

# KIC 005298466

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005298466-01	OBS	No	1.171326	132.349343	174.0	4.037	15.8	14.4	2.24	7941	3.43	25207.37
005298466-02	OBS	No	1.171317	131.771823	149.9	8.260	15.1	16.1	2.24	7941	2.80	25207.63

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005298466-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005298466-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

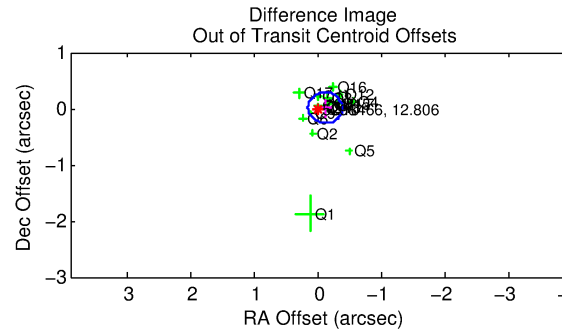
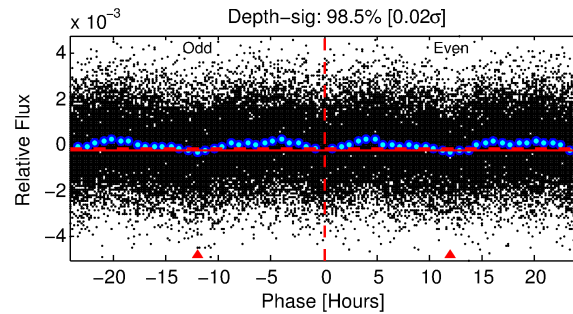
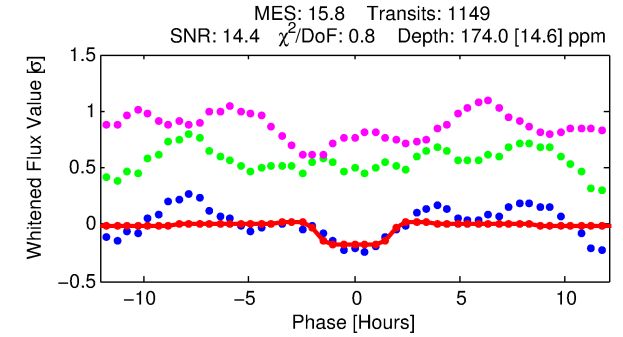
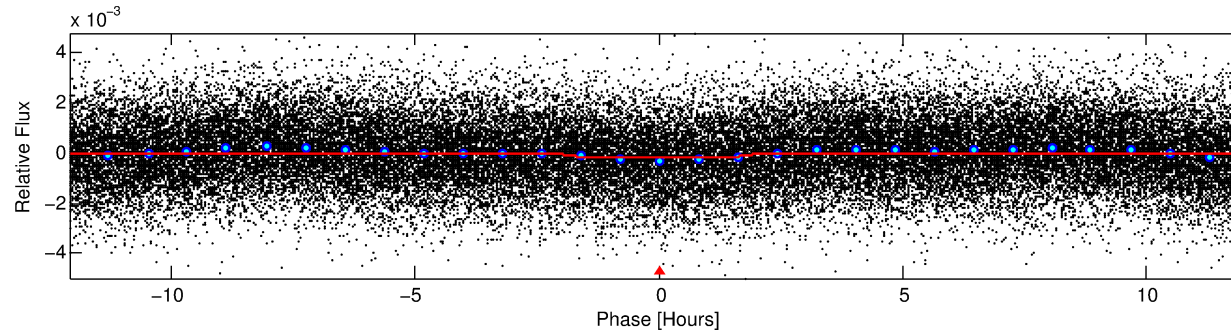
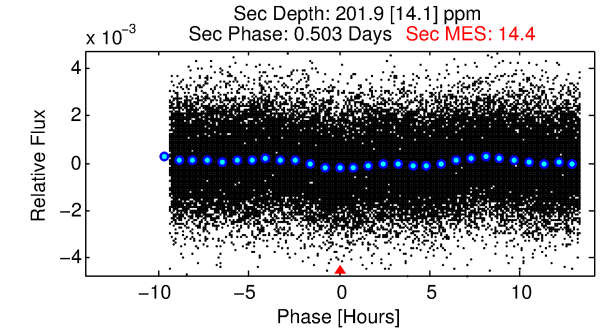
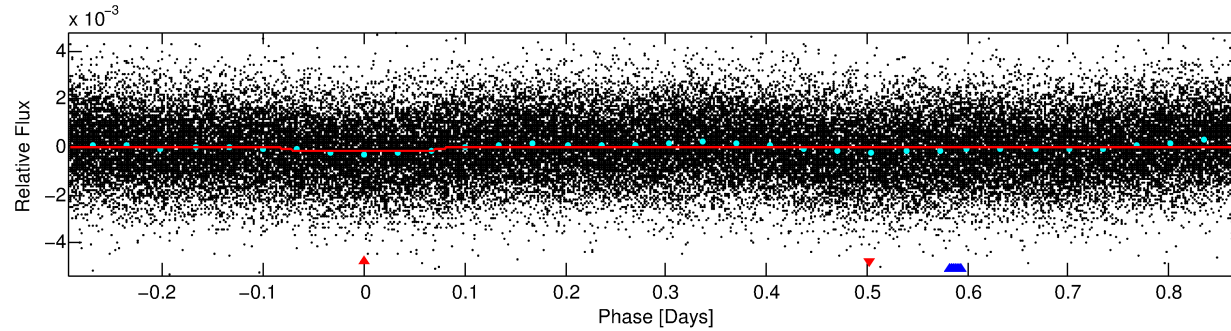
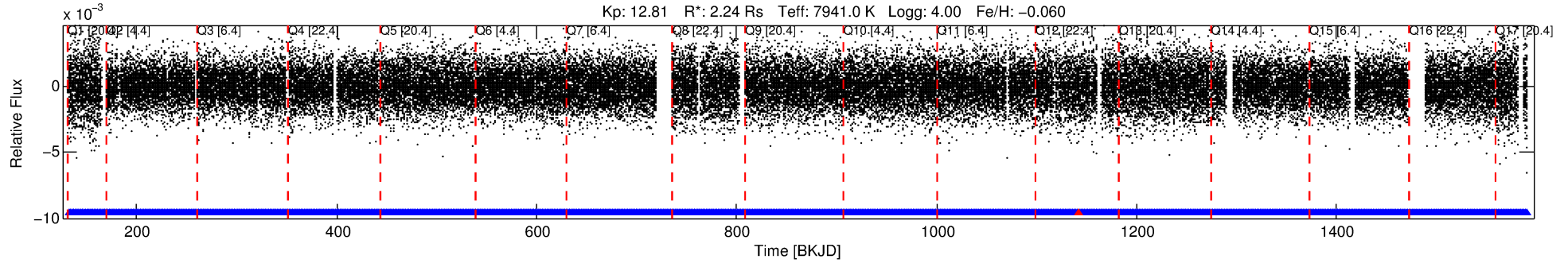
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005298466-01

No Significant Match Found

# DV One-Page Summary

KIC: 5298466 Candidate: 1 of 2 Period: 1.171 d



## DV Fit Results:

Period = 1.17133 [0.00001] d  
Epoch = 132.3493 [0.0037] BKJD  
Rp/R\* = 0.0140 [0.0042]  
a/R\* = 1.40 [1.28]  
b = 0.90 [0.40]  
Seff = 25207.37 [9449.91]  
Teq = 3213 [301] K  
Rp = 3.43 [1.36] Re  
a = 0.0266 [0.0060] AU  
Ag = 6.70 [4.62] [1.23σ]  
Teffp = 7991 [1249] K [3.72σ]

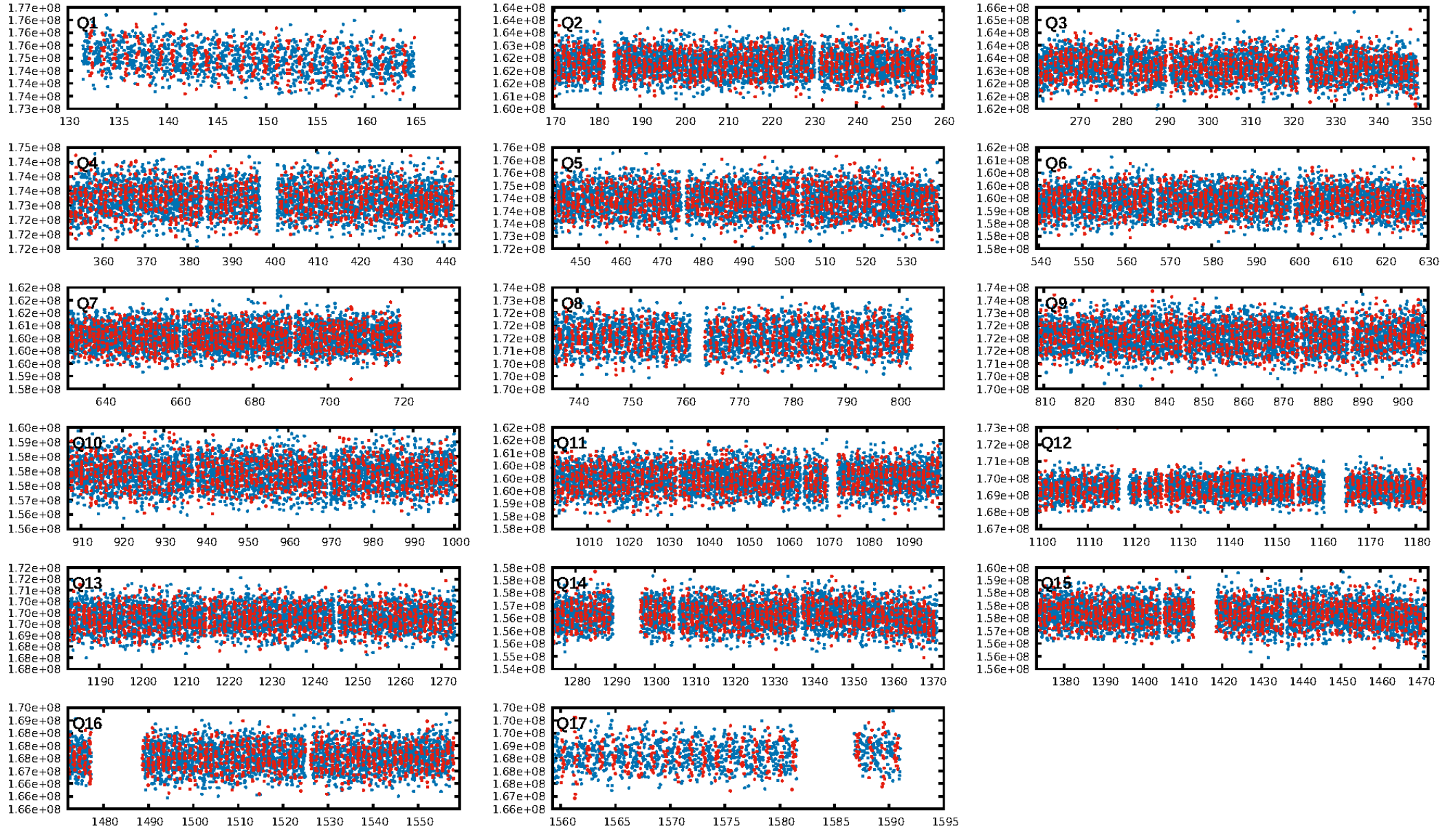
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1097/1098]  
GhostDiagnostic-chr: 1.743  
Centroid-sig: 16.6%  
Centroid-so: 0.200 arcsec [1.70σ]  
OotOffset-rm: 0.105 arcsec [1.16σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.093 arcsec [0.96σ]  
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 03:37:06 Z

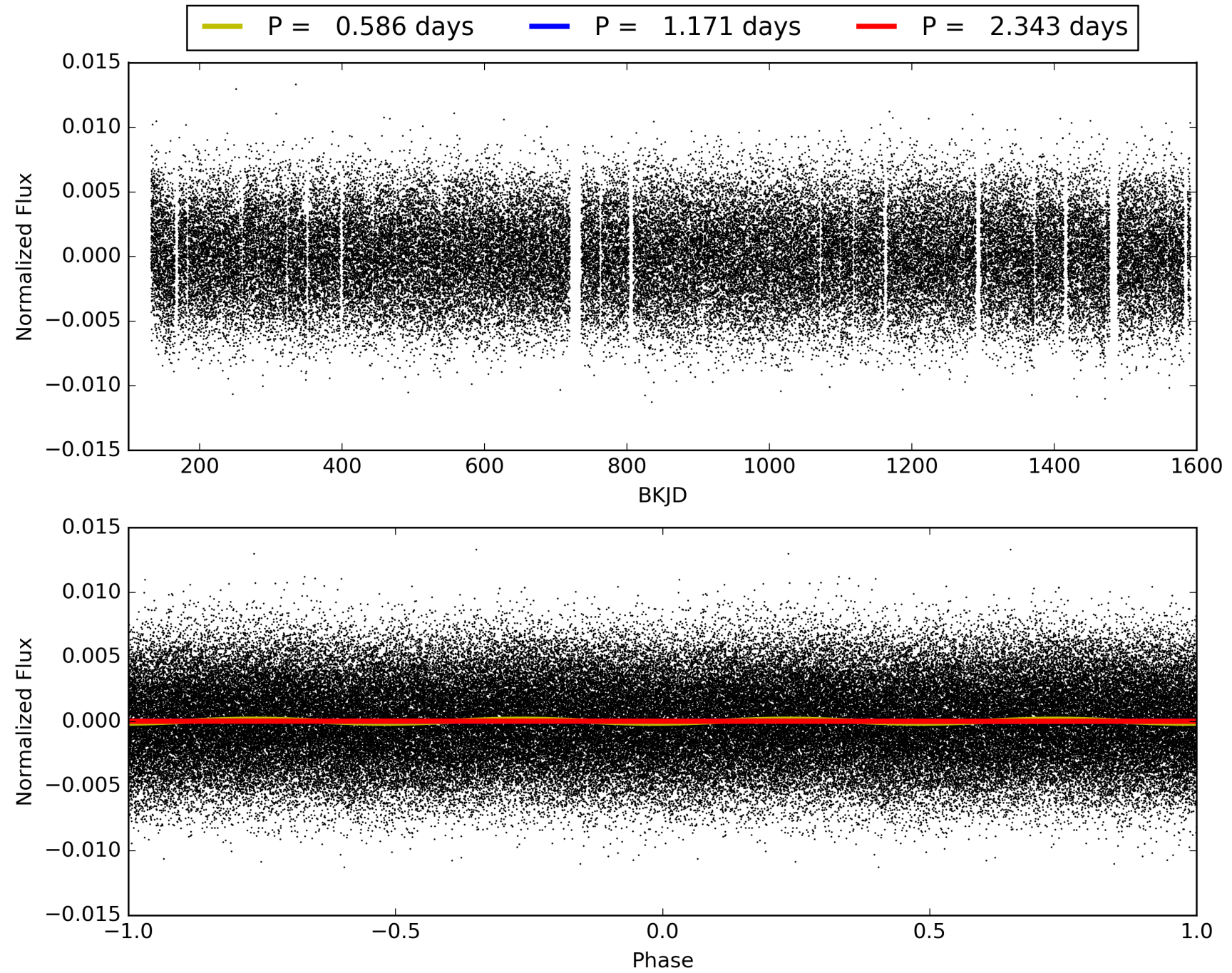
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005298466-01, PDC Light Curves



