

KIC 009119405

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})
009119405-01	OBS	7135.01	18.646322	139.091991	226569.0	8.919	12854.9	5850.6	3.48	5786	207.75	481.40
009119405-02	OBS	No	18.646319	143.426840	201131.7	10.765	11833.4	7768.5	3.48	5786	178.03	481.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009119405-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009119405-02	OBS	FP	0.00	1	0	0	0	SAME_NTL_PERIOD

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.

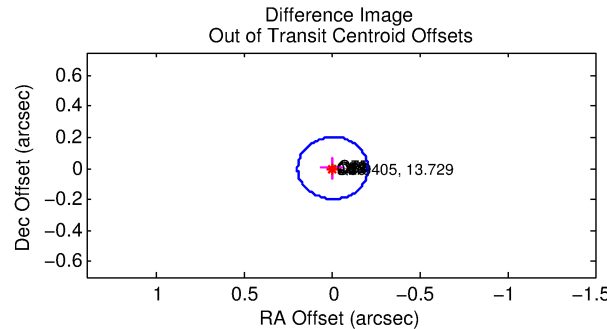
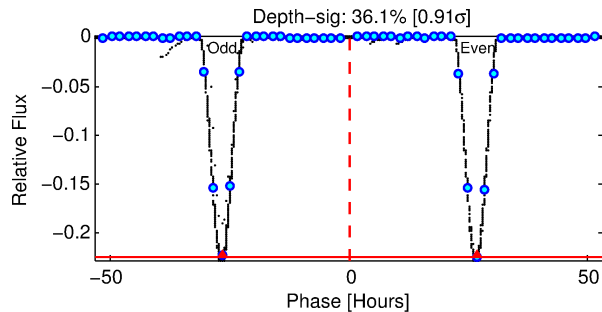
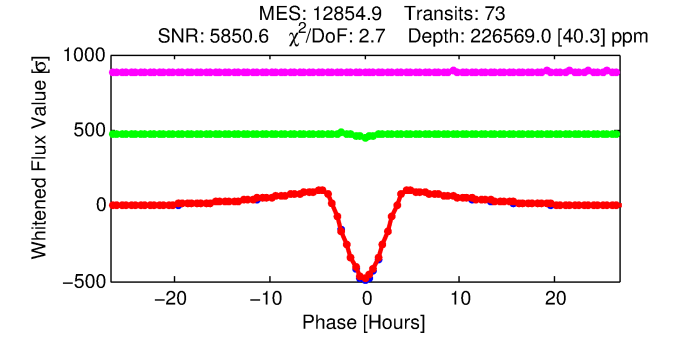
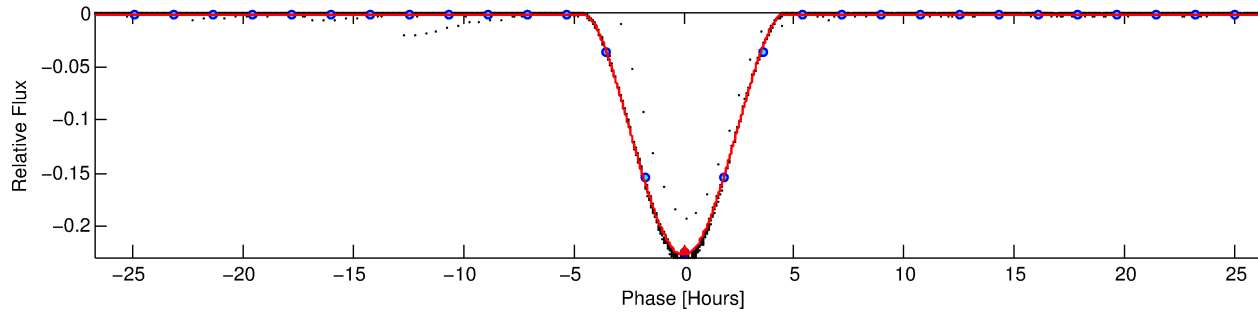
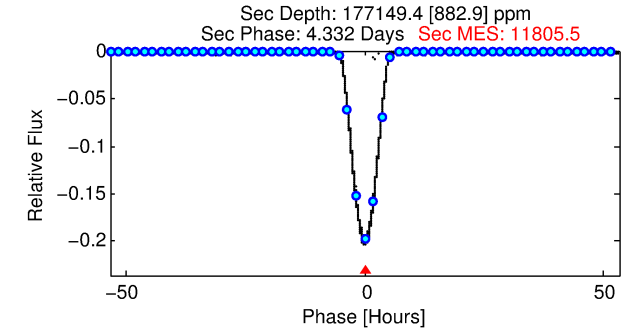
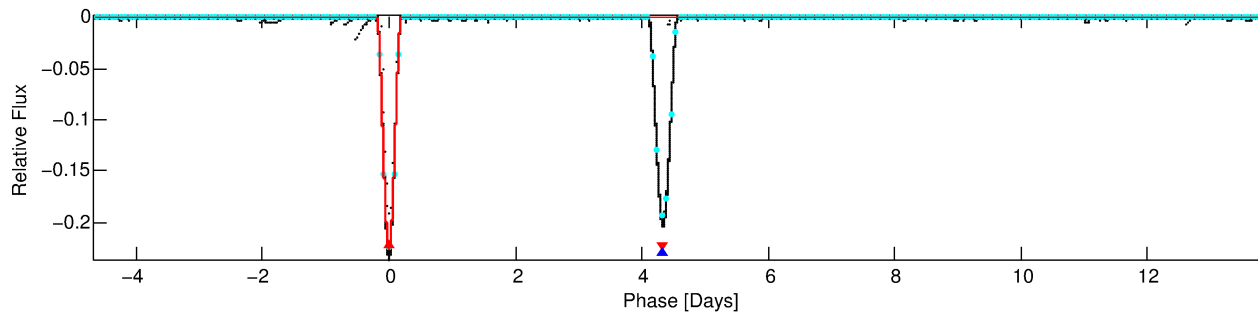
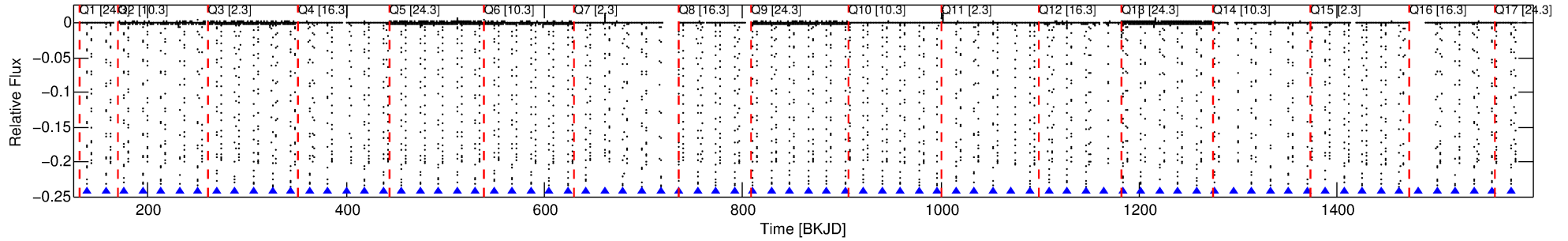
Ephemeris Match Information For 009119405-01

No Significant Match Found

DV One-Page Summary

KIC: 9119405 Candidate: 1 of 2 Period: 18.646 d
KOI: K07135.01 Corr: 0.996

Kp: 13.73 R*: 3.48 Rs Teff: 5786.0 K Logg: 3.54 Fe/H: -0.180



DV Fit Results:

Period = 18.64632 [0.00000] d
Epoch = 139.0920 [0.0000] BKJD
Rp/R* = 0.5474 [0.0103]
a/R* = 21.82 [0.04]
b = 0.73 [0.02]
Seff = 481.40 [598.51]
Teq = 1194 [371] K
Rp = 207.75 [137.86] Re
a = 0.1588 [0.1155] AU
Ag = 56.98 [70.47] [0.79σ]
Teffp = 5074 [175] K [9.45σ]

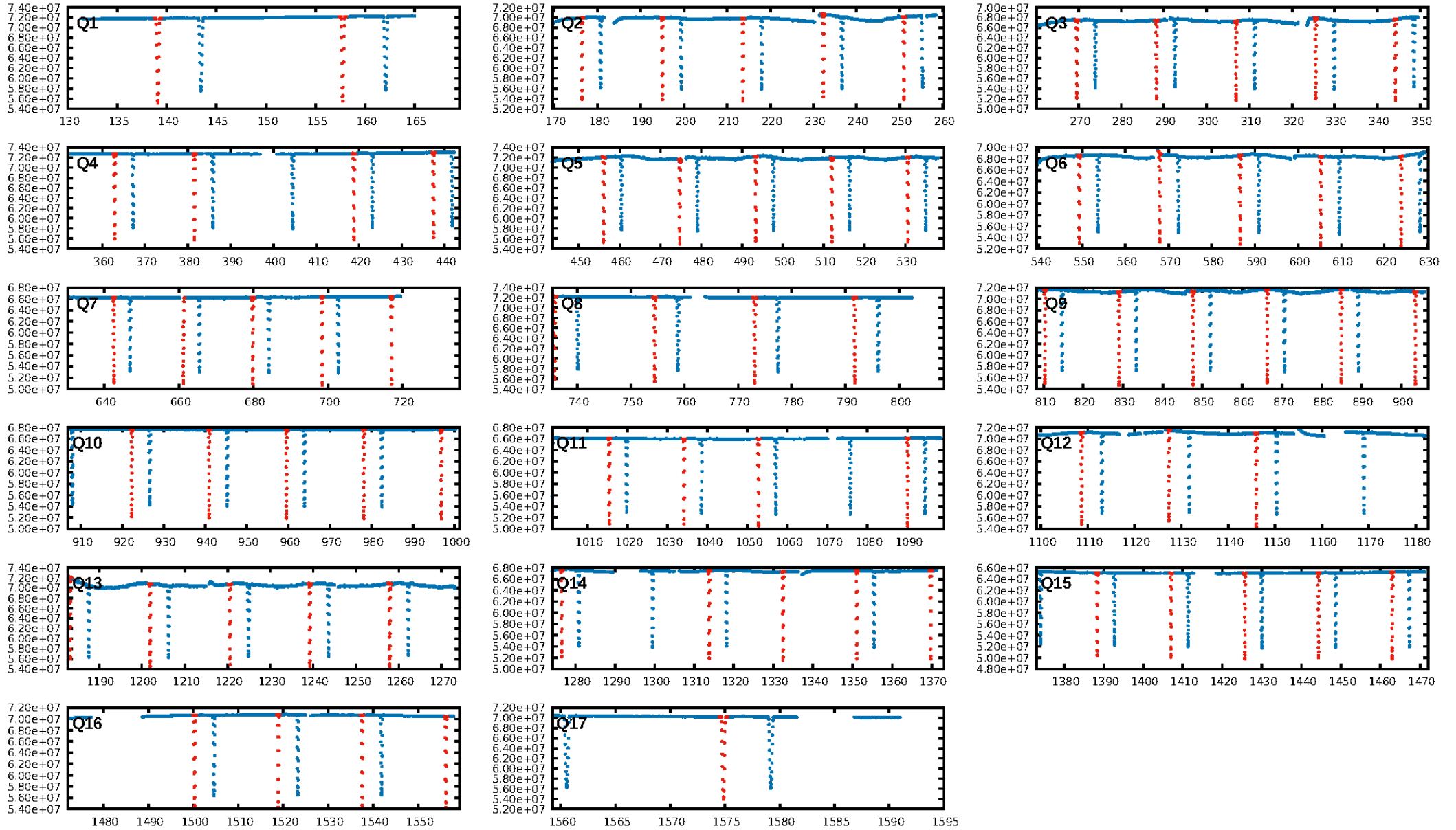
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [70/70]
GhostDiagnostic-chr: 2.729
Centroid-sig: 0.0%
Centroid-so: 0.772 arcsec [1043.14σ]
OotOffset-rm: 0.005 arcsec [0.07σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.164 arcsec [2.30σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

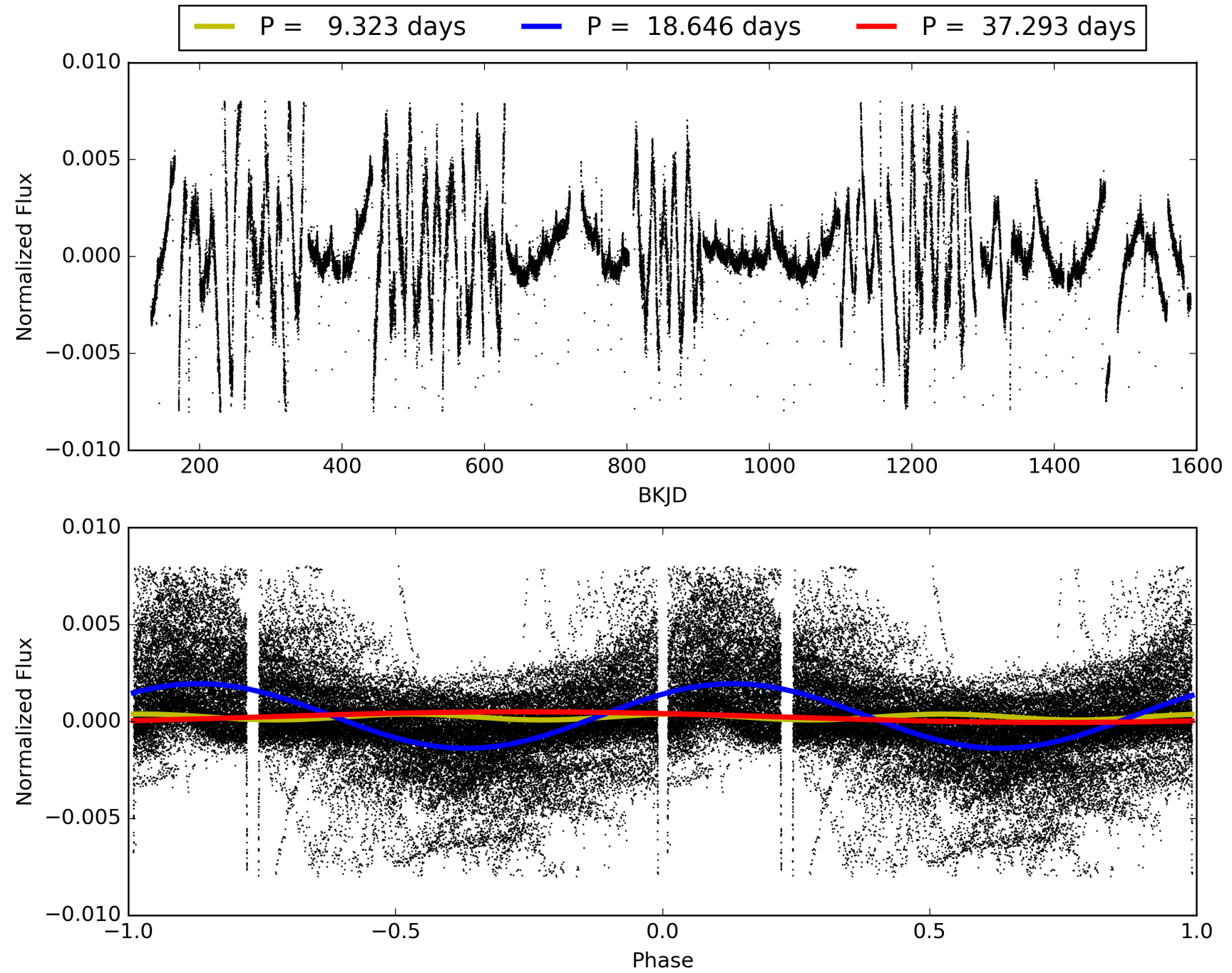
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:55:00 Z

