

# KIC 011619964

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011619964-01	OBS	7466.01	10.368553	132.718397	153114.2	4.391	7700.6	6493.1	0.94	5855	55.05	120.60
011619964-02	OBS	No	10.368555	137.473409	36946.4	3.975	1976.9	1794.5	0.94	5855	31.41	120.60
011619964-03	OBS	No	361.098314	373.839611	1043.2	19.966	16.0	12.8	0.94	5855	3.04	1.06

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011619964-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011619964-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
011619964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

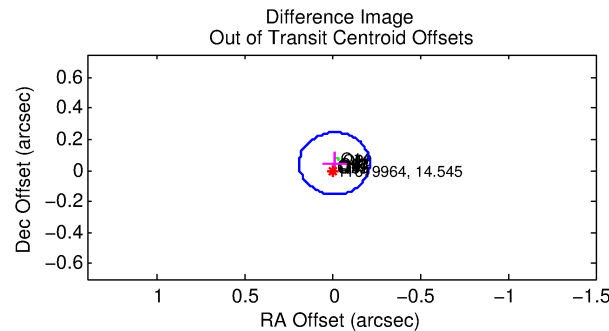
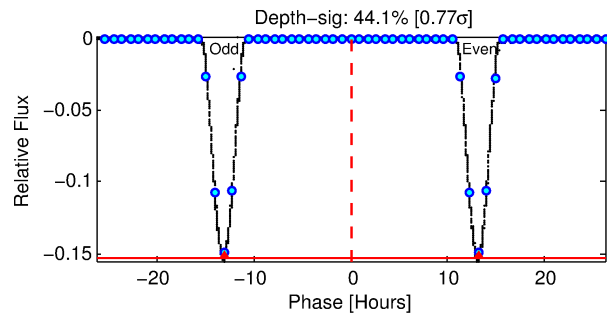
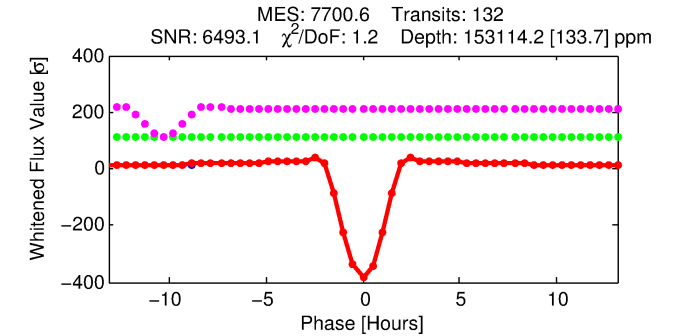
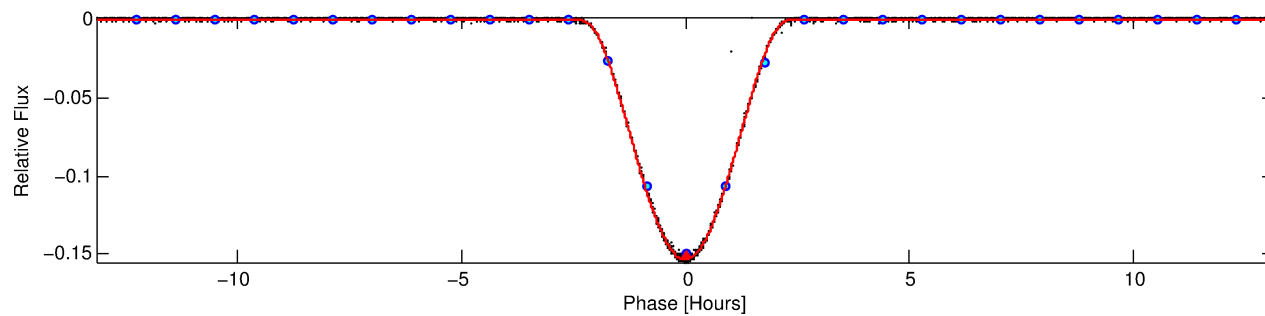
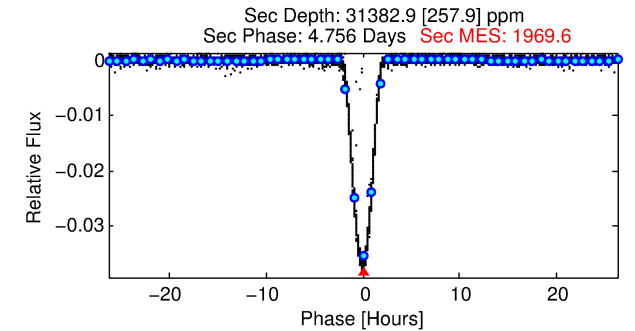
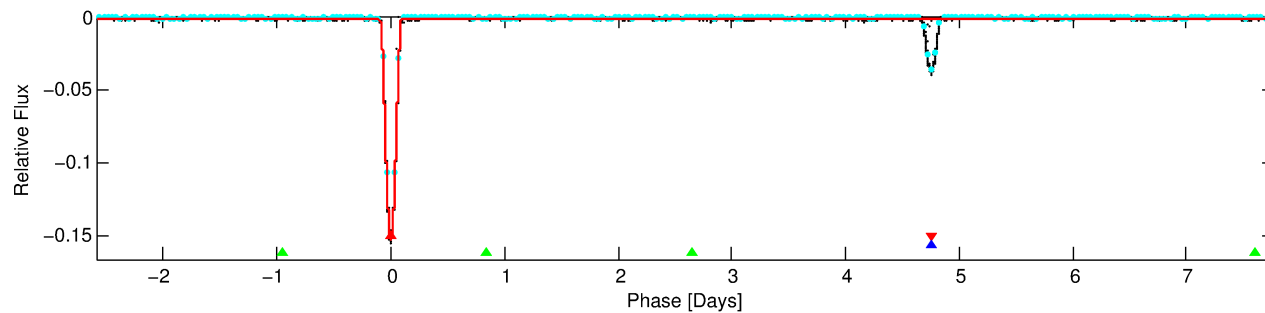
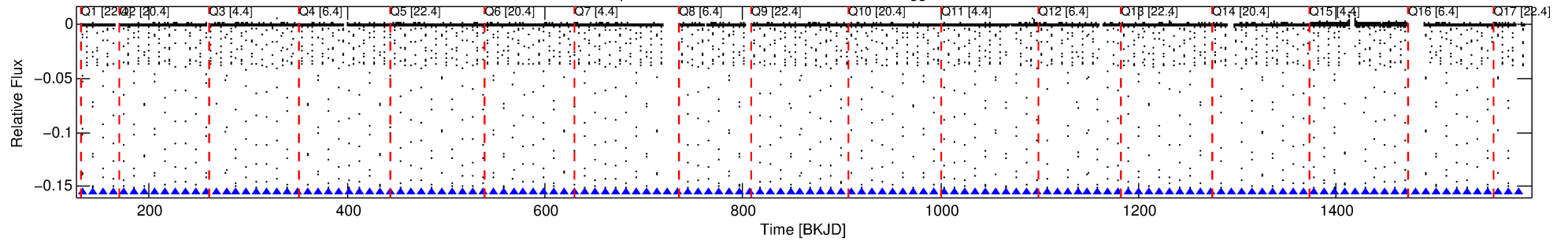
Ephemeris Match Information For 011619964-01

No Significant Match Found

# DV One-Page Summary

KIC: 11619964 Candidate: 1 of 3 Period: 10.369 d  
KOI: K07466.01 Corr: 1.000

Kp: 14.55 R\*: 0.94 Rs Teff: 5855.0 K Logg: 4.42 Fe/H: -0.400



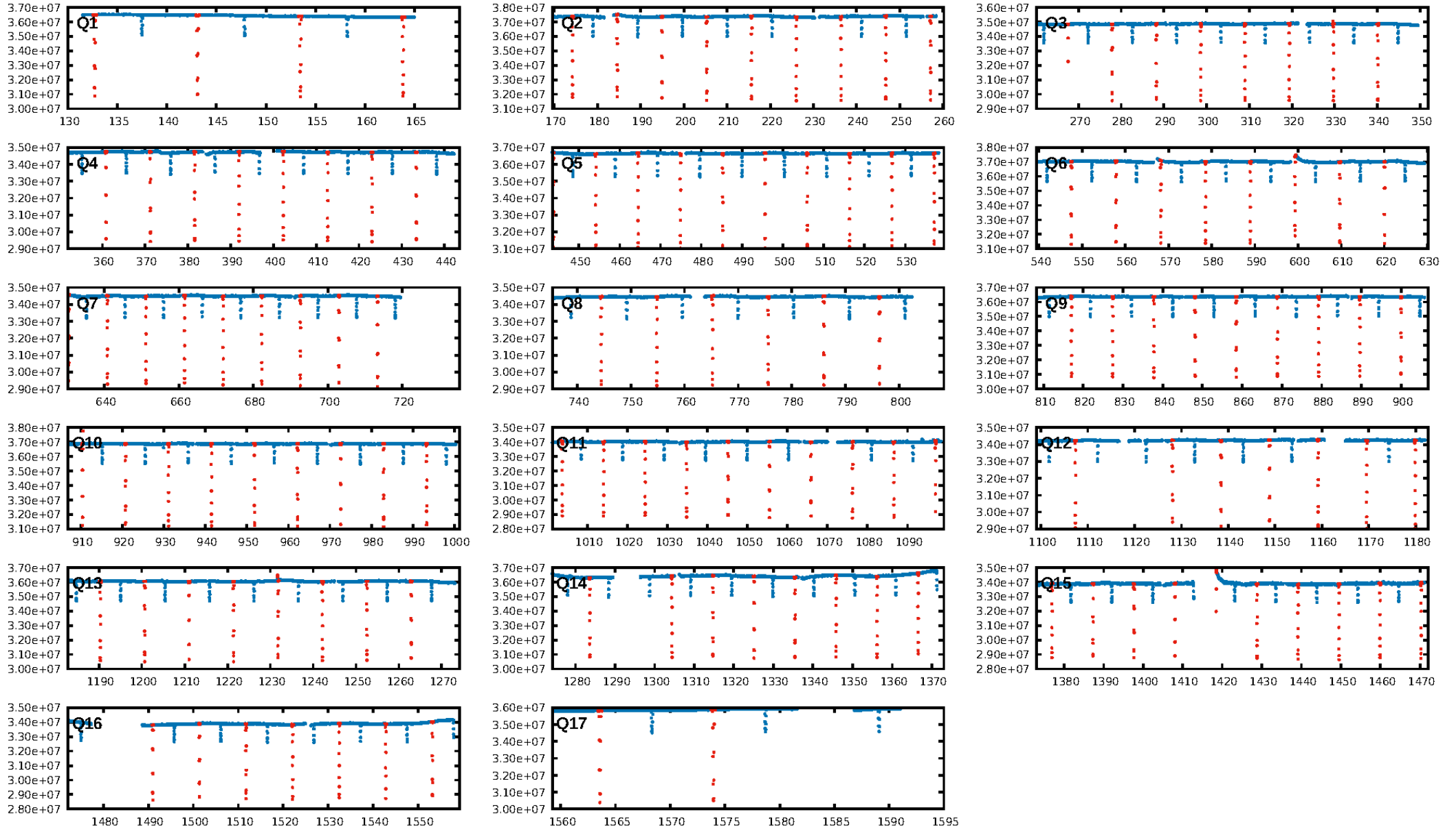
## DV Fit Results:

Period = 10.36855 [0.00000] d  
Epoch = 132.7184 [0.0000] BKJD  
Rp/R\* = 0.5344 [0.0342]  
a/R\* = 22.45 [0.15]  
b = 0.90 [0.05]  
Seff = 120.60 [43.32]  
Teff = 845 [76] K  
Rp = 55.05 [15.45] Re  
a = 0.0882 [0.0204] AU  
Ag = 44.32 [16.05] [2.70σ]  
Teffp = 3371 [148] K [15.21σ]

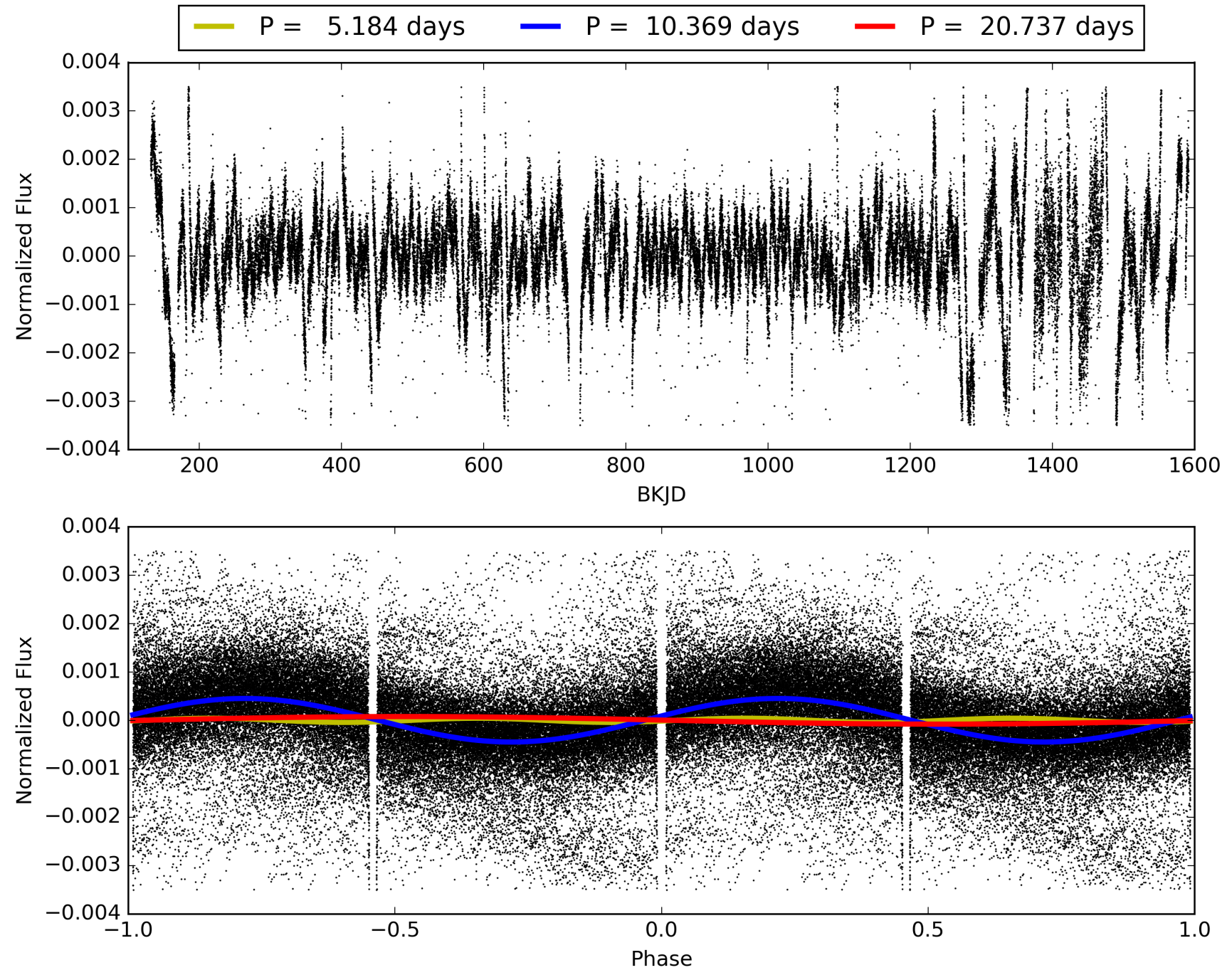
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 90.9%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [126/126]  
GhostDiagnostic-chr: 7.407  
Centroid-sig: 0.0%  
Centroid-so: 0.413 arcsec [290.21σ]  
OotOffset-rm: 0.046 arcsec [0.69σ]  
KicOffset-rm: 0.188 arcsec [2.68σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 011619964-01, PDC Light Curves

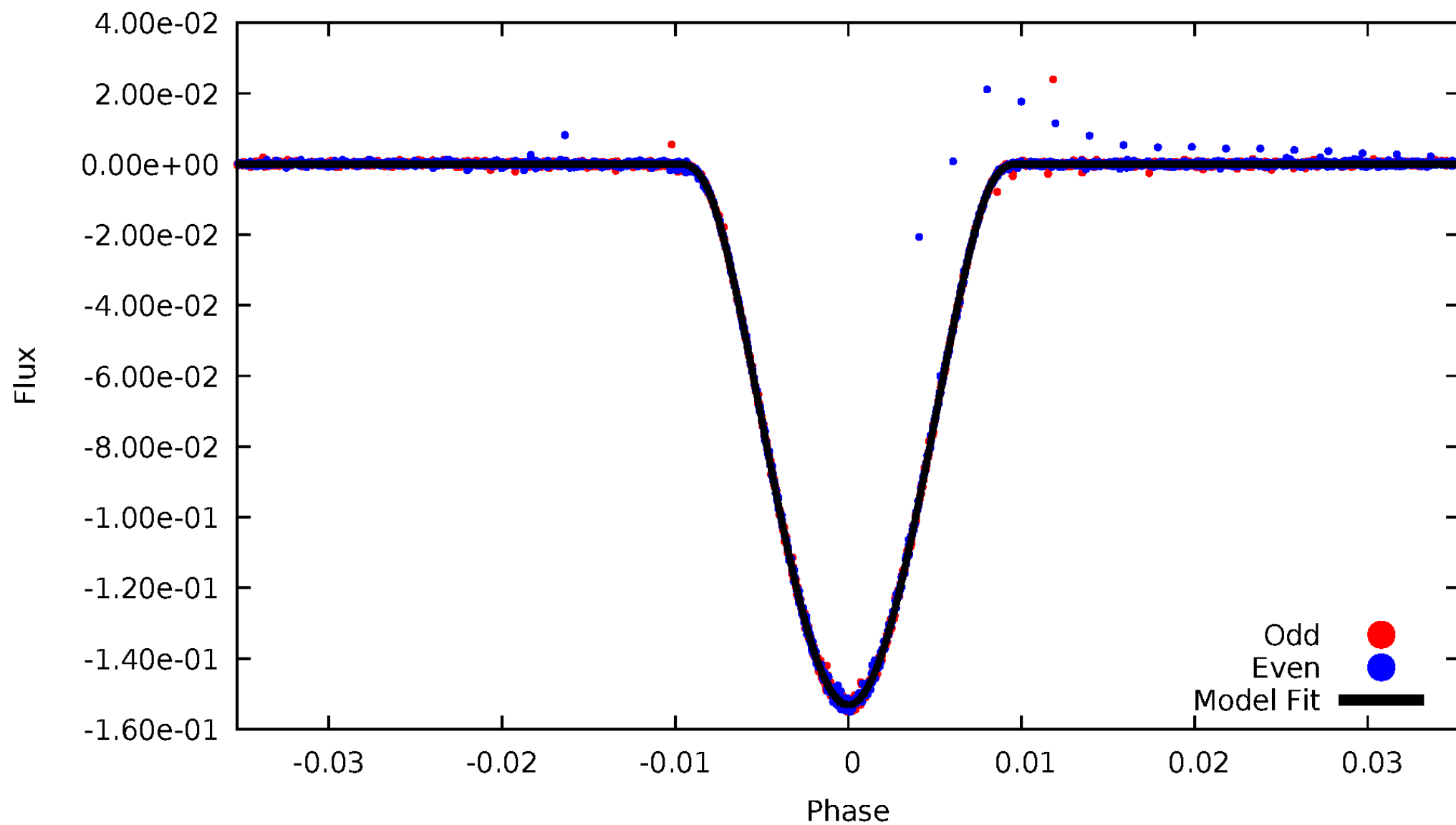


# TCE 011619964-01



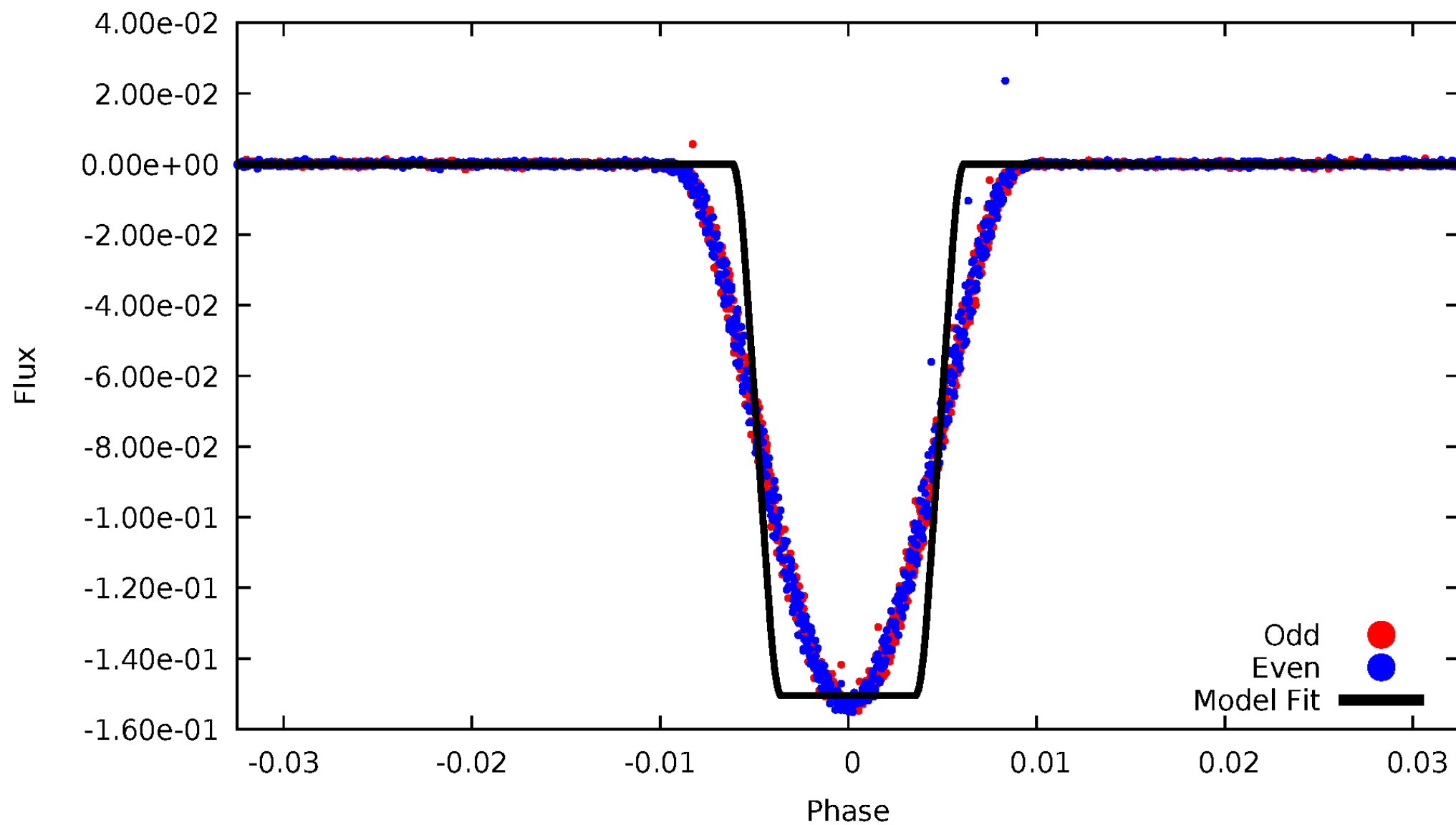
# DV Odd/Even

TCE 011619964-01



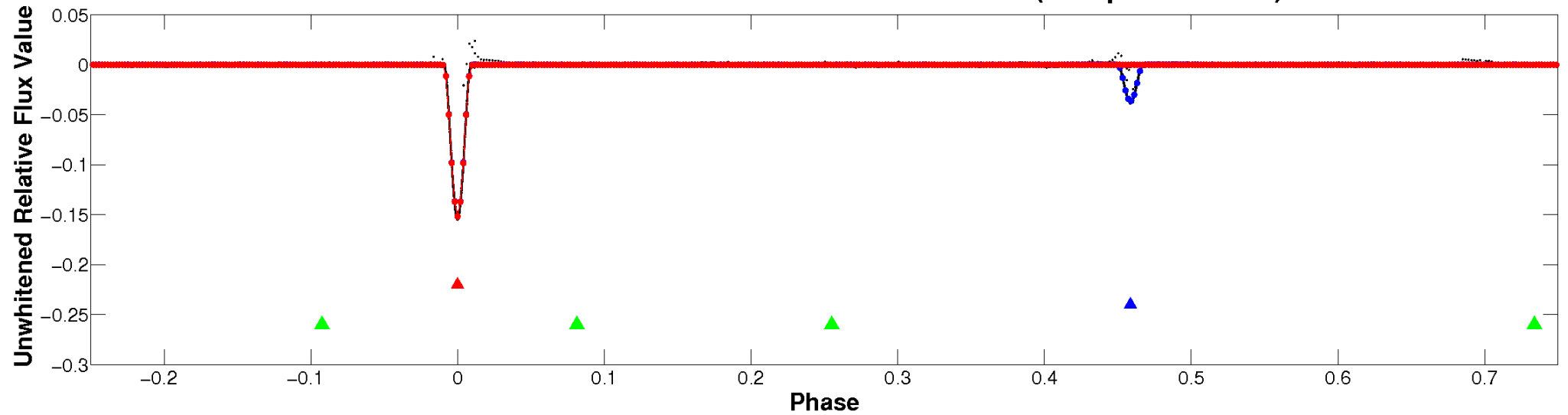
# ALT Odd/Even

TCE 011619964-01

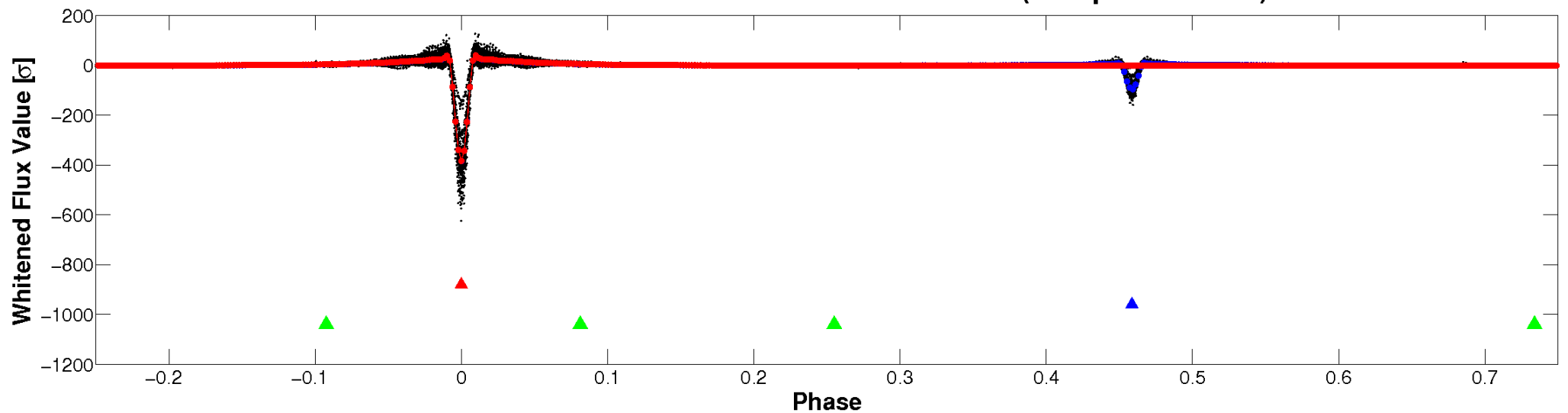


# Non-Whitened Vs. Whitened Light Curve

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

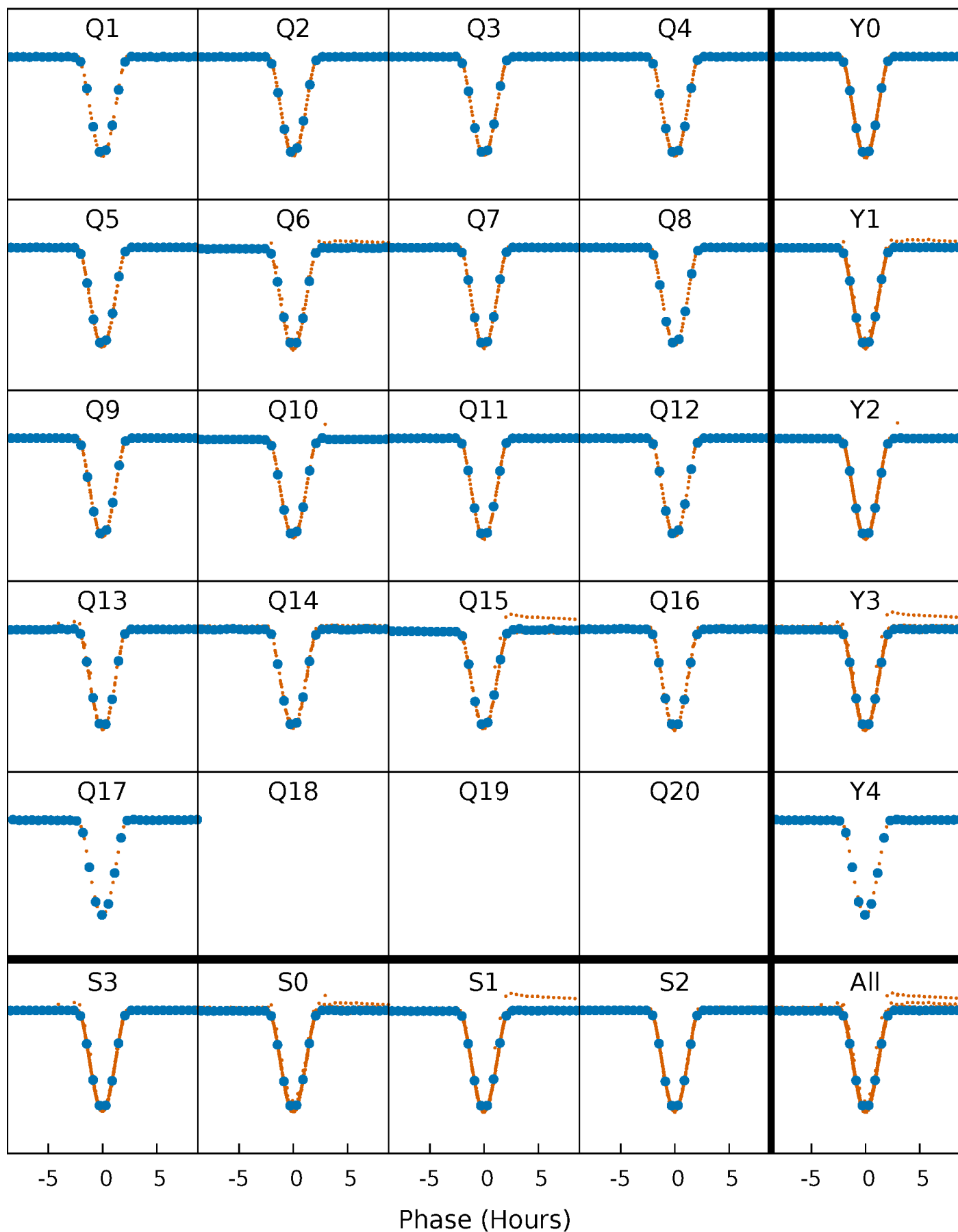


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

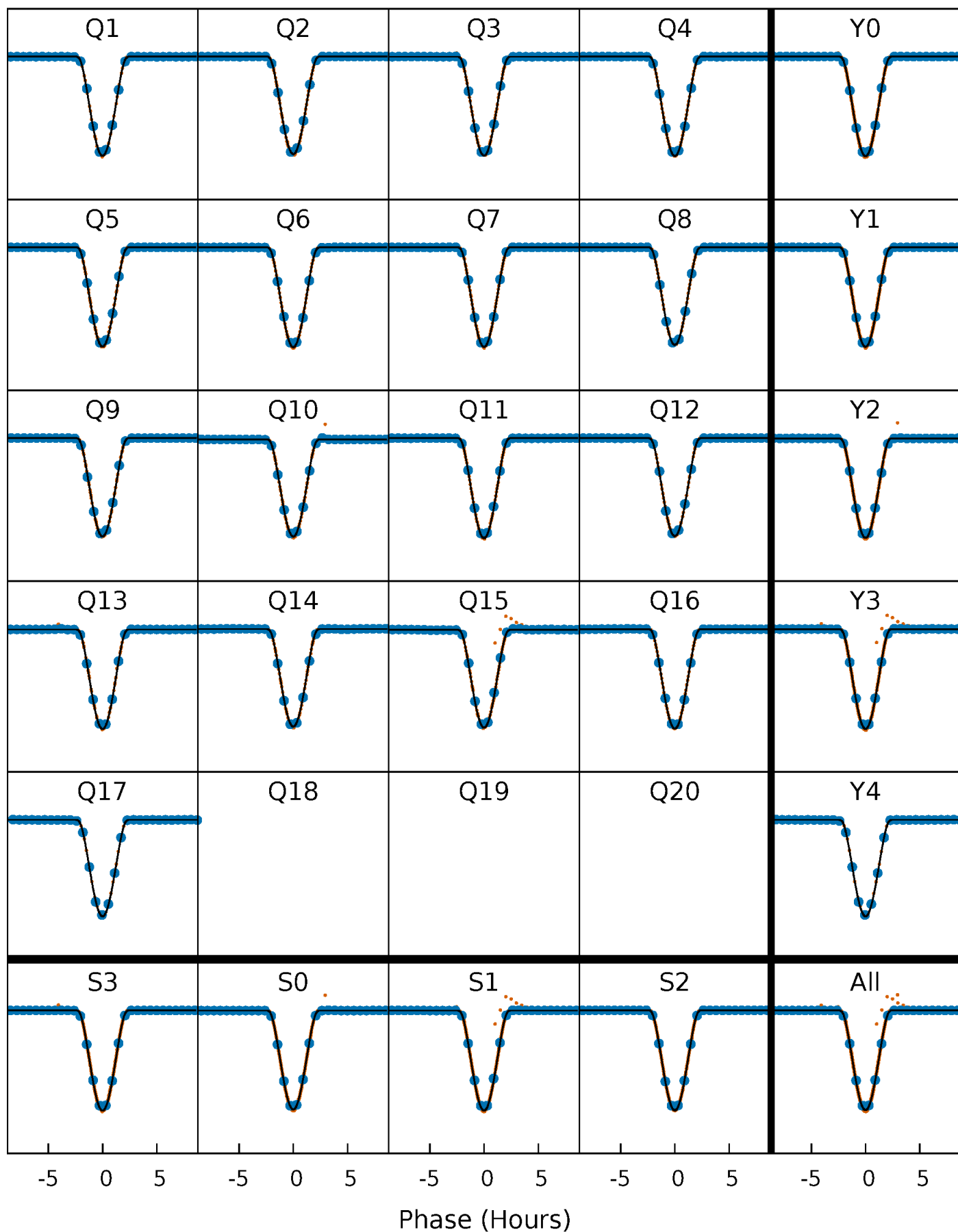
TCE 011619964-01 P= 10.368553 Days  $T_0=132.718397$  (BKJD)





