

# KIC 011975363

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011975363-01	OBS	6248.01	1.759201	132.656827	364697.8	2.500	17093.1	-1.0	0.96	5721	51.86	1122.48
011975363-02	OBS	No	3.958379	133.288714	22551.2	15.000	1221.4	-1.0	0.96	5721	14.28	380.69

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011975363-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_ALT—CENT_NOFITS
011975363-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_NOFITS—HALO_GHOST

**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.

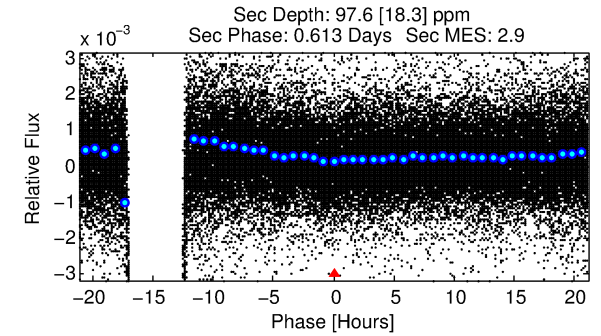
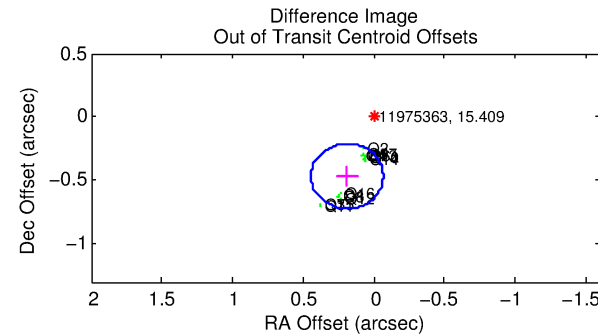
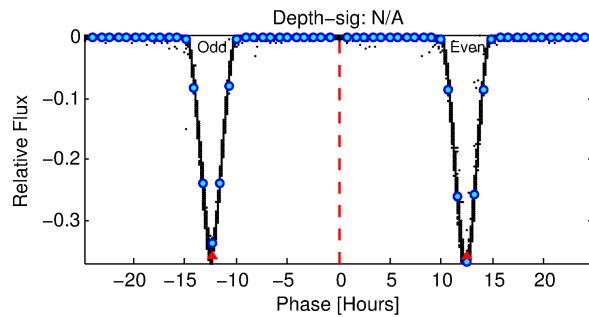
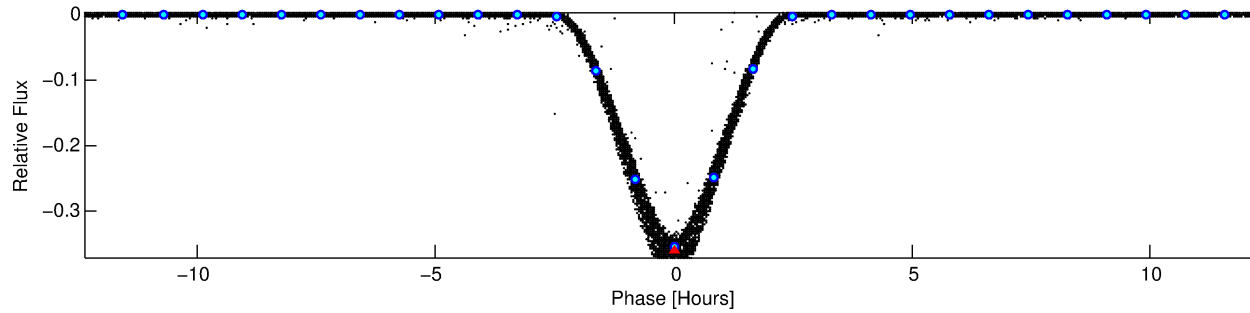
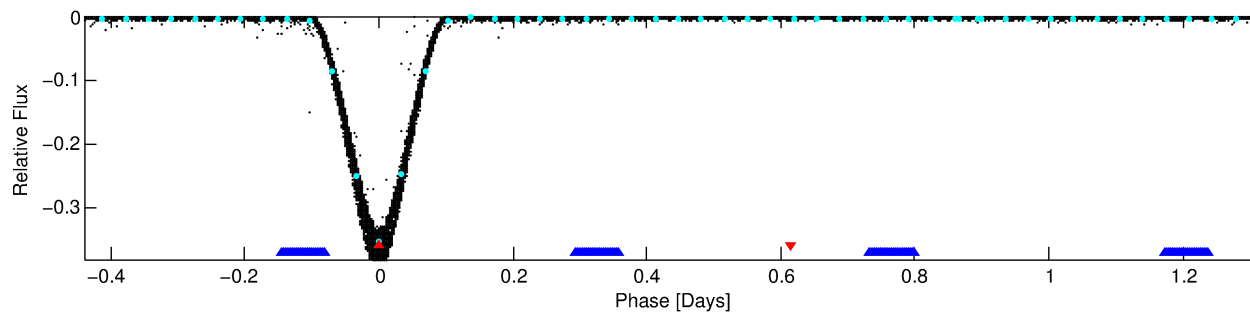
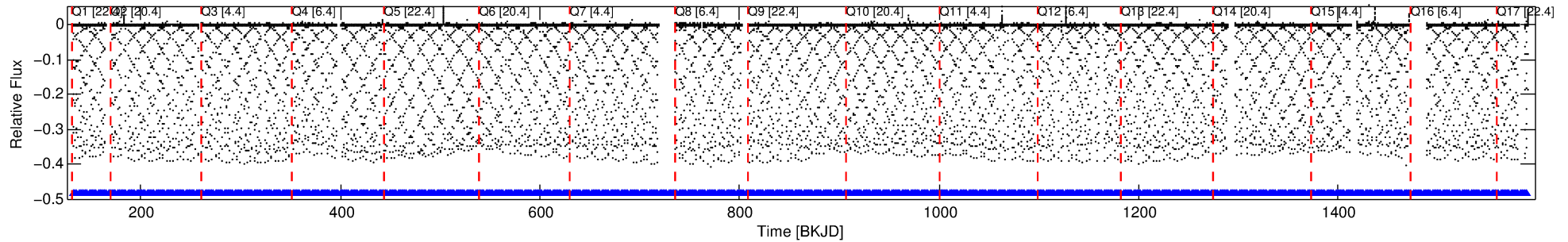
## Ephemeris Match Information For 011975363-01

No Significant Match Found

# DV One-Page Summary

KIC: 11975363 Candidate: 1 of 2 Period: 1.759 d  
KOI: K06248 Corr: No Ephemeris Match

Kp: 15.41 R\*: 0.96 Rs Teff: 5721.0 K Logg: 4.45 Fe/H: 0.000



## TPS TCE Results:

Period = 1.75920 d  
Epoch = 132.6568 BKJD

DV fit results are unavailable

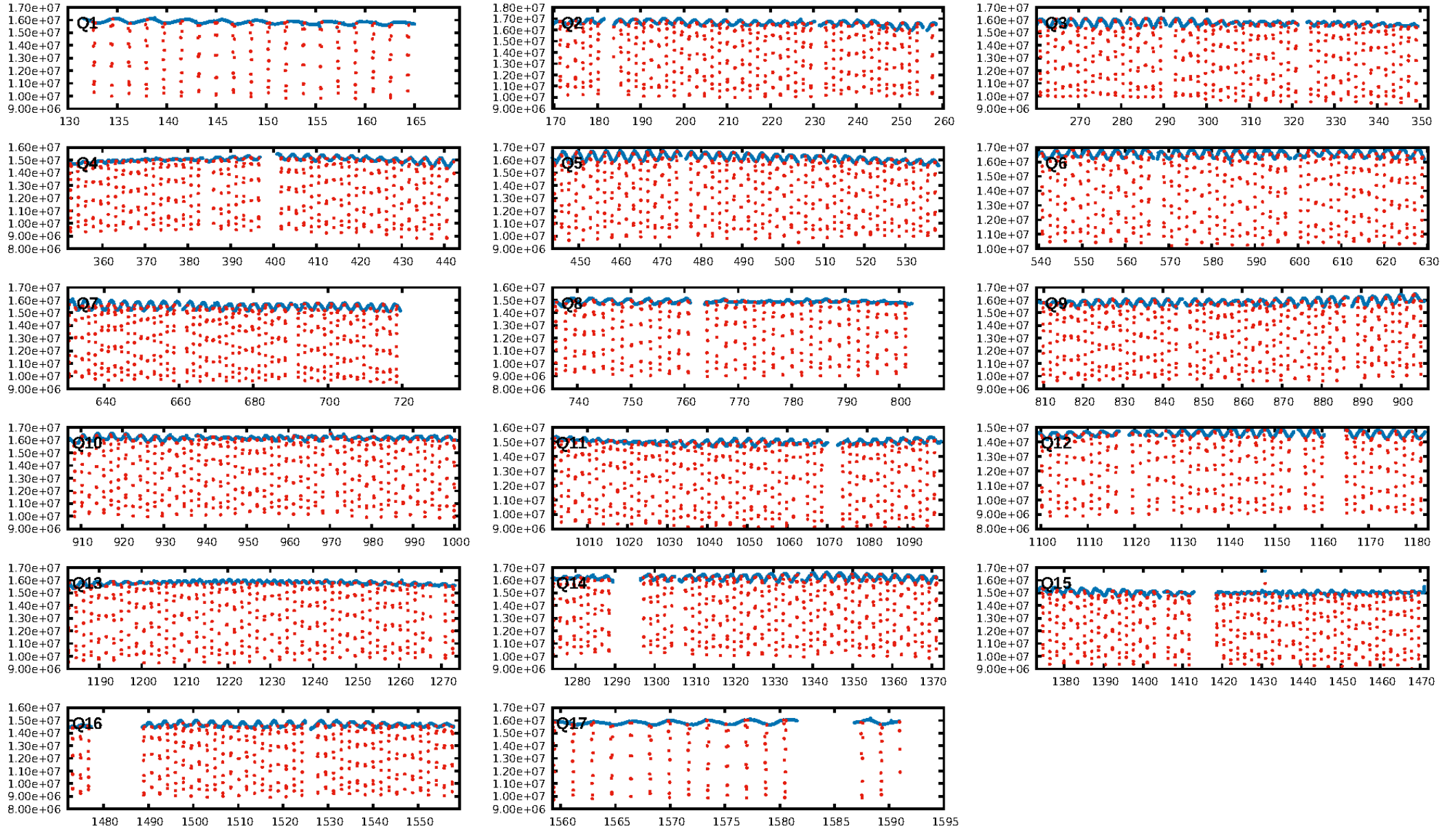
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 99.9% [3.47 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [729/729]  
GhostDiagnostic-chr: 1.657  
Centroid-sig: N/A  
Centroid-so: 0.728 arcsec [1108.14 $\sigma$ ]  
OotOffset-rm: 0.503 arcsec [5.91 $\sigma$ ]  
KicOffset-rm: 0.066 arcsec [0.98 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

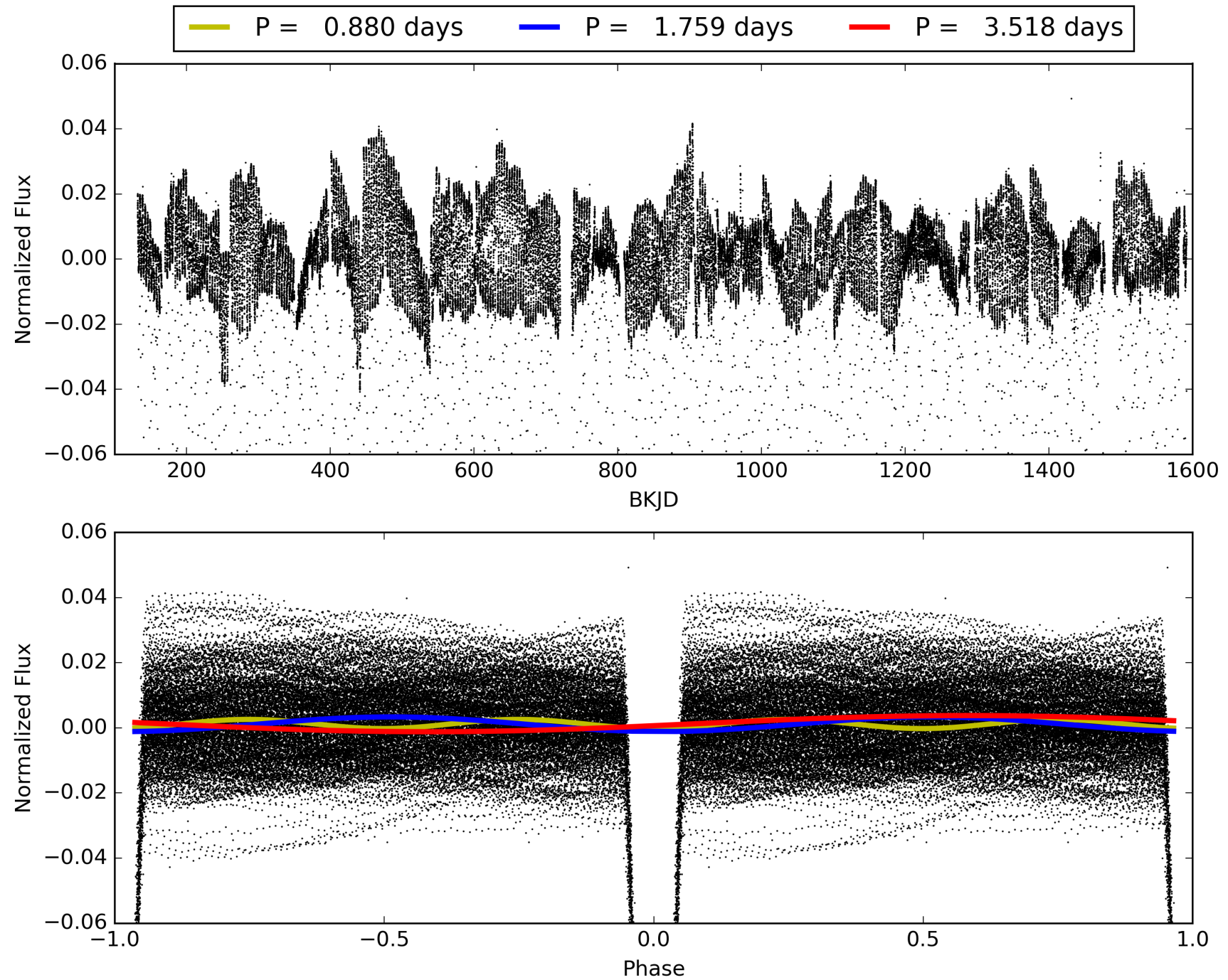
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:47:56 Z

