

# KIC 005693926

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005693926-01	OBS	No	0.570105	131.767001	88.7	1.503	11.8	5.9	0.51	4447	0.60	790.81
005693926-02	OBS	No	0.570933	131.794232	300.5	1.120	11.6	15.2	0.51	4447	0.91	789.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005693926-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
005693926-02	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_KIC_POS

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

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

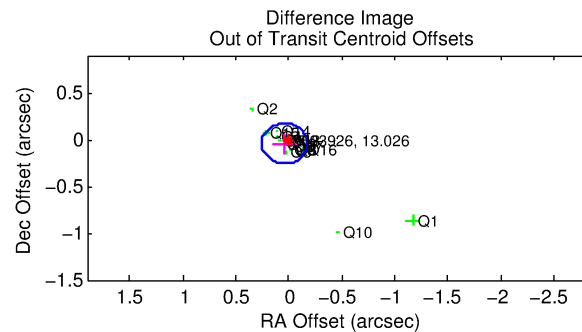
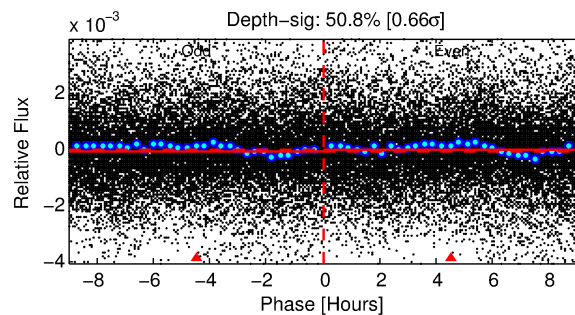
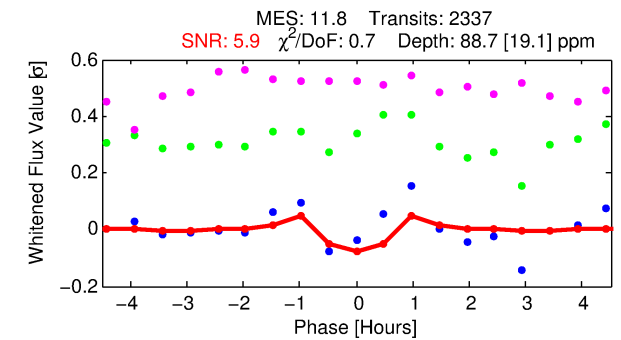
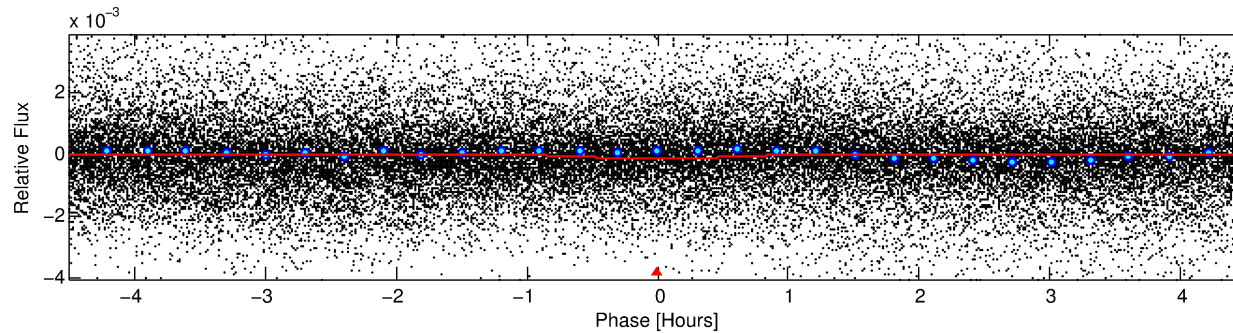
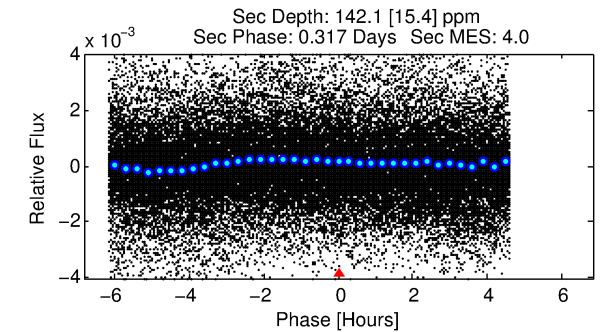
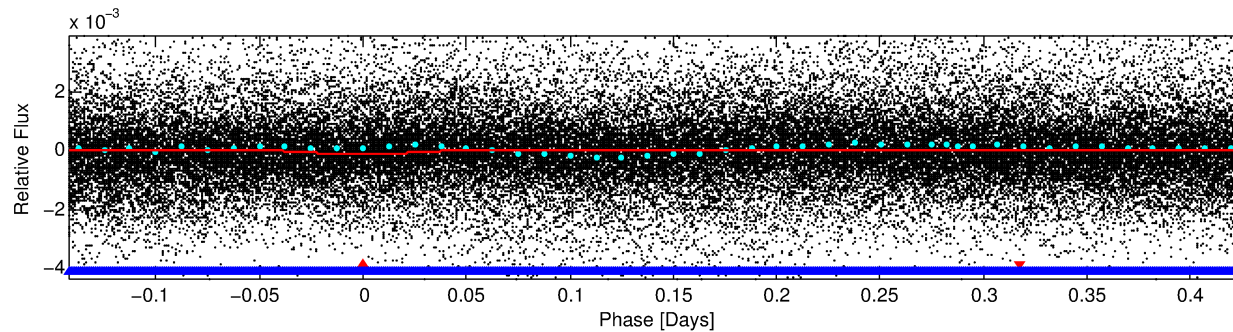
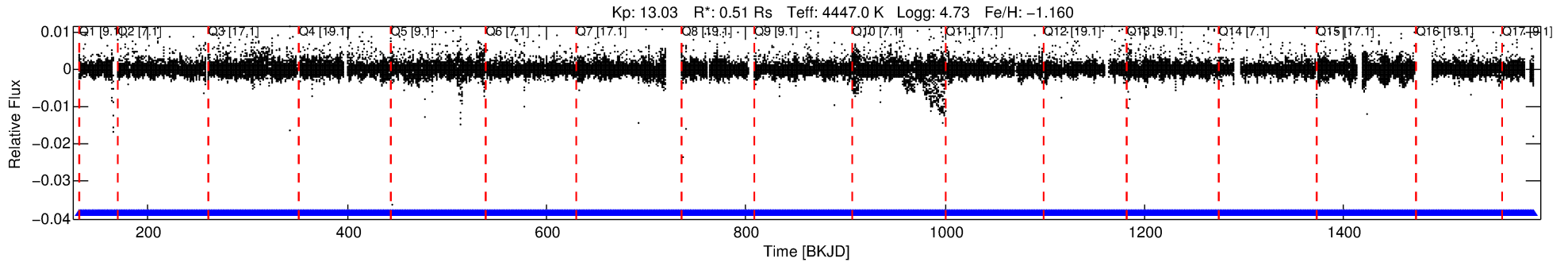
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005693926-01

No Significant Match Found

# DV One-Page Summary

KIC: 5693926 Candidate: 1 of 2 Period: 0.570 d



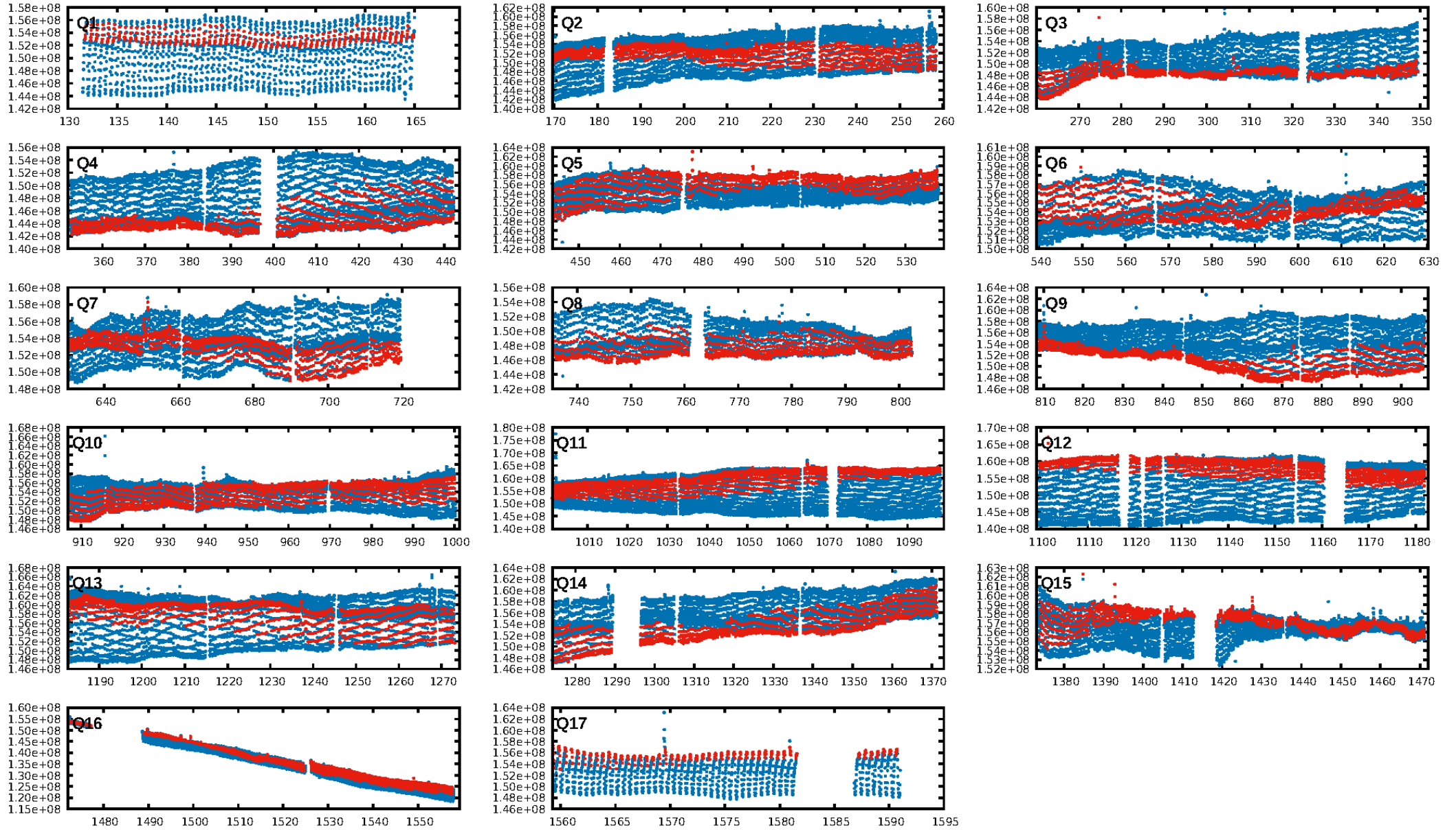
## DV Fit Results:

Period = 0.57010 [0.00001] d  
Epoch = 131.7670 [0.0020] BKJD  
Rp/R\* = 0.0107 [0.0070]  
a/R\* = 1.52 [2.55]  
b = 0.92 [0.48]  
Seff = 790.81 [140.82]  
Teff = 1352 [60] K  
Rp = 0.60 [0.39] Re  
a = 0.0108 [0.0008] AU  
Ag = 25.46 [33.53] [0.73σ]  
Teffp = 4696 [1549] K [2.16σ]

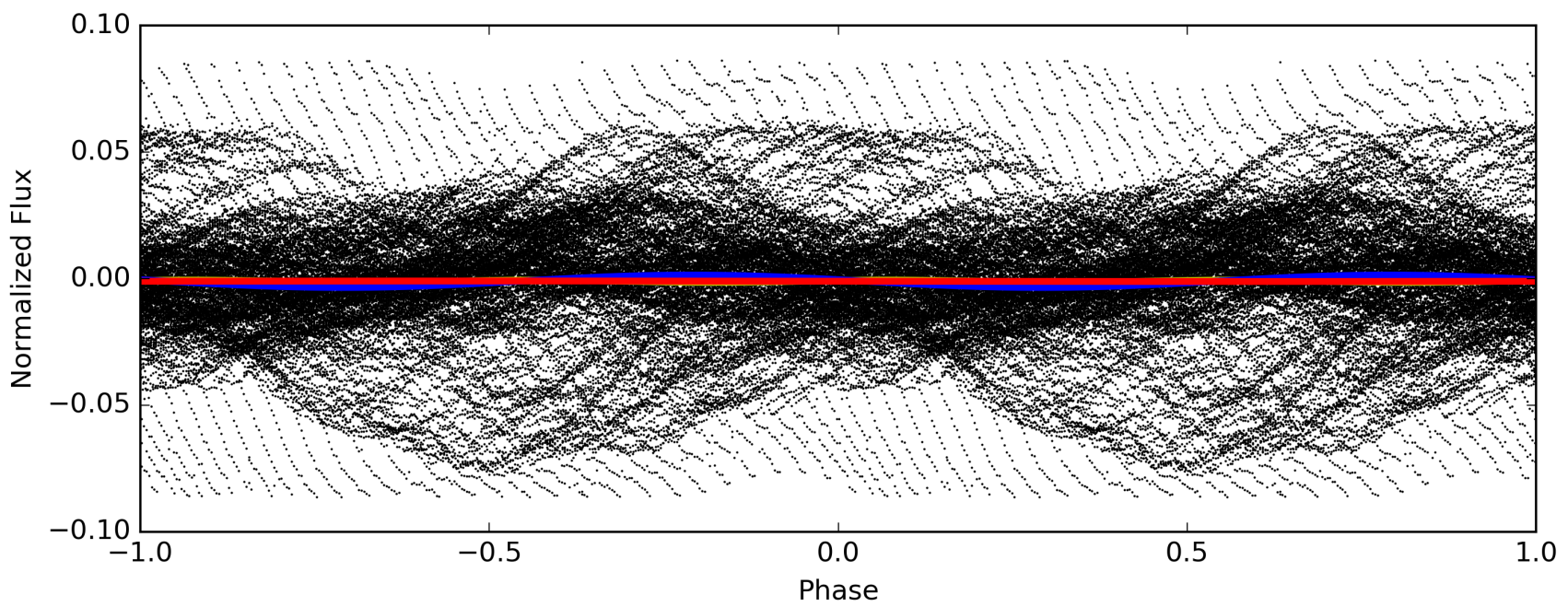
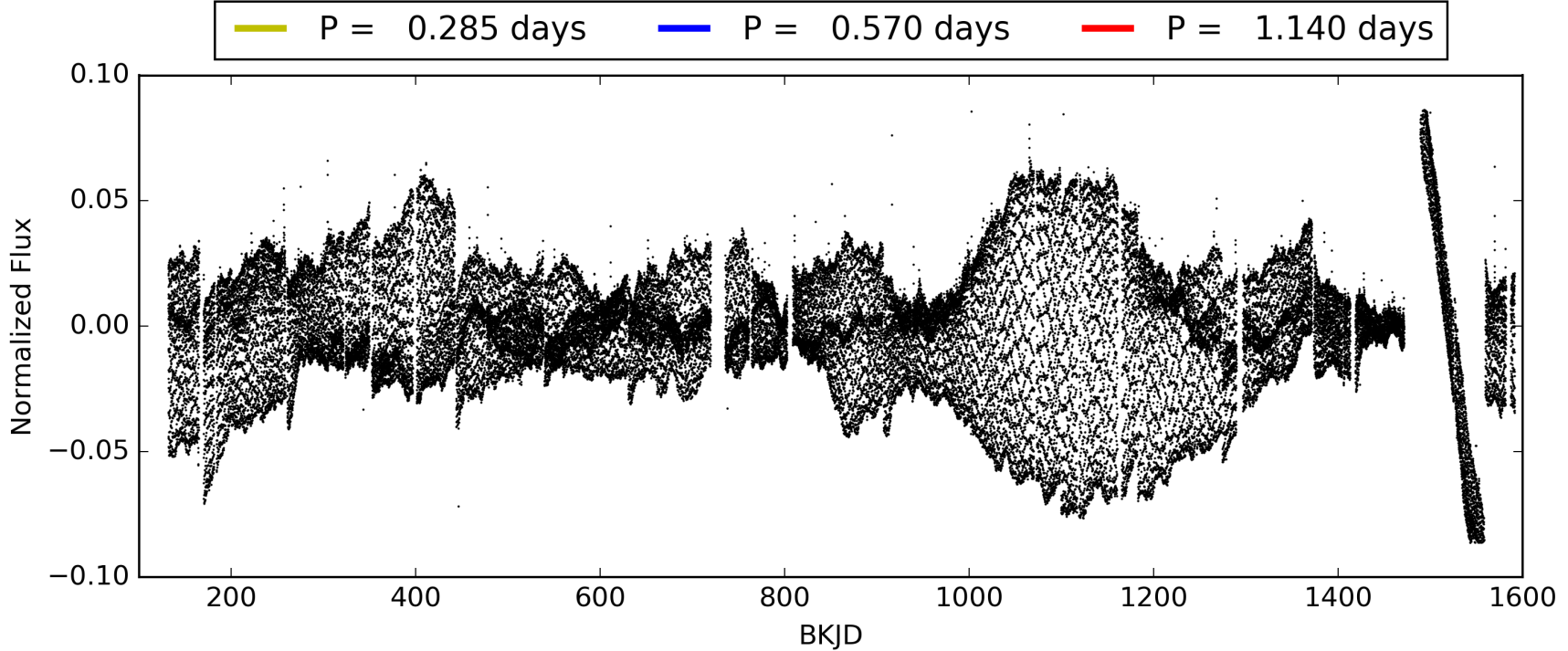
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.8% [0.01σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.19e-34  
RollingBand-fgt: 1.00 [2231/2231]  
**GhostDiagnostic-chr: 1.532**  
Centroid-sig: N/A  
Centroid-so: 0.470 arcsec [1.60σ]  
OotOffset-rm: 0.058 arcsec [0.81σ]  
KicOffset-rm: 0.386 arcsec [2.96σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.53 [9/17]  
DiffImageOverlap-fno: 0.35 [6/17]

