

KIC 001571511

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})
001571511-01	OBS	0362.01	14.022451	135.528004	20151.8	8.084	2487.5	2315.5	1.05	6061	14.93	102.04
001571511-02	OBS	No	14.022516	142.923964	242.6	4.674	23.8	26.7	1.05	6061	2.06	102.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001571511-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
001571511-02	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 001571511-01

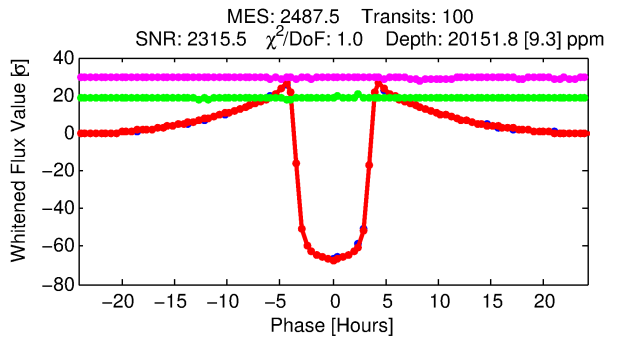
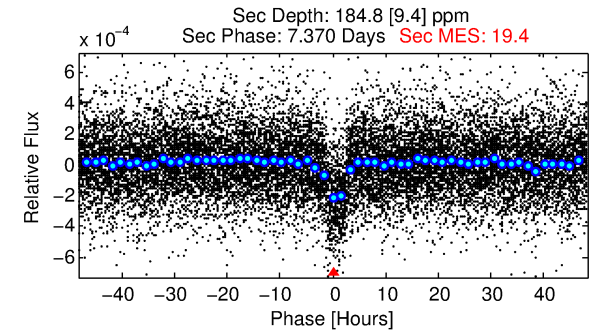
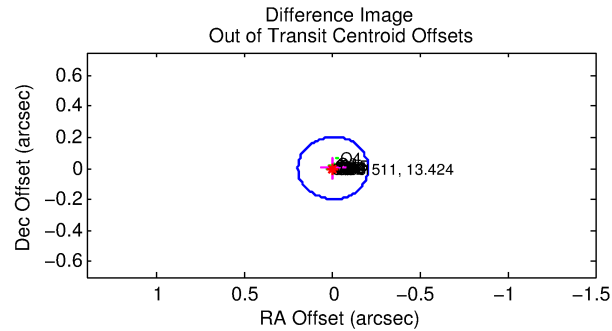
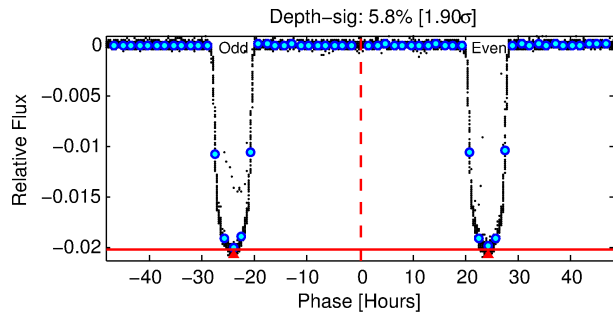
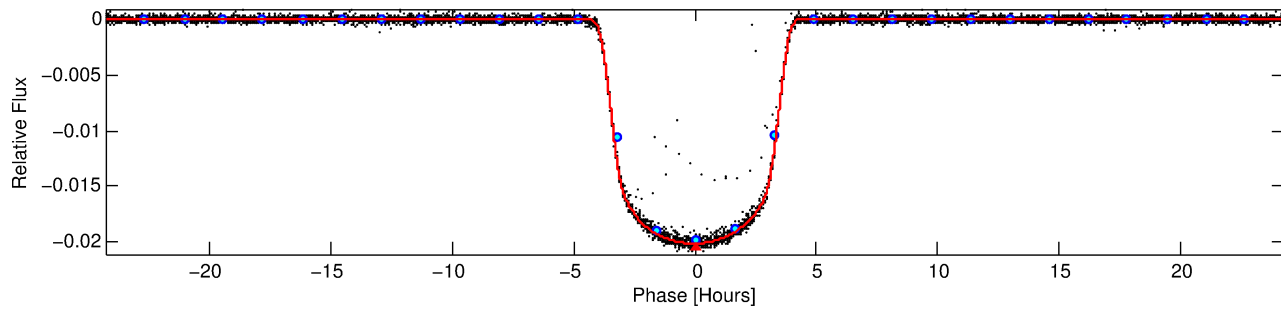
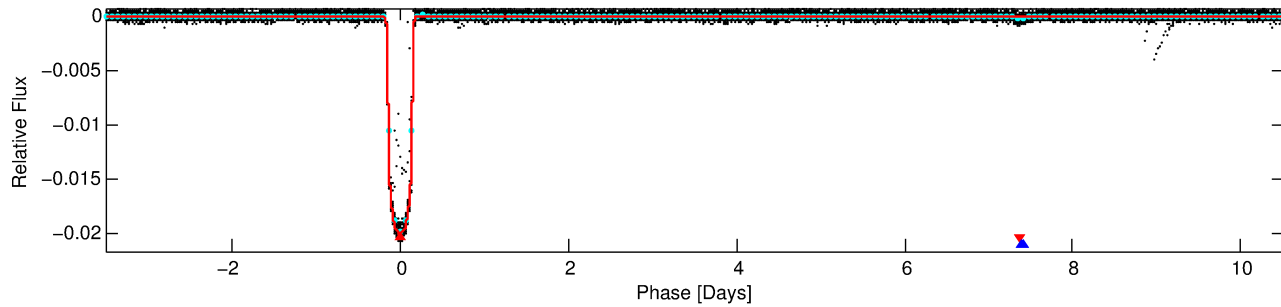
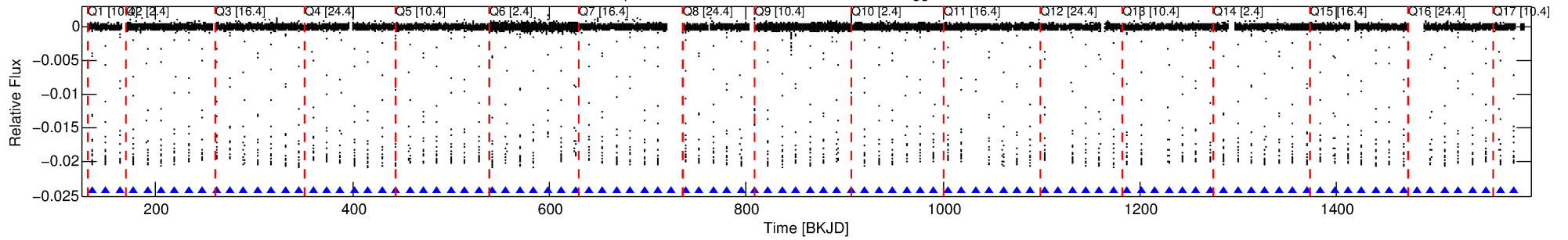
No Significant Match Found

