

# KIC 011718839

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011718839-01	OBS	No	1.263677	131.676742	32.3	6.075	9.2	9.3	3.13	8443	1.89	53062.22
011718839-02	OBS	No	0.538096	131.763212	55.8	0.961	8.1	6.9	3.13	8443	2.73	165635.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011718839-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
011718839-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED

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

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

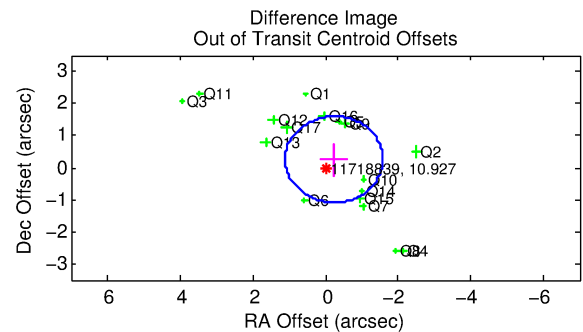
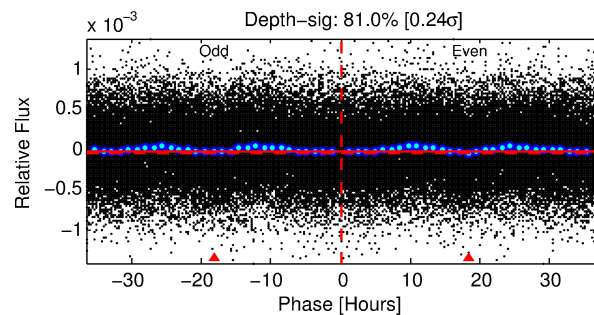
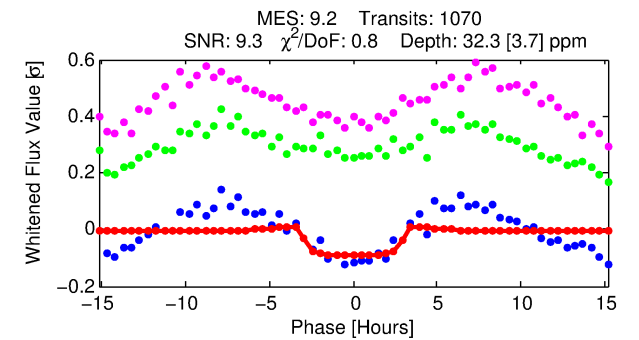
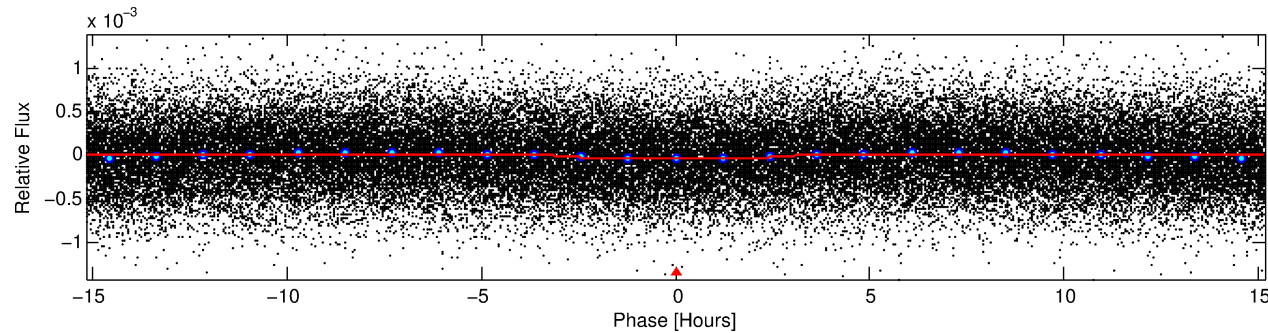
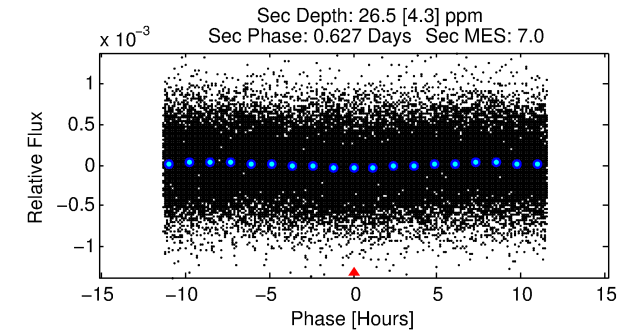
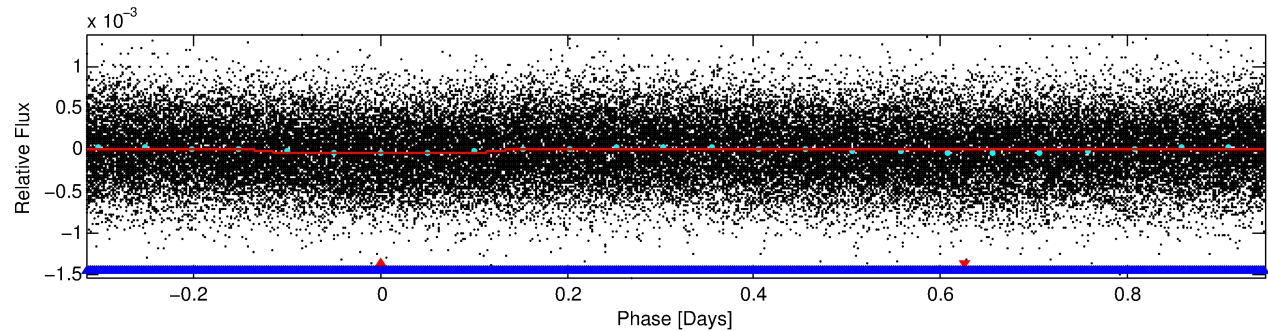
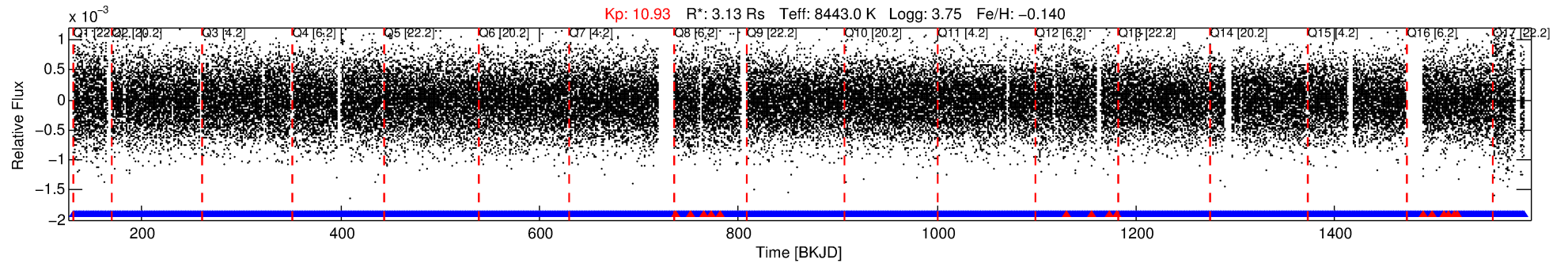
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011718839-01

No Significant Match Found

# DV One-Page Summary

KIC: 11718839 Candidate: 1 of 2 Period: 1.264 d



## DV Fit Results:

Period = 1.26368 [0.00002] d  
Epoch = 131.6767 [0.0069] BKJD  
Rp/R\* = 0.0055 [0.0029]  
a/R\* = 1.44 [2.34]  
b = 0.67 [2.62]  
Seff = 53062.22 [38825.09]  
Teff = 3870 [708] K  
Rp = 1.89 [1.31] Re  
a = 0.0290 [0.0127] AU  
Ag = 3.41 [4.36] [0.55σ]  
Teffp = 8133 [2190] K [1.85σ]

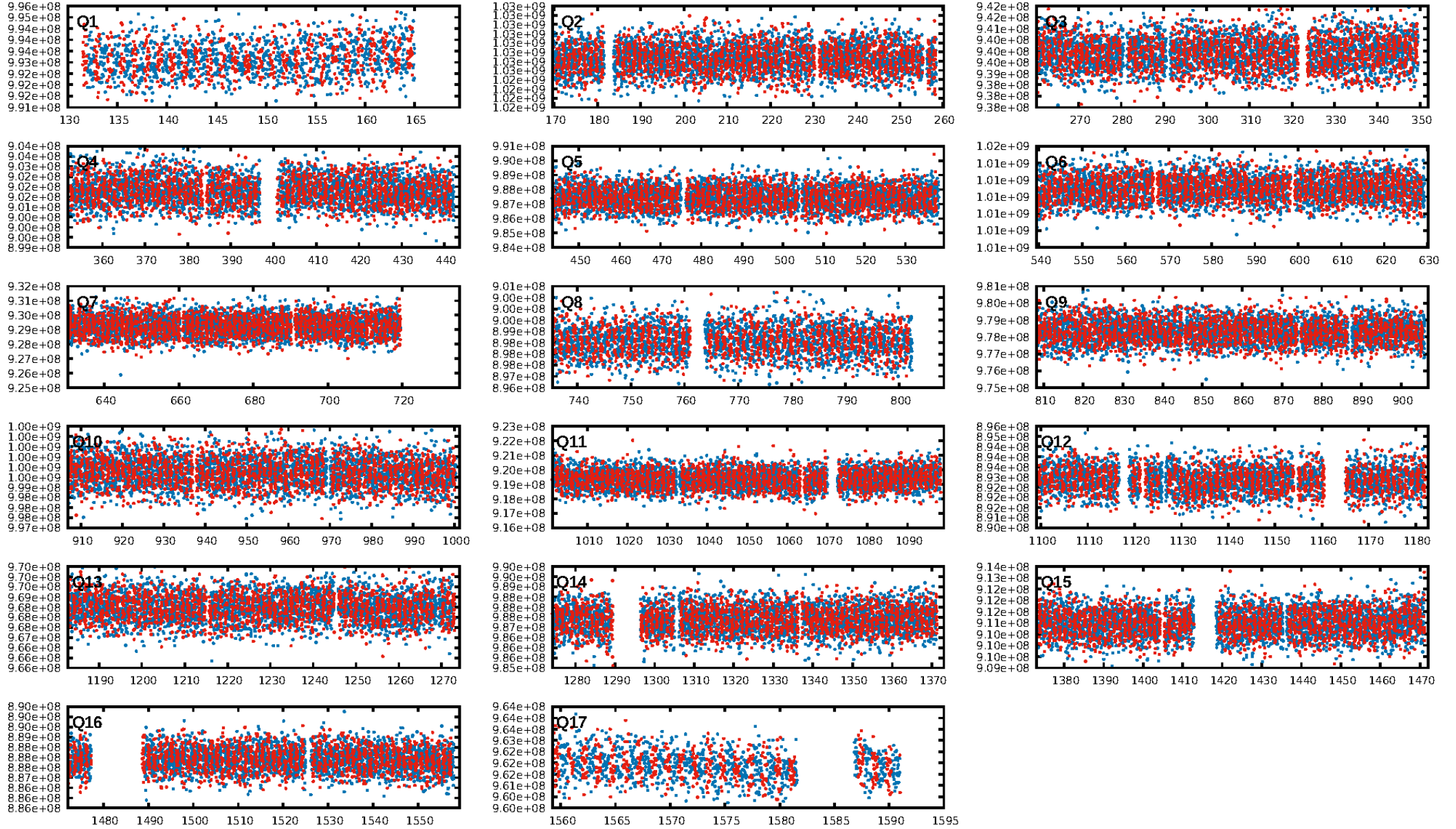
## DV Diagnostic Results:

ShortPeriod-sig: 99.5% [2.83σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.82e-16  
RollingBand-fgt: 0.98 [1006/1022]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 9.4%  
Centroid-so: 0.723 arcsec [2.21σ]  
OotOffset-rm: 0.345 arcsec [0.77σ]  
KicOffset-rm: 0.440 arcsec [0.98σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.53 [9/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:14:10 Z

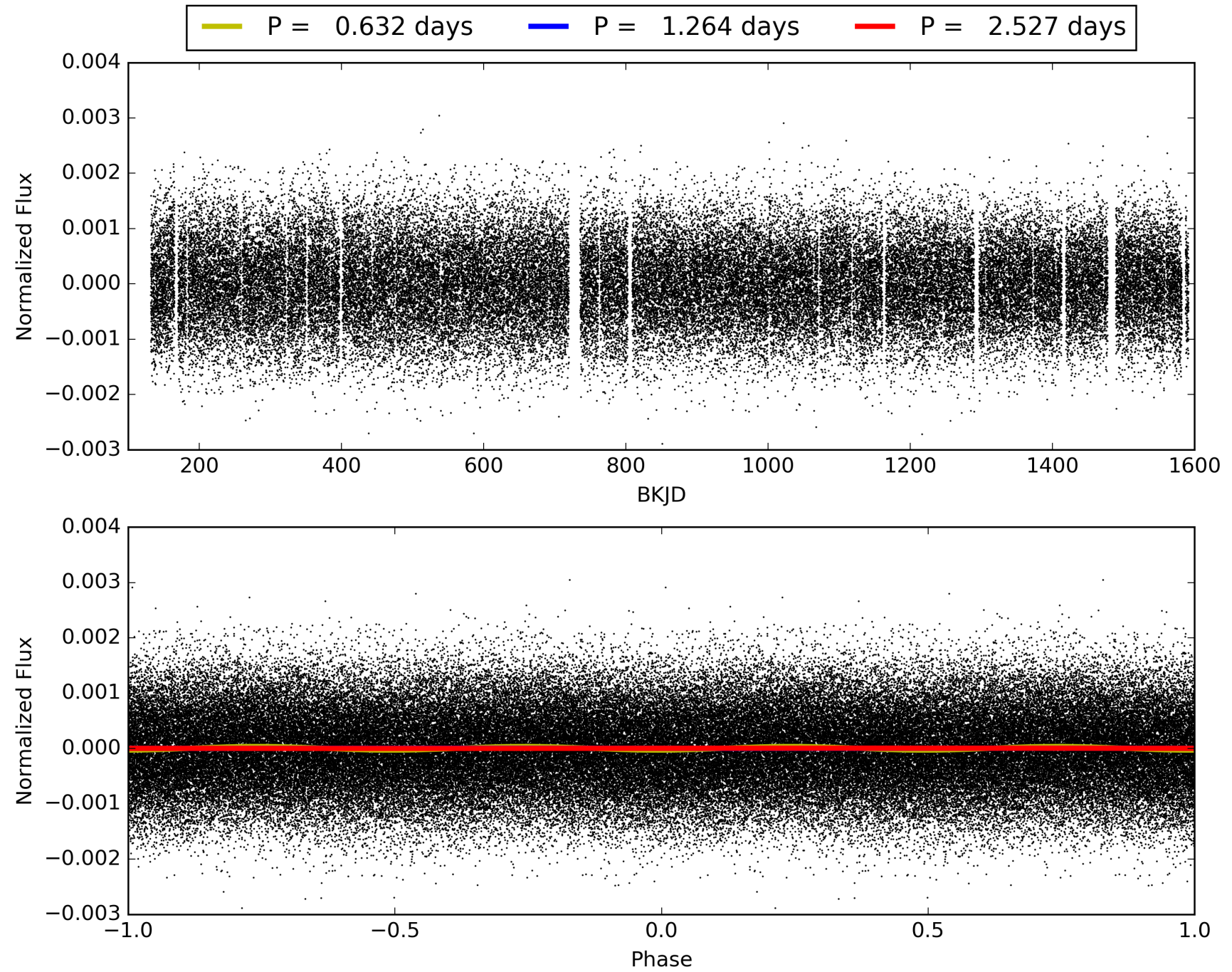
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011718839-01, PDC Light Curves



