

# KIC 006469599

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006469599-01	OBS	No	0.946430	131.893077	23.7	4.199	7.9	8.0	2.65	7570	1.34	42997.56
006469599-02	OBS	No	14.302248	132.391862	115.0	3.848	7.7	7.3	2.65	7570	3.18	1150.86
006469599-03	OBS	No	247.851866	143.835908	192.6	7.414	7.2	4.6	2.65	7570	4.10	25.66

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006469599-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
006469599-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
006469599-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

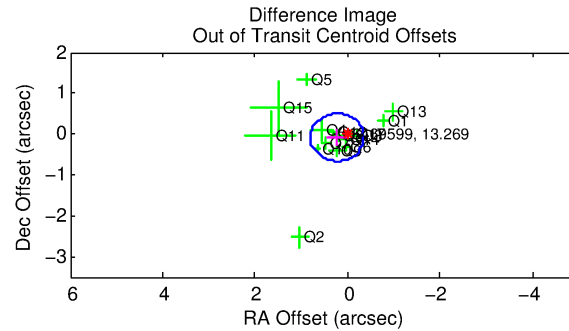
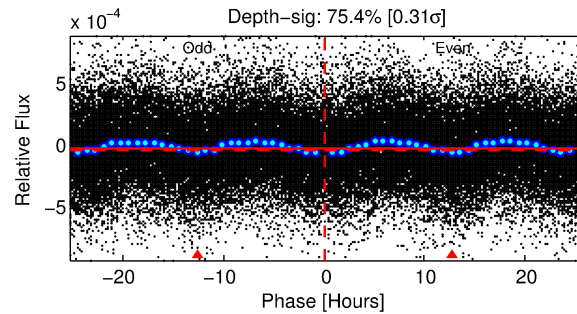
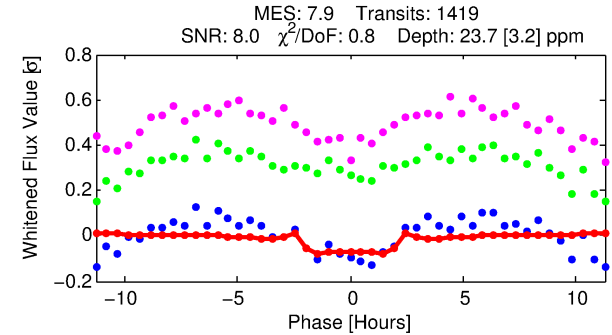
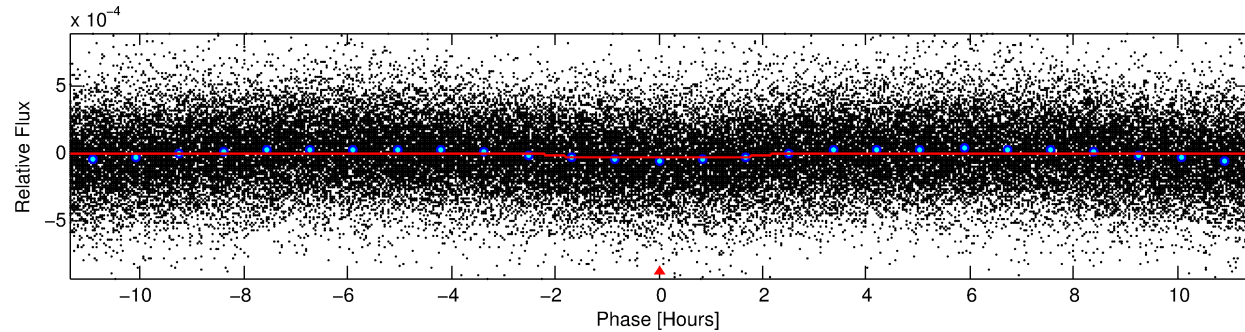
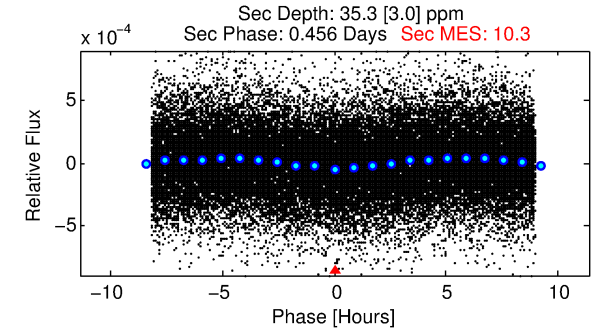
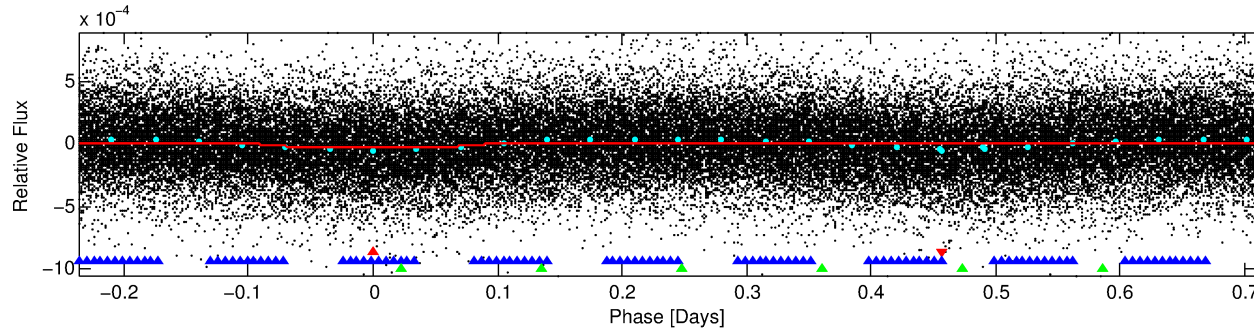
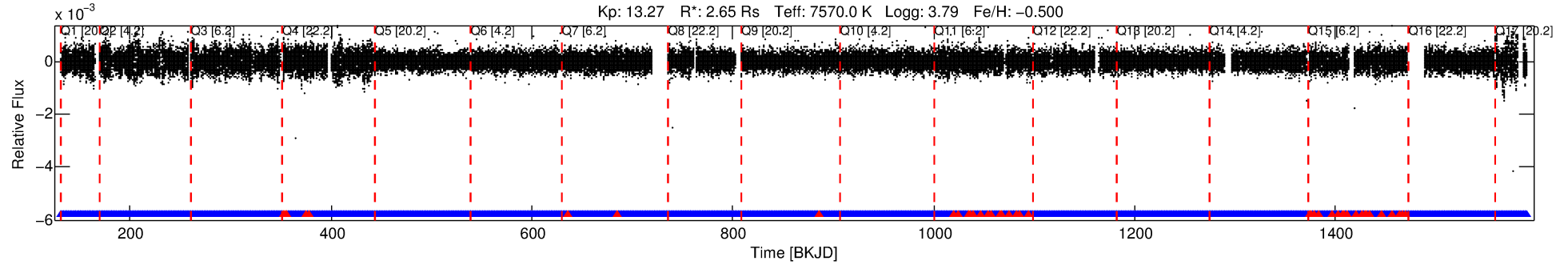
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006469599-01

No Significant Match Found

# DV One-Page Summary

KIC: 6469599 Candidate: 1 of 3 Period: 0.946 d



## DV Fit Results:

Period = 0.94643 [0.00001] d  
Epoch = 131.8931 [0.0035] BKJD  
Rp/R\* = 0.0046 [0.0012]  
a/R\* = 1.65 [1.58]  
b = 0.52 [2.14]  
Seff = 42997.56 [33118.24]  
Teq = 3672 [707] K  
Rp = 1.34 [0.74] Re  
a = 0.0219 [0.0103] AU  
Ag = 5.18 [4.73] [0.88σ]  
**Teffp = 8565 [1164] K [3.59σ]**

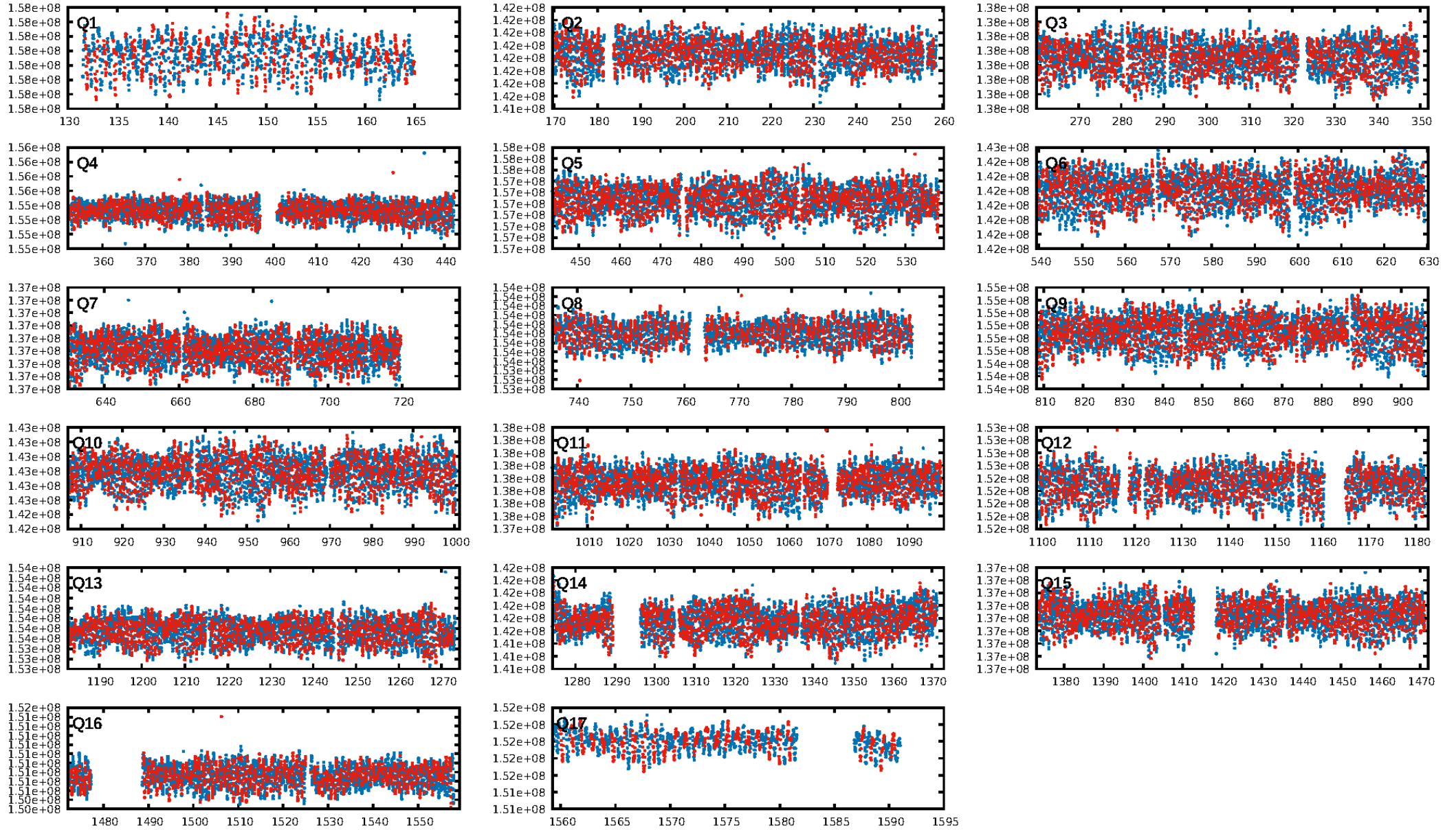
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [56.28σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
**Bootstrap-pfa: 2.60e-11**  
RollingBand-fgt: 0.97 [1311/1356]  
GhostDiagnostic-chr: 3.745  
Centroid-sig: 0.3%  
Centroid-so: 1.392 arcsec [1.86σ]  
OotOffset-rm: 0.246 arcsec [1.27σ]  
KicOffset-rm: 0.200 arcsec [1.07σ]  
OotOffset-st: 4/4/3/5 [16]  
KicOffset-st: 4/4/3/5 [16]  
DiffImageQuality-fgm: 0.88 [14/16]  
DiffImageOverlap-fno: 1.00 [17/17]

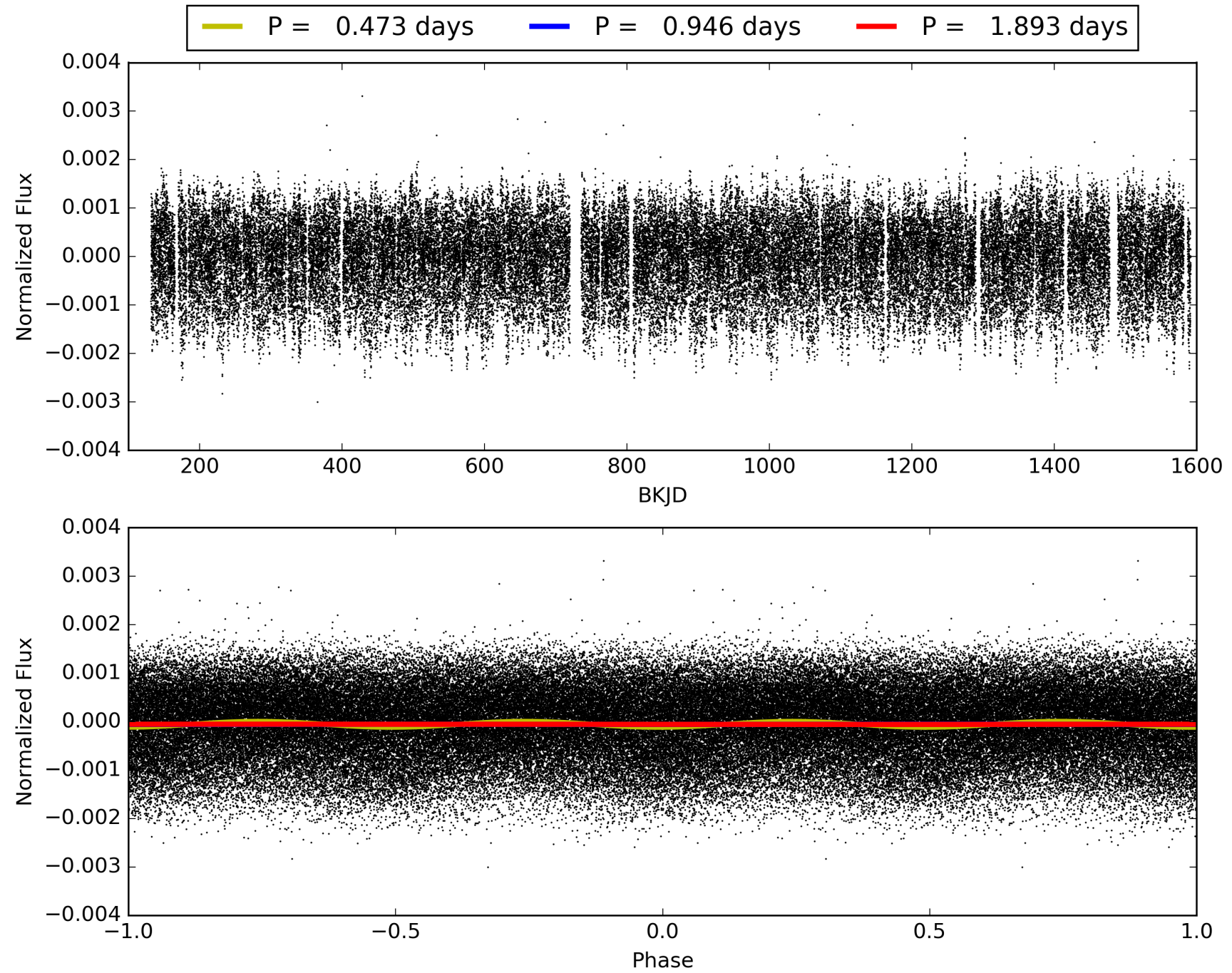
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:13:12 Z

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

# TCE 006469599-01, PDC Light Curves



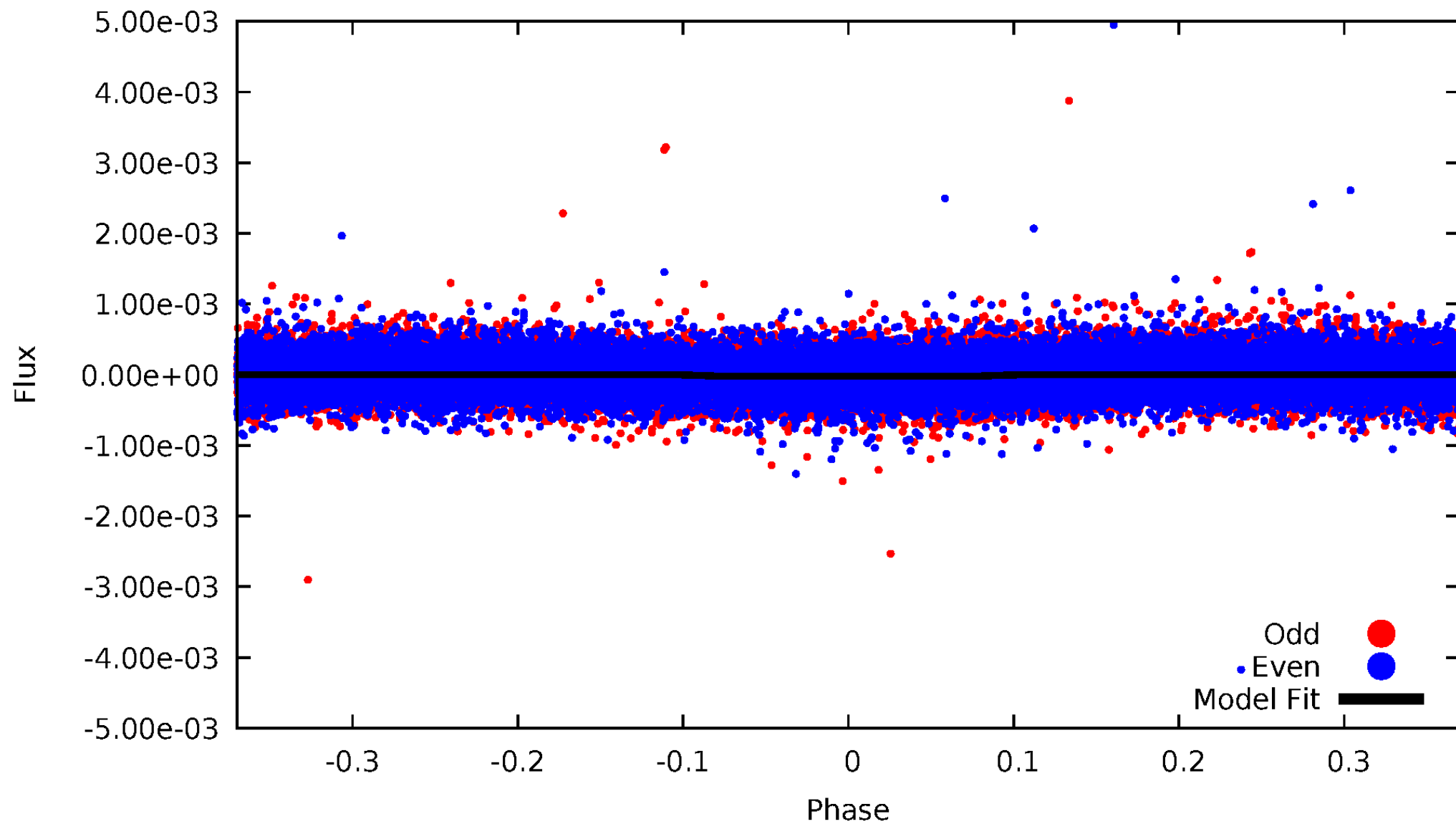
TCE 006469599-01





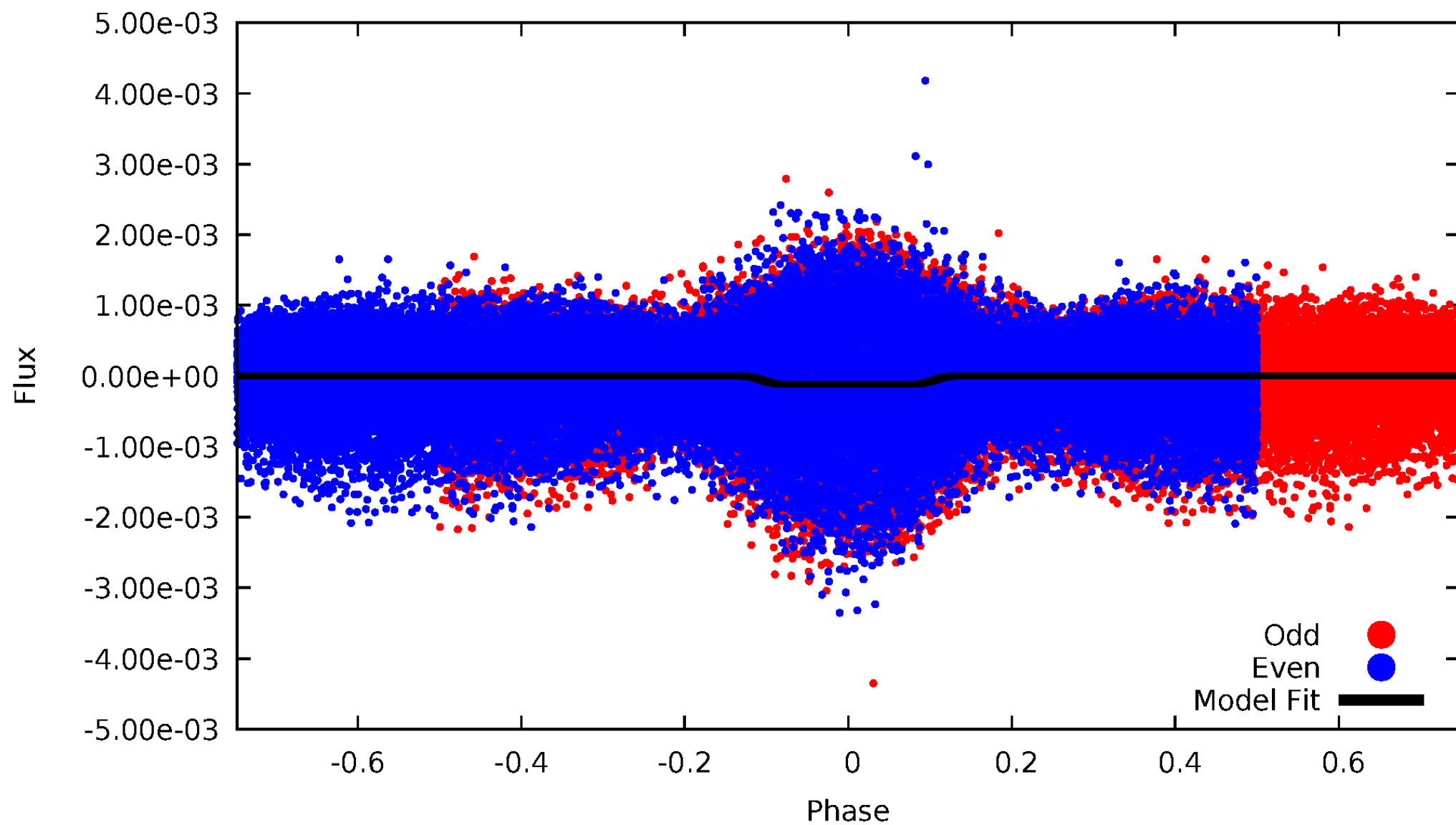
# DV Odd/Even

TCE 006469599-01



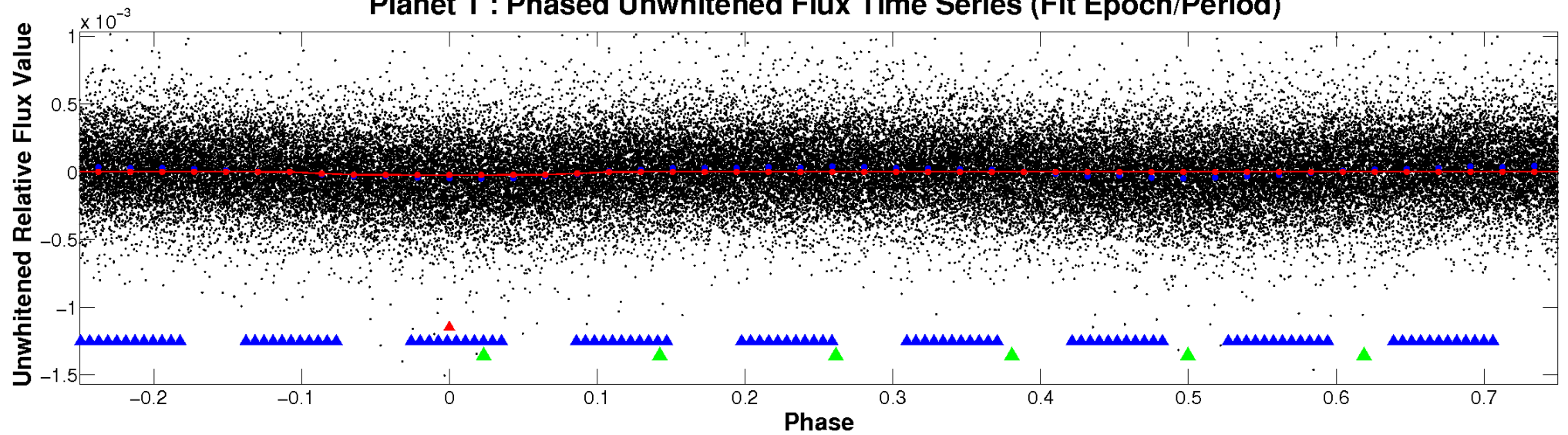
# ALT Odd/Even

TCE 006469599-01

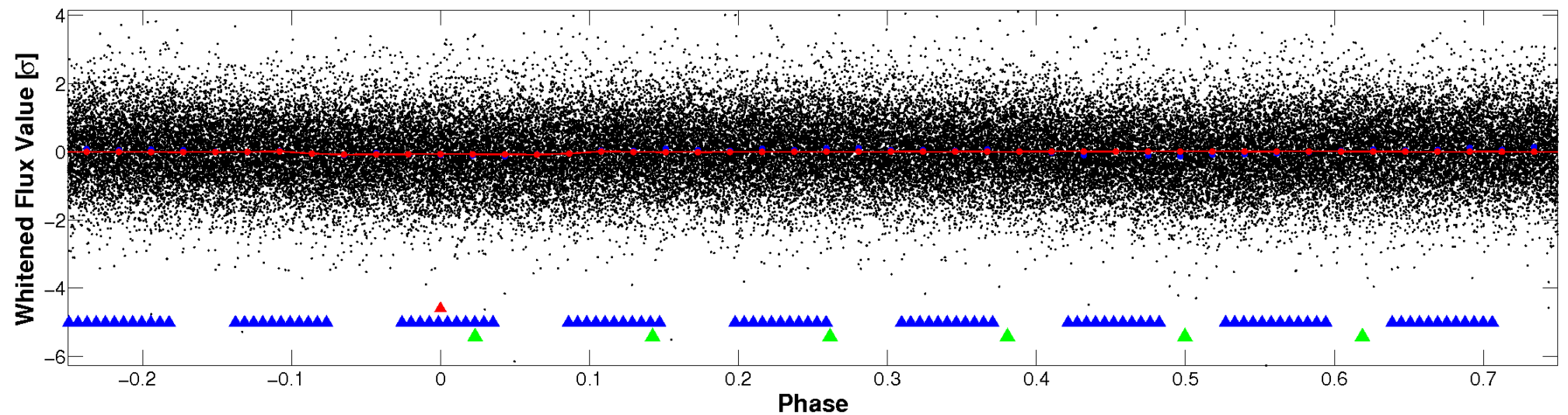


# Non-Whitened Vs. Whitened Light Curve

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

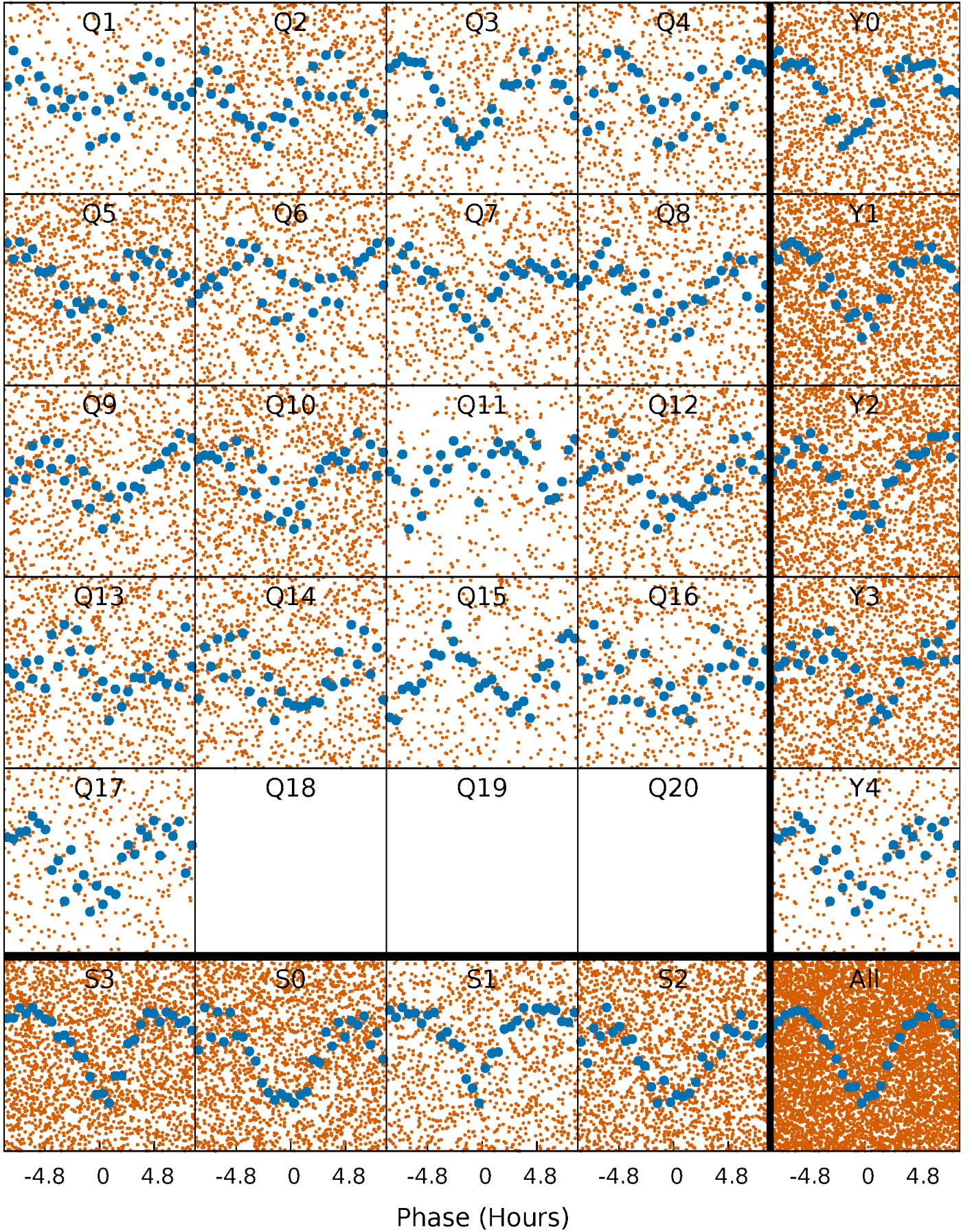


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

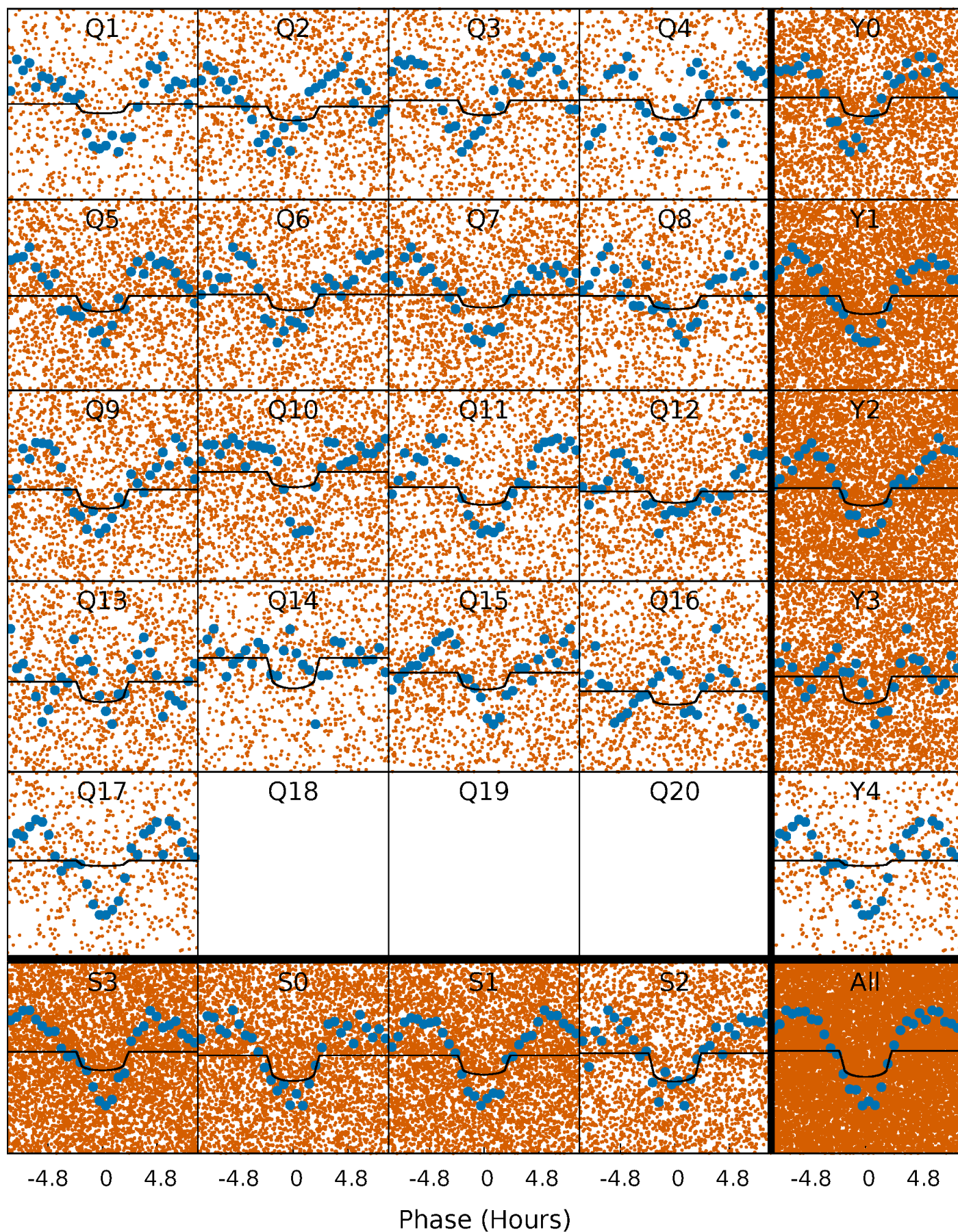
TCE 006469599-01   P= 0.946430 Days    $T_0=131.893077$  (BKJD)