DV One-Page Summary

KIC: 1571511 Candidate: 1 of 2 Period: 14.022 d

KOI: K00362.01 Corr: 1.000

Kp: 13.42 R*: 1.05 Rs Teff: 6061.0 K Logg: 4.40 Fe/H: -0.140



DV Fit Results:

Period = 14.02245 [0.00000] d
Epoch = 135.5280 [0.0001] BKJD
Rp/R* = 0.1303 [0.0001]
a/R* = 14.80 [0.03]
b = 0.18 [0.01]
Seff = 102.04 [38.96]
Teq = 810 [77] K
Rp = 14.93 [4.59] Re
a = 0.1143 [0.0290] AU
Ag = 5.96 [2.18] [2.27σ]
Teffp = 1958 [63] K [11.48σ]

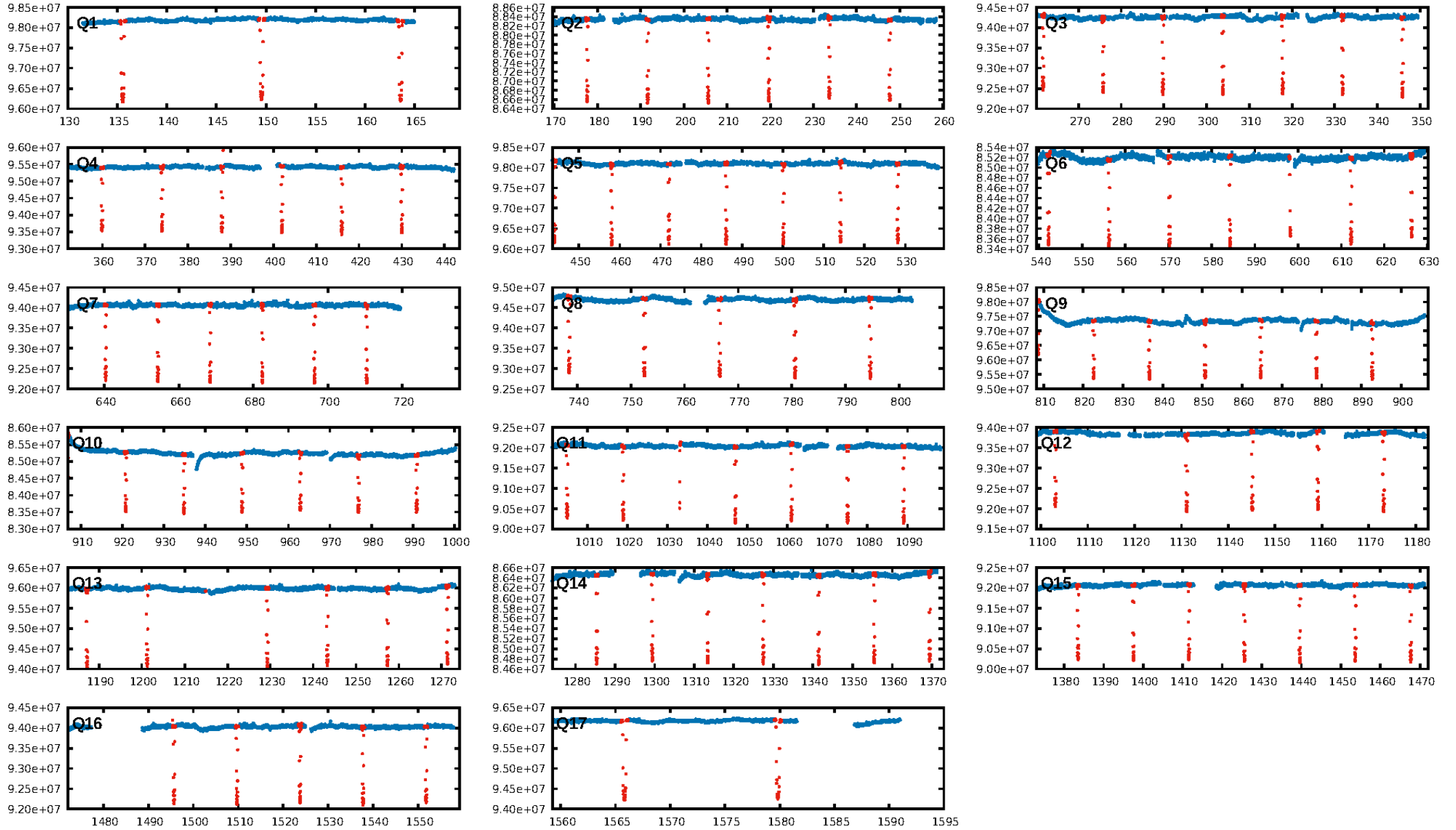
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [95/95]
GhostDiagnostic-chr: 3.535
Centroid-sig: 1.4%
Centroid-so: 0.720 arcsec [159.93σ]
OotOffset-rm: 0.006 arcsec [0.08σ]
KicOffset-rm: 0.050 arcsec [0.74σ]
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]

