

# KIC 003323289

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003323289-01	OBS	6319.01	33.693433	158.857908	520447.5	4.500	12515.7	-1.0	0.90	5427	49.05	17.10
003323289-02	OBS	No	33.693462	147.319758	319013.0	3.500	8326.7	-1.0	0.90	5427	49.05	17.10
003323289-03	OBS	No	11.231103	136.104763	9115.5	11.775	449.1	386.4	0.90	5427	8.43	73.97

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003323289-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
003323289-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
003323289-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—RESIDUAL_TCE—CENT_FEW_MEAS

**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.

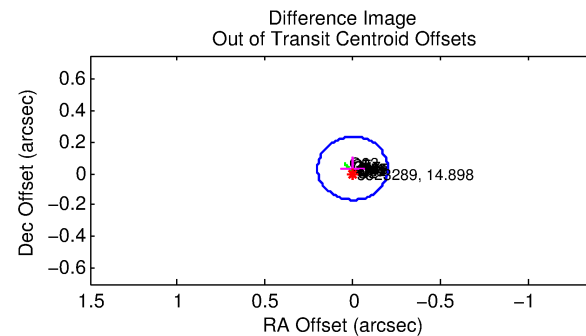
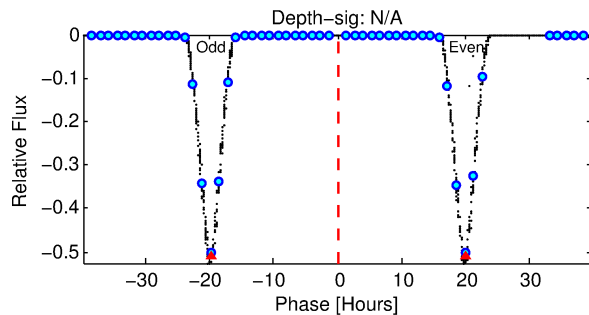
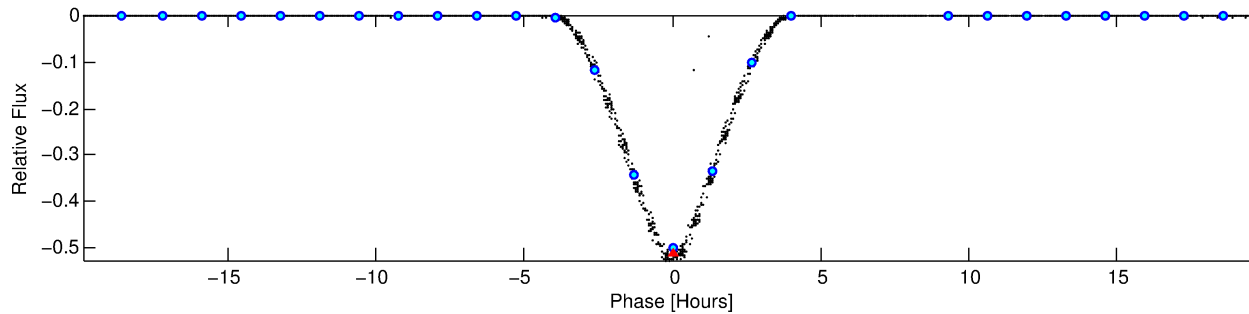
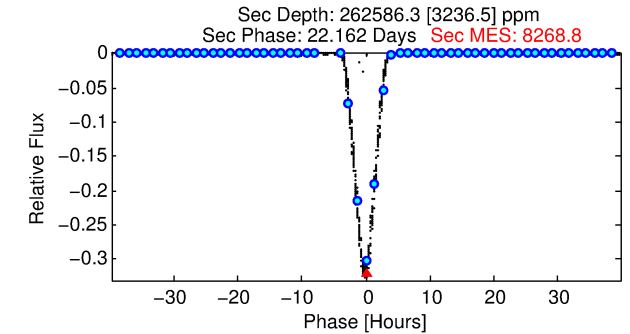
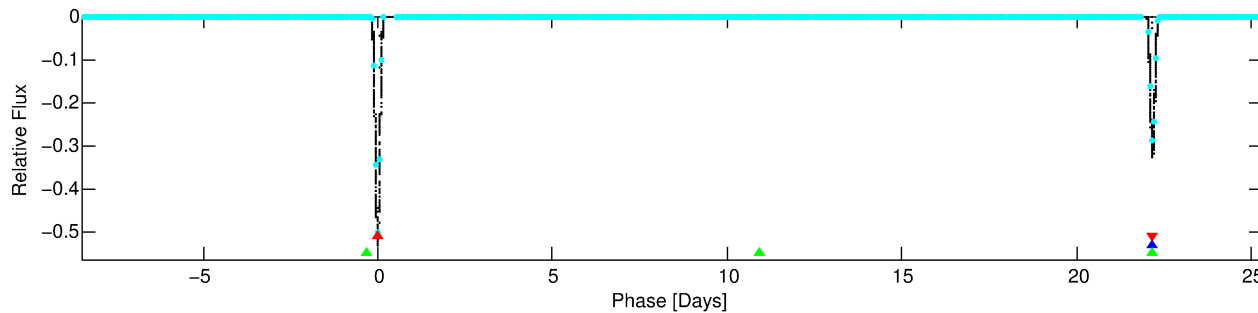
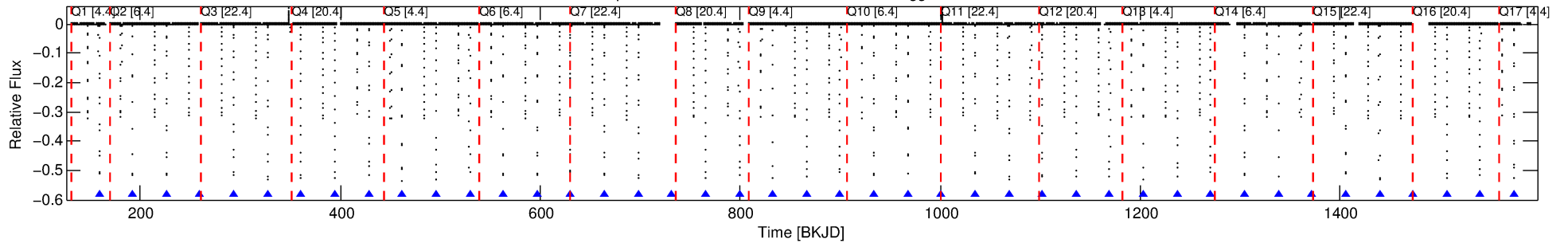
Ephemeris Match Information For 003323289-01

No Significant Match Found

# DV One-Page Summary

KIC: 3323289 Candidate: 1 of 3 Period: 33.693 d  
KOI: K06319.01 Corr: 0.777

Kp: 14.90 R\*: 0.90 Rs Teff: 5427.0 K Logg: 4.45 Fe/H: -0.100



## TPS TCE Results:

Period = 33.69343 d  
Epoch = 158.8579 BKJD

DV fit results are unavailable

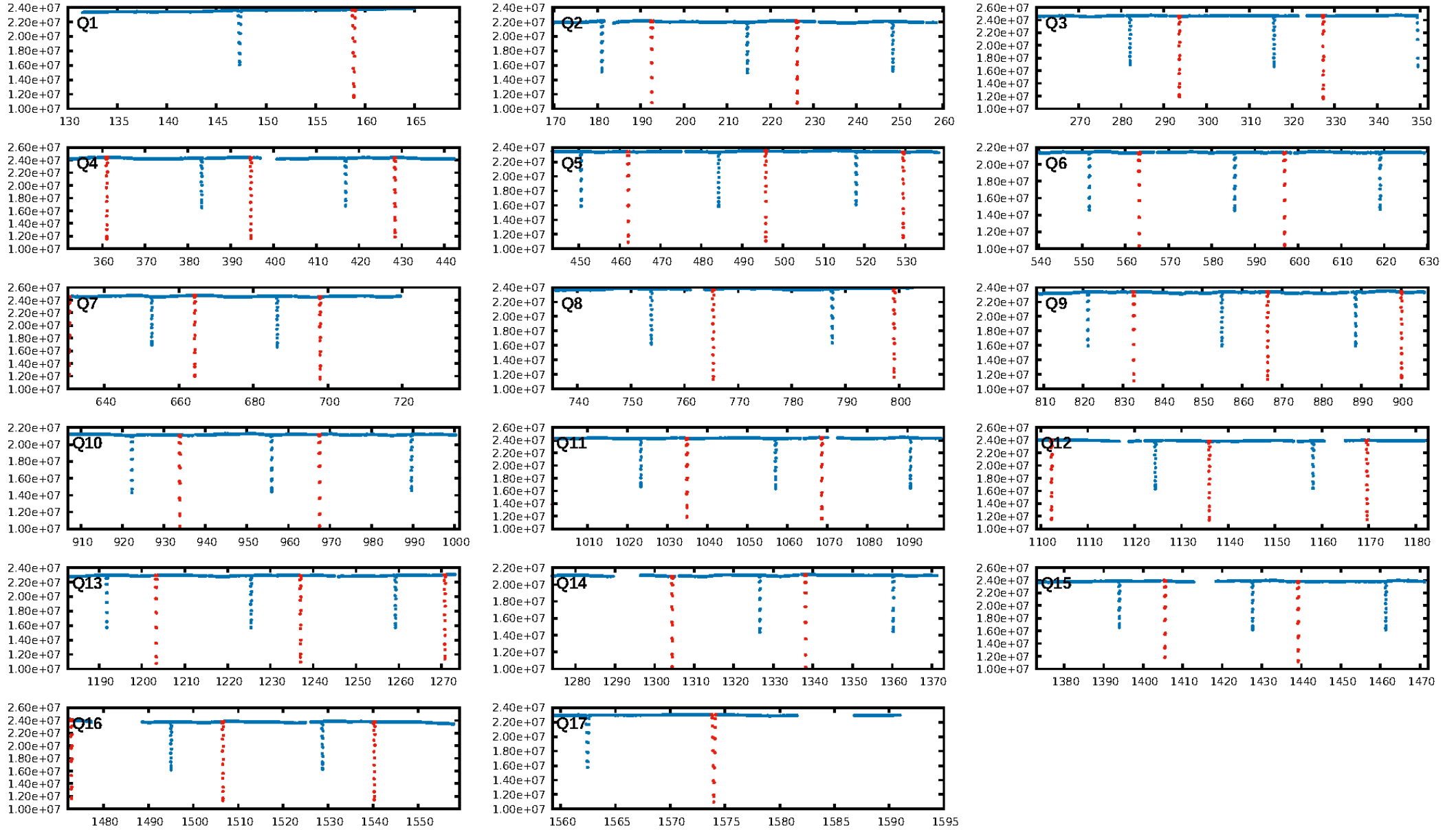
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [42.77σ]  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [37/37]  
GhostDiagnostic-chr: 2.747  
Centroid-sig: 0.0%  
Centroid-so: 0.494 arcsec [647.12σ]  
OotOffset-rm: 0.034 arcsec [0.51σ]  
KicOffset-rm: 0.085 arcsec [1.20σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

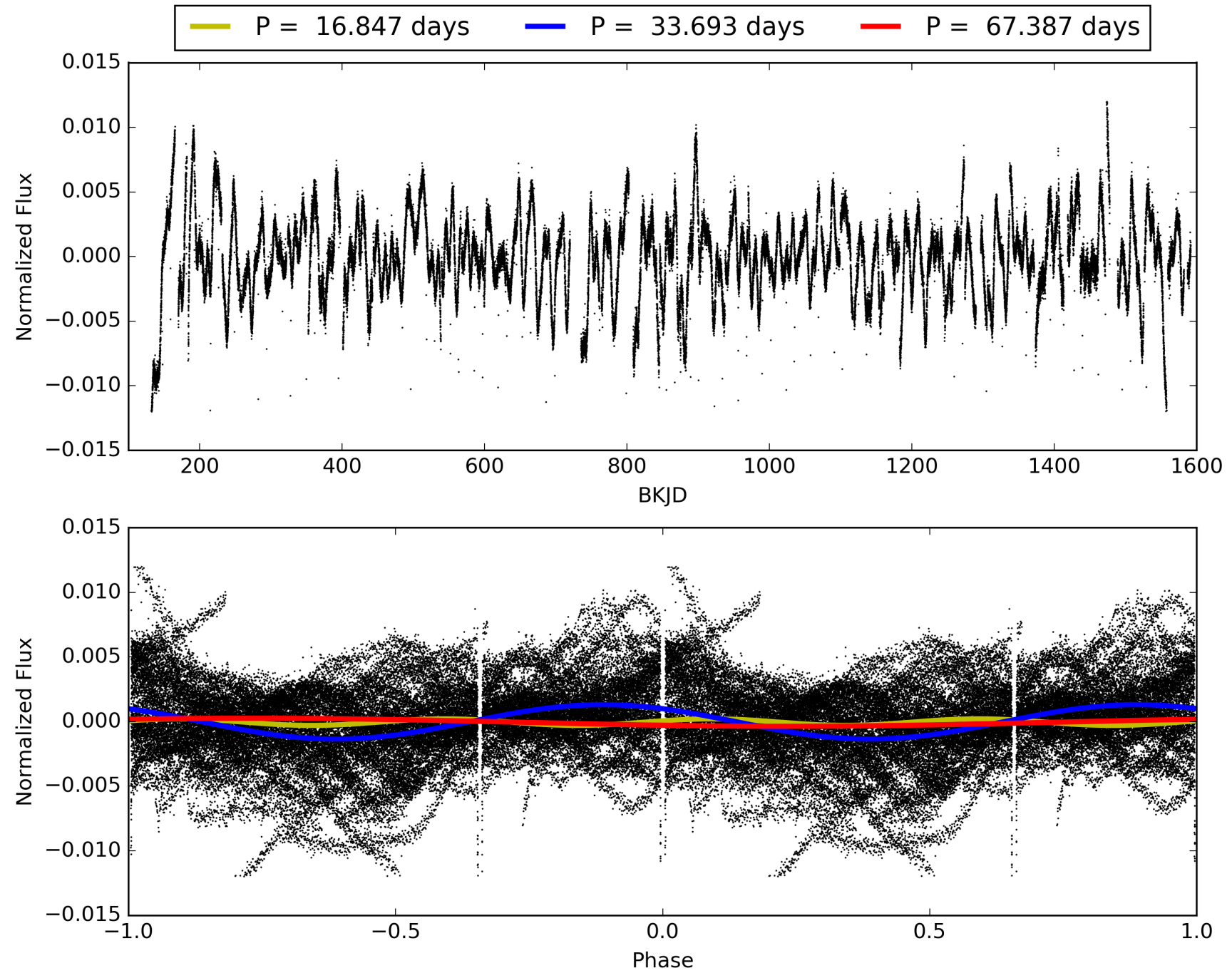
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:29:09 Z

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

# TCE 00323289-01, PDC Light Curves

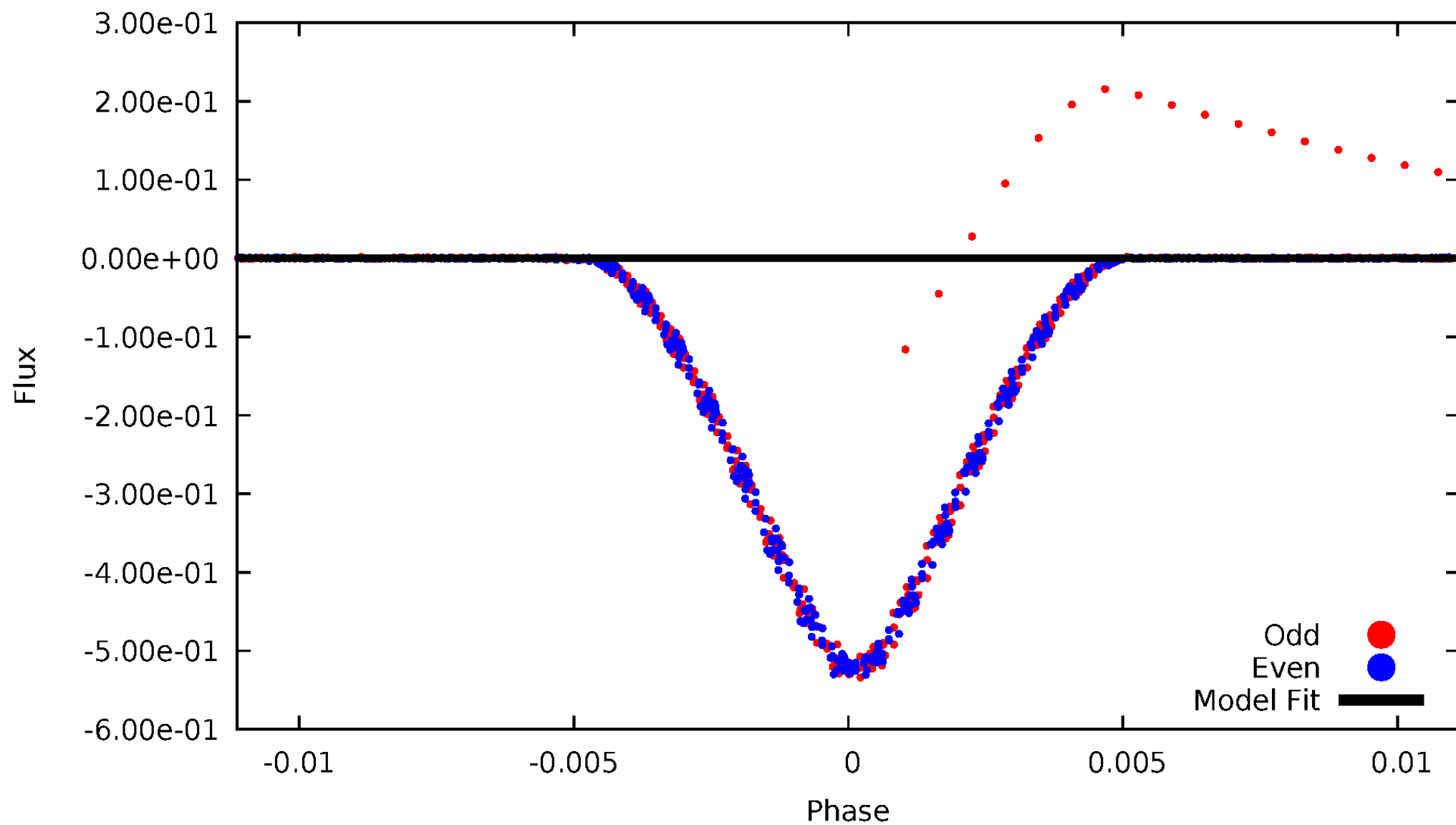


TCE 003323289-01



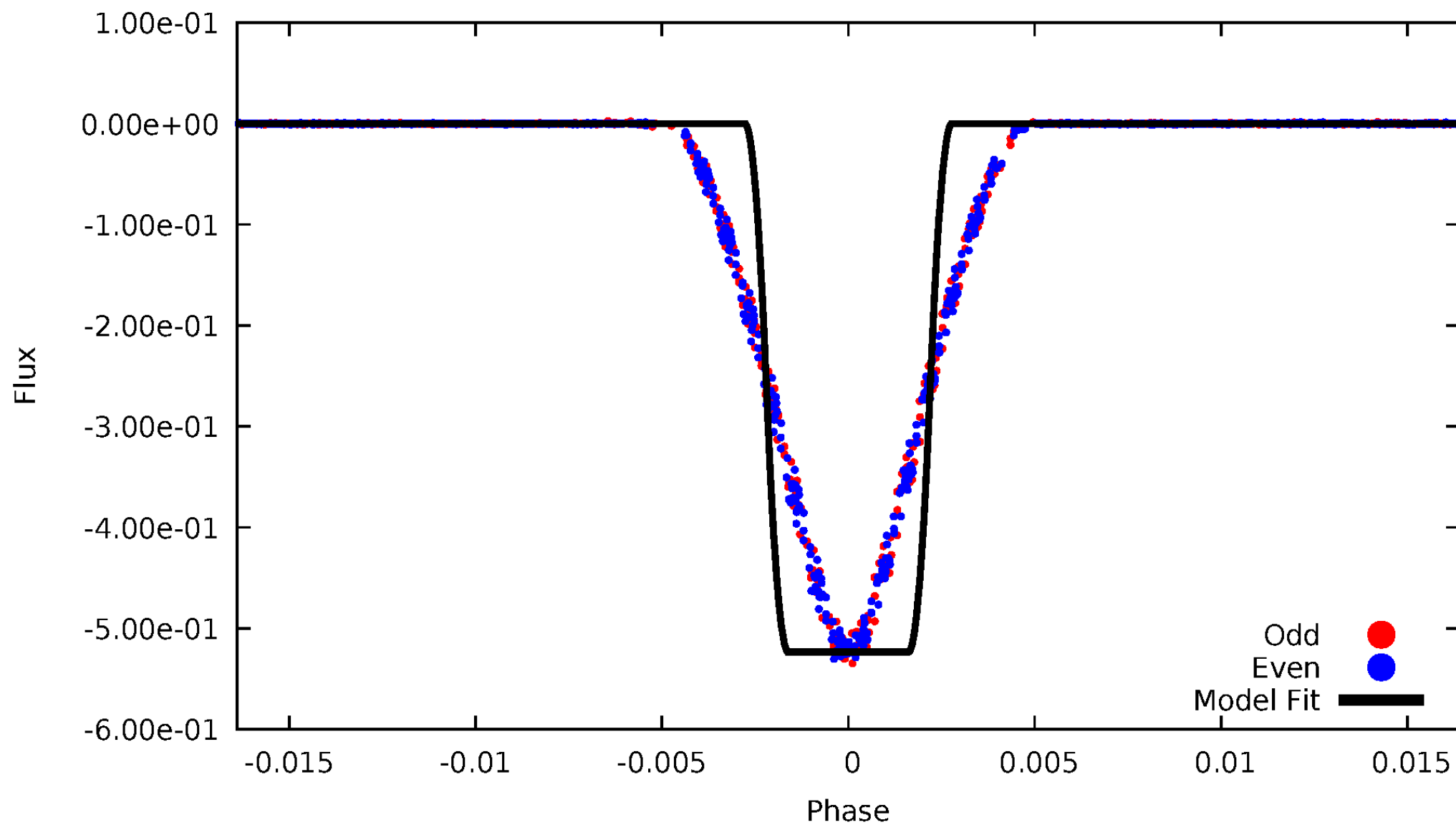
# DV Odd/Even

TCE 003323289-01



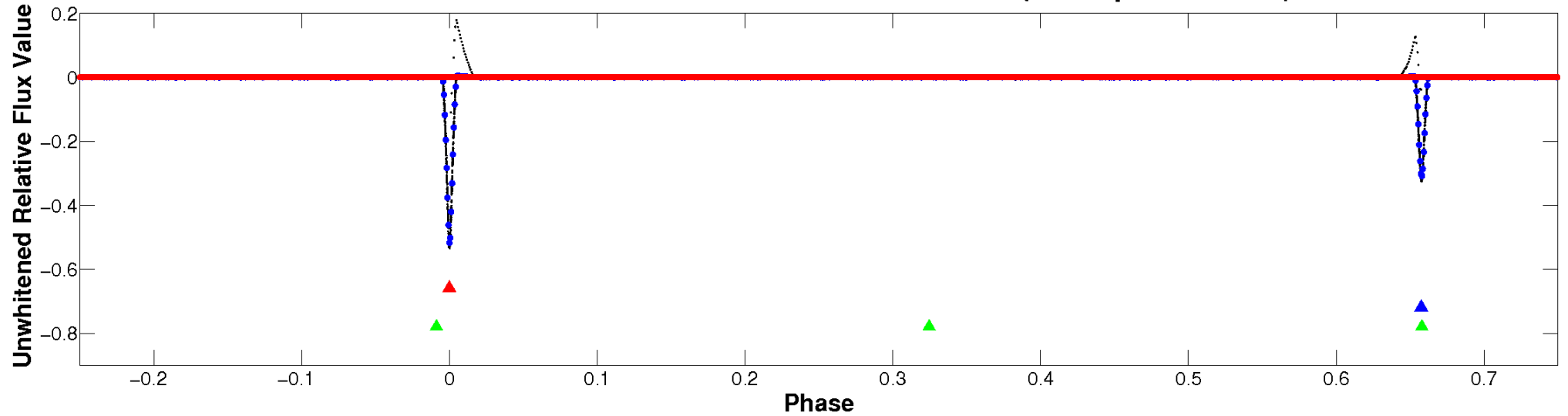
# ALT Odd/Even

TCE 003323289-01



# Non-Whitened Vs. Whitened Light Curve

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

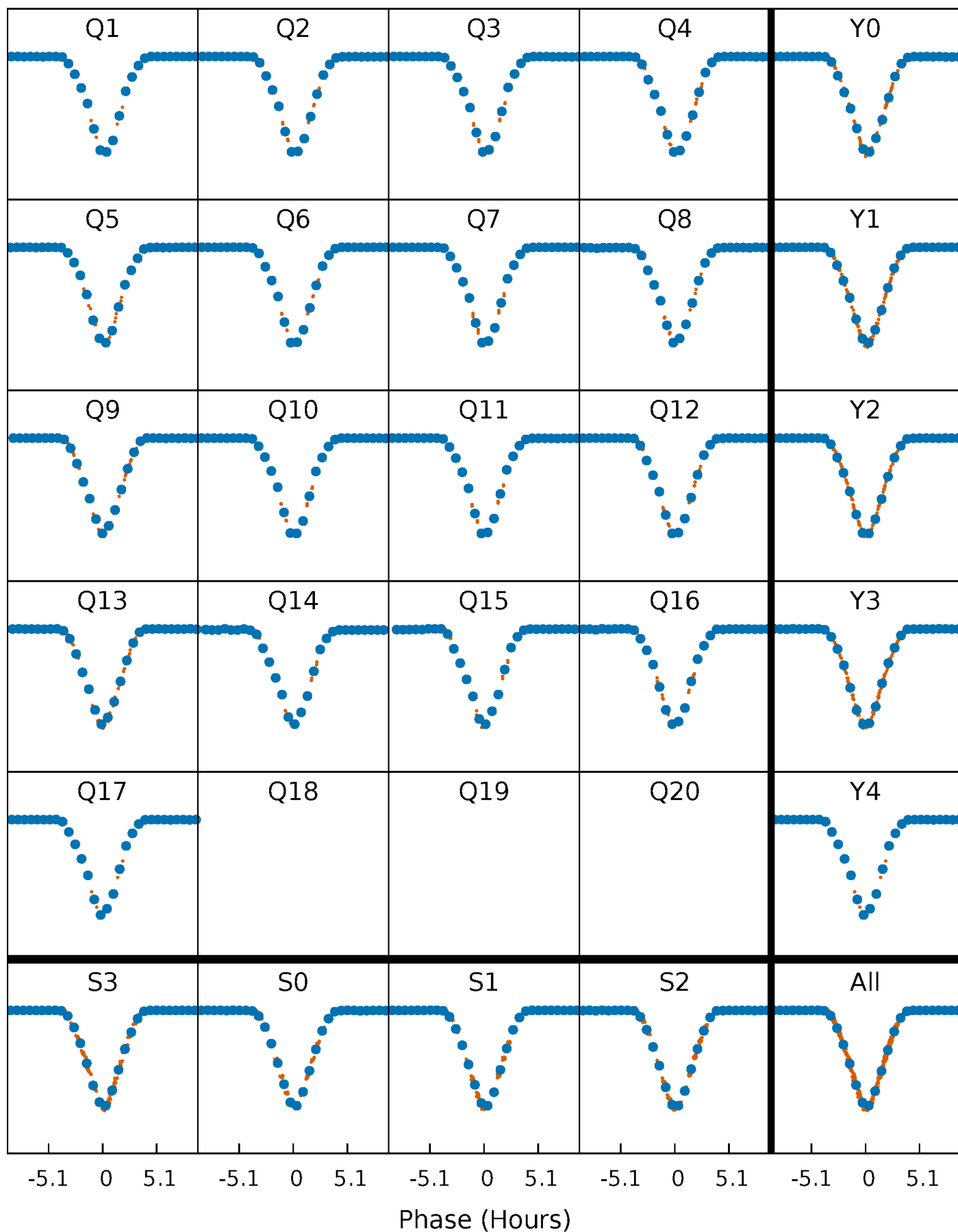


**Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

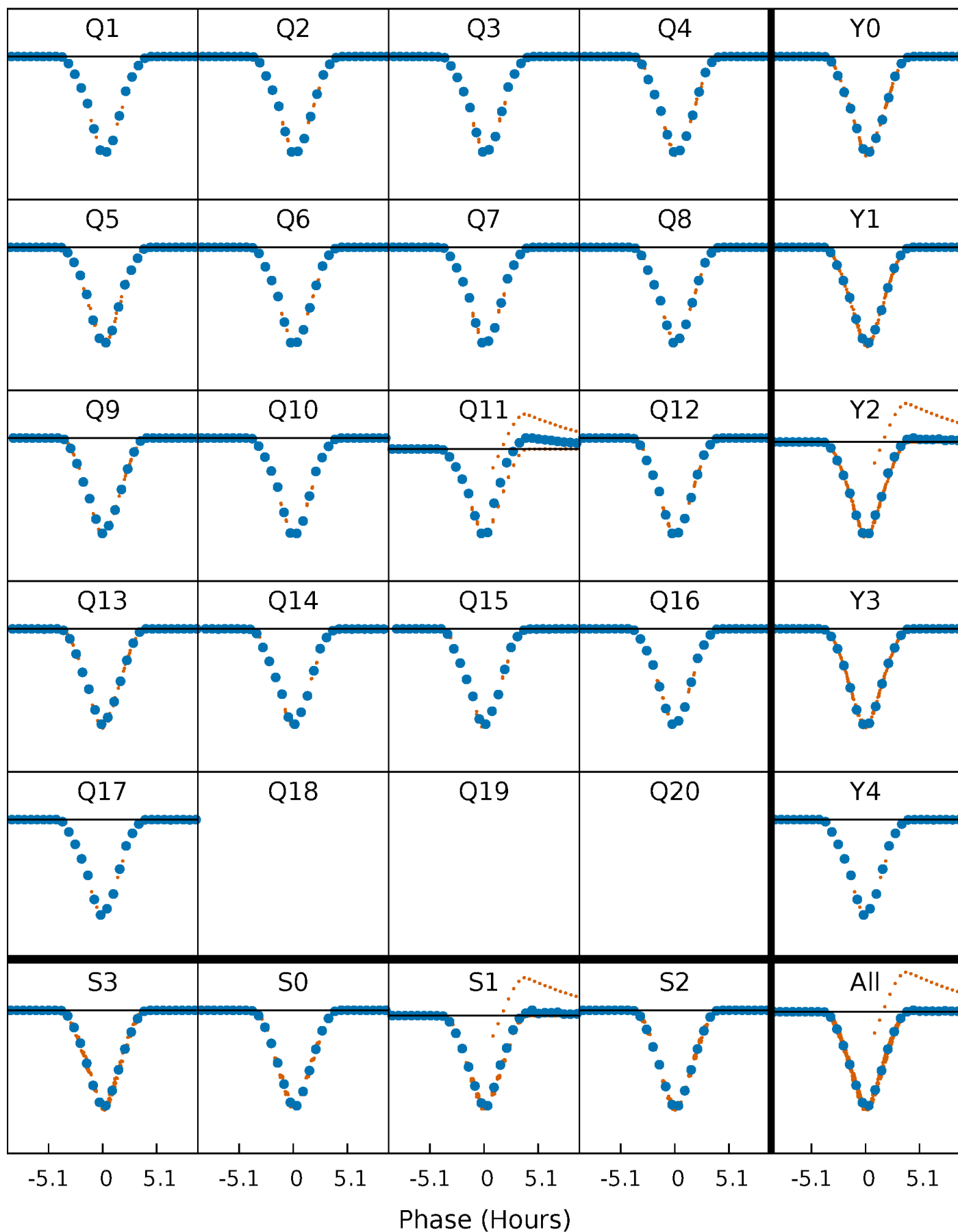
TCE 003323289-01 P= 33.693433 Days  $T_0=158.857908$  (BKJD)





