

# KIC 006949204

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006949204-01	OBS	No	2.141463	132.398258	27.6	4.483	10.4	9.8	3.00	7081	1.79	13340.42
006949204-02	OBS	No	2.141815	133.093061	3.0	18.051	8.0	2.0	3.00	7081	0.57	13337.49

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006949204-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006949204-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

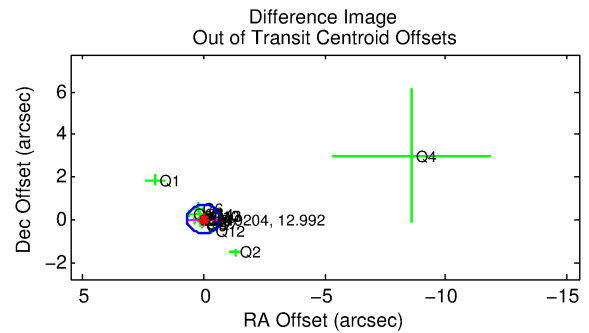
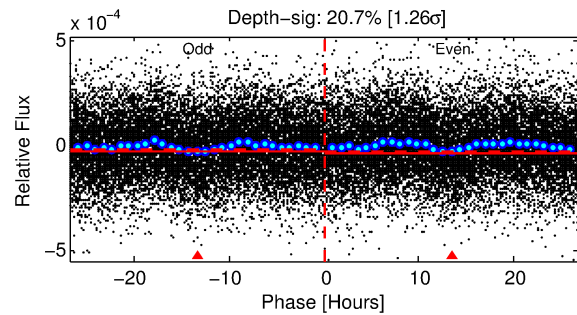
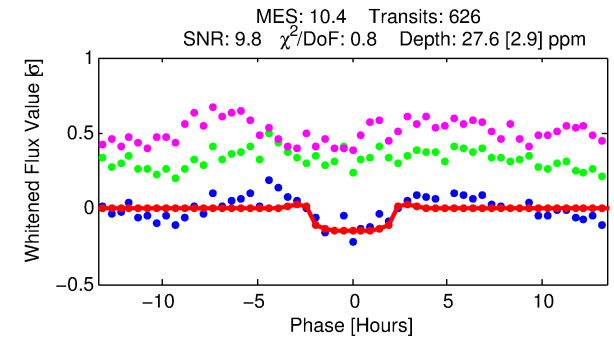
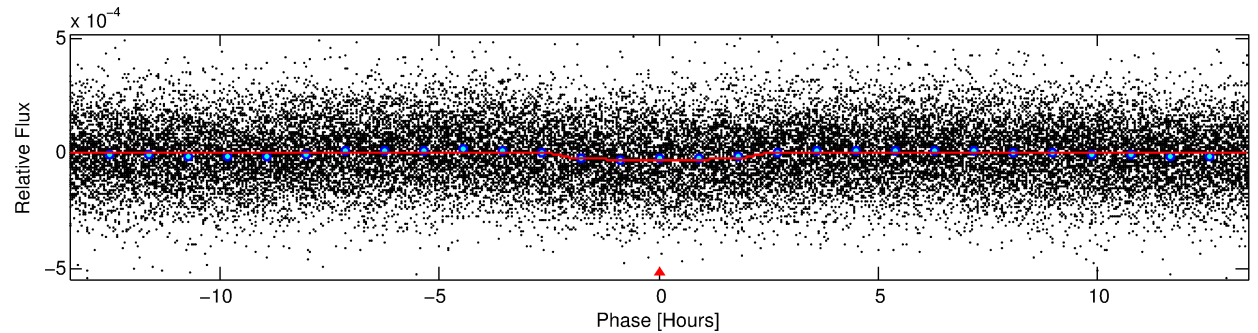
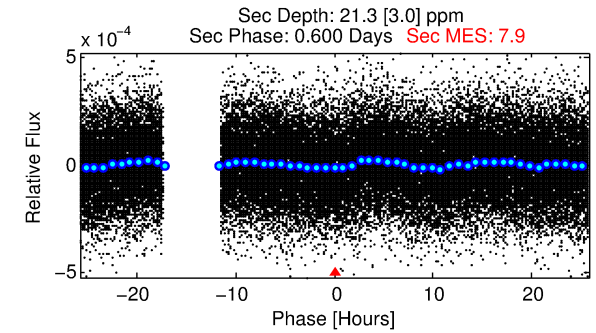
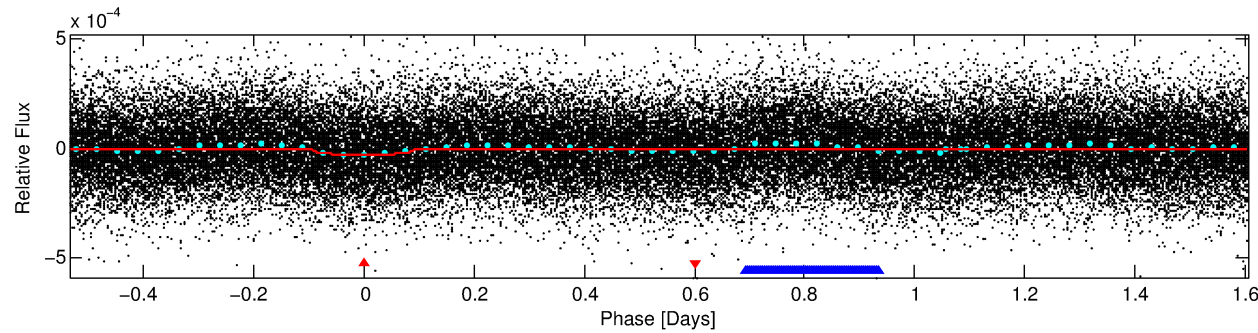
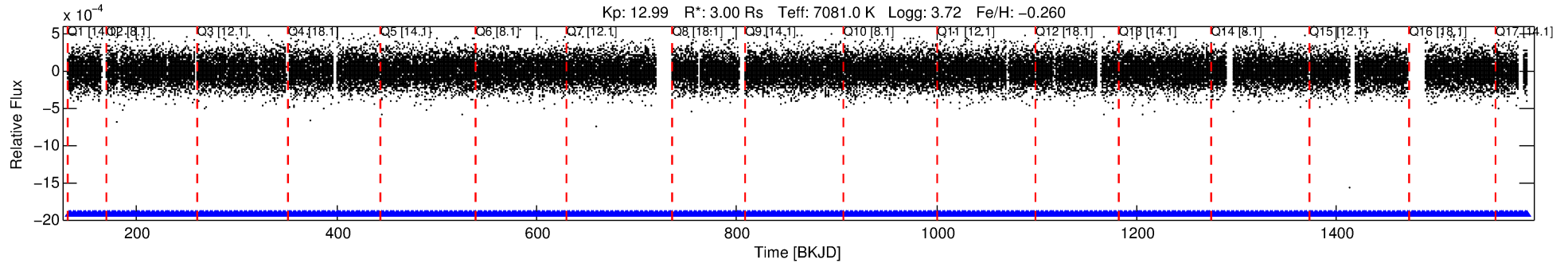
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006949204-01

No Significant Match Found

# DV One-Page Summary

KIC: 6949204 Candidate: 1 of 2 Period: 2.141 d



## DV Fit Results:

Period = 2.14146 [0.00002] d  
Epoch = 132.3983 [0.0041] BKJD  
Rp/R\* = 0.0055 [0.0013]  
a/R\* = 2.14 [2.34]  
b = 0.85 [0.45]  
Seff = 13340.42 [6853.33]  
Teq = 2740 [352] K  
Rp = 1.79 [0.75] Re  
a = 0.0390 [0.0123] AU  
Ag = 5.59 [3.99] [1.15σ]  
Teffp = 6515 [861] K [4.06σ]

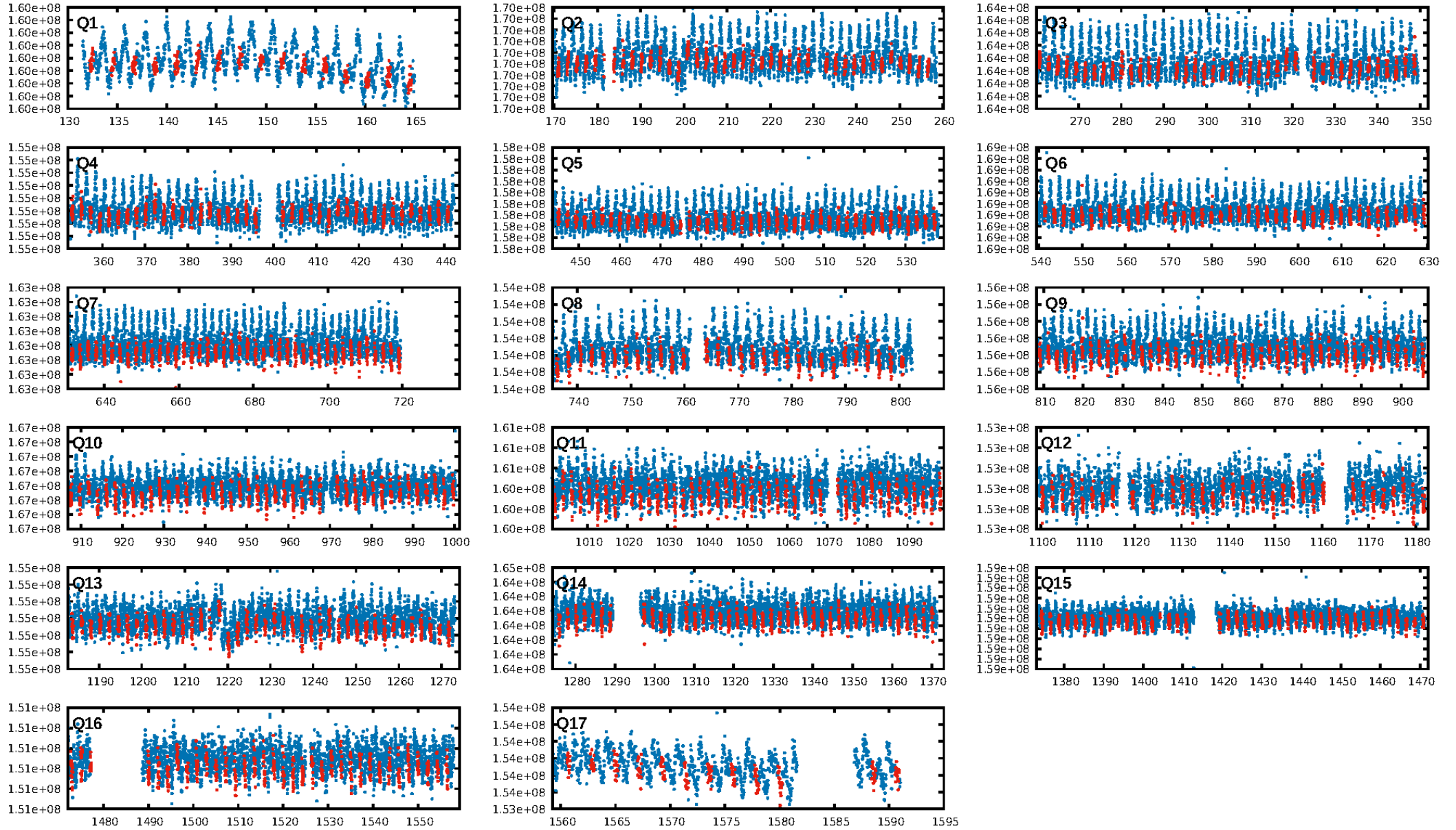
## DV Diagnostic Results:

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 [598/598]  
GhostDiagnostic-chr: 1.609  
Centroid-sig: 19.2%  
Centroid-so: 0.617 arcsec [0.81σ]  
OotOffset-rm: 0.041 arcsec [0.18σ]  
OotOffset-st: 4/3/4/4 [15]  
KicOffset-rm: 0.100 arcsec [0.42σ]  
KicOffset-st: 4/3/4/4 [15]  
DiffImageQuality-fgm: 0.80 [12/15]  
DiffImageOverlap-fno: 0.65 [11/17]

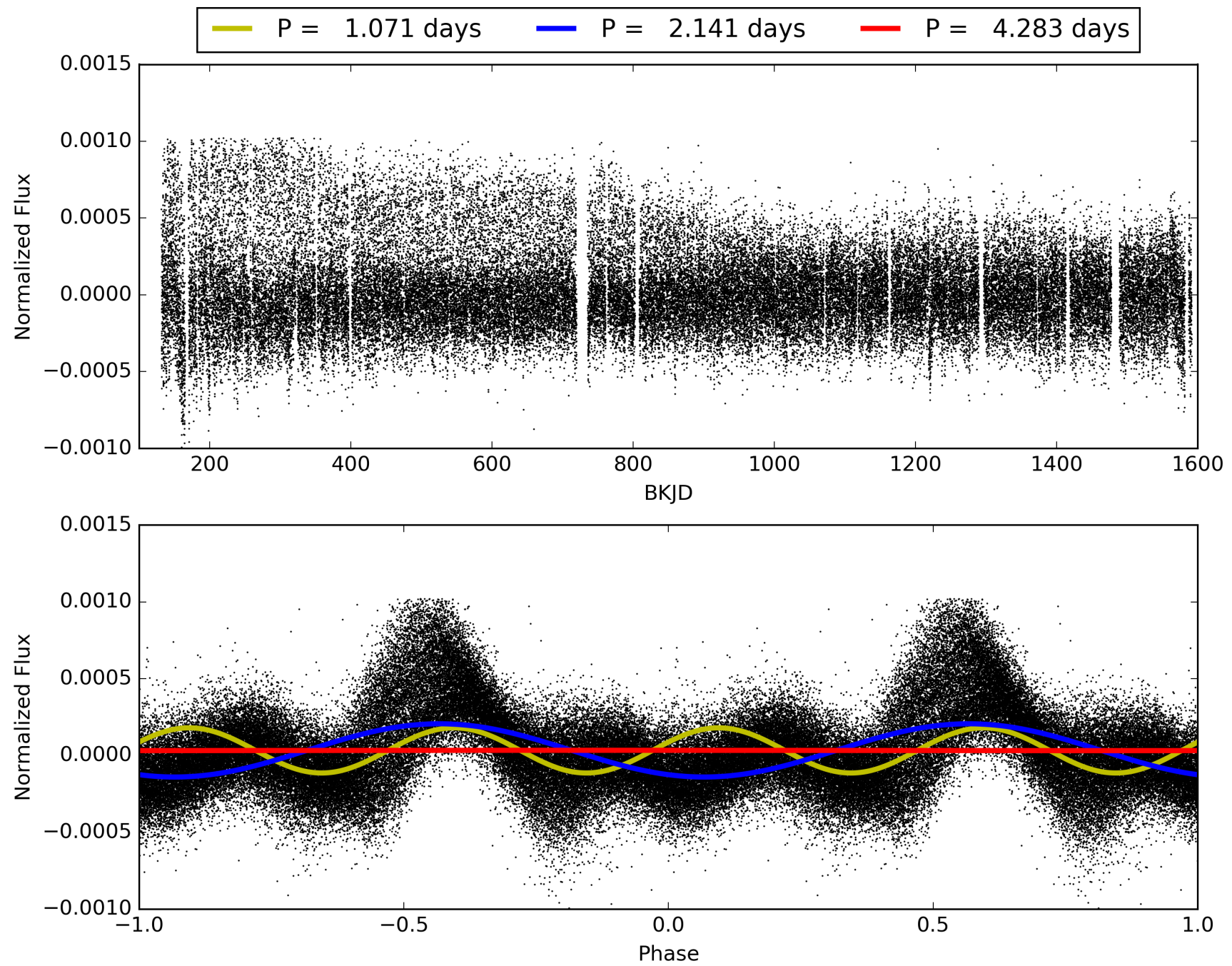
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:07:45 Z