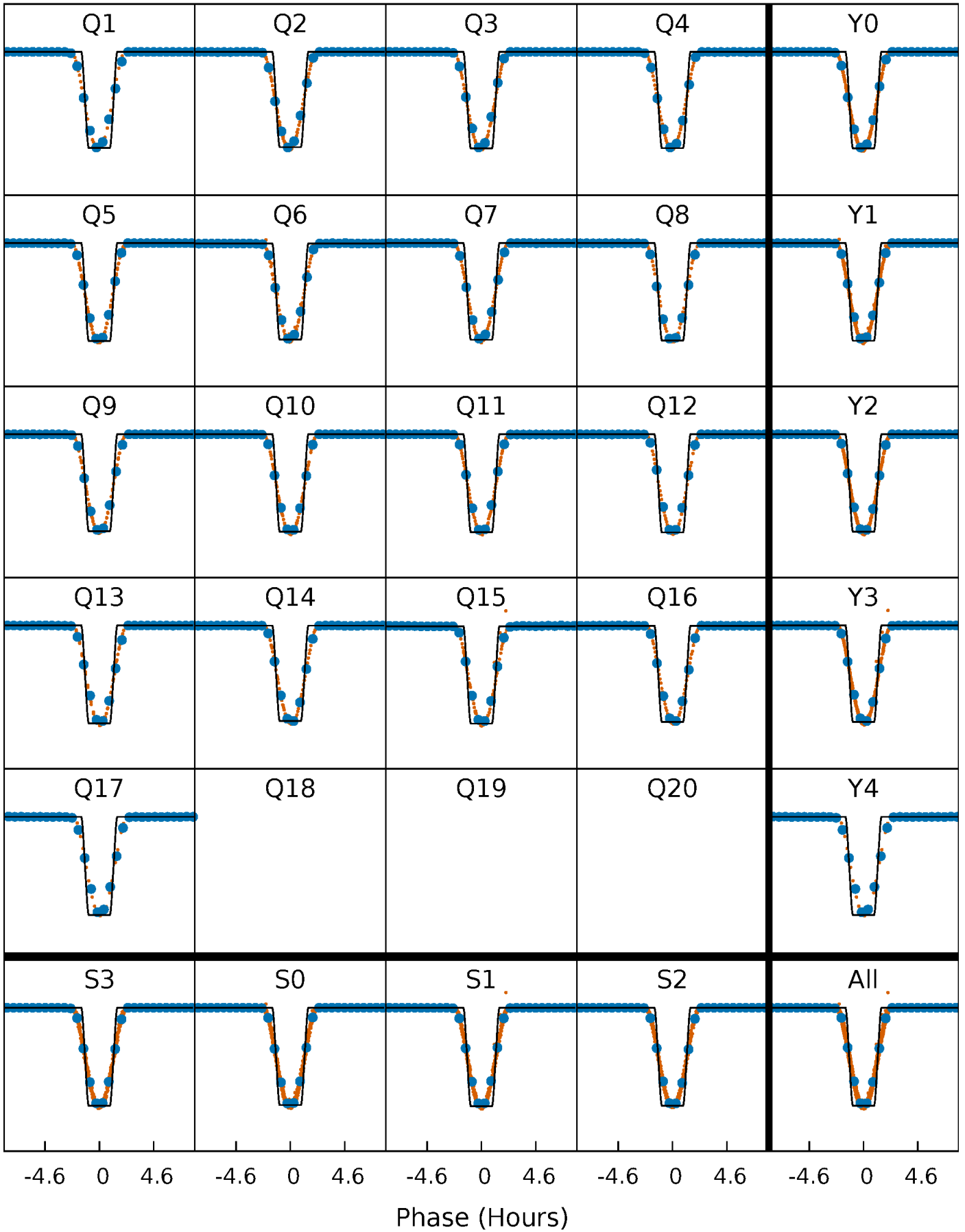
# DV Quarter-Phased Transit Curves

TCE 011619964-01 P= 10.368553 Days  $T_0=132.718397$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

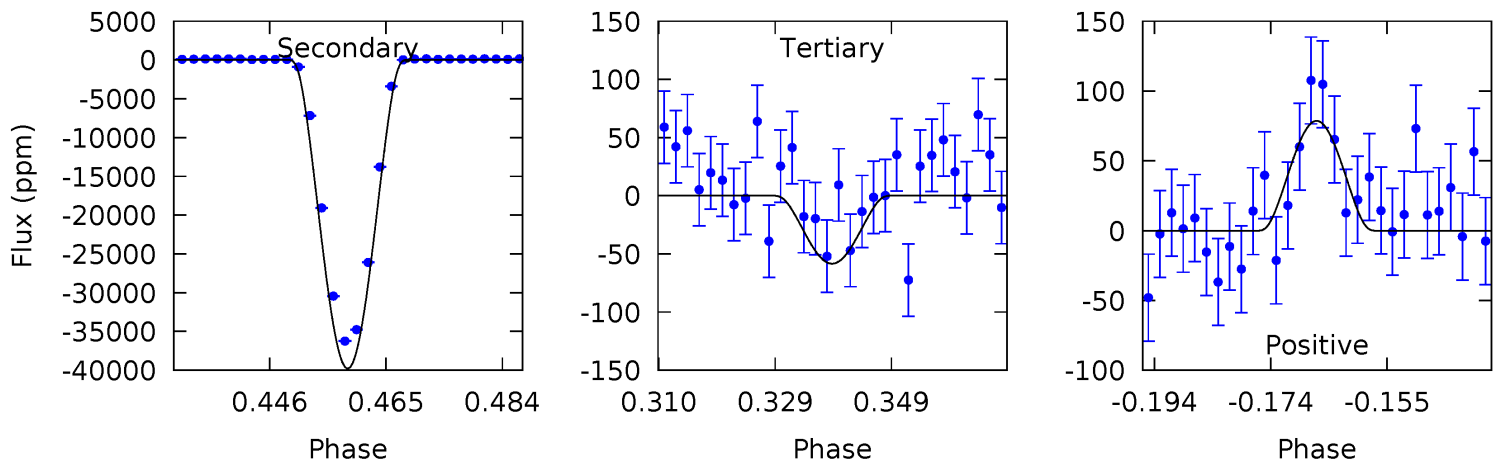
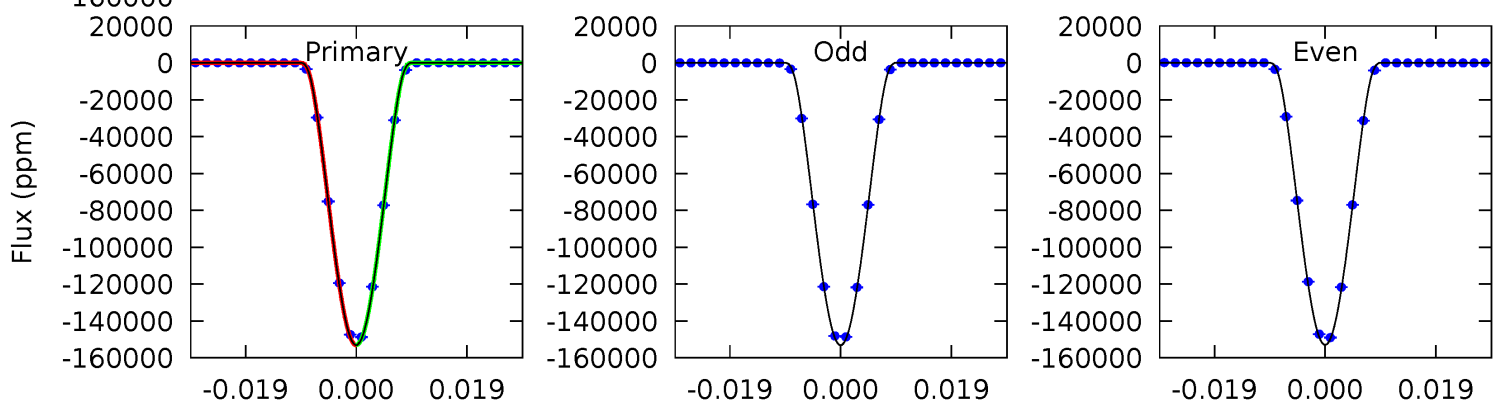
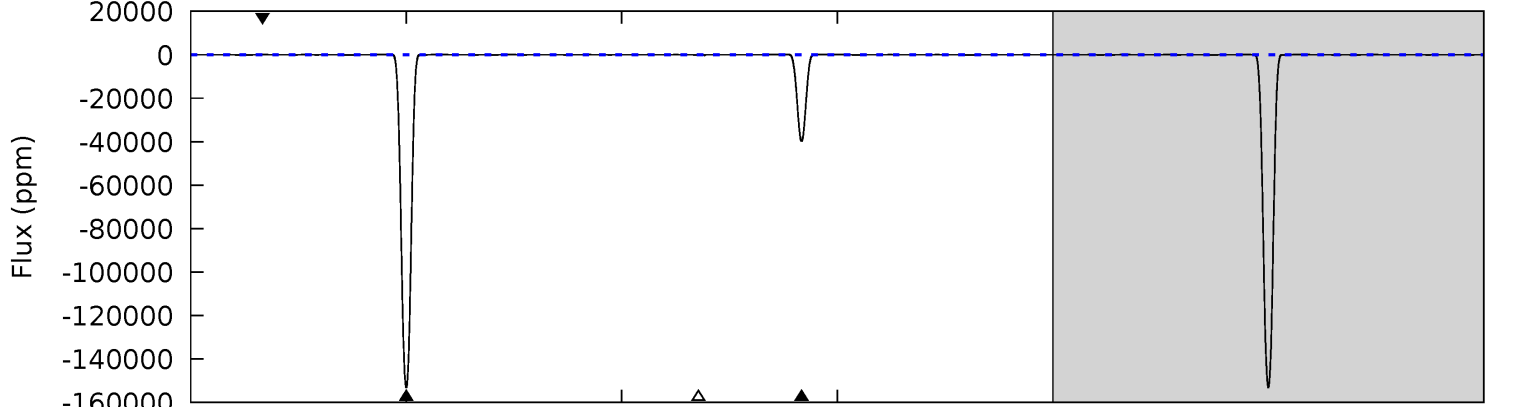
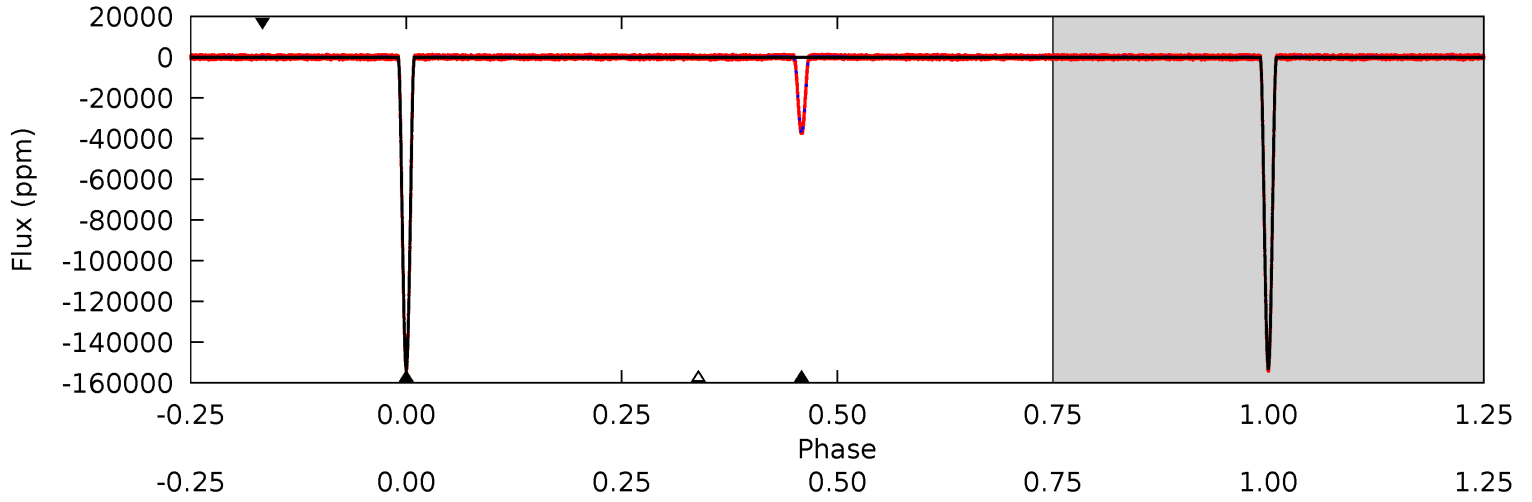
TCE 011619964-01 P= 10.368500 Days  $T_0=132.721724$  (BKJD)



# DV Model-Shift Uniqueness Test

011619964-01, P = 10.368553 Days, E = 122.349844 Days

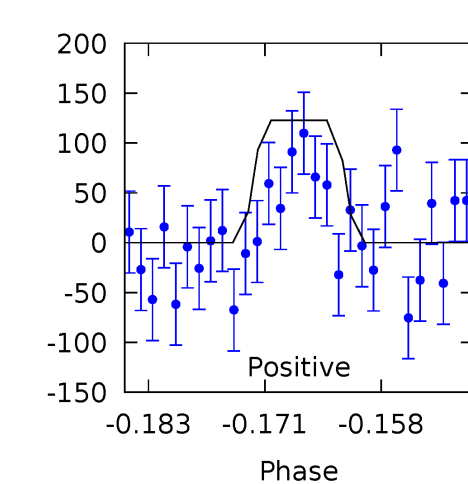
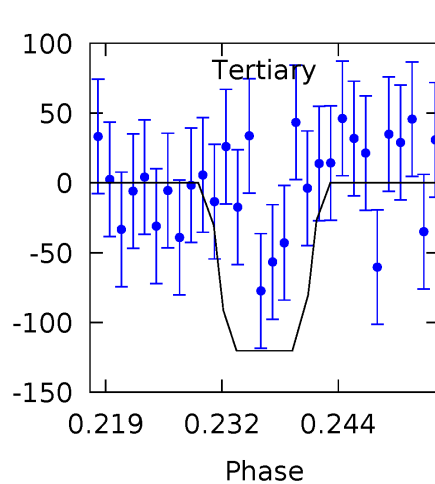
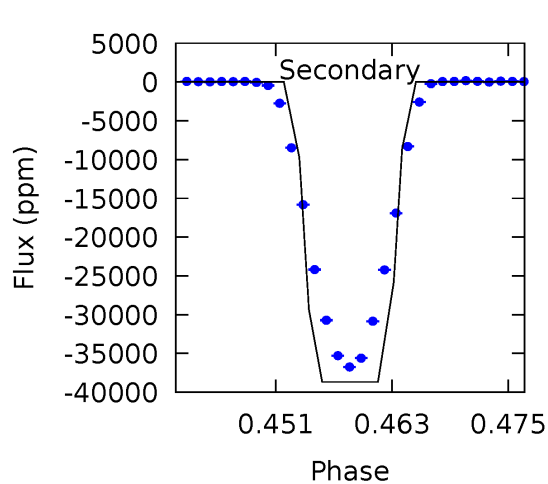
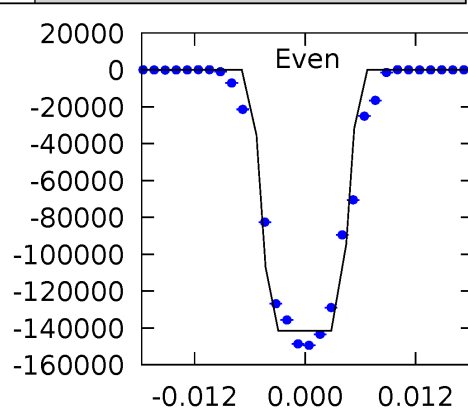
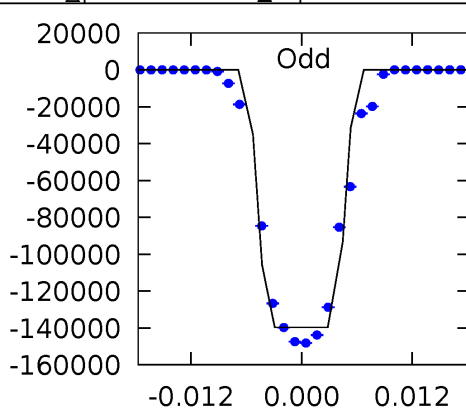
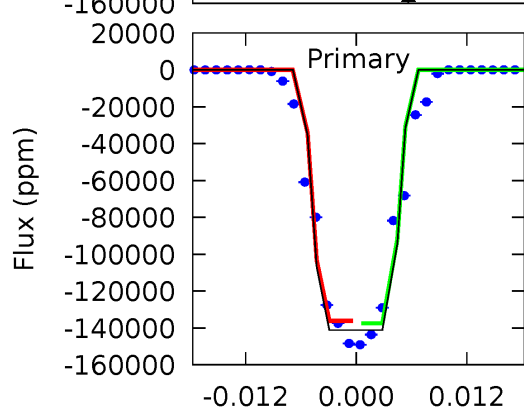
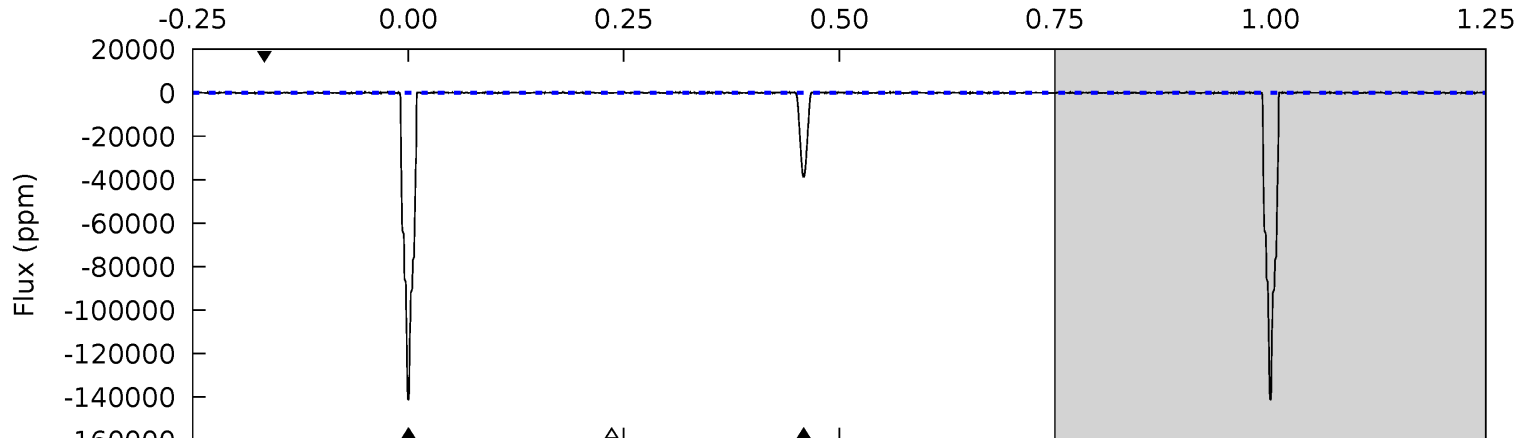
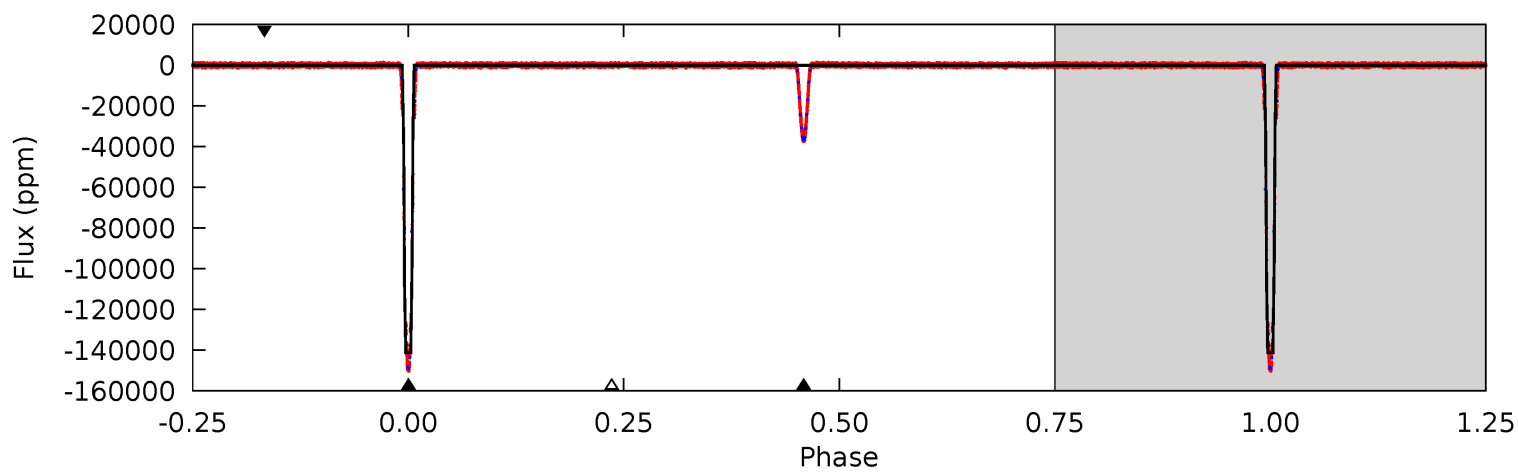
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14961	3887	5.71	7.68	4.90	2.34	3.87	14956	14954	3881	3879	11.4	0.99	0.00	0.43



# Alt Model-Shift Uniqueness Test

011619964-01, P = 10.368500 Days, E = 122.353224 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
4603	1261	3.92	4.00	4.99	2.51	1.20	4600	4599	1257	1257	27.1	1.00	0.00	0



### Stellar Parameters For KIC 011619964

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5855^{+158}_{-175}$	$4.418^{+0.124}_{-0.186}$	$-0.400^{+0.300}_{-0.300}$	$0.944^{+0.258}_{-0.139}$	$0.852^{+0.117}_{-0.072}$	$1.426^{+0.776}_{-0.684}$
	+3%/-3%	+3%/-4%	+75%/-75%	+27%/-15%	+14%/-8%	+54%/-48%
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 011619964-01 / KOI 7466.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-39766 \pm 10$	$56.08^{+8.78}_{-6.41}$	$1188^{+80}_{-64}$	$3946^{+117}_{-119}$	$57^{+15}_{-14}$
Alt.	$-38679 \pm 31$	$40.73^{+6.99}_{-5.27}$	$1187^{+75}_{-68}$	$4394^{+185}_{-163}$	$104^{+32}_{-27}$

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

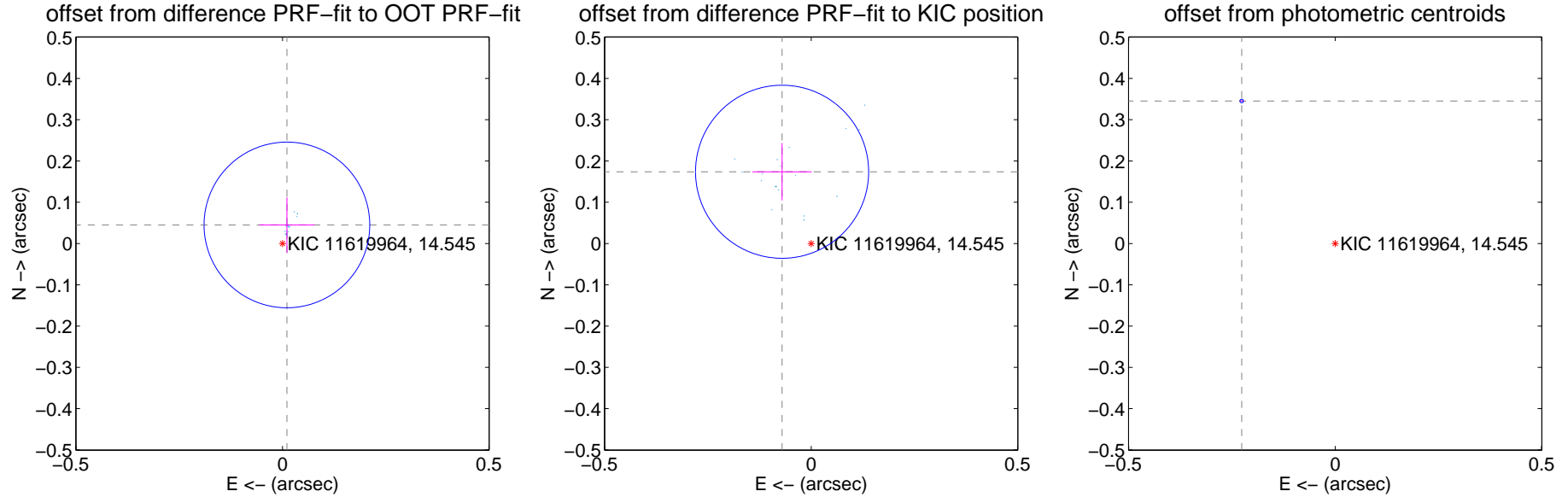
## DV Centroid Data

Supplemental centroid analysis for 011619964-01. Kepler magnitude: 14.54. Transit SNR 6493.07

There are 17 quarters with good PRF difference image offsets

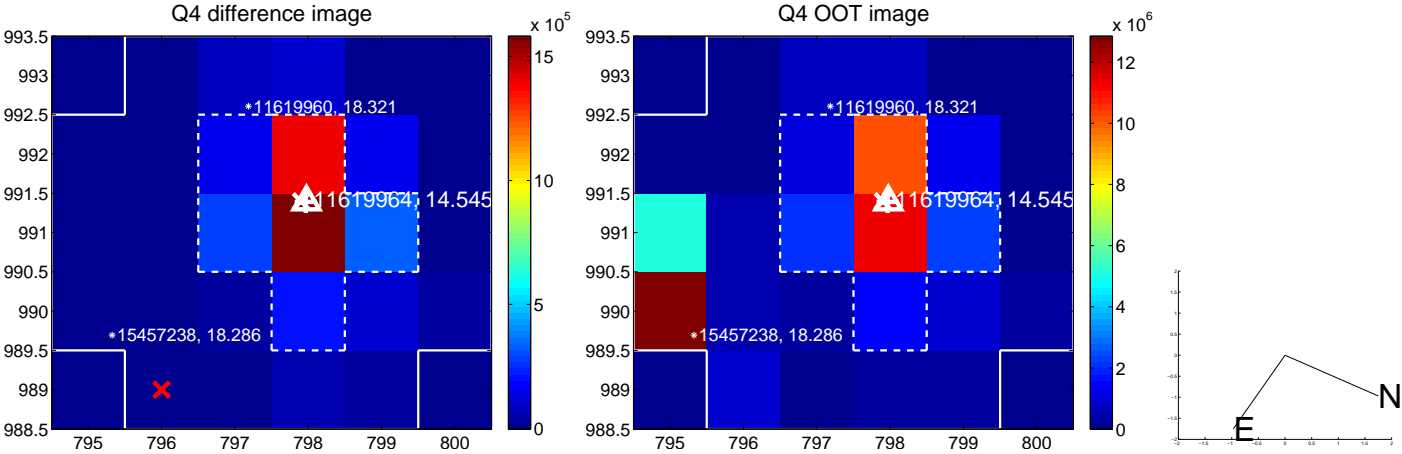
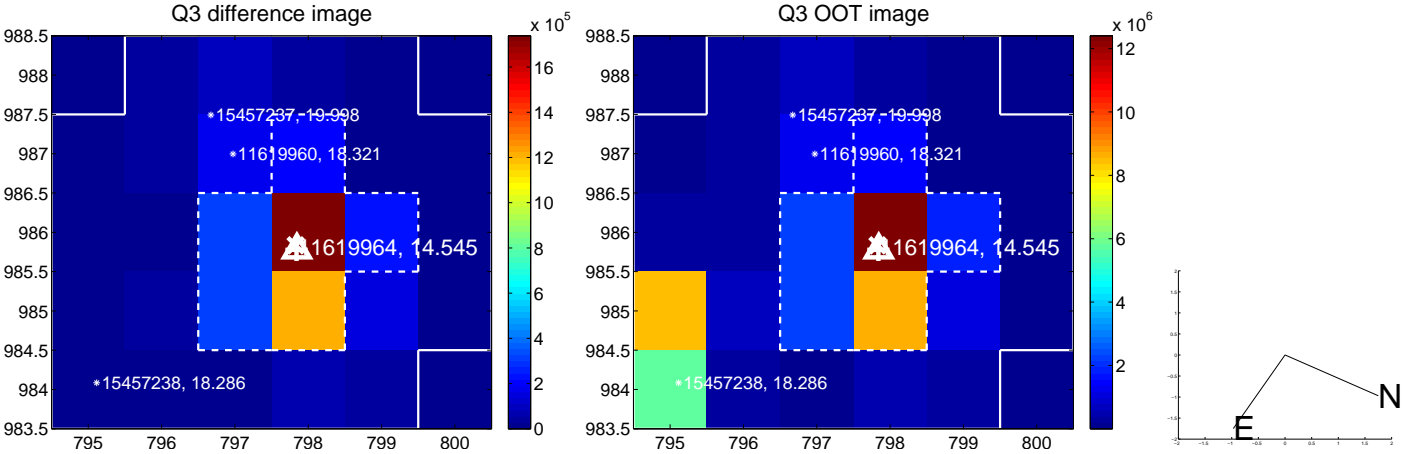
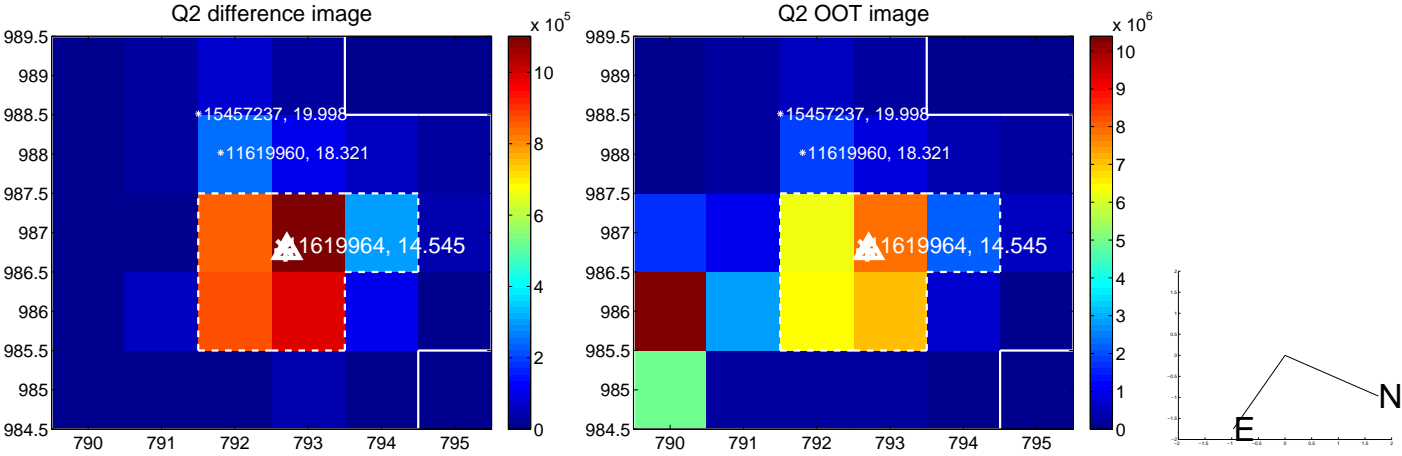
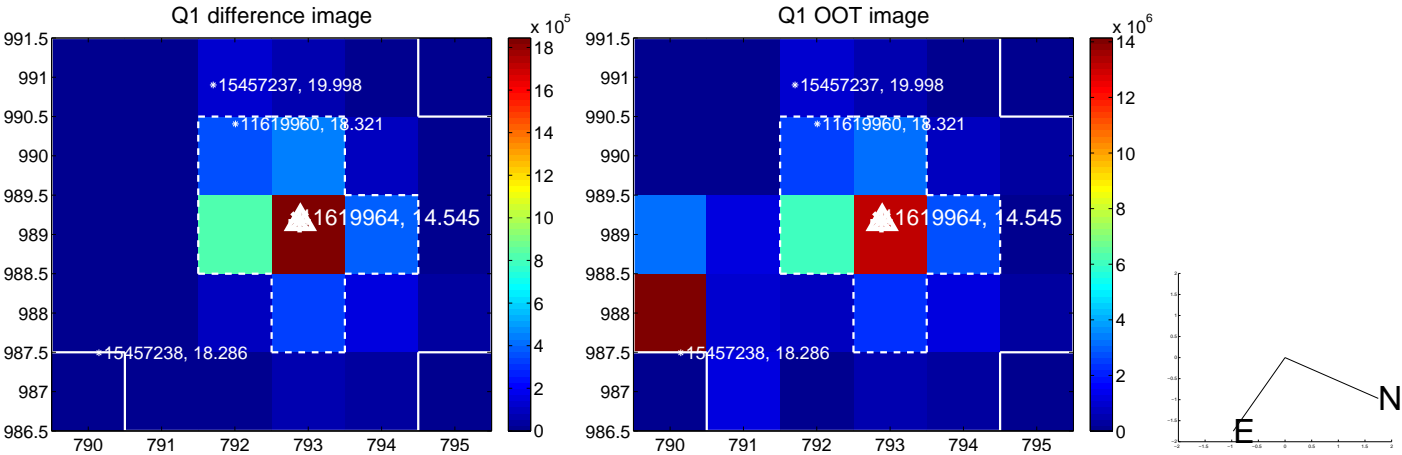
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.046 \pm 0.067$	0.69	$-0.011 \pm 0.067$	$0.045 \pm 0.067$
PRF-fit source offset from KIC position	$0.188 \pm 0.070$	2.68	$0.070 \pm 0.072$	$0.174 \pm 0.070$
photometric centroid source offset	$0.41 \pm 0.00$	290.21	$0.23 \pm 0.00$	$0.35 \pm 0.00$