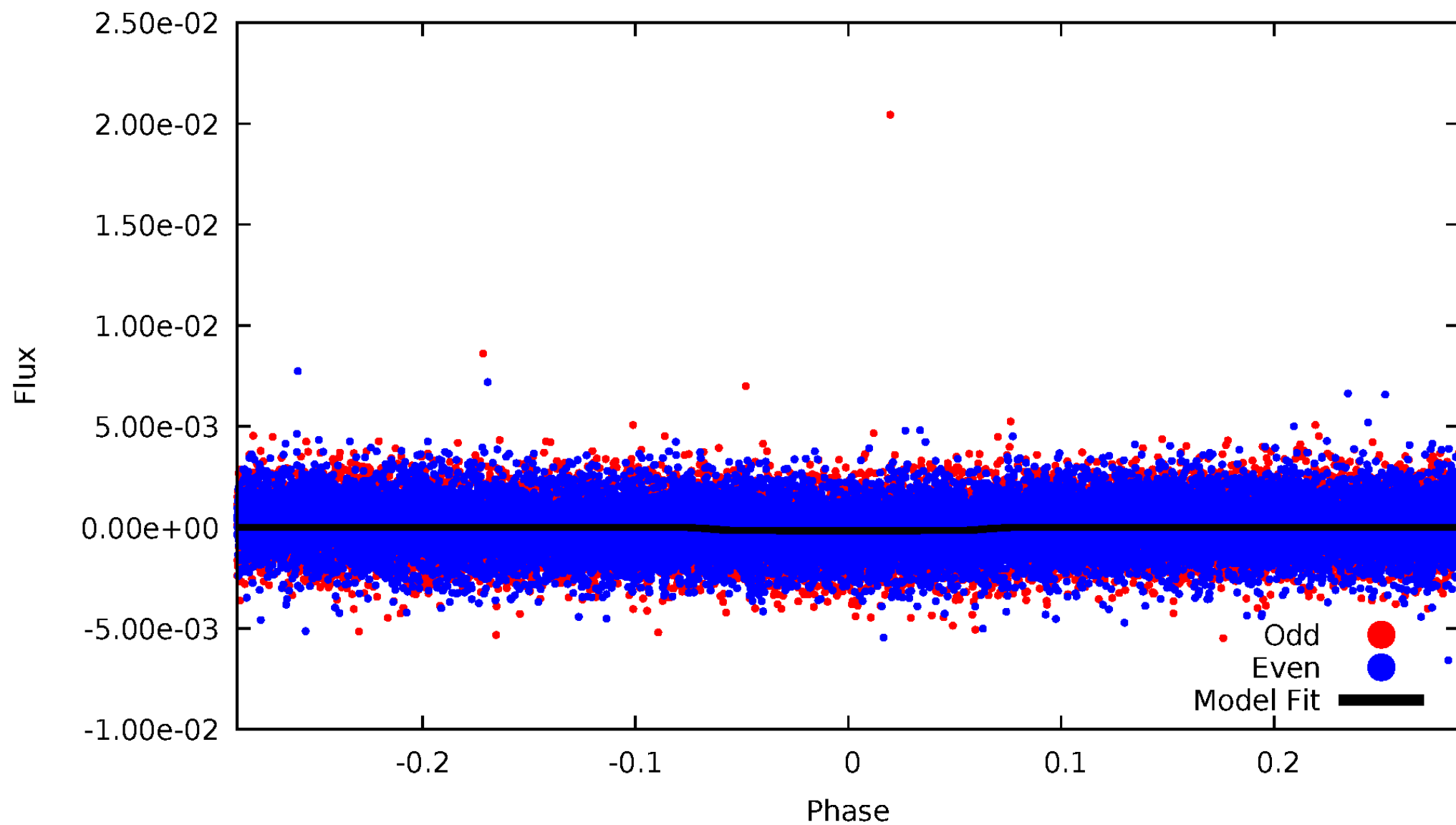


TCE 005298466-01



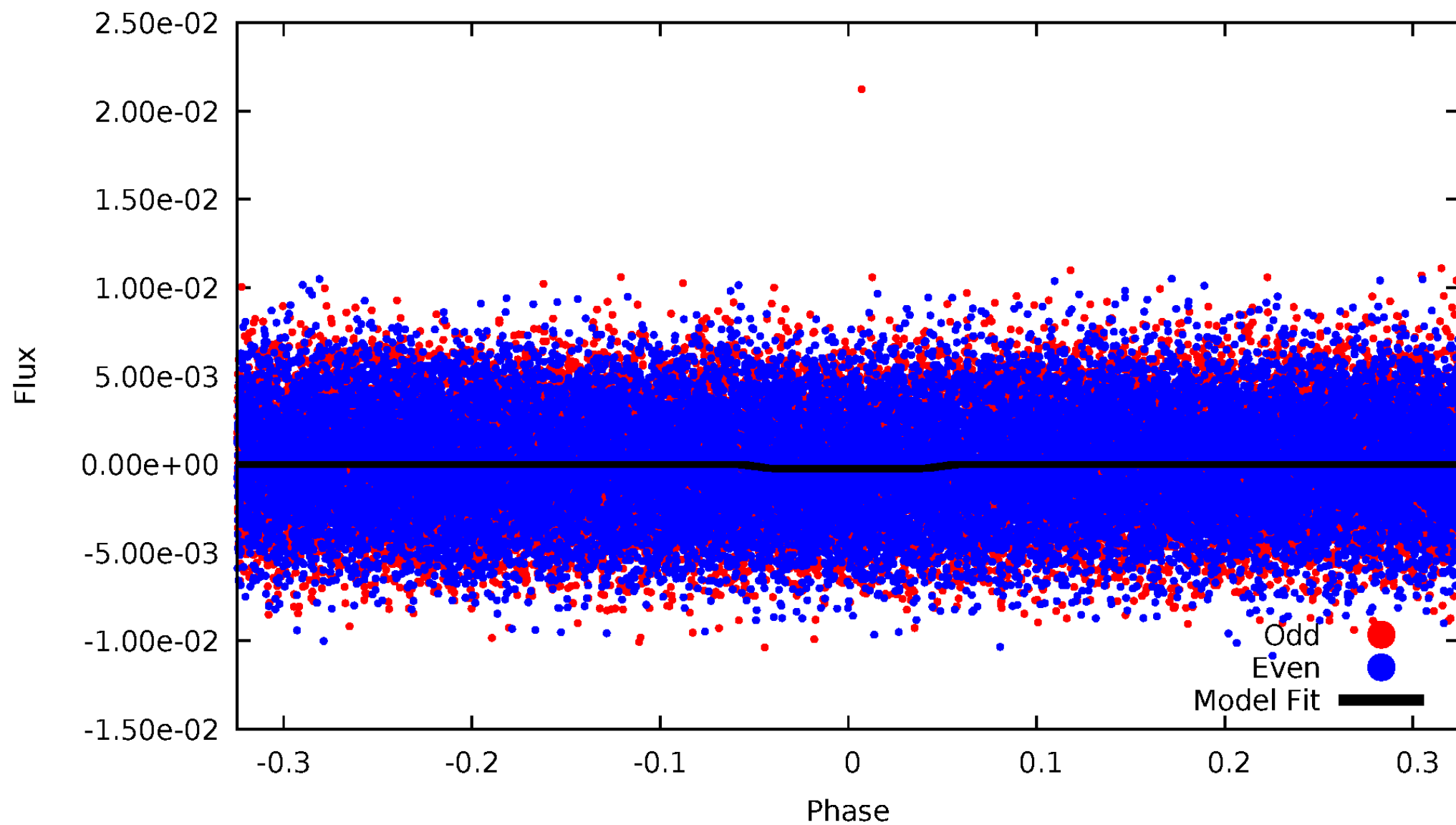
# DV Odd/Even

TCE 005298466-01



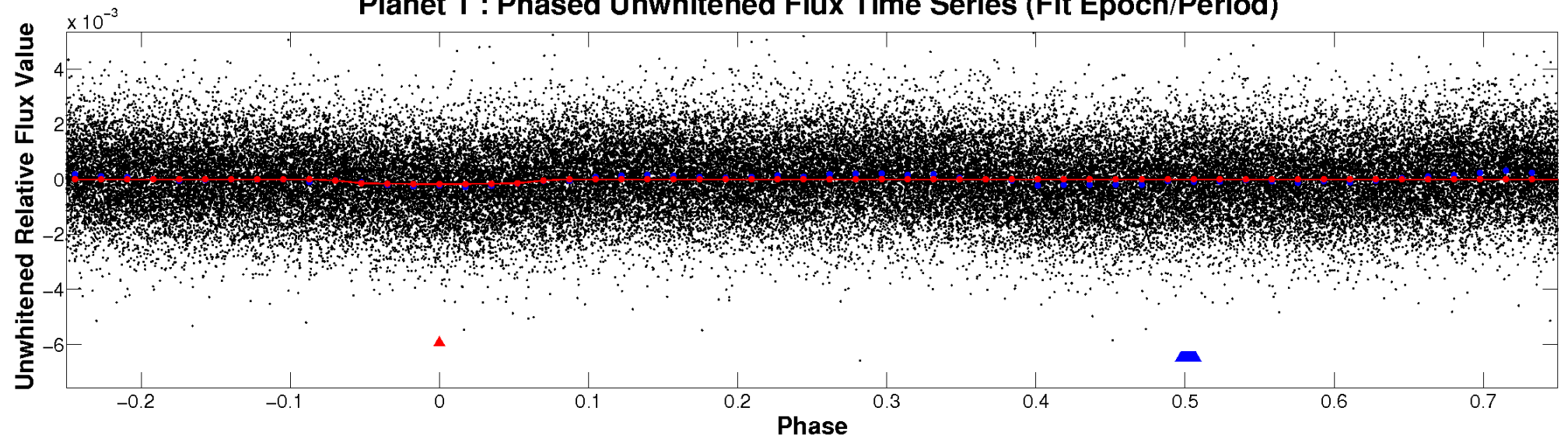
# ALT Odd/Even

TCE 005298466-01

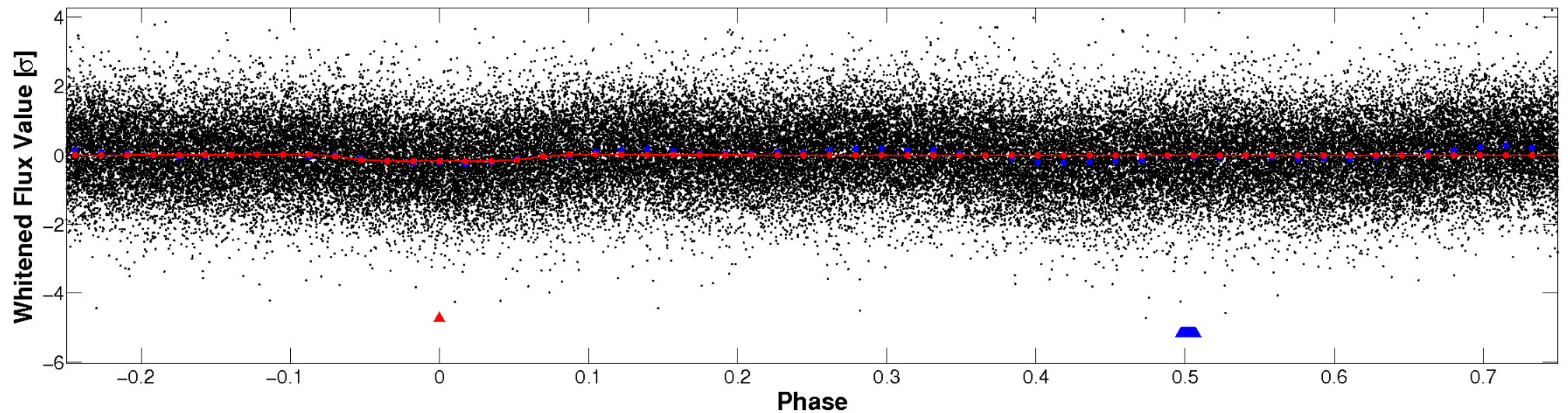


# Non-Whitened Vs. Whitened Light Curve

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



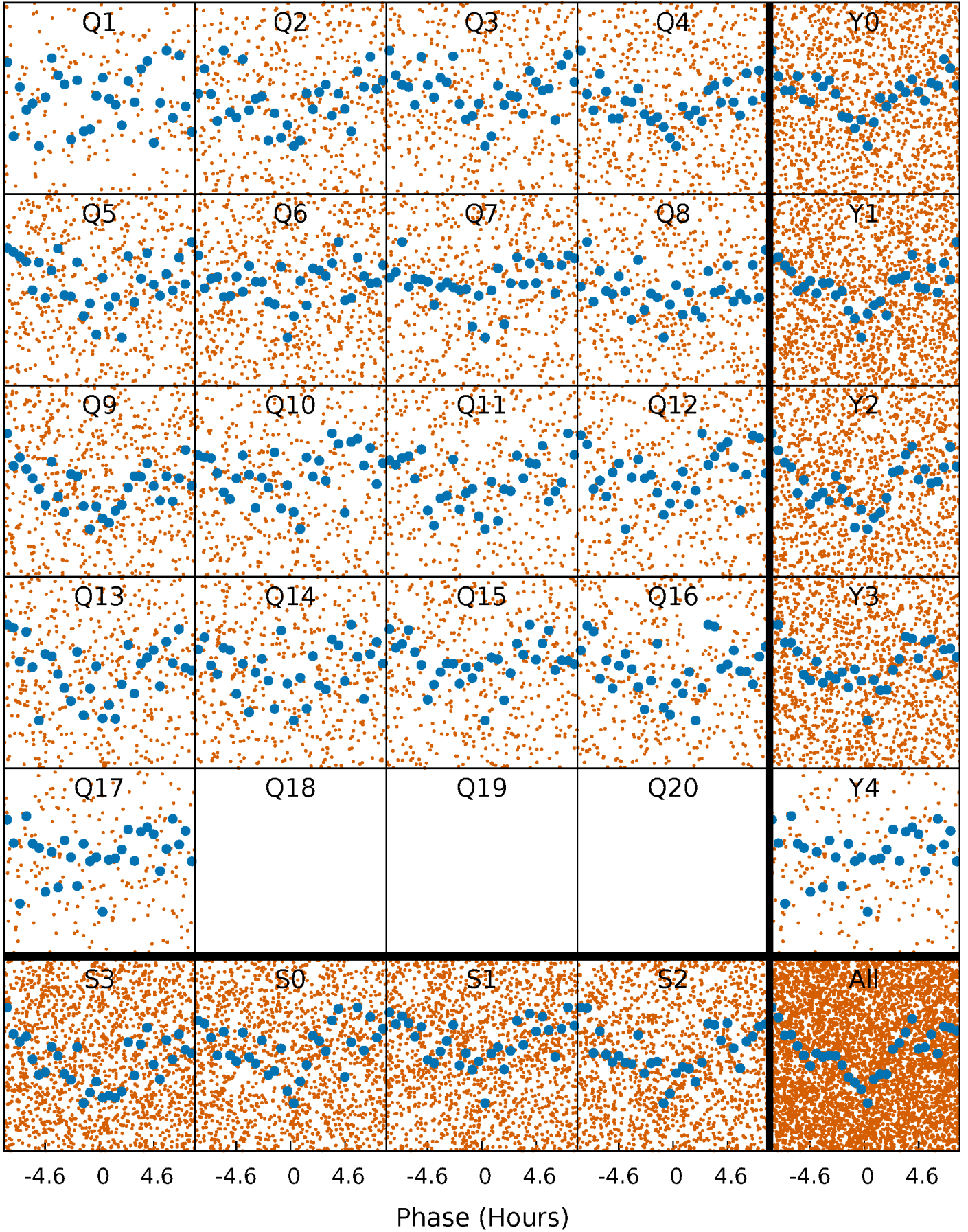
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

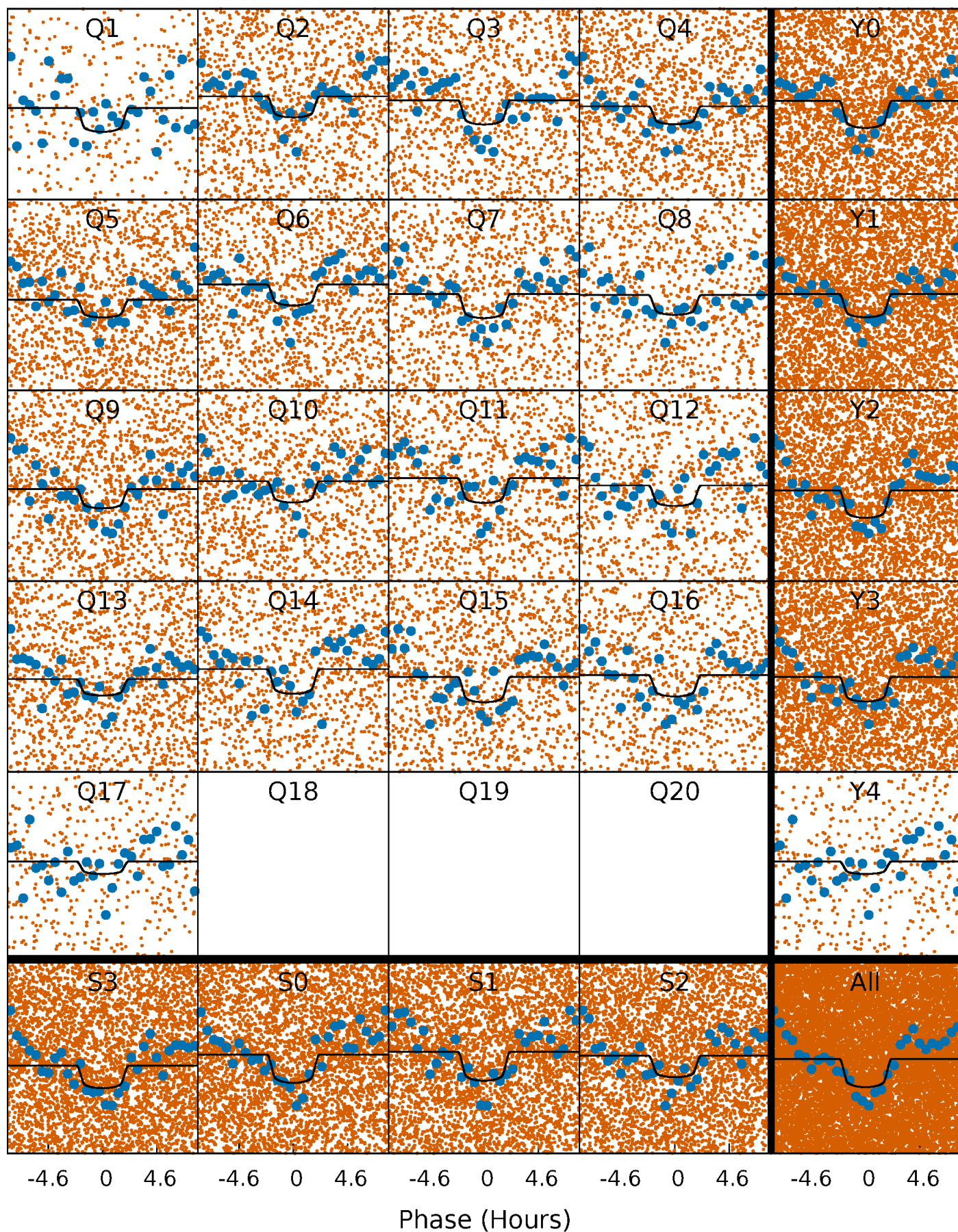
TCE 005298466-01 P= 1.171326 Days  $T_0=132.349343$  (BKJD)





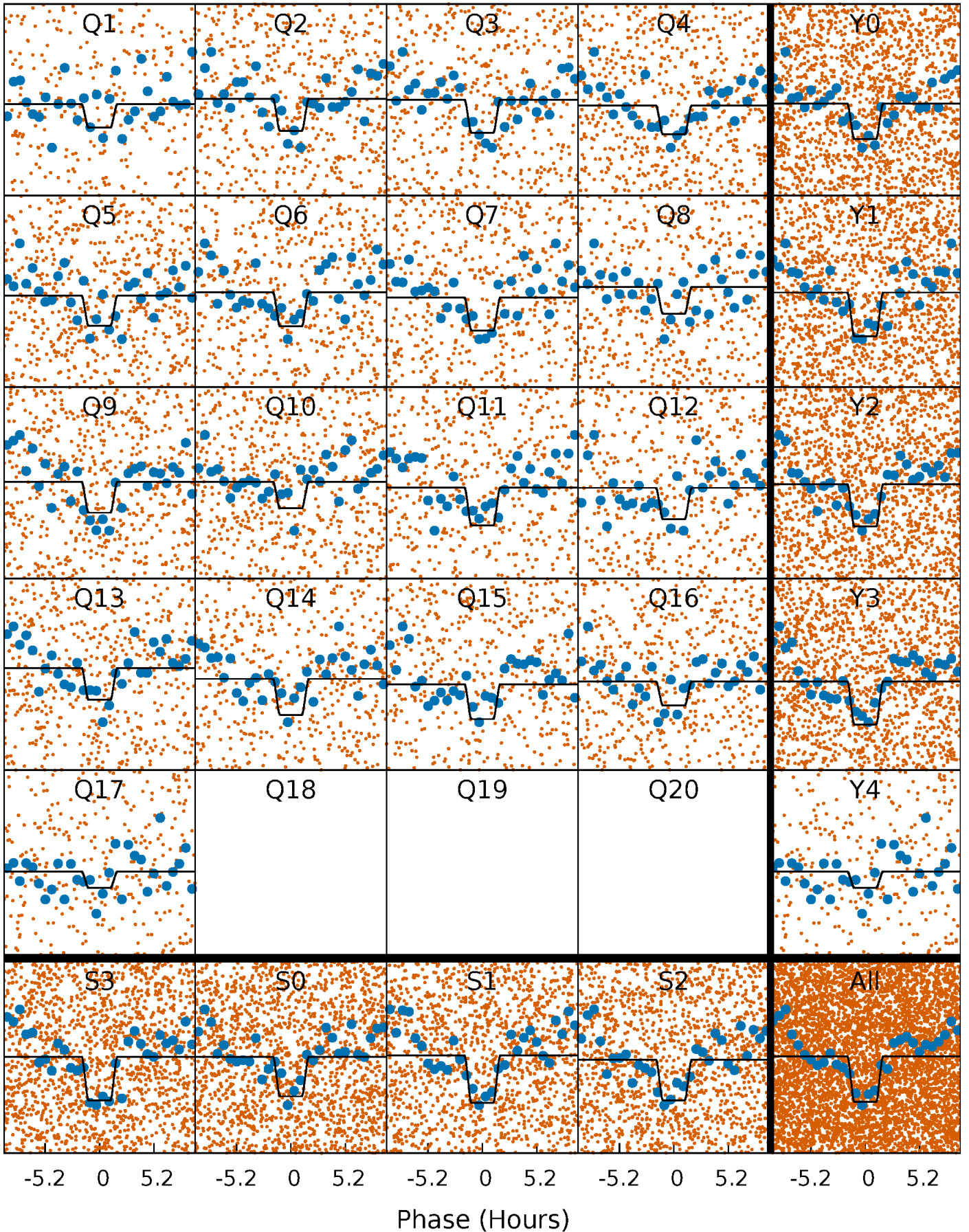
# DV Quarter-Phased Transit Curves

TCE 005298466-01 P= 1.171326 Days  $T_0=132.349343$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

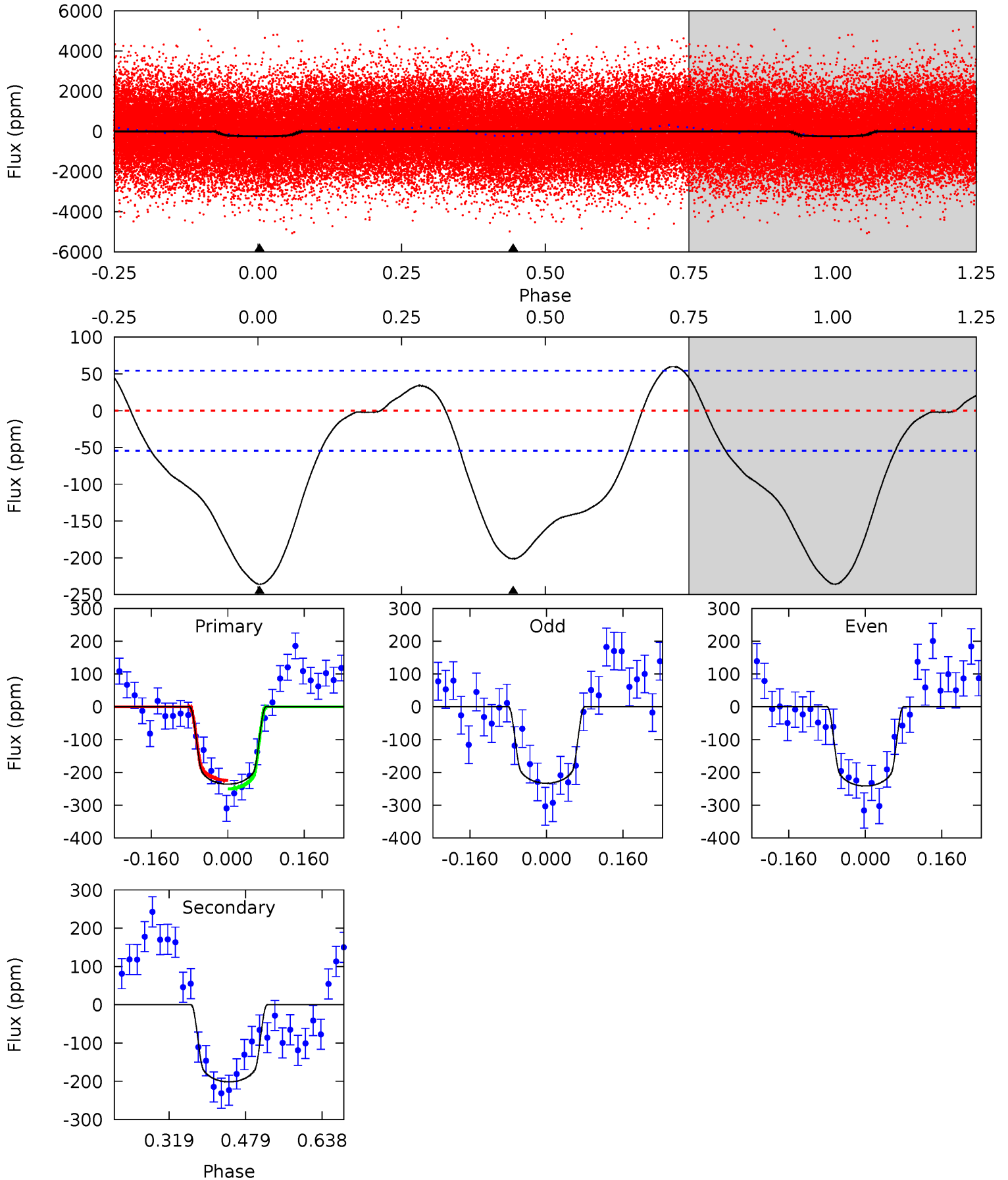
TCE 005298466-01 P= 1.171370 Days  $T_0=132.327475$  (BKJD)



