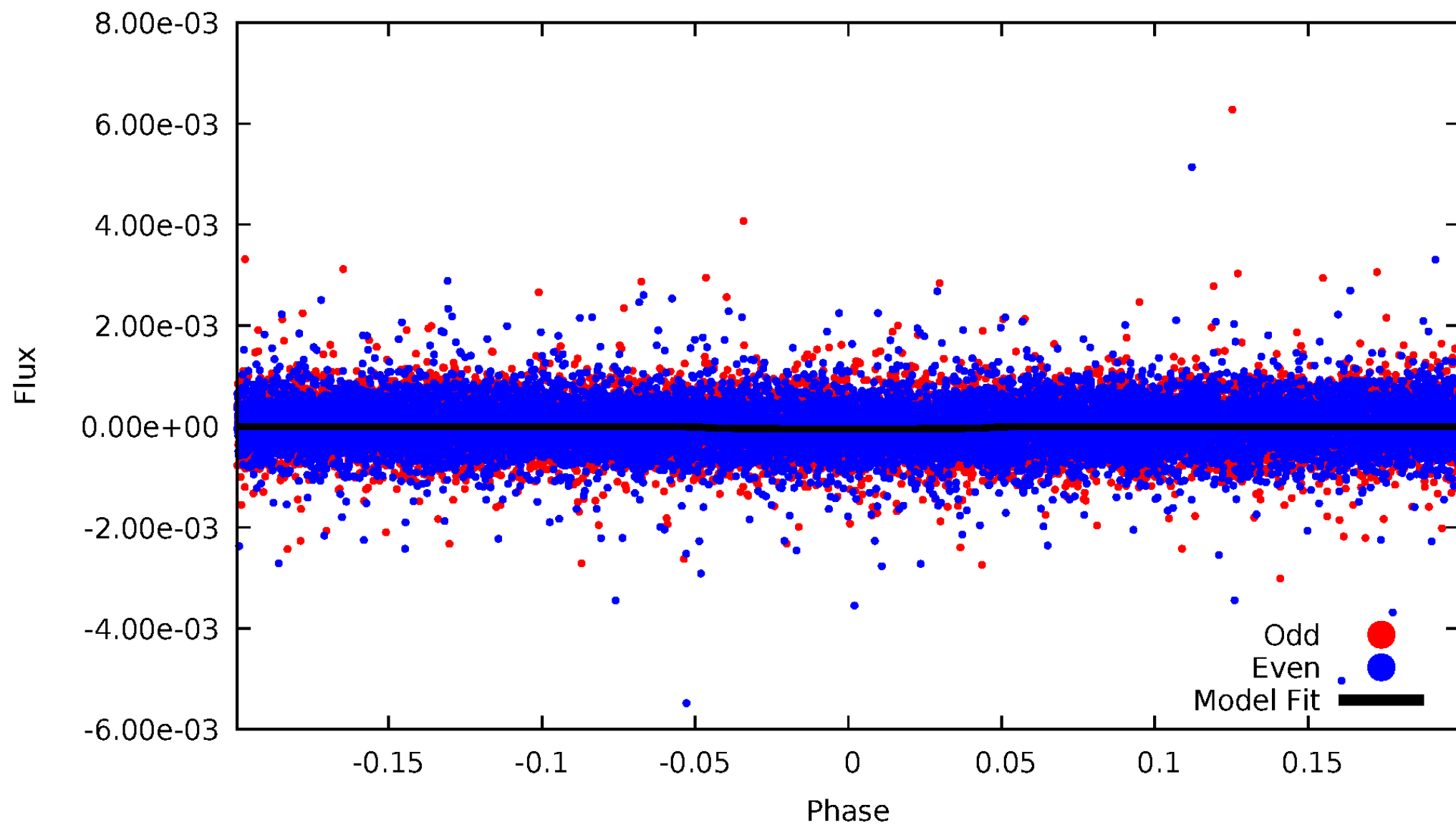


TCE 007467539-01



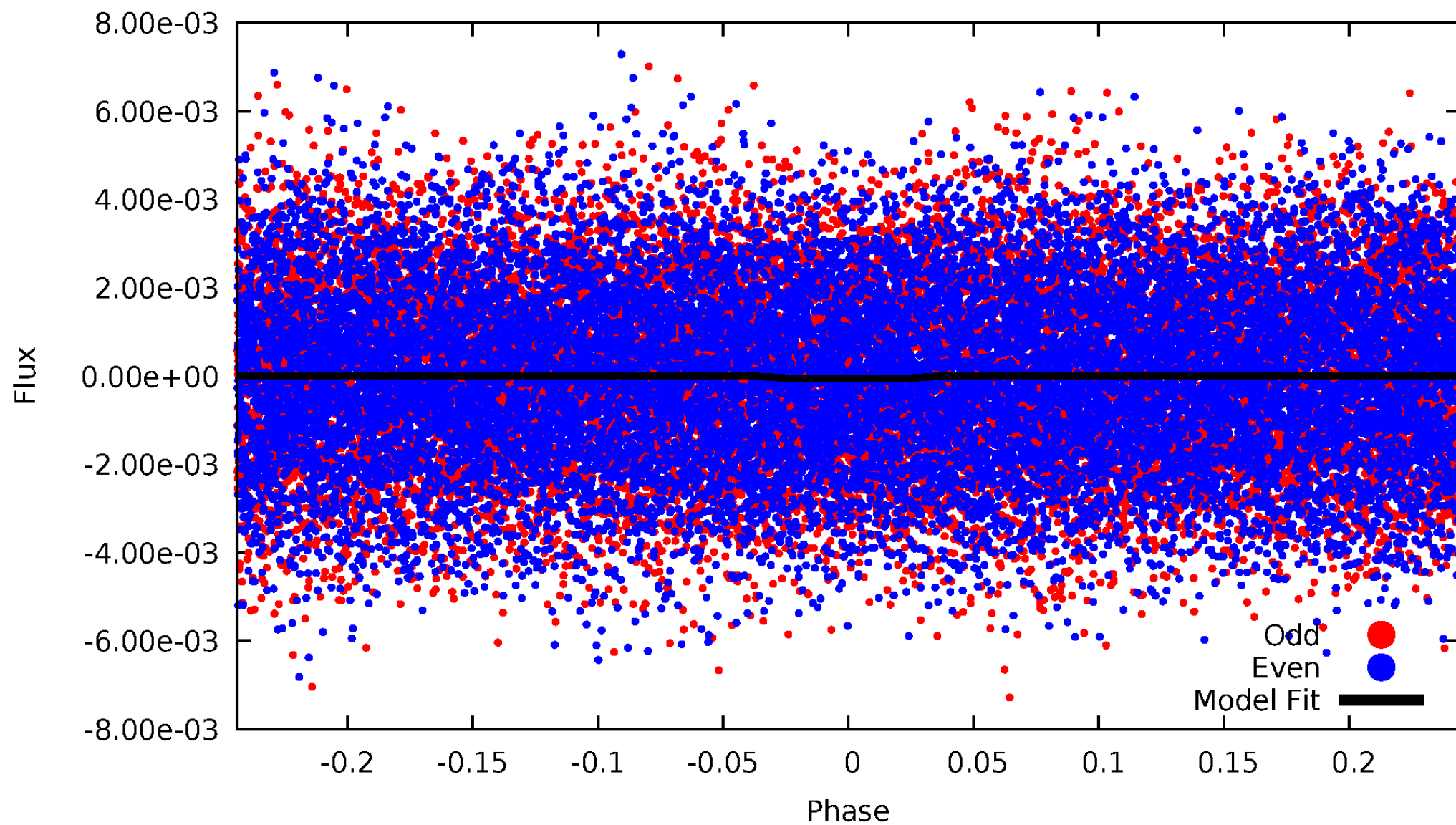
# DV Odd/Even

TCE 007467539-01

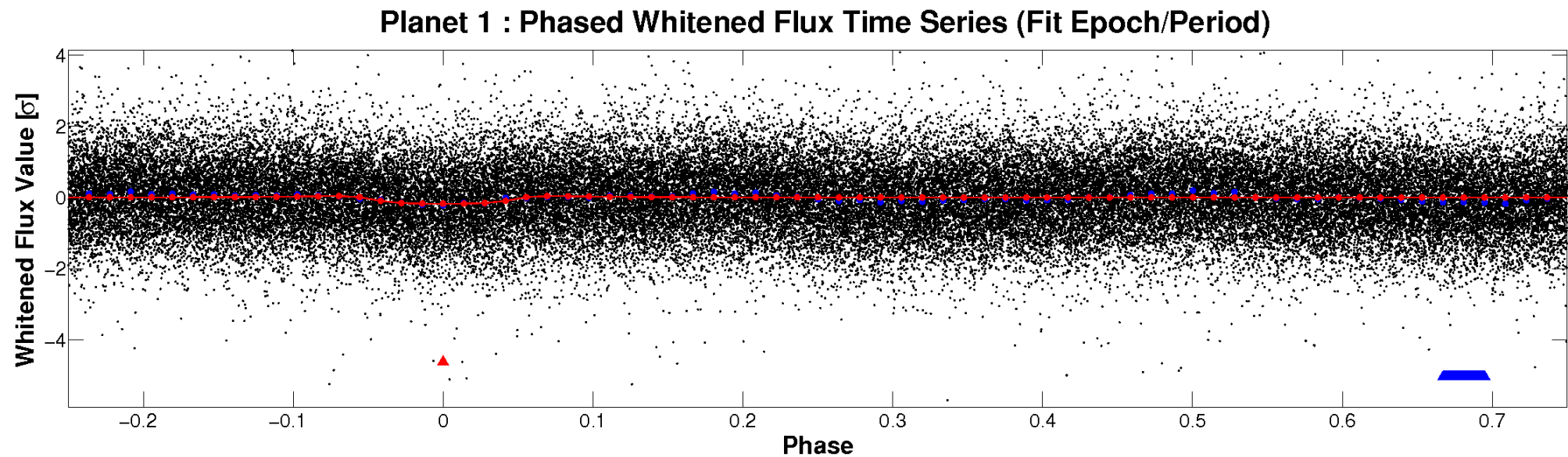
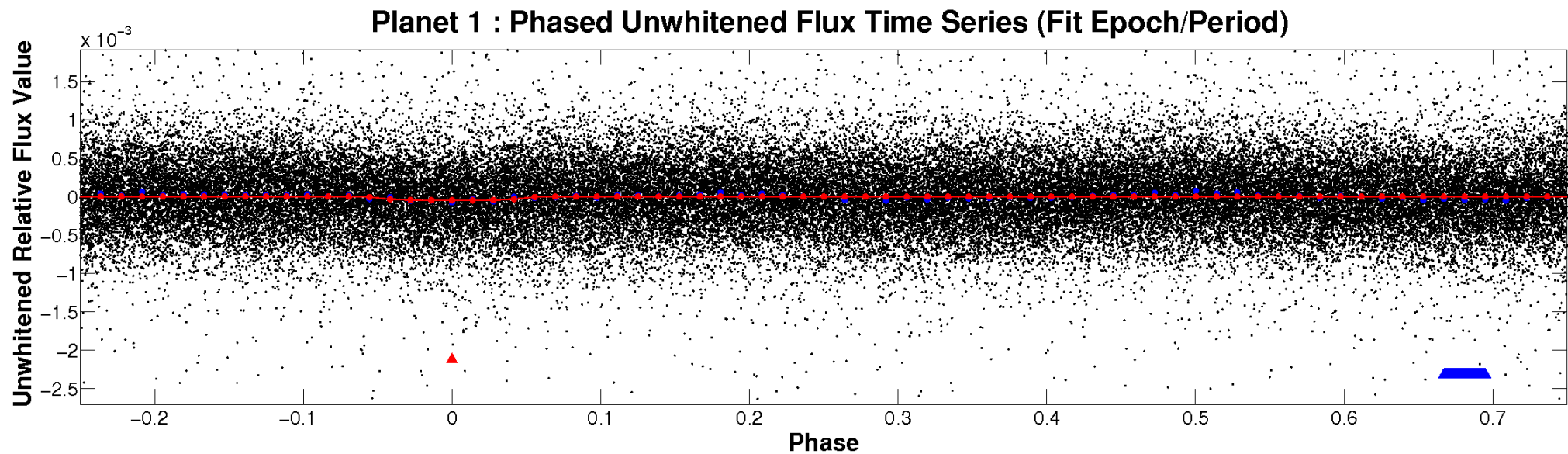


# ALT Odd/Even

TCE 007467539-01



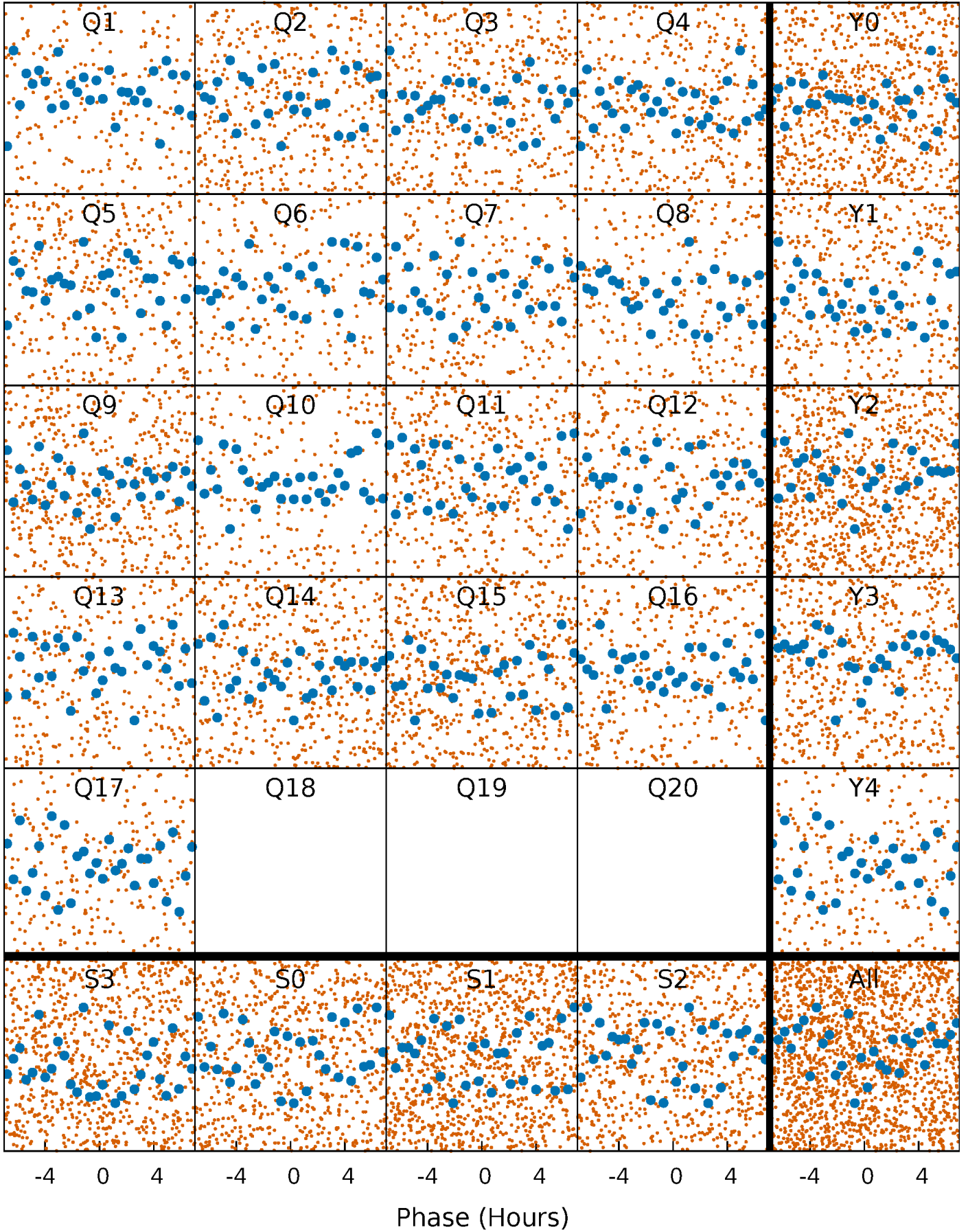
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

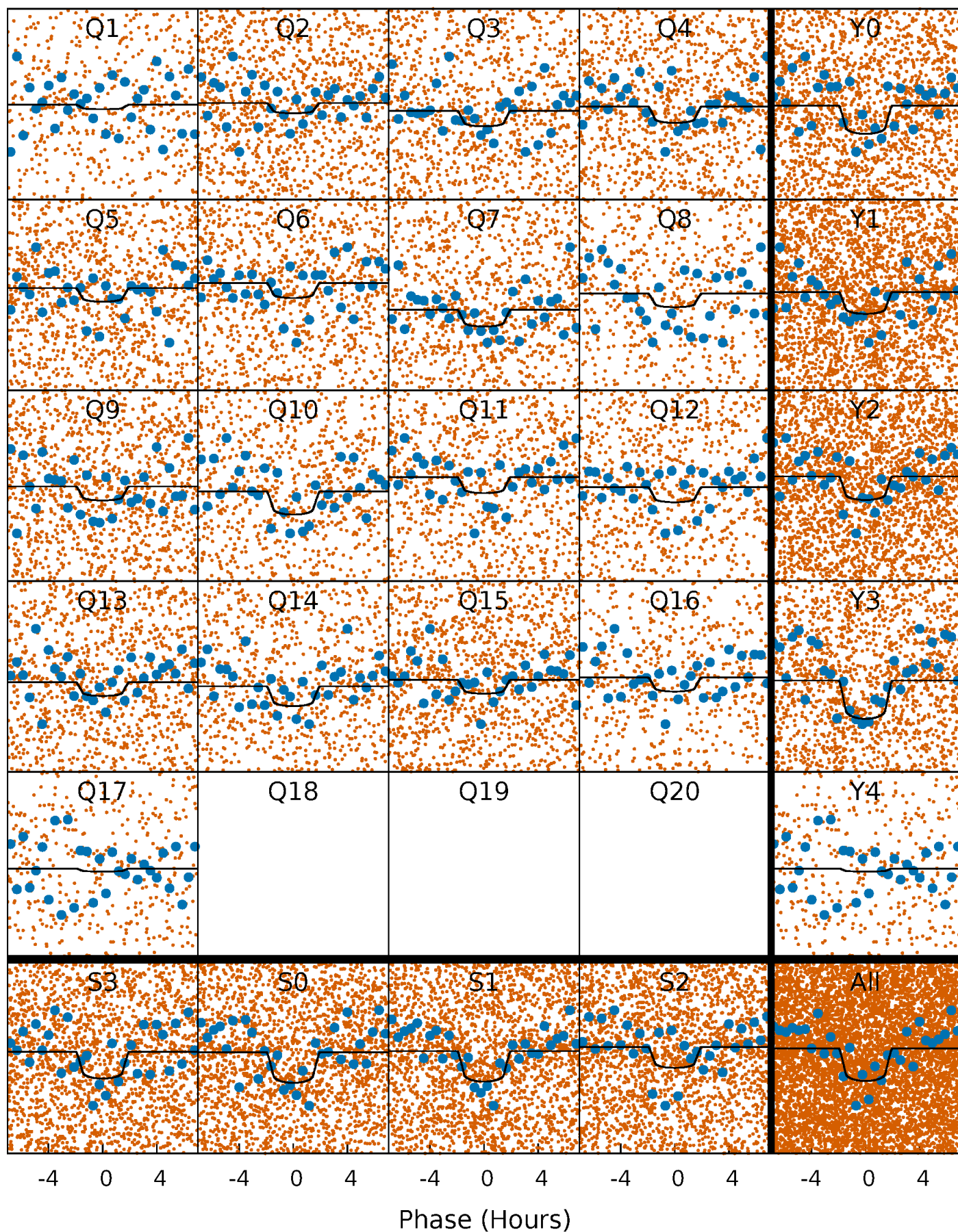
TCE 007467539-01 P= 1.470229 Days  $T_0=131.847210$  (BKJD)