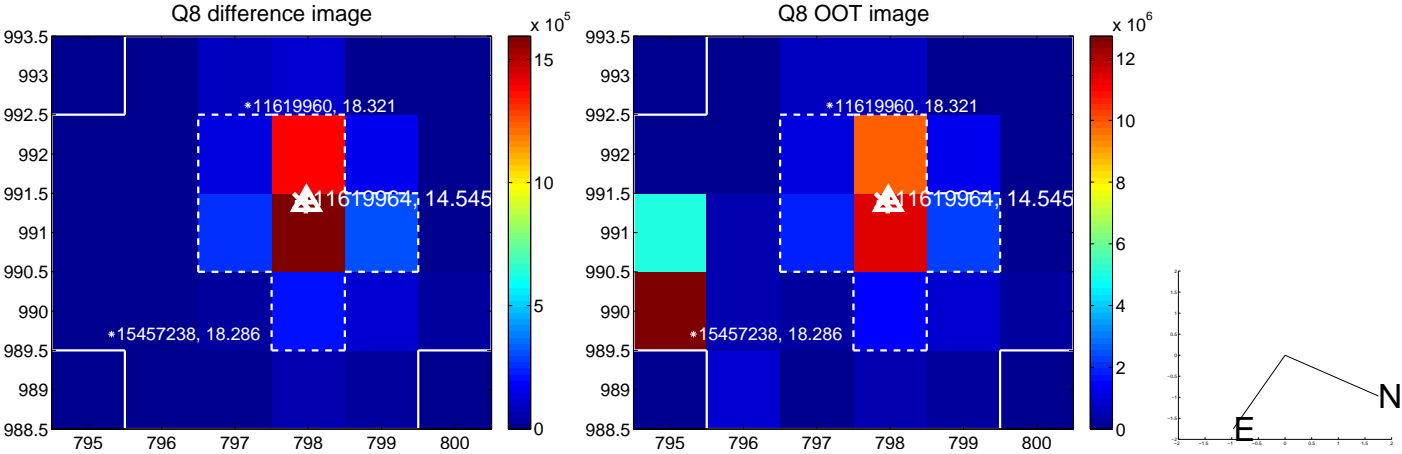
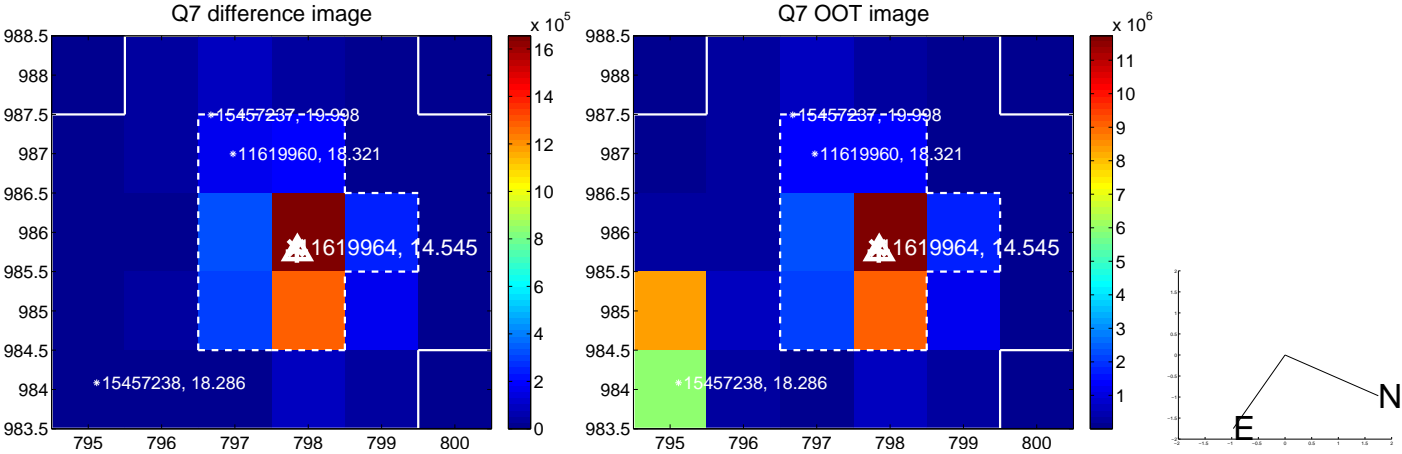
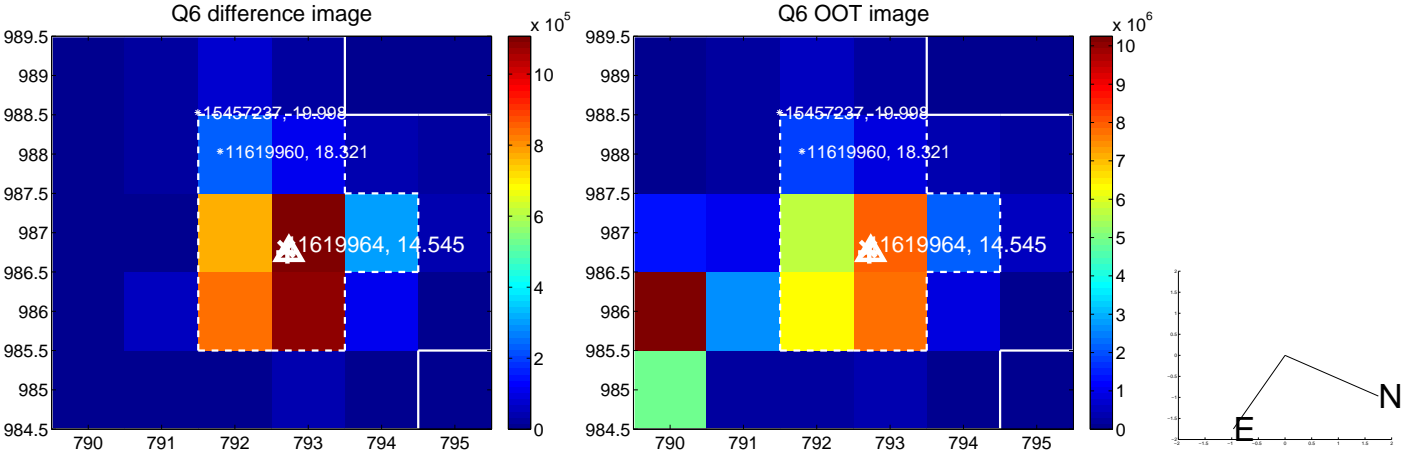
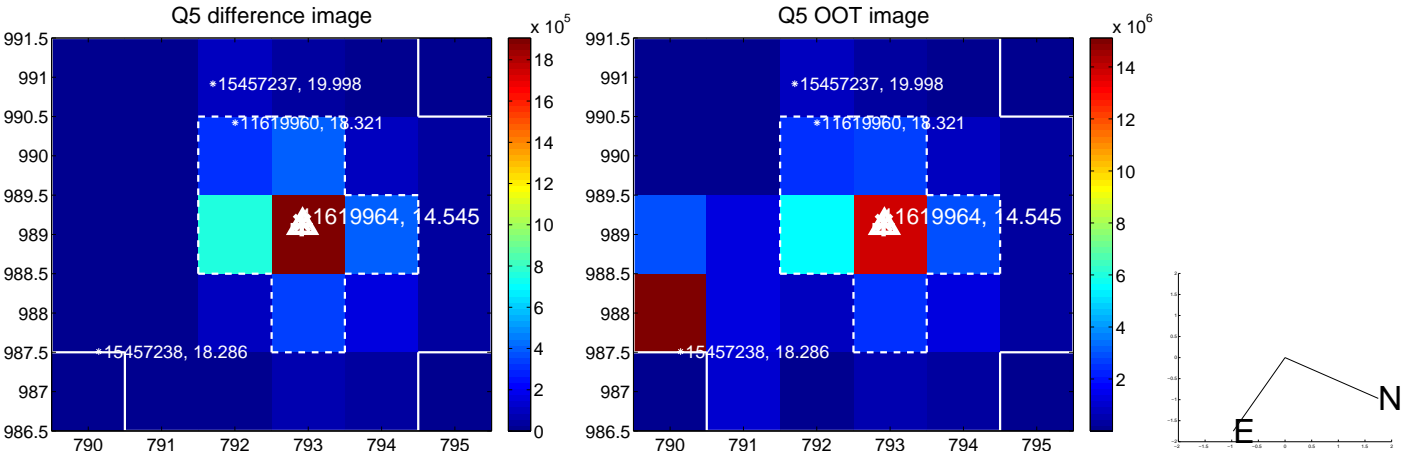


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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

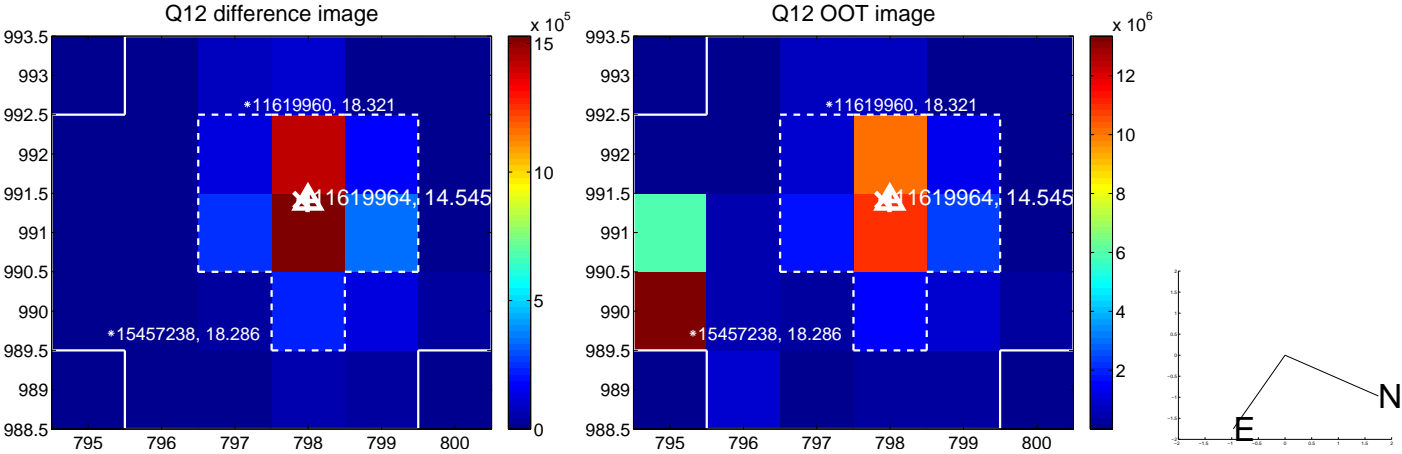
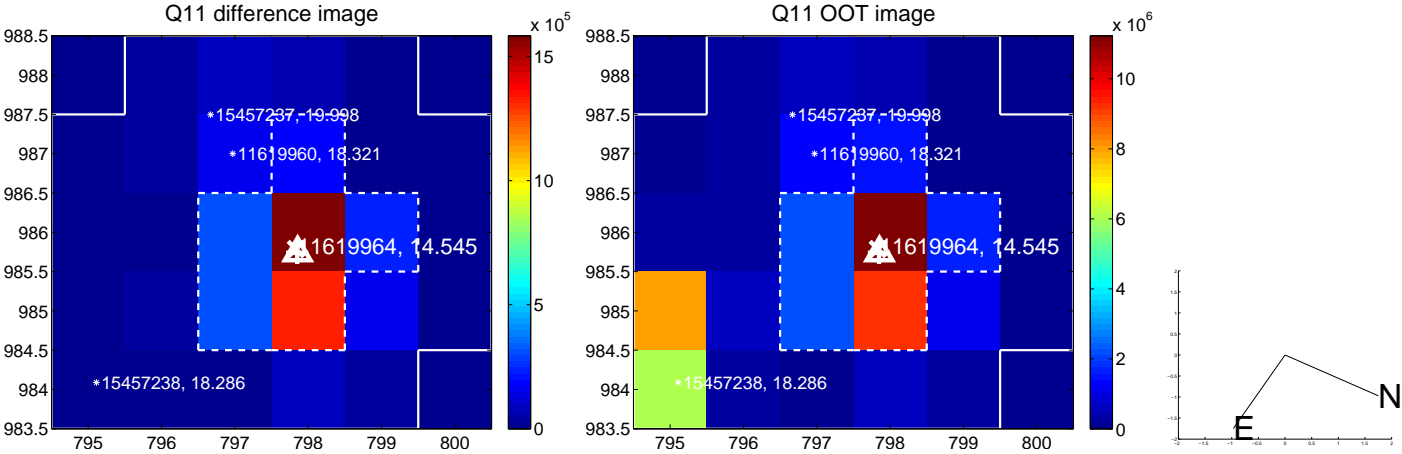
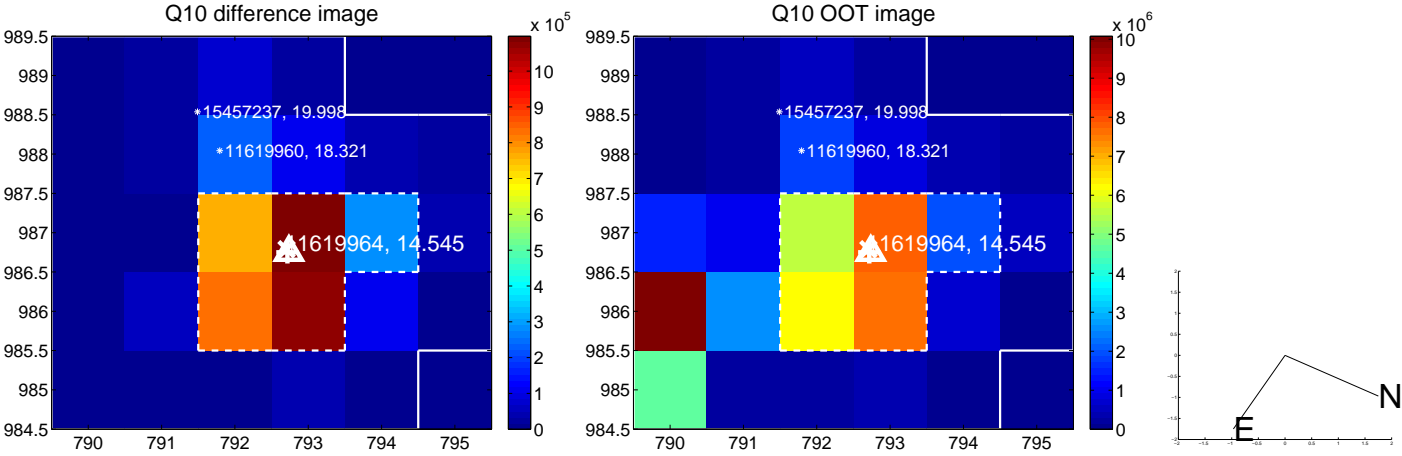
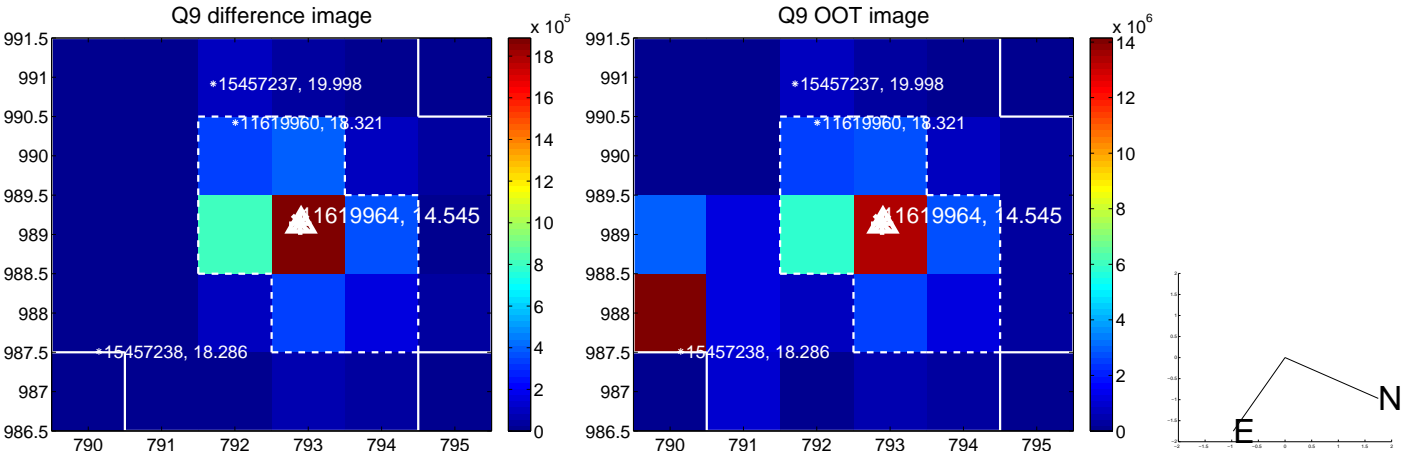


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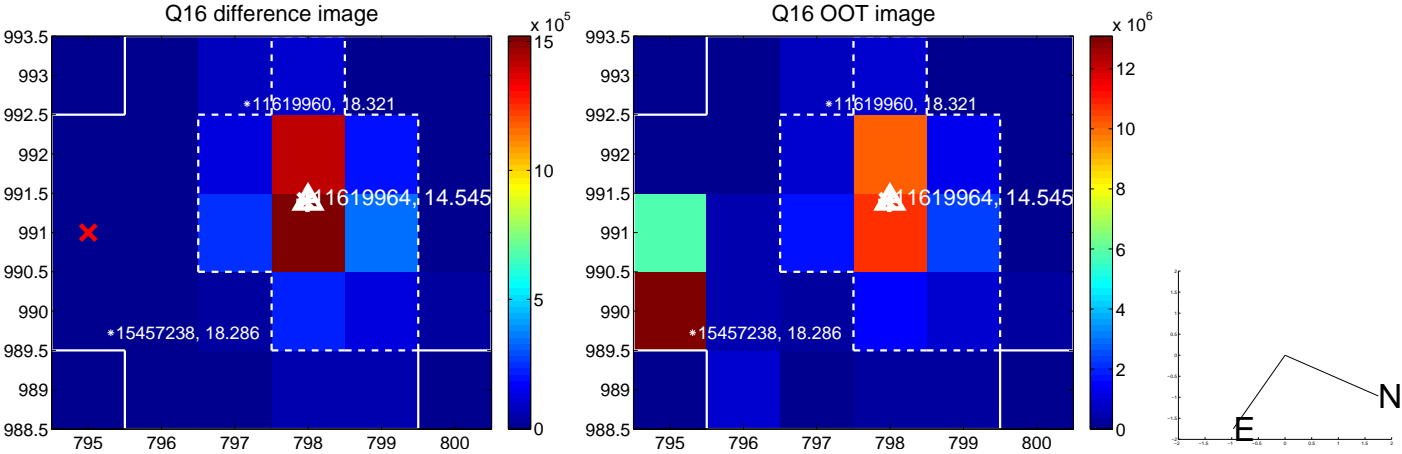
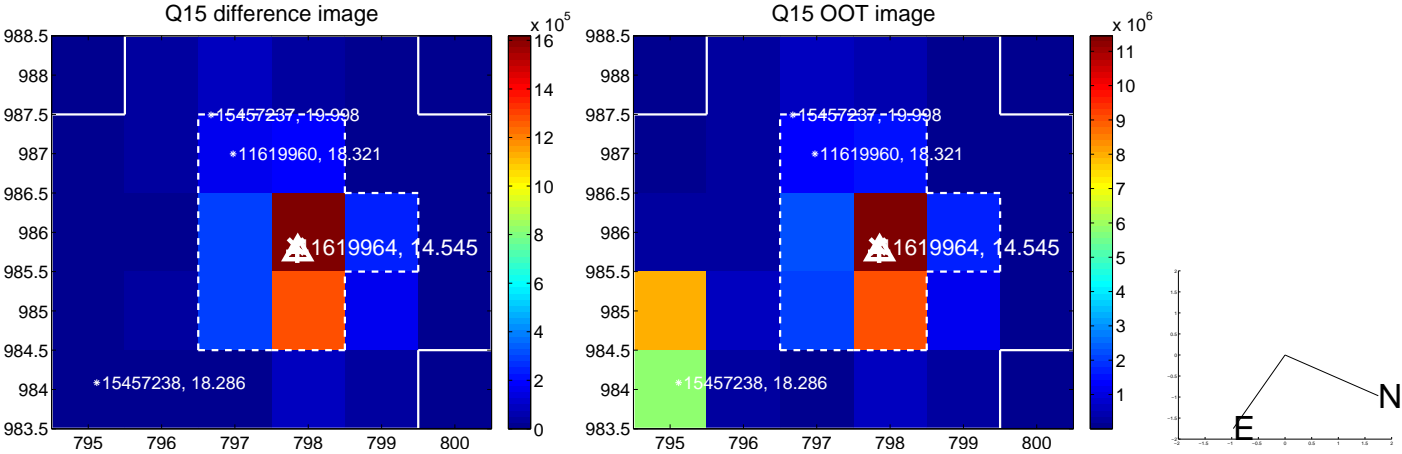
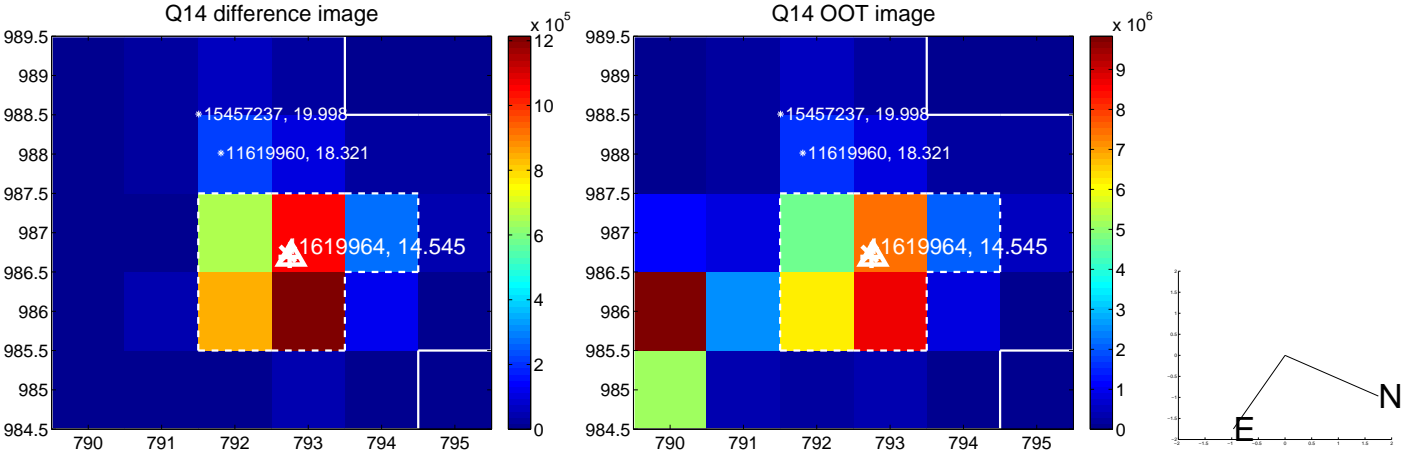
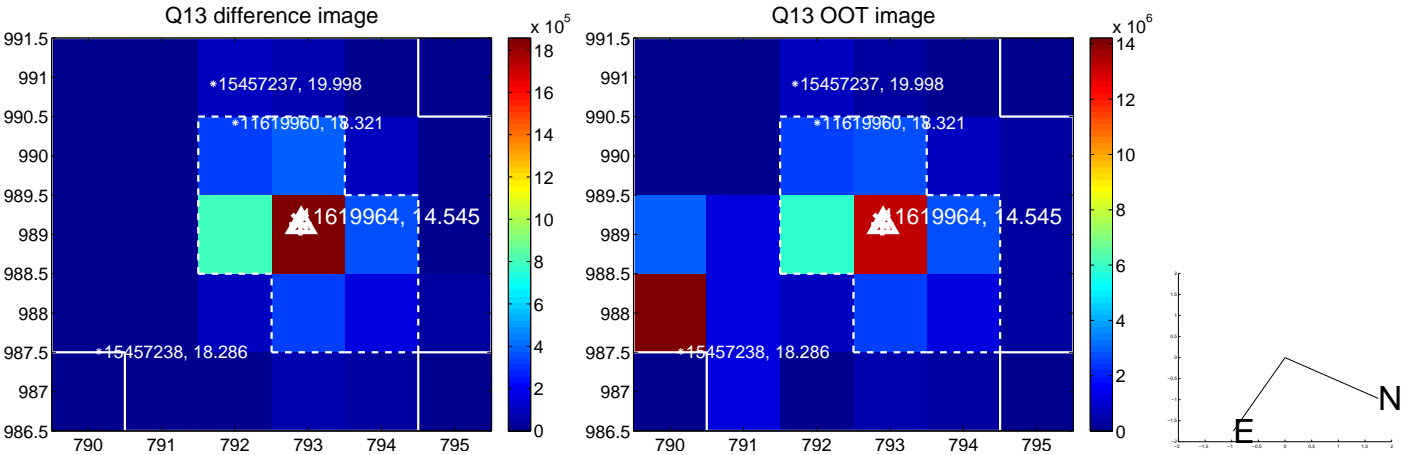




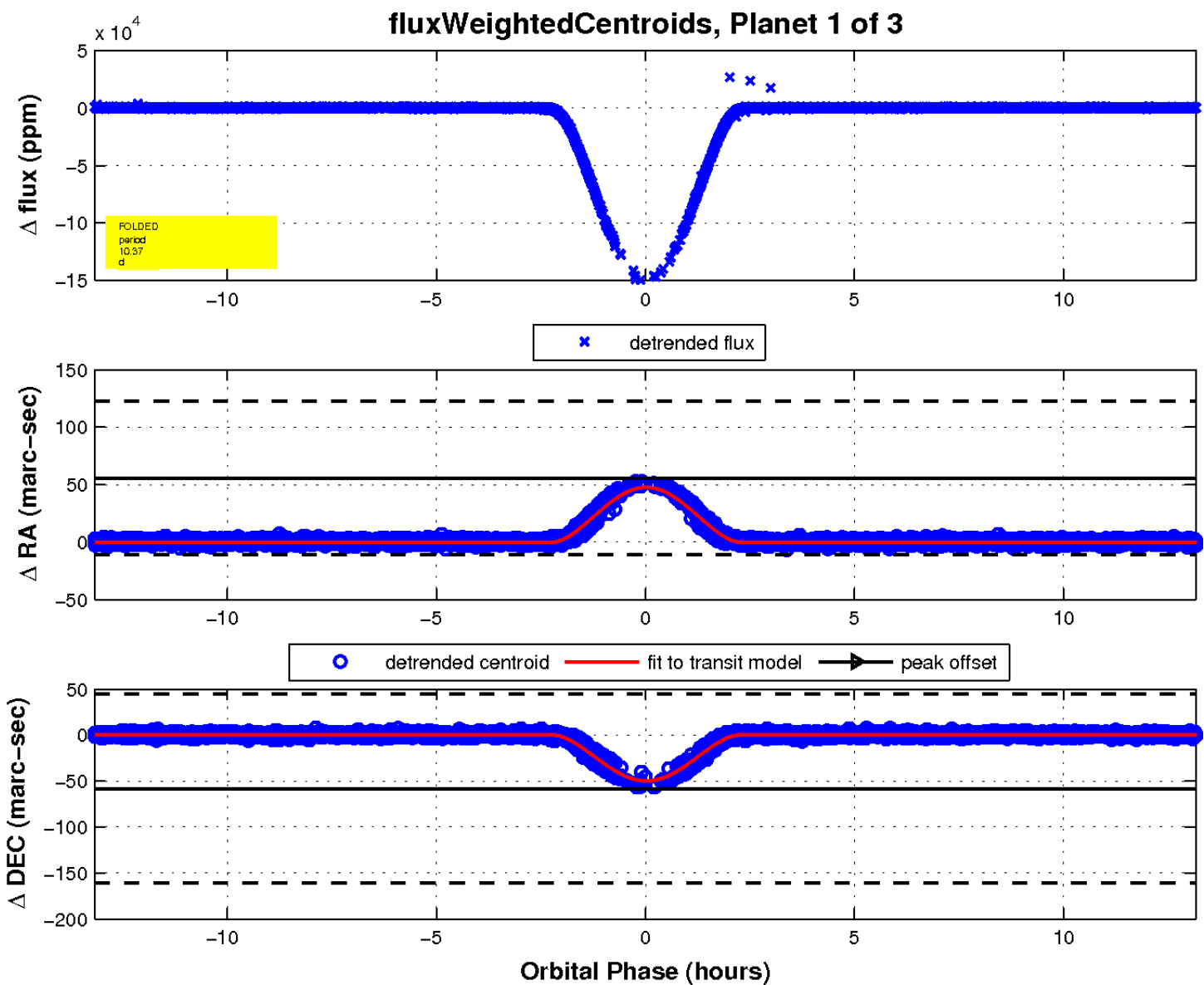
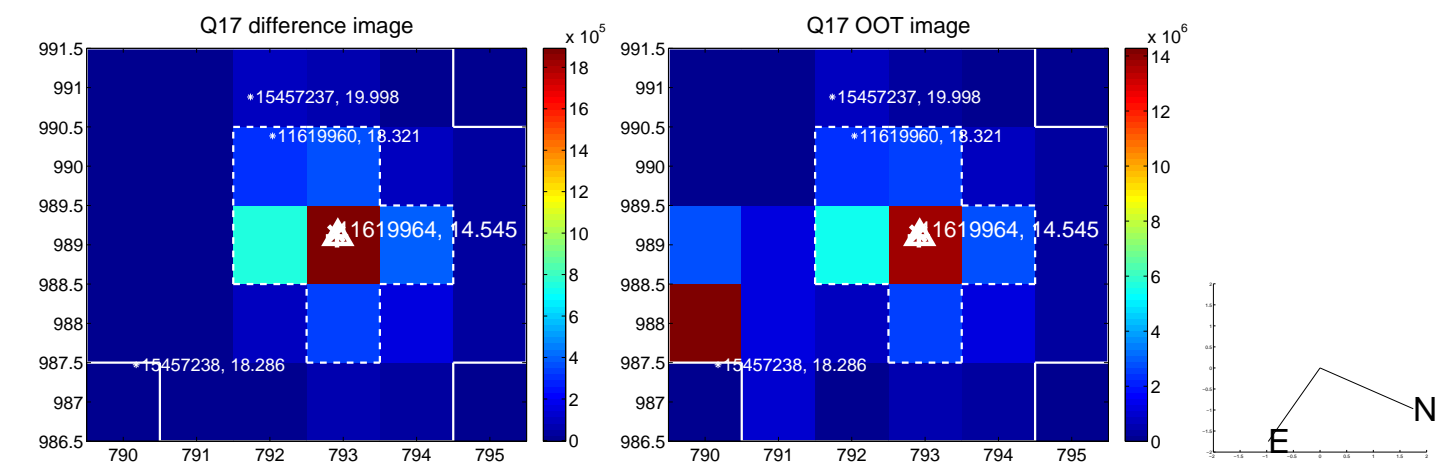
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