# TCE 005693926-01, PDC Light Curves



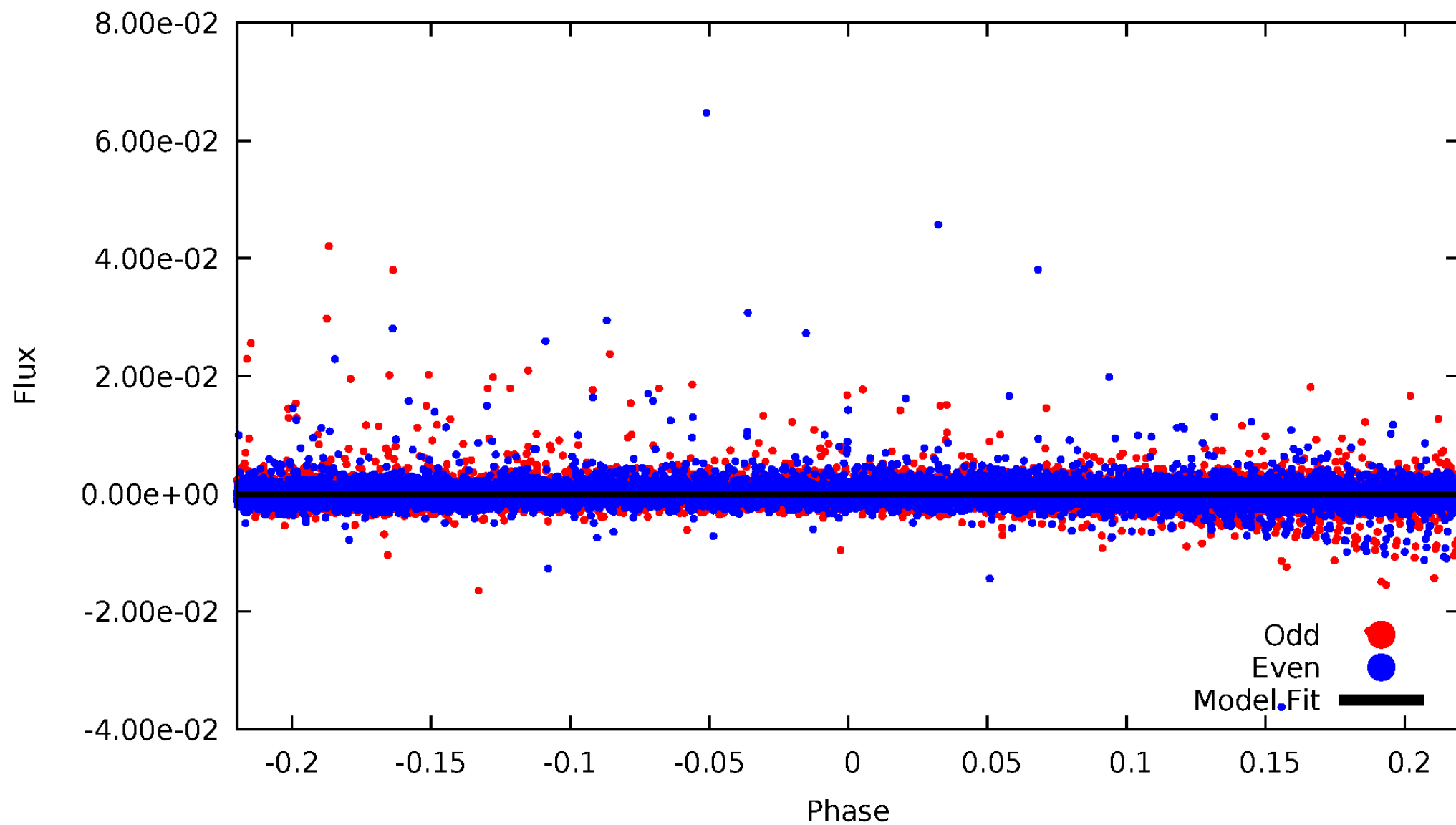
TCE 005693926-01





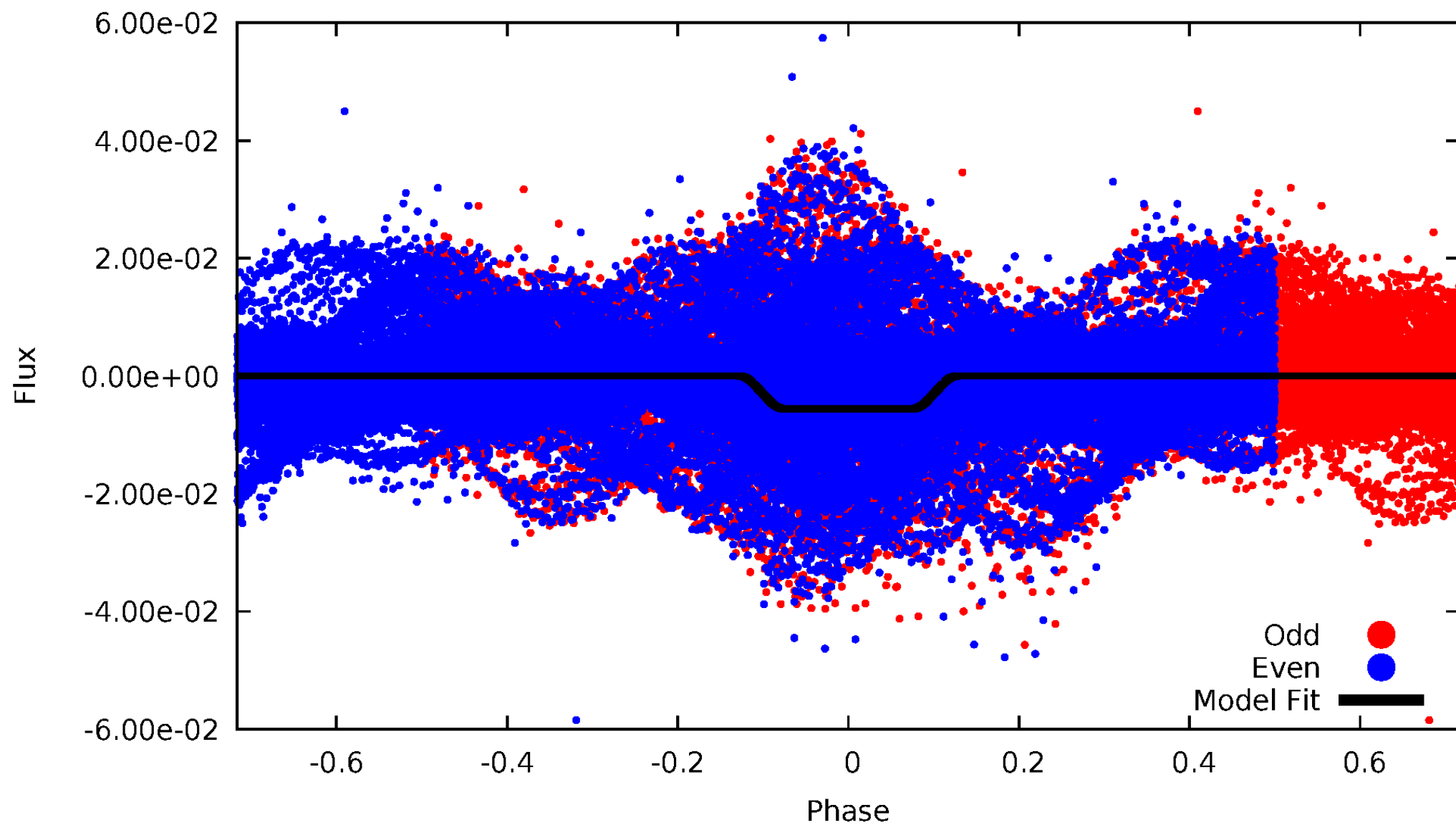
# DV Odd/Even

TCE 005693926-01



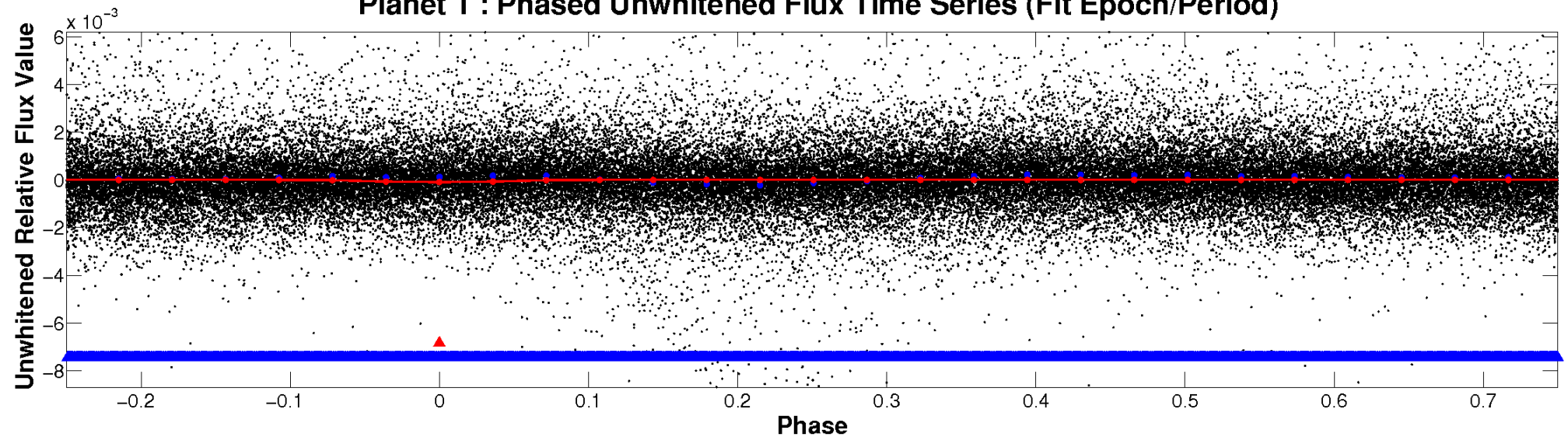
# ALT Odd/Even

TCE 005693926-01

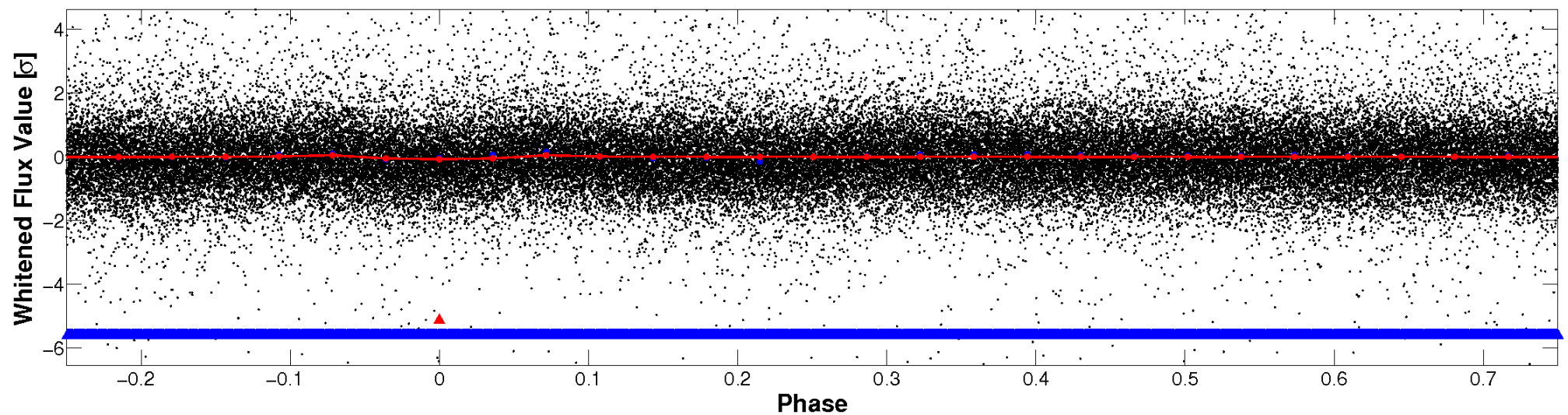


# Non-Whitened Vs. Whitened Light Curve

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

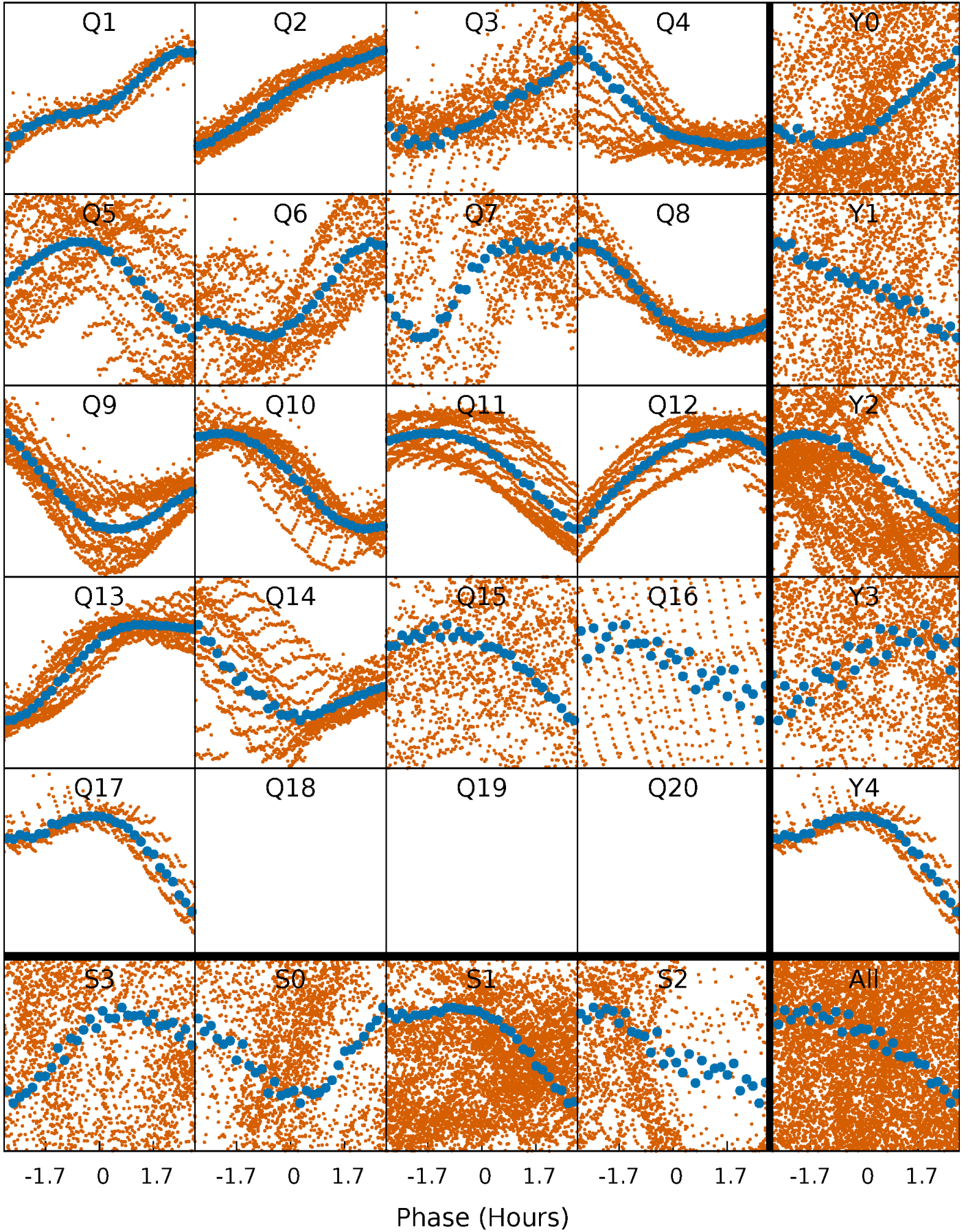


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

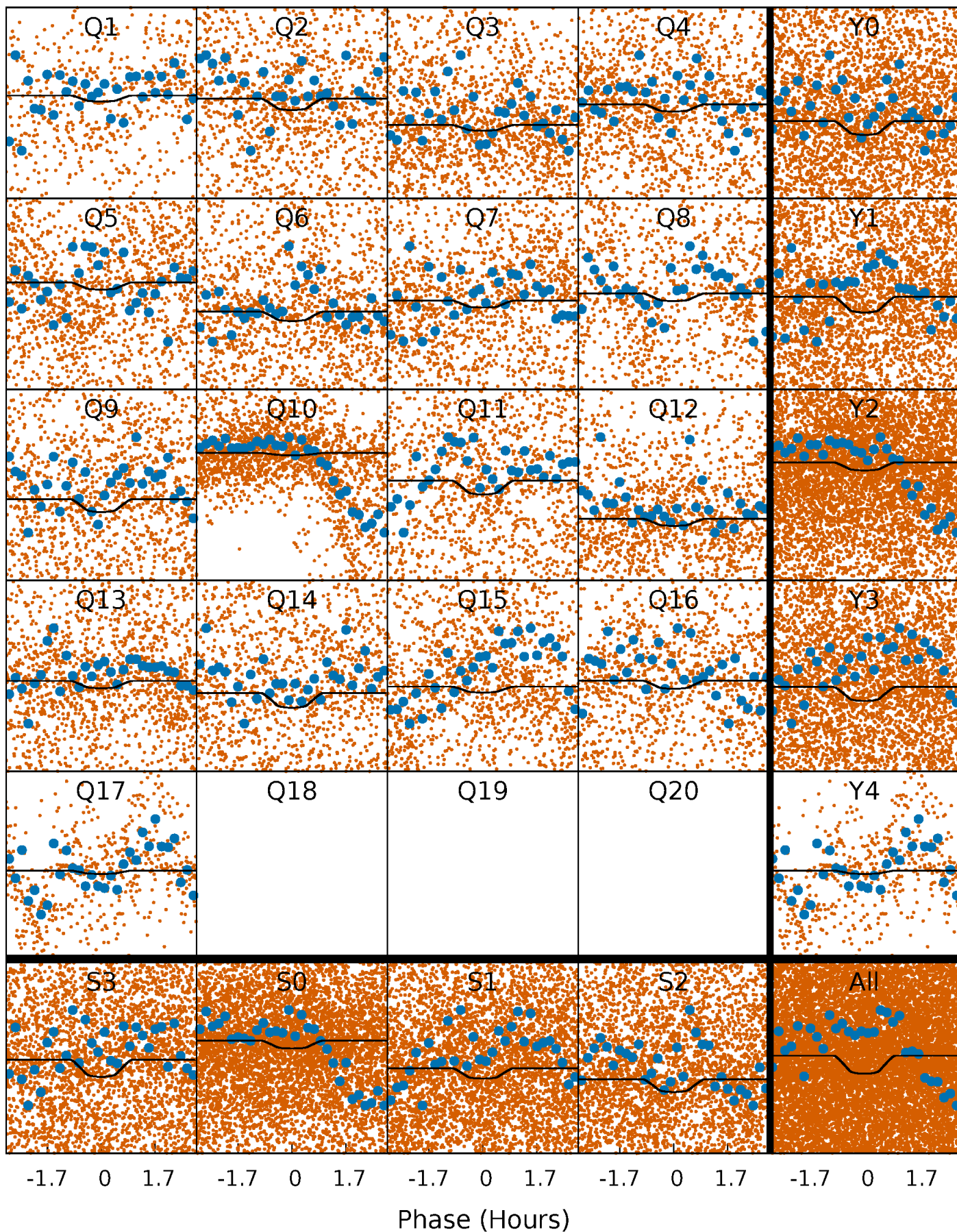
TCE 005693926-01 P= 0.570105 Days  $T_0=131.767001$  (BKJD)





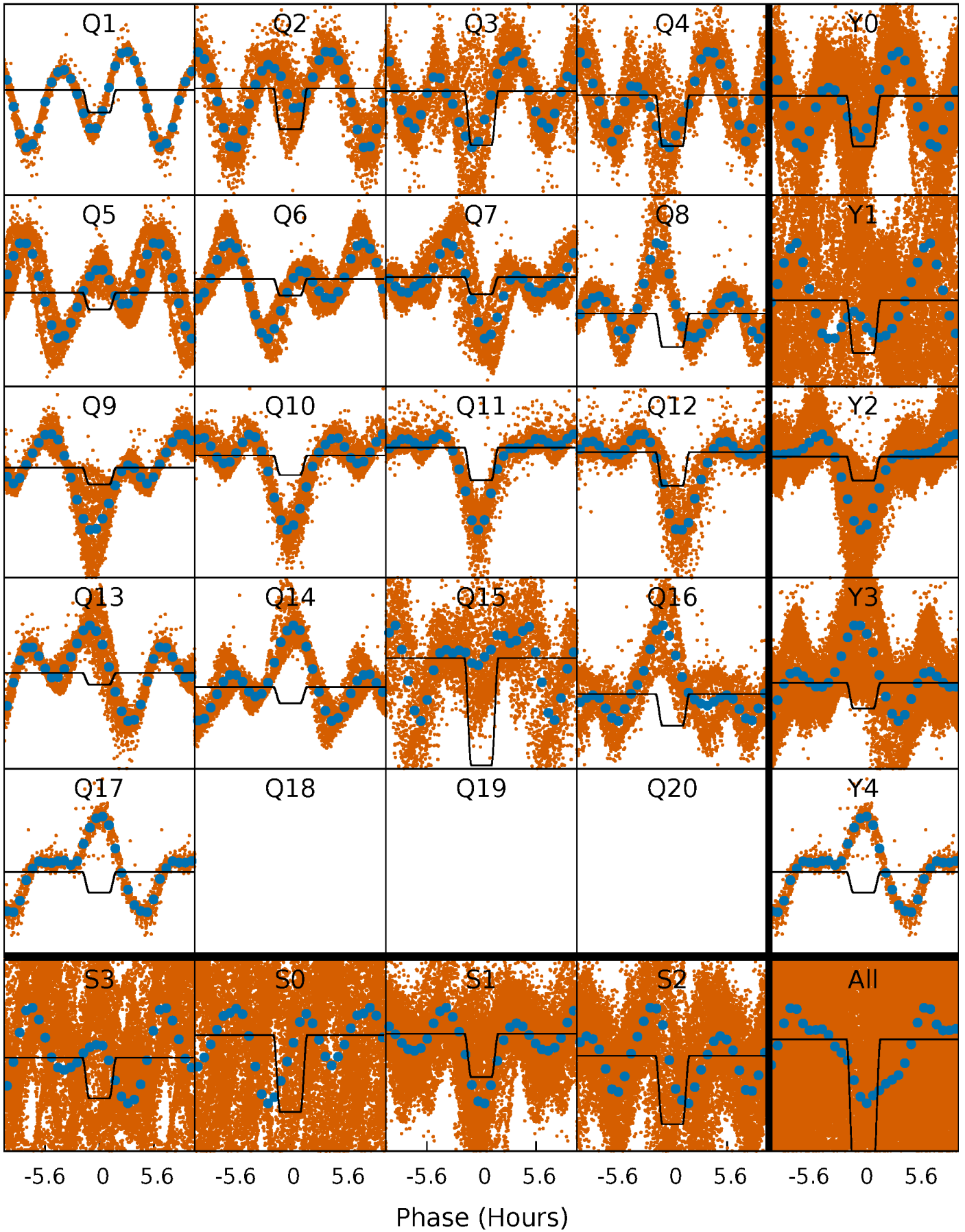
# DV Quarter-Phased Transit Curves

TCE 005693926-01 P= 0.570105 Days  $T_0=131.767001$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

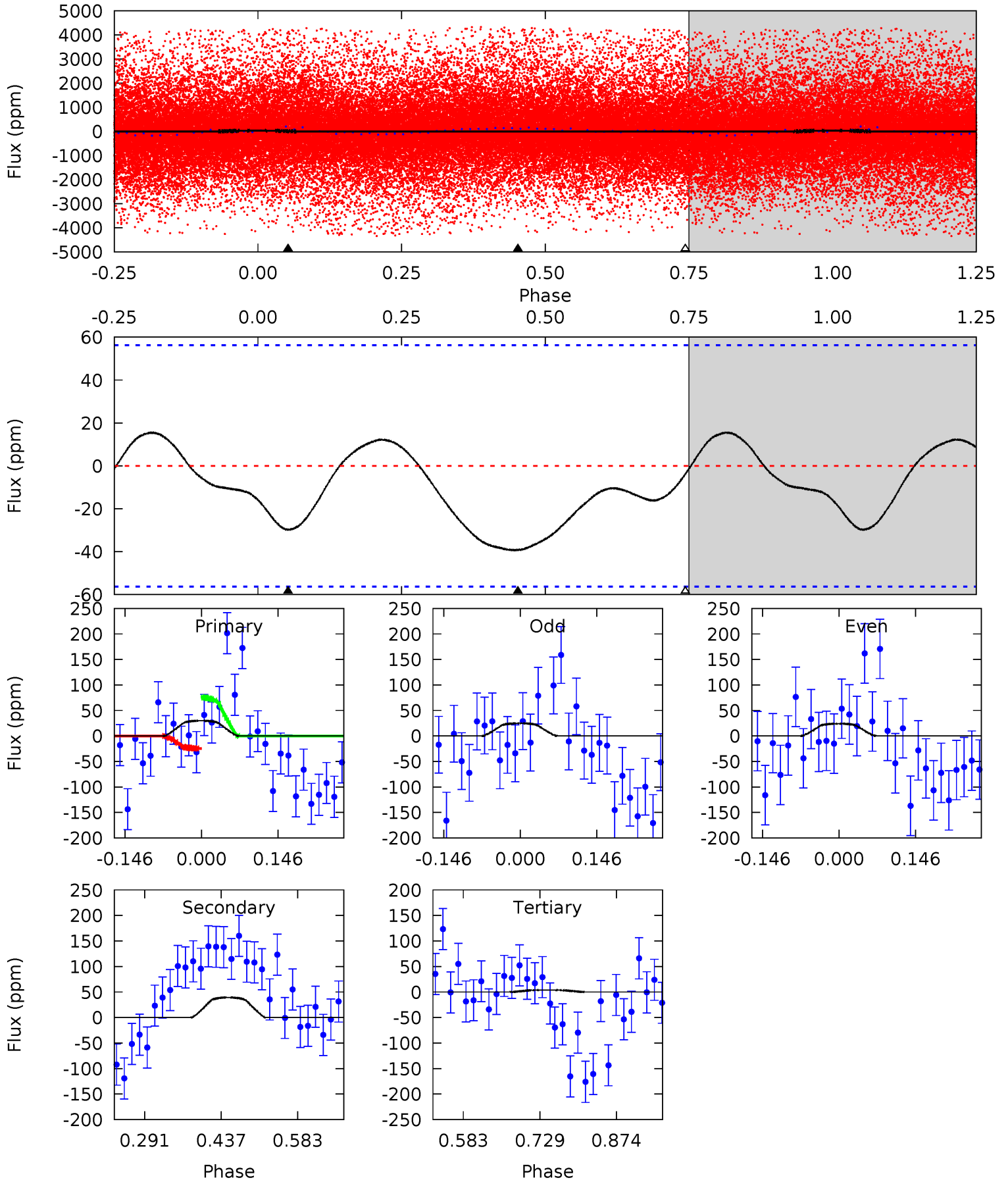
TCE 005693926-01 P= 0.570553 Days  $T_0=131.790812$  (BKJD)



# DV Model-Shift Uniqueness Test

005693926-01, P = 0.570105 Days, E = 131.196896 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
2.38	3.14	0.31	0	4.49	1.45	0.85	2.07	2.38	2.83	3.14	0.03	6.23	0.28	2.06

