

# KIC 005739204

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005739204-01	OBS	No	1.811172	131.764548	84.9	3.037	17.9	16.7	2.28	9099	2.43	22314.81
005739204-02	OBS	No	0.905176	131.996885	0.0	10.206	11.4	0.0	2.28	9099	0.00	56263.75

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005739204-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005739204-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—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.

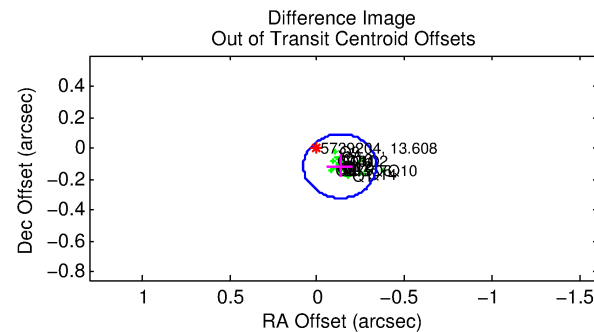
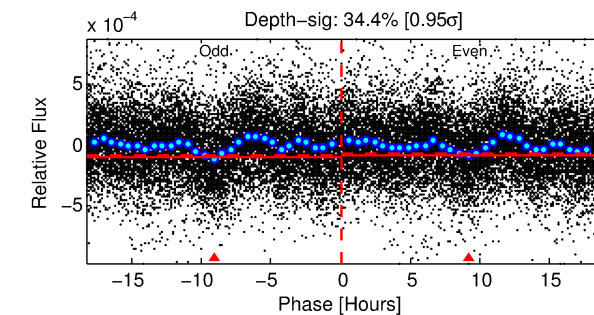
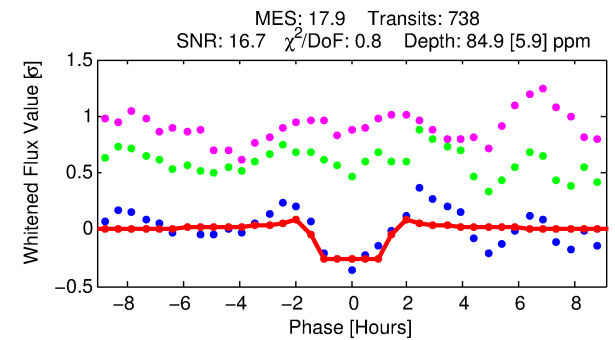
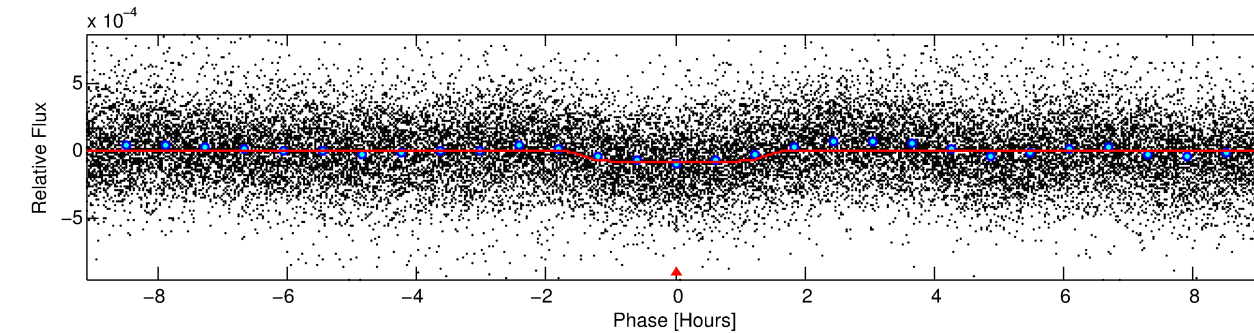
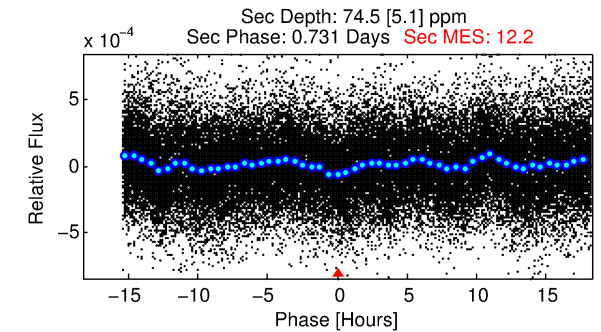
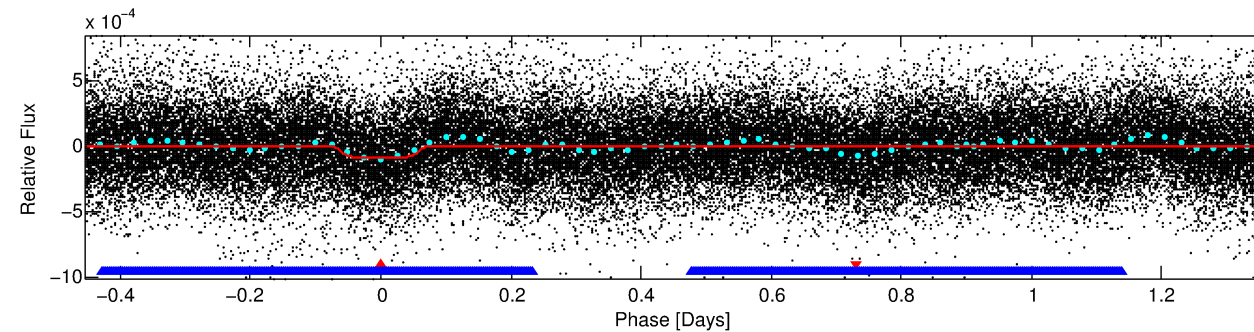
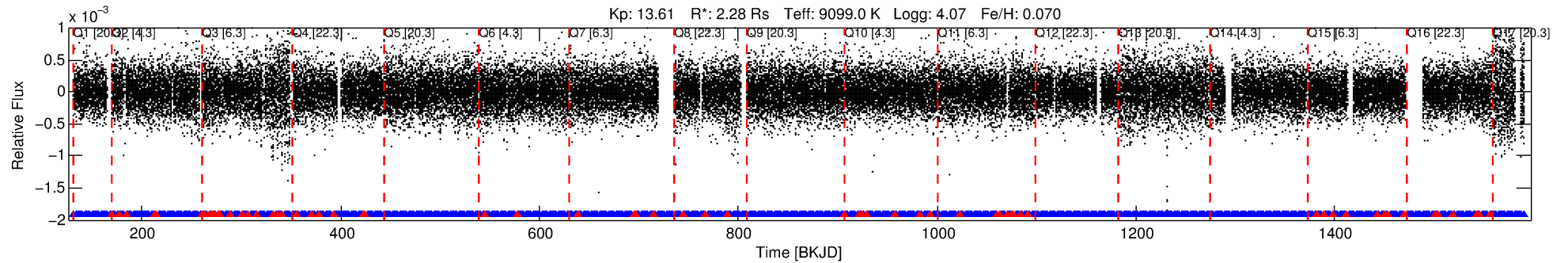
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005739204-01

No Significant Match Found

# DV One-Page Summary

KIC: 5739204 Candidate: 1 of 2 Period: 1.811 d



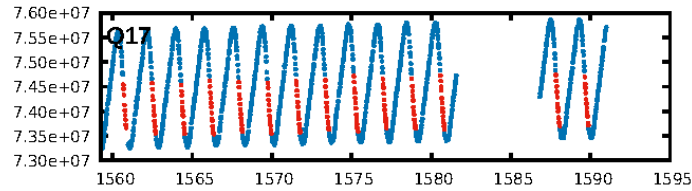
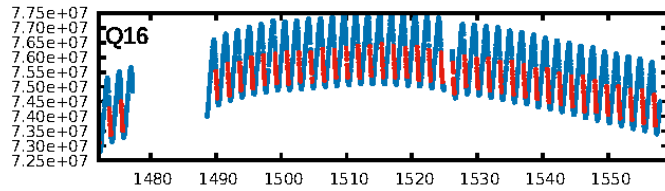
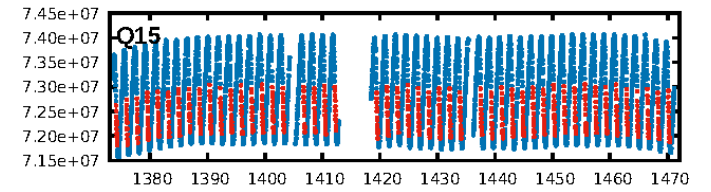
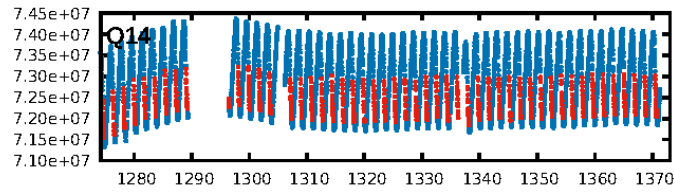
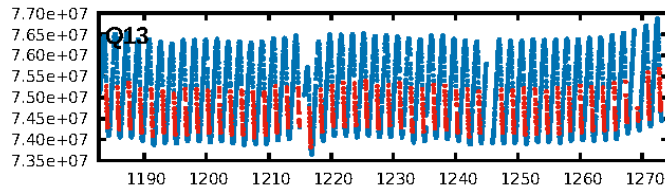
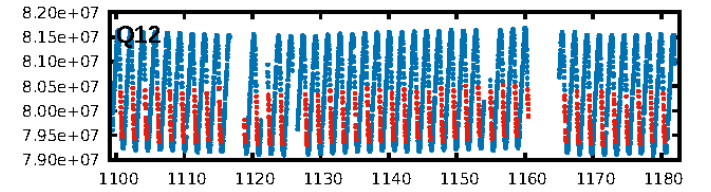
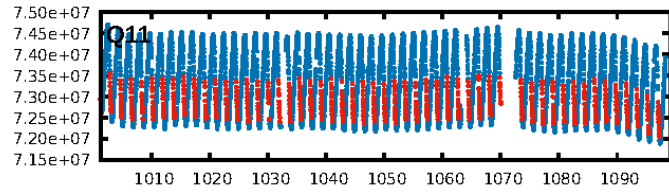
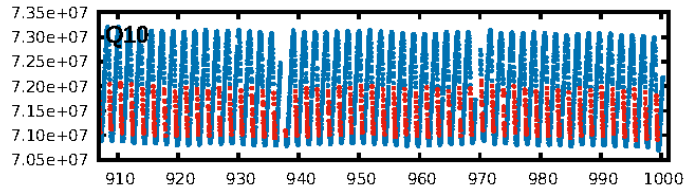
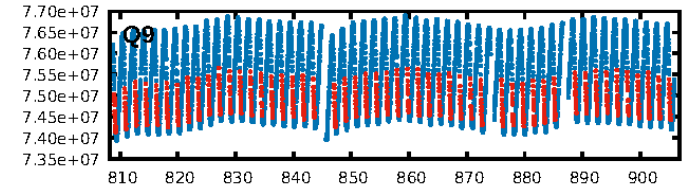
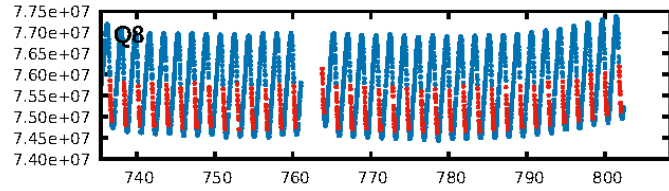
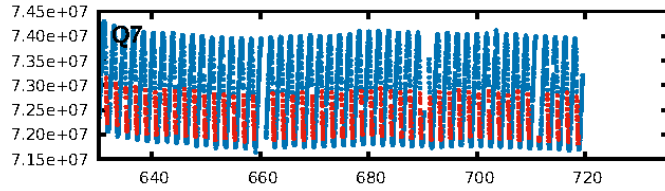
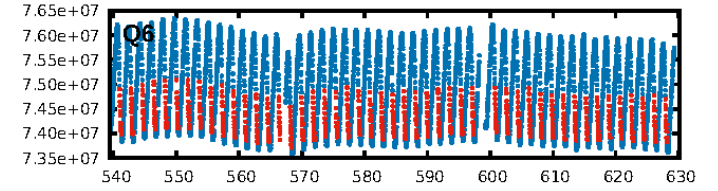
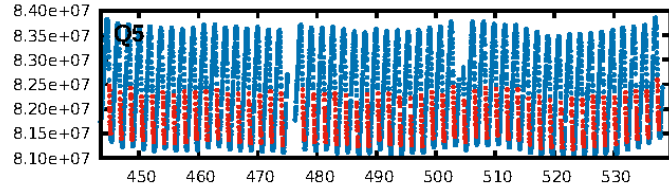
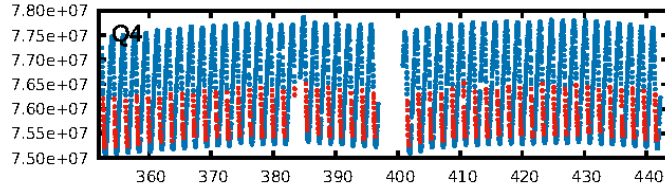
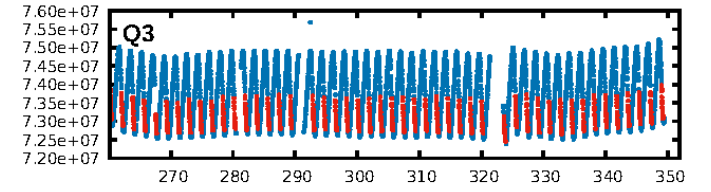
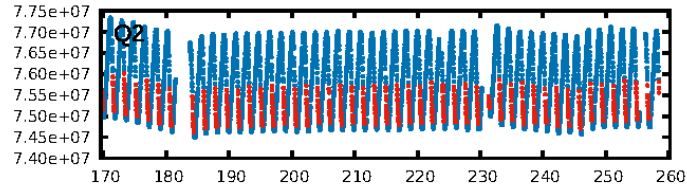
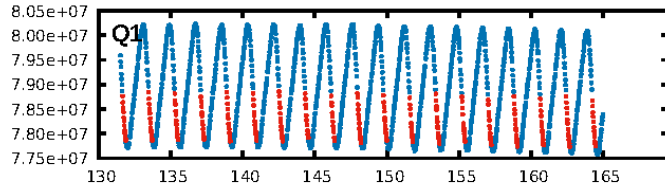
## DV Fit Results:

Period = 1.81117 [0.00001] d  
Epoch = 131.7645 [0.0018] BKJD  
Rp/R\* = 0.0097 [0.0018]  
a/R\* = 2.27 [2.38]  
b = 0.90 [0.27]  
Seff = 22314.81 [8857.53]  
Teff = 3117 [309] K  
Rp = 2.43 [0.84] Re  
a = 0.0379 [0.0091] AU  
Ag = 9.99 [5.01] [1.79σ]  
**Teffp = 8566 [904] K [5.71σ]**

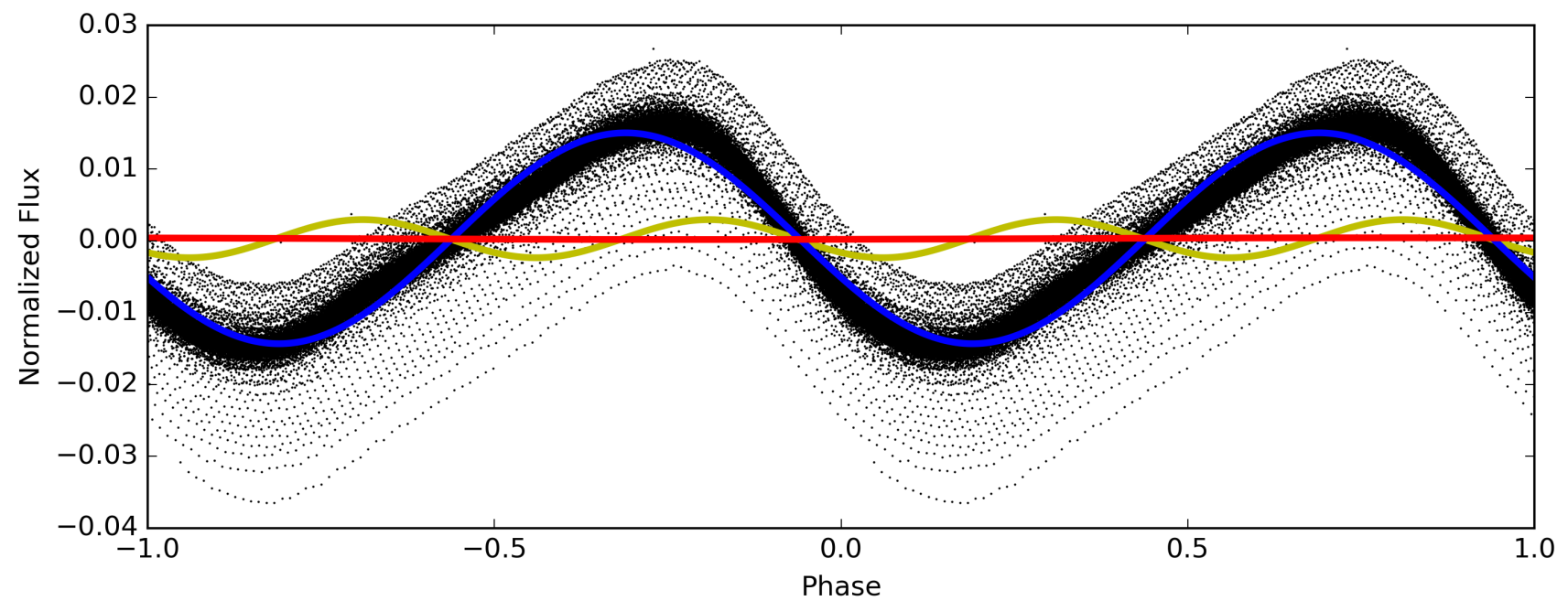
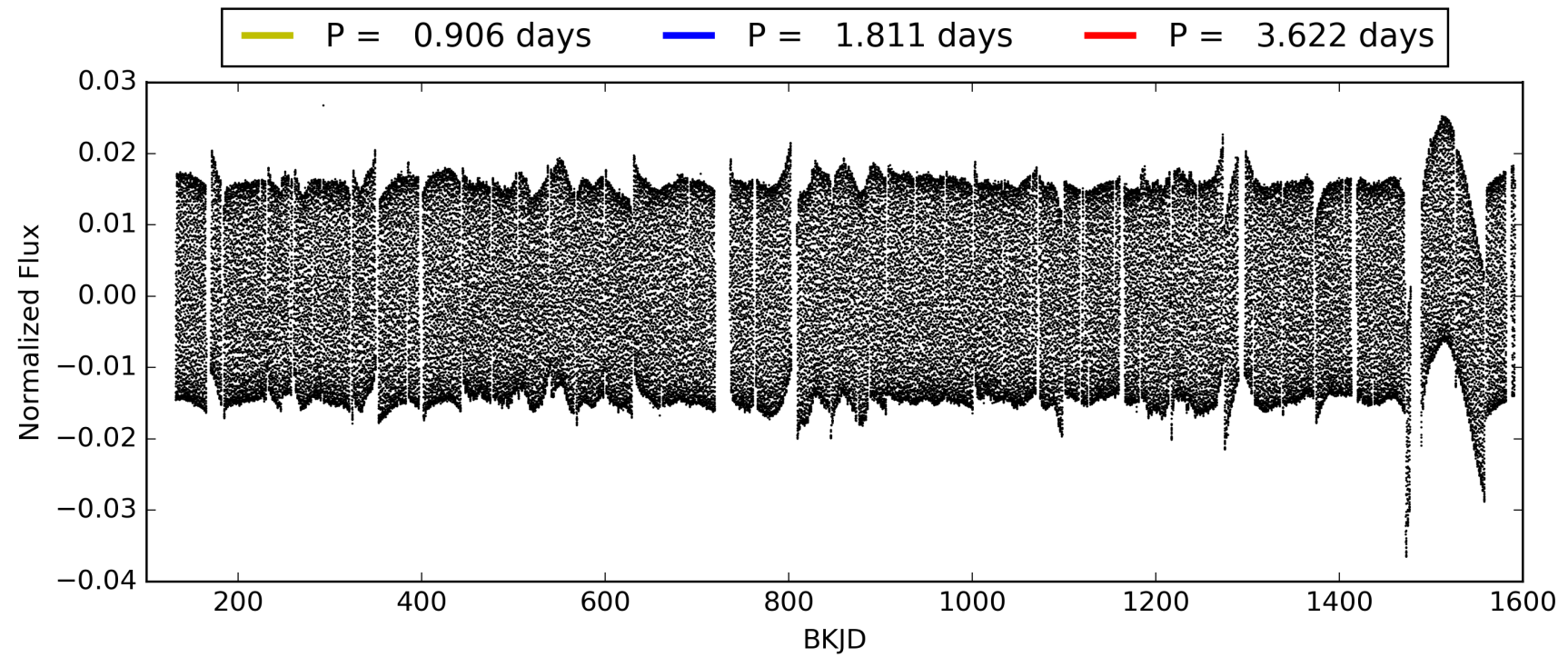
## DV Diagnostic Results:

ShortPeriod-sig: 95.9% [2.04σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.91 [642/705]  
GhostDiagnostic-chr: 1.572  
Centroid-sig: 11.5%  
Centroid-so: 0.336 arcsec [0.59σ]  
OotOffset-rm: 0.173 arcsec [2.51σ]  
KicOffset-rm: 0.194 arcsec [2.67σ]  
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]

# TCE 005739204-01, PDC Light Curves

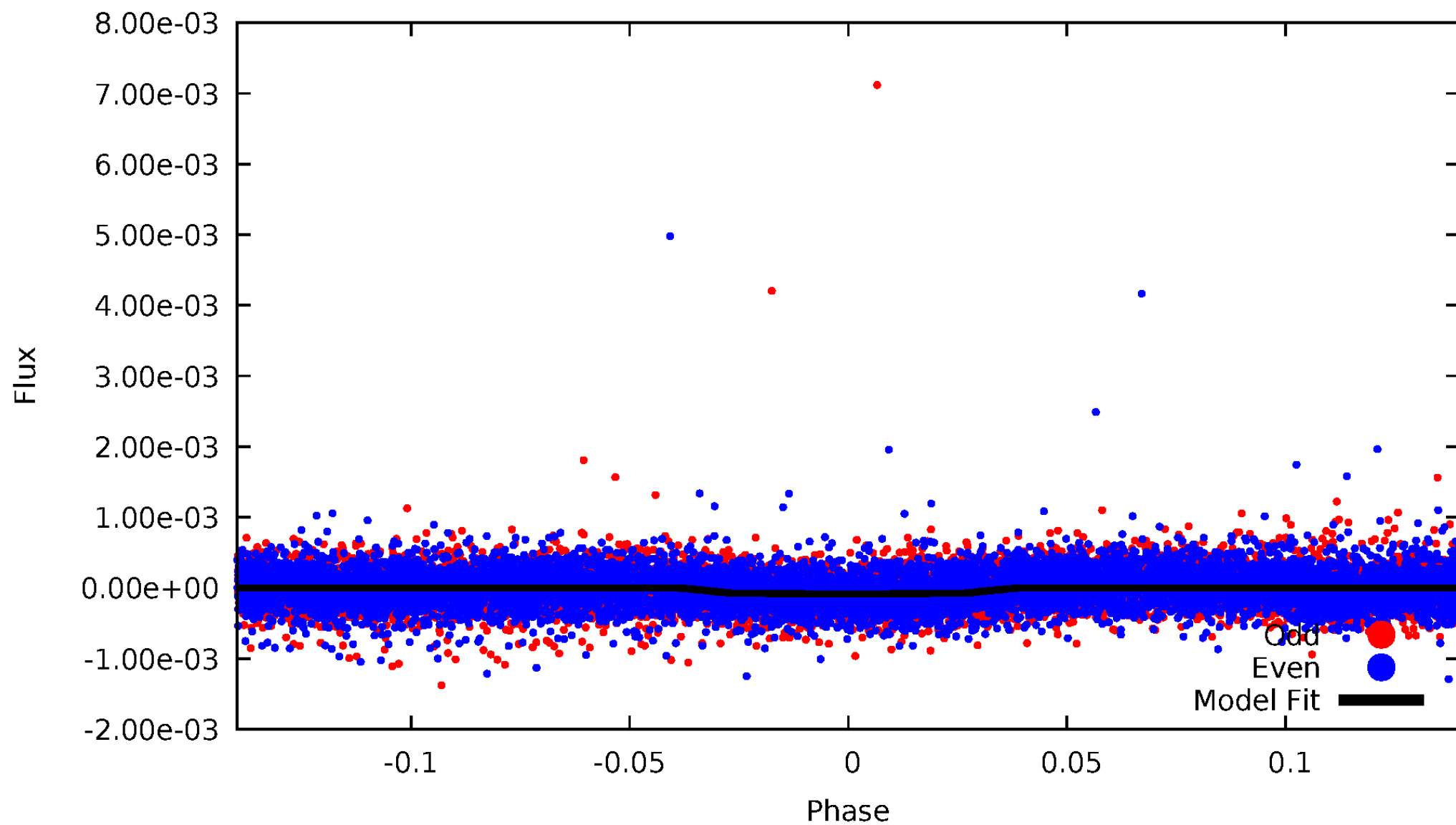


TCE 005739204-01



# DV Odd/Even

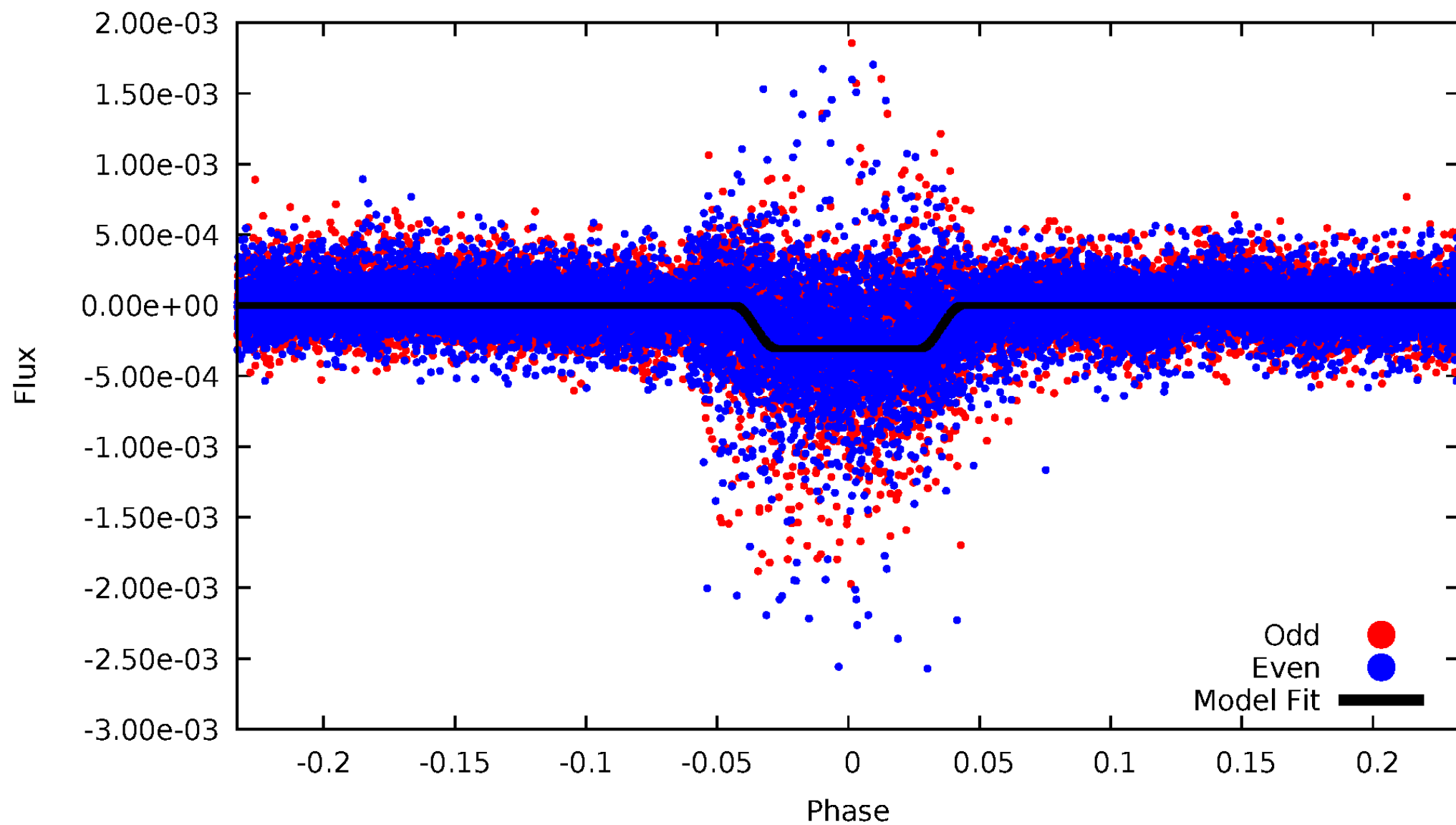
TCE 005739204-01





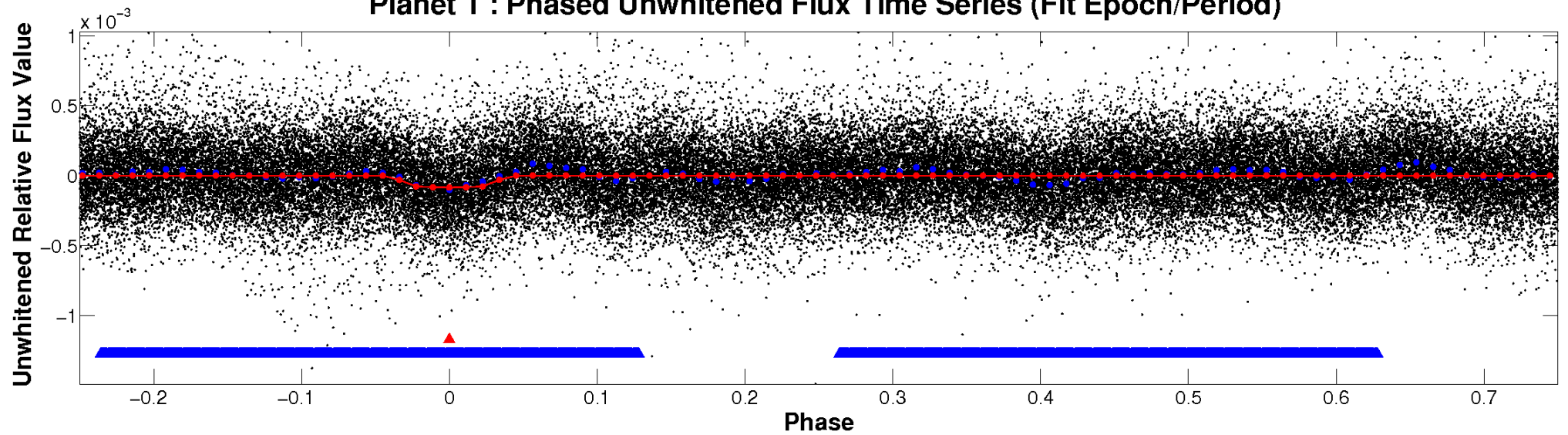
# ALT Odd/Even

TCE 005739204-01

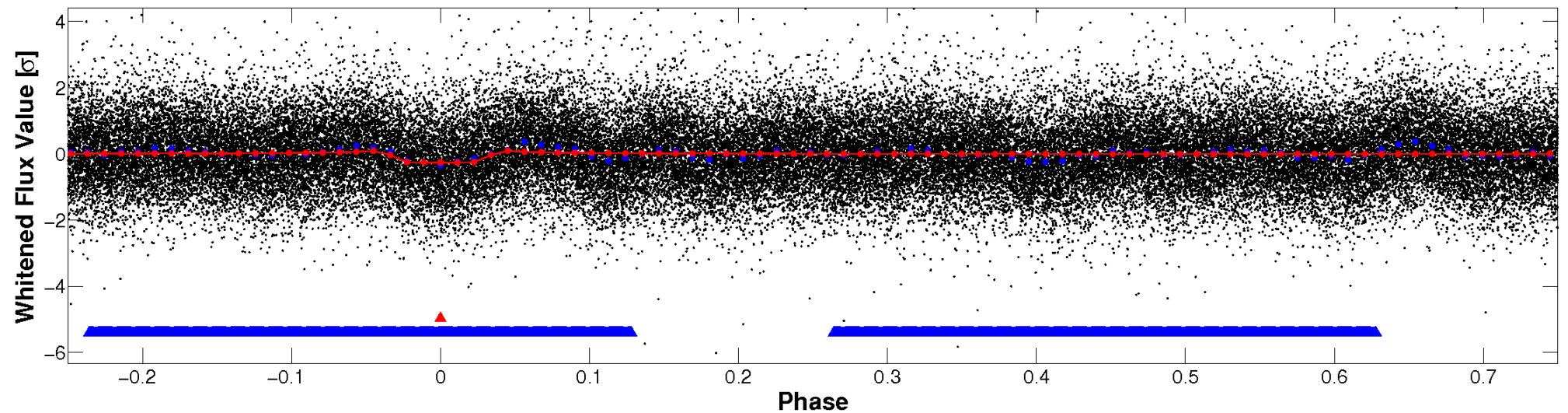


# Non-Whitened Vs. Whitened Light Curve

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

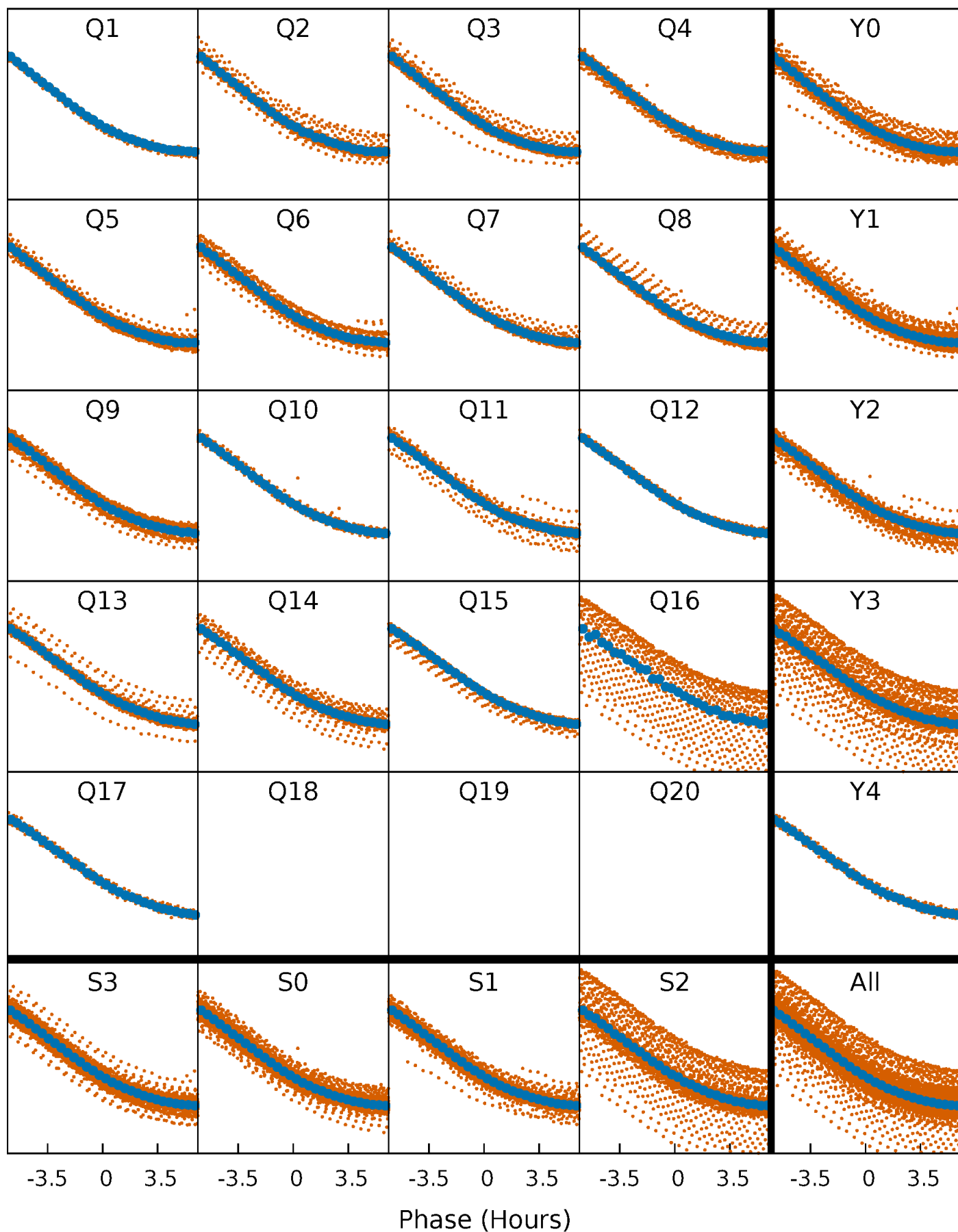


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

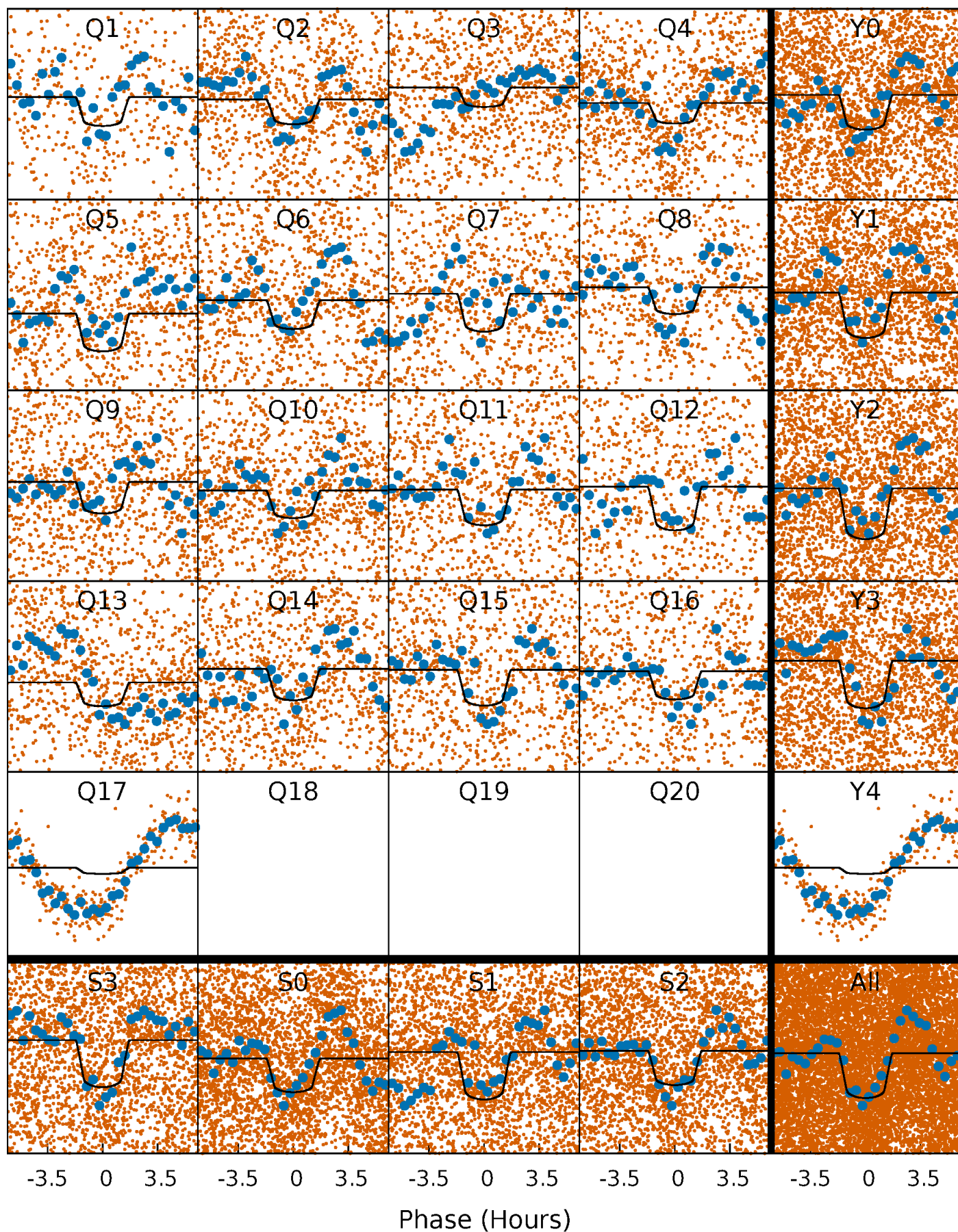
TCE 005739204-01 P= 1.811172 Days  $T_0=131.764548$  (BKJD)





