

# KIC 006607286

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006607286-01	OBS	1239.01	0.783271	131.936763	207.6	1.810	35.0	37.1	1.23	5640	2.13	5051.69
006607286-02	OBS	1239.02	3.174056	131.701228	265.7	2.400	20.5	23.1	1.23	5640	2.45	781.93

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006607286-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
006607286-02	OBS	PC	0.55	0	0	0	0	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.

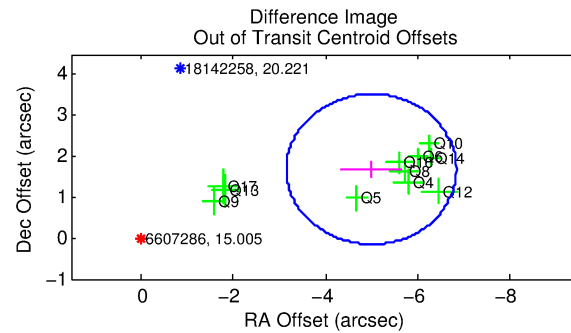
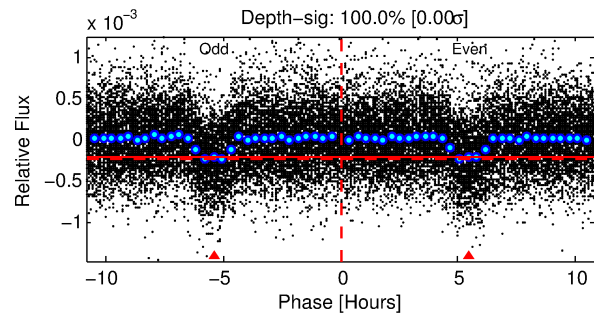
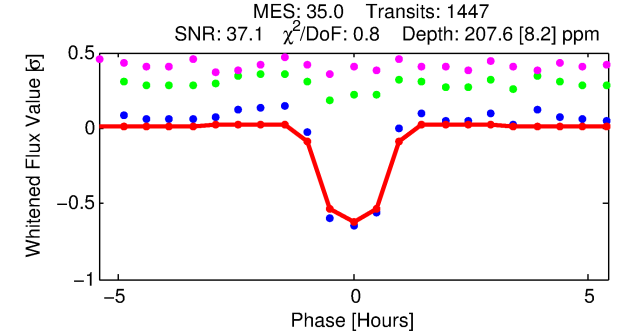
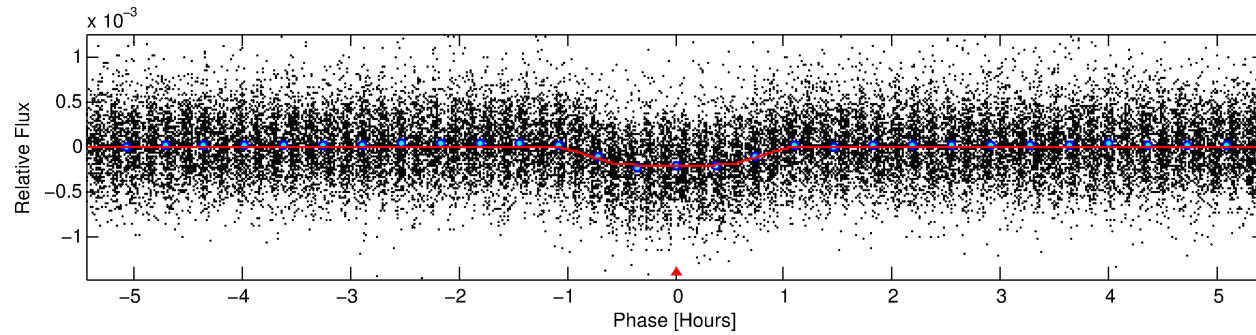
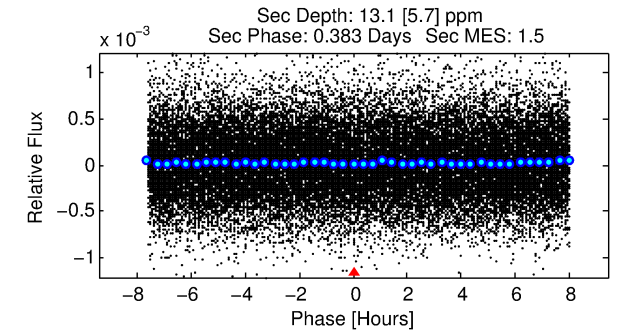
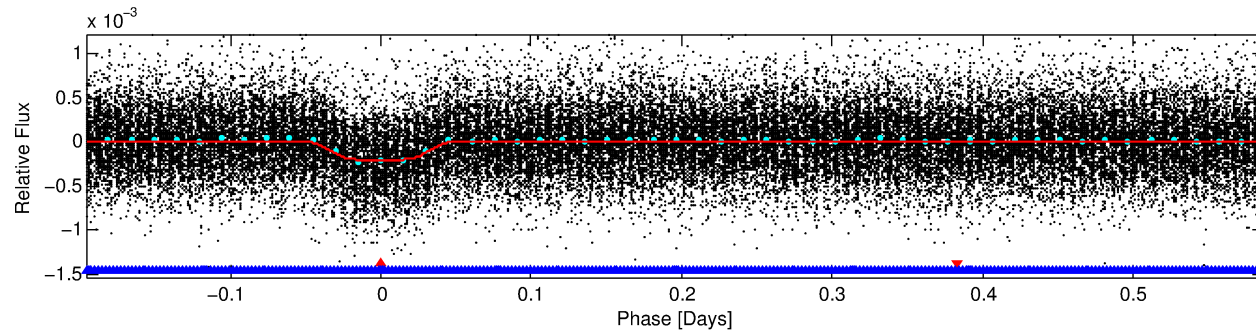
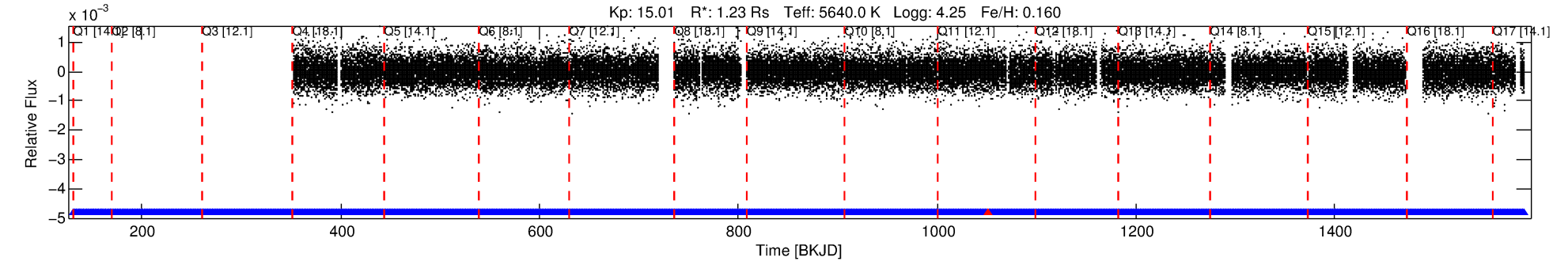
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006607286-01

No Significant Match Found

# DV One-Page Summary

KIC: 6607286 Candidate: 1 of 2 Period: 0.783 d  
KOI: K01239.01 Corr: 0.945



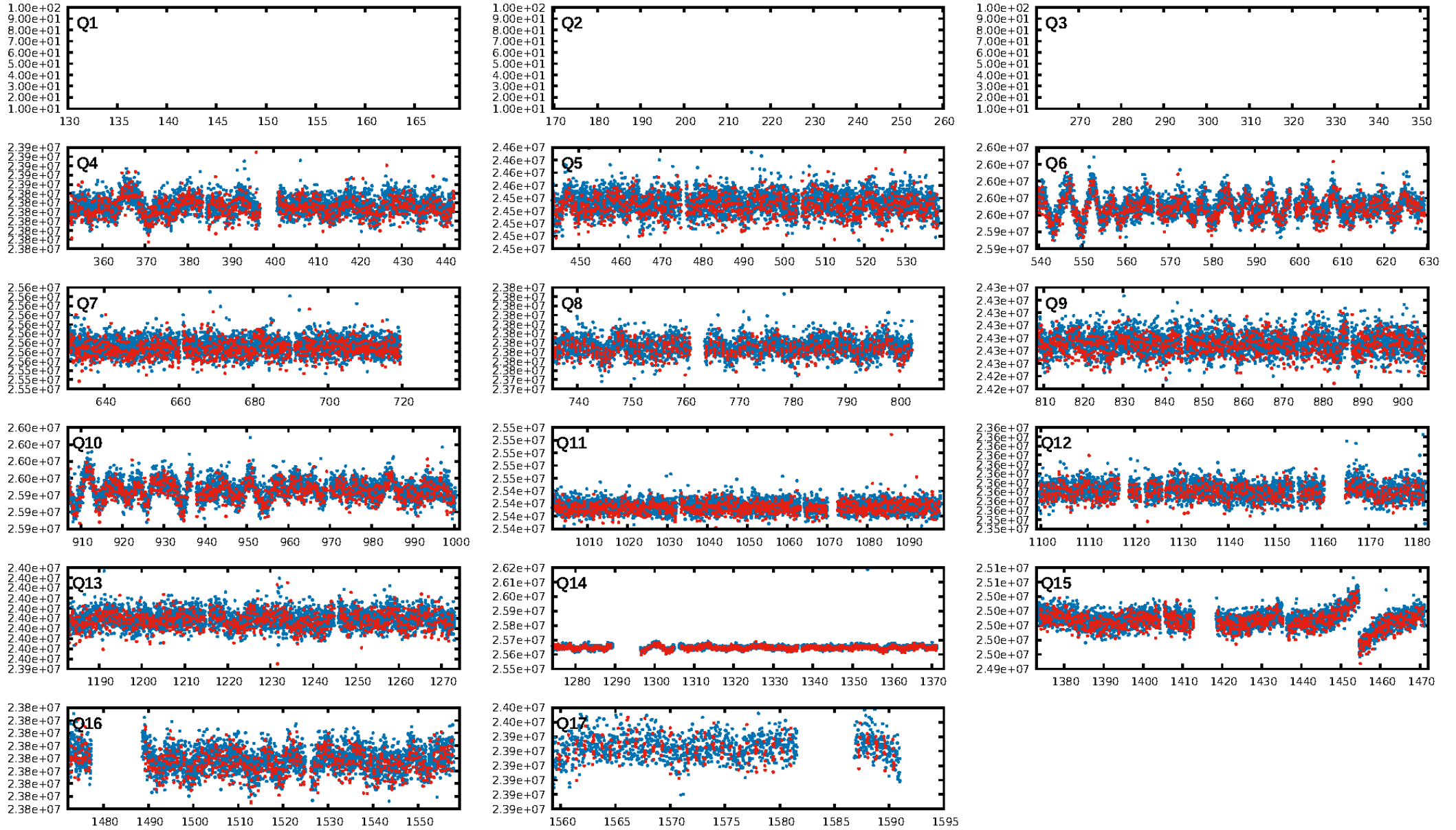
## DV Fit Results:

Period = 0.78327 [0.00000] d  
Epoch = 131.9368 [0.0007] BKJD  
Rp/R\* = 0.0158 [0.0033]  
a/R\* = 1.82 [1.20]  
b = 0.90 [0.21]  
Seff = 5051.69 [1408.71]  
Teff = 2150 [150] K  
Rp = 2.13 [0.58] Re  
a = 0.0165 [0.0028] AU  
Ag = 0.43 [0.29] [-1.97 $\sigma$ ]  
Teffp = 2696 [410] K [1.25 $\sigma$ ]

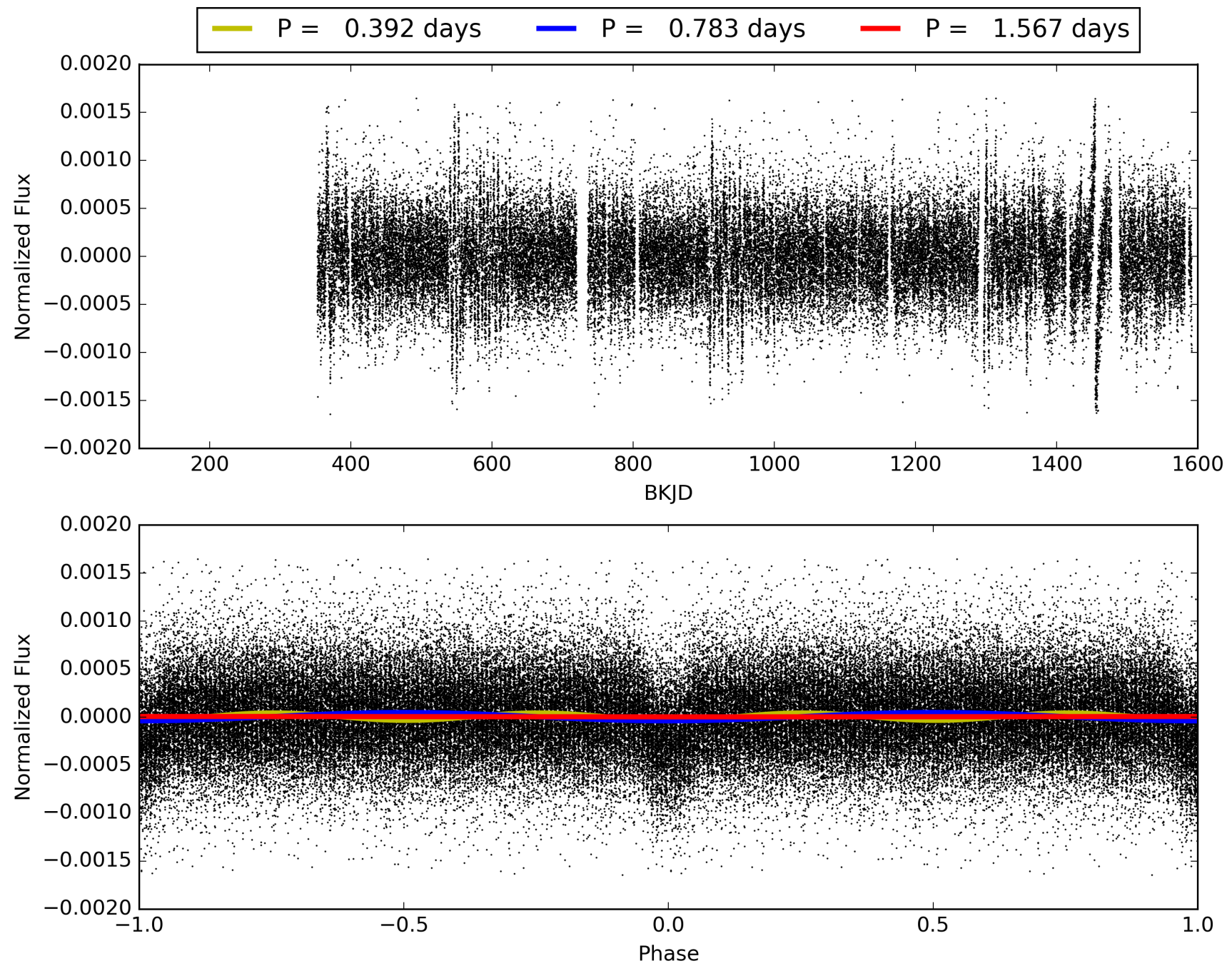
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [19.09 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.14e-258  
RollingBand-fgt: 1.00 [1413/1414]  
GhostDiagnostic-chr: 5.931  
Centroid-sig: 0.0%  
Centroid-so: 1.492 arcsec [6.61 $\sigma$ ]  
OotOffset-rm: 5.270 arcsec [8.60 $\sigma$ ]  
KicOffset-rm: 0.195 arcsec [1.83 $\sigma$ ]  
OotOffset-st: 3/0/4/4 [11]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 006607286-01, PDC Light Curves

