

# KIC 007467185

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007467185-01	OBS	No	1.191550	132.017443	29.6	4.728	9.7	9.9	2.03	6865	1.33	12098.50
007467185-02	OBS	No	1.191546	132.588613	32.4	5.368	11.7	13.3	2.03	6865	1.19	12098.56

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007467185-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
007467185-02	OBS	FP	0.00	1	0	0	0	LPP_DV—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.

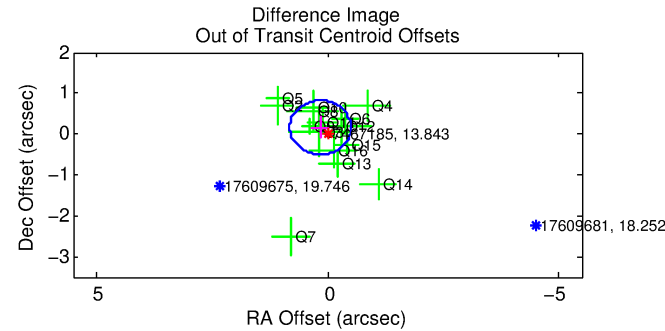
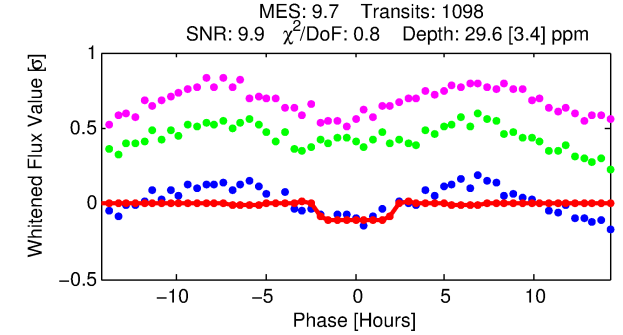
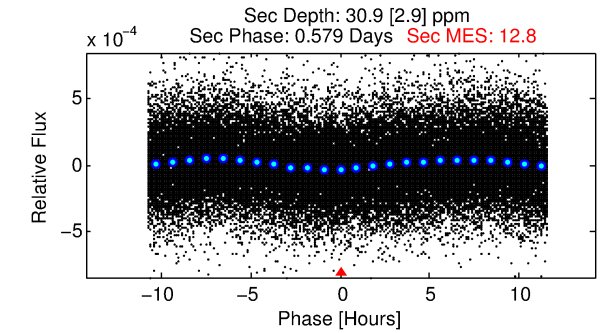
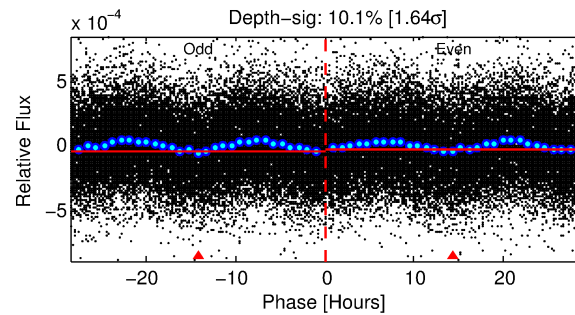
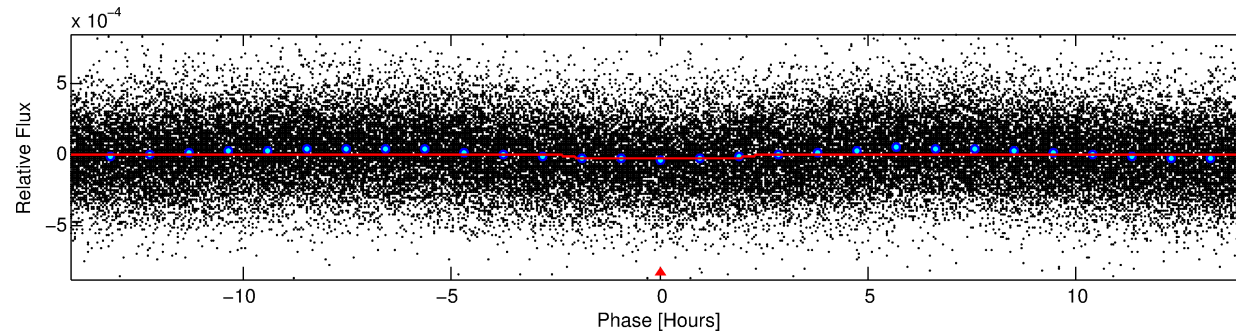
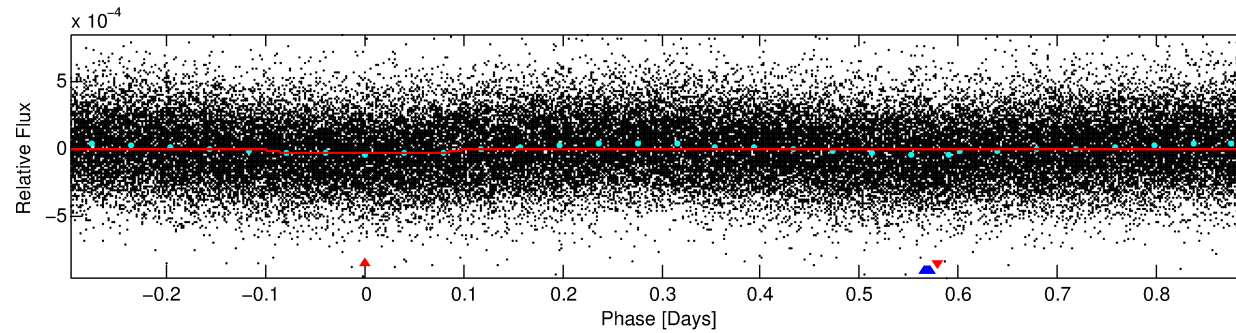
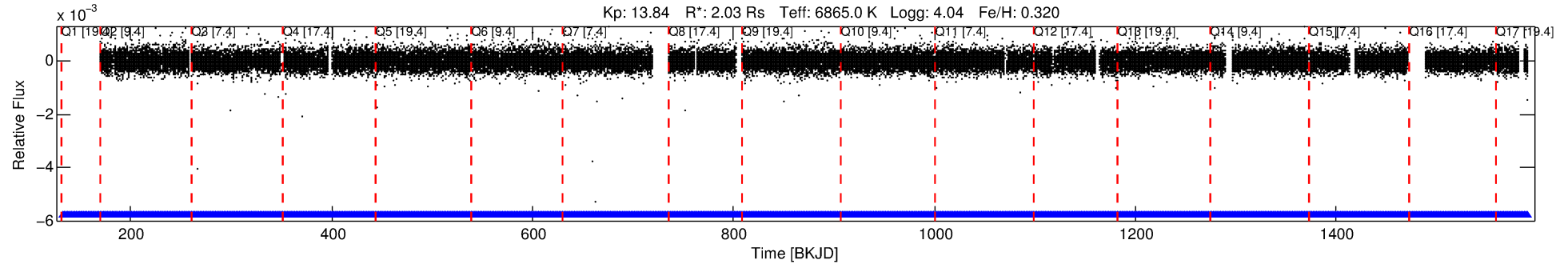
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007467185-01

No Significant Match Found

# DV One-Page Summary

KIC: 7467185 Candidate: 1 of 2 Period: 1.192 d



## DV Fit Results:

Period = 1.19155 [0.00001] d  
Epoch = 132.0174 [0.0048] BKJD  
Rp/R\* = 0.0060 [0.0019]  
a/R\* = 1.19 [0.68]  
b = 0.94 [0.25]  
Seff = 12098.50 [4583.74]  
Teq = 2674 [253] K  
Rp = 1.33 [0.58] Re  
a = 0.0261 [0.0063] AU  
Ag = 6.49 [4.69] [1.17 $\sigma$ ]  
Teffp = 6599 [1087] K [3.52 $\sigma$ ]

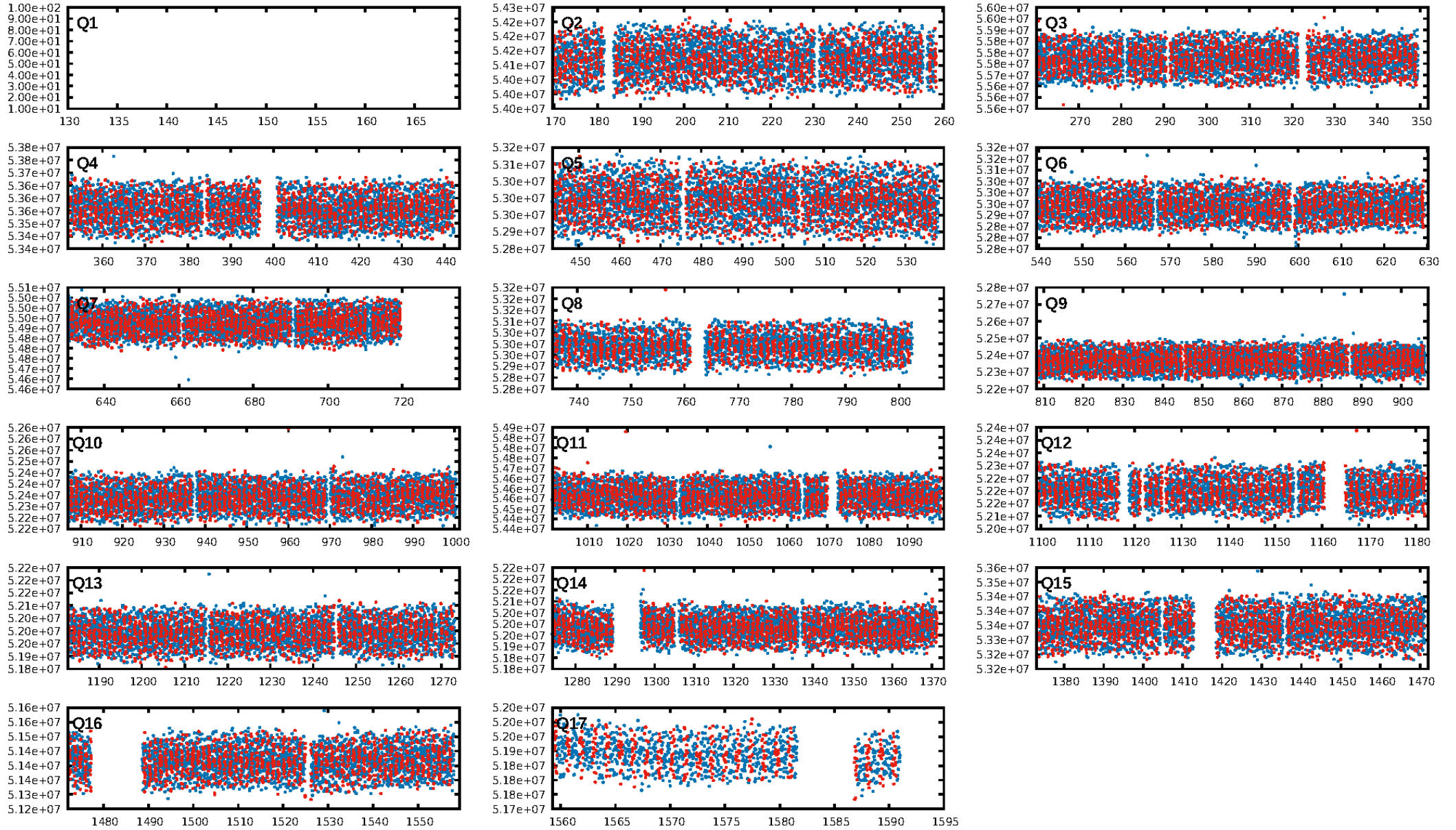
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1075/1075]  
GhostDiagnostic-chr: 3.841  
Centroid-sig: 0.2%  
Centroid-so: 2.263 arcsec [2.21 $\sigma$ ]  
OotOffset-rm: 0.224 arcsec [1.02 $\sigma$ ]  
KicOffset-rm: 0.219 arcsec [1.08 $\sigma$ ]  
OotOffset-st: 4/4/4/3 [15]  
KicOffset-st: 4/4/4/3 [15]  
DiffImageQuality-fgm: 1.00 [15/15]  
DiffImageOverlap-fno: 1.00 [16/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:03:46 Z

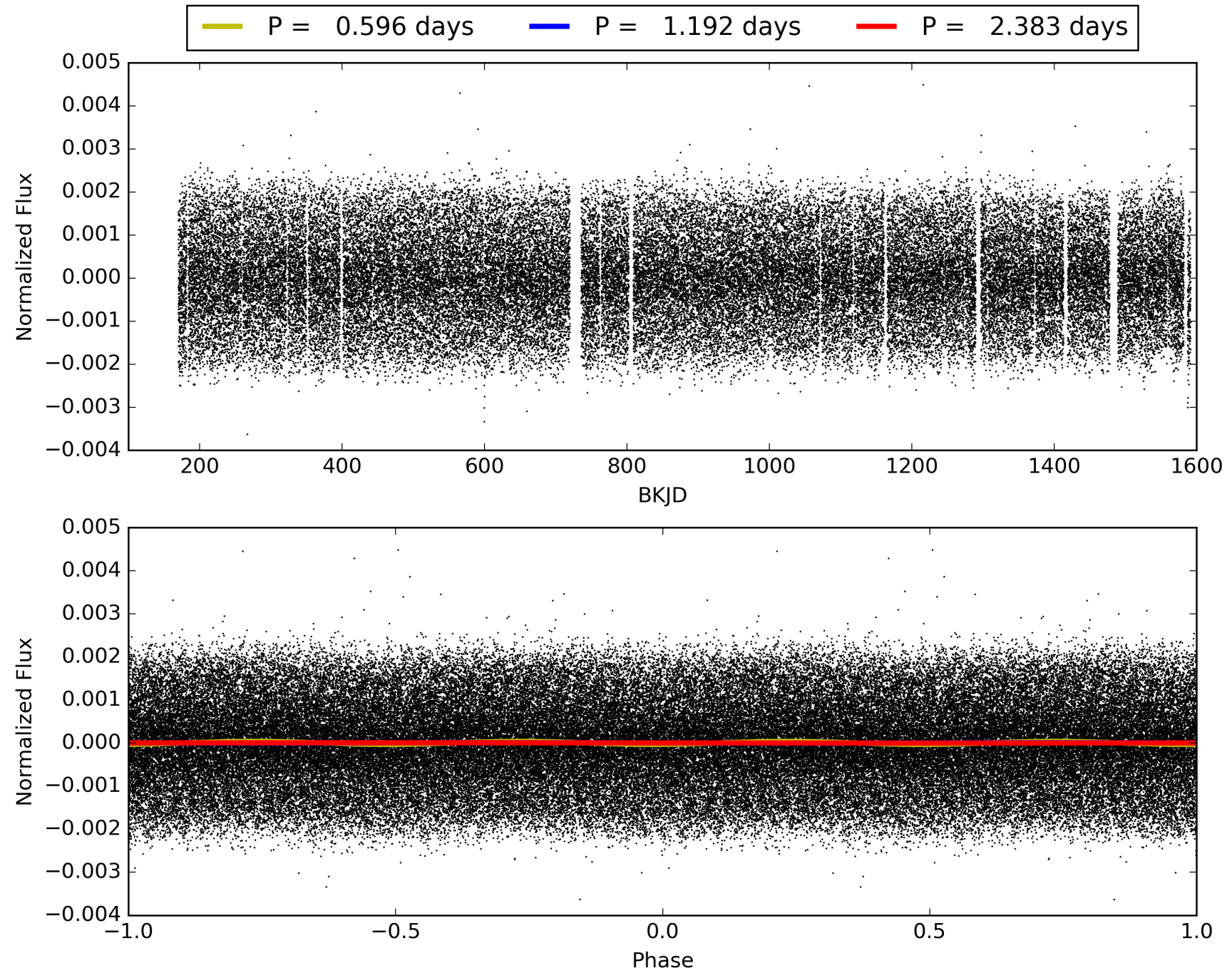
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007467185-01, PDC Light Curves