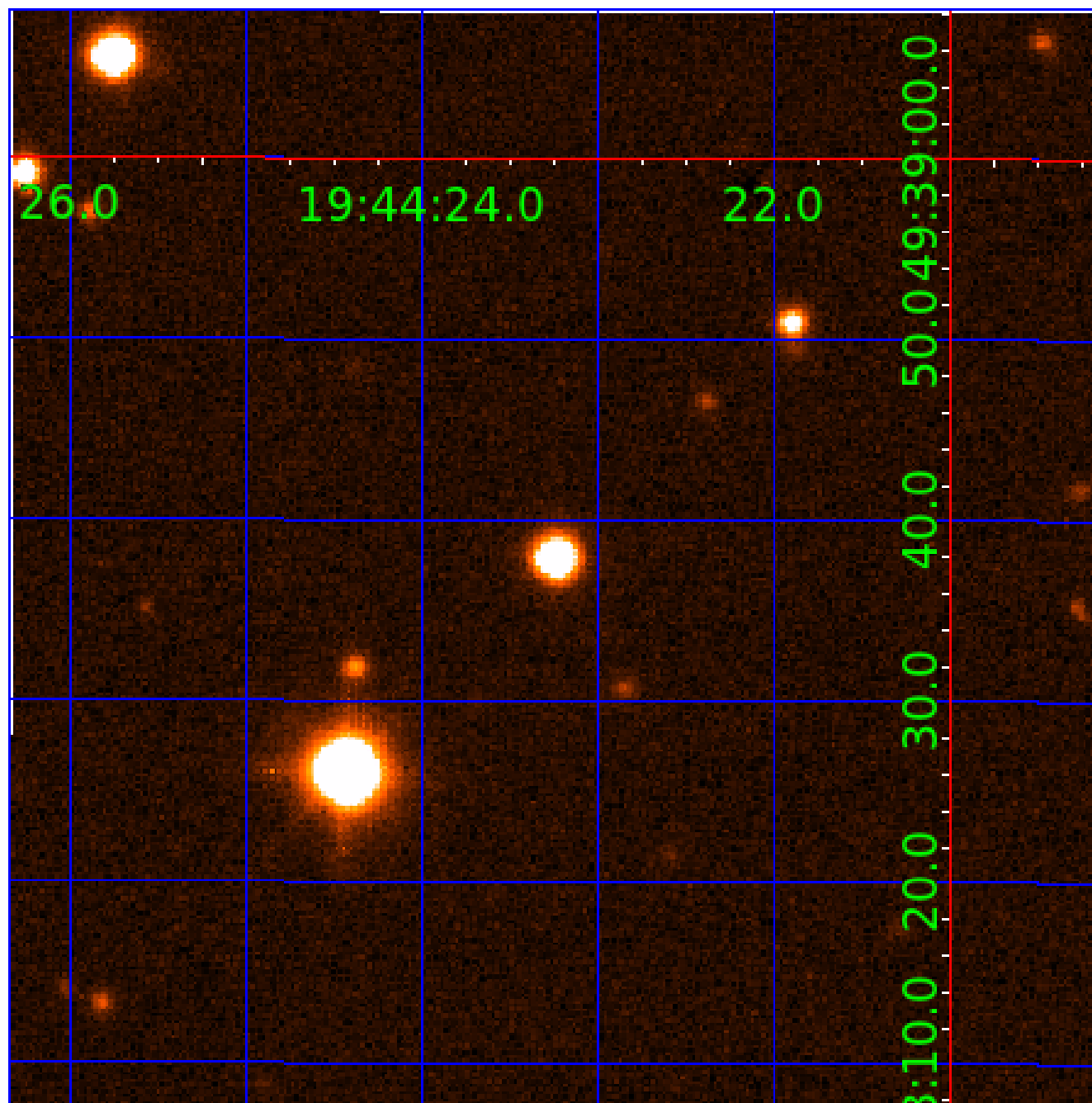


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



UKIRT Image

Declination



# KIC 011619964

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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011619964-03	OBS	No	361.098314	373.839611	1043.2	19.966	16.0	12.8	0.94	5855	3.04	1.06

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011619964-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011619964-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
011619964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

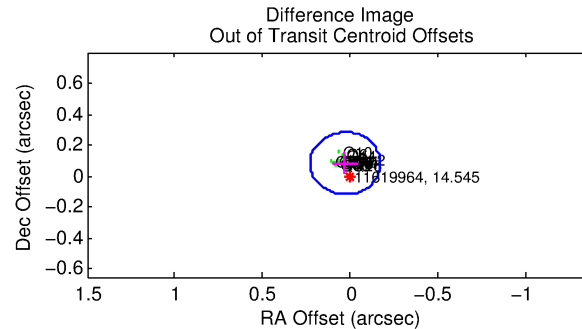
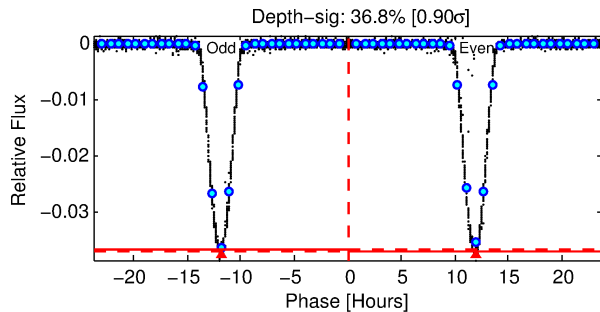
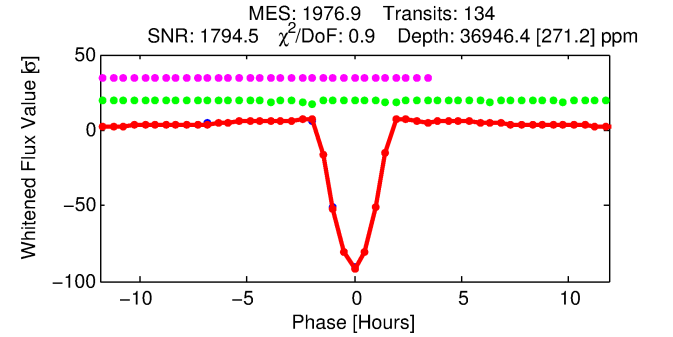
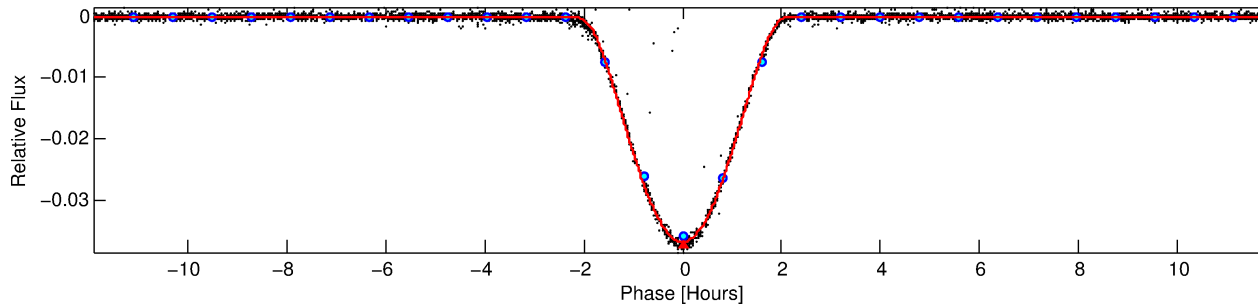
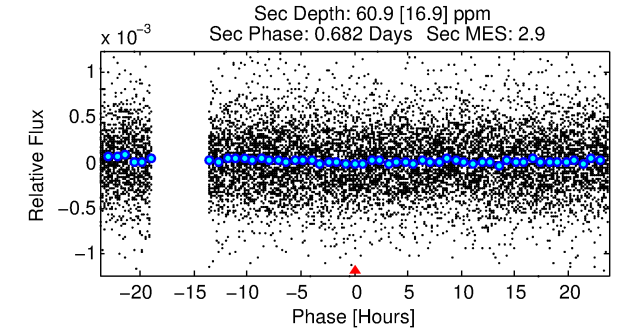
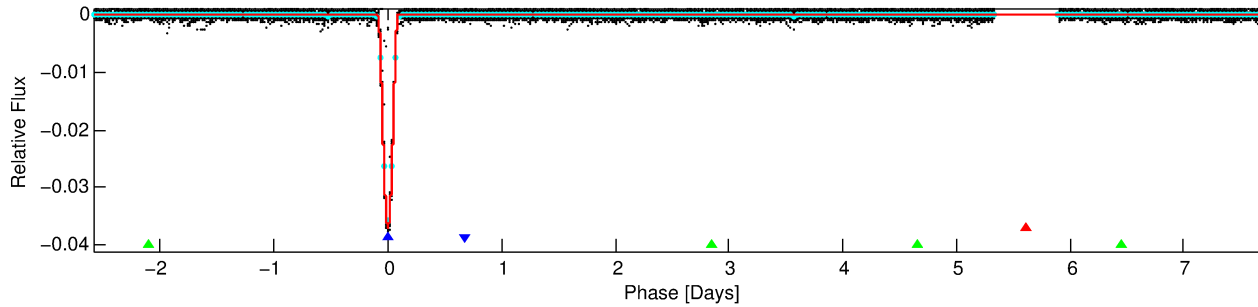
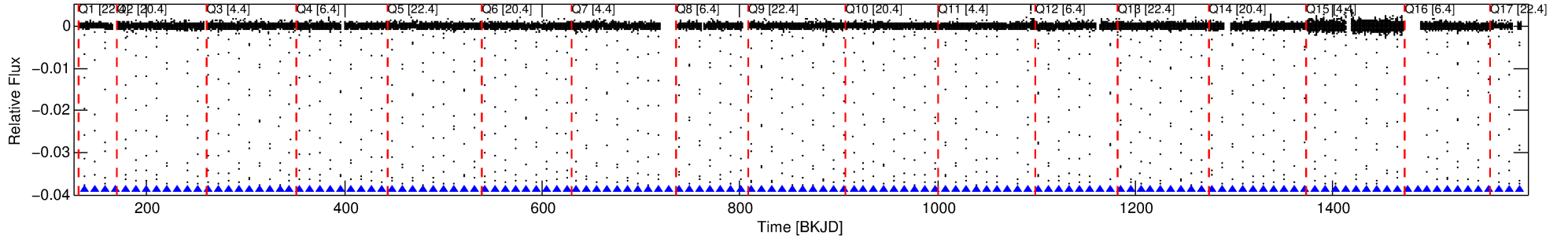
## Ephemeris Match Information For 011619964-02

No Significant Match Found

# DV One-Page Summary

KIC: 11619964 Candidate: 2 of 3 Period: 10.369 d  
KOI: K07466 Corr: No Ephemeris Match

Kp: 14.55 R\*: 0.94 Rs Teff: 5855.0 K Logg: 4.42 Fe/H: -0.400



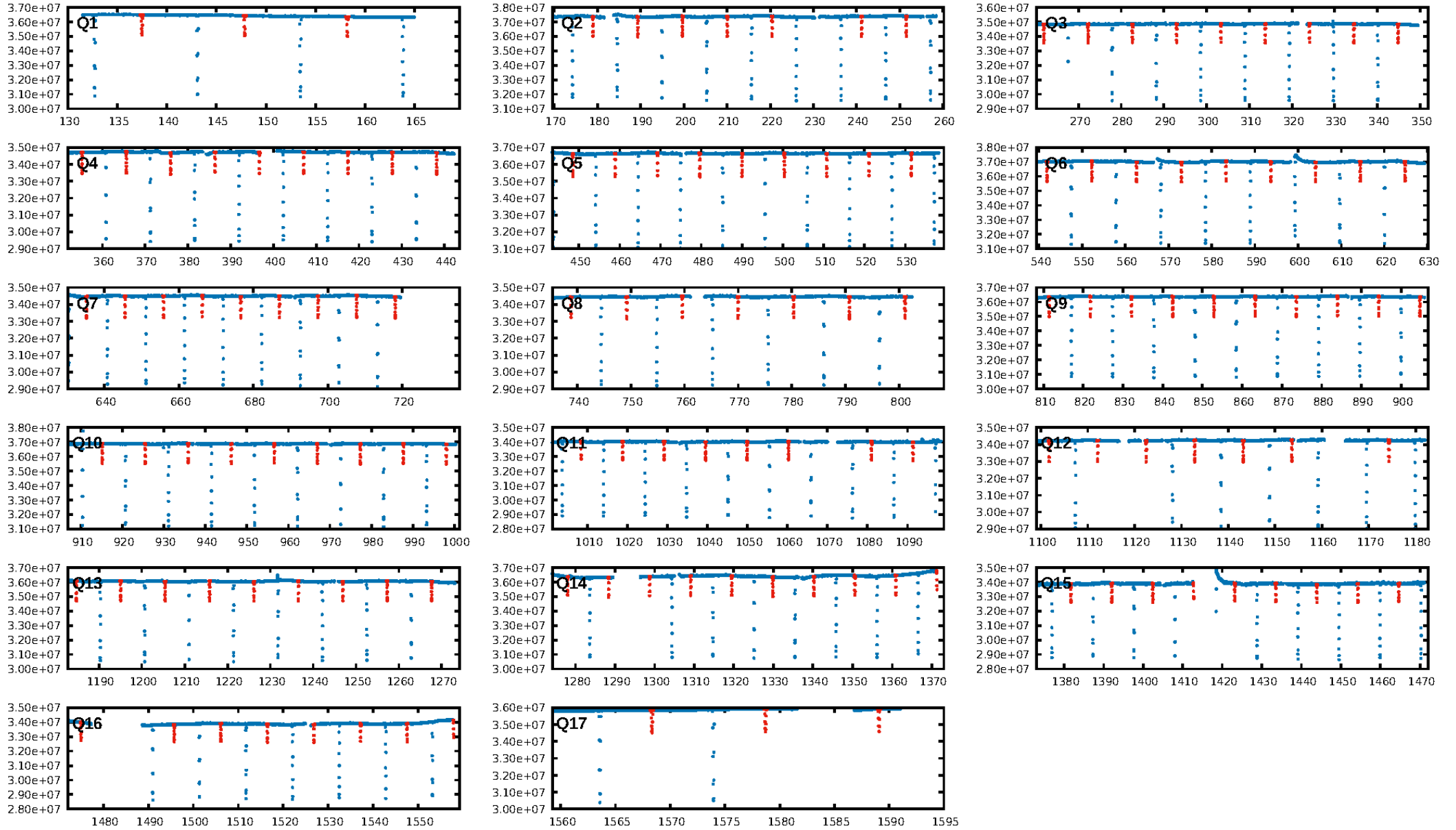
## DV Fit Results:

Period = 10.36856 [0.00000] d  
Epoch = 137.4734 [0.0000] BKJD  
Rp/R\* = 0.3050 [0.0142]  
a/R\* = 16.74 [0.03]  
b = 1.00 [0.02]  
Seff = 120.60 [43.32]  
Teq = 845 [76] K  
Rp = 31.41 [8.71] Re  
a = 0.0882 [0.0204] AU  
Ag = 0.26 [0.12] [-6.22σ]  
Teffp = 936 [74] K [0.86σ]

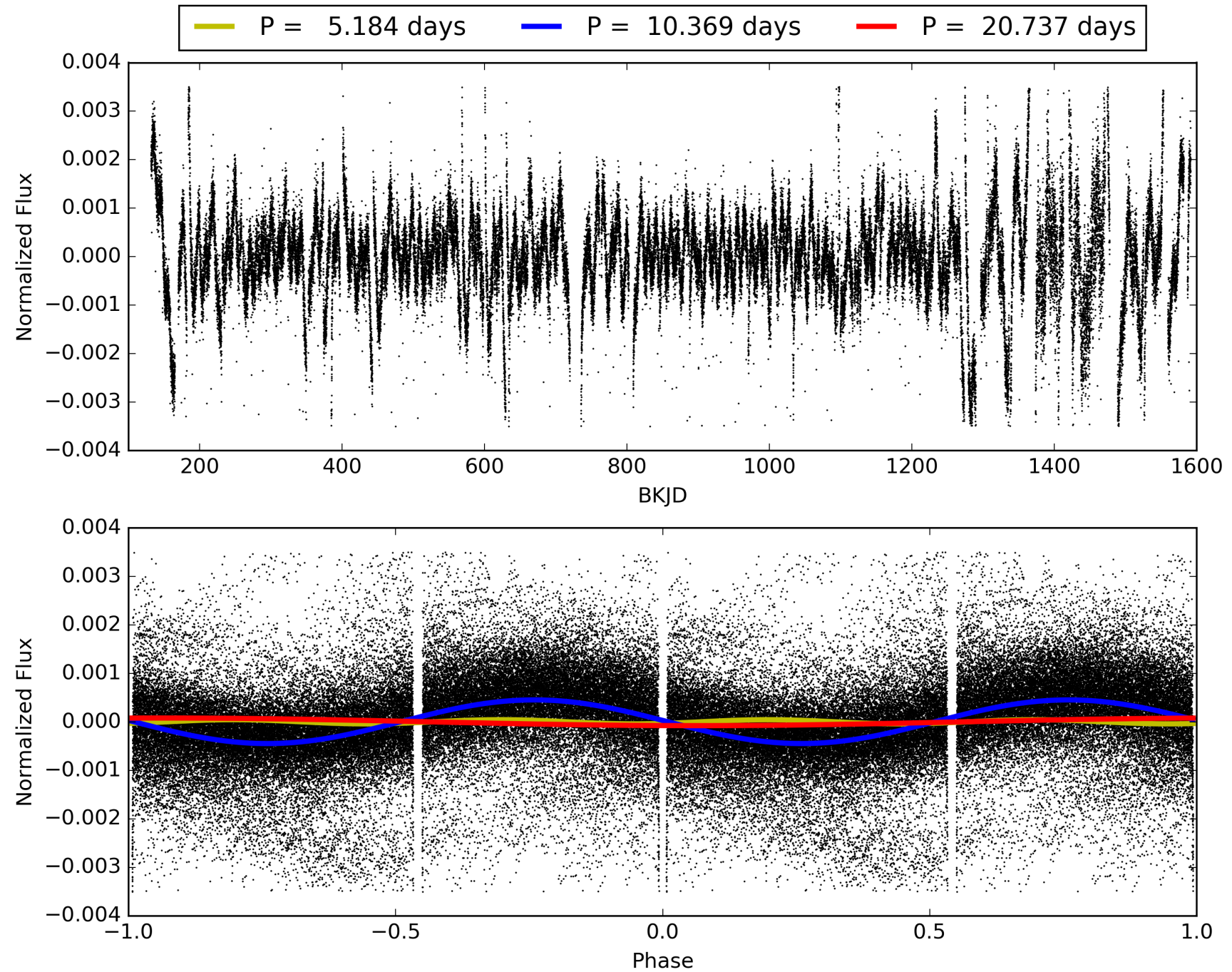
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 100.0% [413.48σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 69.3%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [128/128]  
GhostDiagnostic-chr: 6.17  
Centroid-sig: 0.0%  
Centroid-so: 0.453 arcsec [78.05σ]  
OotOffset-rm: 0.089 arcsec [1.32σ]  
KicOffset-rm: 0.257 arcsec [3.66σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 011619964-02, PDC Light Curves



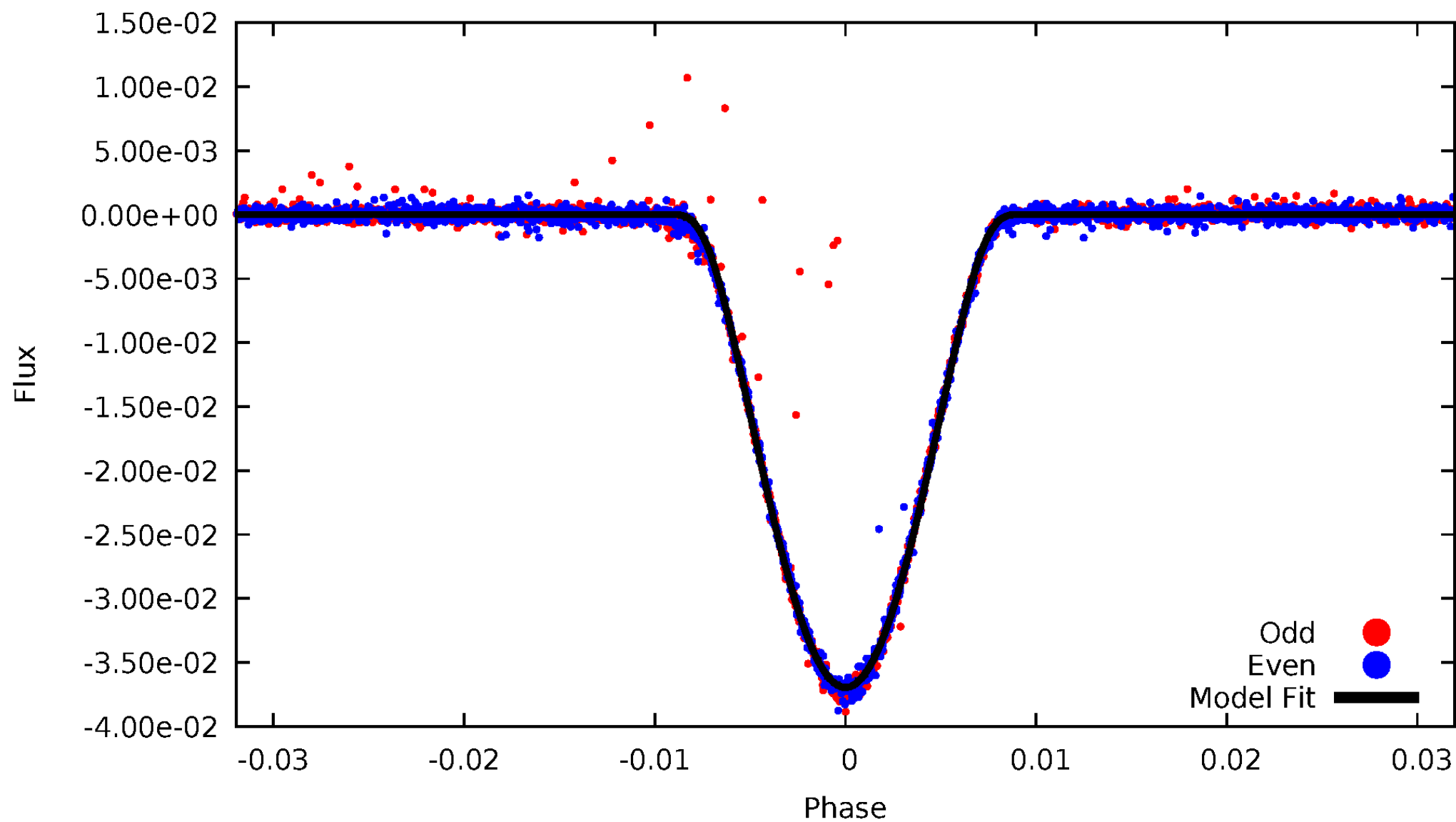
TCE 011619964-02





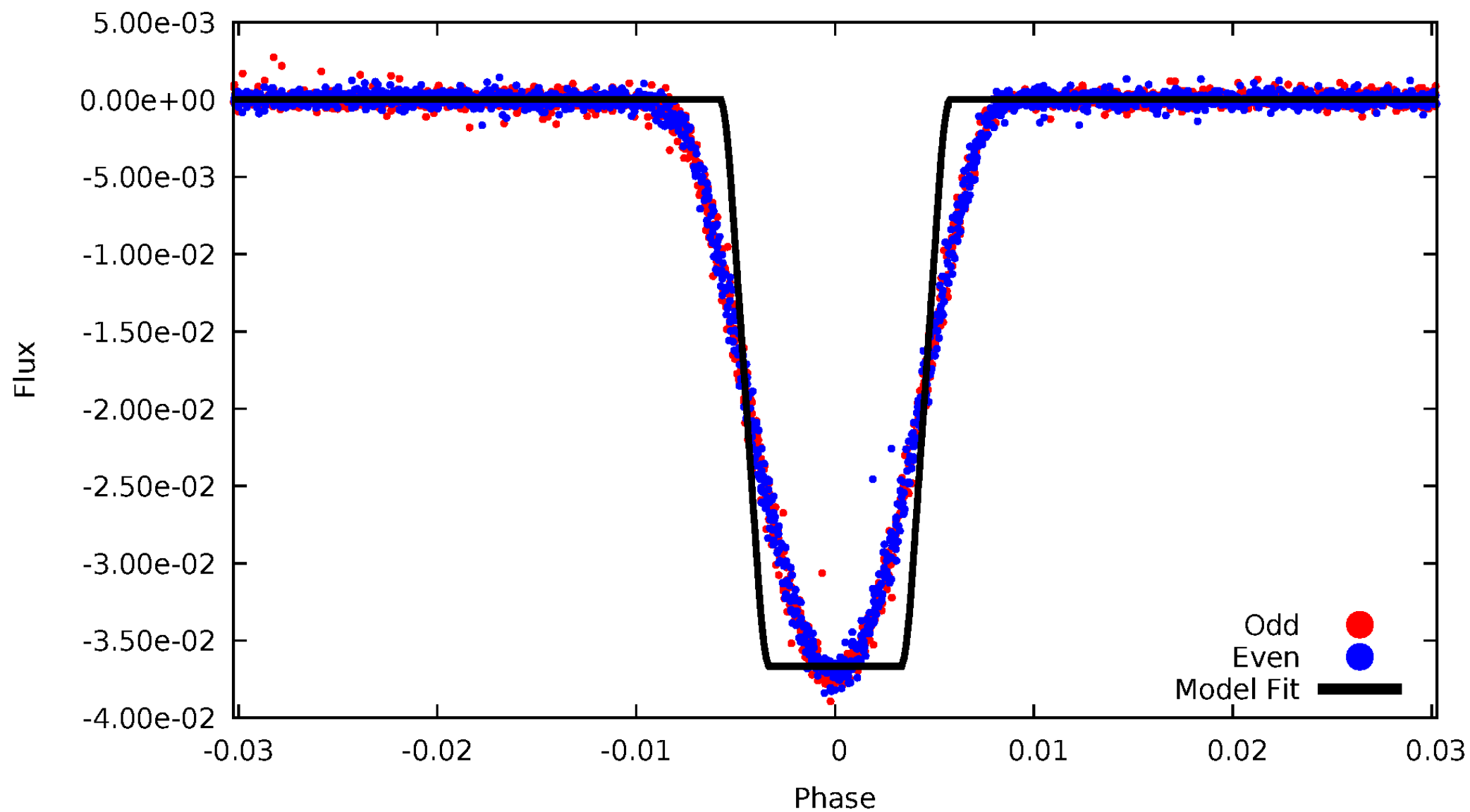
# DV Odd/Even

TCE 011619964-02



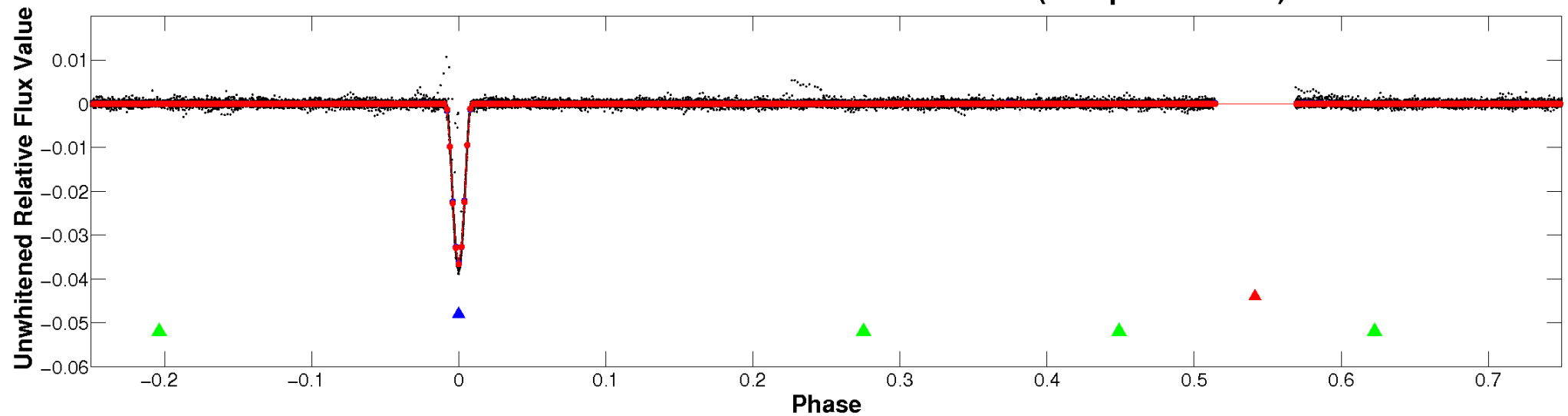
# ALT Odd/Even

TCE 011619964-02

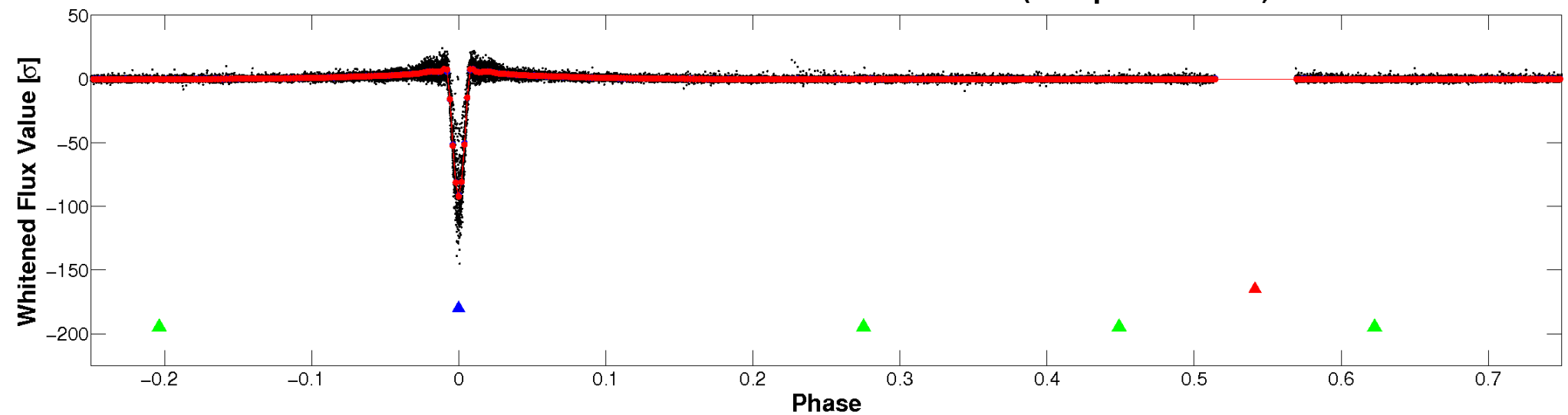


# Non-Whitened Vs. Whitened Light Curve

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

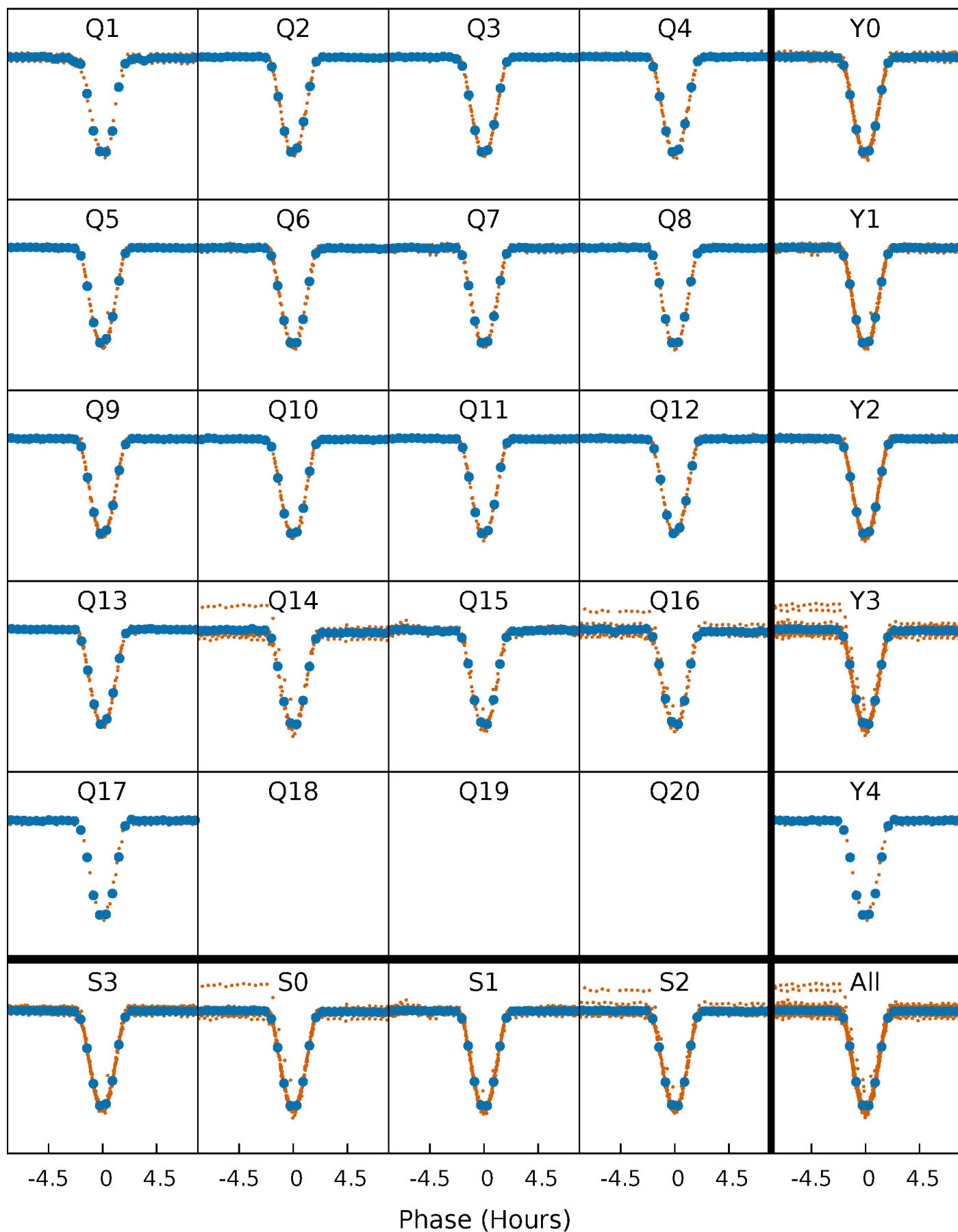


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



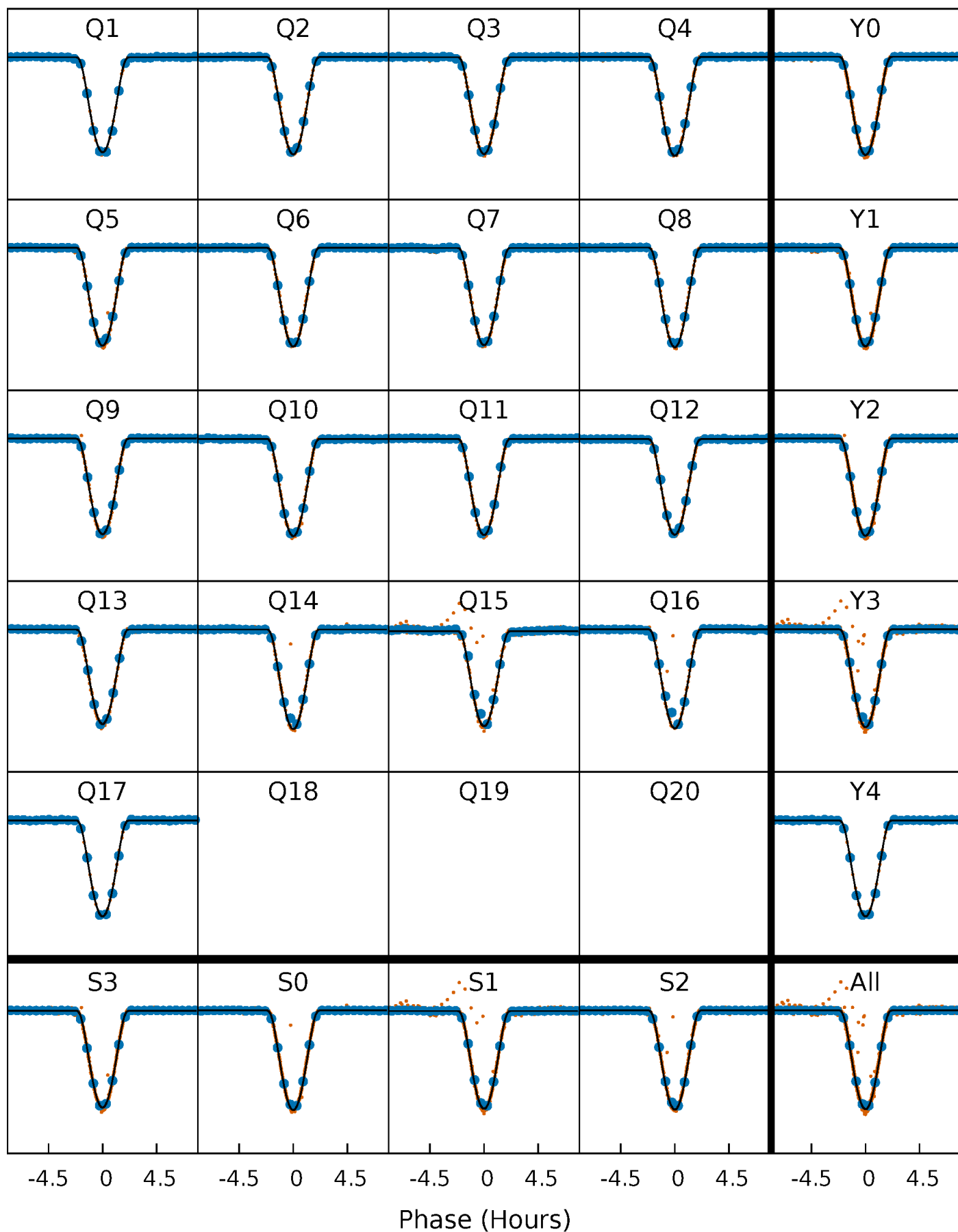
# PDC Quarter-Phased Transit Curves

TCE 011619964-02 P= 10.368555 Days  $T_0=137.473409$  (BKJD)