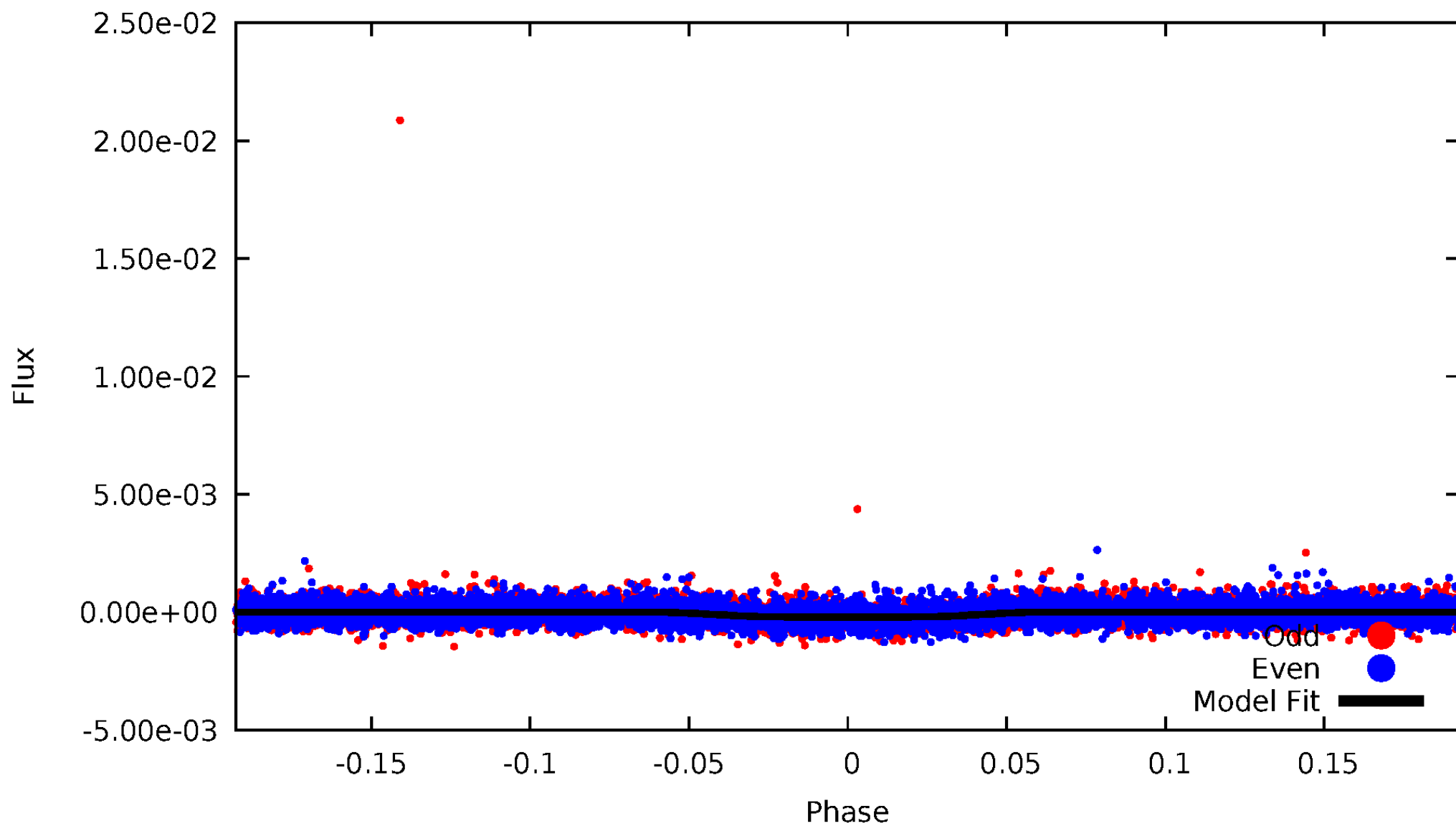


TCE 006607286-01



# DV Odd/Even

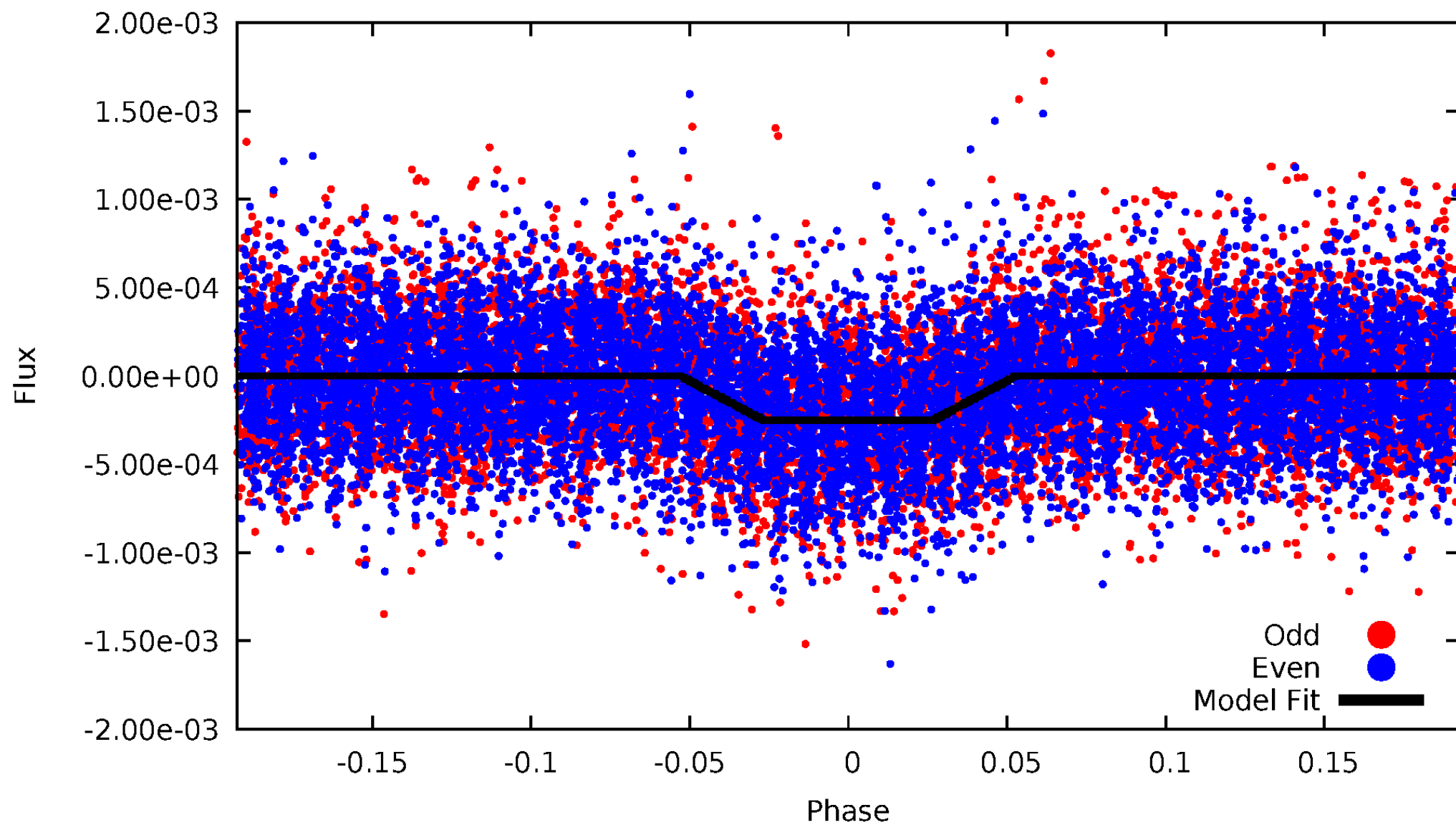
TCE 006607286-01



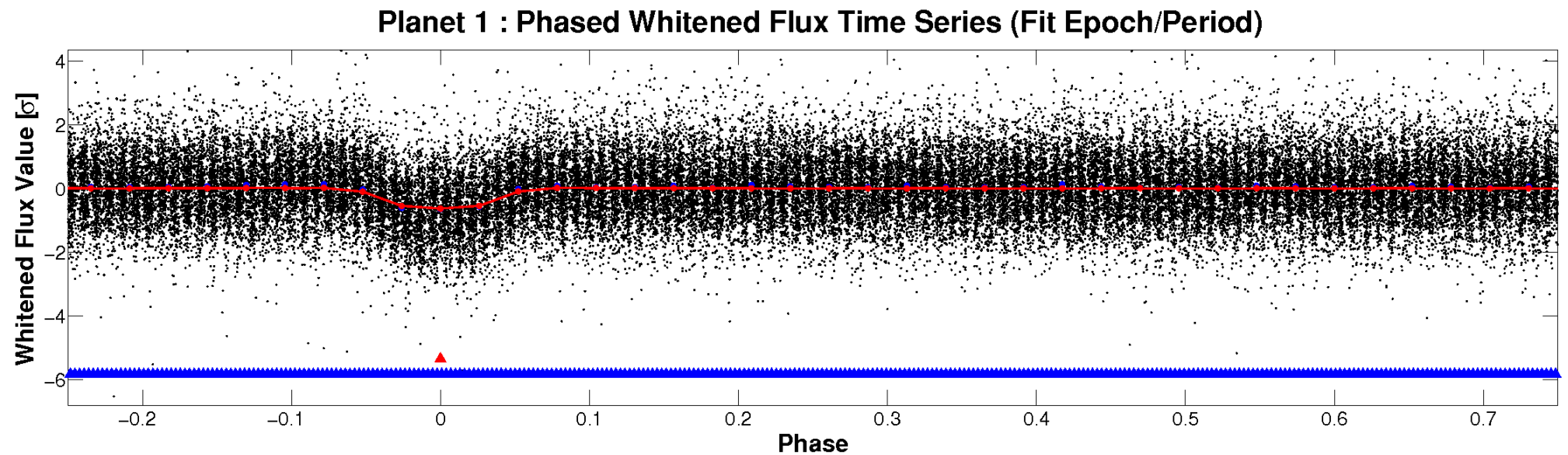
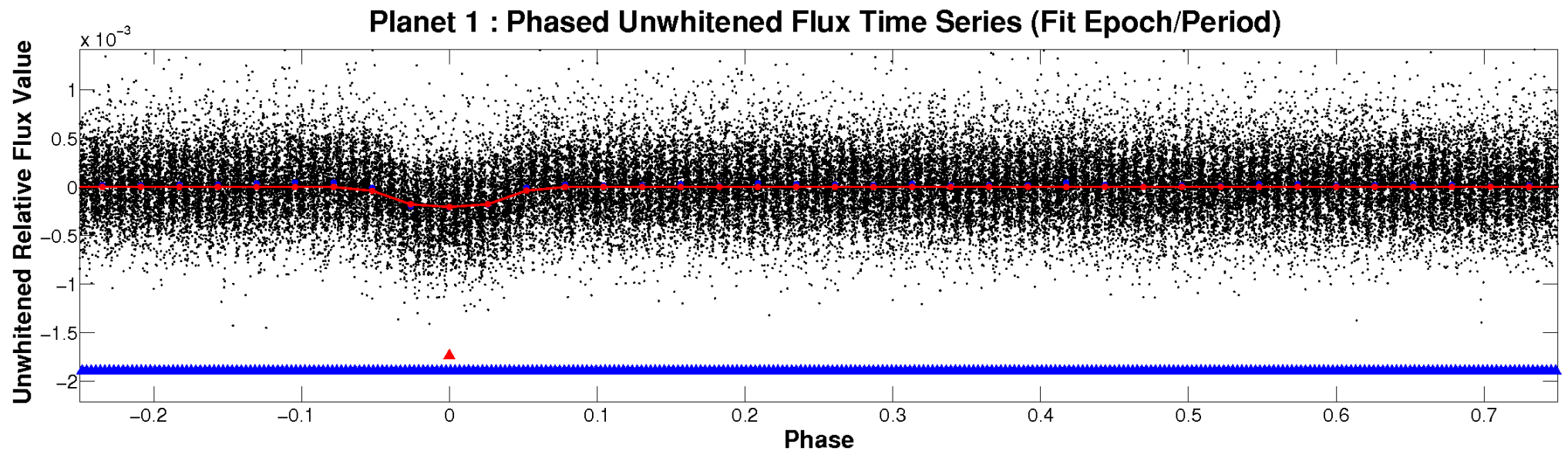


# ALT Odd/Even

TCE 006607286-01

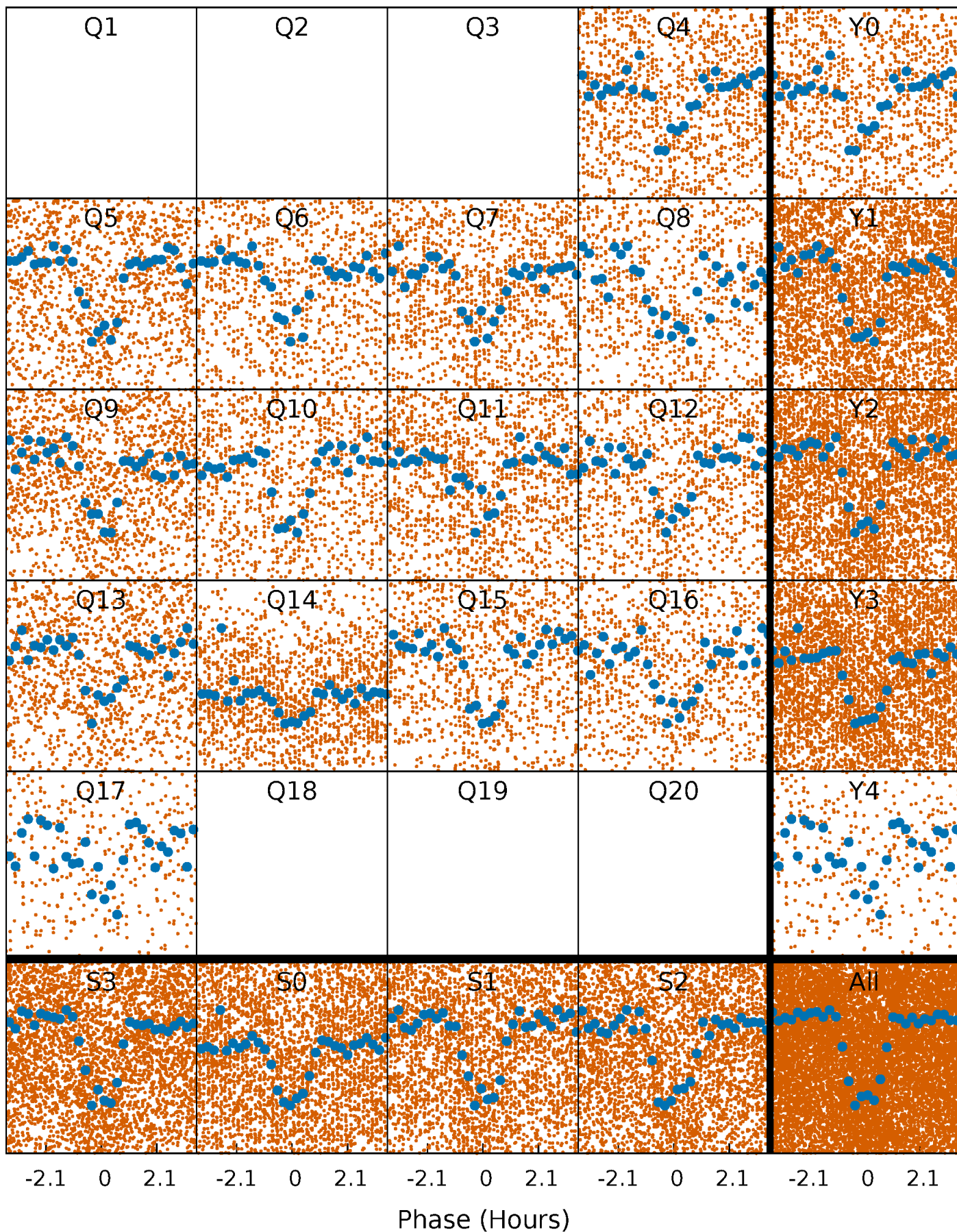


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

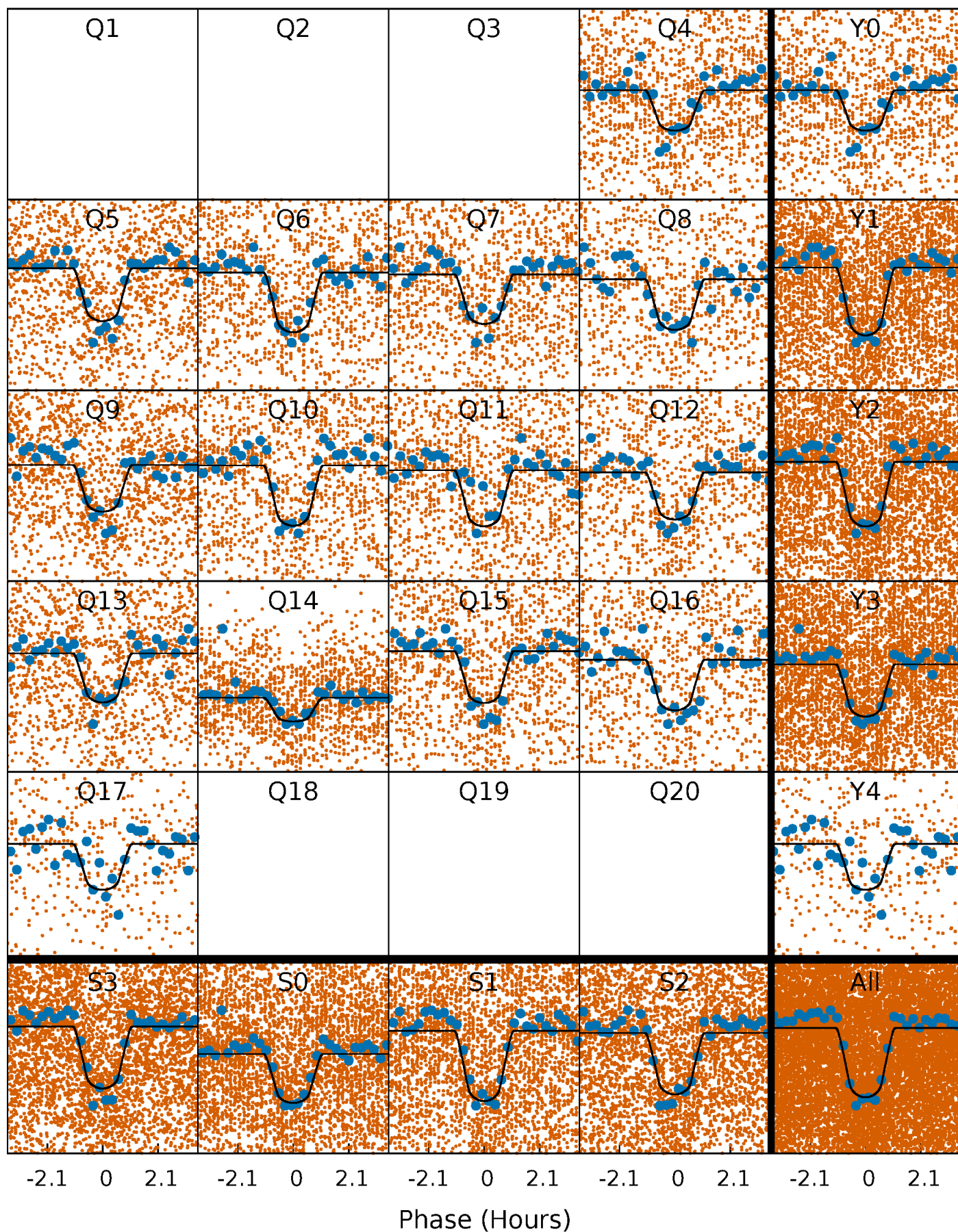
TCE 006607286-01 P= 0.783271 Days  $T_0=131.936763$  (BKJD)





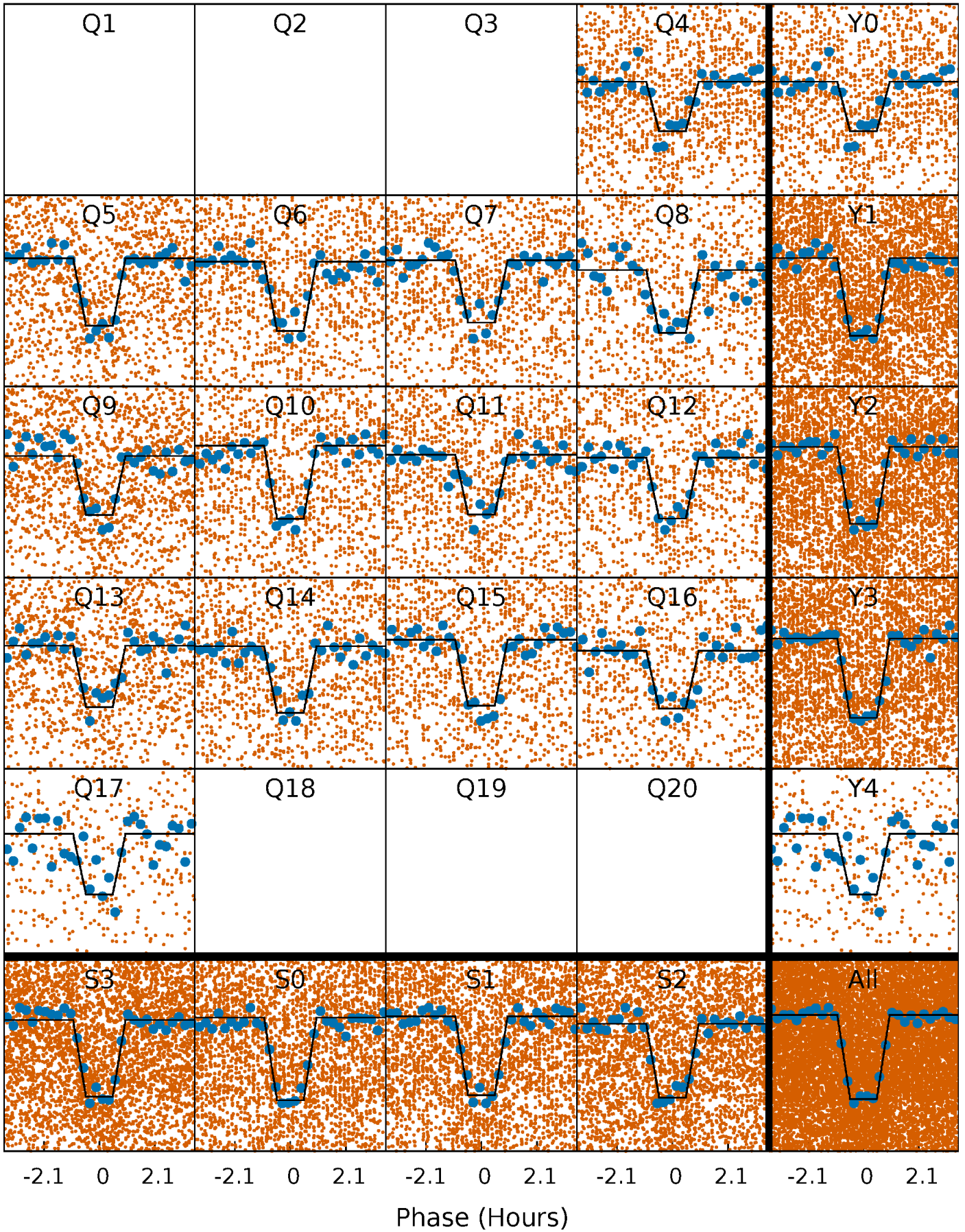
# DV Quarter-Phased Transit Curves

TCE 006607286-01 P= 0.783271 Days  $T_0=131.936763$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006607286-01   P= 0.783271 Days    $T_0=131.936763$  (BKJD)