# DV Quarter-Phased Transit Curves

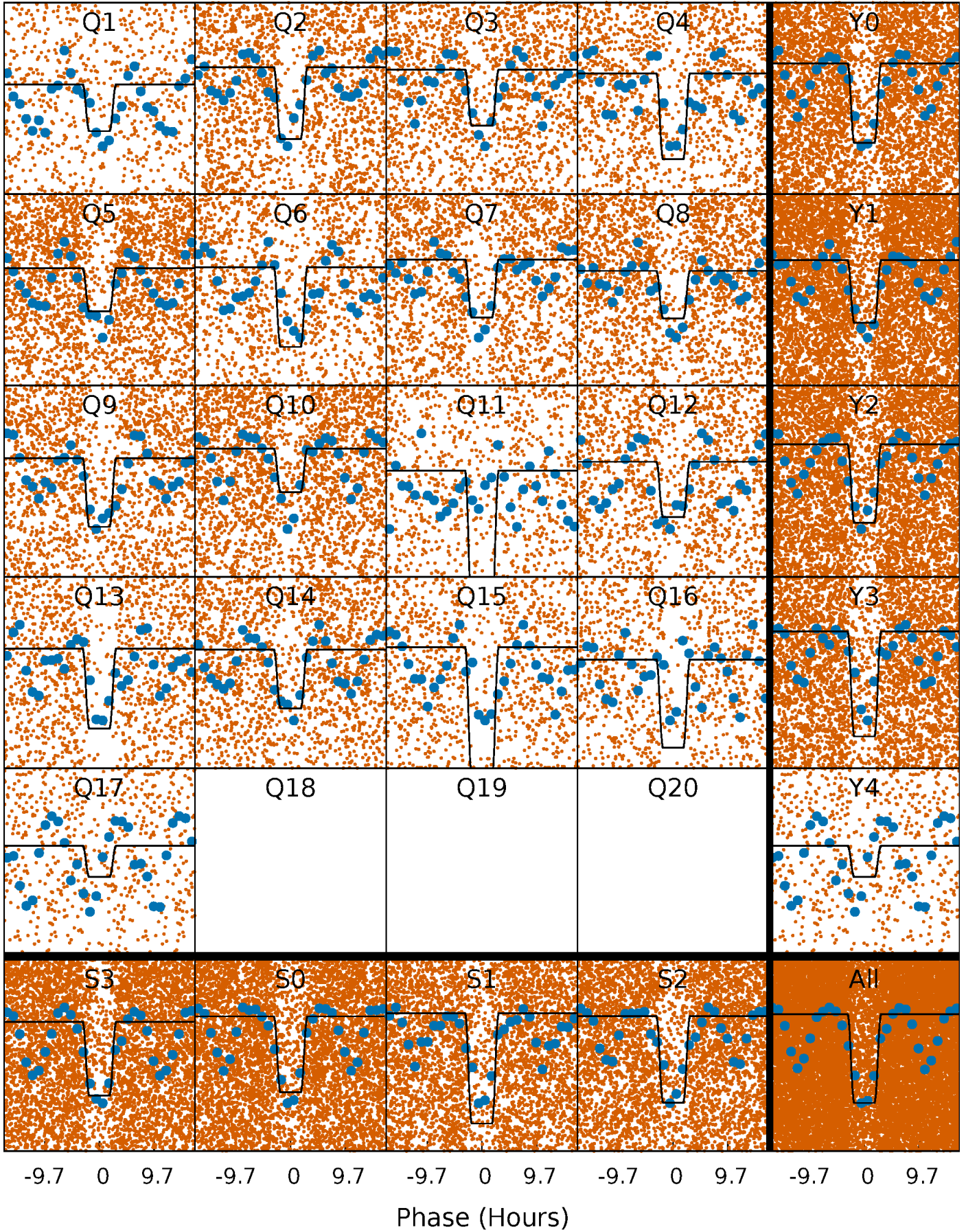
TCE 006469599-01   P= 0.946430 Days    $T_0=131.893077$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

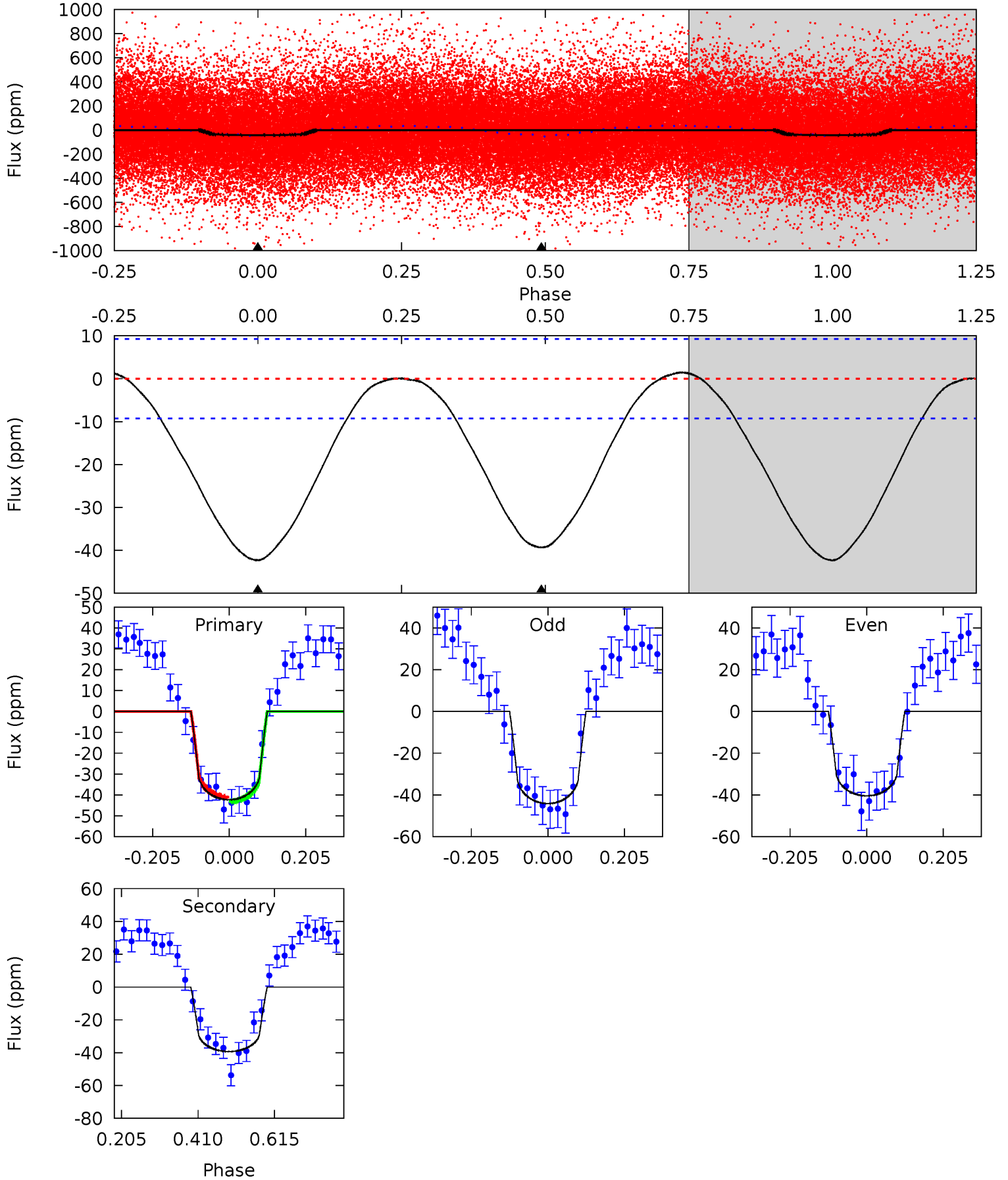
TCE 006469599-01   P= 0.946514 Days    $T_0=131.834329$  (BKJD)



# DV Model-Shift Uniqueness Test

006469599-01, P = 0.946430 Days, E = 130.946647 Days

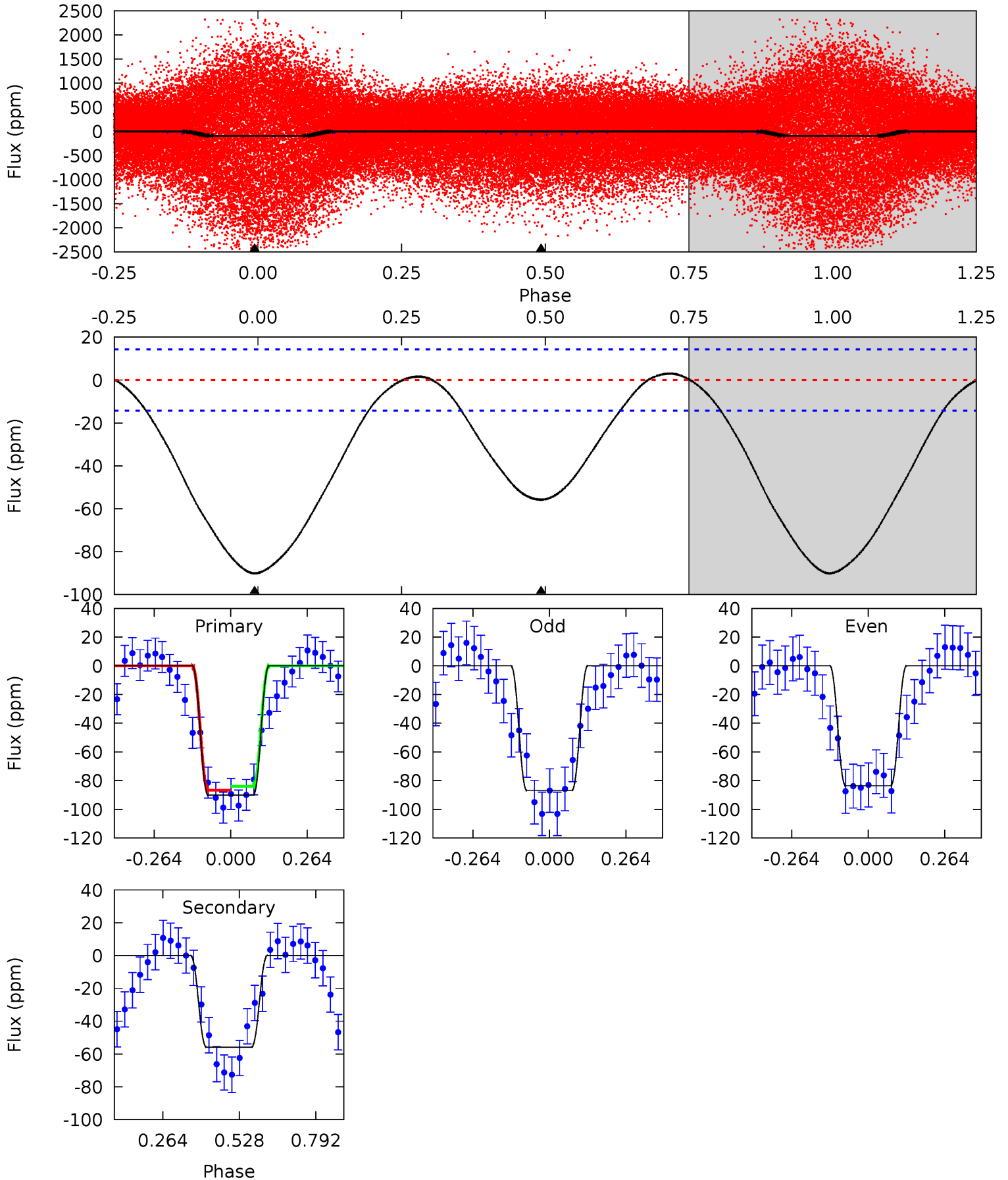
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	18.7	0	0	4.41	1.27	0.45	20.2	20.2	18.7	18.7	0.88	1.27	0.03	0.51



# Alt Model-Shift Uniqueness Test

006469599-01, P = 0.946514 Days, E = 130.887815 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
27.5	17.0	0	0	4.36	1.12	0.72	27.5	27.5	17.0	17.0	0.50	1.80	0.03	0.28





### Stellar Parameters For KIC 006469599

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7570^{+234}_{-313}$	$3.786^{+0.442}_{-0.078}$	$-0.500^{+0.250}_{-0.300}$	$2.645^{+0.403}_{-1.289}$	$1.560^{+0.182}_{-0.337}$	$0.119^{+0.516}_{-0.031}$
	+3%/-4%	+12%/-2%	+50%/-60%	+15%/-49%	+12%/-22%	+435%/-26%
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 006469599-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-39 \pm 2$	$1.19^{+0.42}_{-0.40}$	$4894^{+406}_{-569}$	$8975^{+2272}_{-1286}$	$7.447^{+8.510}_{-3.431}$
Alt.	$-56 \pm 3$	$2.95^{+0.60}_{-0.70}$	$4966^{+350}_{-569}$	$5846^{+509}_{-405}$	$1.721^{+1.126}_{-0.510}$

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

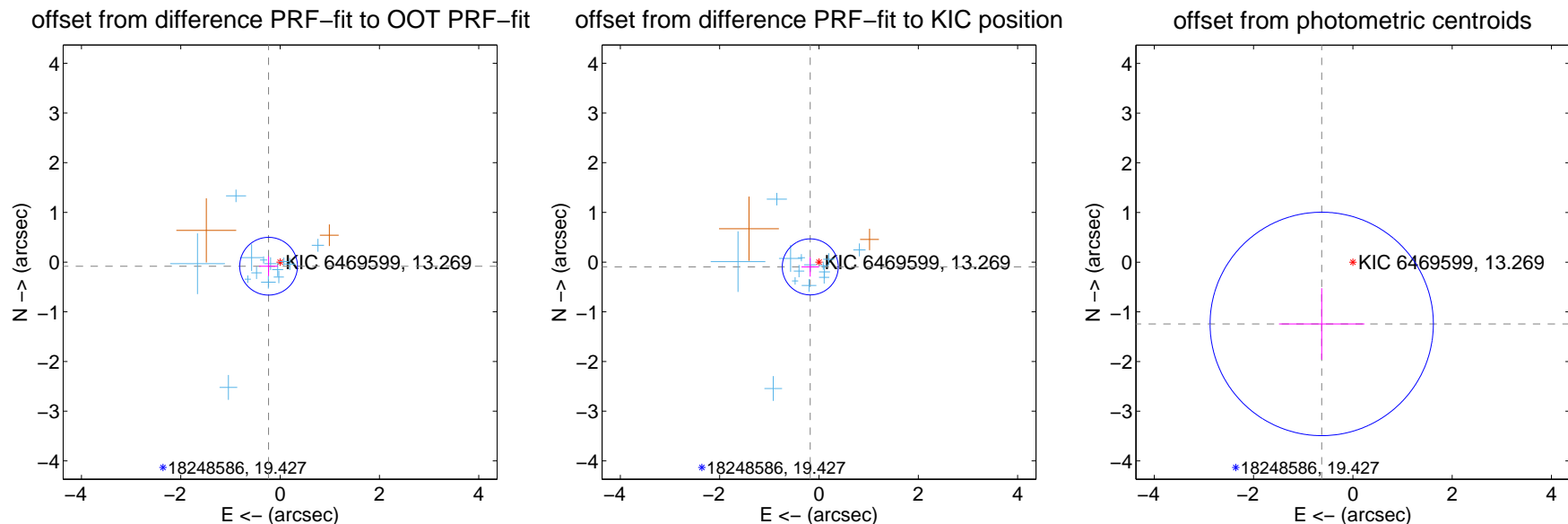
## DV Centroid Data

Supplemental centroid analysis for 006469599-01. Kepler magnitude: 13.27. Transit SNR 7.99

There are 14 quarters with good PRF difference image offsets

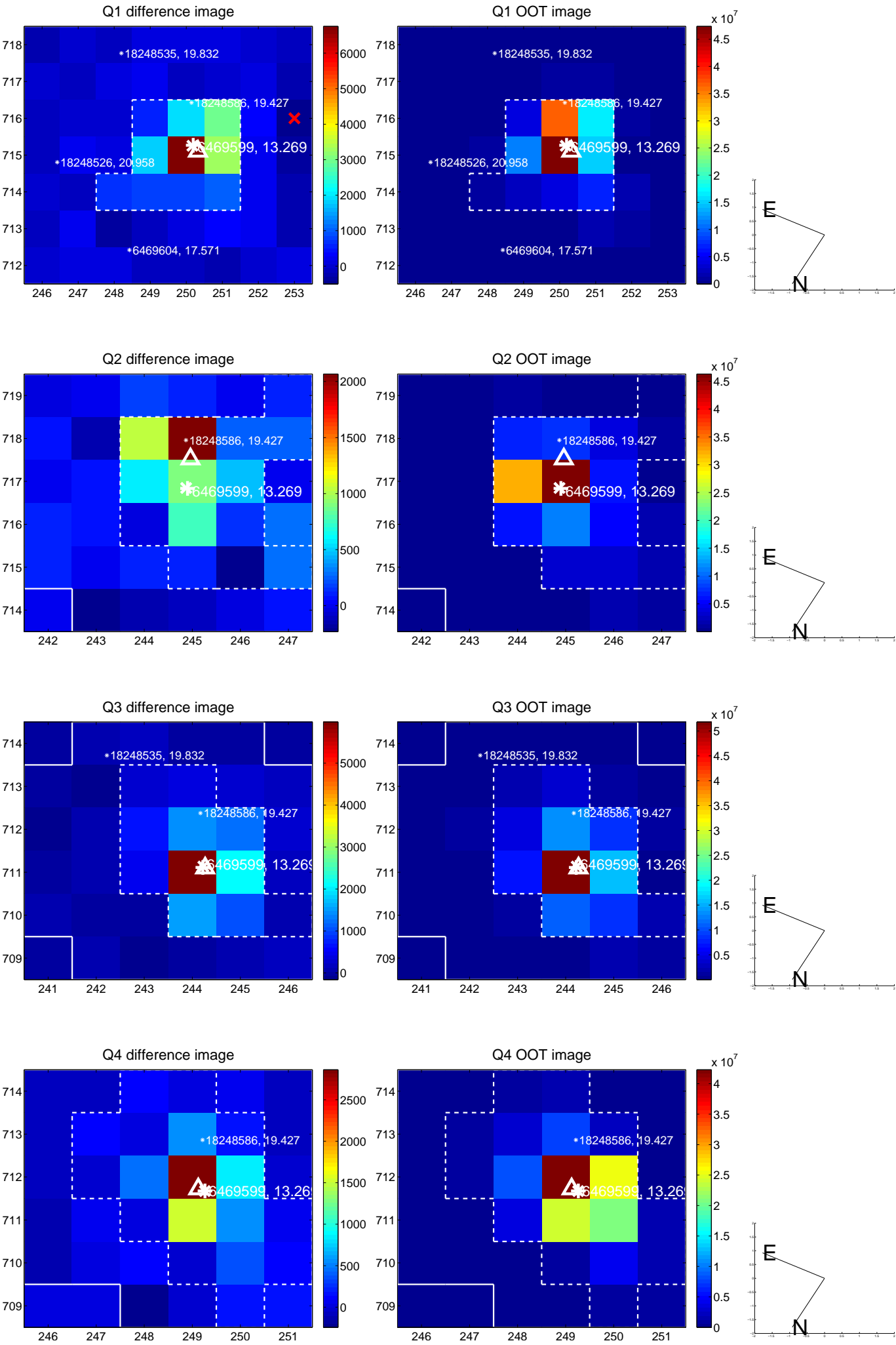
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.246 \pm 0.194$	1.27	$0.232 \pm 0.188$	$-0.083 \pm 0.200$
PRF-fit source offset from KIC position	$0.200 \pm 0.188$	1.07	$0.176 \pm 0.177$	$-0.096 \pm 0.197$
photometric centroid source offset	$1.39 \pm 0.75$	1.86	$0.63 \pm 0.86$	$-1.24 \pm 0.72$

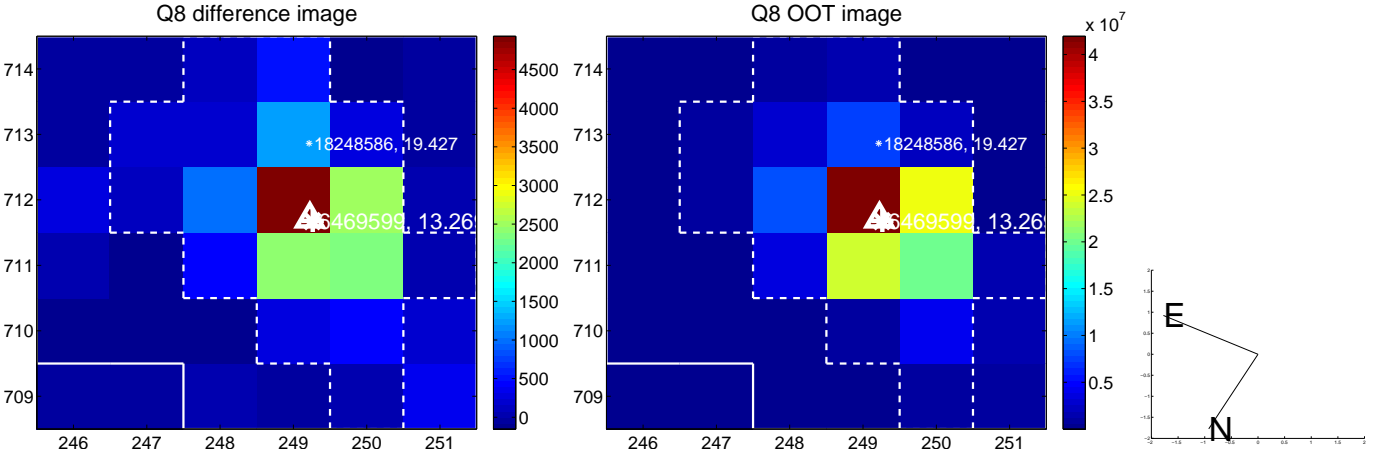
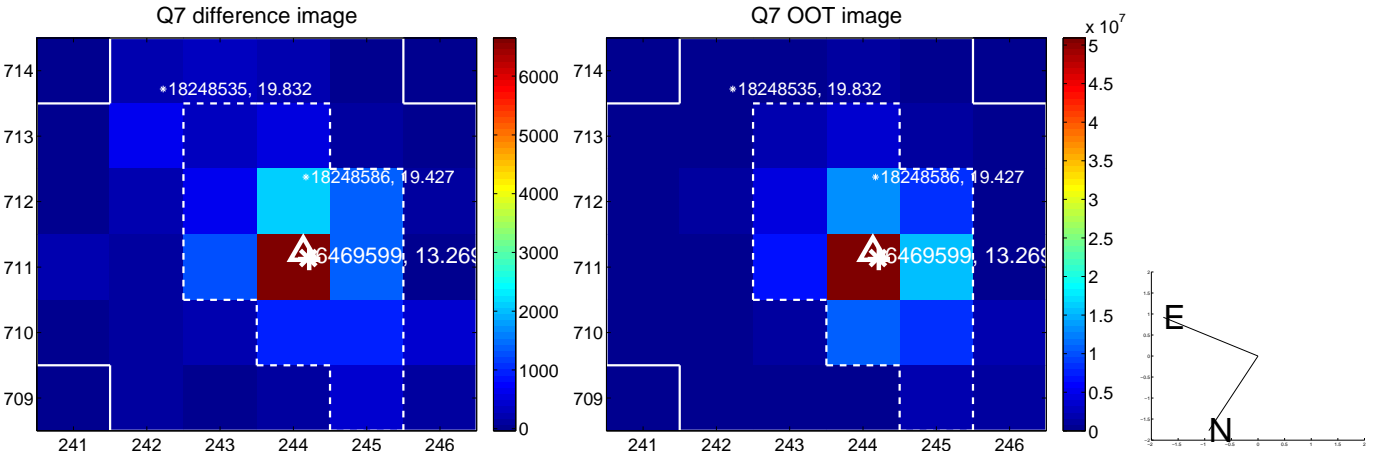
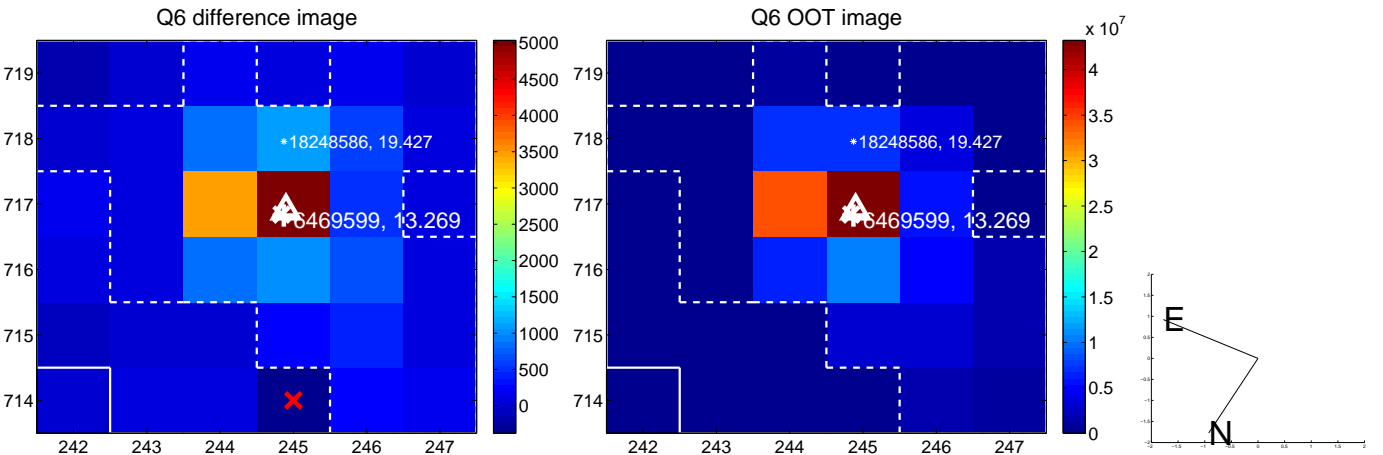
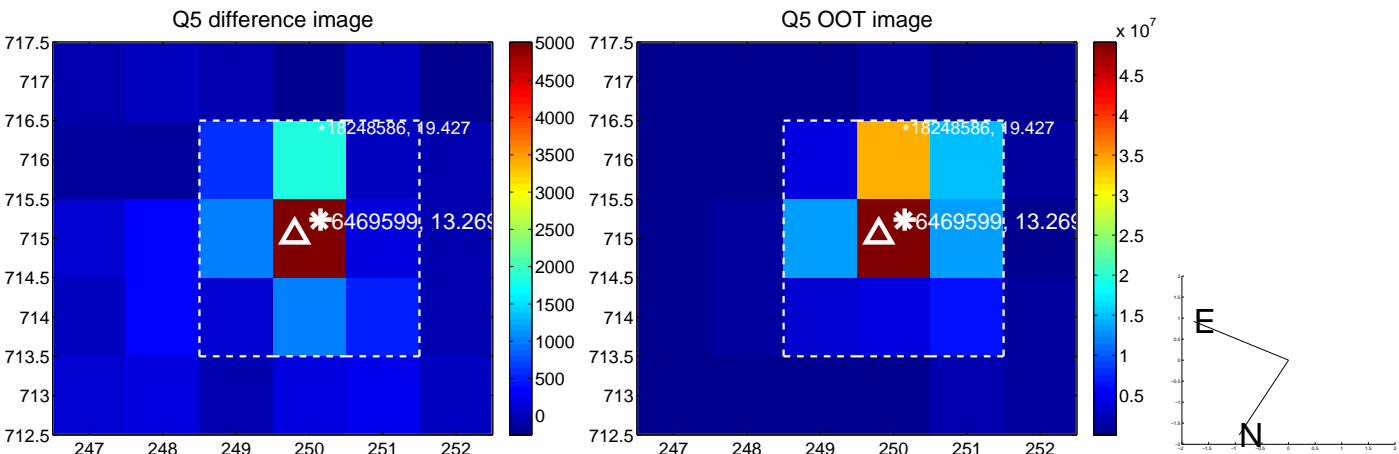