# DV Model-Shift Uniqueness Test

005298466-01, P = 1.171326 Days, E = 131.178017 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	16.5	0	0	4.47	1.41	3.81	19.3	19.3	16.5	16.5	0.35	1.05	0.20	1.08

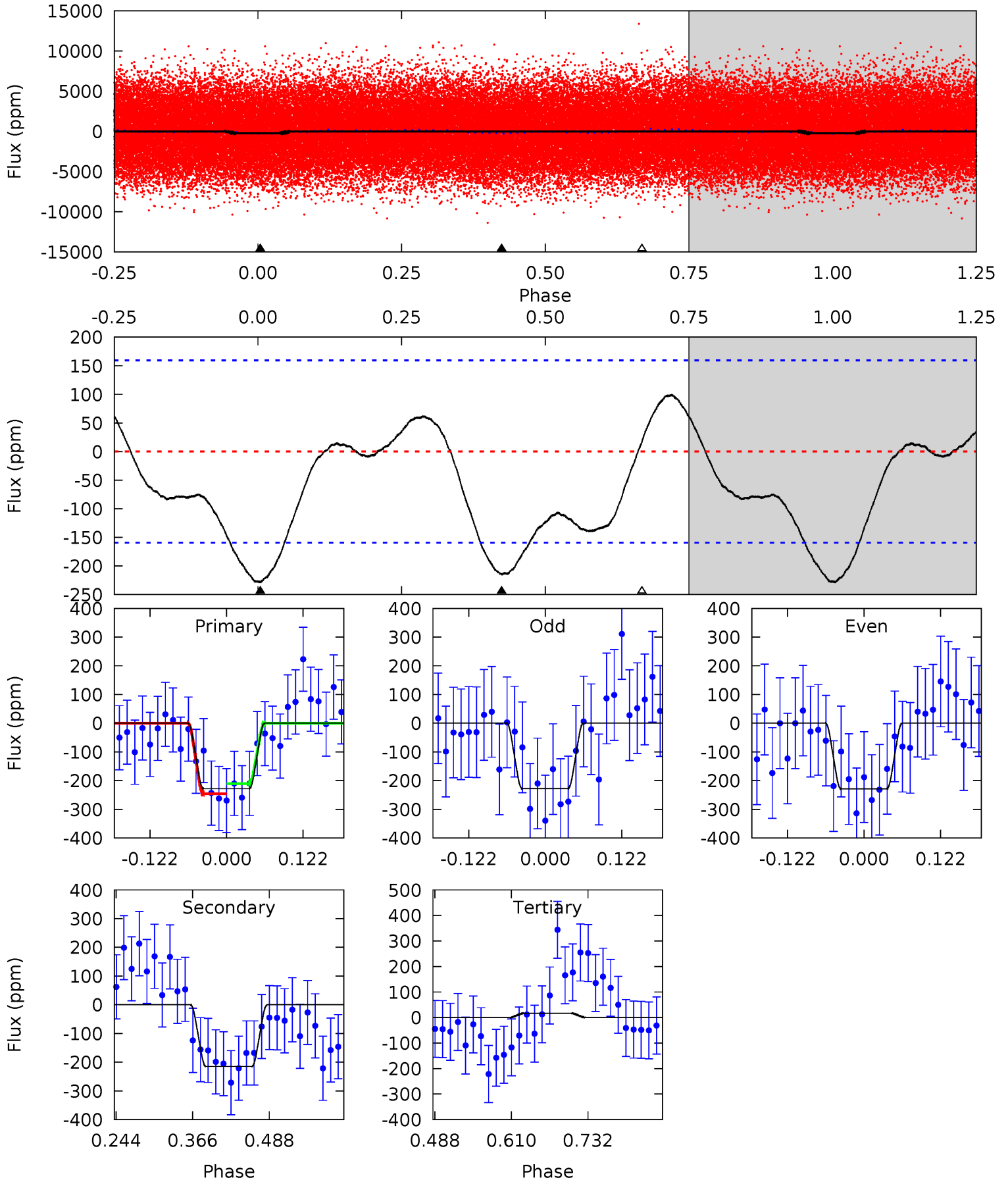




# Alt Model-Shift Uniqueness Test

005298466-01, P = 1.171370 Days, E = 131.156105 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
6.47	6.10	-0.48	0	4.52	1.55	1.99	6.96	6.47	6.58	6.10	0.01	0.95	0.30	0.50





### Stellar Parameters For KIC 005298466

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7941^{+221}_{-331}$	$4.001^{+0.187}_{-0.136}$	$-0.060^{+0.200}_{-0.350}$	$2.239^{+0.479}_{-0.585}$	$1.833^{+0.136}_{-0.318}$	$0.230^{+0.254}_{-0.089}$
	+3%/-4%	+5%/-3%	+333%/-583%	+21%/-26%	+7%/-17%	+110%/-39%
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 005298466-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-201 \pm 12$	$3.33^{+1.10}_{-1.10}$	$4449^{+304}_{-321}$	$7861^{+2220}_{-1157}$	$6.915^{+8.075}_{-2.947}$
Alt.	$-215 \pm 35$	$3.72^{+1.19}_{-1.12}$	$4430^{+323}_{-313}$	$7492^{+1726}_{-1092}$	$6.018^{+5.834}_{-2.719}$

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

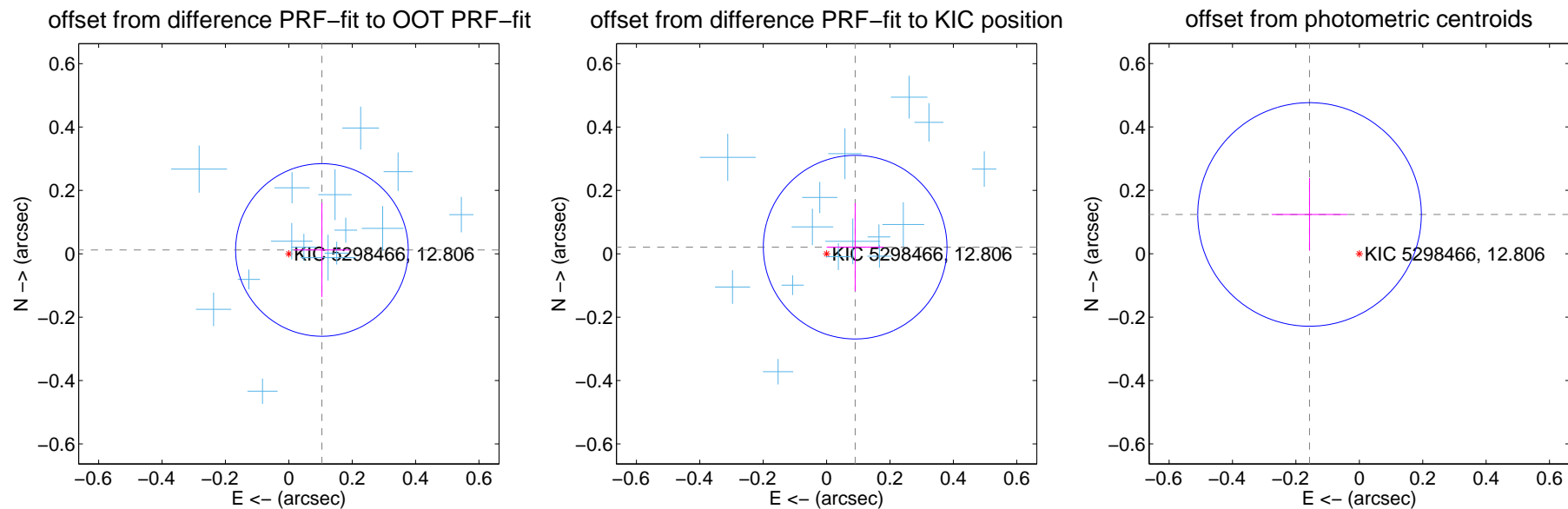
## DV Centroid Data

Supplemental centroid analysis for 005298466-01. Kepler magnitude: 12.81. Transit SNR 14.42

There are 17 quarters with good PRF difference image offsets

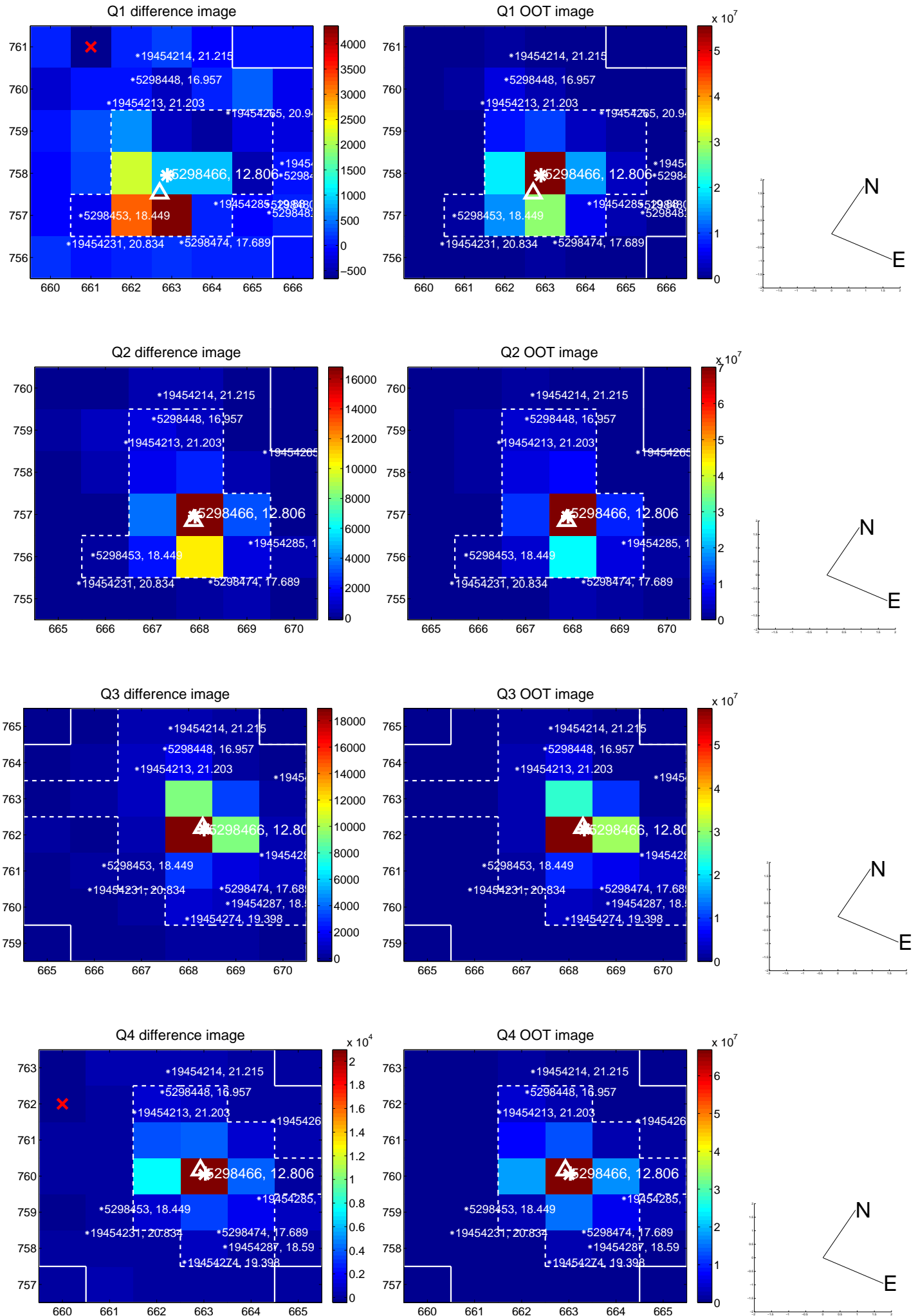
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.105 \pm 0.091$	1.16	$-0.105 \pm 0.088$	$0.012 \pm 0.148$
PRF-fit source offset from KIC position	$0.093 \pm 0.097$	0.96	$-0.090 \pm 0.090$	$0.021 \pm 0.139$
photometric centroid source offset	$0.20 \pm 0.12$	1.70	$0.16 \pm 0.12$	$0.12 \pm 0.11$

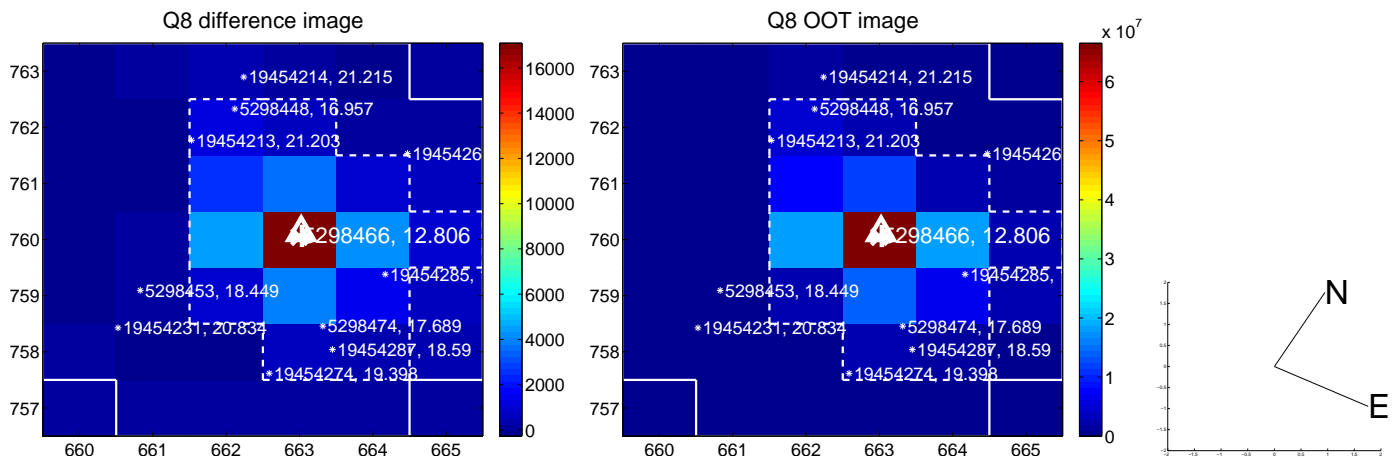
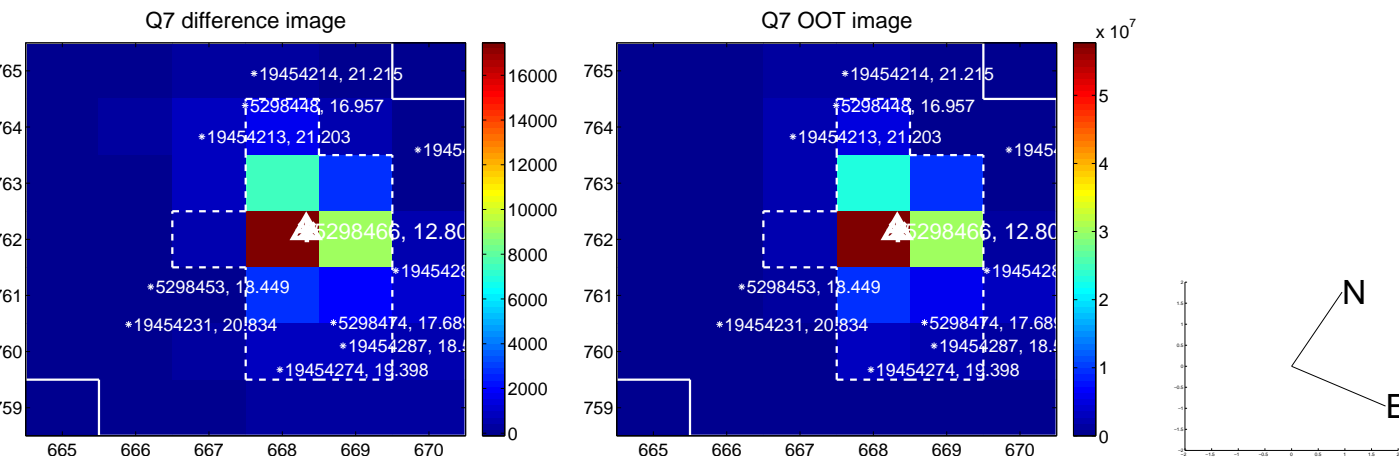
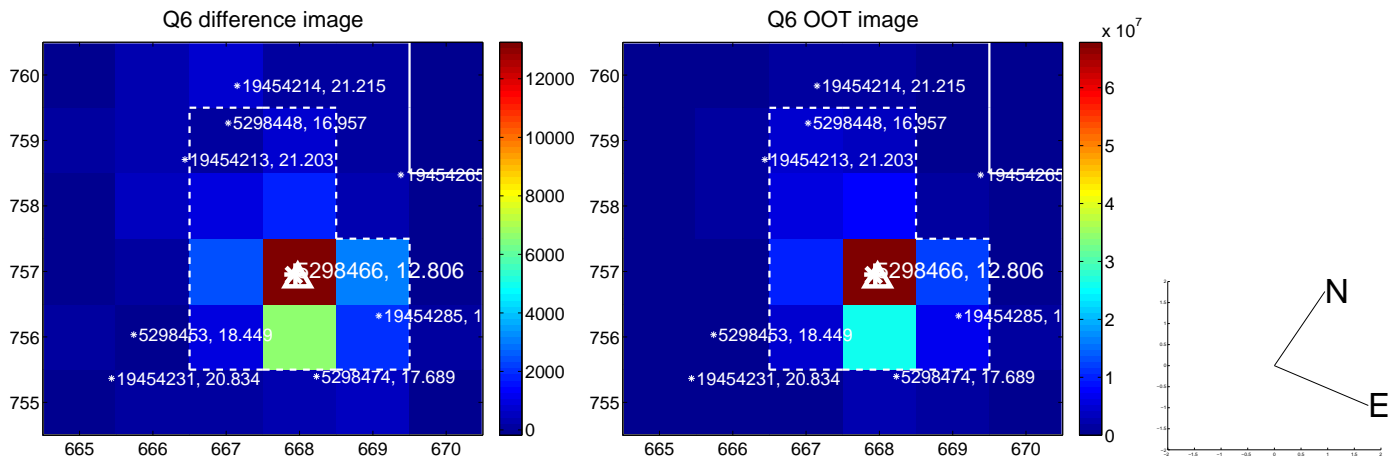
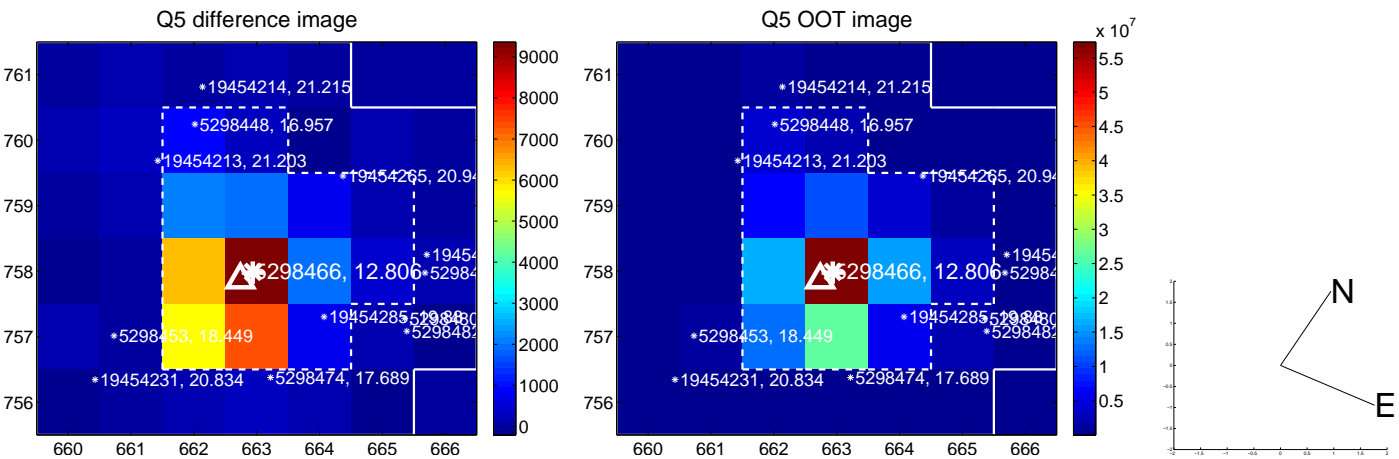