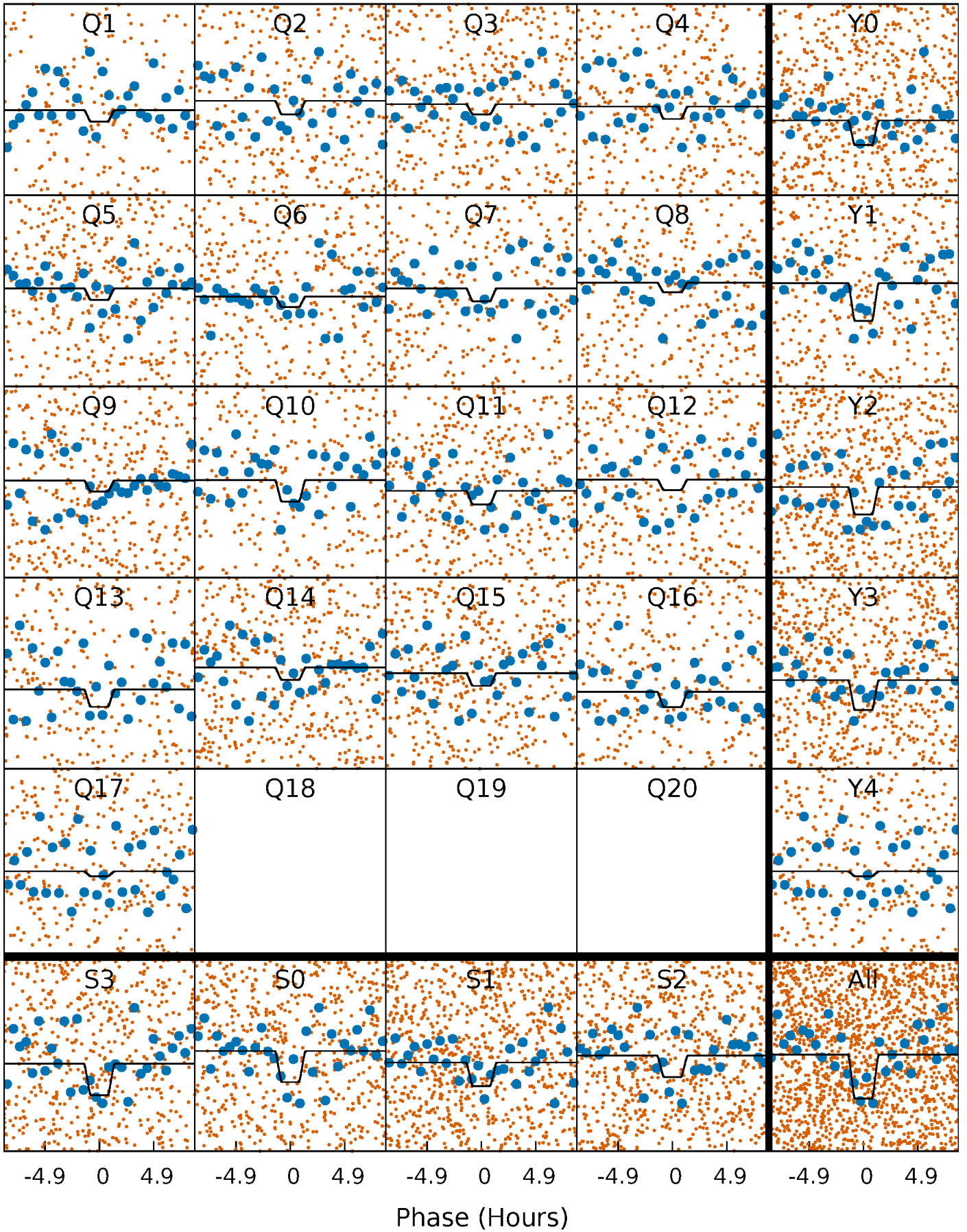
# DV Quarter-Phased Transit Curves

TCE 007467539-01 P= 1.470229 Days  $T_0=131.847210$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

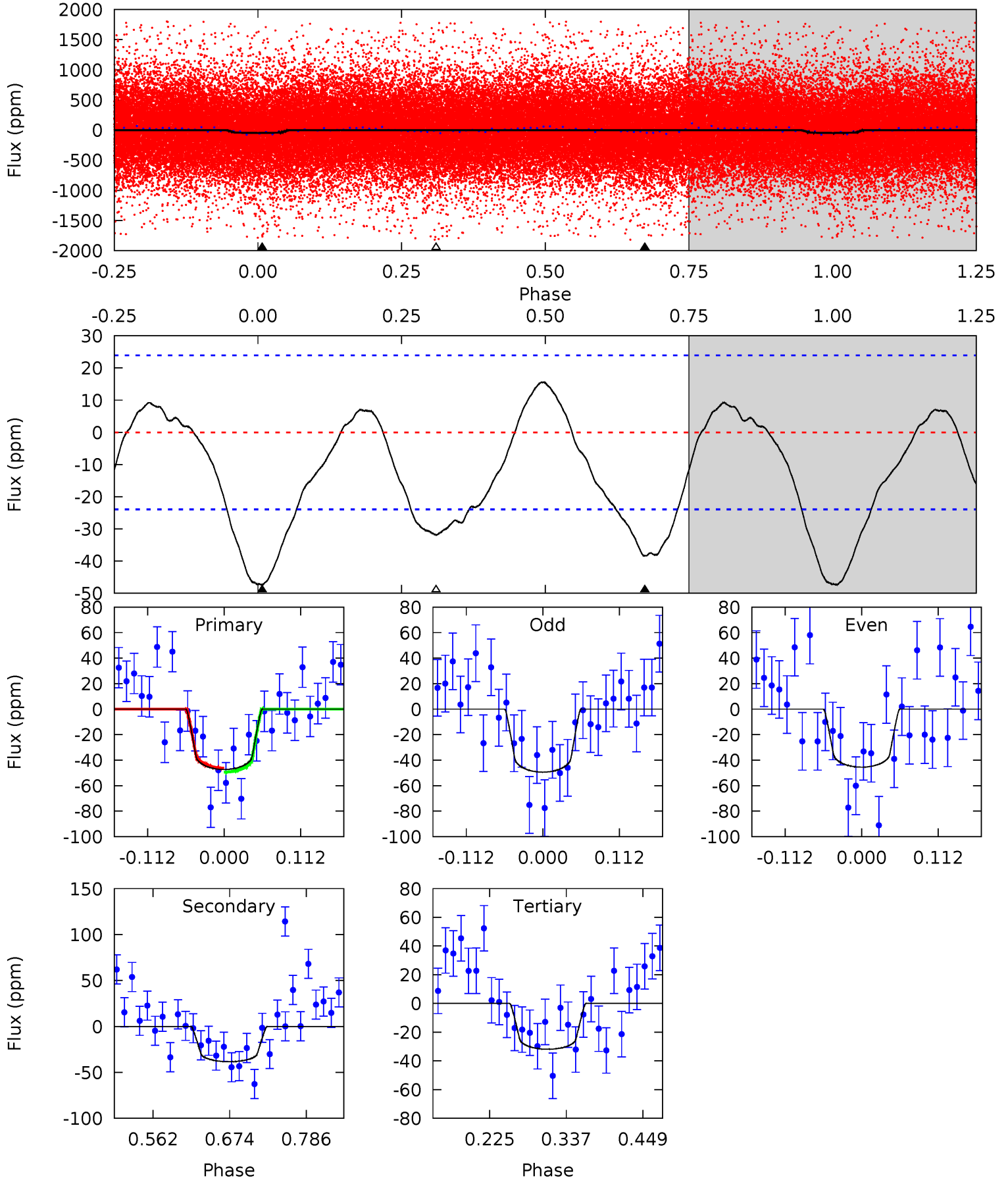
TCE 007467539-01 P= 1.470186 Days  $T_0=131.866484$  (BKJD)



# DV Model-Shift Uniqueness Test

007467539-01, P = 1.470229 Days, E = 130.376981 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
8.99	7.28	6.05	0	4.54	1.59	2.78	2.93	8.99	1.23	7.28	0.38	1.08	0.25	0.30

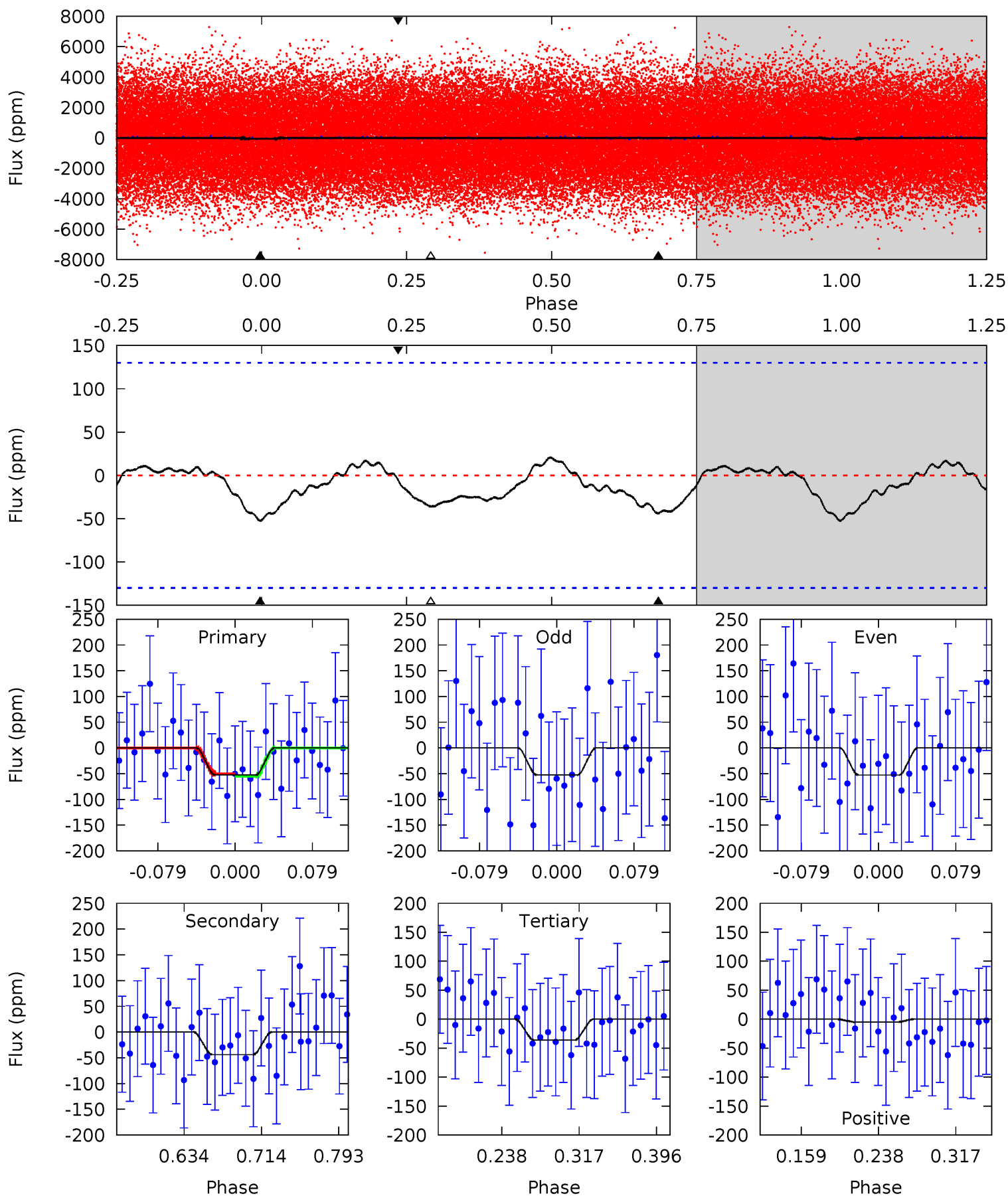




# Alt Model-Shift Uniqueness Test

007467539-01, P = 1.470186 Days, E = 130.396298 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
1.87	1.56	1.28	-0.18	4.61	1.75	0.56	0.59	2.04	0.28	1.74	0.00	0.97	0.28	0.08





### Stellar Parameters For KIC 007467539

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7671^{+214}_{-322}$	$3.962^{+0.210}_{-0.140}$	$0.080^{+0.150}_{-0.350}$	$2.368^{+0.471}_{-0.706}$	$1.873^{+0.145}_{-0.363}$	$0.199^{+0.266}_{-0.080}$
	+3%/-4%	+5%/-4%	+188%/-438%	+20%/-30%	+8%/-19%	+134%/-40%
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 007467539-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-38 \pm 5$	$1.84^{+0.88}_{-0.84}$	$4087^{+290}_{-297}$	$6795^{+3260}_{-1301}$	$5.911^{+14.976}_{-3.322}$
Alt.	$-44 \pm 28$	$1.91^{+1.03}_{-0.80}$	$4107^{+252}_{-287}$	$6740^{+3323}_{-1884}$	$5.625^{+13.849}_{-4.077}$

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

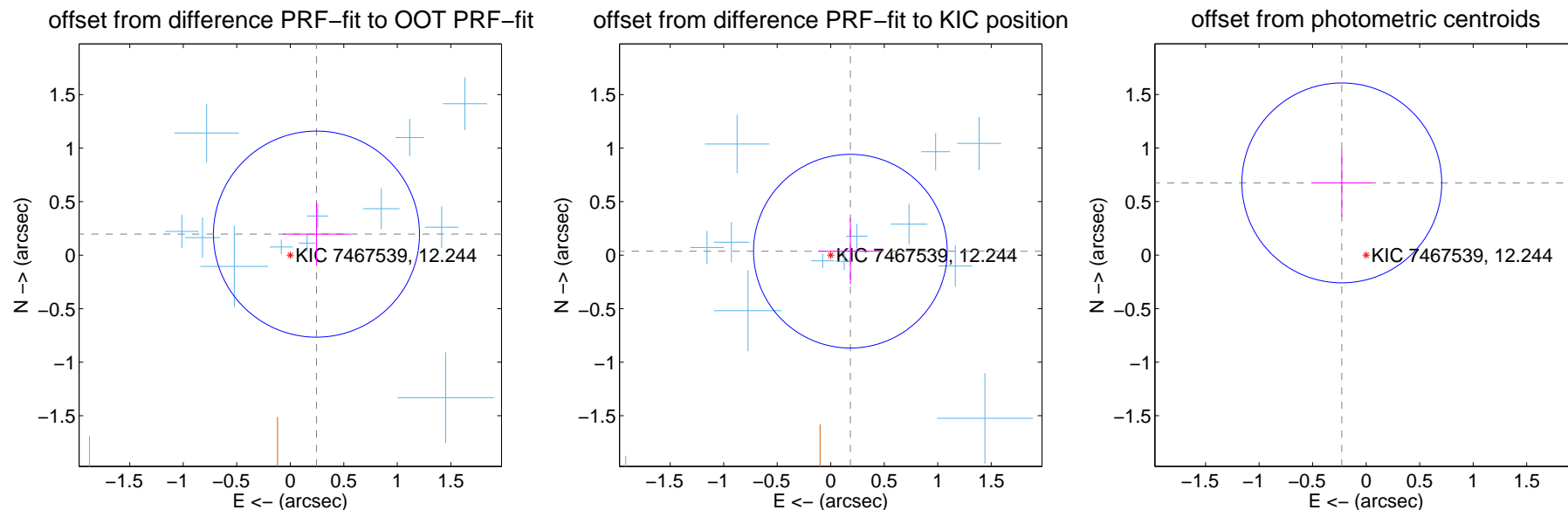
## DV Centroid Data

Supplemental centroid analysis for 007467539-01. Kepler magnitude: 12.24. Transit SNR 11.91