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

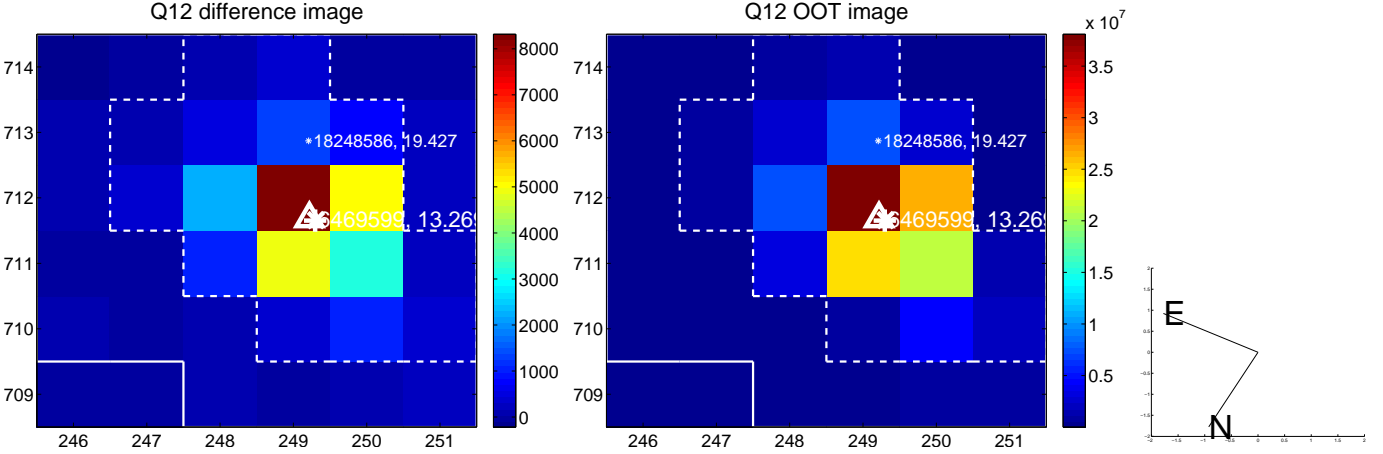
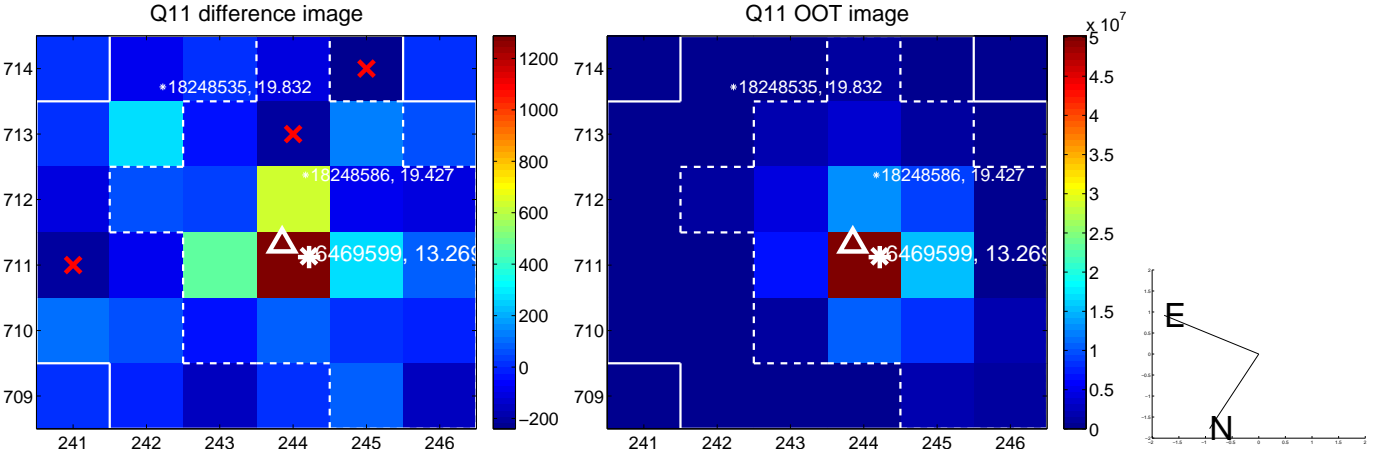
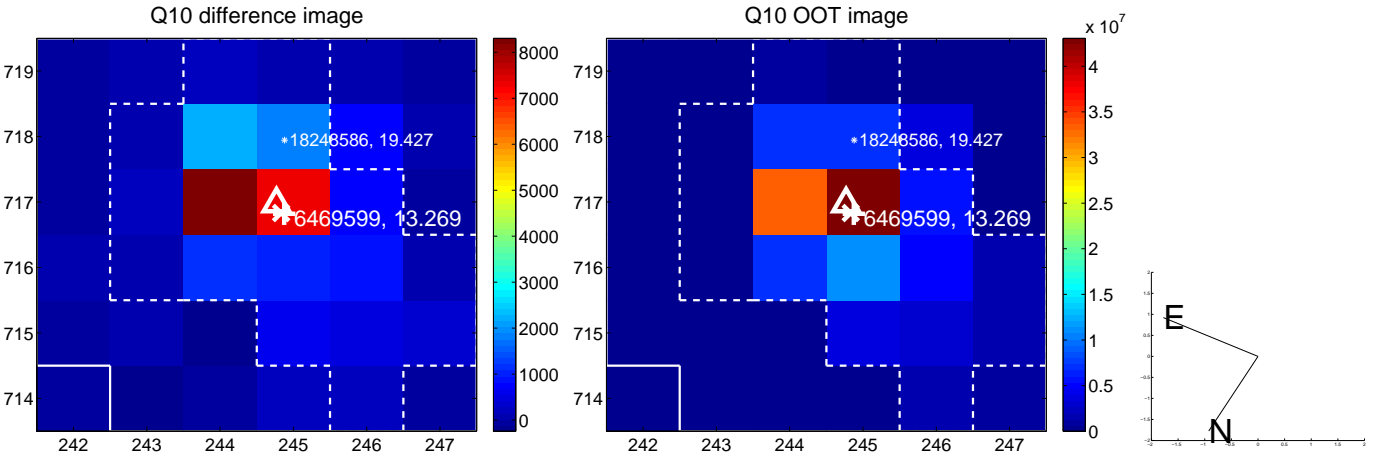
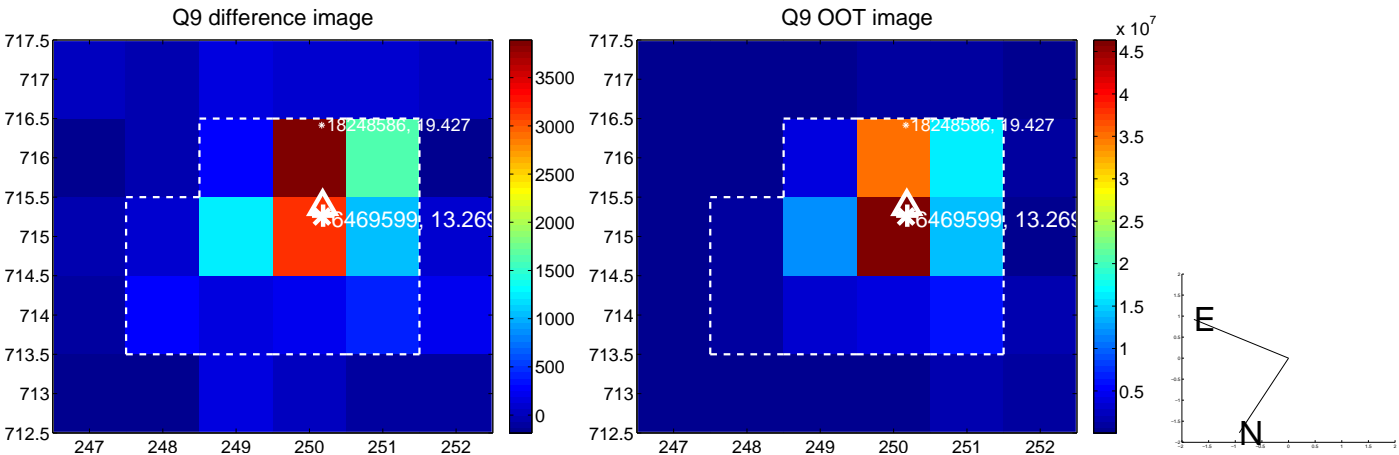


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

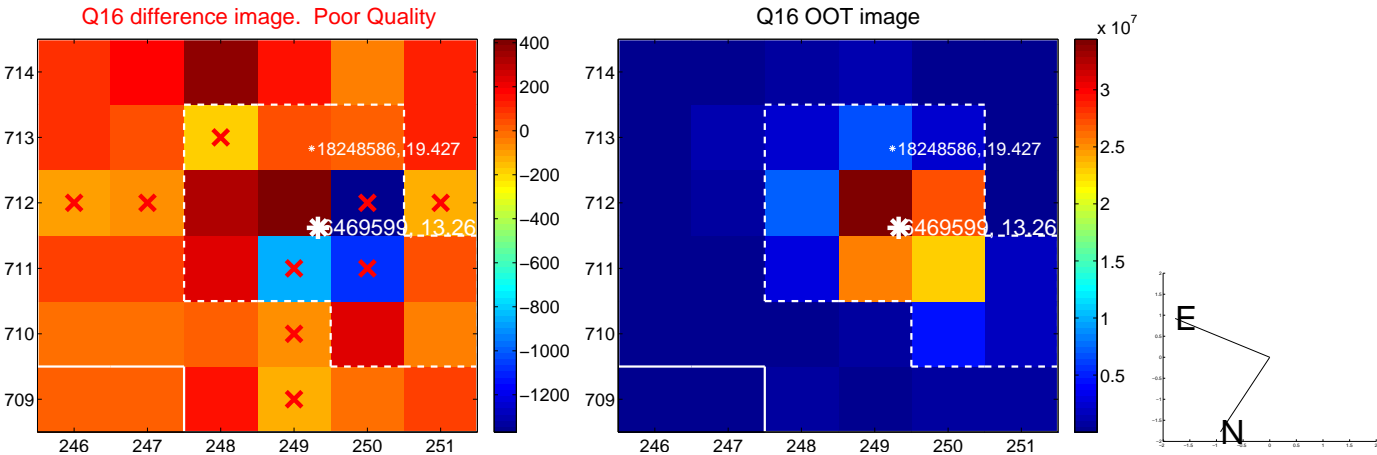
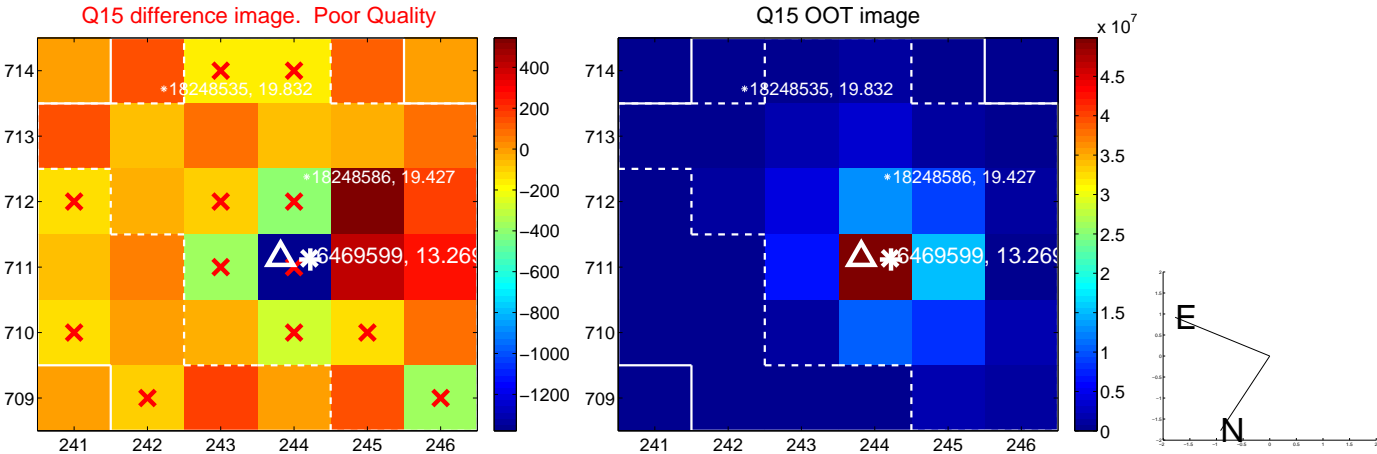
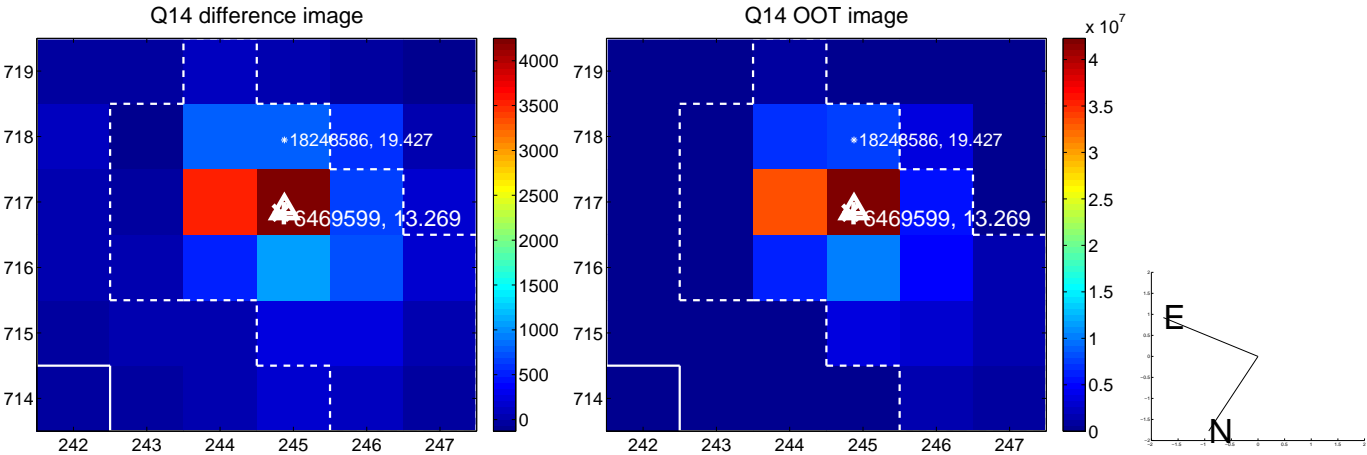
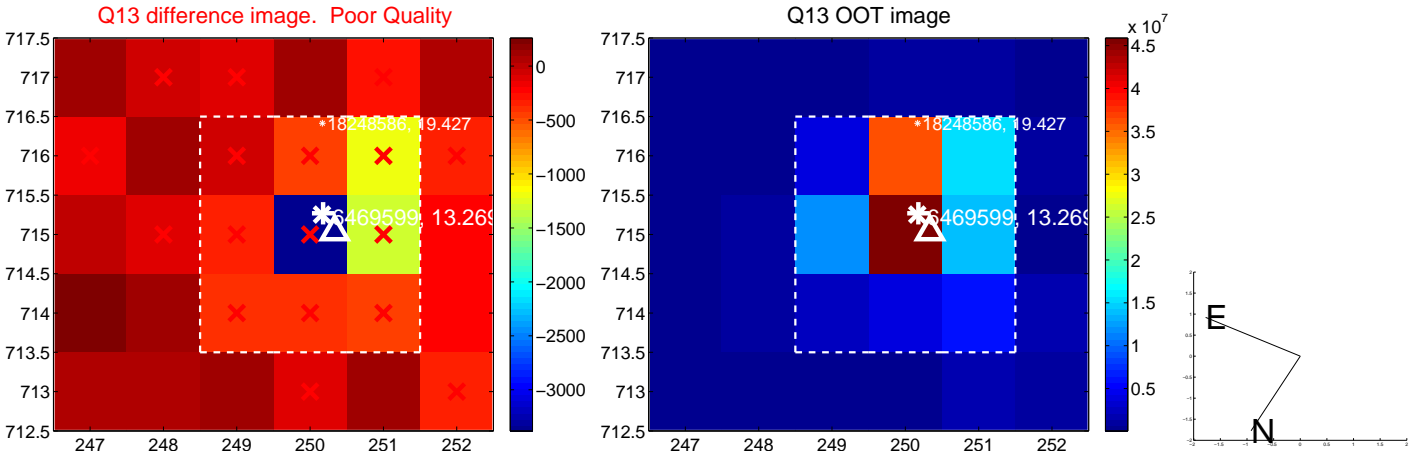




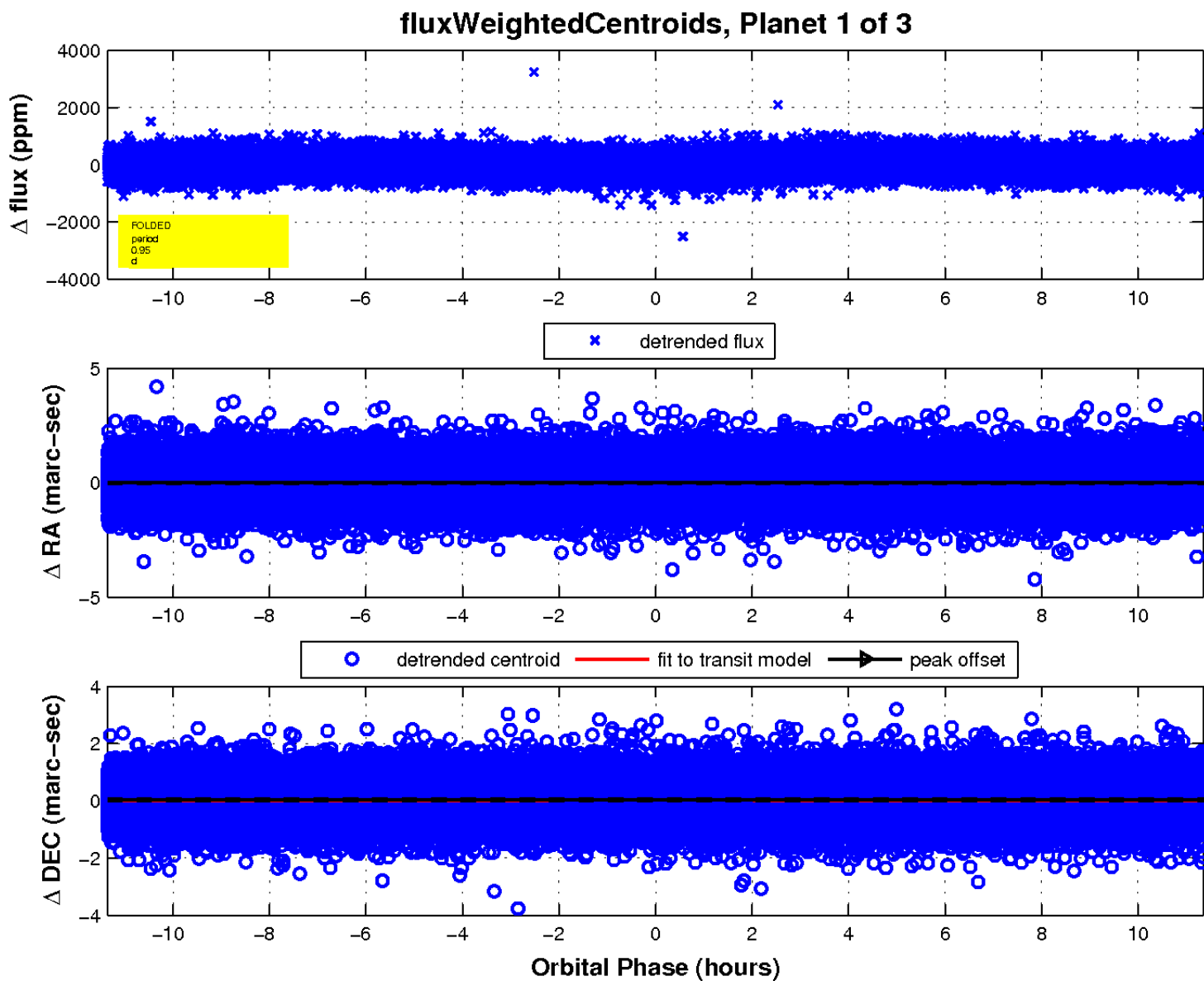
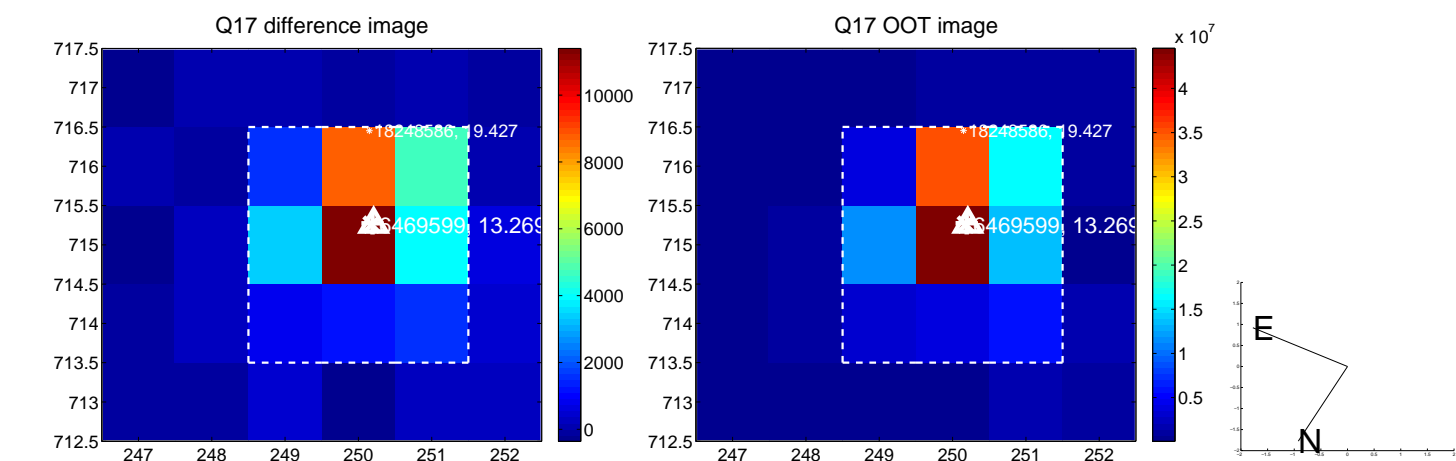
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

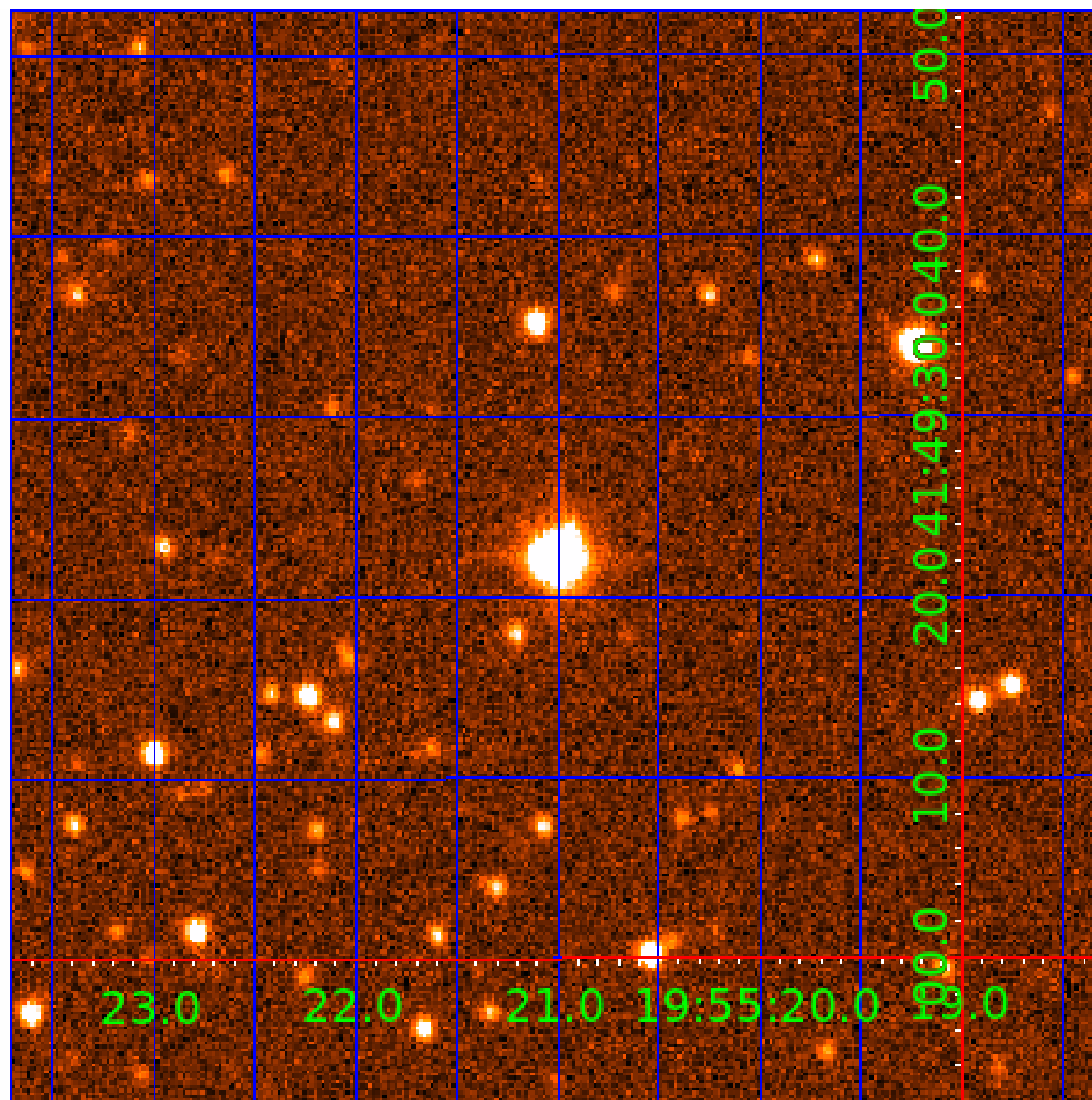


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 006469599

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006469599-01	OBS	No	0.946430	131.893077	23.7	4.199	7.9	8.0	2.65	7570	1.34	42997.56
006469599-02	OBS	No	14.302248	132.391862	115.0	3.848	7.7	7.3	2.65	7570	3.18	1150.86
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006469599-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
006469599-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
006469599-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

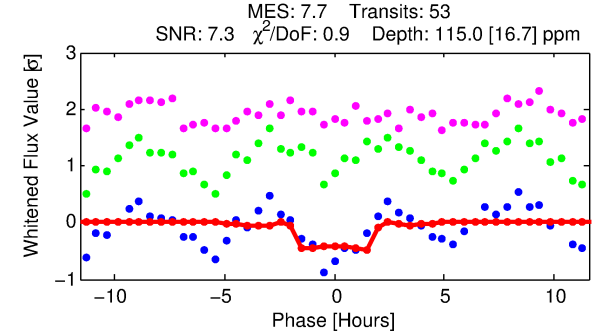
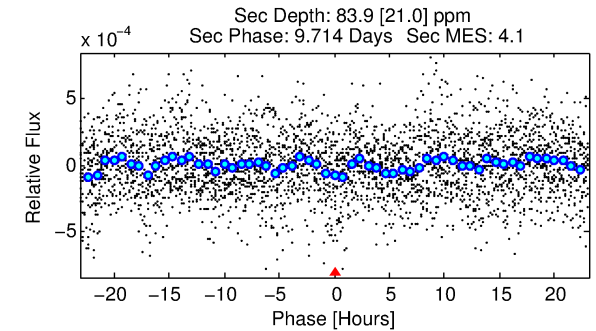
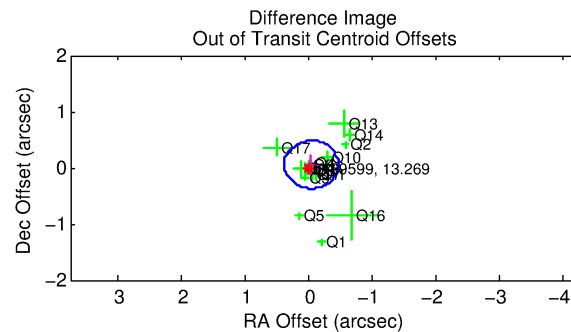
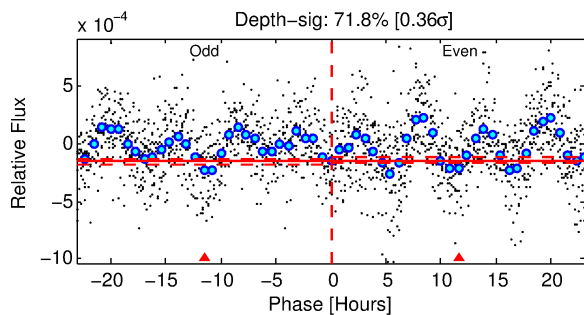
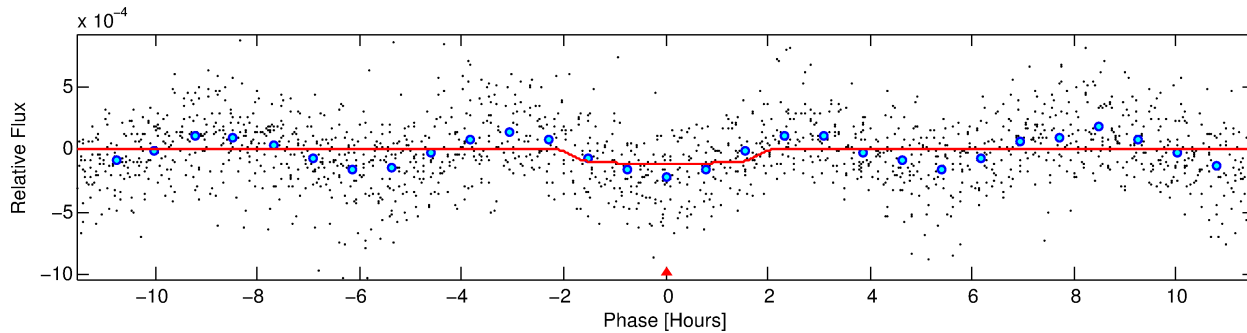
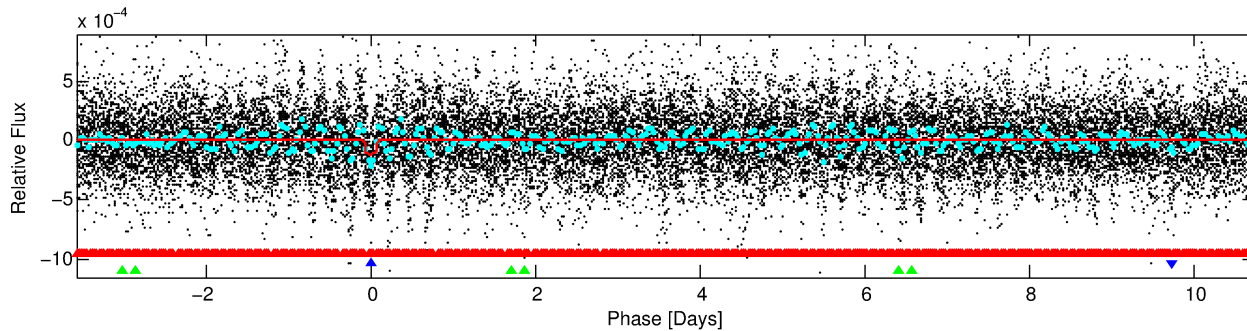
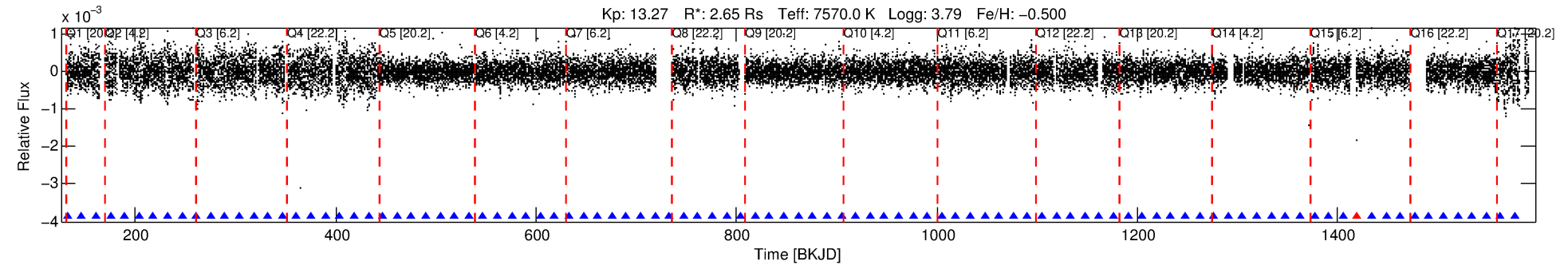
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## Ephemeris Match Information For 006469599-02