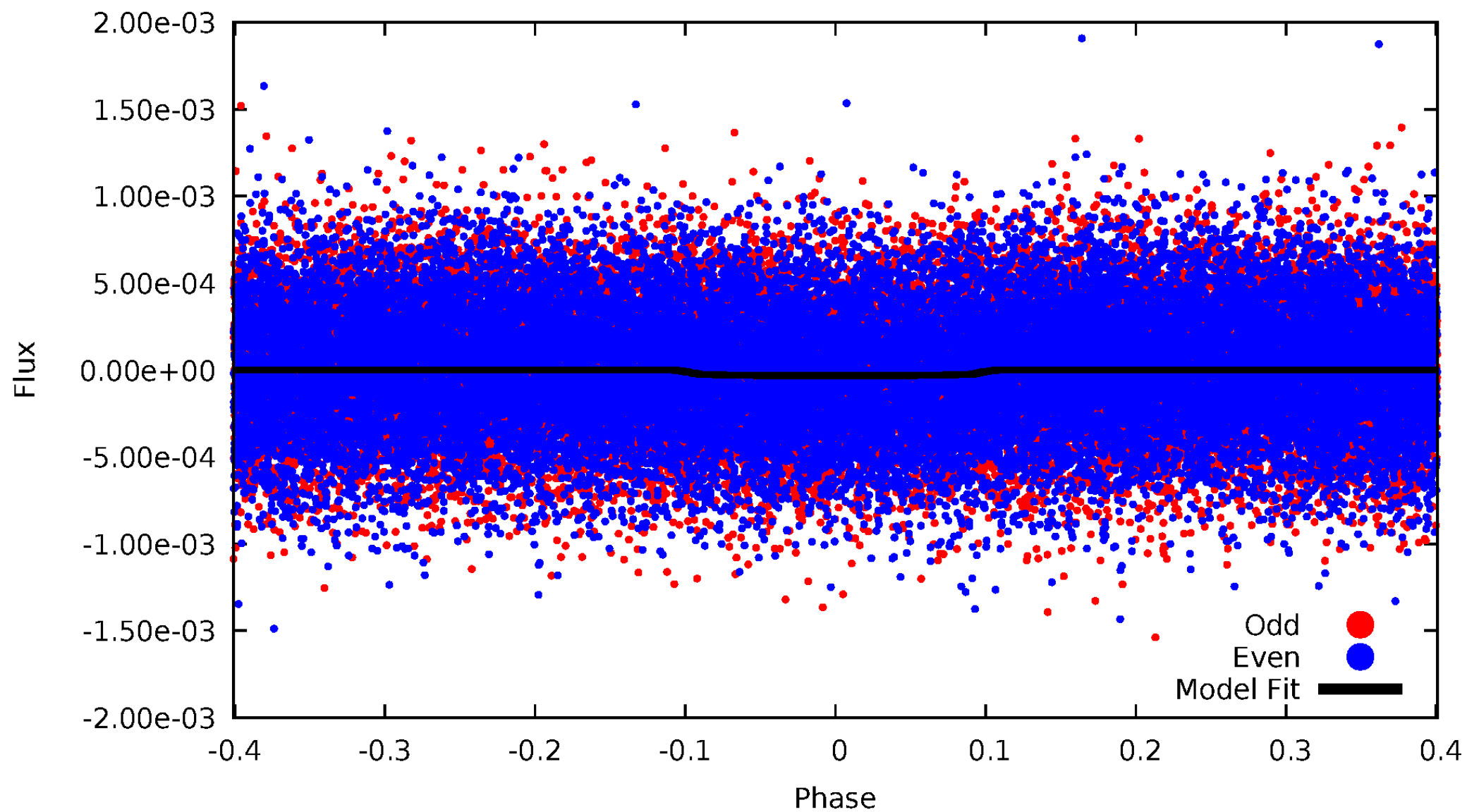


# TCE 011718839-01



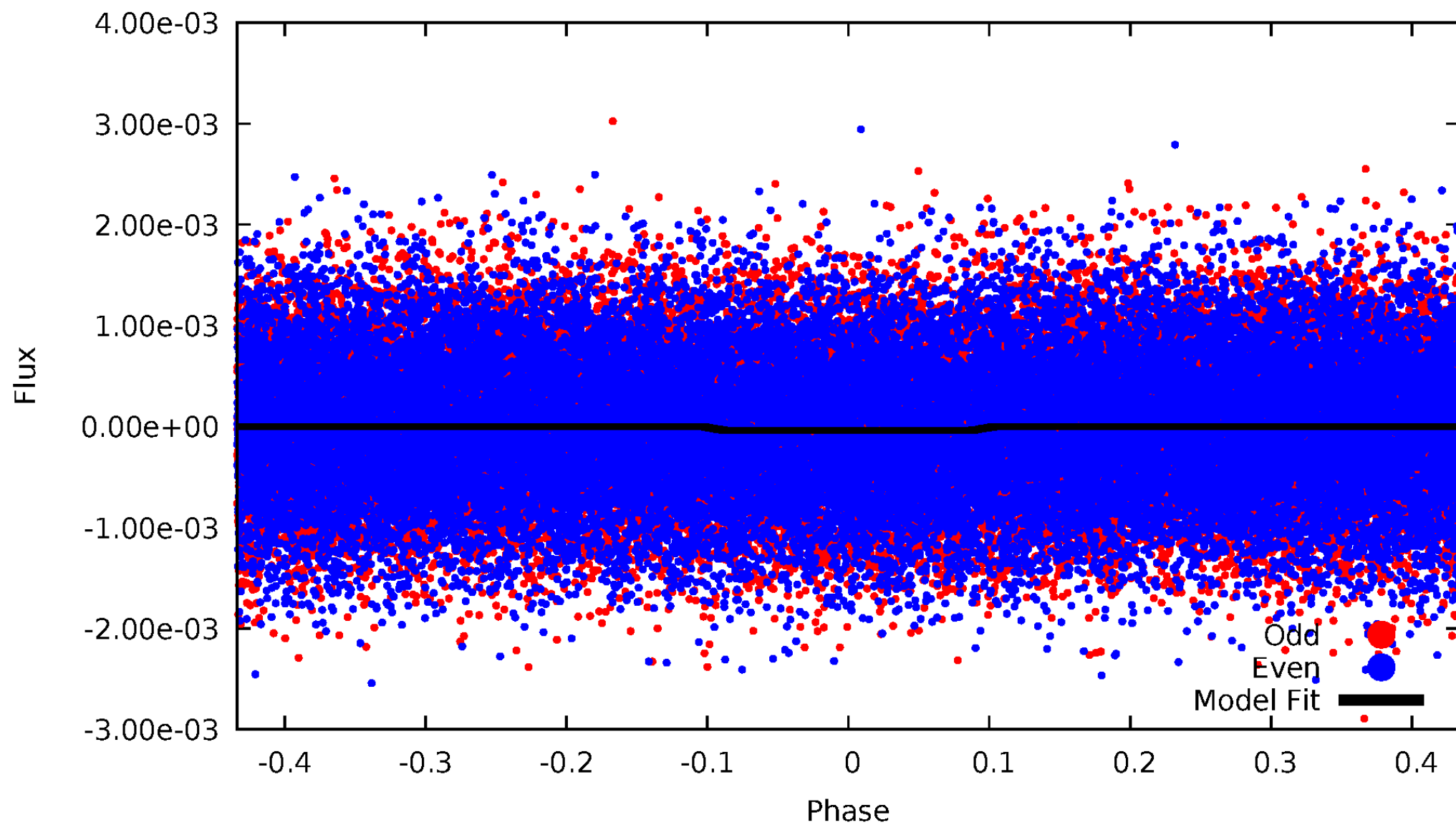
# DV Odd/Even

TCE 011718839-01

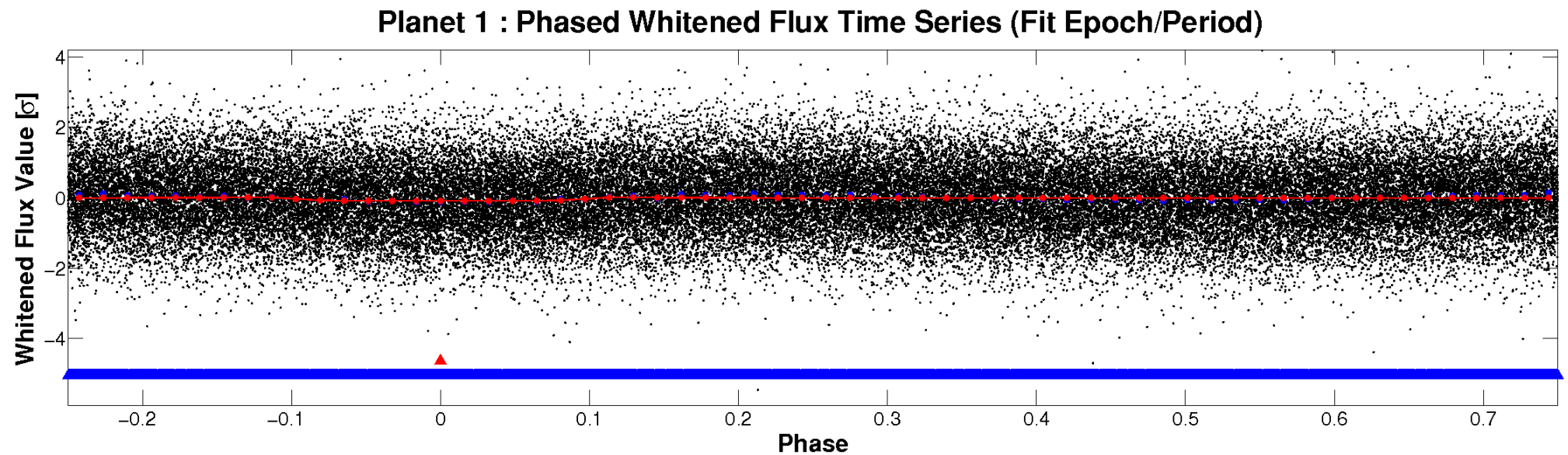
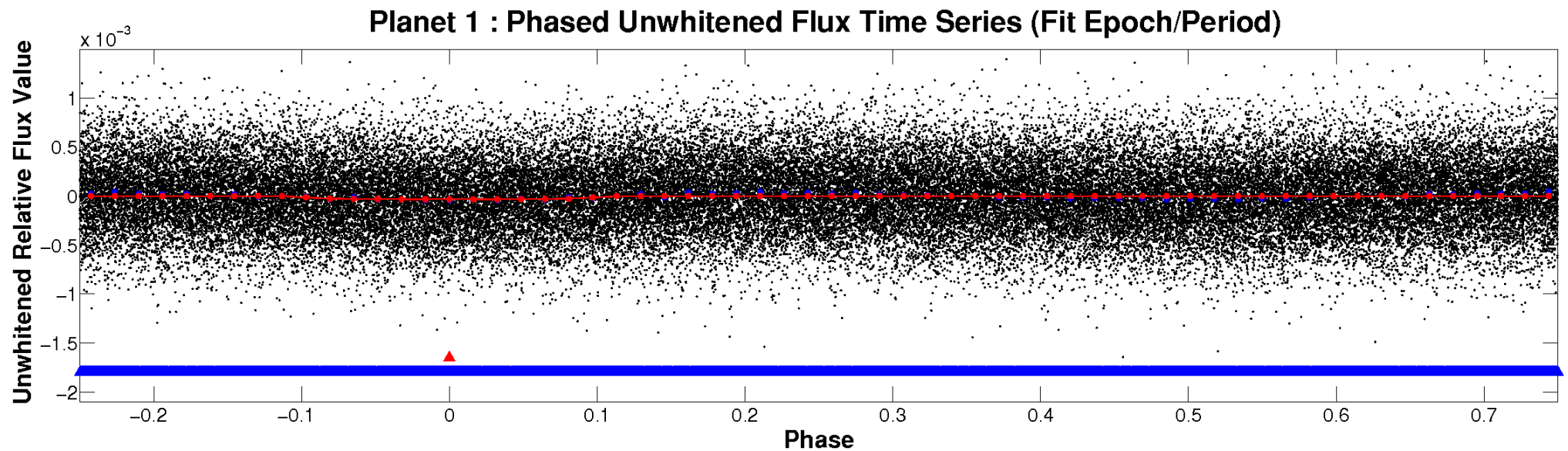


# ALT Odd/Even

TCE 011718839-01



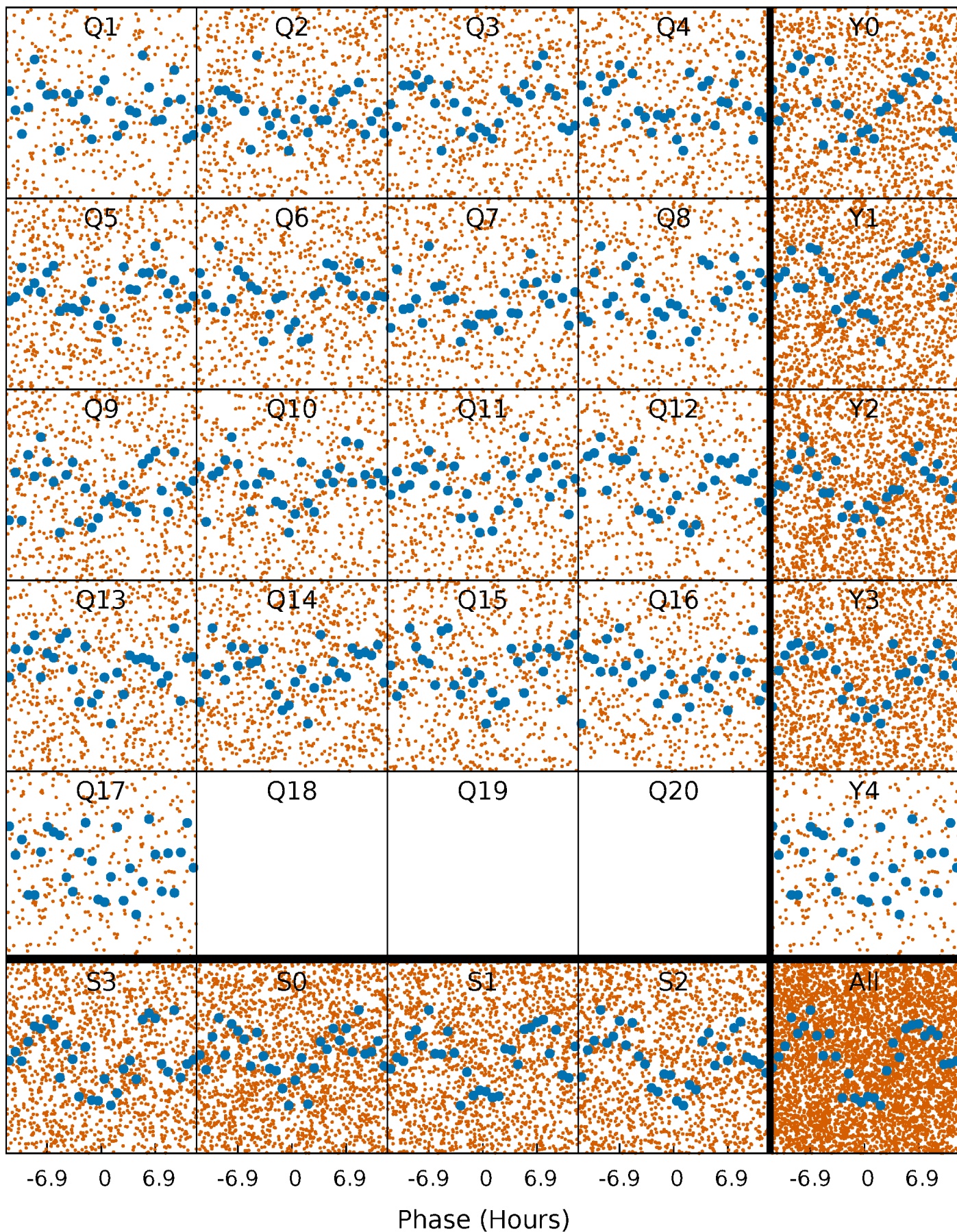
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

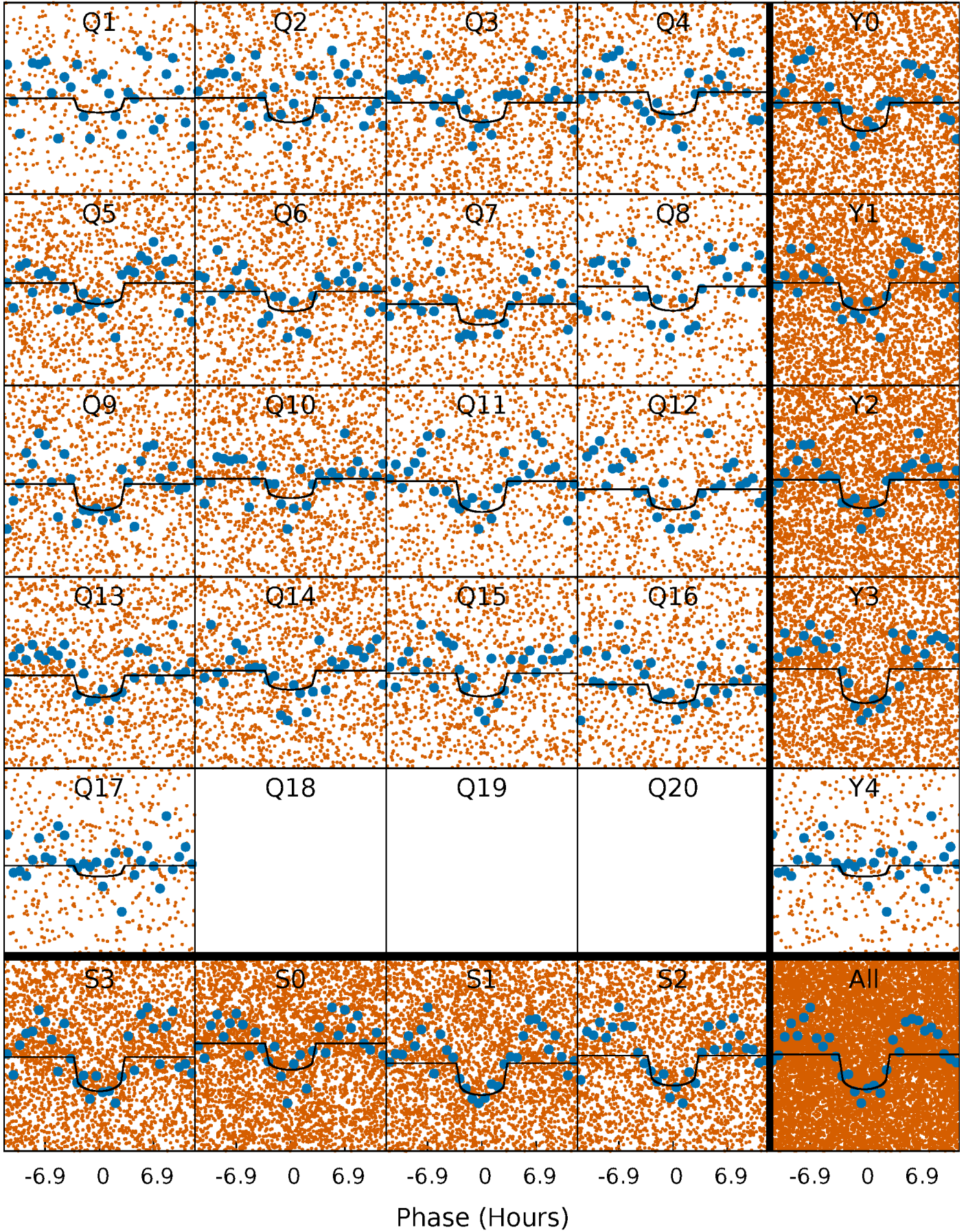
TCE 011718839-01 P= 1.263677 Days  $T_0=131.676742$  (BKJD)





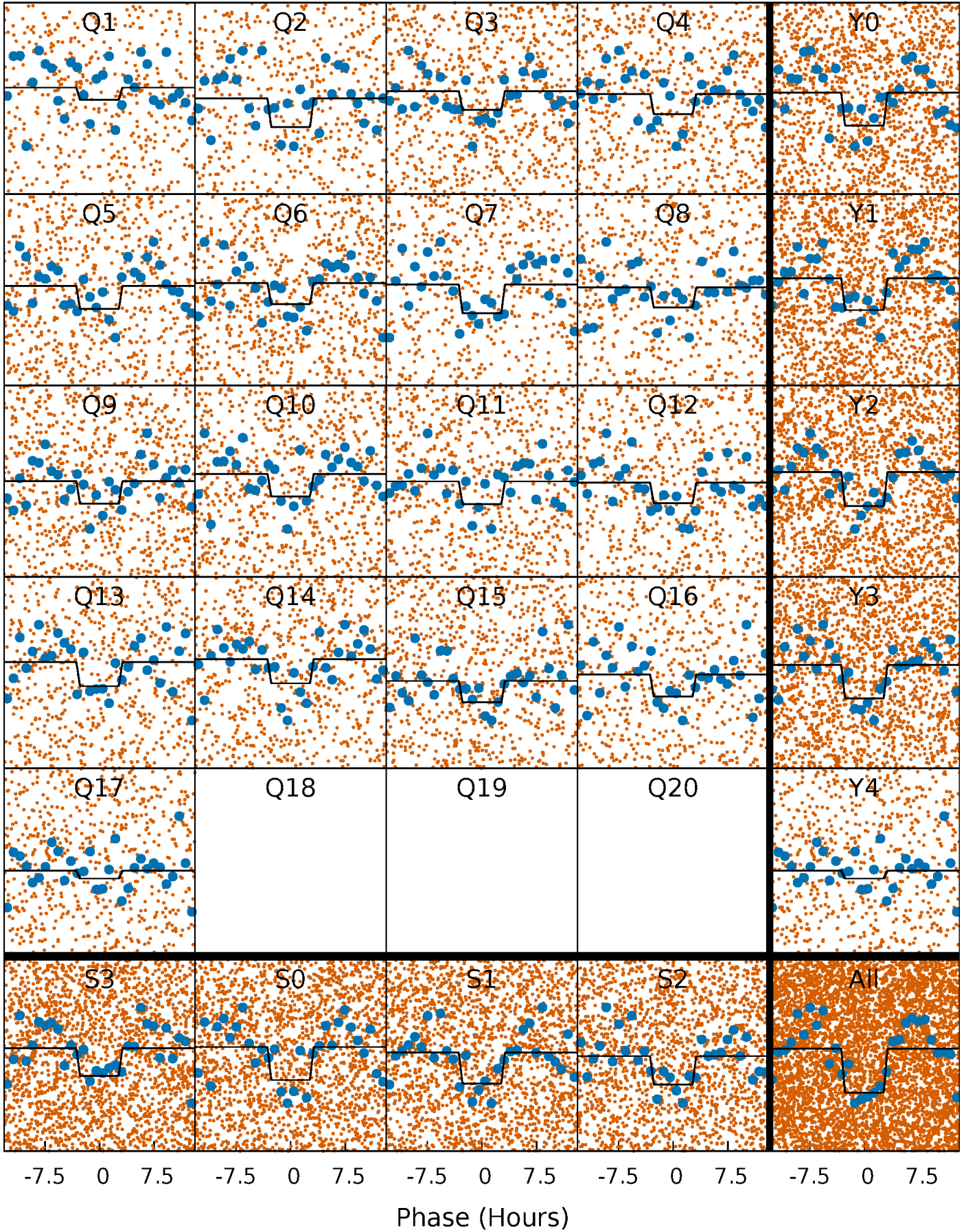
# DV Quarter-Phased Transit Curves

TCE 011718839-01 P= 1.263677 Days  $T_0=131.676742$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 011718839-01 P= 1.263688 Days  $T_0=131.666601$  (BKJD)