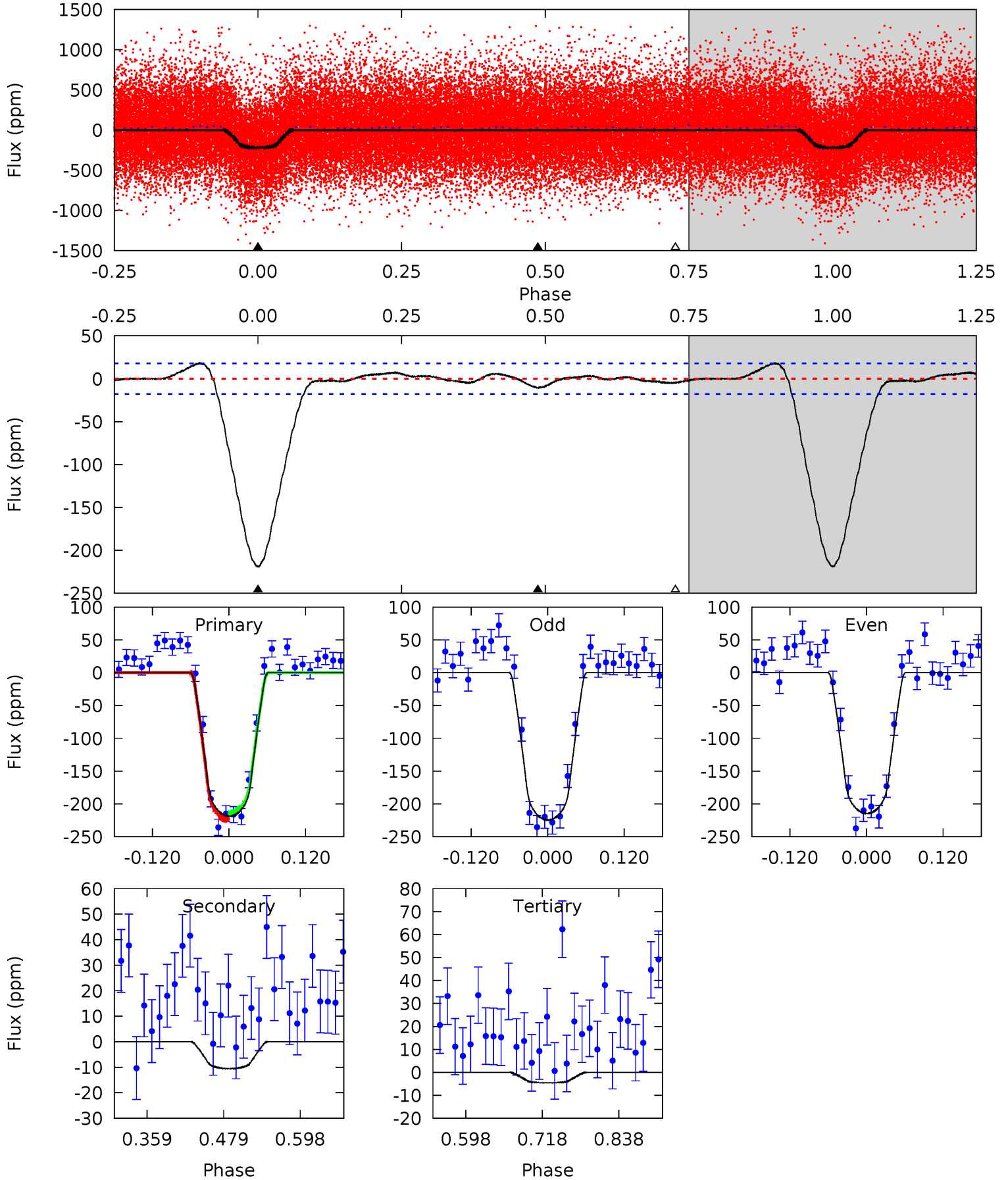




# DV Model-Shift Uniqueness Test

006607286-01, P = 0.783271 Days, E = 131.936763 Days

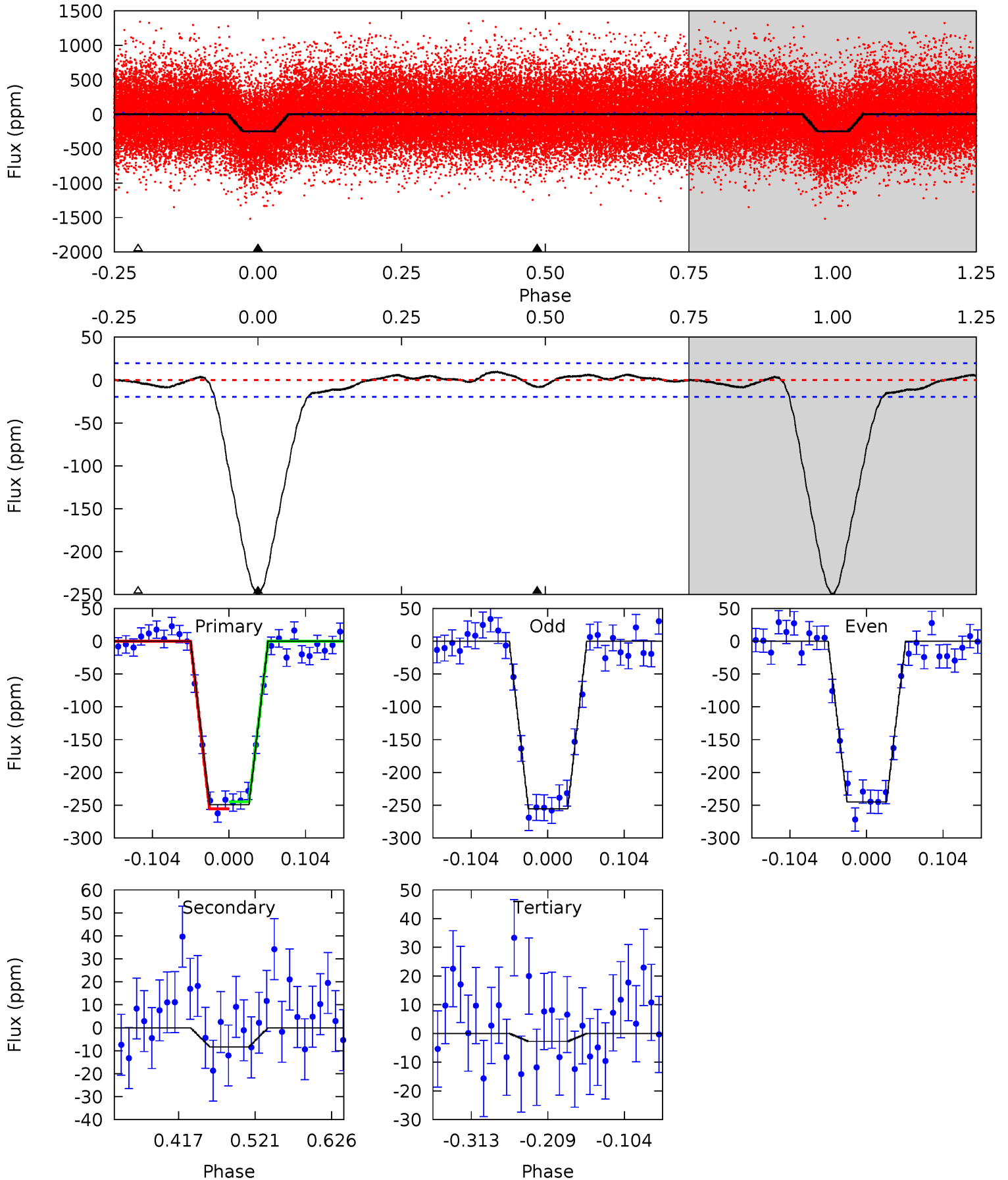
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
55.1	2.66	1.16	0	4.53	1.56	0.90	54.0	55.1	1.50	2.66	1.26	0.99	0.08	1.36



# Alt Model-Shift Uniqueness Test

006607286-01, P = 0.783271 Days, E = 131.936763 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
57.8	1.93	0.64	0	4.56	1.62	1.13	57.1	57.8	1.28	1.93	1.20	1.01	0.04	1.23





### Stellar Parameters For KIC 006607286

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5640^{+76}_{-76}$	$4.247^{+0.162}_{-0.108}$	$0.160^{+0.150}_{-0.150}$	$1.233^{+0.190}_{-0.211}$	$0.979^{+0.075}_{-0.055}$	$0.736^{+0.525}_{-0.240}$
	+1%/-1%	+4%/-3%	+94%/-94%	+15%/-17%	+8%/-6%	+71%/-33%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 006607286-01 / KOI 1239.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-11 \pm 4$	$2.13^{+0.52}_{-0.51}$	$2992^{+131}_{-150}$	$2362^{+775}_{-5089}$	$0.339^{+0.332}_{-0.157}$
Alt.	$-8 \pm 4$	$2.11^{+0.51}_{-0.50}$	$2990^{+134}_{-152}$	$-2273^{+5194}_{-639}$	$0.270^{+0.252}_{-0.159}$

$T_{max}$  = 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

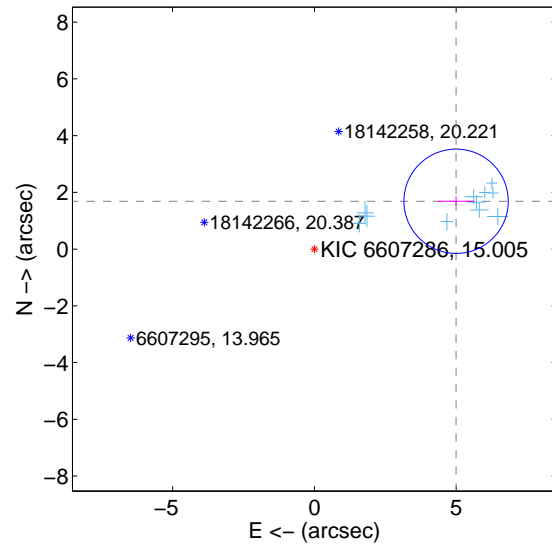
Supplemental centroid analysis for 006607286-01. Kepler magnitude: 15.01. Transit SNR 37.12

There are 14 quarters with good PRF difference image offsets

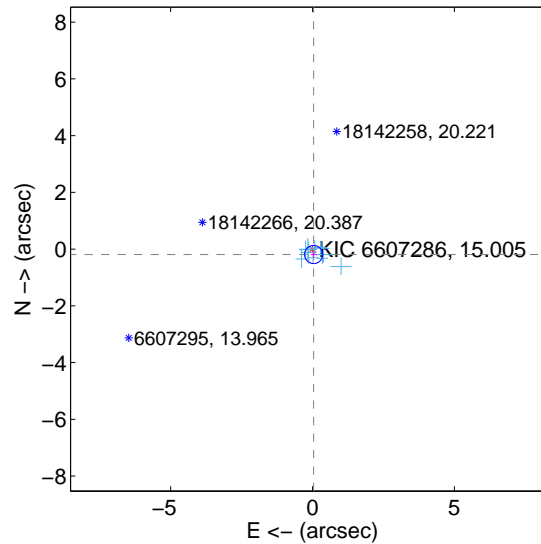
The OOT PRF centroid is offset from the target star catalog position by about 2.35 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.270 \pm 0.613$	8.60	$-4.993 \pm 0.644$	$1.686 \pm 0.171$
PRF-fit source offset from KIC position	$0.195 \pm 0.107$	1.83	$-0.040 \pm 0.103$	$-0.191 \pm 0.107$
photometric centroid source offset	$1.49 \pm 0.23$	6.61	$1.43 \pm 0.23$	$-0.42 \pm 0.15$

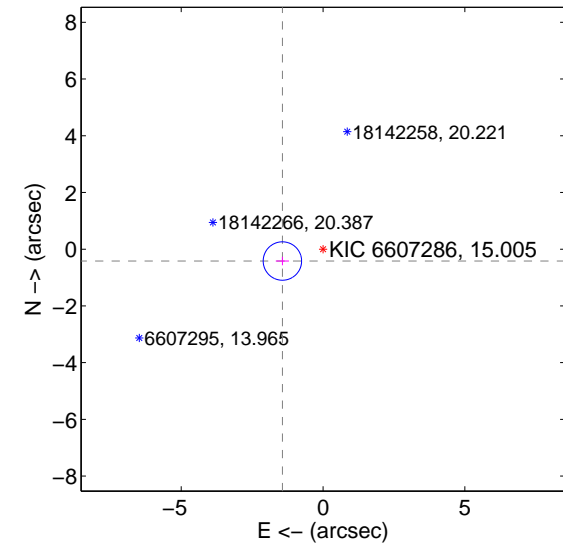
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

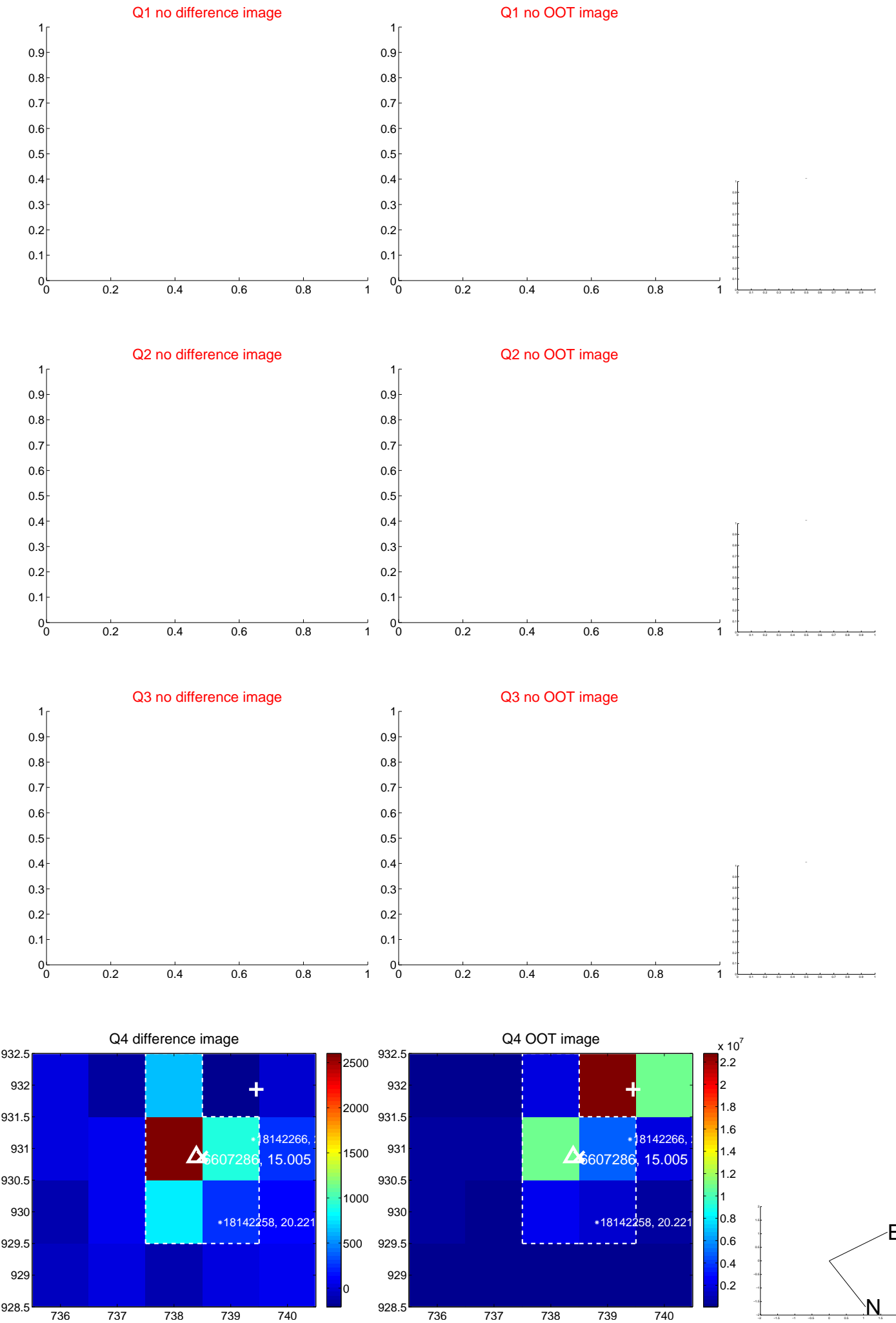


offset from photometric centroids

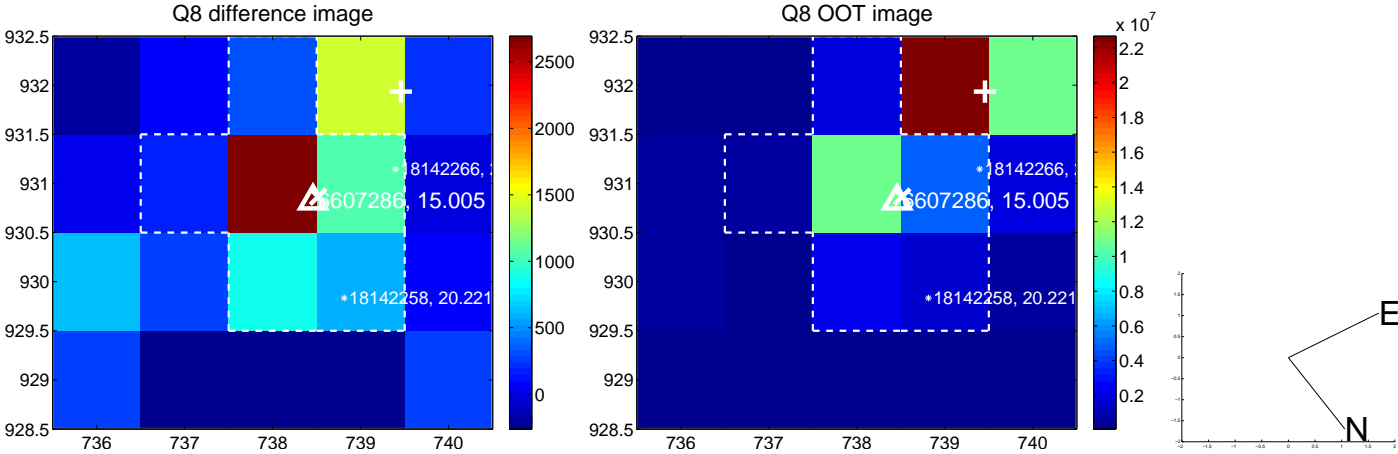
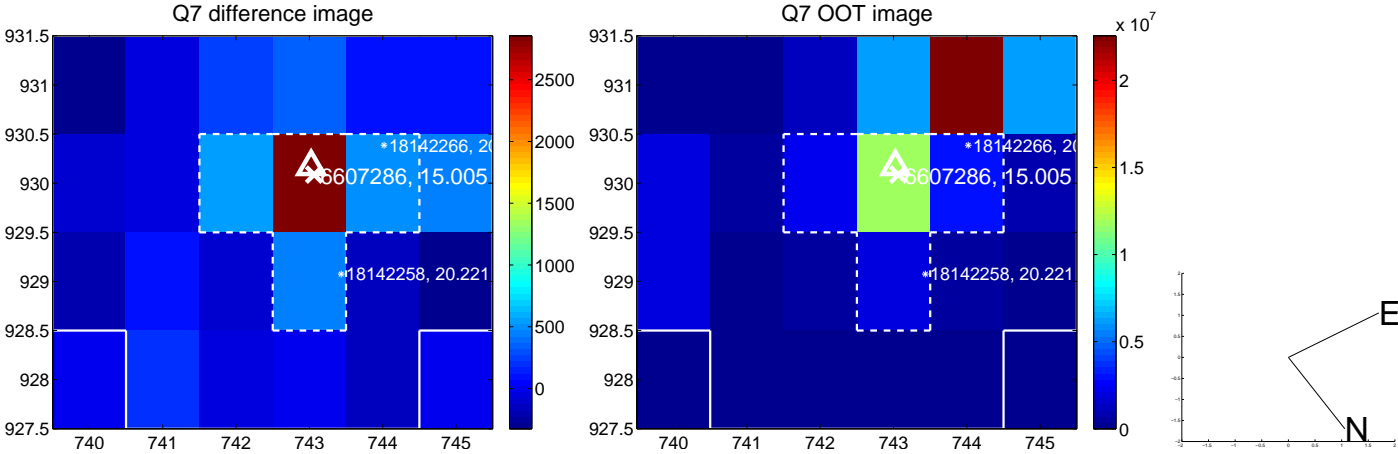
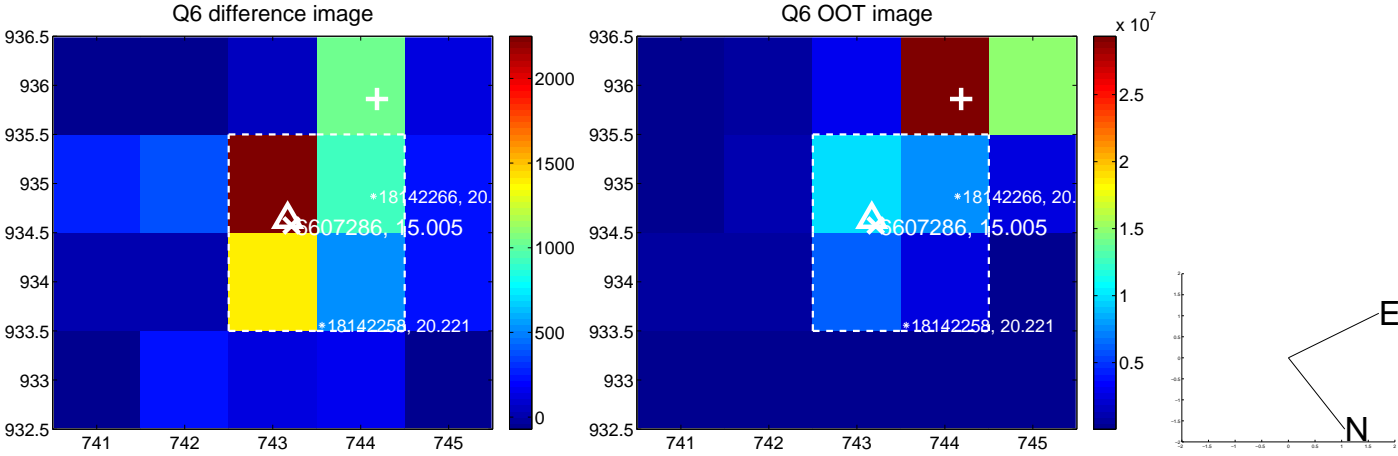
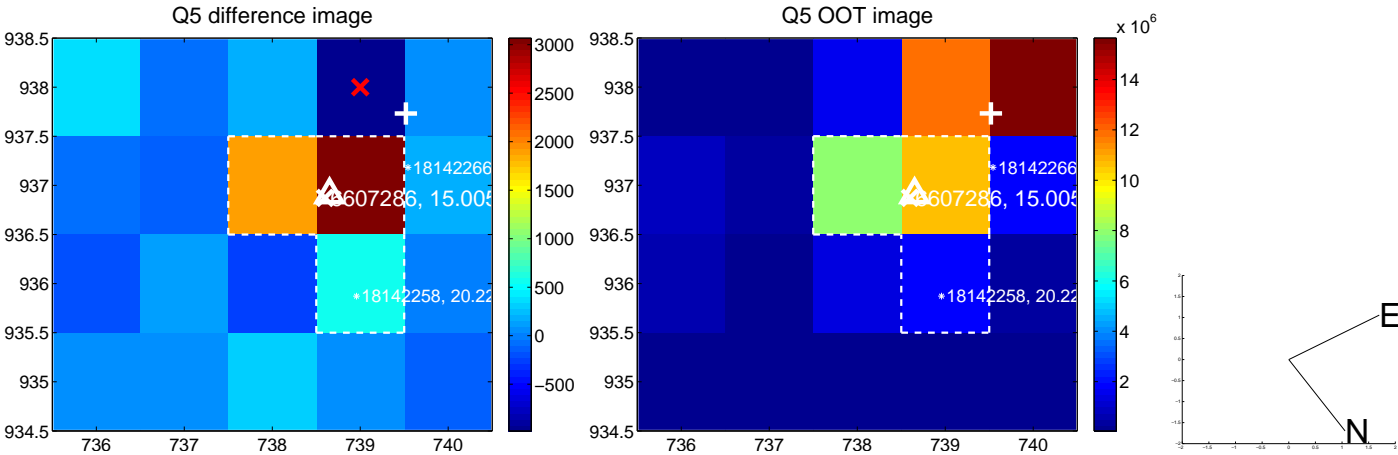