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

# TCE 006949204-01, PDC Light Curves

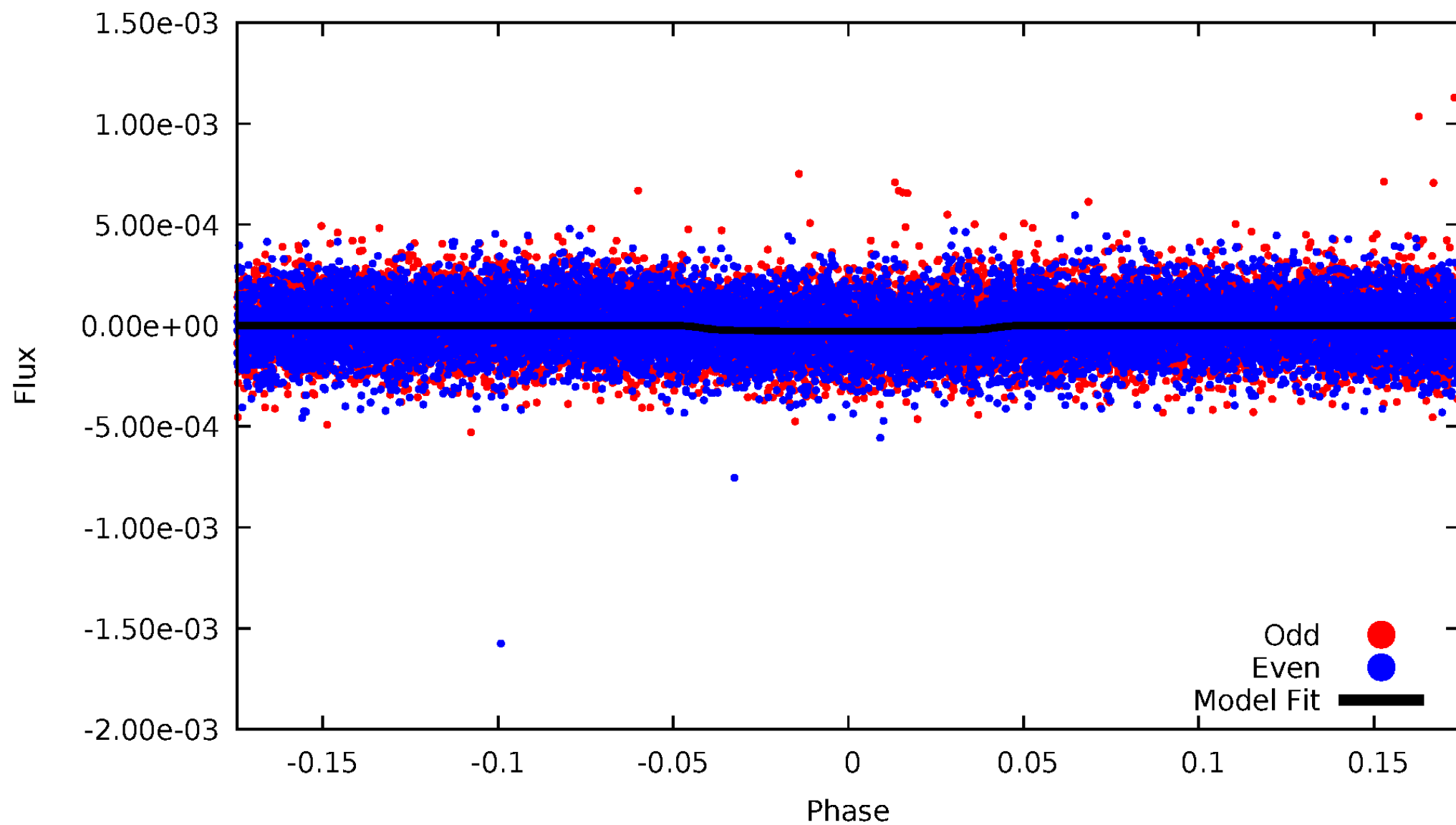


TCE 006949204-01



# DV Odd/Even

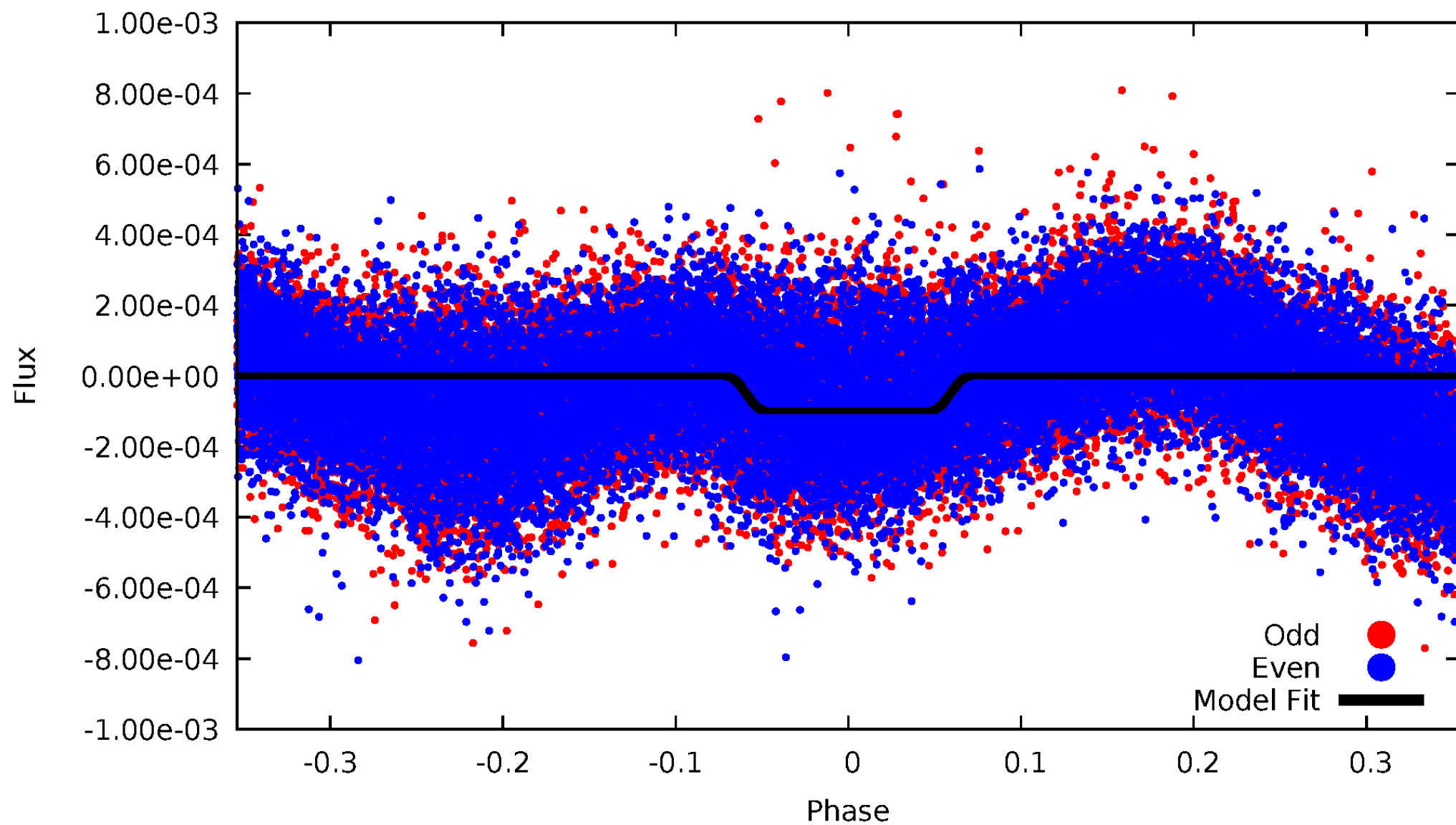
TCE 006949204-01



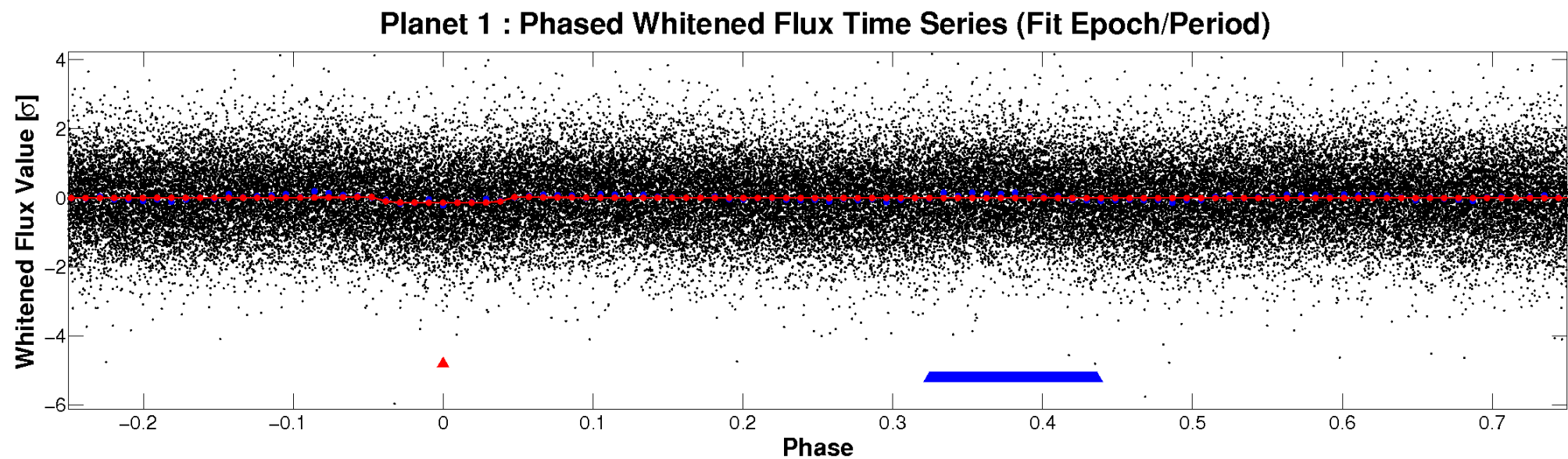
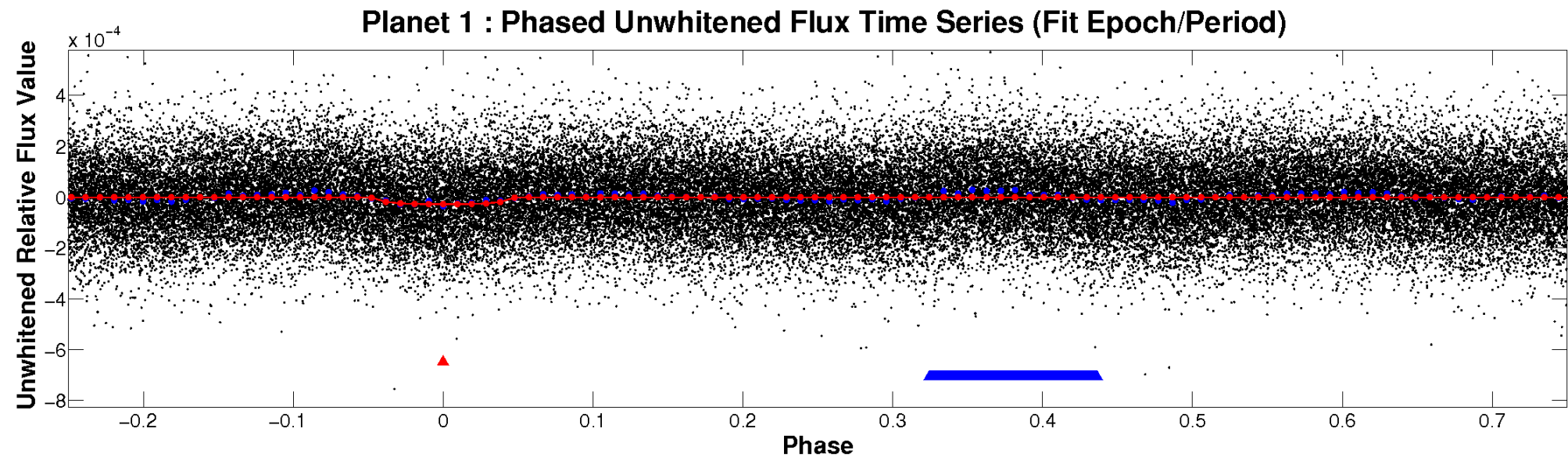


# ALT Odd/Even

TCE 006949204-01

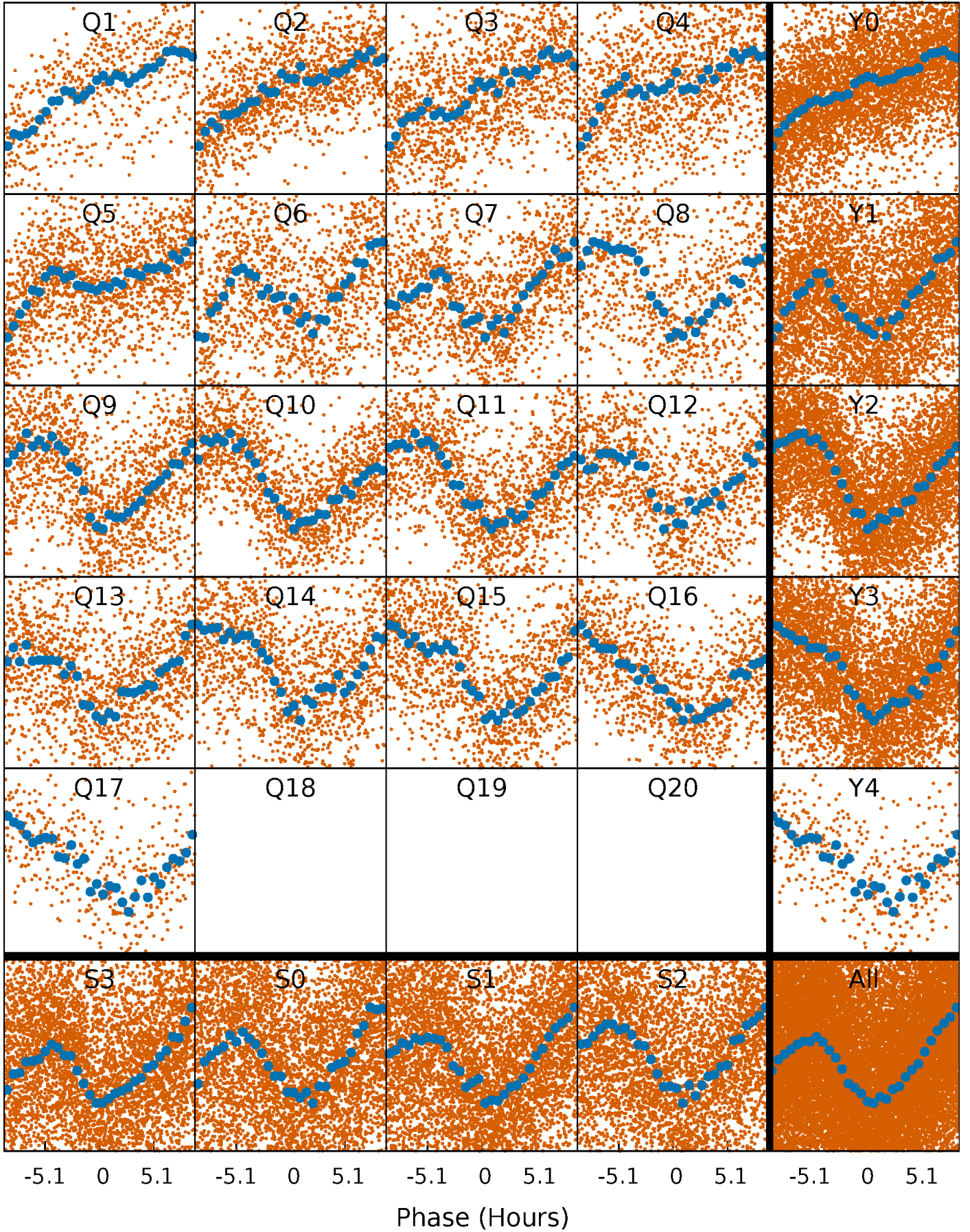


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

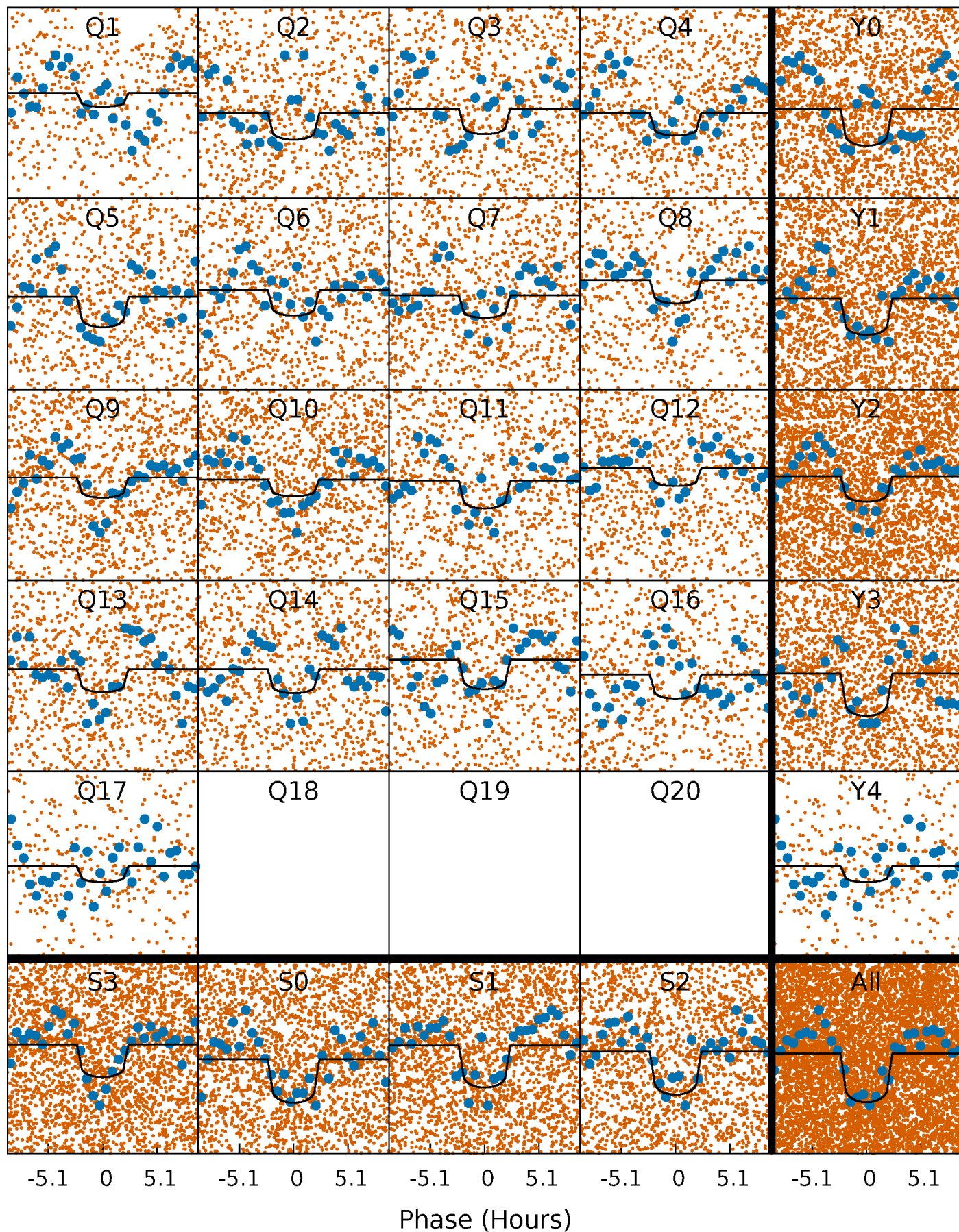
TCE 006949204-01 P= 2.141463 Days  $T_0=132.398258$  (BKJD)





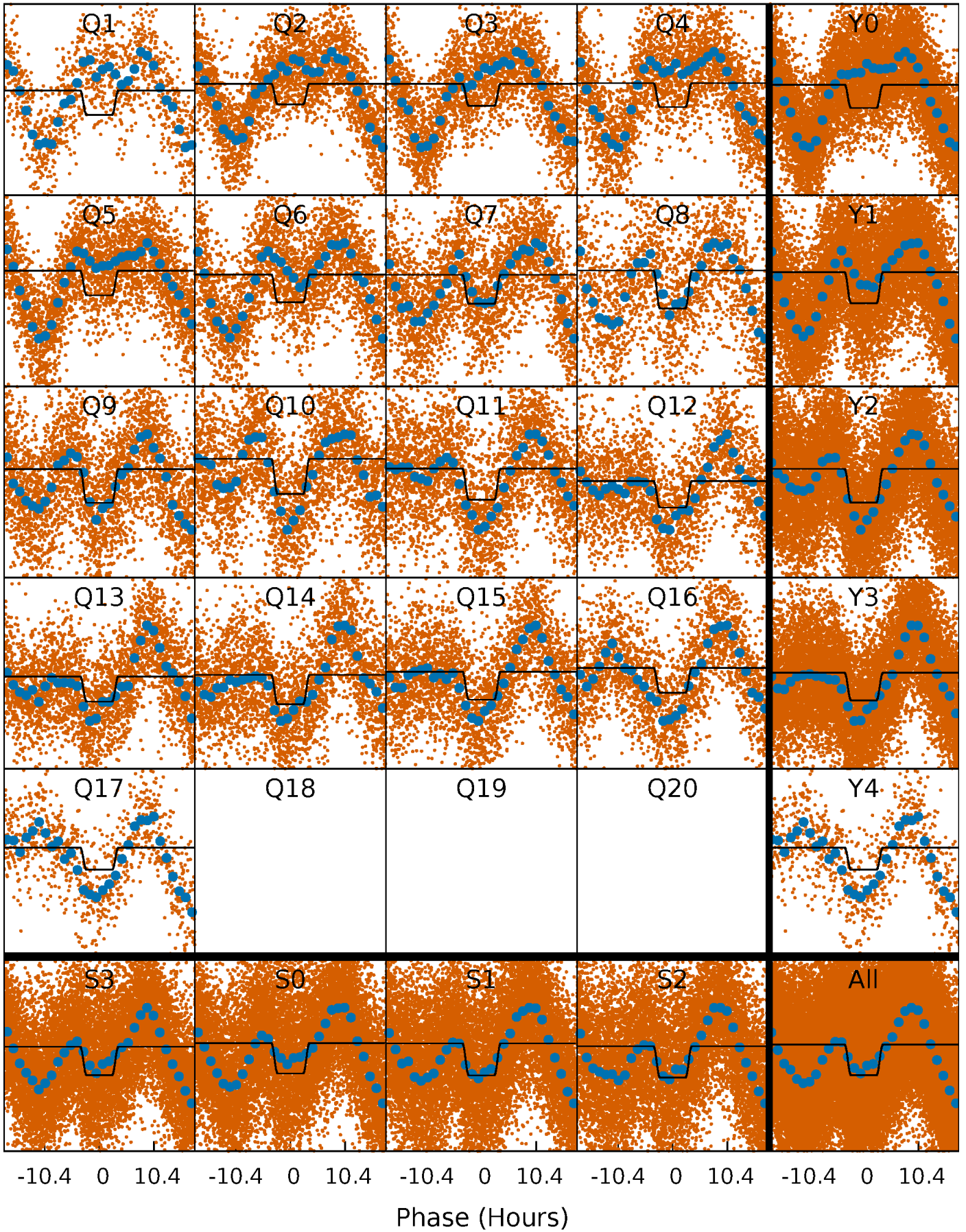
# DV Quarter-Phased Transit Curves

TCE 006949204-01 P= 2.141463 Days  $T_0=132.398258$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006949204-01 P= 2.141703 Days  $T_0=132.347054$  (BKJD)