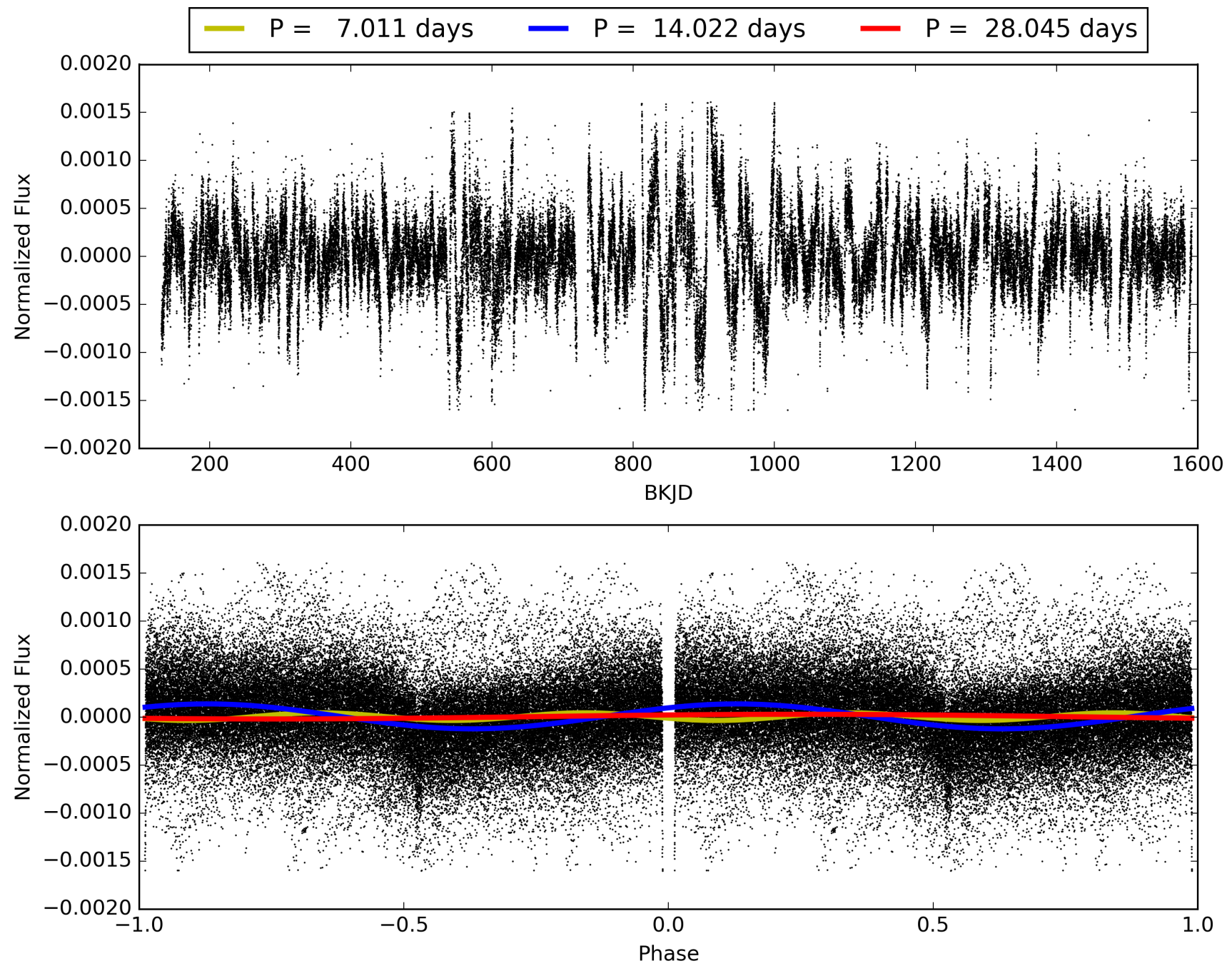
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:50:35 Z