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

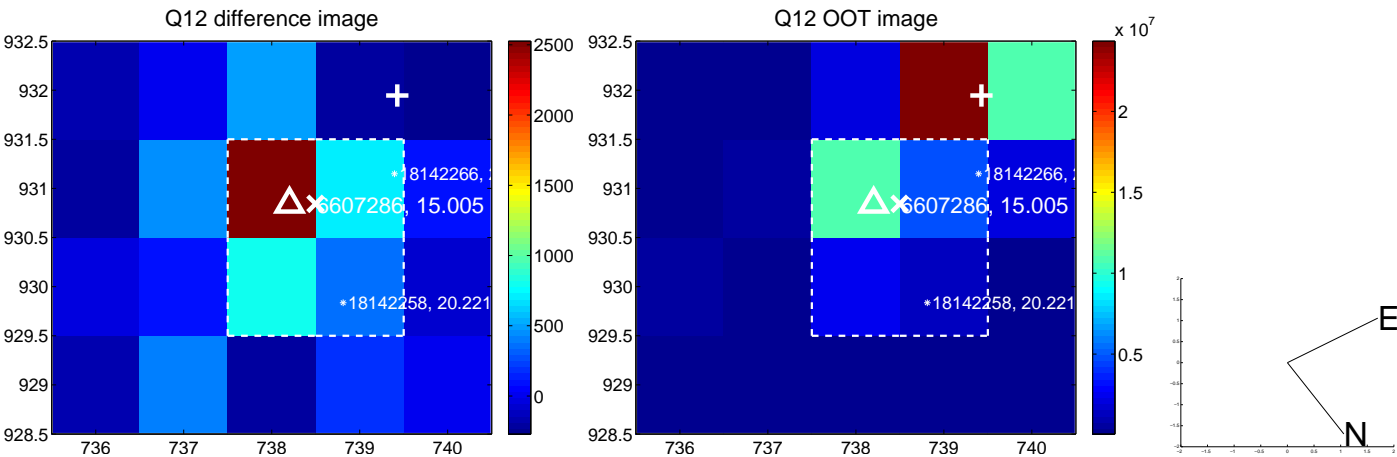
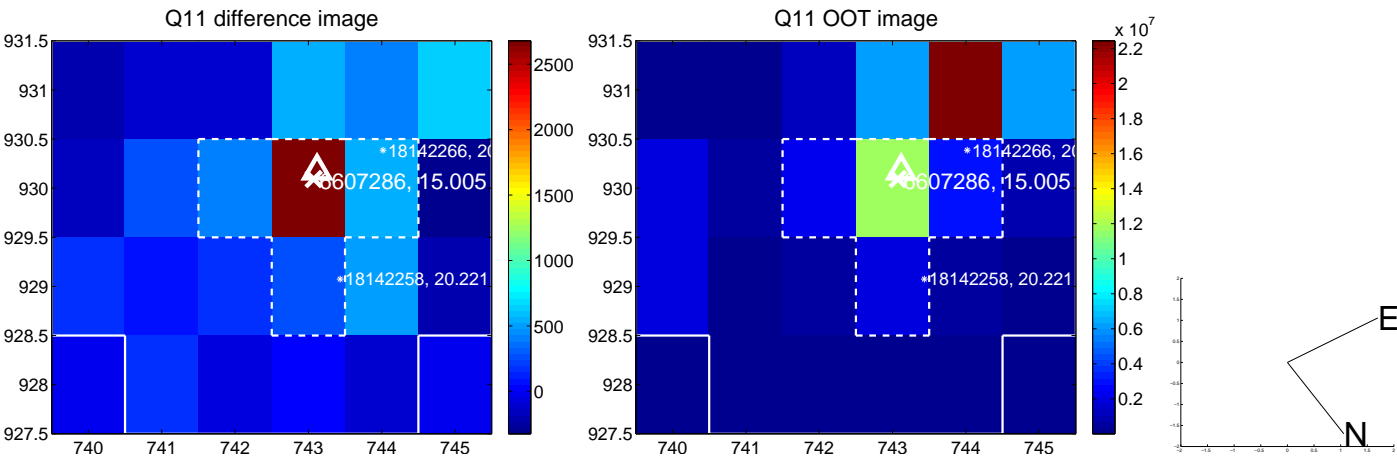
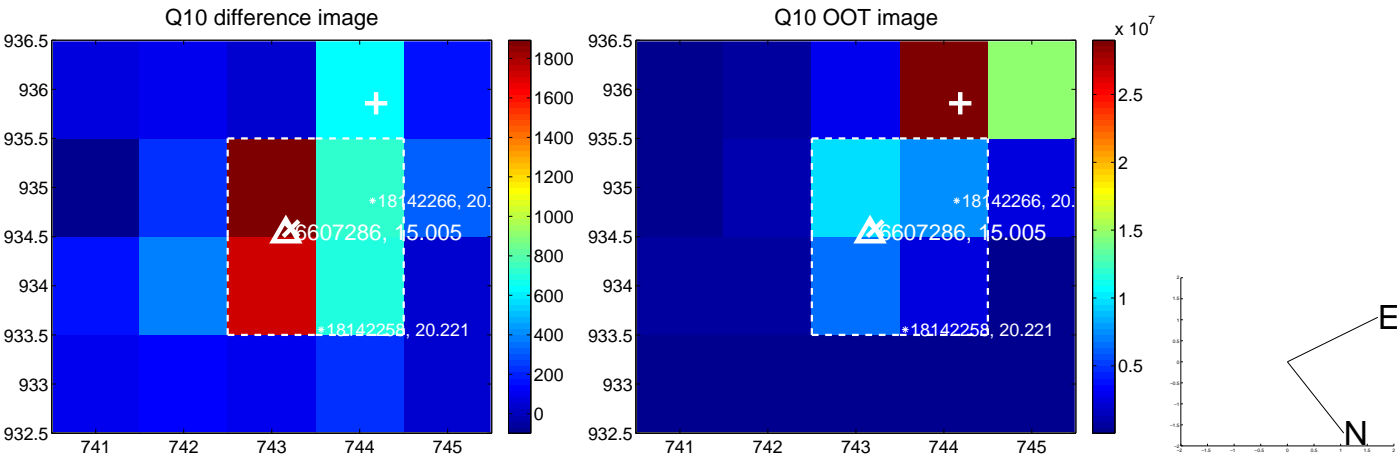
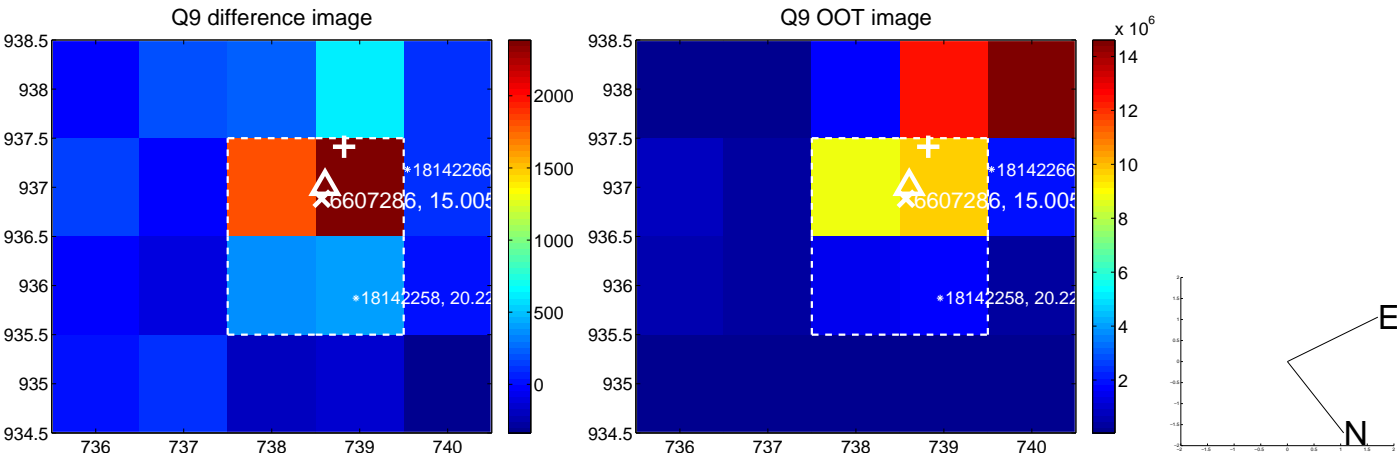


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

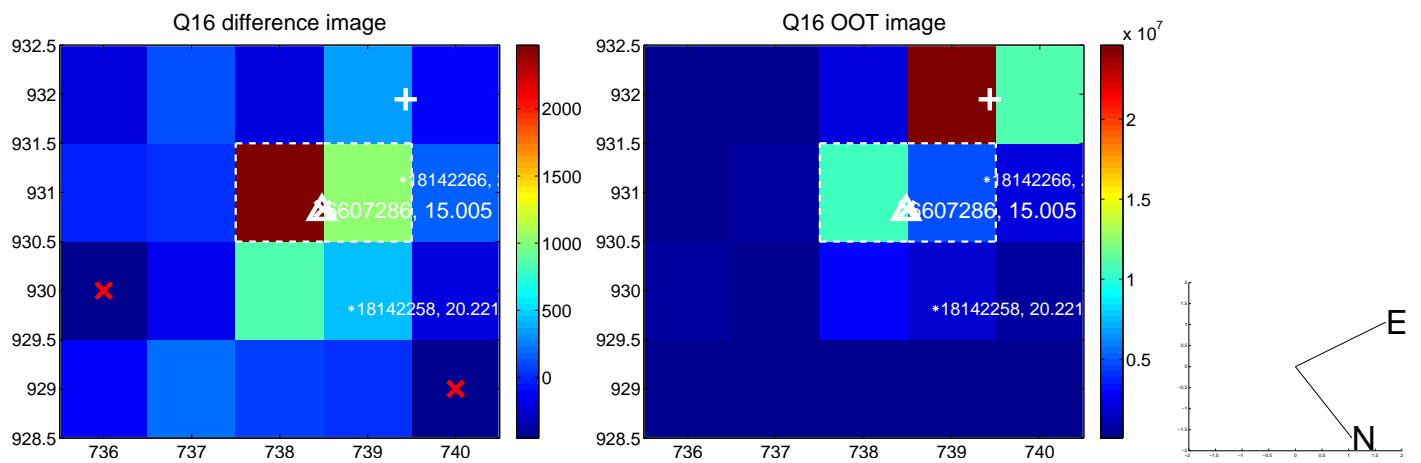
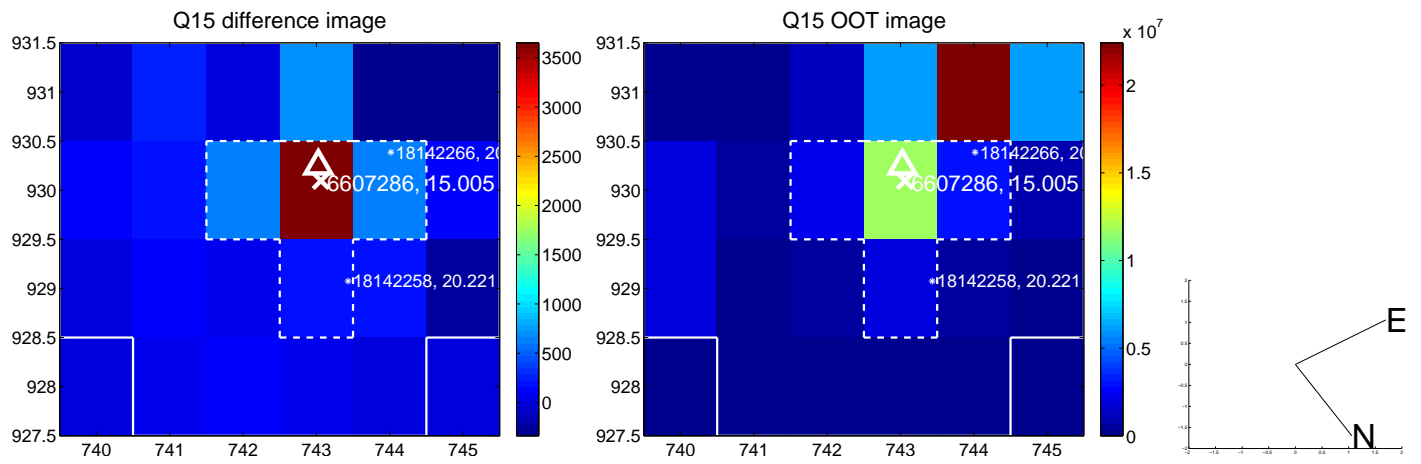
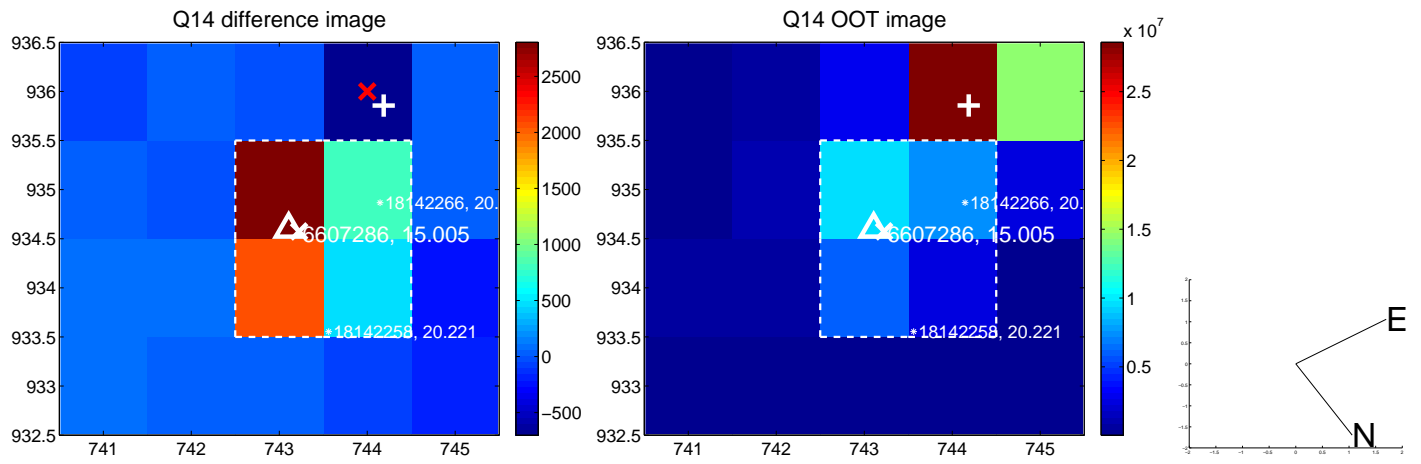
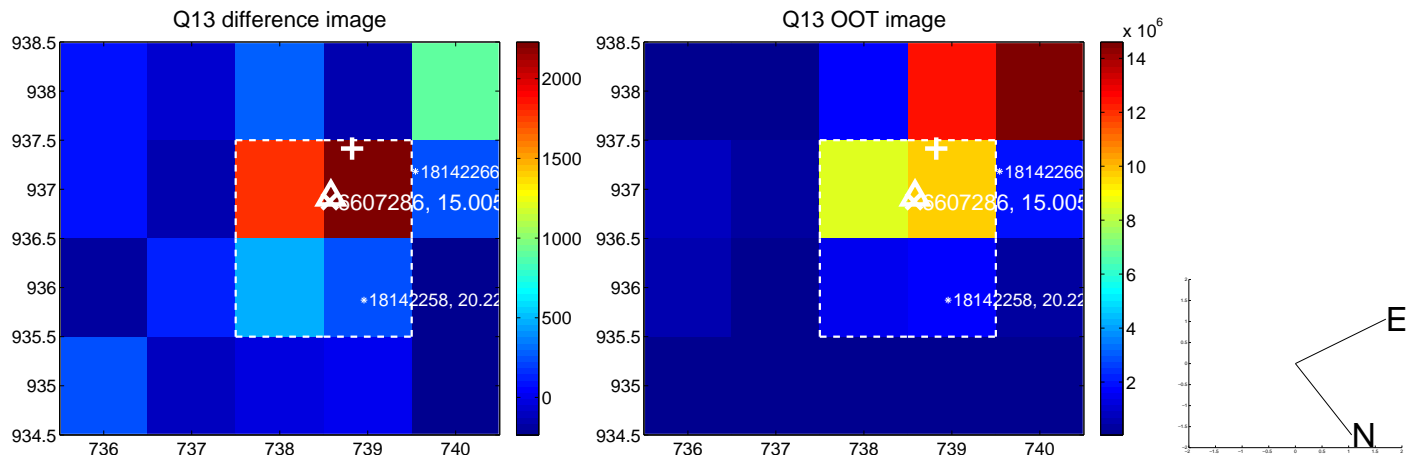




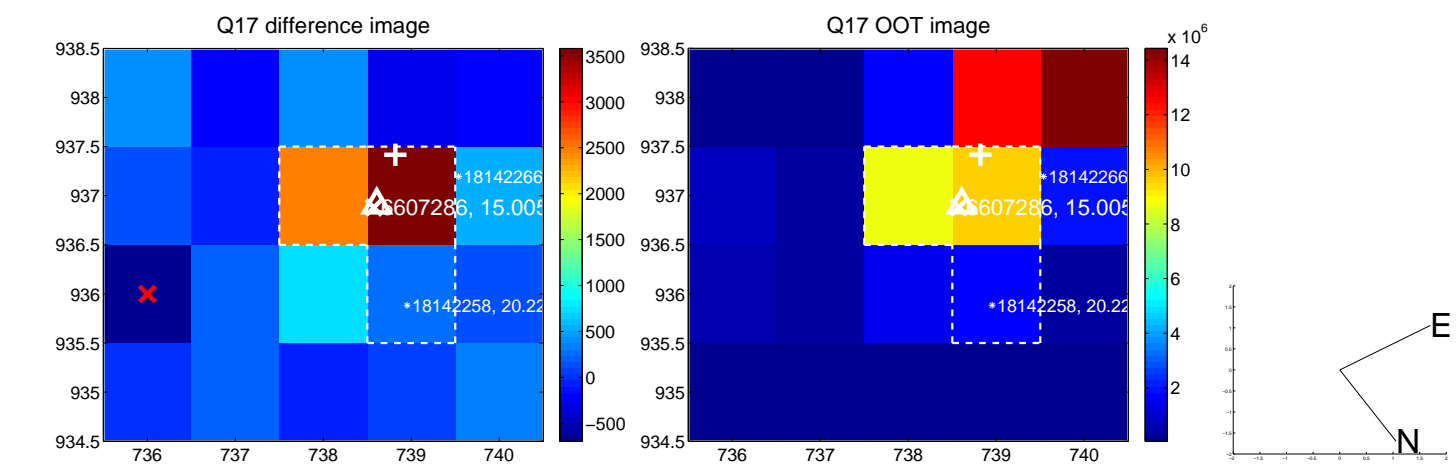
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



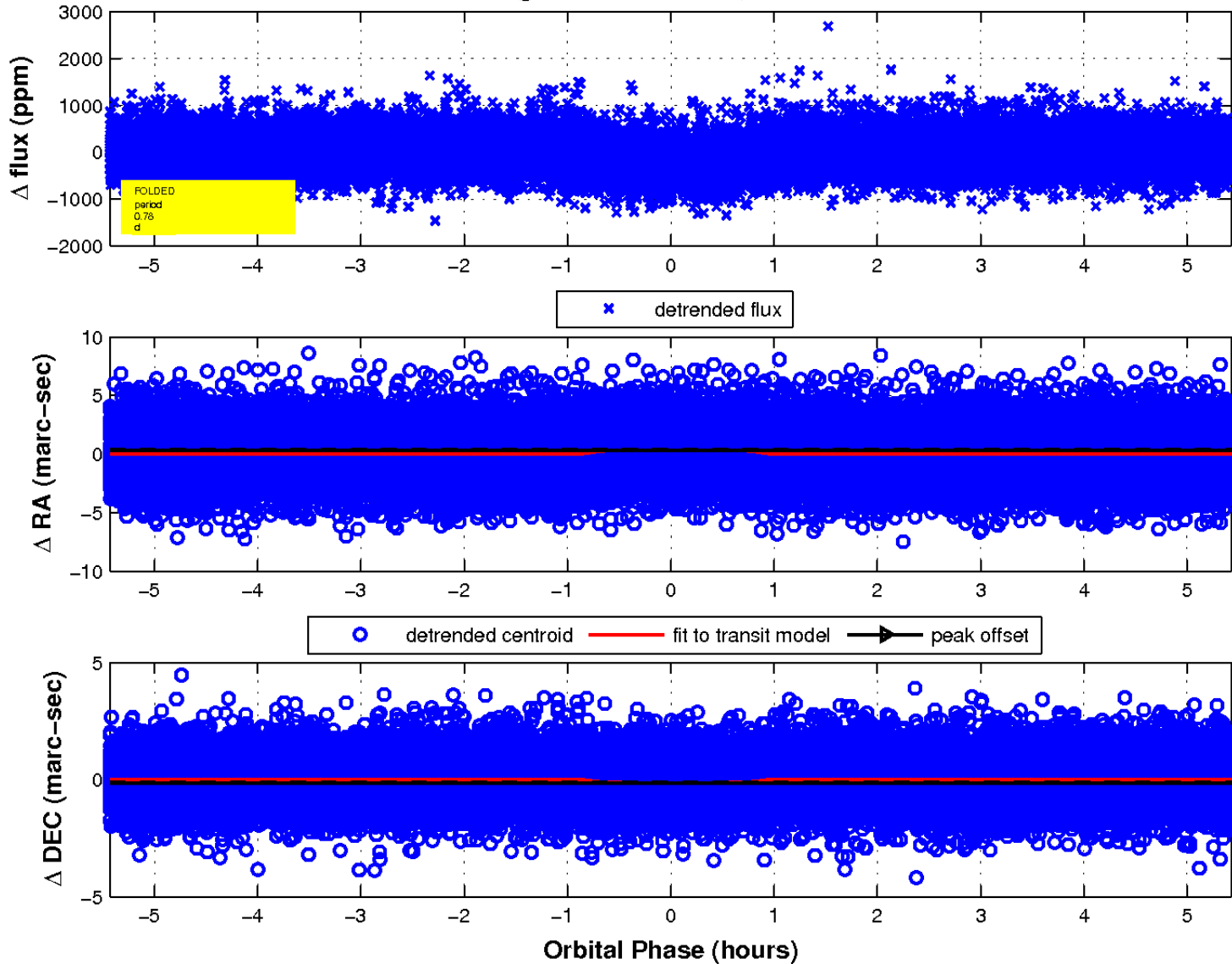
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