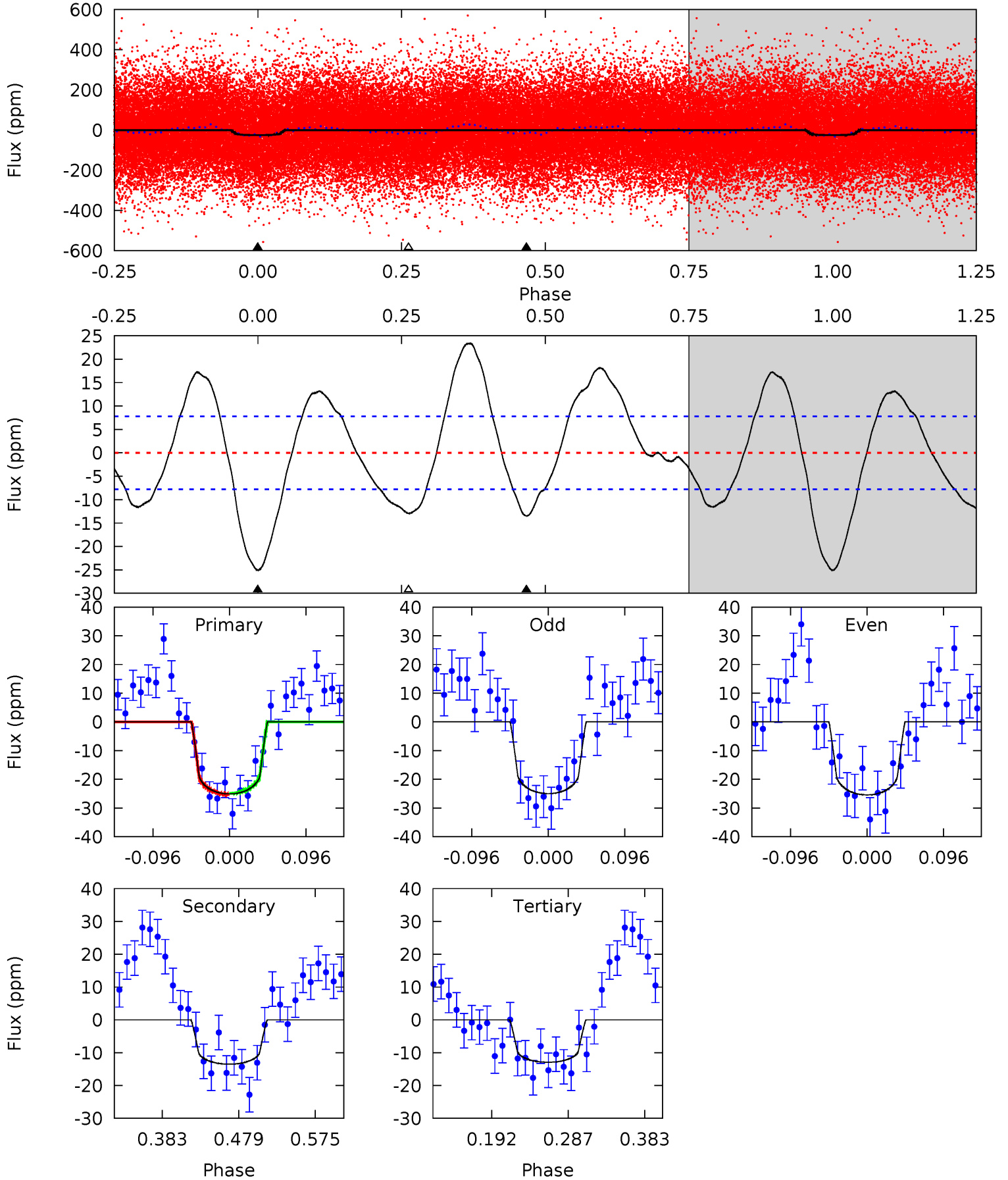




# DV Model-Shift Uniqueness Test

006949204-01, P = 2.141463 Days, E = 130.256795 Days

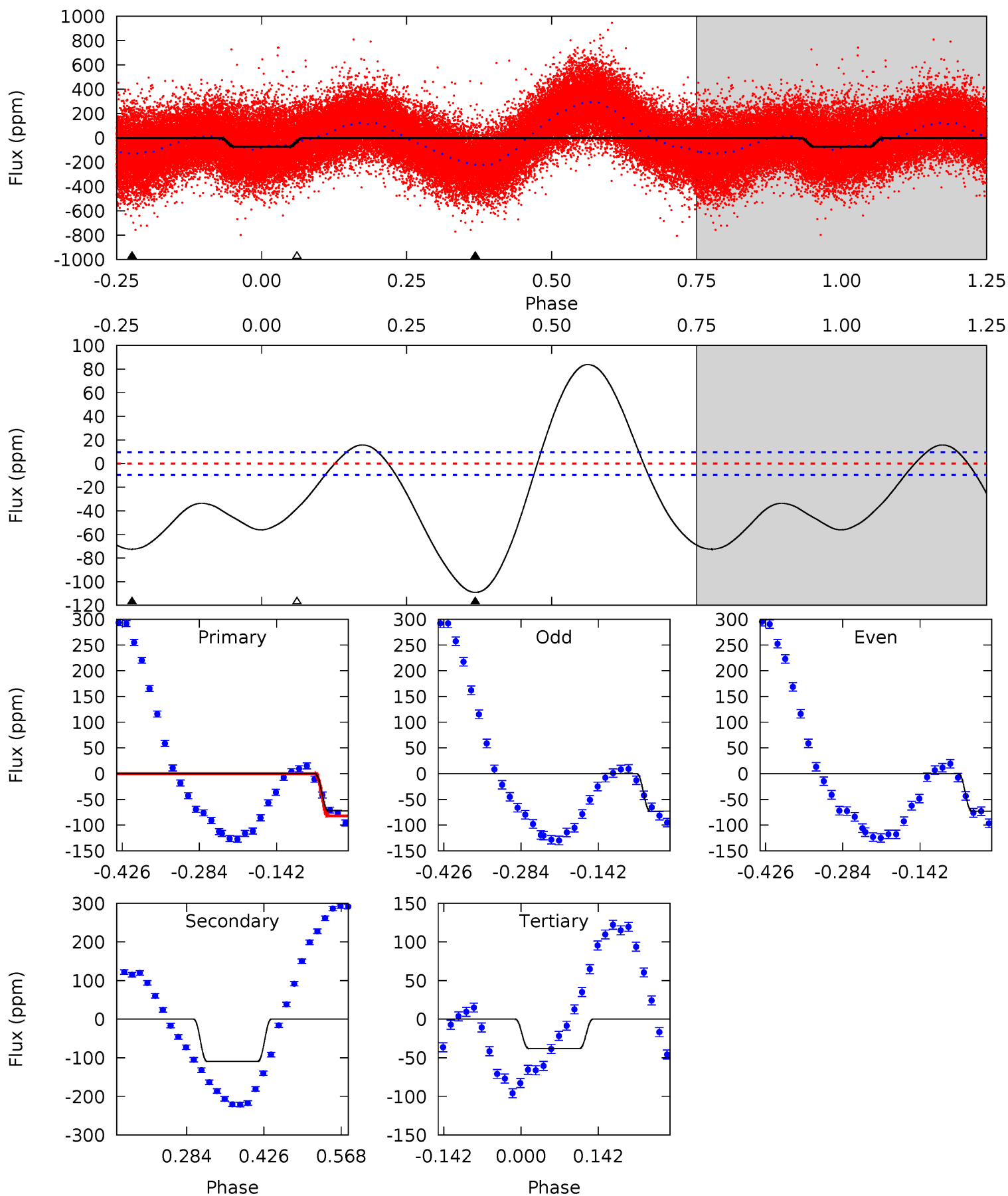
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	7.92	7.59	0	4.57	1.67	6.04	7.14	14.7	0.33	7.92	0.13	0.88	0.48	0.11



# Alt Model-Shift Uniqueness Test

006949204-01, P = 2.141703 Days, E = 130.205351 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
33.5	50.4	17.6	0	4.49	1.47	22.0	16.0	33.5	32.9	50.4	0.02	0.81	0.43	5.49





### Stellar Parameters For KIC 006949204

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7081^{+190}_{-233}$	$3.720^{+0.288}_{-0.072}$	$-0.260^{+0.300}_{-0.250}$	$3.001^{+0.436}_{-1.018}$	$1.722^{+0.165}_{-0.358}$	$0.090^{+0.191}_{-0.023}$
	+3%/-3%	+8%/-2%	+115%/-96%	+15%/-34%	+10%/-21%	+213%/-25%
Source	PHO1	FLK73	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 006949204-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-13 \pm 2$	$1.65^{+0.51}_{-0.47}$	$3740^{+222}_{-328}$	$5656^{+982}_{-634}$	$3.971^{+3.979}_{-1.550}$
Alt.	$-109 \pm 2$	$3.07^{+0.60}_{-0.63}$	$3728^{+202}_{-291}$	$7178^{+692}_{-534}$	$9.691^{+4.651}_{-2.777}$

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

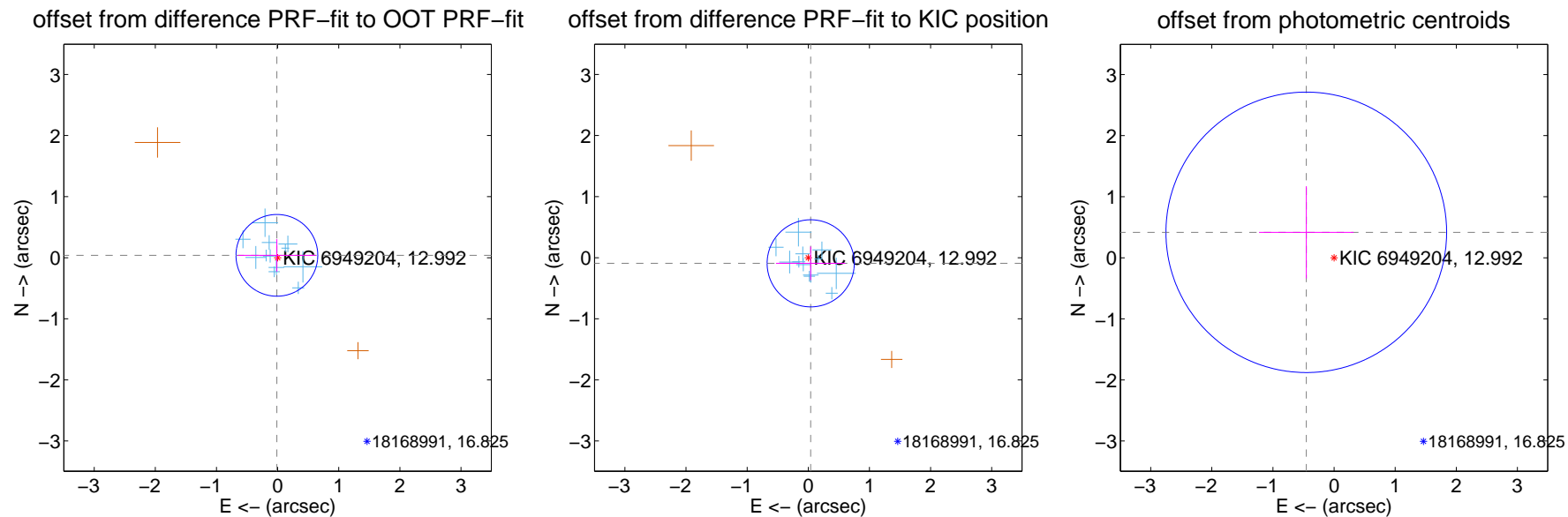
## DV Centroid Data

Supplemental centroid analysis for 006949204-01. Kepler magnitude: 12.99. Transit SNR 9.80

There are 12 quarters with good PRF difference image offsets

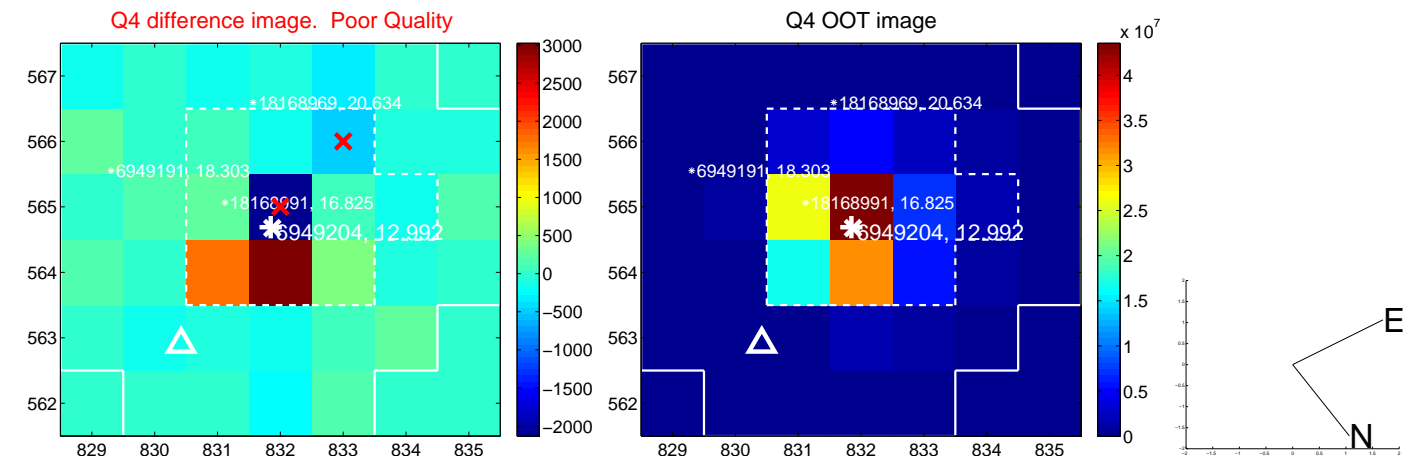
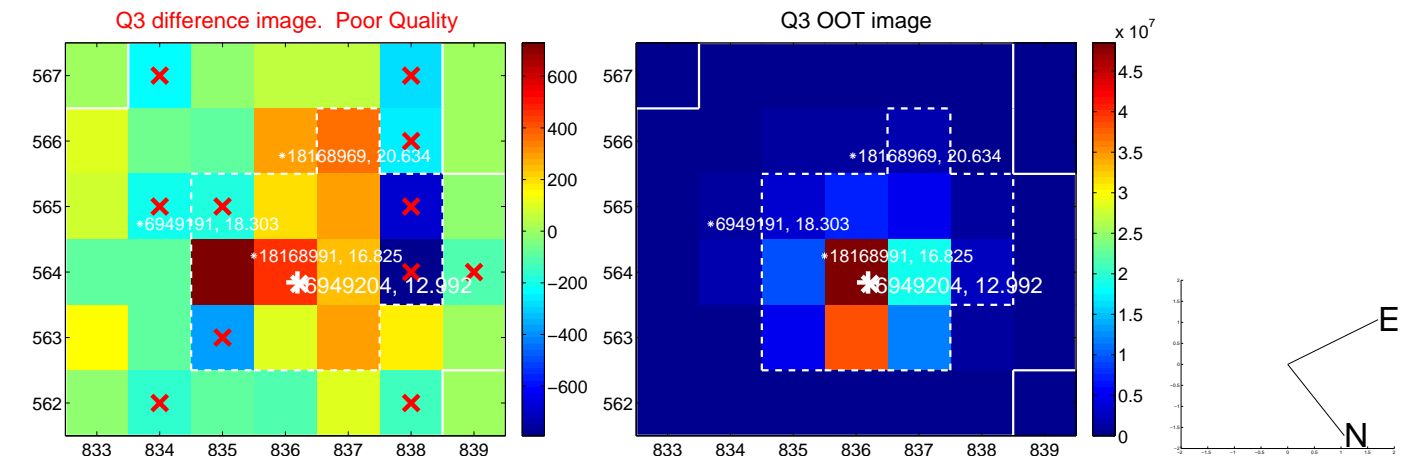
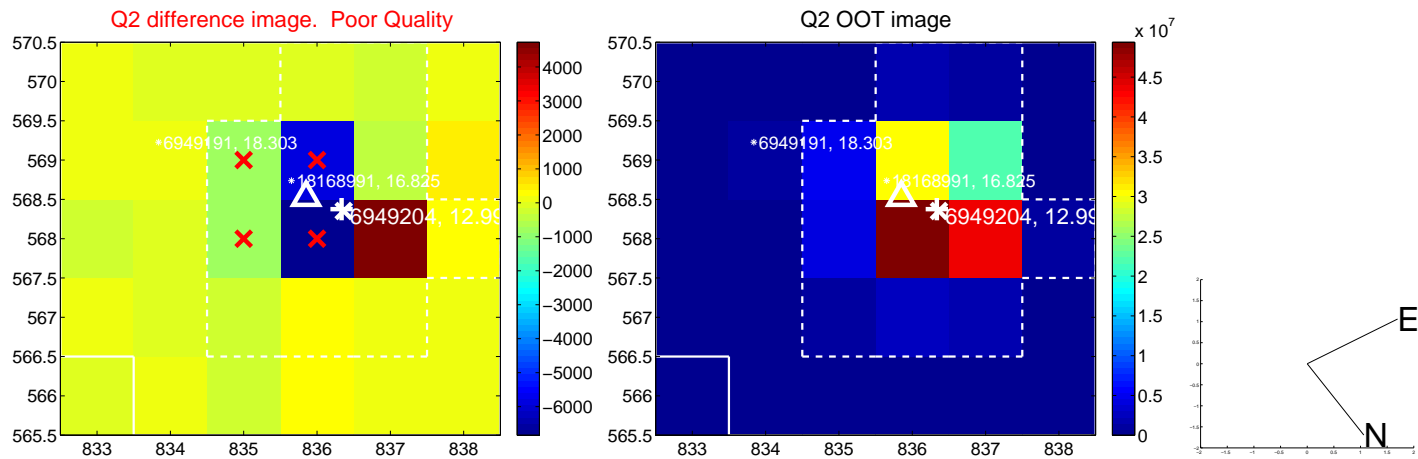
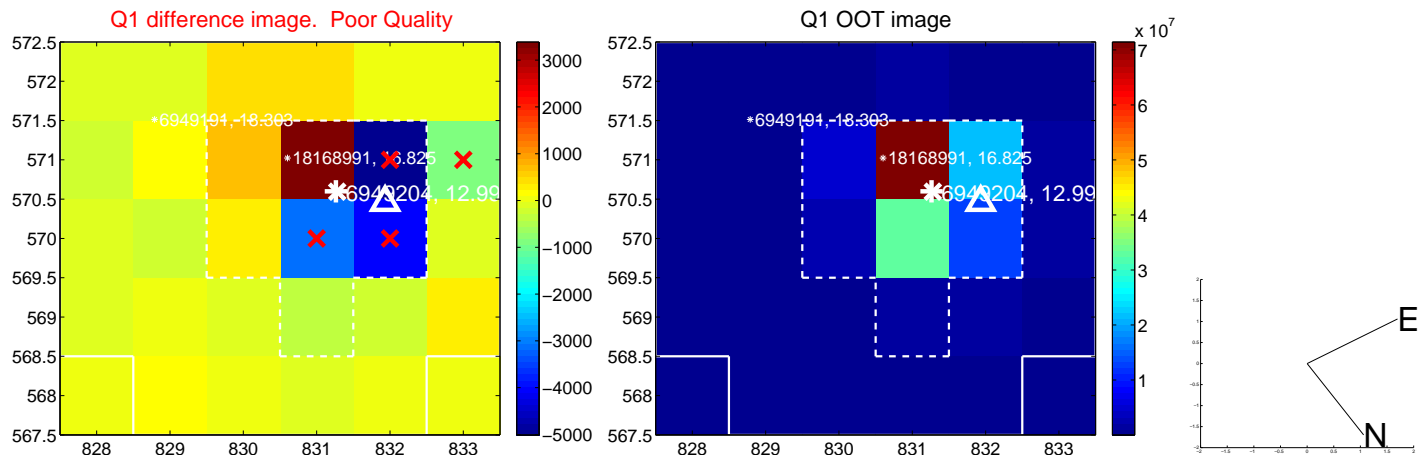
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.041 \pm 0.223$	0.18	$0.012 \pm 0.637$	$0.039 \pm 0.266$
PRF-fit source offset from KIC position	$0.100 \pm 0.238$	0.42	$-0.039 \pm 0.568$	$-0.092 \pm 0.275$
photometric centroid source offset	$0.62 \pm 0.77$	0.81	$0.45 \pm 0.77$	$0.42 \pm 0.75$