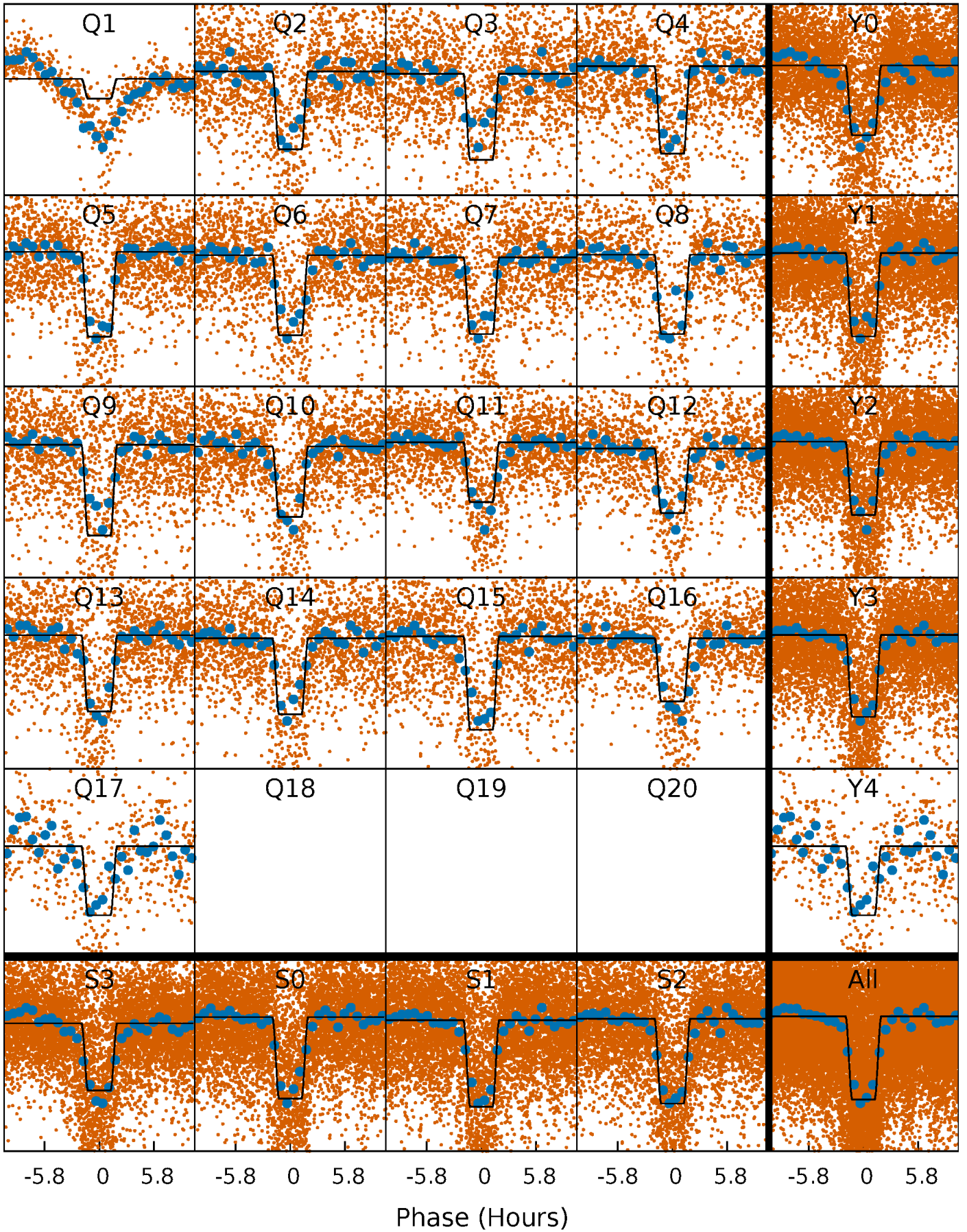
# DV Quarter-Phased Transit Curves

TCE 005739204-01 P= 1.811172 Days  $T_0=131.764548$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005739204-01 P= 1.811228 Days  $T_0=131.743349$  (BKJD)

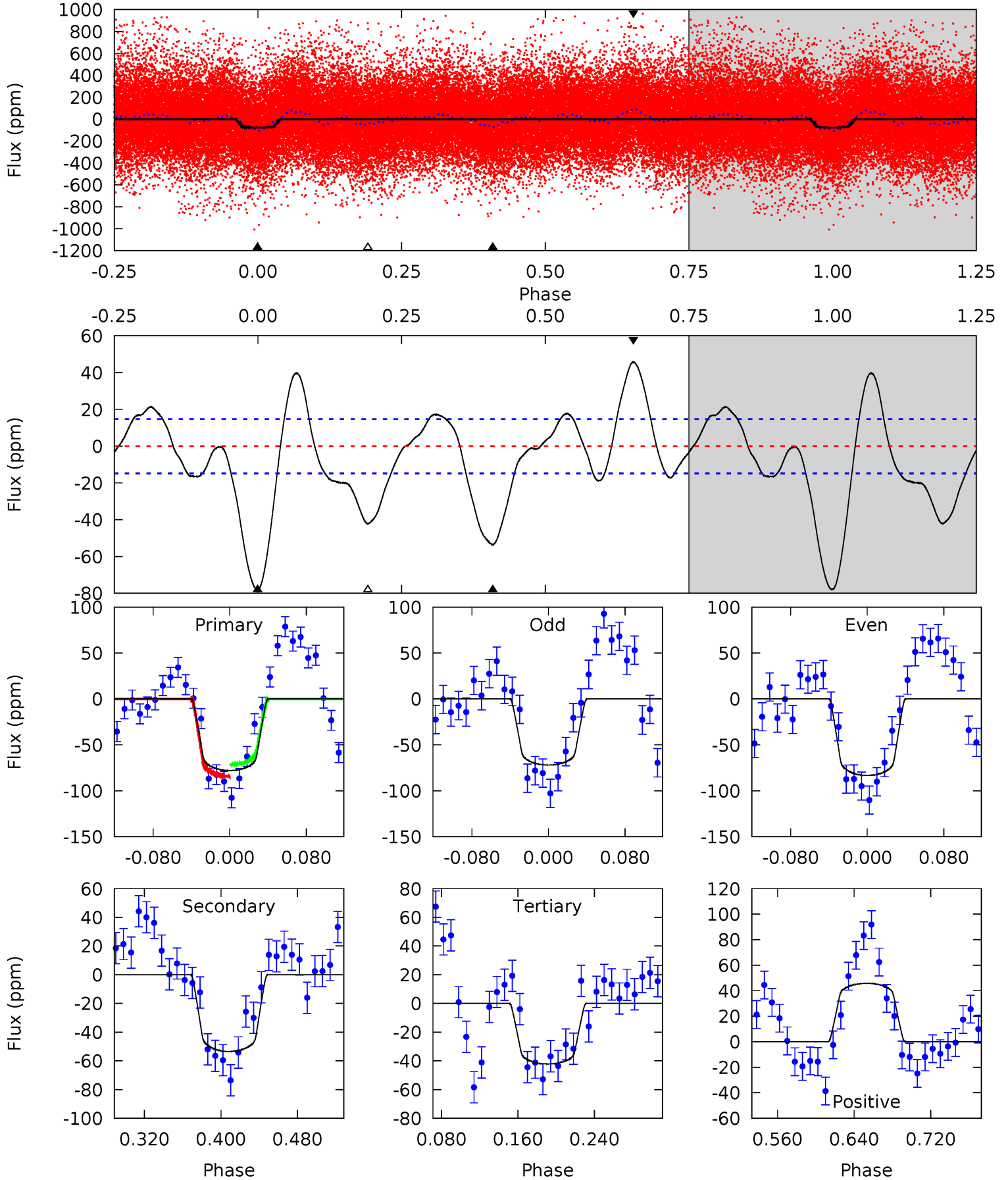




# DV Model-Shift Uniqueness Test

005739204-01, P = 1.811172 Days, E = 129.953376 Days

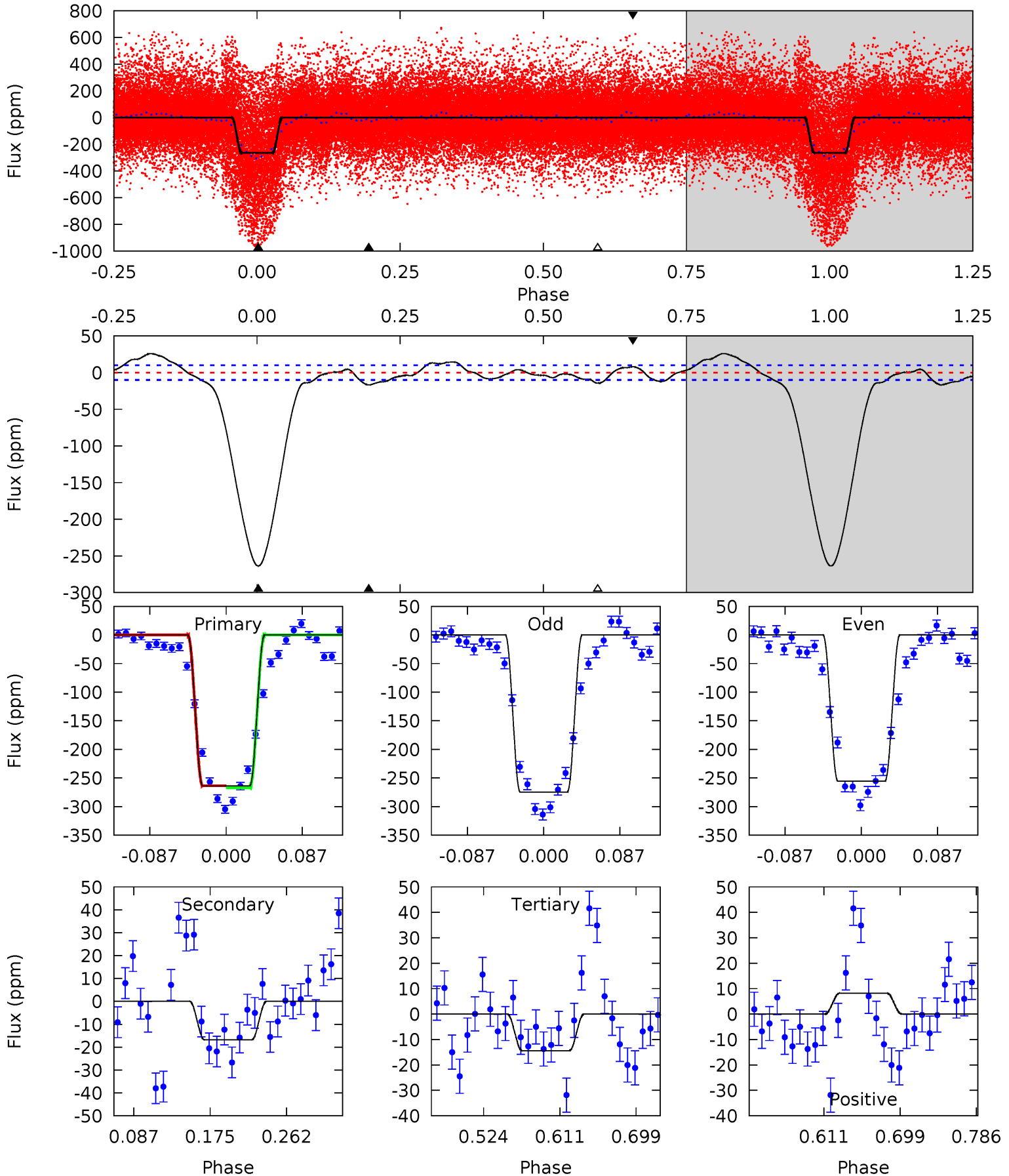
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.3	16.7	13.2	14.3	4.61	1.75	5.91	11.2	10.0	3.54	2.42	1.78	1.08	0.37	2.03



# Alt Model-Shift Uniqueness Test

005739204-01, P = 1.811228 Days, E = 129.932121 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
120.3	7.66	6.57	3.75	4.59	1.71	4.66	113.8	116.6	1.09	3.91	4.38	1.06	0.09	0.80



### Stellar Parameters For KIC 005739204

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$9099^{+251}_{-466}$	$4.065^{+0.181}_{-0.148}$	$0.070^{+0.150}_{-0.700}$	$2.283^{+0.671}_{-0.671}$	$2.209^{+0.337}_{-0.626}$	$0.262^{+0.285}_{-0.117}$
	+3%/-5%	+4%/-4%	+214%/-1000%	+29%/-29%	+15%/-28%	+109%/-45%
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 005739204-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-53 \pm 3$	$2.42^{+0.62}_{-0.61}$	$4325^{+290}_{-351}$	$7401^{+984}_{-748}$	$7.067^{+4.846}_{-2.464}$
Alt.	$-17 \pm 2$	$4.35^{+0.80}_{-0.74}$	$4305^{+330}_{-332}$	$3904^{+326}_{-360}$	$0.689^{+0.275}_{-0.196}$

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



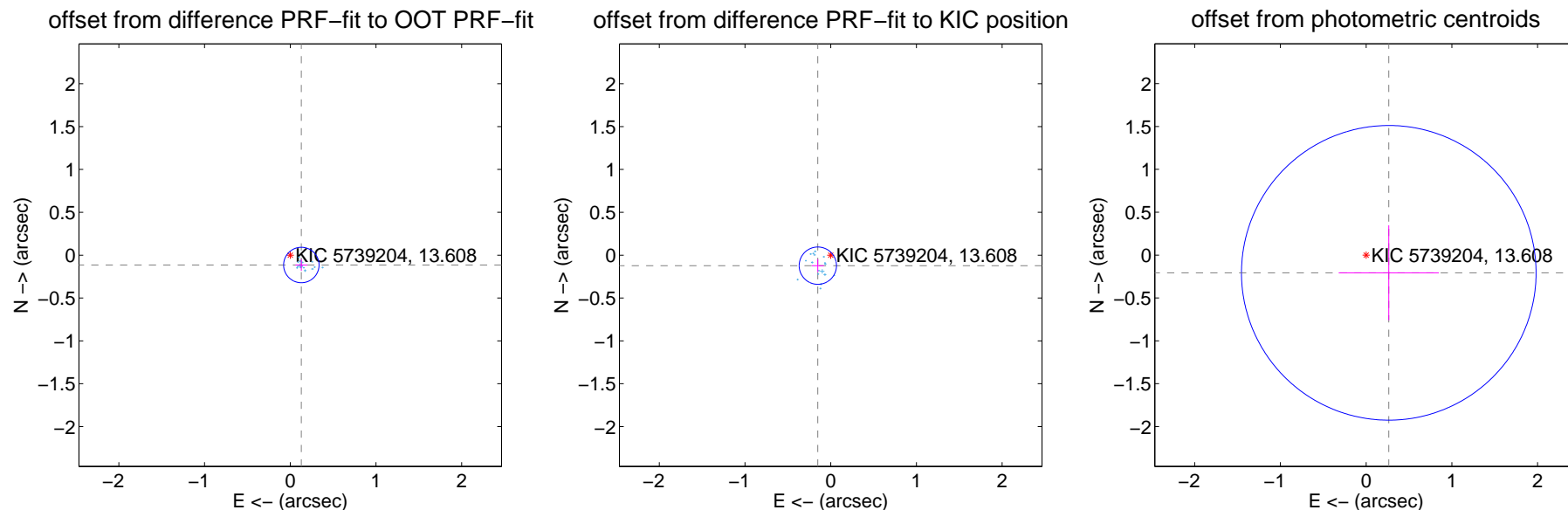
## DV Centroid Data

Supplemental centroid analysis for 005739204-01. Kepler magnitude: 13.61. Transit SNR 16.67

There are 17 quarters with good PRF difference image offsets

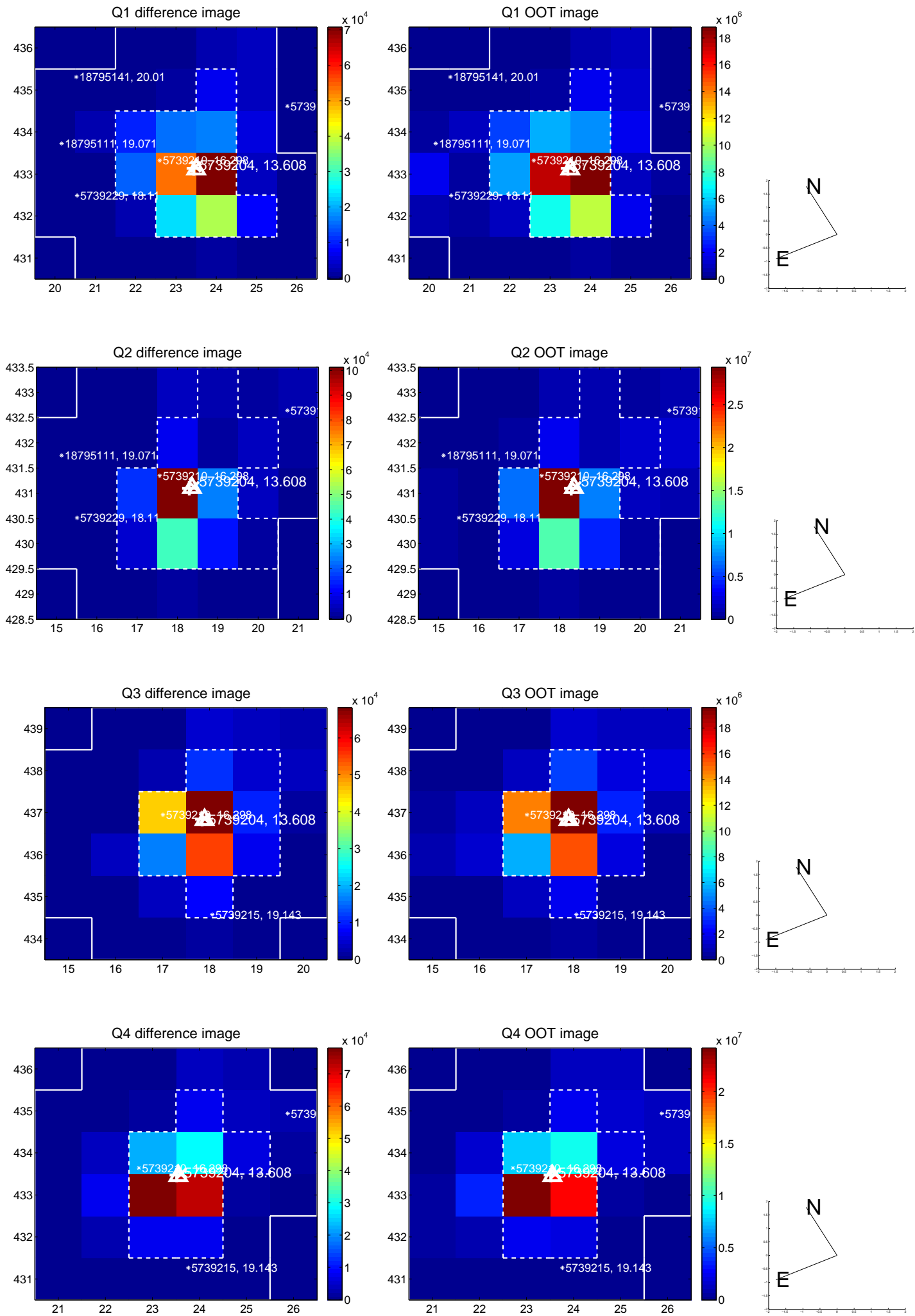
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.173 \pm 0.069$	2.51	$-0.129 \pm 0.069$	$-0.115 \pm 0.067$
PRF-fit source offset from KIC position	$0.194 \pm 0.073$	2.67	$0.151 \pm 0.071$	$-0.123 \pm 0.075$
photometric centroid source offset	$0.34 \pm 0.57$	0.59	$-0.26 \pm 0.58$	$-0.21 \pm 0.55$

