

# KIC 007300387

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007300387-01	OBS	No	1.070603	131.600220	272.7	4.845	12.6	12.8	3.60	7217	7.36	49690.24
007300387-02	OBS	No	3.241970	133.375478	1131.5	38.904	10.1	19.6	3.60	7217	15.34	11342.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007300387-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
007300387-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

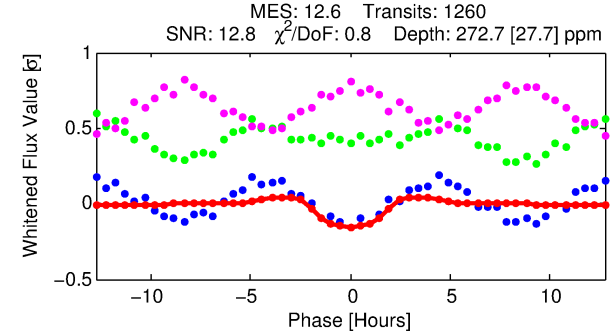
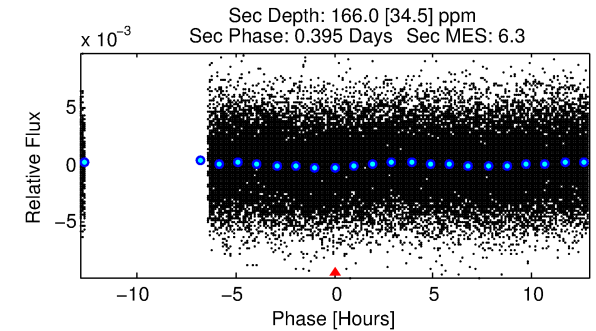
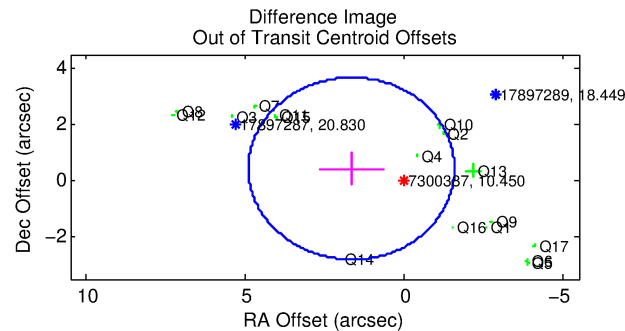
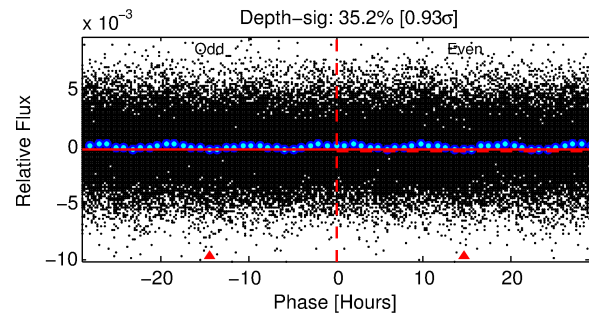
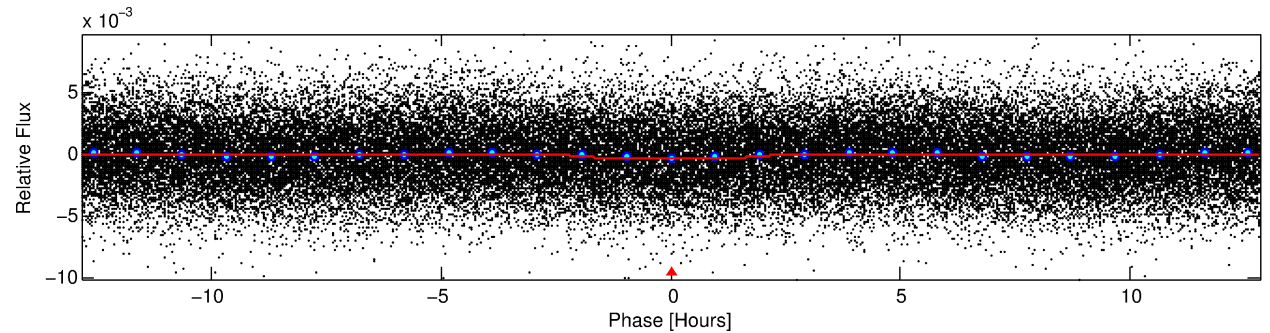
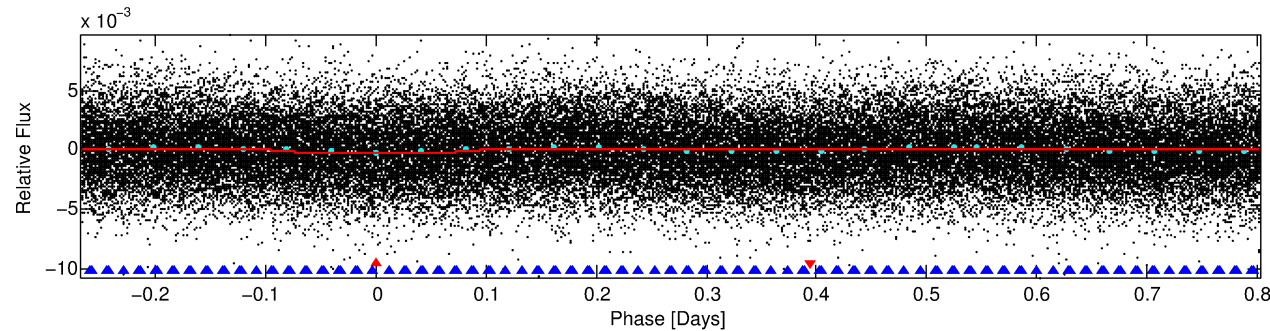
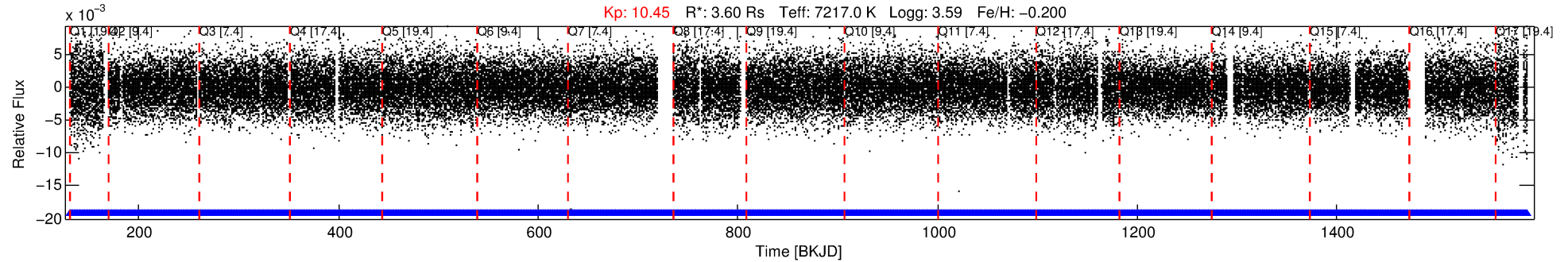
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007300387-01

No Significant Match Found

# DV One-Page Summary

KIC: 7300387 Candidate: 1 of 2 Period: 1.071 d



## DV Fit Results:

Period = 1.07060 [0.00001] d  
Epoch = 131.6002 [0.0047] BKJD  
 $R_p/R^*$  = 0.0187 [0.0023]  
 $a/R^*$  = 1.16 [0.18]  
 $b$  = 0.95 [0.07]  
 $S_{\text{eff}}$  = 49690.24 [45086.86]  
 $T_{\text{eq}}$  = 3807 [864] K  
 $R_p$  = 7.36 [4.24]  $R_e$   
 $a$  = 0.0252 [0.0139] AU  
 $A_g$  = 1.07 [1.01] [0.07 $\sigma$ ]  
 $T_{\text{eff}}$  = 5983 [537] K [2.14 $\sigma$ ]

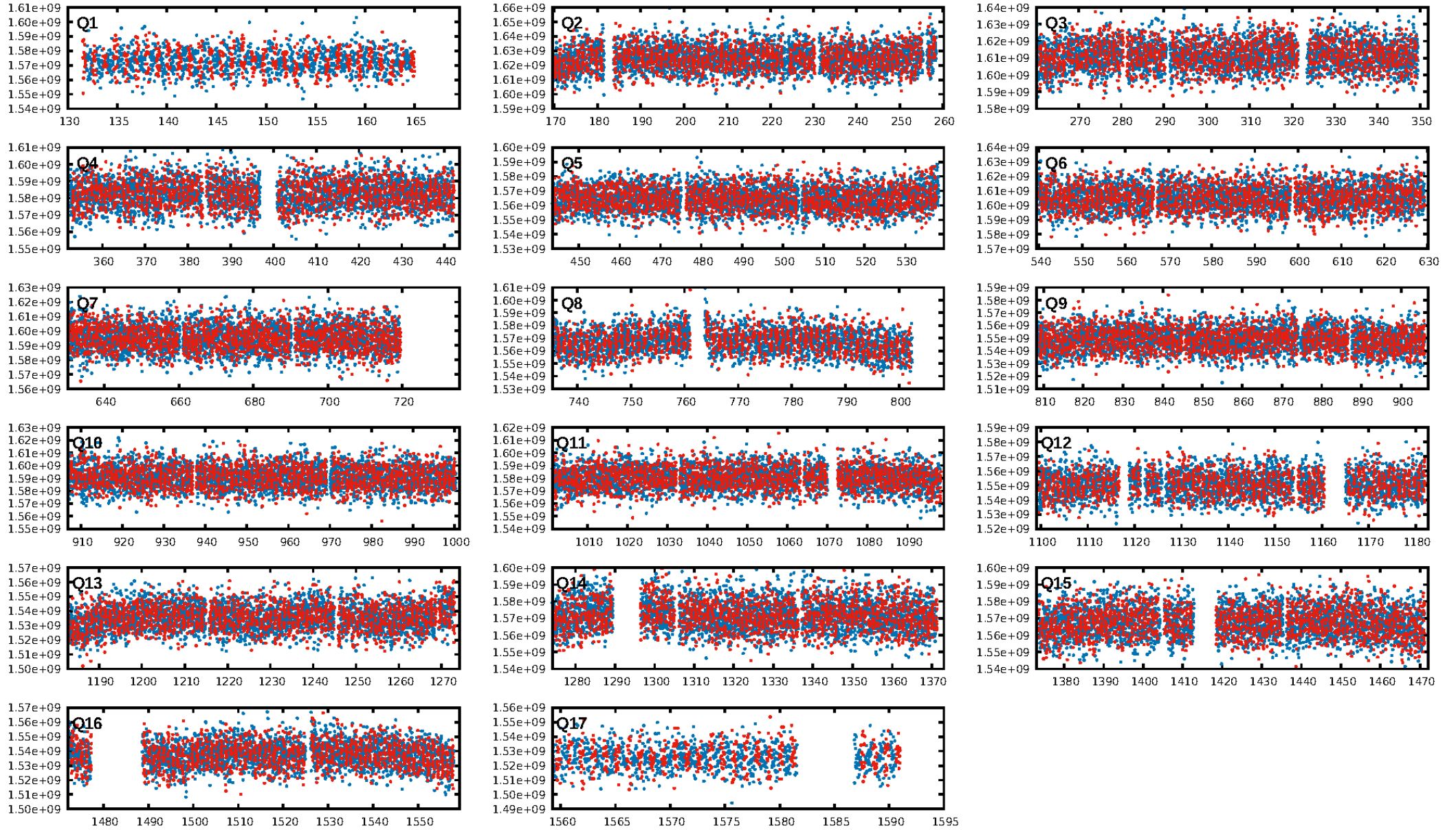
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 81.6% [1.33 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1203/1203]  
GhostDiagnostic-chr: 1.133  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 1.711 arcsec [1.58 $\sigma$ ]  
KicOffset-rm: 1.509 arcsec [1.67 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.12 [2/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:20:05 Z

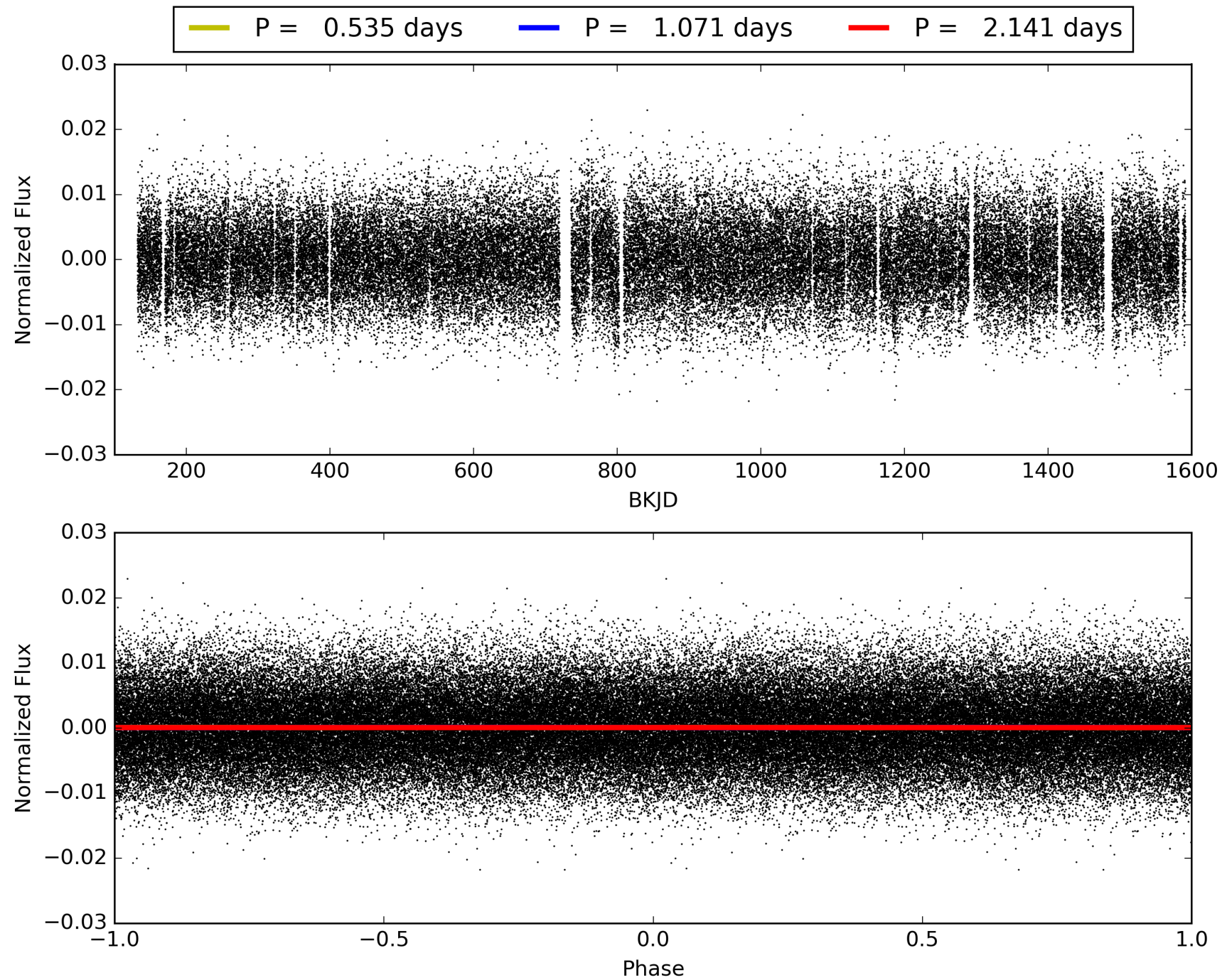
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007300387-01, PDC Light Curves