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

TCE 009119405-01, PDC Light Curves

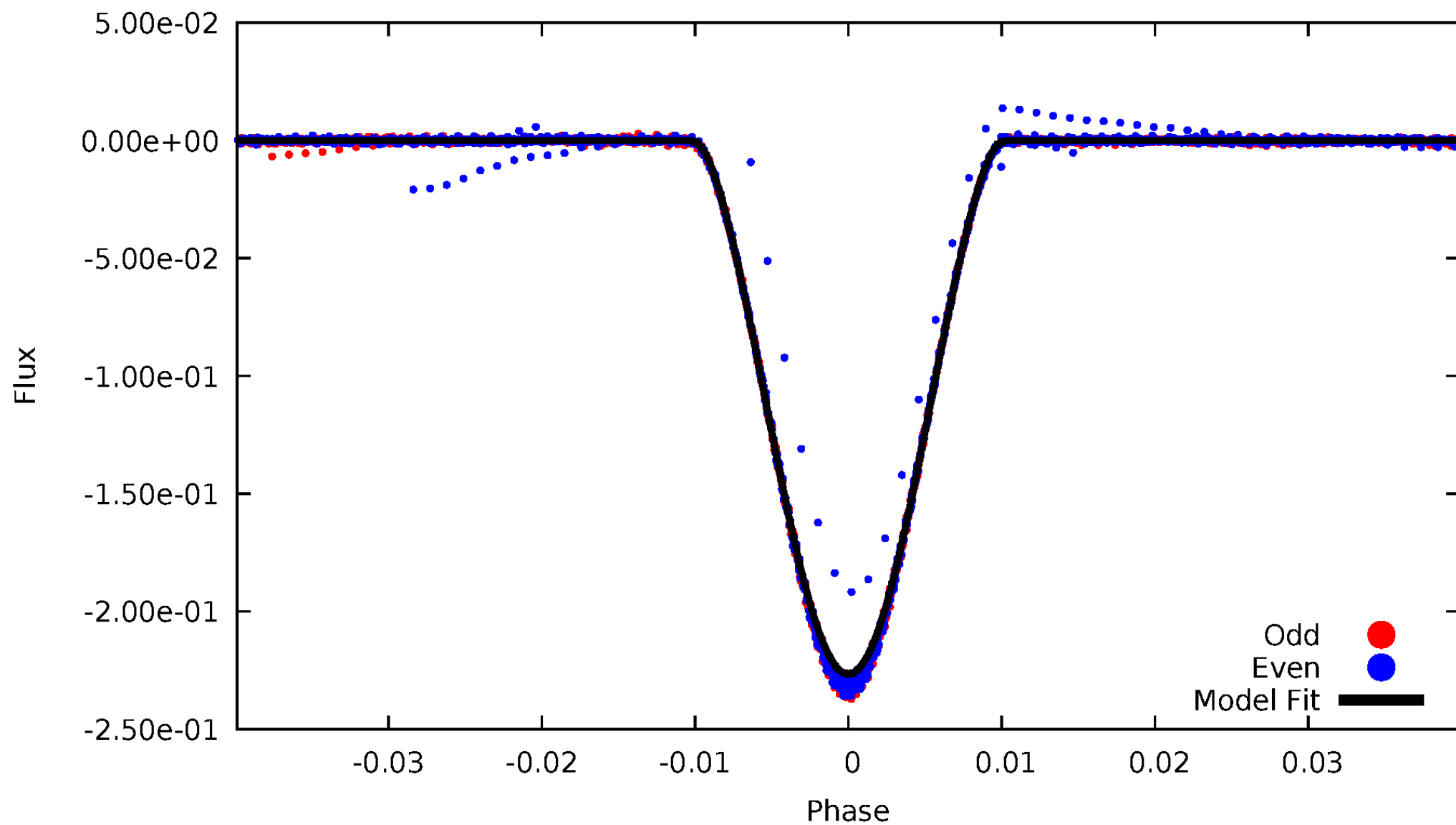


TCE 009119405-01



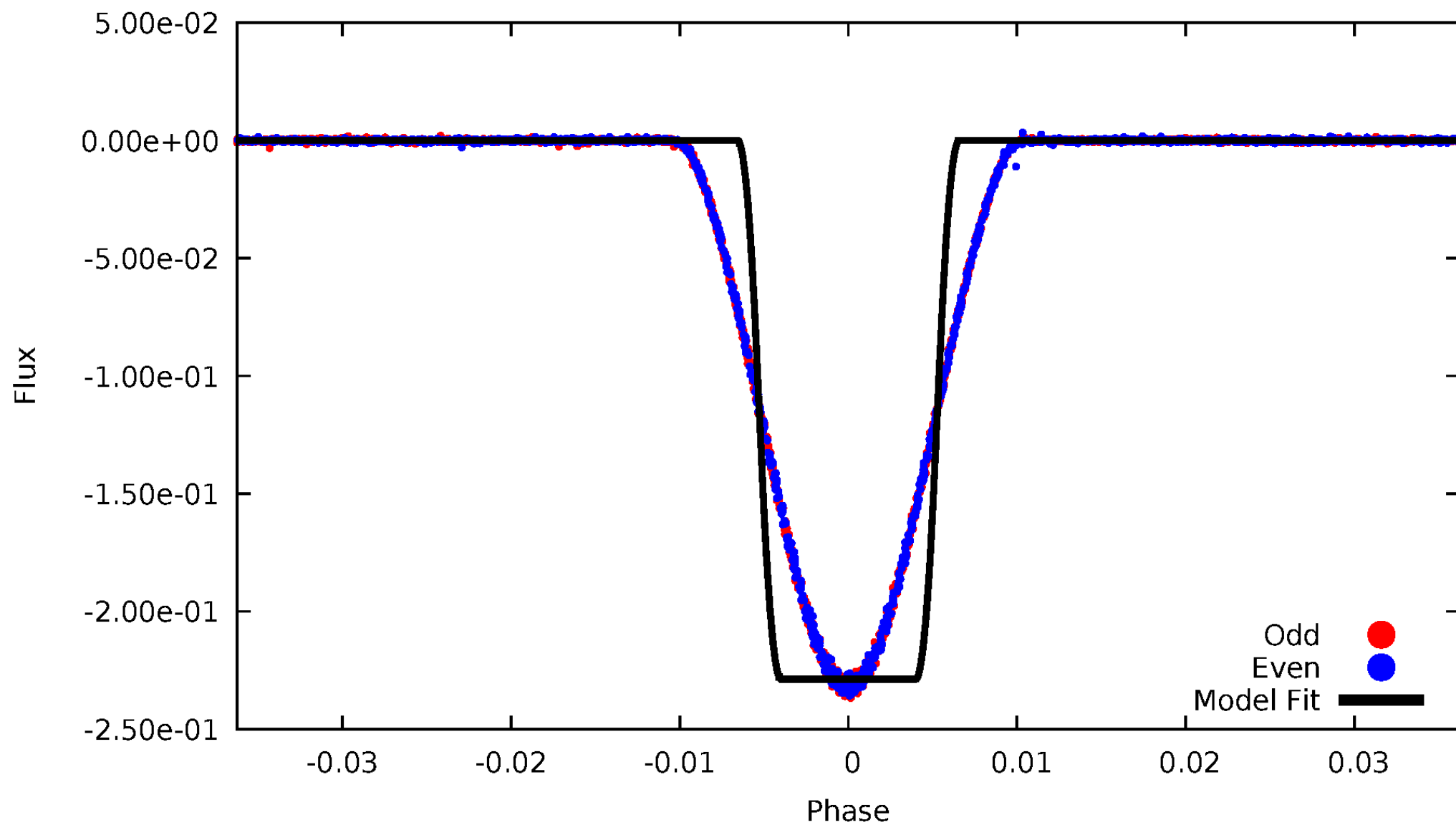
DV Odd/Even

TCE 009119405-01



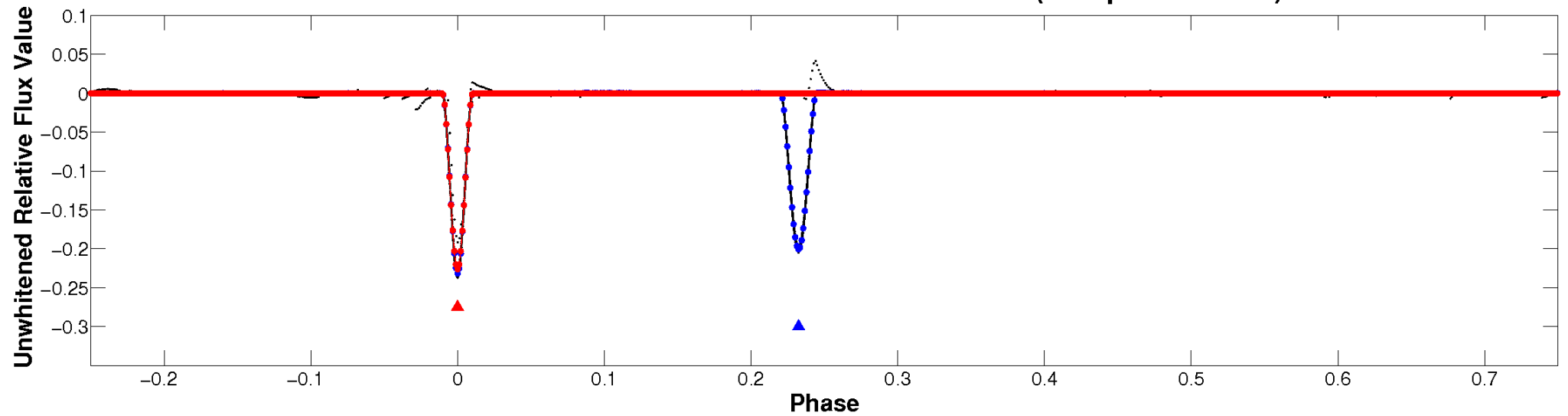
ALT Odd/Even

TCE 009119405-01

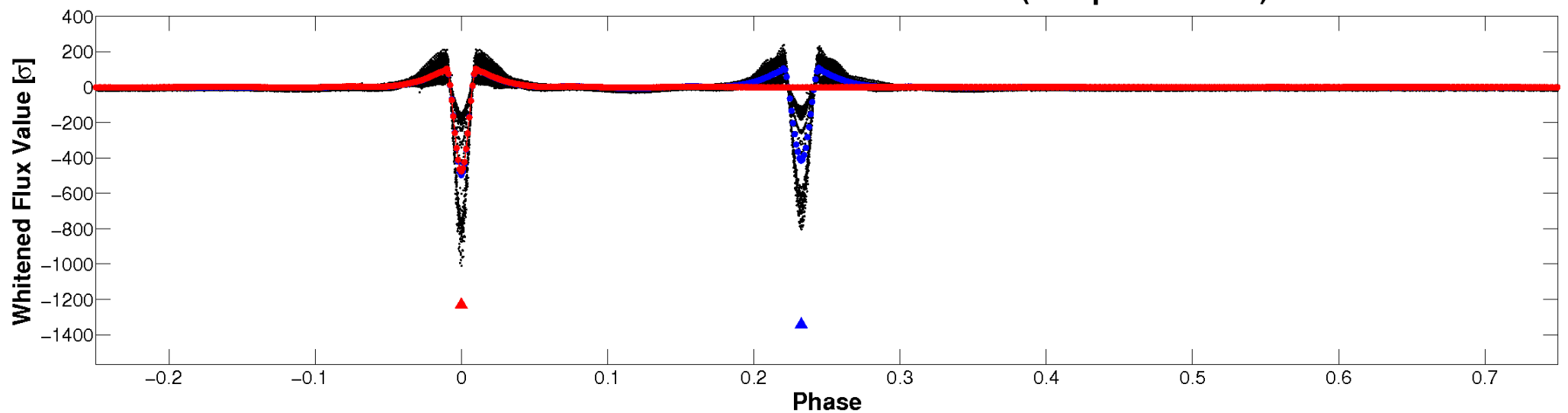


Non-Whitened Vs. Whitened Light Curve

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

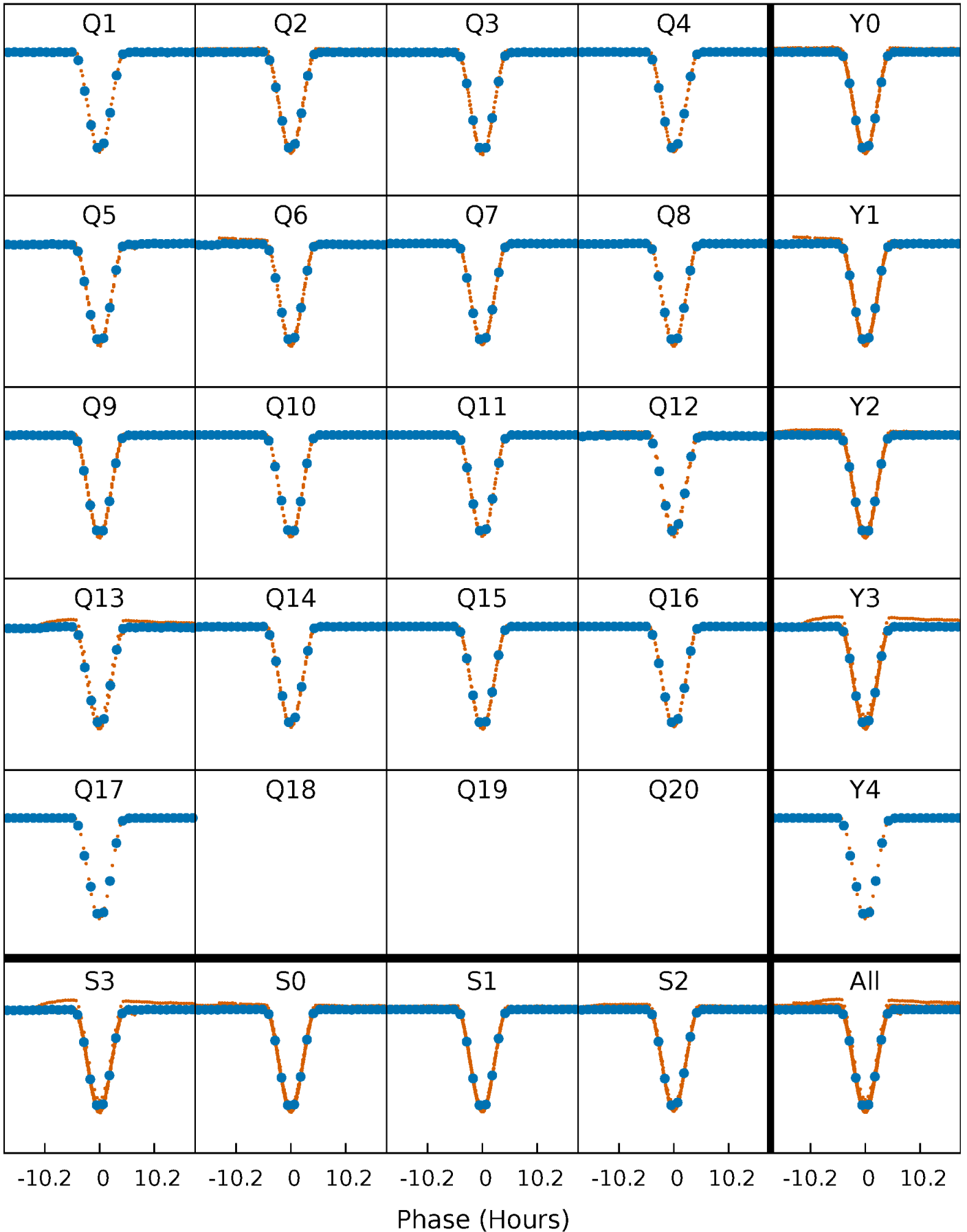


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



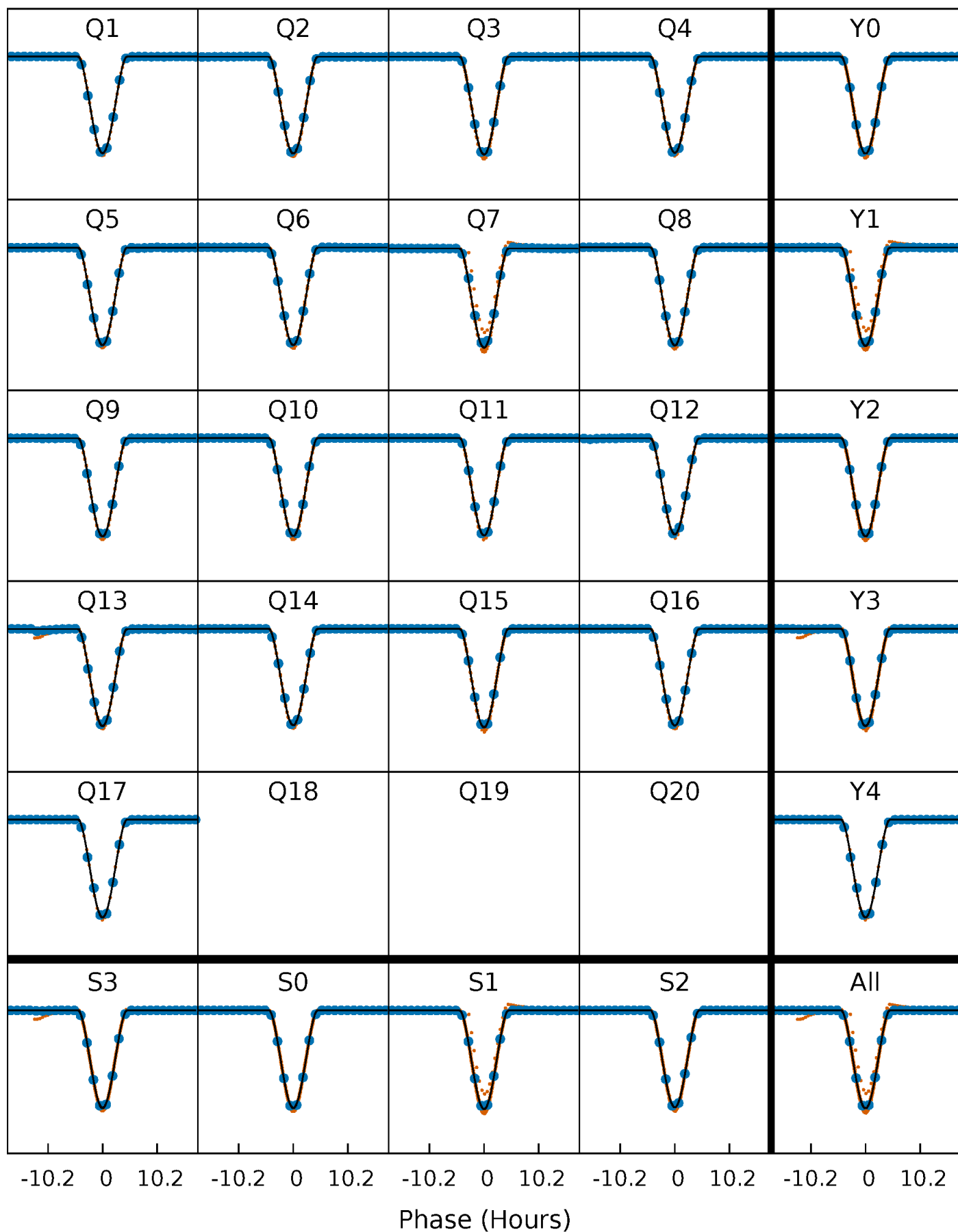
PDC Quarter-Phased Transit Curves

TCE 009119405-01 P= 18.646322 Days $T_0=139.091991$ (BKJD)



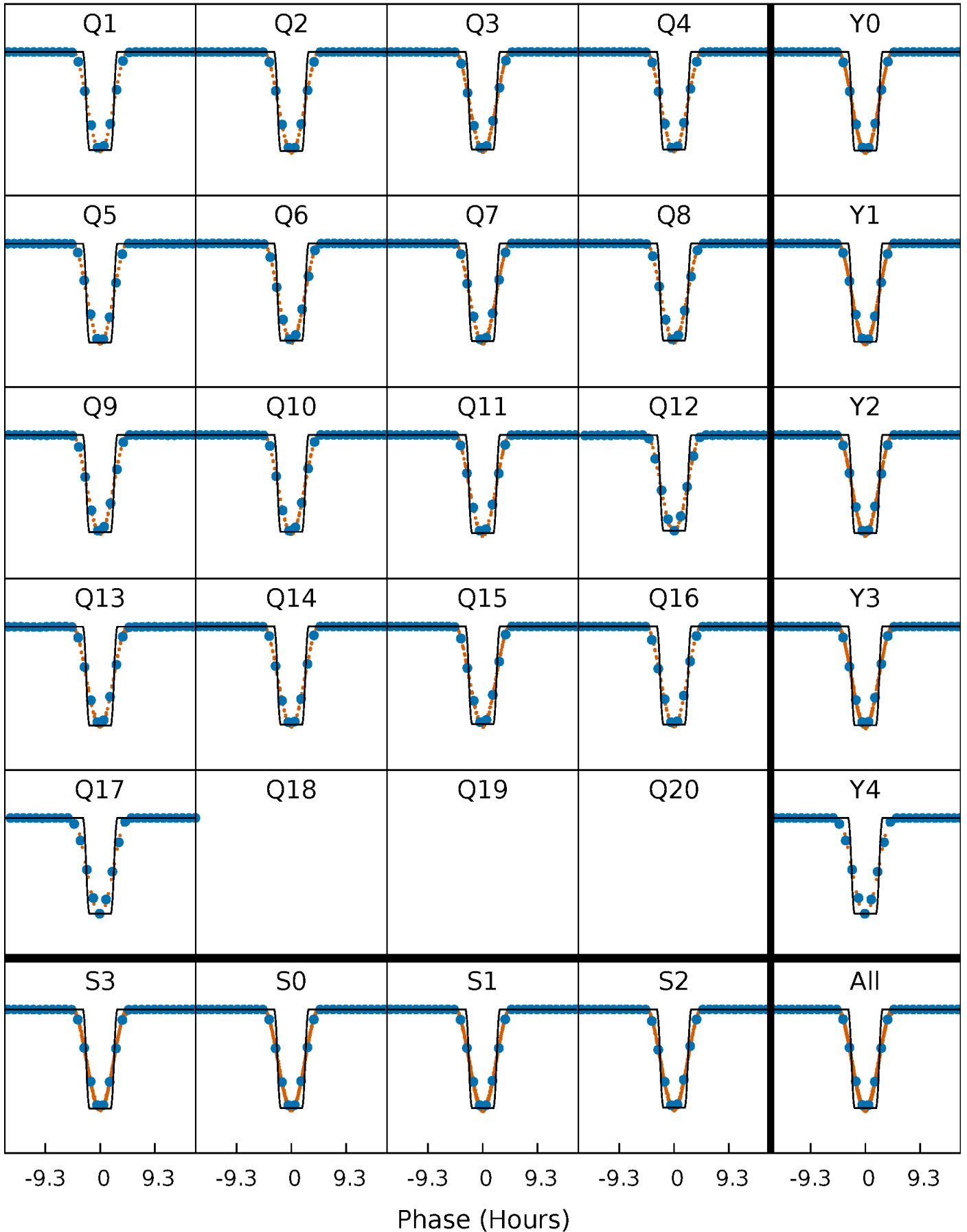
DV Quarter-Phased Transit Curves

TCE 009119405-01 P= 18.646322 Days $T_0=139.091991$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

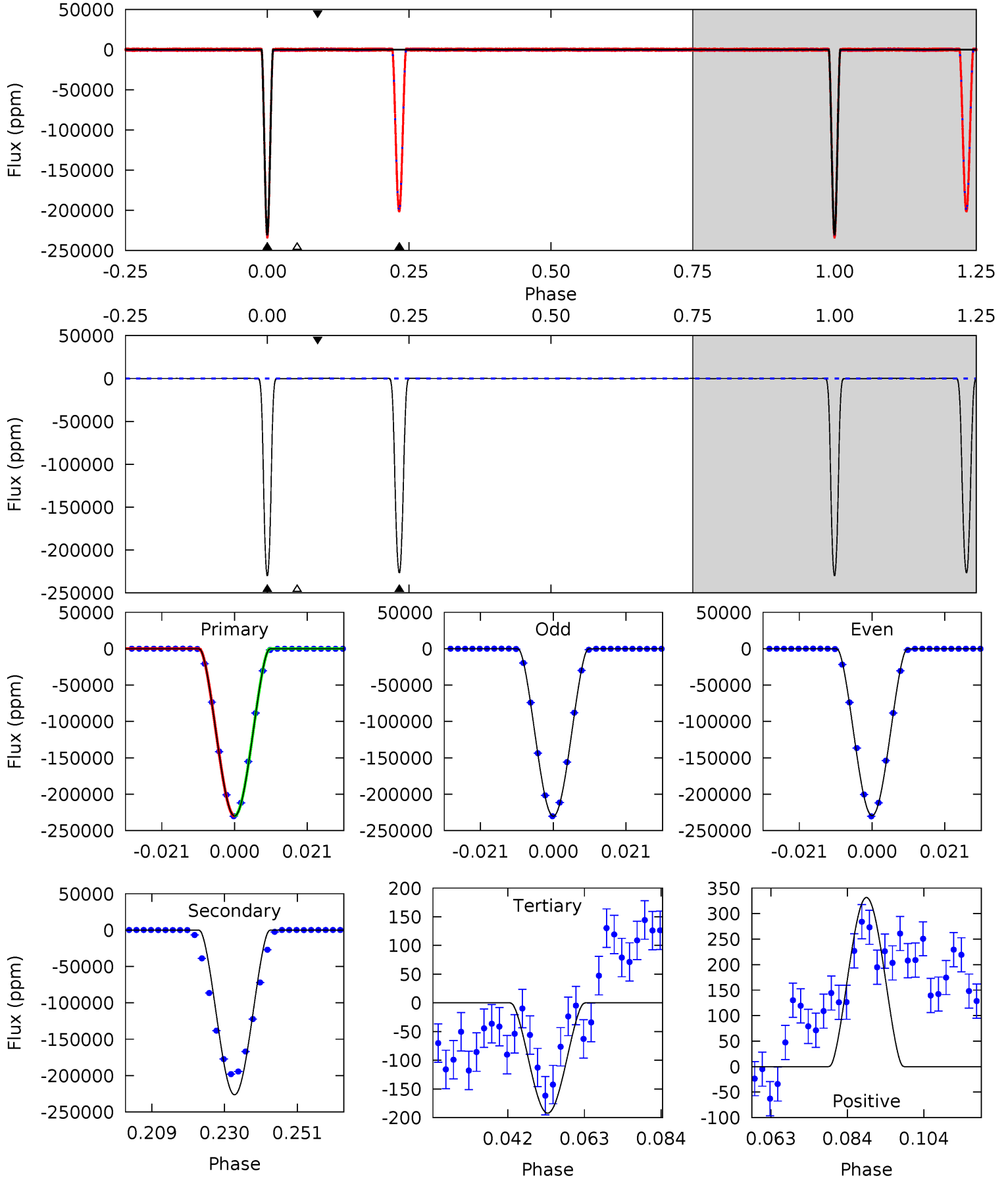
TCE 009119405-01 P= 18.646359 Days $T_0=139.090386$ (BKJD)