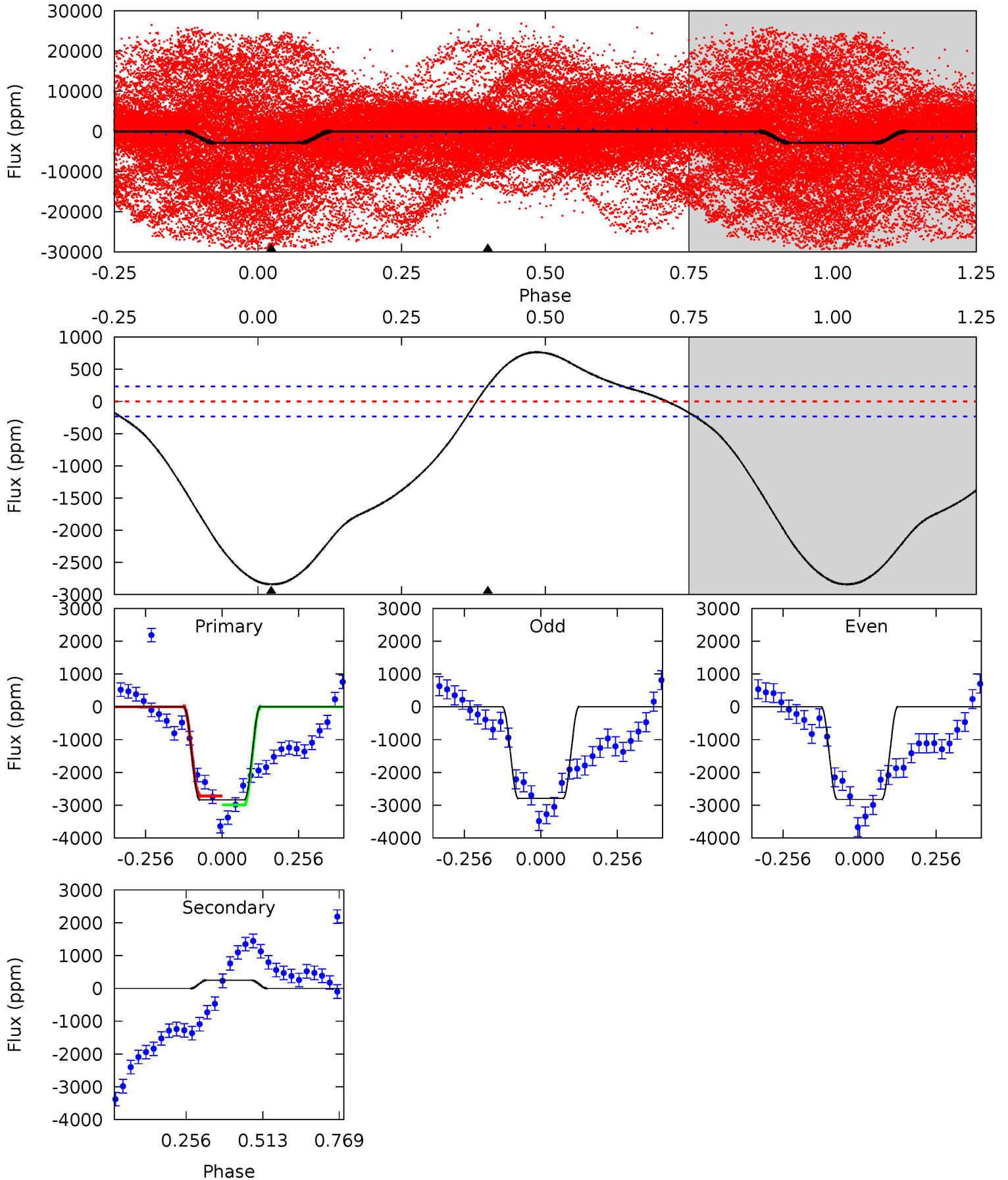




# Alt Model-Shift Uniqueness Test

005693926-01, P = 0.570553 Days, E = 131.220259 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
53.1	-4.65	0	0	4.36	1.13	2.41	53.1	53.1	-4.65	-4.65	0.25	1.00	0.21	2.44





### Stellar Parameters For KIC 005693926

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4447^{+140}_{-155}$	$4.730^{+0.059}_{-0.032}$	$-1.160^{+0.300}_{-0.300}$	$0.512^{+0.033}_{-0.049}$	$0.513^{+0.036}_{-0.032}$	$5.387^{+1.460}_{-0.653}$
	+3%/-3%	+1%/-1%	+26%/-26%	+6%/-10%	+7%/-6%	+27%/-12%
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 005693926-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-39 \pm 13$	$0.63^{+0.38}_{-0.33}$	$1880^{+68}_{-79}$	$3575^{+1102}_{-579}$	$6.243^{+23.062}_{-4.066}$
Alt.	$249 \pm 54$	$4.14^{+0.45}_{-0.43}$	$1877^{+69}_{-72}$	$-2822^{+99}_{-109}$	$-0.918^{+0.232}_{-0.310}$

$T_{\text{max}}$  = 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

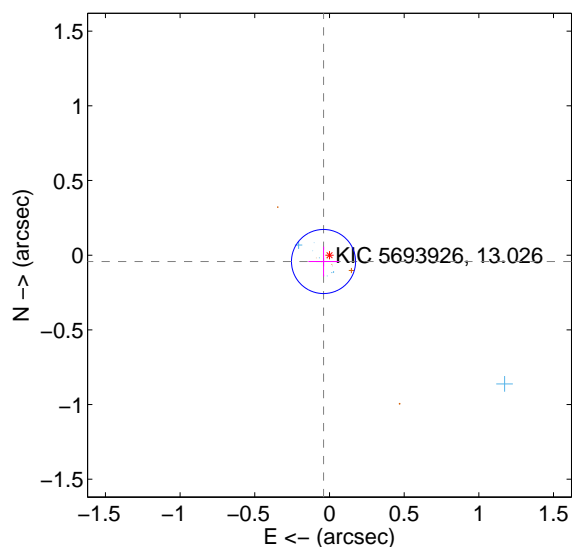
Supplemental centroid analysis for 005693926-01. Kepler magnitude: 13.03. Transit SNR 5.94

There are 9 quarters with good PRF difference image offsets

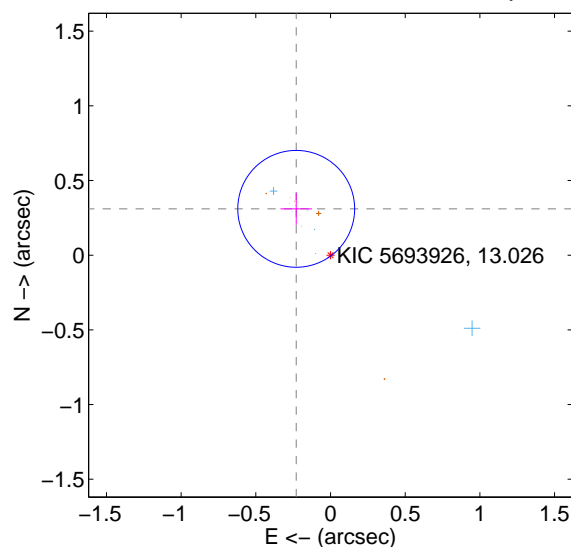
The direct PRF centroid is offset from the target star catalog position by about 0.49 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.058 \pm 0.072$	0.81	$0.040 \pm 0.102$	$-0.042 \pm 0.100$
PRF-fit source offset from KIC position	$0.386 \pm 0.130$	2.96	$0.230 \pm 0.105$	$0.310 \pm 0.107$
photometric centroid source offset	$0.47 \pm 0.29$	1.60	$0.20 \pm 0.22$	$-0.43 \pm 0.31$

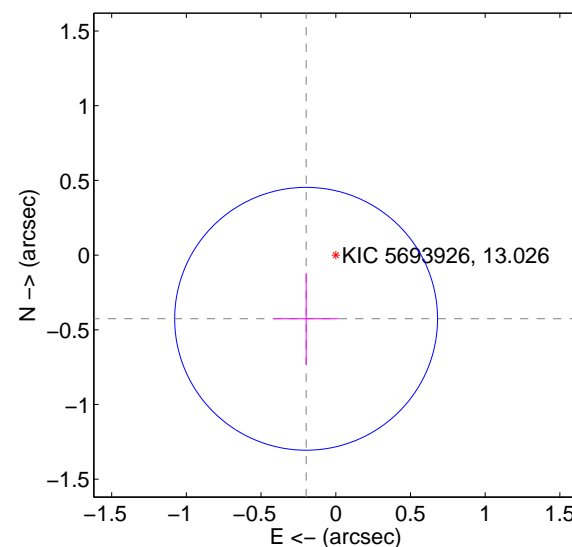
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

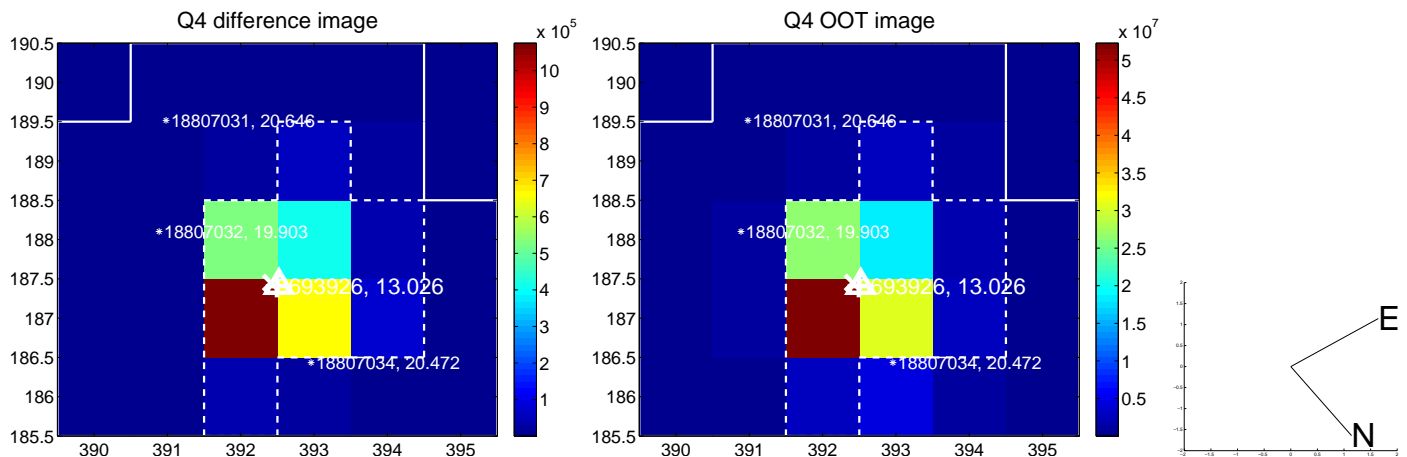
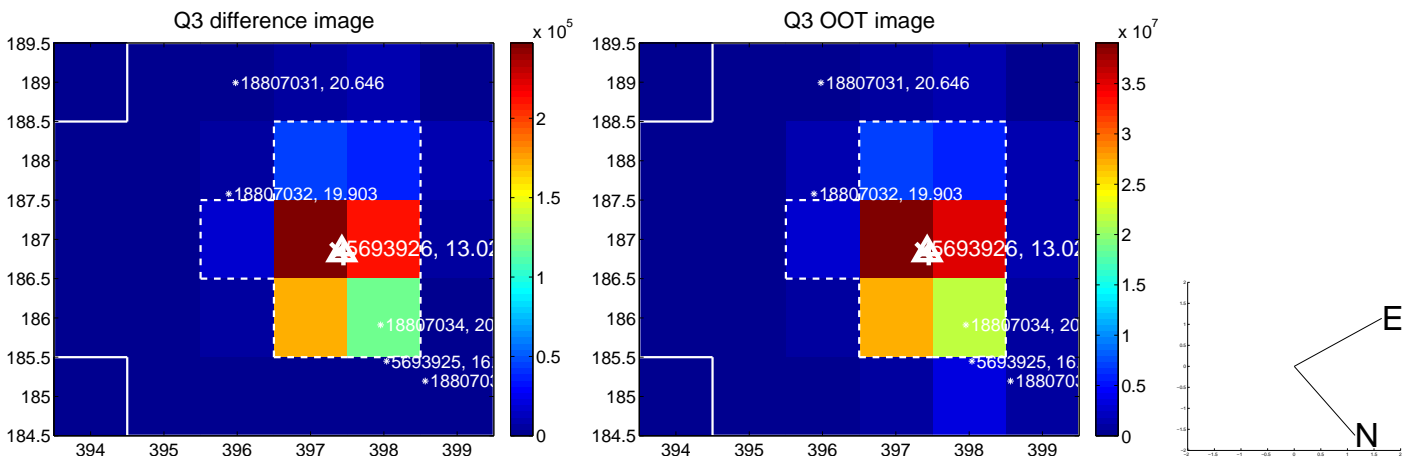
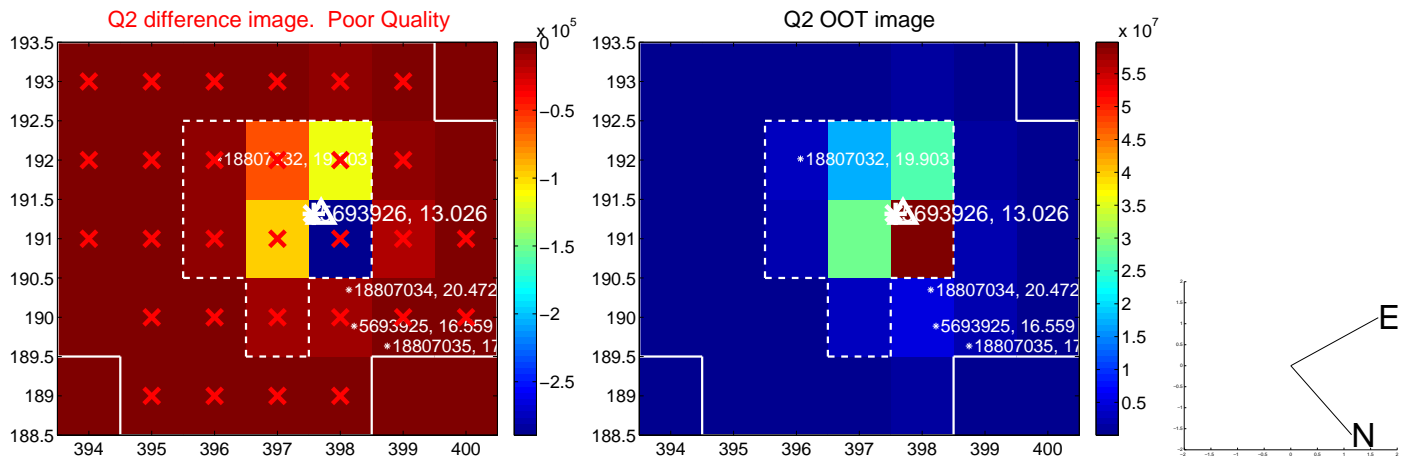
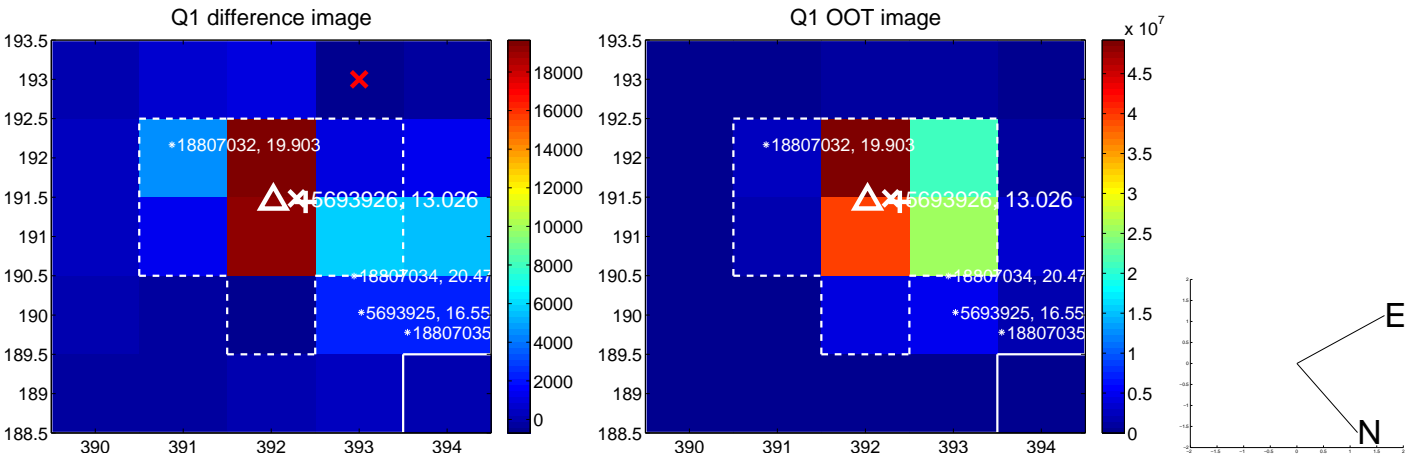


offset from photometric centroids

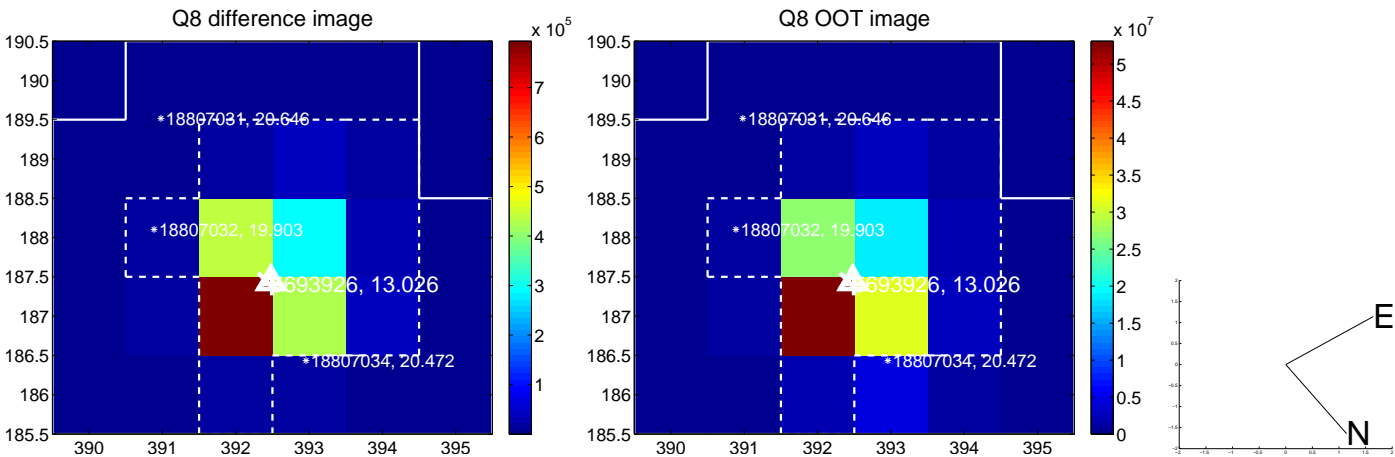
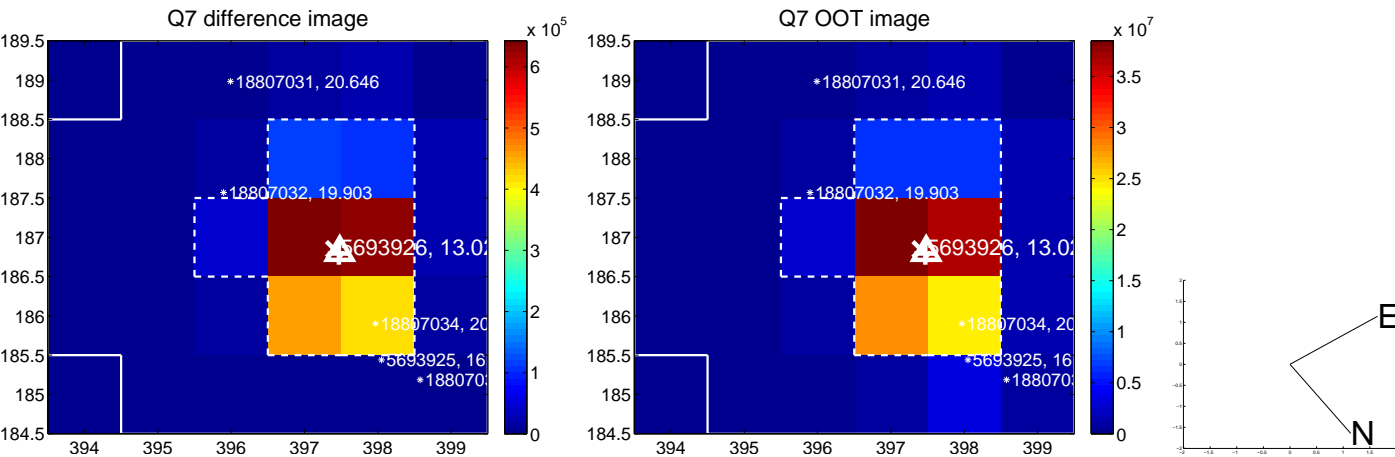
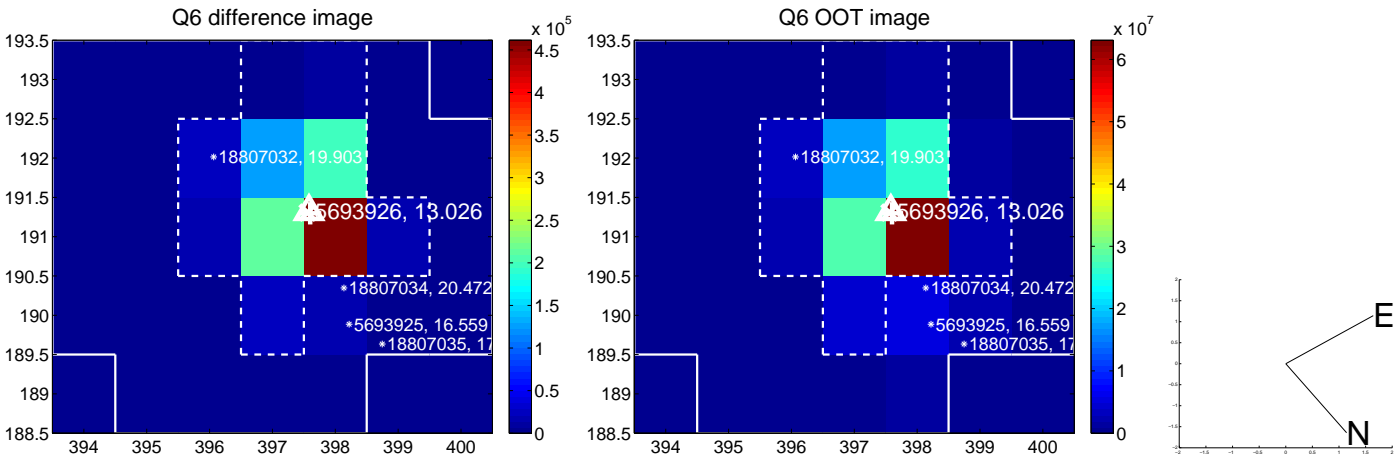
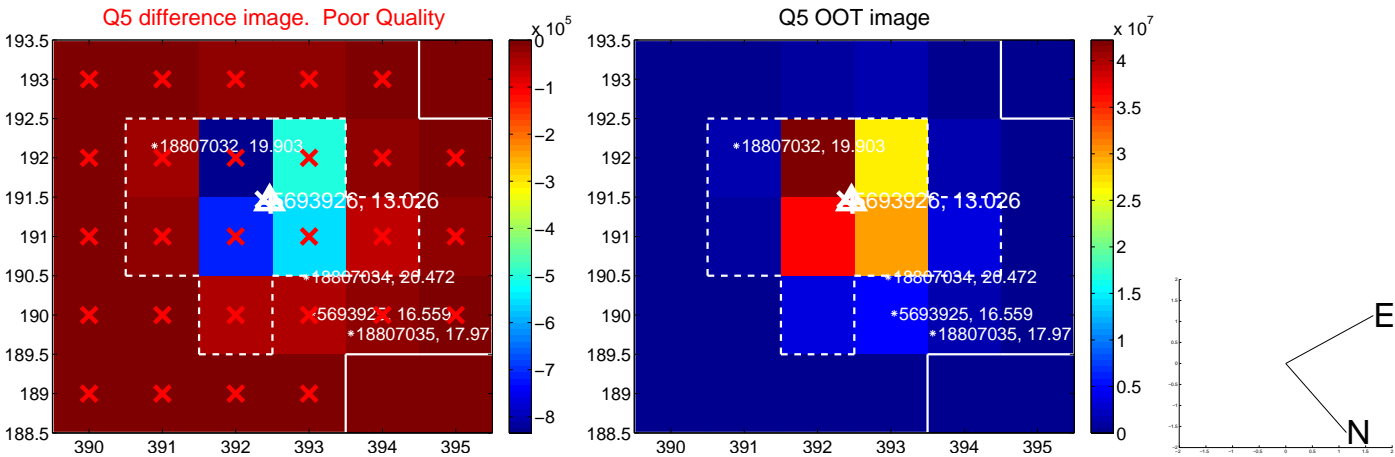