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

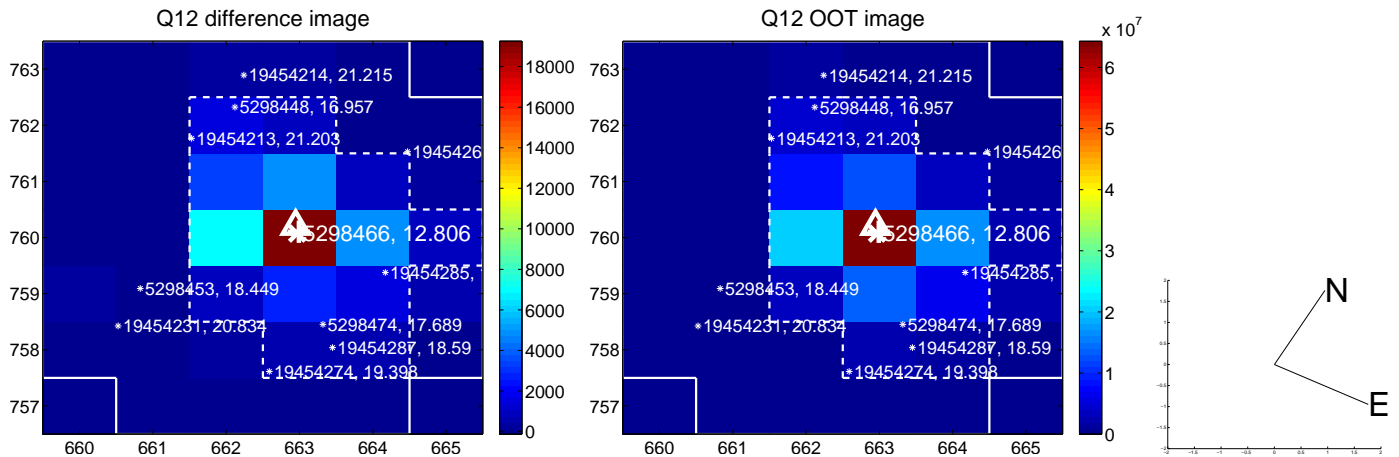
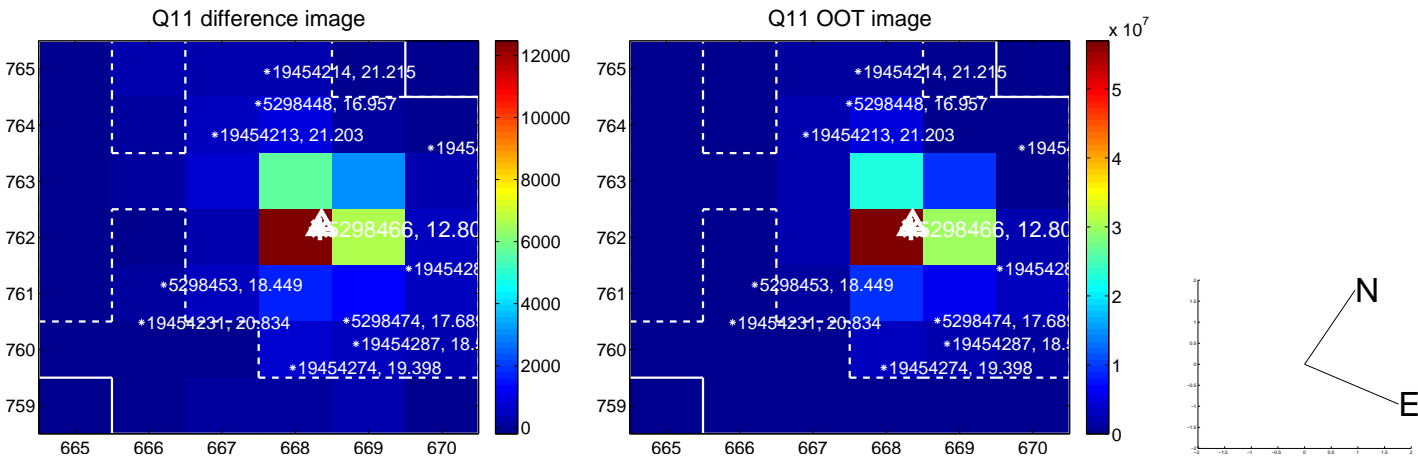
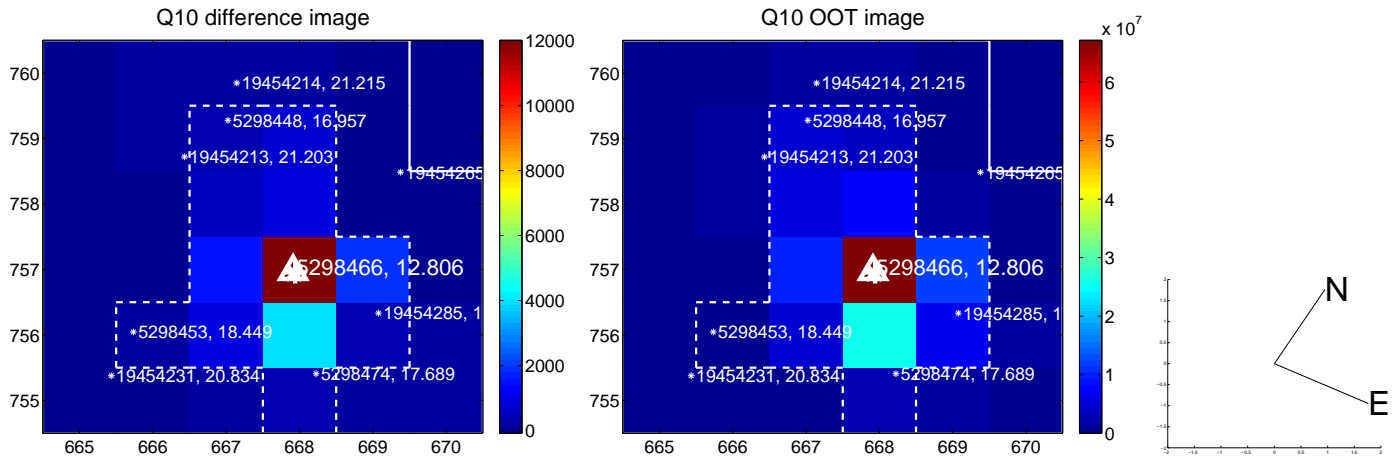
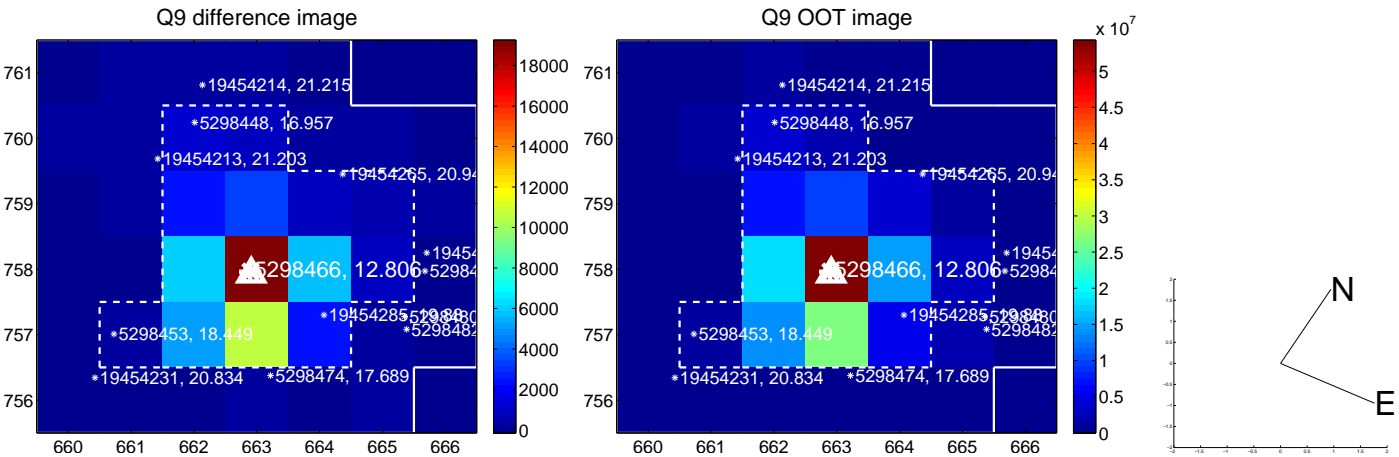


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

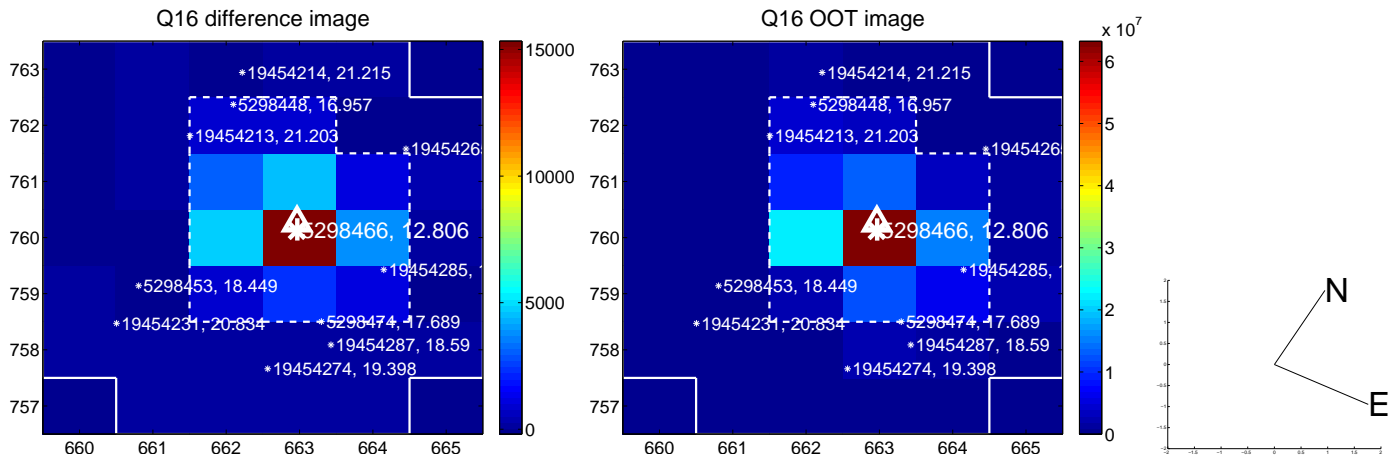
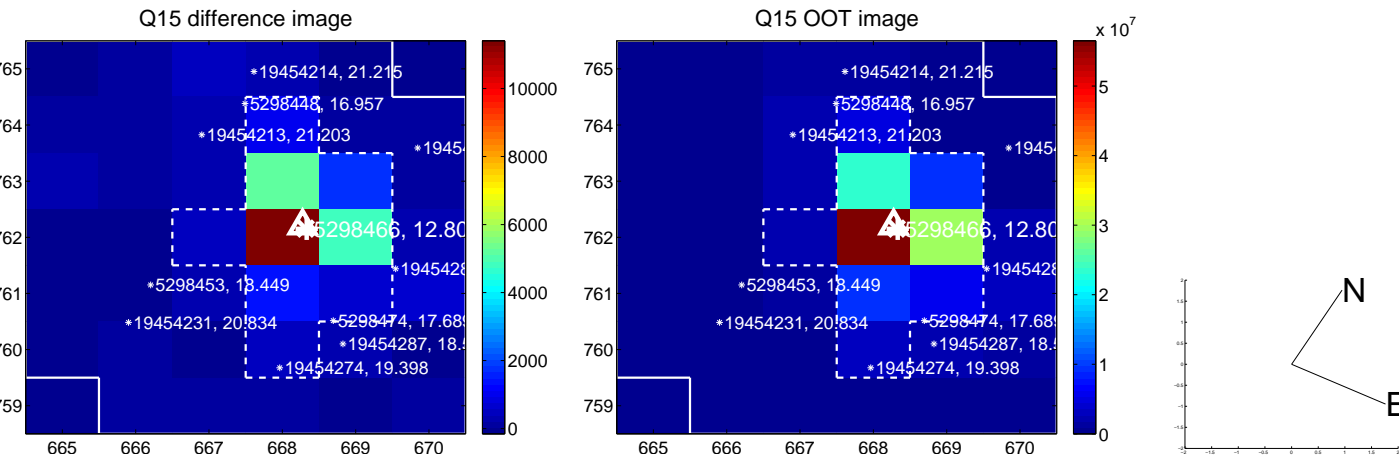
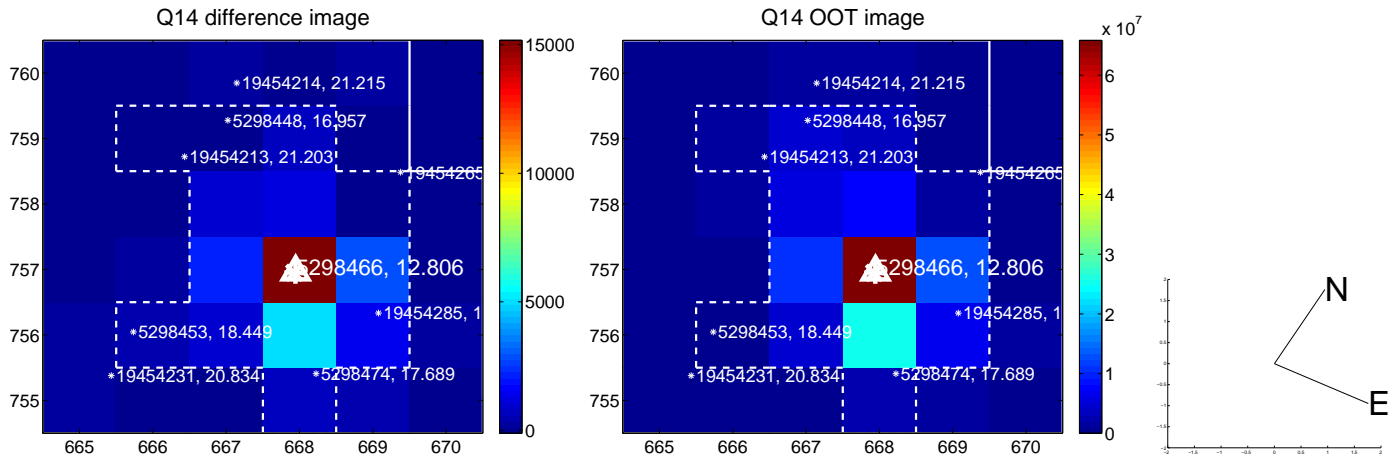
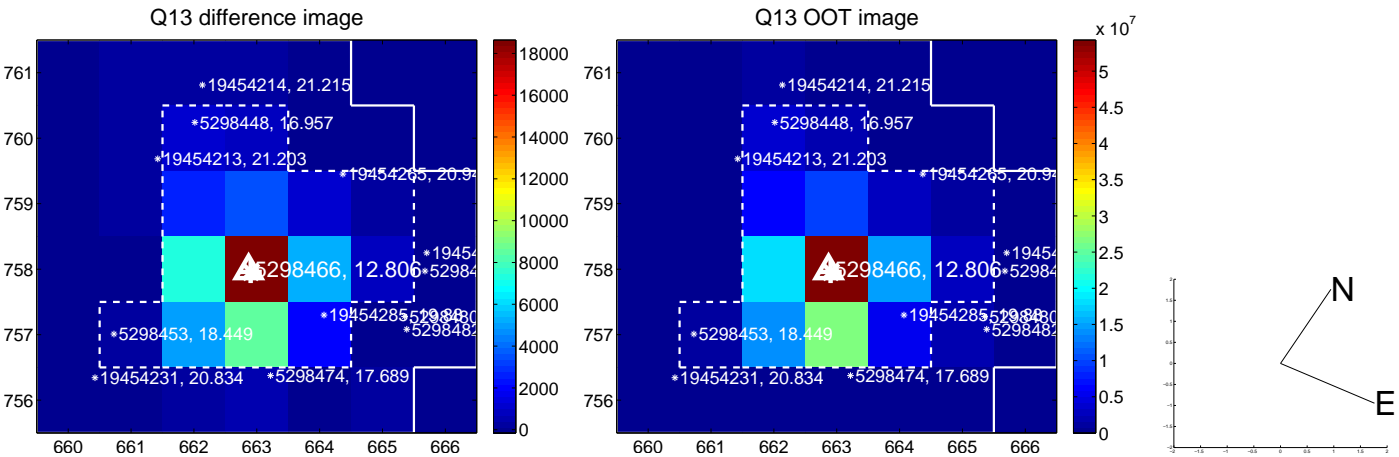




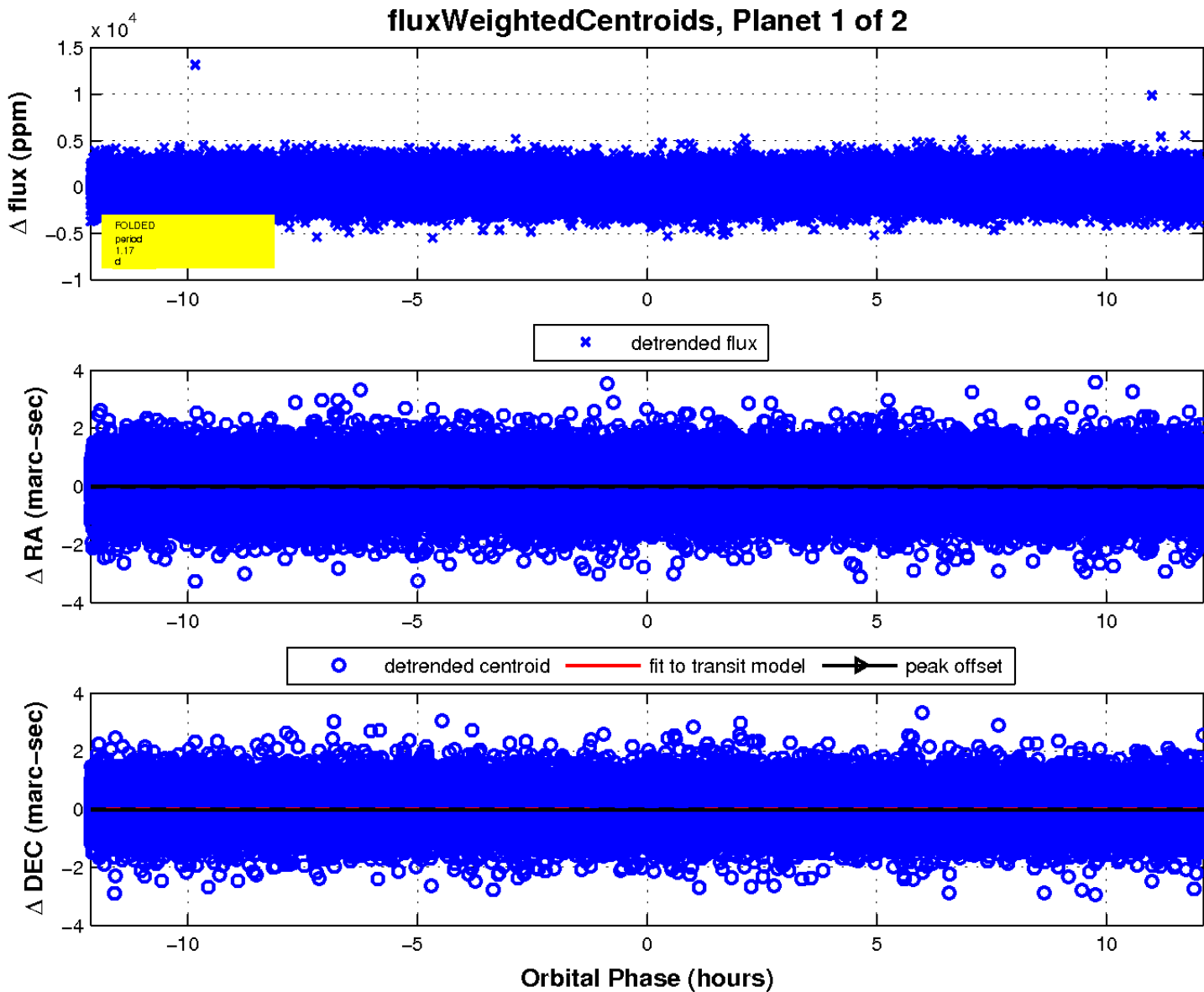
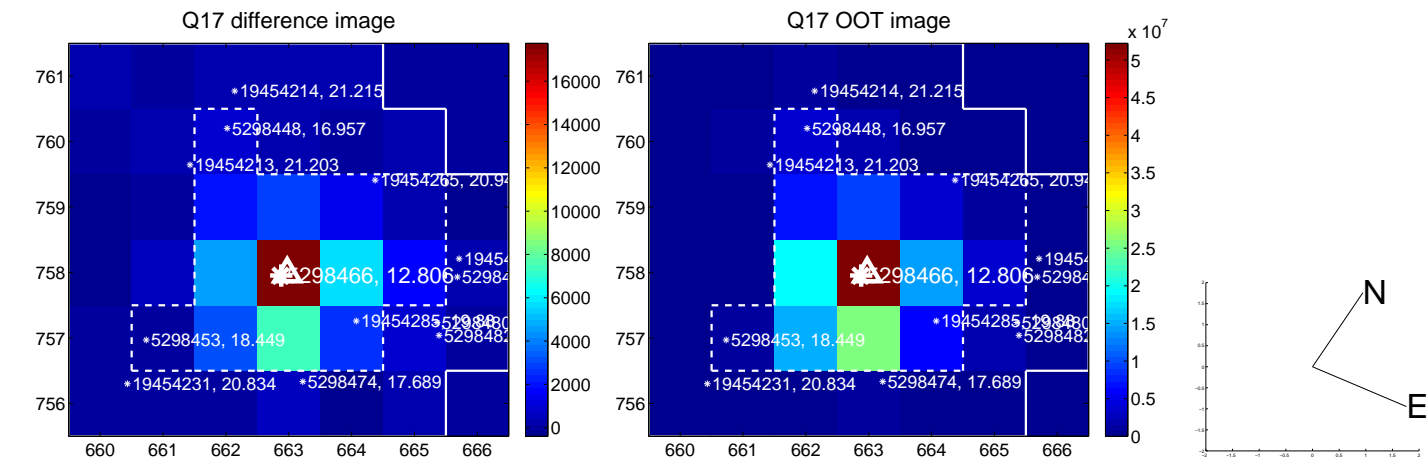
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

