

# KIC 003964128

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003964128-01	OBS	No	0.913909	131.859877	0.5	6.931	8.5	0.1	1.49	7021	0.11	10709.53
003964128-02	OBS	No	2.285186	131.887777	1374.4	1.882	11.1	6.4	1.49	7021	10.13	3155.58
003964128-03	OBS	No	34.732095	135.936170	1061.0	1.825	12.0	12.9	1.49	7021	4.96	83.82

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003964128-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
003964128-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
003964128-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV

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

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

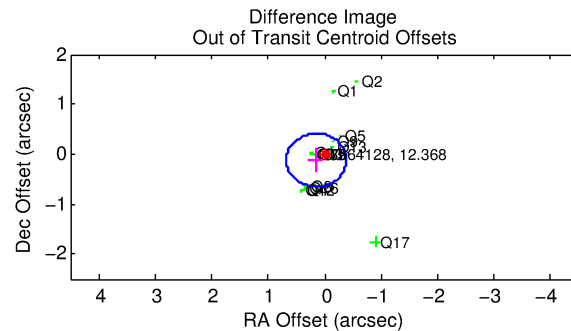
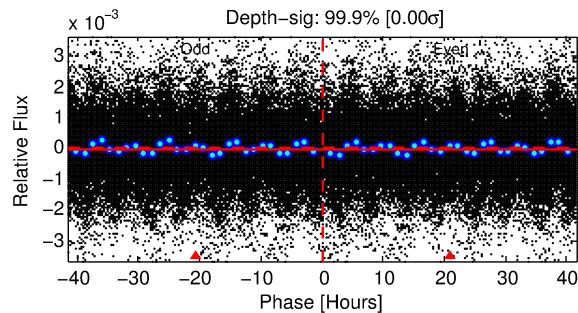
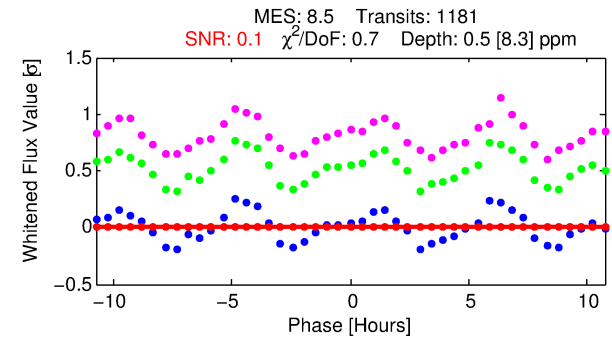
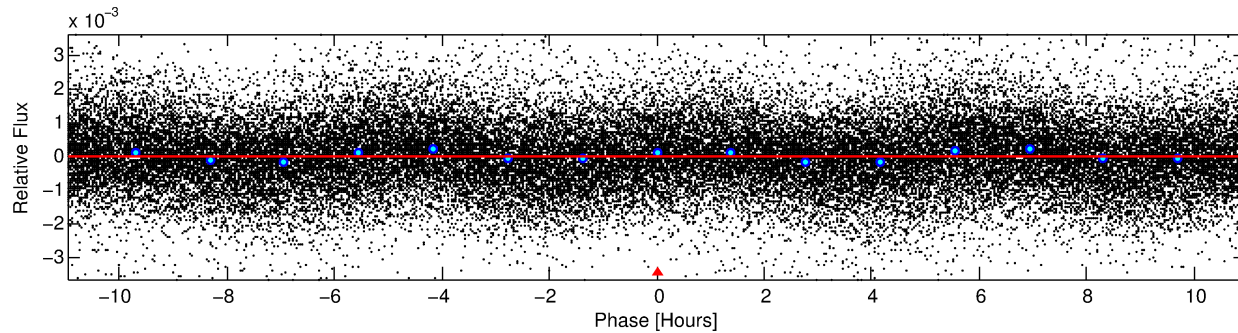
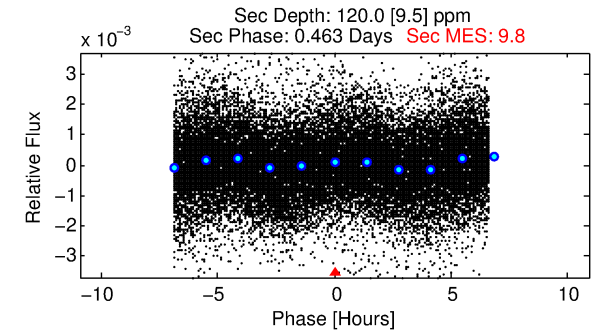
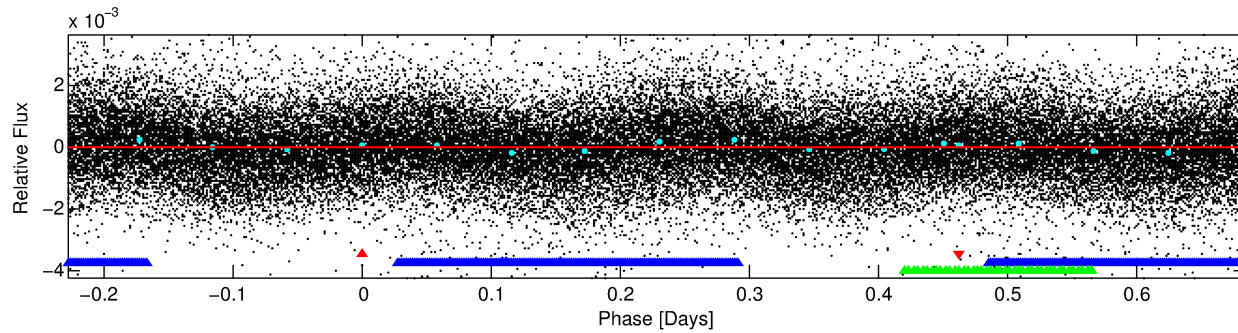
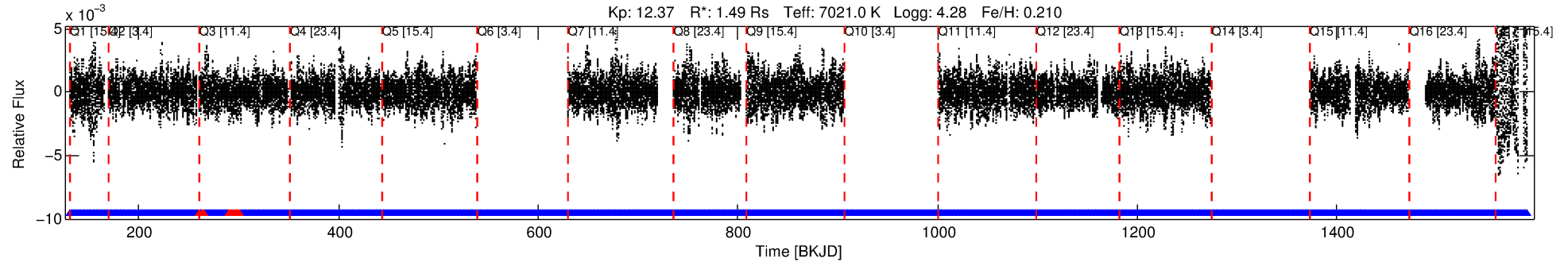
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 003964128-01

No Significant Match Found

# DV One-Page Summary

KIC: 3964128 Candidate: 1 of 3 Period: 0.914 d



## DV Fit Results:

Period = 0.91391 [0.00163] d  
Epoch = 131.8599 [0.2140] BKJD  
Rp/R\* = 0.0007 [0.0062]  
a/R\* = 1.10 [3.76]  
b = 0.70 [13.83]  
Seff = 10709.53 [4958.23]  
Teff = 2594 [300] K  
Rp = 0.11 [1.00] Re  
a = 0.0212 [0.0064] AU  
Ag = 2379.36 [42621.24] [0.06σ]  
Teffp = 28011 [125415] K [0.20σ]

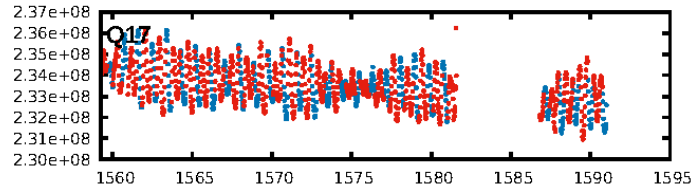
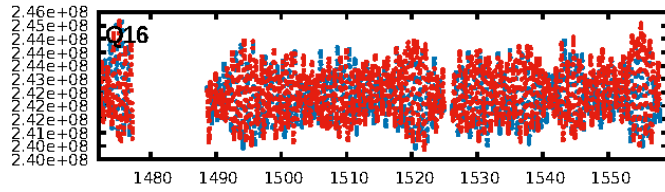
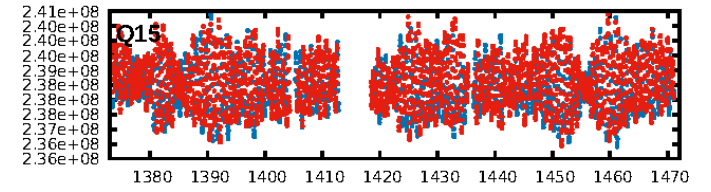
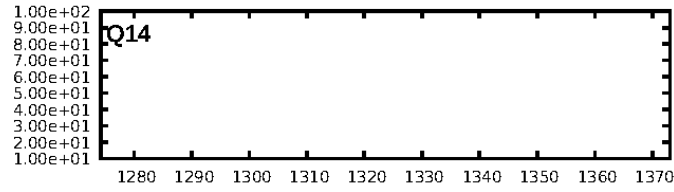
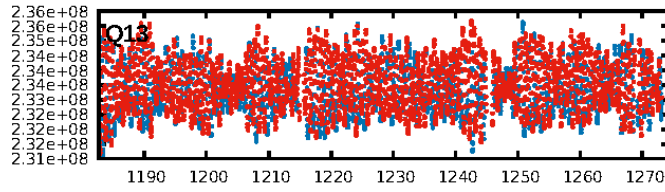
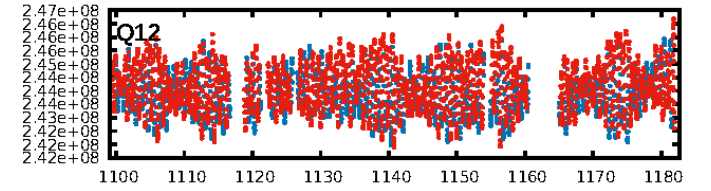
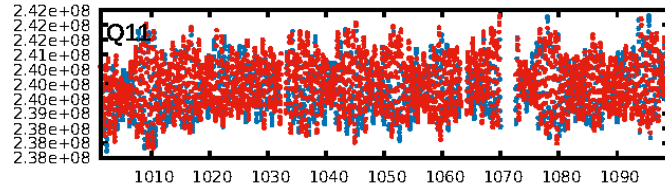
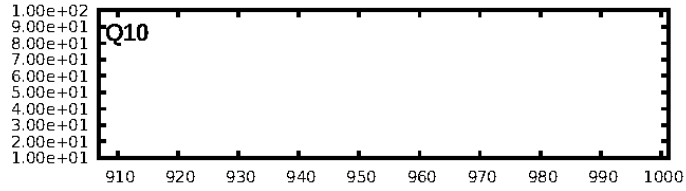
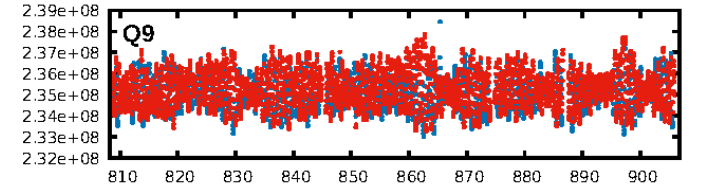
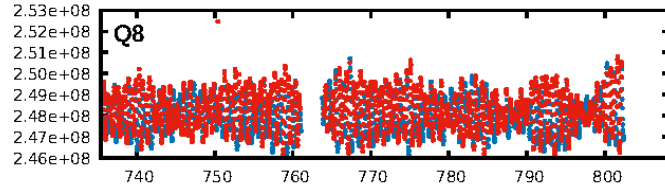
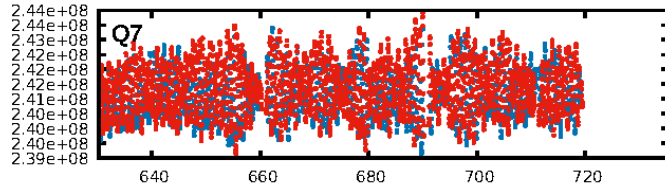
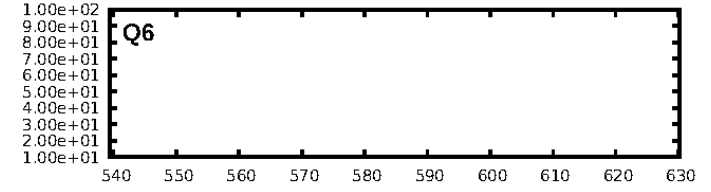
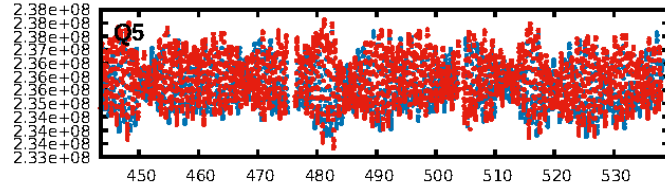
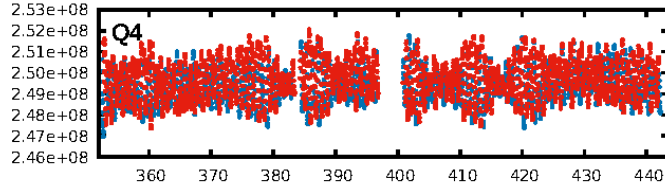
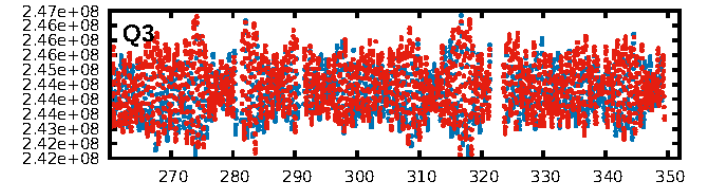
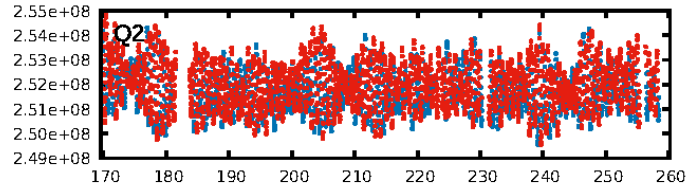
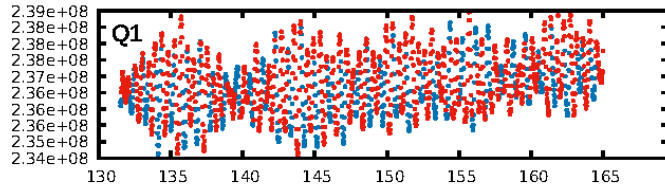
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [4.58σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
**Bootstrap-pfa: 9.94e-09**  
RollingBand-fgt: 0.99 [1100/1114]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.194 arcsec [1.10σ]  
KicOffset-rm: 0.231 arcsec [1.81σ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

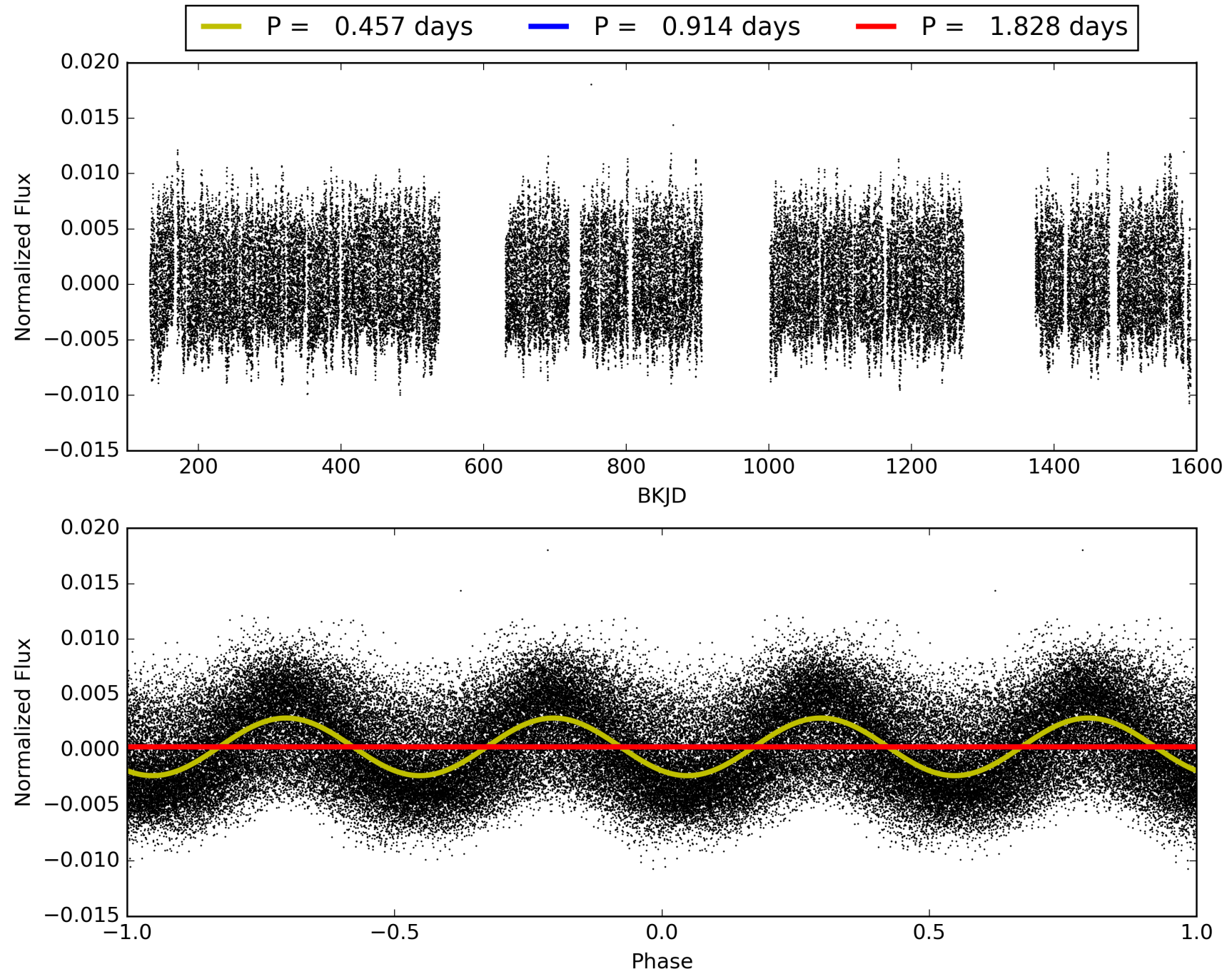
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:30:26 Z