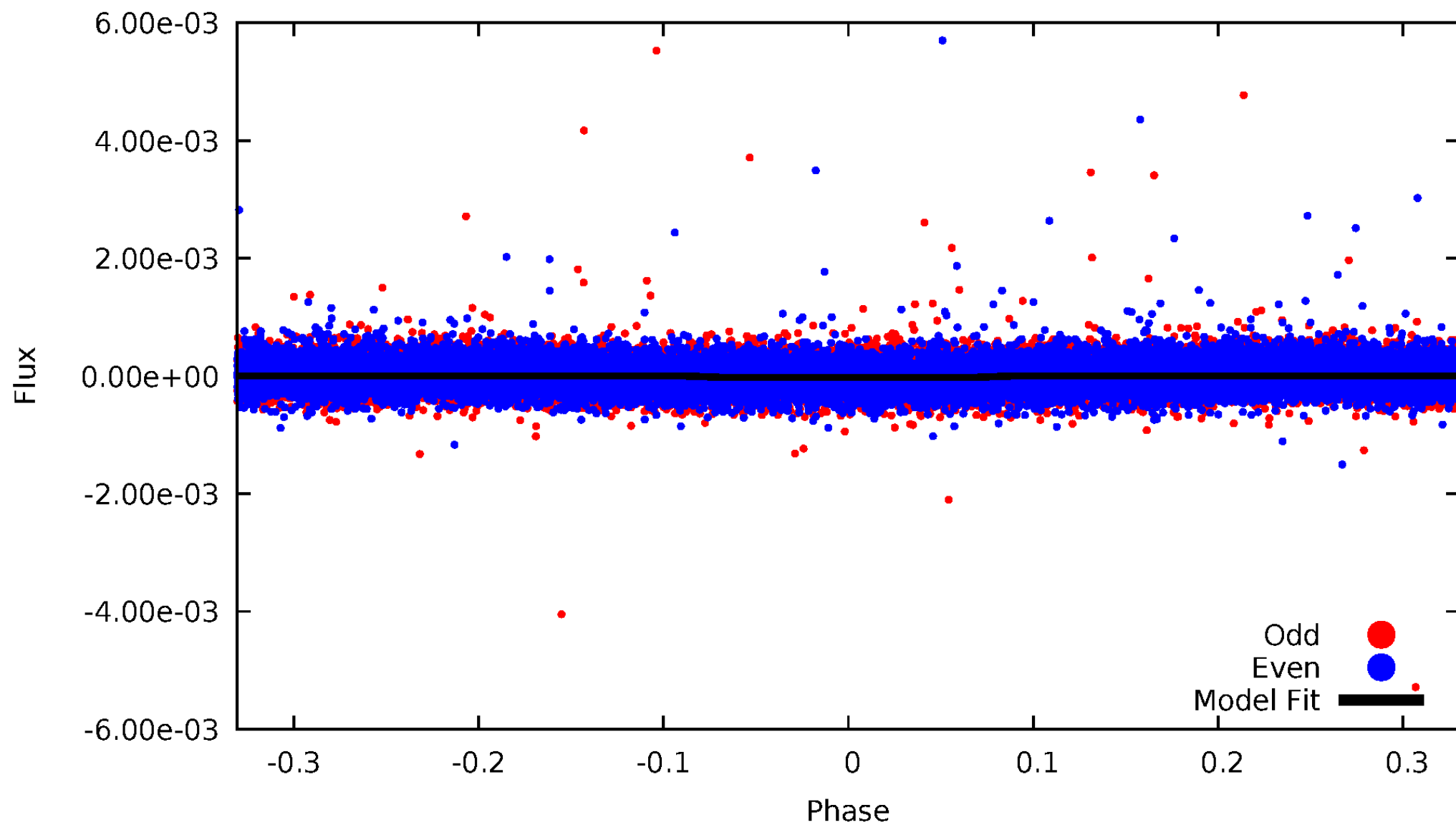


TCE 007467185-01



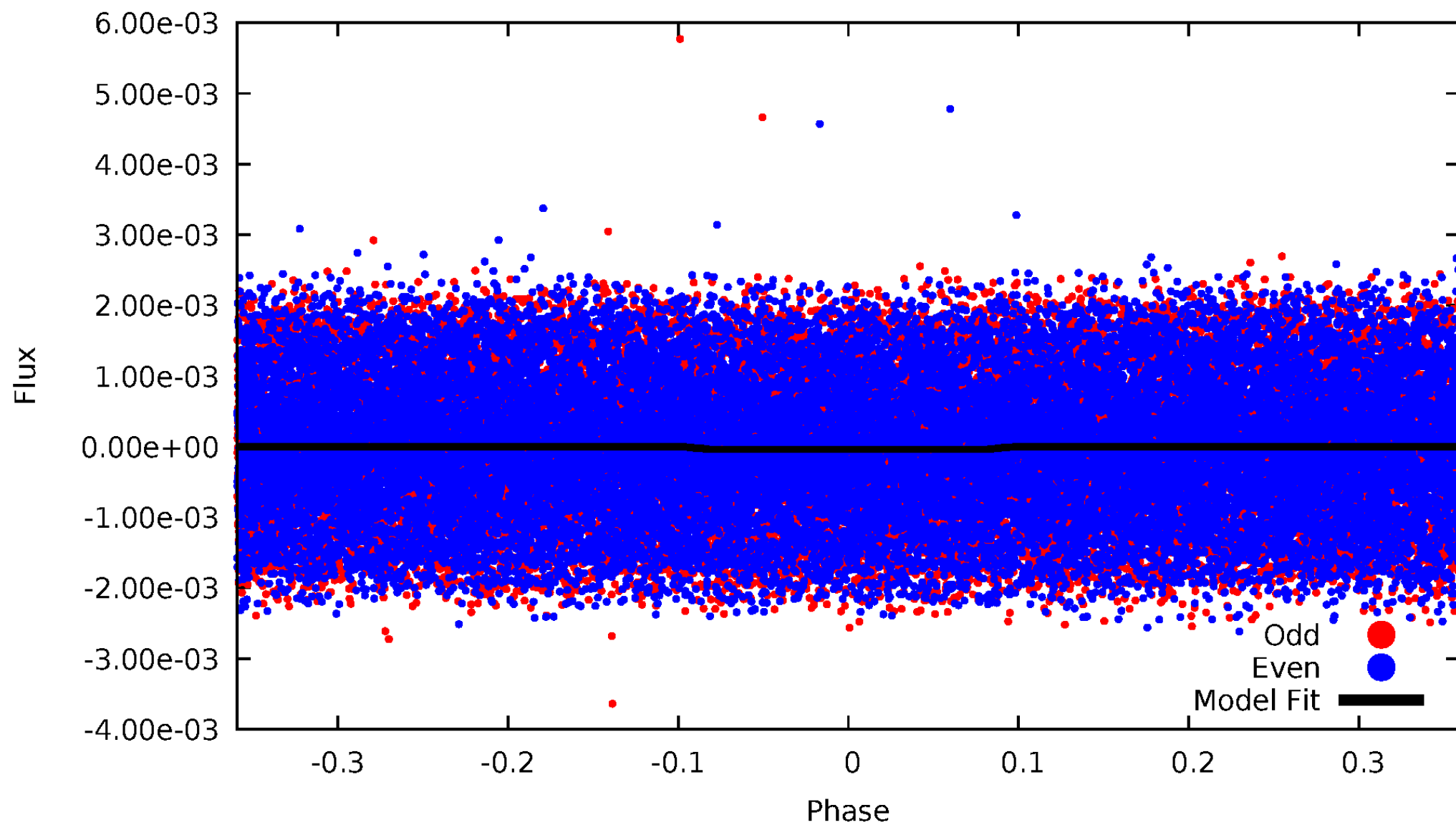
# DV Odd/Even

TCE 007467185-01

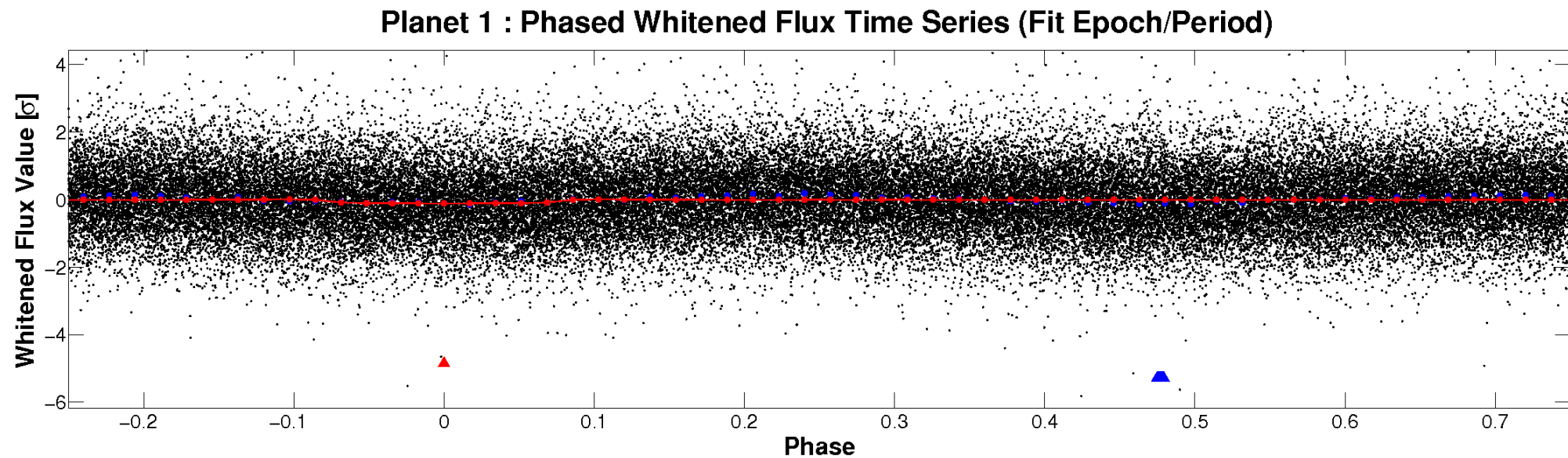
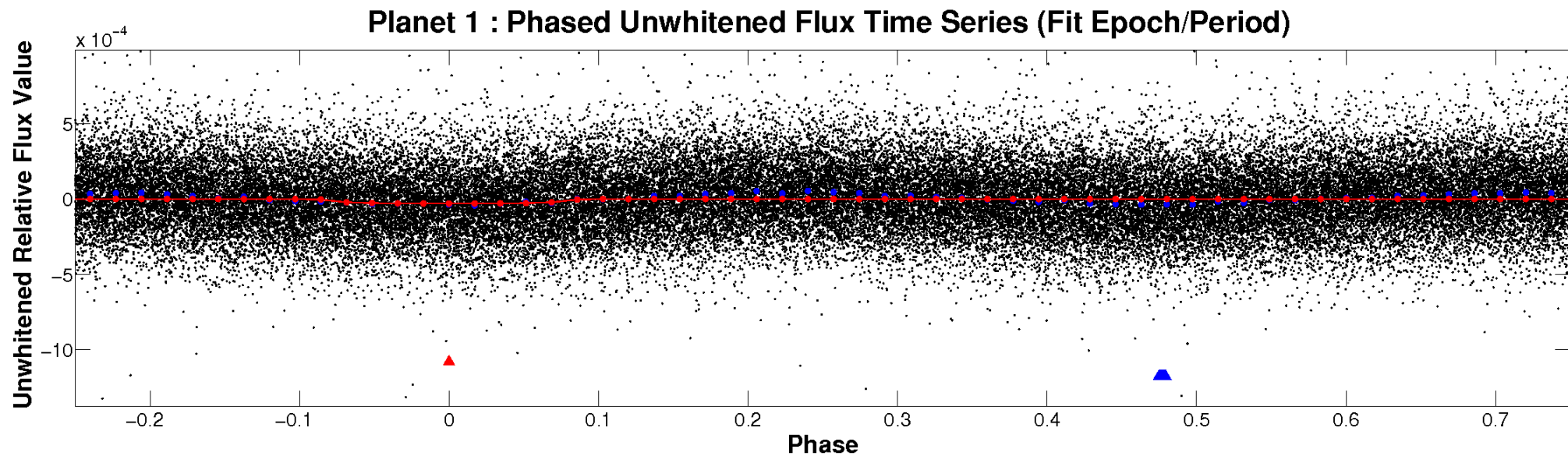


# ALT Odd/Even

TCE 007467185-01



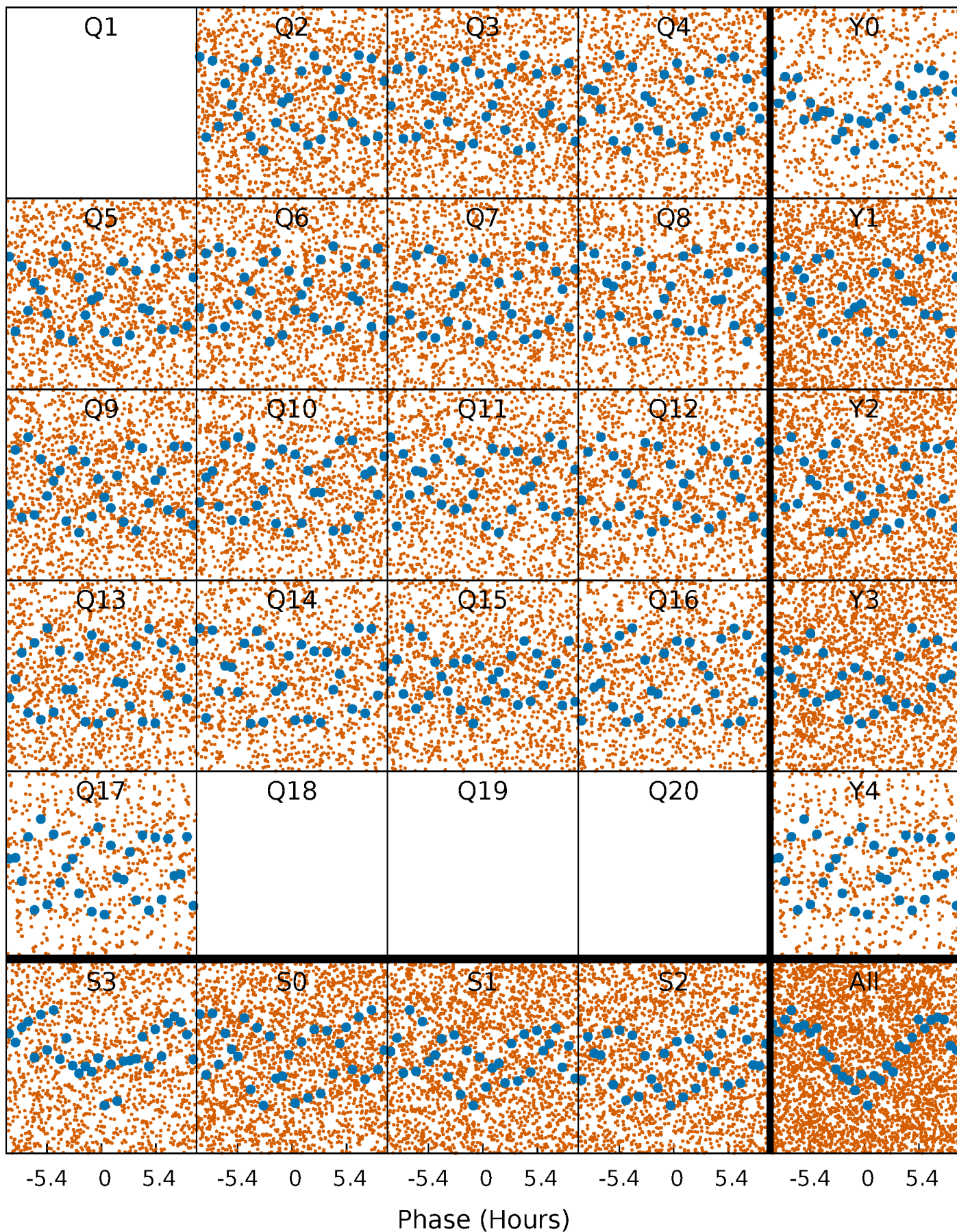
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

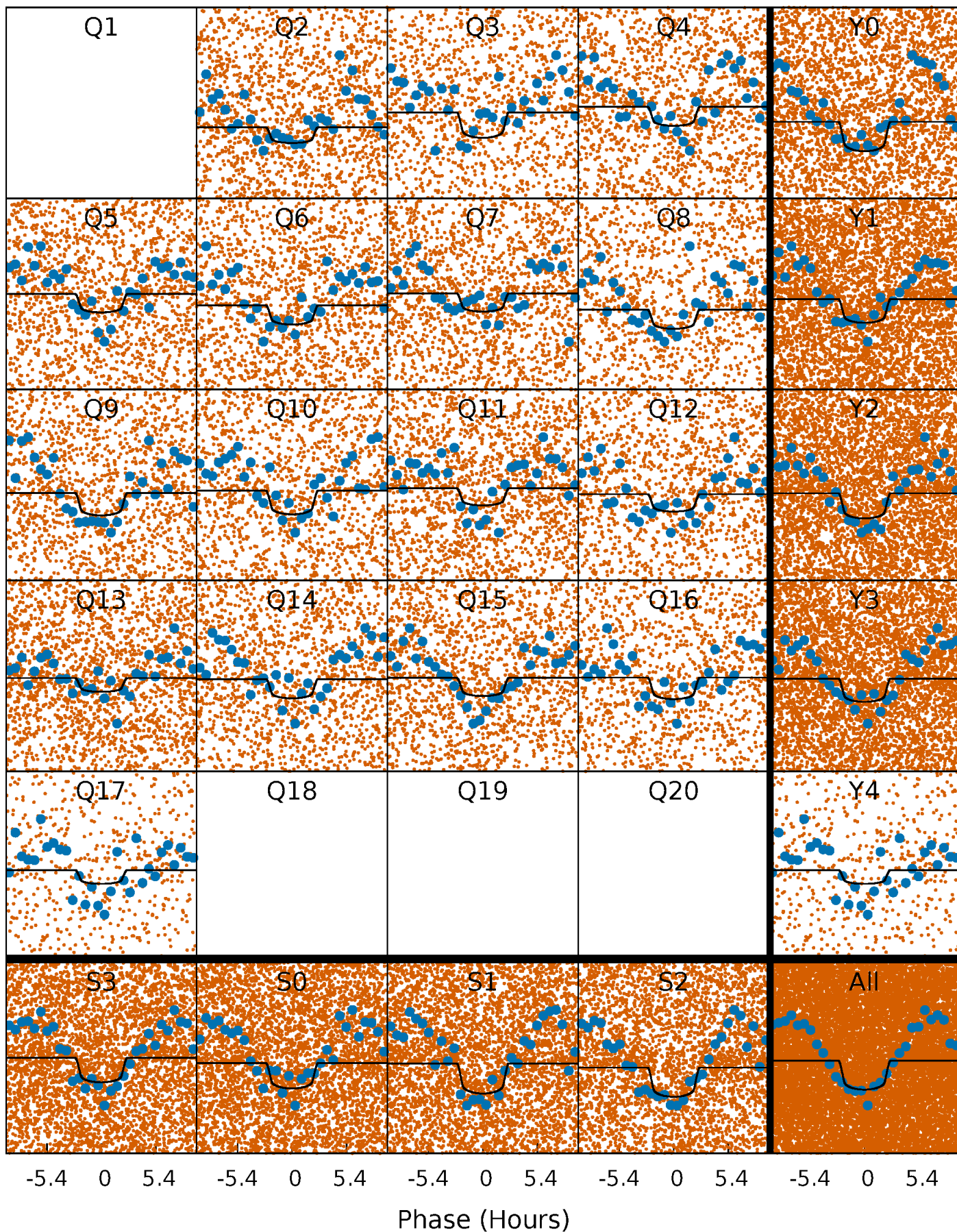
TCE 007467185-01 P= 1.191550 Days  $T_0=132.017443$  (BKJD)





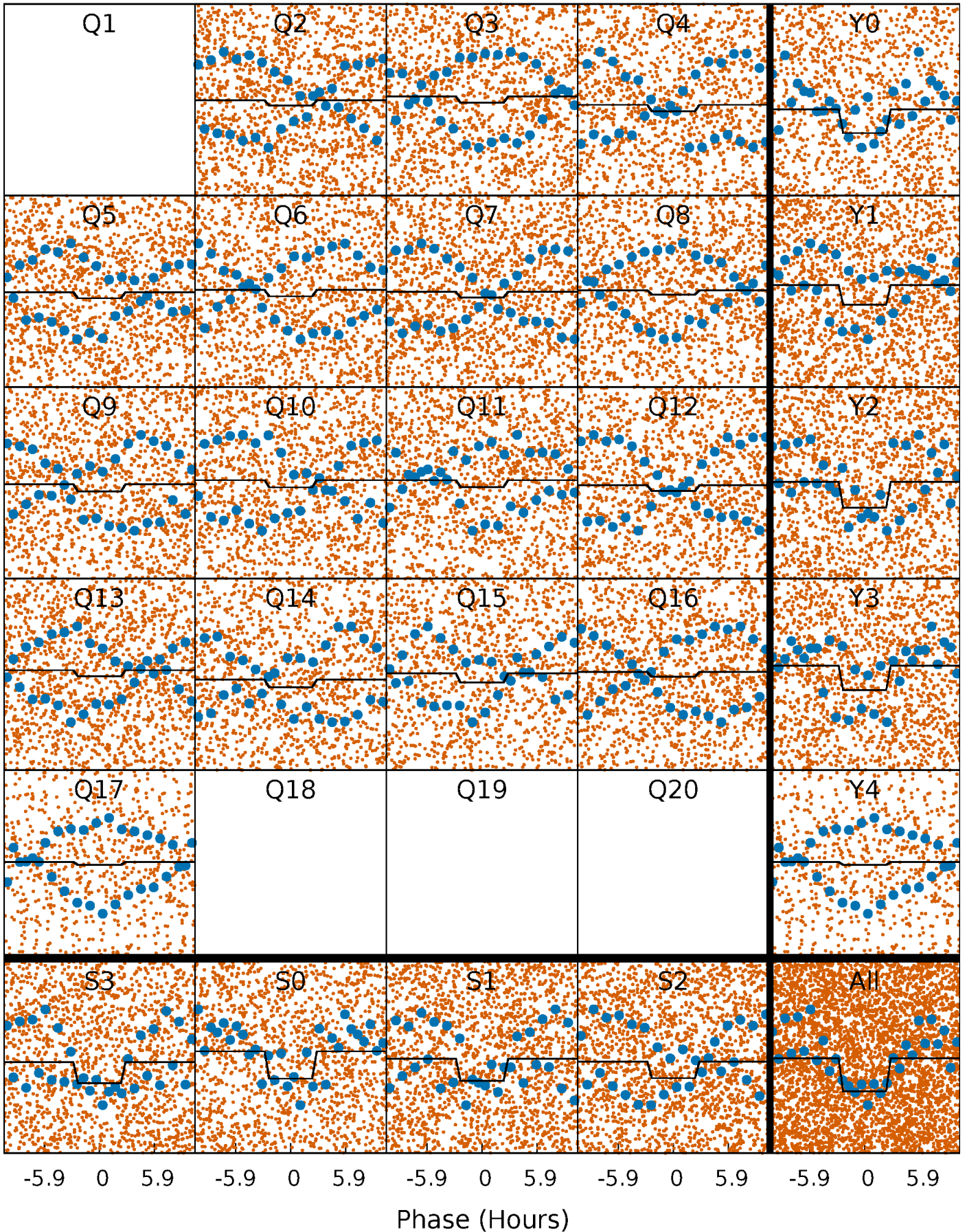
# DV Quarter-Phased Transit Curves

TCE 007467185-01 P= 1.191550 Days  $T_0=132.017443$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007467185-01 P= 1.191572 Days  $T_0=131.995365$  (BKJD)