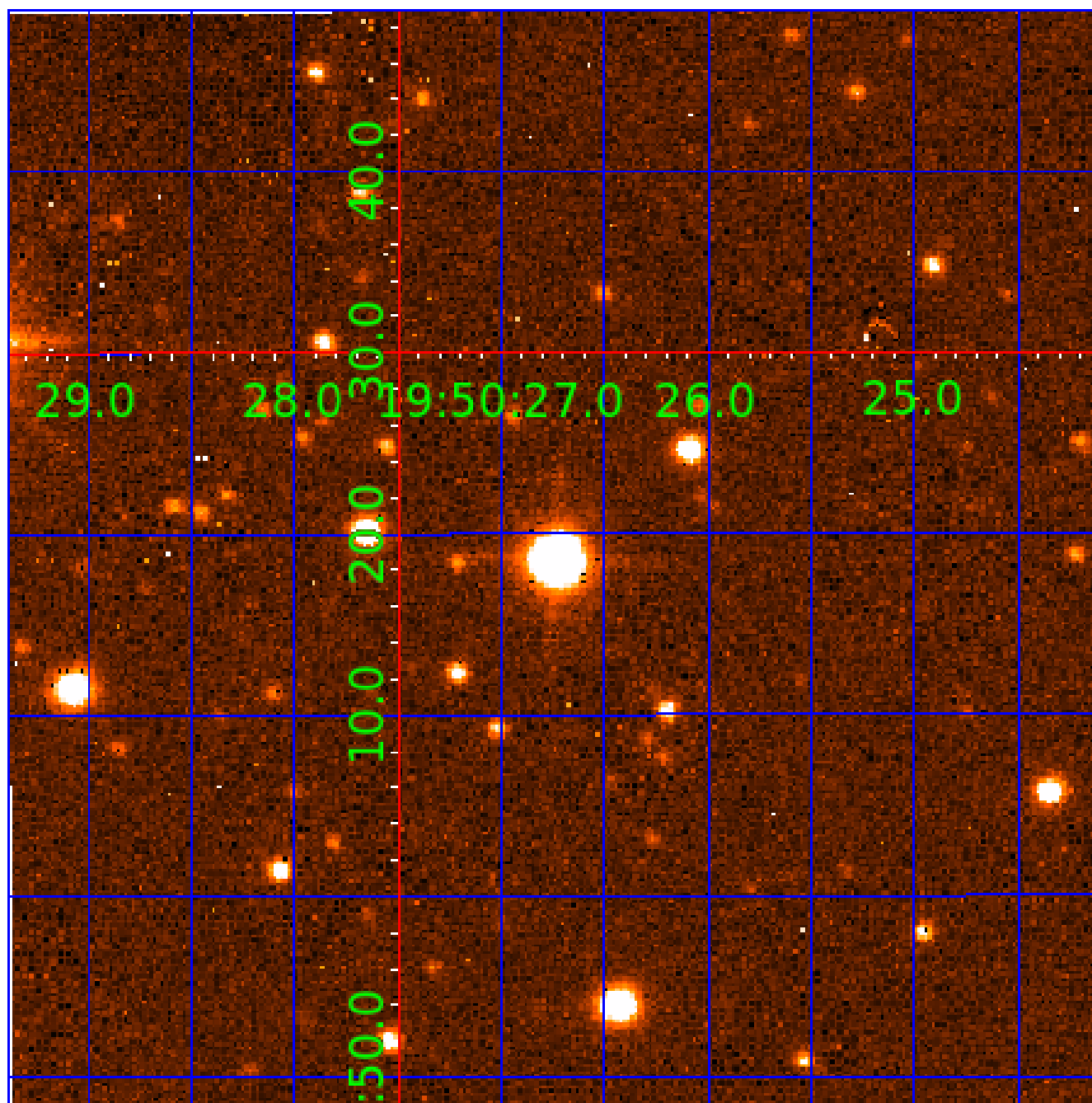


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 005298466

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005298466-01	OBS	No	1.171326	132.349343	174.0	4.037	15.8	14.4	2.24	7941	3.43	25207.37
005298466-02	OBS	No	1.171317	131.771823	149.9	8.260	15.1	16.1	2.24	7941	2.80	25207.63

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005298466-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005298466-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

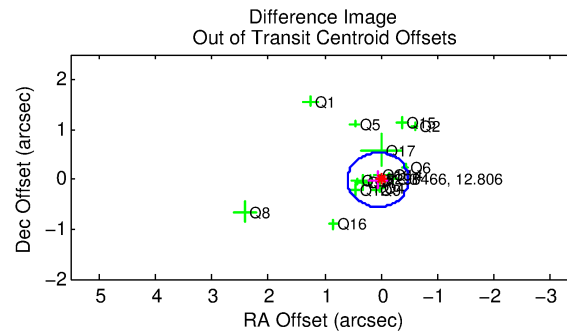
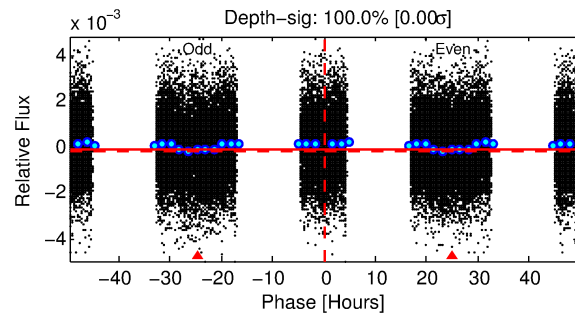
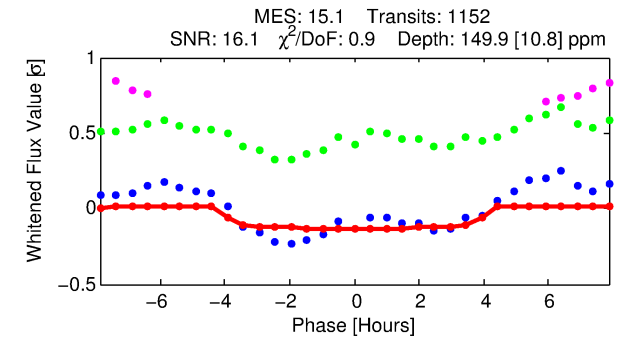
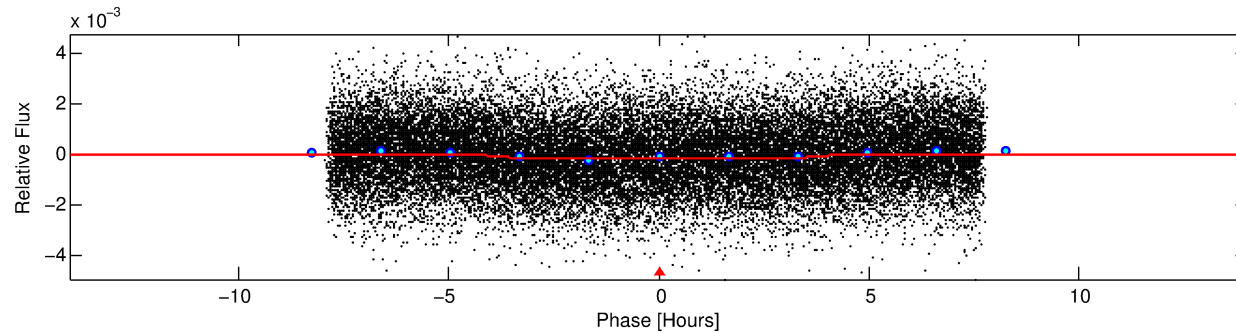
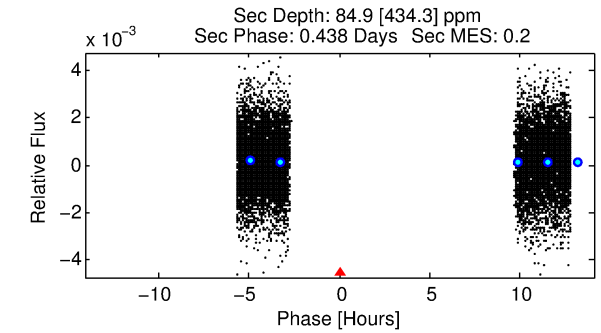
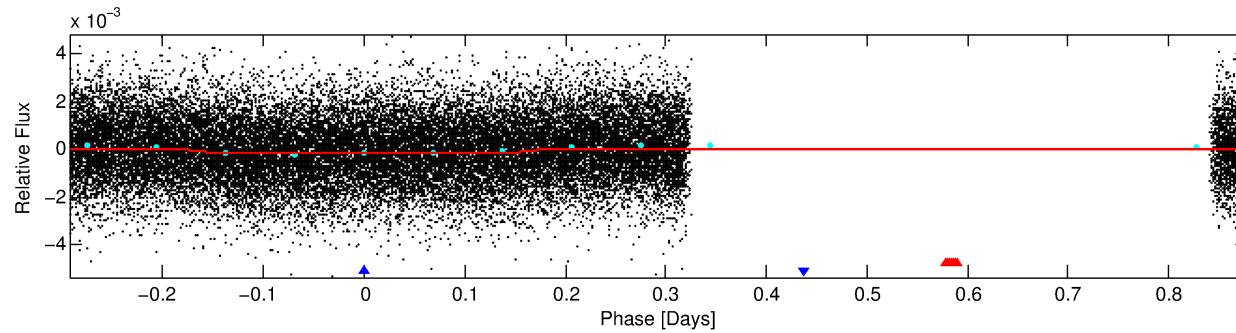
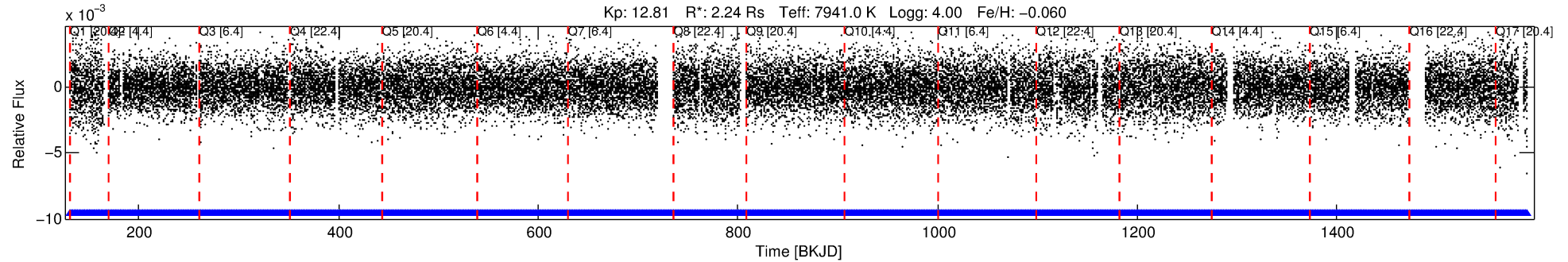
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005298466-02

No Significant Match Found

# DV One-Page Summary

KIC: 5298466 Candidate: 2 of 2 Period: 1.171 d



## DV Fit Results:

Period = 1.17132 [0.00001] d  
Epoch = 131.7718 [0.0052] BKJD  
Rp/R\* = 0.0114 [0.0110]  
a/R\* = 1.25 [2.53]  
b = 0.30 [17.37]  
Seff = 25207.63 [9450.01]  
Teq = 3213 [301] K  
Rp = 2.80 [2.79] Re  
a = 0.0266 [0.0060] AU  
Ag = 4.23 [23.17] [0.14σ]  
Teffp = 7124 [9743] K [0.40σ]

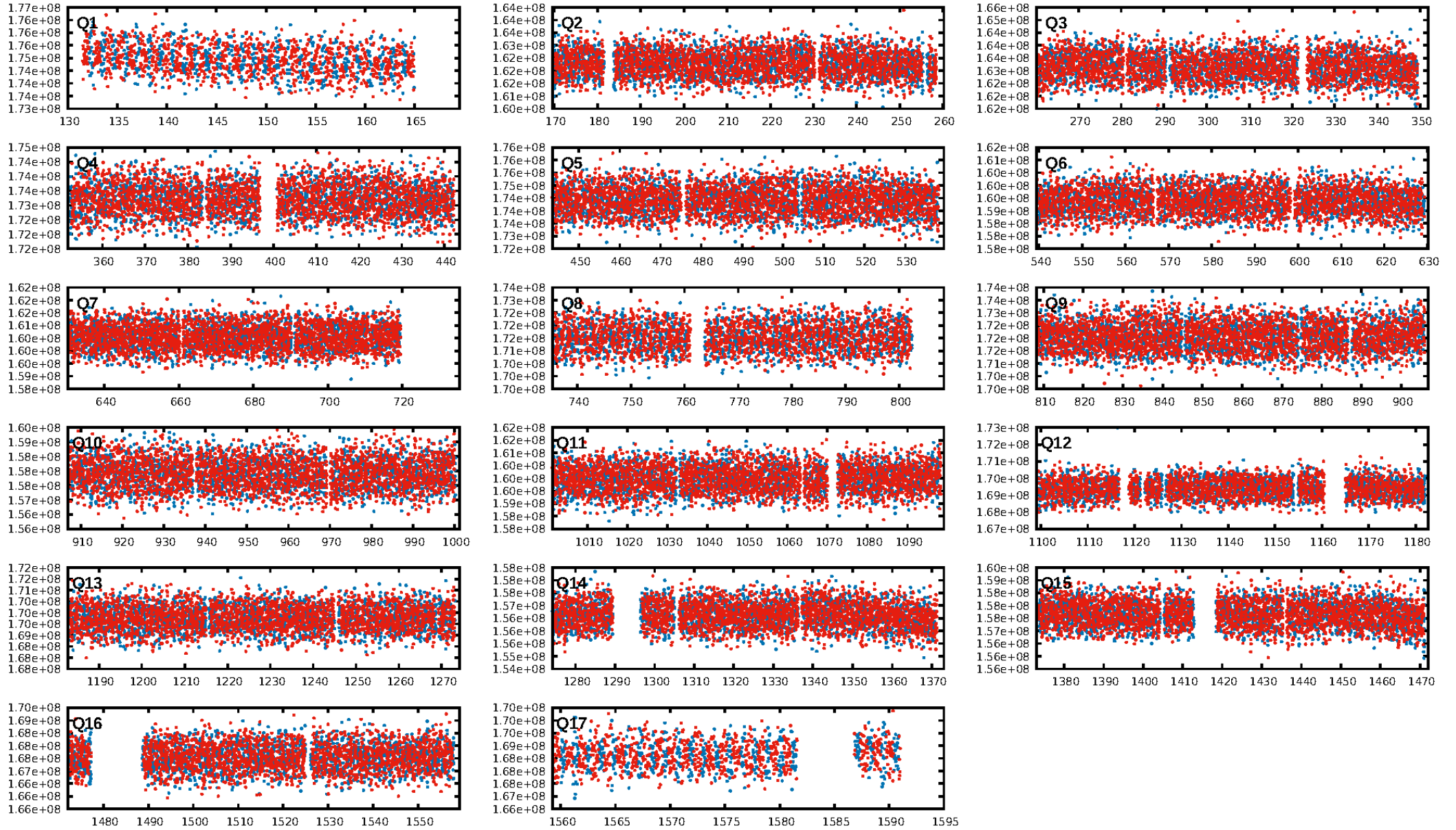
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1101/1101]  
GhostDiagnostic-chr: 1.555  
Centroid-sig: 4.0%  
Centroid-so: 0.203 arcsec [2.07σ]  
OotOffset-rm: 0.060 arcsec [0.33σ]  
KicOffset-rm: 0.087 arcsec [0.53σ]  
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: 30-Jan-2016 03:37:19 Z

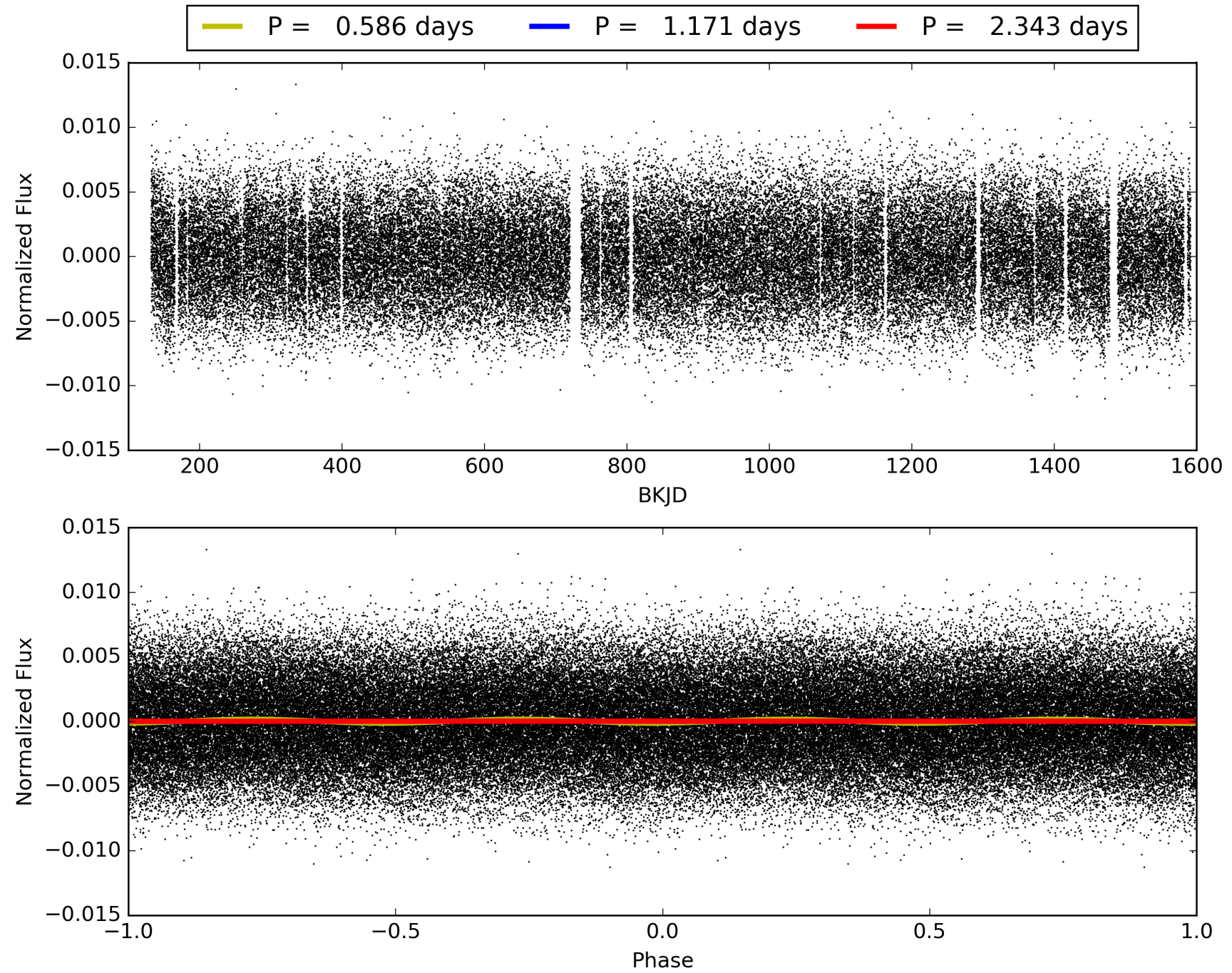
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005298466-02, PDC Light Curves