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

# TCE 003964128-01, PDC Light Curves



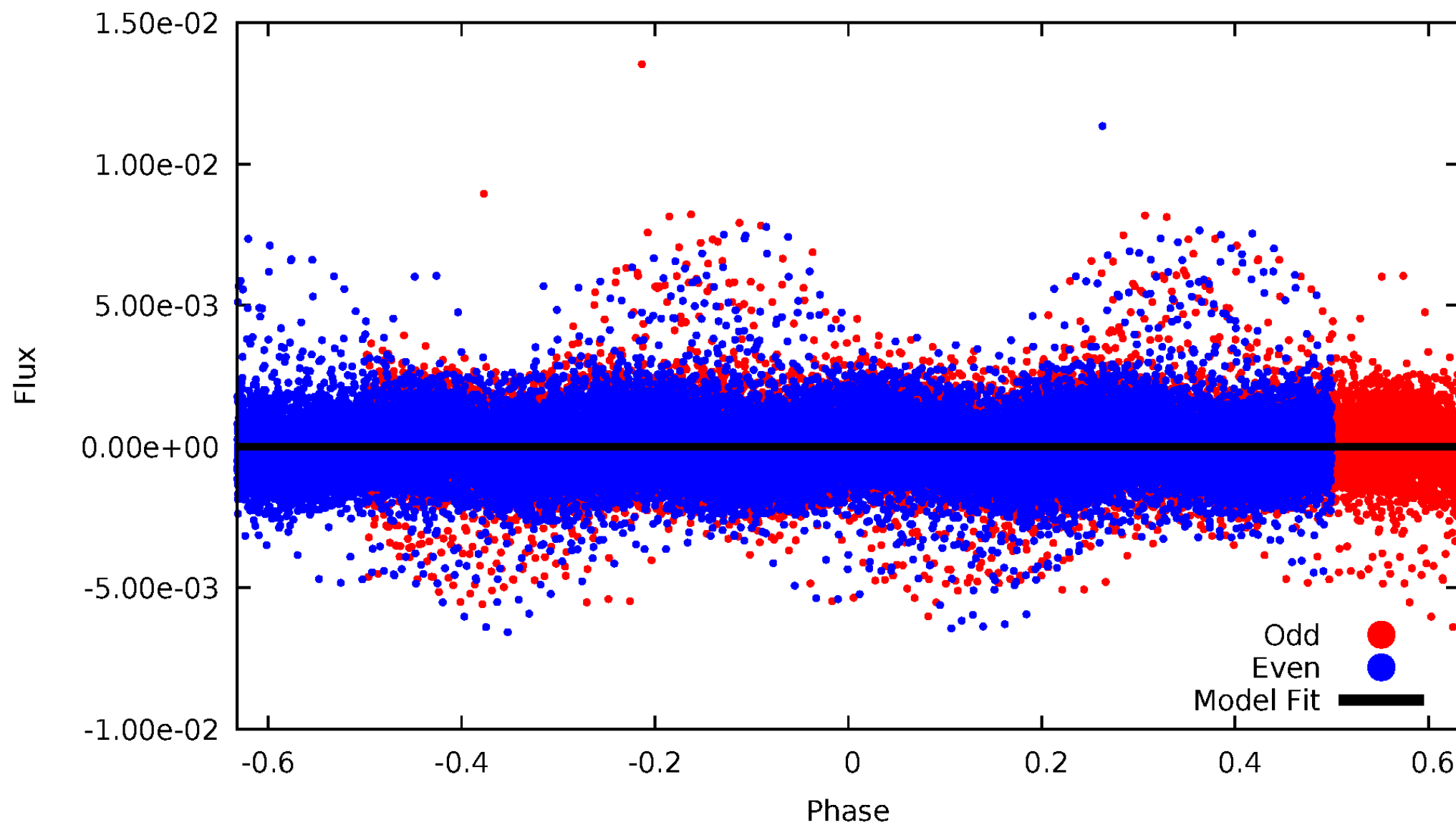
TCE 003964128-01





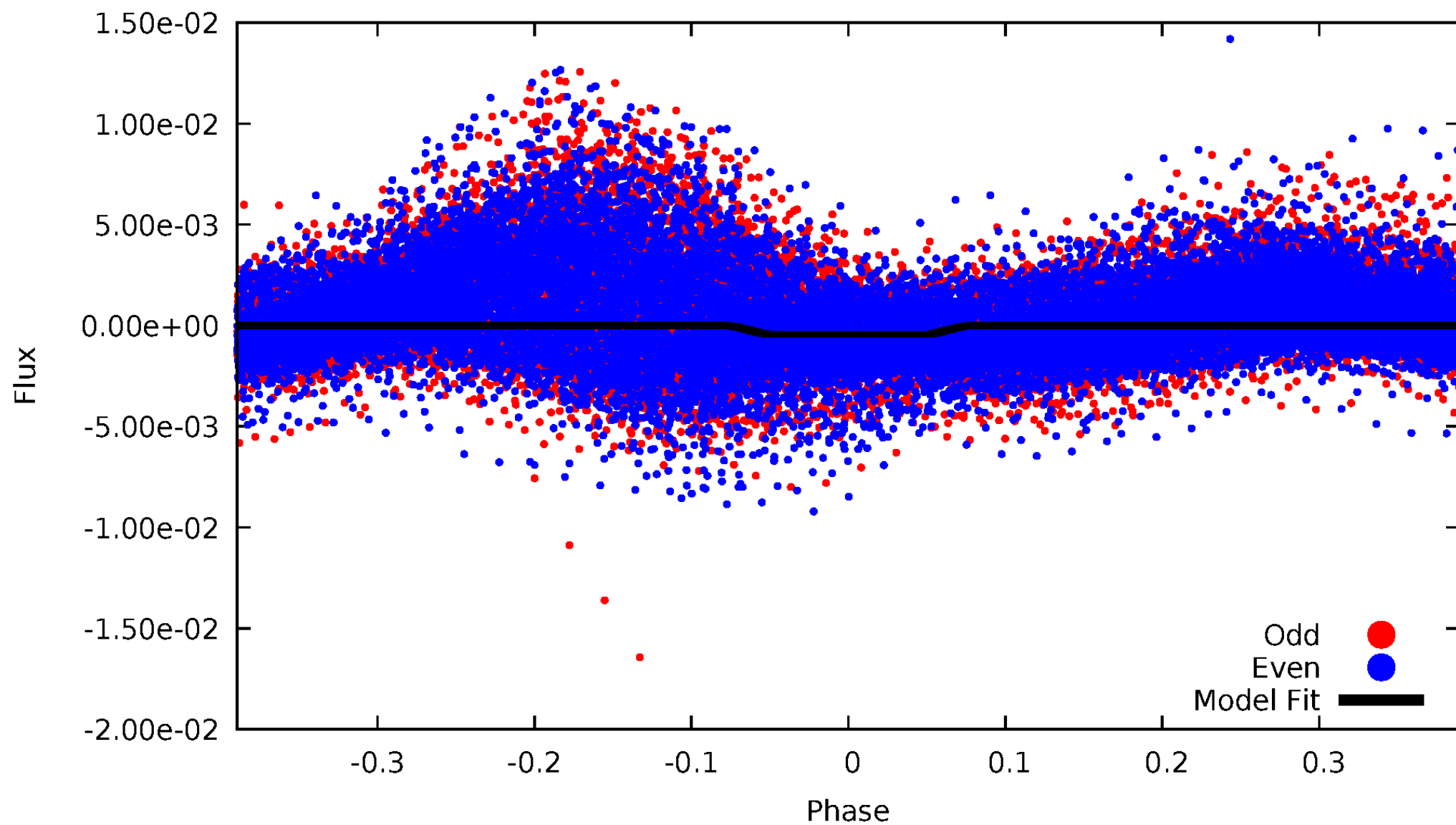
# DV Odd/Even

TCE 003964128-01



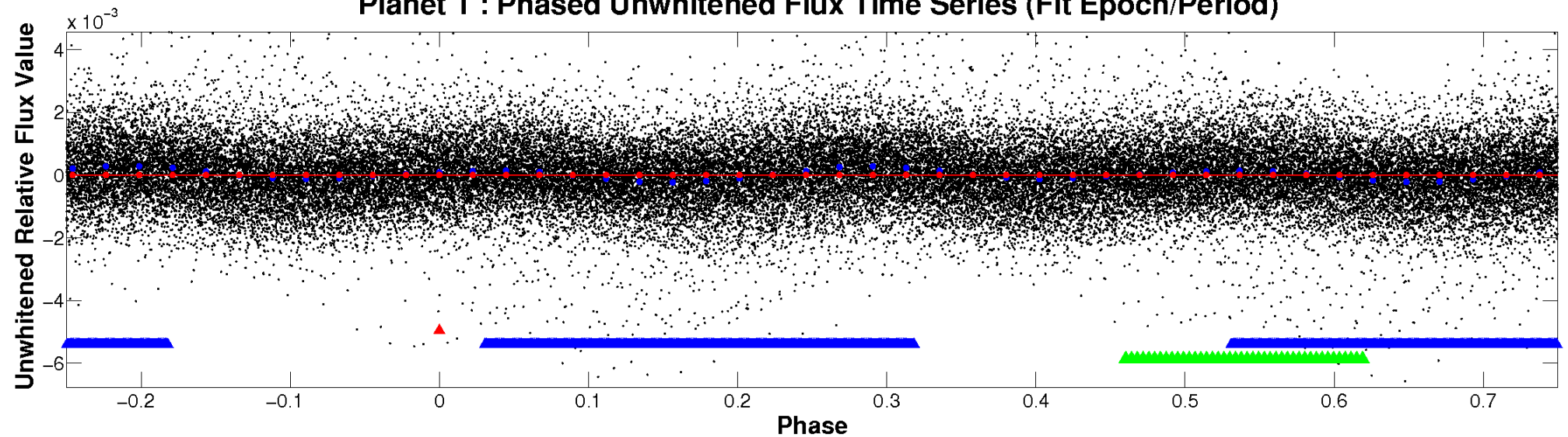
# ALT Odd/Even

TCE 003964128-01

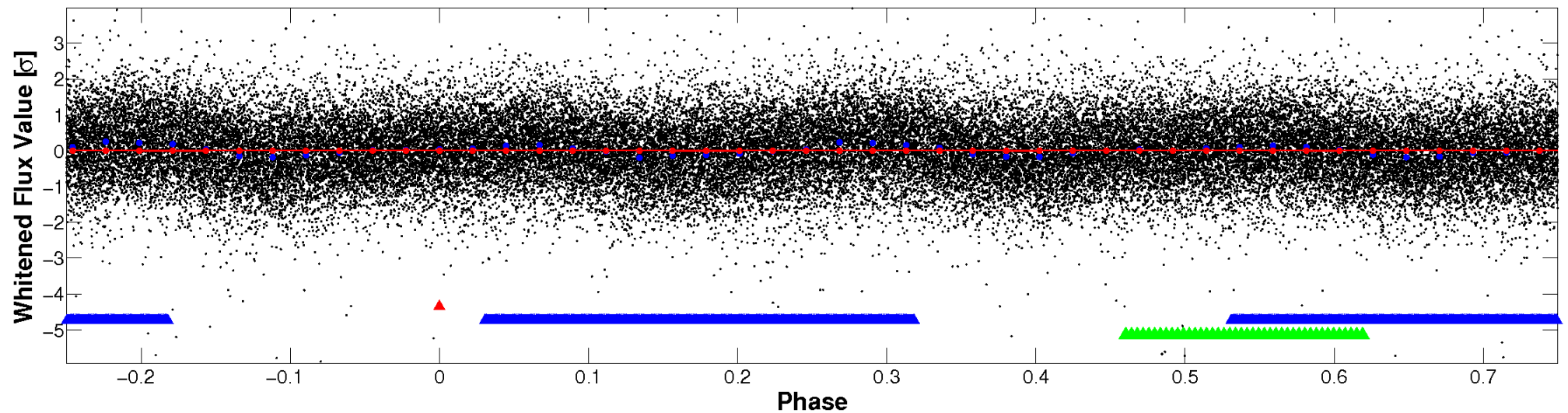


# Non-Whitened Vs. Whitened Light Curve

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

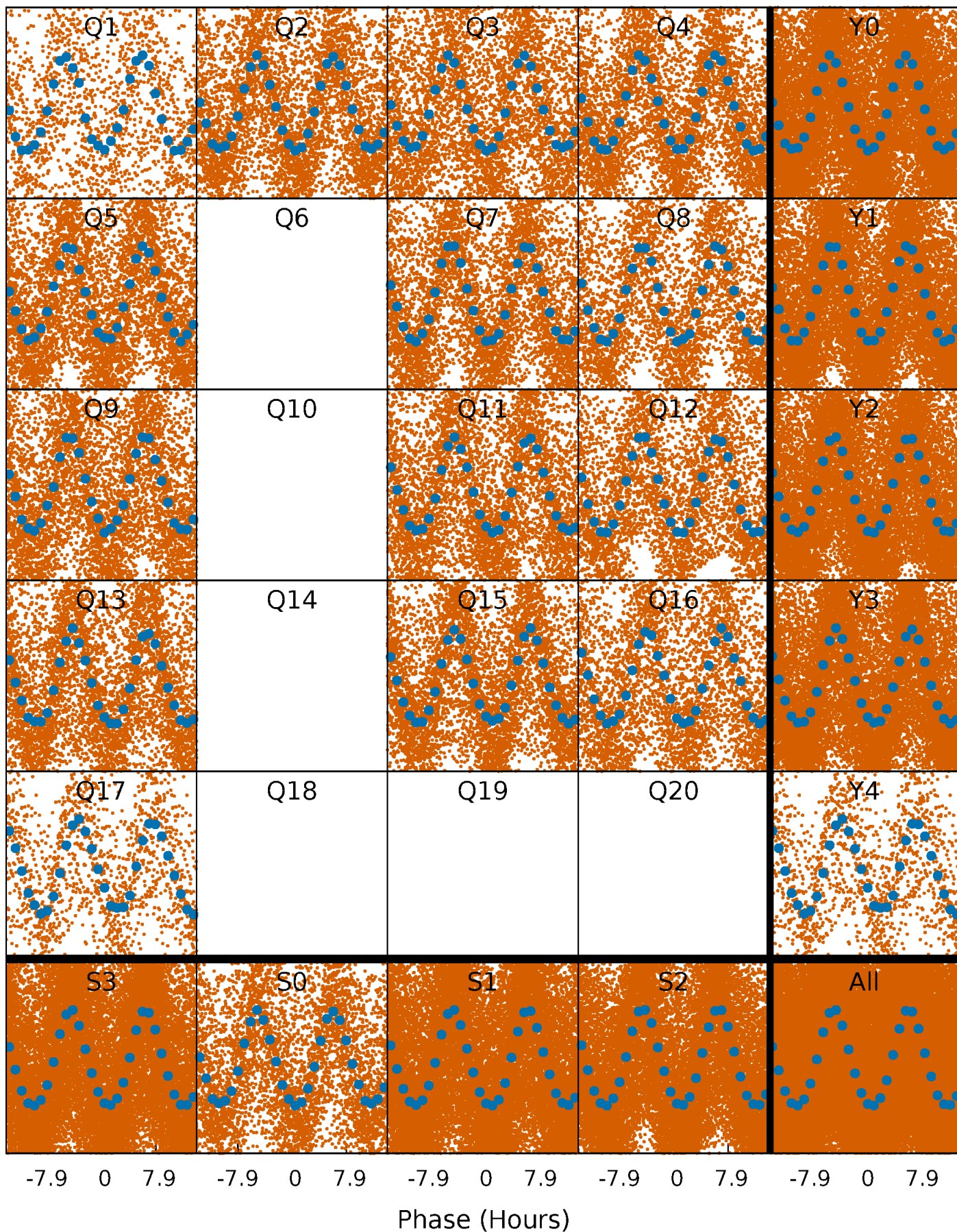


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

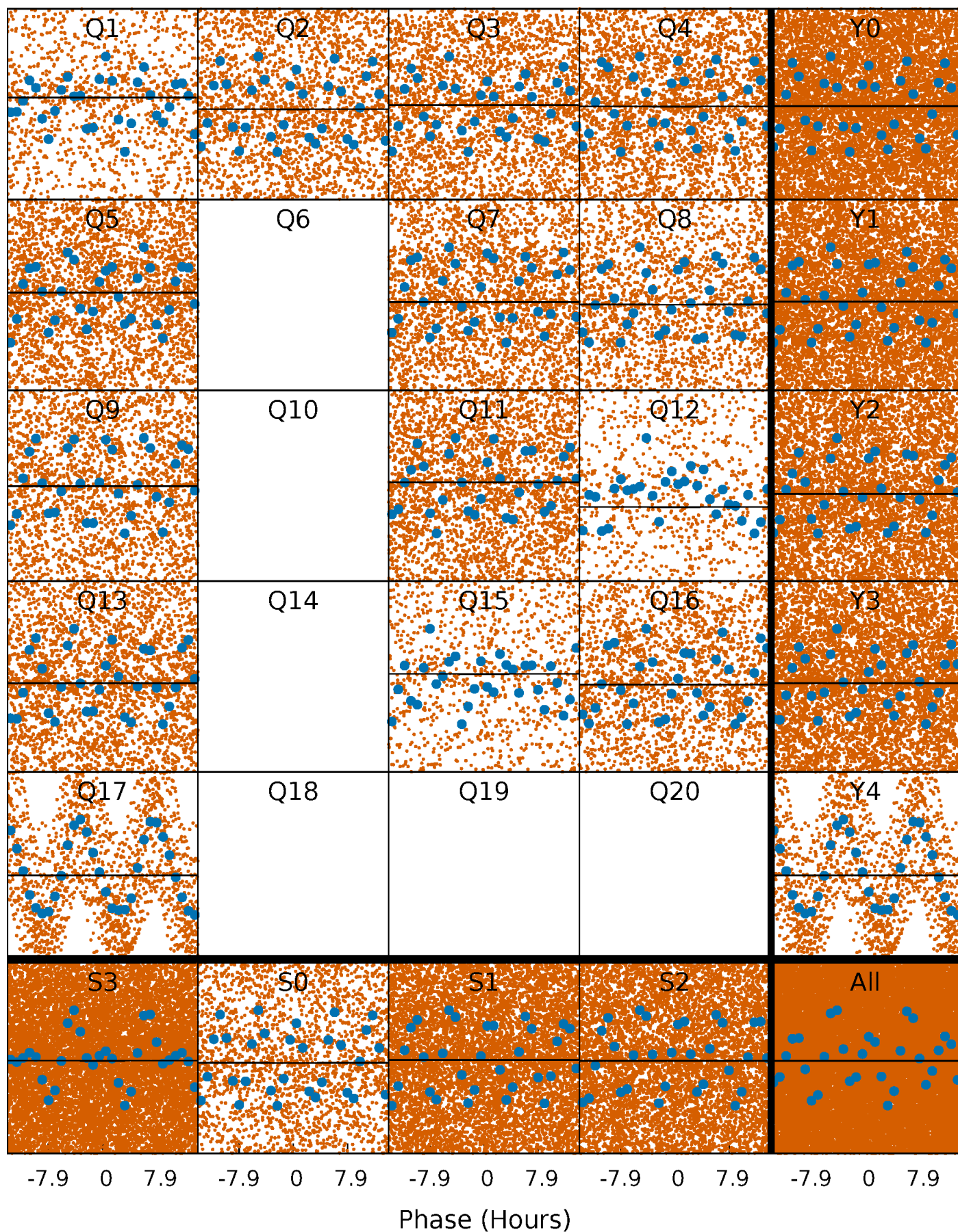
TCE 003964128-01 P= 0.913909 Days  $T_0=131.859877$  (BKJD)





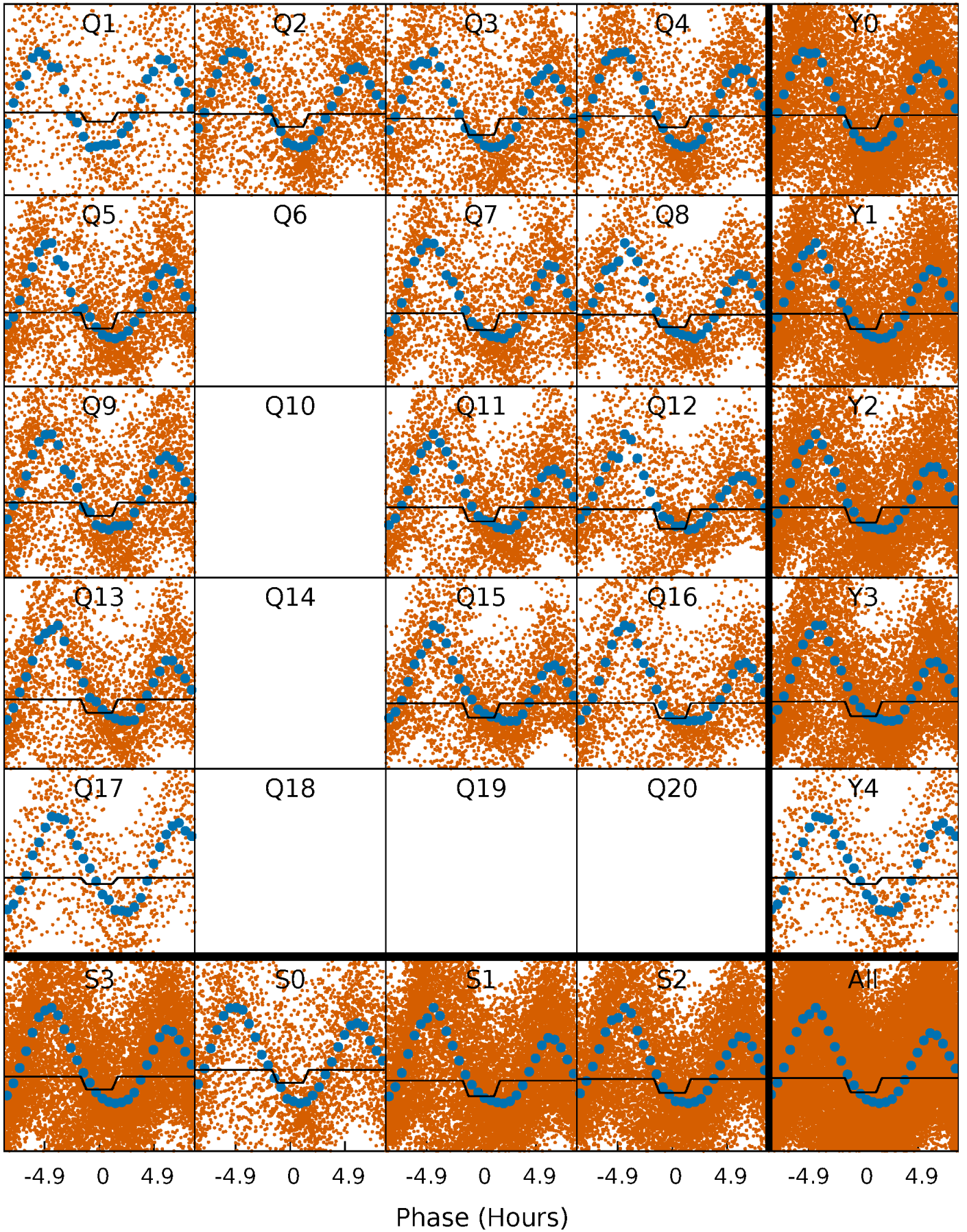
# DV Quarter-Phased Transit Curves

TCE 003964128-01 P= 0.913909 Days  $T_0=131.859877$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 003964128-01 P= 0.913919 Days  $T_0=131.862173$  (BKJD)

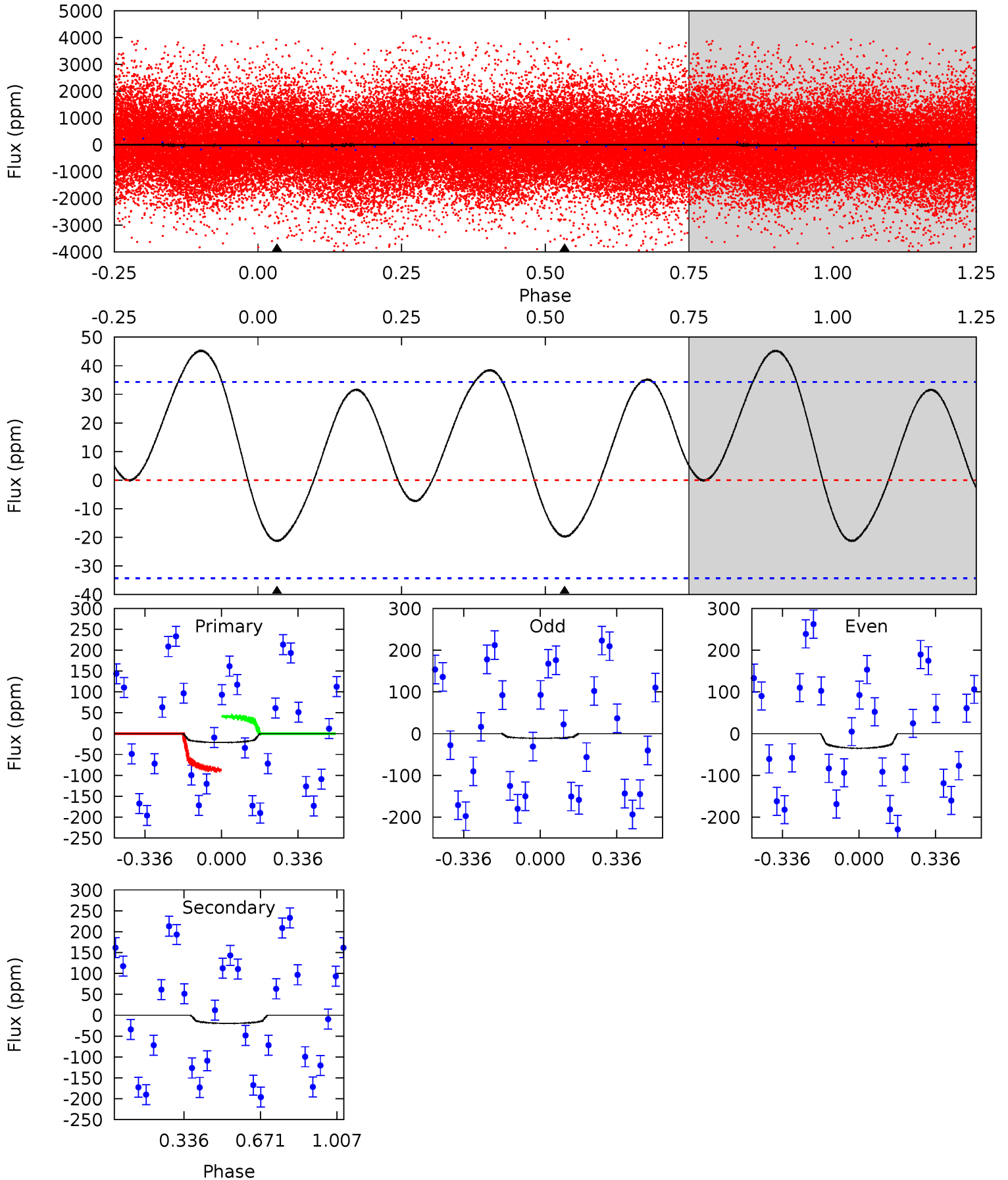




# DV Model-Shift Uniqueness Test

003964128-01, P = 0.913909 Days, E = 130.945968 Days

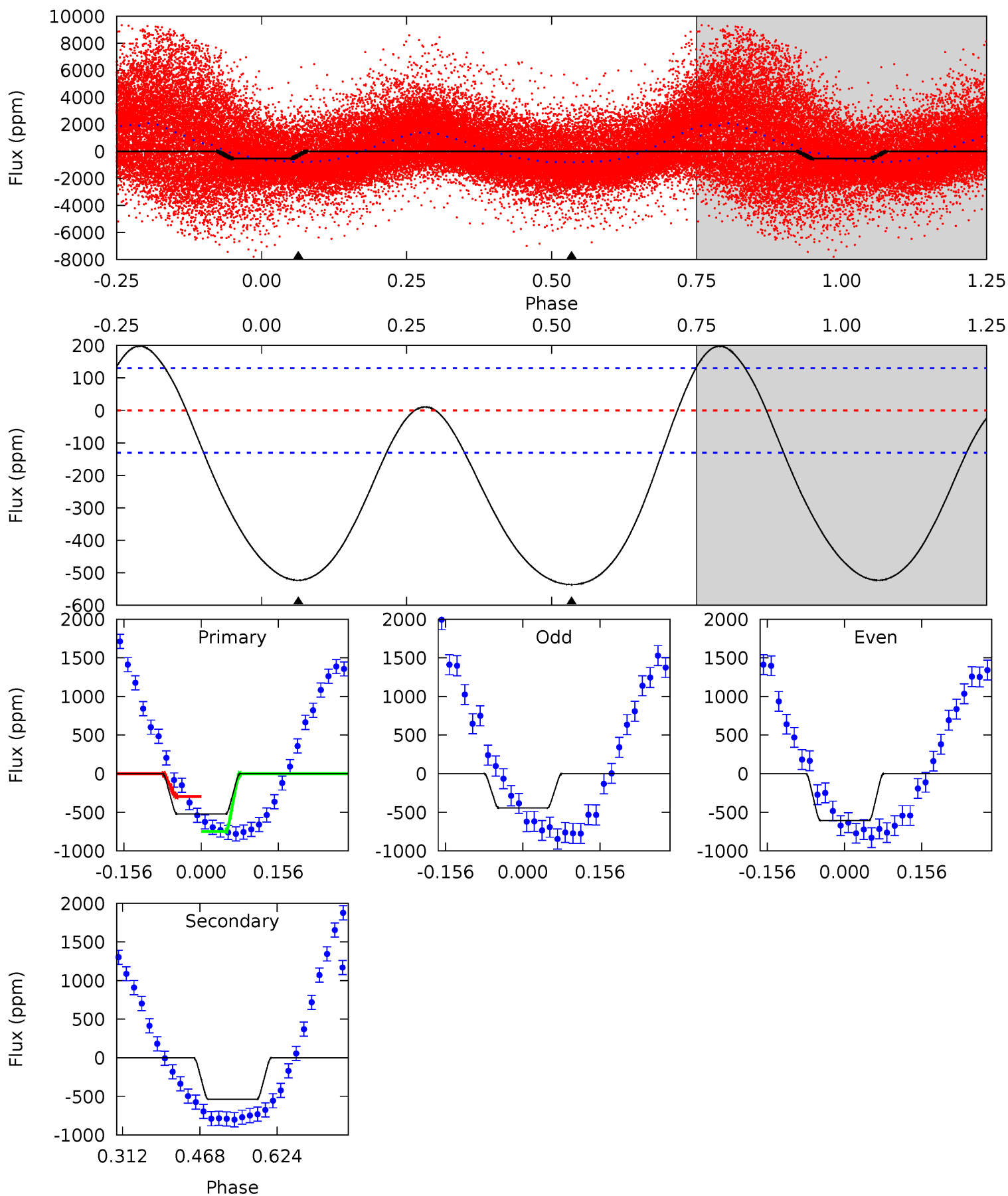
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.68	2.48	0	0	4.30	0.96	0.51	2.68	2.68	2.48	2.48	1.56	0.25	0.68	3.15



# Alt Model-Shift Uniqueness Test

003964128-01, P = 0.913919 Days, E = 130.948254 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
18.0	18.4	0	0	4.47	1.42	3.87	18.0	18.0	18.4	18.4	2.80	1.05	0.27	7.59





### Stellar Parameters For KIC 003964128

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$7021^{+195}_{-293}$	$4.275^{+0.058}_{-0.232}$	$0.210^{+0.150}_{-0.400}$	$1.485^{+0.544}_{-0.181}$	$1.514^{+0.193}_{-0.214}$	$0.652^{+0.205}_{-0.362}$
	+3%/-4%	+1%/-5%	+71%/-190%	+37%/-12%	+13%/-14%	+31%/-56%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003964128-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-20 \pm 8$	$0.75^{+0.84}_{-0.53}$	$3689^{+305}_{-211}$	$6730^{+10137}_{-2244}$	$7.339^{+79.656}_{-5.810}$
Alt.	$-536 \pm 29$	$3.55^{+1.12}_{-1.10}$	$3701^{+313}_{-214}$	$7362^{+1886}_{-1023}$	$10^{+11}_{-4}$

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

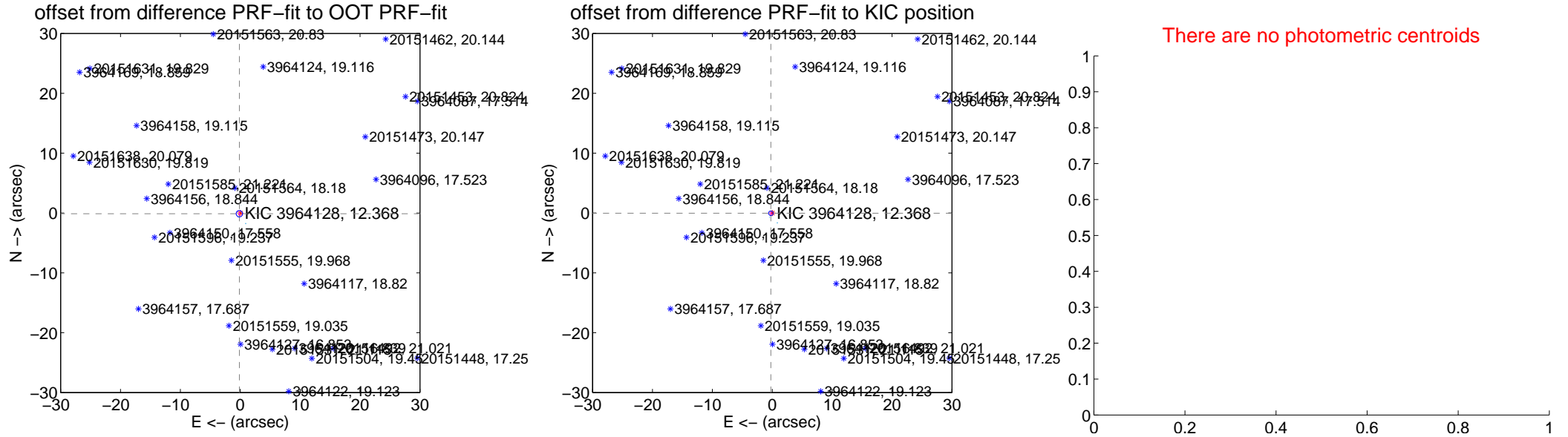
## DV Centroid Data

Supplemental centroid analysis for 003964128-01. Kepler magnitude: 12.37. Transit SNR 0.06