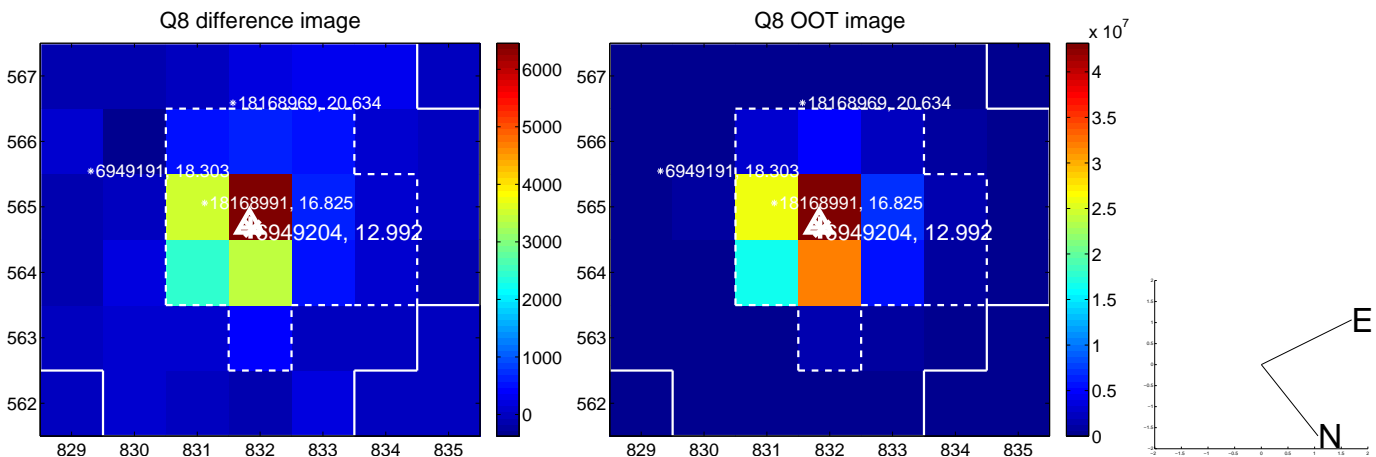
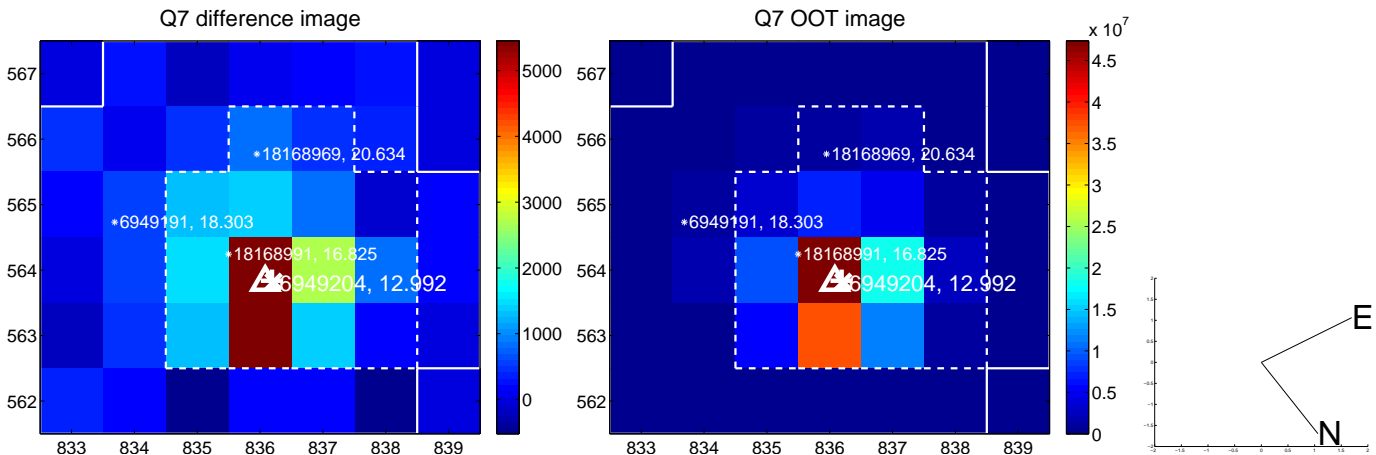
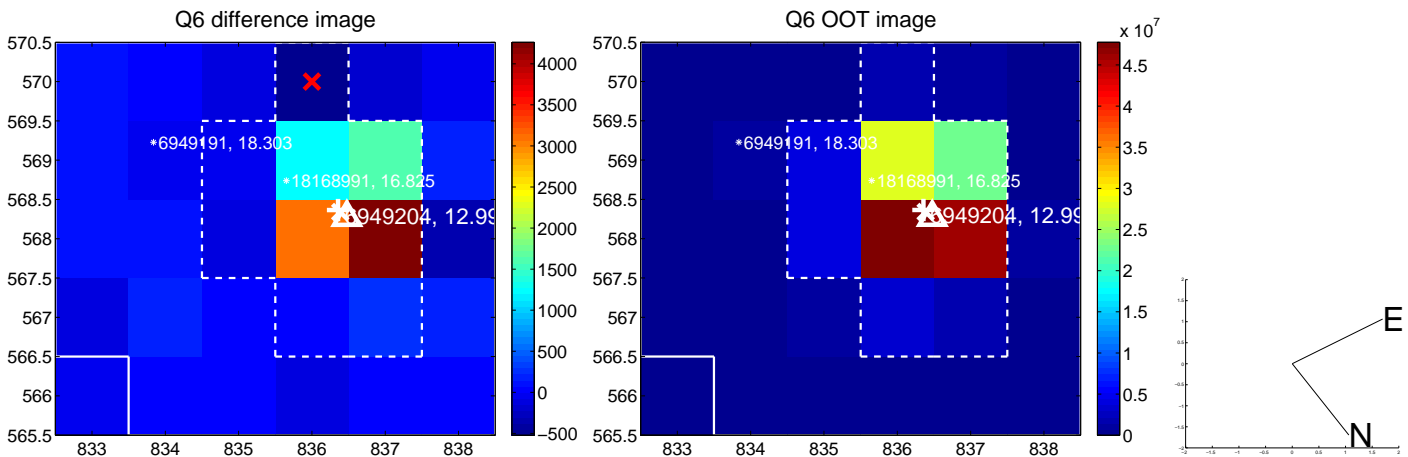
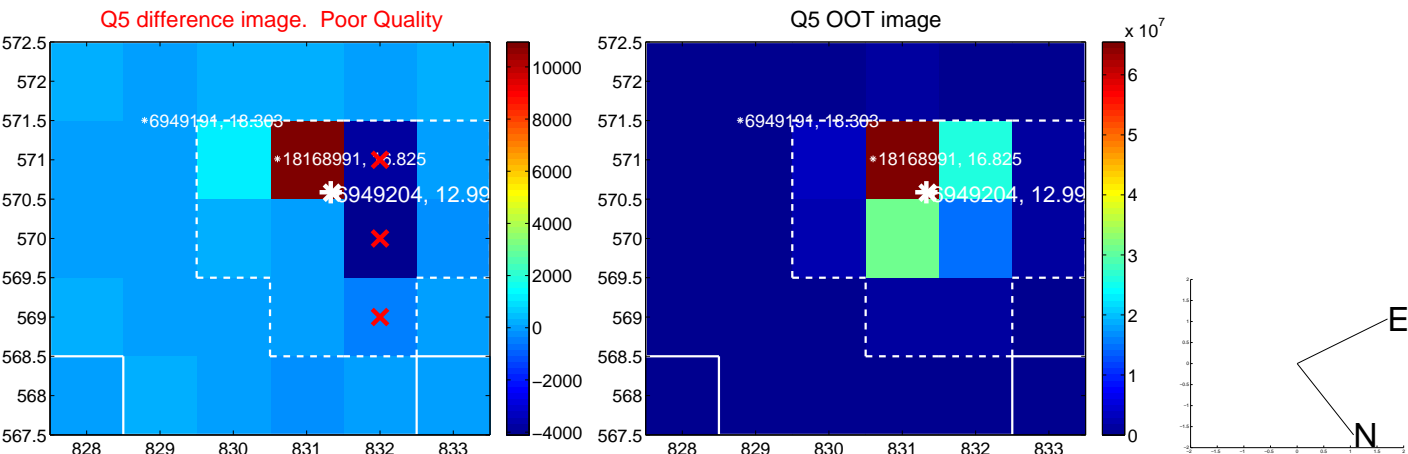


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



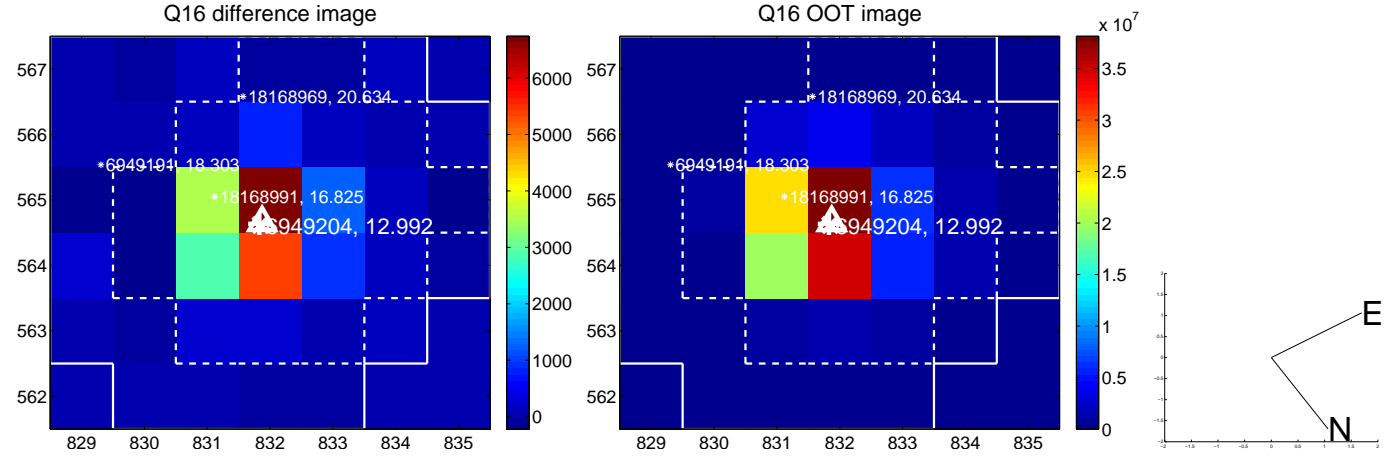
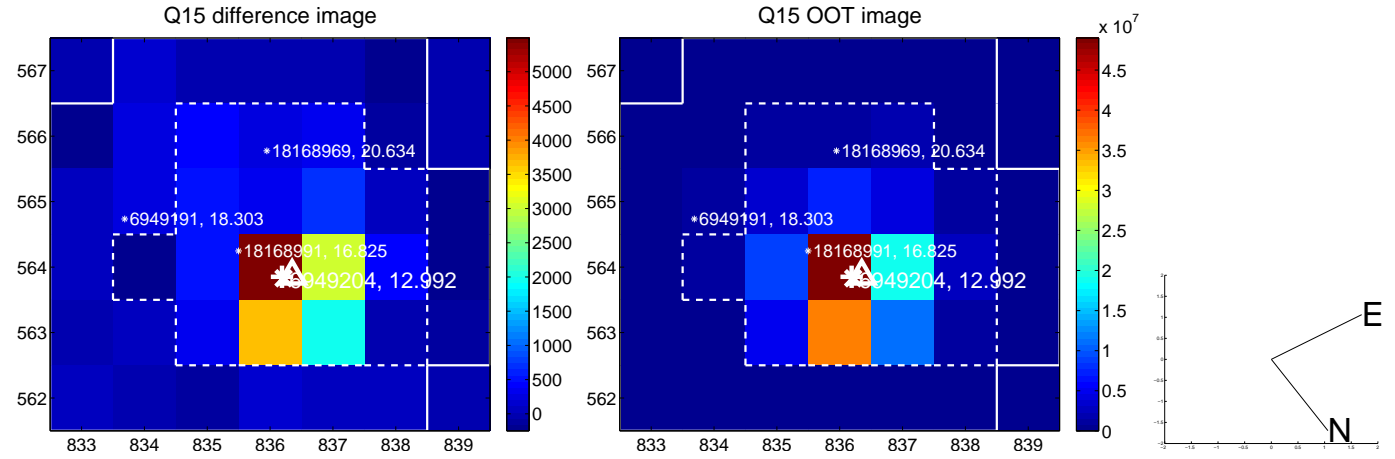
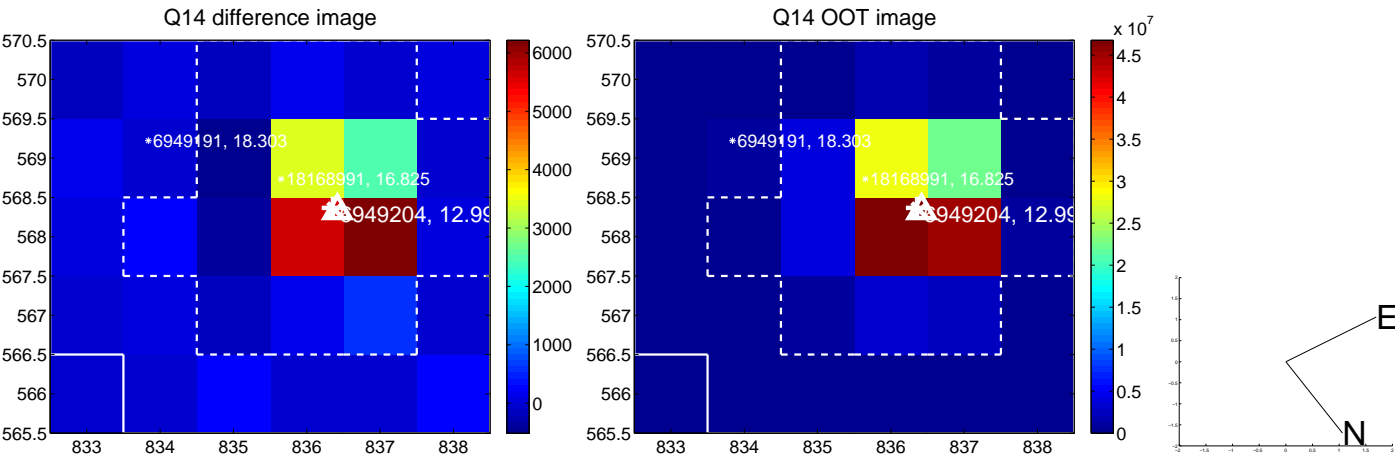
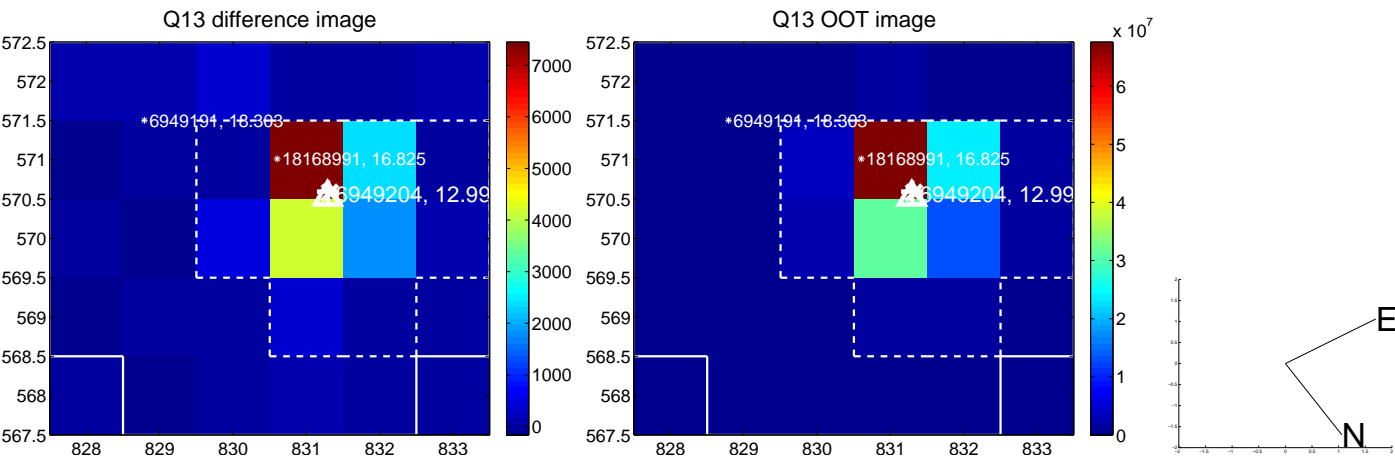
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



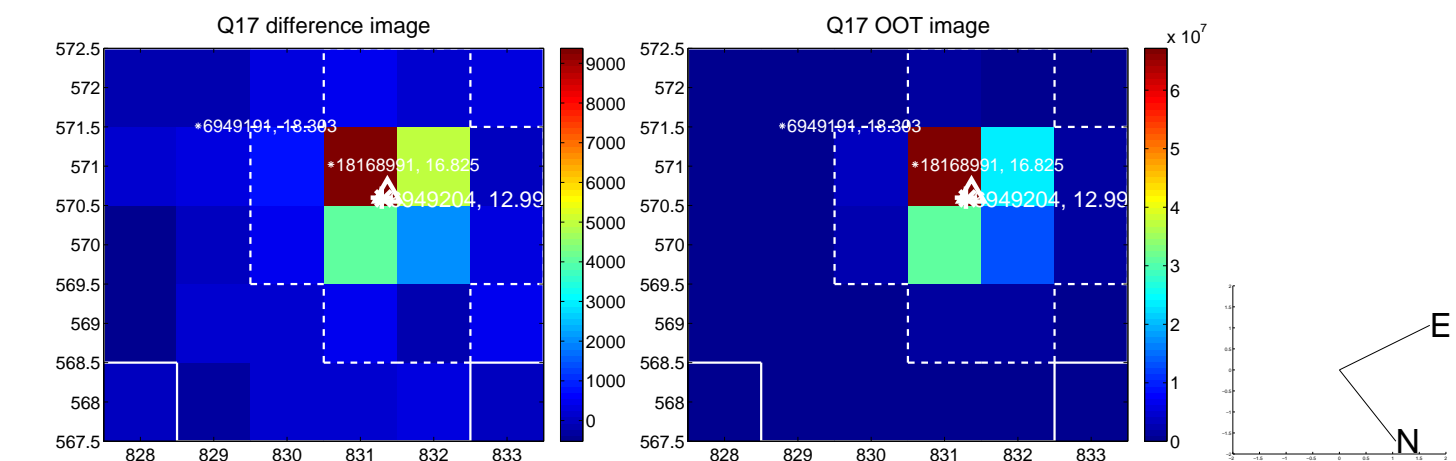




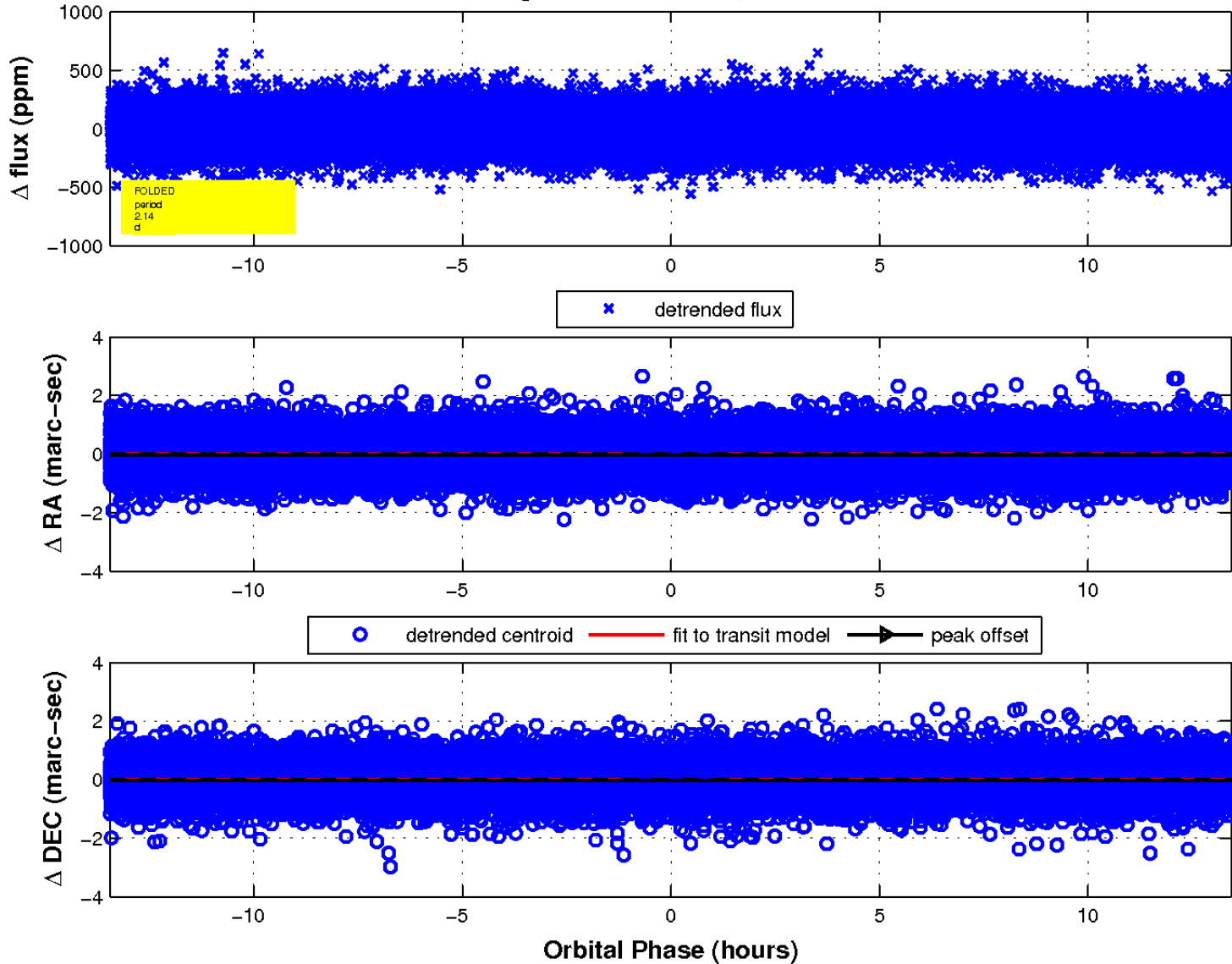
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