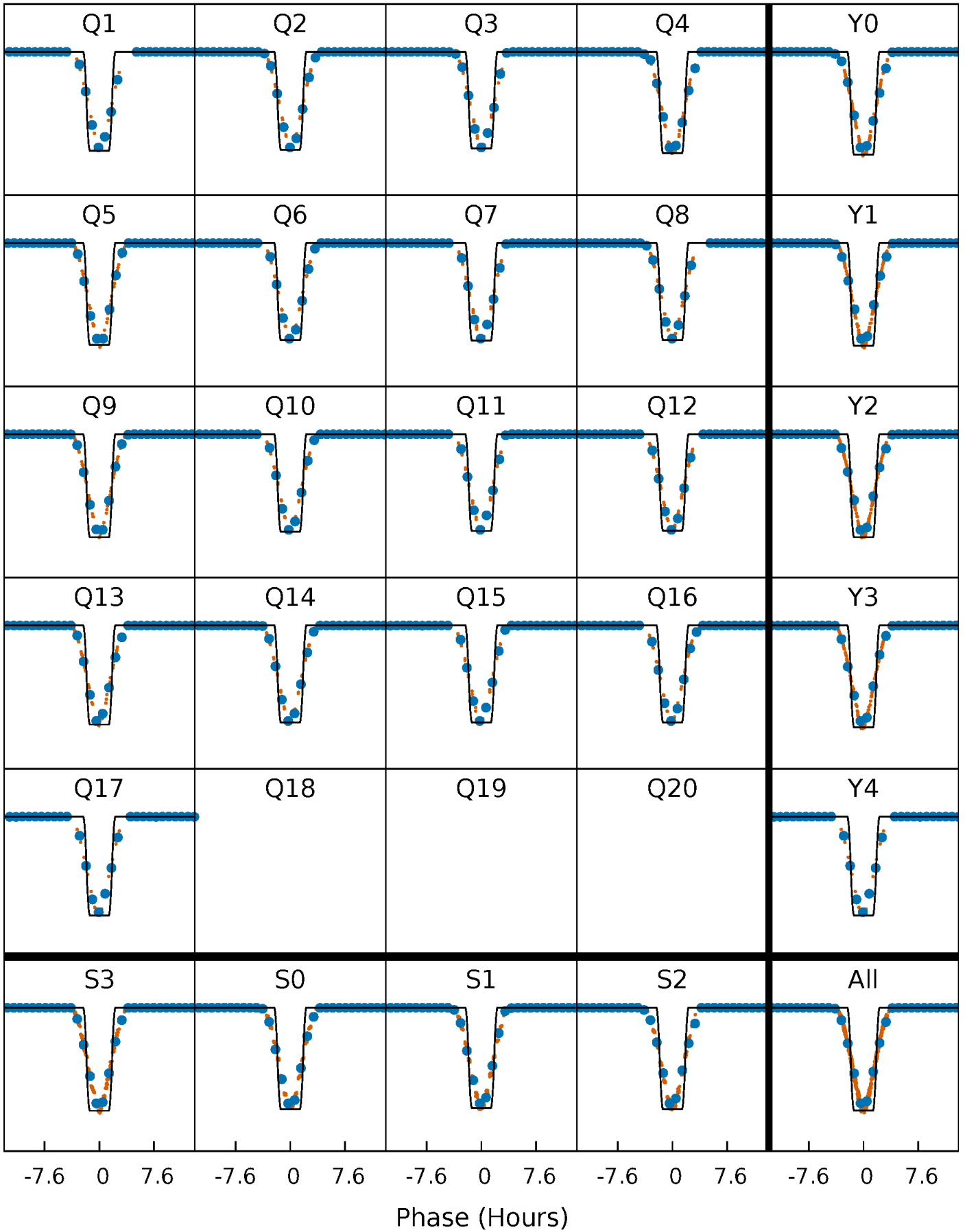
# DV Quarter-Phased Transit Curves

TCE 003323289-01 P= 33.693433 Days  $T_0=158.857908$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

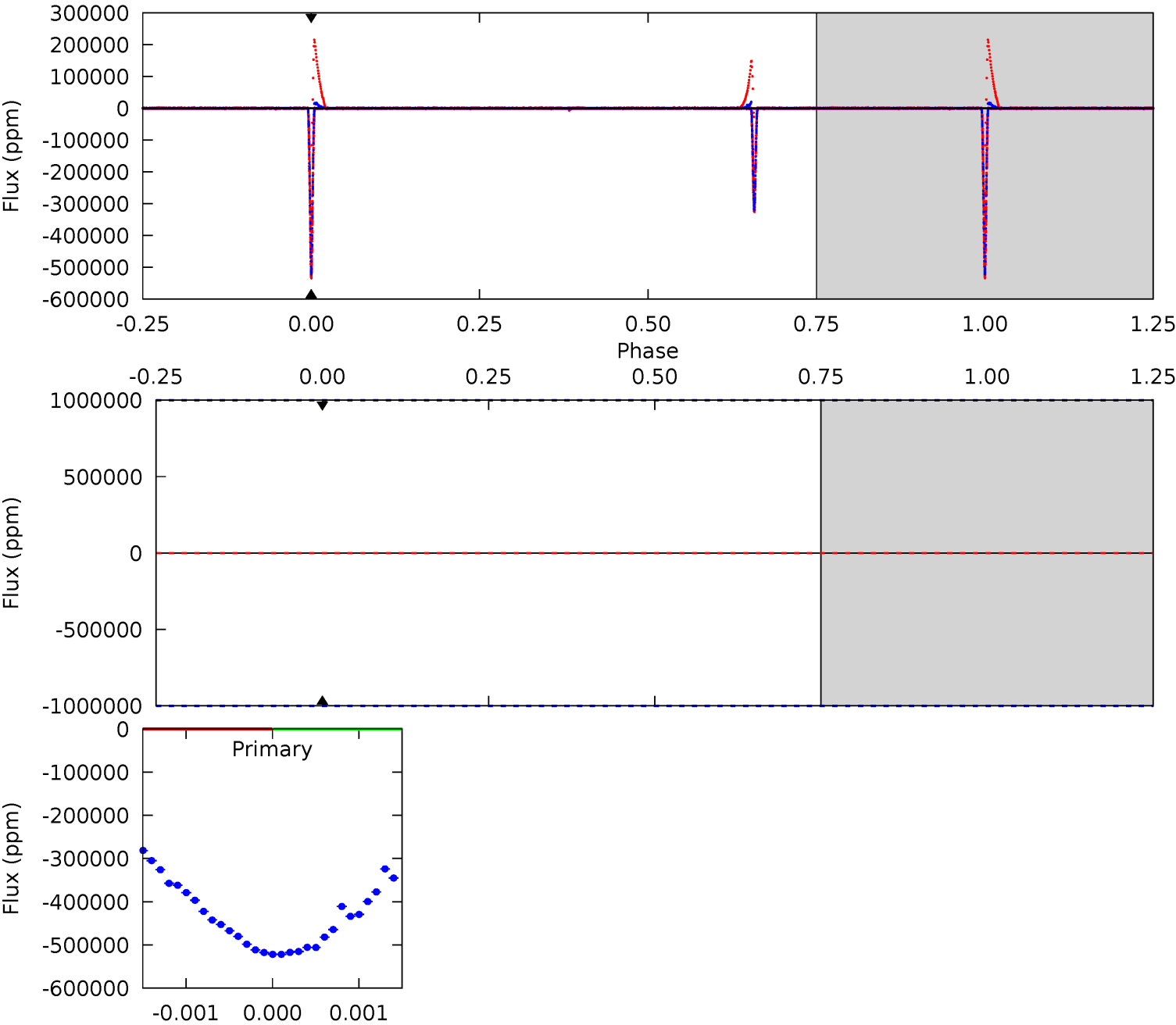
TCE 003323289-01 P= 33.693433 Days  $T_0=158.861917$  (BKJD)



DV Model-Shift Uniqueness Test

003323289-01, P = 33.693433 Days, E = 125.164475 Days

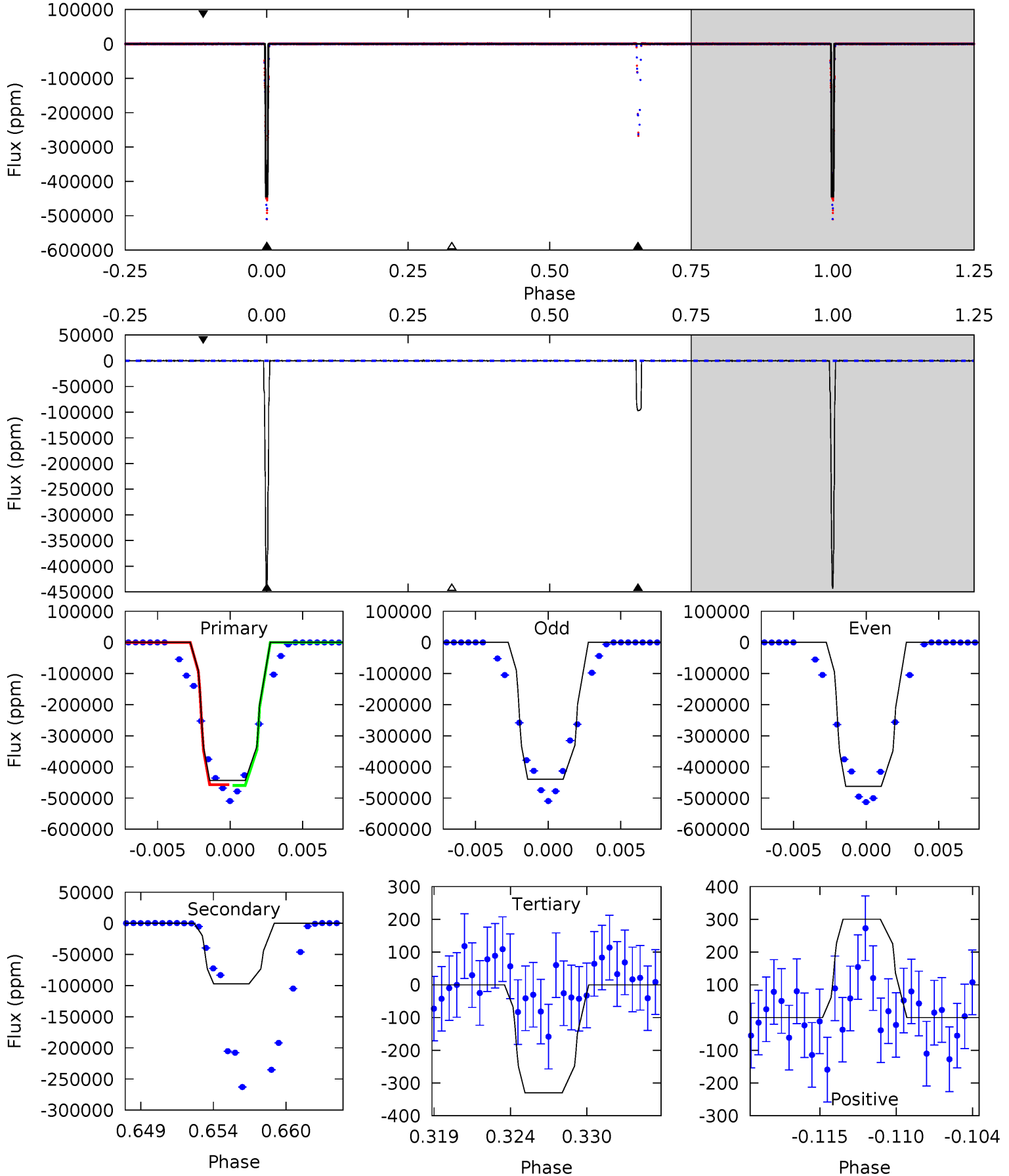
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

003323289-01, P = 33.693433 Days, E = 125.168484 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
6355	1390	4.72	4.30	5.14	2.78	14.0	6350	6351	1385	1385	130.8	1.00	0.00	0



### Stellar Parameters For KIC 003323289

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5427^{+161}_{-145}$	$4.448^{+0.117}_{-0.156}$	$-0.100^{+0.300}_{-0.300}$	$0.899^{+0.190}_{-0.132}$	$0.826^{+0.108}_{-0.063}$	$1.604^{+0.747}_{-0.652}$
	+3%/-3%	+3%/-4%	+300%/-300%	+21%/-15%	+13%/-8%	+47%/-41%
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 003323289-01 / KOI 6319.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$49.95^{+11.91}_{-11.19}$	$729^{+47}_{-35}$	$-2583^{+7142}_{-1915}$	$-20.636^{+926.123}_{-769.552}$
Alt.	$-97028 \pm 70$	$71.61^{+14.74}_{-11.31}$	$728^{+47}_{-38}$	$3961^{+227}_{-175}$	$421^{+177}_{-122}$

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

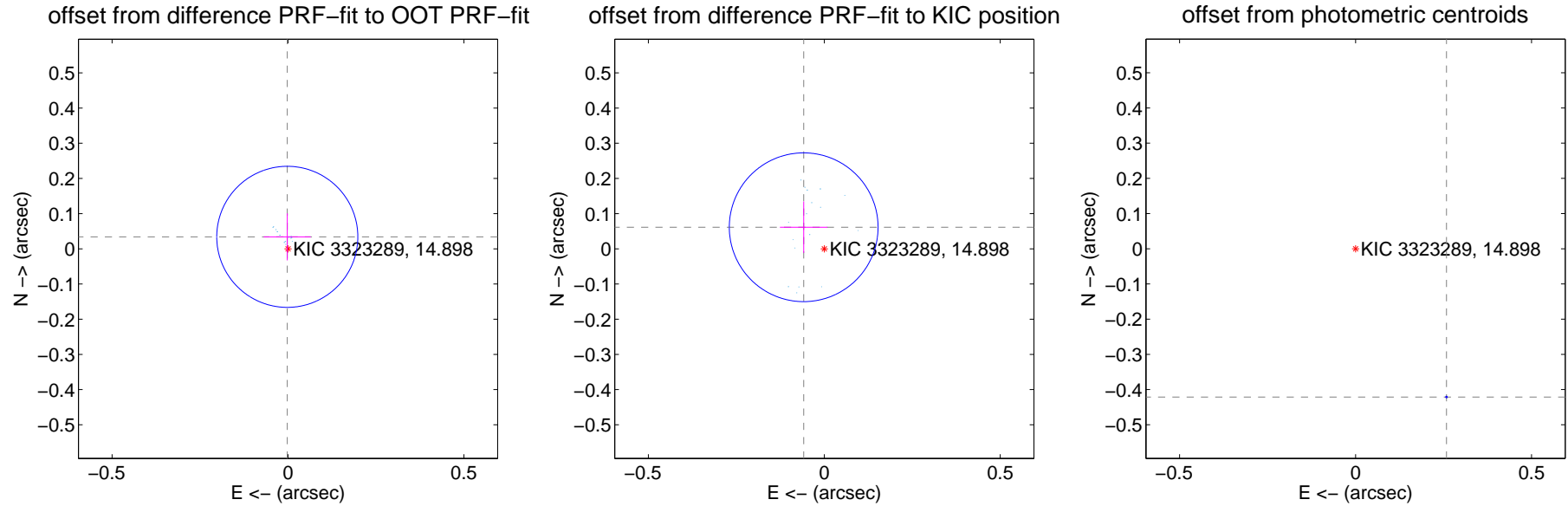
## DV Centroid Data

Supplemental centroid analysis for 003323289-01. Kepler magnitude: 14.90. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

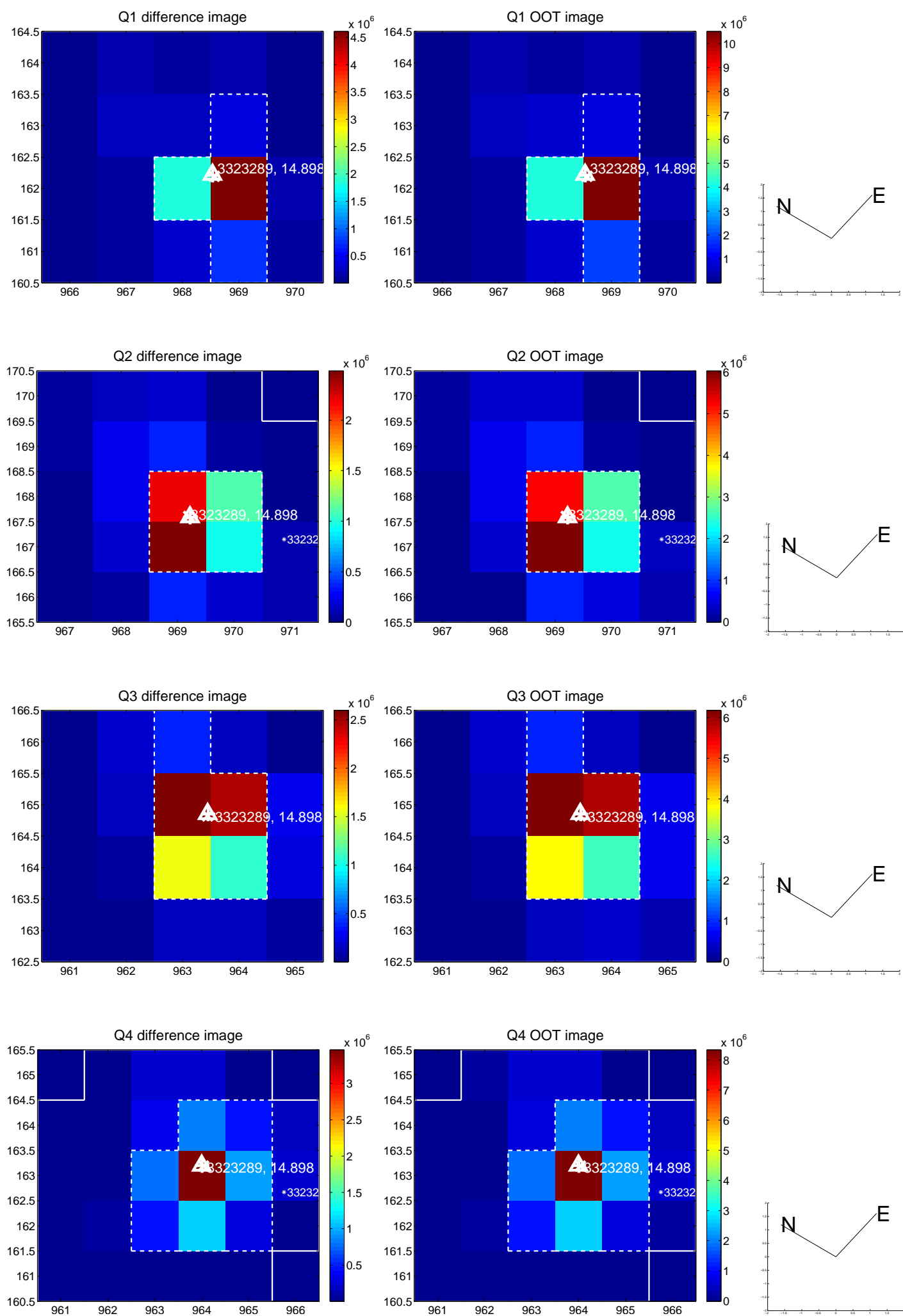
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.034 \pm 0.067$	0.51	$0.002 \pm 0.067$	$0.034 \pm 0.067$
PRF-fit source offset from KIC position	$0.085 \pm 0.070$	1.20	$0.059 \pm 0.067$	$0.061 \pm 0.073$
photometric centroid source offset	$0.49 \pm 0.00$	647.12	$-0.26 \pm 0.00$	$-0.42 \pm 0.00$