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

# TCE 011975363-01, PDC Light Curves

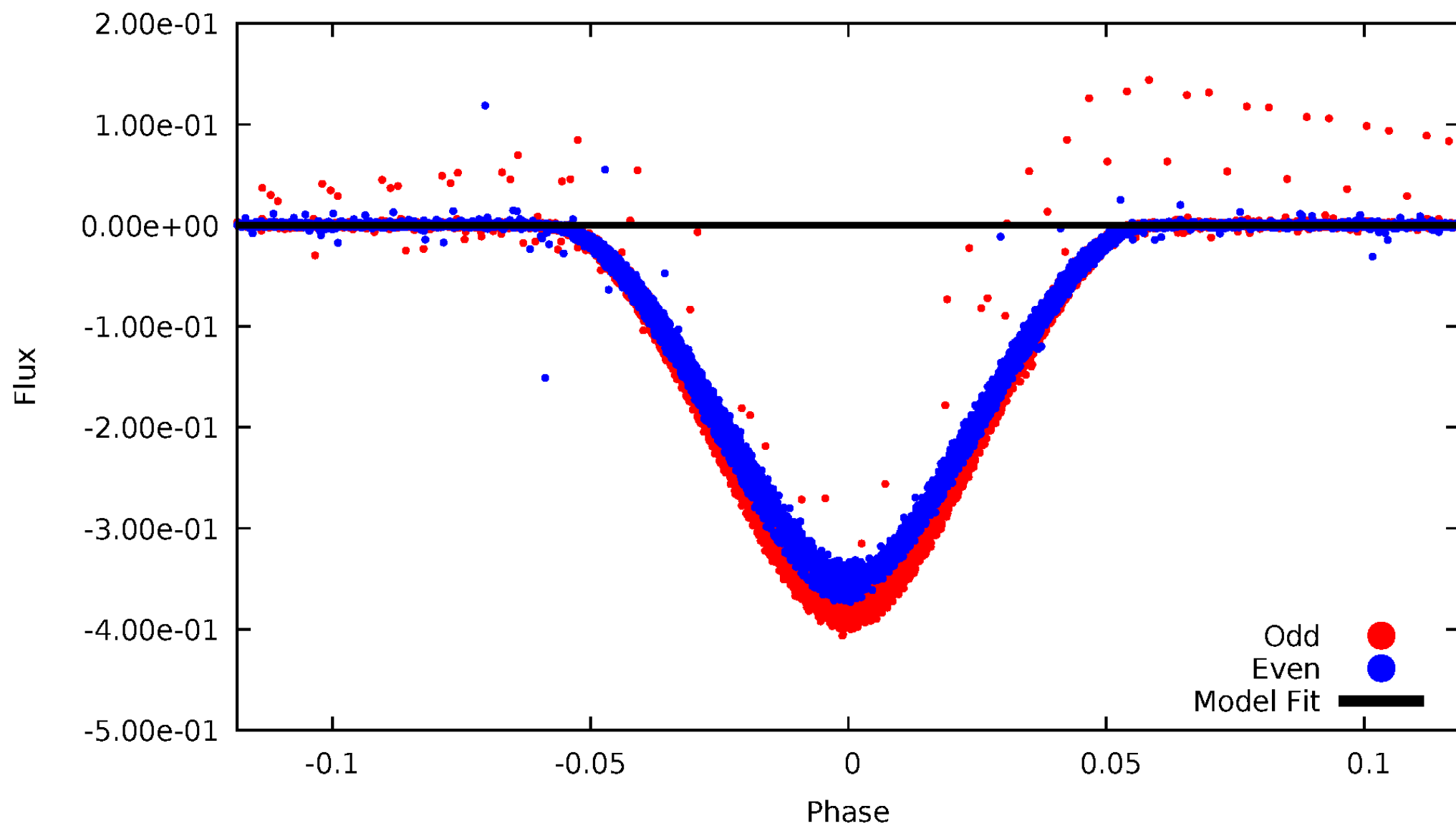


TCE 011975363-01



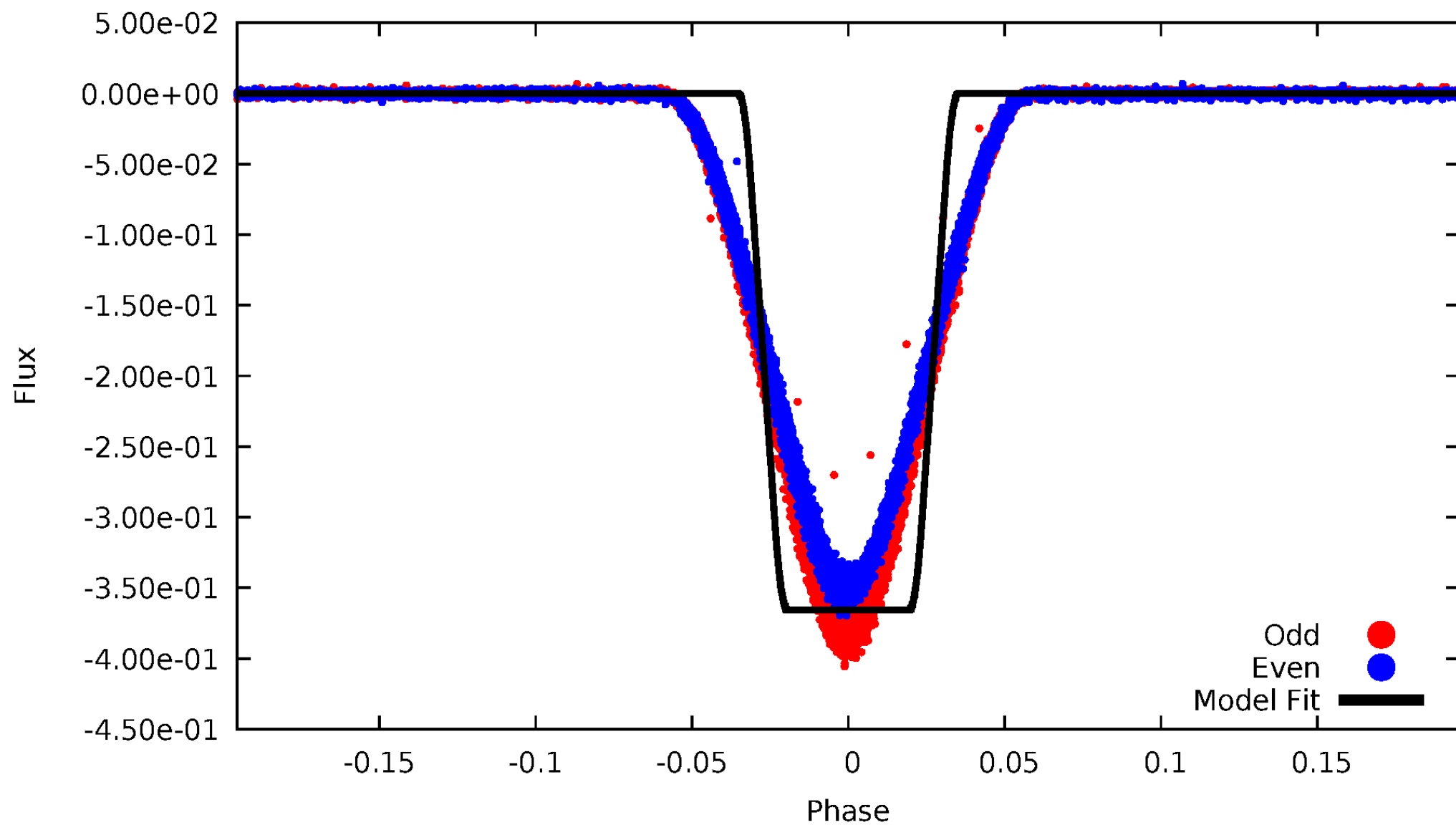
# DV Odd/Even

TCE 011975363-01



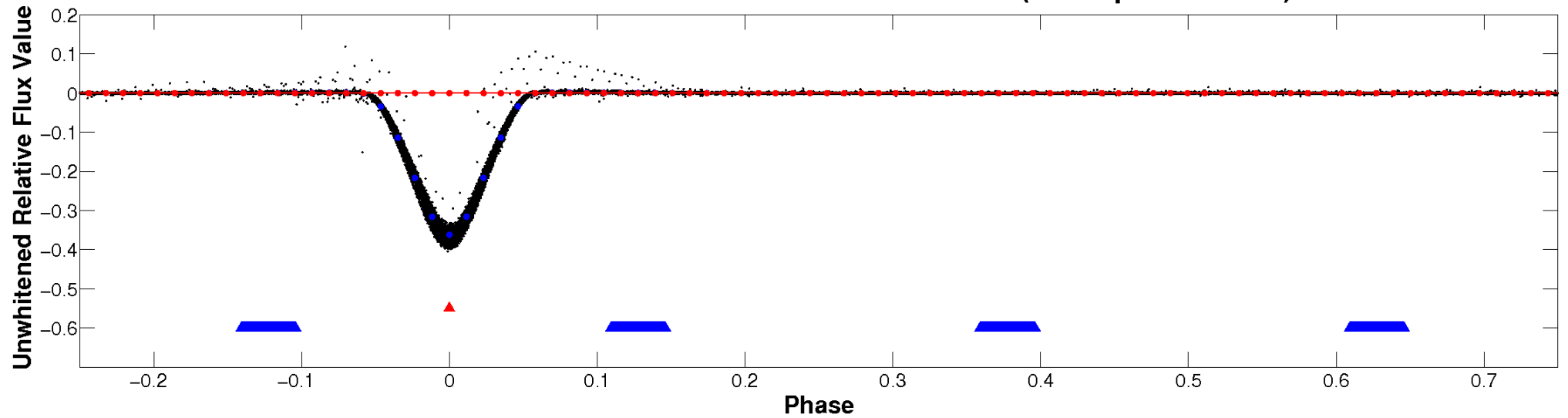
# ALT Odd/Even

TCE 011975363-01



# Non-Whitened Vs. Whitened Light Curve

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

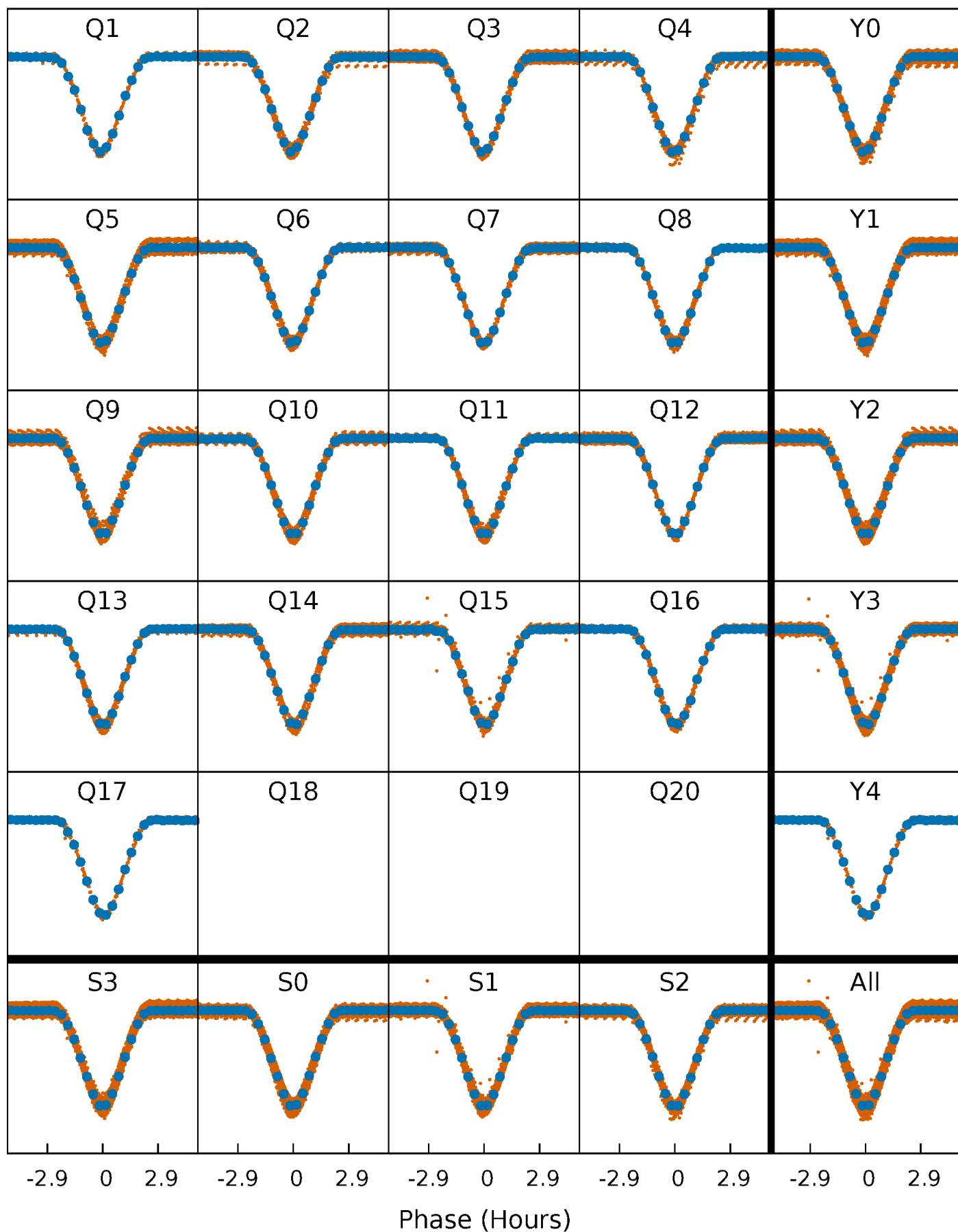


**Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

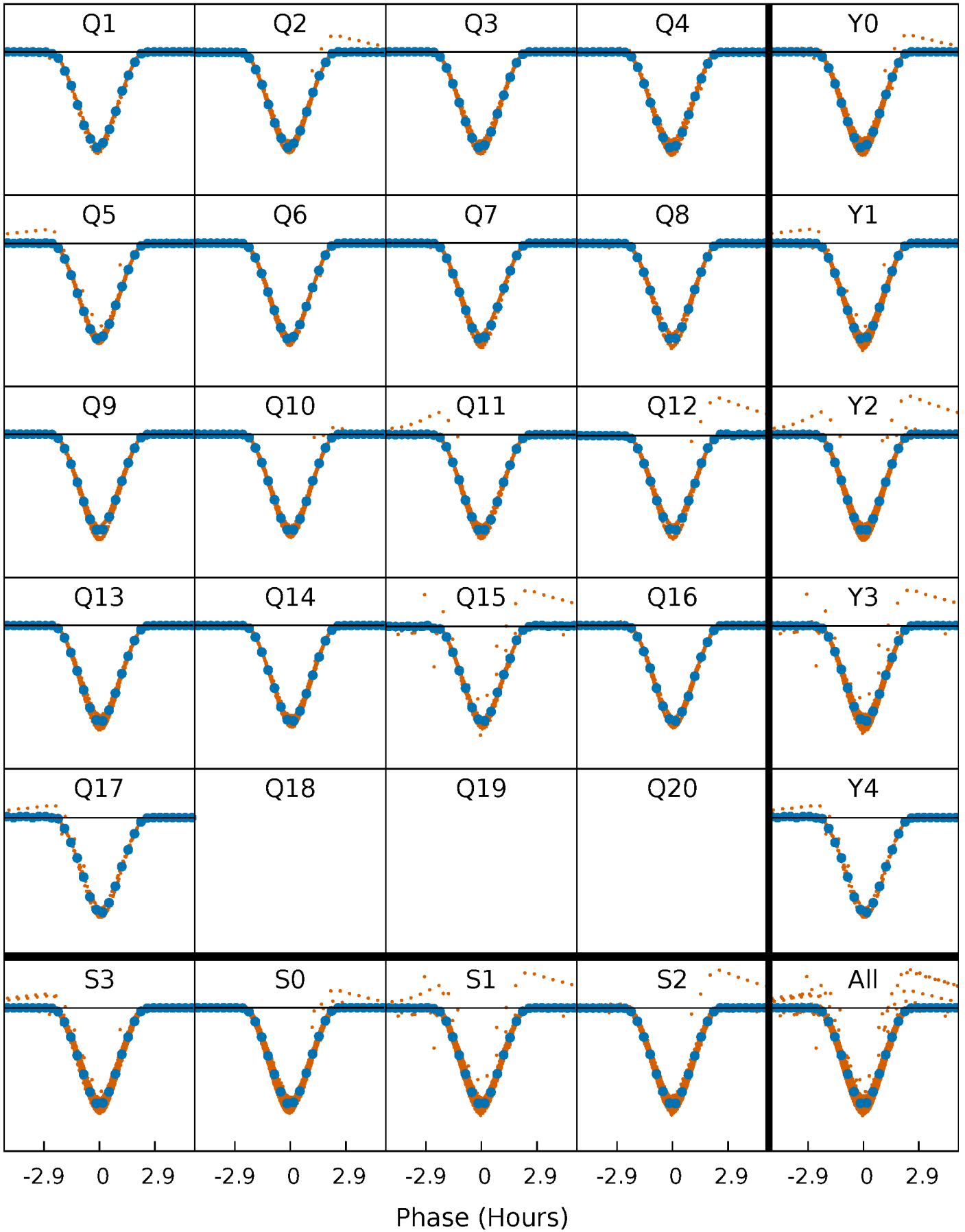
TCE 011975363-01 P= 1.759201 Days  $T_0=132.656827$  (BKJD)





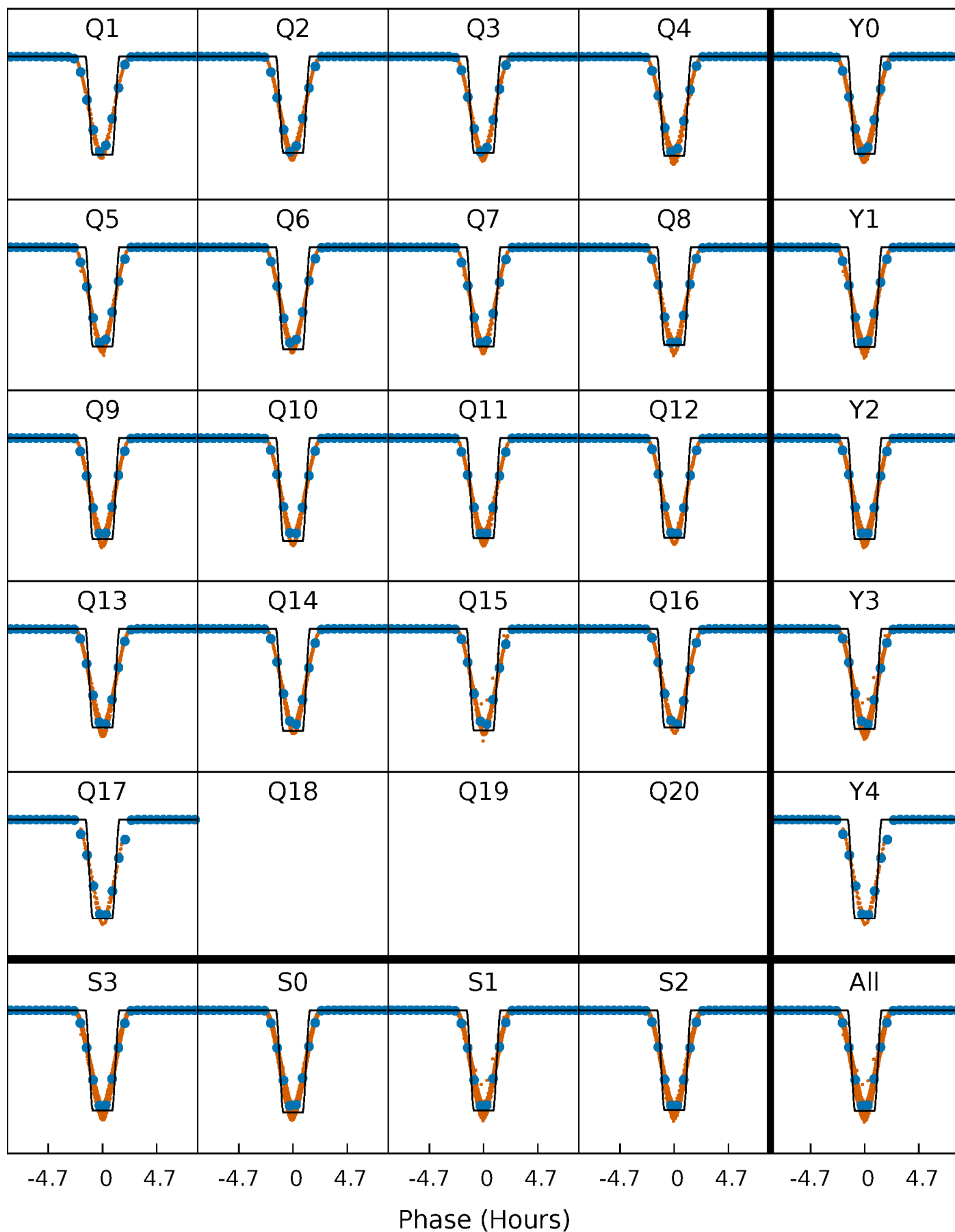
# DV Quarter-Phased Transit Curves

TCE 011975363-01 P= 1.759201 Days  $T_0=132.656827$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

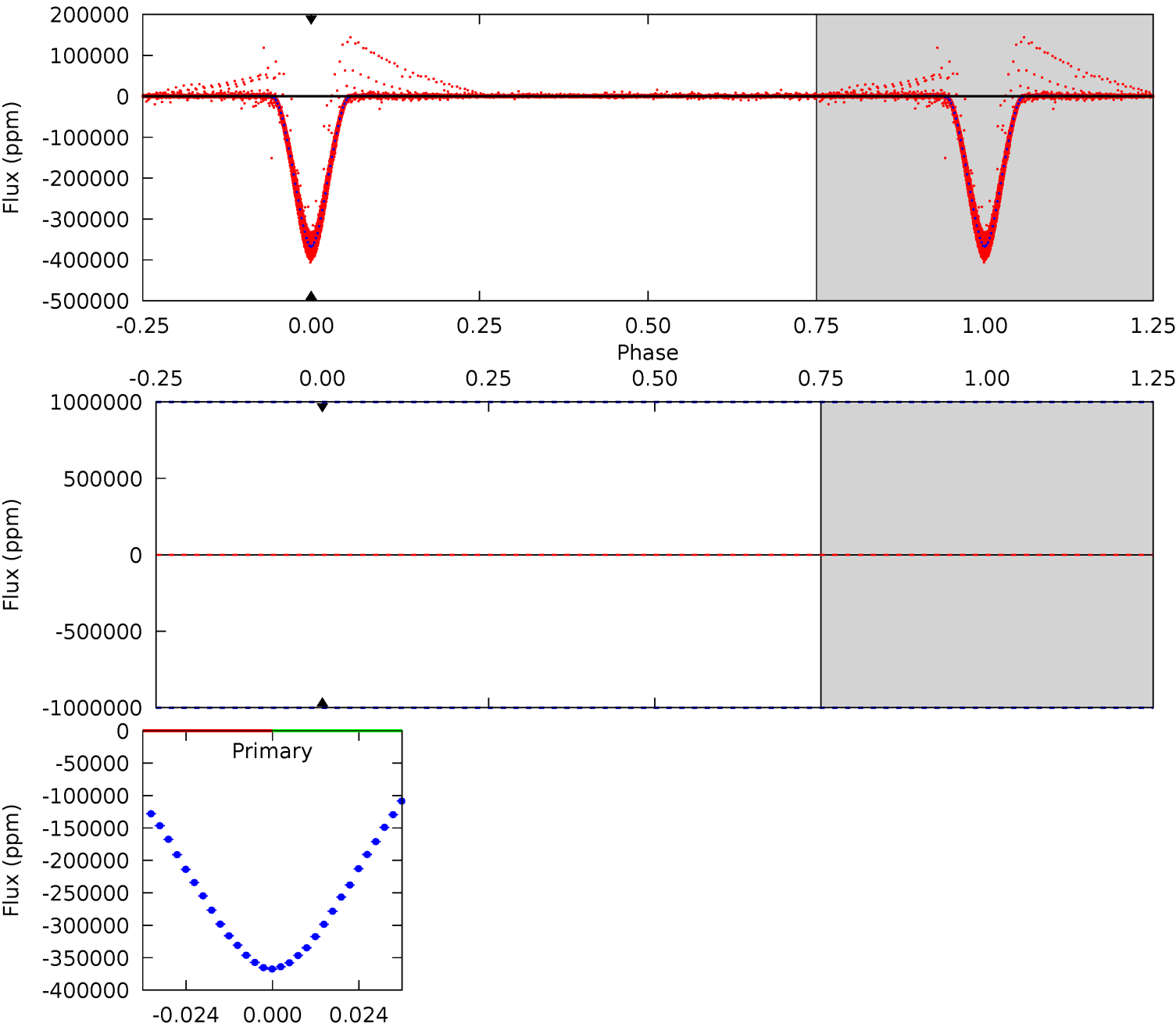
TCE 011975363-01 P= 1.759201 Days  $T_0=132.657036$  (BKJD)