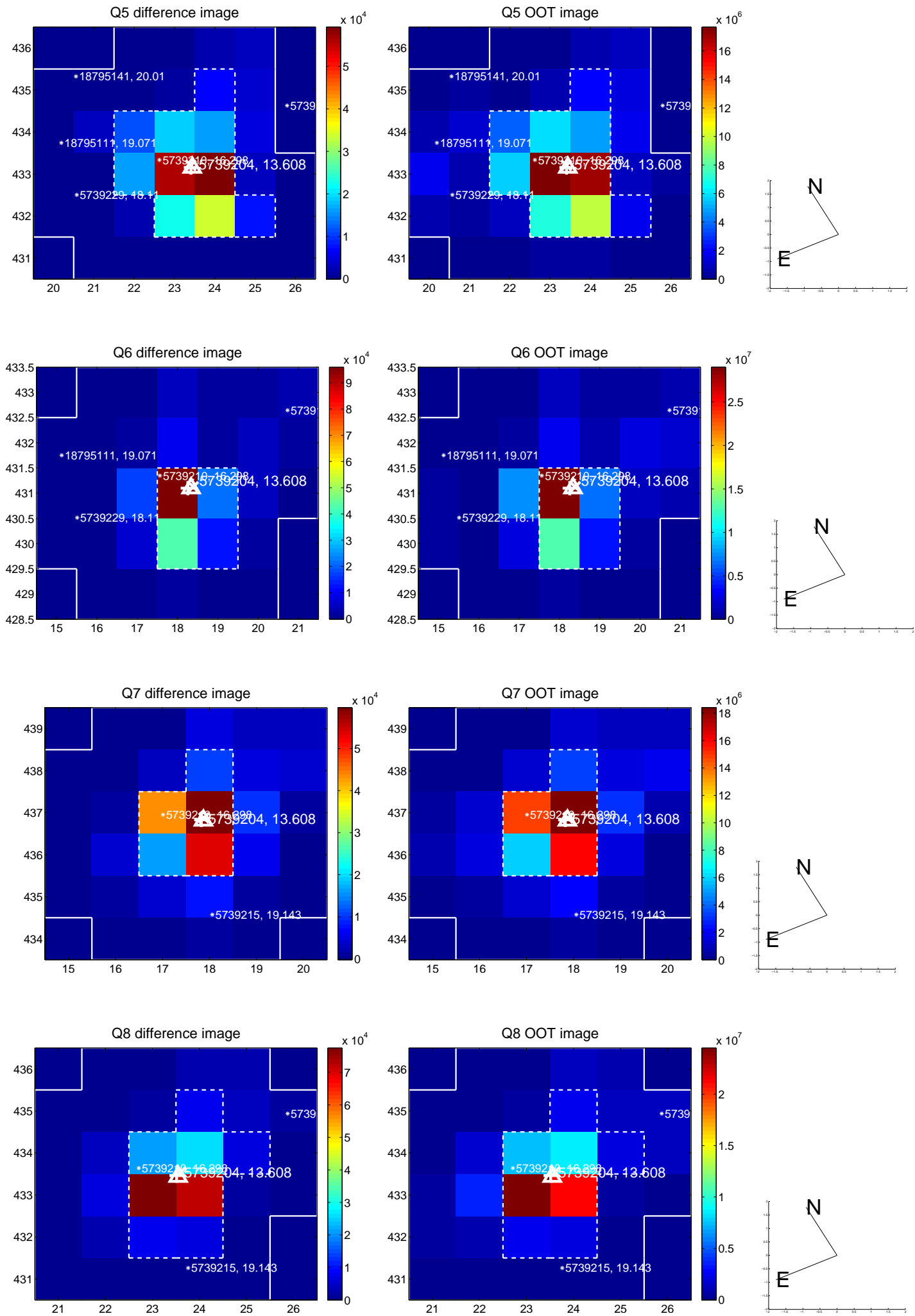


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

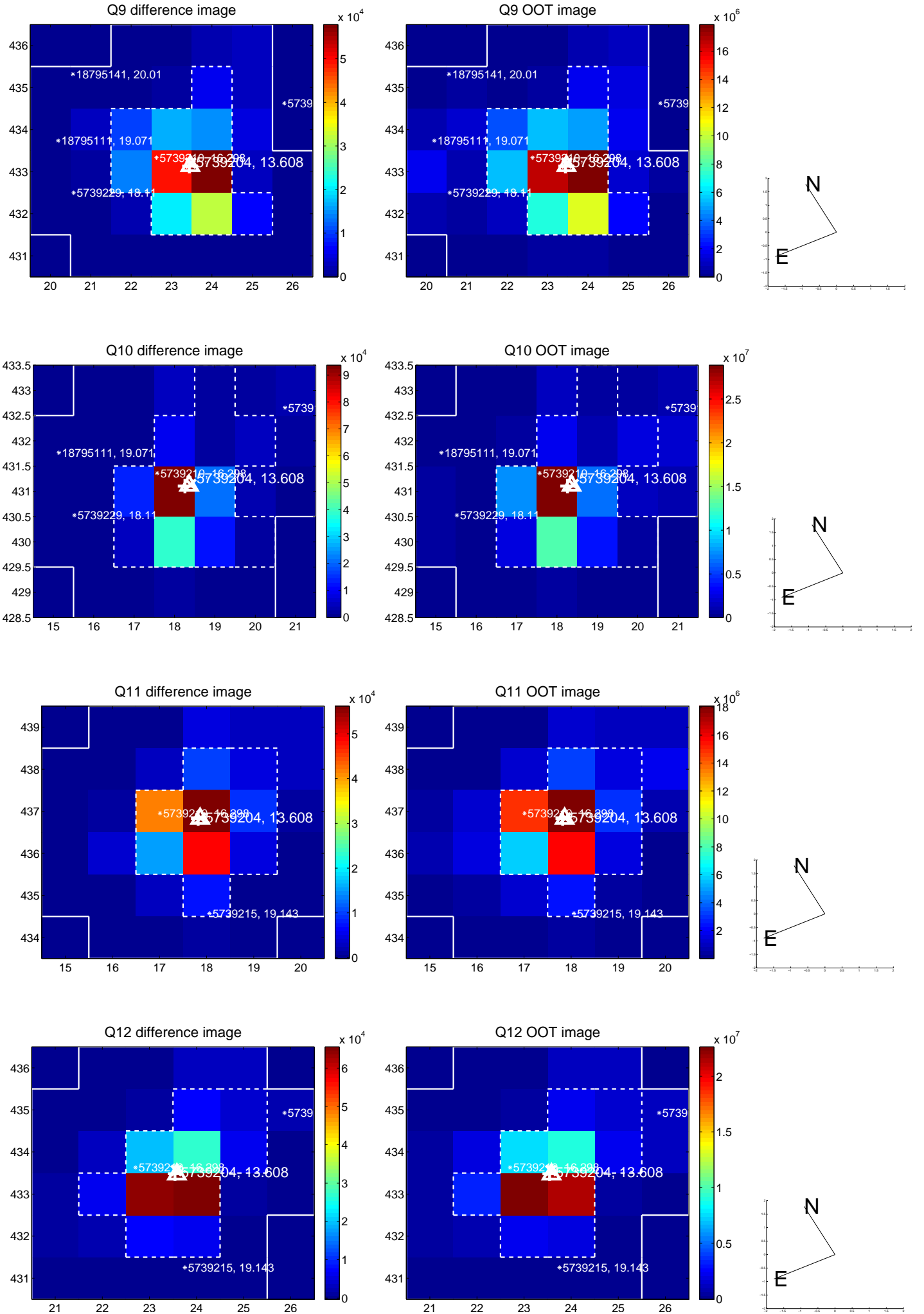
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



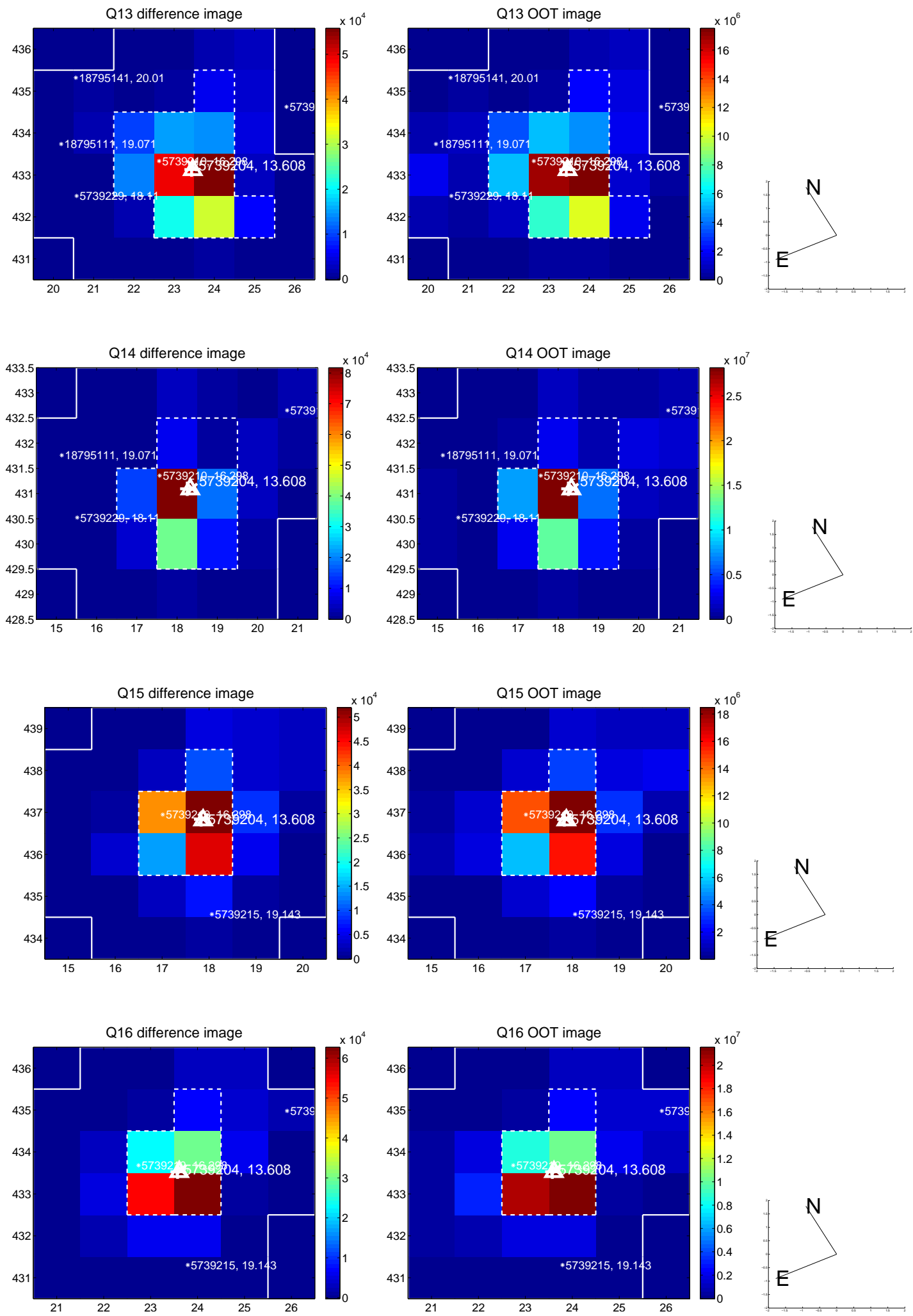
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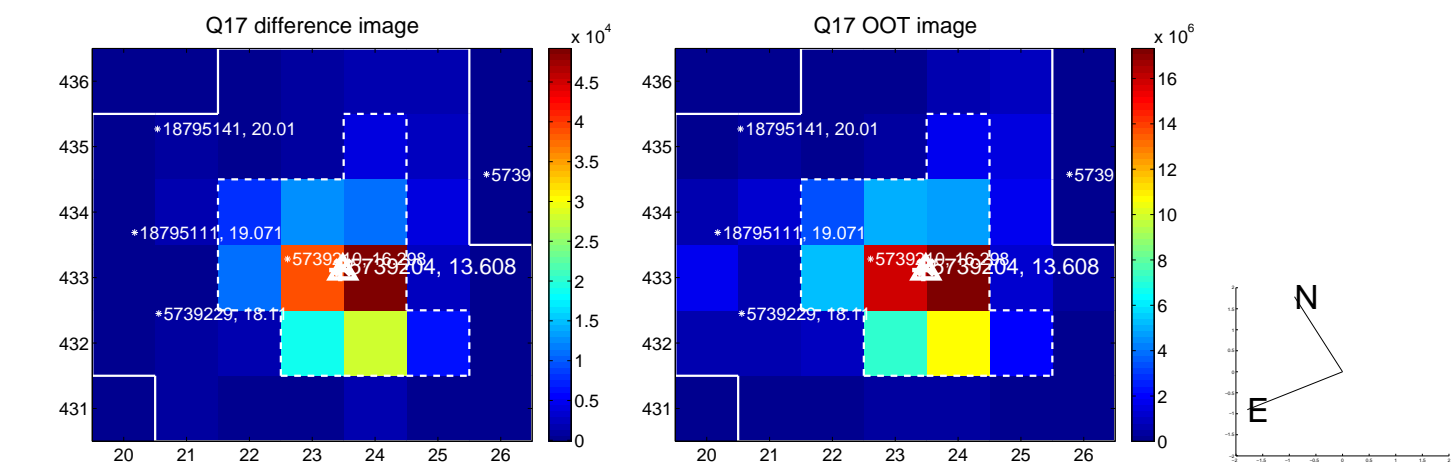


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

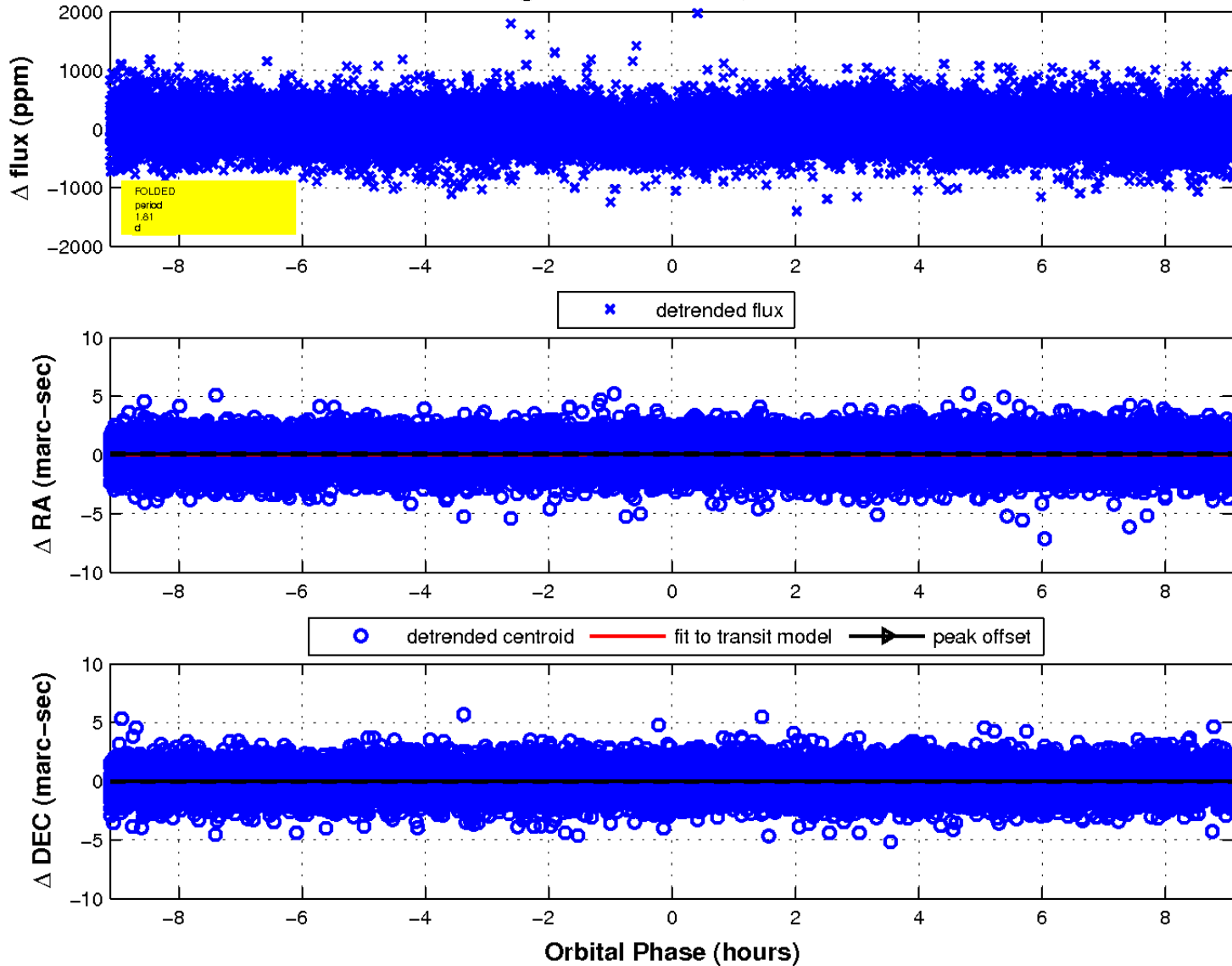




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

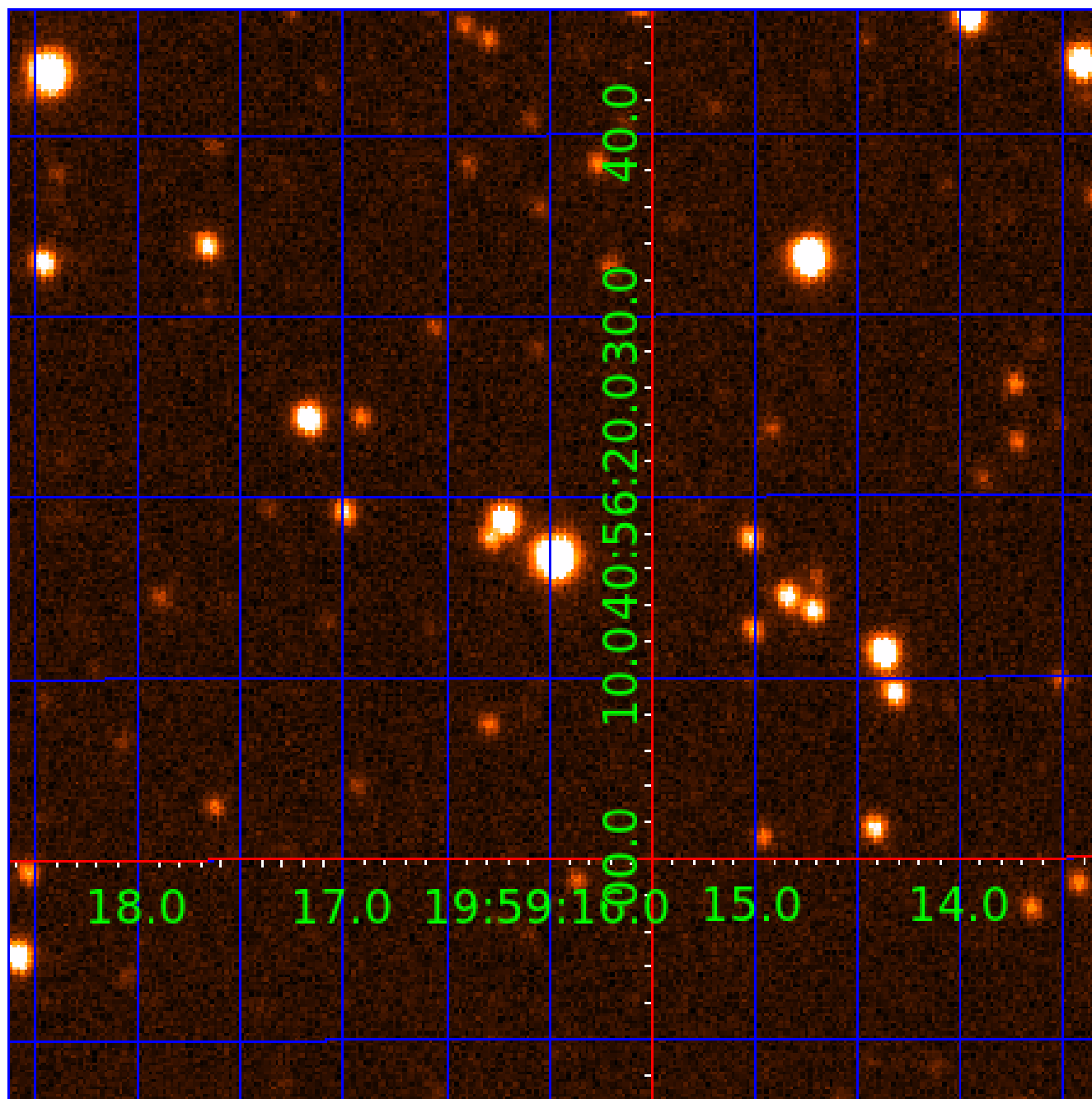


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



# KIC 005739204

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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005739204-02	OBS	No	0.905176	131.996885	0.0	10.206	11.4	0.0	2.28	9099	0.00	56263.75

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005739204-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
005739204-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—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.