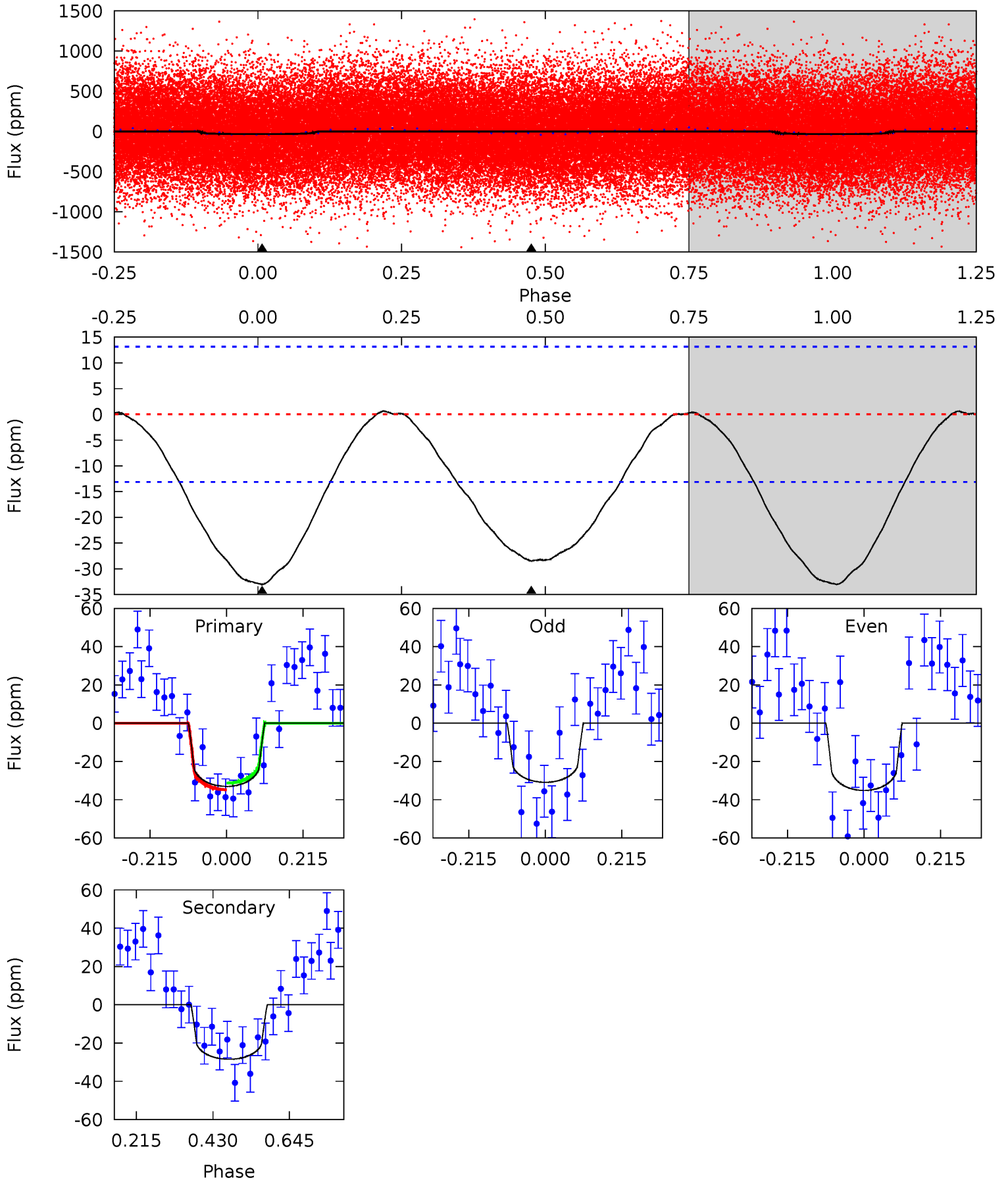




# DV Model-Shift Uniqueness Test

011718839-01, P = 1.263677 Days, E = 130.413065 Days

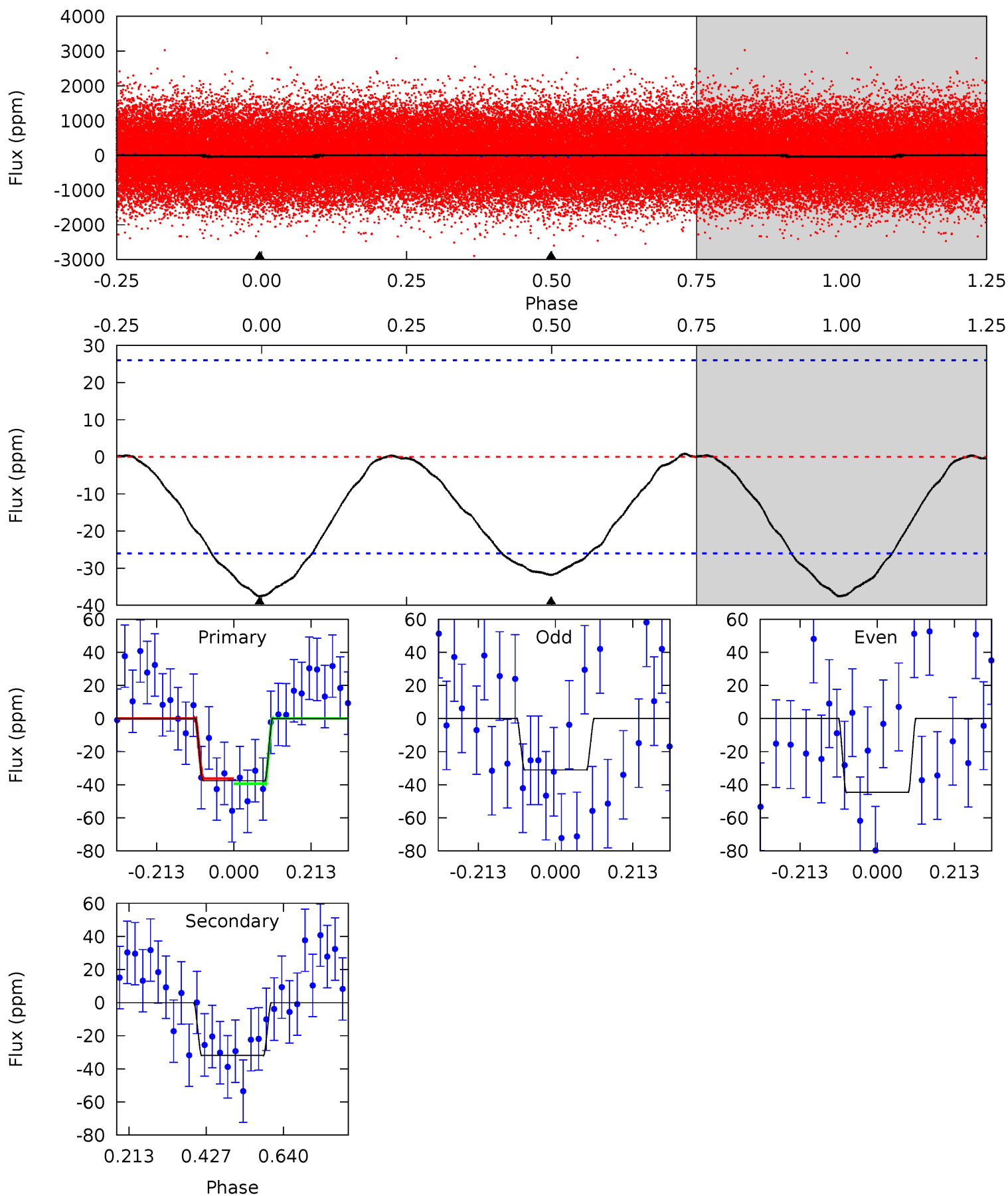
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	9.54	0	0	4.40	1.24	0.28	11.1	11.1	9.54	9.54	0.72	0.83	0.02	0.58



# Alt Model-Shift Uniqueness Test

011718839-01, P = 1.263688 Days, E = 130.402913 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
6.36	5.38	0	0	4.40	1.24	0.15	6.36	6.36	5.38	5.38	1.13	0.95	0.02	0.26





### Stellar Parameters For KIC 011718839

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8443^{+233}_{-367}$	$3.755^{+0.420}_{-0.140}$	$-0.140^{+0.400}_{-0.350}$	$3.127^{+0.935}_{-1.403}$	$2.032^{+0.425}_{-0.425}$	$0.094^{+0.335}_{-0.045}$
	+3%/-4%	+11%/-4%	+286%/-250%	+30%/-45%	+21%/-21%	+358%/-48%
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 011718839-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-28 \pm 3$	$1.76^{+1.13}_{-0.88}$	$5250^{+429}_{-584}$	$7865^{+5464}_{-1769}$	$4.420^{+12.683}_{-2.820}$
Alt.	$-32 \pm 6$	$1.98^{+1.06}_{-0.91}$	$5252^{+429}_{-592}$	$7631^{+3642}_{-1587}$	$3.848^{+8.636}_{-2.266}$

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

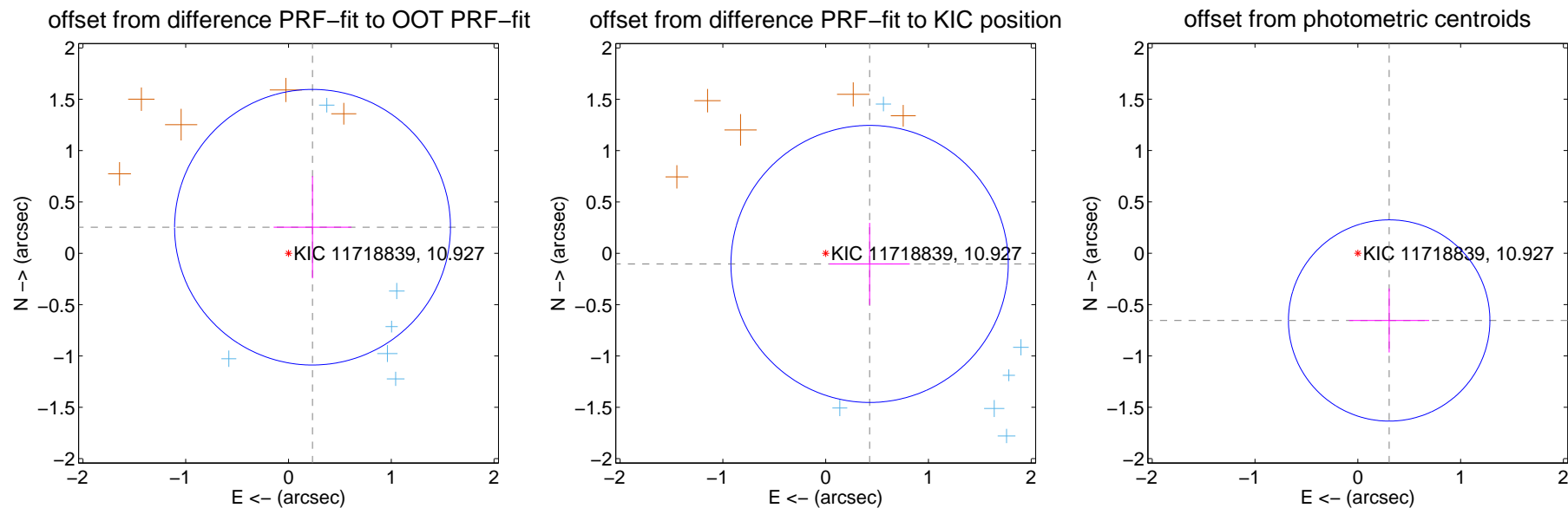
## DV Centroid Data

Supplemental centroid analysis for 011718839-01. **Kepler magnitude: 10.93.** Transit SNR 9.32

There are 9 quarters with good PRF difference image offsets

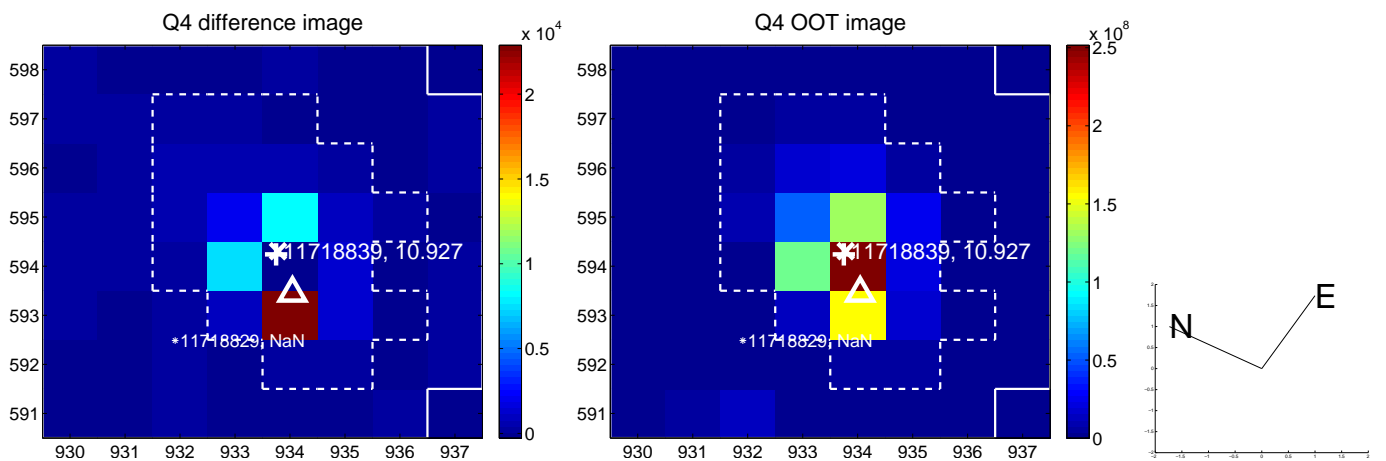
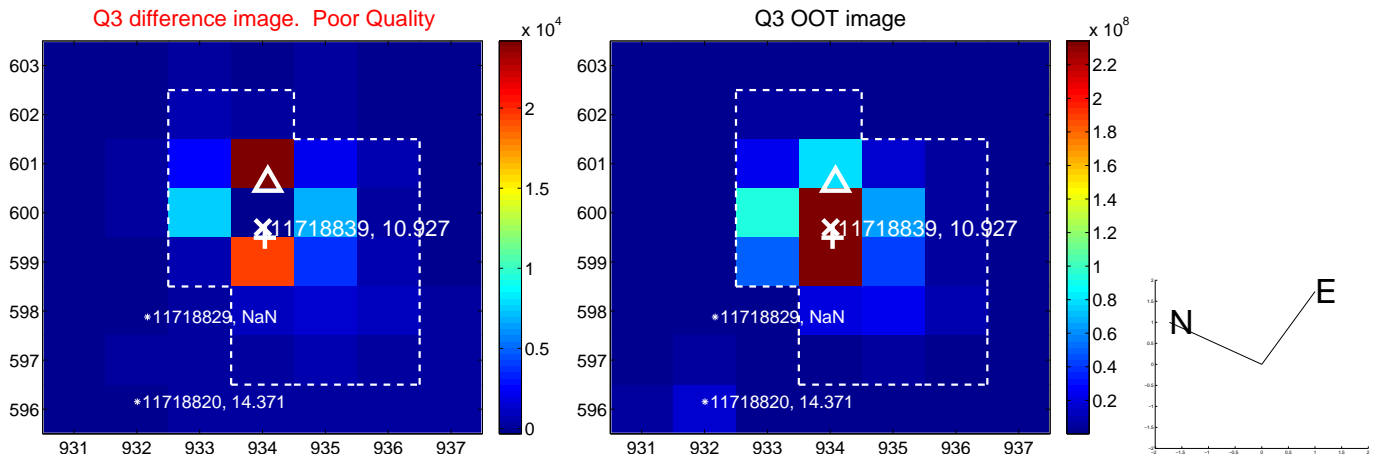
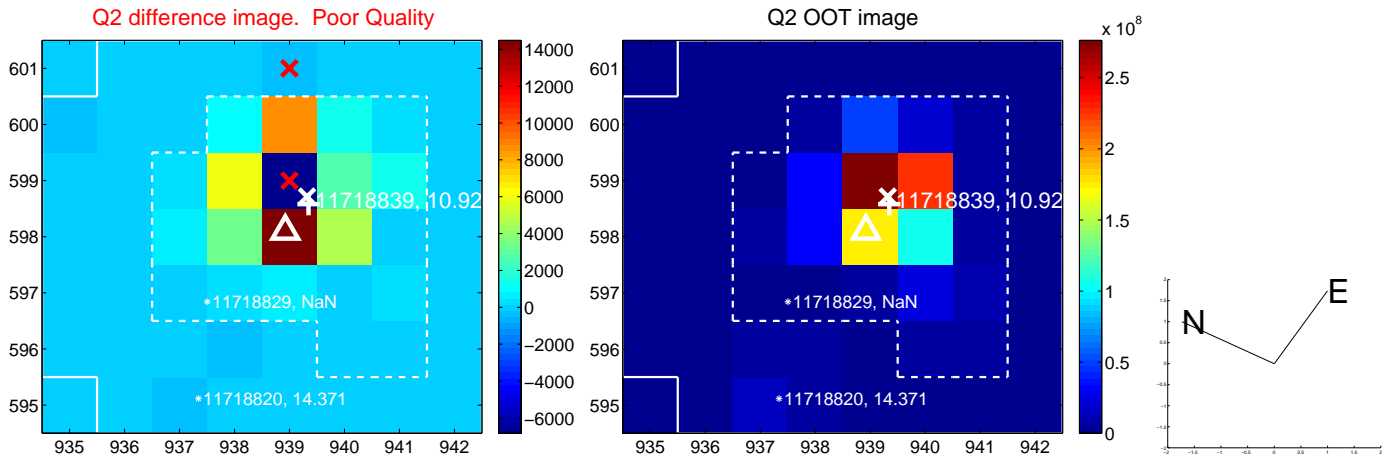
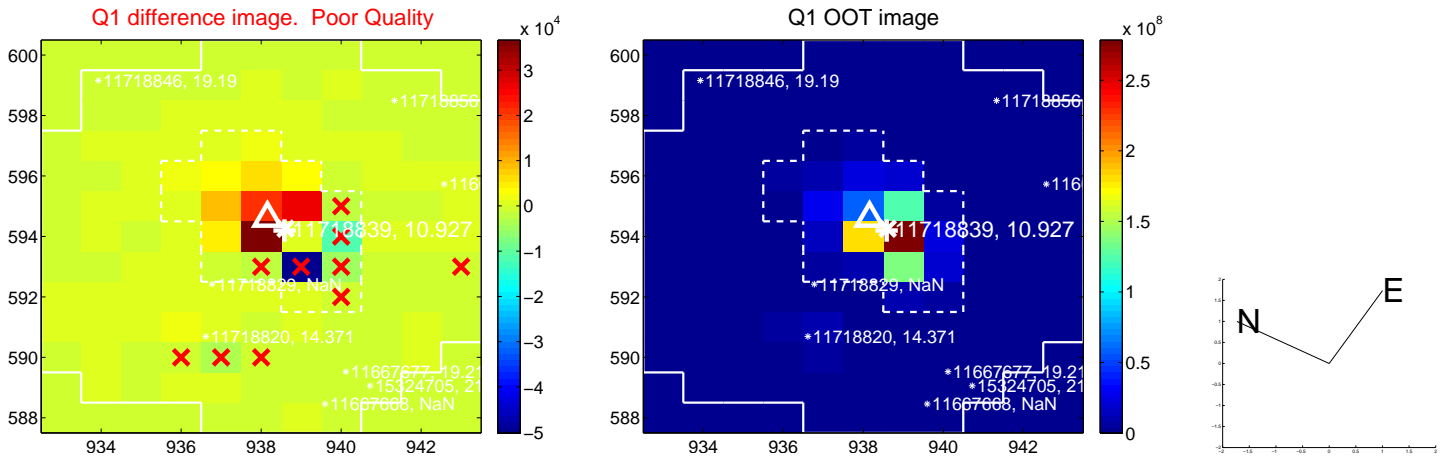
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.345 \pm 0.447$	0.77	$-0.234 \pm 0.379$	$0.254 \pm 0.498$
PRF-fit source offset from KIC position	$0.440 \pm 0.450$	0.98	$-0.428 \pm 0.391$	$-0.104 \pm 0.400$
photometric centroid source offset	$0.72 \pm 0.33$	2.21	$-0.31 \pm 0.39$	$-0.66 \pm 0.31$