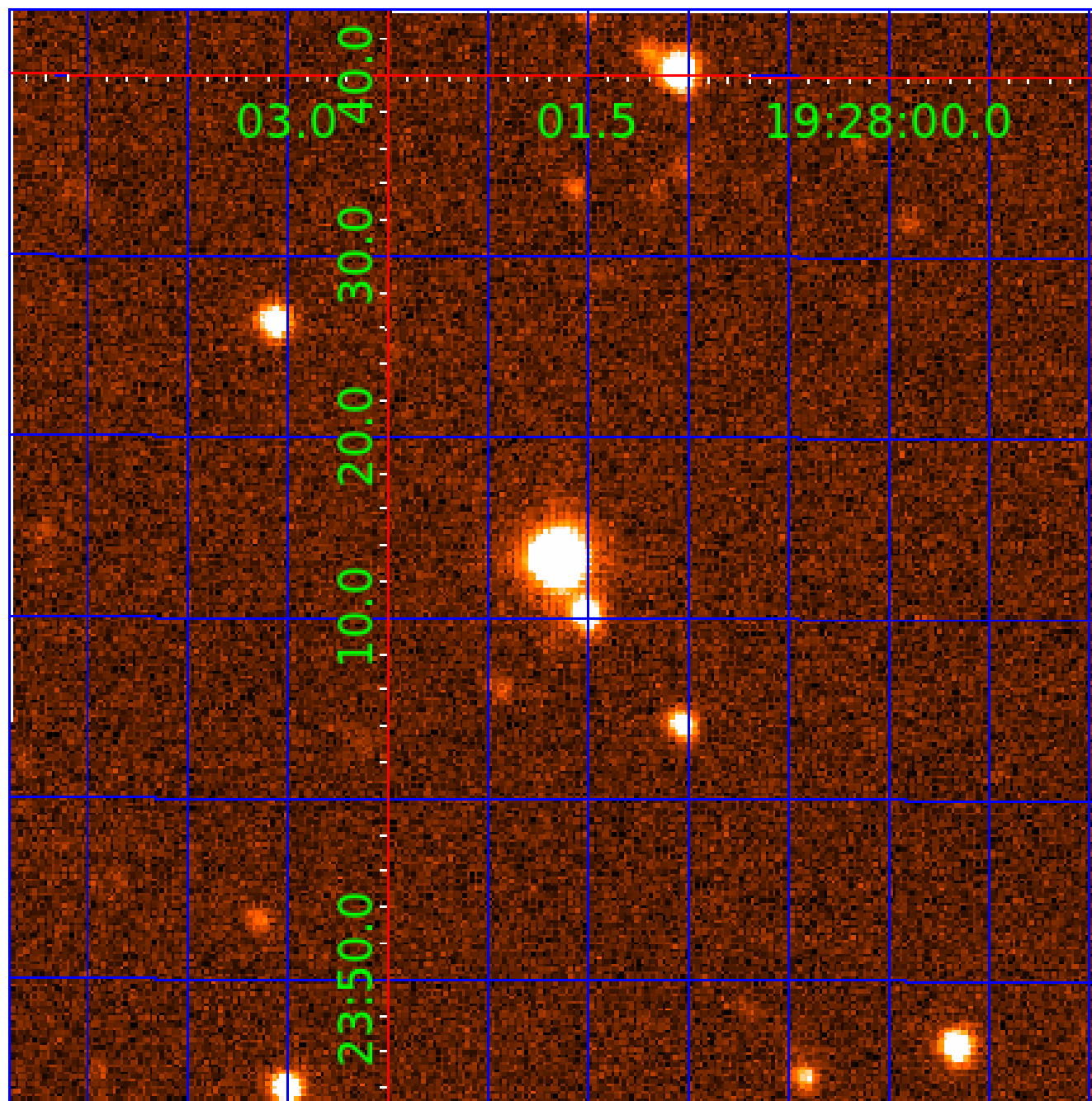


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination





# KIC 006949204

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006949204-01	OBS	No	2.141463	132.398258	27.6	4.483	10.4	9.8	3.00	7081	1.79	13340.42
006949204-02	OBS	No	2.141815	133.093061	3.0	18.051	8.0	2.0	3.00	7081	0.57	13337.49

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006949204-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006949204-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

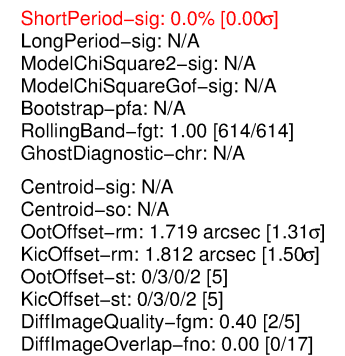
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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.

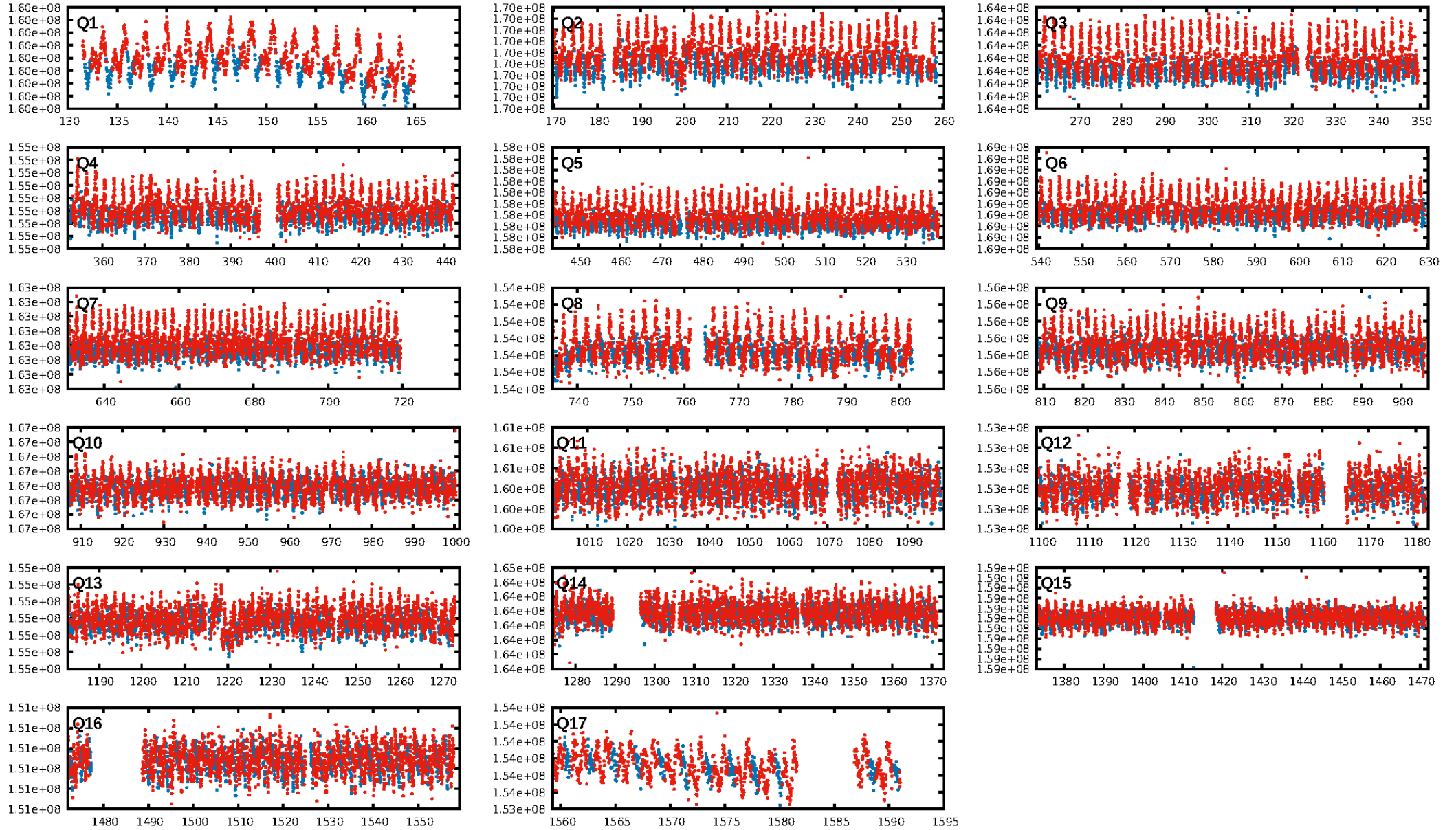
## Ephemeris Match Information For 006949204-02

No Significant Match Found

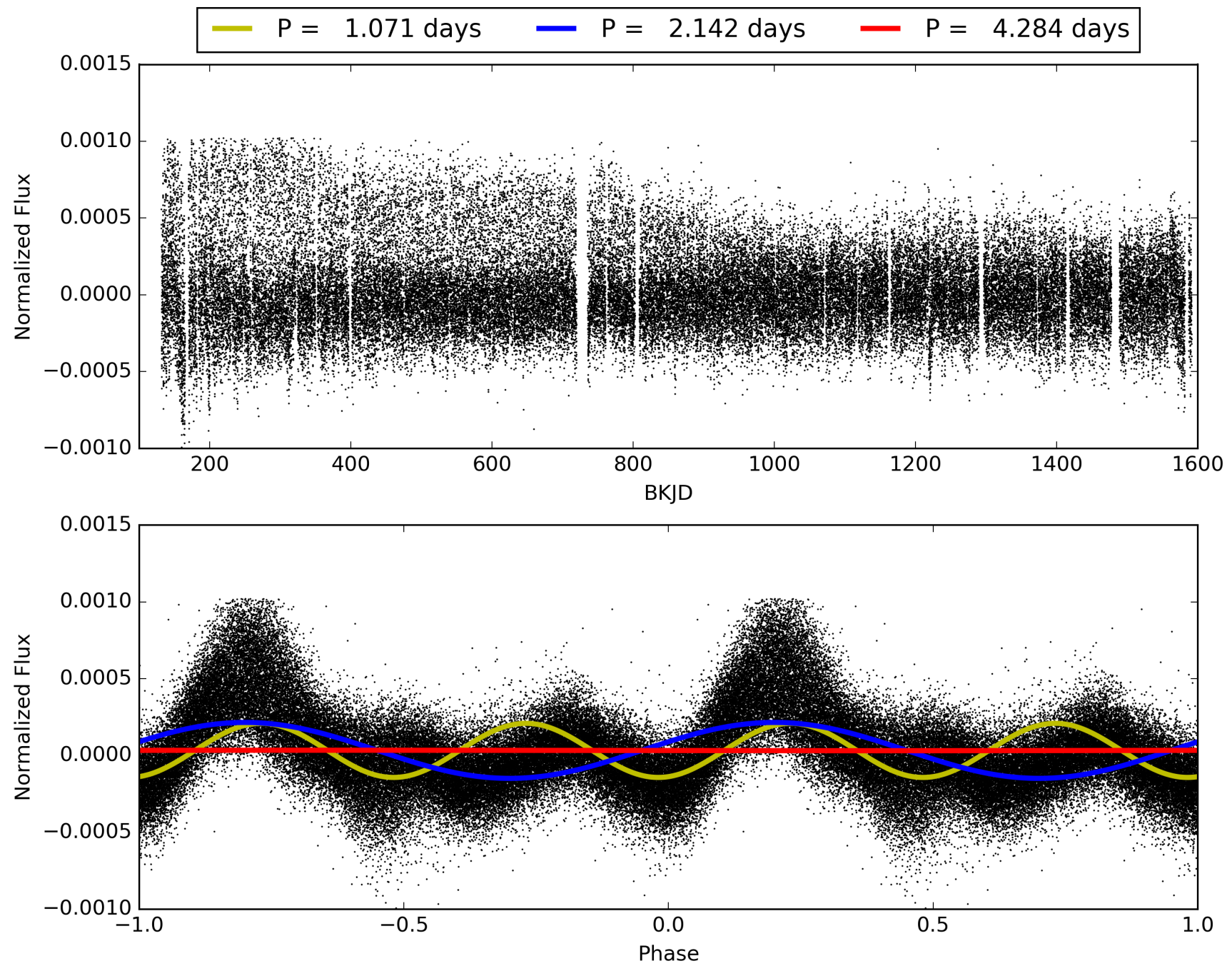
## KIC: 6949204    Candidate: 2 of 2    Period: 2.142 d