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

TCE 001571511-01, PDC Light Curves

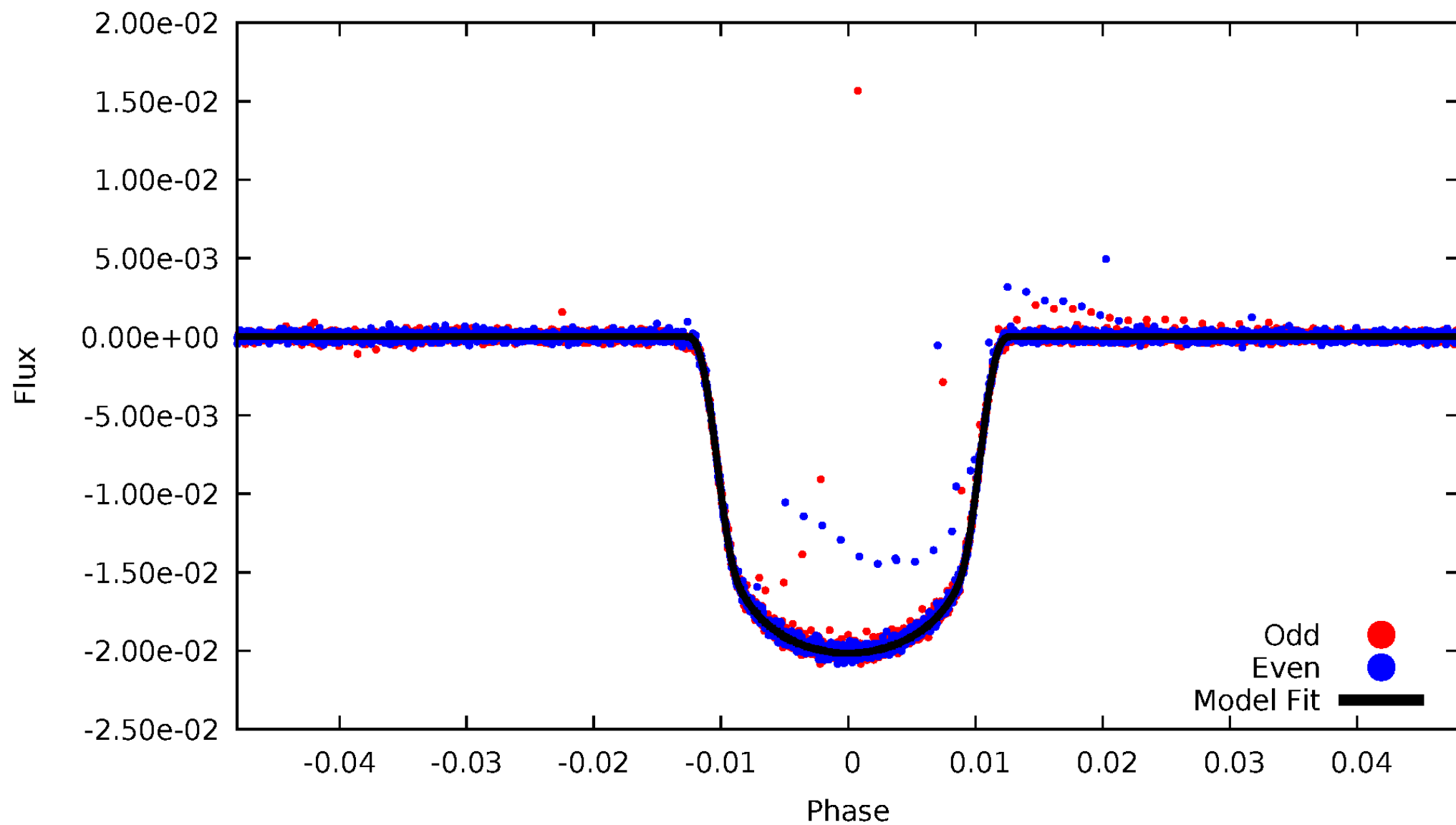


TCE 001571511-01