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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

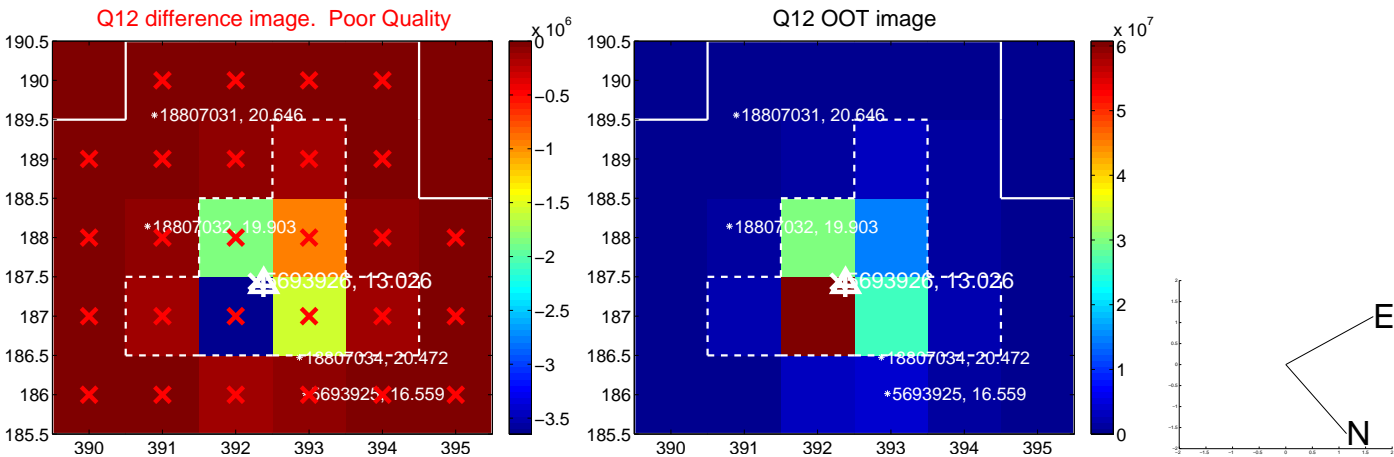
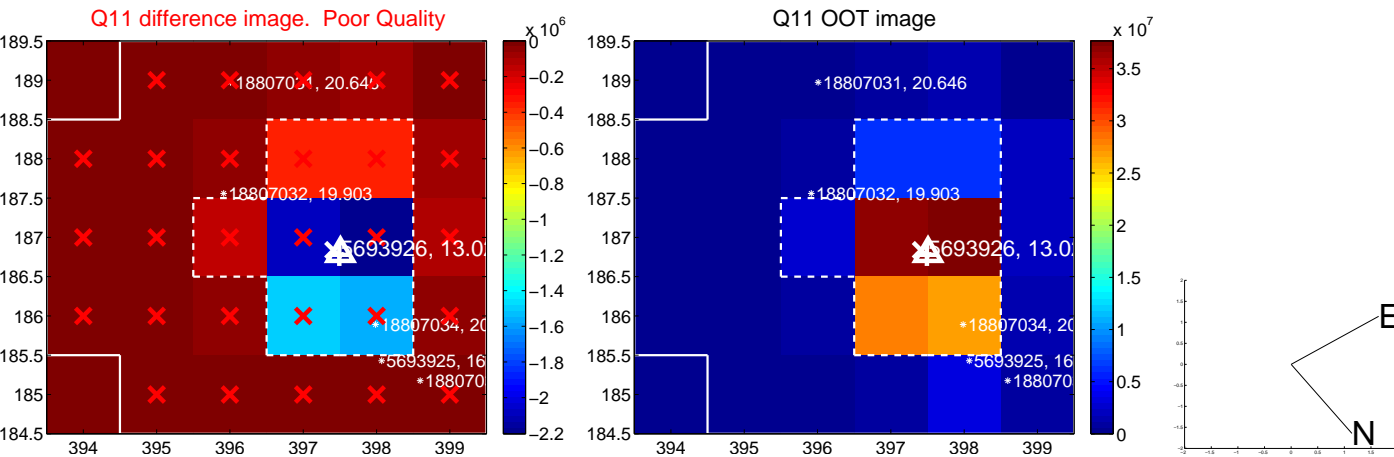
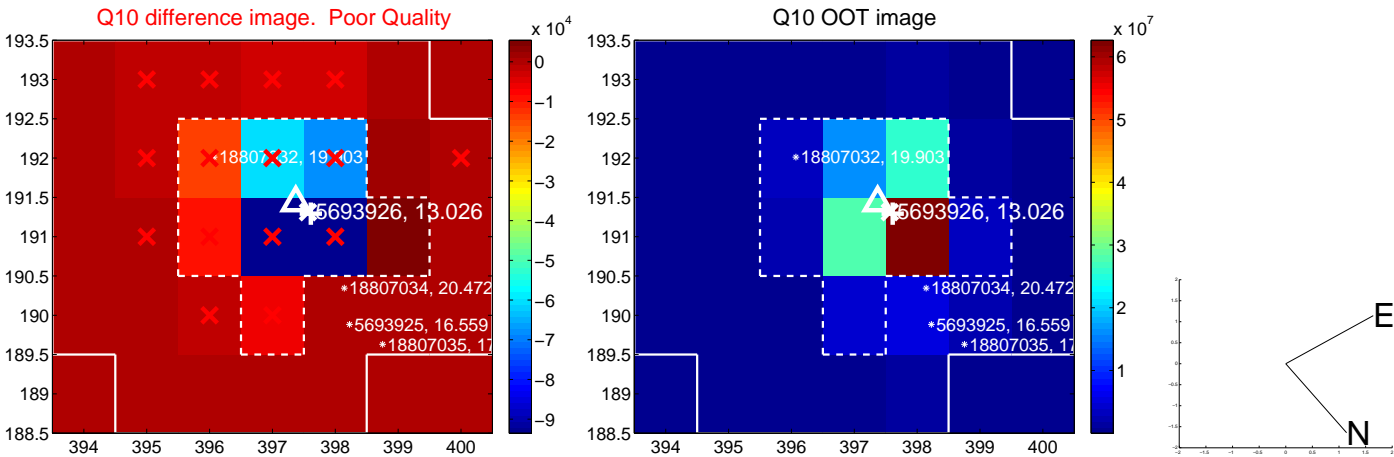
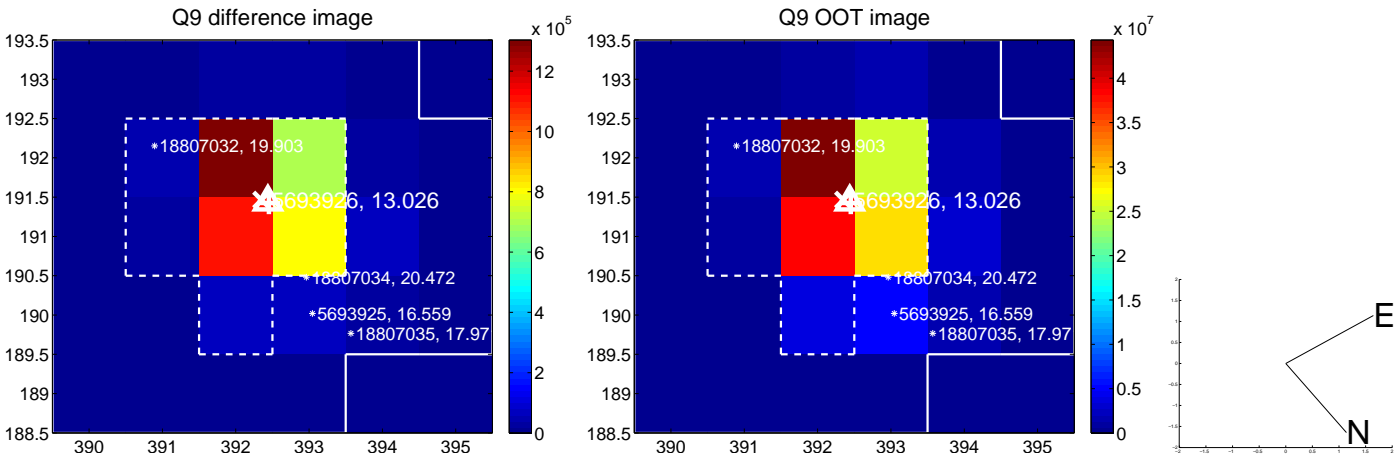


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

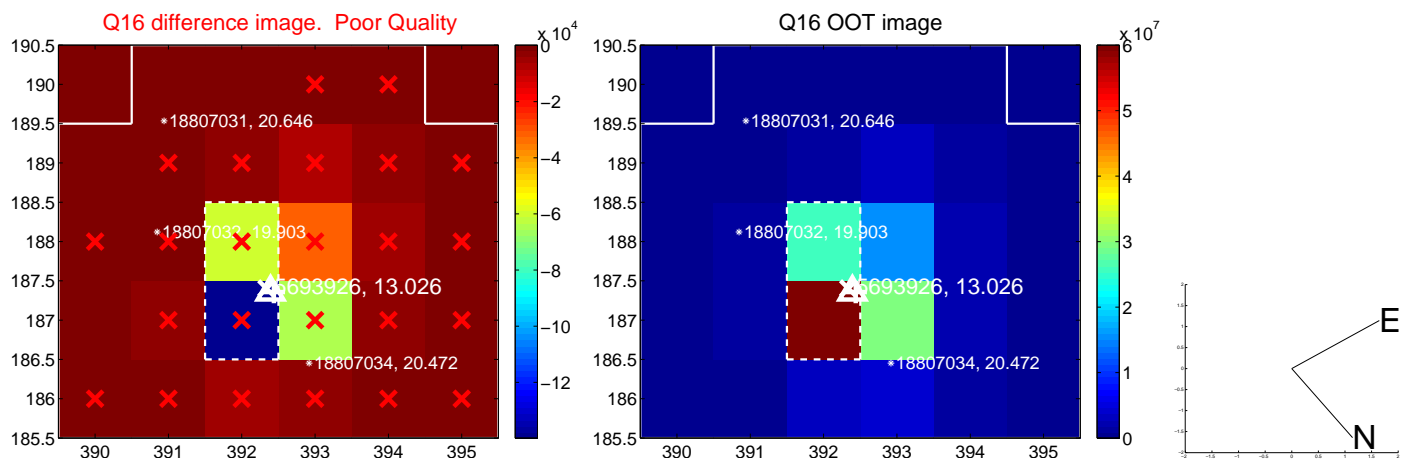
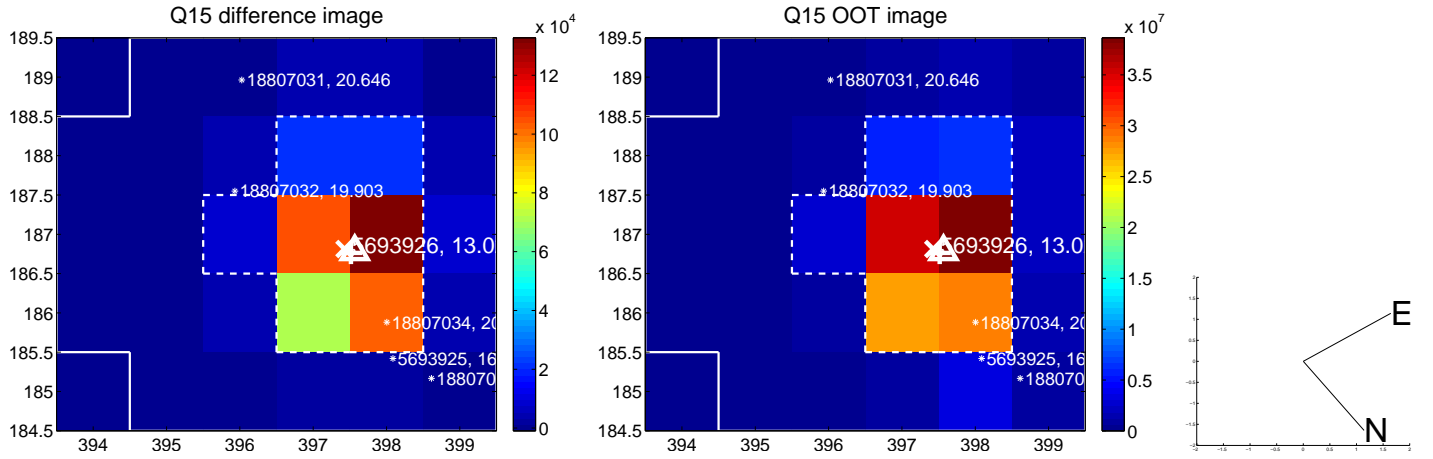
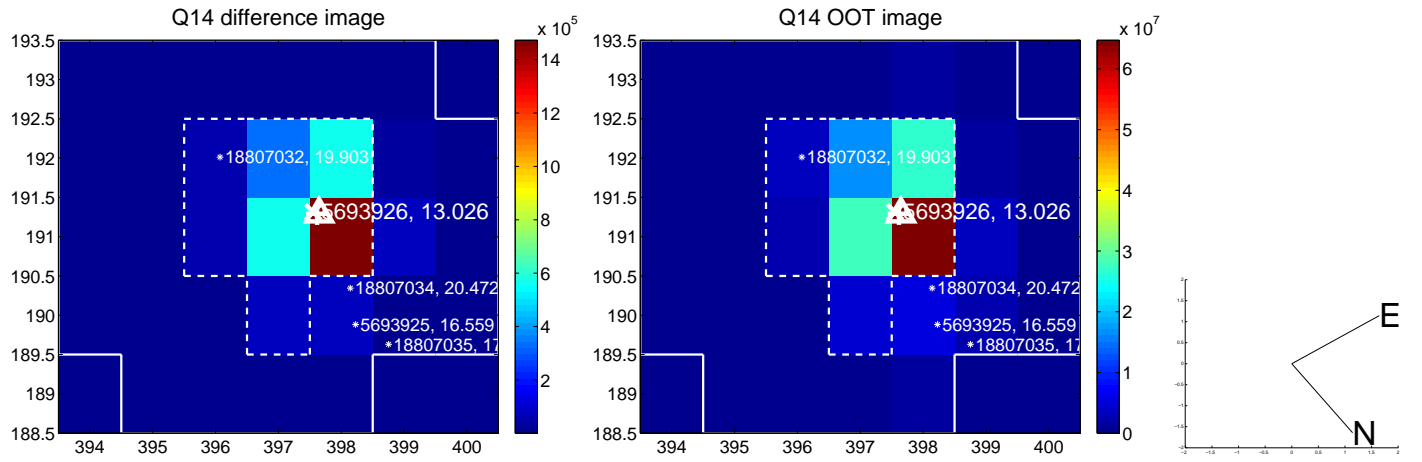
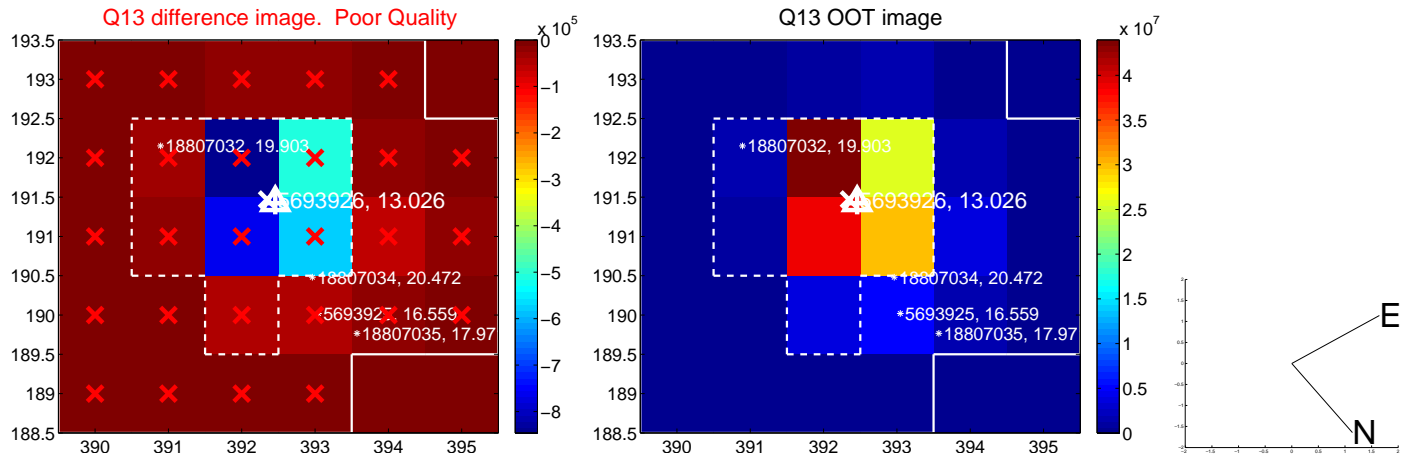




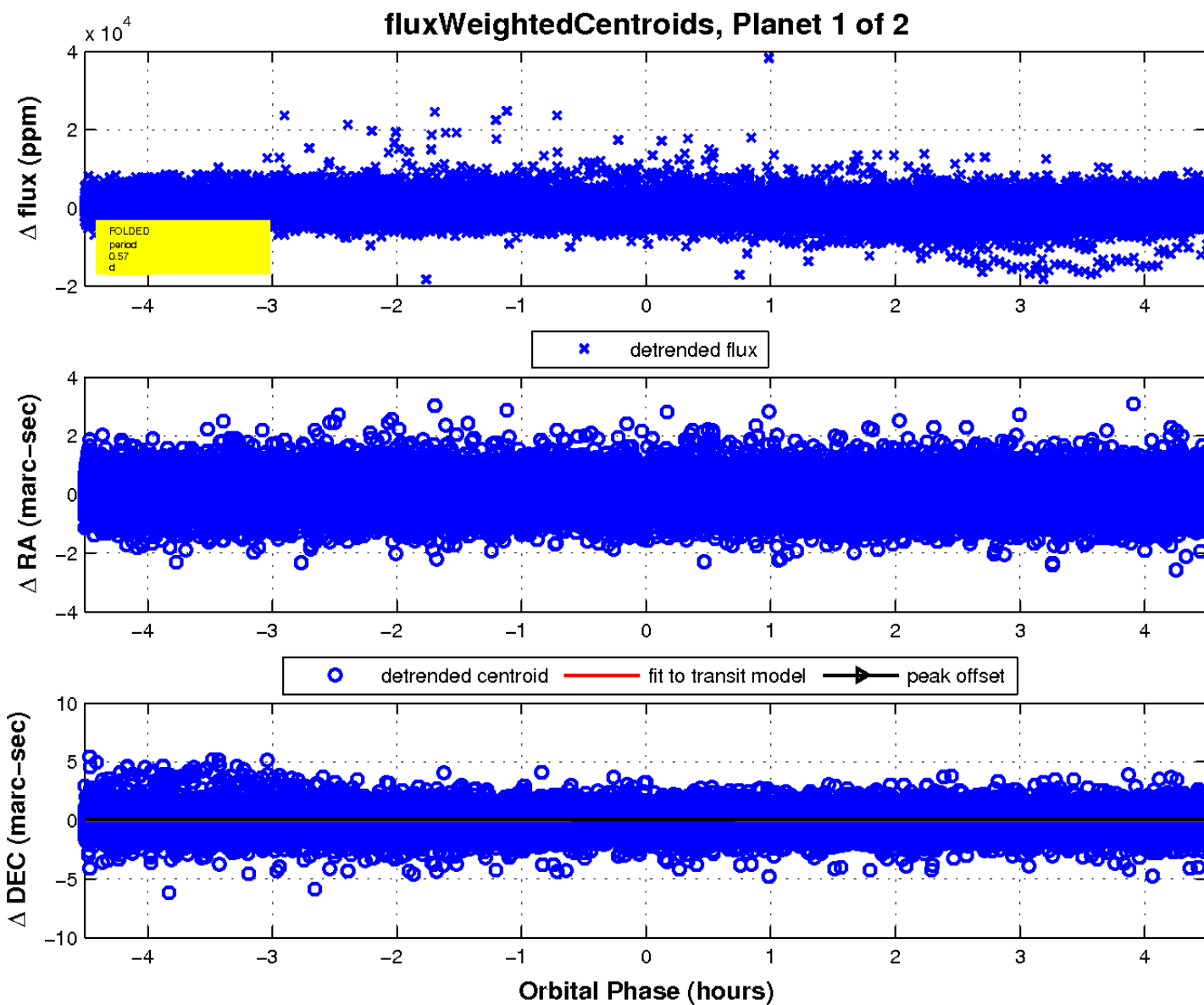
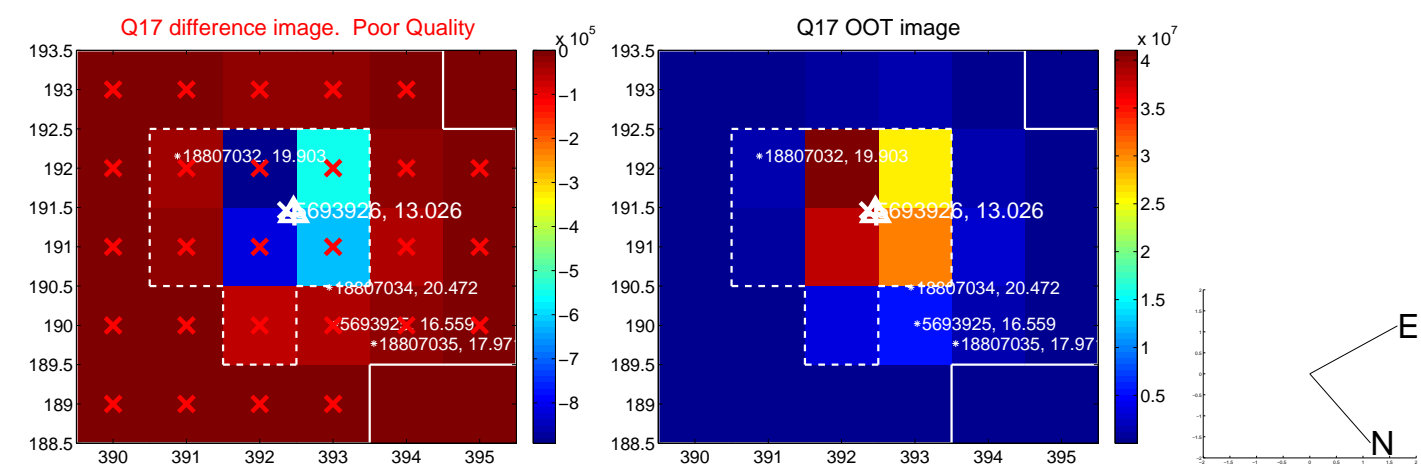
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

