

KIC 005871918

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})
005871918-01	OBS	6632.01	12.643306	139.760334	234835.8	5.454	6626.6	4594.3	0.56	3977	40.47	9.09
005871918-02	OBS	No	12.643312	132.152619	90429.0	3.052	2127.7	1705.3	0.56	3977	25.88	9.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005871918-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005871918-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 for comment definitions.

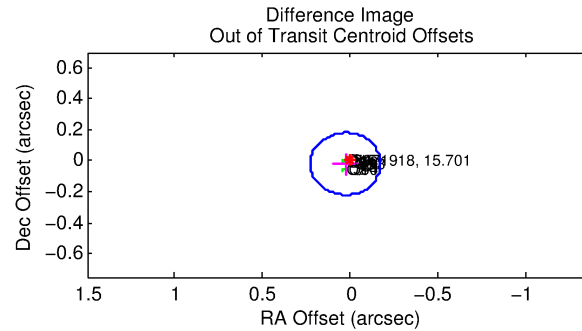
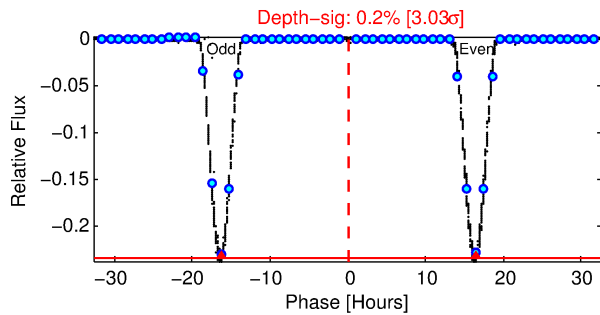
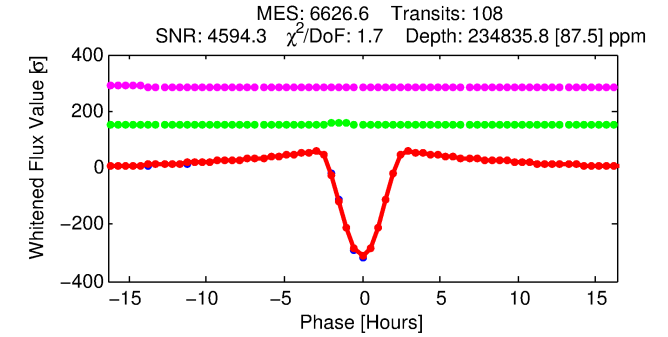
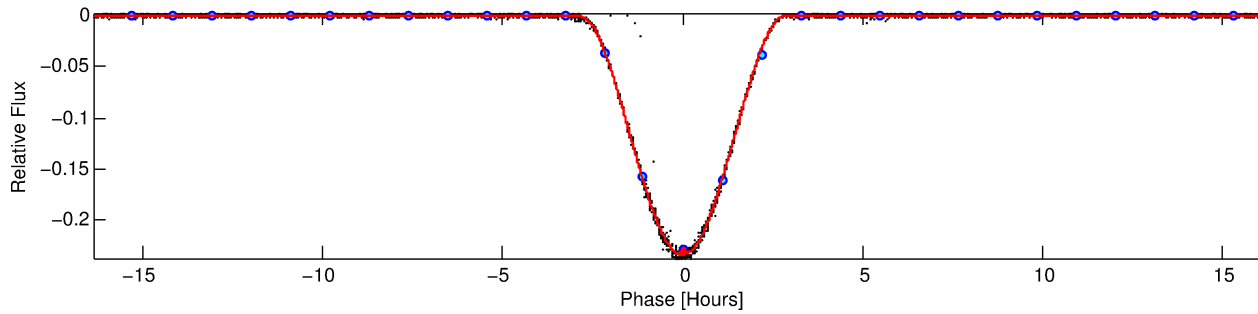
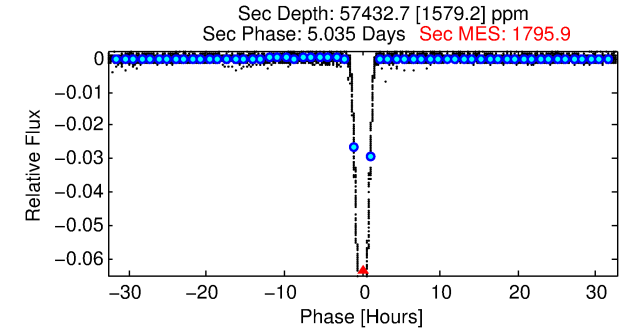
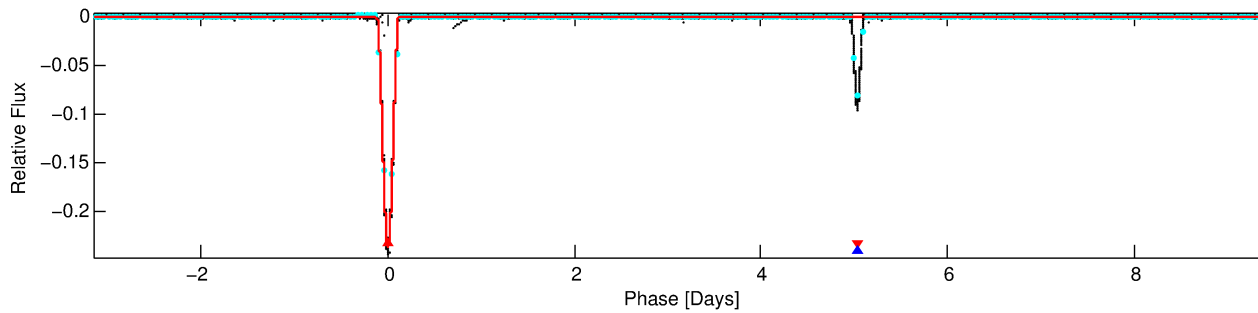
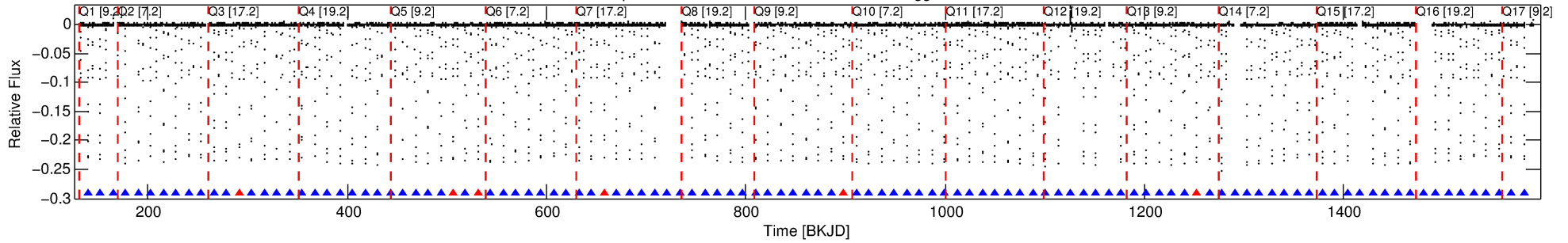
Ephemeris Match Information For 005871918-01

No Significant Match Found

DV One-Page Summary

KIC: 5871918 Candidate: 1 of 2 Period: 12.643 d
KOI: K06632.01 Corr: 0.997

Kp: 15.70 R*: 0.56 Rs Teff: 3977.0 K Logg: 4.70 Fe/H: -0.100



DV Fit Results:

Period = 12.64331 [0.00000] d
Epoch = 139.7603 [0.0000] BKJD
Rp/R* = 0.6598 [0.0083]
a/R* = 25.02 [0.06]
b = 0.87 [0.01]
Seff = 9.09 [0.94]
Teq = 443 [12] K
Rp = 40.47 [2.71] Re
a = 0.0883 [0.0045] AU
Ag = 150.30 [11.53] [12.94σ]
Teffp = 2397 [53] K [36.28σ]

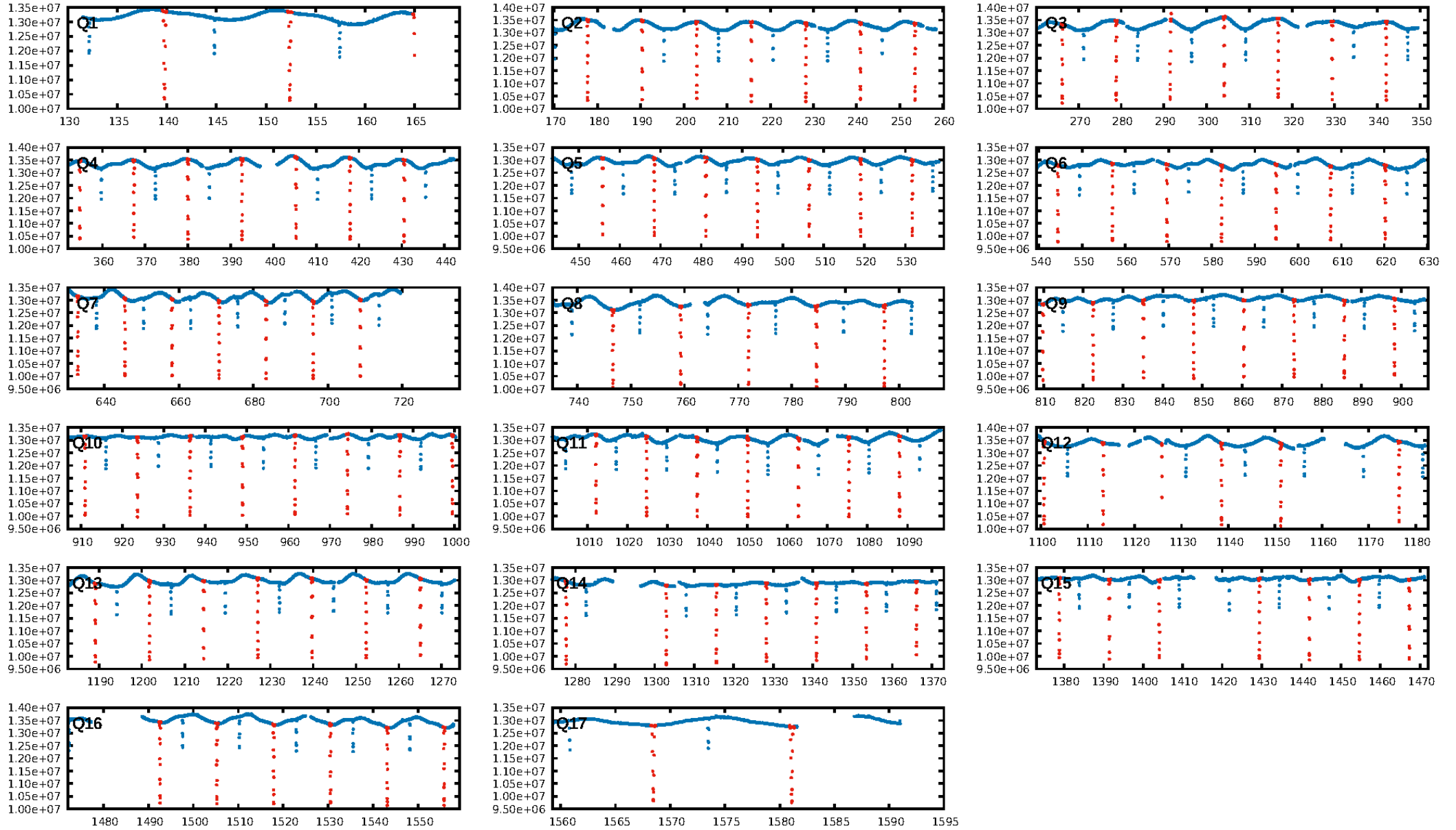
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.94 [97/103]
GhostDiagnostic-chr: 2.232
Centroid-sig: 0.0%
Centroid-so: 0.081 arcsec [43.14σ]
OotOffset-rm: 0.034 arcsec [0.51σ]
KicOffset-rm: 0.122 arcsec [1.80σ]
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]

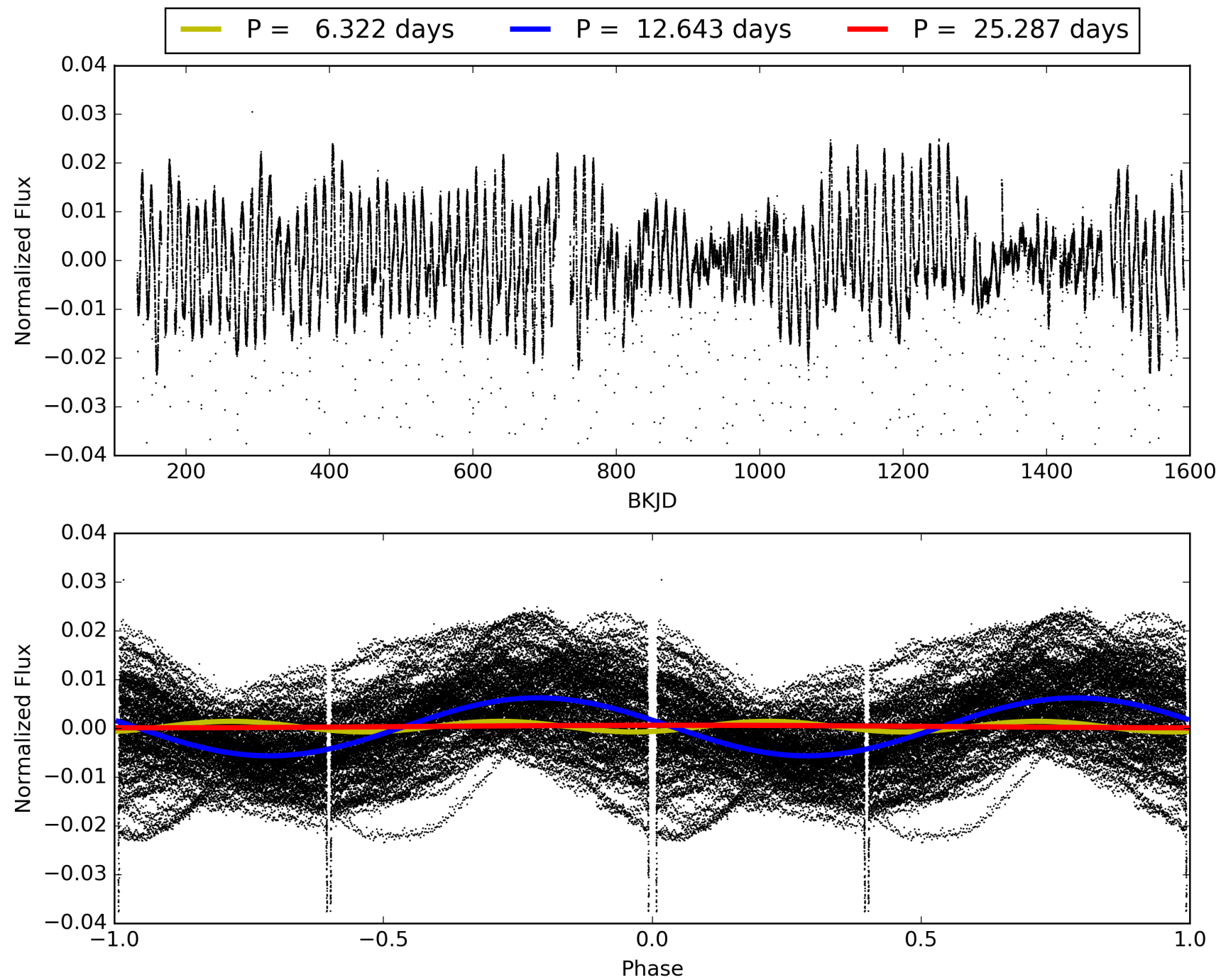
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:29:40 Z