There are 14 quarters with good PRF difference image offsets

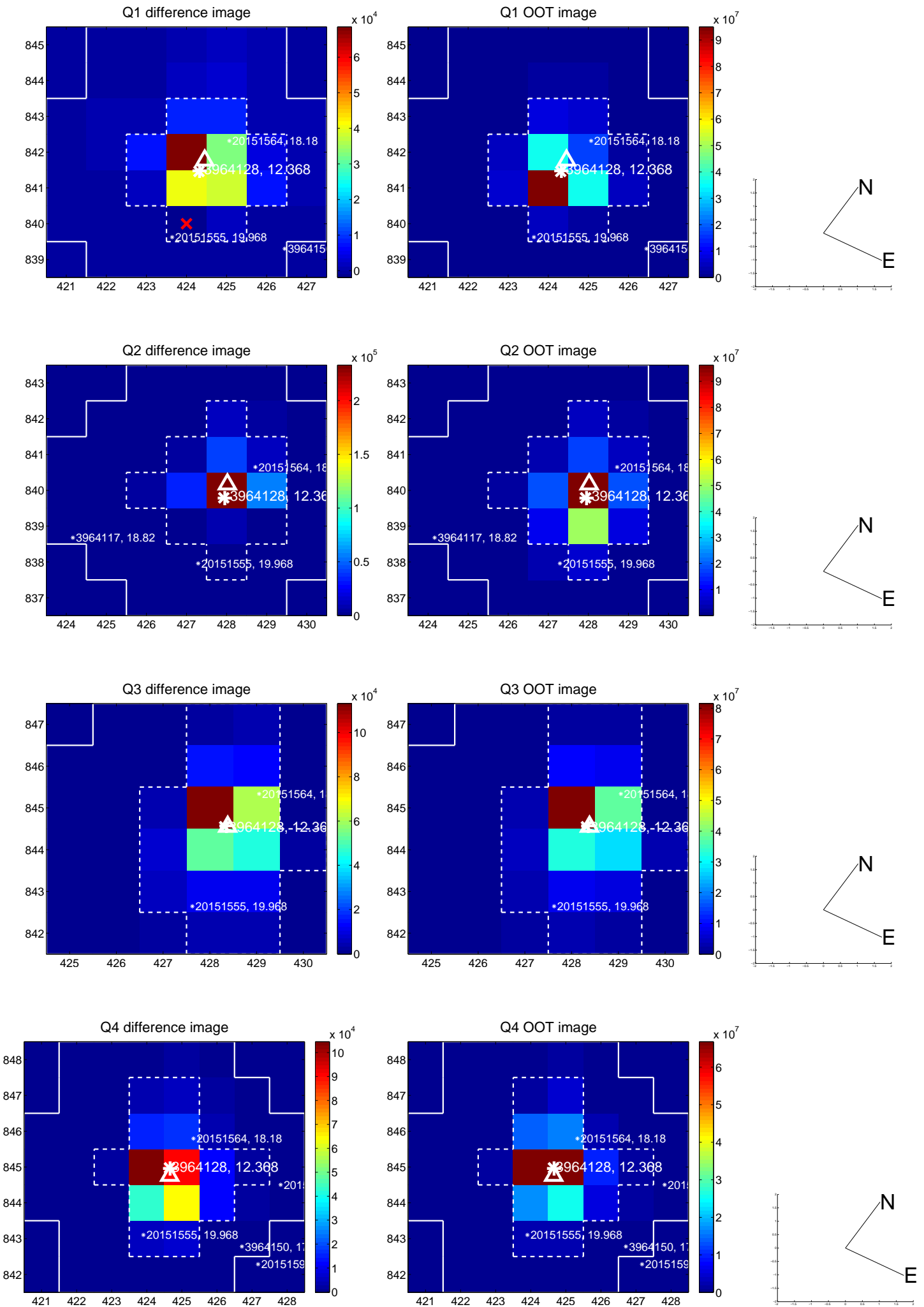
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.194 \pm 0.177$	1.10	$0.152 \pm 0.118$	$-0.121 \pm 0.227$
PRF-fit source offset from KIC position	$0.231 \pm 0.128$	1.81	$0.228 \pm 0.122$	$-0.037 \pm 0.222$
photometric centroid source offset	—	—	—	—

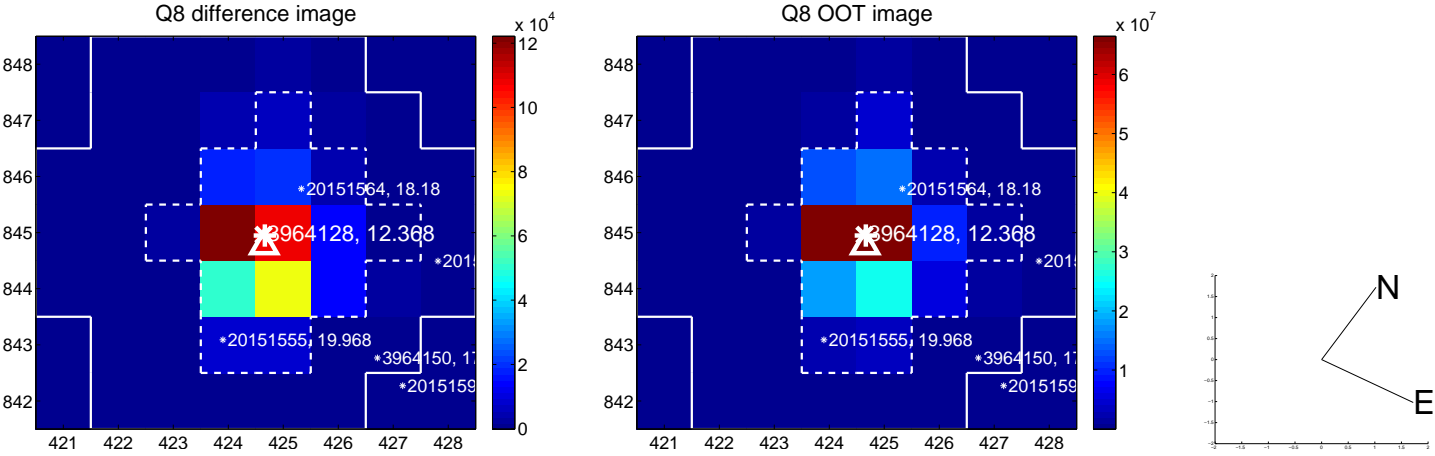
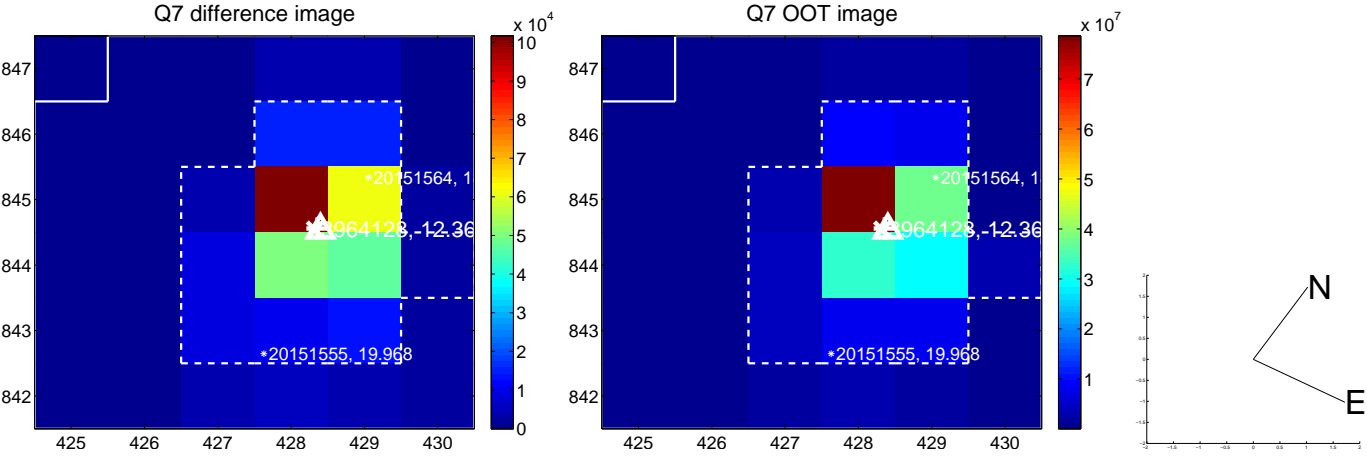
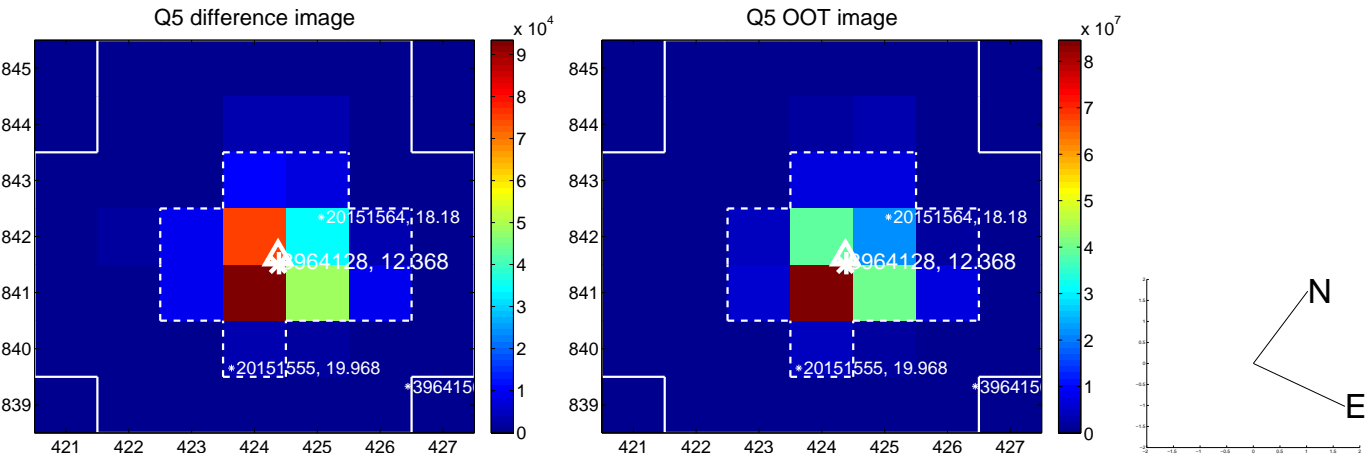


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

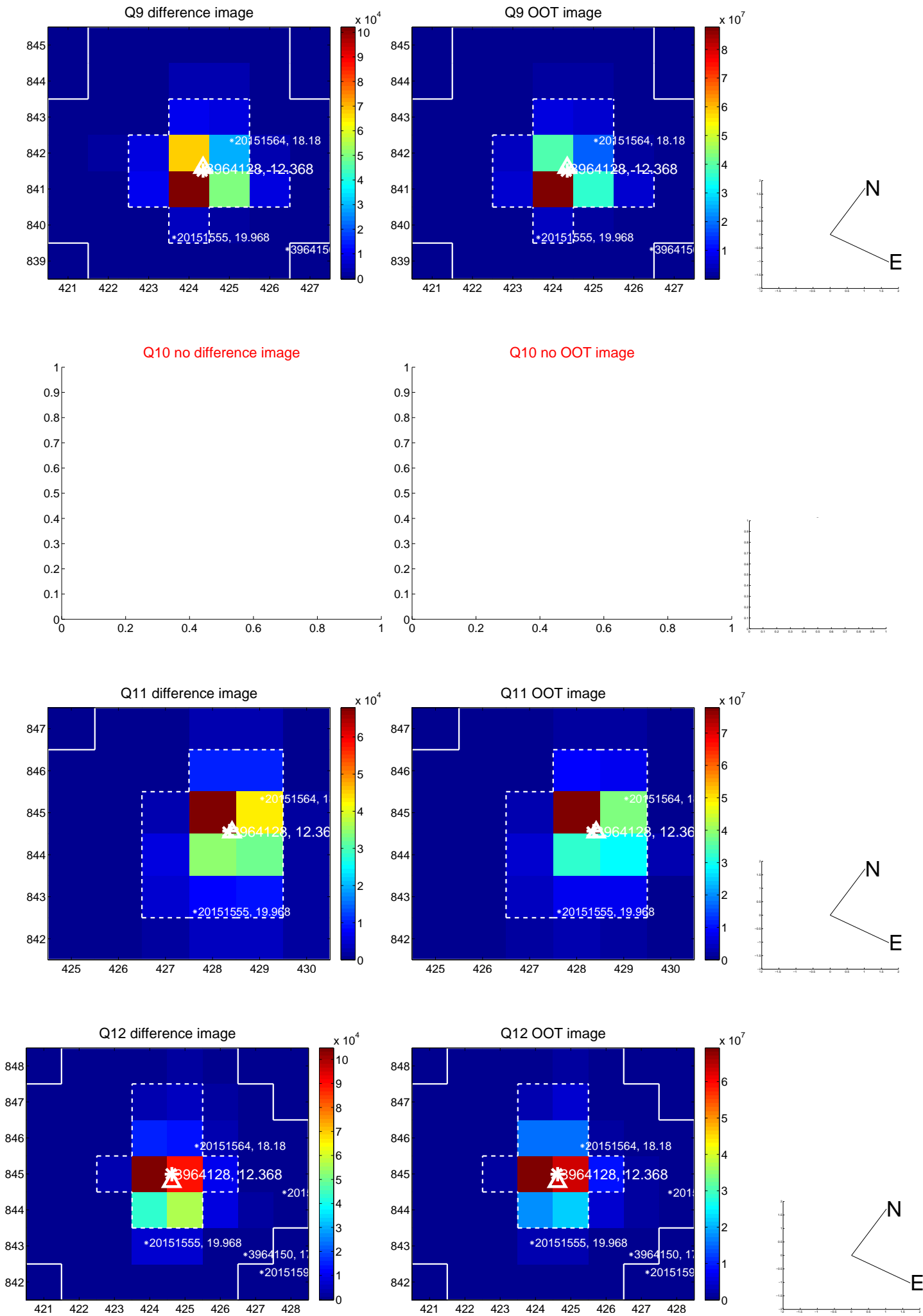


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

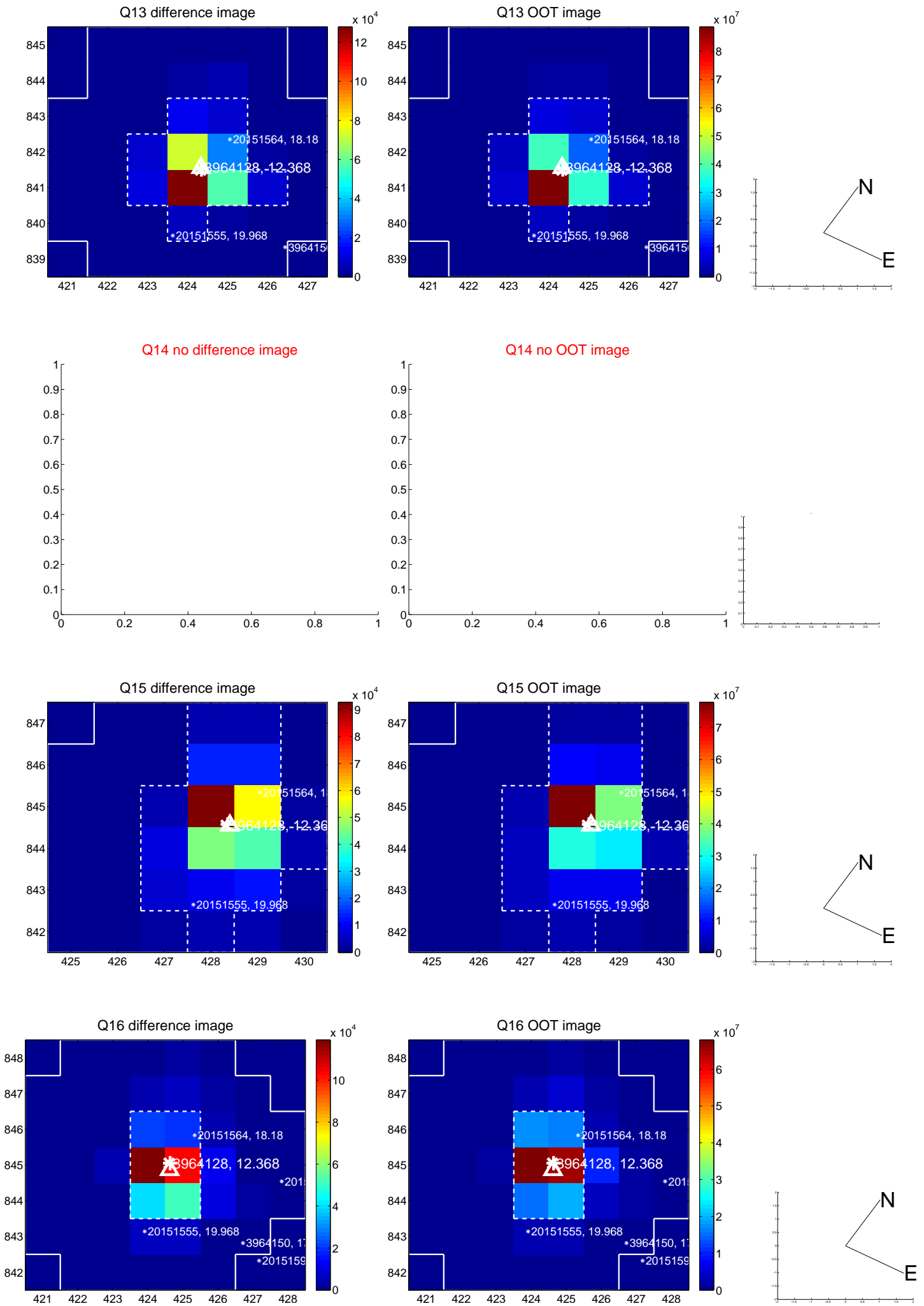




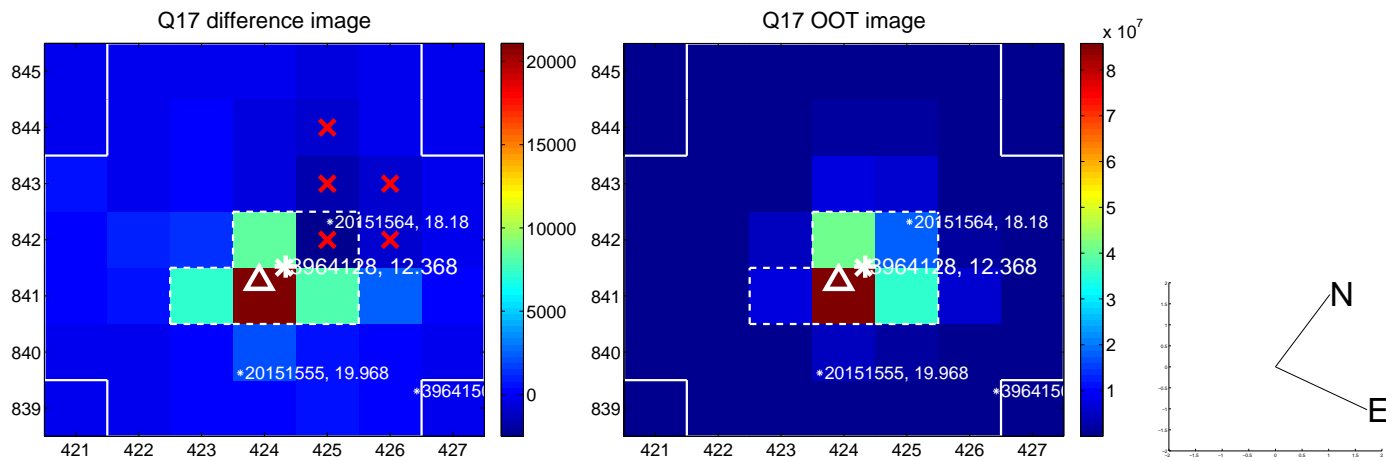
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

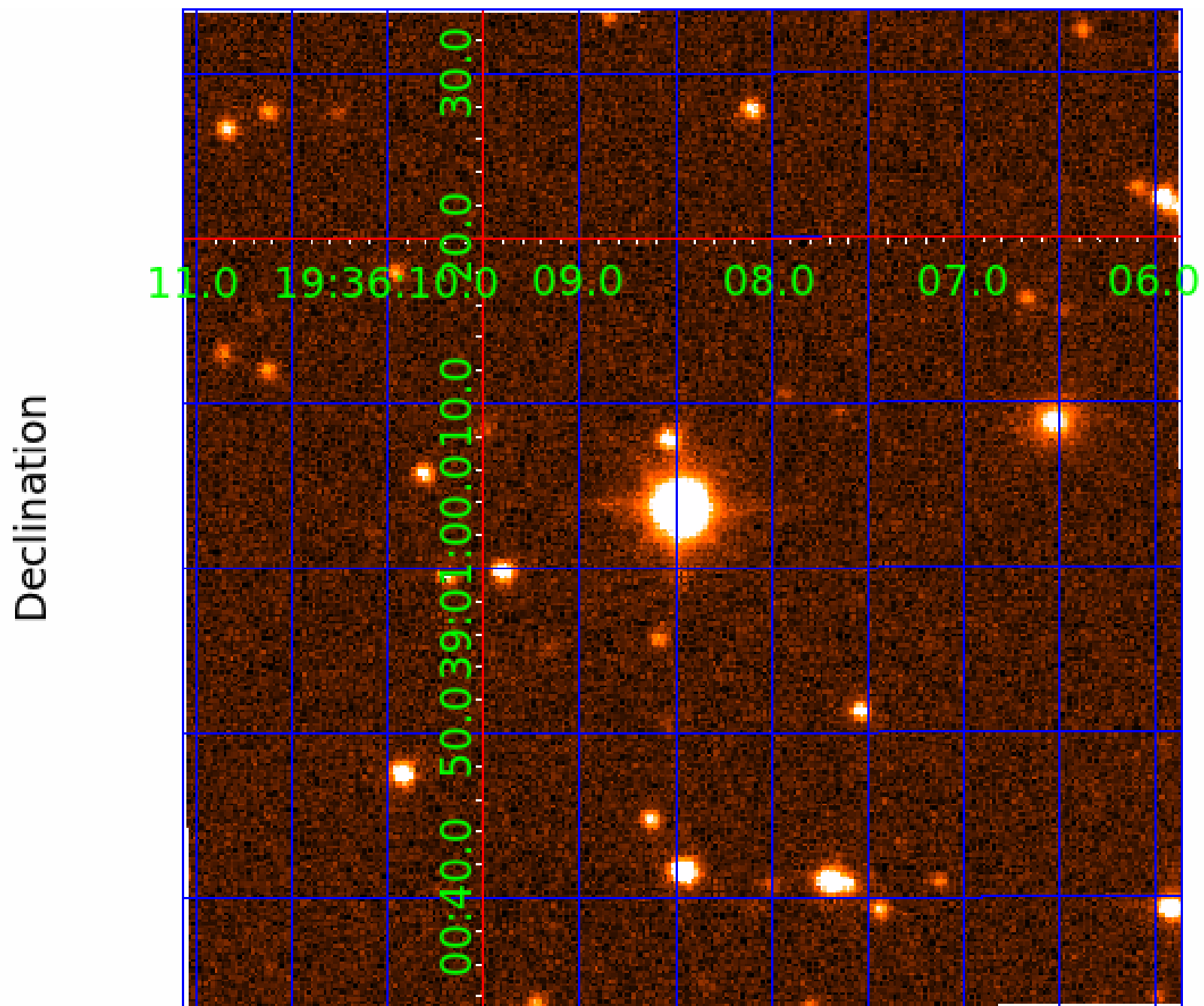


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image





# KIC 003964128

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003964128-01	OBS	No	0.913909	131.859877	0.5	6.931	8.5	0.1	1.49	7021	0.11	10709.53
003964128-02	OBS	No	2.285186	131.887777	1374.4	1.882	11.1	6.4	1.49	7021	10.13	3155.58
003964128-03	OBS	No	34.732095	135.936170	1061.0	1.825	12.0	12.9	1.49	7021	4.96	83.82

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003964128-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
003964128-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
003964128-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV