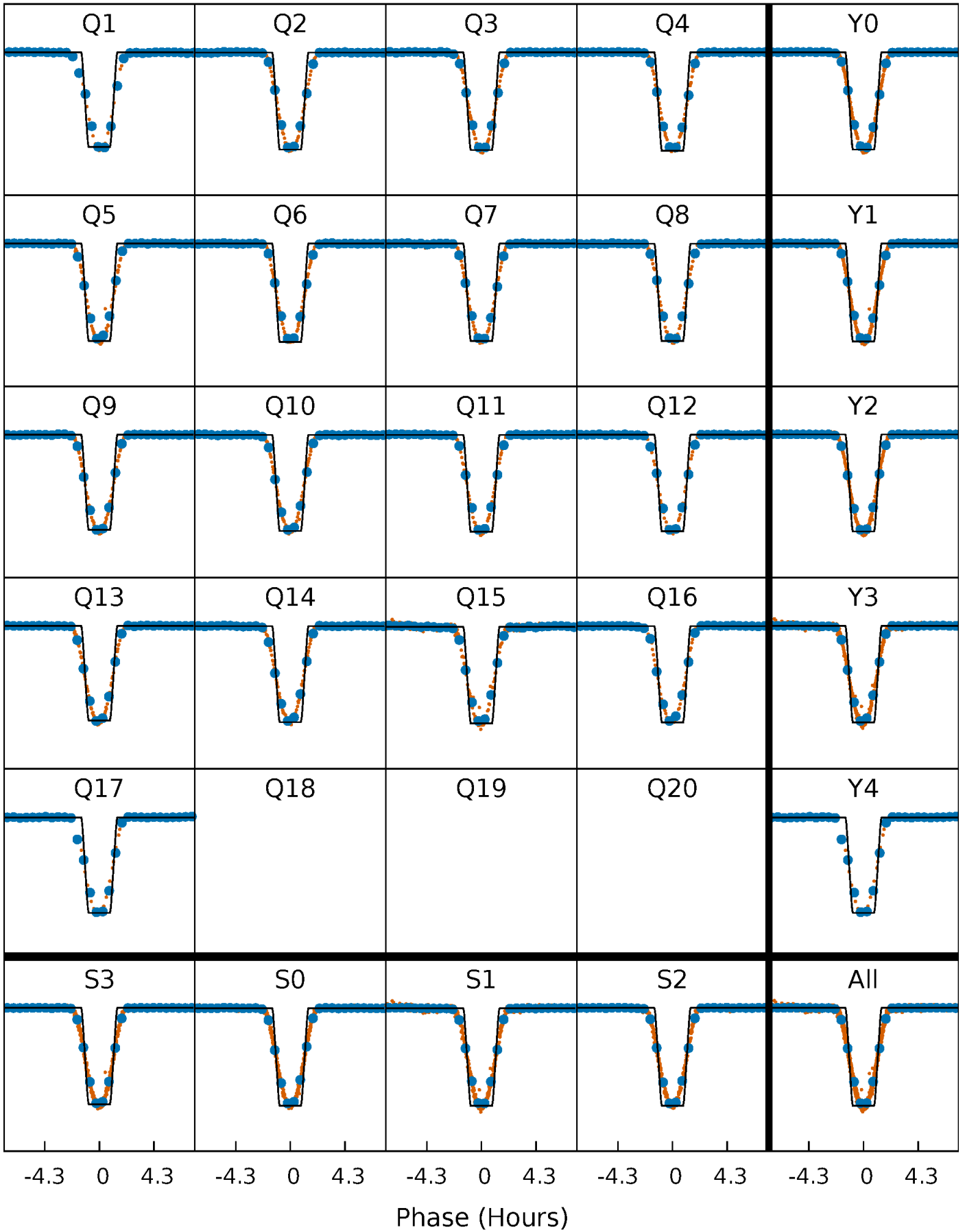
# DV Quarter-Phased Transit Curves

TCE 011619964-02   P= 10.368555 Days    $T_0=137.473409$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

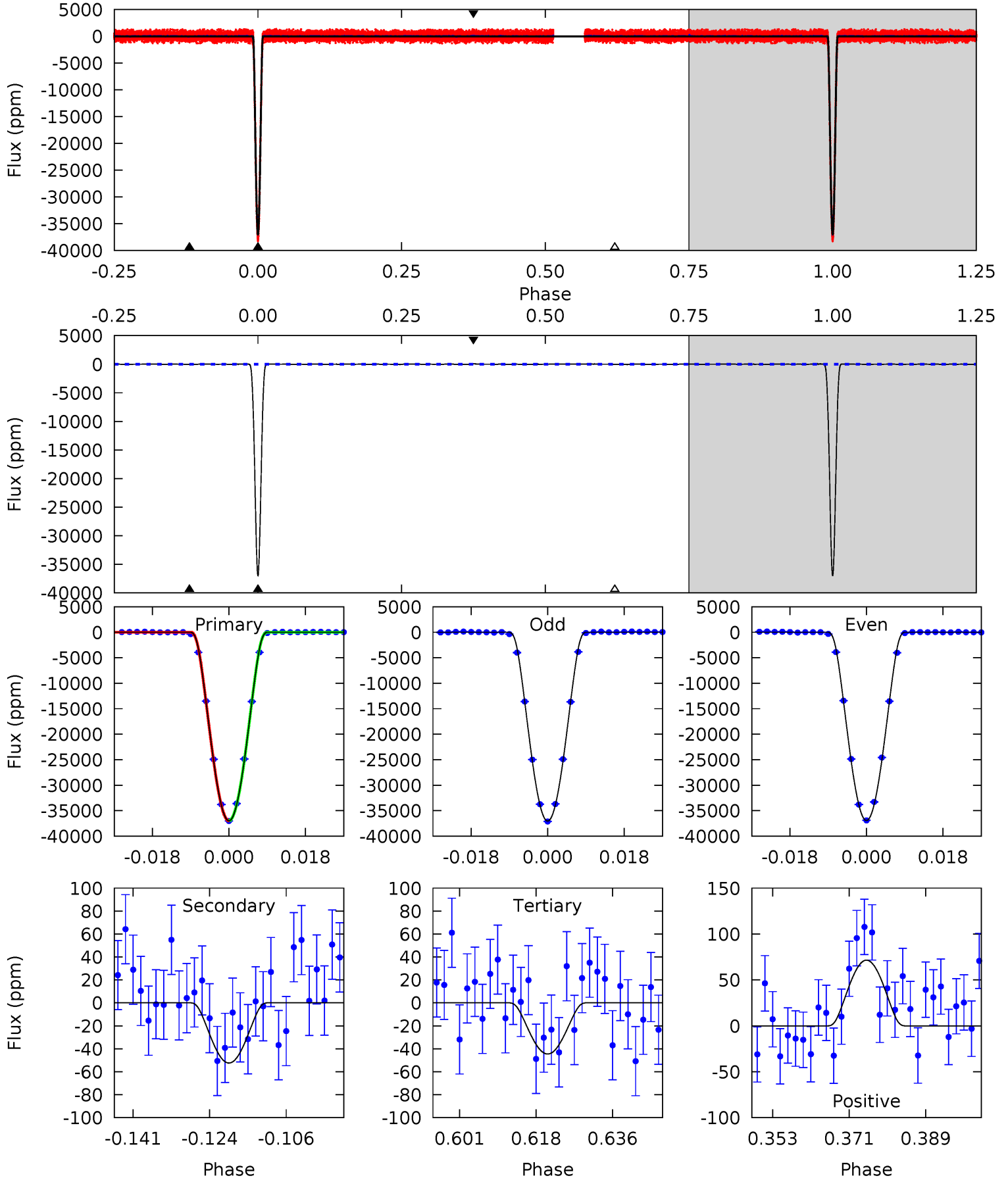
TCE 011619964-02     $P = 10.368597$  Days     $T_0 = 137.470629$  (BKJD)



# DV Model-Shift Uniqueness Test

011619964-02, P = 10.368555 Days, E = 127.104854 Days

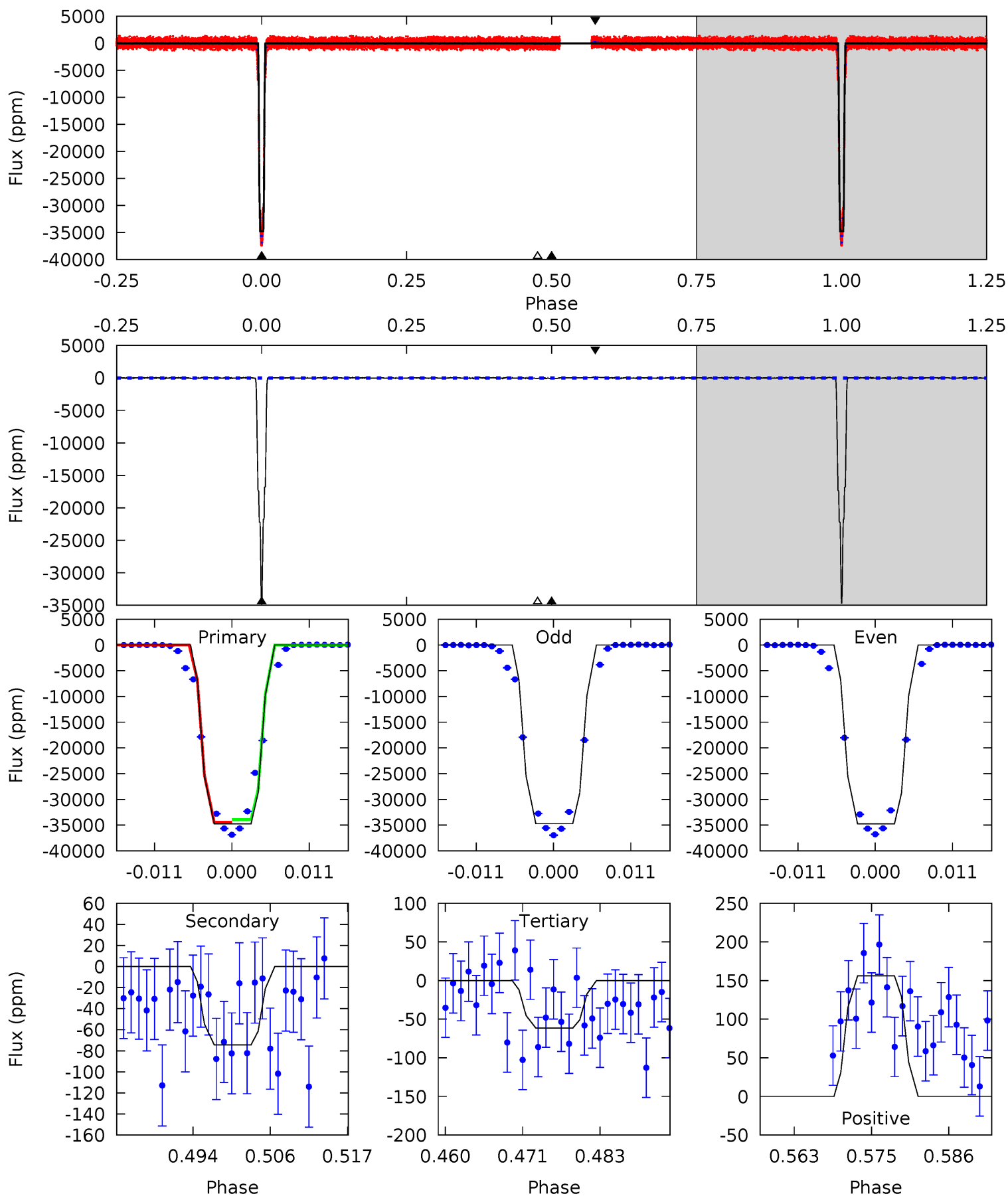
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3735	5.29	4.50	7.22	4.92	2.37	2.14	3730	3728	0.79	-1.93	5.12	0.98	0.00	2.83



# Alt Model-Shift Uniqueness Test

011619964-02, P = 10.368597 Days, E = 127.102032 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
2061	4.41	3.65	9.26	5.00	2.53	1.65	2058	2052	0.76	-4.85	1.32	1.00	0.00	13.3





### Stellar Parameters For KIC 011619964

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5855^{+158}_{-175}$	$4.418^{+0.124}_{-0.186}$	$-0.400^{+0.300}_{-0.300}$	$0.944^{+0.258}_{-0.139}$	$0.852^{+0.117}_{-0.072}$	$1.426^{+0.776}_{-0.684}$
	+3%/-3%	+3%/-4%	+75%/-75%	+27%/-15%	+14%/-8%	+54%/-48%
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 011619964-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-52 \pm 10$	$31.86^{+4.55}_{-3.22}$	$1185^{+84}_{-65}$	$-1747^{+310}_{-129}$	$0.217^{+0.074}_{-0.063}$
Alt.	$-74 \pm 17$	$19.99^{+3.20}_{-2.46}$	$1189^{+88}_{-73}$	$2078^{+100}_{-129}$	$0.790^{+0.298}_{-0.265}$

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

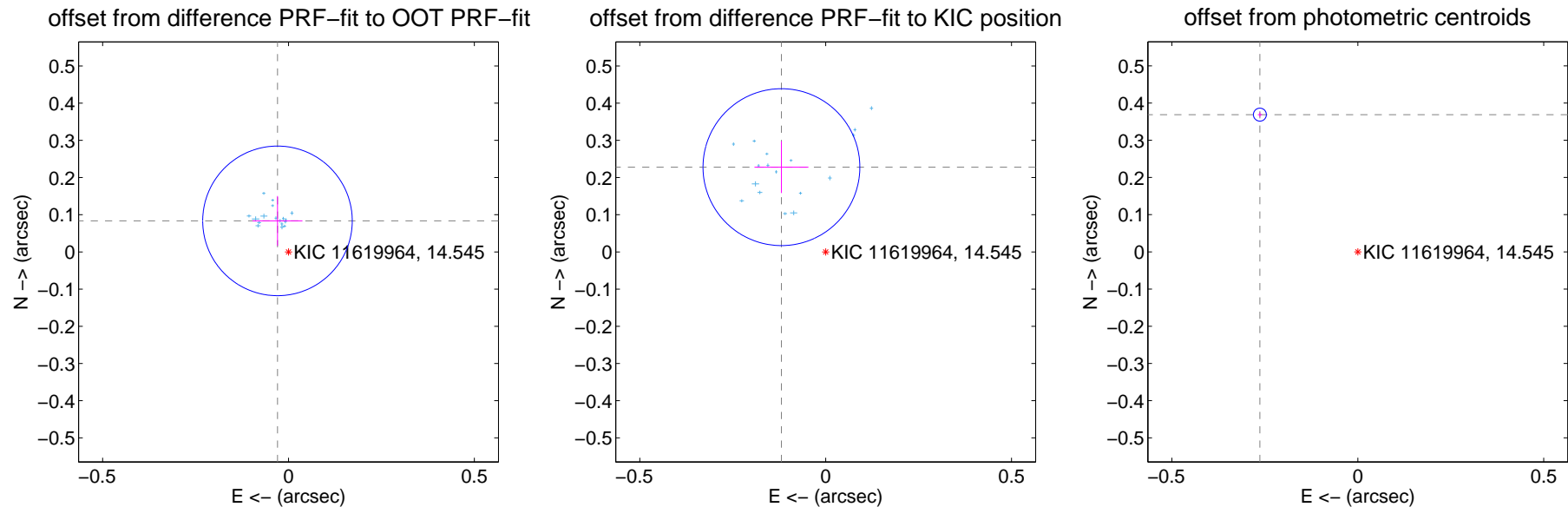
## DV Centroid Data

Supplemental centroid analysis for 011619964-02. Kepler magnitude: 14.54. Transit SNR 1794.47

There are 17 quarters with good PRF difference image offsets

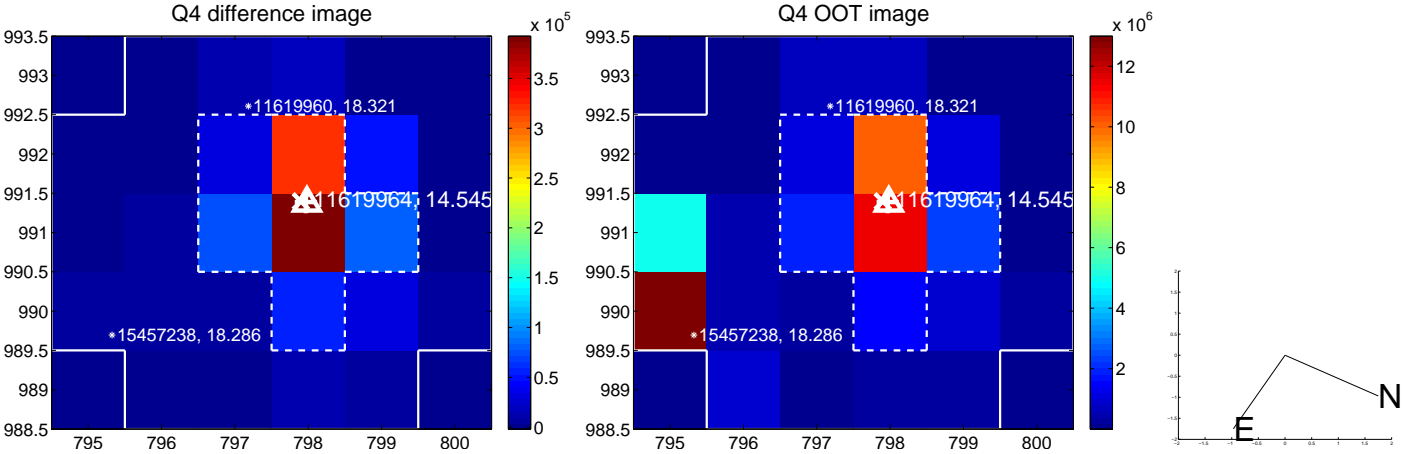
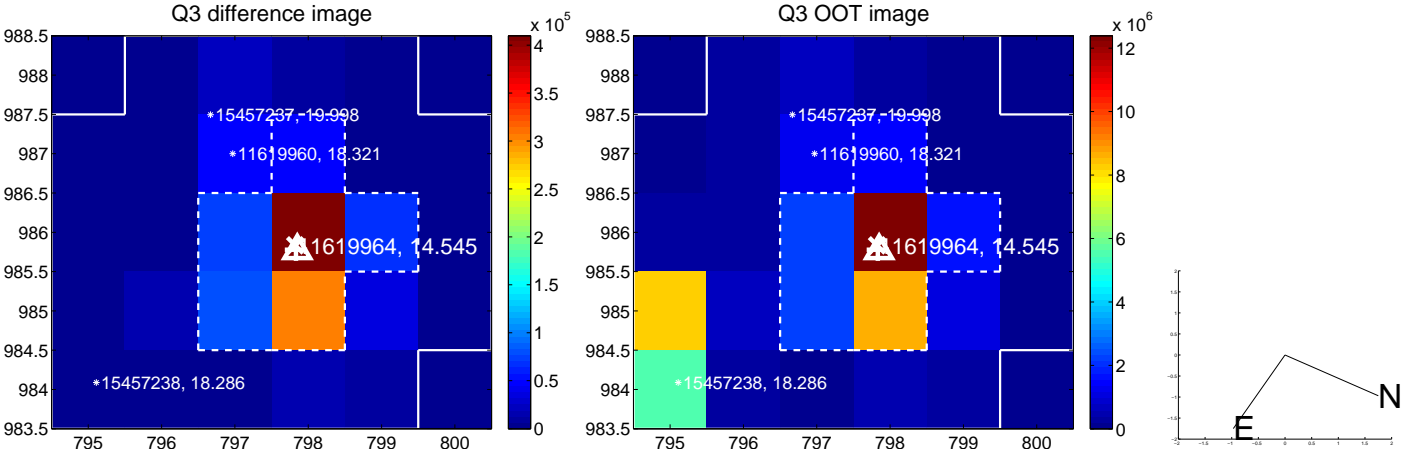
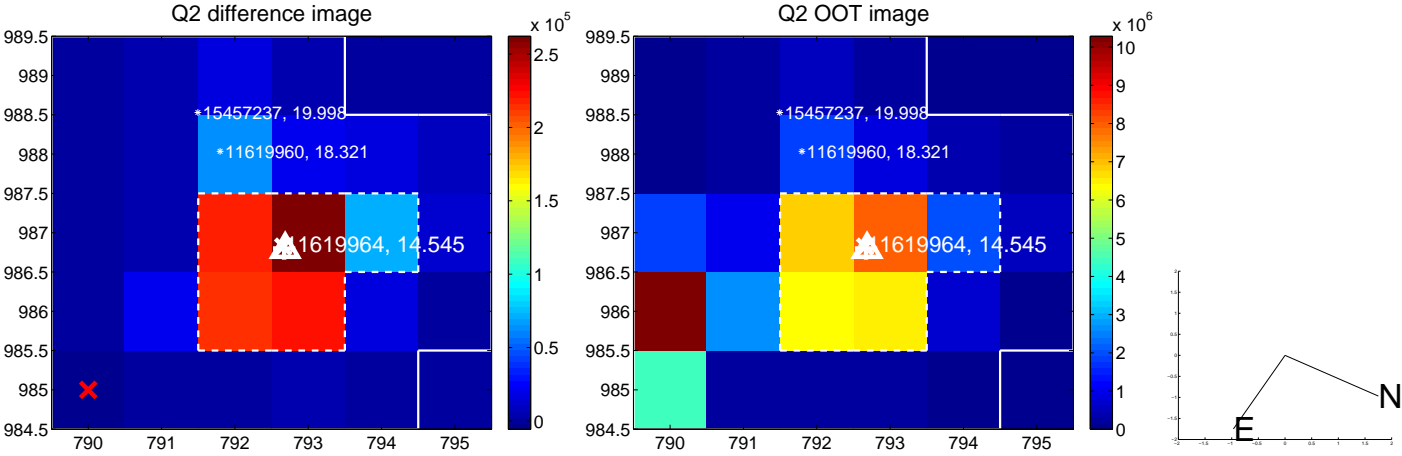
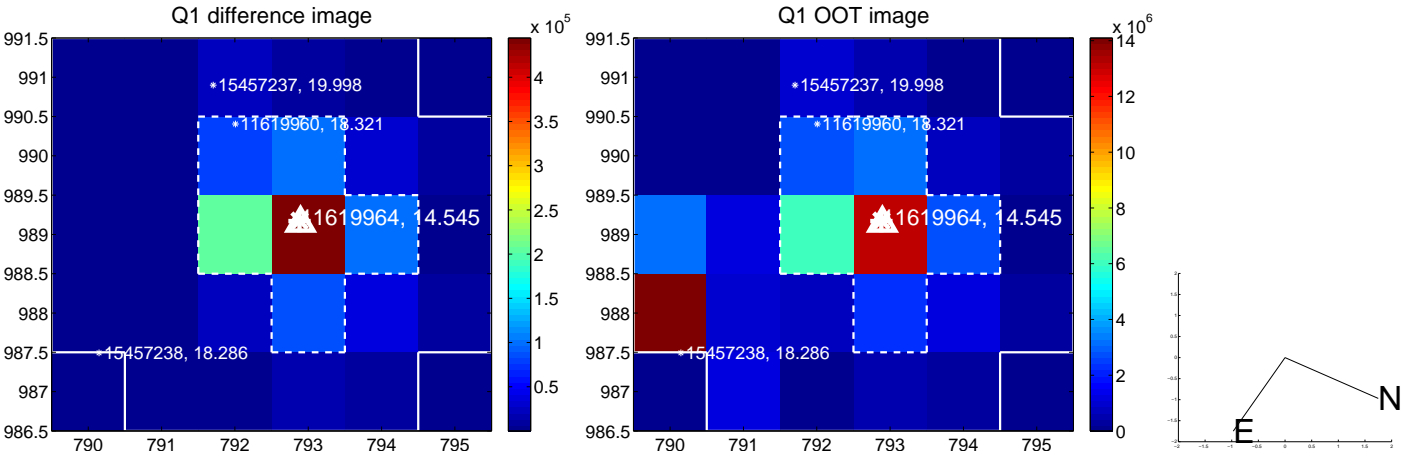
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.089 \pm 0.067$	1.32	$0.030 \pm 0.067$	$0.083 \pm 0.067$
PRF-fit source offset from KIC position	$0.257 \pm 0.070$	3.66	$0.119 \pm 0.073$	$0.228 \pm 0.070$
photometric centroid source offset	$0.45 \pm 0.01$	78.05	$0.26 \pm 0.01$	$0.37 \pm 0.01$

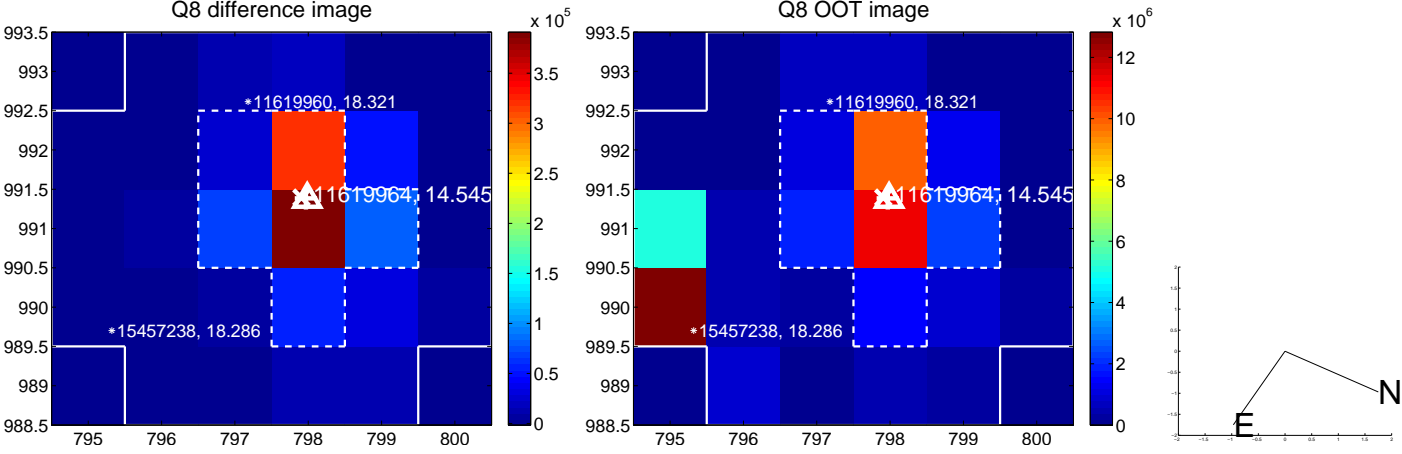
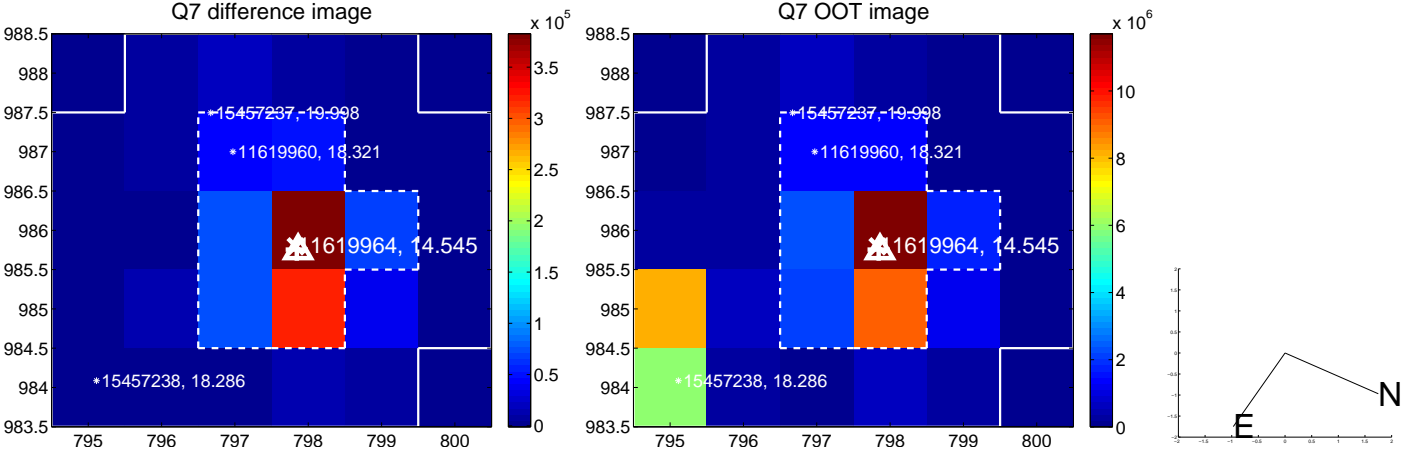
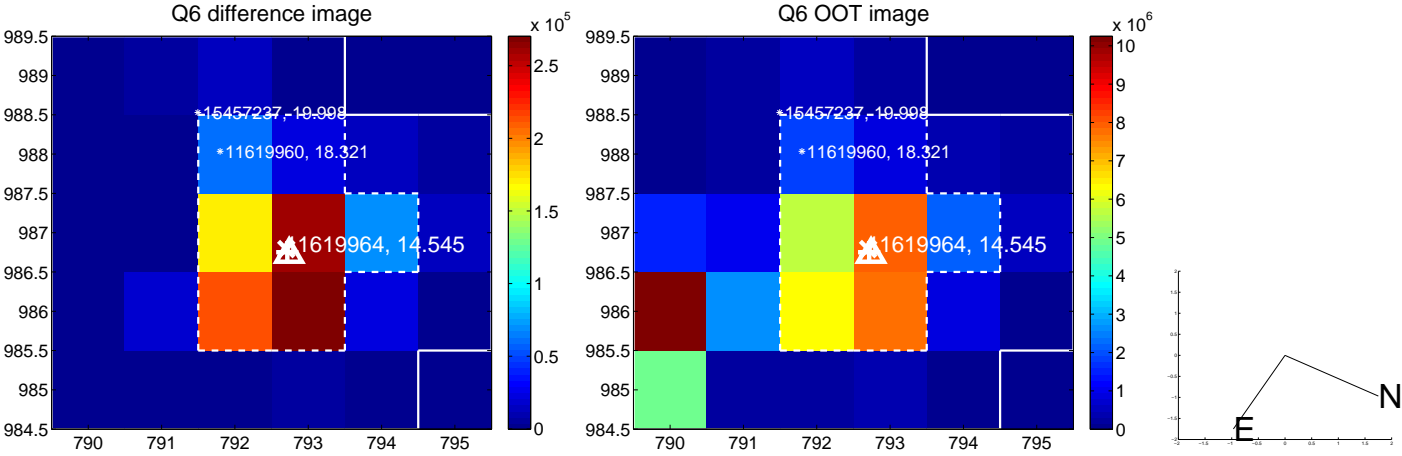
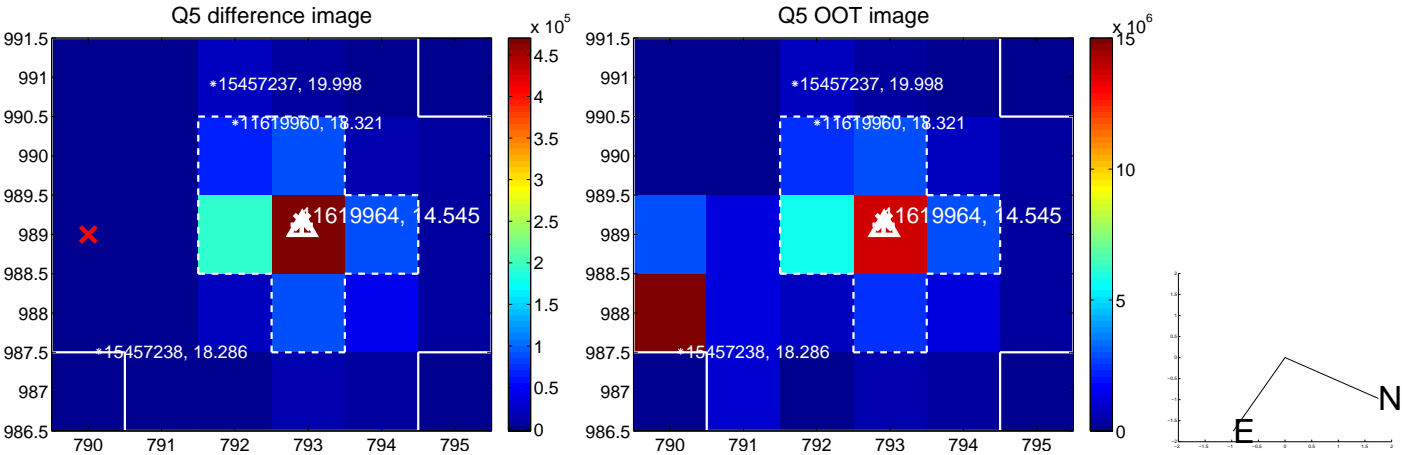


