

# KIC 010601549

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010601549-01	OBS	6226.01	1.463860	132.790828	2337.8	2.618	561.3	52.8	0.67	5446	6.11	738.57
010601549-02	OBS	No	1.463808	132.632869	513.1	1.500	13.5	-1.0	0.67	5446	1.51	738.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010601549-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010601549-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS

**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.

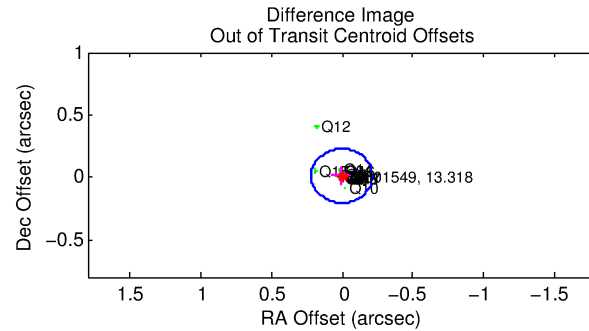
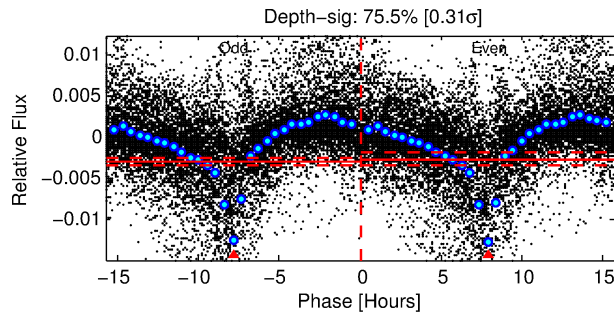
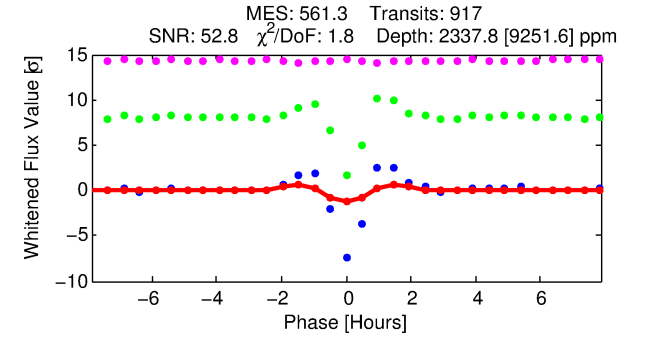
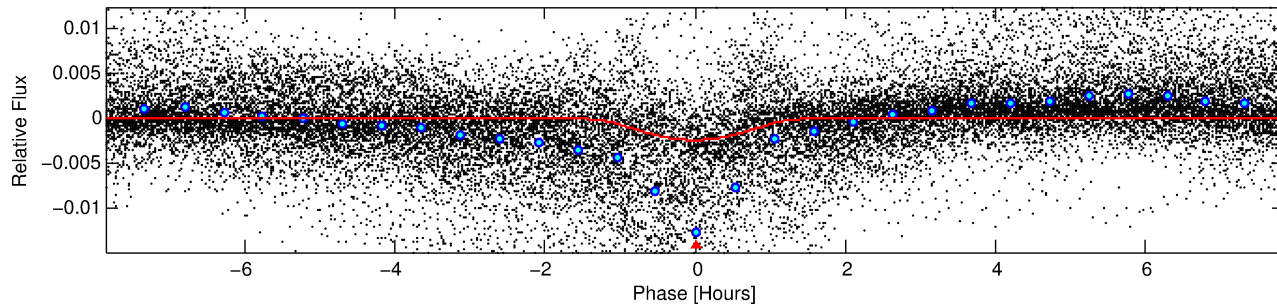
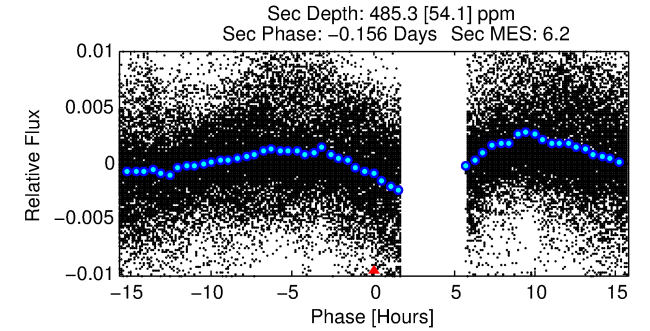
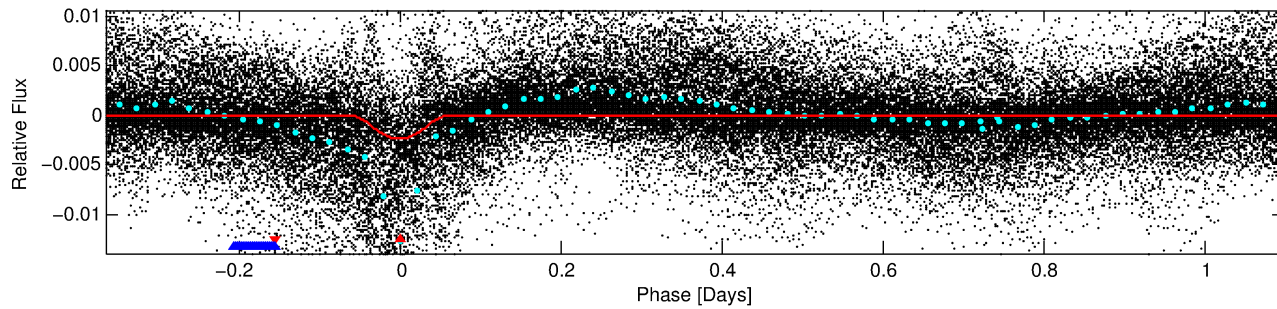
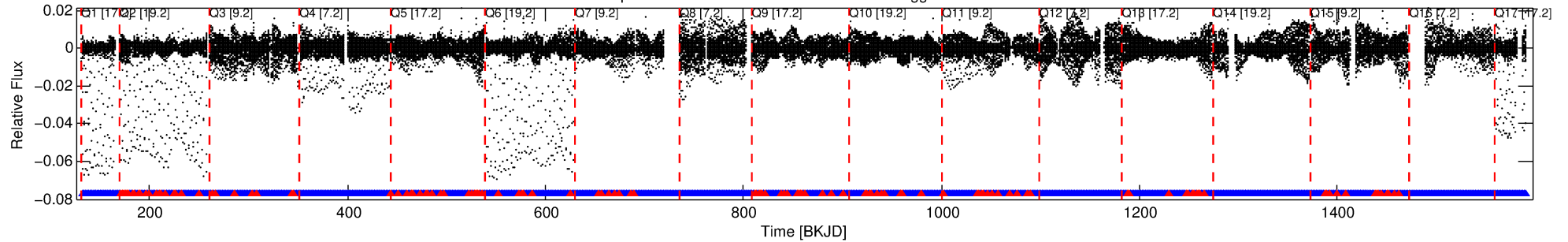
## Ephemeris Match Information For 010601549-01

No Significant Match Found

# DV One-Page Summary

KIC: 10601549 Candidate: 1 of 2 Period: 1.464 d  
KOI: K06226 Corr: No Ephemeris Match

Kp: 13.32 R\*: 0.67 Rs Teff: 5446.0 K Logg: 4.60 Fe/H: -1.040



## DV Fit Results:

Period = 1.46386 [0.00000] d  
Epoch = 132.7908 [0.0005] BKJD  
Rp/R\* = 0.0839 [0.0836]  
a/R\* = 2.06 [0.28]  
b = 1.00 [0.34]  
Seff = 738.57 [132.29]  
Teq = 1329 [60] K  
Rp = 6.11 [6.12] Re  
a = 0.0218 [0.0019] AU  
Ag = 3.40 [6.81] [0.35σ]  
Teff = 2791 [1396] K [1.05σ]

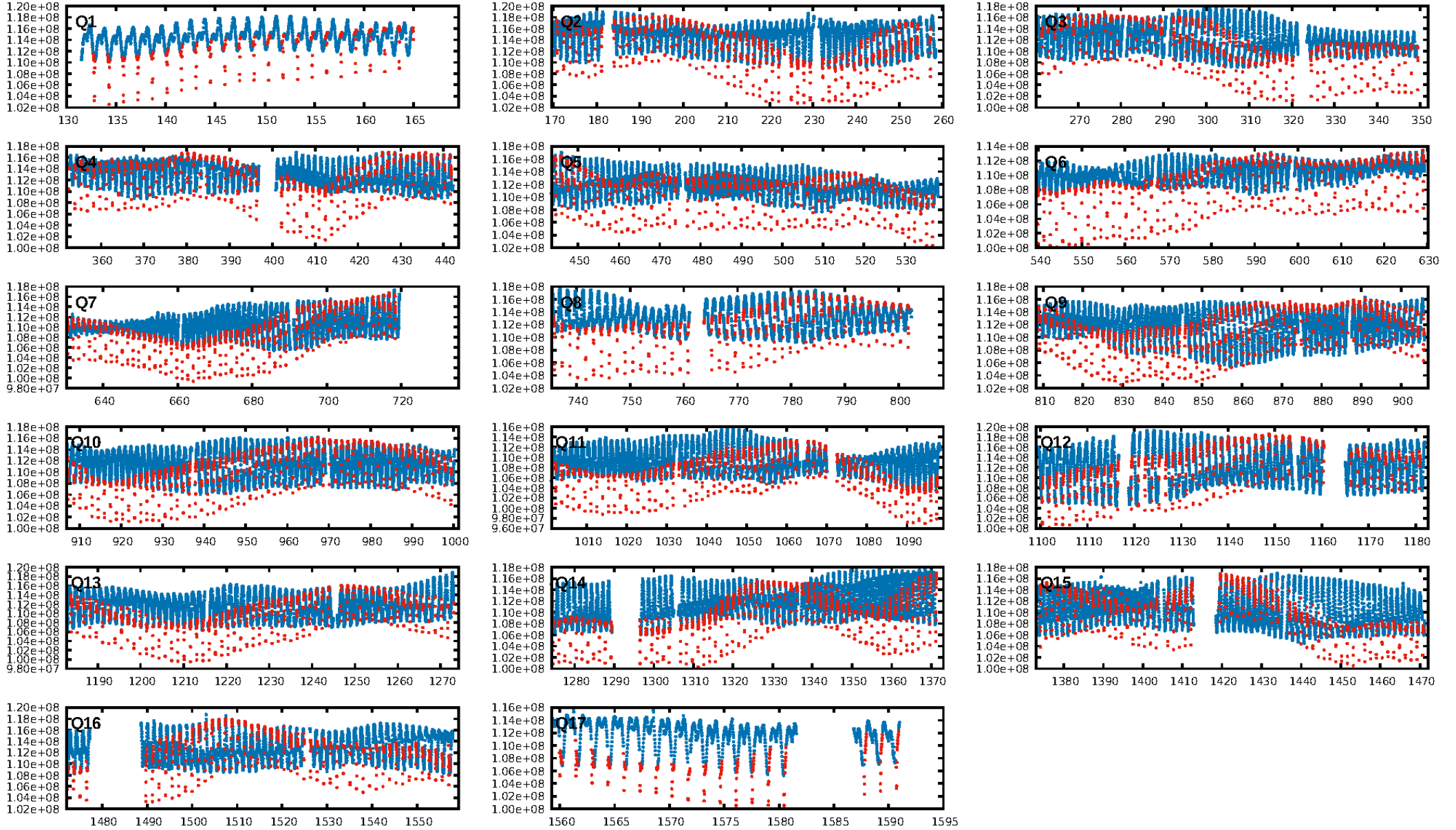
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.86 [755/876]  
GhostDiagnostic-chr: 1.409  
Centroid-sig: 0.0%  
Centroid-so: 0.245 arcsec [13.77σ]  
OotOffset-rm: 0.011 arcsec [0.15σ]  
KicOffset-rm: 0.204 arcsec [2.91σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.88 [15/17]  
DiffImageOverlap-fno: 0.00 [0/17]

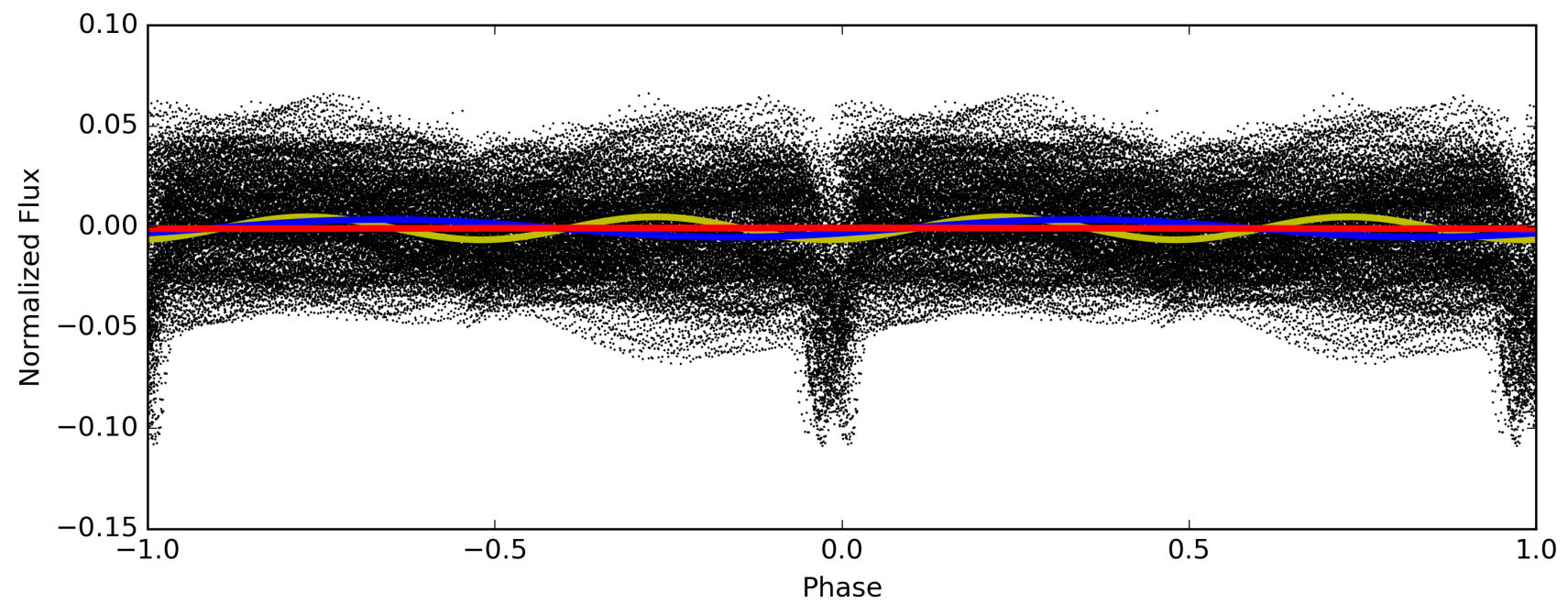
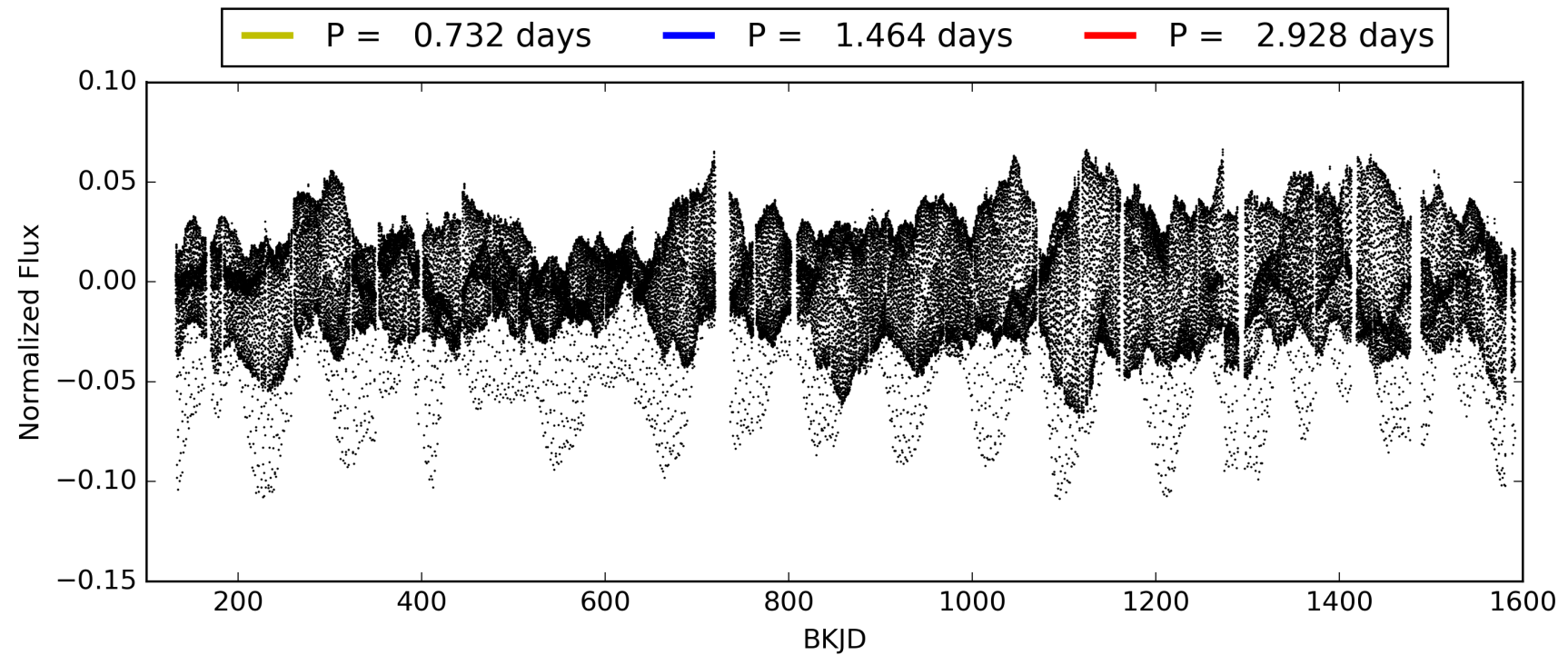
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:31:54 Z