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

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

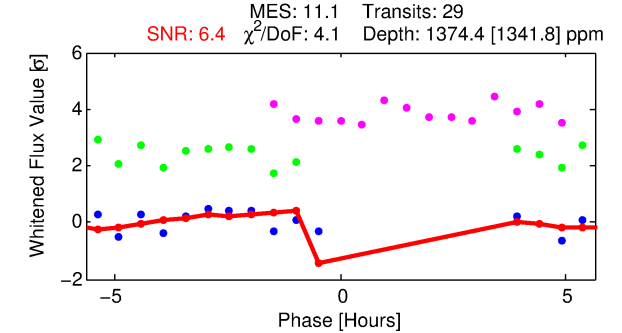
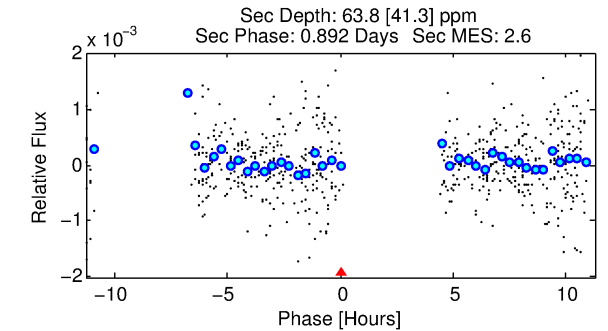
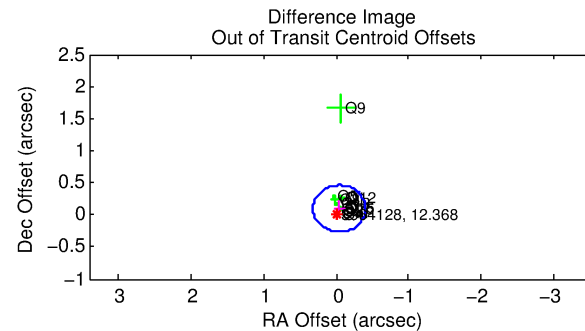
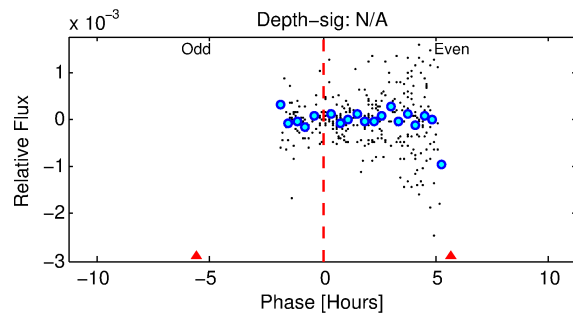
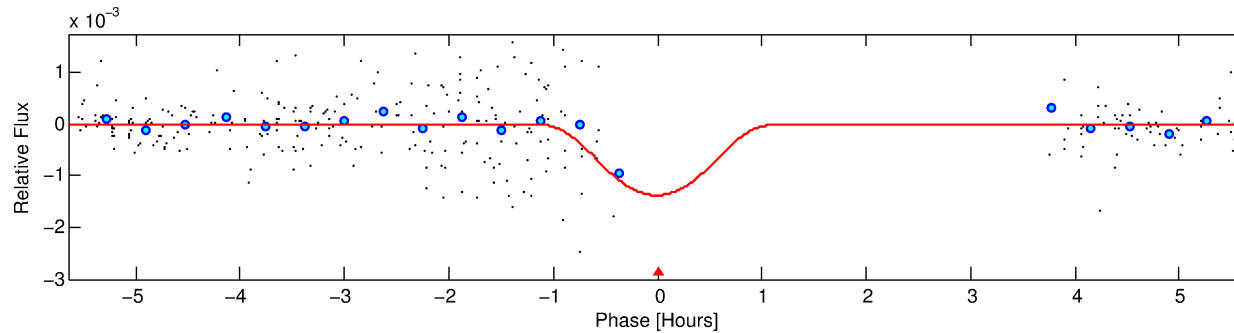
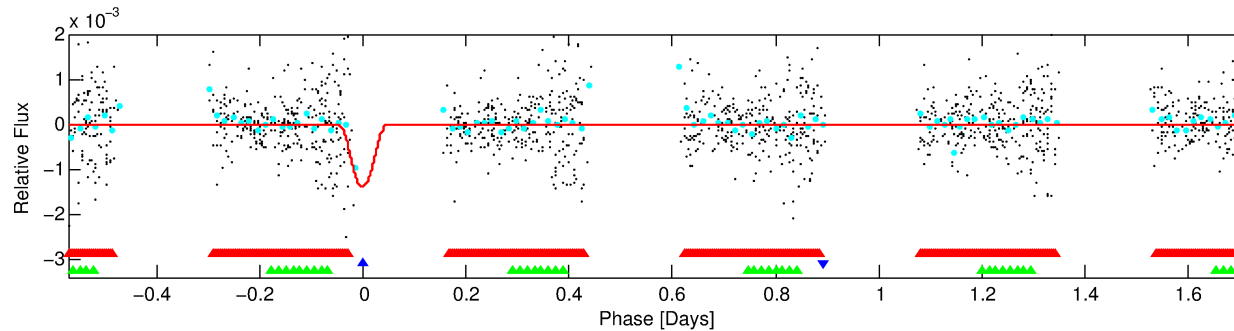
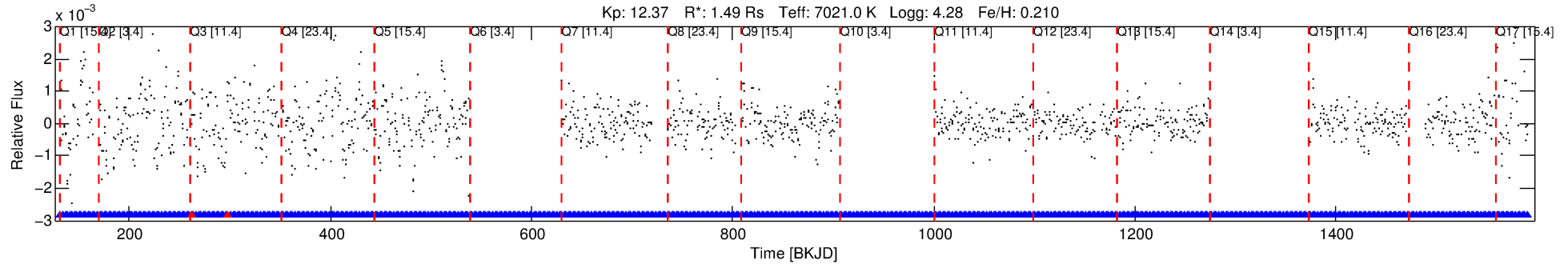
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003964128-02

No Significant Match Found

# DV One-Page Summary

KIC: 3964128 Candidate: 2 of 3 Period: 2.285 d



## DV Fit Results:

Period = 2.28519 [0.00009] d  
Epoch = 131.8878 [0.0219] BKJD  
Rp/R\* = 0.0625 [1.5654]  
a/R\* = 3.53 [15.88]  
b = 1.00 [2.33]  
Seff = 3155.58 [1460.93]  
Teq = 1911 [221] K  
Rp = 10.13 [253.69] Re  
a = 0.0390 [0.0118] AU  
Ag = 0.52 [26.04] [-0.02σ]  
Teff = 2509 [31411] K [0.02σ]

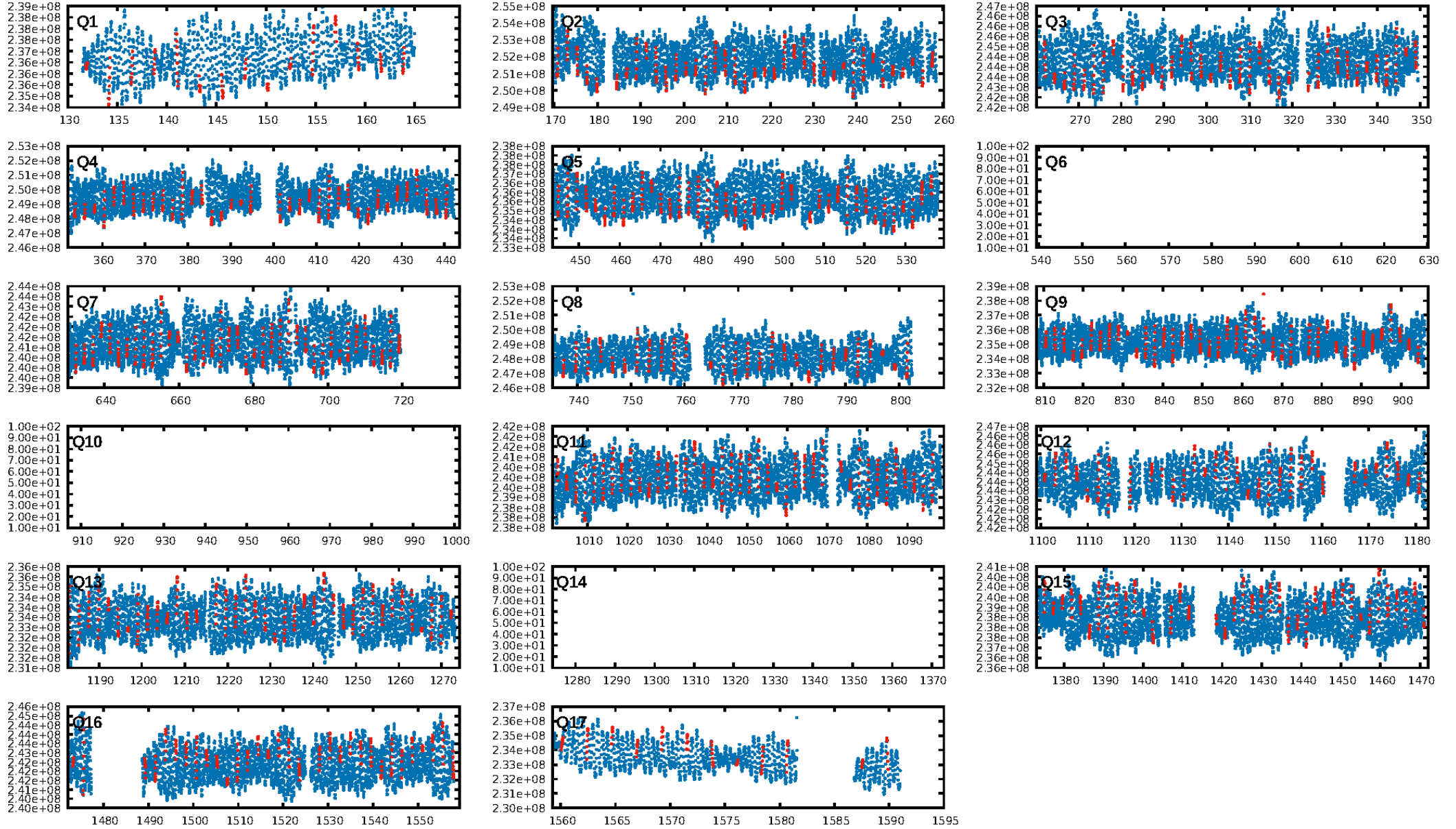
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.58σ]  
LongPeriod-sig: 100.0% [297.06σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 99.5%  
Bootstrap-pfa: 2.16e-17  
RollingBand-fgt: 0.91 [20/22]  
GhostDiagnostic-chr: -2.367  
Centroid-sig: N/A  
Centroid-so: 0.097 arcsec [2.99σ]  
OotOffset-rm: 0.104 arcsec [0.86σ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-rm: 0.227 arcsec [1.89σ]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 0.57 [8/14]  
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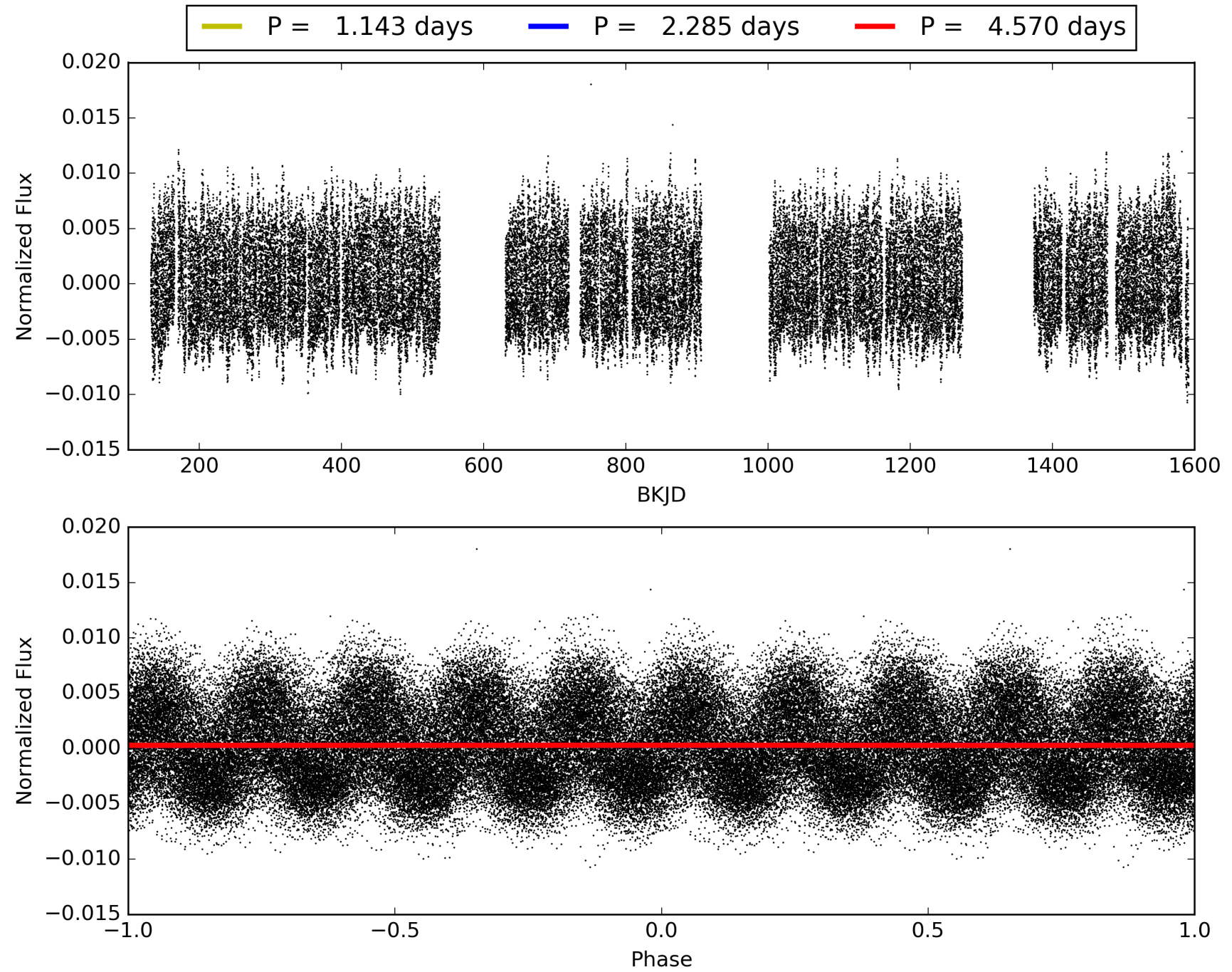
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:30:37 Z

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

# TCE 003964128-02, PDC Light Curves

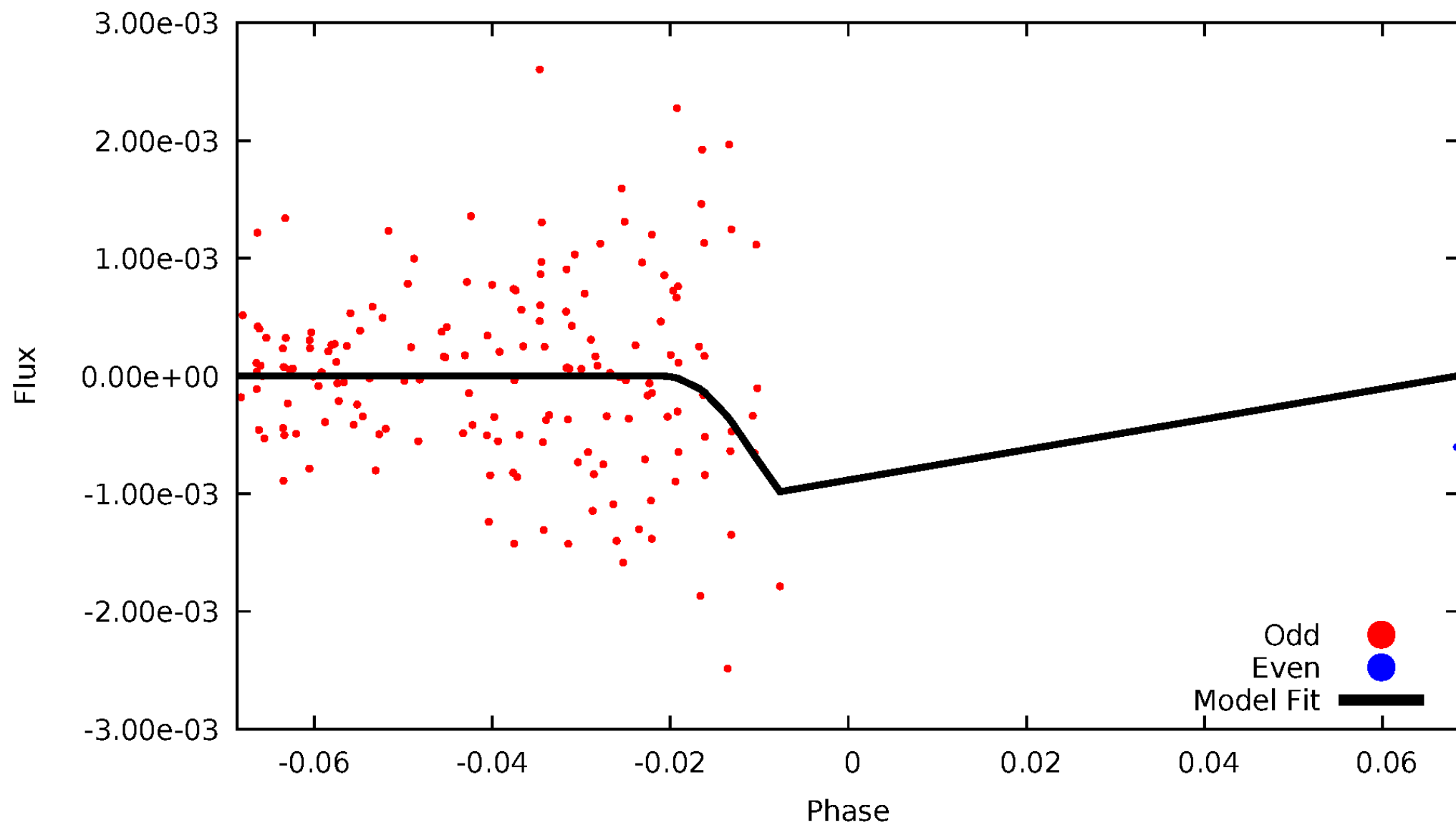


# TCE 003964128-02



# DV Odd/Even

TCE 003964128-02





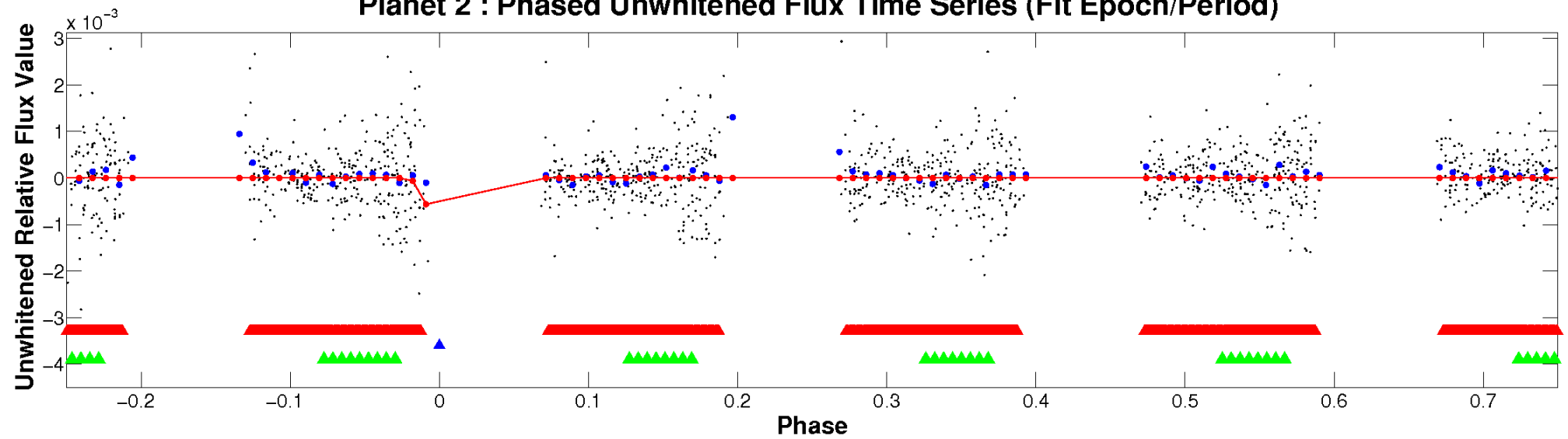


ALT Odd/Even

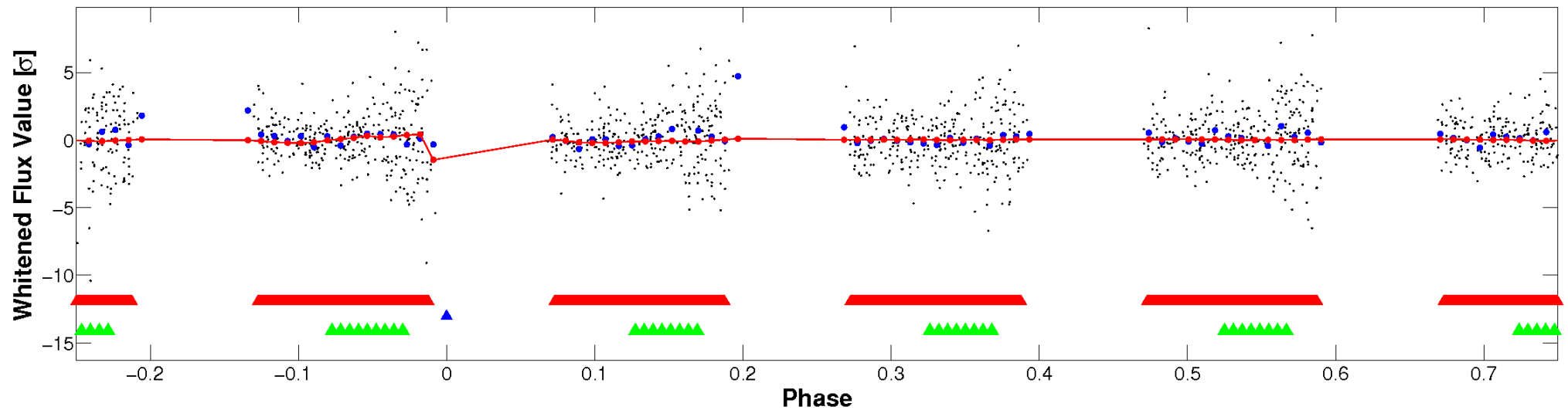
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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

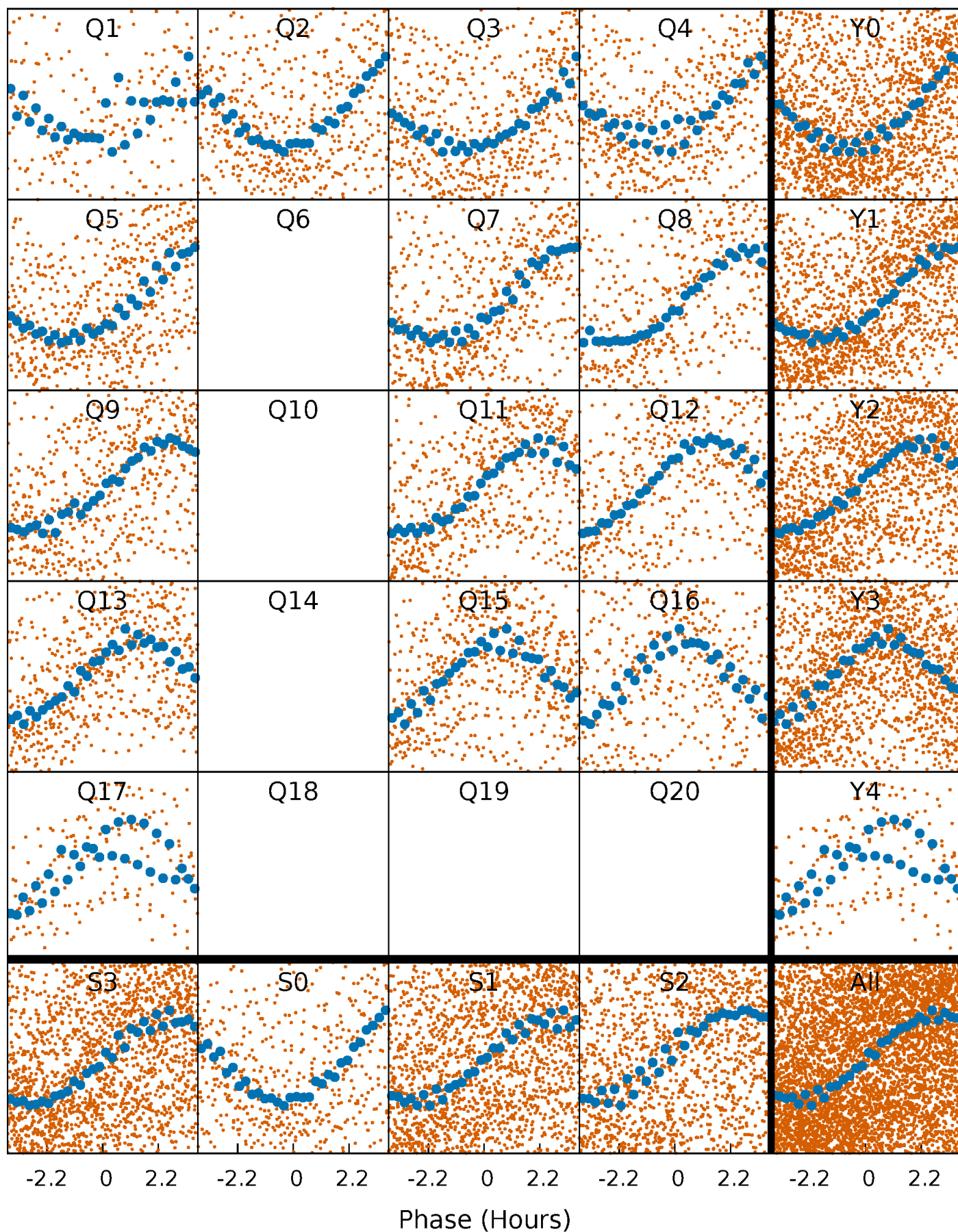


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



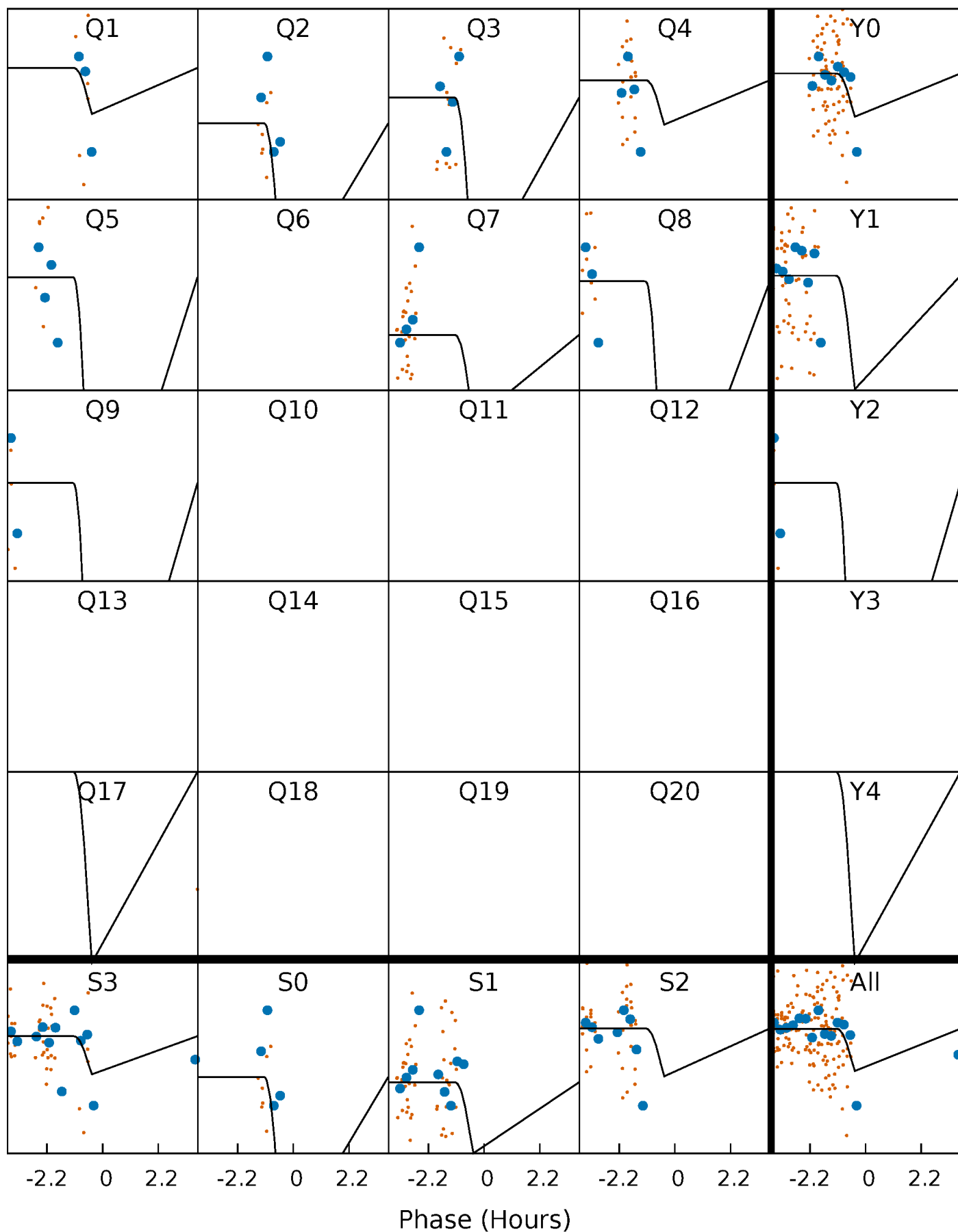
# PDC Quarter-Phased Transit Curves

TCE 003964128-02 P= 2.285186 Days  $T_0=131.887777$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 003964128-02   P= 2.285186 Days    $T_0=131.887777$  (BKJD)