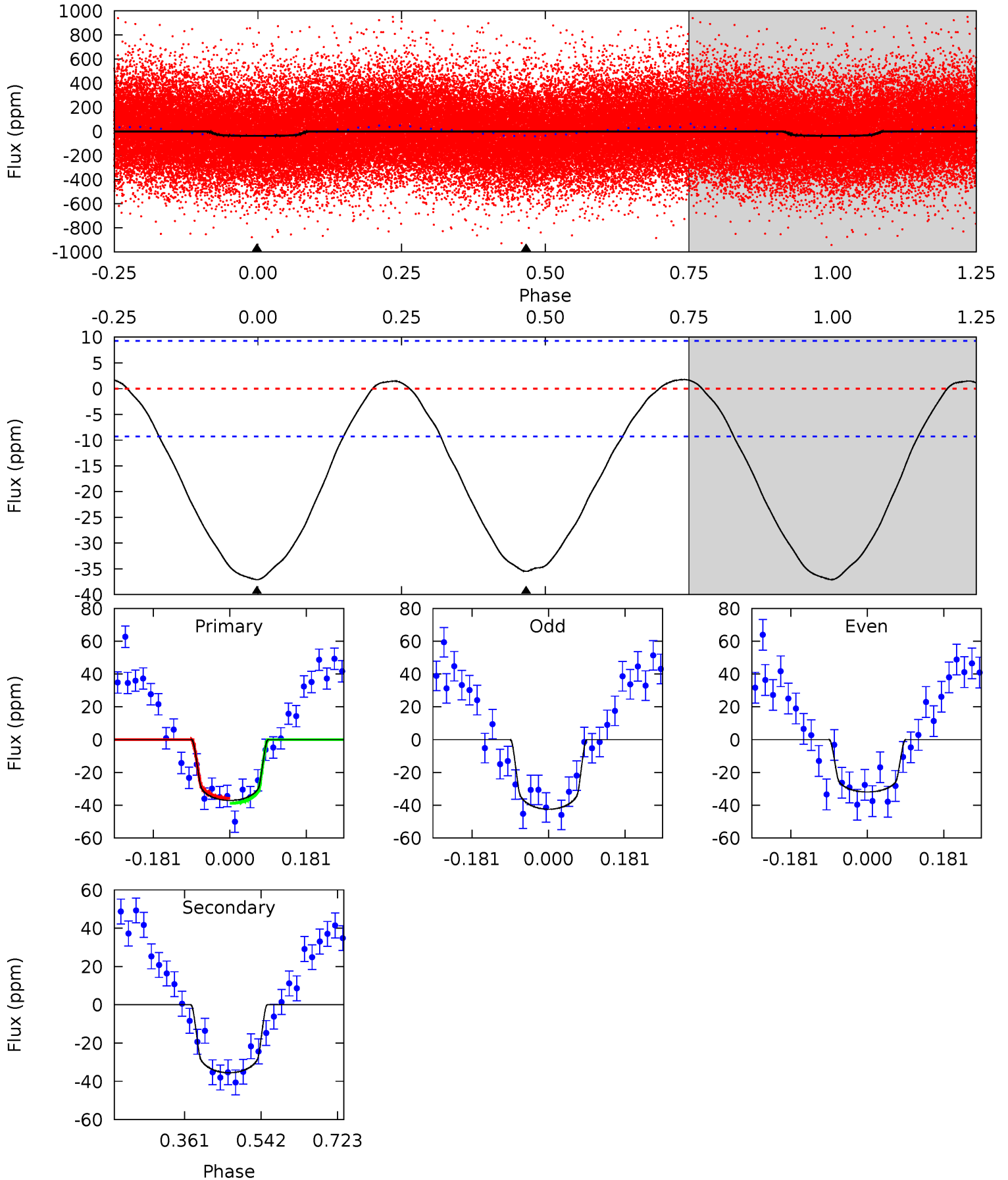




# DV Model-Shift Uniqueness Test

007467185-01, P = 1.191550 Days, E = 132.017443 Days

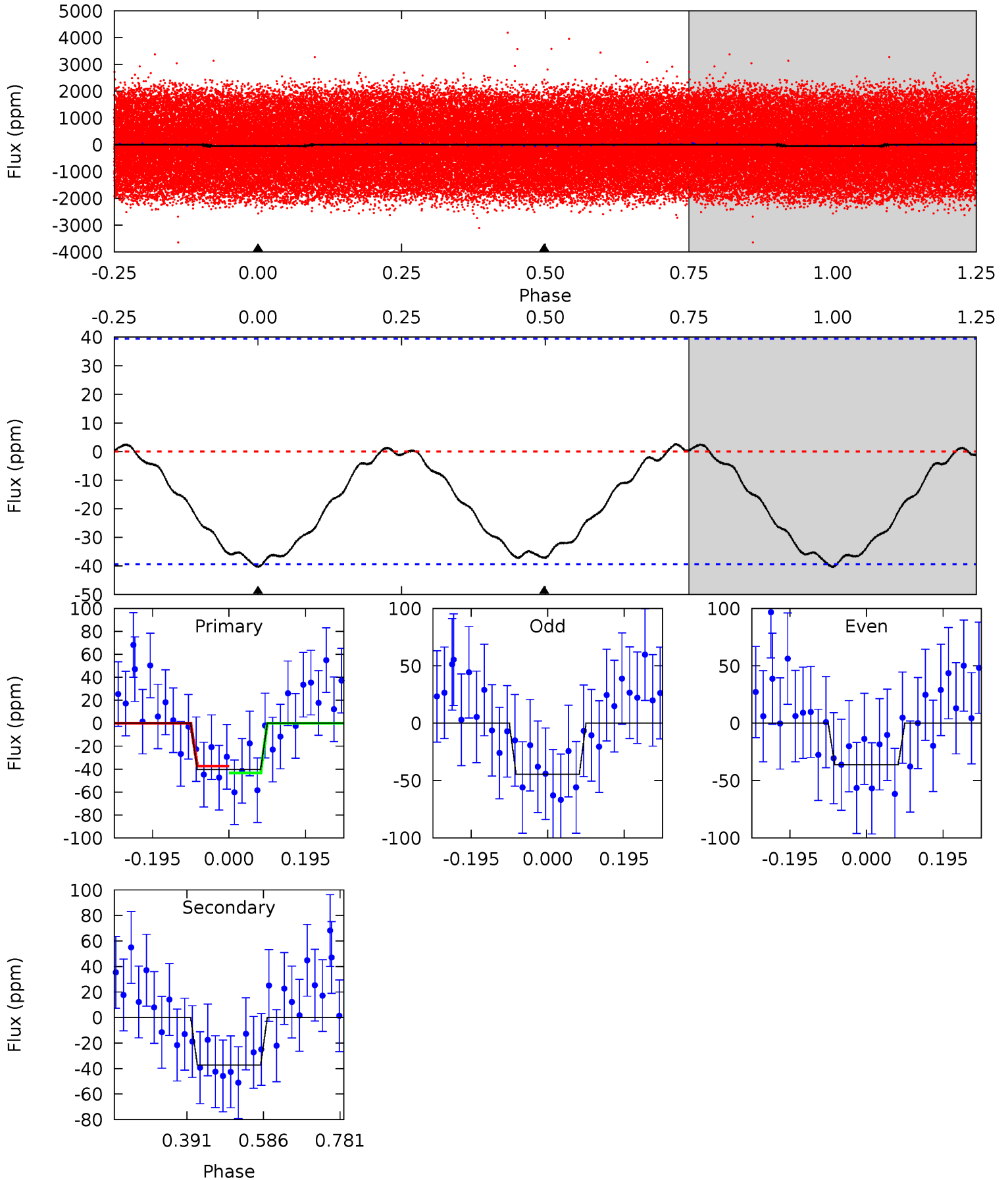
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	17.0	0	0	4.44	1.34	1.09	17.8	17.8	17.0	17.0	2.52	0.93	0.05	0.73



# Alt Model-Shift Uniqueness Test

007467185-01, P = 1.191572 Days, E = 131.995365 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
4.53	4.18	0	0	4.42	1.29	0.23	4.53	4.53	4.18	4.18	0.45	1.08	0.06	0.33





### Stellar Parameters For KIC 007467185

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6865^{+191}_{-287}$	$4.043^{+0.180}_{-0.180}$	$0.320^{+0.100}_{-0.350}$	$2.033^{+0.604}_{-0.549}$	$1.662^{+0.201}_{-0.301}$	$0.279^{+0.291}_{-0.144}$
	+3%/-4%	+4%/-4%	+31%/-109%	+30%/-27%	+12%/-18%	+105%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 007467185-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-36 \pm 2$	$1.32^{+0.50}_{-0.44}$	$3724^{+289}_{-257}$	$6698^{+1750}_{-937}$	$7.662^{+9.085}_{-3.635}$
Alt.	$-37 \pm 9$	$1.40^{+0.51}_{-0.43}$	$3734^{+278}_{-275}$	$6567^{+1502}_{-876}$	$6.907^{+7.991}_{-3.222}$

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

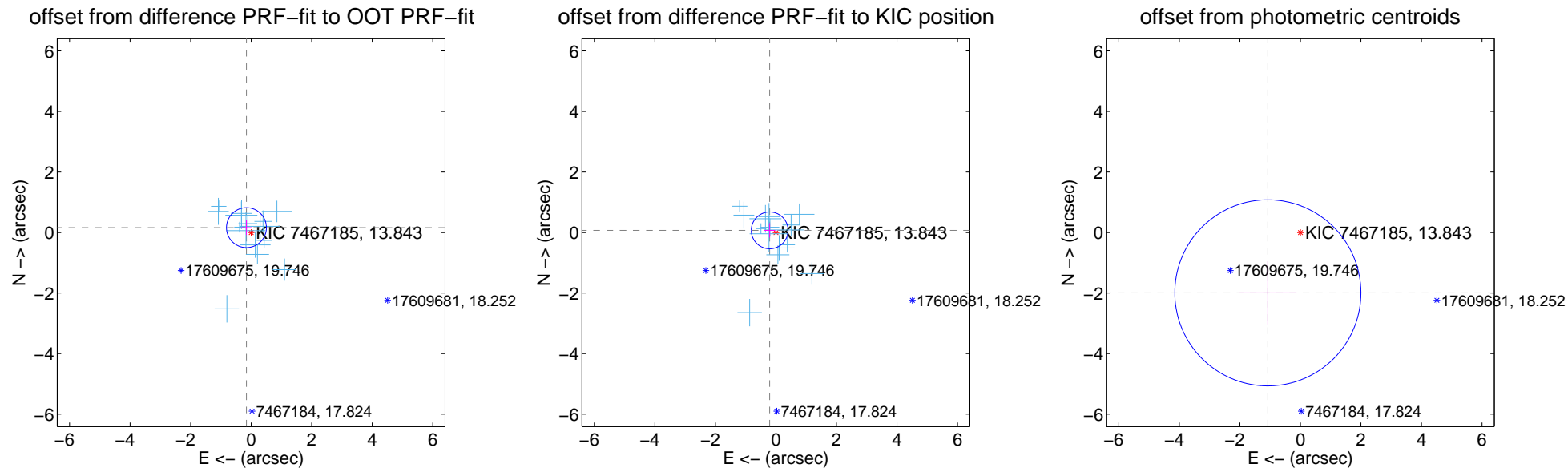
## DV Centroid Data

Supplemental centroid analysis for 007467185-01. Kepler magnitude: 13.84. Transit SNR 9.86

There are 15 quarters with good PRF difference image offsets

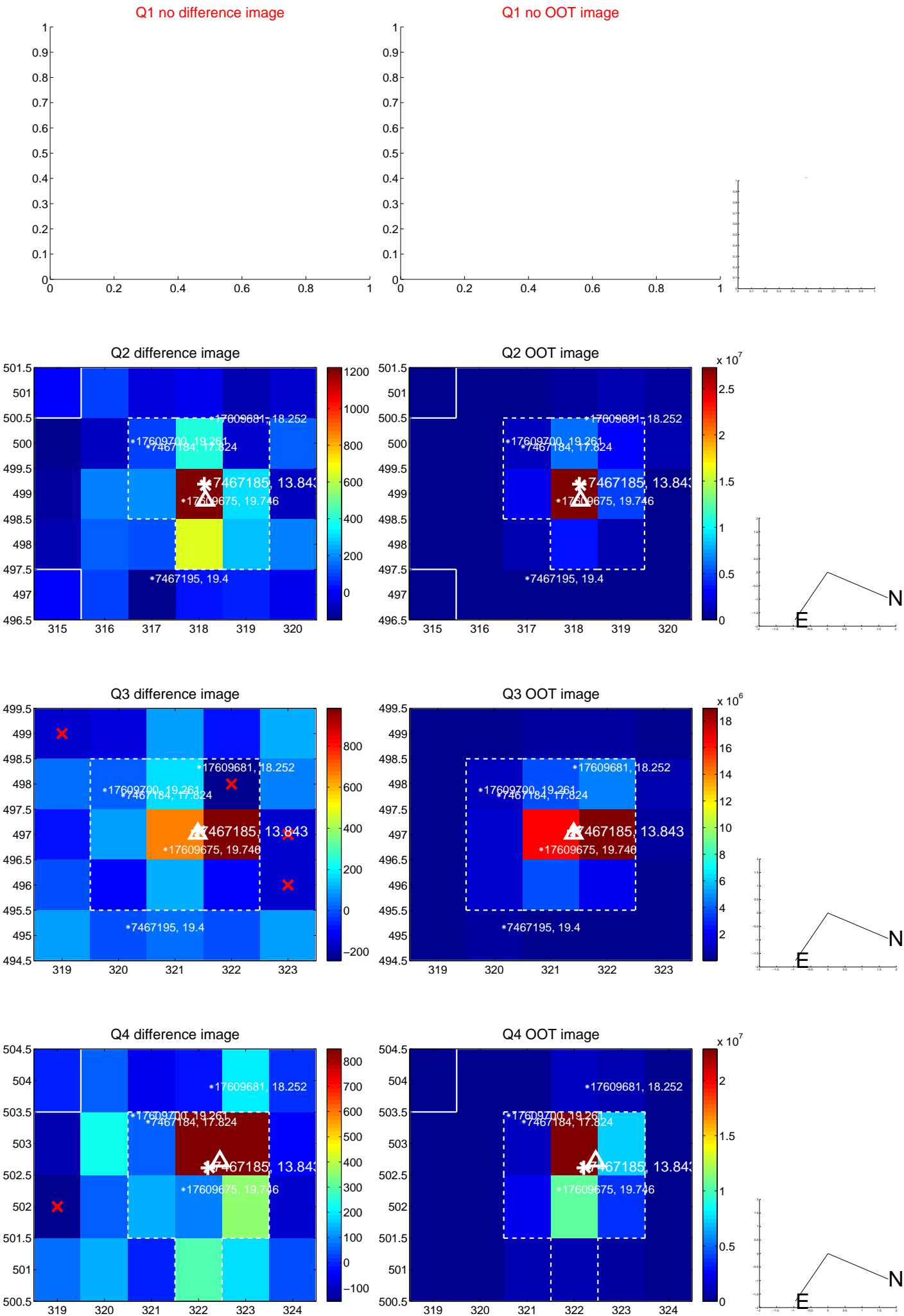
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.224 \pm 0.220$	1.02	$0.156 \pm 0.178$	$0.162 \pm 0.242$
PRF-fit source offset from KIC position	$0.219 \pm 0.203$	1.08	$0.207 \pm 0.183$	$0.072 \pm 0.237$
photometric centroid source offset	$2.26 \pm 1.02$	2.21	$1.08 \pm 0.95$	$-1.99 \pm 1.04$

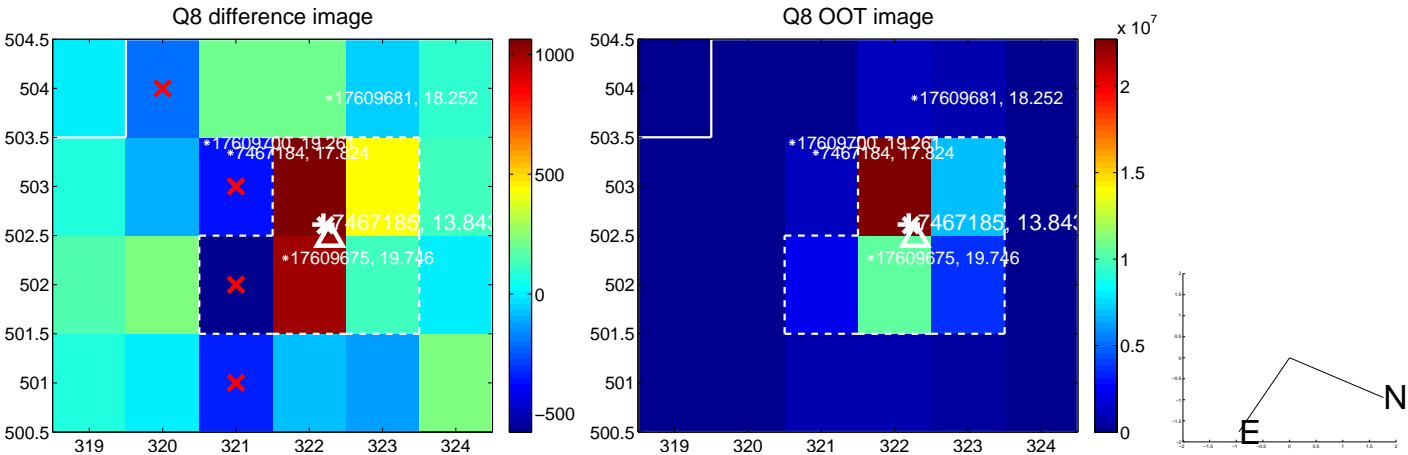
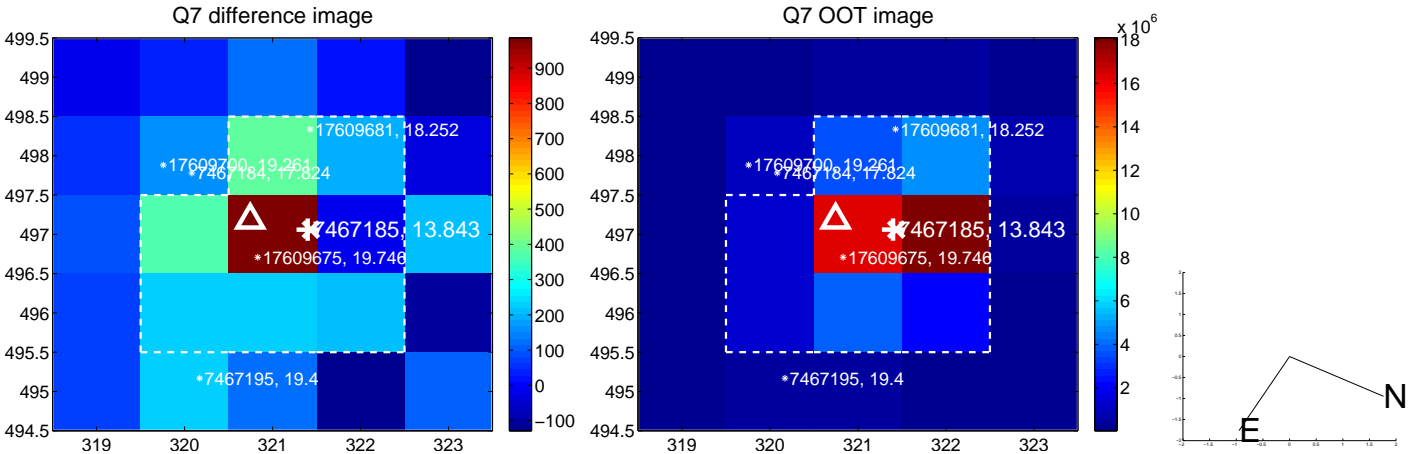
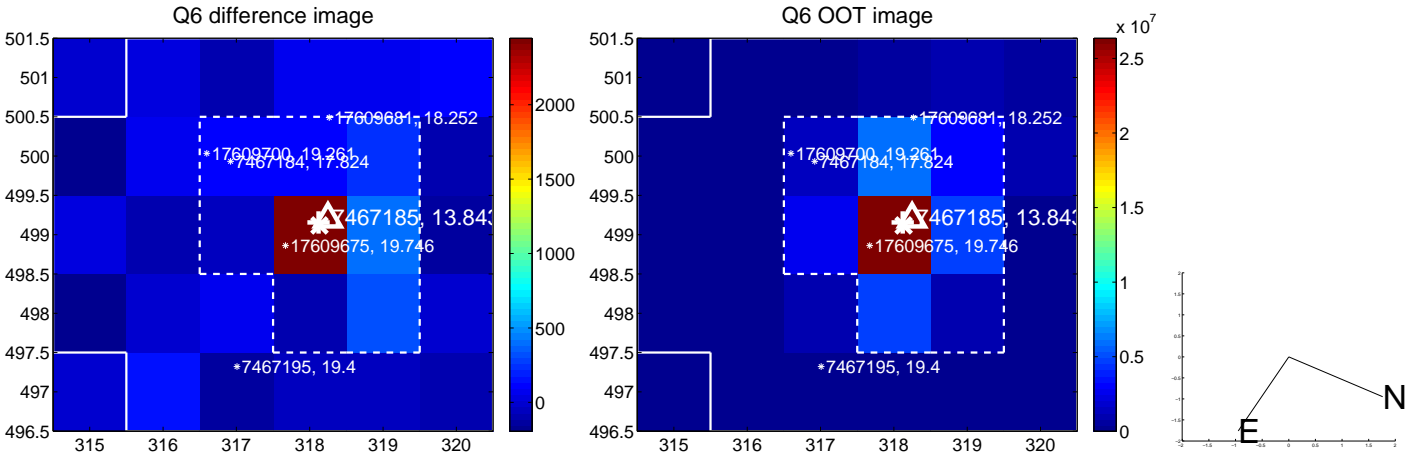
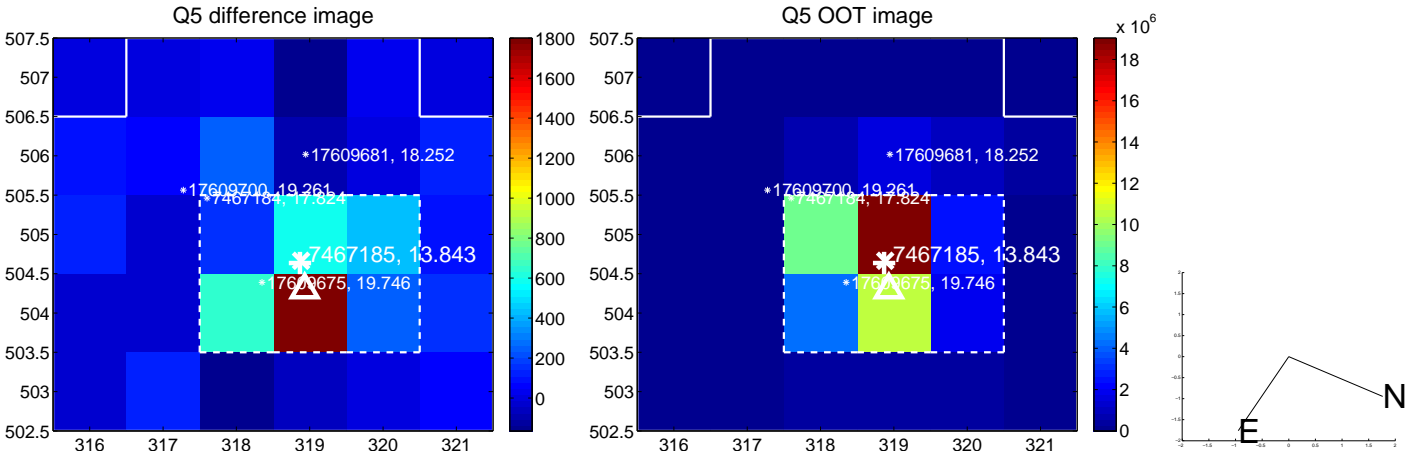