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

# TCE 010601549-01, PDC Light Curves

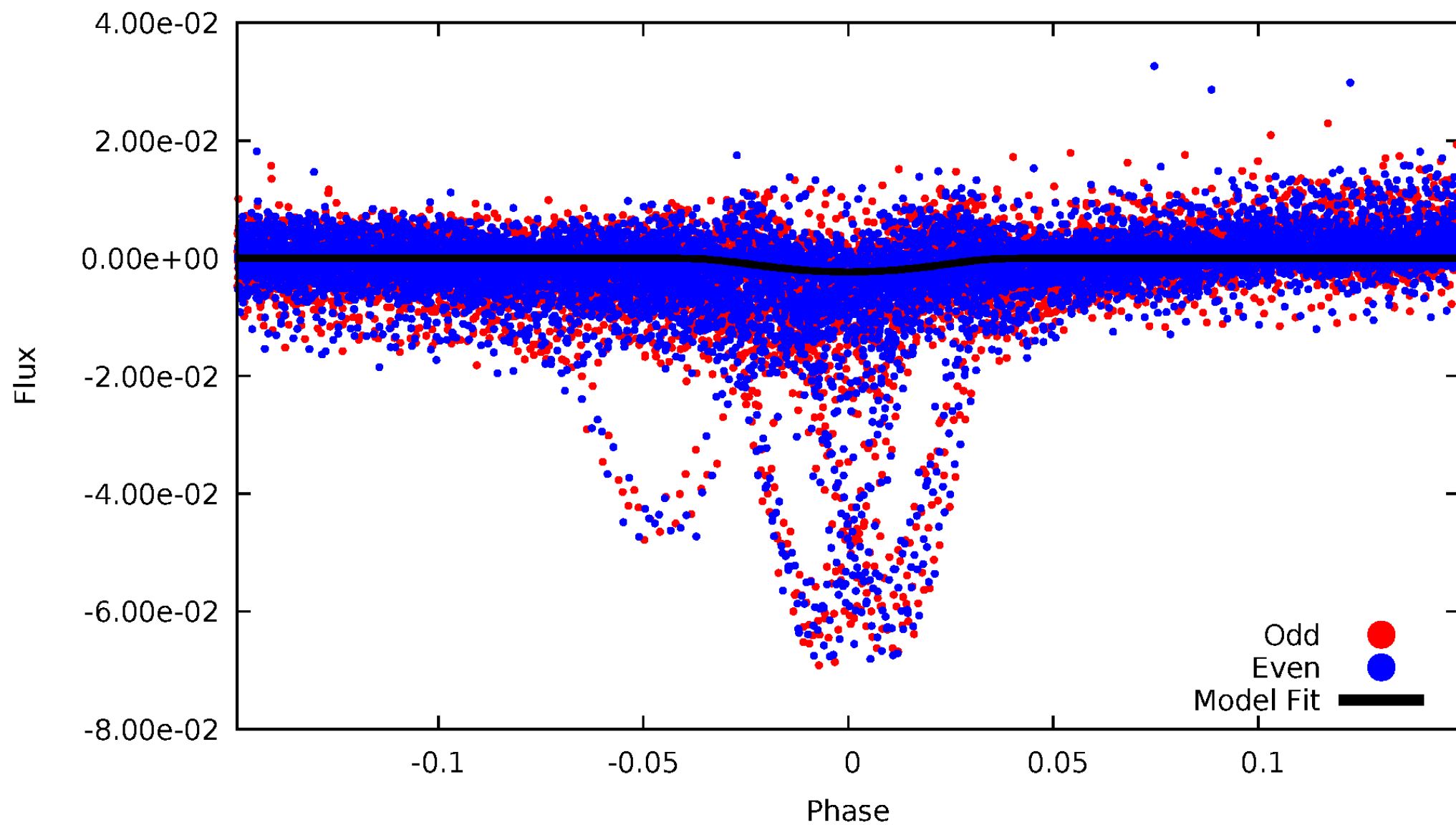


TCE 010601549-01



# DV Odd/Even

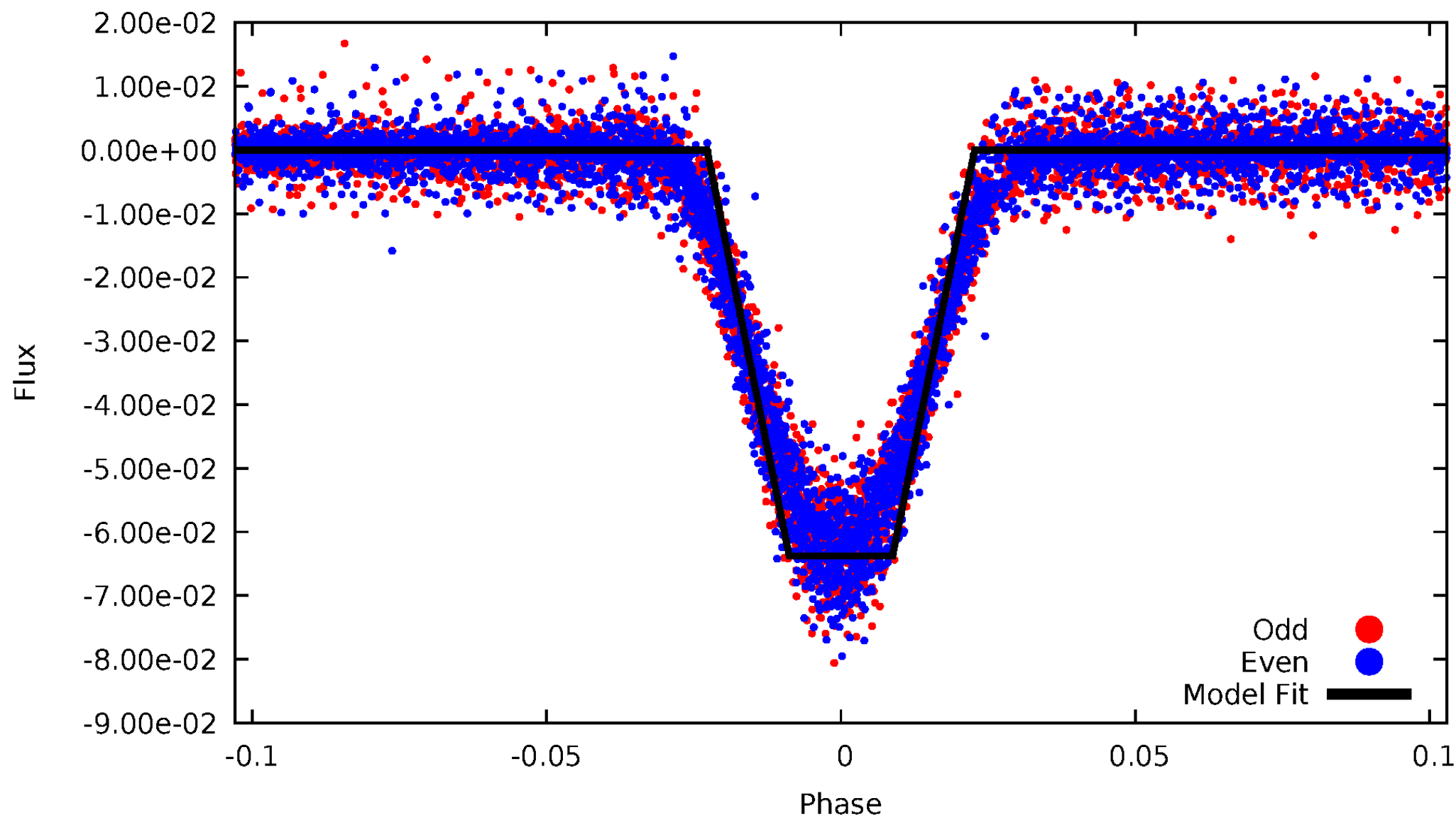
TCE 010601549-01





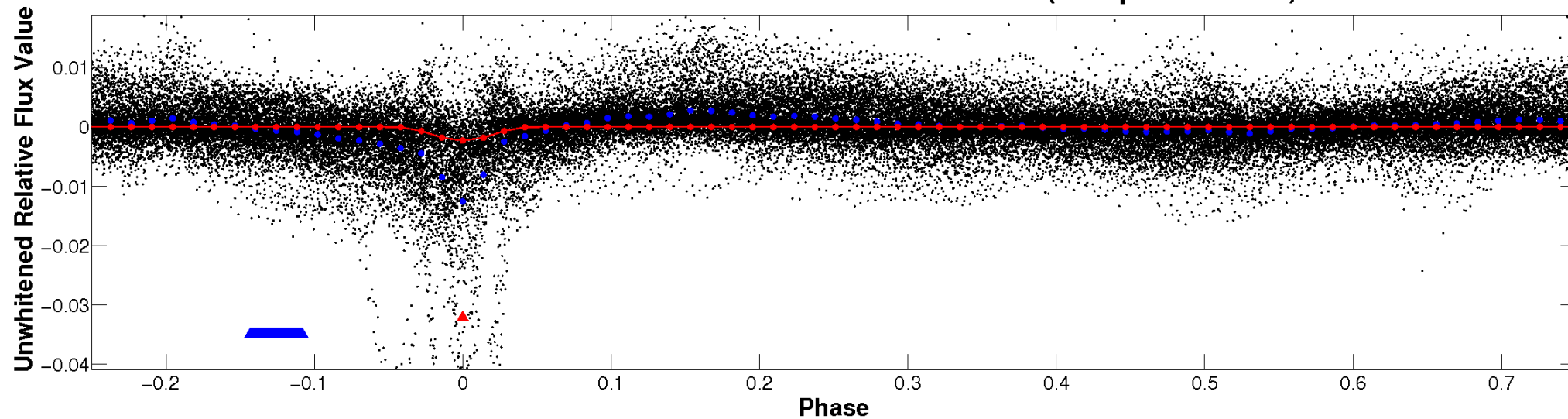
# ALT Odd/Even

TCE 010601549-01

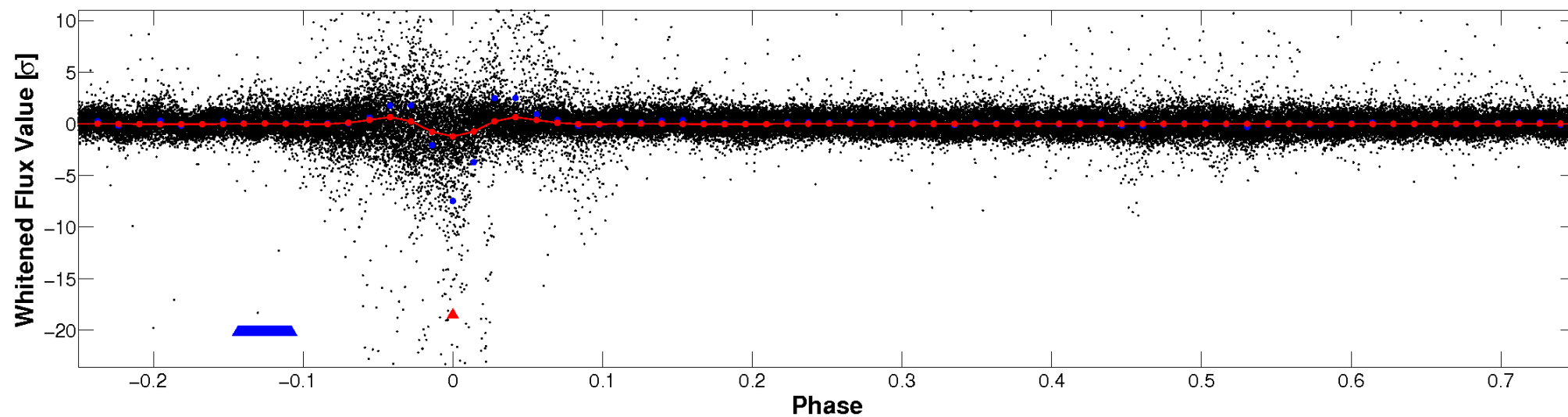


# Non-Whitened Vs. Whitened Light Curve

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

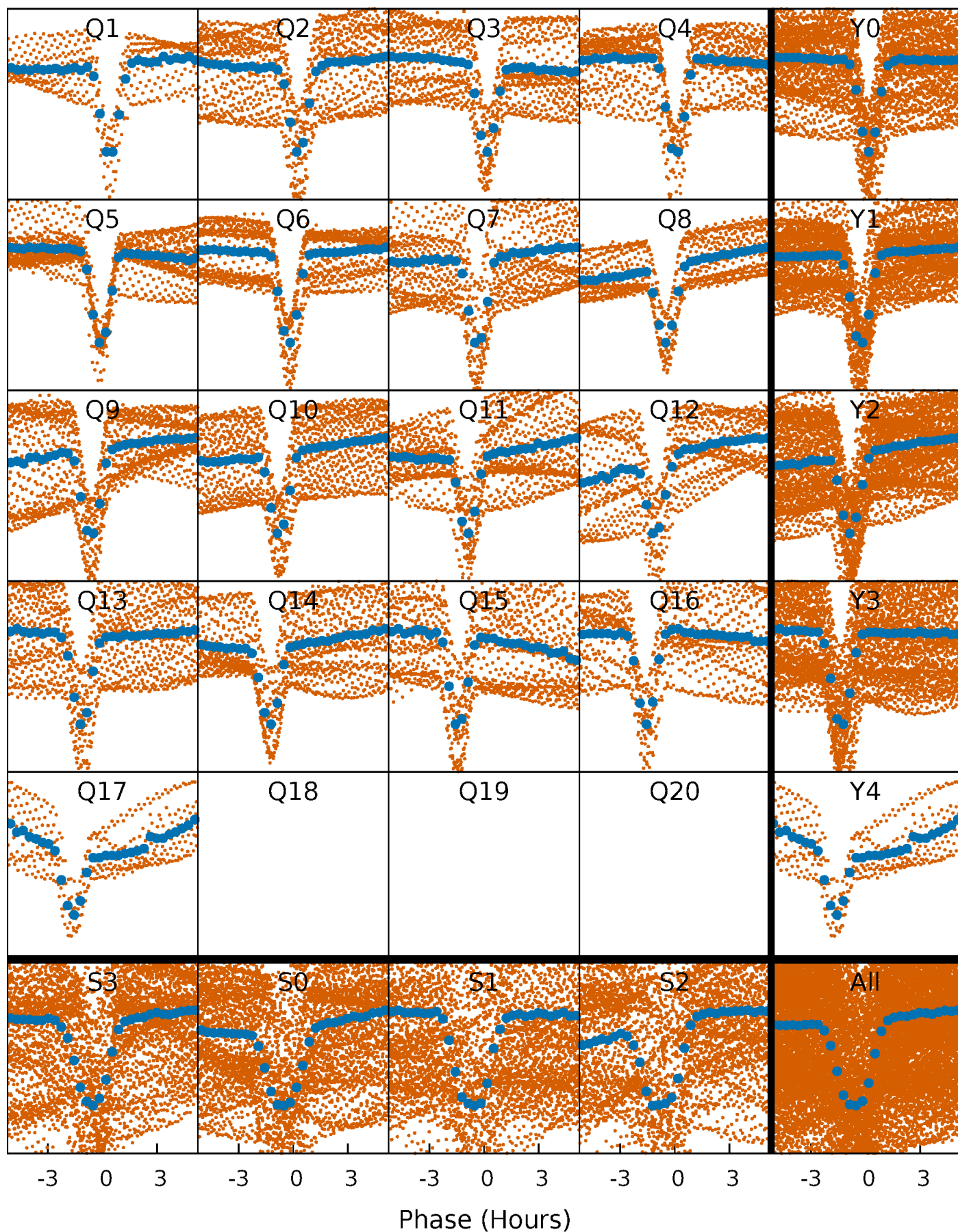


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

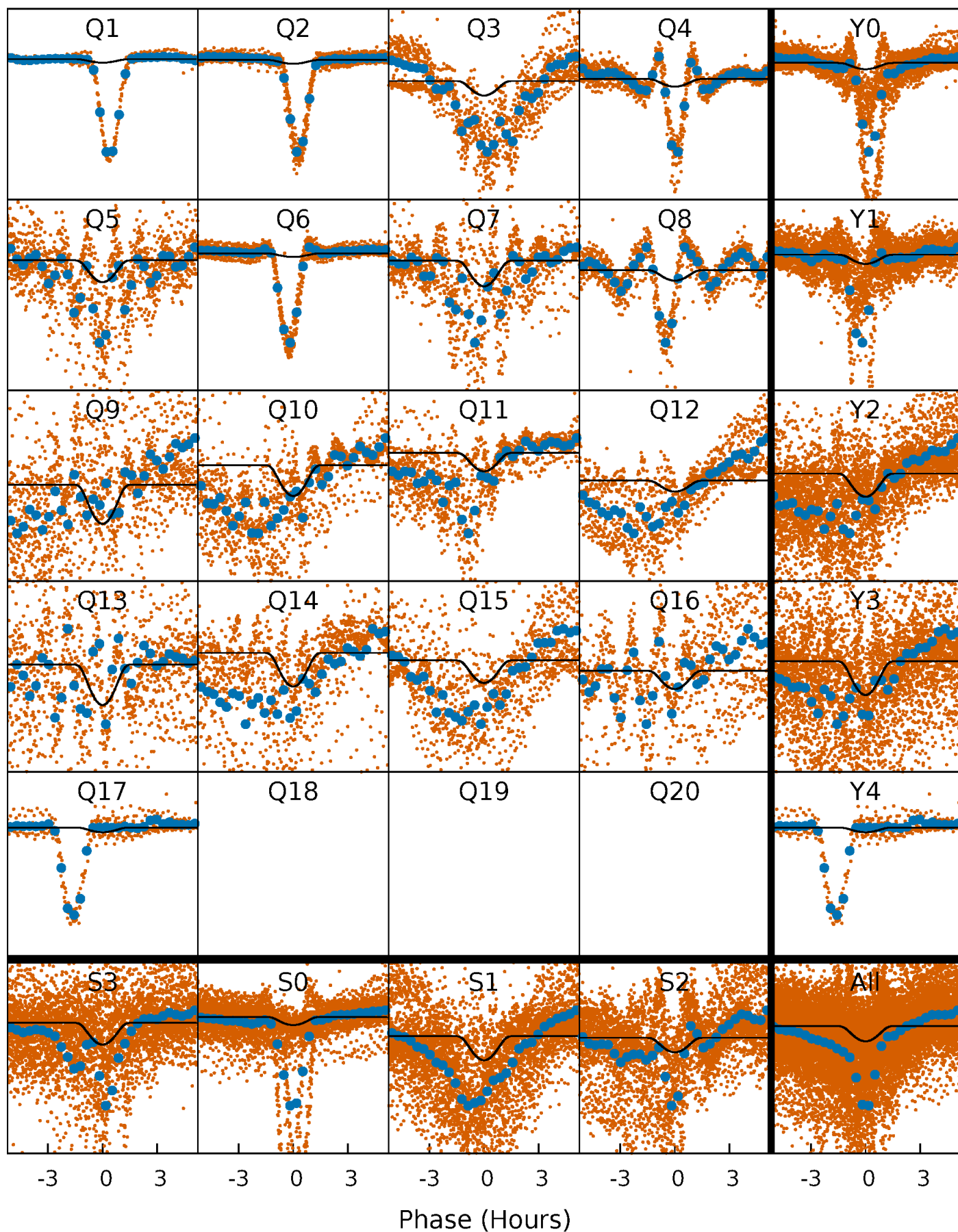
TCE 010601549-01 P= 1.463860 Days  $T_0=132.790828$  (BKJD)





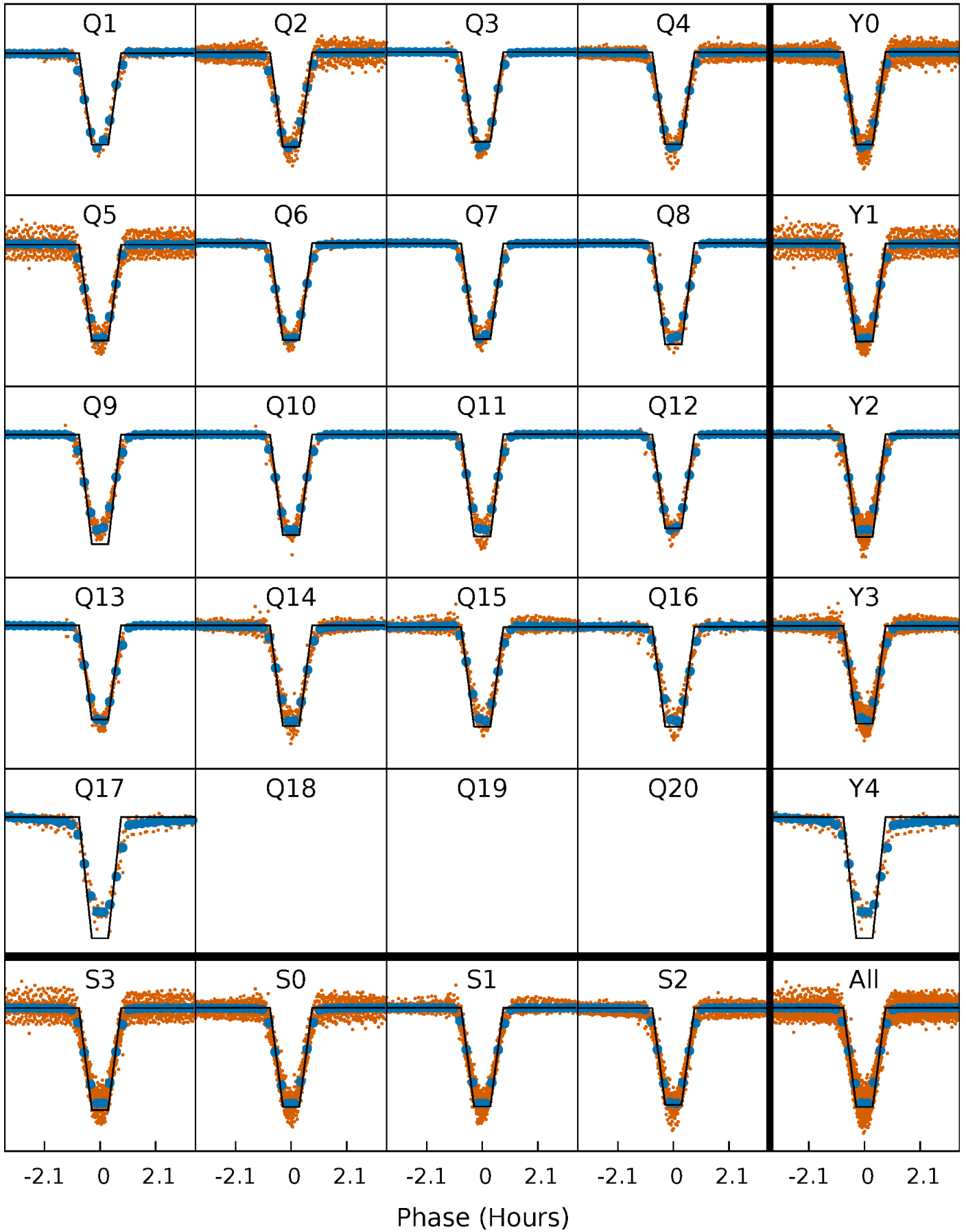
# DV Quarter-Phased Transit Curves

TCE 010601549-01 P= 1.463860 Days  $T_0=132.790828$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

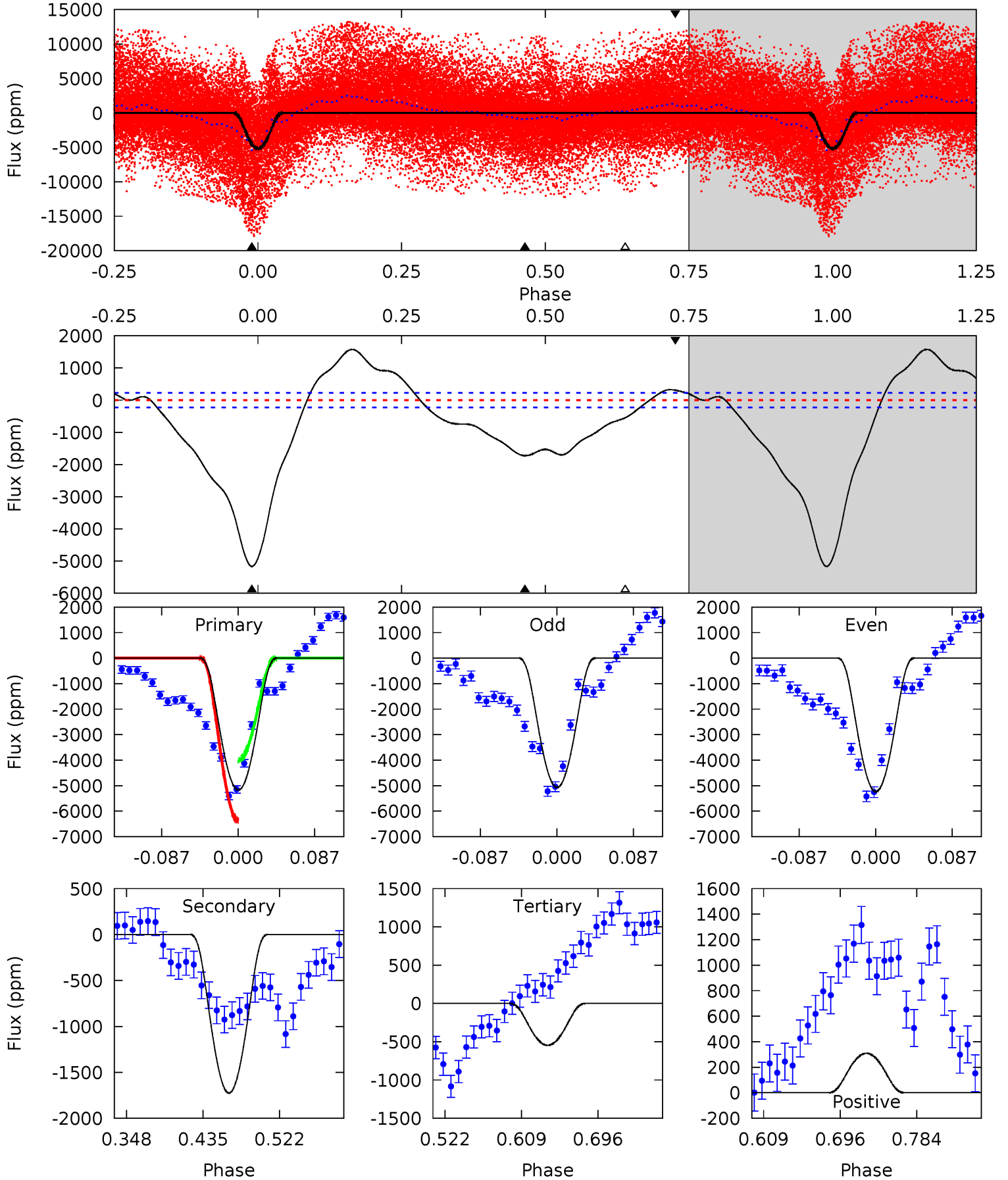
TCE 010601549-01 P= 1.463771 Days  $T_0=132.809415$  (BKJD)



