

# KIC 007375348

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007375348-01	OBS	0266.01	25.308909	146.197401	154.6	5.809	41.1	43.5	1.29	5949	1.85	60.32
007375348-02	OBS	0266.02	47.743815	160.160702	102.1	3.071	14.1	15.1	1.29	5949	1.79	25.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007375348-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
007375348-02	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

**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 007375348-01

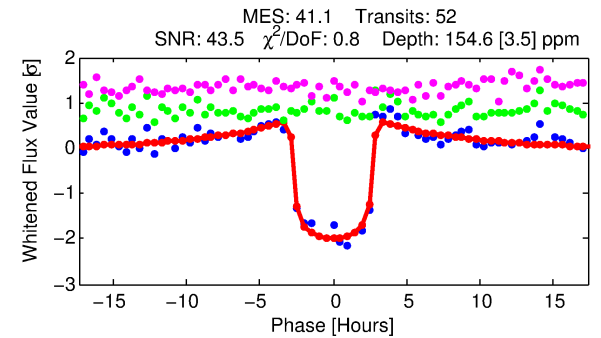
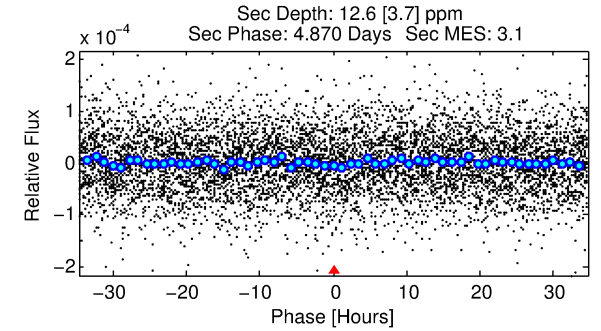
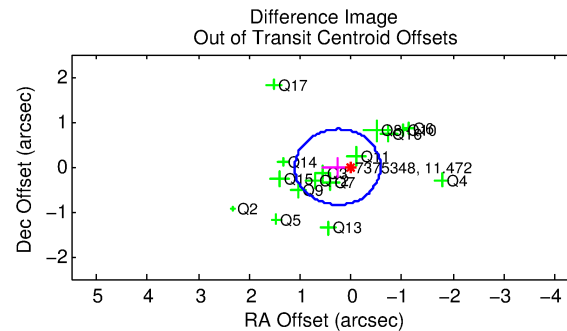
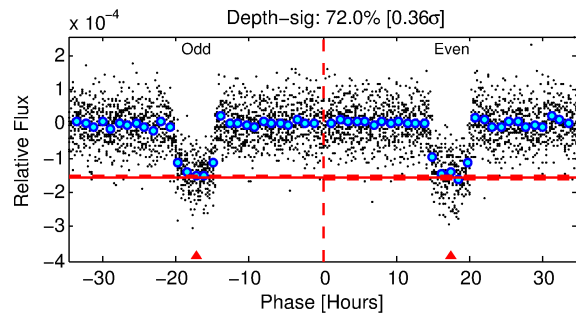
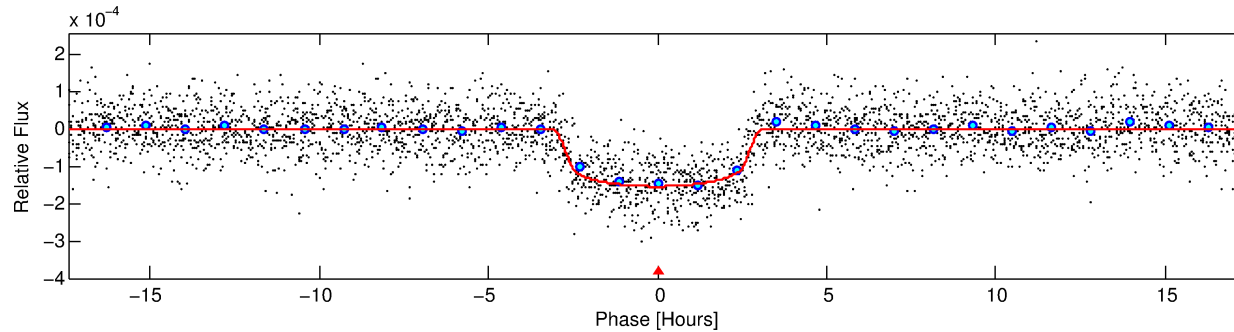
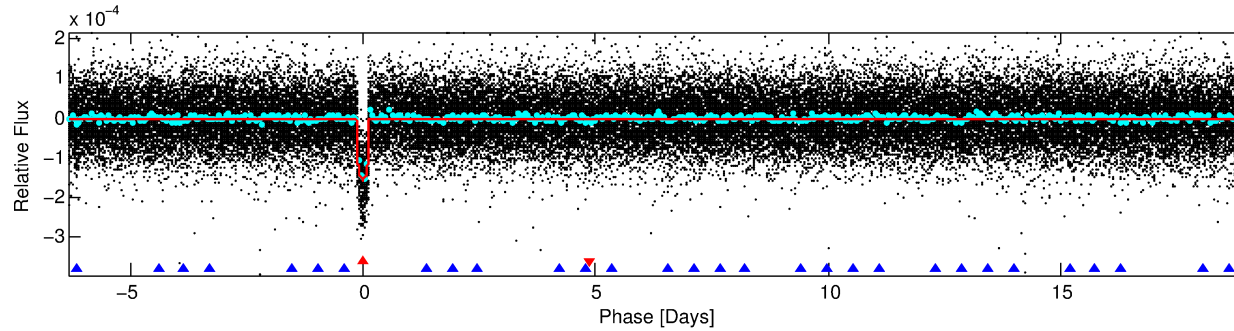
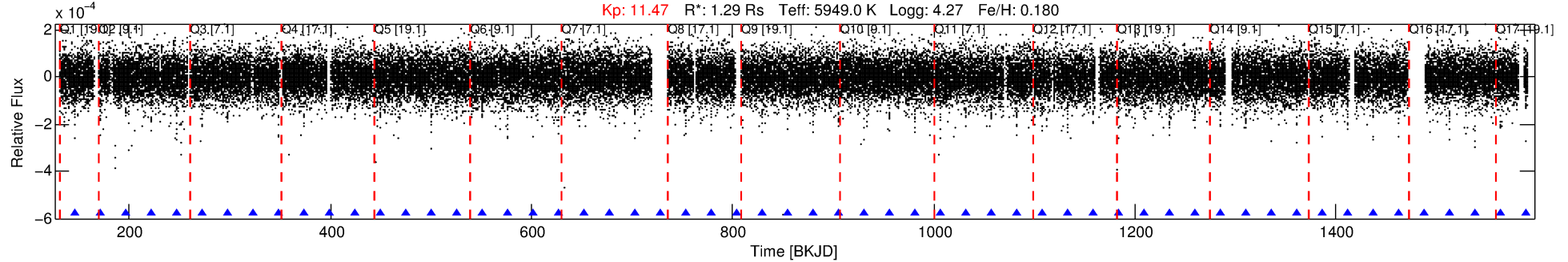
No Significant Match Found

# DV One-Page Summary

KIC: 7375348 Candidate: 1 of 2 Period: 25.309 d

KOI: K00266.01 Corr: 0.989

Kp: 11.47 R\*: 1.29 Rs Teff: 5949.0 K Logg: 4.27 Fe/H: 0.180



## DV Fit Results:

Period = 25.30891 [0.00006] d  
Epoch = 146.1974 [0.0021] BKJD  
Rp/R\* = 0.0131 [0.0012]  
a/R\* = 17.56 [7.45]  
b = 0.87 [0.12]  
Seff = 60.32 [13.74]  
Teq = 711 [40] K  
Rp = 1.85 [0.34] Re  
a = 0.1762 [0.0250] AU  
Ag = 62.87 [25.46] [2.43σ]  
Teff = 3094 [273] K [8.63σ]

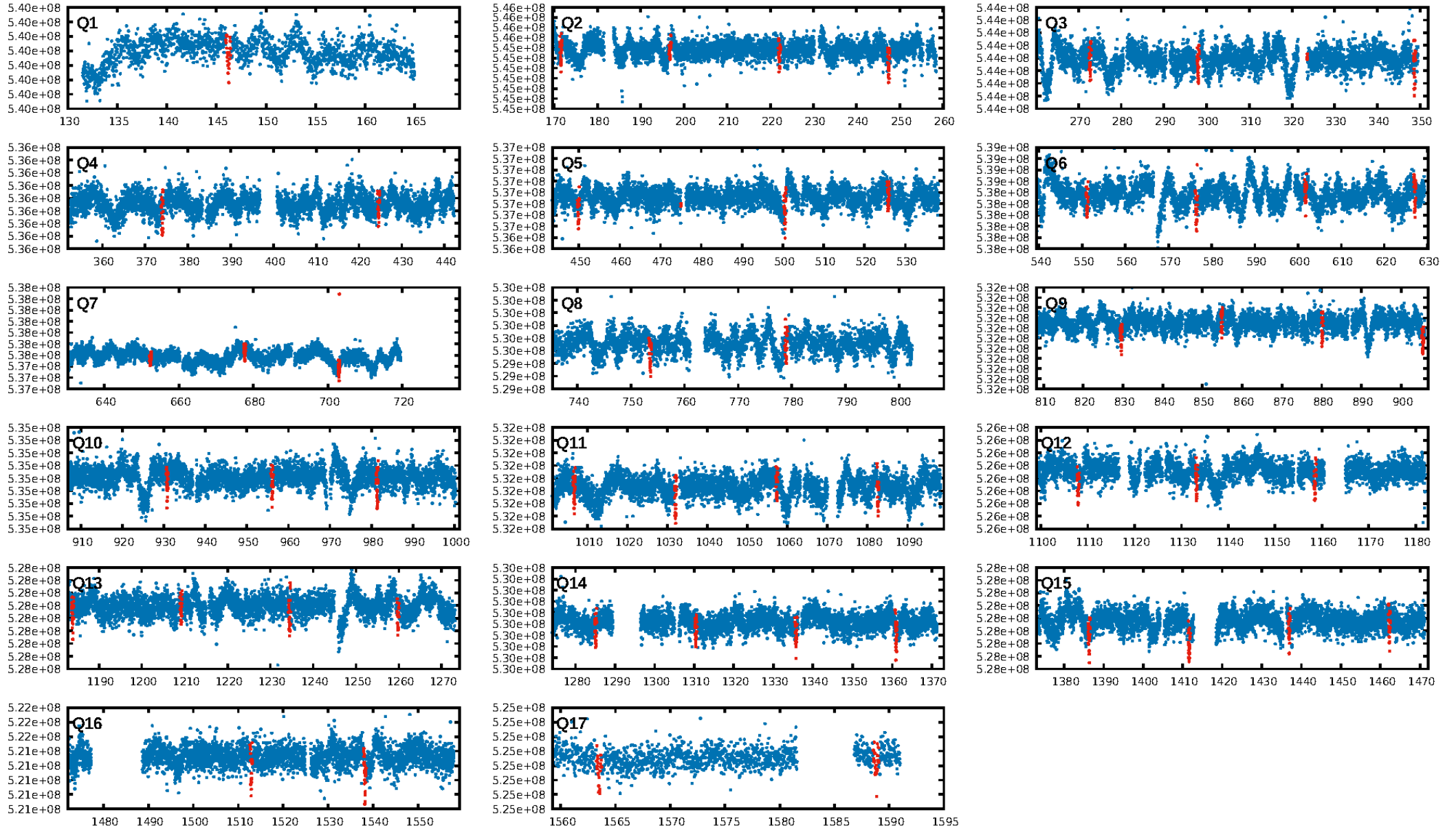
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [81.95σ]  
ModelChiSquare2-sig: 85.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [49/49]  
GhostDiagnostic-chr: 15.1  
Centroid-sig: 10.1%  
Centroid-so: 0.000 arcsec [0.00σ]  
OotOffset-rm: 0.263 arcsec [0.94σ]  
KicOffset-rm: 0.350 arcsec [1.46σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 1.00 [17/17]

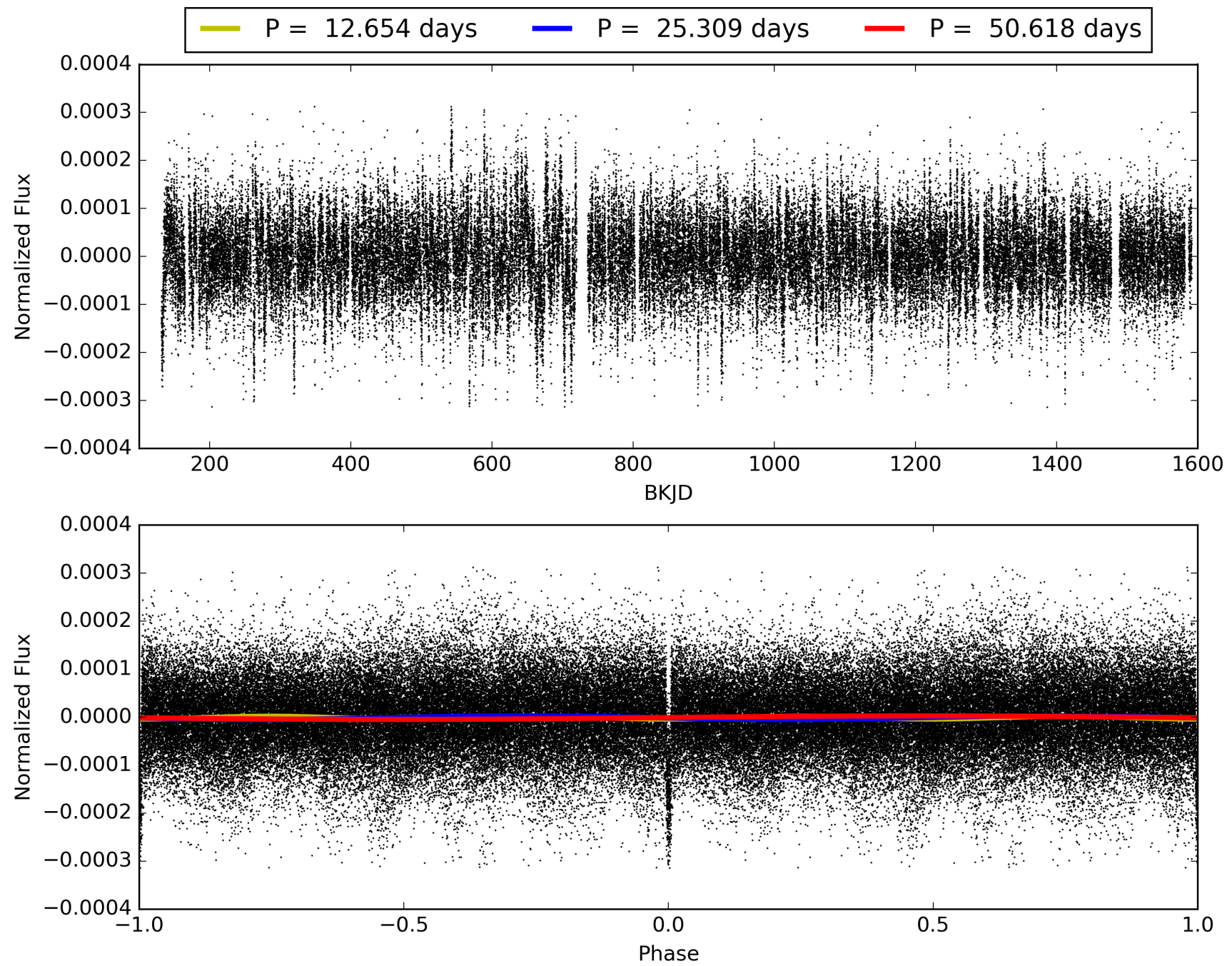
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:29:10 Z