# DV Model-Shift Uniqueness Test

011975363-01, P = 1.759201 Days, E = 130.897626 Days

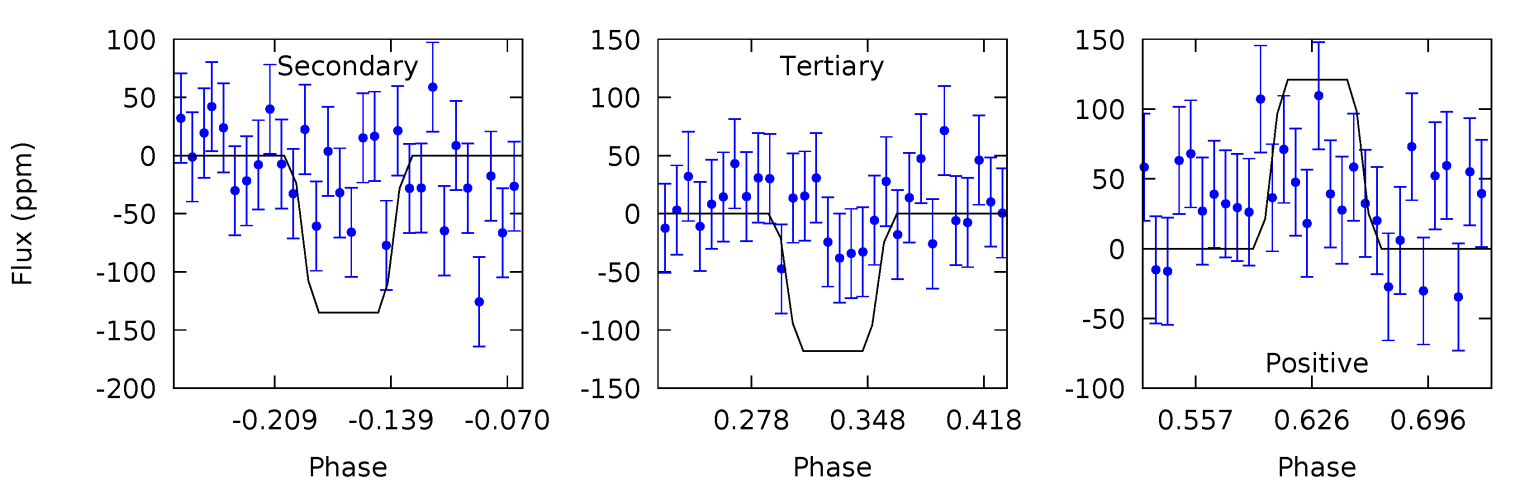
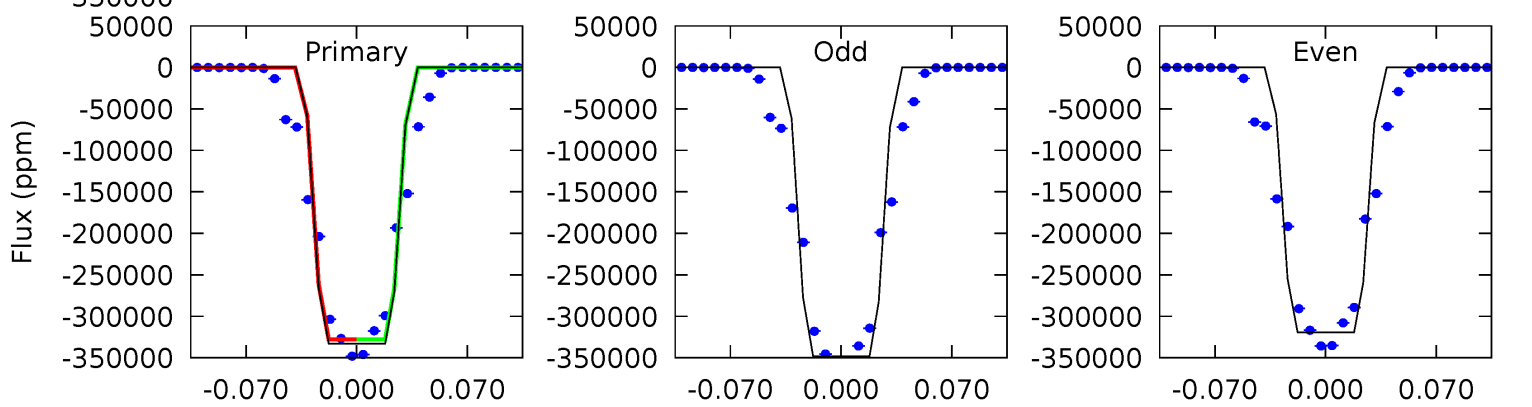
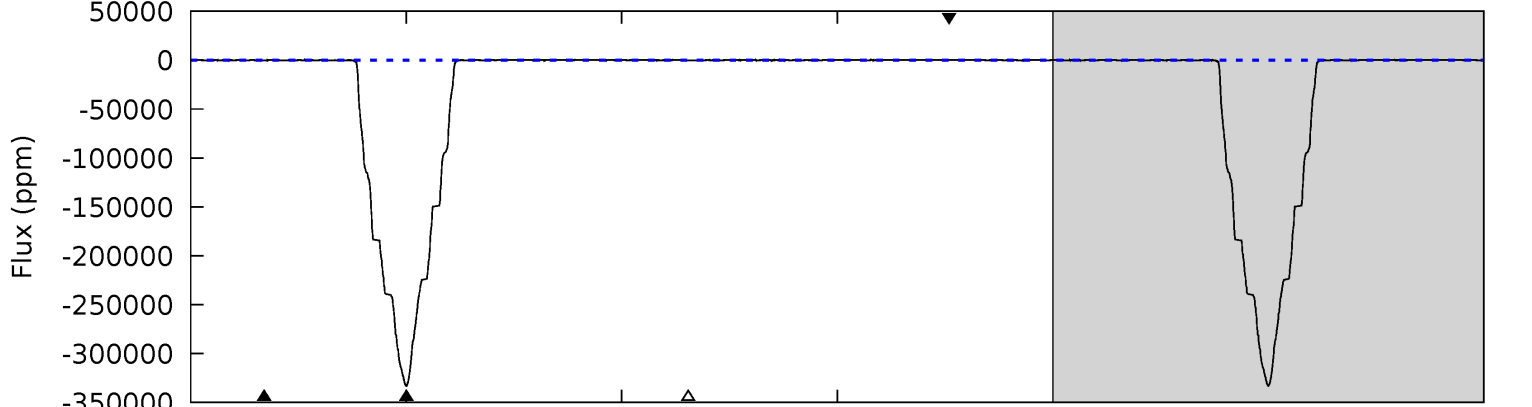
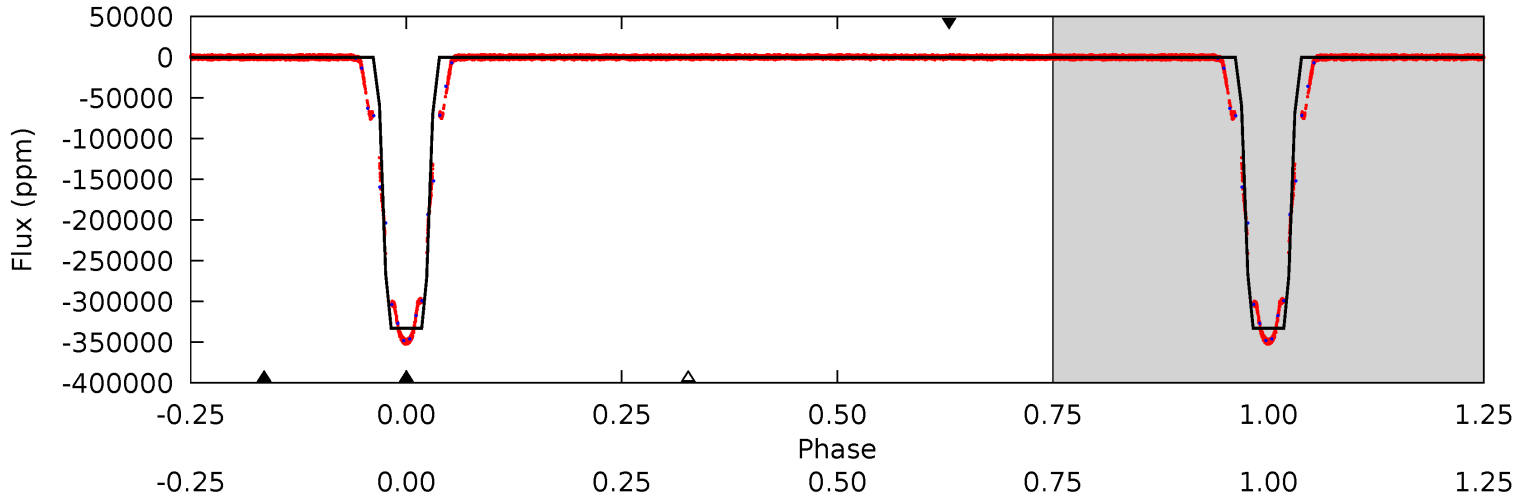
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

011975363-01, P = 1.759201 Days, E = 130.897835 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
8324	3.37	2.95	3.03	4.64	1.81	1.11	8321	8321	0.42	0.34	412.2	1.00	0.00	0



### Stellar Parameters For KIC 011975363

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5721^{+173}_{-190}$	$4.453^{+0.081}_{-0.189}$	$0.000^{+0.250}_{-0.300}$	$0.961^{+0.281}_{-0.120}$	$0.956^{+0.125}_{-0.102}$	$1.520^{+0.522}_{-0.755}$
	+3%/-3%	+2%/-4%	+inf%/-inf%	+29%/-12%	+13%/-11%	+34%/-50%
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 011975363-01 / KOI 6248.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$53.66^{+12.29}_{-11.88}$	$2082^{+143}_{-111}$	$-2220^{+7055}_{-2405}$	$0.224^{+16.853}_{-13.792}$
Alt.	$-135 \pm 40$	$65.71^{+12.87}_{-12.26}$	$2089^{+131}_{-103}$	$-2533^{+65}_{-81}$	$0.013^{+0.008}_{-0.006}$

$T_{max}$  = 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

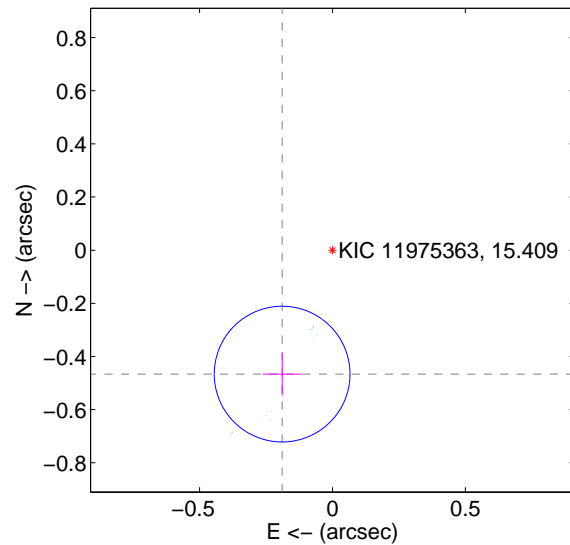
Supplemental centroid analysis for 011975363-01. Kepler magnitude: 15.41. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

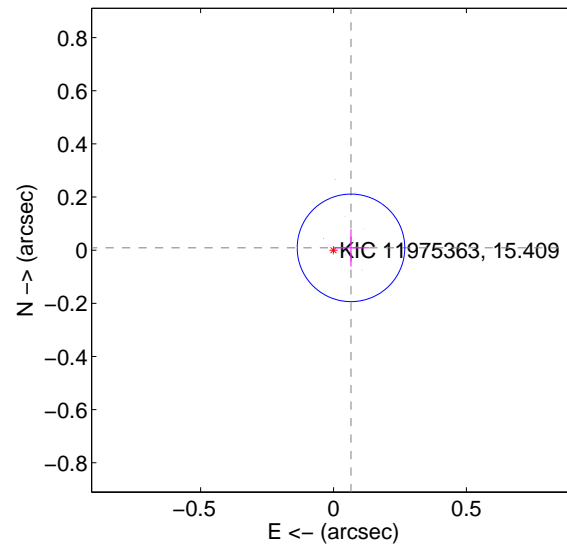
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.503 \pm 0.085$	5.91	$0.190 \pm 0.074$	$-0.466 \pm 0.080$
PRF-fit source offset from KIC position	$0.066 \pm 0.067$	0.98	$-0.066 \pm 0.067$	$0.009 \pm 0.071$
photometric centroid source offset	$0.73 \pm 0.00$	1108.14	$0.52 \pm 0.00$	$0.51 \pm 0.00$

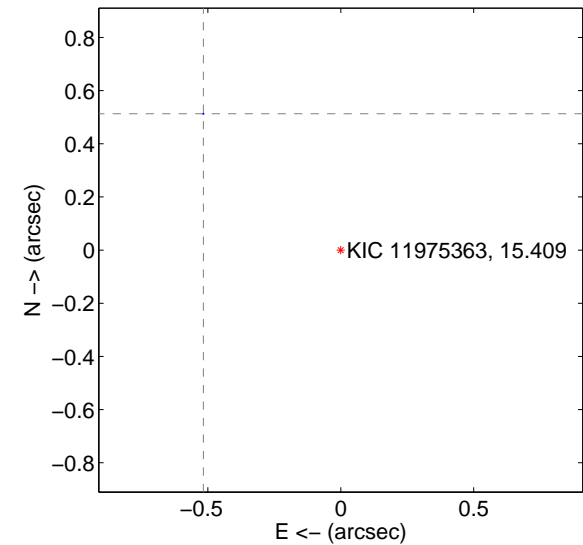
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