DV Model-Shift Uniqueness Test

009119405-01, P = 18.646322 Days, E = 120.445669 Days

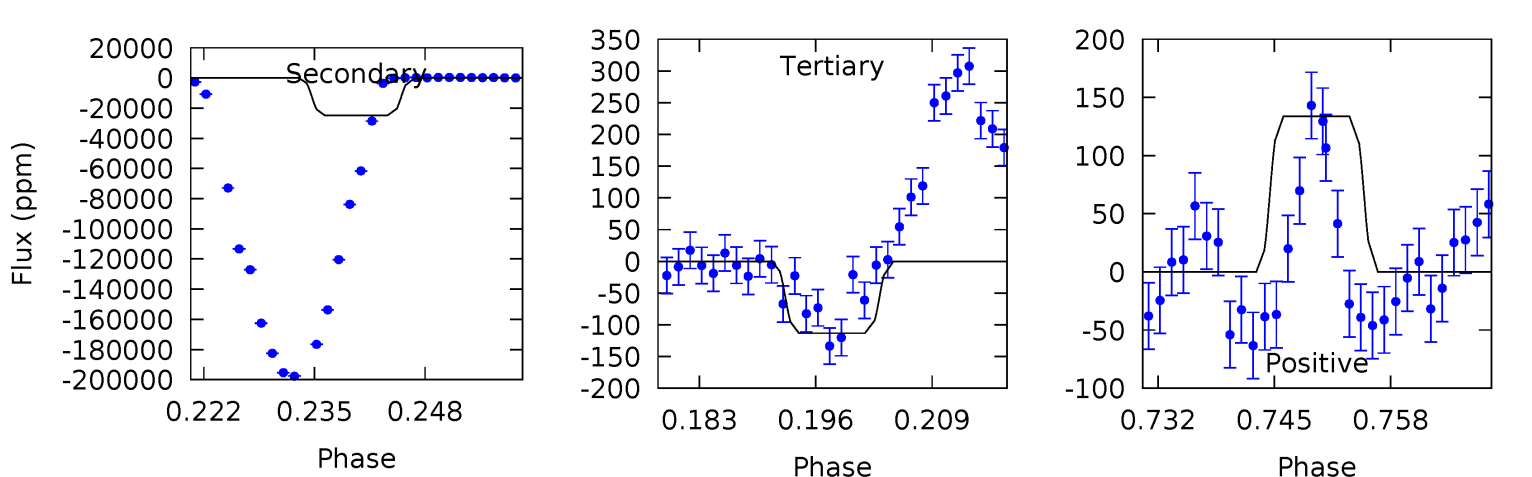
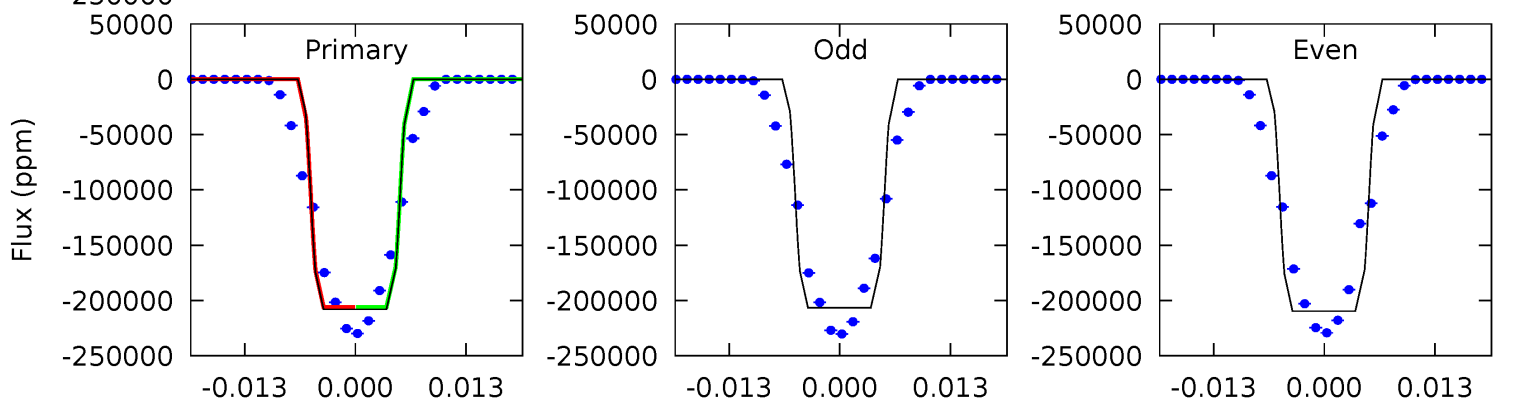
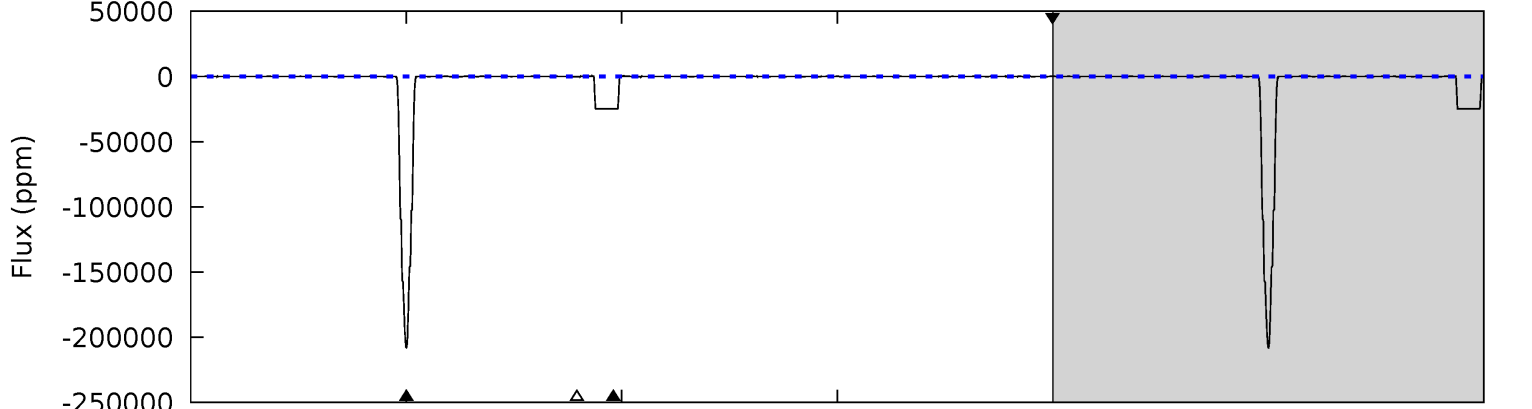
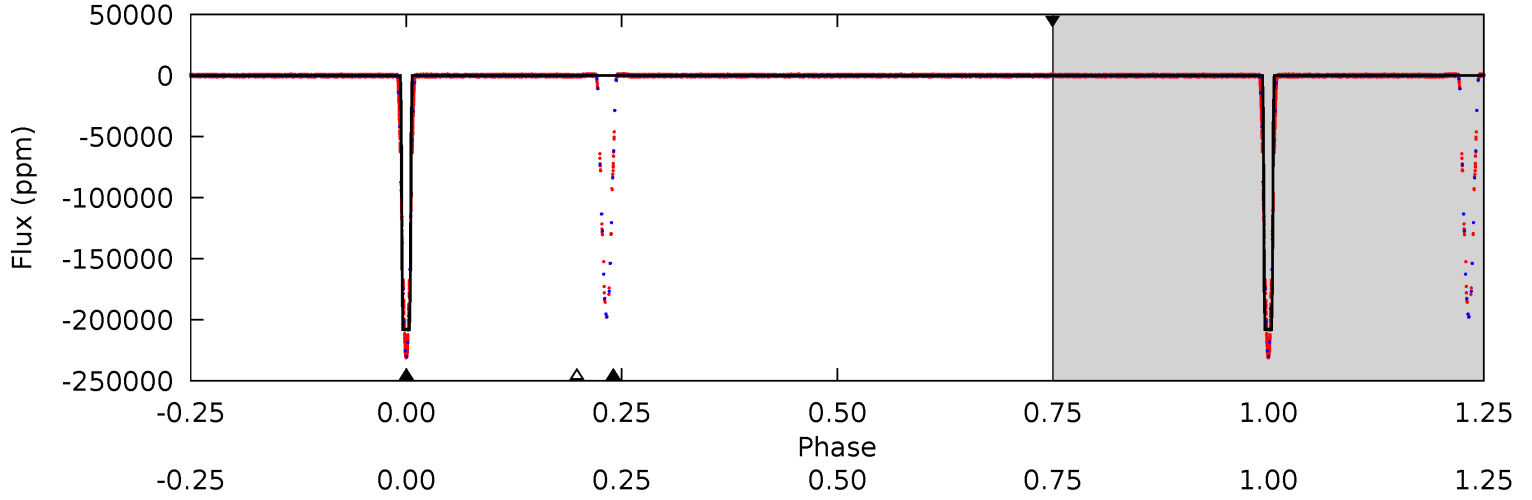
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17768	17491	14.9	25.6	4.88	2.31	6.86	17753	17742	17476	17465	27.9	1.00	0.00	14.1



Alt Model-Shift Uniqueness Test

009119405-01, P = 18.646359 Days, E = 120.444027 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2725	325.2	1.48	1.75	4.97	2.48	12.6	2724	2724	323.7	323.5	21.4	1.00	0.00	0



Stellar Parameters For KIC 009119405

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5786^{+192}_{-175}	$3.542^{+0.752}_{-0.141}$	$-0.180^{+0.300}_{-0.250}$	$3.478^{+0.989}_{-2.307}$	$1.536^{+0.195}_{-0.624}$	$0.051^{+0.919}_{-0.020}$
	+3%/-3%	+21%/-4%	+167%/-139%	+28%/-66%	+13%/-41%	+1787%/-39%
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 009119405-01 / KOI 7135.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-226297 ± 13	$187.05^{+44.12}_{-67.79}$	1598^{+164}_{-298}	5763^{+200}_{-202}	111^{+134}_{-34}
Alt.	-24816 ± 76	$163.28^{+37.63}_{-51.98}$	1597^{+160}_{-267}	3724^{+95}_{-87}	13^{+14}_{-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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

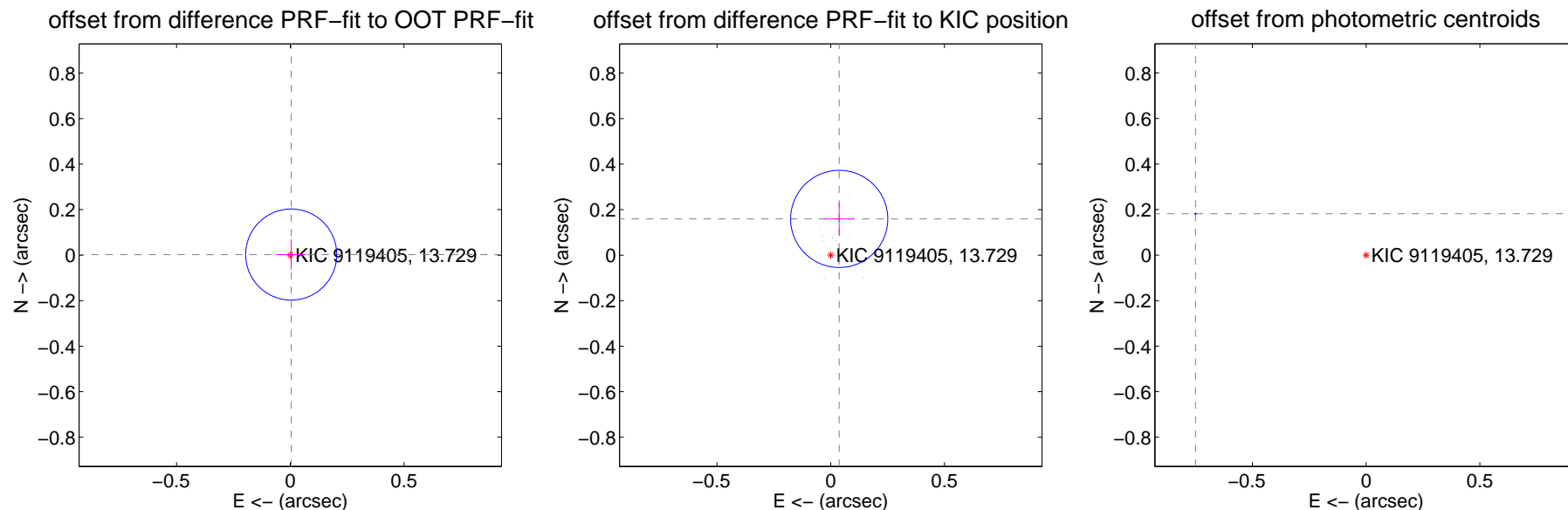
DV Centroid Data

Supplemental centroid analysis for 009119405-01. Kepler magnitude: 13.73. Transit SNR 5850.64

There are 17 quarters with good PRF difference image offsets

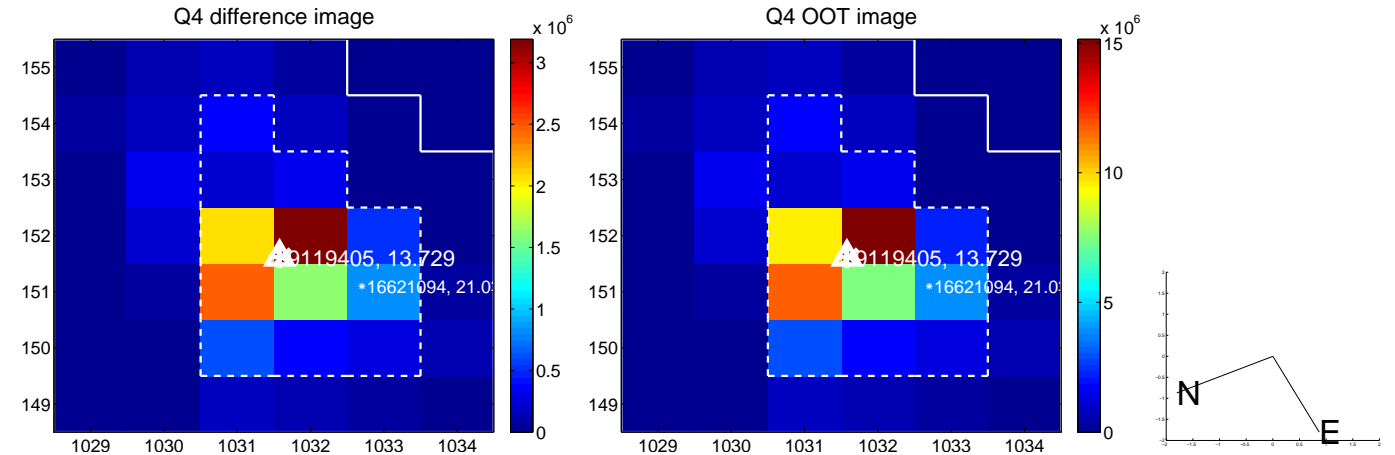
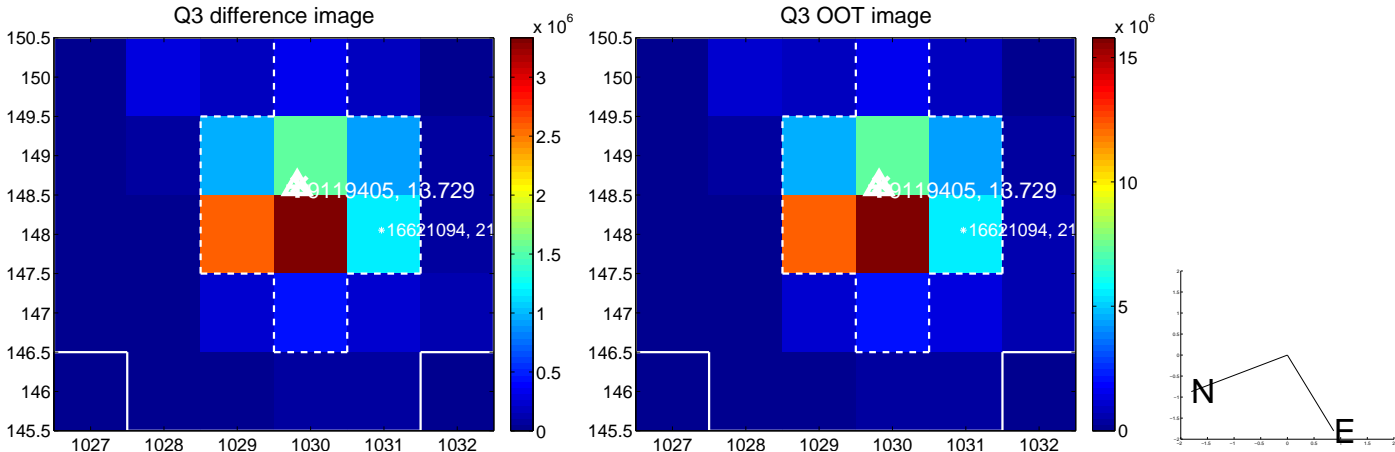
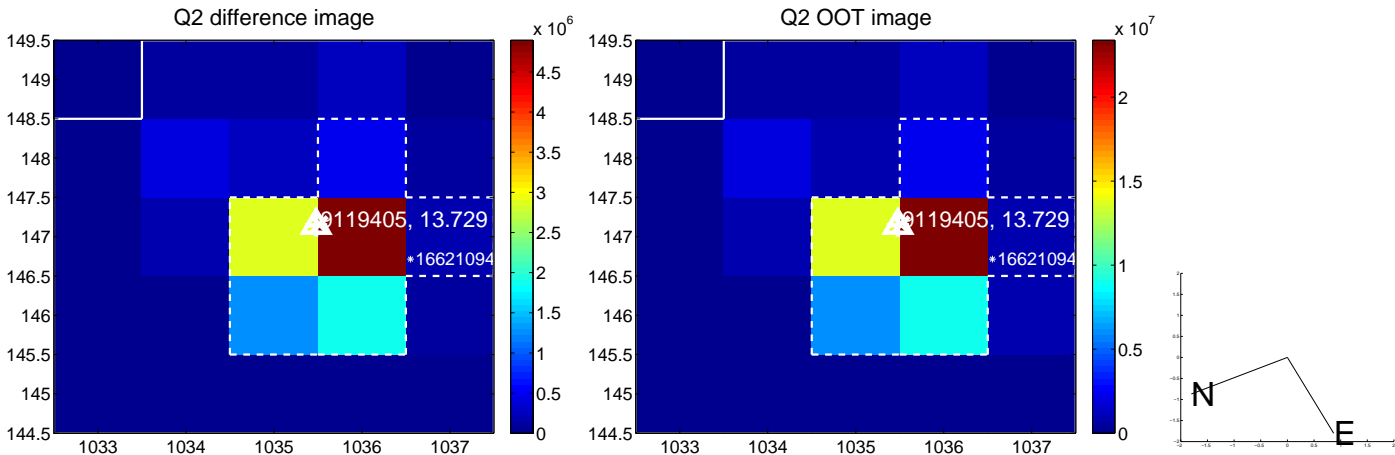
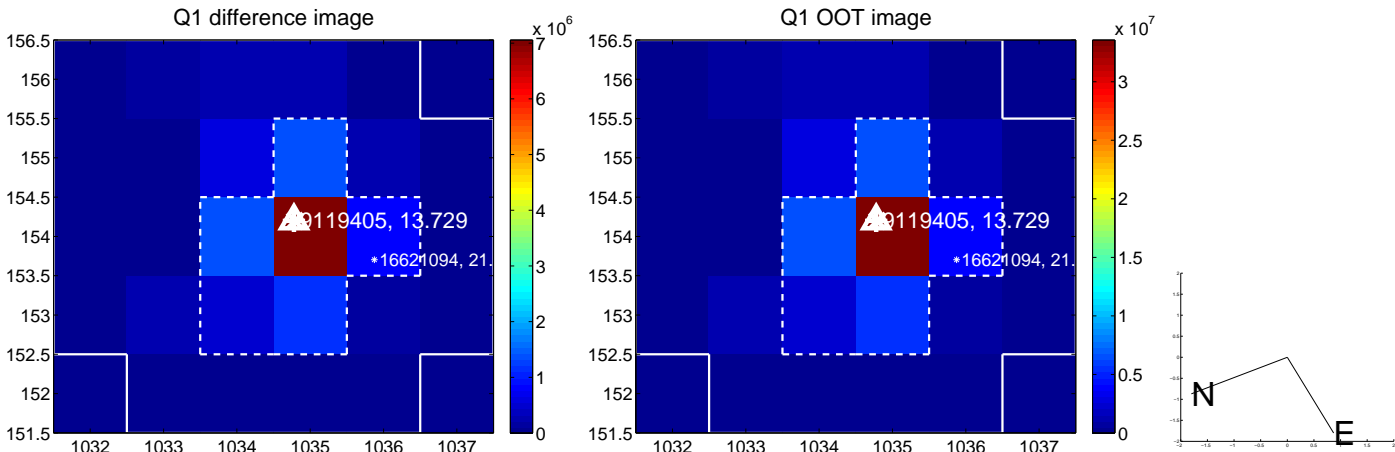
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.005 ± 0.067	0.07	-0.004 ± 0.067	0.003 ± 0.067
PRF-fit source offset from KIC position	0.164 ± 0.071	2.30	-0.037 ± 0.068	0.159 ± 0.071
photometric centroid source offset	0.77 ± 0.00	1043.14	0.75 ± 0.00	0.18 ± 0.00

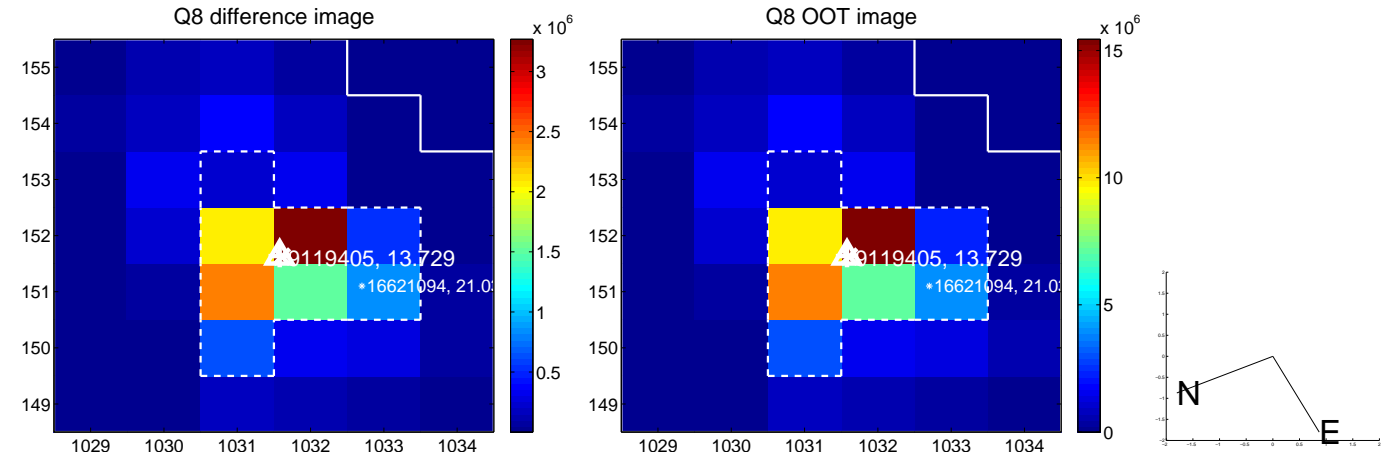
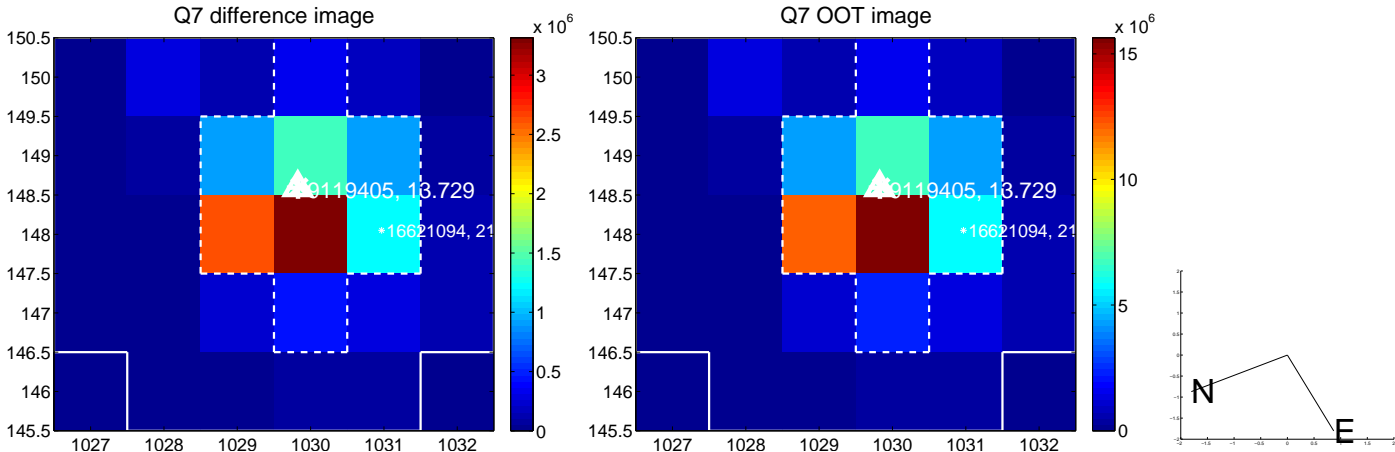
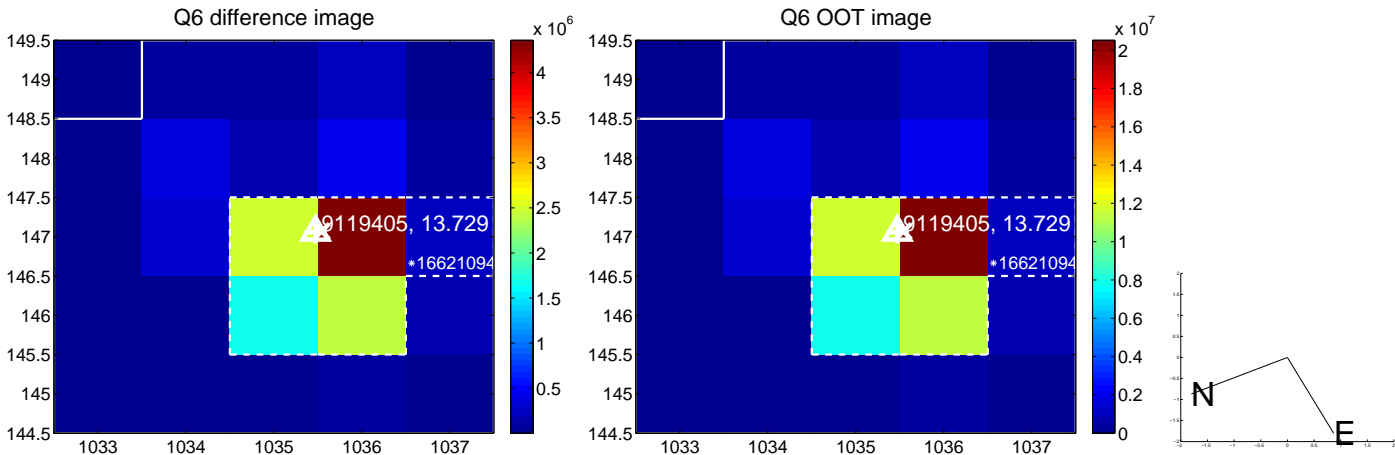
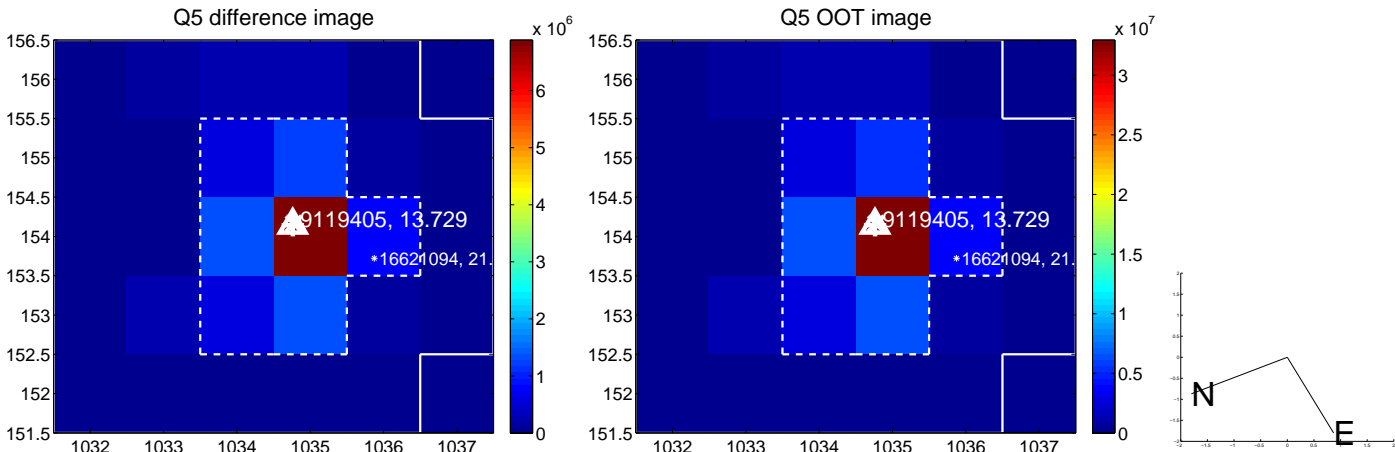