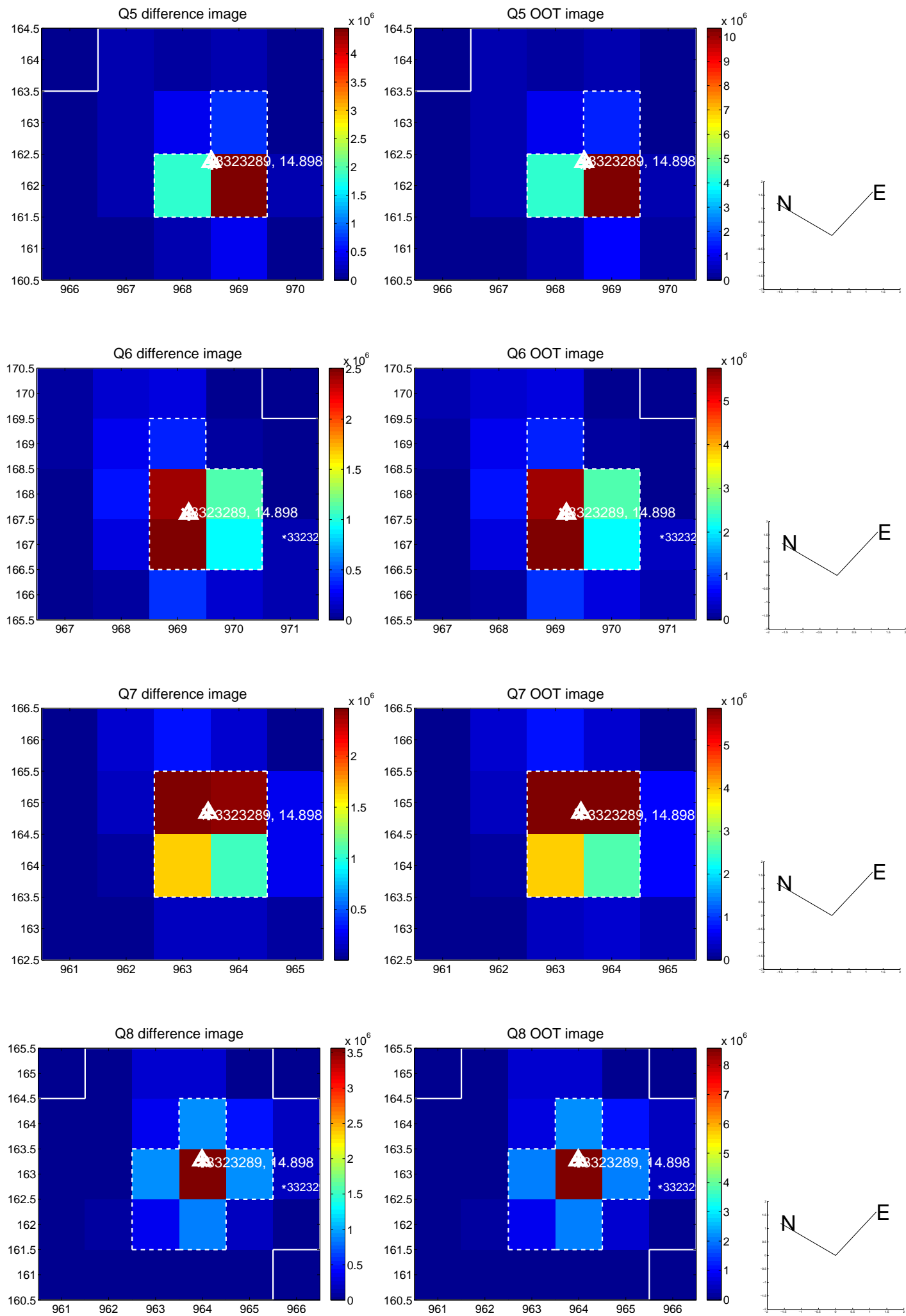


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

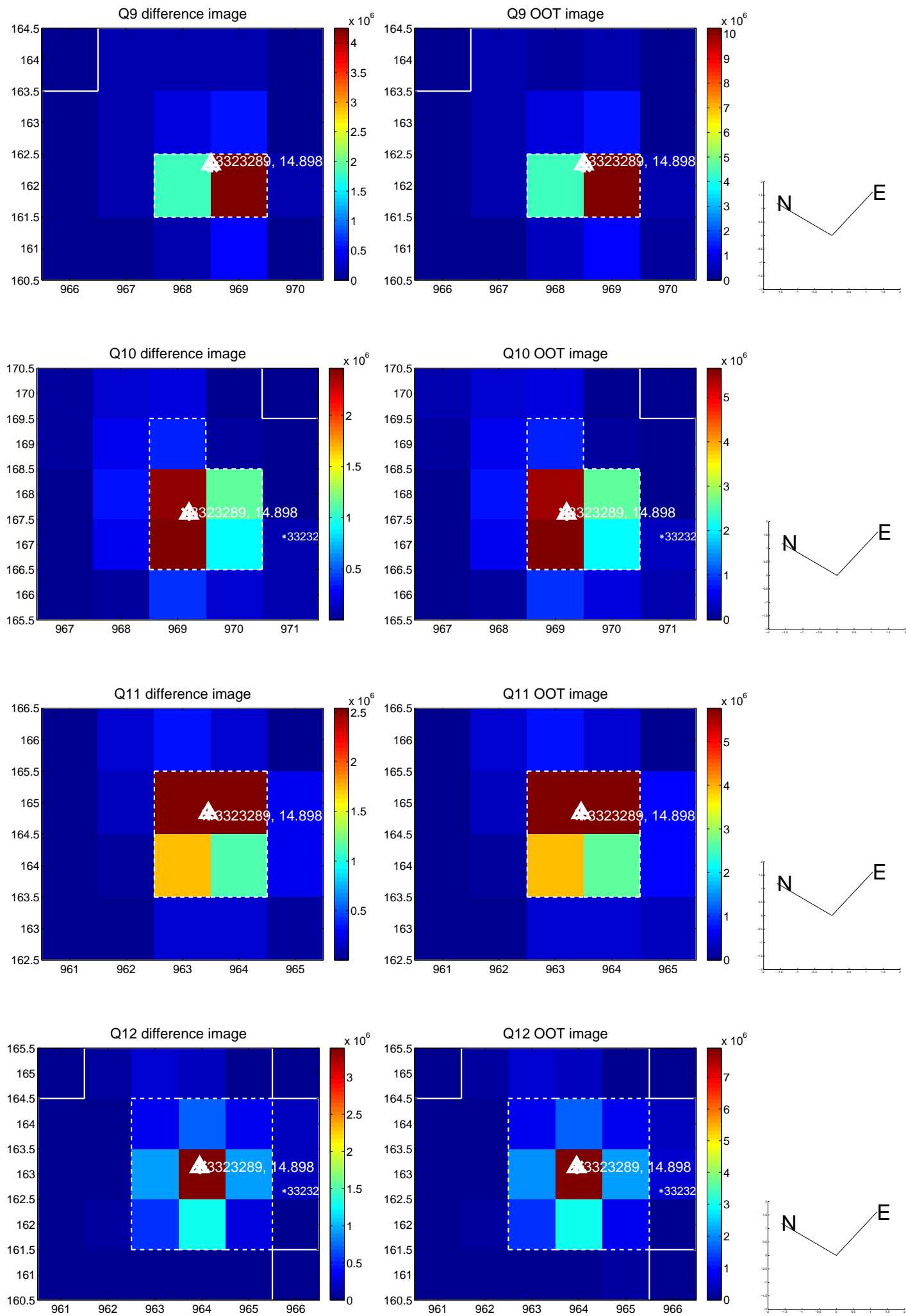


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

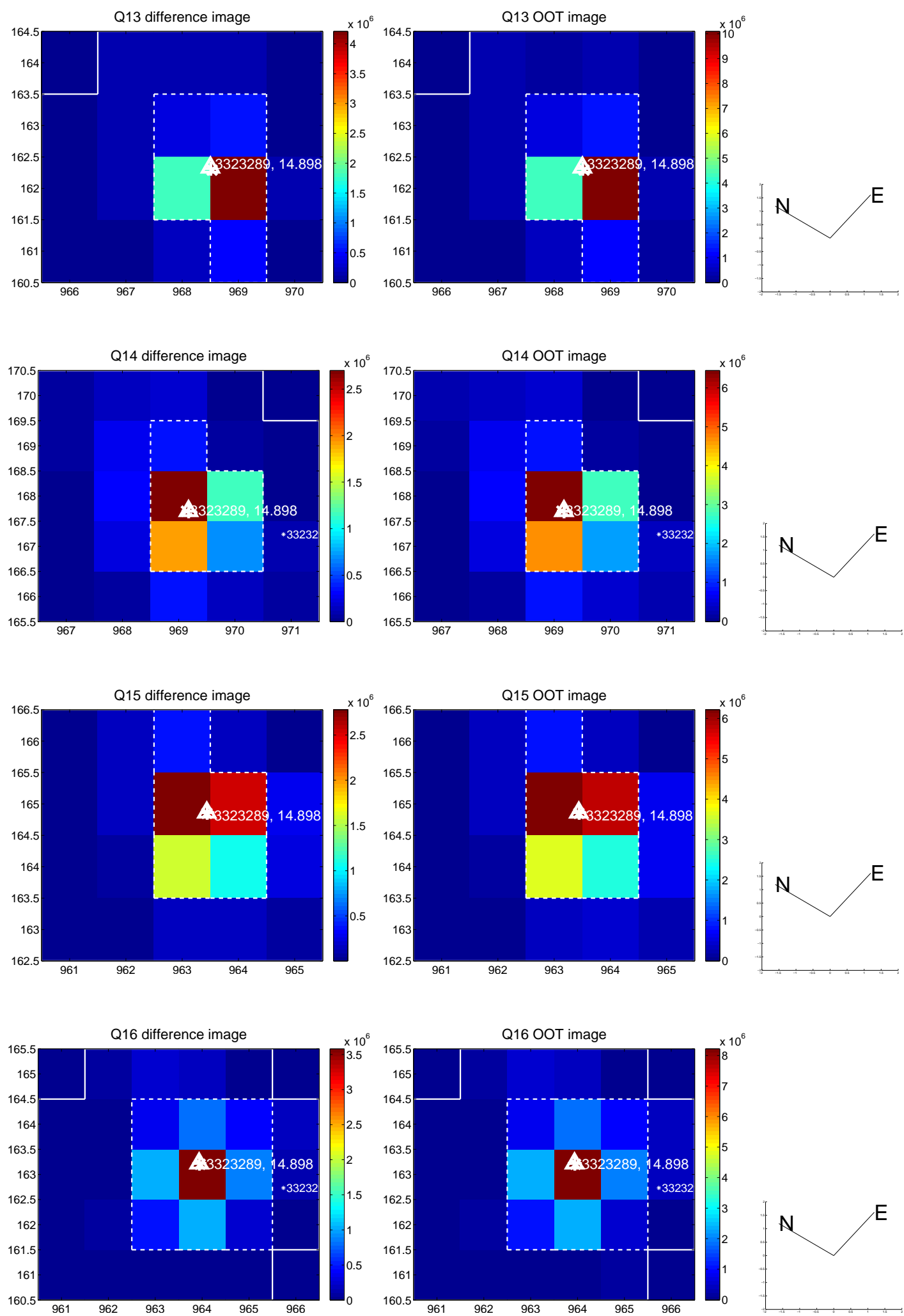




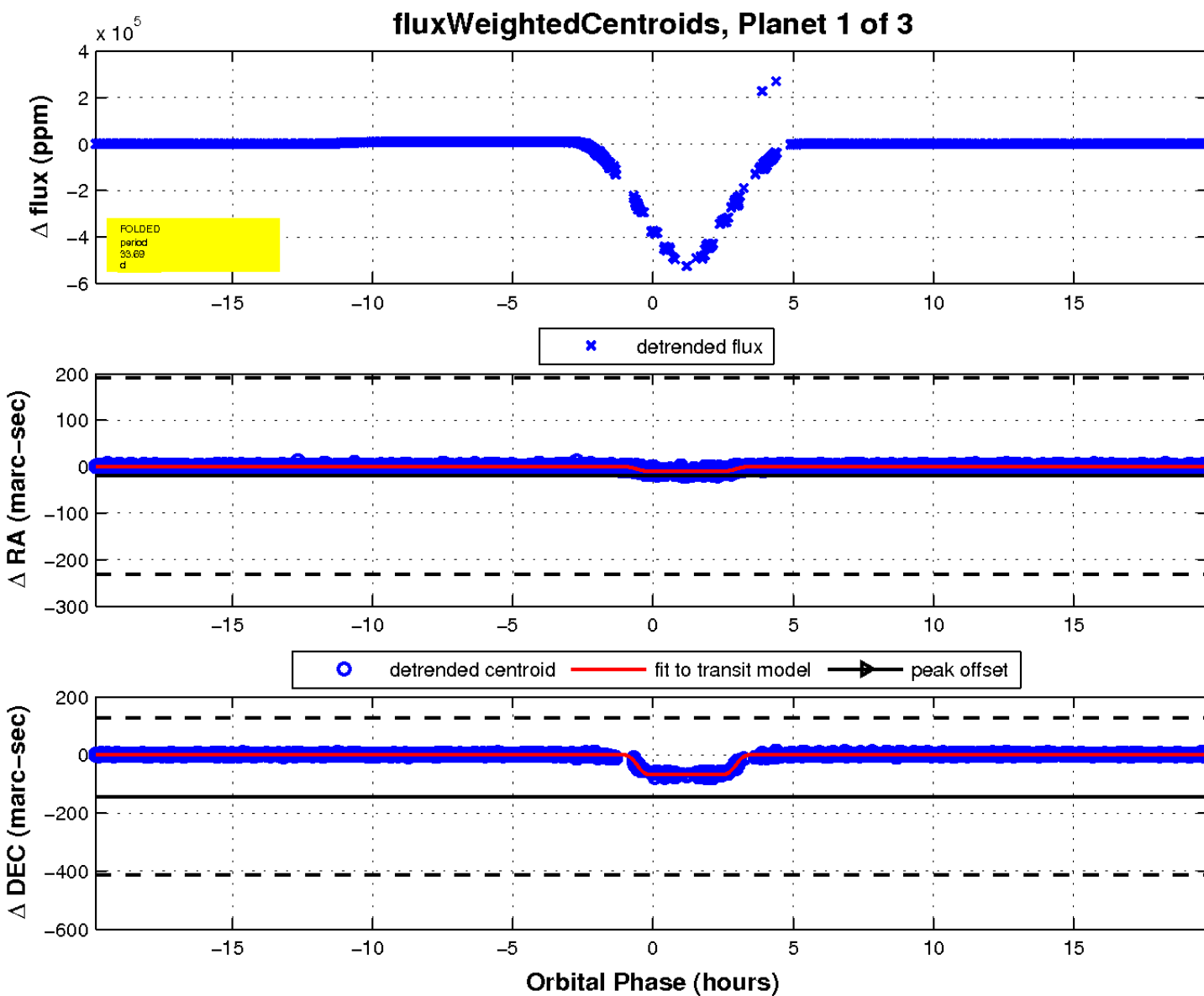
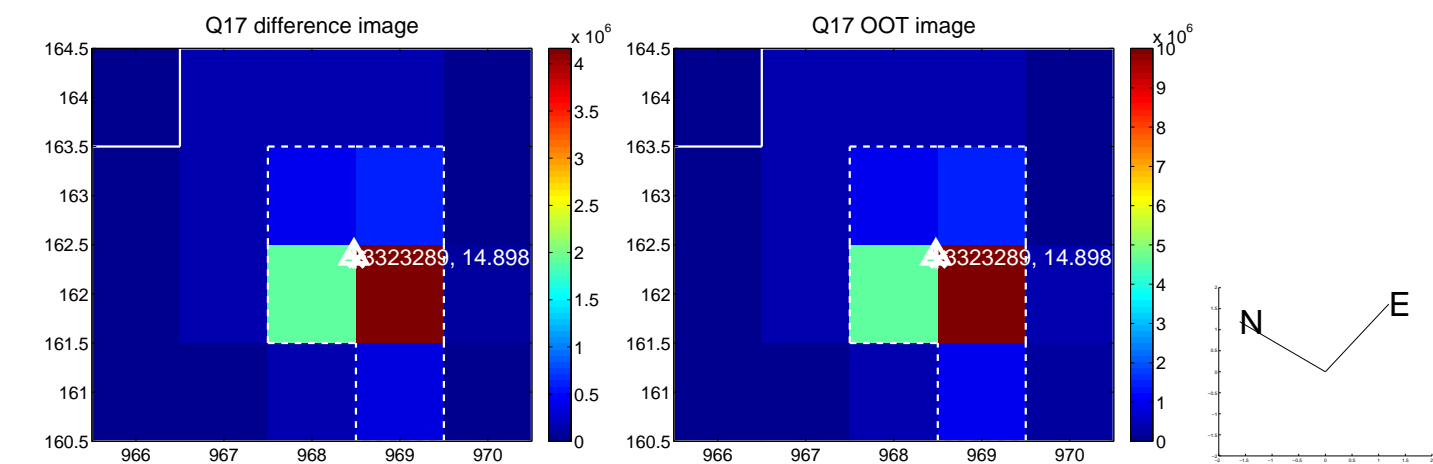
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

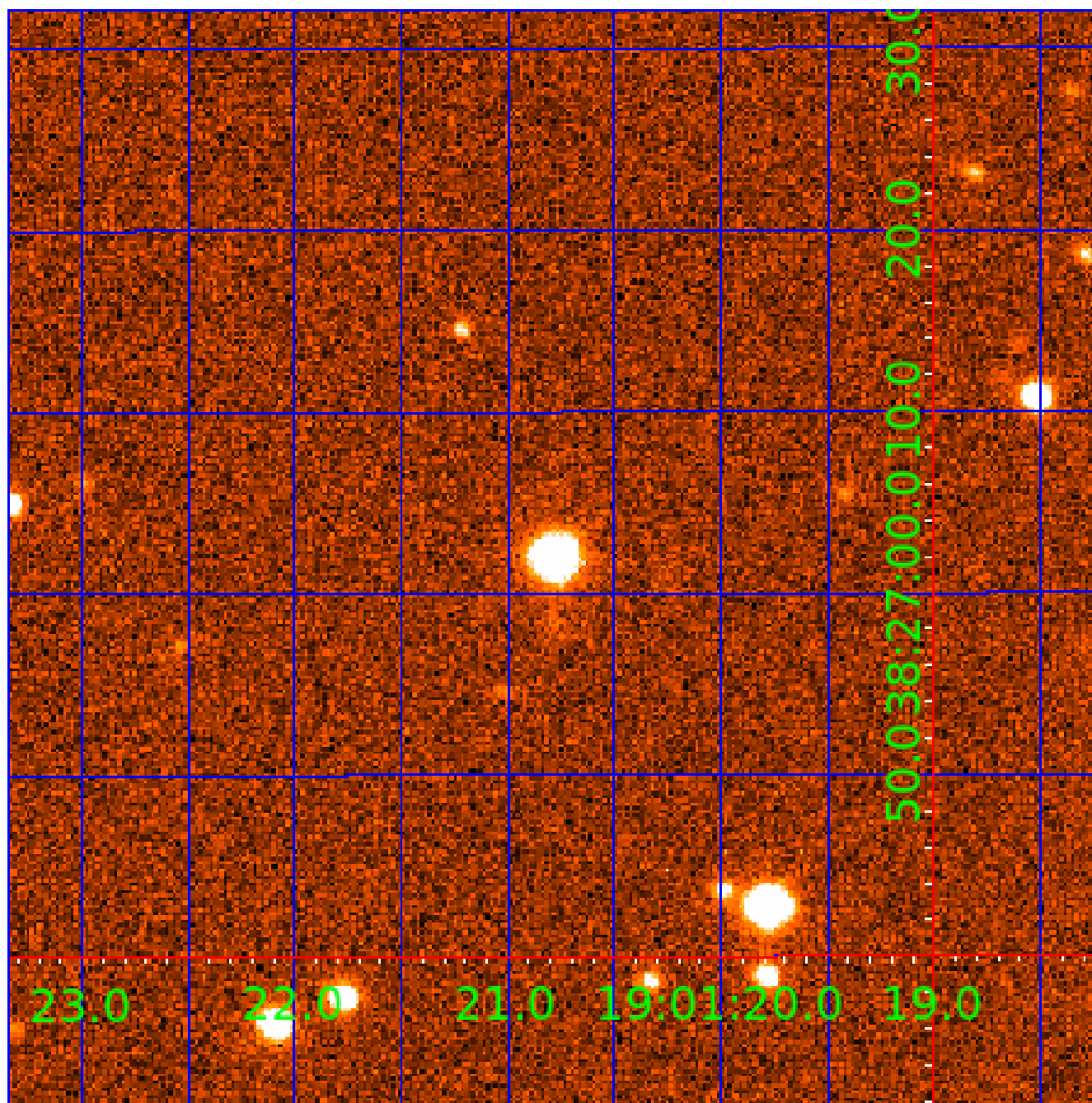


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 003323289

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003323289-01	OBS	6319.01	33.693433	158.857908	520447.5	4.500	12515.7	-1.0	0.90	5427	49.05	17.10
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003323289-03	OBS	No	11.231103	136.104763	9115.5	11.775	449.1	386.4	0.90	5427	8.43	73.97

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003323289-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
003323289-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
003323289-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—RESIDUAL_TCE—CENT_FEW_MEAS

**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 003323289-02

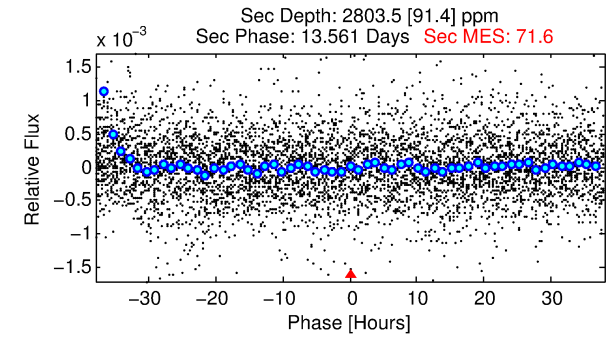
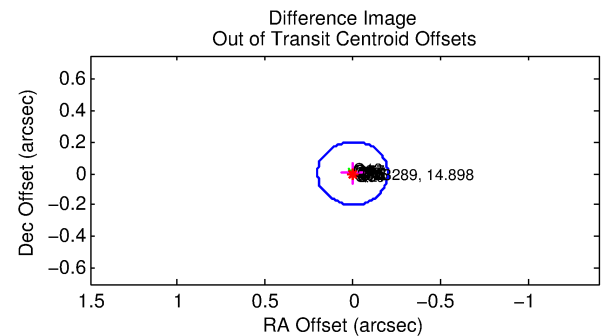
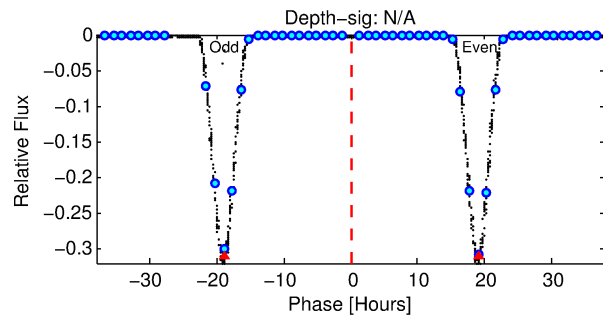
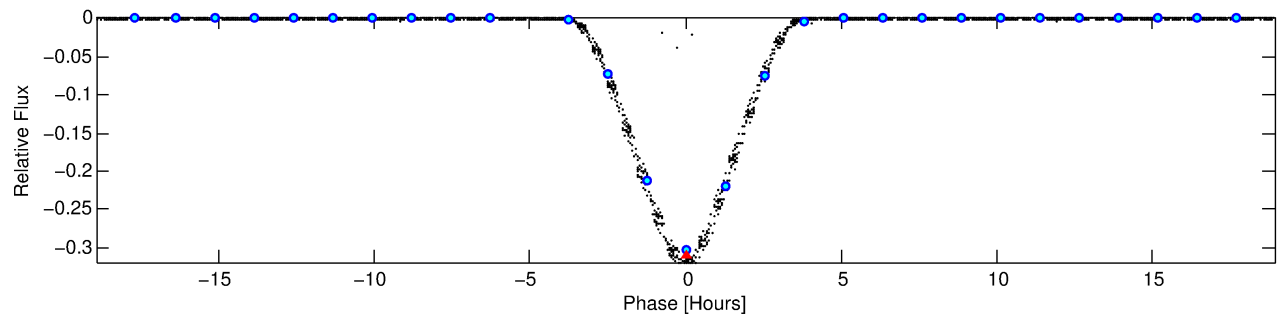
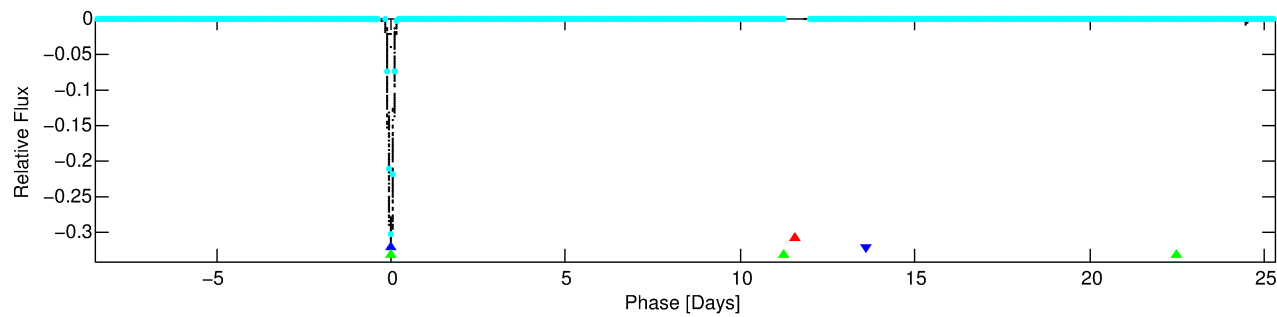
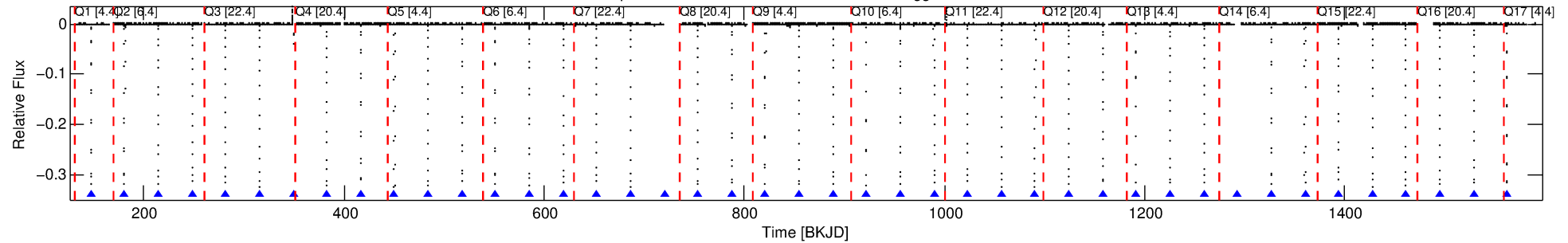
No Significant Match Found

# DV One-Page Summary

KIC: 3323289 Candidate: 2 of 3 Period: 33.693 d

KOI: K06319 Corr: No Ephemeris Match

Kp: 14.90 R\*: 0.90 Rs Teff: 5427.0 K Logg: 4.45 Fe/H: -0.100



TPS TCE Results:

Period = 33.69346 d  
Epoch = 147.3198 BKJD

DV fit results are unavailable

DV Diagnostic Results:

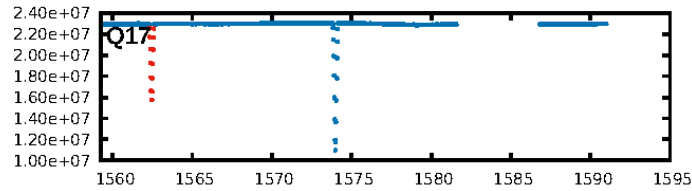
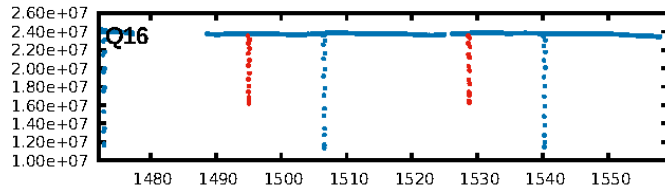
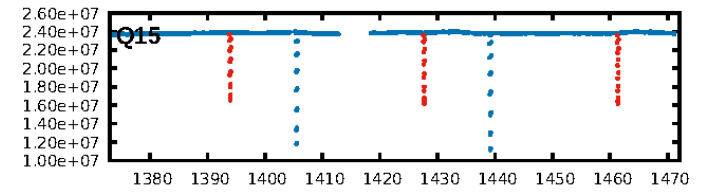
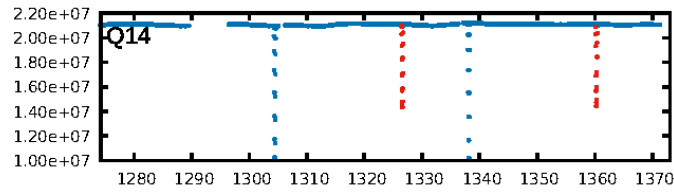
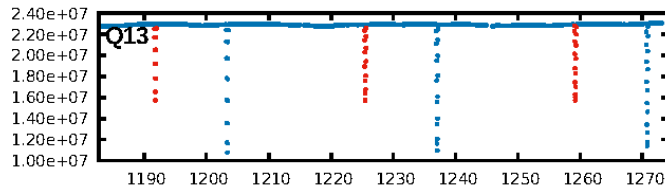
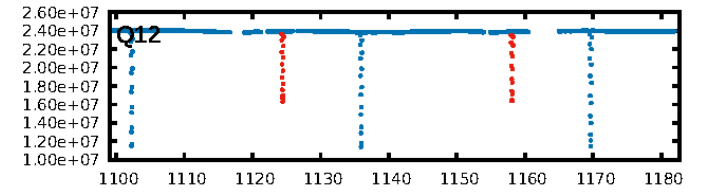
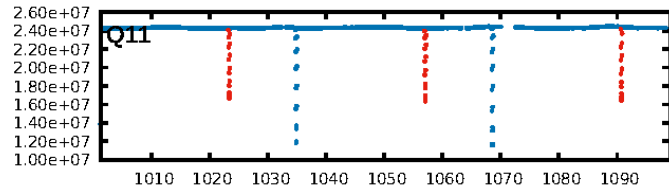
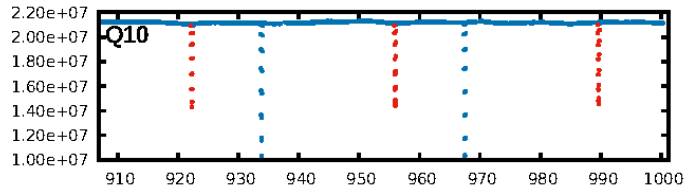
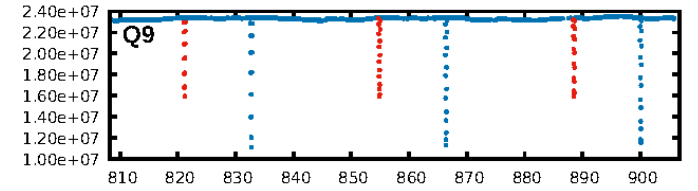
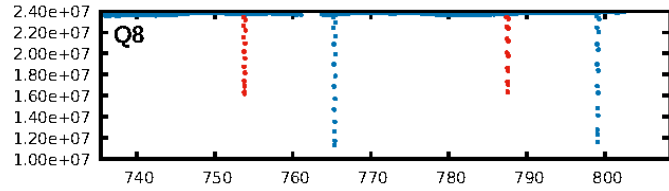
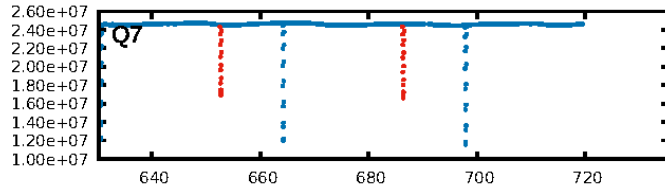
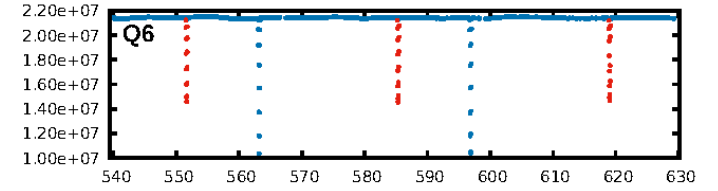
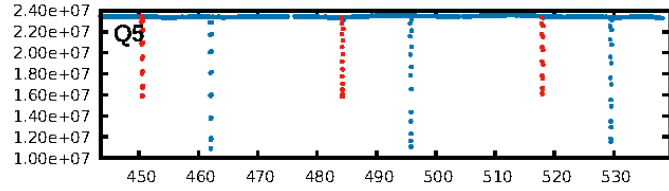
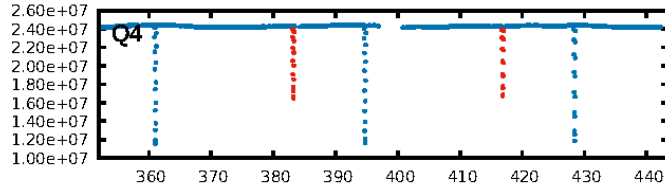
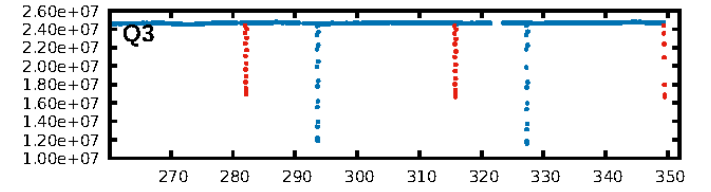
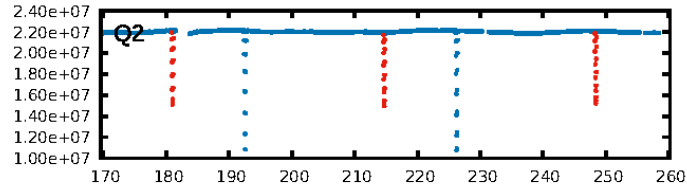
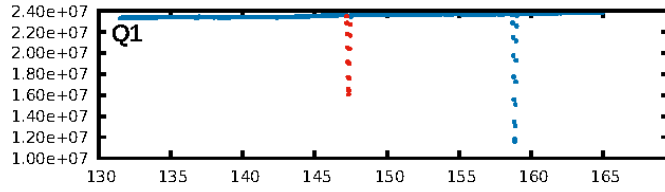
ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [39/39]  
GhostDiagnostic-chr: 1.465

Centroid-sig: 0.0%  
Centroid-so: 0.539 arcsec [443.18 $\sigma$ ]  
OotOffset-rm: 0.003 arcsec [0.05 $\sigma$ ]  
KicOffset-rm: 0.059 arcsec [0.88 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

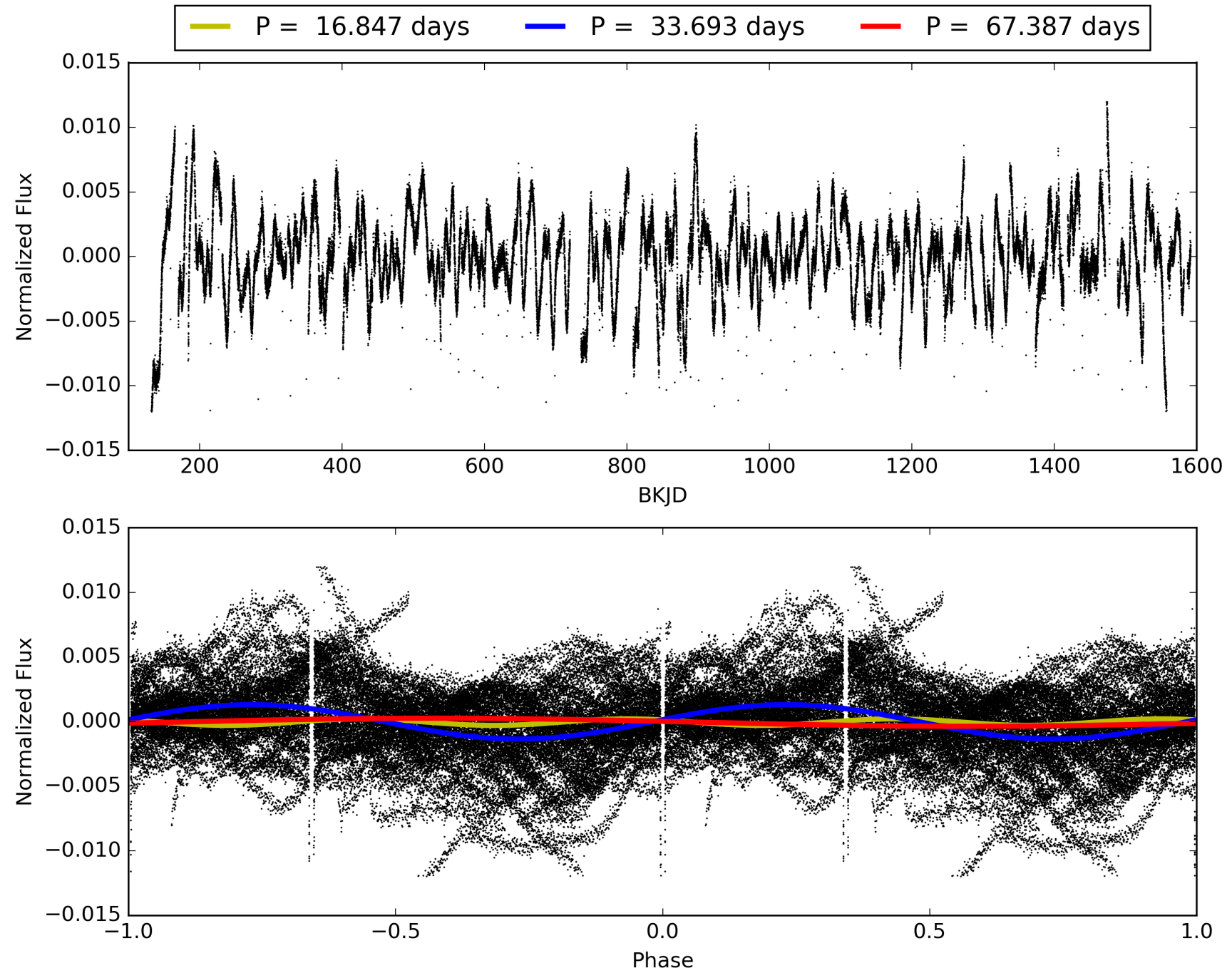
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:29:13 Z