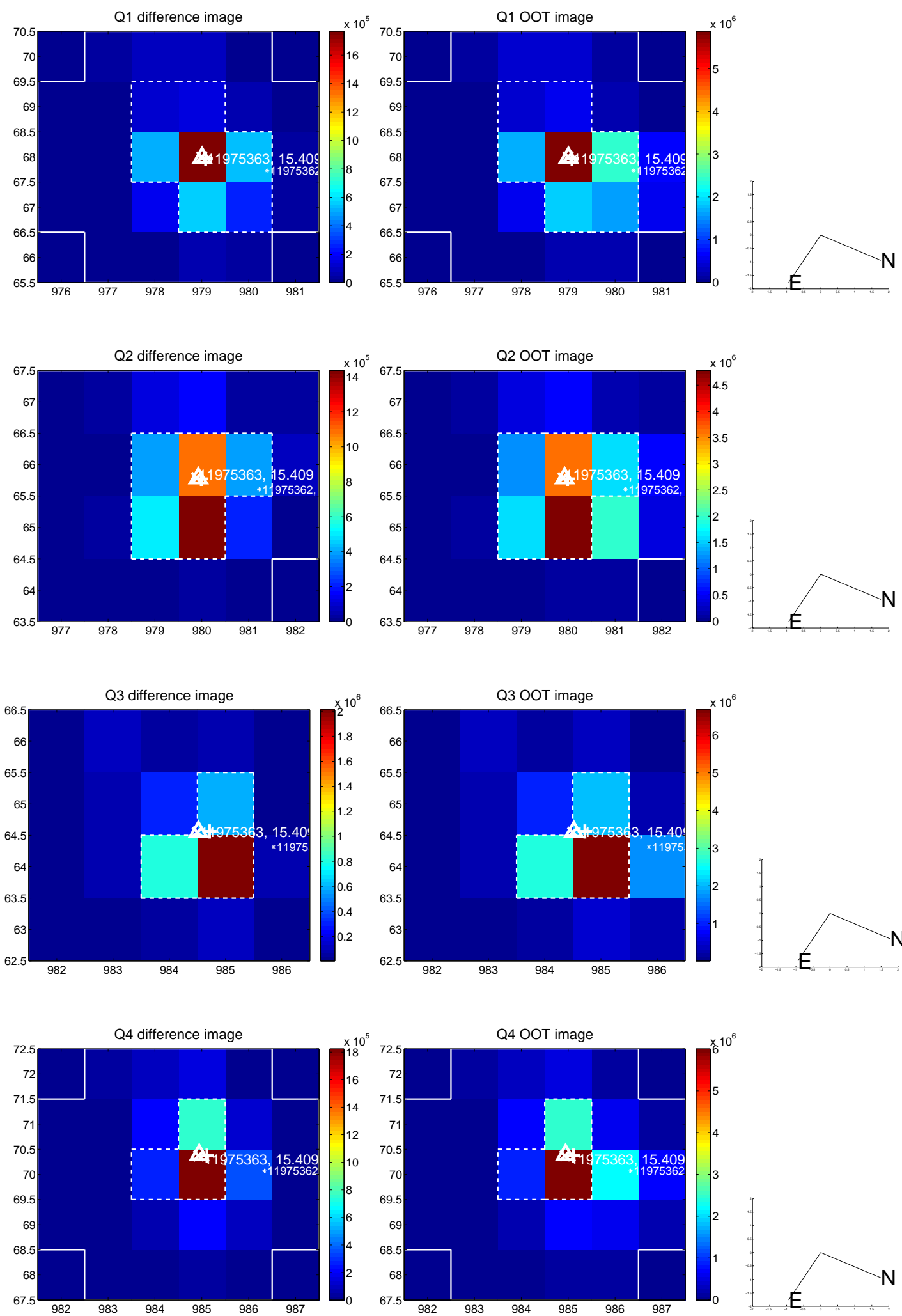


offset from photometric centroids

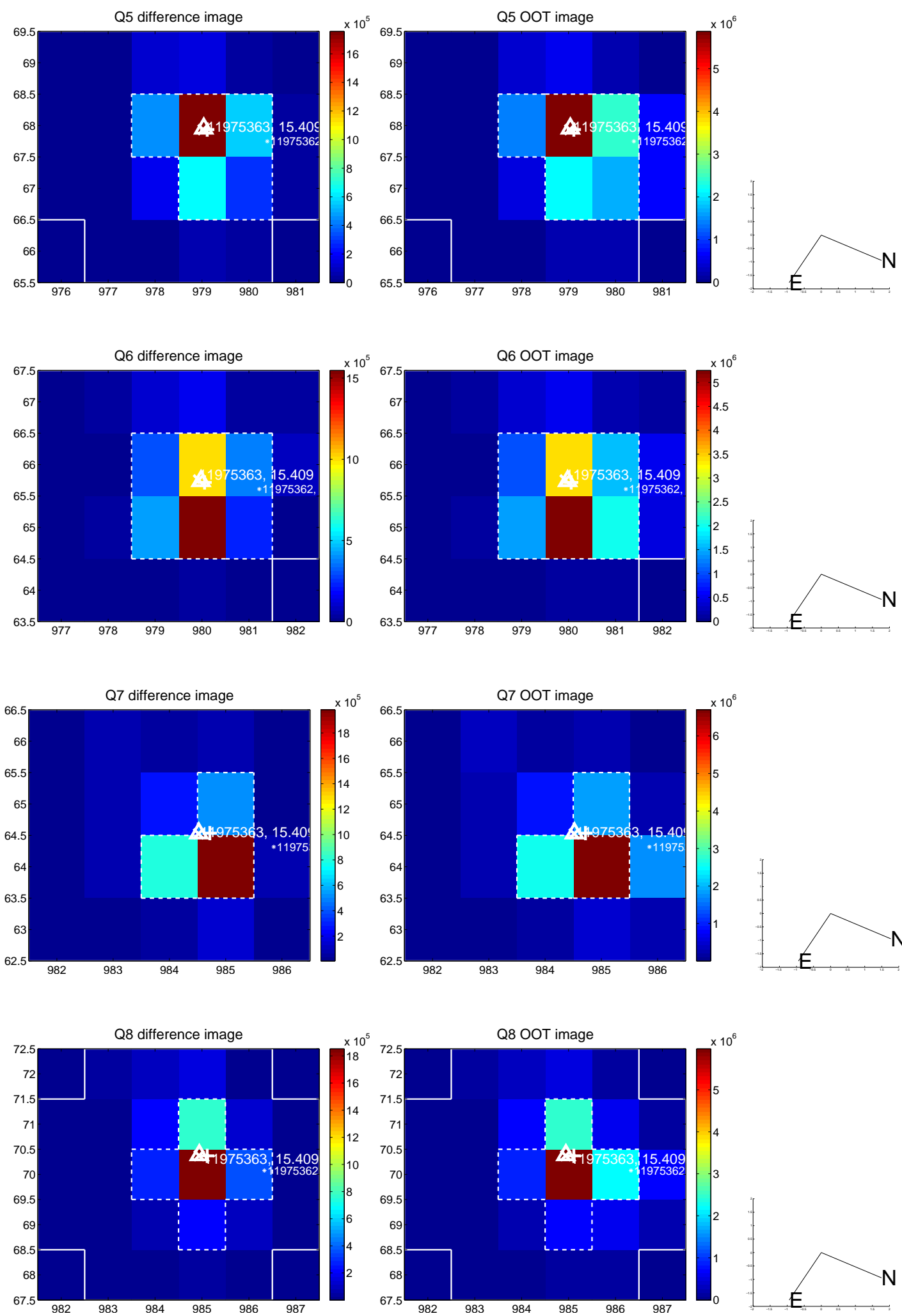


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

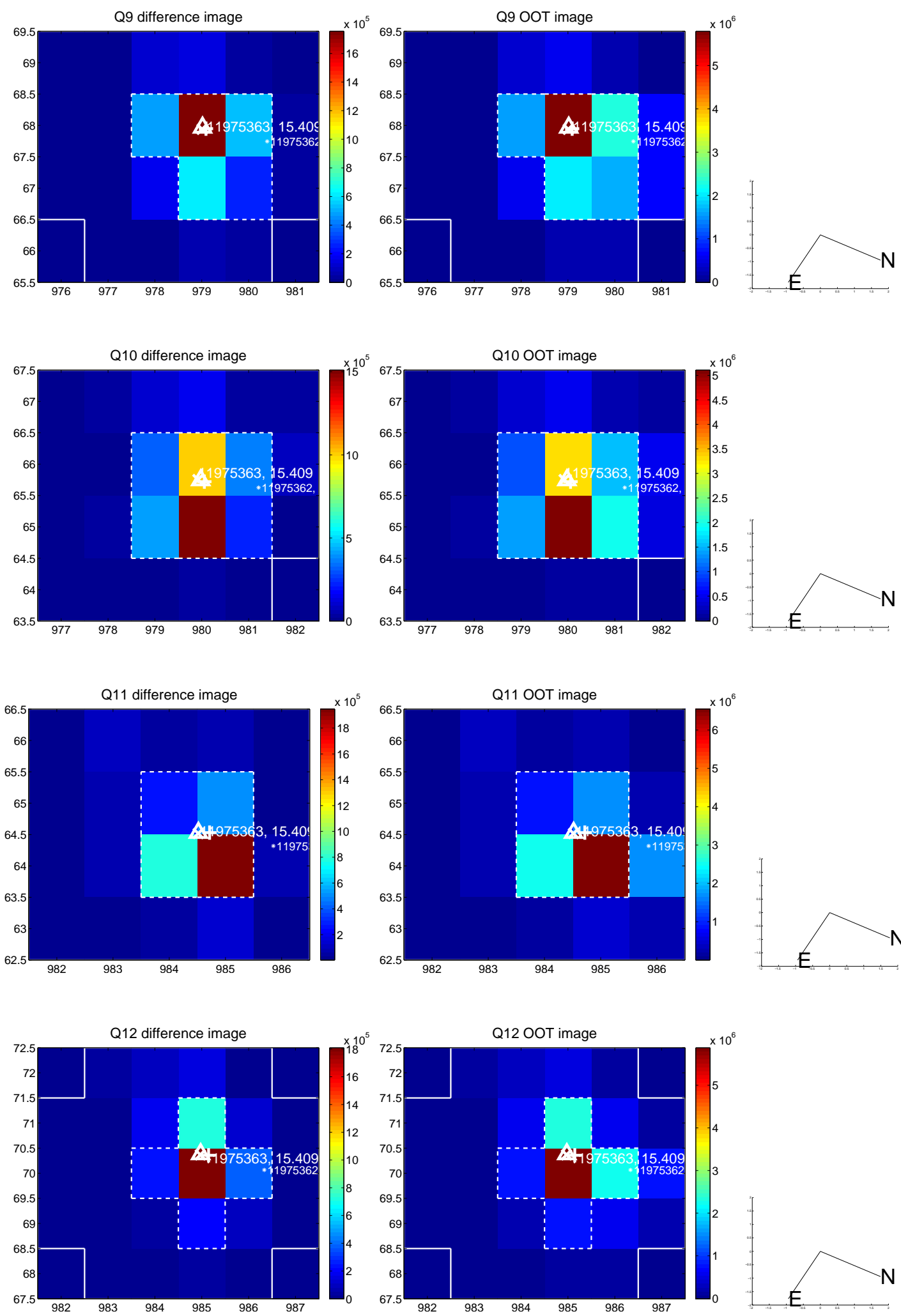


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

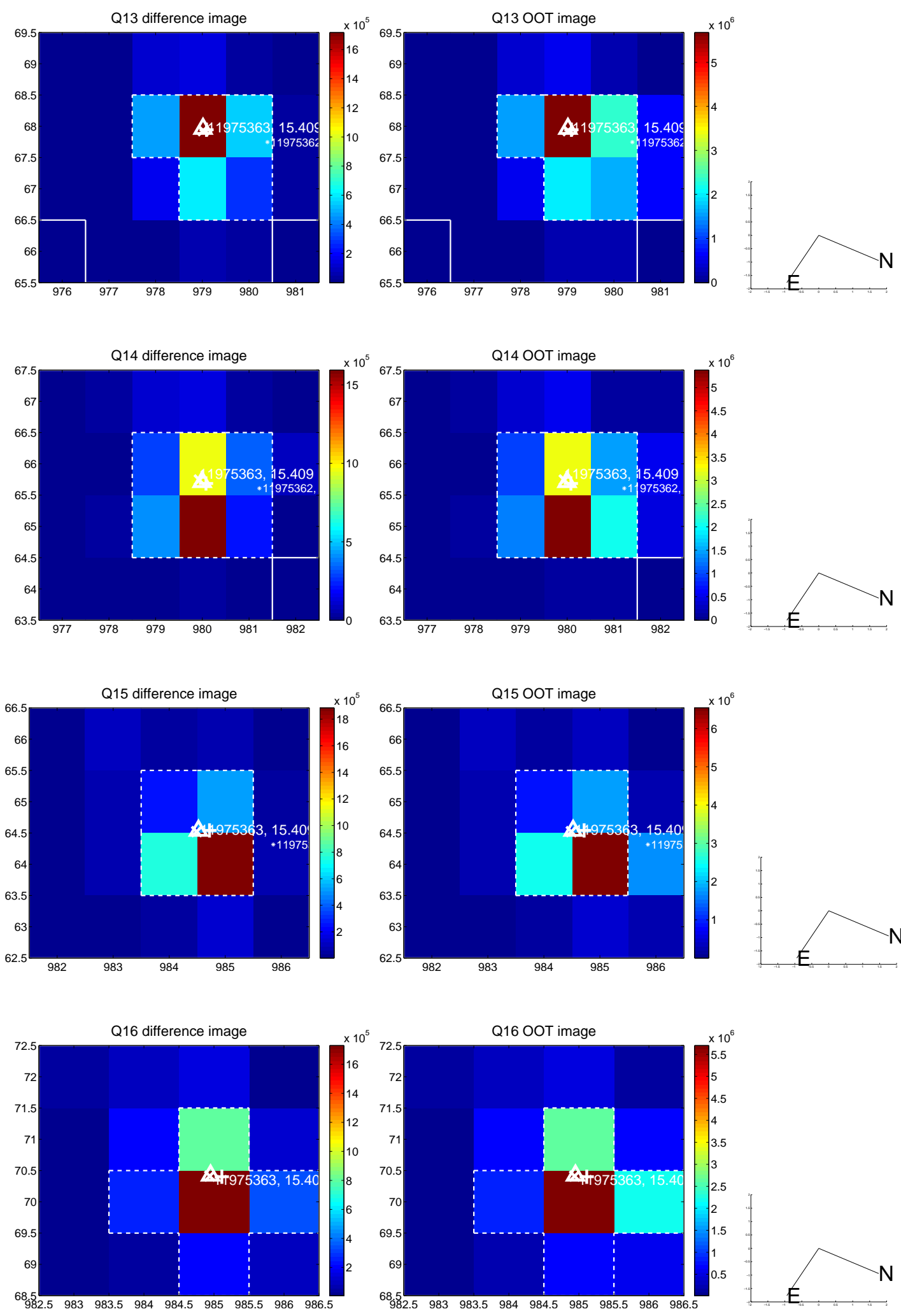




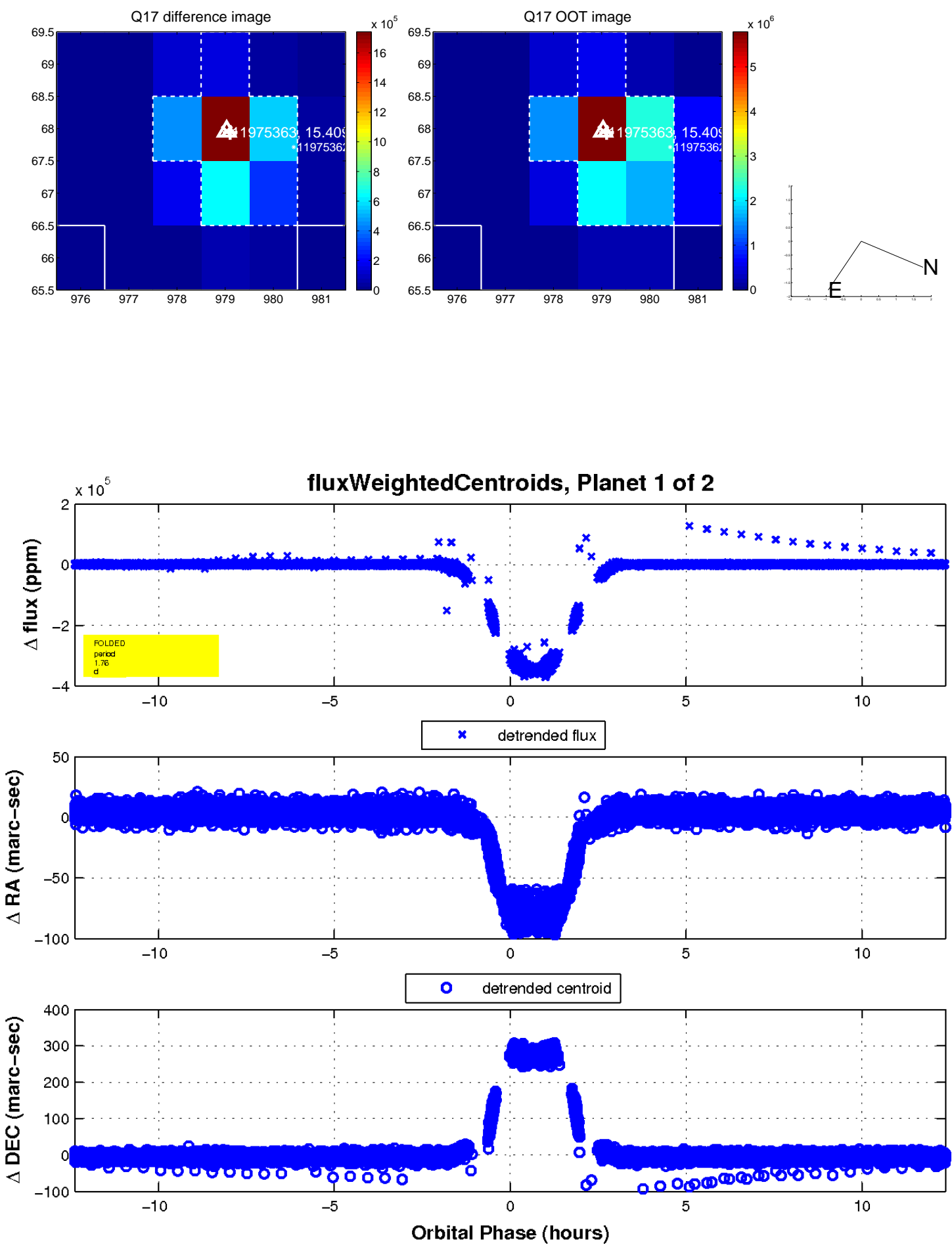
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

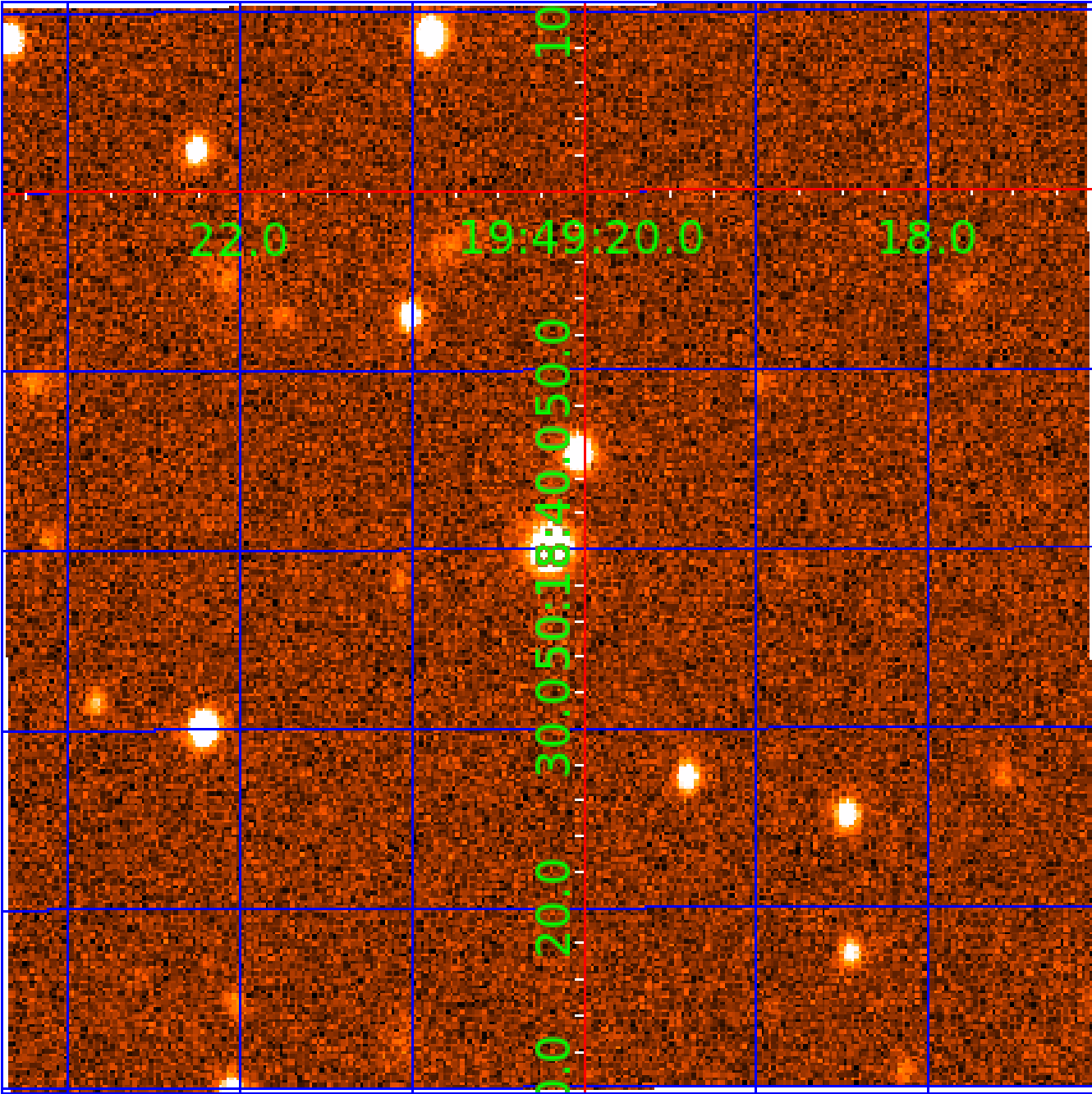


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 011975363

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011975363-01	OBS	6248.01	1.759201	132.656827	364697.8	2.500	17093.1	-1.0	0.96	5721	51.86	1122.48
011975363-02	OBS	No	3.958379	133.288714	22551.2	15.000	1221.4	-1.0	0.96	5721	14.28	380.69

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011975363-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_ALT—CENT_NOFITS
011975363-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_NOFITS—HALO_GHOST