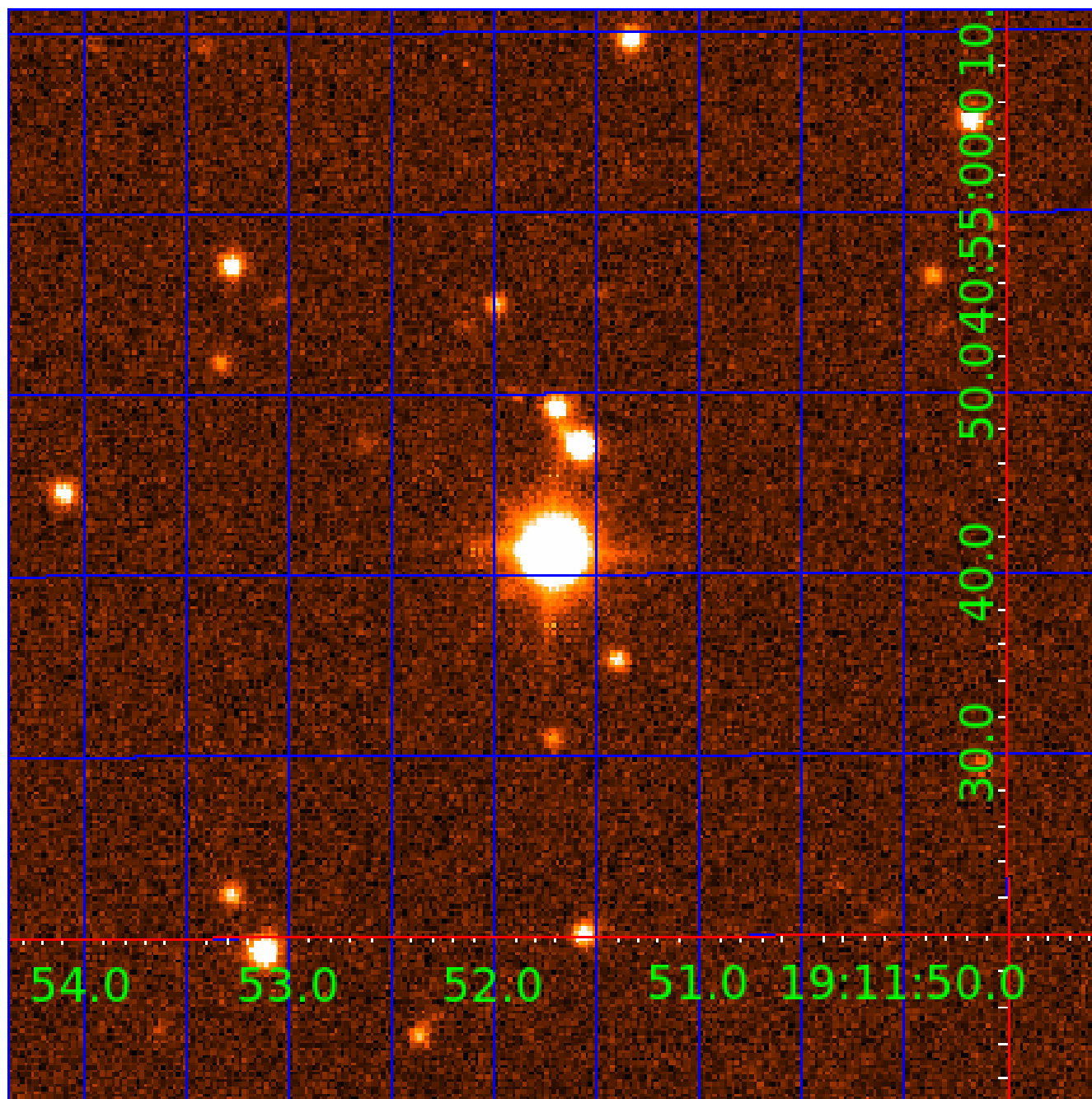


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 005693926

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005693926-01	OBS	No	0.570105	131.767001	88.7	1.503	11.8	5.9	0.51	4447	0.60	790.81
005693926-02	OBS	No	0.570933	131.794232	300.5	1.120	11.6	15.2	0.51	4447	0.91	789.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005693926-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
005693926-02	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_KIC_POS

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

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

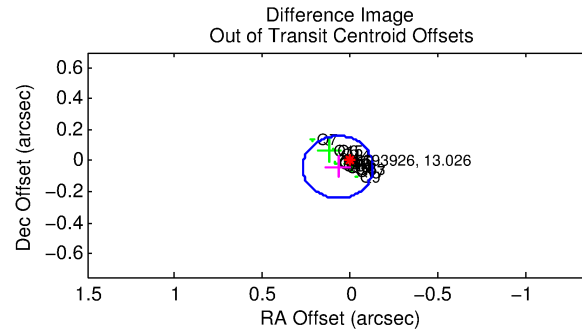
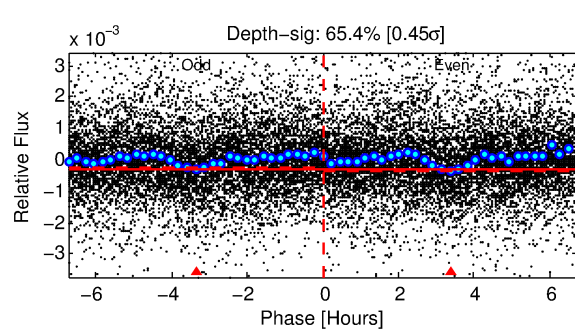
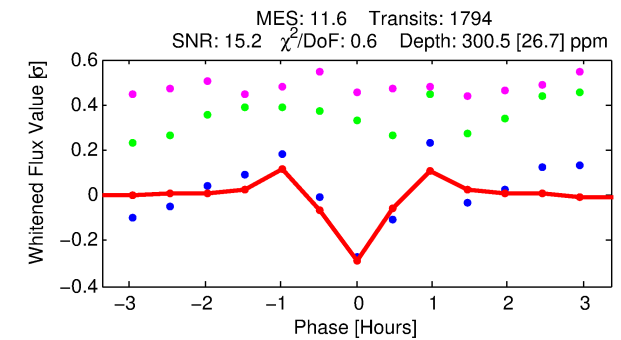
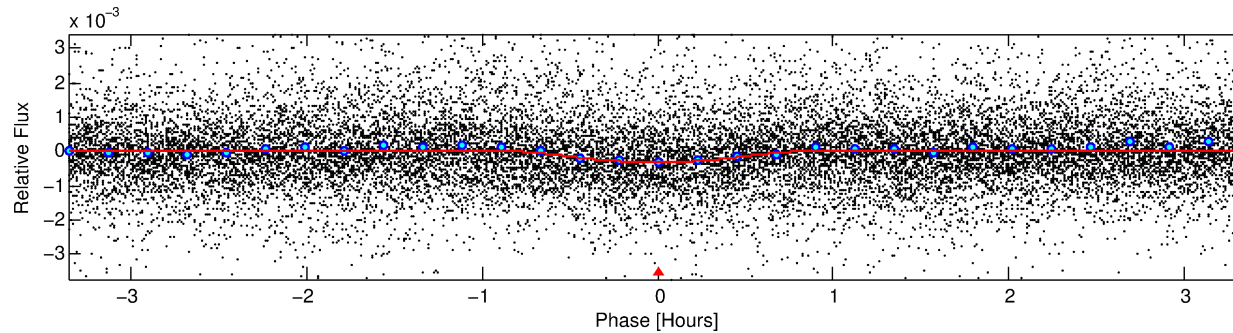
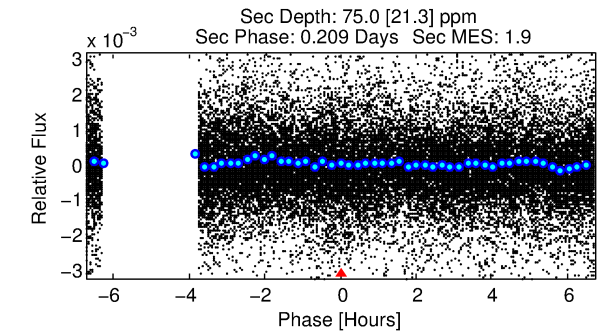
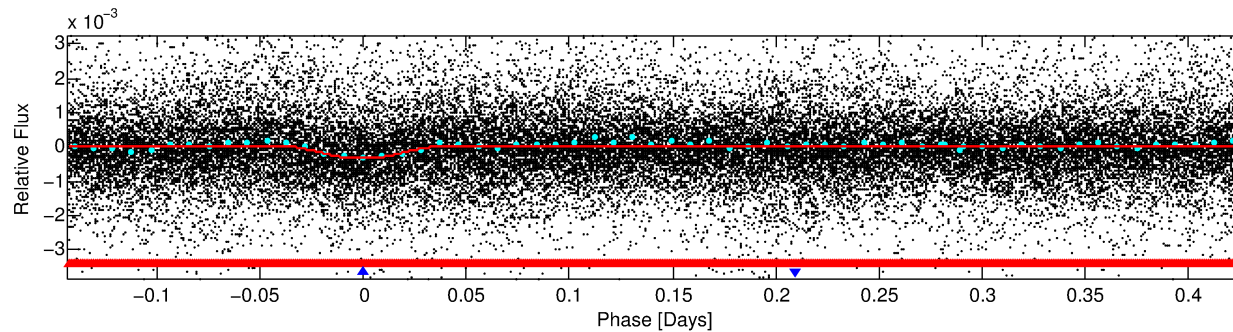
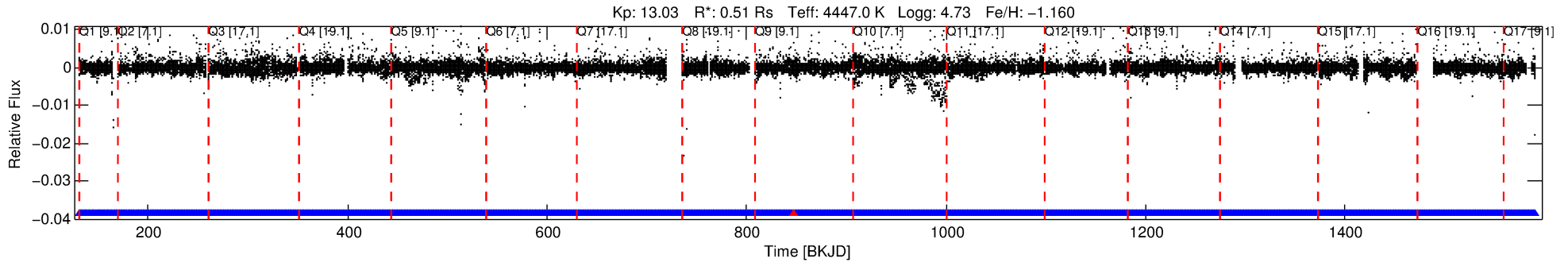
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005693926-02

No Significant Match Found

# DV One-Page Summary

KIC: 5693926 Candidate: 2 of 2 Period: 0.571 d



## DV Fit Results:

Period = 0.57093 [0.00001] d  
Epoch = 131.7942 [0.0007] BKJD  
Rp/R\* = 0.0163 [0.0058]  
a/R\* = 3.55 [4.58]  
b = 0.48 [2.25]  
Seff = 789.28 [140.55]  
Teff = 1352 [60] K  
Rp = 0.91 [0.34] Re  
a = 0.0108 [0.0008] AU  
Ag = 5.83 [4.54] [1.06σ]  
Teffp = 3247 [637] K [2.96σ]

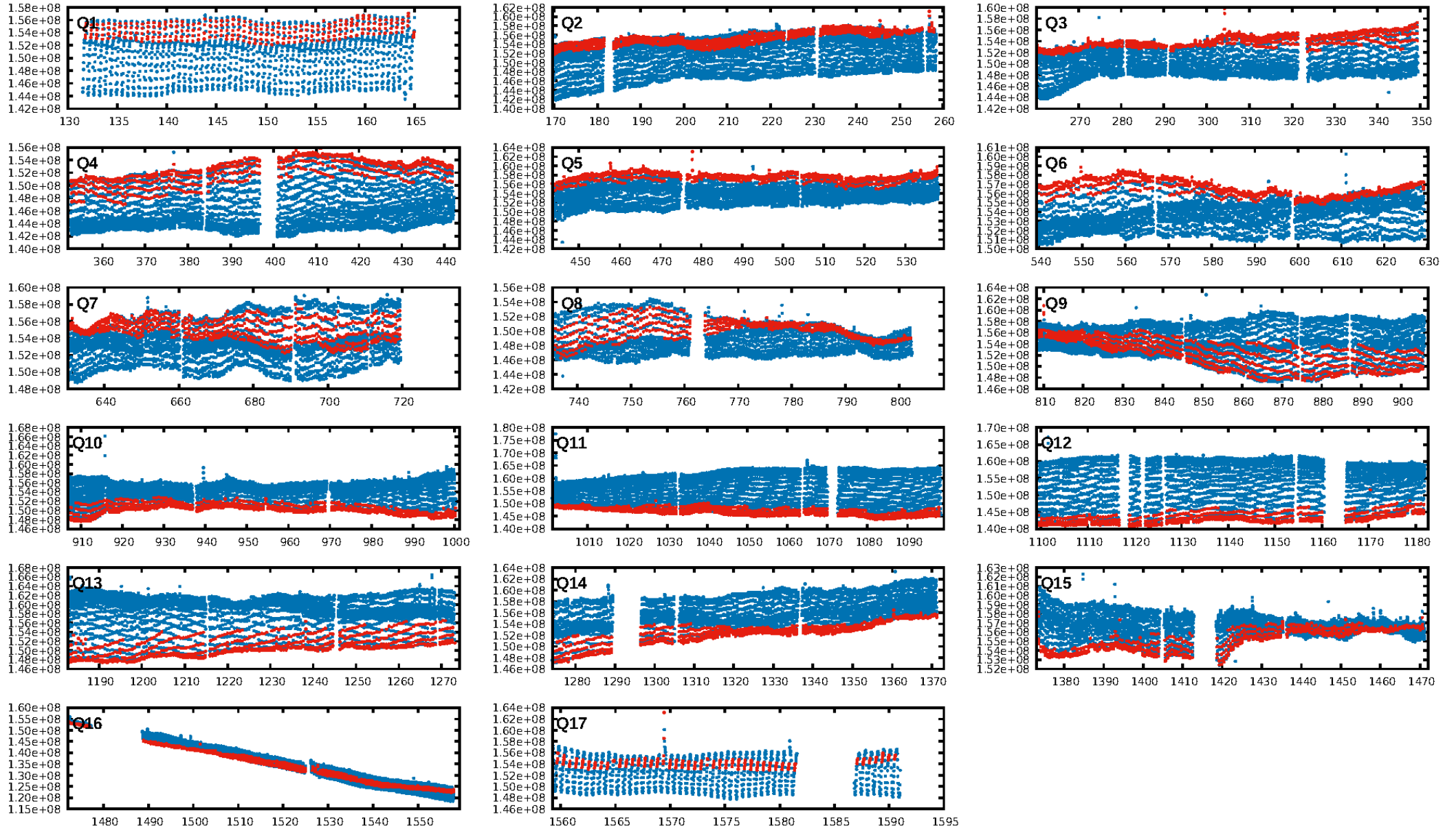
## DV Diagnostic Results:

ShortPeriod-sig: 0.8% [0.01σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.95e-33  
RollingBand-fgt: 1.00 [1743/1744]  
**GhostDiagnostic-chr: 0.3229**  
Centroid-sig: N/A  
**Centroid-so: 0.406 arcsec [4.67σ]**  
OotOffset-rm: 0.082 arcsec [1.22σ]  
**KicOffset-rm: 0.358 arcsec [5.11σ]**  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.47 [8/17]  
DiffImageOverlap-fno: 0.35 [6/17]

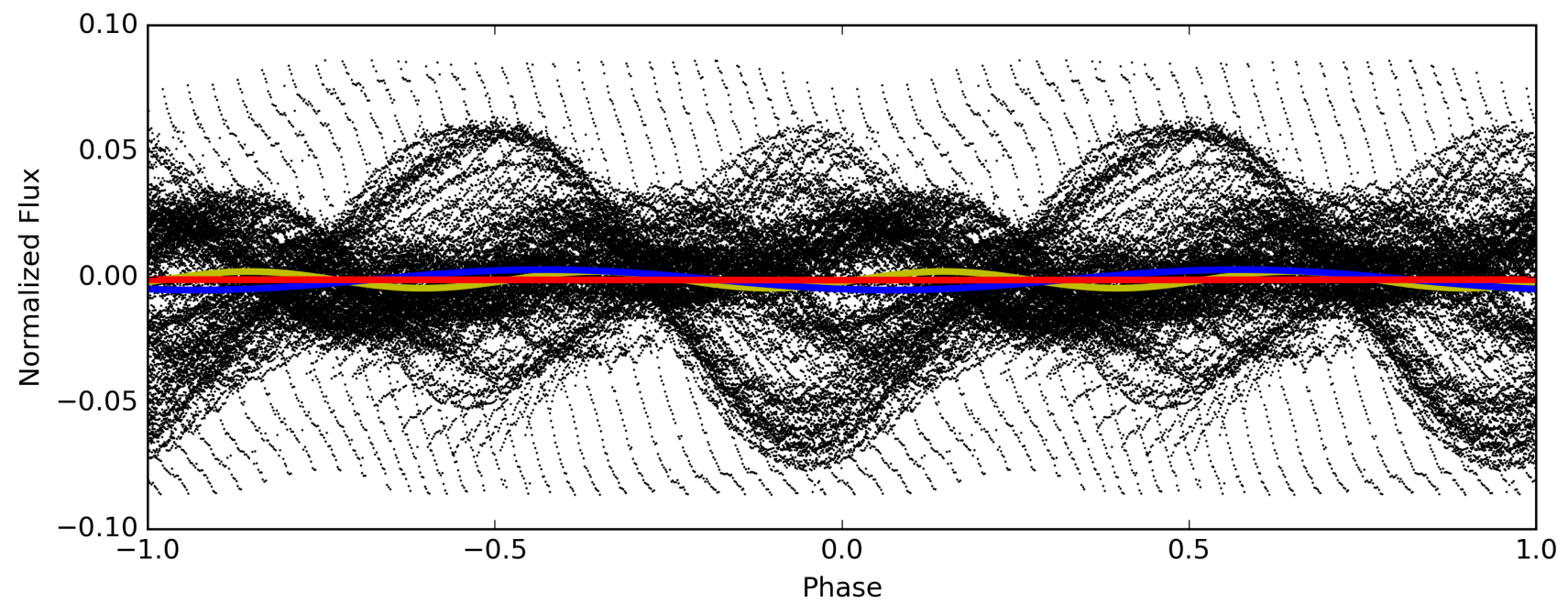
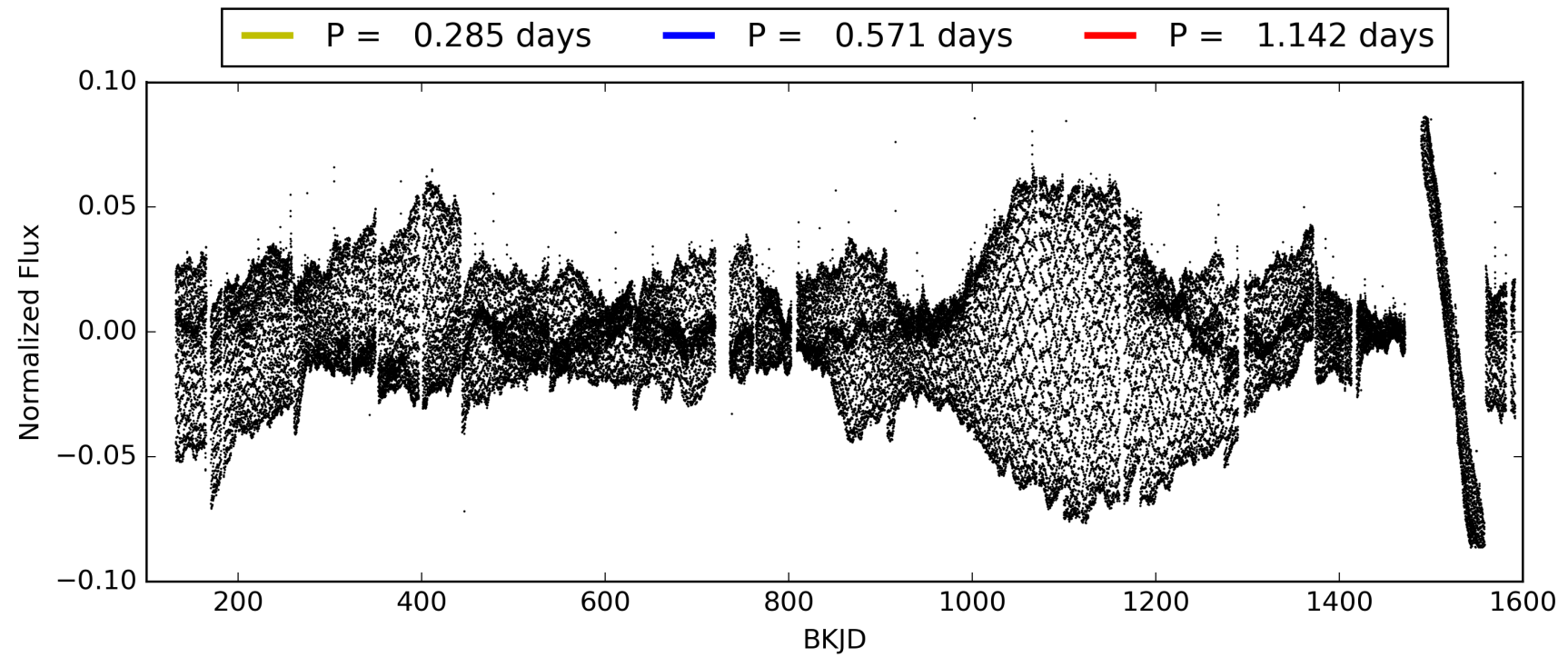
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 22:09:39 Z

