

# KIC 008264706

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008264706-01	OBS	No	4.628970	135.639509	0.1	1.520	9.6	0.0	1.55	7364	0.06	1640.31
008264706-02	OBS	No	2.136003	131.805378	122.8	7.071	10.3	8.1	1.55	7364	1.99	4600.11

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008264706-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS
008264706-02	OBS	FP	0.00	1	0	0	0	LPP_DV—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.

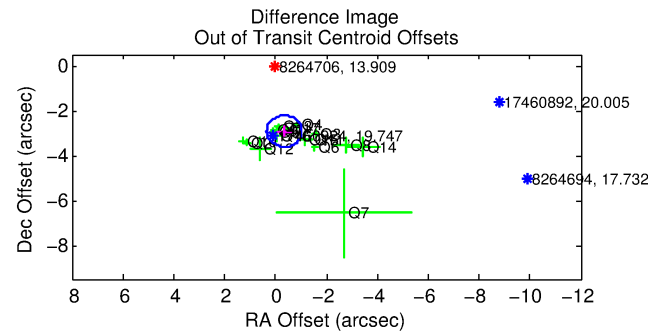
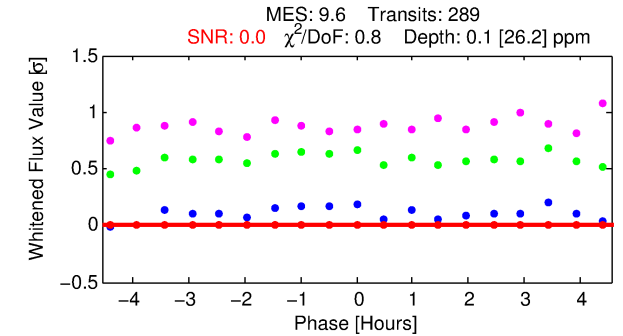
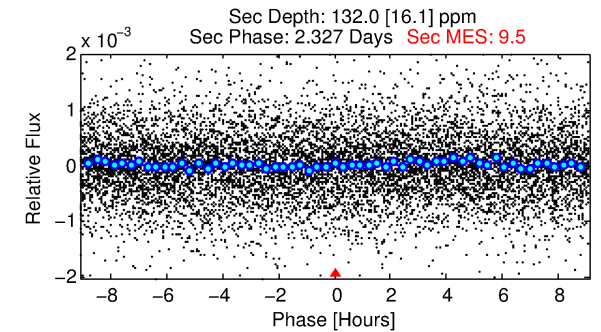
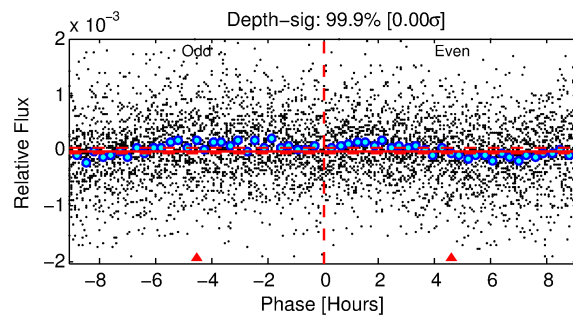
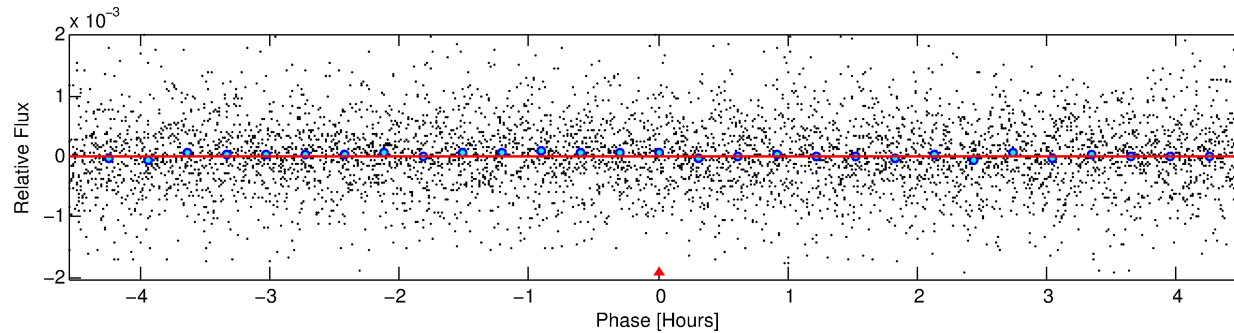
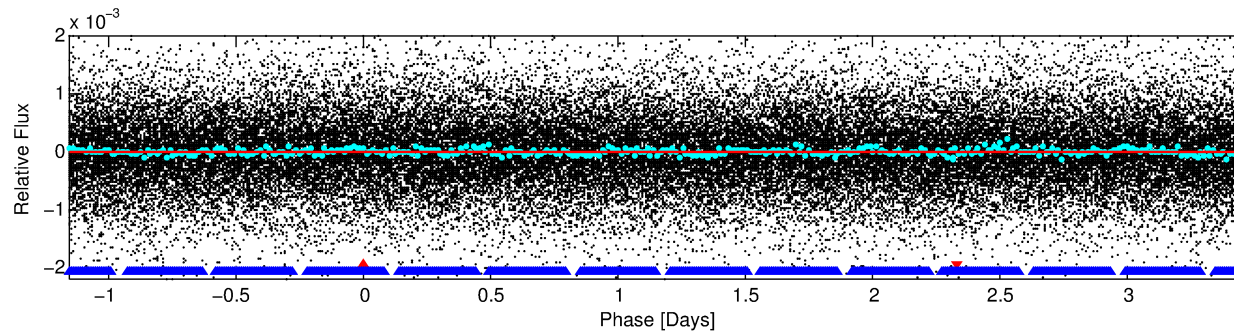
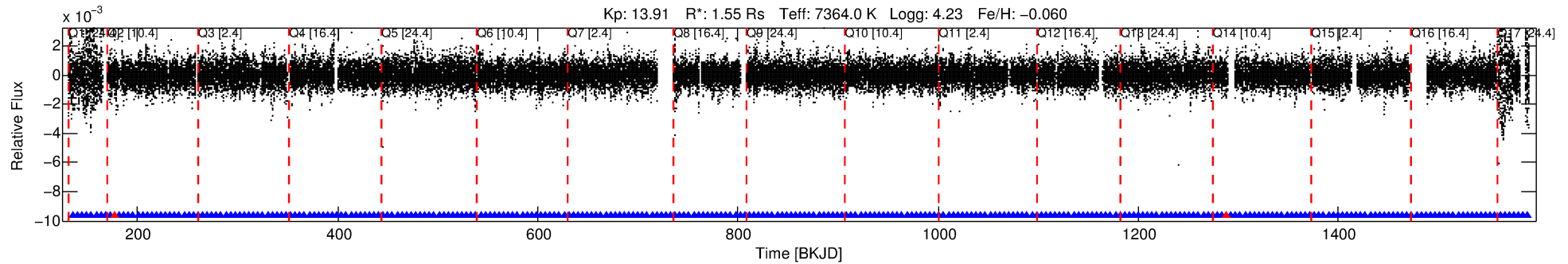
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008264706-01

No Significant Match Found

# DV One-Page Summary

KIC: 8264706 Candidate: 1 of 2 Period: 4.629 d



## DV Fit Results:

Period = 4.62897 [0.02818] d  
Epoch = 135.6395 [3.6413] BKJD  
Rp/R\* = 0.0004 [0.0356]  
a/R\* = 16.45 [594.76]  
b = 0.71 [33.24]  
Seff = 1640.31 [729.00]  
Teq = 1623 [180] K  
Rp = 0.06 [6.03] Re  
a = 0.0621 [0.0176] AU  
Ag = 75593.46 [14969925.01] [0.01σ]  
Teffp = 41602 [2059693] K [0.02σ]

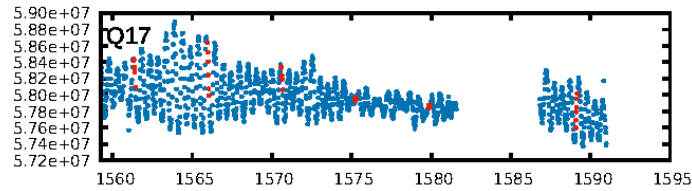
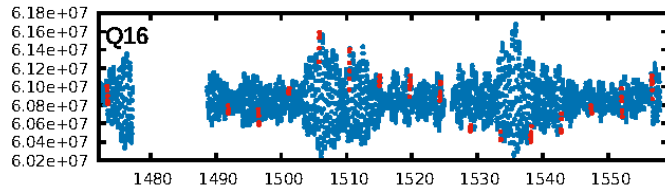
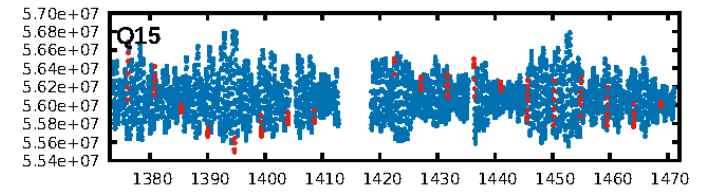
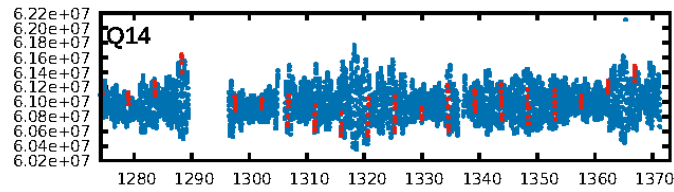
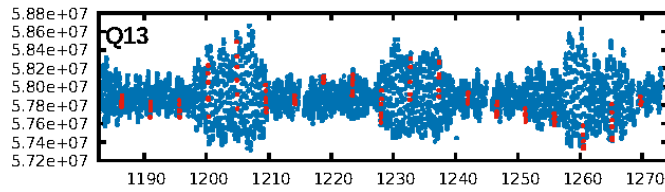
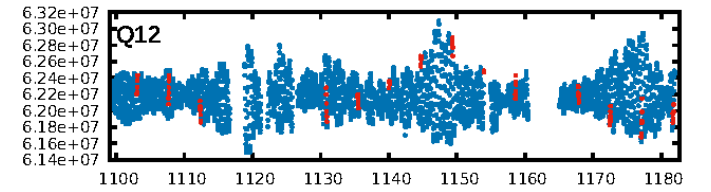
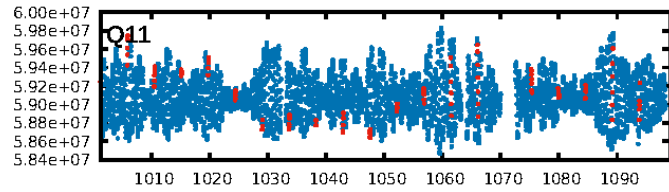
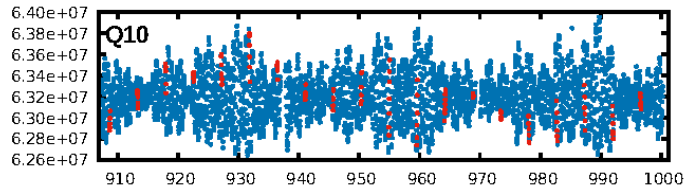
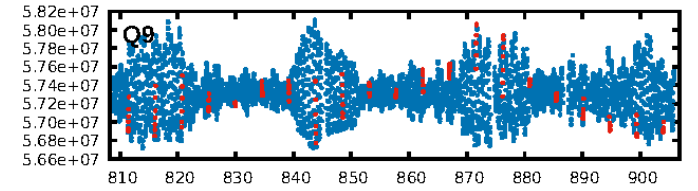
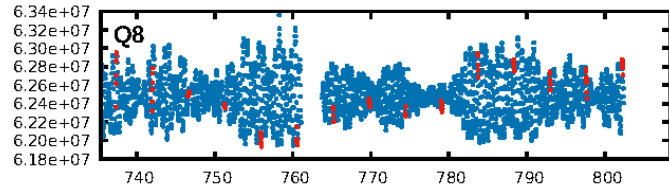
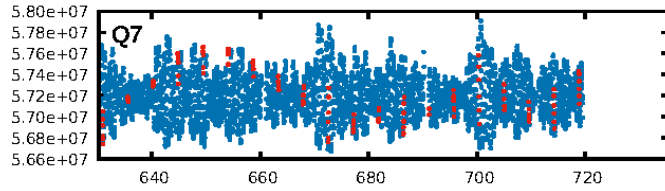
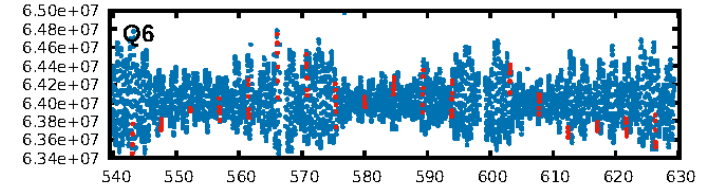
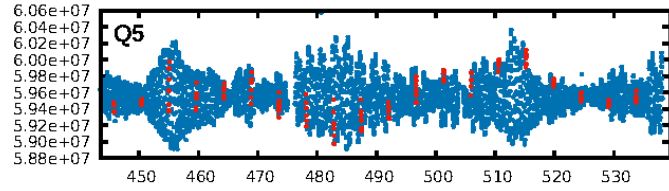
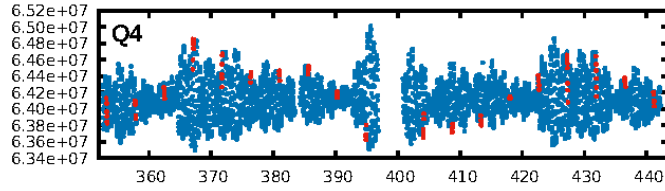
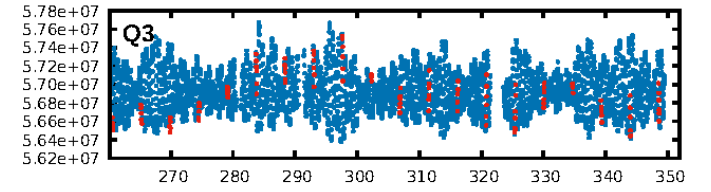
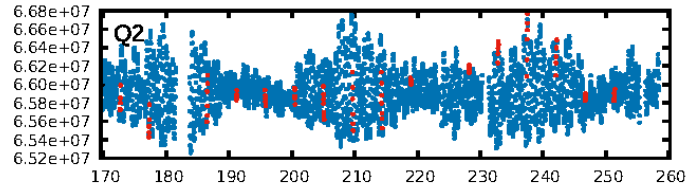
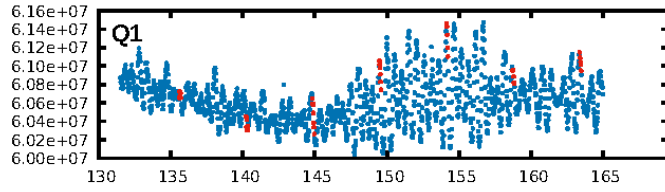
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.27σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 9.38e-29  
RollingBand-fgt: 0.99 [274/276]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 2.941 arcsec [12.66σ]  
KicOffset-rm: 0.192 arcsec [0.62σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.35 [6/17]  
DiffImageOverlap-fno: 1.00 [17/17]

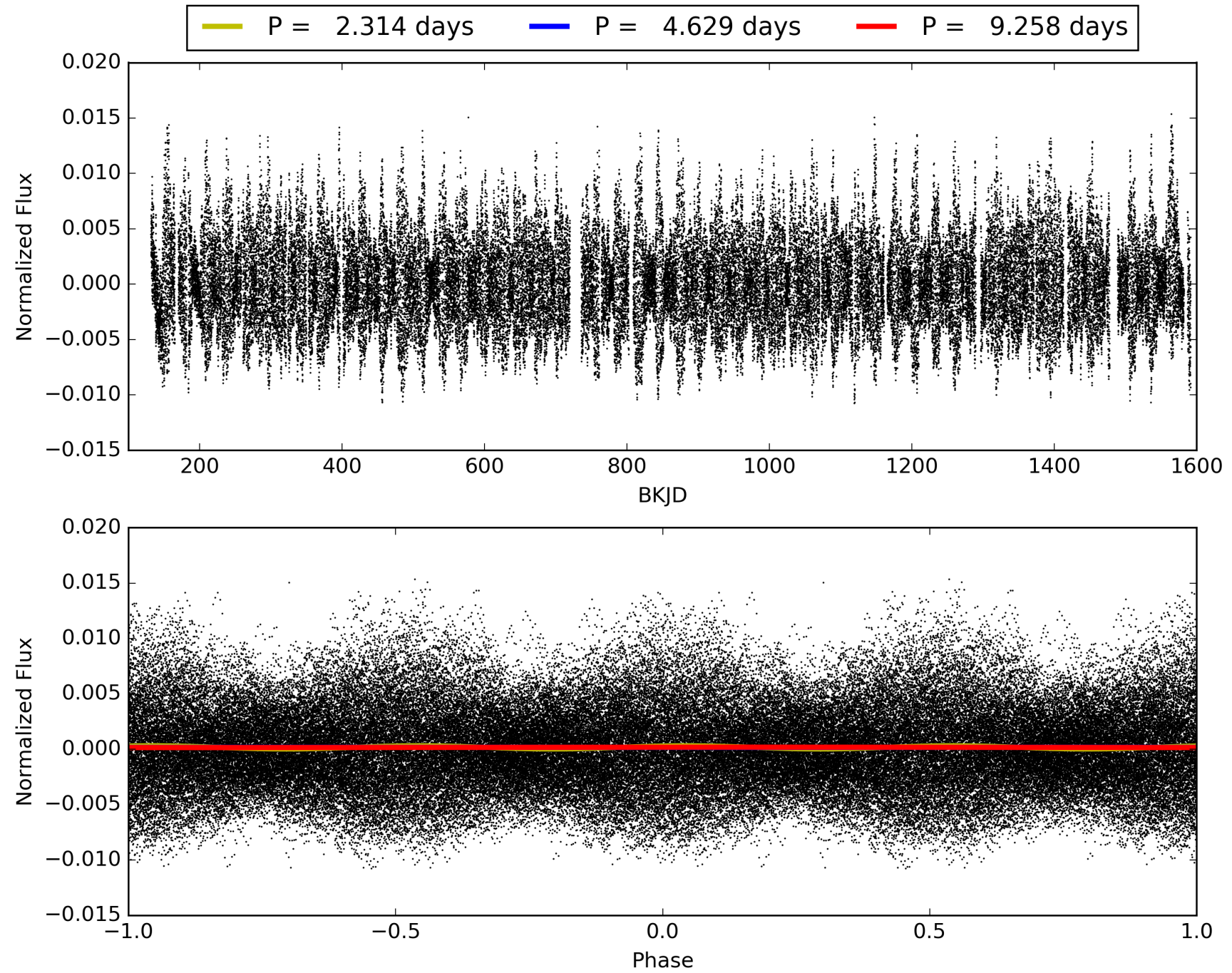
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:42:16 Z