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

# TCE 003323289-02, PDC Light Curves



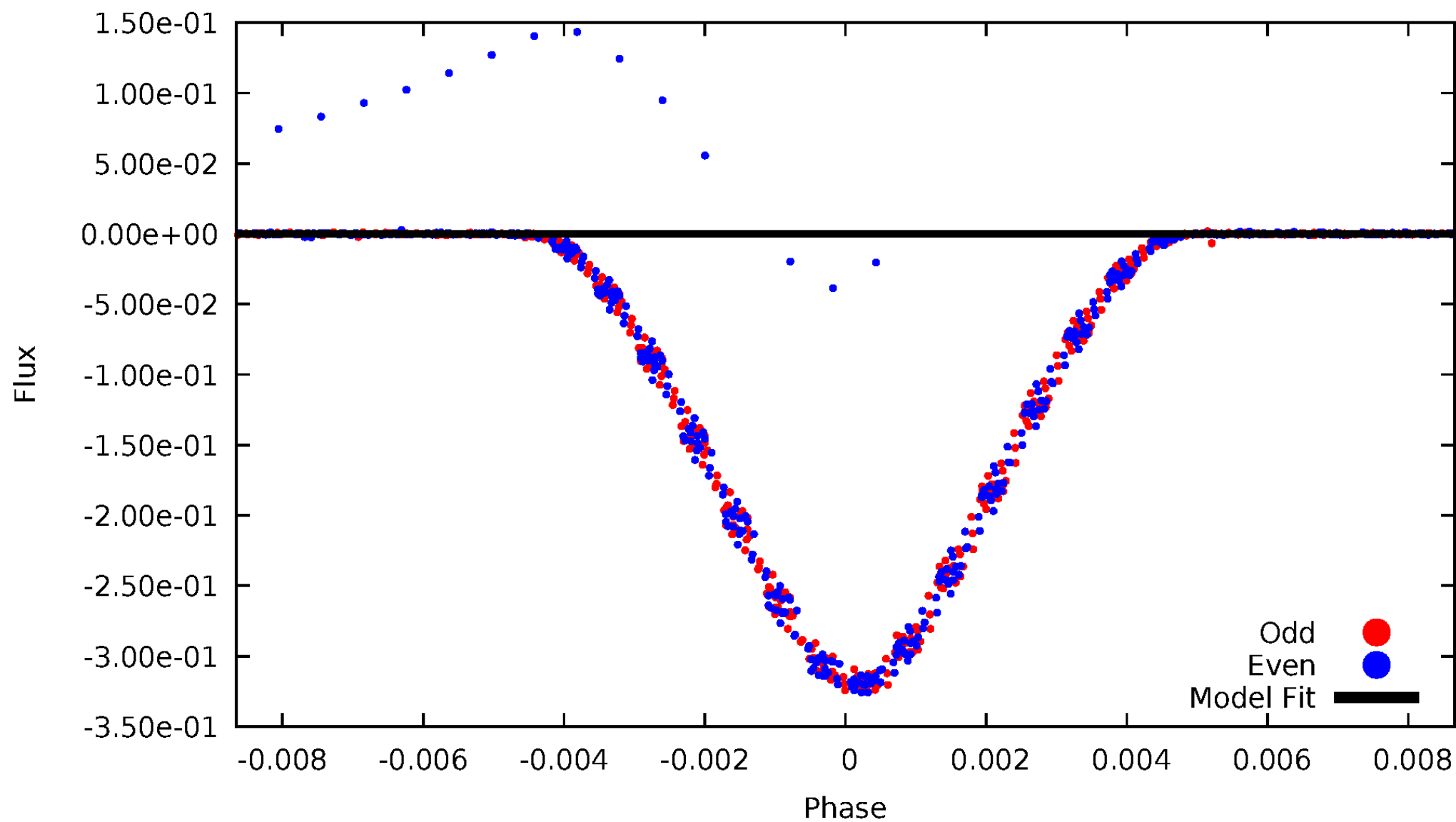
TCE 003323289-02





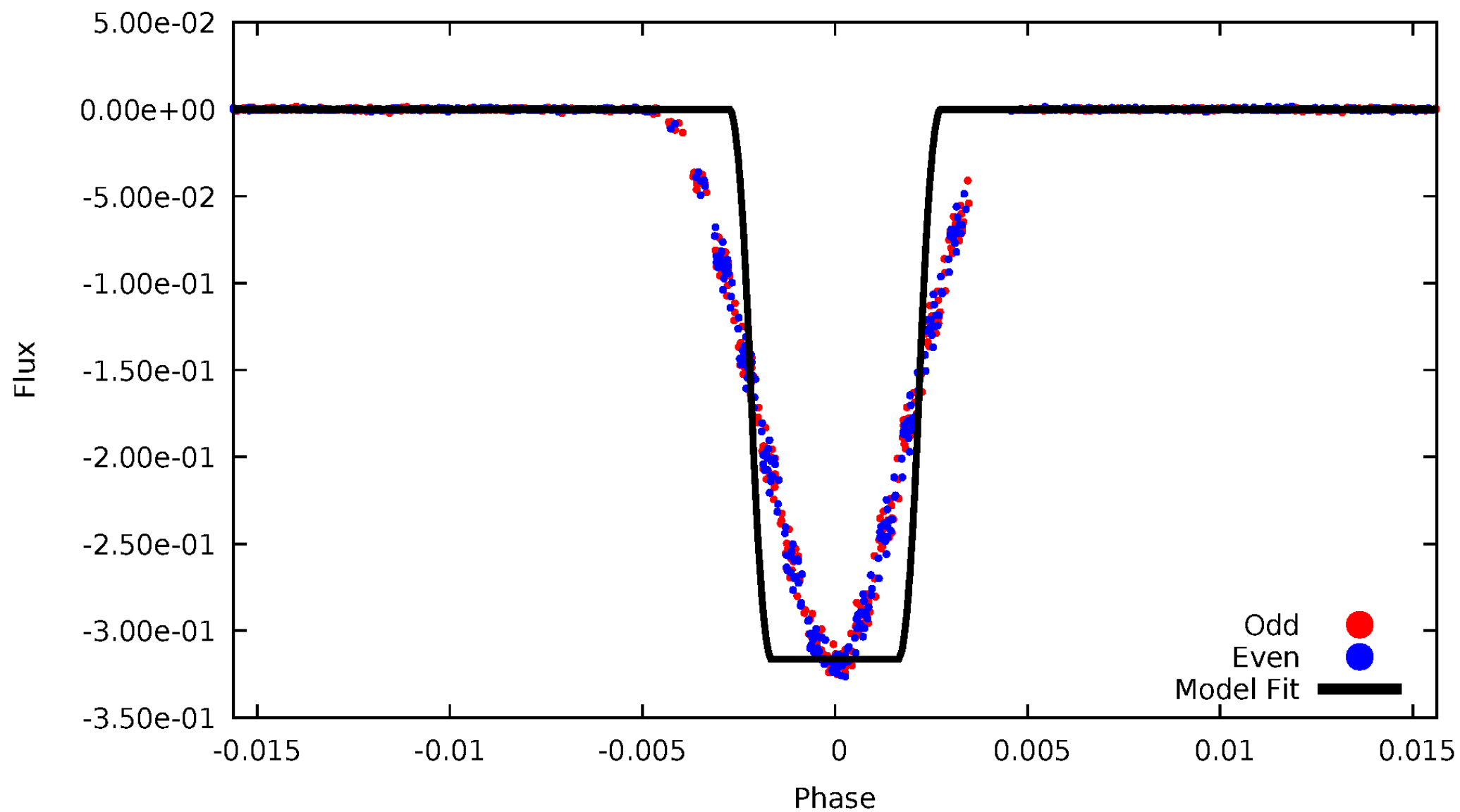
# DV Odd/Even

TCE 003323289-02



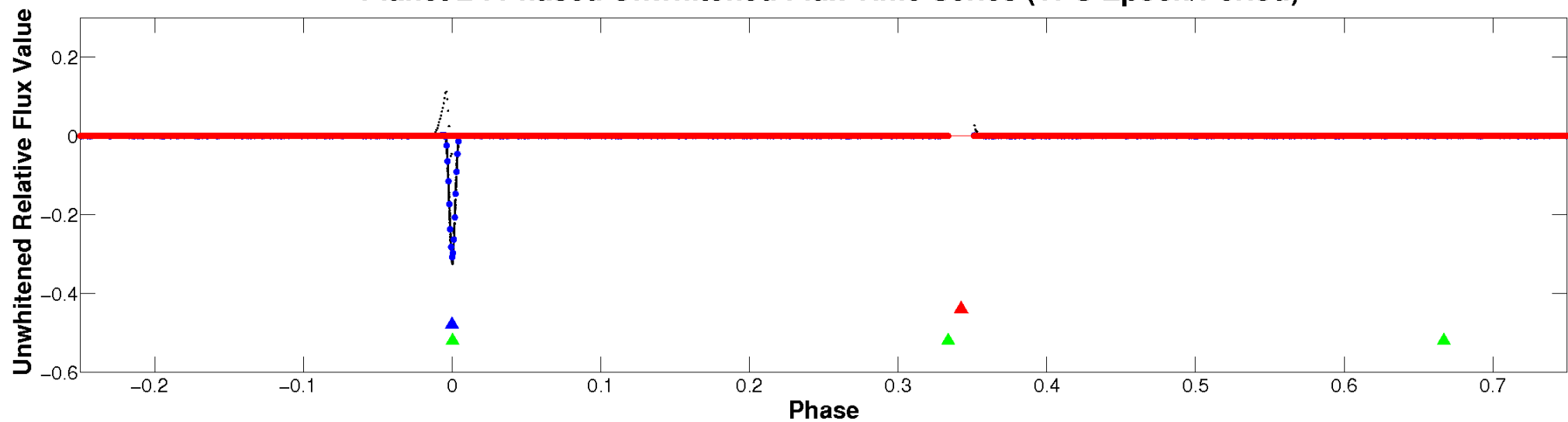
# ALT Odd/Even

TCE 003323289-02

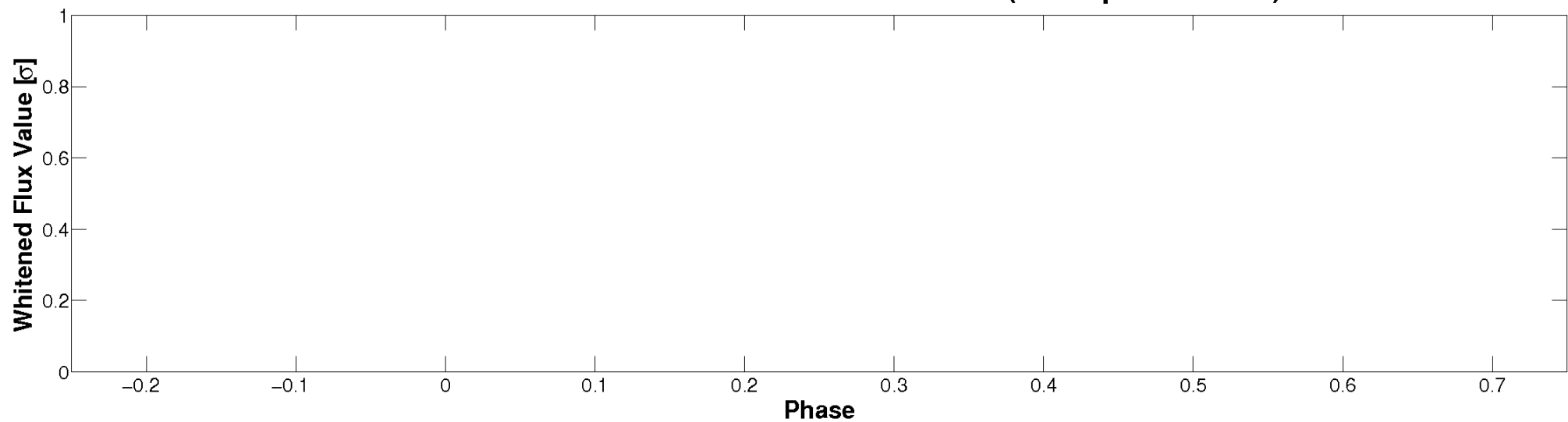


# Non-Whitened Vs. Whitened Light Curve

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

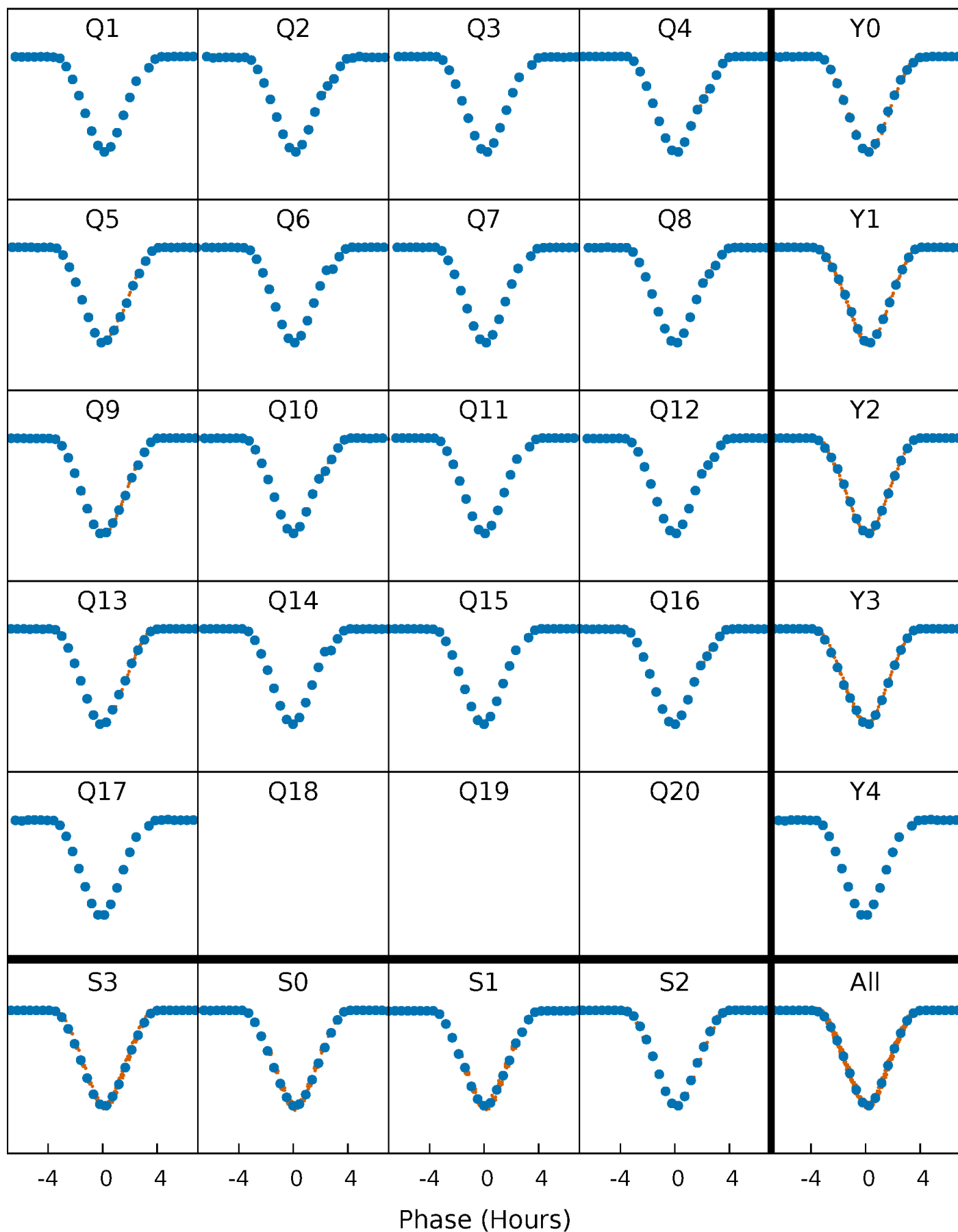


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



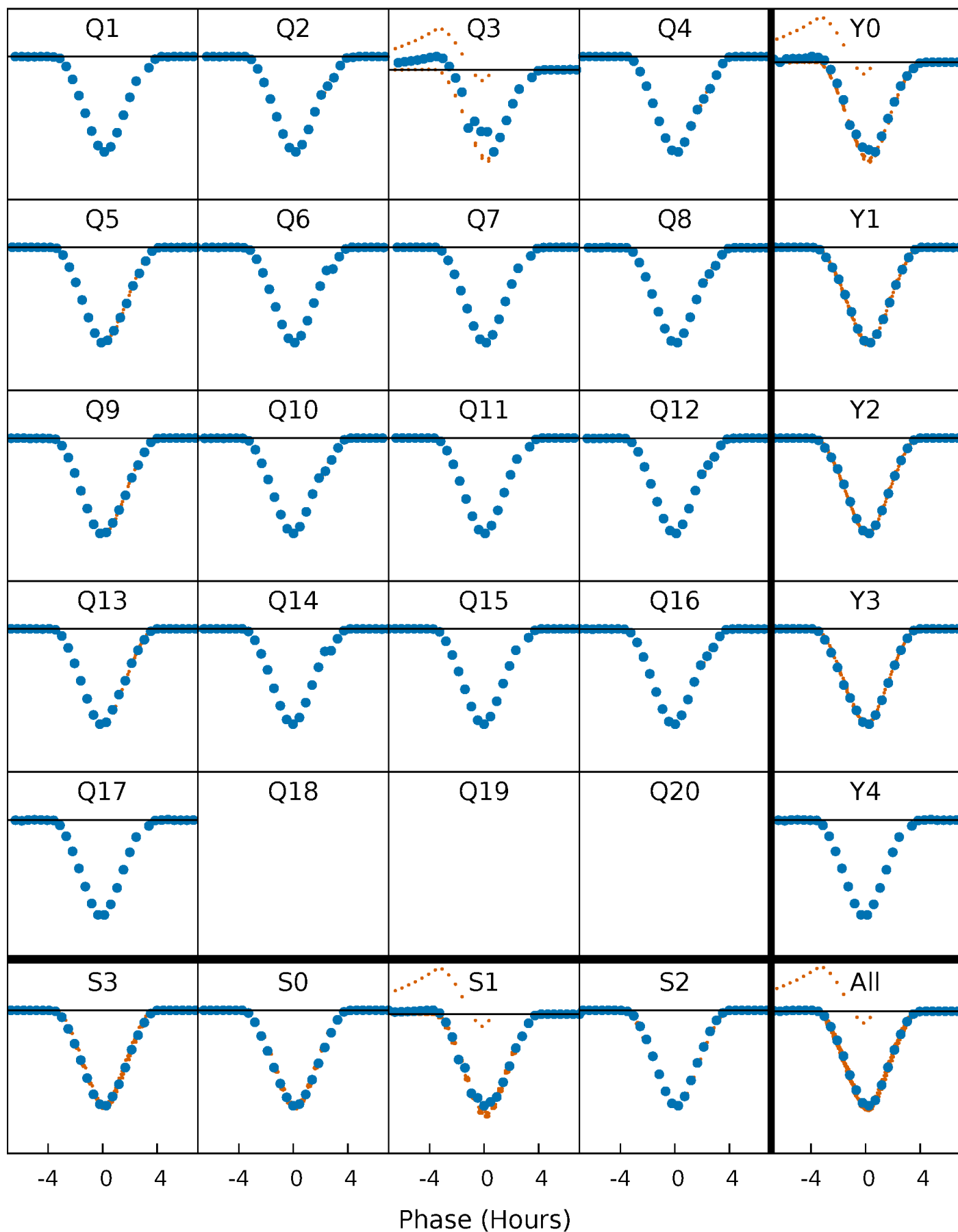
# PDC Quarter-Phased Transit Curves

TCE 003323289-02 P= 33.693462 Days  $T_0=147.319758$  (BKJD)



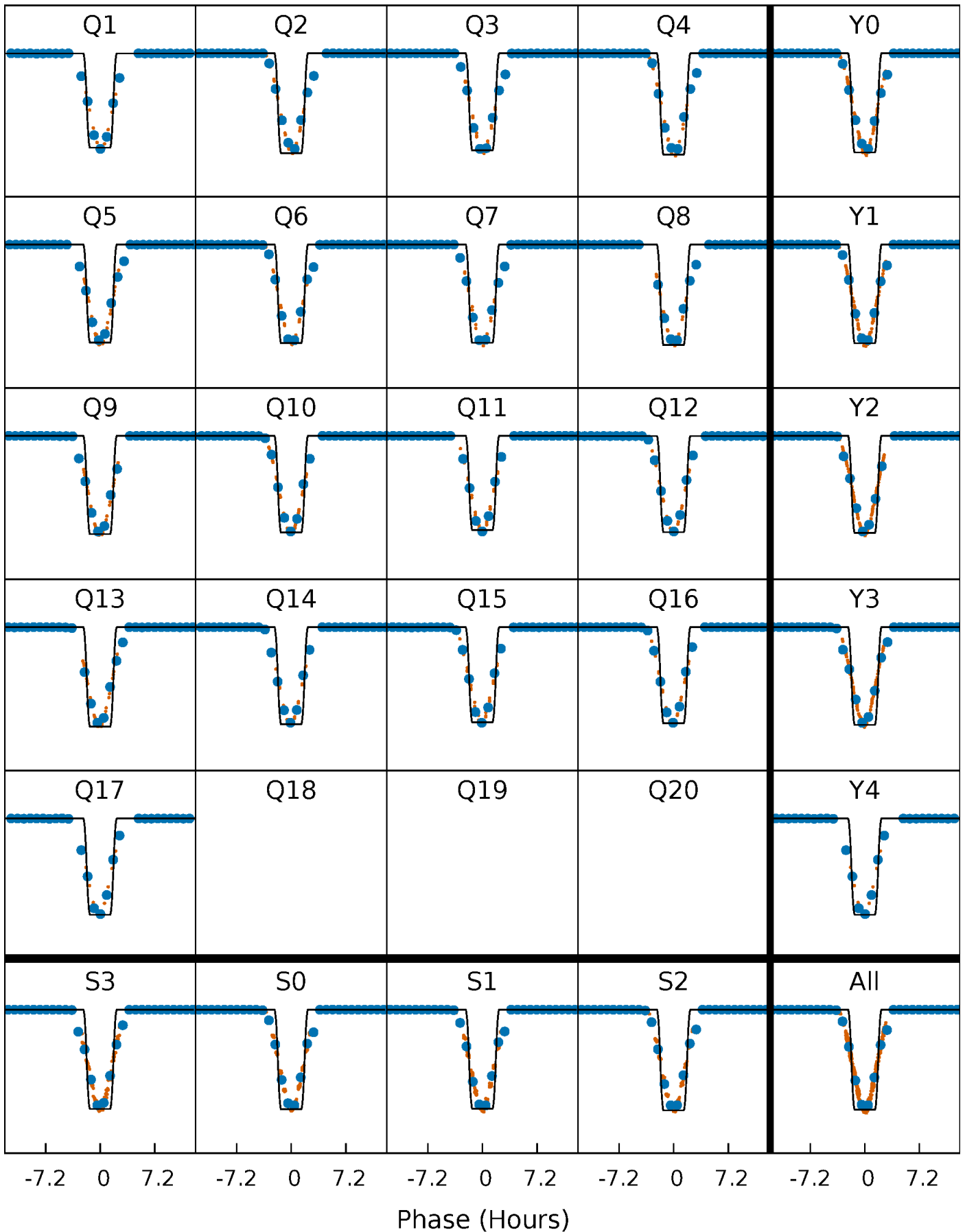
# DV Quarter-Phased Transit Curves

TCE 003323289-02 P= 33.693462 Days  $T_0=147.319758$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

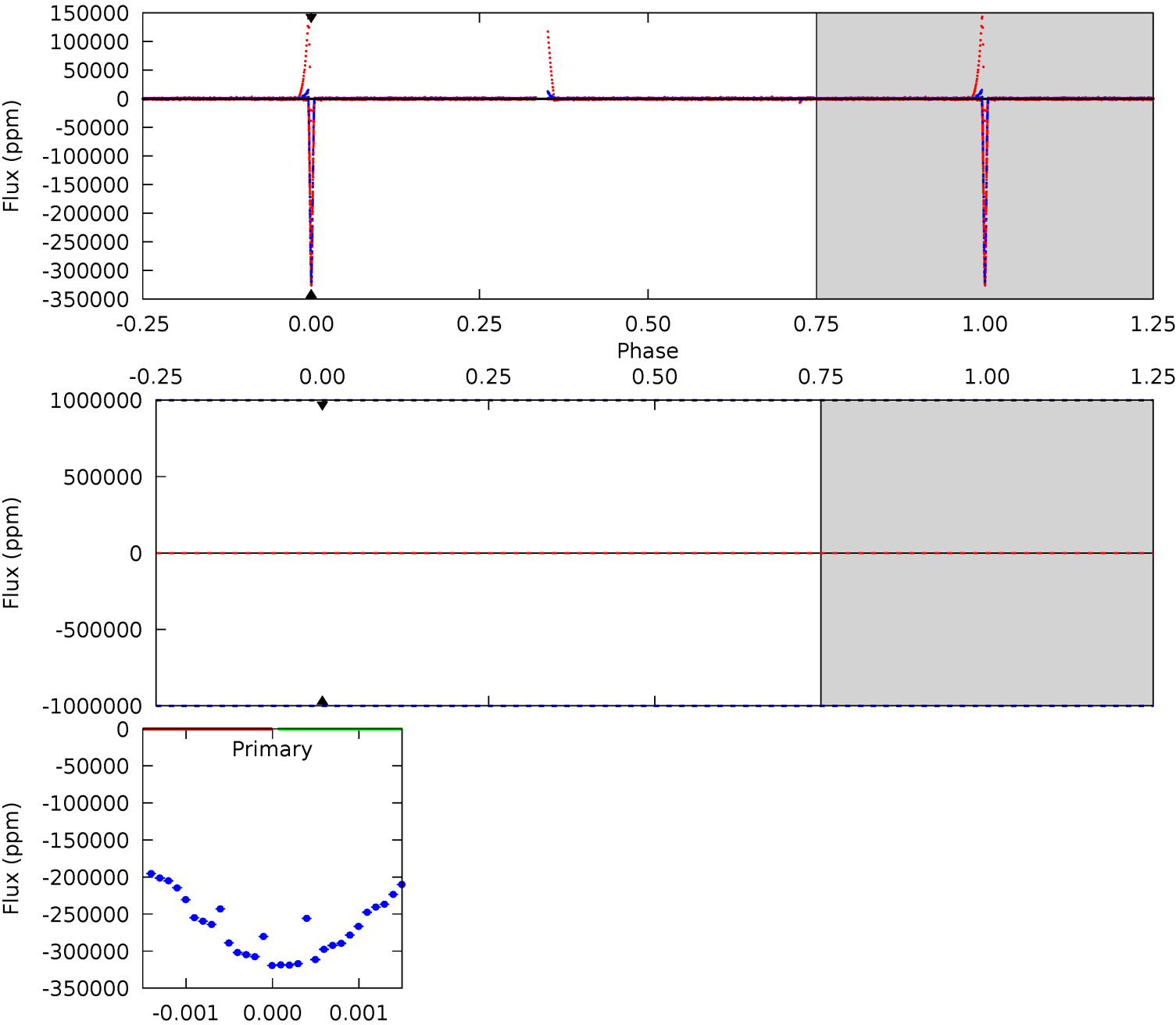
TCE 003323289-02 P= 33.693462 Days  $T_0=147.325326$  (BKJD)



DV Model-Shift Uniqueness Test

003323289-02, P = 33.693462 Days, E = 113.626296 Days

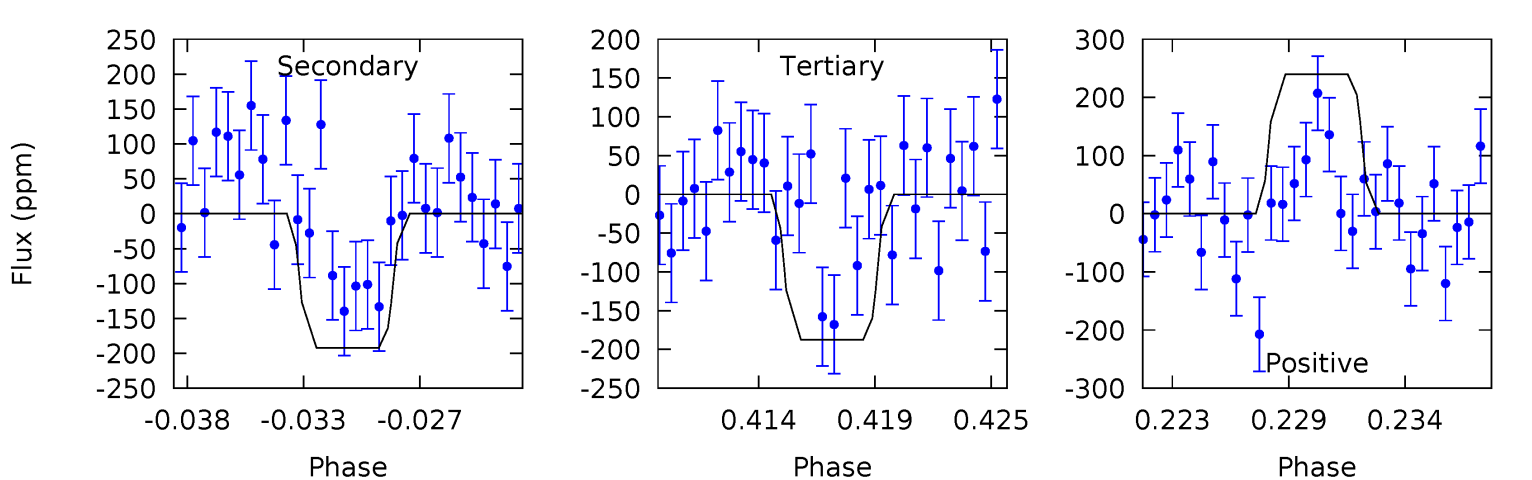
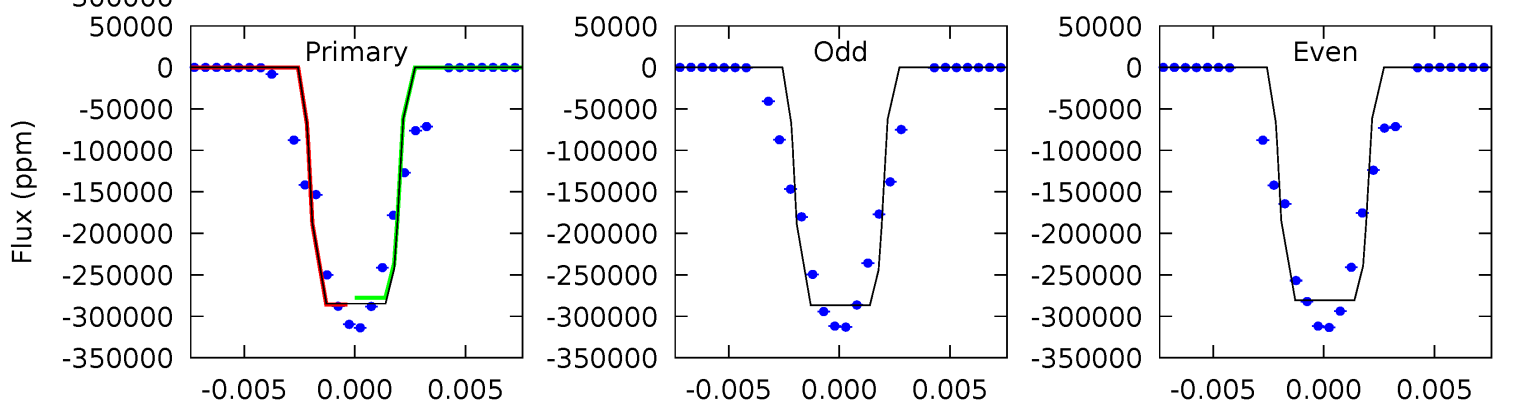
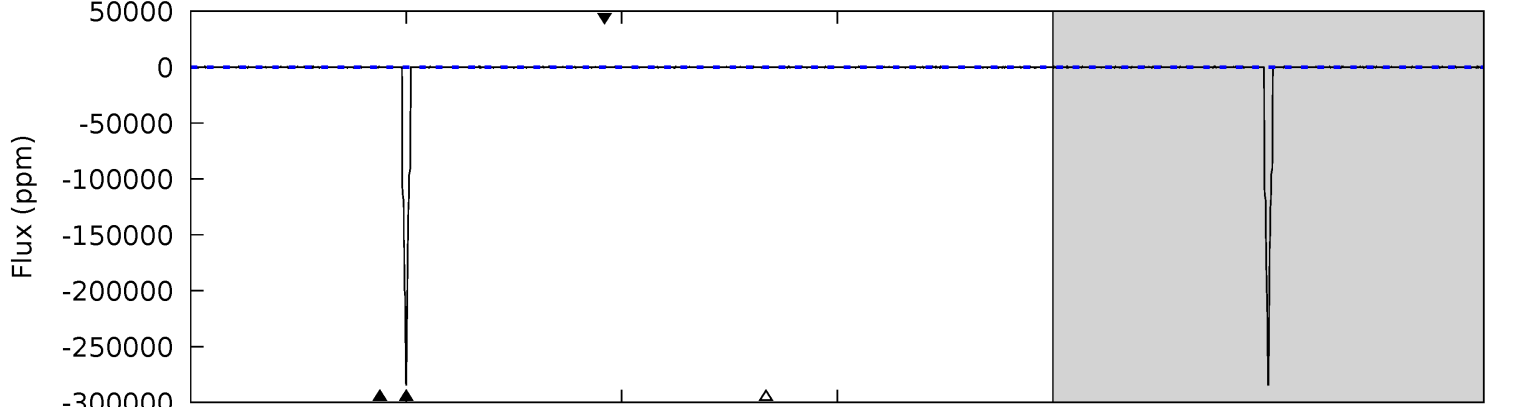
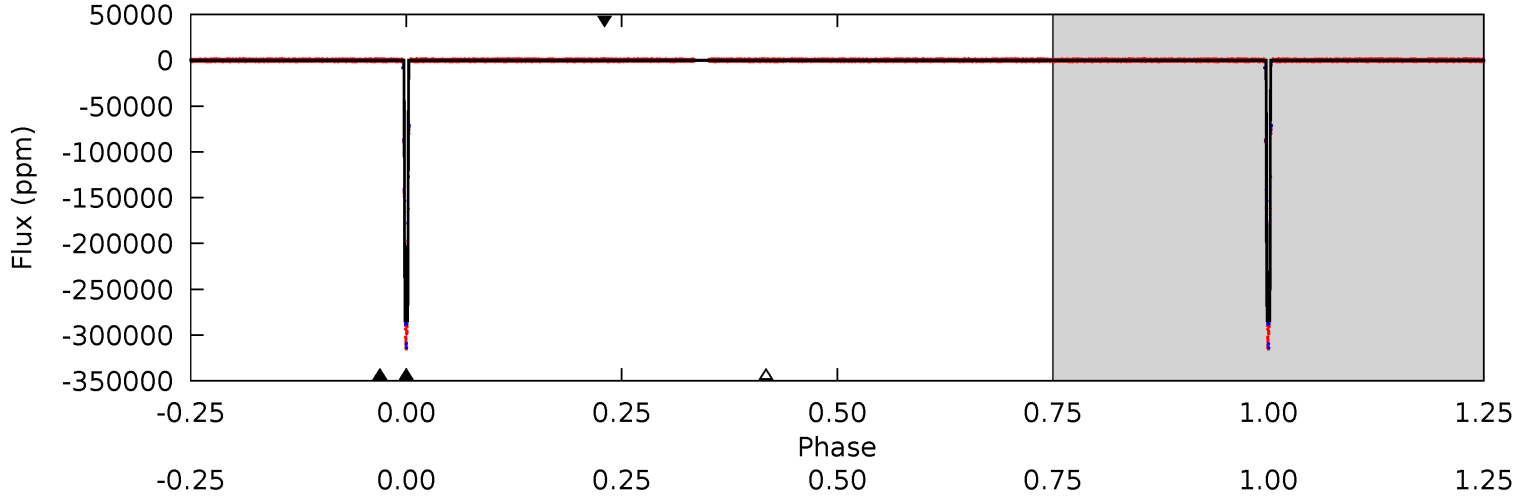
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