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

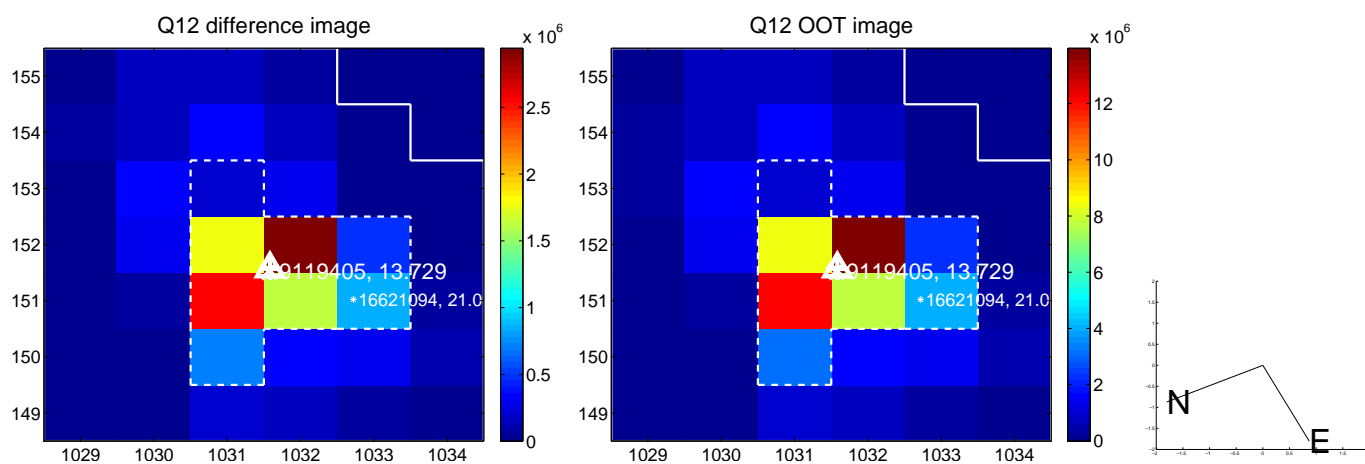
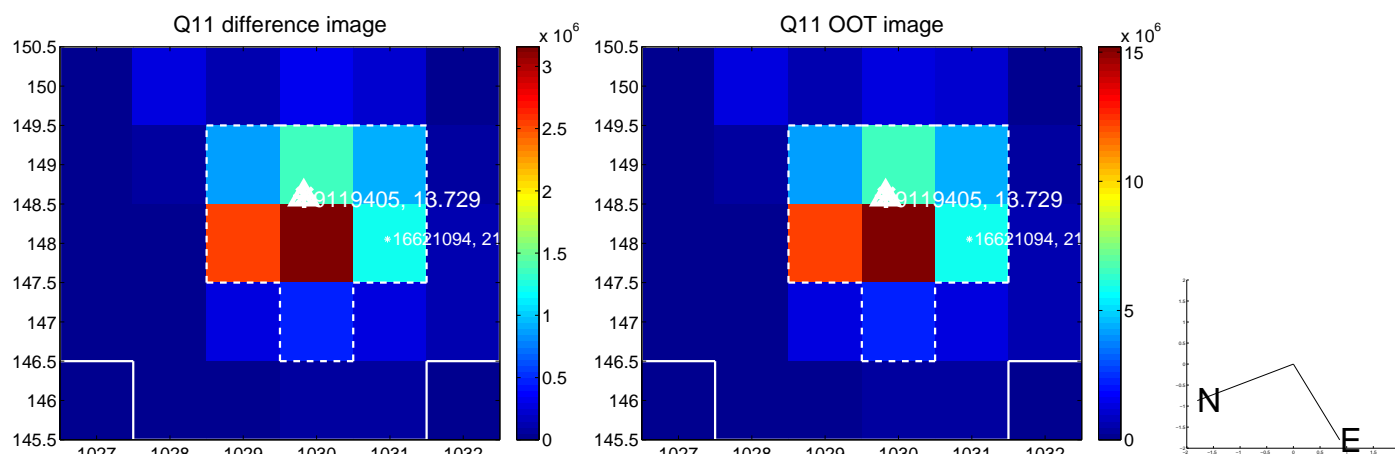
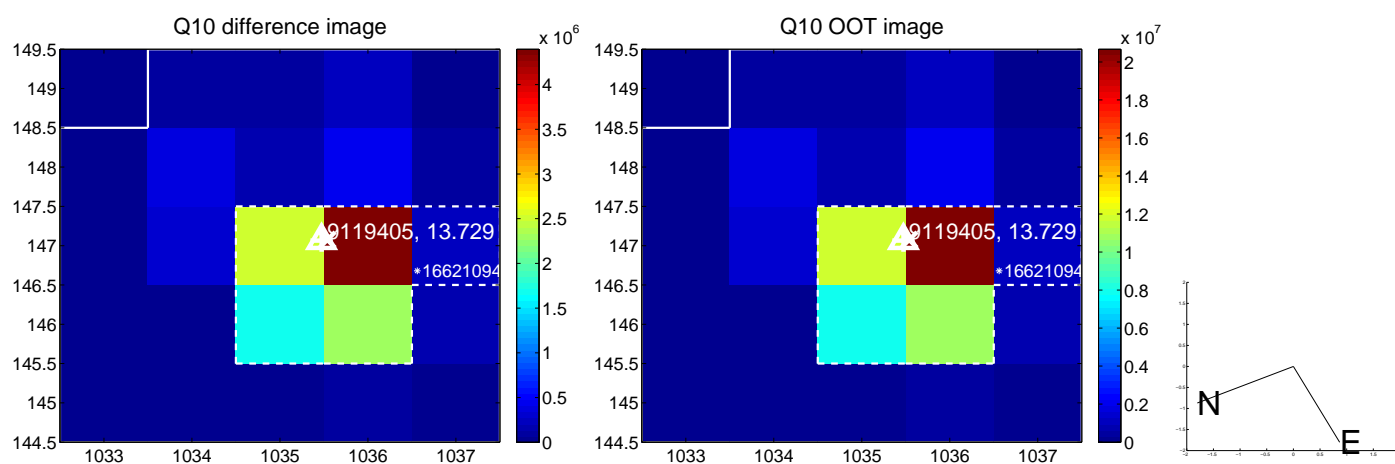
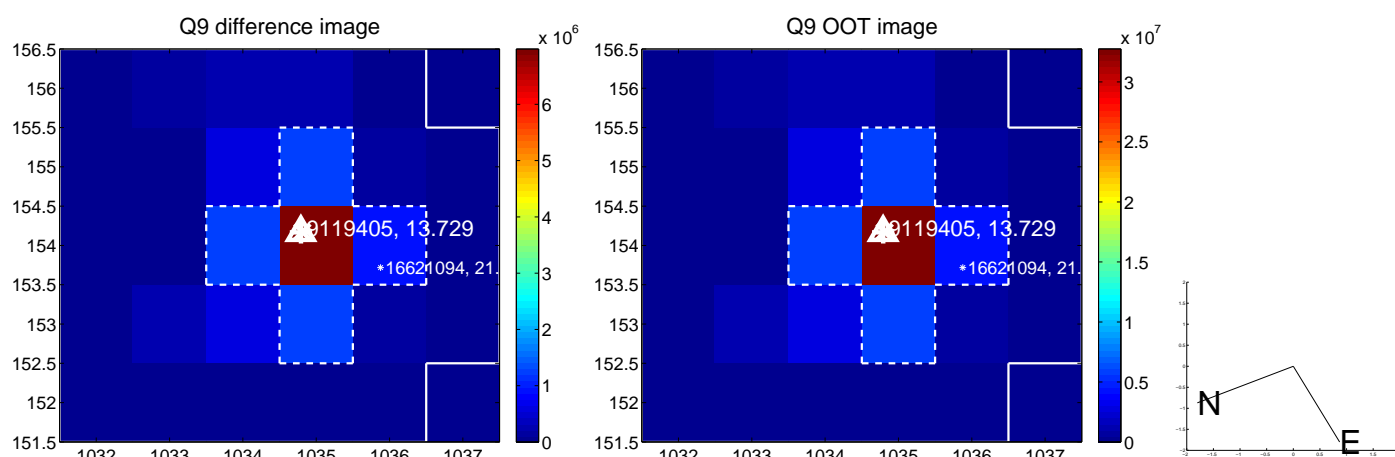
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



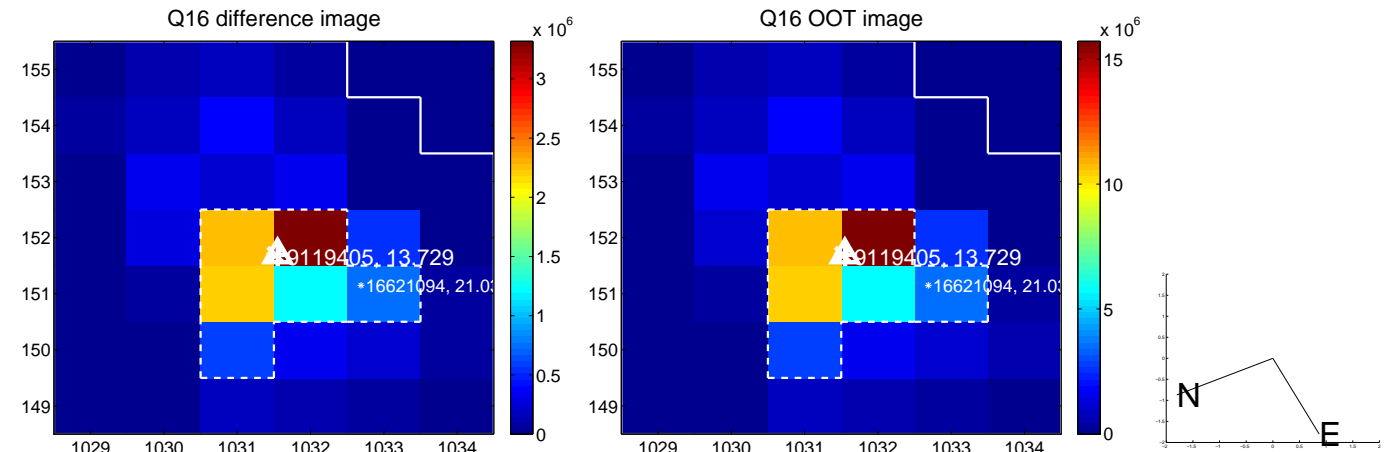
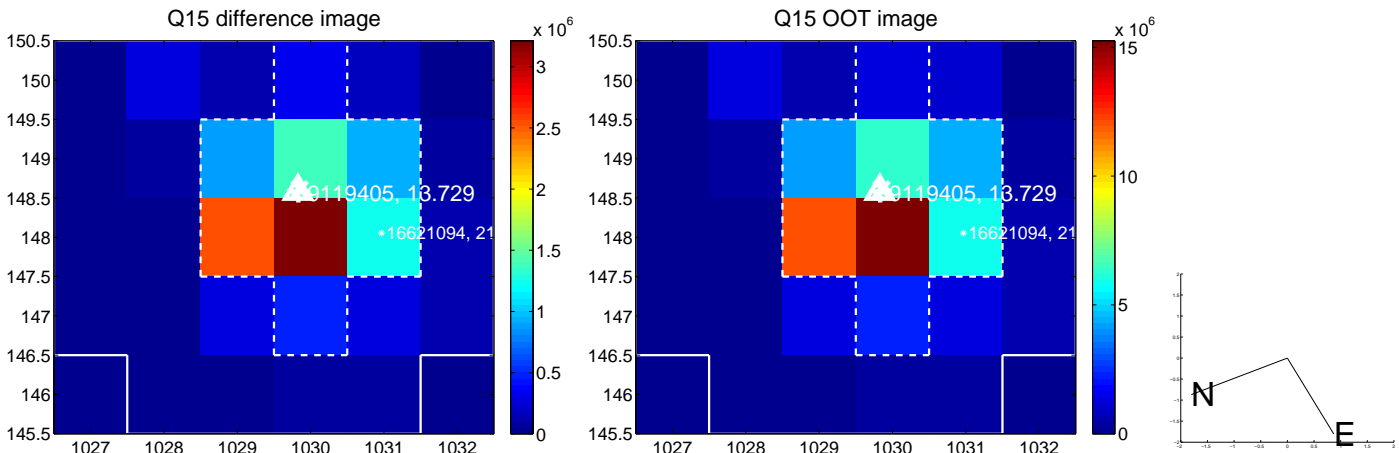
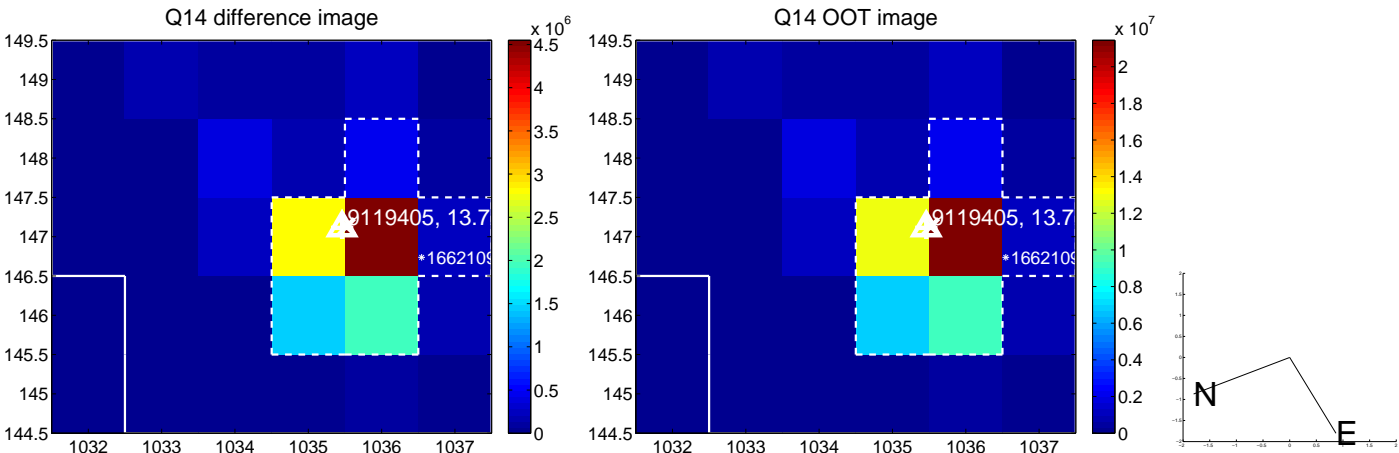
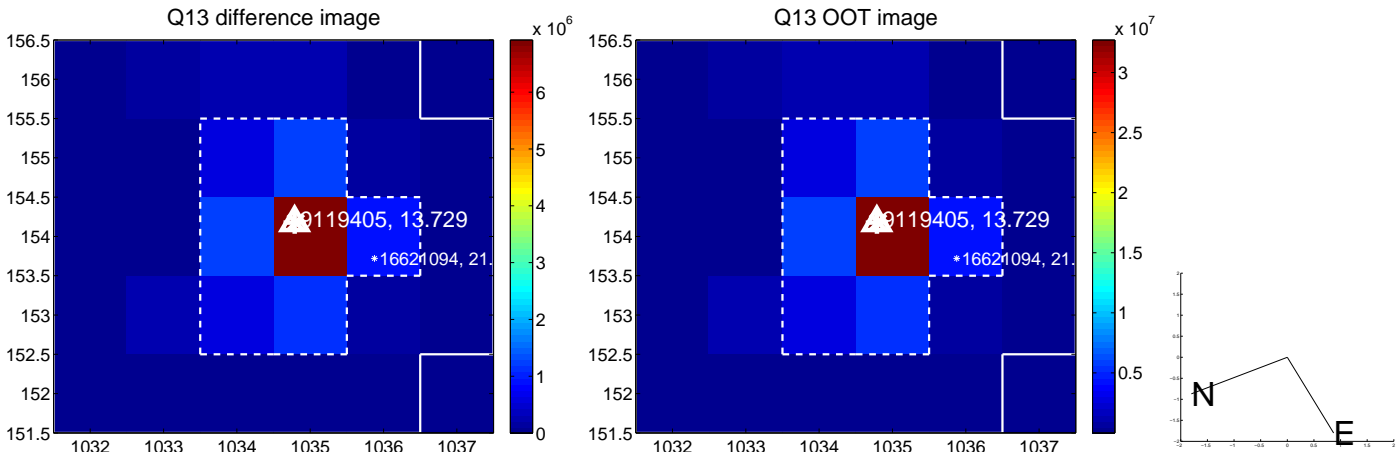
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



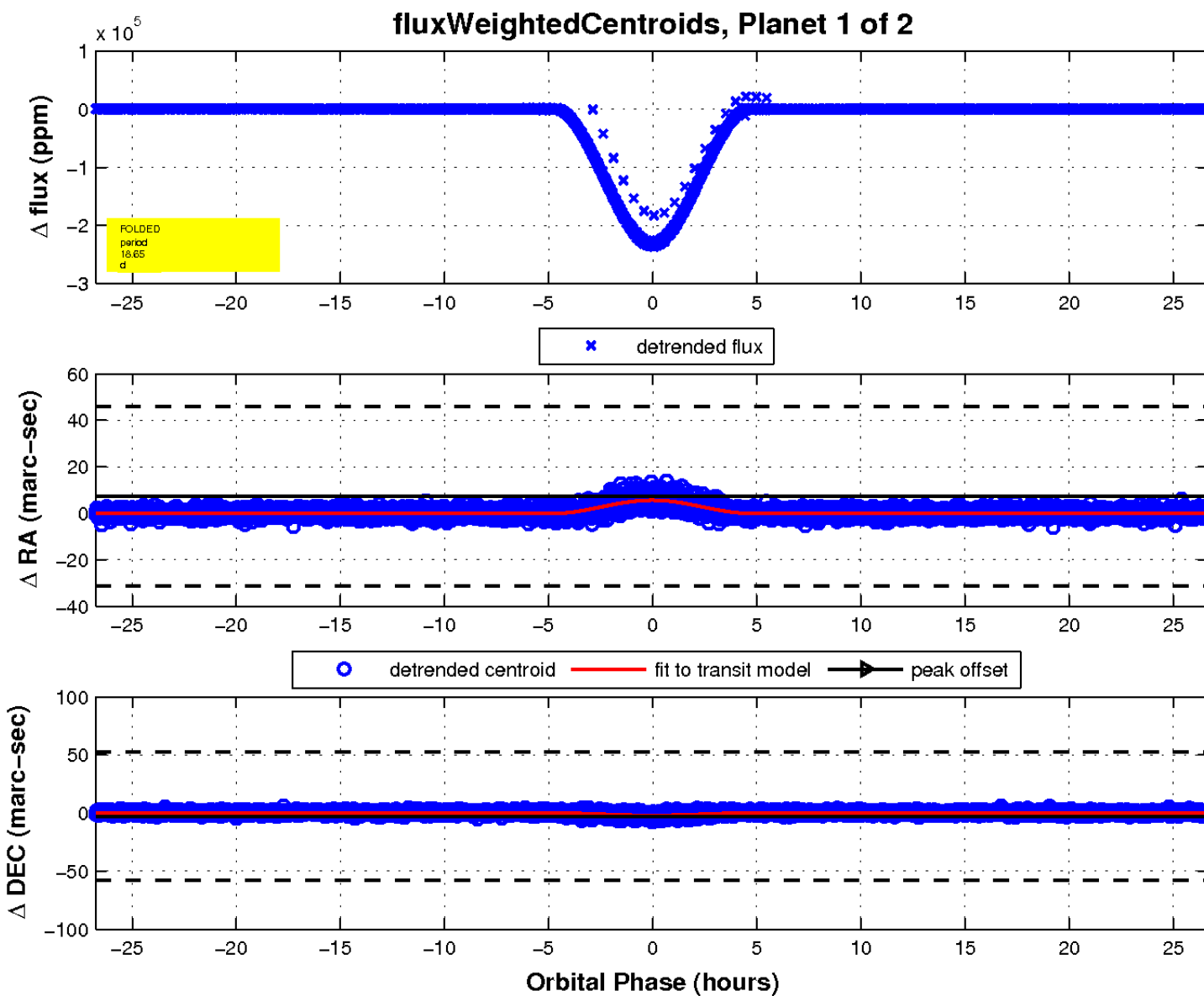
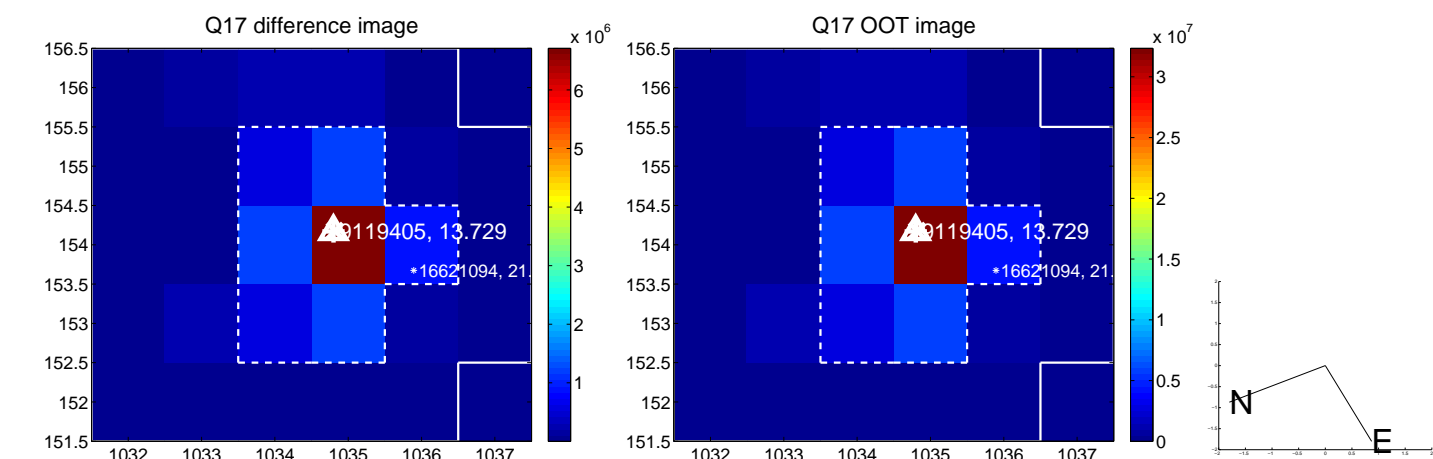
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