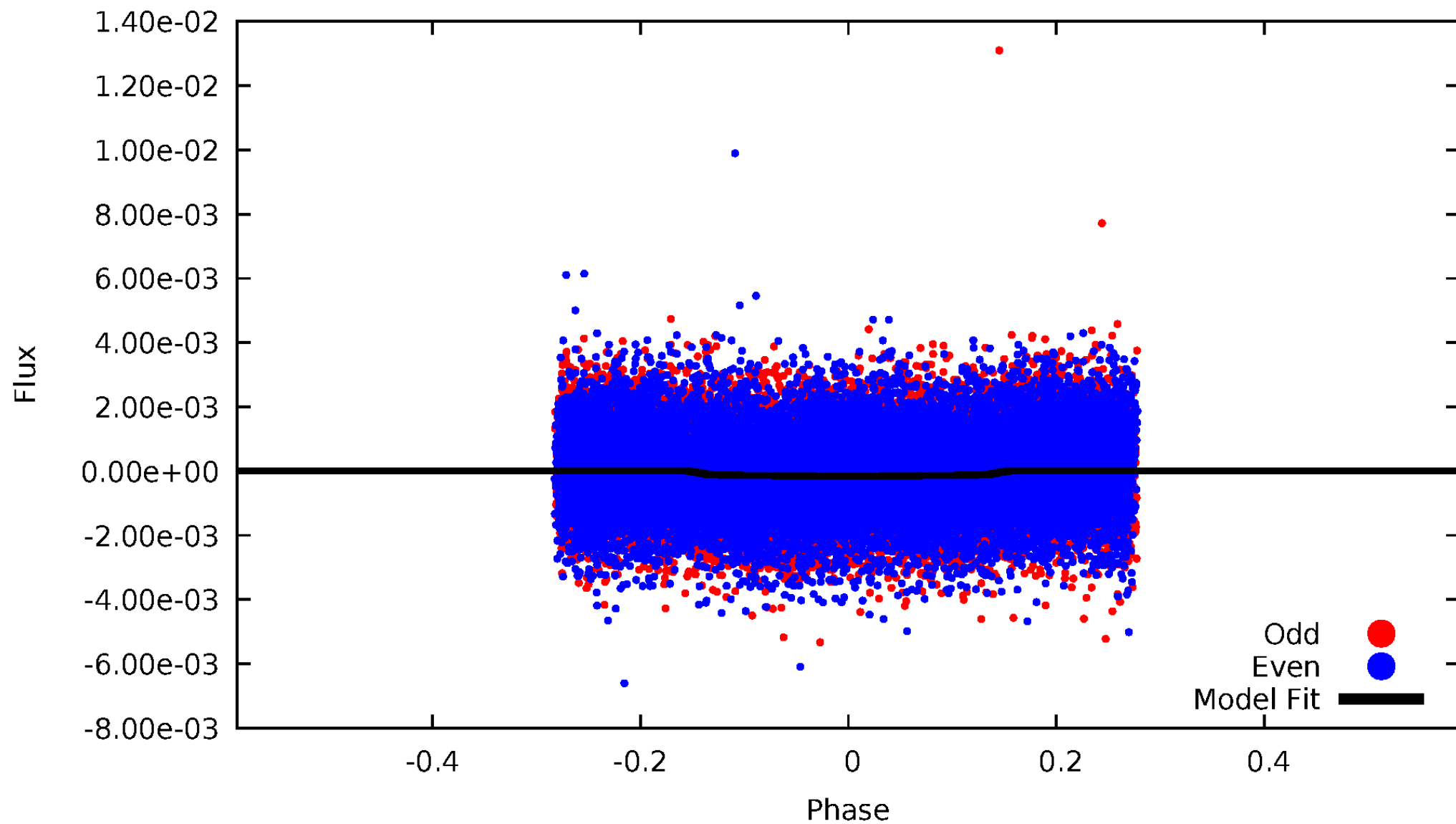


TCE 005298466-02



# DV Odd/Even

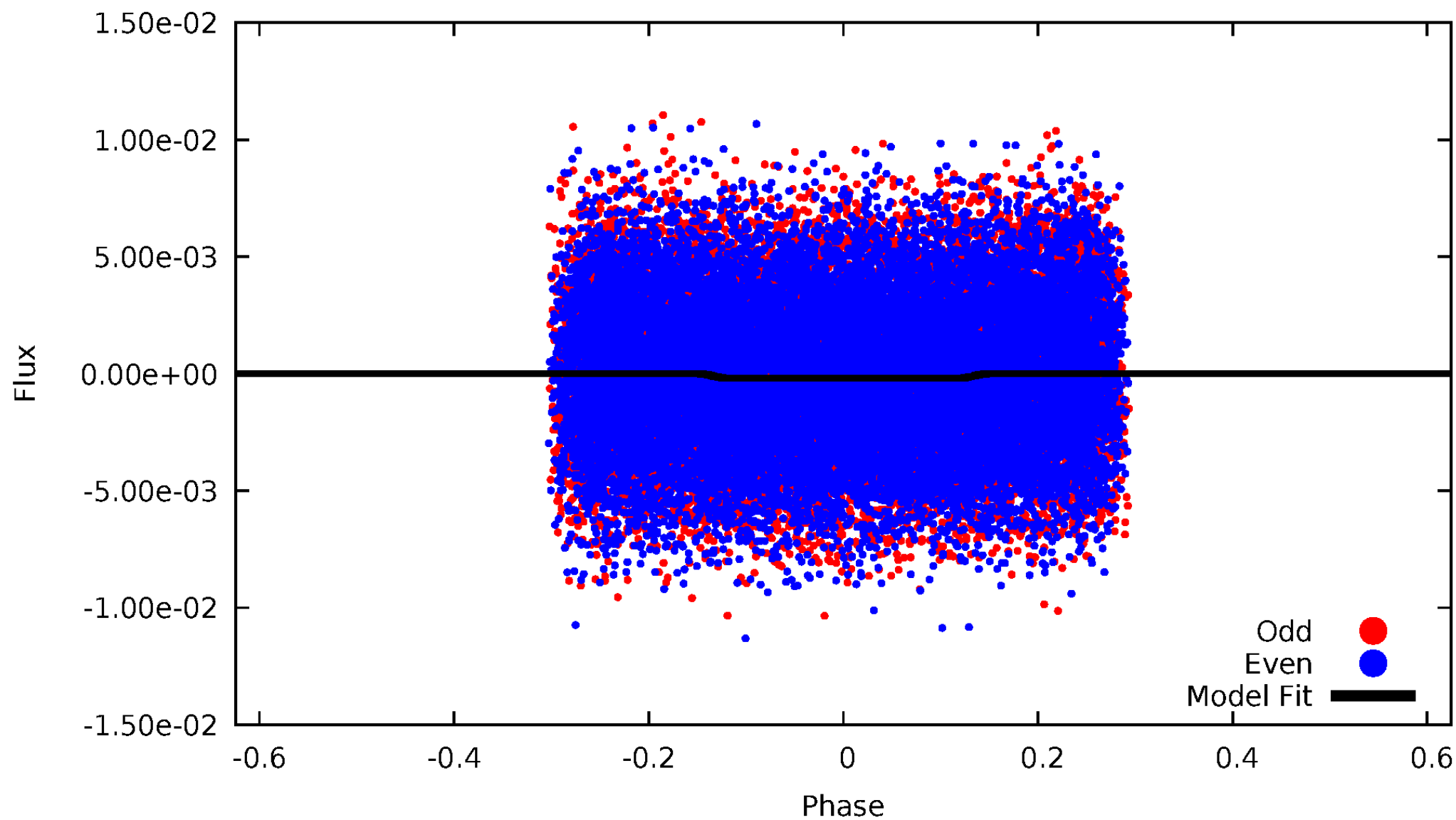
TCE 005298466-02





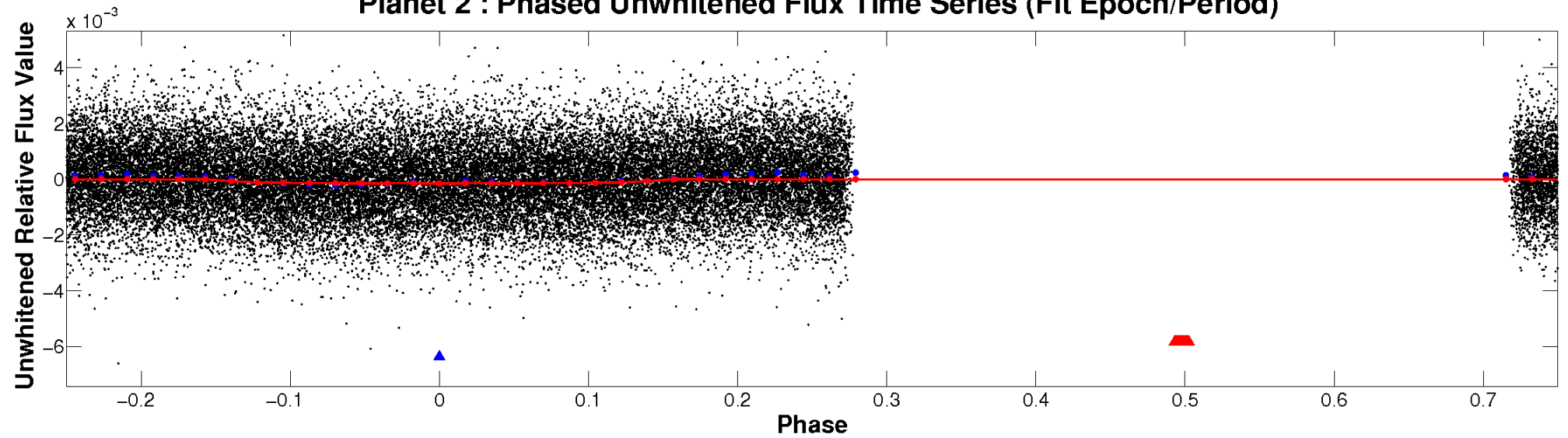
# ALT Odd/Even

TCE 005298466-02

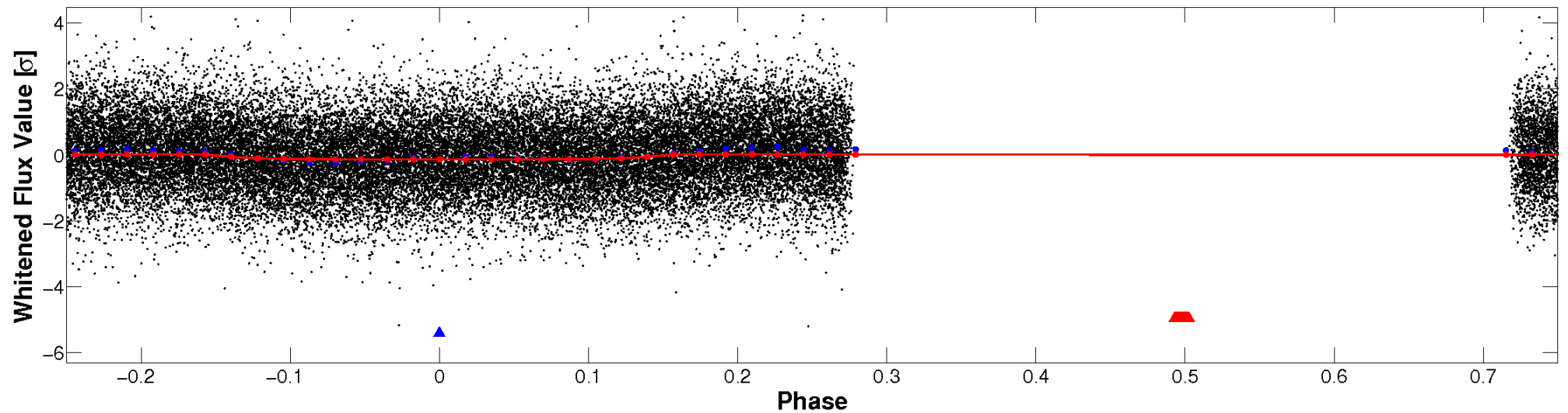


# Non-Whitened Vs. Whitened Light Curve

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

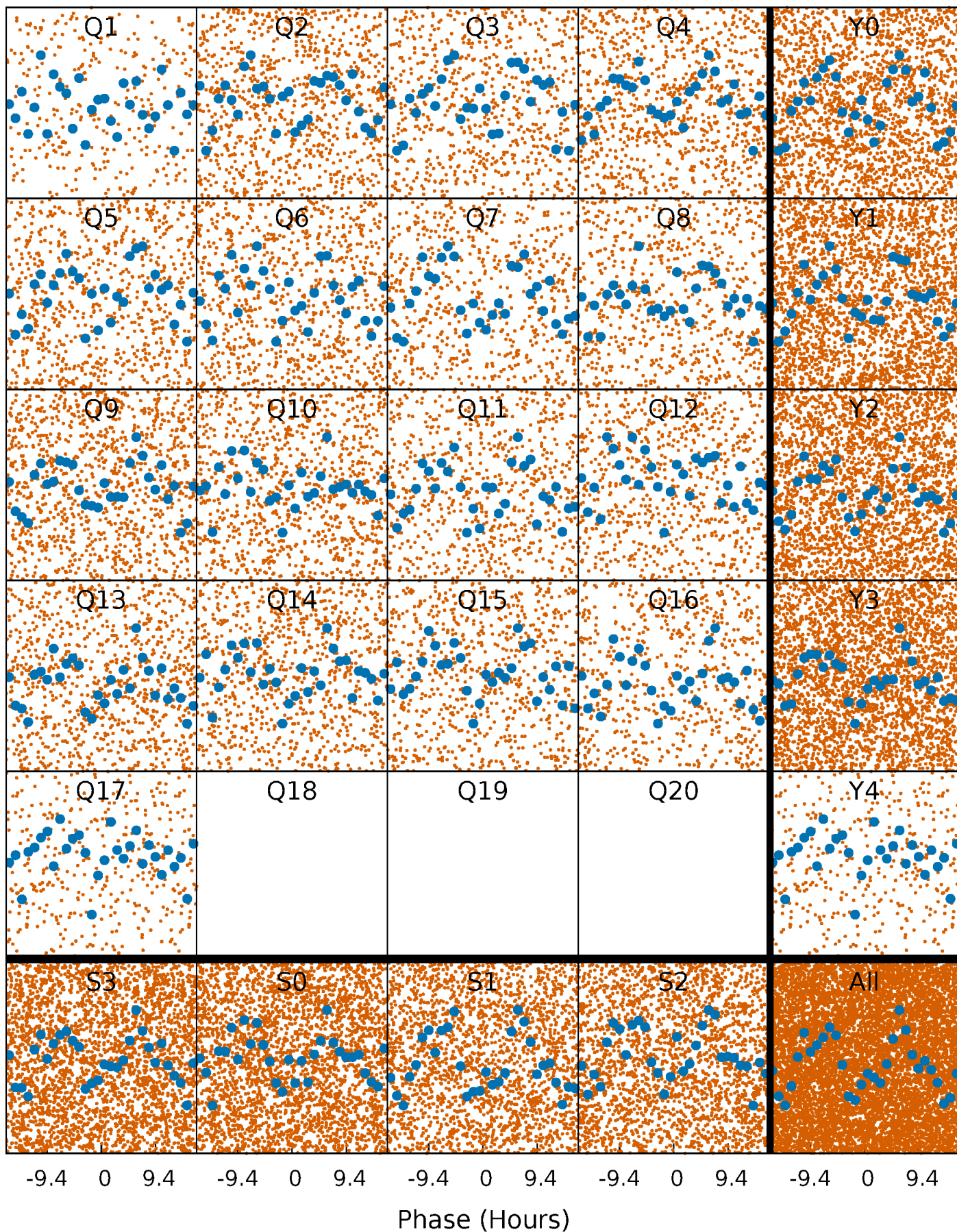


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



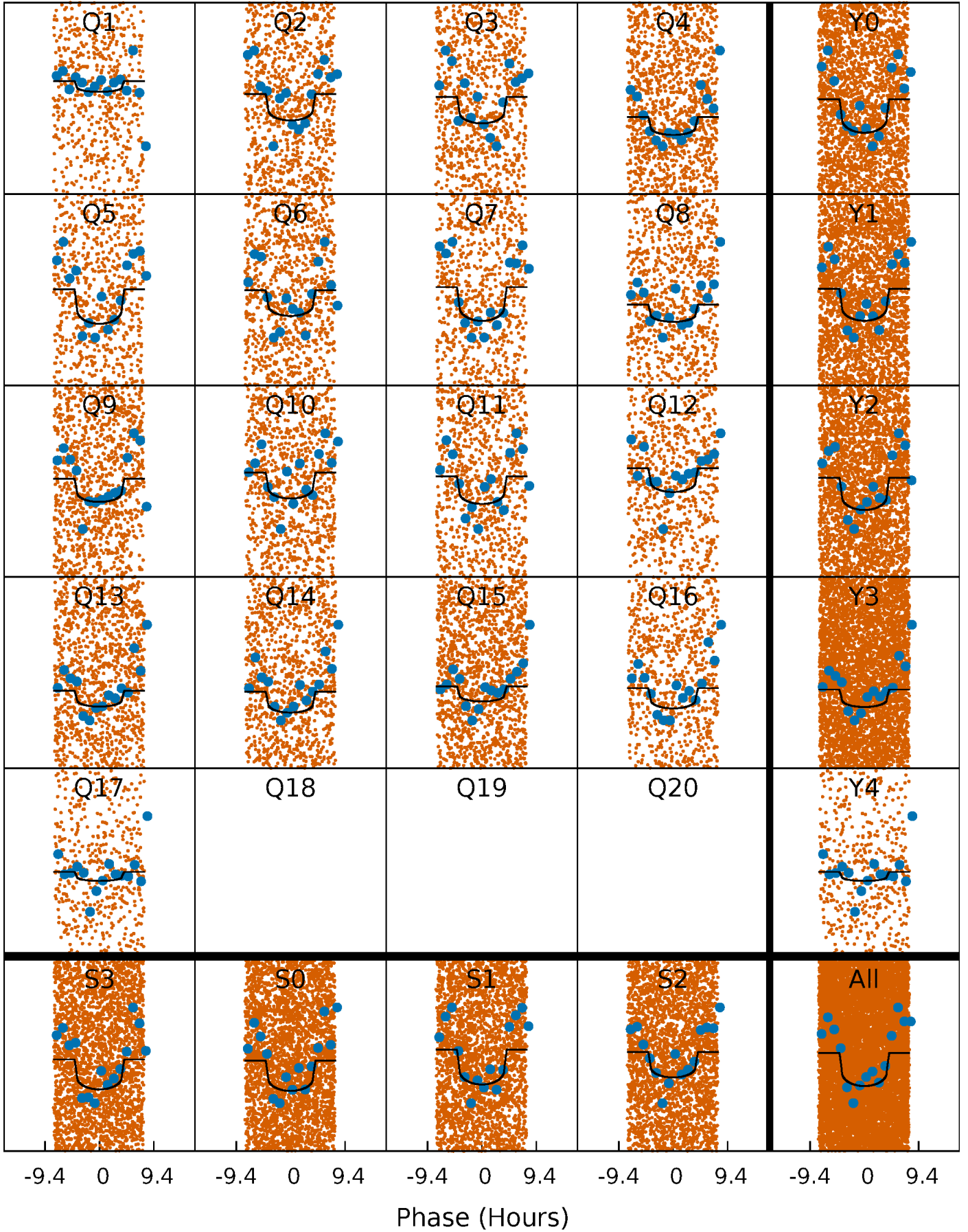
# PDC Quarter-Phased Transit Curves

TCE 005298466-02 P= 1.171317 Days  $T_0=131.771823$  (BKJD)