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

# TCE 008264706-01, PDC Light Curves



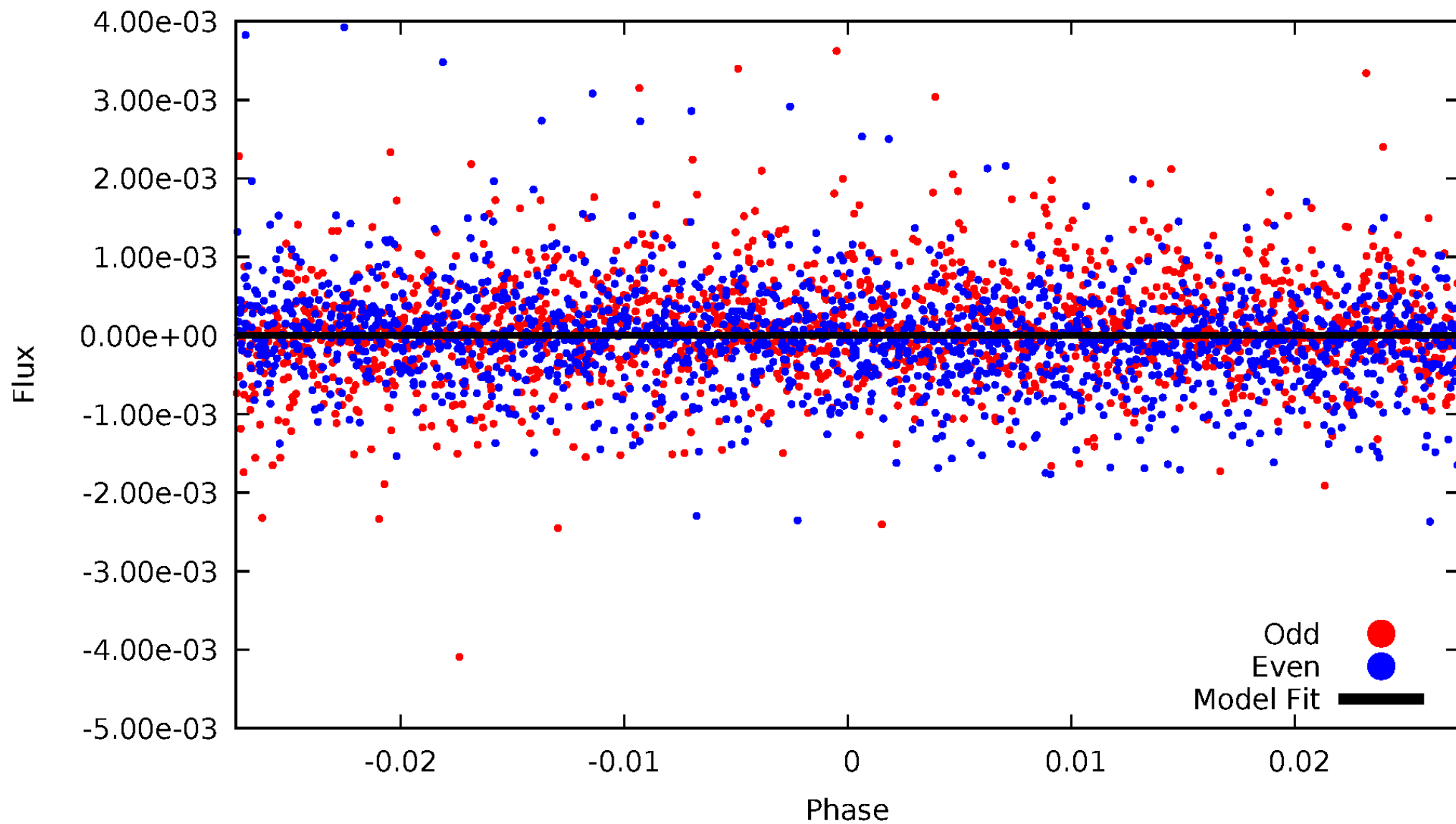
TCE 008264706-01





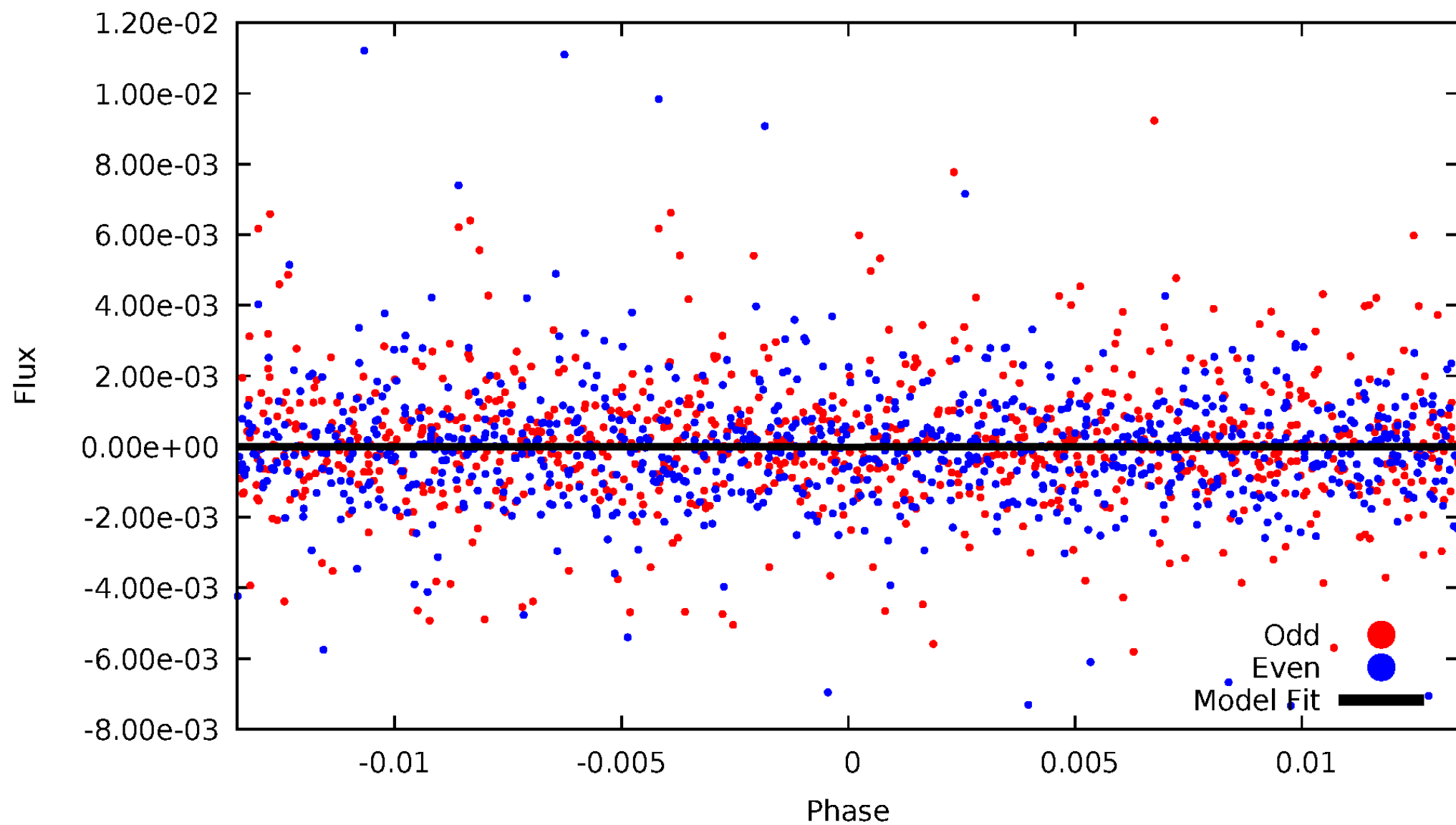
# DV Odd/Even

TCE 008264706-01



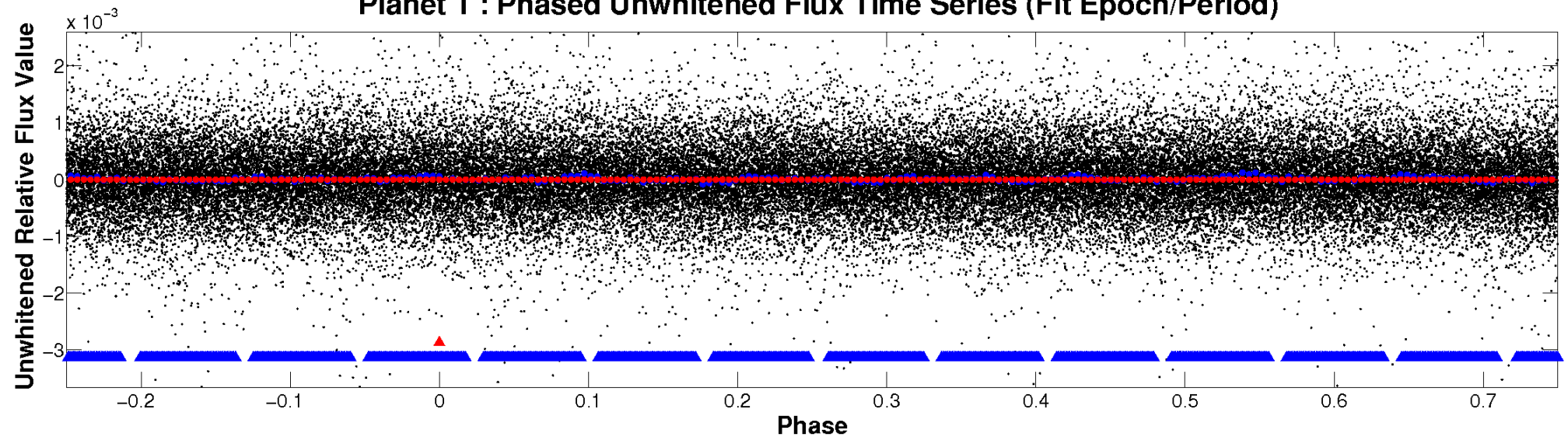
# ALT Odd/Even

TCE 008264706-01

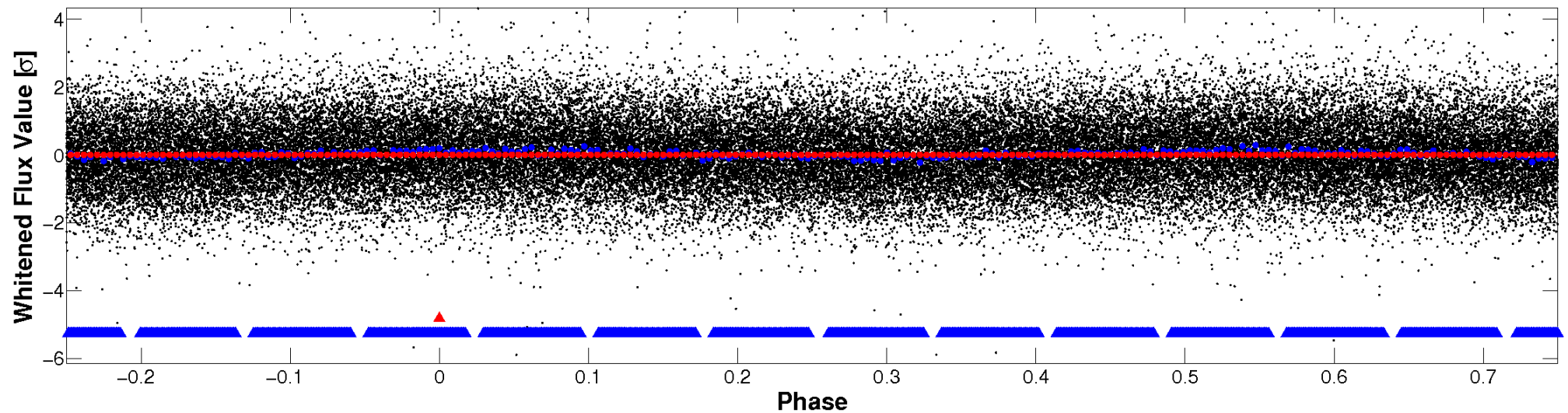


# Non-Whitened Vs. Whitened Light Curve

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

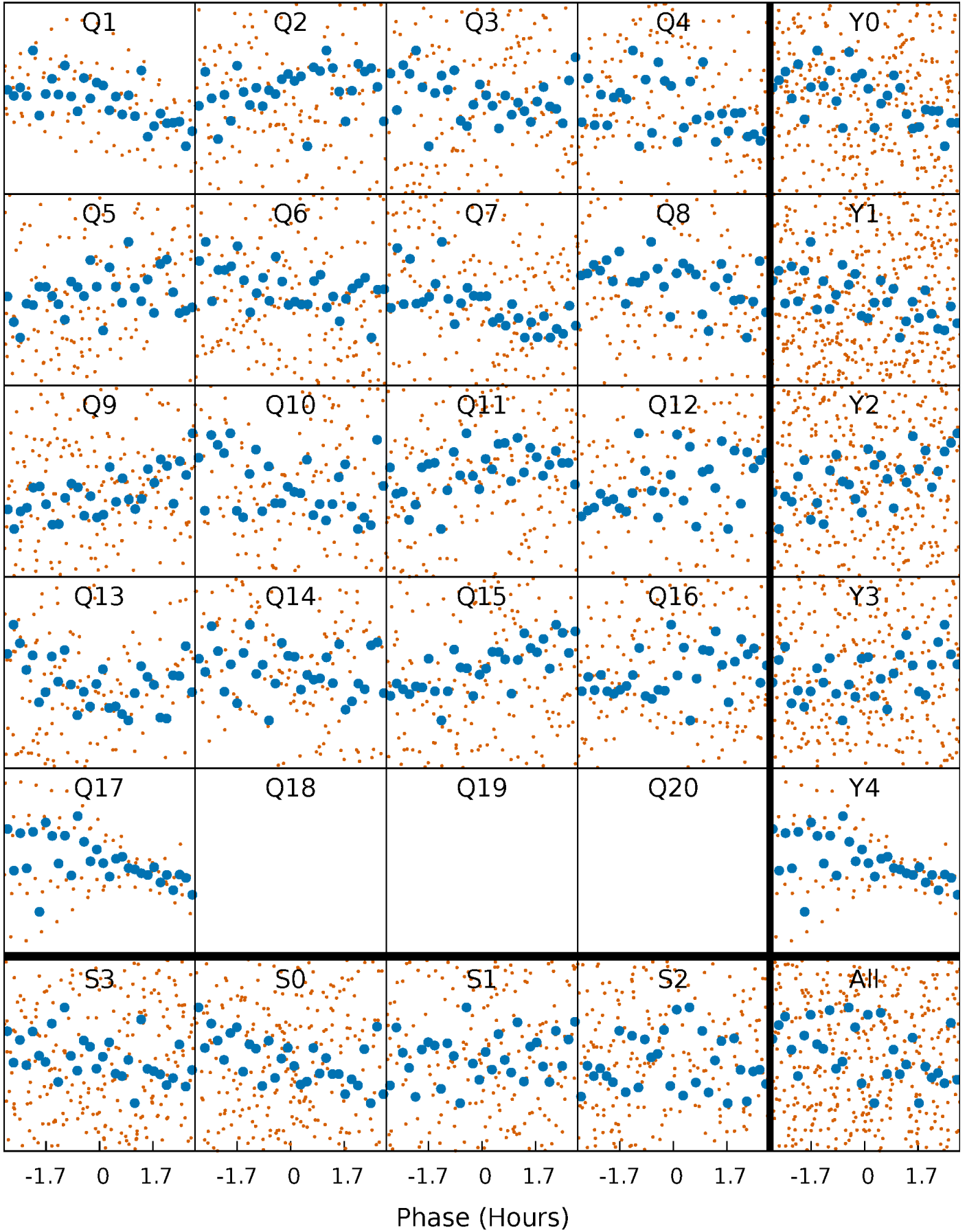


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

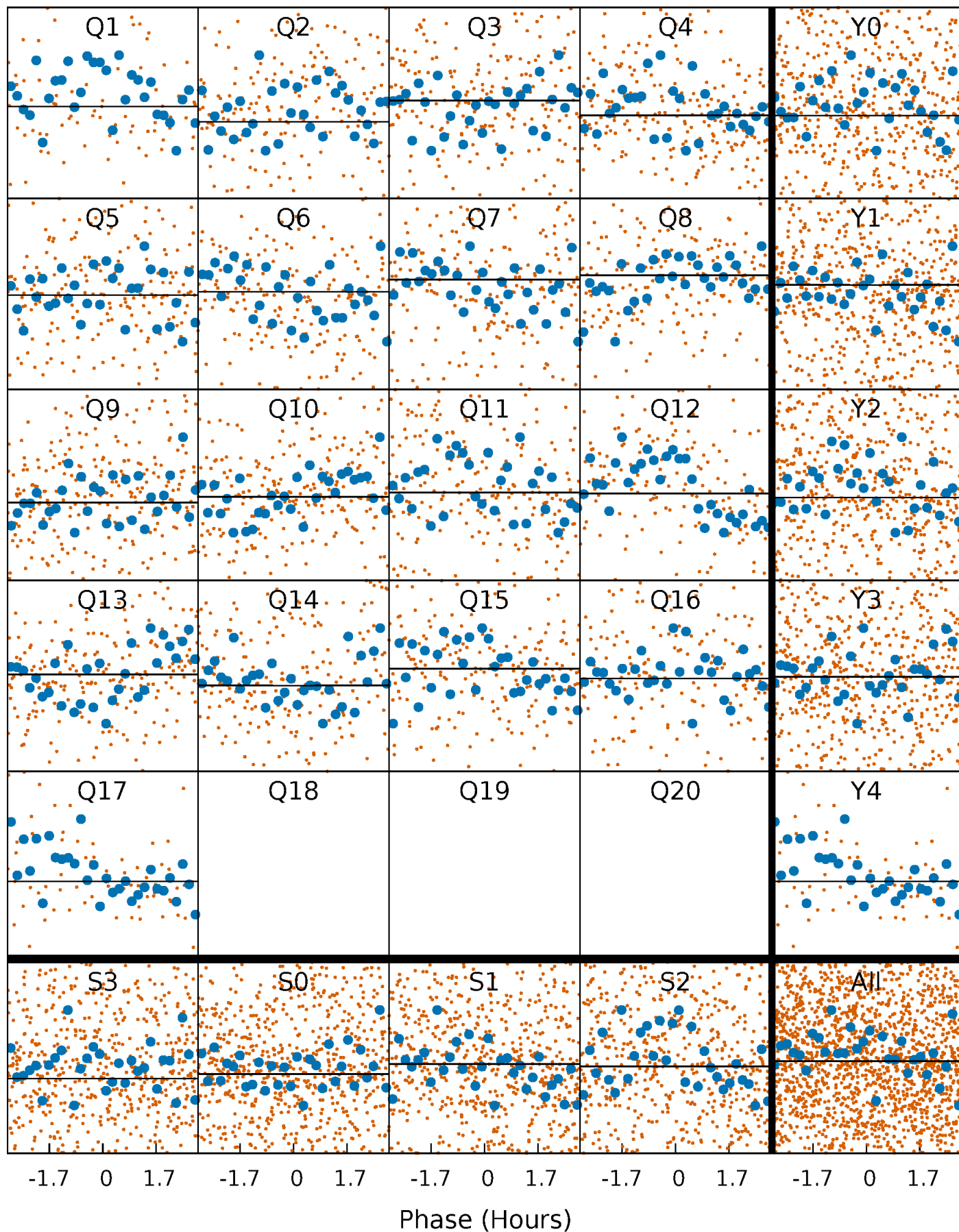
TCE 008264706-01 P= 4.628970 Days  $T_0=135.639509$  (BKJD)





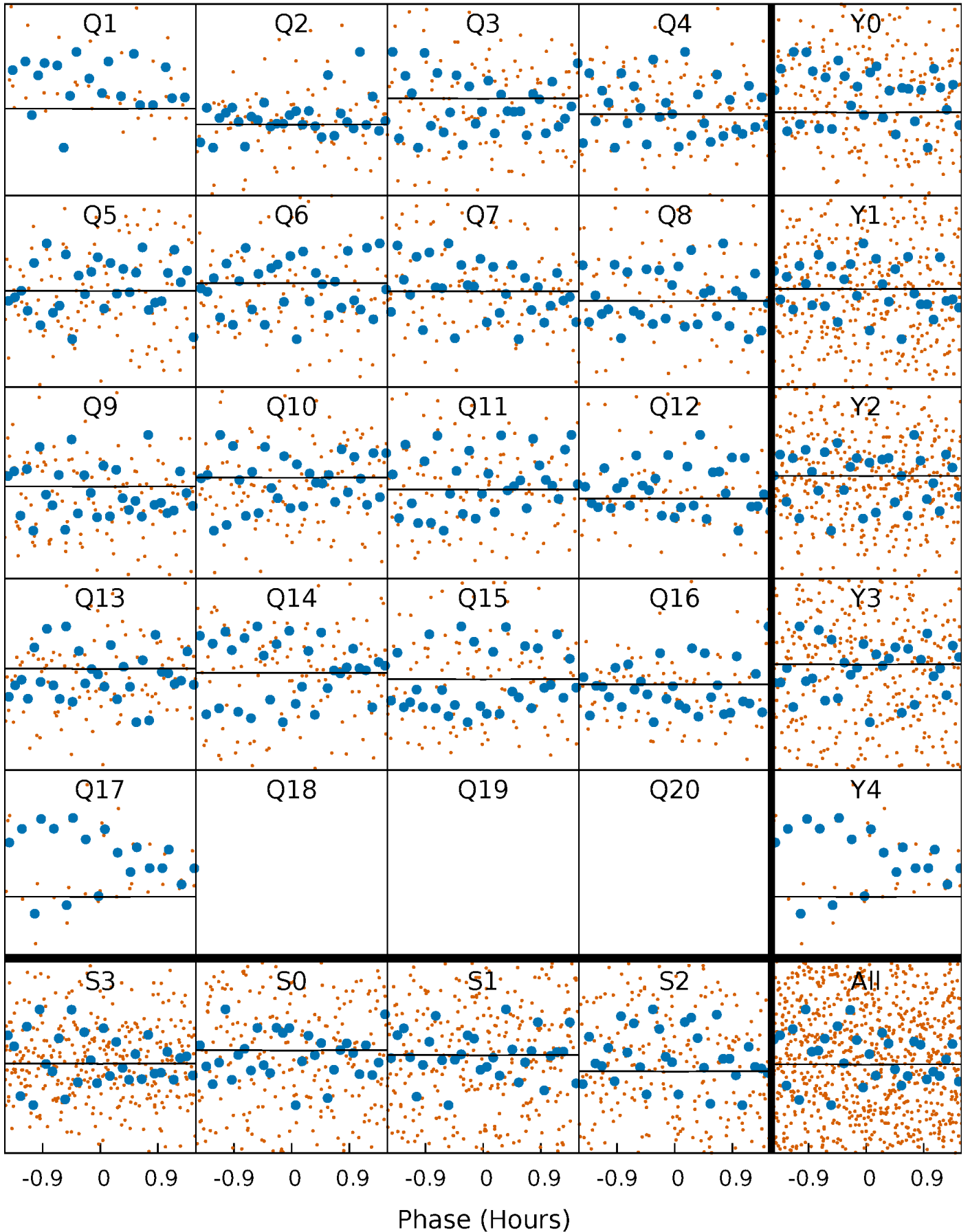
# DV Quarter-Phased Transit Curves

TCE 008264706-01 P= 4.628970 Days  $T_0=135.639509$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

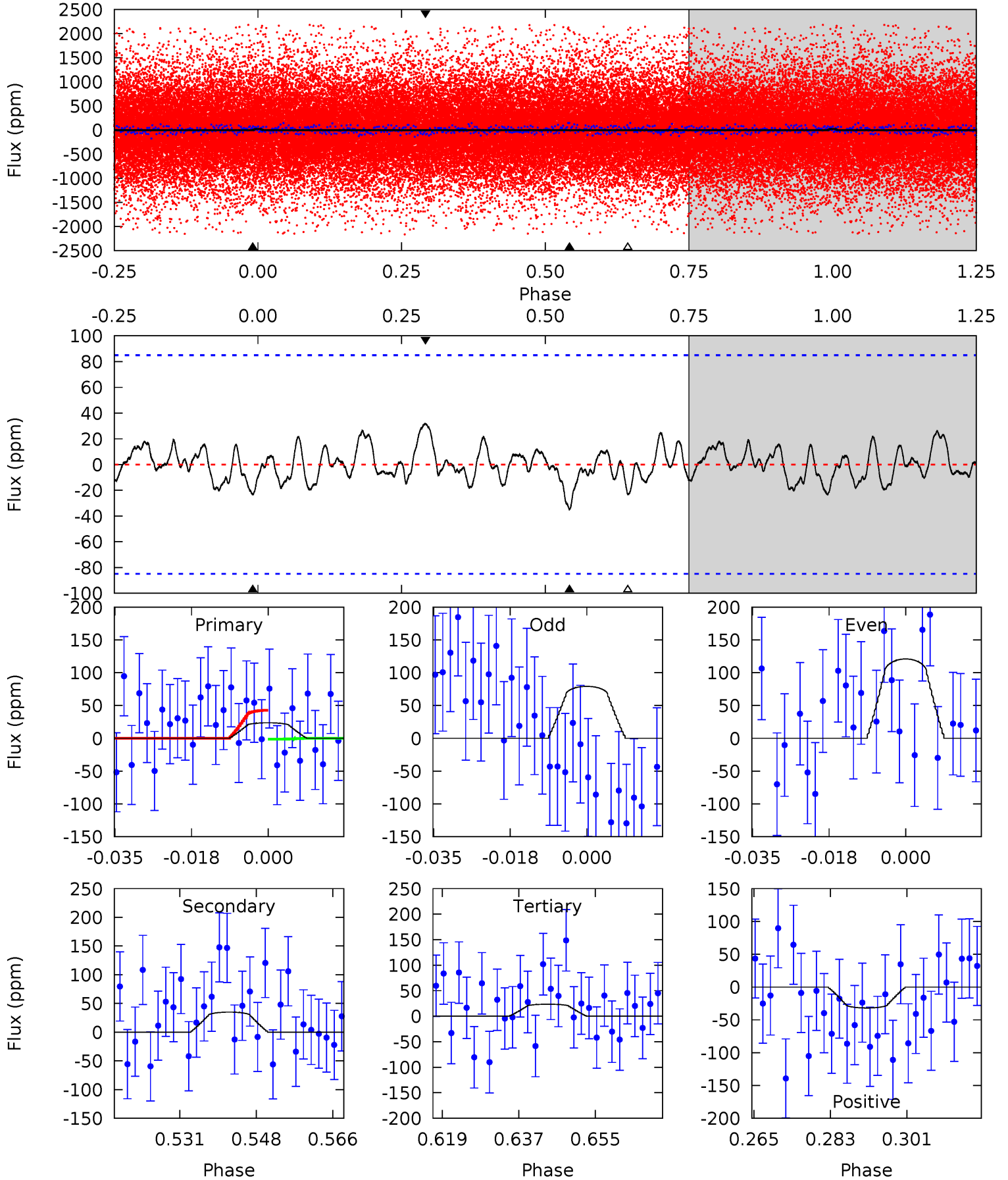
TCE 008264706-01 P= 4.628942 Days  $T_0=135.634089$  (BKJD)