No Significant Match Found

# DV One-Page Summary

KIC: 6469599 Candidate: 2 of 3 Period: 14.302 d



## DV Fit Results:

Period = 14.30225 [0.00015] d  
Epoch = 132.3919 [0.0081] BKJD  
Rp/R\* = 0.0110 [0.0060]  
a/R\* = 15.90 [53.88]  
b = 0.84 [1.18]  
Seff = 1150.86 [886.43]  
Teq = 1485 [286] K  
Rp = 3.18 [2.32] Re  
a = 0.1337 [0.0628] AU  
Ag = 81.52 [109.59] [0.73 $\sigma$ ]  
Teffp = 6900 [1943] K [2.76 $\sigma$ ]

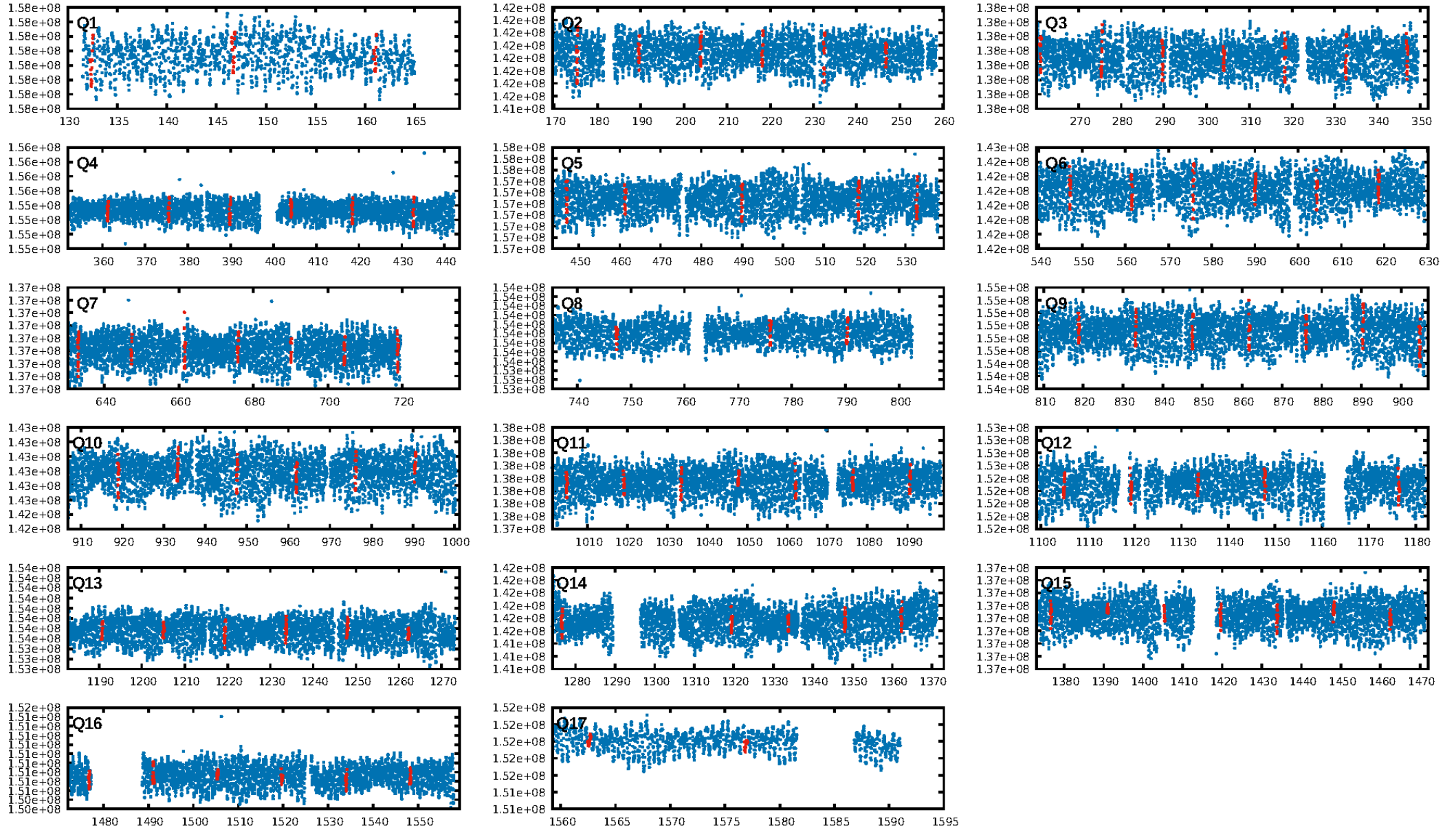
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [56.28 $\sigma$ ]  
LongPeriod-sig: 100.0% [671.03 $\sigma$ ]  
ModelChiSquare2-sig: 45.3%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 1.95e-10**  
RollingBand-fgt: 0.98 [48/49]  
**GhostDiagnostic-chr: 0.4231**  
Centroid-sig: 100.0%  
Centroid-so: 0.052 arcsec [0.08 $\sigma$ ]  
OotOffset-rm: 0.067 arcsec [0.47 $\sigma$ ]  
OotOffset-st: 4/3/4/5 [16]  
KicOffset-rm: 0.117 arcsec [0.88 $\sigma$ ]  
KicOffset-st: 4/3/4/5 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 0.00 [0/17]

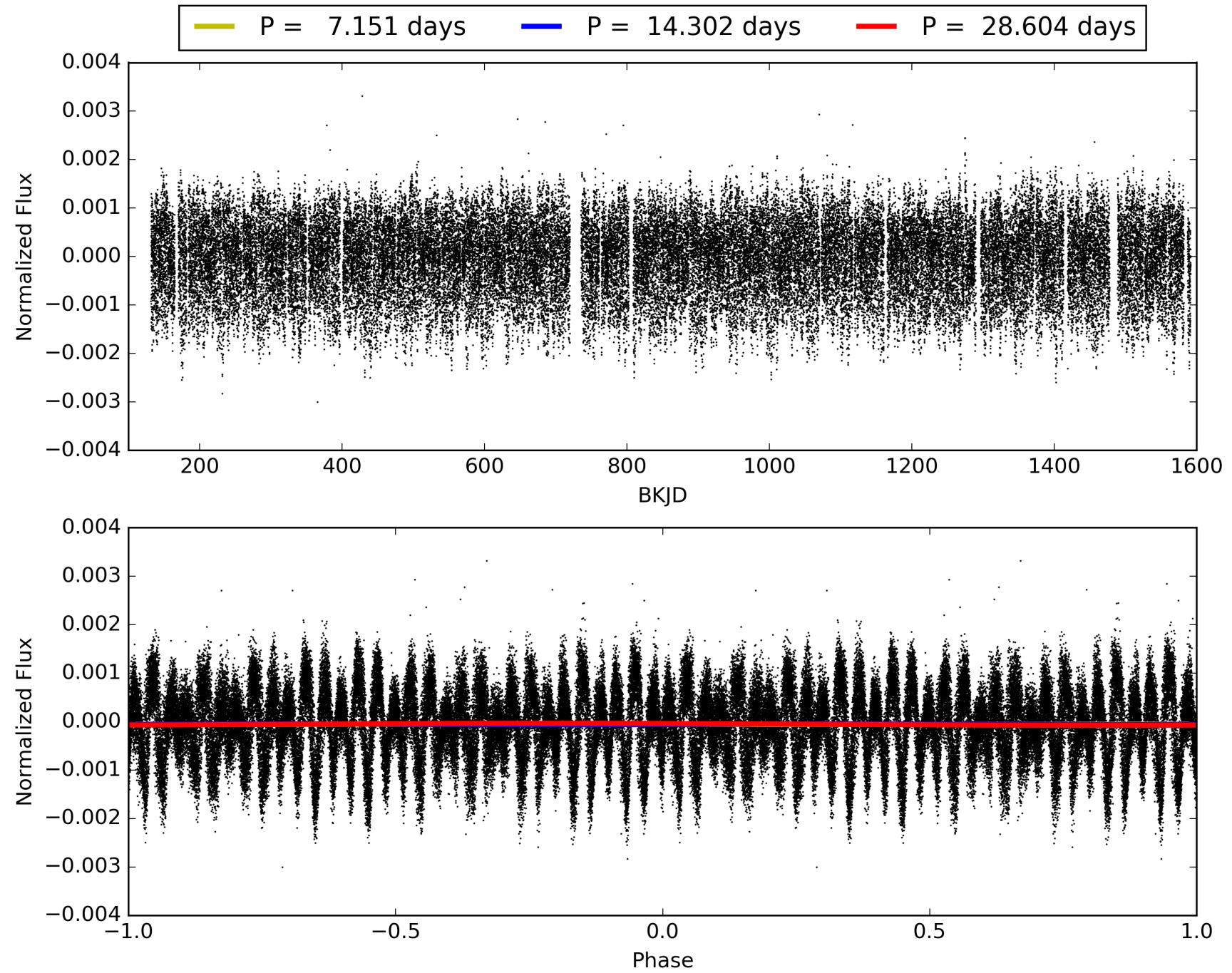
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:13:22 Z

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

# TCE 006469599-02, PDC Light Curves

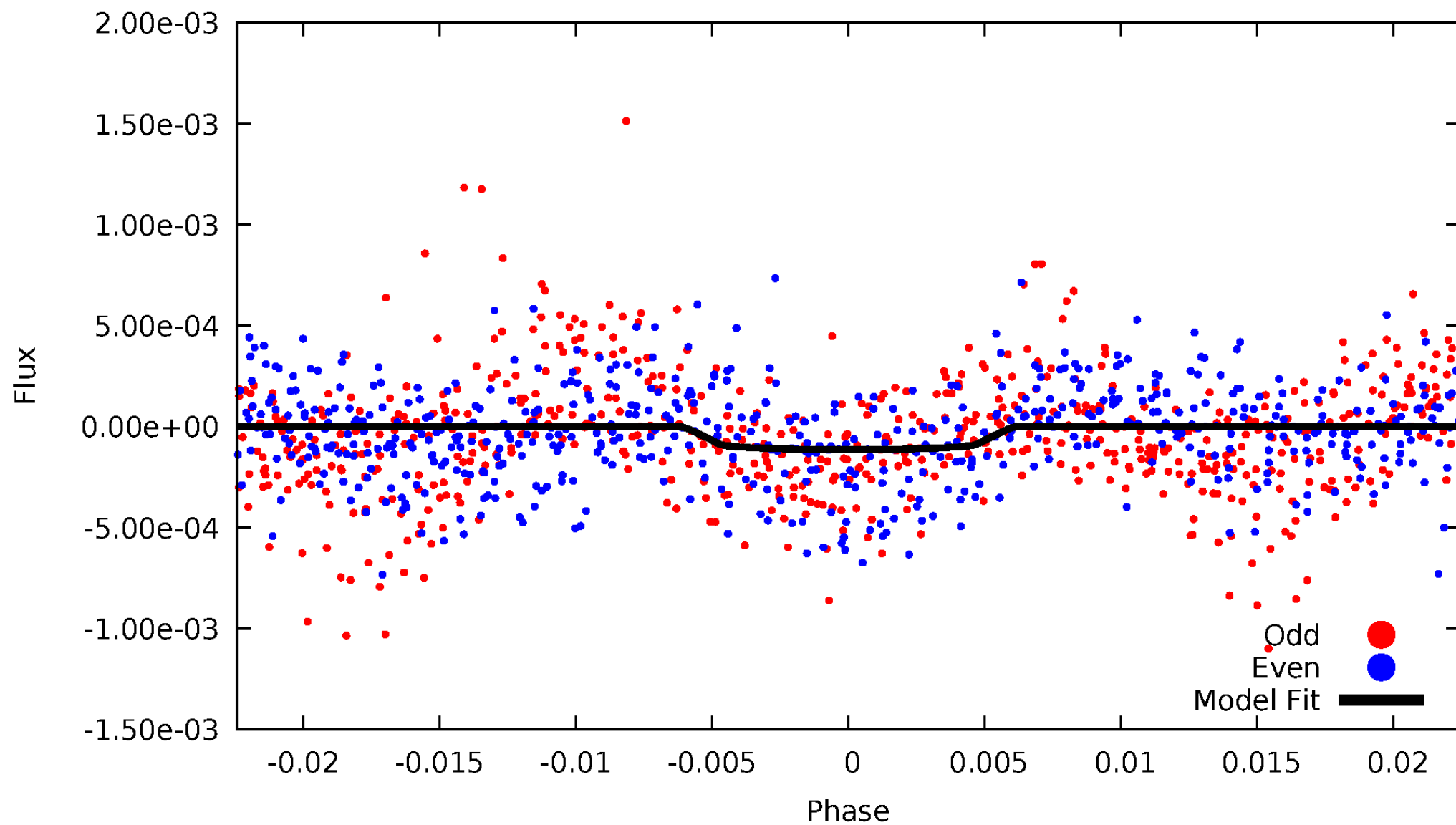


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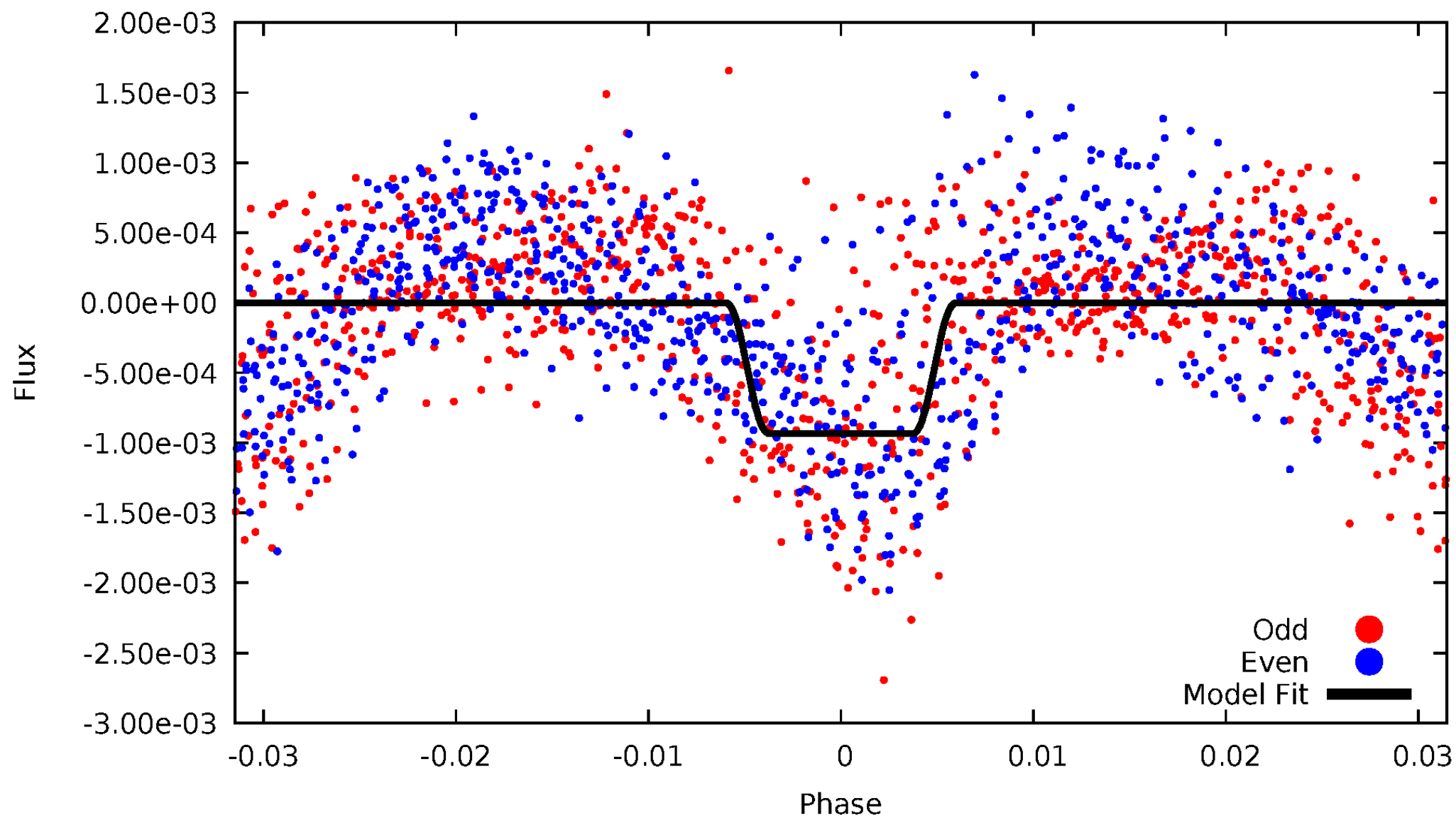
# DV Odd/Even

TCE 006469599-02



# ALT Odd/Even

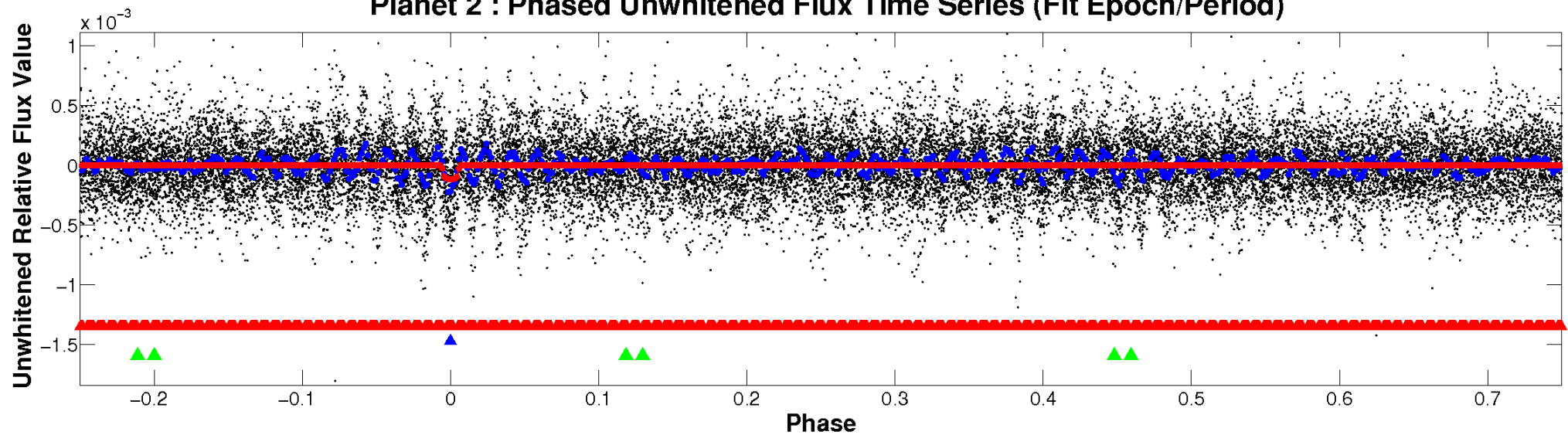
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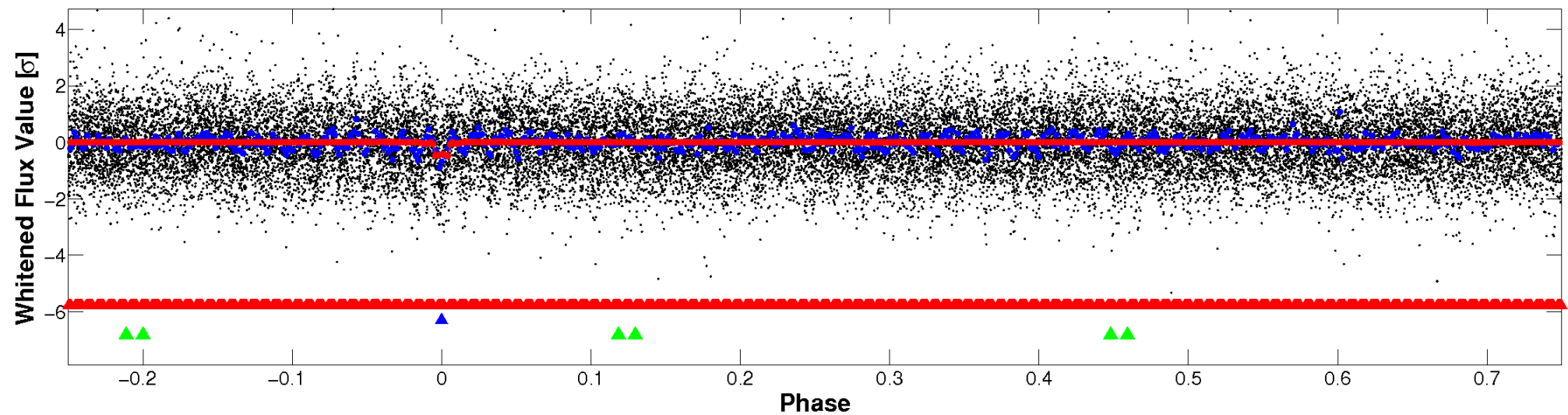


# Non-Whitened Vs. Whitened Light Curve

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

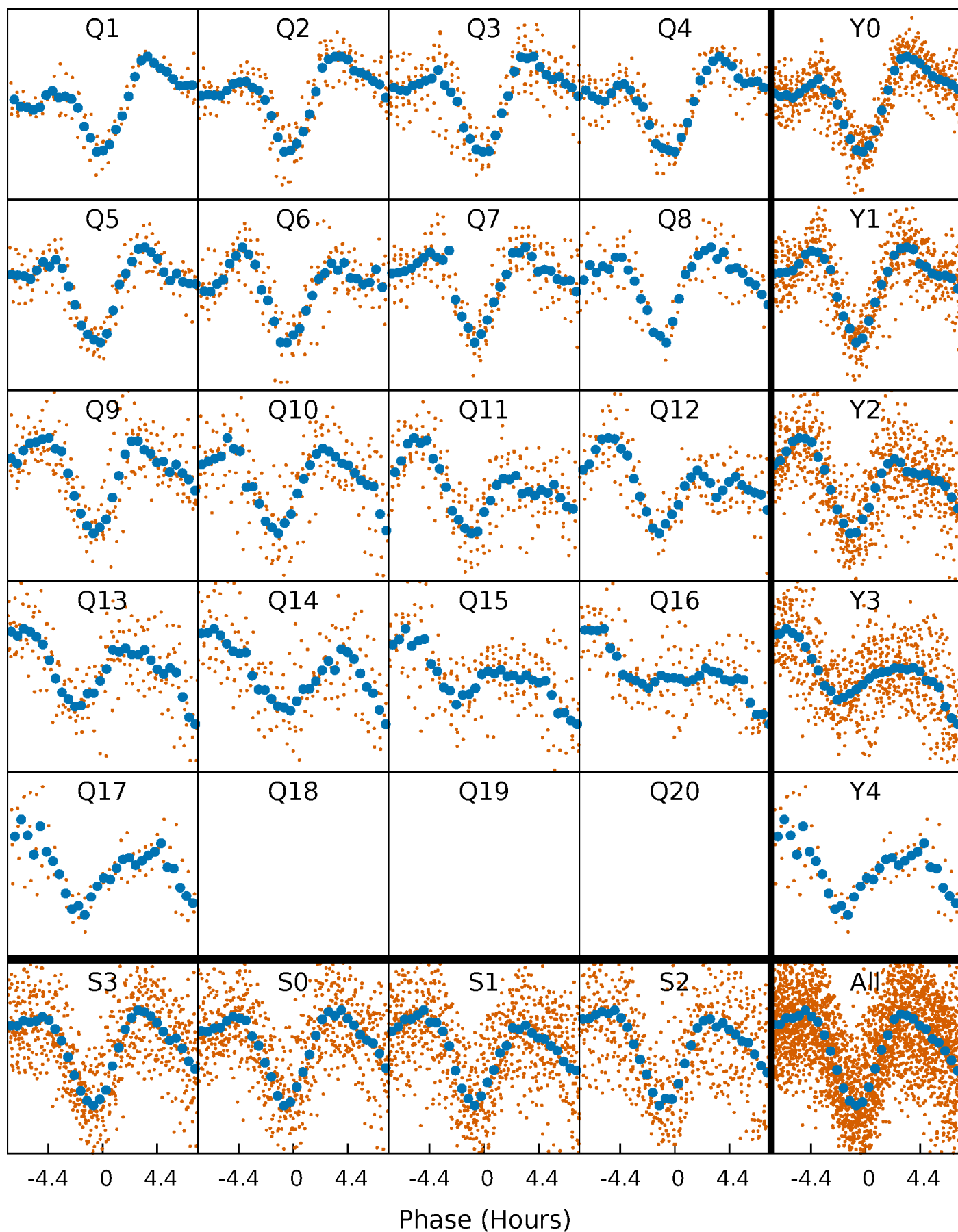


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



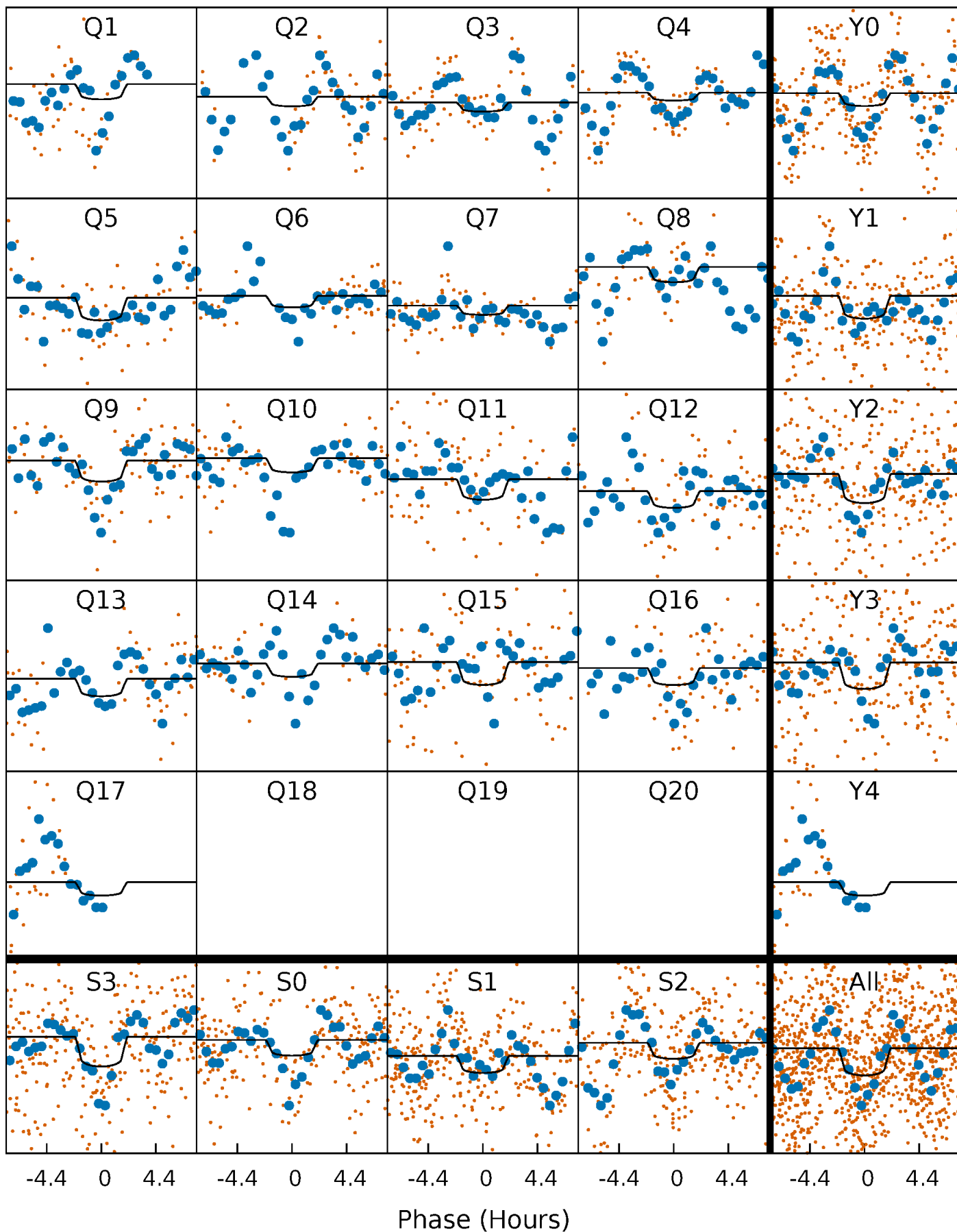
# PDC Quarter-Phased Transit Curves

TCE 006469599-02 P= 14.302248 Days  $T_0=132.391862$  (BKJD)