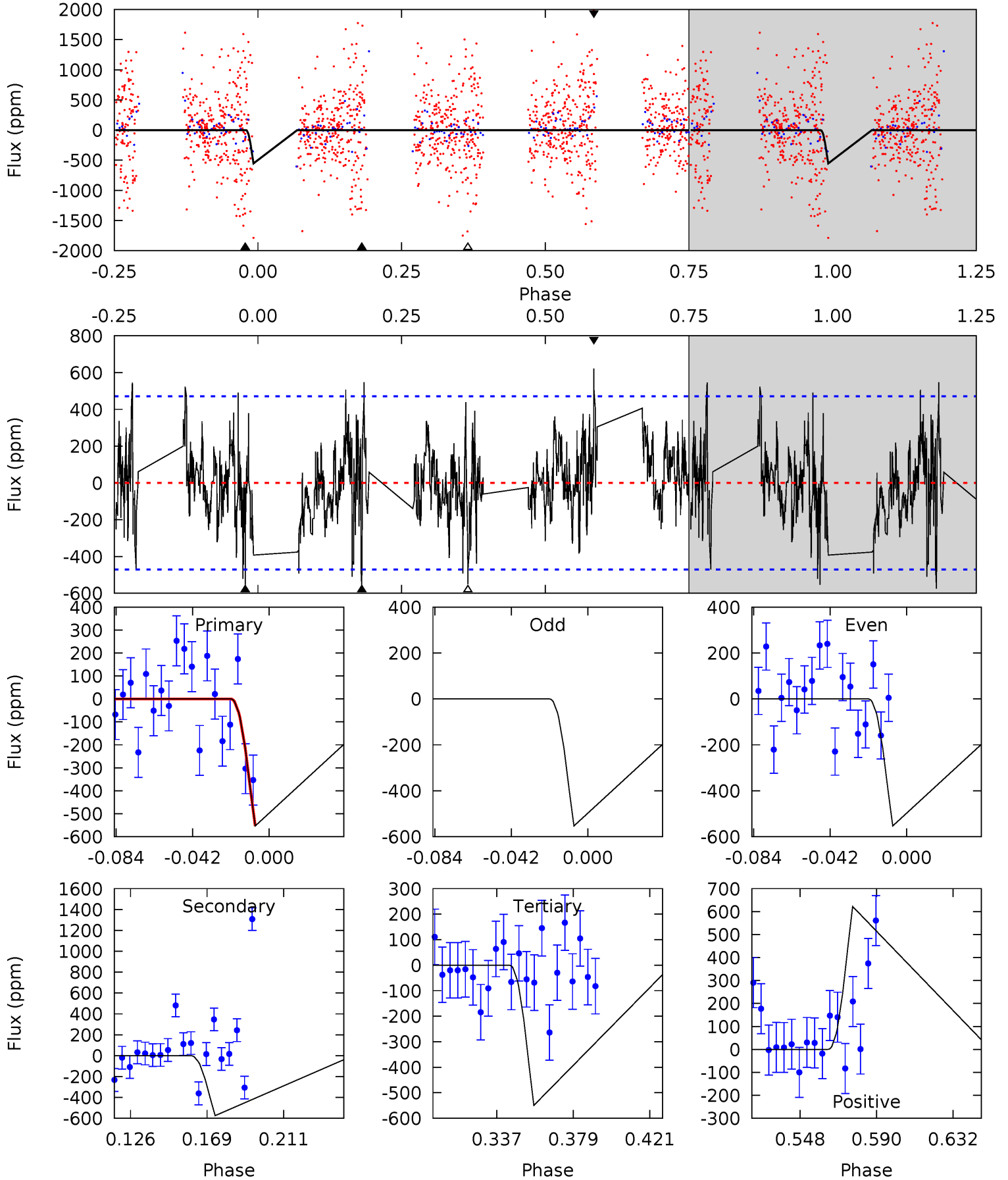


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

003964128-02, P = 2.285186 Days, E = 131.887777 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
5.57	5.79	5.53	6.27	4.74	2.03	1.66	0.04	-0.70	0.26	-0.48	0.00	0	0.52	0





## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 003964128

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7021^{+195}_{-293}$	$4.275^{+0.058}_{-0.232}$	$0.210^{+0.150}_{-0.400}$	$1.485^{+0.544}_{-0.181}$	$1.514^{+0.193}_{-0.214}$	$0.652^{+0.205}_{-0.362}$
	+3%/-4%	+1%/-5%	+71%/-190%	+37%/-12%	+13%/-14%	+31%/-56%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003964128-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-575 \pm 99$	$190.45^{+198.09}_{-131.94}$	$2726^{+211}_{-162}$	$-2868^{+224}_{-139}$	$0.013^{+0.133}_{-0.010}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

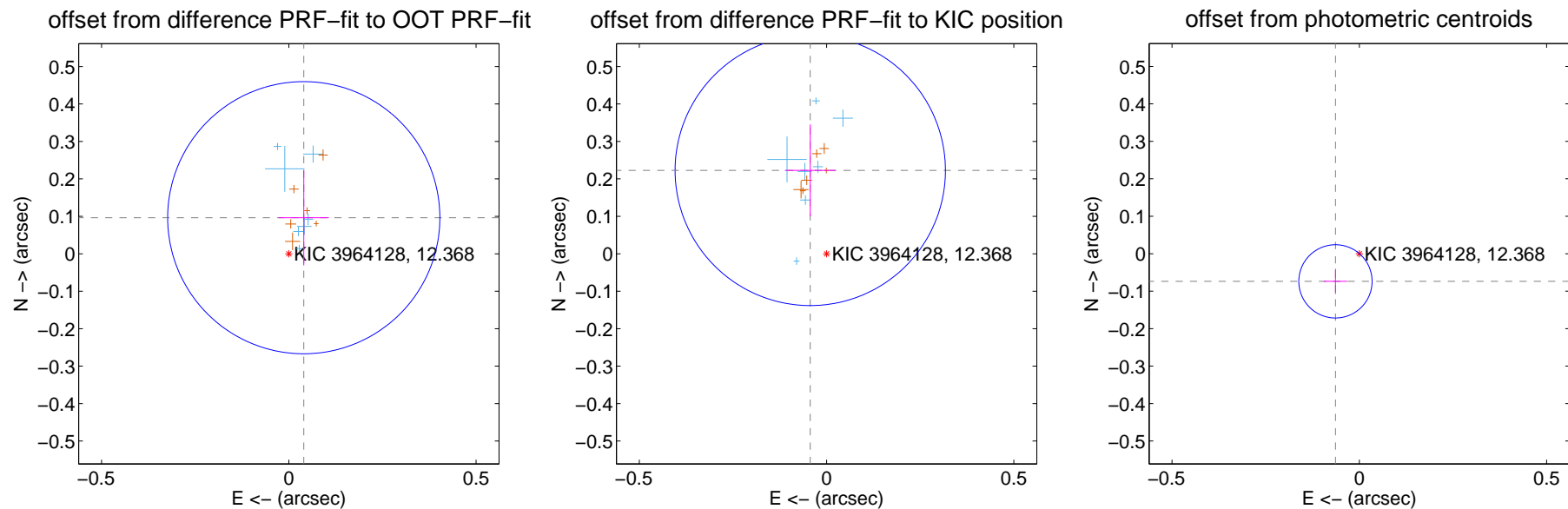
## DV Centroid Data

Supplemental centroid analysis for 003964128-02. Kepler magnitude: 12.37. Transit SNR 6.39

There are 8 quarters with good PRF difference image offsets

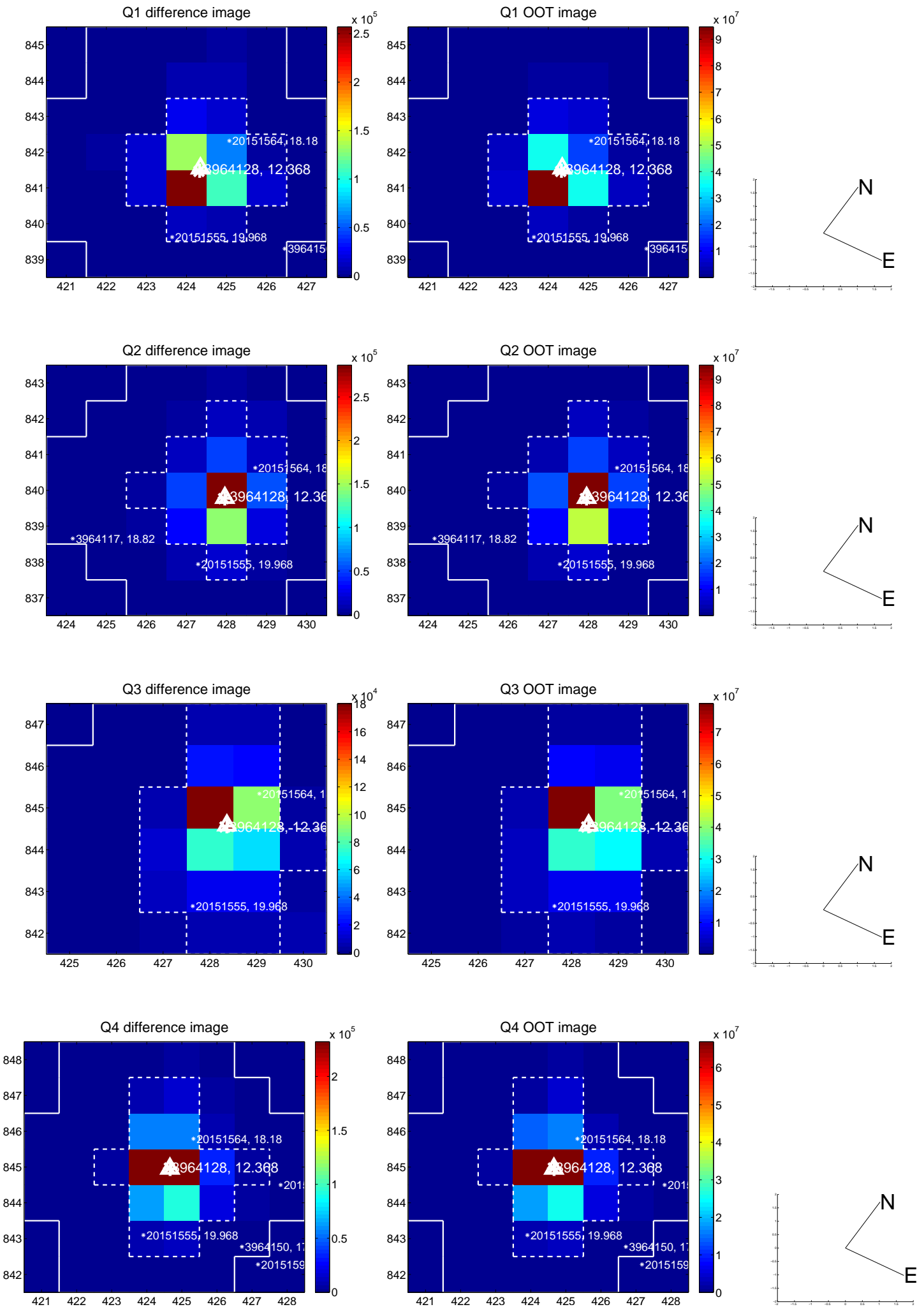
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.104 \pm 0.121$	0.86	$-0.040 \pm 0.067$	$0.096 \pm 0.128$
PRF-fit source offset from KIC position	$0.227 \pm 0.120$	1.89	$0.044 \pm 0.067$	$0.223 \pm 0.123$
photometric centroid source offset	$0.10 \pm 0.03$	2.99	$0.06 \pm 0.03$	$-0.07 \pm 0.03$

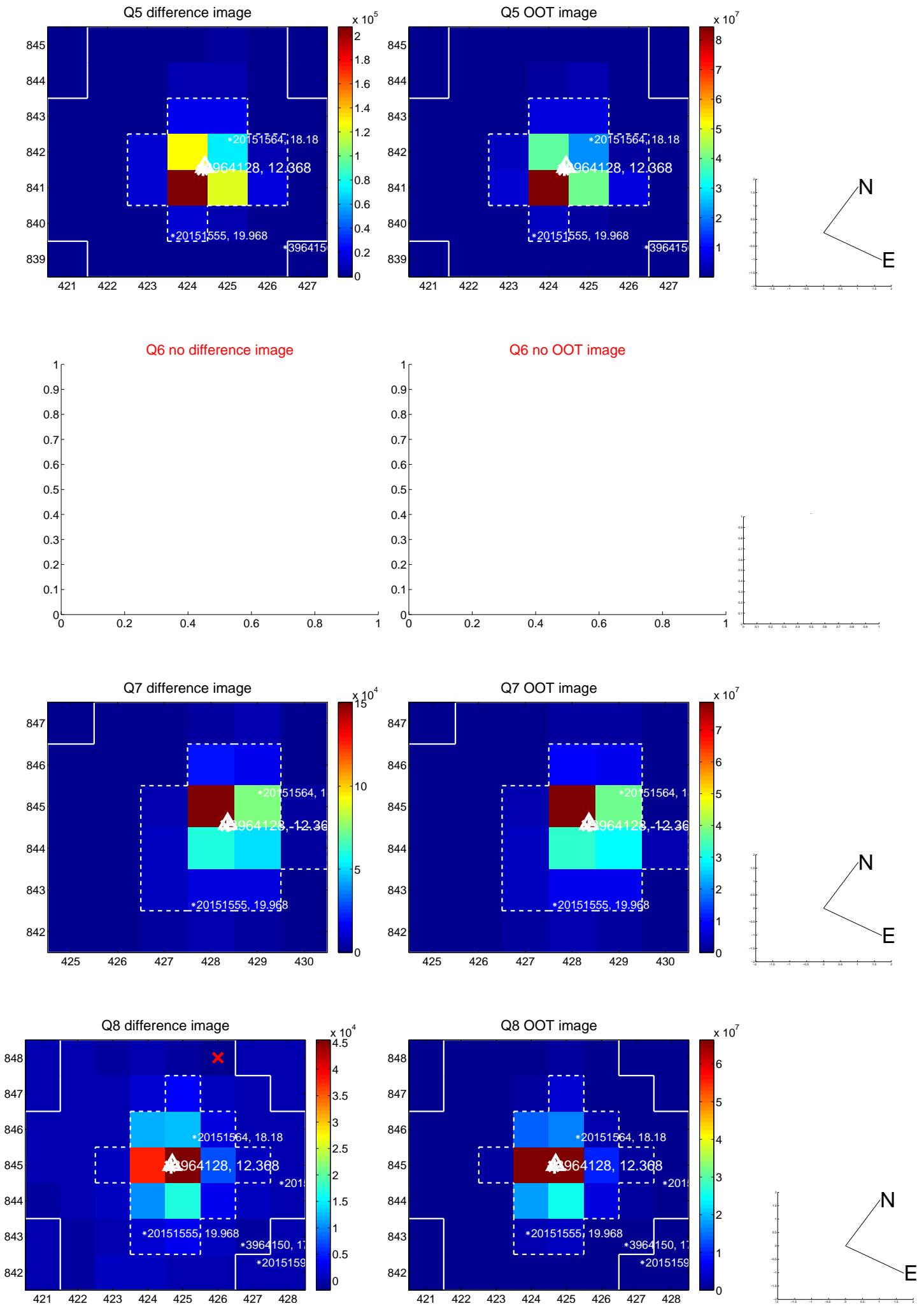


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

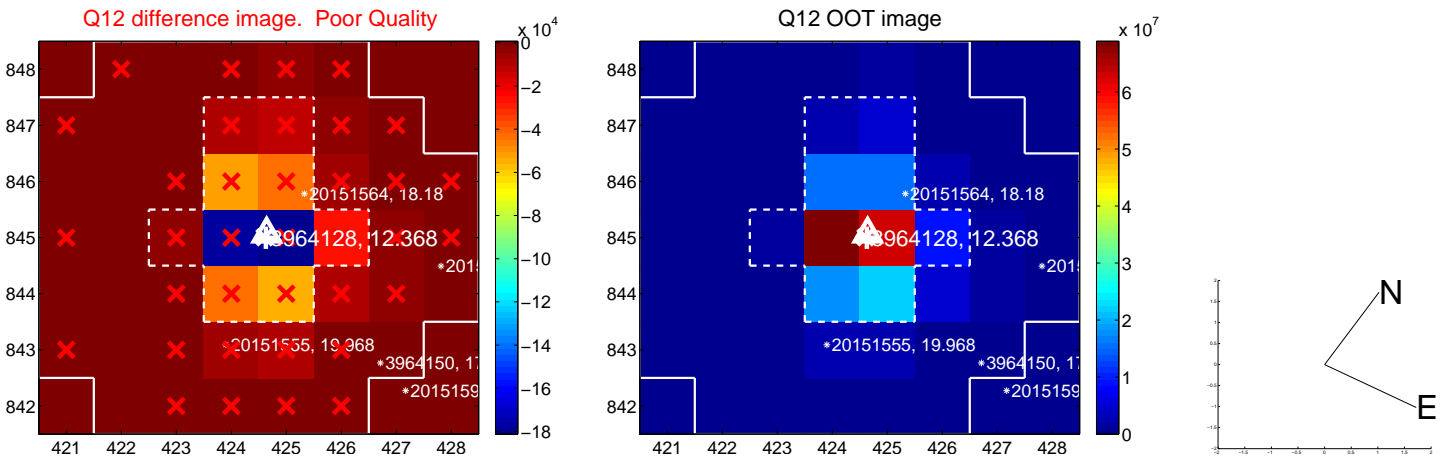
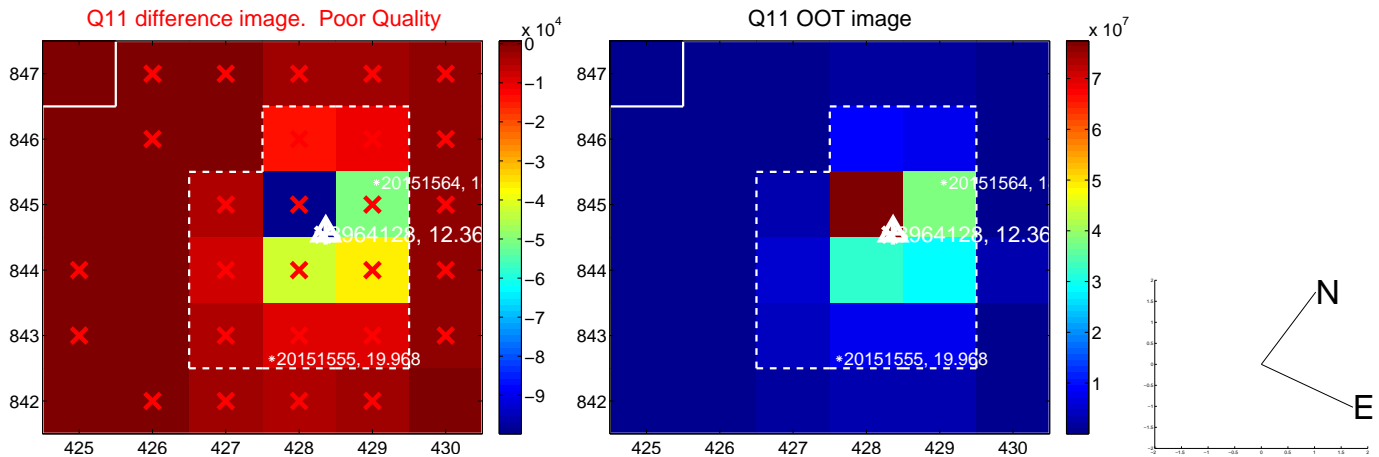
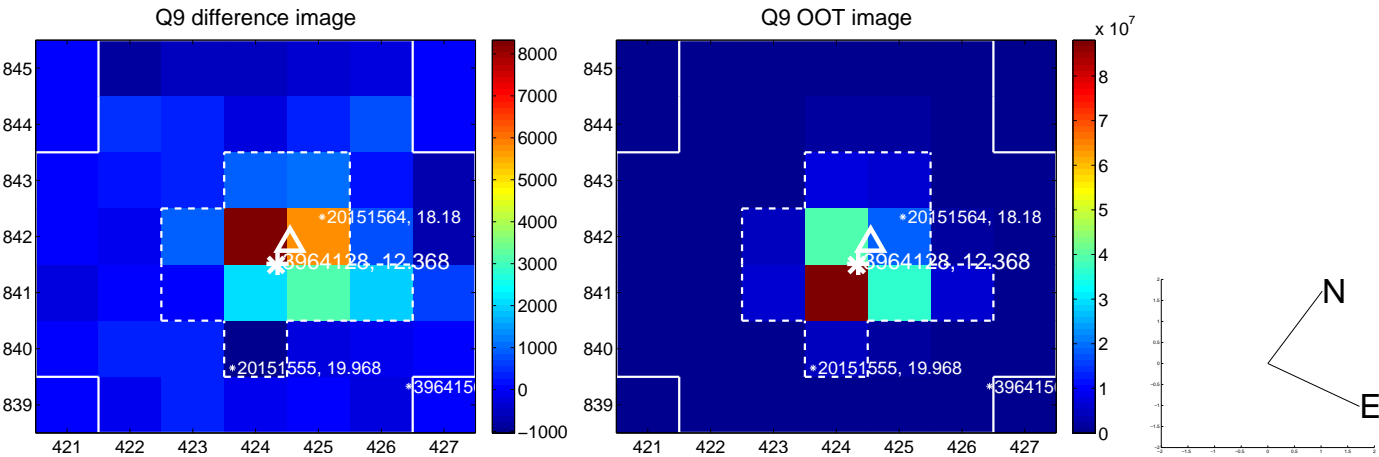