There are 13 quarters with good PRF difference image offsets

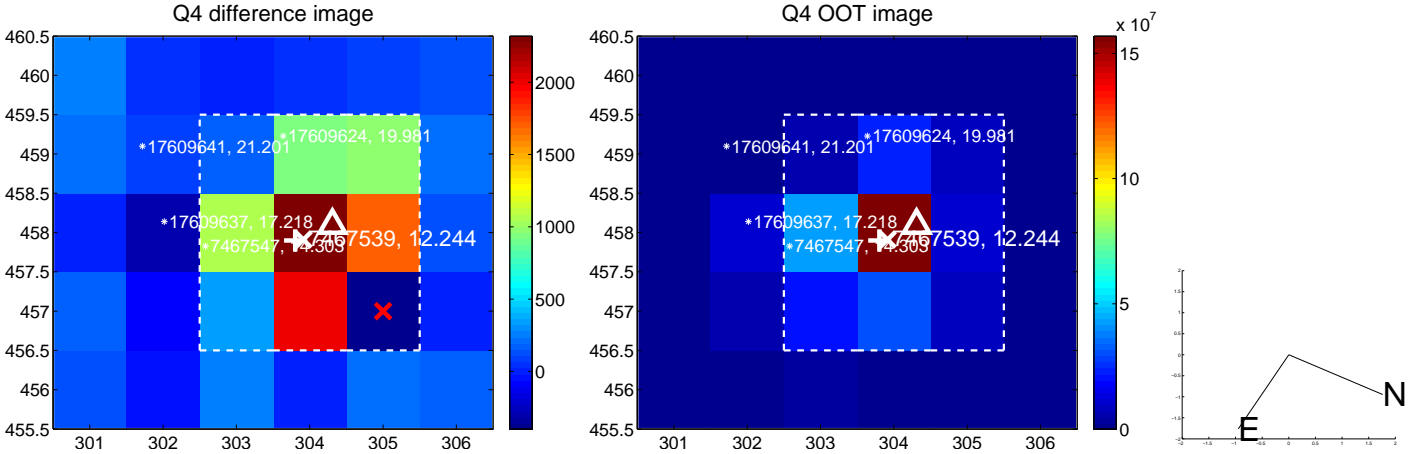
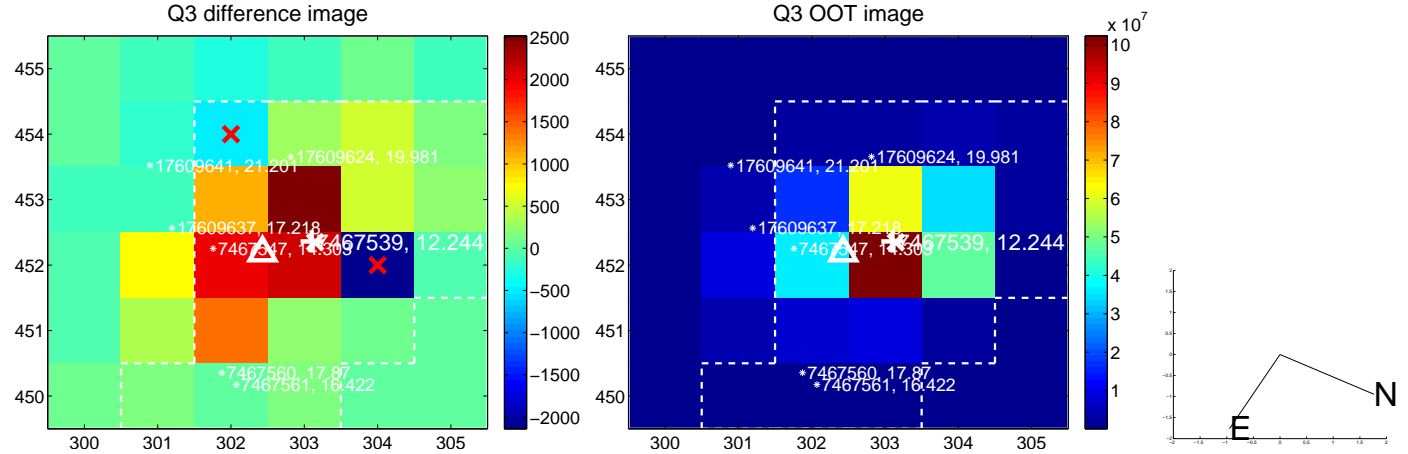
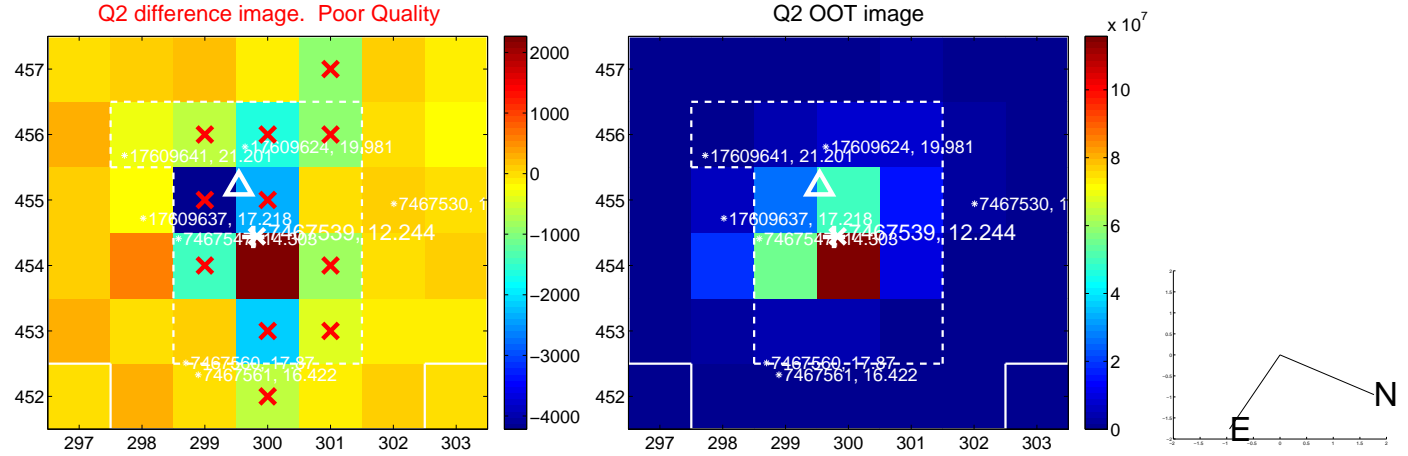
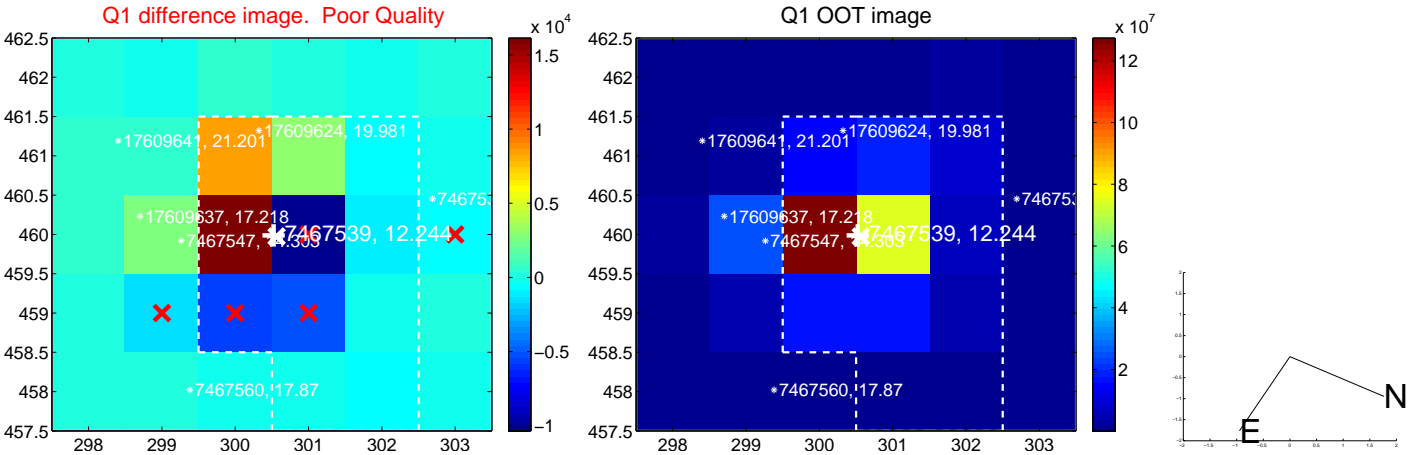
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.314 \pm 0.321$	0.98	$-0.245 \pm 0.312$	$0.196 \pm 0.294$
PRF-fit source offset from KIC position	$0.187 \pm 0.302$	0.62	$-0.184 \pm 0.302$	$0.037 \pm 0.309$
photometric centroid source offset	$0.71 \pm 0.31$	2.29	$0.23 \pm 0.28$	$0.67 \pm 0.31$

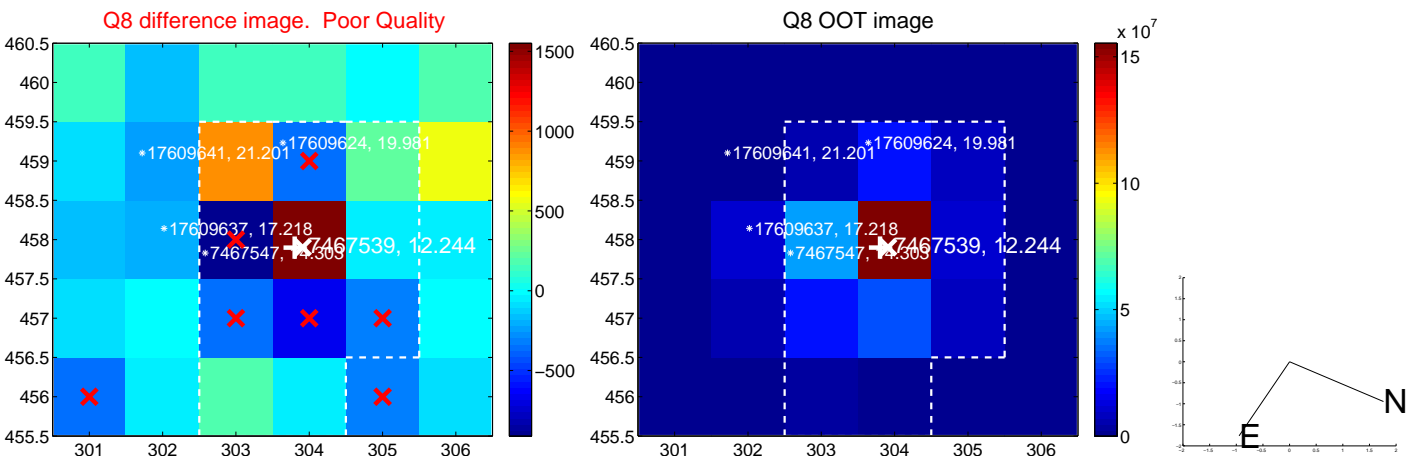
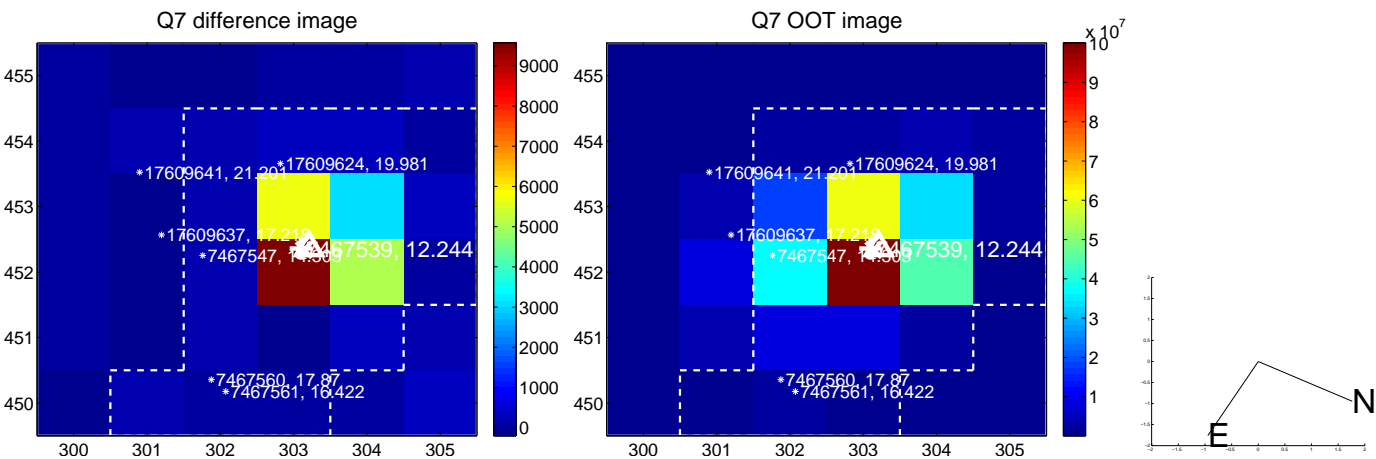
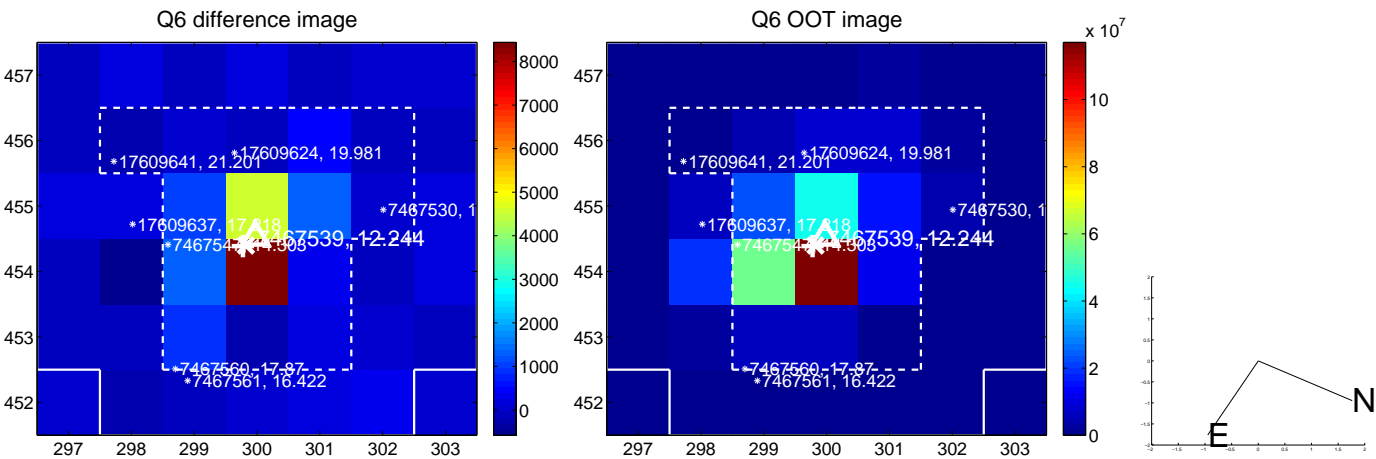
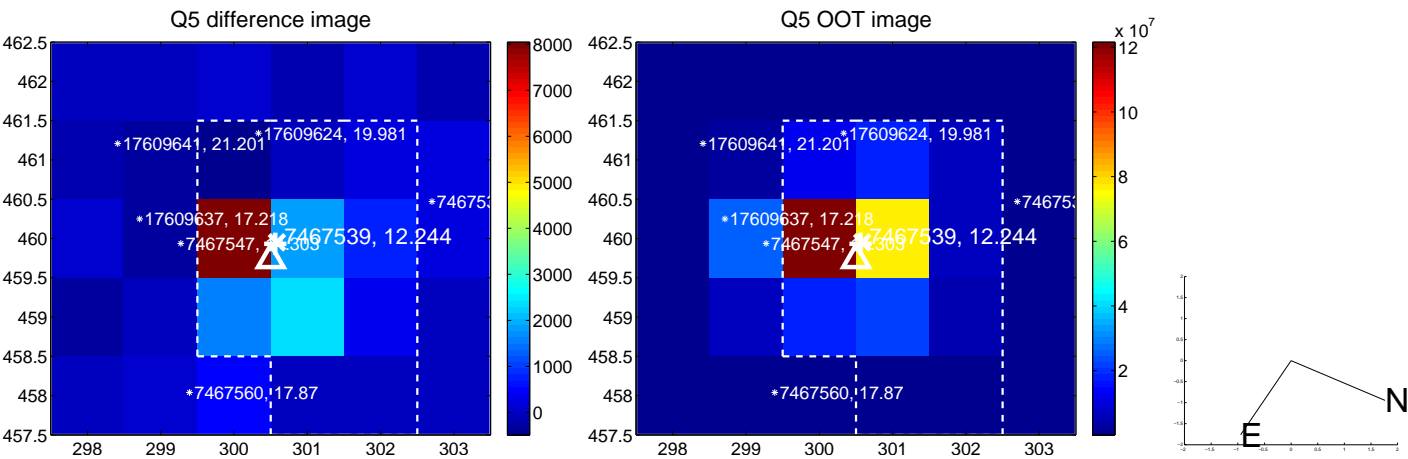