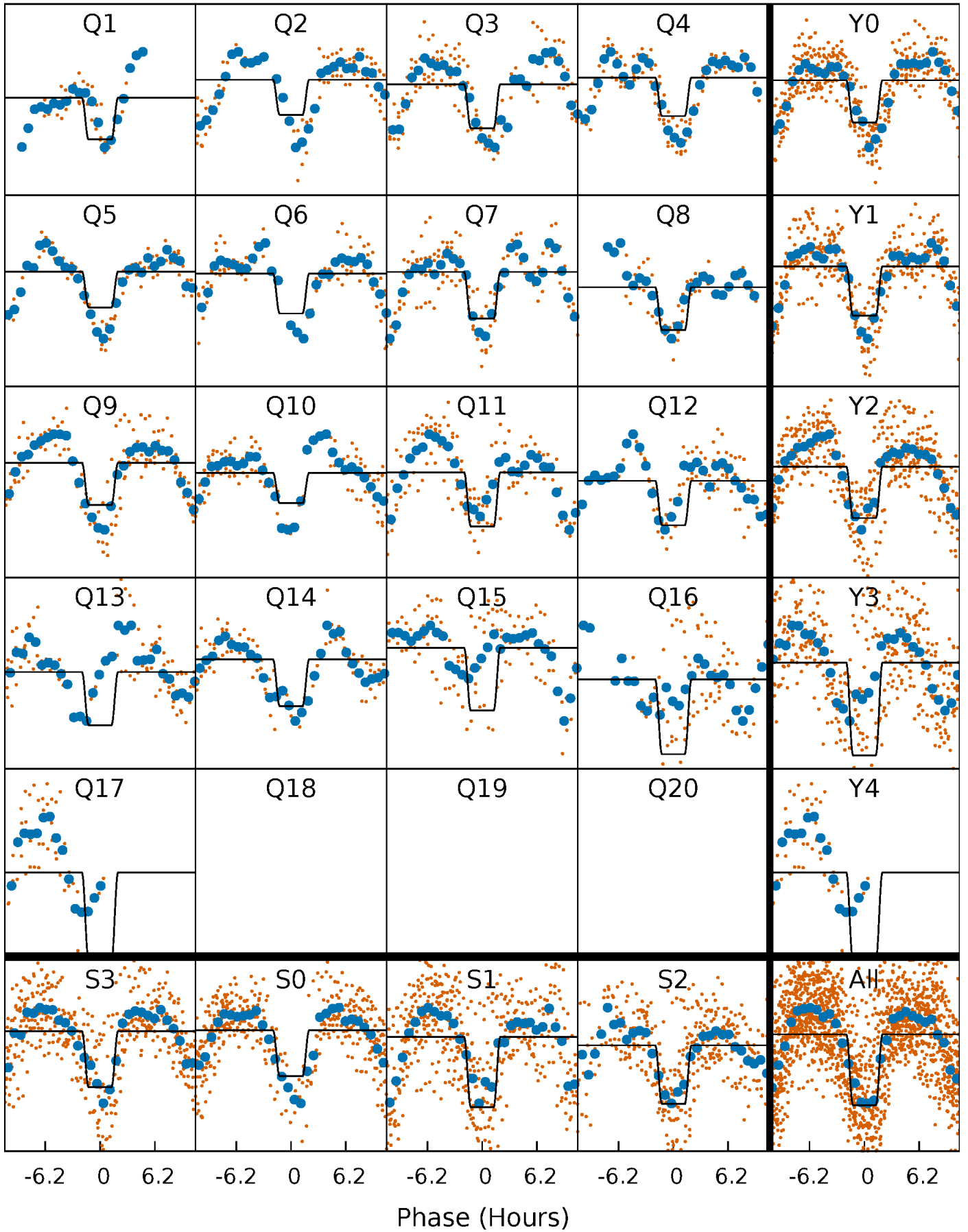
# DV Quarter-Phased Transit Curves

TCE 006469599-02 P= 14.302248 Days  $T_0=132.391862$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

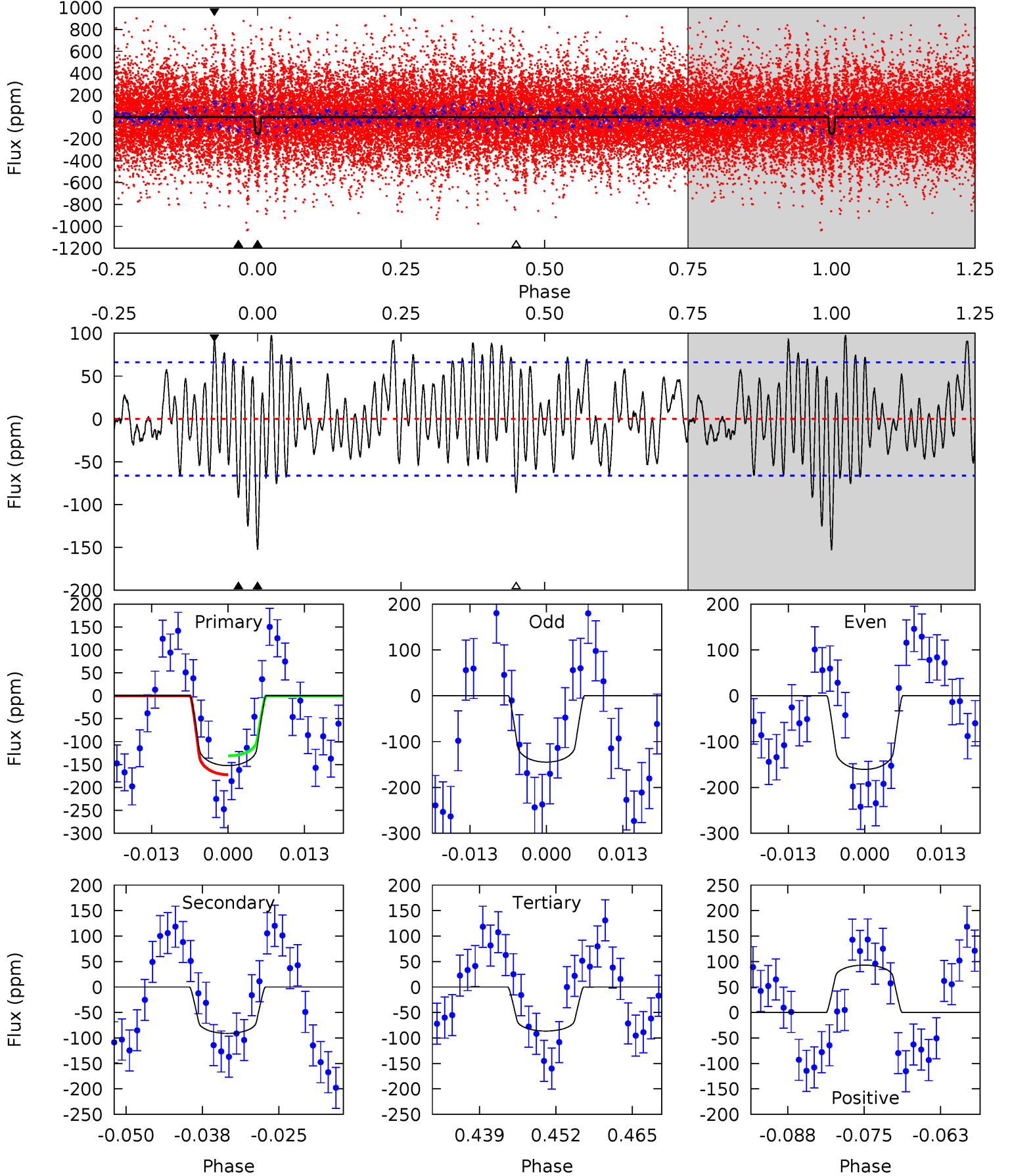
TCE 006469599-02 P= 14.302532 Days  $T_0=132.347901$  (BKJD)



# DV Model-Shift Uniqueness Test

006469599-02, P = 14.302248 Days, E = 118.089614 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
11.5	6.85	6.50	7.00	4.98	2.50	2.76	4.97	4.47	0.35	-0.15	0.60	0.82	0.39	1.55

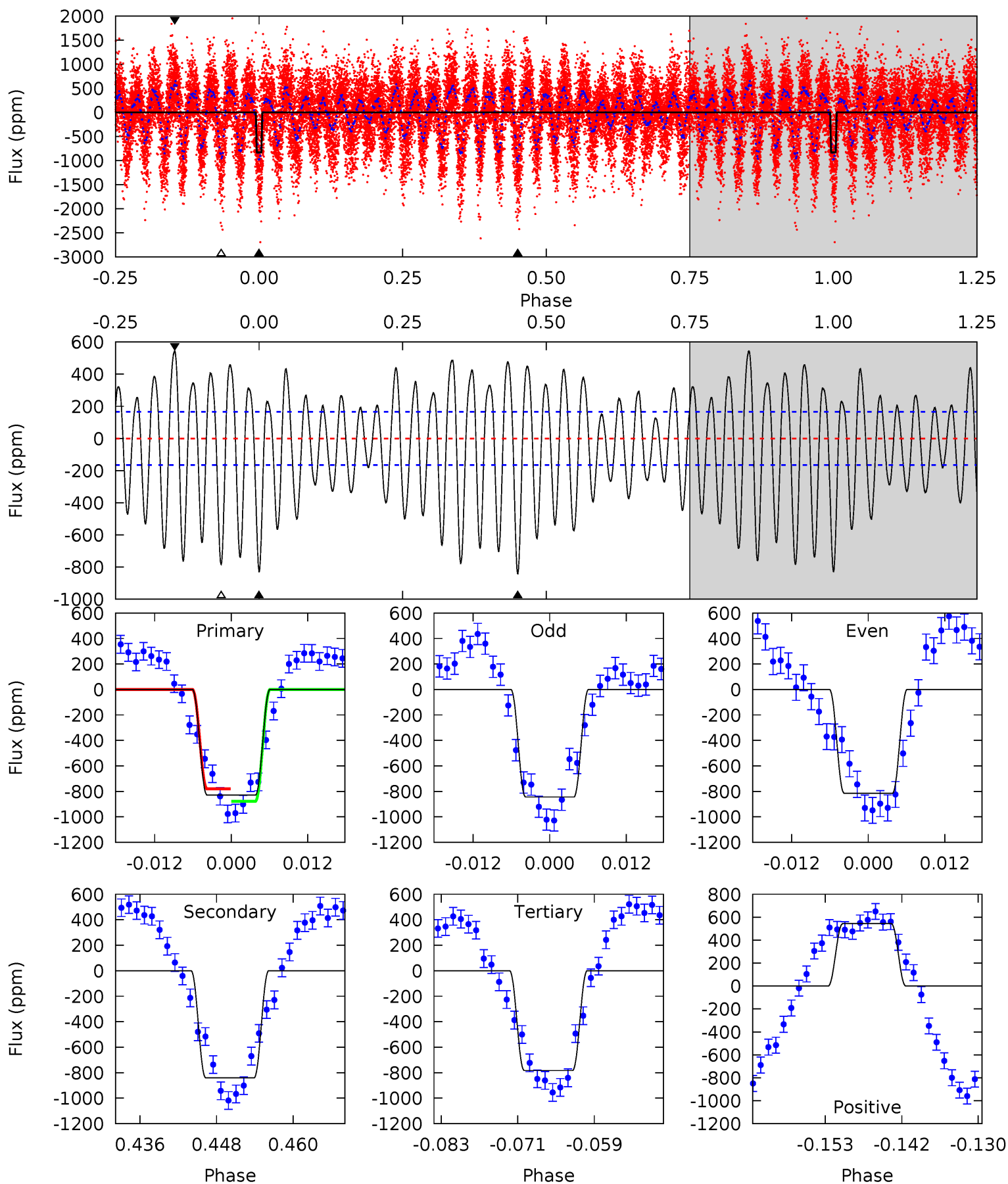




# Alt Model-Shift Uniqueness Test

006469599-02, P = 14.302532 Days, E = 118.045369 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
25.0	25.3	23.6	16.4	4.99	2.52	9.60	1.40	8.57	1.73	8.91	0.46	0.98	0.39	1.49





### Stellar Parameters For KIC 006469599

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7570^{+234}_{-313}$	$3.786^{+0.442}_{-0.078}$	$-0.500^{+0.250}_{-0.300}$	$2.645^{+0.403}_{-1.289}$	$1.560^{+0.182}_{-0.337}$	$0.119^{+0.516}_{-0.031}$
	+3%/-4%	+12%/-2%	+50%/-60%	+15%/-49%	+12%/-22%	+435%/-26%
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 006469599-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-91 \pm 13$	$2.87^{+1.80}_{-1.47}$	$2001^{+147}_{-245}$	$6866^{+3732}_{-1355}$	$107^{+334}_{-67}$
Alt.	$-841 \pm 33$	$7.97^{+2.13}_{-2.30}$	$1994^{+154}_{-227}$	$7343^{+1069}_{-750}$	$131^{+117}_{-48}$

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

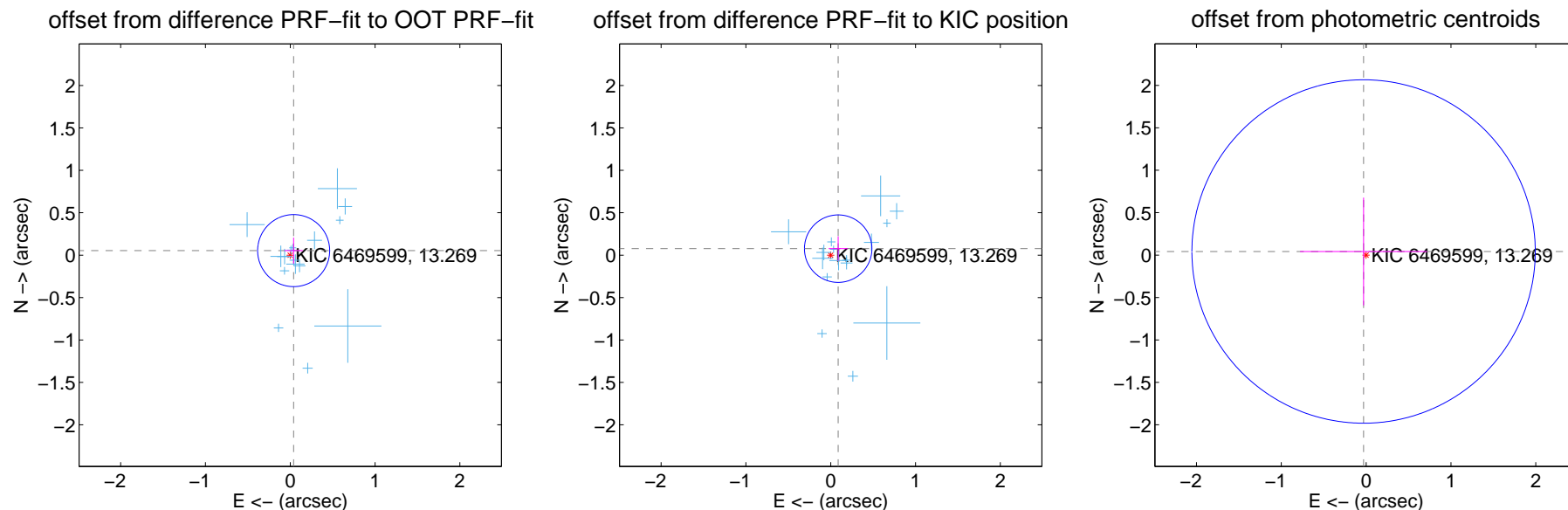
## DV Centroid Data

Supplemental centroid analysis for 006469599-02. Kepler magnitude: 13.27. Transit SNR 7.29

There are 16 quarters with good PRF difference image offsets

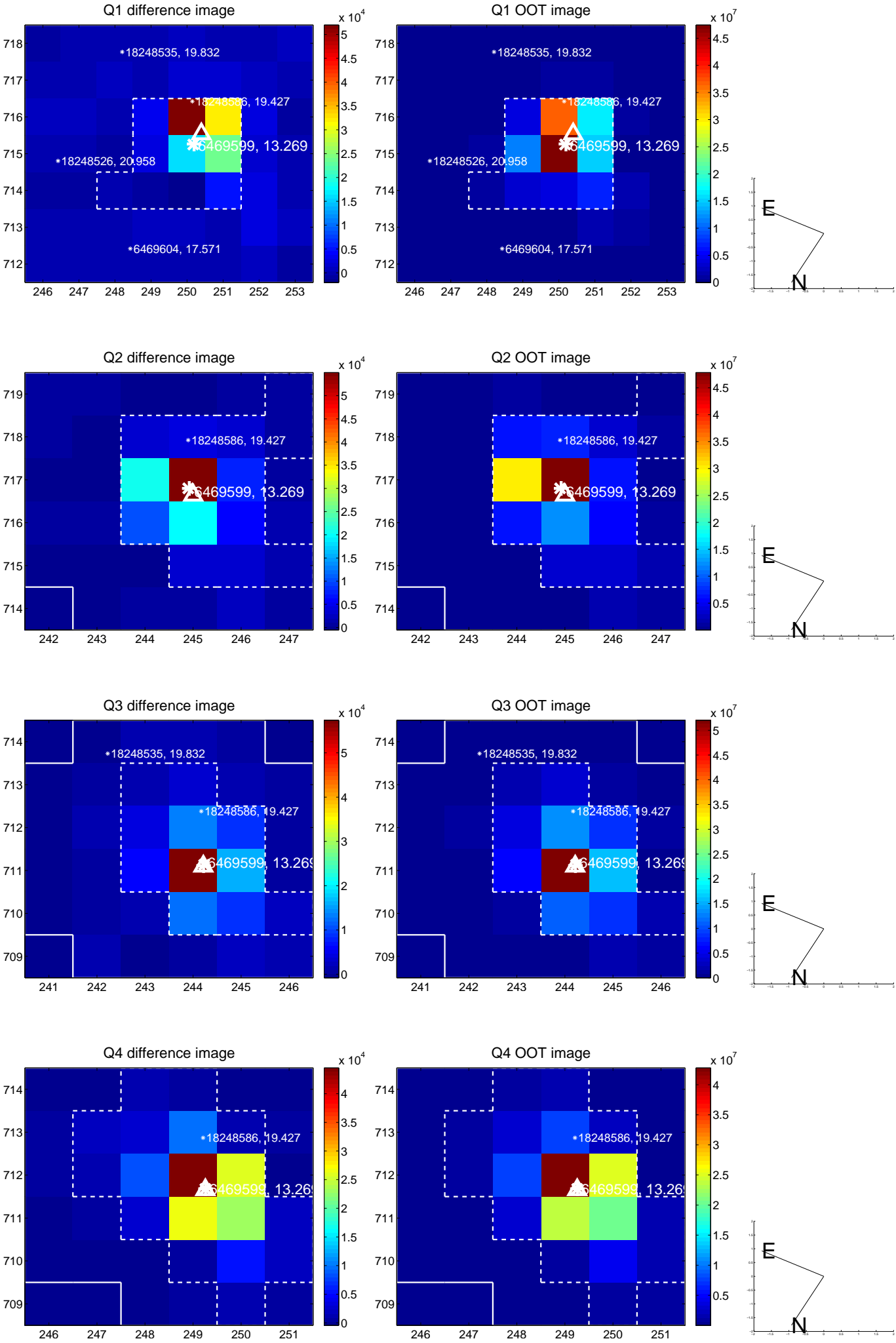
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.067 \pm 0.142$	0.47	$-0.040 \pm 0.108$	$0.054 \pm 0.154$
PRF-fit source offset from KIC position	$0.117 \pm 0.133$	0.88	$-0.088 \pm 0.113$	$0.077 \pm 0.144$
photometric centroid source offset	$0.05 \pm 0.67$	0.08	$0.03 \pm 0.75$	$0.04 \pm 0.63$

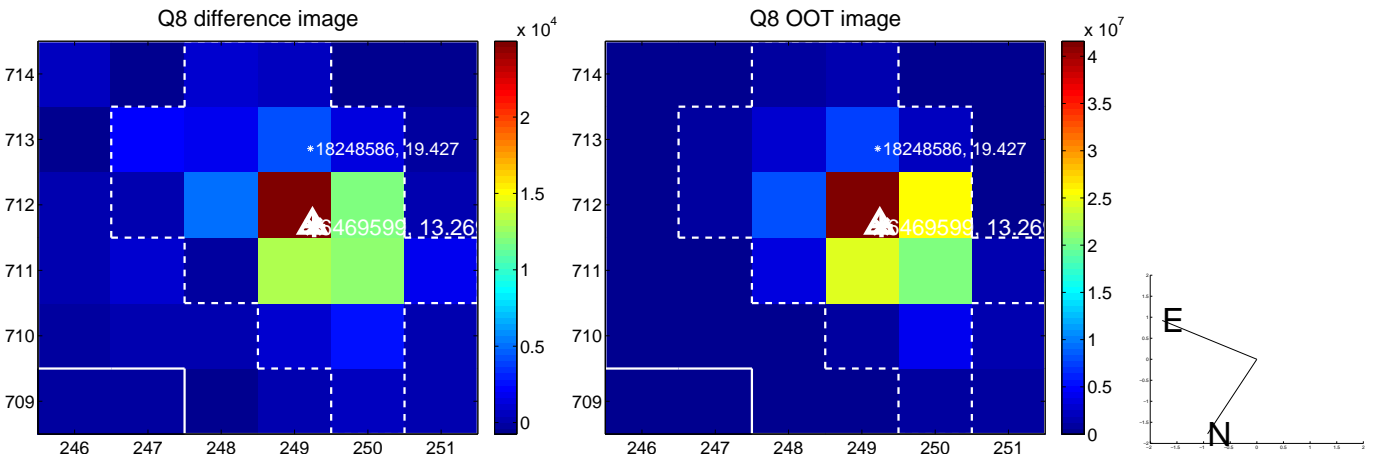
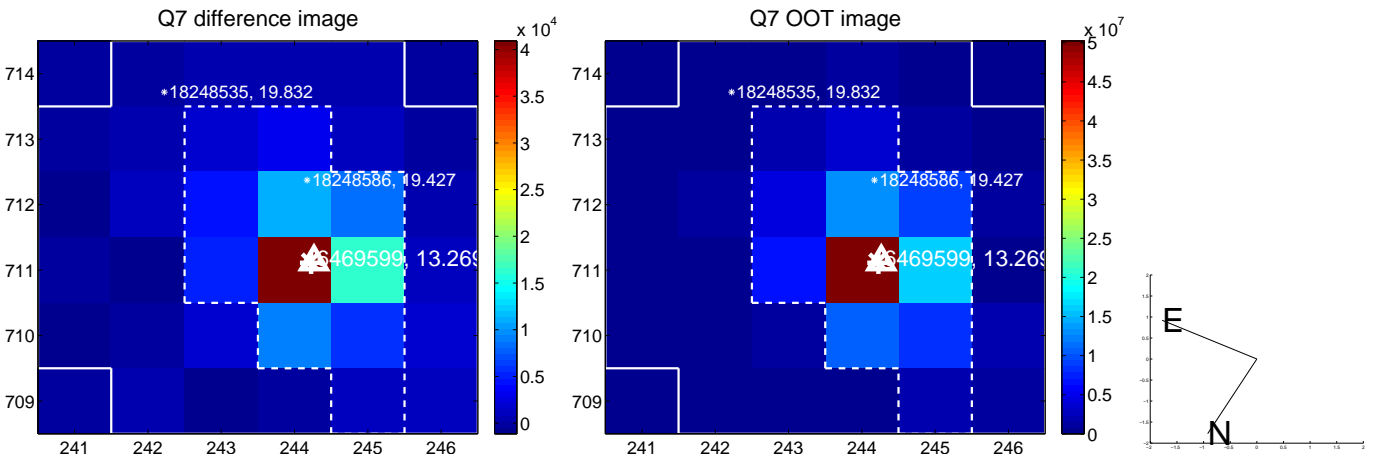
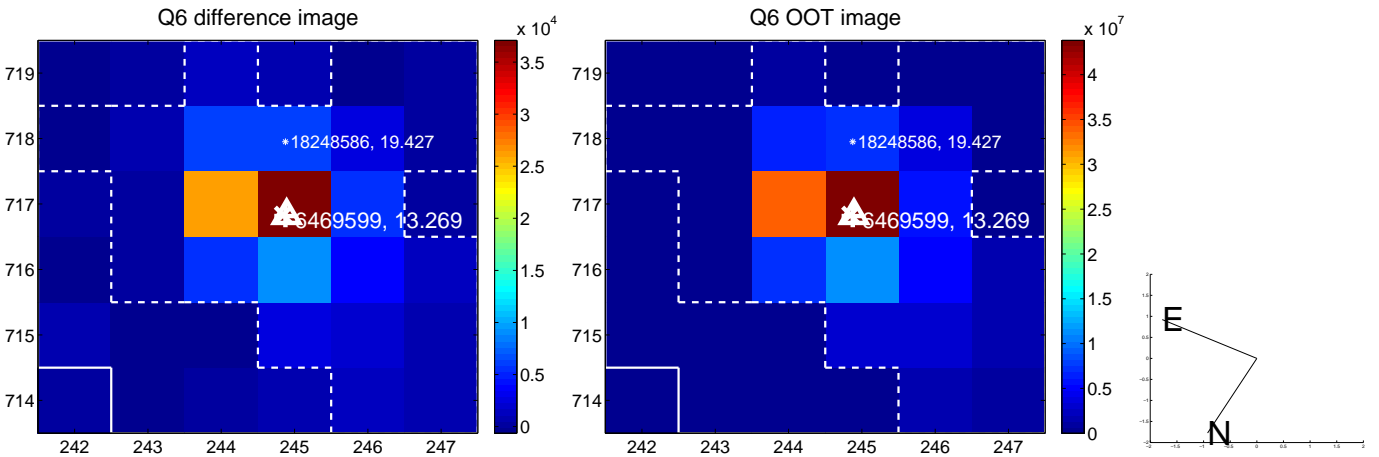
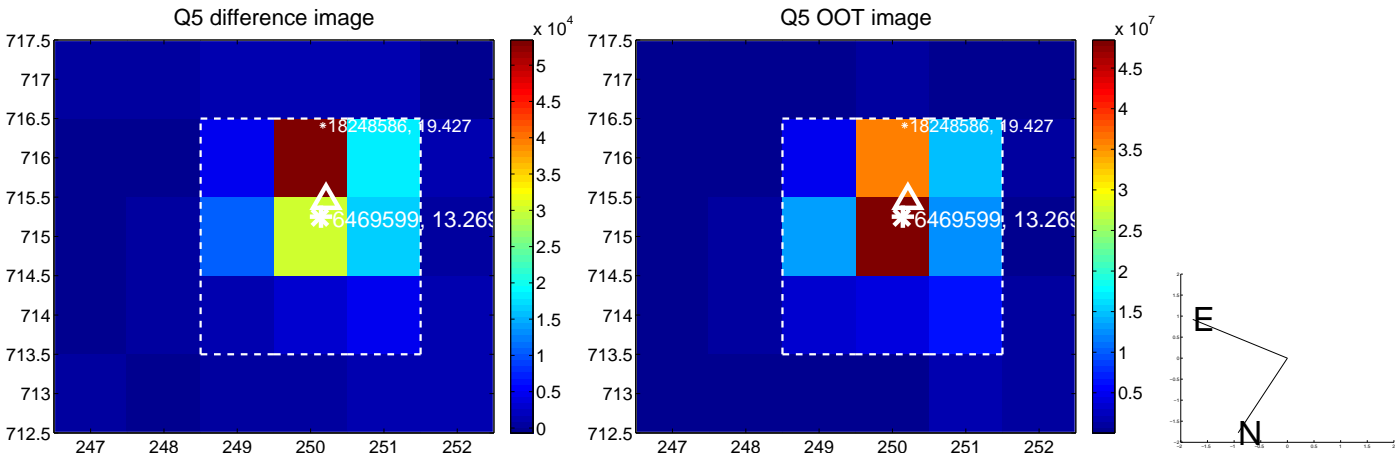


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

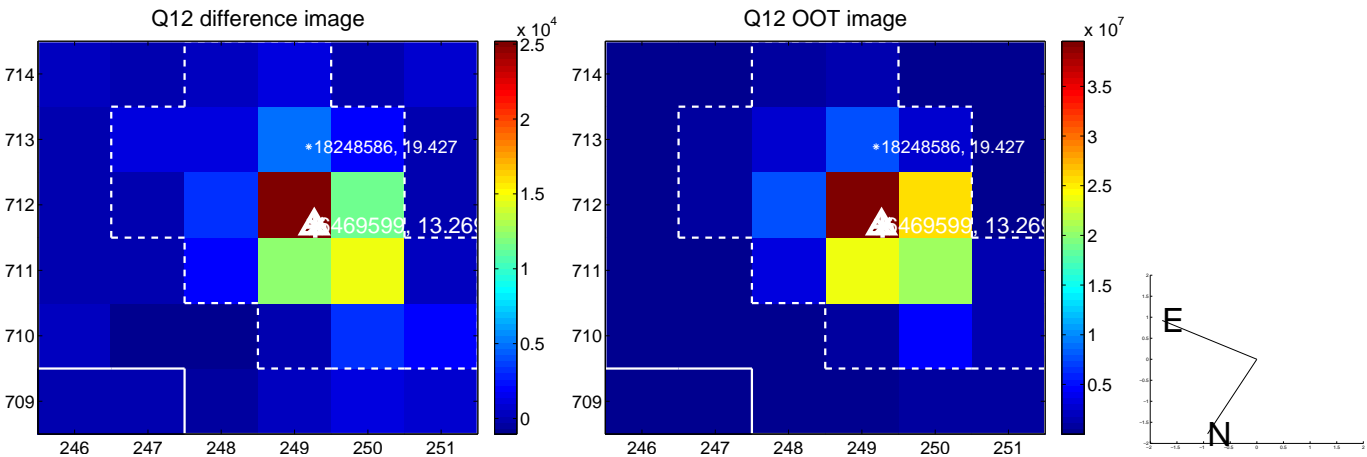
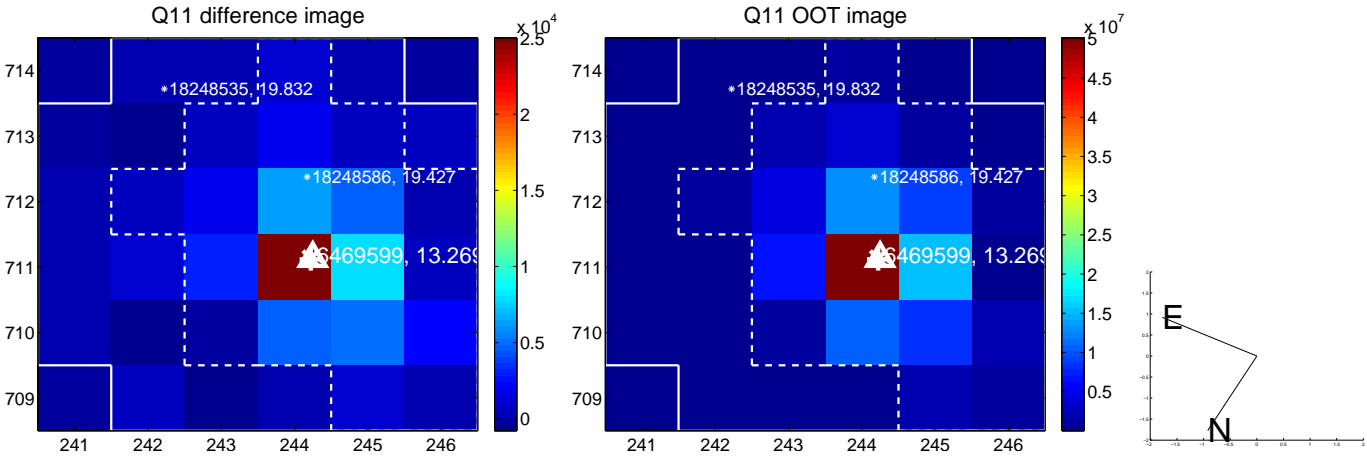
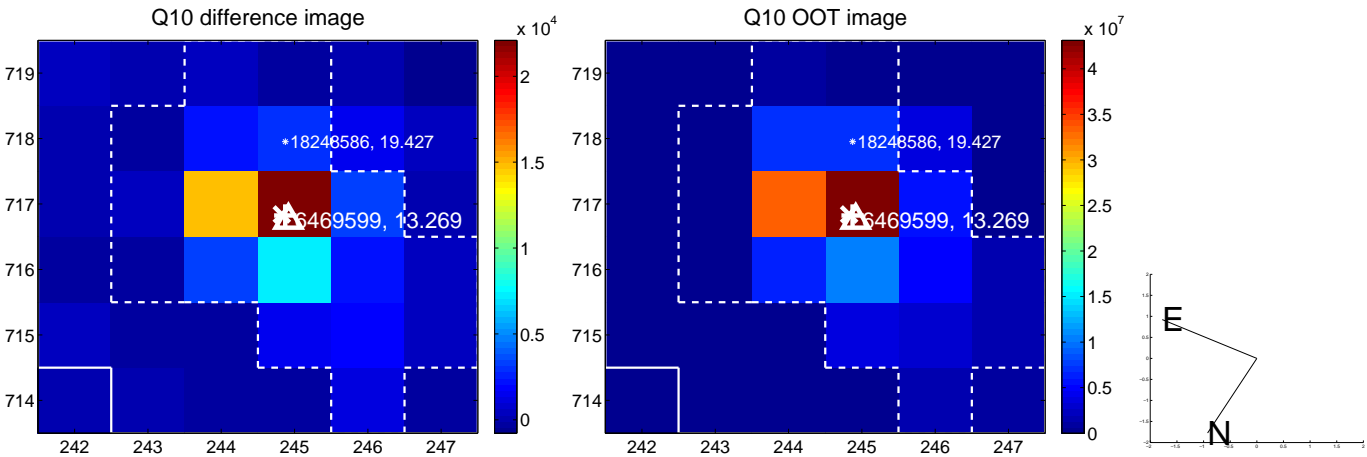
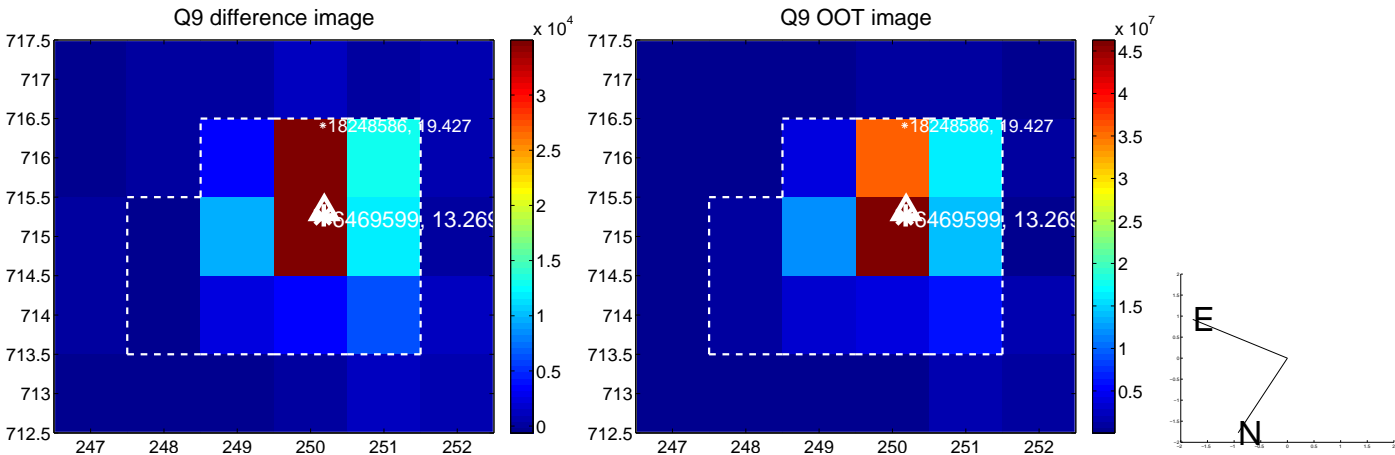
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