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

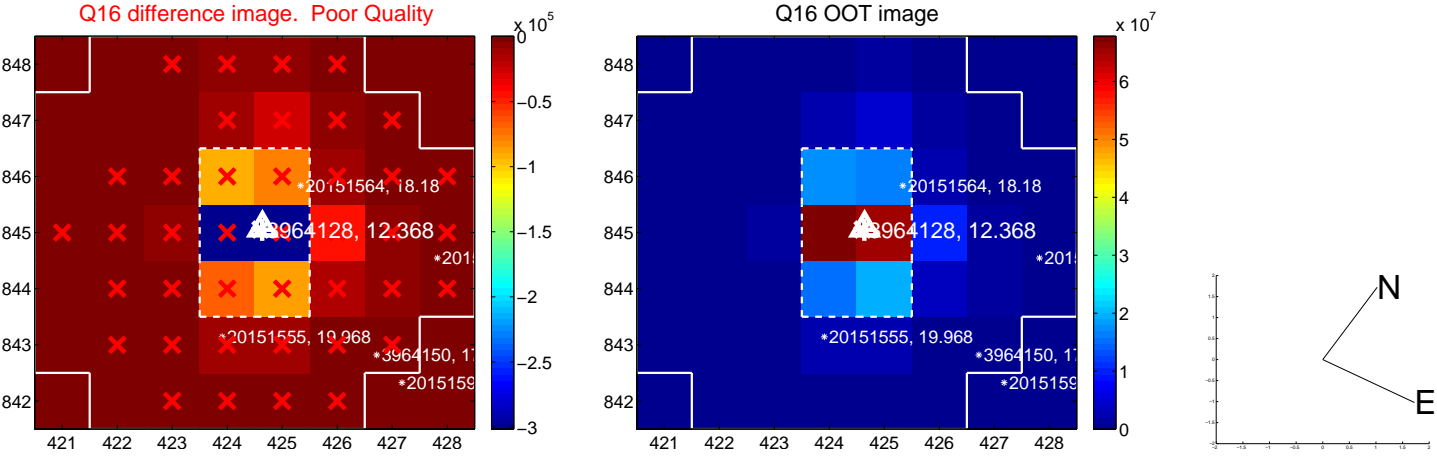
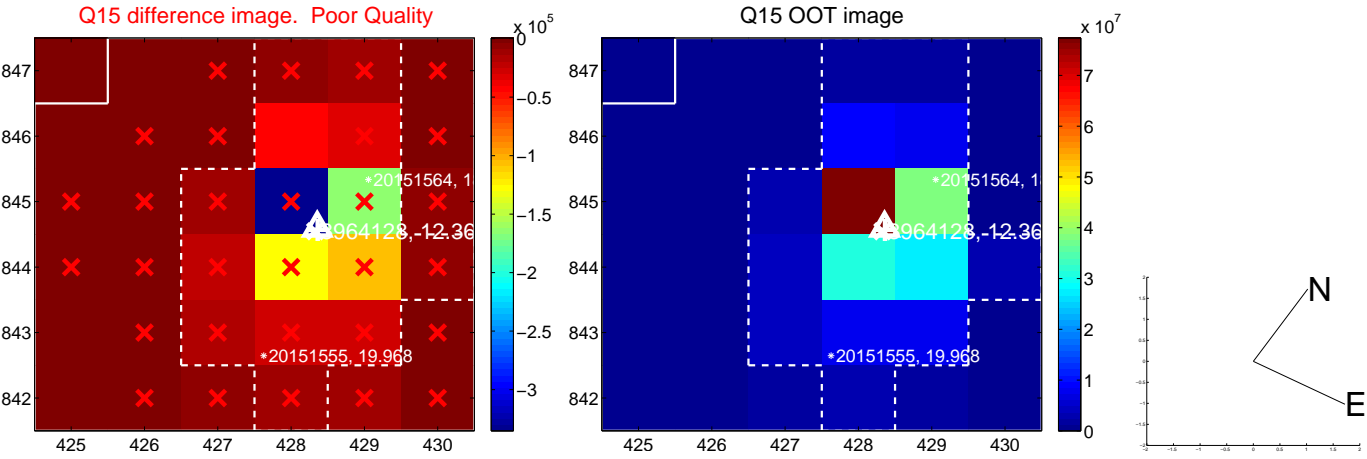
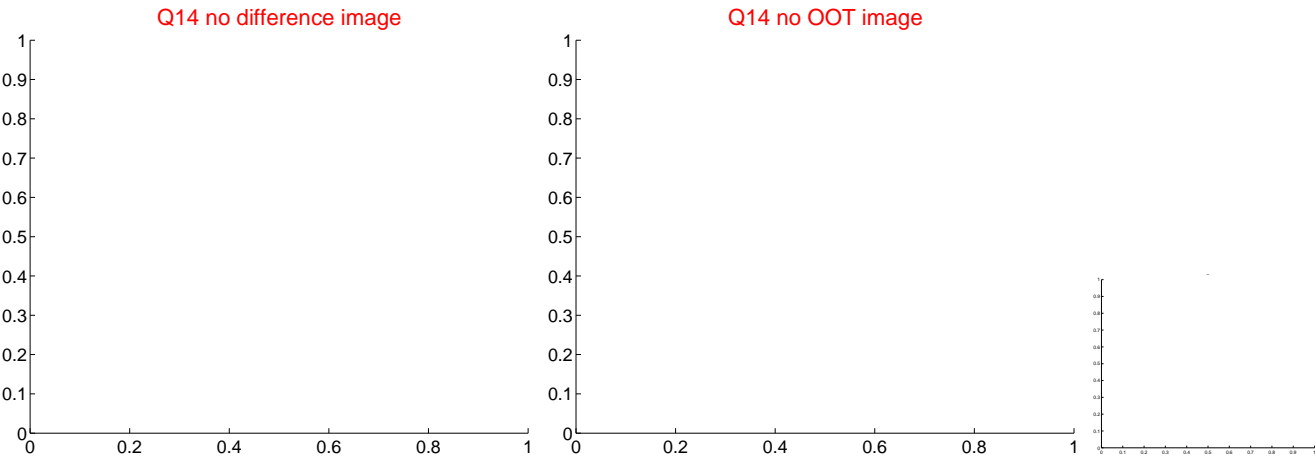
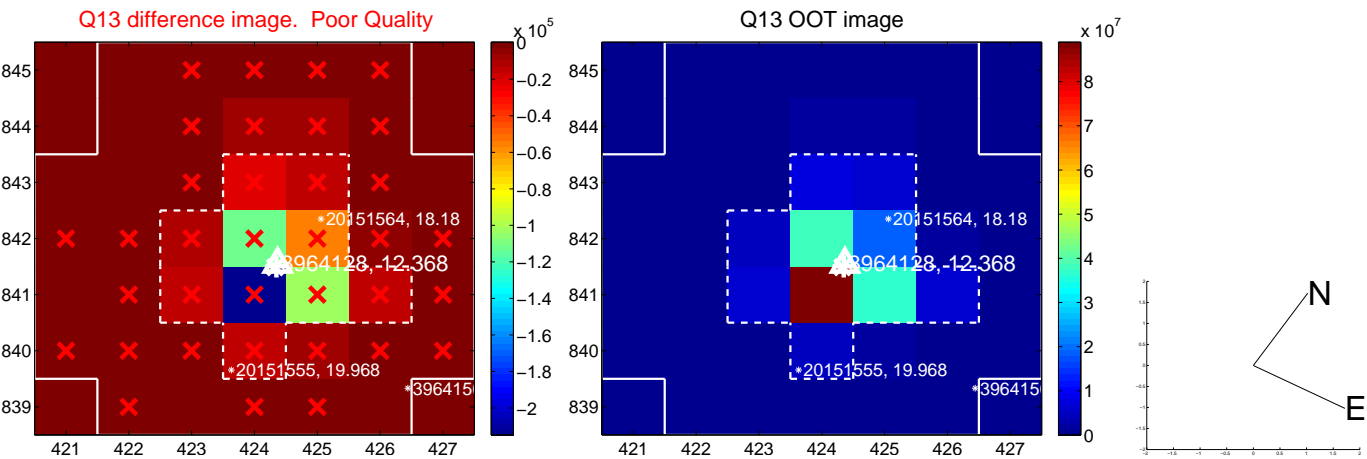




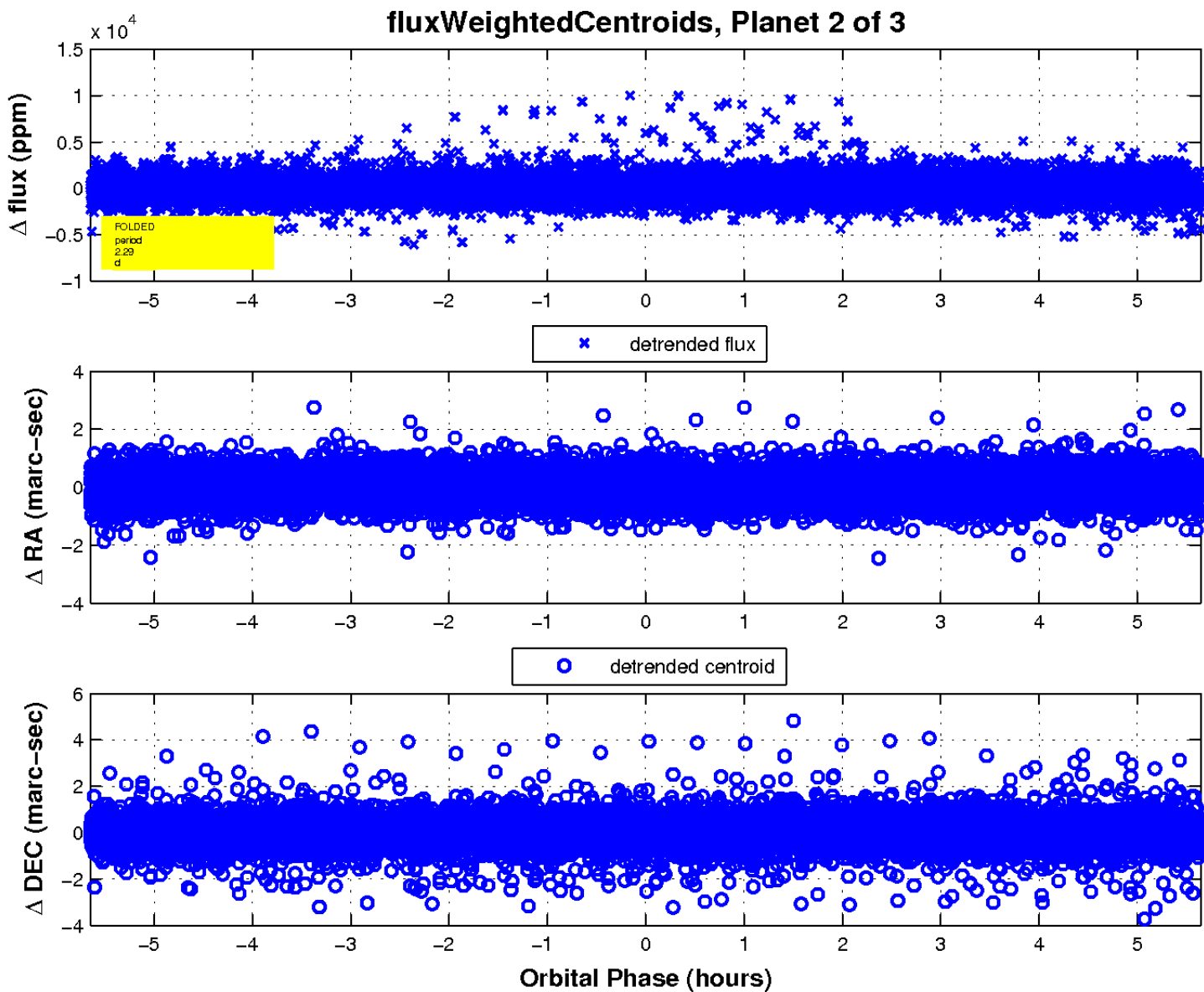
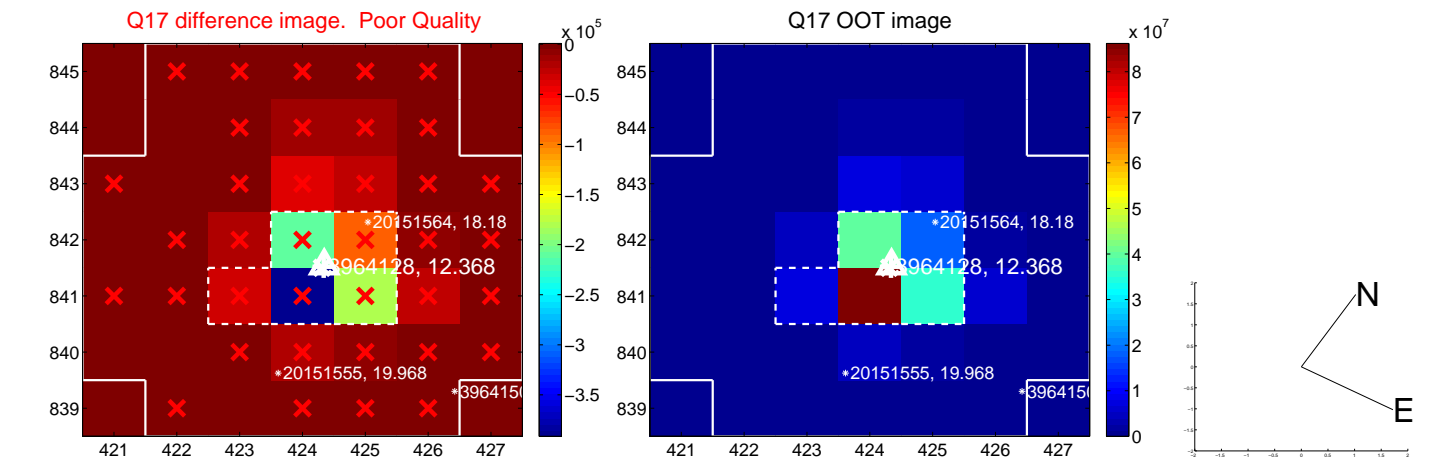
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



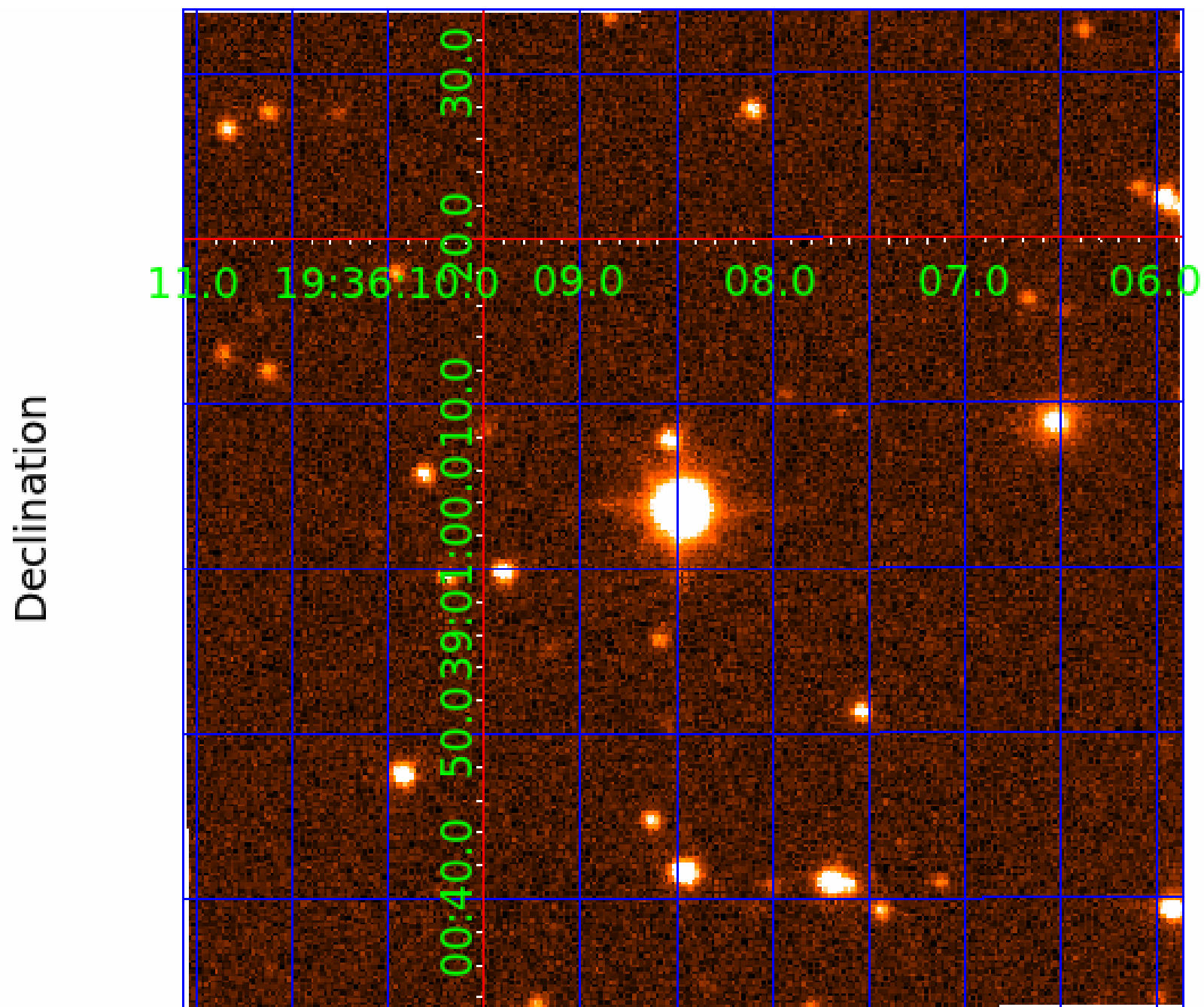
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image



# KIC 003964128

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003964128-01	OBS	No	0.913909	131.859877	0.5	6.931	8.5	0.1	1.49	7021	0.11	10709.53
003964128-02	OBS	No	2.285186	131.887777	1374.4	1.882	11.1	6.4	1.49	7021	10.13	3155.58
003964128-03	OBS	No	34.732095	135.936170	1061.0	1.825	12.0	12.9	1.49	7021	4.96	83.82

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003964128-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
003964128-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
003964128-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV

**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.

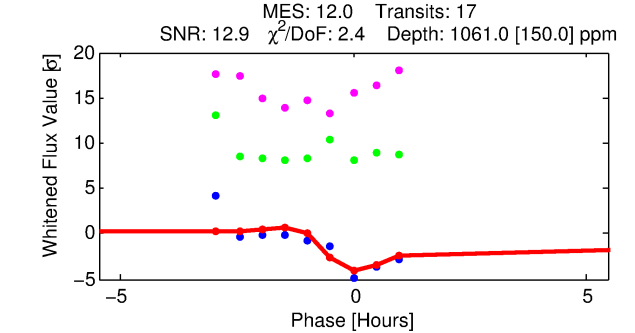
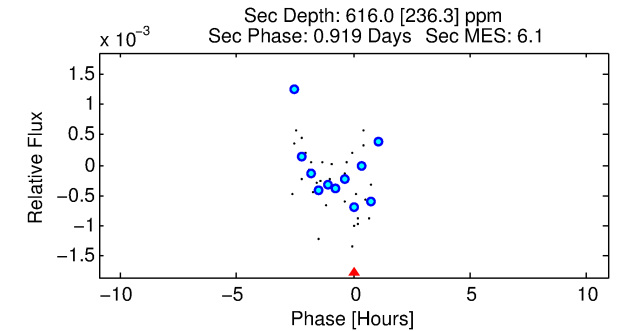
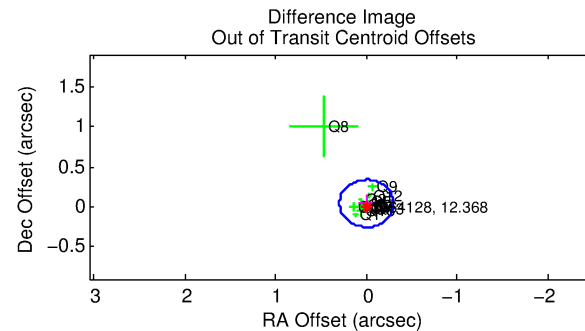
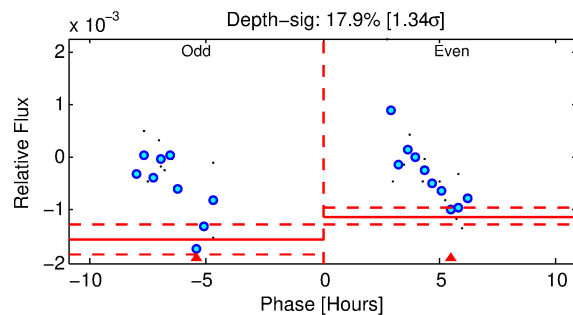
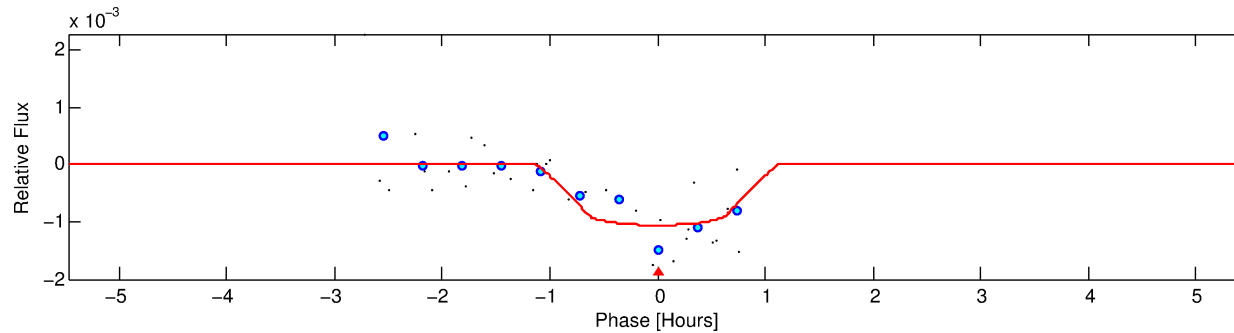
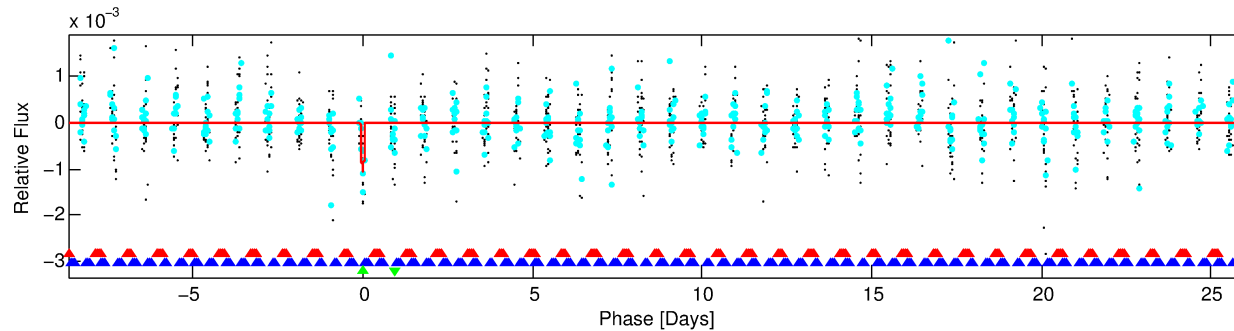
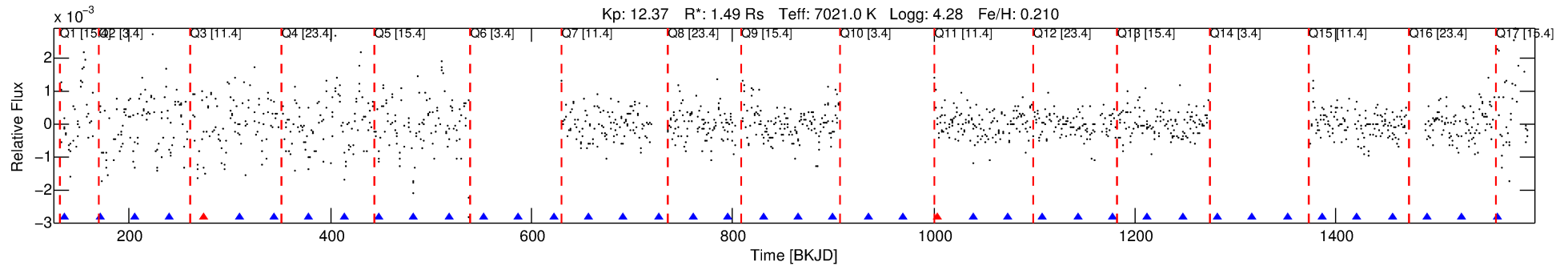
## Ephemeris Match Information For 003964128-03

No Significant Match Found



# DV One-Page Summary

KIC: 3964128 Candidate: 3 of 3 Period: 34.732 d



## DV Fit Results:

Period = 34.73210 [0.00087] d  
Epoch = 135.9362 [0.0108] BKJD  
Rp/R\* = 0.0306 [0.0620]  
a/R\* = 140.31 [1587.28]  
b = 0.36 [27.66]  
Seff = 83.82 [38.80]  
Teq = 772 [89] K  
Rp = 4.96 [10.21] Re  
a = 0.2393 [0.0723] AU  
Ag = 790.12 [3235.74] [0.24 $\sigma$ ]  
Teffp = 6324 [6444] K [0.86 $\sigma$ ]

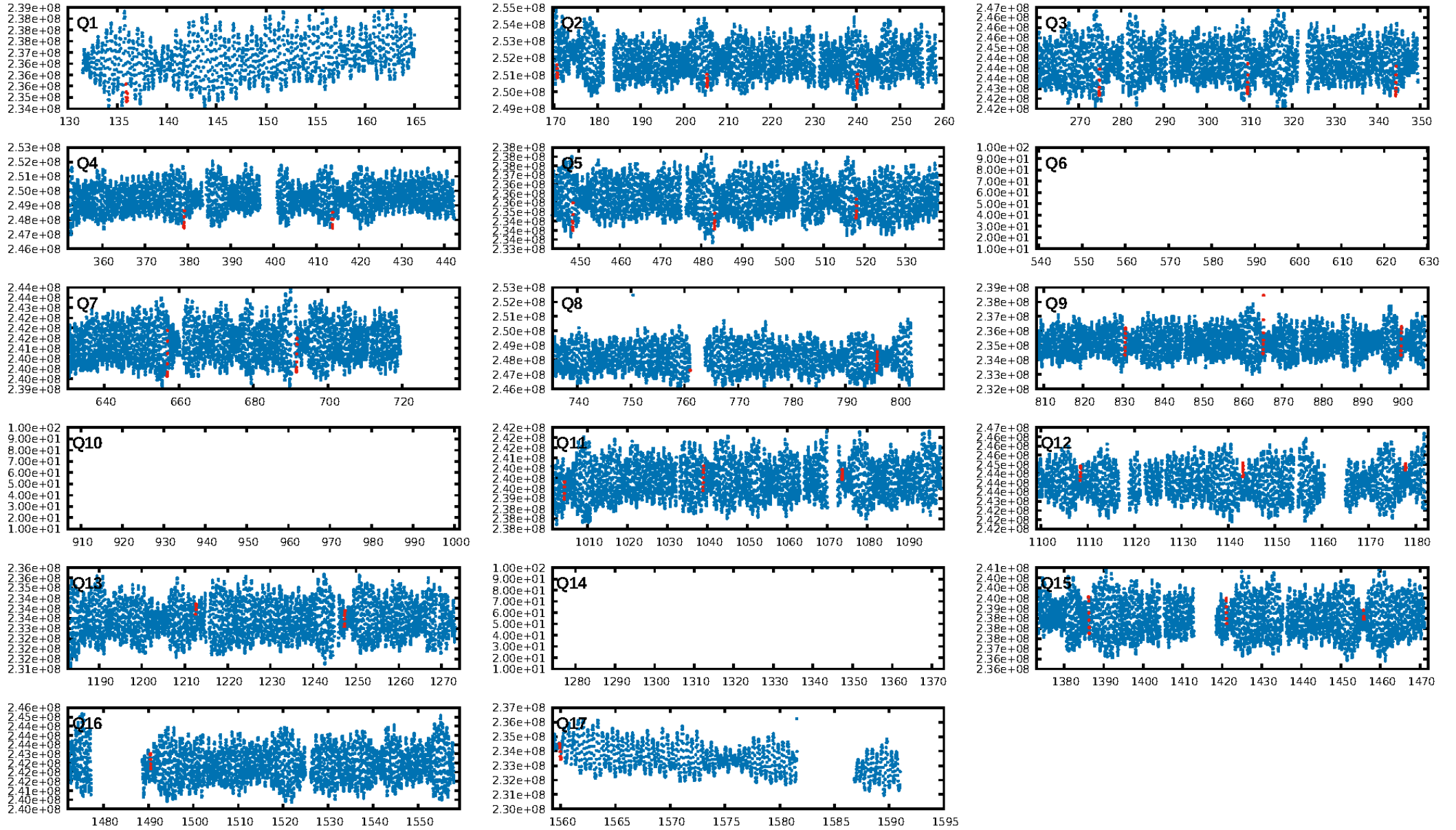
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [297.06 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.5%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.42e-24  
RollingBand-fgt: 0.88 [14/16]  
**GhostDiagnostic-chr: -1.391**  
Centroid-sig: N/A  
Centroid-so: 0.286 arcsec [2.18 $\sigma$ ]  
OotOffset-rm: 0.042 arcsec [0.43 $\sigma$ ]  
KicOffset-rm: 0.173 arcsec [1.68 $\sigma$ ]  
OotOffset-st: 1/4/4/4 [13]  
KicOffset-st: 1/4/4/4 [13]  
DiffImageQuality-fgm: 0.54 [7/13]  
DiffImageOverlap-fno: 0.69 [9/13]