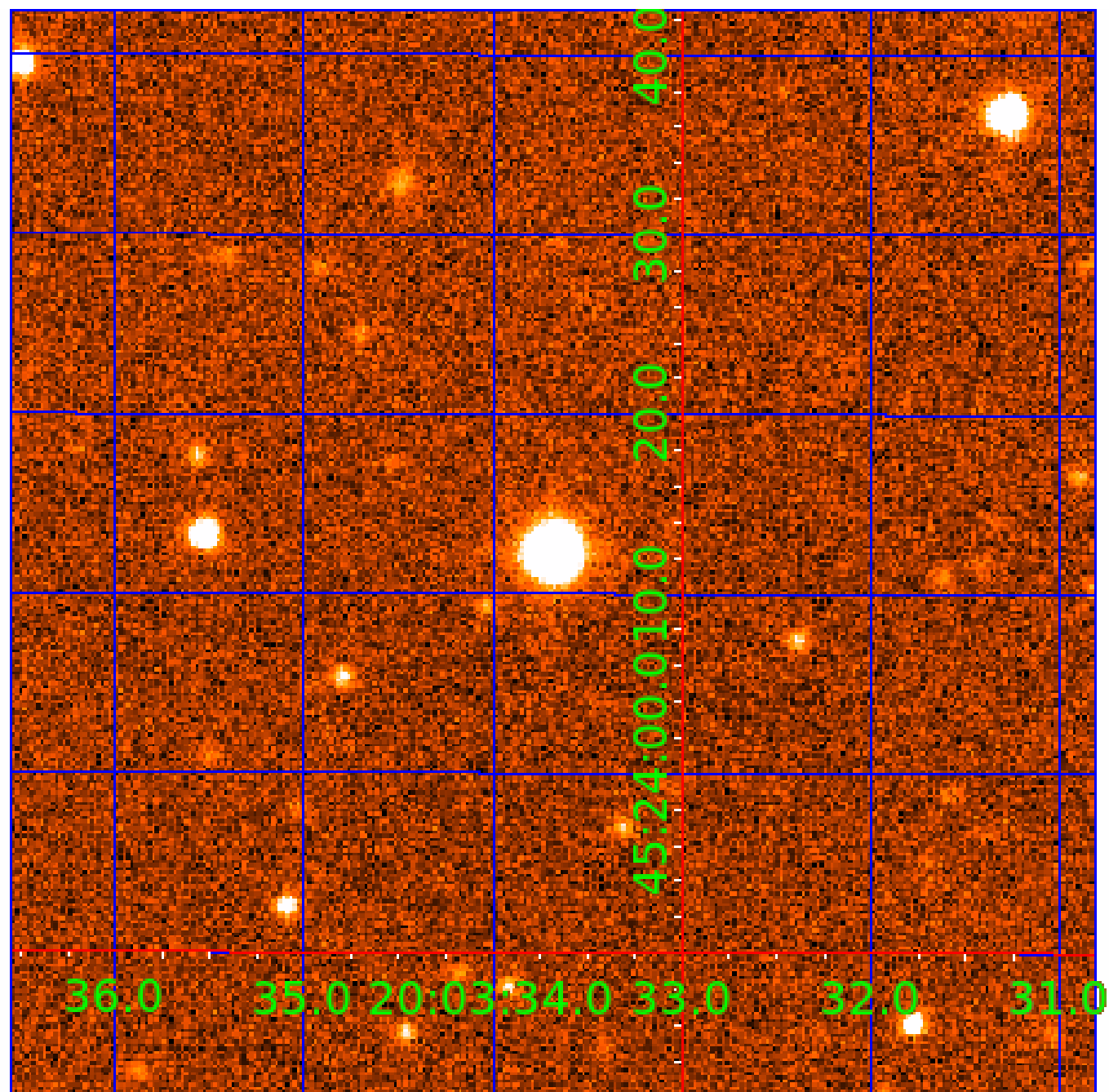


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009119405

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})
009119405-01	OBS	7135.01	18.646322	139.091991	226569.0	8.919	12854.9	5850.6	3.48	5786	207.75	481.40
009119405-02	OBS	No	18.646319	143.426840	201131.7	10.765	11833.4	7768.5	3.48	5786	178.03	481.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009119405-01	OBS	FP	0.00	1	0	0	0	LPP_DV
009119405-02	OBS	FP	0.00	1	0	0	0	SAME_NTL_PERIOD

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 009119405-02

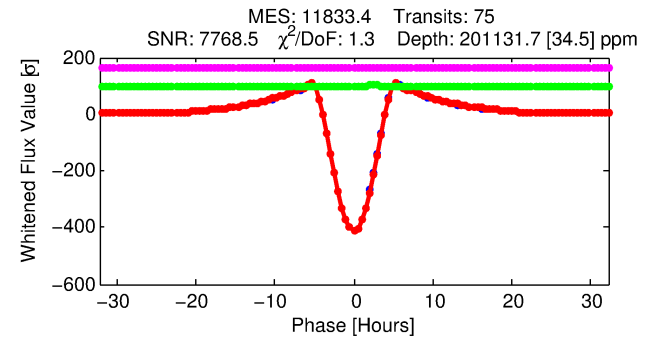
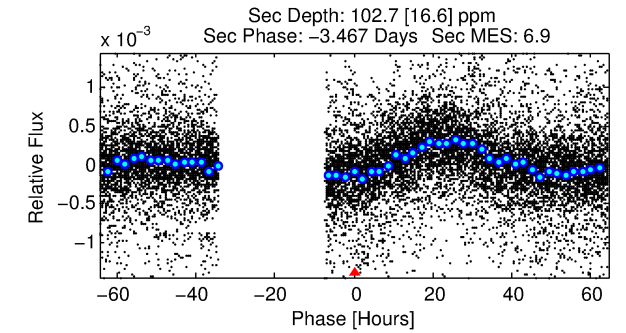
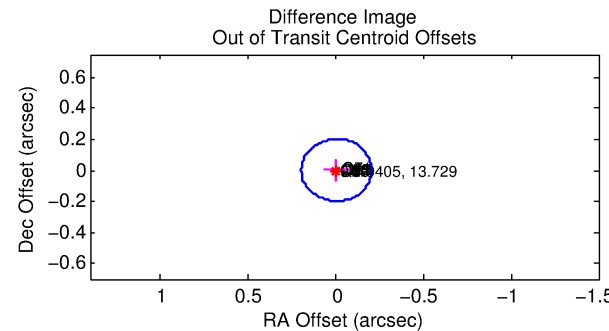
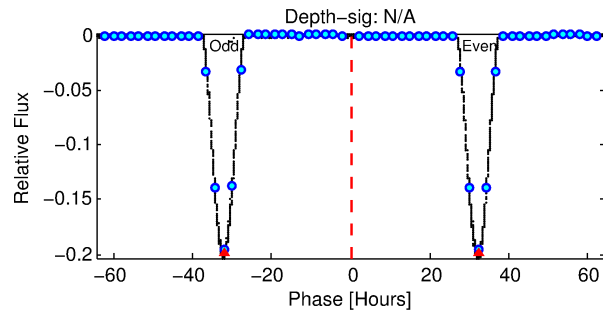
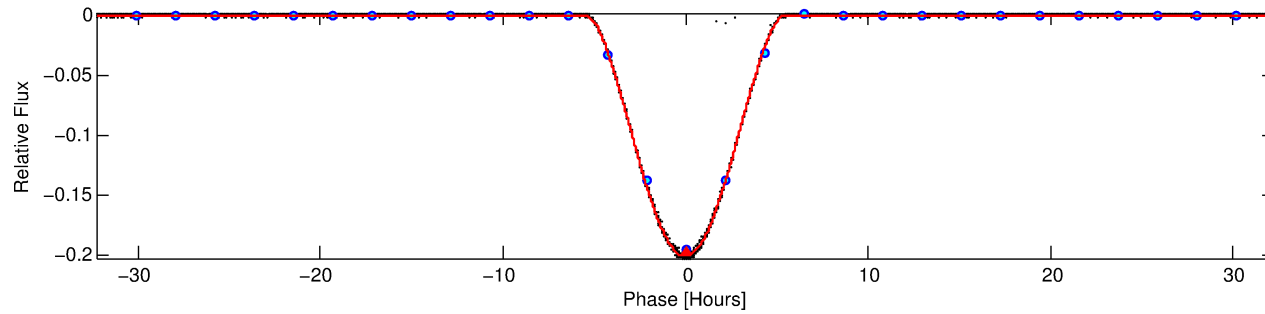
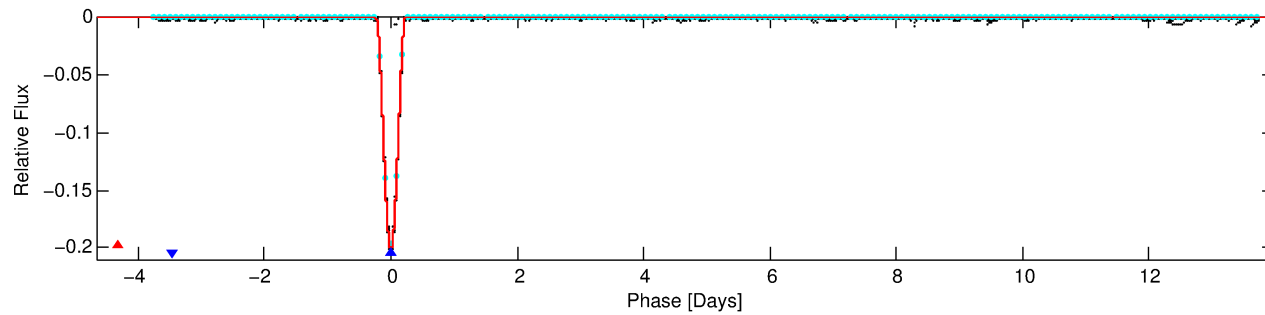
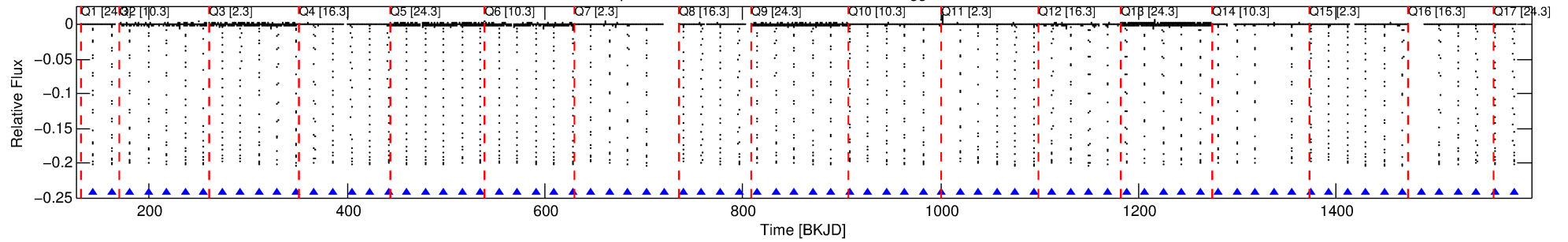
No Significant Match Found

DV One-Page Summary

KIC: 9119405 Candidate: 2 of 2 Period: 18.646 d

KOI: K07135 Corr: No Ephemeris Match

Kp: 13.73 R*: 3.48 Rs Teff: 5786.0 K Logg: 3.54 Fe/H: -0.180



DV Fit Results:

Period = 18.64632 [0.00000] d
Epoch = 143.4268 [0.0000] BKJD
Rp/R* = 0.4691 [0.0007]
a/R* = 17.42 [0.00]
b = 0.66 [0.00]
Seff = 481.40 [598.51]
Teq = 1194 [371] K
Rp = 178.03 [118.09] Re
a = 0.1588 [0.1155] AU
Ag = 0.04 [0.06] [-17.03σ]
Teffp = 850 [44] K [-0.92σ]

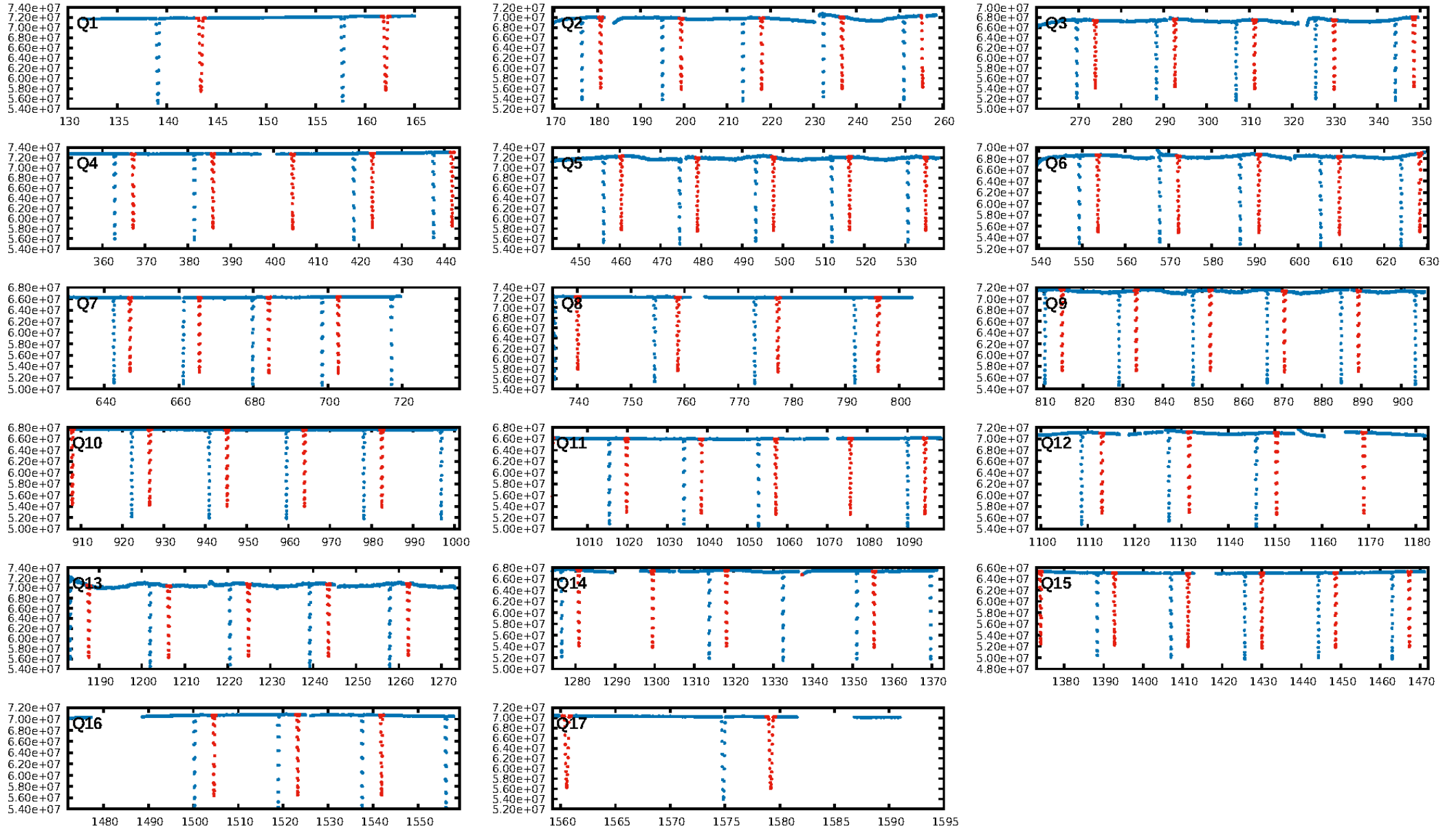
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [71/71]
GhostDiagnostic-chr: 3.85
Centroid-sig: 0.0%
Centroid-so: 0.770 arcsec [993.01σ]
OotOffset-rm: 0.005 arcsec [0.08σ]
KicOffset-rm: 0.159 arcsec [2.24σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
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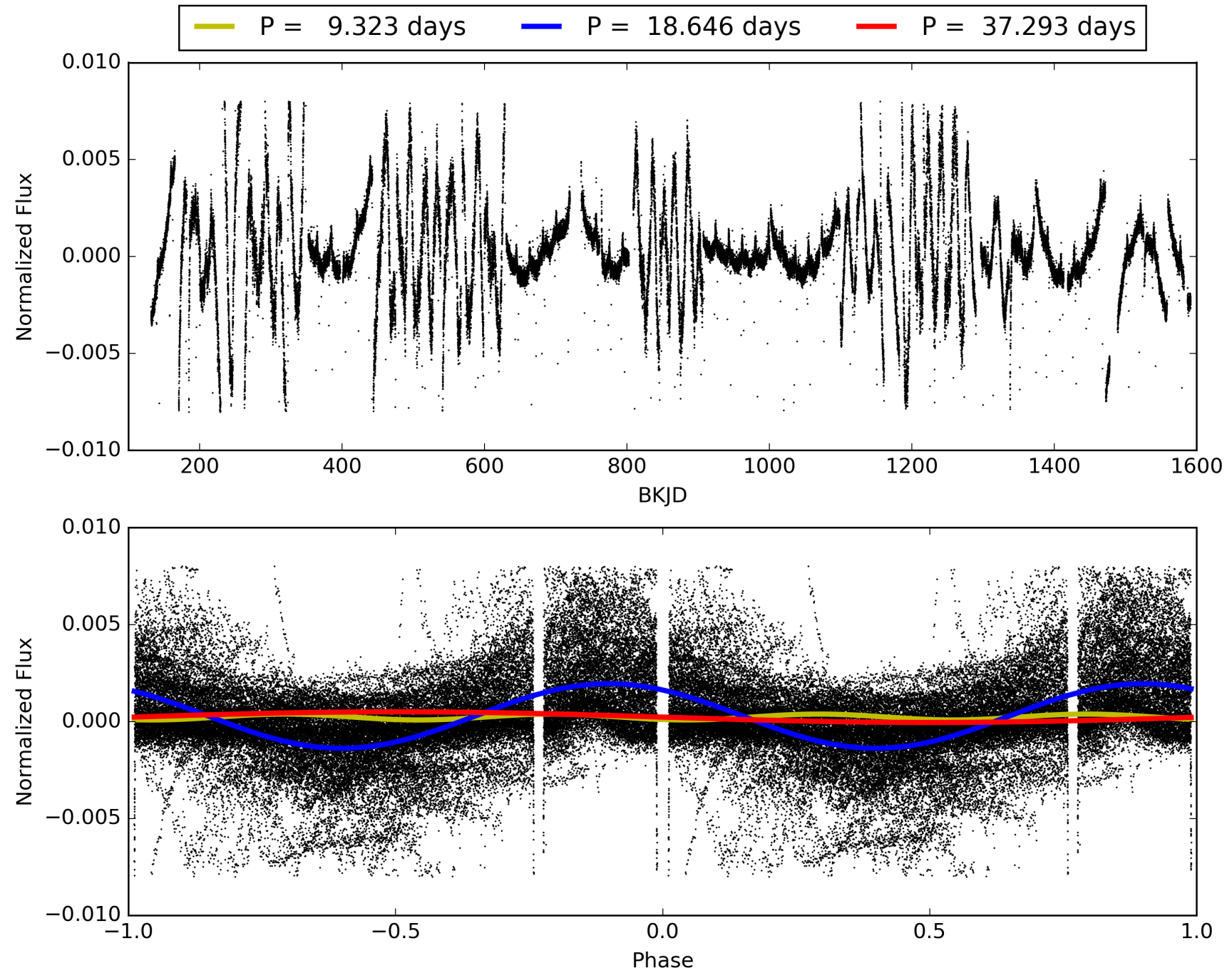
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:55:04 Z