# DV Model-Shift Uniqueness Test

008264706-01, P = 4.628970 Days, E = 131.010539 Days

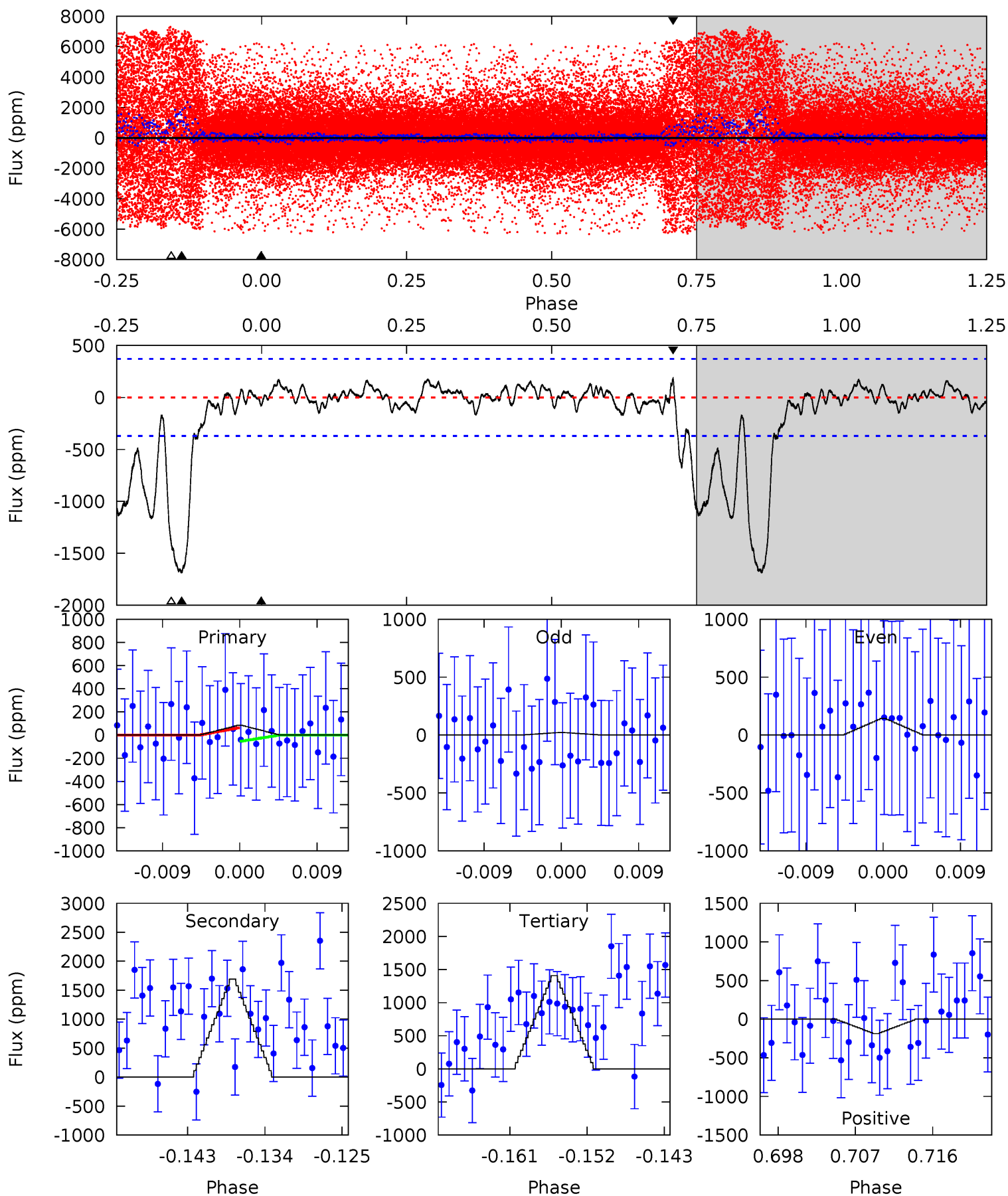
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.37	2.02	1.36	1.85	4.92	2.37	0.64	0.00	-0.48	0.66	0.17	1.22	-45.0	0.48	1.20



# Alt Model-Shift Uniqueness Test

008264706-01, P = 4.628942 Days, E = 131.005147 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
1.14	23.0	19.2	2.54	5.05	2.61	3.81	-18.1	-1.40	3.85	20.5	0.84	1.98	0.10	0.05



### Stellar Parameters For KIC 008264706

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7364^{+231}_{-334}$	$4.231^{+0.087}_{-0.218}$	$-0.060^{+0.200}_{-0.350}$	$1.550^{+0.533}_{-0.229}$	$1.488^{+0.219}_{-0.219}$	$0.563^{+0.228}_{-0.309}$
	+3%/-5%	+2%/-5%	+333%/-583%	+34%/-15%	+15%/-15%	+41%/-55%
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 008264706-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-35 \pm 17$	$3.90^{+4.87}_{-2.68}$	$2313^{+189}_{-145}$	$3920^{+2591}_{-1183}$	$4.195^{+40.967}_{-3.515}$
Alt.	$-1691 \pm 73$	$4.47^{+5.02}_{-3.24}$	$2295^{+185}_{-141}$	$10023^{+28201}_{-3719}$	$178^{+2156}_{-138}$

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



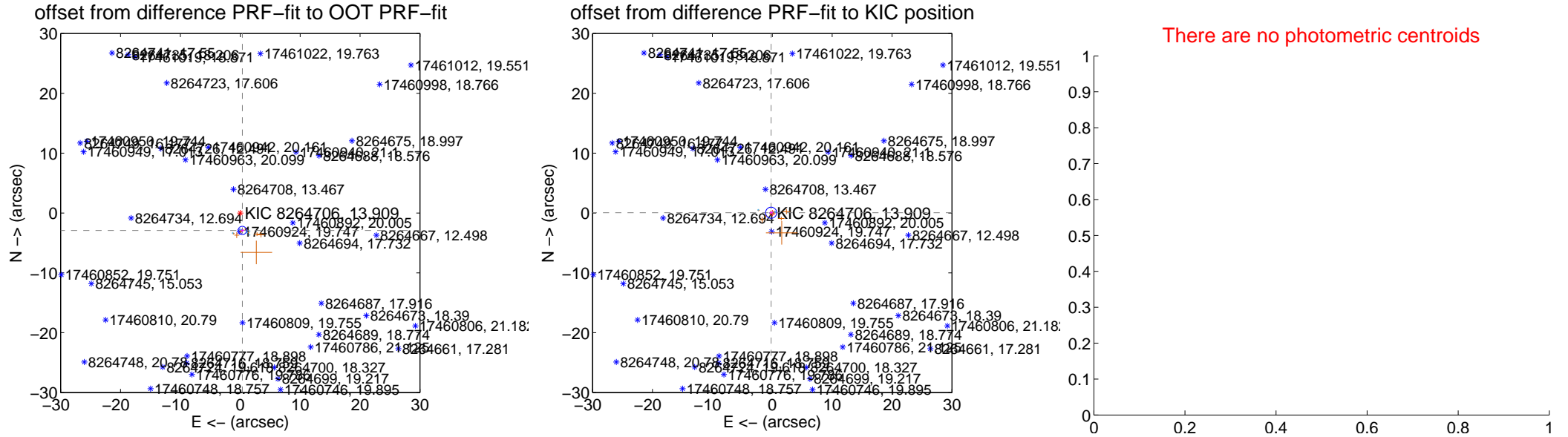
## DV Centroid Data

Supplemental centroid analysis for 008264706-01. Kepler magnitude: 13.91. Transit SNR 0.01

There are 6 quarters with good PRF difference image offsets

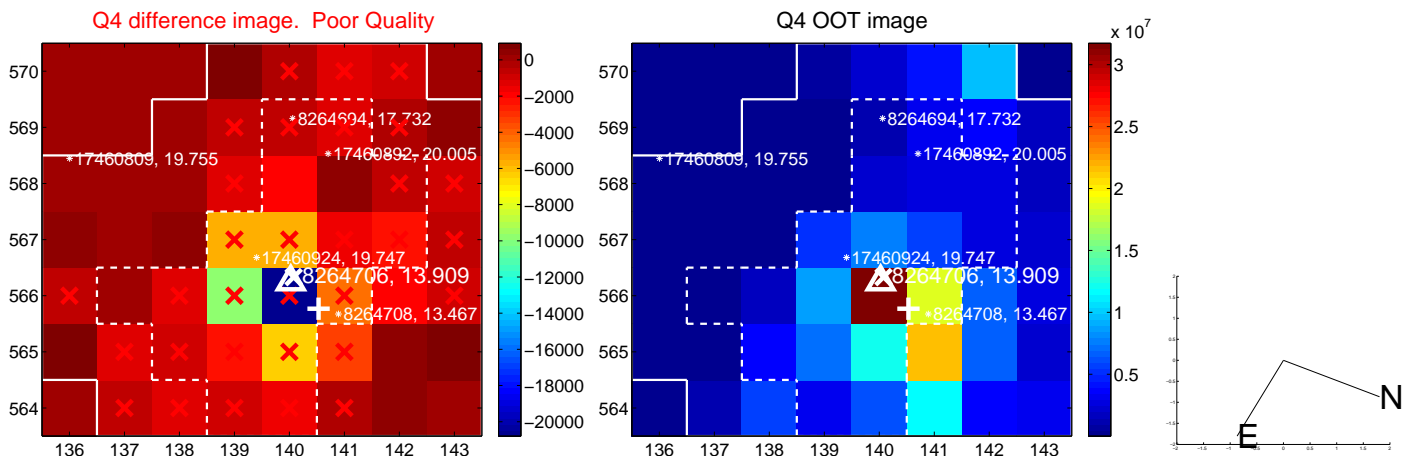
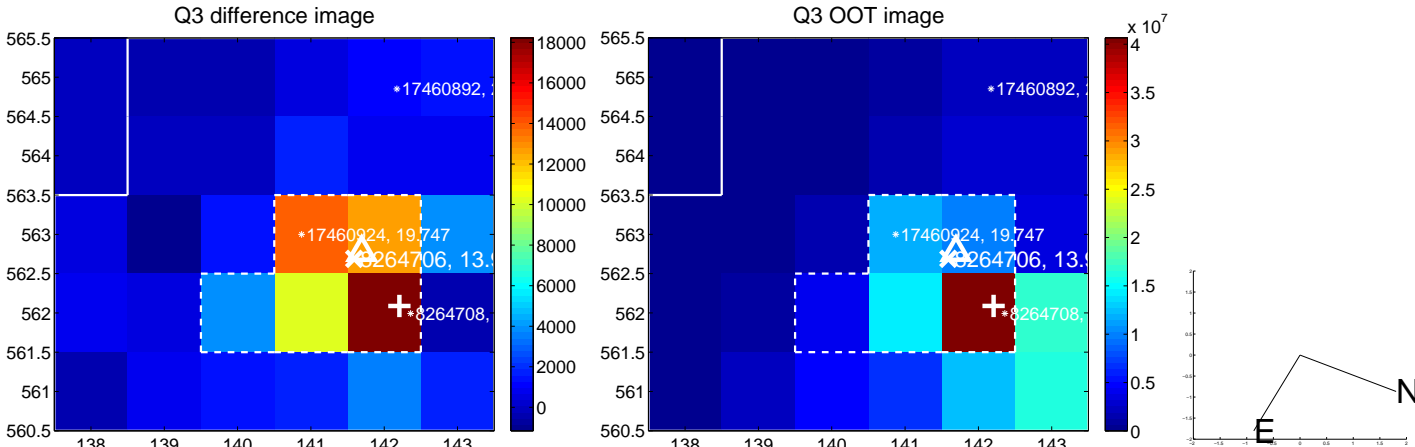
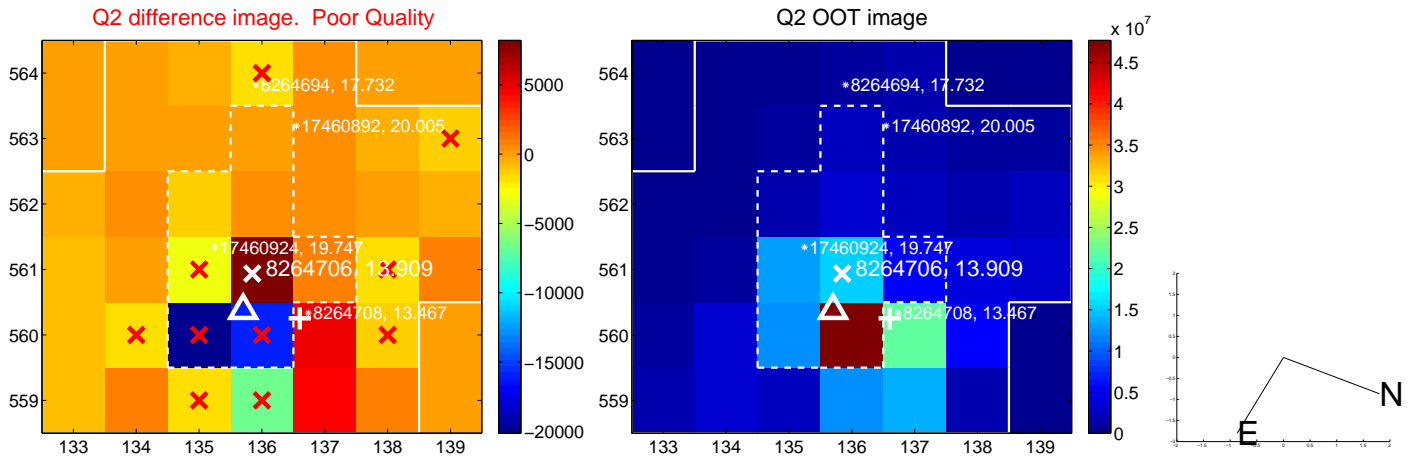
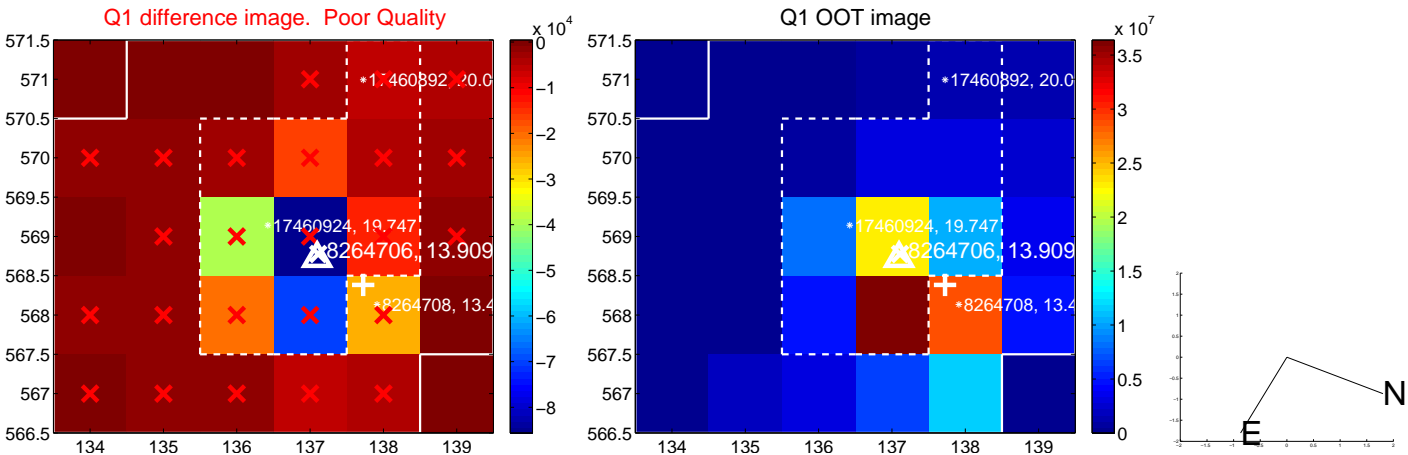
The OOT PRF centroid is offset from the target star catalog position by about 2.83 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.941 \pm 0.232$	$12.66$	$-0.341 \pm 0.303$	$-2.921 \pm 0.219$
PRF-fit source offset from KIC position	$0.192 \pm 0.309$	$0.62$	$0.186 \pm 0.295$	$0.048 \pm 0.226$
photometric centroid source offset	—	—	—	—

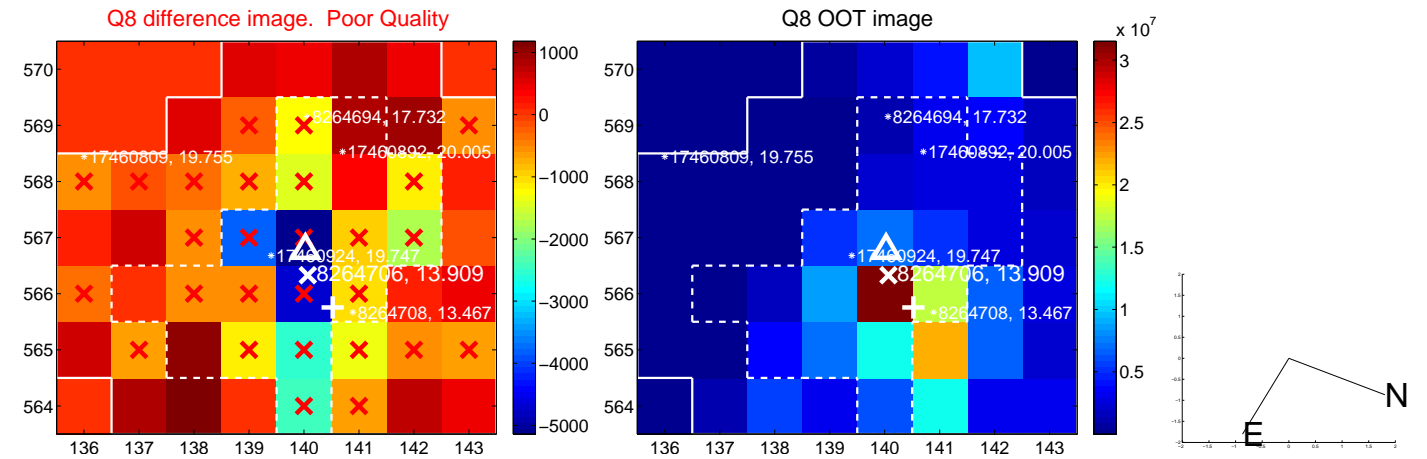
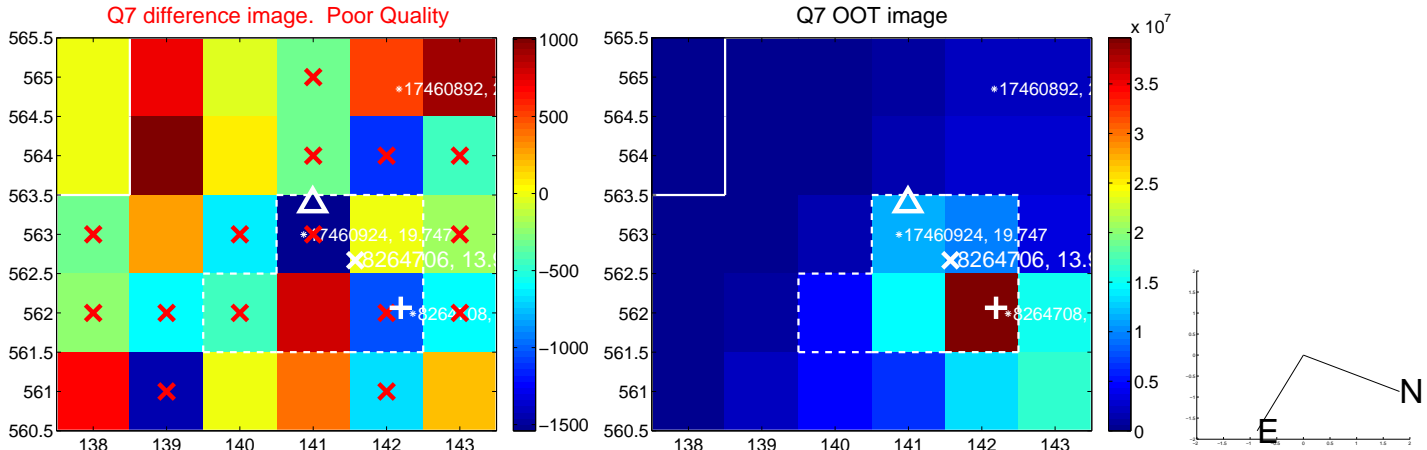
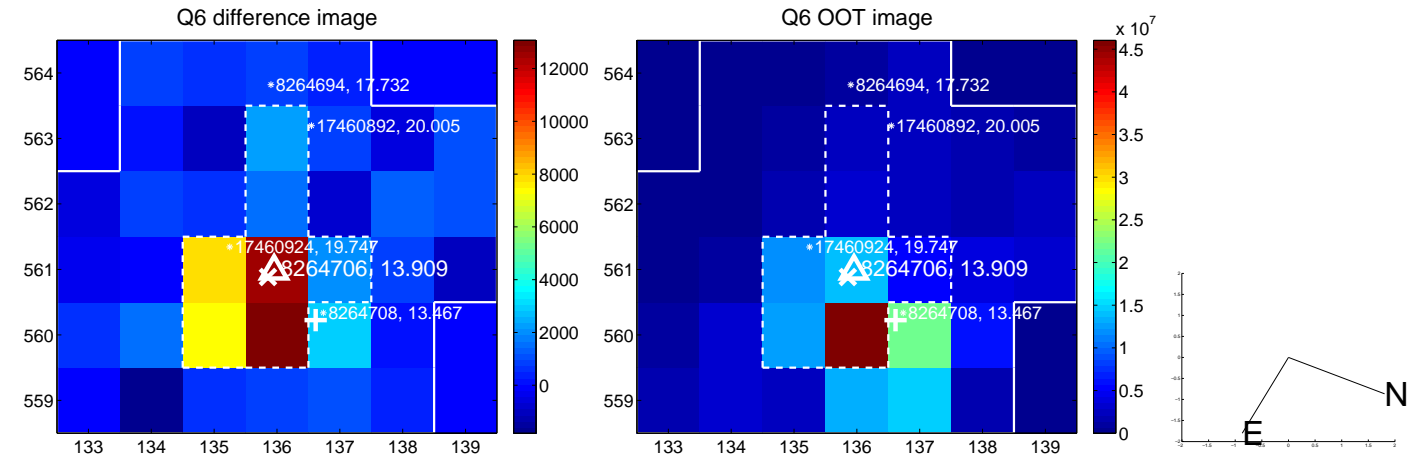
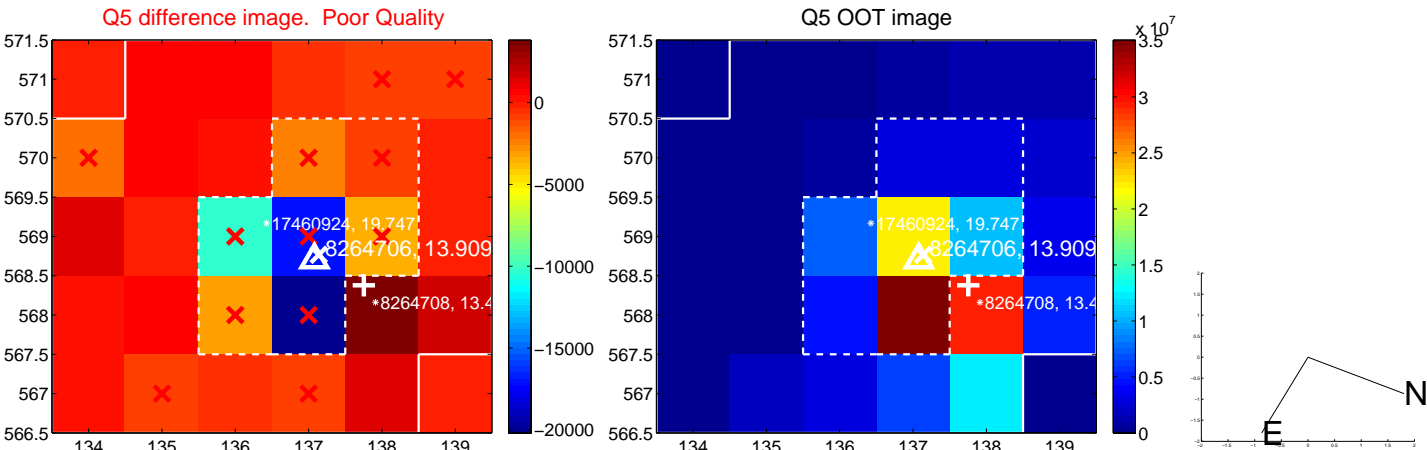