# DV Model-Shift Uniqueness Test

010601549-01, P = 1.463860 Days, E = 131.326968 Days

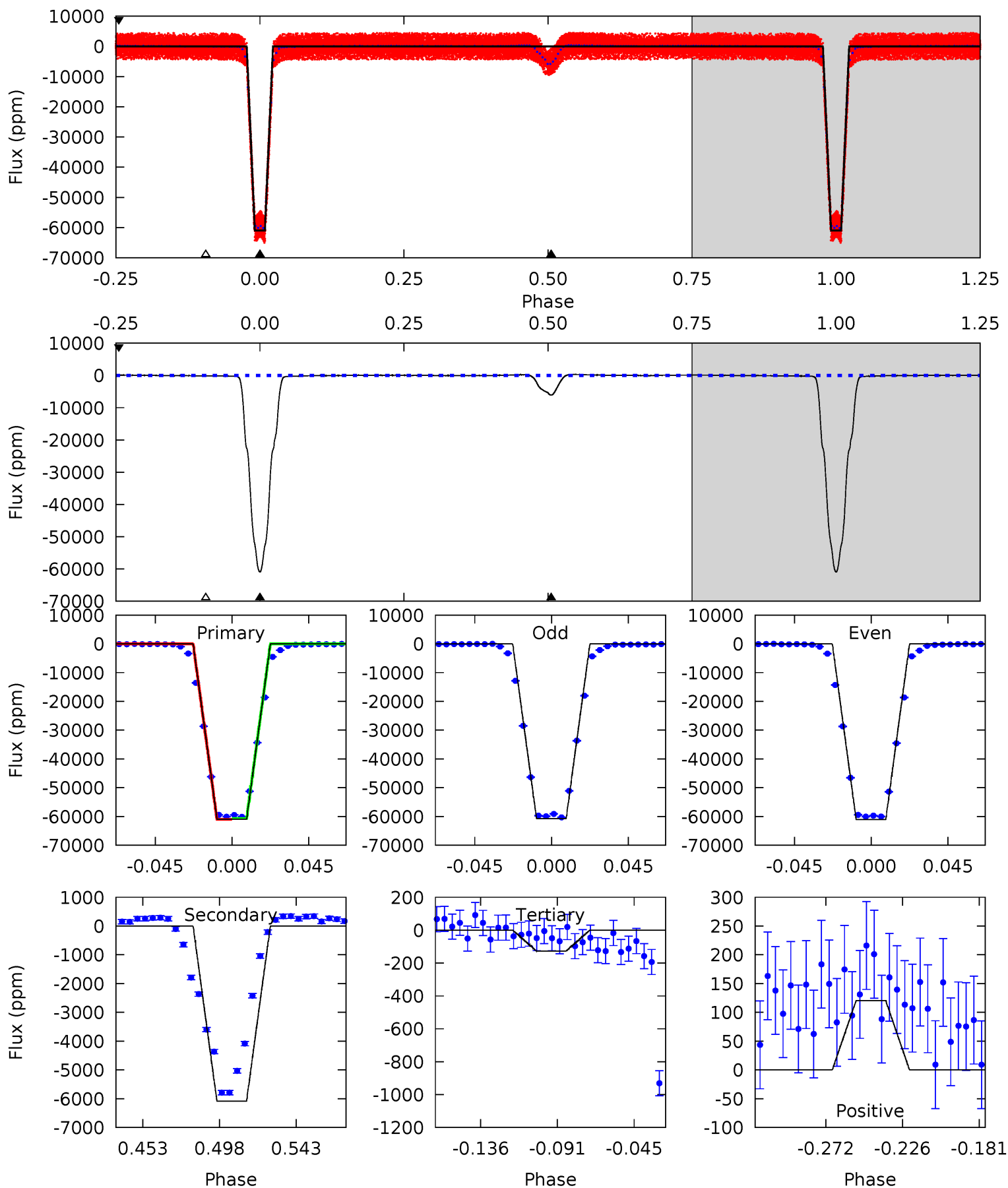
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
104.5	34.9	11.0	6.25	4.59	1.71	16.3	93.4	98.2	23.8	28.6	1.67	1.73	0.23	24.1



# Alt Model-Shift Uniqueness Test

010601549-01, P = 1.463771 Days, E = 131.345644 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
1727	172.5	3.60	3.41	4.73	2.00	2.67	1723	1723	168.9	169.0	4.77	1.00	0.00	4.66



### Stellar Parameters For KIC 010601549

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5446^{+162}_{-162}$	$4.599^{+0.077}_{-0.056}$	$-1.040^{+0.300}_{-0.300}$	$0.668^{+0.063}_{-0.056}$	$0.646^{+0.060}_{-0.024}$	$3.058^{+0.929}_{-0.596}$
	+3%/-3%	+2%/-1%	+29%/-29%	+9%/-8%	+9%/-4%	+30%/-19%
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 010601549-01 / KOI 6226.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-1725 \pm 49$	$7.46^{+6.22}_{-4.63}$	$1850^{+74}_{-70}$	$3804^{+1805}_{-699}$	$8.236^{+48.587}_{-5.785}$
Alt.	$-6087 \pm 35$	$18.68^{+5.80}_{-6.68}$	$1853^{+70}_{-72}$	$3464^{+539}_{-316}$	$4.675^{+6.700}_{-1.976}$

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



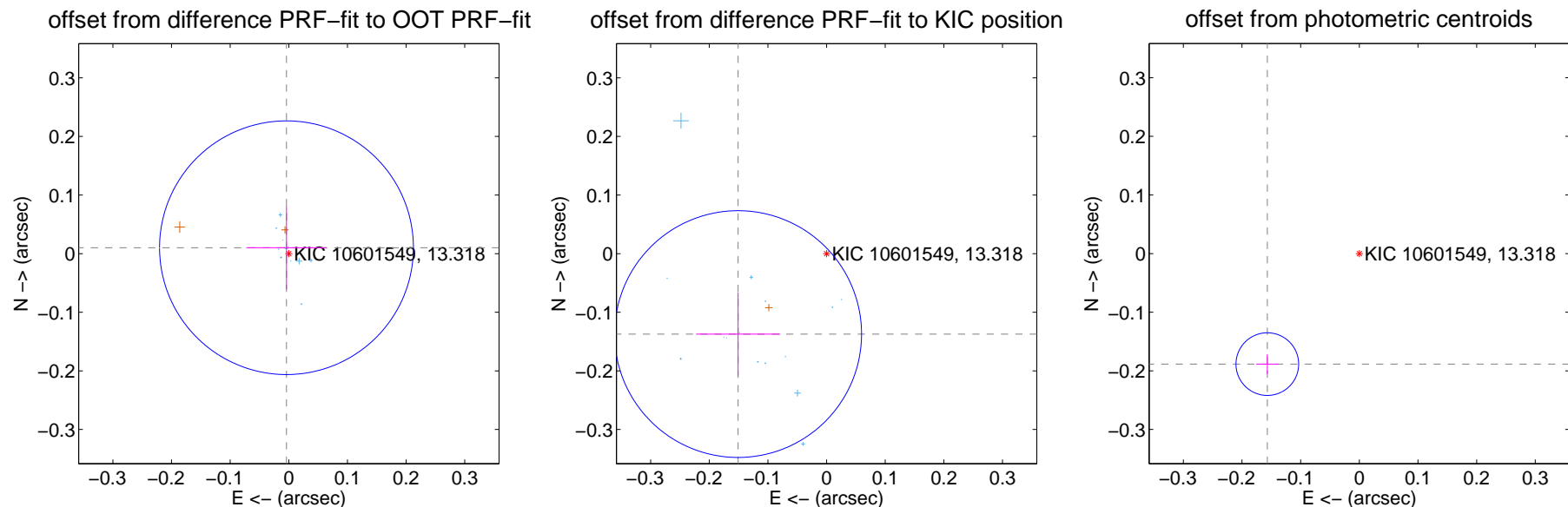
## DV Centroid Data

Supplemental centroid analysis for 010601549-01. Kepler magnitude: 13.32. Transit SNR 52.77

There are 15 quarters with good PRF difference image offsets

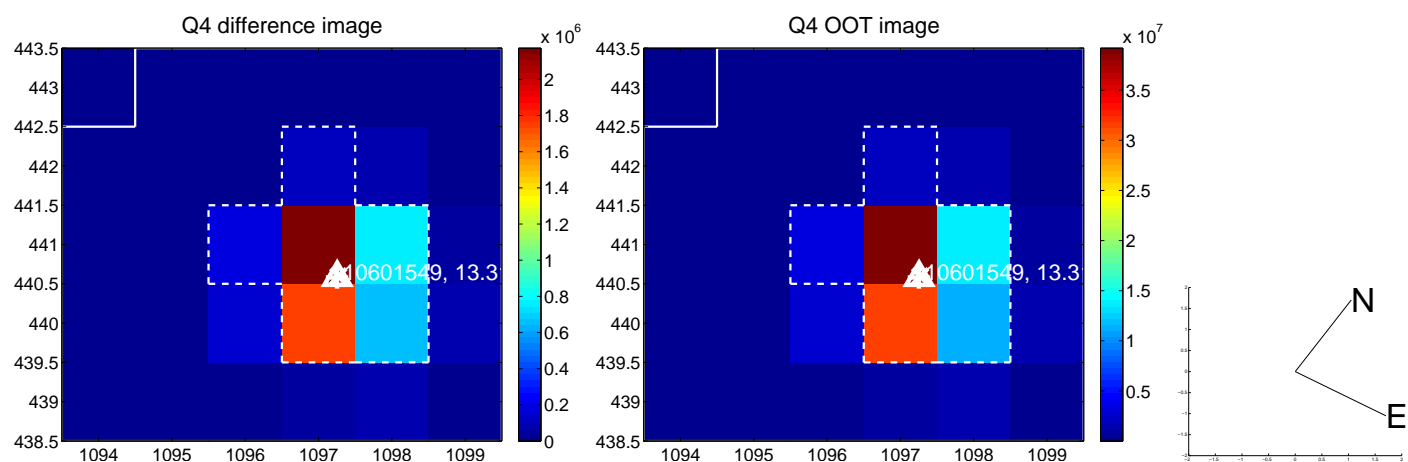
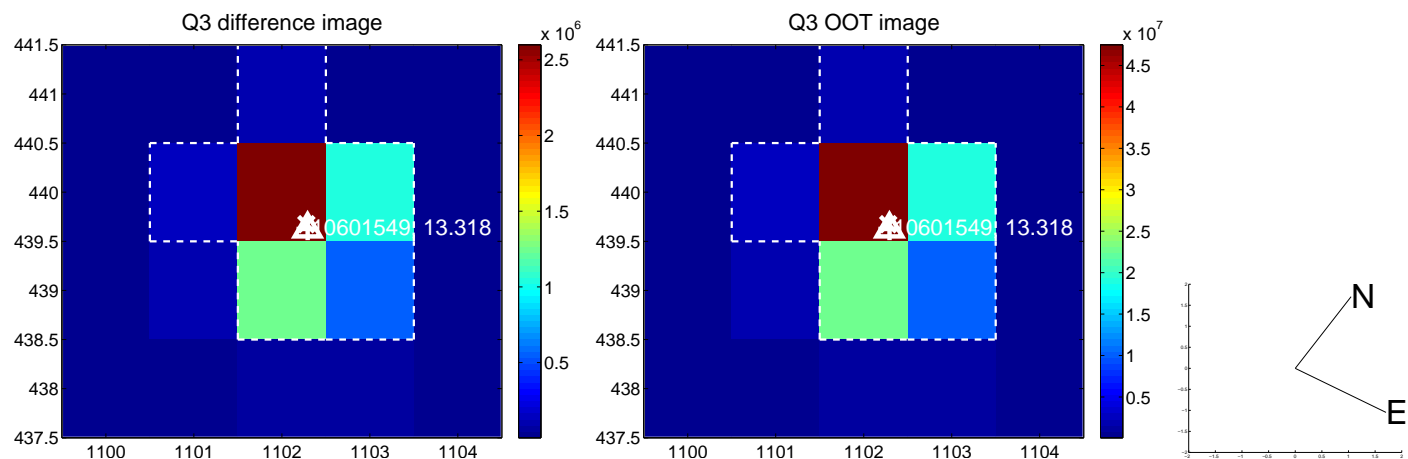
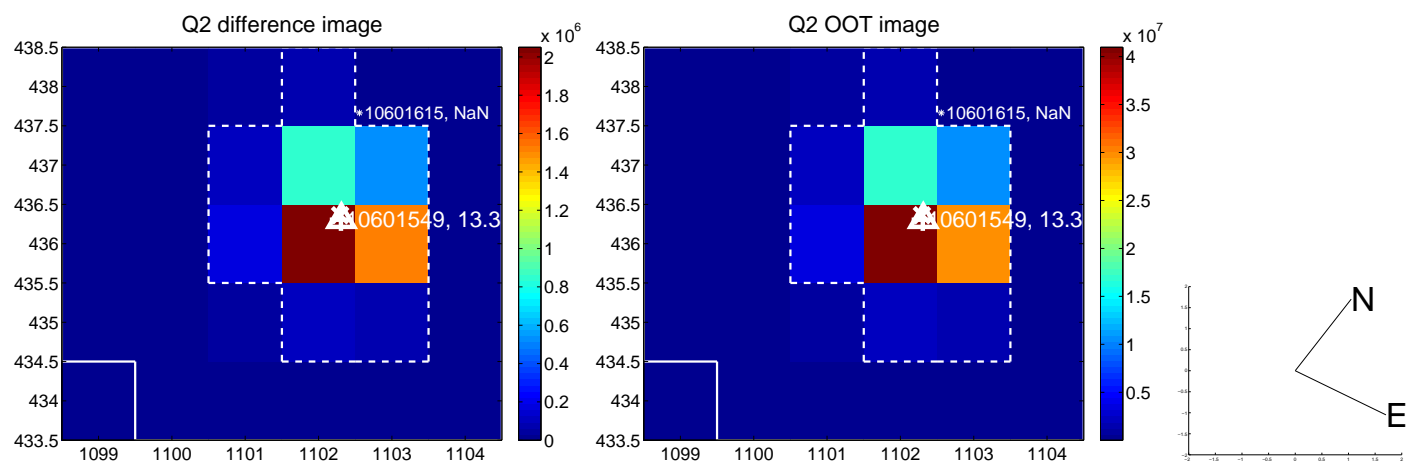
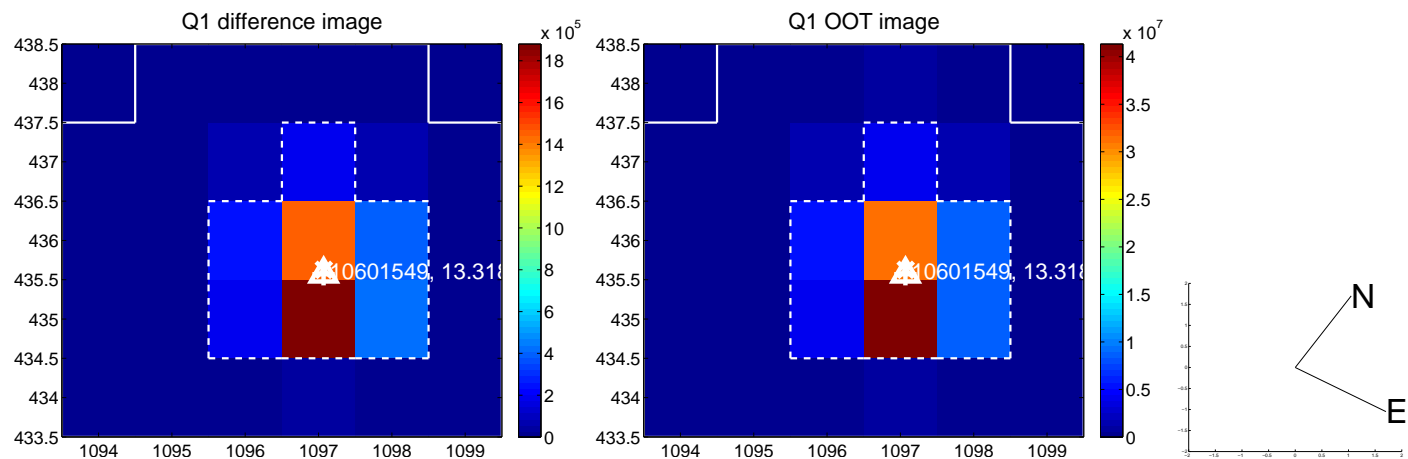
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.011 \pm 0.072$	0.15	$0.004 \pm 0.069$	$0.010 \pm 0.071$
PRF-fit source offset from KIC position	$0.204 \pm 0.070$	2.91	$0.151 \pm 0.072$	$-0.137 \pm 0.071$
photometric centroid source offset	$0.25 \pm 0.02$	13.77	$0.16 \pm 0.02$	$-0.19 \pm 0.02$