003323289-02, P = 33.693462 Days, E = 113.631864 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
5326	3.60	3.51	4.49	5.14	2.78	1.09	5323	5322	0.09	-0.89	60.4	1.00	0.00	0





### Stellar Parameters For KIC 003323289

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5427^{+161}_{-145}$	$4.448^{+0.117}_{-0.156}$	$-0.100^{+0.300}_{-0.300}$	$0.899^{+0.190}_{-0.132}$	$0.826^{+0.108}_{-0.063}$	$1.604^{+0.747}_{-0.652}$
	+3%/-3%	+3%/-4%	+300%/-300%	+21%/-15%	+13%/-8%	+47%/-41%
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 003323289-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$50.17^{+11.25}_{-10.00}$	$730^{+42}_{-35}$	$2655^{+1989}_{-7081}$	$25^{+985}_{-769}$
Alt.	$-192 \pm 53$	$56.55^{+11.49}_{-11.05}$	$731^{+42}_{-39}$	$1821^{+107}_{-113}$	$1.234^{+0.726}_{-0.481}$

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

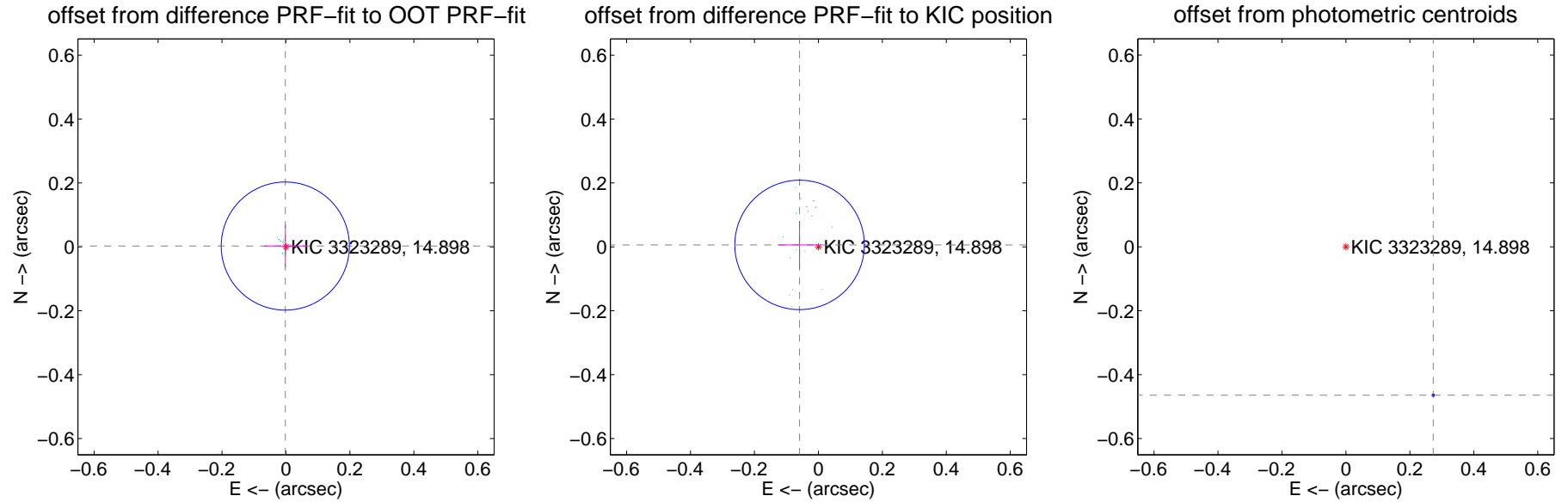
## DV Centroid Data

Supplemental centroid analysis for 003323289-02. Kepler magnitude: 14.90. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

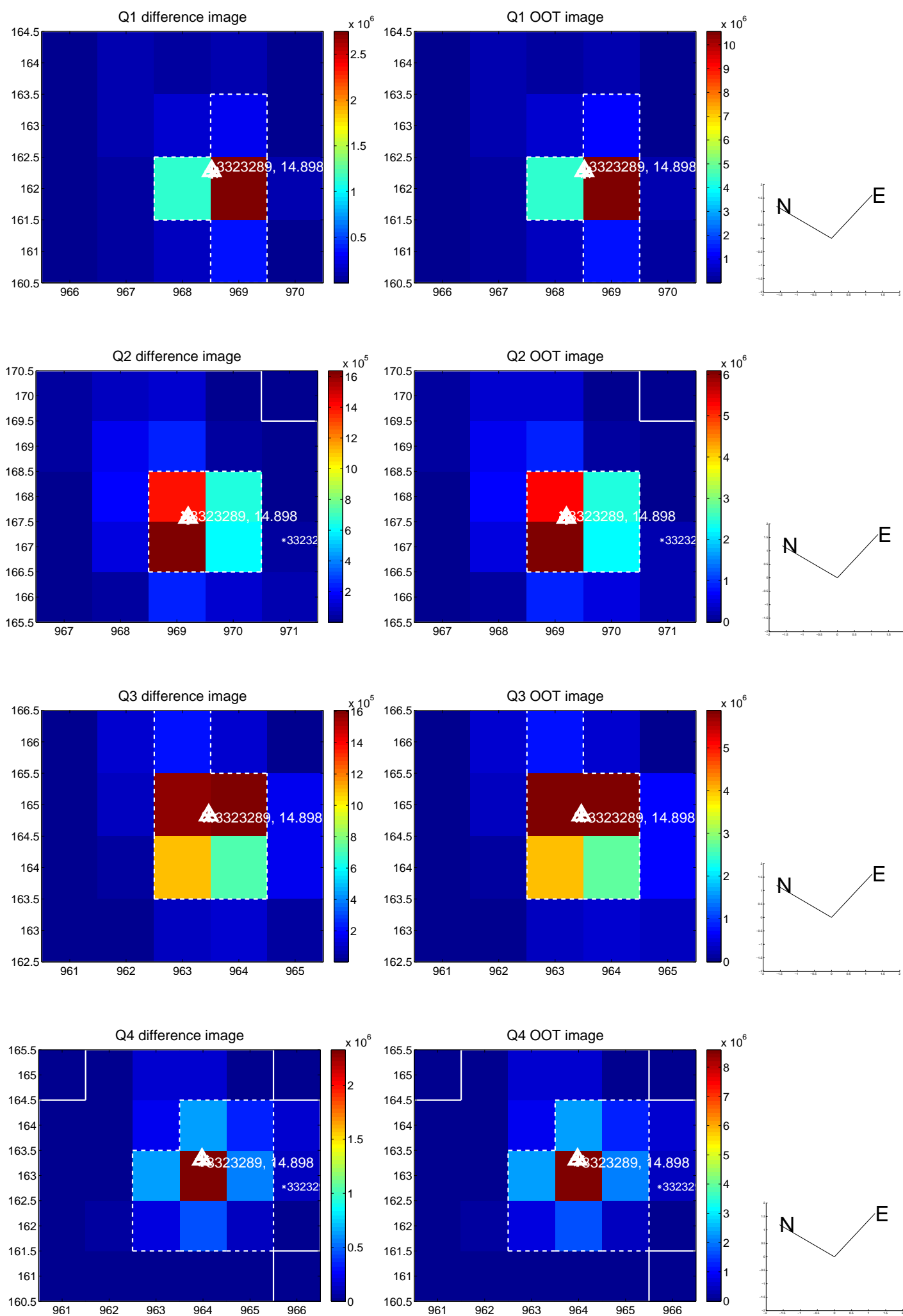
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.003 \pm 0.067$	0.05	$0.002 \pm 0.067$	$0.002 \pm 0.067$
PRF-fit source offset from KIC position	$0.059 \pm 0.068$	0.88	$0.059 \pm 0.067$	$0.006 \pm 0.075$
photometric centroid source offset	$0.54 \pm 0.00$	443.18	$-0.27 \pm 0.00$	$-0.46 \pm 0.00$

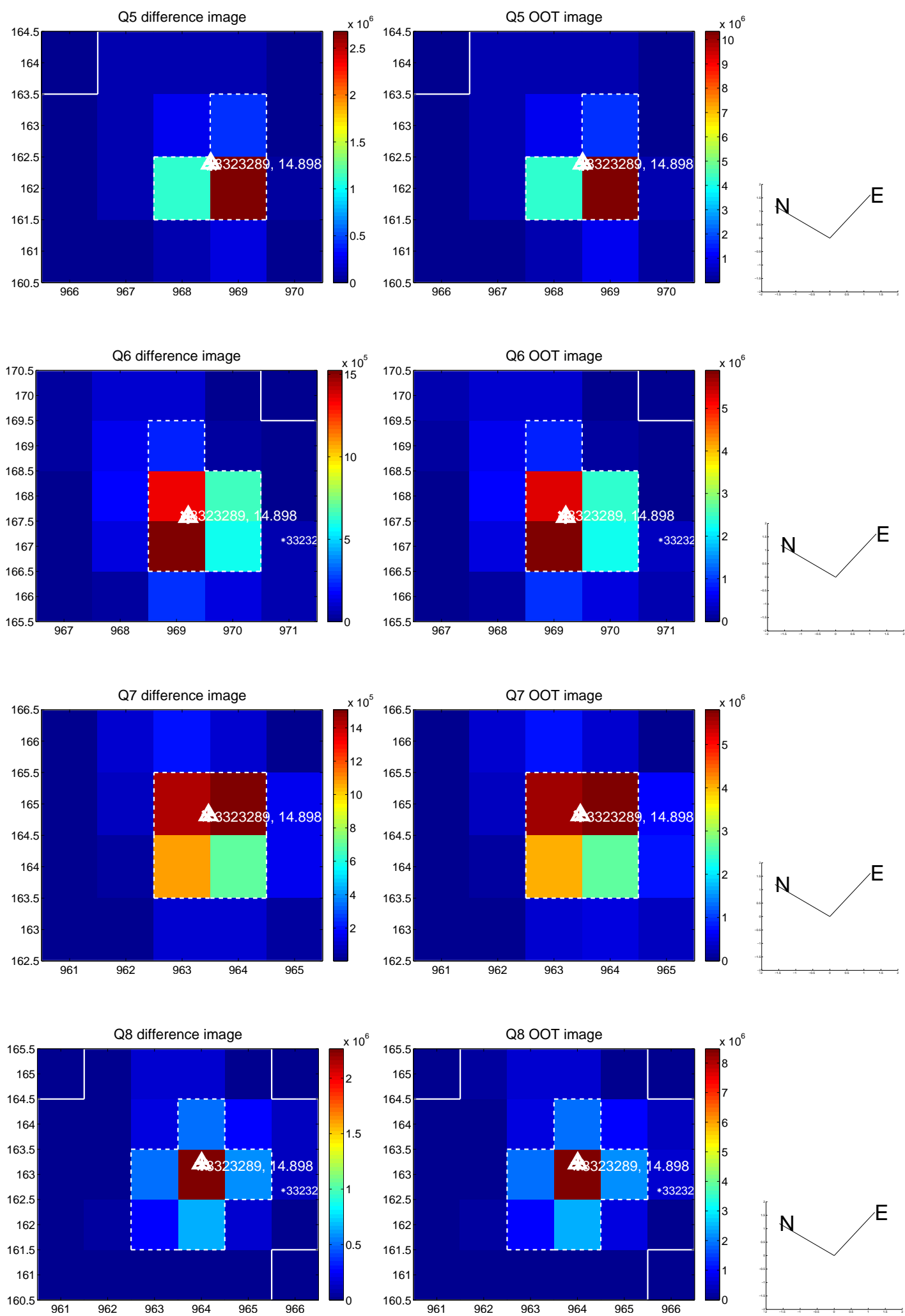


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

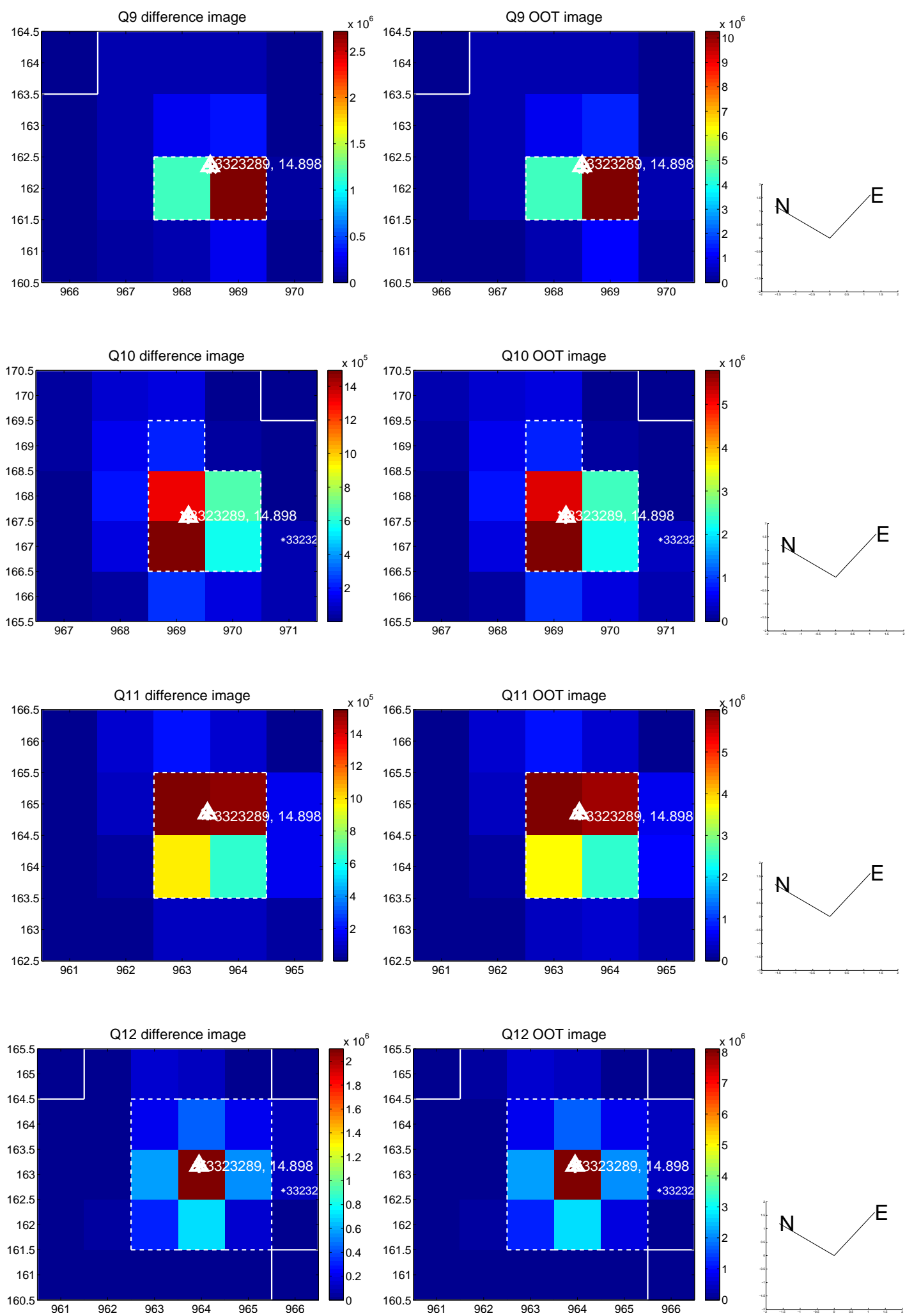
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



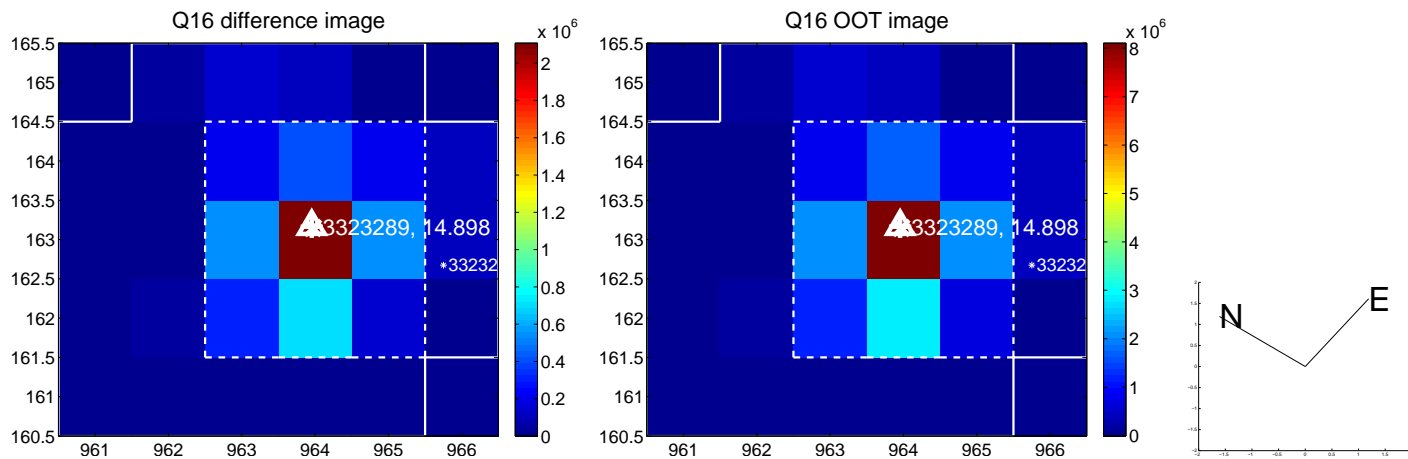
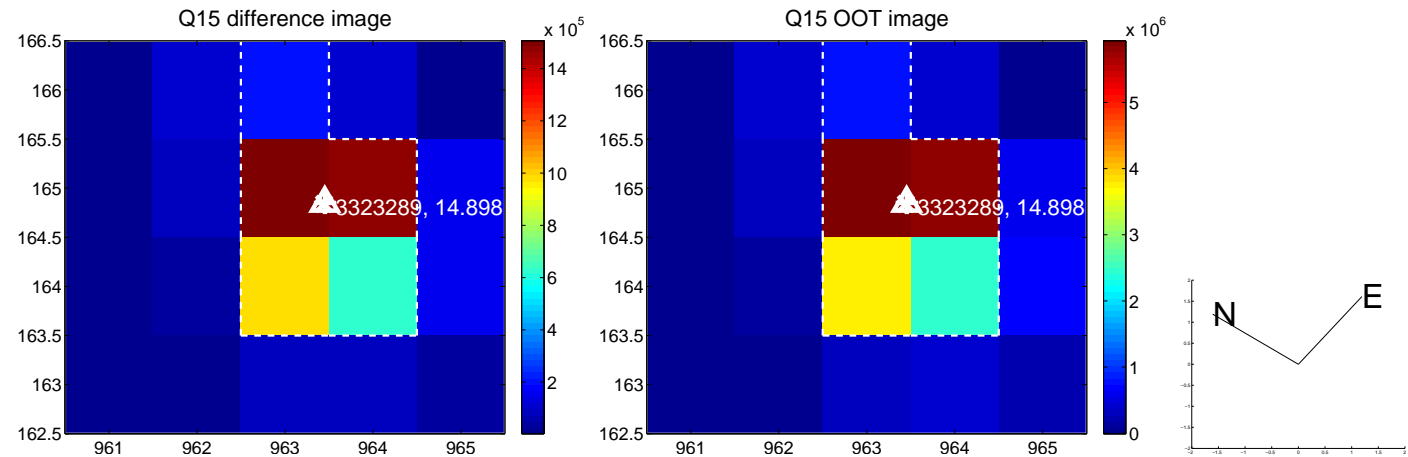
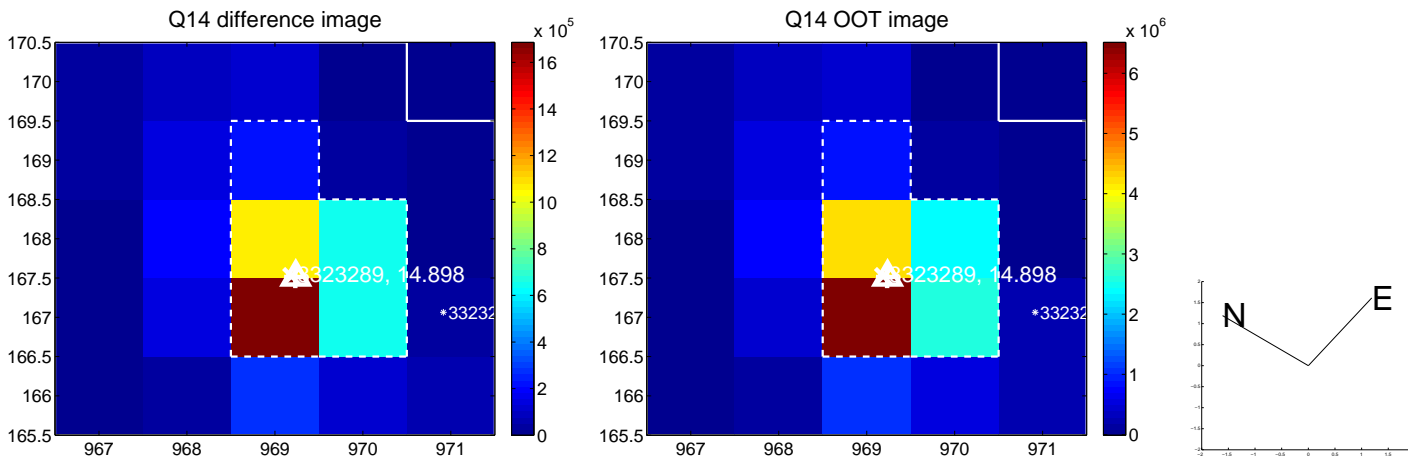
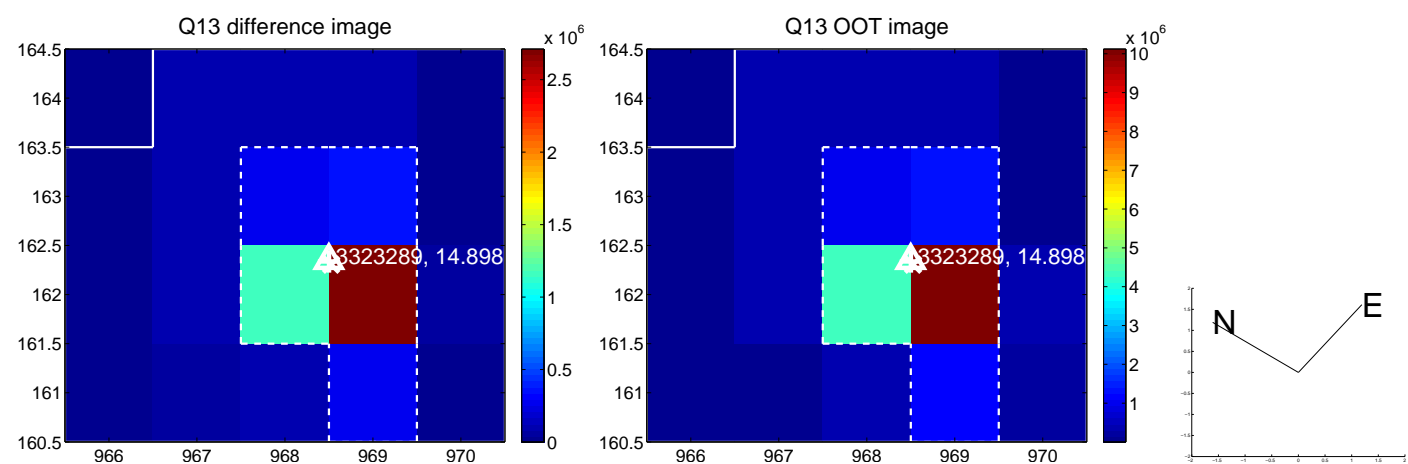
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



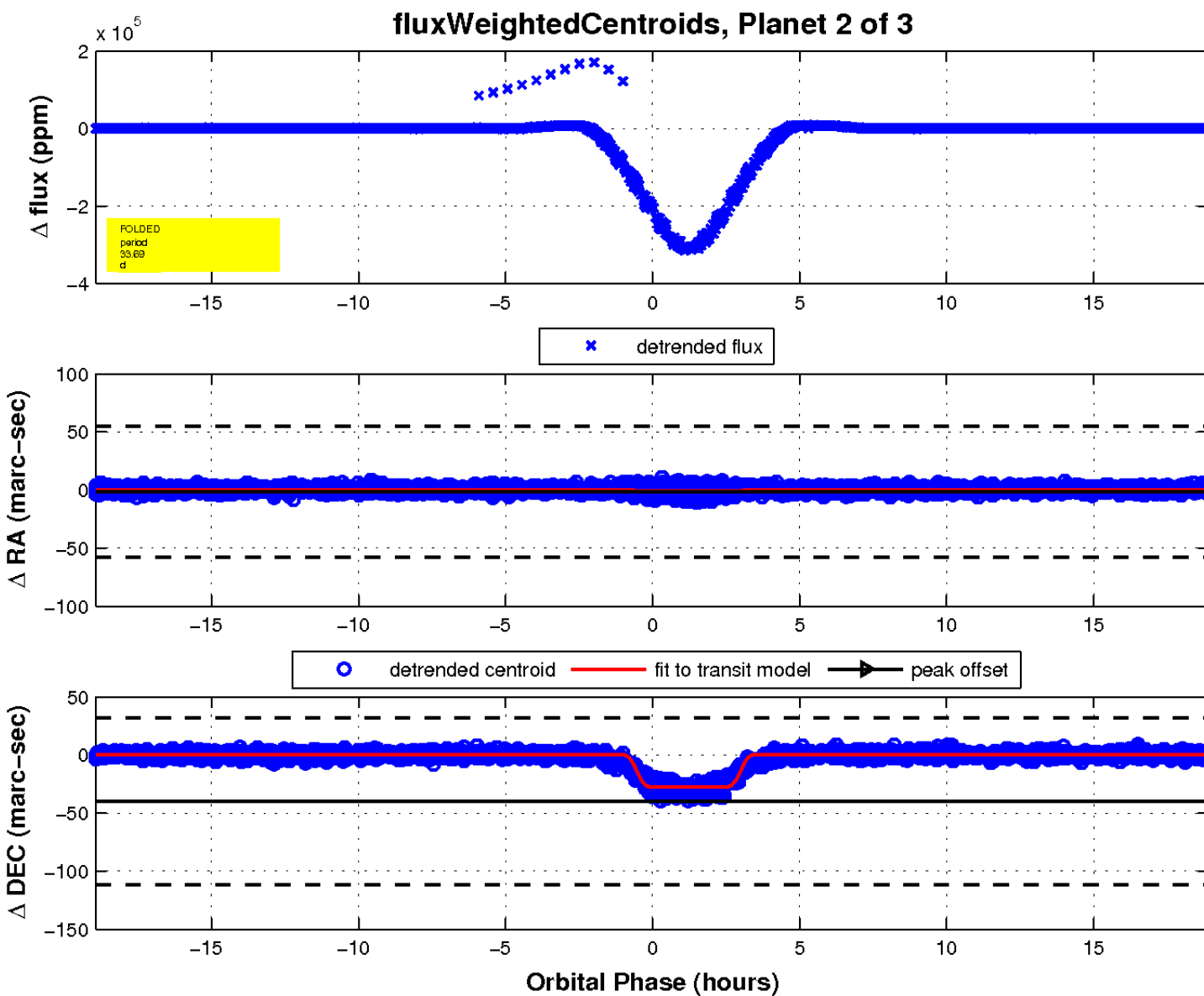
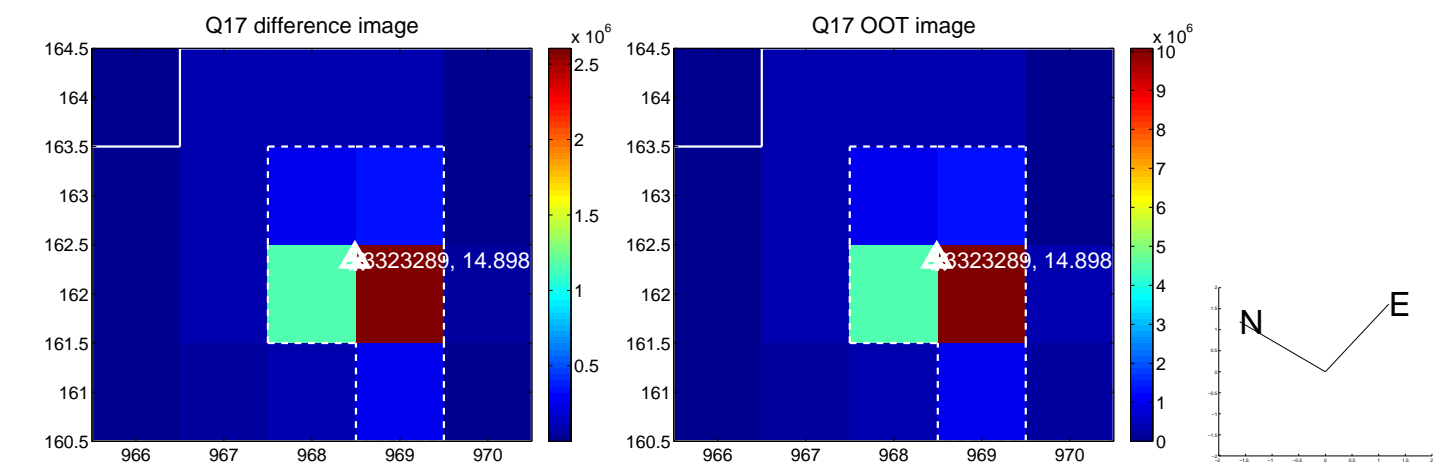
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