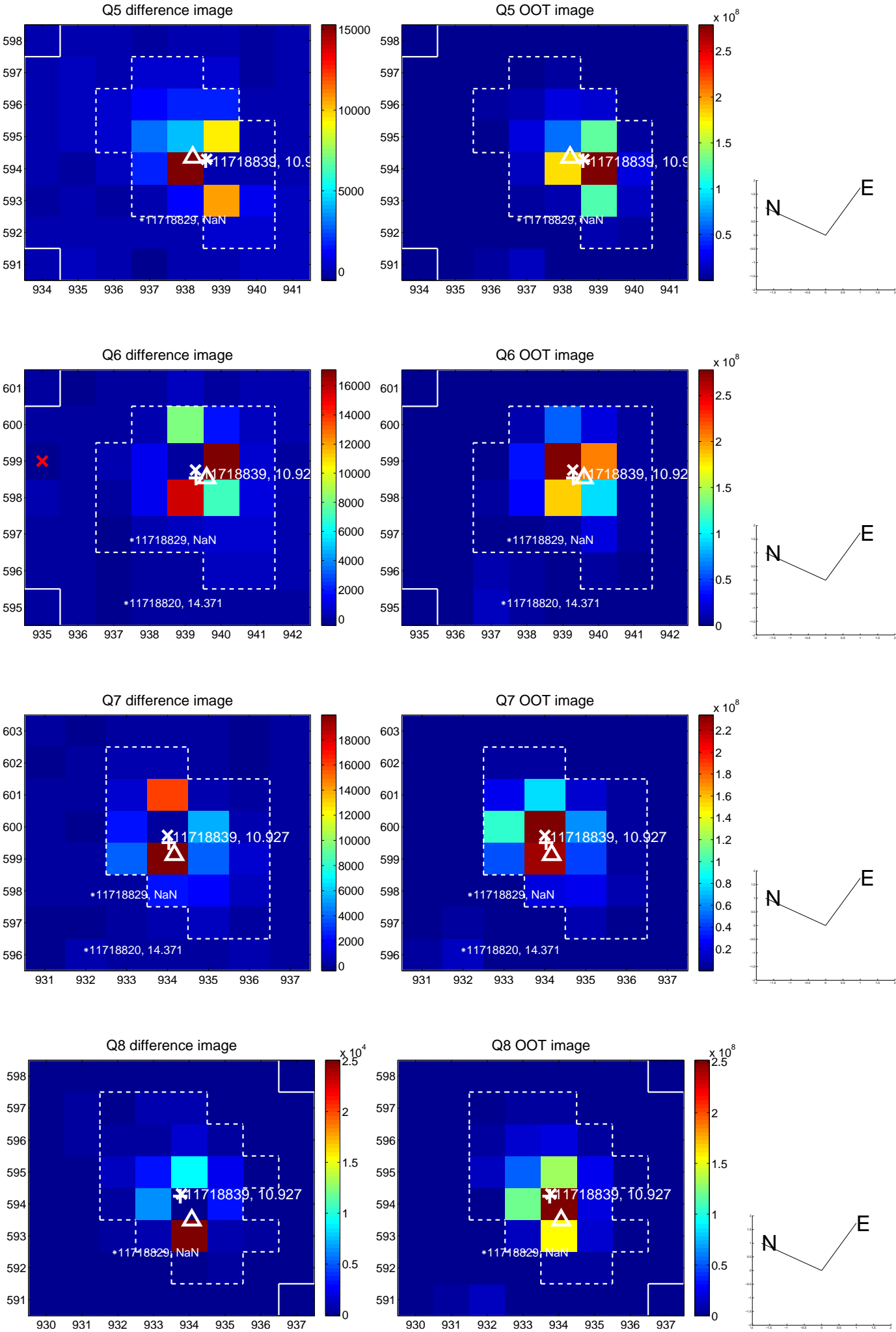


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

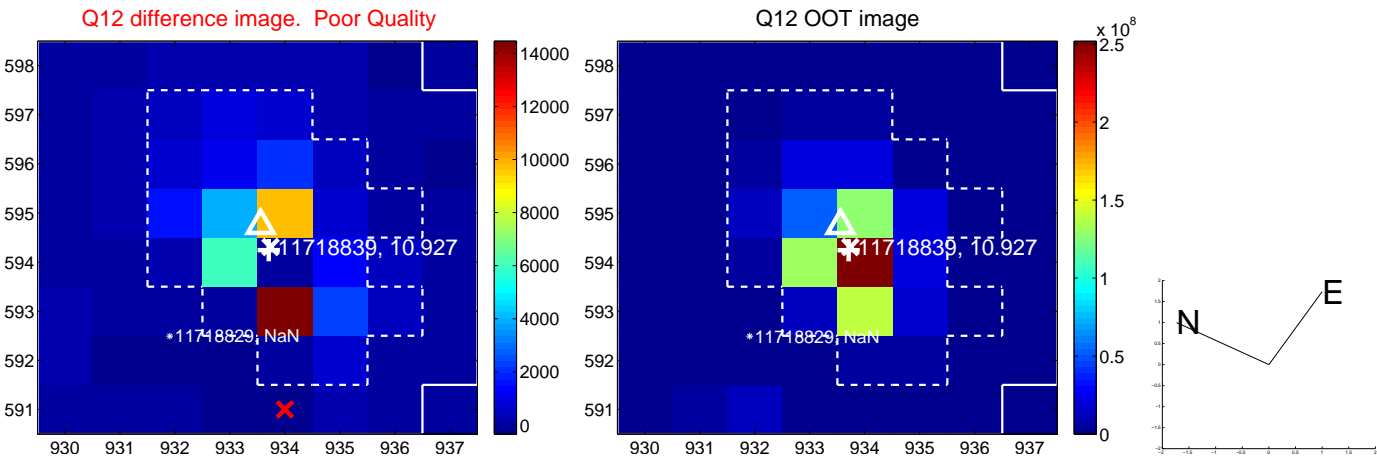
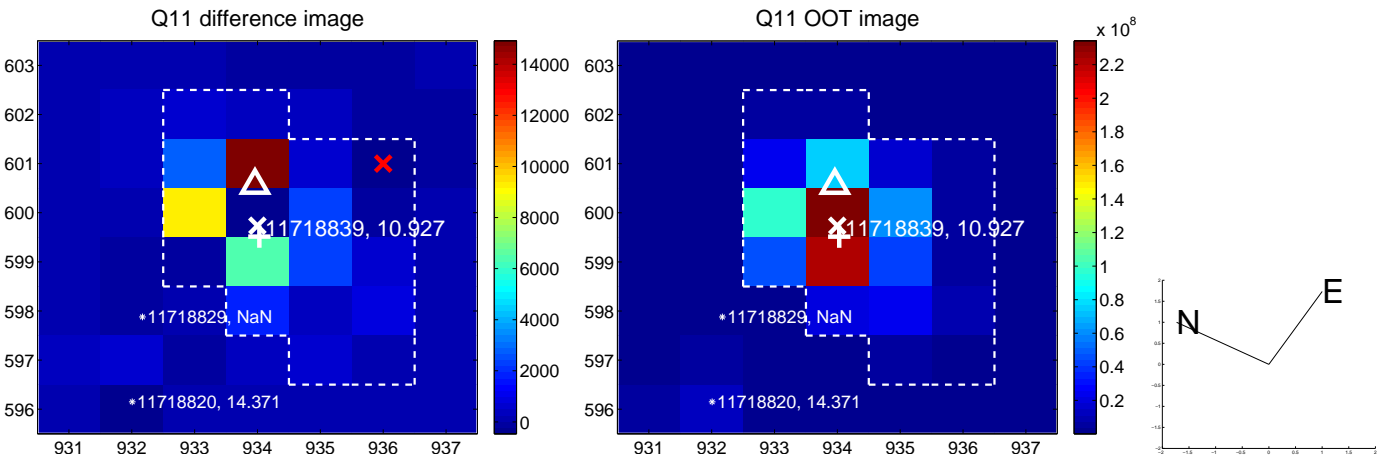
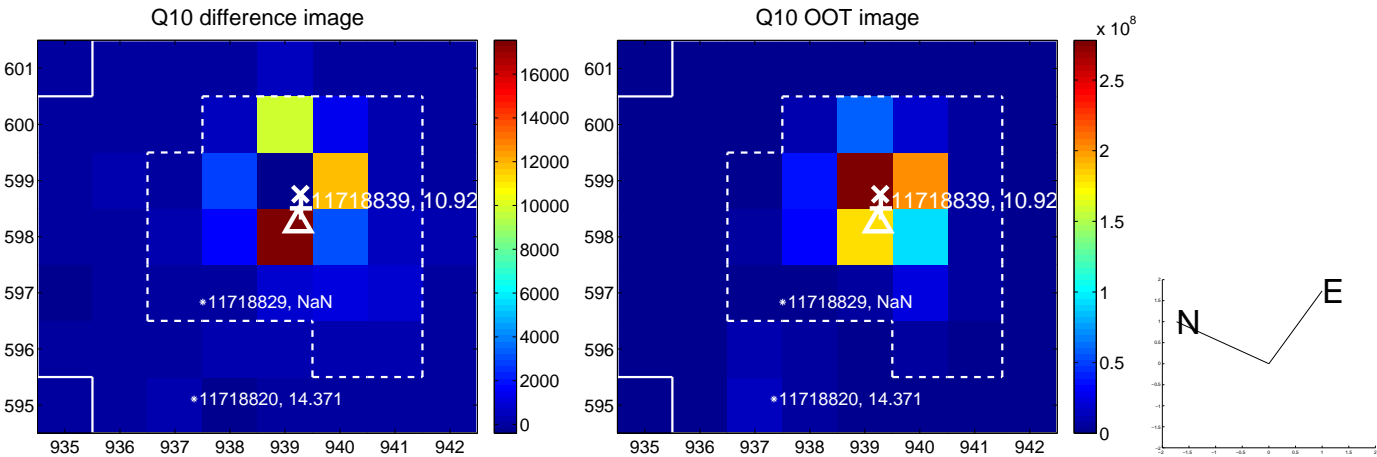
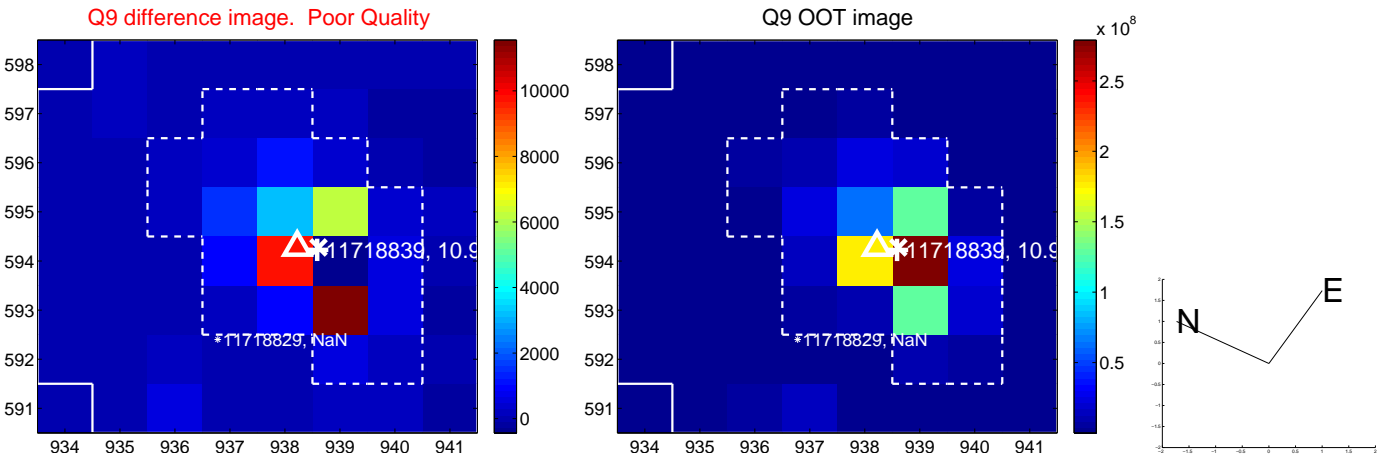


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

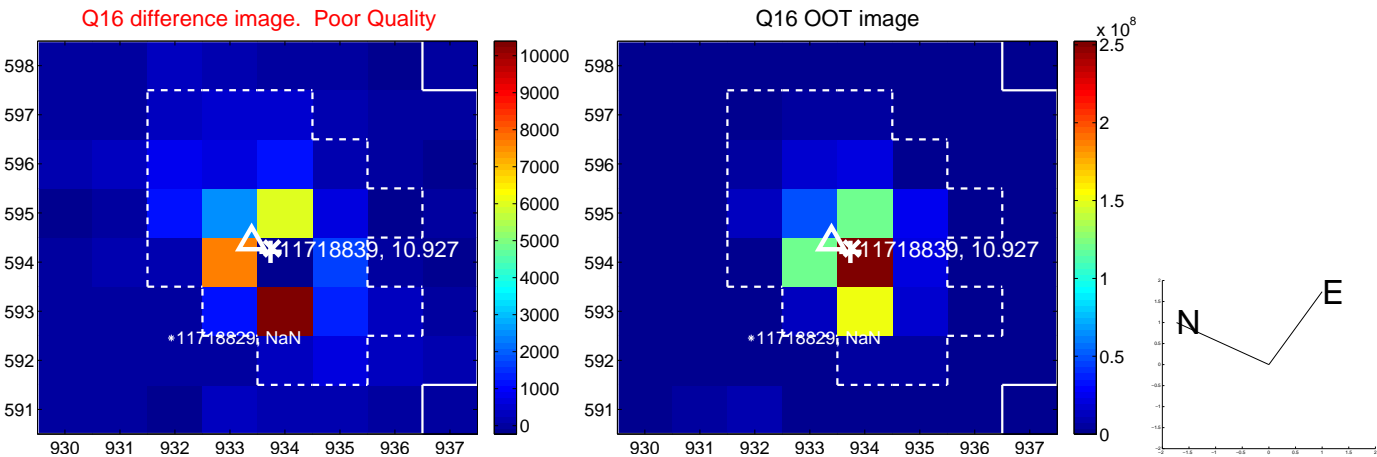
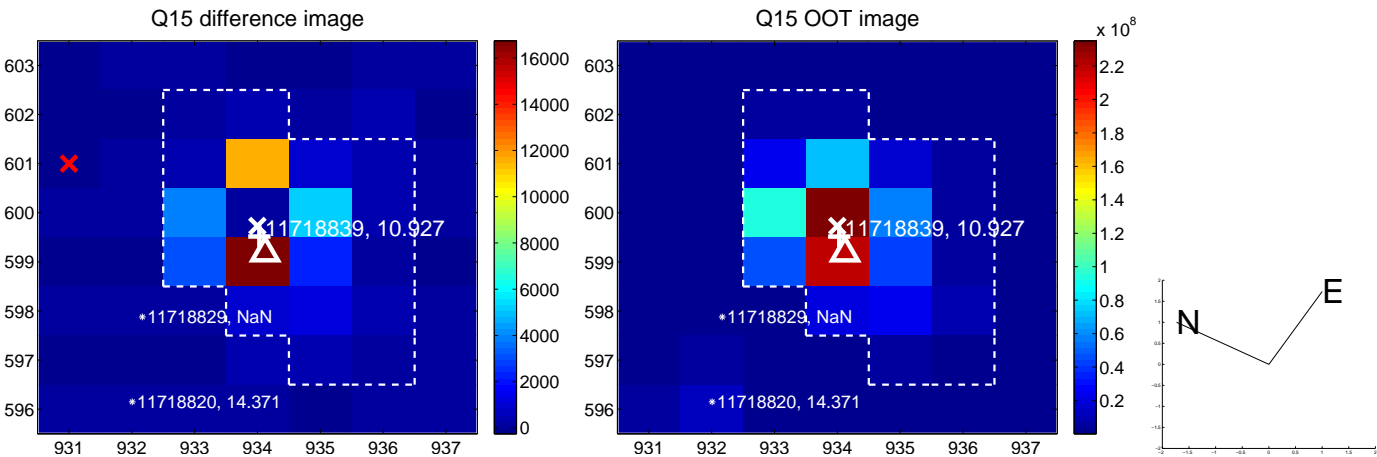
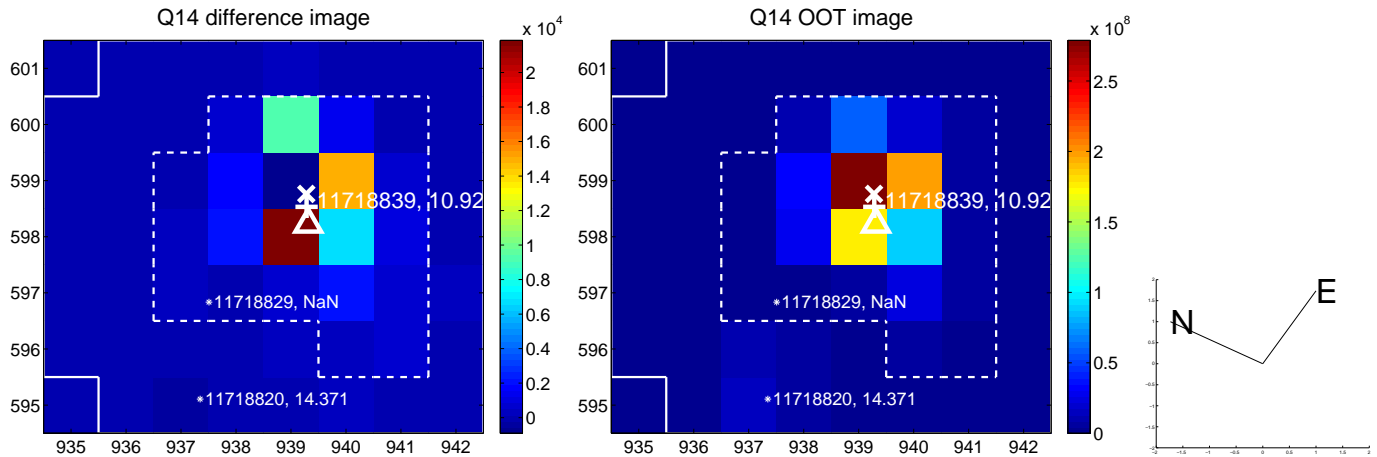
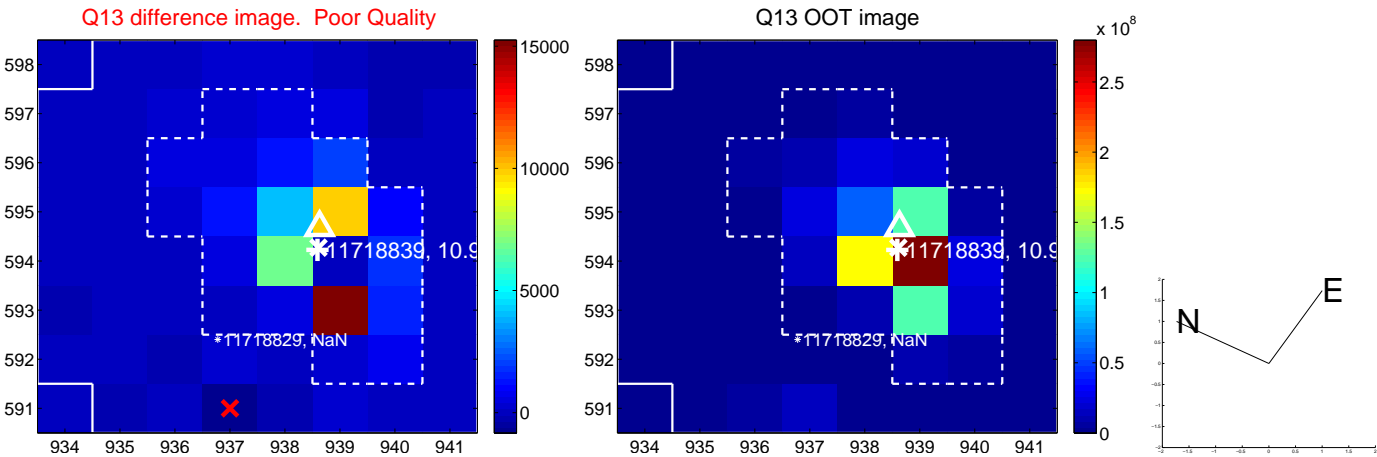




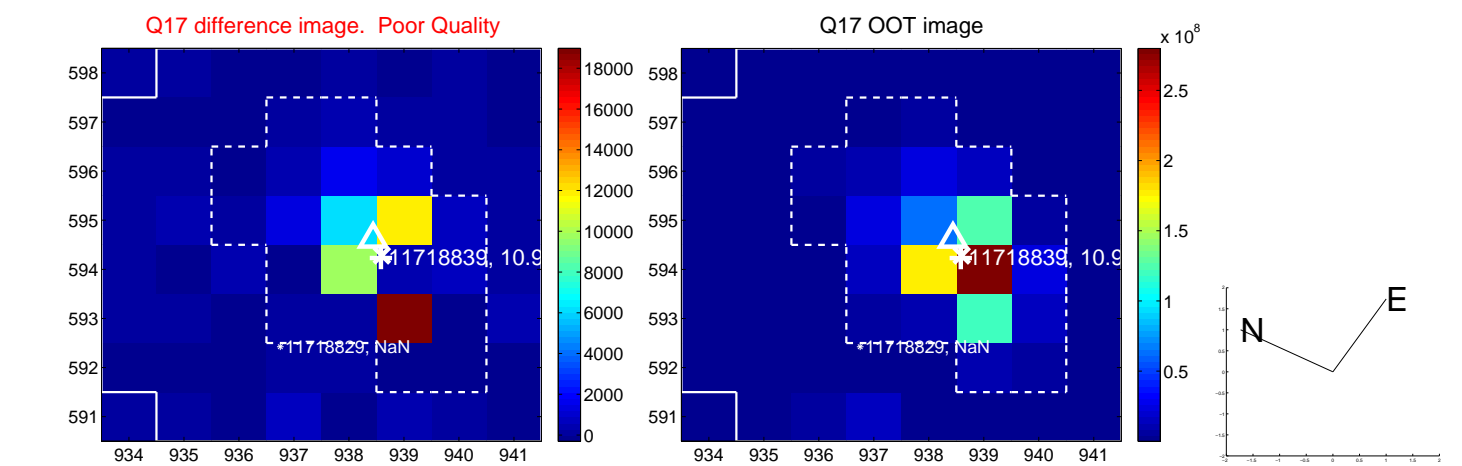
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



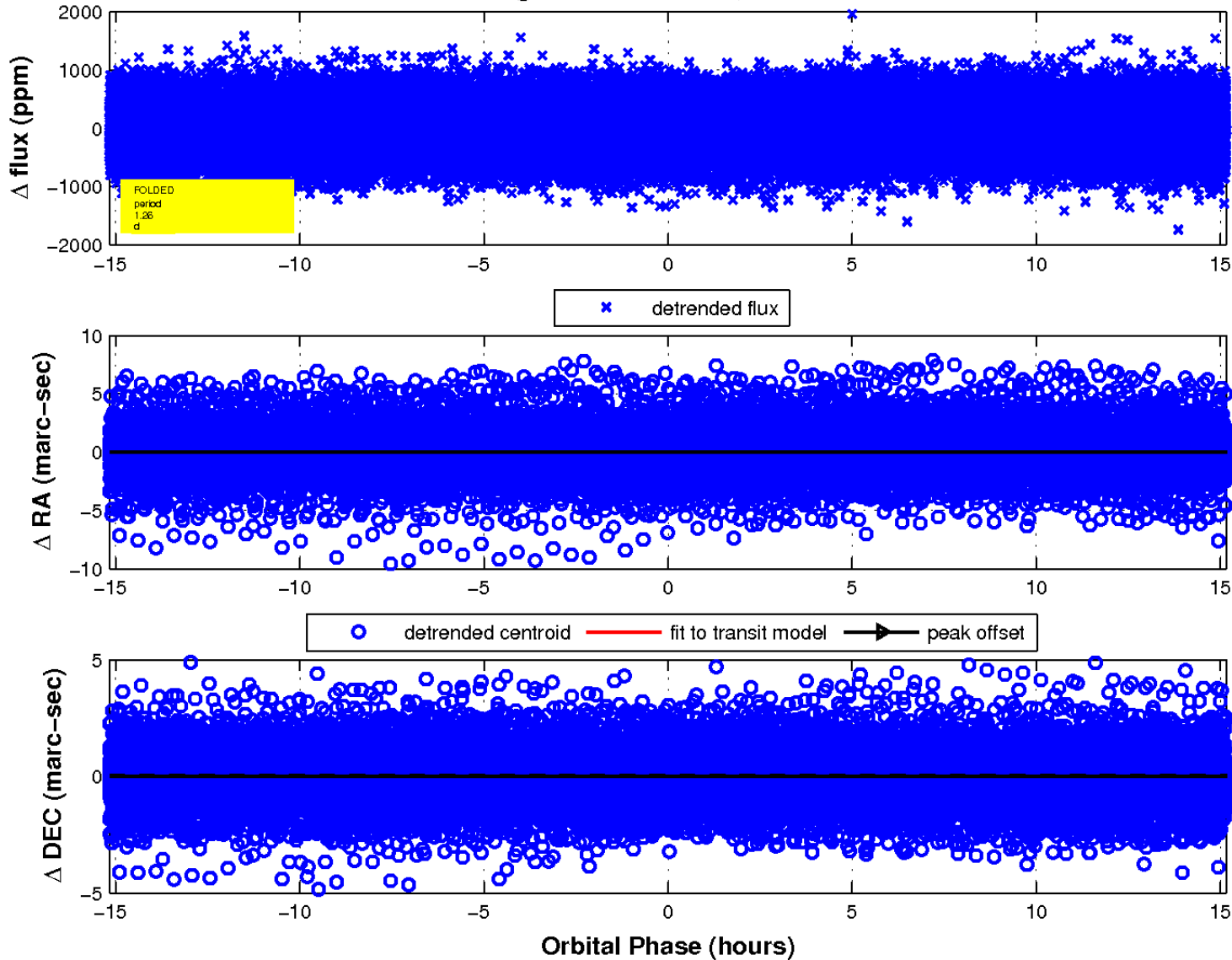
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