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

# TCE 005693926-02, PDC Light Curves

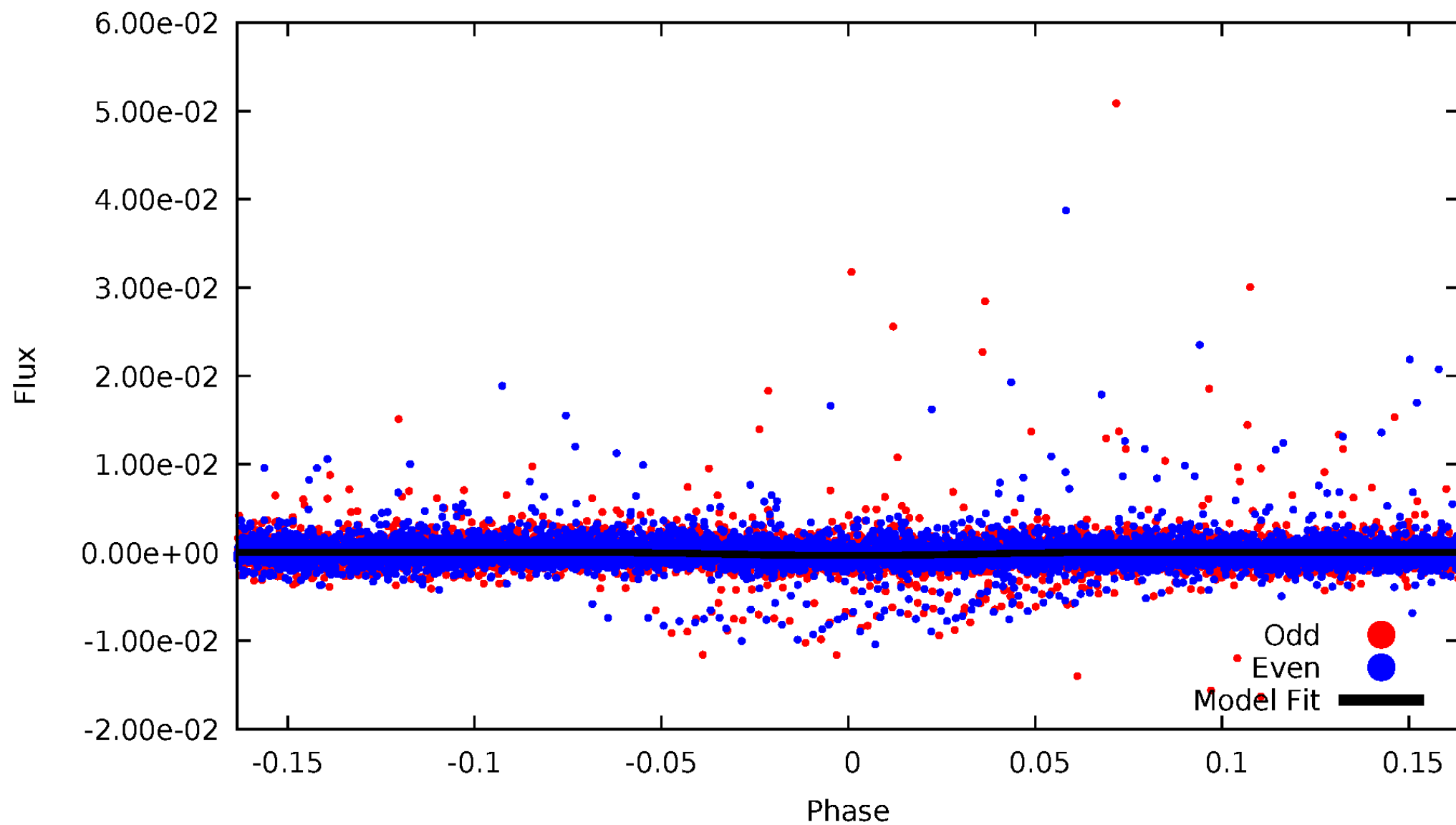


TCE 005693926-02



# DV Odd/Even

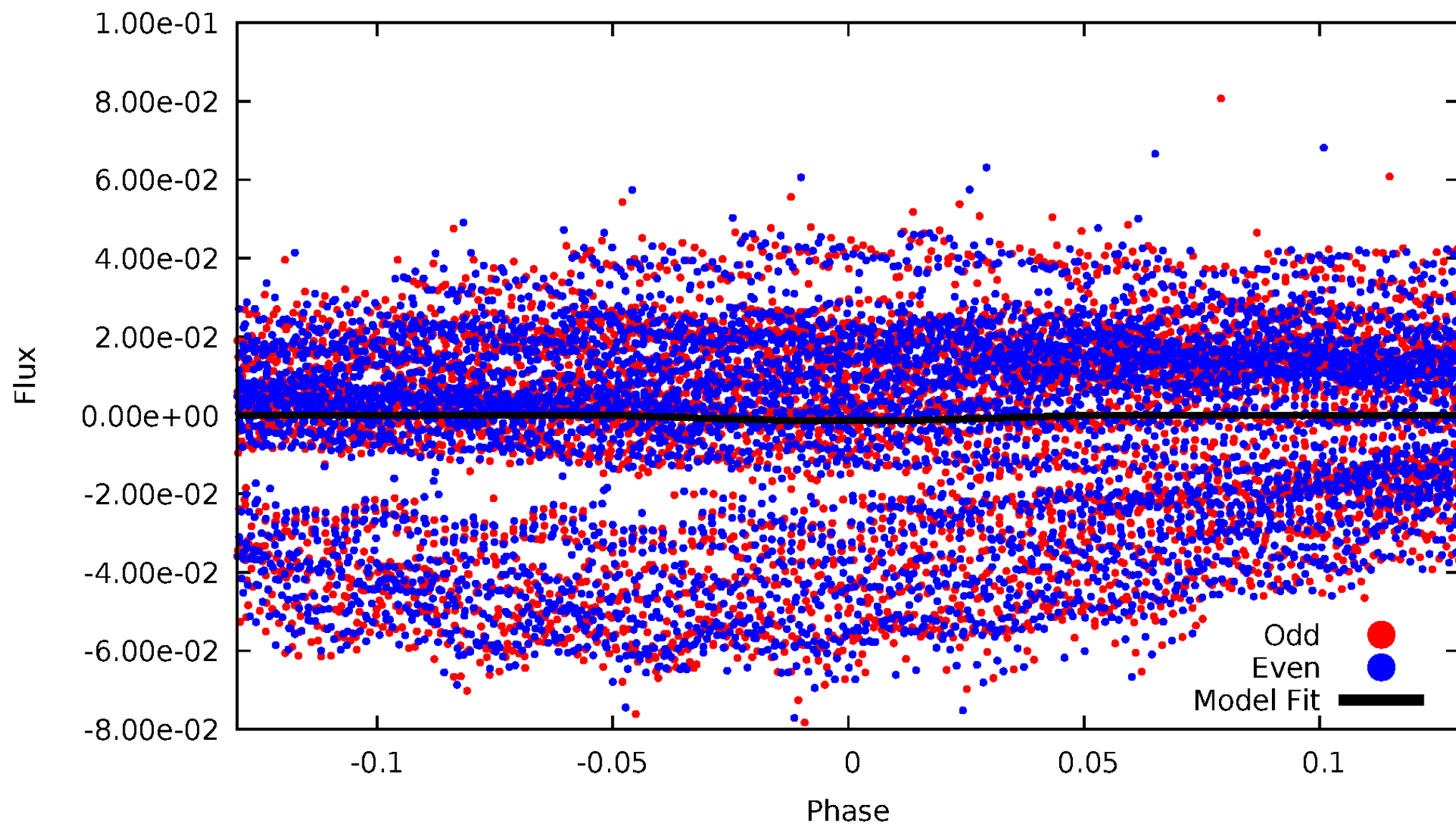
TCE 005693926-02





# ALT Odd/Even

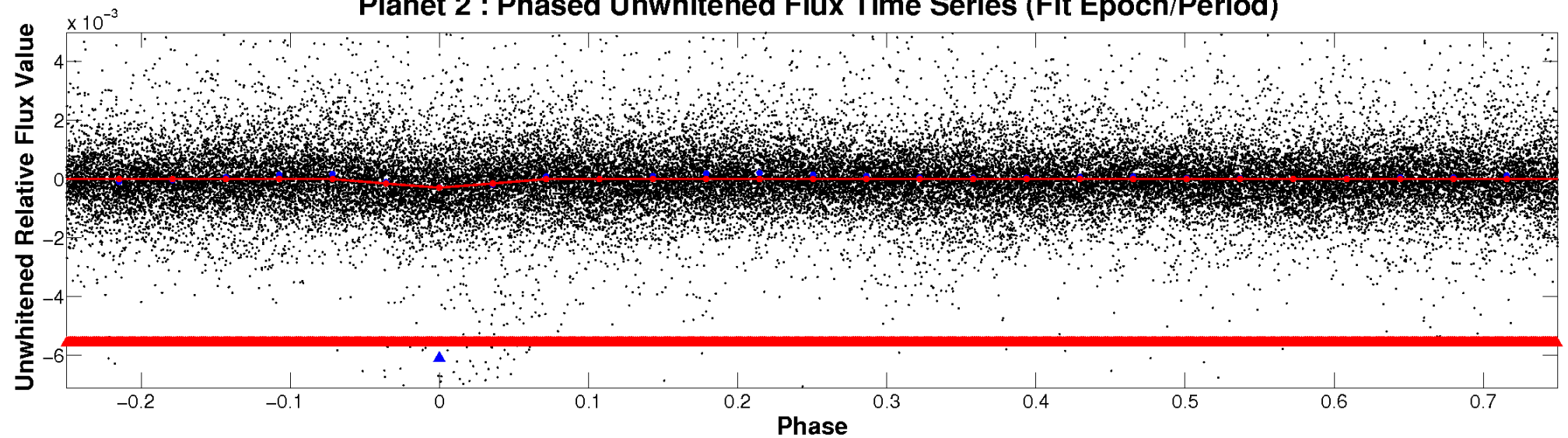
TCE 005693926-02



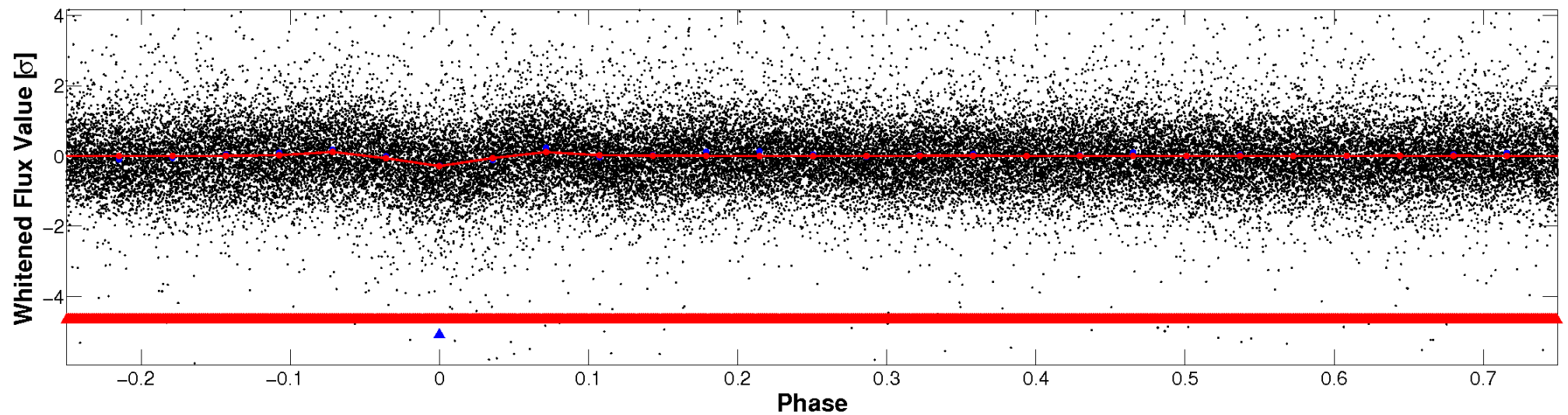


# Non-Whitened Vs. Whitened Light Curve

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

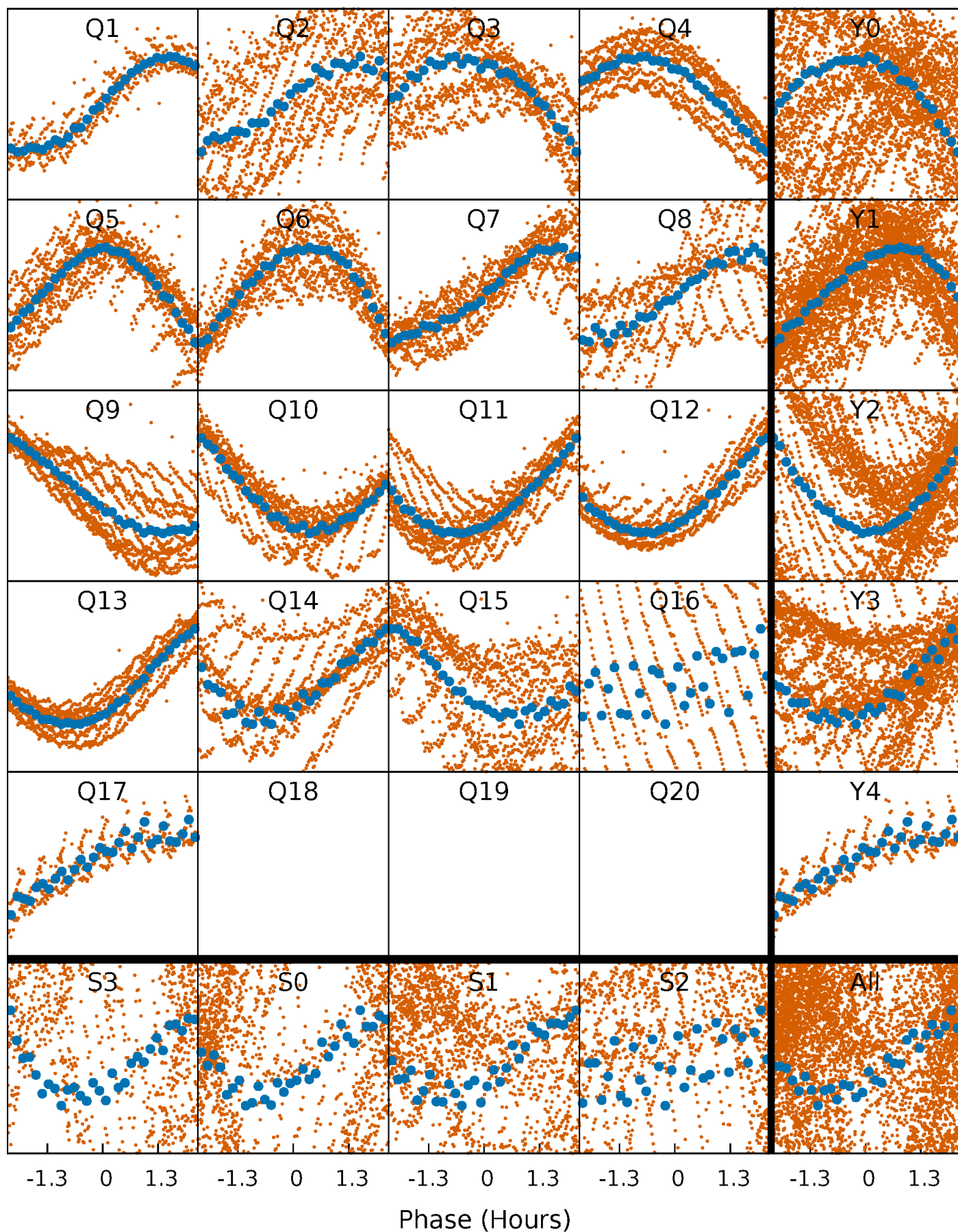


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



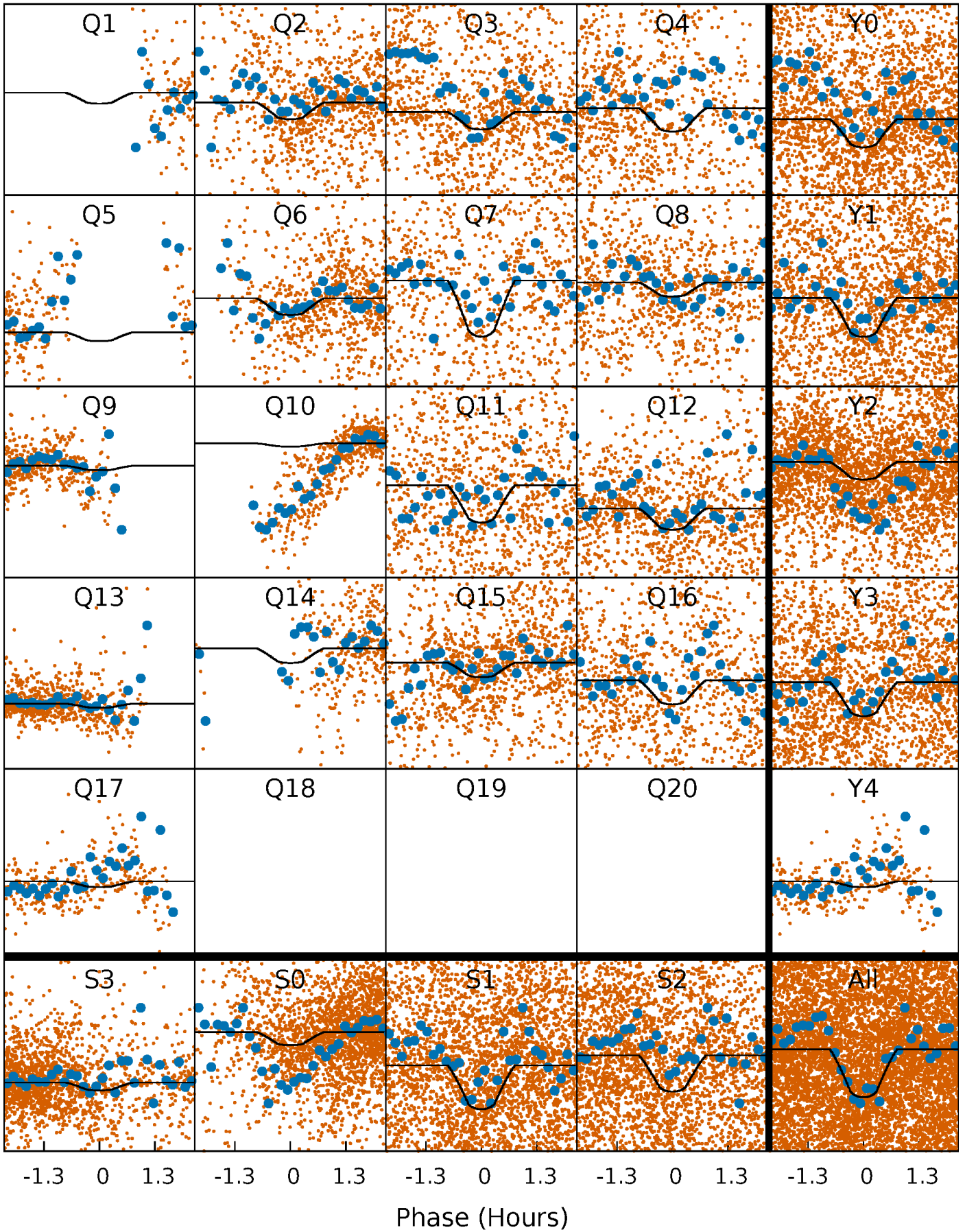
# PDC Quarter-Phased Transit Curves

TCE 005693926-02   P= 0.570933 Days    $T_0=131.794232$  (BKJD)



# DV Quarter-Phased Transit Curves

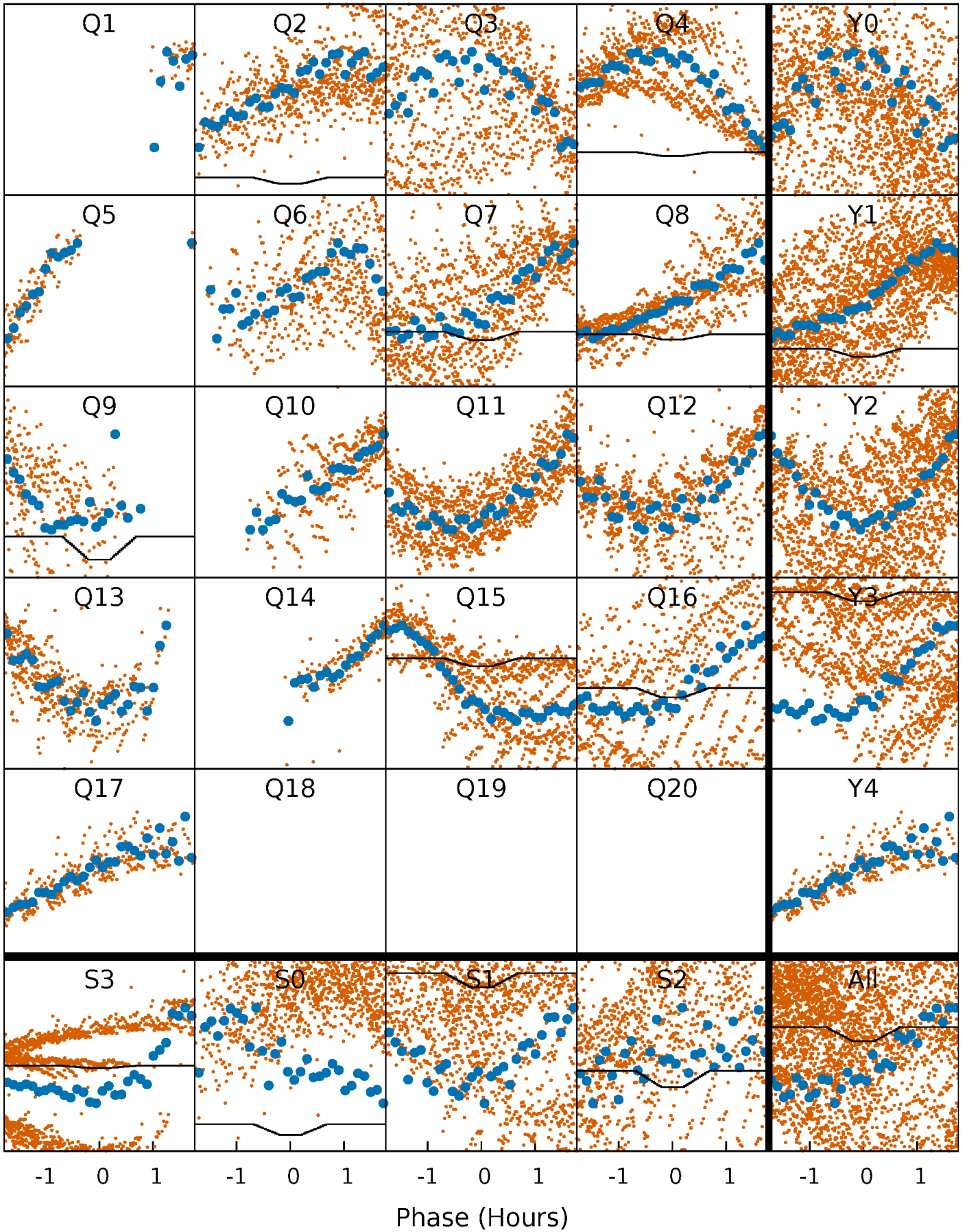
TCE 005693926-02   P= 0.570933 Days    $T_0=131.794232$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