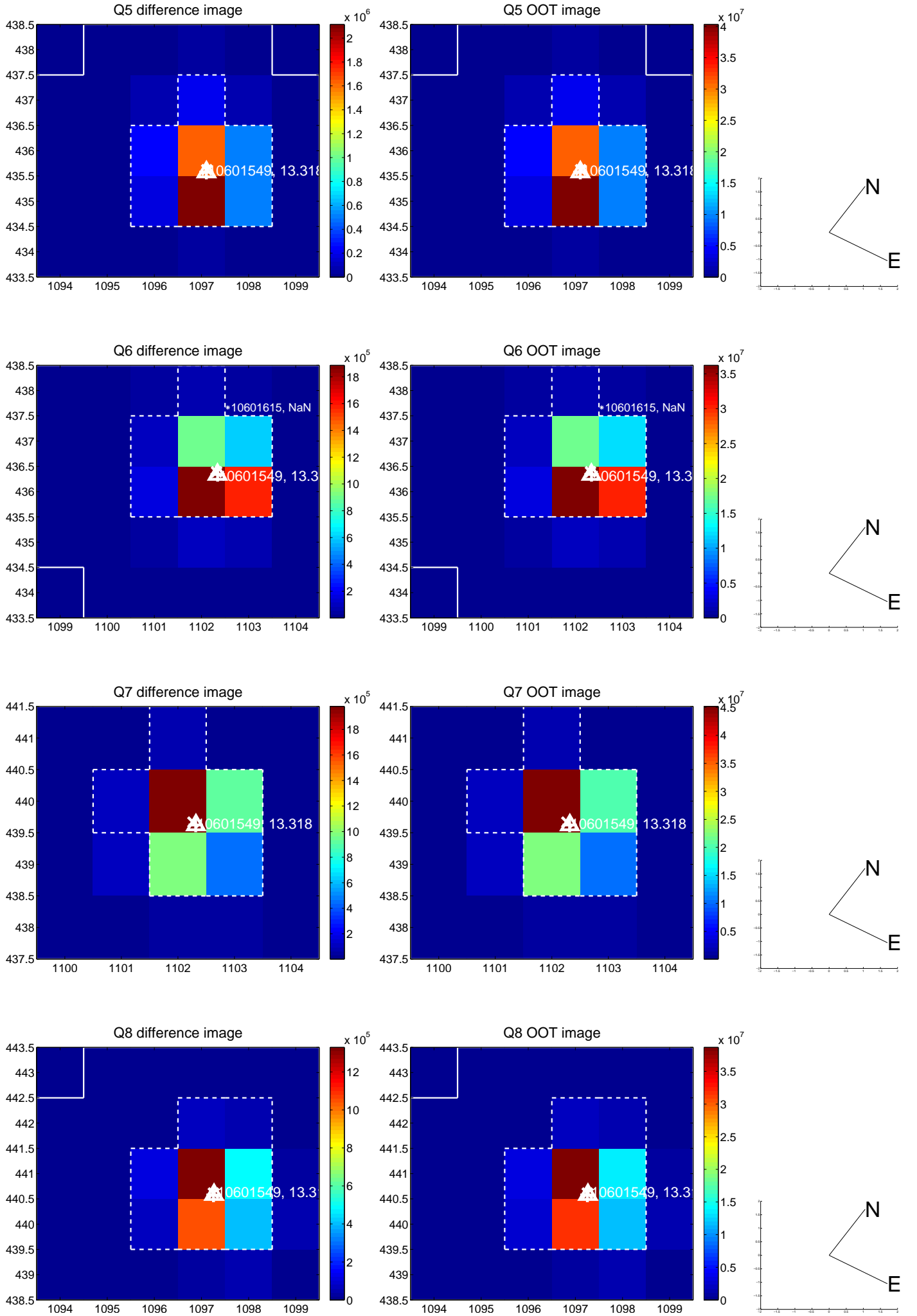


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

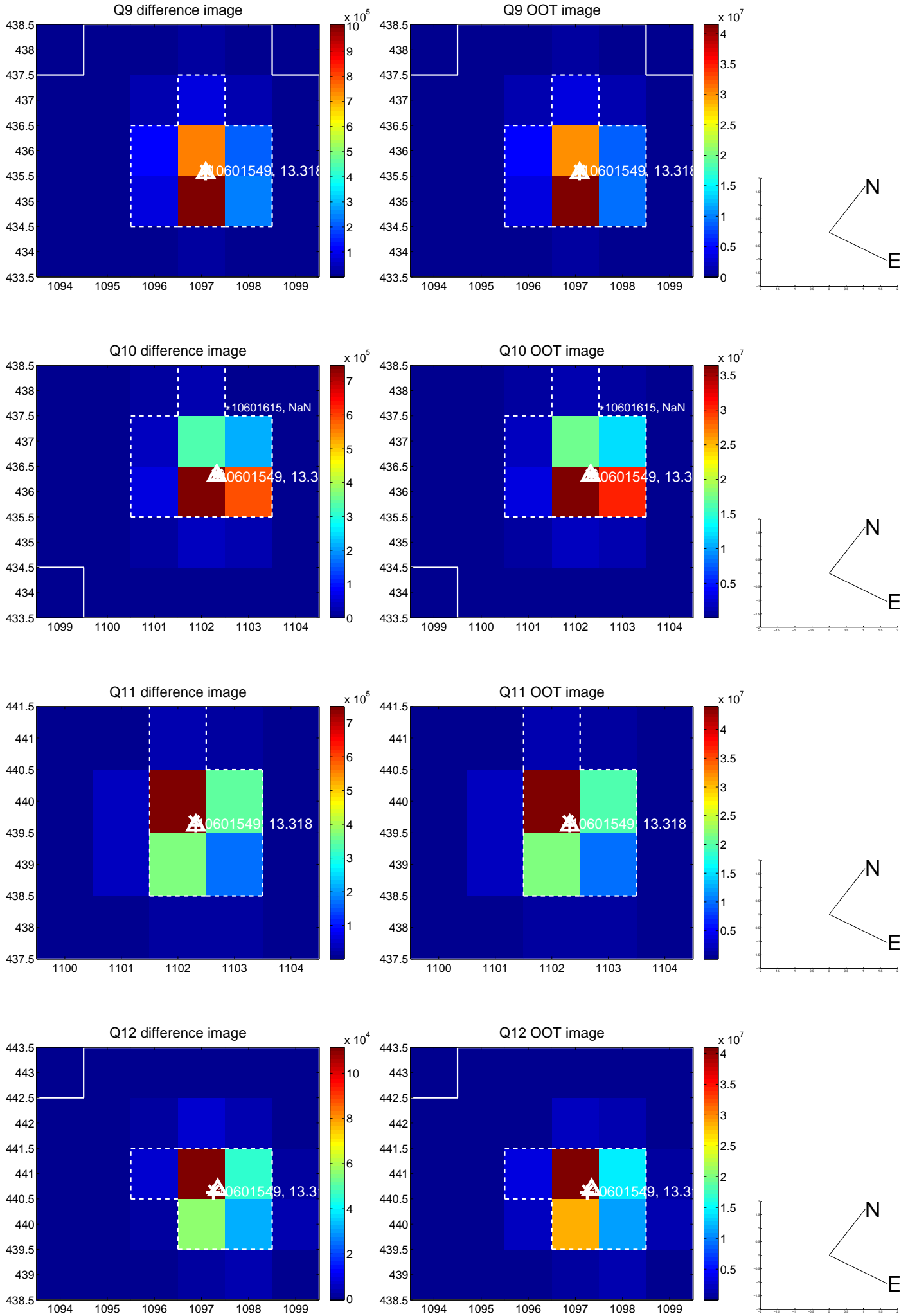
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



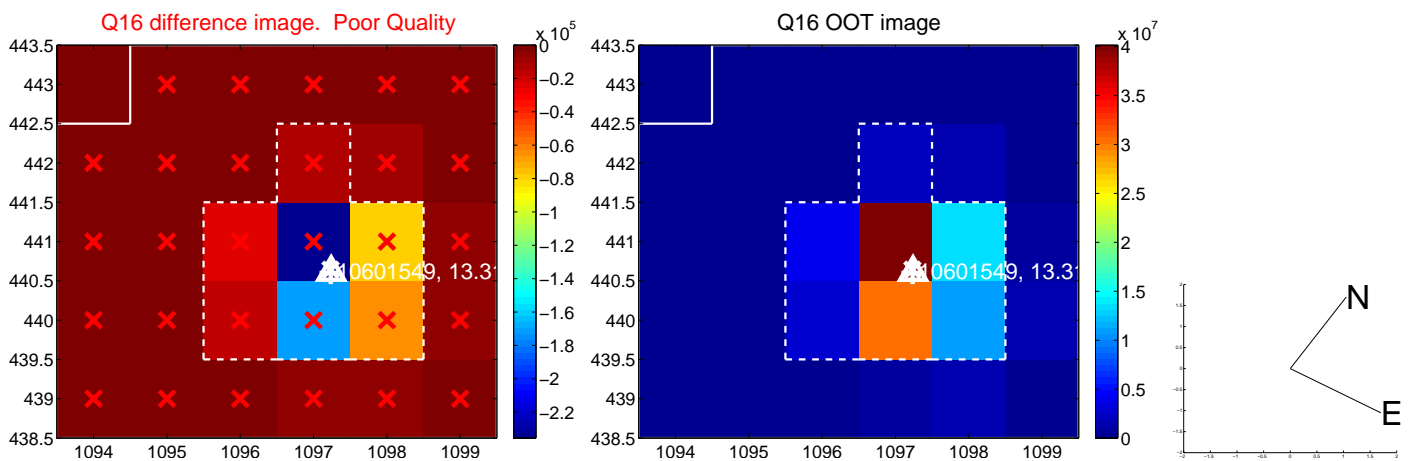
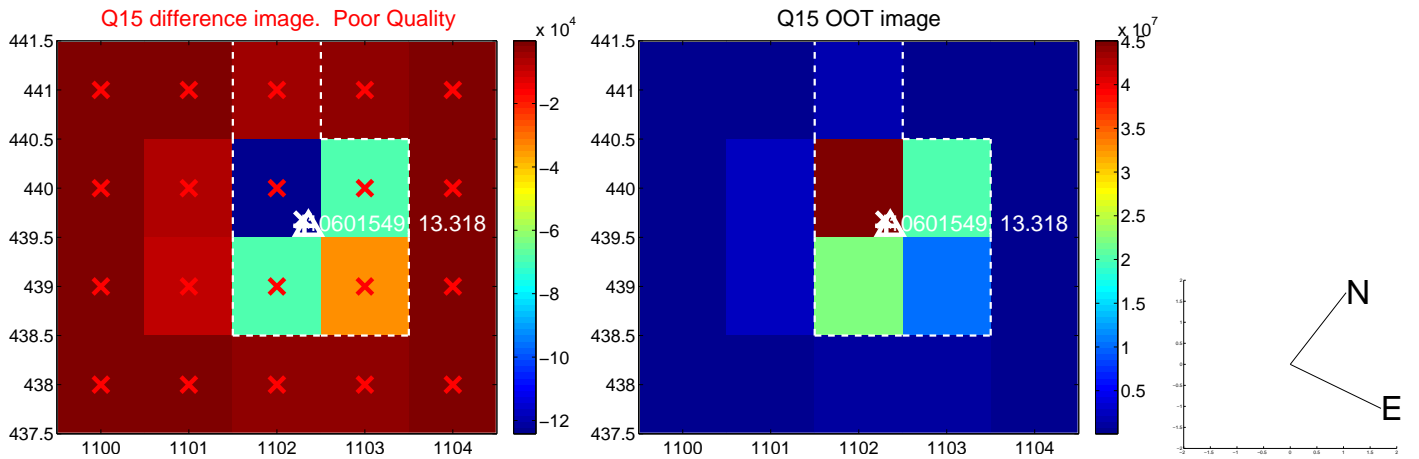
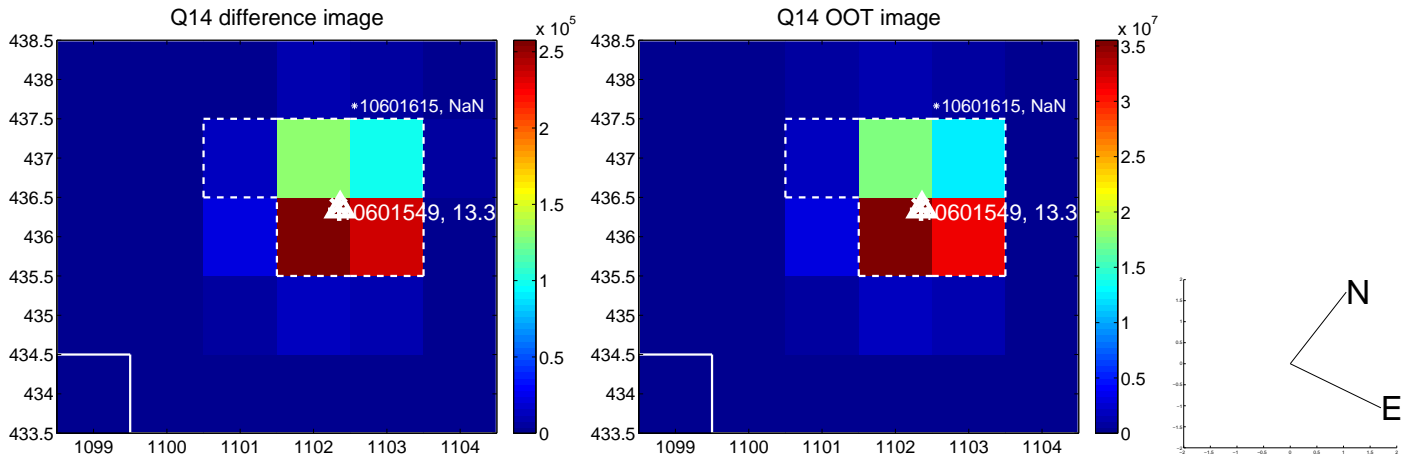
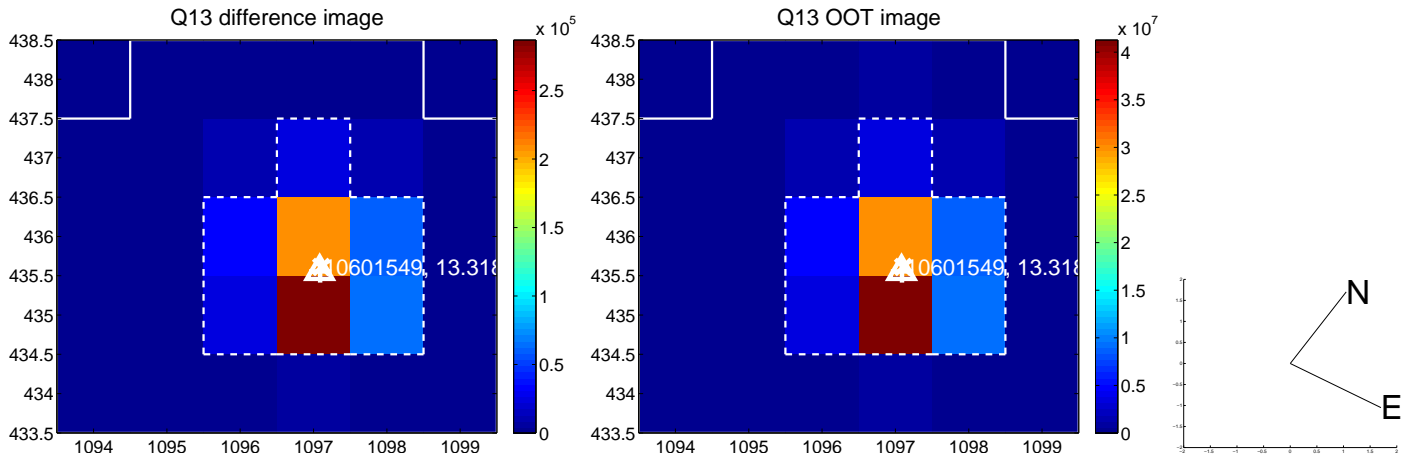
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

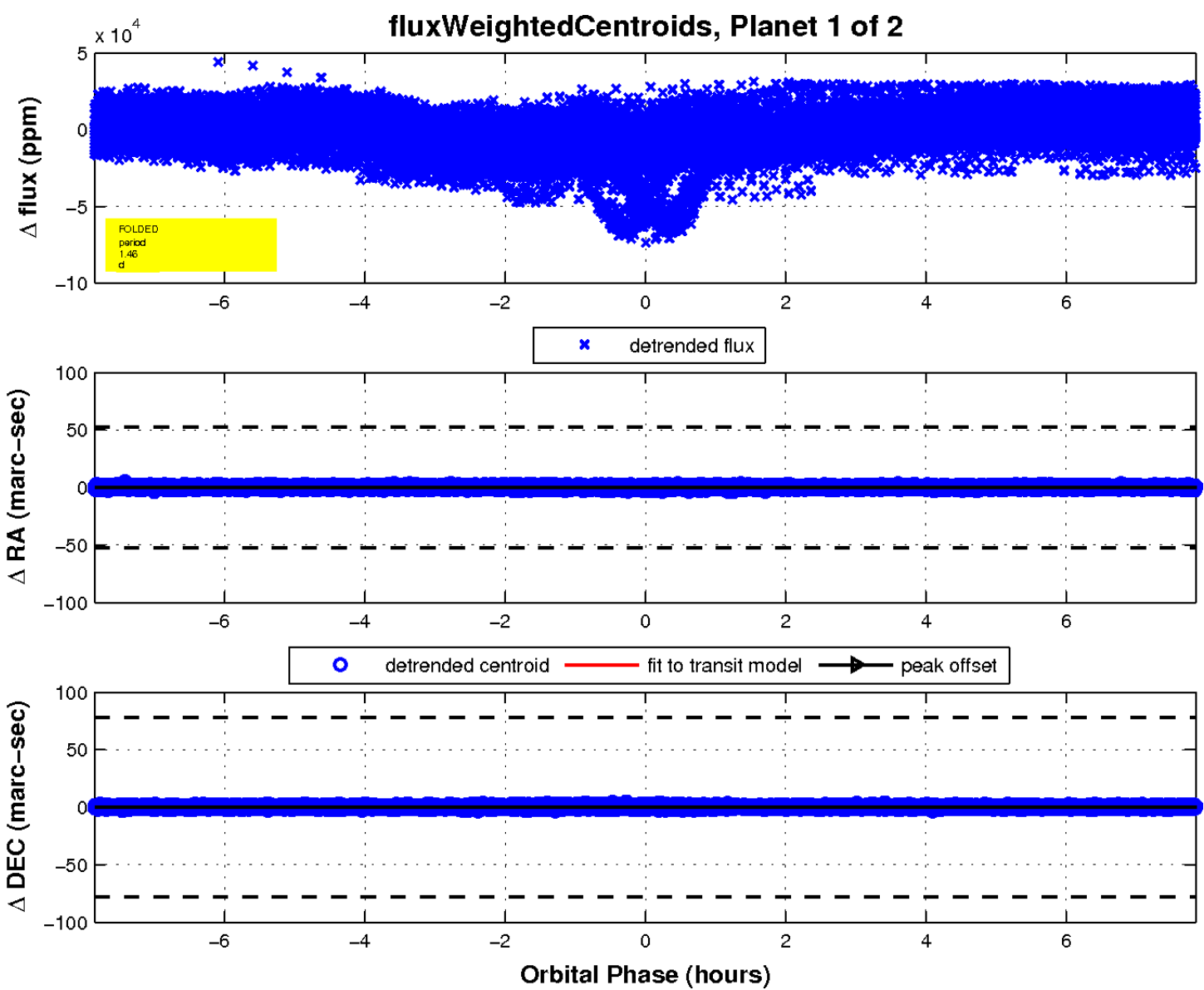
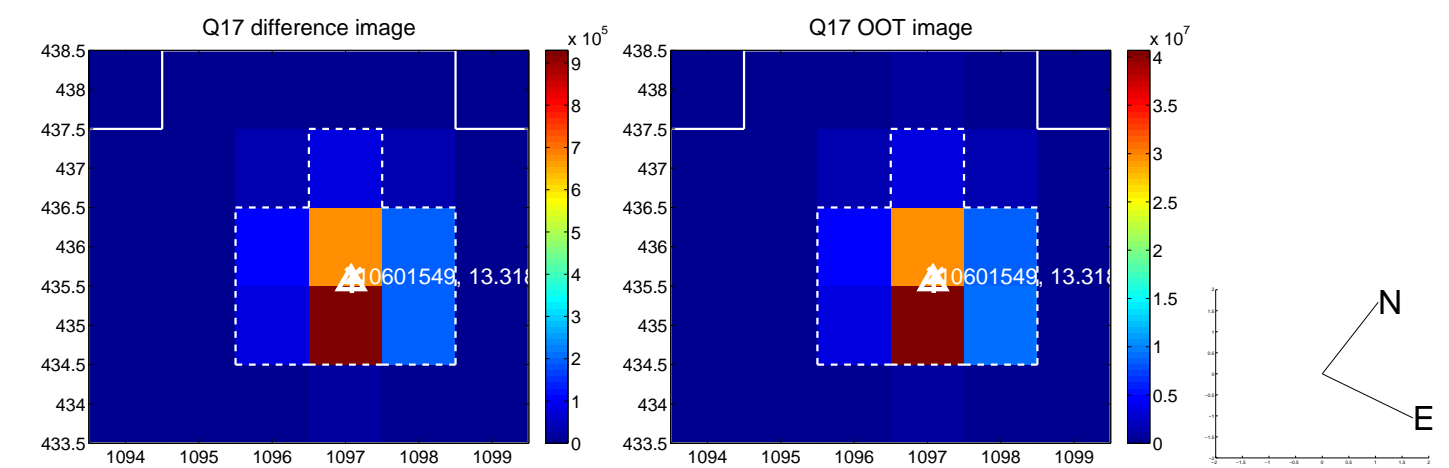


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



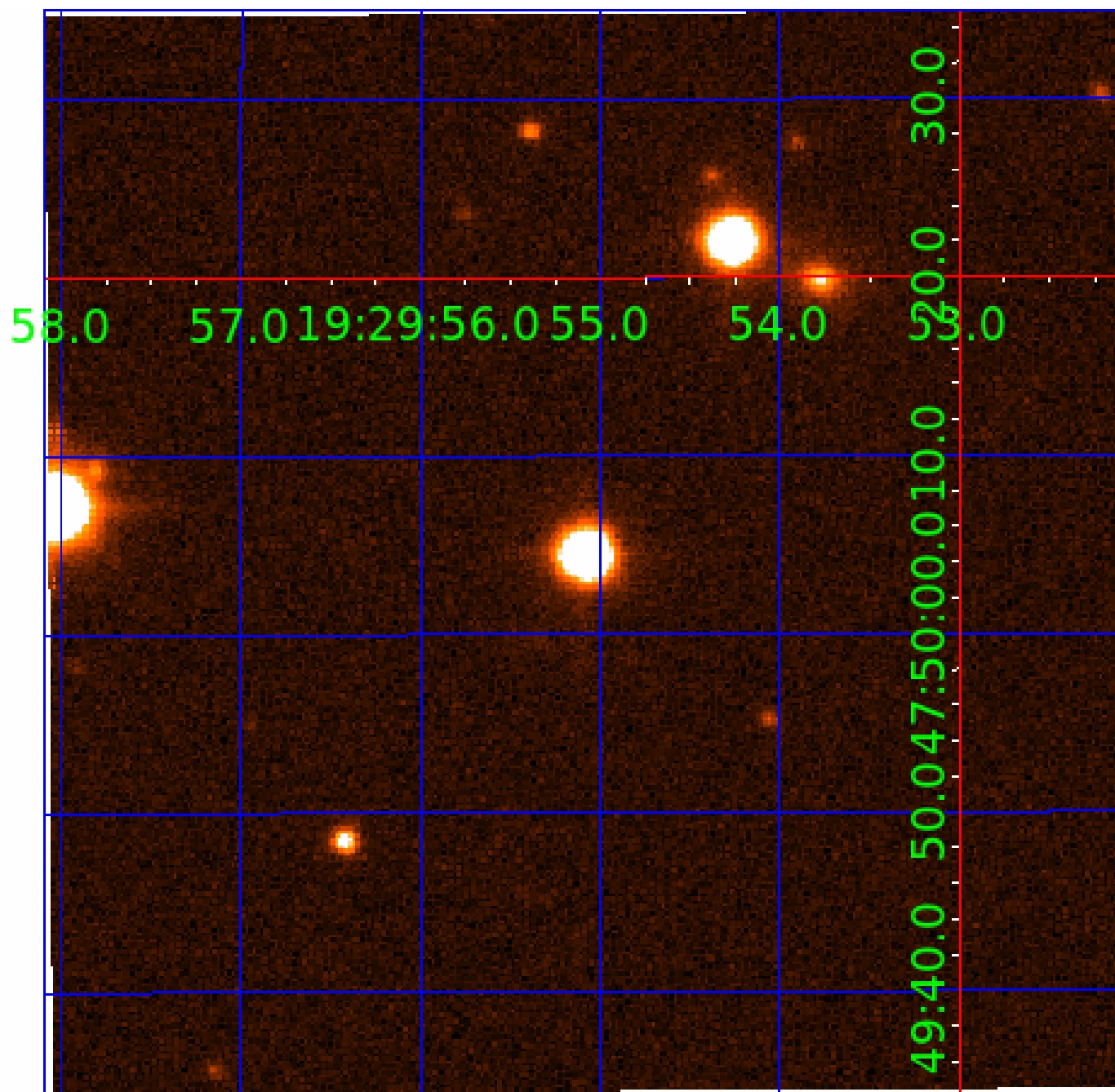


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 010601549

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010601549-01	OBS	6226.01	1.463860	132.790828	2337.8	2.618	561.3	52.8	0.67	5446	6.11	738.57
010601549-02	OBS	No	1.463808	132.632869	513.1	1.500	13.5	-1.0	0.67	5446	1.51	738.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010601549-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010601549-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS