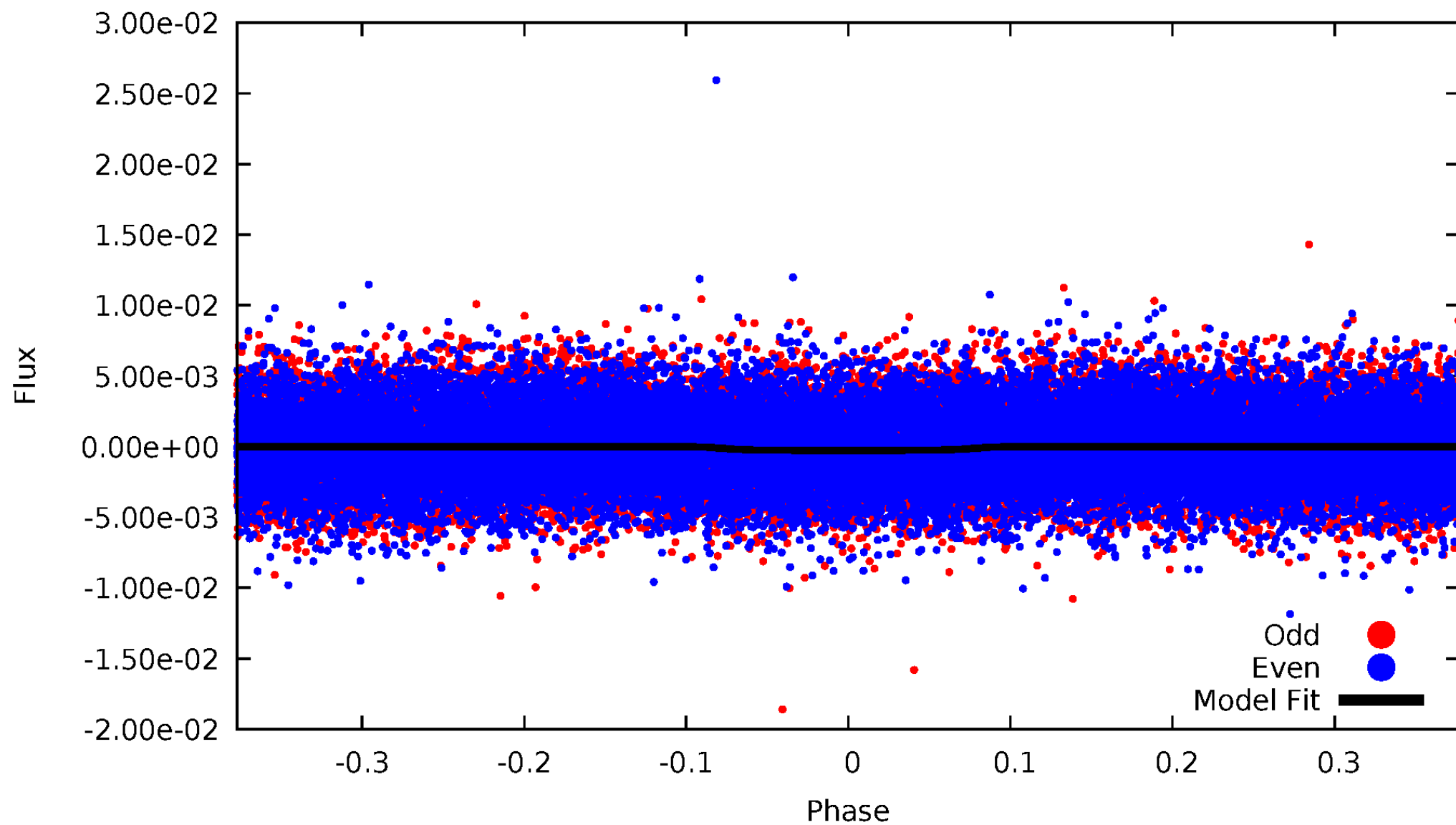


TCE 007300387-01



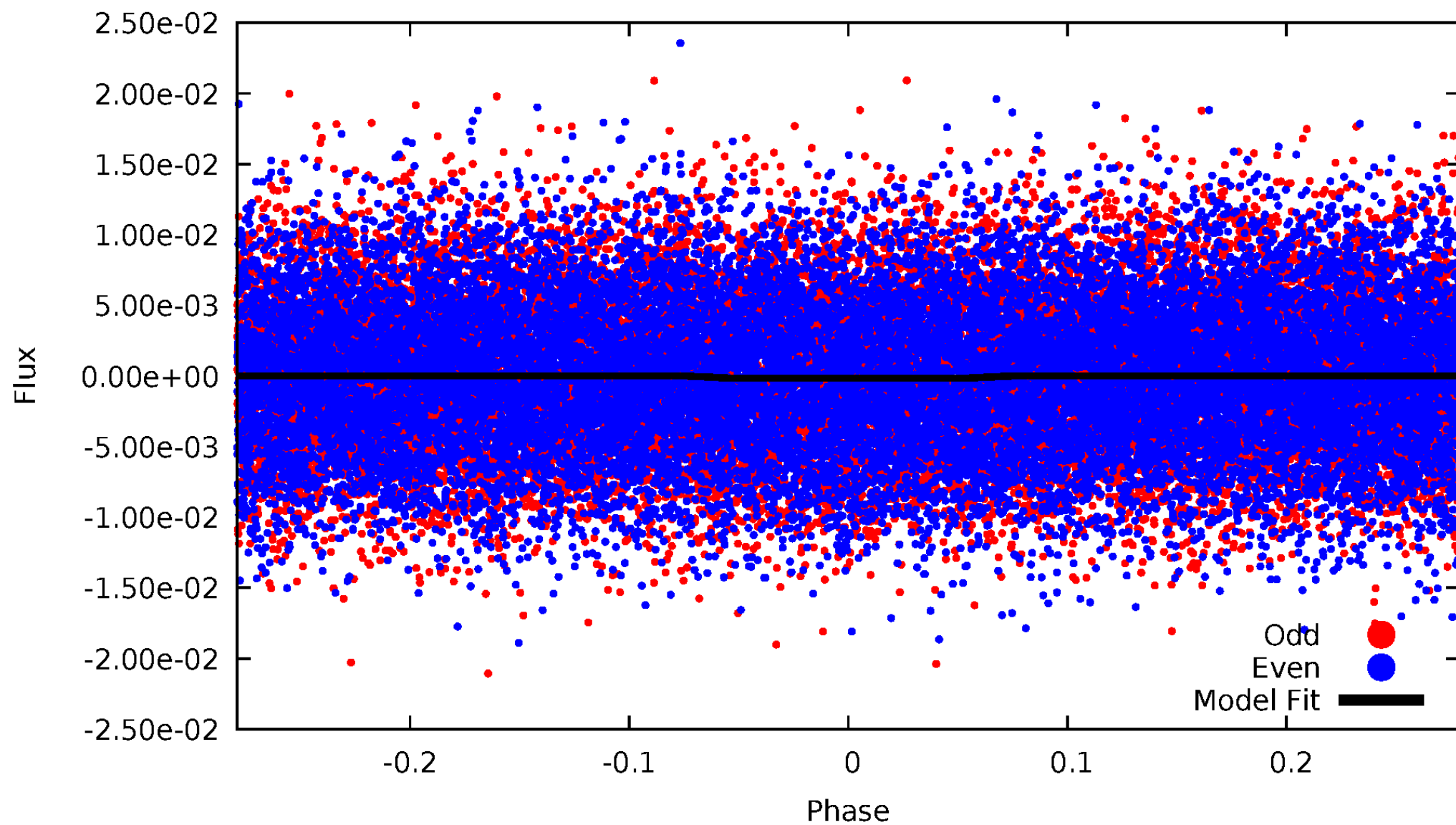
# DV Odd/Even

TCE 007300387-01



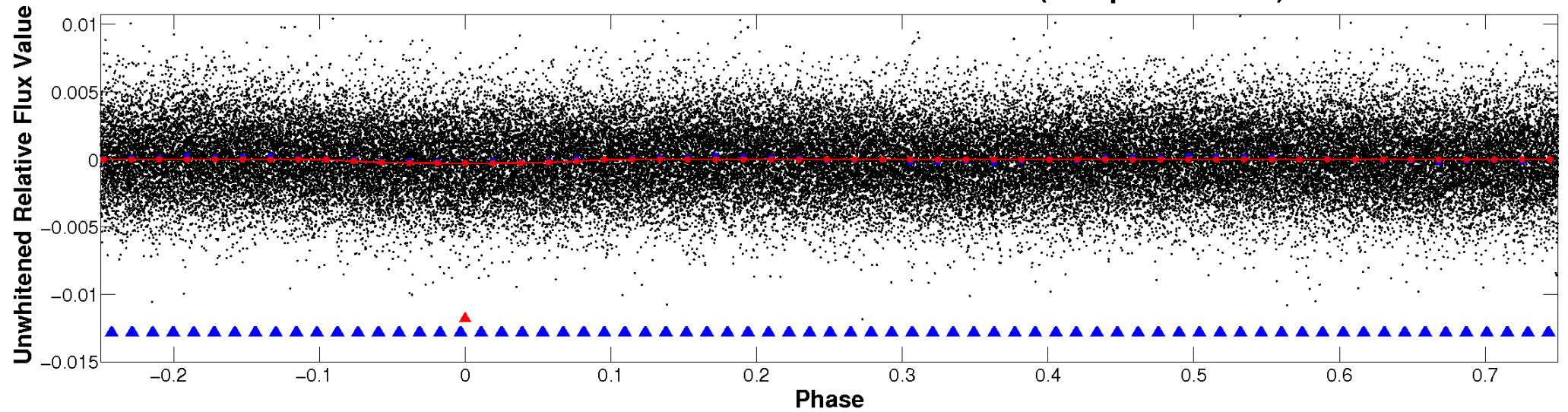
# ALT Odd/Even

TCE 007300387-01

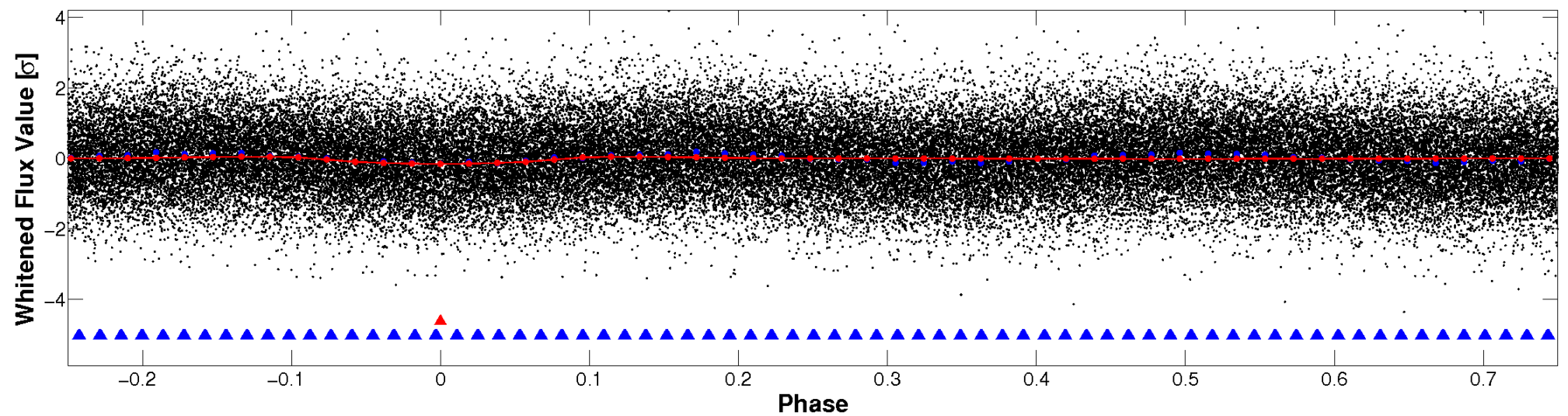


# Non-Whitened Vs. Whitened Light Curve

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



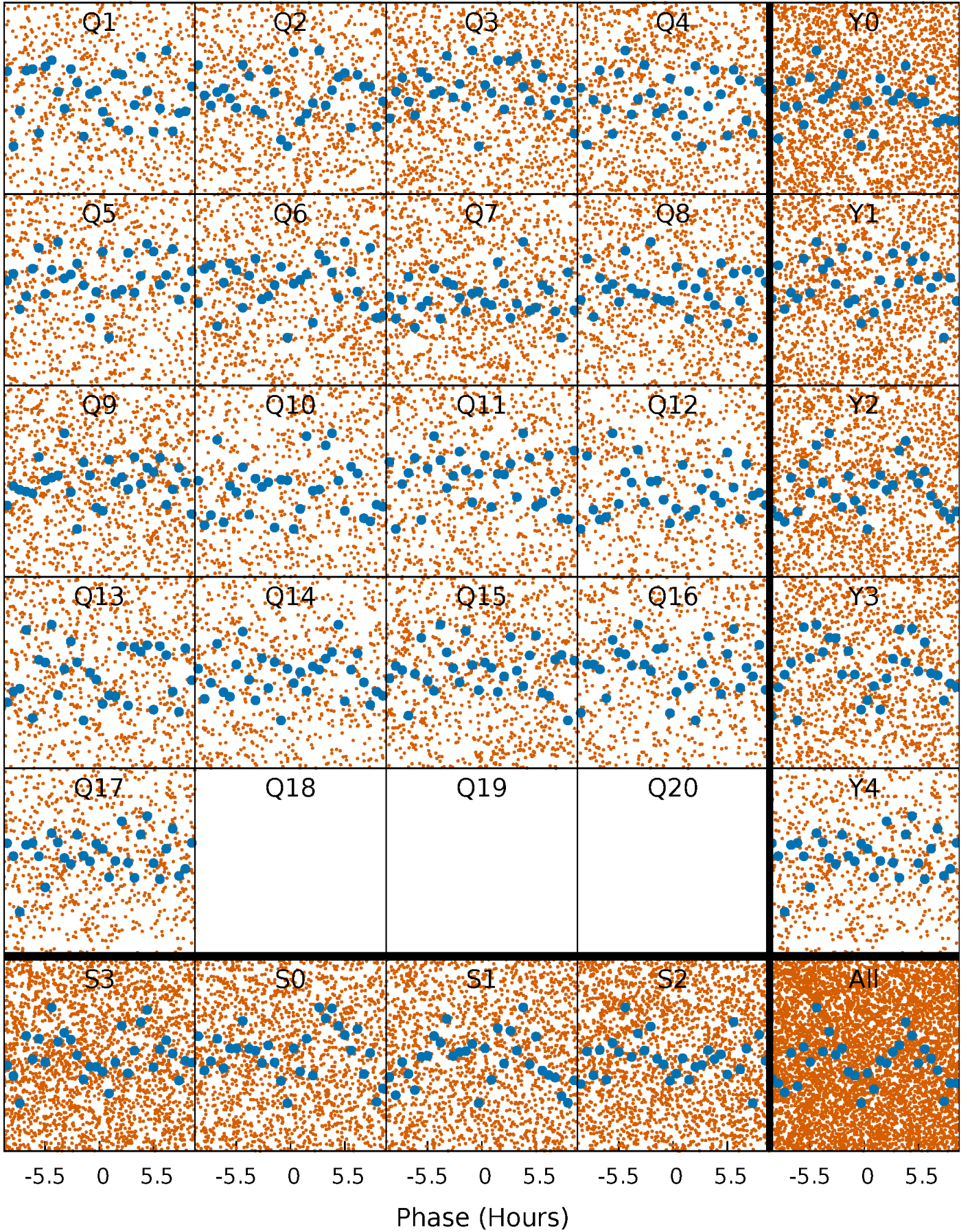
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

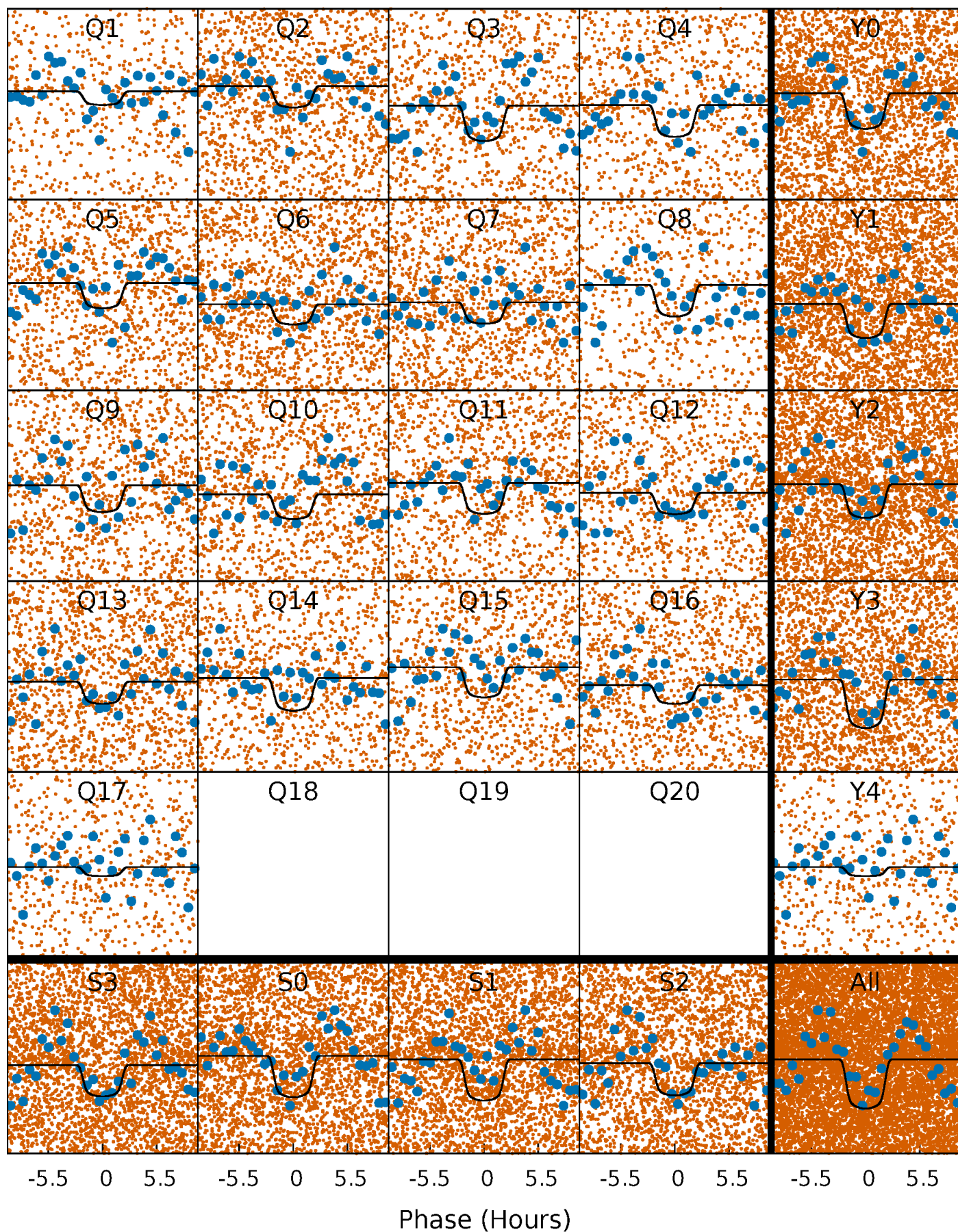
TCE 007300387-01 P= 1.070603 Days  $T_0=131.600221$  (BKJD)





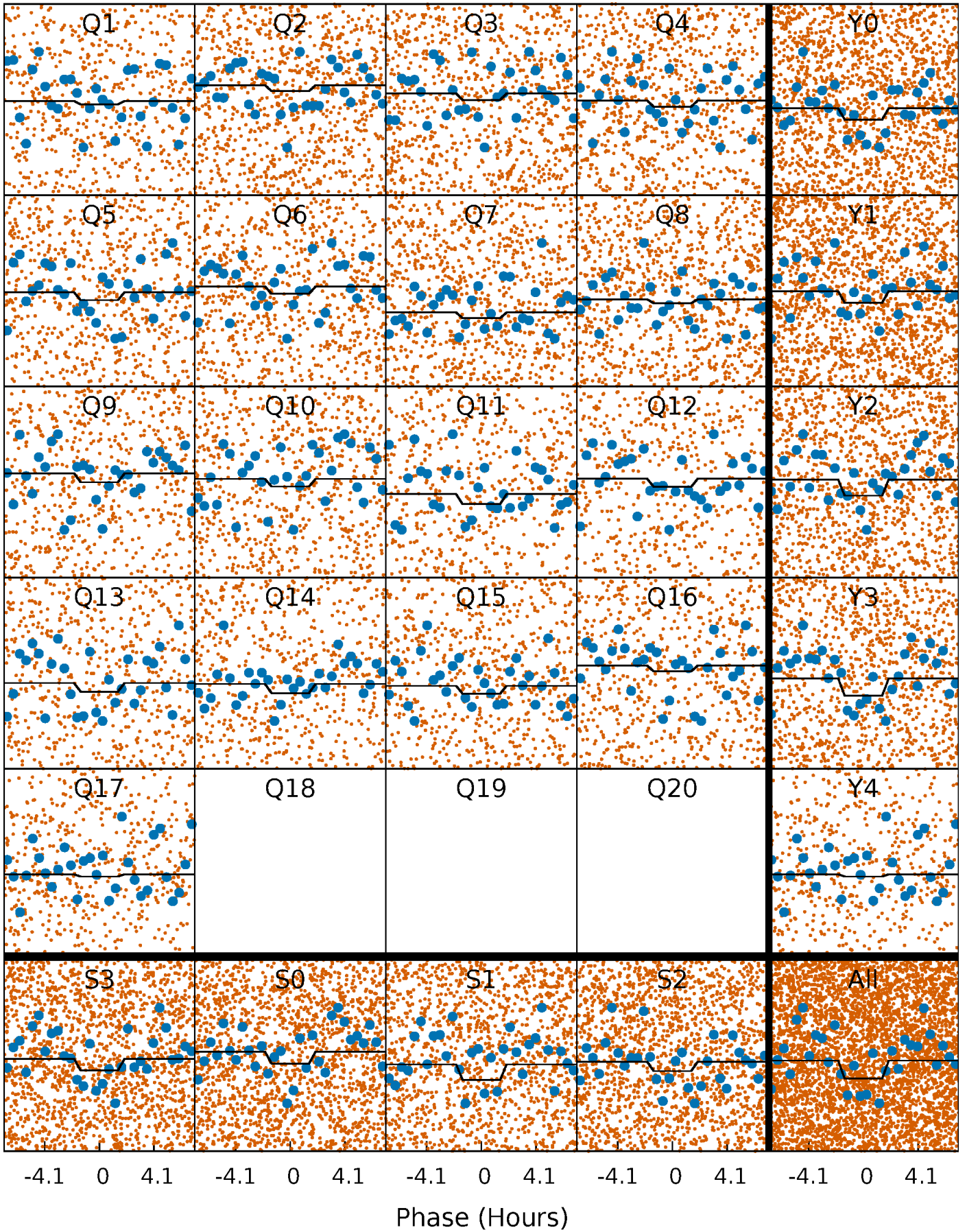
# DV Quarter-Phased Transit Curves

TCE 007300387-01 P= 1.070603 Days  $T_0=131.600221$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007300387-01 P= 1.070627 Days  $T_0=131.580597$  (BKJD)

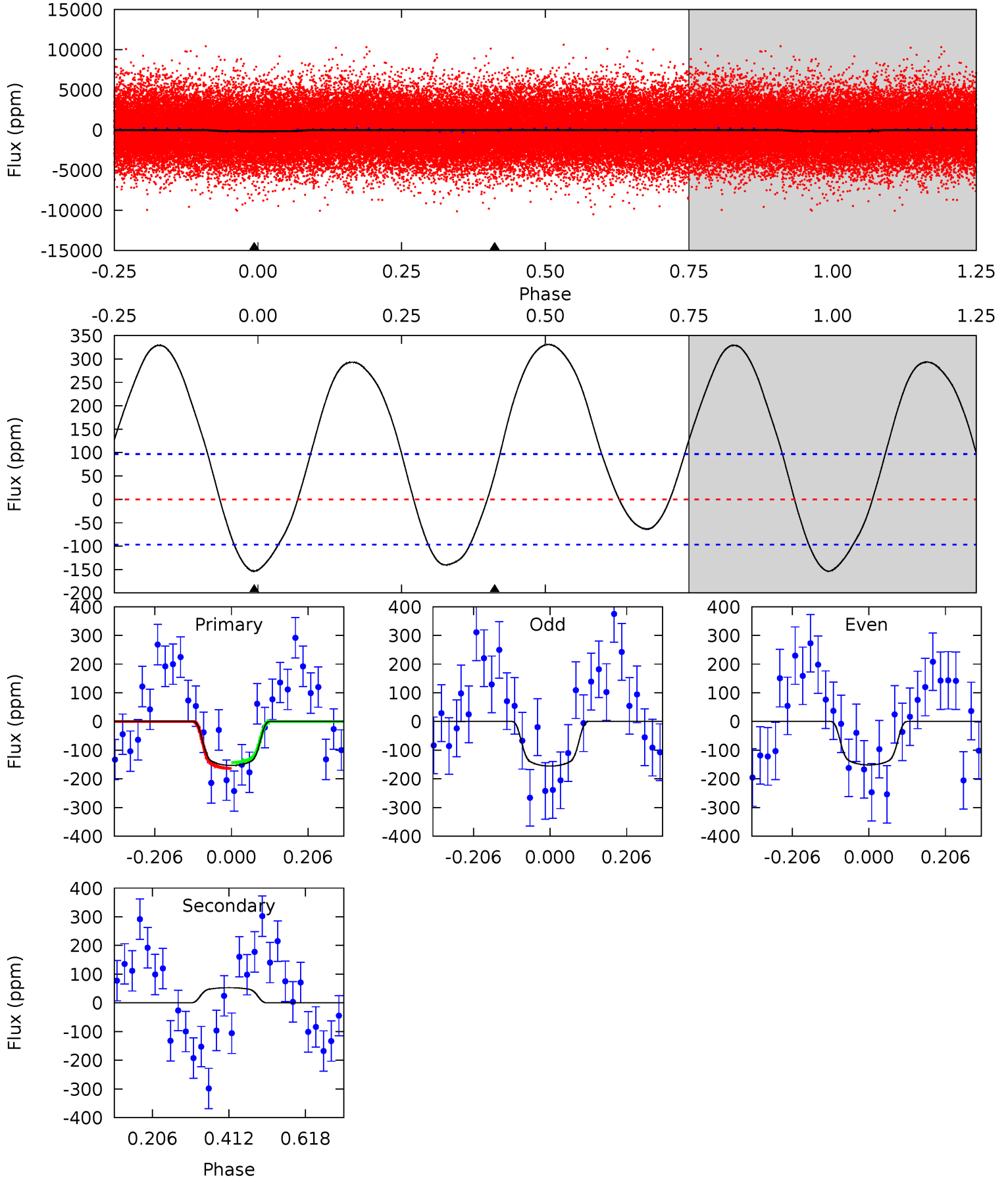




# DV Model-Shift Uniqueness Test

007300387-01, P = 1.070603 Days, E = 130.529618 Days

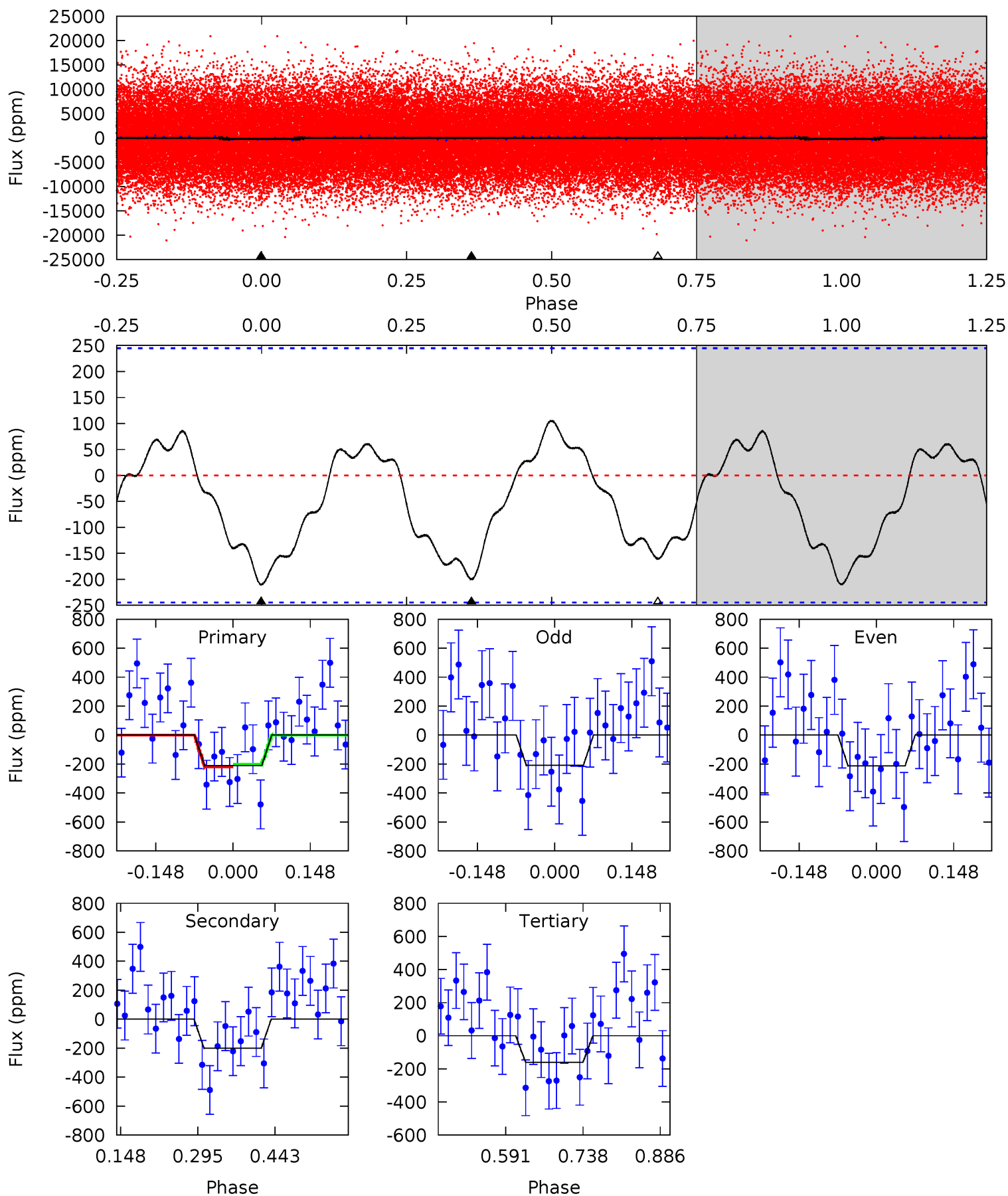
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.99	-2.40	0	0	4.41	1.26	4.80	6.99	6.99	-2.40	-2.40	0.09	0.97	0.68	0.48