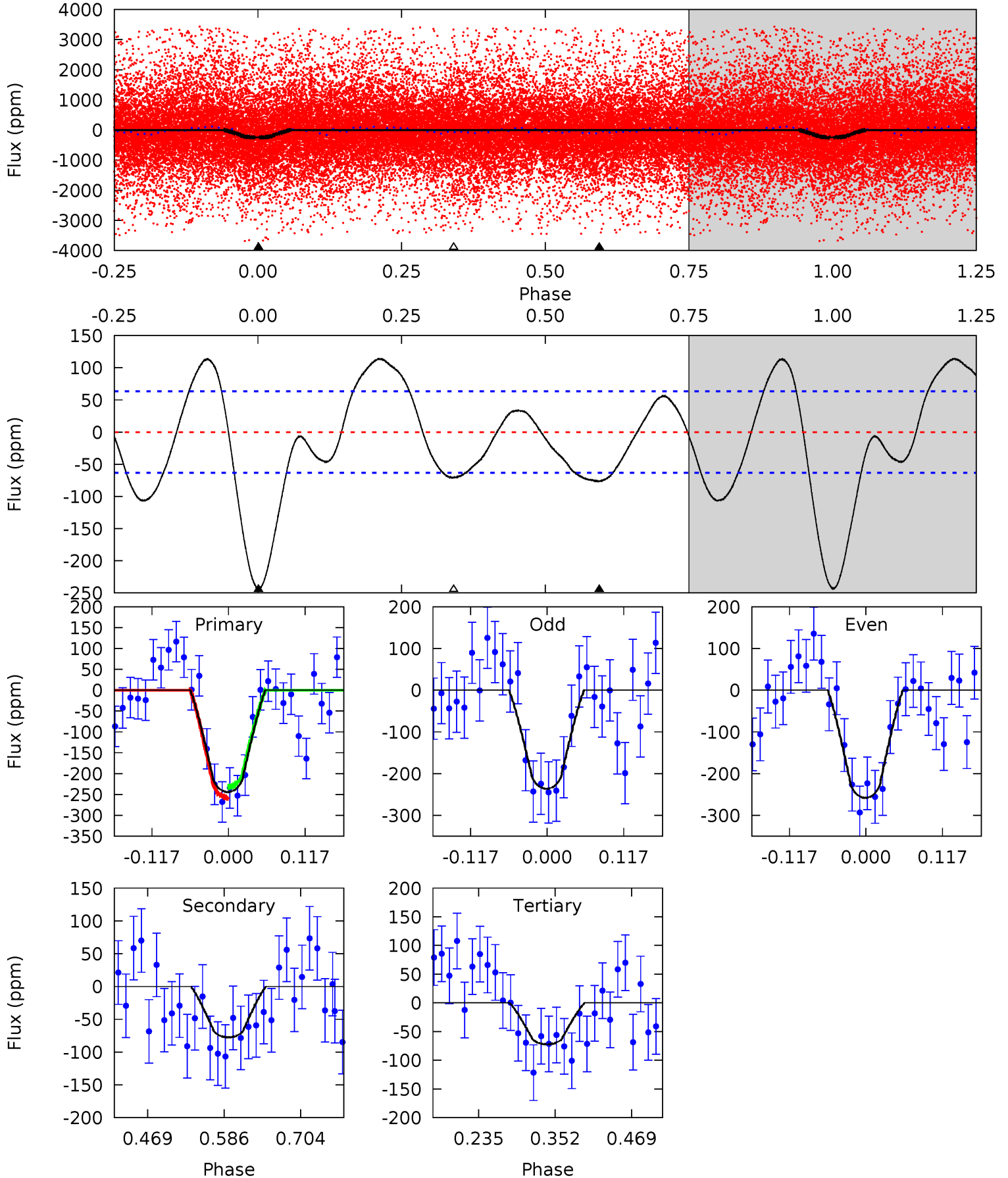
TCE 005693926-02   P= 0.570934 Days    $T_0=131.786458$  (BKJD)



# DV Model-Shift Uniqueness Test

005693926-02, P = 0.570933 Days, E = 131.223299 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
17.5	5.54	5.16	0	4.53	1.57	4.51	12.3	17.5	0.38	5.54	0.79	0.97	0.32	0.92

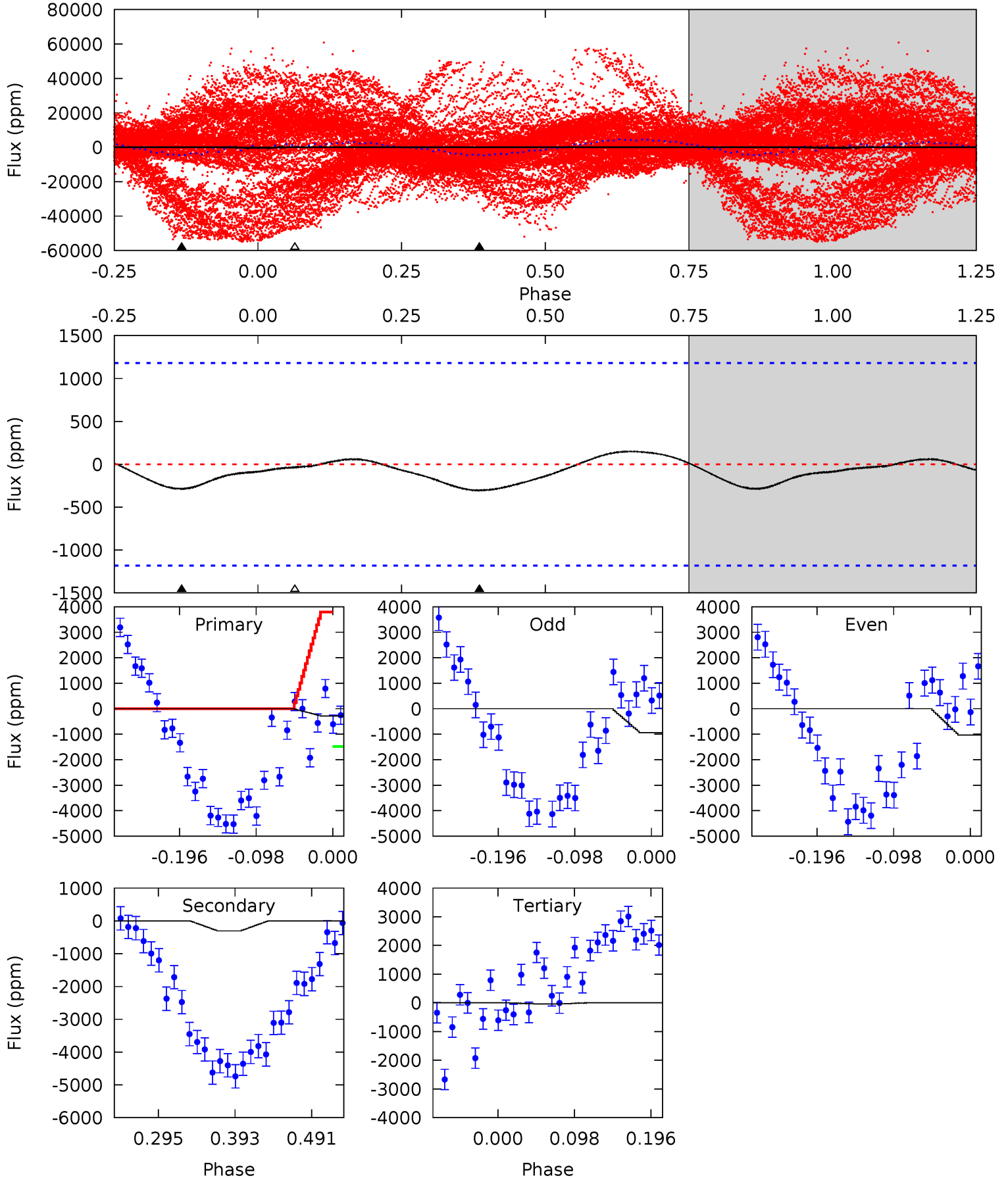




# Alt Model-Shift Uniqueness Test

005693926-02, P = 0.570934 Days, E = 131.215524 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
1.11	1.18	0.14	0	4.57	1.65	0.32	0.97	1.11	1.04	1.18	0.18	-1.99	0.33	5.03



### Stellar Parameters For KIC 005693926

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4447^{+140}_{-155}$	$4.730^{+0.059}_{-0.032}$	$-1.160^{+0.300}_{-0.300}$	$0.512^{+0.033}_{-0.049}$	$0.513^{+0.036}_{-0.032}$	$5.387^{+1.460}_{-0.653}$
	+3%/-3%	+1%/-1%	+26%/-26%	+6%/-10%	+7%/-6%	+27%/-12%
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 005693926-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-77 \pm 14$	$0.90^{+0.31}_{-0.31}$	$1875^{+68}_{-72}$	$3539^{+612}_{-360}$	$6.223^{+8.465}_{-2.944}$
Alt.	$-305 \pm 259$	$2.00^{+0.33}_{-0.33}$	$1877^{+74}_{-69}$	$3421^{+464}_{-900}$	$4.964^{+5.036}_{-4.142}$

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

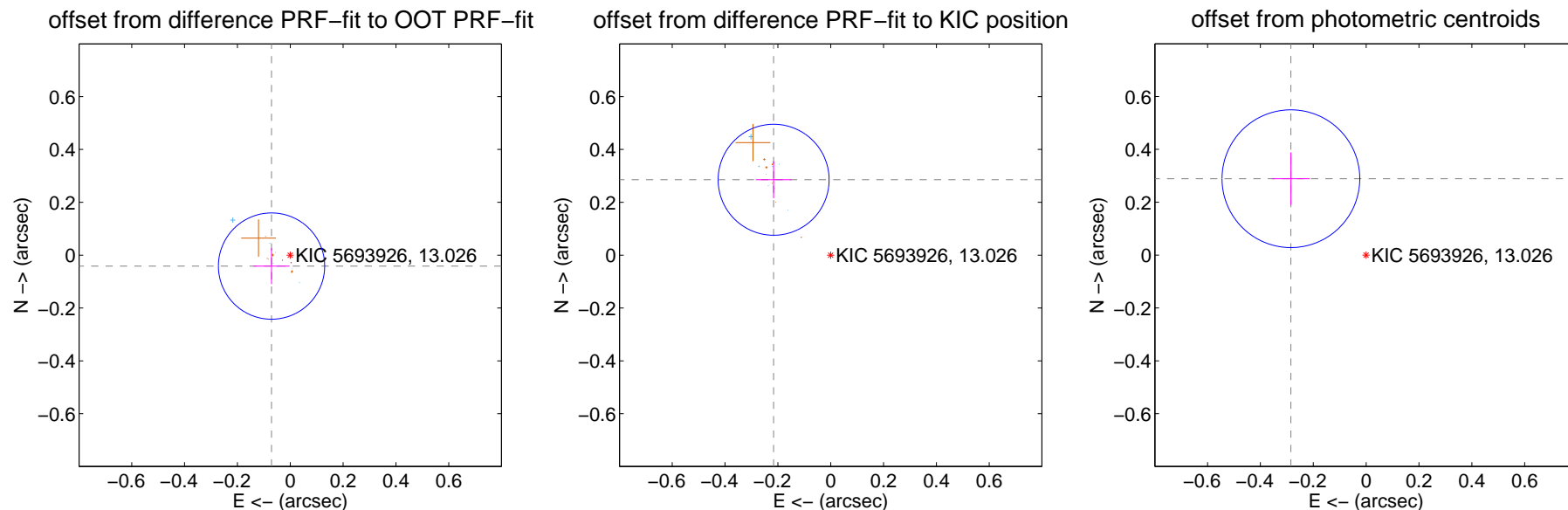
## DV Centroid Data

Supplemental centroid analysis for 005693926-02. Kepler magnitude: 13.03. Transit SNR 15.24

There are 8 quarters with good PRF difference image offsets

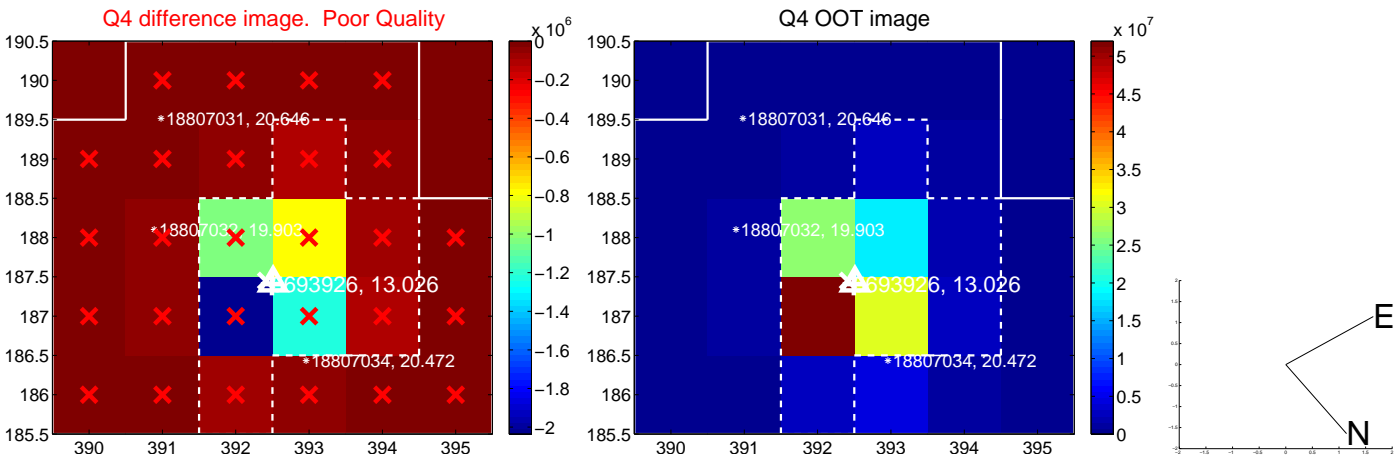
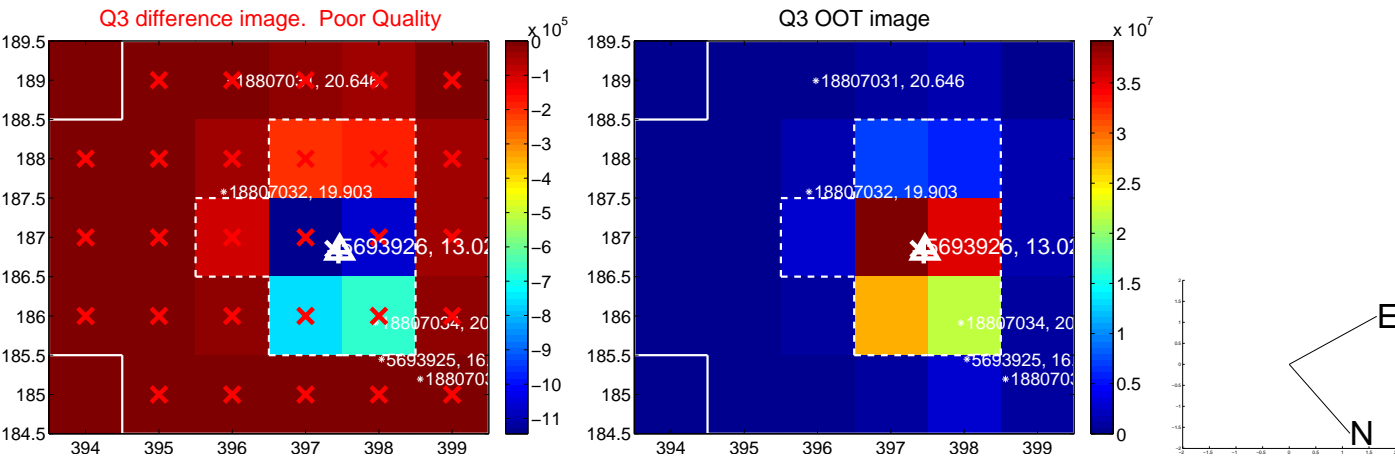
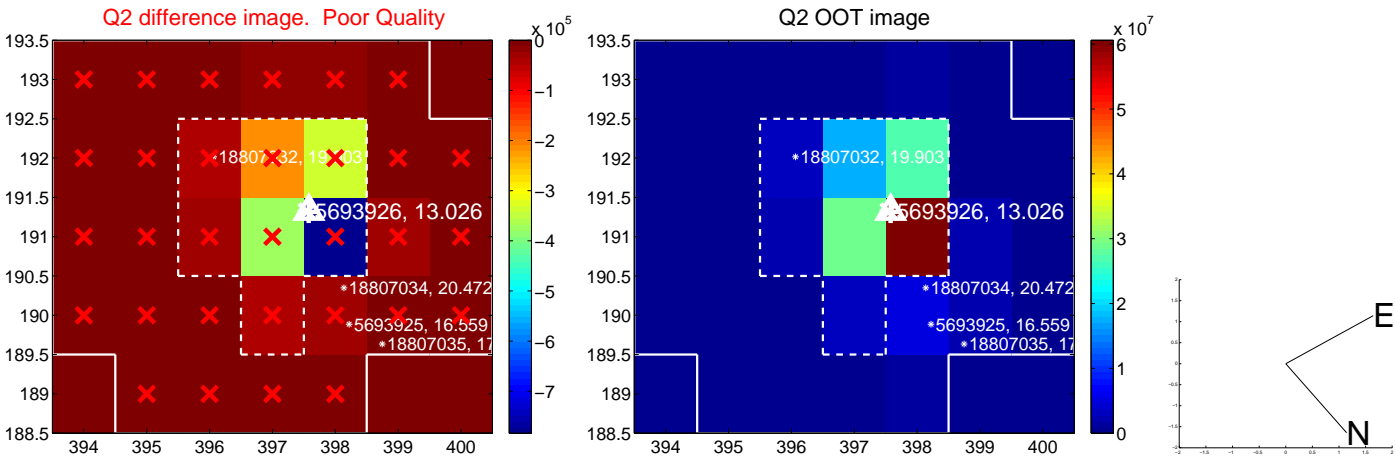
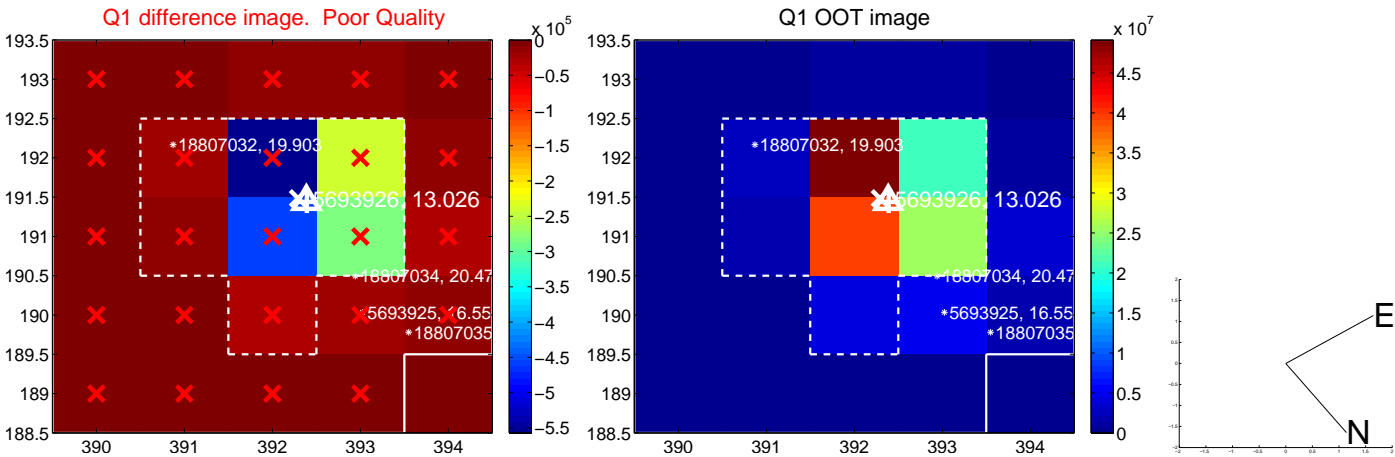
The direct PRF centroid is offset from the target star catalog position by about 0.50 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.082 \pm 0.067$	1.22	$0.071 \pm 0.068$	$-0.041 \pm 0.068$
PRF-fit source offset from KIC position	$0.358 \pm 0.070$	5.11	$0.216 \pm 0.067$	$0.285 \pm 0.070$
photometric centroid source offset	$0.41 \pm 0.09$	4.67	$0.28 \pm 0.07$	$0.29 \pm 0.10$