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

# TCE 007375348-01, PDC Light Curves

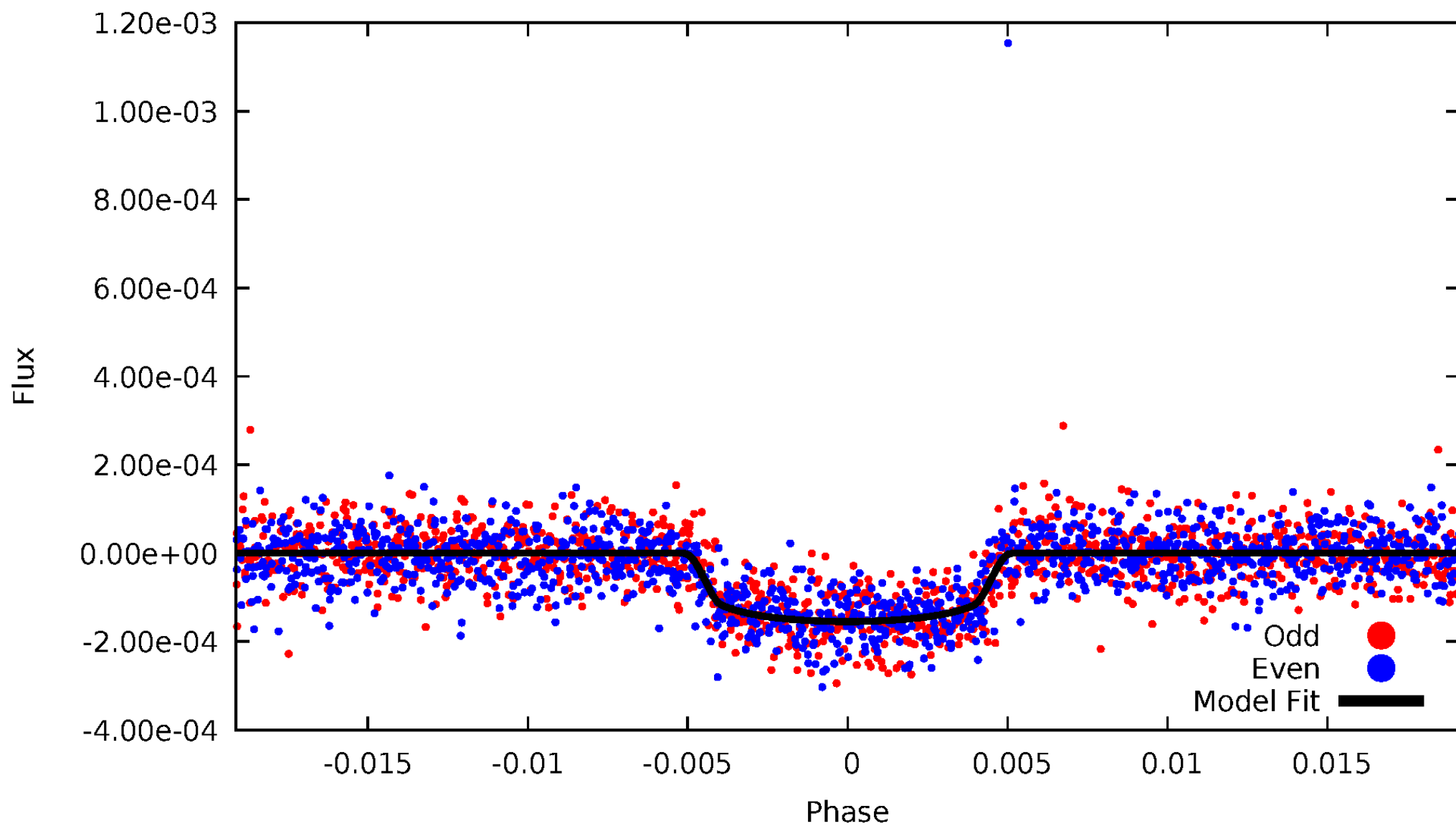


TCE 007375348-01



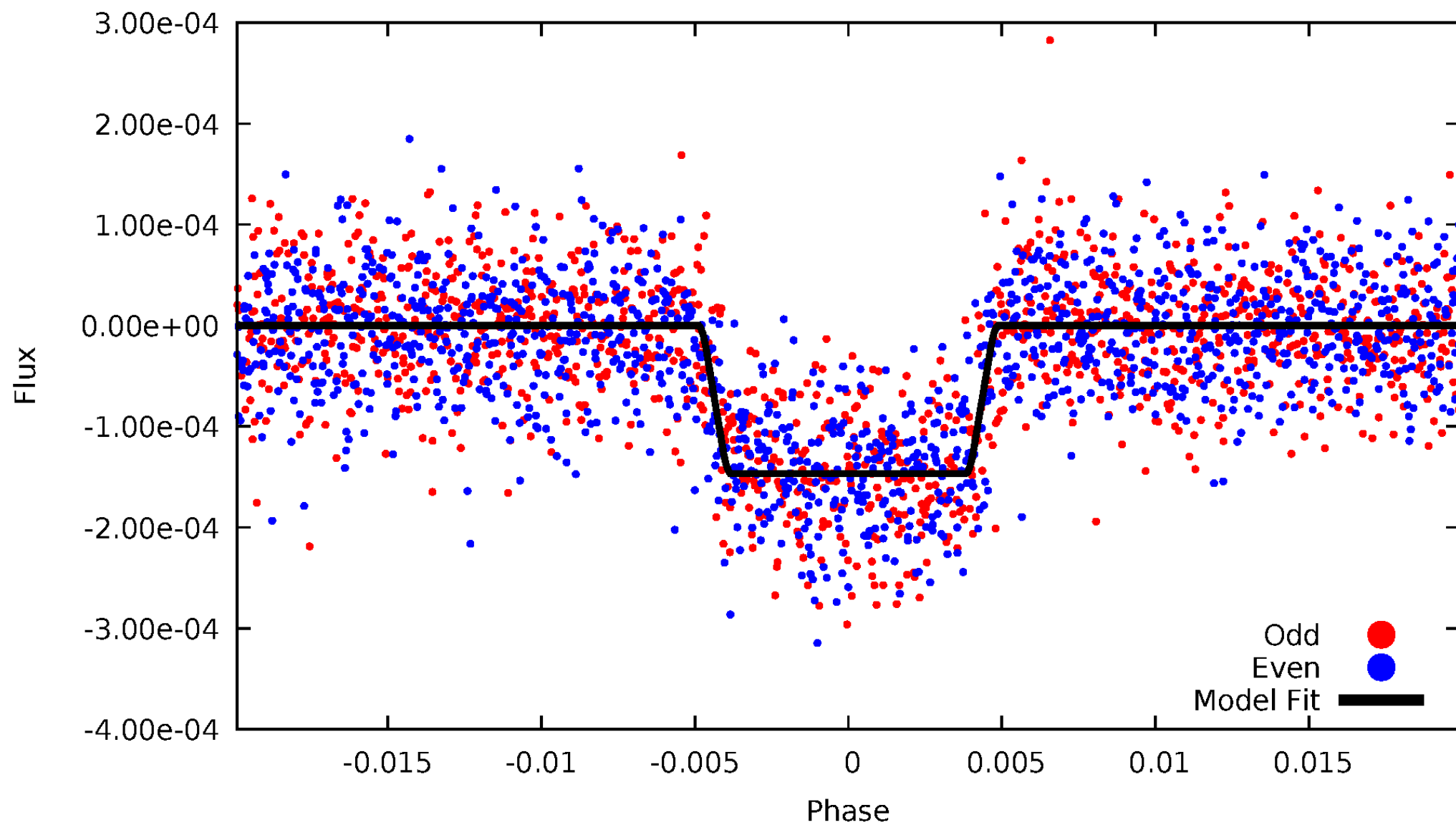
# DV Odd/Even

TCE 007375348-01



# ALT Odd/Even

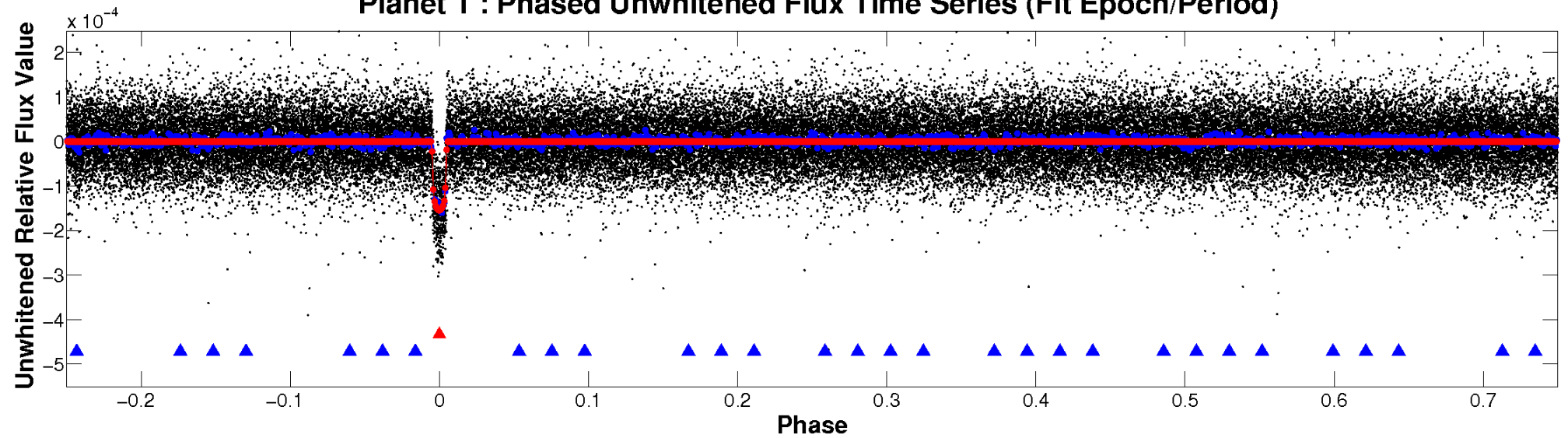
TCE 007375348-01



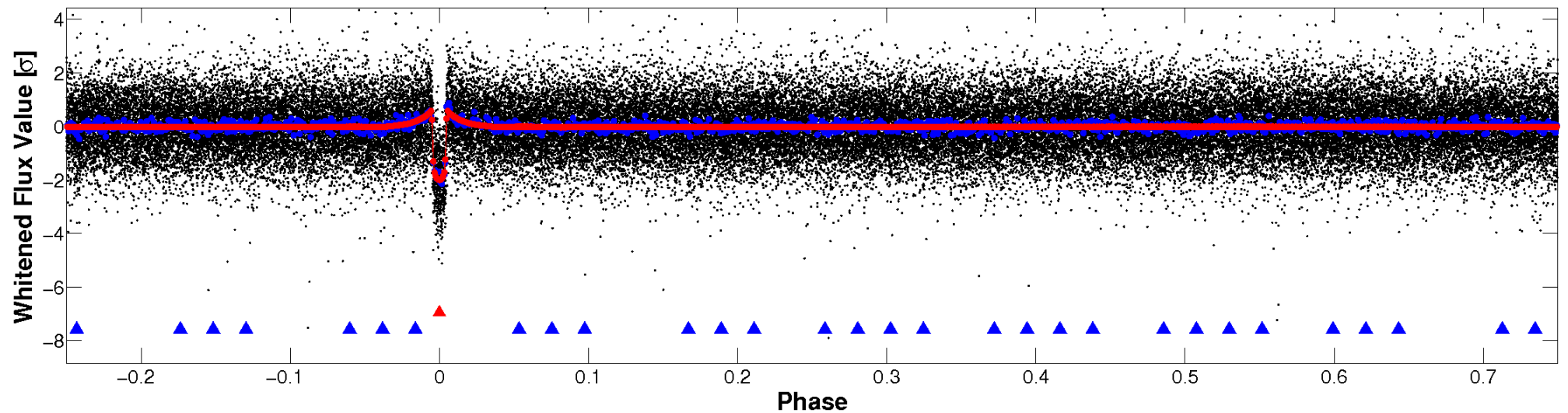


# Non-Whitened Vs. Whitened Light Curve

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

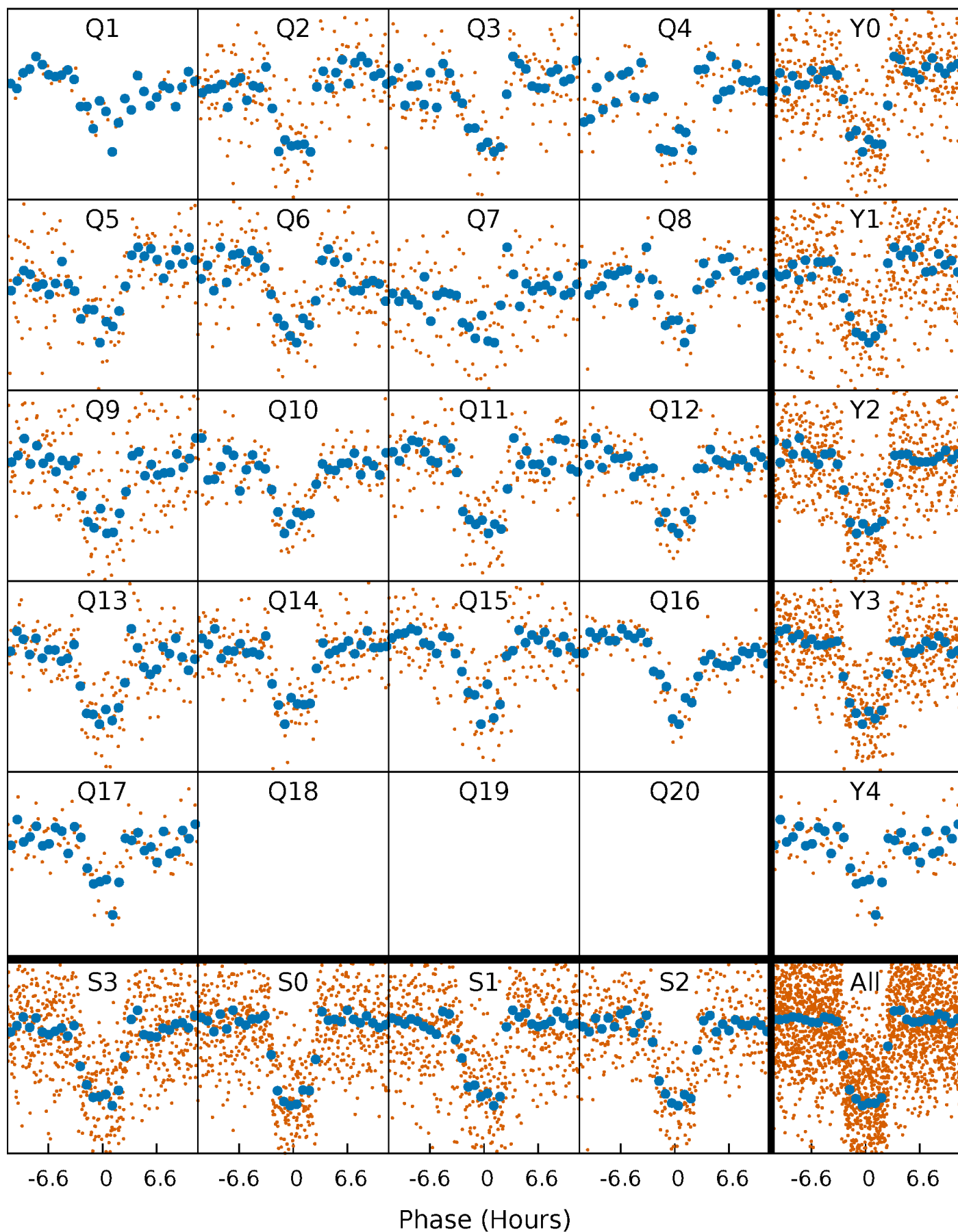


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

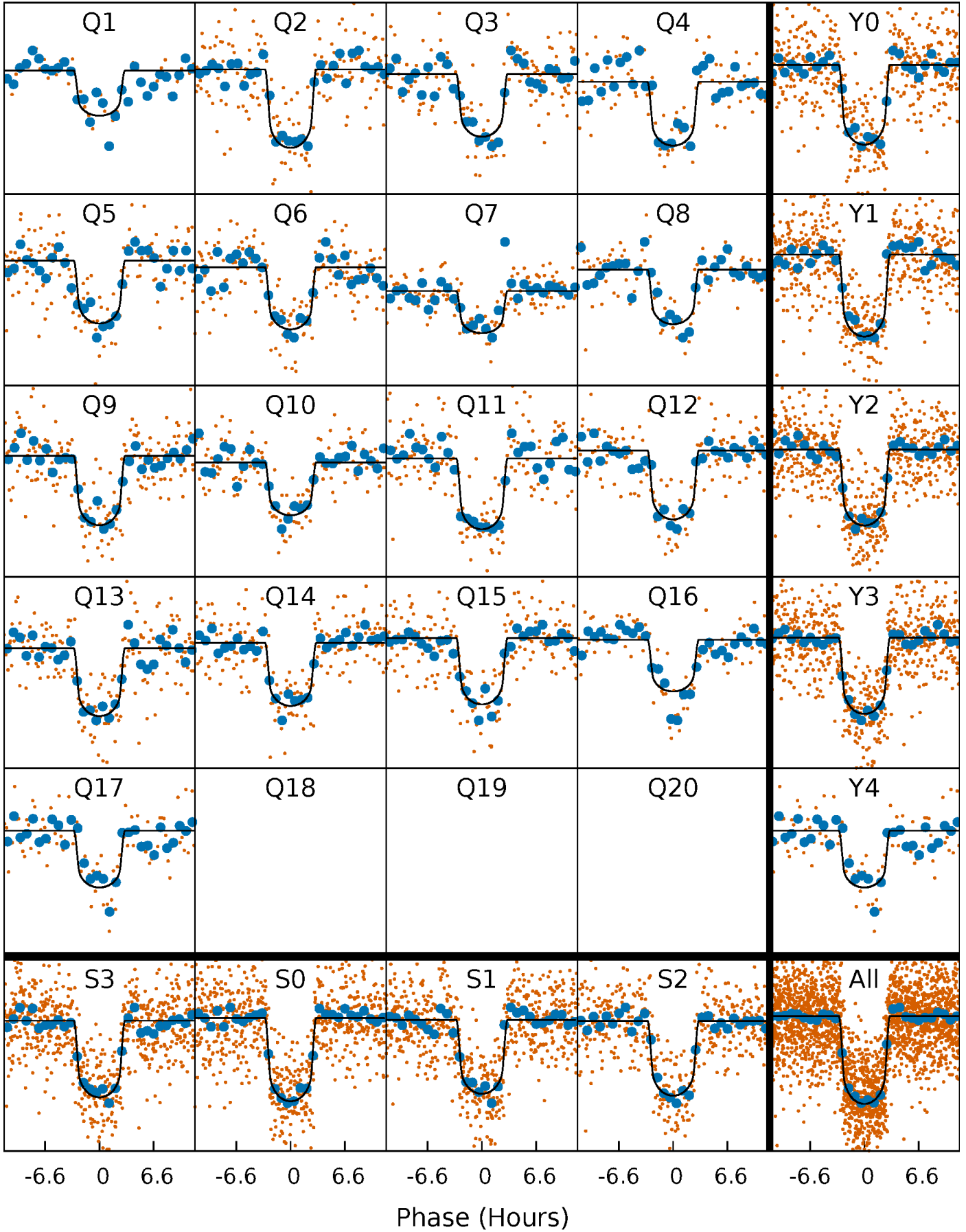
TCE 007375348-01 P= 25.308909 Days  $T_0=146.197401$  (BKJD)





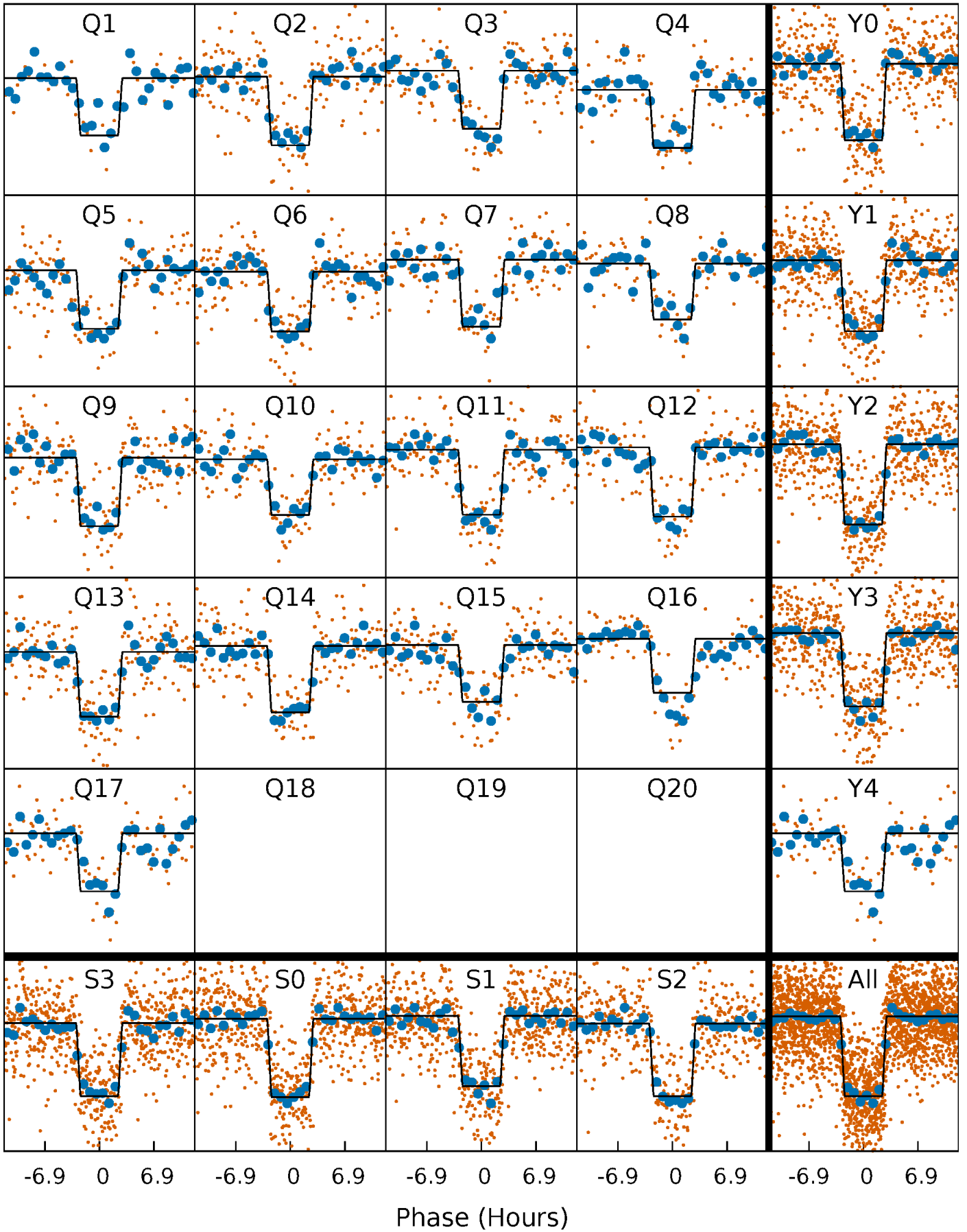
# DV Quarter-Phased Transit Curves

TCE 007375348-01 P= 25.308909 Days  $T_0=146.197401$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