# Alt Model-Shift Uniqueness Test

007300387-01, P = 1.070627 Days, E = 130.509970 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
3.86	3.67	2.95	0	4.48	1.45	1.44	0.91	3.86	0.72	3.67	0.04	1.08	0.33	0.17





### Stellar Parameters For KIC 007300387

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7217^{+226}_{-302}$	$3.594^{+0.527}_{-0.062}$	$-0.200^{+0.250}_{-0.300}$	$3.599^{+0.338}_{-2.026}$	$1.857^{+0.179}_{-0.536}$	$0.056^{+0.406}_{-0.012}$
	+3%/-4%	+15%/-2%	+125%/-150%	+9%/-56%	+10%/-29%	+723%/-21%
Source	KIC0	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 007300387-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$53 \pm 22$	$6.80^{+1.37}_{-2.01}$	$5108^{+364}_{-748}$	$-5129^{+380}_{-410}$	$-0.395^{+0.188}_{-0.424}$
Alt.	$-200 \pm 55$	$4.35^{+1.17}_{-1.32}$	$5131^{+336}_{-665}$	$7602^{+1458}_{-1053}$	$3.652^{+3.621}_{-1.606}$

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

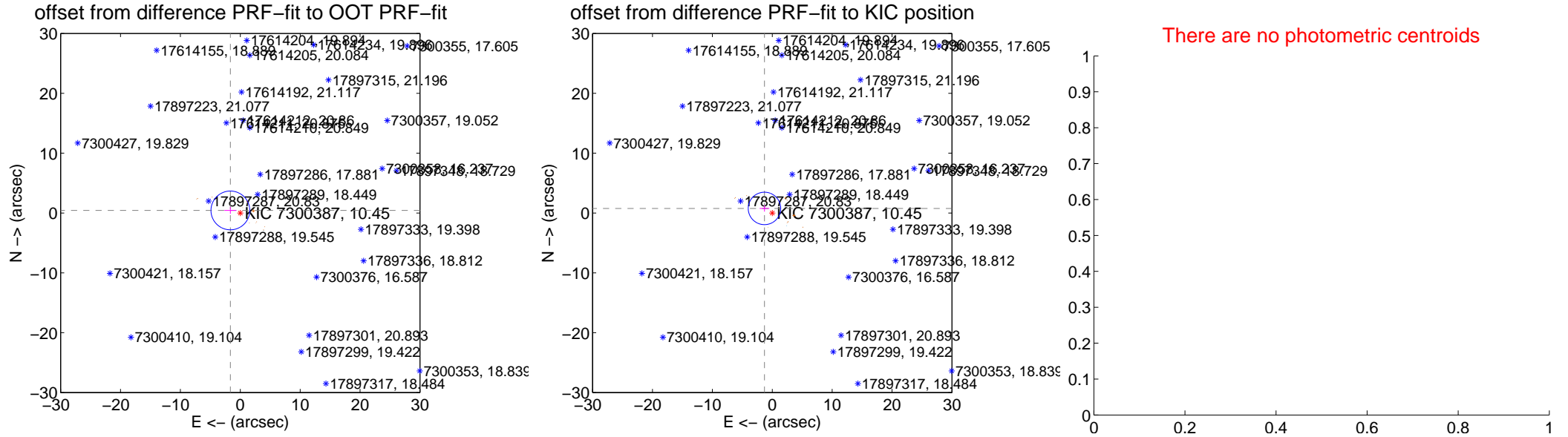
## DV Centroid Data

Supplemental centroid analysis for 007300387-01. **Kepler magnitude: 10.45.** Transit SNR 12.79

**There are 2 quarters with good PRF difference image offsets**

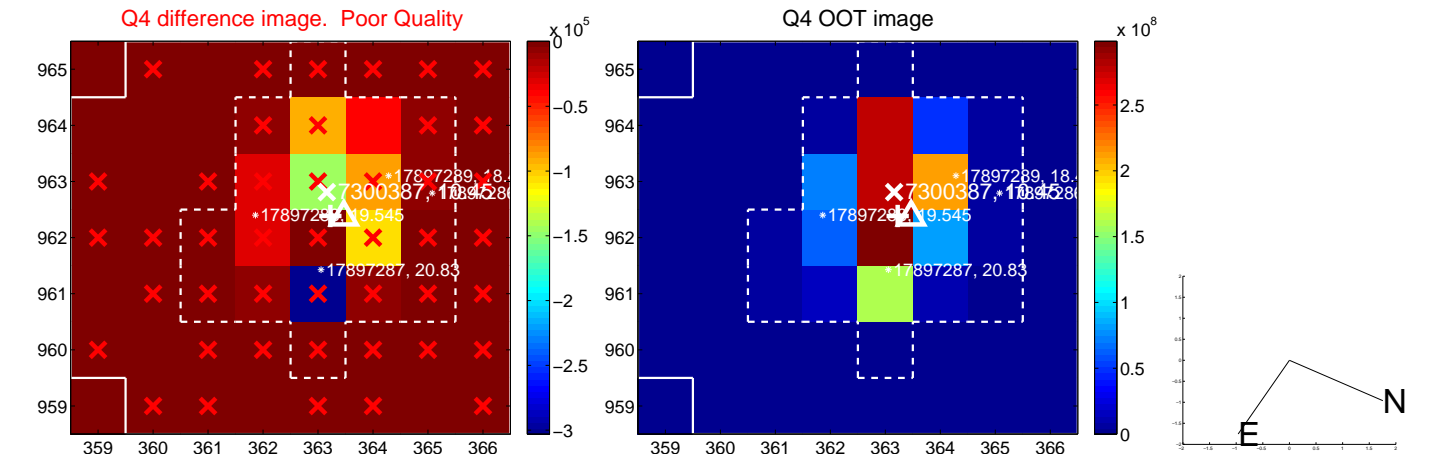
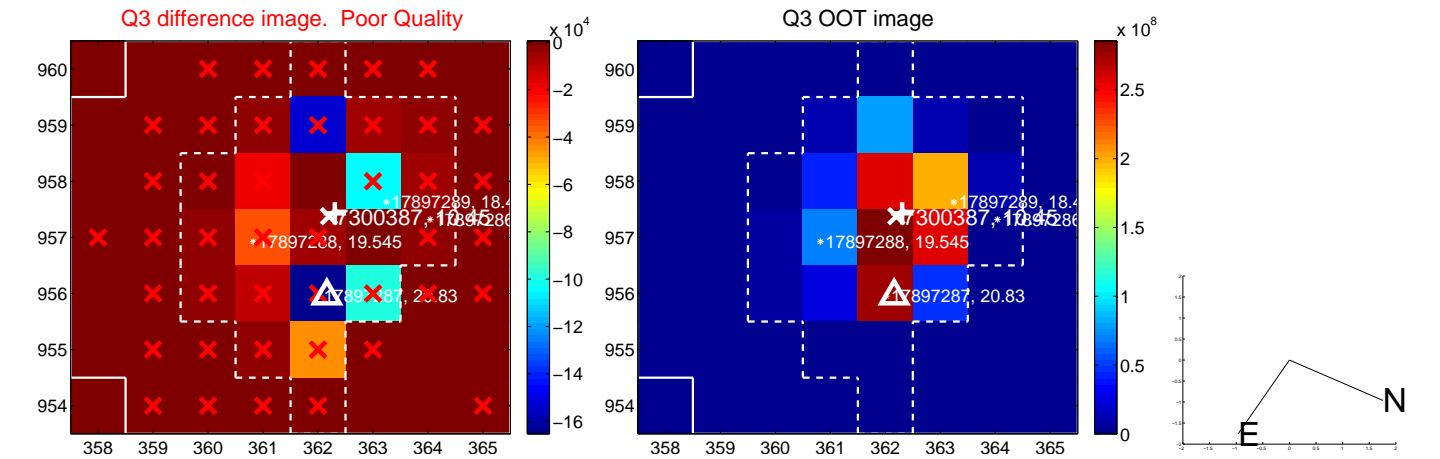
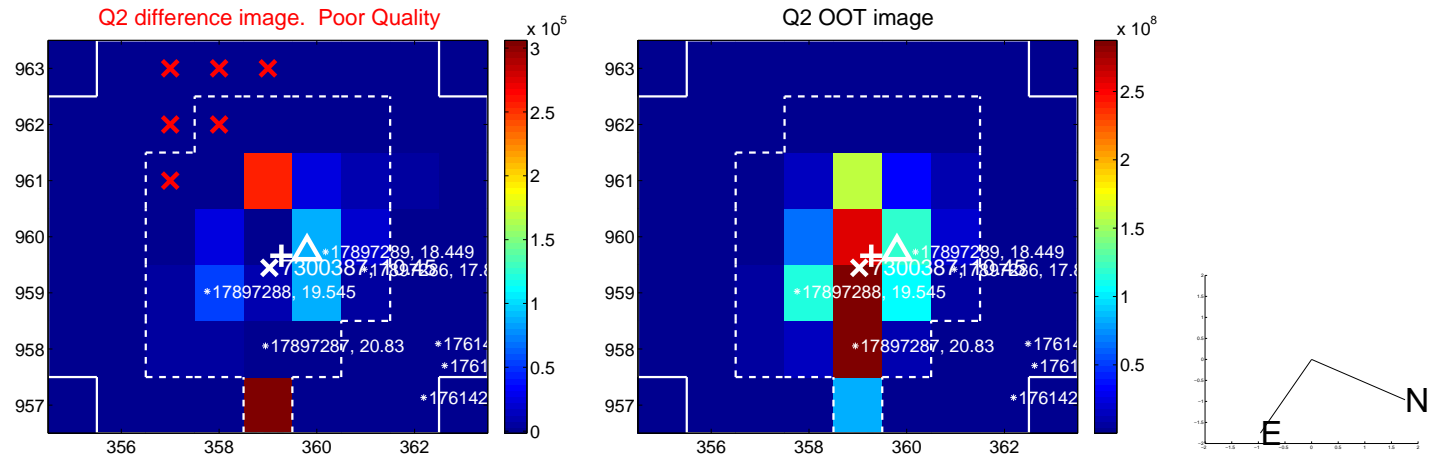
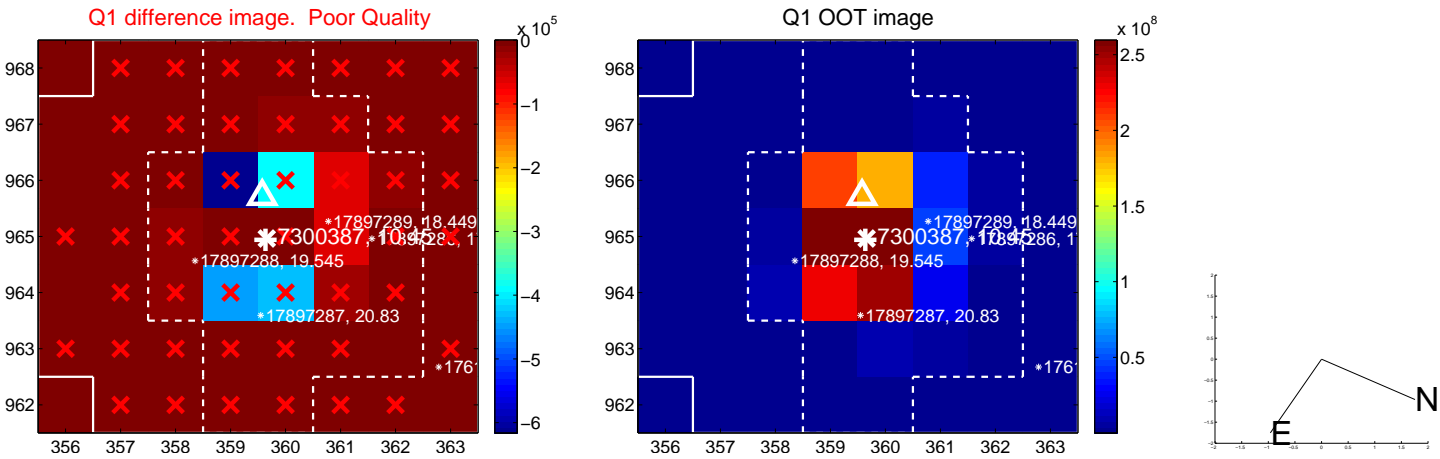
The direct PRF centroid is offset from the target star catalog position by about 1.69 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.711 \pm 1.080$	1.58	$1.656 \pm 1.000$	$0.432 \pm 0.563$
PRF-fit source offset from KIC position	$1.509 \pm 0.904$	1.67	$1.300 \pm 0.810$	$0.766 \pm 0.529$
photometric centroid source offset	—	—	—	—

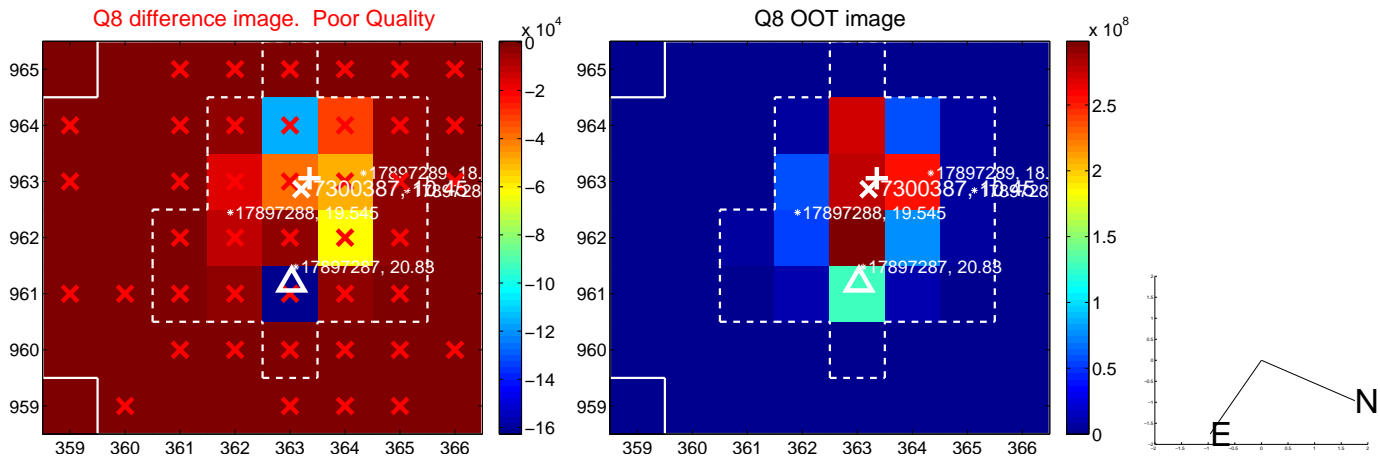
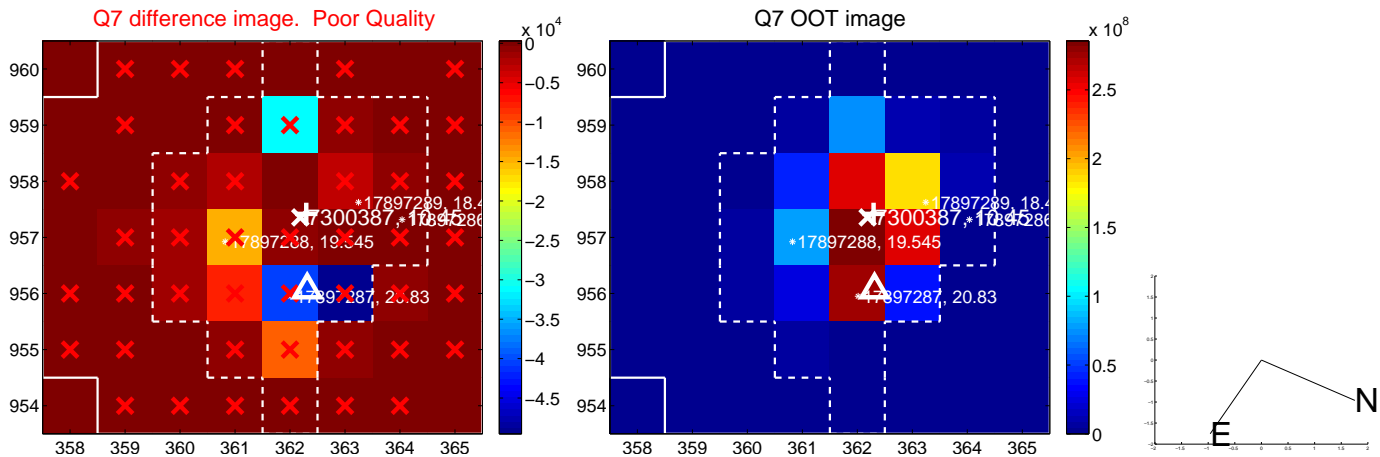
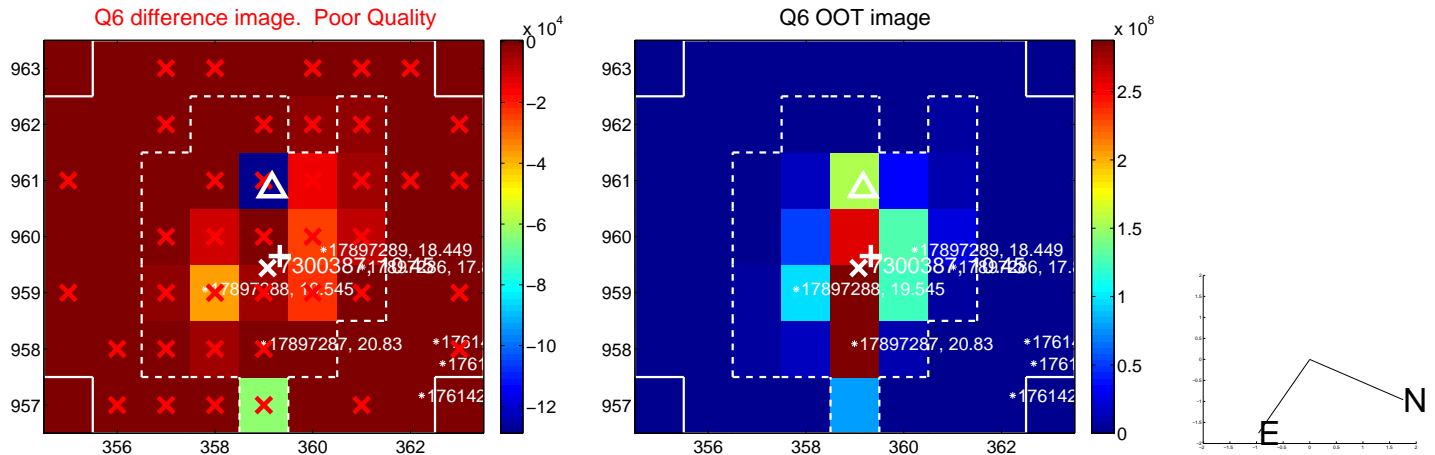
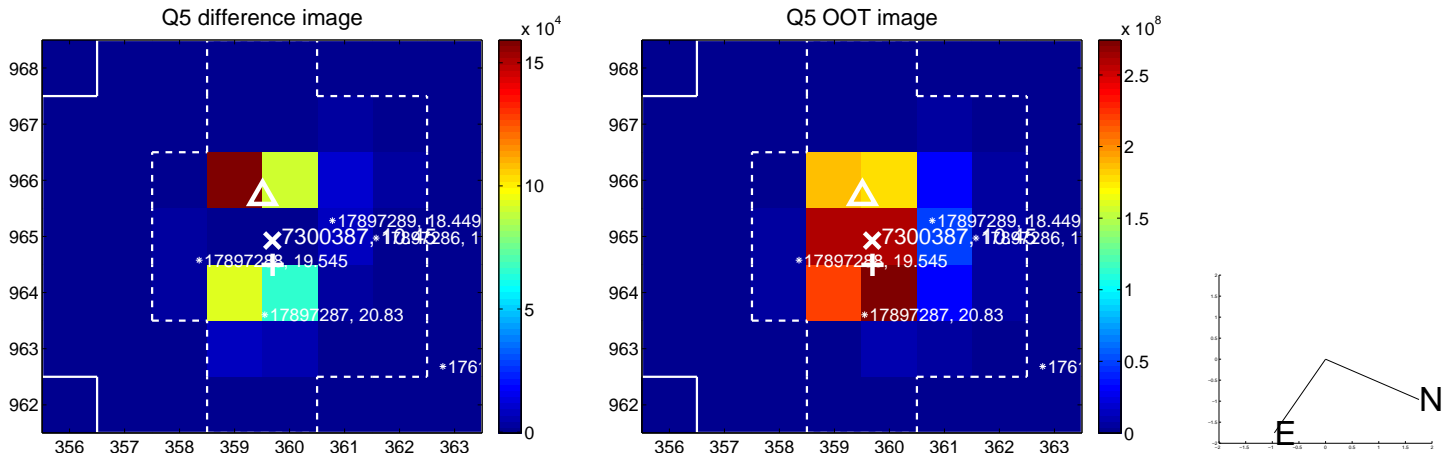