# TCE 006949204-02, PDC Light Curves



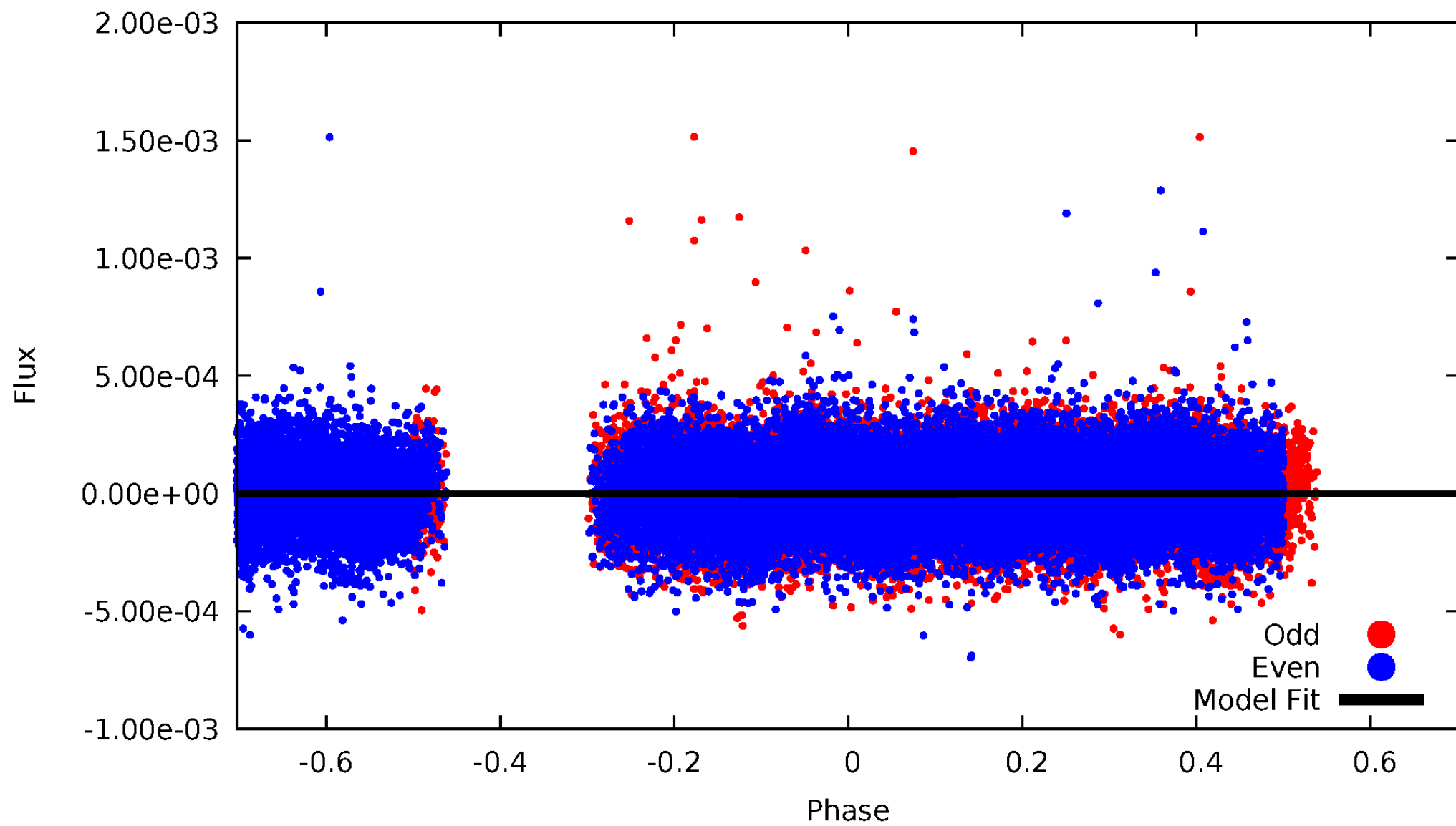
TCE 006949204-02





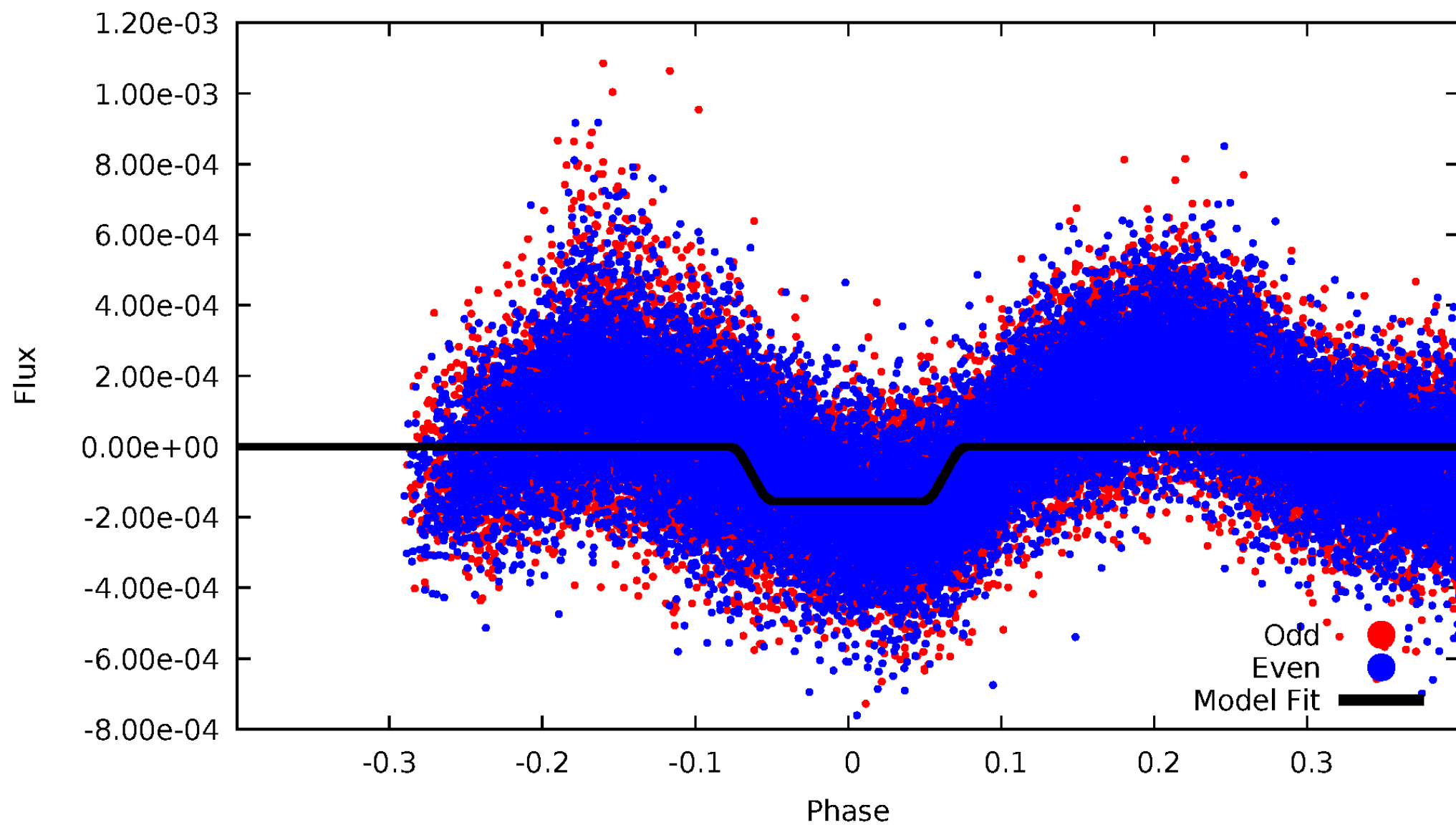
# DV Odd/Even

TCE 006949204-02



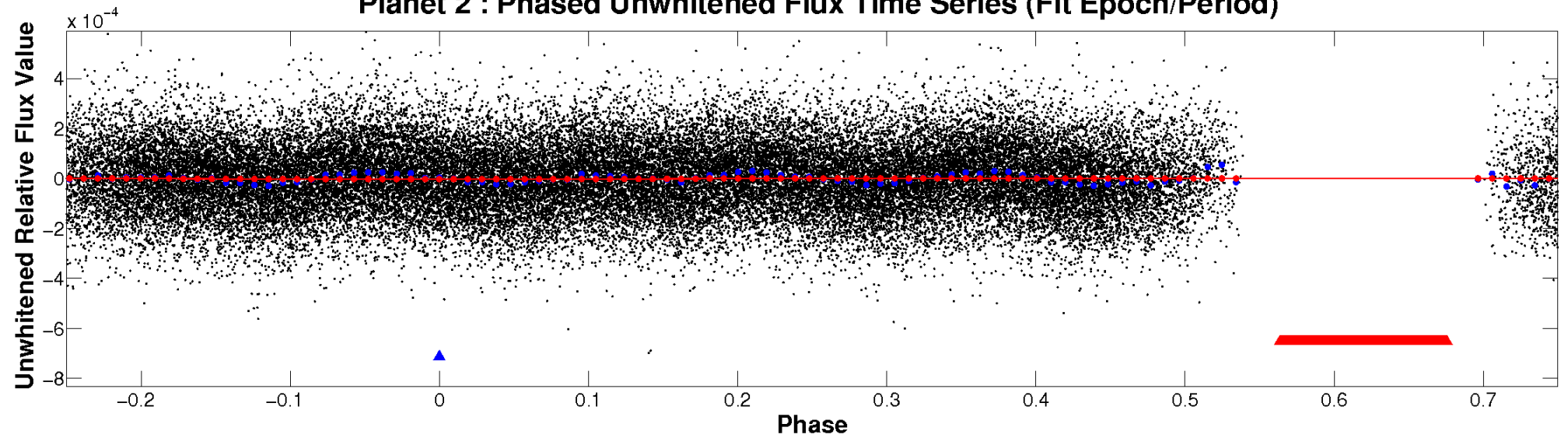
# ALT Odd/Even

TCE 006949204-02

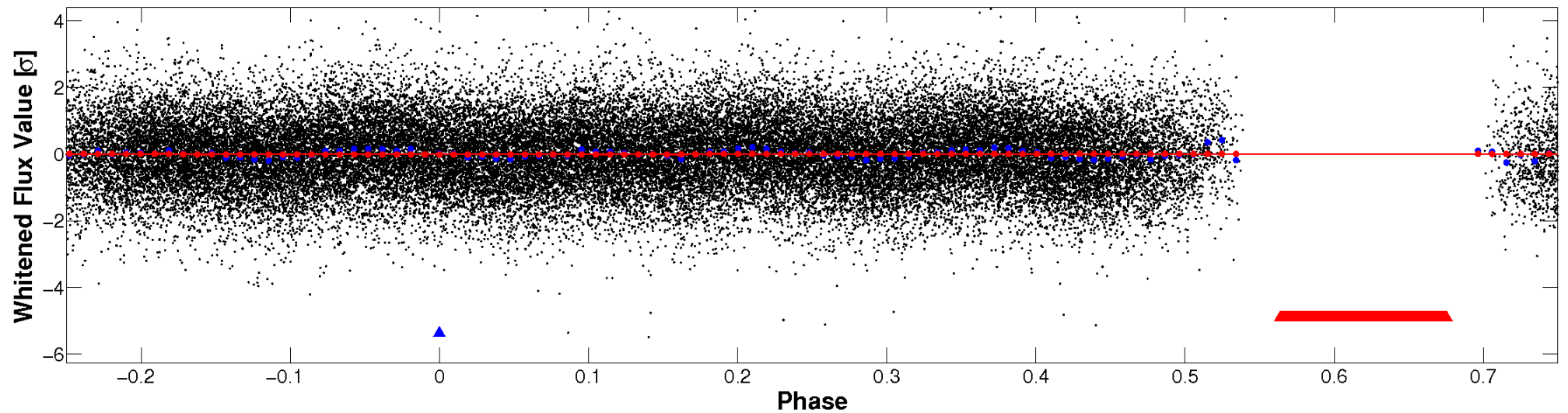


# Non-Whitened Vs. Whitened Light Curve

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

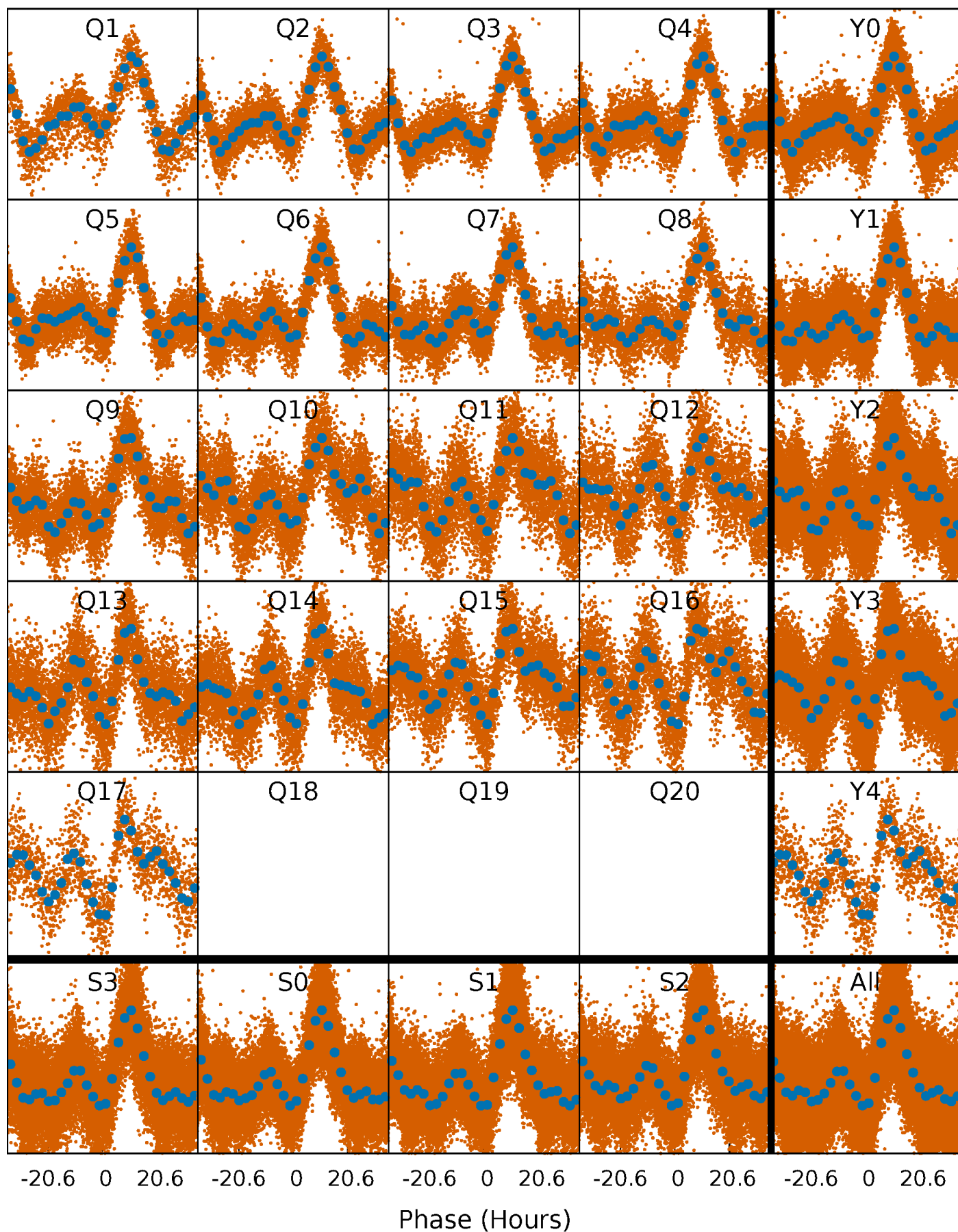


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



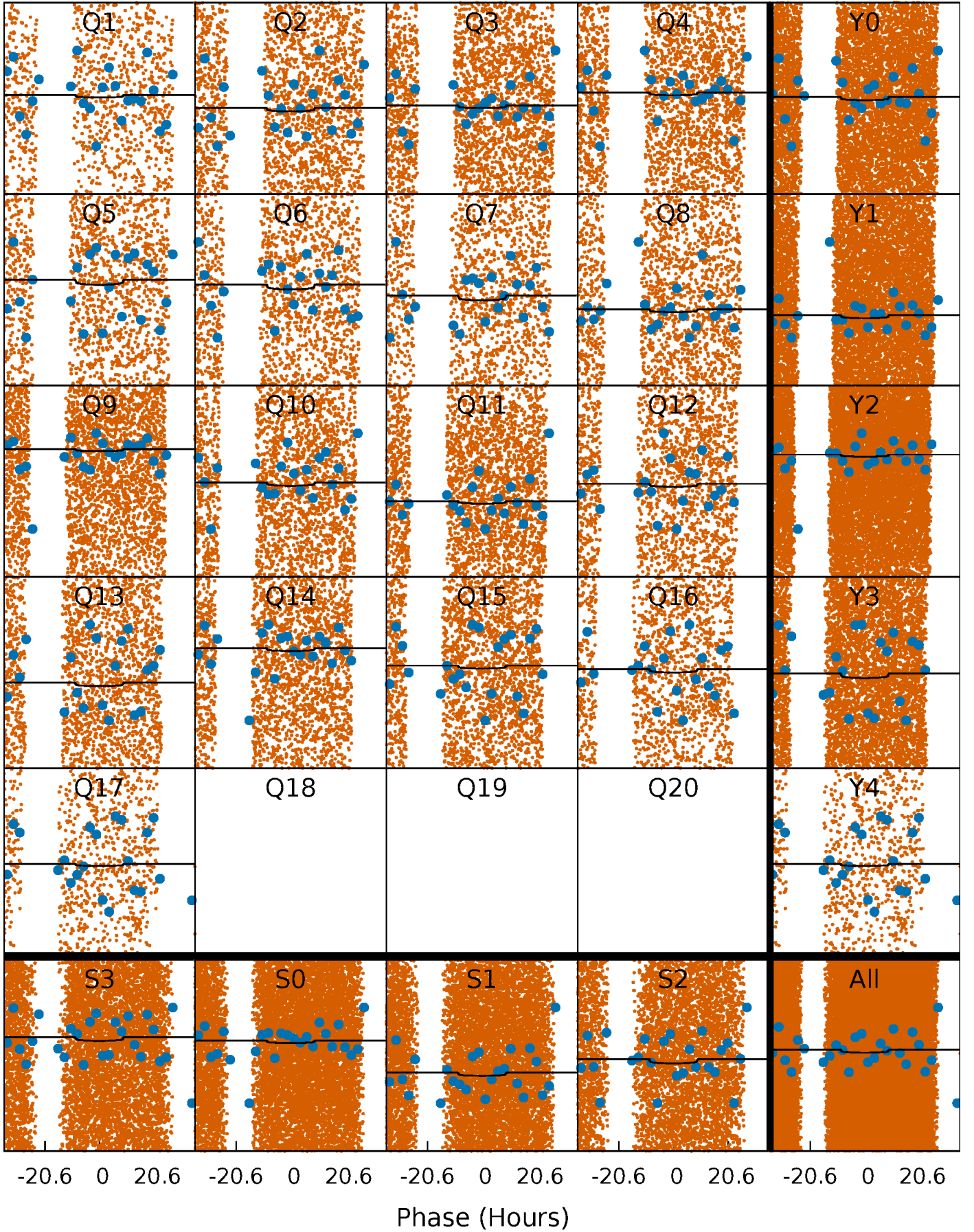
# PDC Quarter-Phased Transit Curves

TCE 006949204-02   P= 2.141815 Days    $T_0=133.093061$  (BKJD)



# DV Quarter-Phased Transit Curves

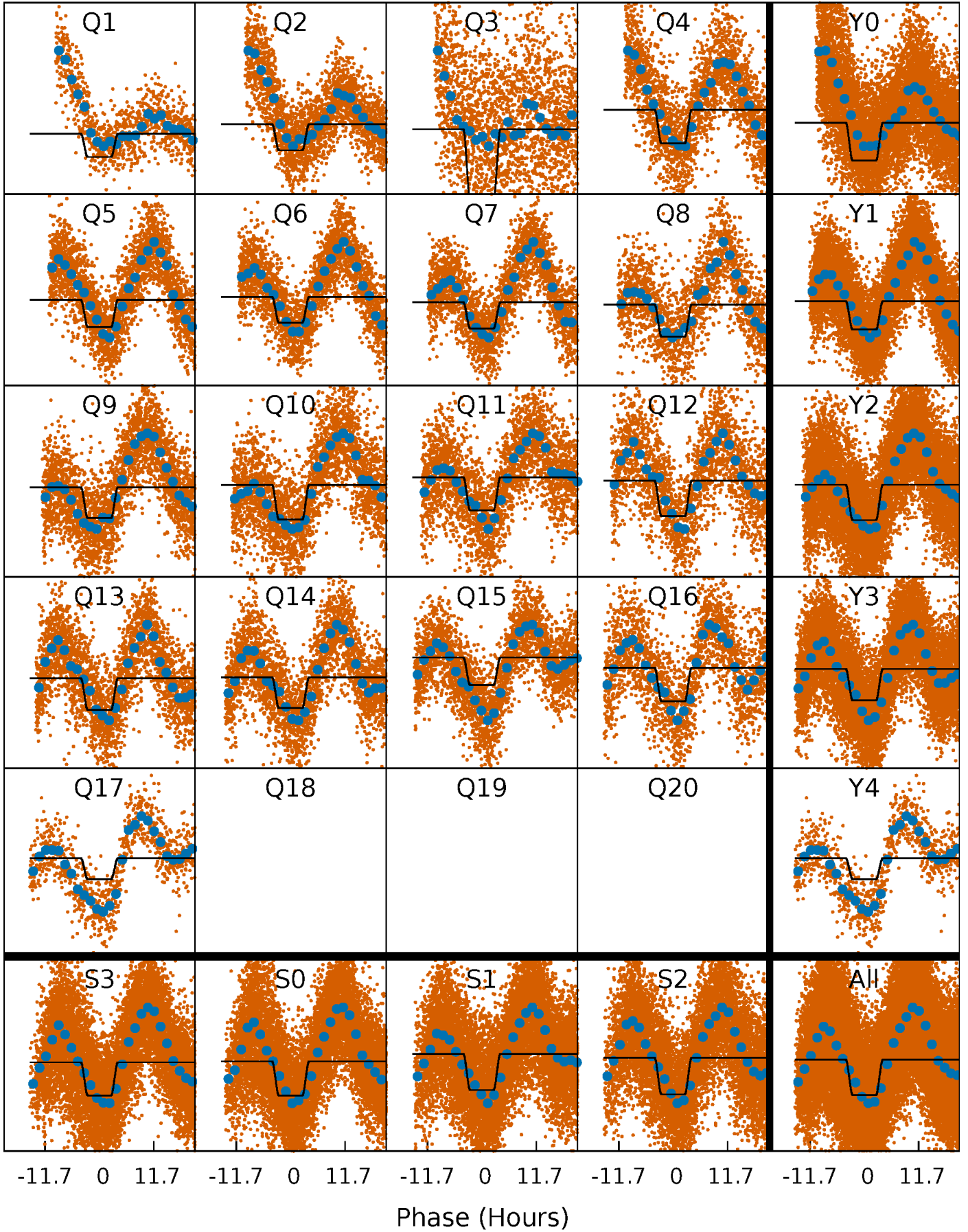
TCE 006949204-02   P= 2.141815 Days    $T_0=133.093061$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 006949204-02   P= 2.141812 Days    $T_0=133.075945$  (BKJD)

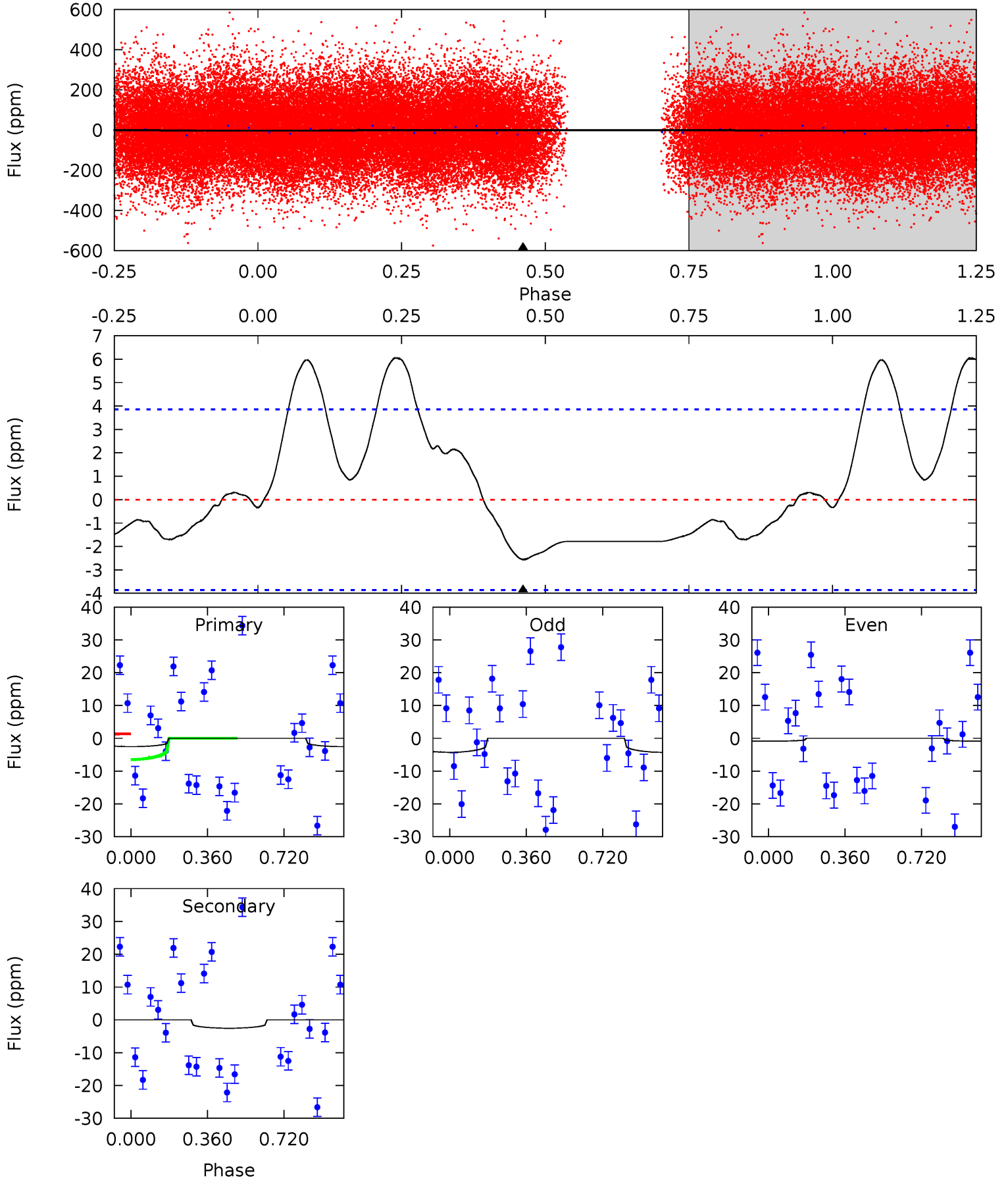




# DV Model-Shift Uniqueness Test

006949204-02, P = 2.141815 Days, E = 130.951246 Days

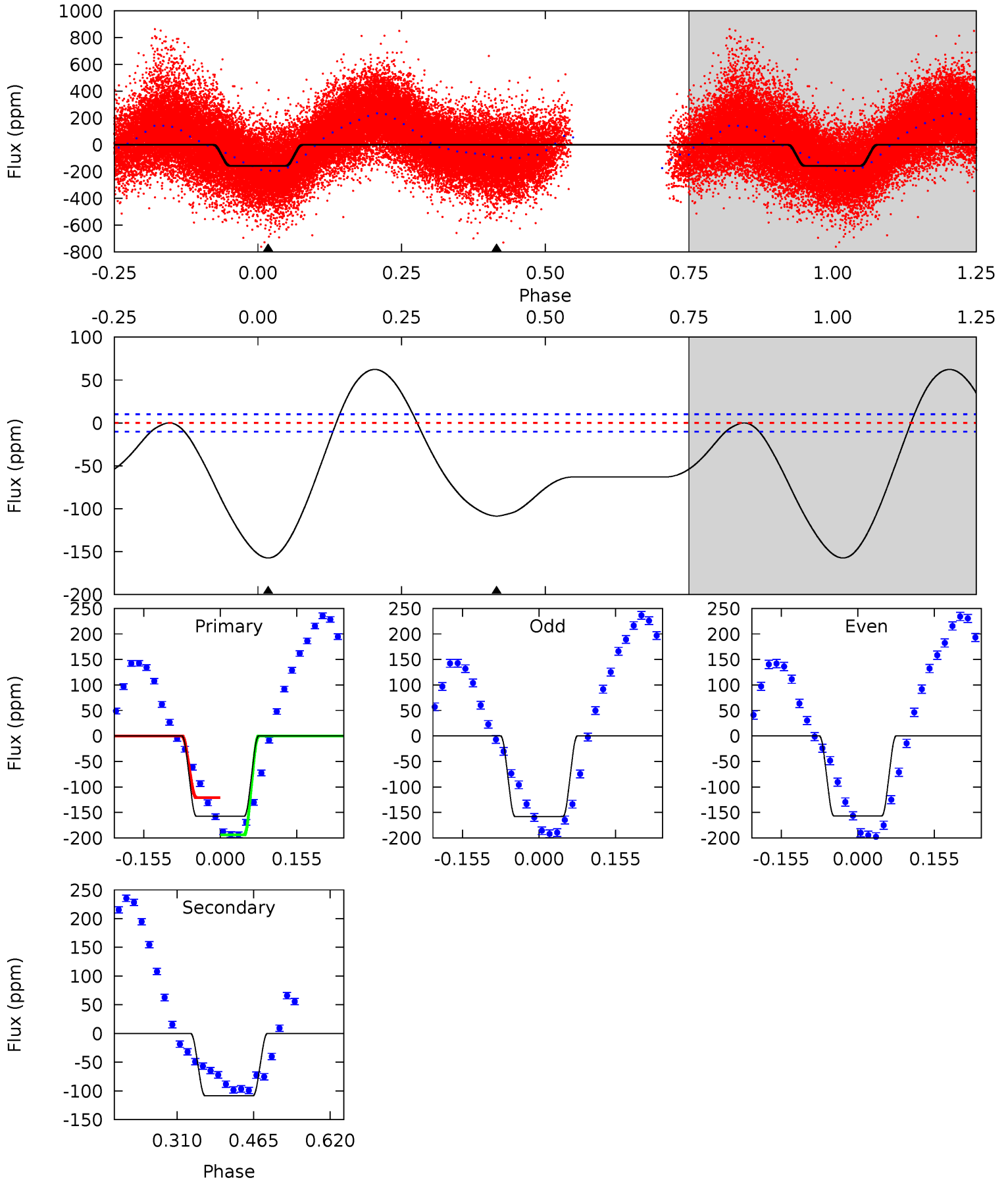
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.84	2.84	0	0	4.29	0.92	2.67	2.84	2.84	2.84	2.84	1.87	0.81	0.70	2.86