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

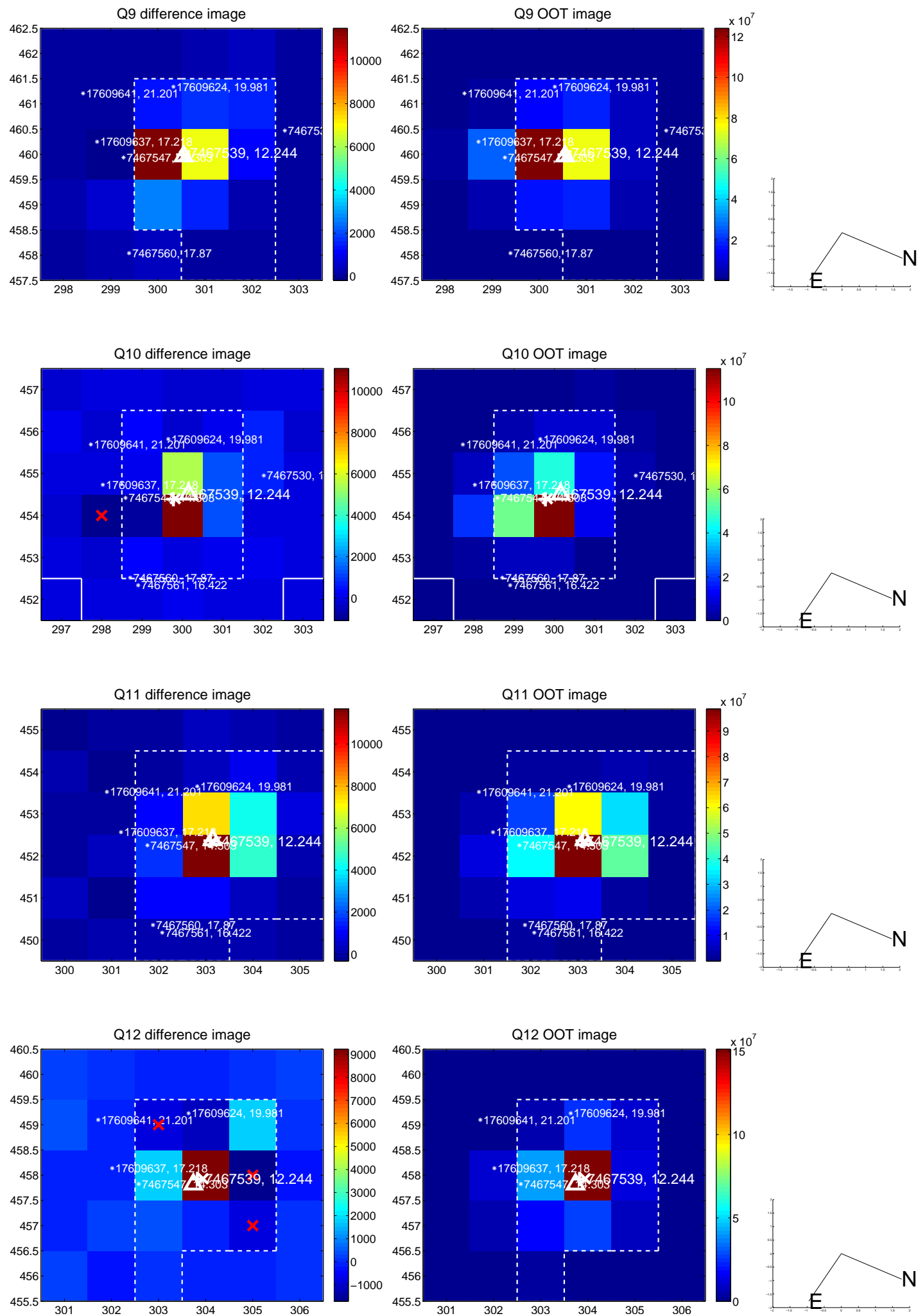


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

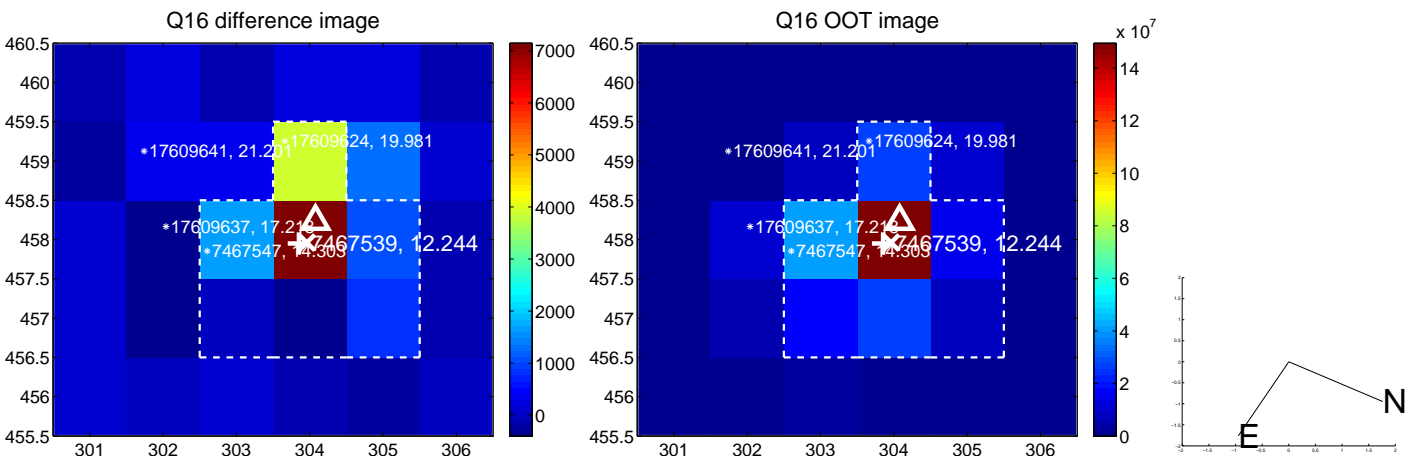
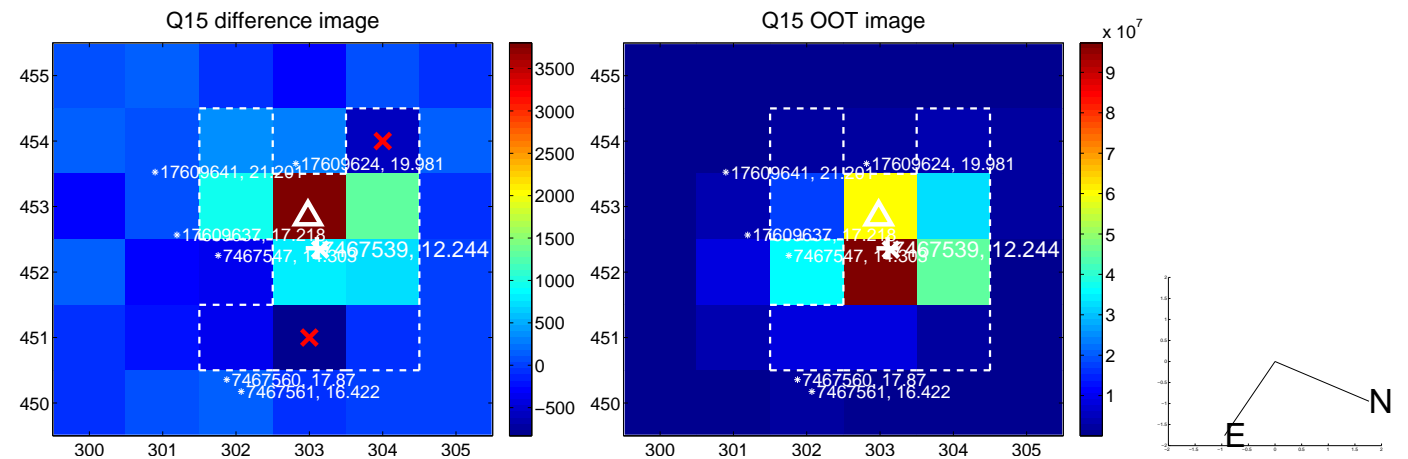
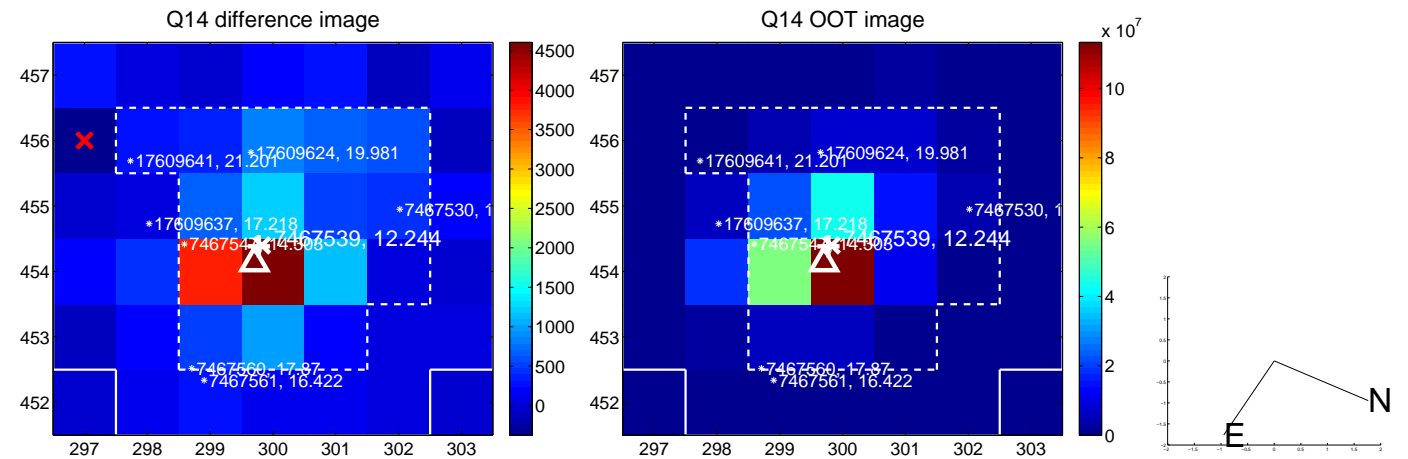
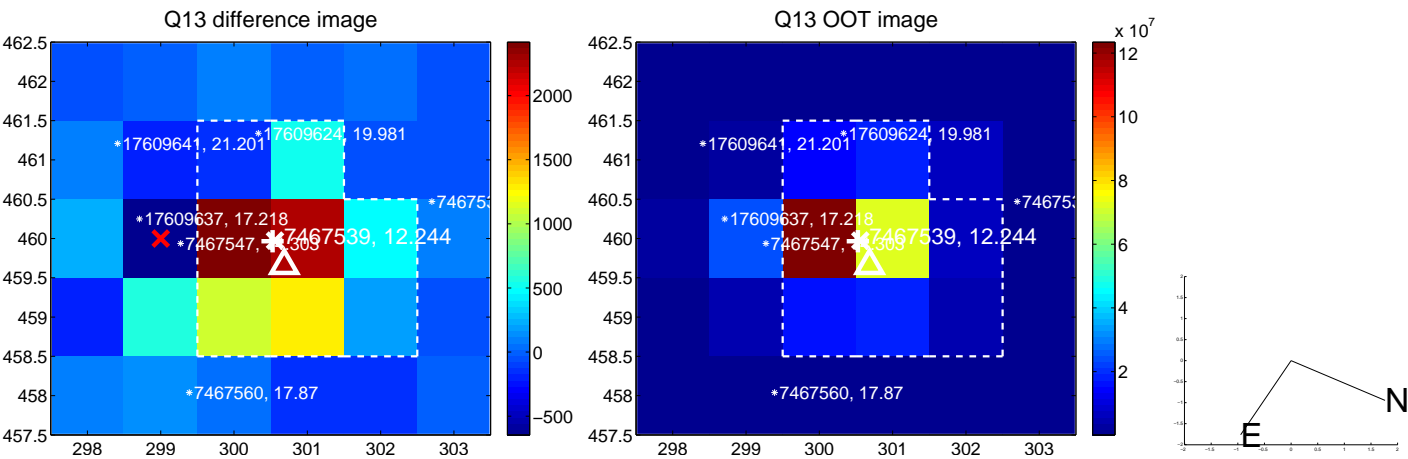




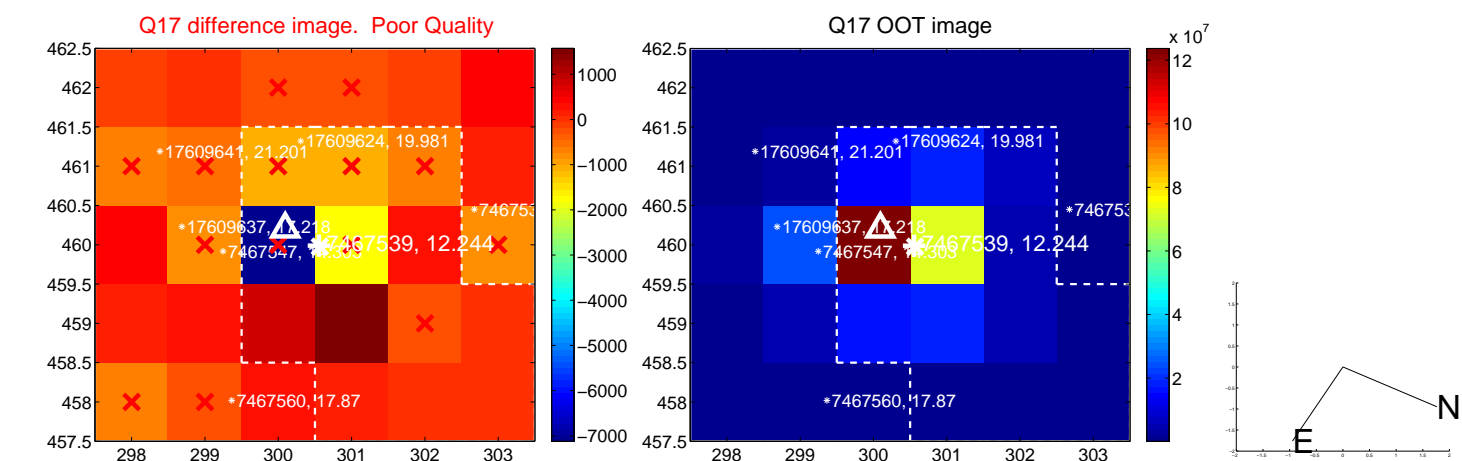
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



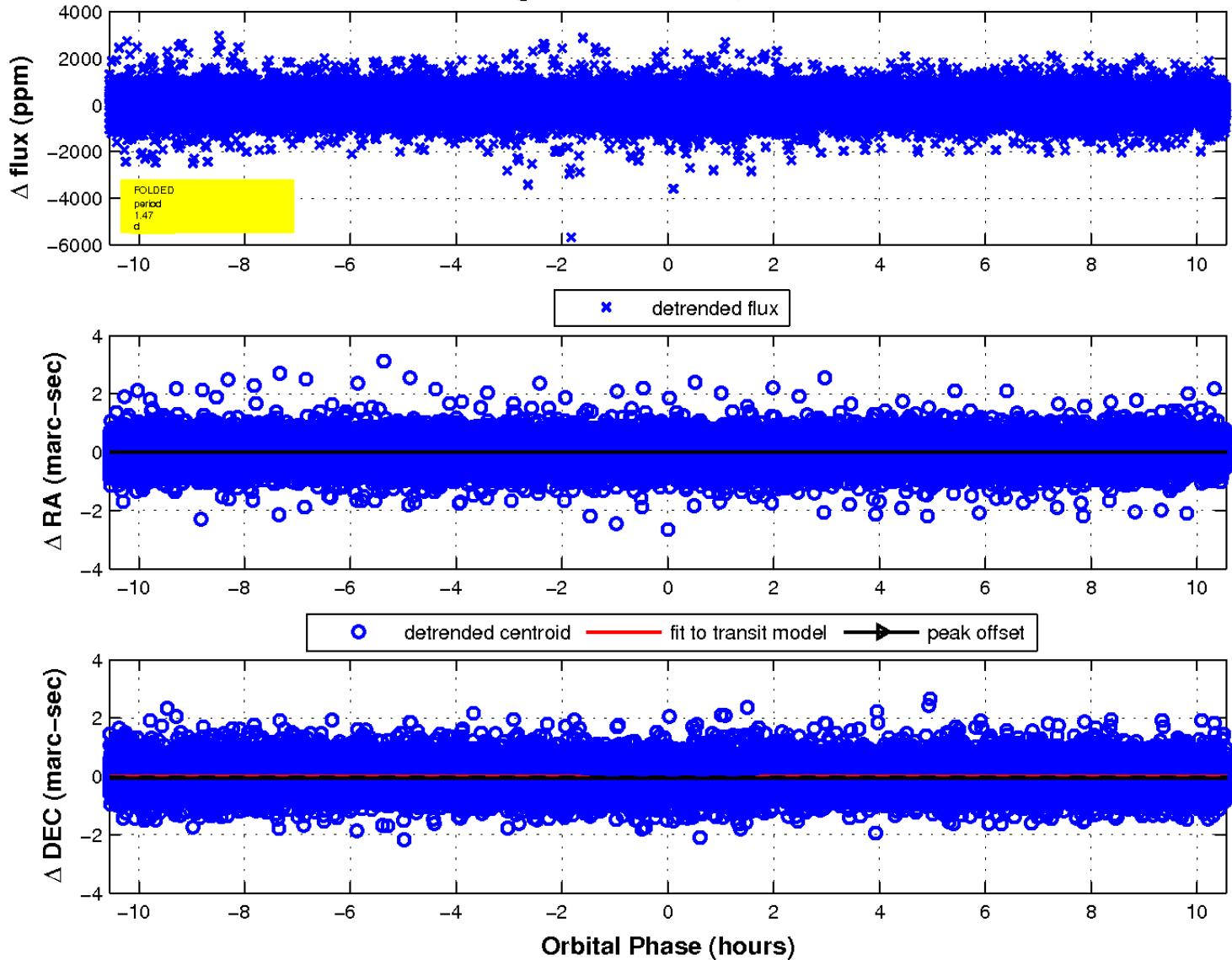
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



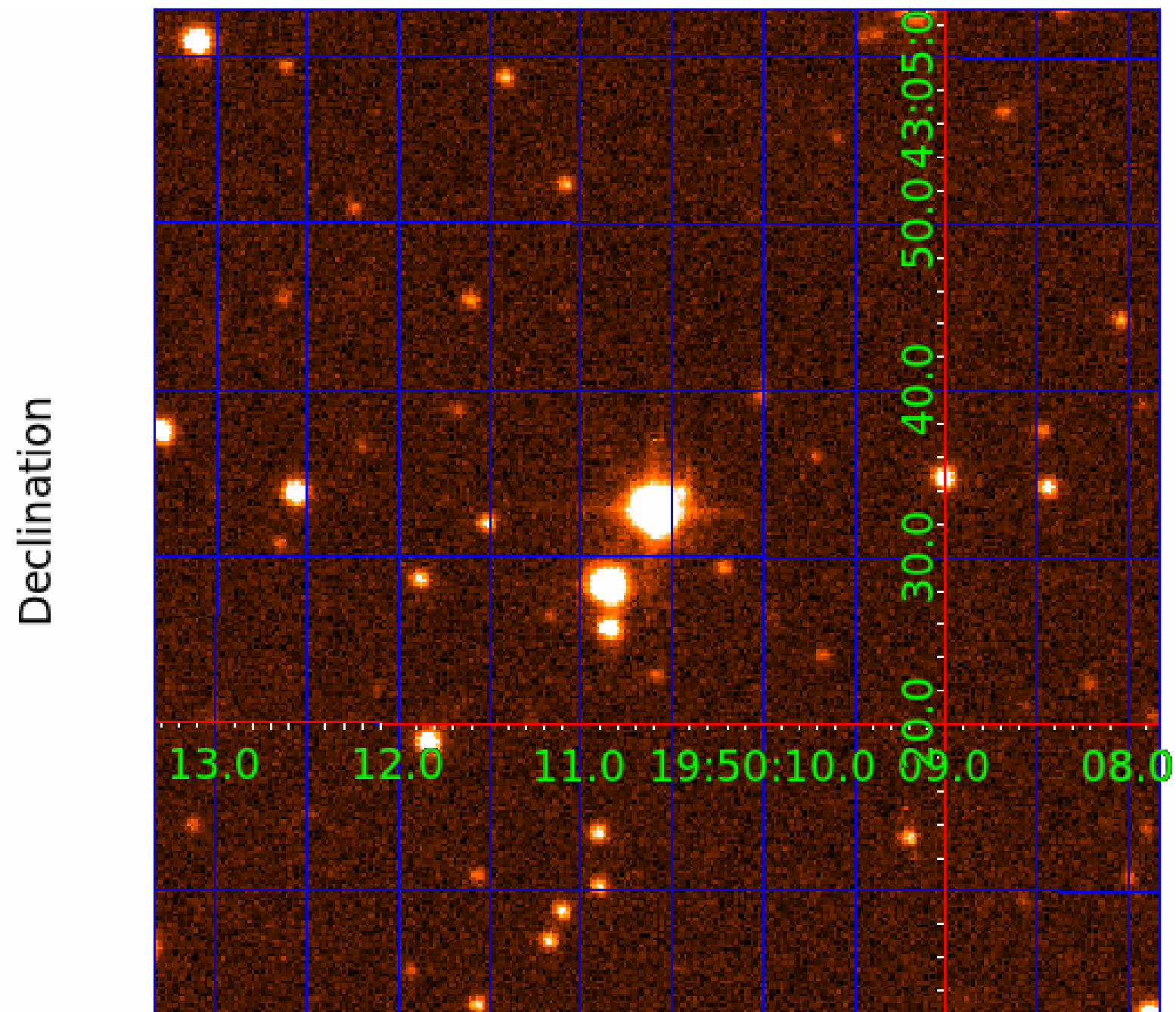
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image