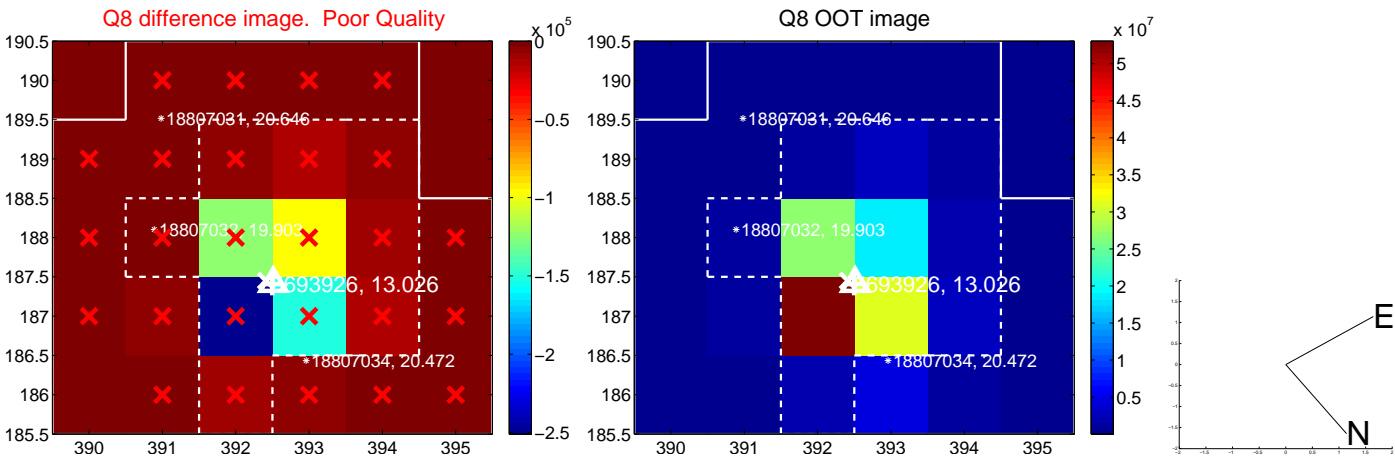
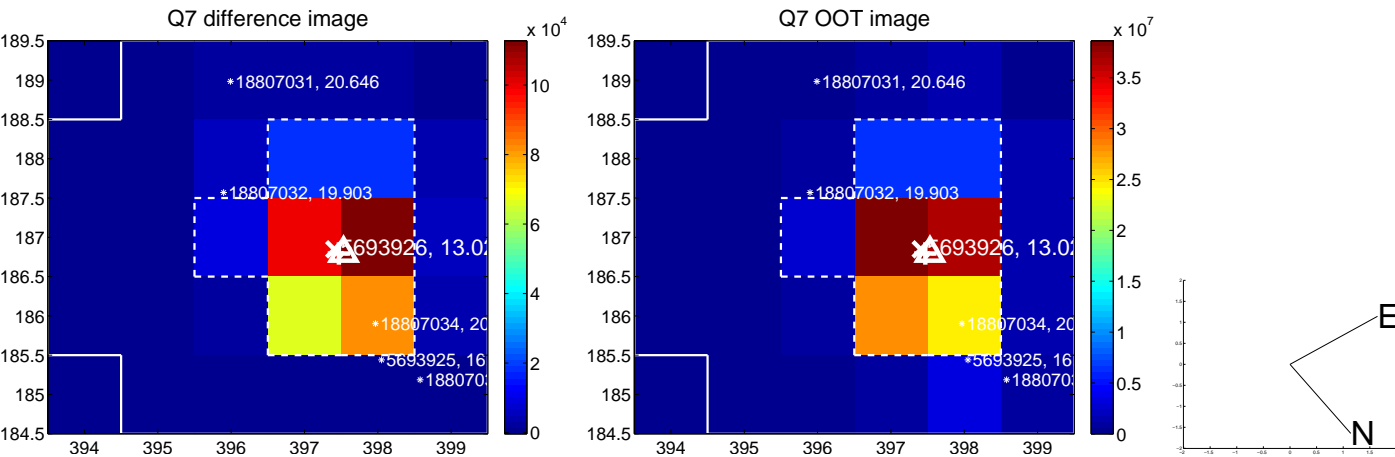
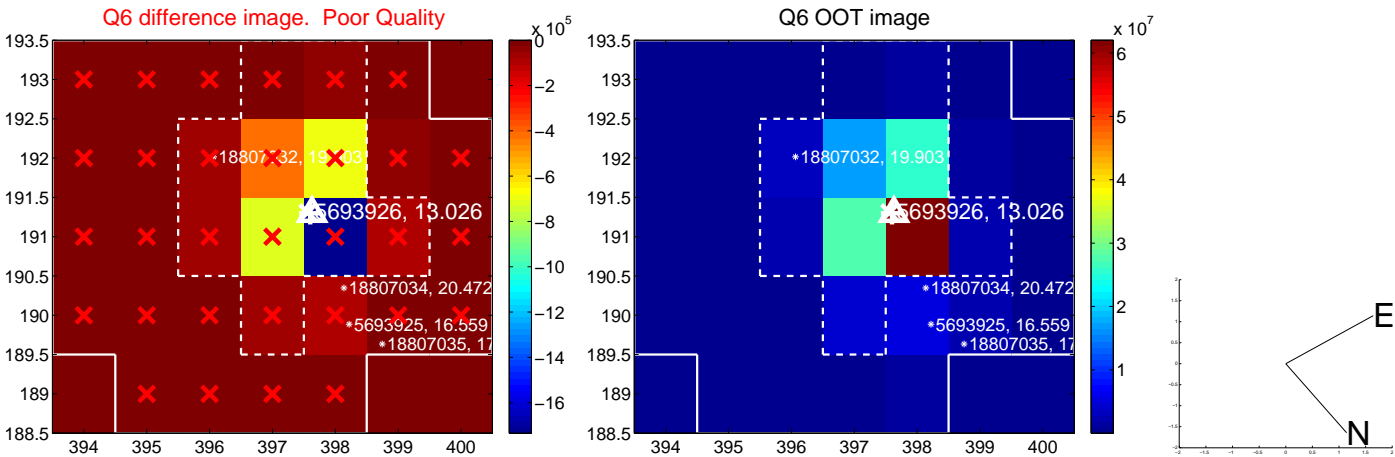
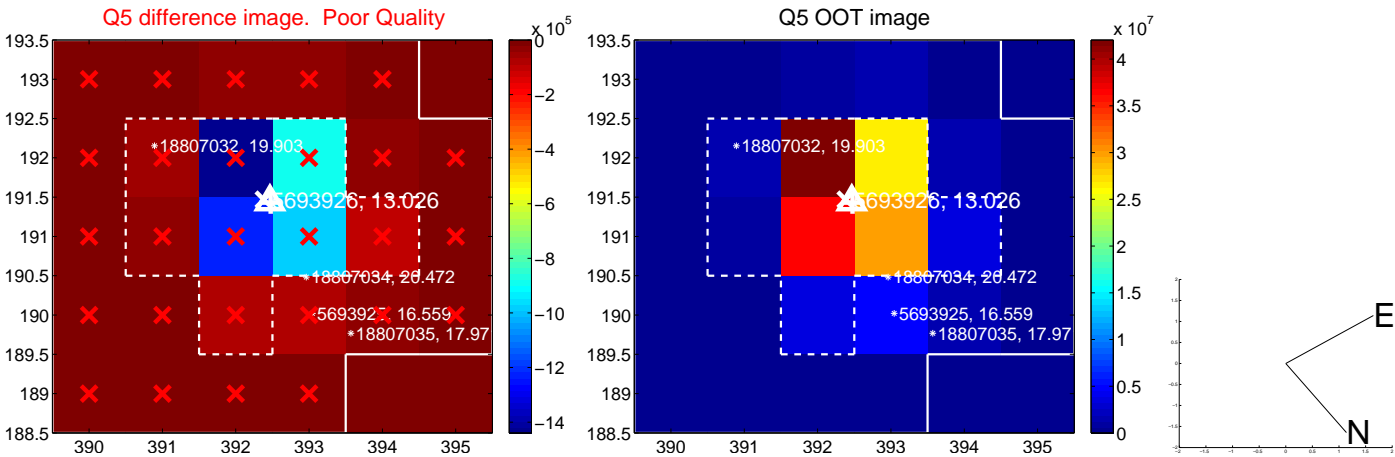


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

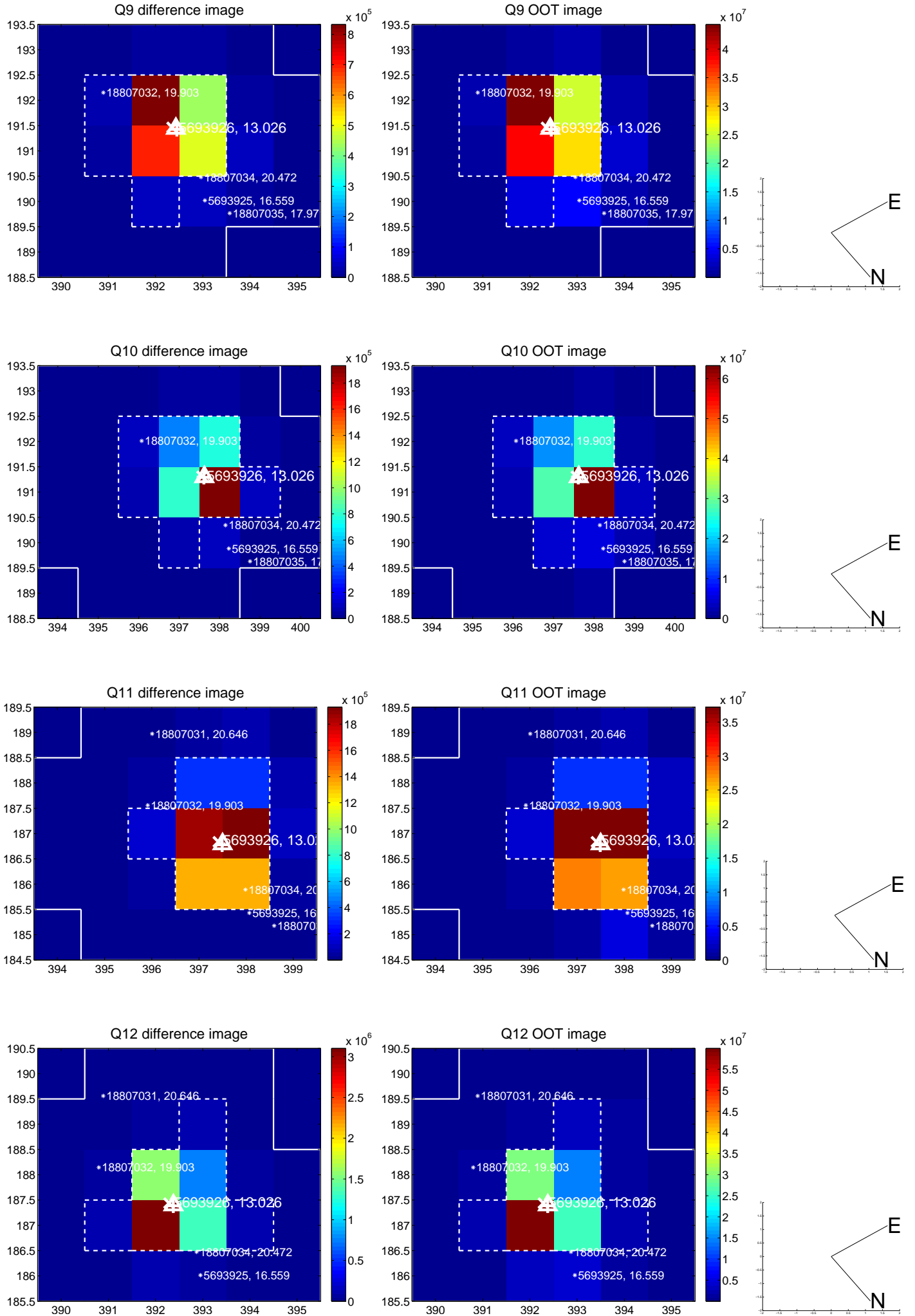


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

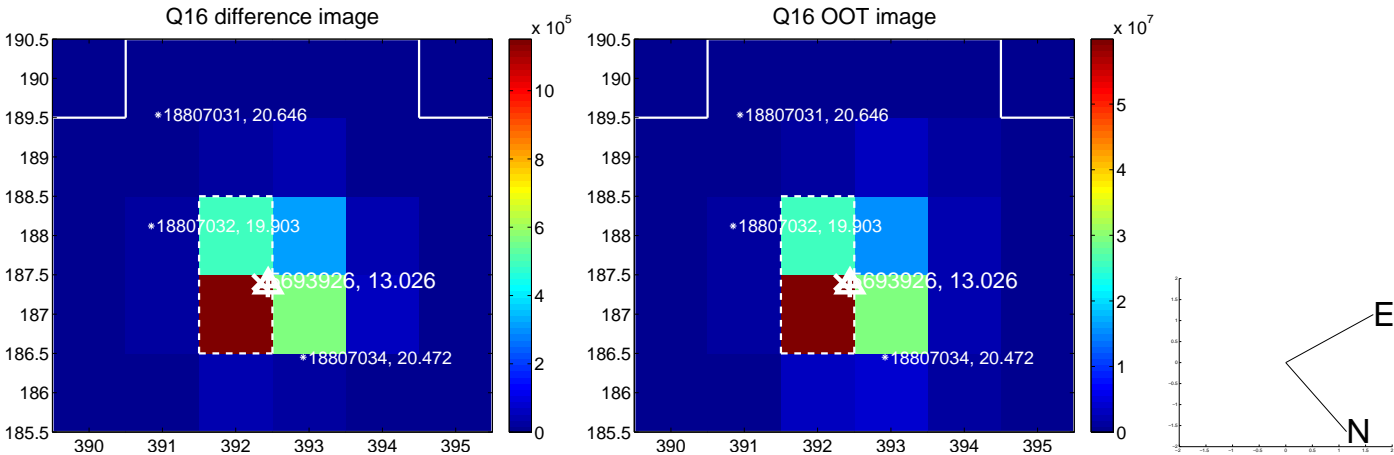
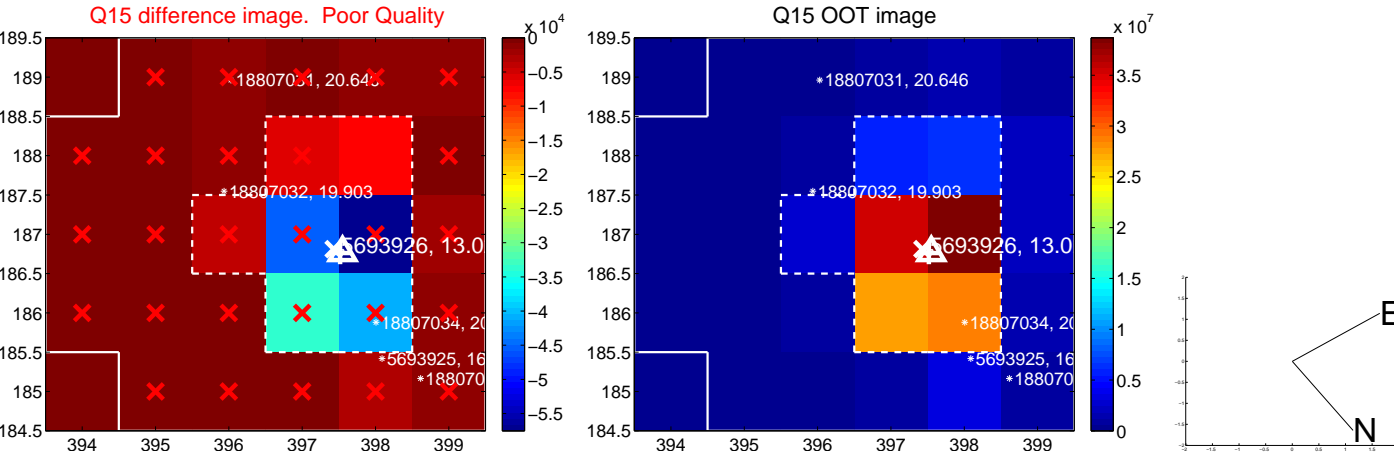
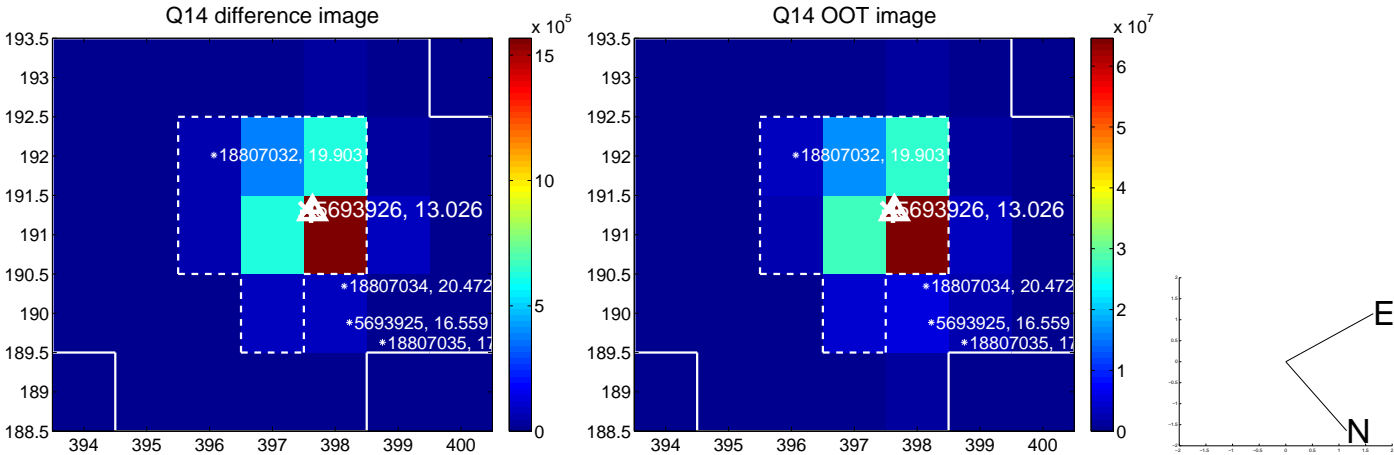
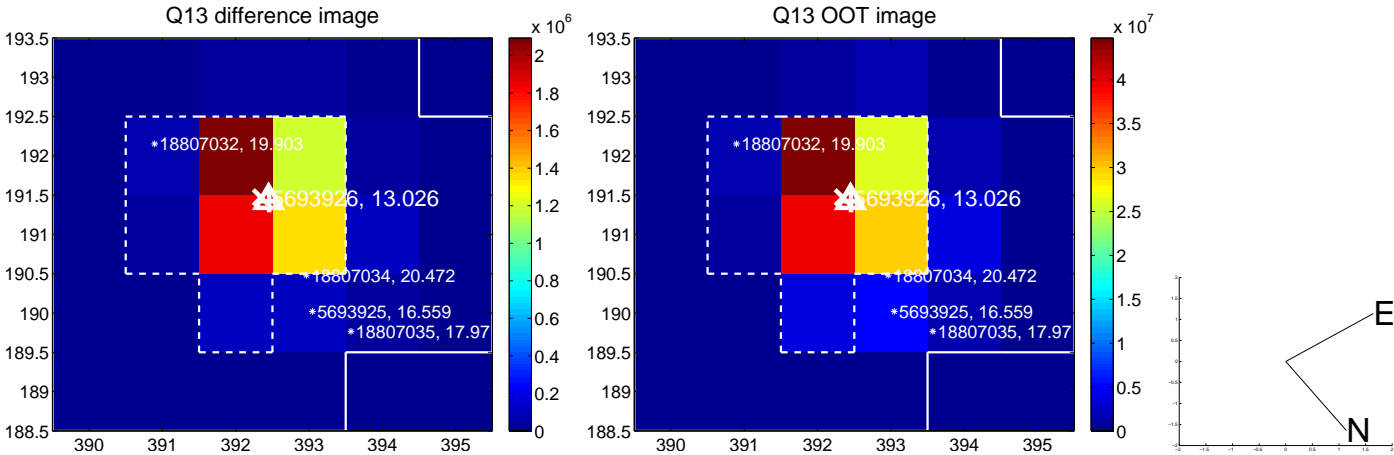




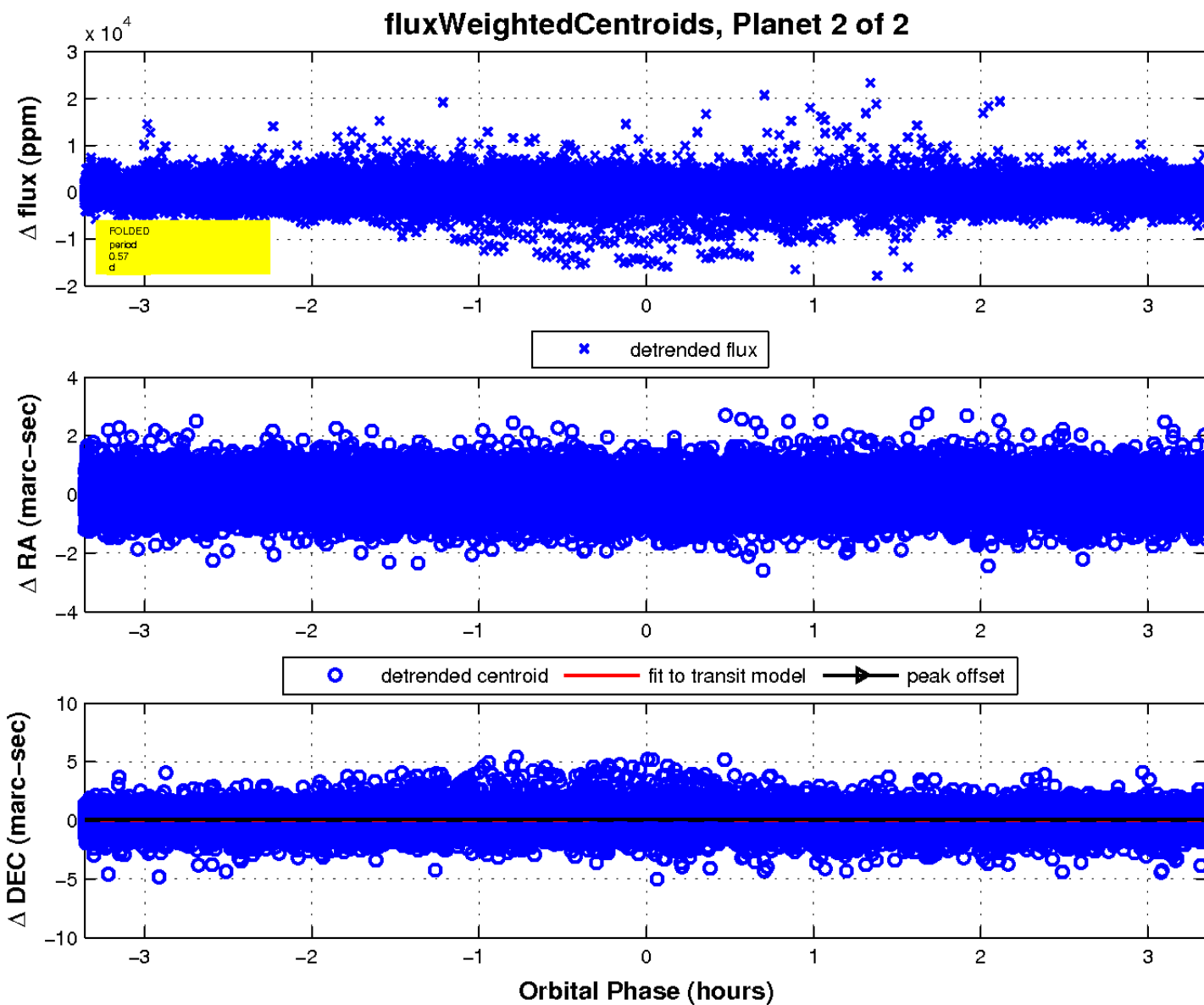
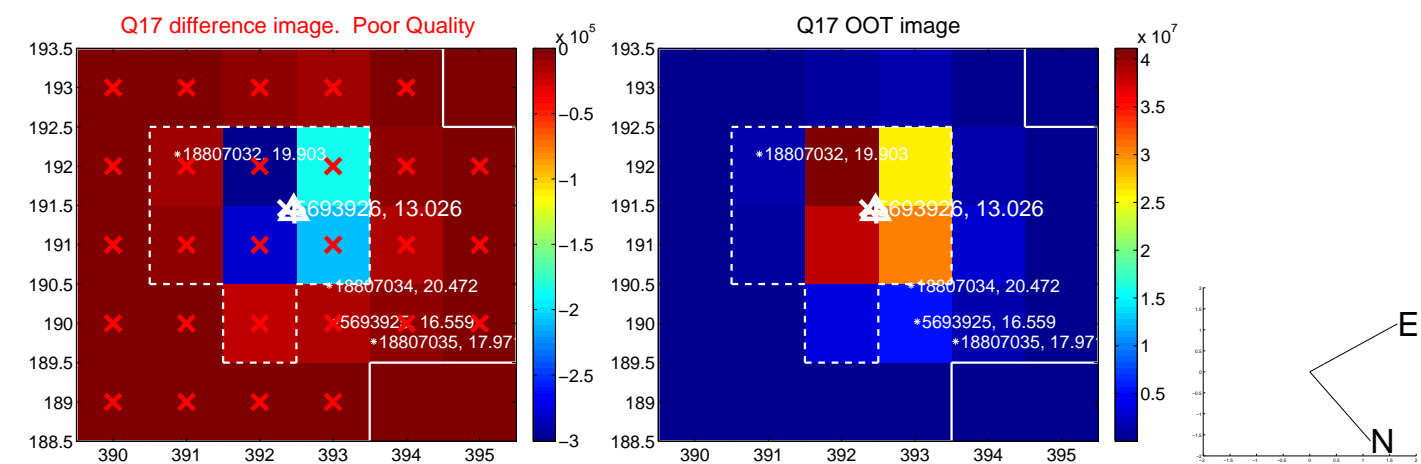
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