# Alt Model-Shift Uniqueness Test

006949204-02, P = 2.141812 Days, E = 130.934133 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
69.5	47.9	0	0	4.47	1.42	17.1	69.5	69.5	47.9	47.9	0.27	1.01	0.28	18.2



### Stellar Parameters For KIC 006949204

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7081^{+190}_{-233}$	$3.720^{+0.288}_{-0.072}$	$-0.260^{+0.300}_{-0.250}$	$3.001^{+0.436}_{-1.018}$	$1.722^{+0.165}_{-0.358}$	$0.090^{+0.191}_{-0.023}$
	+3%/-3%	+8%/-2%	+115%/-96%	+15%/-34%	+10%/-21%	+213%/-25%
Source	PHO1	FLK73	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 006949204-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-3\pm 1$	$1.04^{+0.97}_{-0.69}$	$3749^{+202}_{-299}$	$4681^{+3742}_{-1531}$	$1.902^{+14.919}_{-1.444}$
Alt.	$-109\pm 2$	$3.75^{+1.33}_{-1.26}$	$3731^{+212}_{-299}$	$6325^{+1516}_{-808}$	$6.295^{+7.584}_{-2.786}$

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

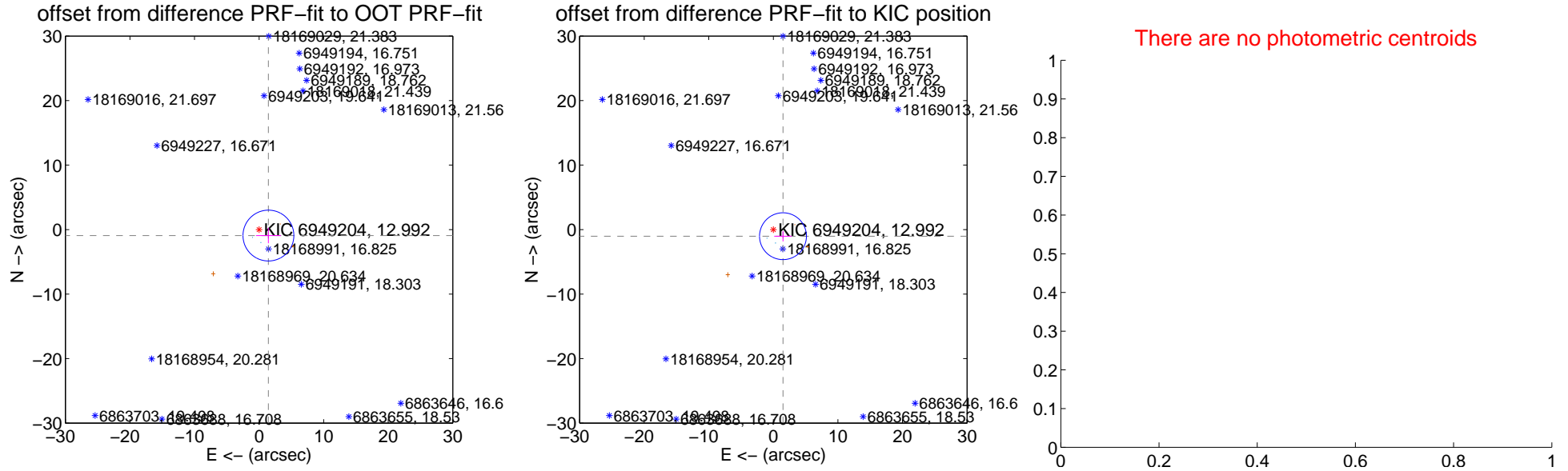
## DV Centroid Data

Supplemental centroid analysis for 006949204-02. Kepler magnitude: 12.99. Transit SNR 1.98

There are 2 quarters with good PRF difference image offsets

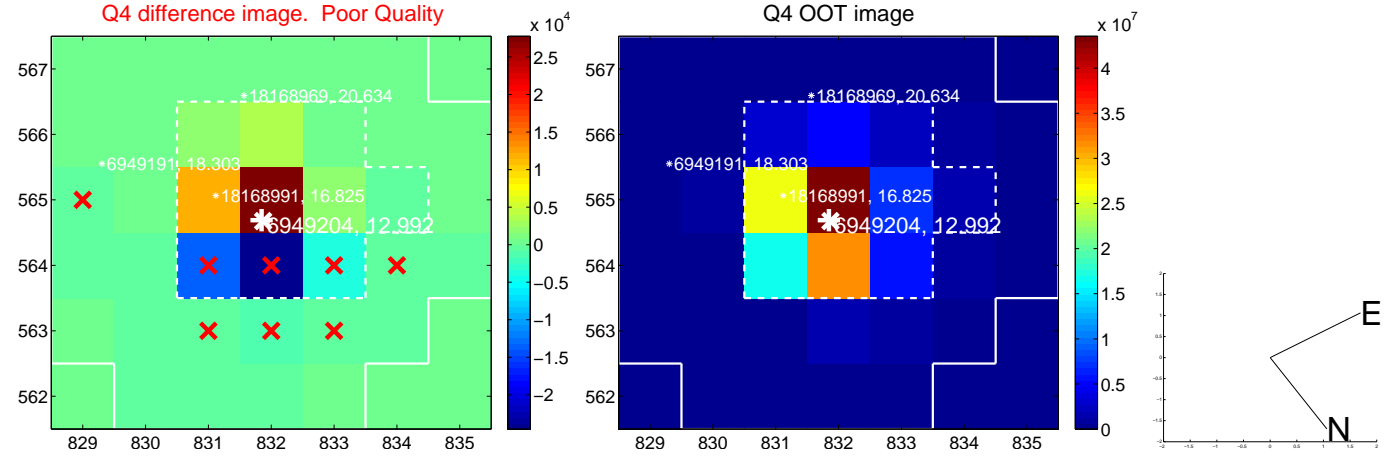
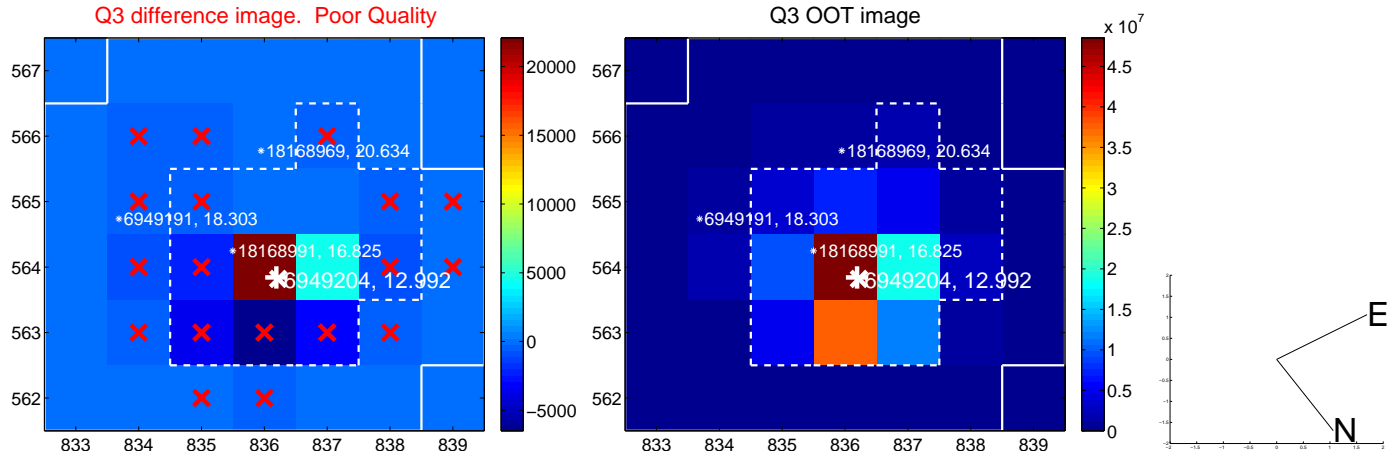
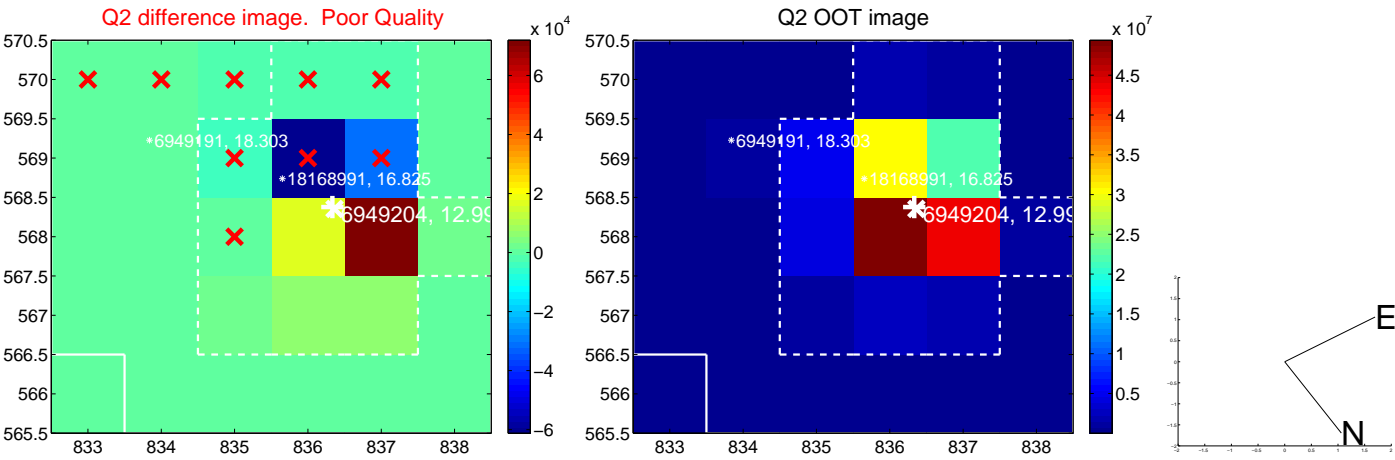
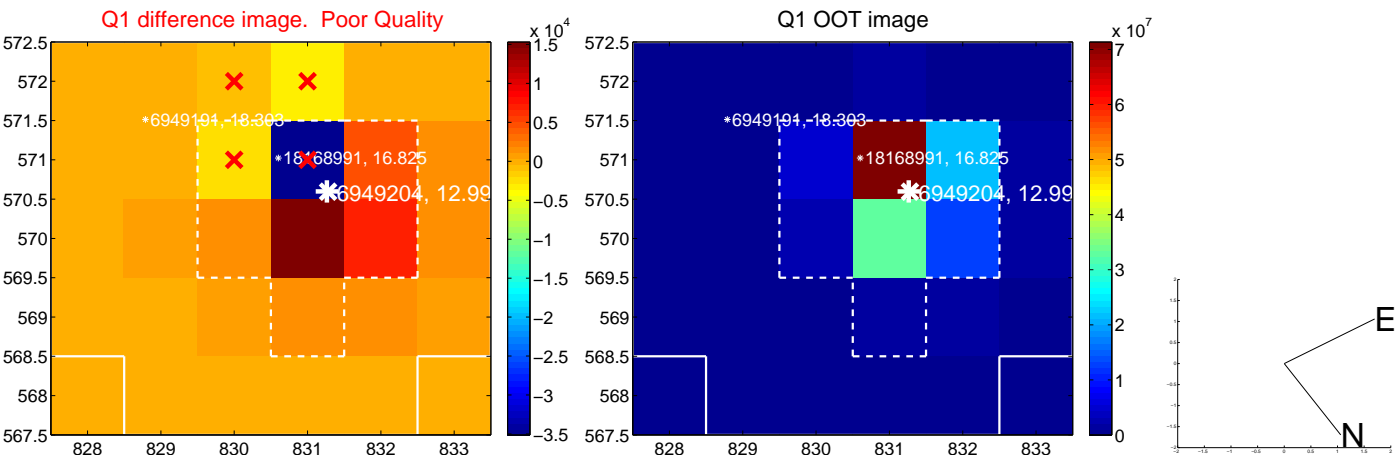
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.719 \pm 1.313$	1.31	$-1.448 \pm 1.930$	$-0.927 \pm 1.203$
PRF-fit source offset from KIC position	$1.812 \pm 1.210$	1.50	$-1.494 \pm 1.358$	$-1.025 \pm 0.811$
photometric centroid source offset	—	—	—	—

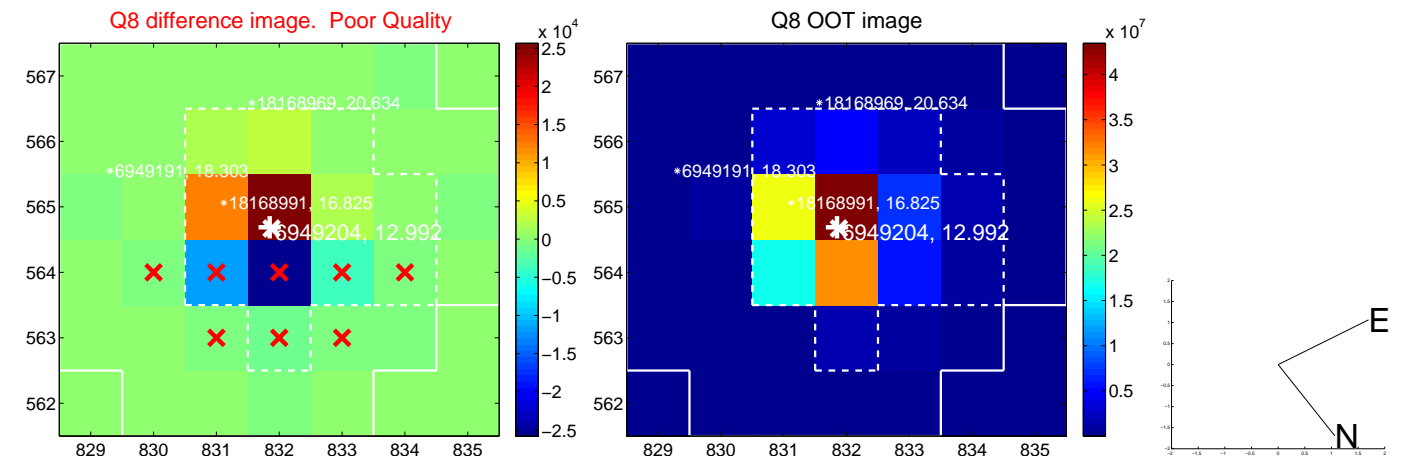
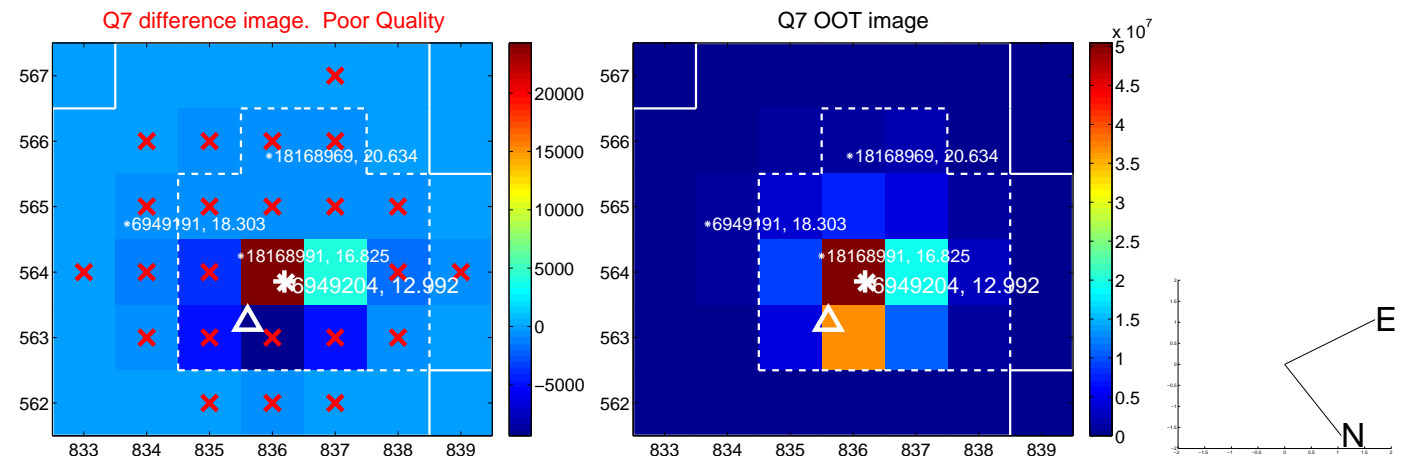
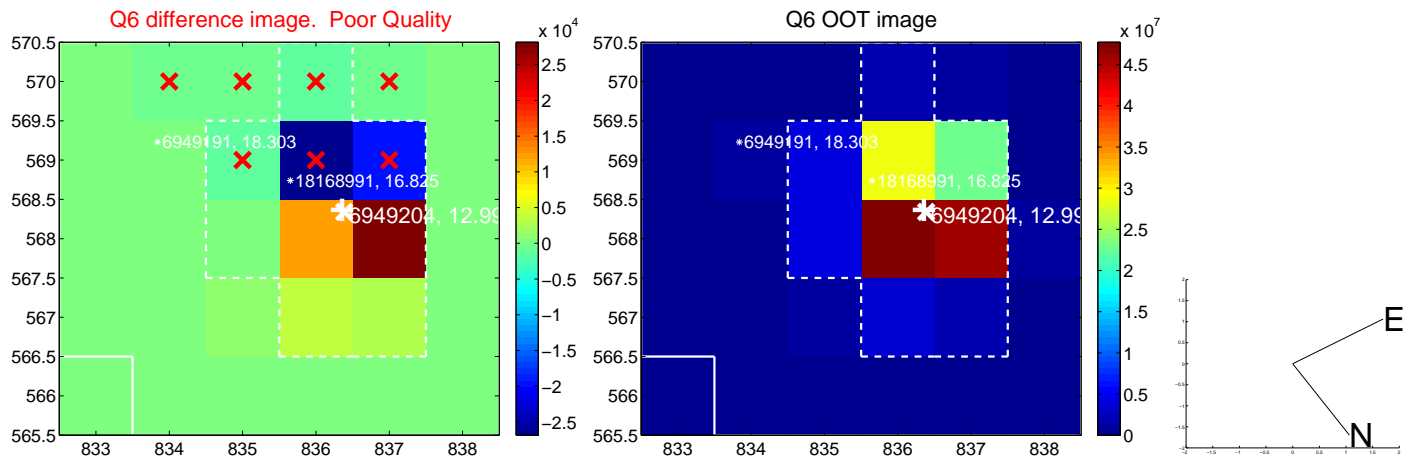
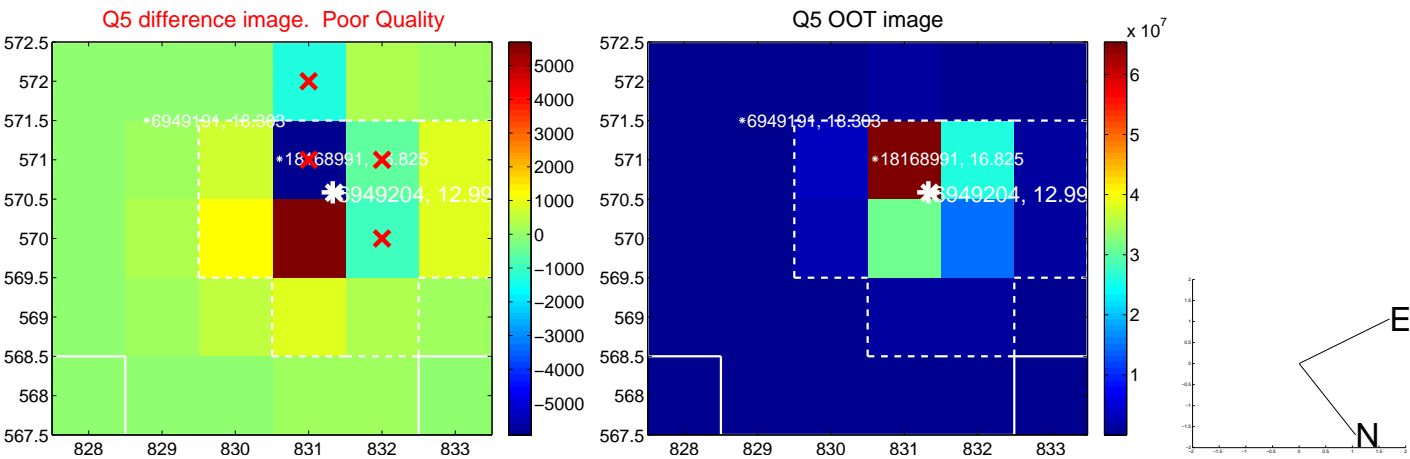