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

TCE 009119405-02, PDC Light Curves

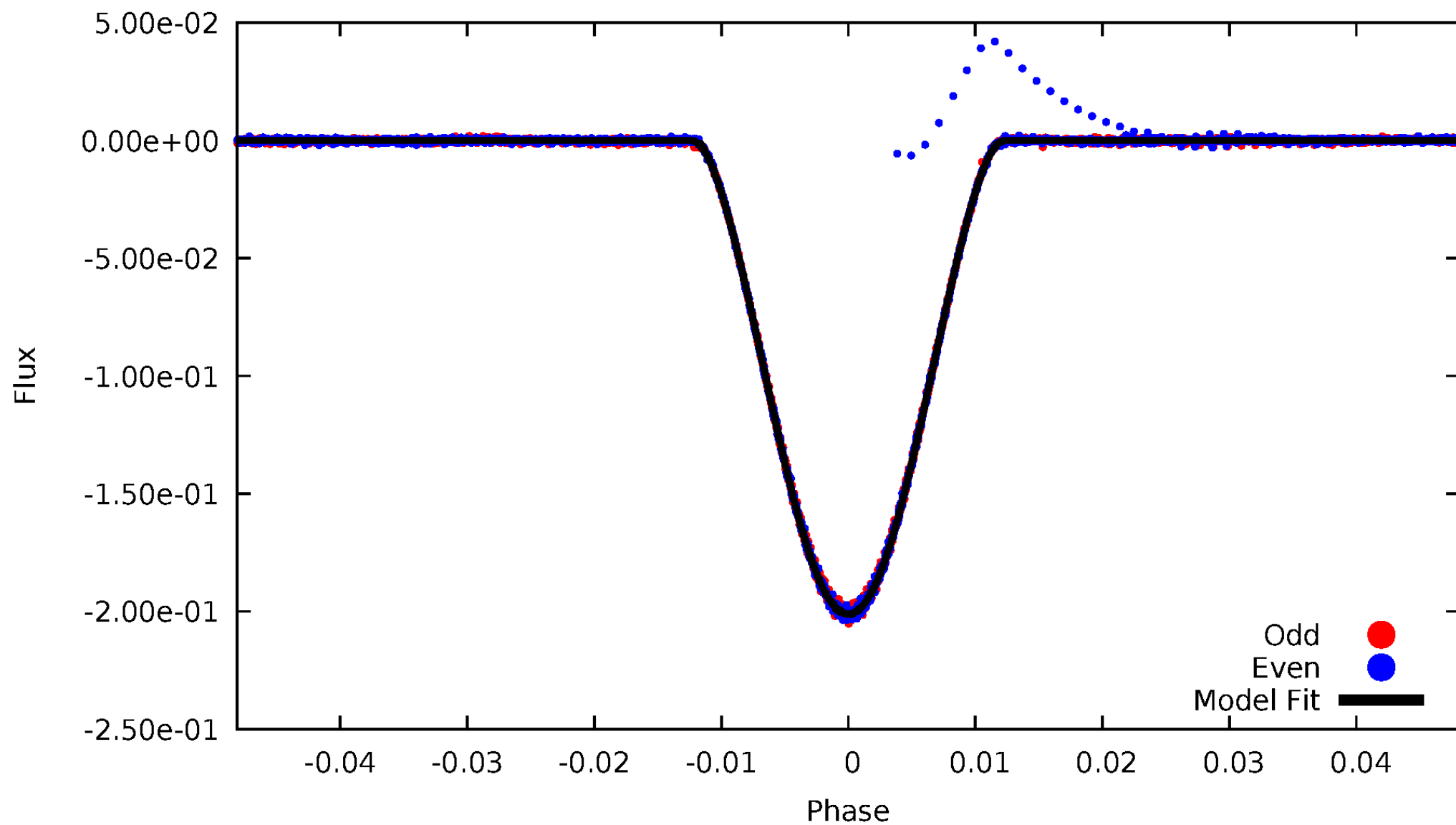


TCE 009119405-02



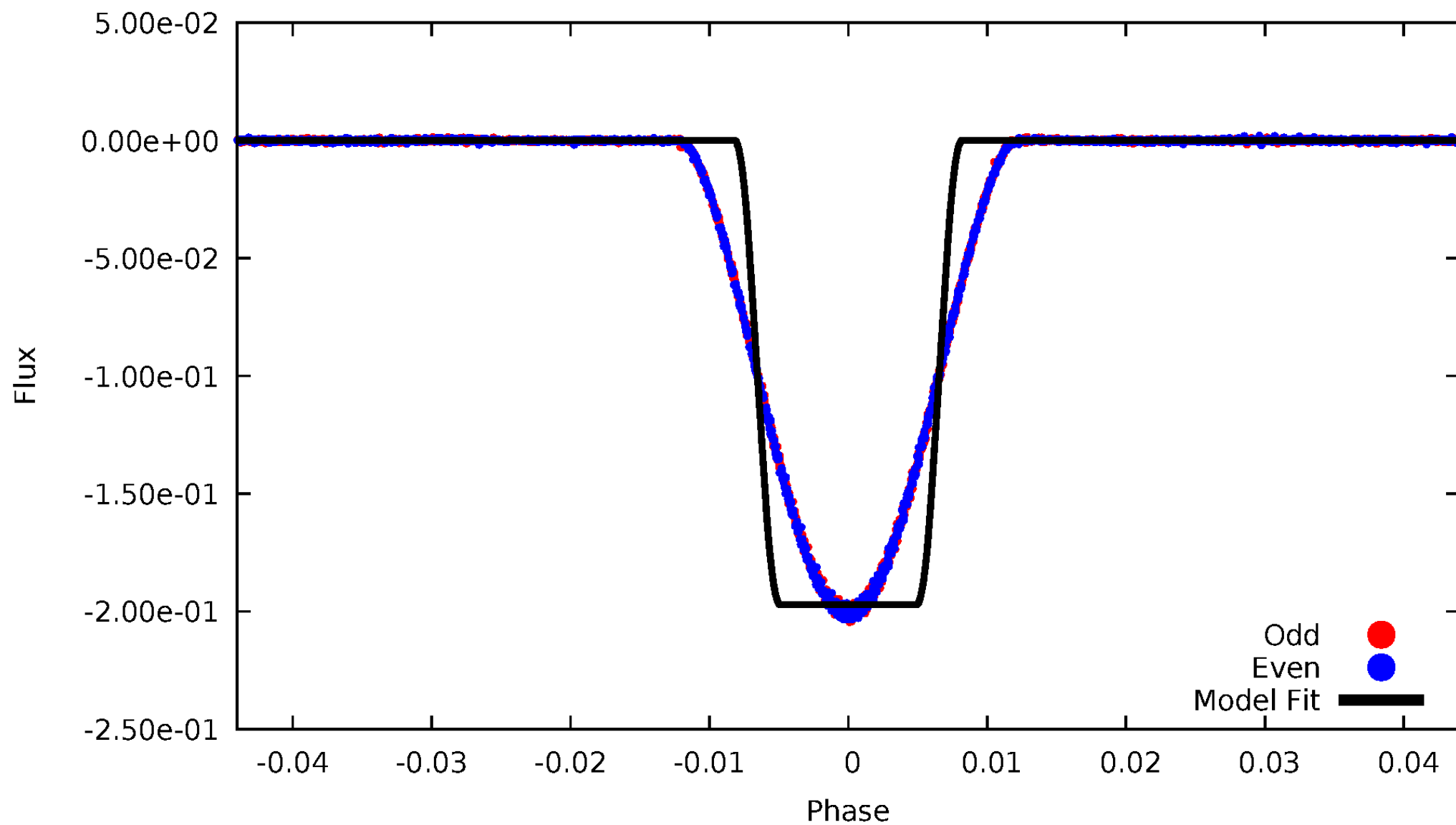
DV Odd/Even

TCE 009119405-02



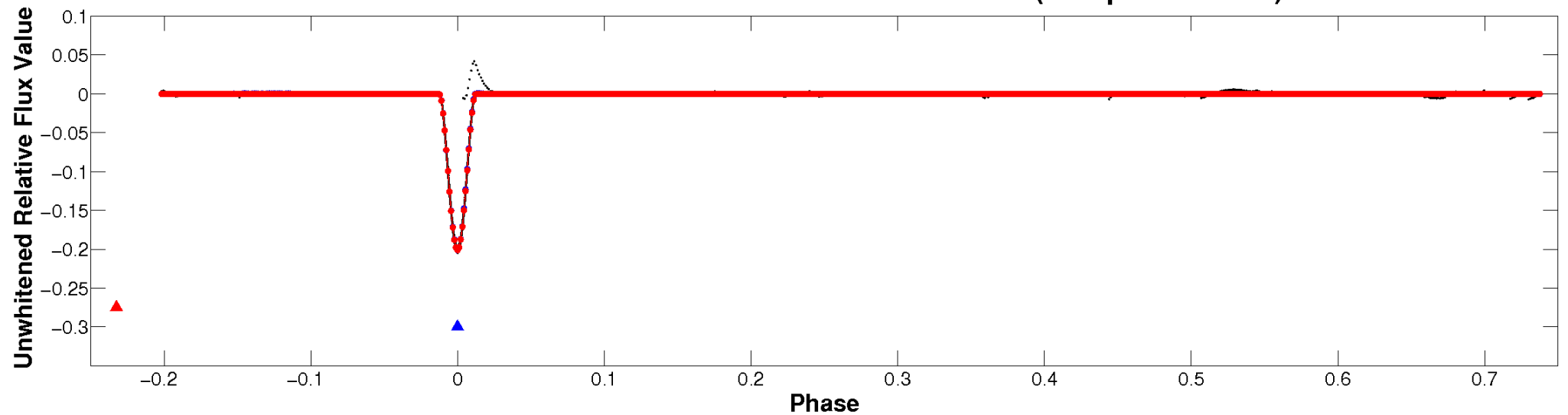
ALT Odd/Even

TCE 009119405-02

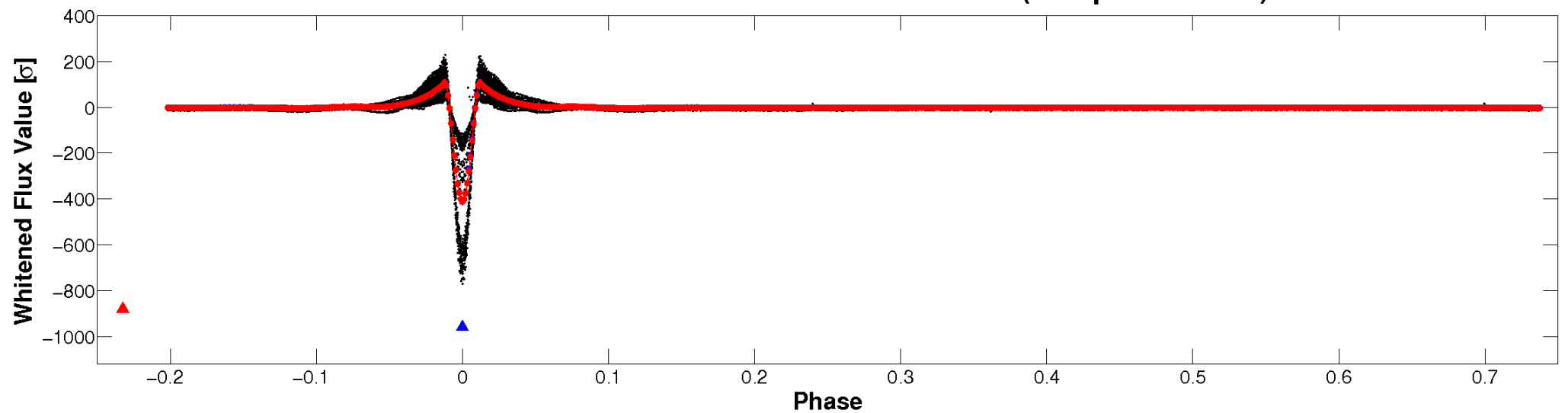


Non-Whitened Vs. Whitened Light Curve

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

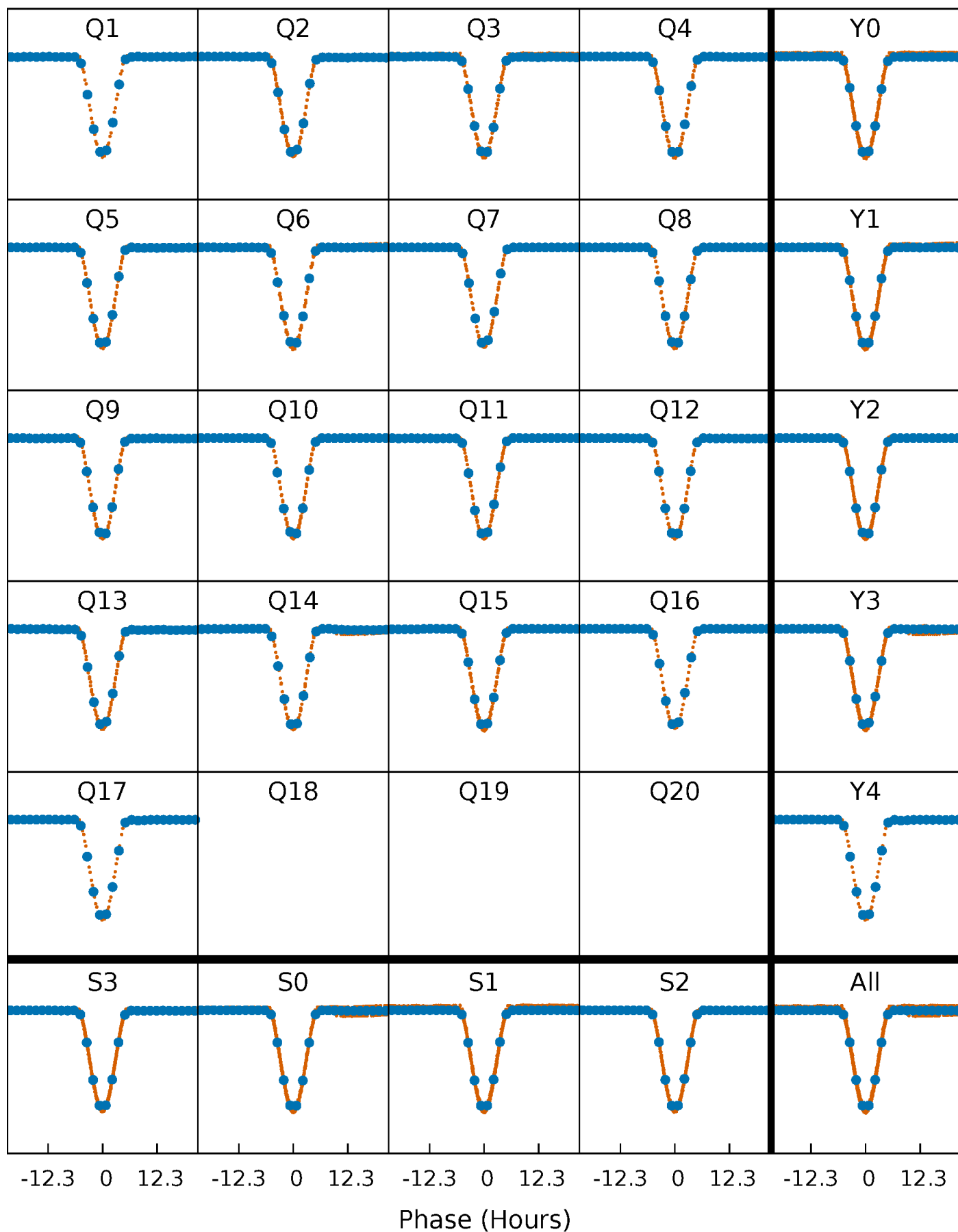


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



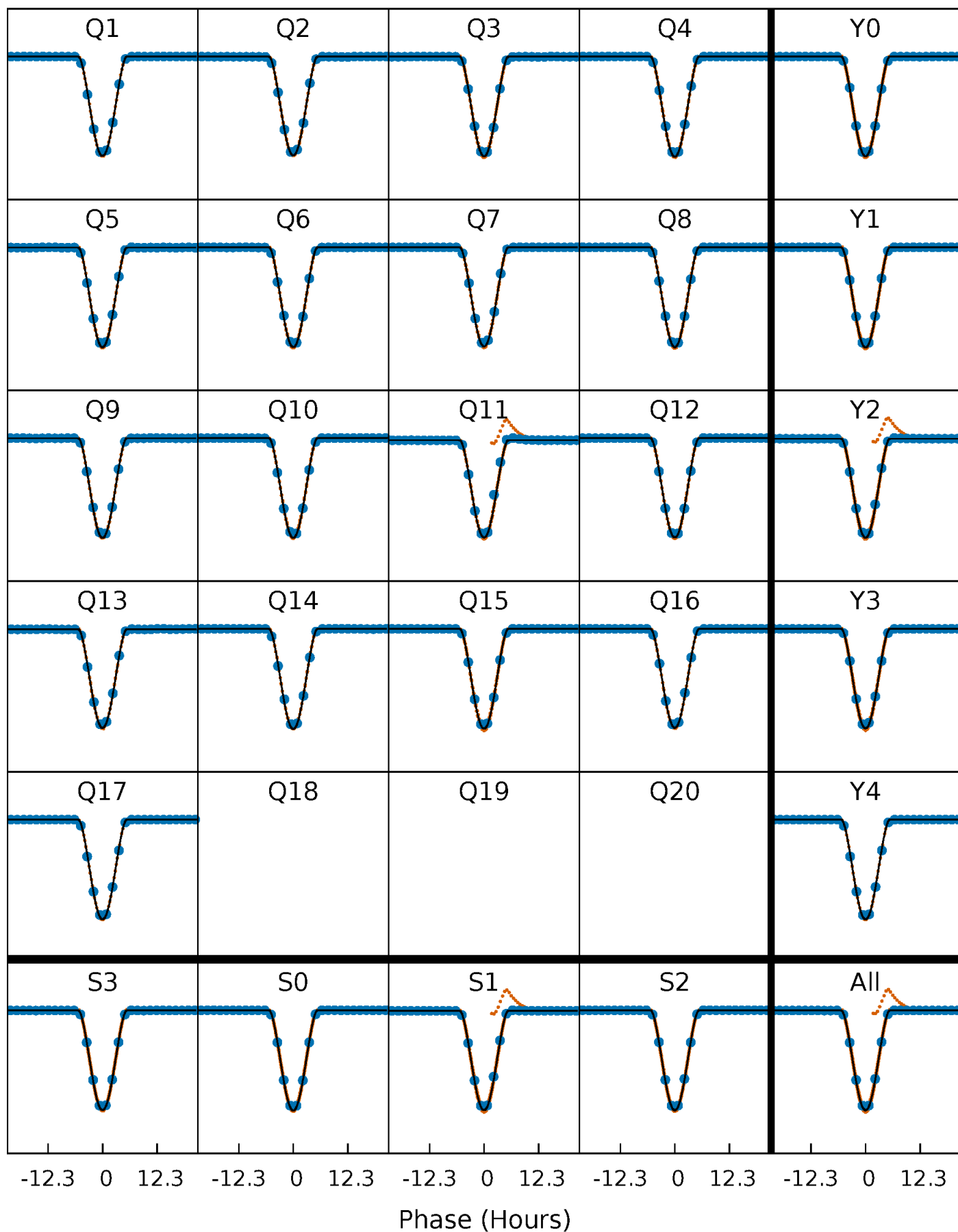
PDC Quarter-Phased Transit Curves

TCE 009119405-02 P= 18.646319 Days $T_0=143.426840$ (BKJD)



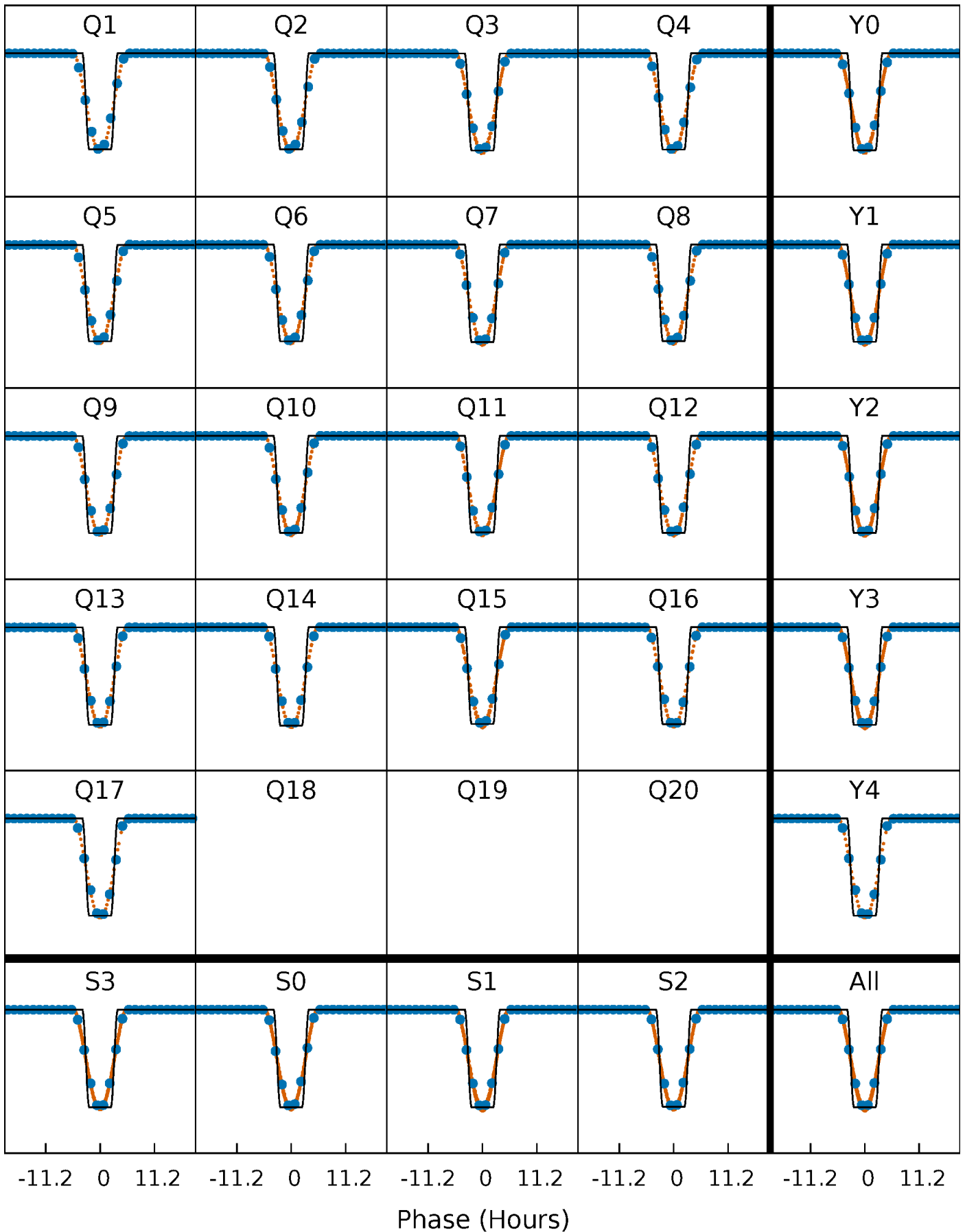
DV Quarter-Phased Transit Curves

TCE 009119405-02 P= 18.646319 Days $T_0=143.426840$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

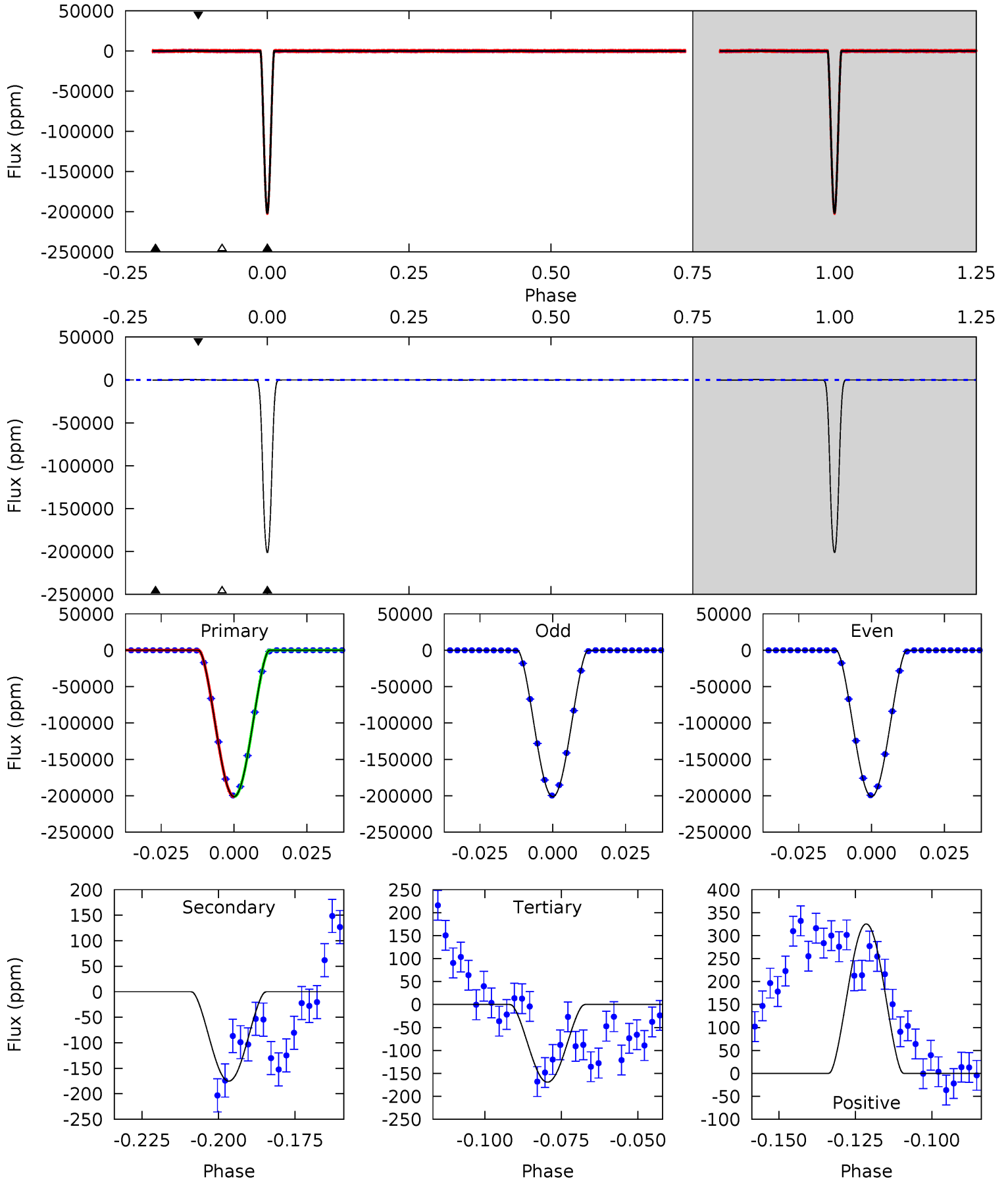
TCE 009119405-02 P= 18.646281 Days $T_0=143.428462$ (BKJD)