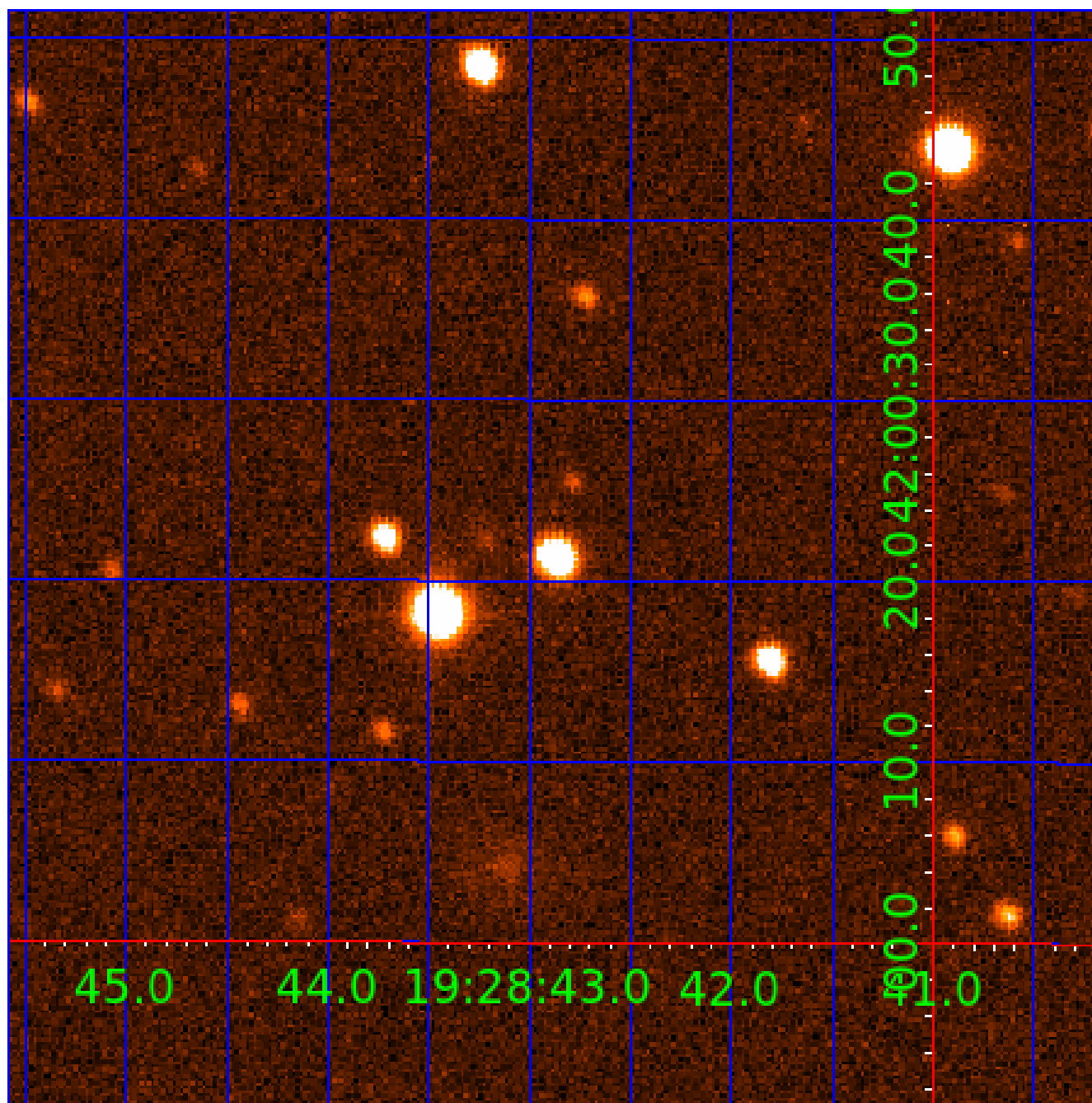


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination





# KIC 006607286

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006607286-01	OBS	1239.01	0.783271	131.936763	207.6	1.810	35.0	37.1	1.23	5640	2.13	5051.69
006607286-02	OBS	1239.02	3.174056	131.701228	265.7	2.400	20.5	23.1	1.23	5640	2.45	781.93

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006607286-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
006607286-02	OBS	PC	0.55	0	0	0	0	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.

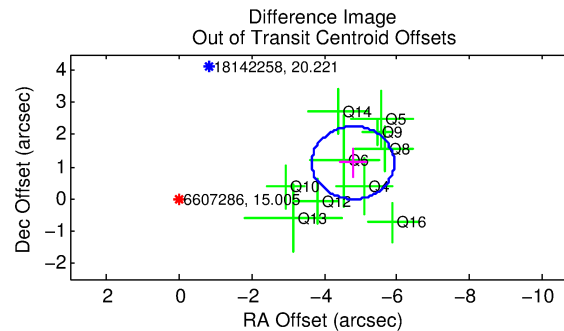
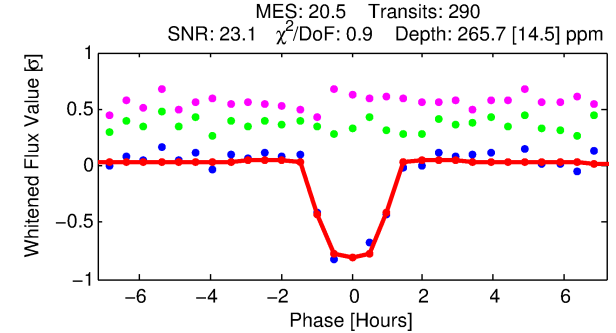
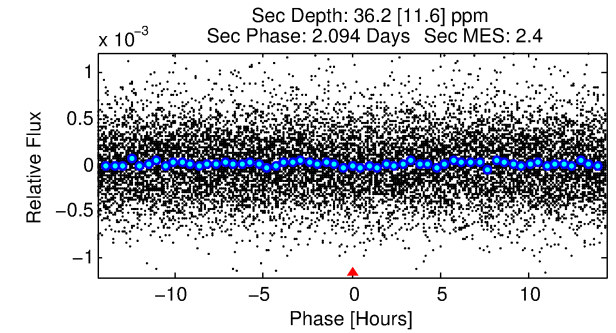
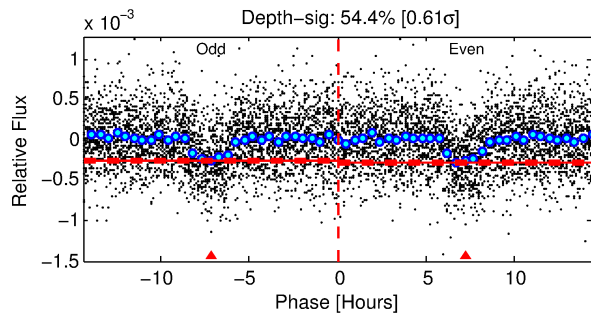
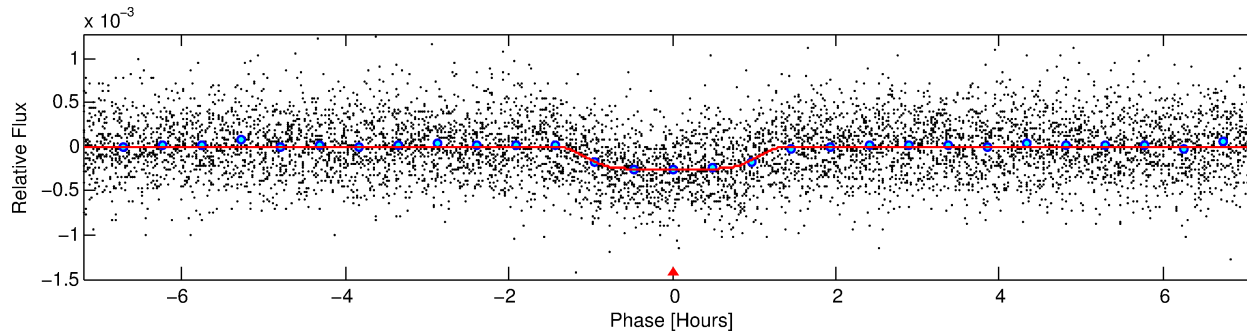
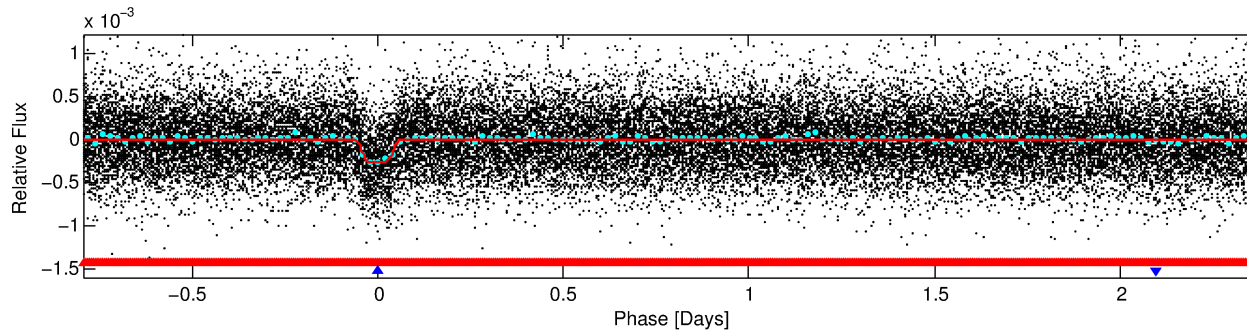
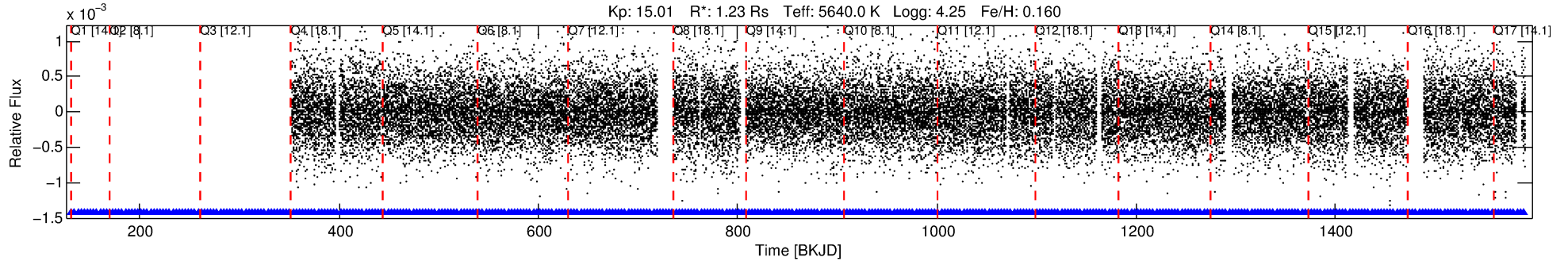
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006607286-02

No Significant Match Found

# DV One-Page Summary

KIC: 6607286 Candidate: 2 of 2 Period: 3.174 d  
KOI: K01239.02 Corr: 0.973



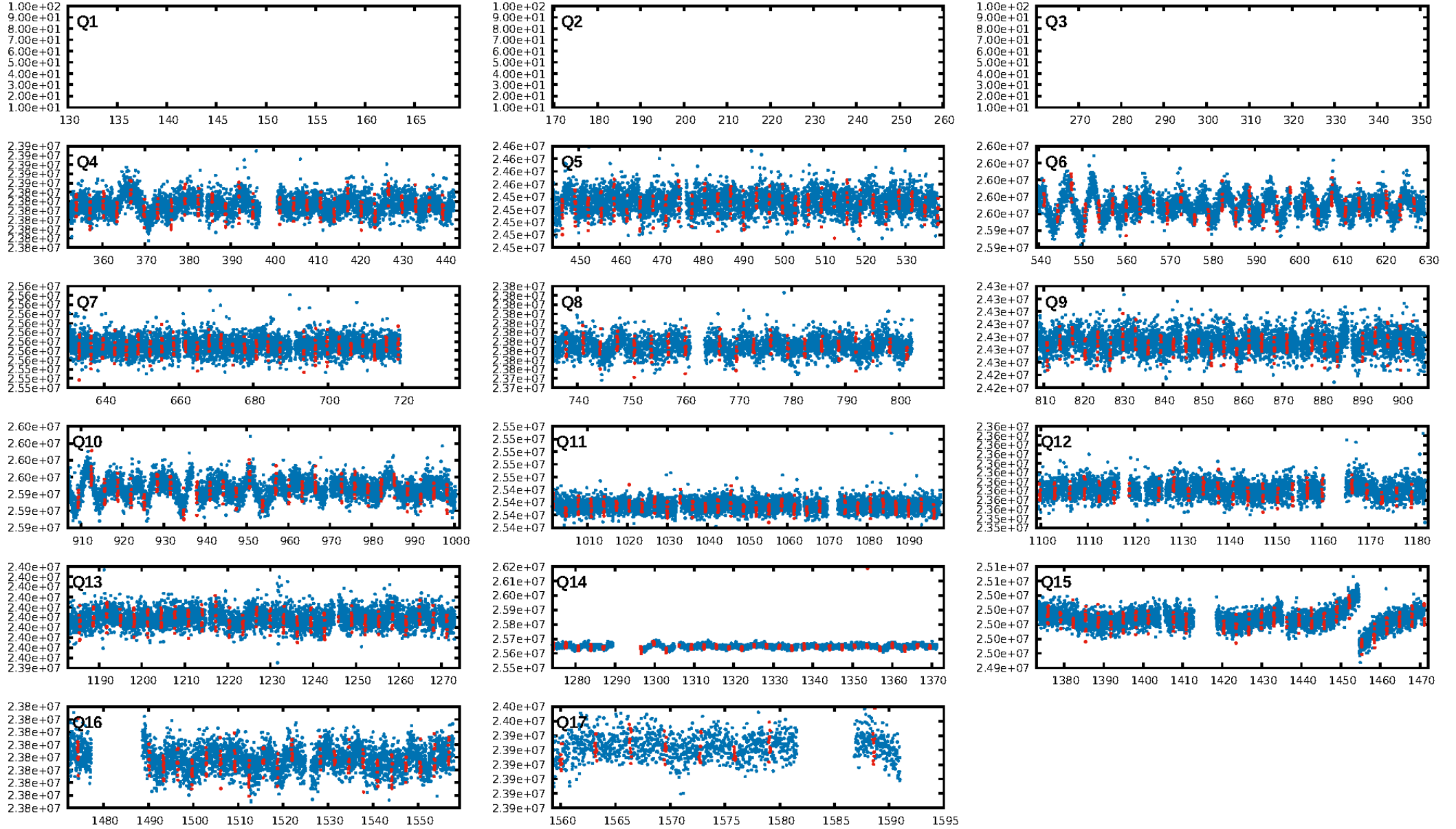
## DV Fit Results:

Period = 3.17406 [0.00001] d  
Epoch = 131.7012 [0.0018] BKJD  
Rp/R\* = 0.0182 [0.0042]  
a/R\* = 4.61 [4.65]  
b = 0.92 [0.19]  
Seff = 781.93 [218.05]  
Teq = 1348 [94] K  
Rp = 2.45 [0.70] Re  
a = 0.0420 [0.0071] AU  
Ag = 5.87 [3.66] [1.33 $\sigma$ ]  
Teffp = 3245 [458] K [4.06 $\sigma$ ]

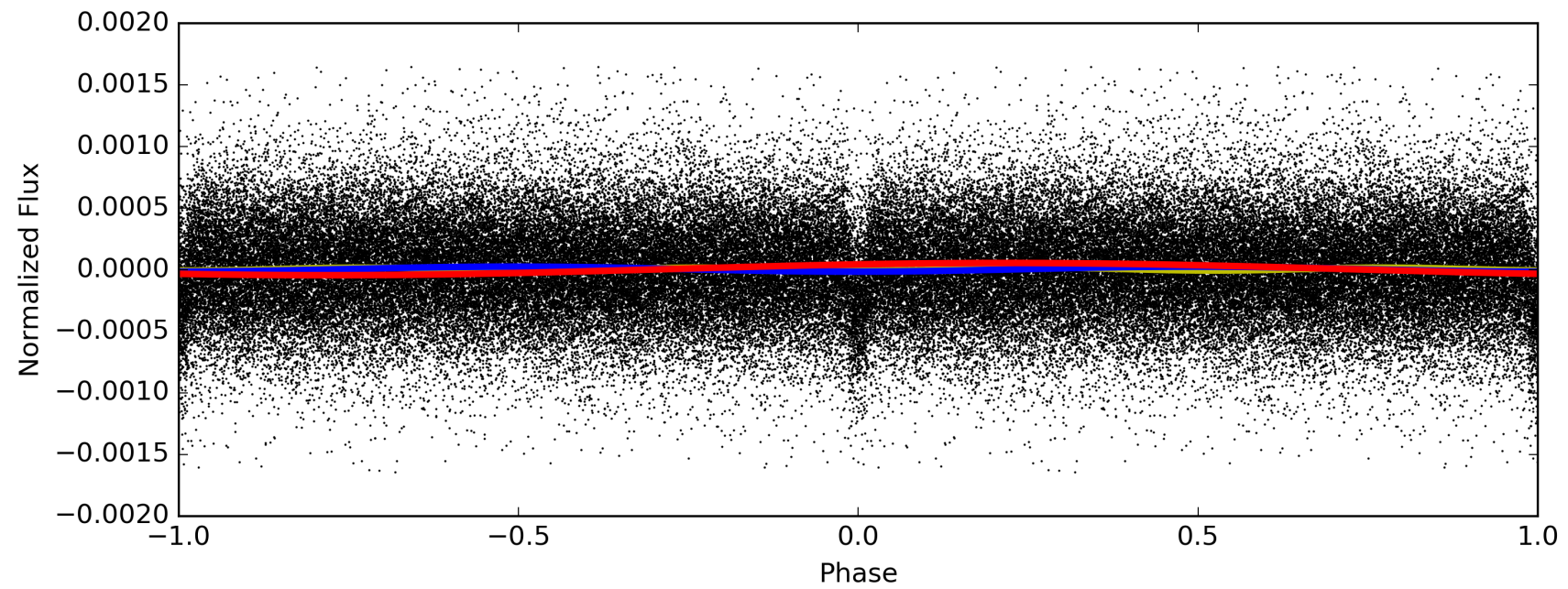
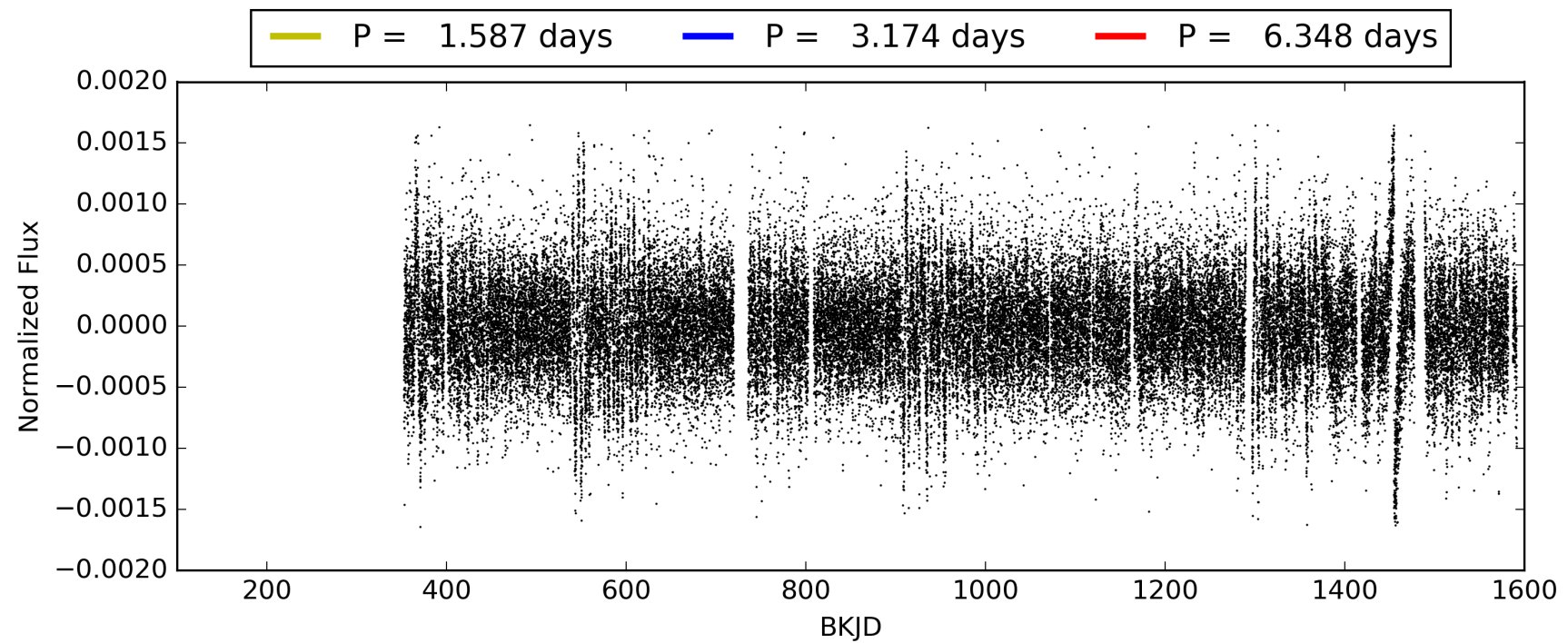
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.09 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.52e-91  
RollingBand-fgt: 1.00 [282/282]  
GhostDiagnostic-chr: -14.43  
Centroid-sig: 0.0%  
Centroid-so: 1.596 arcsec [5.60 $\sigma$ ]  
OotOffset-rm: 4.919 arcsec [13.03 $\sigma$ ]  
KicOffset-rm: 0.981 arcsec [1.78 $\sigma$ ]  
OotOffset-st: 3/0/4/3 [10]  
KicOffset-st: 3/2/4/3 [12]  
DiffImageQuality-fgm: 0.58 [7/12]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 006607286-02, PDC Light Curves