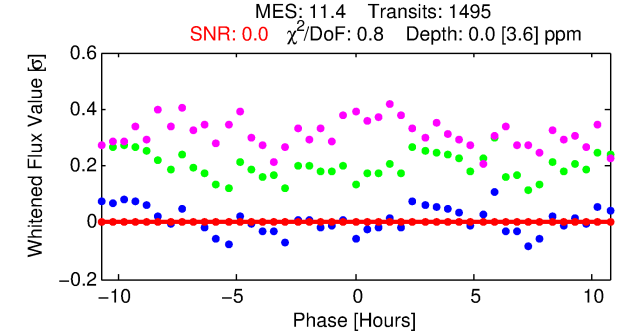
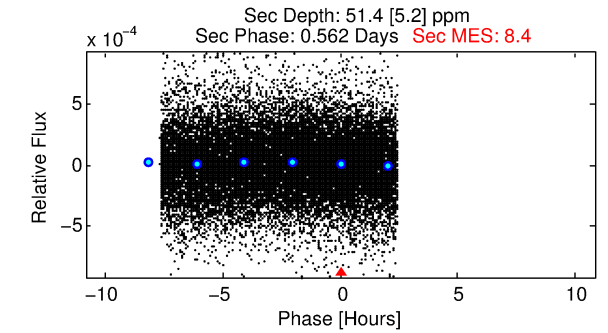
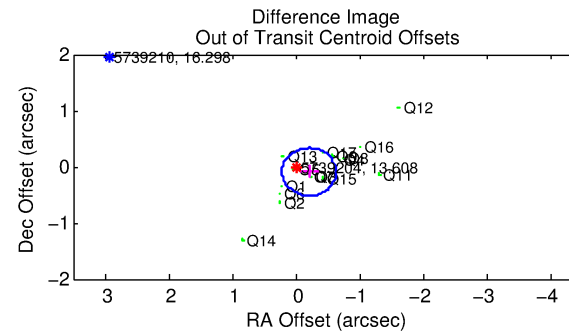
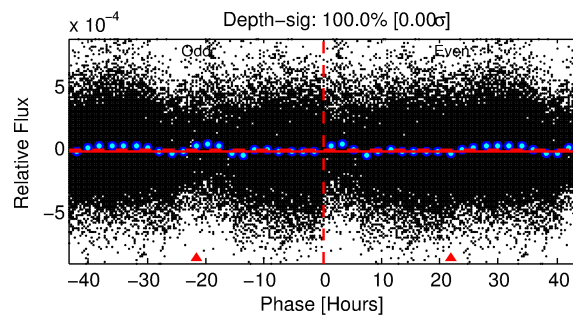
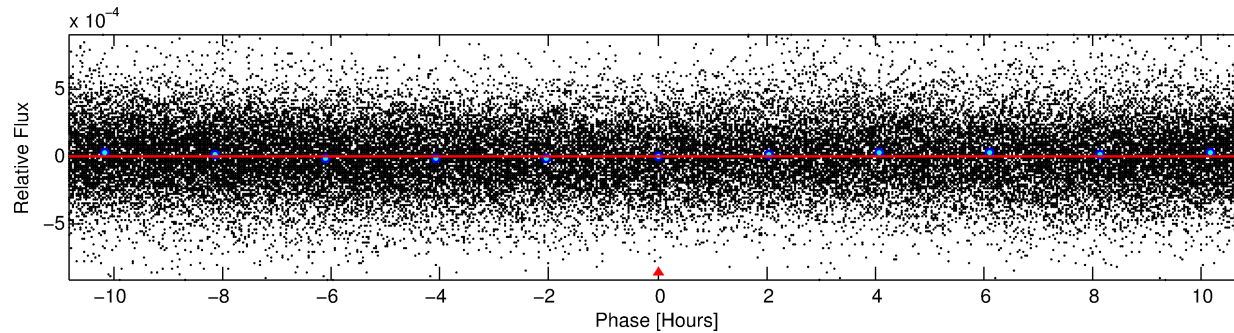
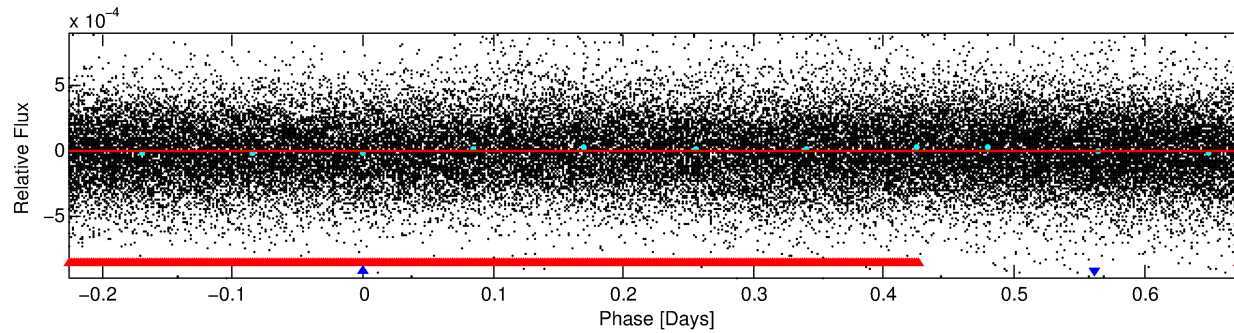
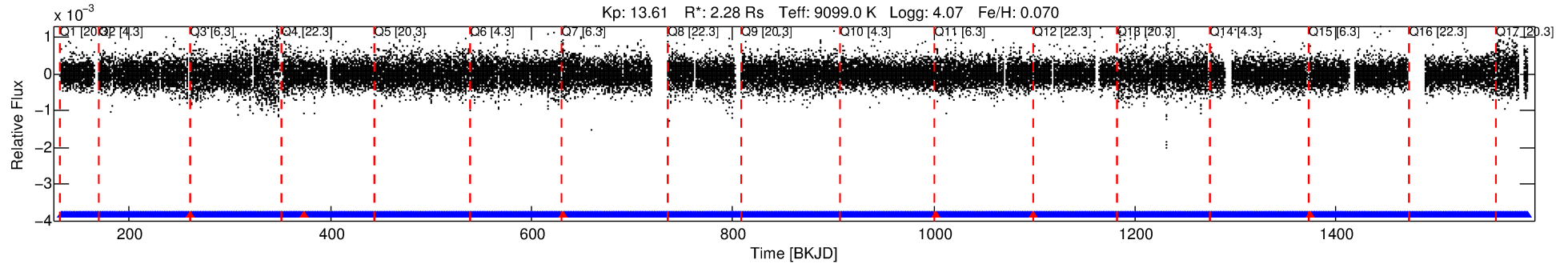
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005739204-02

No Significant Match Found

# DV One-Page Summary

KIC: 5739204 Candidate: 2 of 2 Period: 0.905 d



## DV Fit Results:

Period = 0.90518 [1.95996] d  
Epoch = 131.9969 [674.5199] BKJD  
Rp/R\* = 0.0000 [0.1203]  
a/R\* = 1.00 [212.99]  
b = 0.14 [155742.92]  
Seff = 56263.75 [163964.13]  
Teq = 3927 [2861] K  
Rp = 0.00 [29.96] Re  
a = 0.0239 [0.0349] AU  
Ag = 1222300.60 [20185398572.82]  
Teff = 201892 [833585248] K [0.00σ]

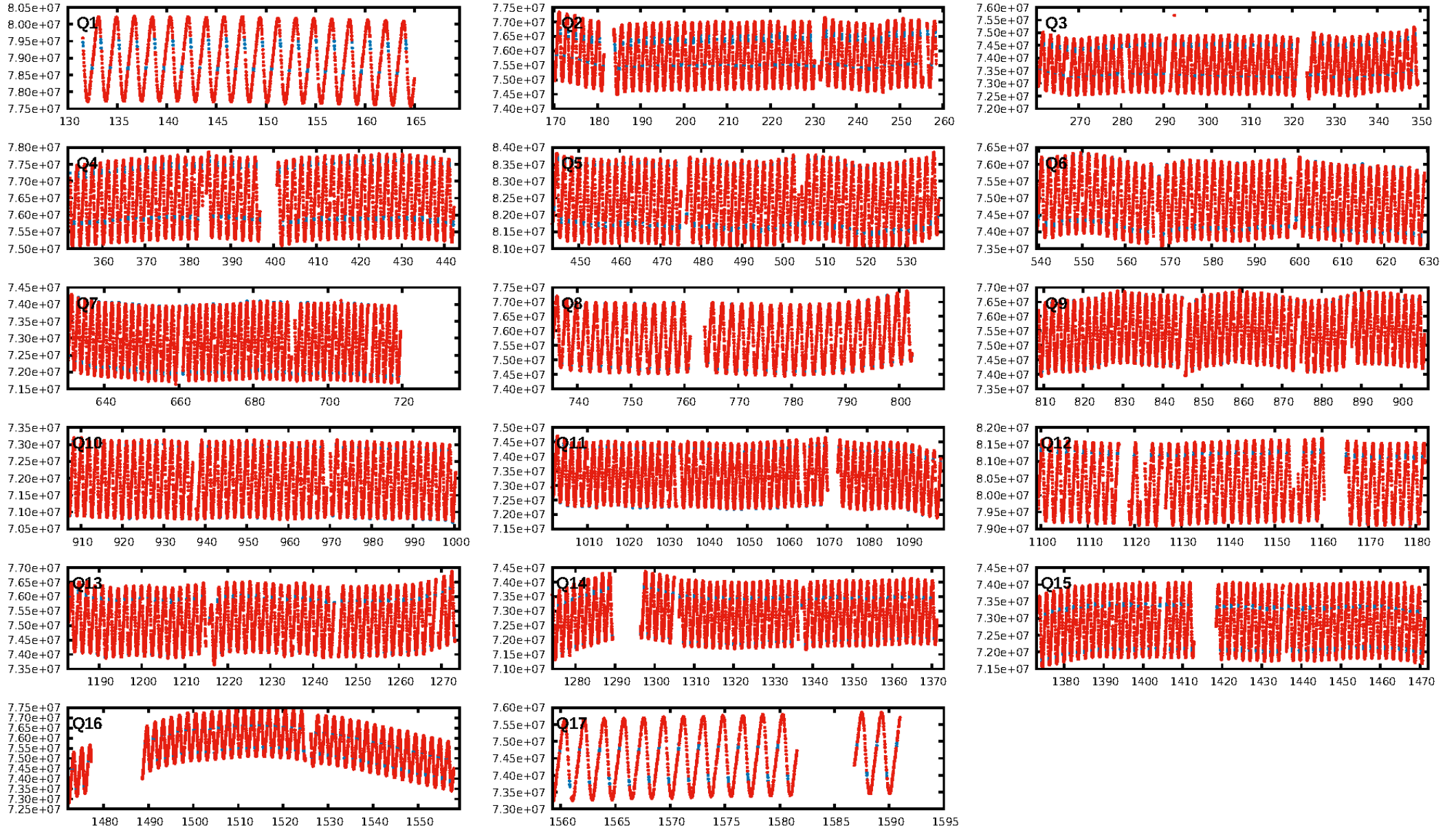
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 95.9% [2.04σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1421/1427]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.227 arcsec [1.60σ]  
KicOffset-rm: 0.157 arcsec [1.45σ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.00 [0/16]  
DiffImageOverlap-fno: 0.76 [13/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:17:38 Z

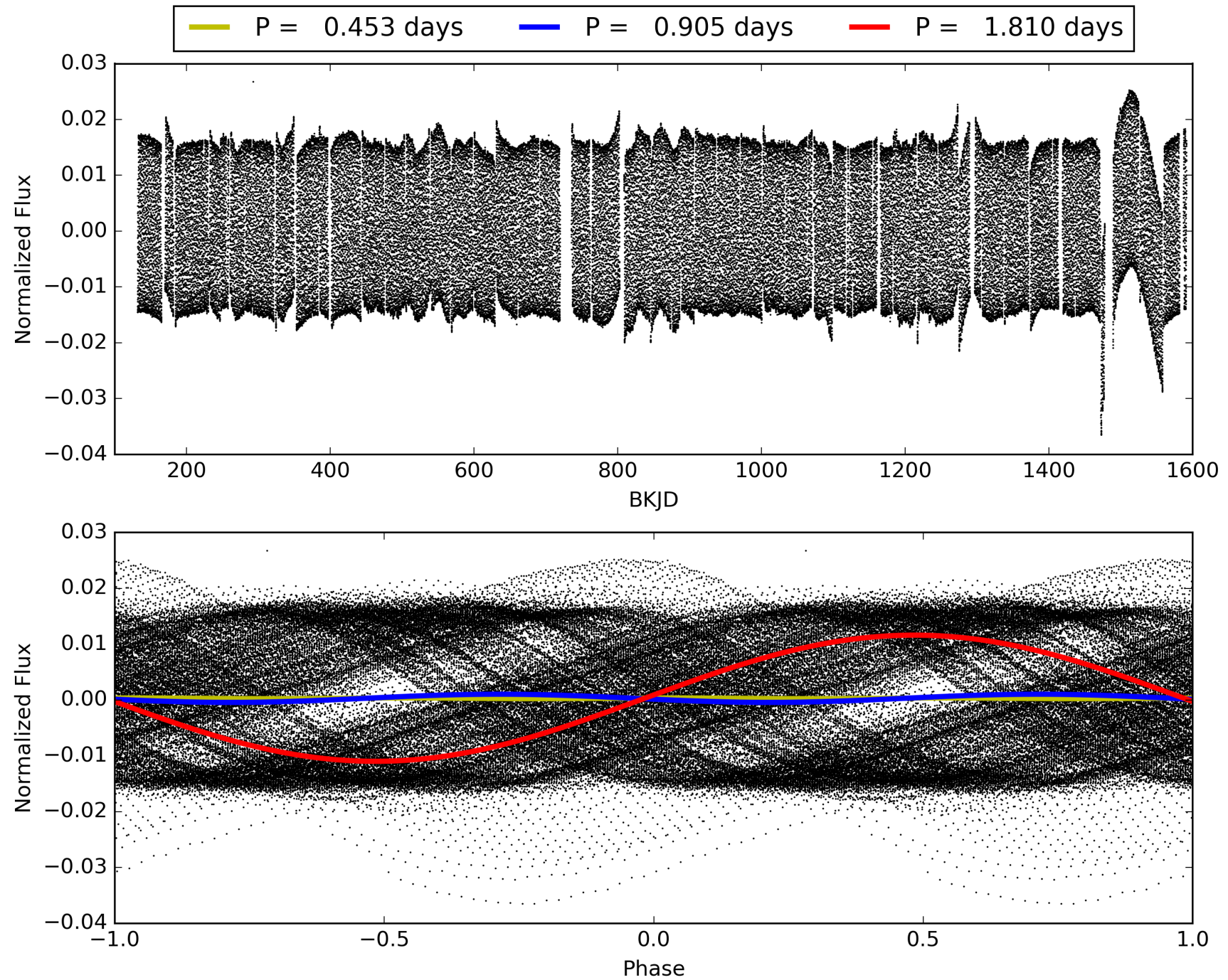
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005739204-02, PDC Light Curves