DV Model-Shift Uniqueness Test

009119405-02, P = 18.646319 Days, E = 124.780521 Days

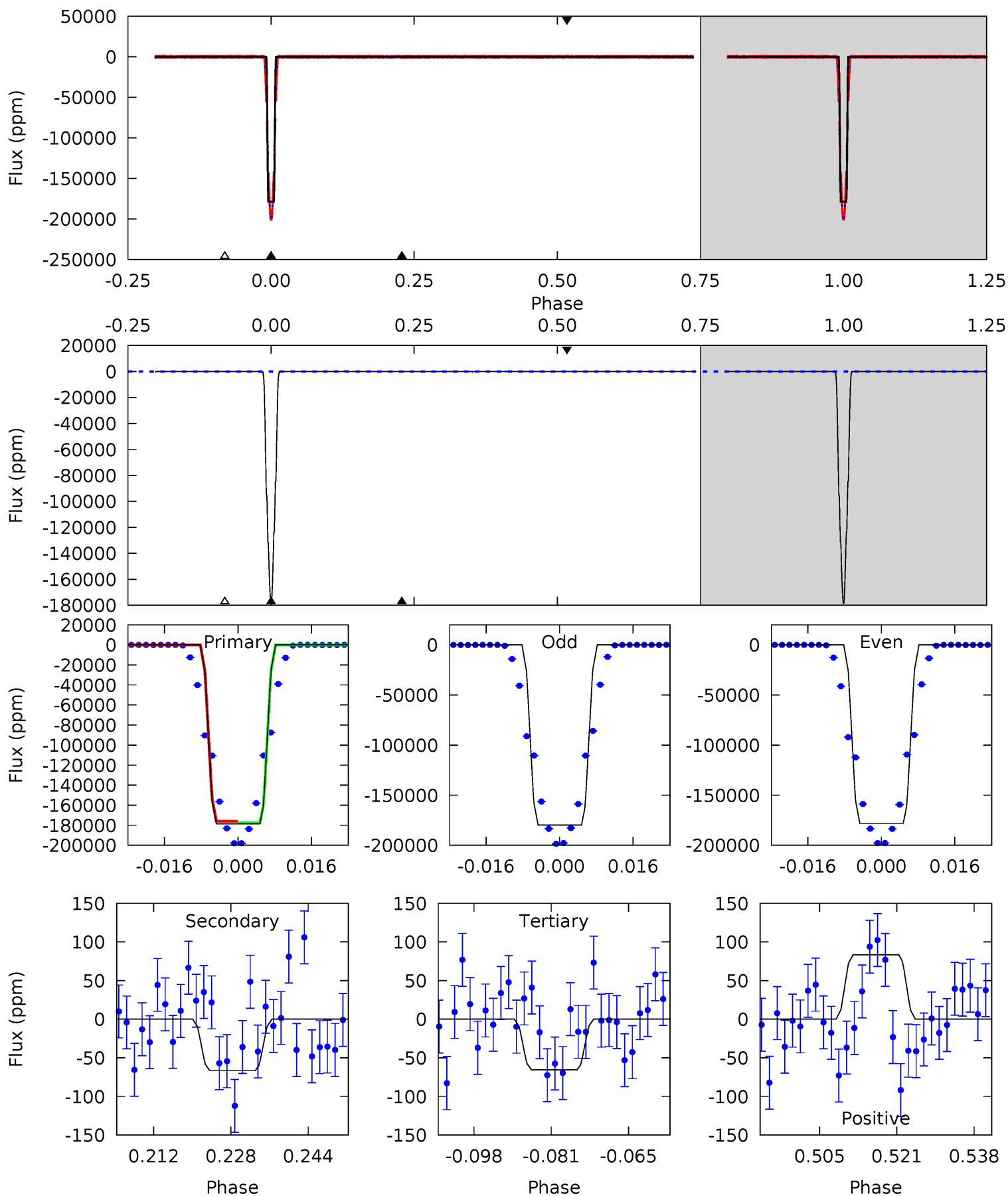
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17693	15.4	14.9	28.6	4.85	2.24	8.14	17678	17664	0.54	-13.2	9.90	0.99	0.00	3.71



Alt Model-Shift Uniqueness Test

009119405-02, P = 18.646281 Days, E = 124.782181 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11874	4.42	4.35	5.54	4.93	2.40	1.63	11870	11869	0.07	-1.12	53.9	1.00	0.00	0



Stellar Parameters For KIC 009119405

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5786^{+192}_{-175}	$3.542^{+0.752}_{-0.141}$	$-0.180^{+0.300}_{-0.250}$	$3.478^{+0.989}_{-2.307}$	$1.536^{+0.195}_{-0.624}$	$0.051^{+0.919}_{-0.020}$
	+3%/-3%	+21%/-4%	+167%/-139%	+28%/-66%	+13%/-41%	+1787%/-39%
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 009119405-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-175 ± 11	$160.95^{+36.19}_{-56.47}$	1597^{+162}_{-298}	-2158^{+310}_{-123}	$0.091^{+0.106}_{-0.026}$
Alt.	-66 ± 15	$151.93^{+36.20}_{-56.30}$	1594^{+171}_{-298}	-2210^{+225}_{-117}	$0.040^{+0.047}_{-0.015}$

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 $A_{obs} \gg 1.0$

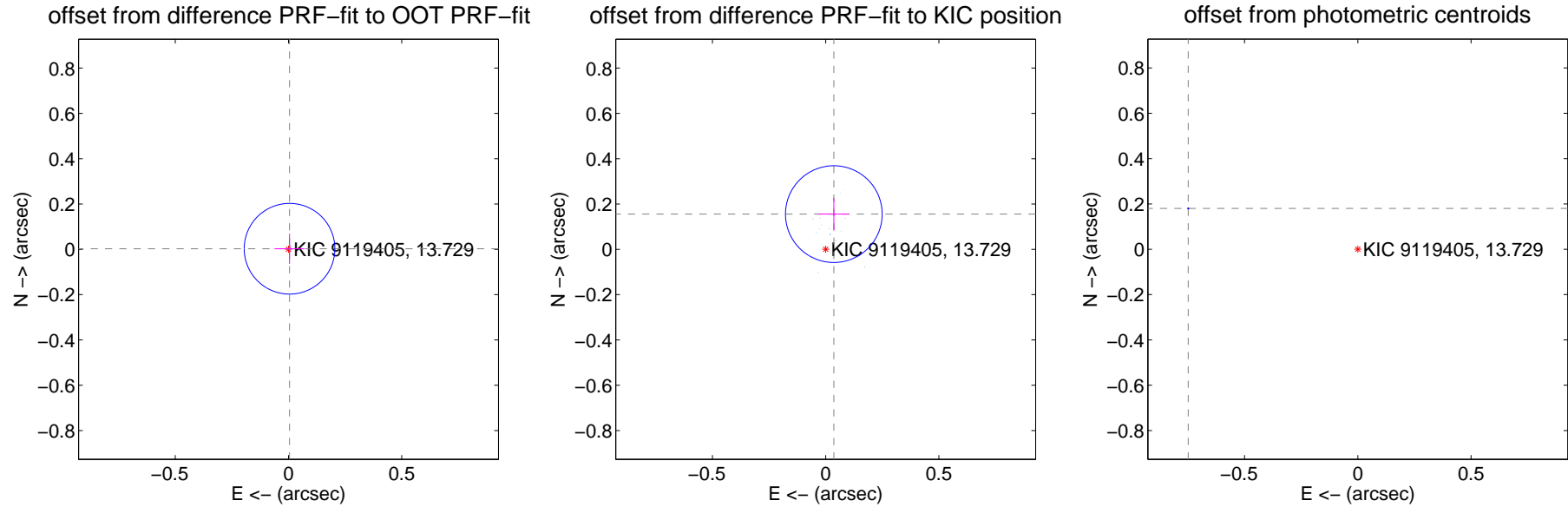
DV Centroid Data

Supplemental centroid analysis for 009119405-02. Kepler magnitude: 13.73. Transit SNR 7768.50

There are 17 quarters with good PRF difference image offsets

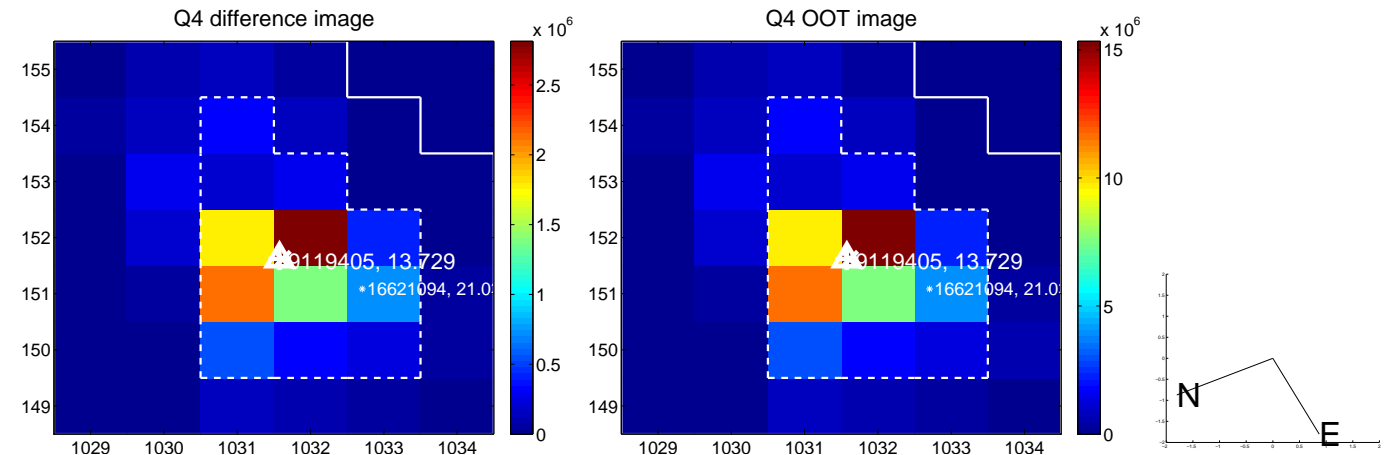
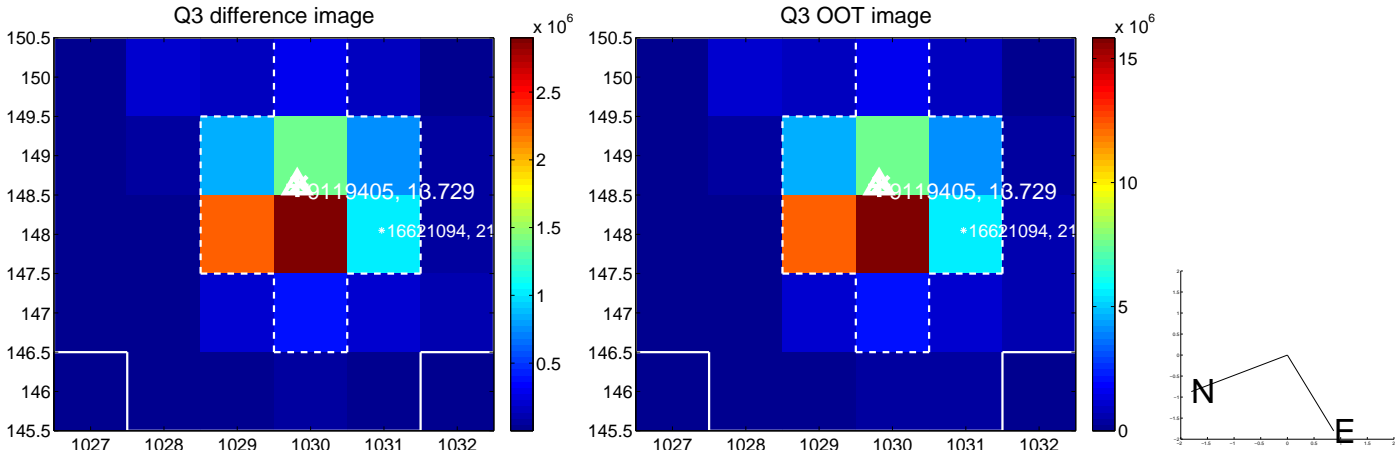
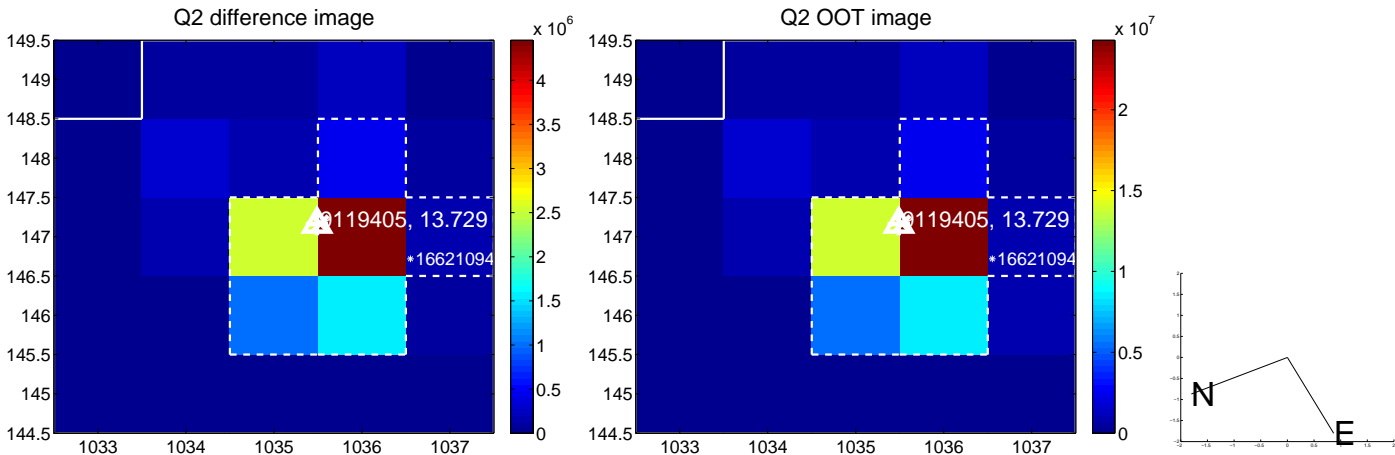
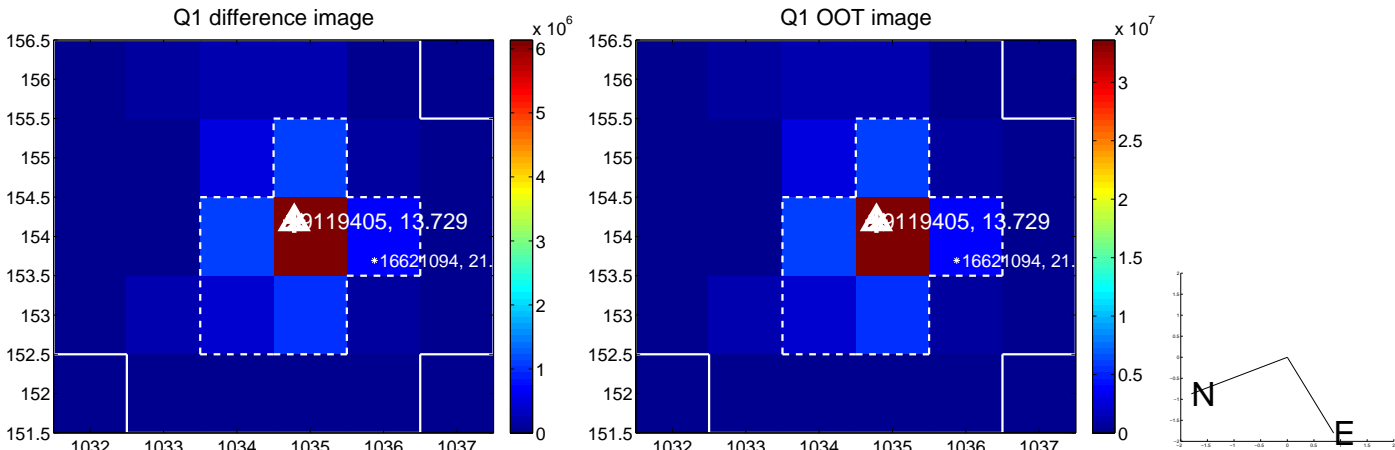
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.005 ± 0.067	0.08	-0.005 ± 0.067	0.003 ± 0.067
PRF-fit source offset from KIC position	0.159 ± 0.071	2.24	-0.036 ± 0.068	0.155 ± 0.071
photometric centroid source offset	0.77 ± 0.00	993.01	0.75 ± 0.00	0.18 ± 0.00

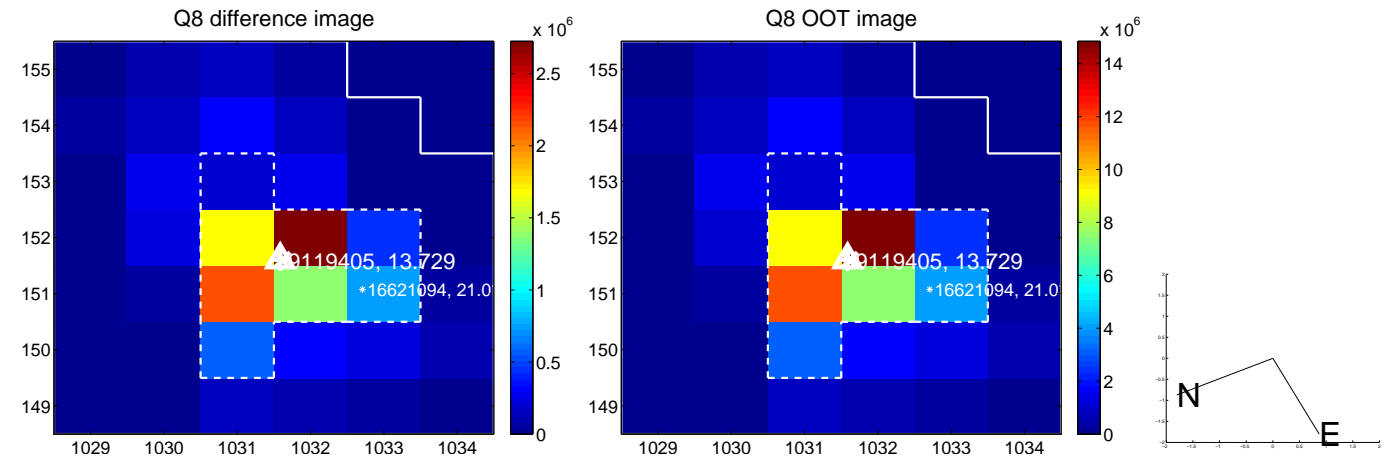
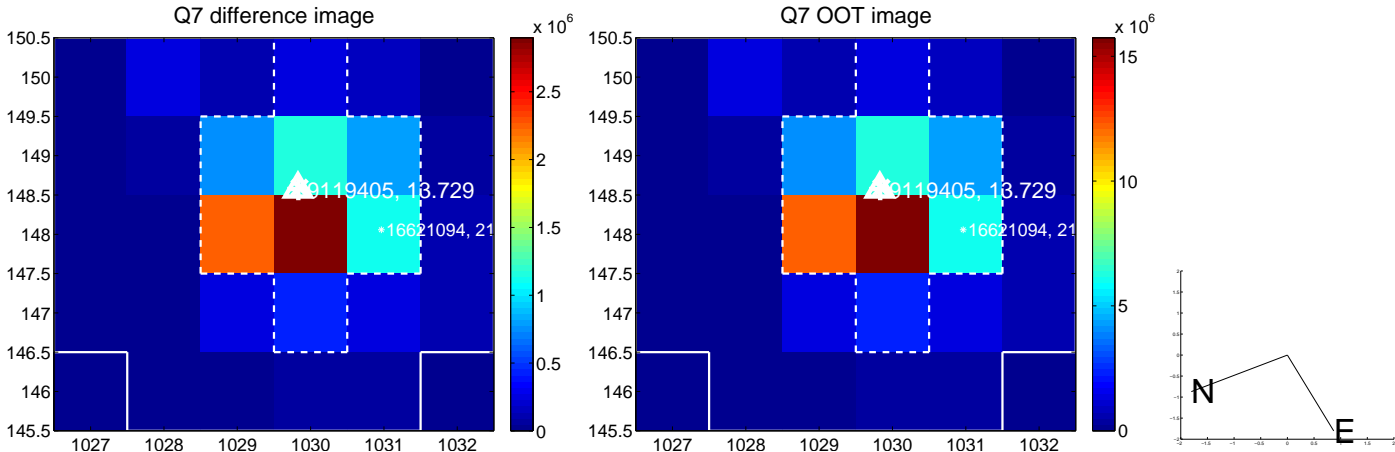
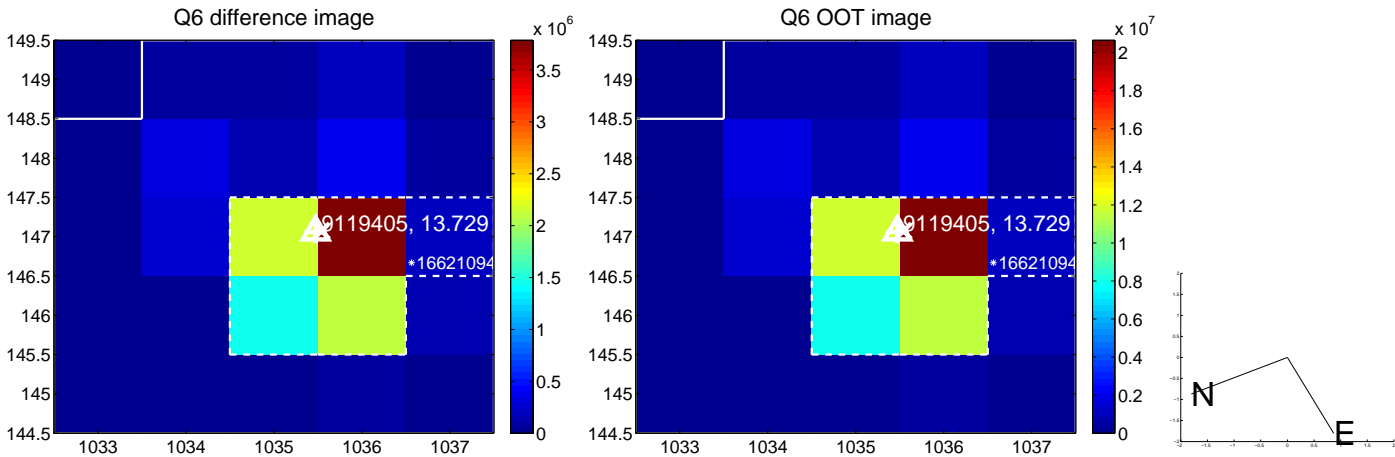
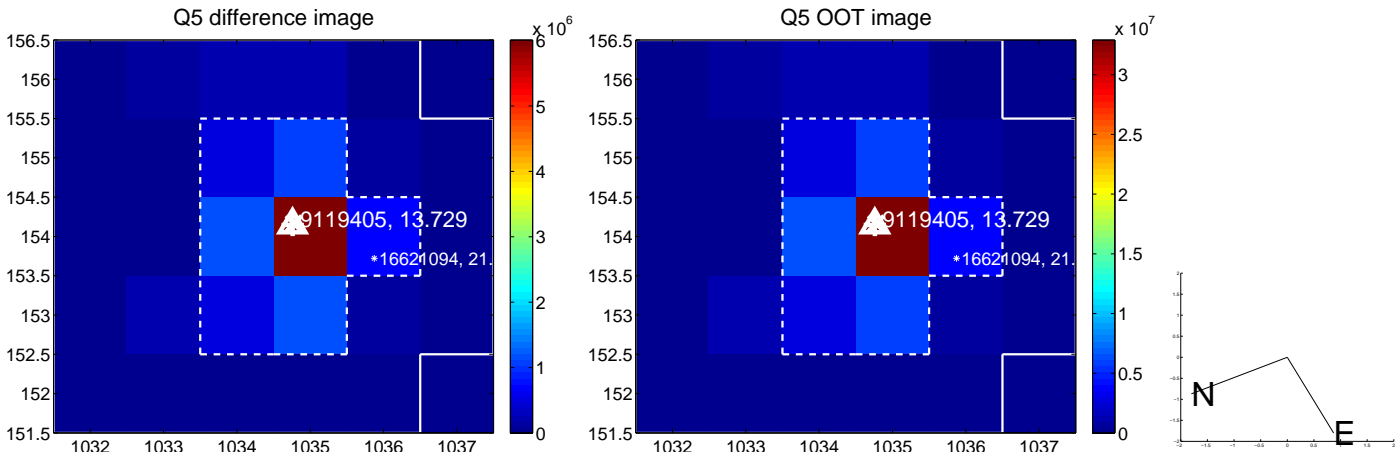