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

TCE 005871918-01, PDC Light Curves

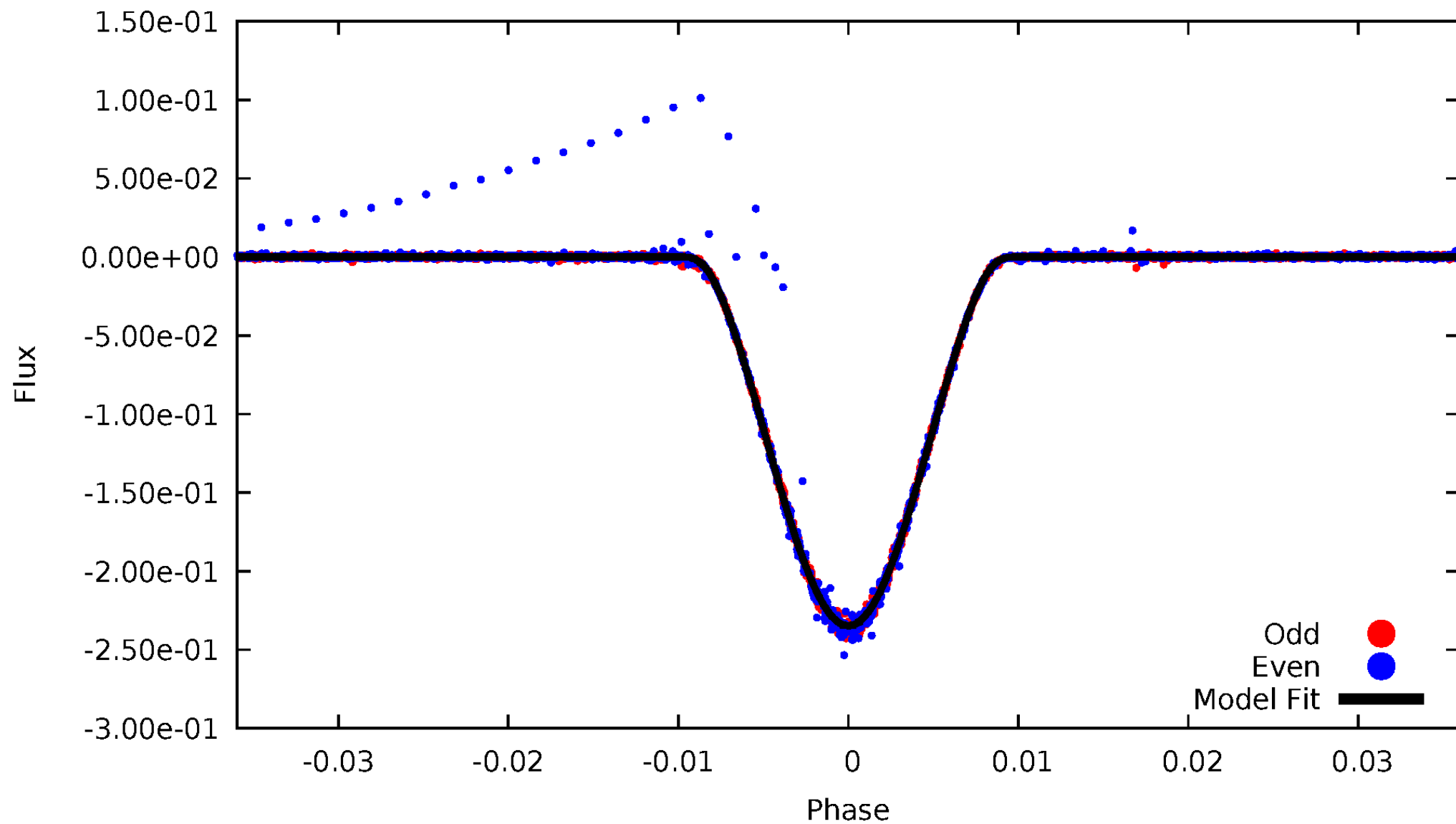


TCE 005871918-01



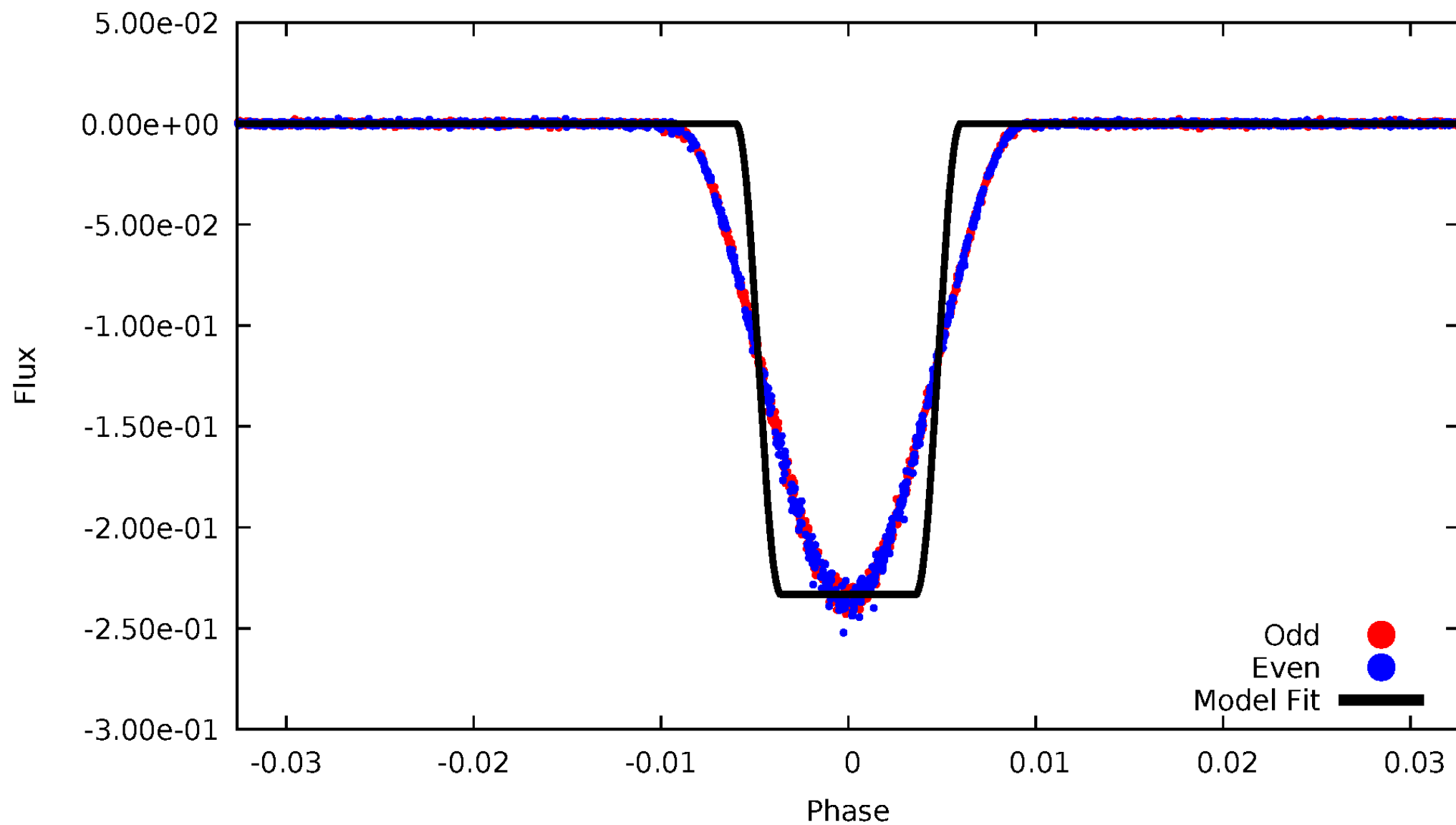
DV Odd/Even

TCE 005871918-01



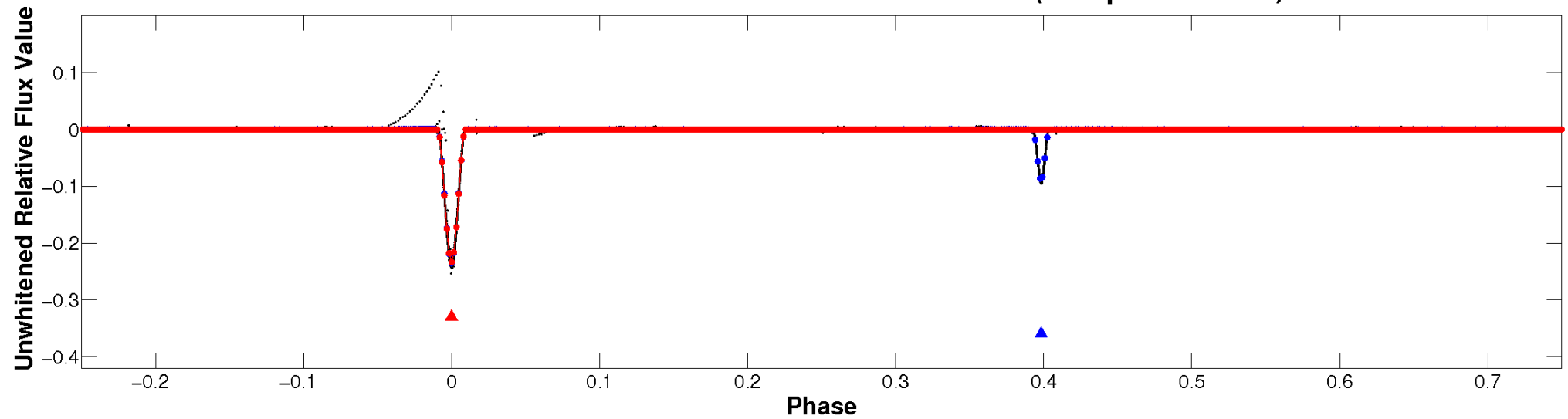
ALT Odd/Even

TCE 005871918-01

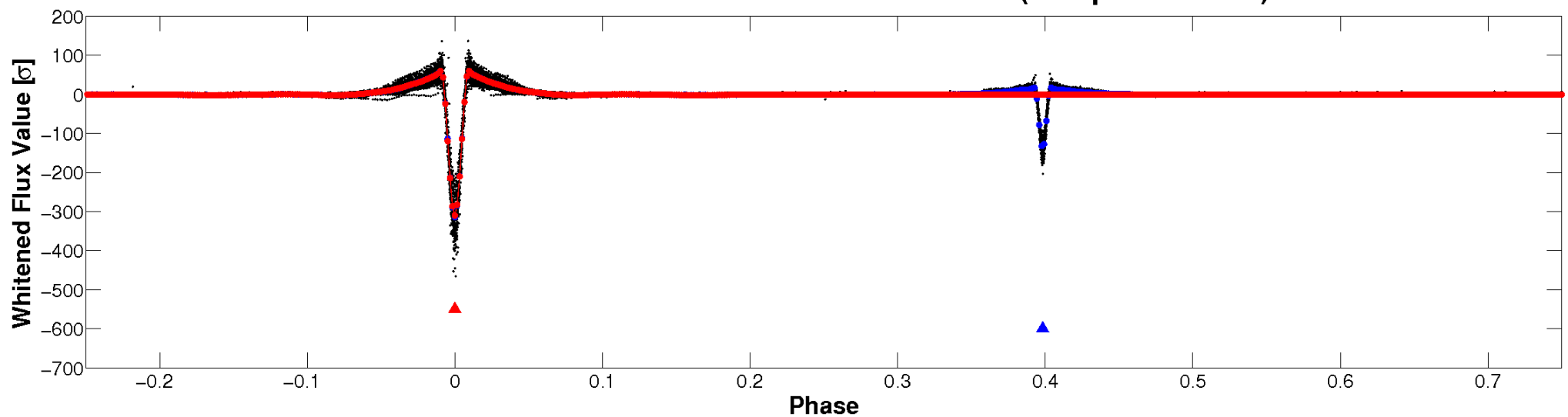


Non-Whitened Vs. Whitened Light Curve

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

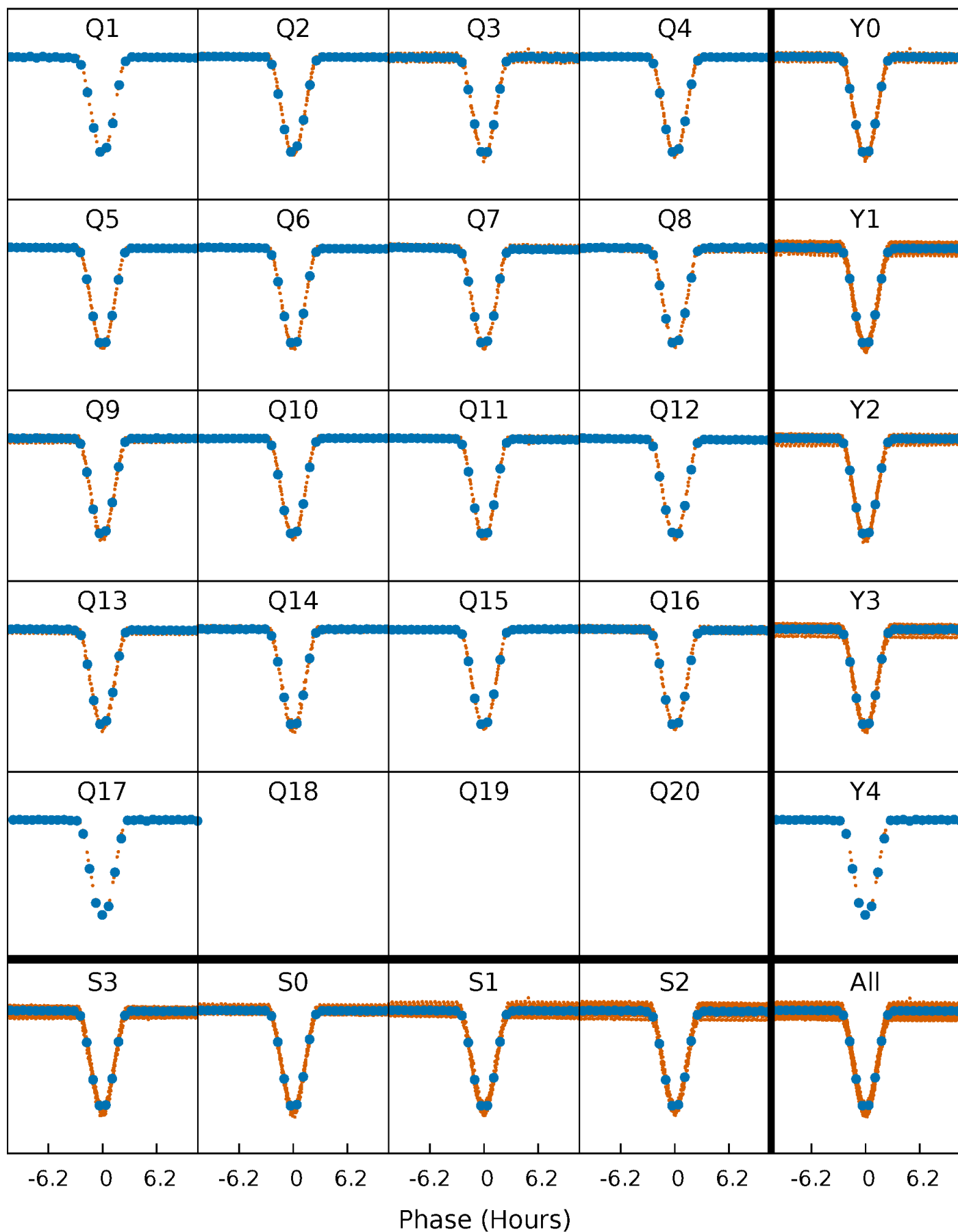


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



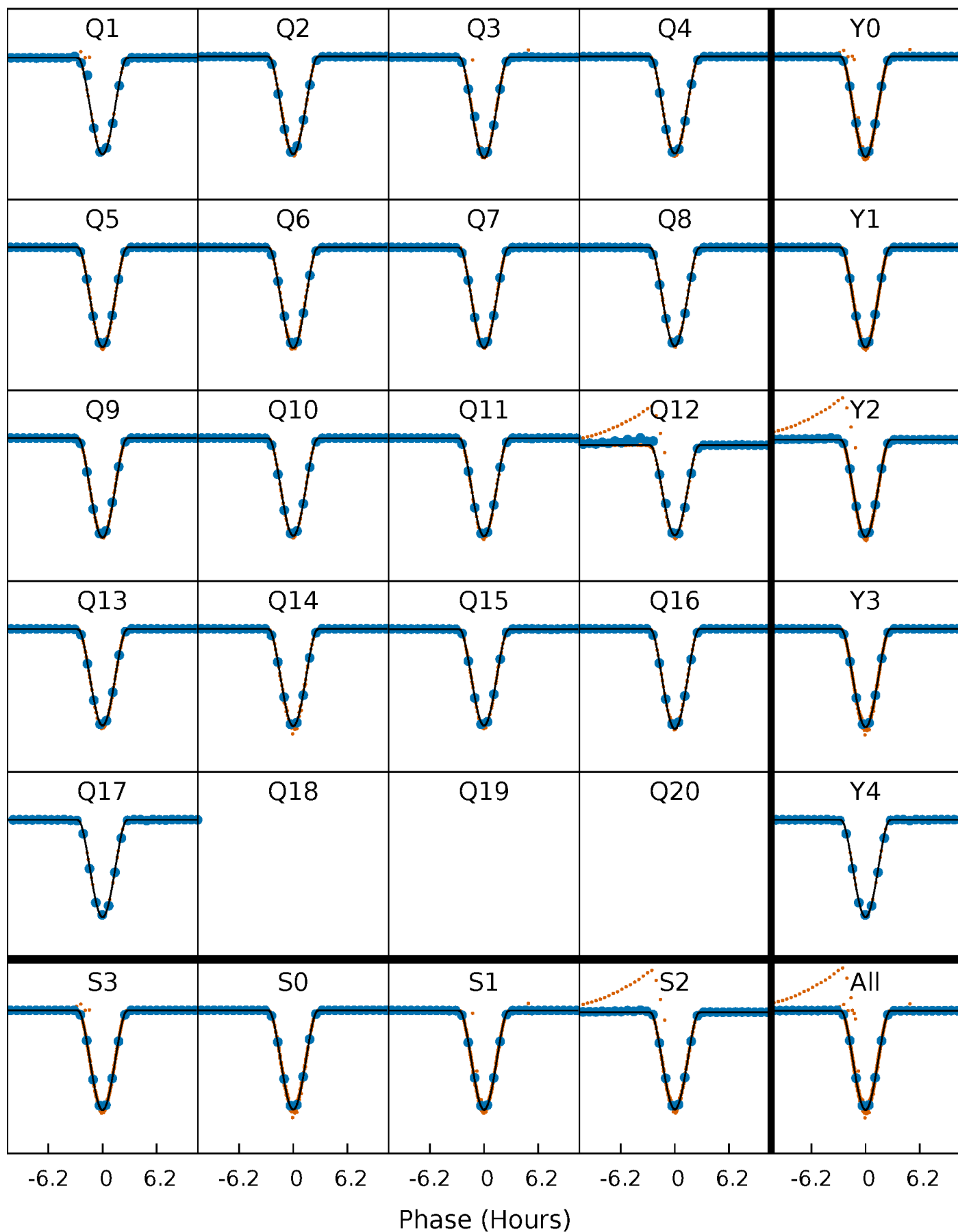
PDC Quarter-Phased Transit Curves

TCE 005871918-01 P= 12.643306 Days $T_0=139.760334$ (BKJD)



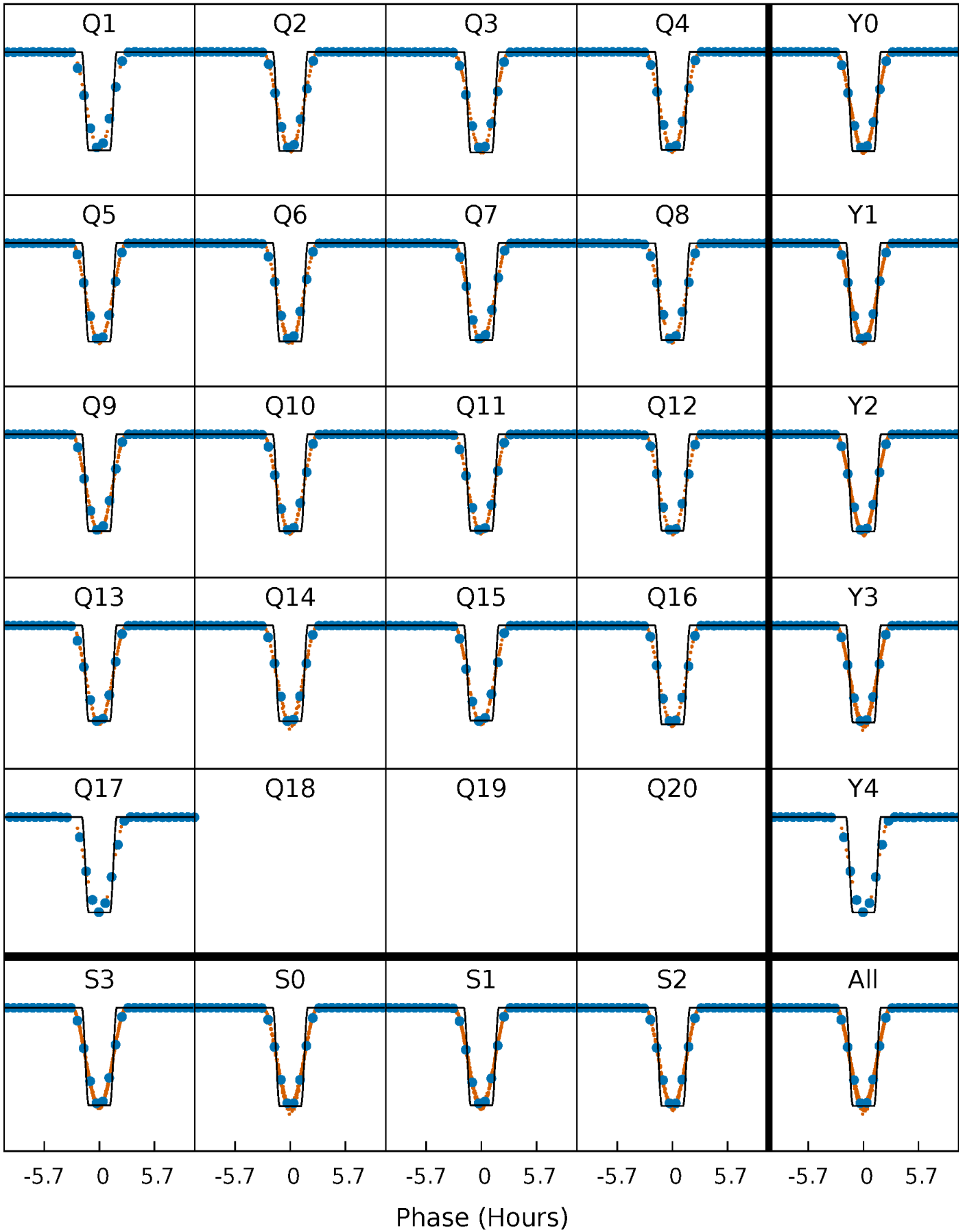
DV Quarter-Phased Transit Curves

TCE 005871918-01 P= 12.643306 Days $T_0=139.760334$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

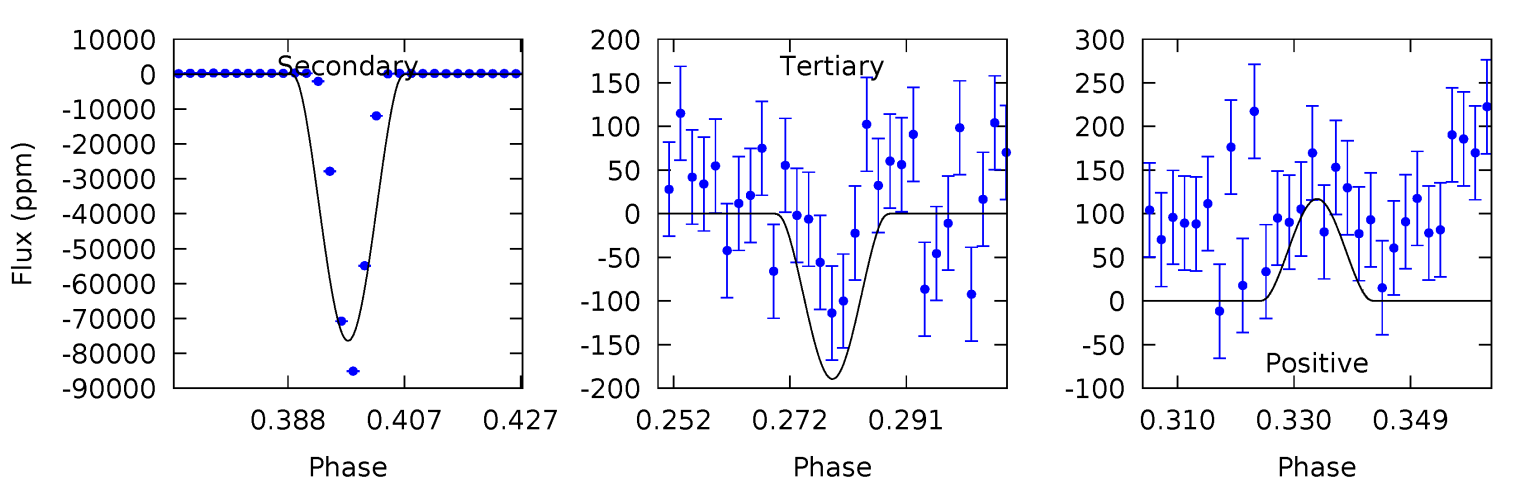
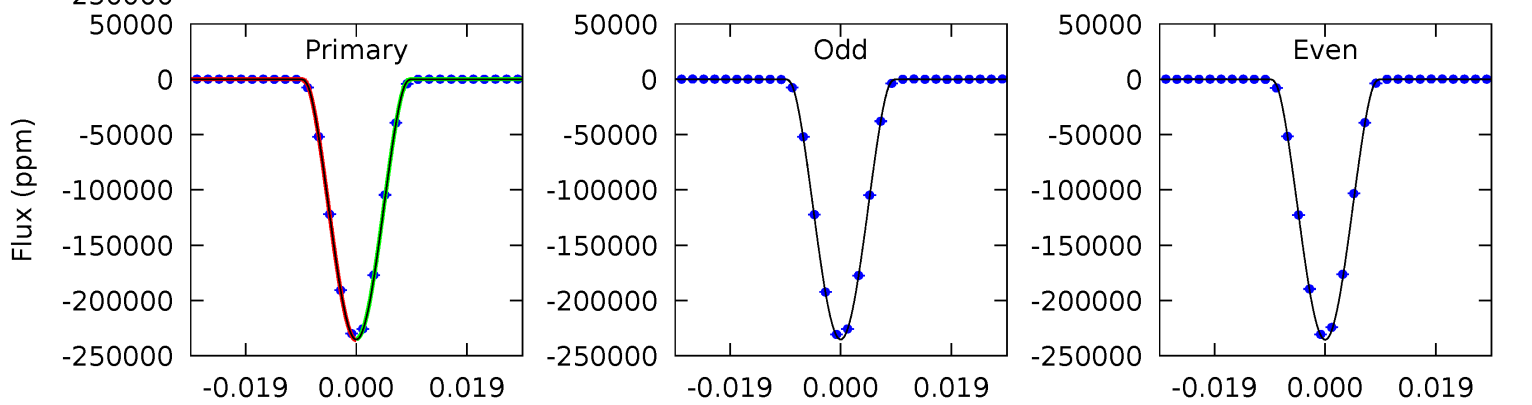
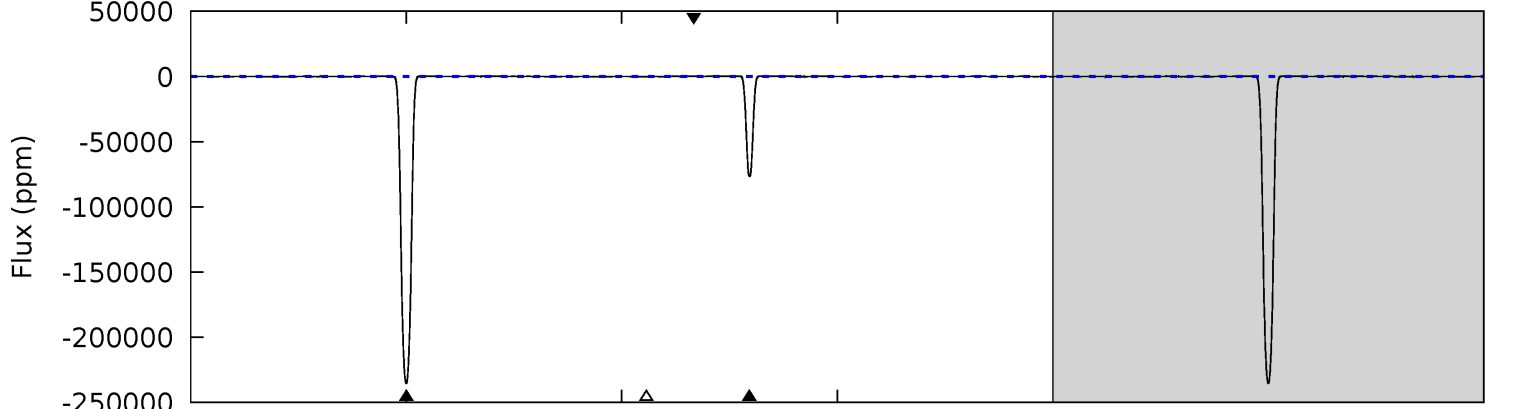
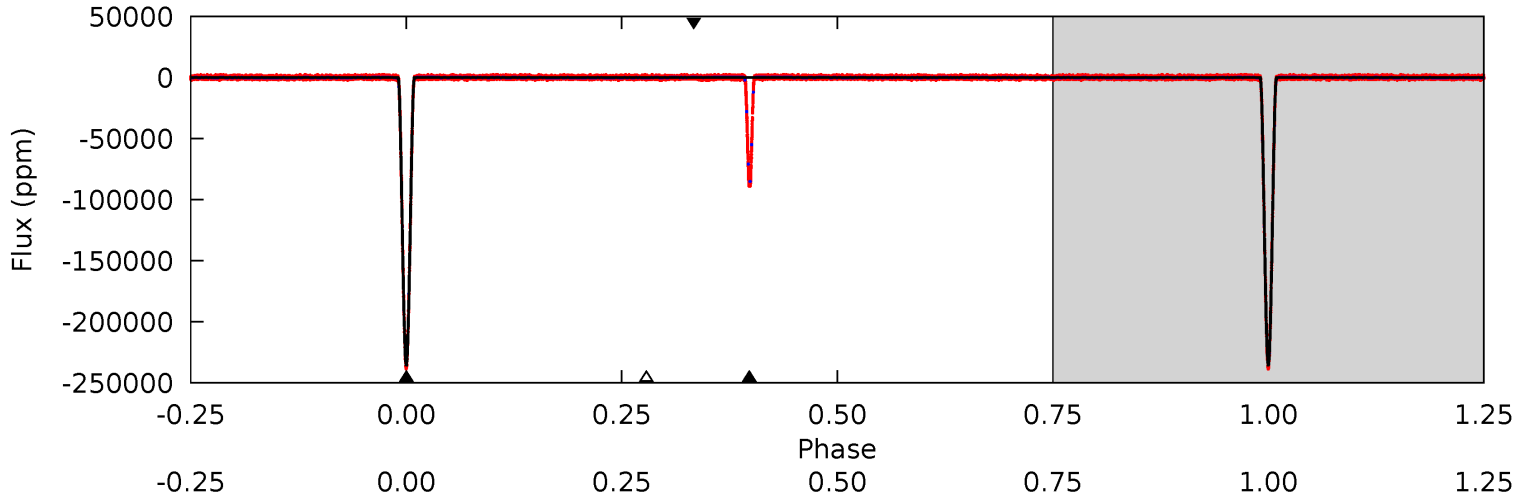
TCE 005871918-01 P= 12.643312 Days $T_0=139.759943$ (BKJD)