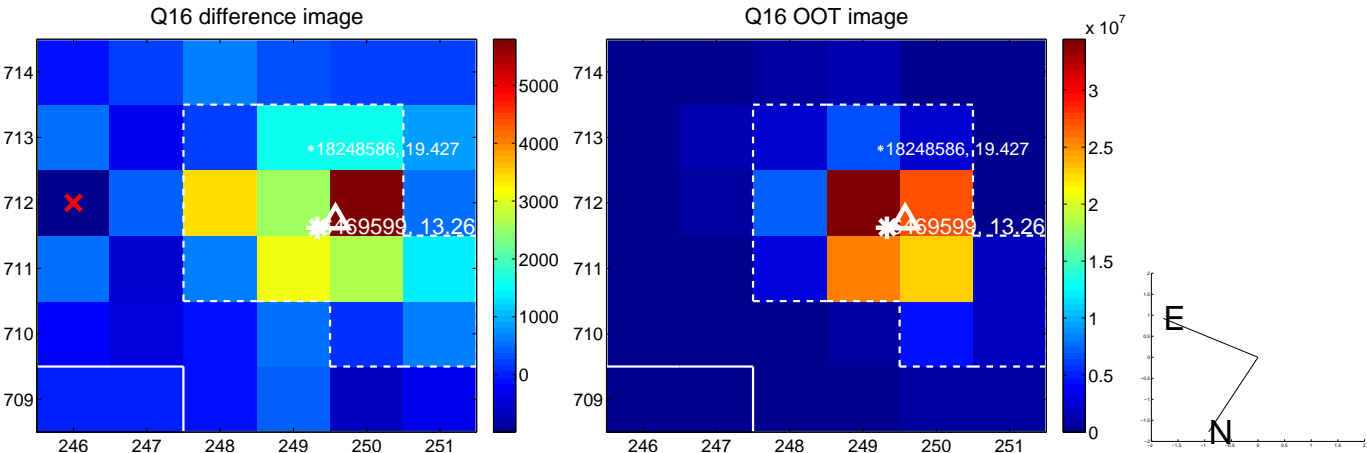
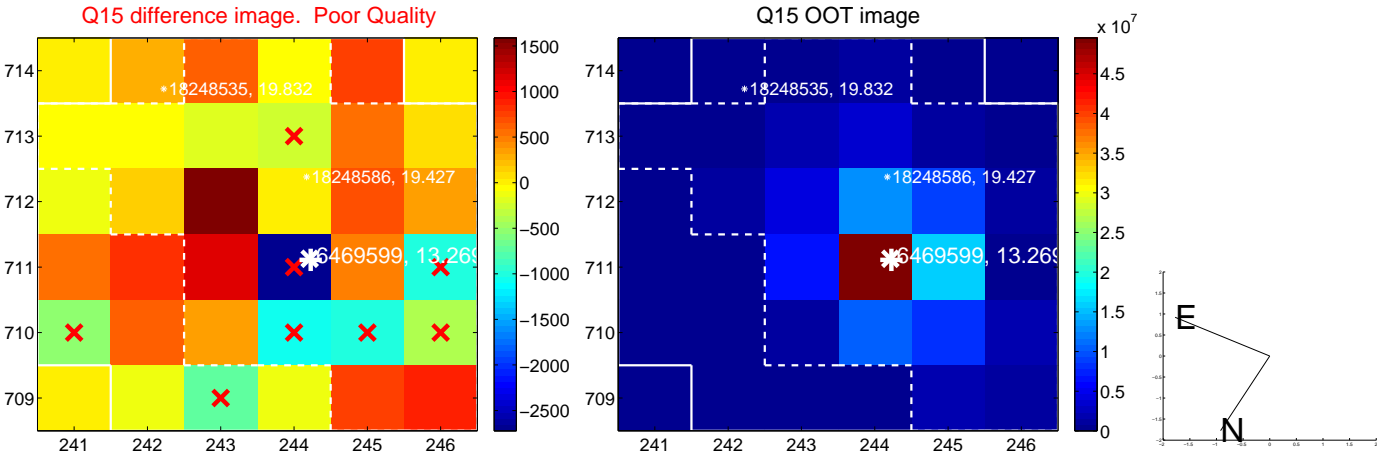
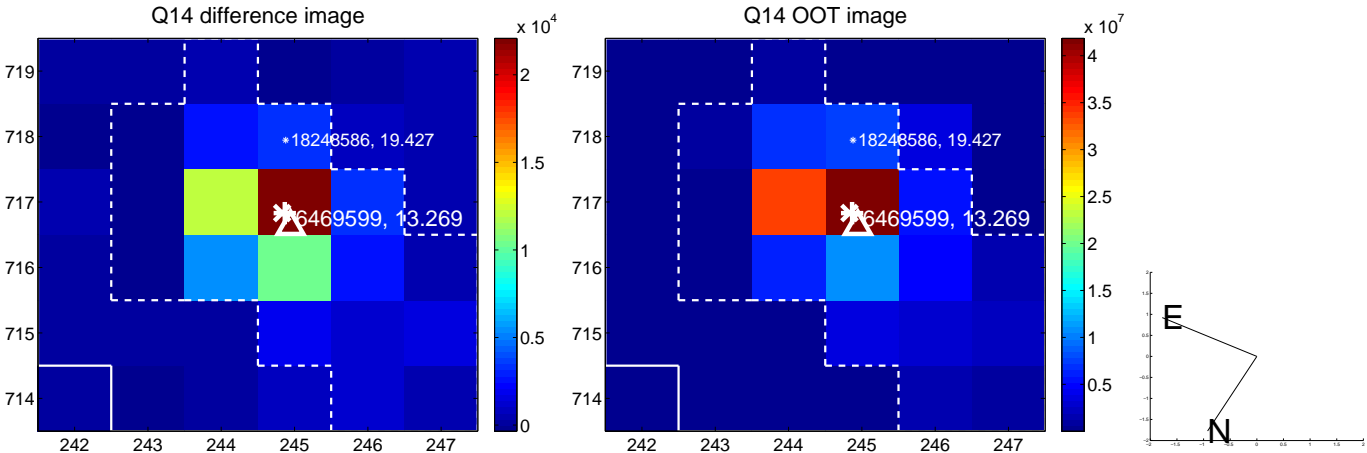
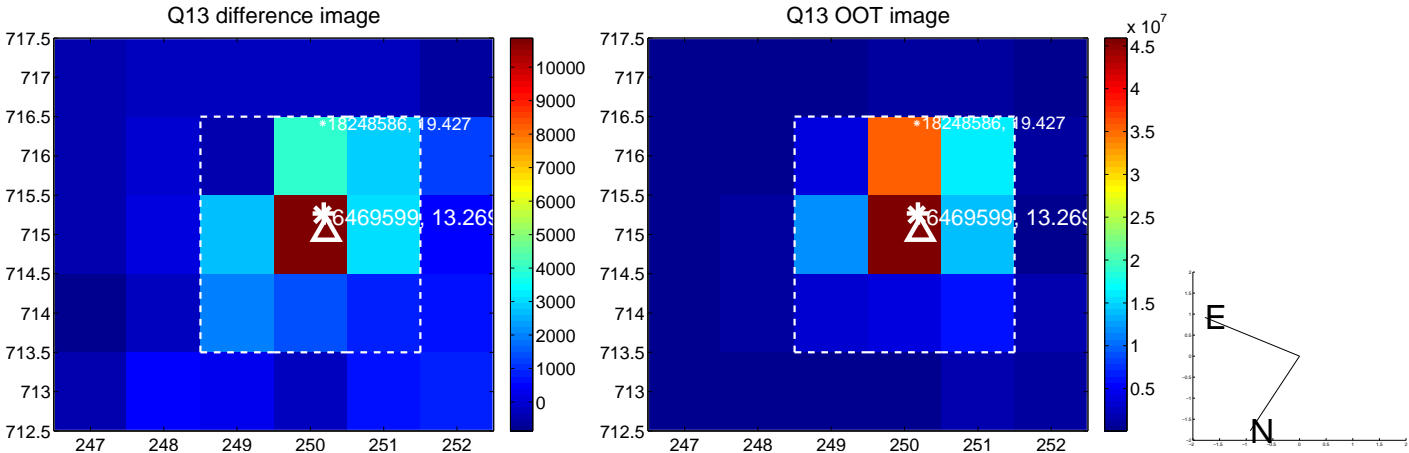
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

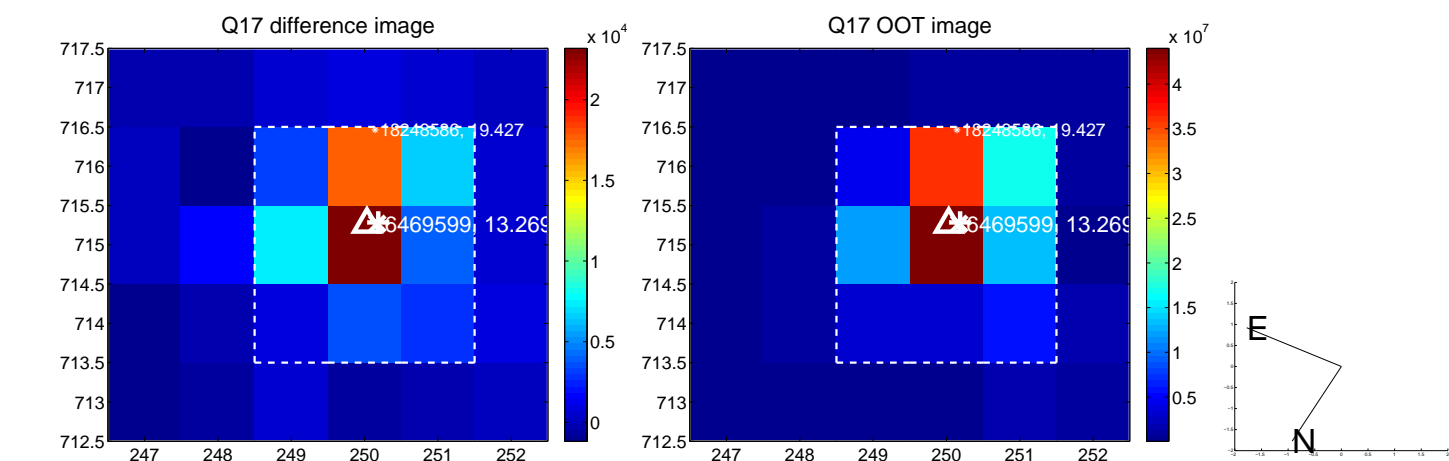


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

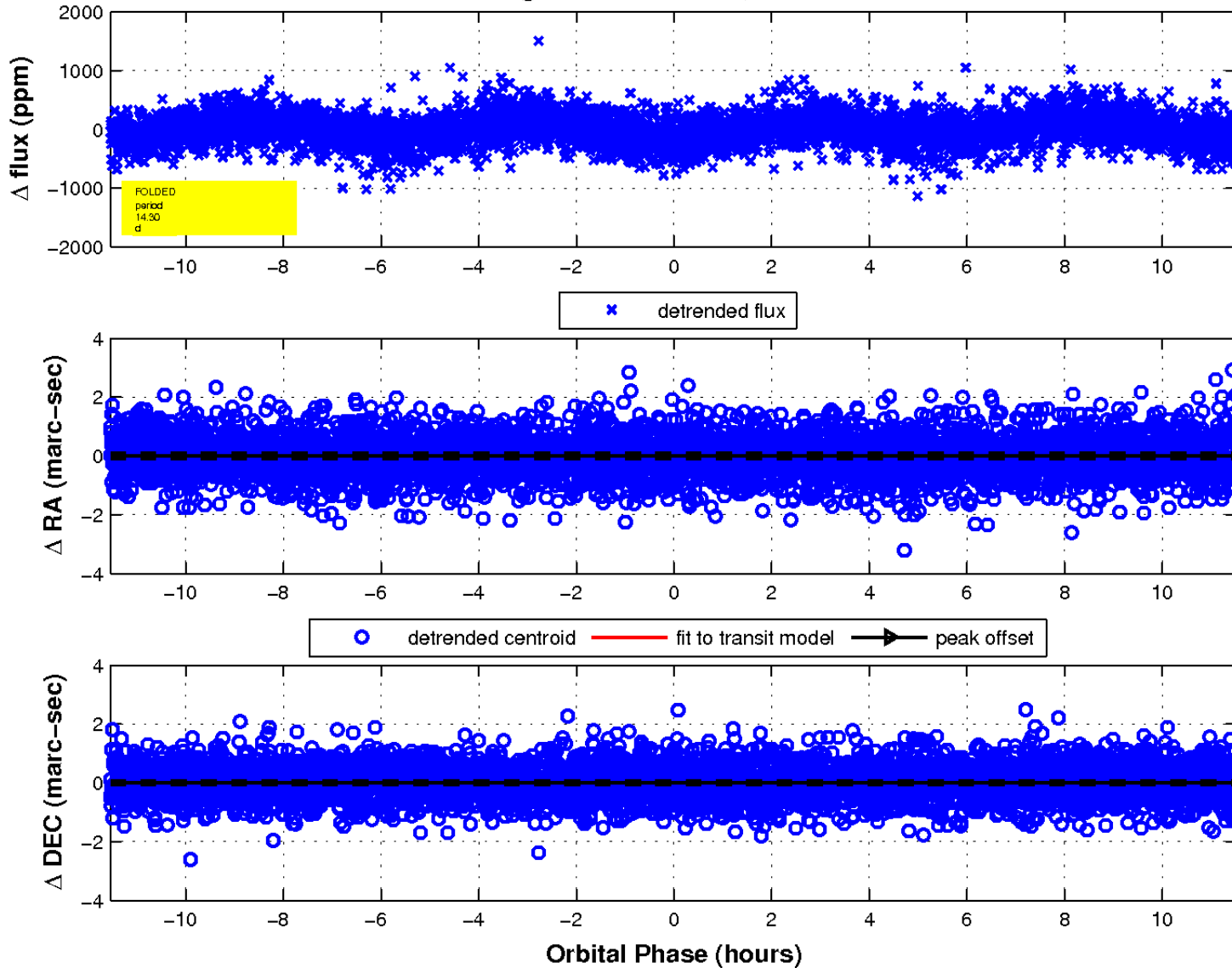




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

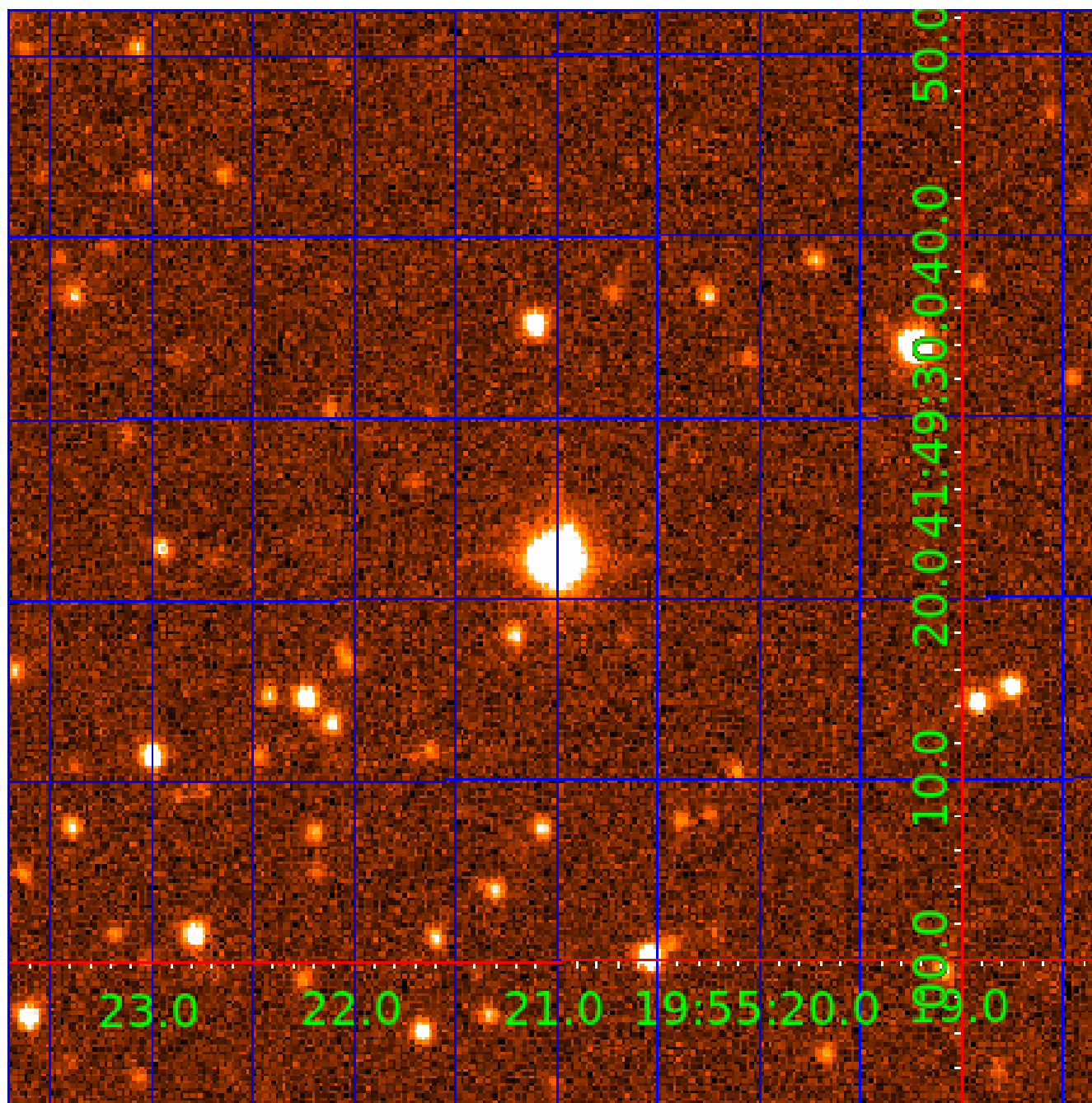


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



# KIC 006469599

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006469599-01	OBS	No	0.946430	131.893077	23.7	4.199	7.9	8.0	2.65	7570	1.34	42997.56
006469599-02	OBS	No	14.302248	132.391862	115.0	3.848	7.7	7.3	2.65	7570	3.18	1150.86
006469599-03	OBS	No	247.851866	143.835908	192.6	7.414	7.2	4.6	2.65	7570	4.10	25.66

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006469599-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
006469599-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
006469599-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

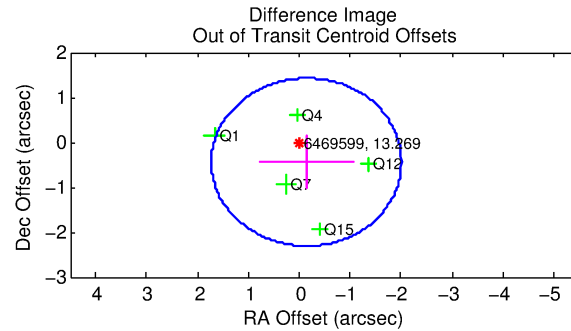
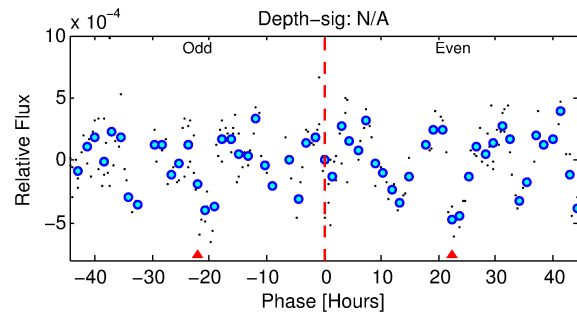
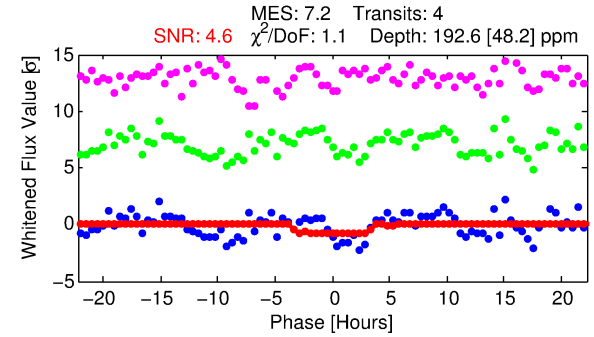
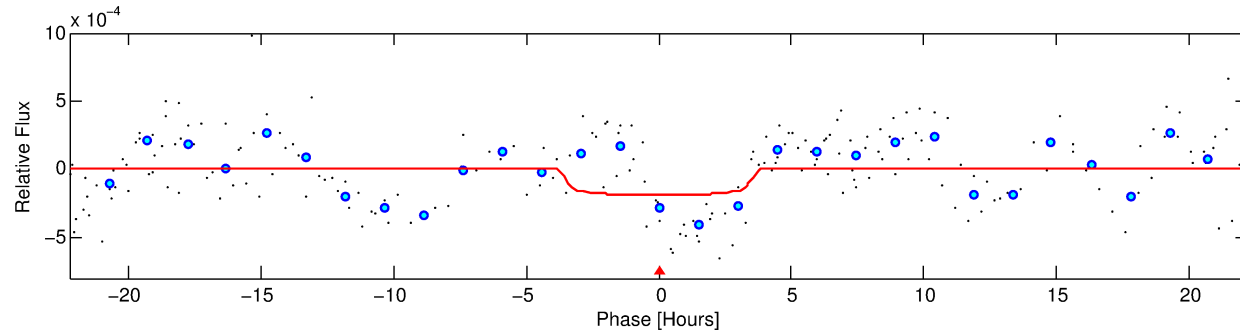
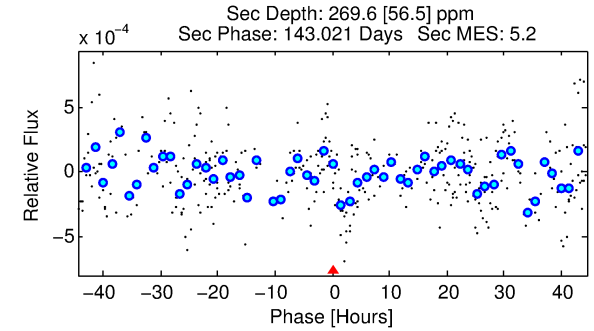
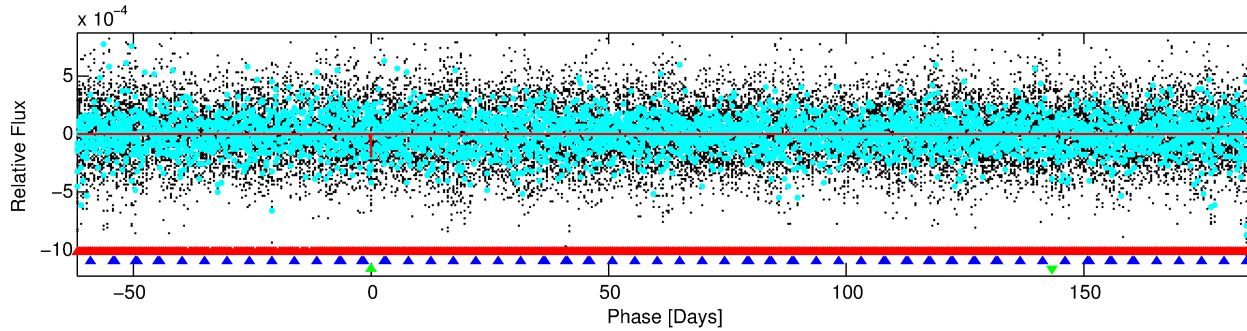
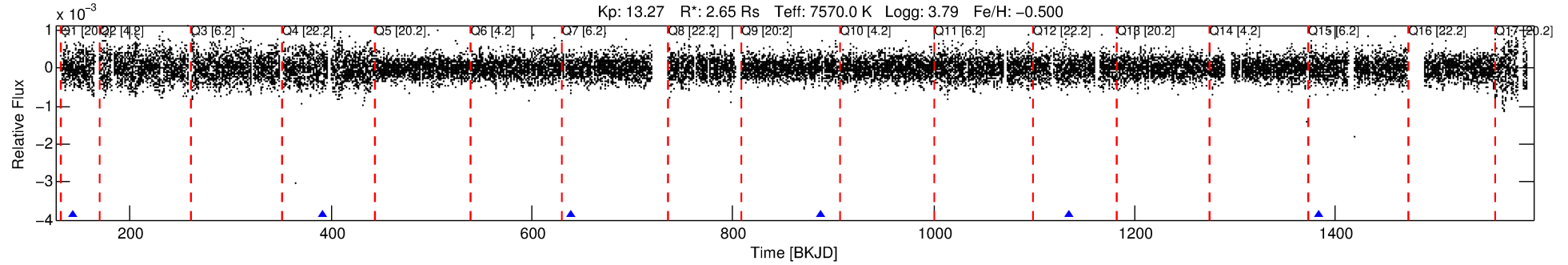
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006469599-03

No Significant Match Found

# DV One-Page Summary

KIC: 6469599 Candidate: 3 of 3 Period: 247.852 d



## DV Fit Results:

Period = 247.85187 [0.01274] d  
Epoch = 143.8359 [0.0230] BKJD  
Rp/R\* = 0.0142 [0.0089]  
a/R\* = 146.62 [566.51]  
b = 0.84 [1.40]  
Seff = 25.66 [19.77]  
Teff = 574 [111] K  
Rp = 4.10 [3.26] Re  
a = 0.8956 [0.4207] AU  
Ag = 7062.98 [10425.62] [0.68σ]  
Teffp = 8135 [2605] K [2.90σ]

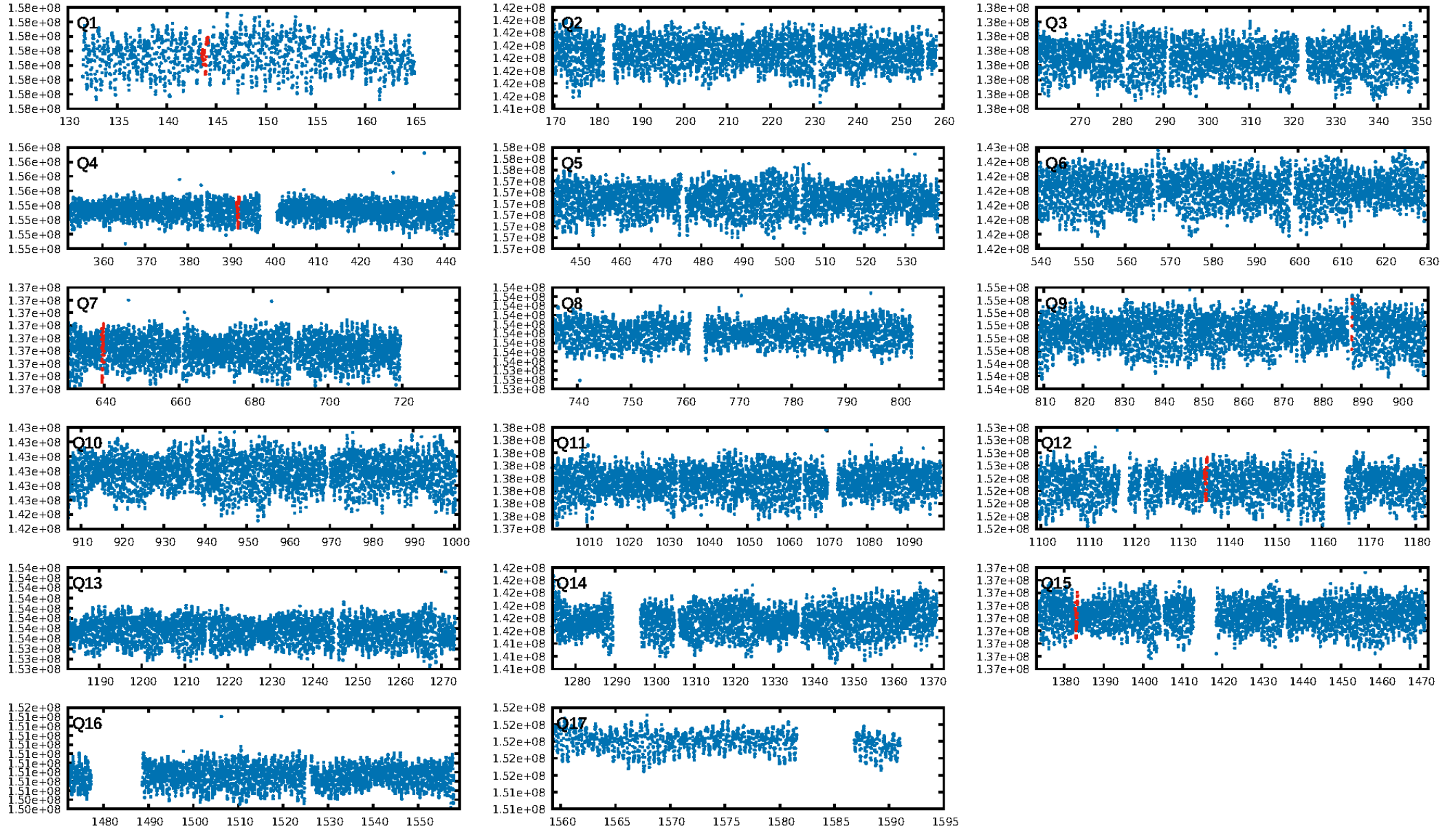
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [671.03σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 66.0%  
ModelChiSquareGof-sig: 99.1%  
**Bootstrap-pfa: 2.48e-09**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 14.78  
Centroid-sig: 92.9%  
Centroid-so: 0.276 arcsec [0.21σ]  
OotOffset-rm: 0.466 arcsec [0.75σ]  
KicOffset-rm: 0.382 arcsec [0.57σ]  
OotOffset-st: 0/2/2/1 [5]  
KicOffset-st: 0/2/2/1 [5]  
DiffImageQuality-fgm: 1.00 [5/5]  
DiffImageOverlap-fno: 0.00 [0/5]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:13:28 Z