**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.

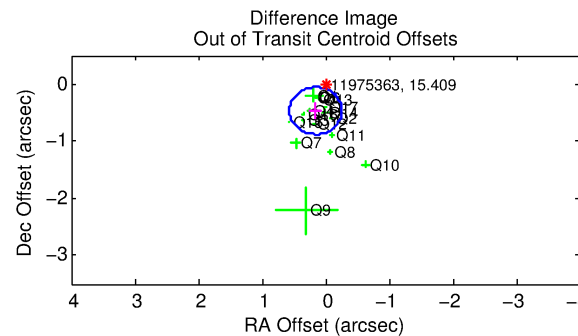
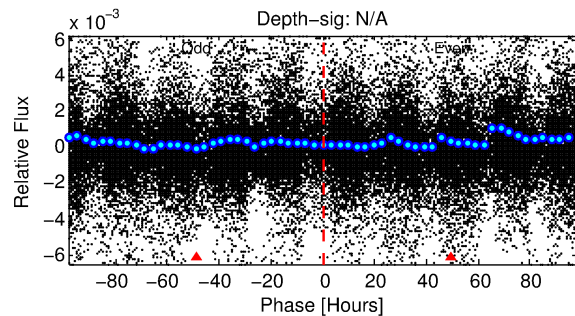
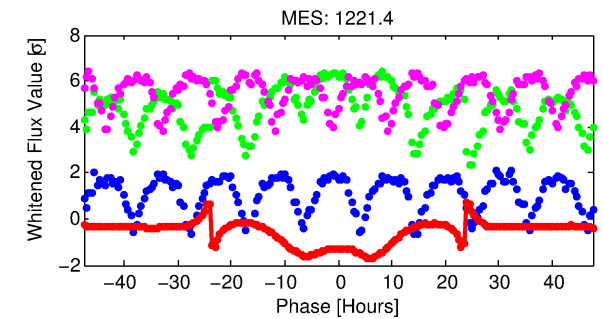
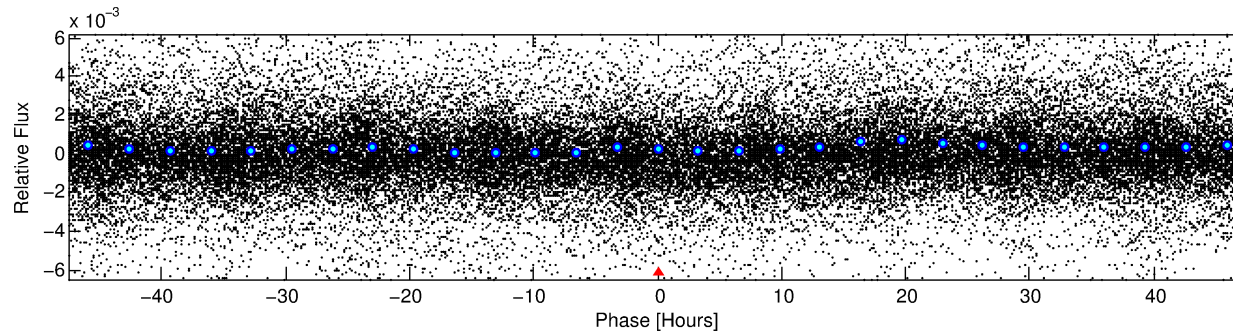
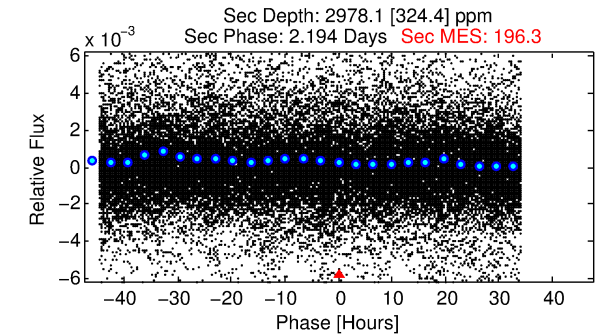
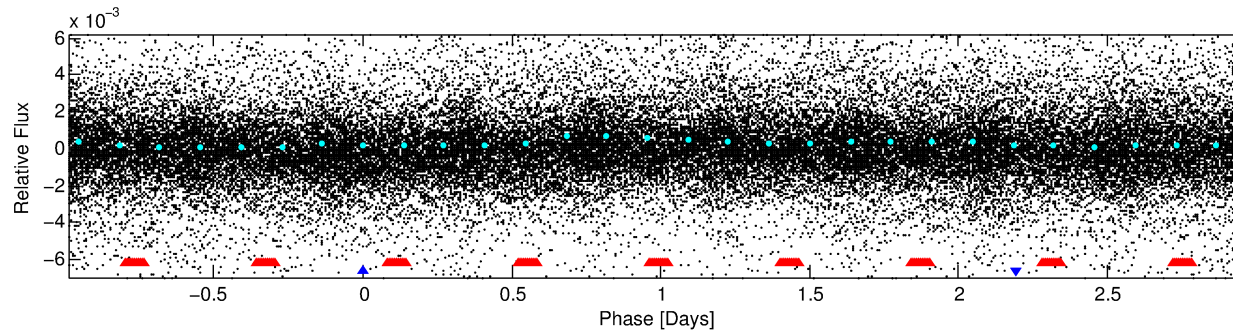
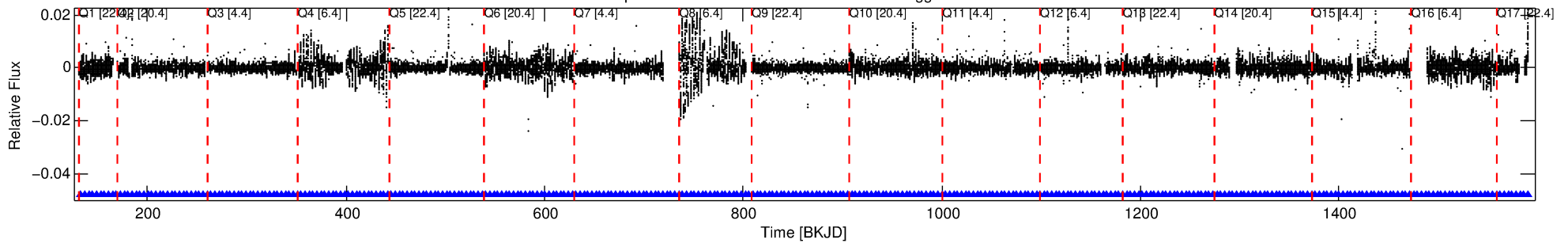
## Ephemeris Match Information For 011975363-02

No Significant Match Found

# DV One-Page Summary

KIC: 11975363 Candidate: 2 of 2 Period: 3.958 d  
KOI: K06248 Corr: No Ephemeris Match

Kp: 15.41 R\*: 0.96 Rs Teff: 5721.0 K Logg: 4.45 Fe/H: 0.000



## TPS TCE Results:

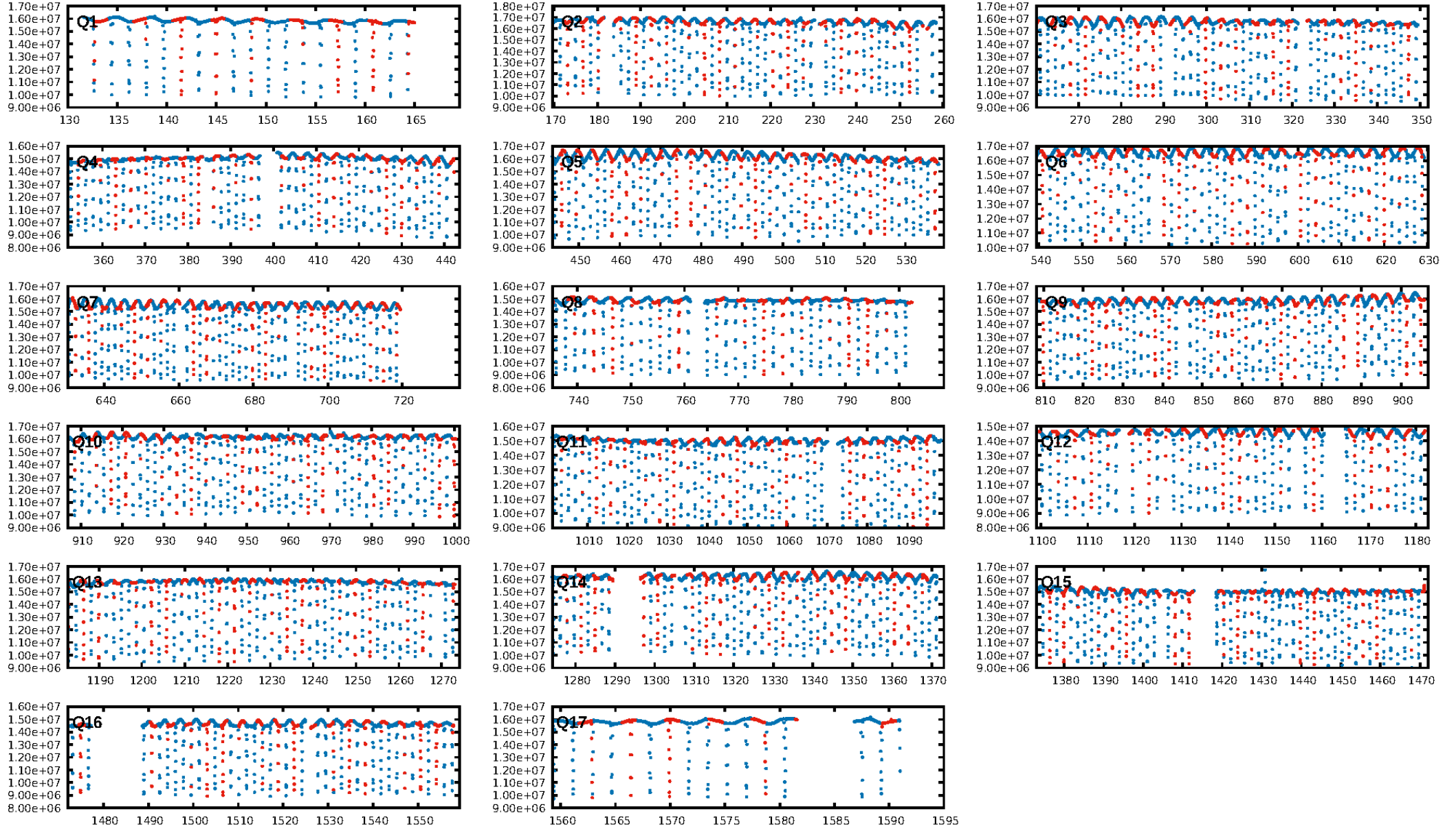
Period = 3.95838 d  
Epoch = 133.2887 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

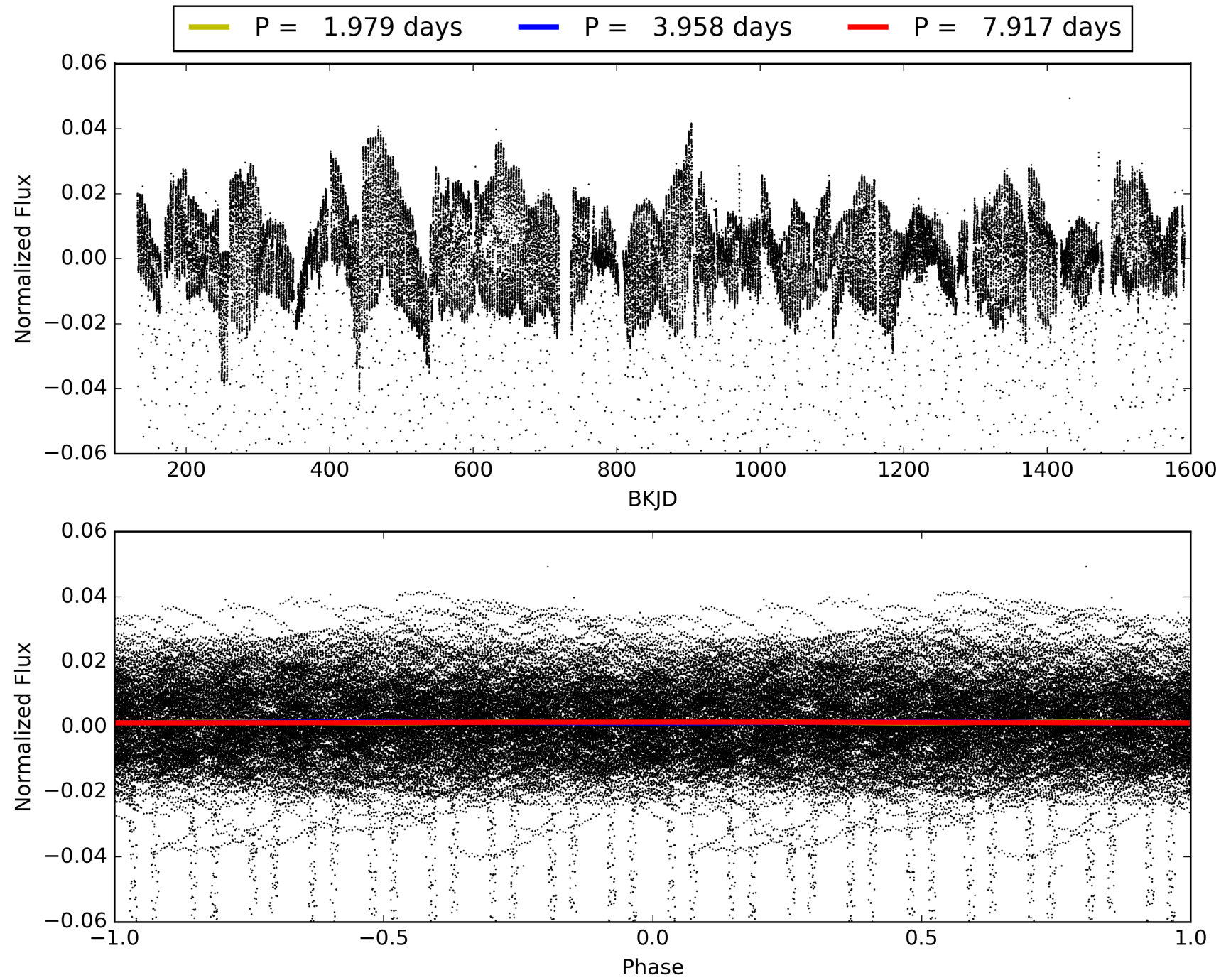
ShortPeriod-sig: 99.9% [3.47σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [330/330]  
GhostDiagnostic-chr: 0.1272  
Centroid-sig: N/A  
Centroid-so: 2.457 arcsec [3.36σ]  
OotOffset-rm: 0.493 arcsec [3.58σ]  
KicOffset-rm: 0.059 arcsec [0.67σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.47 [8/17]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 011975363-02, PDC Light Curves