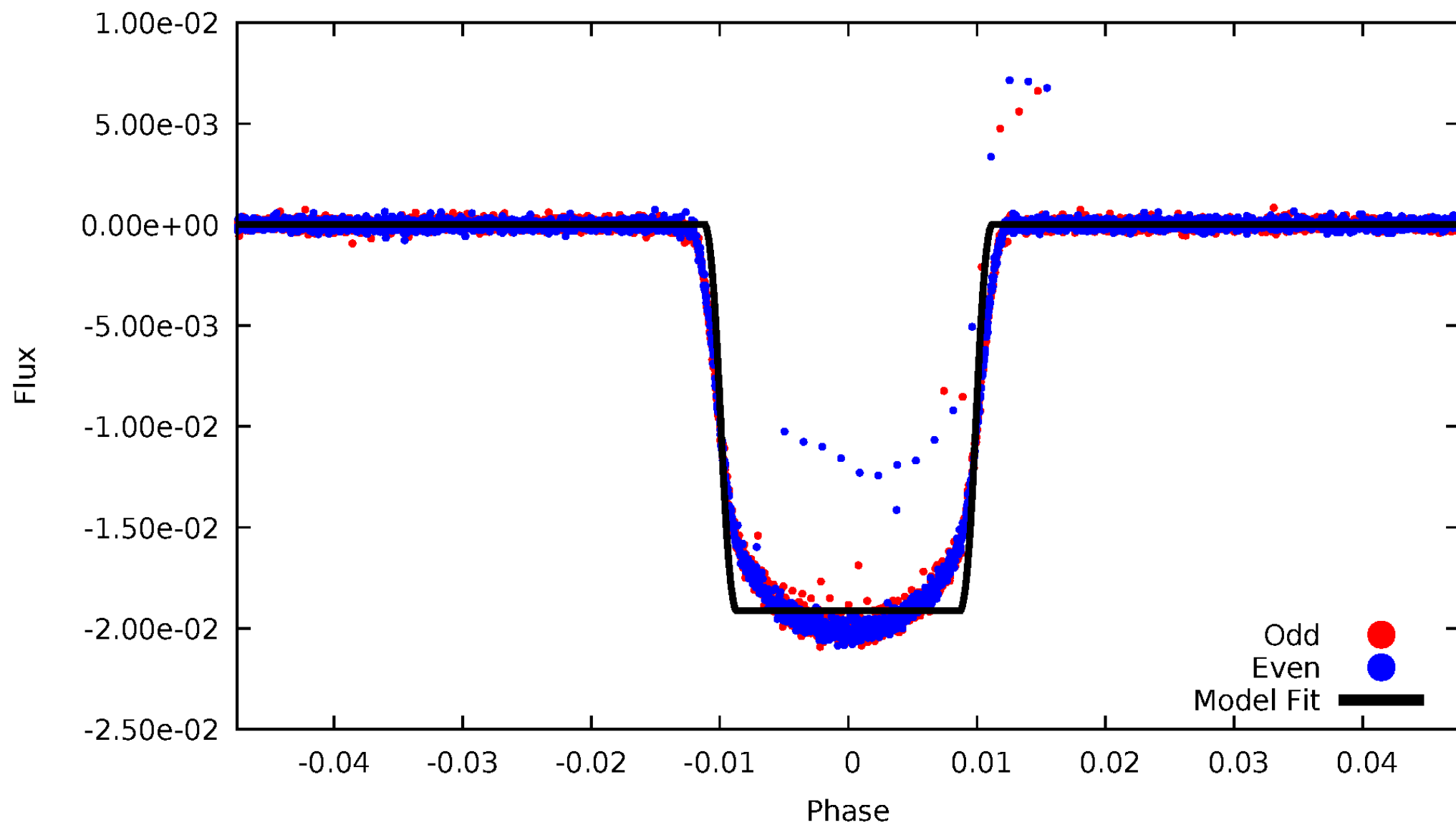
DV Odd/Even

TCE 001571511-01



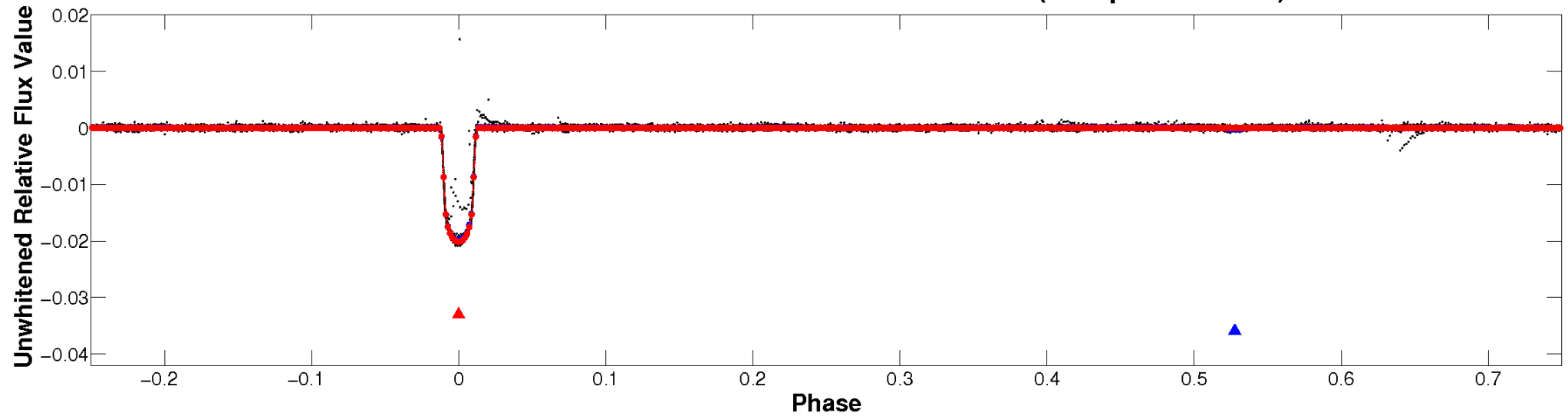
ALT Odd/Even