# DV Quarter-Phased Transit Curves

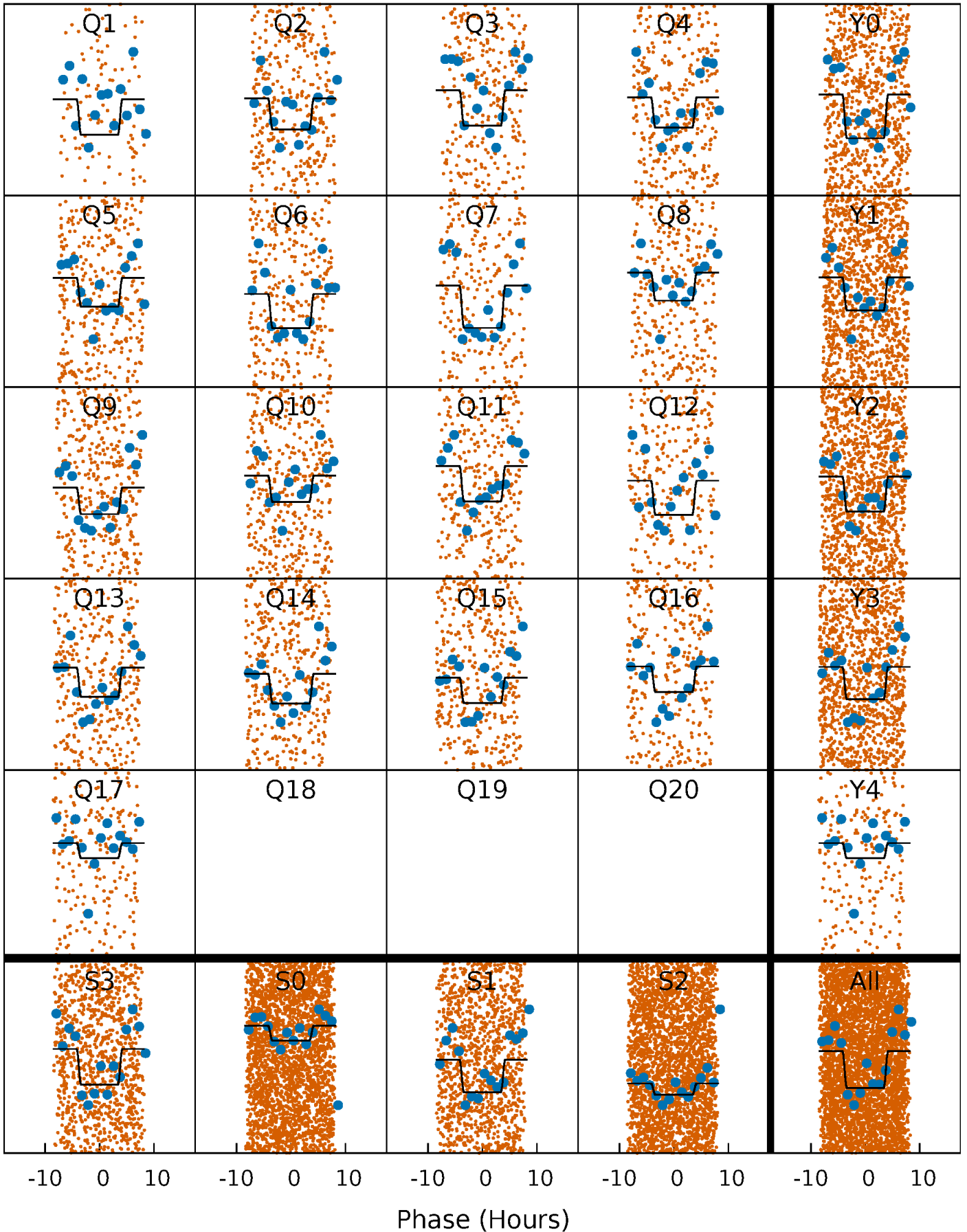
TCE 005298466-02   P= 1.171317 Days    $T_0=131.771823$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 005298466-02   P= 1.171370 Days    $T_0=131.742409$  (BKJD)

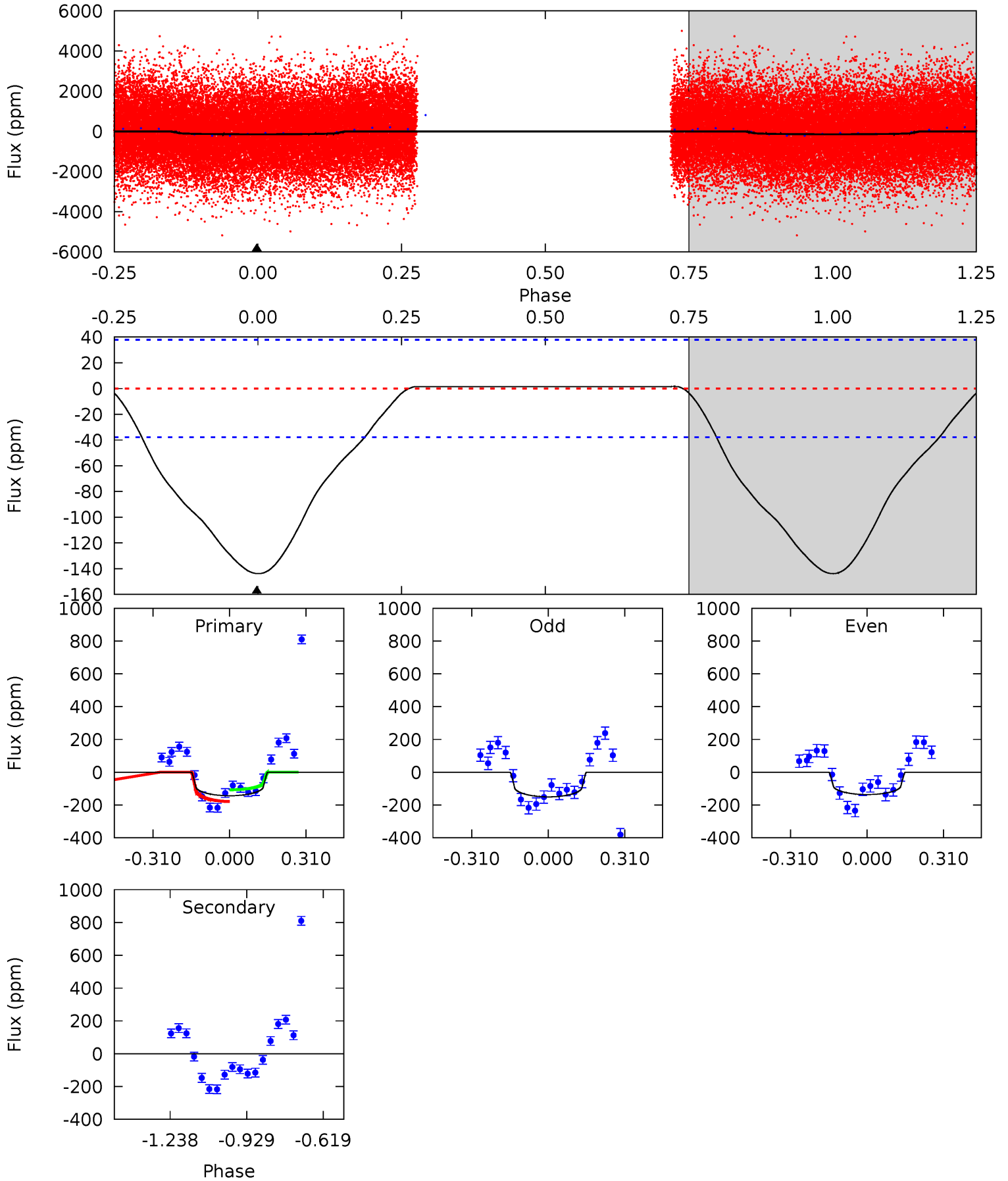




# DV Model-Shift Uniqueness Test

005298466-02, P = 1.171317 Days, E = 130.600506 Days

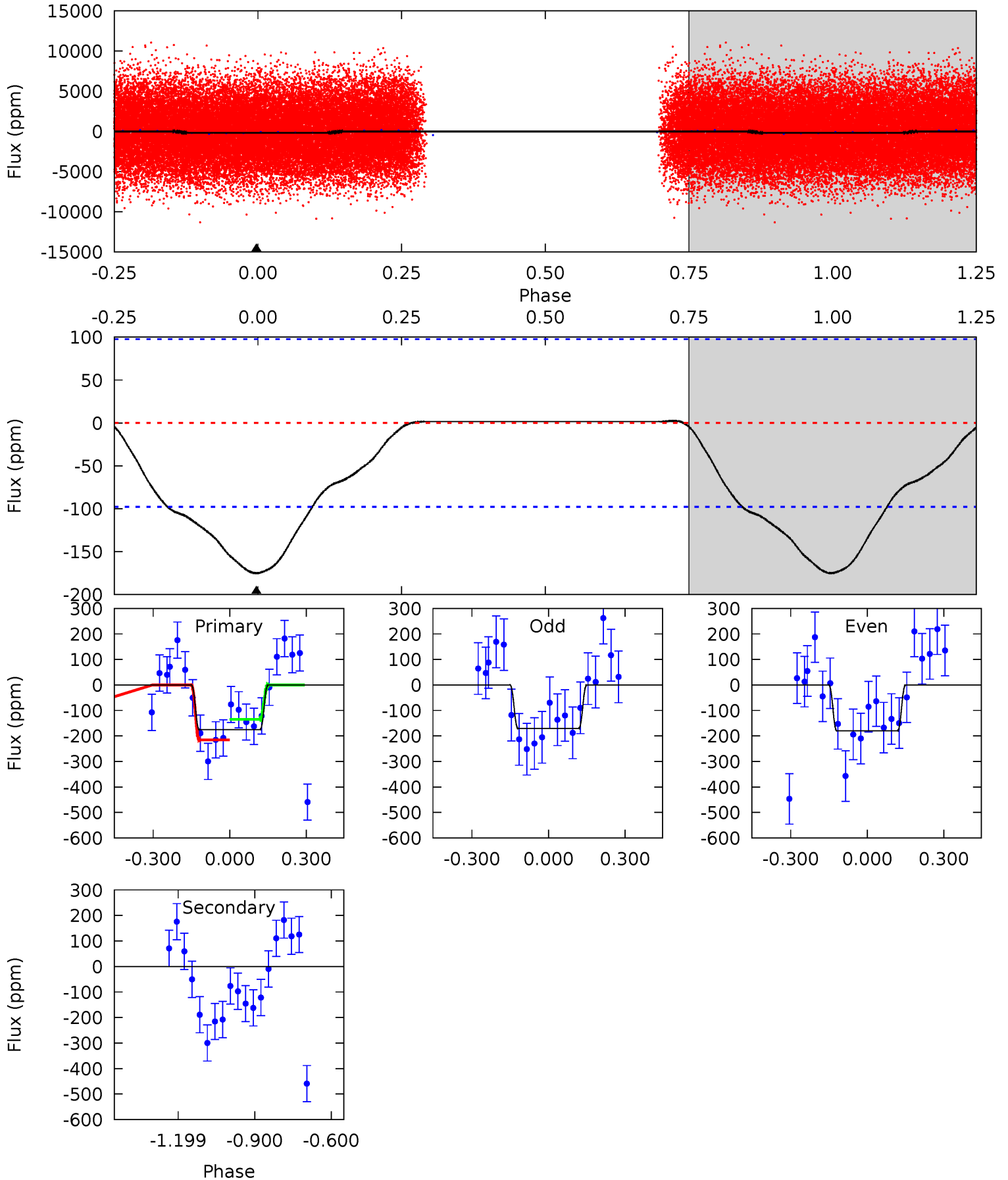
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	0	0	0	4.32	1.02	0.22	16.4	16.4	0	0	0.81	1.04	0.01	4.07



# Alt Model-Shift Uniqueness Test

005298466-02, P = 1.171370 Days, E = 130.571039 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
7.76	0	0	0	4.33	1.04	0.13	7.76	7.76	0	0	0.20	0.95	0.01	1.80



### Stellar Parameters For KIC 005298466

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7941^{+221}_{-331}$	$4.001^{+0.187}_{-0.136}$	$-0.060^{+0.200}_{-0.350}$	$2.239^{+0.479}_{-0.585}$	$1.833^{+0.136}_{-0.318}$	$0.230^{+0.254}_{-0.089}$
	+3%/-4%	+5%/-3%	+333%/-583%	+21%/-26%	+7%/-17%	+110%/-39%
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 005298466-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 9$	$3.32^{+2.38}_{-1.96}$	$4455^{+309}_{-304}$	$-3899^{+7371}_{-726}$	$0.006^{+0.438}_{-0.453}$
Alt.	$0 \pm 23$	$3.60^{+2.44}_{-2.14}$	$4461^{+292}_{-333}$	$-3944^{+8111}_{-1357}$	$-0.014^{+0.754}_{-1.131}$

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

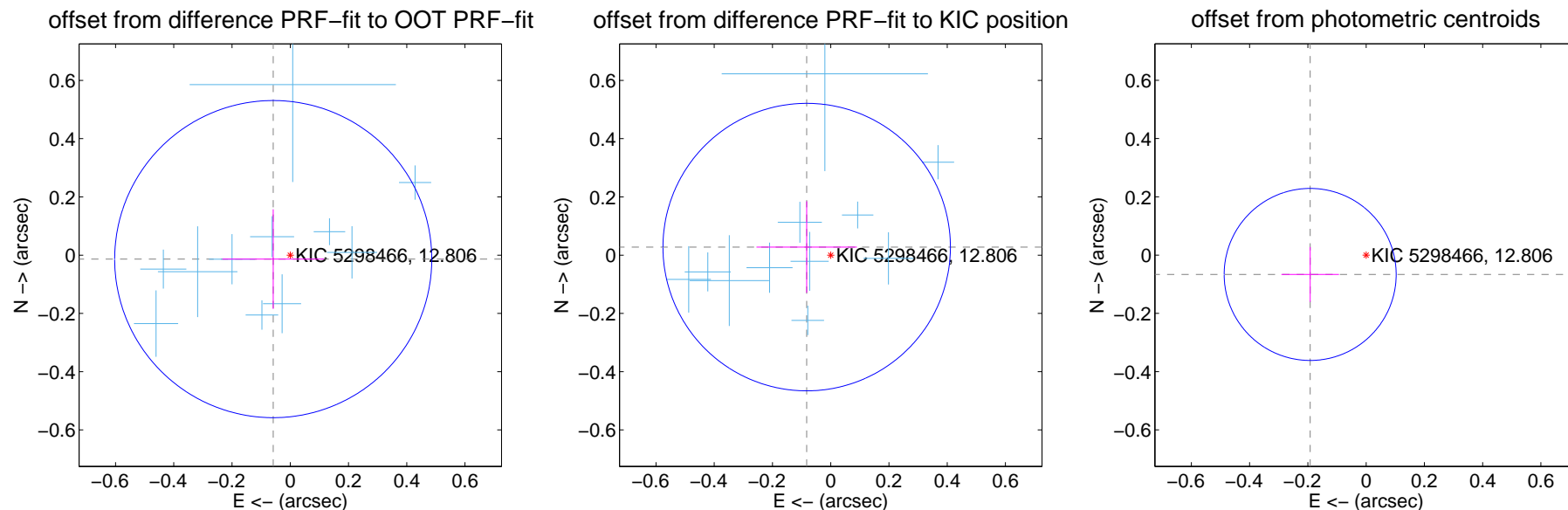
## DV Centroid Data

Supplemental centroid analysis for 005298466-02. Kepler magnitude: 12.81. Transit SNR 16.06

There are 17 quarters with good PRF difference image offsets

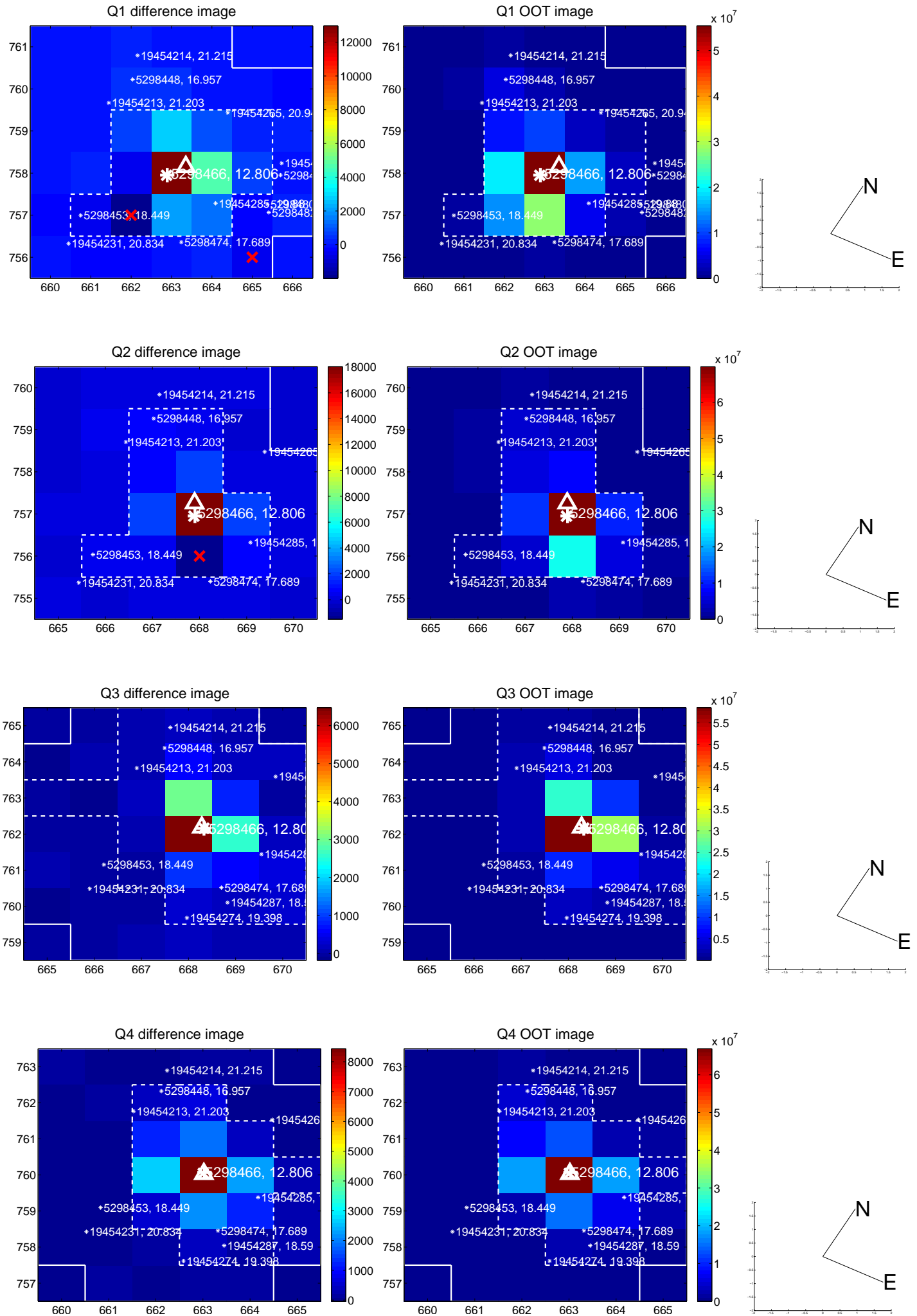
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.060 \pm 0.181$	0.33	$0.059 \pm 0.174$	$-0.014 \pm 0.171$
PRF-fit source offset from KIC position	$0.087 \pm 0.164$	0.53	$0.083 \pm 0.172$	$0.028 \pm 0.157$
photometric centroid source offset	$0.20 \pm 0.10$	2.07	$0.19 \pm 0.10$	$-0.07 \pm 0.09$