**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.

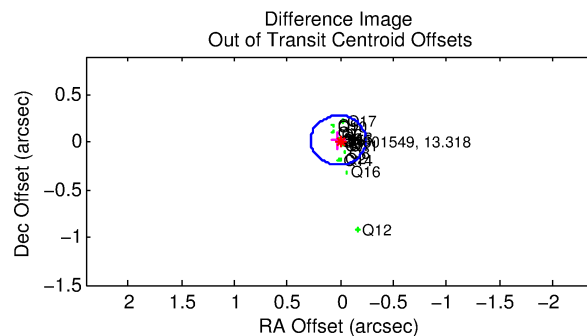
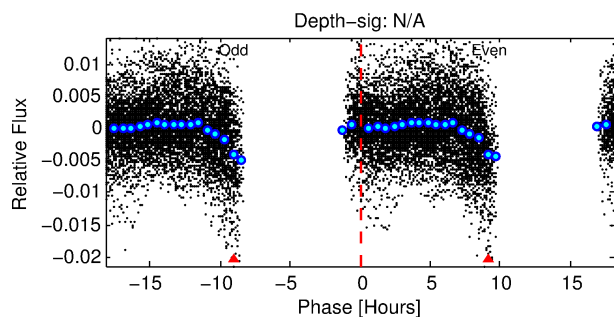
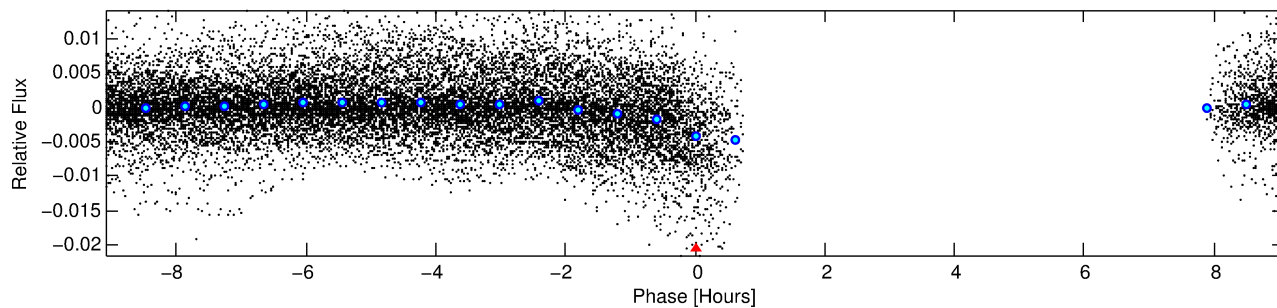
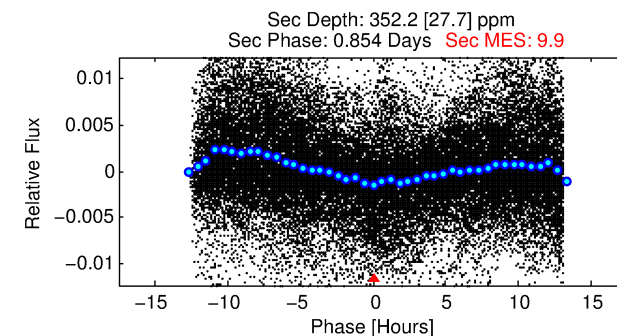
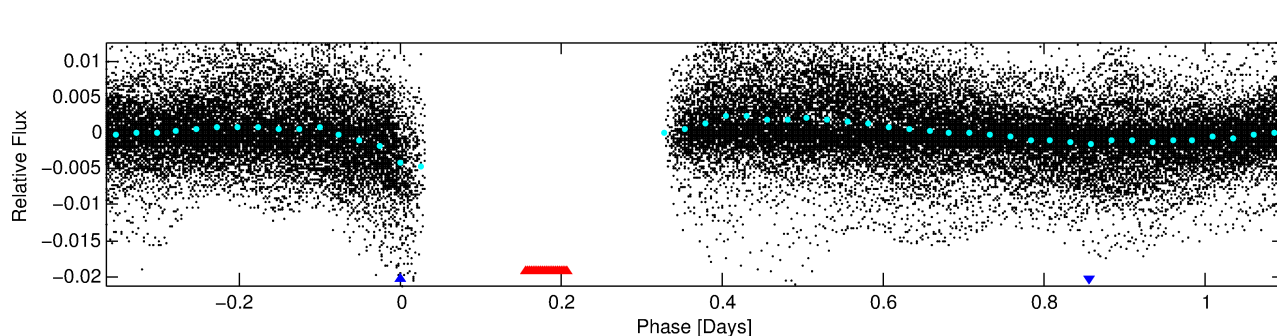
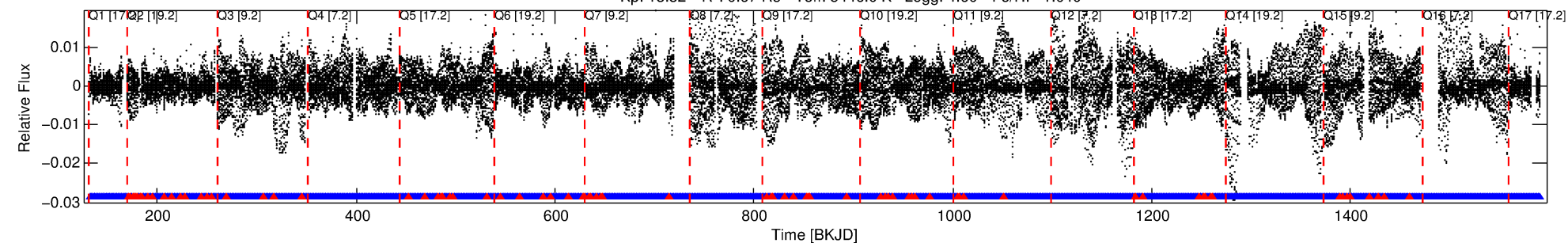
## Ephemeris Match Information For 010601549-02

No Significant Match Found

# DV One-Page Summary

KIC: 10601549 Candidate: 2 of 2 Period: 1.464 d  
KOI: K06226 Corr: No Ephemeris Match

Kp: 13.32 R\*: 0.67 Rs Teff: 5446.0 K Logg: 4.60 Fe/H: -1.040



## TPS TCE Results:

Period = 1.46381 d  
Epoch = 132.6329 BKJD

DV fit results are unavailable

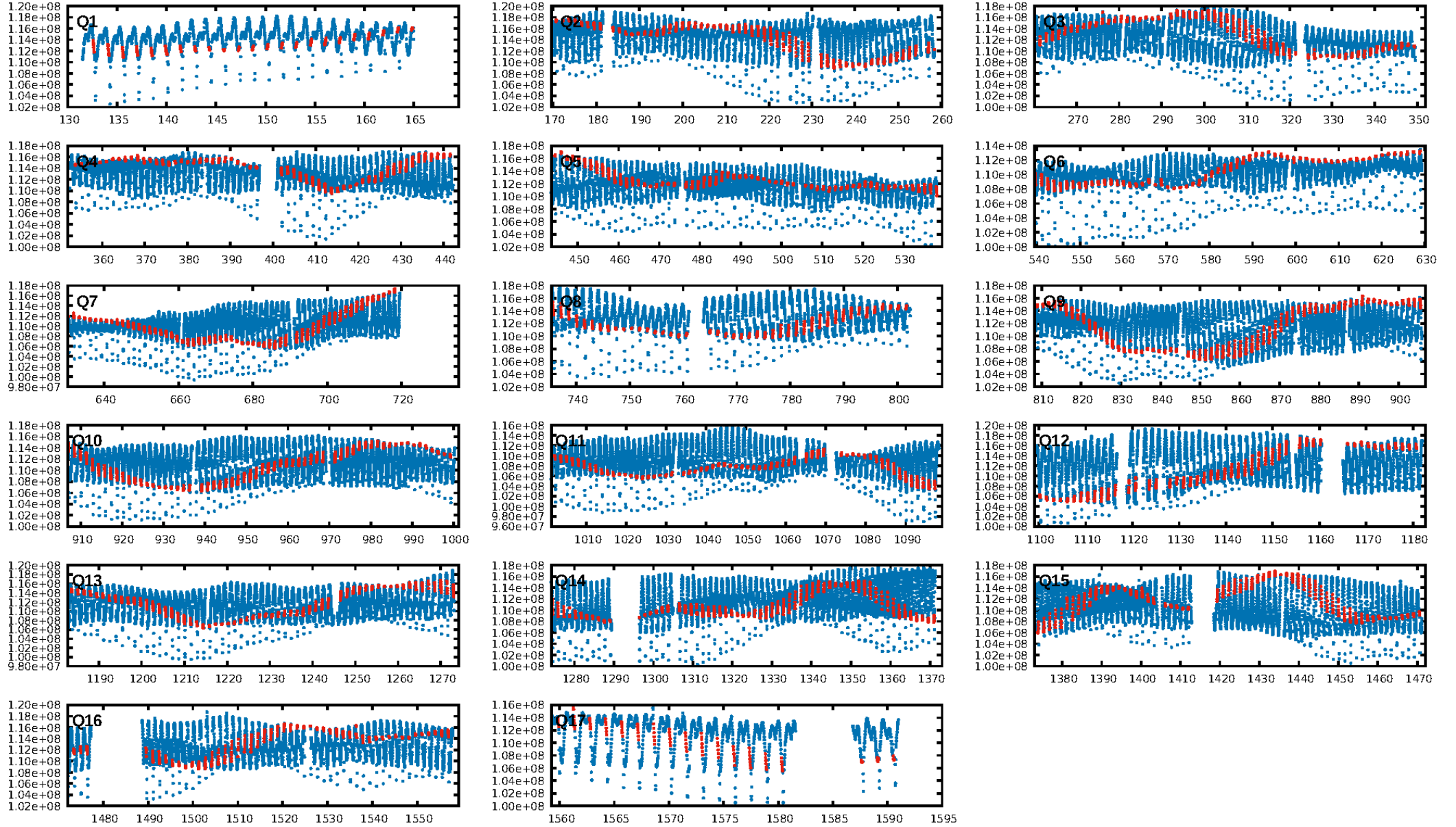
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.91 [795/873]  
GhostDiagnostic-chr: -3.446  
Centroid-sig: 0.0%  
Centroid-so: 0.195 arcsec [37.87σ]  
OotOffset-rm: 0.027 arcsec [0.31σ]  
KicOffset-rm: 0.207 arcsec [2.79σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:32:02 Z

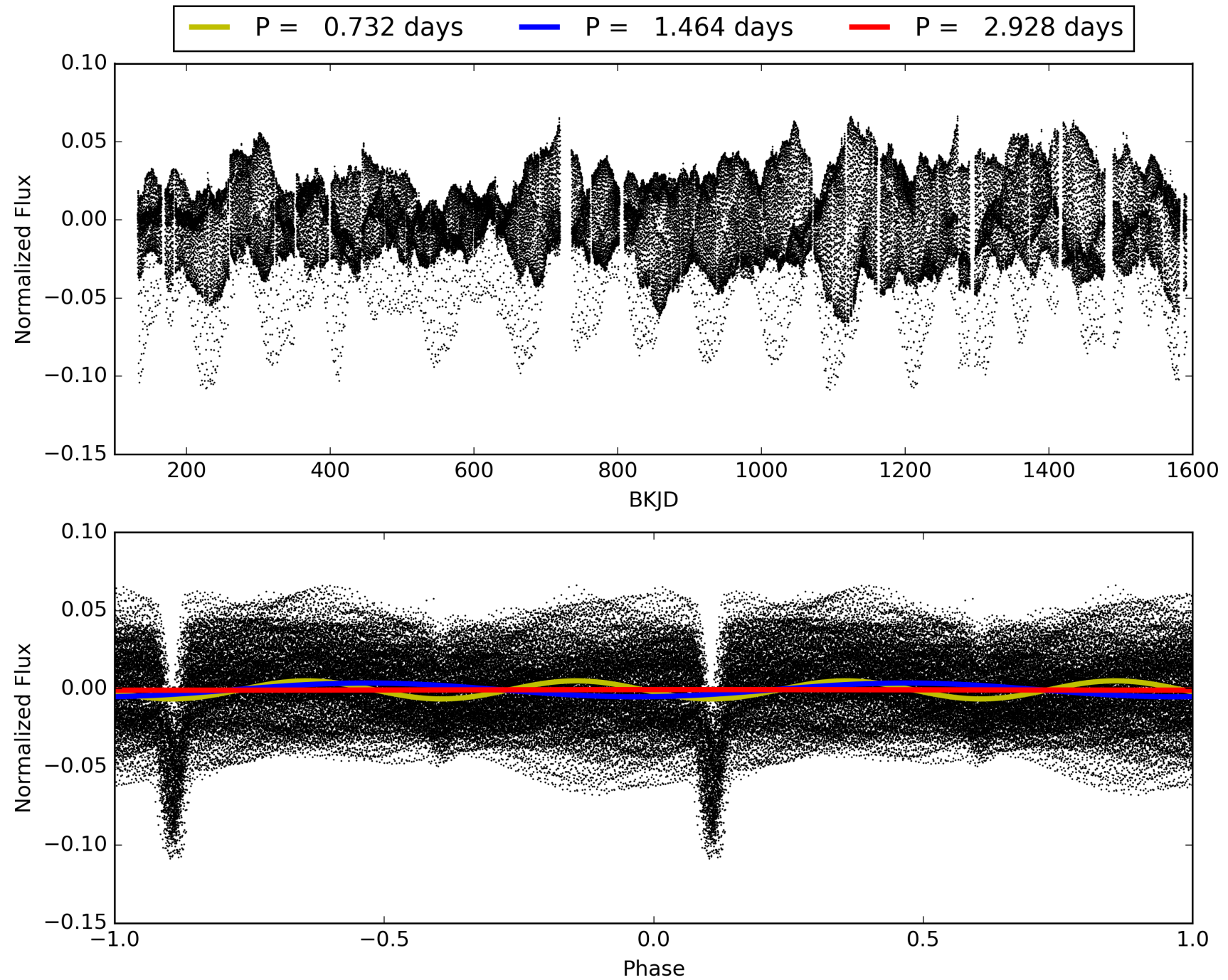
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 010601549-02, PDC Light Curves