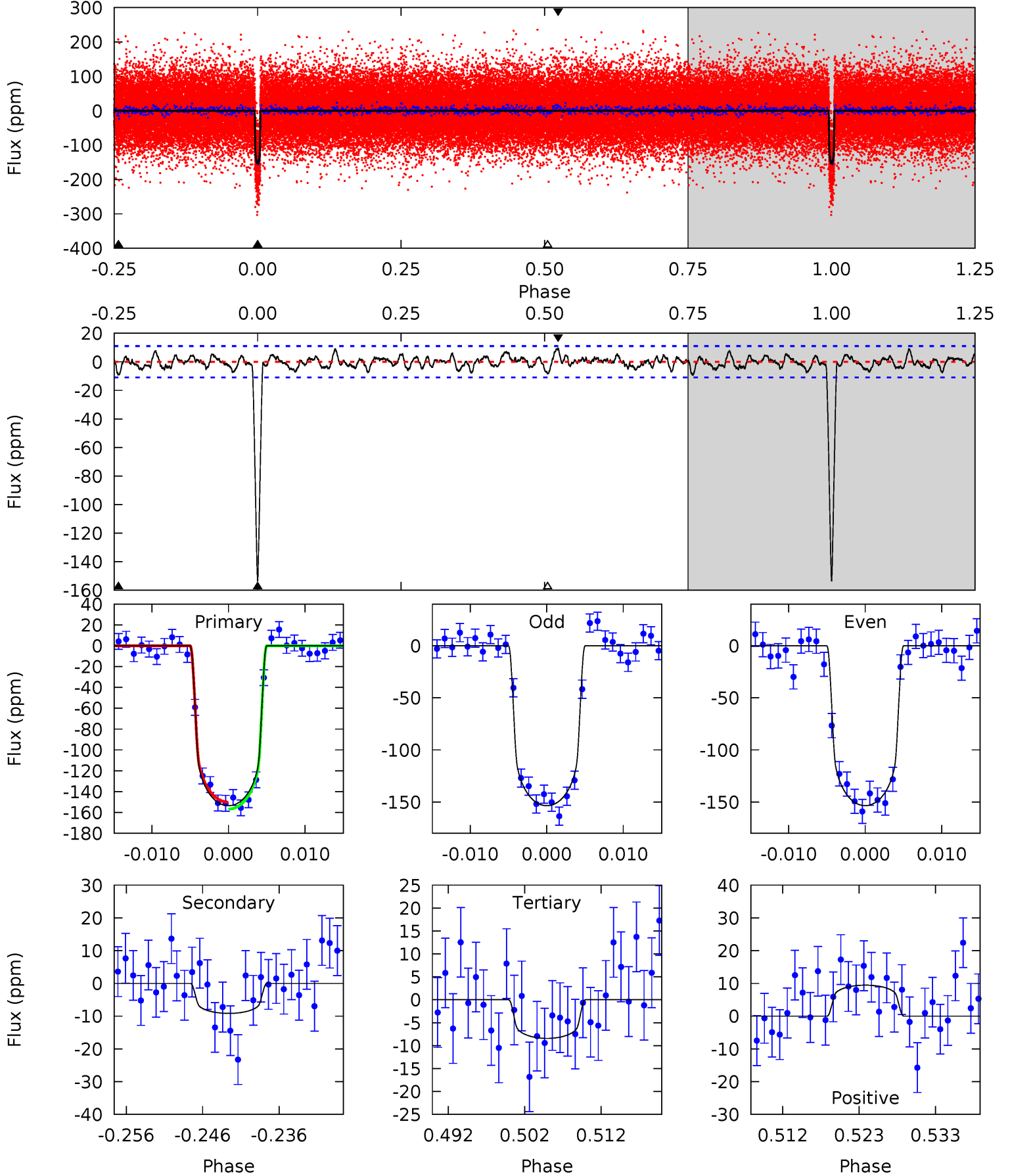
TCE 007375348-01 P= 25.308589 Days  $T_0=146.207170$  (BKJD)



# DV Model-Shift Uniqueness Test

007375348-01,  $P = 25.308909$  Days,  $E = 120.888492$  Days

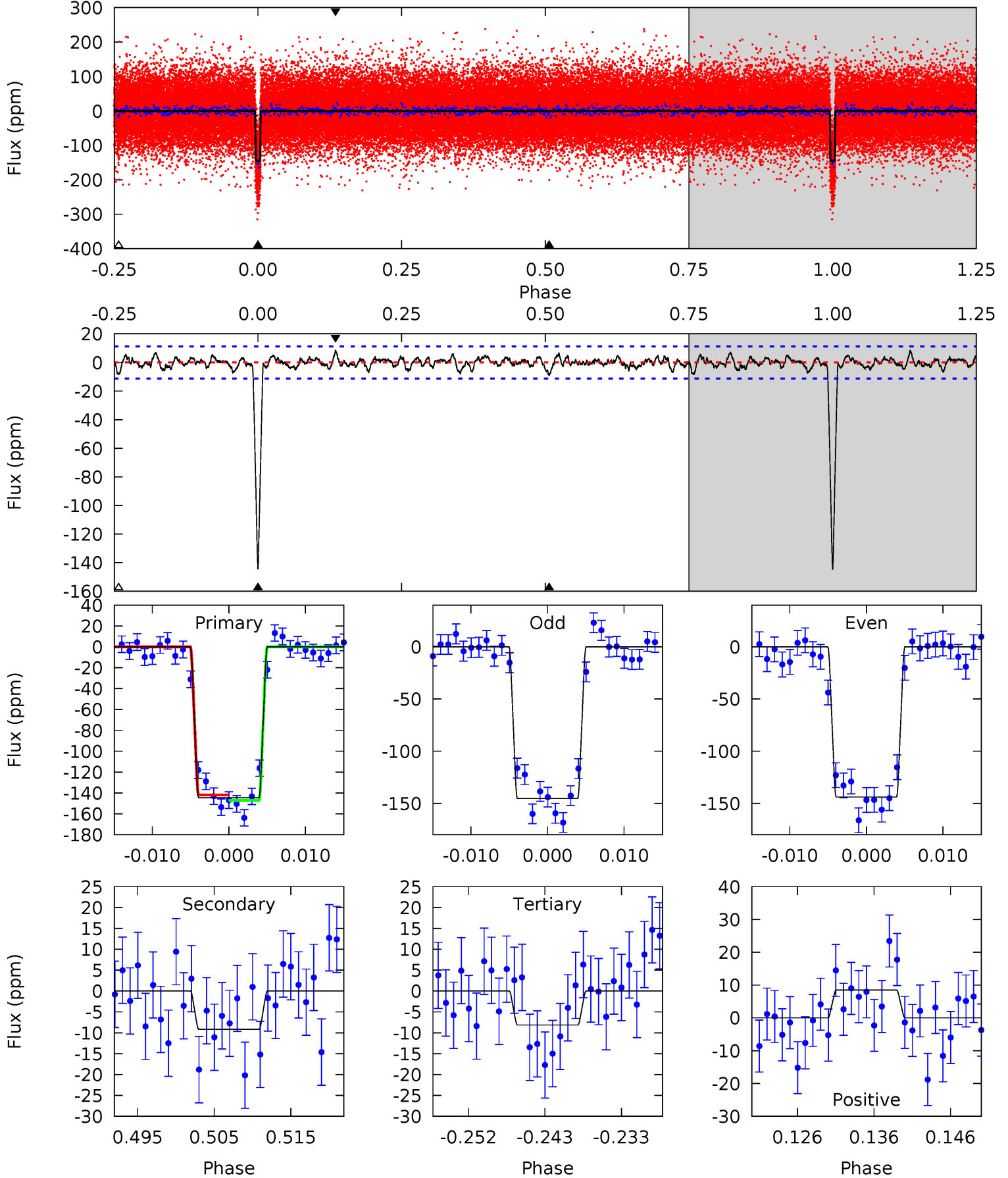
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
70.4	4.20	3.86	4.34	5.02	2.57	1.44	66.5	66.0	0.34	-0.14	0.01	1.00	0.06	1.51



# Alt Model-Shift Uniqueness Test

007375348-01,  $P = 25.308589$  Days,  $E = 120.898581$  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
65.0	4.12	3.66	3.81	5.03	2.59	1.19	61.4	61.2	0.46	0.31	0.33	1.00	0.06	1.16



### Stellar Parameters For KIC 007375348

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5949^{+106}_{-118}$	$4.272^{+0.120}_{-0.120}$	$0.180^{+0.150}_{-0.150}$	$1.292^{+0.209}_{-0.209}$	$1.140^{+0.079}_{-0.099}$	$0.745^{+0.414}_{-0.268}$
	+2%/-2%	+3%/-3%	+83%/-83%	+16%/-16%	+7%/-9%	+56%/-36%
Source	SPE59	SPE59	SPE59	DSEP		

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

### Secondary Eclipse Parameters for KIC 007375348-01 / KOI 0266.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-9 \pm 2$	$1.83^{+0.26}_{-0.22}$	$994^{+45}_{-45}$	$3374^{+165}_{-151}$	$45^{+16}_{-14}$
Alt.	$-9 \pm 2$	$1.70^{+0.23}_{-0.23}$	$993^{+48}_{-47}$	$3462^{+183}_{-181}$	$53^{+24}_{-16}$

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



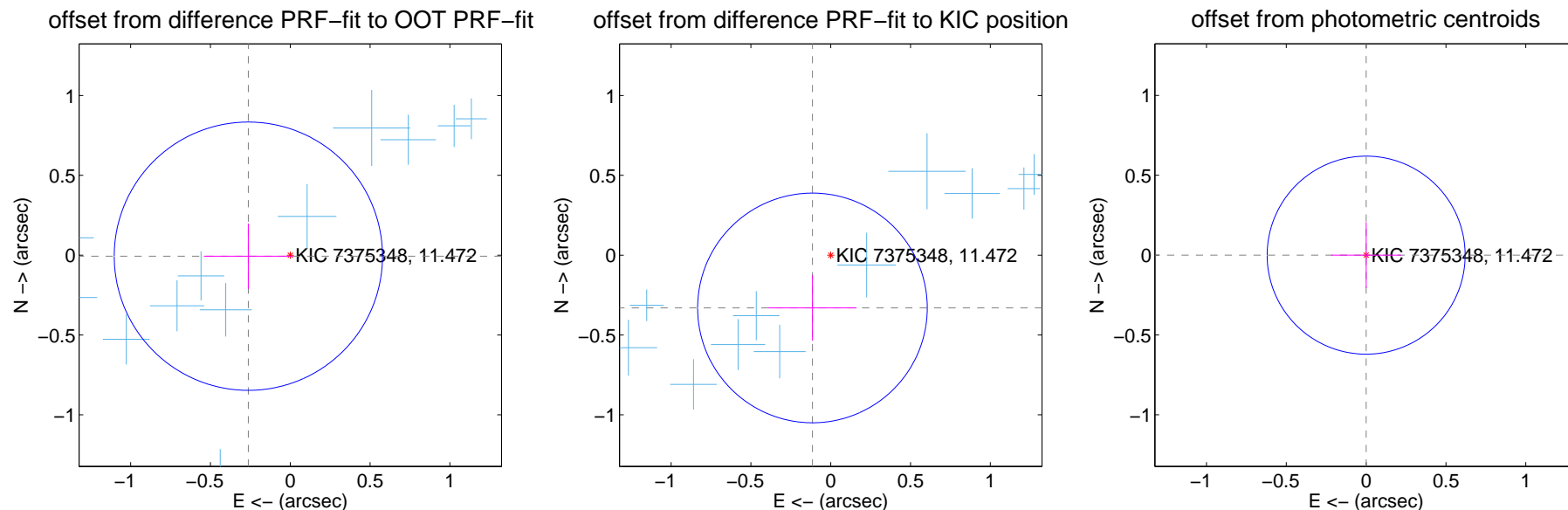
## DV Centroid Data

Supplemental centroid analysis for 007375348-01. **Kepler magnitude: 11.47.** Transit SNR 43.47

There are 16 quarters with good PRF difference image offsets

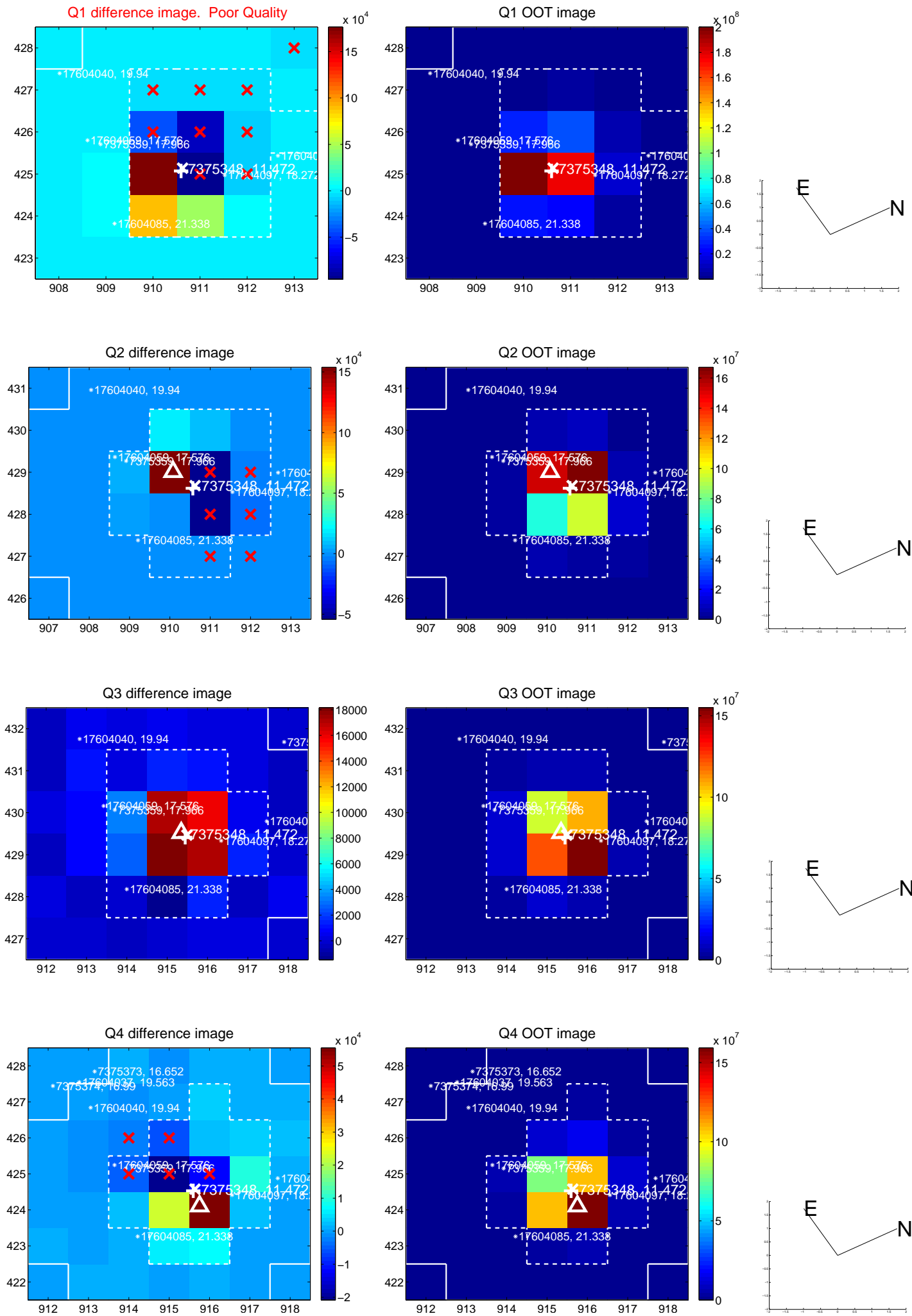
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.263 \pm 0.280$	0.94	$0.263 \pm 0.279$	$-0.007 \pm 0.205$
PRF-fit source offset from KIC position	$0.350 \pm 0.240$	1.46	$0.115 \pm 0.277$	$-0.331 \pm 0.205$
photometric centroid source offset	$0.00 \pm 0.21$	0.00	$-0.00 \pm 0.22$	$-0.00 \pm 0.21$