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

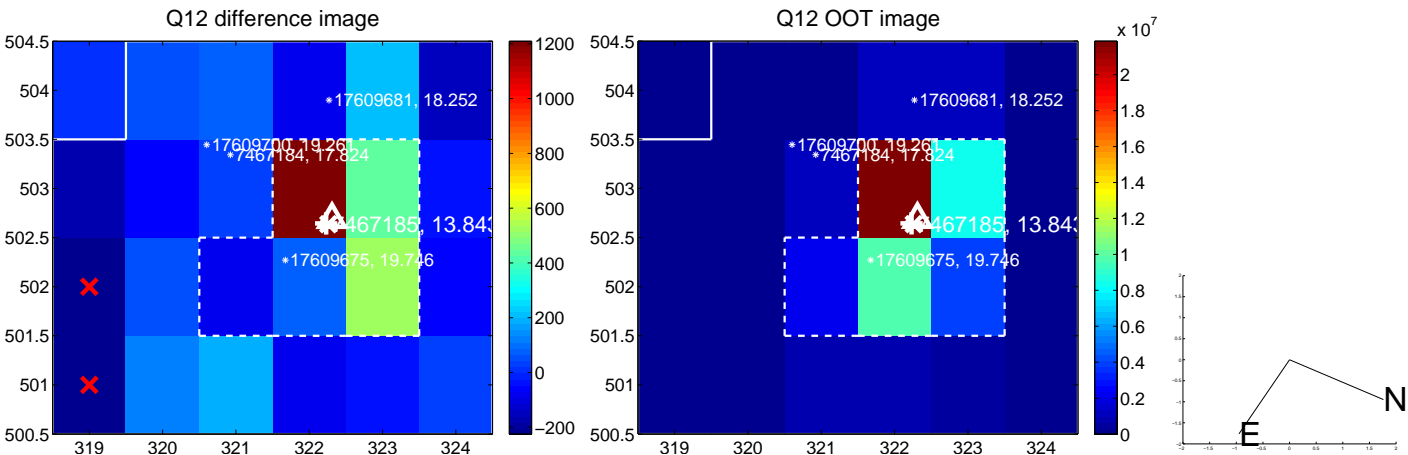
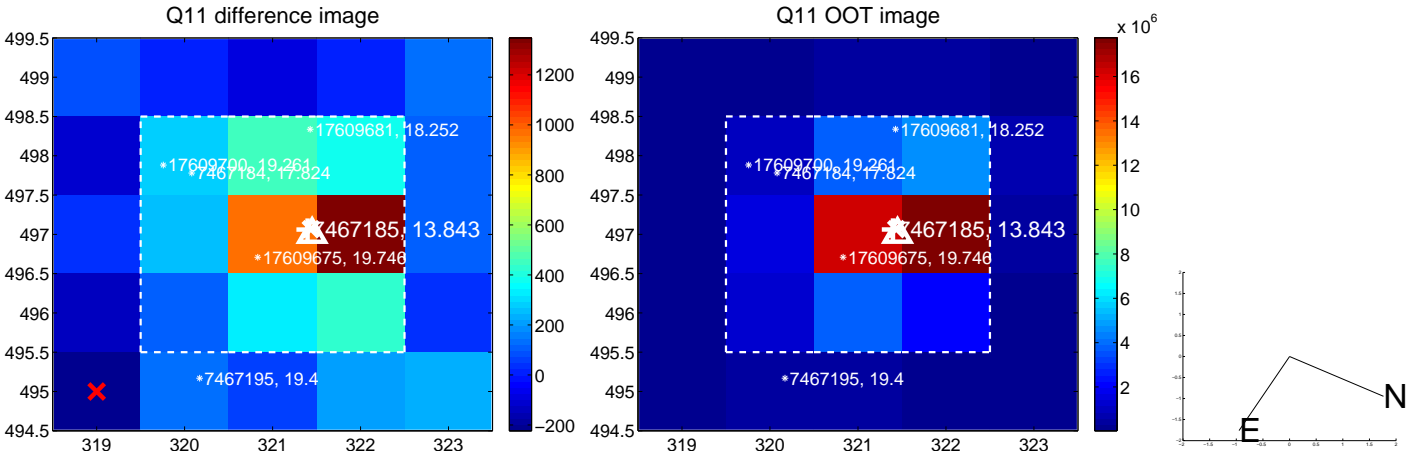
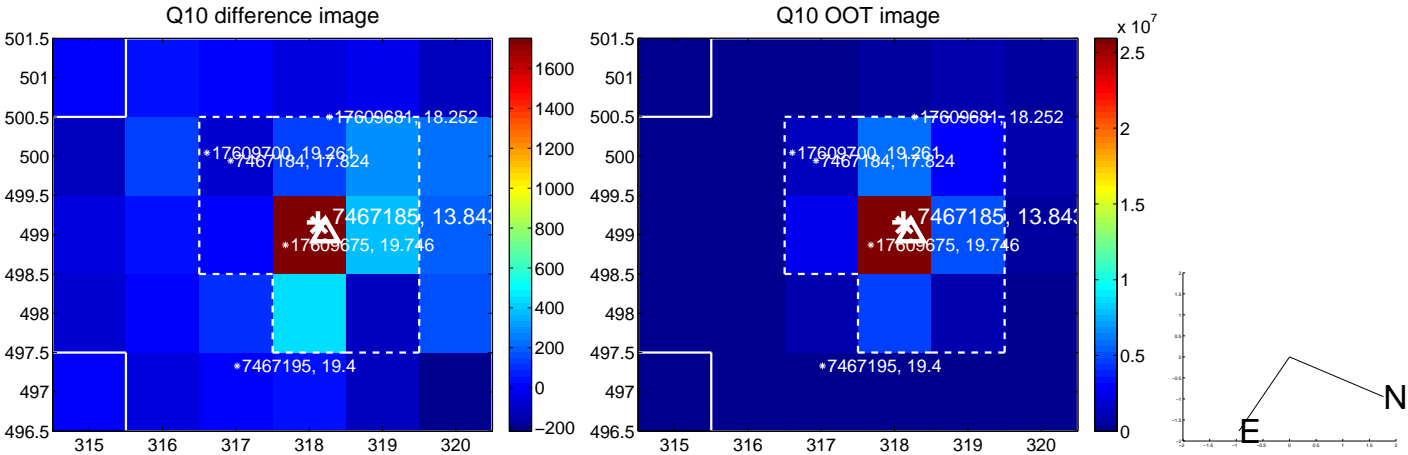
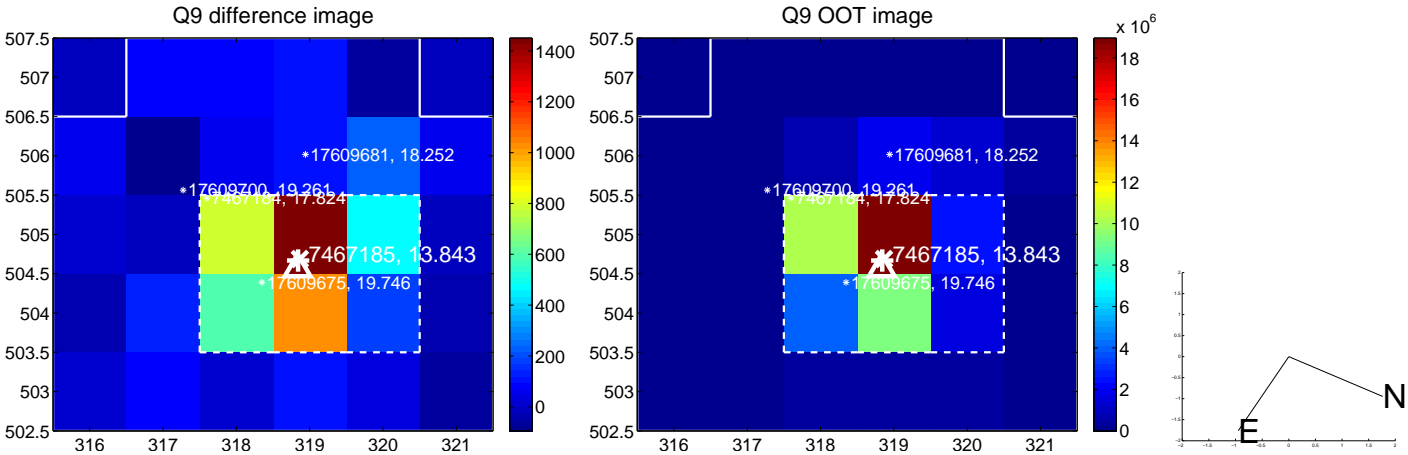


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

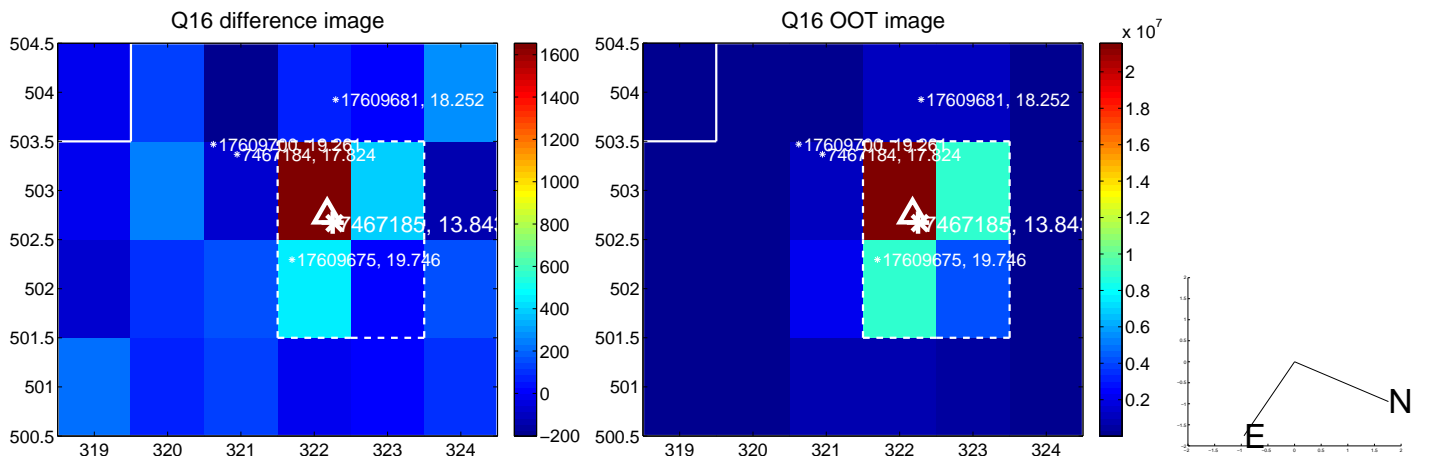
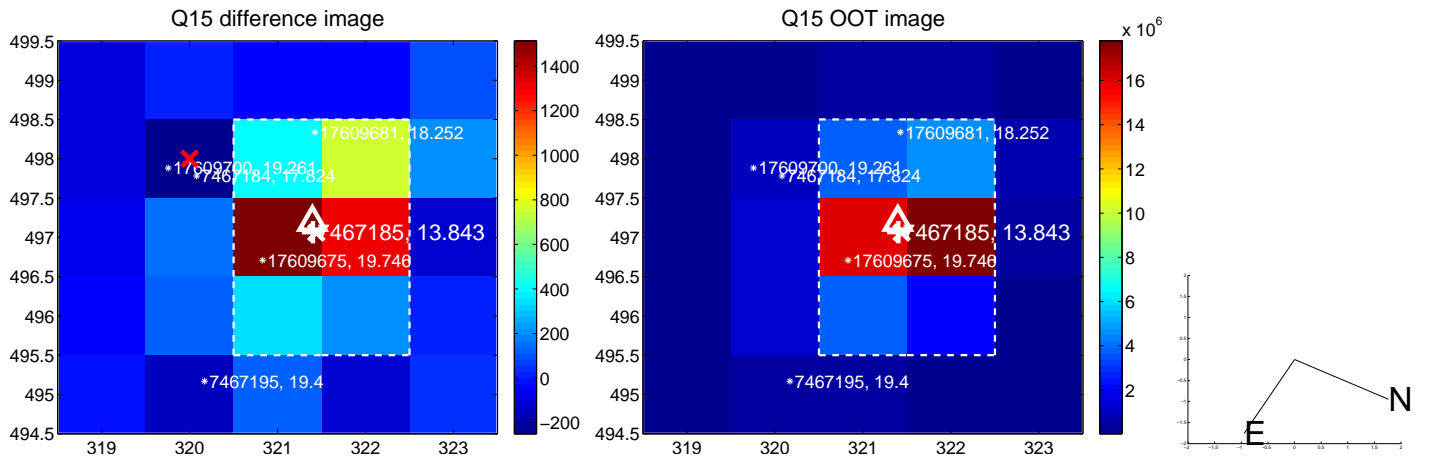
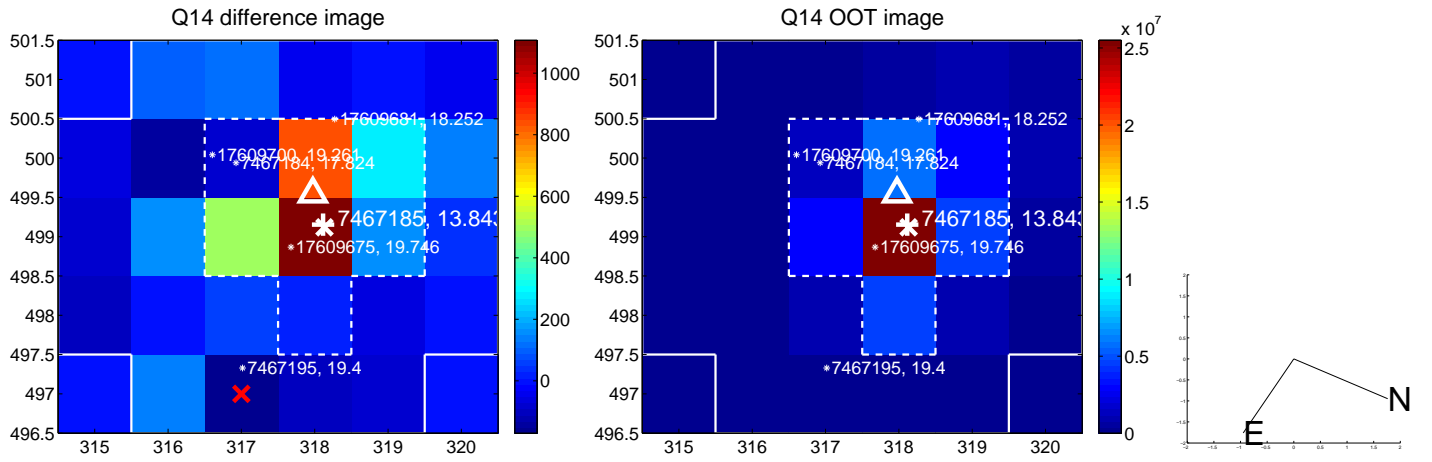
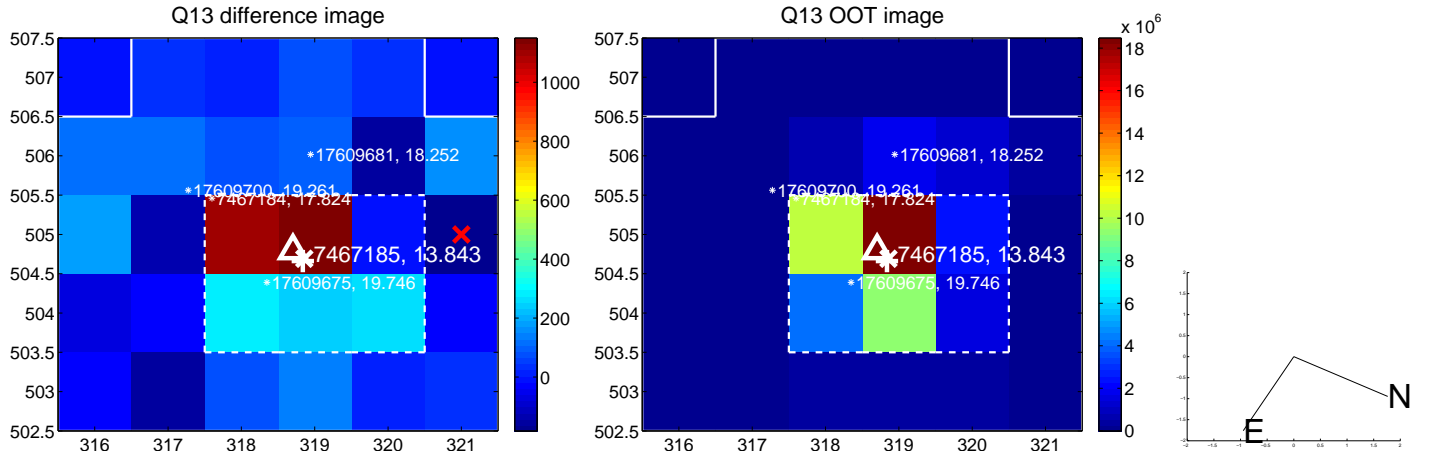




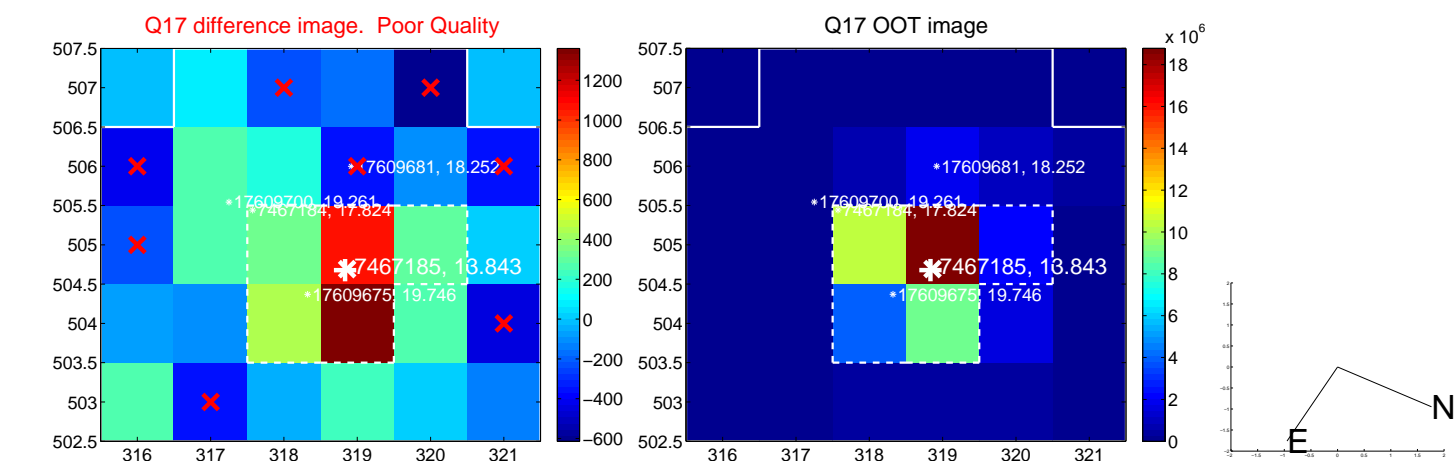
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



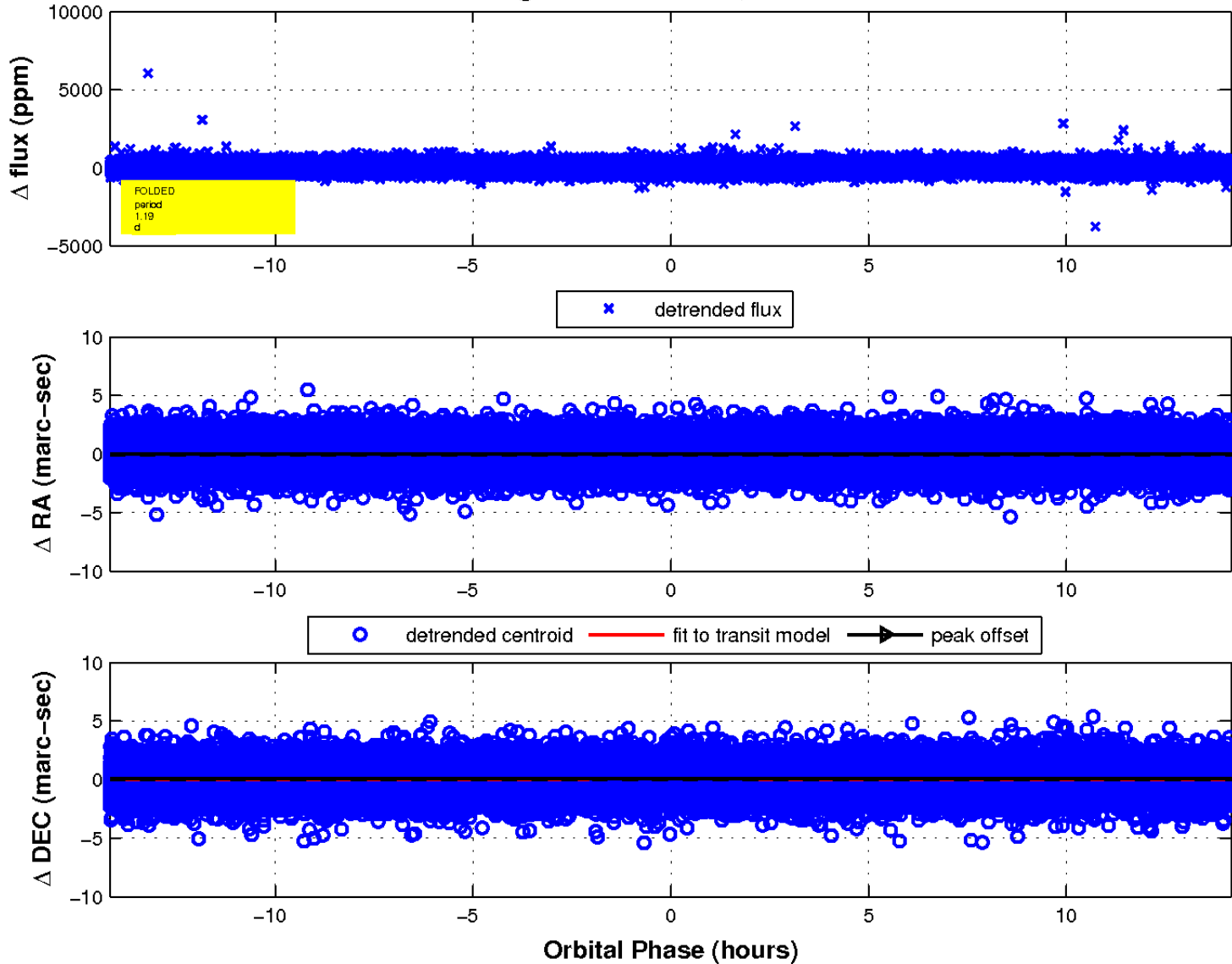
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

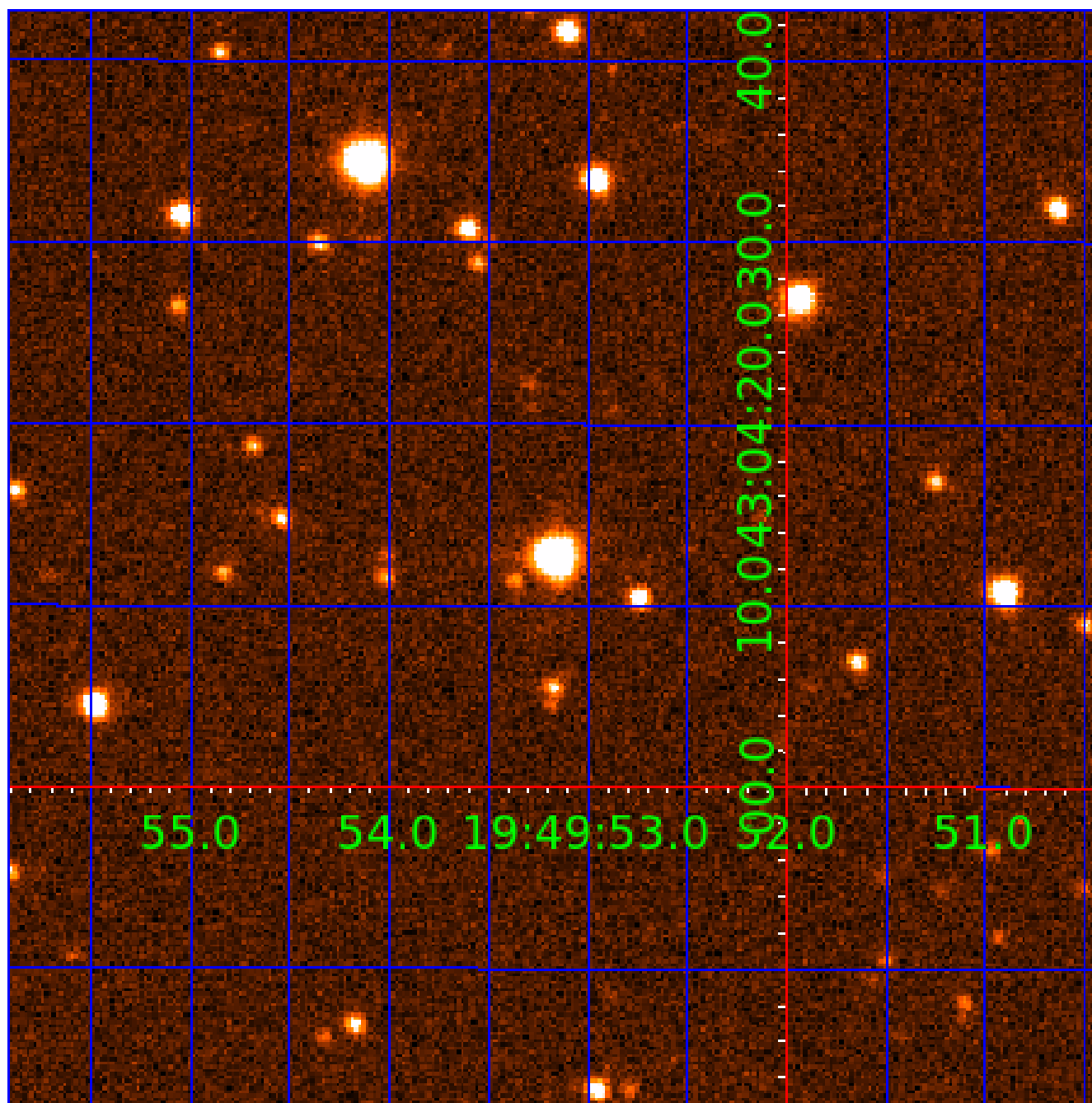


fluxWeightedCentroids, Planet 1 of 2



# UKIRT Image

Declination





# KIC 007467185

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007467185-01	OBS	No	1.191550	132.017443	29.6	4.728	9.7	9.9	2.03	6865	1.33	12098.50
007467185-02	OBS	No	1.191546	132.588613	32.4	5.368	11.7	13.3	2.03	6865	1.19	12098.56

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007467185-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
007467185-02	OBS	FP	0.00	1	0	0	0	LPP_DV—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.