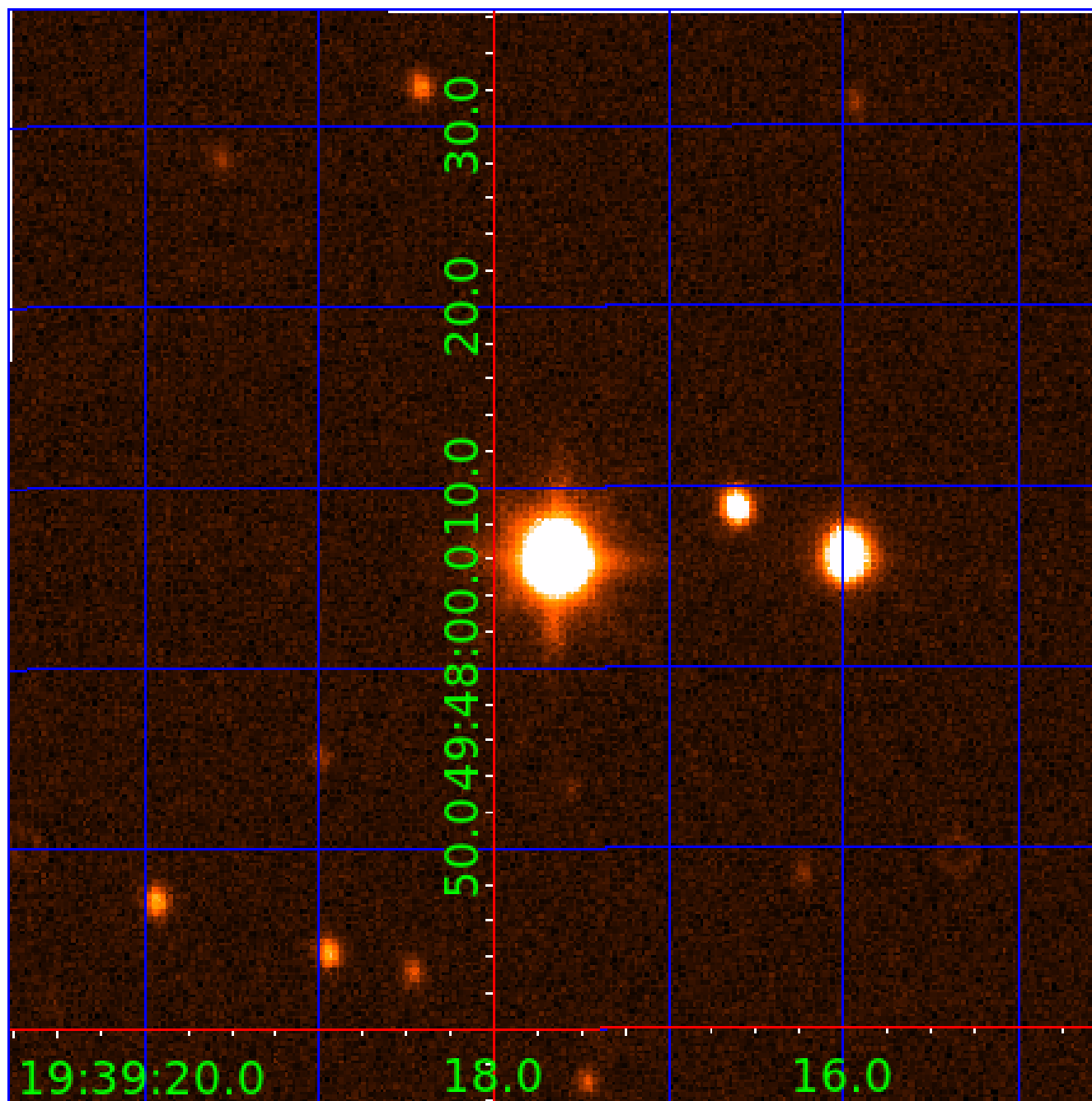


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination





# KIC 011718839

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011718839-01	OBS	No	1.263677	131.676742	32.3	6.075	9.2	9.3	3.13	8443	1.89	53062.22
011718839-02	OBS	No	0.538096	131.763212	55.8	0.961	8.1	6.9	3.13	8443	2.73	165635.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011718839-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
011718839-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED

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

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

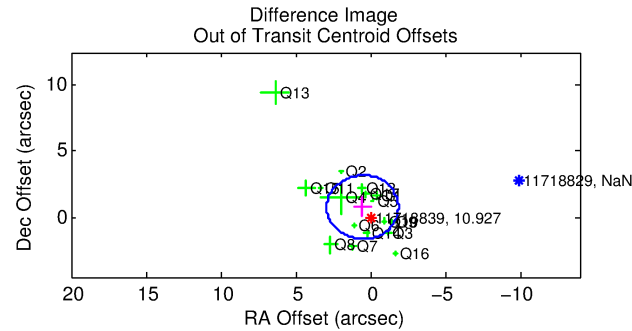
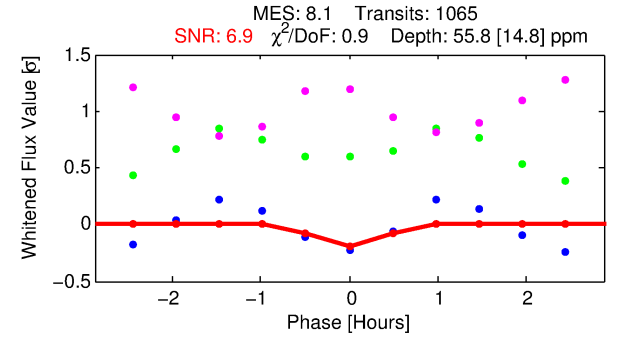
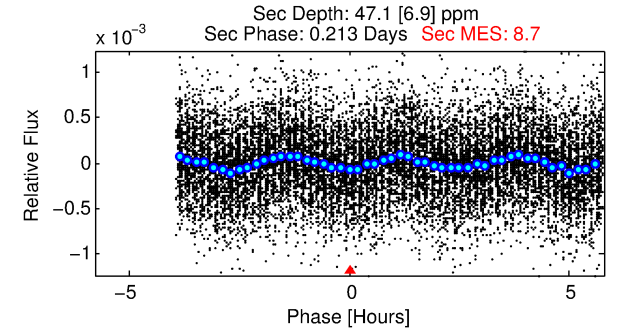
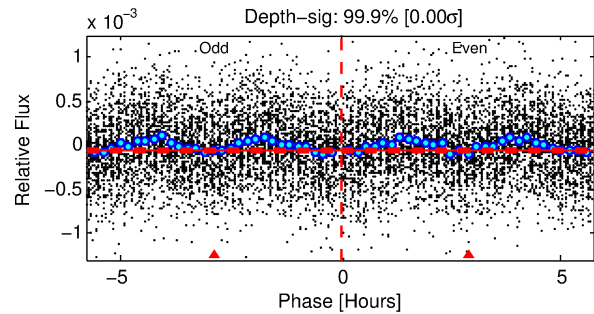
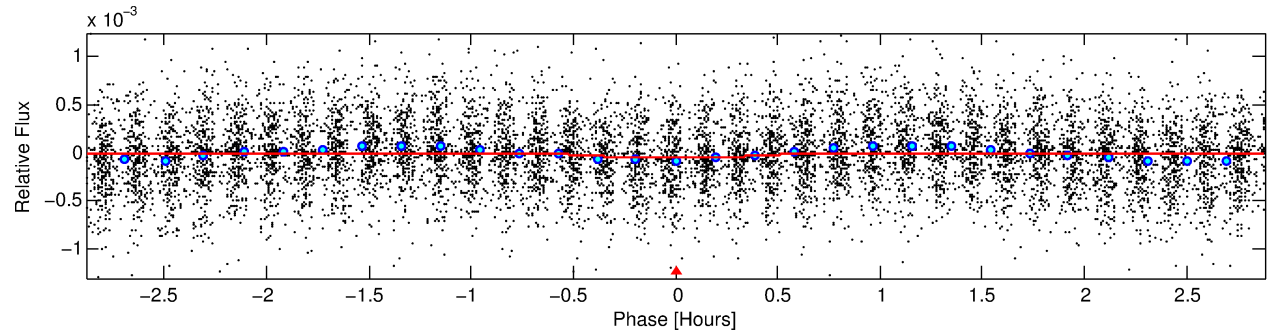
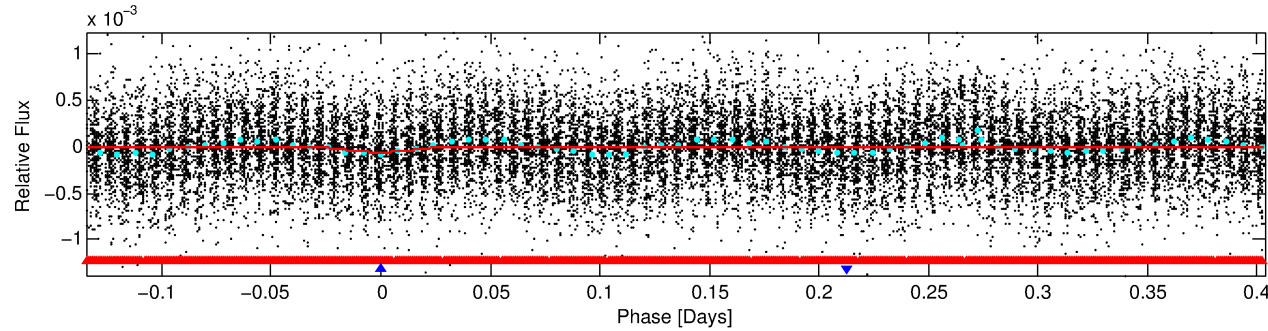
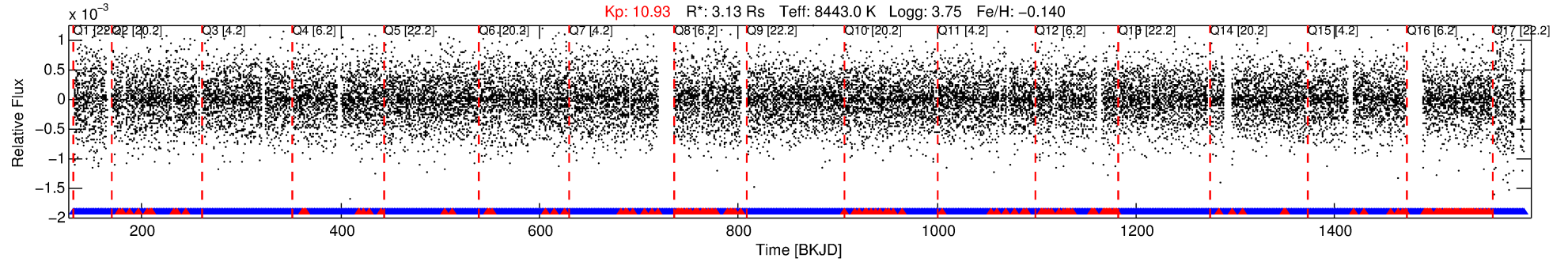
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011718839-02

No Significant Match Found

# DV One-Page Summary

KIC: 11718839 Candidate: 2 of 2 Period: 0.538 d



## DV Fit Results:

Period = 0.53810 [0.00002] d  
Epoch = 131.7632 [0.0029] BKJD  
Rp/R\* = 0.0080 [0.0034]  
a/R\* = 2.16 [4.47]  
b = 0.90 [0.57]  
Seff = 165635.77 [121194.03]  
Teff = 5144 [941] K  
Rp = 2.73 [1.68] Re  
a = 0.0164 [0.0072] AU  
Ag = 0.93 [1.04] [-0.06 $\sigma$ ]  
Teffp = 7819 [1704] K [1.37 $\sigma$ ]

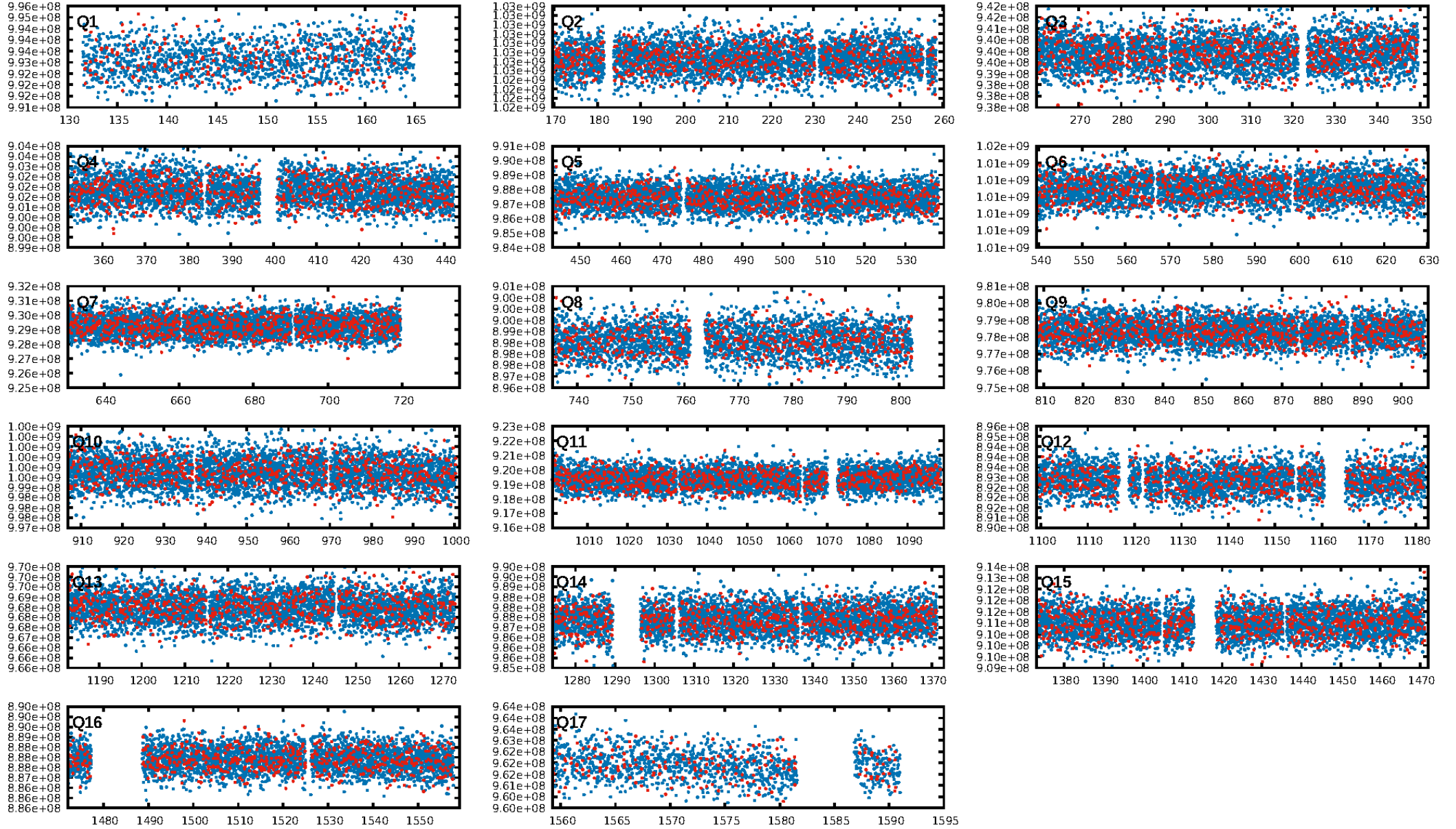
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 99.5% [2.83 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.72e-14  
RollingBand-fgt: 0.85 [866/1018]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 3.6%  
Centroid-so: 0.086 arcsec [0.31 $\sigma$ ]  
OotOffset-rm: 0.941 arcsec [1.18 $\sigma$ ]  
KicOffset-rm: 0.442 arcsec [0.71 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.41 [7/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:14:22 Z

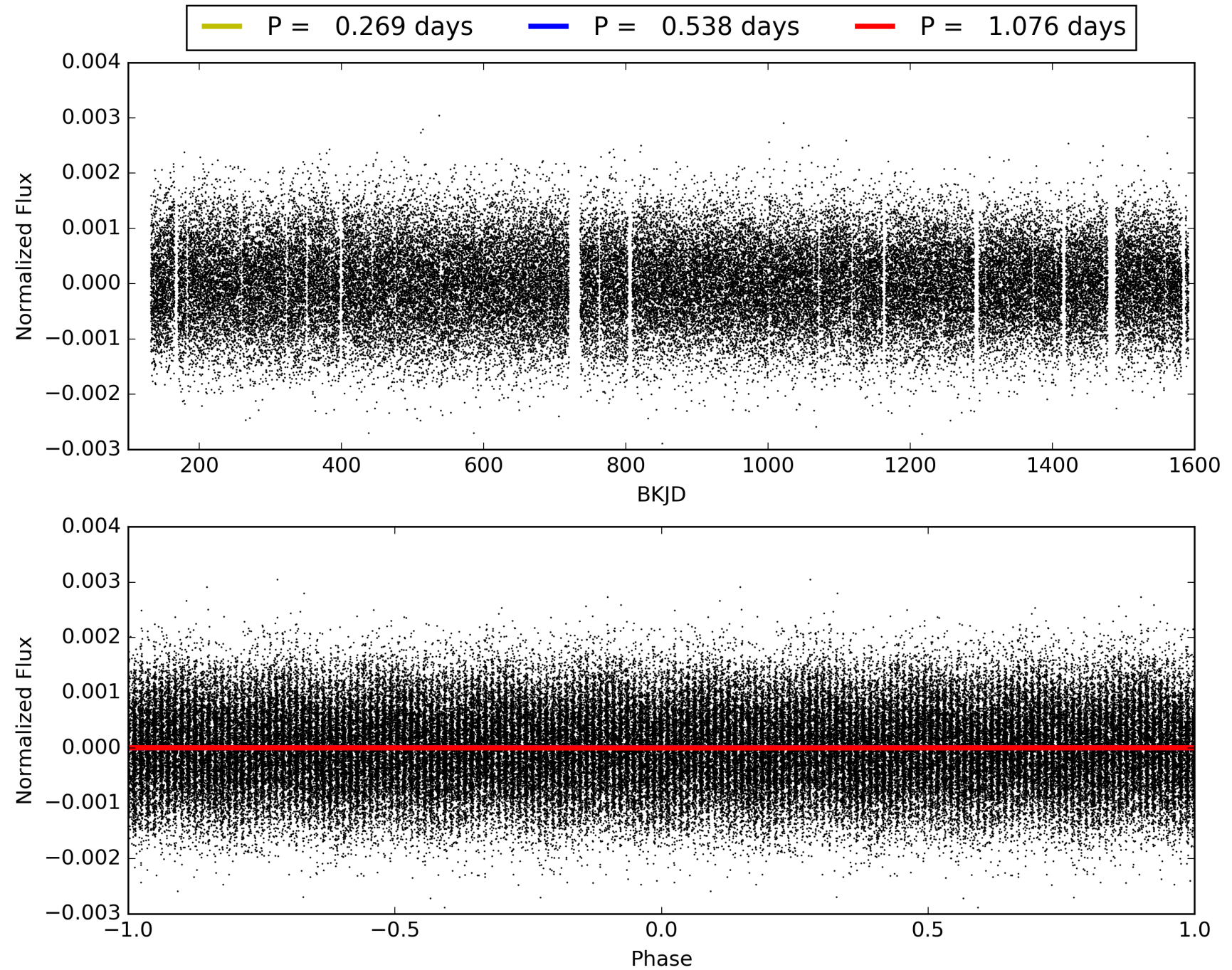
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011718839-02, PDC Light Curves