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

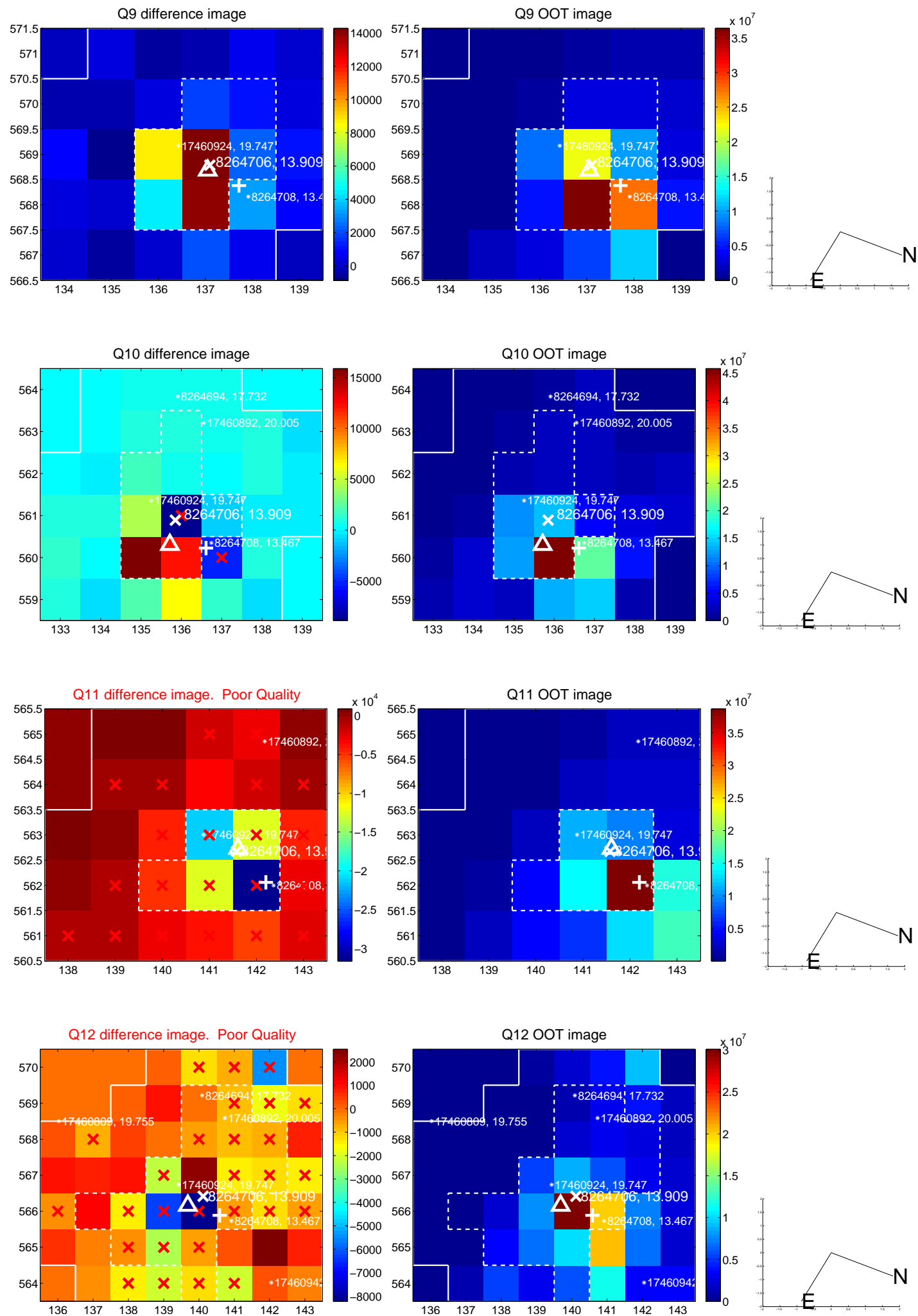
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



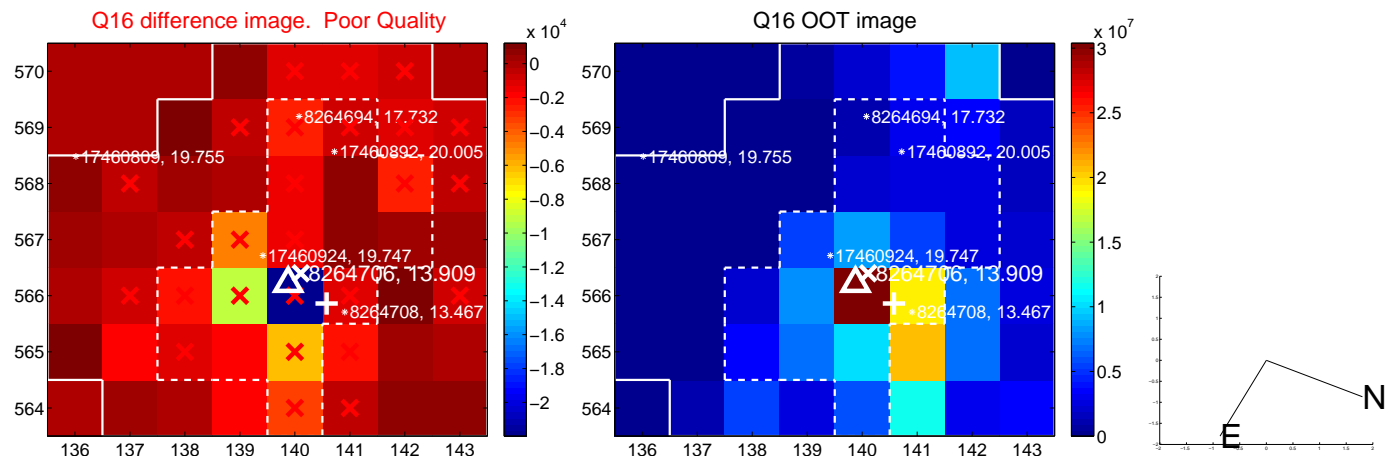
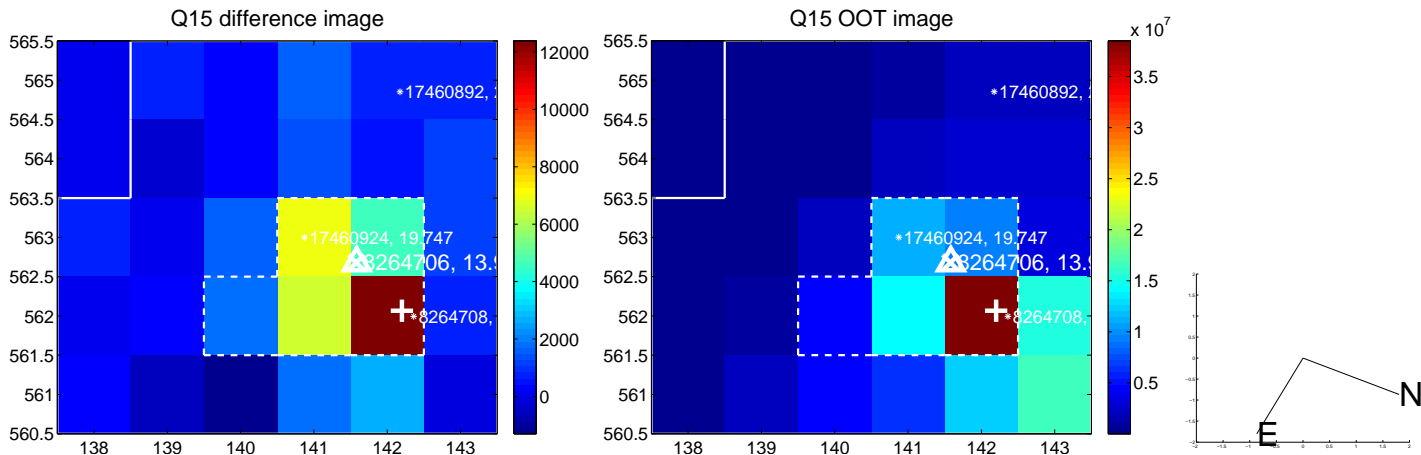
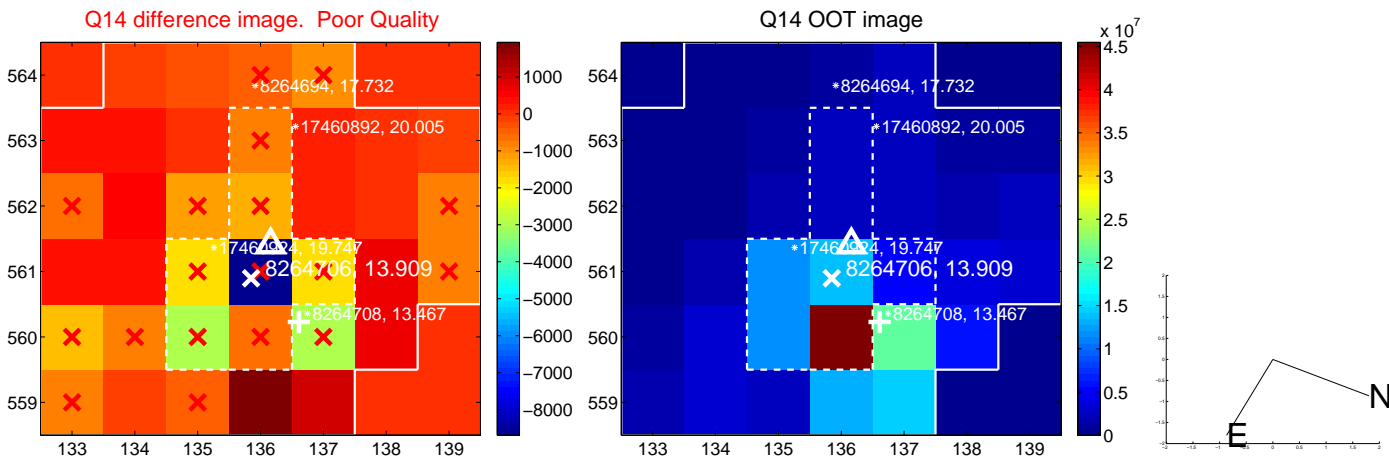
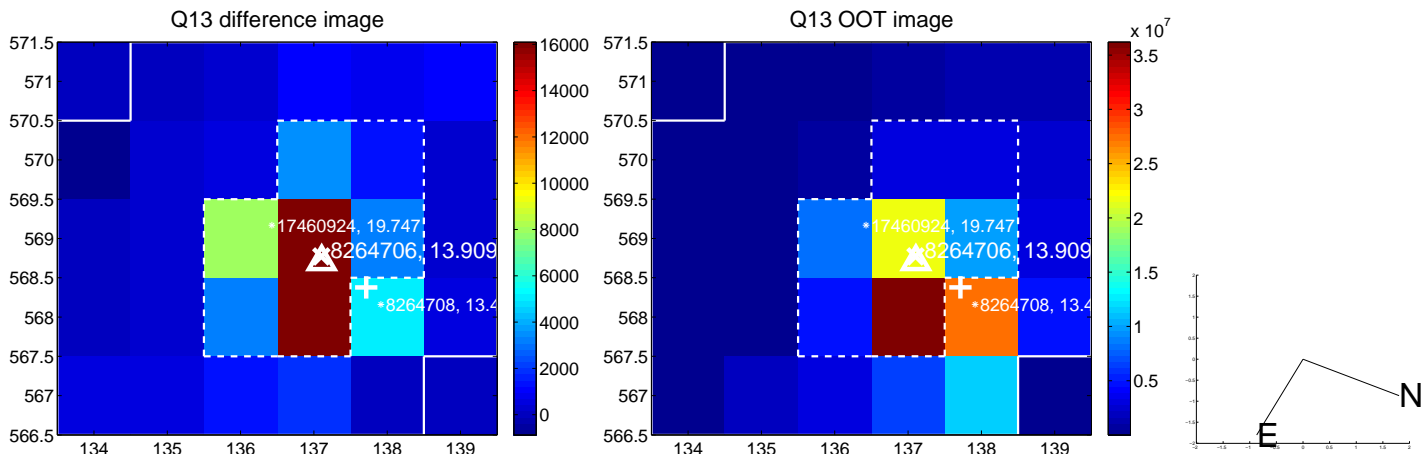
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

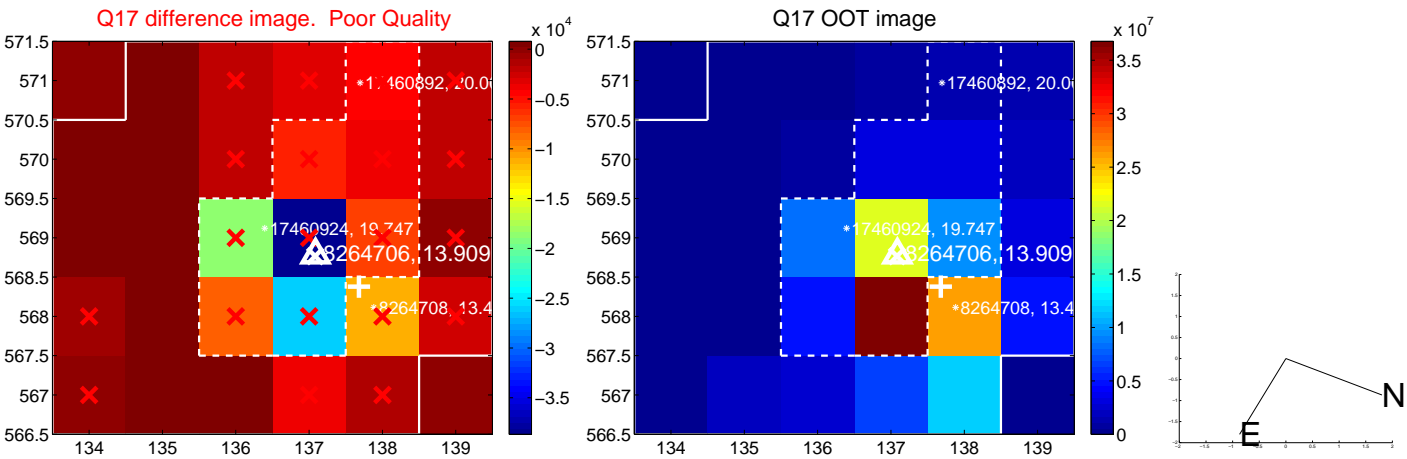


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





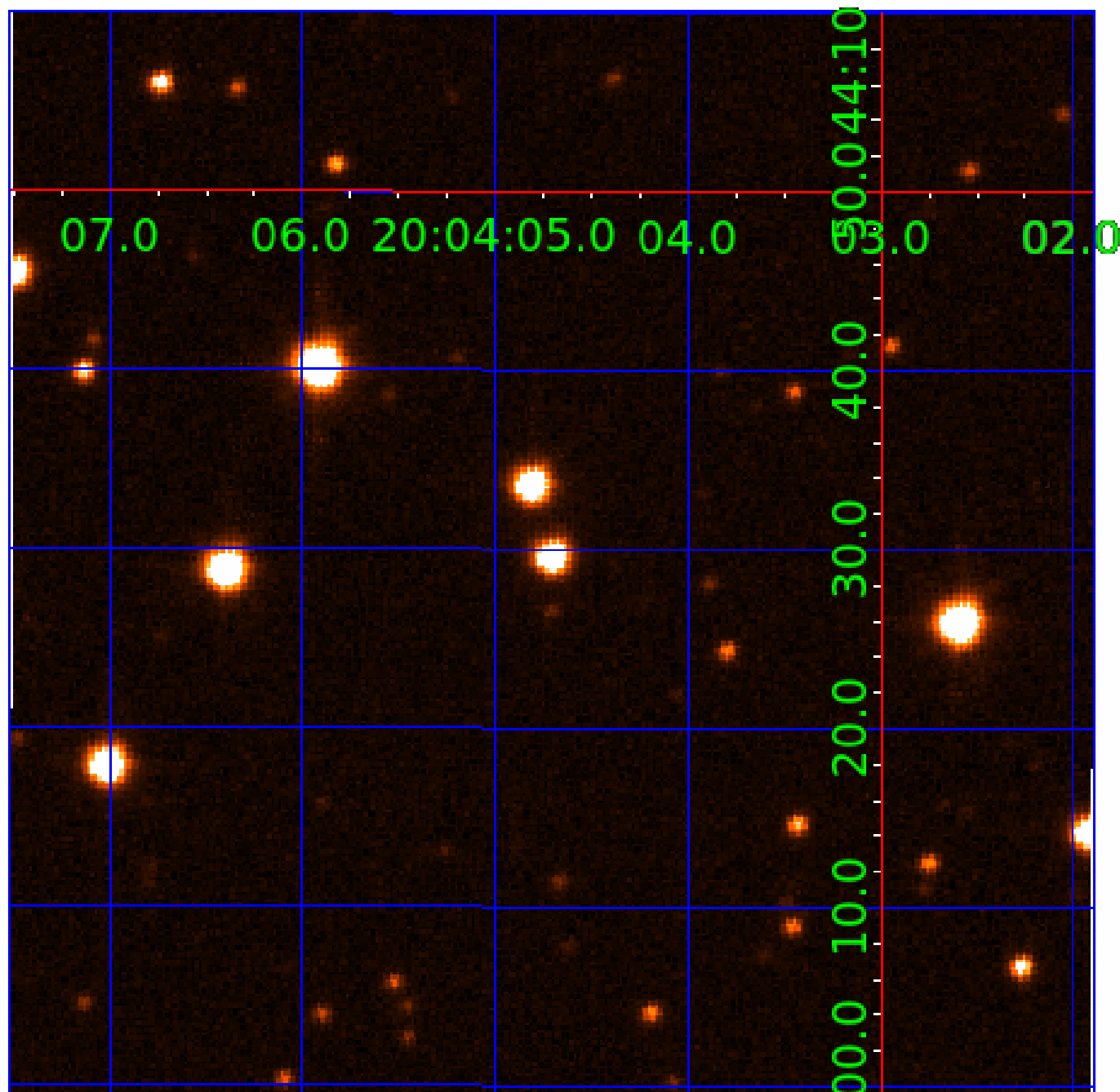
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



# KIC 008264706

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008264706-01	OBS	No	4.628970	135.639509	0.1	1.520	9.6	0.0	1.55	7364	0.06	1640.31
008264706-02	OBS	No	2.136003	131.805378	122.8	7.071	10.3	8.1	1.55	7364	1.99	4600.11

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008264706-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS
008264706-02	OBS	FP	0.00	1	0	0	0	LPP_DV—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.