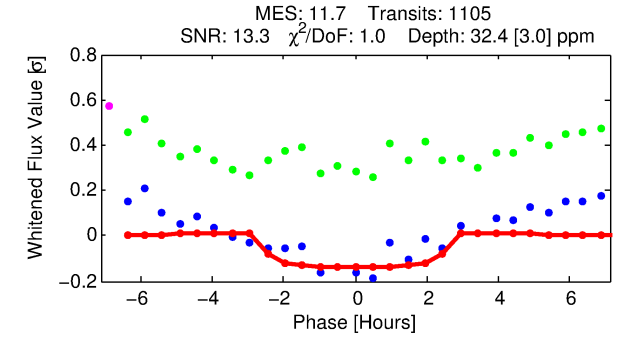
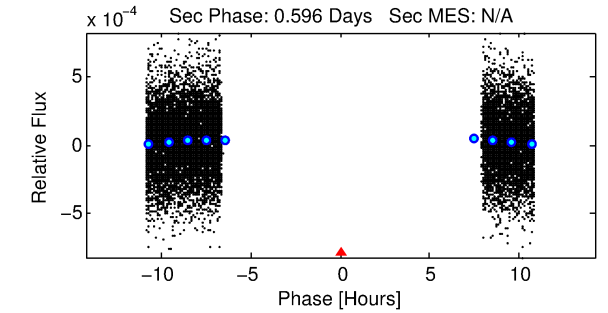
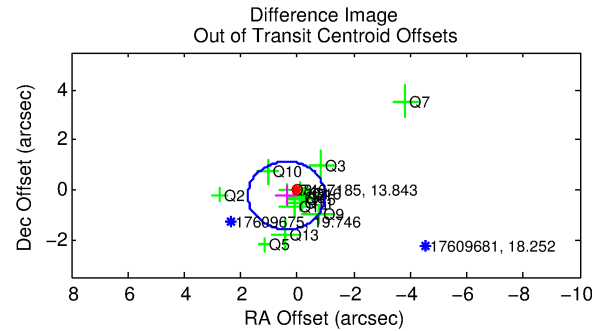
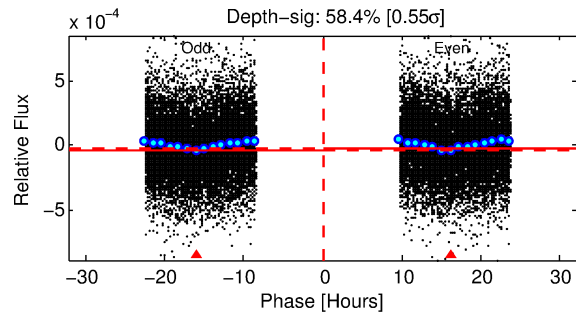
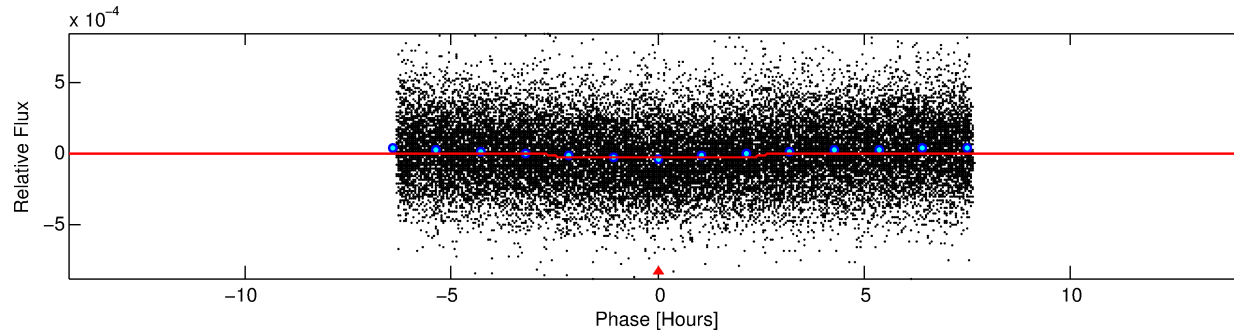
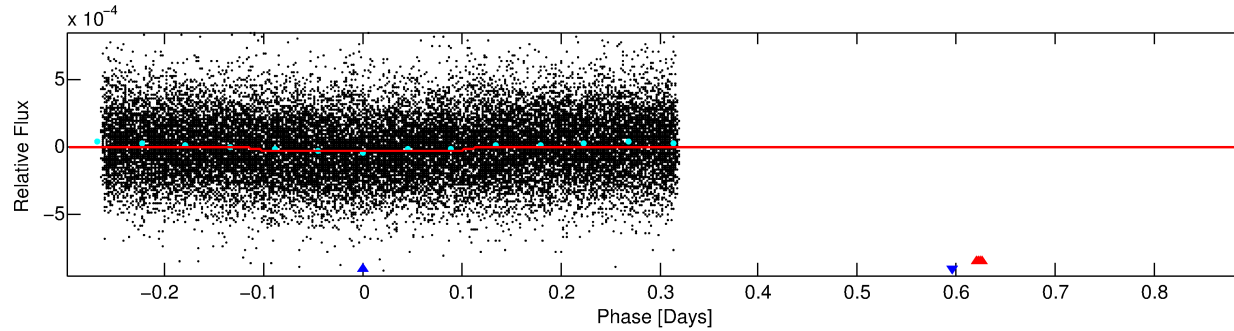
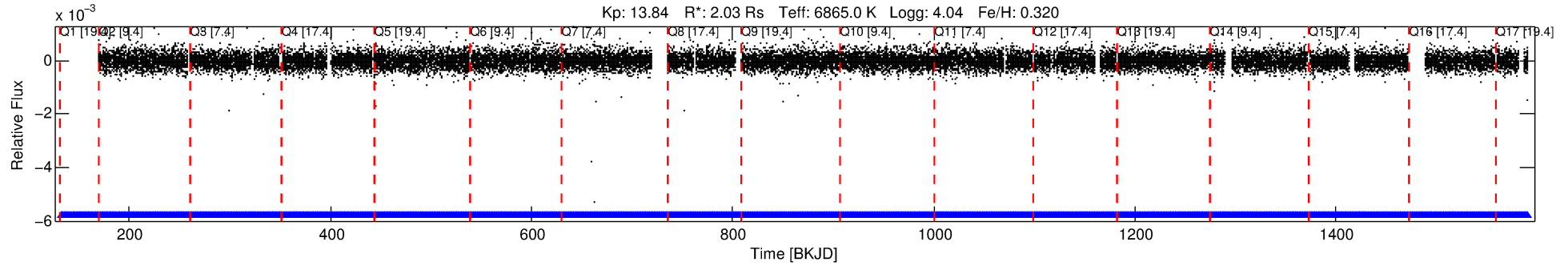
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007467185-02

No Significant Match Found

# DV One-Page Summary

KIC: 7467185 Candidate: 2 of 2 Period: 1.192 d



## DV Fit Results:

Period = 1.19155 [0.00001] d  
Epoch = 132.5886 [0.0045] BKJD  
Rp/R\* = 0.0054 [0.0023]  
a/R\* = 1.68 [2.56]  
b = 0.44 [4.33]  
Seff = 12098.56 [4583.77]  
Teq = 2674 [253] K  
Rp = 1.19 [0.61] Re  
a = 0.0261 [0.0063] AU

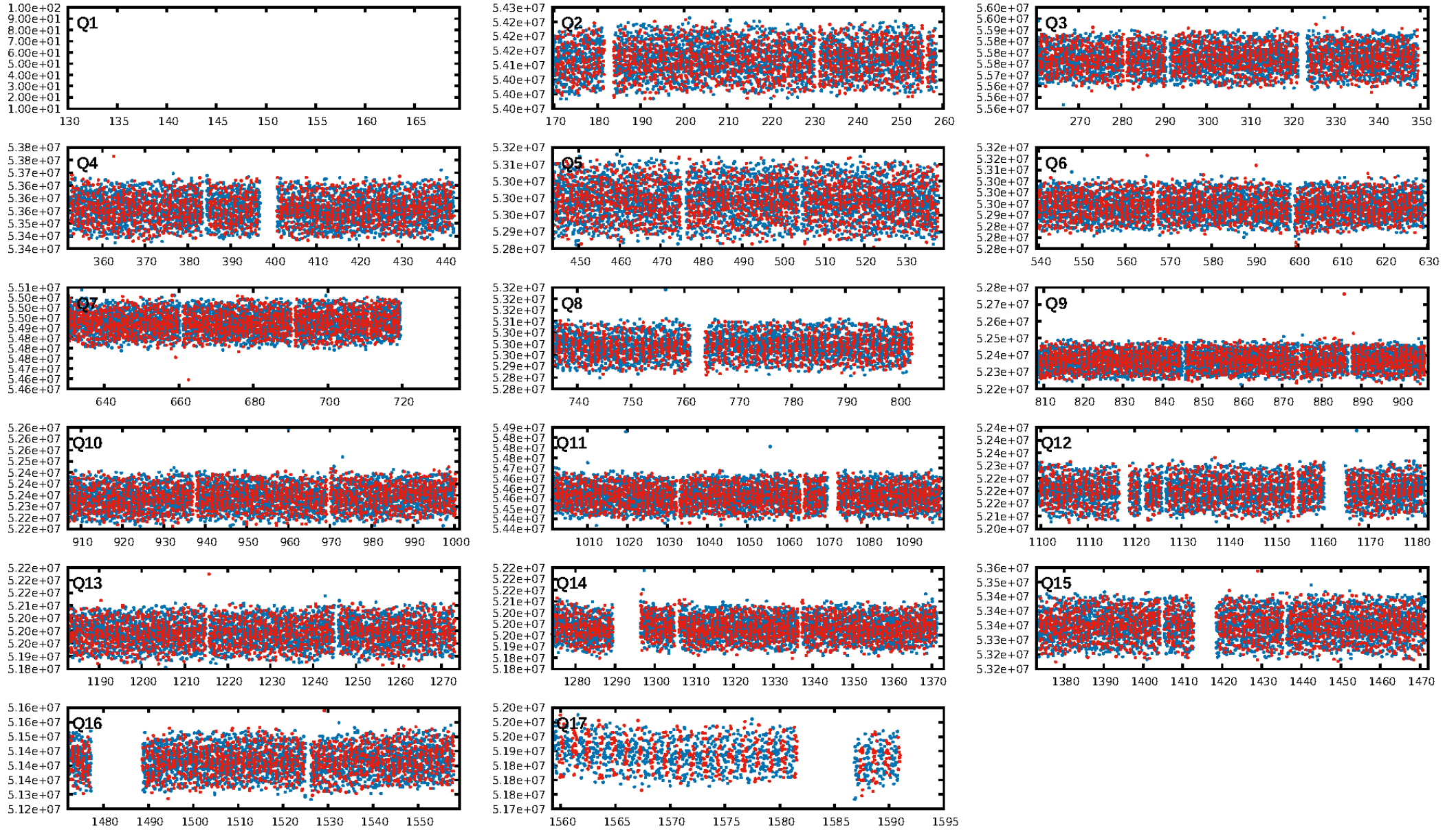
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1082/1082]  
GhostDiagnostic-chr: 5.628  
Centroid-sig: 4.7%  
Centroid-so: 1.455 arcsec [1.69 $\sigma$ ]  
OotOffset-rm: 0.450 arcsec [0.99 $\sigma$ ]  
KicOffset-rm: 0.512 arcsec [1.13 $\sigma$ ]  
OotOffset-st: 4/4/3/3 [14]  
KicOffset-st: 4/4/3/3 [14]  
DiffImageQuality-fgm: 0.86 [12/14]  
DiffImageOverlap-fno: 1.00 [16/16]

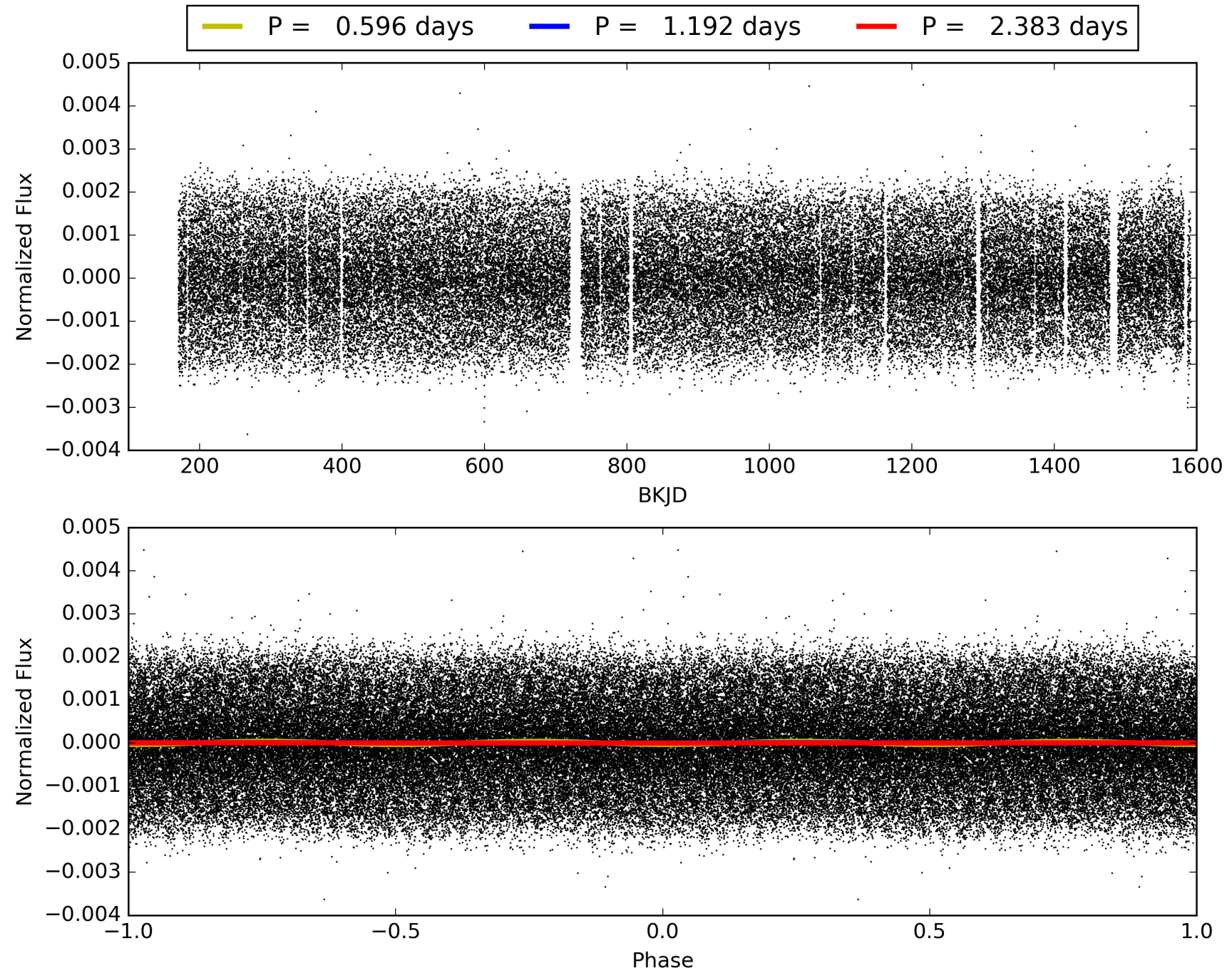
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:03:58 Z