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

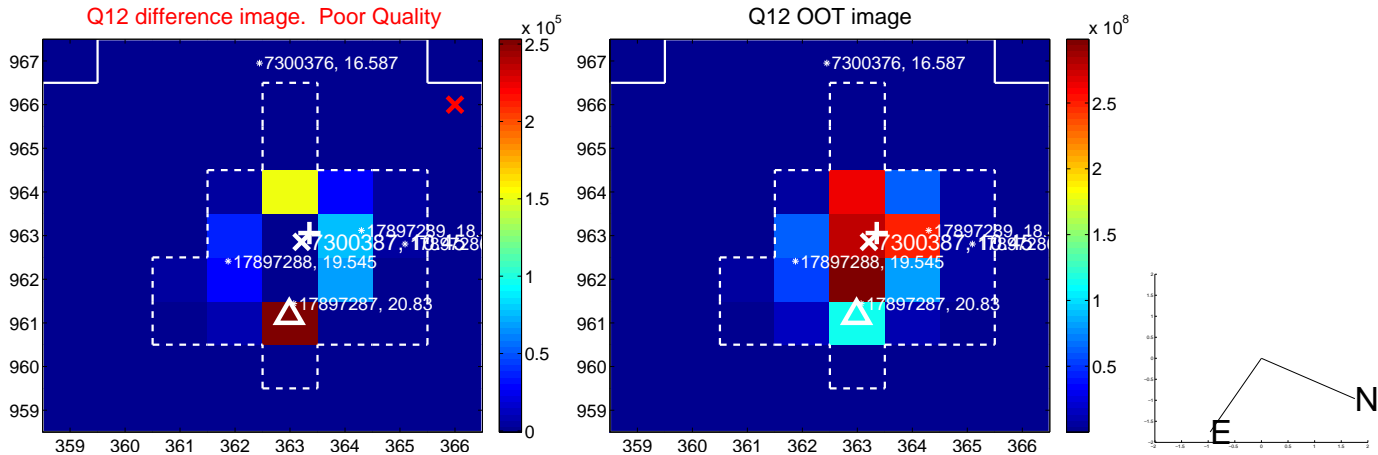
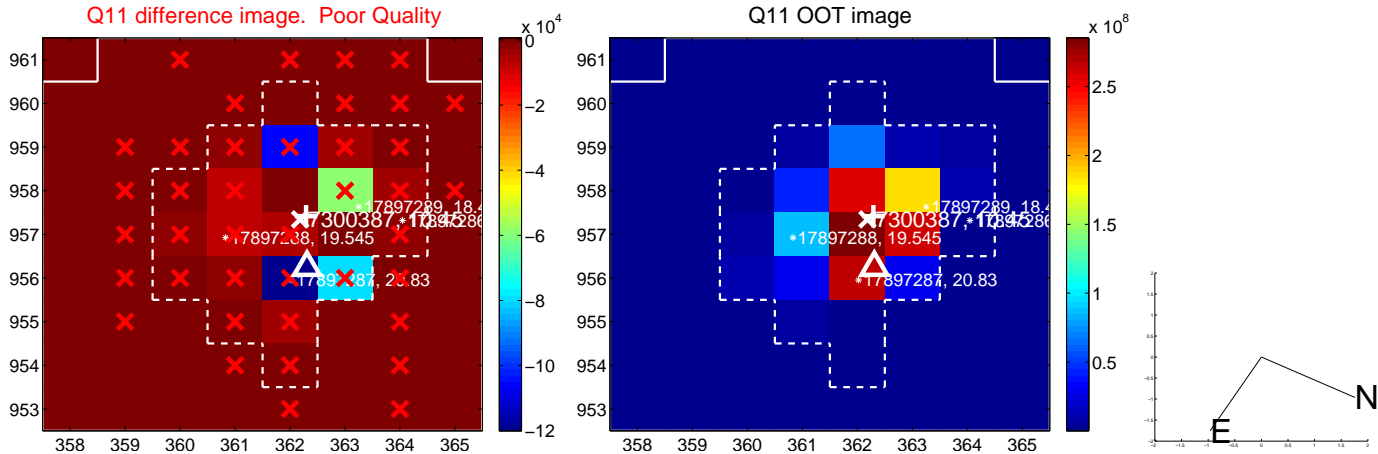
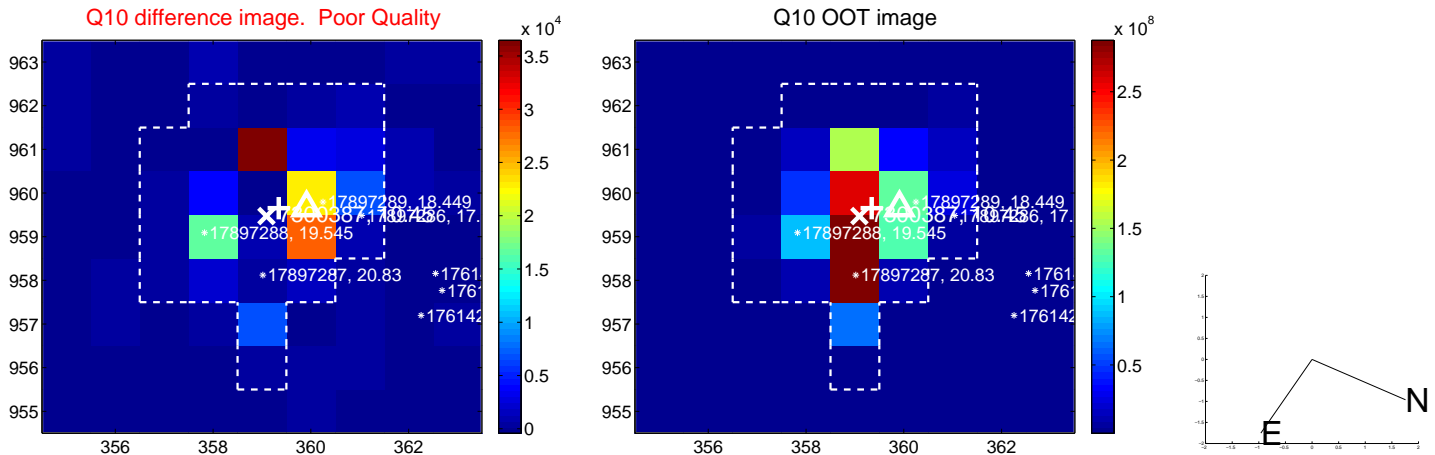
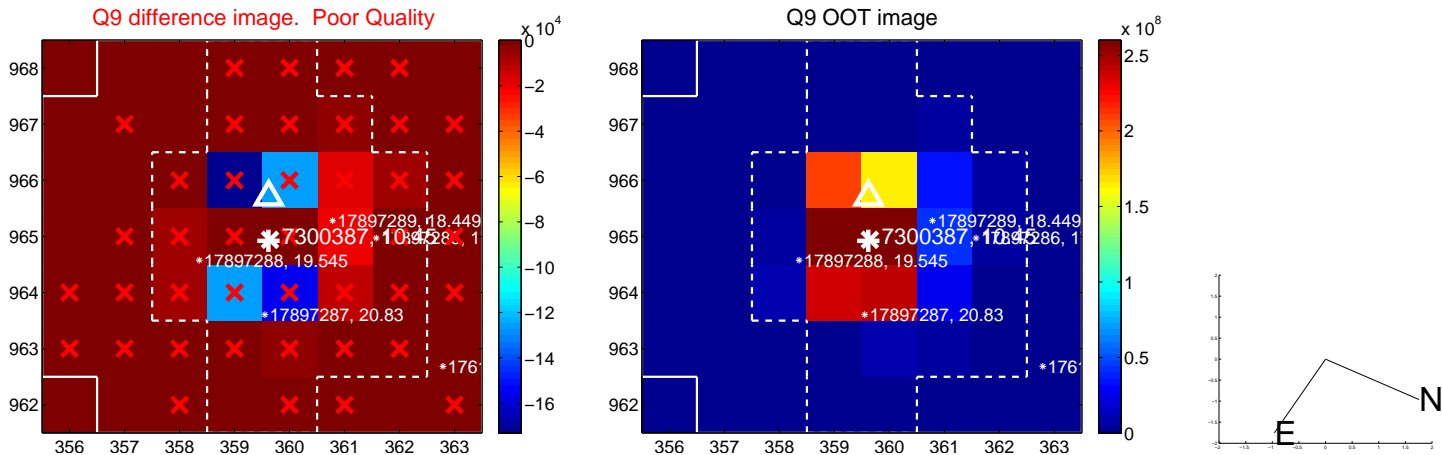


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

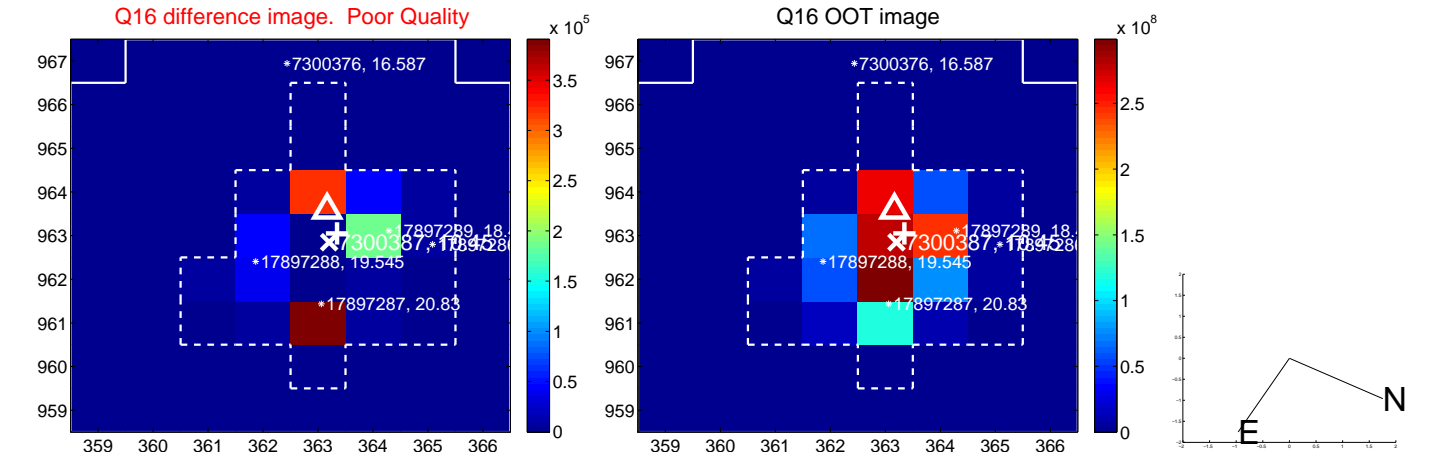
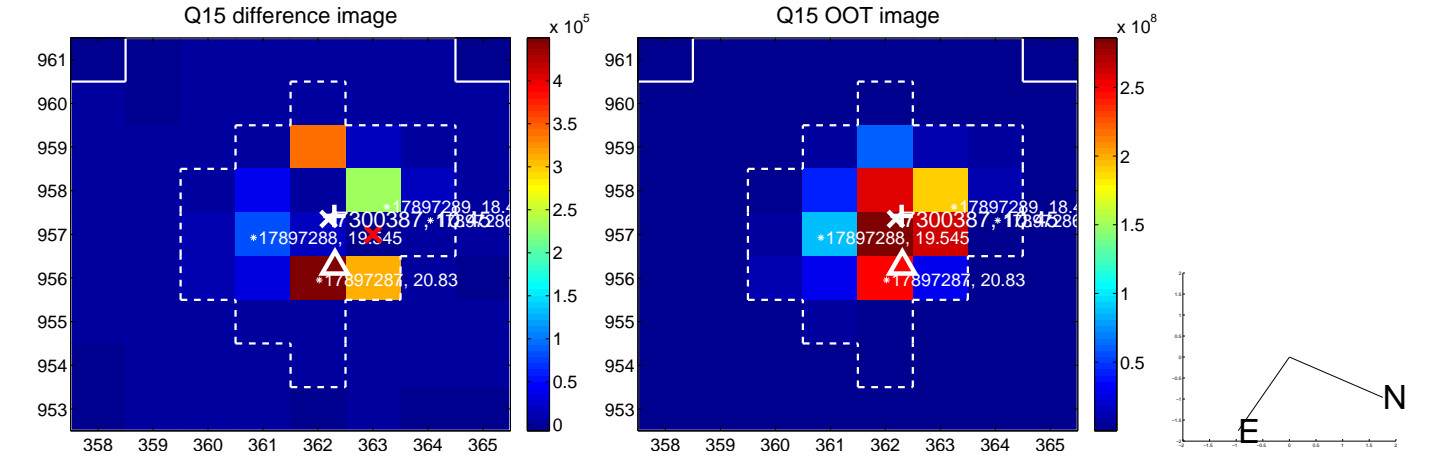
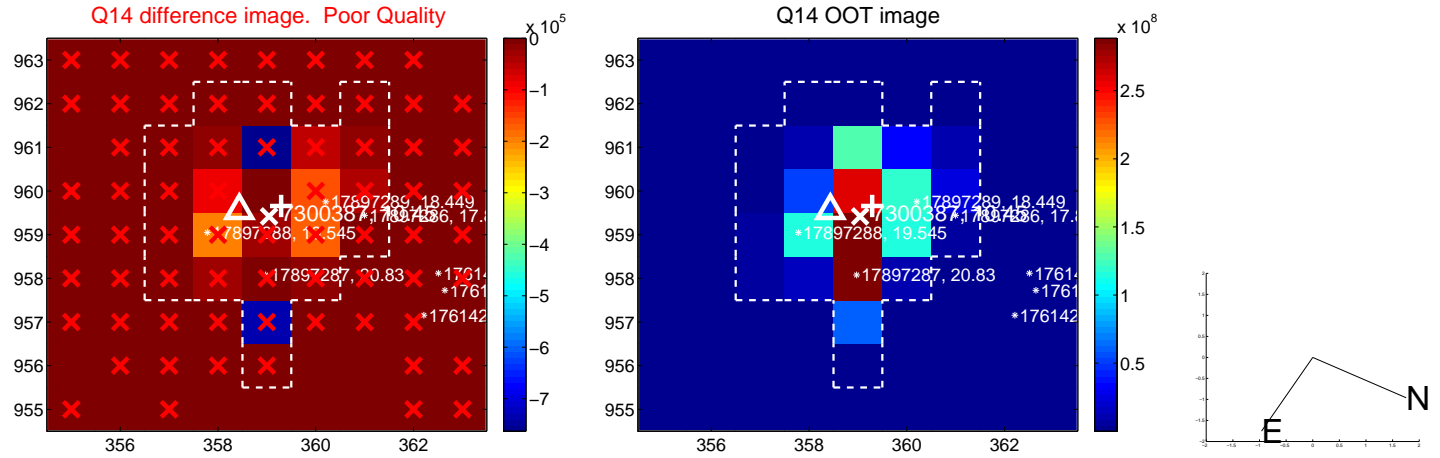
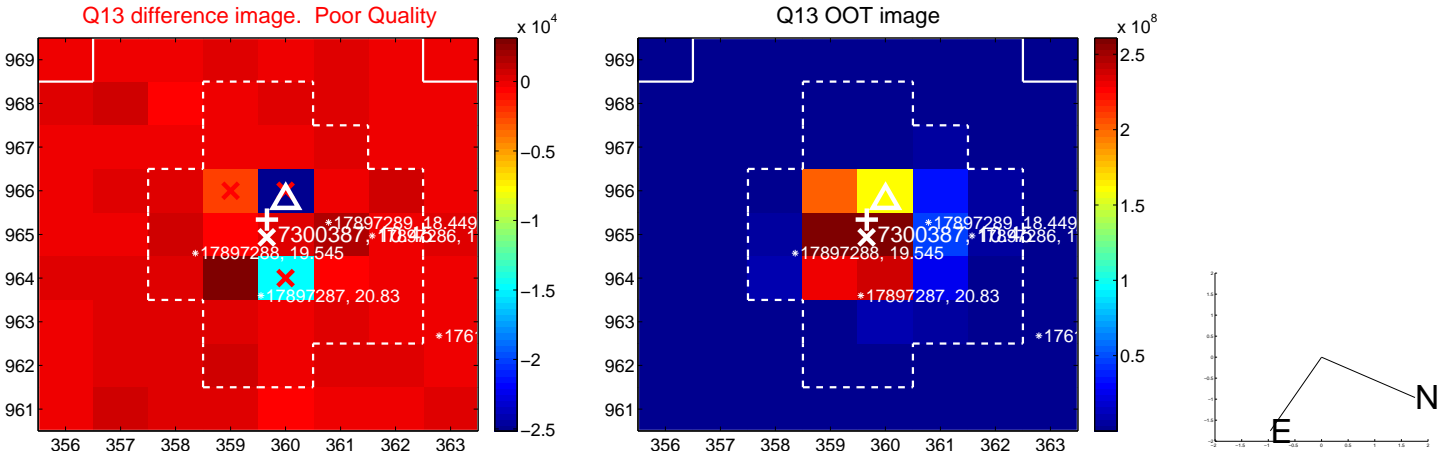




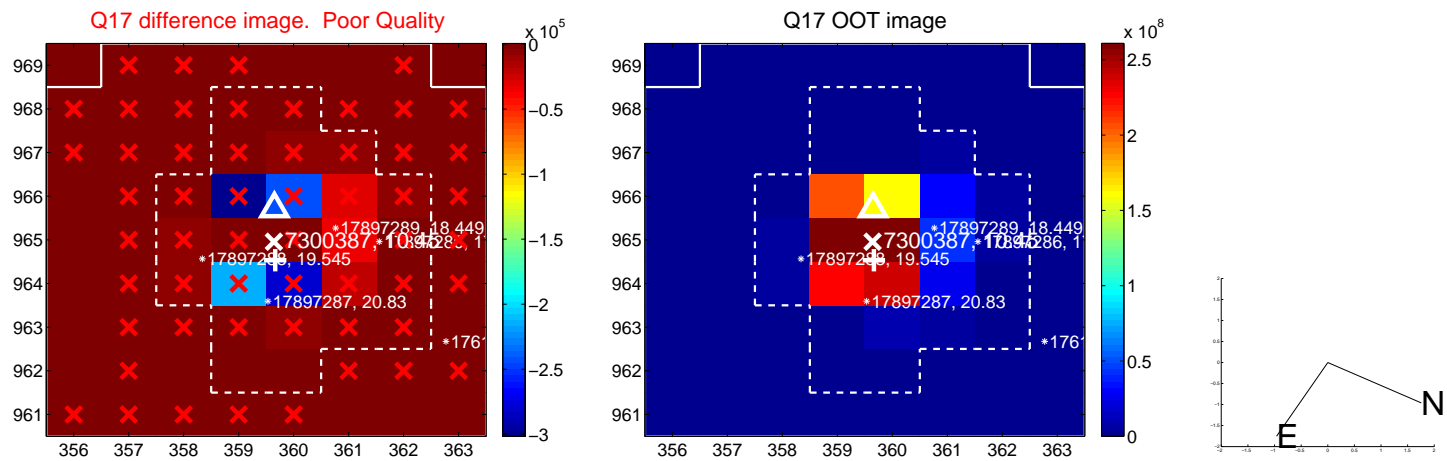
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