DV Model-Shift Uniqueness Test

005871918-01, P = 12.643306 Days, E = 127.117028 Days

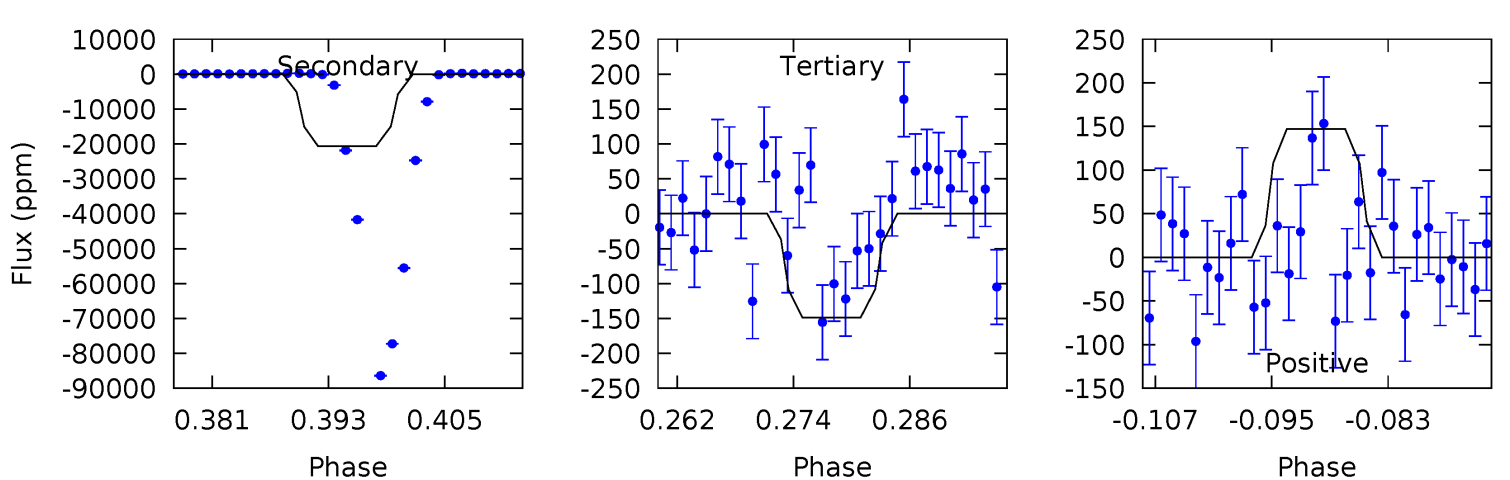
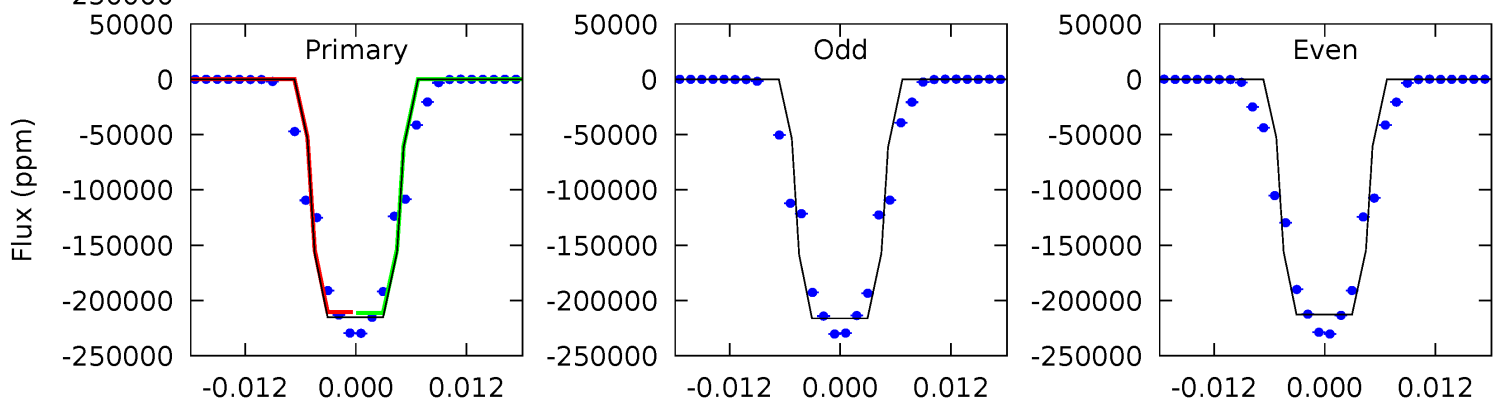
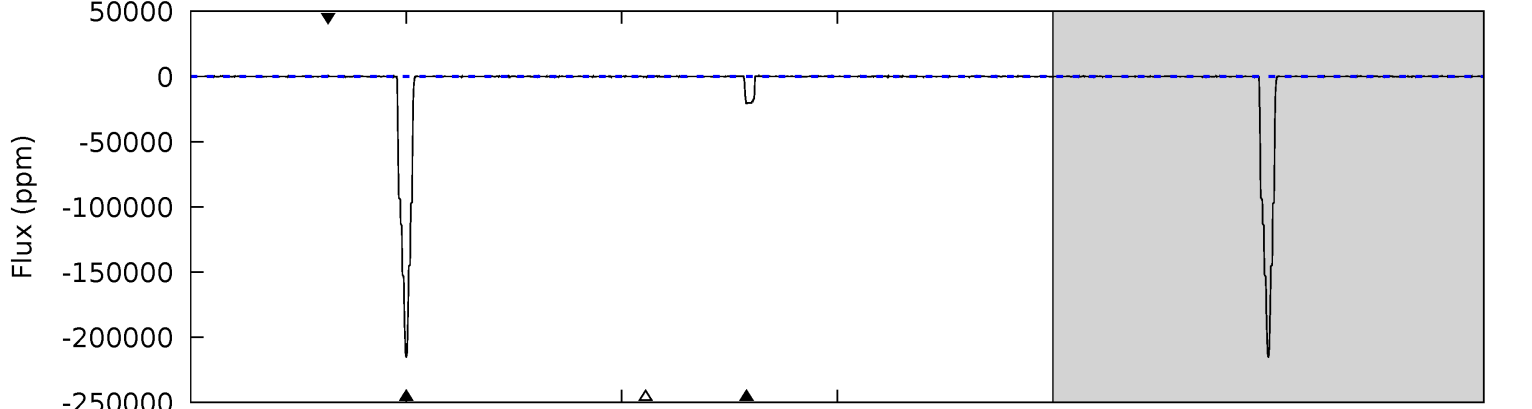
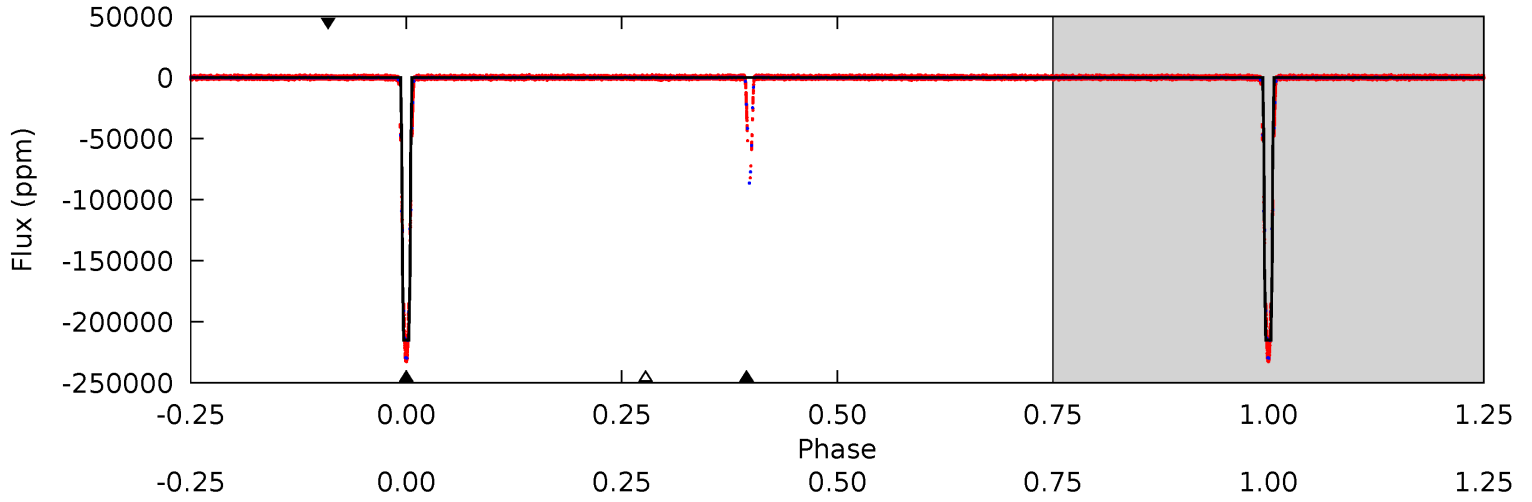
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11794	3828	9.49	5.86	4.90	2.34	3.78	11785	11788	3819	3823	4.44	0.98	0.00	3.19



Alt Model-Shift Uniqueness Test

005871918-01, P = 12.643312 Days, E = 127.116631 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5965	571.0	4.12	4.08	4.99	2.52	1.21	5961	5961	566.9	567.0	48.6	1.00	0.00	0



Stellar Parameters For KIC 005871918

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3977^{+79}_{-79}	$4.697^{+0.033}_{-0.025}$	$-0.100^{+0.200}_{-0.200}$	$0.562^{+0.034}_{-0.037}$	$0.572^{+0.036}_{-0.039}$	$4.550^{+0.681}_{-0.491}$
	+2%/-2%	+1%/-1%	+200%/-200%	+6%/-7%	+6%/-7%	+15%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 005871918-01 / KOI 6632.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-76373 ± 20	$40.23^{+1.60}_{-1.35}$	618^{+13}_{-15}	3062^{+44}_{-54}	217^{+13}_{-11}
Alt.	-20585 ± 36	$29.46^{+1.15}_{-1.14}$	617^{+14}_{-14}	2761^{+43}_{-45}	104^{+6}_{-6}

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 $A_{obs} \gg 1.0$

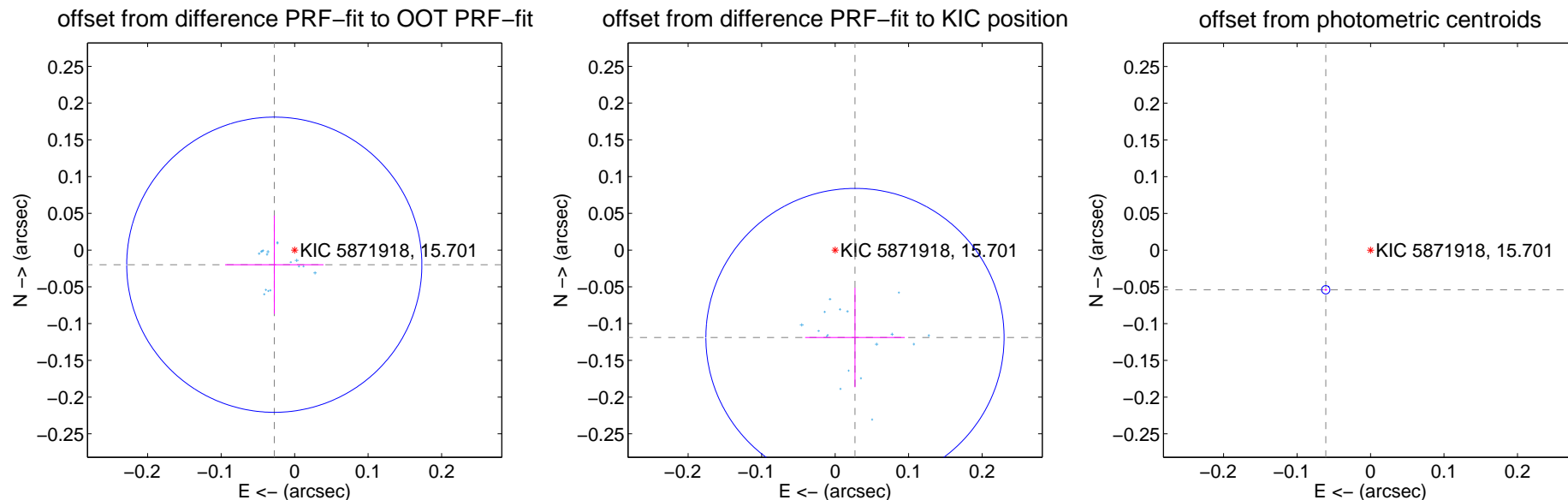
DV Centroid Data

Supplemental centroid analysis for 005871918-01. Kepler magnitude: 15.70. Transit SNR 4594.33

There are 17 quarters with good PRF difference image offsets

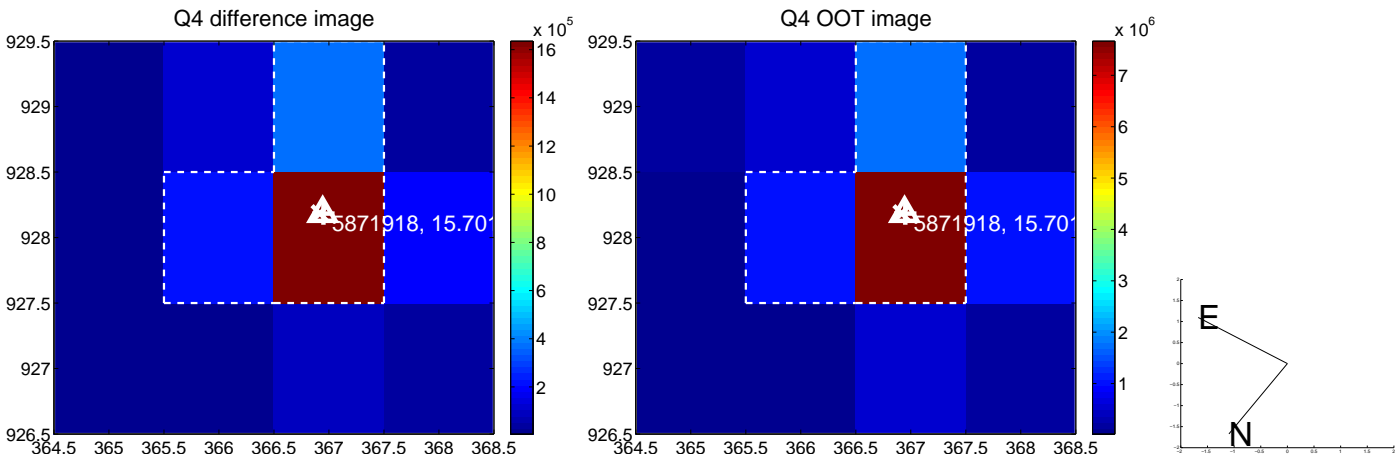
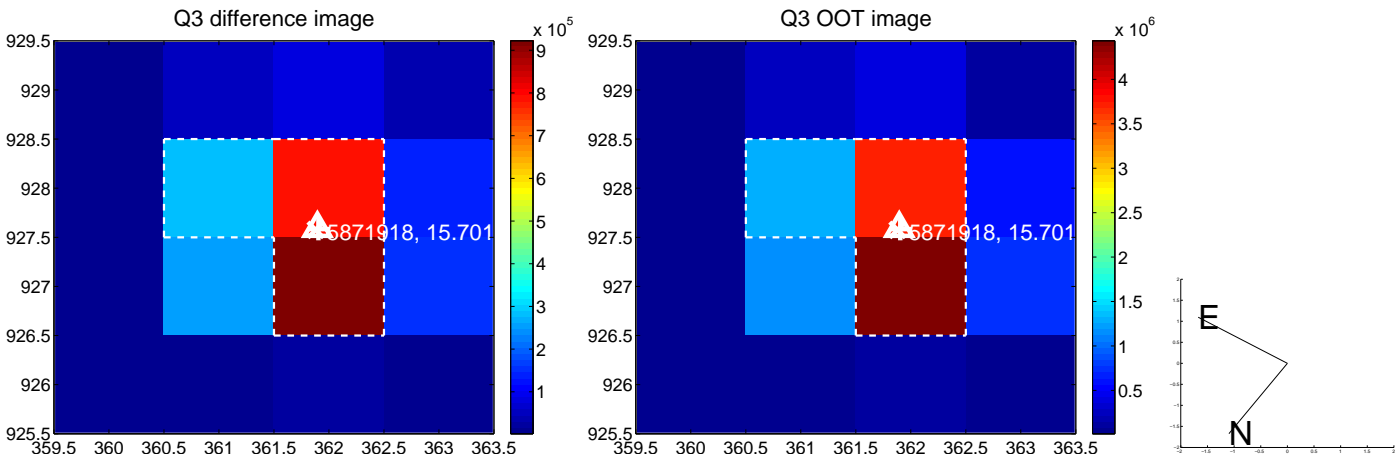
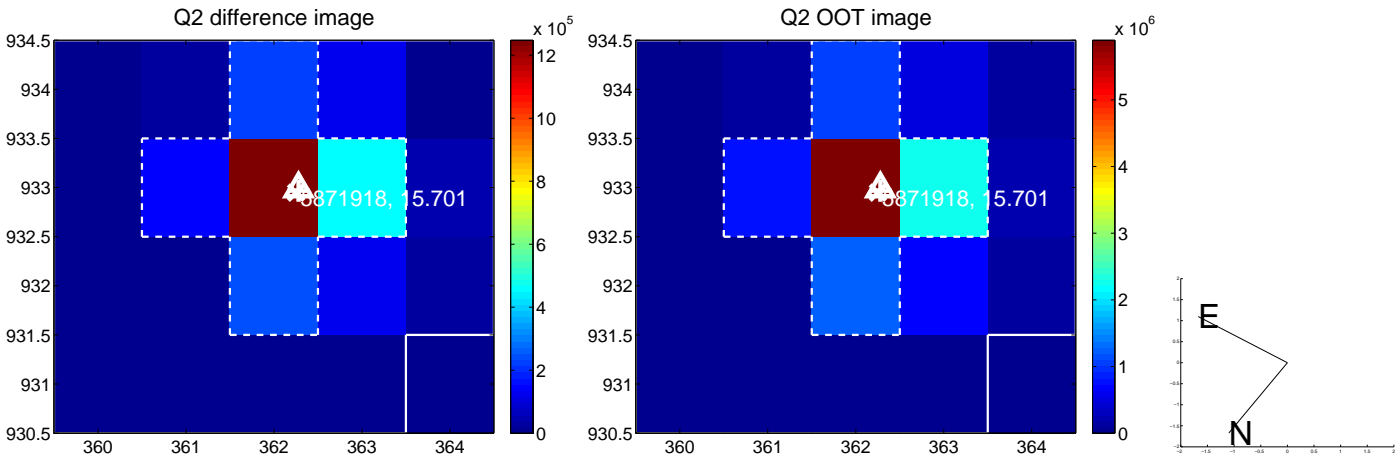
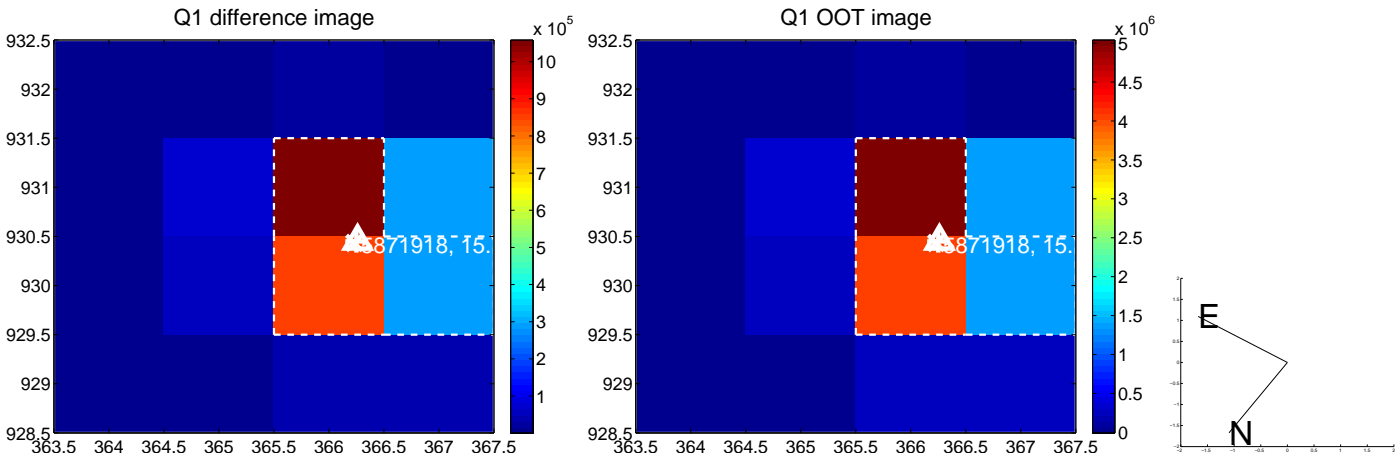
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.034 ± 0.067	0.51	0.028 ± 0.067	-0.020 ± 0.067
PRF-fit source offset from KIC position	0.122 ± 0.068	1.80	-0.027 ± 0.068	-0.119 ± 0.068
photometric centroid source offset	0.08 ± 0.00	43.14	0.06 ± 0.00	-0.05 ± 0.00