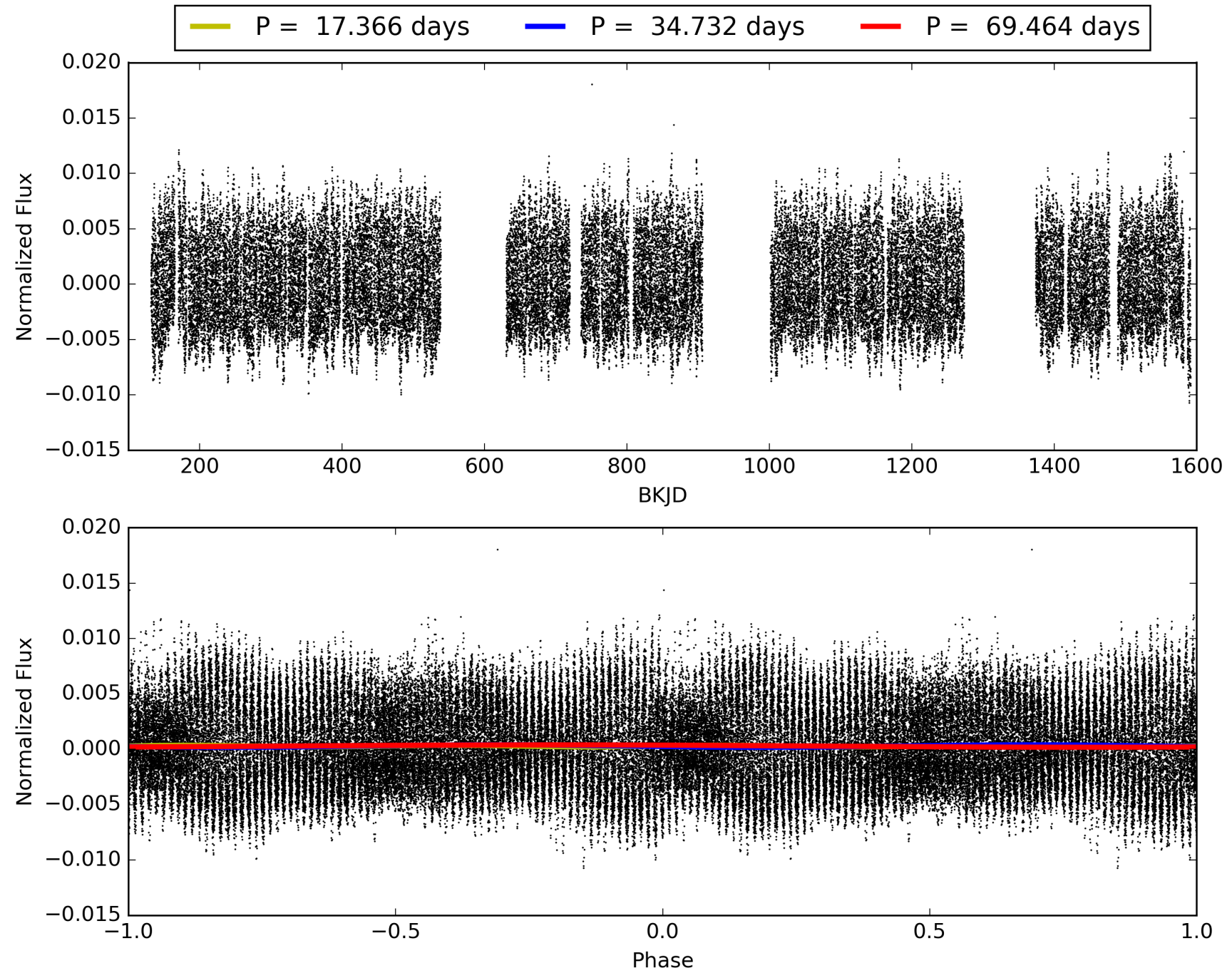
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:30:39 Z

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

# TCE 003964128-03, PDC Light Curves

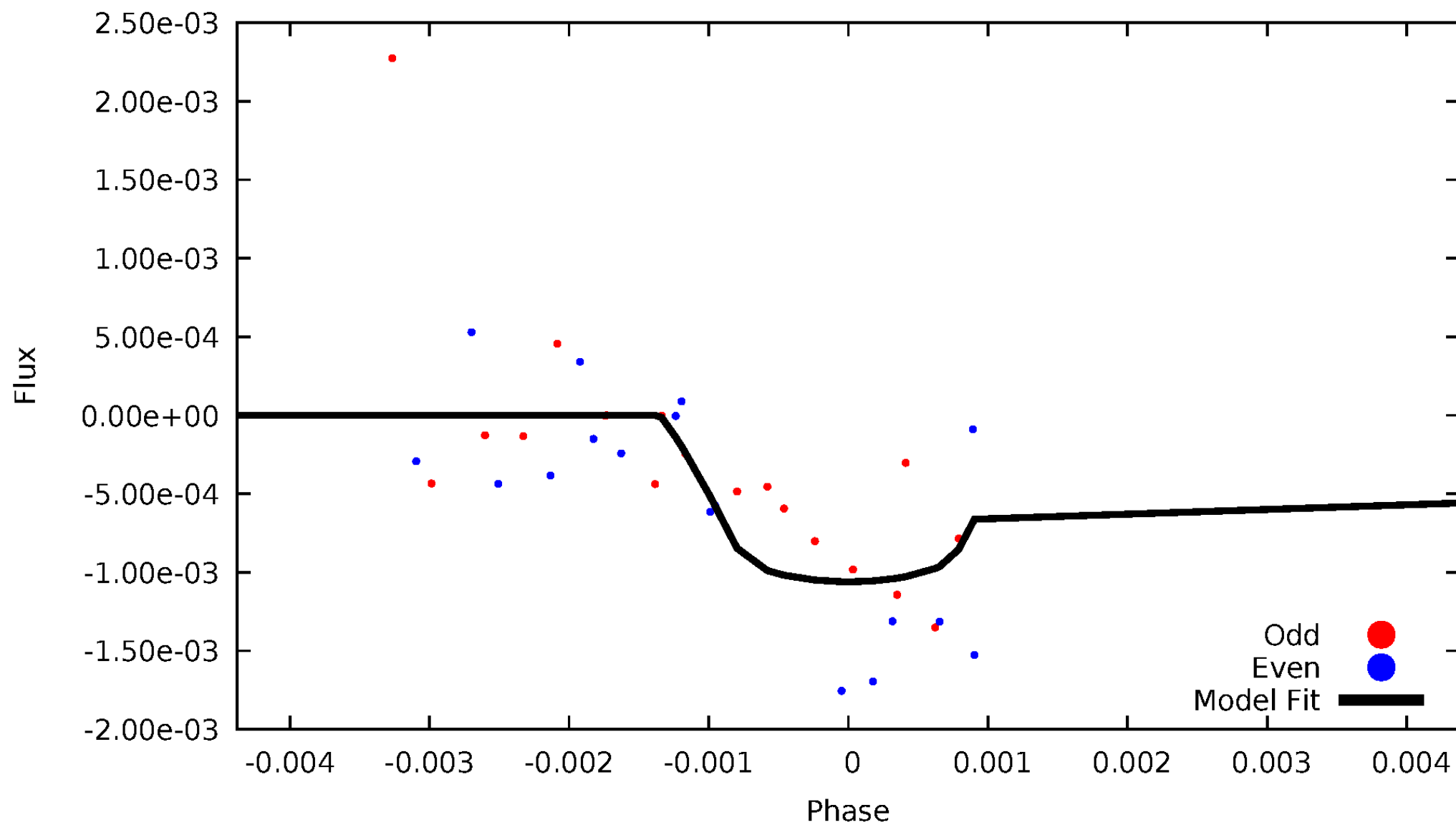


TCE 003964128-03



# DV Odd/Even

TCE 003964128-03





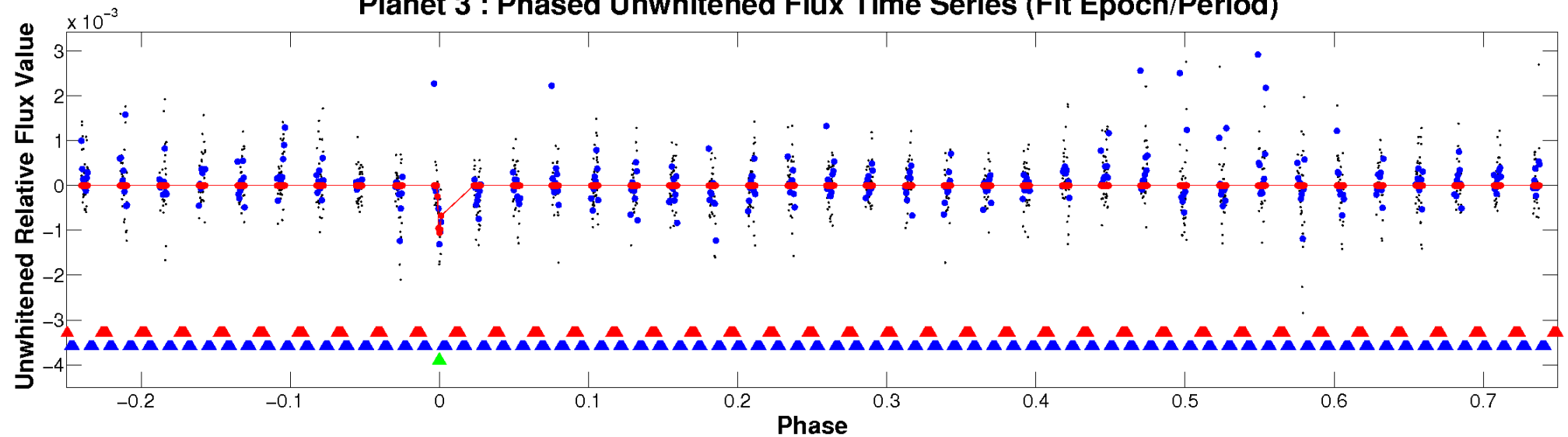
ALT Odd/Even

This plot does not exist for this TCE.

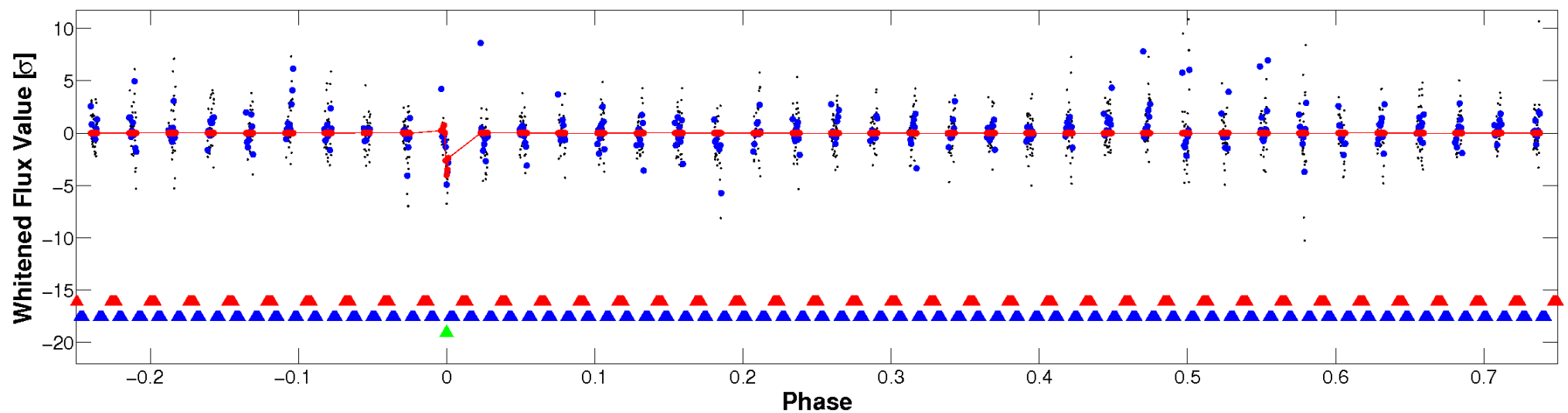


# Non-Whitened Vs. Whitened Light Curve

## Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

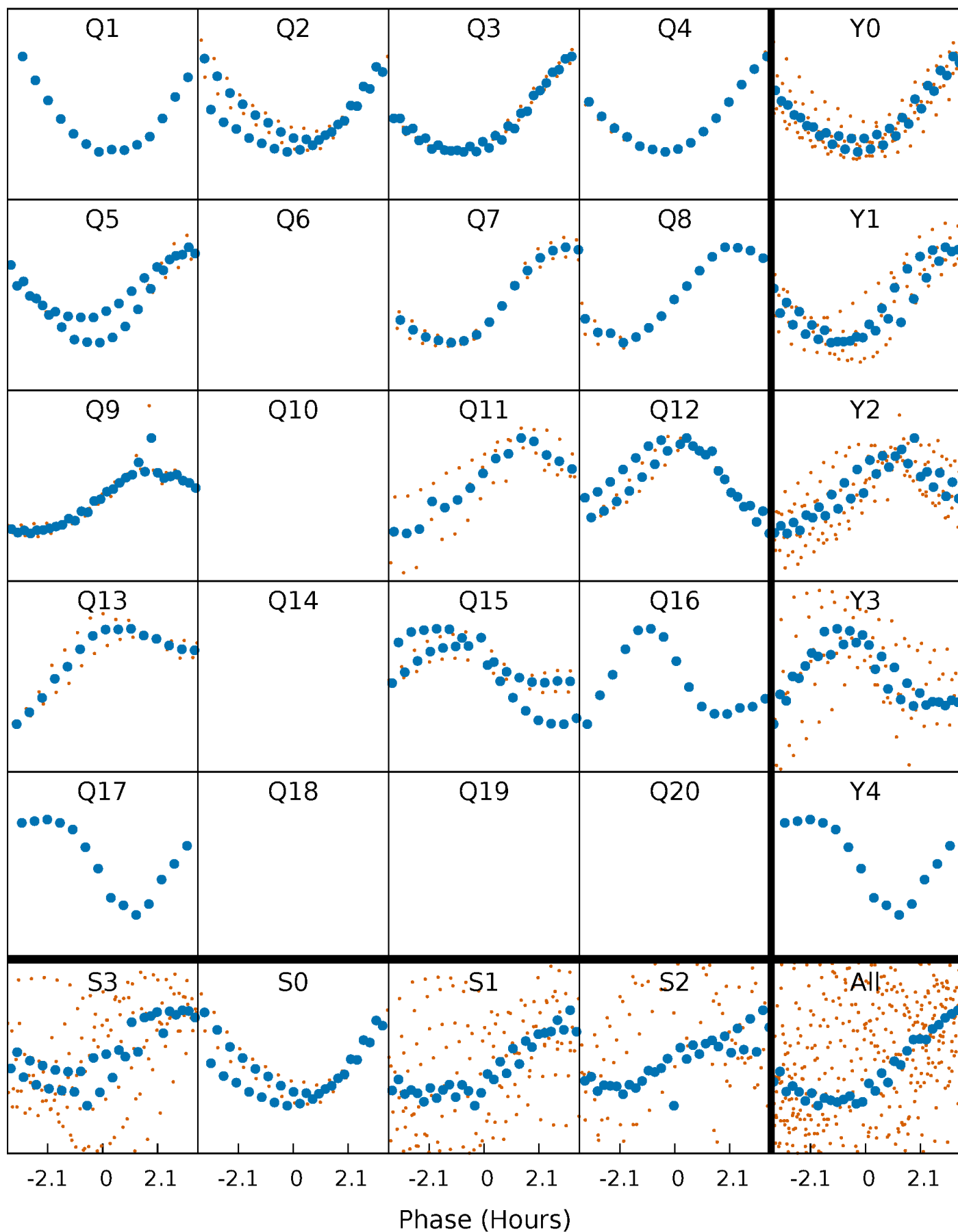


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



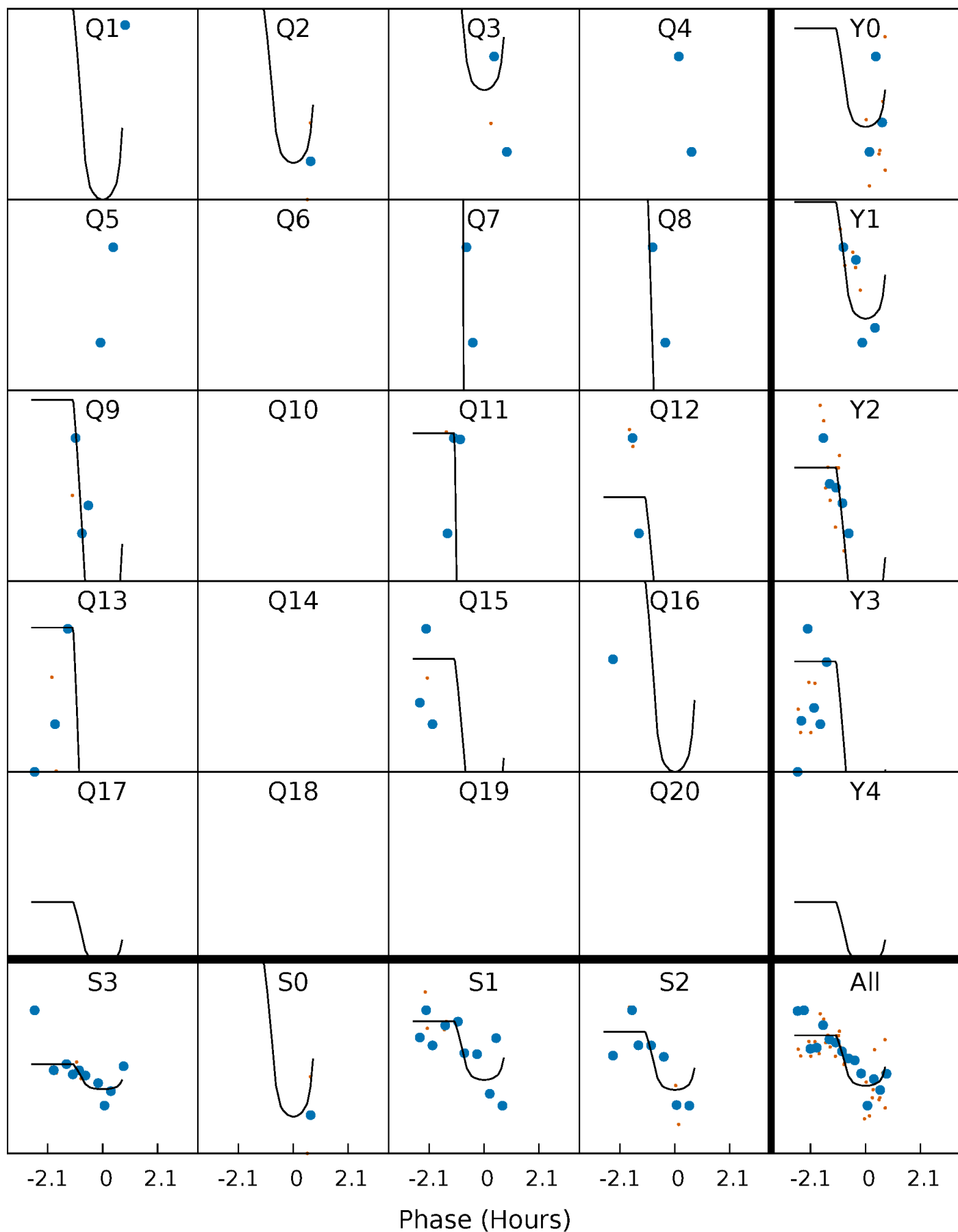
# PDC Quarter-Phased Transit Curves

TCE 003964128-03 P= 34.732095 Days  $T_0=135.936170$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 003964128-03     $P = 34.732095$  Days     $T_0 = 135.936170$  (BKJD)

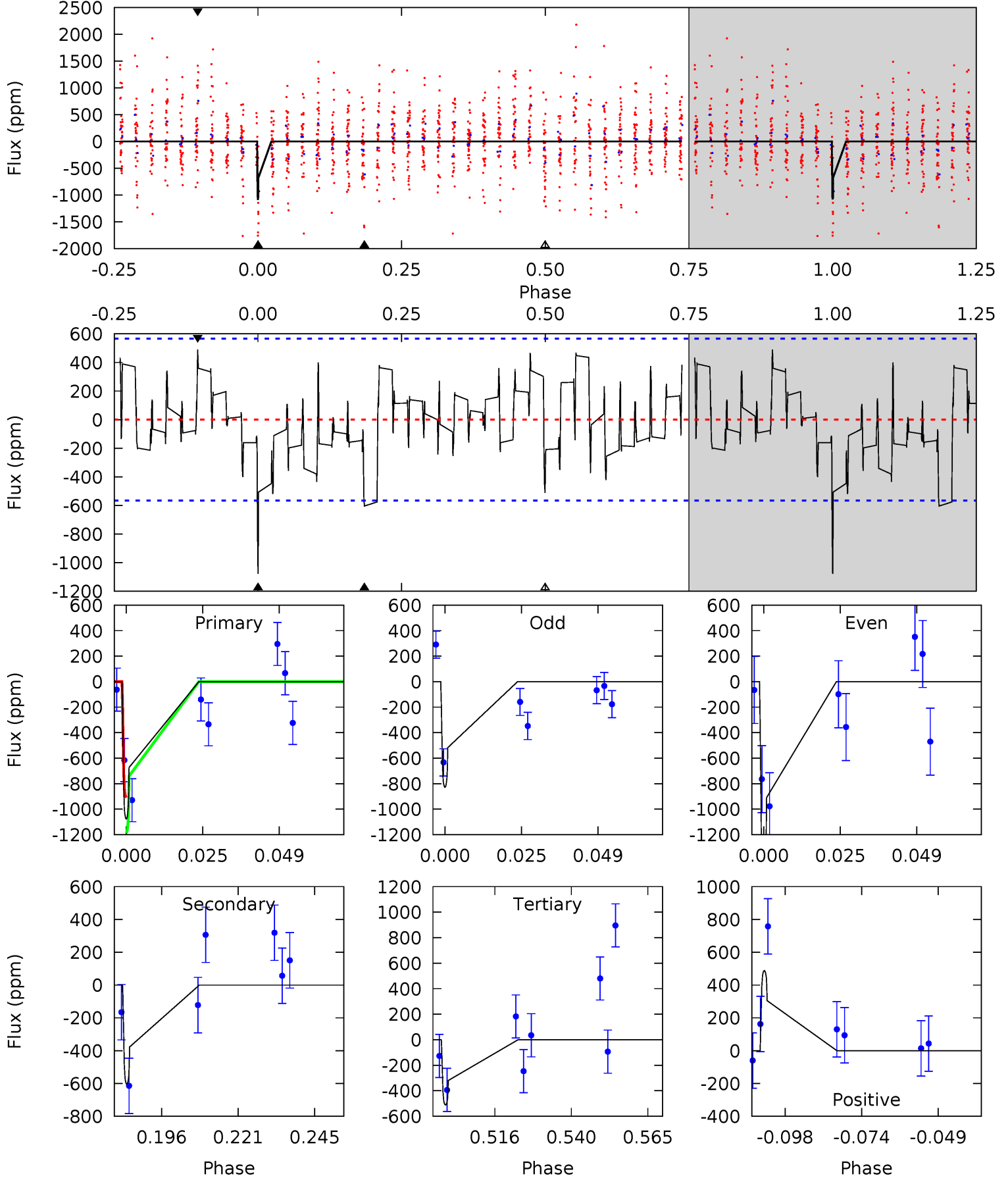


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

003964128-03, P = 34.732095 Days, E = 101.204075 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
9.24	5.18	4.38	4.19	4.85	2.25	1.65	4.86	5.05	0.80	0.99	2.64	1.00	0.31	1.19



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 003964128

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7021^{+195}_{-293}$	$4.275^{+0.058}_{-0.232}$	$0.210^{+0.150}_{-0.400}$	$1.485^{+0.544}_{-0.181}$	$1.514^{+0.193}_{-0.214}$	$0.652^{+0.205}_{-0.362}$
	+3%/-4%	+1%/-5%	+71%/-190%	+37%/-12%	+13%/-14%	+31%/-56%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003964128-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-604 \pm 117$	$9.62^{+9.40}_{-6.59}$	$1109^{+91}_{-64}$	$4690^{+3909}_{-956}$	$191^{+1841}_{-139}$
Alt.	N/A	N/A	N/A	N/A	N/A

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



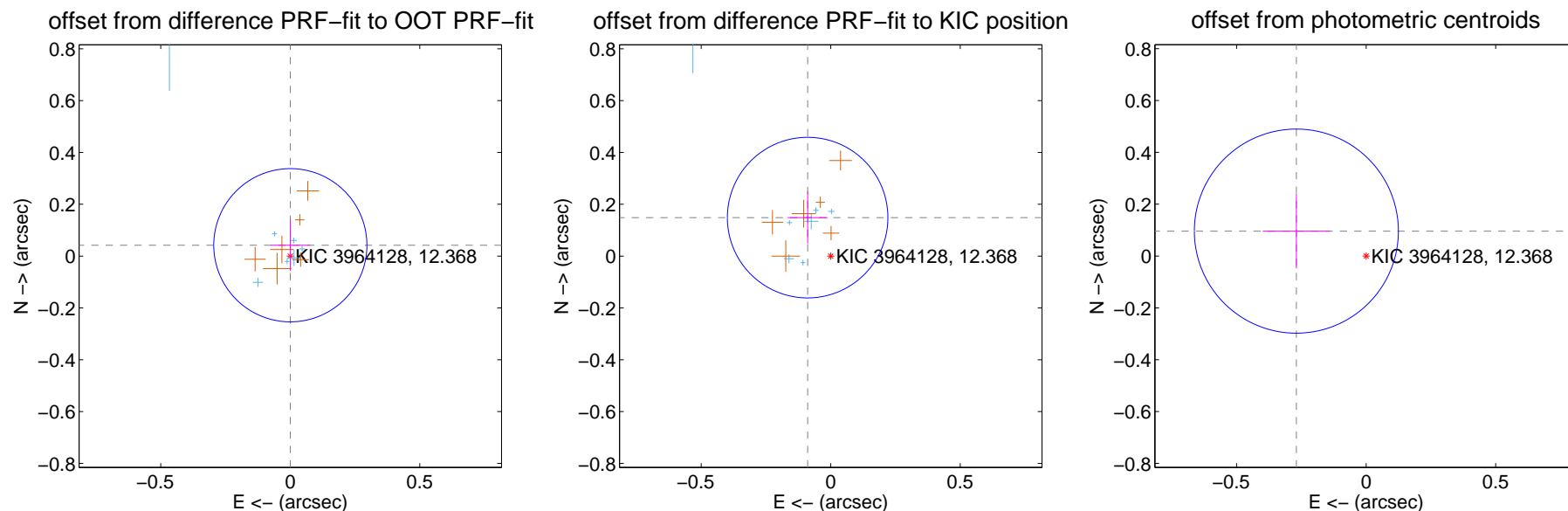
## DV Centroid Data

Supplemental centroid analysis for 003964128-03. Kepler magnitude: 12.37. Transit SNR 12.94