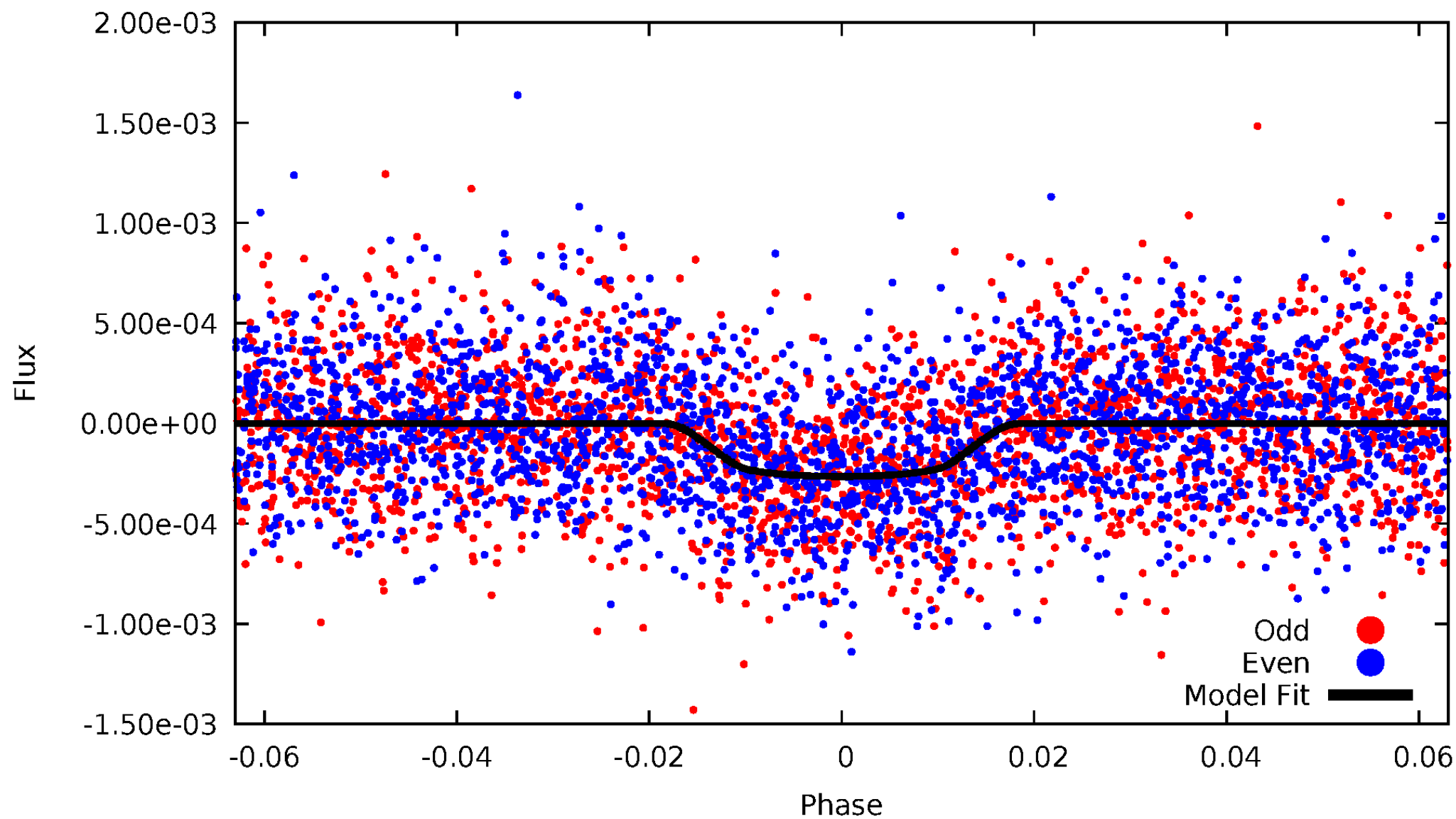
TCE 006607286-02





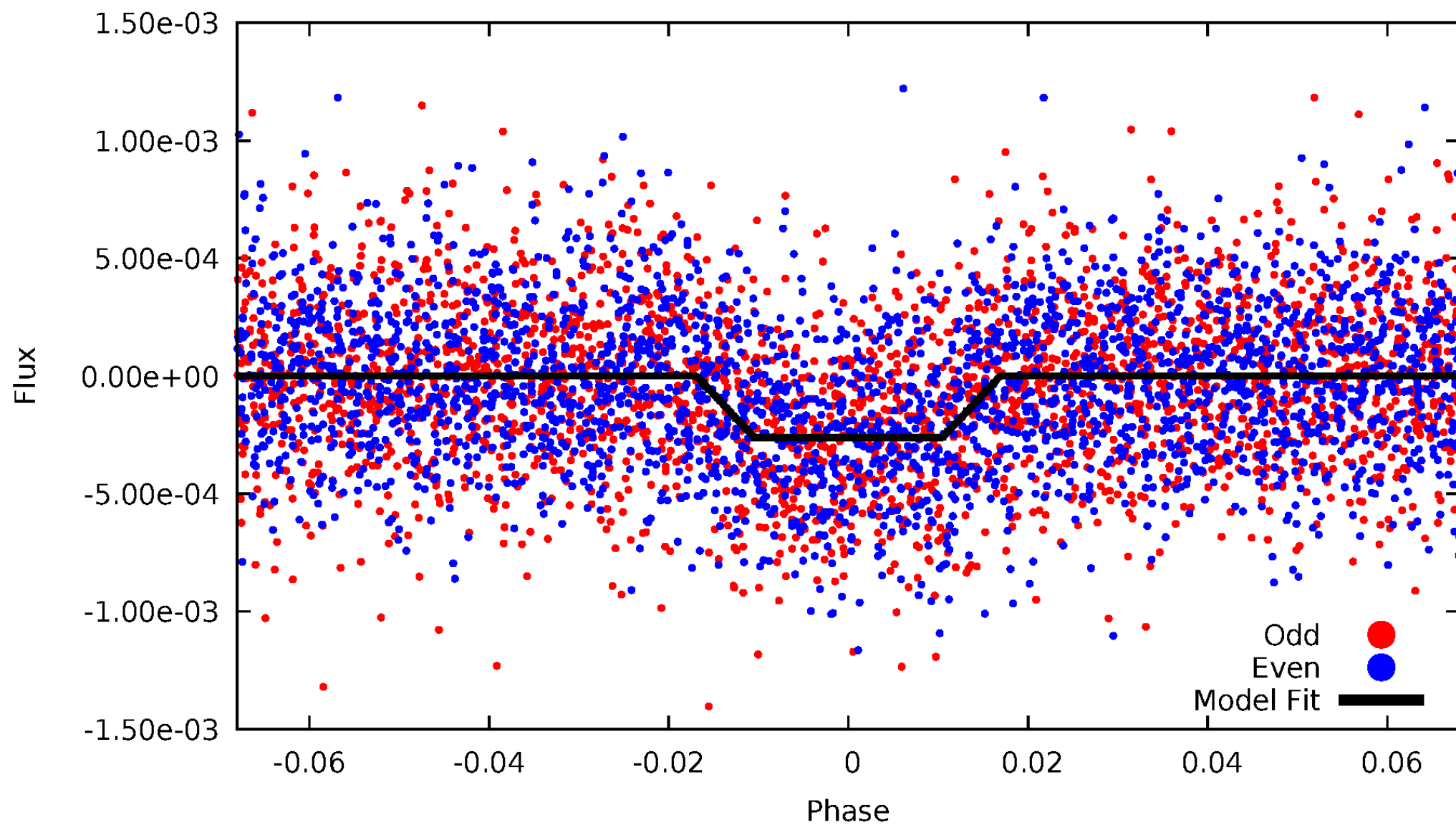
DV Odd/Even

TCE 006607286-02



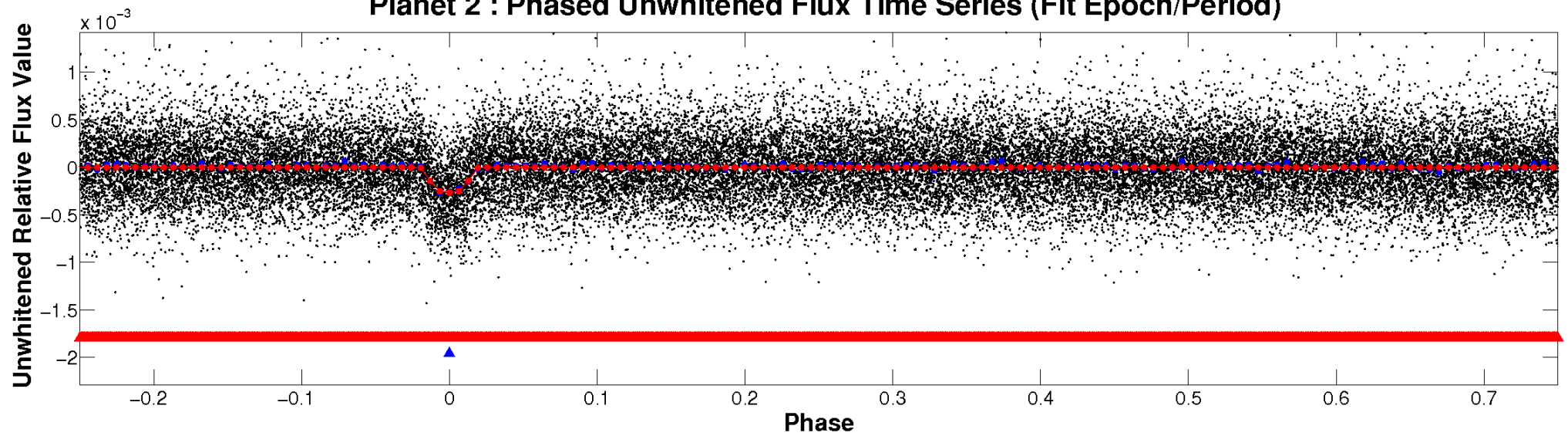
# ALT Odd/Even

TCE 006607286-02

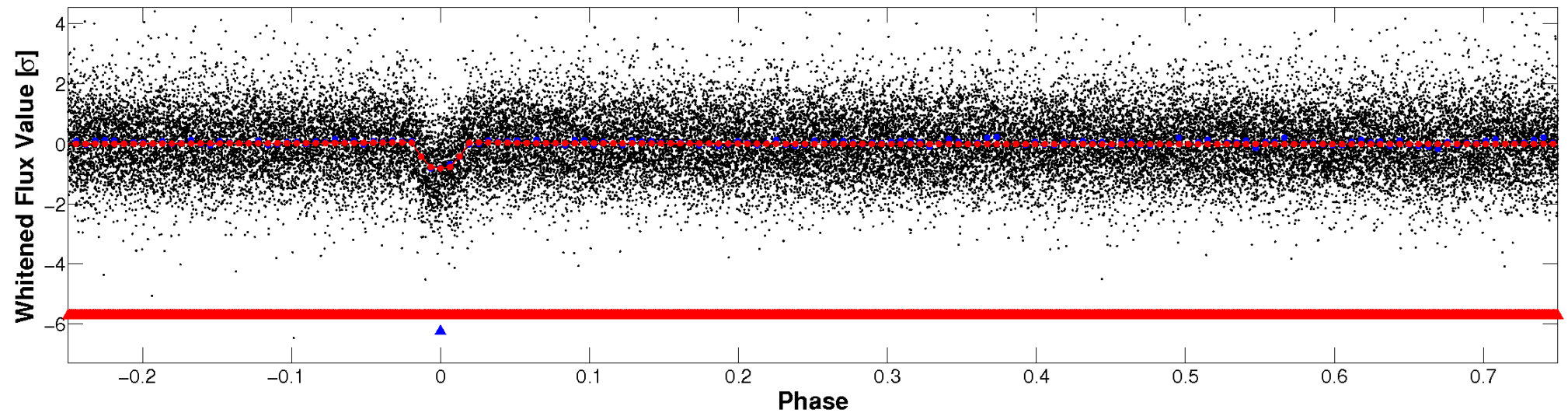


# Non-Whitened Vs. Whitened Light Curve

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

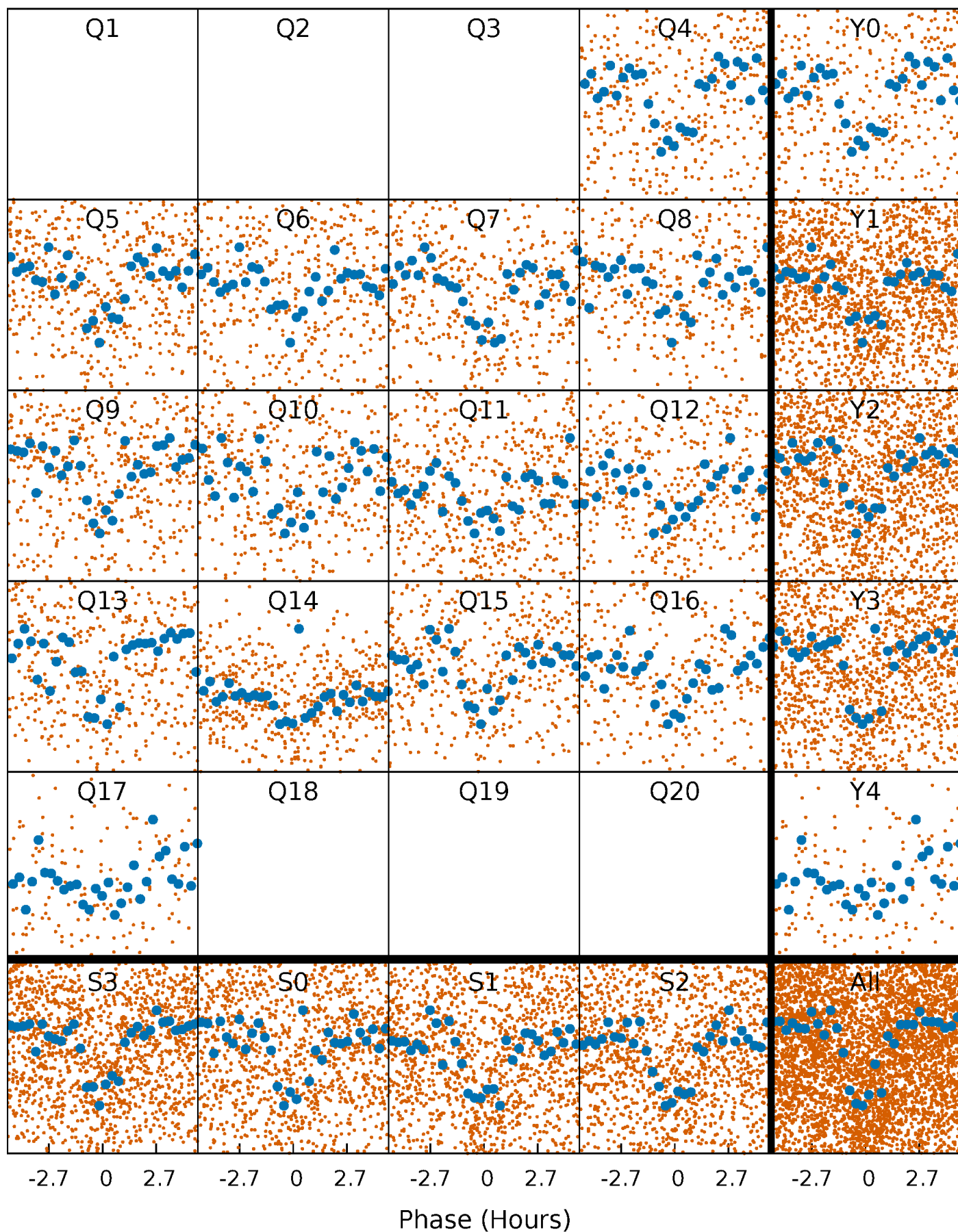


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

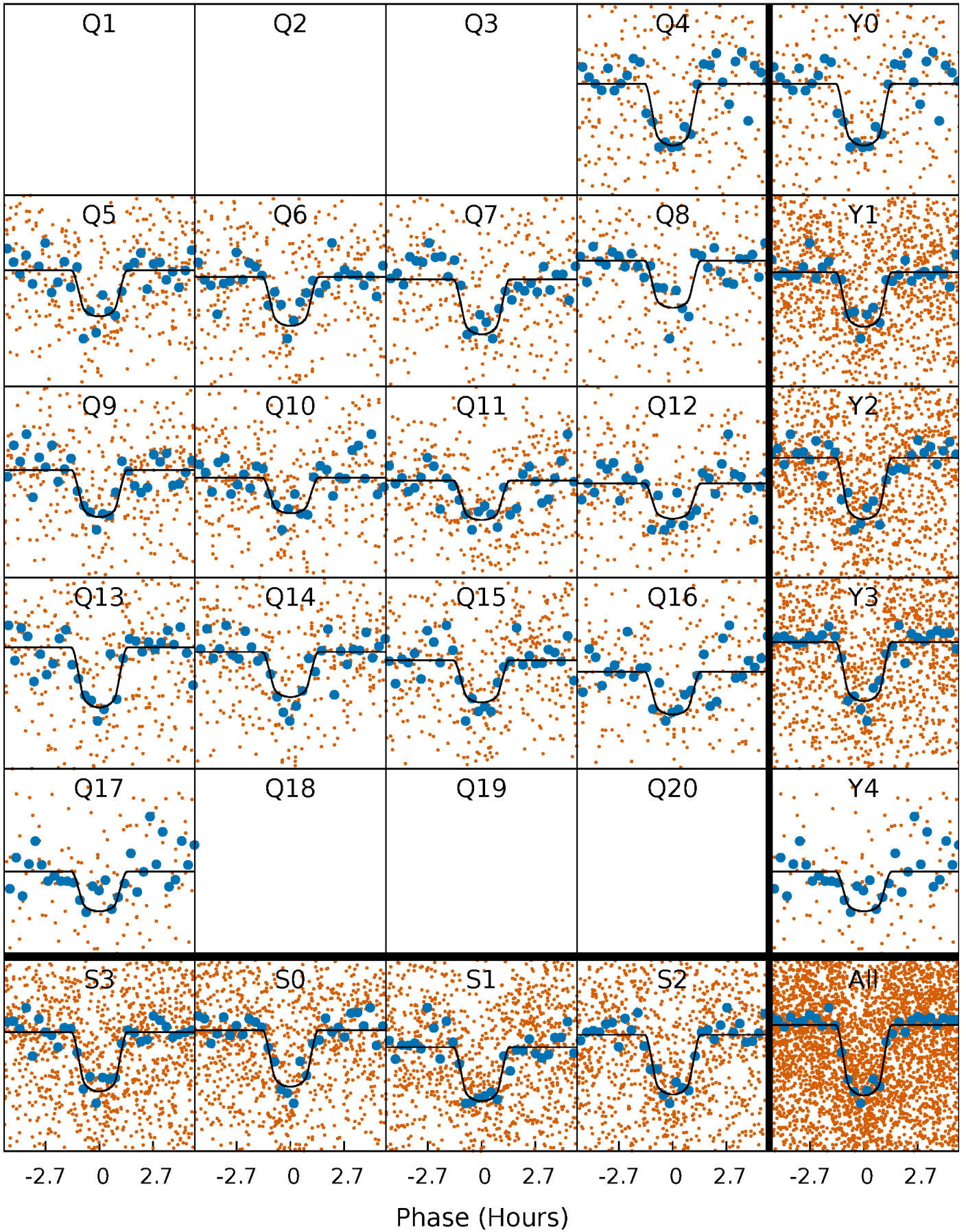
TCE 006607286-02 P= 3.174056 Days  $T_0=131.701228$  (BKJD)