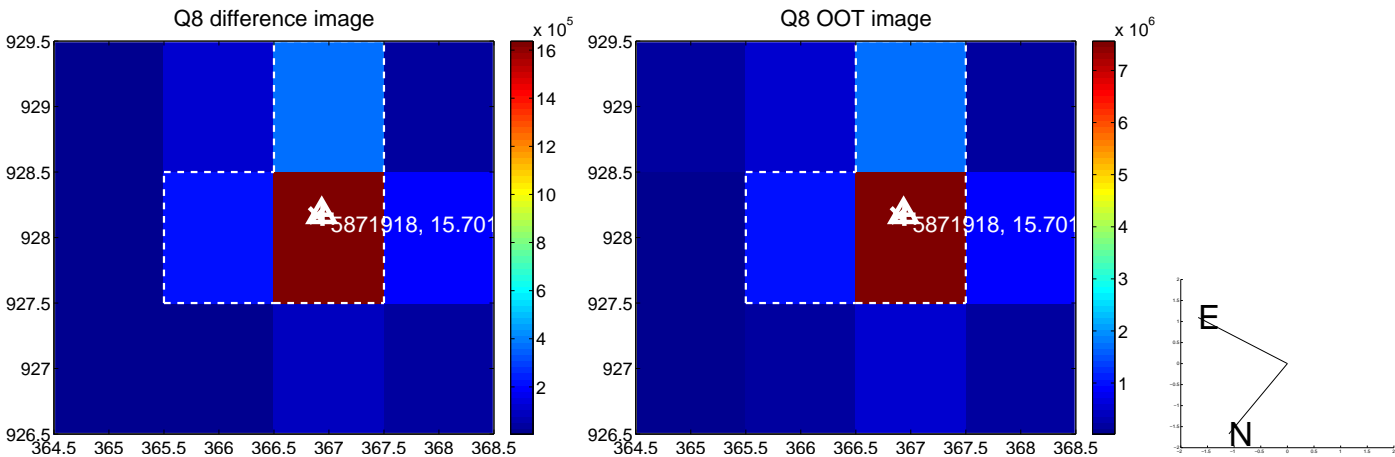
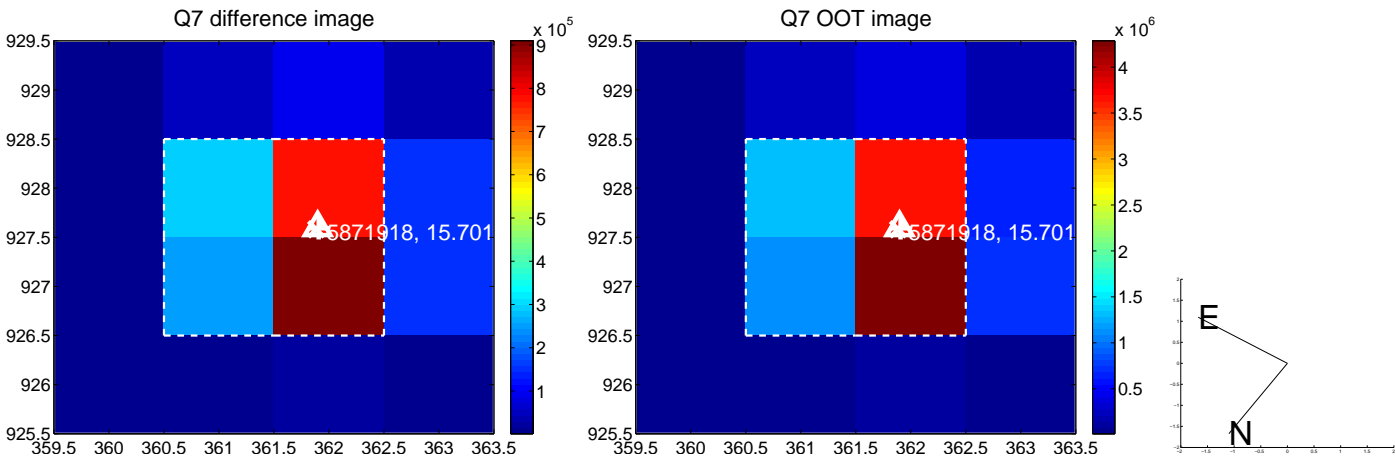
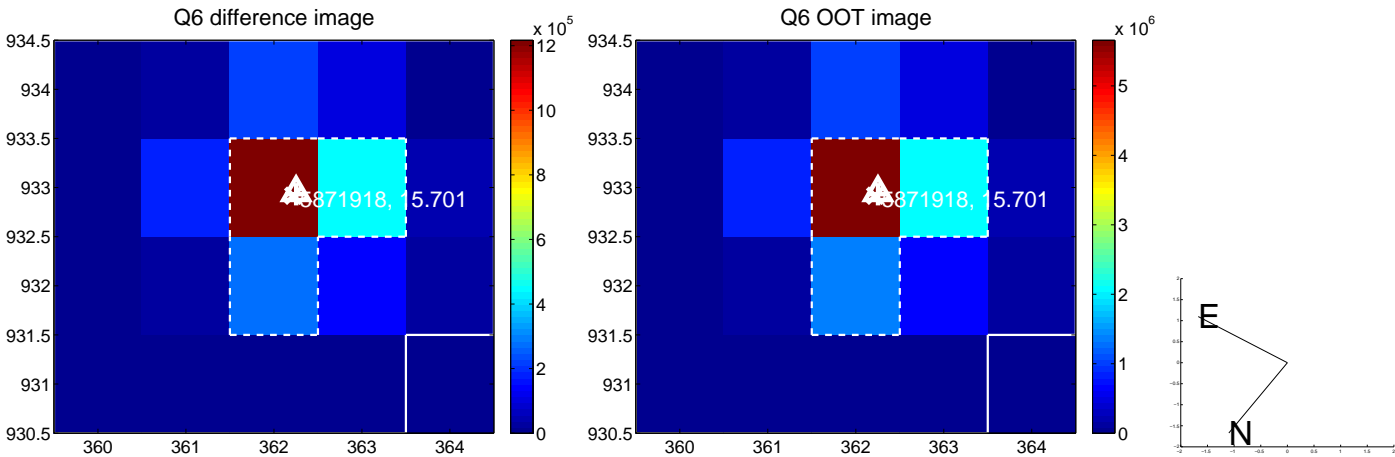
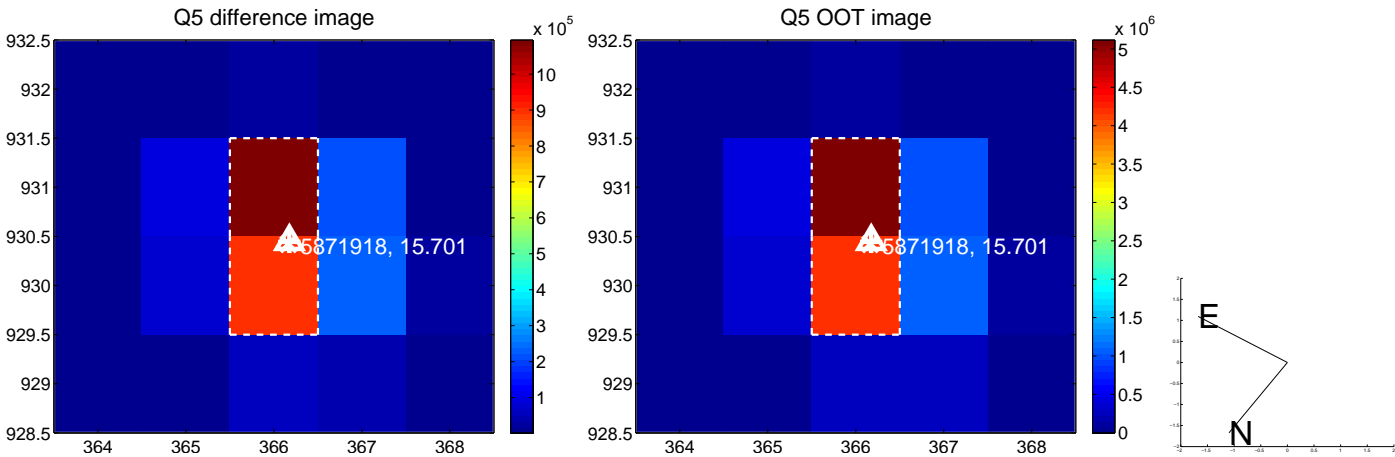


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

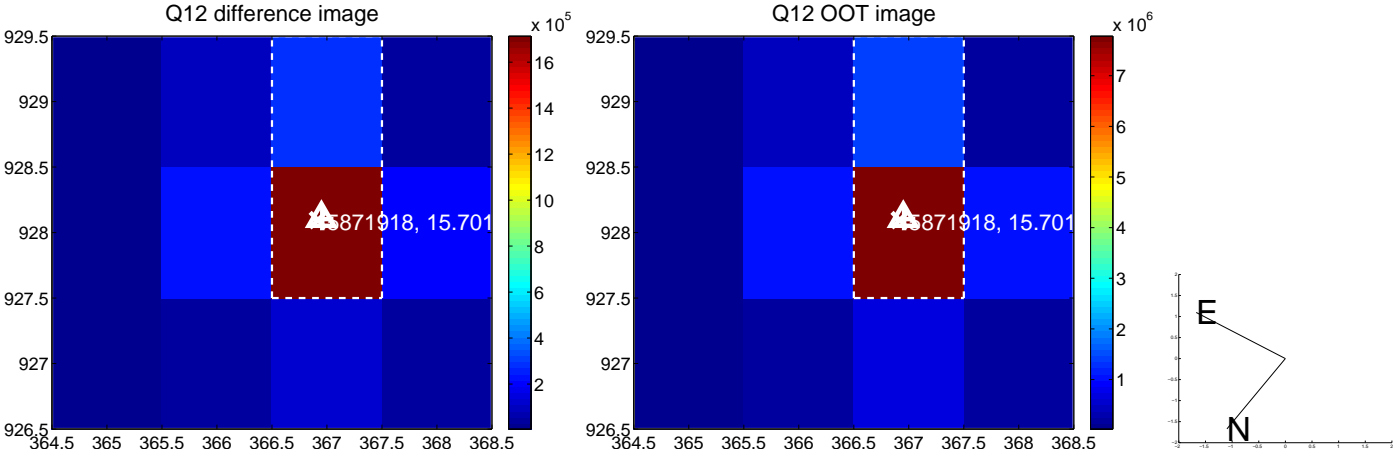
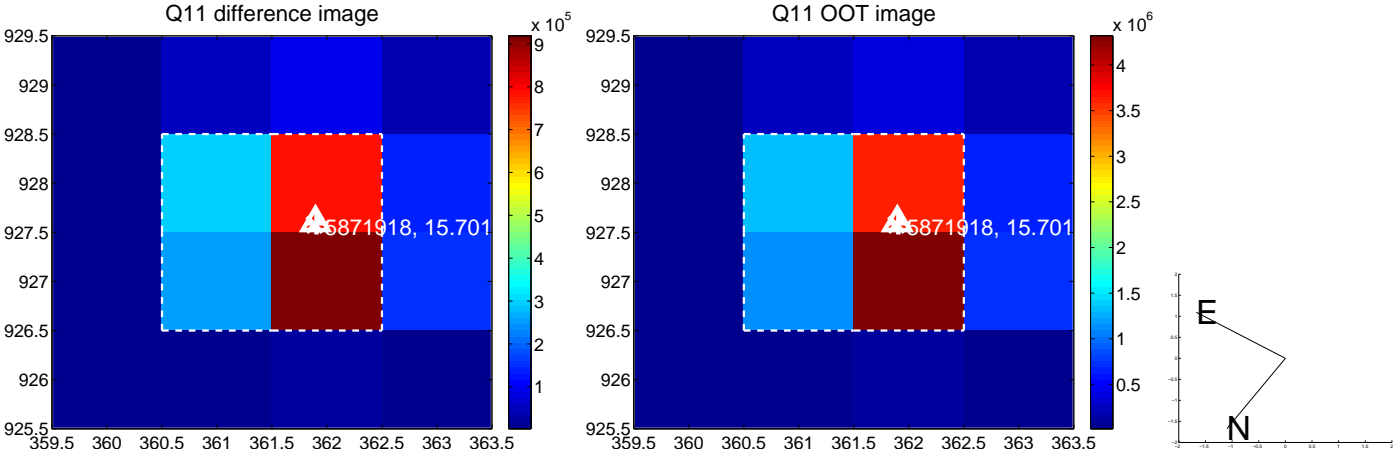
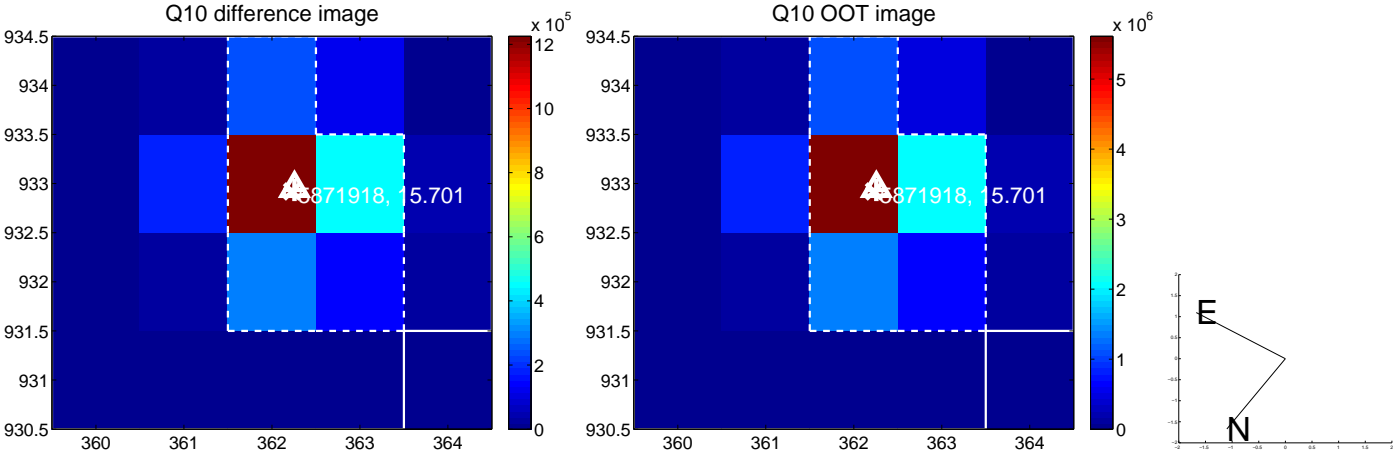
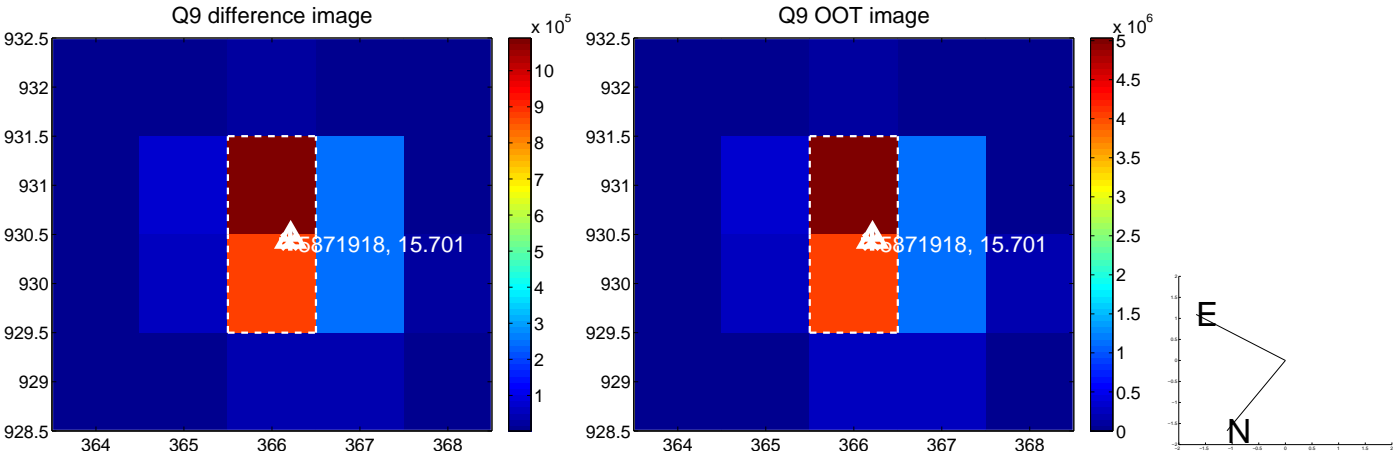
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



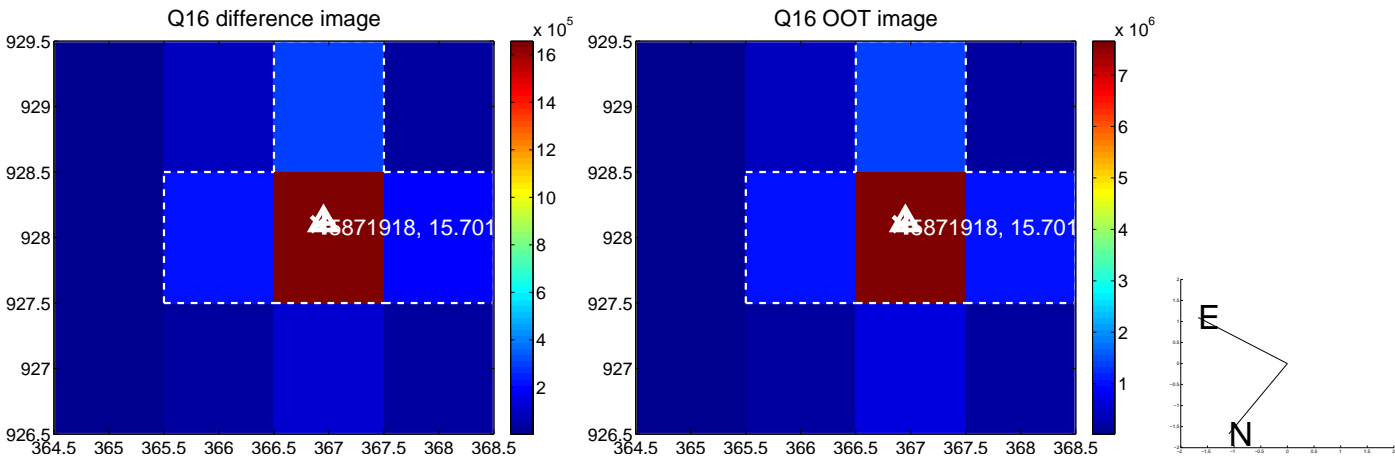
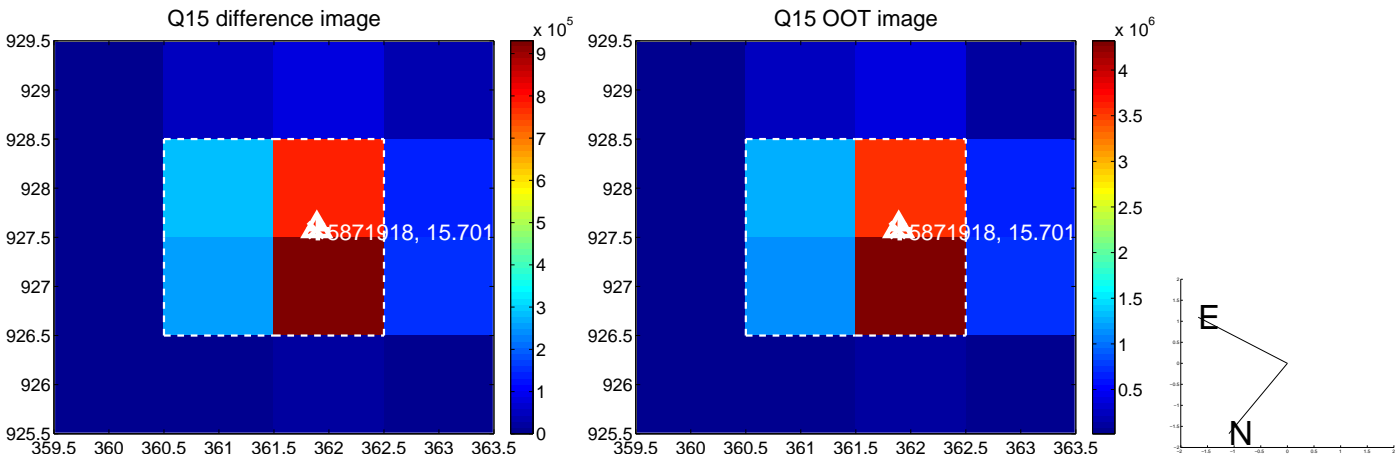
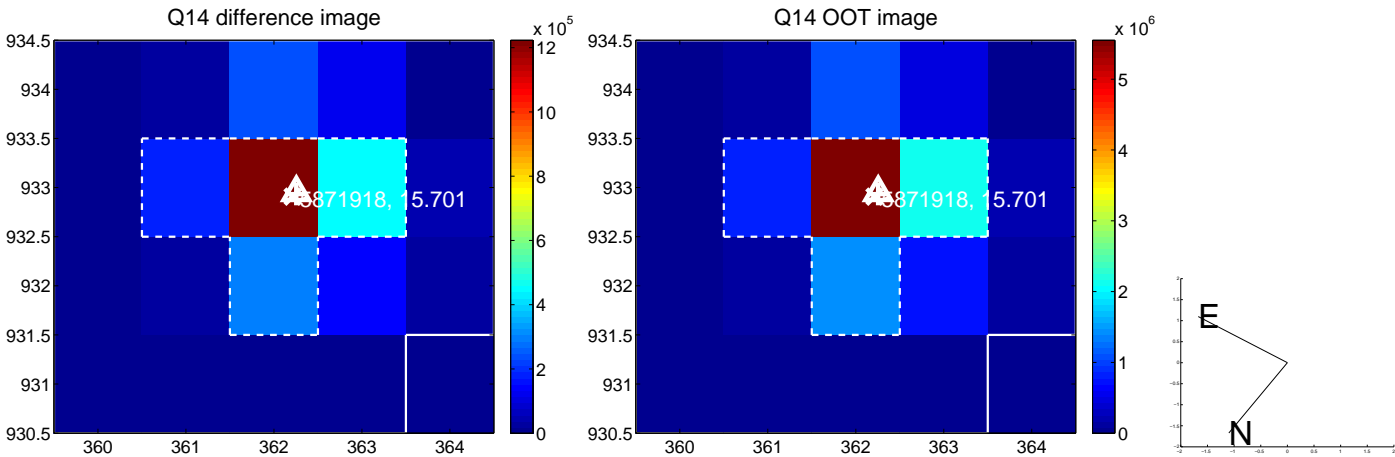
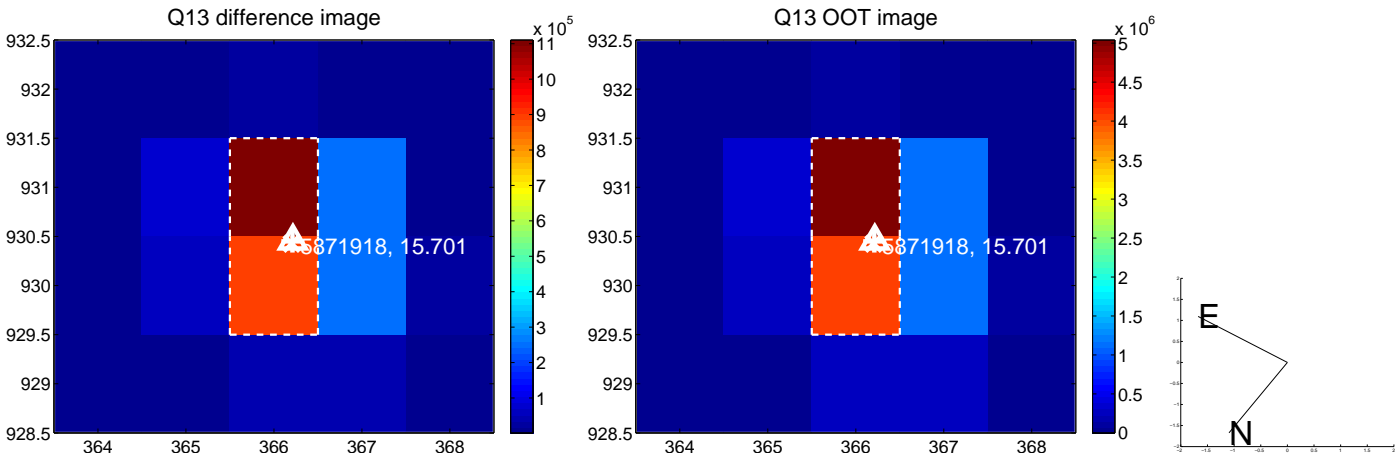
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