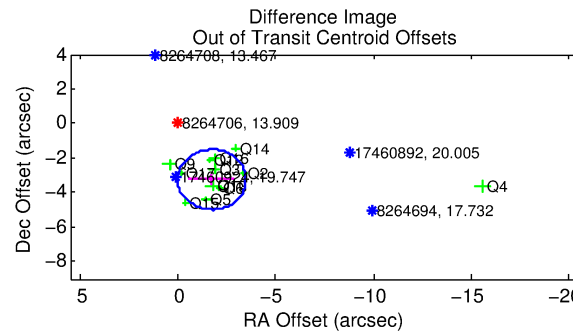
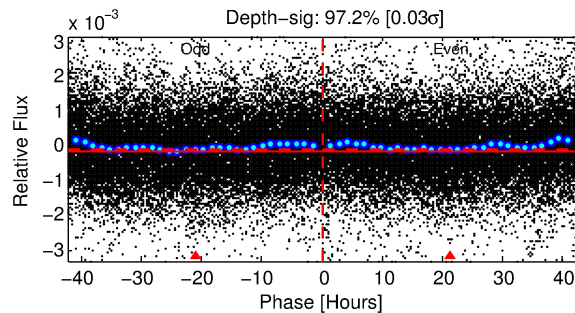
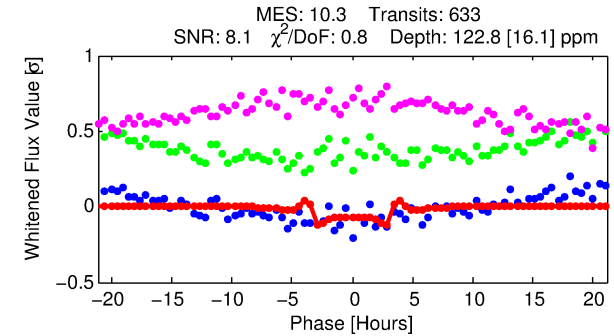
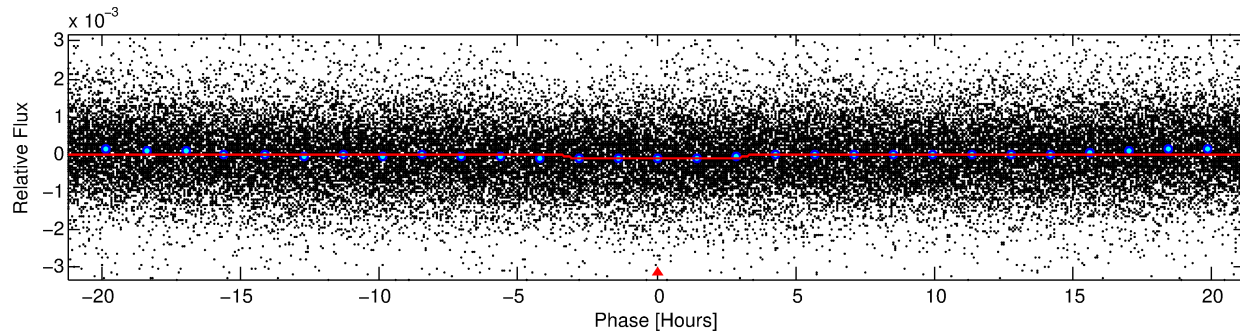
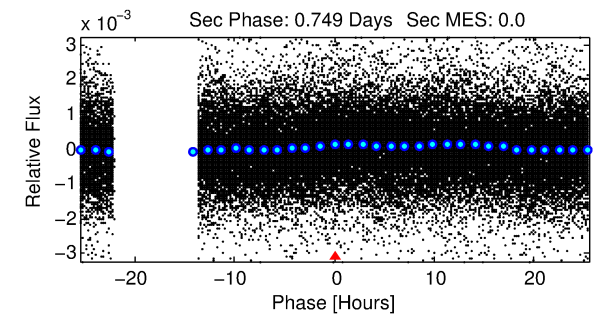
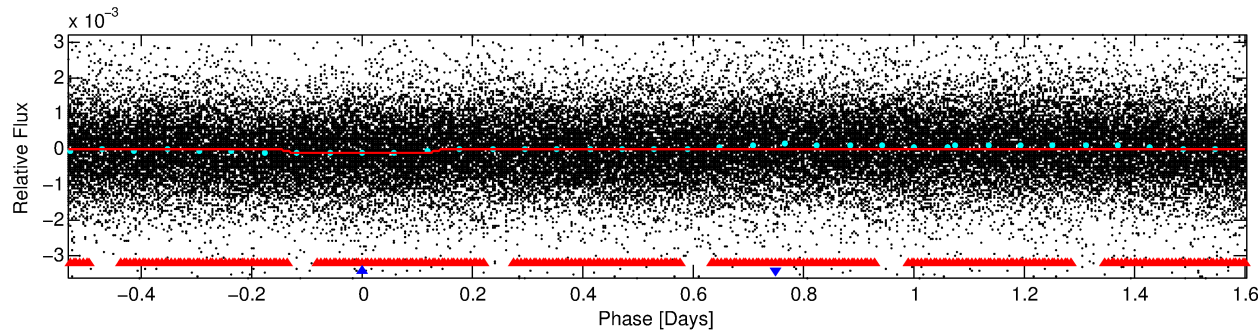
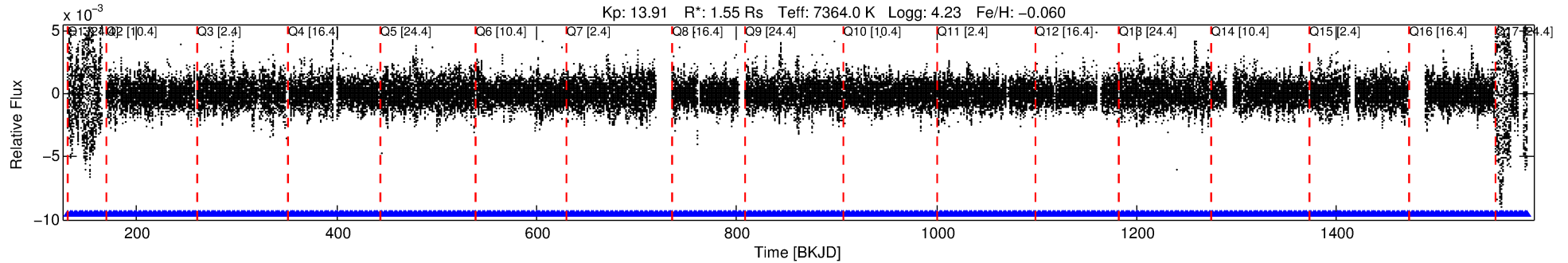
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008264706-02

No Significant Match Found

# DV One-Page Summary

KIC: 8264706 Candidate: 2 of 2 Period: 2.136 d



## DV Fit Results:

Period = 2.13600 [0.00002] d  
Epoch = 131.8054 [0.0032] BKJD  
Rp/R\* = 0.0117 [0.0013]  
a/R\* = 1.43 [0.40]  
b = 0.90 [0.12]  
Seff = 4600.11 [2044.10]  
Teff = 2100 [233] K  
Rp = 1.99 [0.72] Re  
a = 0.0371 [0.0105] AU  
Ag = N/A  
Teffp = N/A

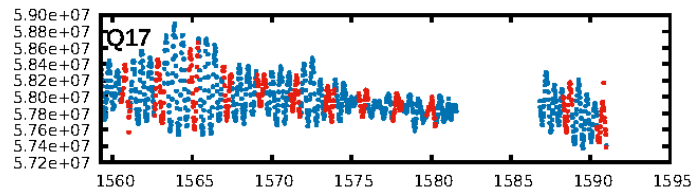
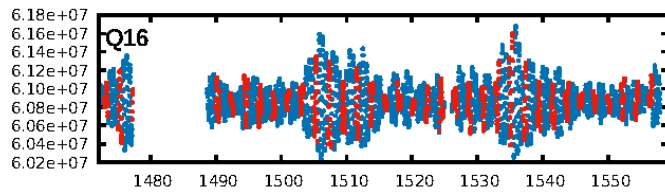
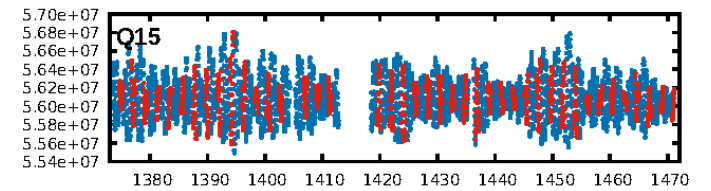
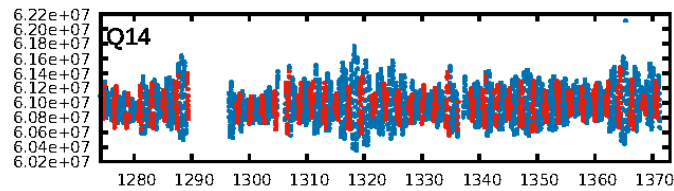
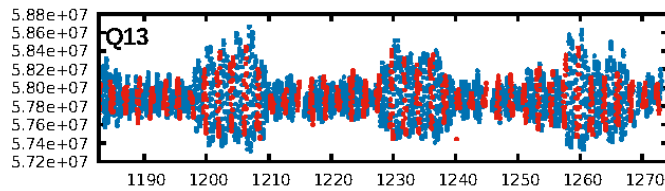
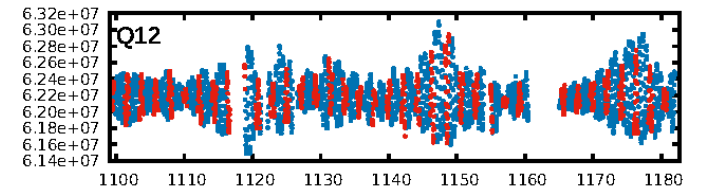
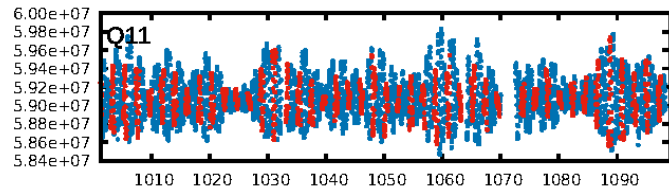
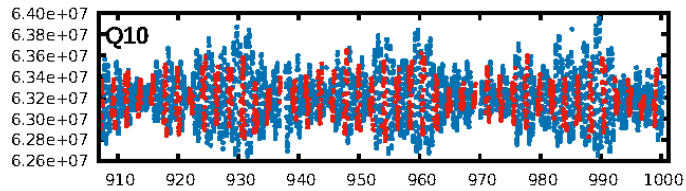
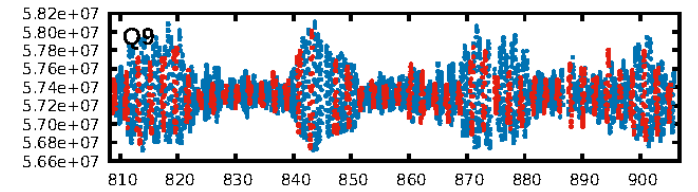
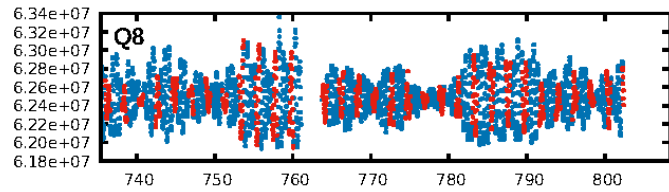
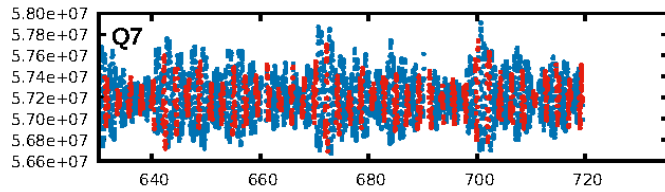
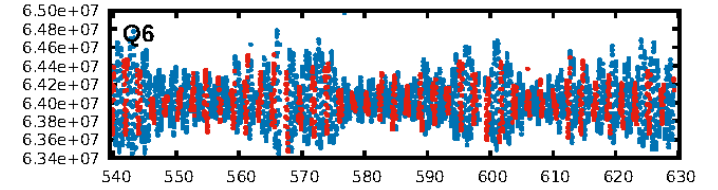
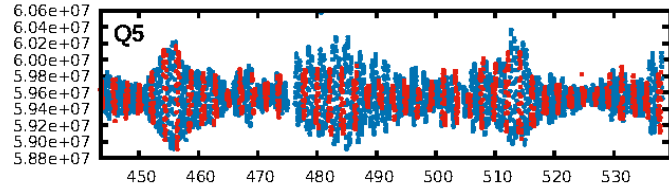
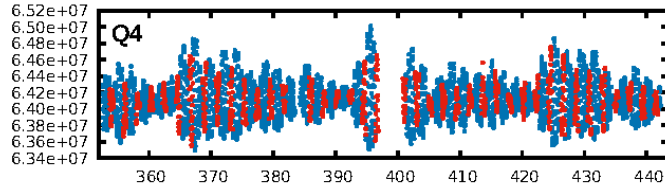
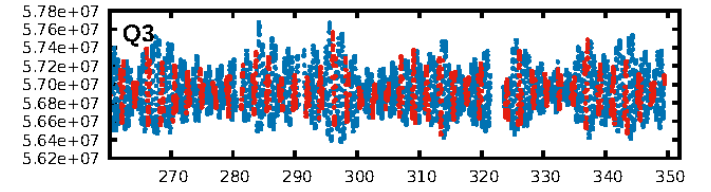
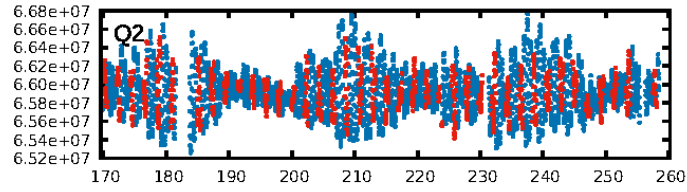
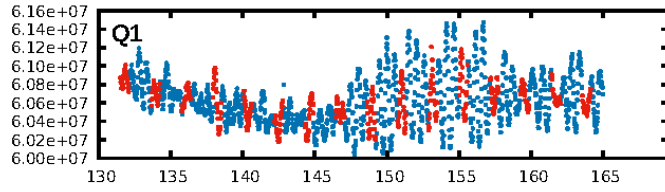
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [8.27σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.64e-29  
RollingBand-fgt: 1.00 [605/605]  
GhostDiagnostic-chr: 1.564  
Centroid-sig: 0.0%  
Centroid-so: 0.740 arcsec [2.74σ]  
OotOffset-rm: 3.684 arcsec [6.35σ]  
KicOffset-rm: 0.680 arcsec [0.65σ]  
OotOffset-st: 4/2/3/4 [13]  
KicOffset-st: 4/2/3/4 [13]  
DiffImageQuality-fgm: 0.77 [10/13]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:42:24 Z

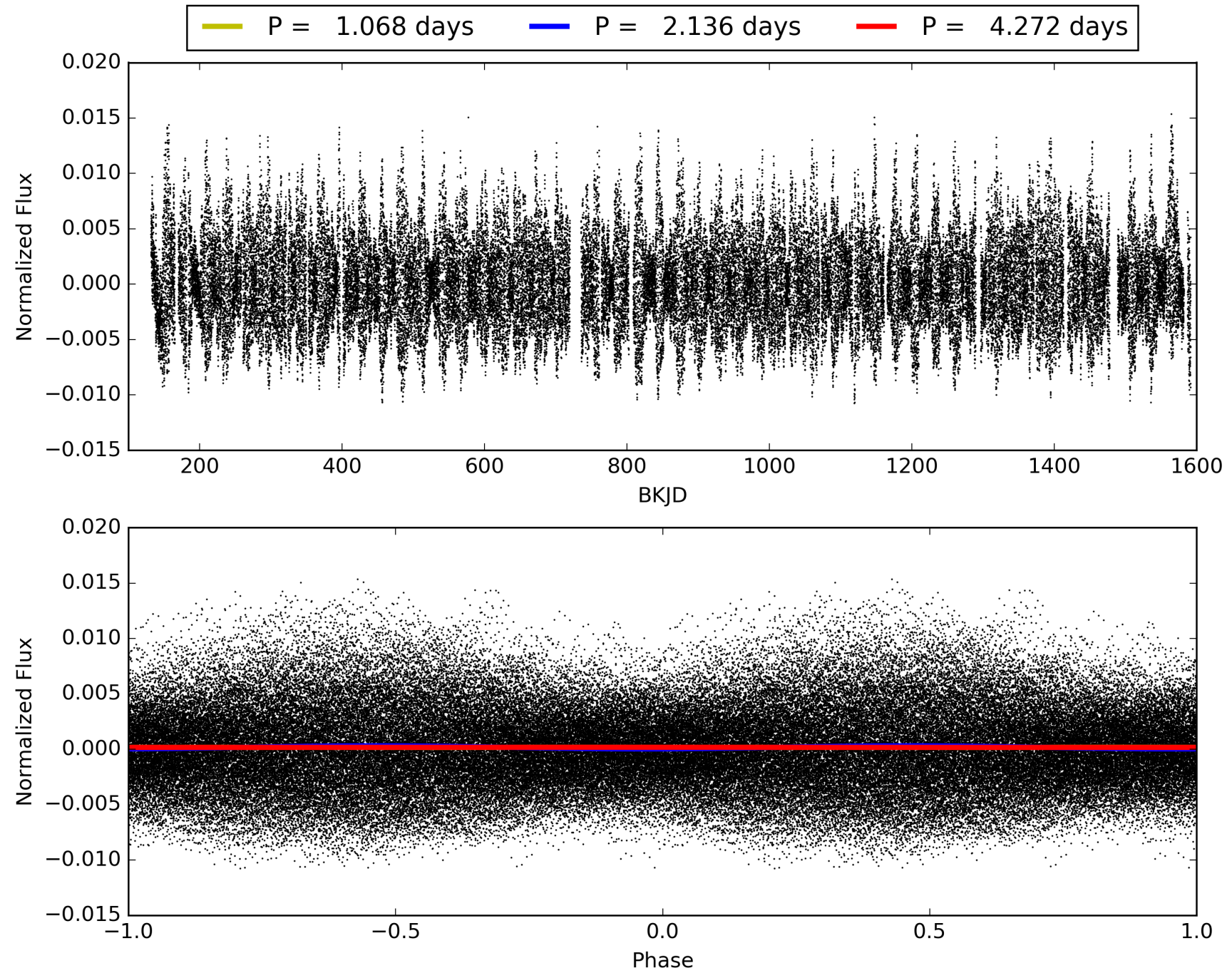
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008264706-02, PDC Light Curves