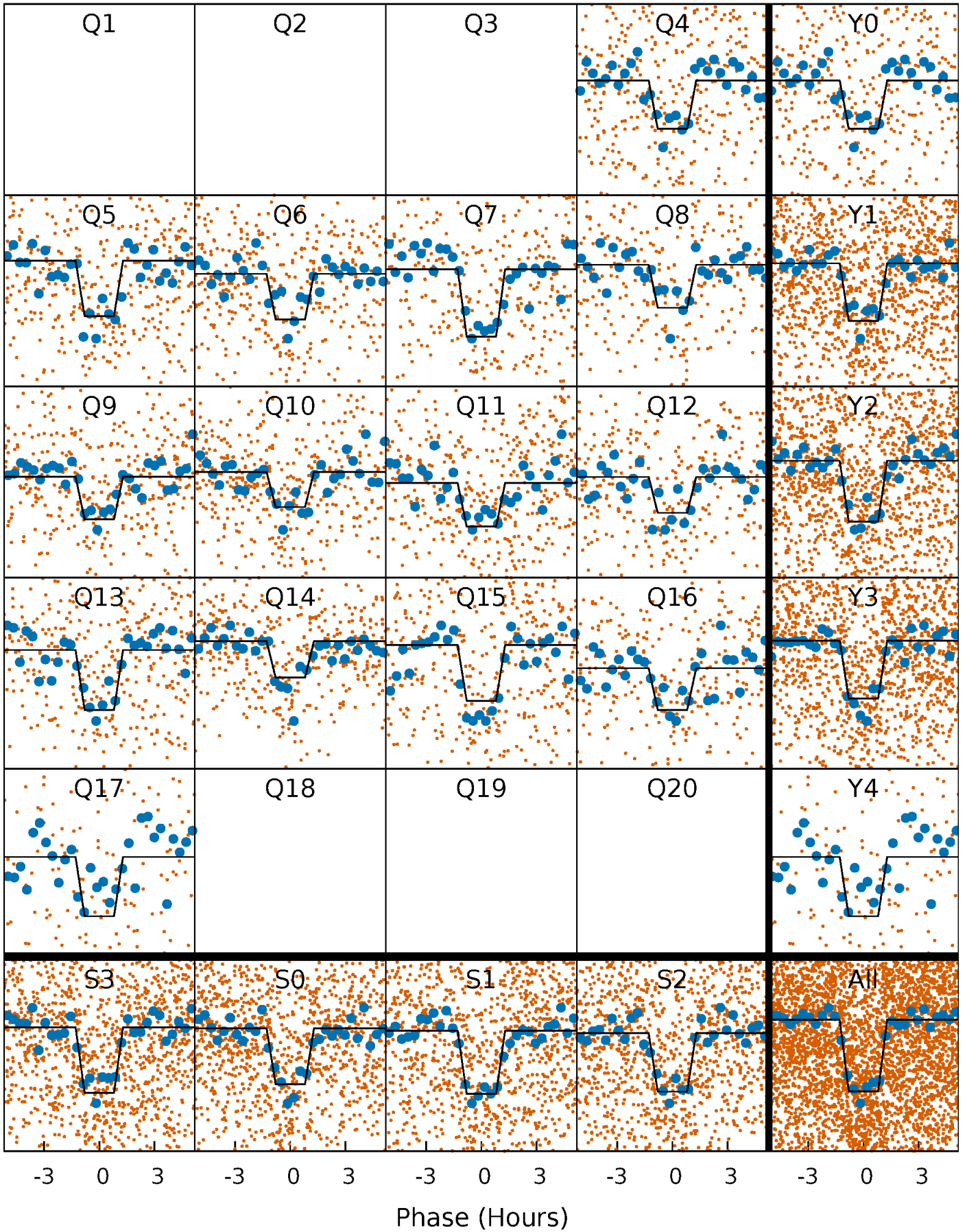
# DV Quarter-Phased Transit Curves

TCE 006607286-02 P= 3.174056 Days  $T_0=131.701228$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006607286-02 P= 3.174053 Days  $T_0=131.702062$  (BKJD)

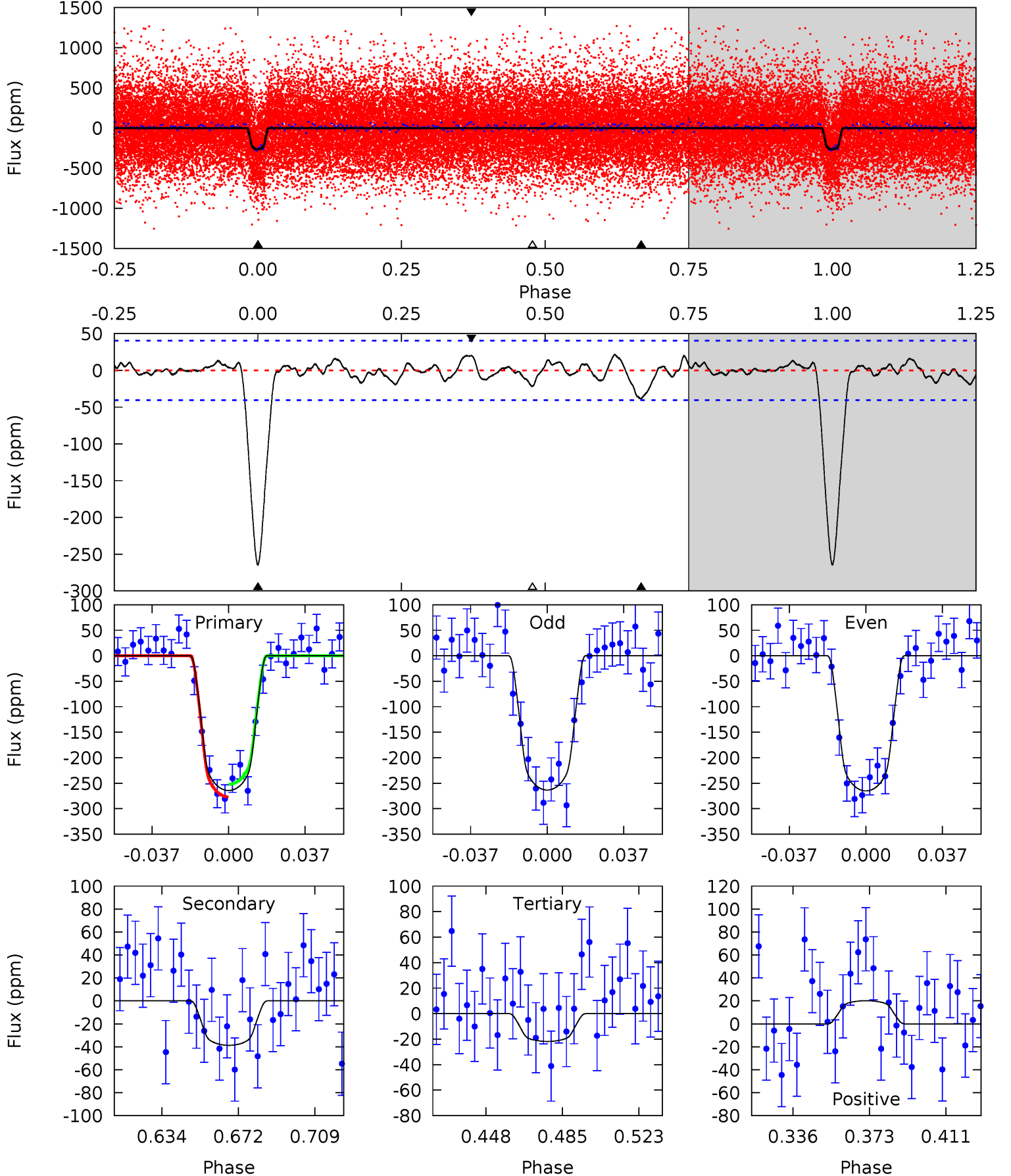




# DV Model-Shift Uniqueness Test

006607286-02, P = 3.174056 Days, E = 131.701228 Days

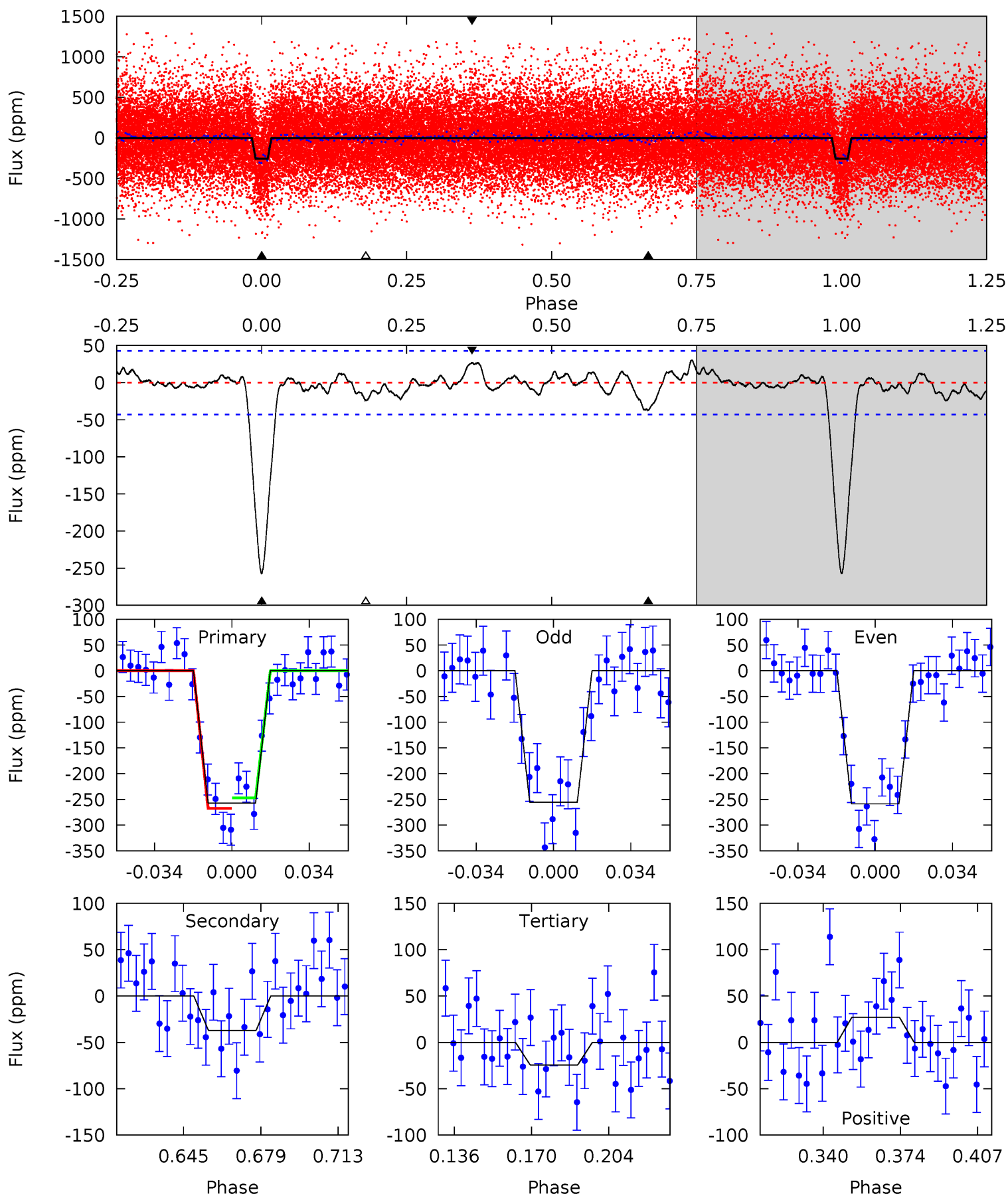
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.1	4.57	2.57	2.37	4.77	2.08	1.00	28.6	28.8	2.00	2.19	0.10	0.95	0.07	1.46



# Alt Model-Shift Uniqueness Test

006607286-02, P = 3.174053 Days, E = 131.702062 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
28.6	4.15	2.71	3.01	4.79	2.12	1.12	25.9	25.6	1.44	1.14	0.17	0.99	0.11	1.15



### Stellar Parameters For KIC 006607286

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5640^{+76}_{-76}$	$4.247^{+0.162}_{-0.108}$	$0.160^{+0.150}_{-0.150}$	$1.233^{+0.190}_{-0.211}$	$0.979^{+0.075}_{-0.055}$	$0.736^{+0.525}_{-0.240}$
	+1%/-1%	+4%/-3%	+94%/-94%	+15%/-17%	+8%/-6%	+71%/-33%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 006607286-02 / KOI 1239.02

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-39 \pm 8$	$2.39^{+0.68}_{-0.55}$	$1874^{+96}_{-100}$	$3694^{+341}_{-310}$	$6.549^{+5.042}_{-2.787}$
Alt.	$-37 \pm 9$	$2.10^{+0.67}_{-0.56}$	$1878^{+90}_{-87}$	$3810^{+502}_{-353}$	$7.964^{+7.585}_{-3.729}$

$T_{\text{max}}$  = 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

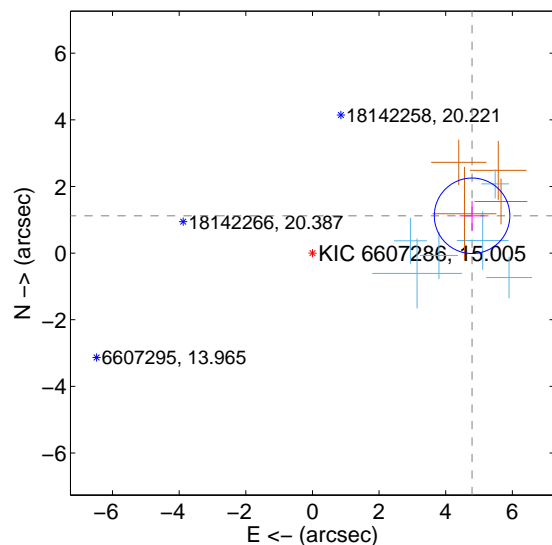
Supplemental centroid analysis for 006607286-02. Kepler magnitude: 15.01. Transit SNR 23.06

There are 7 quarters with good PRF difference image offsets

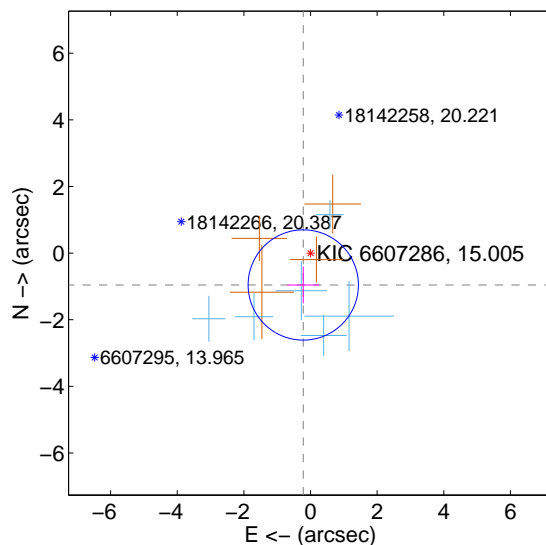
The OOT PRF centroid is offset from the target star catalog position by about 5.77 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.919 \pm 0.378$	13.03	$-4.790 \pm 0.374$	$1.120 \pm 0.444$
PRF-fit source offset from KIC position	$0.981 \pm 0.552$	1.78	$0.218 \pm 0.476$	$-0.957 \pm 0.555$
photometric centroid source offset	$1.60 \pm 0.28$	5.60	$1.18 \pm 0.33$	$-1.08 \pm 0.21$

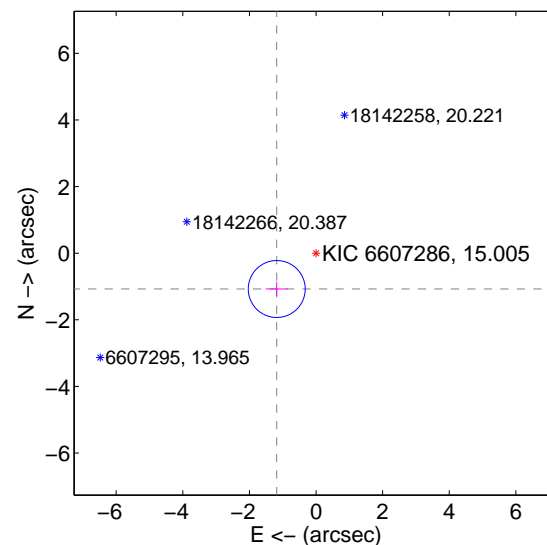
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