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

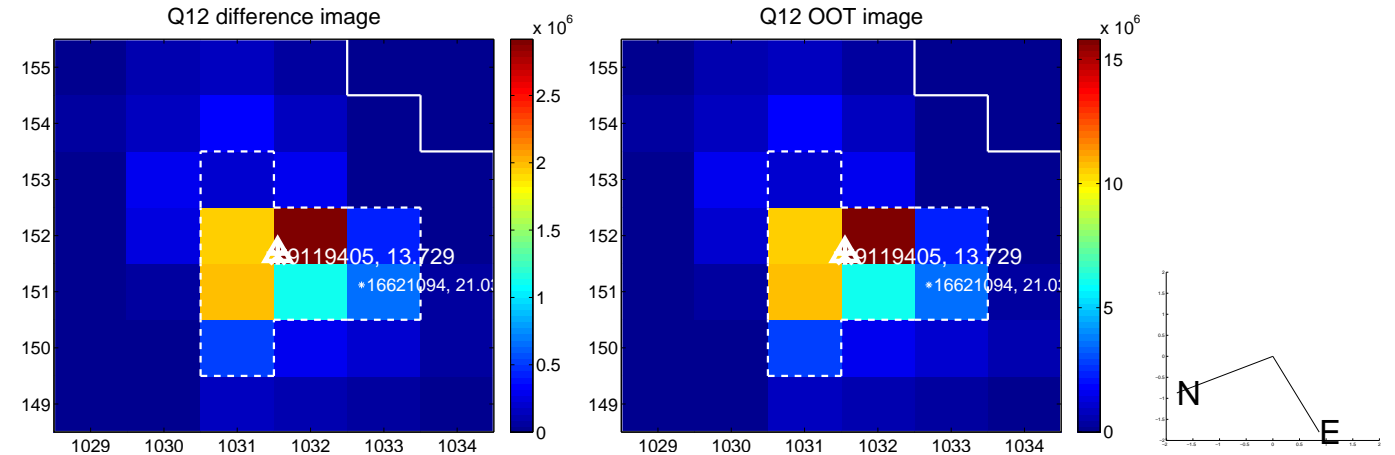
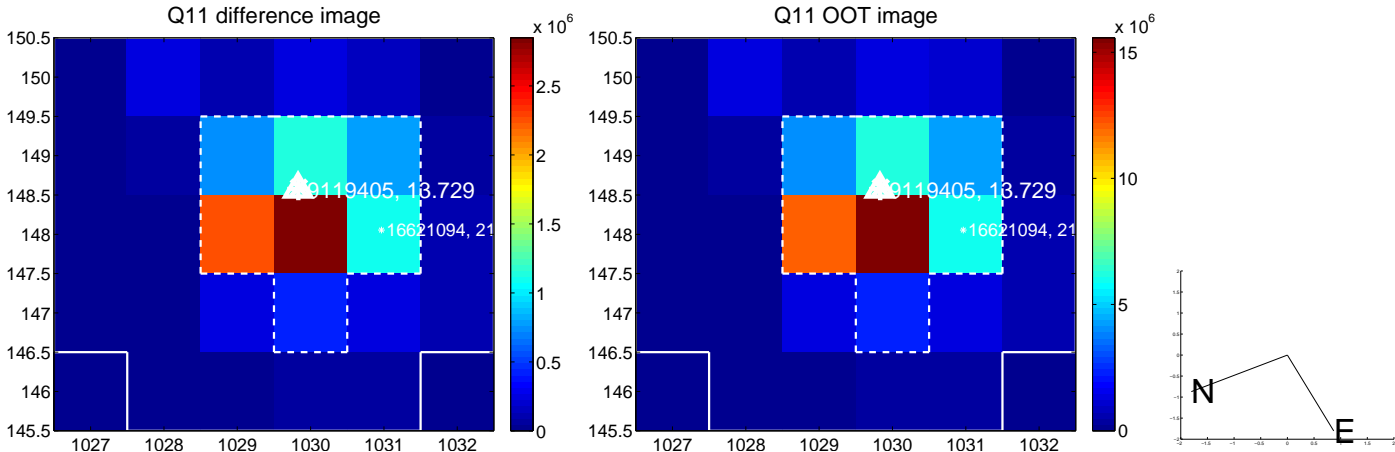
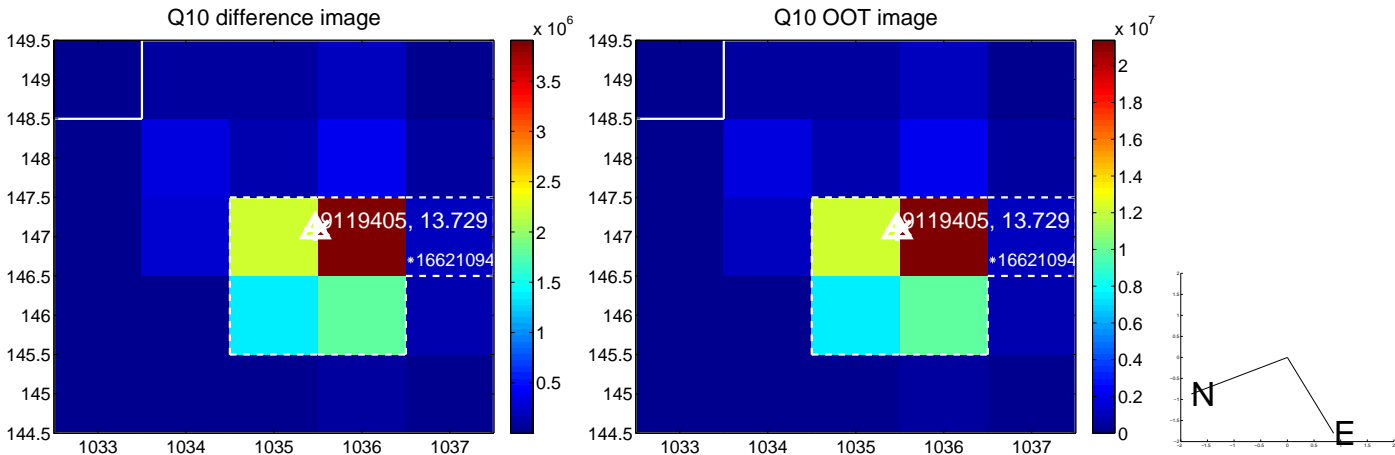
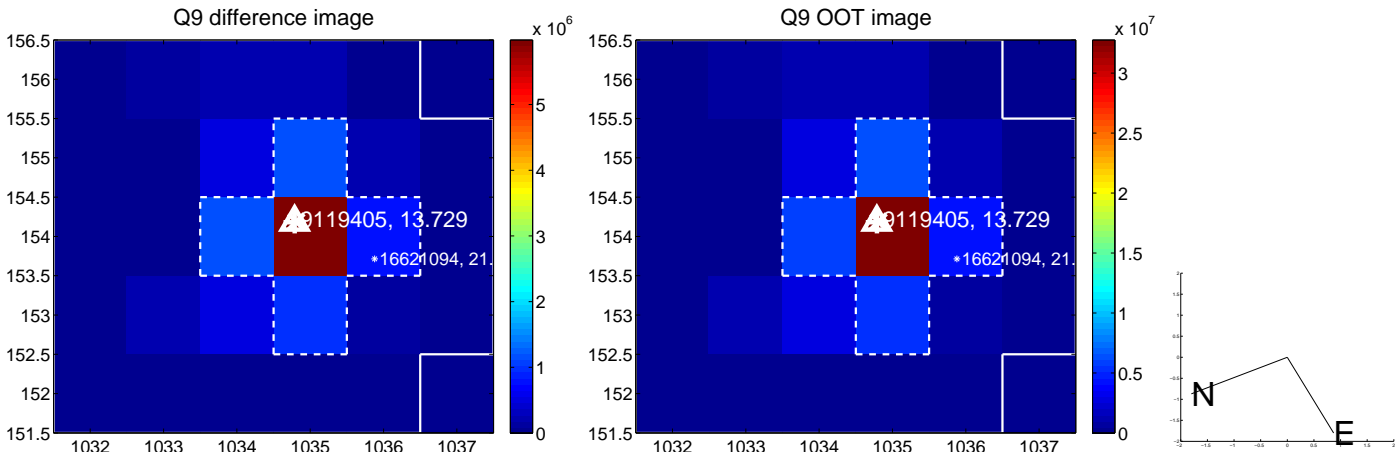
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



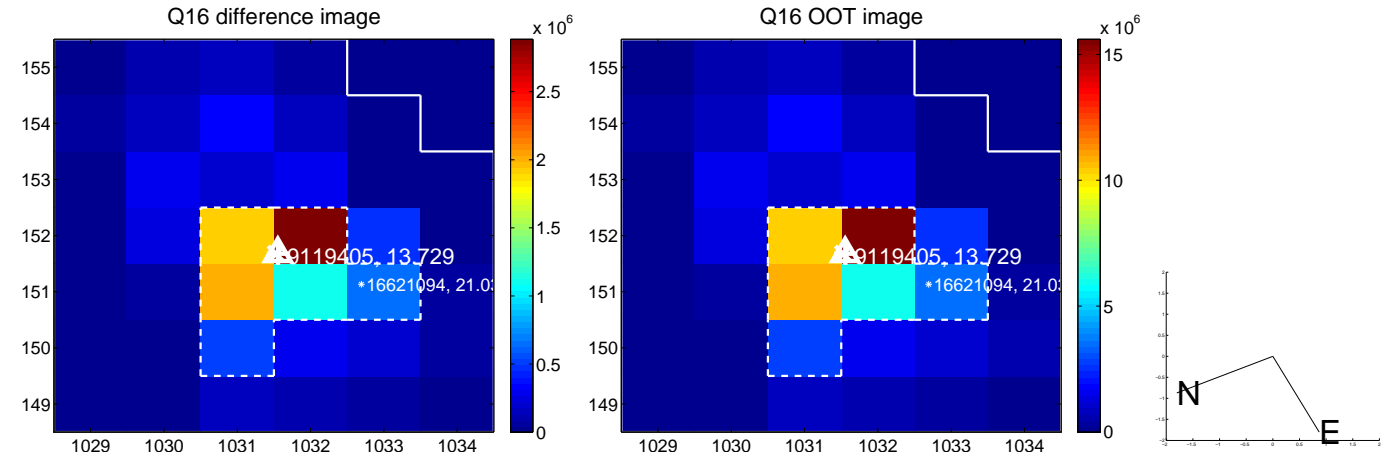
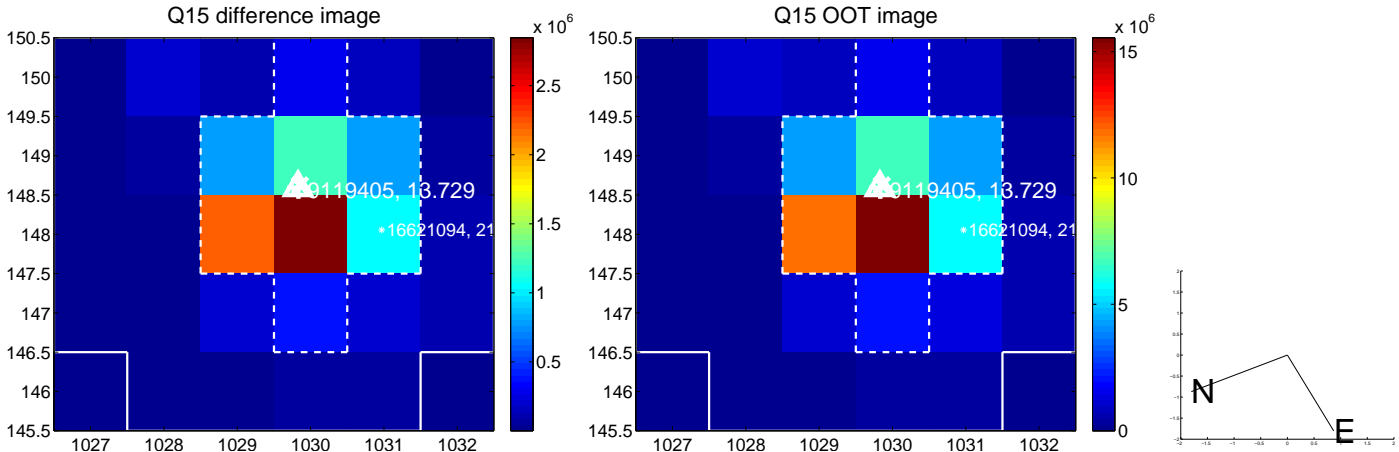
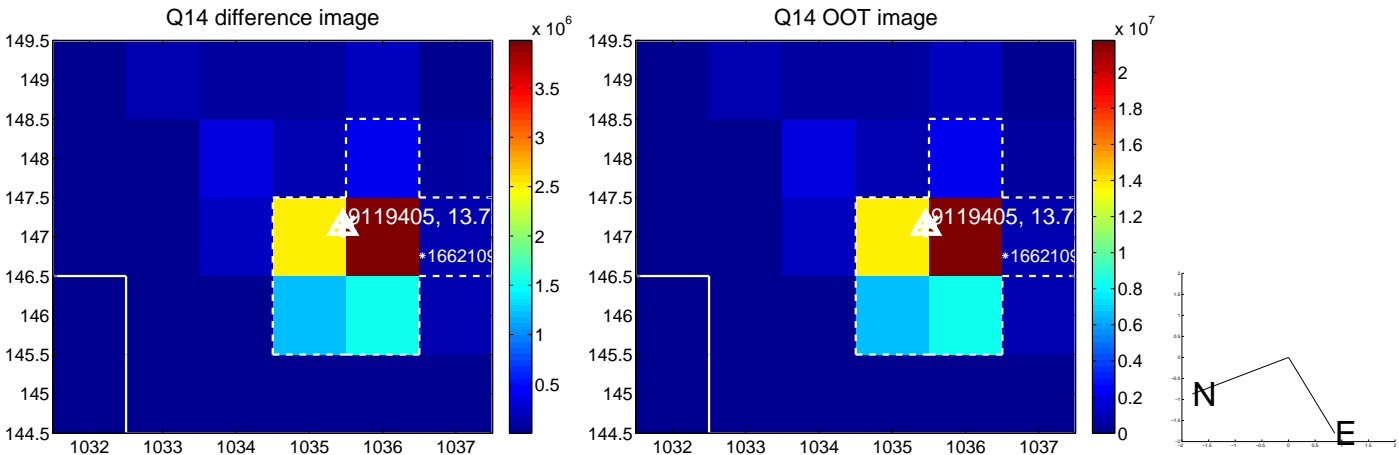
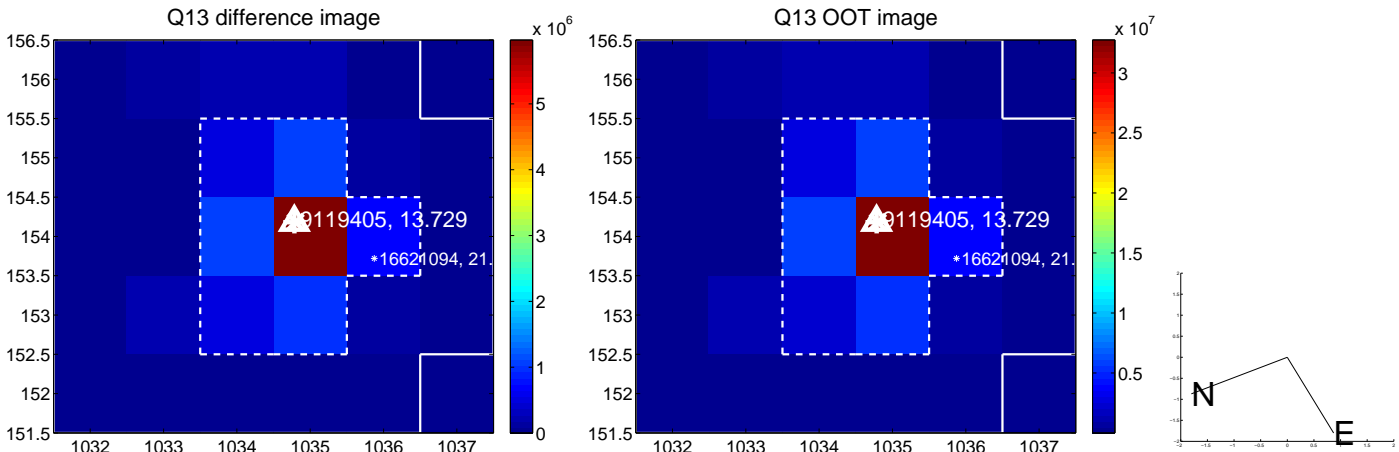
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



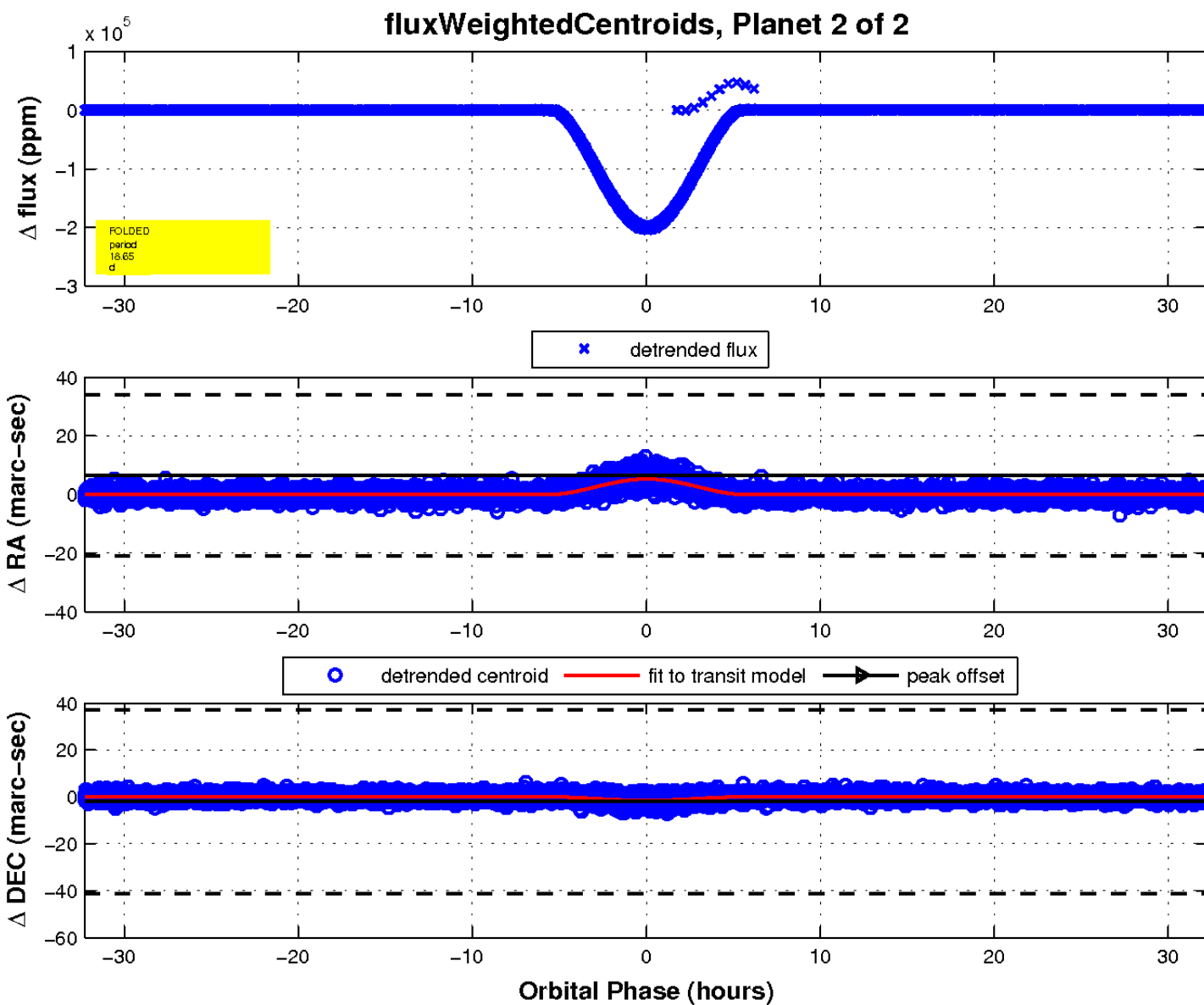
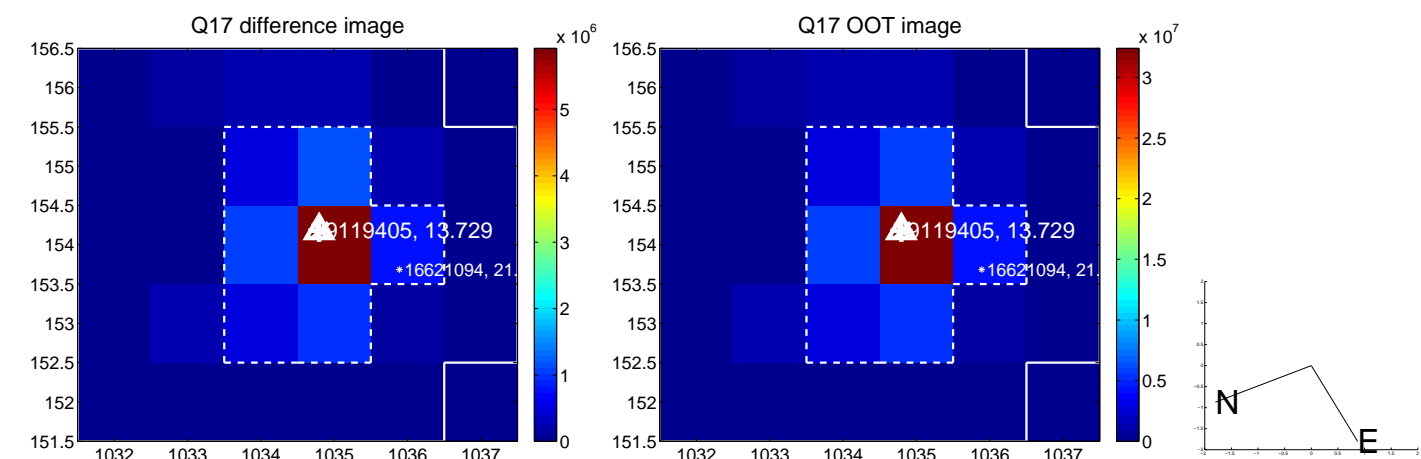
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