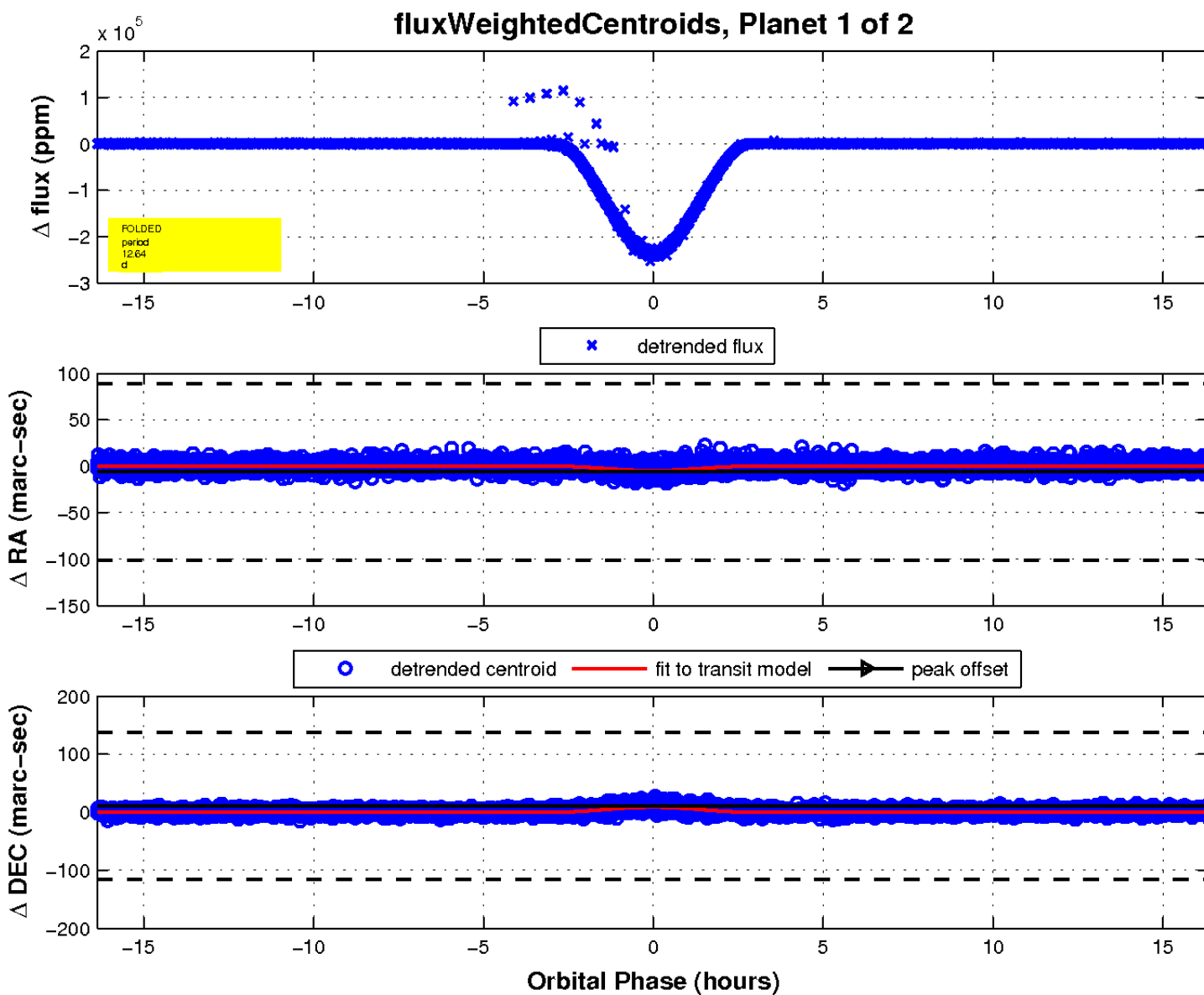
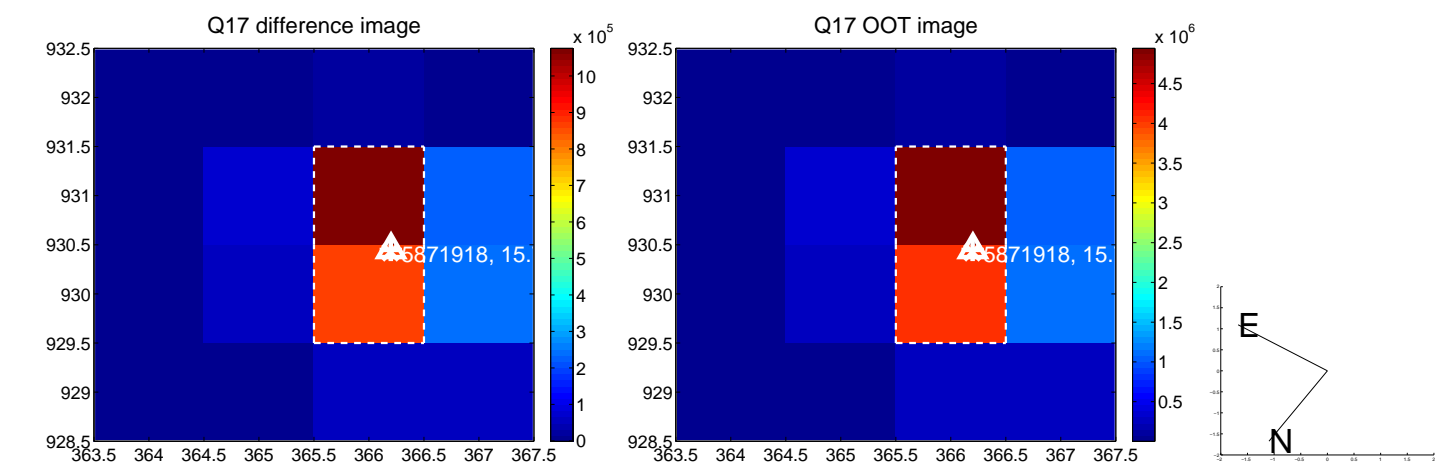
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

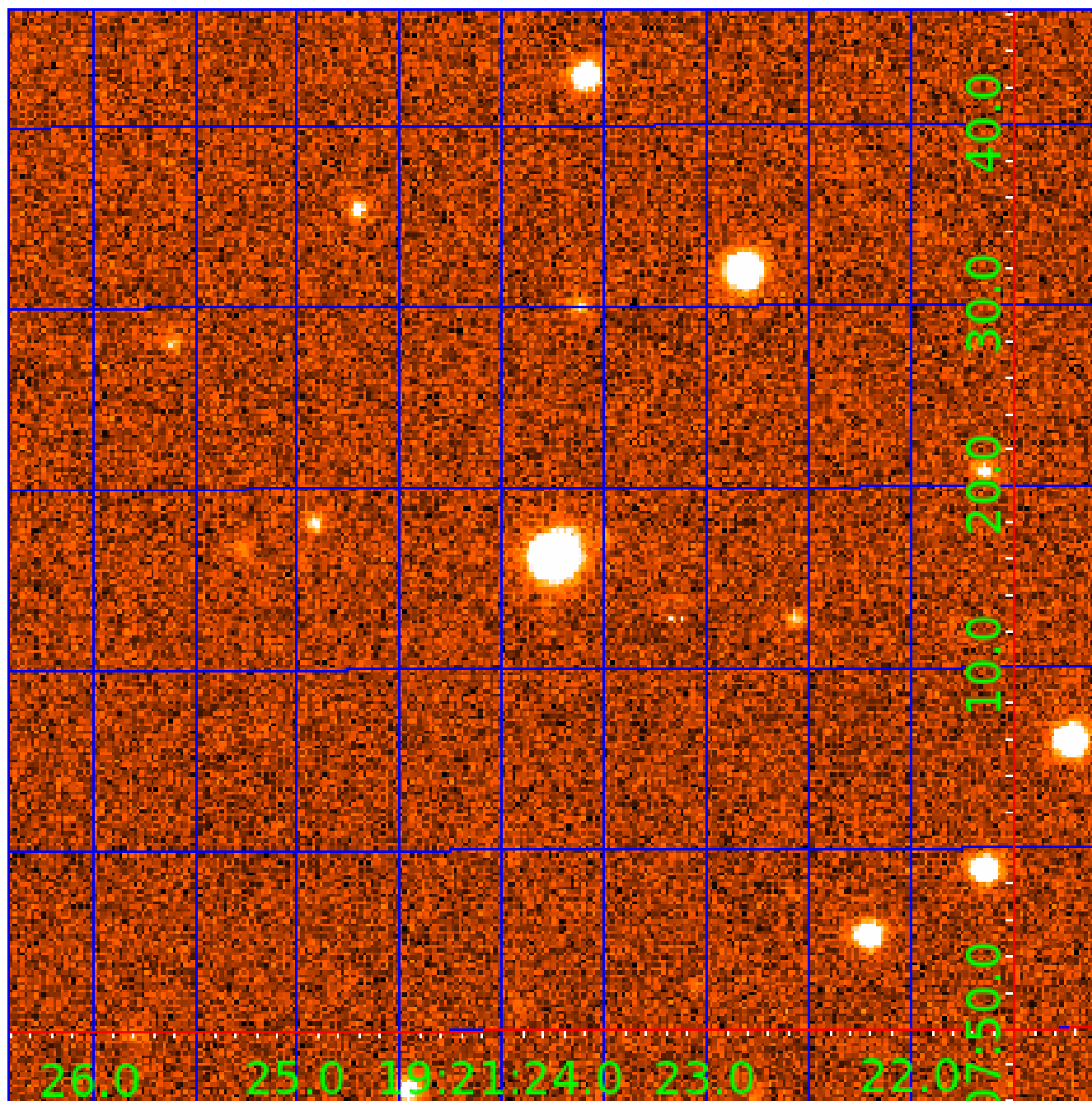


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005871918

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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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005871918-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005871918-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 for comment definitions.

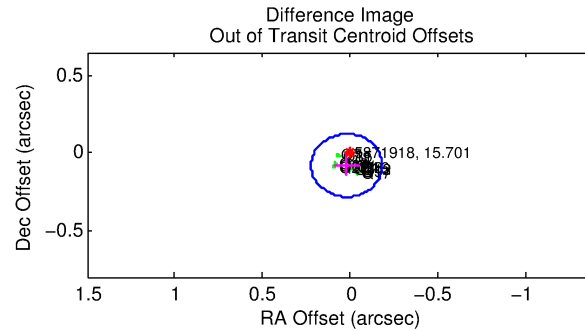
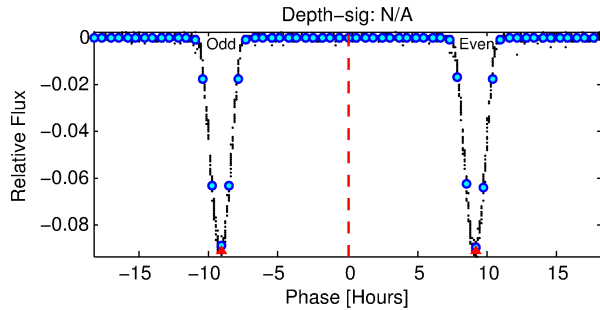
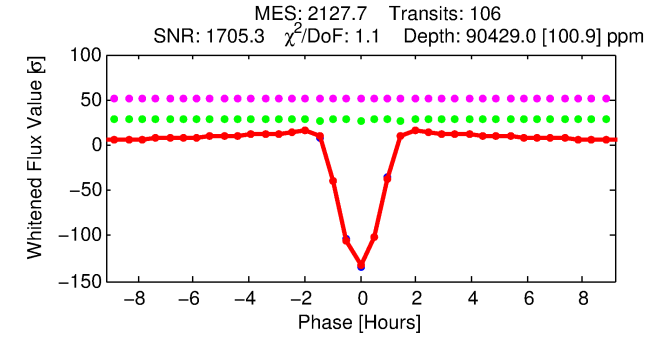
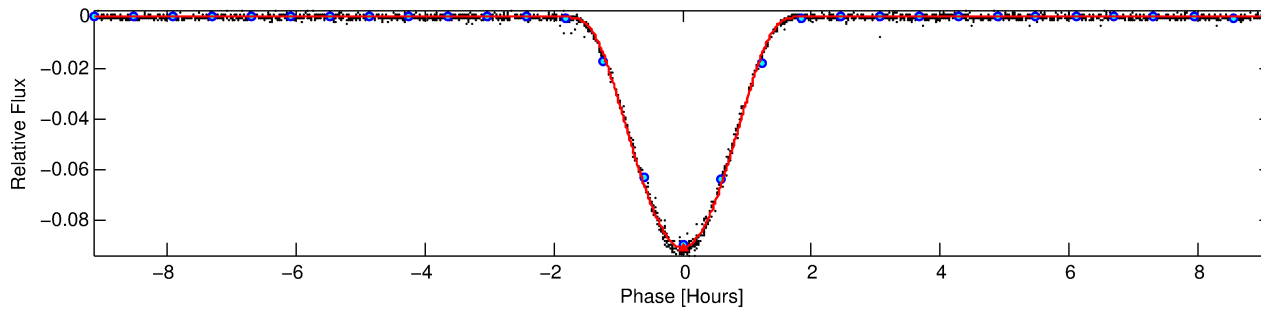
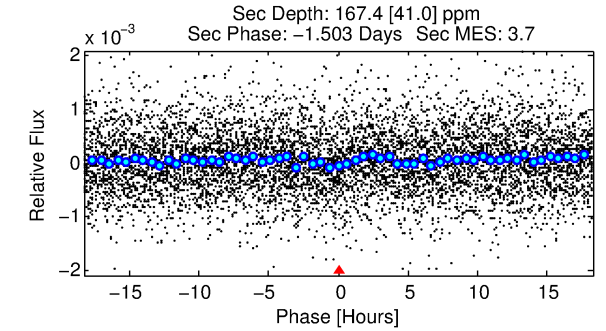
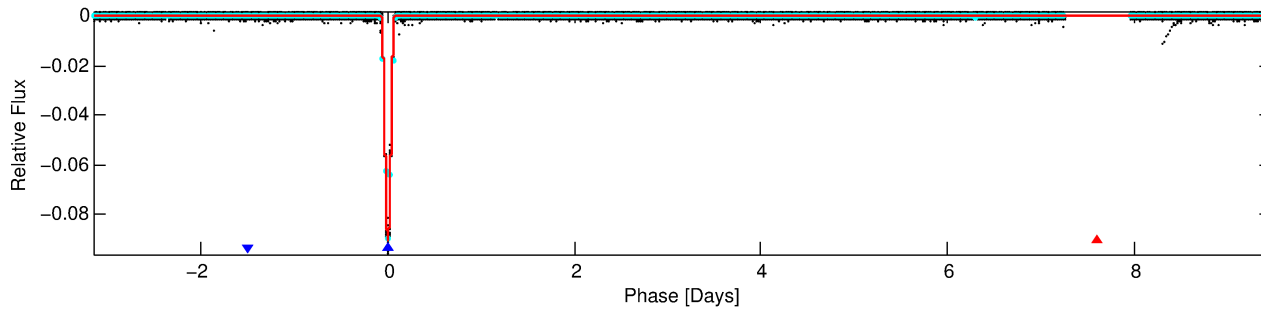
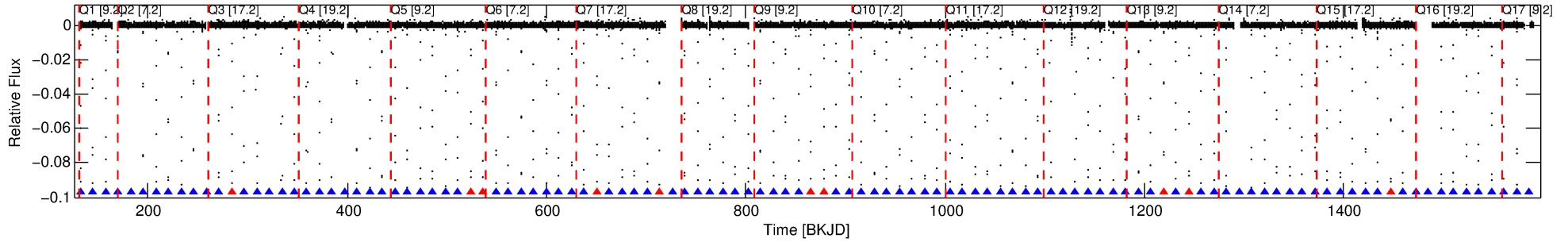
Ephemeris Match Information For 005871918-02

No Significant Match Found

DV One-Page Summary

KIC: 5871918 Candidate: 2 of 2 Period: 12.643 d
KOI: K06632 Corr: No Ephemeris Match

Kp: 15.70 R*: 0.56 Rs Teff: 3977.0 K Logg: 4.70 Fe/H: -0.100



DV Fit Results:

Period = 12.64331 [0.00000] d
Epoch = 132.1526 [0.0000] BKJD
Rp/R* = 0.4221 [0.0351]
a/R* = 34.12 [0.09]
b = 0.93 [0.05]
Seff = 9.09 [0.94]
Teq = 443 [12] K
Rp = 25.88 [2.75] Re
a = 0.0883 [0.0045] AU
Ag = 1.07 [0.33] [0.22σ]
Teffp = 696 [53] K [4.64σ]

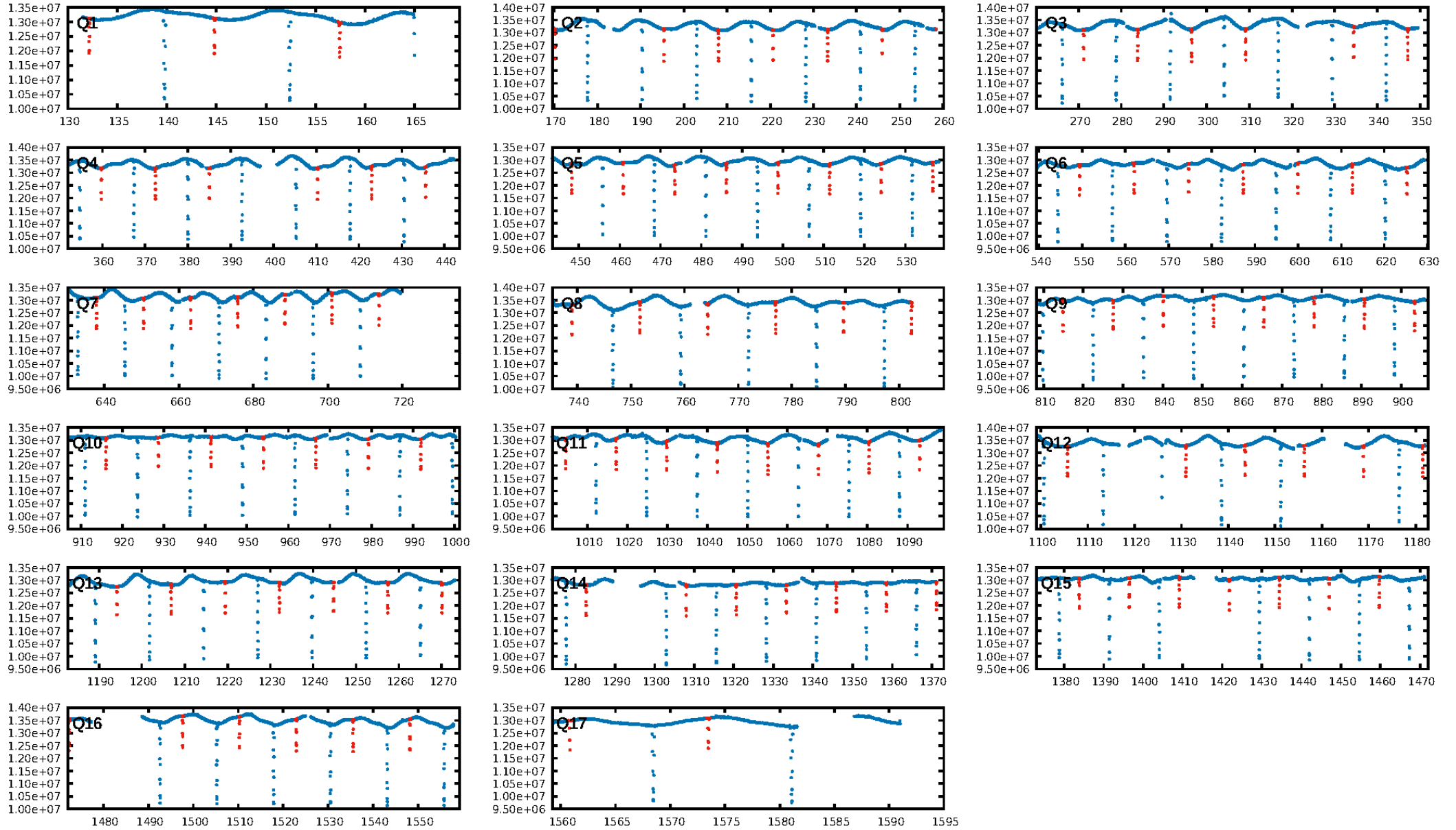
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.90 [91/101]
GhostDiagnostic-chr: 2.272
Centroid-sig: 0.0%
Centroid-so: 0.098 arcsec [16.71σ]
OotOffset-rm: 0.083 arcsec [1.23σ]
KicOffset-rm: 0.179 arcsec [2.63σ]
OotOffset-st: 4/4/4/5 [17]
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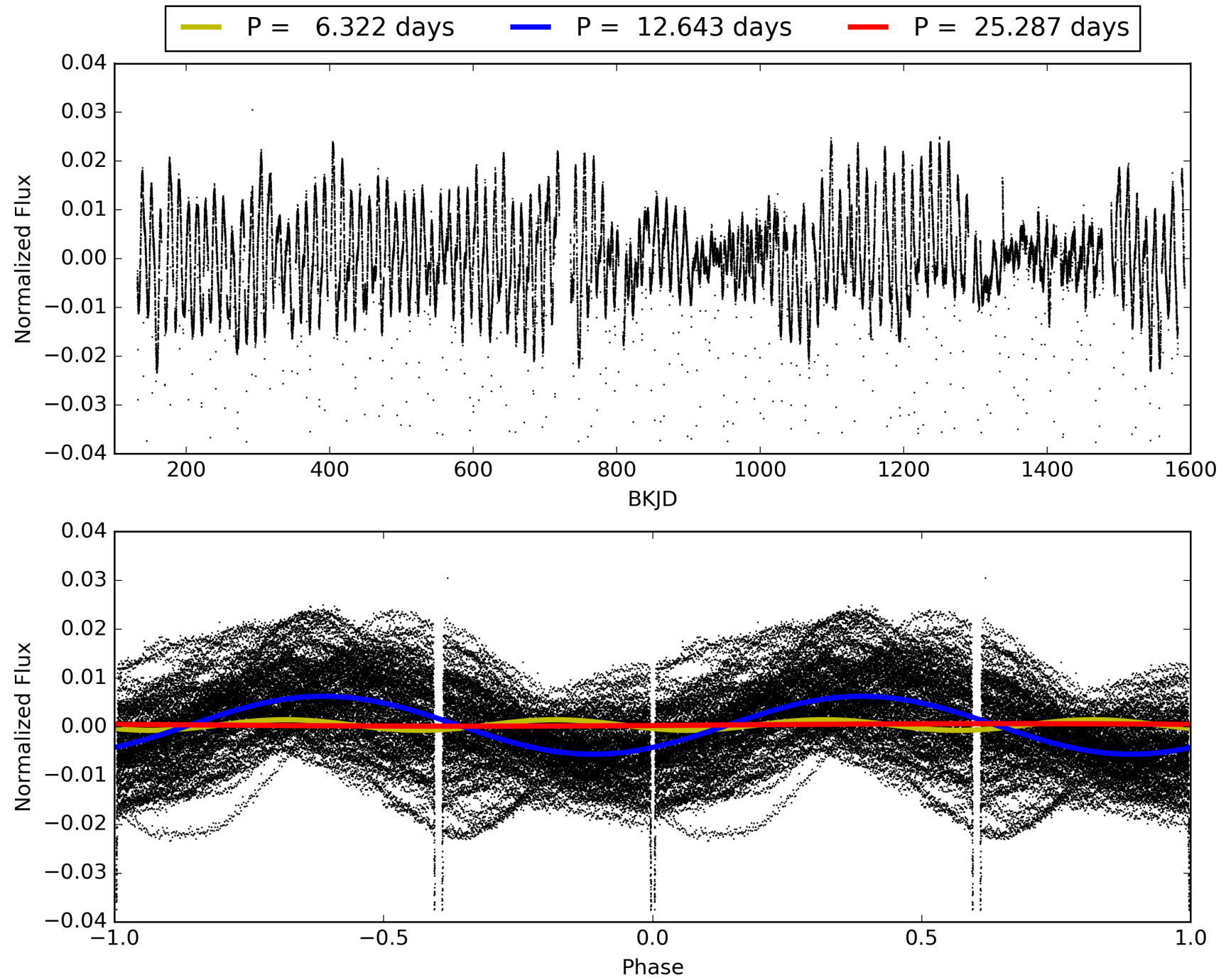
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005871918-02, PDC Light Curves