TCE 001571511-01

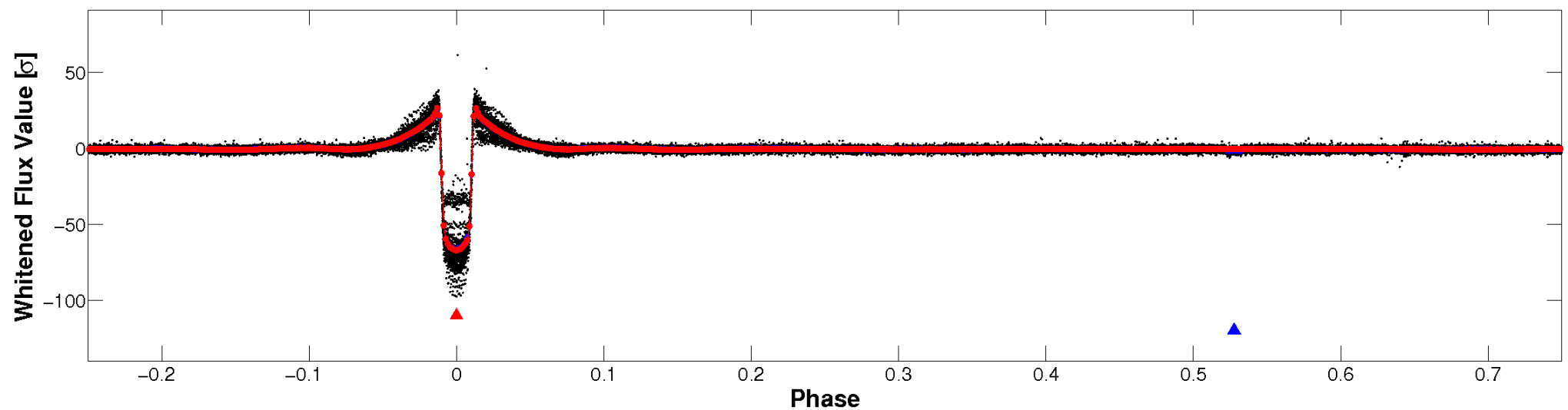


Non-Whitened Vs. Whitened Light Curve

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