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

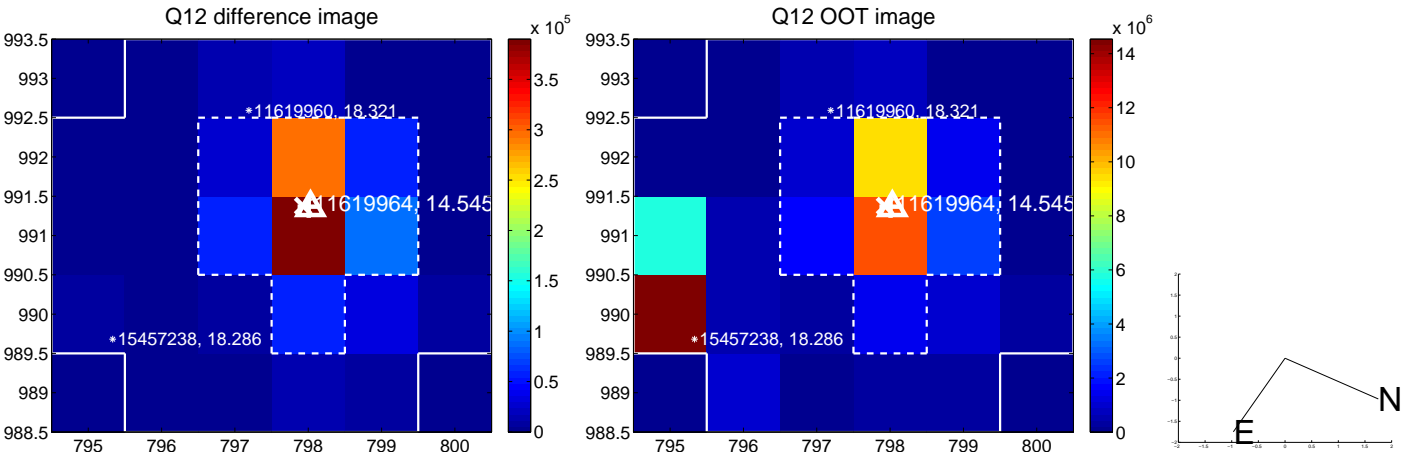
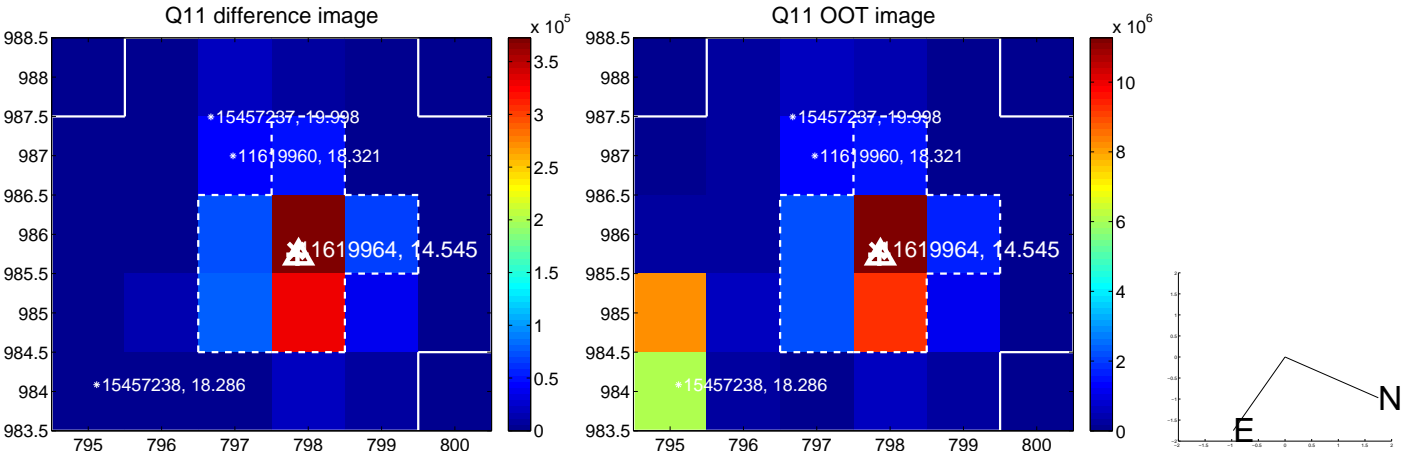
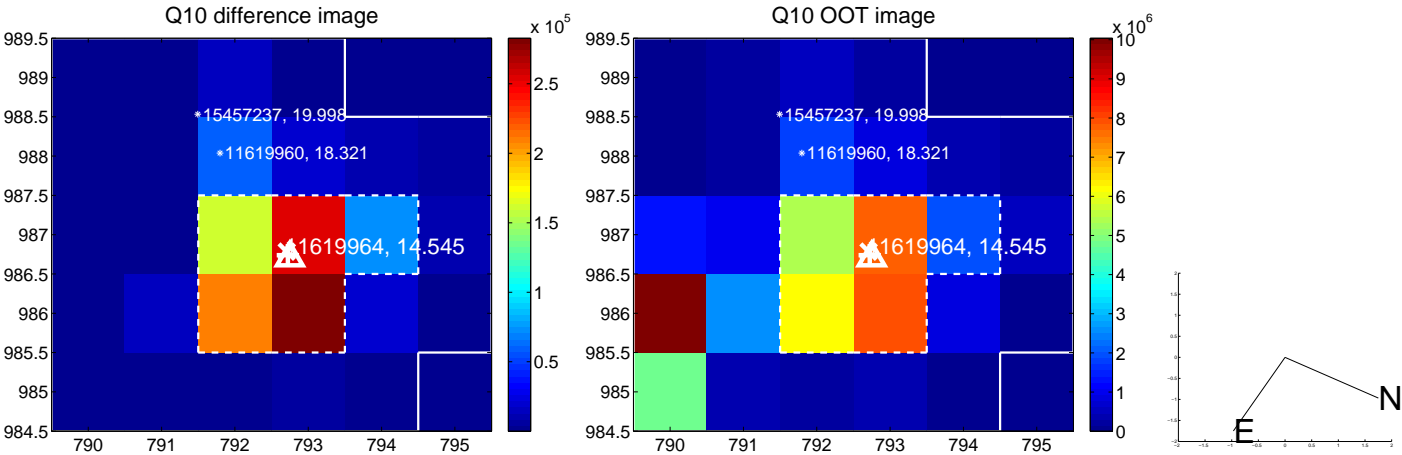
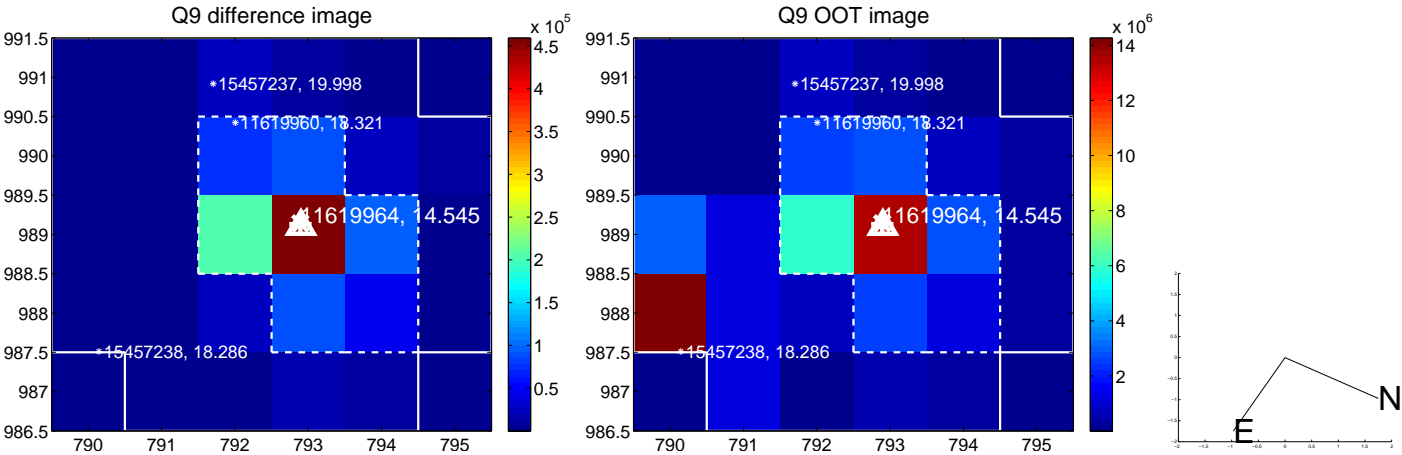
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



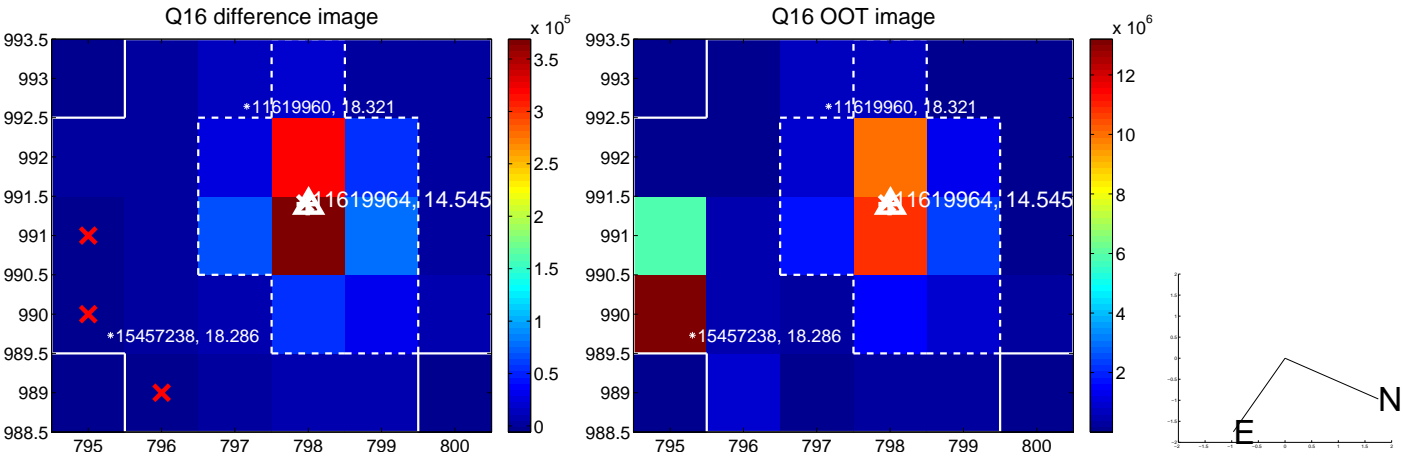
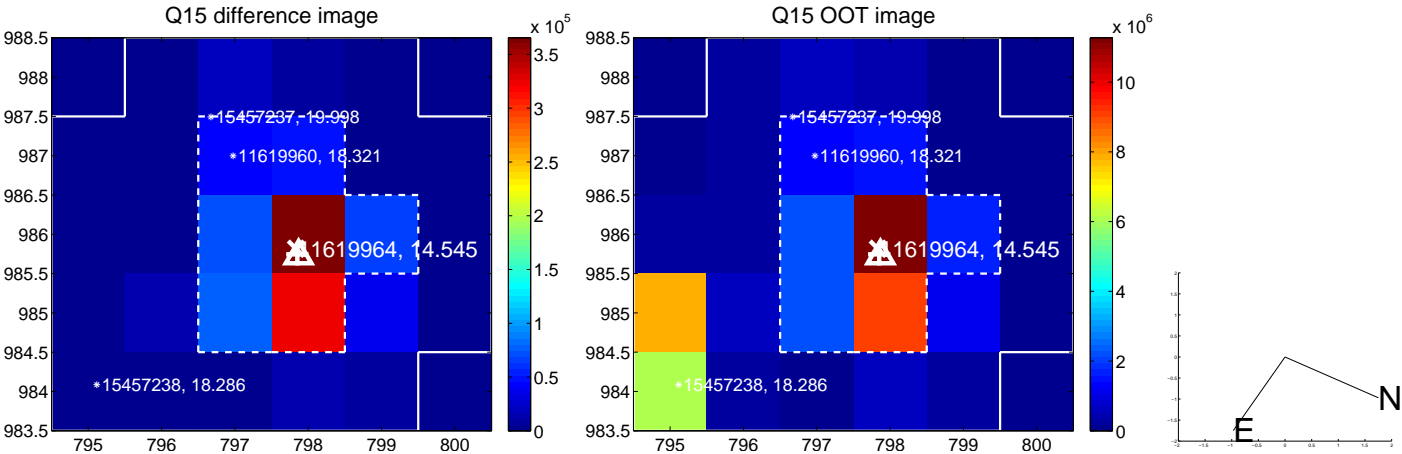
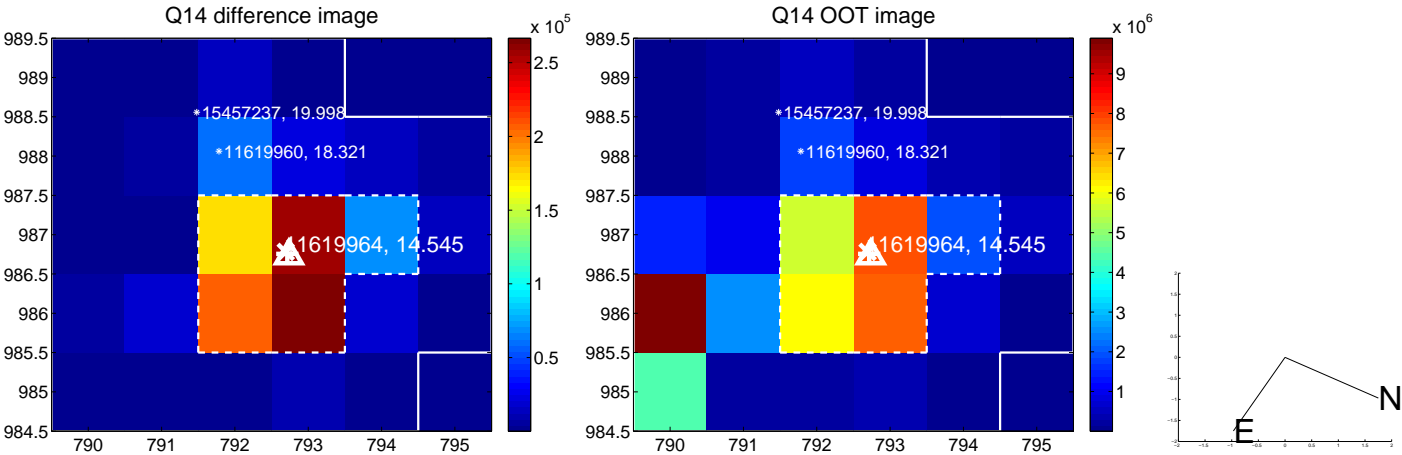
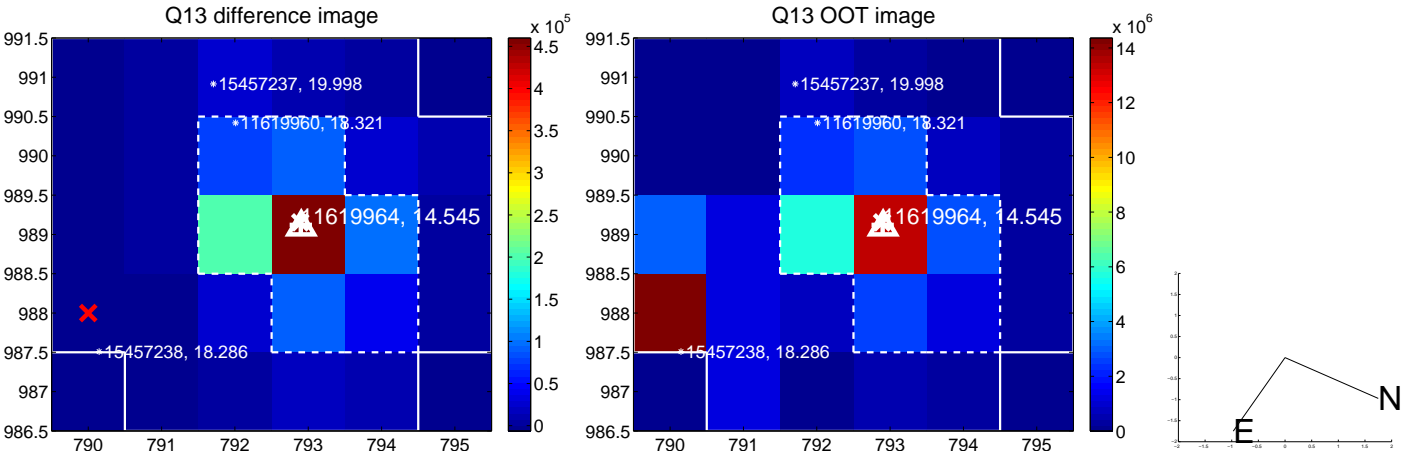
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



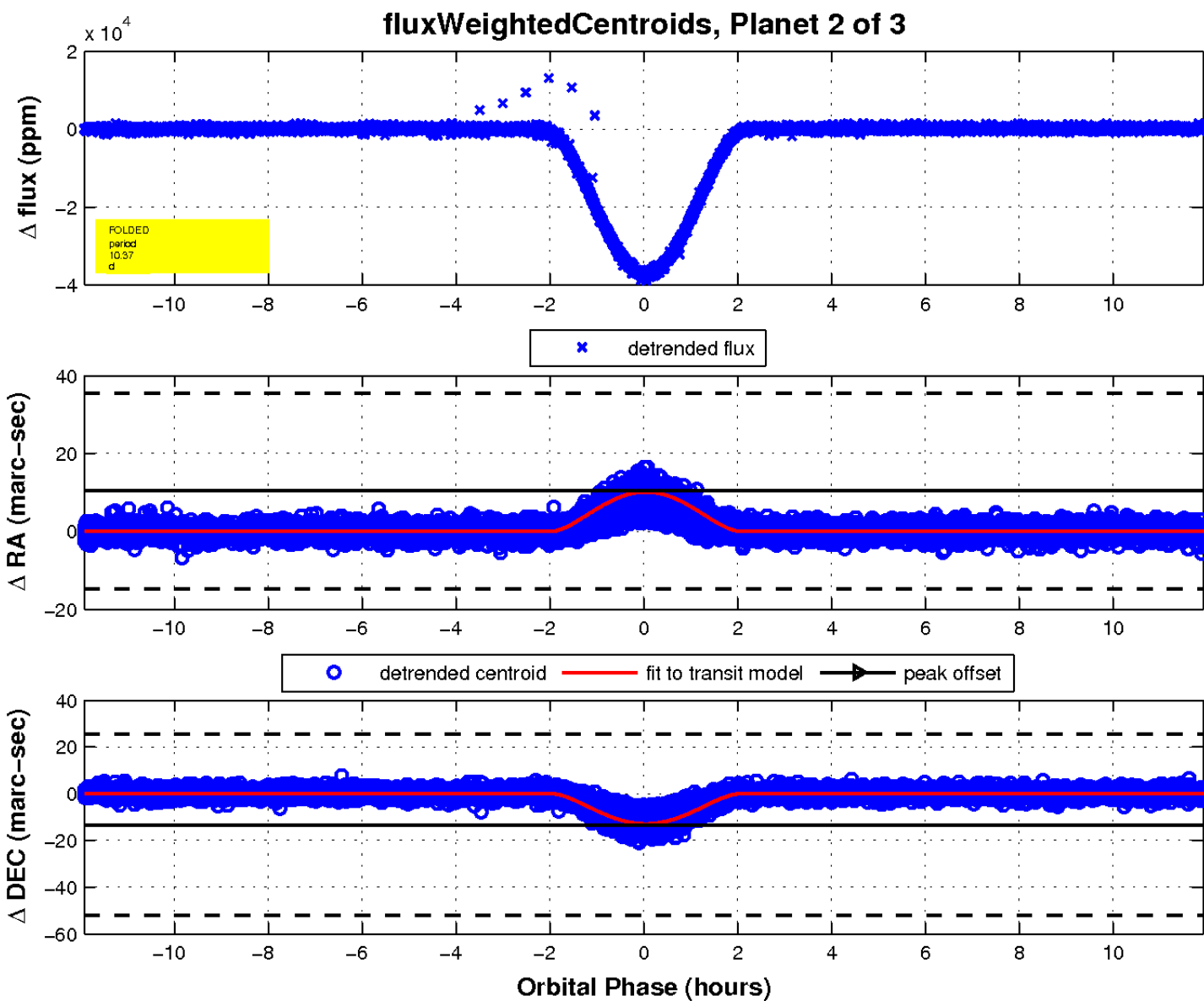
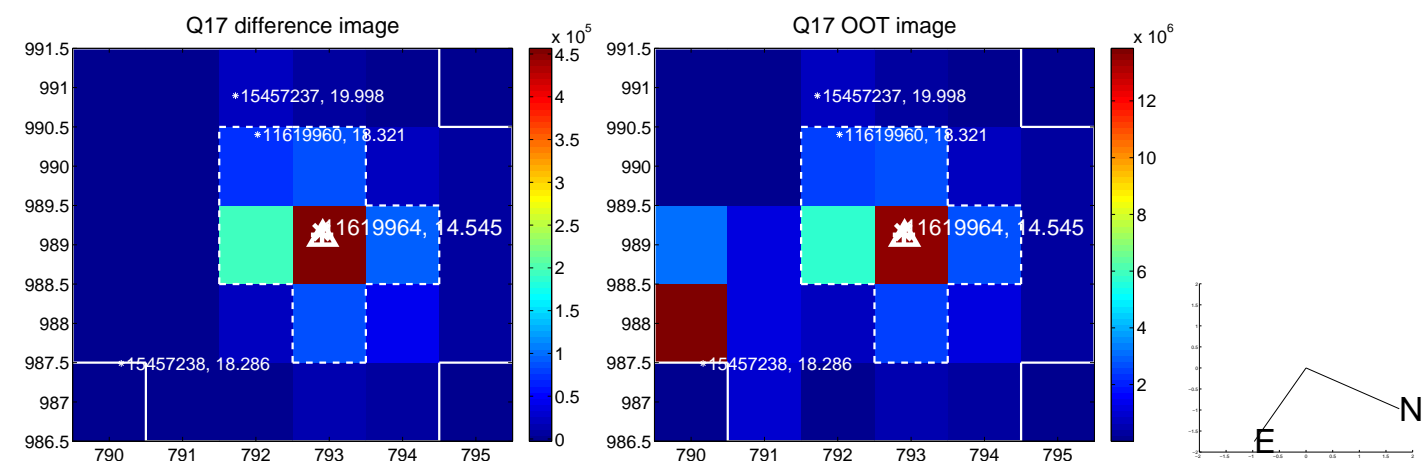
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

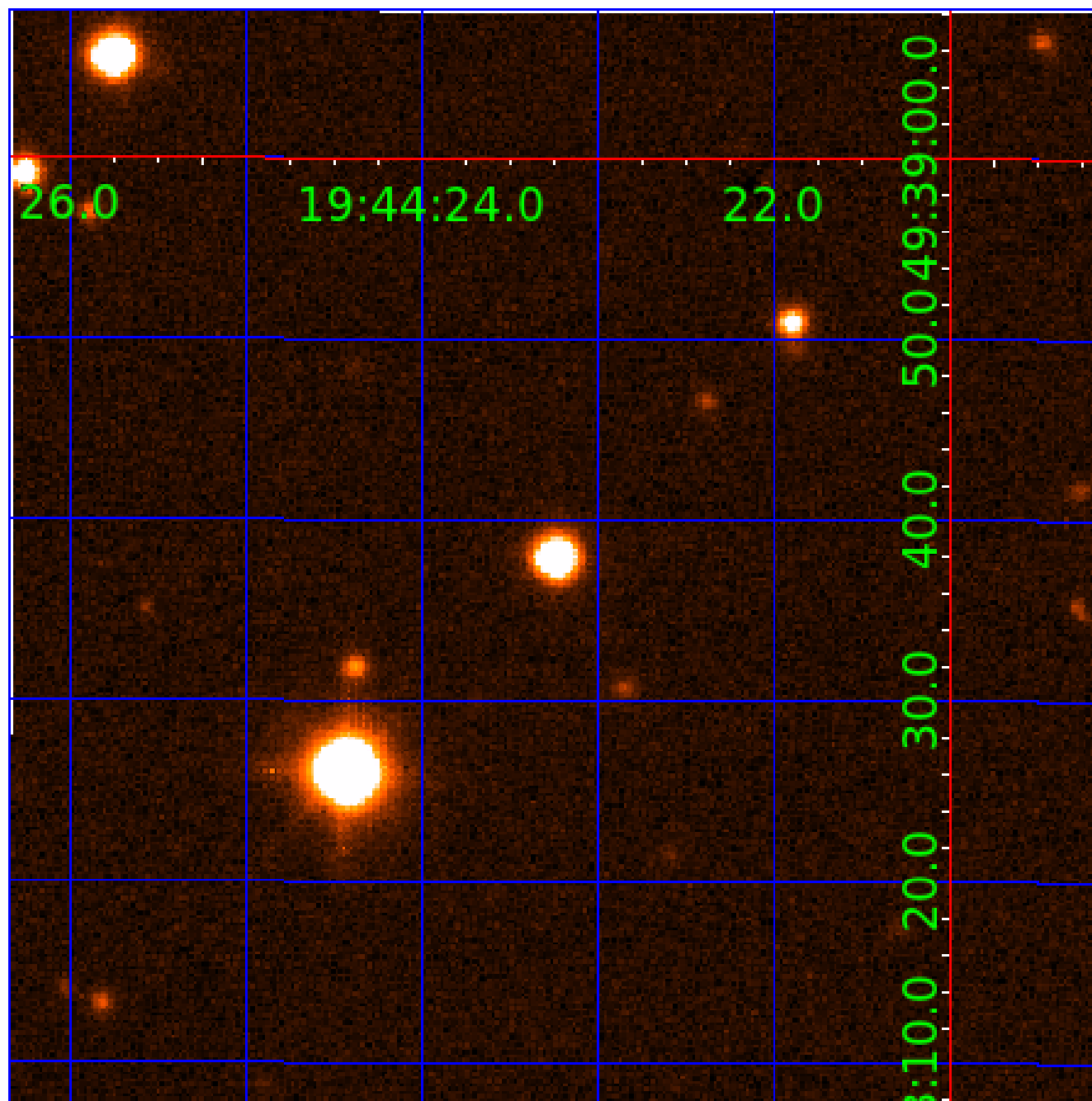


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 011619964

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011619964-01	OBS	7466.01	10.368553	132.718397	153114.2	4.391	7700.6	6493.1	0.94	5855	55.05	120.60
011619964-02	OBS	No	10.368555	137.473409	36946.4	3.975	1976.9	1794.5	0.94	5855	31.41	120.60
011619964-03	OBS	No	361.098314	373.839611	1043.2	19.966	16.0	12.8	0.94	5855	3.04	1.06

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011619964-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
011619964-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
011619964-03	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

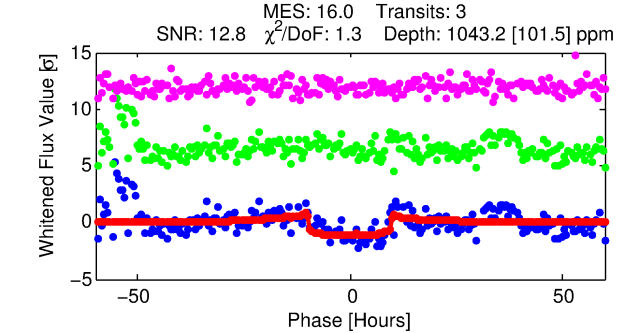
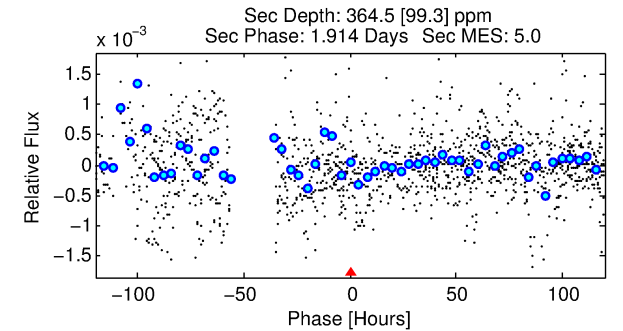
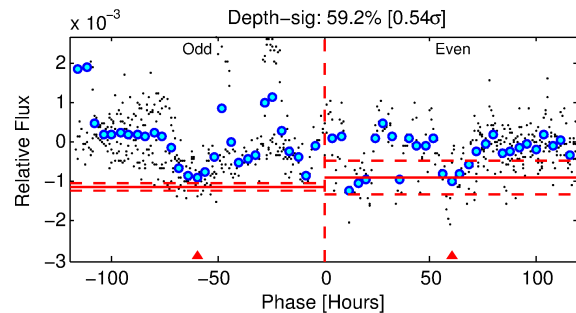
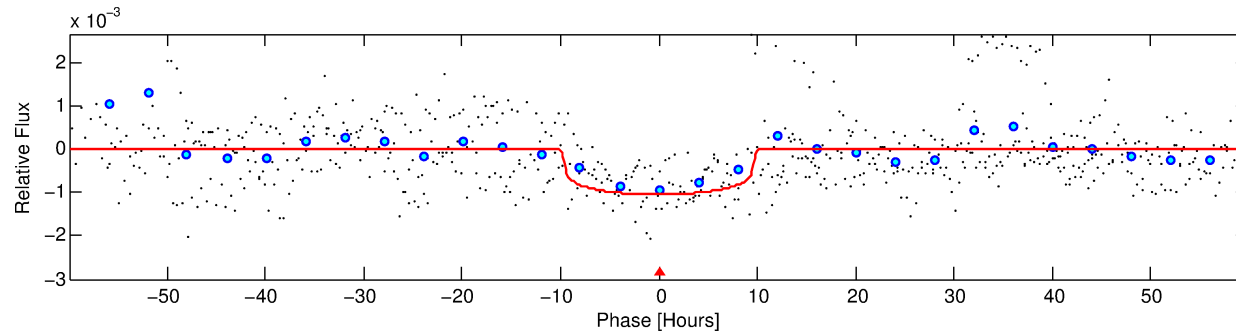
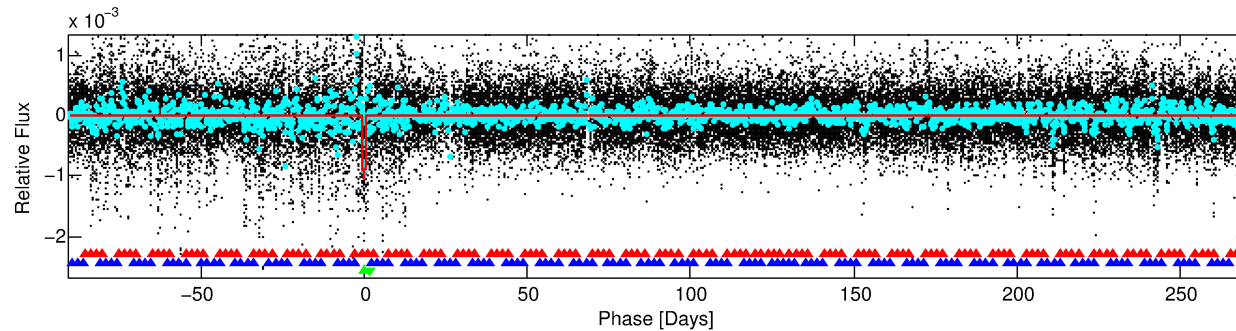
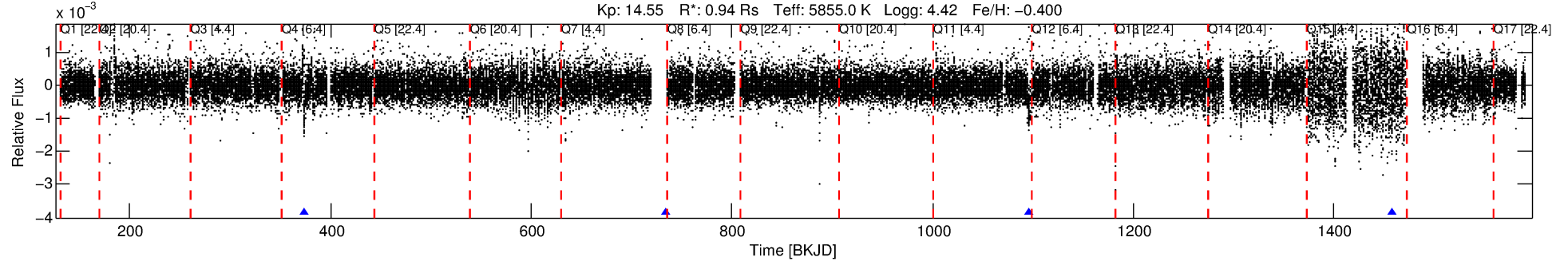
## Ephemeris Match Information For 011619964-03