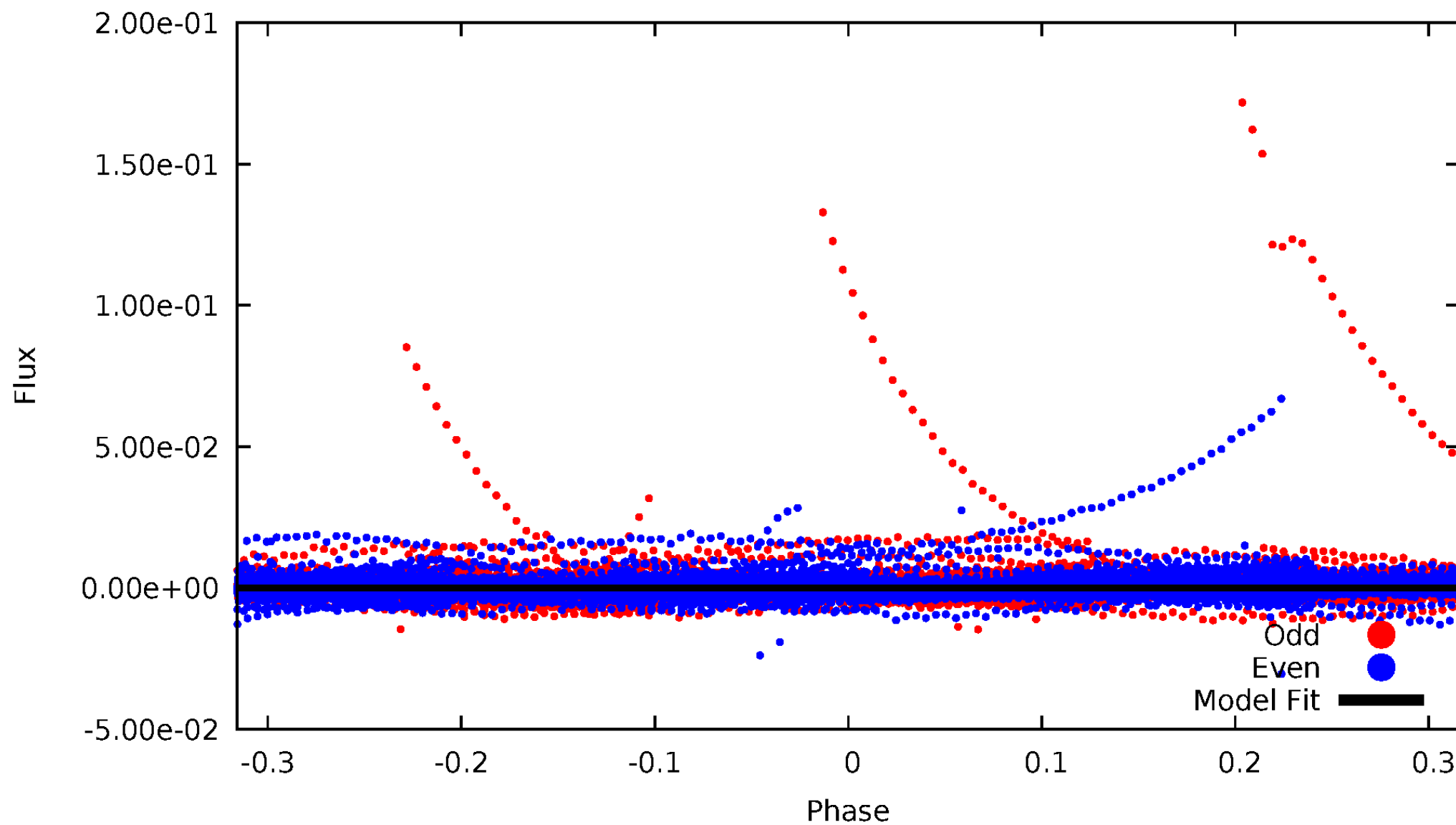
TCE 011975363-02





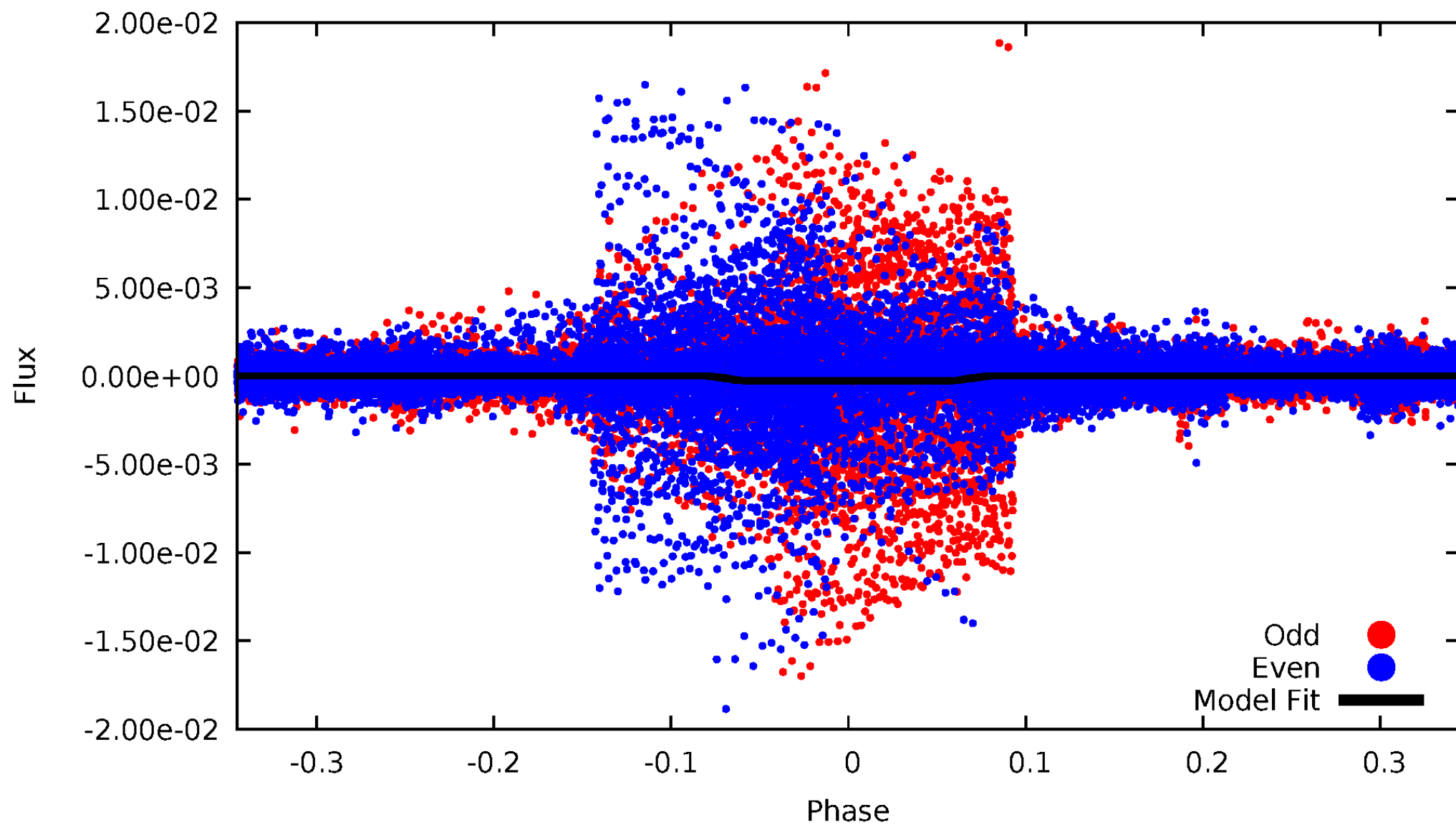
# DV Odd/Even

TCE 011975363-02



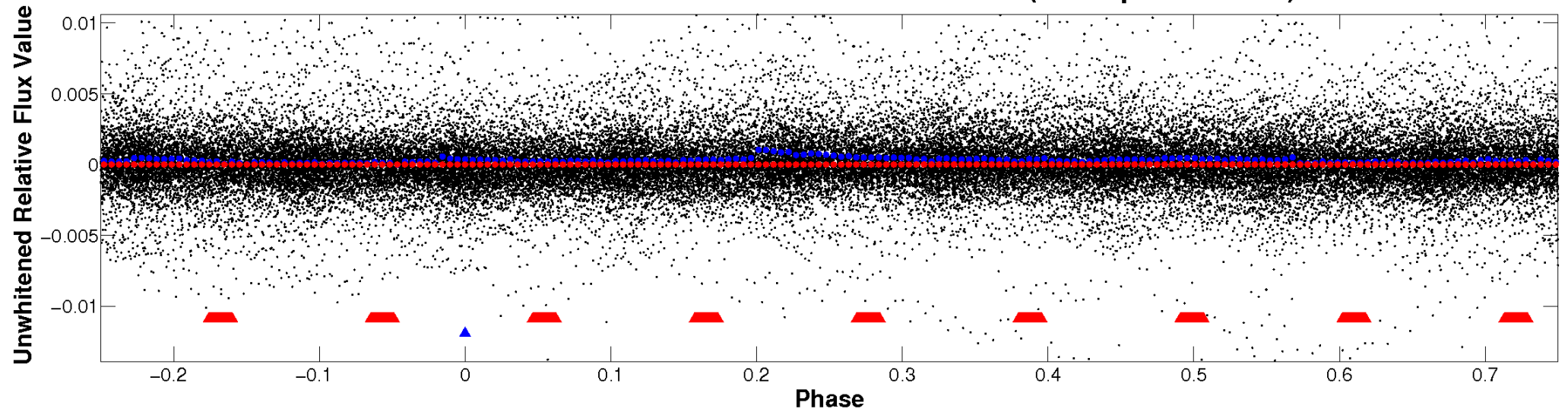
# ALT Odd/Even

TCE 011975363-02



# Non-Whitened Vs. Whitened Light Curve

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

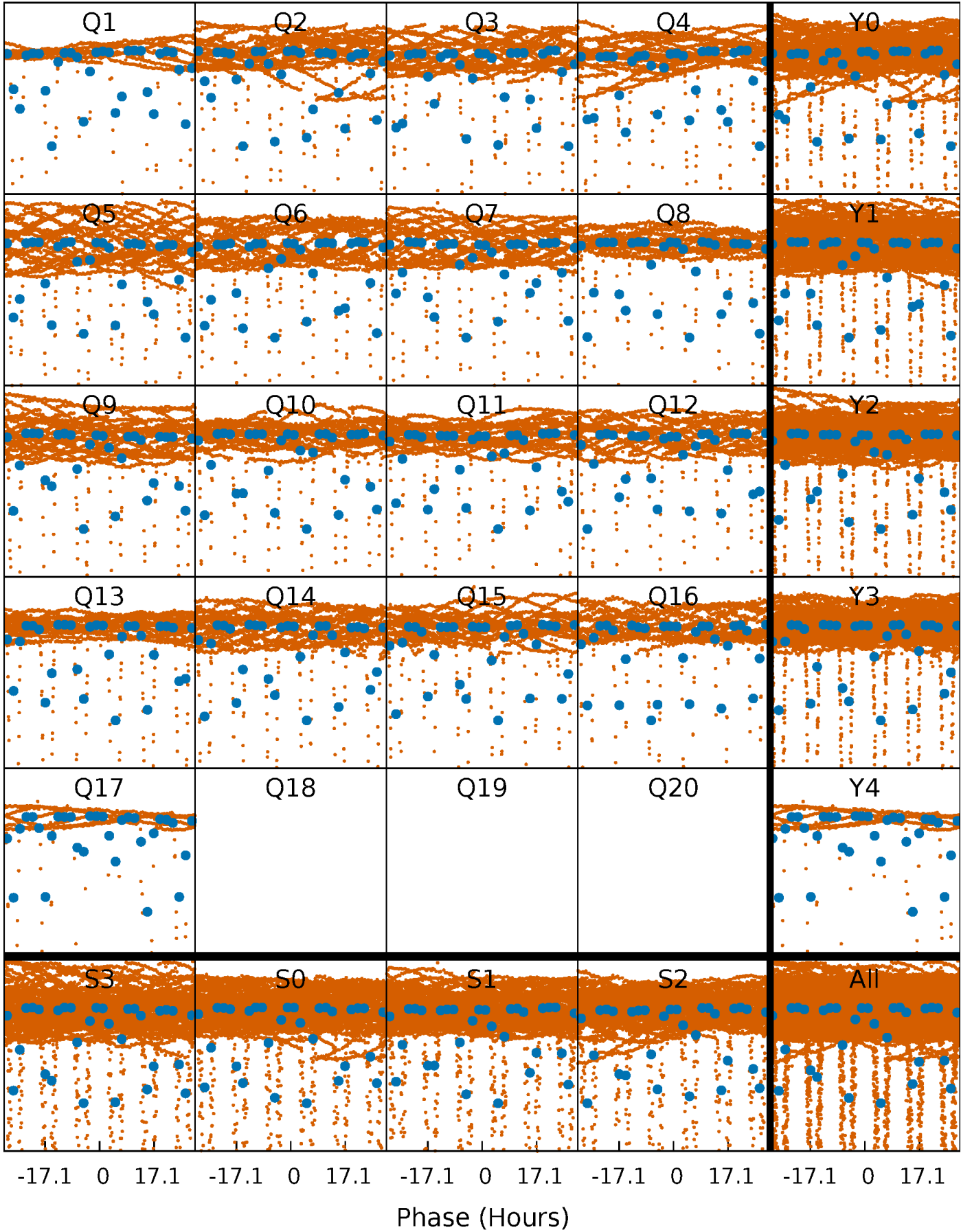


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



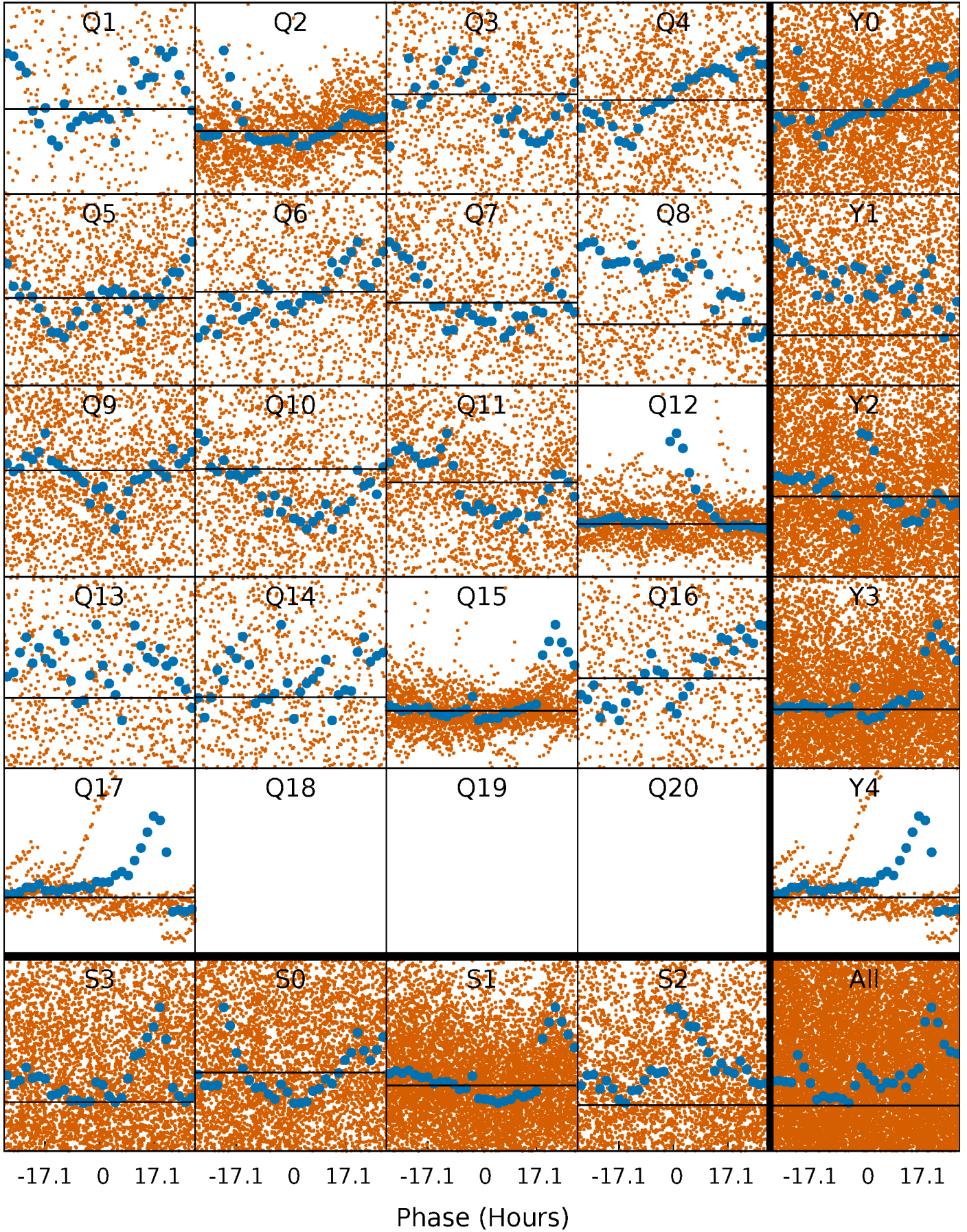
# PDC Quarter-Phased Transit Curves

TCE 011975363-02   P= 3.958379 Days    $T_0=133.288714$  (BKJD)



# DV Quarter-Phased Transit Curves

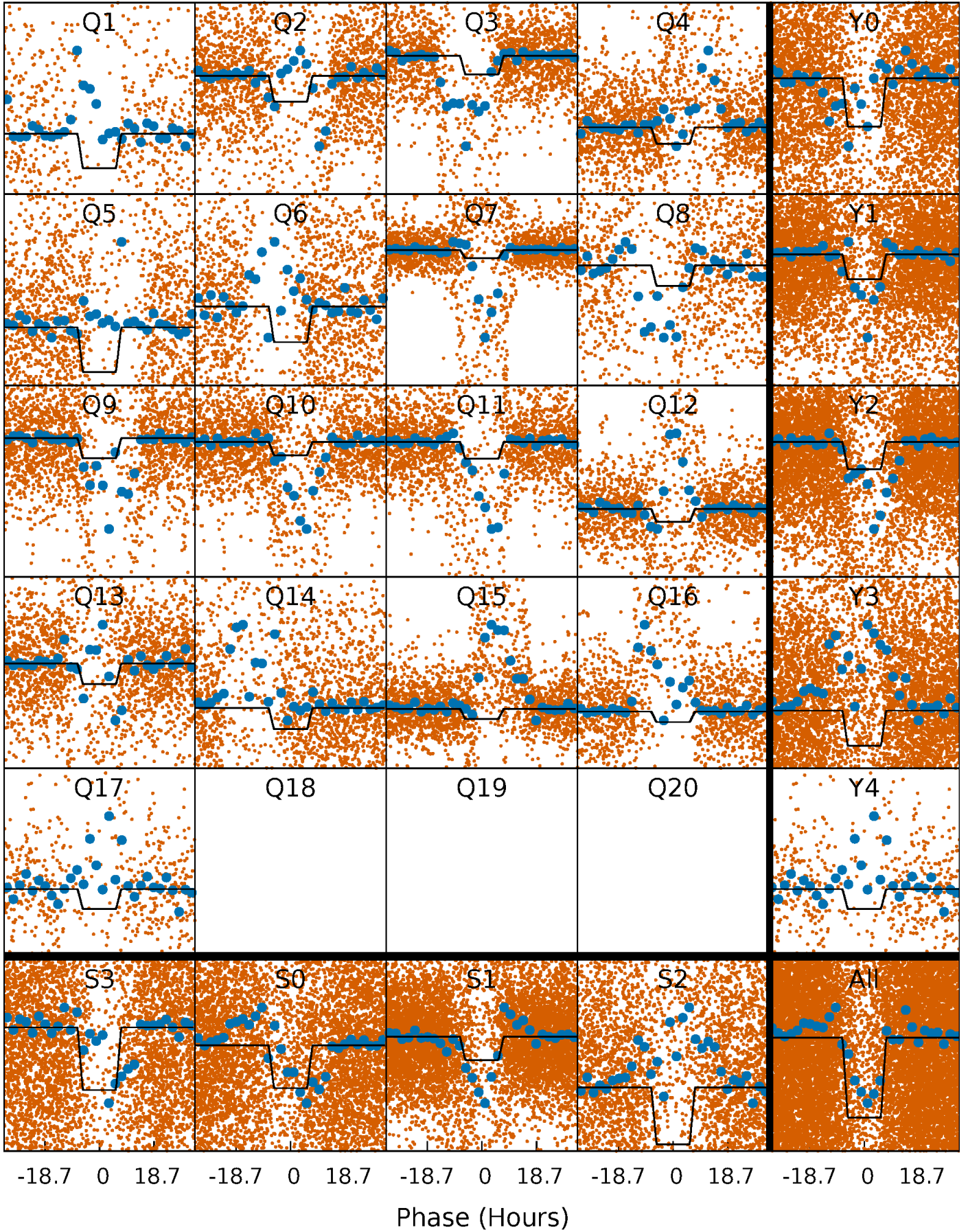
TCE 011975363-02   P= 3.958379 Days    $T_0=133.288714$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

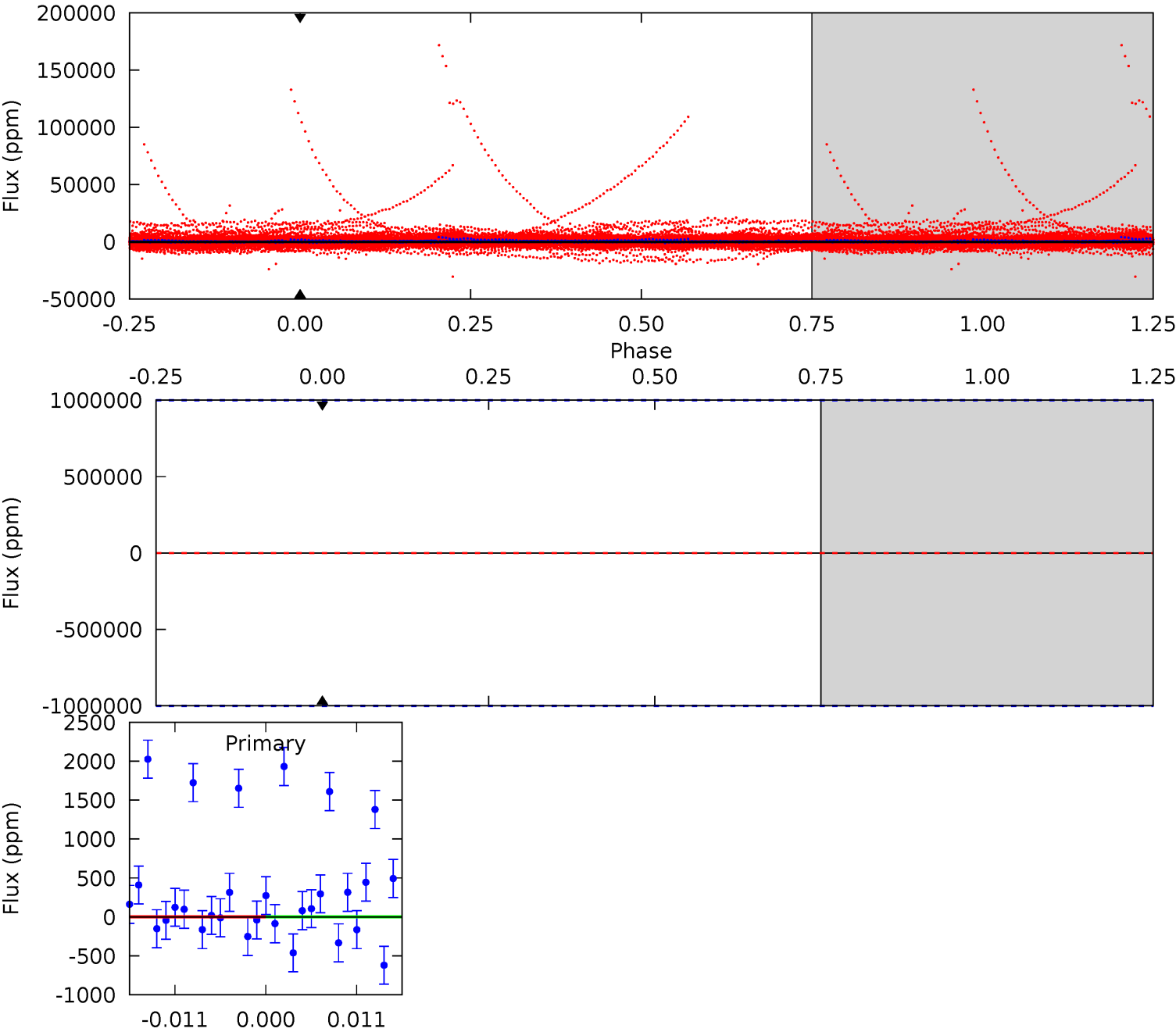
TCE 011975363-02   P= 3.958379 Days    $T_0=133.389964$  (BKJD)