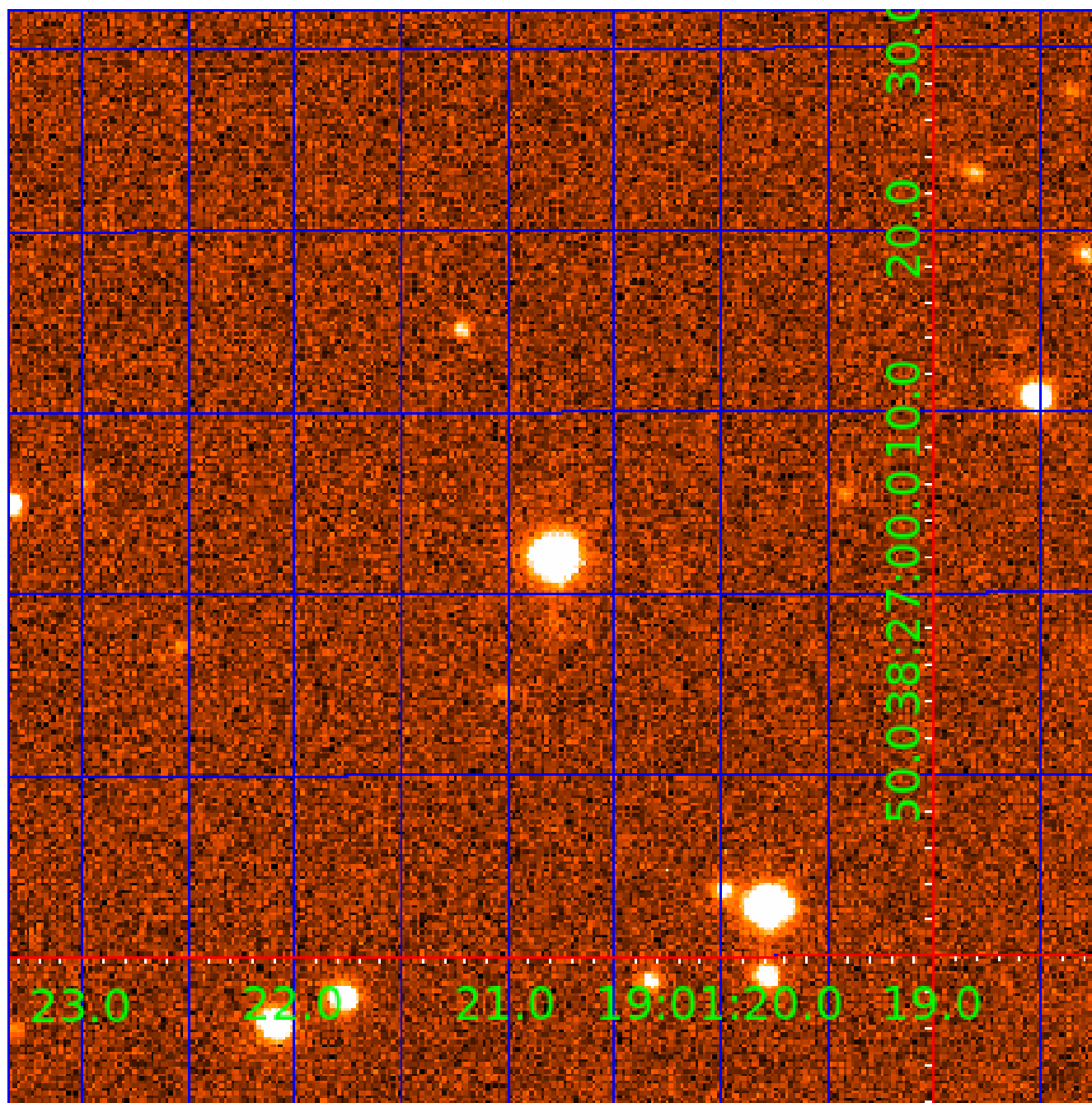


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 003323289

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003323289-01	OBS	6319.01	33.693433	158.857908	520447.5	4.500	12515.7	-1.0	0.90	5427	49.05	17.10
003323289-02	OBS	No	33.693462	147.319758	319013.0	3.500	8326.7	-1.0	0.90	5427	49.05	17.10
003323289-03	OBS	No	11.231103	136.104763	9115.5	11.775	449.1	386.4	0.90	5427	8.43	73.97

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003323289-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
003323289-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
003323289-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—RESIDUAL_TCE—CENT_FEW_MEAS

**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.

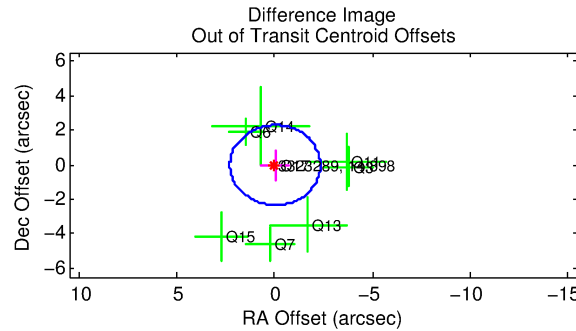
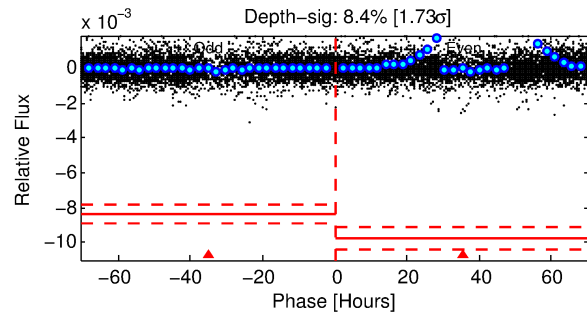
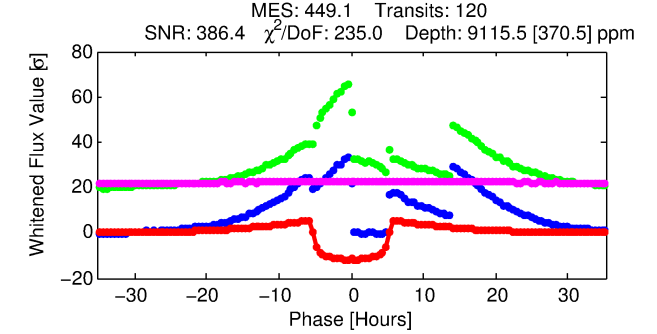
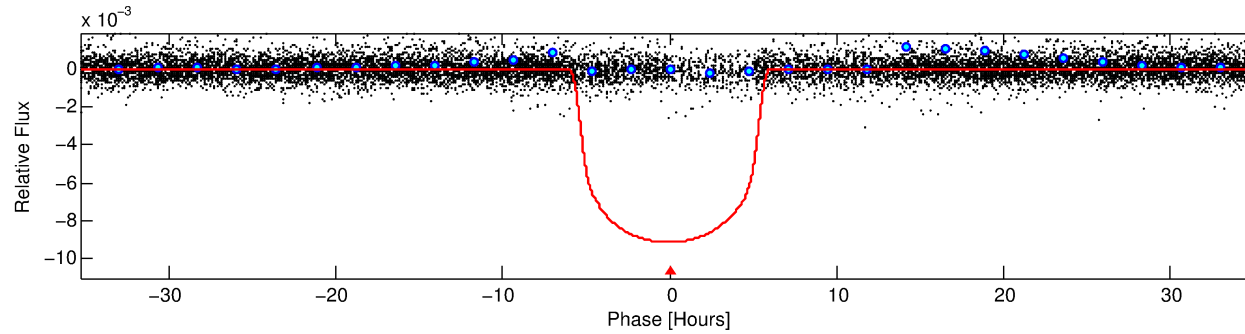
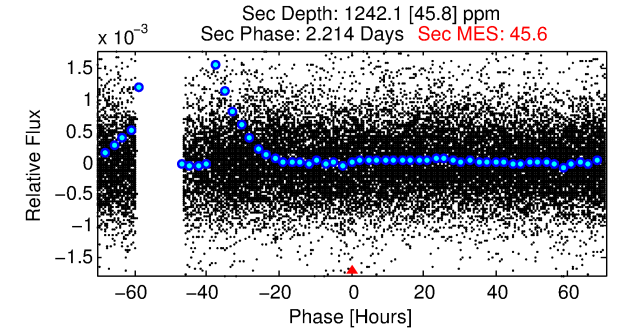
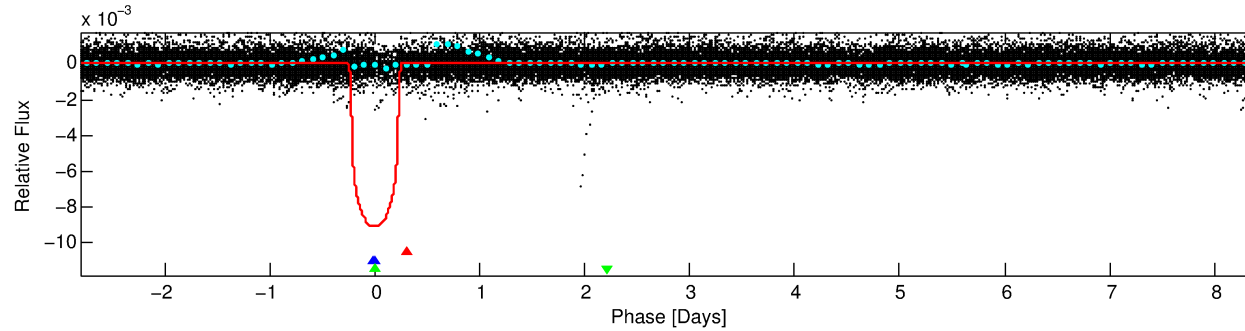
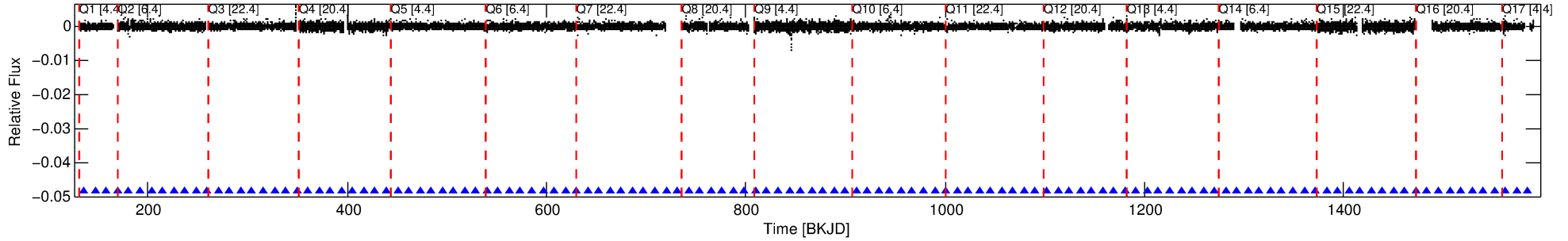
## Ephemeris Match Information For 003323289-03

No Significant Match Found

# DV One-Page Summary

KIC: 3323289 Candidate: 3 of 3 Period: 11.231 d  
KOI: K06319 Corr: No Ephemeris Match

Kp: 14.90 R\*: 0.90 Rs Teff: 5427.0 K Logg: 4.45 Fe/H: -0.100



## DV Fit Results:

Period = 11.23110 [0.00009] d  
Epoch = 136.1048 [0.0061] BKJD  
Rp/R\* = 0.0859 [0.0058]  
a/R\* = 7.91 [1.90]  
b = 0.09 [2.88]  
Seff = 73.97 [22.35]  
Teq = 748 [56] K  
Rp = 8.43 [1.87] Re  
a = 0.0921 [0.0170] AU  
Ag = 81.65 [25.41] [3.17 sigma]  
Teffp = 3476 [160] K [16.11 sigma]

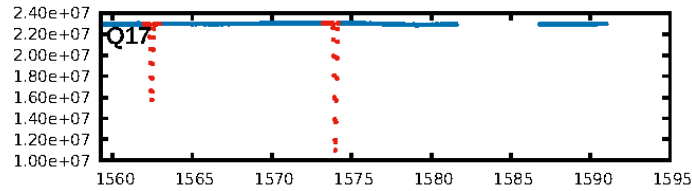
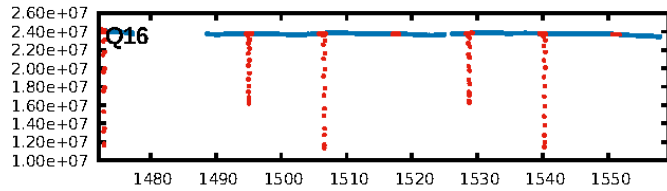
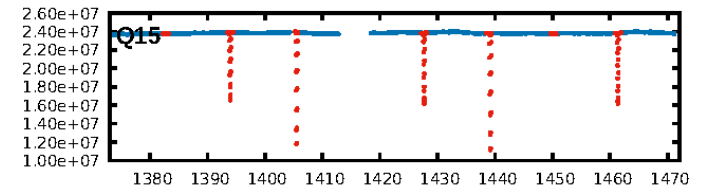
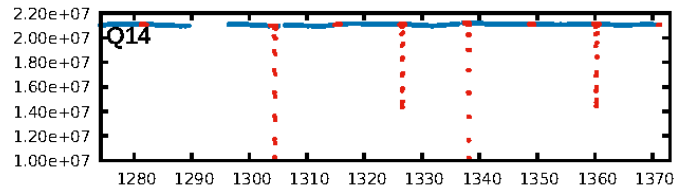
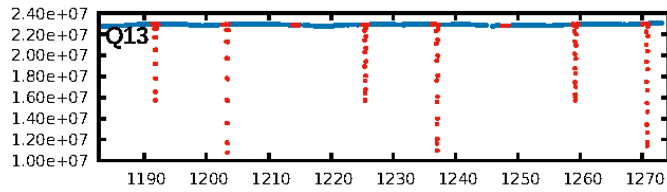
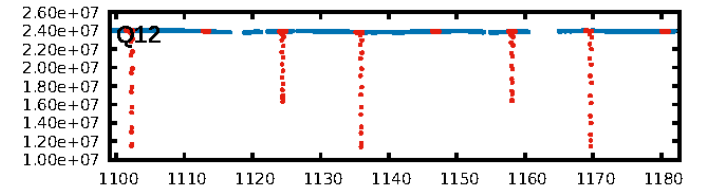
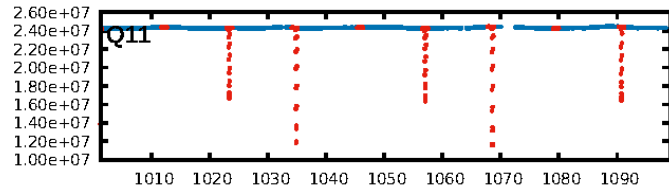
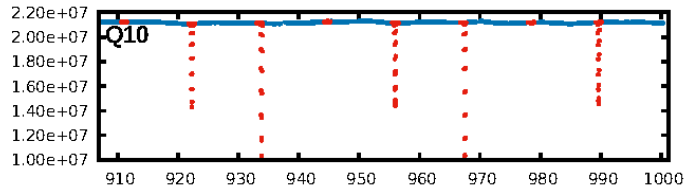
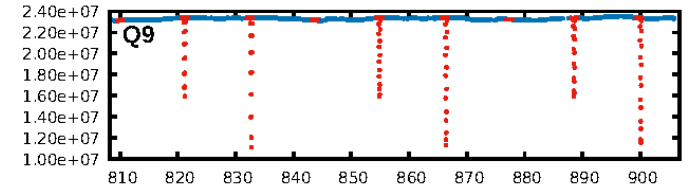
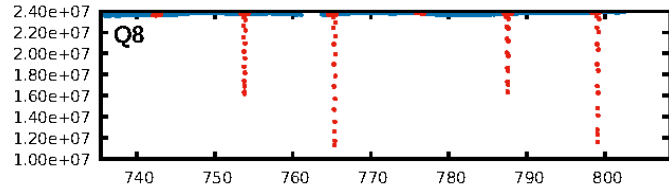
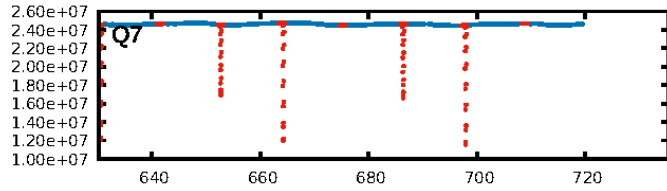
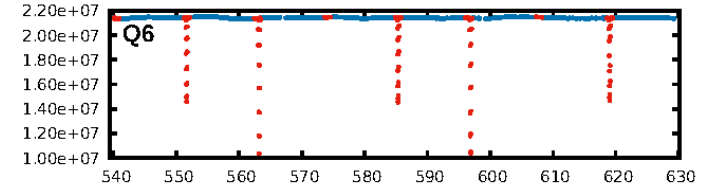
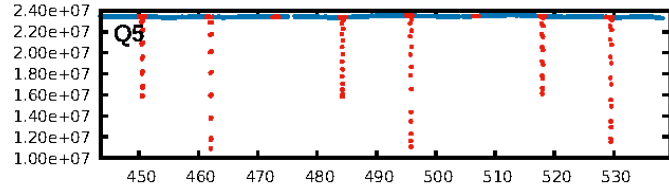
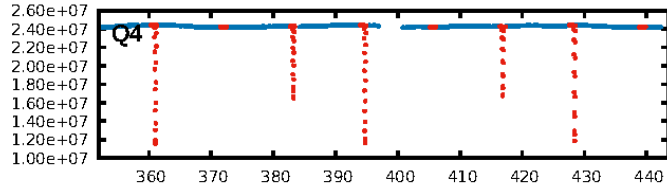
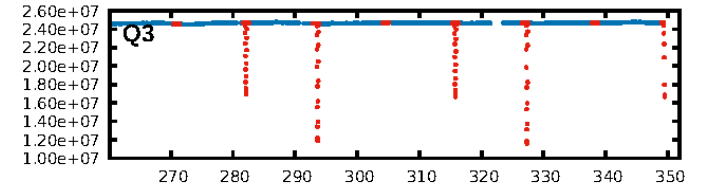
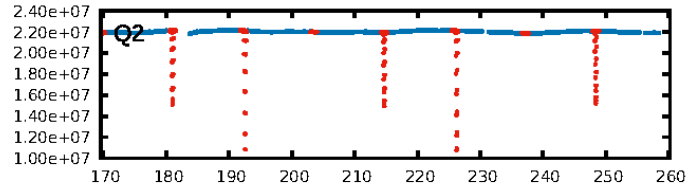
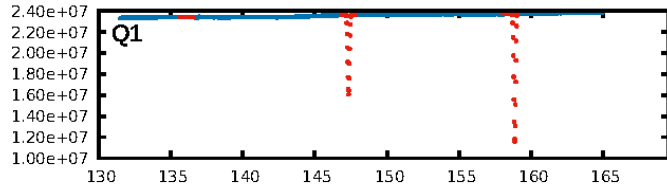
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [42.77 sigma]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [115/115]  
GhostDiagnostic-chr: 0.8272  
Centroid-sig: 67.4%  
Centroid-so: 0.609 arcsec [39.02 sigma]  
OotOffset-rm: 0.036 arcsec [0.05 sigma]  
KicOffset-rm: 0.085 arcsec [0.09 sigma]  
OotOffset-st: 2/4/0/2 [8]  
KicOffset-st: 2/4/0/2 [8]  
DiffImageQuality-fgm: 0.38 [3/8]  
DiffImageOverlap-fno: 0.94 [16/17]

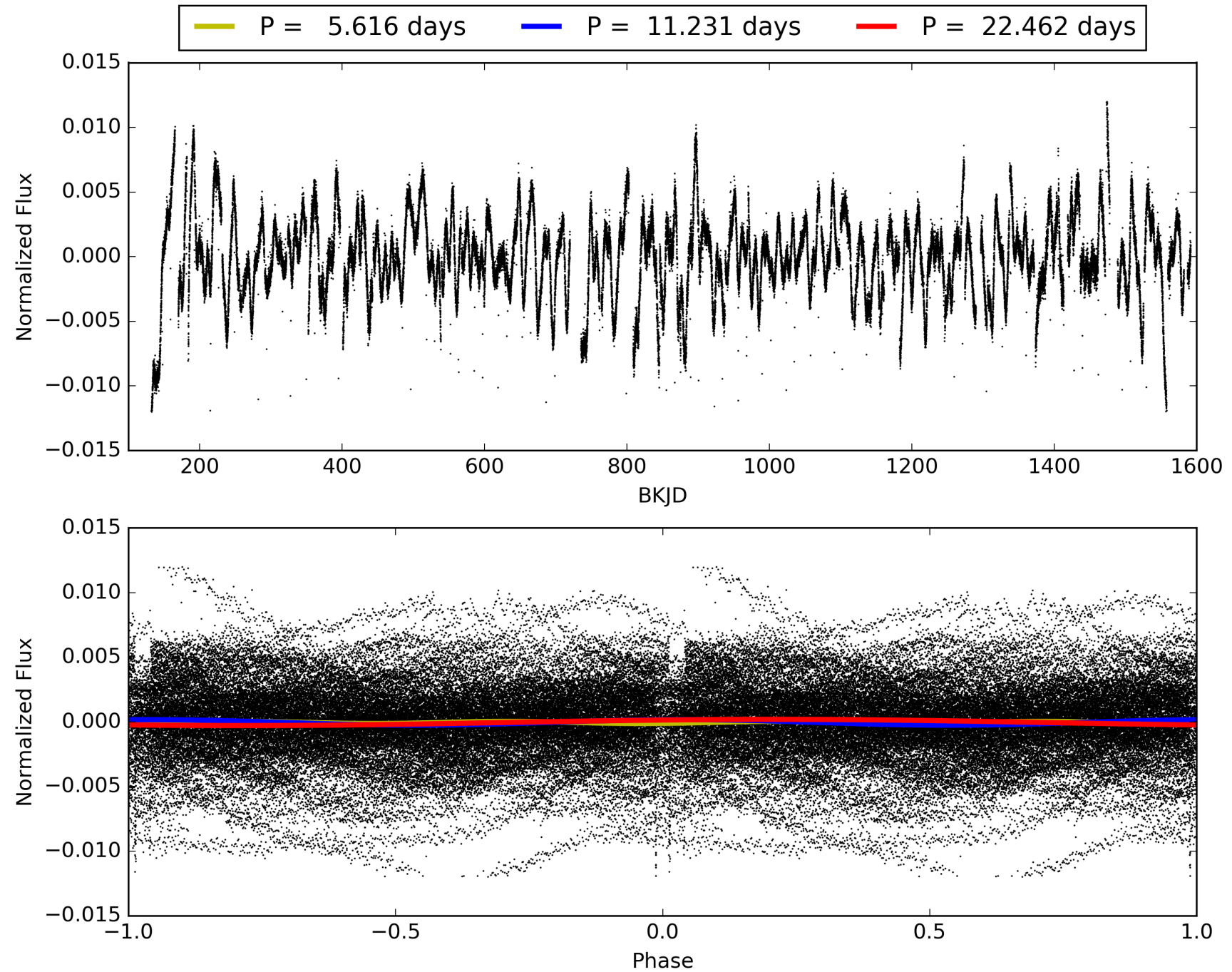
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:29:17 Z