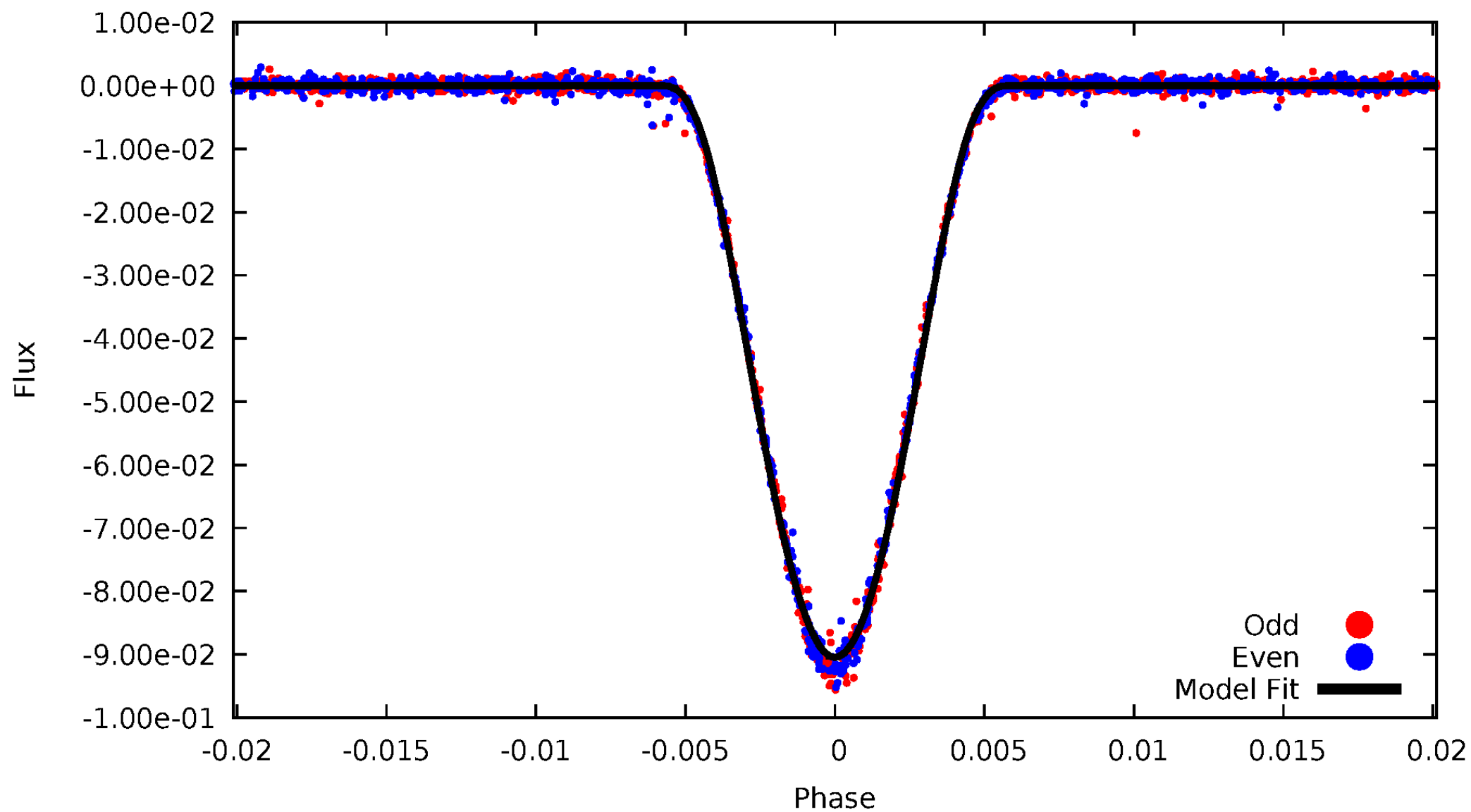


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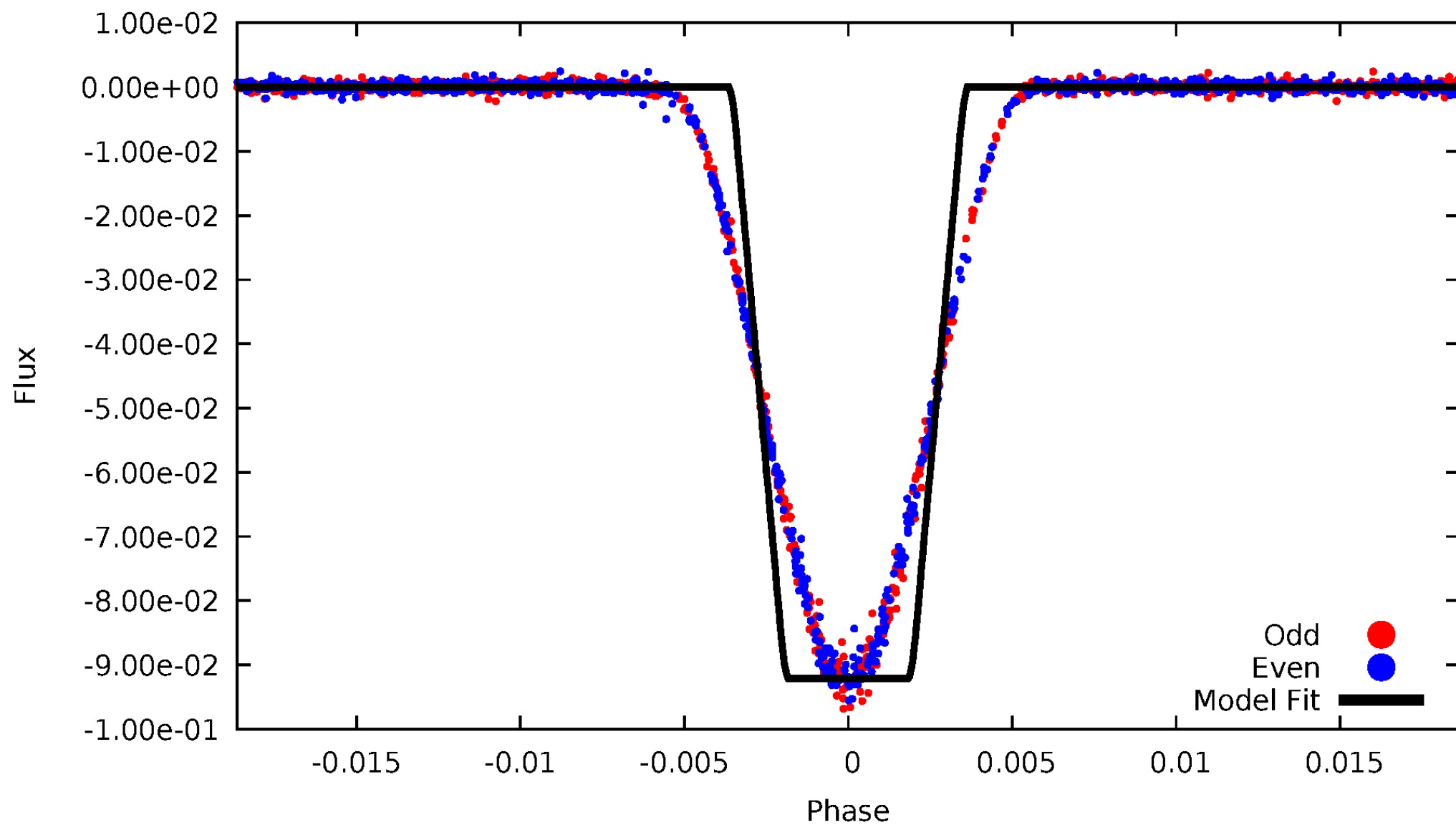
DV Odd/Even

TCE 005871918-02



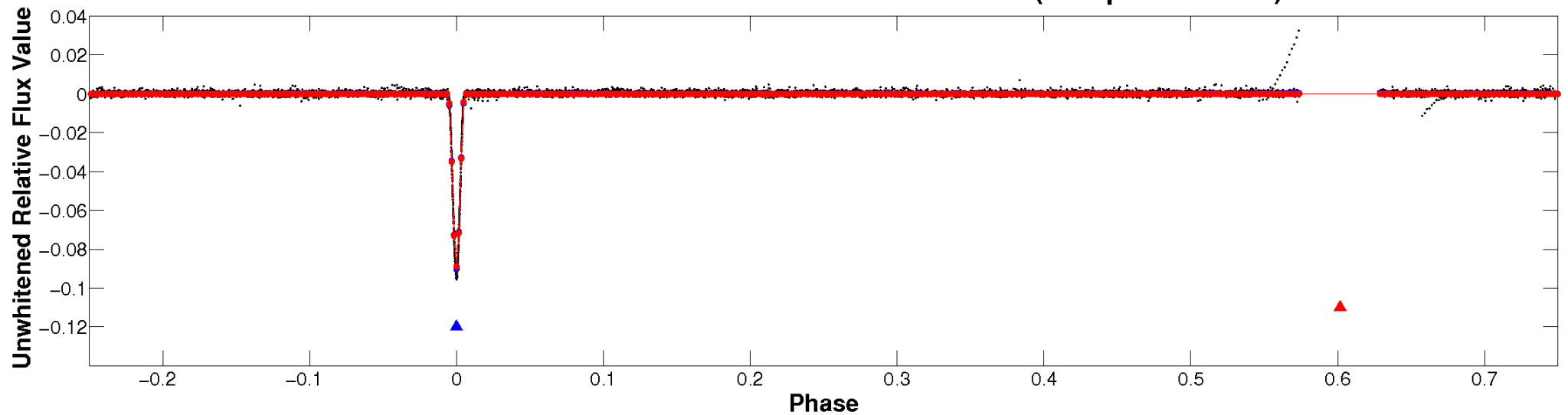
ALT Odd/Even

TCE 005871918-02

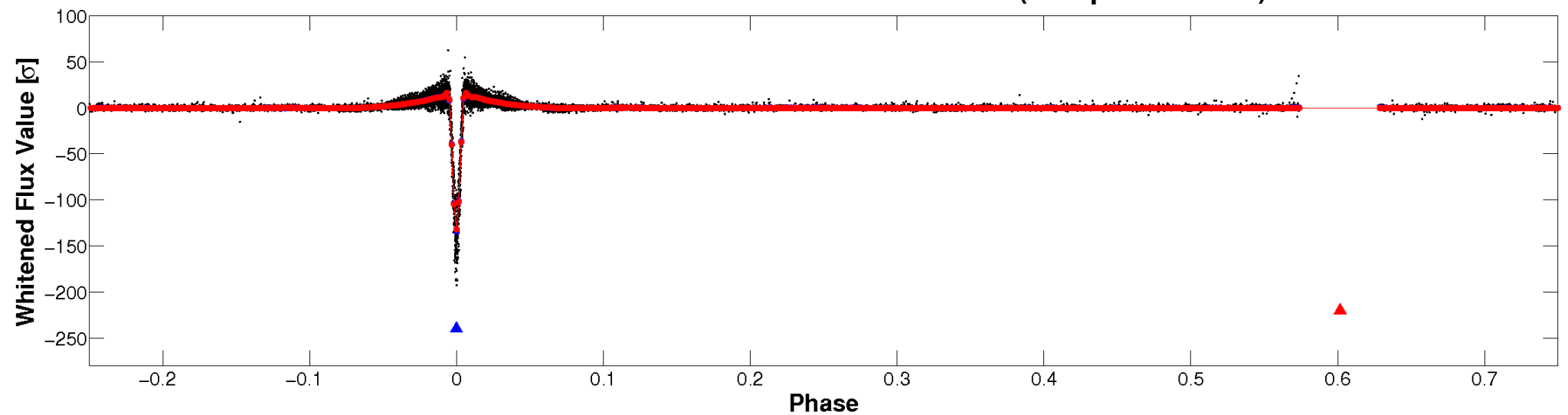


Non-Whitened Vs. Whitened Light Curve

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

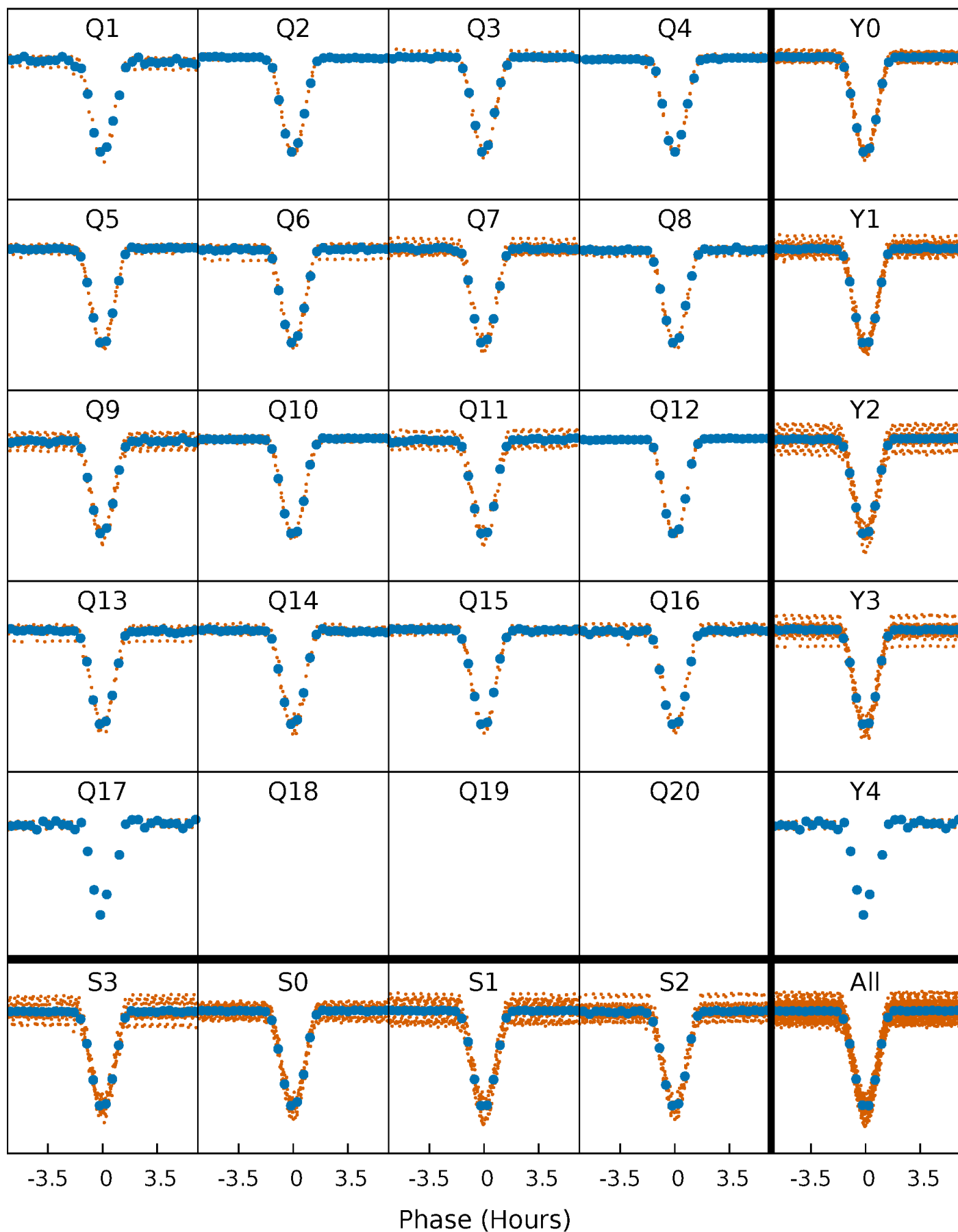


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



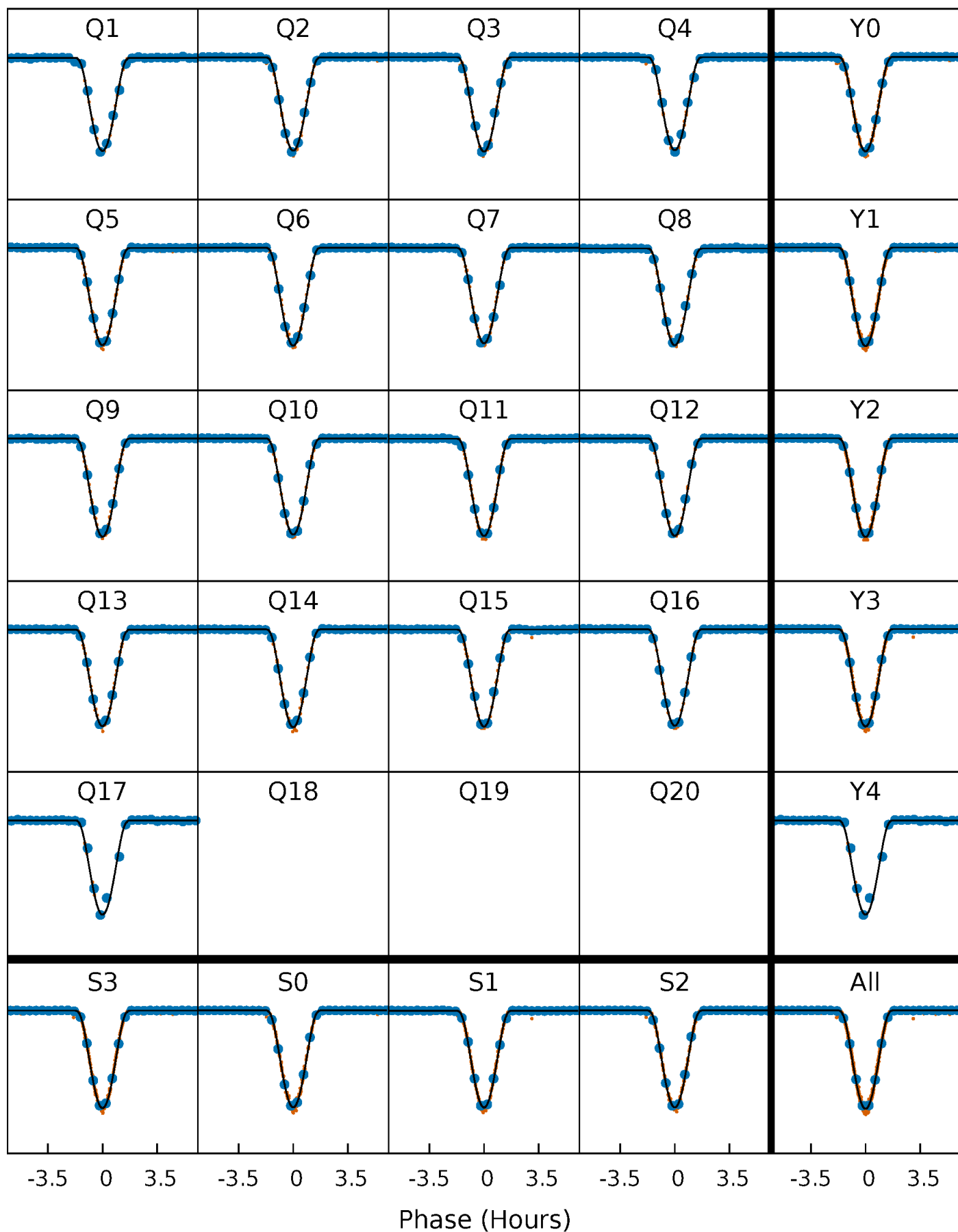
PDC Quarter-Phased Transit Curves

TCE 005871918-02 P= 12.643312 Days $T_0=132.152619$ (BKJD)



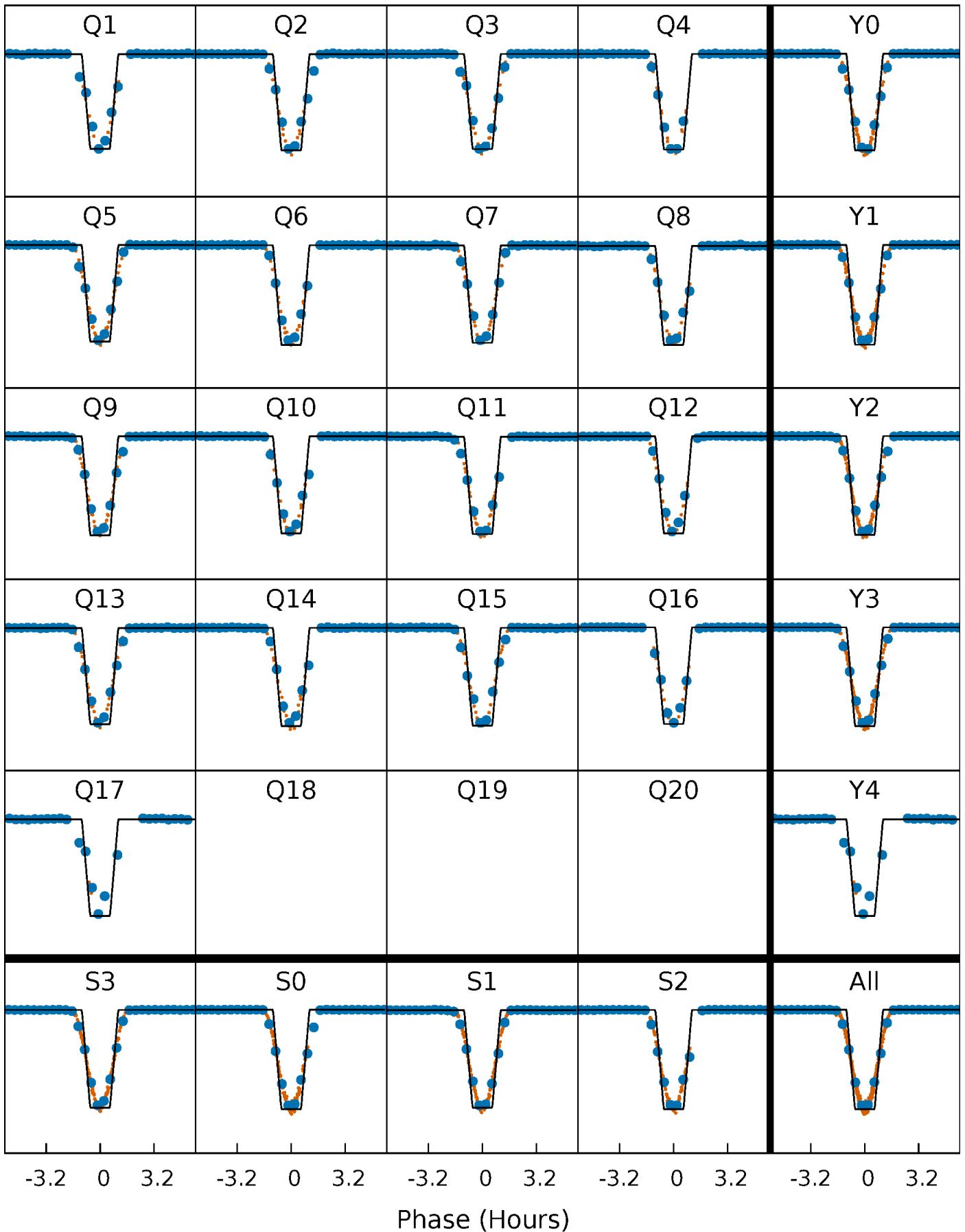
DV Quarter-Phased Transit Curves

TCE 005871918-02 P= 12.643312 Days $T_0=132.152619$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

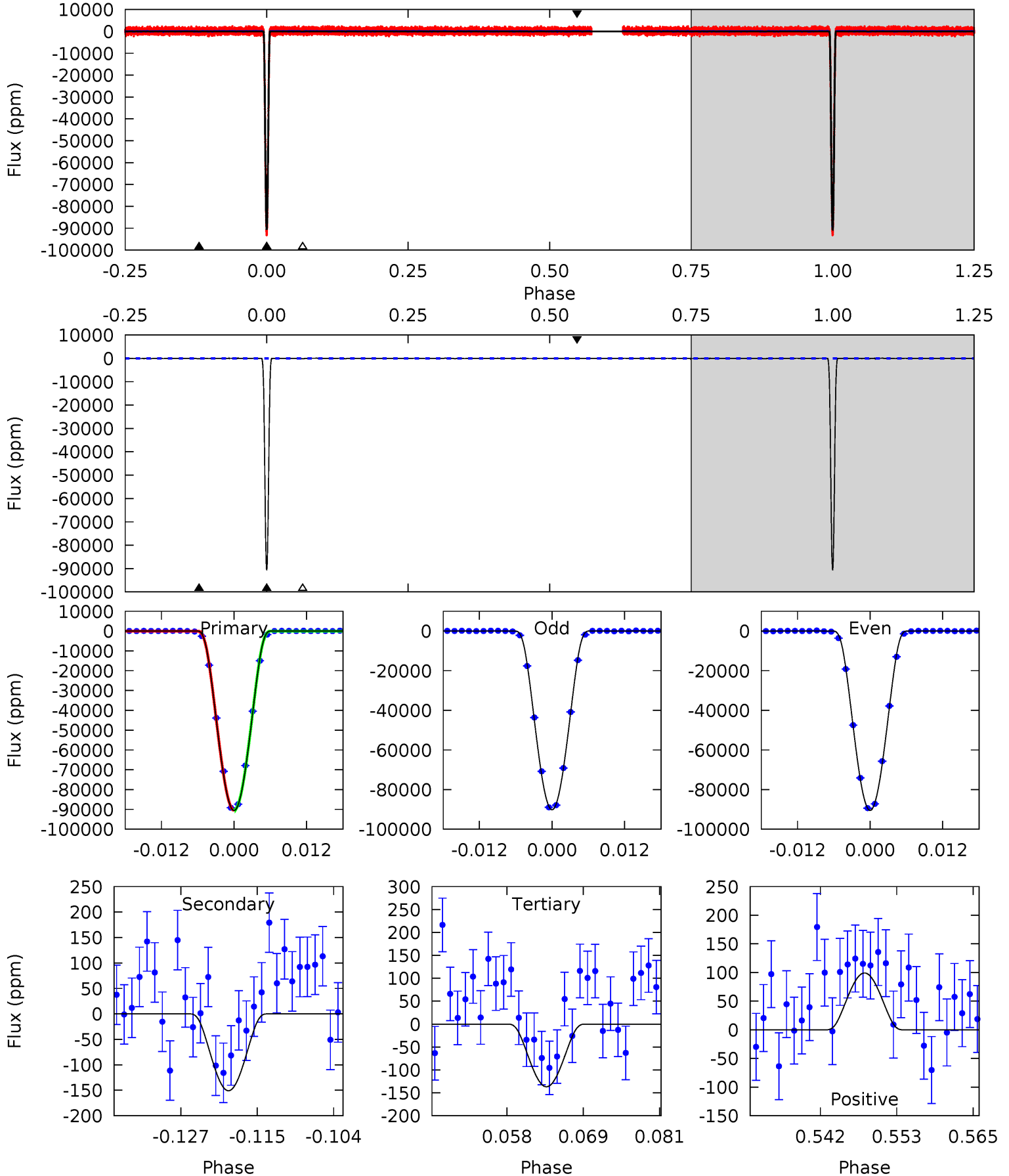
TCE 005871918-02 P= 12.643321 Days $T_0=132.152119$ (BKJD)