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

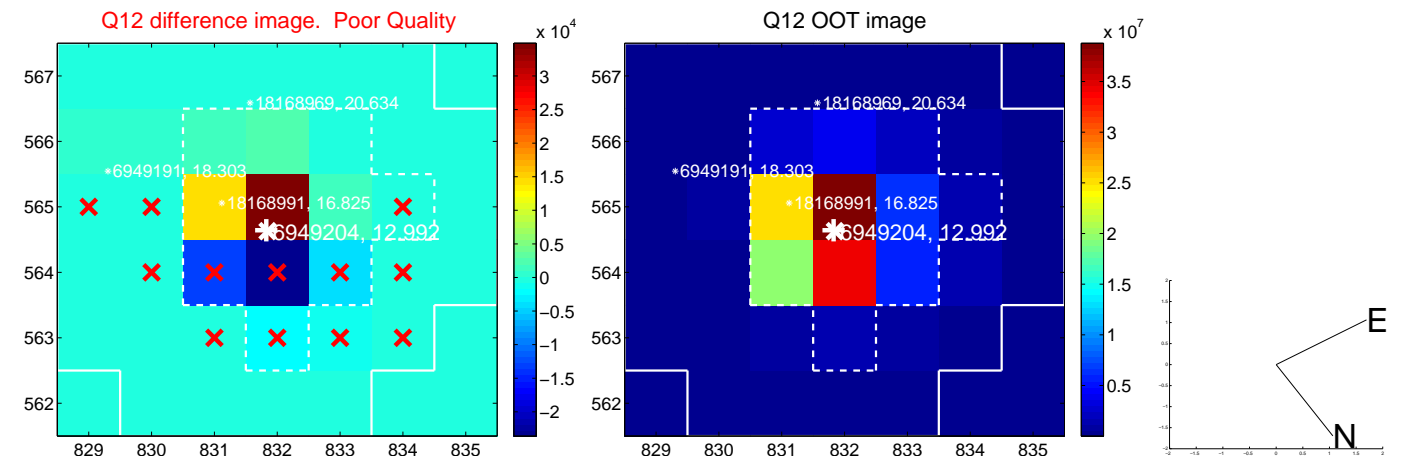
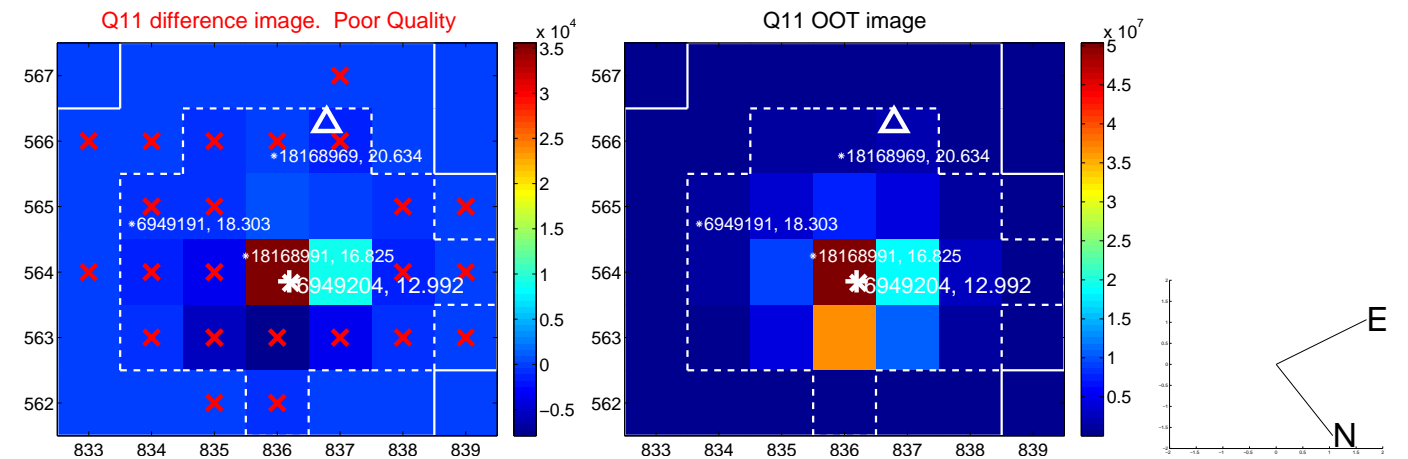
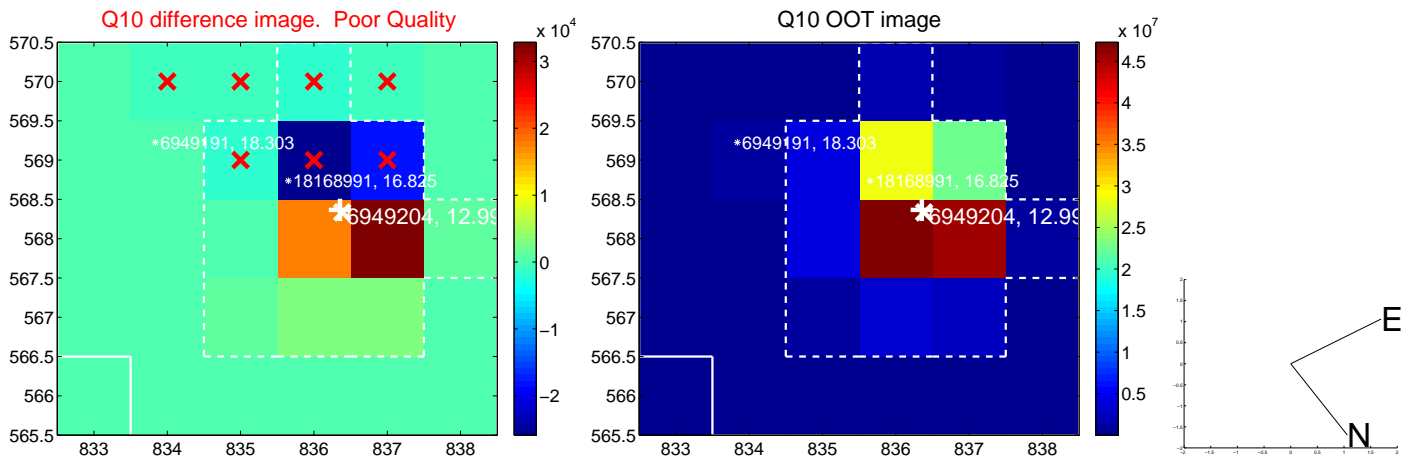
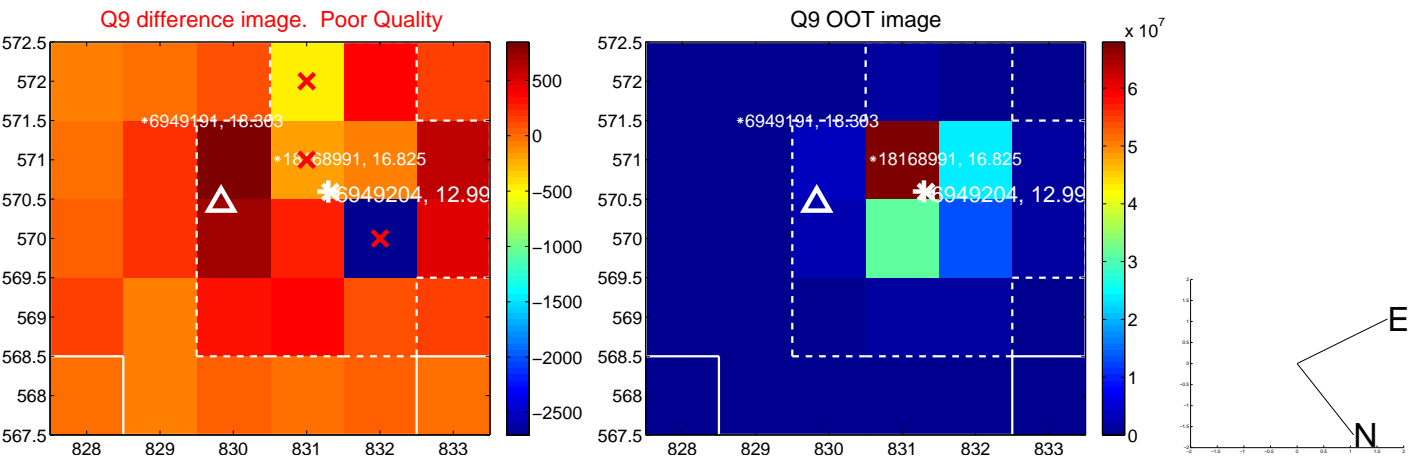


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

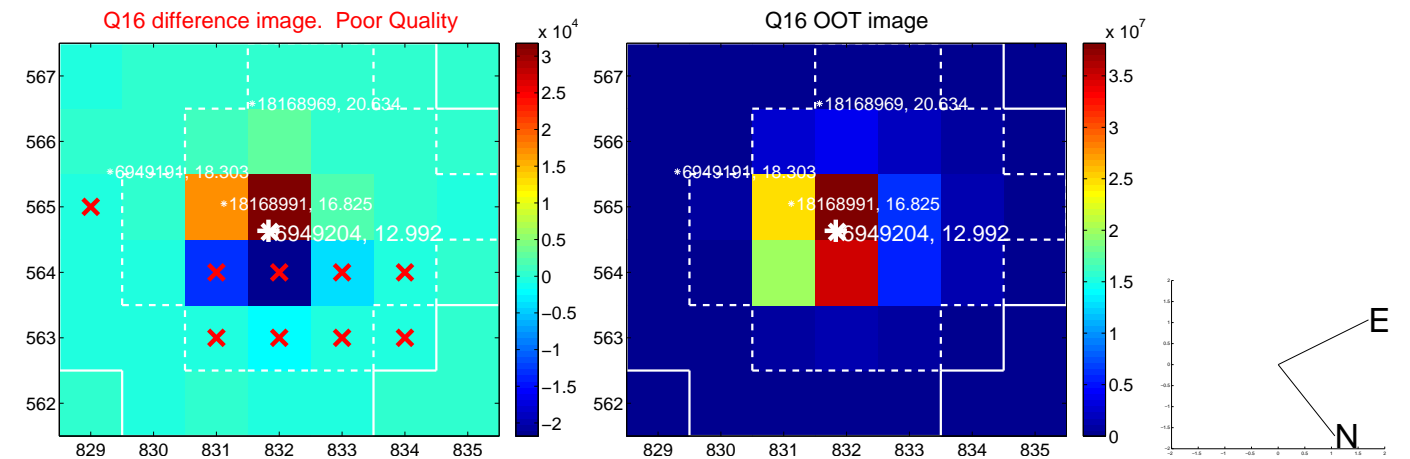
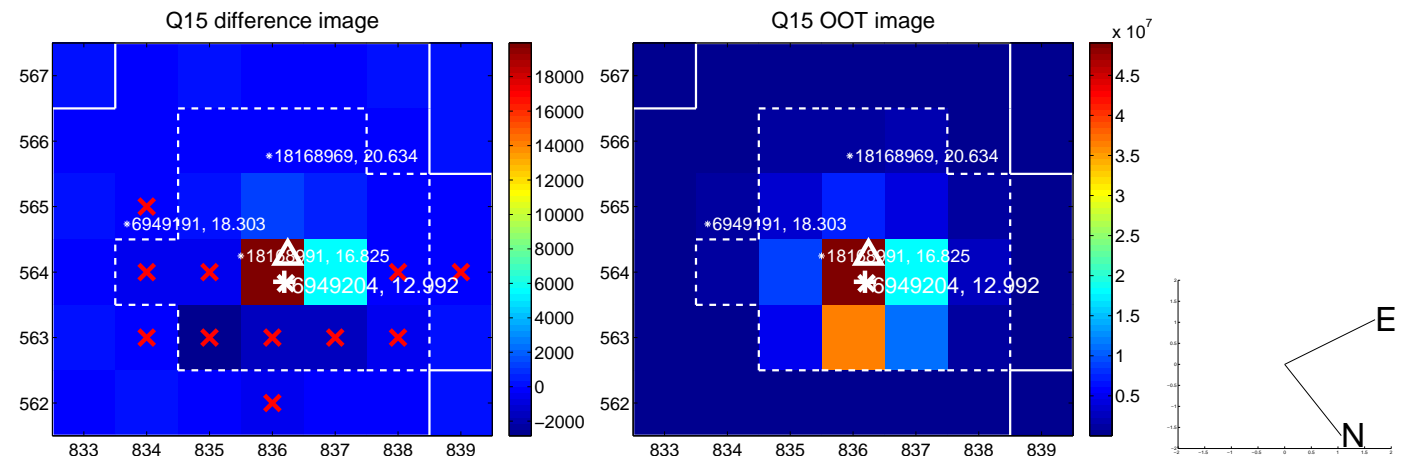
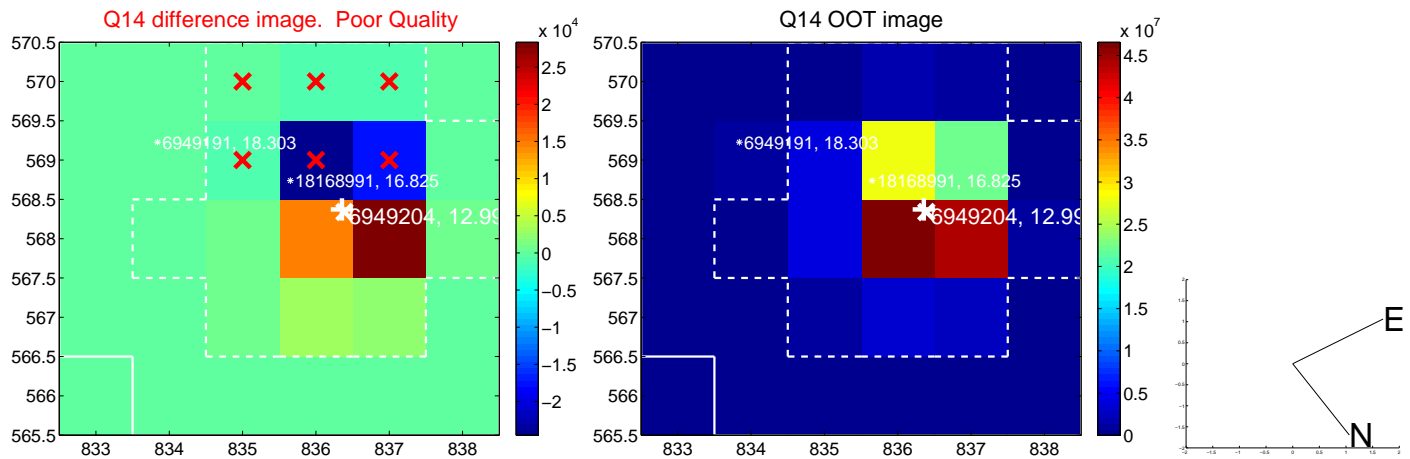
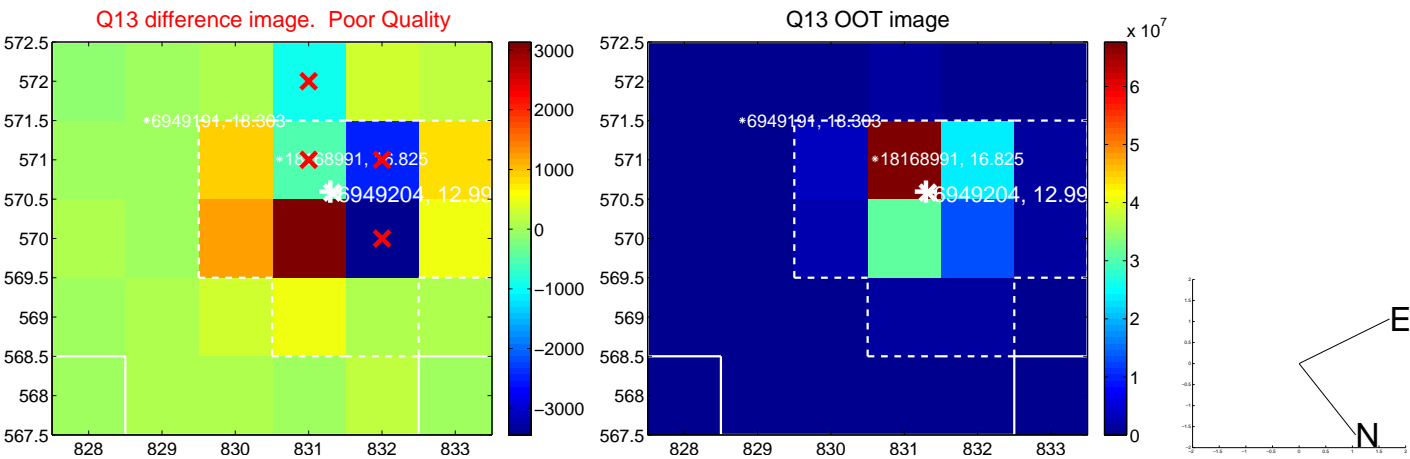




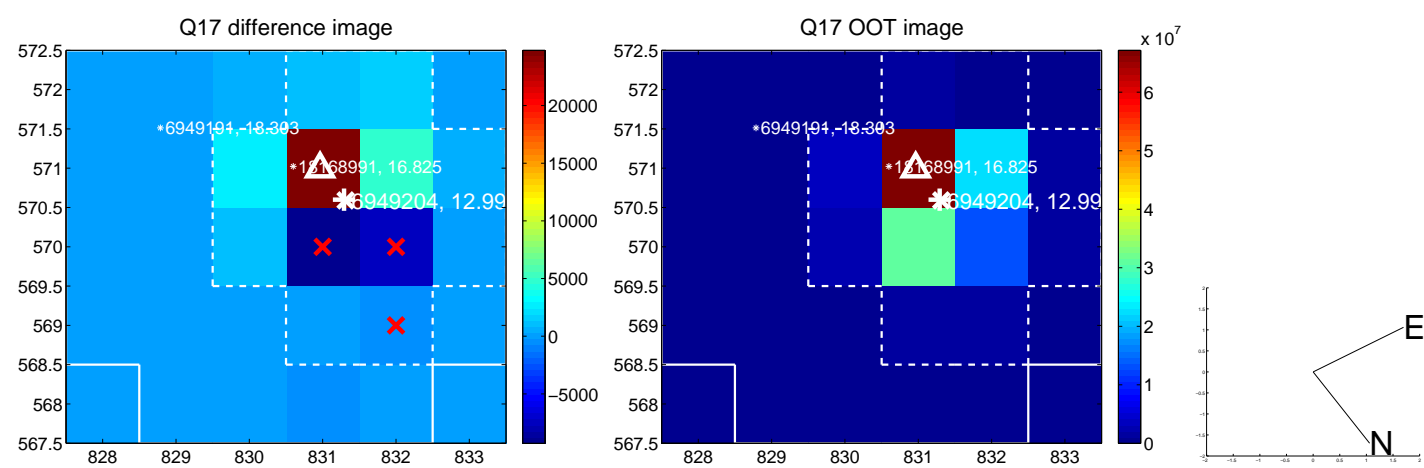
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