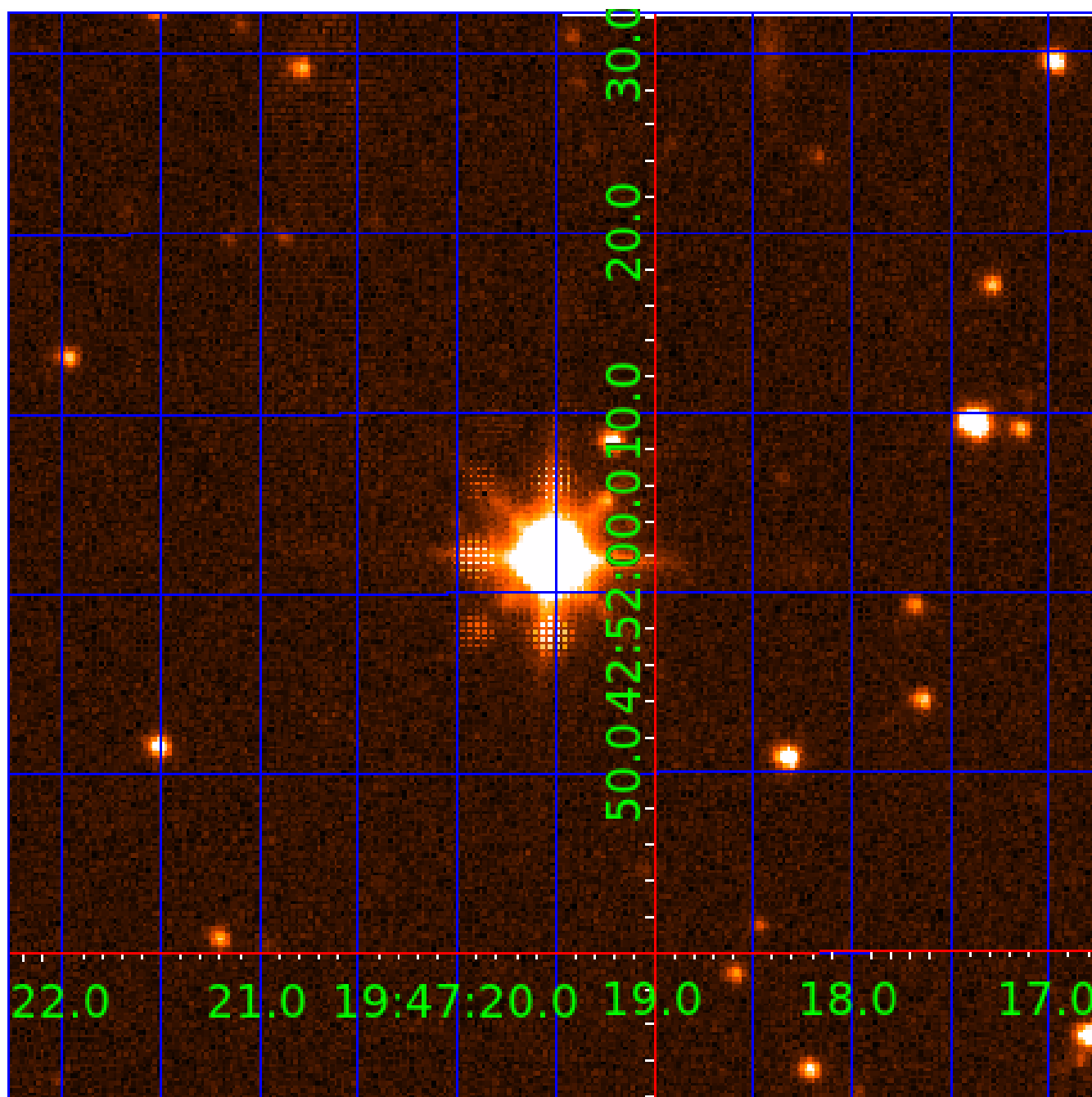
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination





# KIC 007300387

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007300387-01	OBS	No	1.070603	131.600220	272.7	4.845	12.6	12.8	3.60	7217	7.36	49690.24
007300387-02	OBS	No	3.241970	133.375478	1131.5	38.904	10.1	19.6	3.60	7217	15.34	11342.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007300387-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
007300387-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

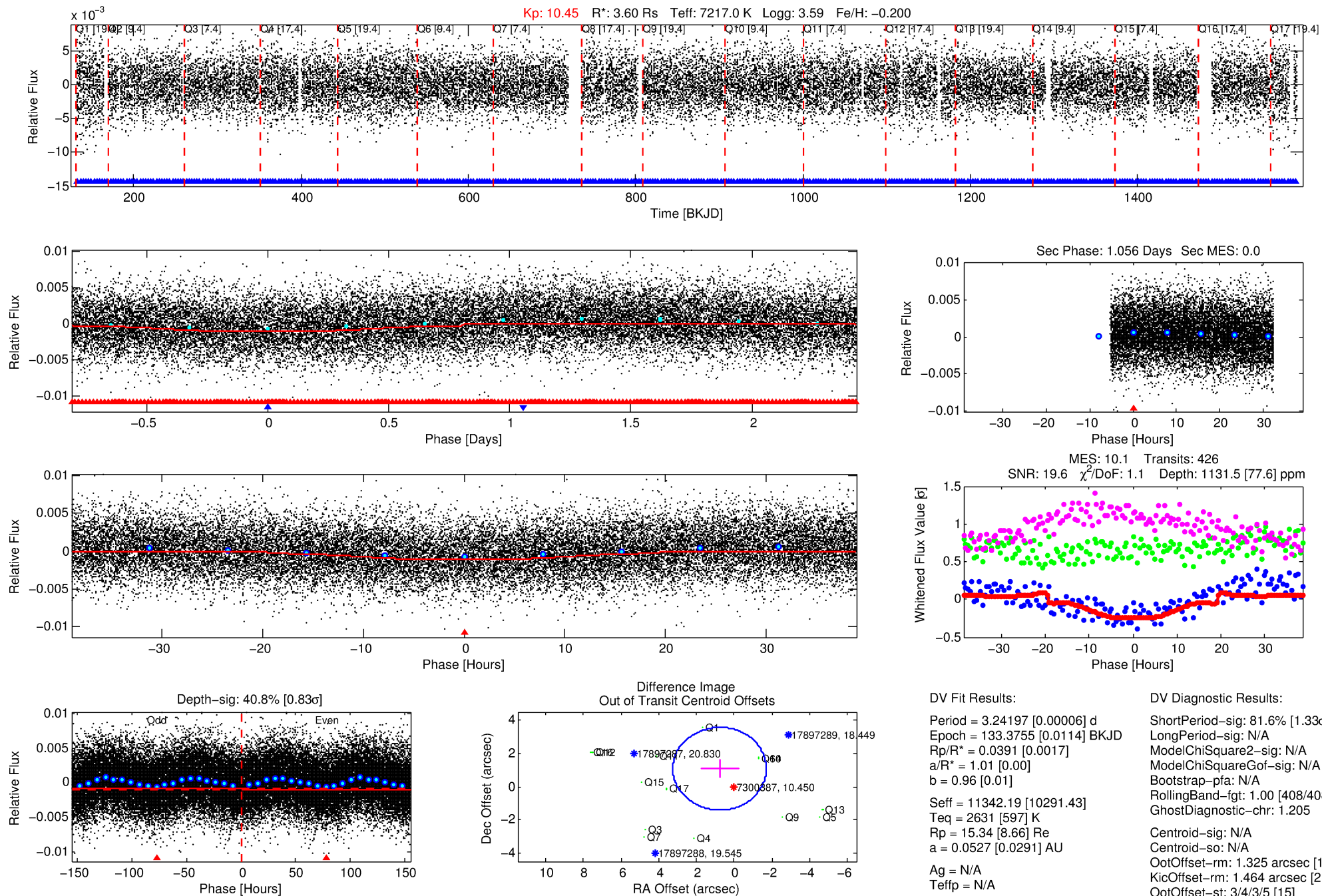
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007300387-02

No Significant Match Found

# DV One-Page Summary

KIC: 7300387 Candidate: 2 of 2 Period: 3.242 d



## DV Fit Results:

Period = 3.24197 [0.00006] d  
Epoch = 133.3755 [0.0114] BKJD  
Rp/R\* = 0.0391 [0.0017]  
a/R\* = 1.01 [0.00]  
b = 0.96 [0.01]  
Seff = 11342.19 [10291.43]  
Teq = 2631 [597] K  
Rp = 15.34 [8.66] Re  
a = 0.0527 [0.0291] AU  
Ag = N/A  
Teffp = N/A

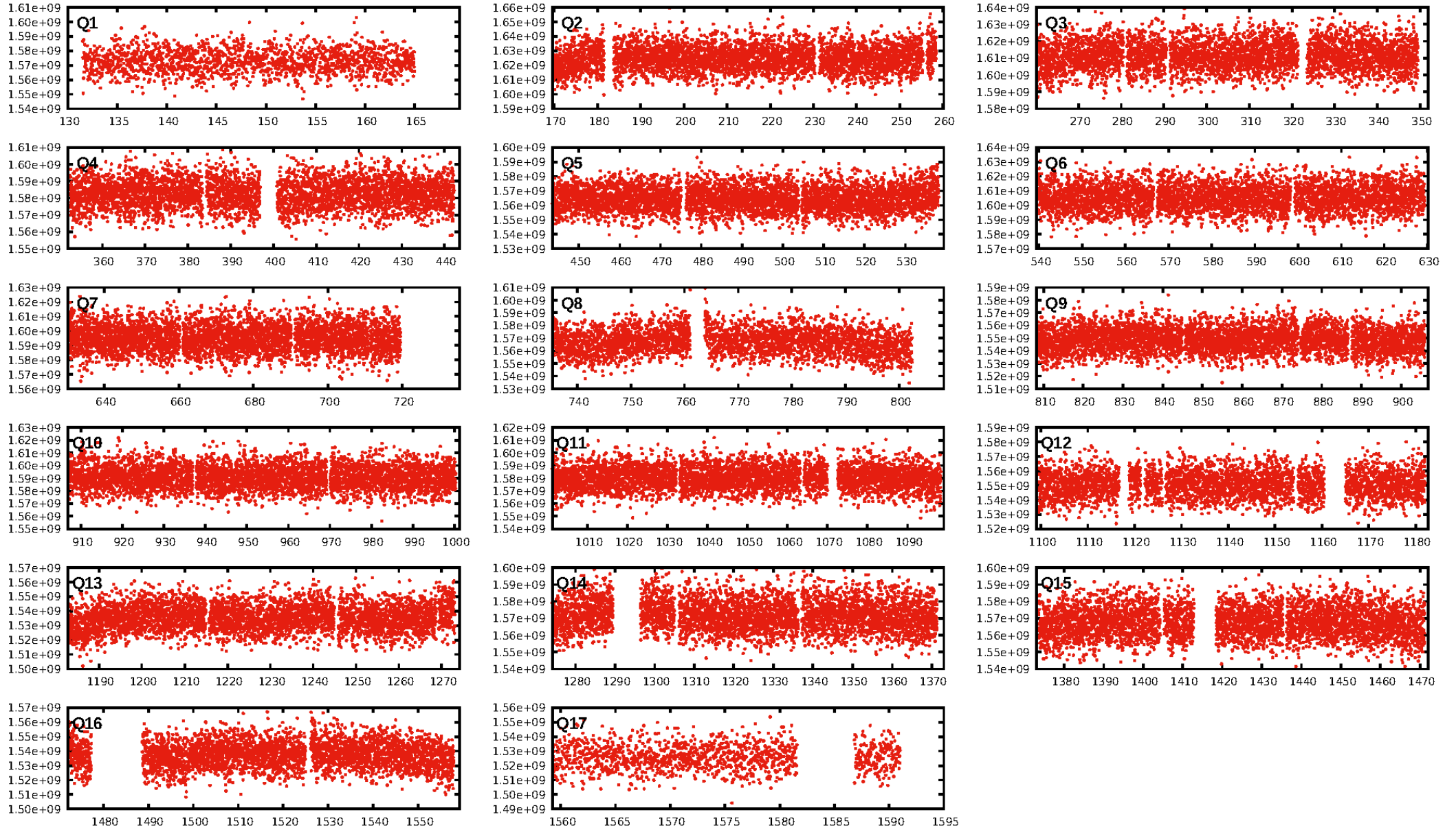
## DV Diagnostic Results:

ShortPeriod-sig: 81.6% [1.33σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [408/408]  
GhostDiagnostic-chr: 1.205  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 1.325 arcsec [1.60σ]  
KicOffset-rm: 1.464 arcsec [2.48σ]  
OotOffset-st: 3/4/3/5 [15]  
KicOffset-st: 3/4/3/5 [15]  
DiffImageQuality-fgm: 0.27 [4/15]  
DiffImageOverlap-fno: 0.00 [0/17]

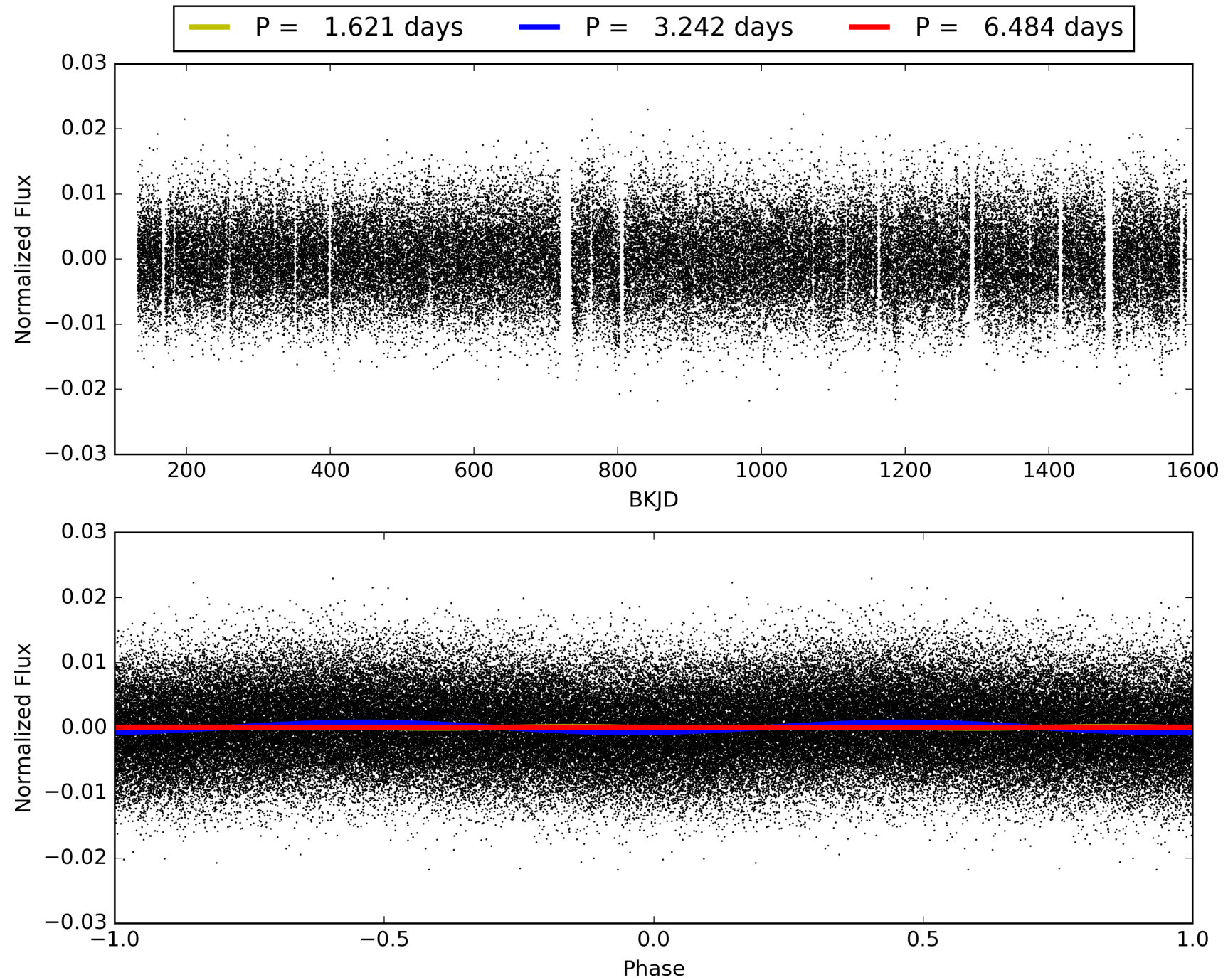
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:20:23 Z