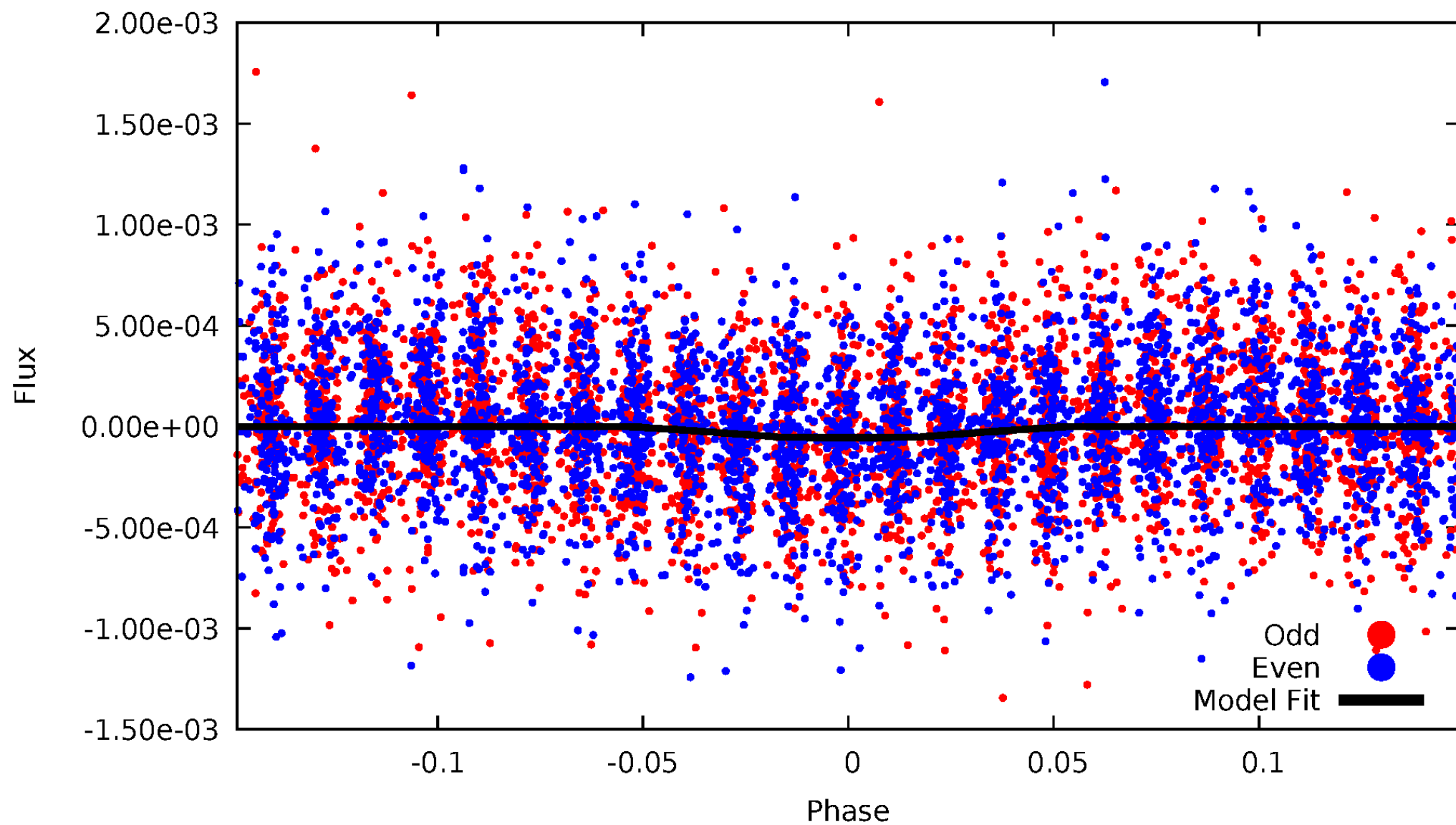


# TCE 011718839-02



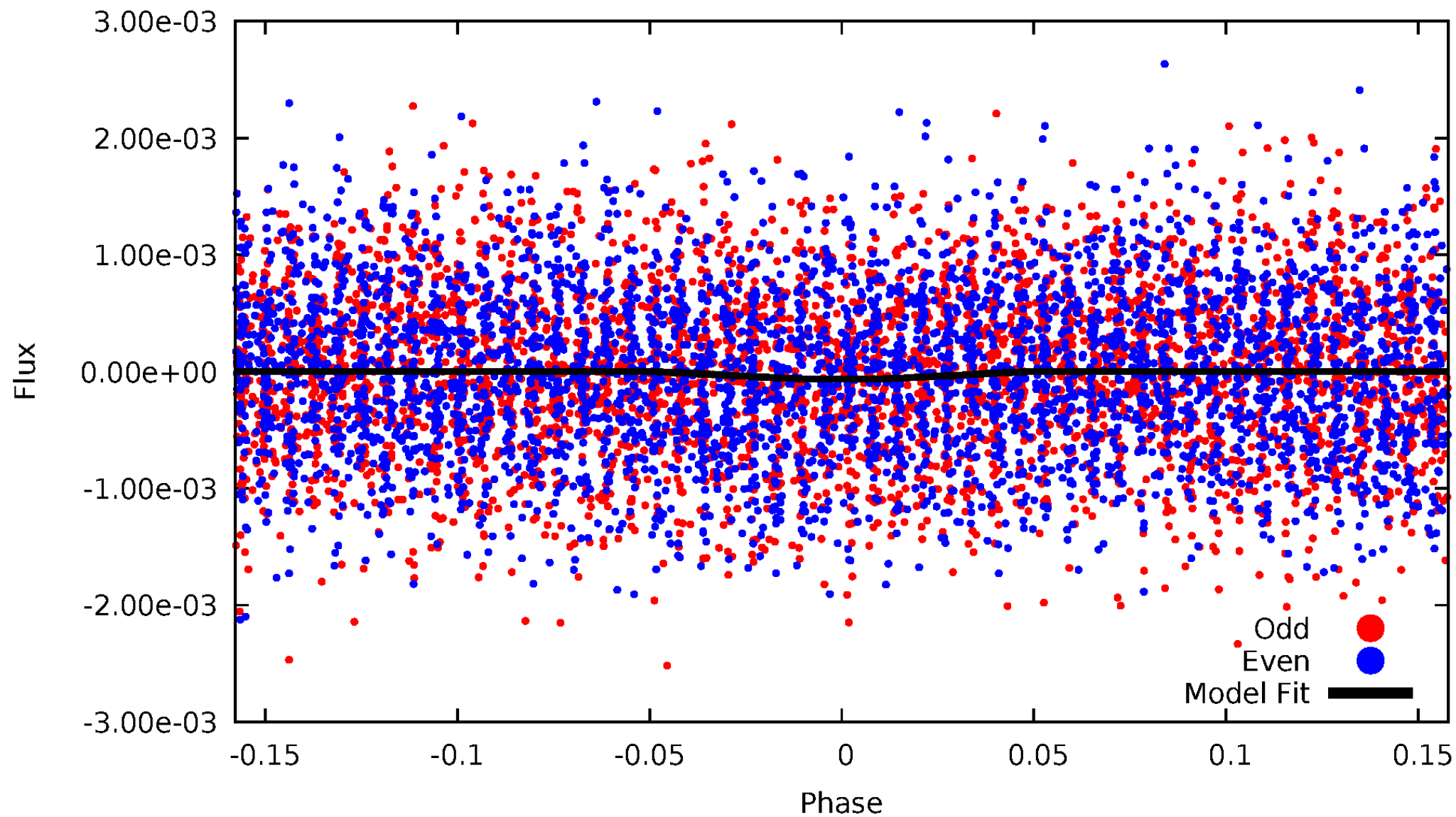
# DV Odd/Even

TCE 011718839-02



# ALT Odd/Even

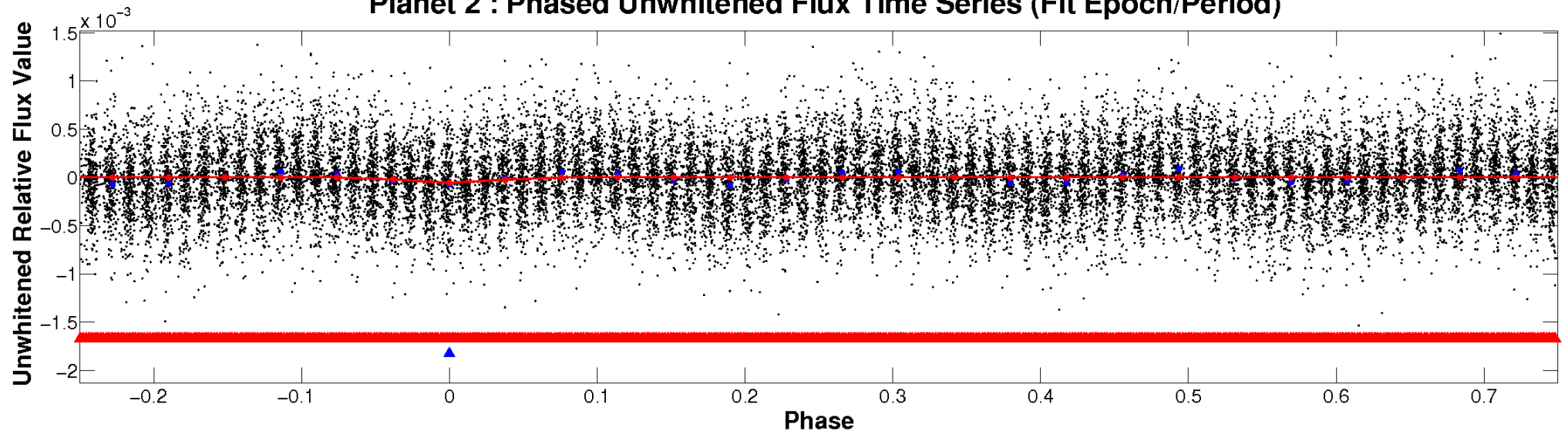
TCE 011718839-02



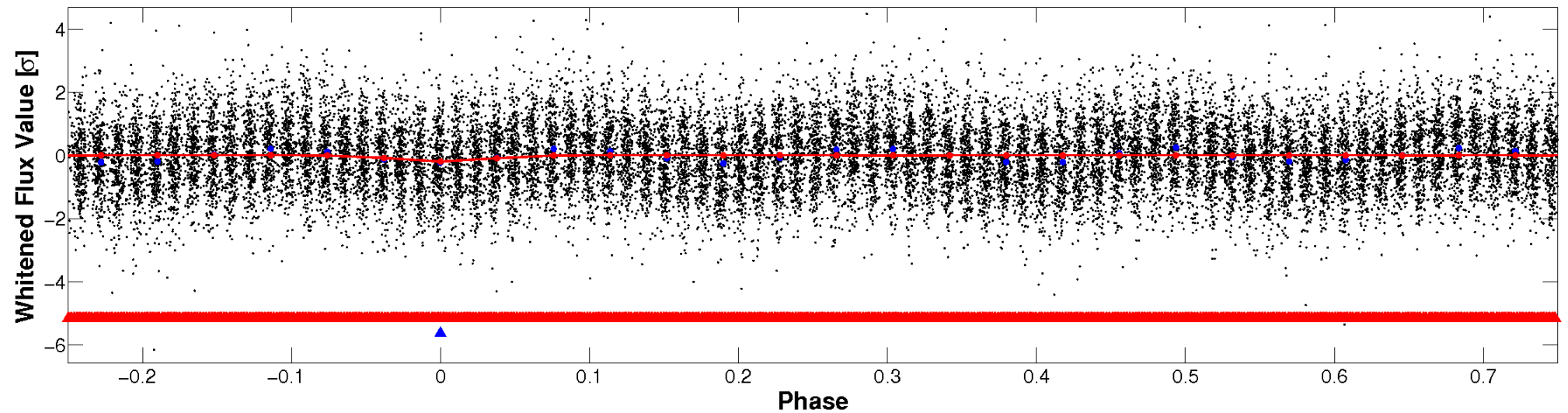


# Non-Whitened Vs. Whitened Light Curve

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

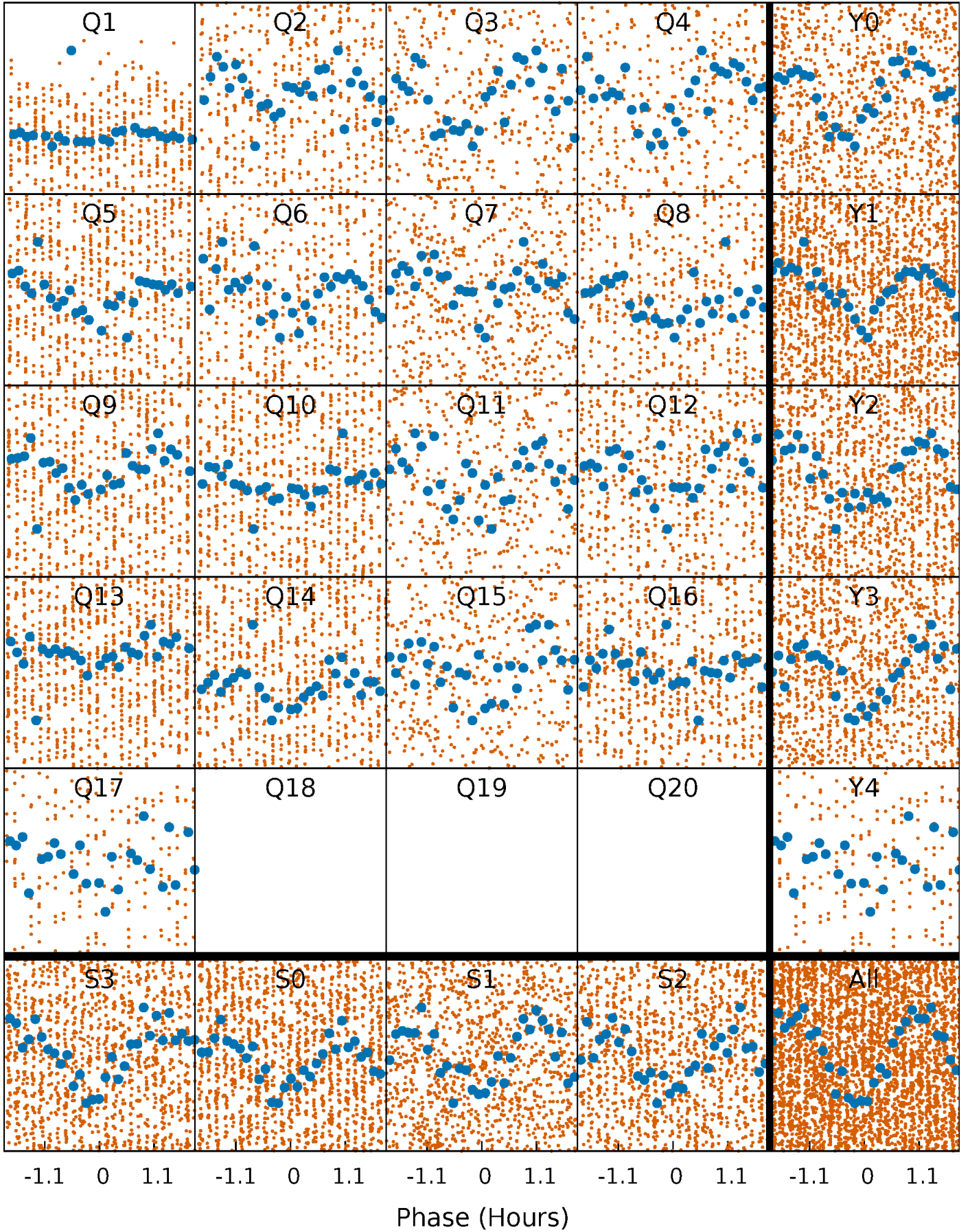


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



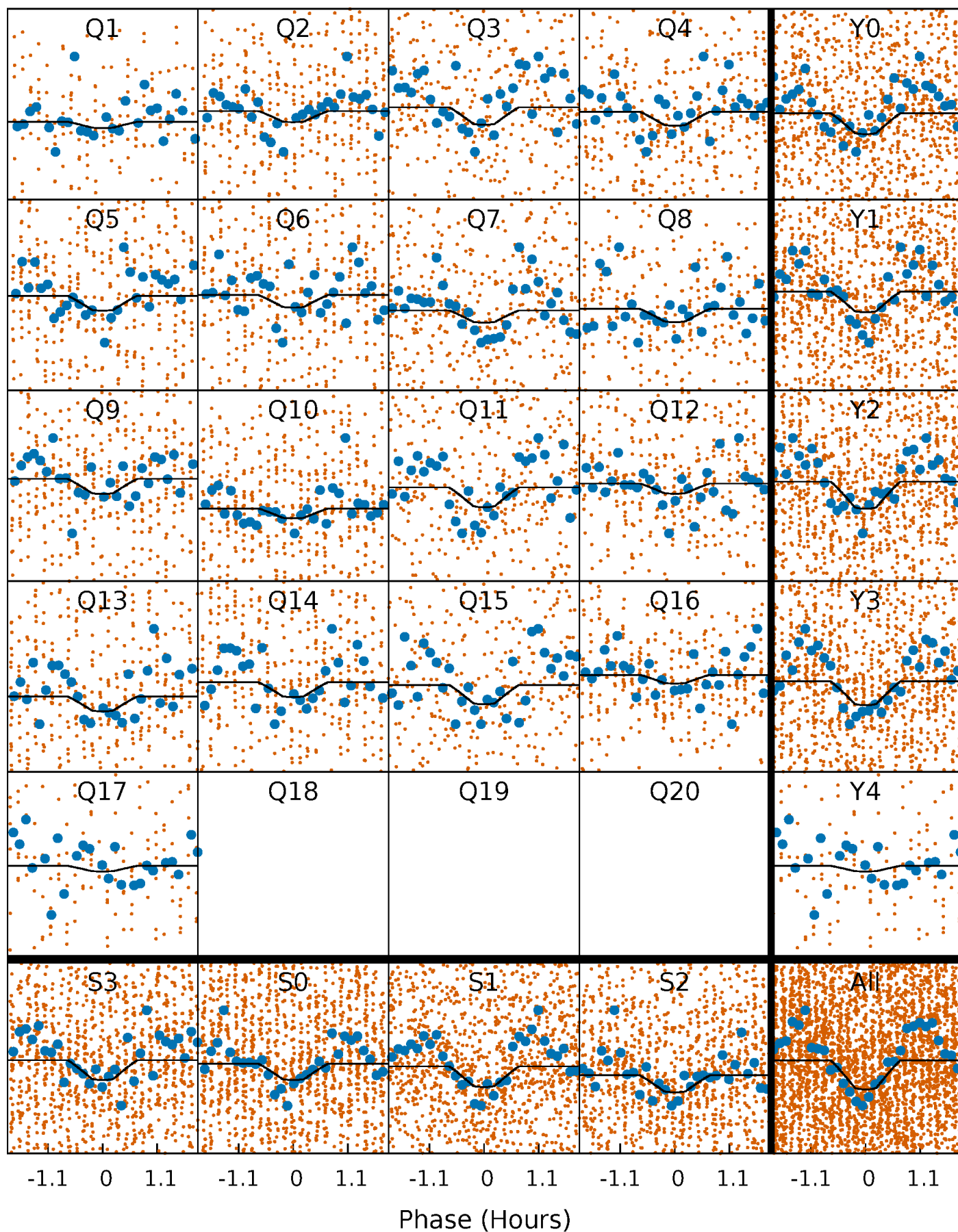
# PDC Quarter-Phased Transit Curves

TCE 011718839-02   P= 0.538096 Days    $T_0=131.763212$  (BKJD)



# DV Quarter-Phased Transit Curves

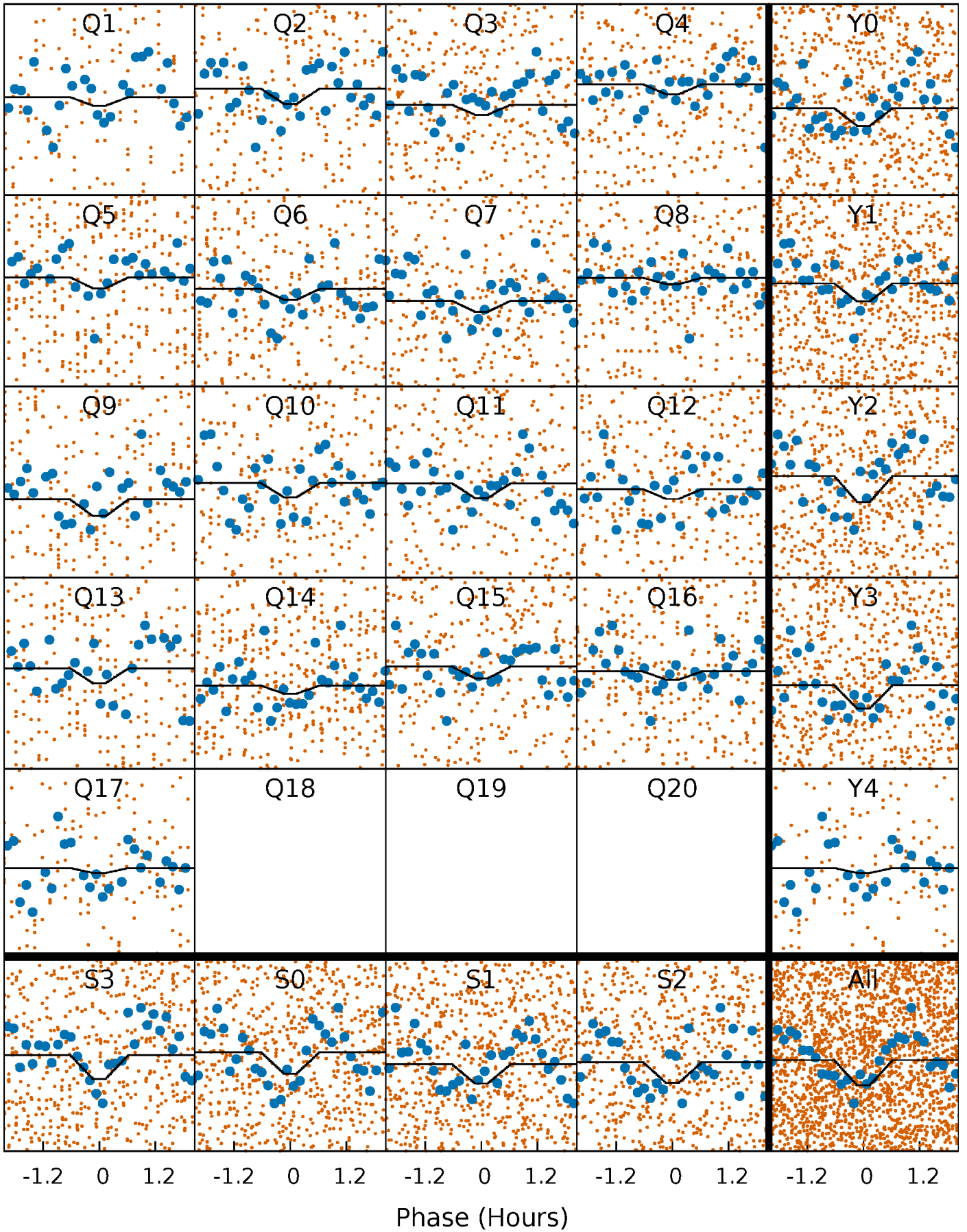
TCE 011718839-02 P= 0.538096 Days  $T_0=131.763212$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

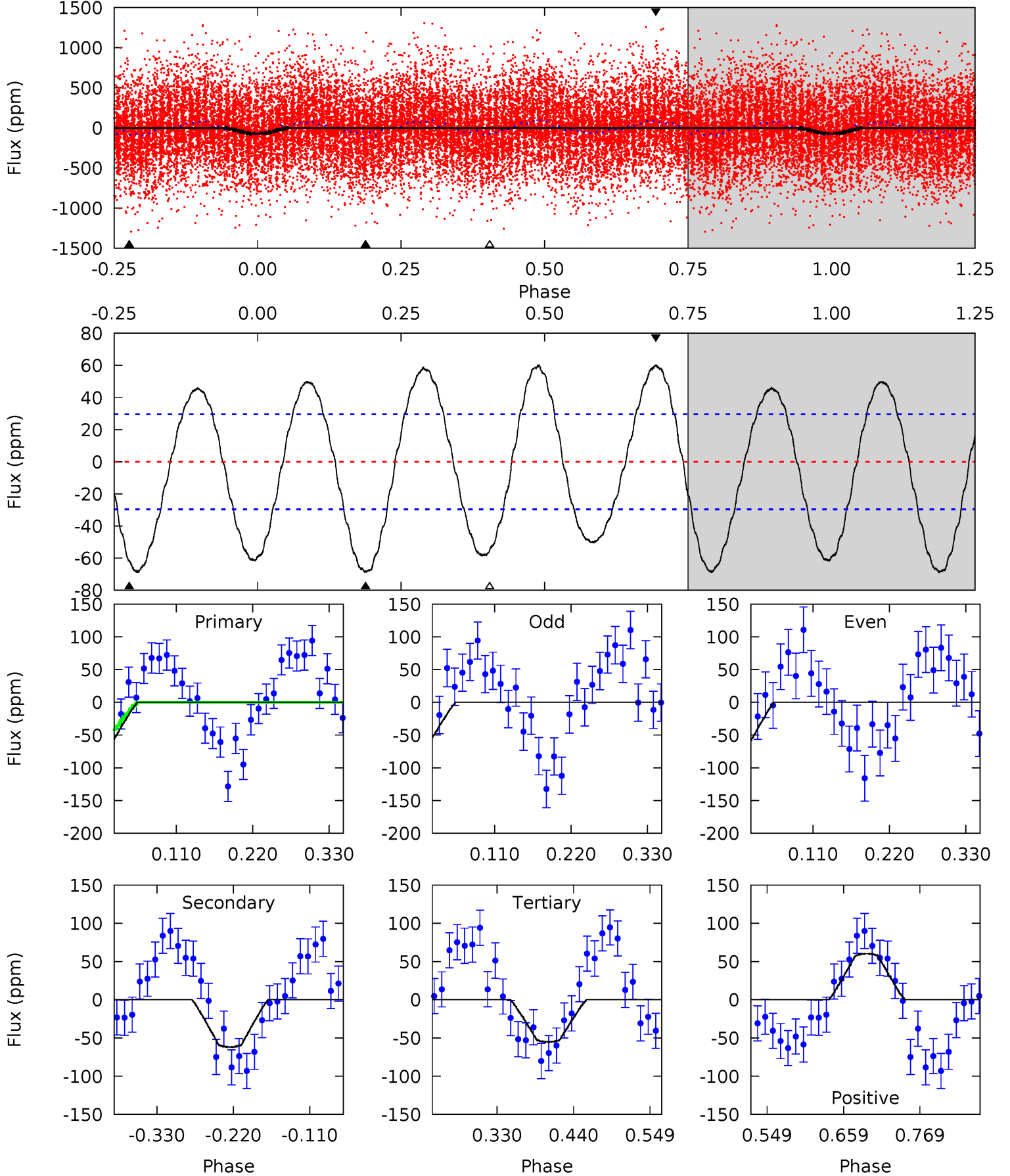
TCE 011718839-02   P= 0.538100 Days    $T_0=131.765675$  (BKJD)