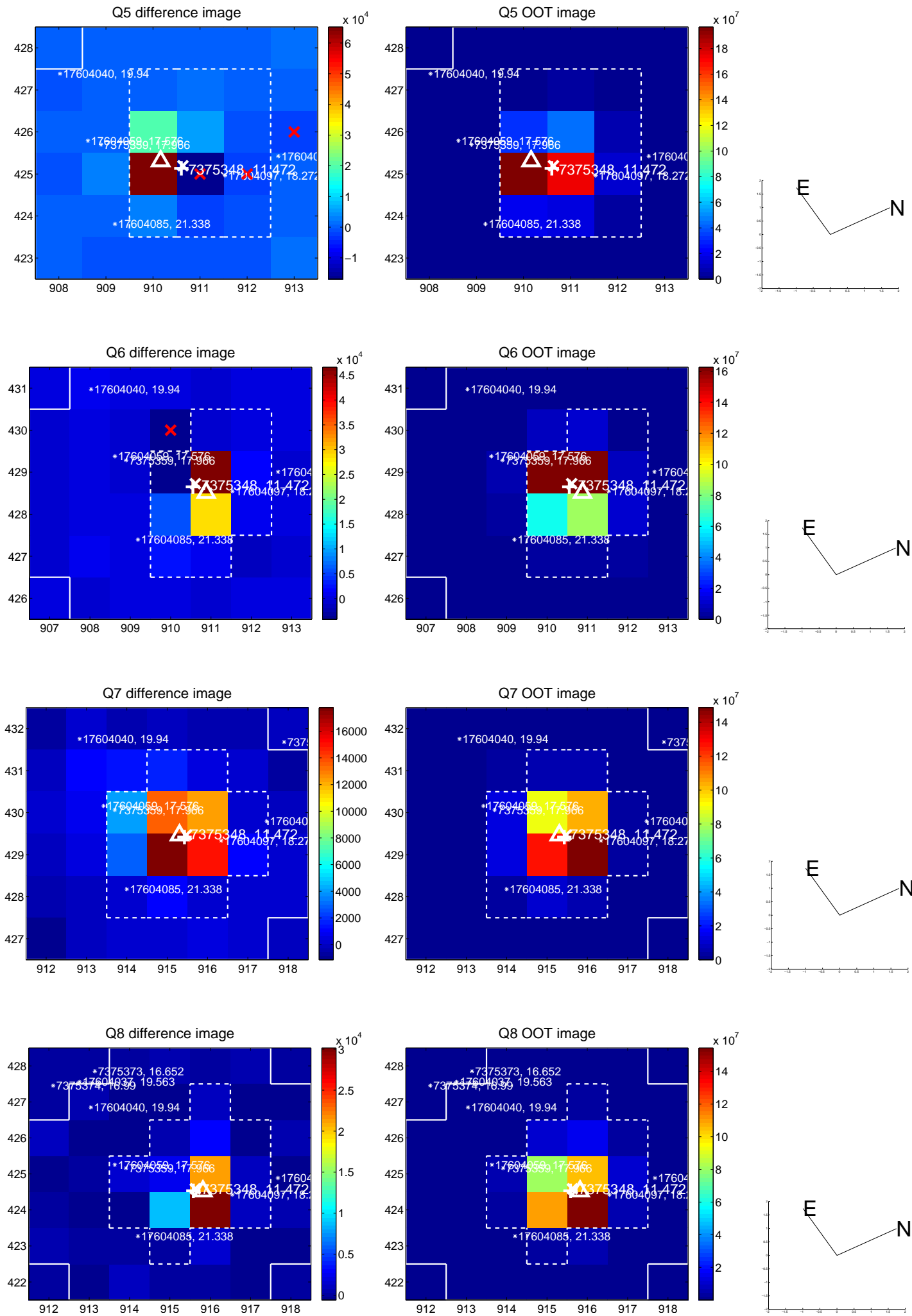


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

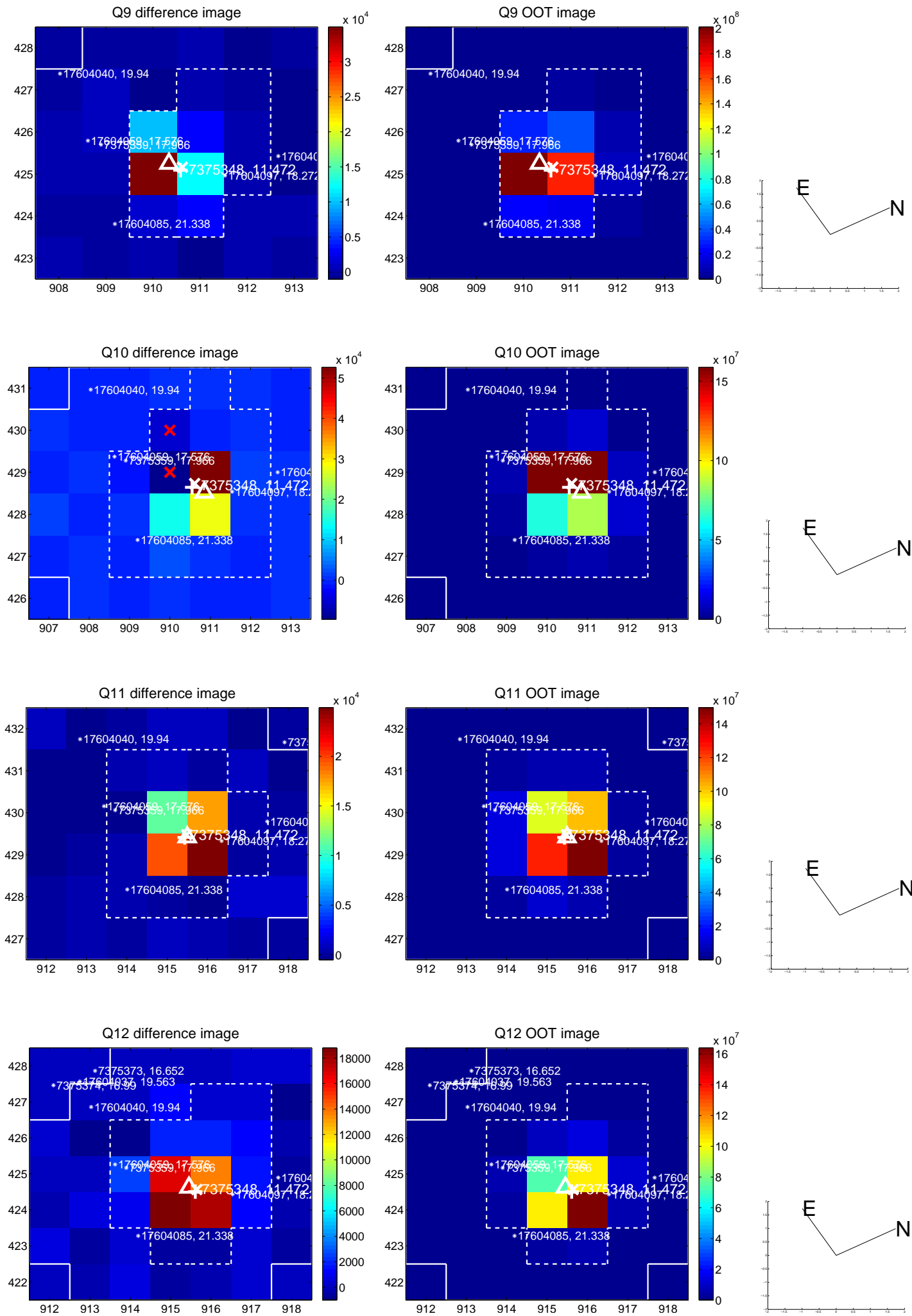
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



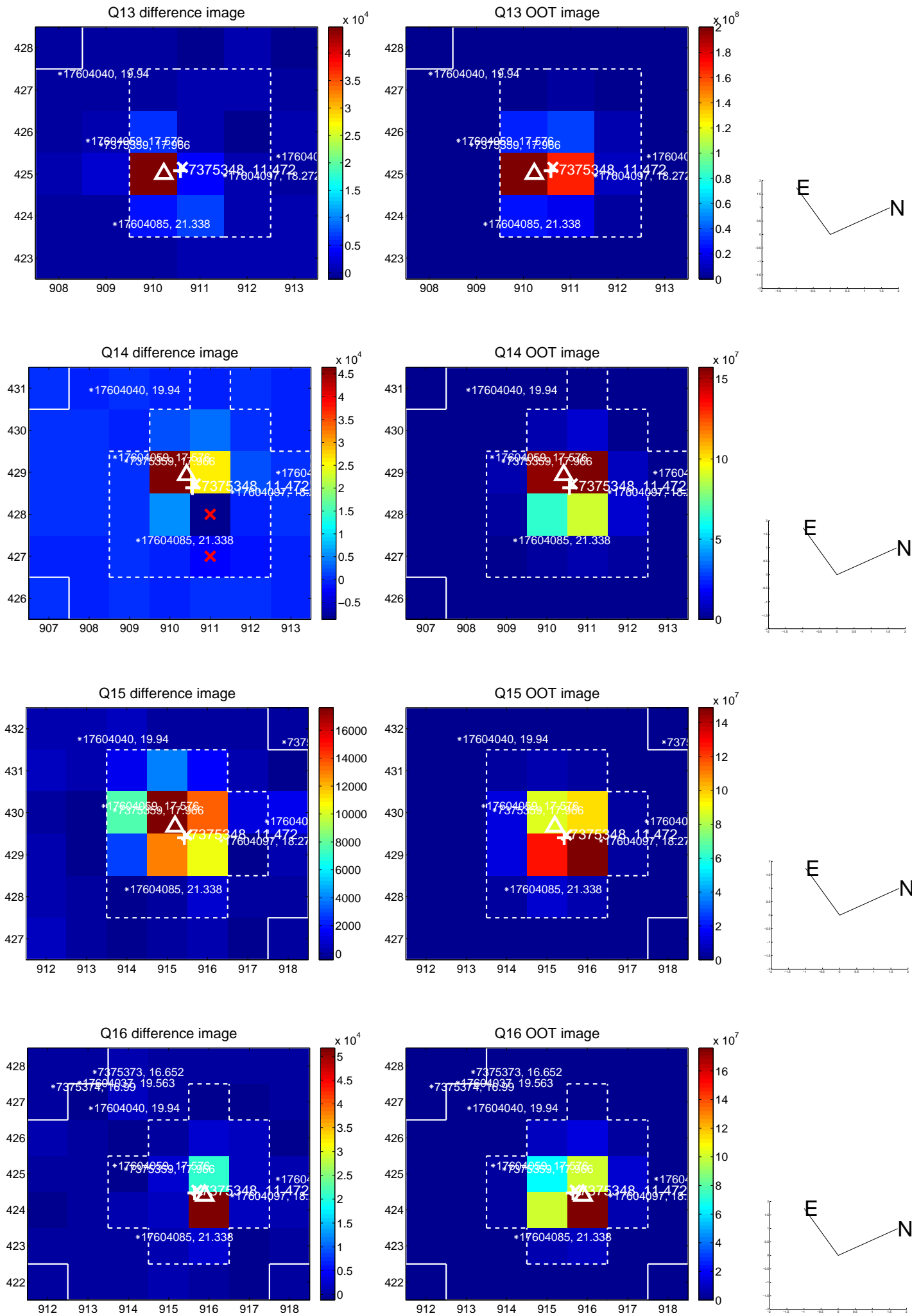
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

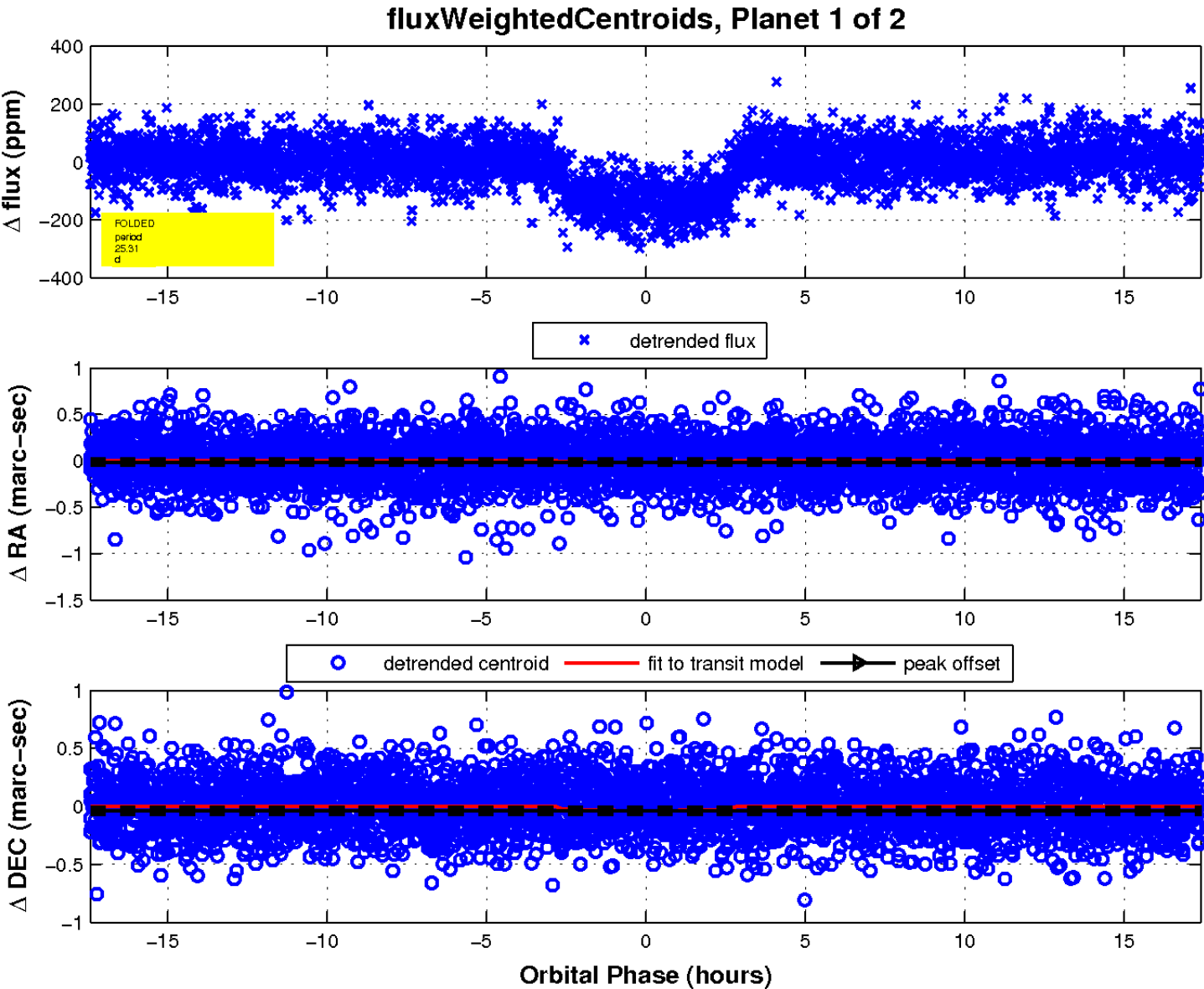
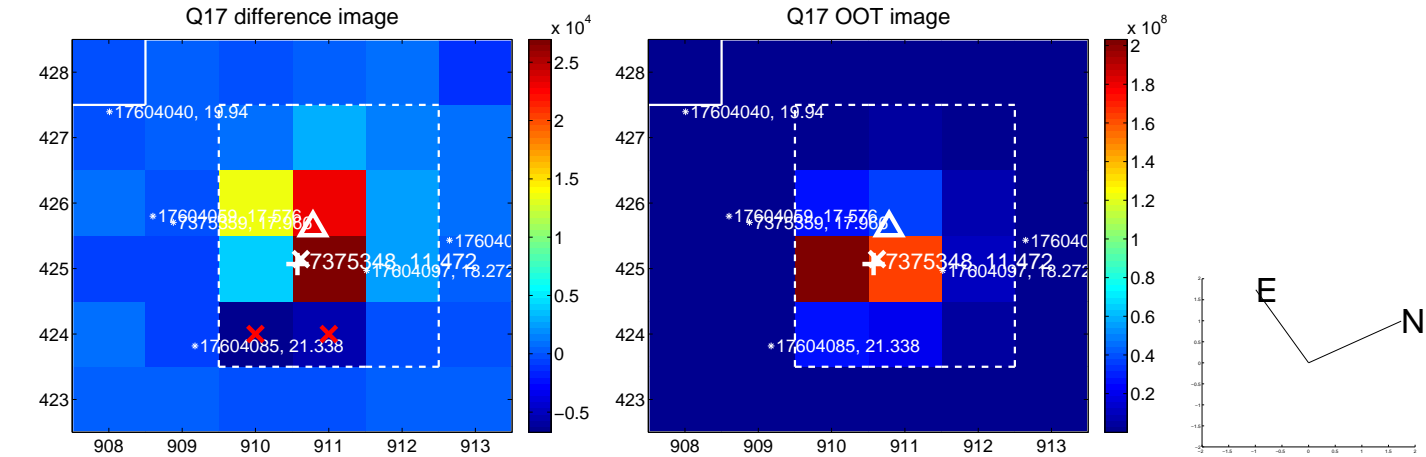


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



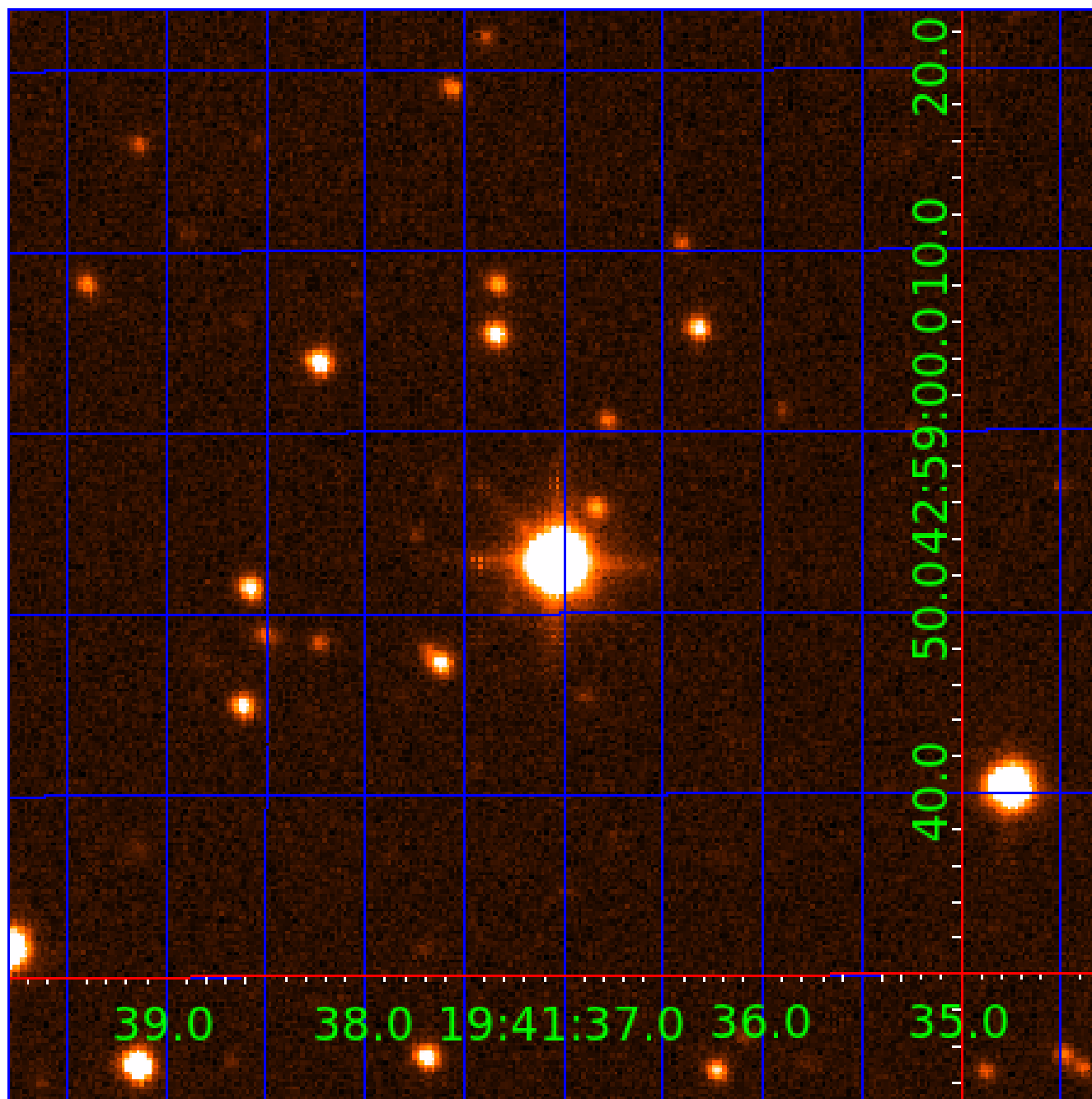


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007375348

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007375348-01	OBS	0266.01	25.308909	146.197401	154.6	5.809	41.1	43.5	1.29	5949	1.85	60.32
007375348-02	OBS	0266.02	47.743815	160.160702	102.1	3.071	14.1	15.1	1.29	5949	1.79	25.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007375348-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
007375348-02	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