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

# TCE 007300387-02, PDC Light Curves



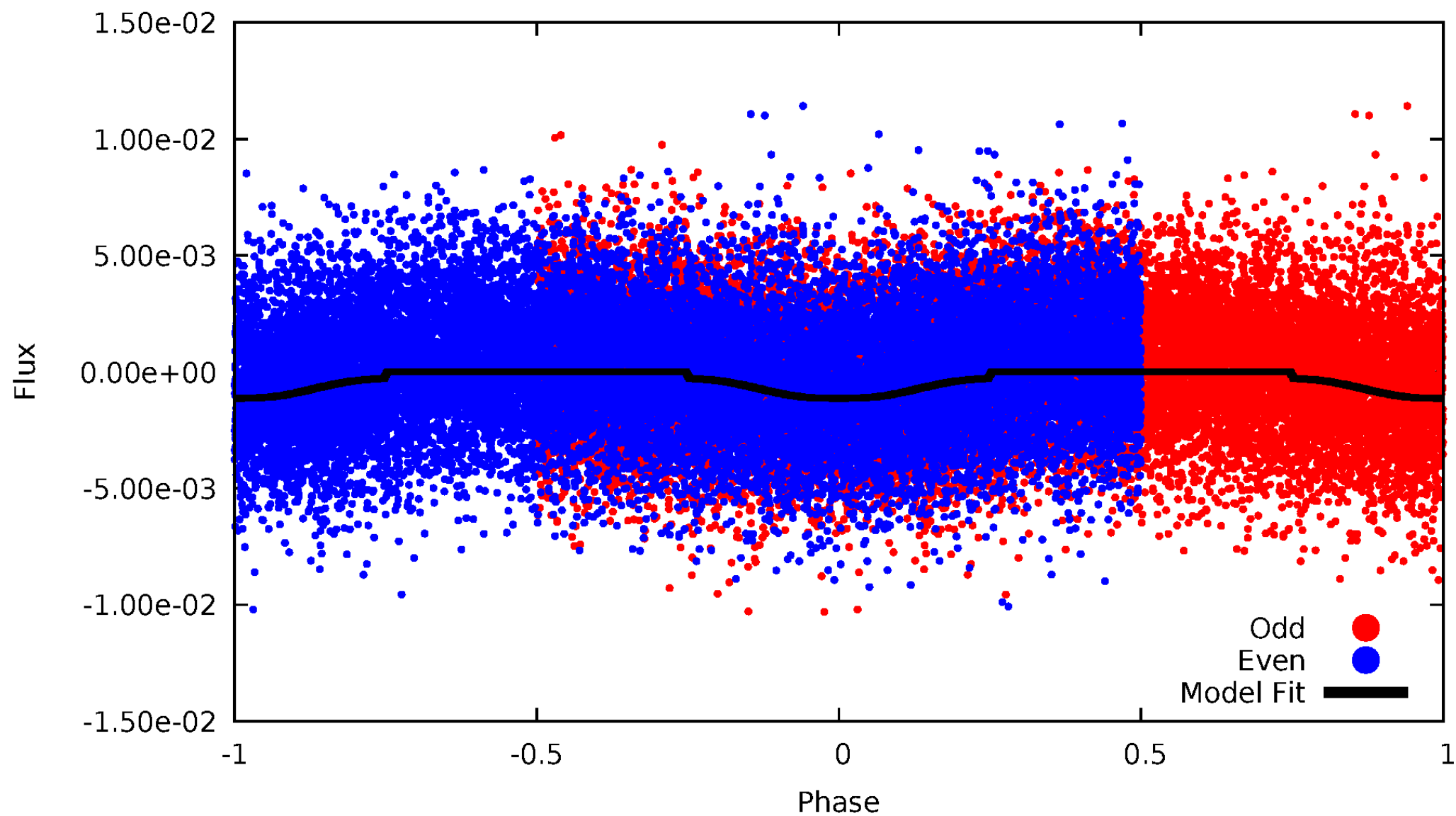
TCE 007300387-02





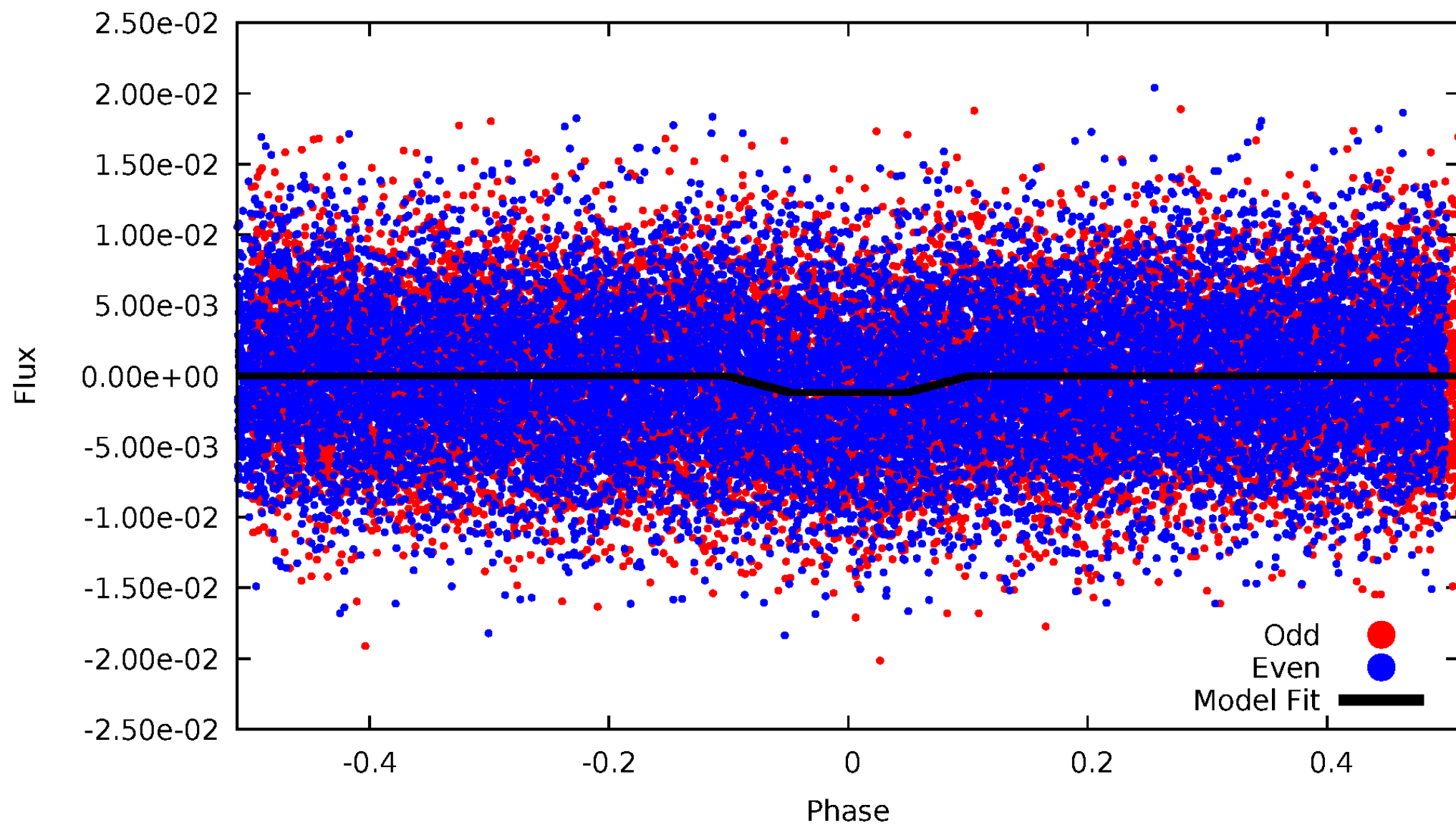
DV Odd/Even

TCE 007300387-02



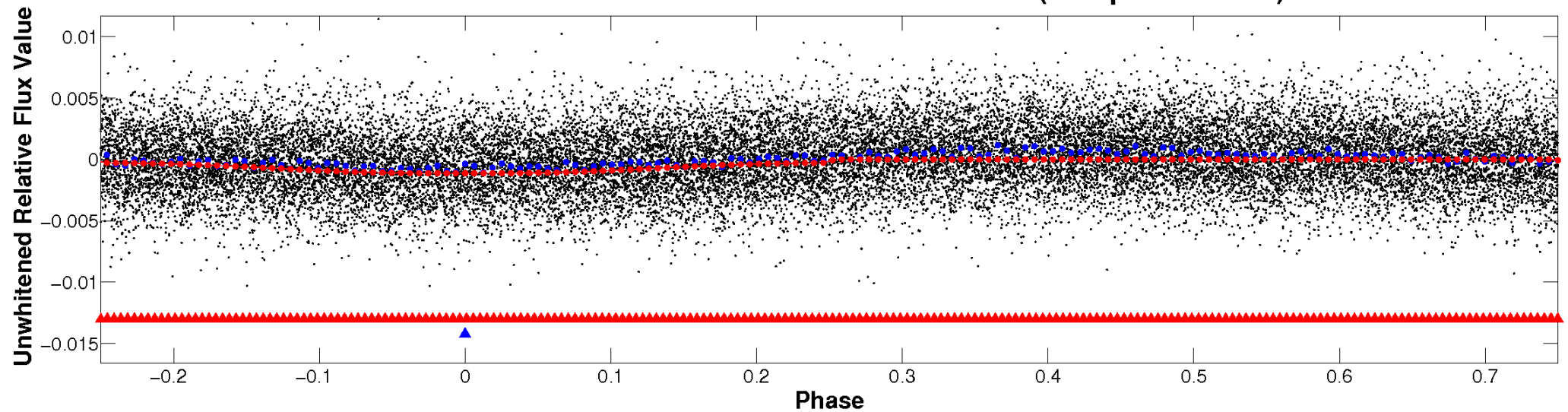
# ALT Odd/Even

TCE 007300387-02

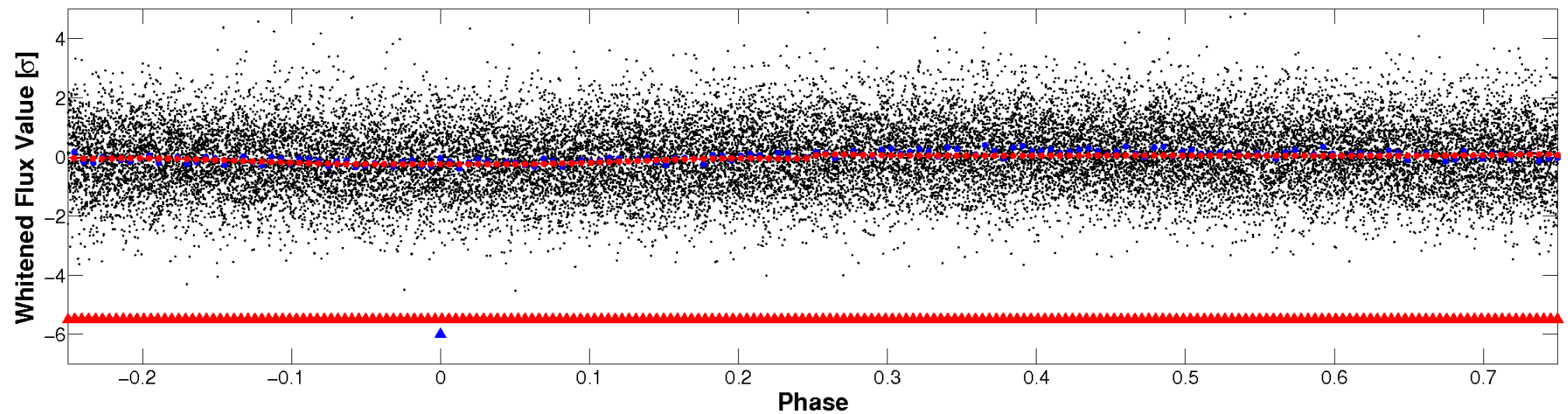


# Non-Whitened Vs. Whitened Light Curve

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

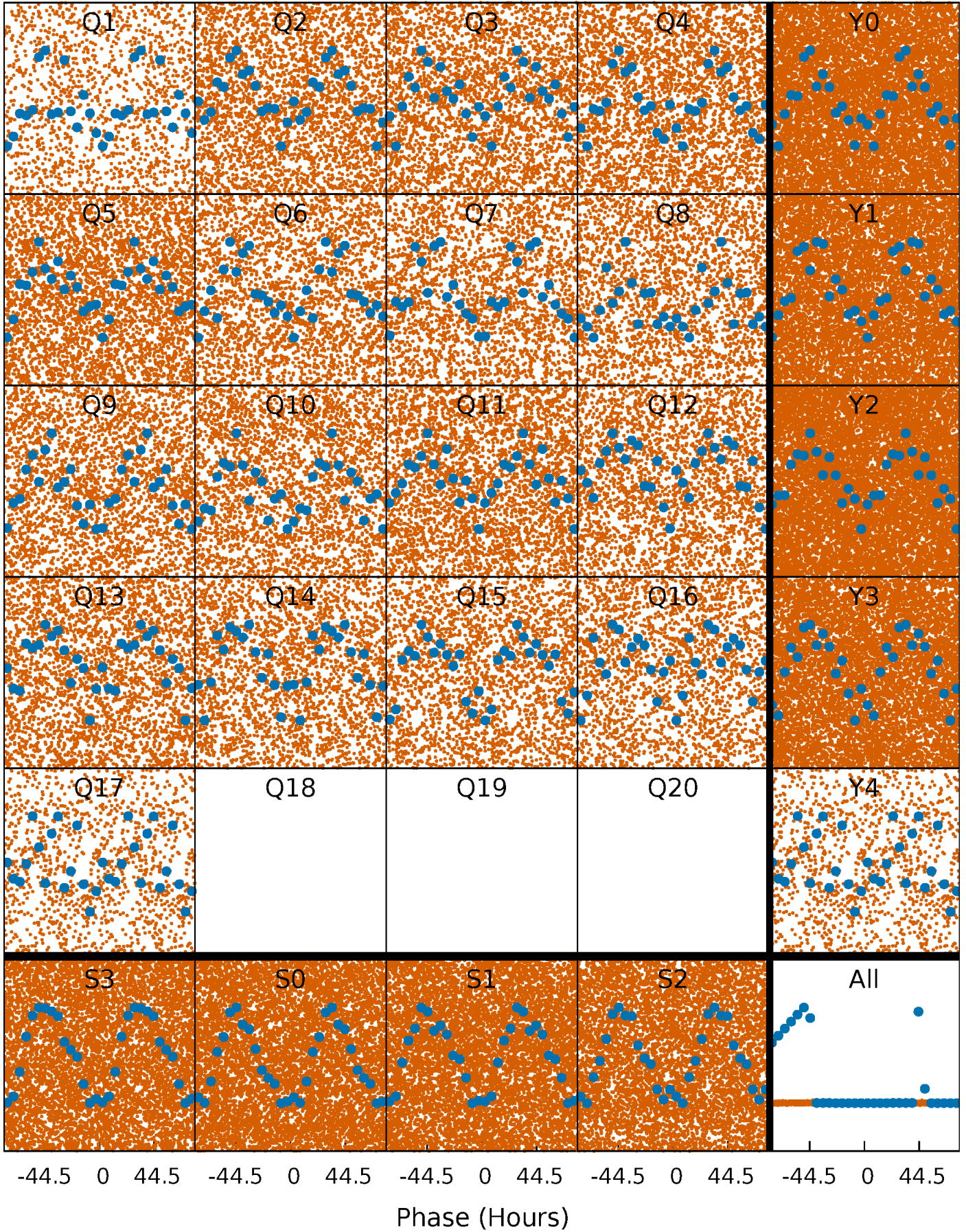


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

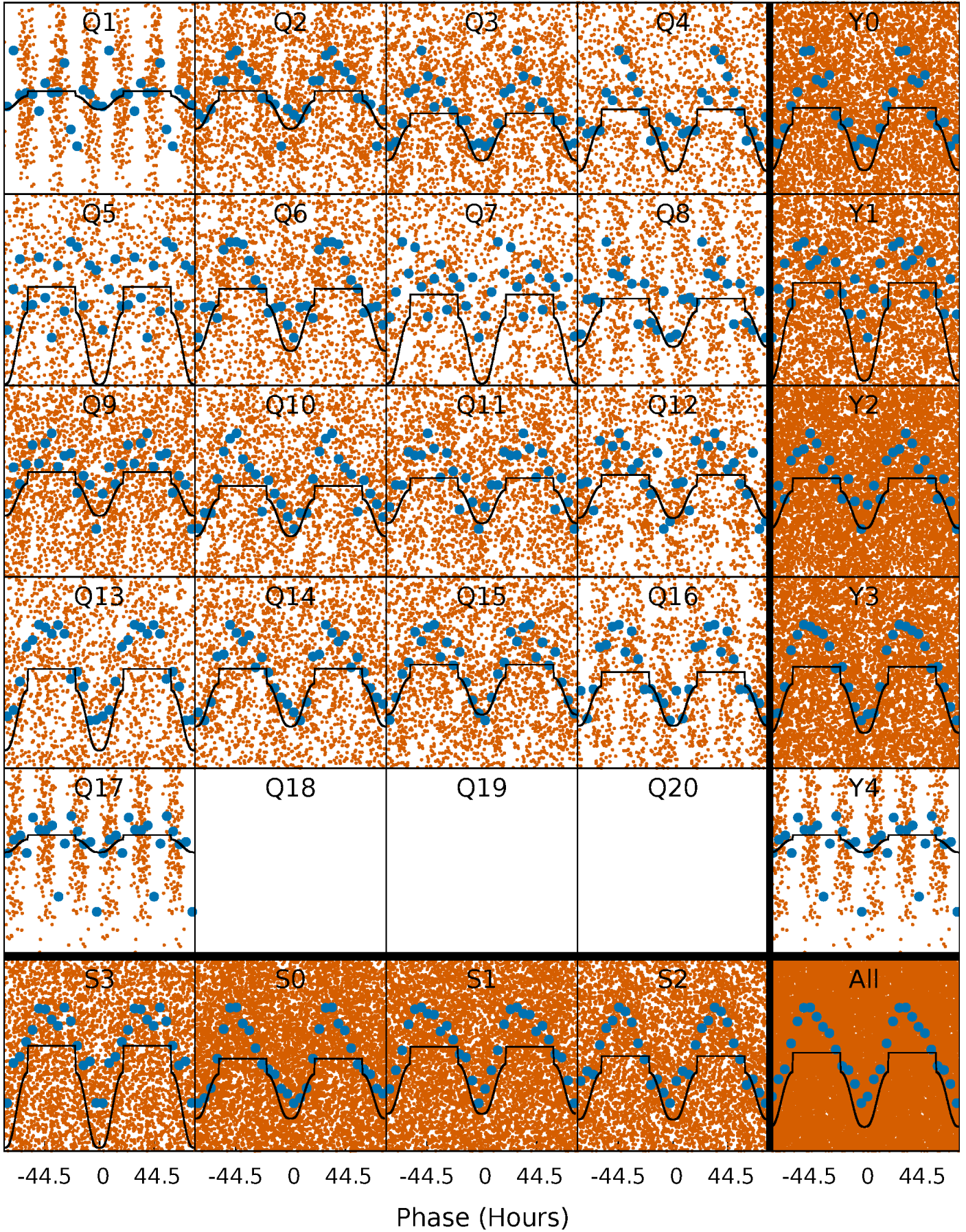
TCE 007300387-02     $P = 3.241970$  Days     $T_0 = 133.375478$  (BKJD)





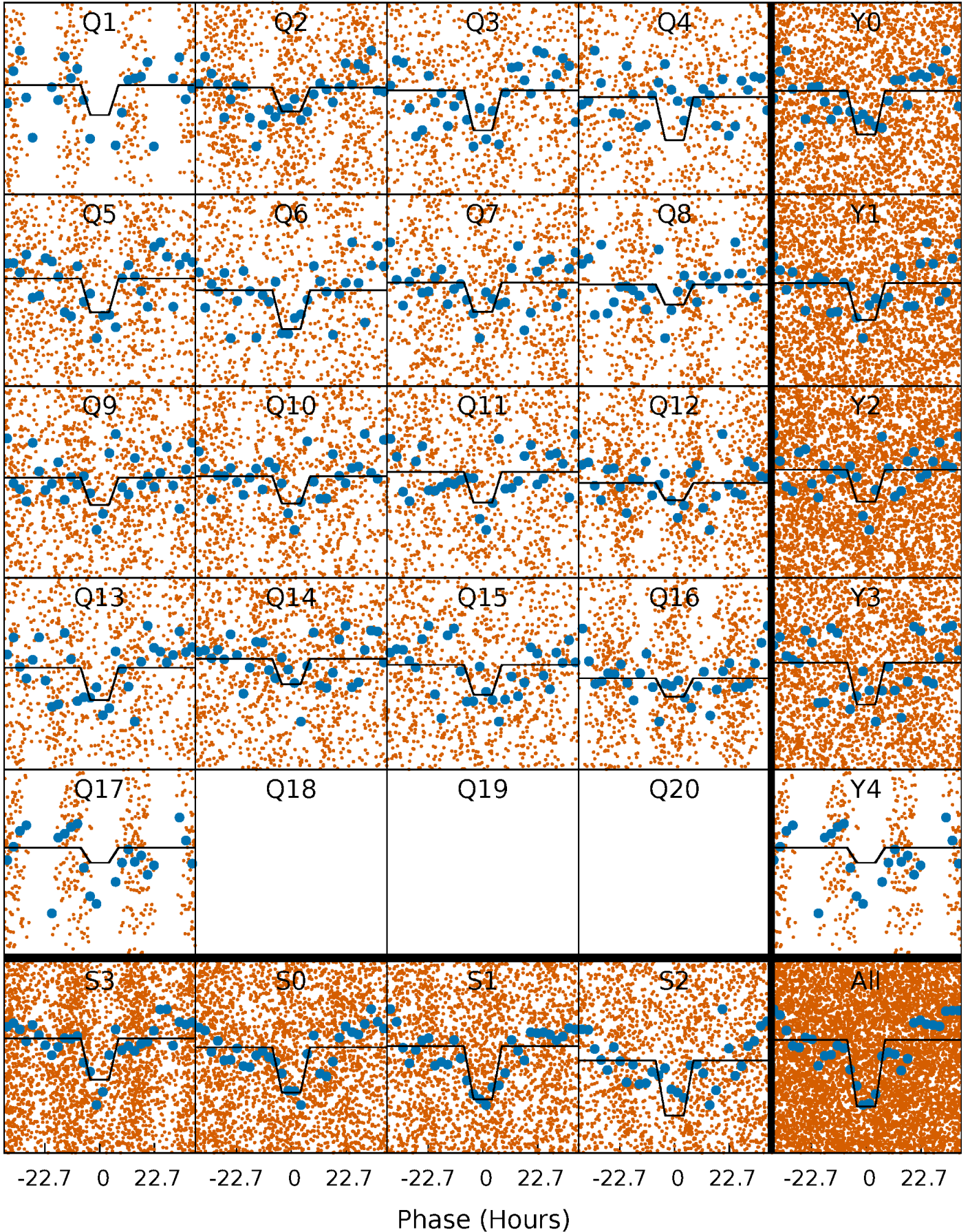
# DV Quarter-Phased Transit Curves

TCE 007300387-02   P= 3.241970 Days    $T_0=133.375478$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007300387-02     $P = 3.240953$  Days     $T_0 = 133.559035$  (BKJD)