No Significant Match Found

# DV One-Page Summary

KIC: 11619964 Candidate: 3 of 3 Period: 361.098 d  
KOI: K07466 Corr: No Ephemeris Match

Kp: 14.55 R\*: 0.94 Rs Teff: 5855.0 K Logg: 4.42 Fe/H: -0.400



## DV Fit Results:

Period = 361.09831 [0.00629] d  
Epoch = 373.8396 [0.0112] BKJD  
Rp/R\* = 0.0295 [0.0080]  
a/R\* = 140.94 [177.38]  
b = 0.14 [8.89]  
Seff = 1.06 [0.38]  
Teq = 259 [23] K  
Rp = 3.04 [1.17] Re  
a = 0.9407 [0.2177] AU  
Ag = 19160.70 [13340.46] [1.44σ]  
Teffp = 4707 [730] K [6.09σ]

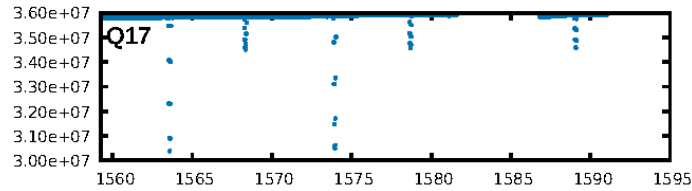
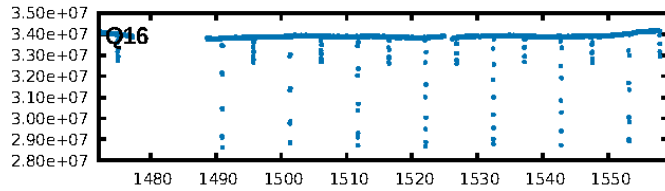
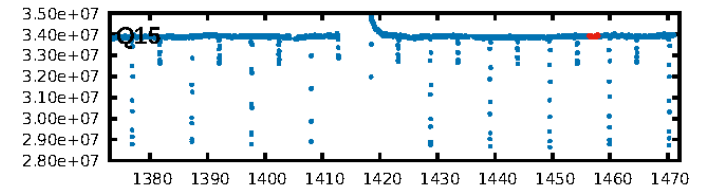
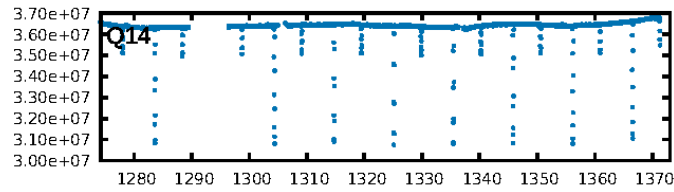
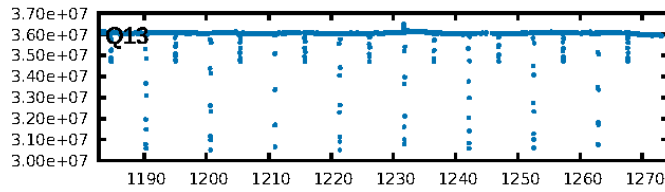
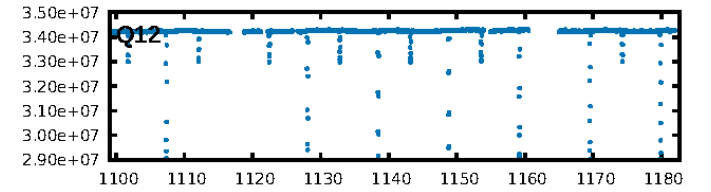
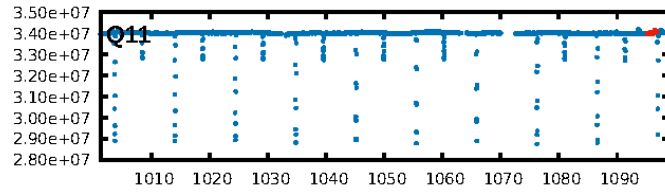
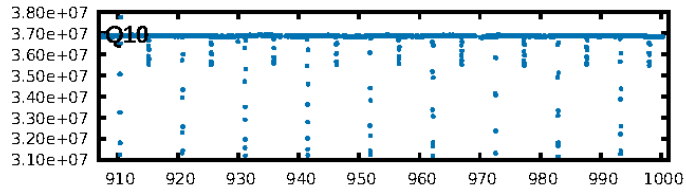
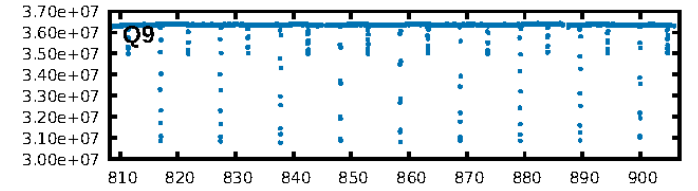
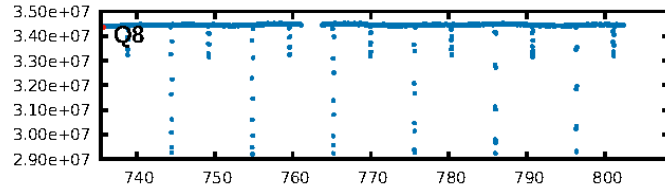
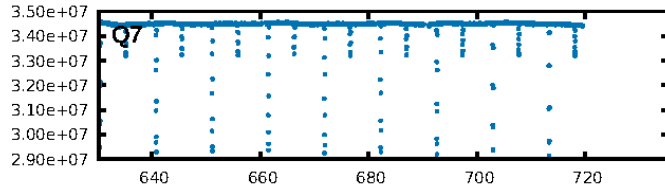
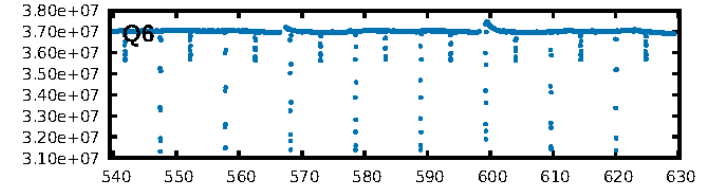
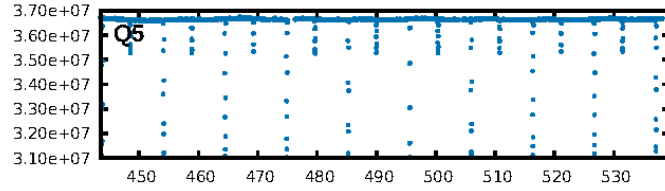
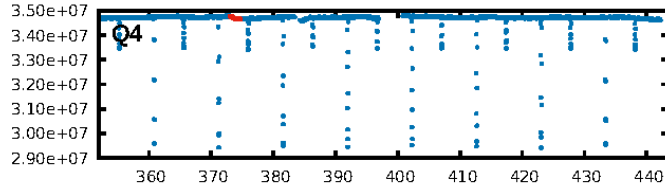
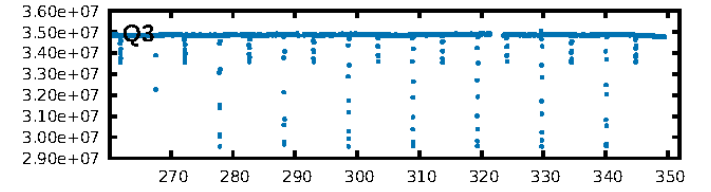
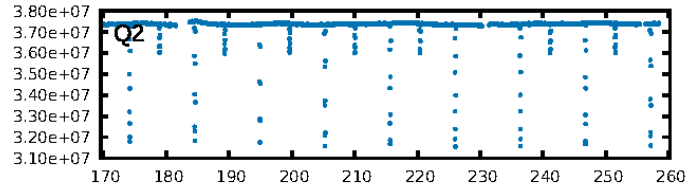
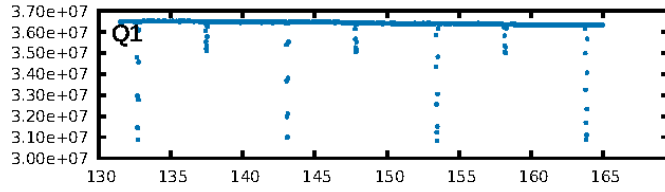
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [413.48σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 29.5%  
ModelChiSquareGof-sig: 93.2%  
Bootstrap-pfa: 3.09e-22  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.703  
Centroid-sig: 60.6%  
Centroid-so: 0.865 arcsec [1.69σ]  
OotOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-rm: N/A  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [1/1]

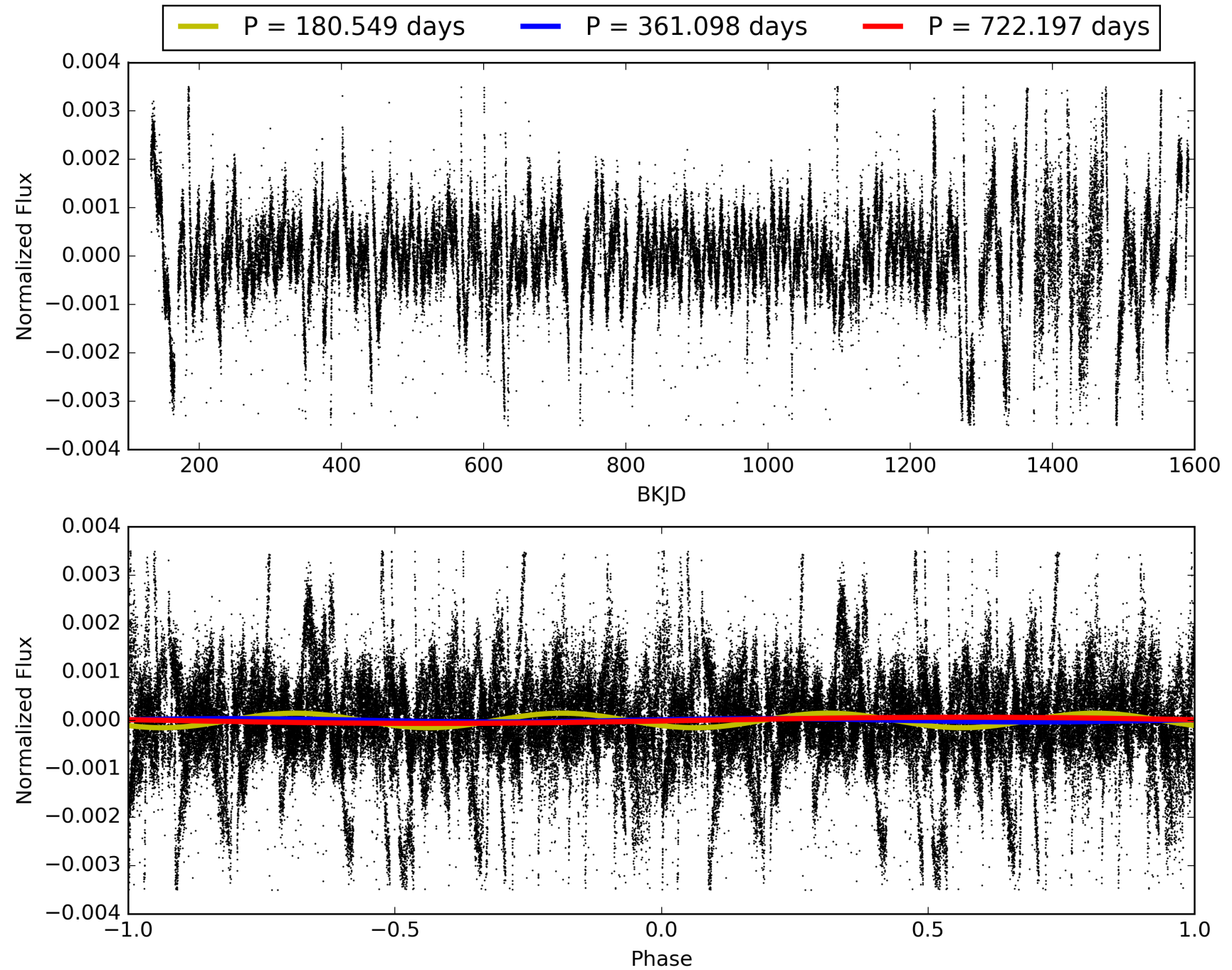
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:17:40 Z

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

# TCE 011619964-03, PDC Light Curves

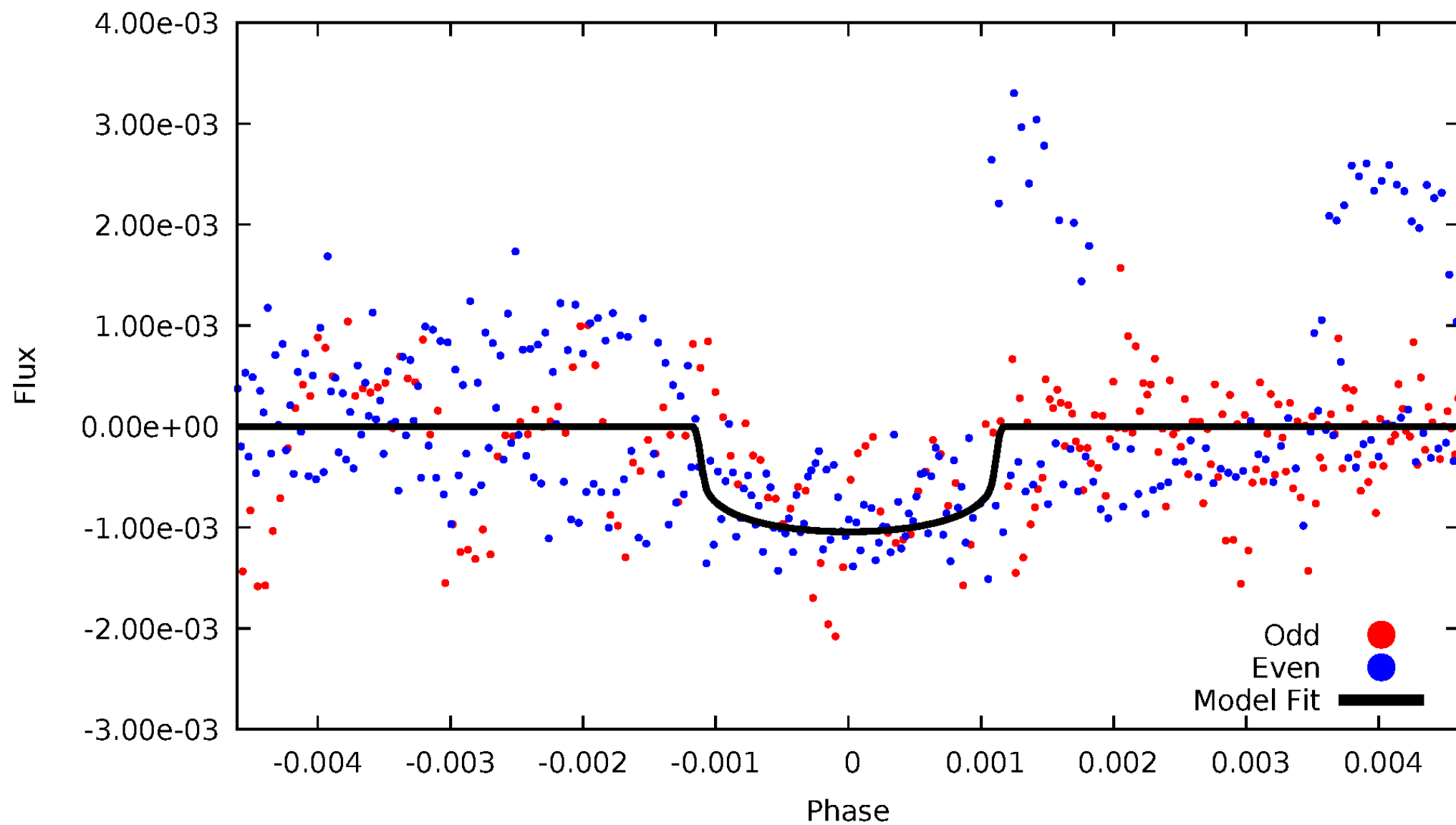


# TCE 011619964-03



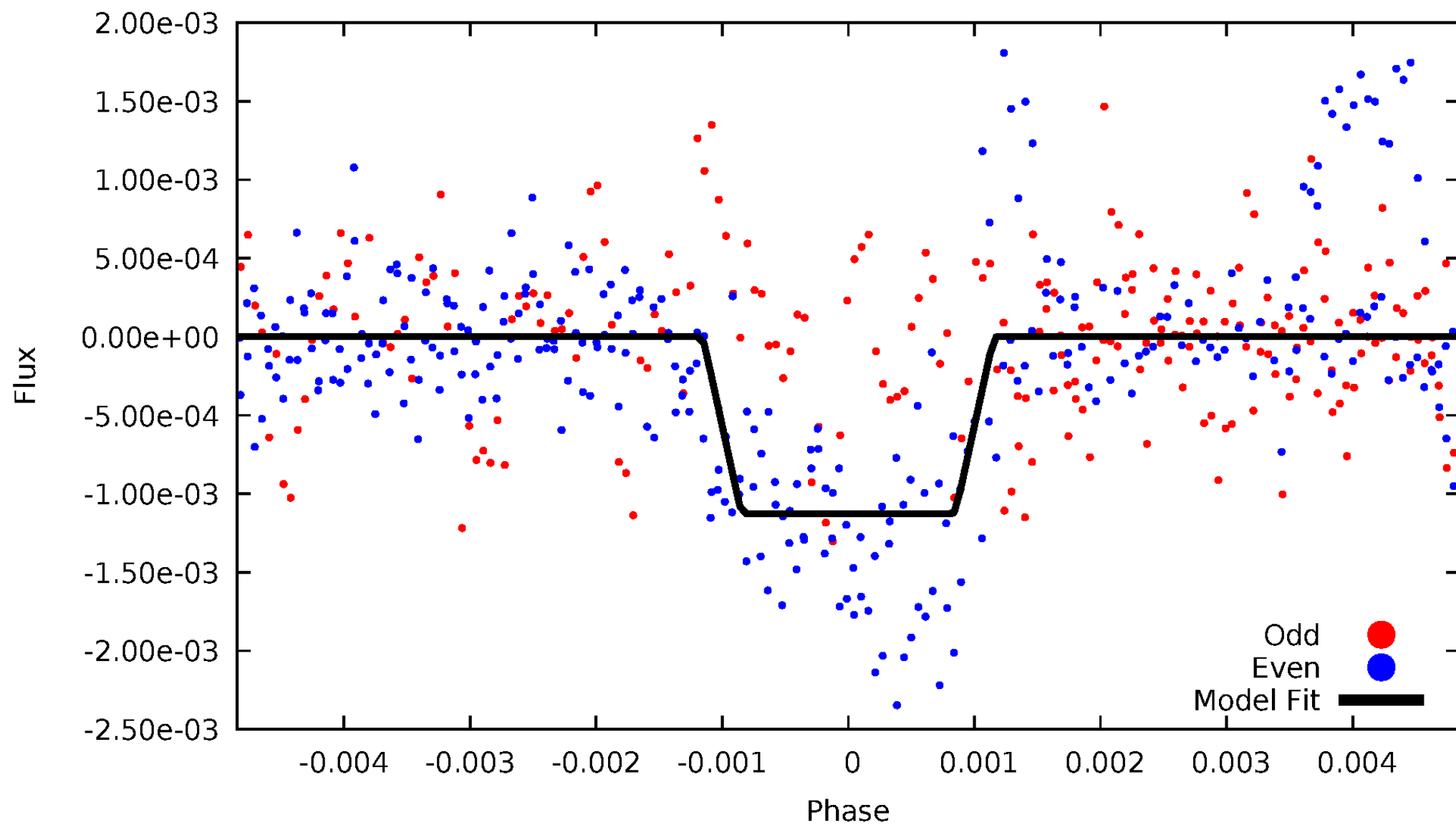
# DV Odd/Even

TCE 011619964-03



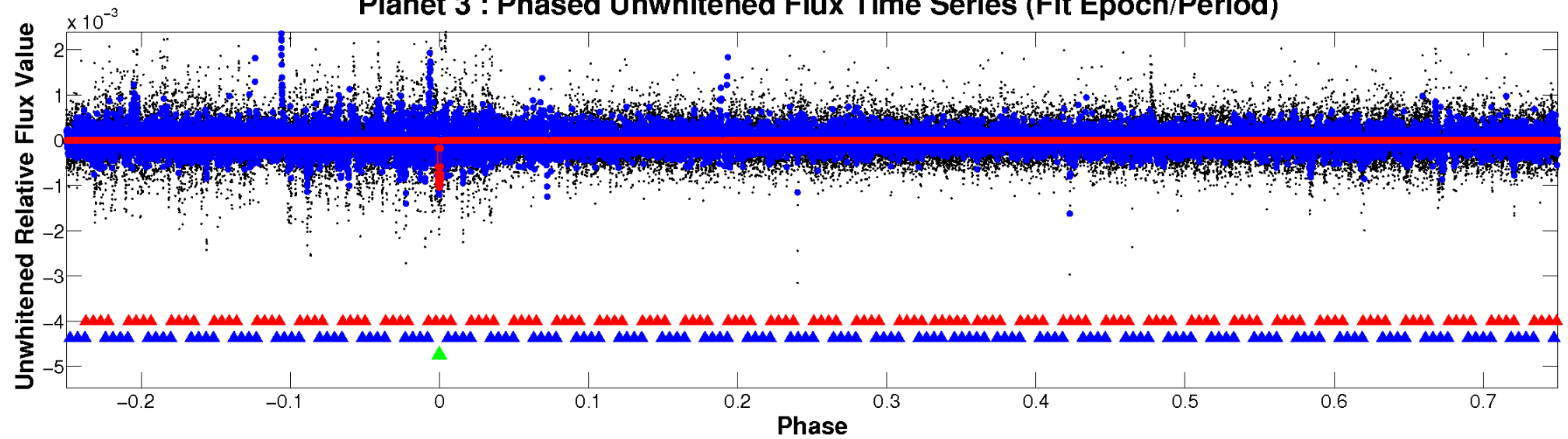
# ALT Odd/Even

TCE 011619964-03

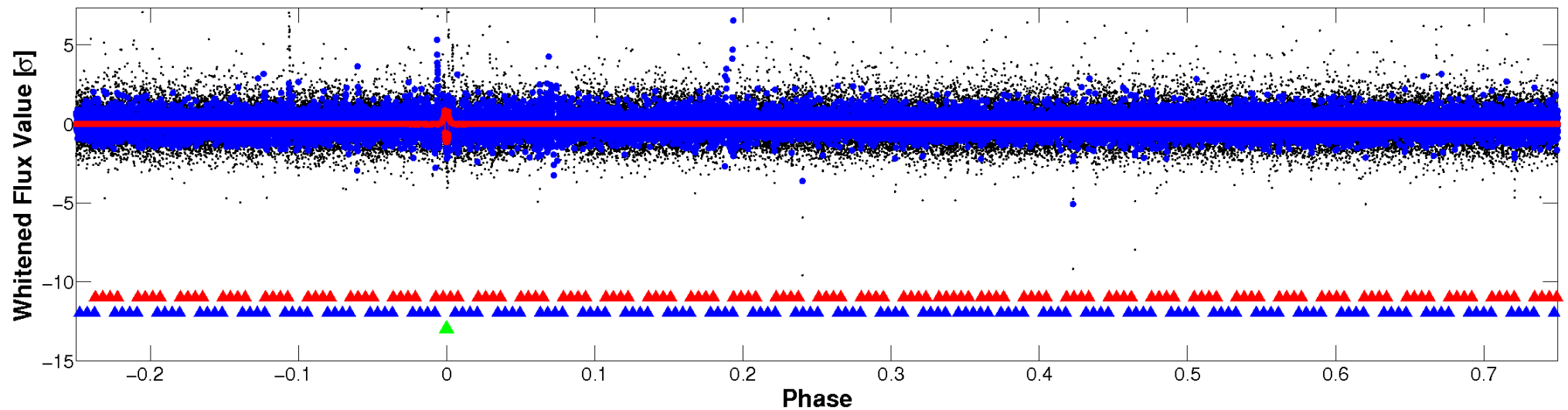


# Non-Whitened Vs. Whitened Light Curve

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

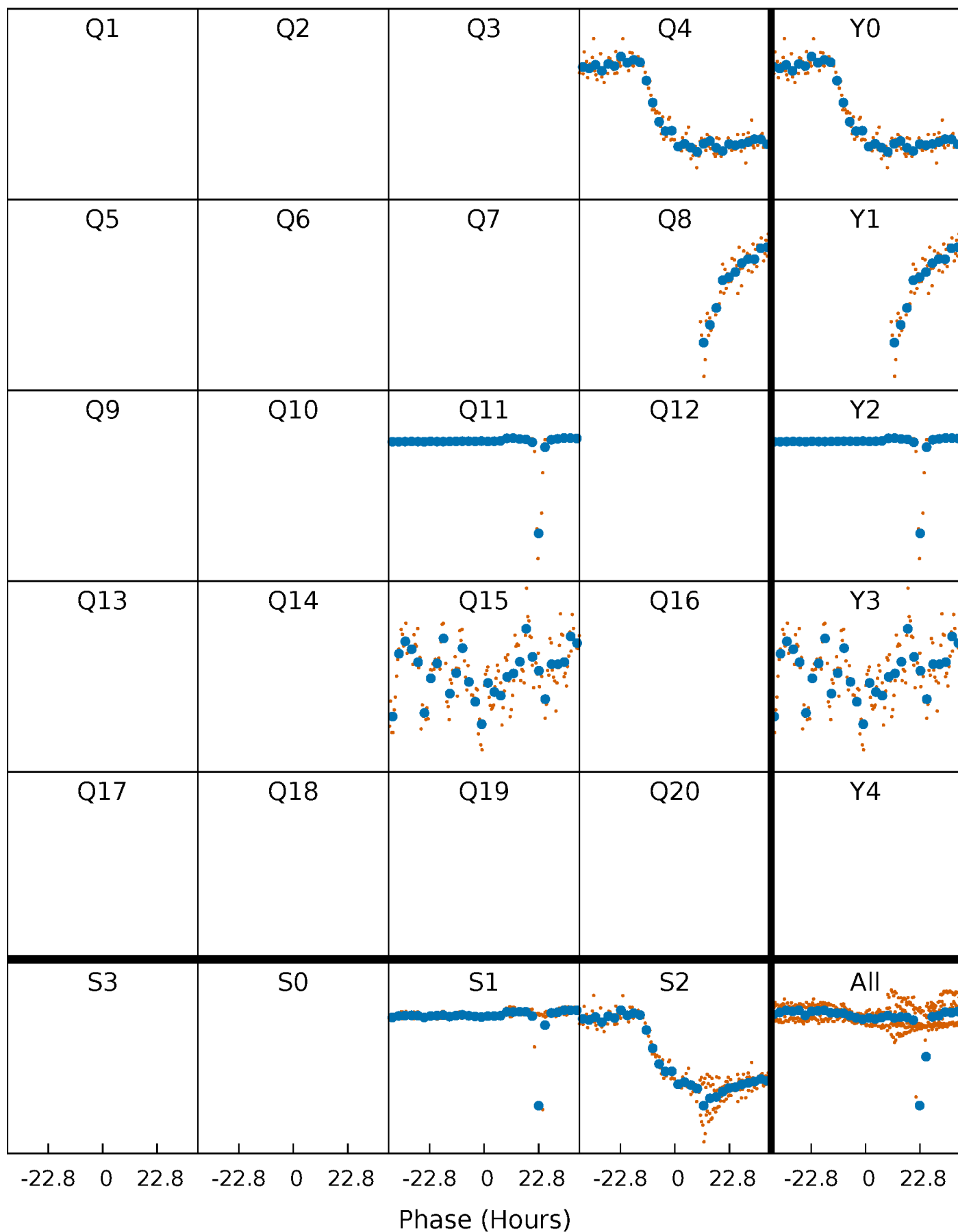


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

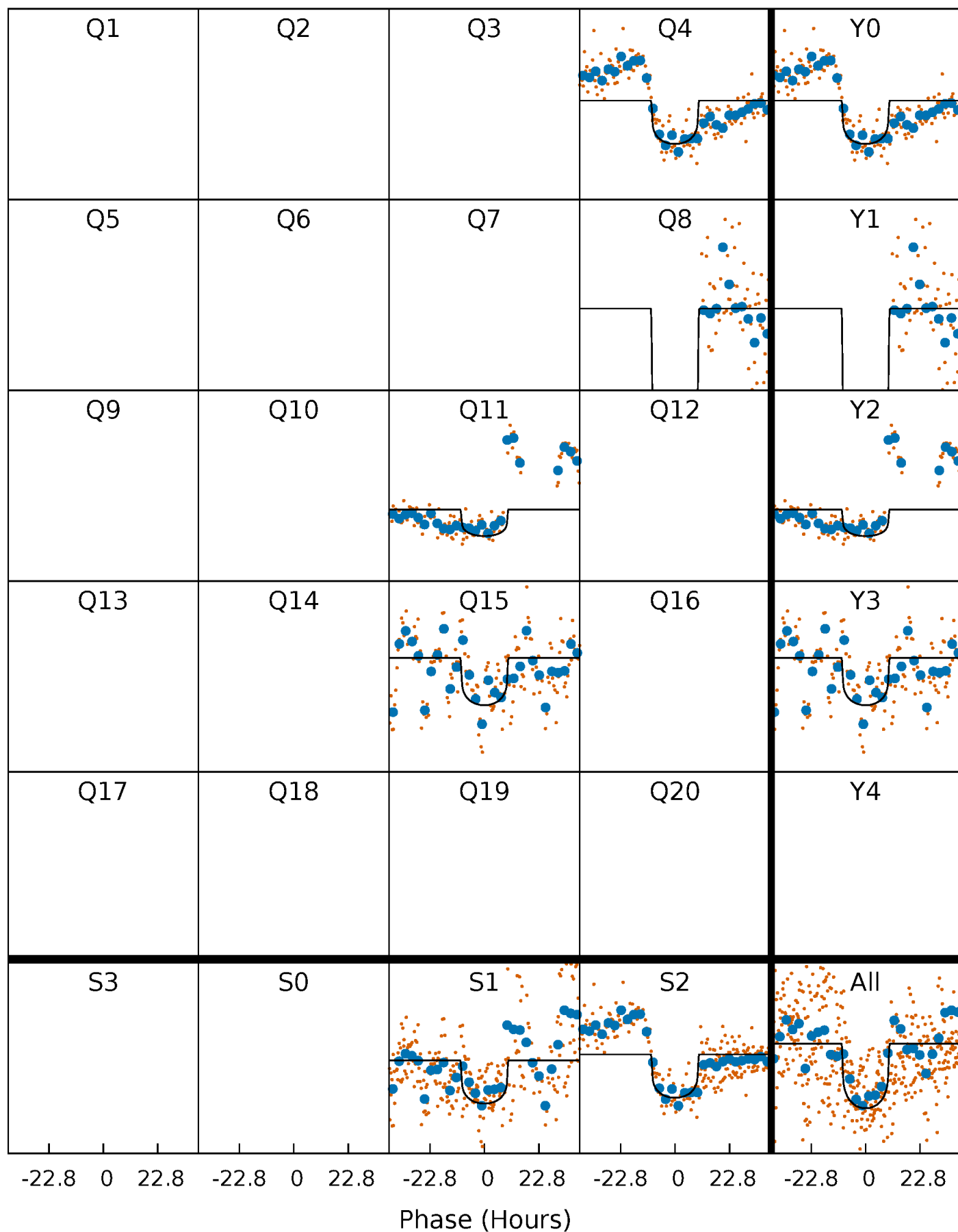
TCE 011619964-03     $P=361.098314$  Days     $T_0=373.839611$  (BKJD)