**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 007375348-02

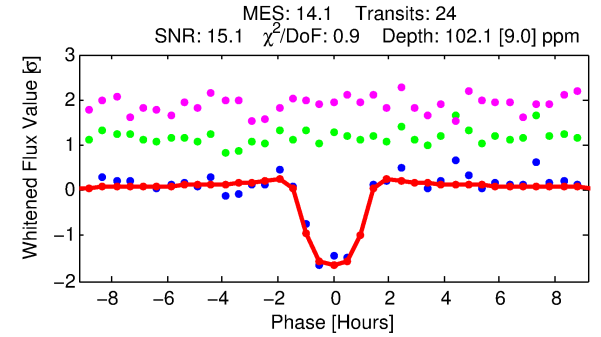
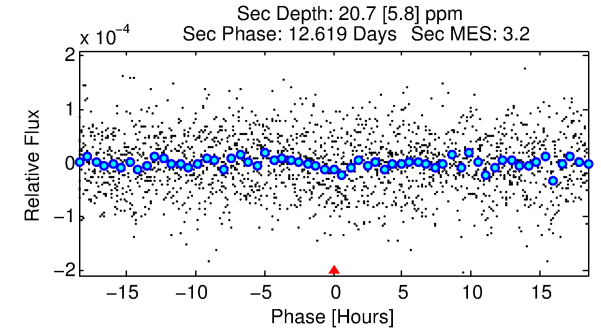
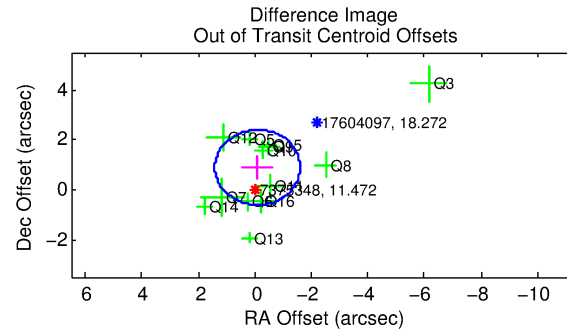
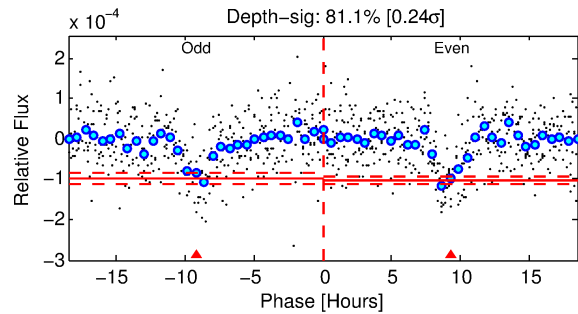
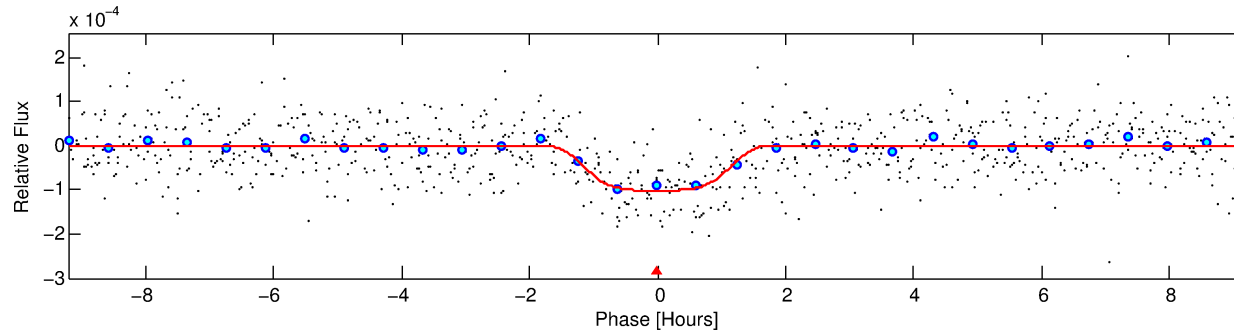
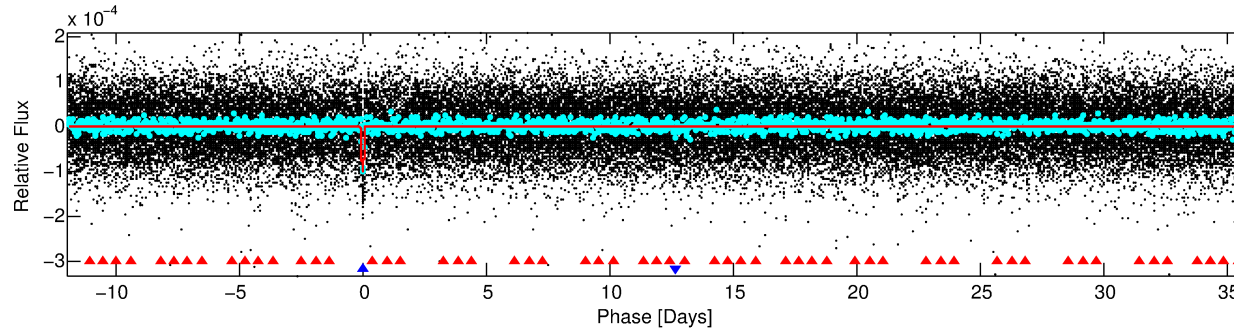
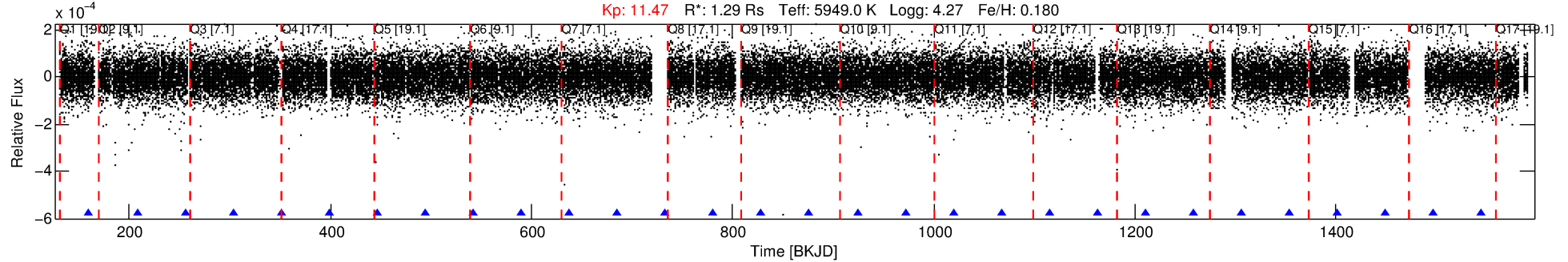
No Significant Match Found

# DV One-Page Summary

KIC: 7375348 Candidate: 2 of 2 Period: 47.744 d

KOI: K00266.02 Corr: 0.895

Kp: 11.47 R\*: 1.29 Rs Teff: 5949.0 K Logg: 4.27 Fe/H: 0.180



## DV Fit Results:

Period = 47.74381 [0.00027] d  
Epoch = 160.1607 [0.0049] BKJD  
Rp/R\* = 0.0127 [0.0009]  
a/R\* = 30.01 [6.94]  
b = 0.98 [0.01]  
Seff = 25.88 [5.89]  
Teq = 575 [33] K  
Rp = 1.79 [0.32] Re  
a = 0.2690 [0.0382] AU  
Ag = 256.59 [97.34] [2.63σ]  
Teff = 3559 [288] K [10.30σ]

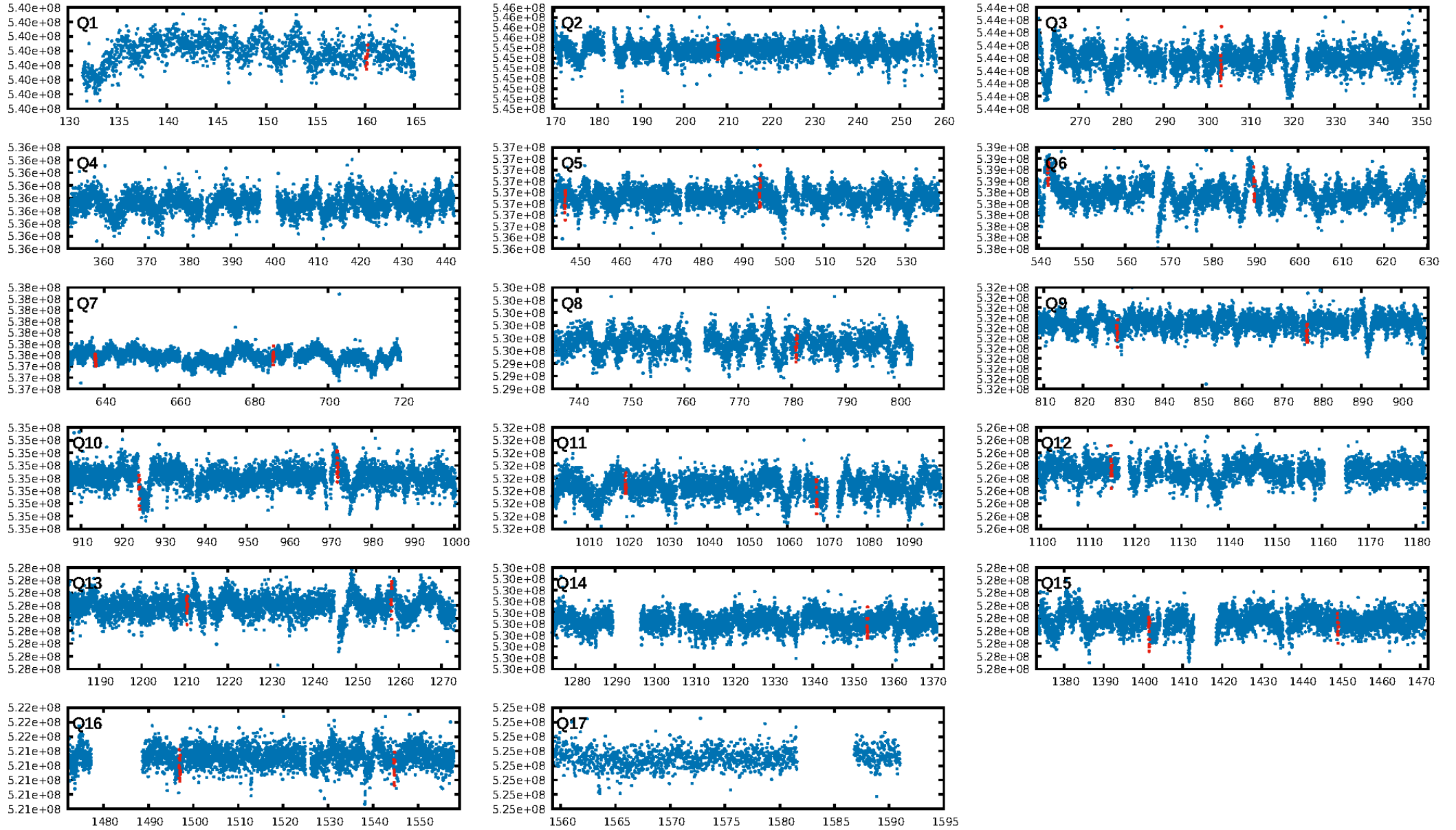
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [81.95σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 7.26e-37  
RollingBand-fgt: 1.00 [23/23]  
GhostDiagnostic-chr: 3.527  
Centroid-sig: 2.2%  
Centroid-so: 1.272 arcsec [1.96σ]  
OotOffset-rm: 0.893 arcsec [1.78σ]  
KicOffset-rm: 0.601 arcsec [1.12σ]  
OotOffset-st: 3/4/3/3 [13]  
KicOffset-st: 3/4/3/3 [13]  
DiffImageQuality-fgm: 0.92 [12/13]  
DiffImageOverlap-fno: 1.00 [15/15]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:29:17 Z

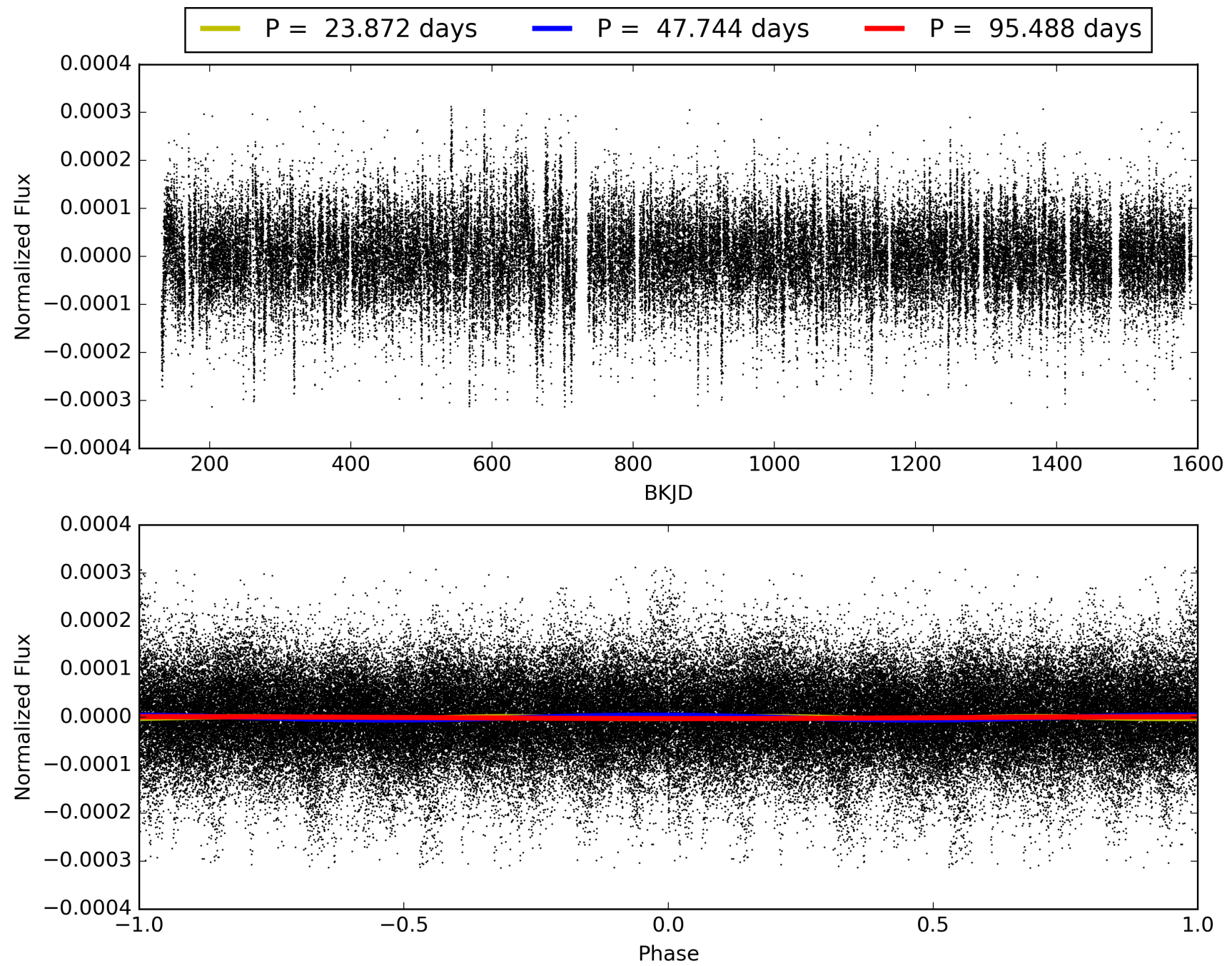
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007375348-02, PDC Light Curves