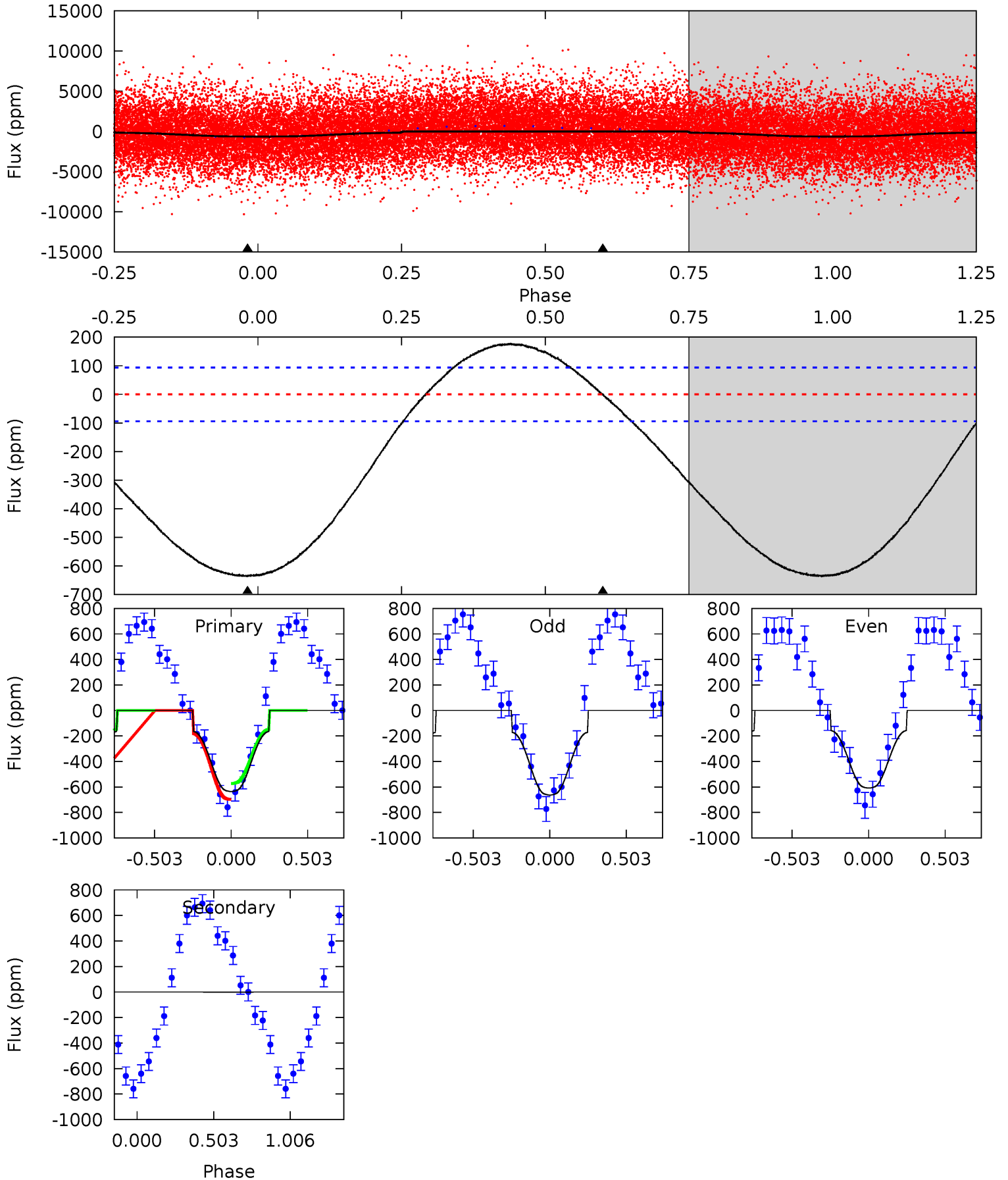




# DV Model-Shift Uniqueness Test

007300387-02, P = 3.241970 Days, E = 130.133508 Days

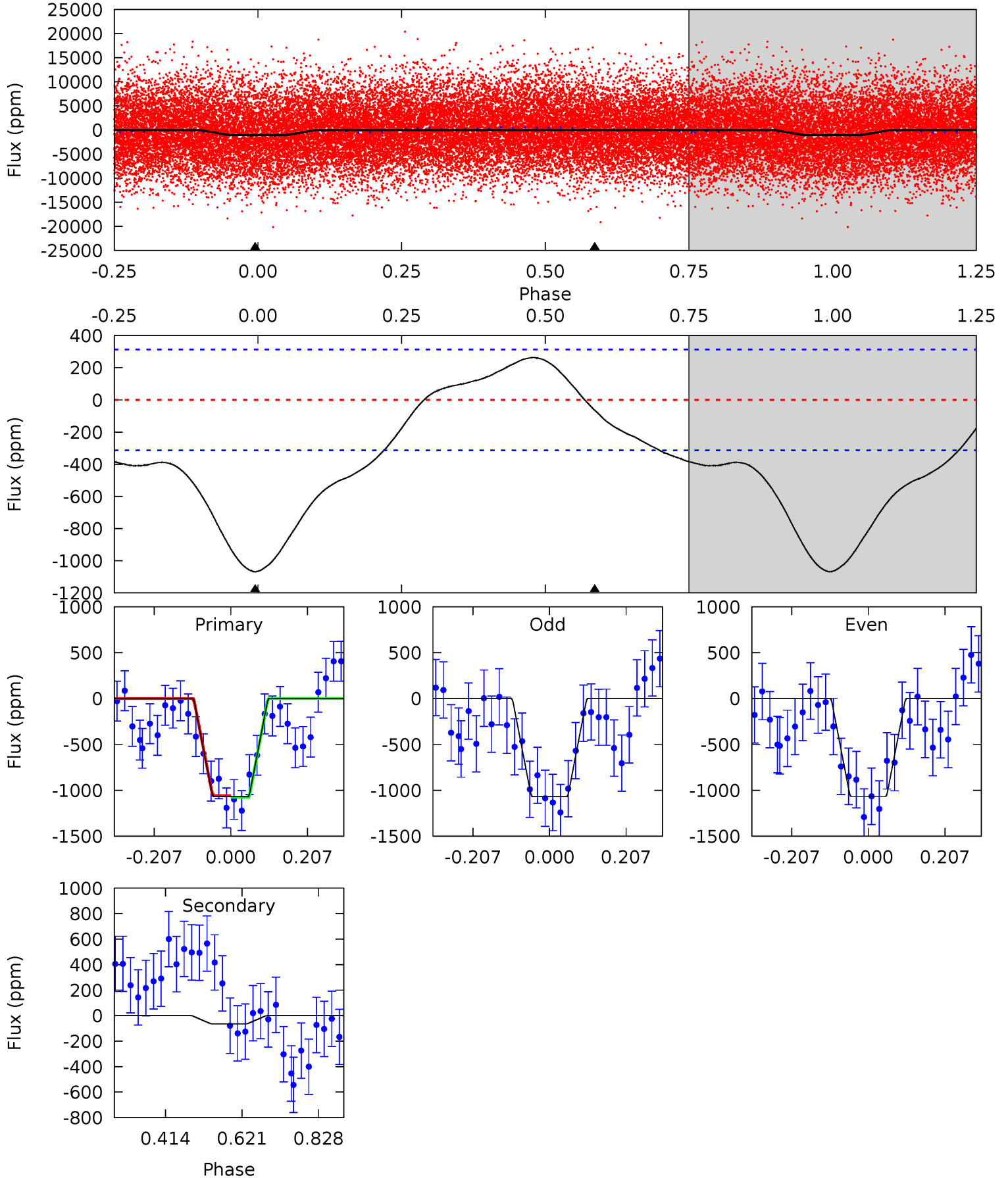
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.5	0.05	0	0	4.21	0.67	2.97	28.5	28.5	0.05	0.05	1.24	1.01	0.22	2.82



# Alt Model-Shift Uniqueness Test

007300387-02, P = 3.240953 Days, E = 130.318082 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
15.0	0.90	0	0	4.41	1.26	2.23	15.0	15.0	0.90	0.90	0.01	0.49	0.20	0.14



### Stellar Parameters For KIC 007300387

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7217^{+226}_{-302}$	$3.594^{+0.527}_{-0.062}$	$-0.200^{+0.250}_{-0.300}$	$3.599^{+0.338}_{-2.026}$	$1.857^{+0.179}_{-0.536}$	$0.056^{+0.406}_{-0.012}$
	+3%/-4%	+15%/-2%	+125%/-150%	+9%/-56%	+10%/-29%	+723%/-21%
Source	KIC0	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 007300387-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-1 \pm 22$	$14.71^{+1.68}_{-4.48}$	$3549^{+233}_{-502}$	$-3347^{+559}_{-291}$	$0.007^{+0.200}_{-0.192}$
Alt.	$-64 \pm 71$	$12.78^{+1.51}_{-3.68}$	$3548^{+240}_{-484}$	$3515^{+739}_{-6863}$	$0.706^{+0.915}_{-0.693}$

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

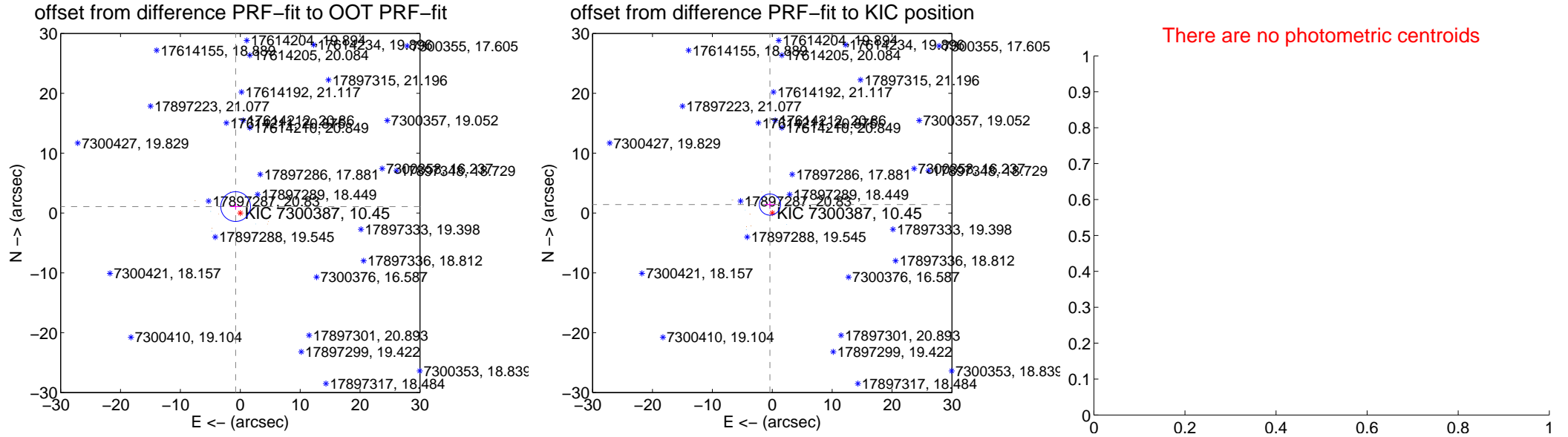
## DV Centroid Data

Supplemental centroid analysis for 007300387-02. **Kepler magnitude: 10.45**. Transit SNR 19.58

There are 4 quarters with good PRF difference image offsets

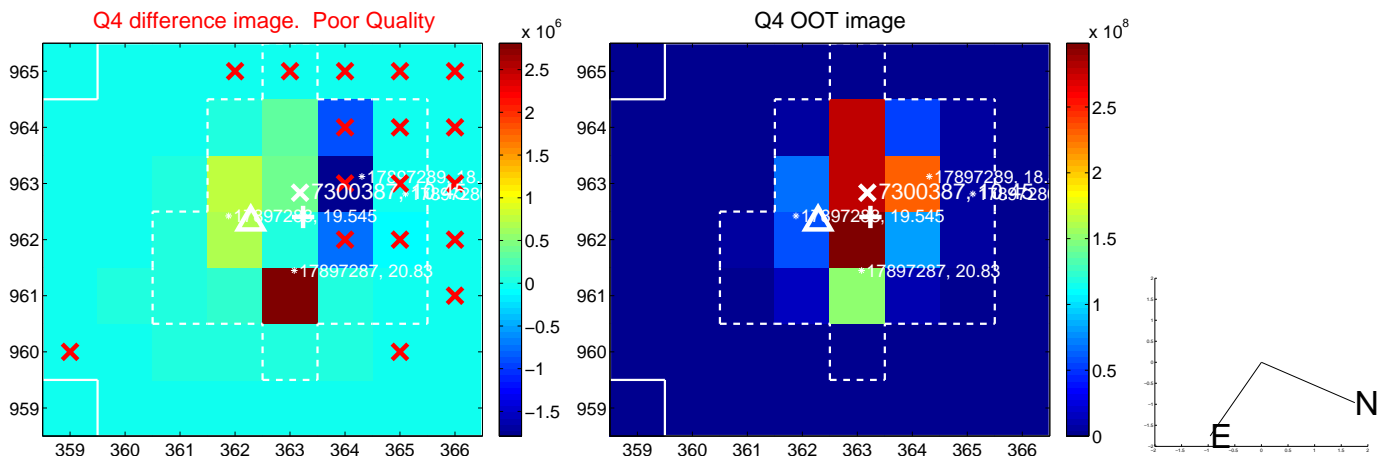
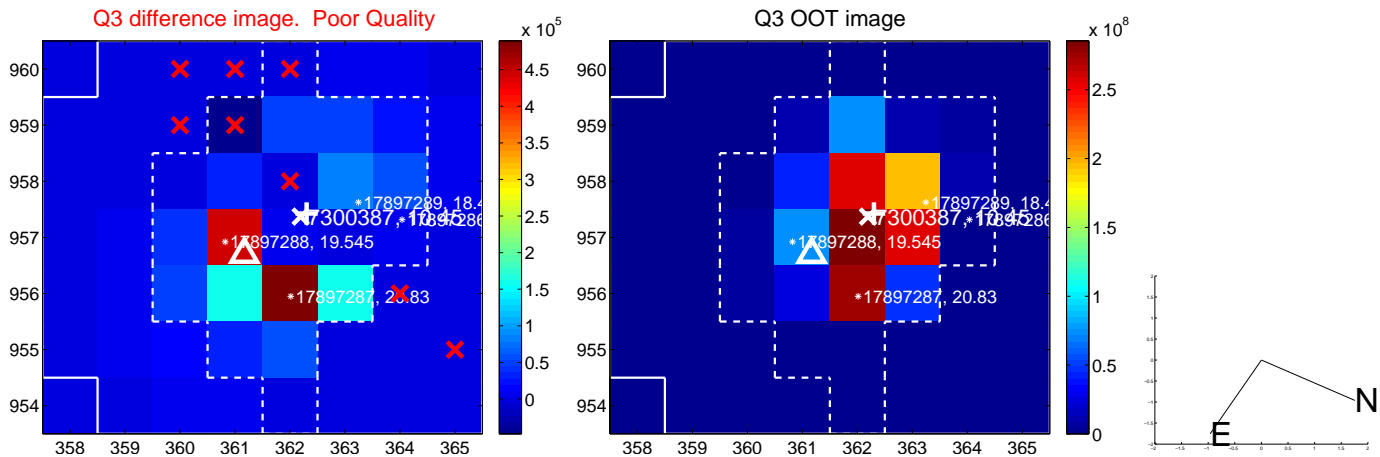
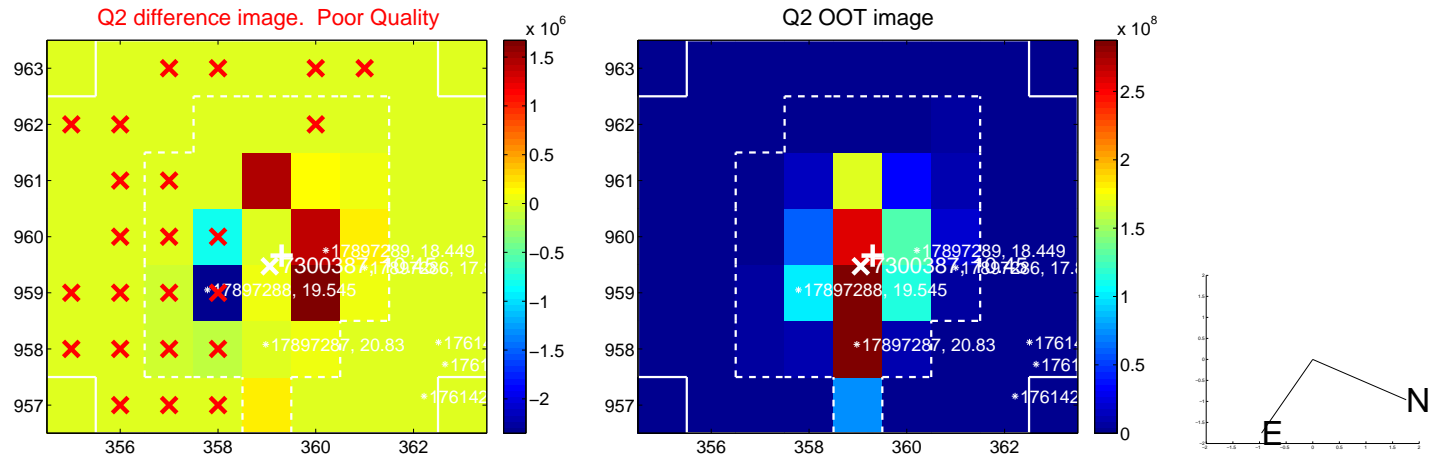
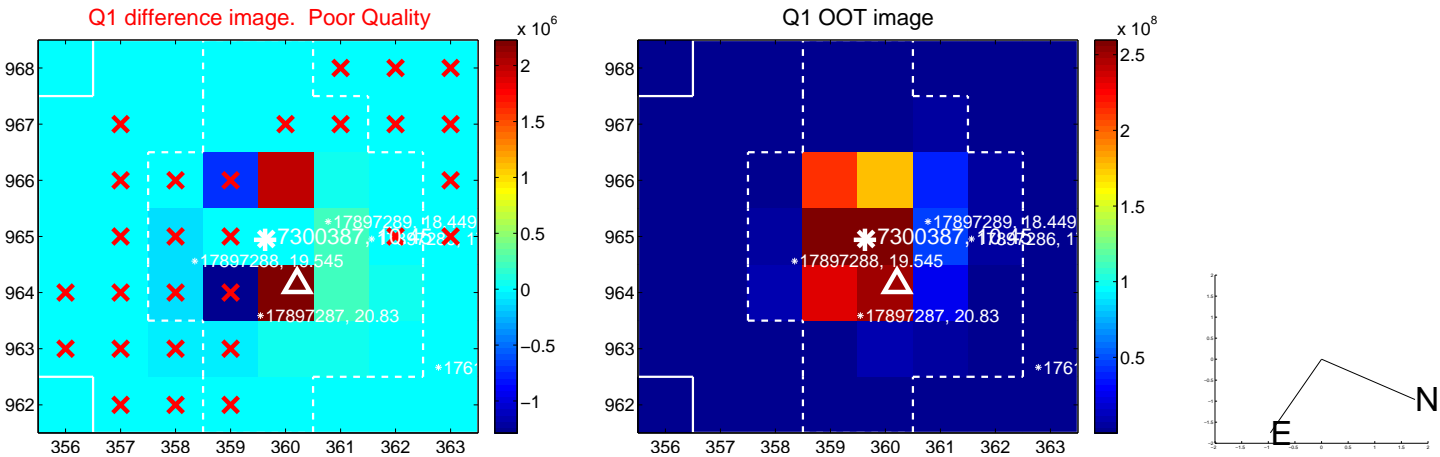
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.325 \pm 0.828$	1.60	$0.775 \pm 0.996$	$1.075 \pm 0.548$
PRF-fit source offset from KIC position	$1.464 \pm 0.590$	2.48	$0.389 \pm 0.895$	$1.411 \pm 0.571$
photometric centroid source offset	—	—	—	—



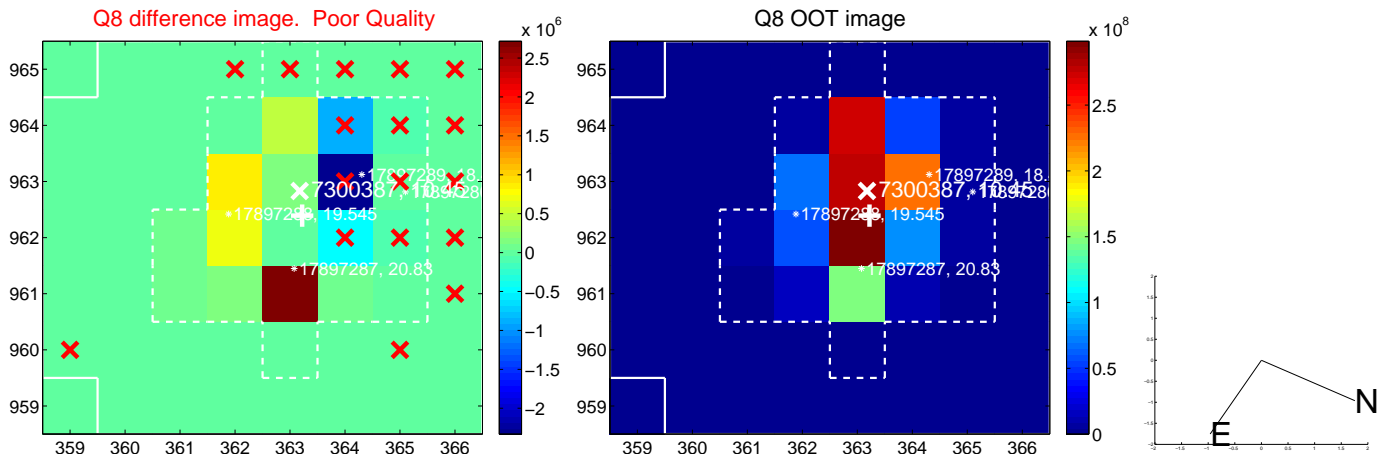
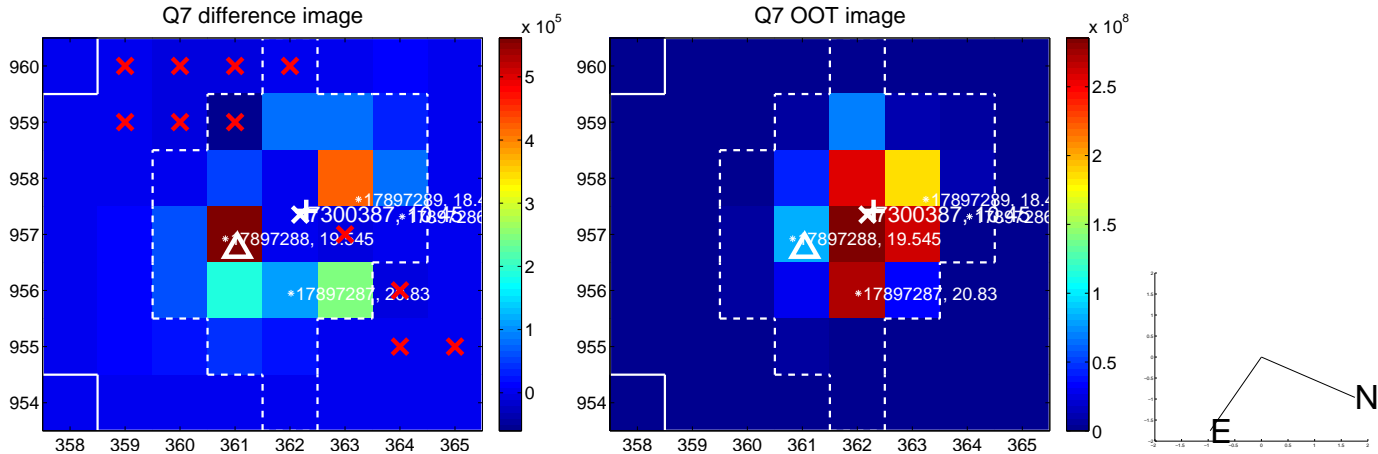
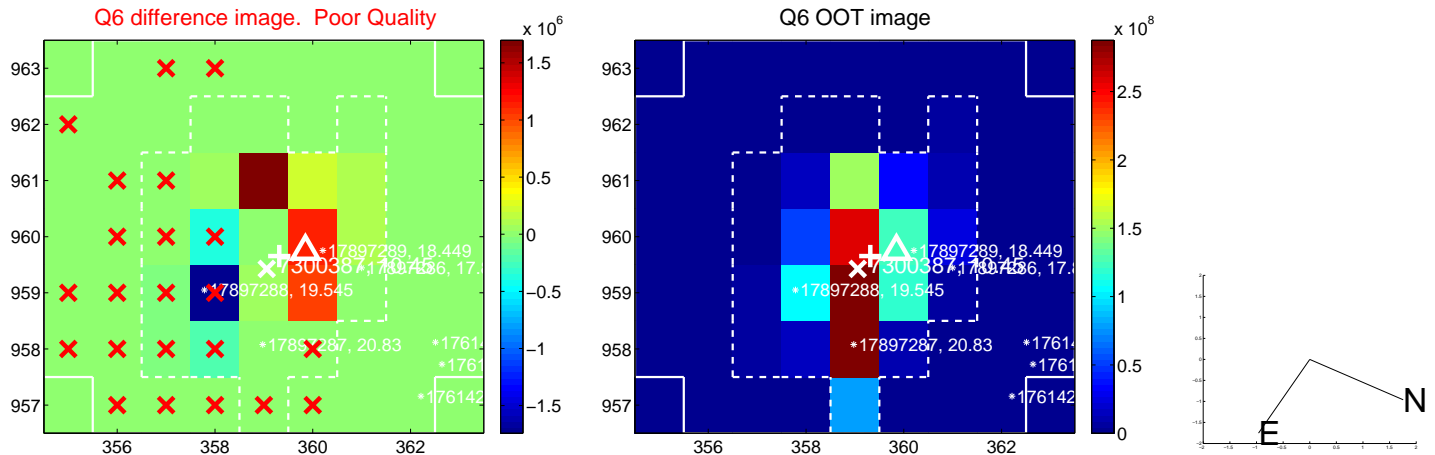
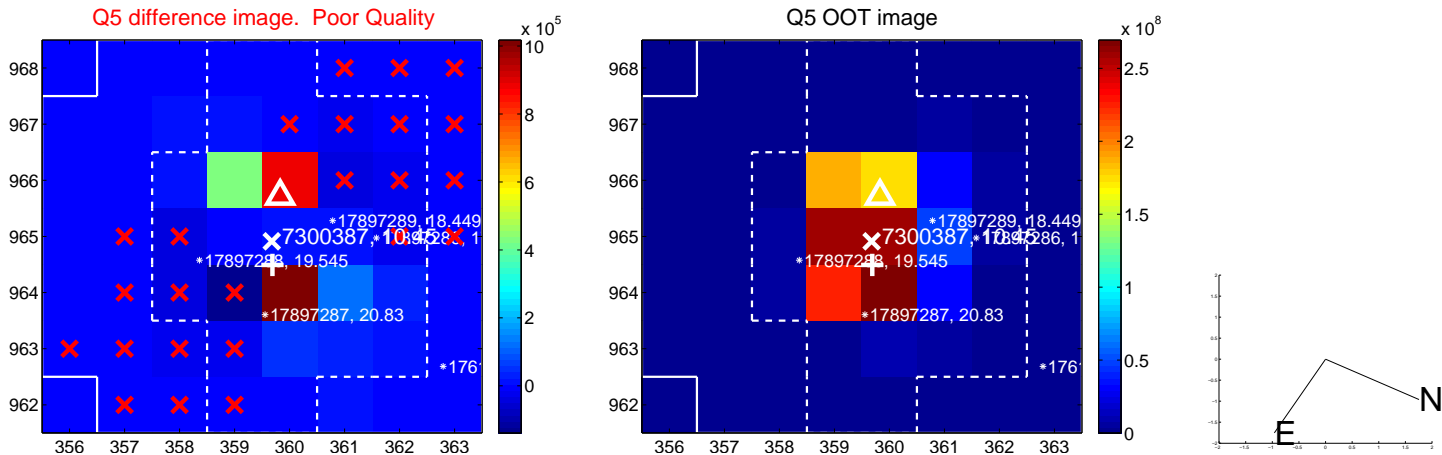
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