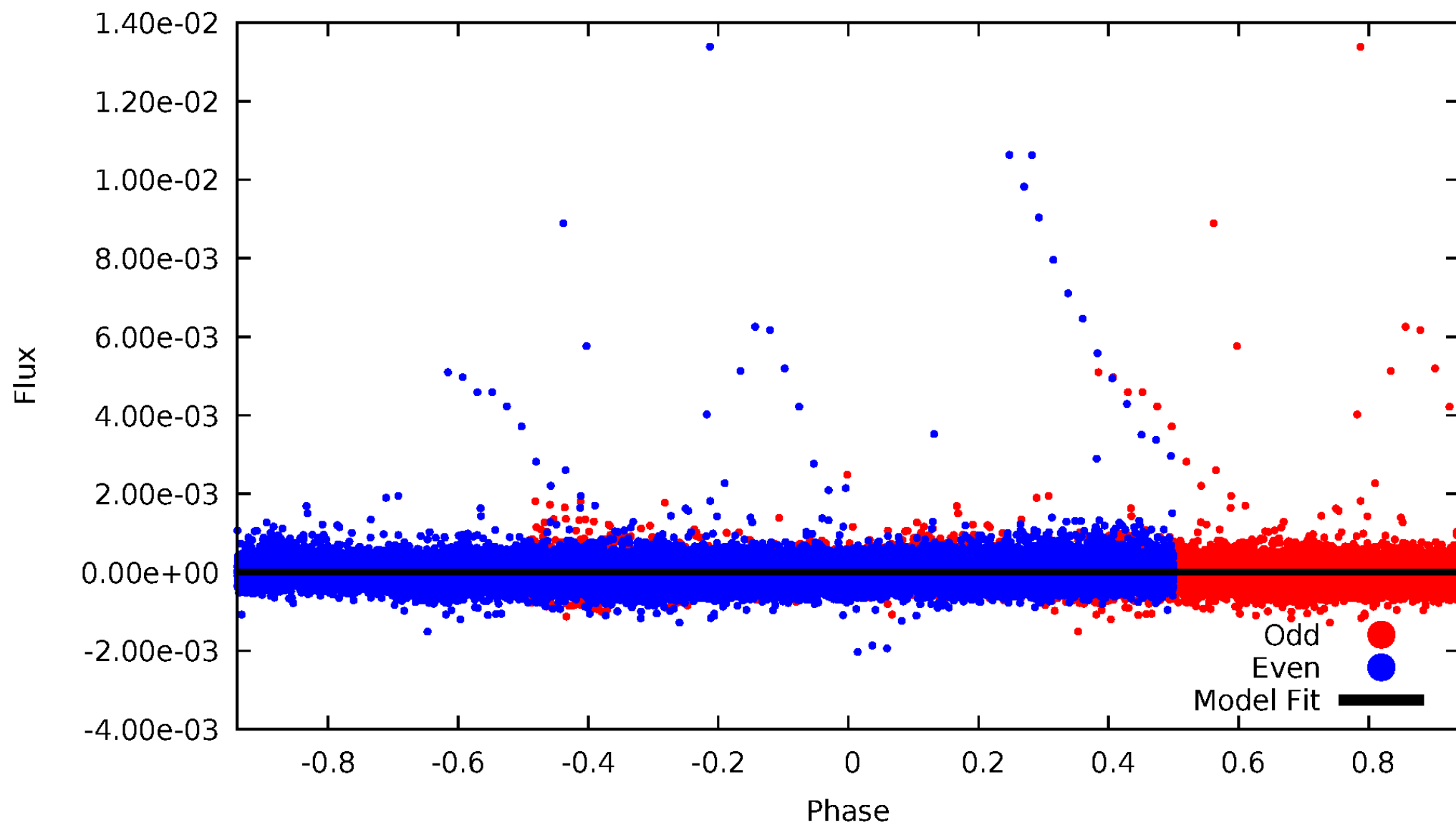


TCE 005739204-02



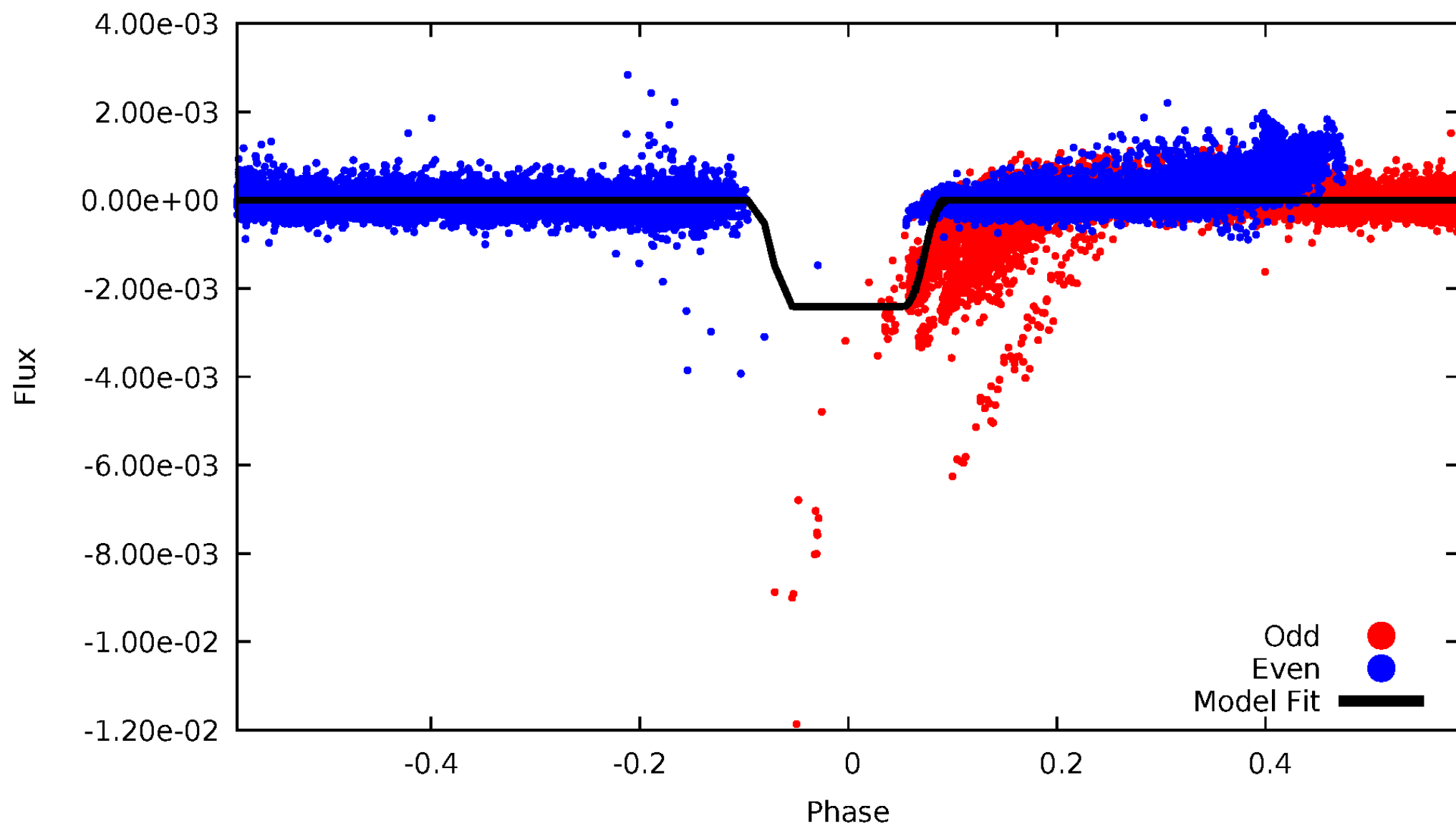
# DV Odd/Even

TCE 005739204-02



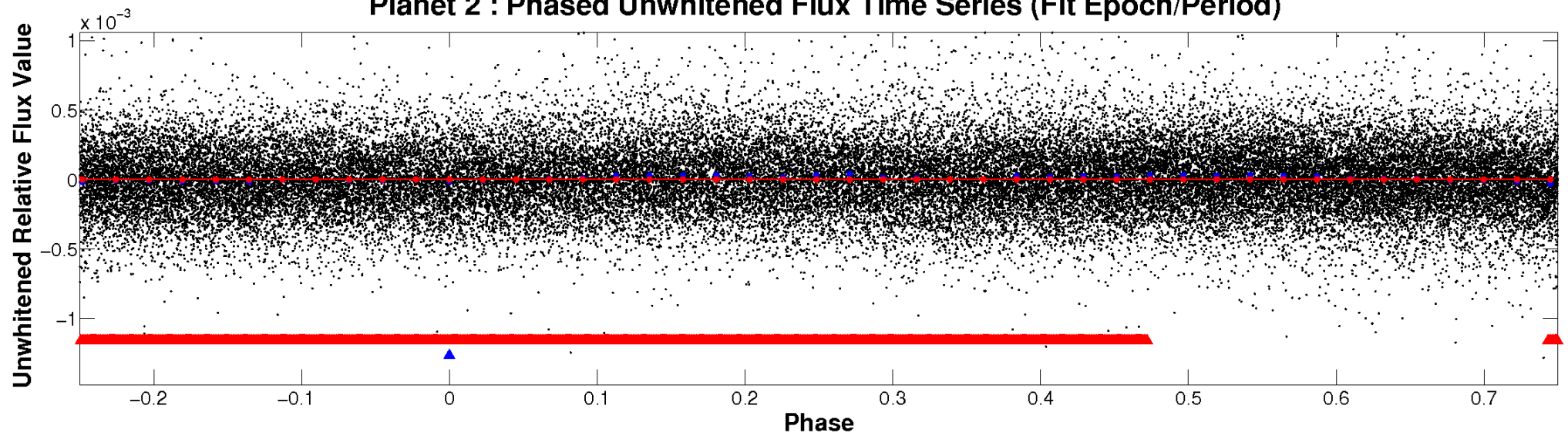
# ALT Odd/Even

TCE 005739204-02

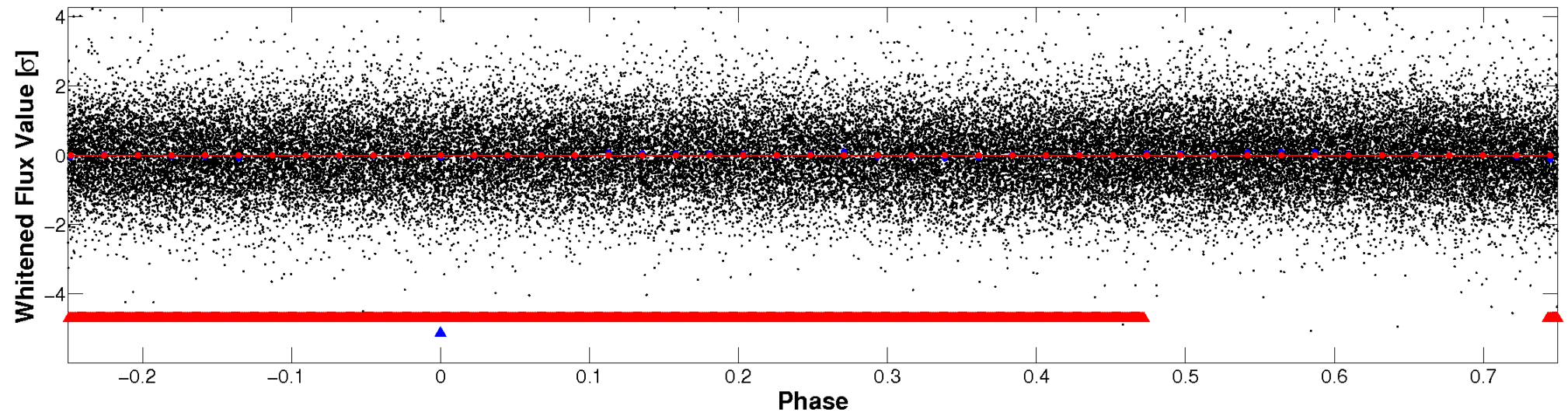


# Non-Whitened Vs. Whitened Light Curve

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



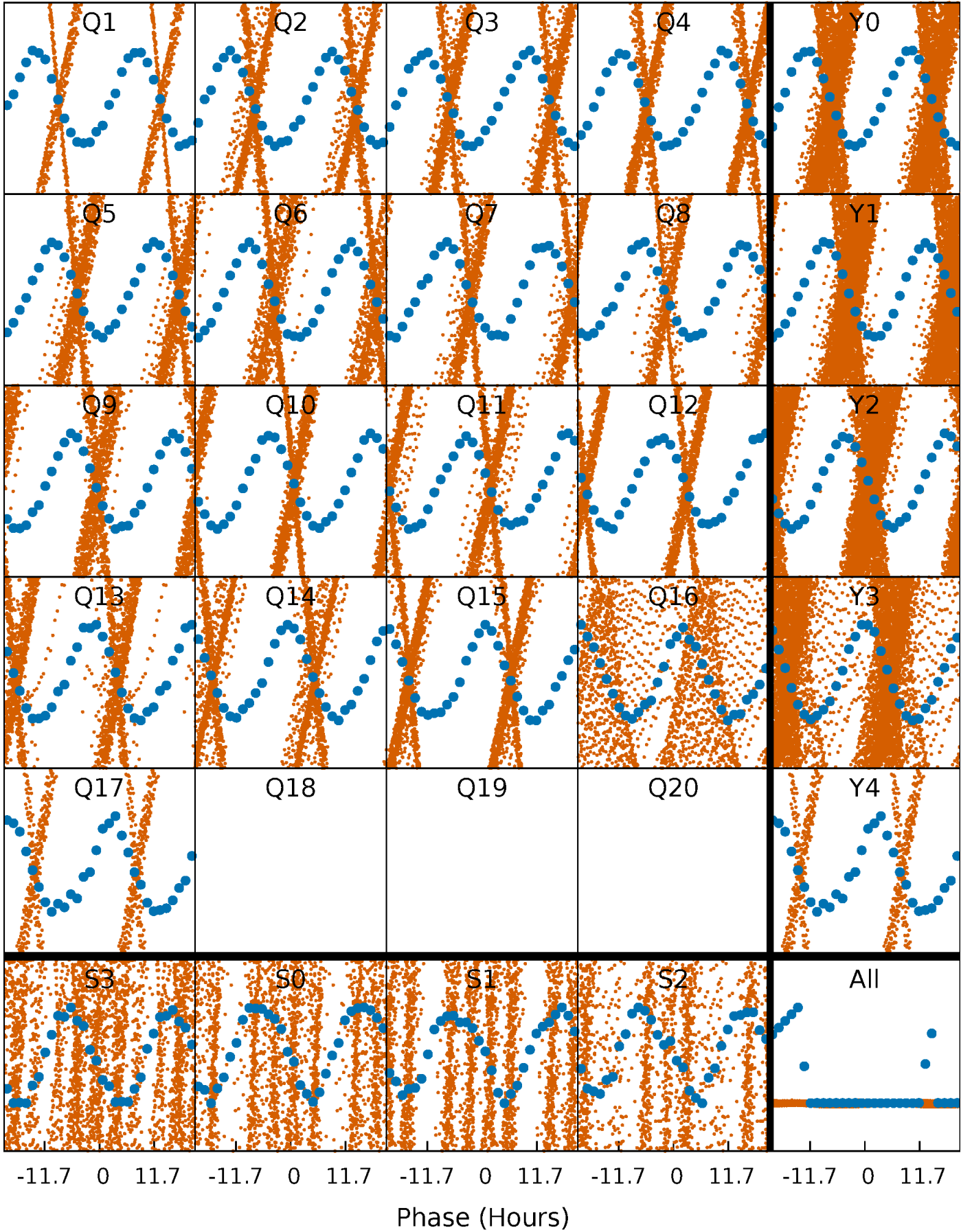
## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

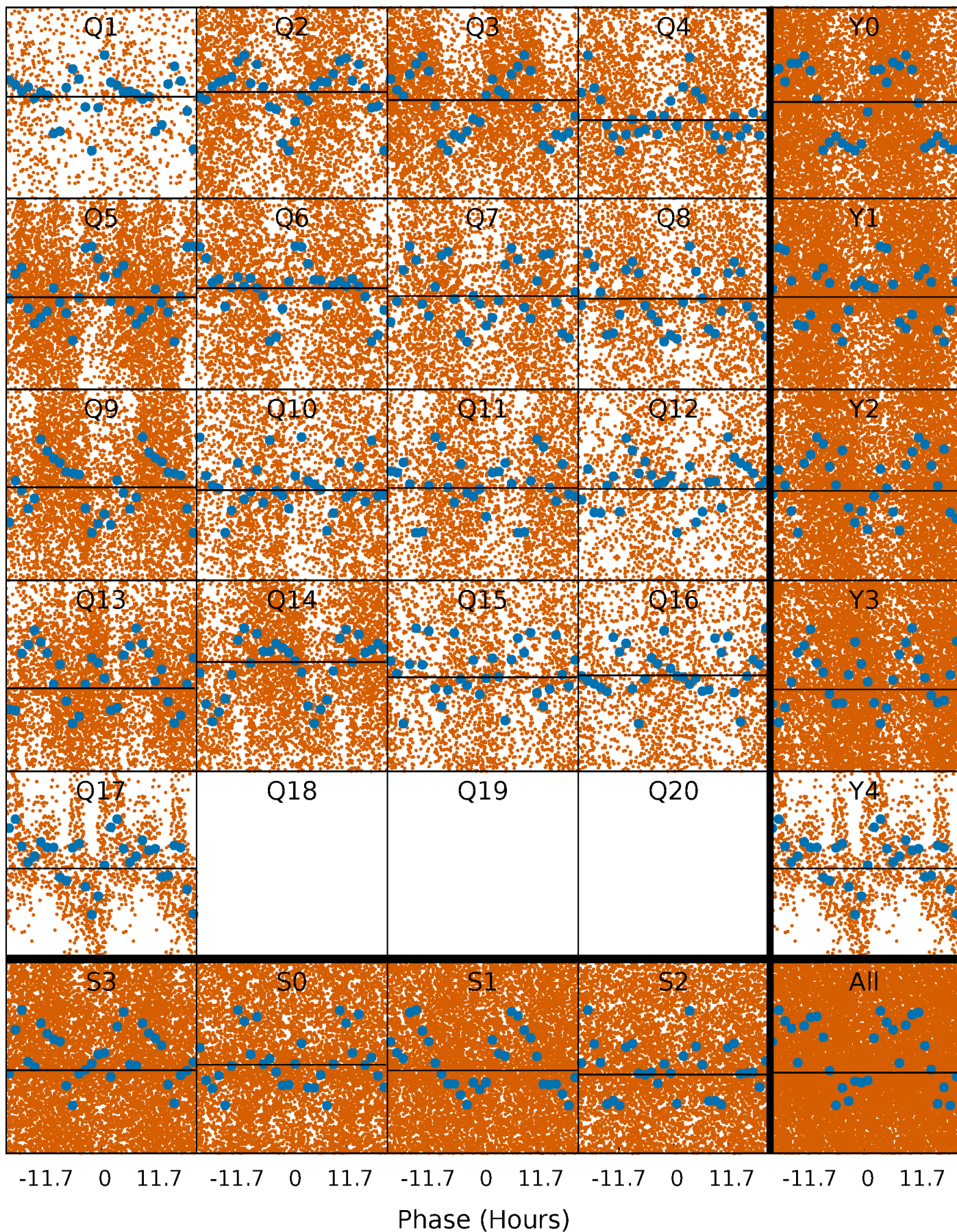
TCE 005739204-02   P= 0.905176 Days    $T_0=131.996885$  (BKJD)





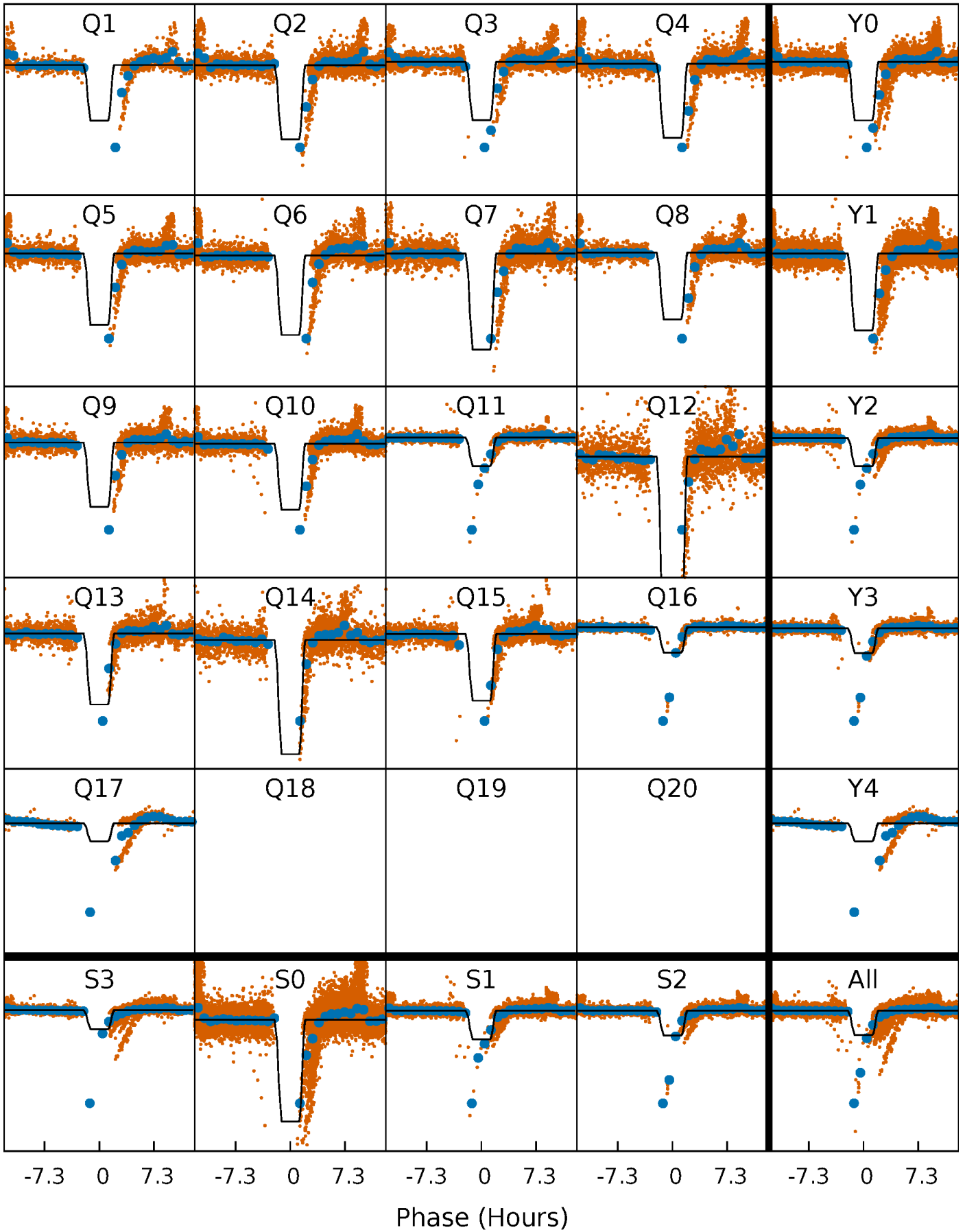
# DV Quarter-Phased Transit Curves

TCE 005739204-02   P= 0.905176 Days    $T_0=131.996885$  (BKJD)