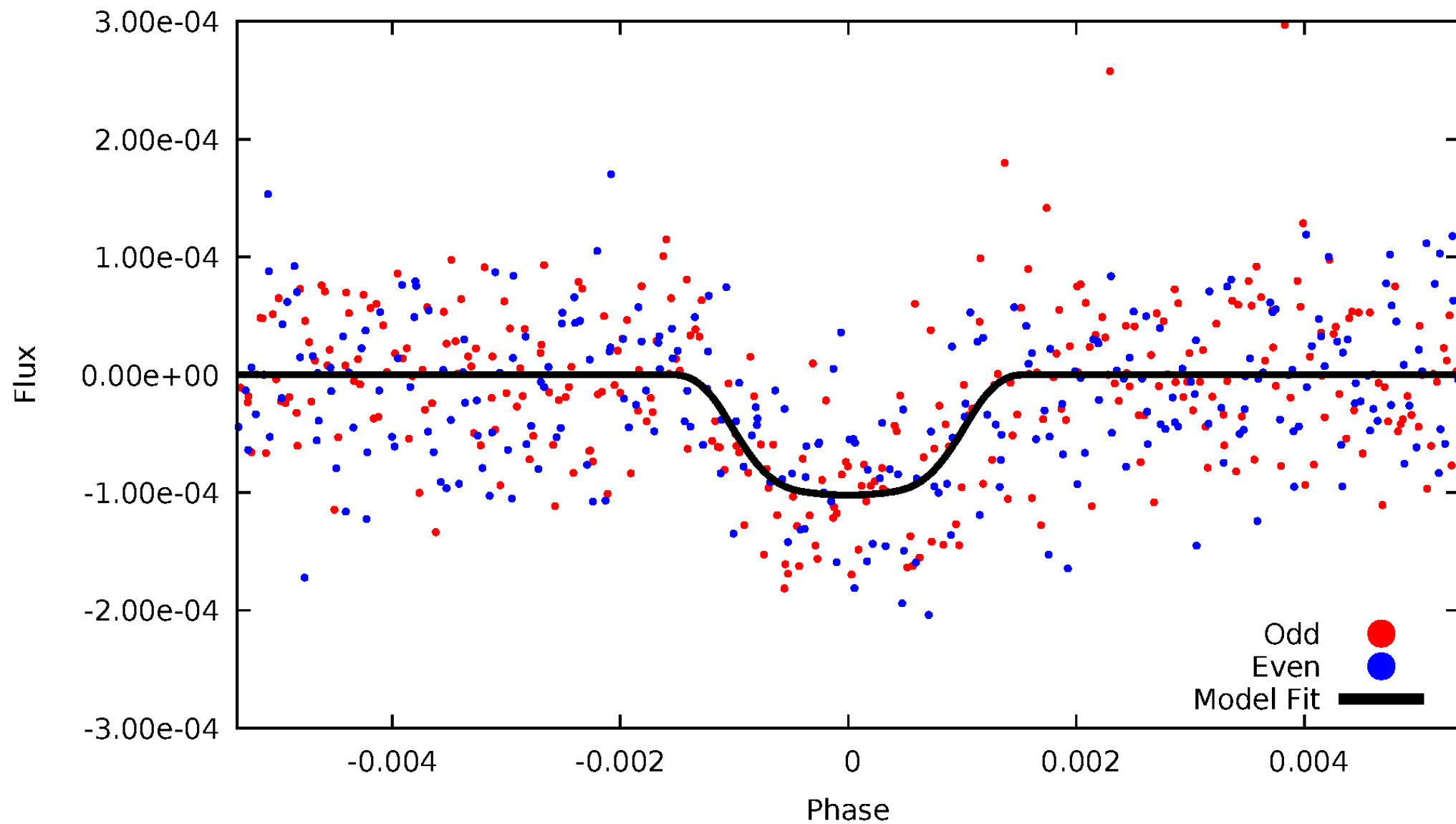


TCE 007375348-02



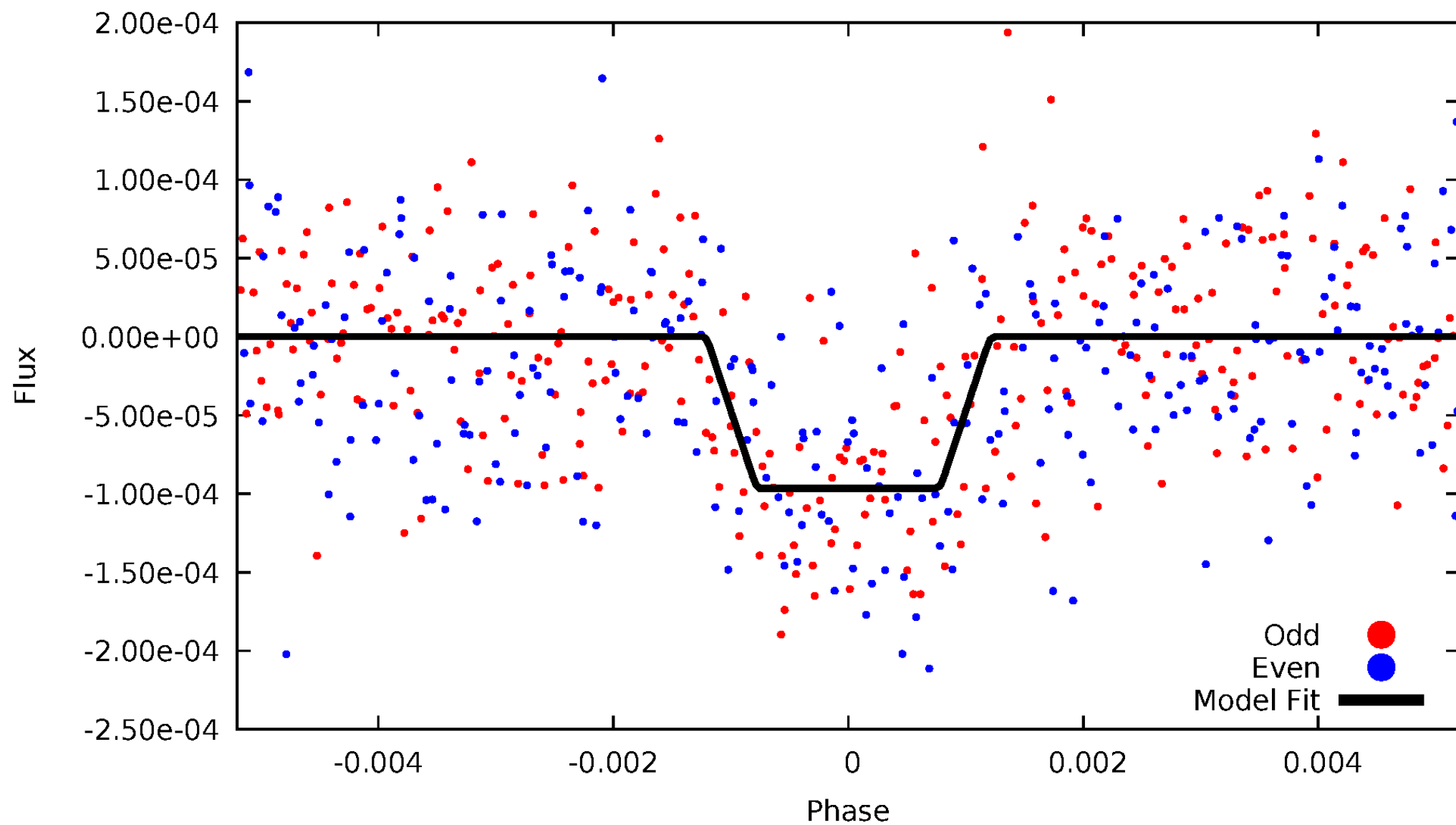
# DV Odd/Even

TCE 007375348-02



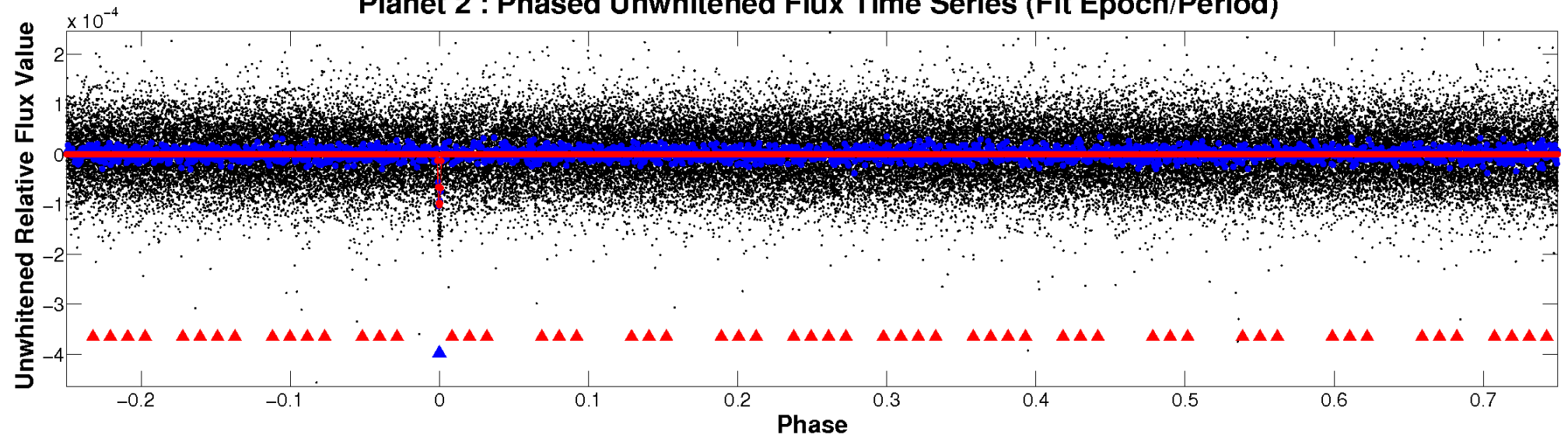
# ALT Odd/Even

TCE 007375348-02

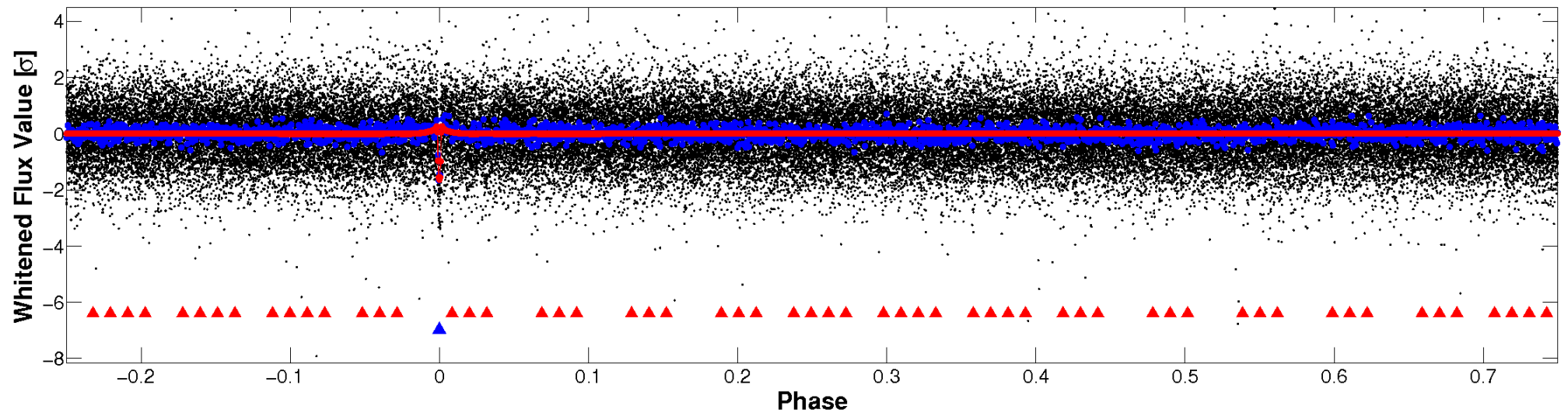


# Non-Whitened Vs. Whitened Light Curve

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

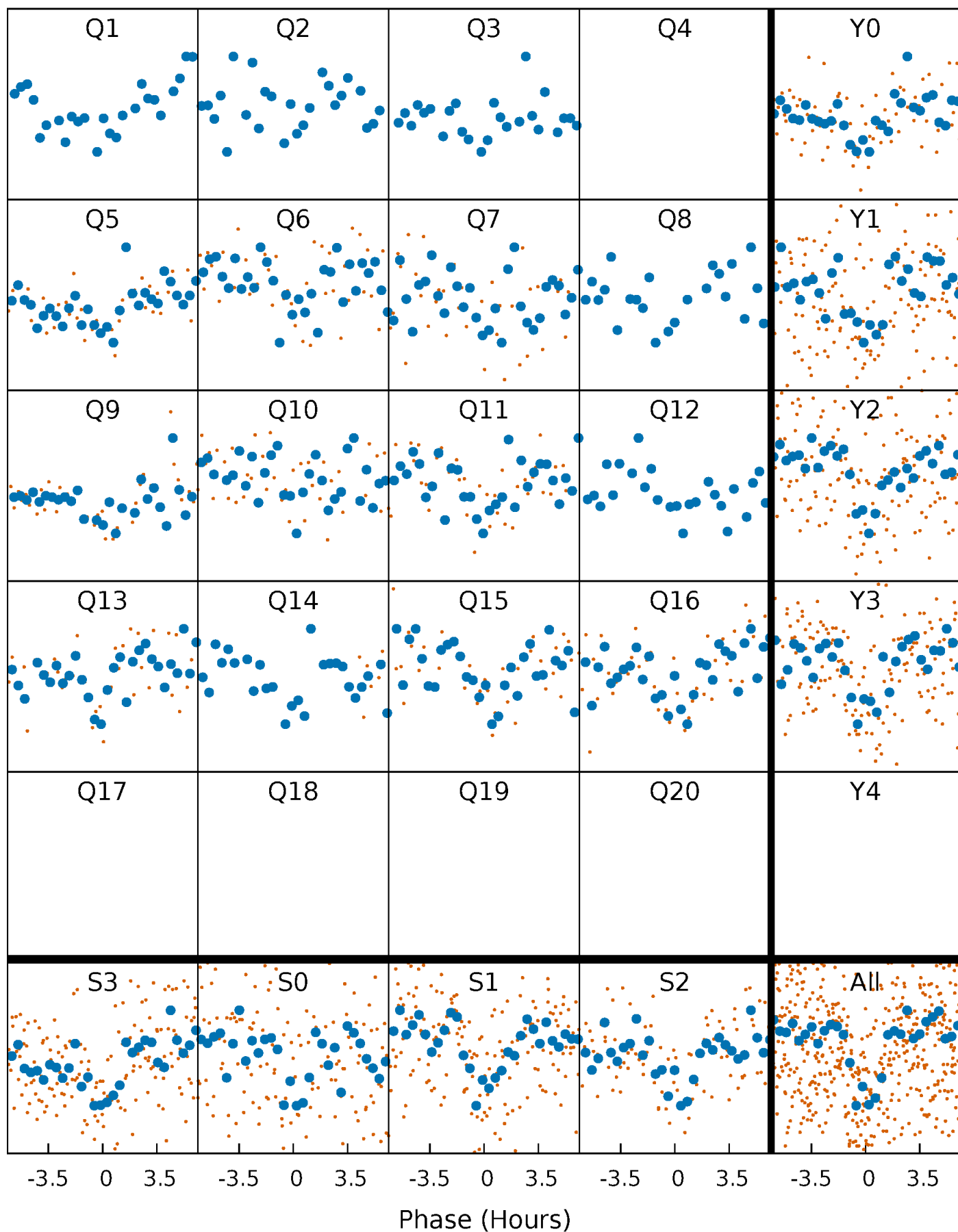


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

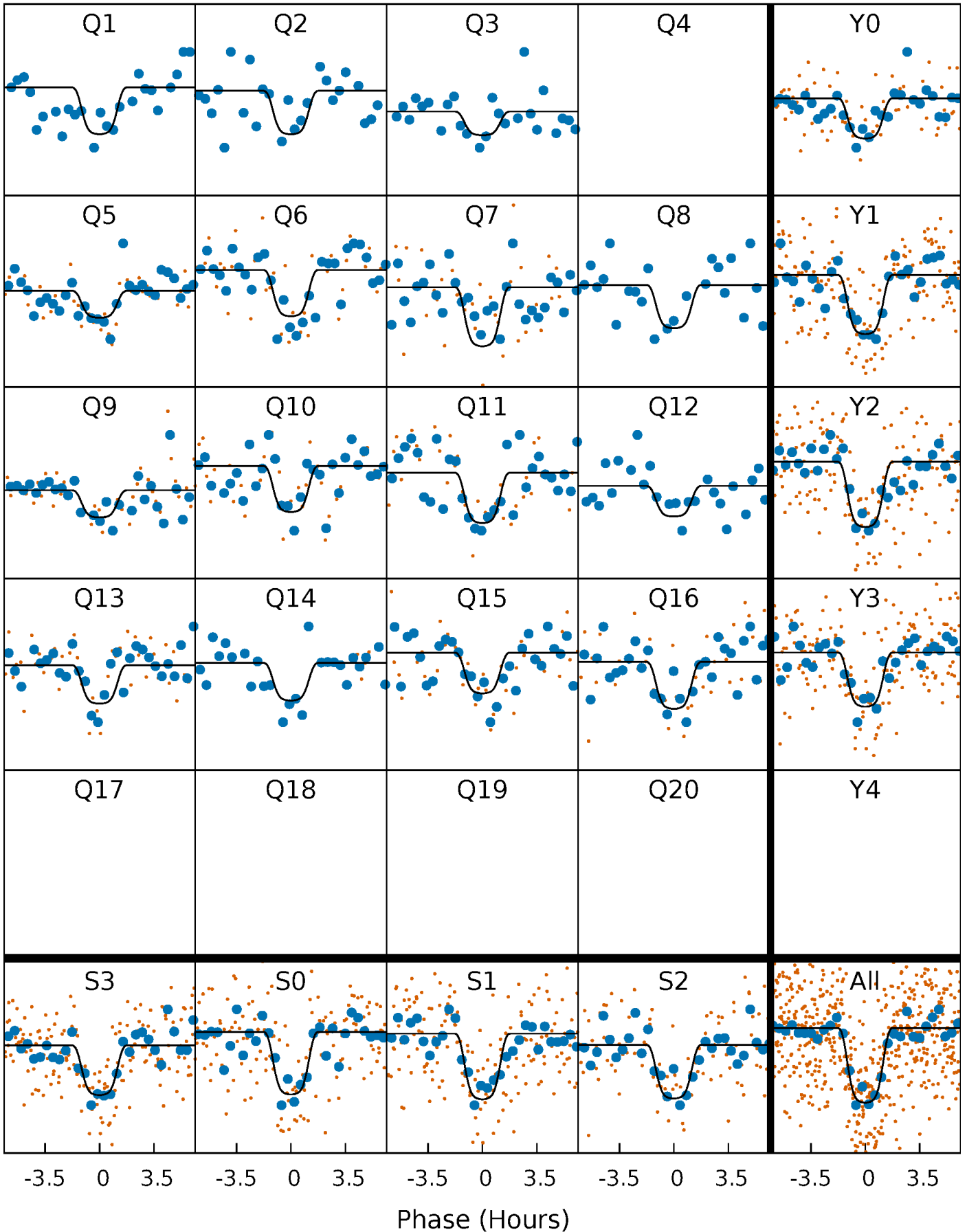
TCE 007375348-02 P= 47.743815 Days  $T_0=160.160702$  (BKJD)