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

# TCE 007467185-02, PDC Light Curves



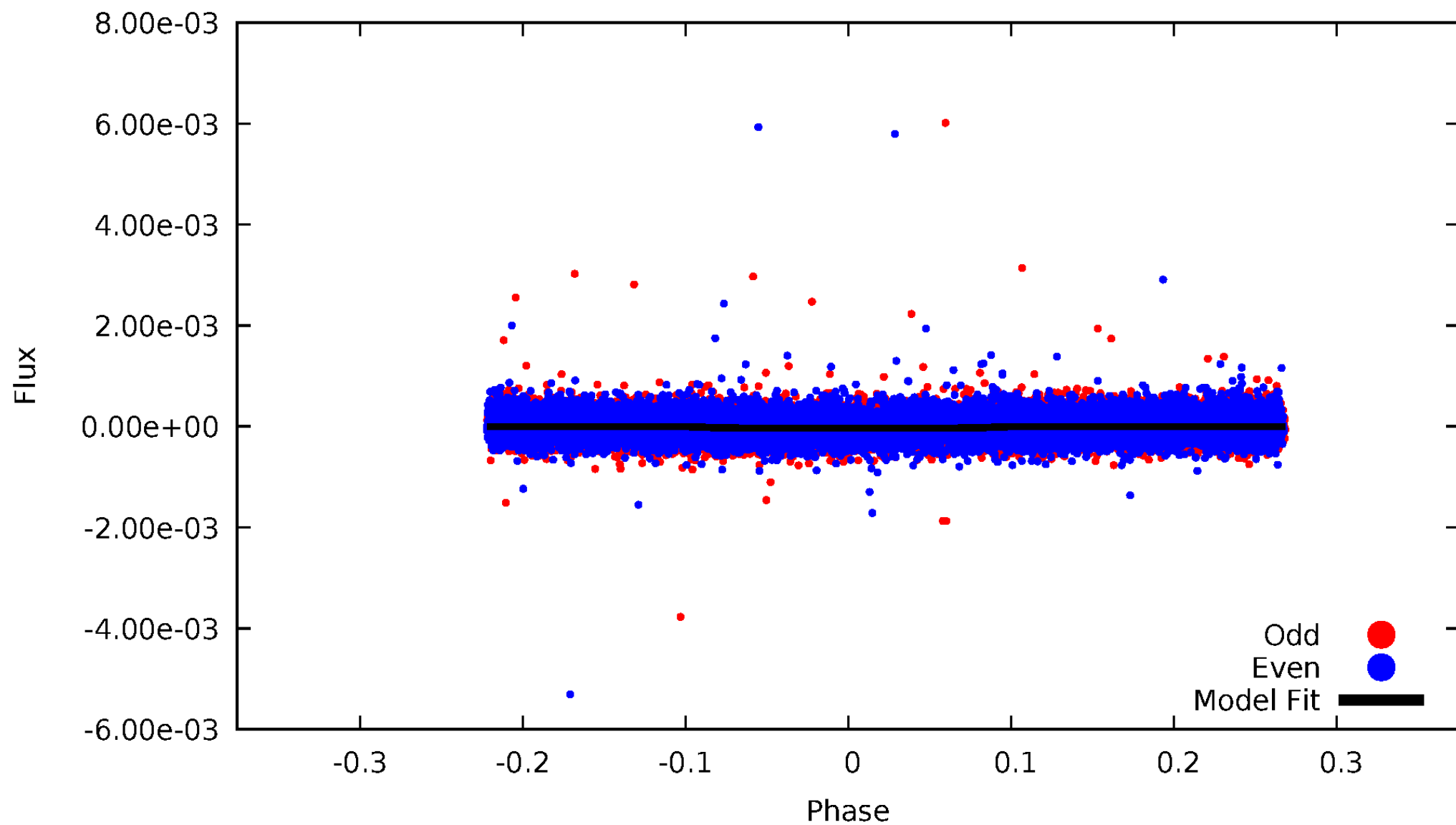
TCE 007467185-02





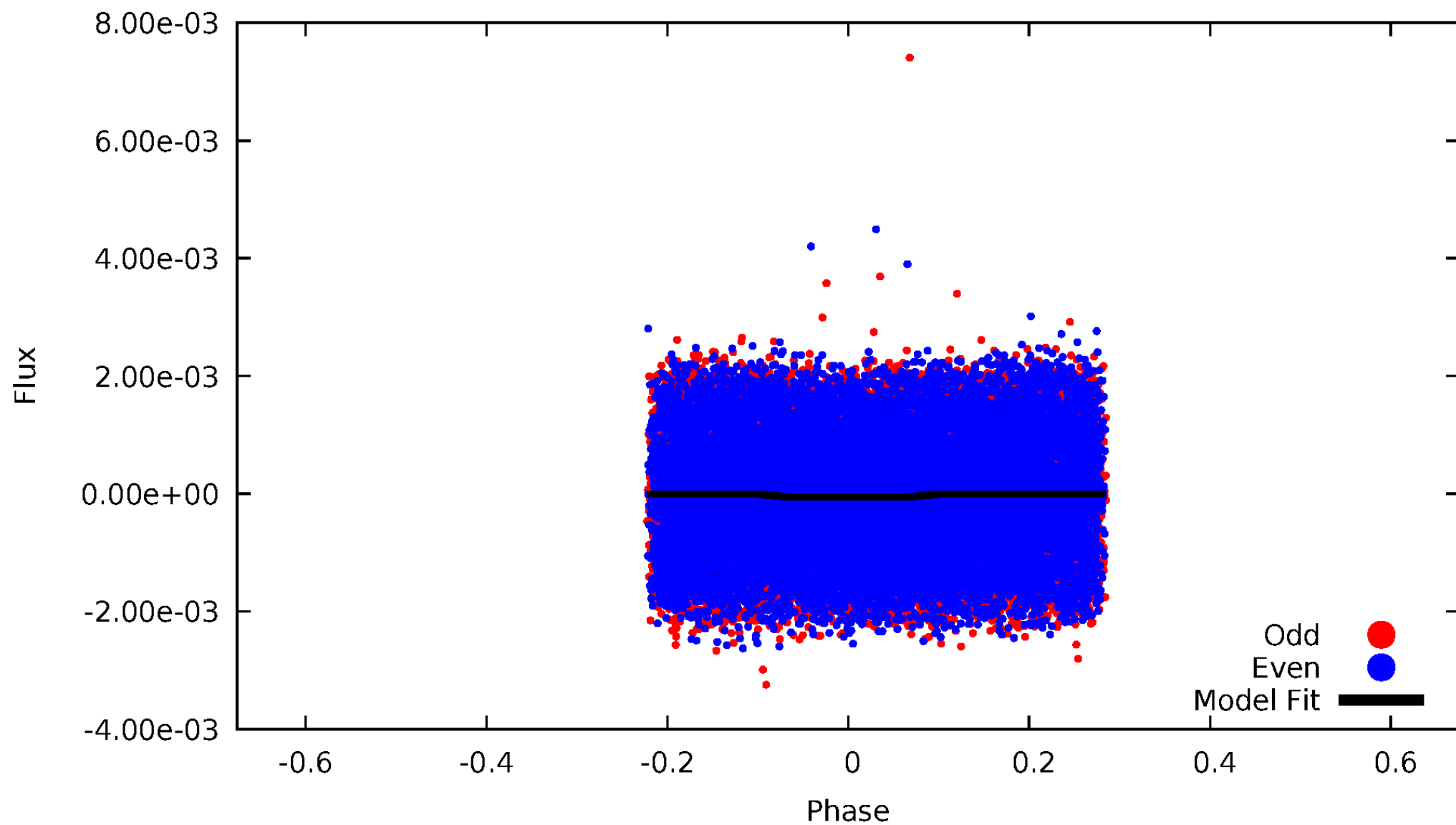
# DV Odd/Even

TCE 007467185-02



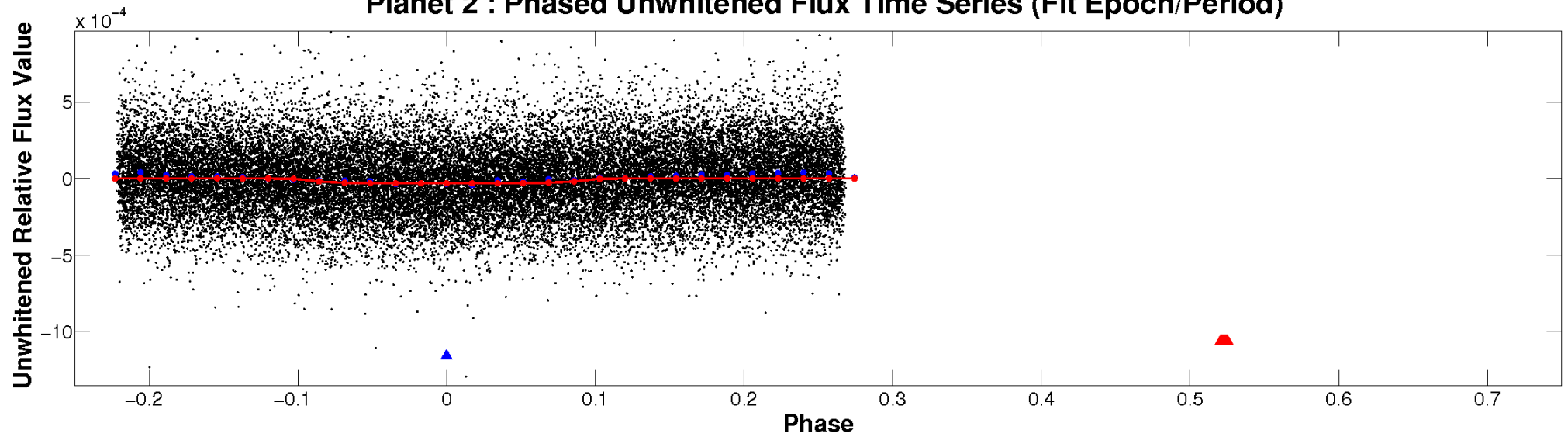
# ALT Odd/Even

TCE 007467185-02

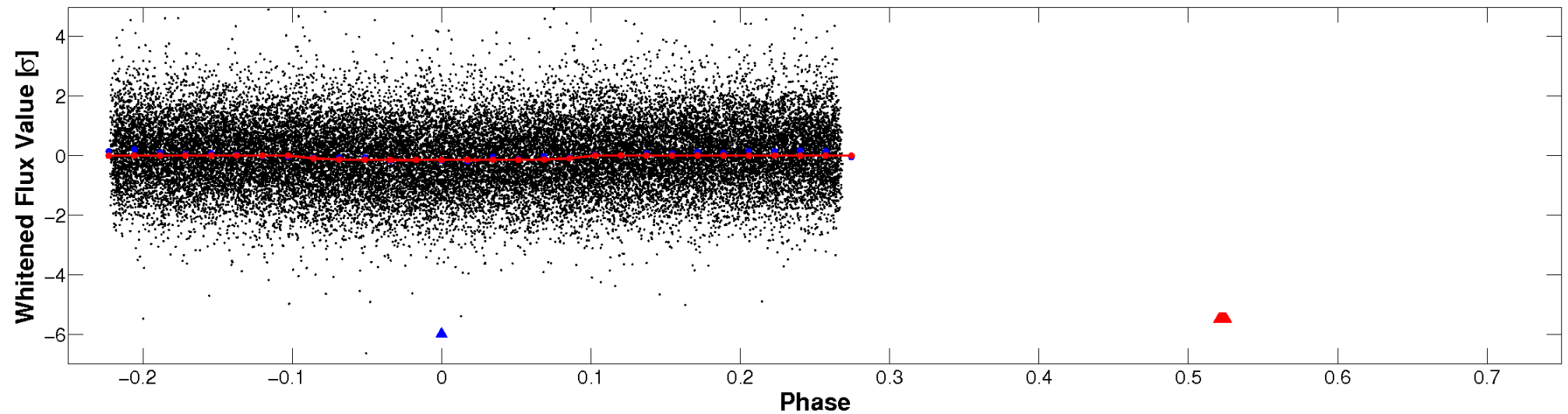


# Non-Whitened Vs. Whitened Light Curve

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

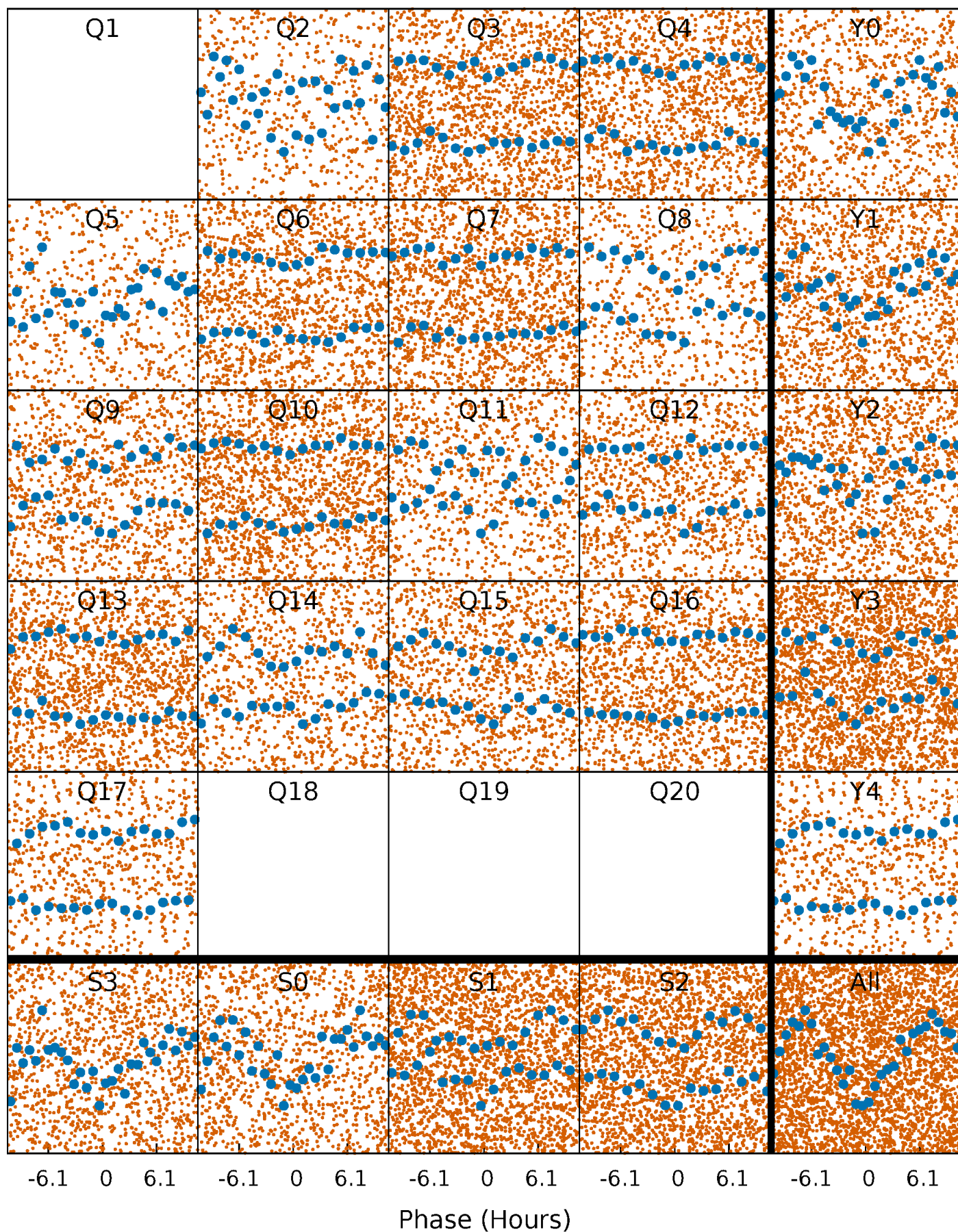


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

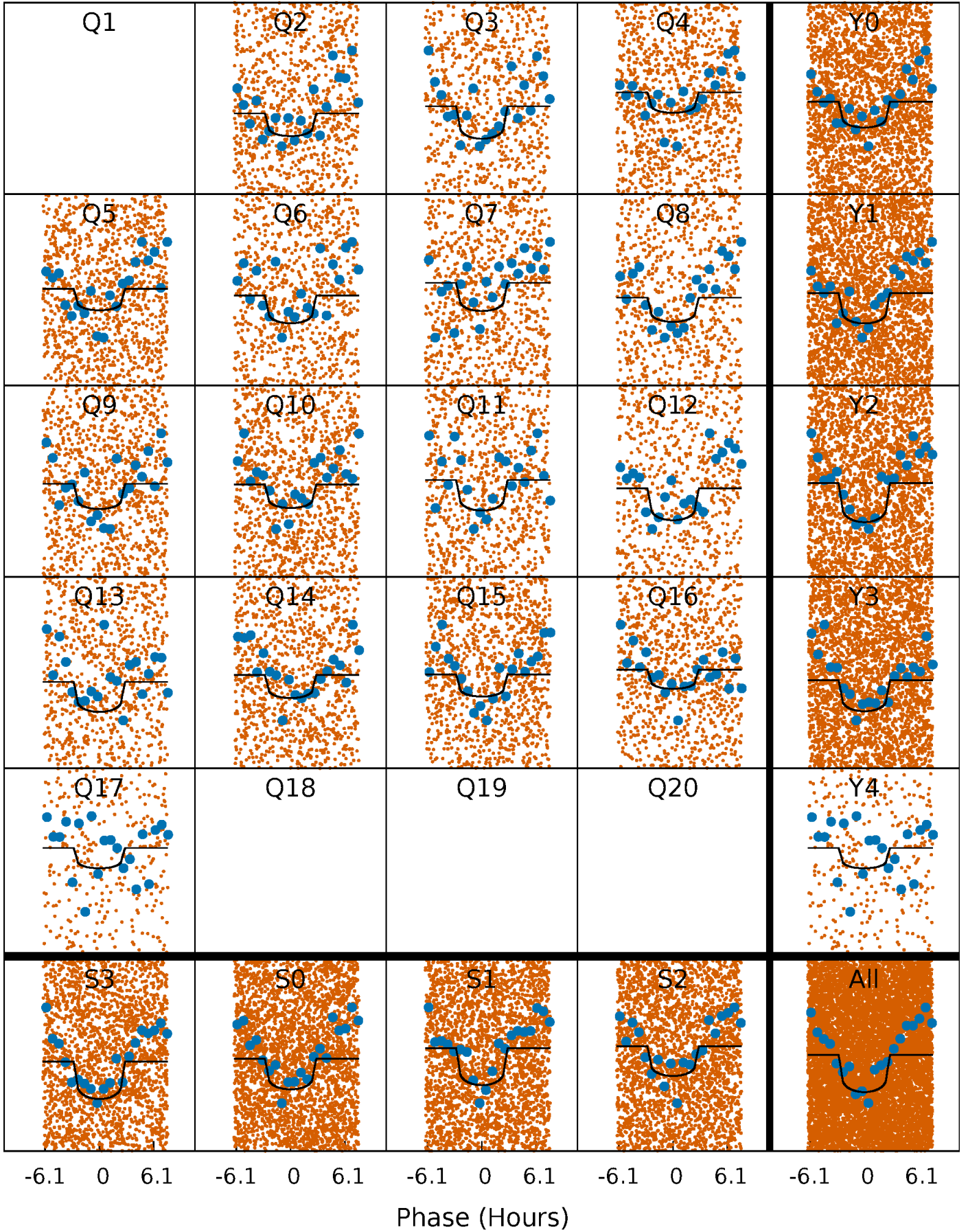
TCE 007467185-02 P= 1.191546 Days  $T_0=132.588613$  (BKJD)





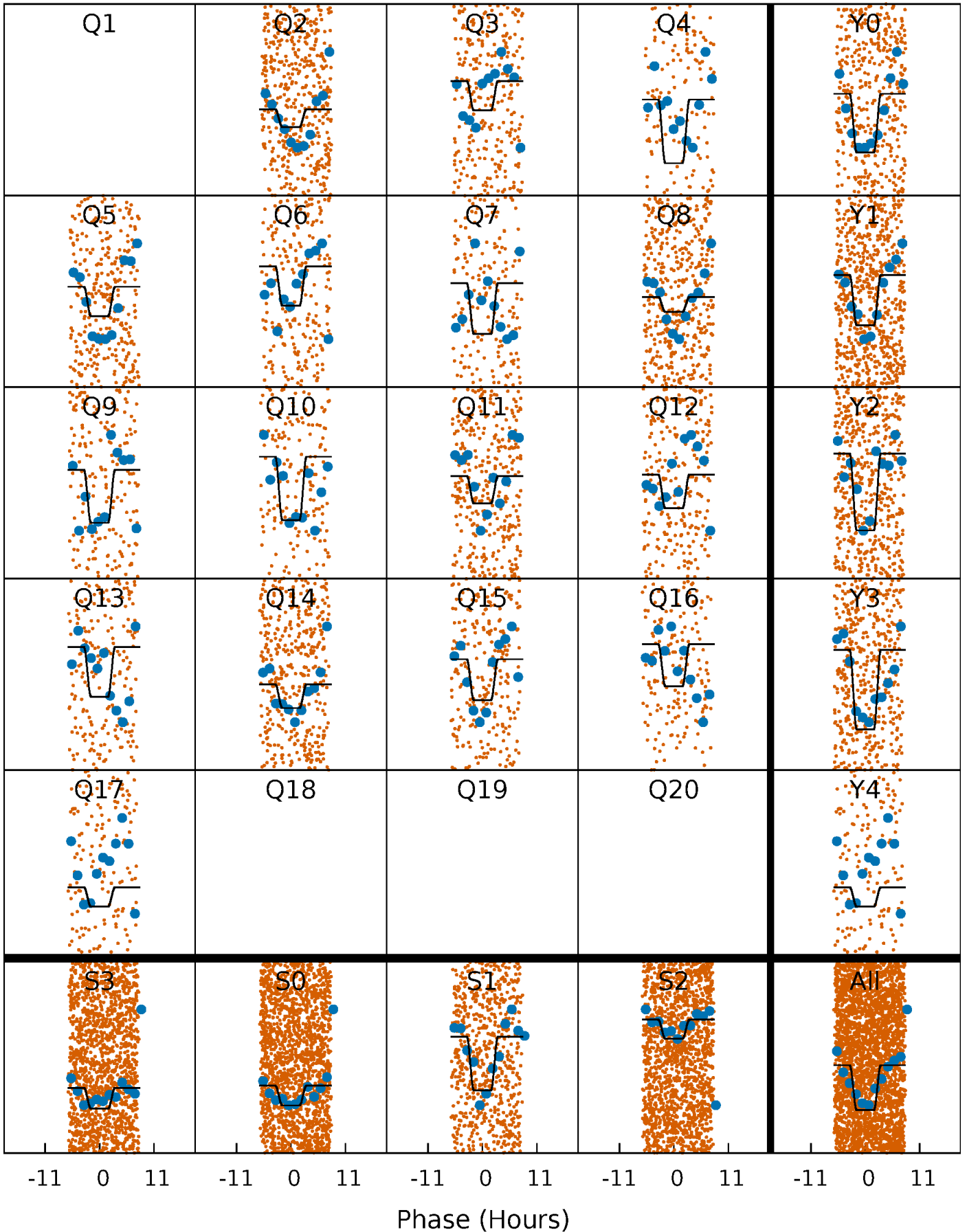
# DV Quarter-Phased Transit Curves

TCE 007467185-02   P= 1.191546 Days    $T_0=132.588613$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007467185-02   P= 1.191572 Days    $T_0=132.562460$  (BKJD)