# DV Model-Shift Uniqueness Test

011718839-02, P = 0.538096 Days, E = 131.763212 Days

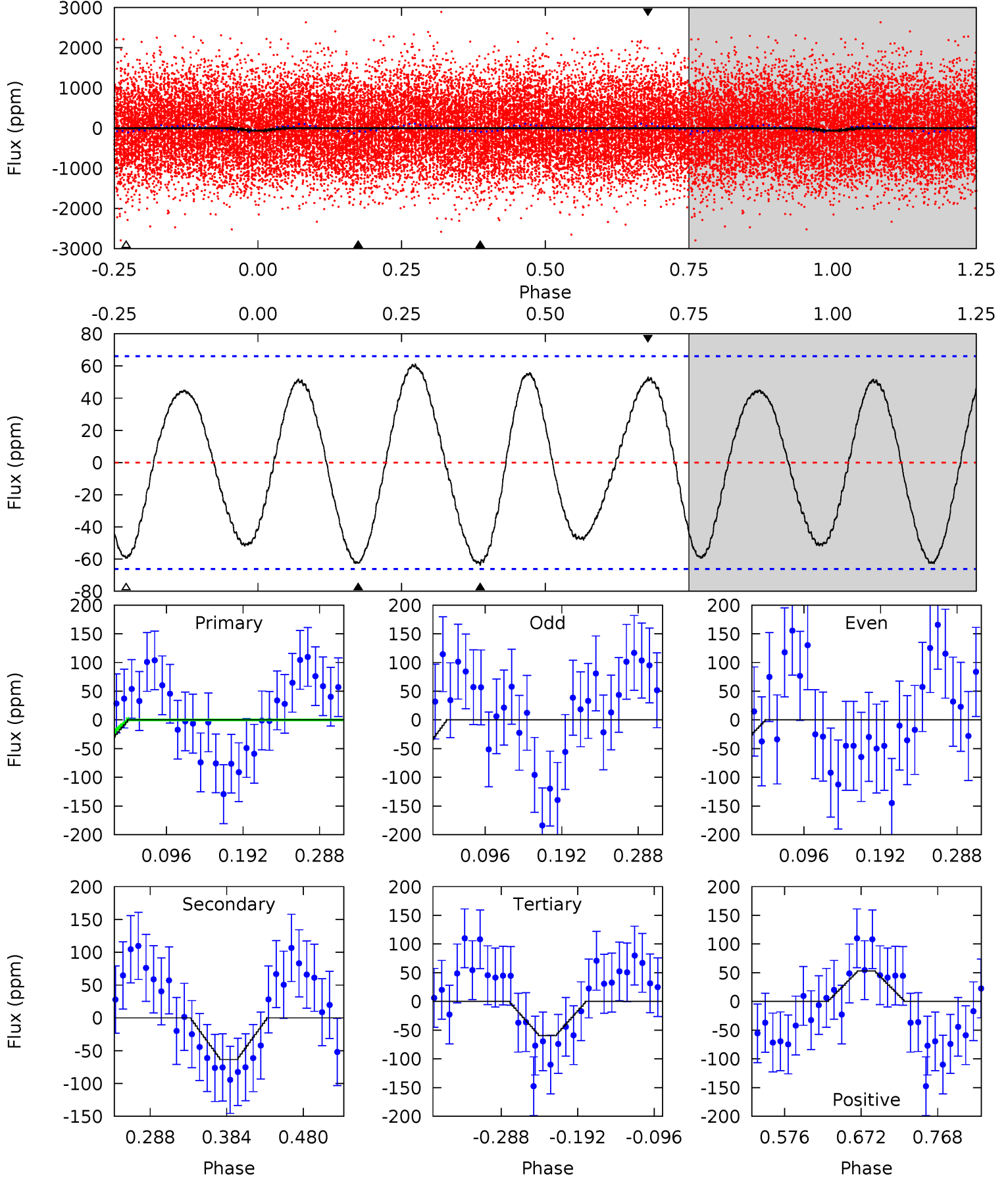
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	9.53	8.50	9.27	4.54	1.60	6.09	2.07	1.30	1.03	0.26	0.51	1.01	0.47	2.38



# Alt Model-Shift Uniqueness Test

011718839-02, P = 0.538100 Days, E = 131.765675 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
4.34	4.39	4.10	3.67	4.57	1.66	2.52	0.24	0.67	0.29	0.72	0.63	0.99	0.49	1.41





### Stellar Parameters For KIC 011718839

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8443^{+233}_{-367}$	$3.755^{+0.420}_{-0.140}$	$-0.140^{+0.400}_{-0.350}$	$3.127^{+0.935}_{-1.403}$	$2.032^{+0.425}_{-0.425}$	$0.094^{+0.335}_{-0.045}$
	+3%/-4%	+11%/-4%	+286%/-250%	+30%/-45%	+21%/-21%	+358%/-48%
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 011718839-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-62 \pm 7$	$2.53^{+1.34}_{-1.15}$	$7000^{+594}_{-772}$	$7606^{+4530}_{-1844}$	$1.429^{+3.298}_{-0.784}$
Alt.	$-63 \pm 14$	$2.47^{+1.43}_{-1.05}$	$6981^{+546}_{-785}$	$7884^{+4332}_{-2222}$	$1.522^{+3.246}_{-0.909}$

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

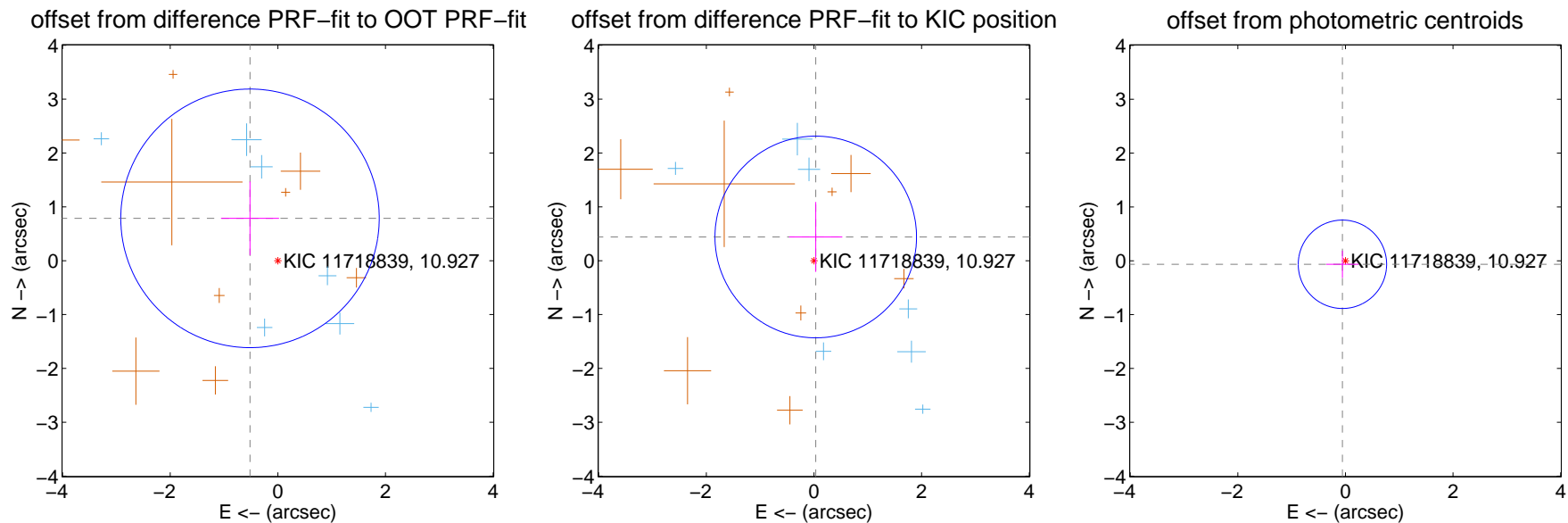
## DV Centroid Data

Supplemental centroid analysis for 011718839-02. **Kepler magnitude: 10.93.** Transit SNR 6.93

There are 7 quarters with good PRF difference image offsets

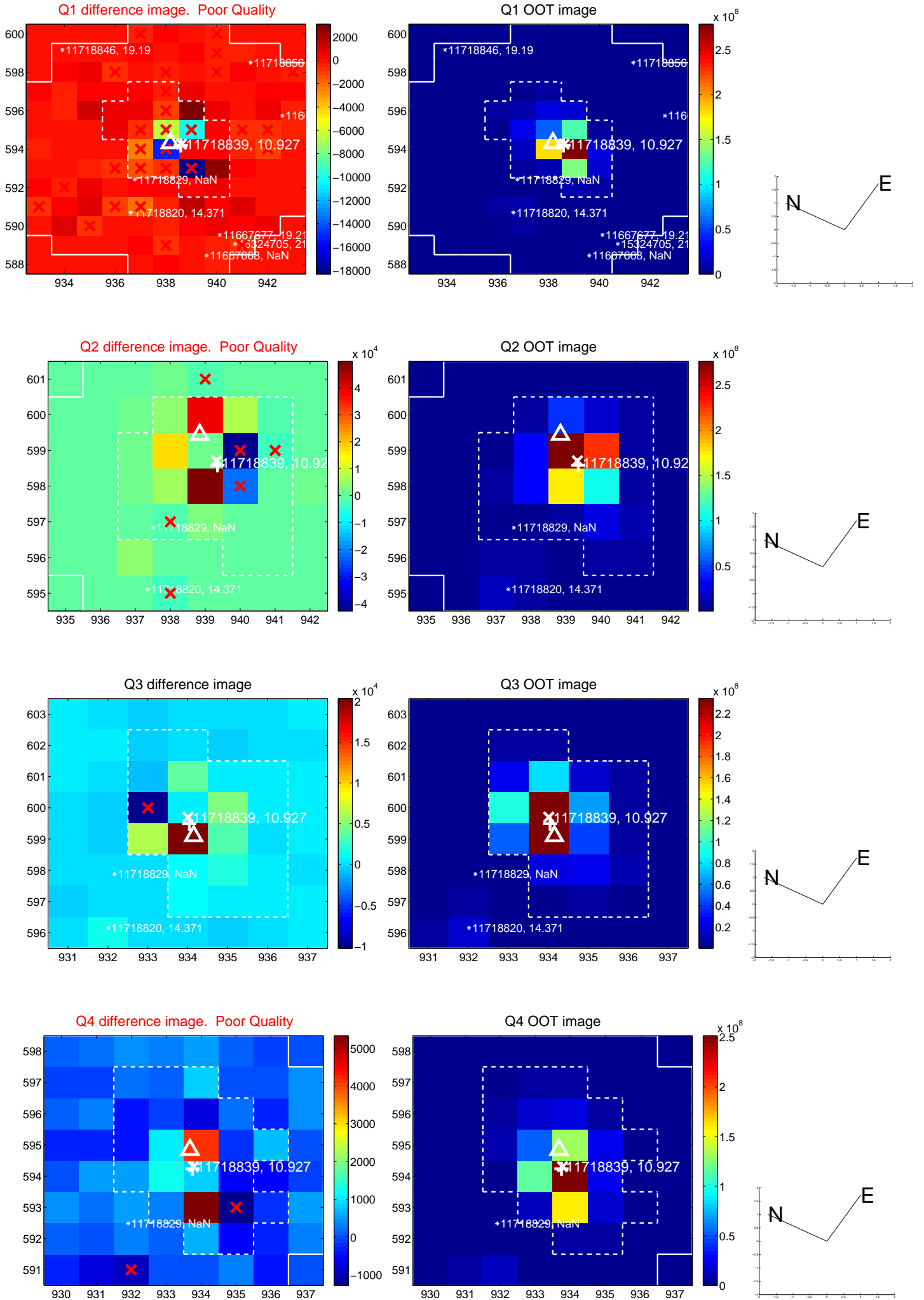
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.941 \pm 0.800$	1.18	$0.517 \pm 0.538$	$0.786 \pm 0.683$
PRF-fit source offset from KIC position	$0.442 \pm 0.624$	0.71	$-0.033 \pm 0.493$	$0.440 \pm 0.649$
photometric centroid source offset	$0.09 \pm 0.27$	0.31	$0.06 \pm 0.30$	$-0.07 \pm 0.25$

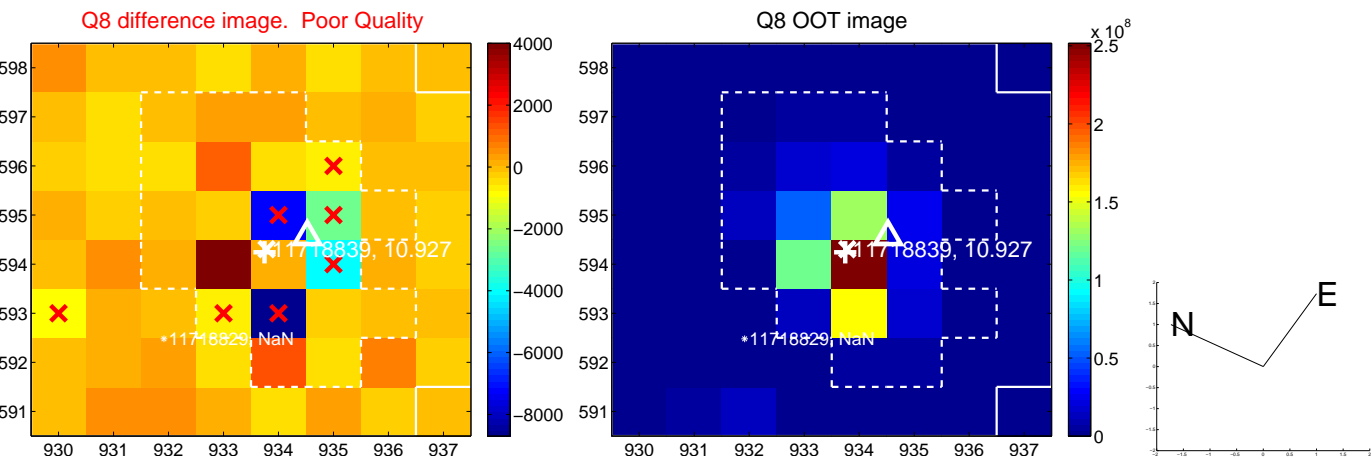
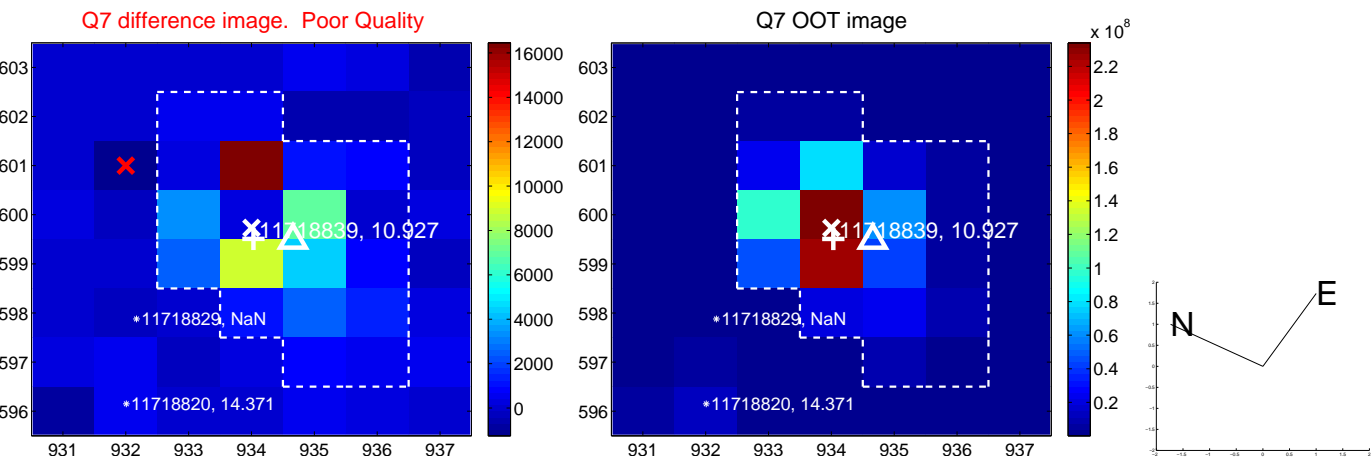
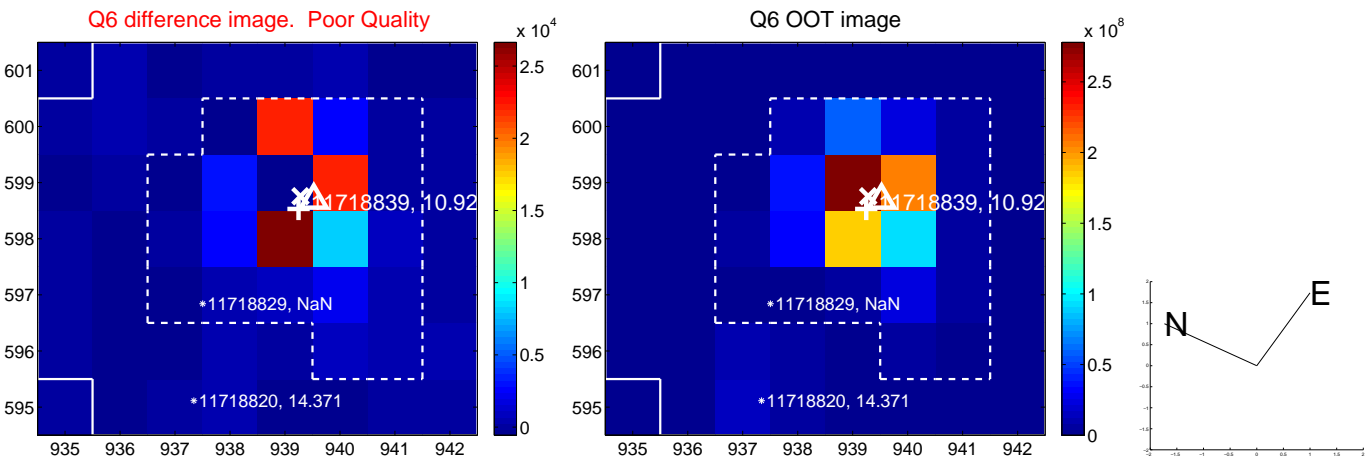
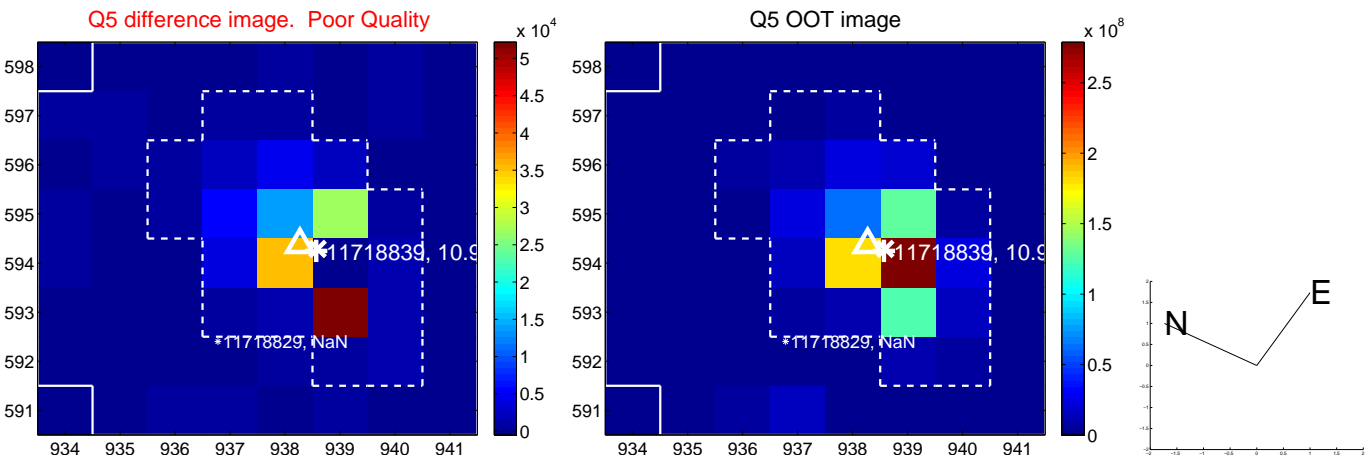