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

# TCE 003323289-03, PDC Light Curves

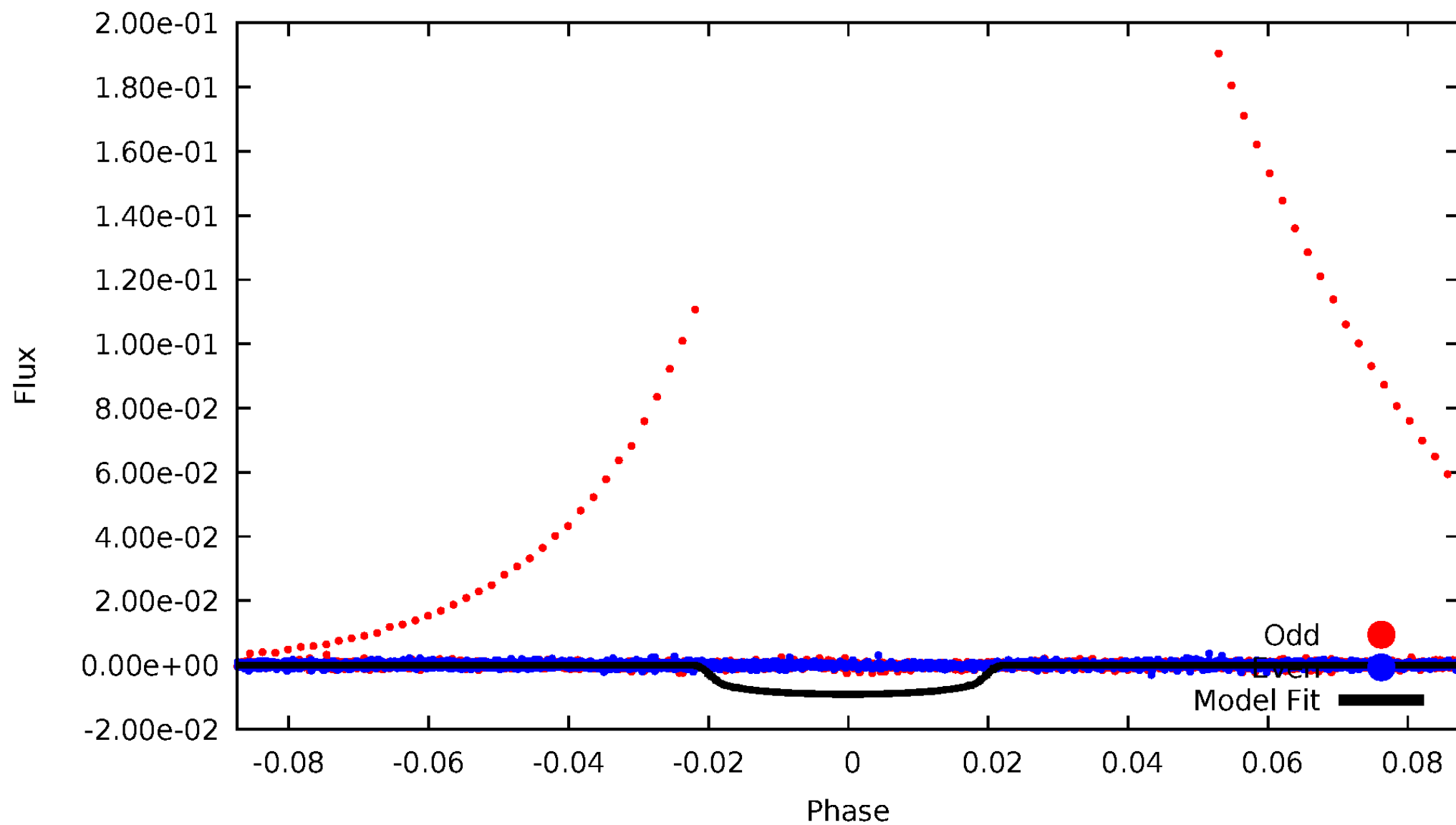


TCE 003323289-03



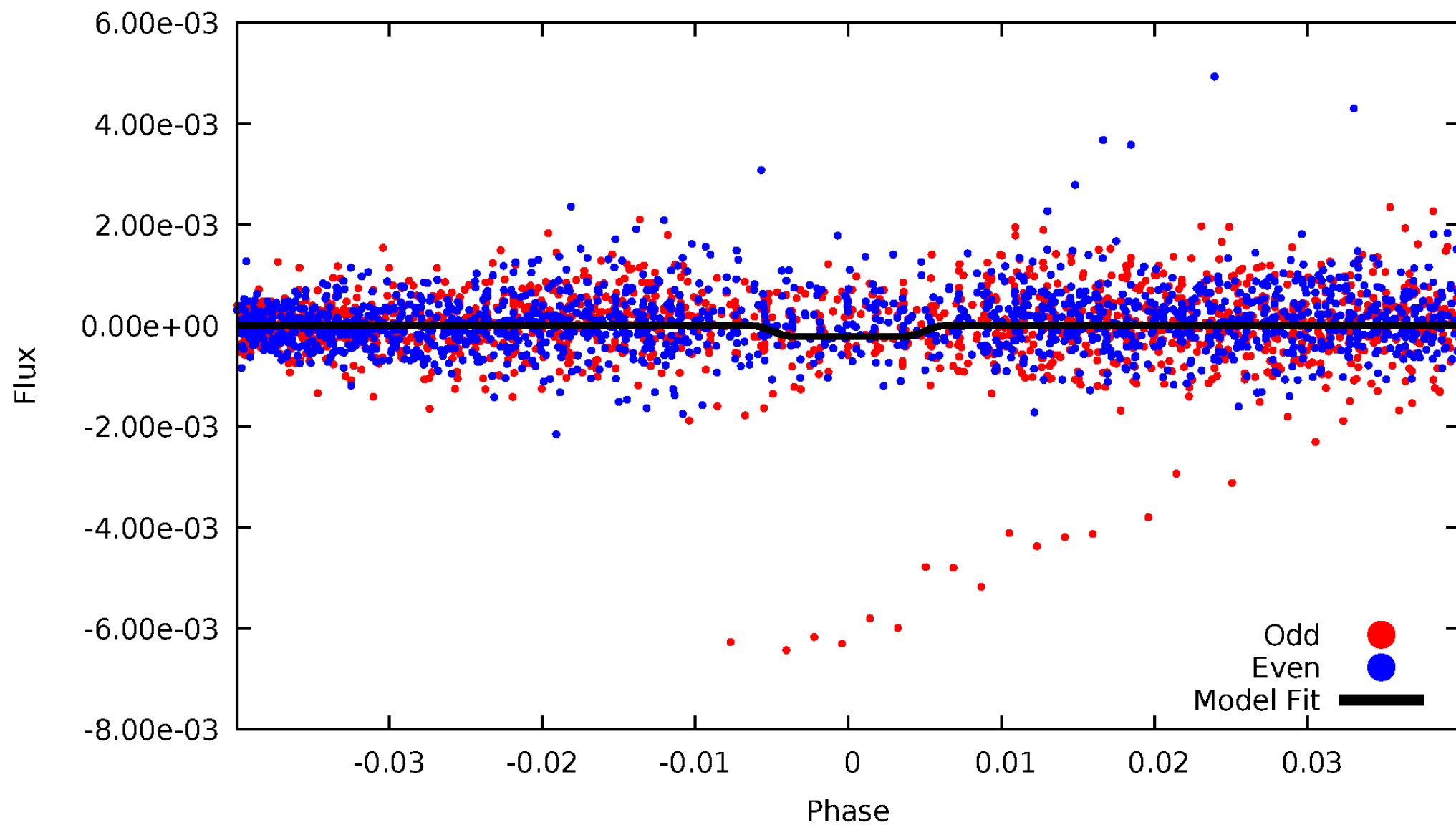
# DV Odd/Even

TCE 003323289-03



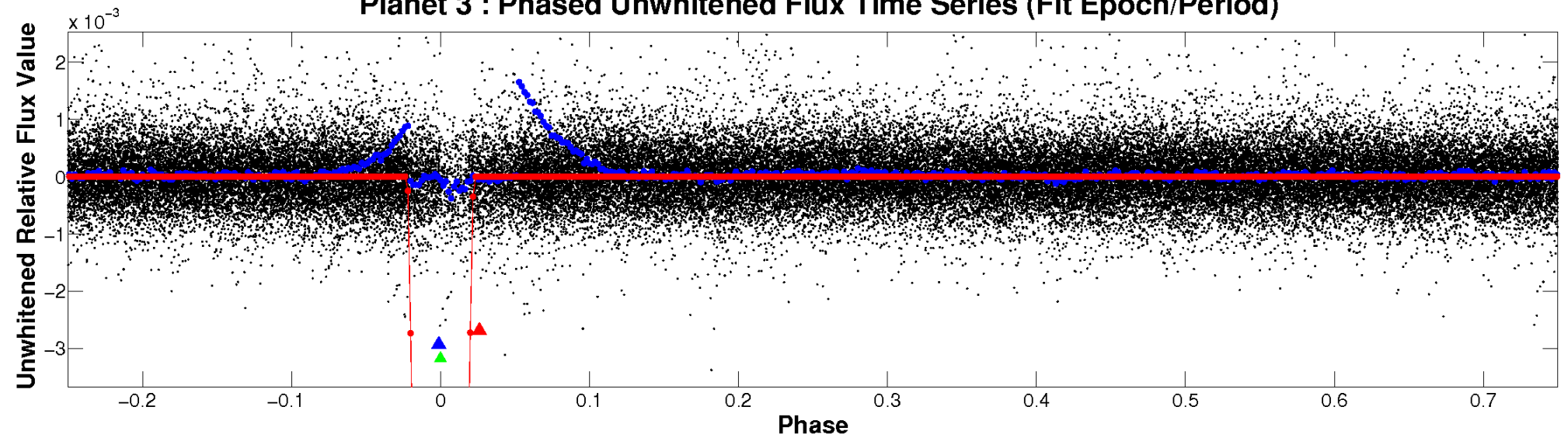
# ALT Odd/Even

TCE 003323289-03

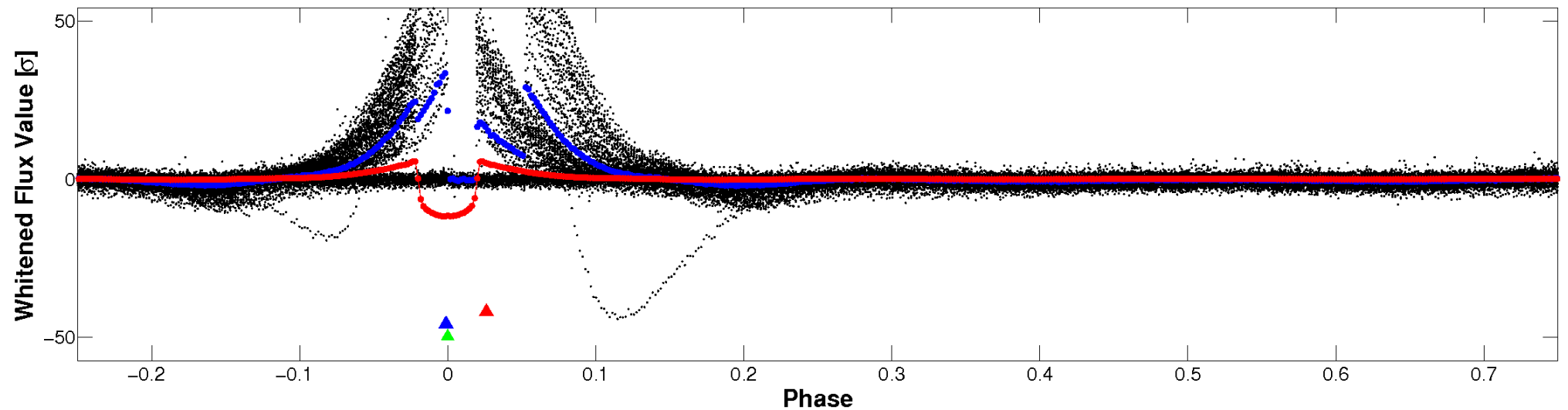


# Non-Whitened Vs. Whitened Light Curve

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

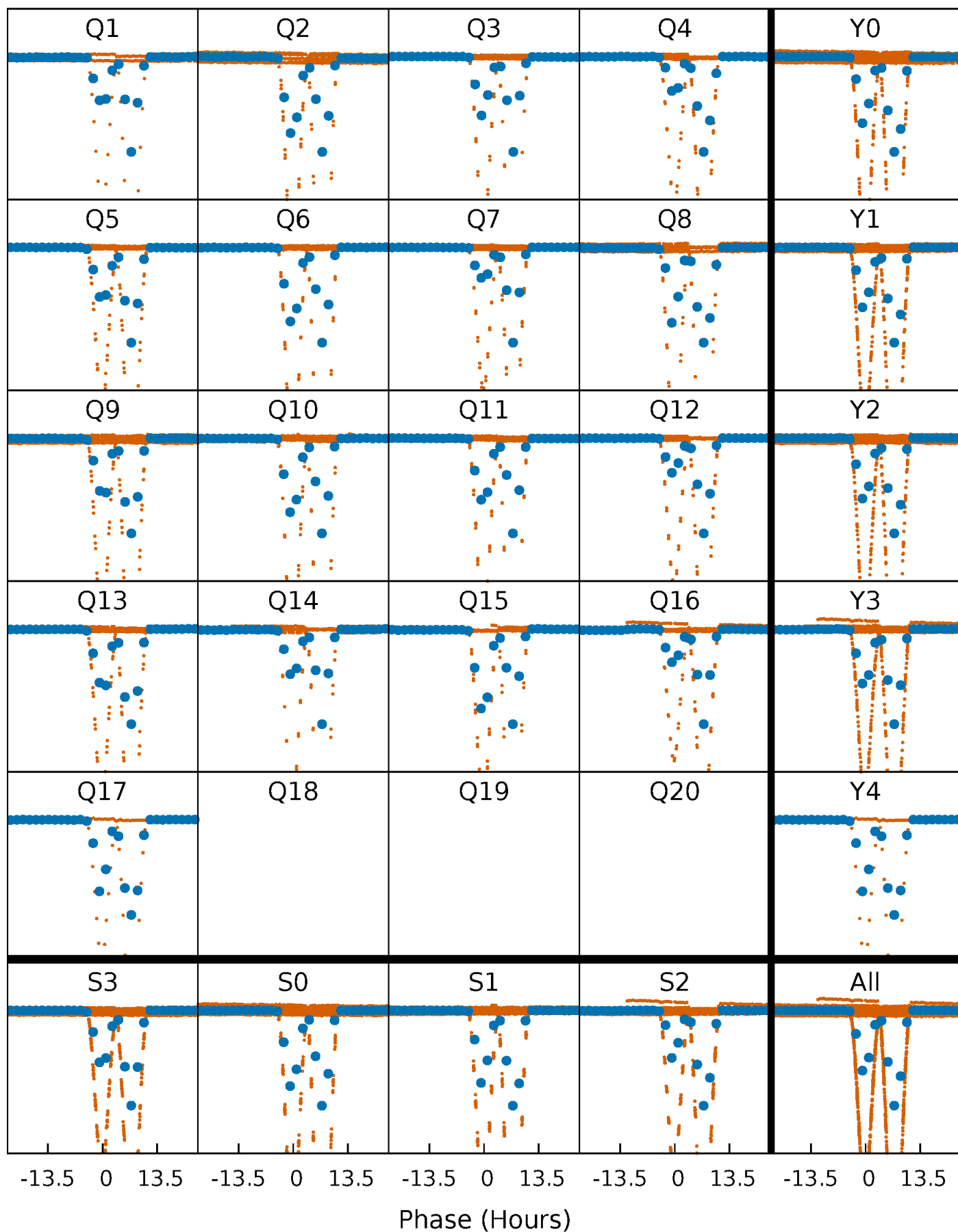


**Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

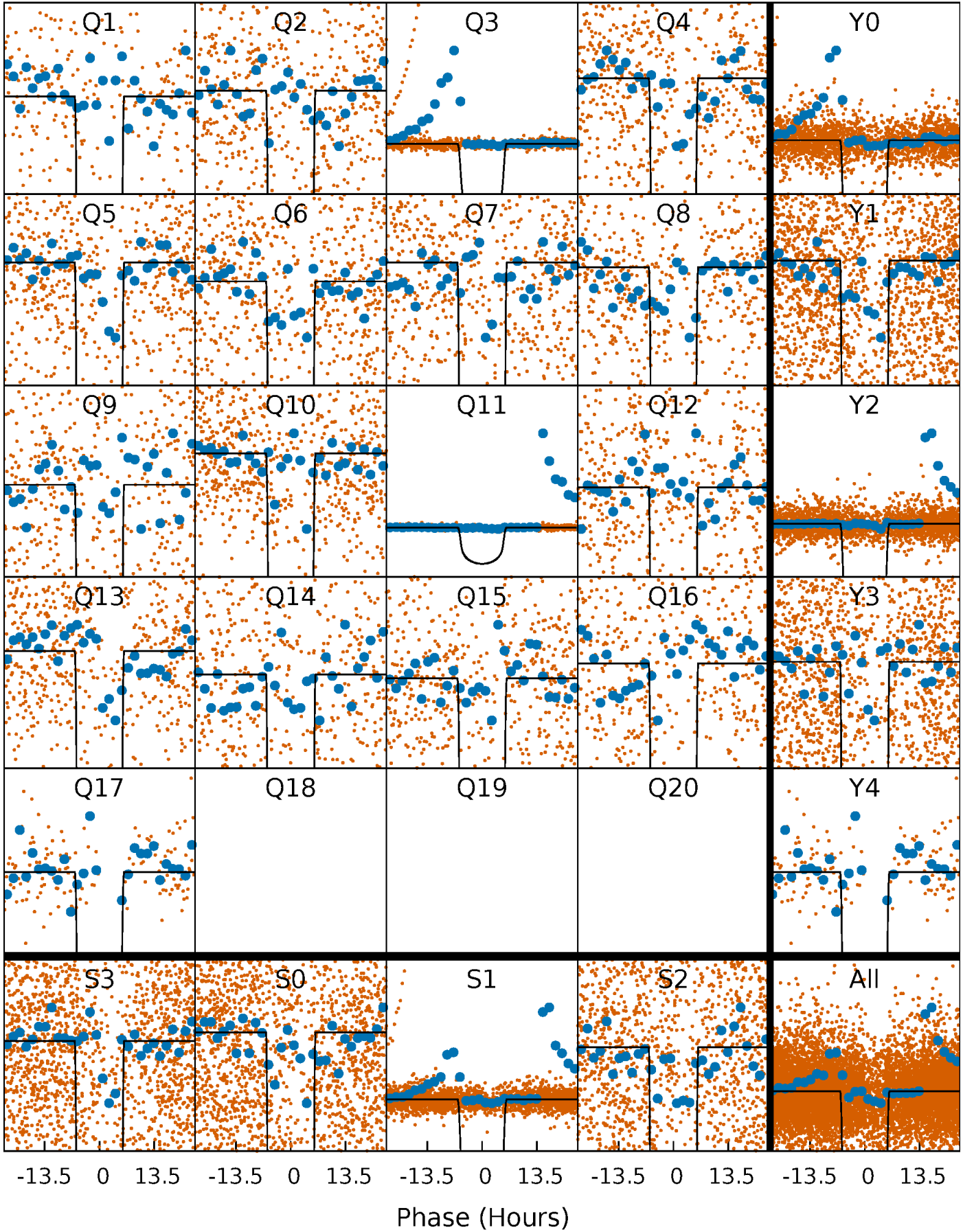
TCE 003323289-03 P= 11.231103 Days  $T_0=136.104763$  (BKJD)





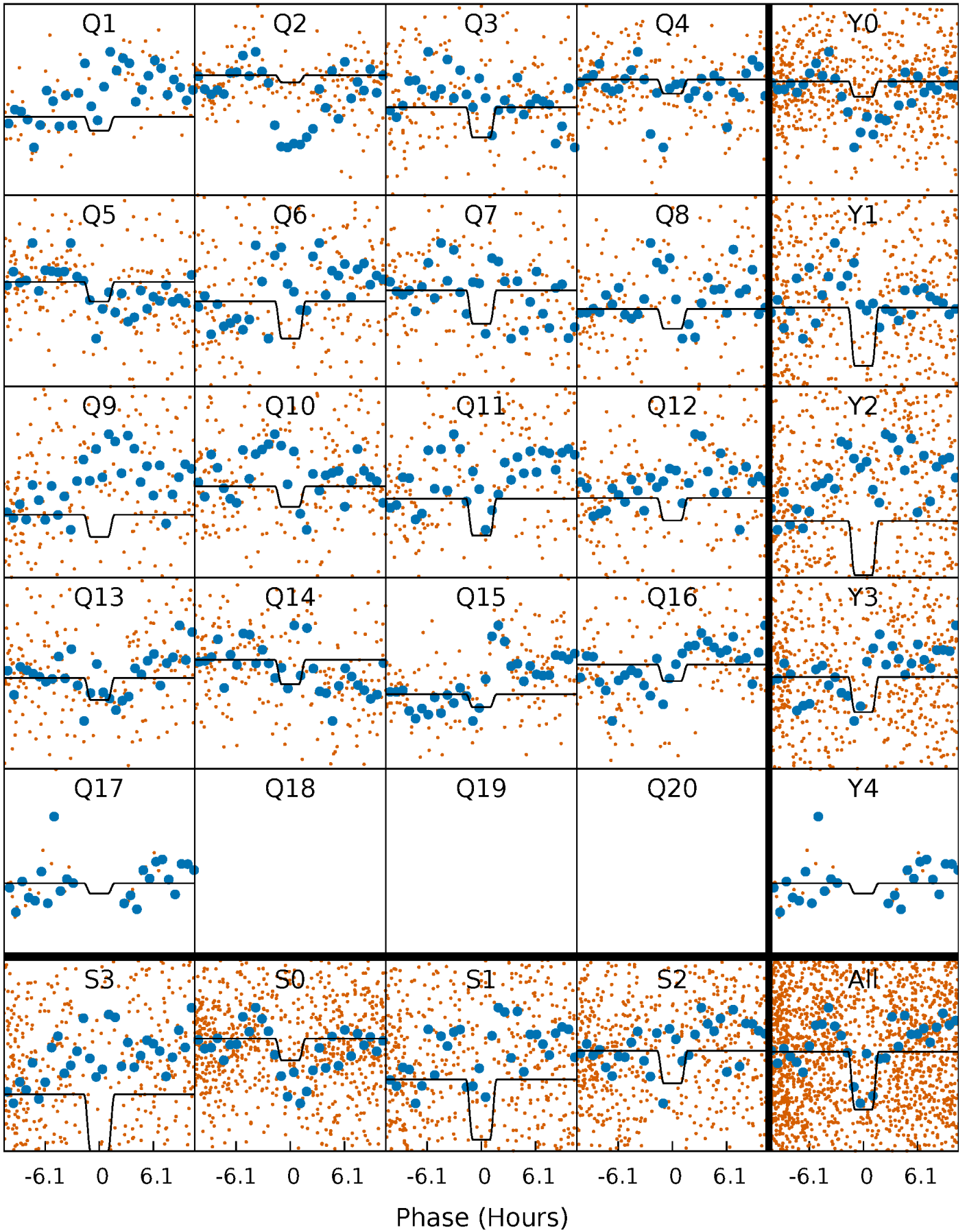
# DV Quarter-Phased Transit Curves

TCE 003323289-03 P= 11.231103 Days  $T_0=136.104763$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

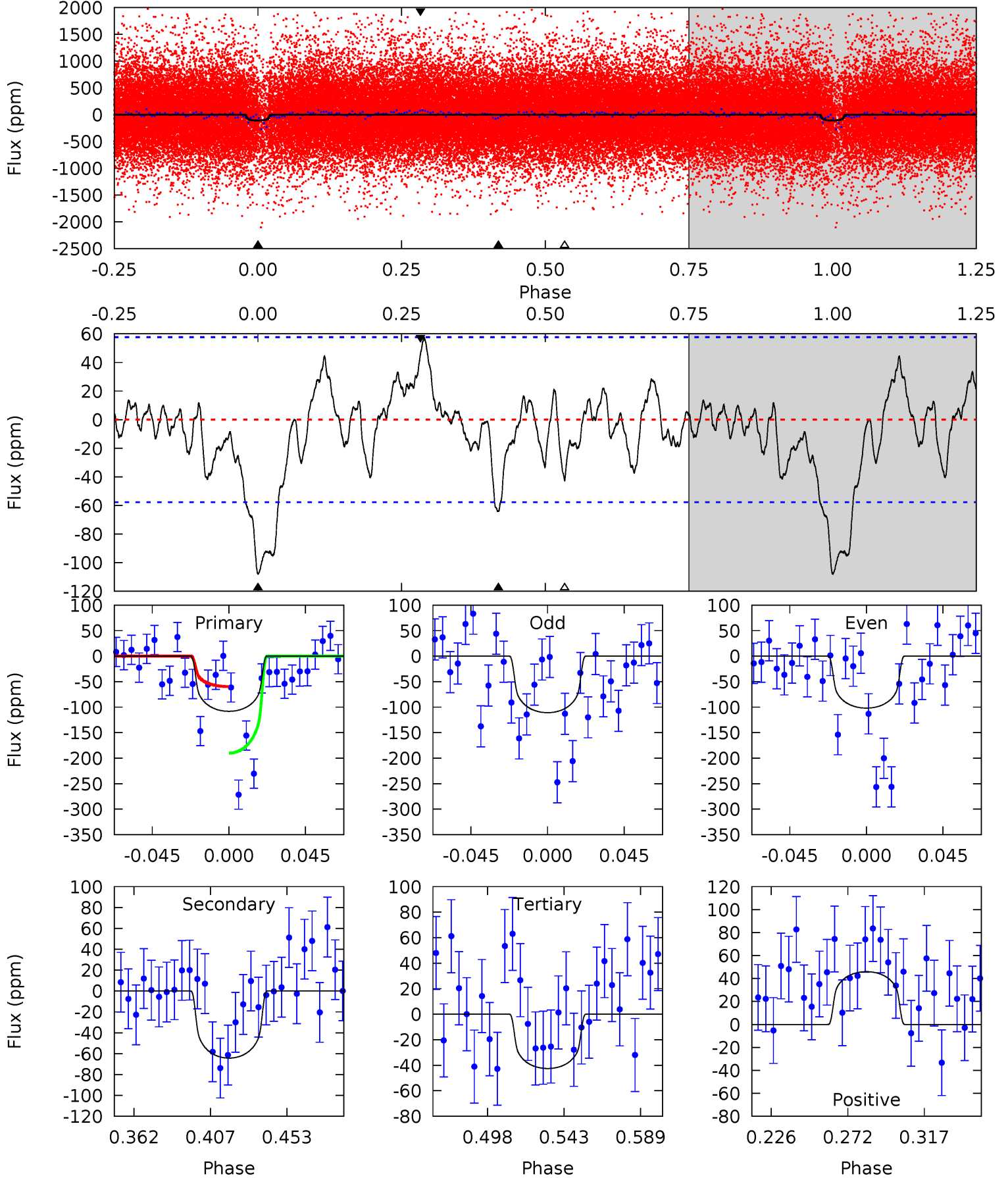
TCE 003323289-03 P= 11.231052 Days  $T_0=136.220506$  (BKJD)



# DV Model-Shift Uniqueness Test

003323289-03, P = 11.231103 Days, E = 124.873660 Days

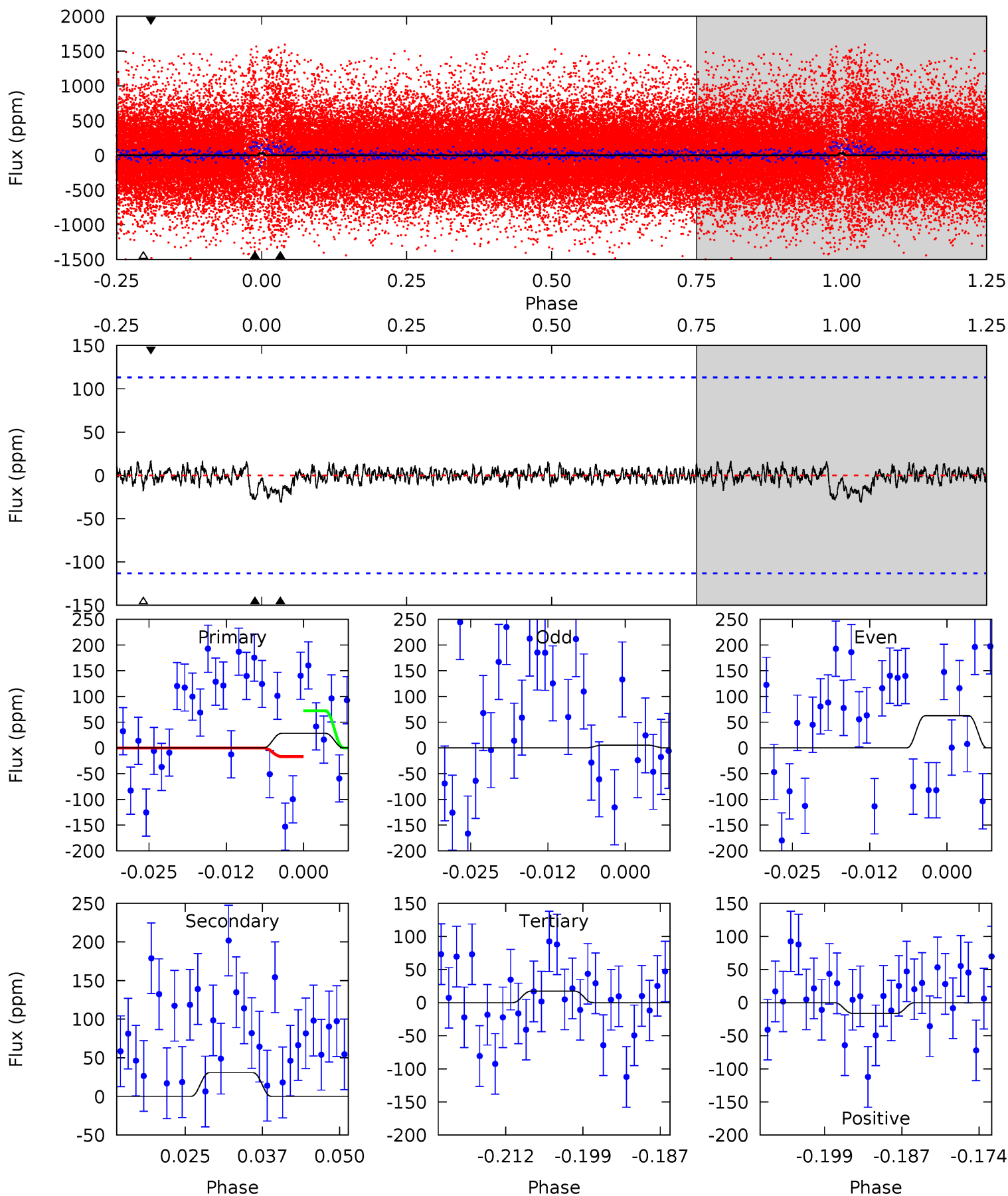
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.87	5.27	3.49	3.76	4.73	2.00	1.55	5.38	5.10	1.78	1.50	0.37	0.04	0.35	5.21



# Alt Model-Shift Uniqueness Test

003323289-03, P = 11.231052 Days, E = 124.989454 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
1.25	1.36	0.76	0.72	4.98	2.50	0.27	0.49	0.53	0.59	0.64	1.25	2.09	0.35	1.23



### Stellar Parameters For KIC 003323289

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5427^{+161}_{-145}$	$4.448^{+0.117}_{-0.156}$	$-0.100^{+0.300}_{-0.300}$	$0.899^{+0.190}_{-0.132}$	$0.826^{+0.108}_{-0.063}$	$1.604^{+0.747}_{-0.652}$
	+3%/-3%	+3%/-4%	+300%/-300%	+21%/-15%	+13%/-8%	+47%/-41%
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 003323289-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-64 \pm 12$	$8.43^{+1.21}_{-0.91}$	$1045^{+67}_{-50}$	$2486^{+80}_{-88}$	$4.186^{+1.441}_{-1.160}$
Alt.	$-31 \pm 23$	$1.52^{+0.57}_{-0.58}$	$1052^{+64}_{-54}$	$3676^{+819}_{-779}$	$59^{+135}_{-46}$

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

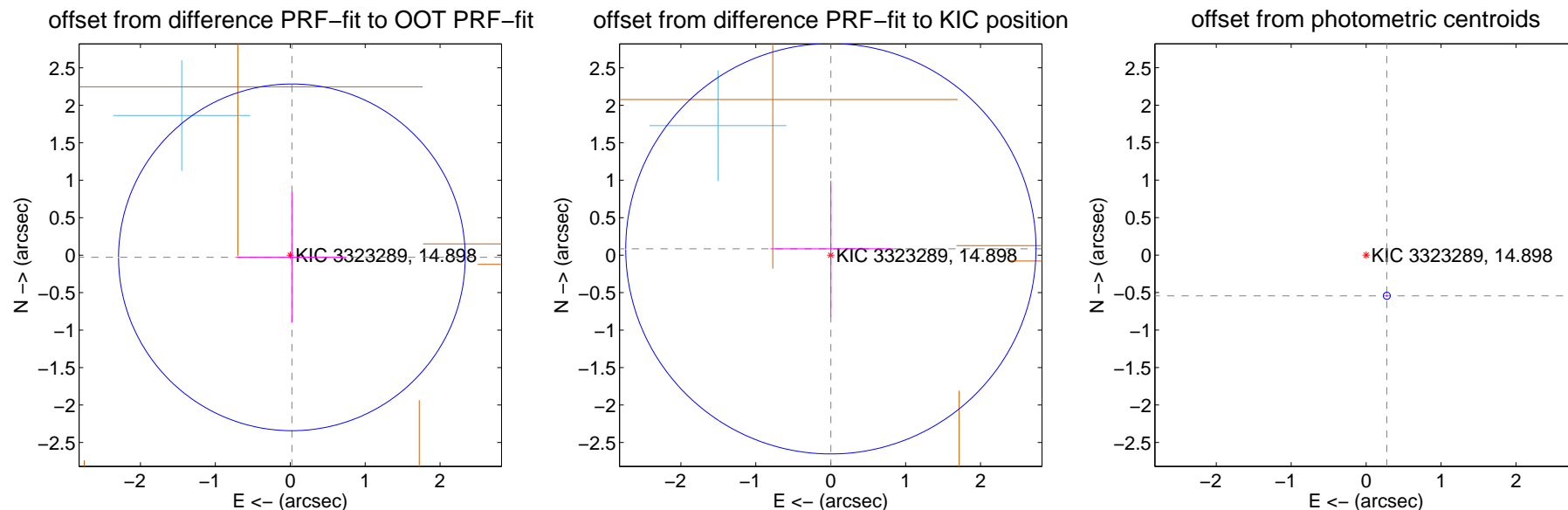
## DV Centroid Data

Supplemental centroid analysis for 003323289-03. Kepler magnitude: 14.90. Transit SNR 386.42