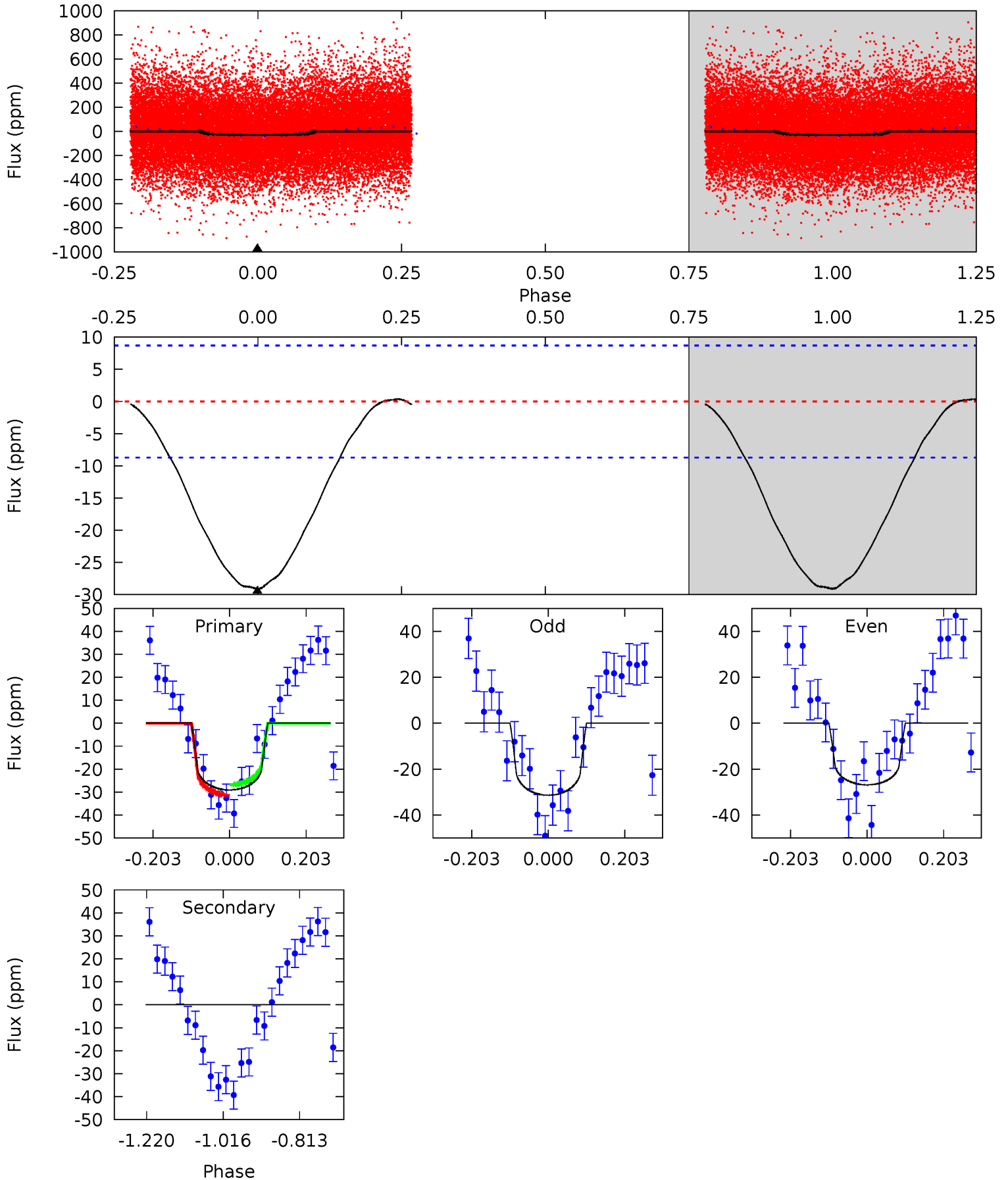




# DV Model-Shift Uniqueness Test

007467185-02, P = 1.191546 Days, E = 132.588613 Days

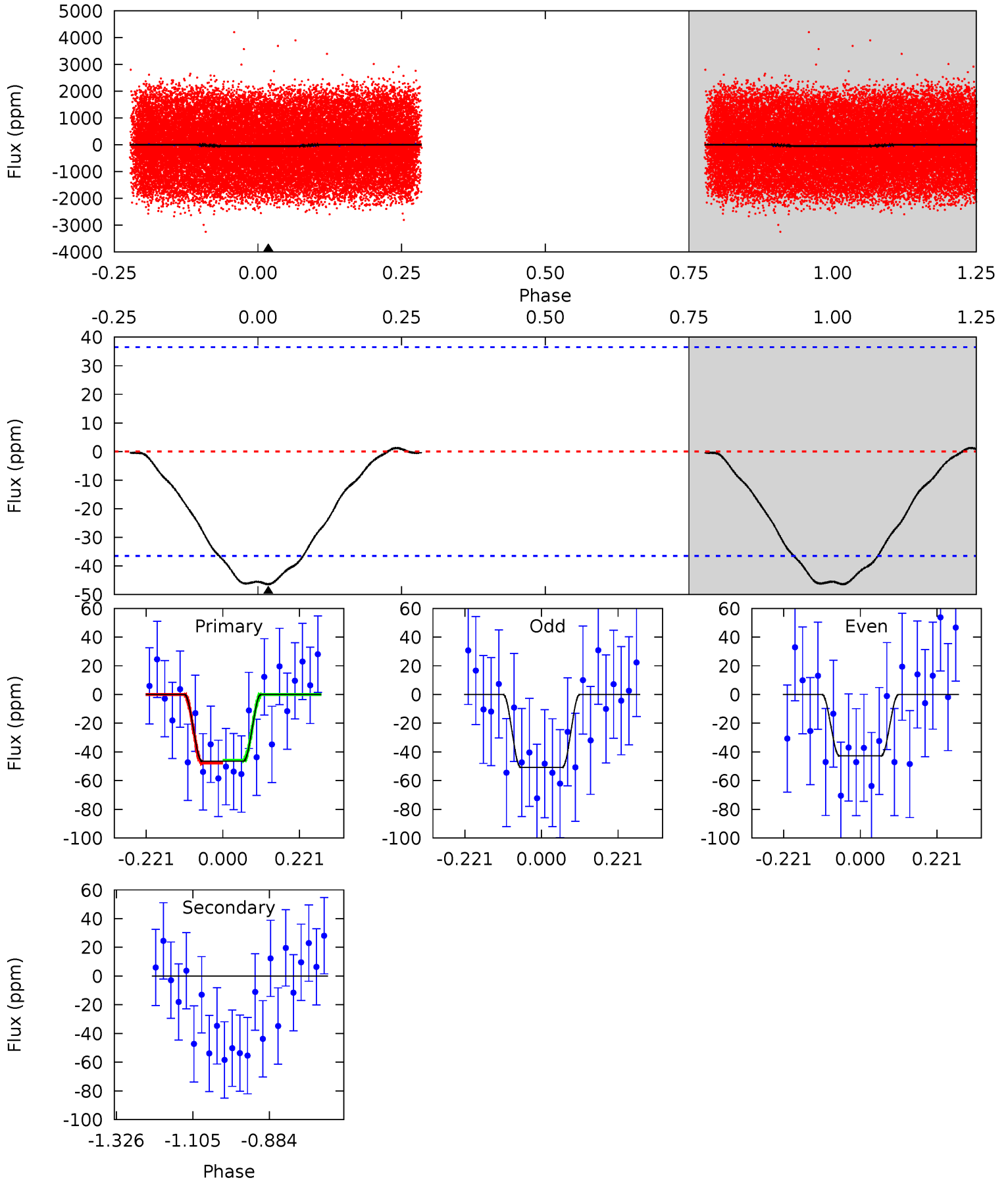
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	0	0	0	4.41	1.27	0.25	14.8	14.8	0	0	1.15	0.93	0.01	1.16



# Alt Model-Shift Uniqueness Test

007467185-02, P = 1.191572 Days, E = 132.562460 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
5.59	0	0	0	4.40	1.22	0.08	5.59	5.59	0	0	0.48	0.76	0.03	0.12



### Stellar Parameters For KIC 007467185

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6865^{+191}_{-287}$	$4.043^{+0.180}_{-0.180}$	$0.320^{+0.100}_{-0.350}$	$2.033^{+0.604}_{-0.549}$	$1.662^{+0.201}_{-0.301}$	$0.279^{+0.291}_{-0.144}$
	+3%/-4%	+4%/-4%	+31%/-109%	+30%/-27%	+12%/-18%	+105%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 007467185-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 2$	$1.18^{+0.56}_{-0.50}$	$3710^{+314}_{-287}$	$-3561^{+6943}_{-747}$	$-0.025^{+0.587}_{-0.607}$
Alt.	$0 \pm 8$	$1.63^{+0.60}_{-0.52}$	$3710^{+323}_{-272}$	$-3389^{+7683}_{-1416}$	$0.064^{+1.209}_{-1.436}$

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

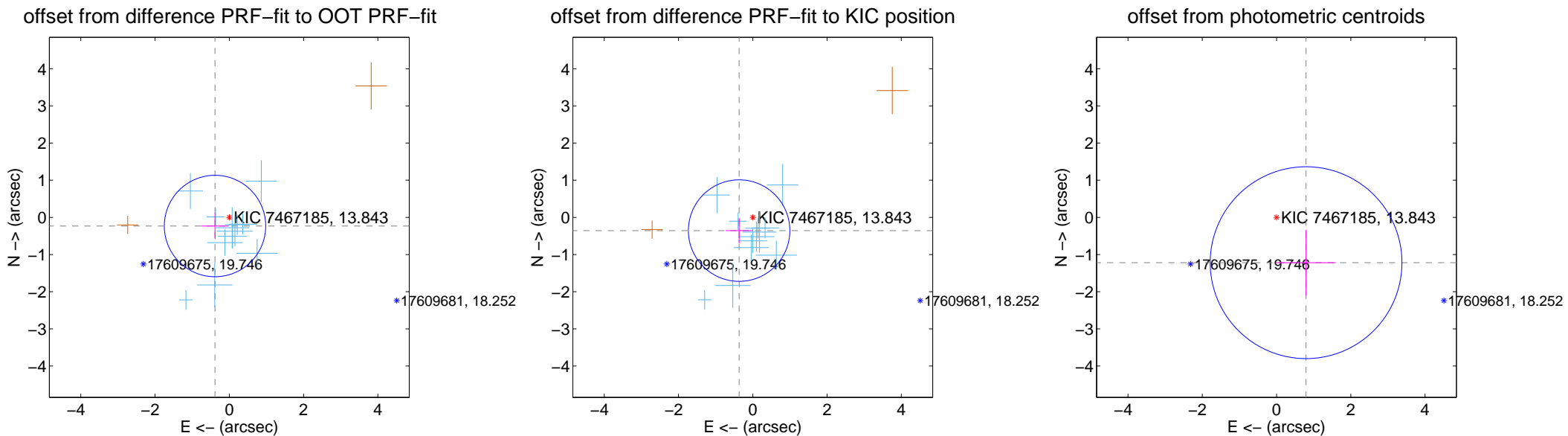
## DV Centroid Data

Supplemental centroid analysis for 007467185-02. Kepler magnitude: 13.84. Transit SNR 13.34

There are 12 quarters with good PRF difference image offsets

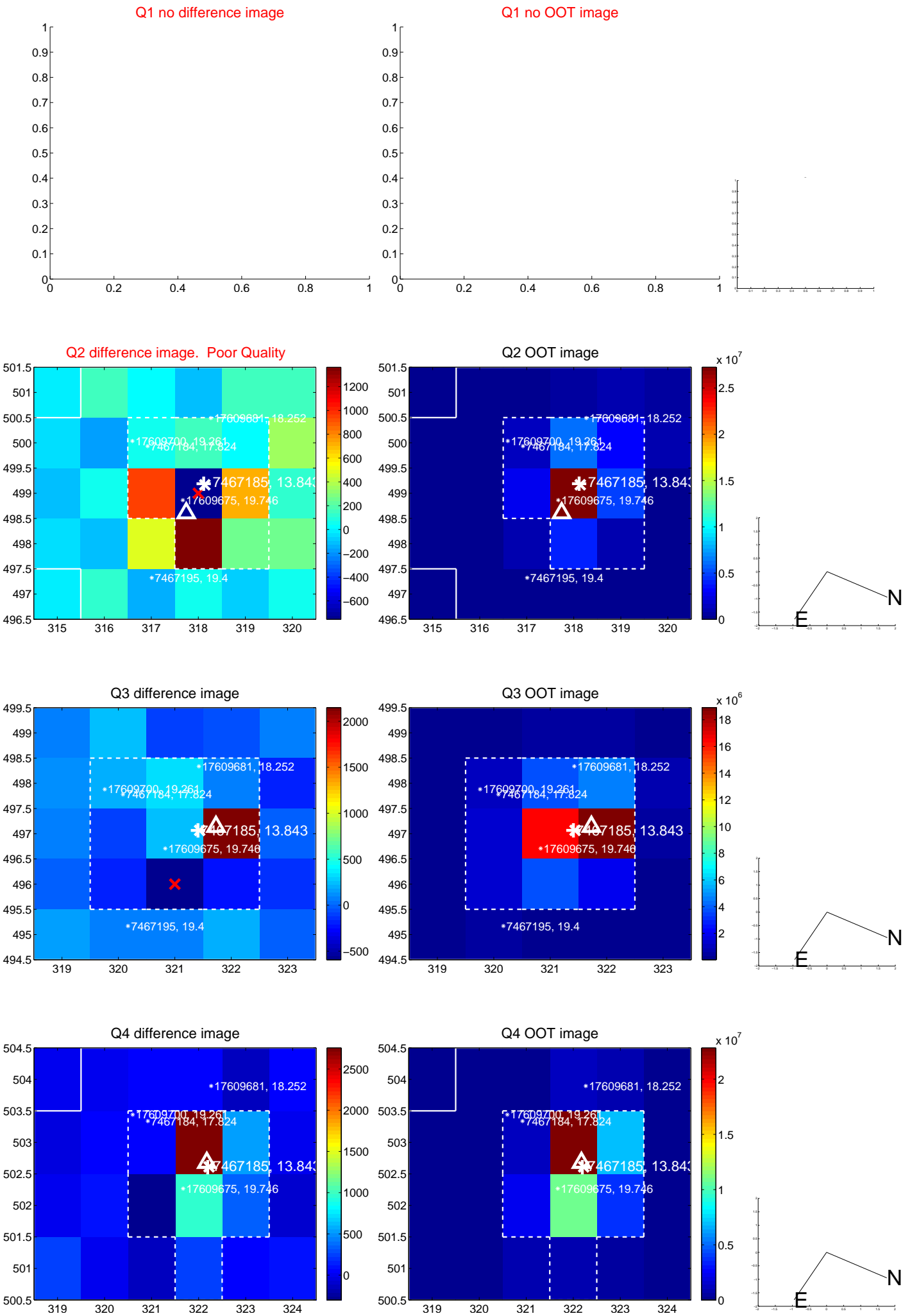
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.450 \pm 0.455$	0.99	$0.386 \pm 0.373$	$-0.232 \pm 0.352$
PRF-fit source offset from KIC position	$0.512 \pm 0.455$	1.13	$0.369 \pm 0.363$	$-0.356 \pm 0.341$
photometric centroid source offset	$1.46 \pm 0.86$	1.69	$-0.80 \pm 0.80$	$-1.22 \pm 0.88$

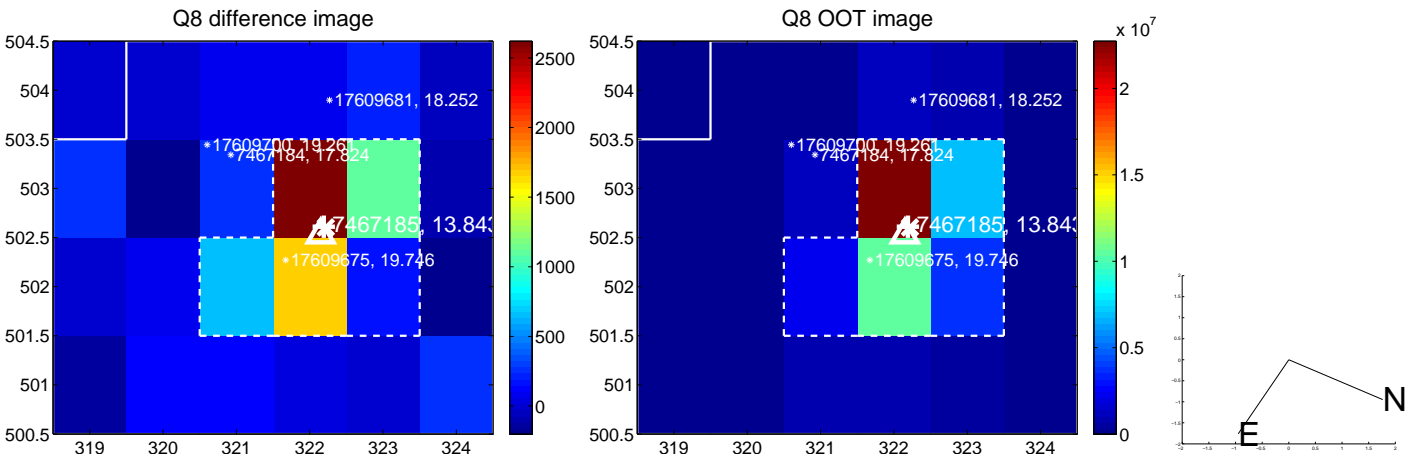
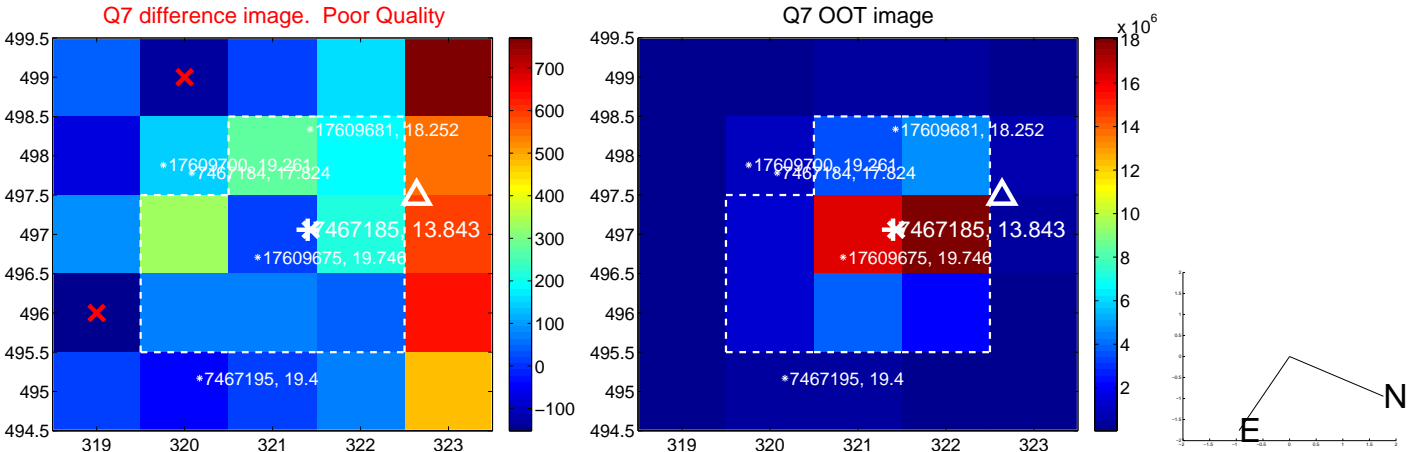
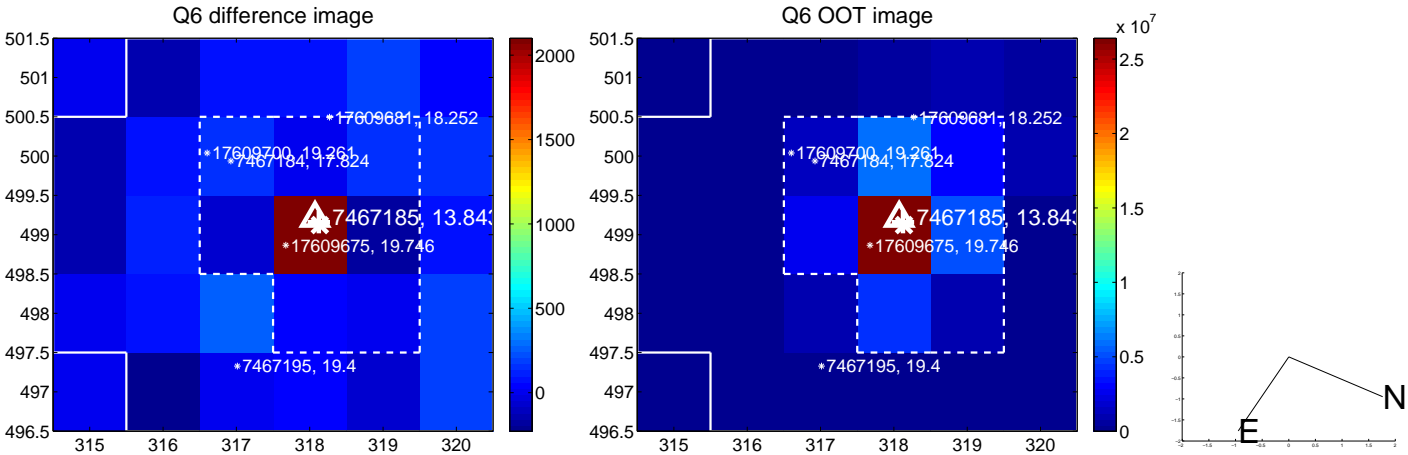
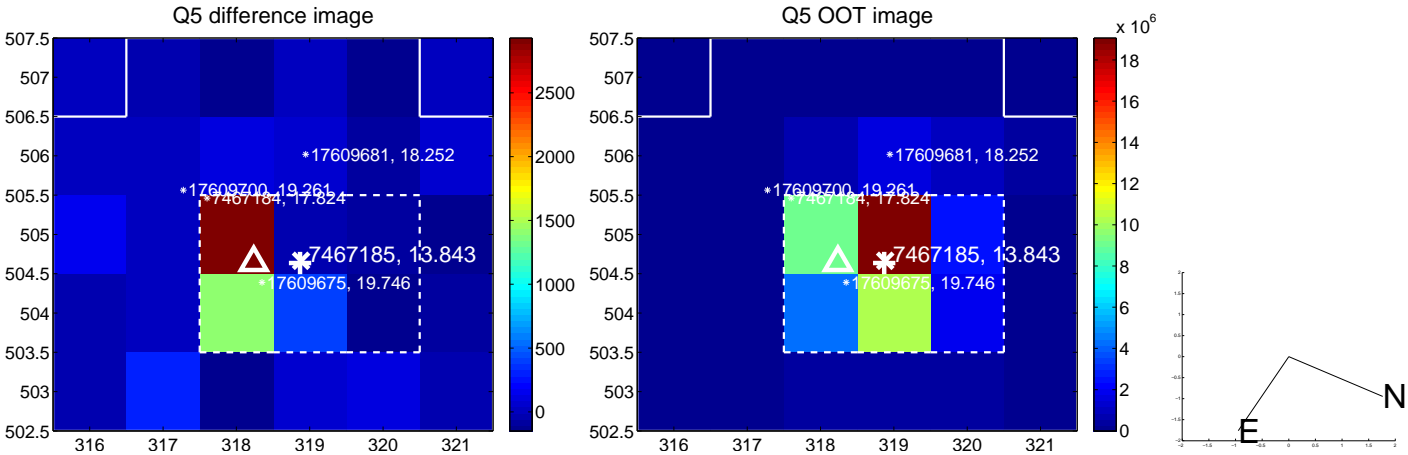