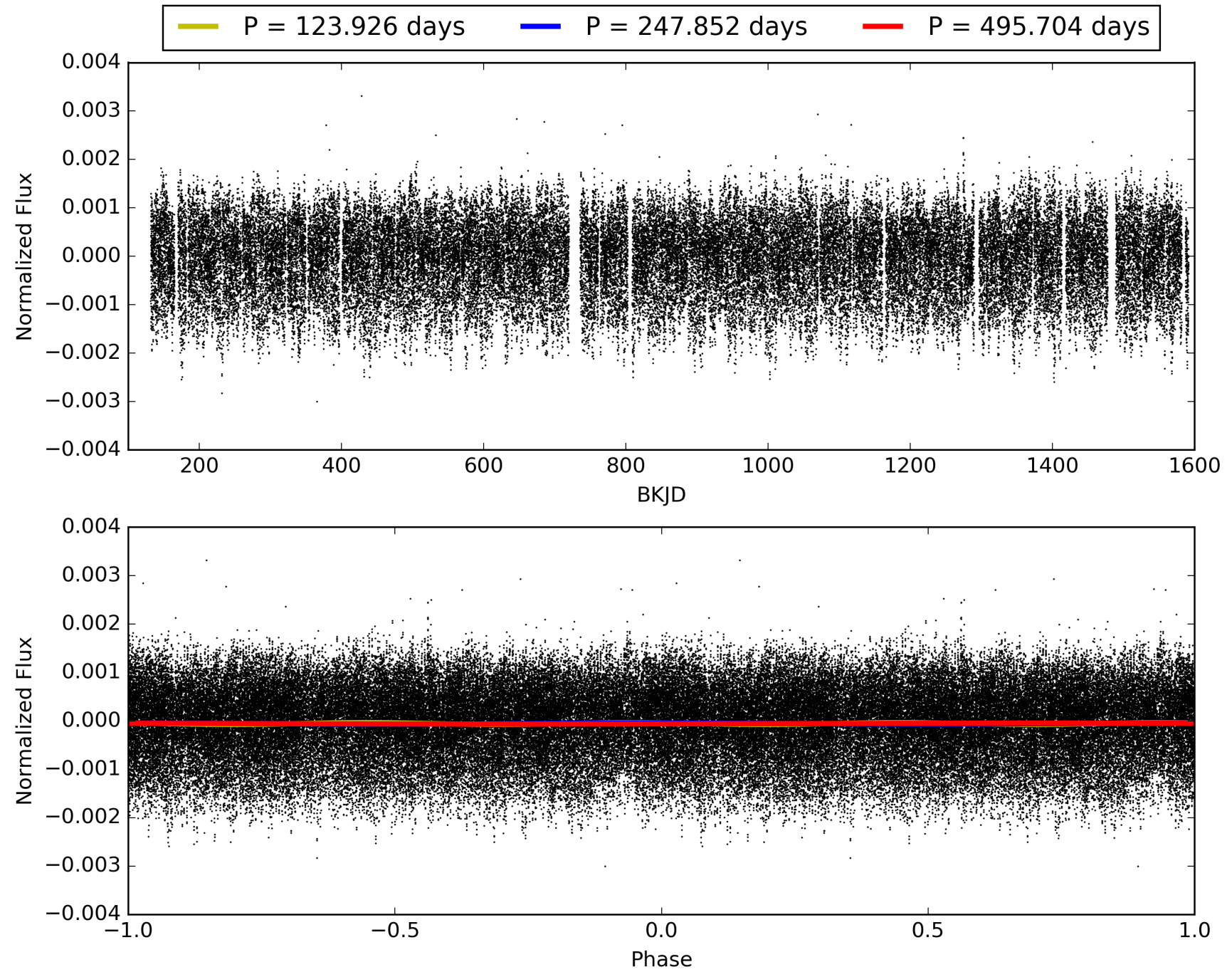
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006469599-03, PDC Light Curves



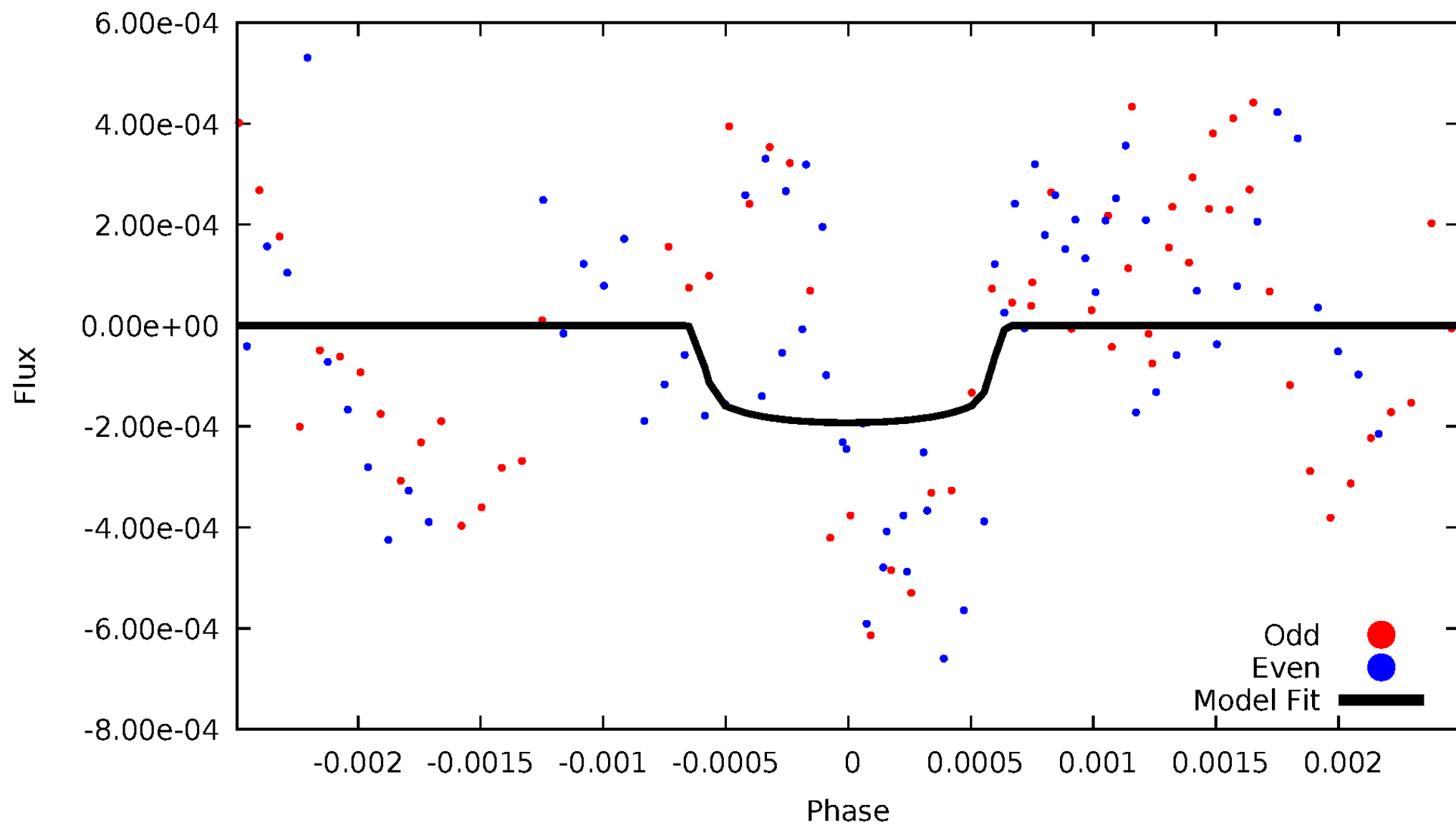


# TCE 006469599-03



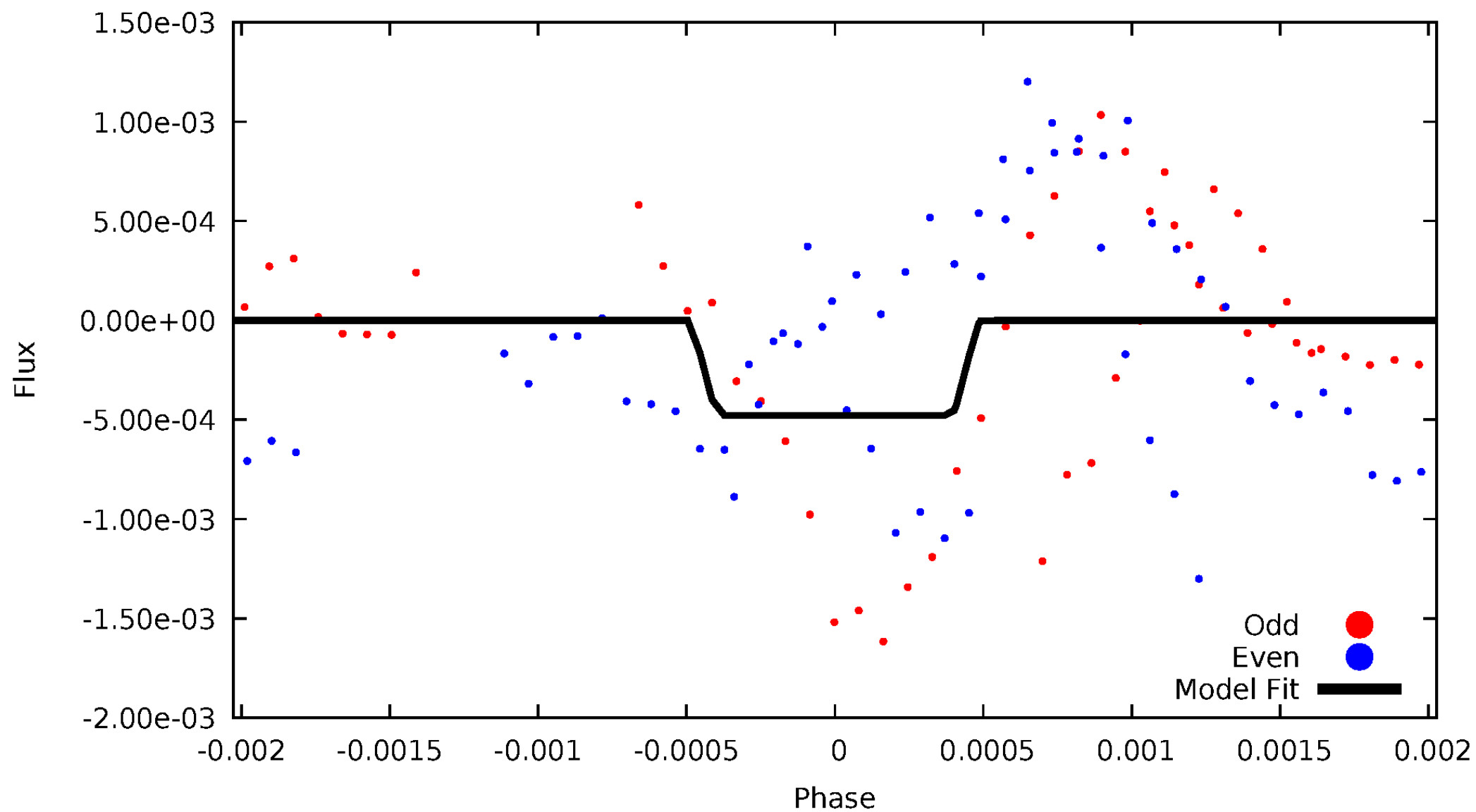
# DV Odd/Even

TCE 006469599-03



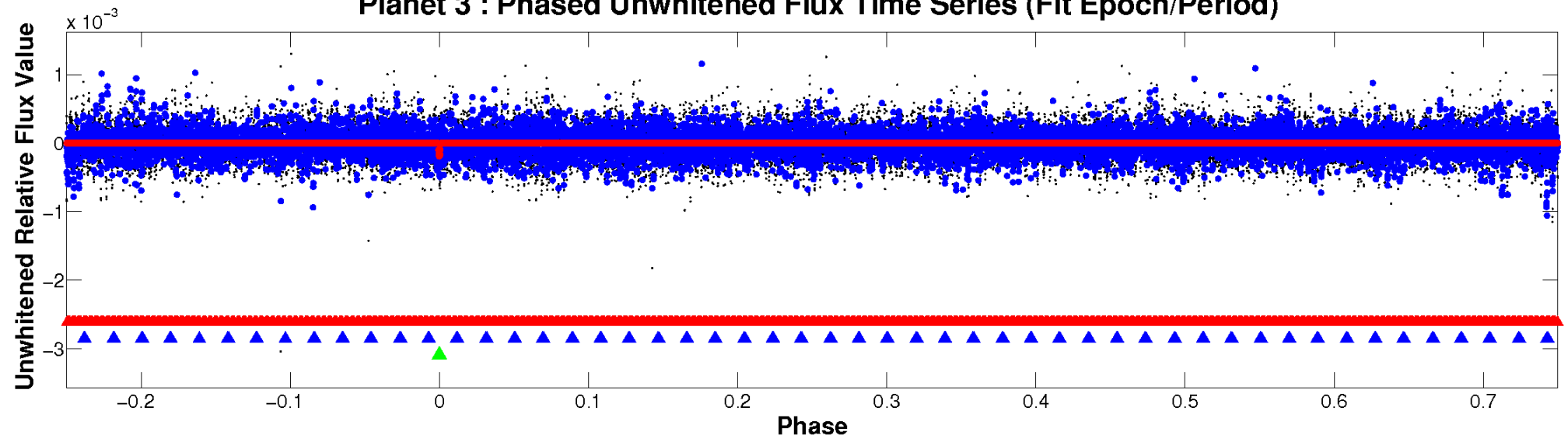
# ALT Odd/Even

TCE 006469599-03

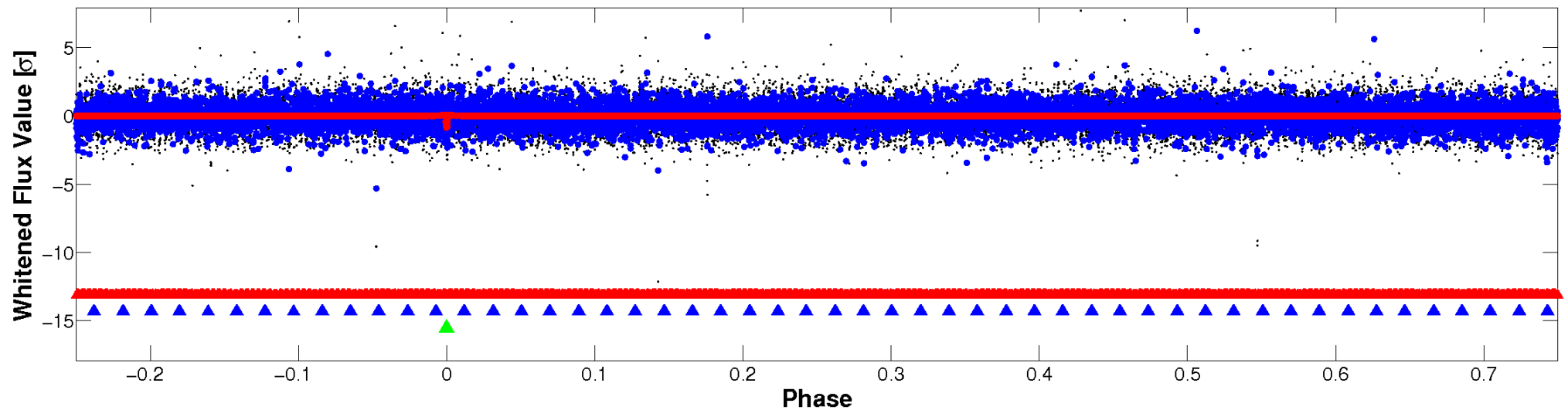


# Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

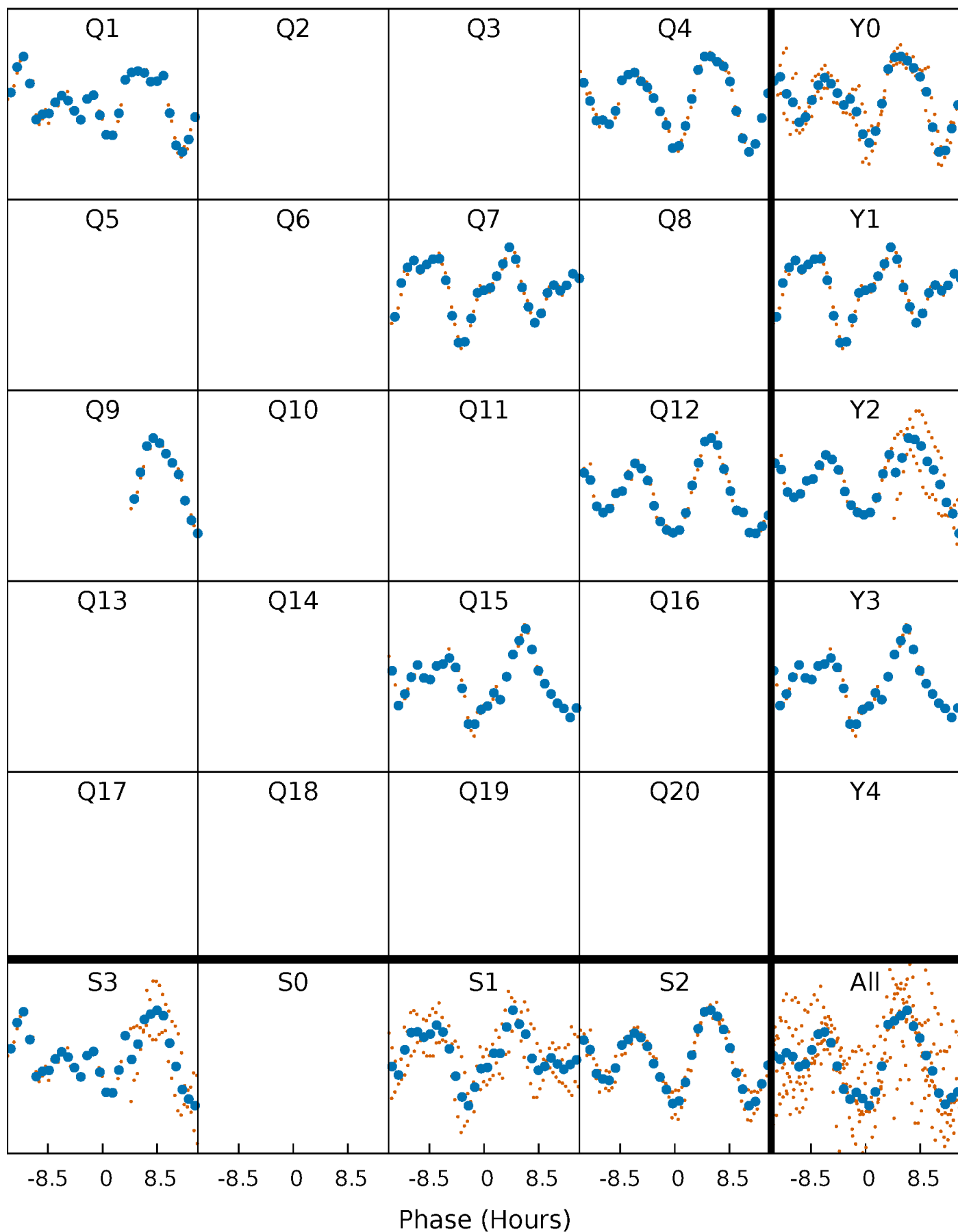


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



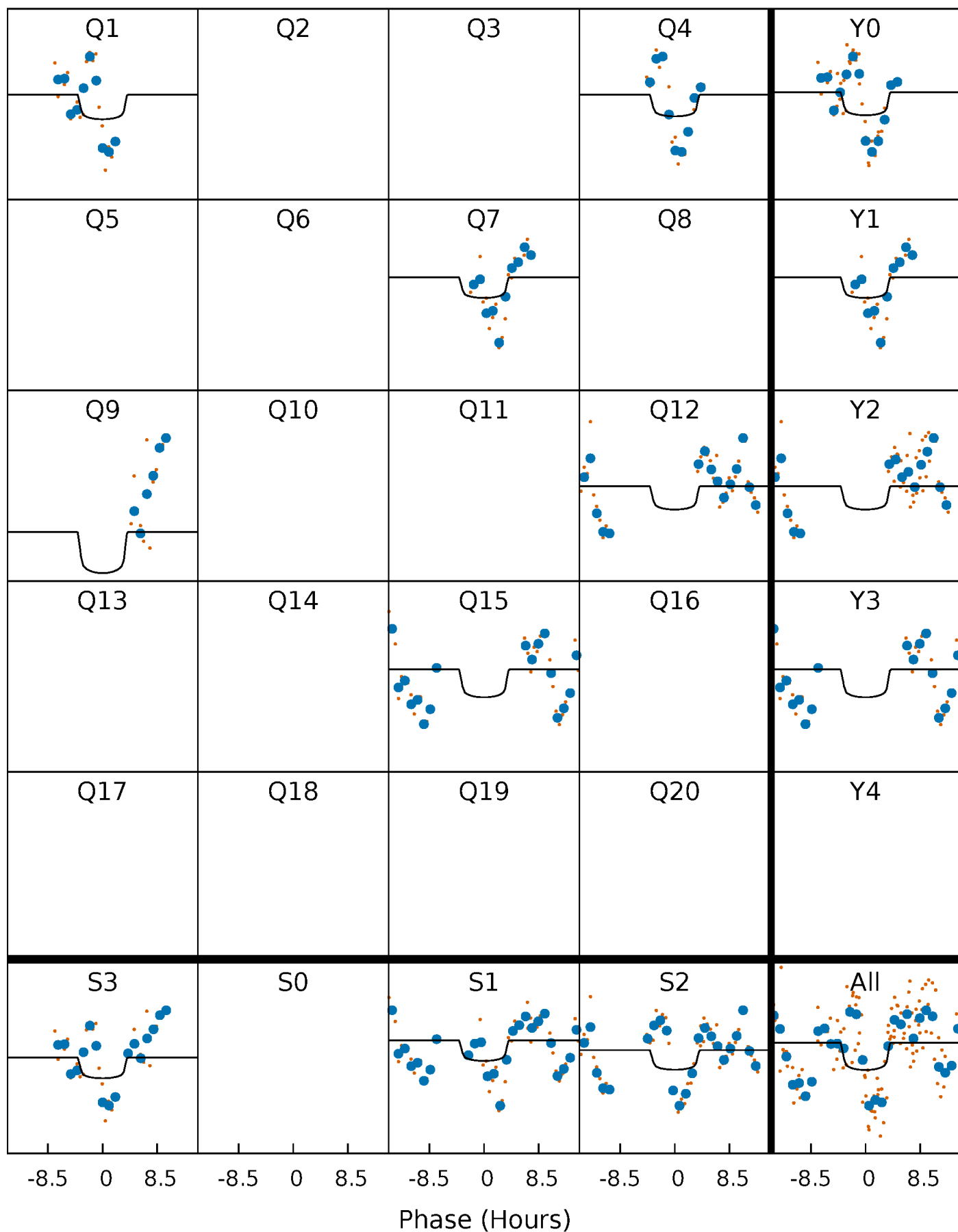
# PDC Quarter-Phased Transit Curves

TCE 006469599-03     $P=247.851866$  Days     $T_0=143.835907$  (BKJD)



# DV Quarter-Phased Transit Curves

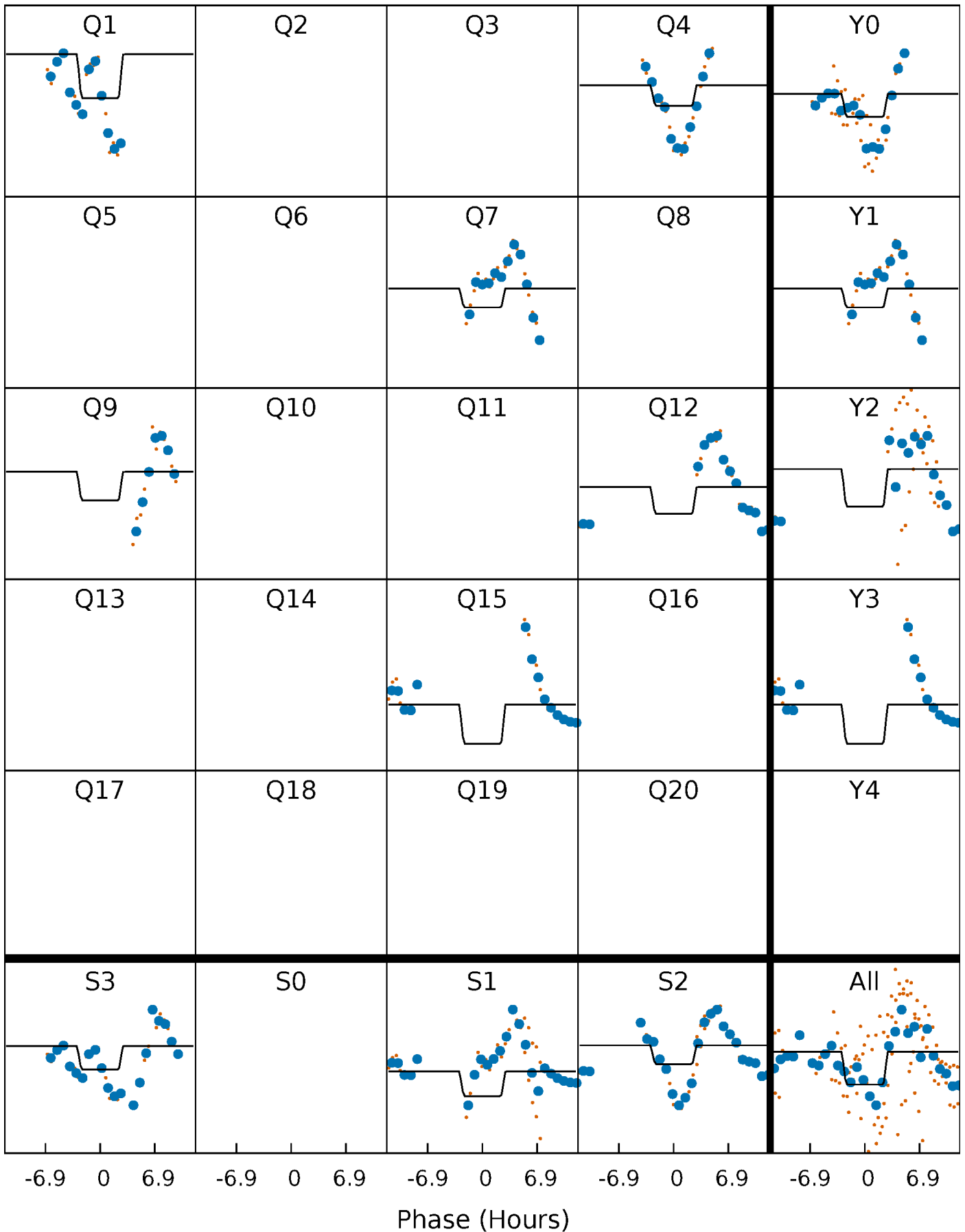
TCE 006469599-03   P=247.851866 Days    $T_0=143.835907$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

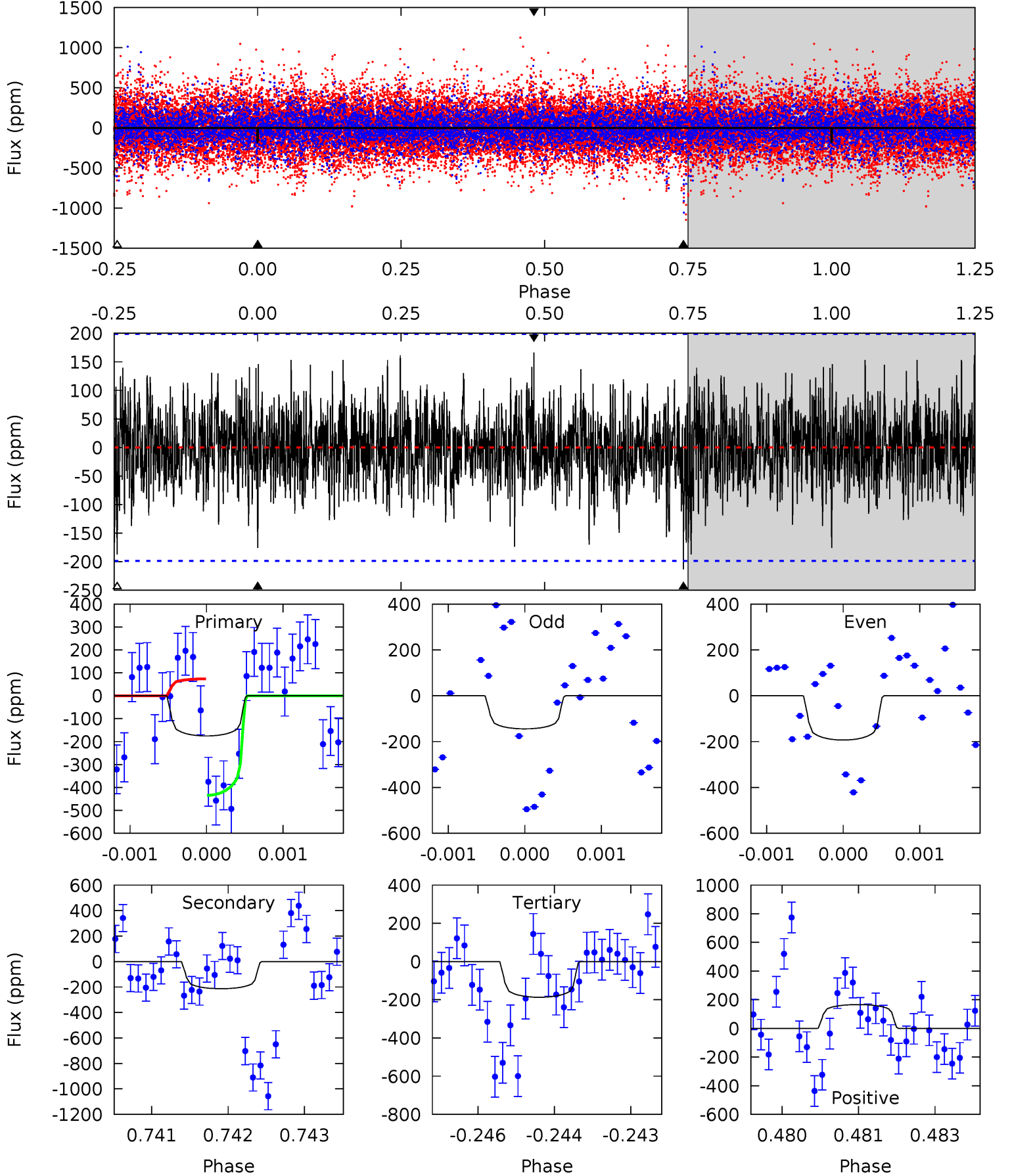
TCE 006469599-03     $P=247.866413$  Days     $T_0=143.803646$  (BKJD)