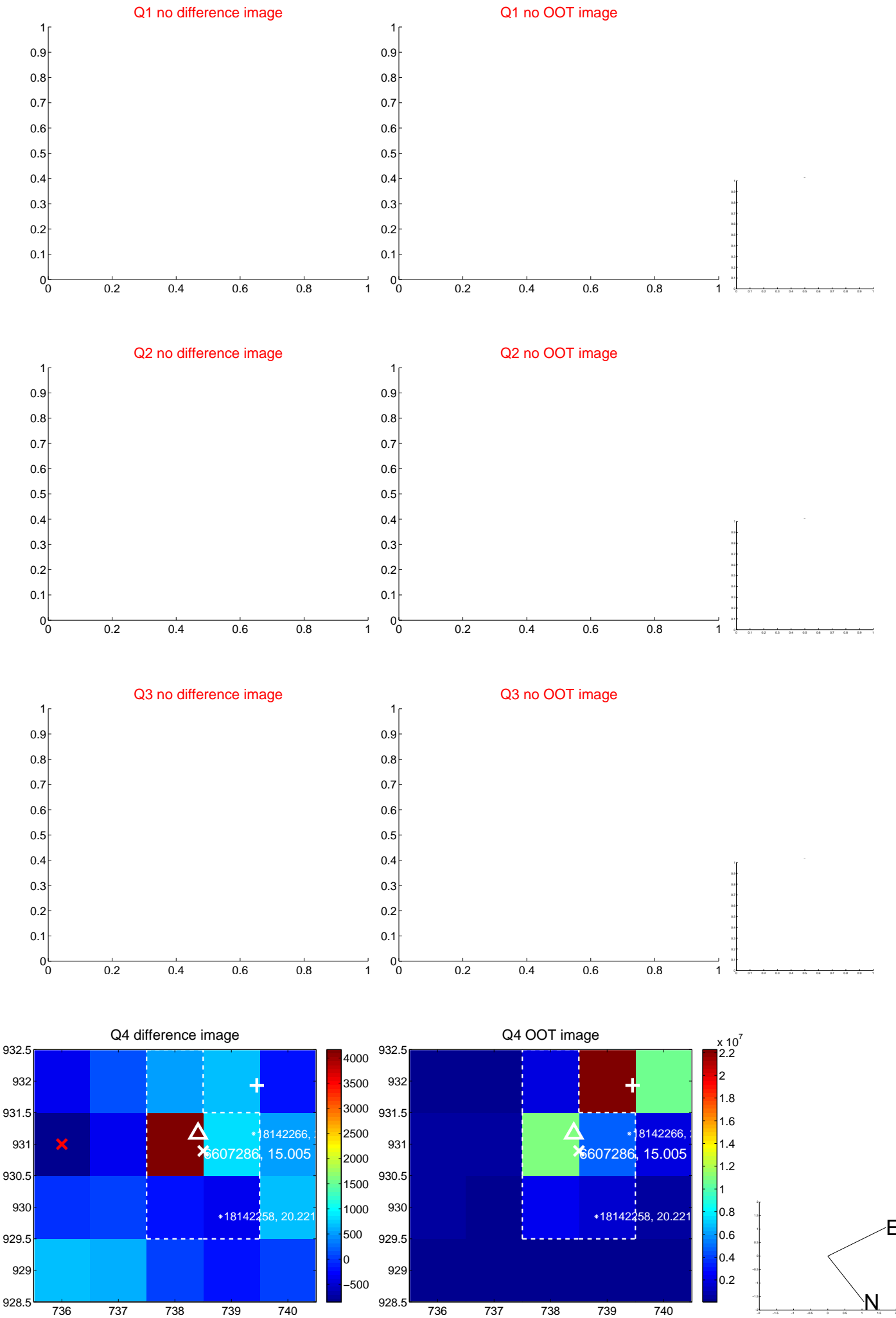


offset from photometric centroids

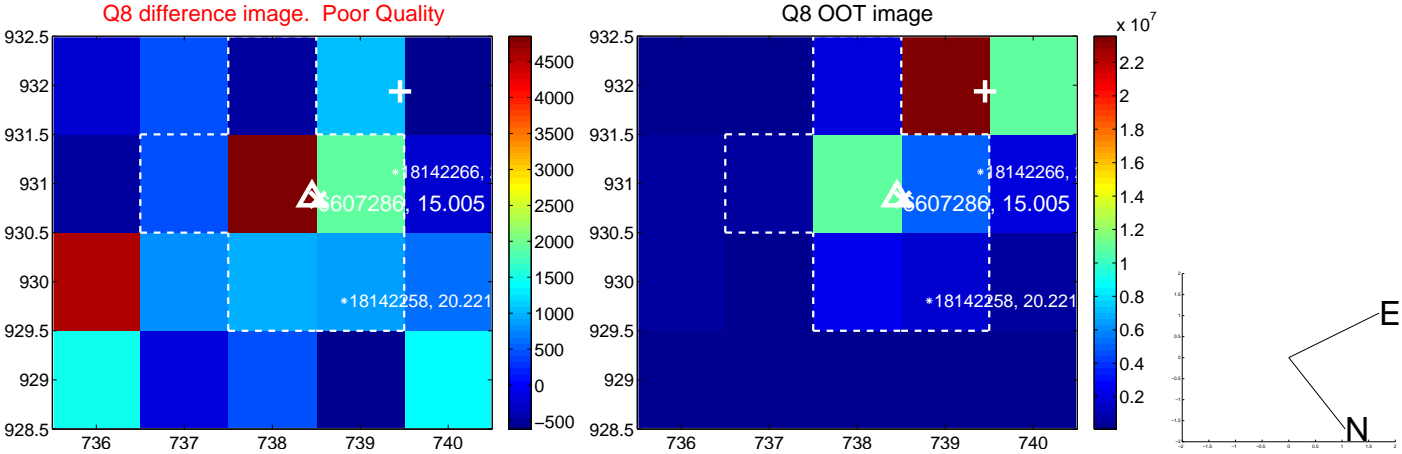
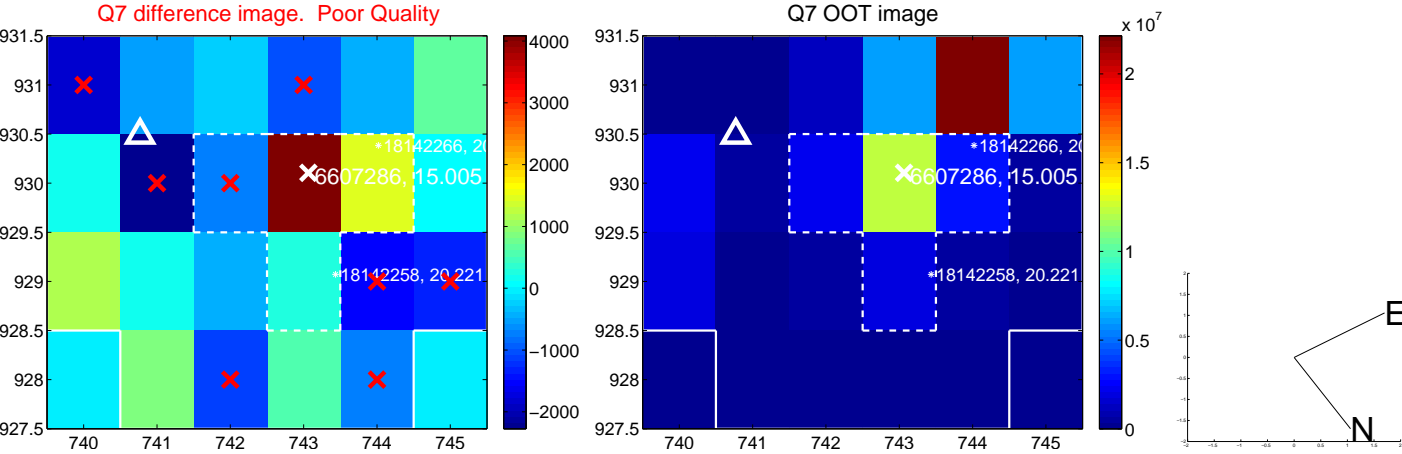
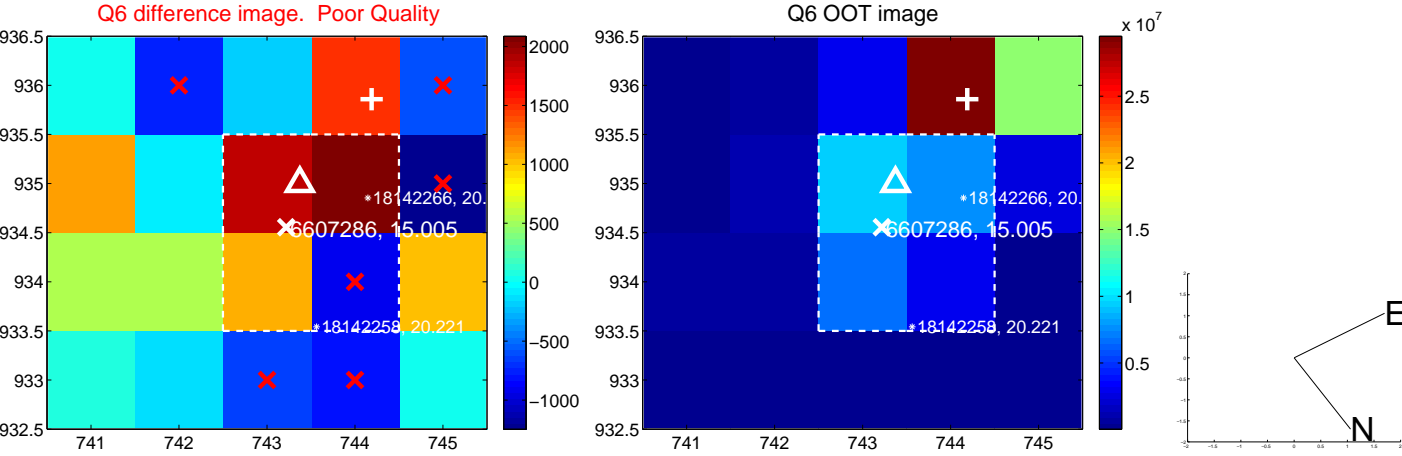
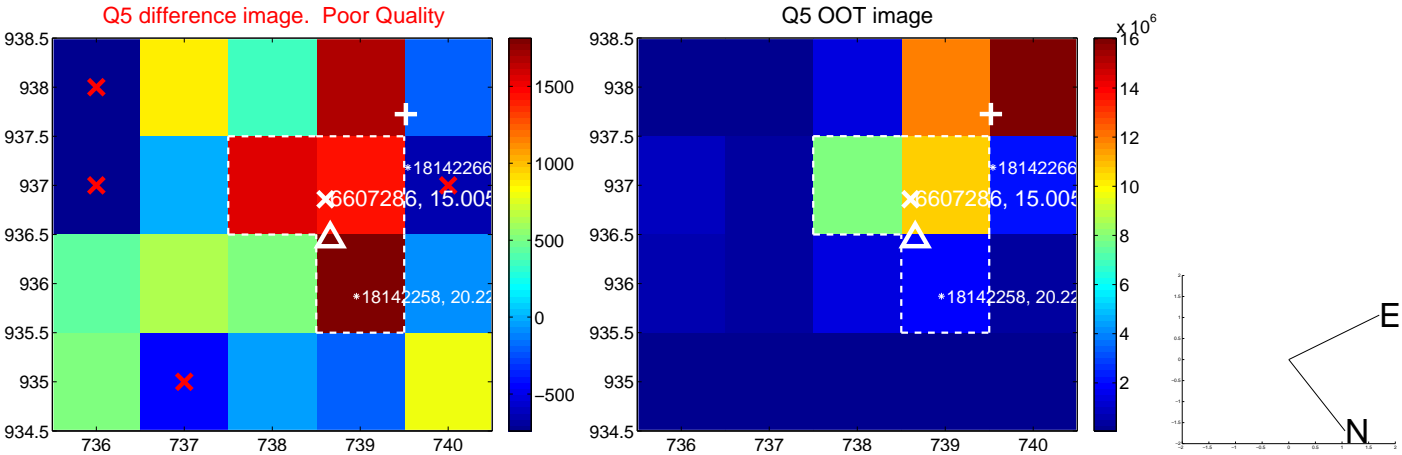


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

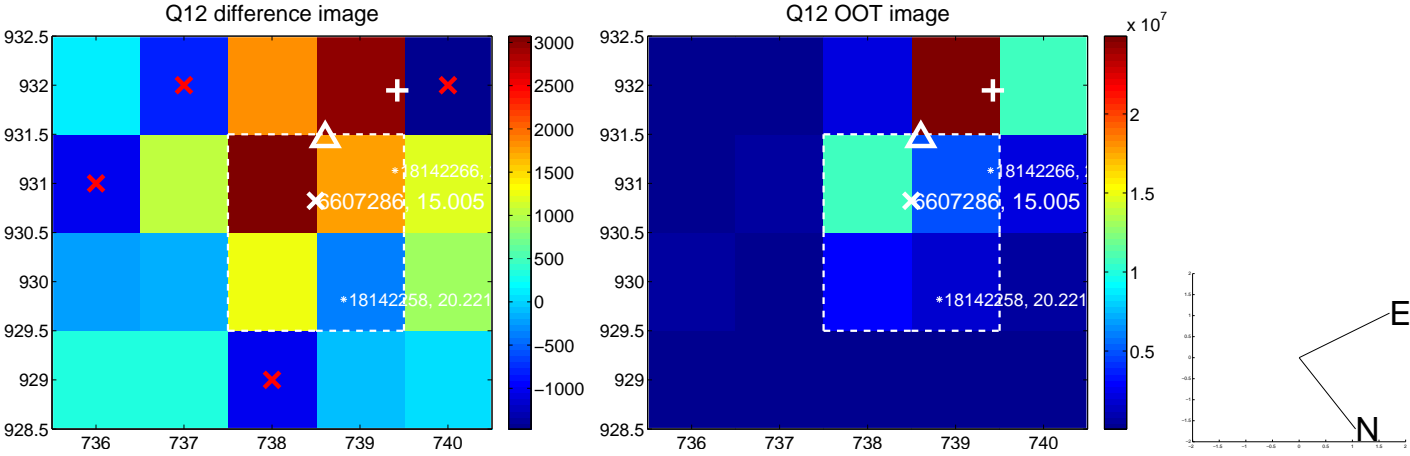
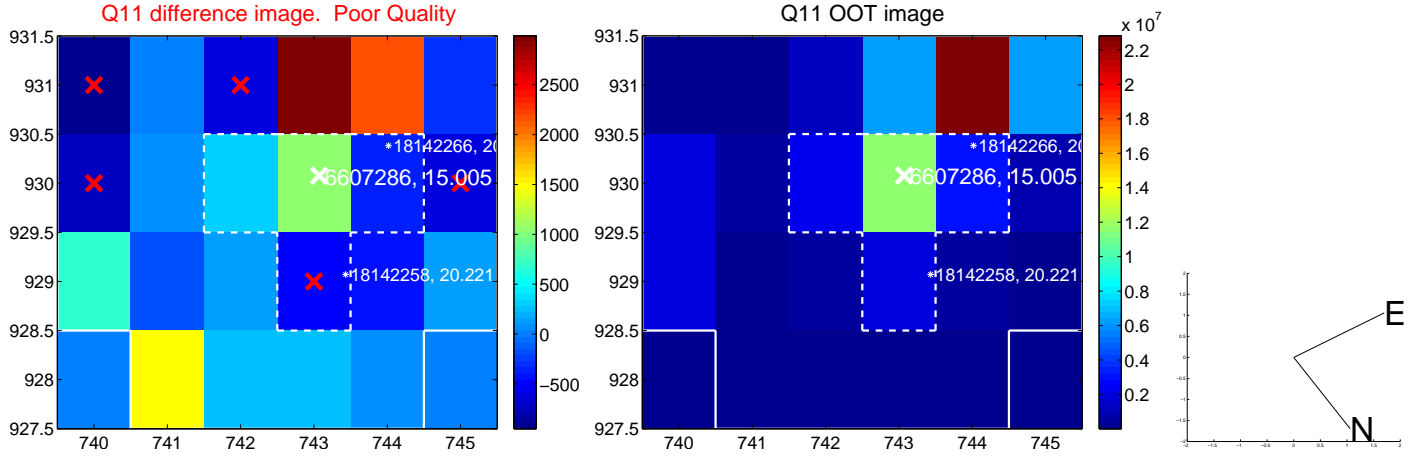
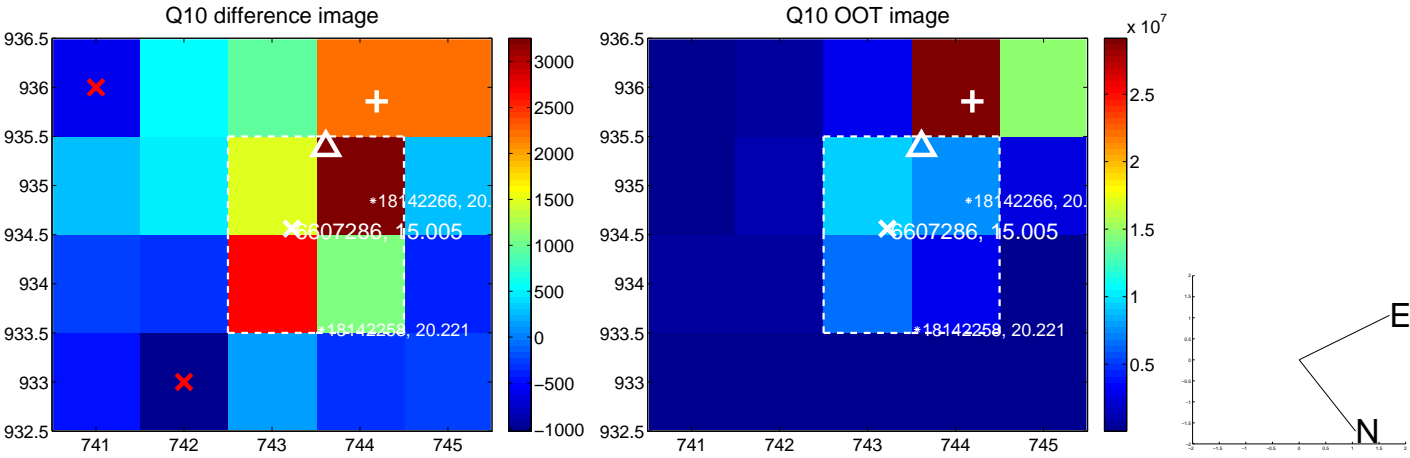
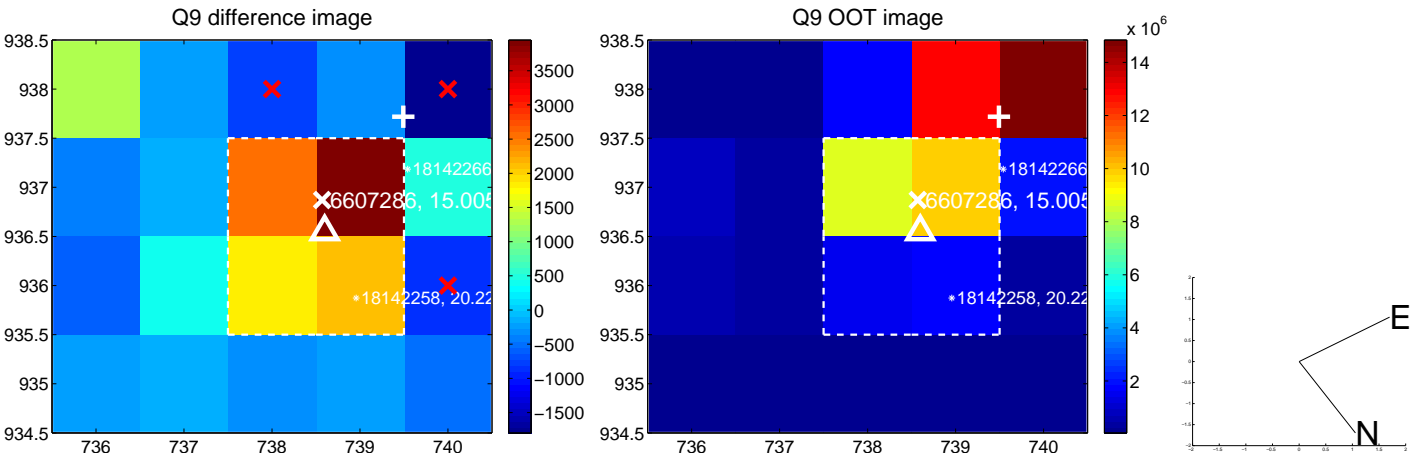


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

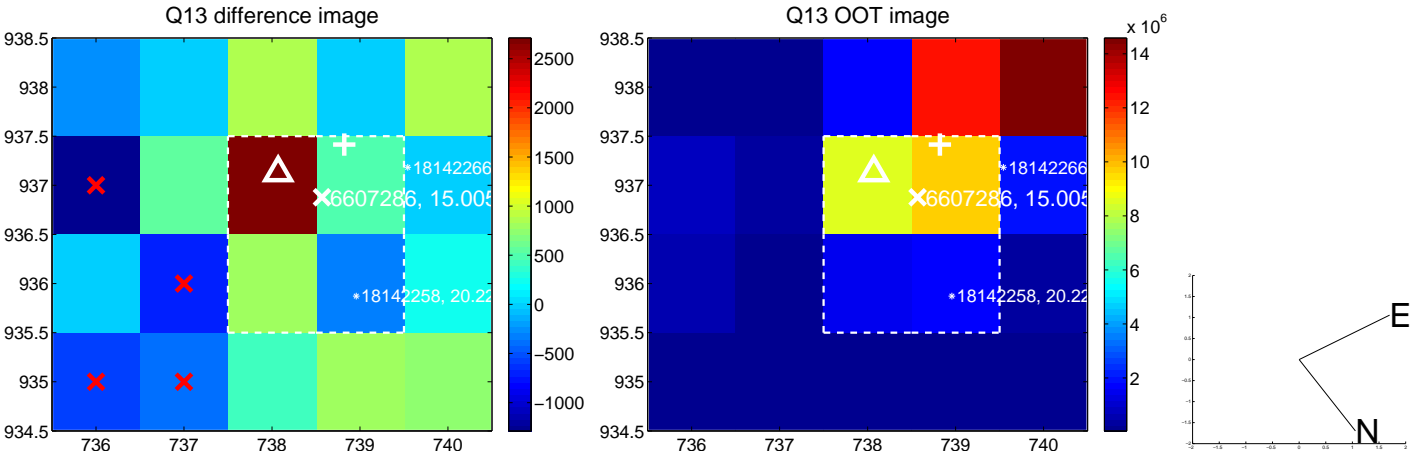




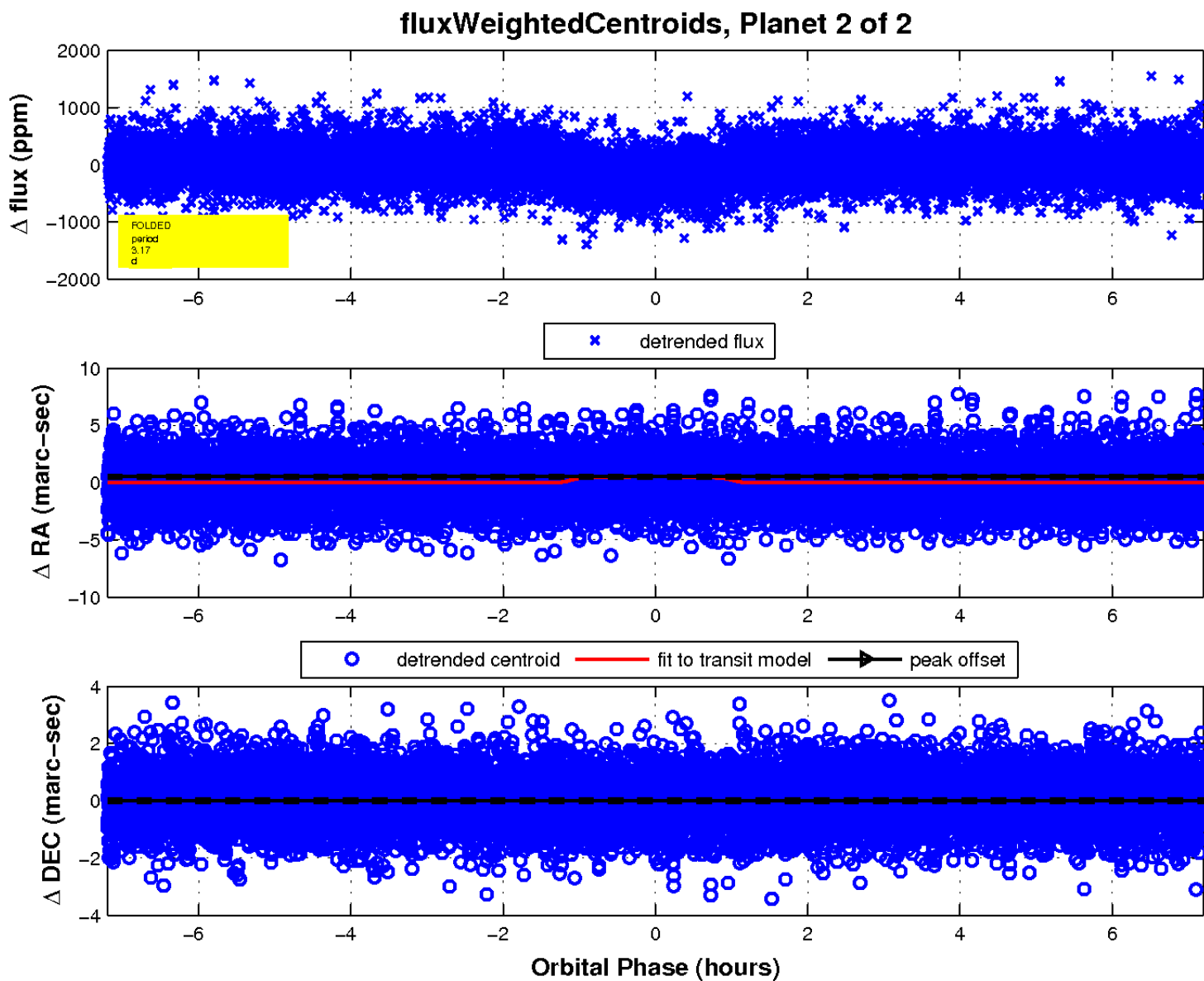
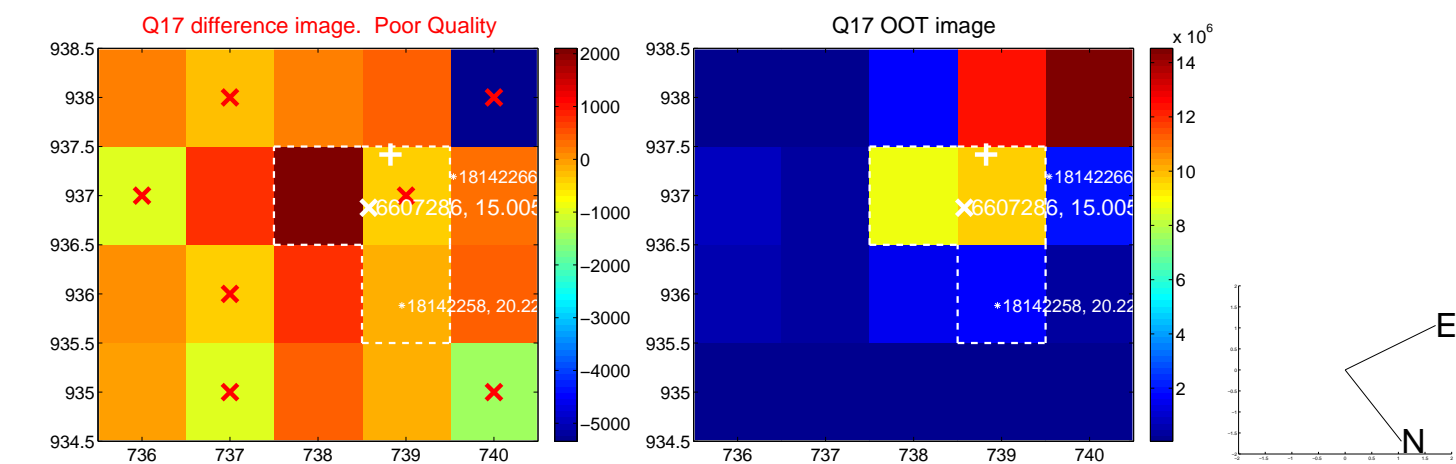
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