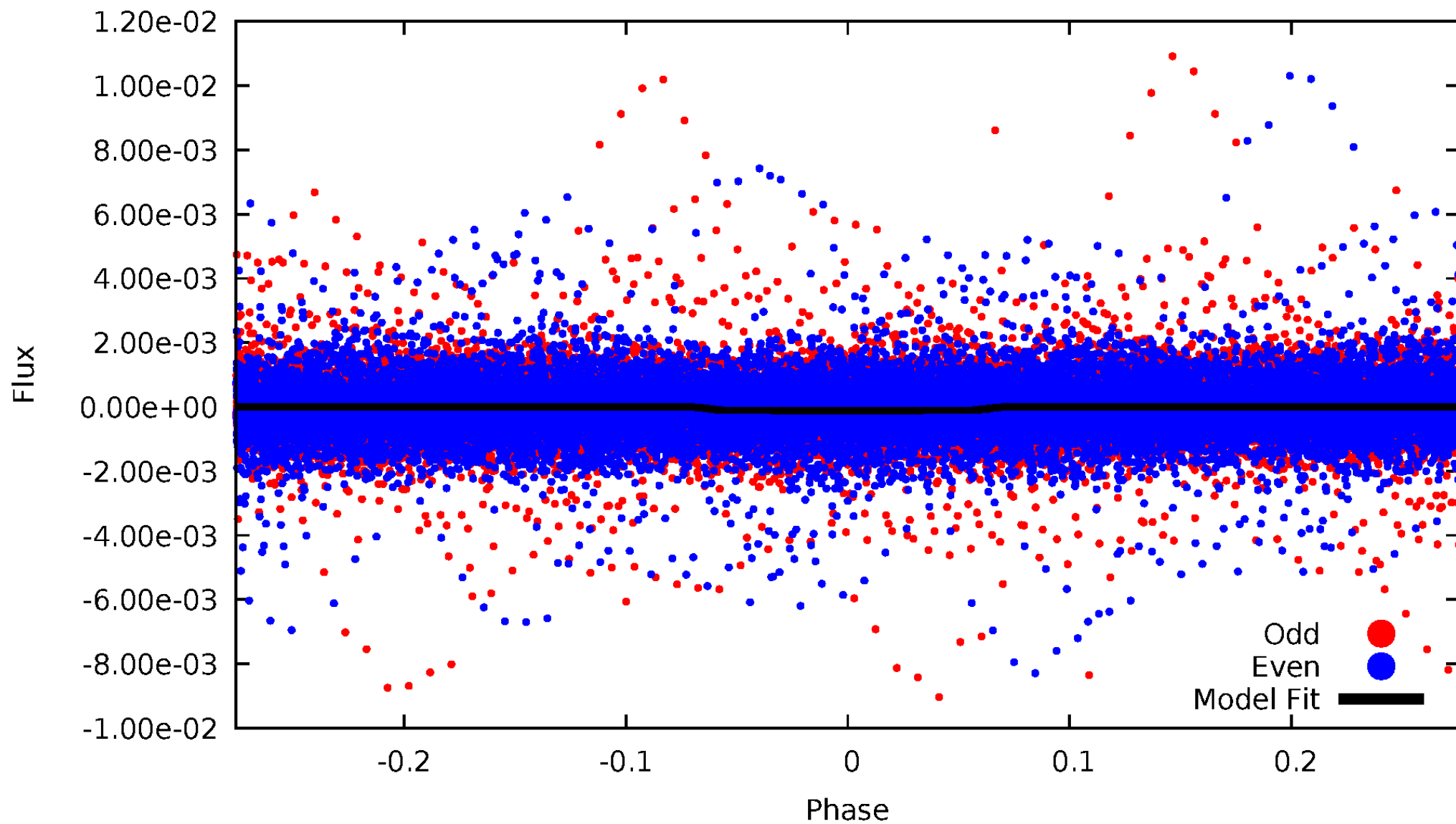


TCE 008264706-02



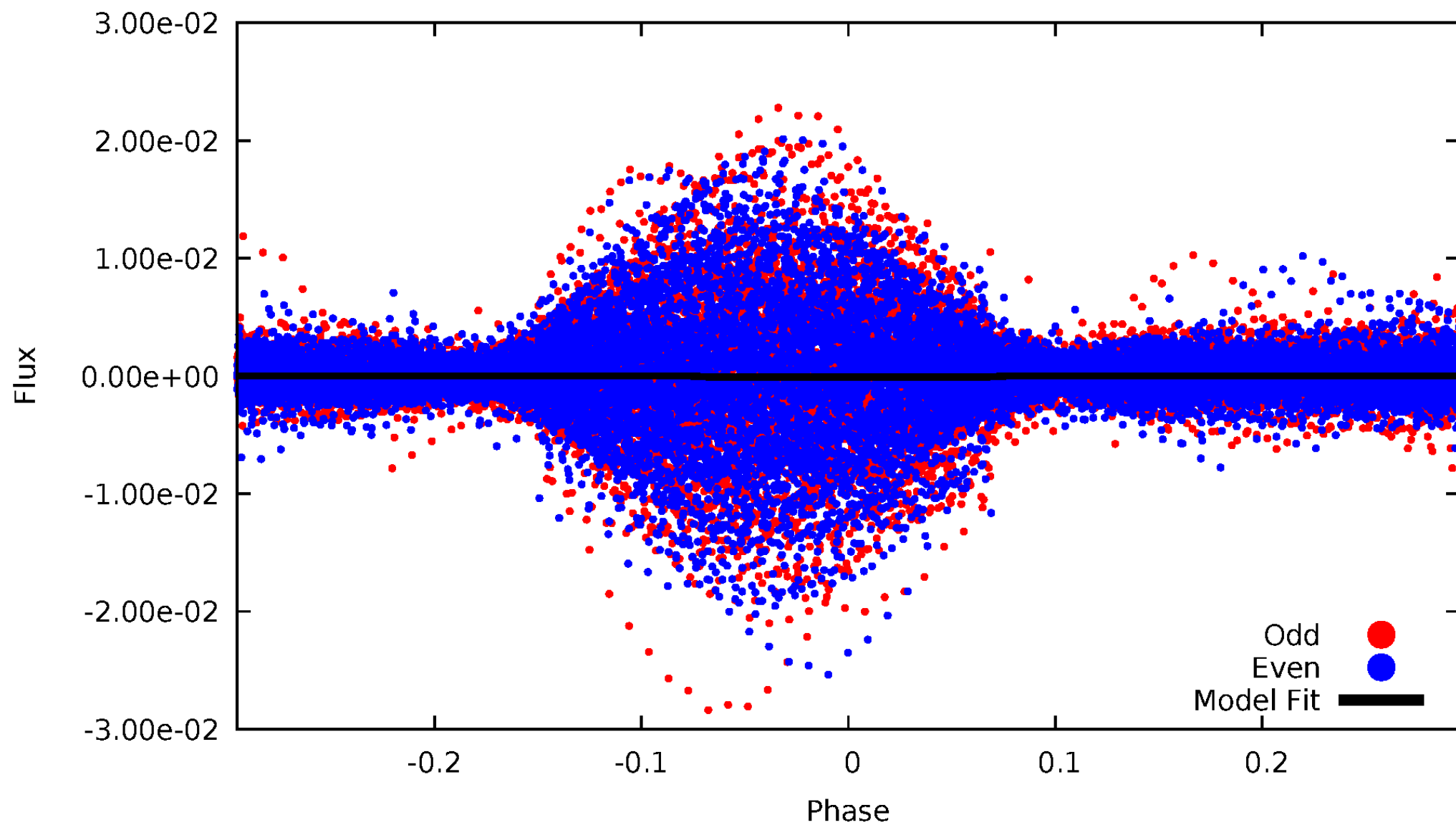
# DV Odd/Even

TCE 008264706-02



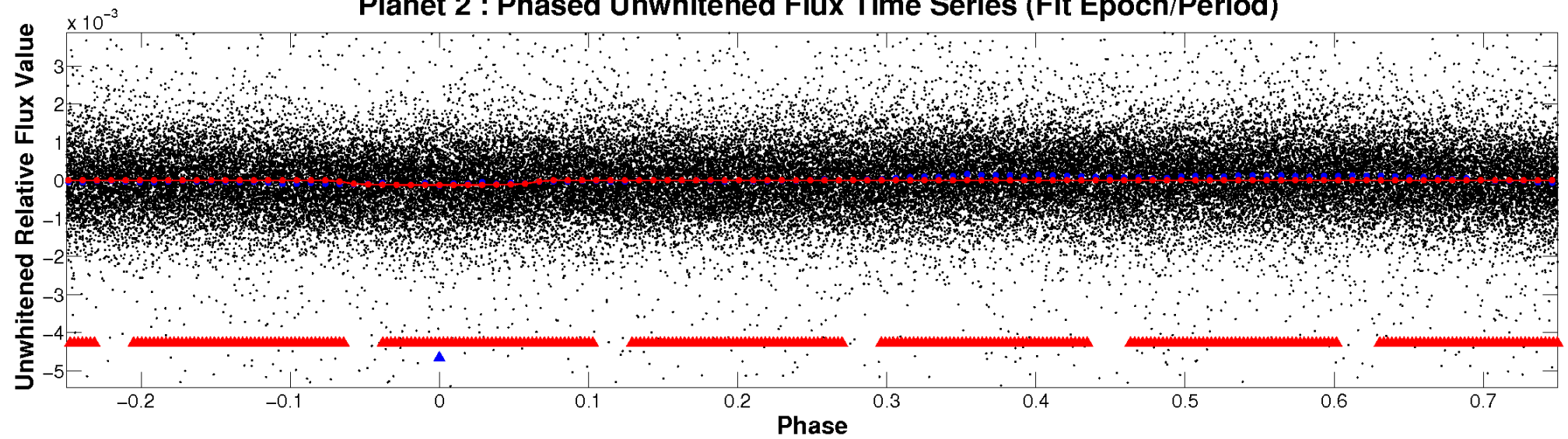
# ALT Odd/Even

TCE 008264706-02

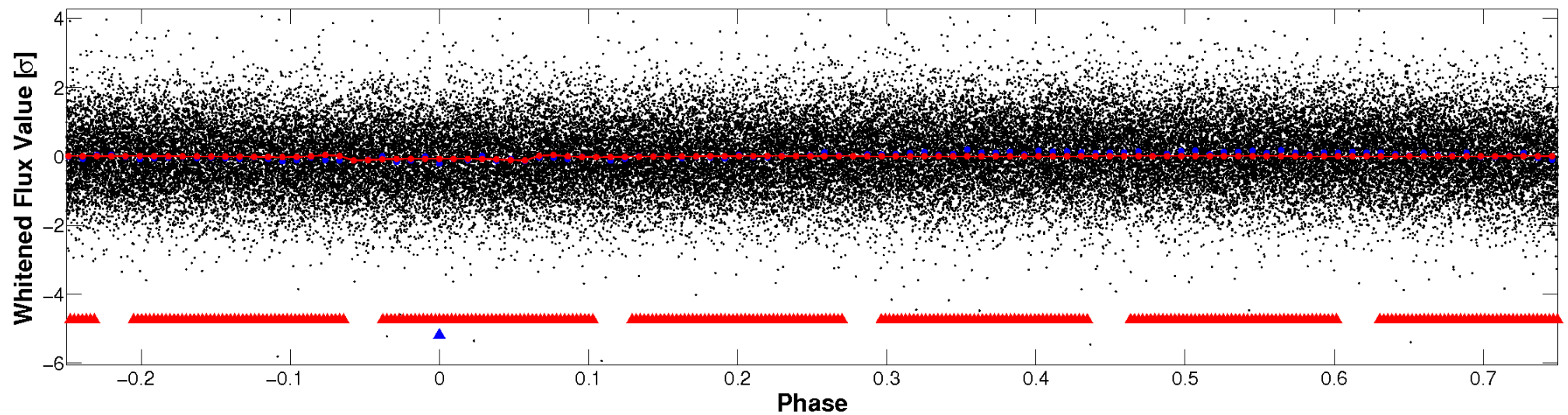


# Non-Whitened Vs. Whitened Light Curve

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



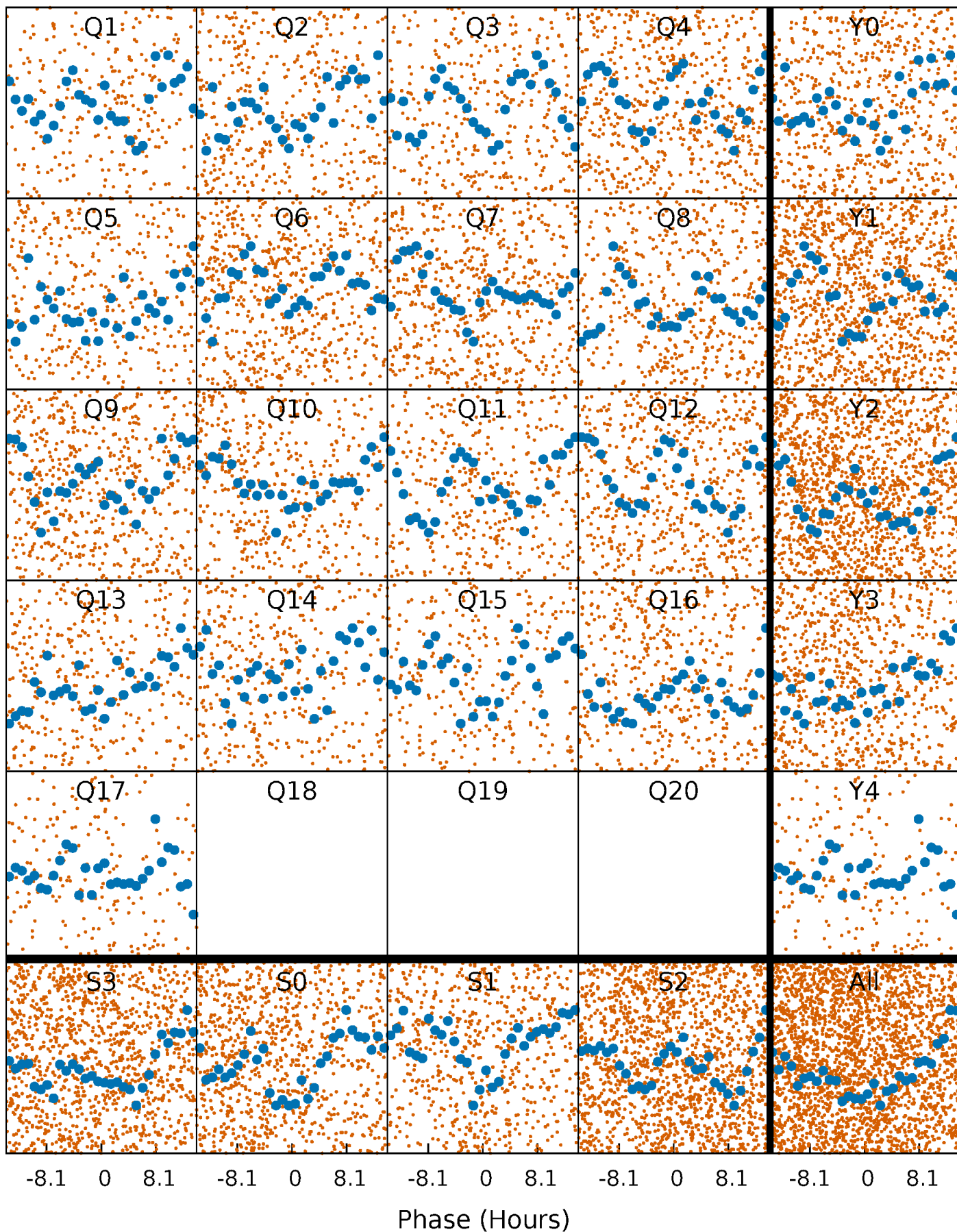
## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

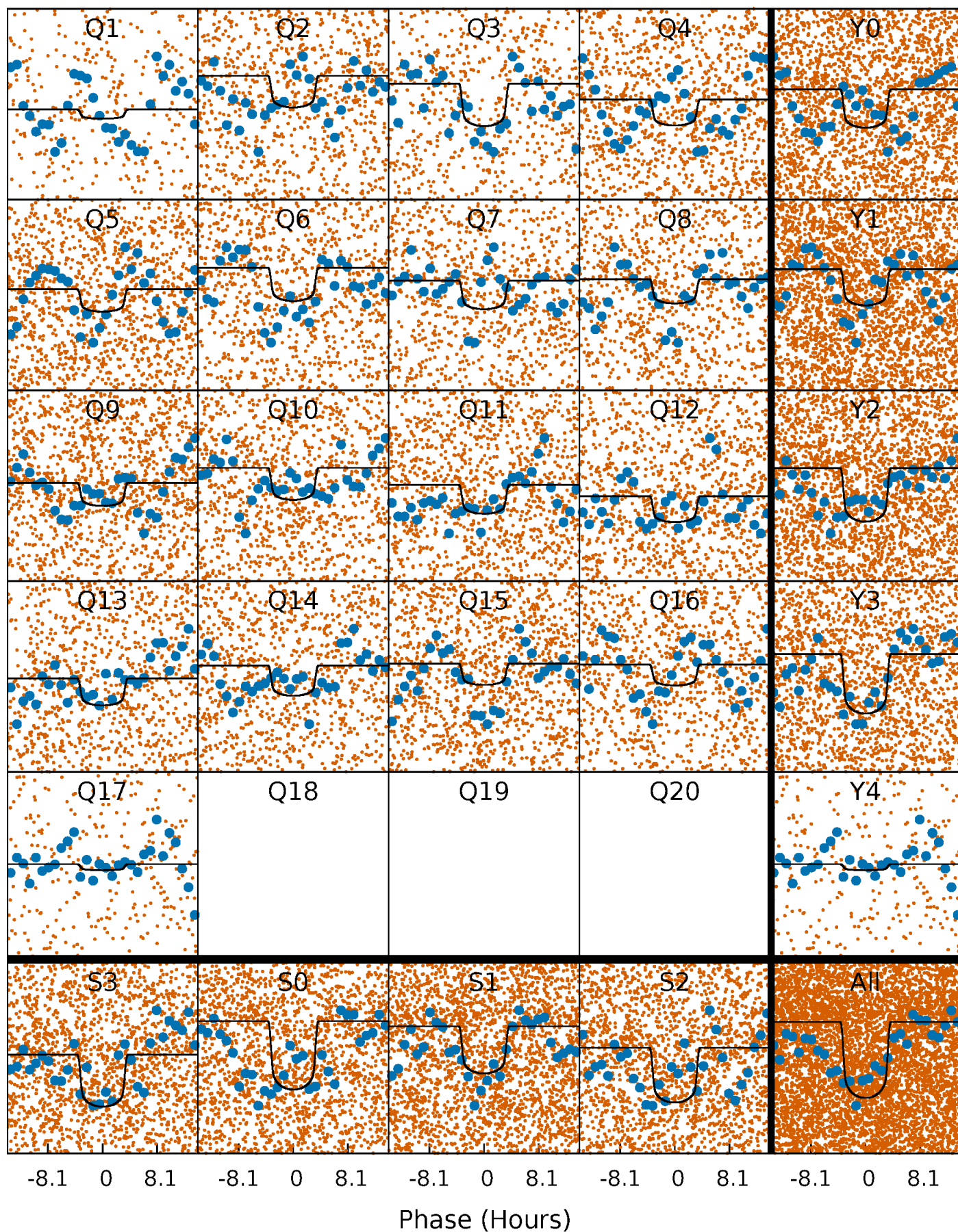
TCE 008264706-02   P= 2.136003 Days    $T_0=131.805378$  (BKJD)





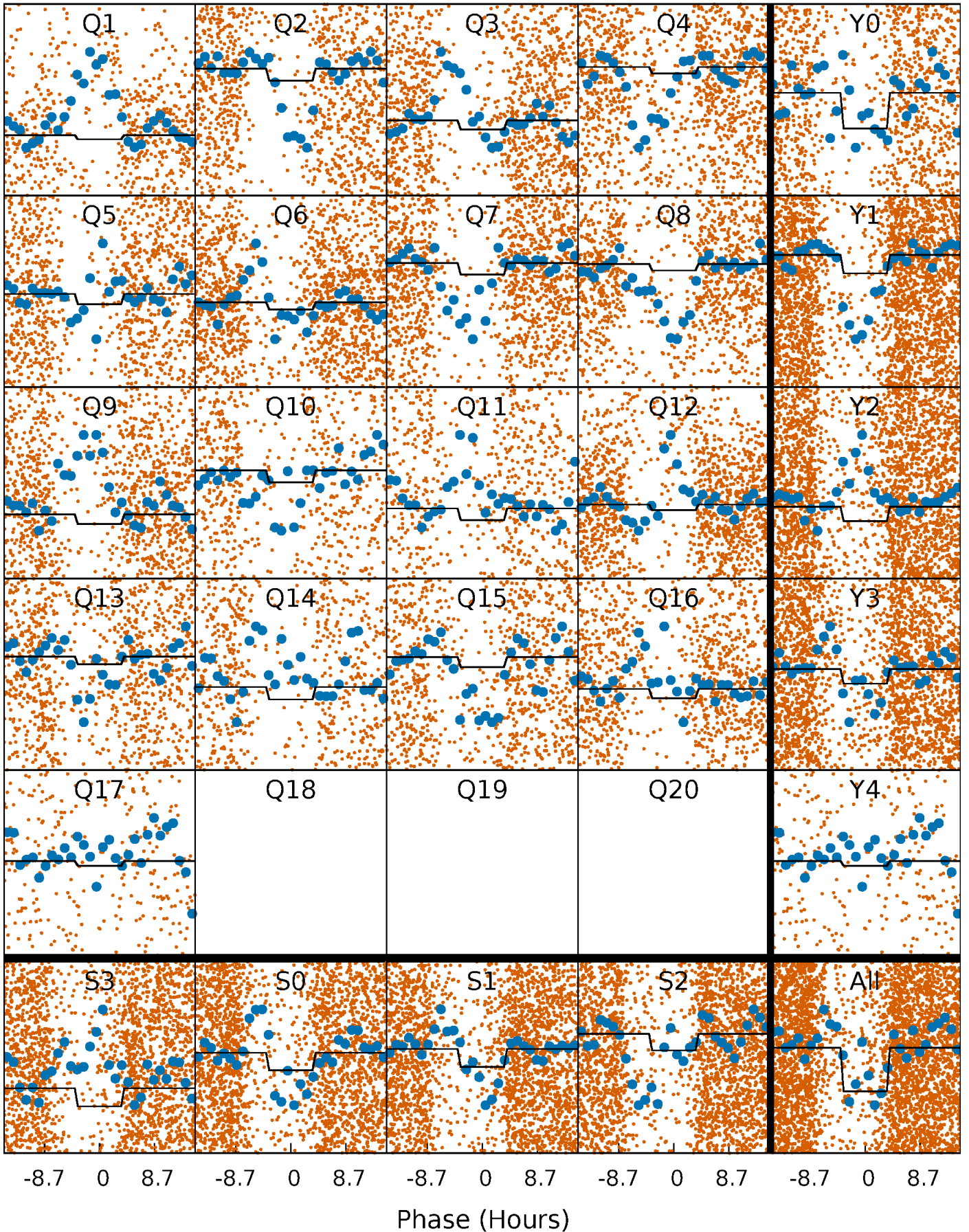
# DV Quarter-Phased Transit Curves

TCE 008264706-02 P= 2.136003 Days  $T_0=131.805378$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008264706-02 P= 2.135943 Days  $T_0=131.802163$  (BKJD)