# DV Model-Shift Uniqueness Test

006469599-03, P = 247.851866 Days, E = 143.835907 Days

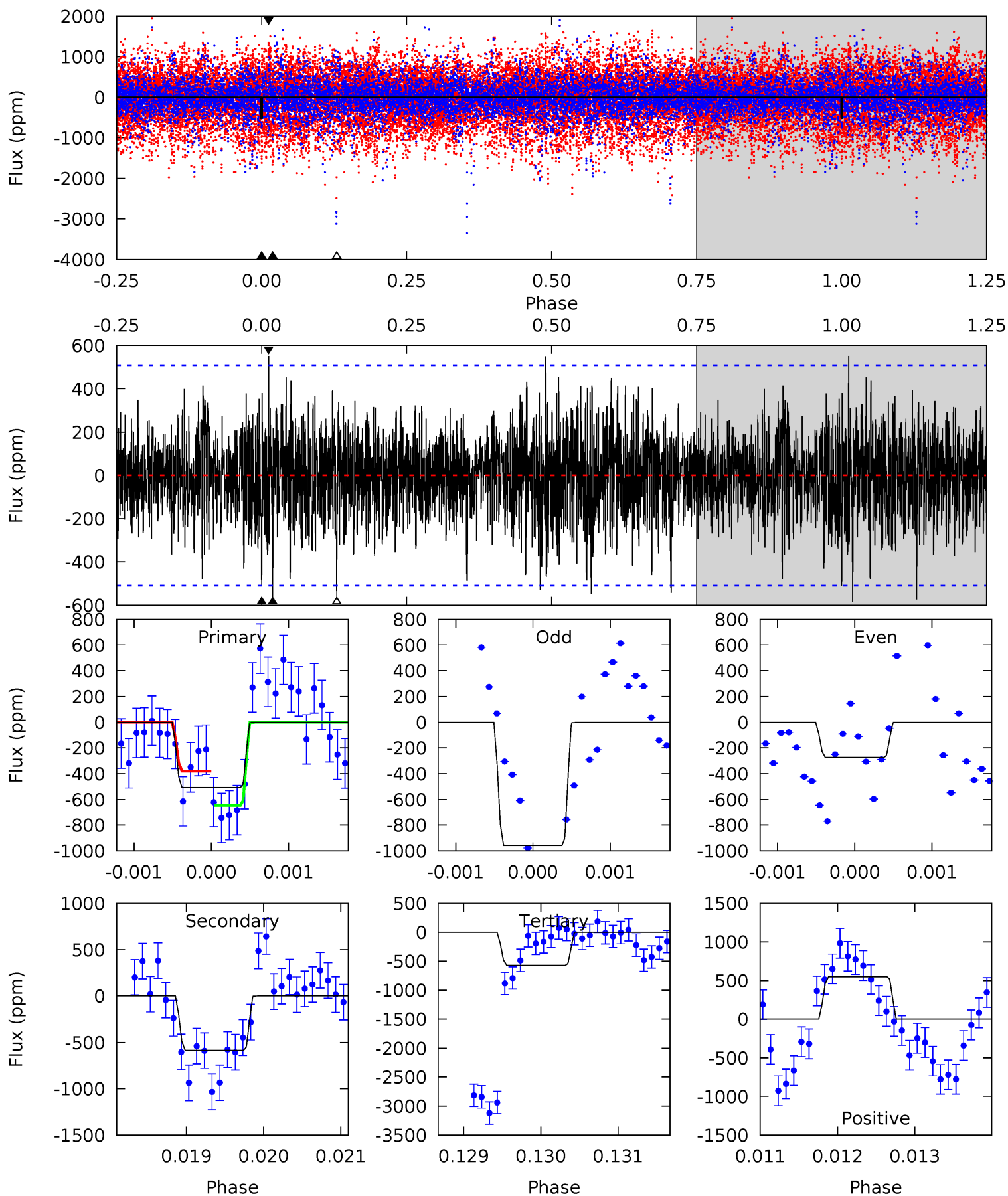
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.78	5.81	5.10	4.53	5.41	3.23	1.34	-0.32	0.25	0.71	1.28	0.65	1.23	0.44	4.91



# Alt Model-Shift Uniqueness Test

006469599-03, P = 247.866413 Days, E = 143.803646 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
5.44	6.26	6.13	5.91	5.45	3.30	1.64	-0.68	-0.46	0.13	0.35	3.52	0.86	0.49	1.42



### Stellar Parameters For KIC 006469599

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7570^{+234}_{-313}$	$3.786^{+0.442}_{-0.078}$	$-0.500^{+0.250}_{-0.300}$	$2.645^{+0.403}_{-1.289}$	$1.560^{+0.182}_{-0.337}$	$0.119^{+0.516}_{-0.031}$
	+3%/-4%	+12%/-2%	+50%/-60%	+15%/-49%	+12%/-22%	+435%/-26%
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 006469599-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-213 \pm 37$	$4.00^{+2.65}_{-2.14}$	$774^{+55}_{-98}$	$7288^{+4750}_{-1552}$	$5923^{+21454}_{-3785}$
Alt.	$-584 \pm 93$	$5.64^{+2.81}_{-2.33}$	$777^{+54}_{-83}$	$7990^{+3369}_{-1475}$	$7978^{+15074}_{-4328}$

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

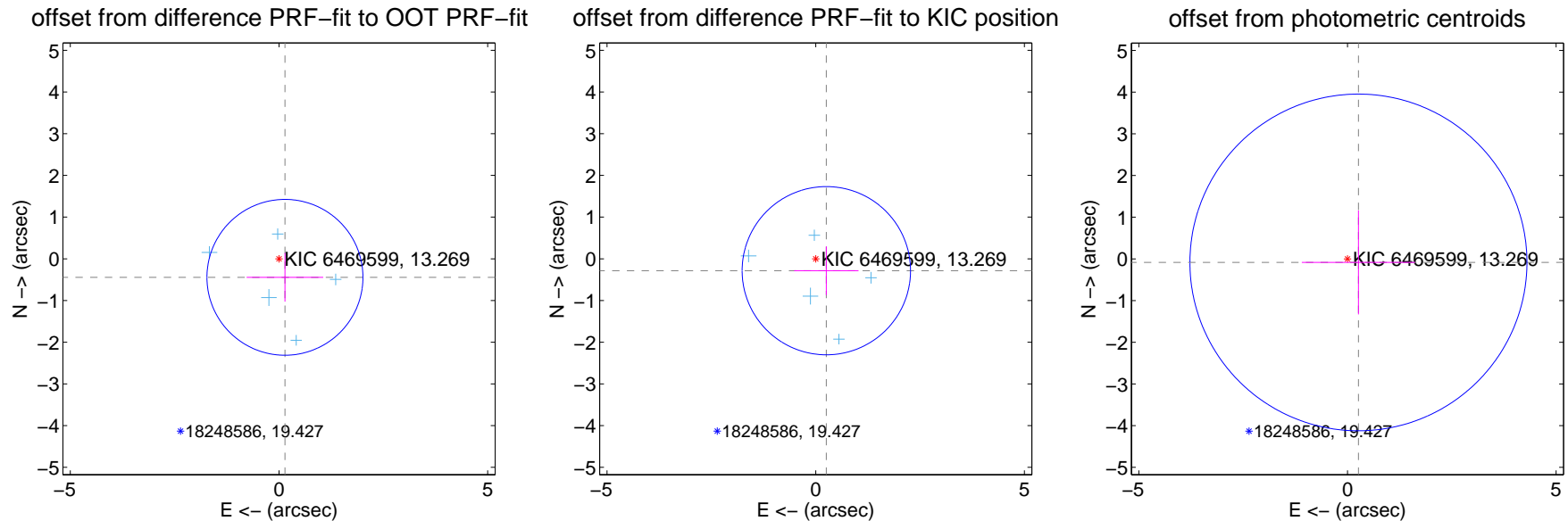
## DV Centroid Data

Supplemental centroid analysis for 006469599-03. Kepler magnitude: 13.27. Transit SNR 4.58

There are 5 quarters with good PRF difference image offsets

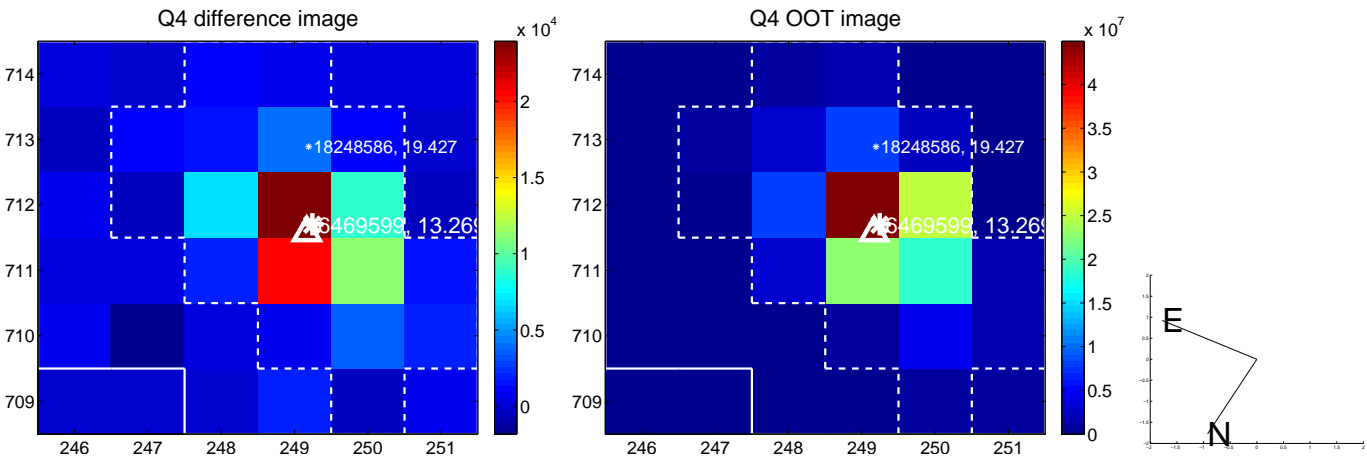
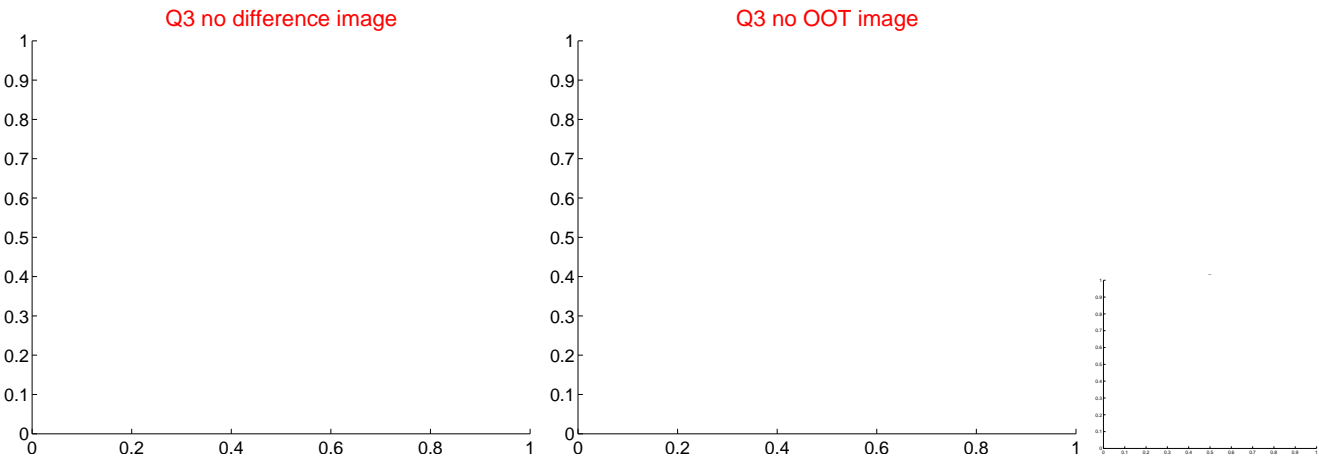
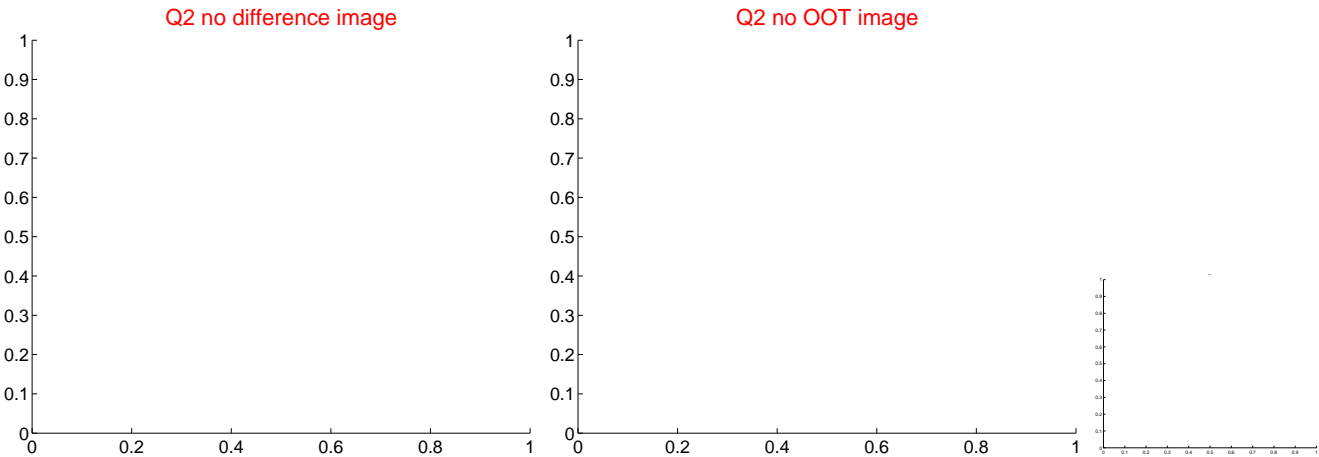
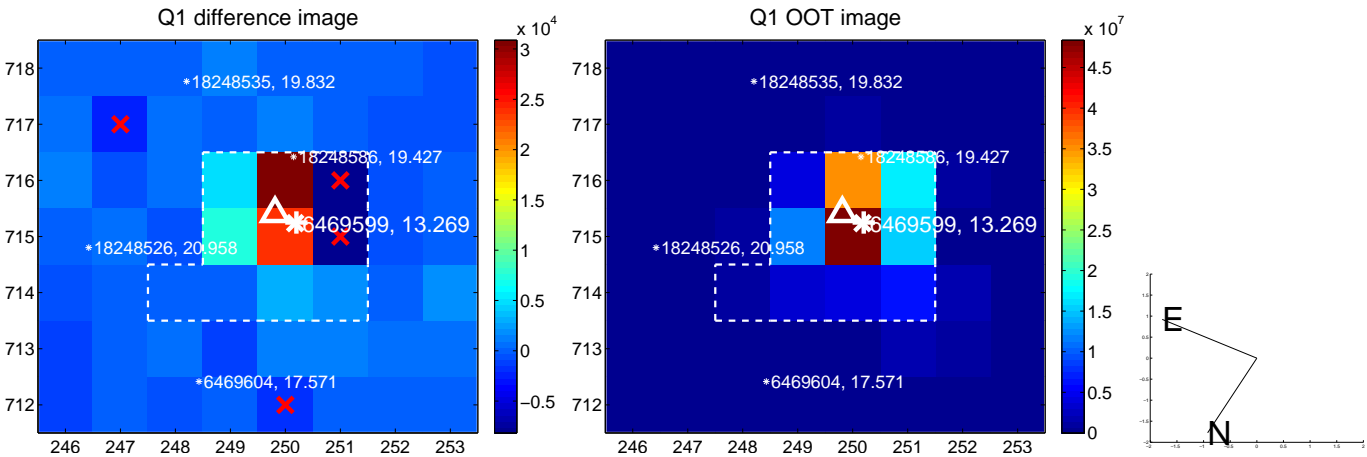
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.466 \pm 0.623$	0.75	$-0.143 \pm 0.918$	$-0.444 \pm 0.584$
PRF-fit source offset from KIC position	$0.382 \pm 0.672$	0.57	$-0.254 \pm 0.770$	$-0.285 \pm 0.583$
photometric centroid source offset	$0.28 \pm 1.35$	0.21	$-0.26 \pm 1.36$	$-0.09 \pm 1.25$



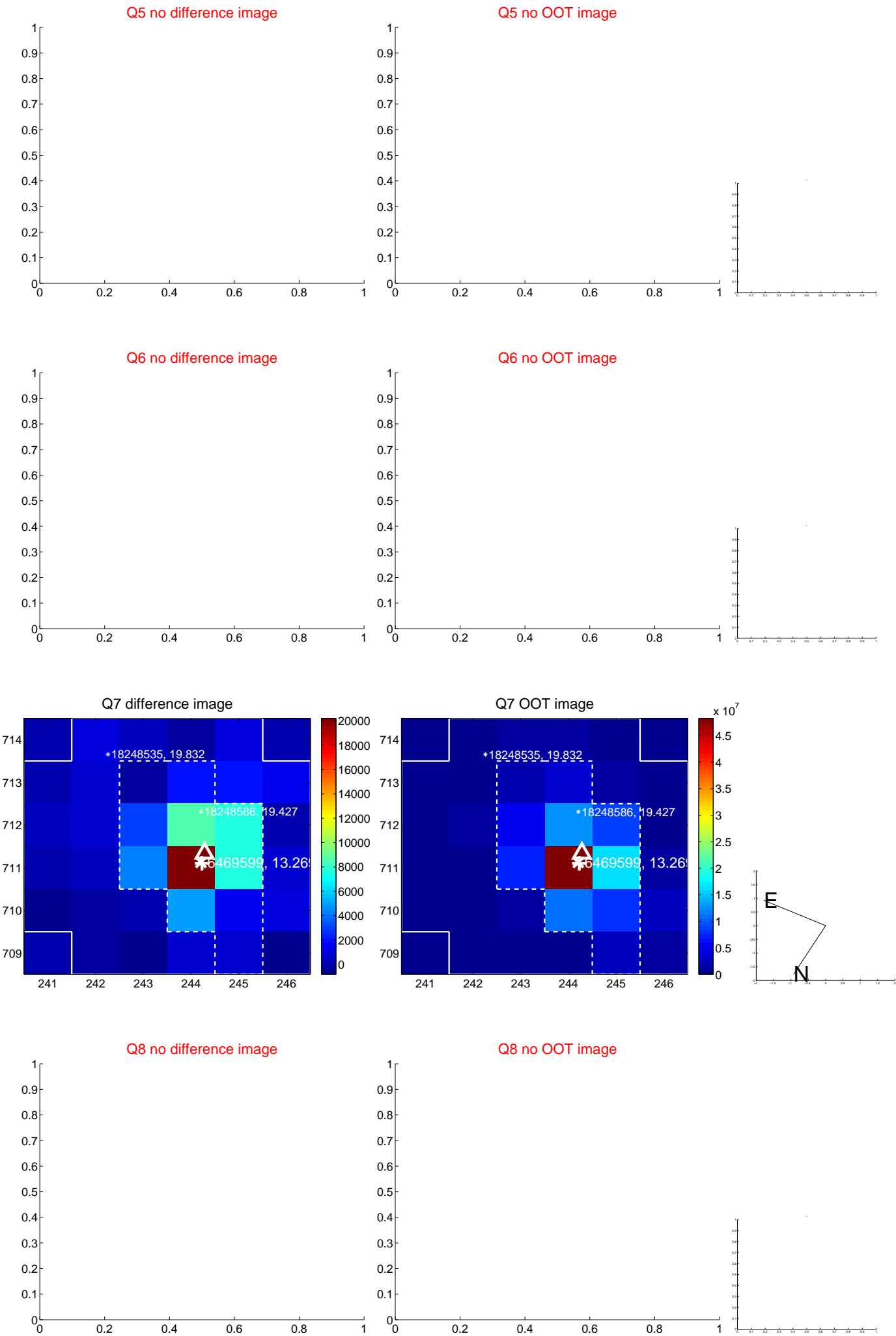
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

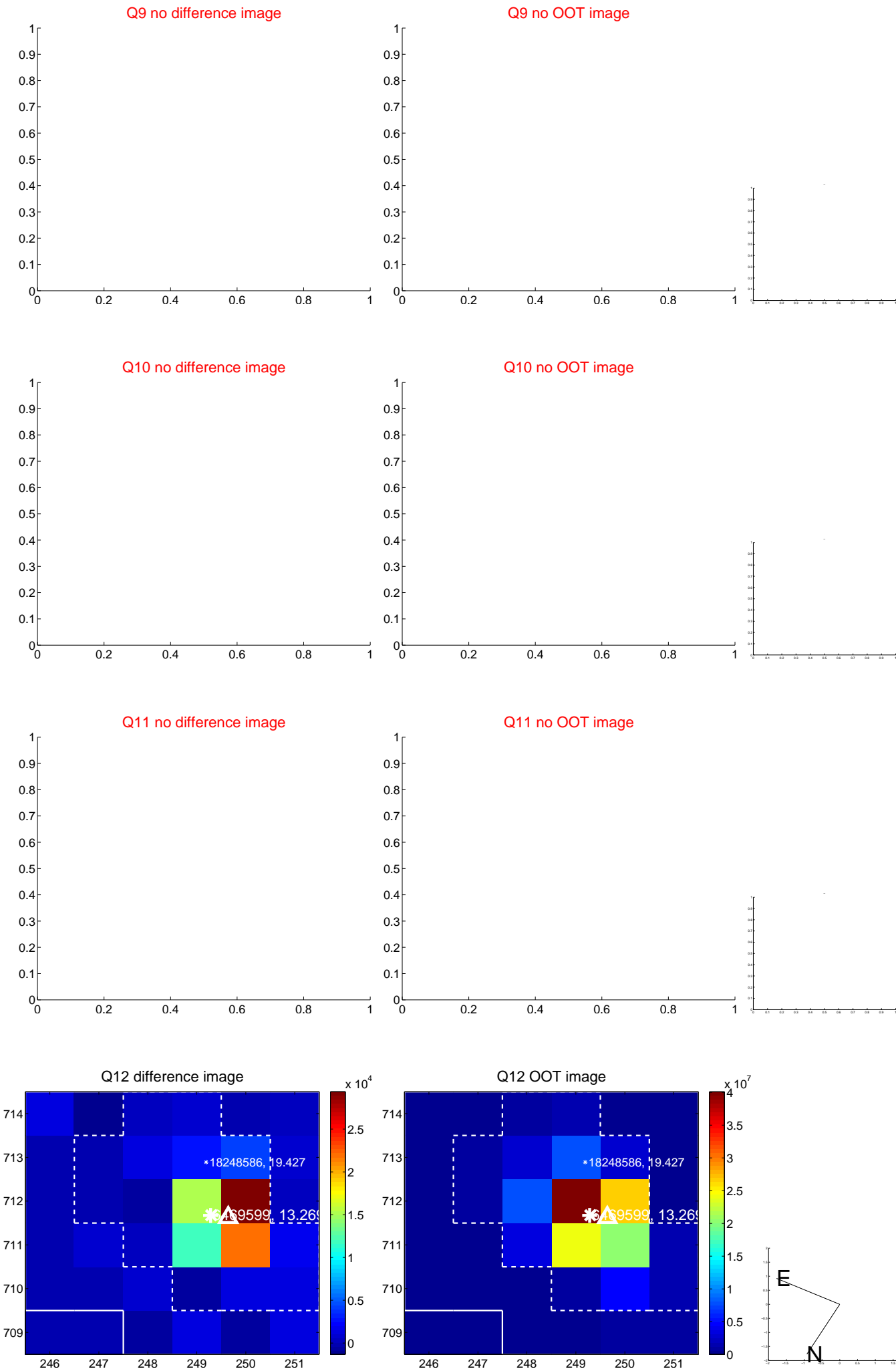




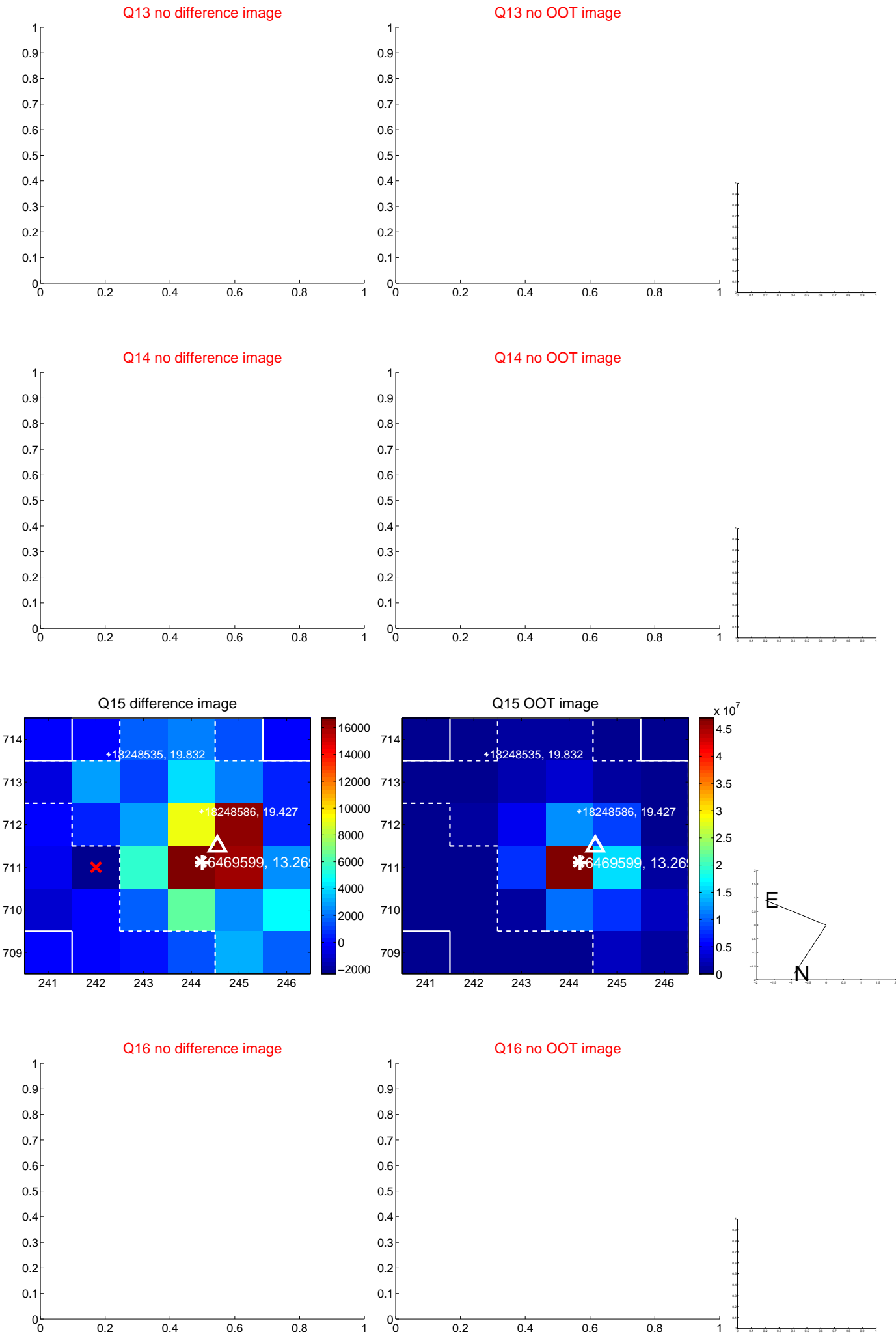
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



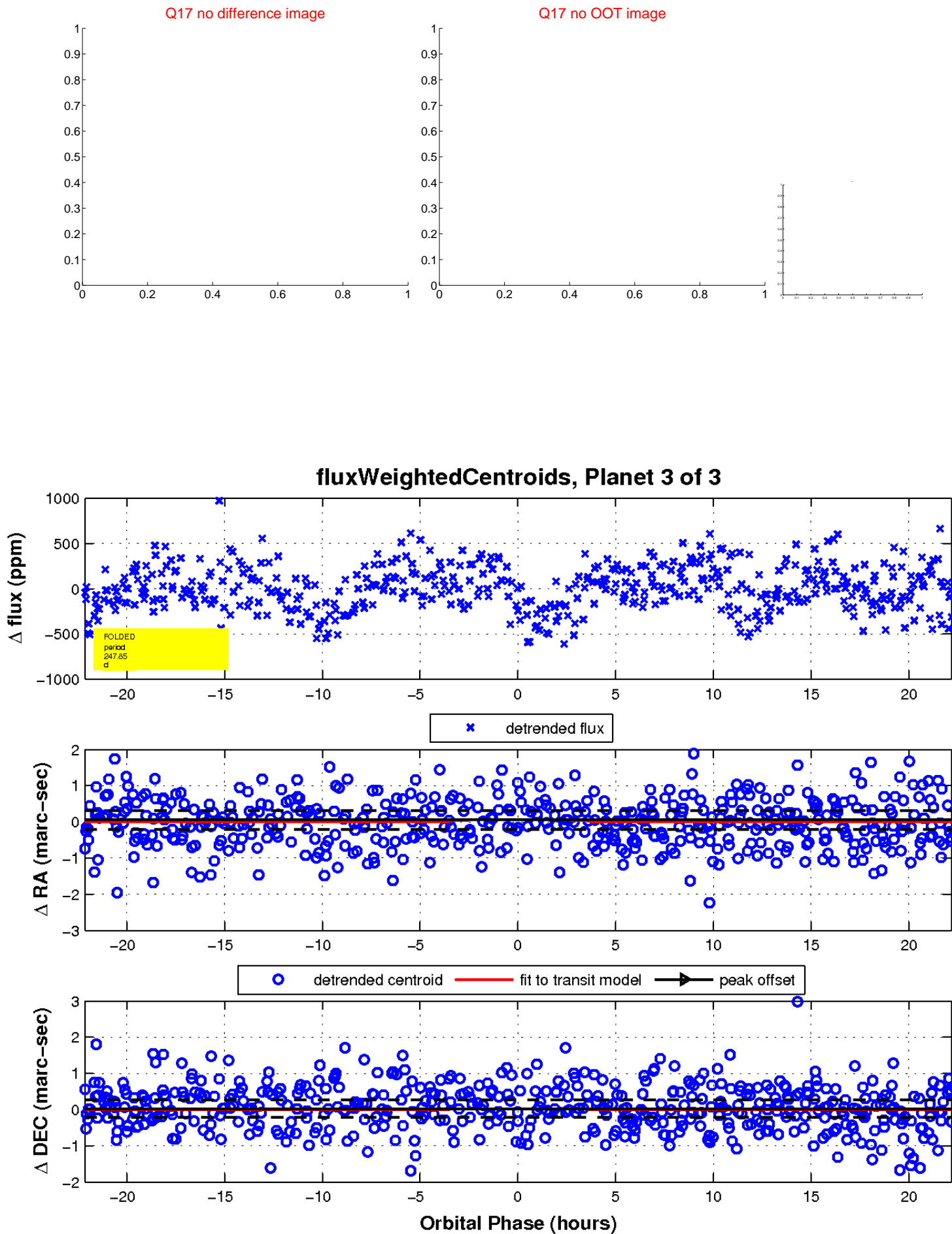
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



UKIRT Image

Declination