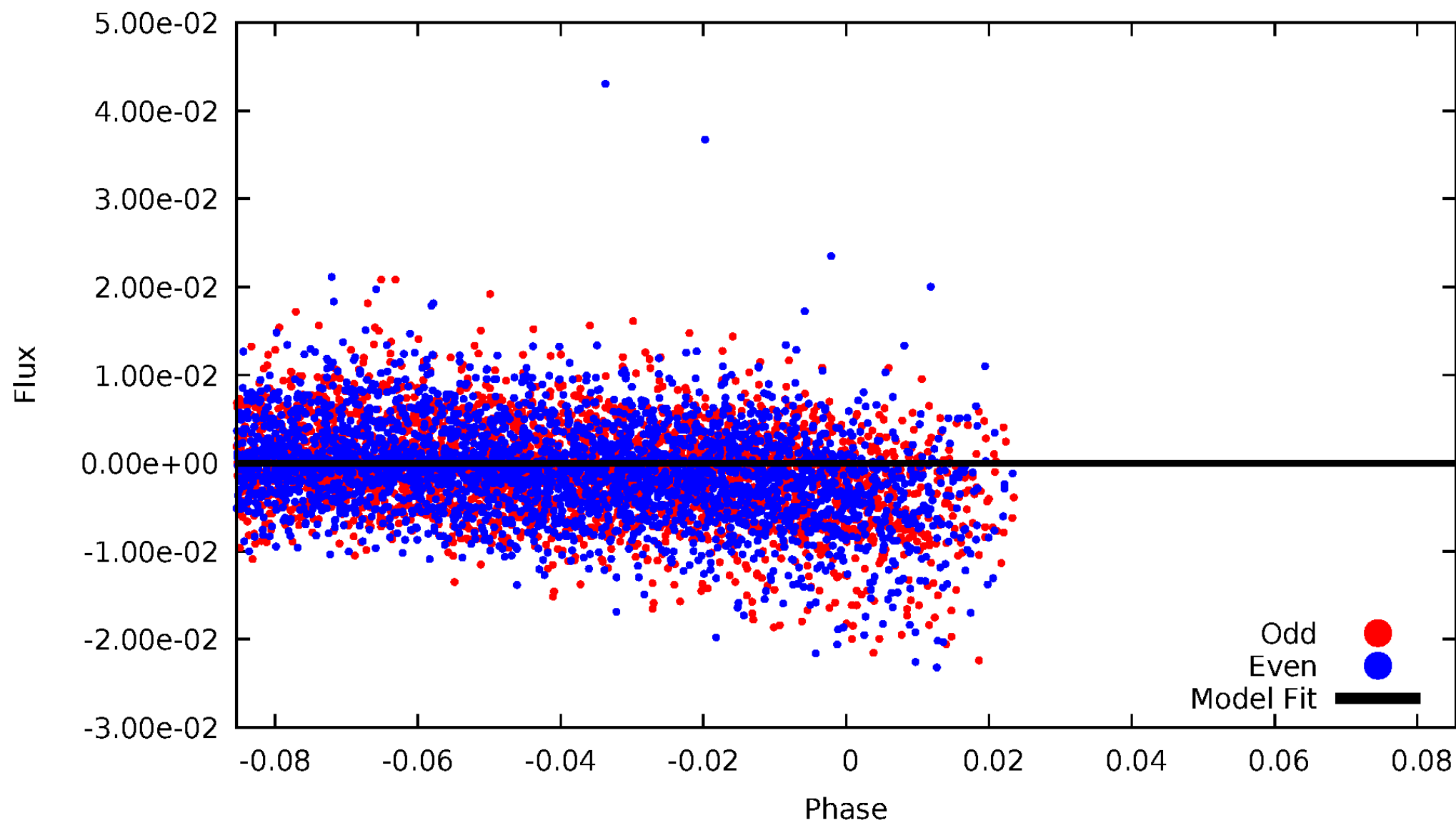


TCE 010601549-02



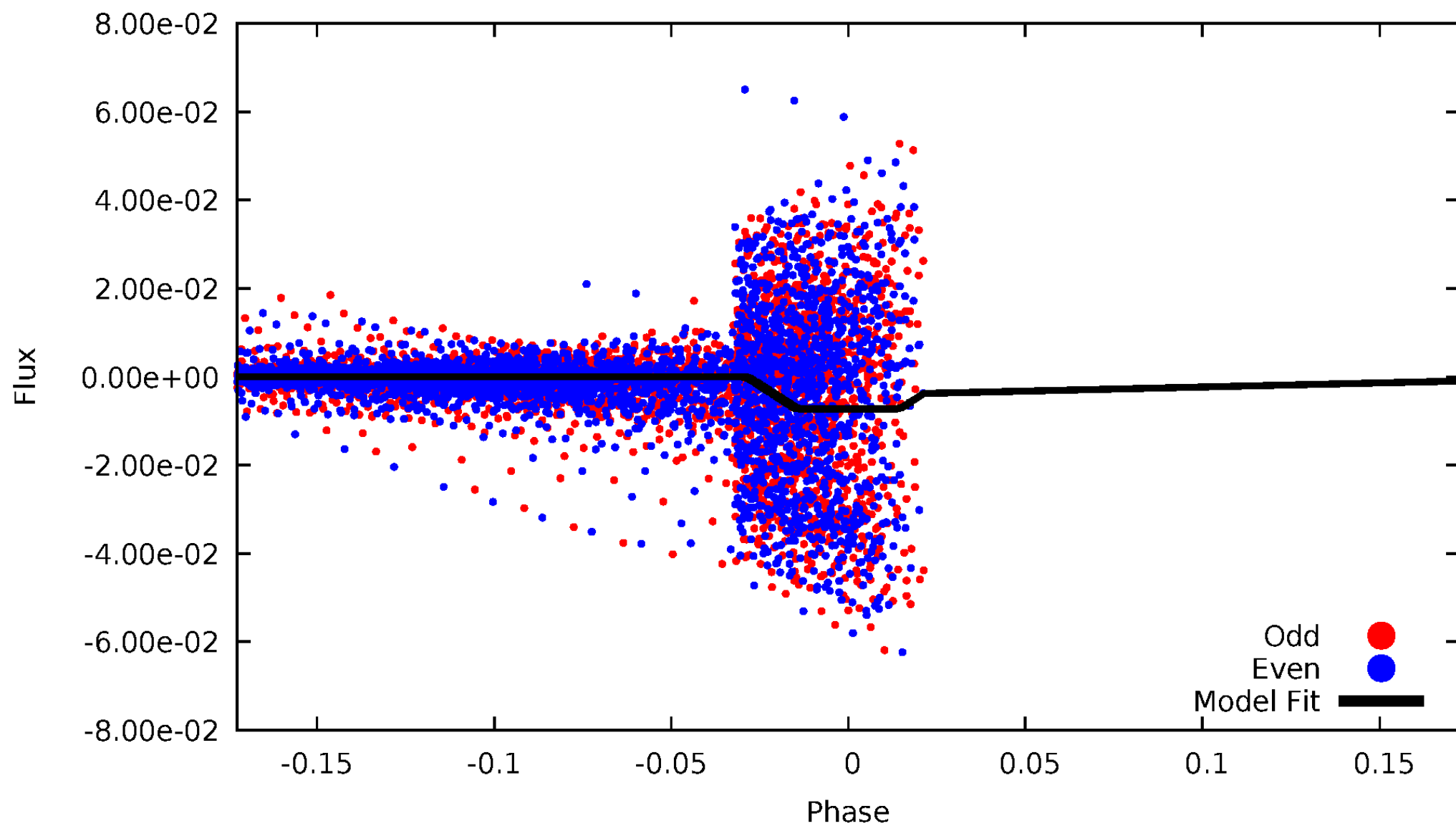
# DV Odd/Even

TCE 010601549-02



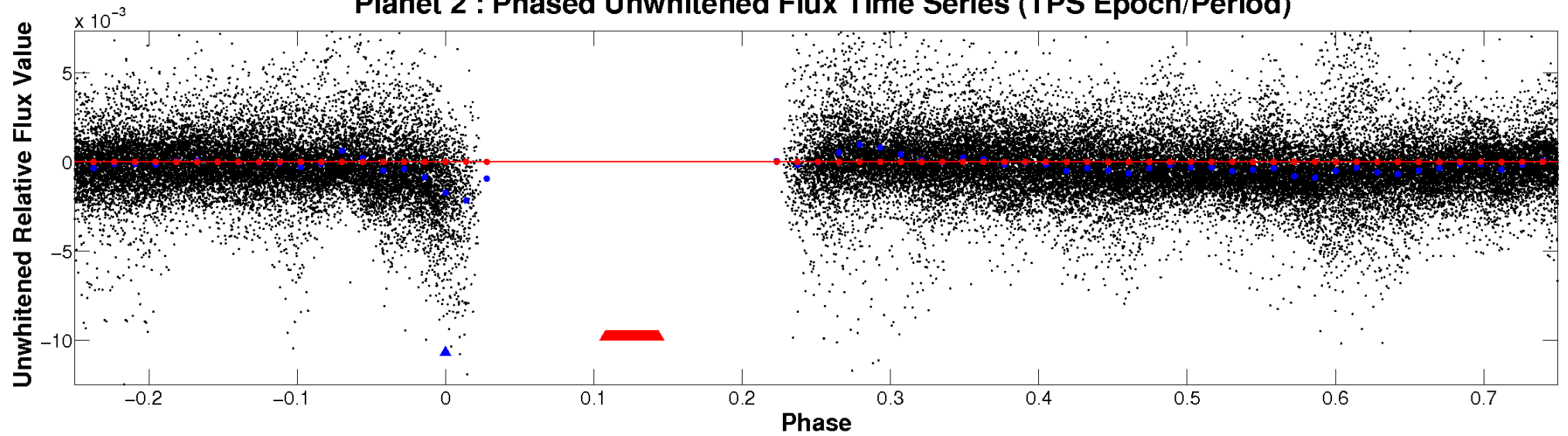
# ALT Odd/Even

TCE 010601549-02

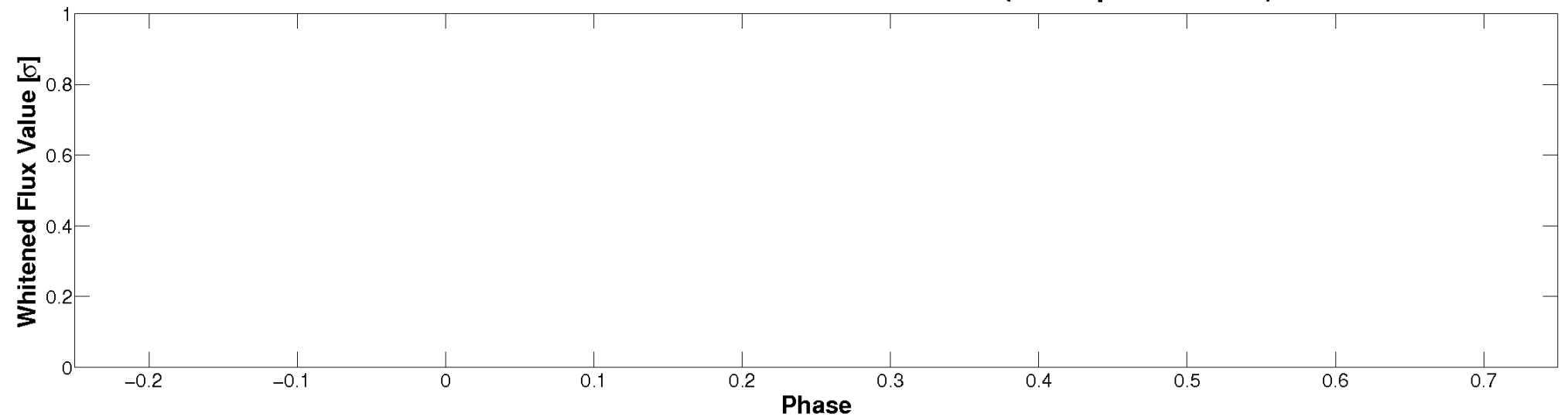


# Non-Whitened Vs. Whitened Light Curve

**Planet 2 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

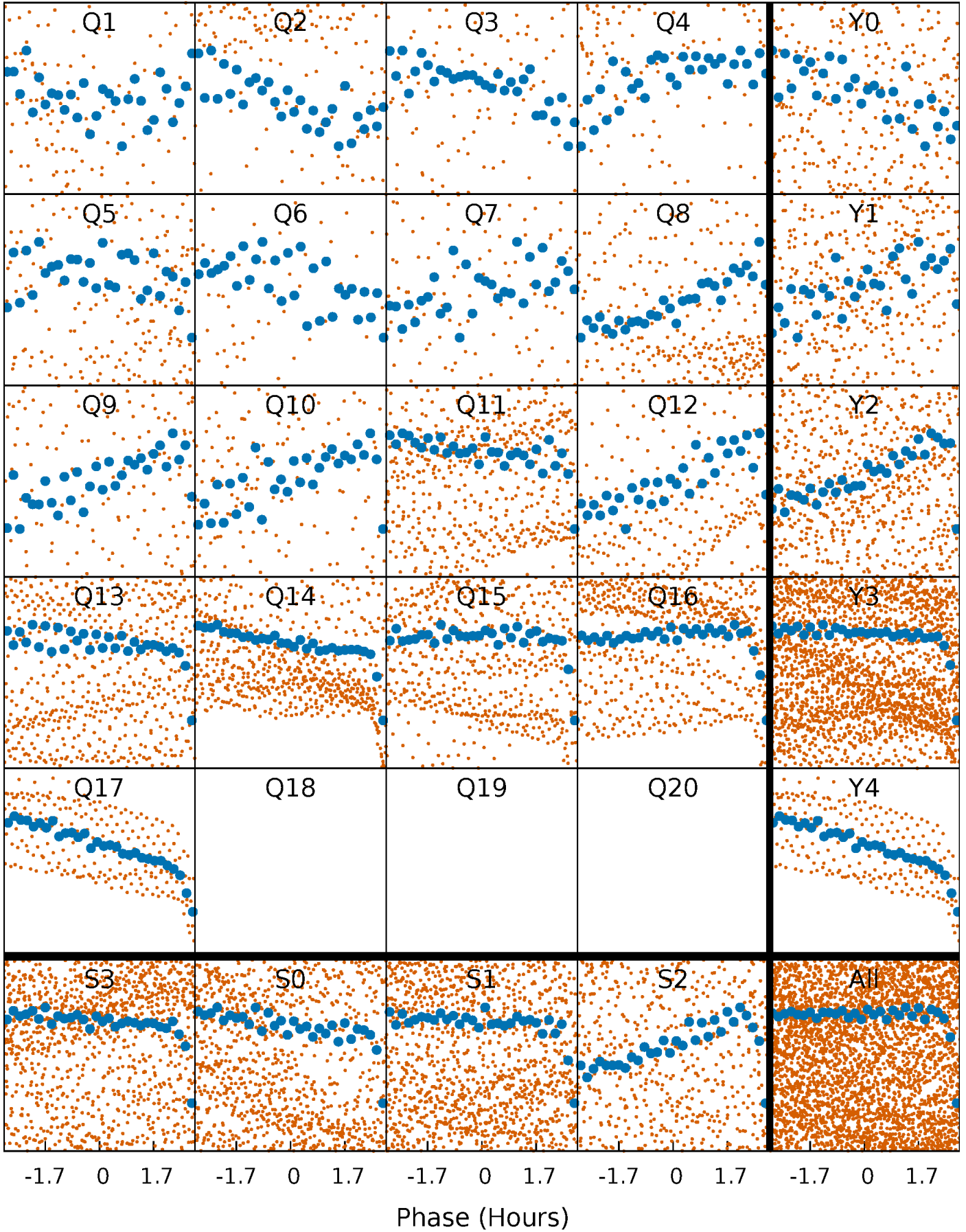


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

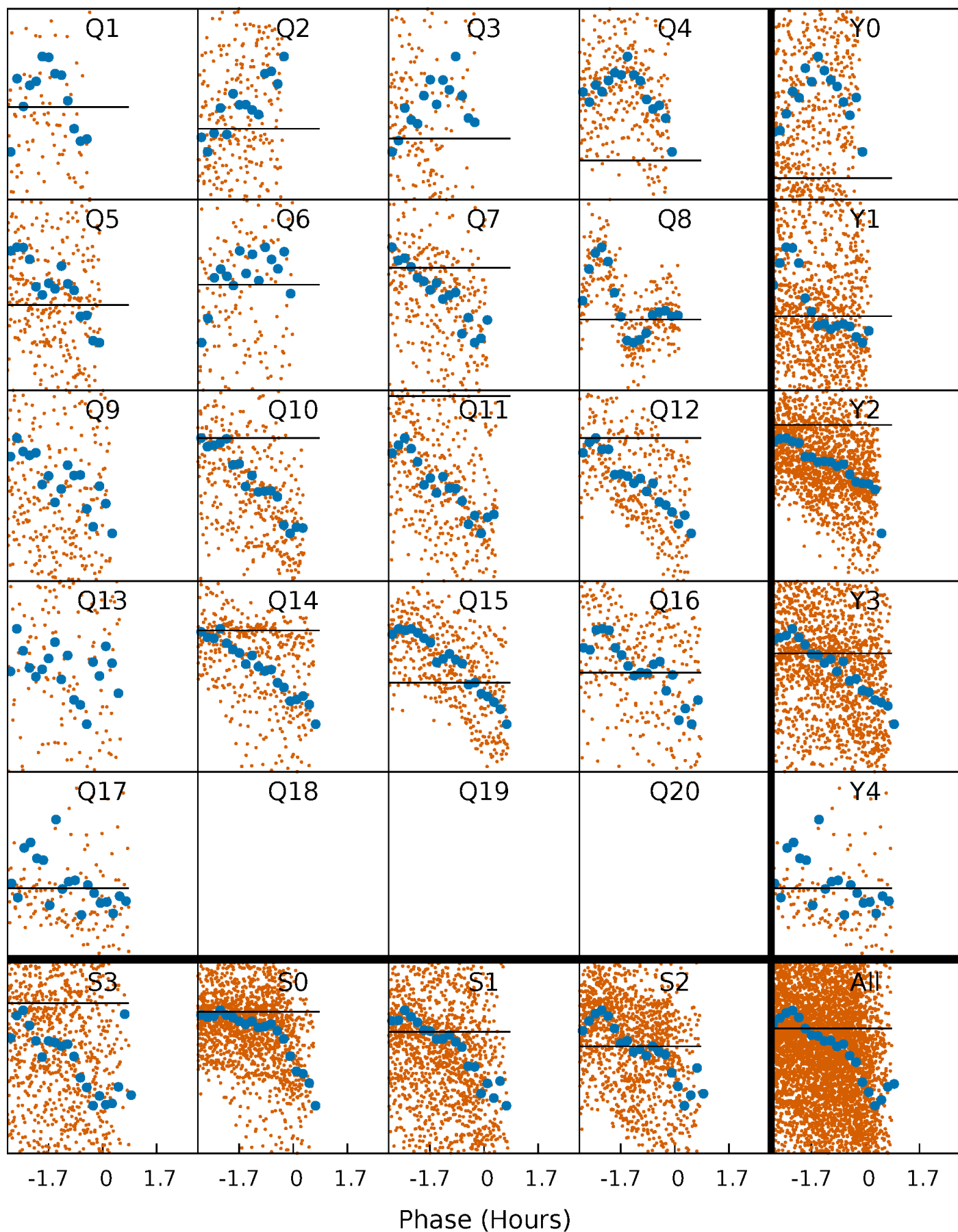
TCE 010601549-02   P= 1.463808 Days    $T_0=132.632869$  (BKJD)





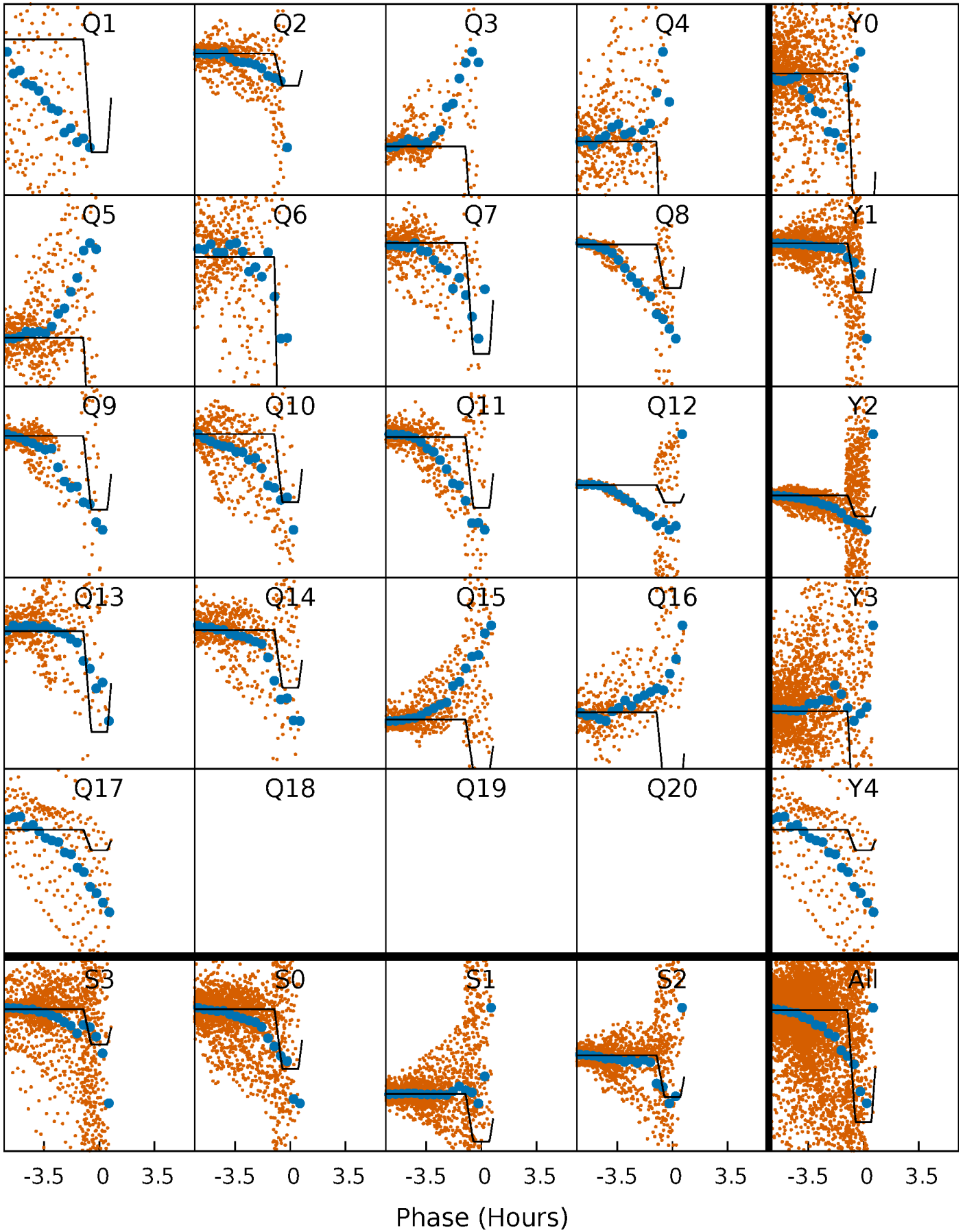
# DV Quarter-Phased Transit Curves

TCE 010601549-02     $P = 1.463808$  Days     $T_0 = 132.632869$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

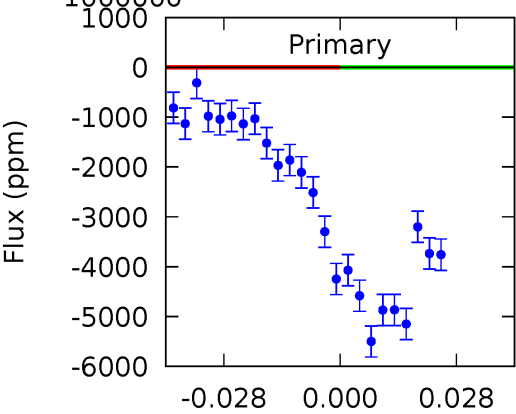
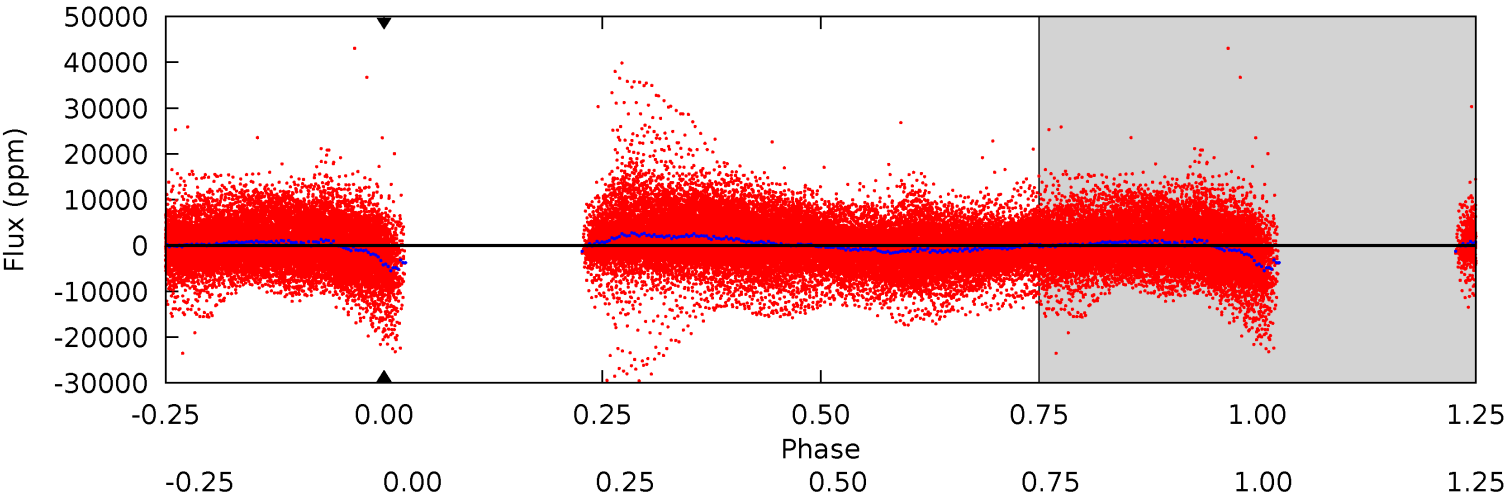
TCE 010601549-02   P= 1.463808 Days    $T_0=132.636026$  (BKJD)



# DV Model-Shift Uniqueness Test

010601549-02, P = 1.463808 Days, E = 131.169061 Days

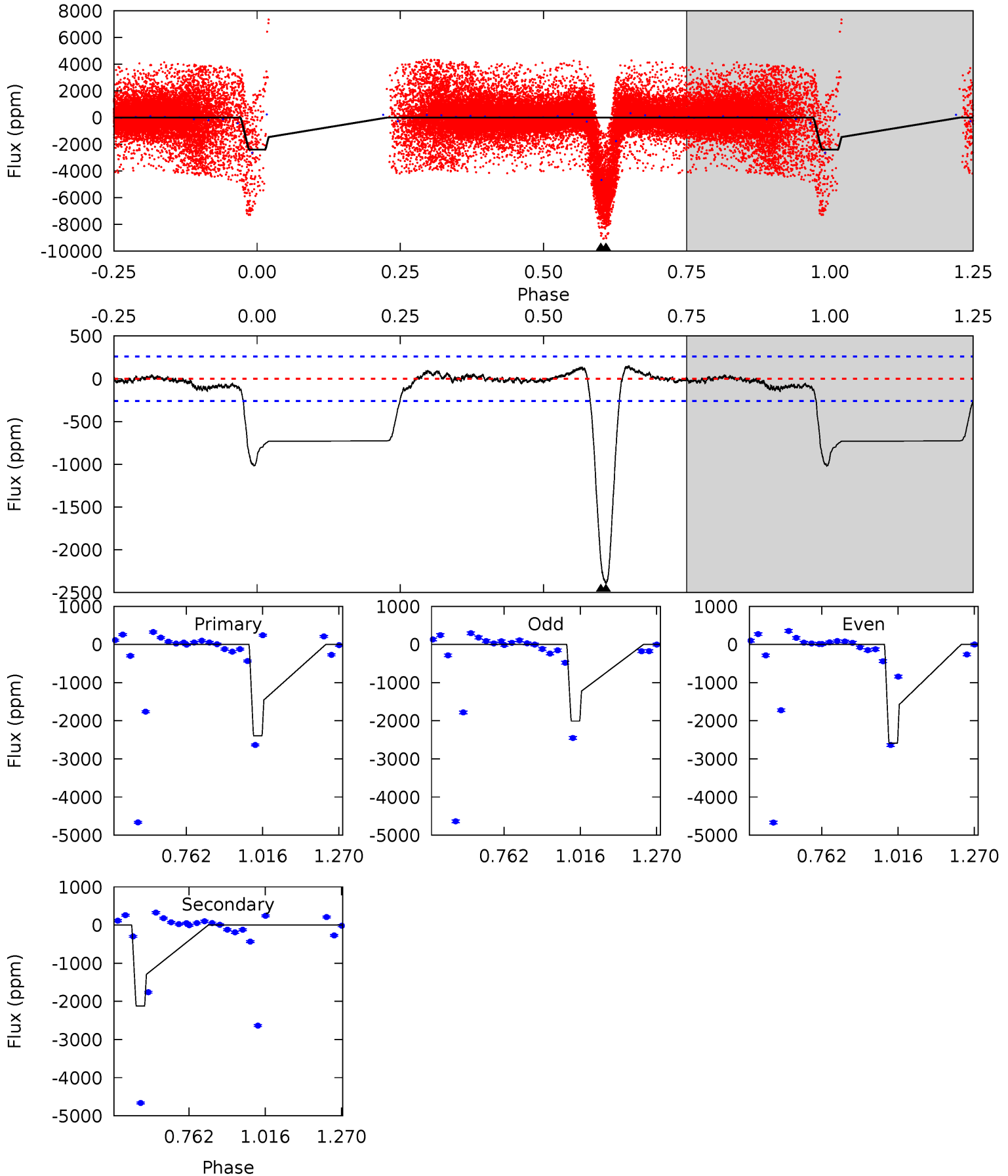
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