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

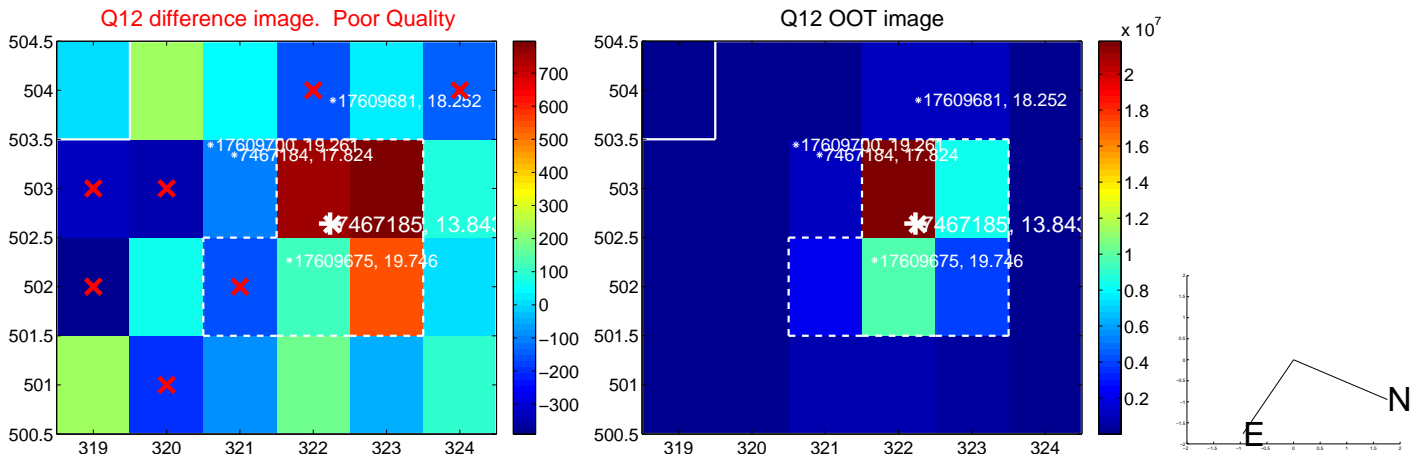
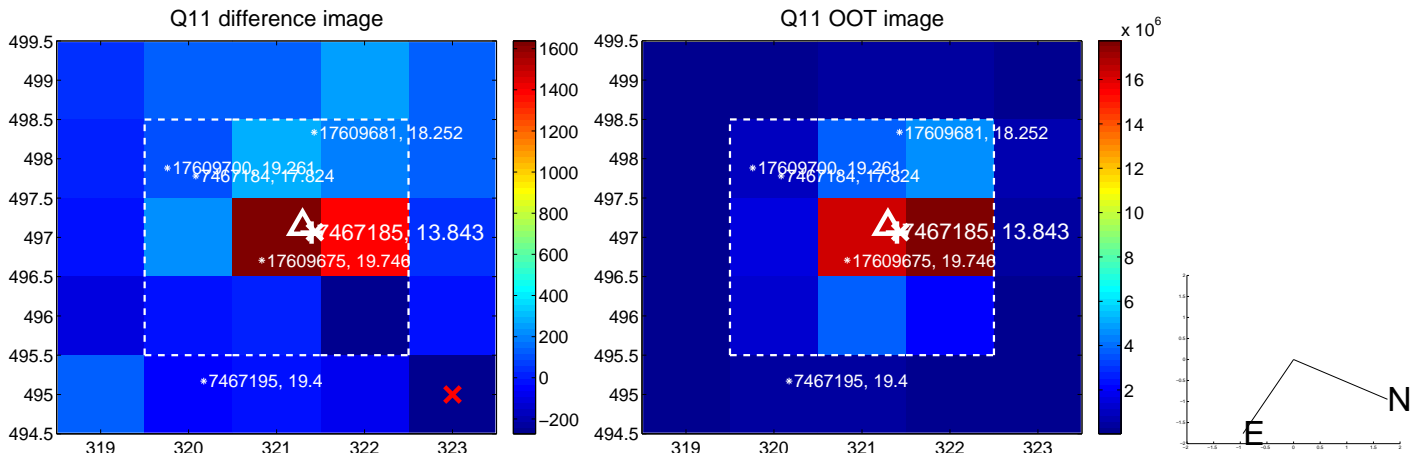
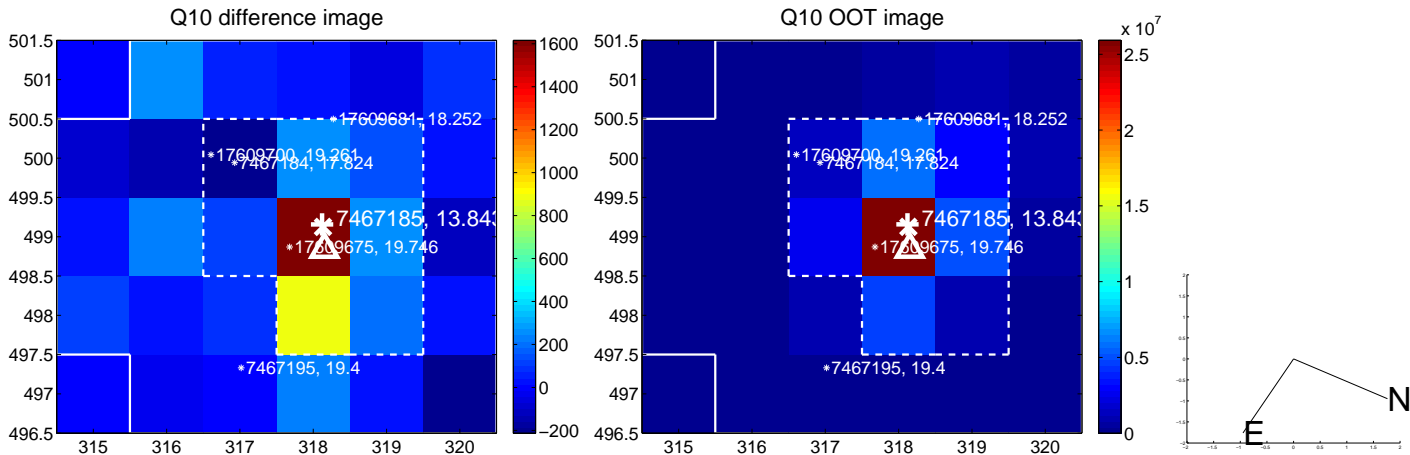
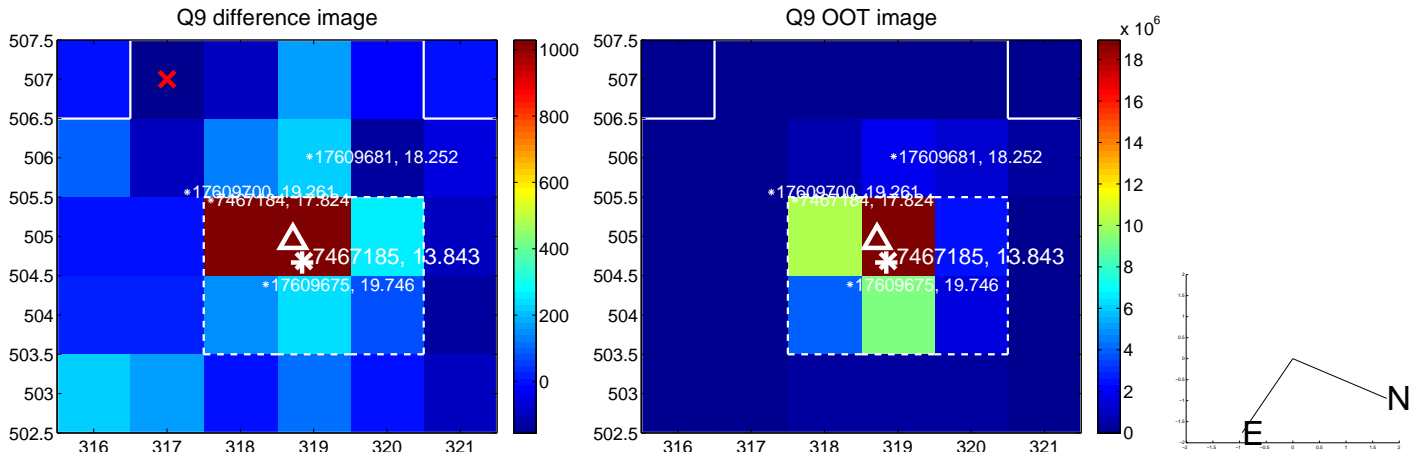


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

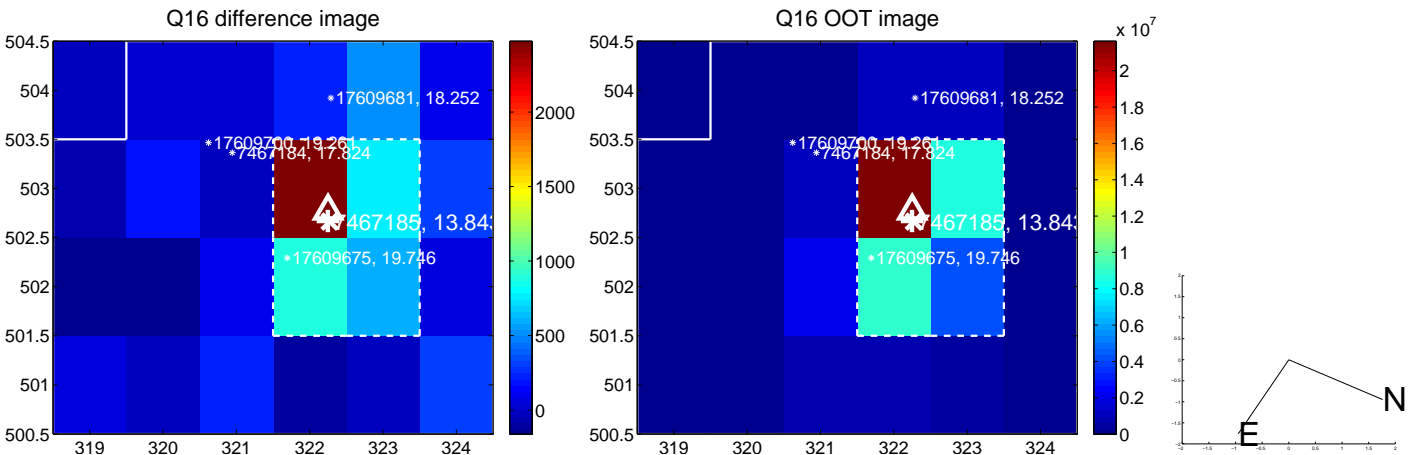
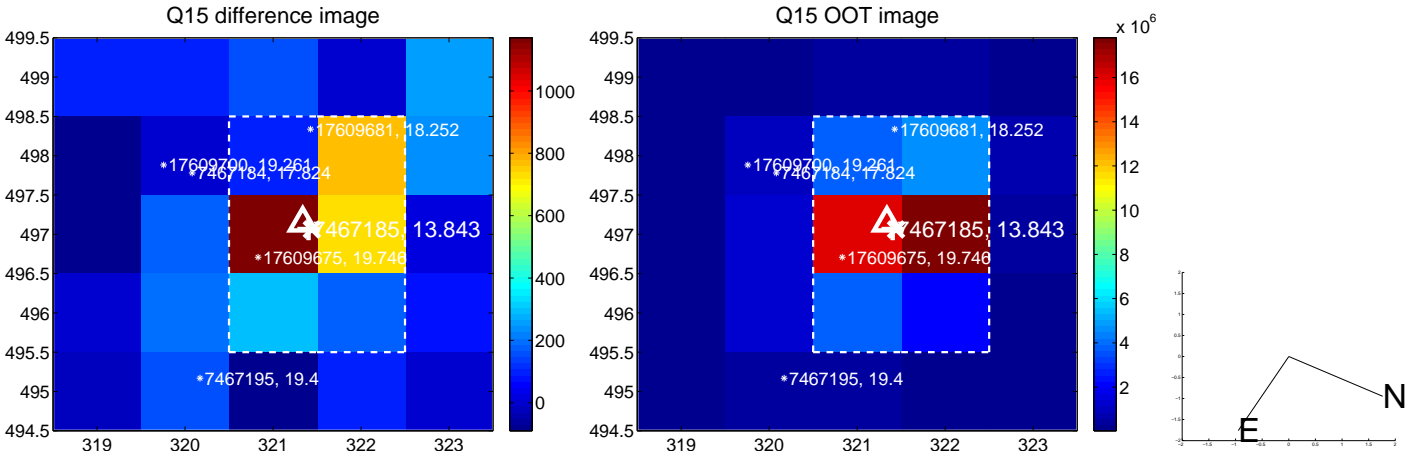
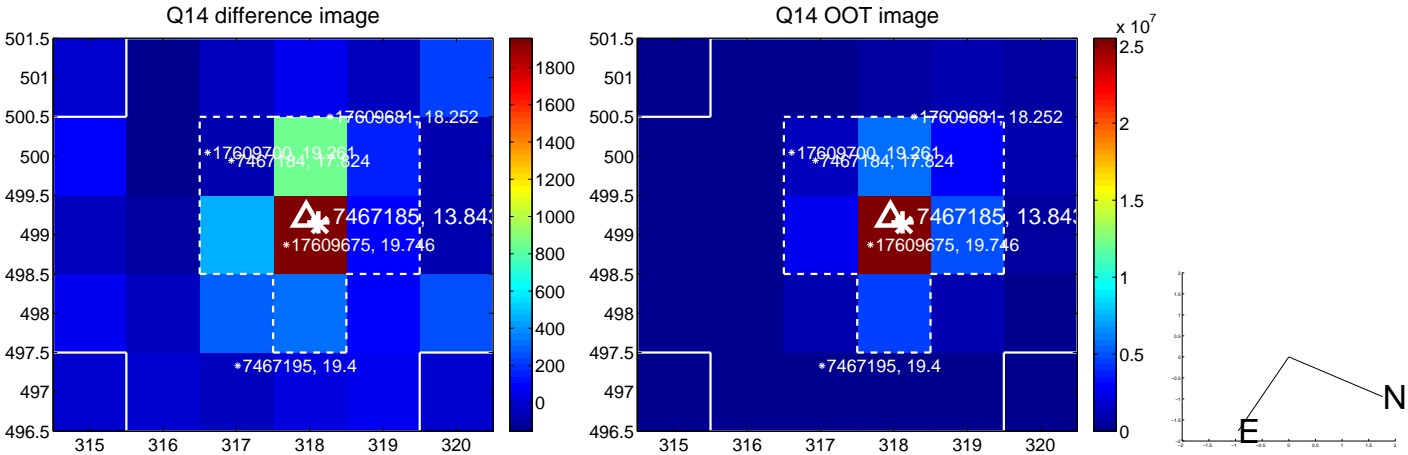
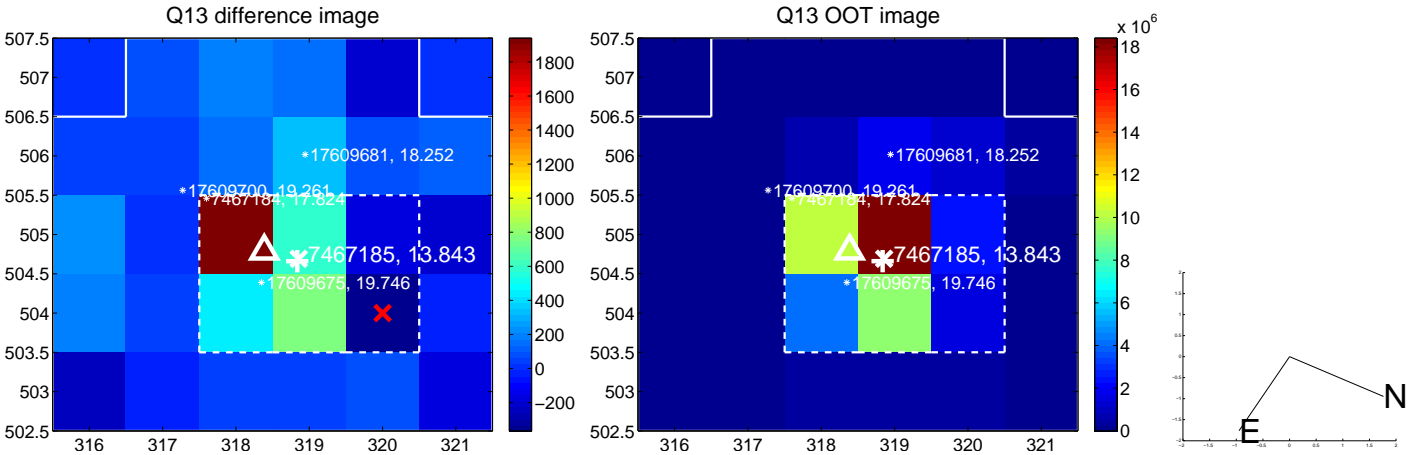




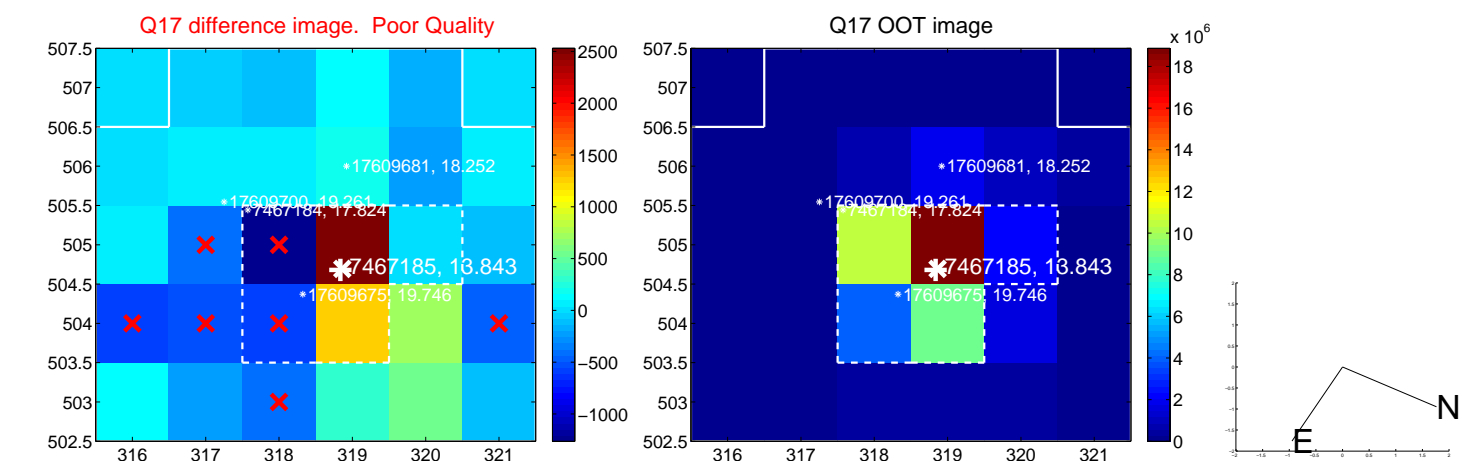
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



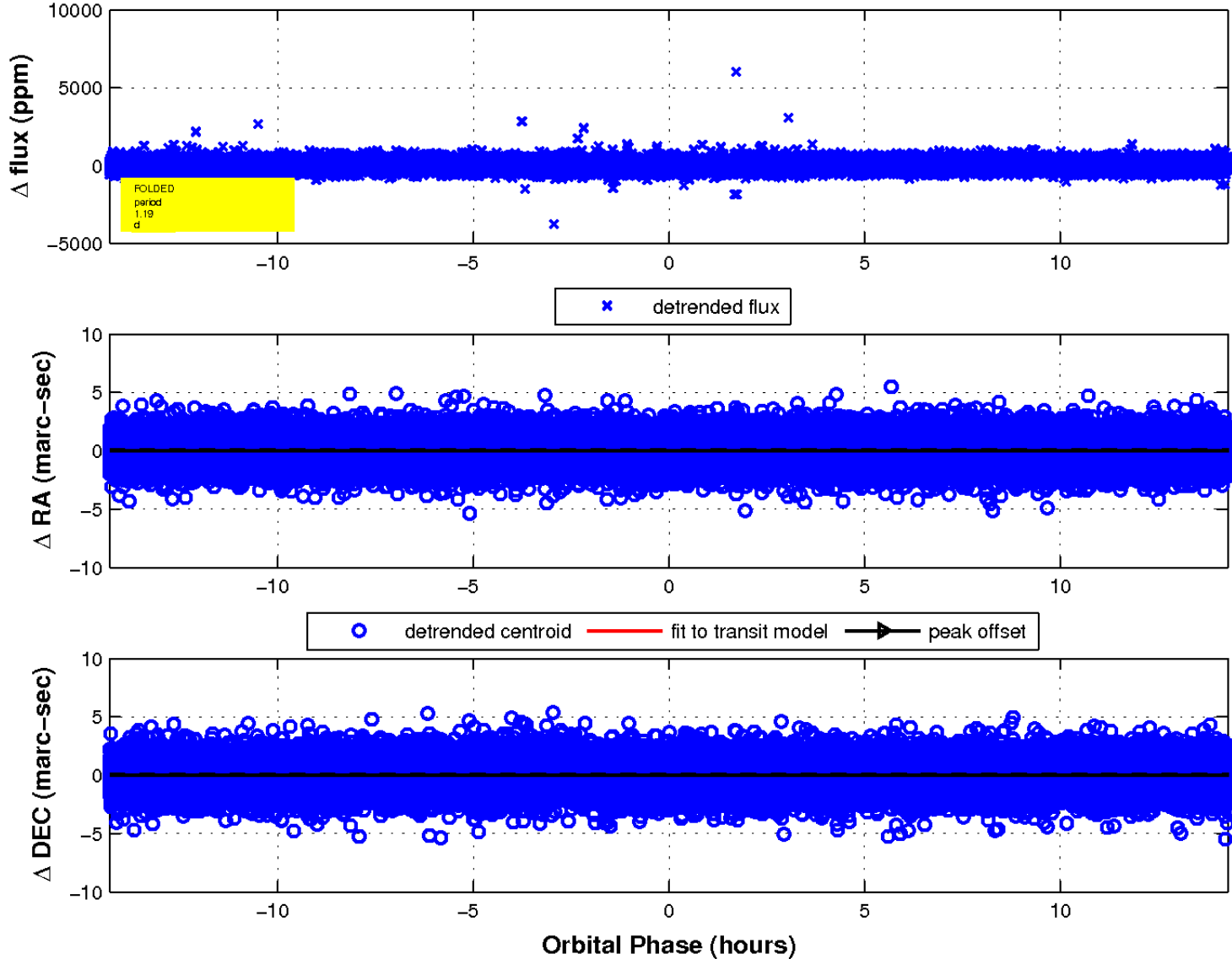
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