There are 3 quarters with good PRF difference image offsets

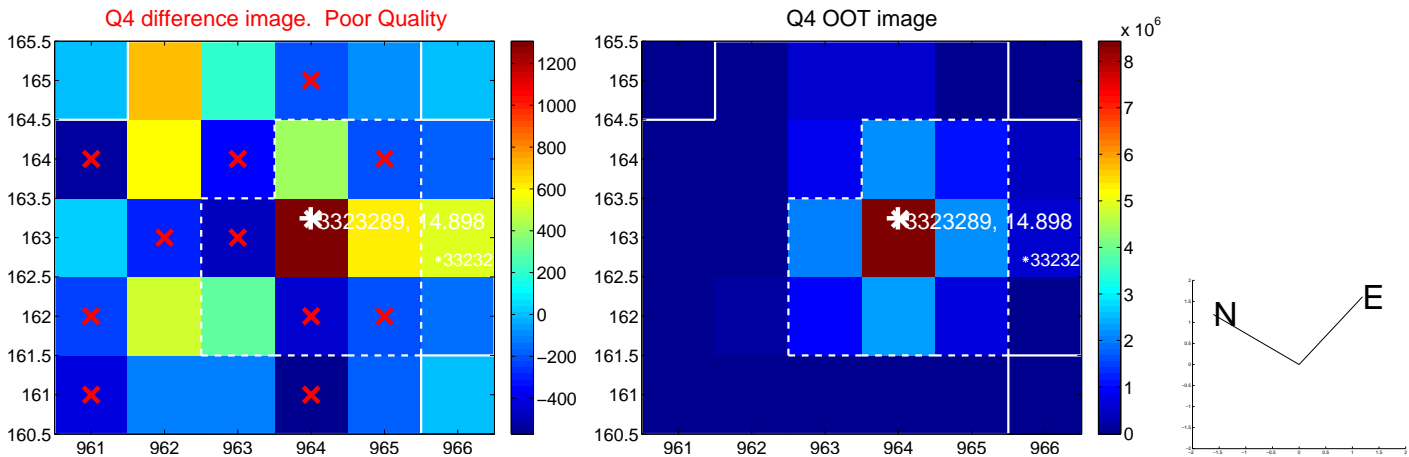
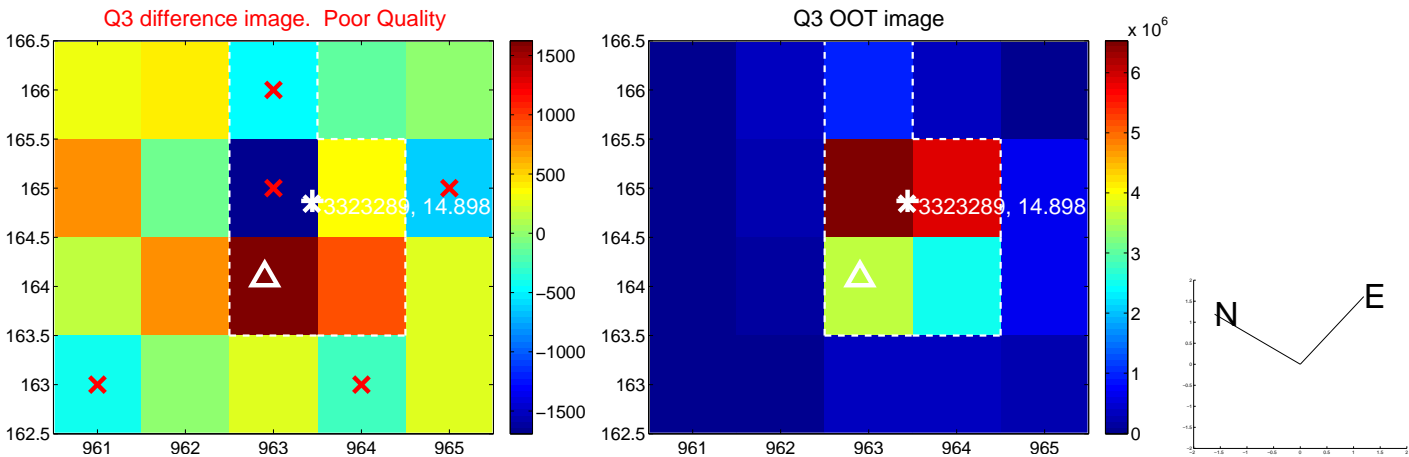
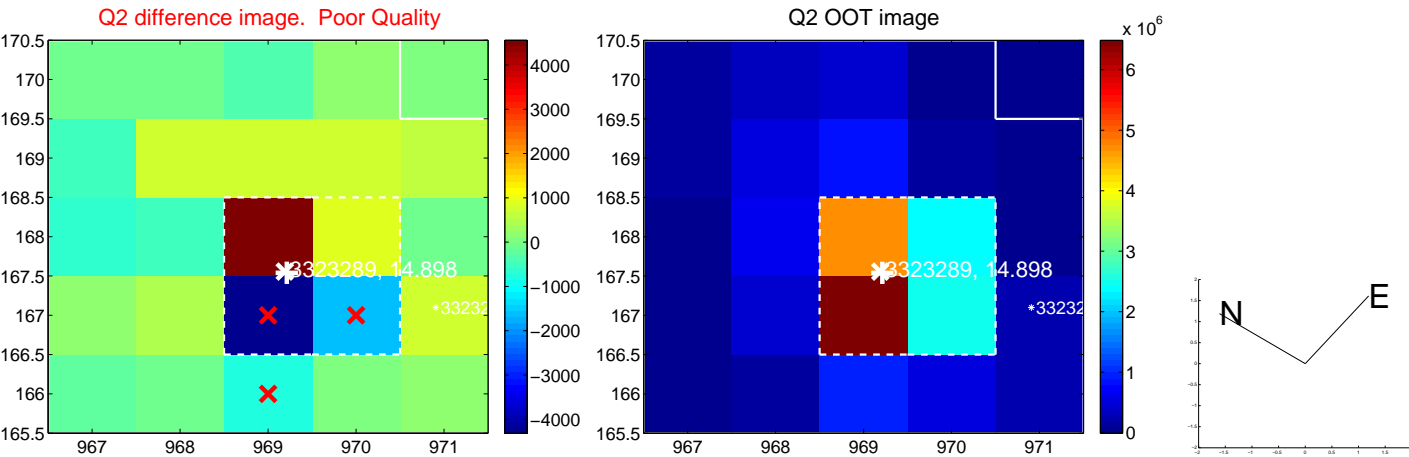
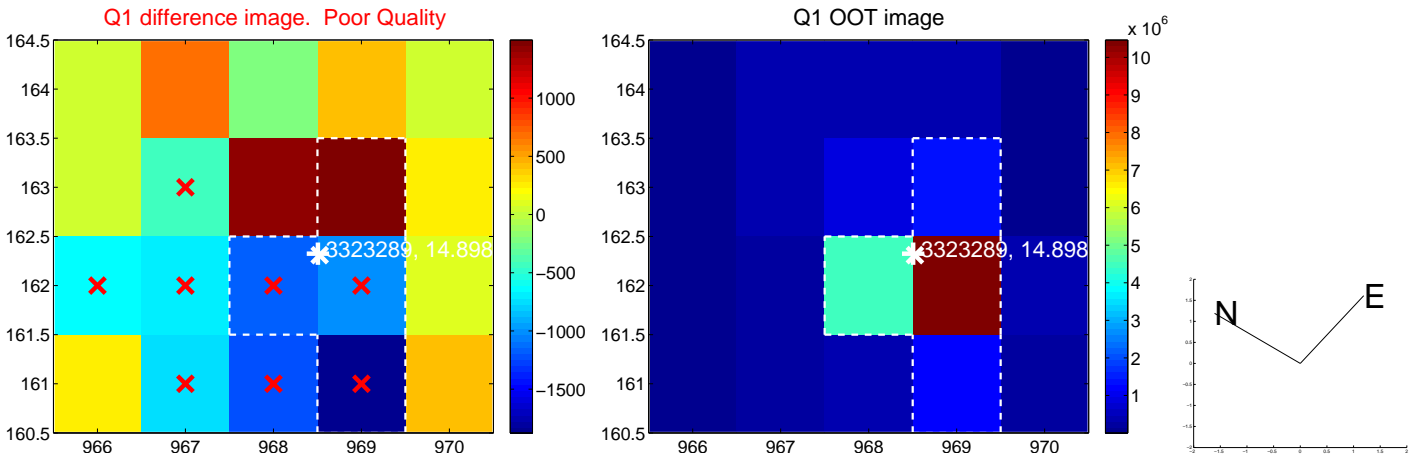
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.036 \pm 0.771$	0.05	$-0.022 \pm 0.728$	$-0.029 \pm 0.870$
PRF-fit source offset from KIC position	$0.085 \pm 0.913$	0.09	$-0.002 \pm 0.805$	$0.085 \pm 0.907$
photometric centroid source offset	$0.61 \pm 0.02$	39.02	$-0.28 \pm 0.02$	$-0.54 \pm 0.02$



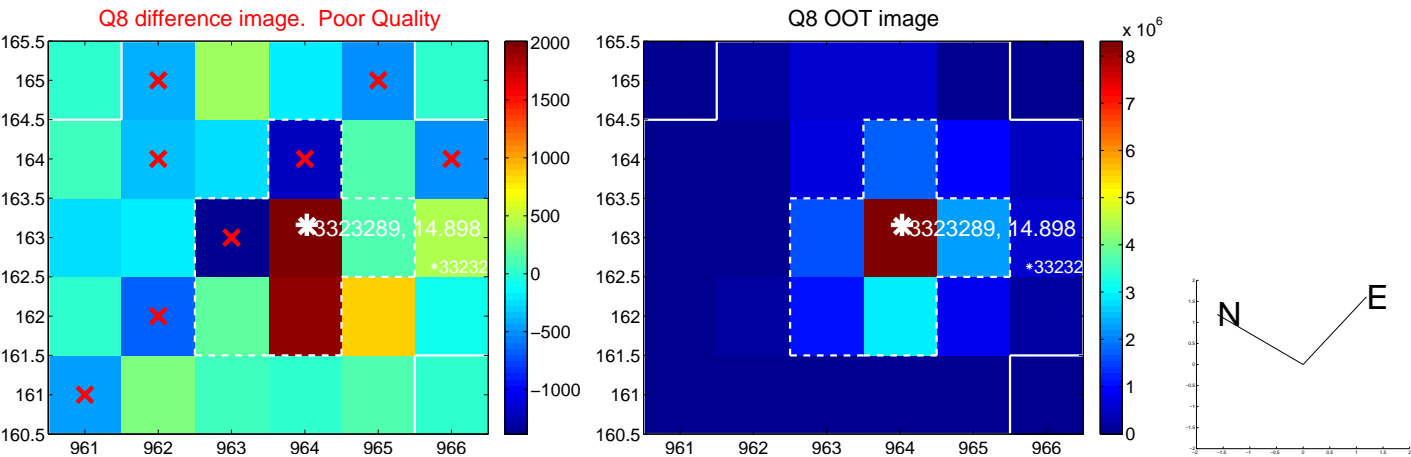
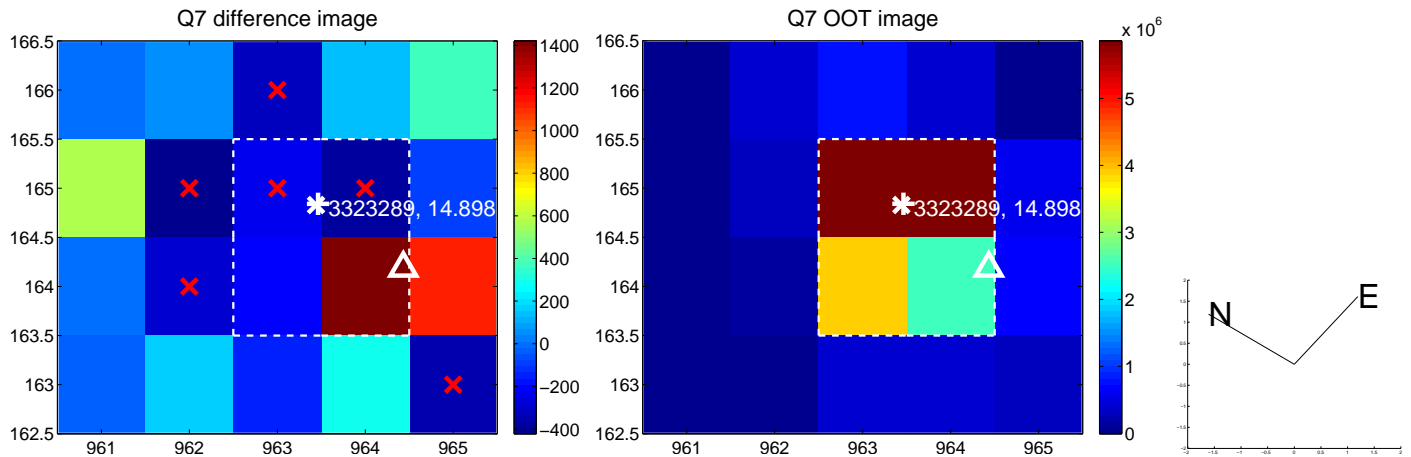
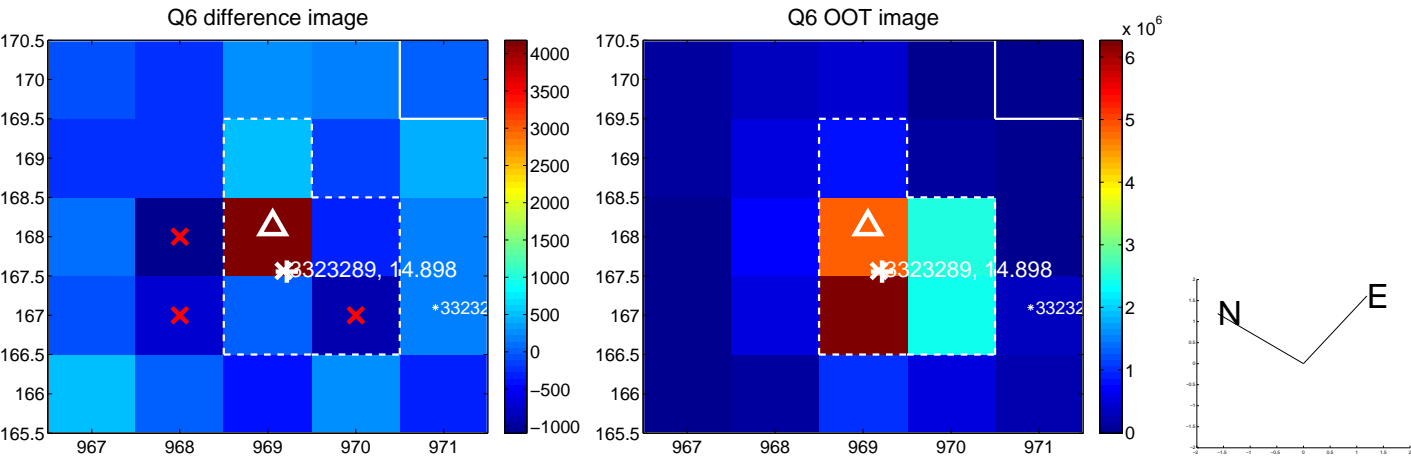
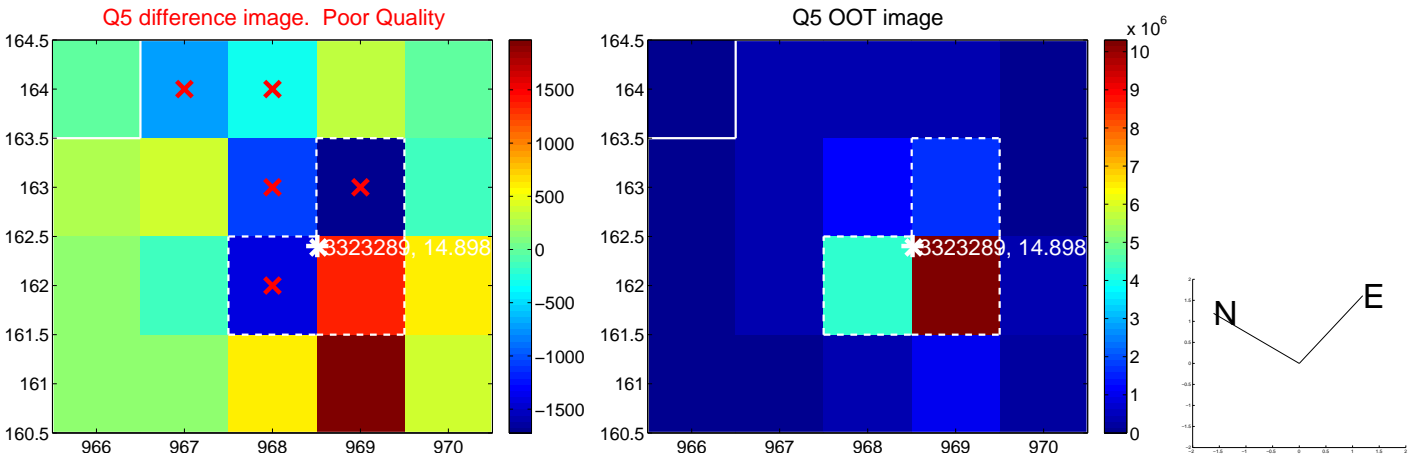
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



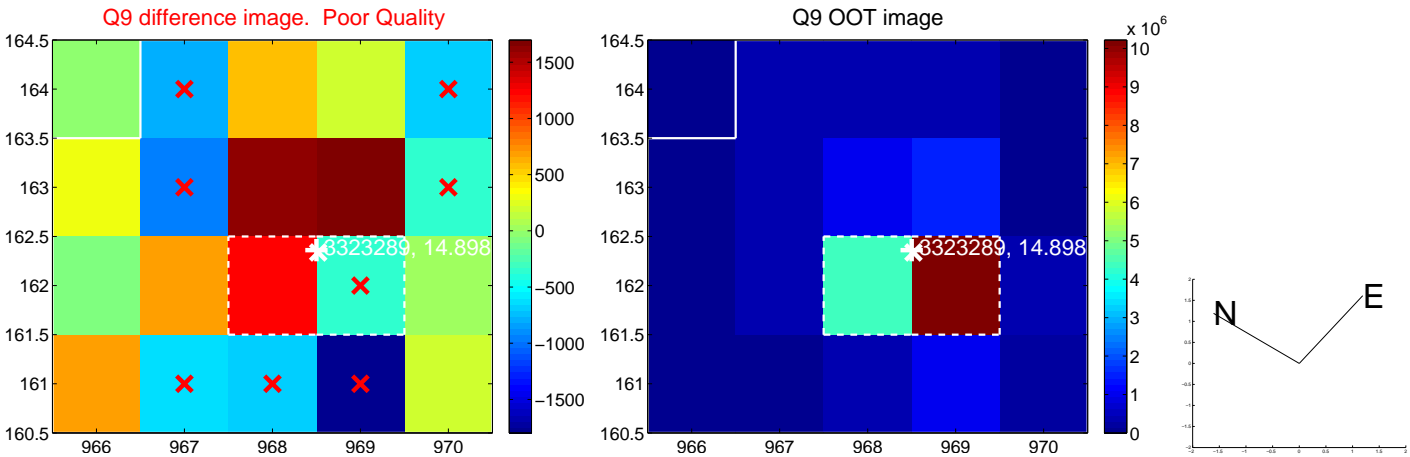


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

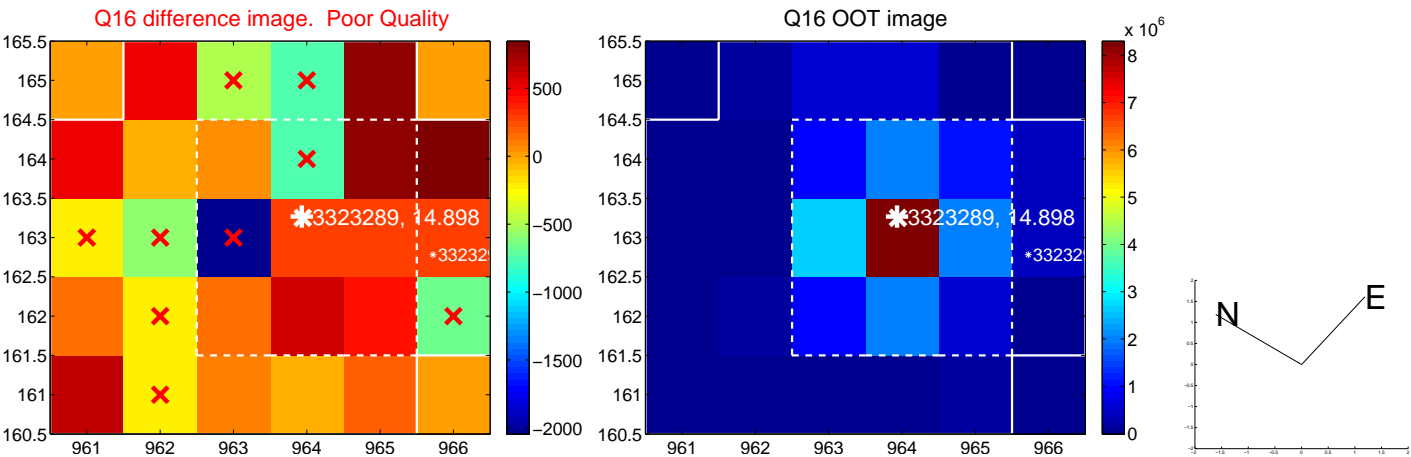
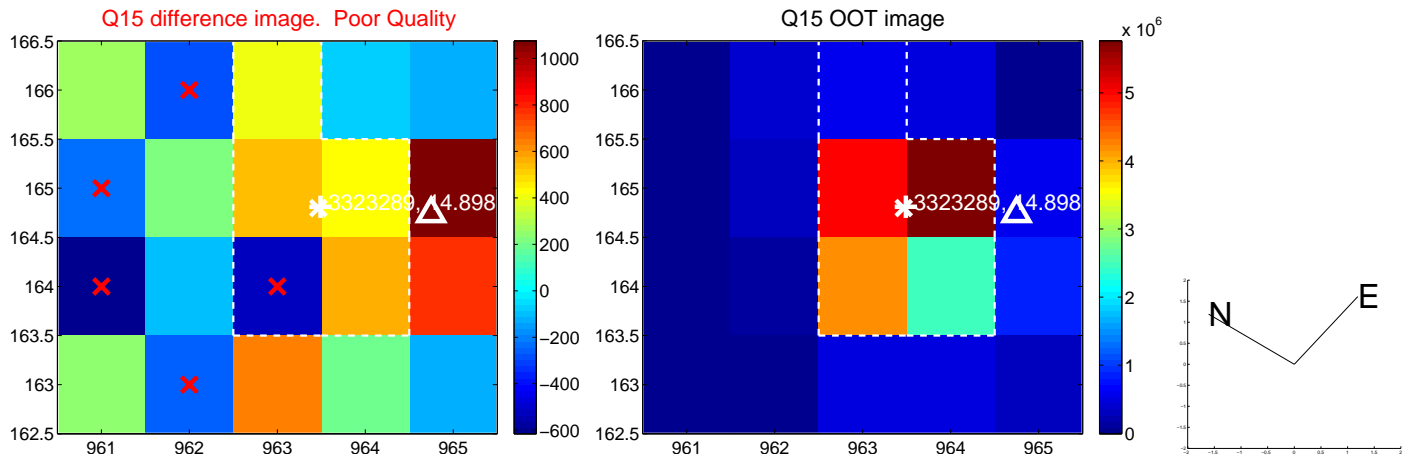
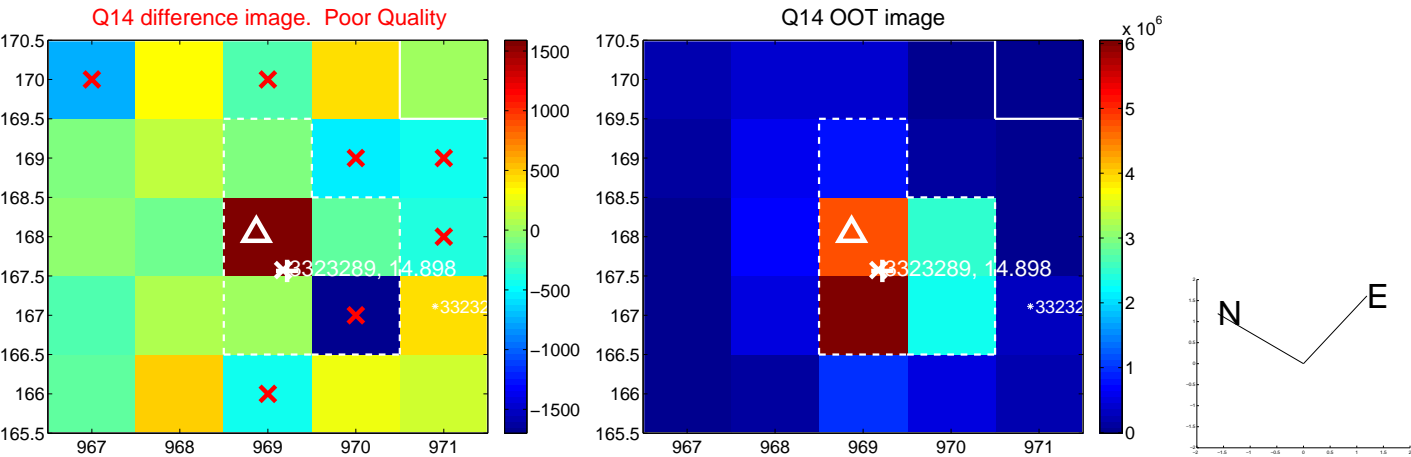
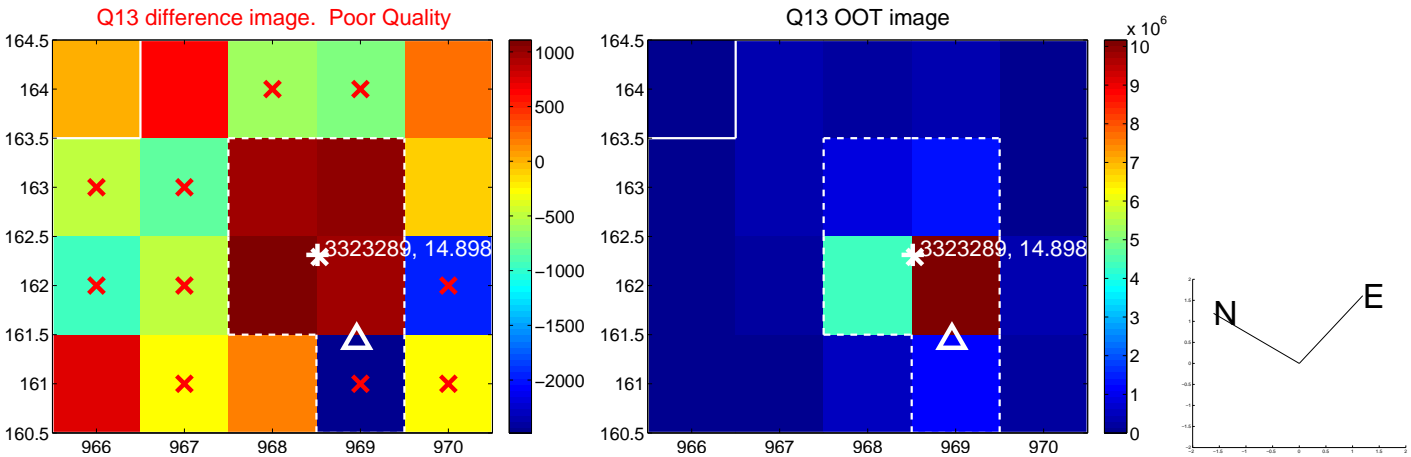




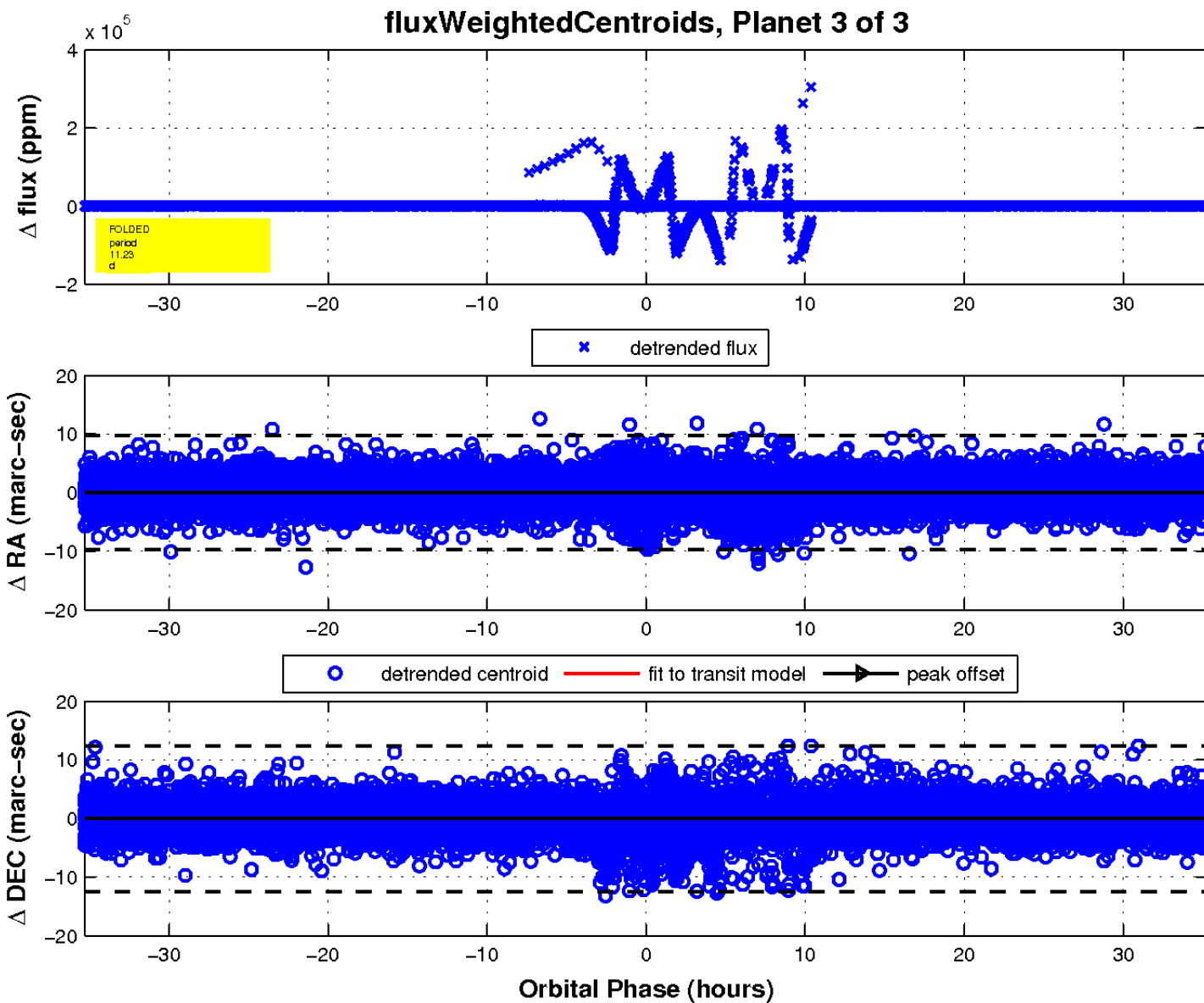
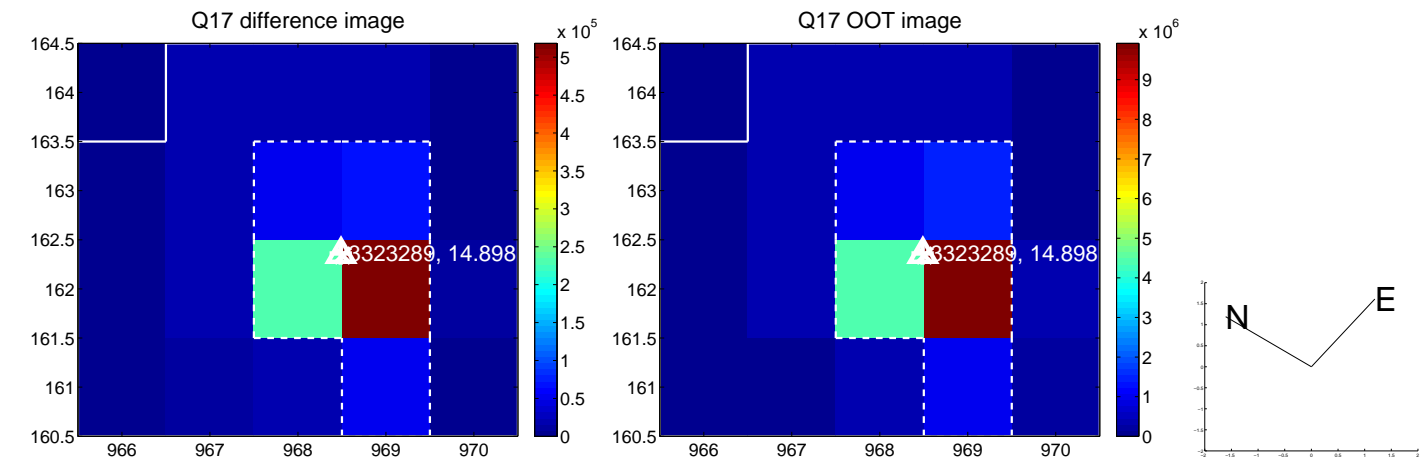
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white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