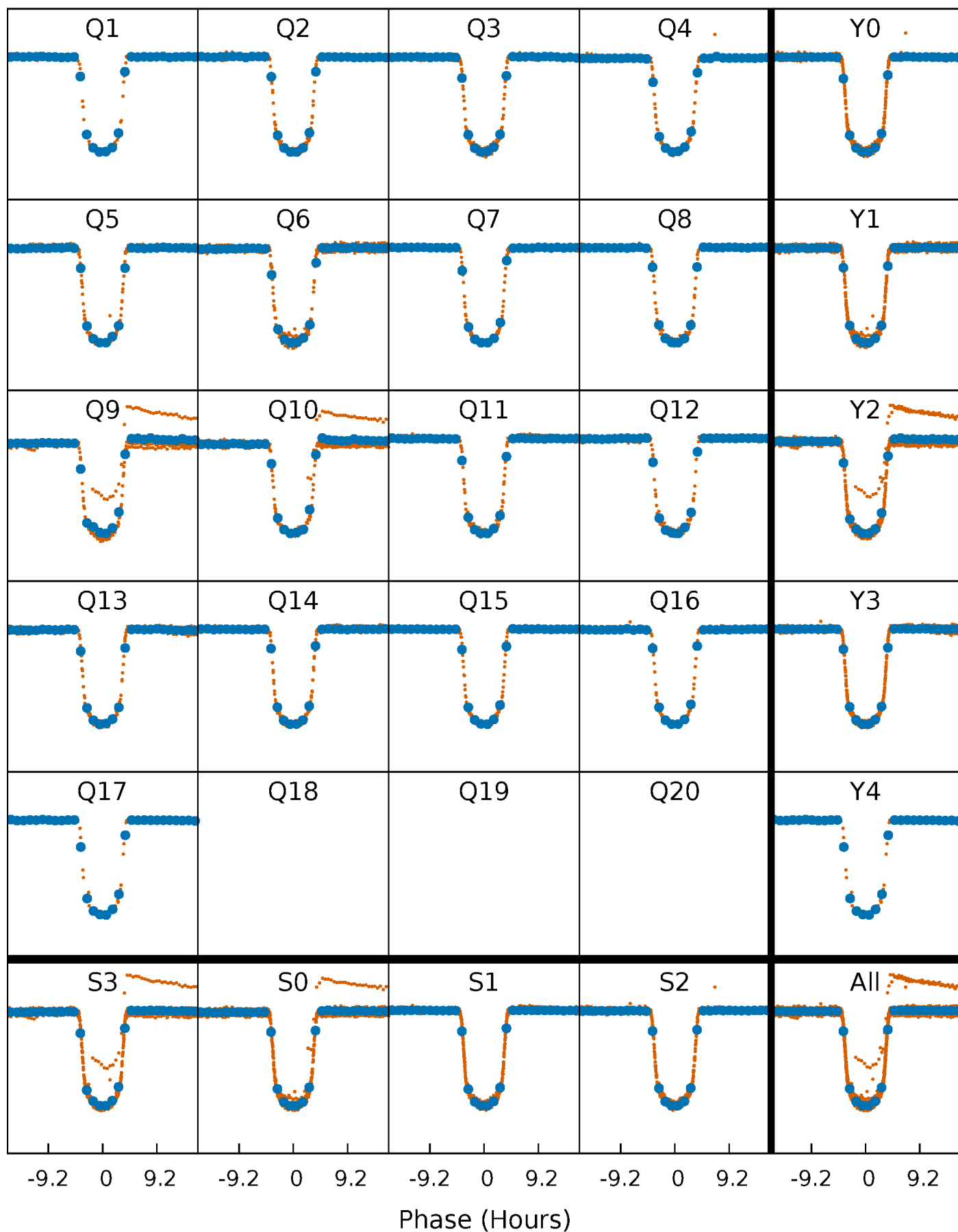


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



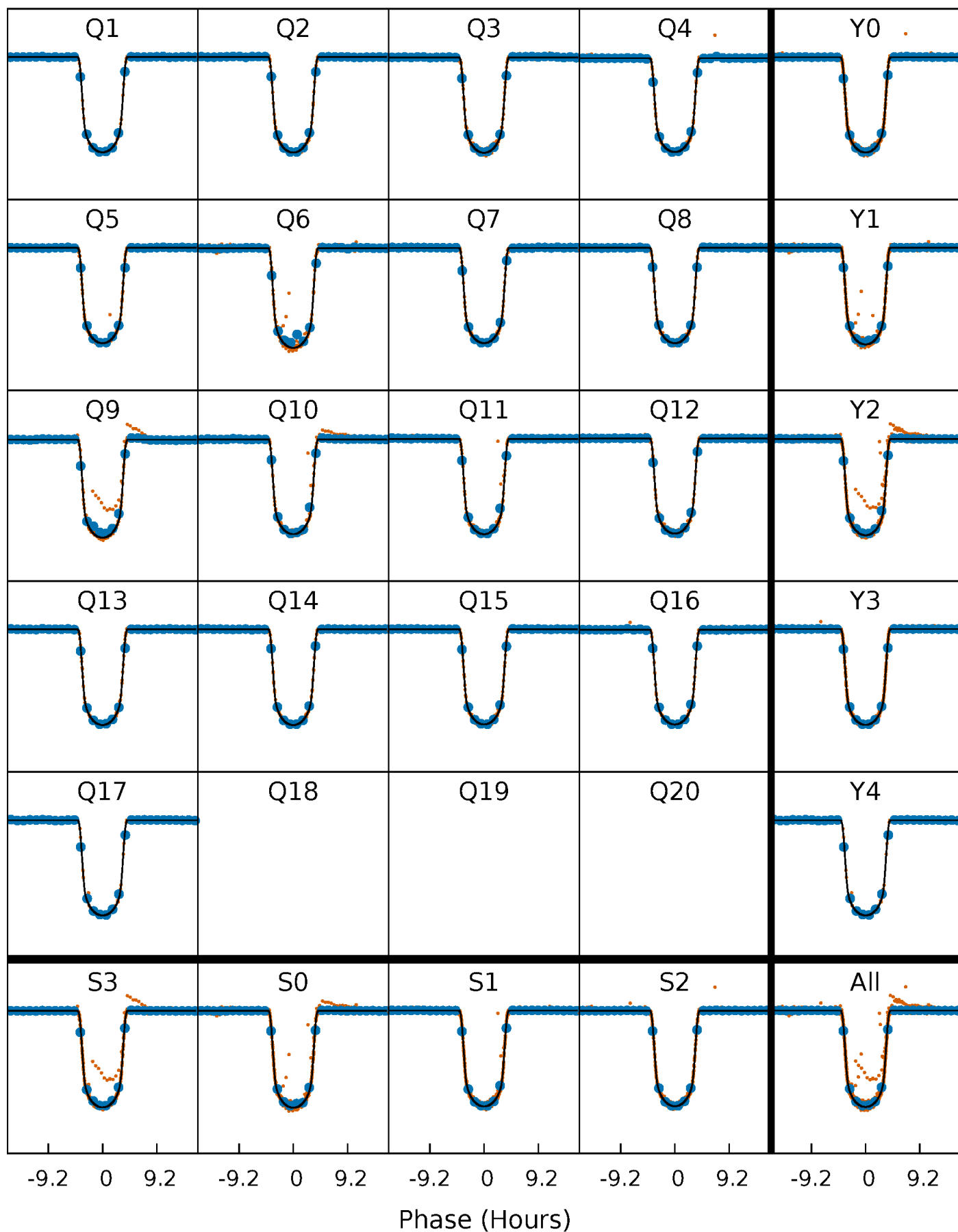