010601549-02, P = 1.463808 Days, E = 131.172218 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
40.0	35.4	0	0	4.37	1.14	0.95	40.0	40.0	35.4	35.4	4.81	2.10	0.06	0



### Stellar Parameters For KIC 010601549

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5446^{+162}_{-162}$	$4.599^{+0.077}_{-0.056}$	$-1.040^{+0.300}_{-0.300}$	$0.668^{+0.063}_{-0.056}$	$0.646^{+0.060}_{-0.024}$	$3.058^{+0.929}_{-0.596}$
	+3%/-3%	+2%/-1%	+29%/-29%	+9%/-8%	+9%/-4%	+30%/-19%
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 010601549-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$5.44^{+5.47}_{-3.82}$	$1855^{+73}_{-76}$	$4760^{+16367}_{-20015}$	$28^{+2094}_{-1293}$
Alt.	$-2120 \pm 60$	$8.34^{+6.33}_{-5.61}$	$1855^{+68}_{-66}$	$3808^{+2156}_{-702}$	$8.313^{+65.546}_{-5.768}$

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

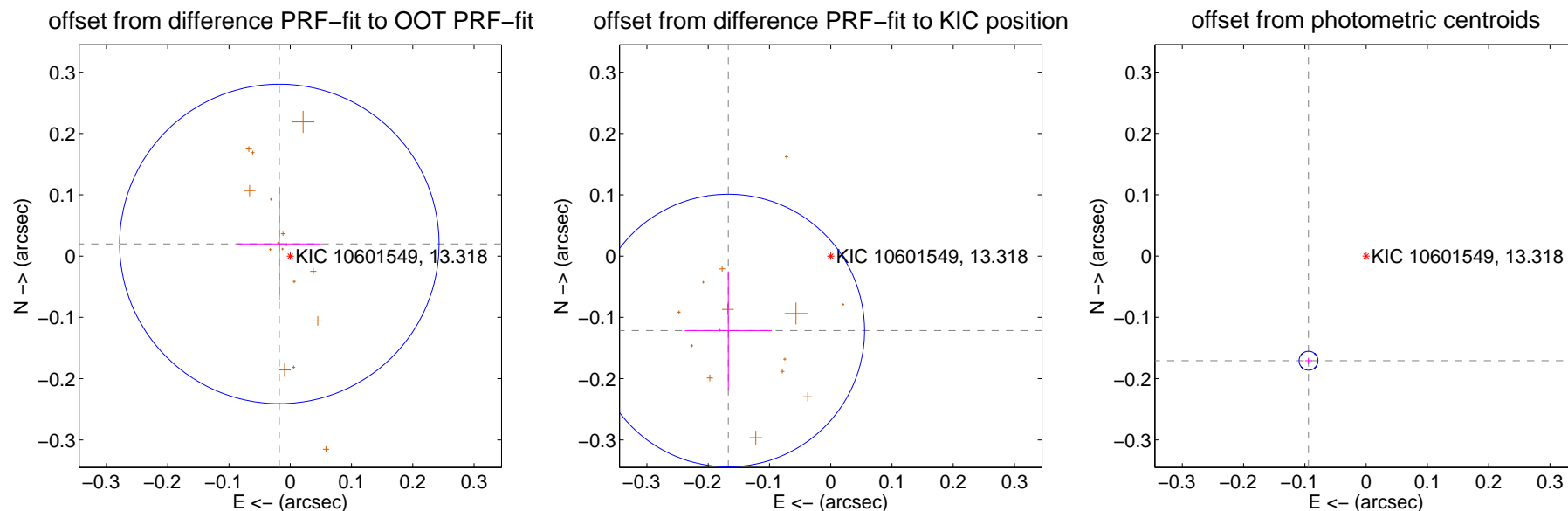
## DV Centroid Data

Supplemental centroid analysis for 010601549-02. Kepler magnitude: 13.32. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

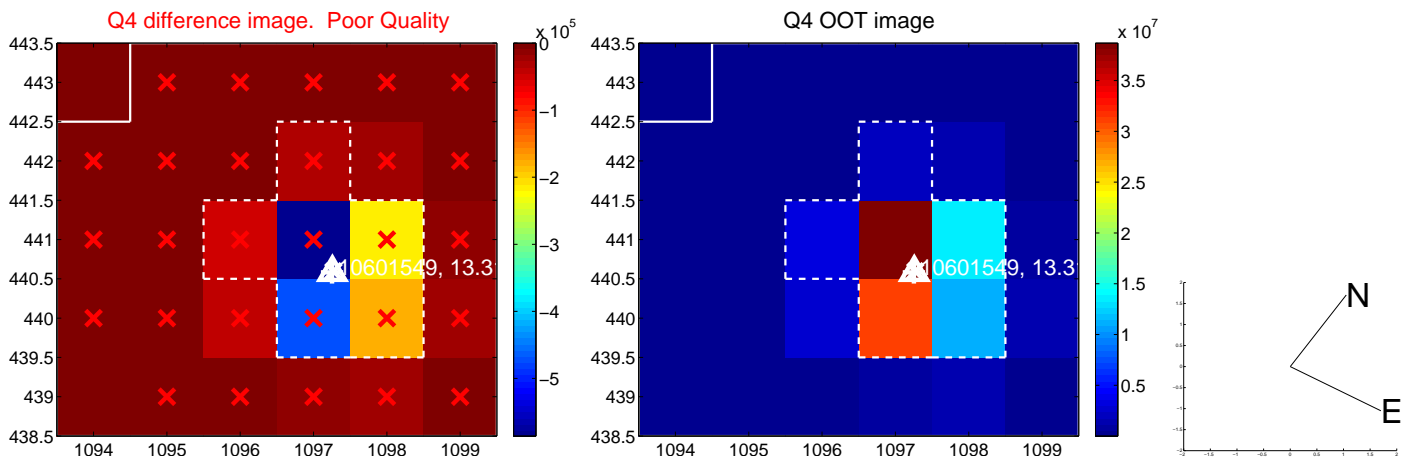
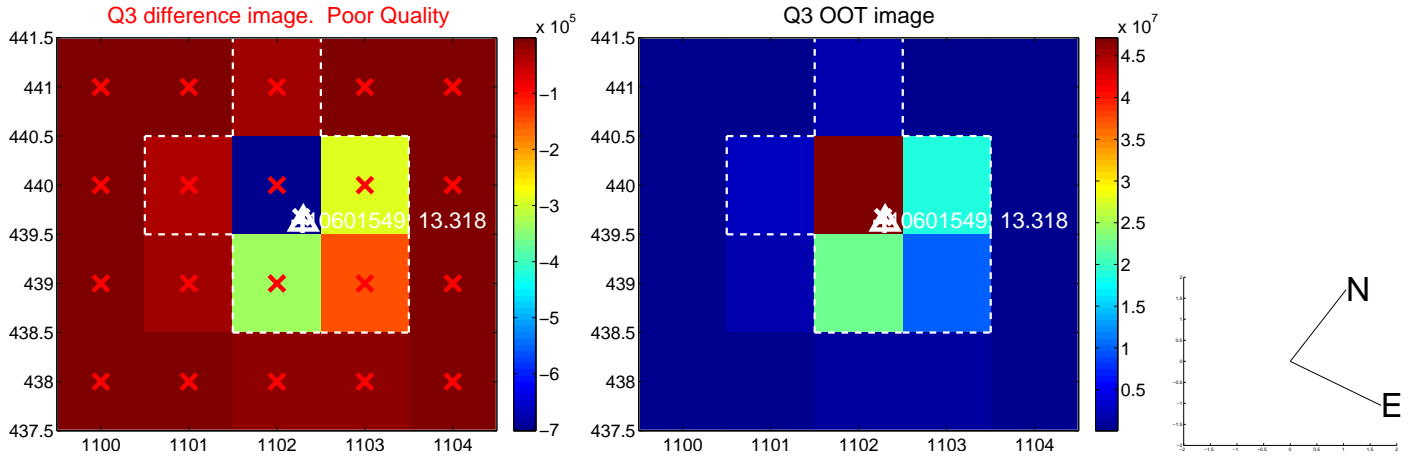
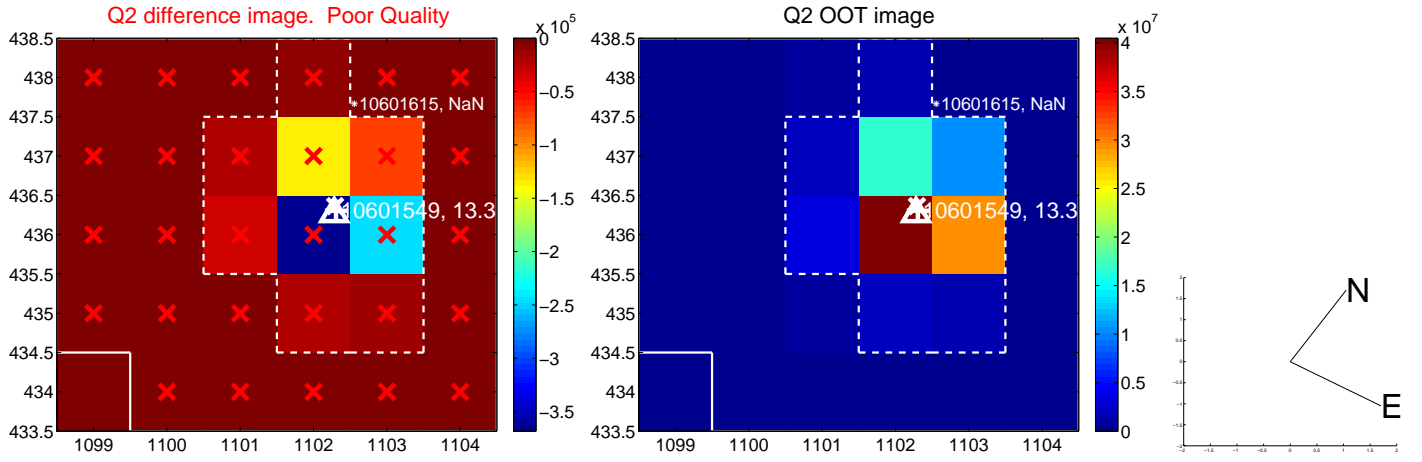
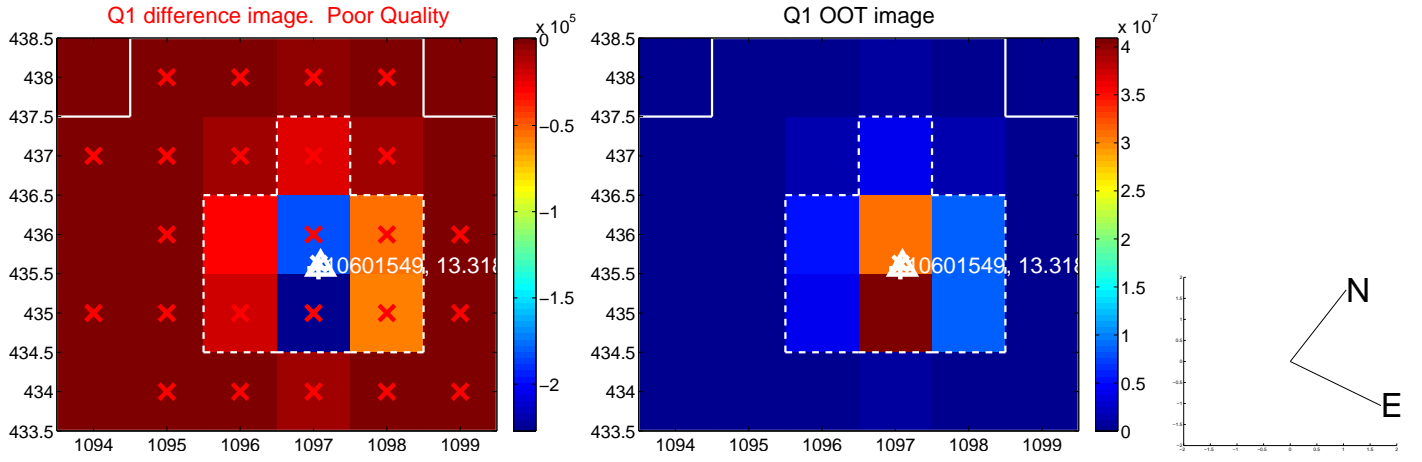
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.027 \pm 0.087$	0.31	$0.018 \pm 0.068$	$0.020 \pm 0.092$
PRF-fit source offset from KIC position	$0.207 \pm 0.074$	2.79	$0.167 \pm 0.071$	$-0.121 \pm 0.097$
photometric centroid source offset	$0.19 \pm 0.01$	37.87	$0.09 \pm 0.01$	$-0.17 \pm 0.00$



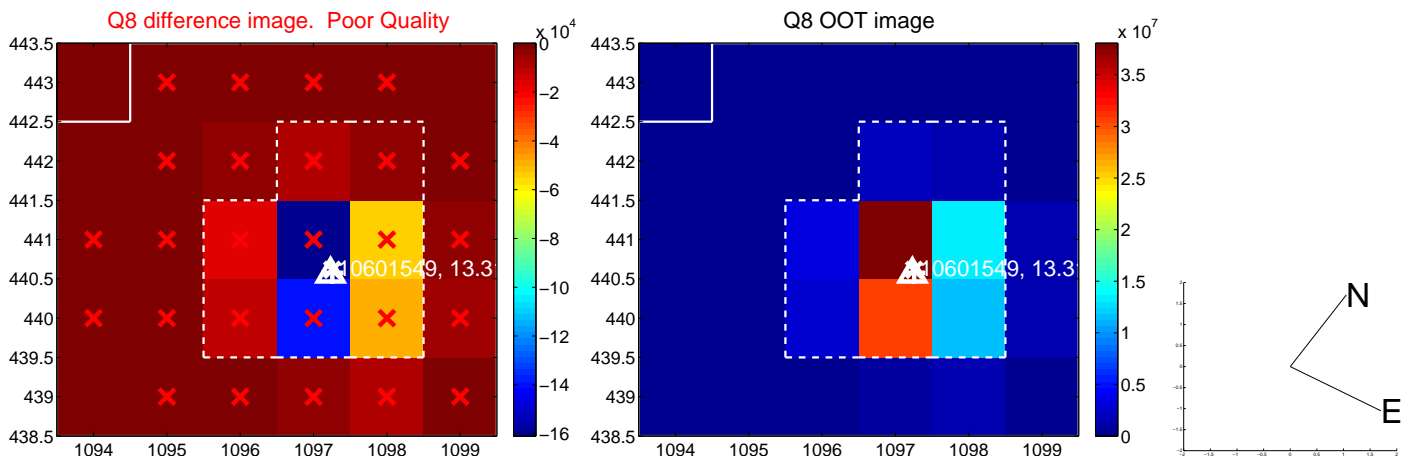
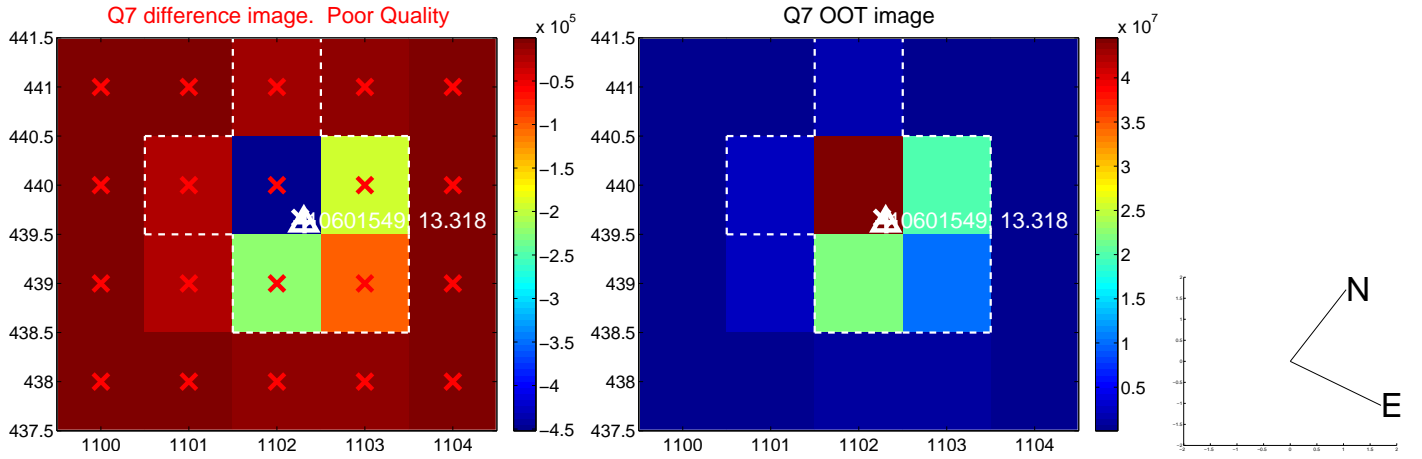
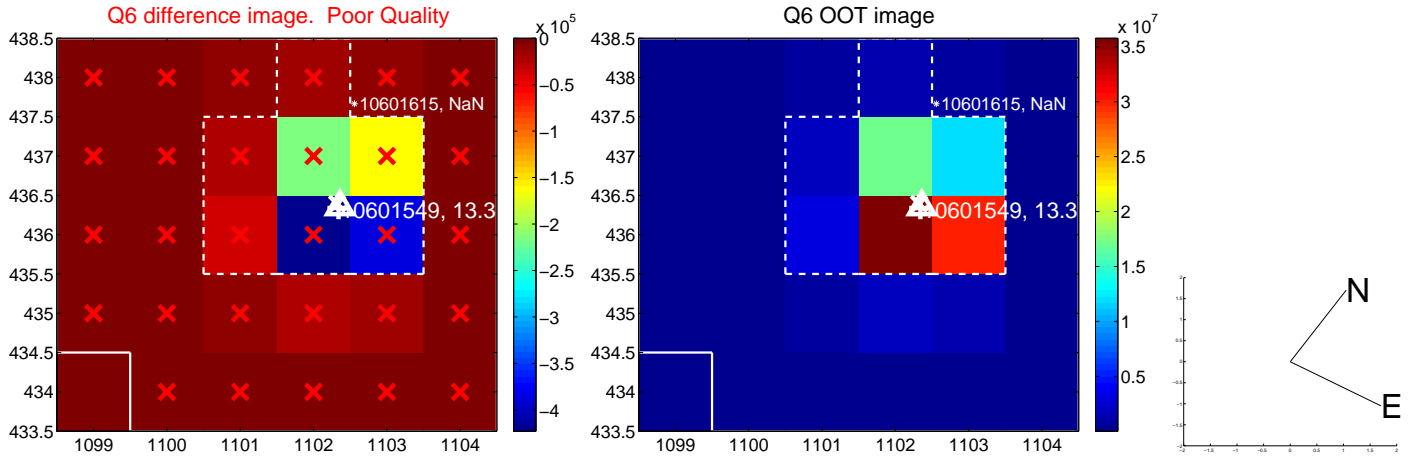
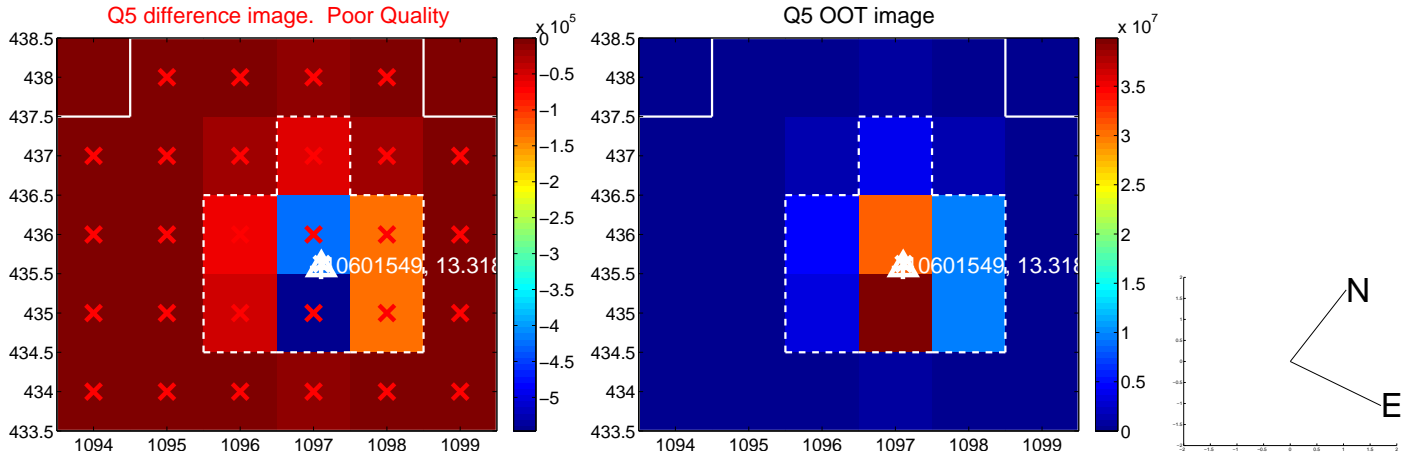
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