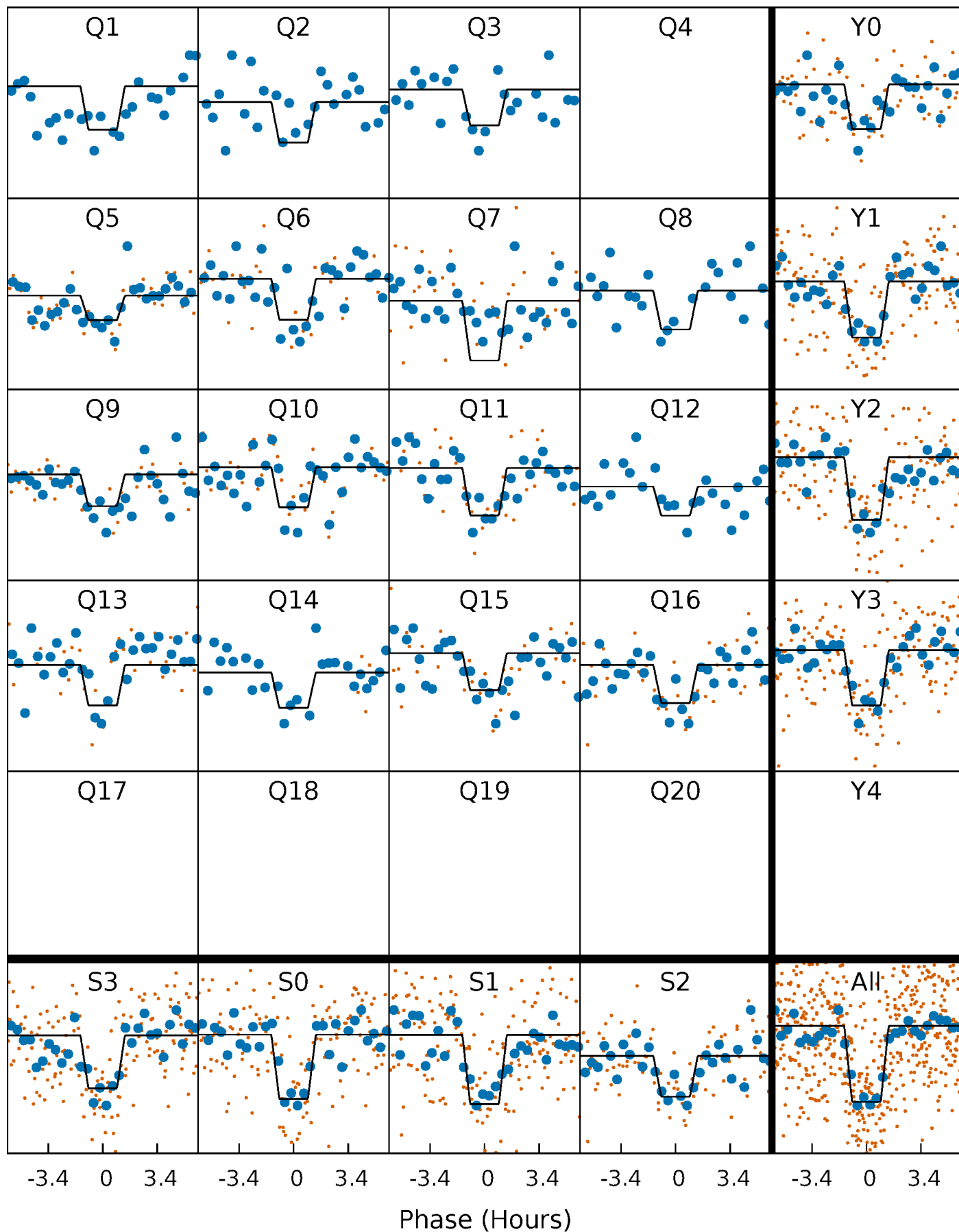
# DV Quarter-Phased Transit Curves

TCE 007375348-02   P= 47.743815 Days    $T_0=160.160702$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

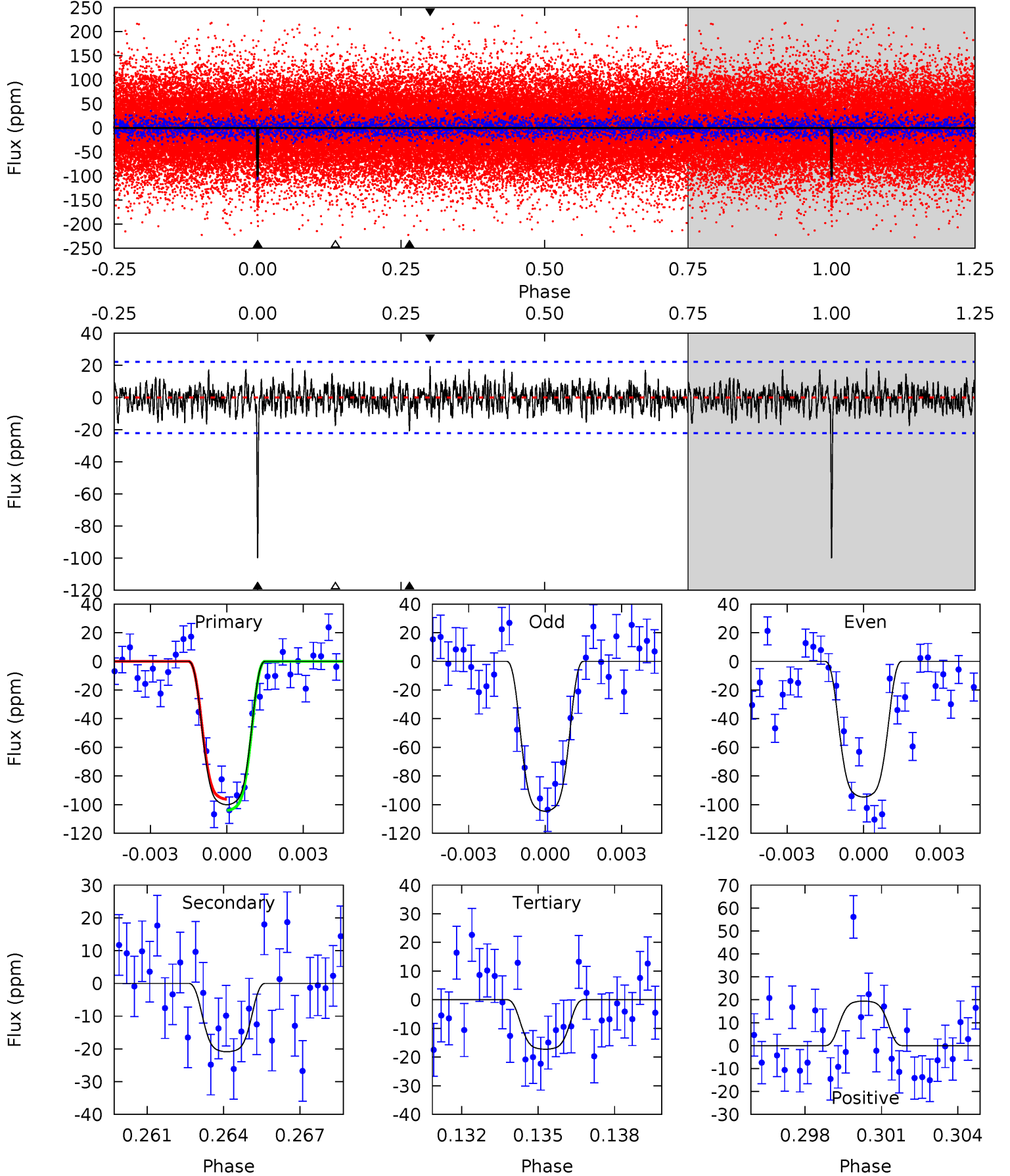
TCE 007375348-02 P= 47.743809 Days  $T_0=160.161452$  (BKJD)



# DV Model-Shift Uniqueness Test

007375348-02,  $P = 47.743815$  Days,  $E = 112.416887$  Days

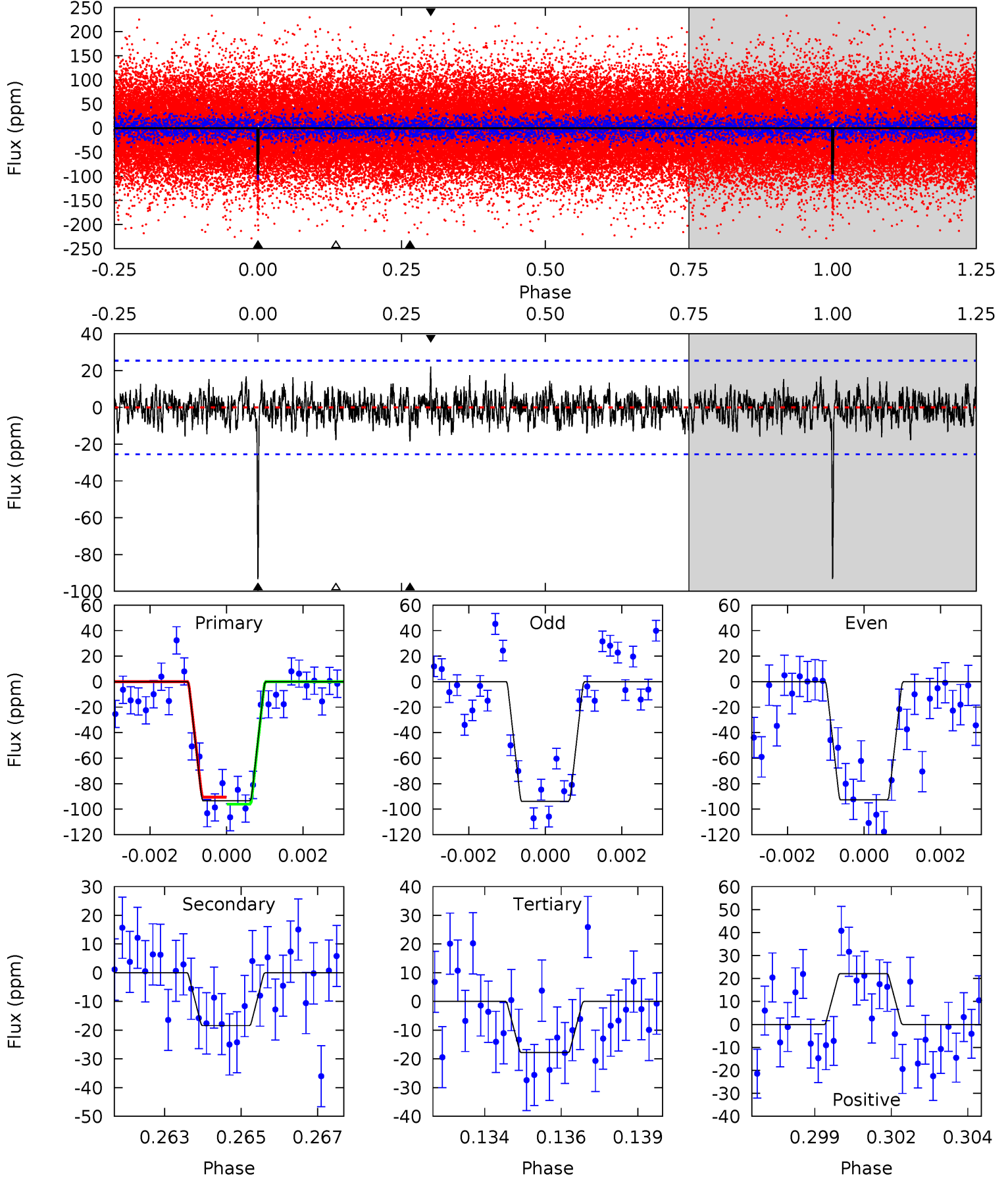
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.6	4.93	4.08	4.59	5.25	2.96	1.36	19.6	19.0	0.85	0.34	1.17	1.02	0.16	0.92



# Alt Model-Shift Uniqueness Test

007375348-02, P = 47.743809 Days, E = 112.417643 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
19.4	3.83	3.70	4.60	5.29	3.03	1.16	15.7	14.8	0.13	-0.77	0.11	0.99	0.19	0.57



### Stellar Parameters For KIC 007375348

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5949^{+106}_{-118}$	$4.272^{+0.120}_{-0.120}$	$0.180^{+0.150}_{-0.150}$	$1.292^{+0.209}_{-0.209}$	$1.140^{+0.079}_{-0.099}$	$0.745^{+0.414}_{-0.268}$
	+2%/-2%	+3%/-3%	+83%/-83%	+16%/-16%	+7%/-9%	+56%/-36%
Source	SPE59	SPE59	SPE59	DSEP		

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

### Secondary Eclipse Parameters for KIC 007375348-02 / KOI 0266.02

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-21 \pm 4$	$1.79^{+0.20}_{-0.19}$	$805^{+36}_{-38}$	$3912^{+167}_{-190}$	$259^{+82}_{-76}$
Alt.	$-18 \pm 5$	$1.39^{+0.17}_{-0.17}$	$803^{+36}_{-36}$	$4177^{+241}_{-265}$	$377^{+146}_{-130}$

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

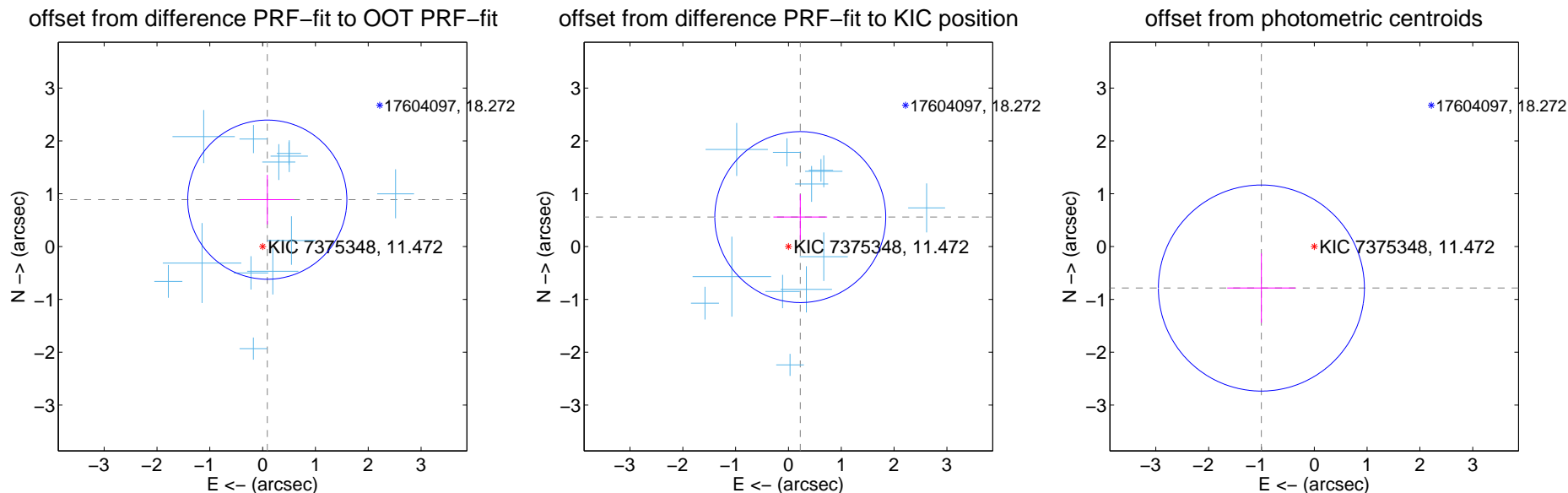
## DV Centroid Data

Supplemental centroid analysis for 007375348-02. **Kepler magnitude: 11.47.** Transit SNR 15.09

There are 12 quarters with good PRF difference image offsets

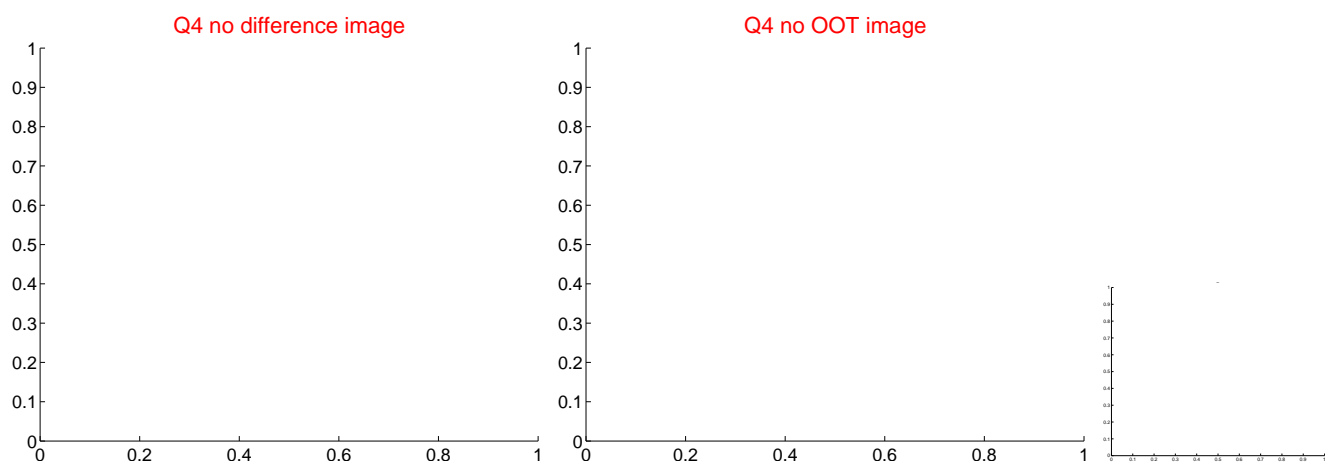
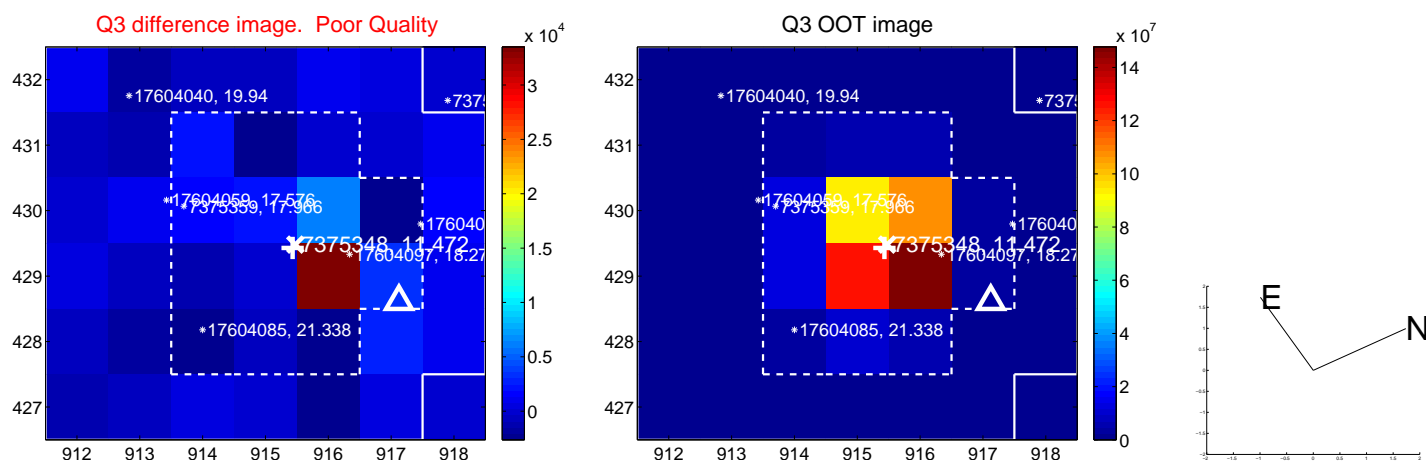
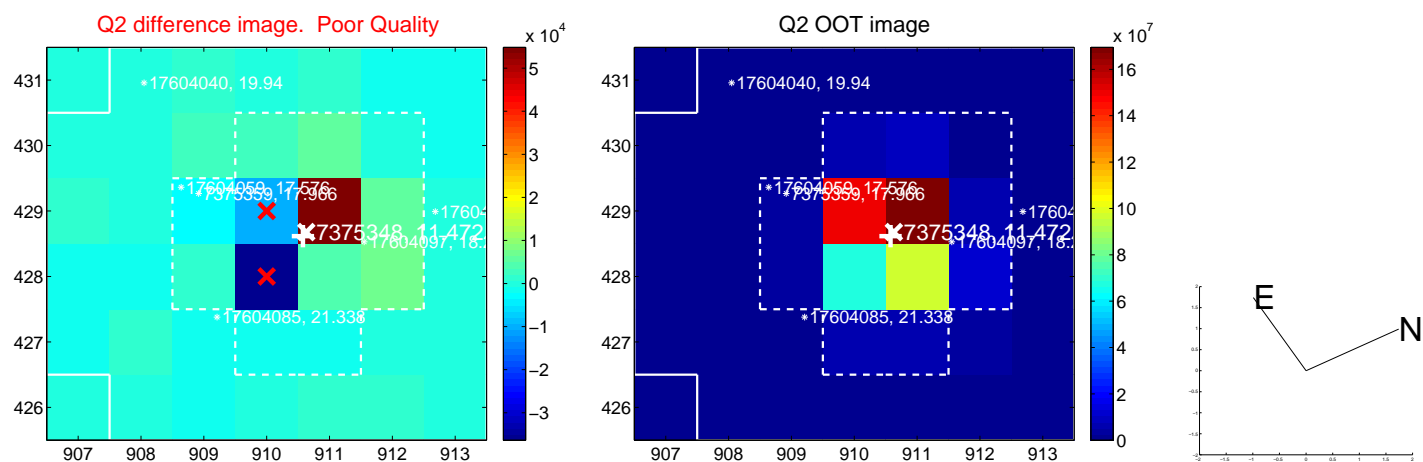
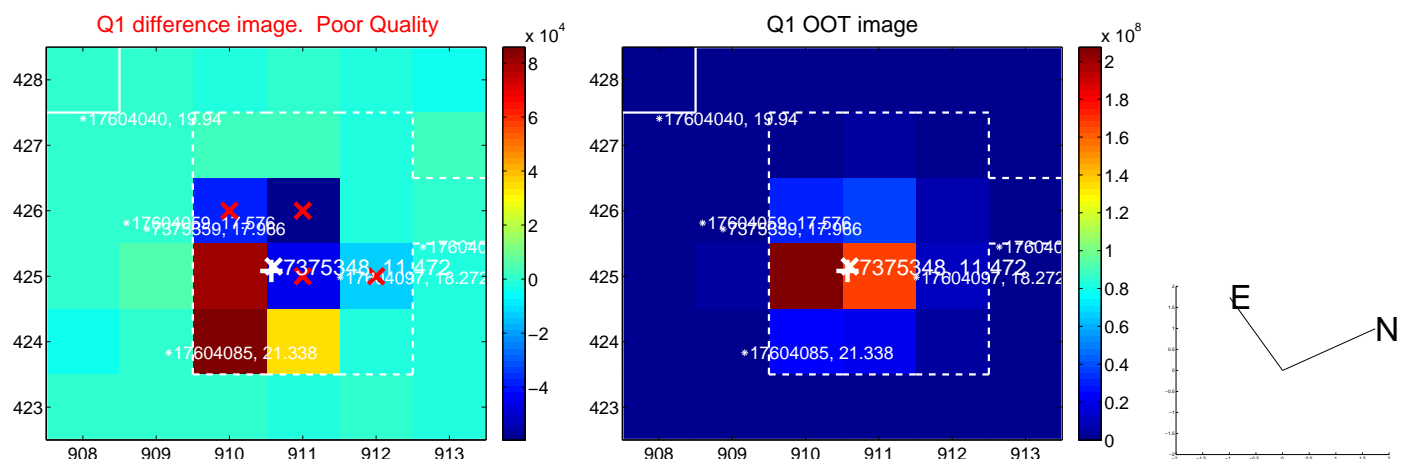
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.893 \pm 0.502$	1.78	$-0.088 \pm 0.513$	$0.888 \pm 0.468$
PRF-fit source offset from KIC position	$0.601 \pm 0.539$	1.12	$-0.224 \pm 0.508$	$0.558 \pm 0.429$
photometric centroid source offset	$1.27 \pm 0.65$	1.96	$1.00 \pm 0.65$	$-0.78 \pm 0.66$