## Alt. Detrend Quarter-Phased Transit Curves

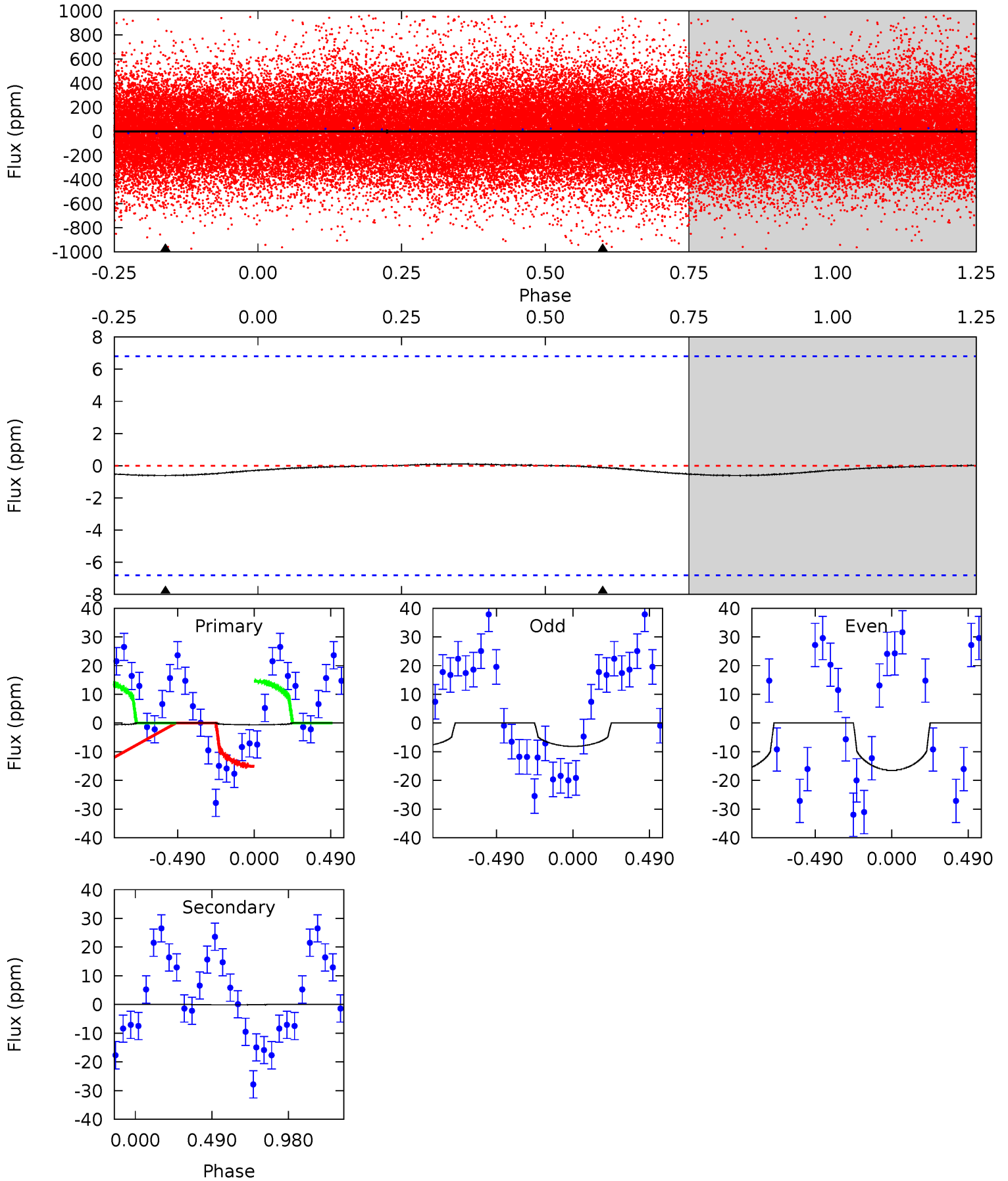
TCE 005739204-02   P= 0.905624 Days    $T_0=132.038840$  (BKJD)



# DV Model-Shift Uniqueness Test

005739204-02, P = 0.905176 Days, E = 131.091709 Days

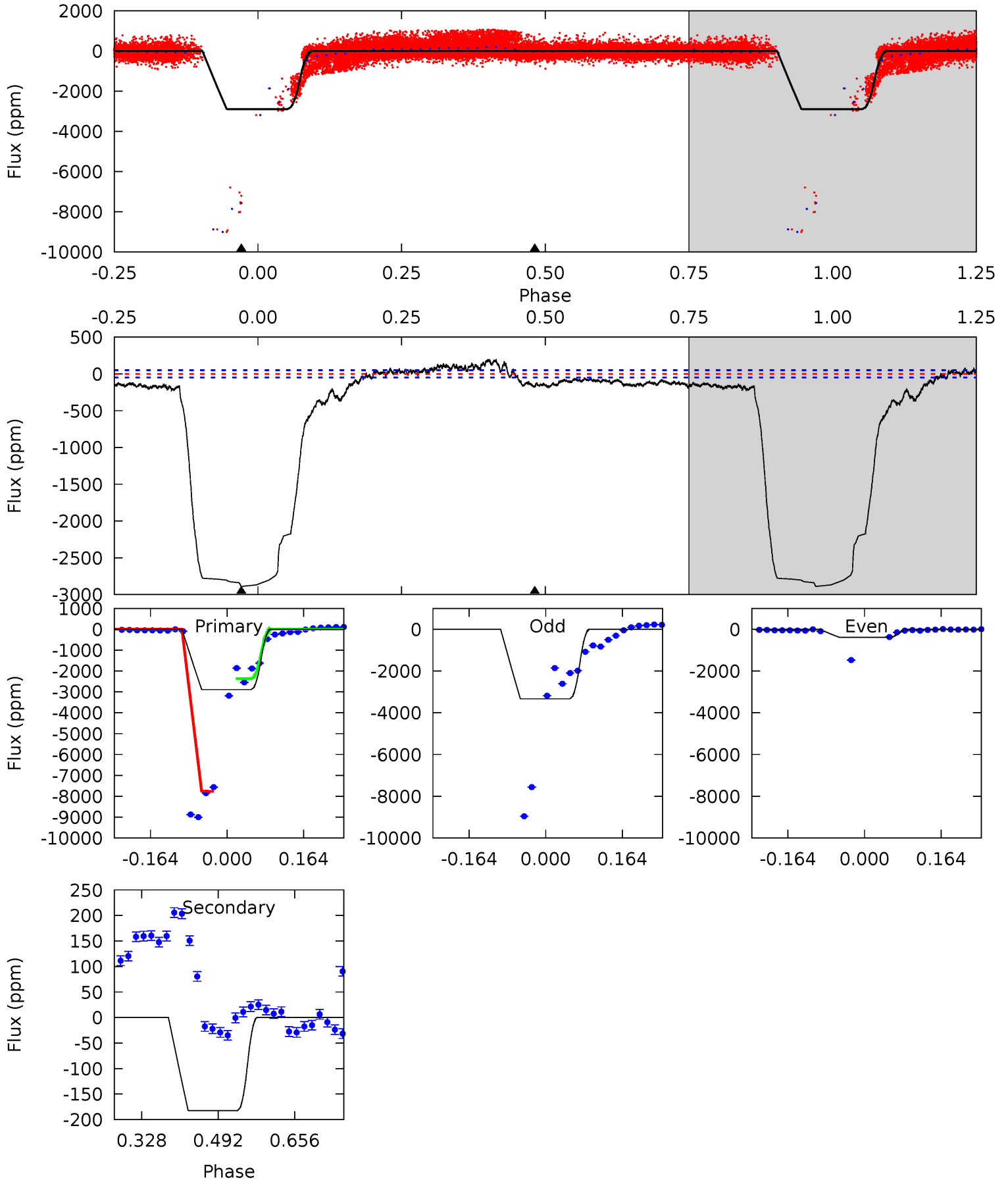
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.38	0.07	0	0	4.22	0.69	0.02	0.38	0.38	0.07	0.07	2.29	2.99	0.15	0.17



# Alt Model-Shift Uniqueness Test

005739204-02, P = 0.905624 Days, E = 132.038840 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
259.4	16.4	0	0	4.46	1.39	8.23	259.4	259.4	16.4	16.4	136.0	0.99	0.06	0



### Stellar Parameters For KIC 005739204

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$9099^{+251}_{-466}$	$4.065^{+0.181}_{-0.148}$	$0.070^{+0.150}_{-0.700}$	$2.283^{+0.671}_{-0.671}$	$2.209^{+0.337}_{-0.626}$	$0.262^{+0.285}_{-0.117}$
	+3%/-5%	+4%/-4%	+214%/-1000%	+29%/-29%	+15%/-28%	+109%/-45%
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 005739204-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	-0±2	$18.79^{+21.21}_{-13.78}$	$4353^{+2182}_{-891}$	$-3784^{+550}_{-1430}$	$0.000^{+0.006}_{-0.004}$
Alt.	-182±11	$24.83^{+22.24}_{-15.99}$	$4463^{+2058}_{-999}$	$-2991^{+7811}_{-1786}$	$0.195^{+1.463}_{-0.166}$

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



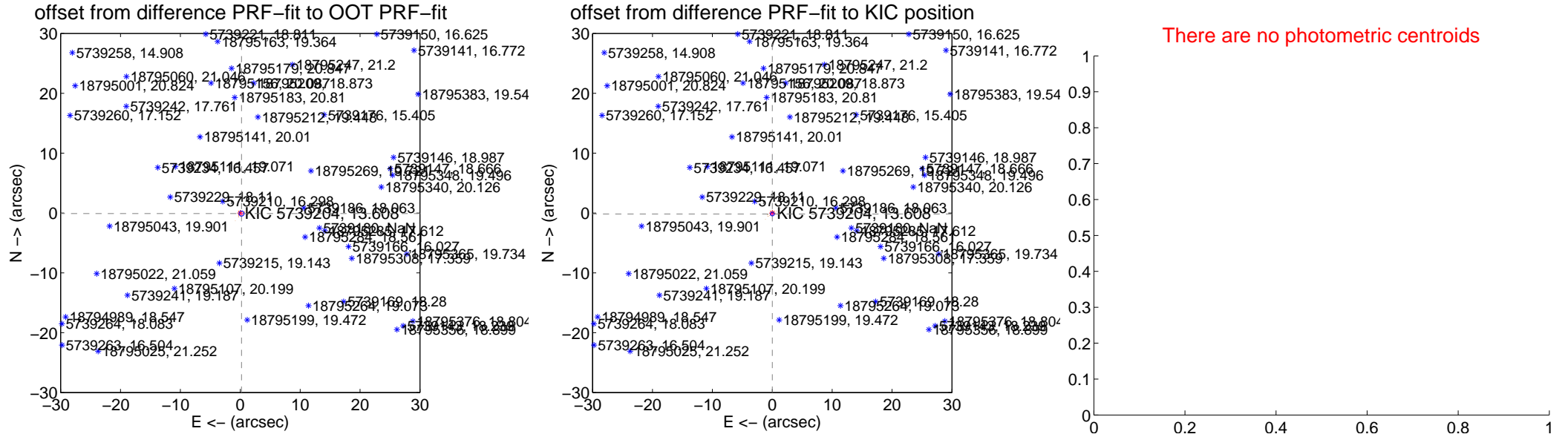
## DV Centroid Data

Supplemental centroid analysis for 005739204-02. Kepler magnitude: 13.61. Transit SNR 0.00

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

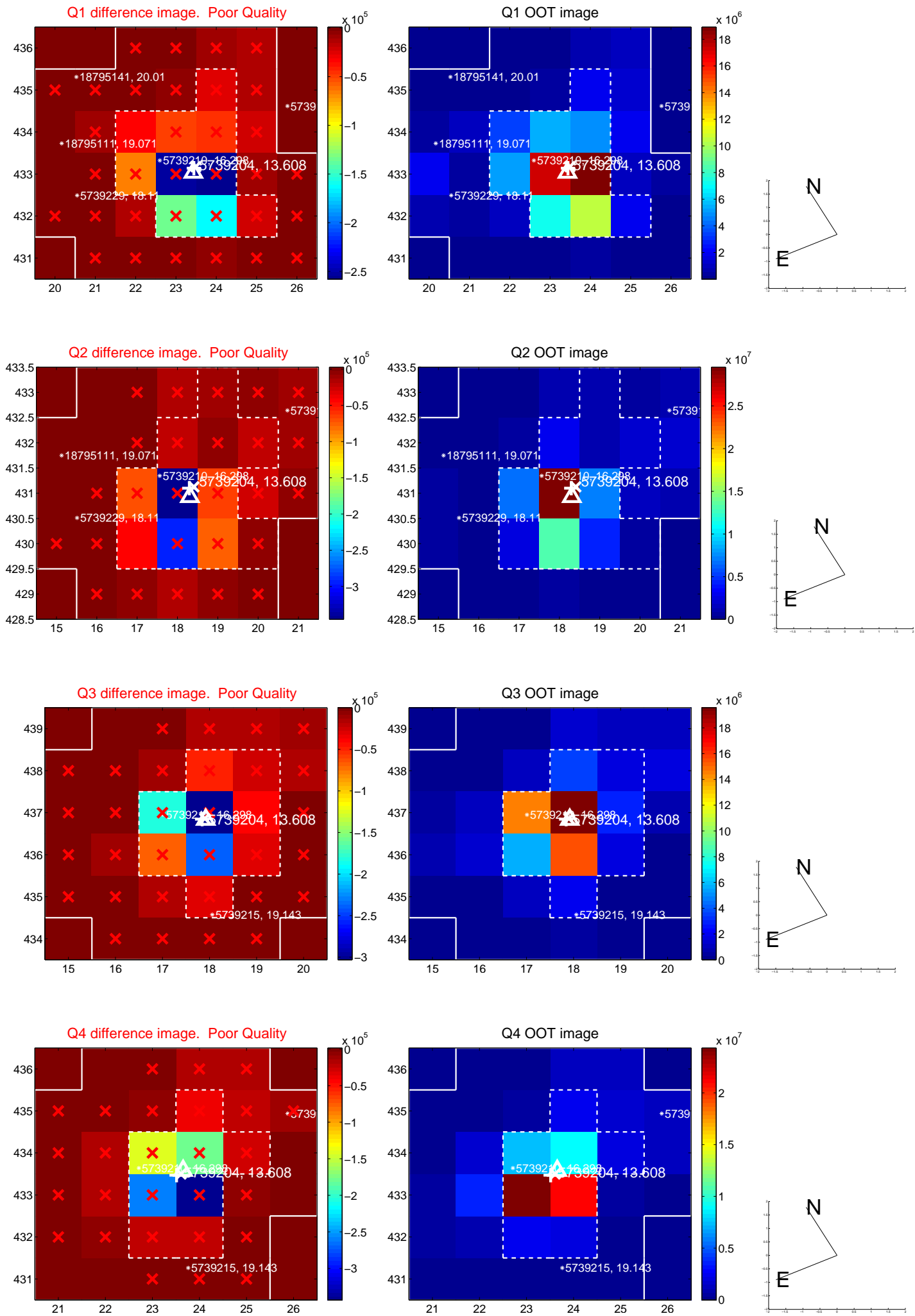
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.227 \pm 0.142$	1.60	$-0.207 \pm 0.148$	$-0.092 \pm 0.107$
PRF-fit source offset from KIC position	$0.157 \pm 0.108$	1.45	$-0.006 \pm 0.164$	$-0.157 \pm 0.112$
photometric centroid source offset	—	—	—	—