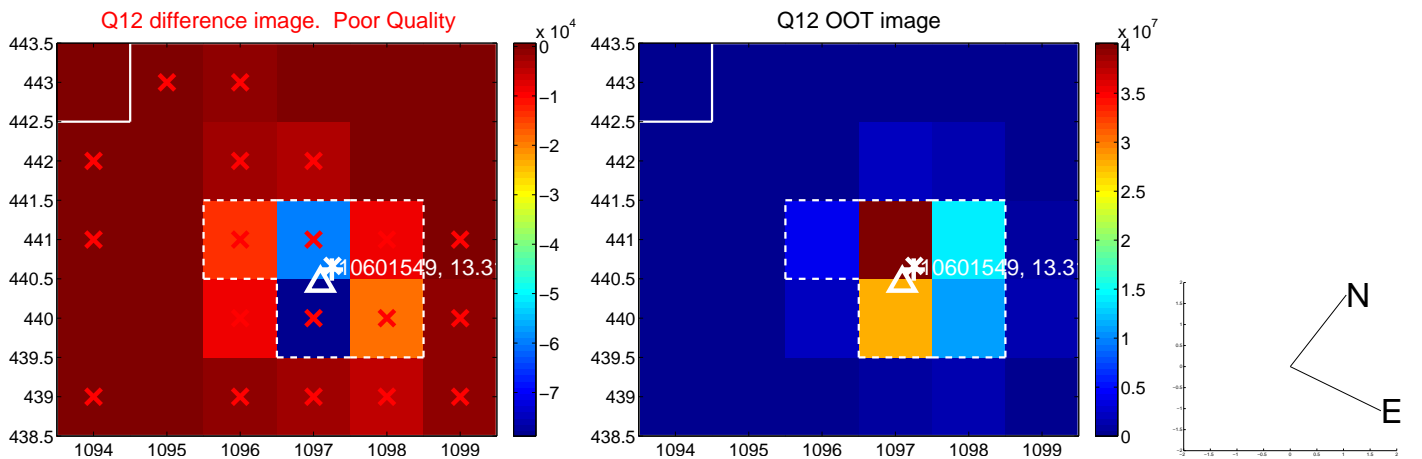
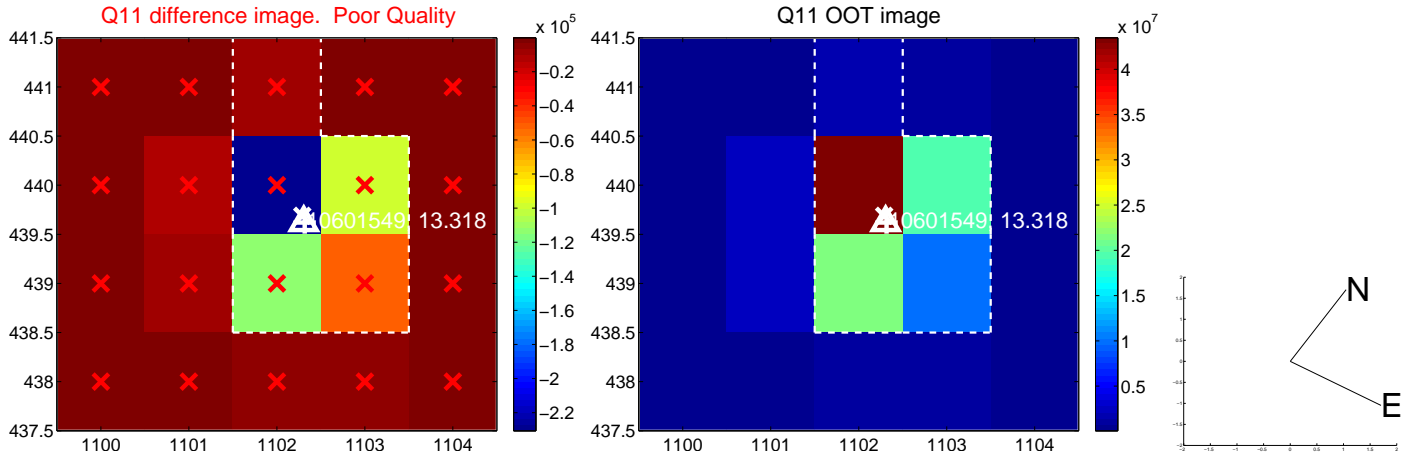
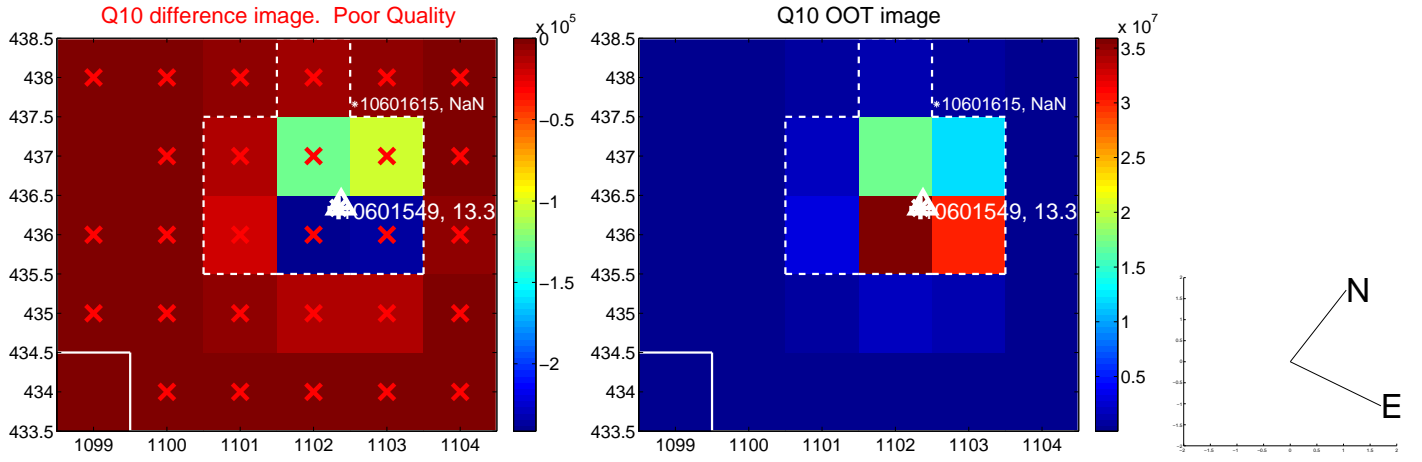
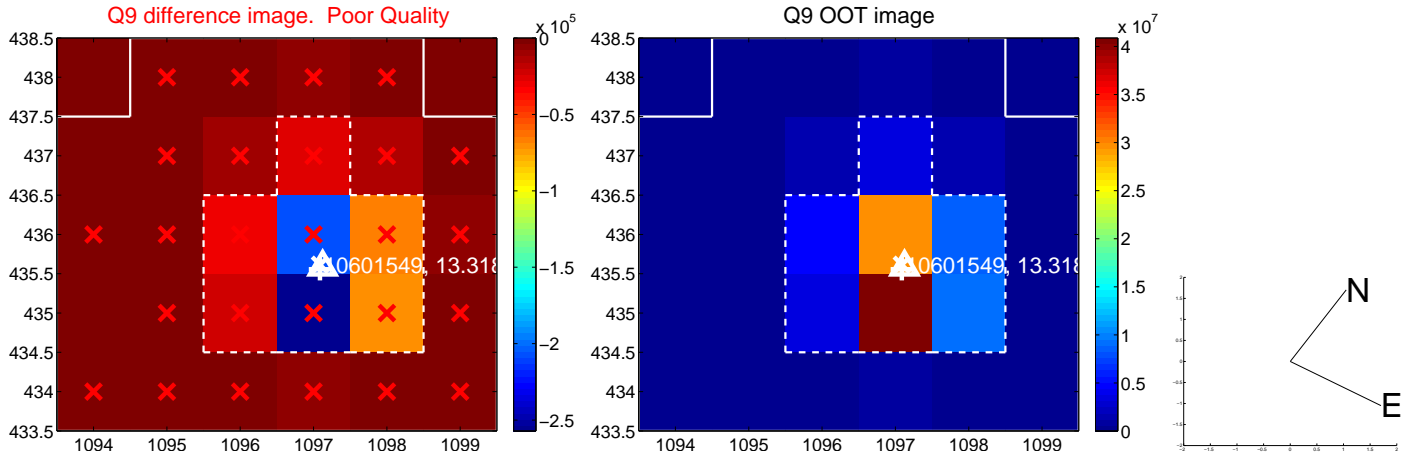
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



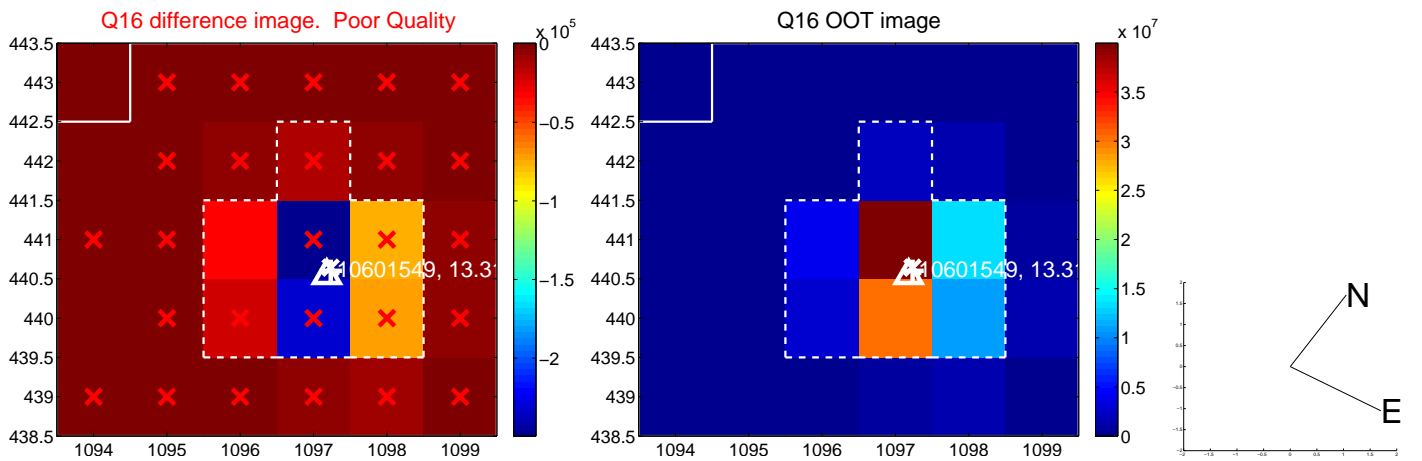
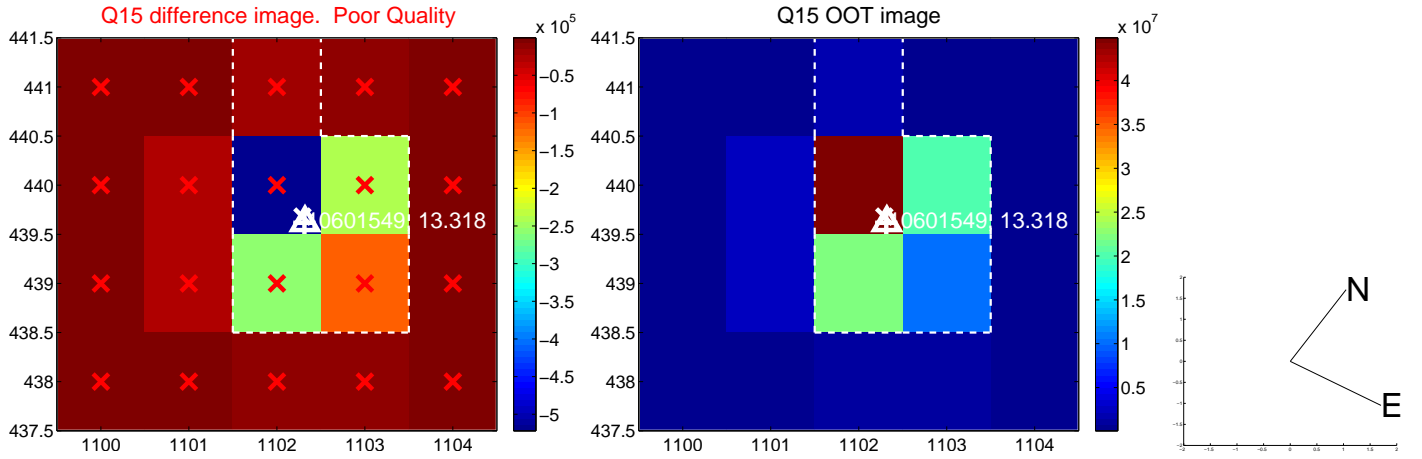
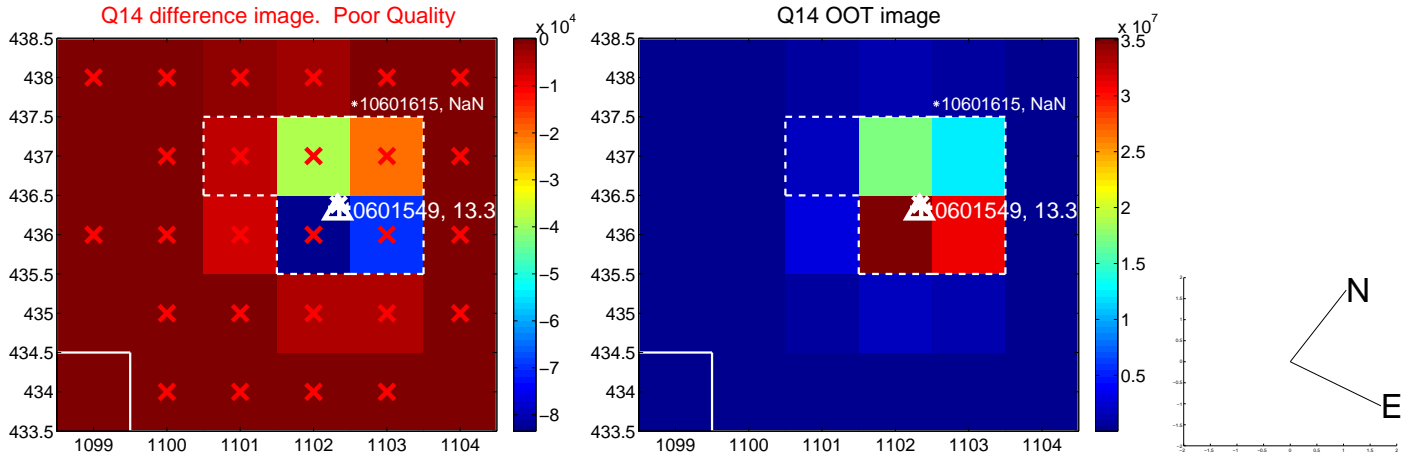
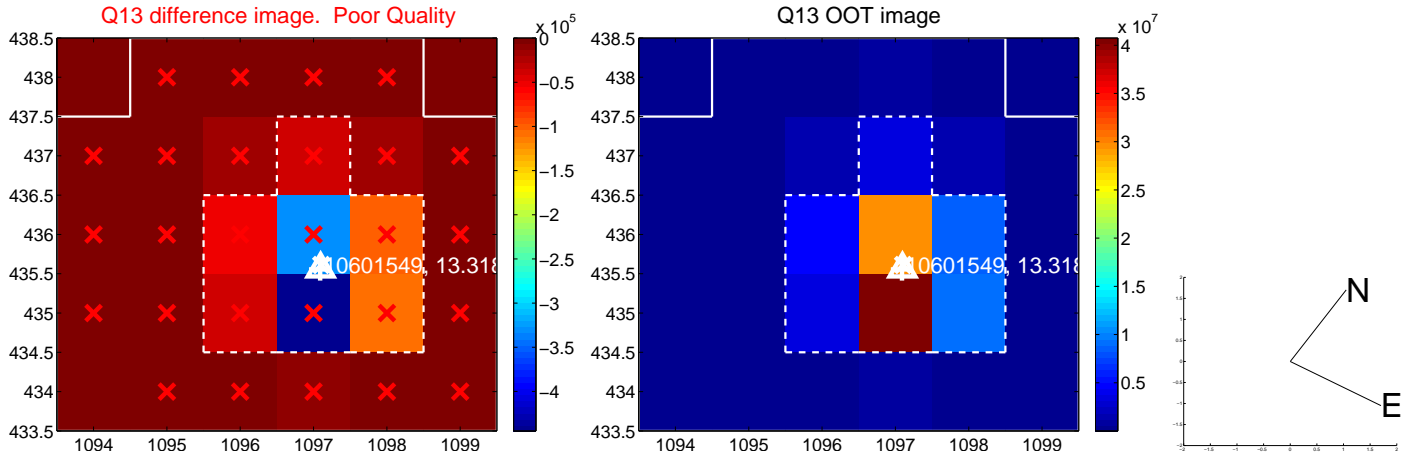
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



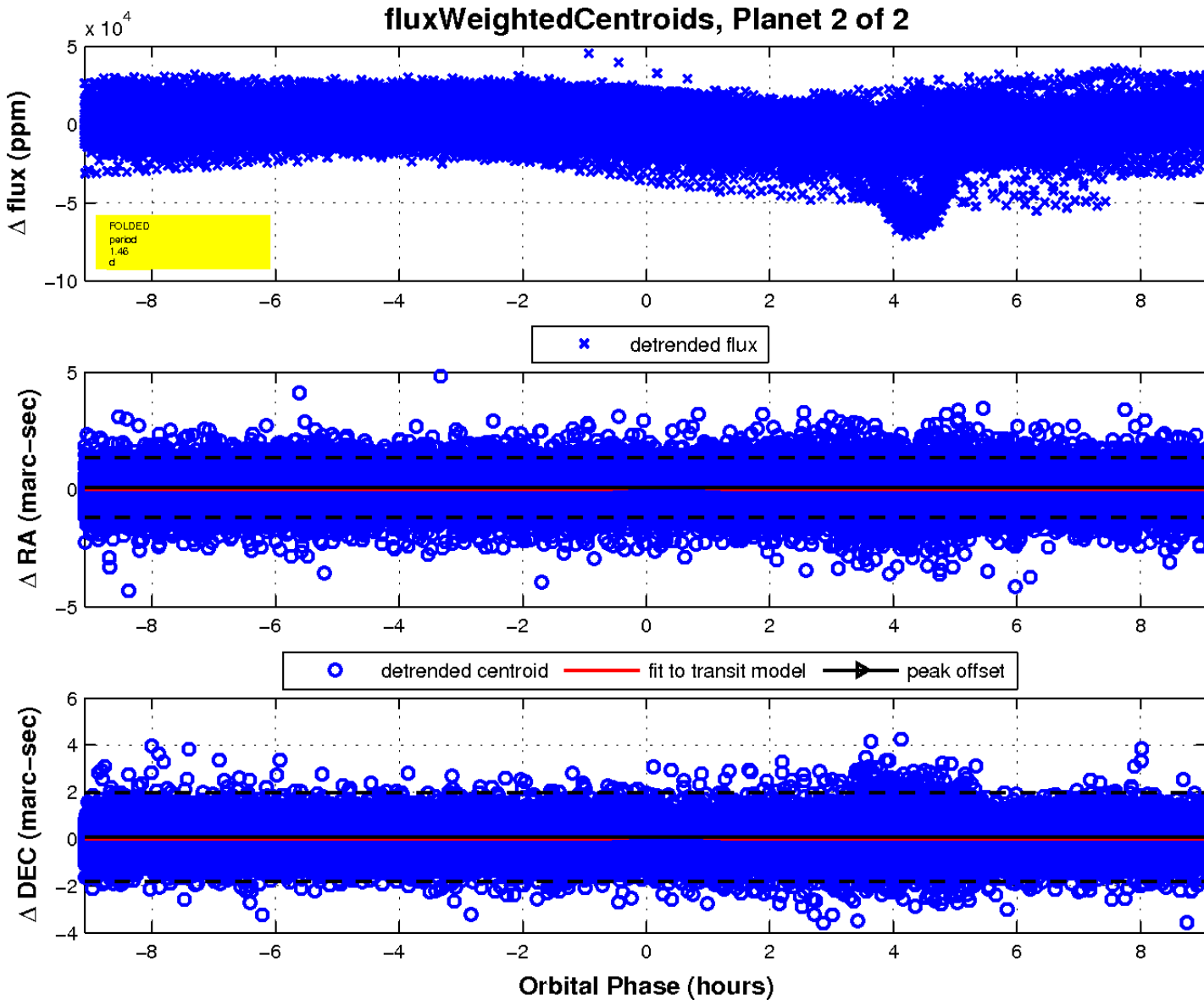
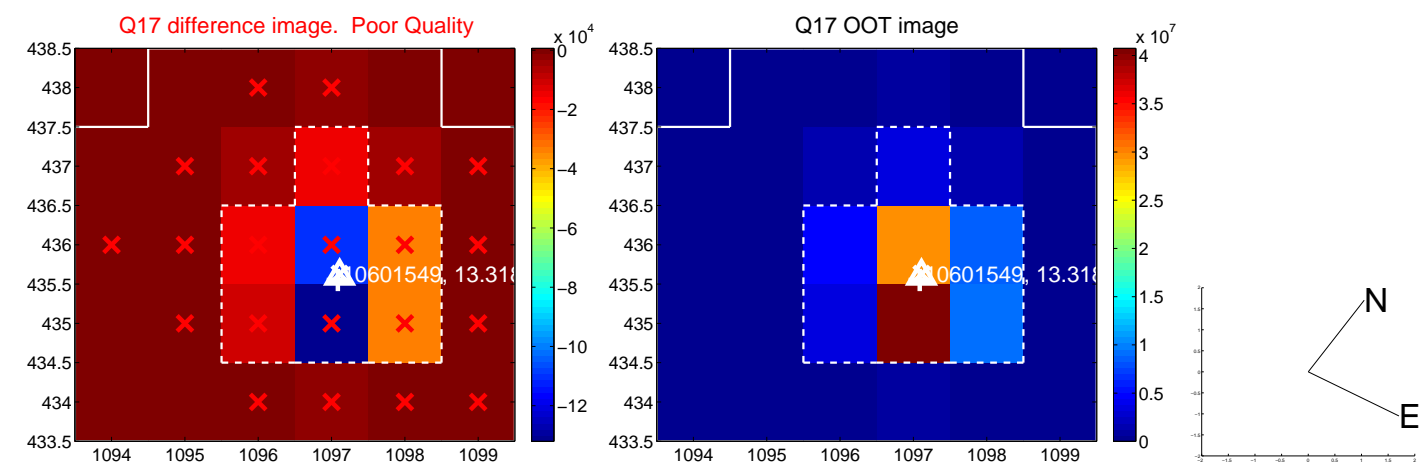
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