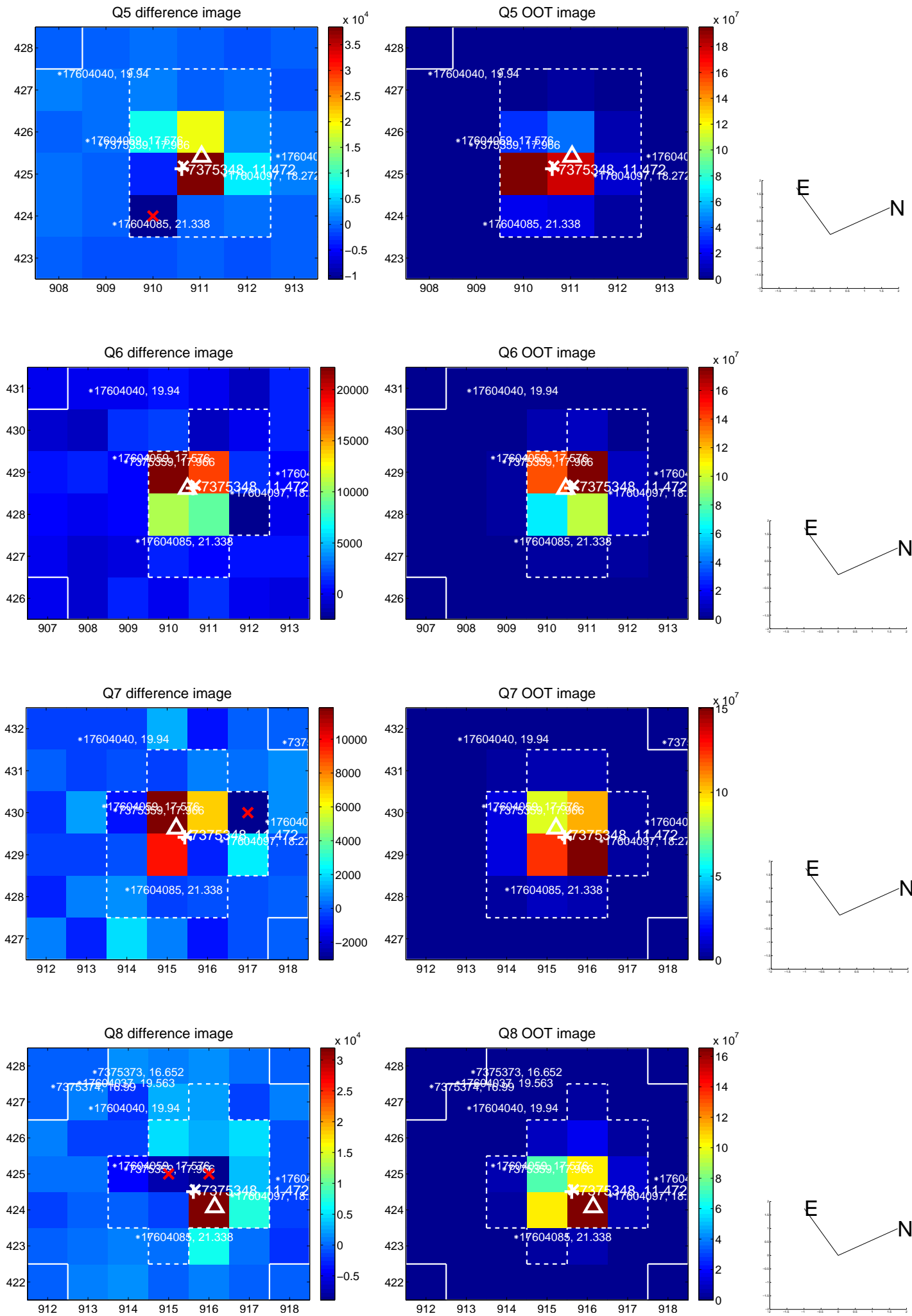
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

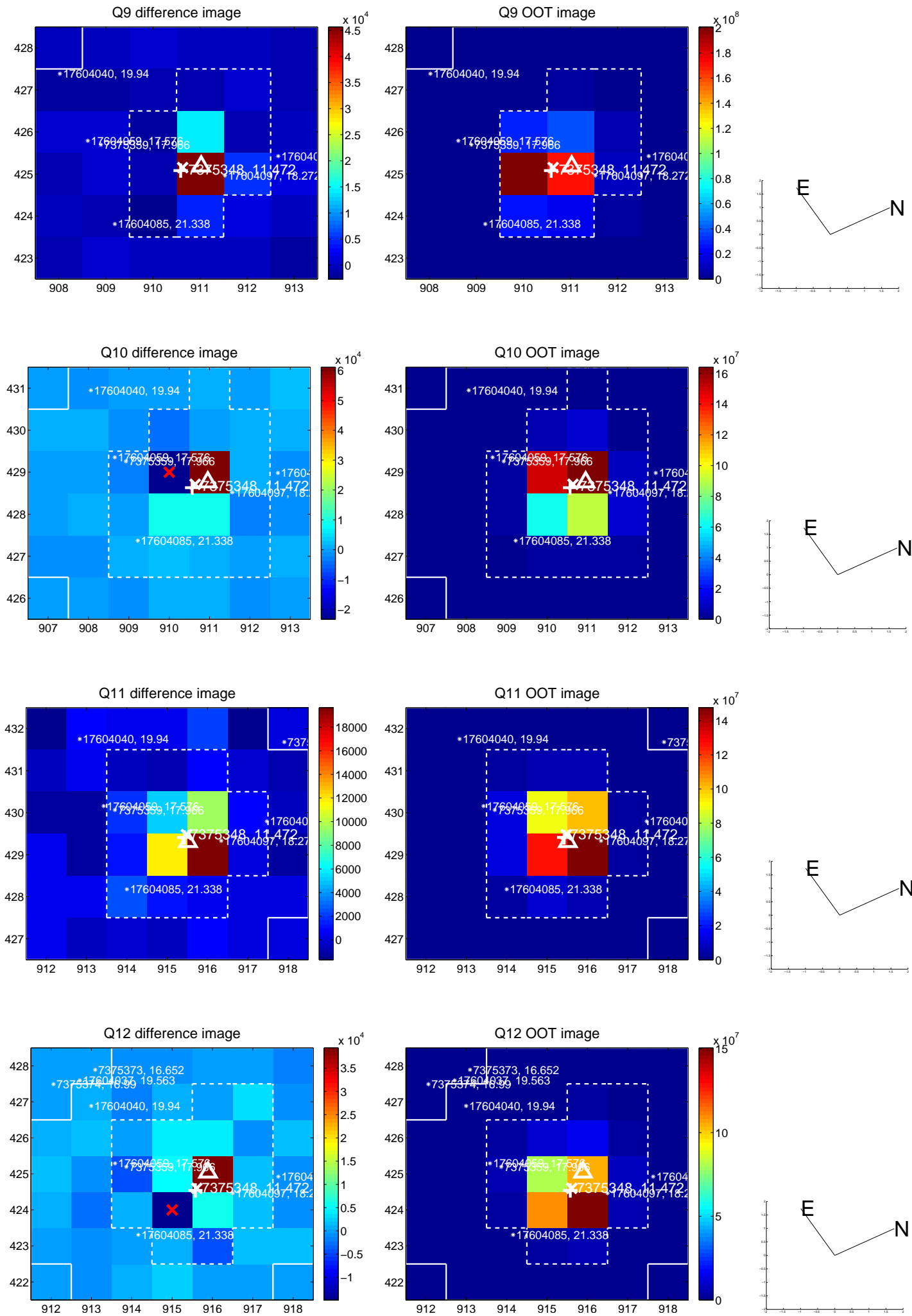




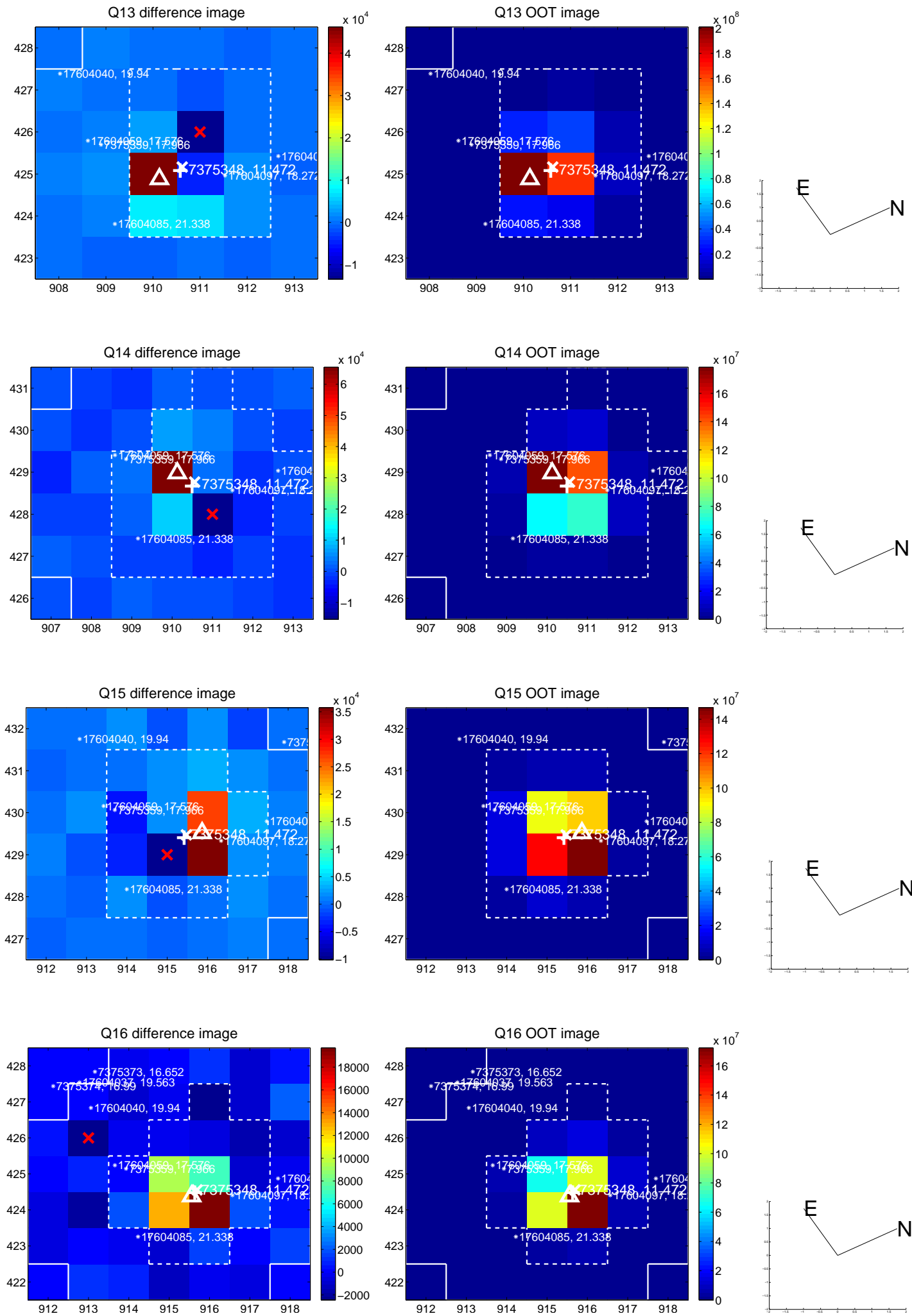
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



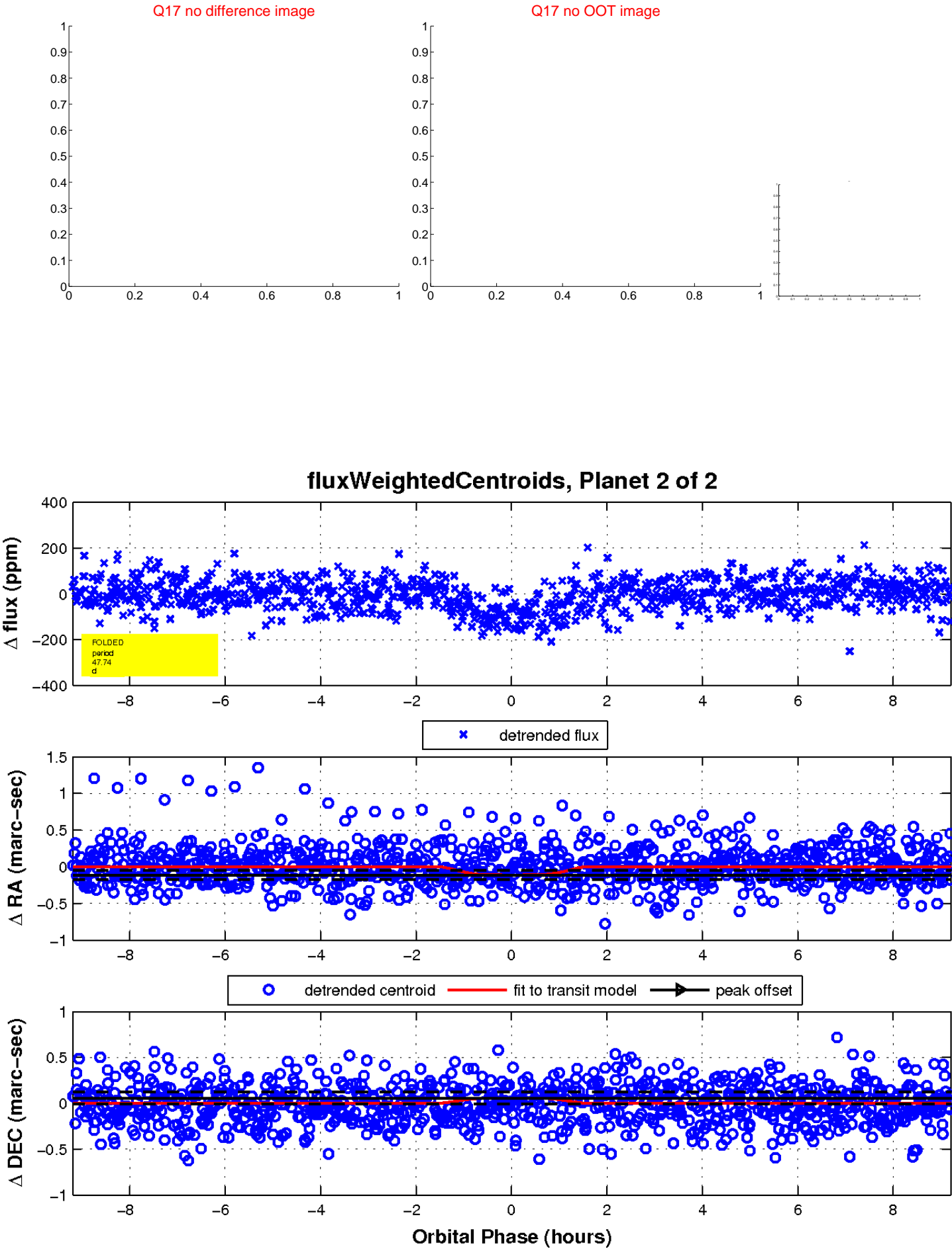
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