# KIC 007467539

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007467539-01	OBS	No	1.470229	131.847210	46.3	3.518	11.4	11.9	2.37	7671	1.88	17866.66
007467539-02	OBS	No	1.470188	132.868985	39.9	4.308	8.9	10.1	2.37	7671	1.75	17867.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007467539-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
007467539-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

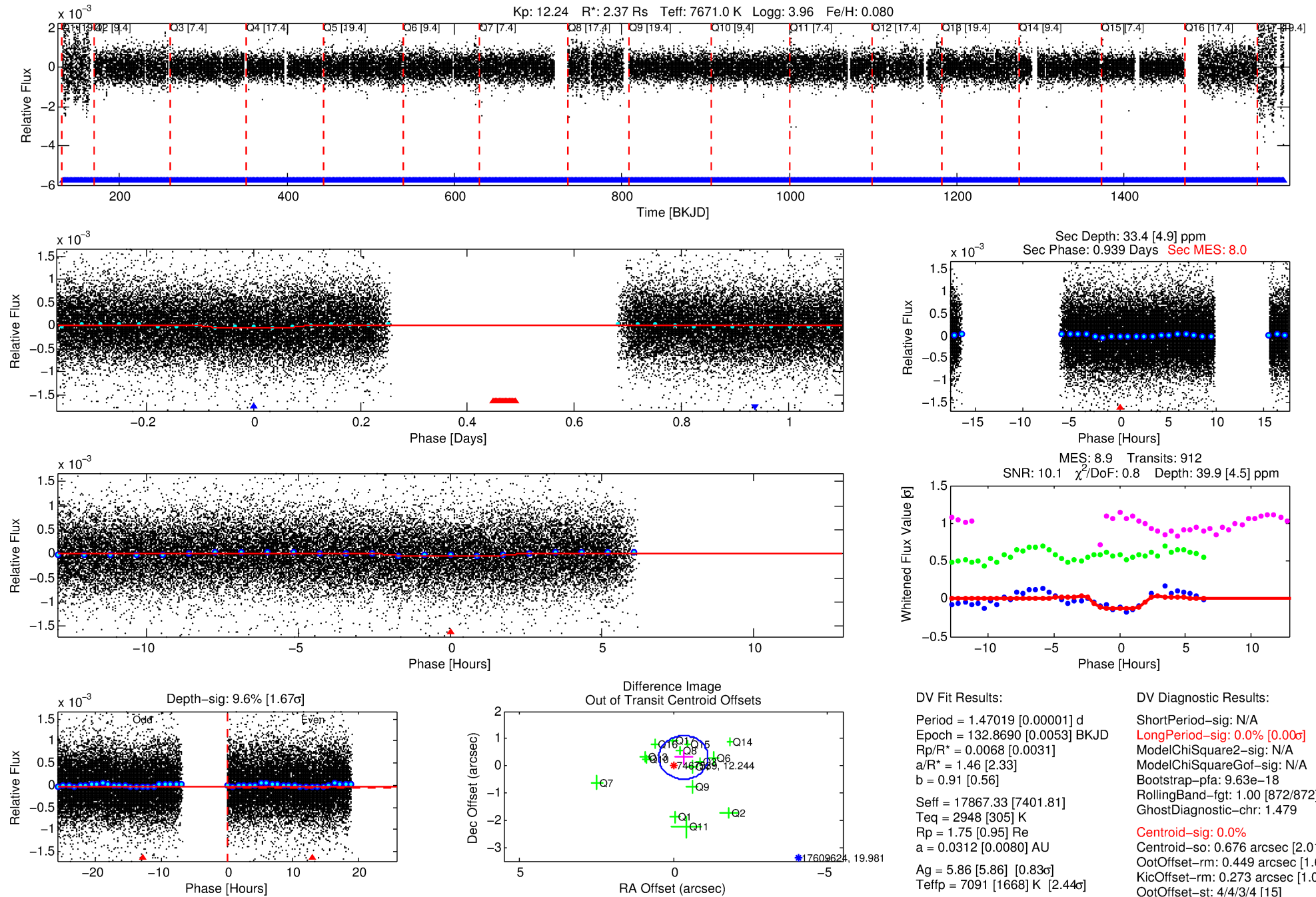
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007467539-02

No Significant Match Found

# DV One-Page Summary

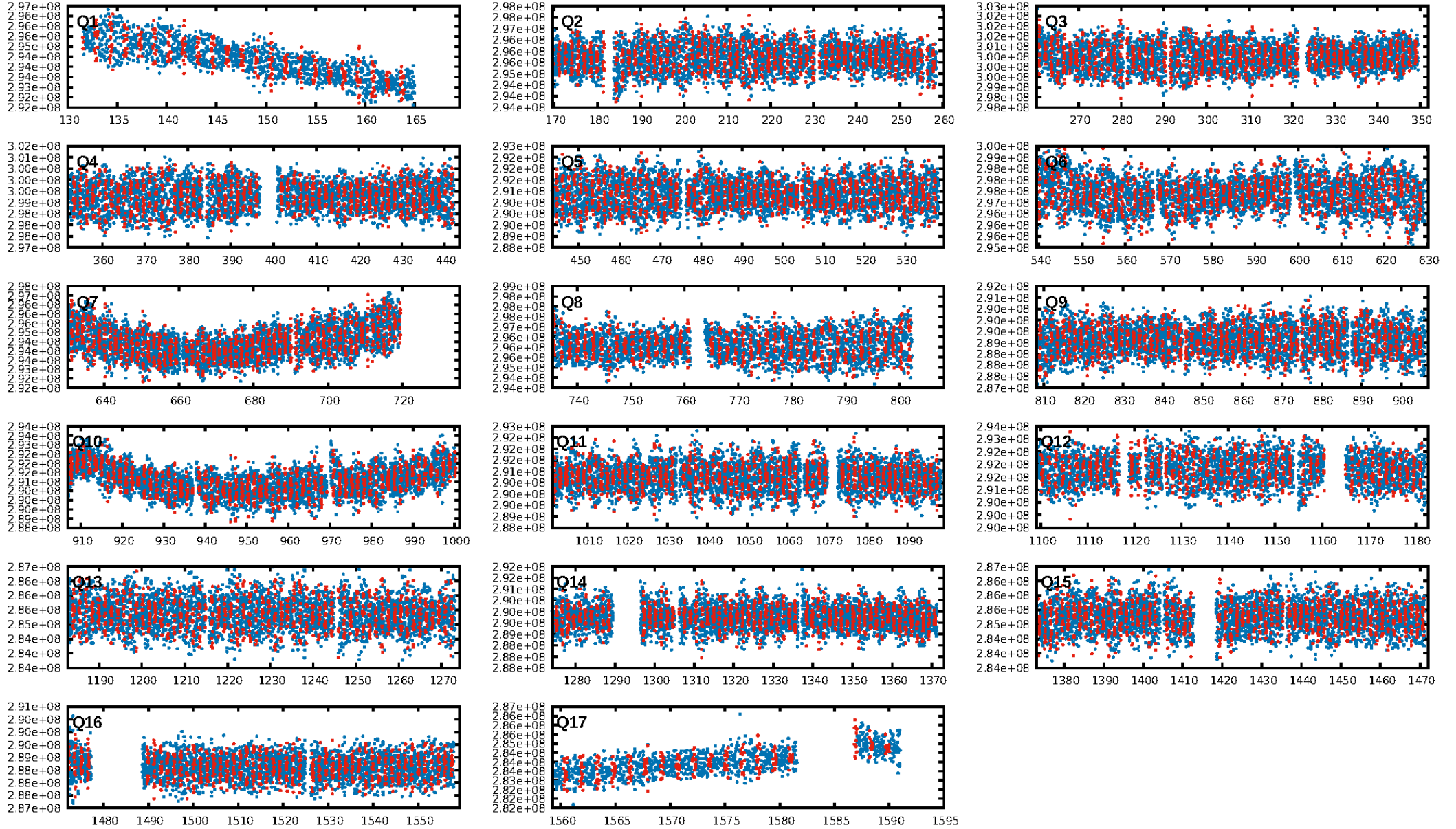
KIC: 7467539 Candidate: 2 of 2 Period: 1.470 d



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:51:06 Z

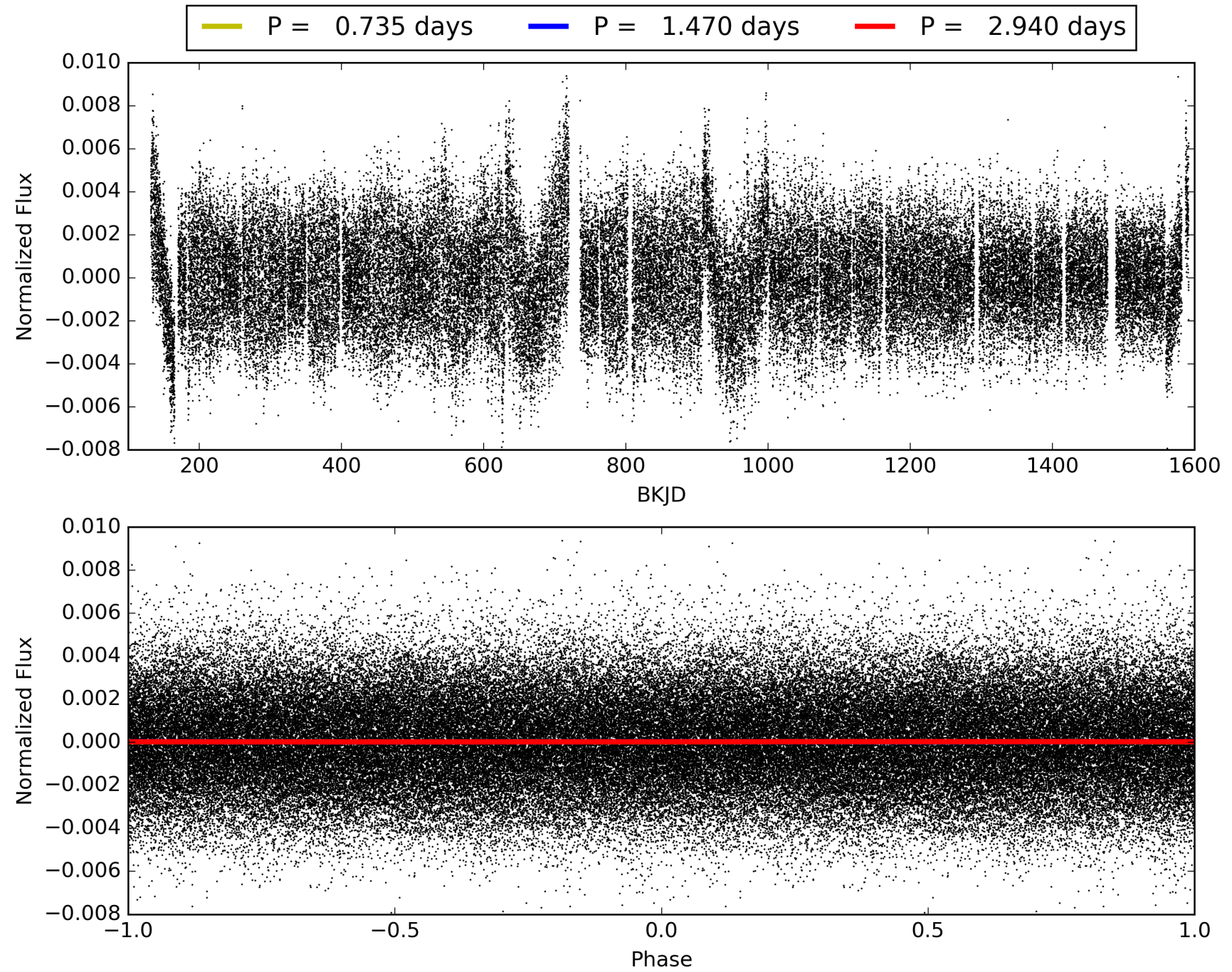
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007467539-02, PDC Light Curves





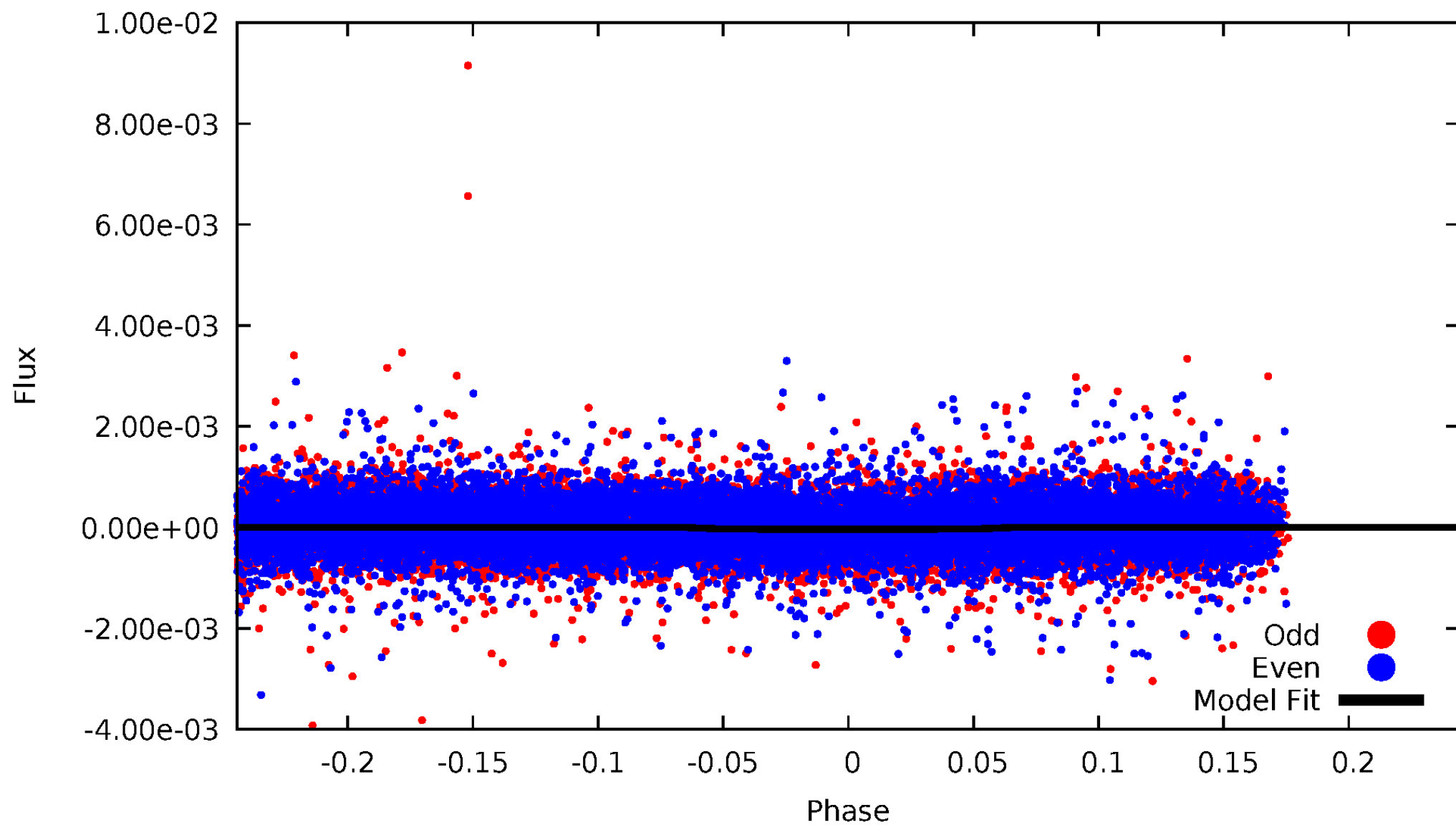
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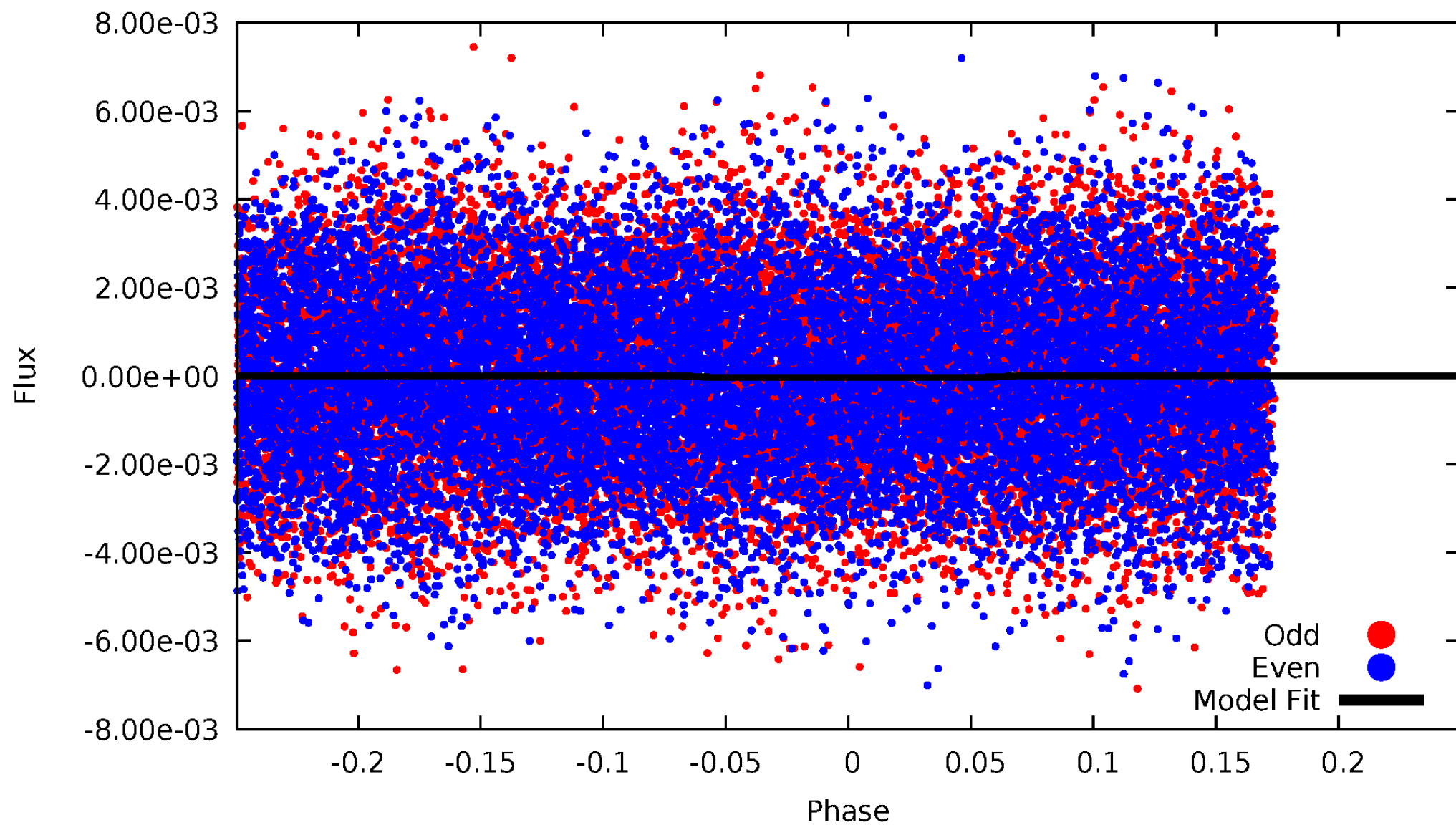
# DV Odd/Even