DV Model-Shift Uniqueness Test

005871918-02, P = 12.643312 Days, E = 119.509307 Days

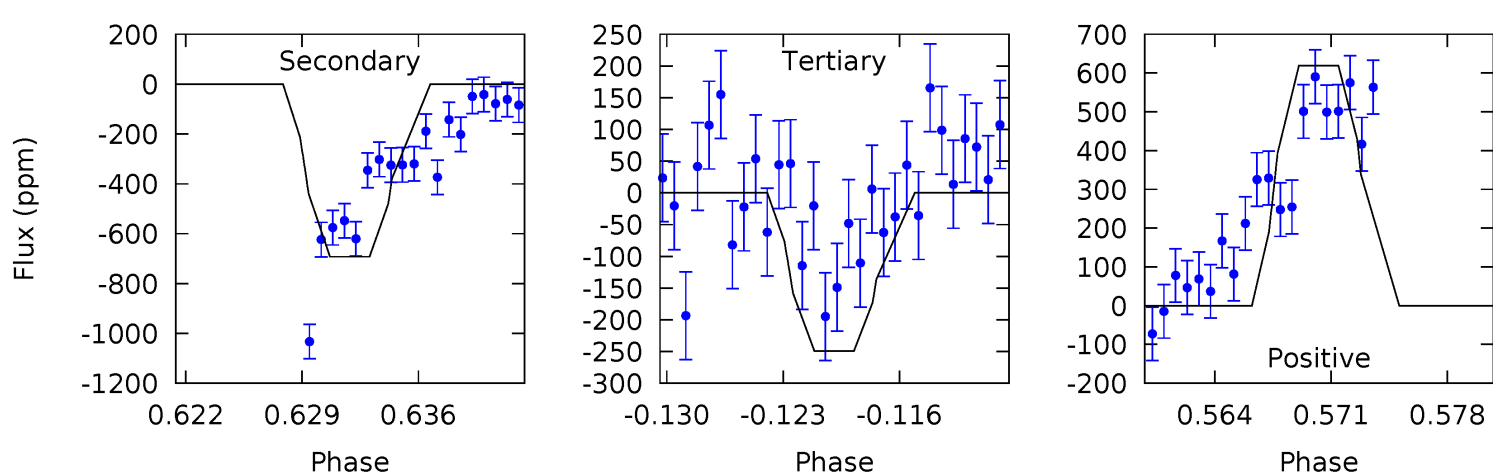
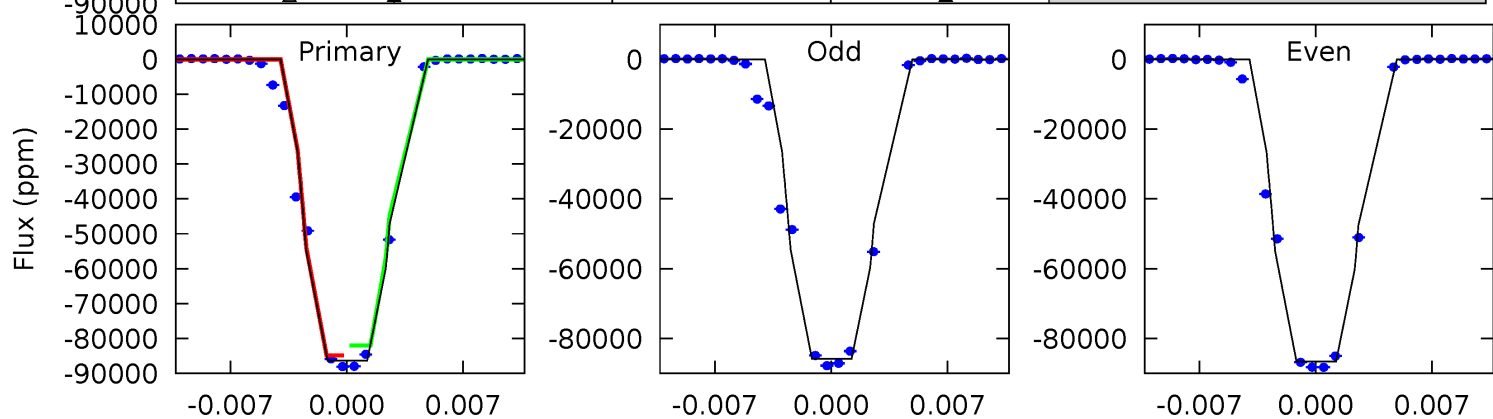
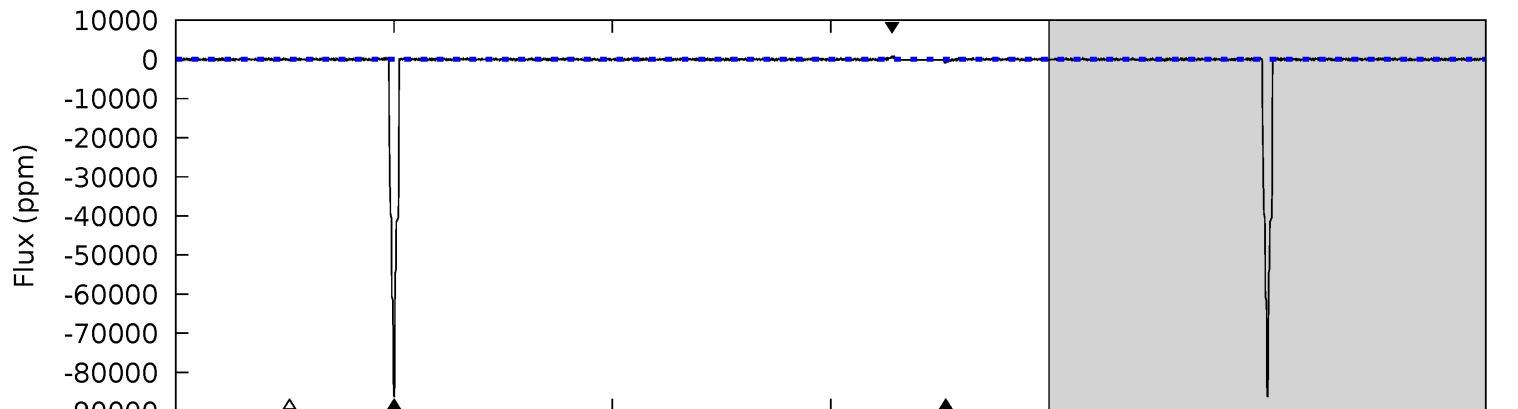
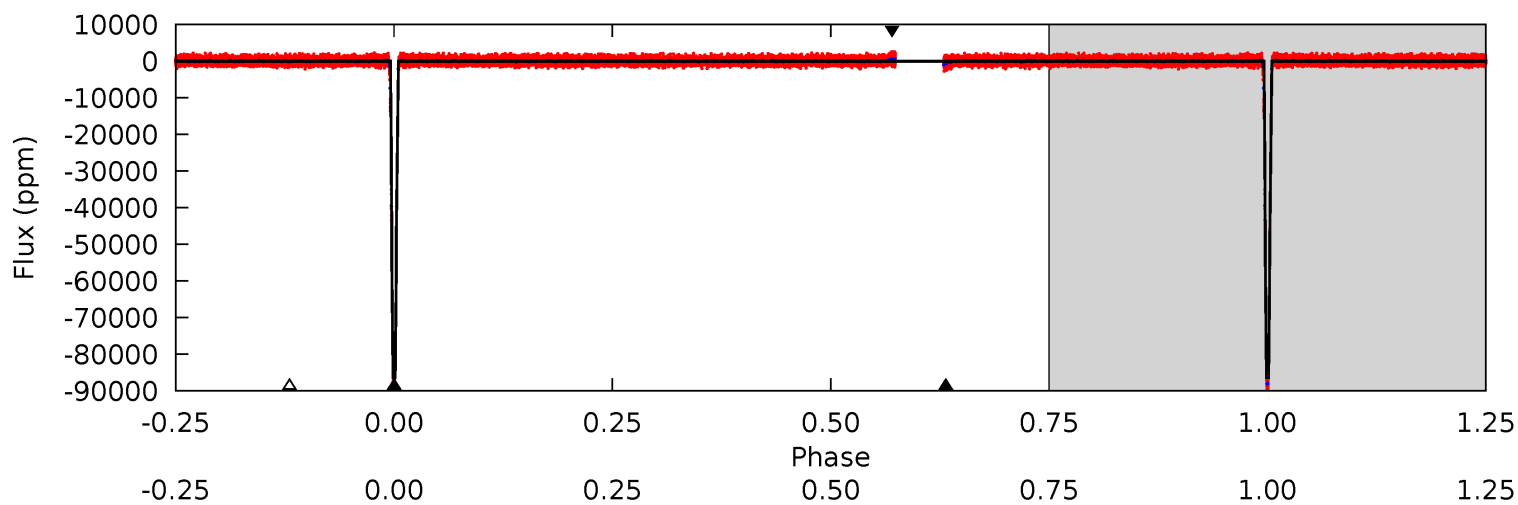
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4111	6.85	6.21	4.50	5.00	2.53	1.85	4105	4107	0.64	2.34	7.61	1.00	0.00	0.59



Alt Model-Shift Uniqueness Test

005871918-02, P = 12.643321 Days, E = 119.508798 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1569	12.6	4.53	11.2	5.09	2.69	1.38	1565	1558	8.06	1.34	6.65	1.00	0.01	0



Stellar Parameters For KIC 005871918

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3977^{+79}_{-79}	$4.697^{+0.033}_{-0.025}$	$-0.100^{+0.200}_{-0.200}$	$0.562^{+0.034}_{-0.037}$	$0.572^{+0.036}_{-0.039}$	$4.550^{+0.681}_{-0.491}$
	+2%/-2%	+1%/-1%	+200%/-200%	+6%/-7%	+6%/-7%	+15%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 005871918-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-151 ± 22	$25.84^{+2.33}_{-2.45}$	617^{+15}_{-15}	1619^{+51}_{-45}	$0.969^{+0.263}_{-0.189}$
Alt.	-693 ± 55	$18.62^{+2.32}_{-2.28}$	617^{+15}_{-15}	2051^{+63}_{-54}	$8.473^{+2.560}_{-1.734}$

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

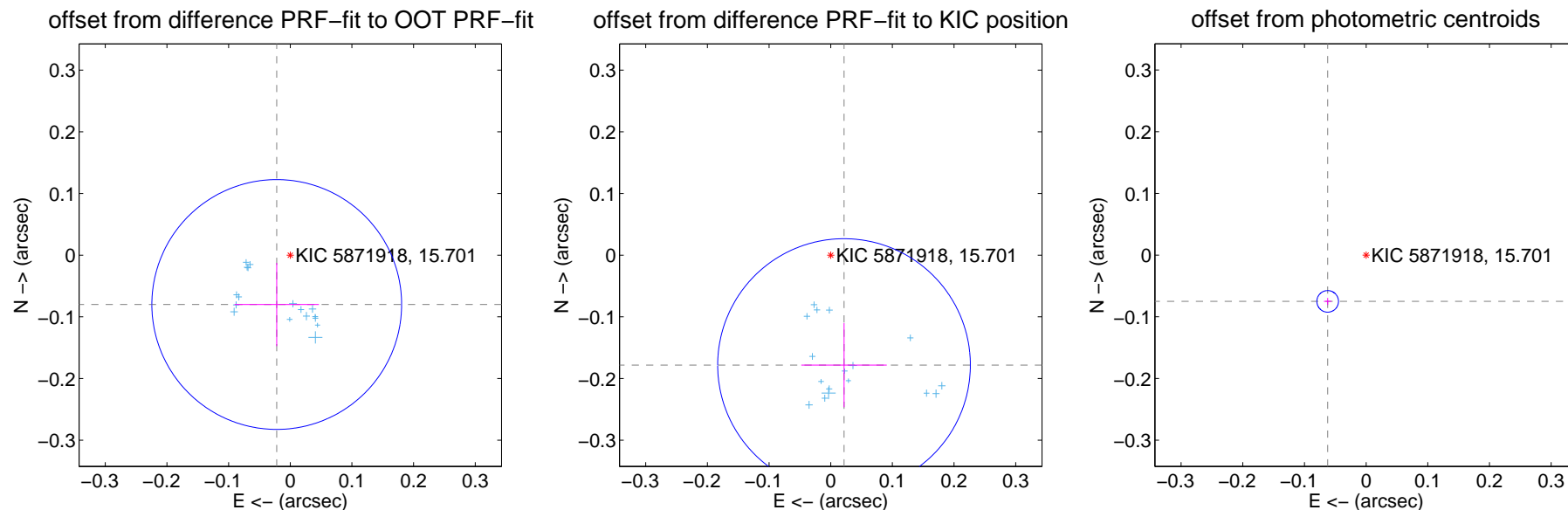
DV Centroid Data

Supplemental centroid analysis for 005871918-02. Kepler magnitude: 15.70. Transit SNR 1705.34

There are 17 quarters with good PRF difference image offsets

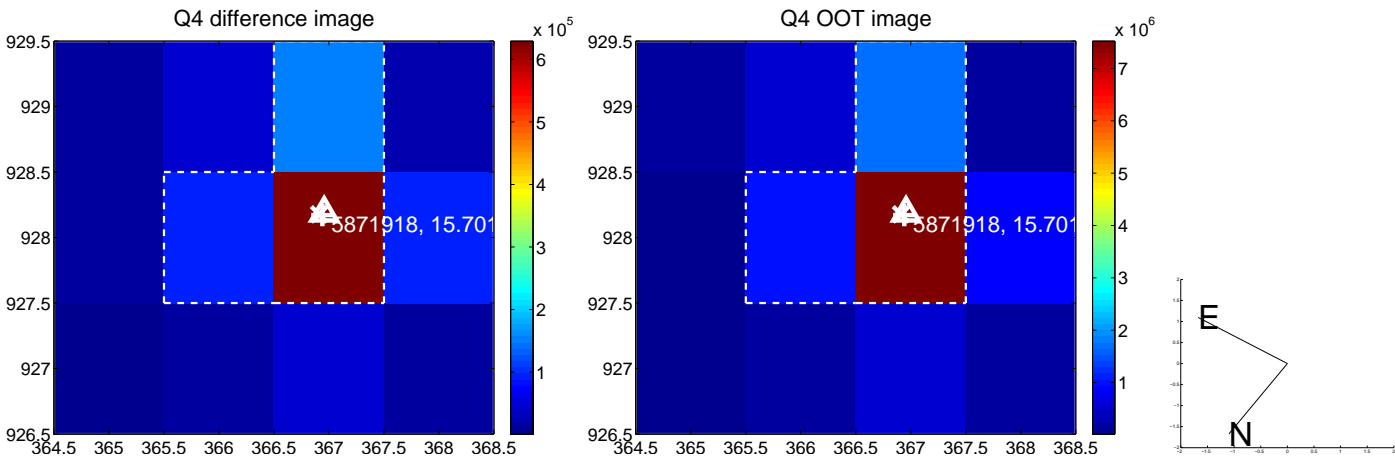
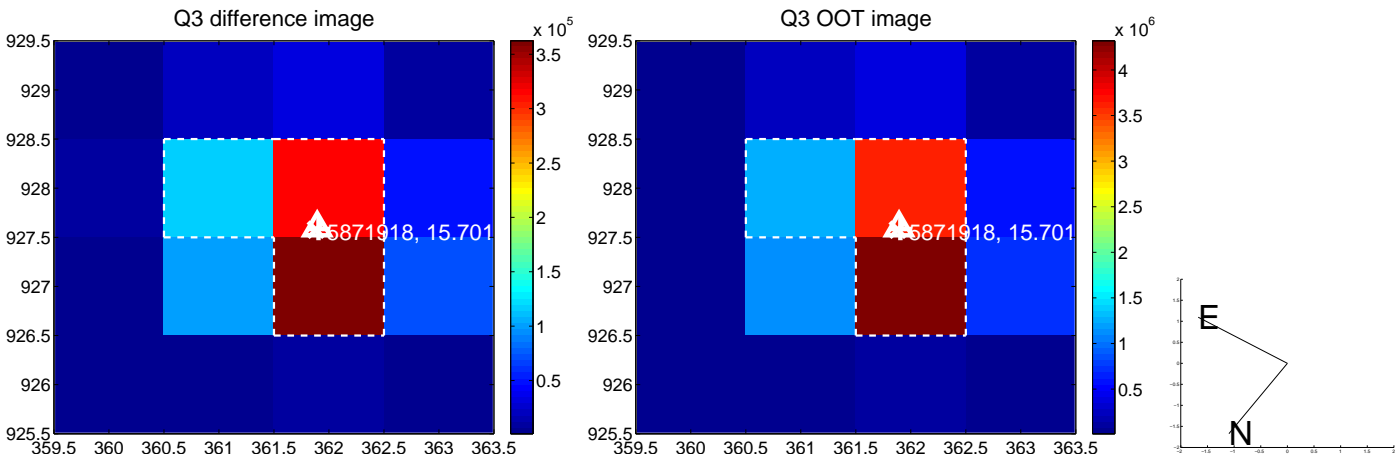
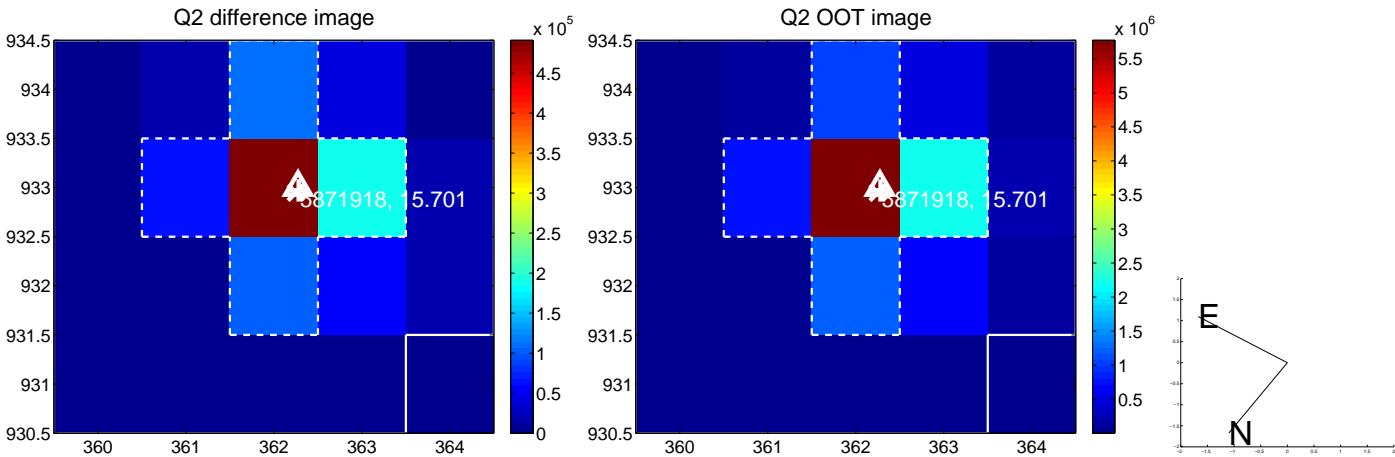
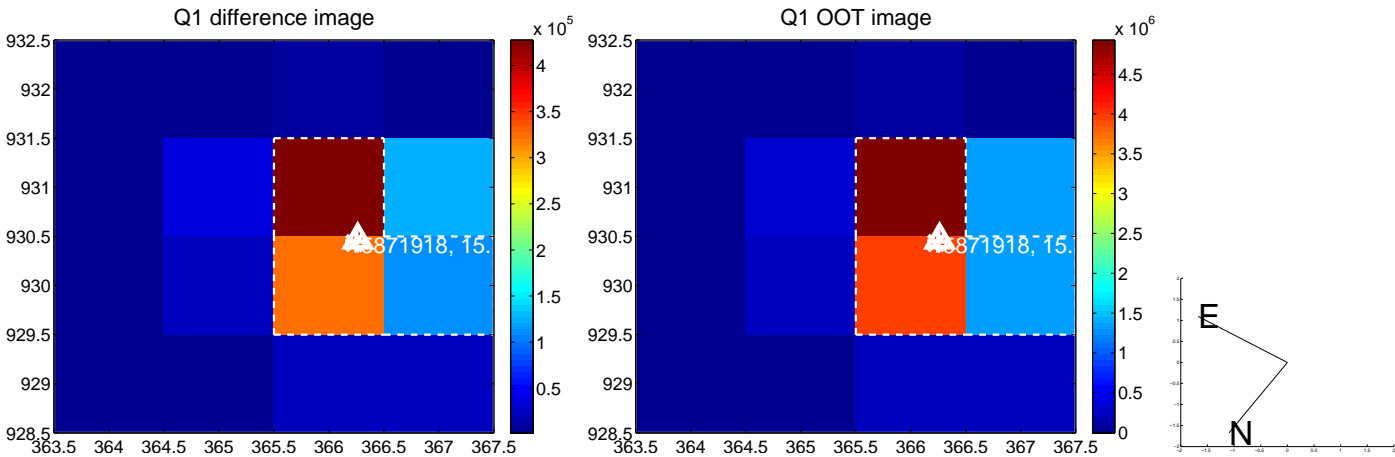
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.083 ± 0.067	1.23	0.022 ± 0.068	-0.080 ± 0.067
PRF-fit source offset from KIC position	0.179 ± 0.068	2.63	-0.022 ± 0.069	-0.178 ± 0.068
photometric centroid source offset	0.10 ± 0.01	16.71	0.06 ± 0.01	-0.08 ± 0.01