DV Model-Shift Uniqueness Test

011975363-02, P = 3.958379 Days, E = 129.330335 Days

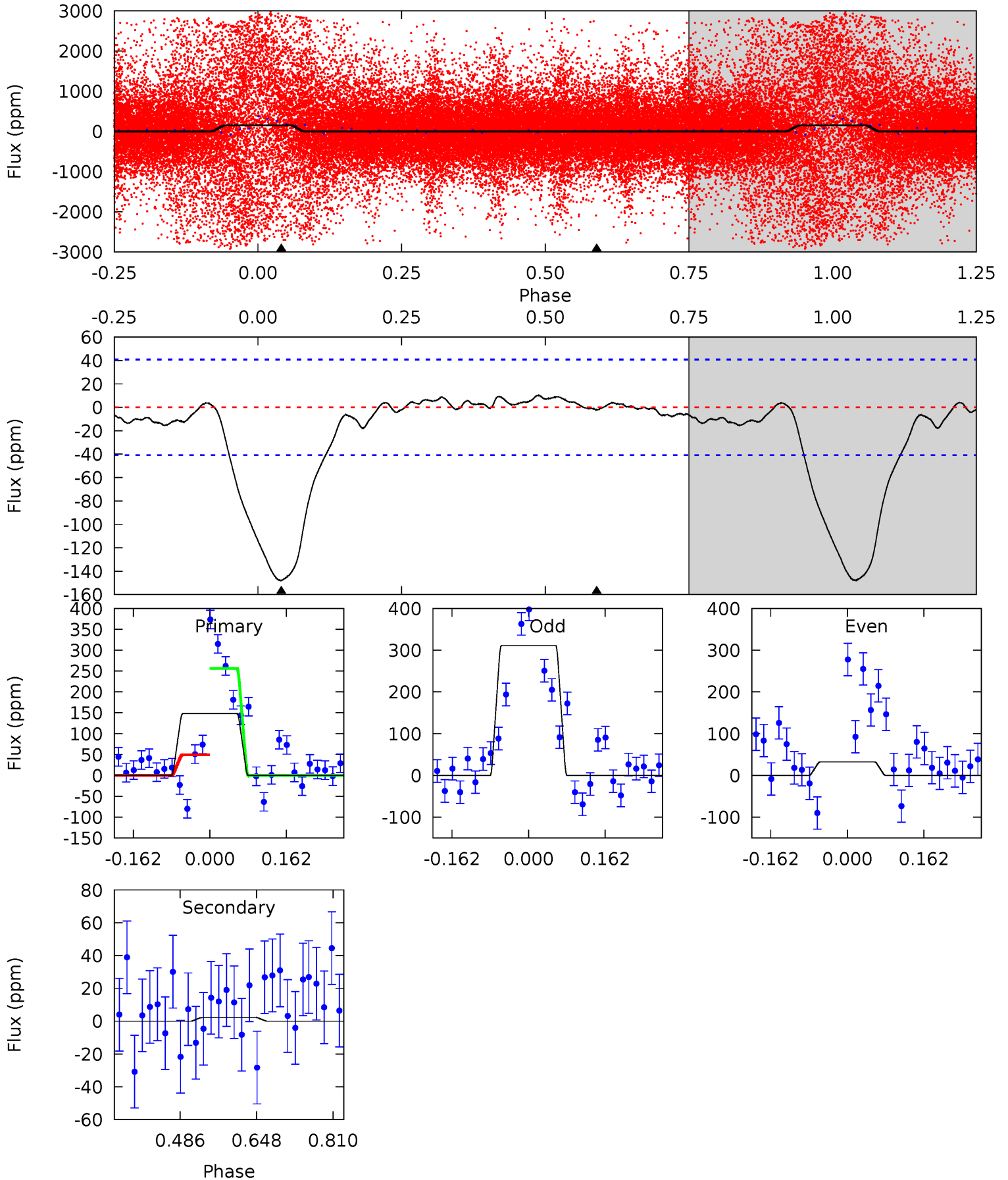
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

011975363-02, P = 3.958379 Days, E = 129.431585 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
16.1	0.24	0	0	4.46	1.40	0.83	16.1	16.1	0.24	0.24	15.7	149.8	0.07	0





### Stellar Parameters For KIC 011975363

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5721^{+173}_{-190}$	$4.453^{+0.081}_{-0.189}$	$0.000^{+0.250}_{-0.300}$	$0.961^{+0.281}_{-0.120}$	$0.956^{+0.125}_{-0.102}$	$1.520^{+0.522}_{-0.755}$
	+3%/-3%	+2%/-4%	+inf%/-inf%	+29%/-12%	+13%/-11%	+34%/-50%
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 011975363-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$15.69^{+11.70}_{-8.61}$	$1589^{+111}_{-80}$	$-3431^{+13200}_{-6140}$	$-9.413^{+721.320}_{-610.771}$
Alt.	$-2 \pm 9$	$8.33^{+8.39}_{-5.66}$	$1595^{+107}_{-88}$	$-2218^{+4159}_{-179}$	$0.024^{+0.366}_{-0.193}$

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

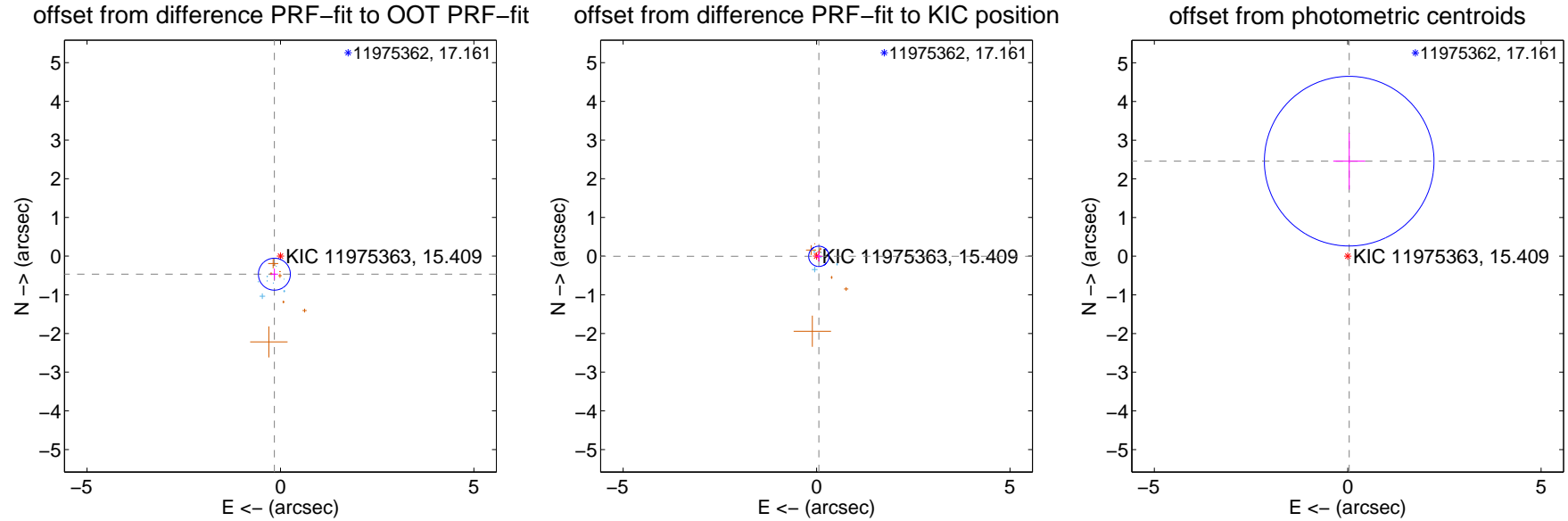
## DV Centroid Data

Supplemental centroid analysis for 011975363-02. Kepler magnitude: 15.41. Transit SNR -1.00

There are 8 quarters with good PRF difference image offsets

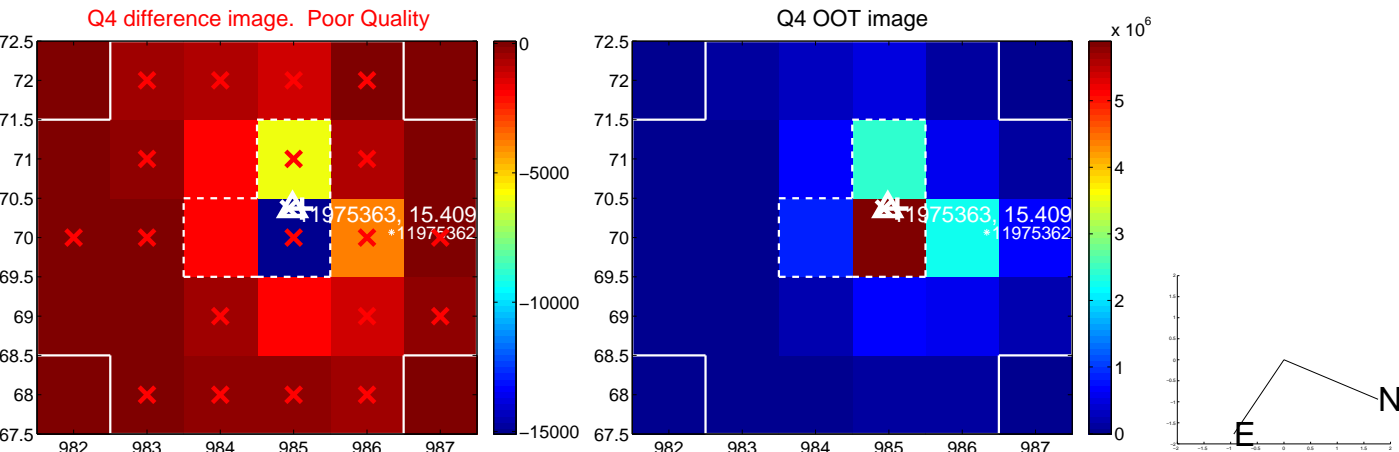
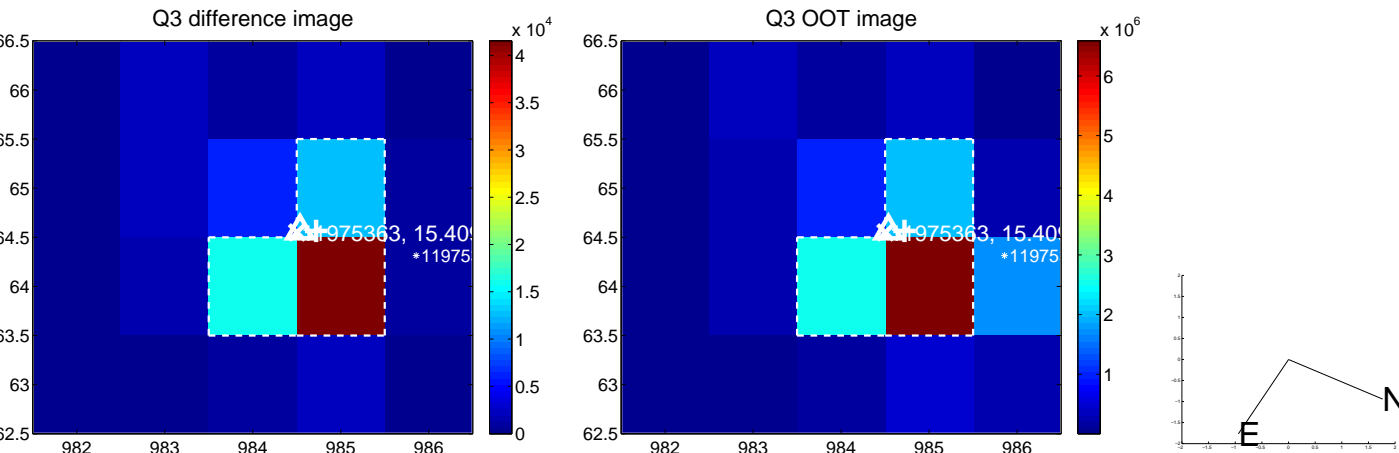
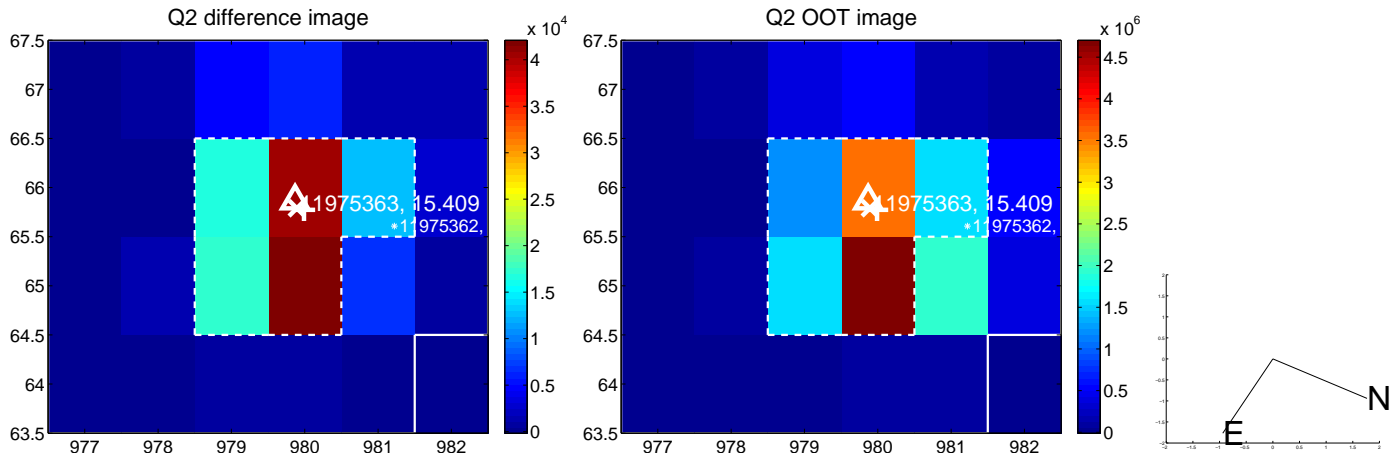
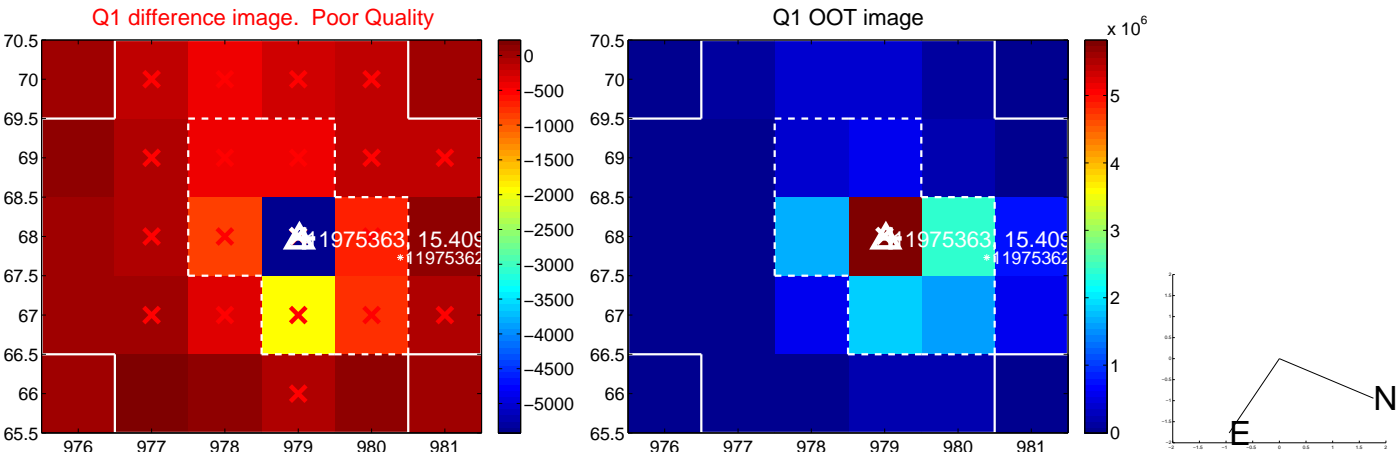
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.493 \pm 0.138$	3.58	$0.157 \pm 0.095$	$-0.467 \pm 0.145$
PRF-fit source offset from KIC position	$0.059 \pm 0.088$	0.67	$-0.058 \pm 0.085$	$-0.005 \pm 0.133$
photometric centroid source offset	$2.46 \pm 0.73$	3.36	$-0.04 \pm 0.41$	$2.46 \pm 0.73$