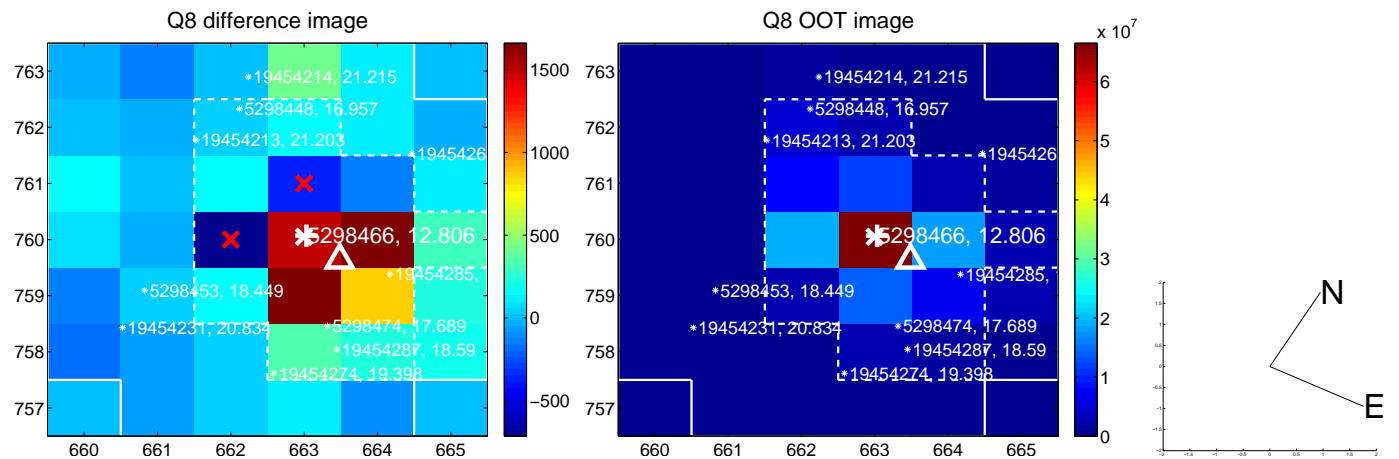
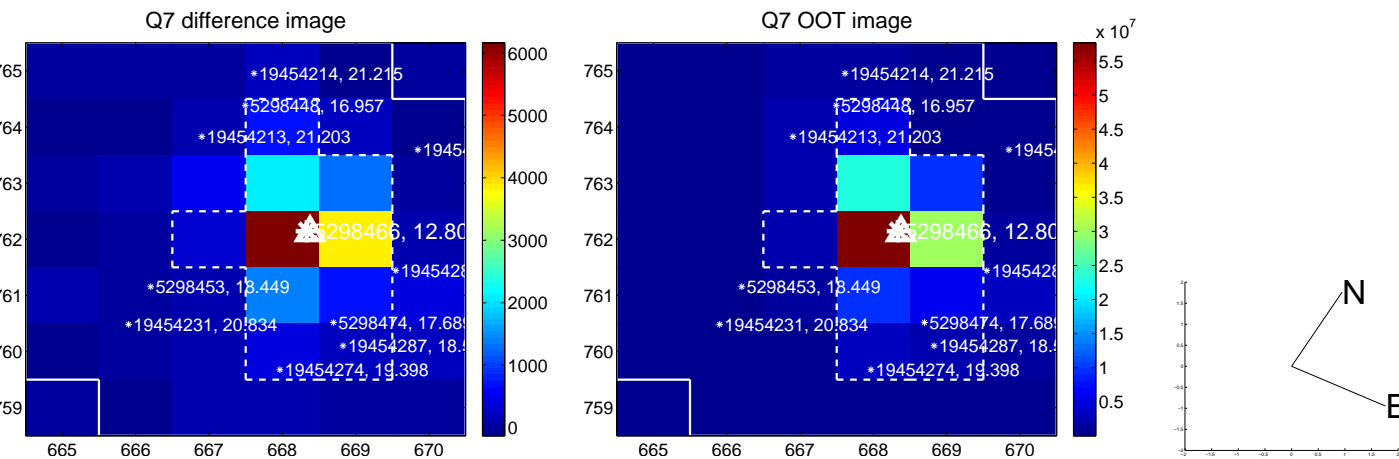
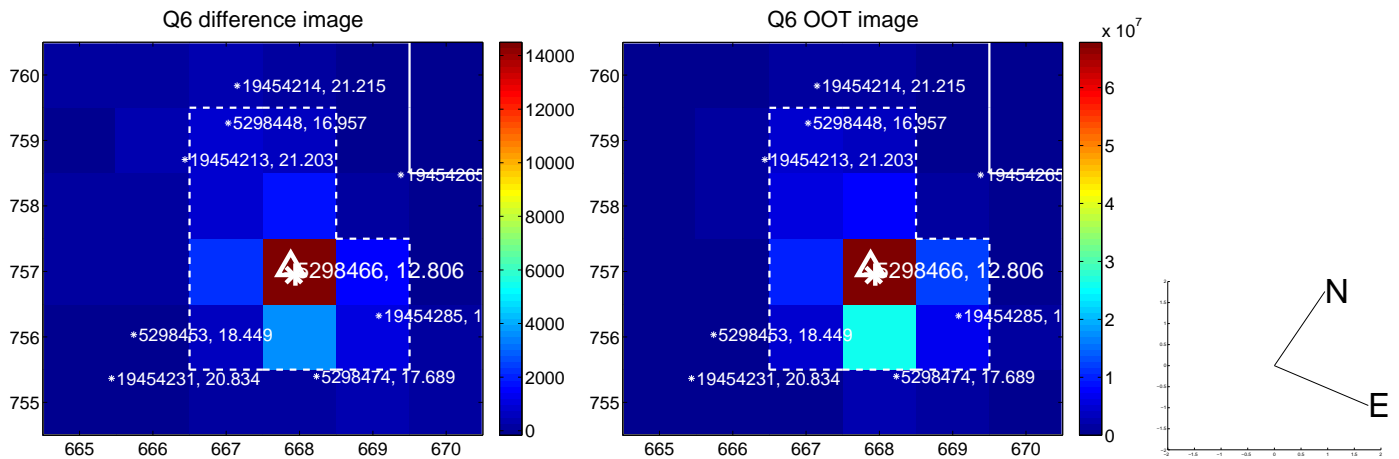
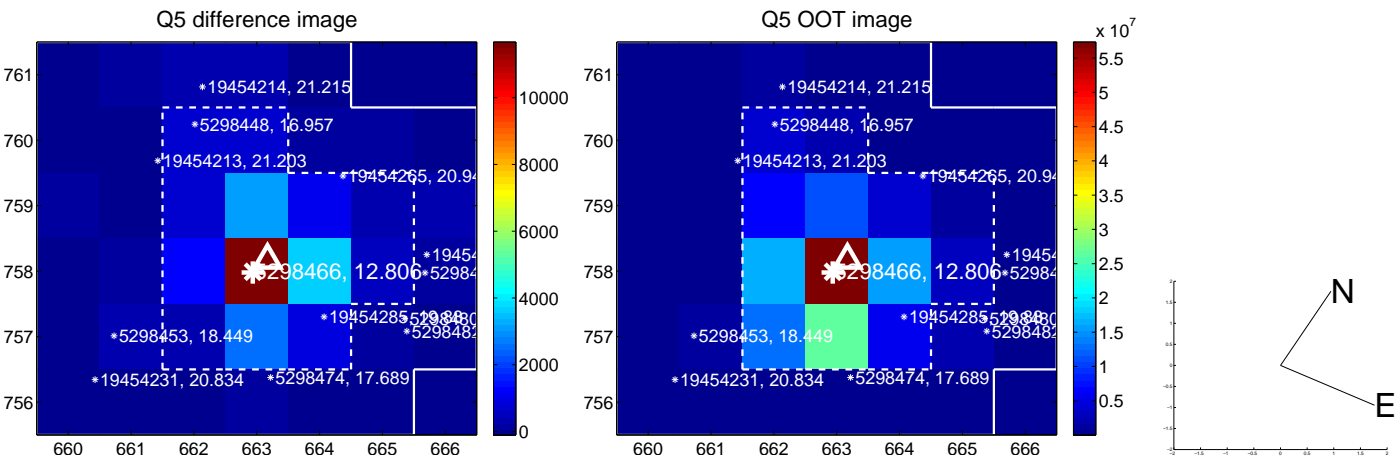
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



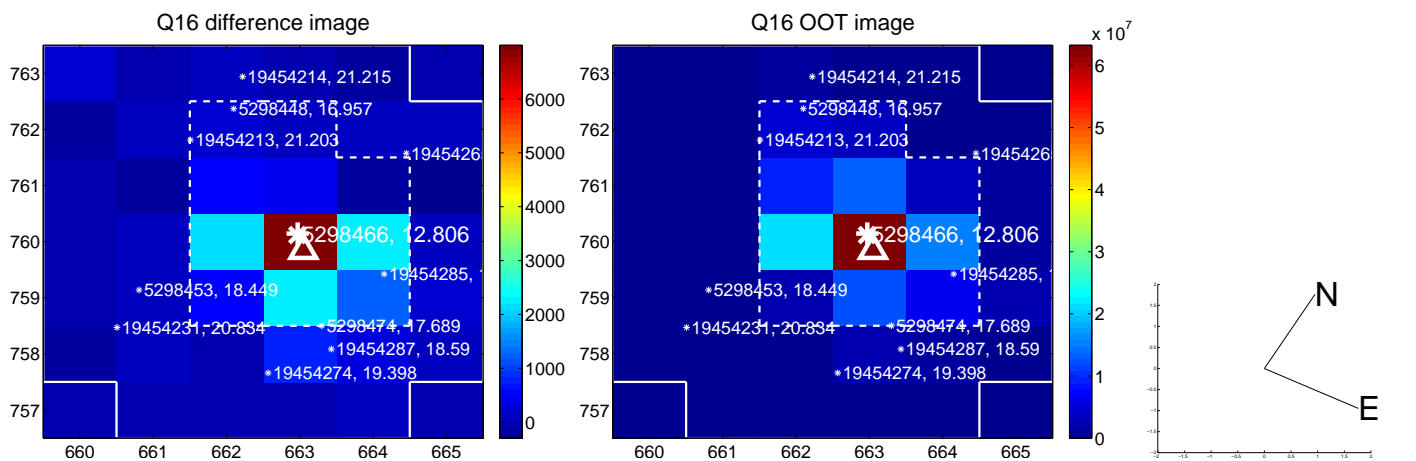
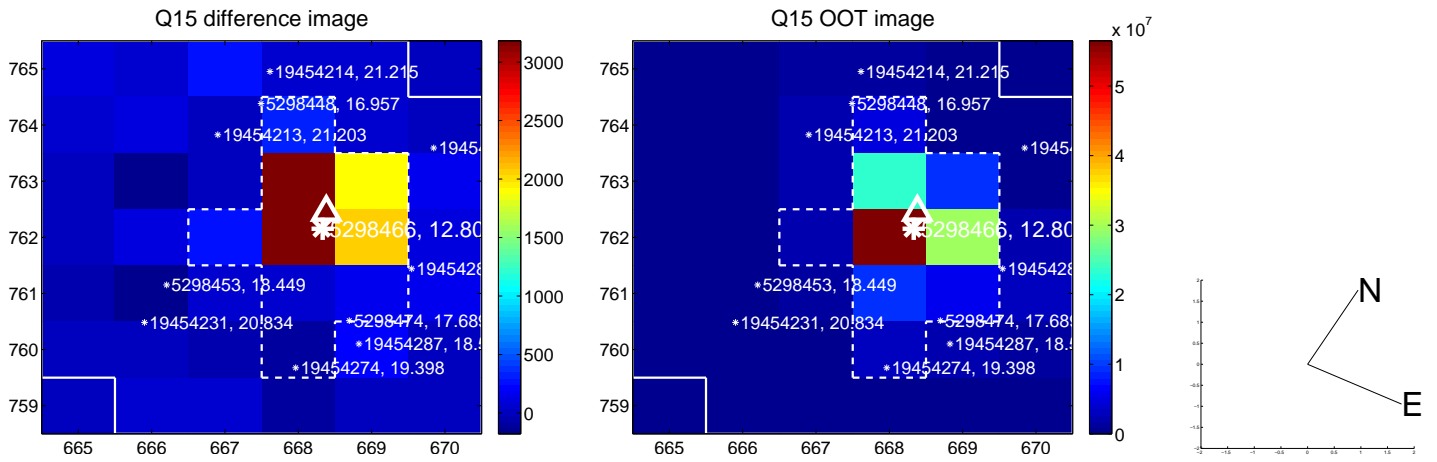
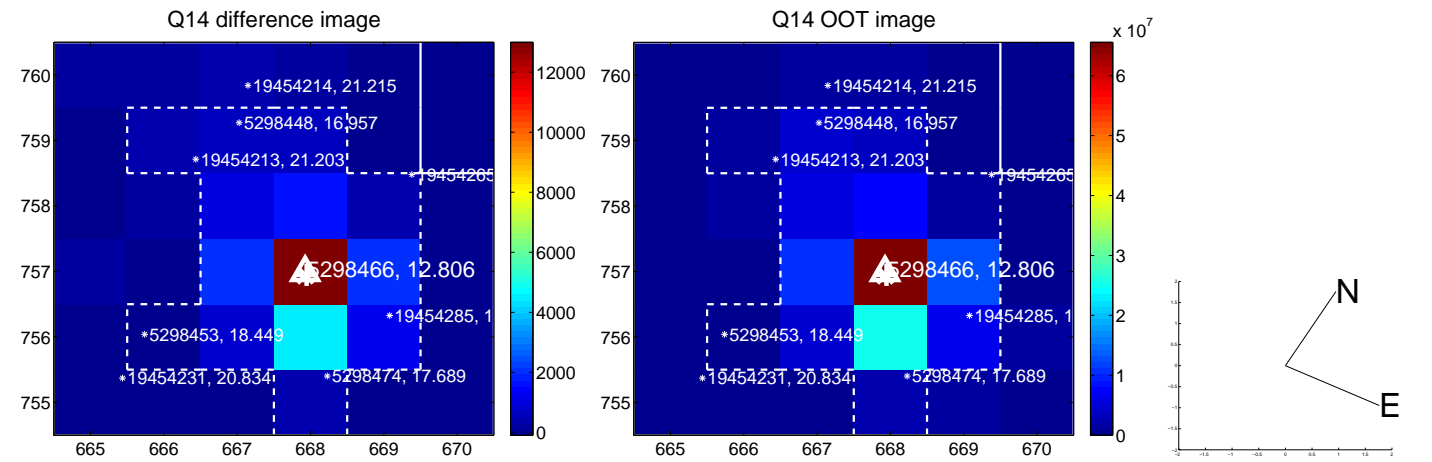
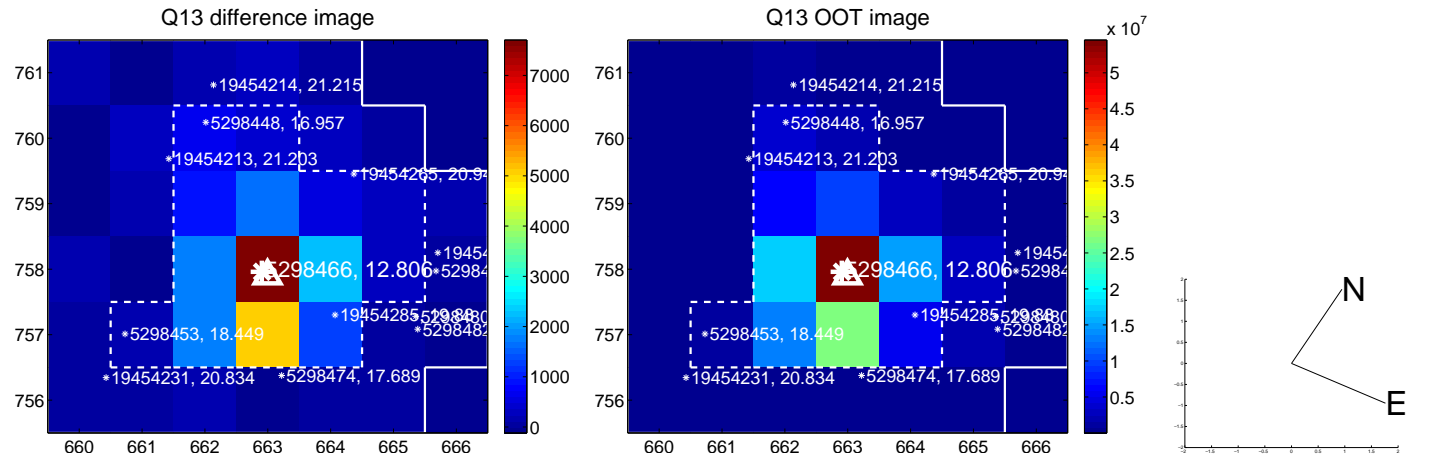


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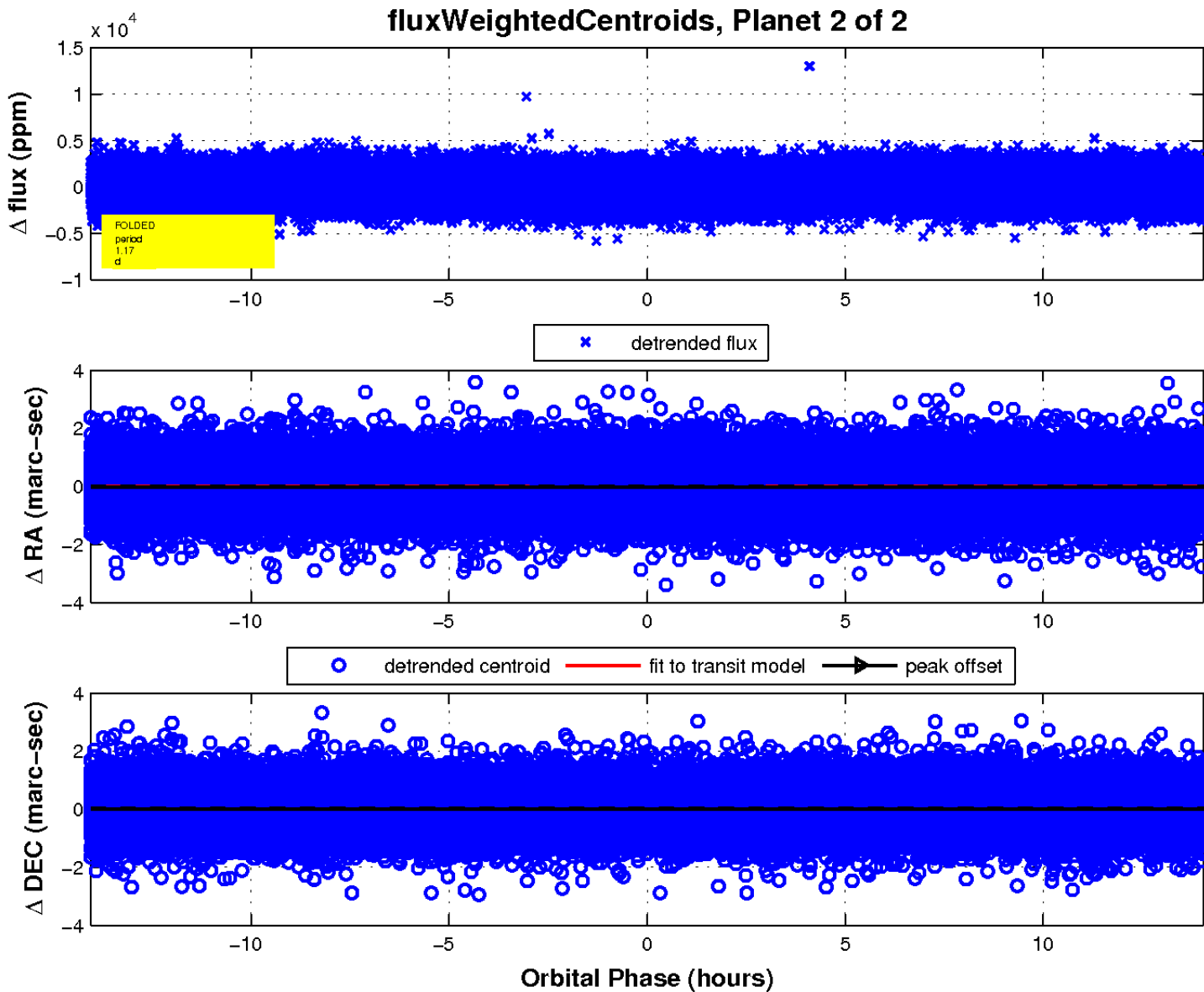
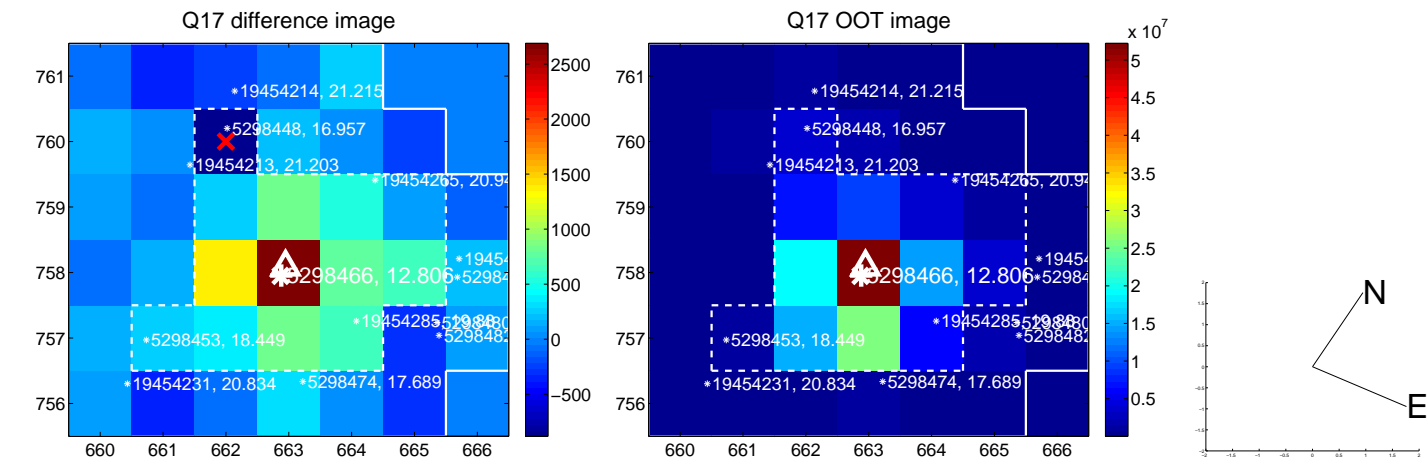




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UKIRT Image

Declination