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

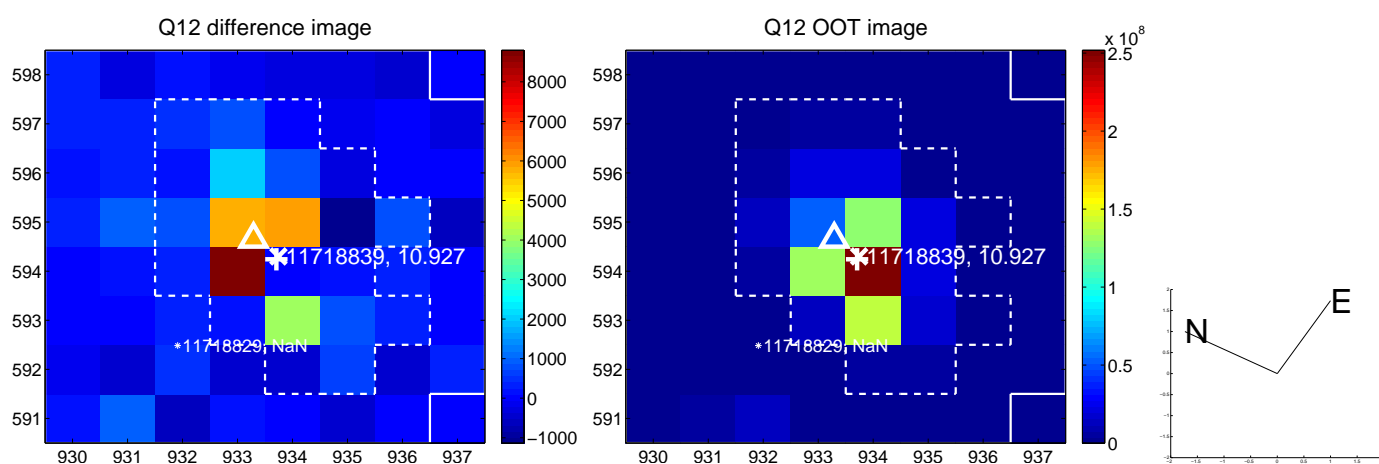
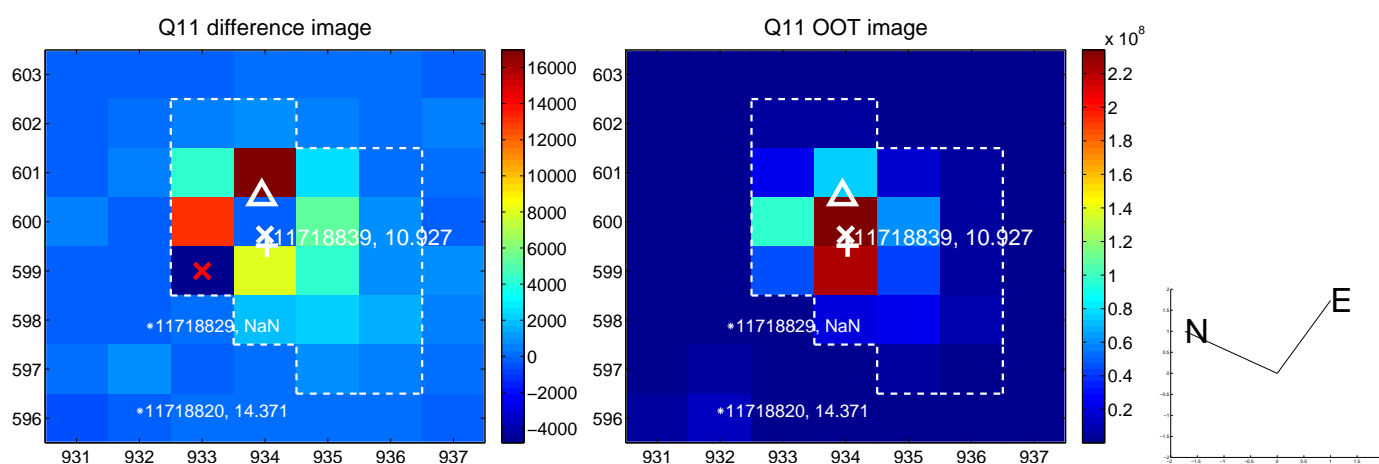
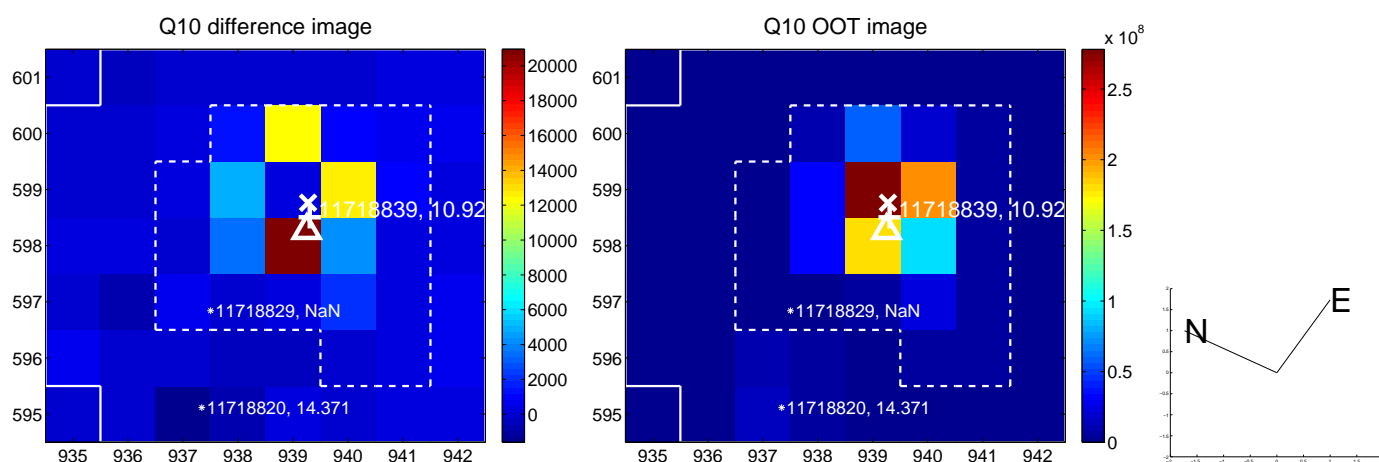
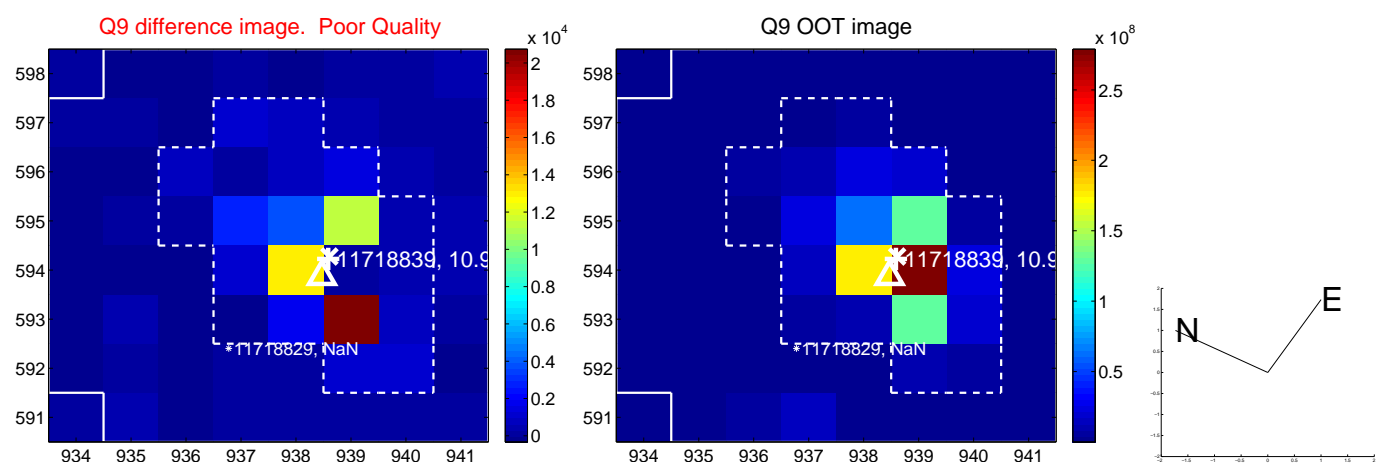
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



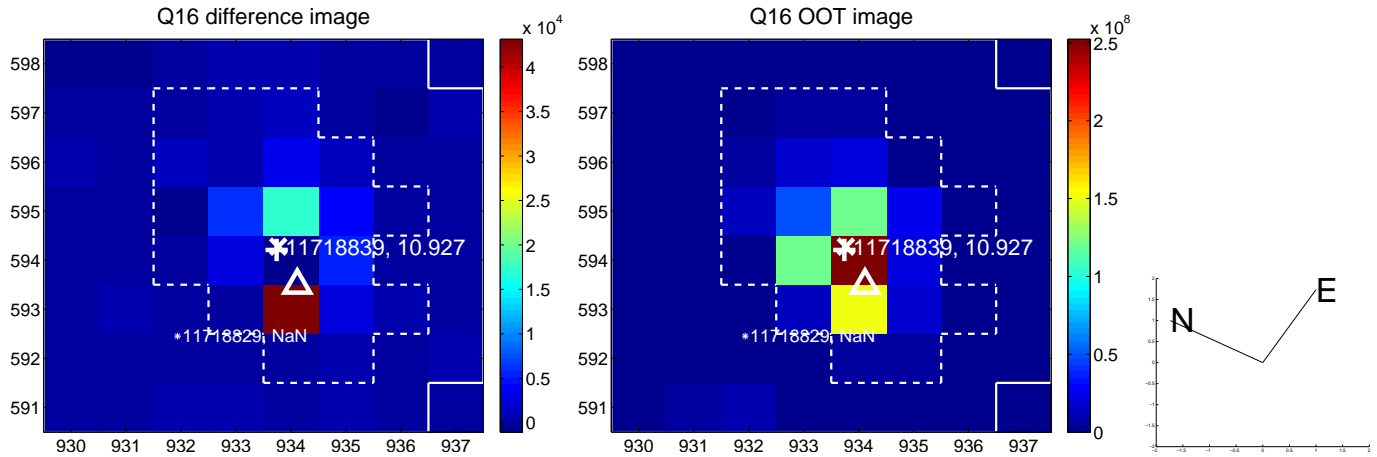
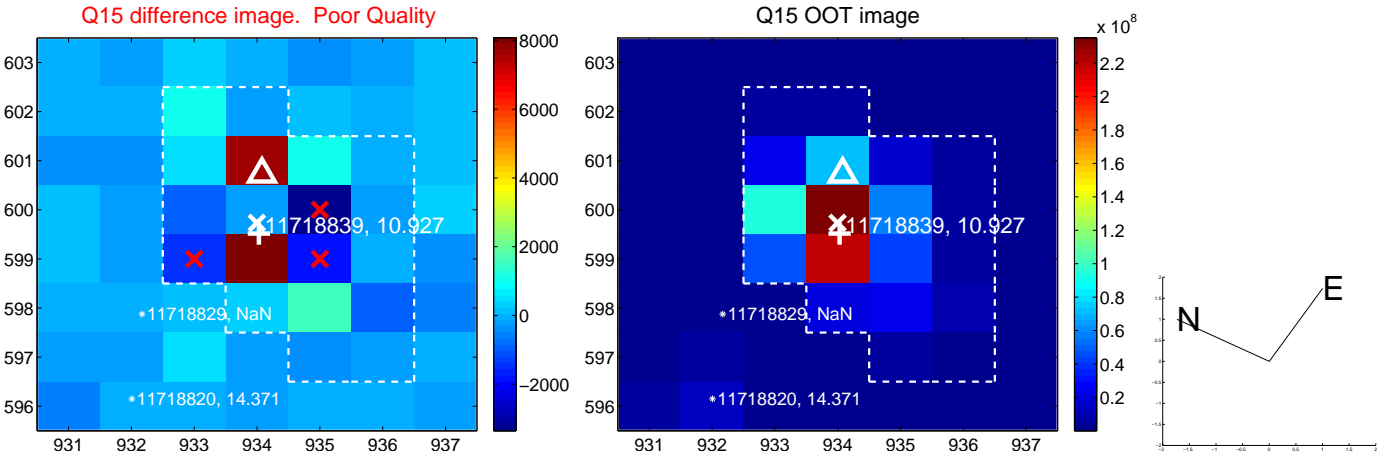
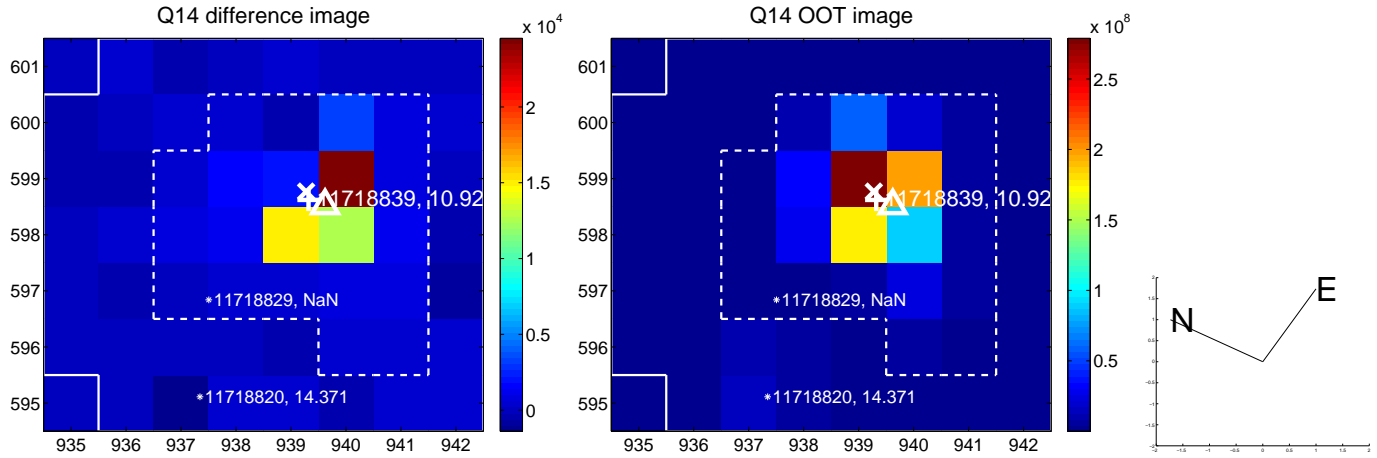
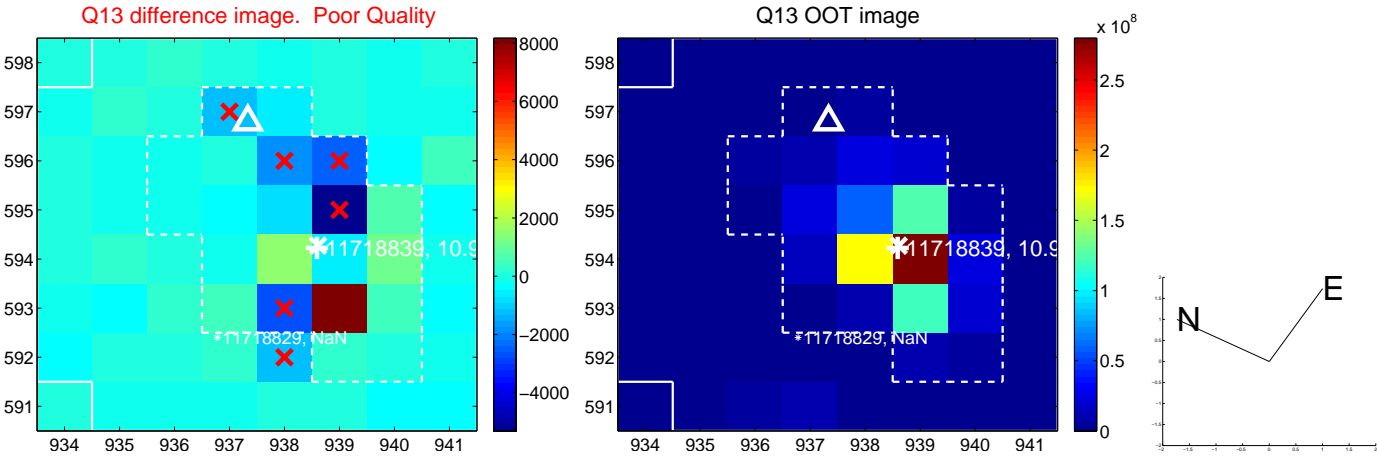
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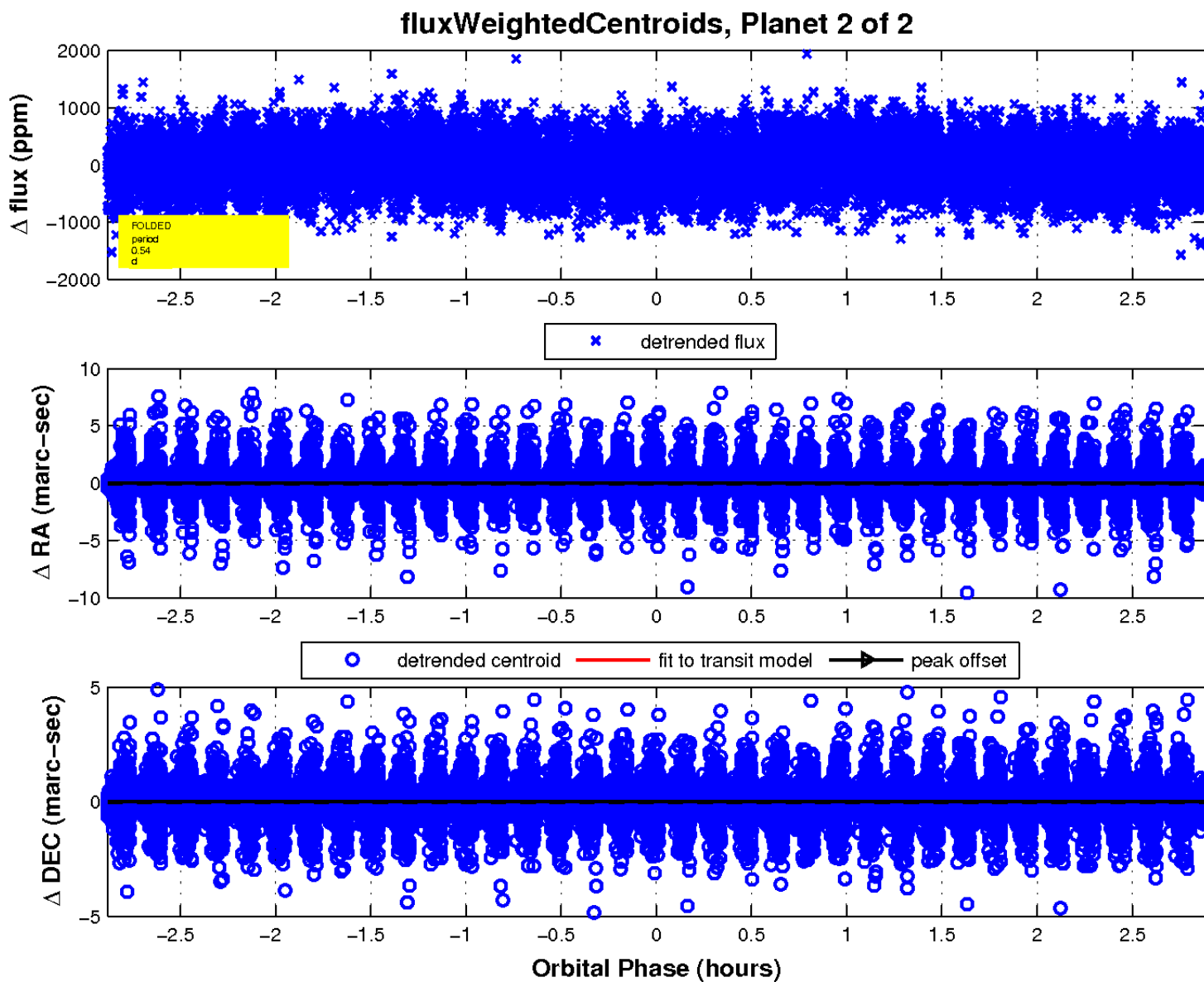
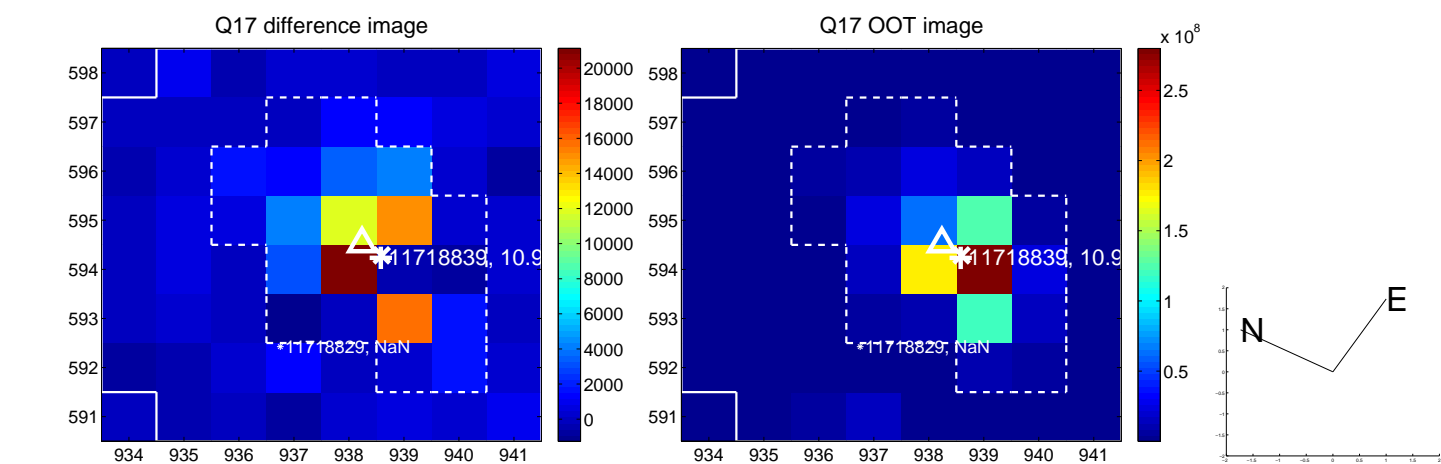


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UKIRT Image

Declination