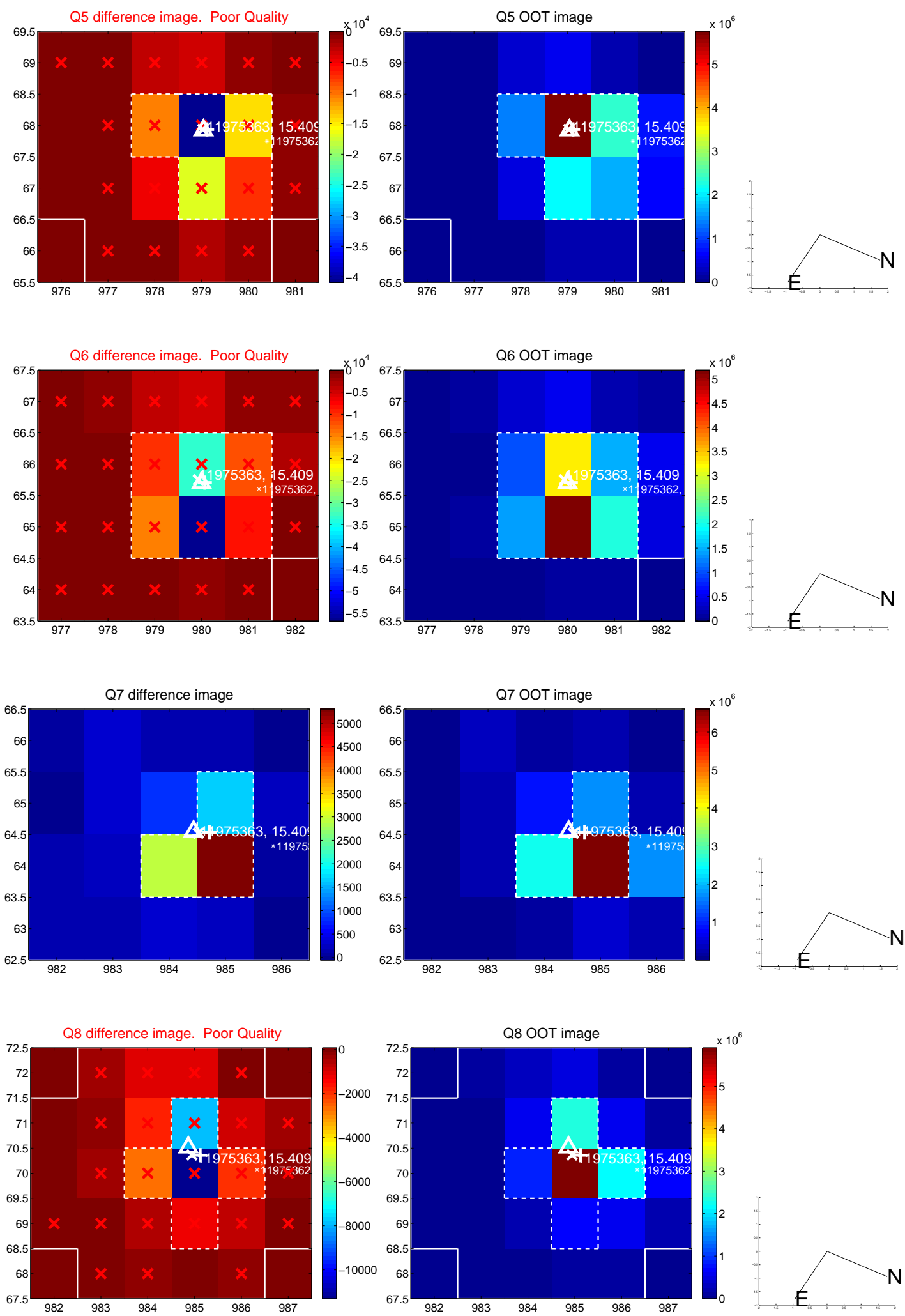


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

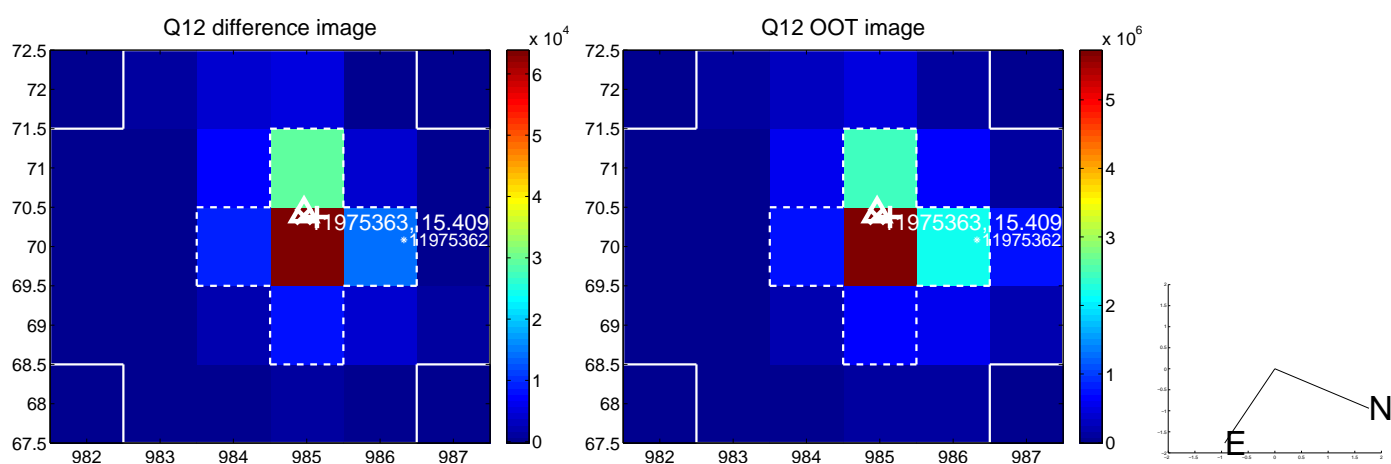
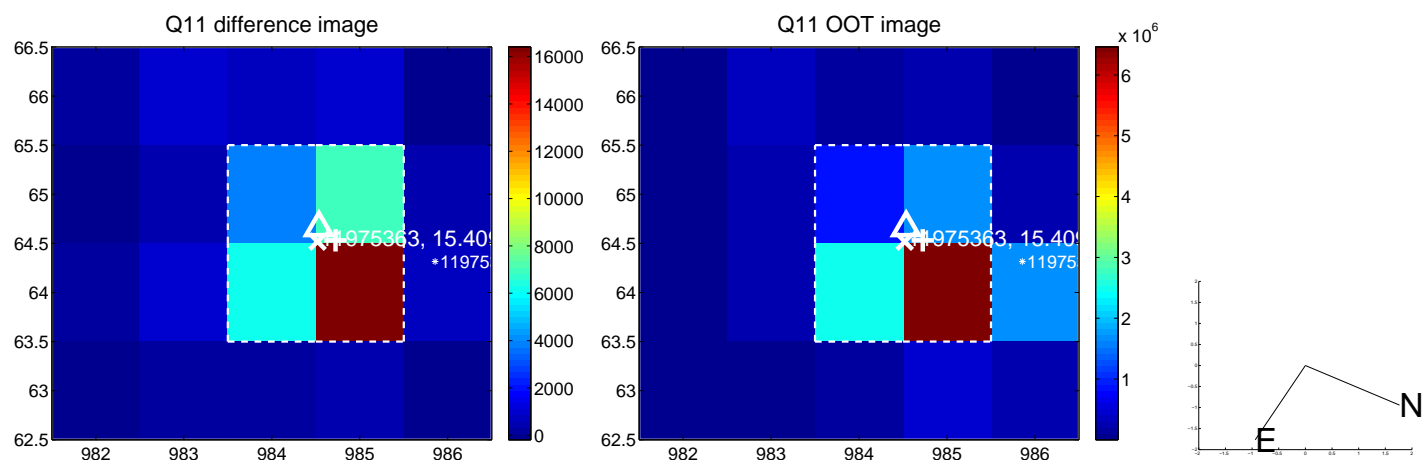
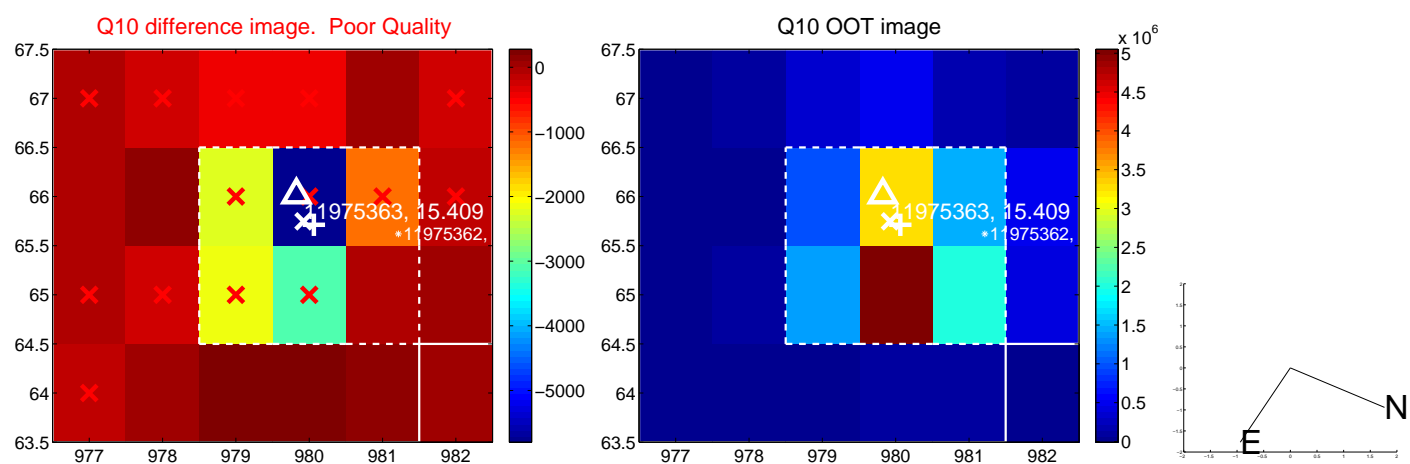
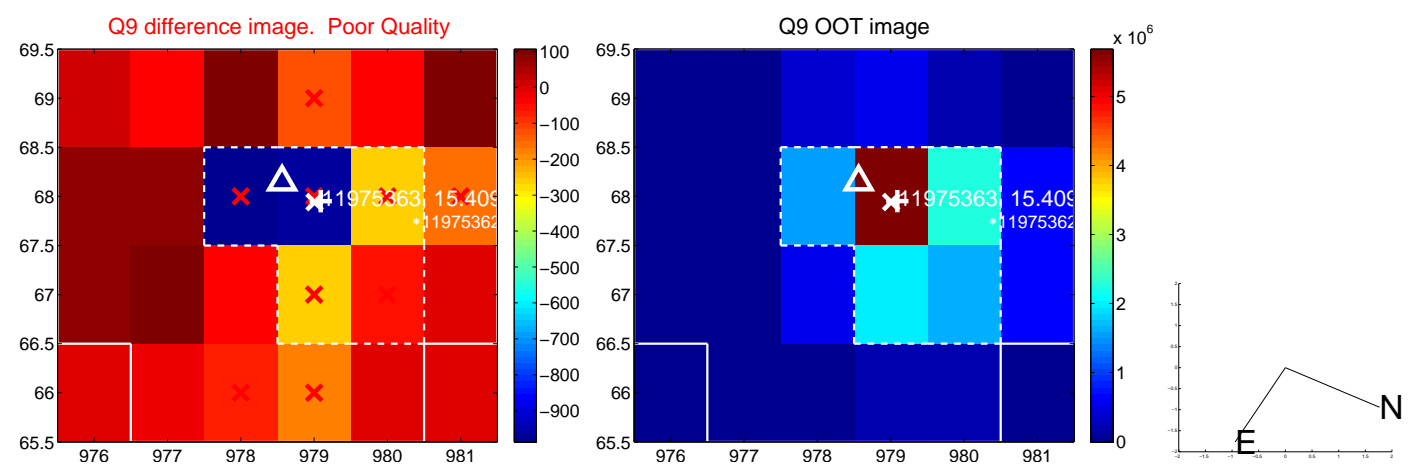
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



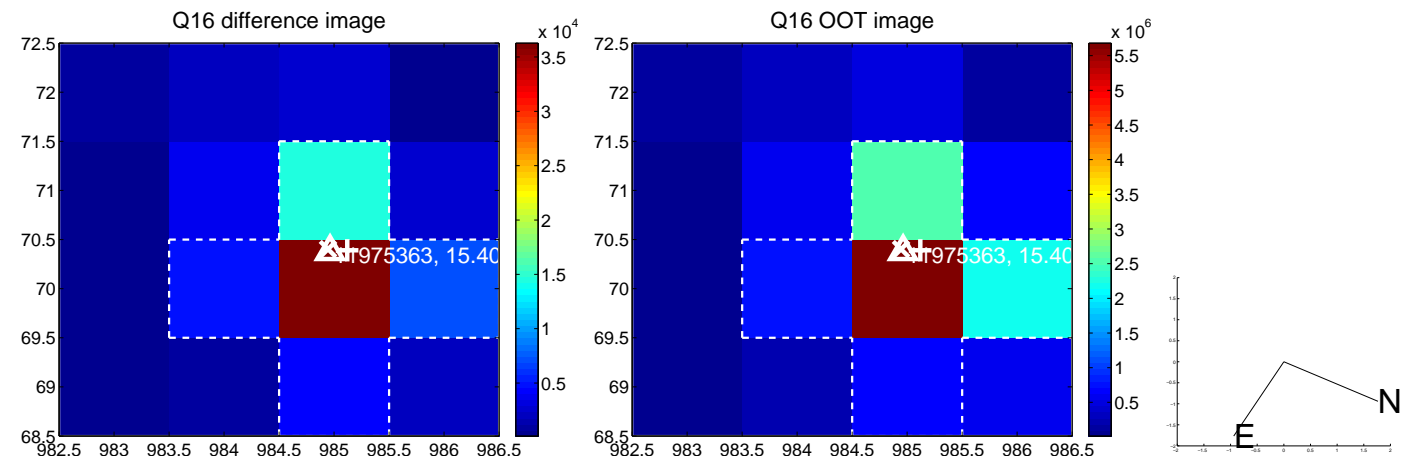
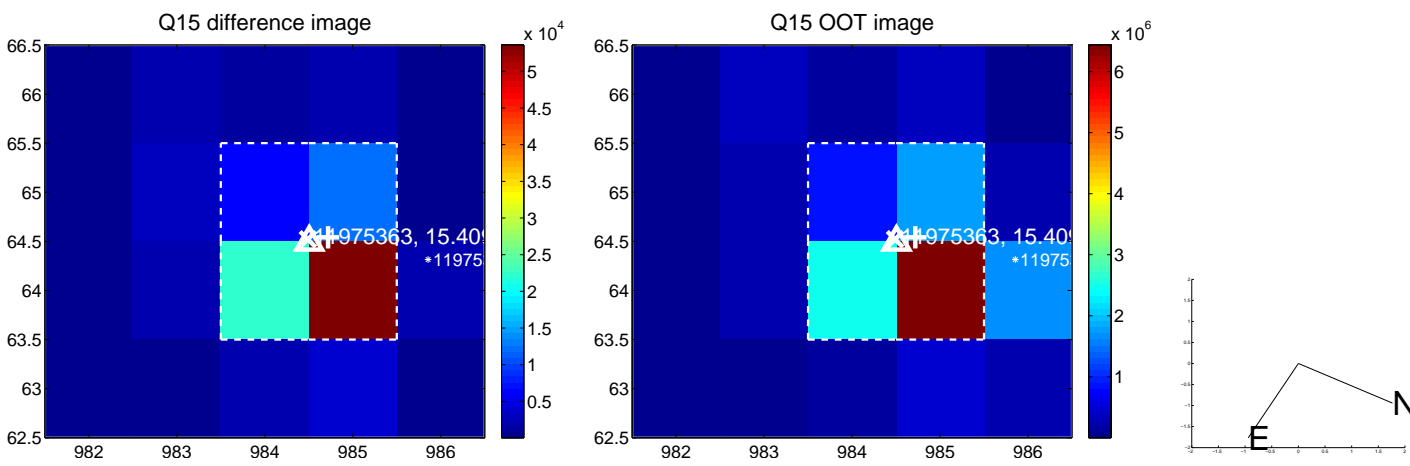
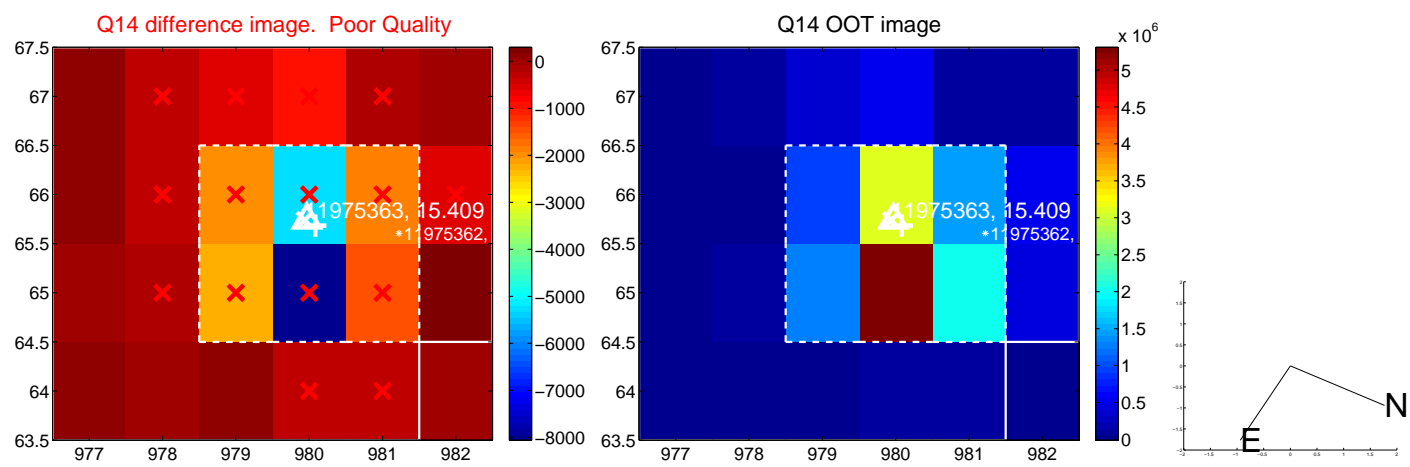
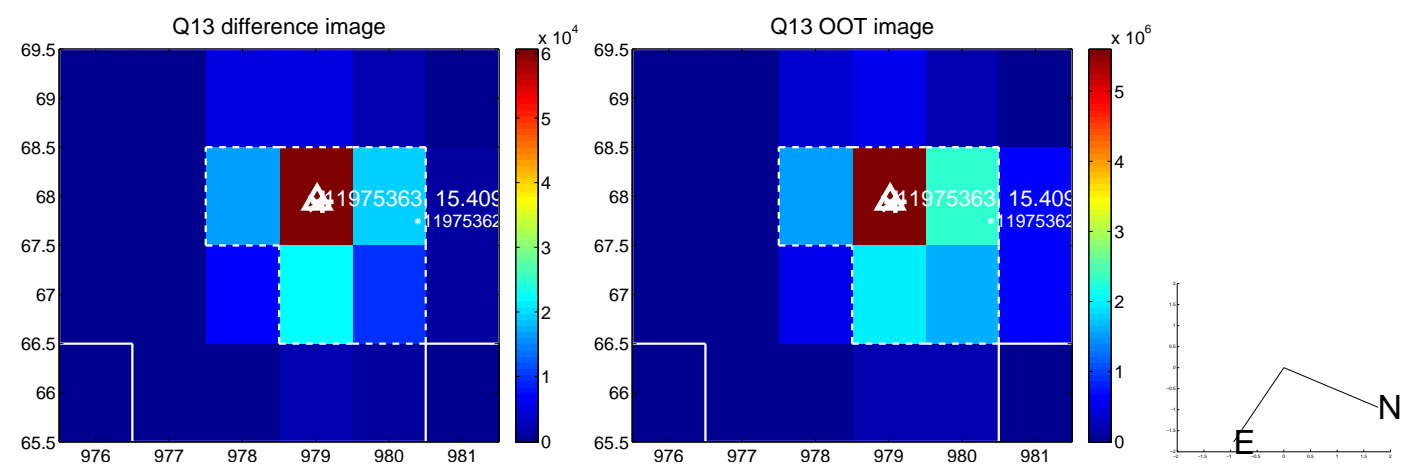
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



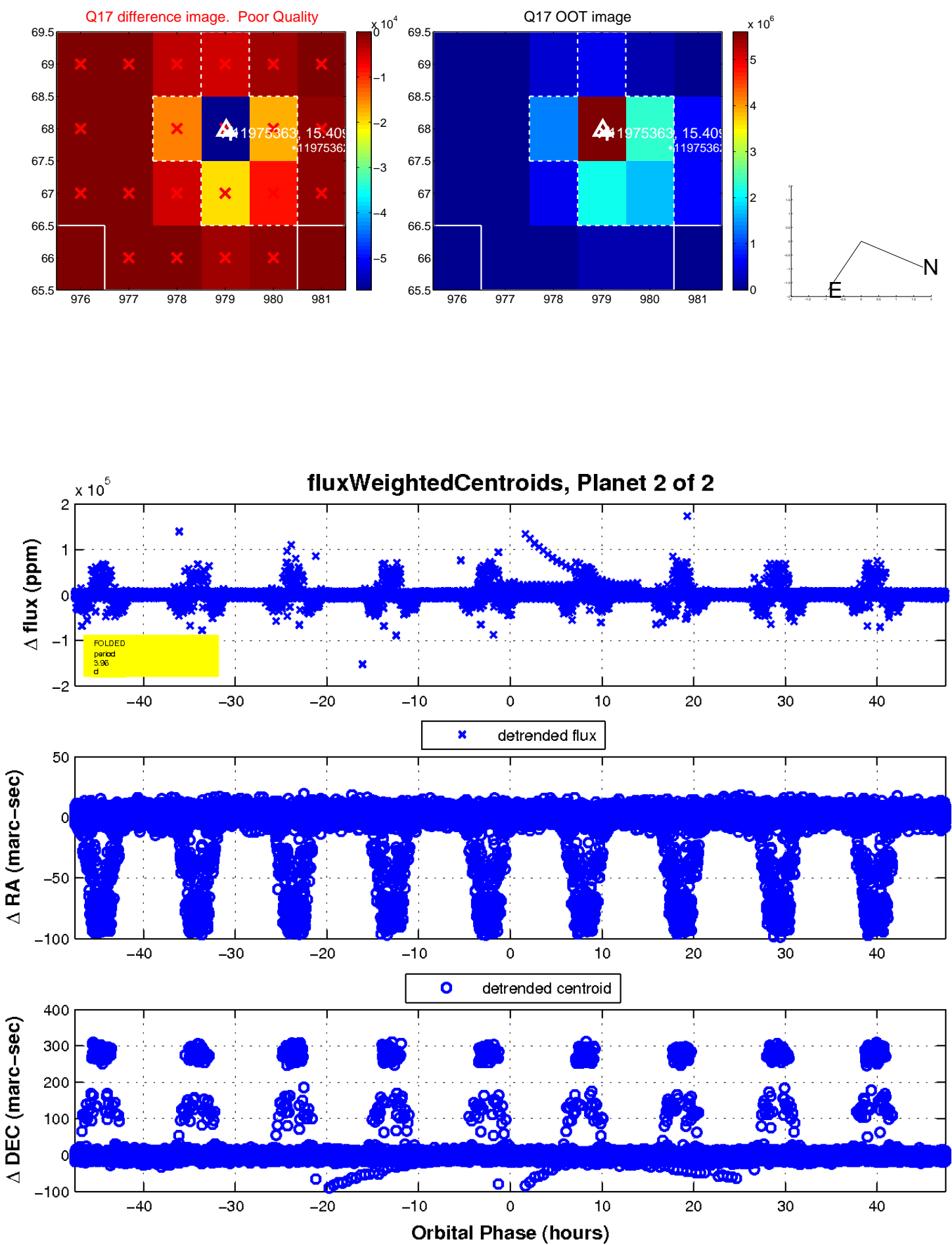
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