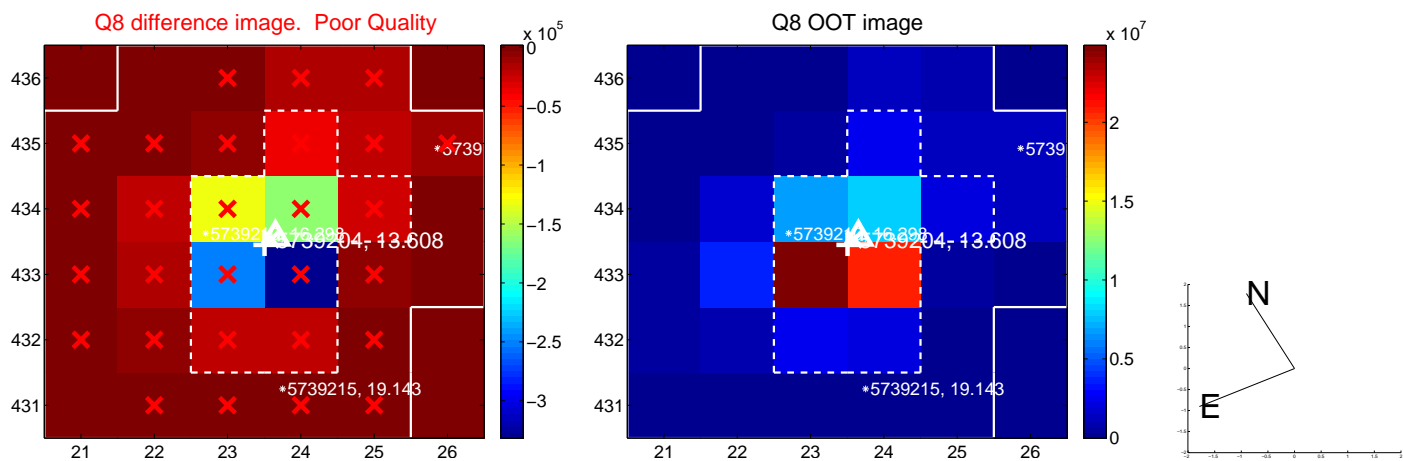
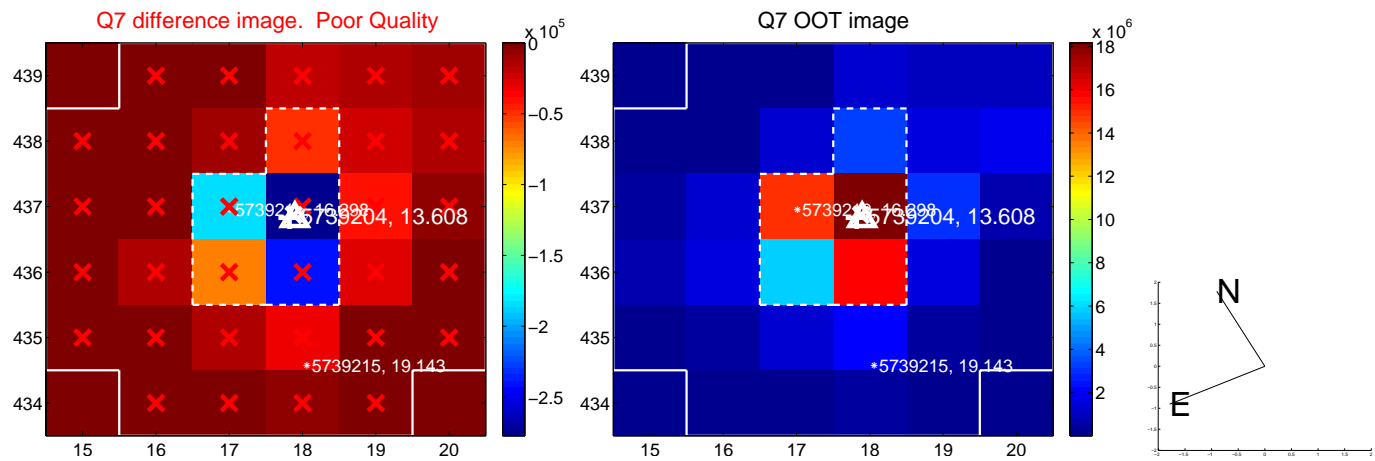
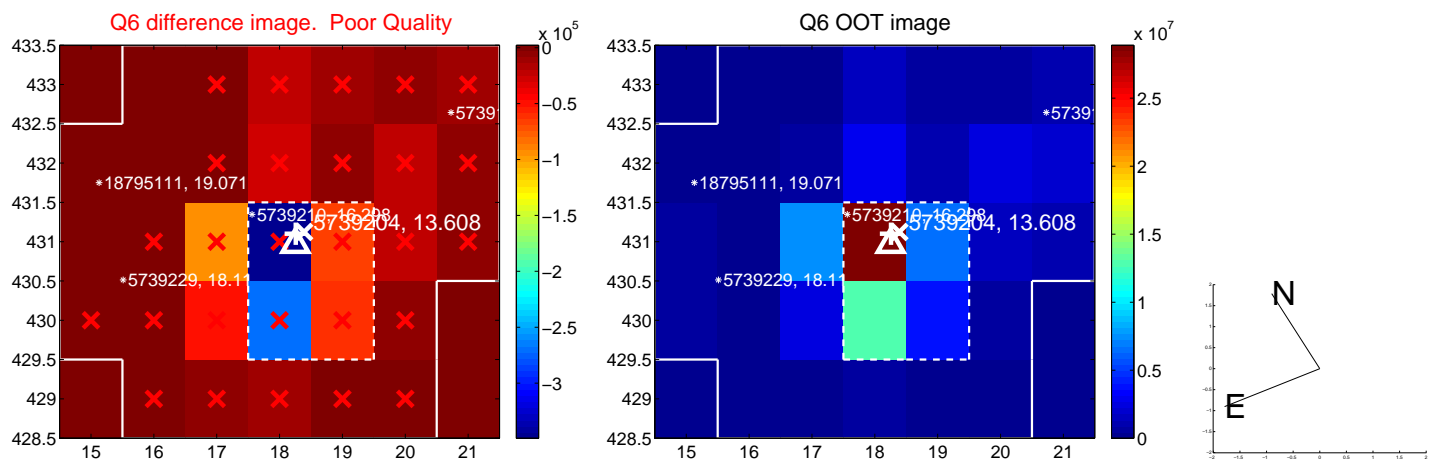
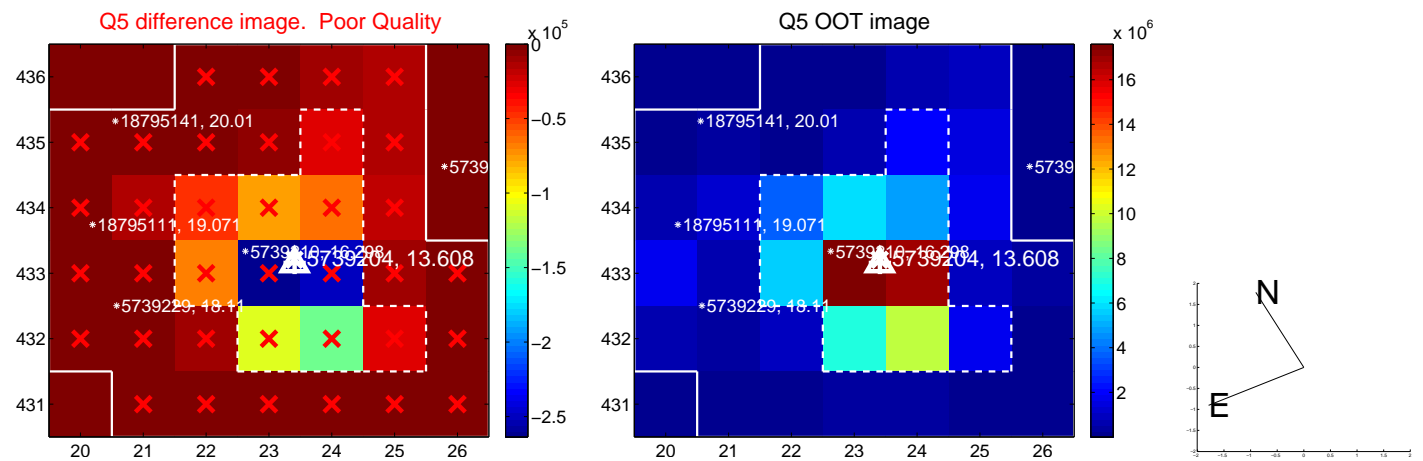
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



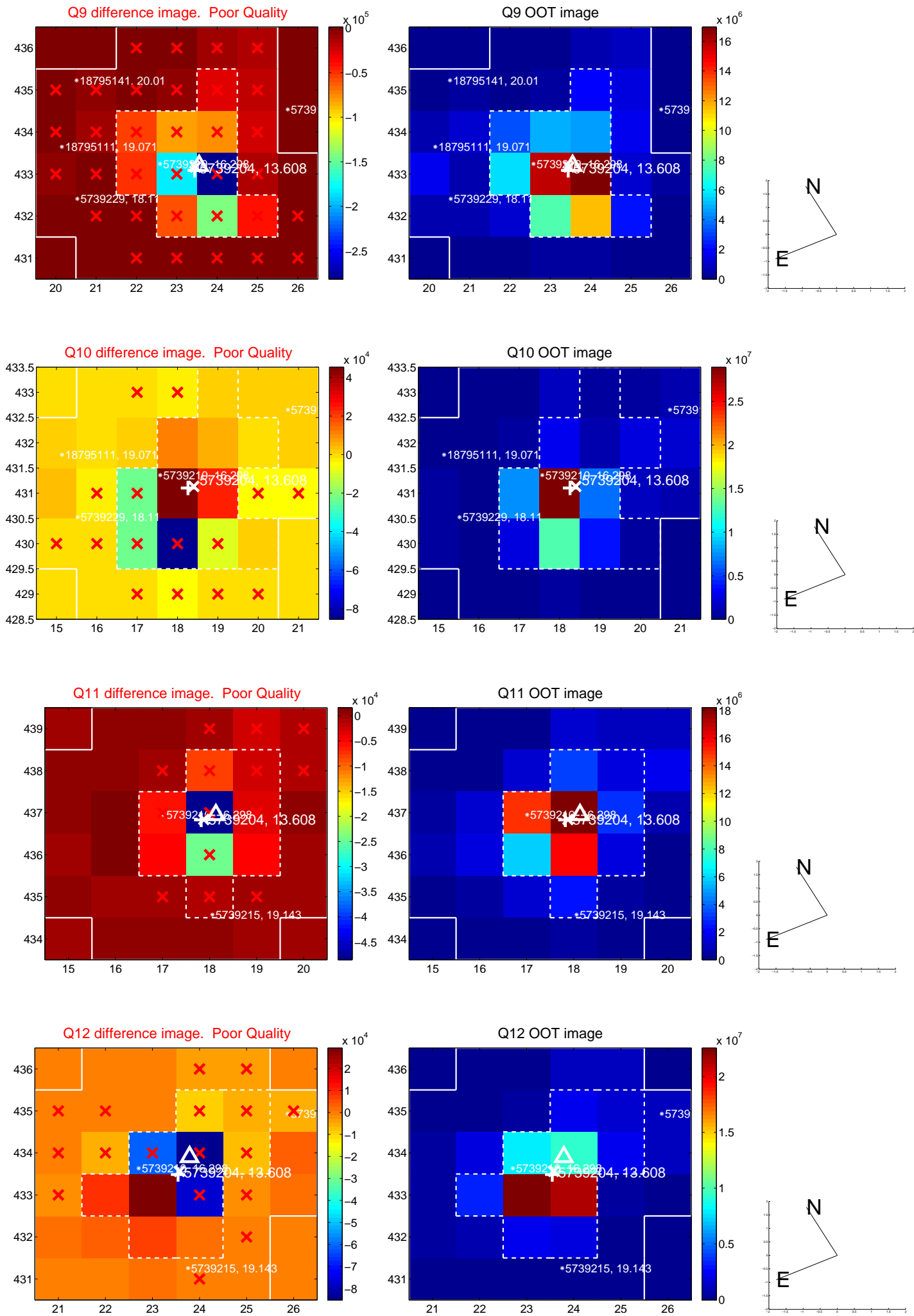
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



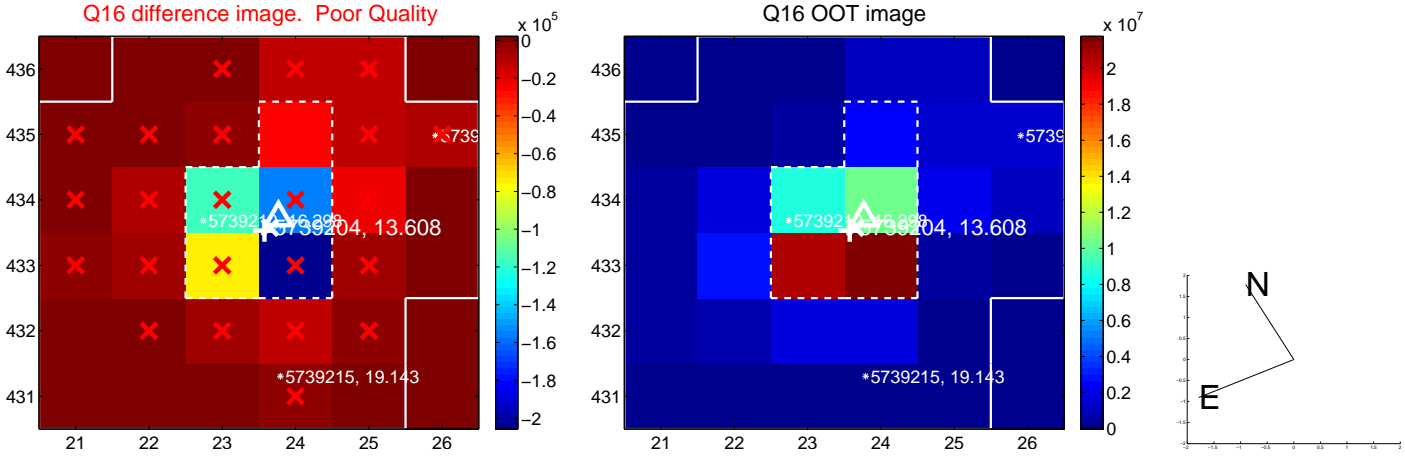
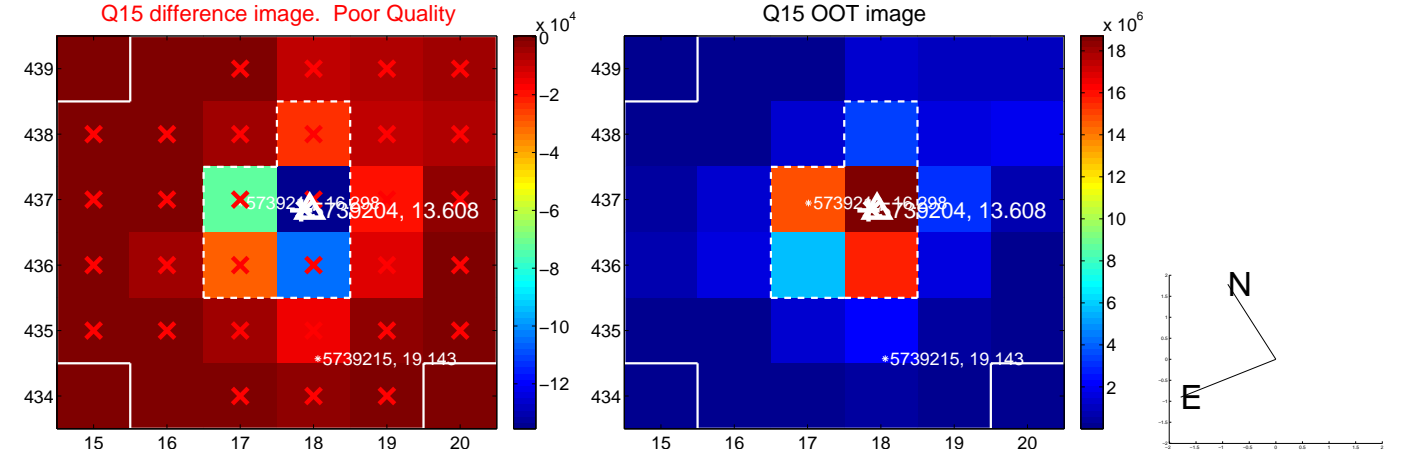
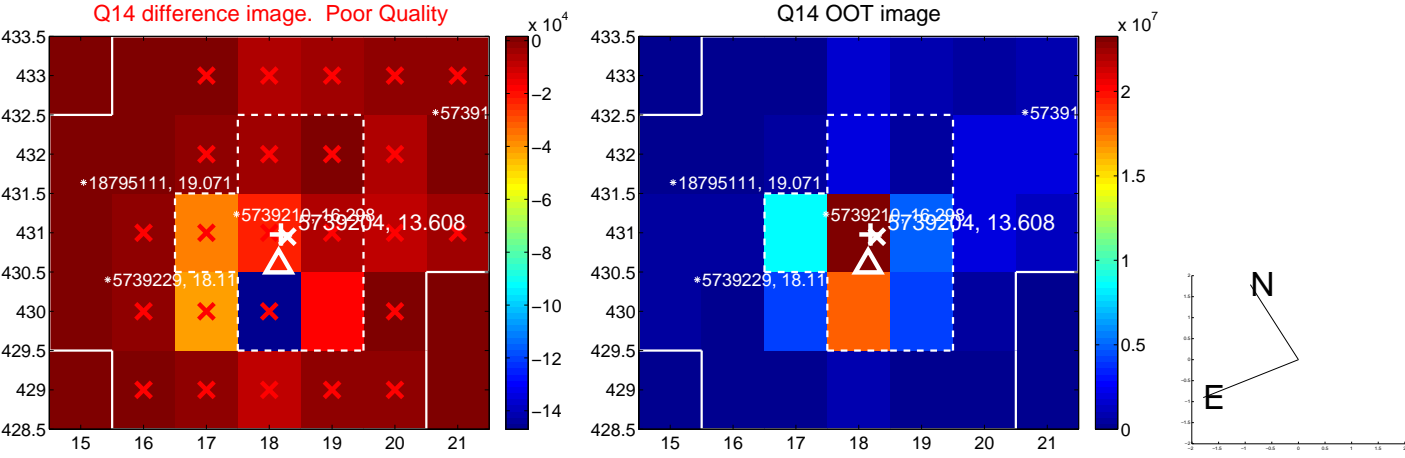
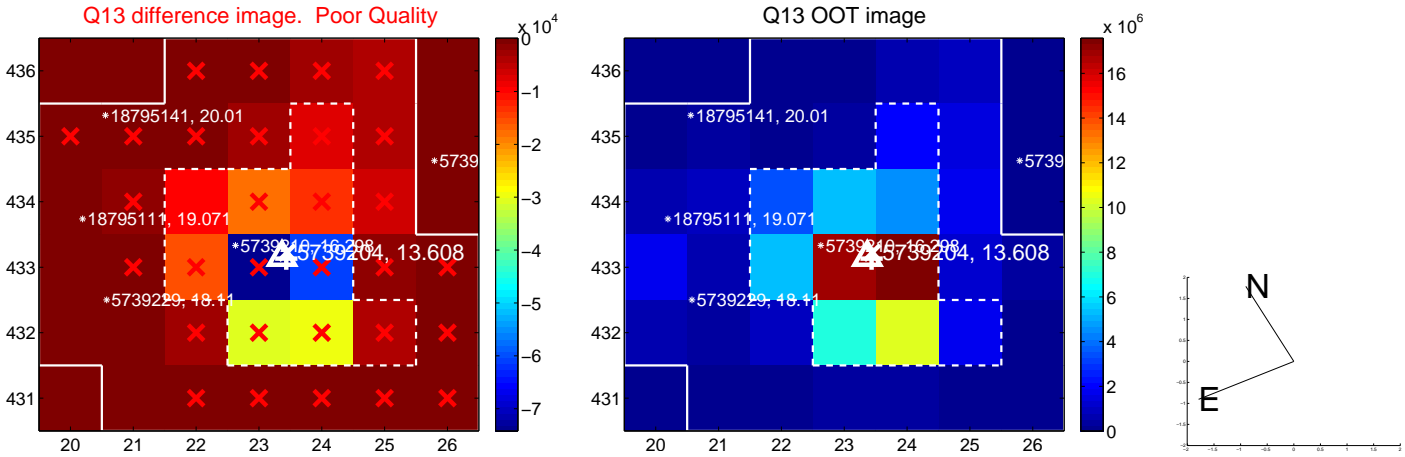
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



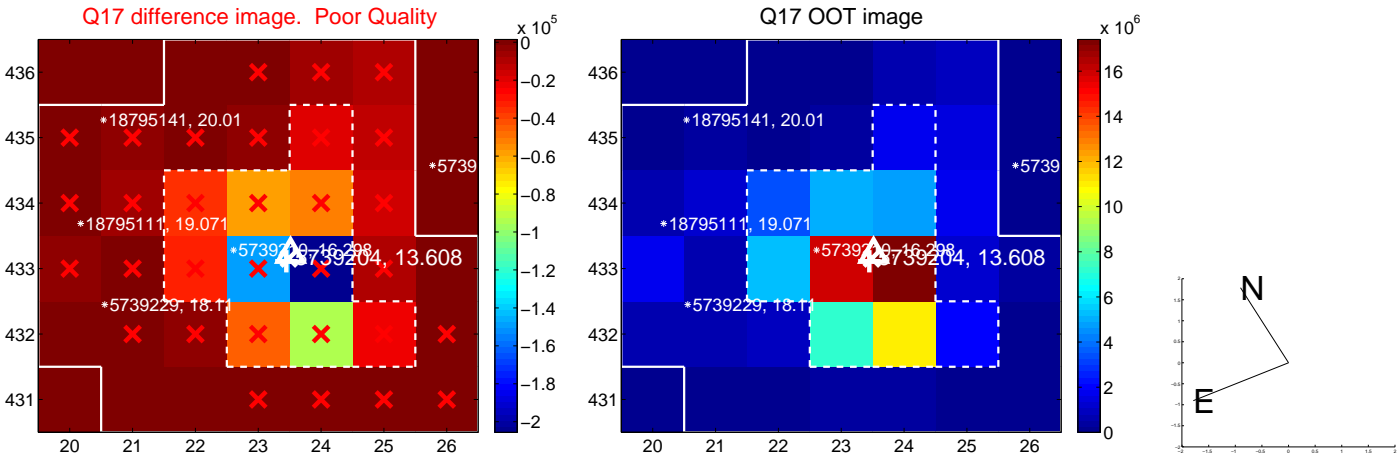
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