TCE 007467539-02



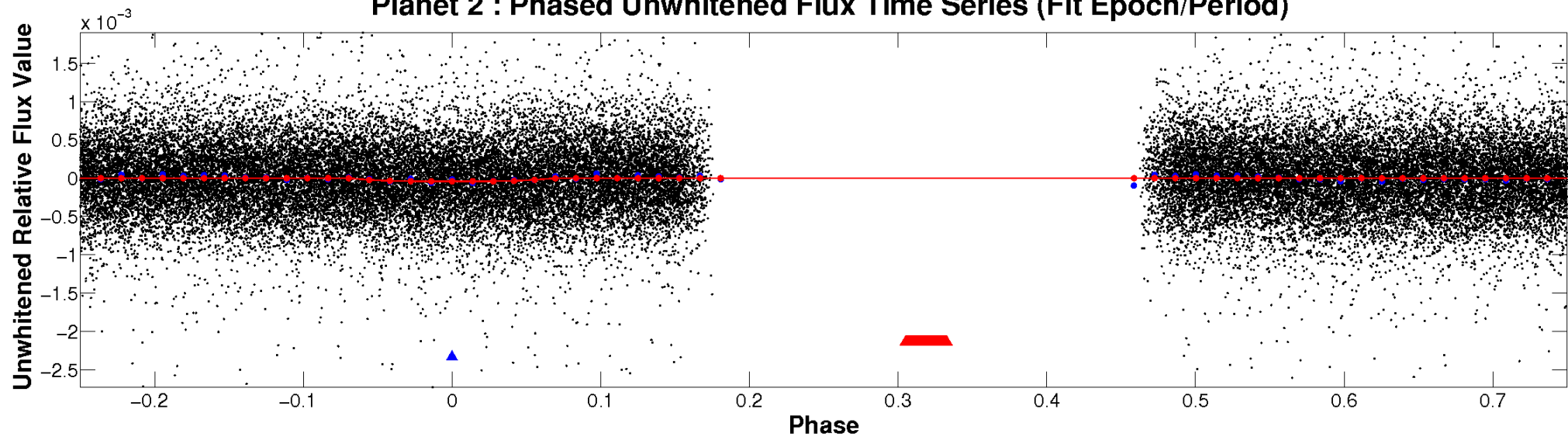
# ALT Odd/Even

TCE 007467539-02

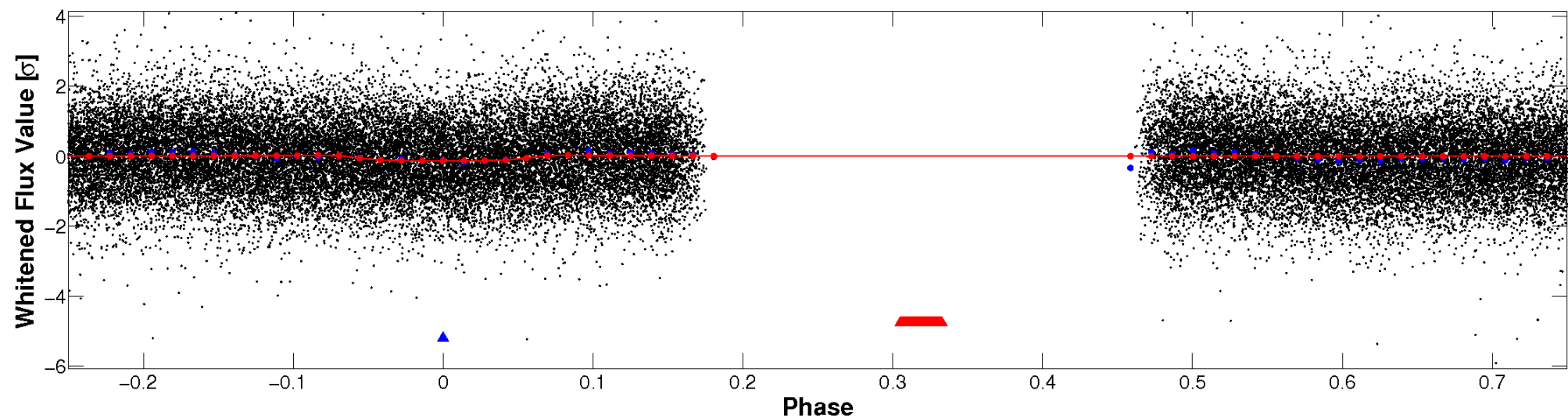


# Non-Whitened Vs. Whitened Light Curve

## Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

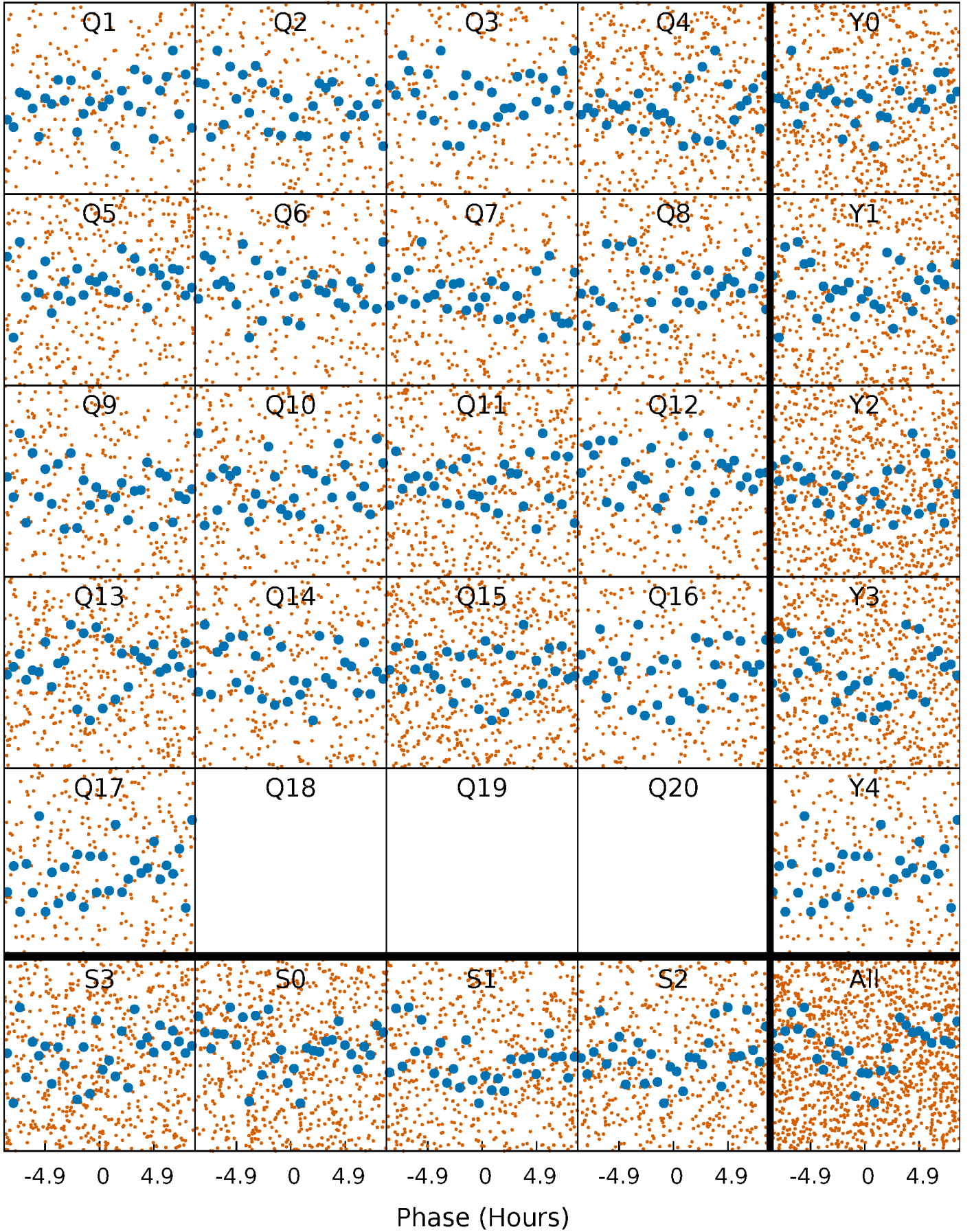


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

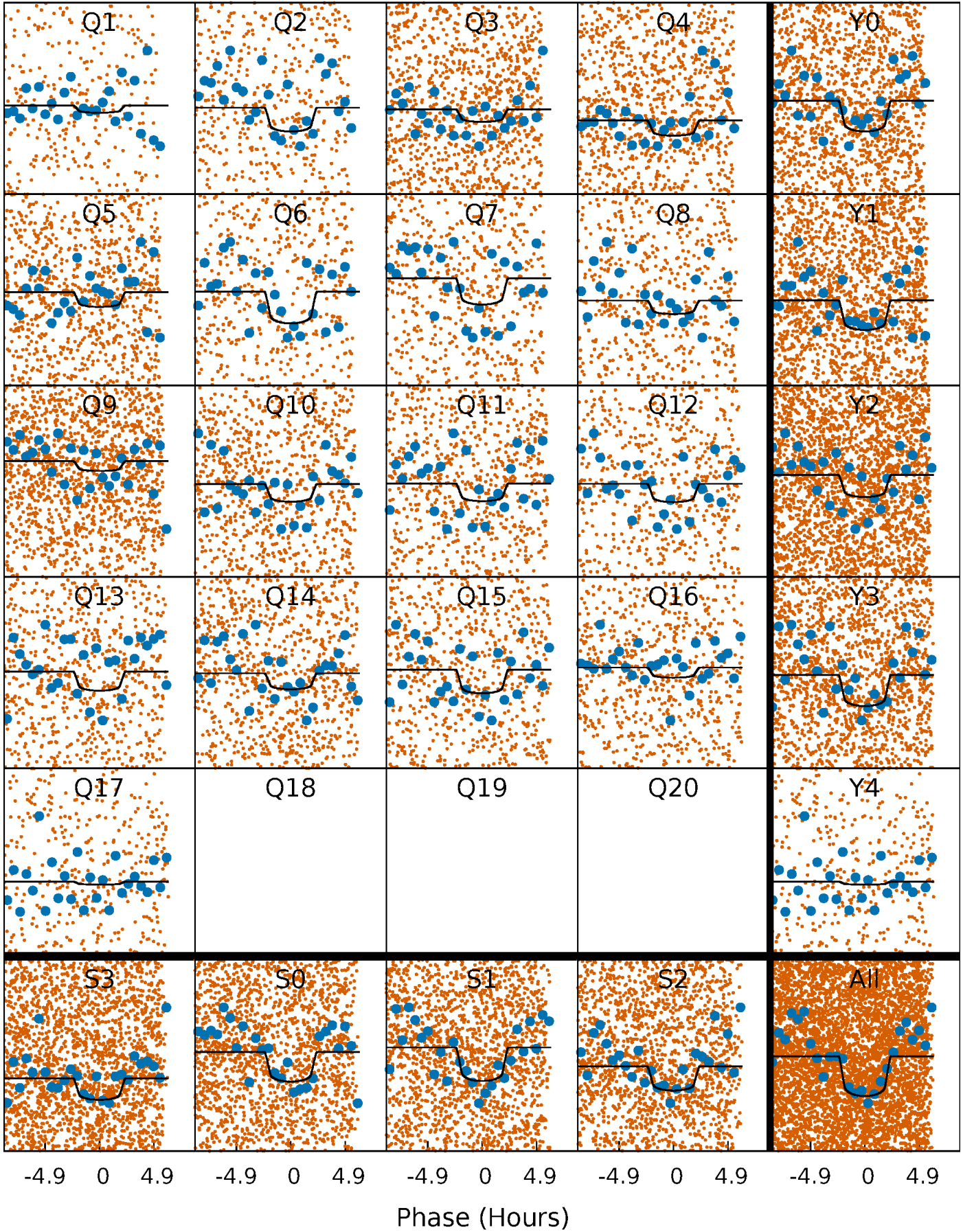
TCE 007467539-02   P= 1.470188 Days    $T_0=132.868985$  (BKJD)





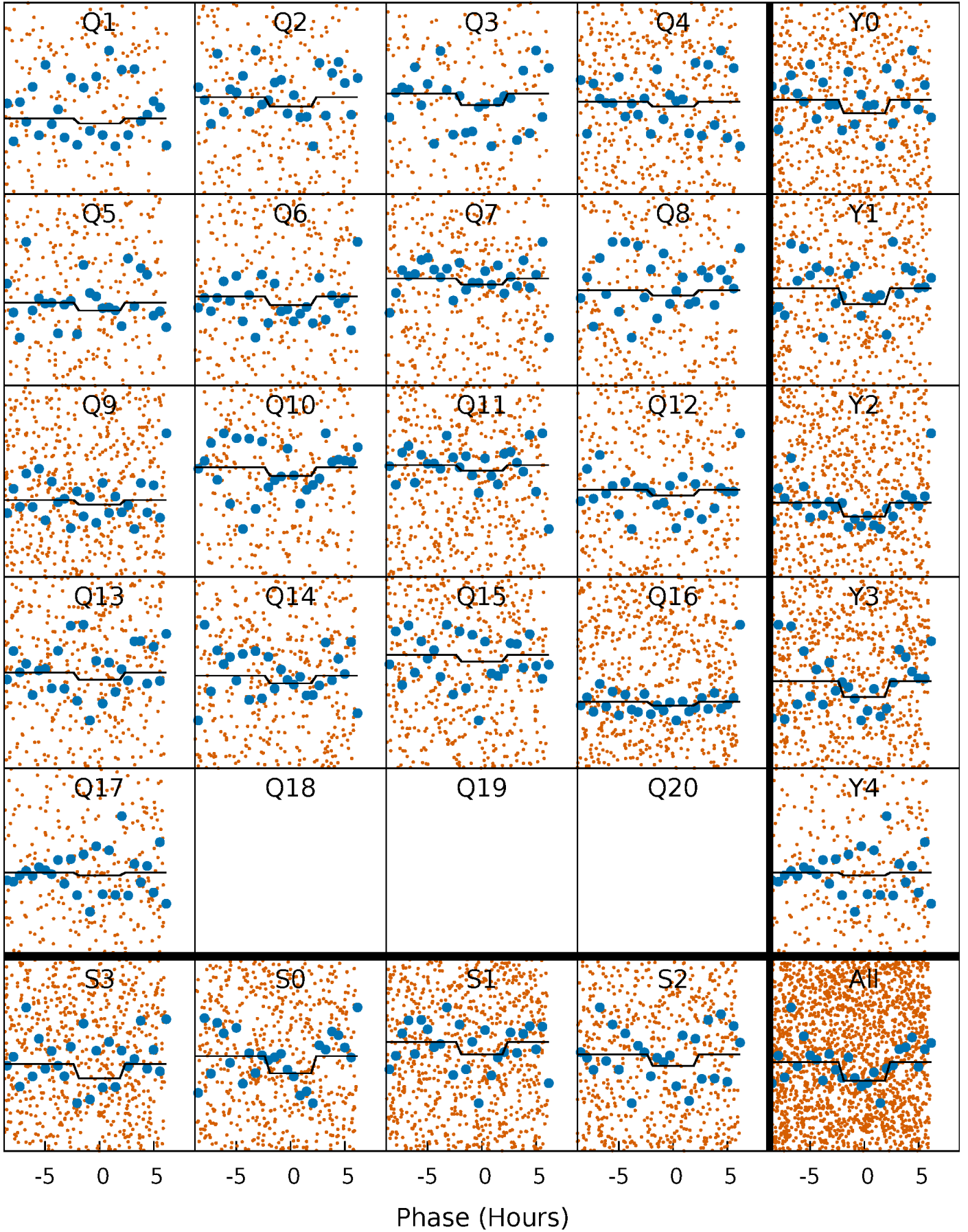
# DV Quarter-Phased Transit Curves

TCE 007467539-02 P= 1.470188 Days  $T_0=132.868985$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007467539-02 P= 1.470240 Days  $T_0=132.830459$  (BKJD)