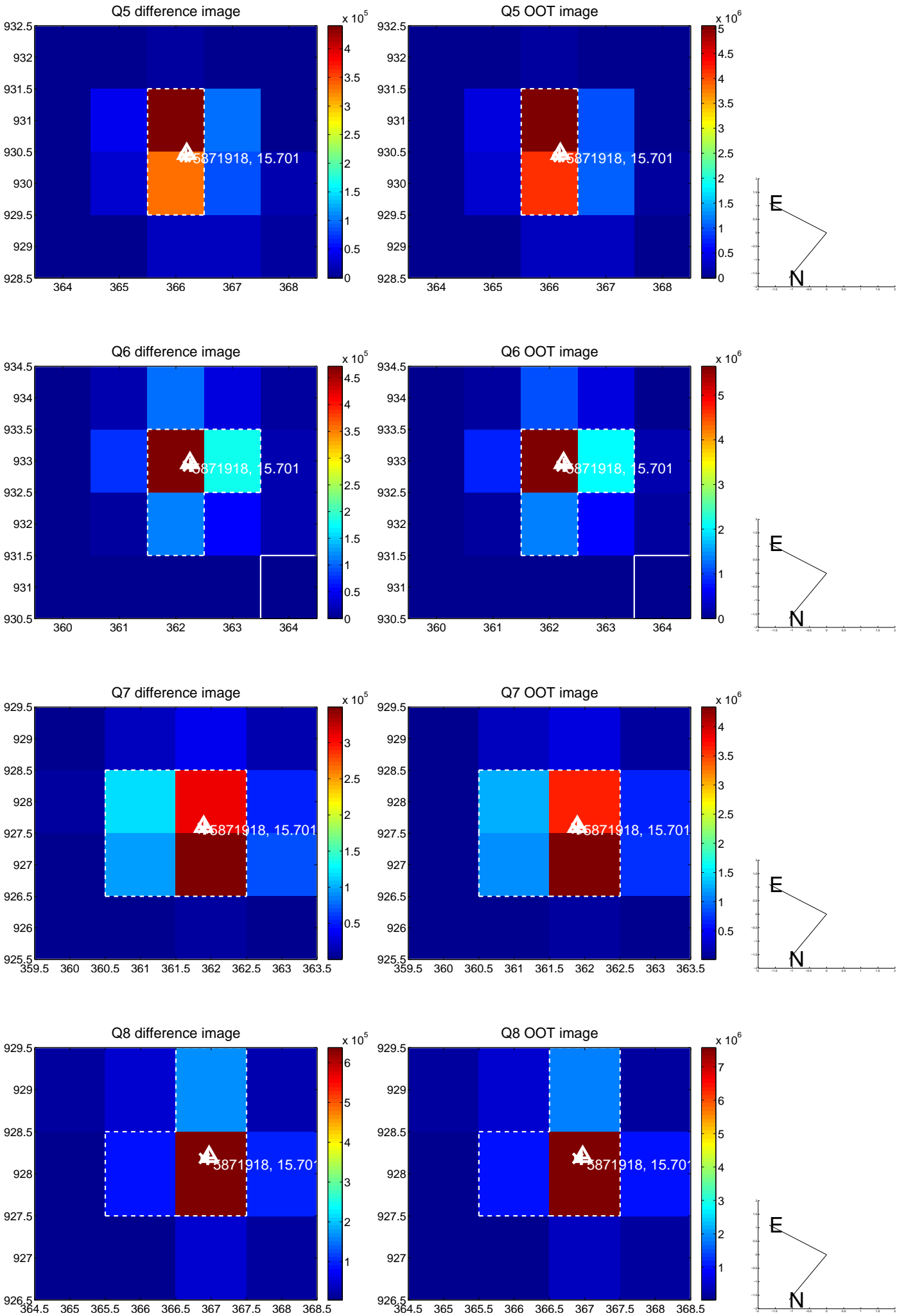


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

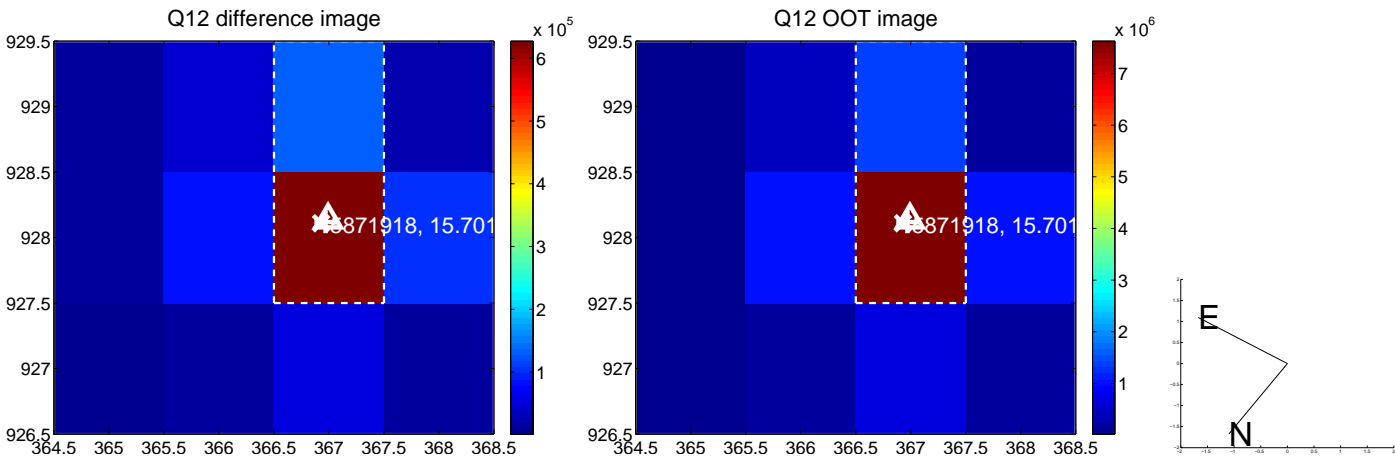
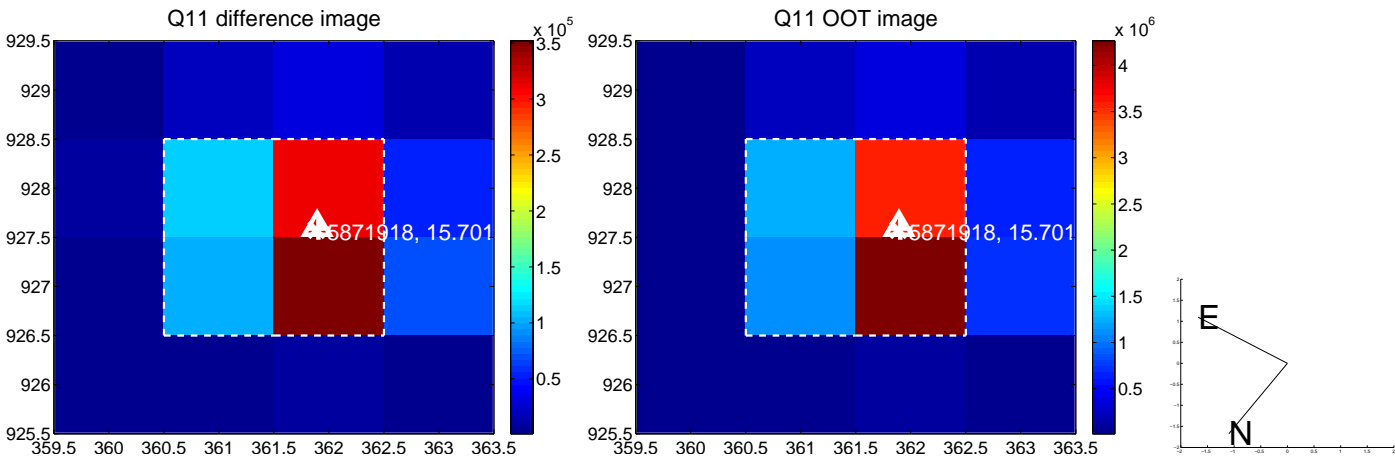
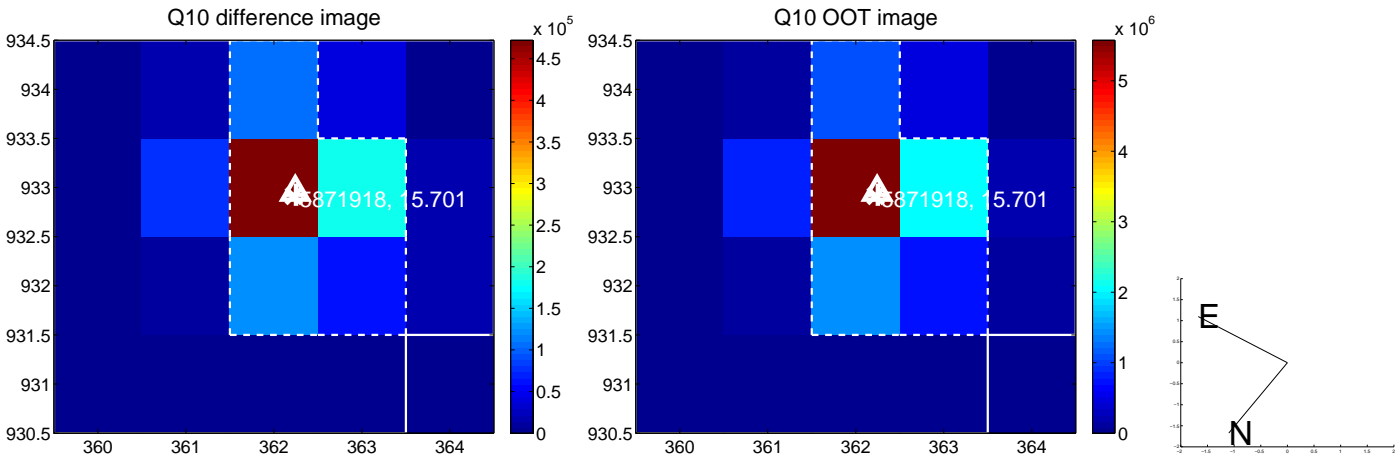
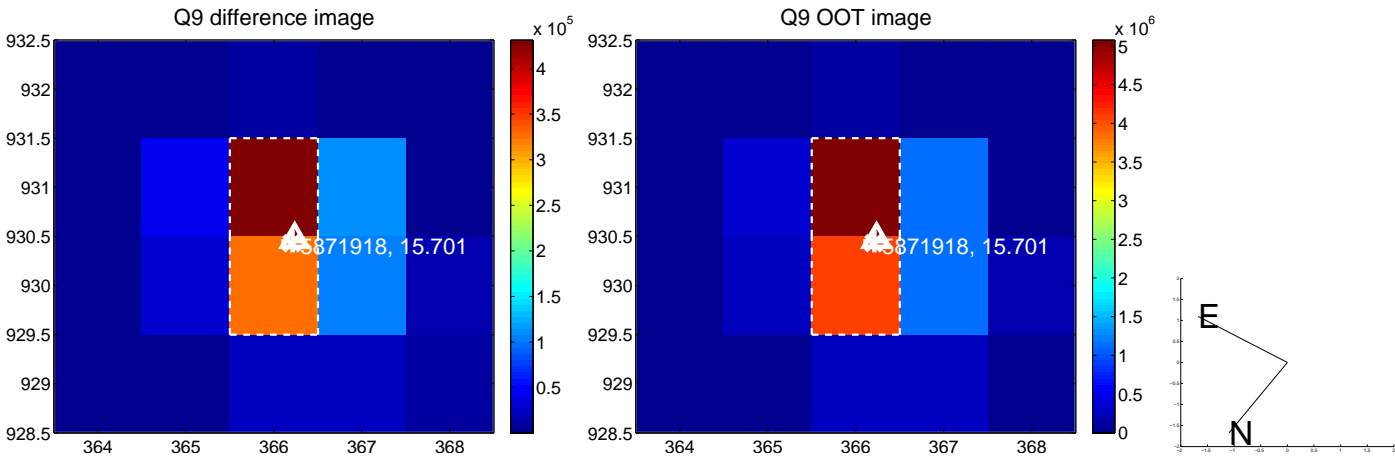
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



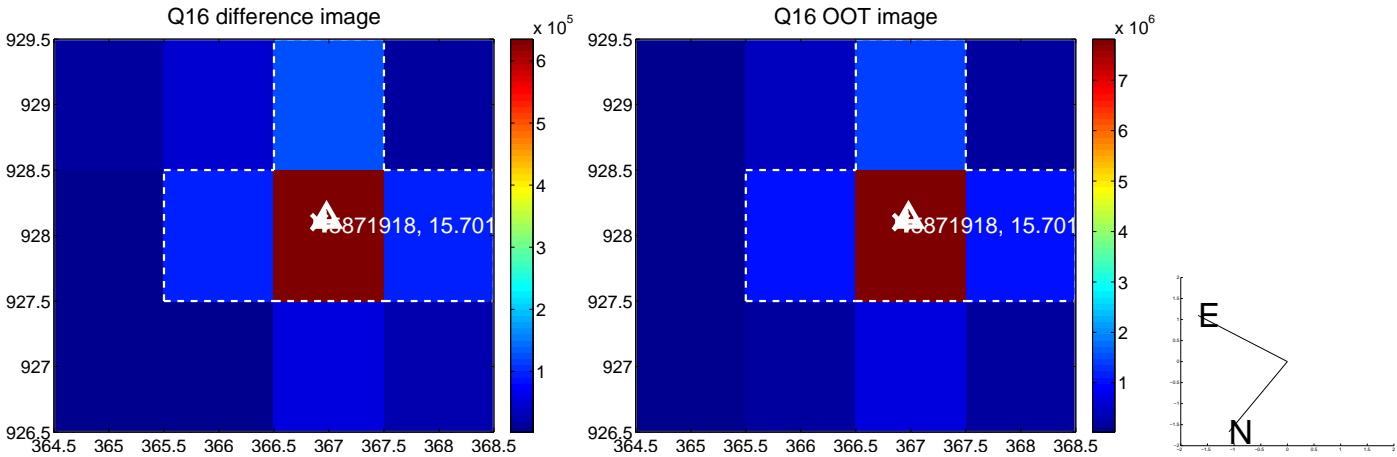
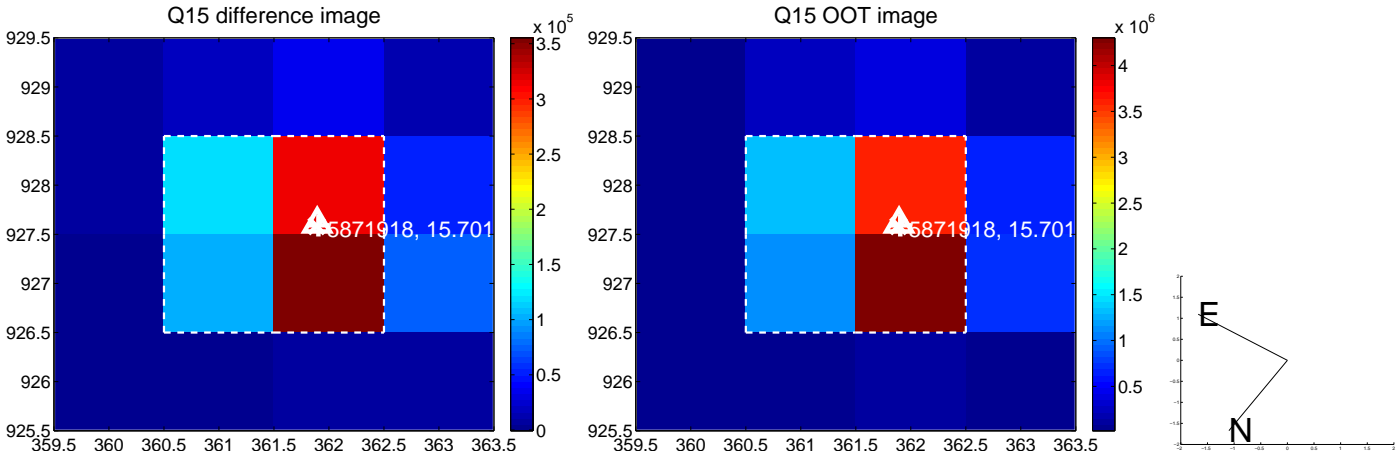
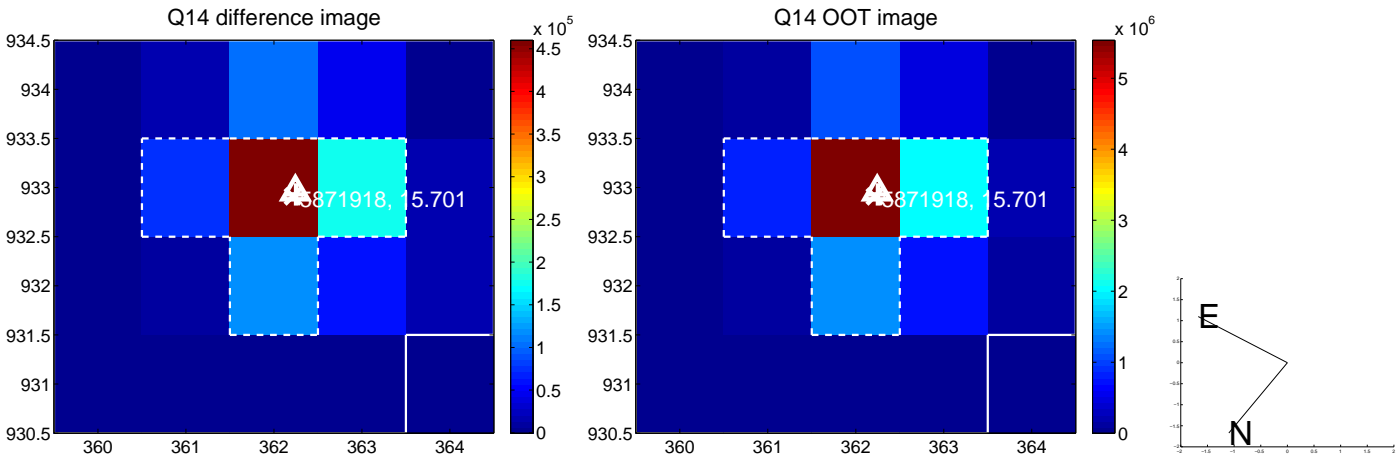
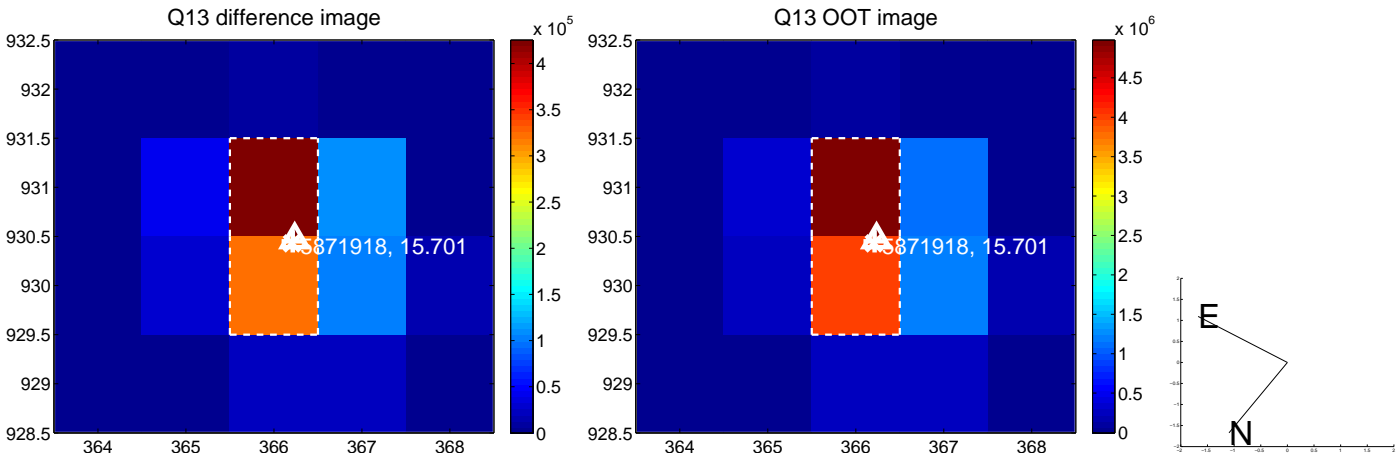
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



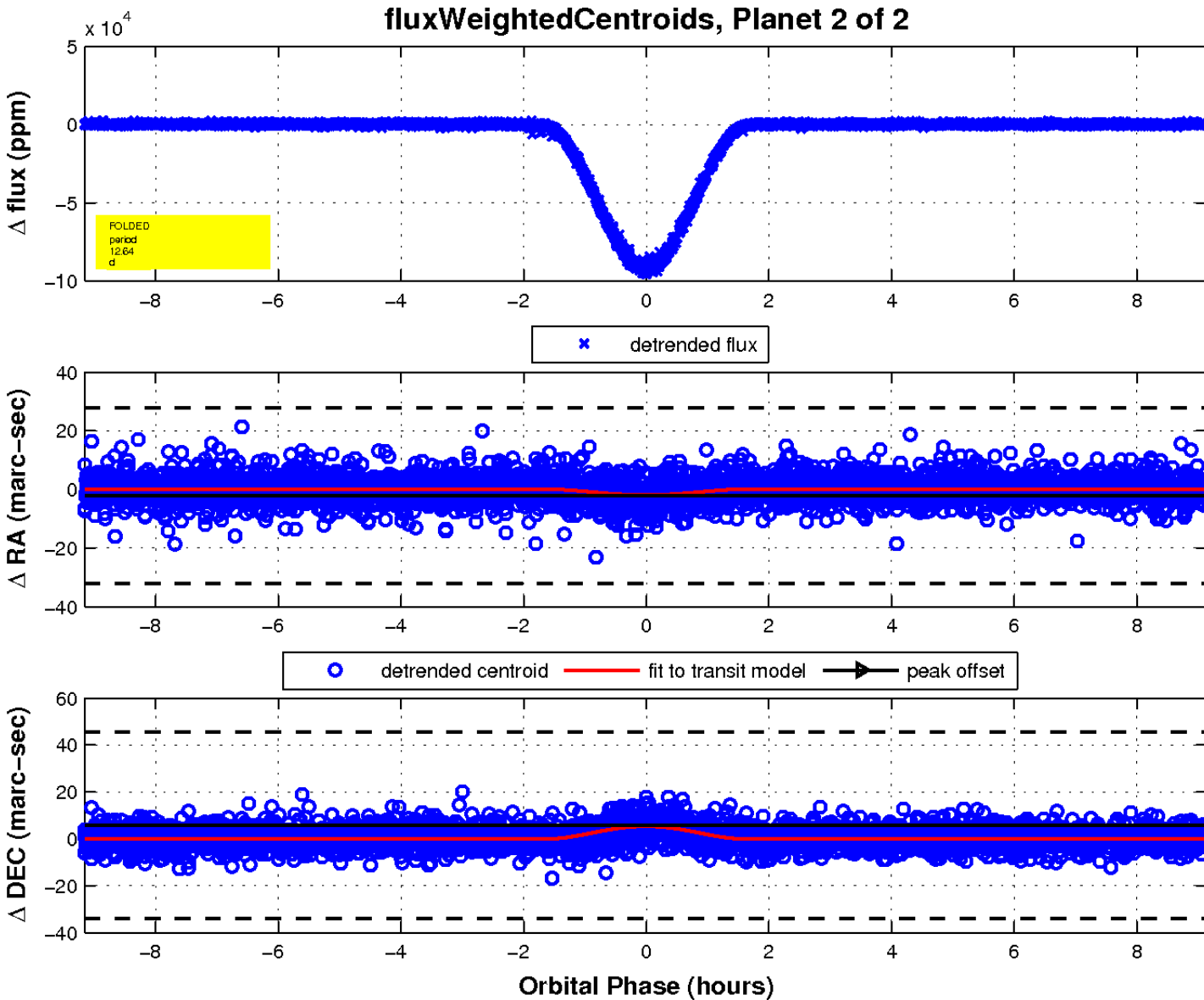
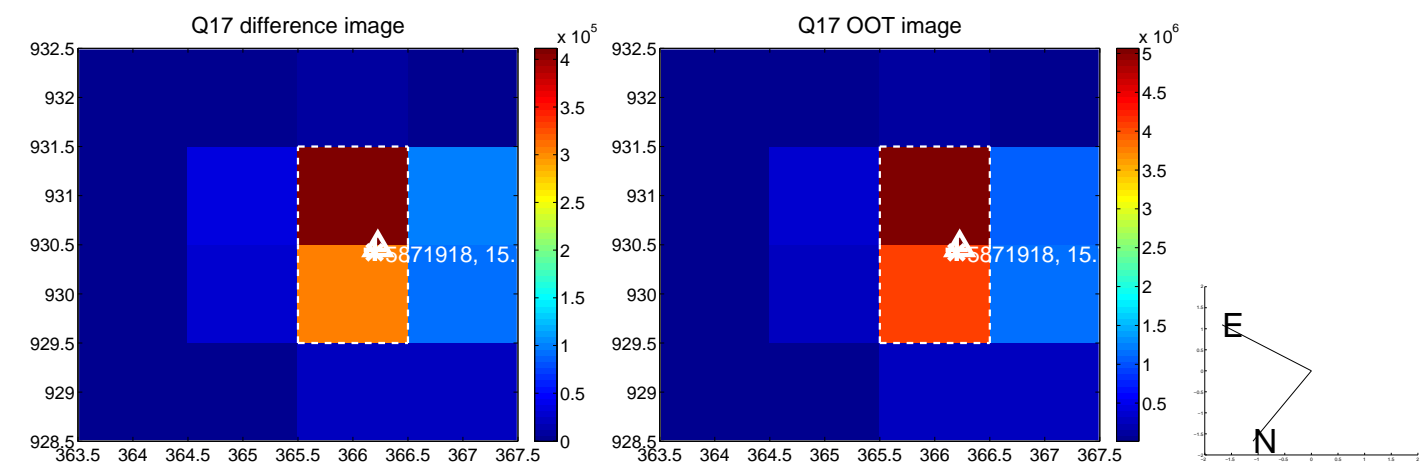
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