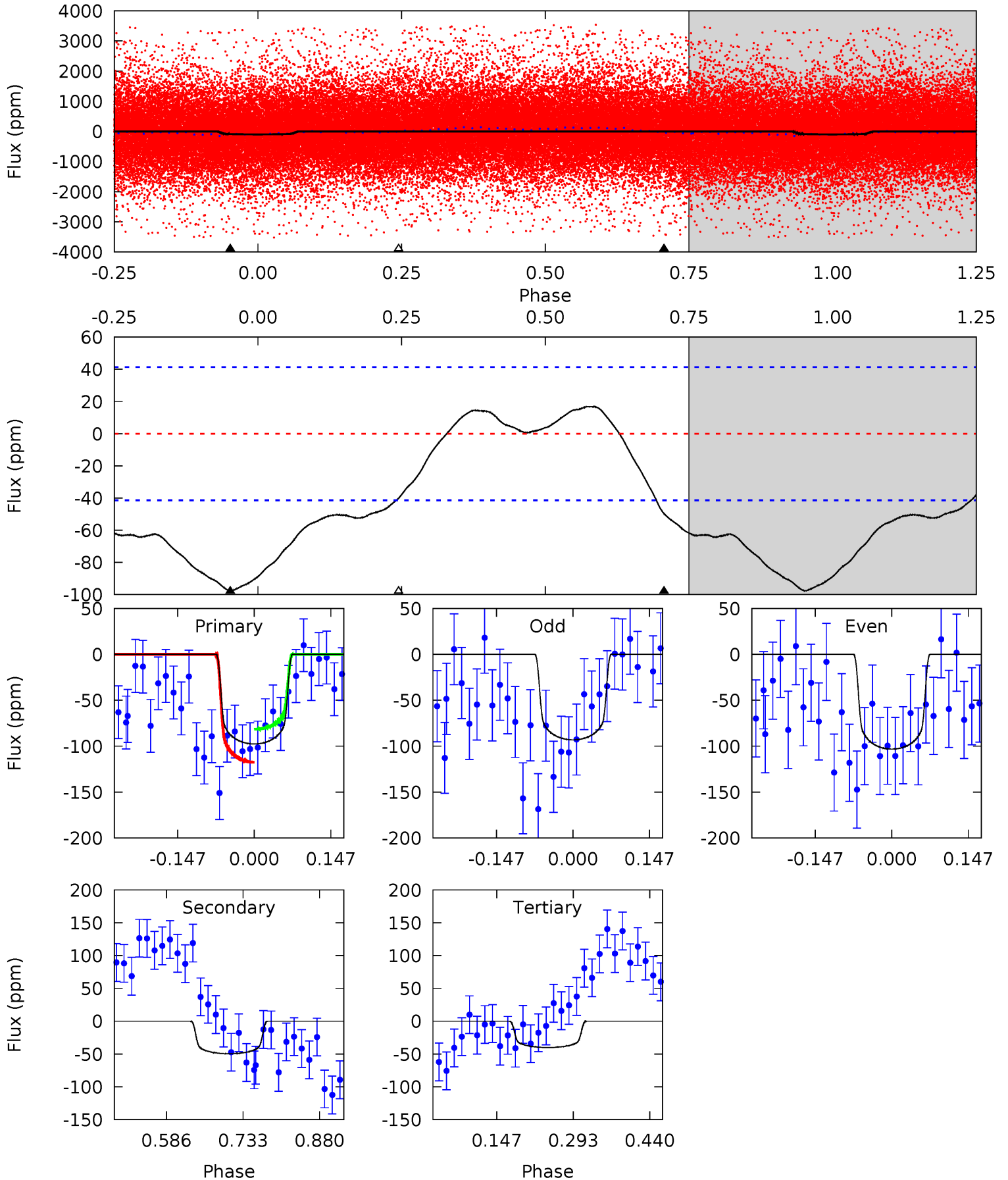




# DV Model-Shift Uniqueness Test

008264706-02, P = 2.136003 Days, E = 129.669375 Days

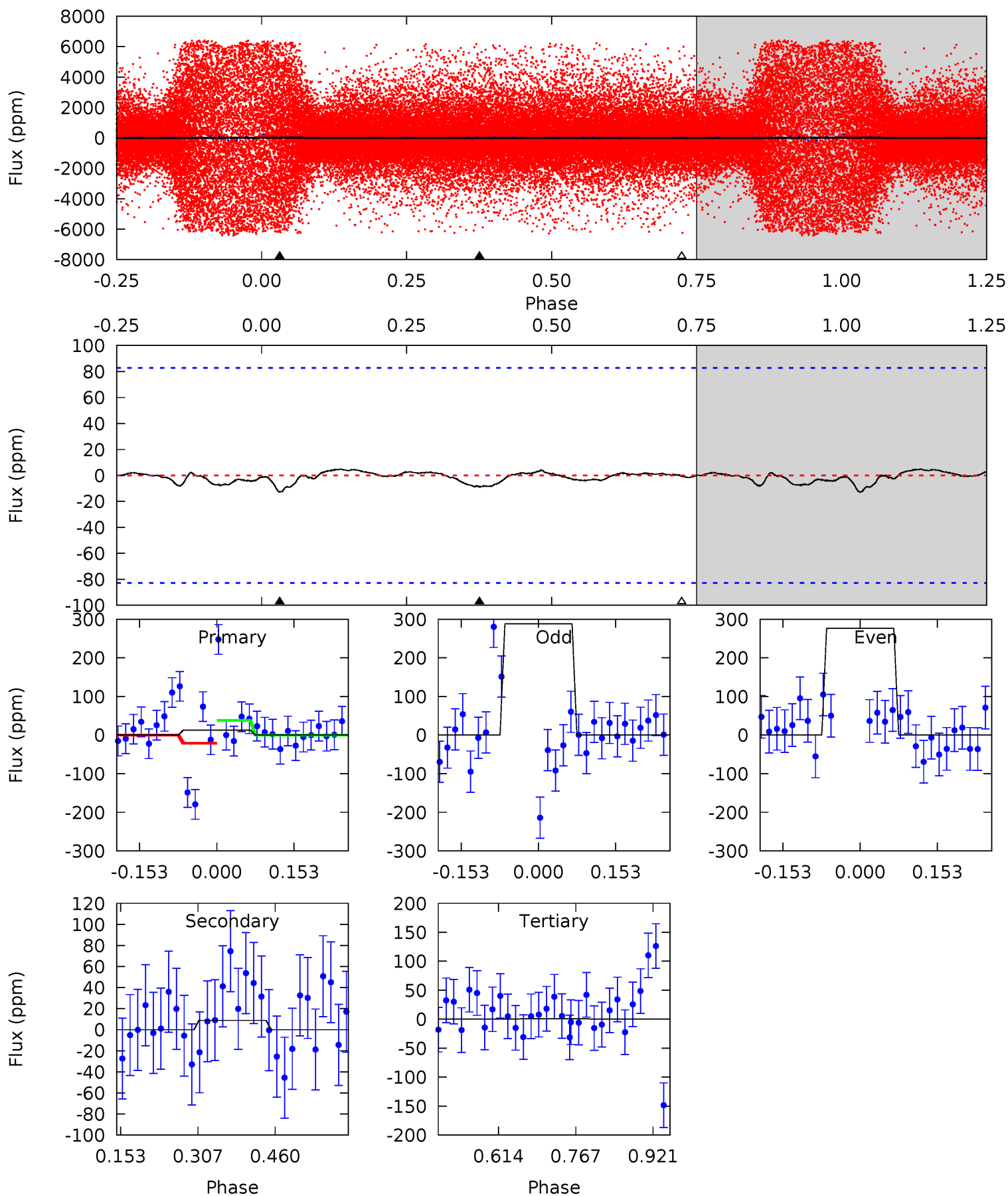
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	5.38	4.35	0	4.48	1.45	2.86	6.23	10.6	1.03	5.38	0.55	1.05	0.15	1.98



# Alt Model-Shift Uniqueness Test

008264706-02, P = 2.135943 Days, E = 129.666220 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
0.69	0.48	0.03	0	4.47	1.43	0.12	0.66	0.69	0.44	0.48	0.33	8.79	0.27	0



### Stellar Parameters For KIC 008264706

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7364^{+231}_{-334}$	$4.231^{+0.087}_{-0.218}$	$-0.060^{+0.200}_{-0.350}$	$1.550^{+0.533}_{-0.229}$	$1.488^{+0.219}_{-0.219}$	$0.563^{+0.228}_{-0.309}$
	+3%/-5%	+2%/-5%	+333%/-583%	+34%/-15%	+15%/-15%	+41%/-55%
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 008264706-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-50 \pm 9$	$2.05^{+0.42}_{-0.33}$	$2974^{+242}_{-193}$	$5558^{+446}_{-398}$	$8.580^{+4.262}_{-2.841}$
Alt.	$-9 \pm 19$	$1.60^{+0.35}_{-0.29}$	$2986^{+216}_{-195}$	$4249^{+1222}_{-8776}$	$2.523^{+5.555}_{-5.183}$

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

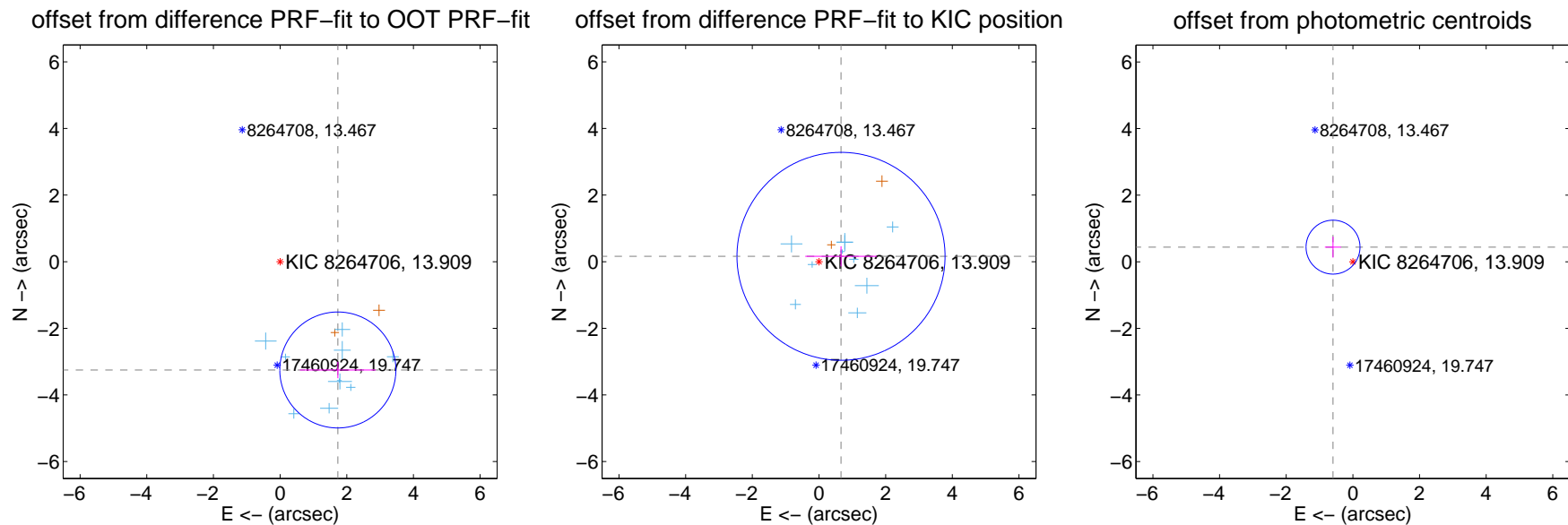
## DV Centroid Data

Supplemental centroid analysis for 008264706-02. Kepler magnitude: 13.91. Transit SNR 8.06

There are 10 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 2.80 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

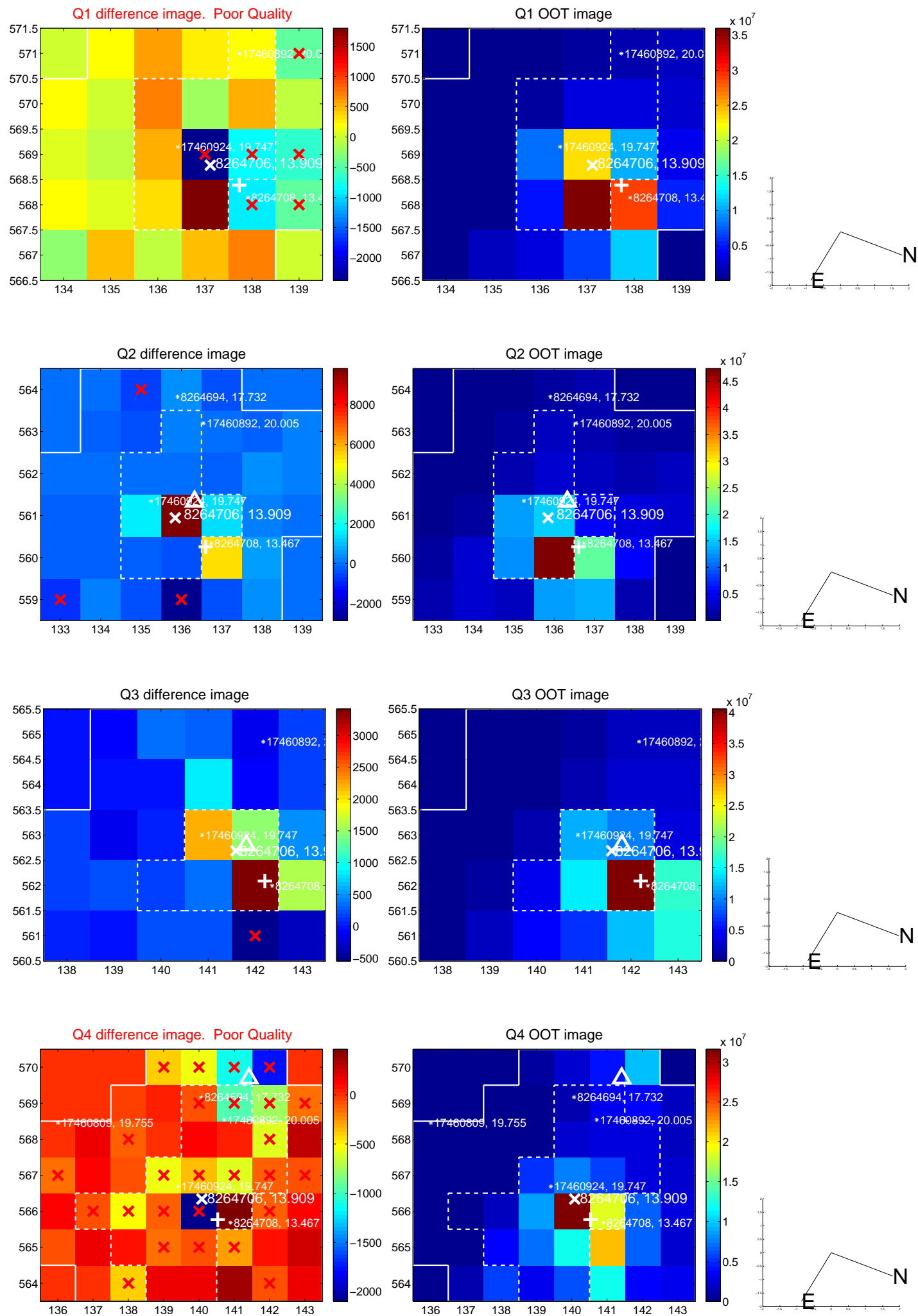
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.684 \pm 0.580$	<b>6.35</b>	$-1.732 \pm 1.139$	$-3.251 \pm 0.247$
PRF-fit source offset from KIC position	$0.680 \pm 1.040$	0.65	$-0.661 \pm 1.074$	$0.161 \pm 0.302$
photometric centroid source offset	$0.74 \pm 0.27$	2.74	$0.60 \pm 0.24$	$0.44 \pm 0.31$



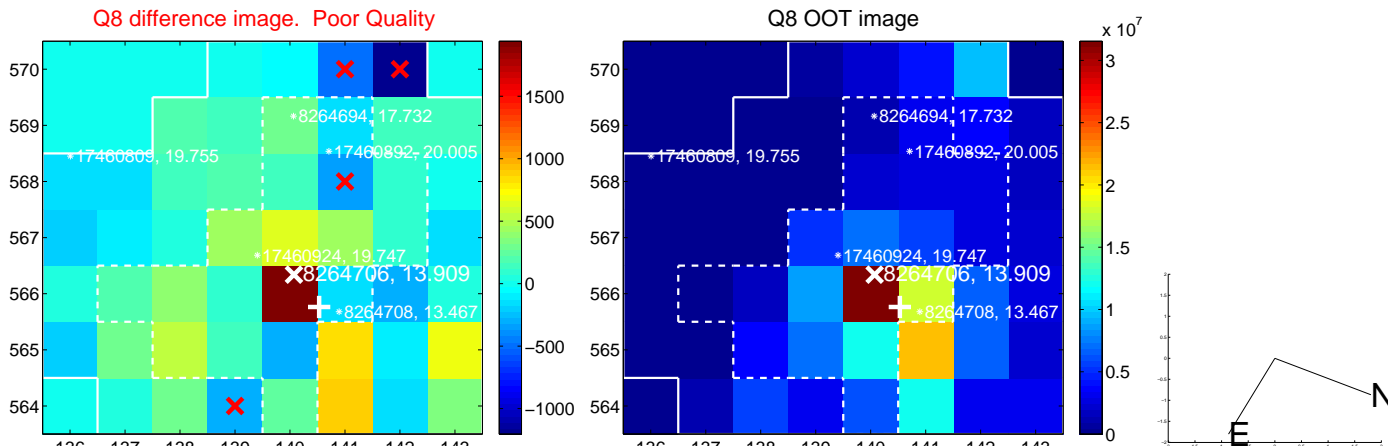
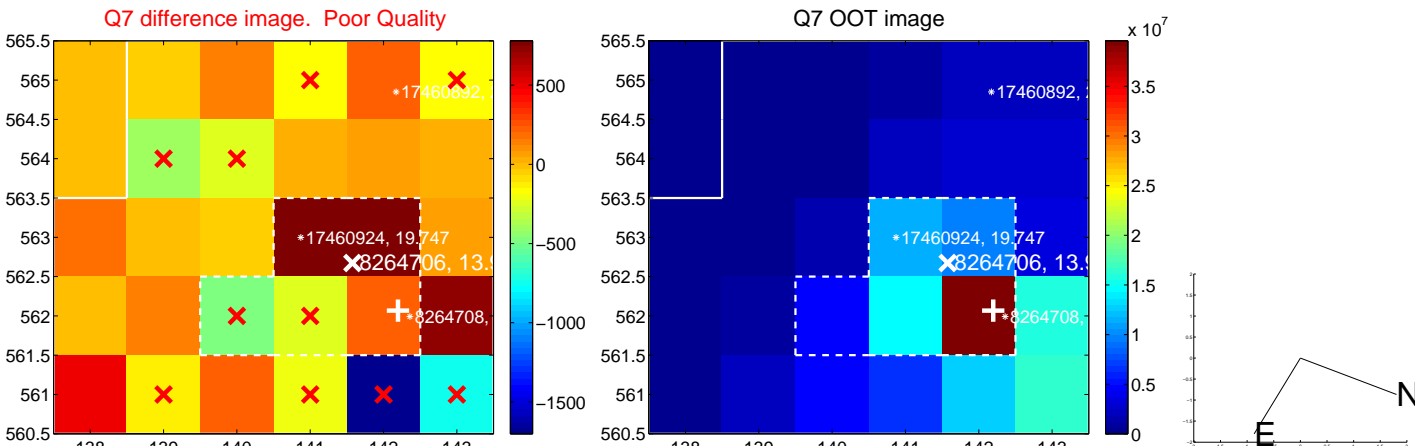
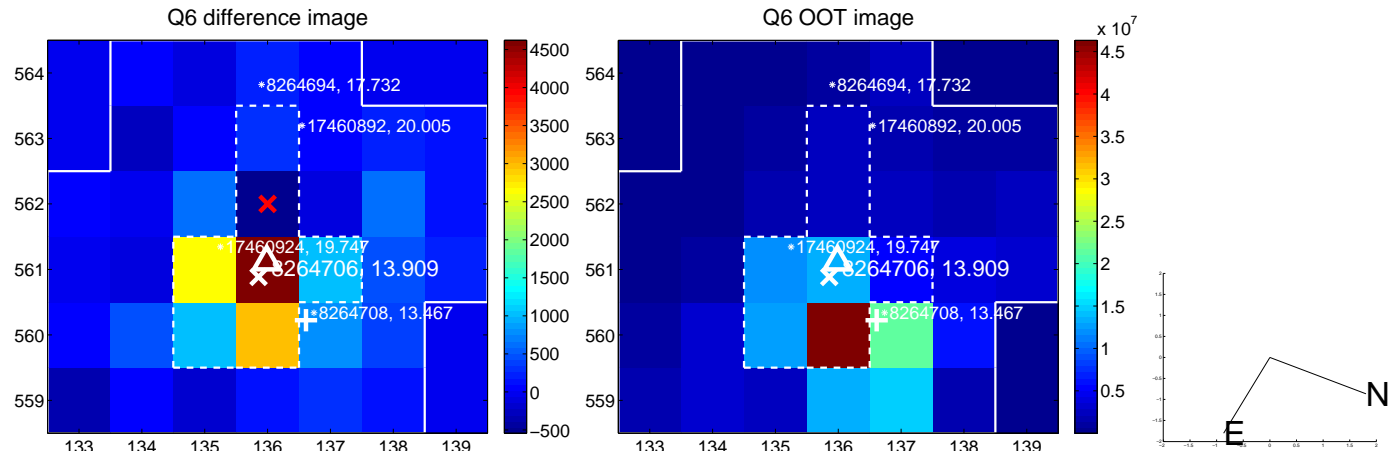
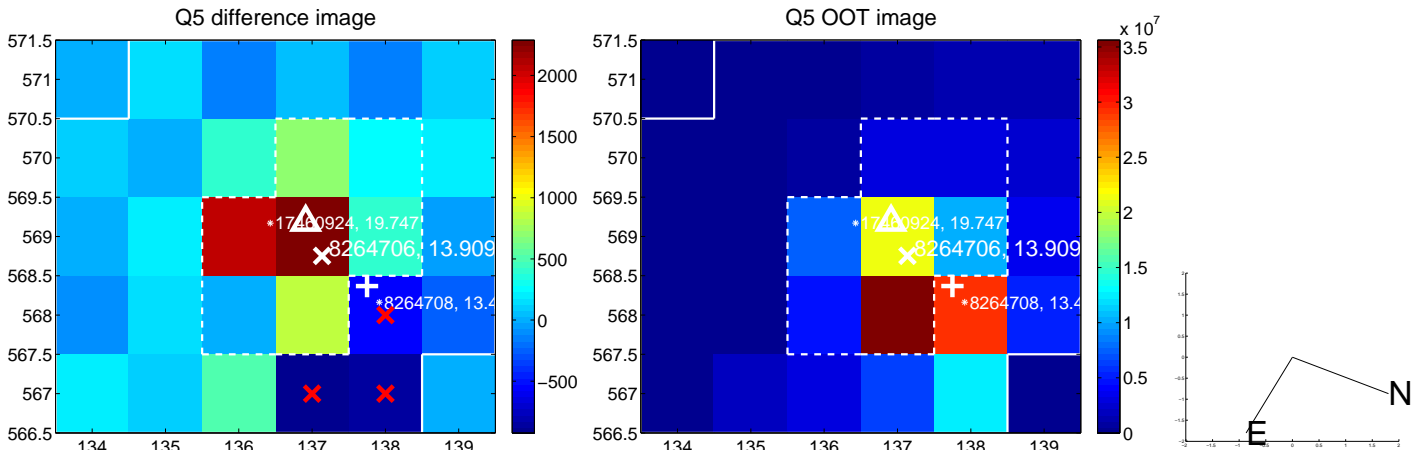
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