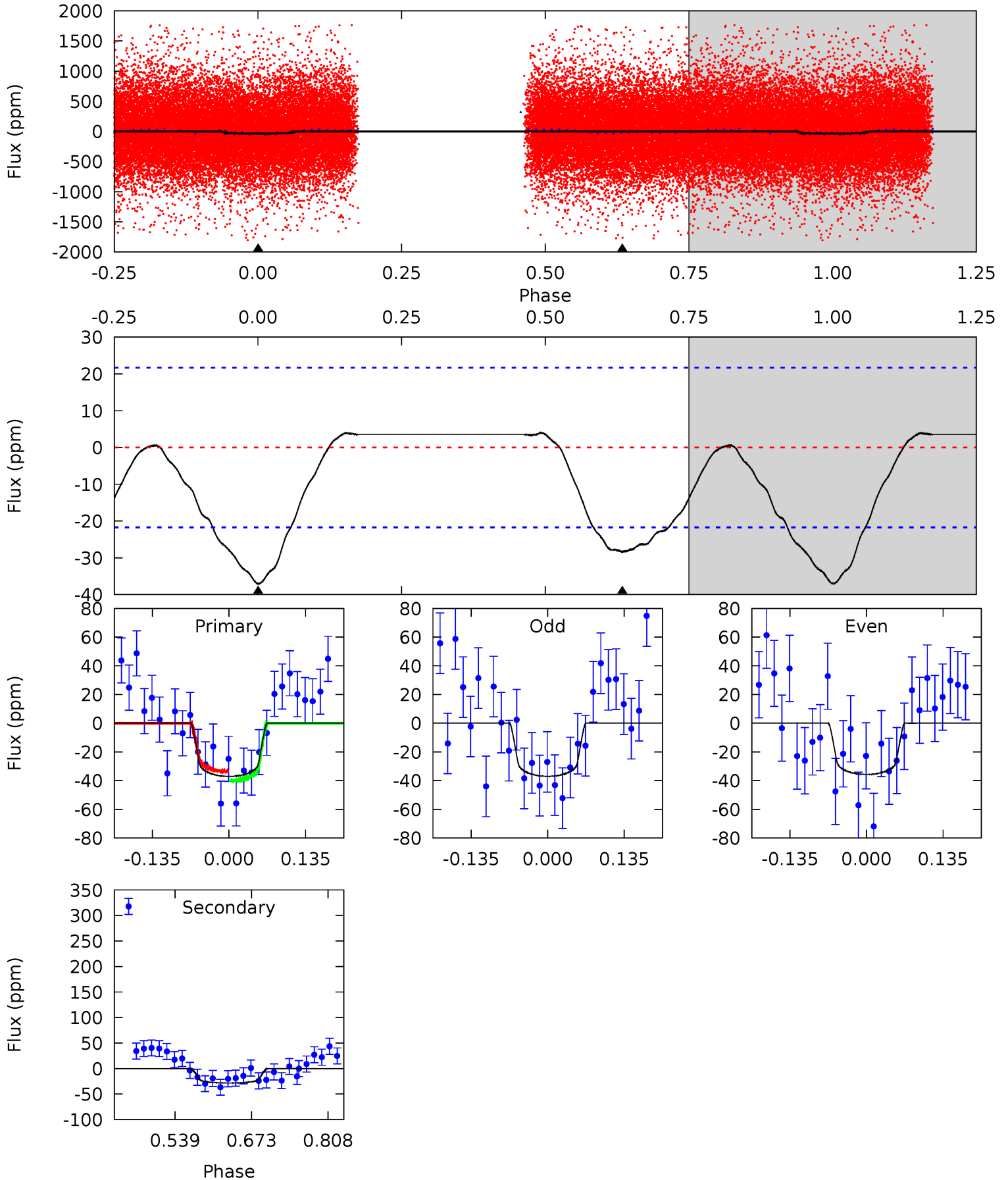




# DV Model-Shift Uniqueness Test

007467539-02, P = 1.470188 Days, E = 131.398797 Days

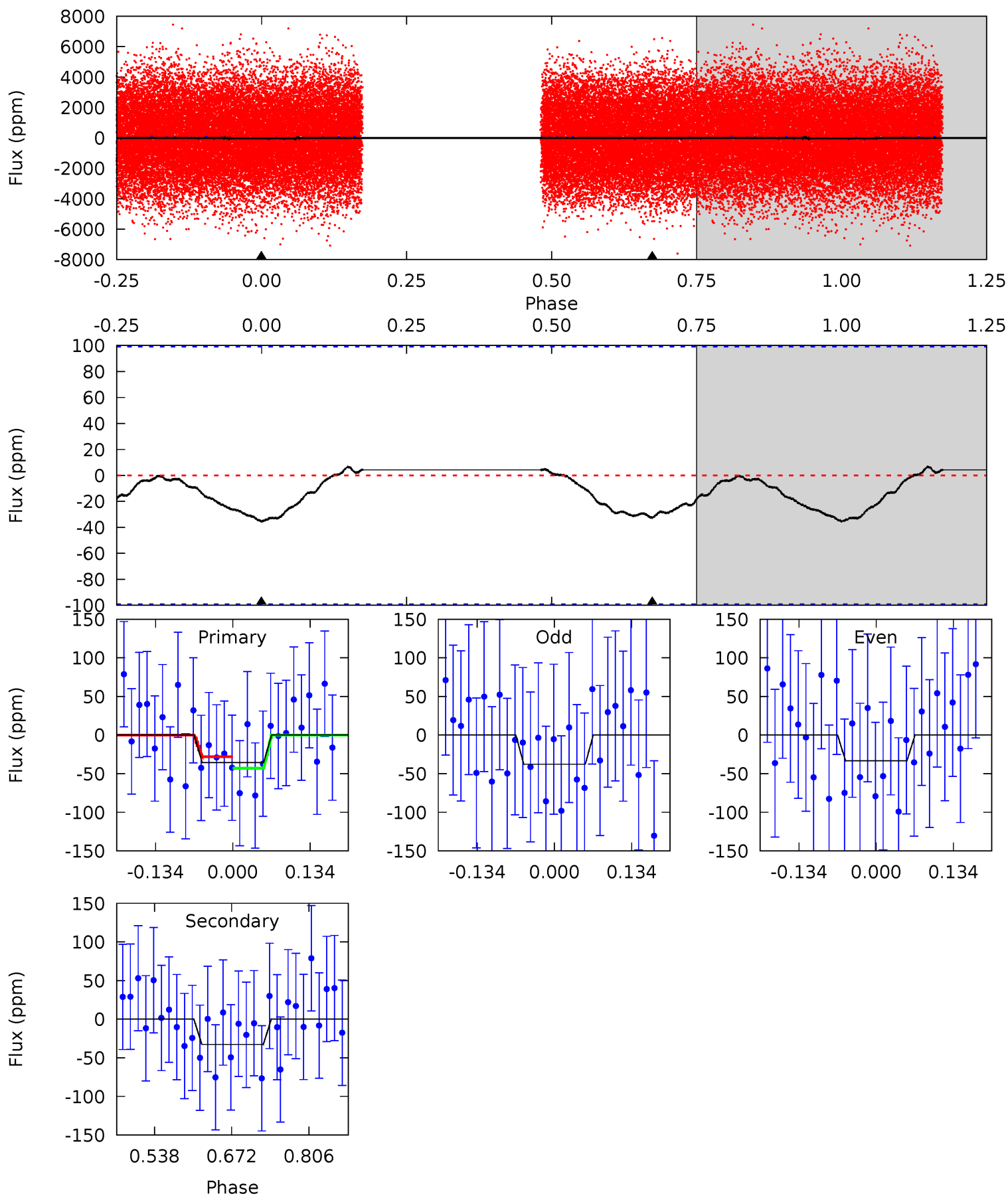
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.68	5.88	0	0	4.50	1.50	0.74	7.68	7.68	5.88	5.88	0.14	1.12	0.10	0.69



# Alt Model-Shift Uniqueness Test

007467539-02, P = 1.470240 Days, E = 131.360219 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
1.61	1.48	0	0	4.50	1.50	0.14	1.61	1.61	1.48	1.48	0.10	1.10	0.16	0.34



### Stellar Parameters For KIC 007467539

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7671^{+214}_{-322}$	$3.962^{+0.210}_{-0.140}$	$0.080^{+0.150}_{-0.350}$	$2.368^{+0.471}_{-0.706}$	$1.873^{+0.145}_{-0.363}$	$0.199^{+0.266}_{-0.080}$
	+3%/-4%	+5%/-4%	+188%/-438%	+20%/-30%	+8%/-19%	+134%/-40%
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 007467539-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-28 \pm 5$	$1.71^{+0.81}_{-0.77}$	$4092^{+287}_{-295}$	$6573^{+2847}_{-1261}$	$5.153^{+11.875}_{-2.881}$
Alt.	$-33 \pm 22$	$1.53^{+0.82}_{-0.72}$	$4088^{+268}_{-307}$	$7092^{+4189}_{-2232}$	$6.891^{+18.456}_{-5.110}$

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

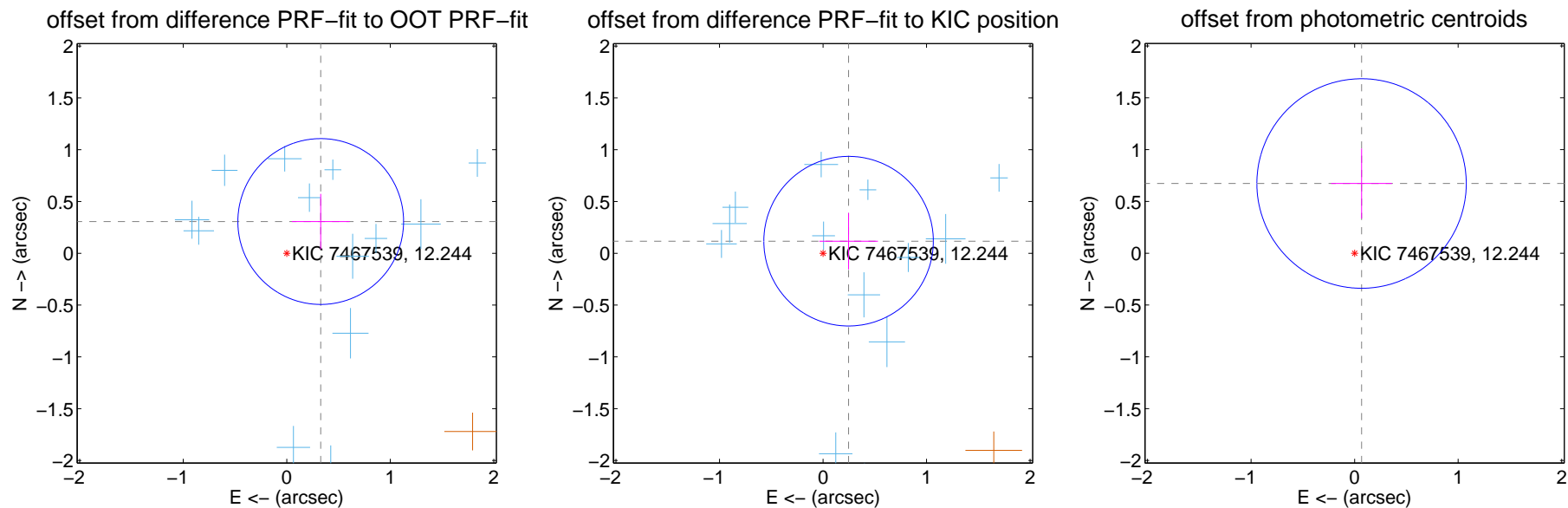
## DV Centroid Data

Supplemental centroid analysis for 007467539-02. Kepler magnitude: 12.24. Transit SNR 10.10

There are 14 quarters with good PRF difference image offsets

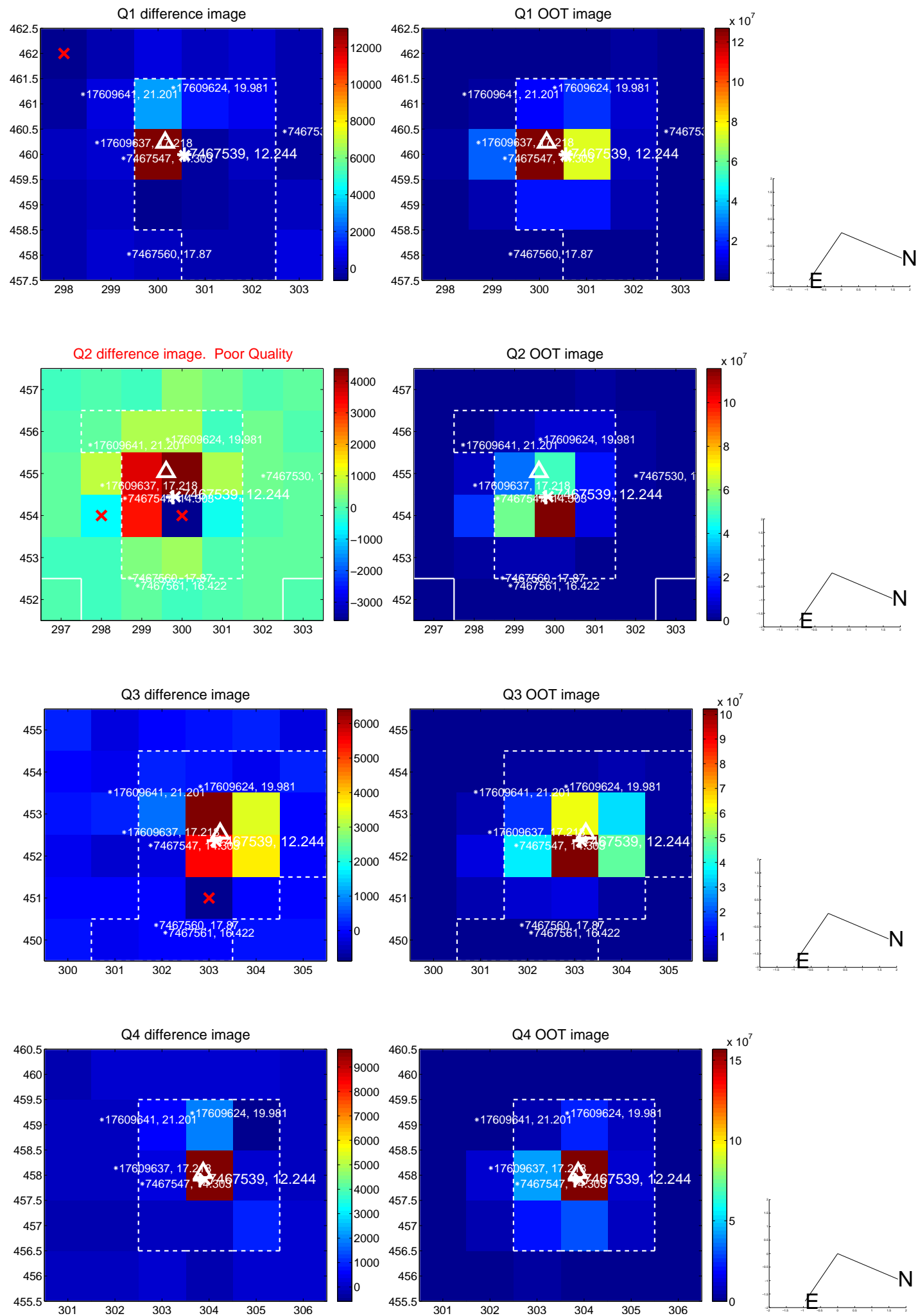
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.449 \pm 0.267$	1.68	$-0.328 \pm 0.279$	$0.307 \pm 0.267$
PRF-fit source offset from KIC position	$0.273 \pm 0.273$	1.00	$-0.247 \pm 0.283$	$0.117 \pm 0.273$
photometric centroid source offset	$0.68 \pm 0.34$	2.01	$-0.07 \pm 0.29$	$0.67 \pm 0.34$