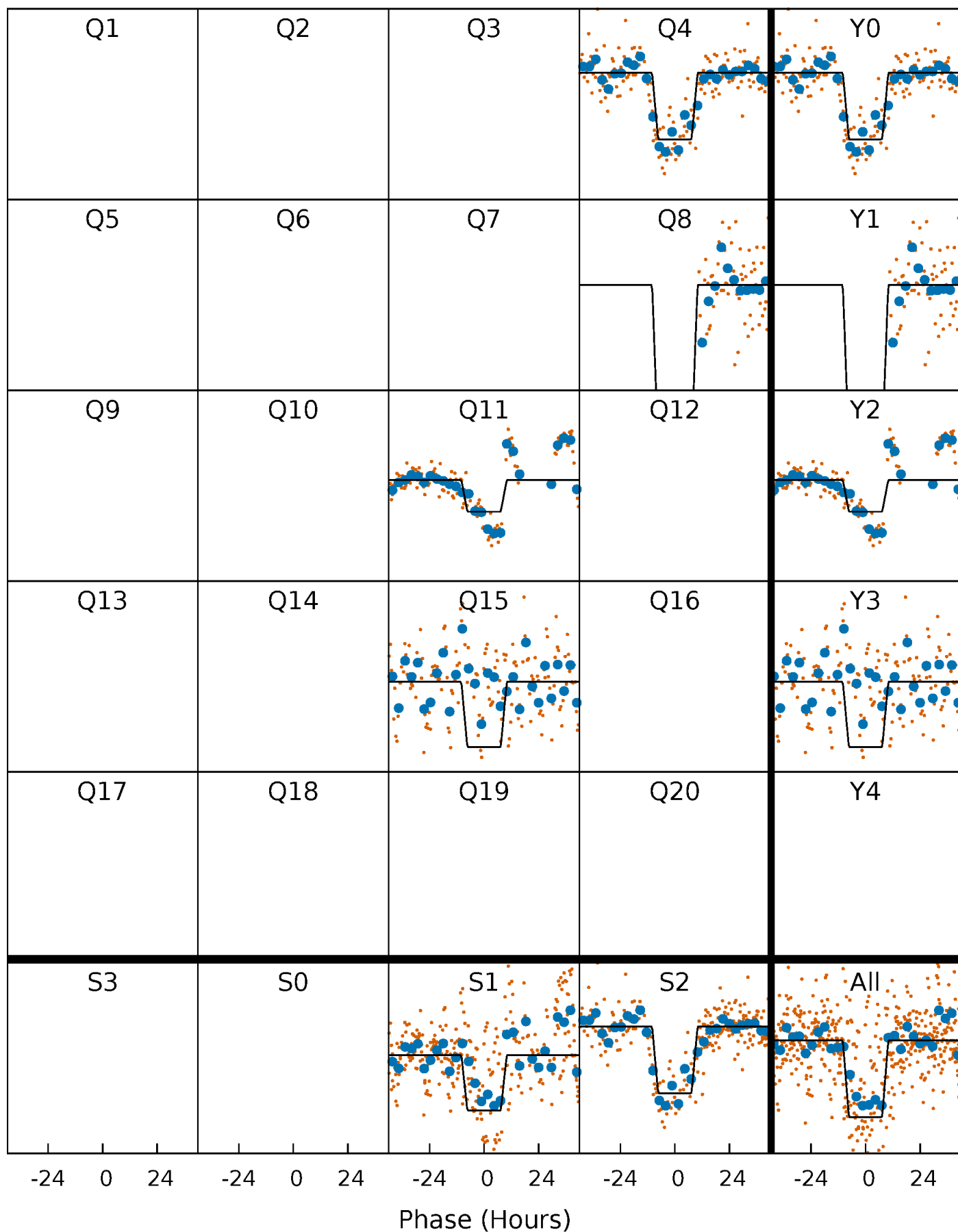
# DV Quarter-Phased Transit Curves

TCE 011619964-03     $P=361.098314$  Days     $T_0=373.839611$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

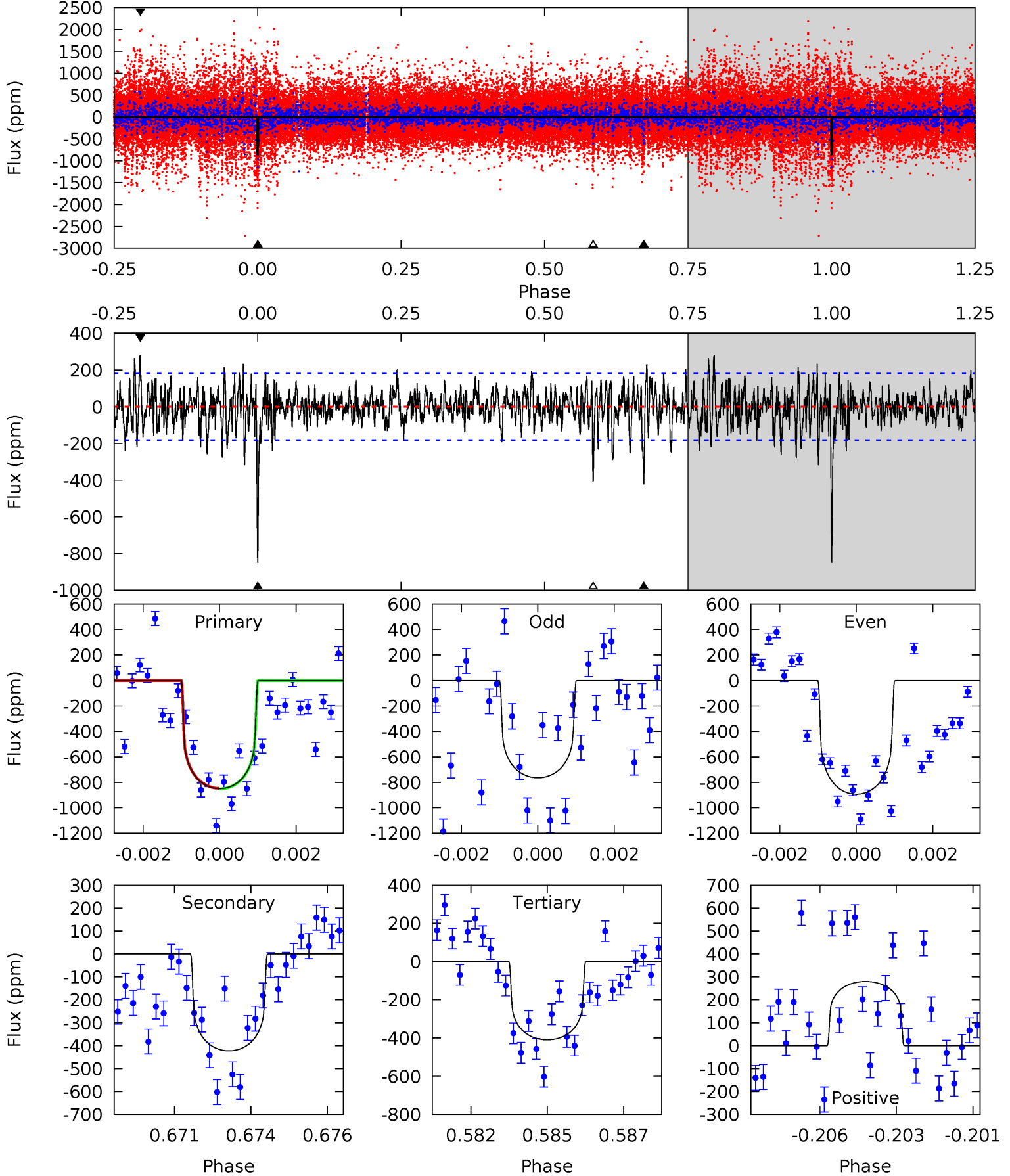
TCE 011619964-03 P=361.101872 Days  $T_0=373.837966$  (BKJD)



# DV Model-Shift Uniqueness Test

011619964-03, P = 361.098314 Days, E = 12.741297 Days

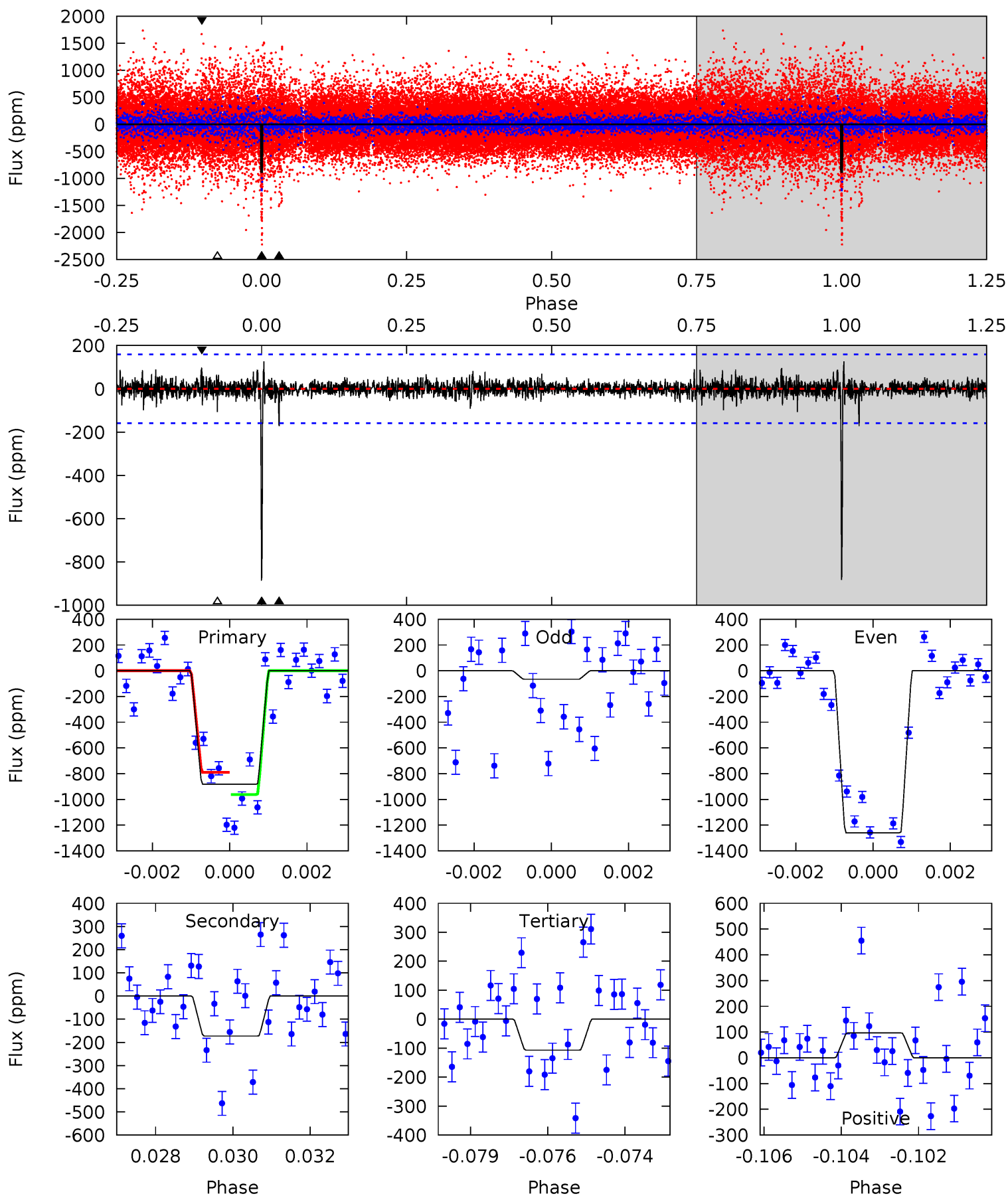
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.7	12.3	11.9	8.13	5.30	3.04	2.34	12.8	16.6	0.38	4.17	1.52	1.08	0.25	0.06



# Alt Model-Shift Uniqueness Test

011619964-03, P = 361.101872 Days, E = 12.736094 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
29.4	5.77	3.57	3.22	5.30	3.05	0.70	25.9	26.2	2.20	2.55	14.2	0.76	0.13	2.88



### Stellar Parameters For KIC 011619964

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5855^{+158}_{-175}$	$4.418^{+0.124}_{-0.186}$	$-0.400^{+0.300}_{-0.300}$	$0.944^{+0.258}_{-0.139}$	$0.852^{+0.117}_{-0.072}$	$1.426^{+0.776}_{-0.684}$
	+3%/-3%	+3%/-4%	+75%/-75%	+27%/-15%	+14%/-8%	+54%/-48%
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 011619964-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-423 \pm 34$	$3.04^{+0.98}_{-0.93}$	$365^{+26}_{-22}$	$5043^{+832}_{-528}$	$22620^{+23341}_{-10083}$
Alt.	$-173 \pm 30$	$3.46^{+1.01}_{-0.89}$	$363^{+26}_{-21}$	$4013^{+438}_{-325}$	$6898^{+6278}_{-2750}$

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

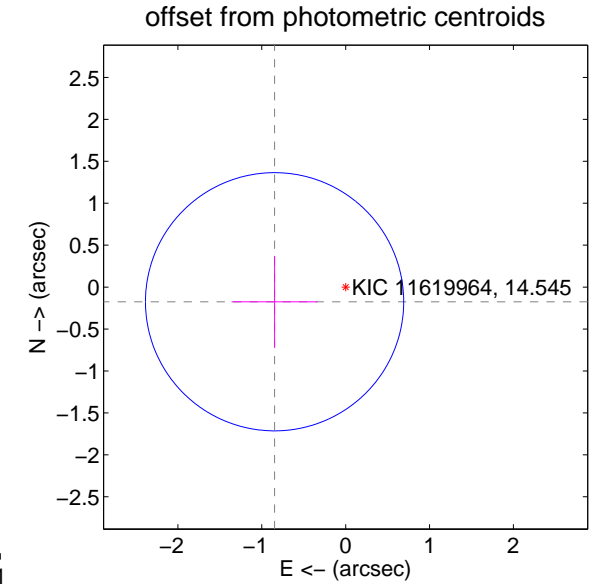
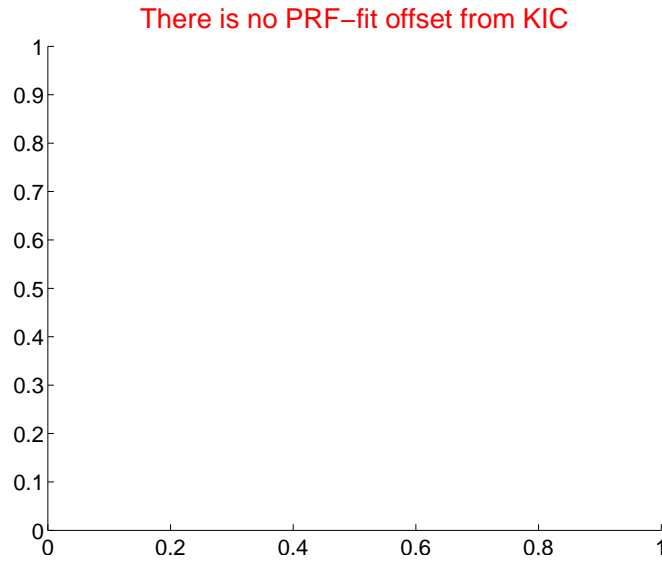
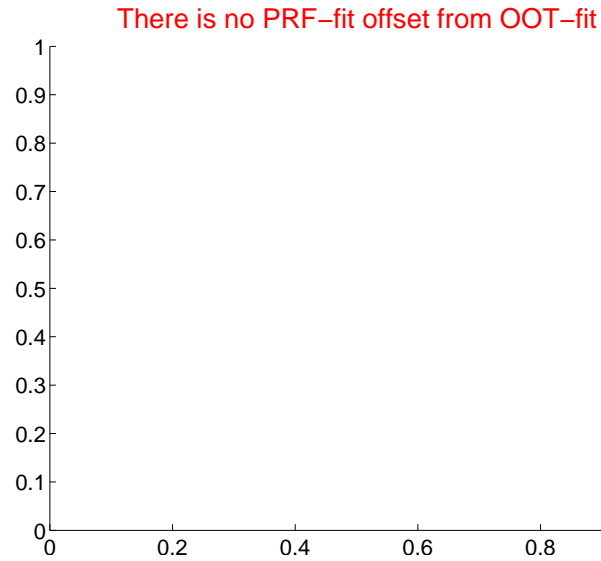
## DV Centroid Data

Supplemental centroid analysis for 011619964-03. Kepler magnitude: 14.54. Transit SNR 12.82

There are 0 quarters with good PRF difference image offsets

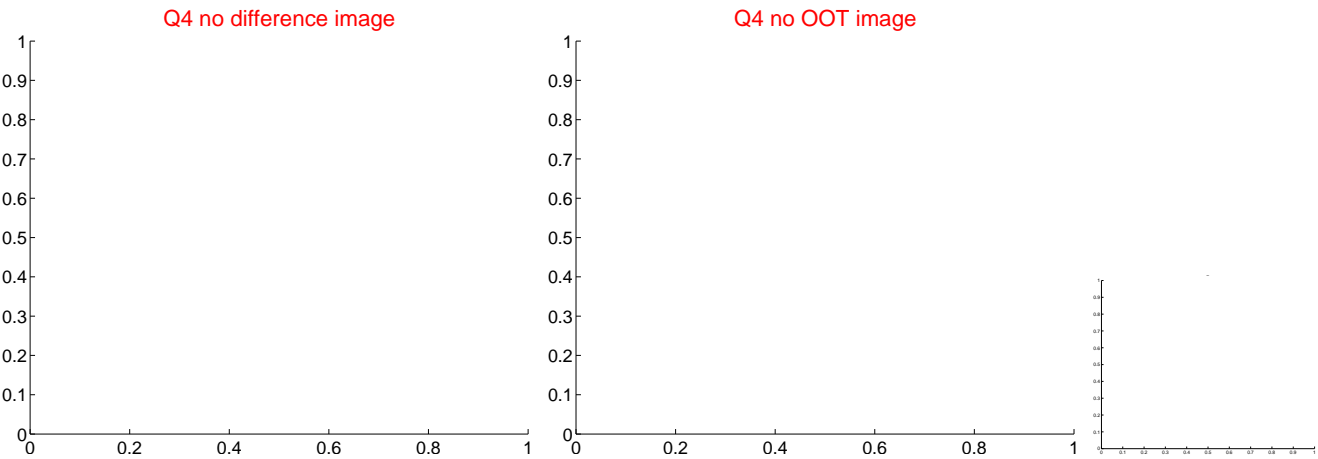
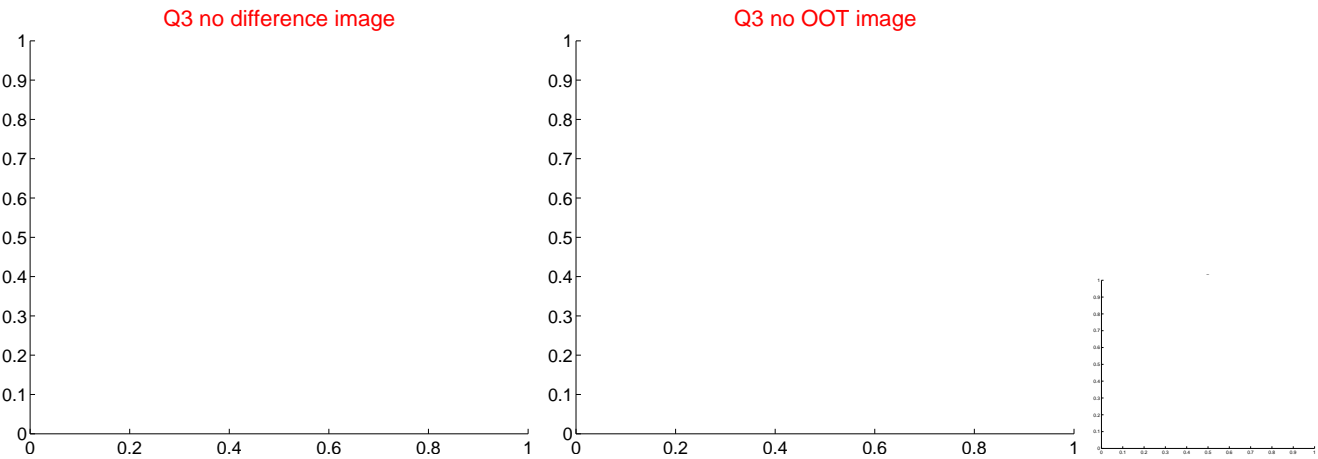
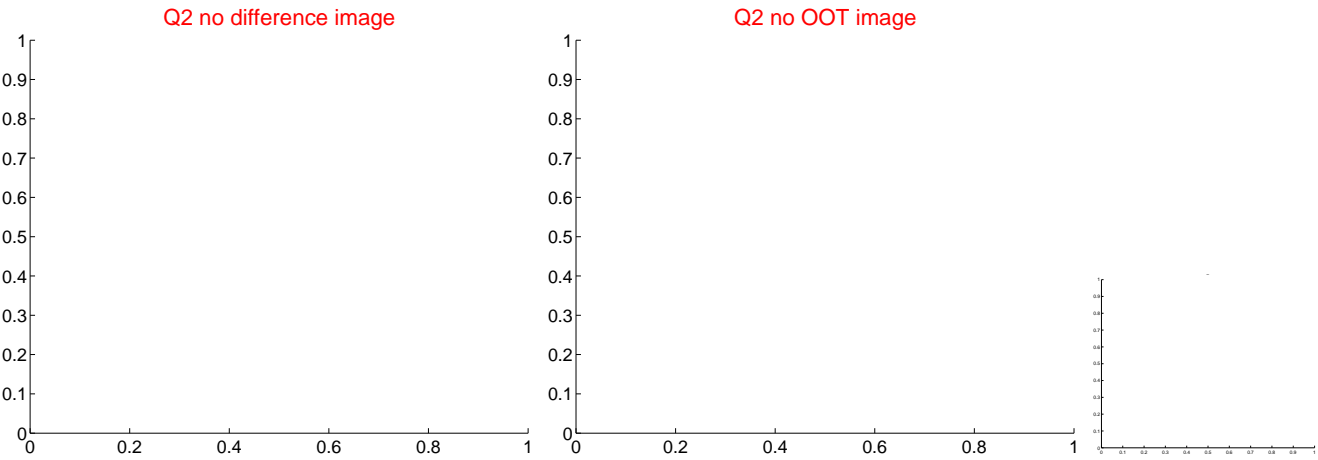
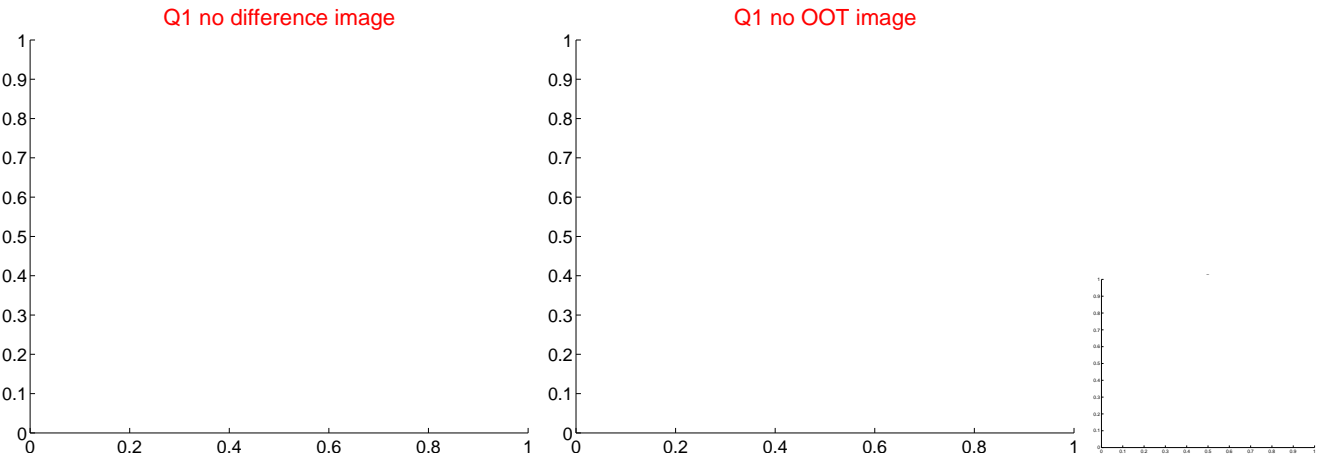
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$0.87 \pm 0.51$	1.69	$0.85 \pm 0.51$	$-0.17 \pm 0.55$



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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



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



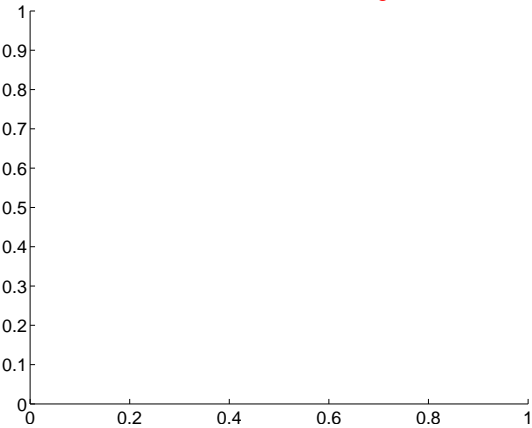


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

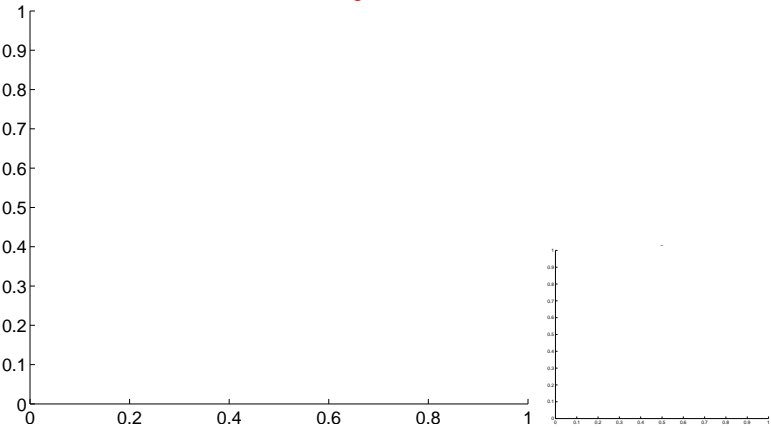


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

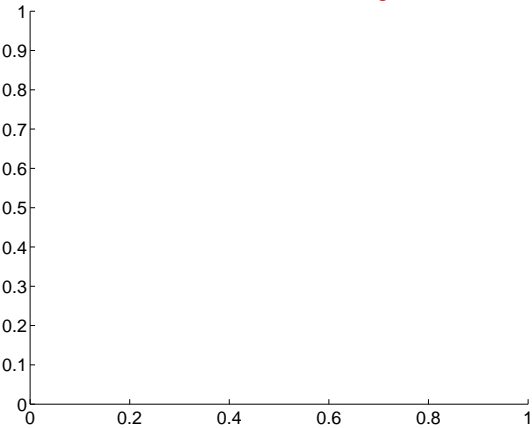
Q13 no difference image



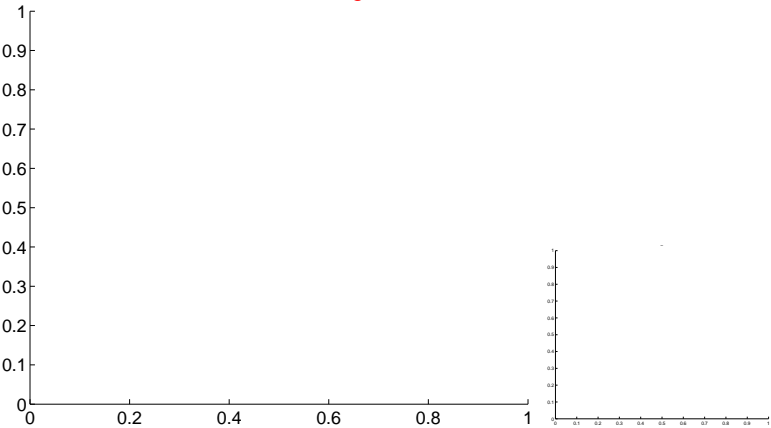
Q13 no OOT image



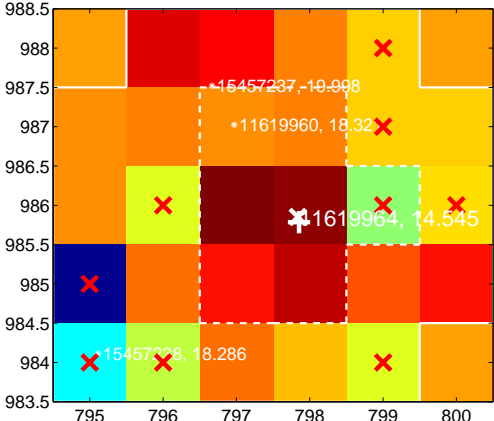
Q14 no difference image



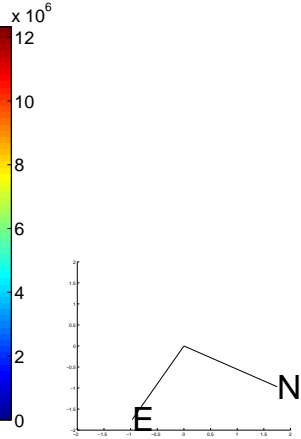
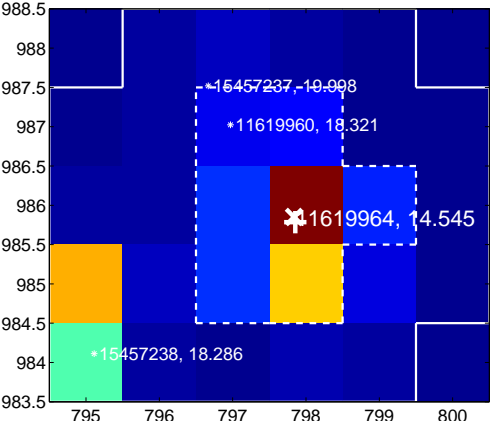
Q14 no OOT image



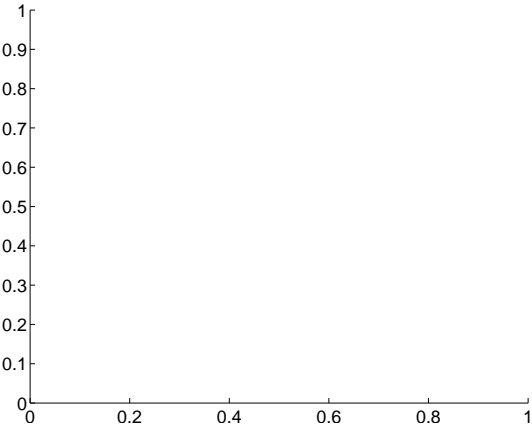
Q15 difference image. Poor Quality



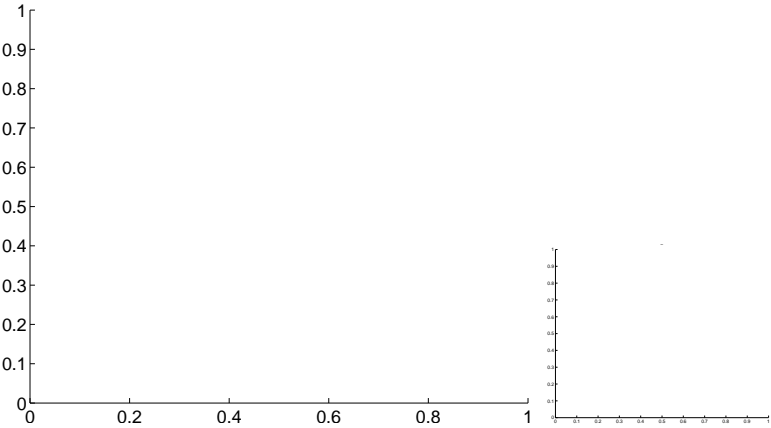
Q15 OOT image



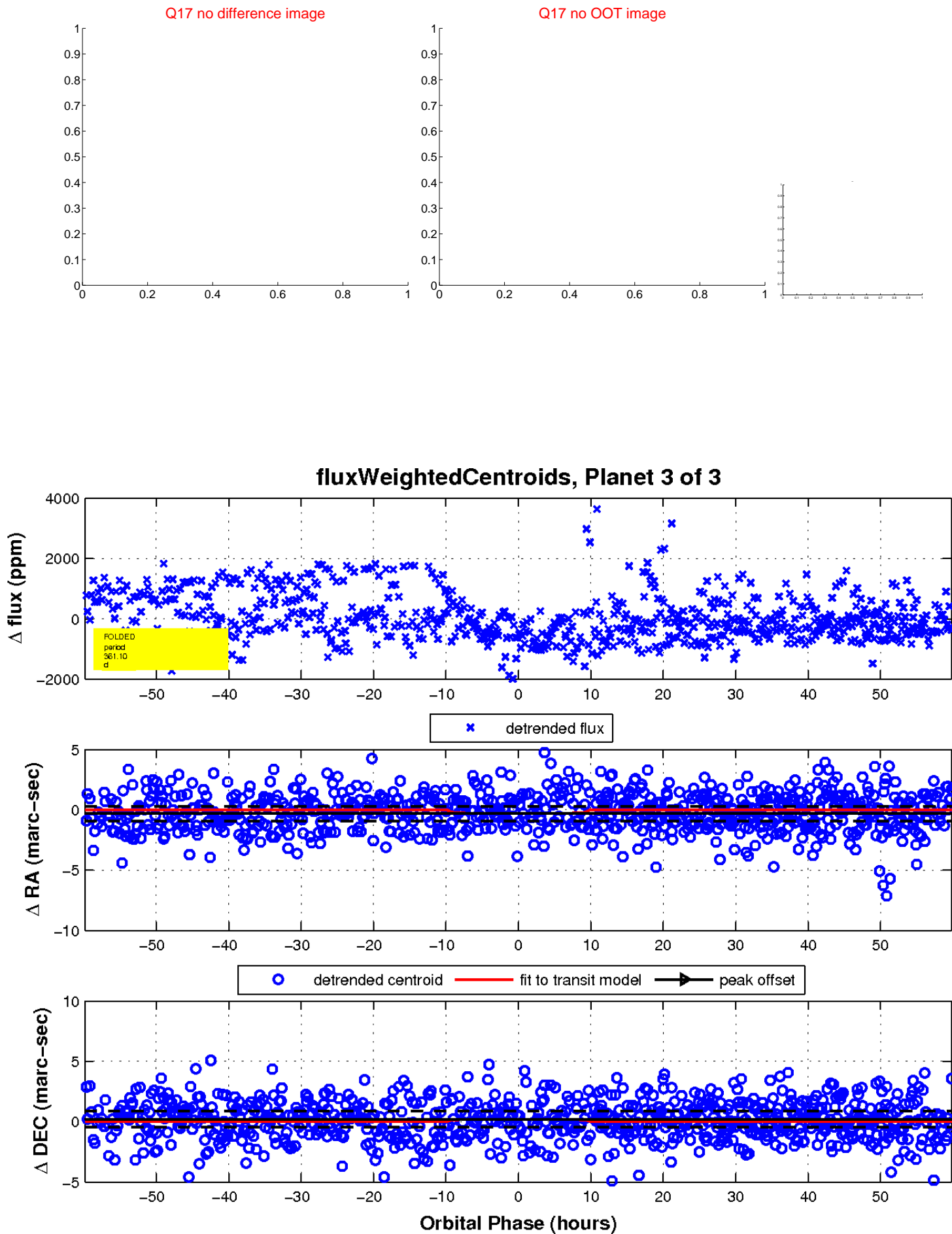
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