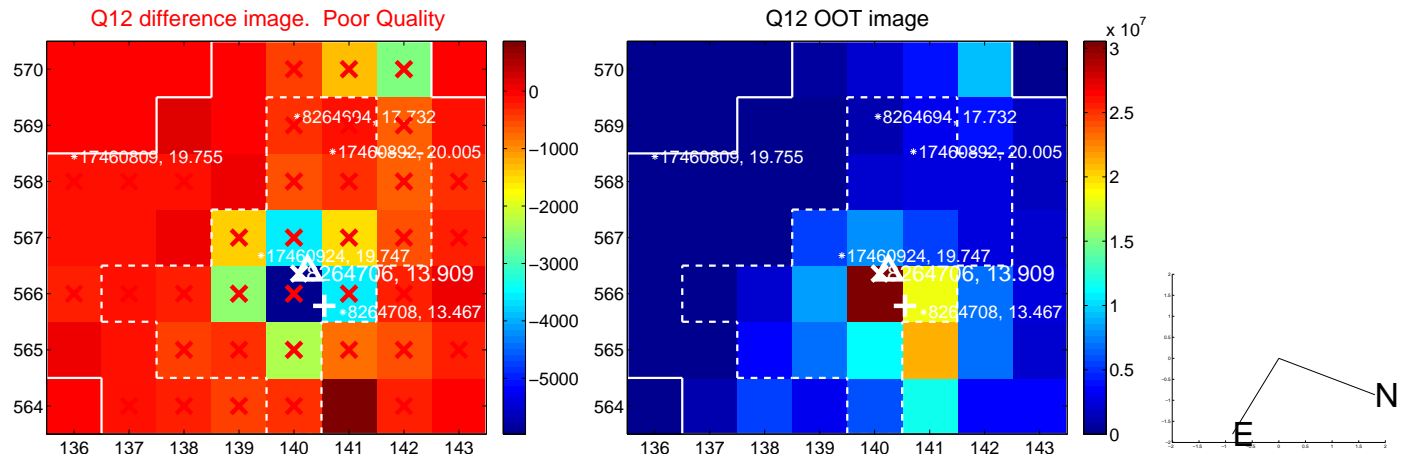
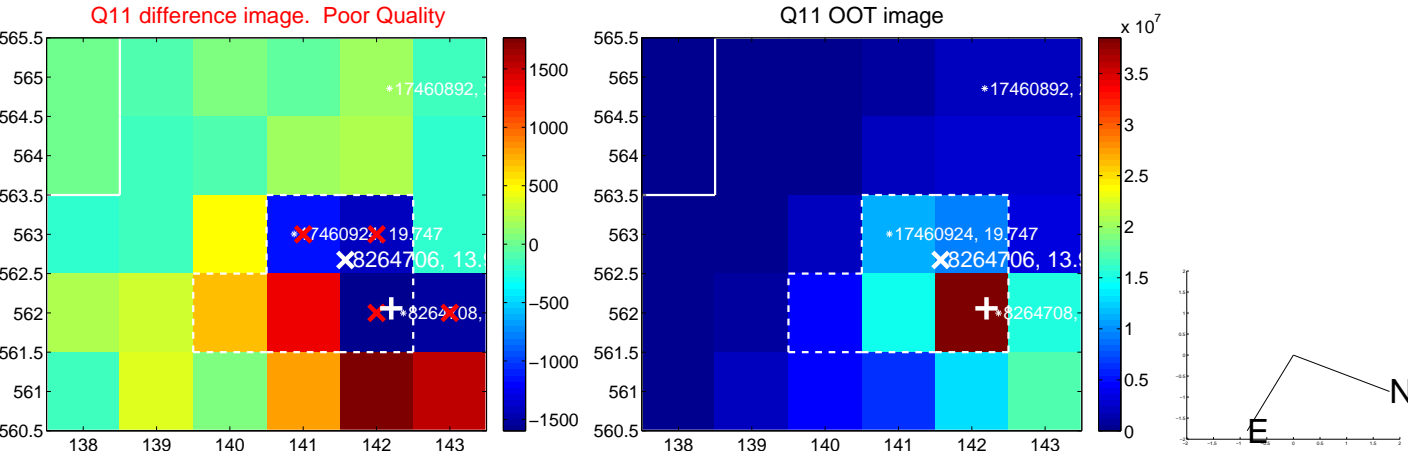
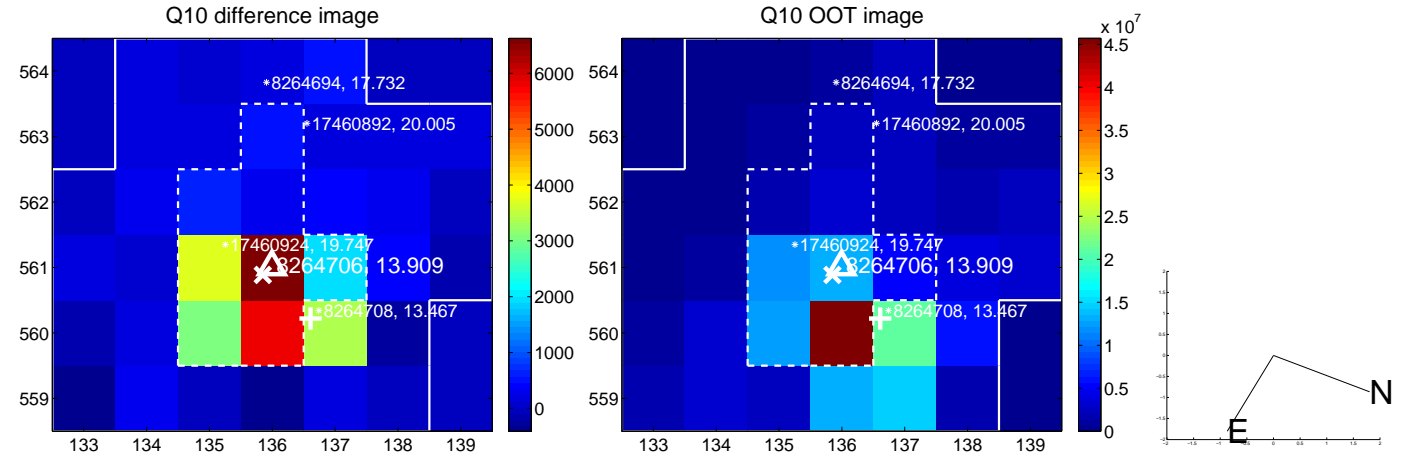
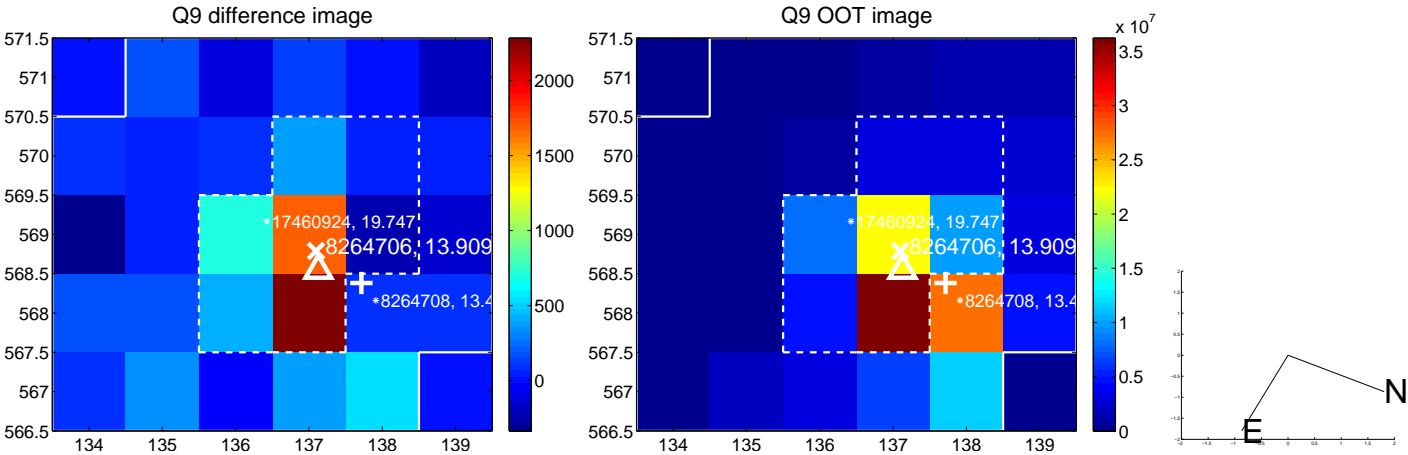
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



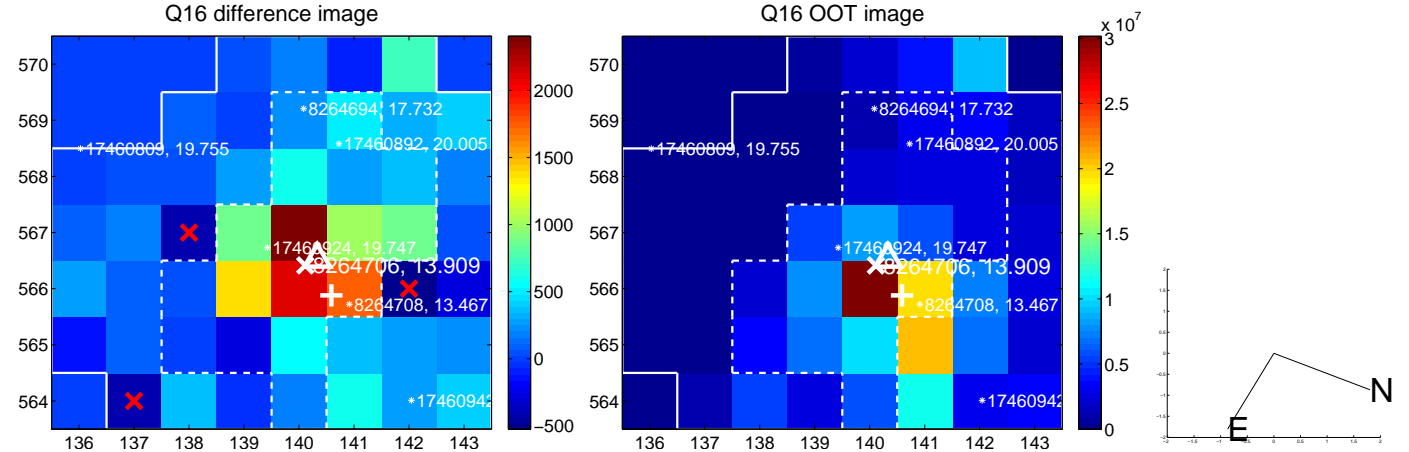
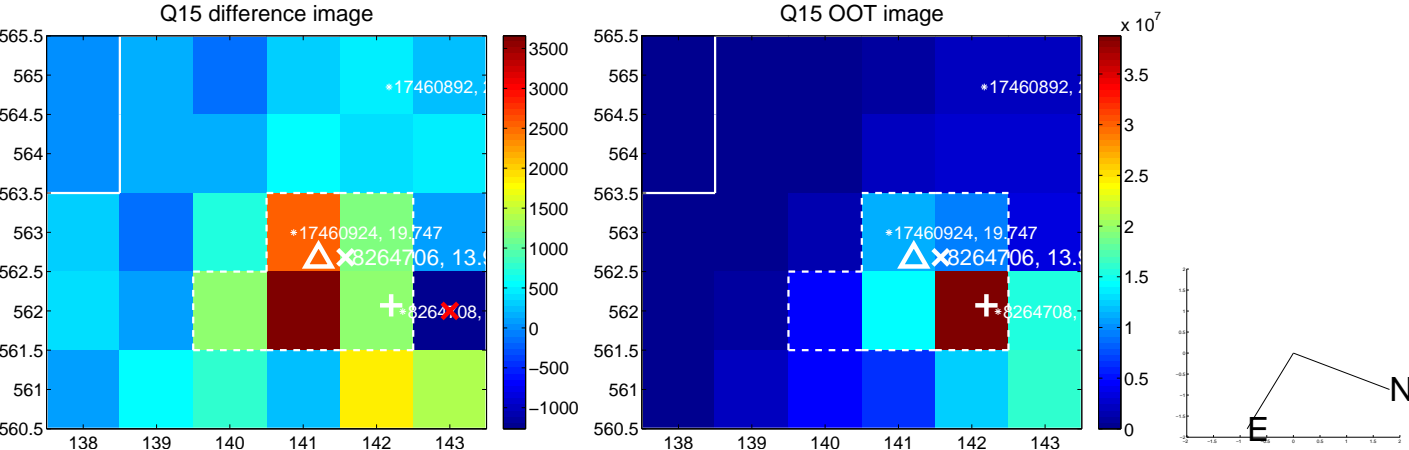
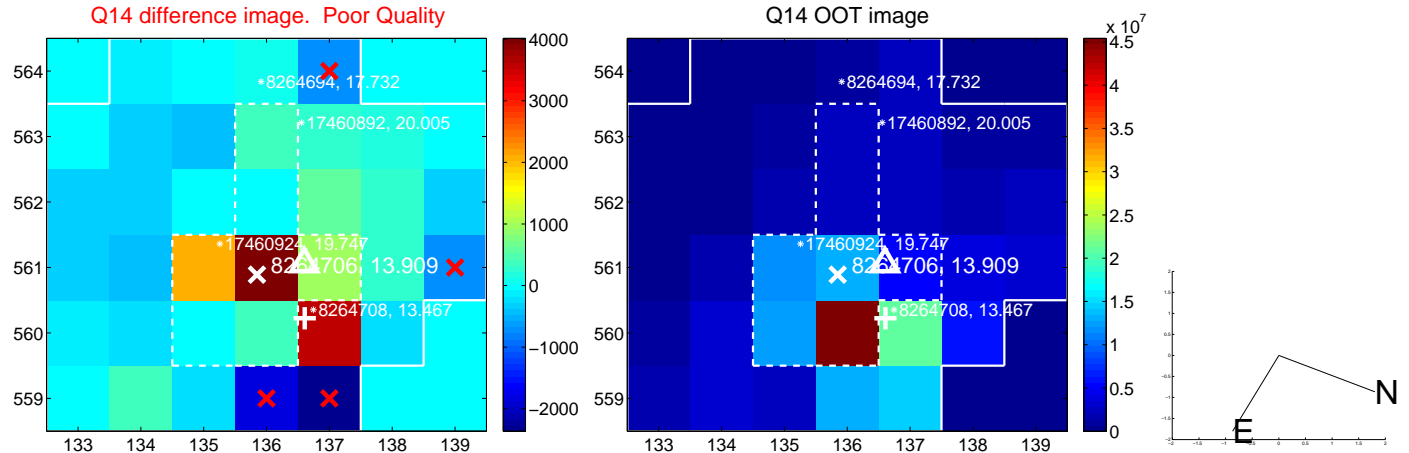
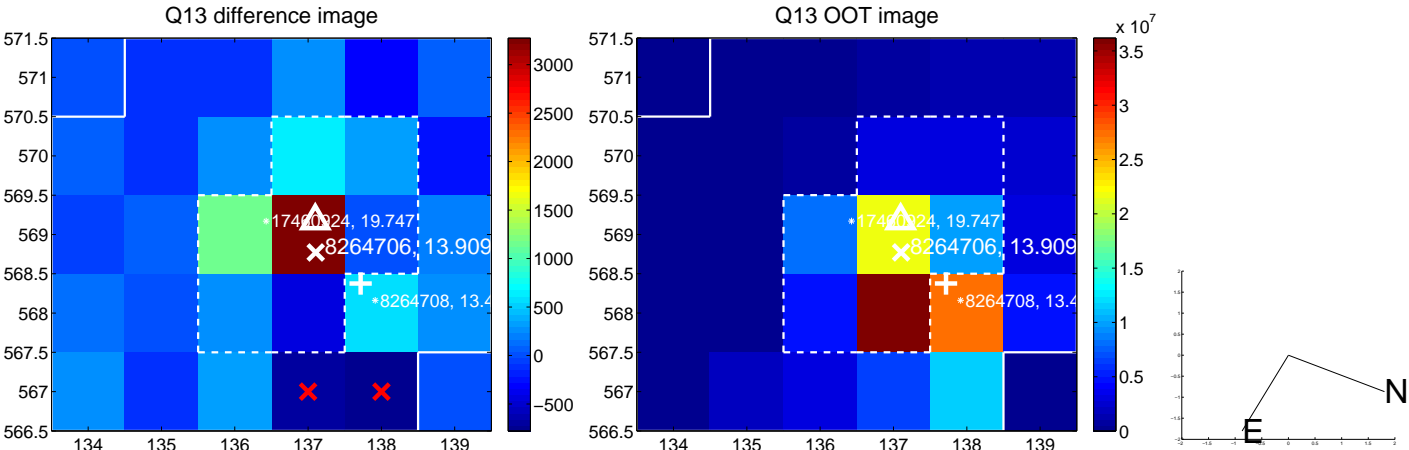
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



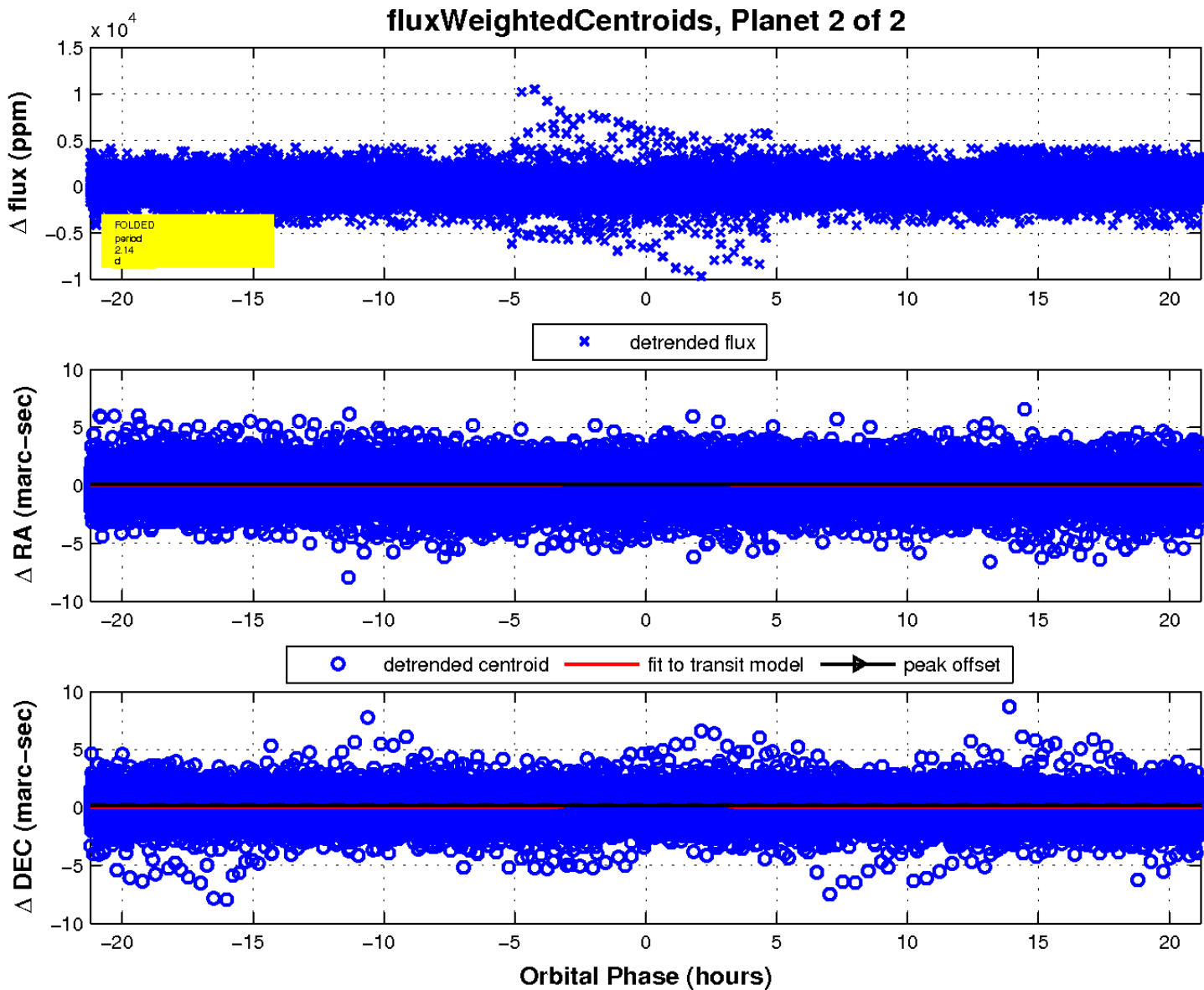
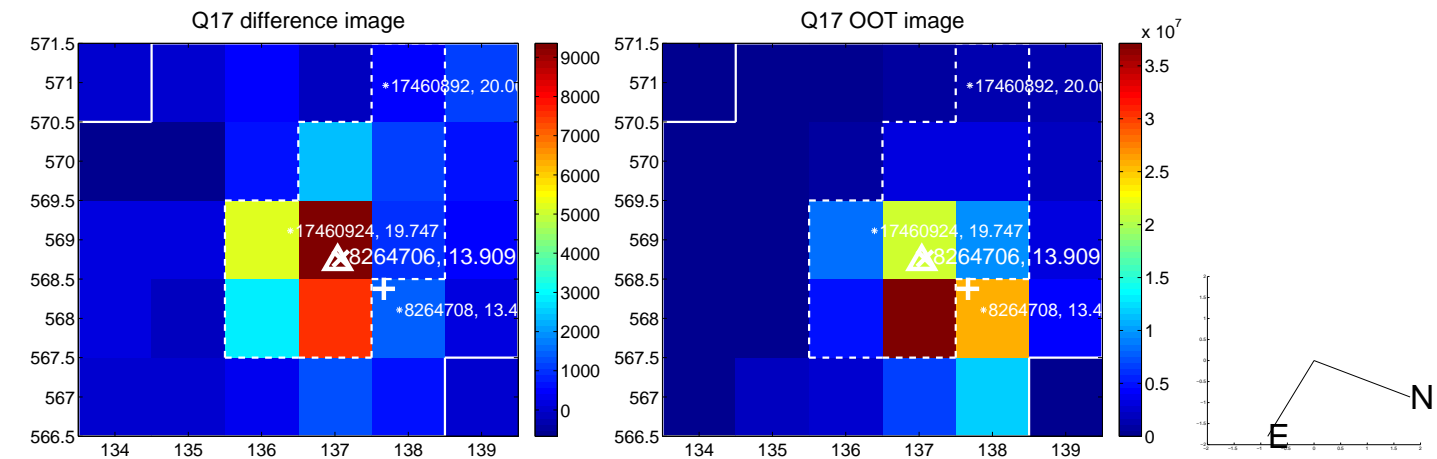
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