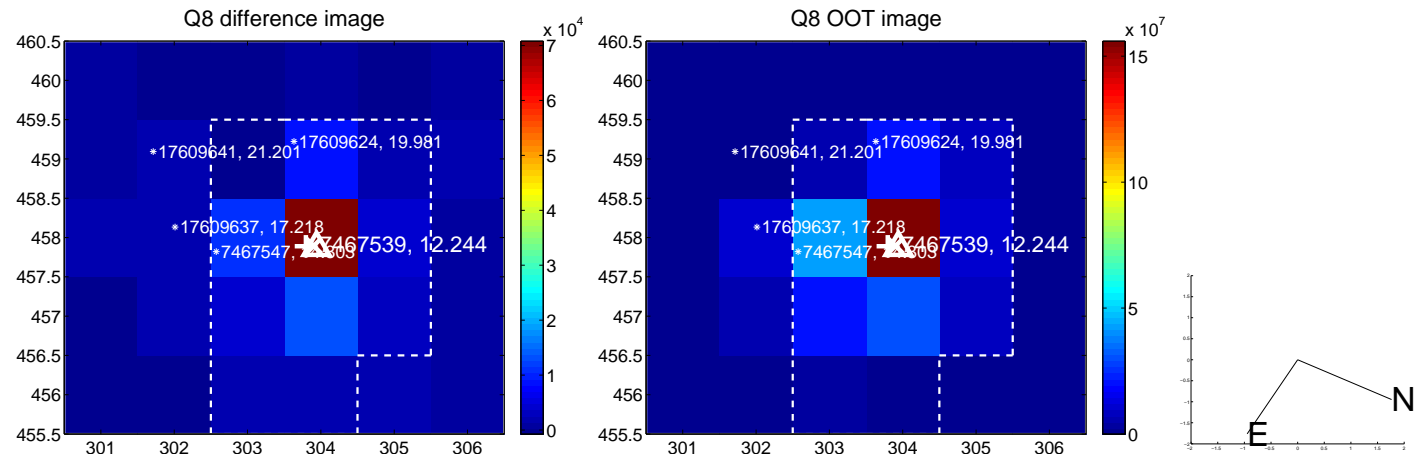
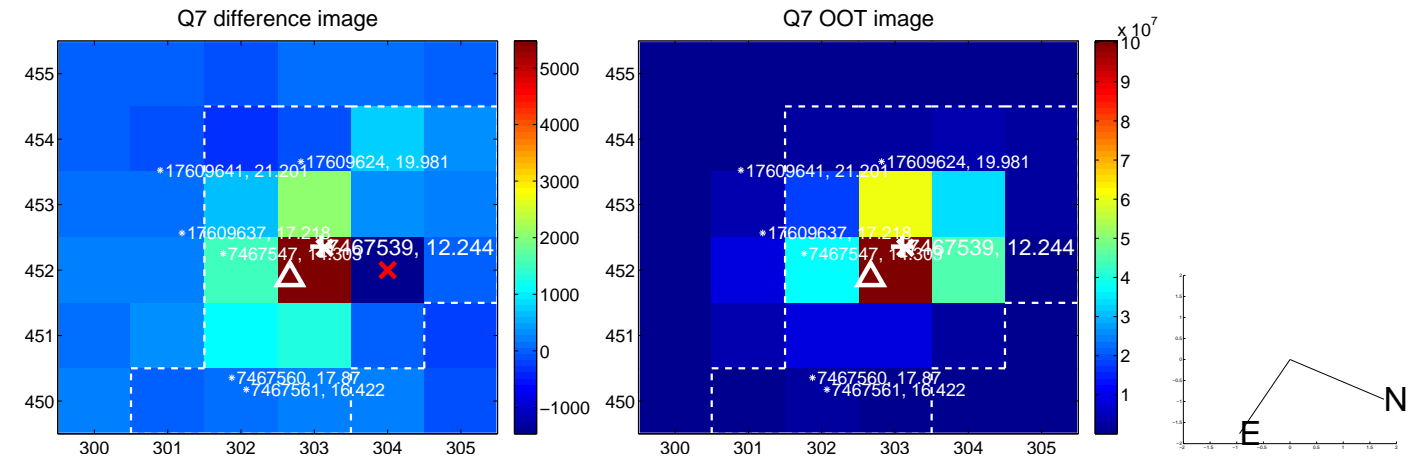
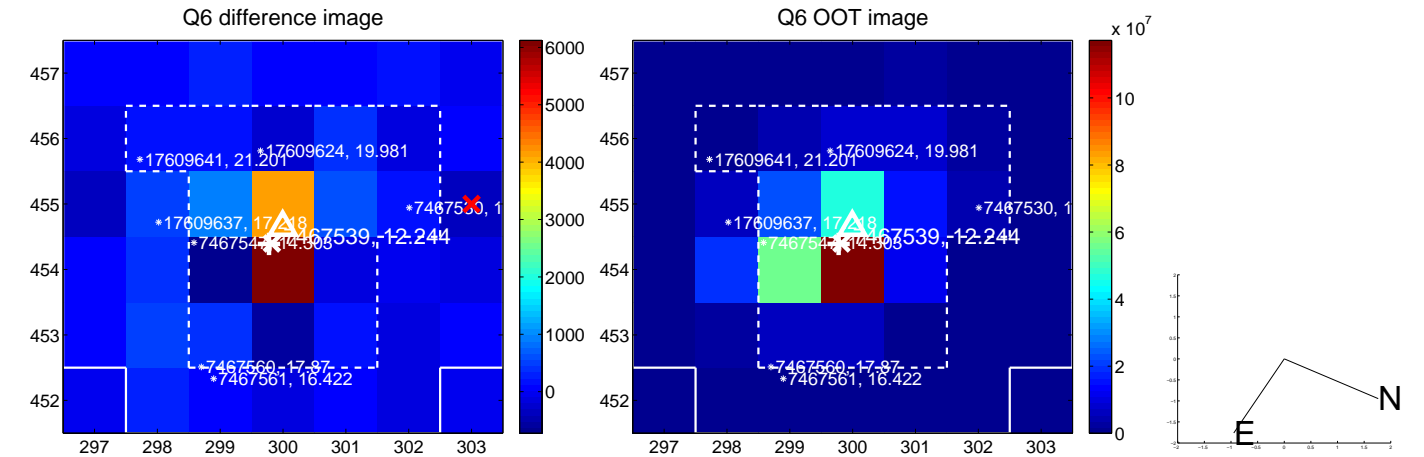
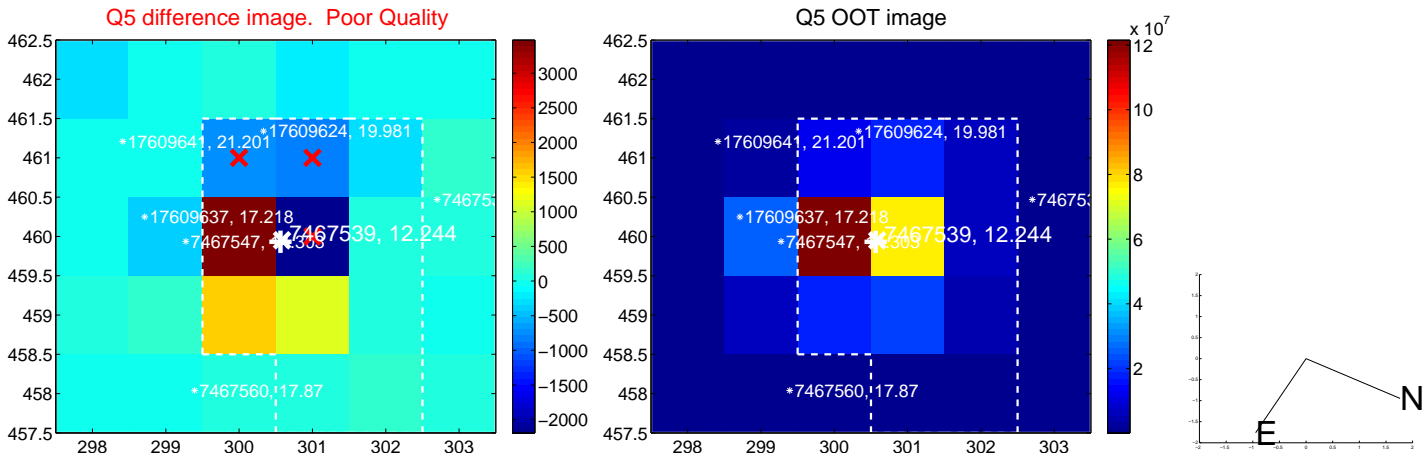


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

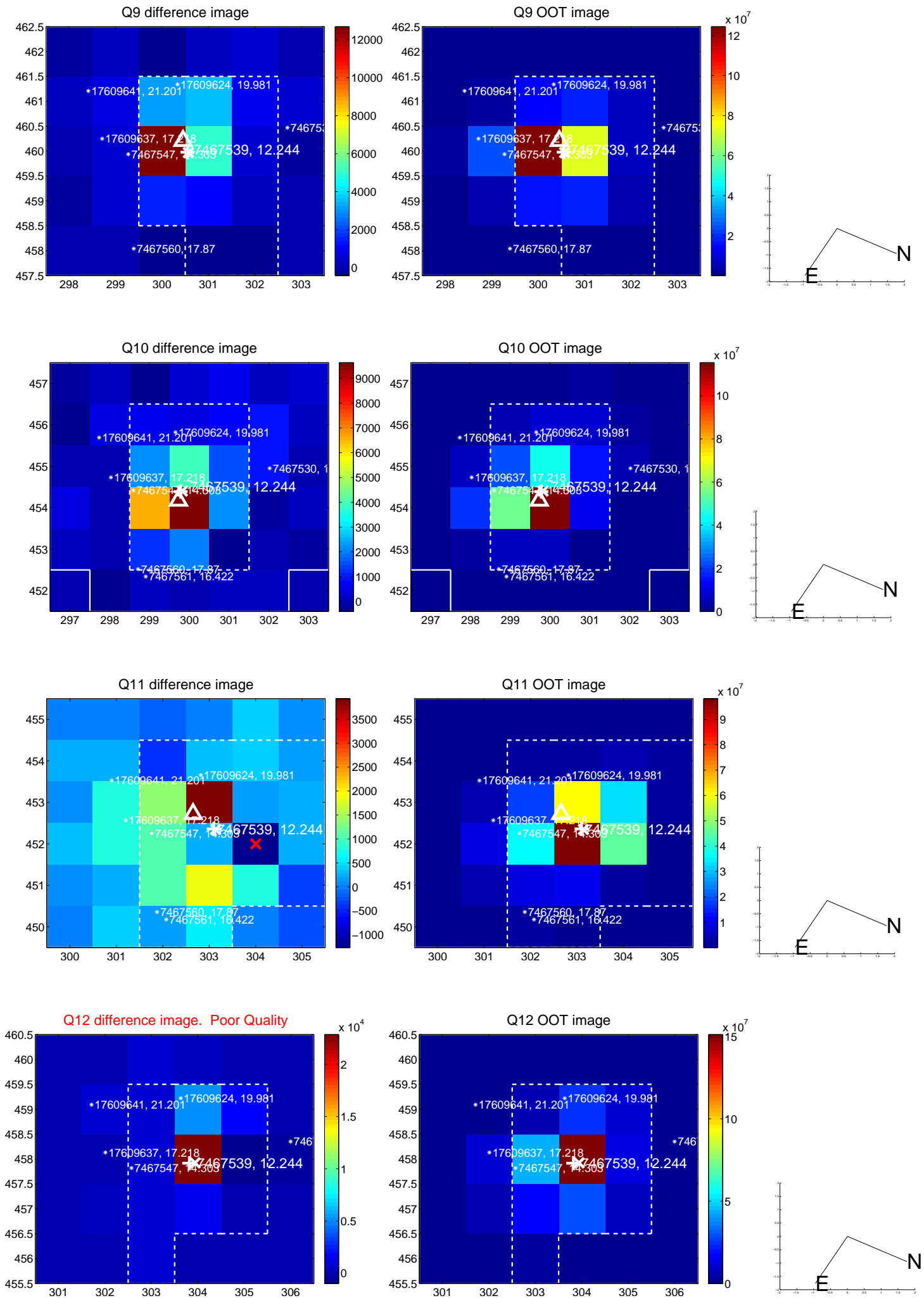


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

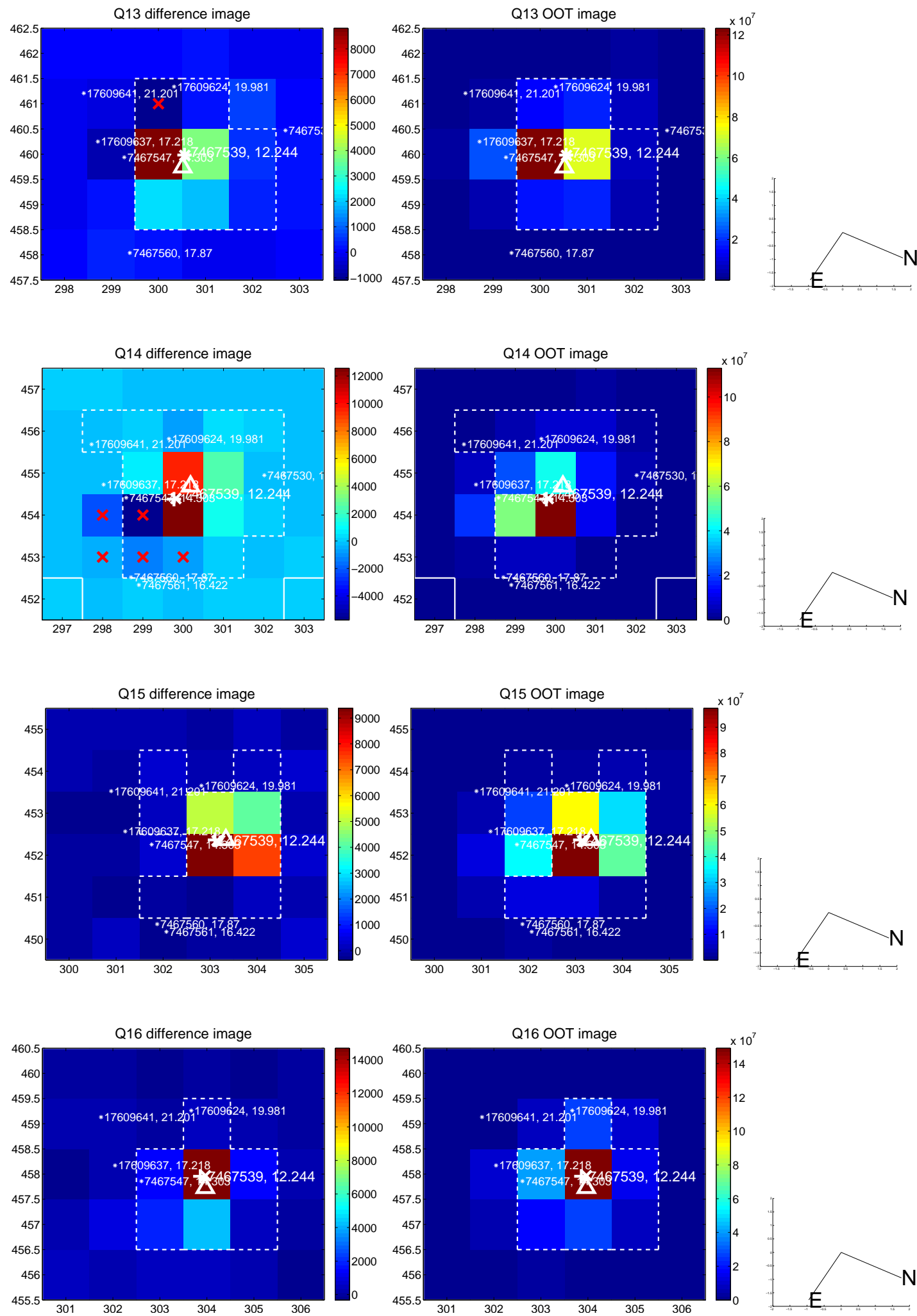




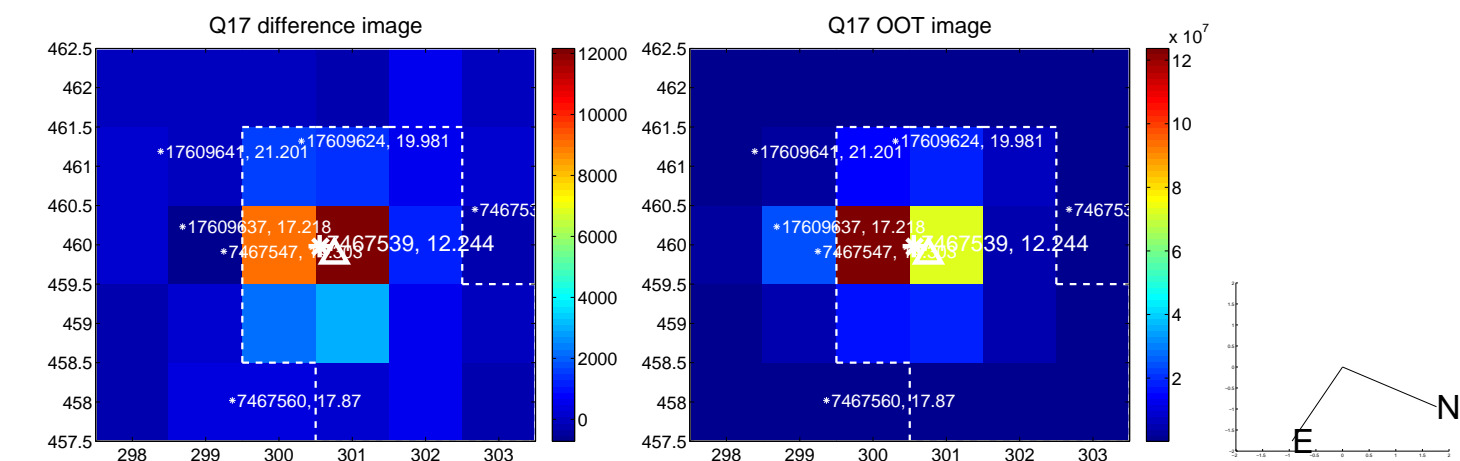
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



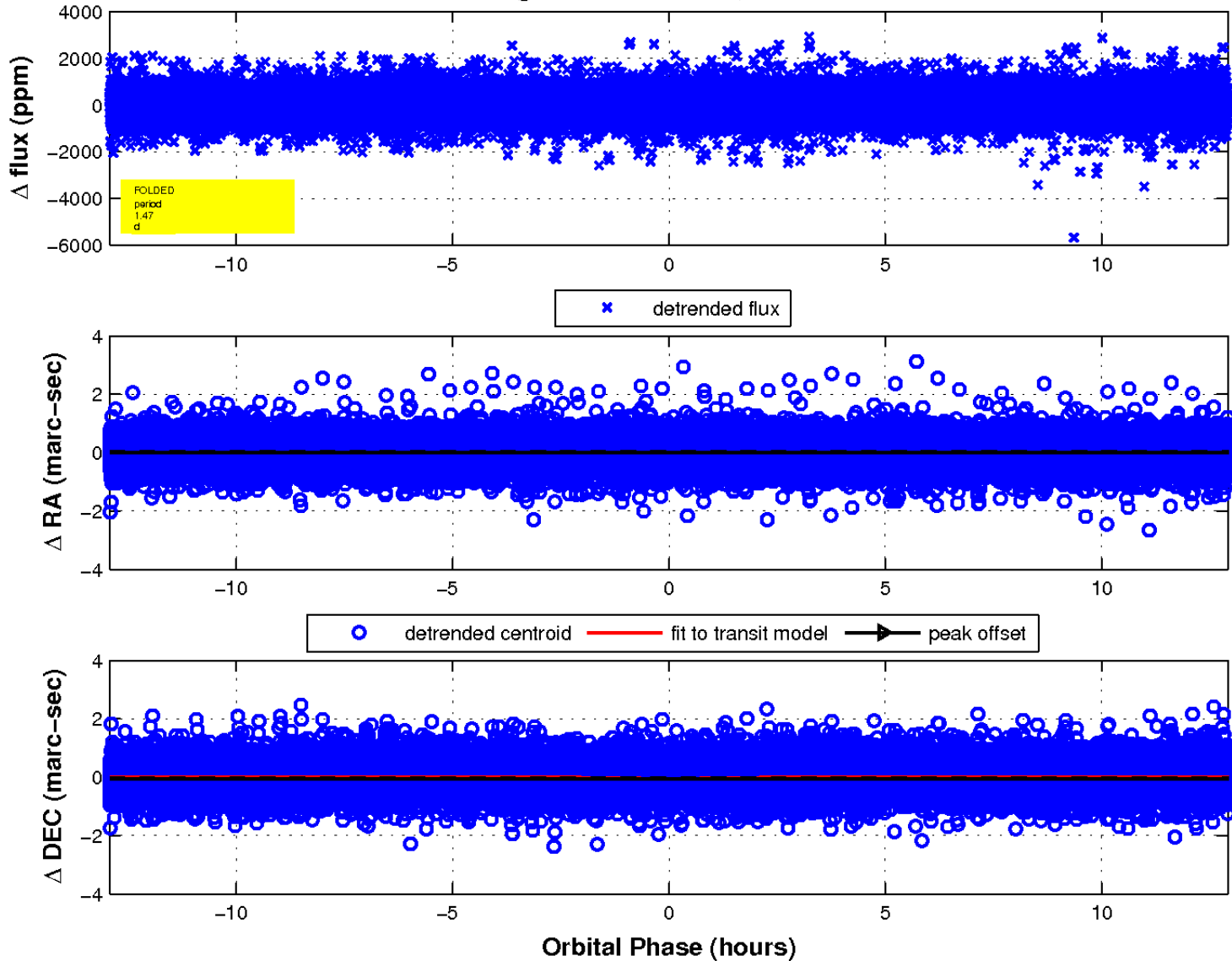
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