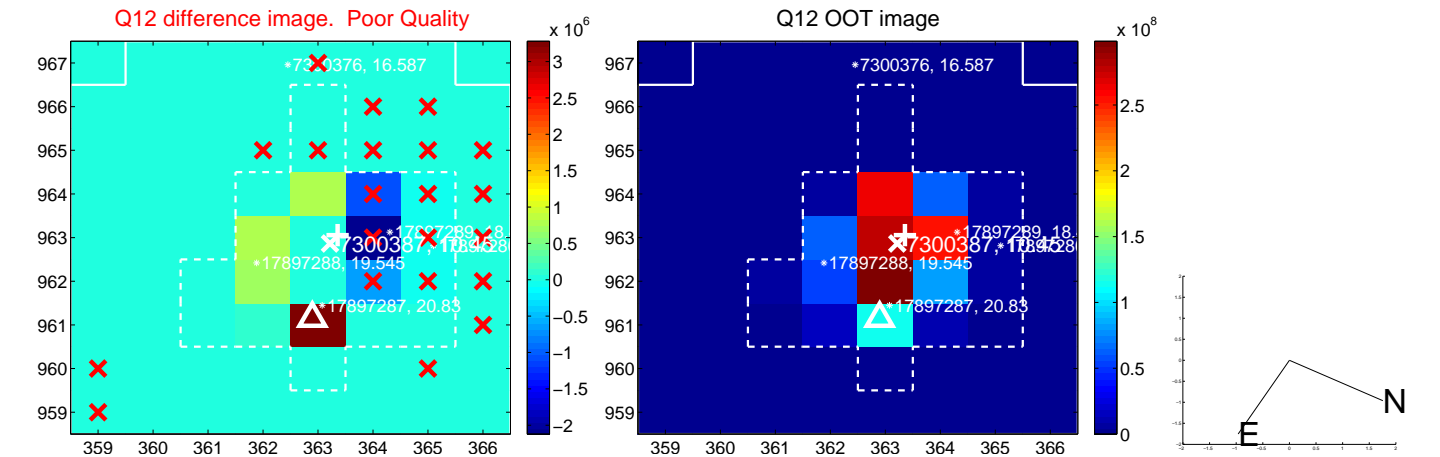
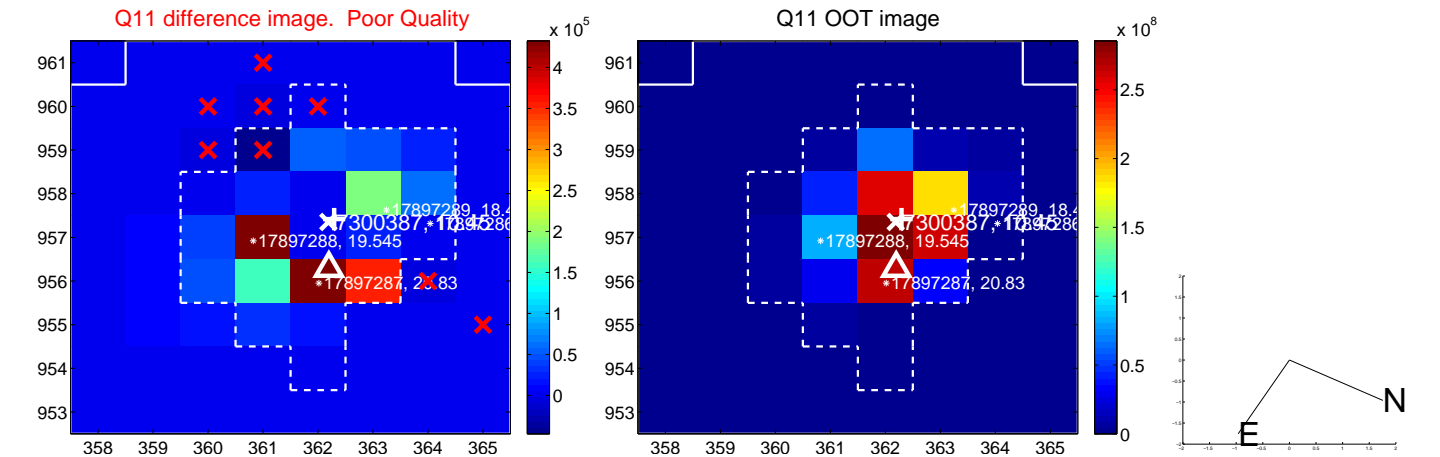
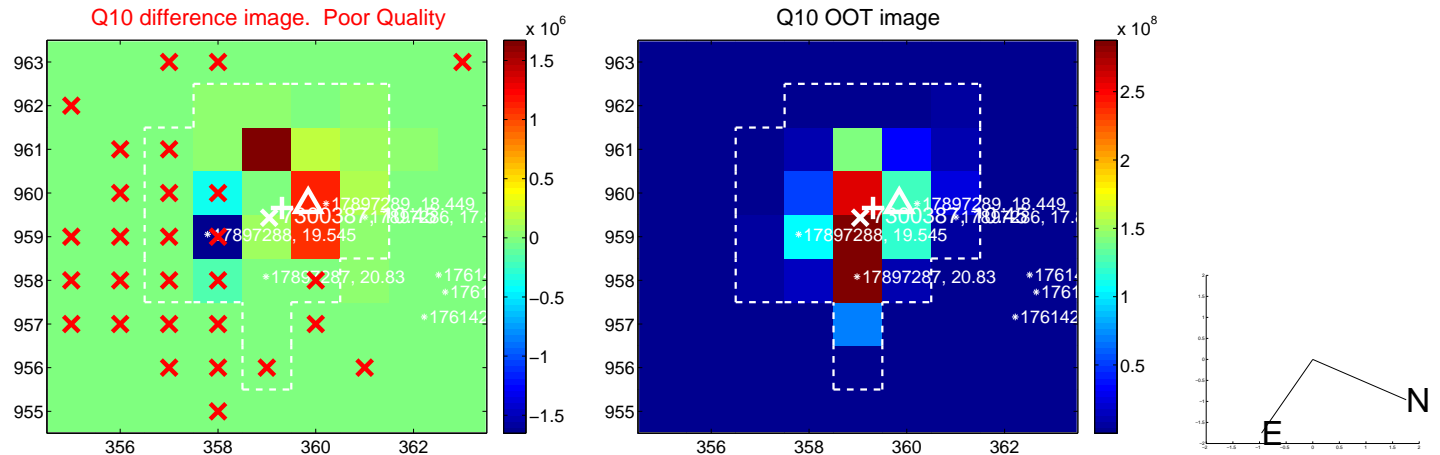
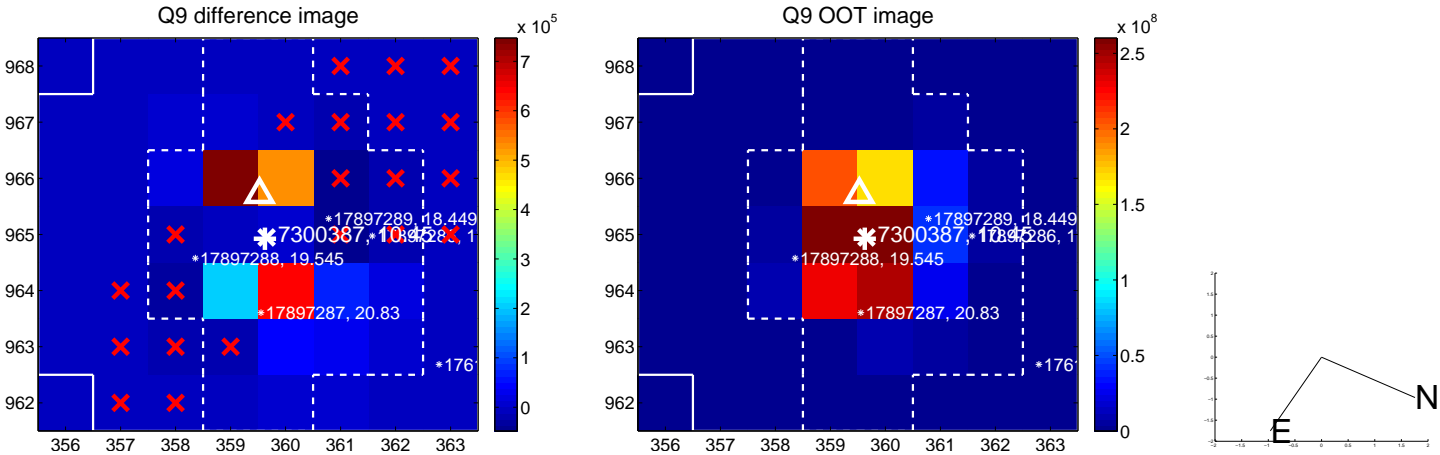




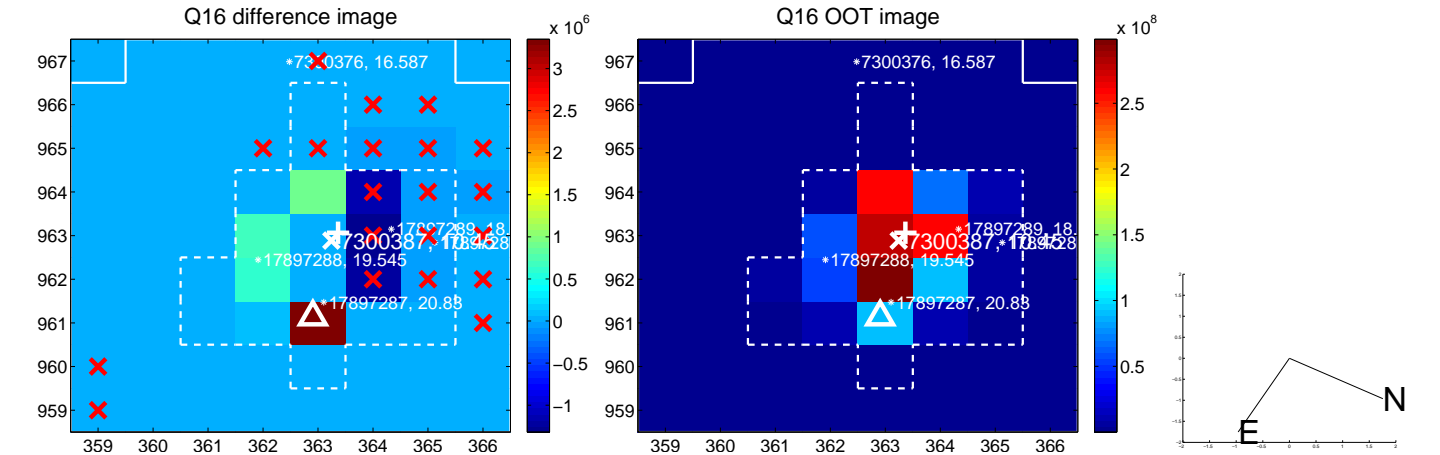
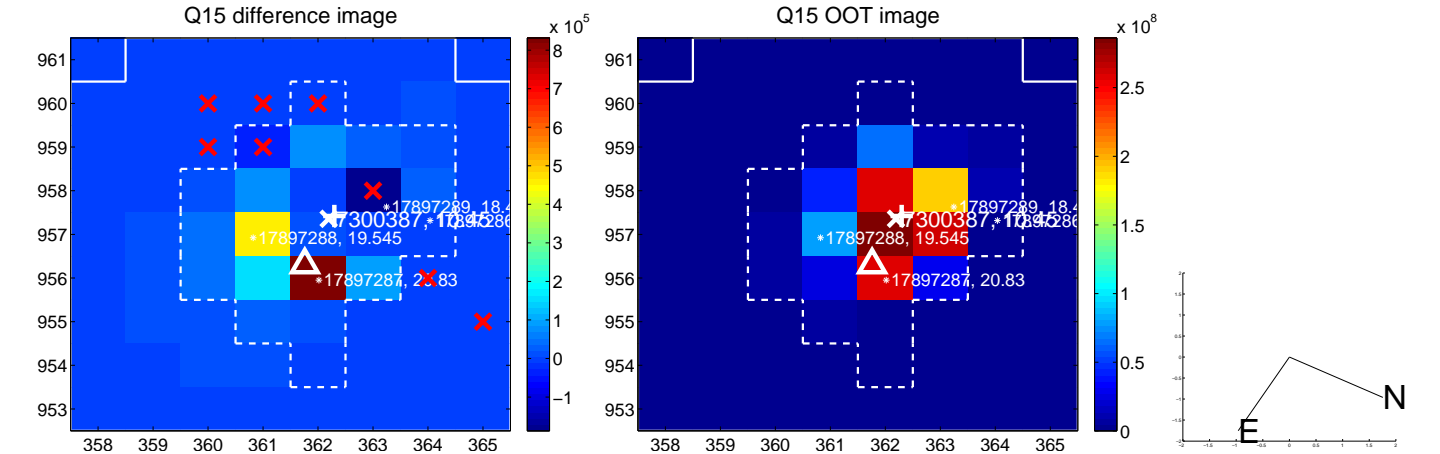
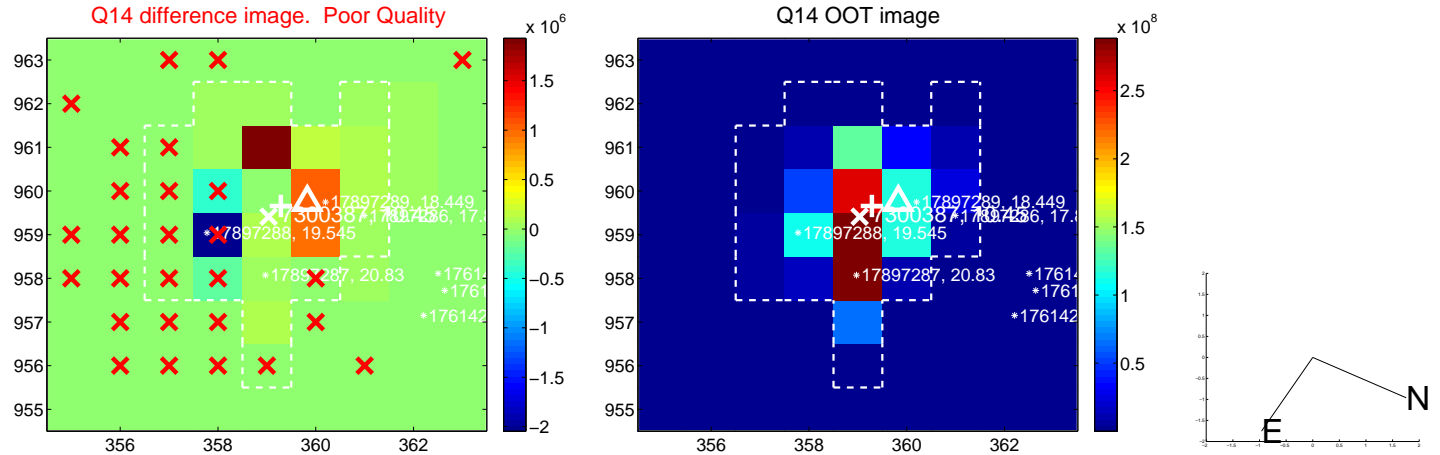
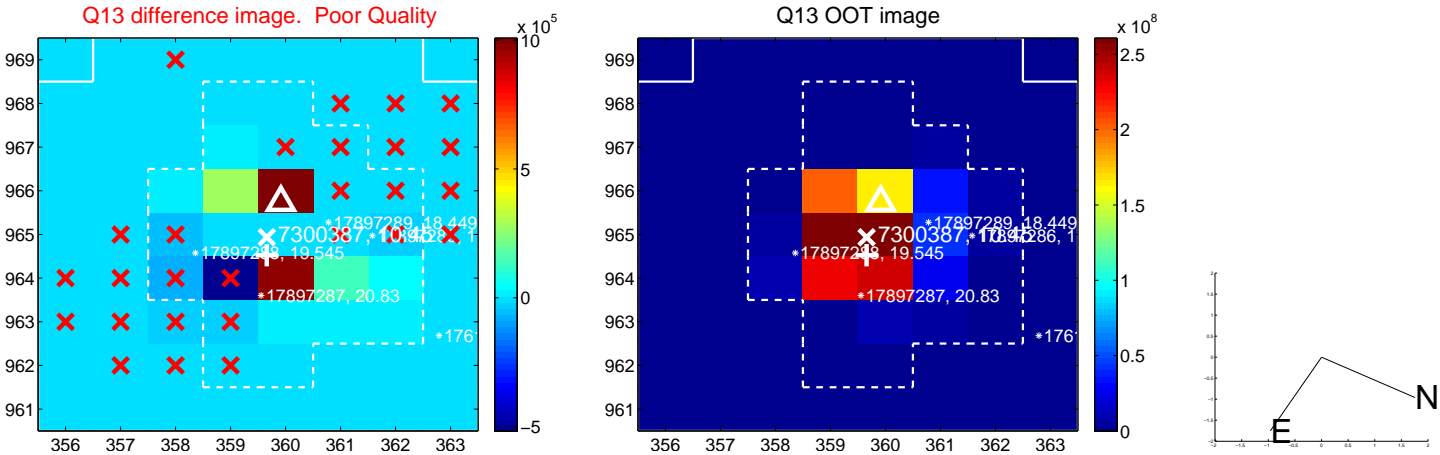
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



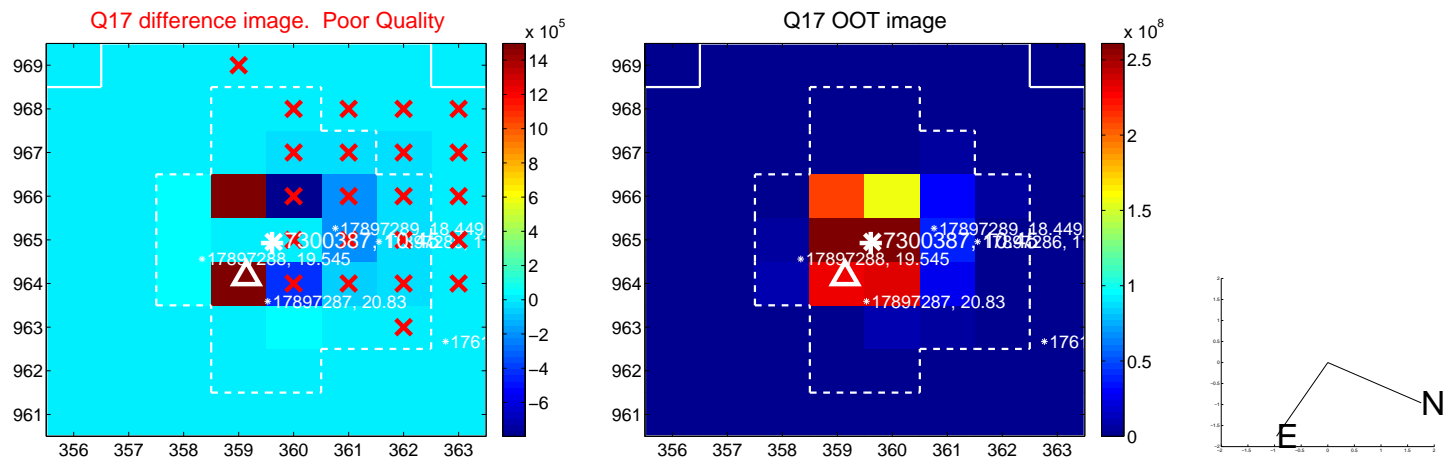
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