There are 7 quarters with good PRF difference image offsets

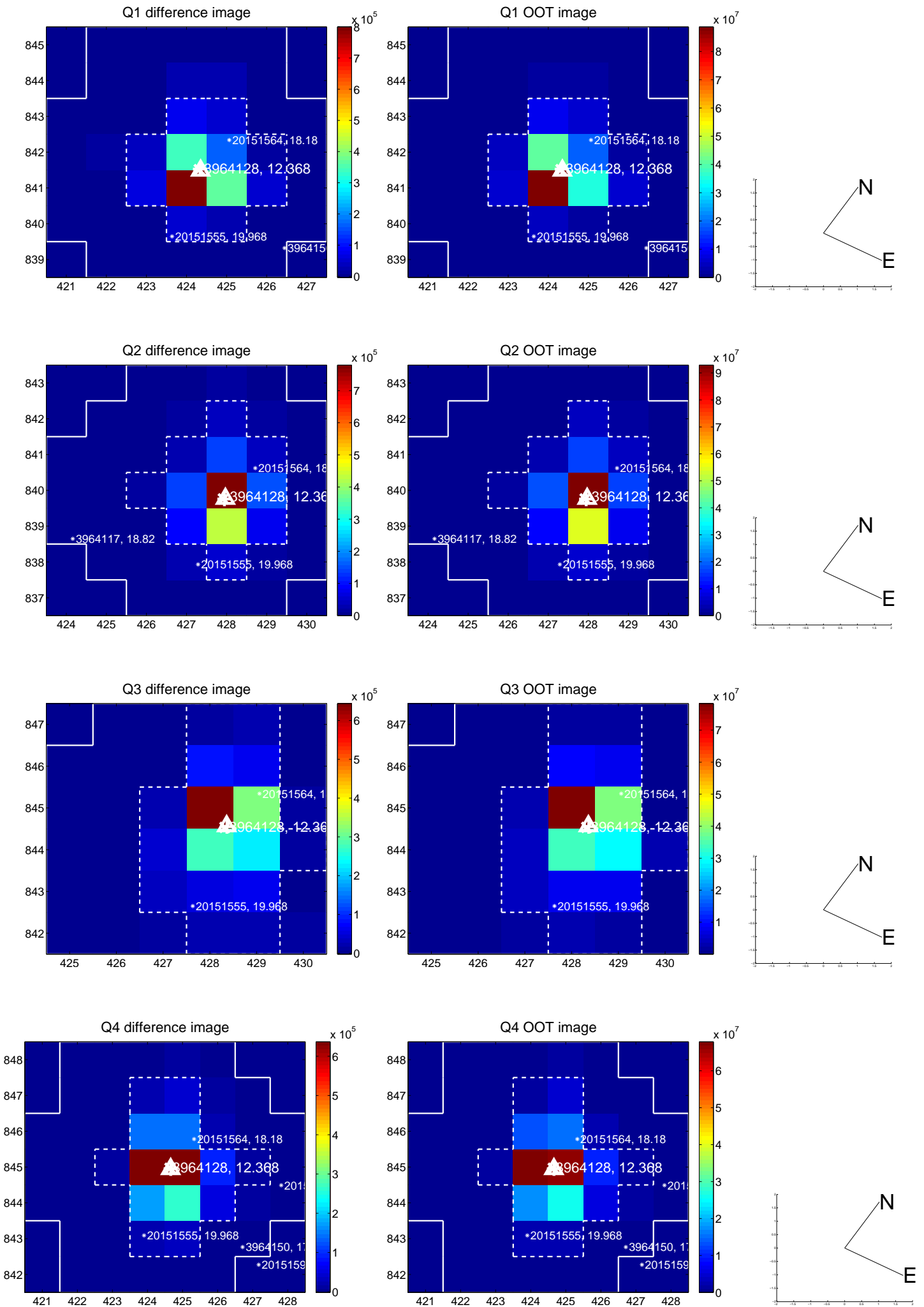
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.042 \pm 0.099$	0.43	$-0.000 \pm 0.077$	$0.042 \pm 0.099$
PRF-fit source offset from KIC position	$0.173 \pm 0.103$	1.68	$0.089 \pm 0.077$	$0.149 \pm 0.100$
photometric centroid source offset	$0.29 \pm 0.13$	2.18	$0.27 \pm 0.13$	$0.10 \pm 0.14$

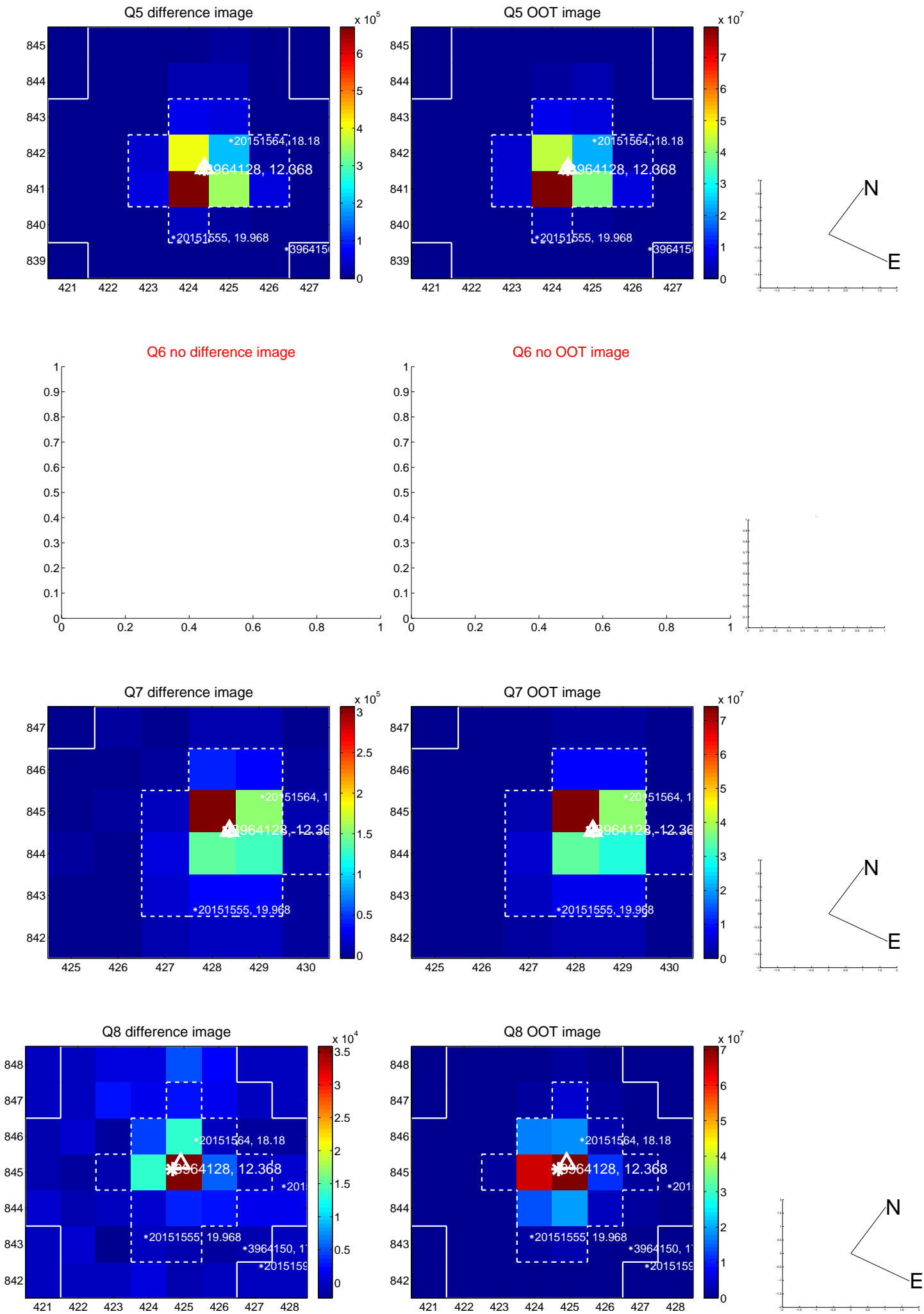


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

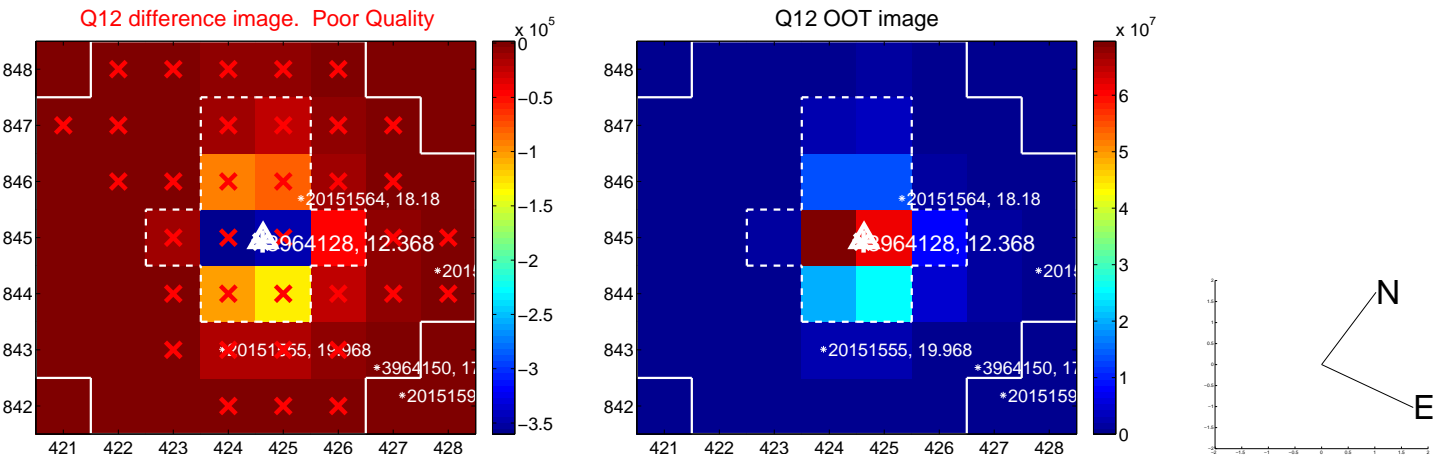
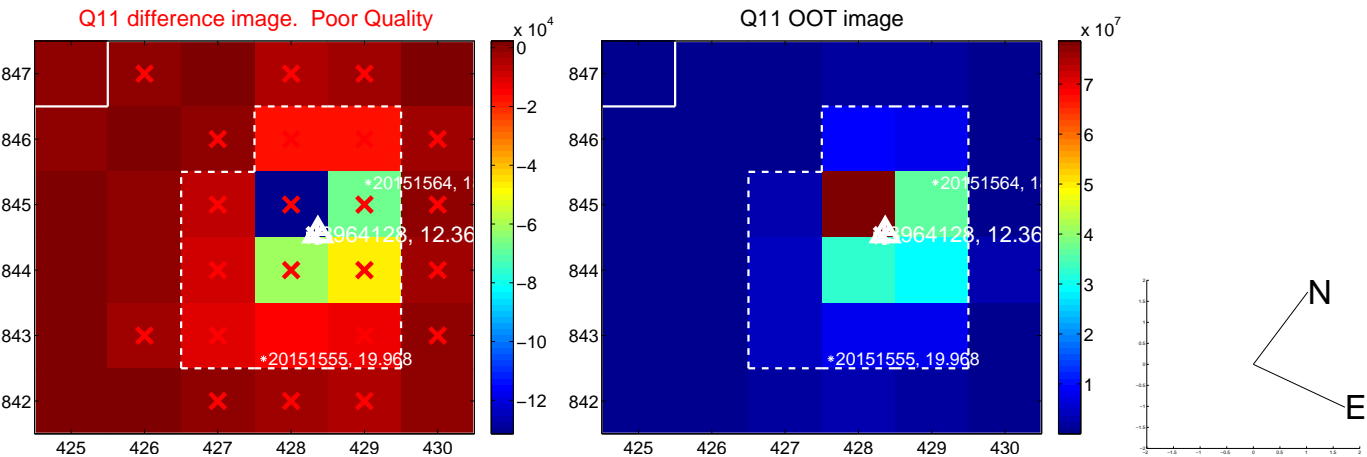
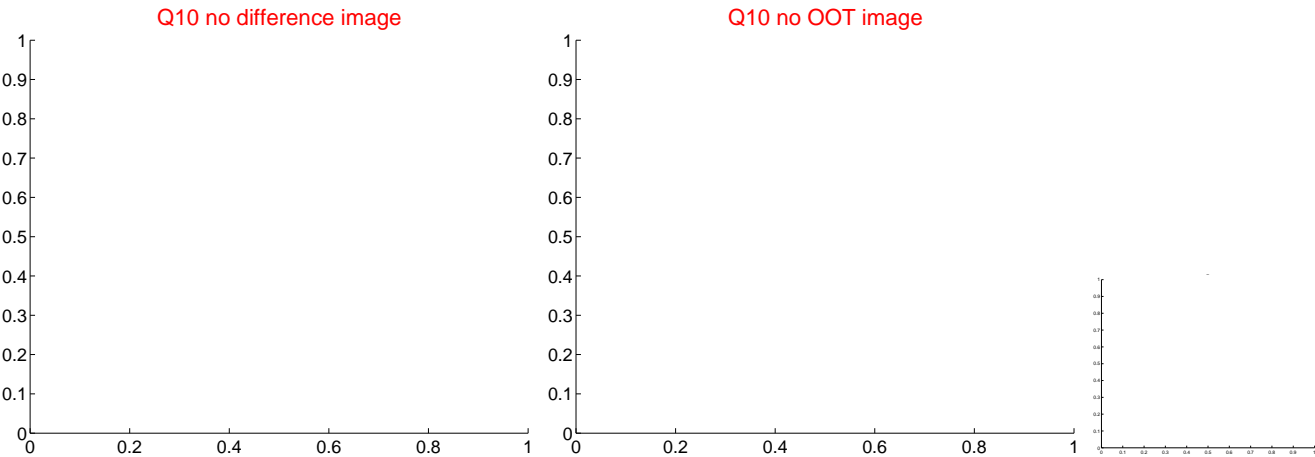
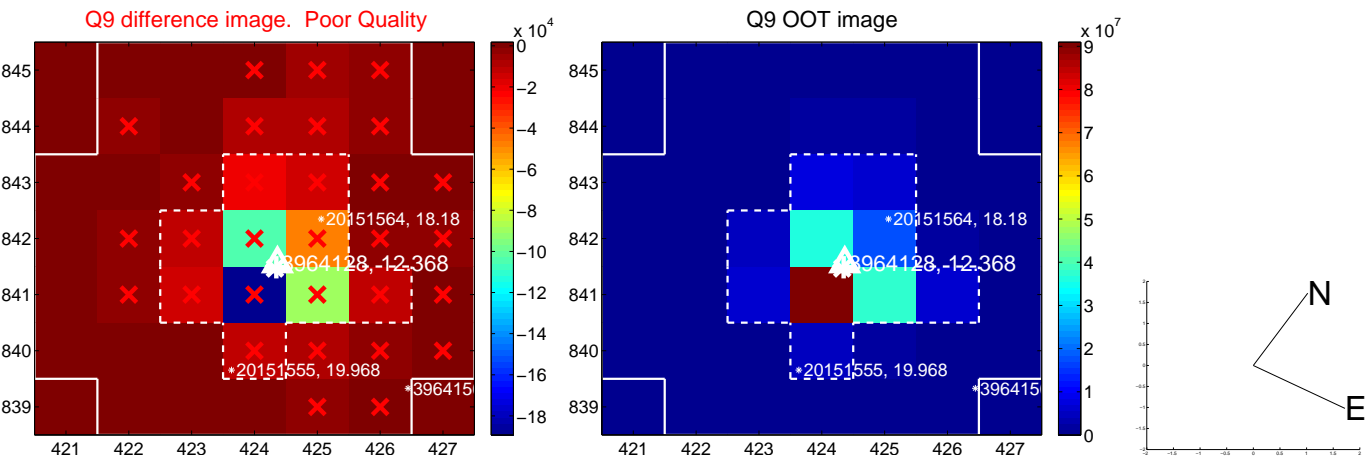
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



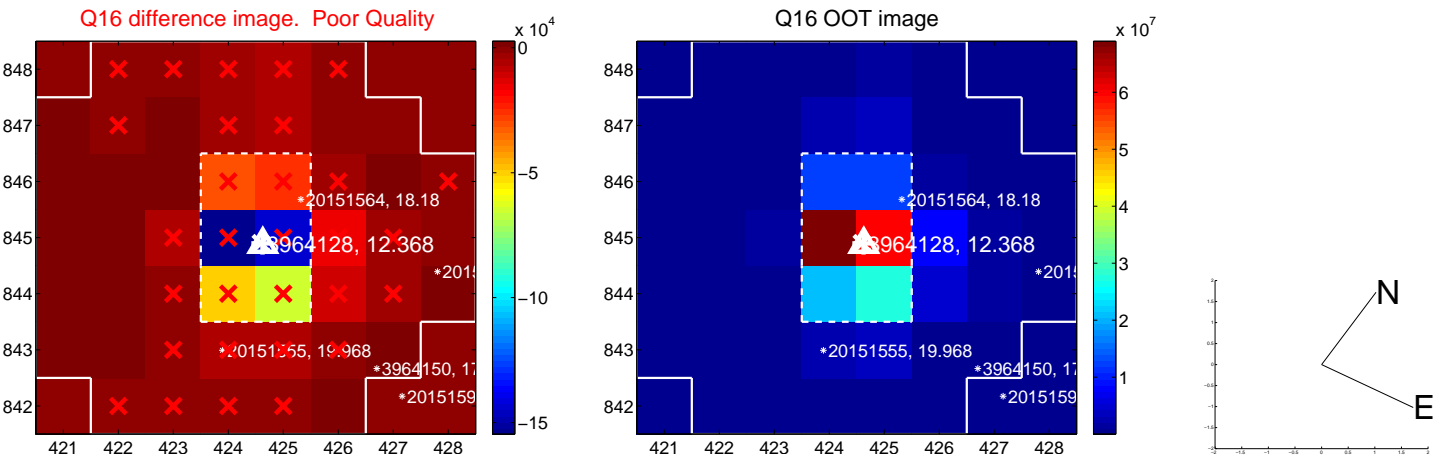
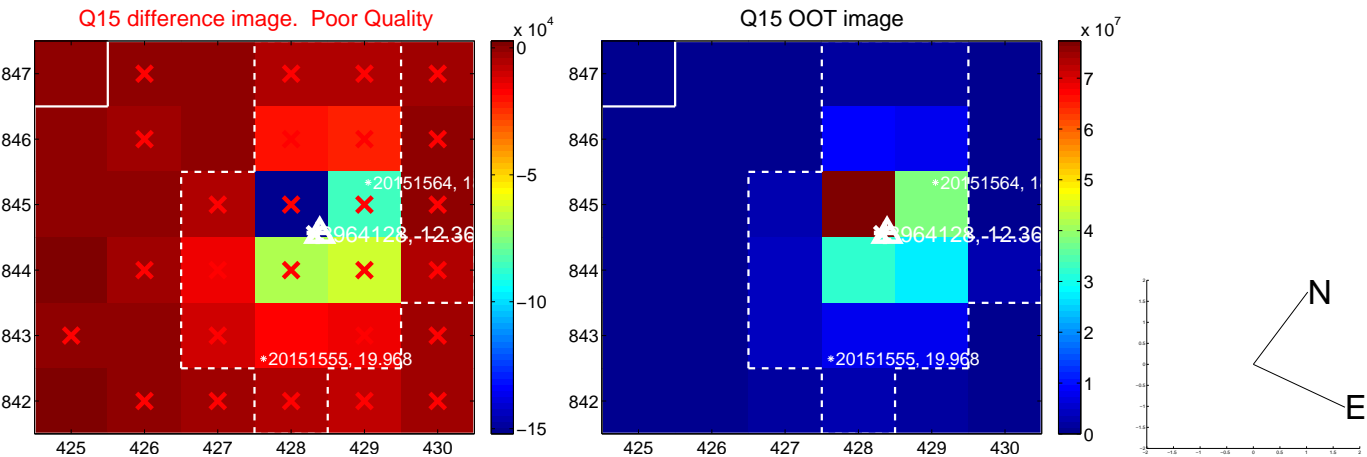
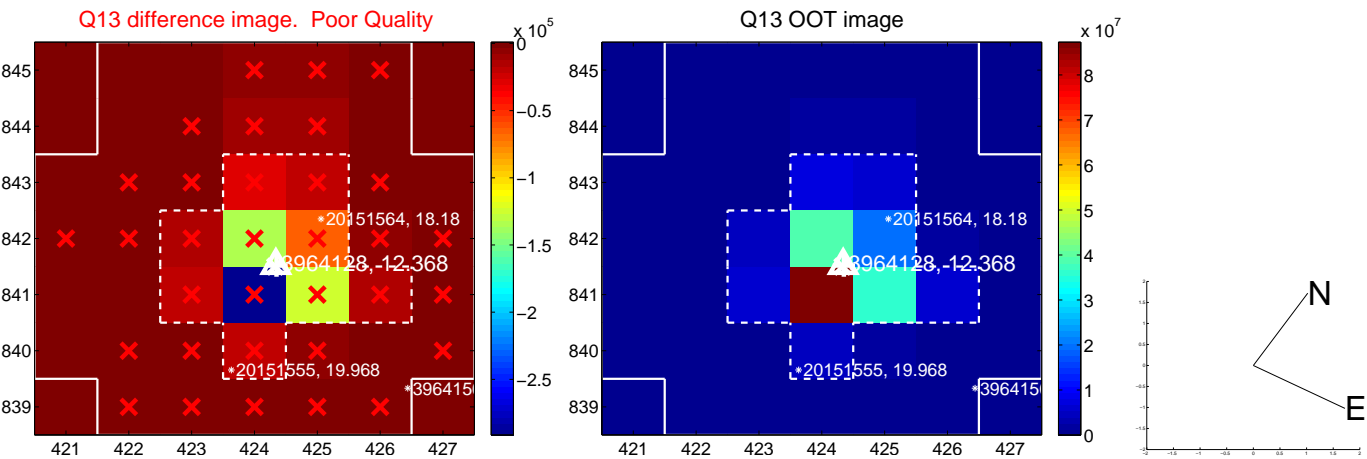
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



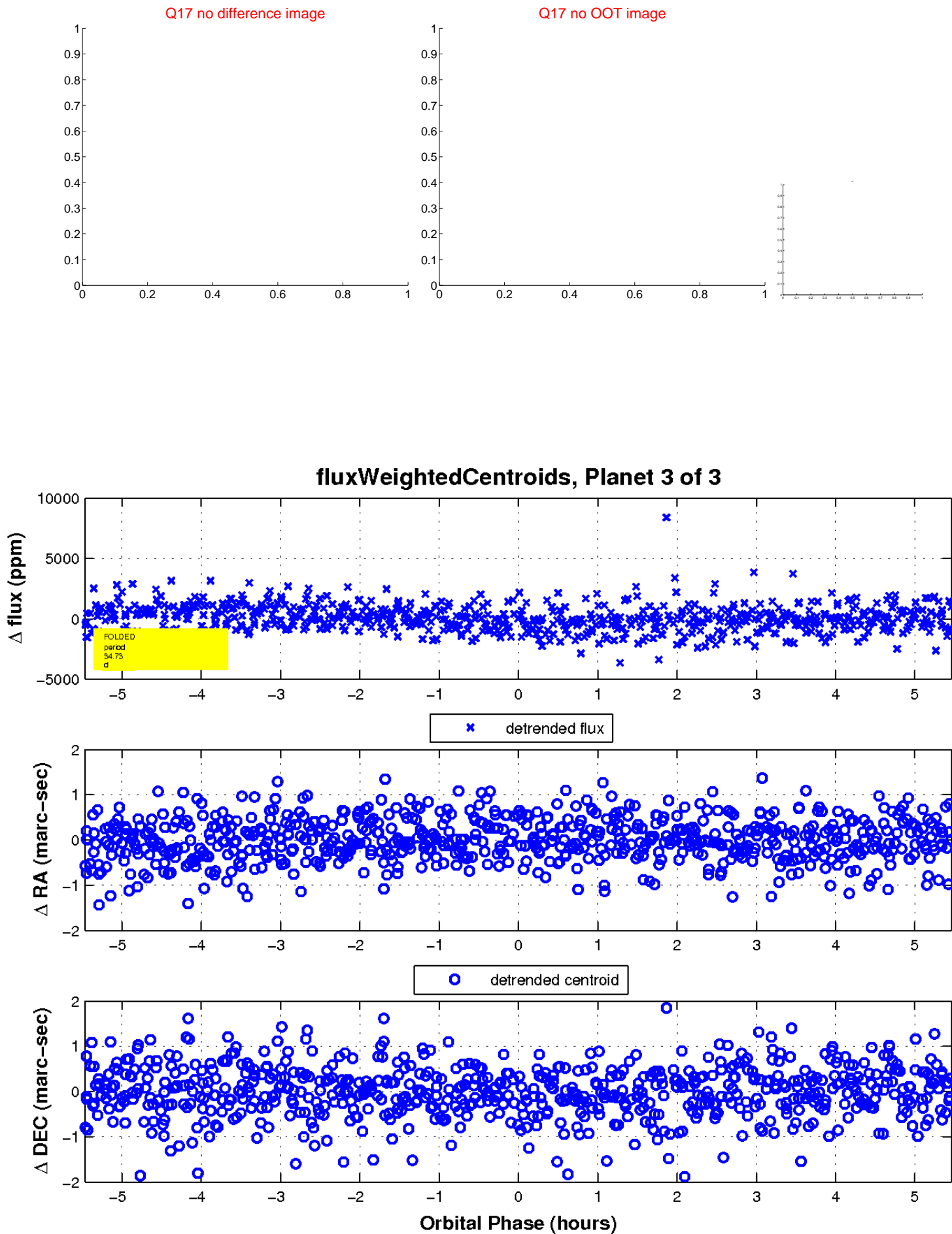
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