PDC Quarter-Phased Transit Curves

TCE 001571511-01 P= 14.022451 Days $T_0=135.528004$ (BKJD)



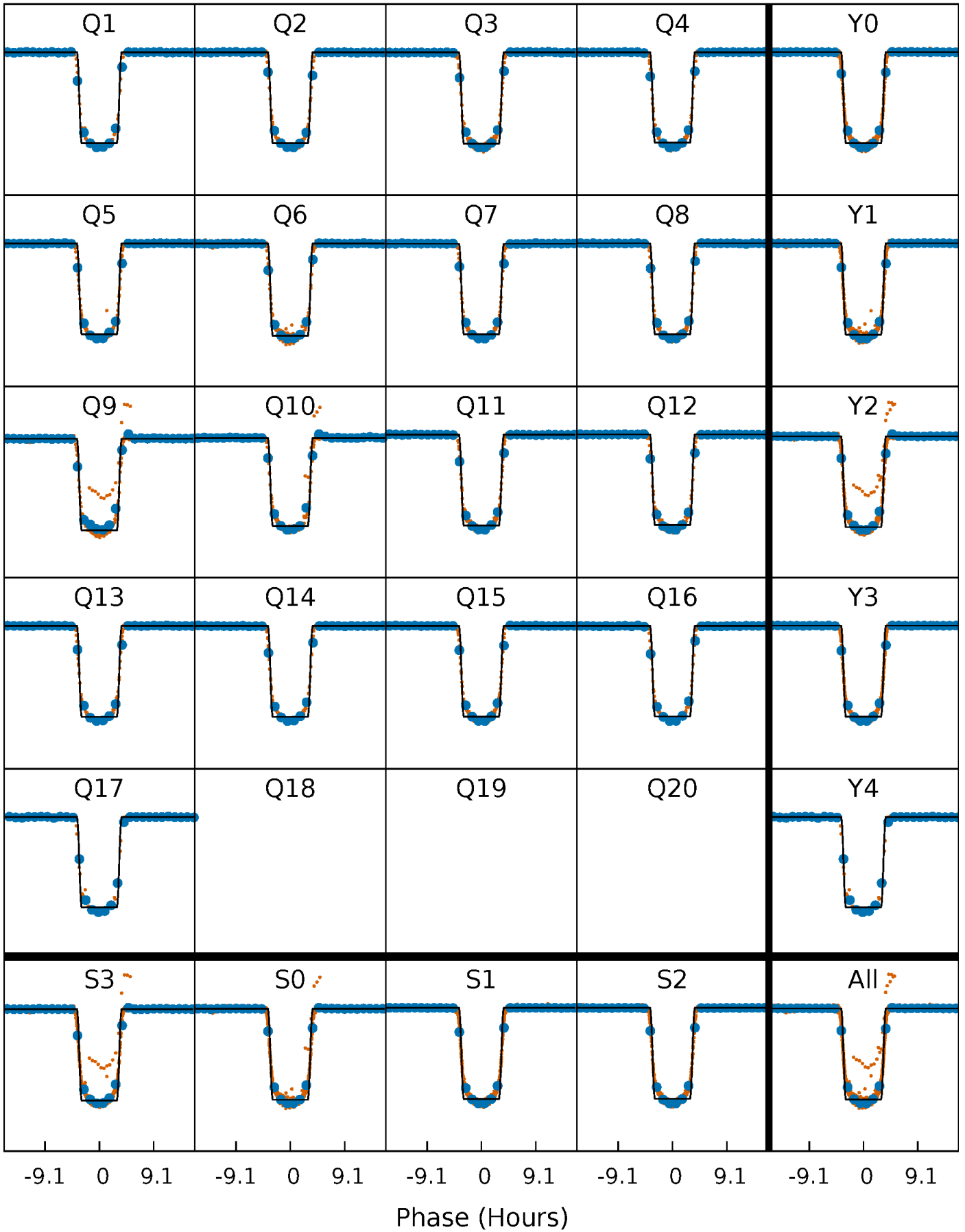
DV Quarter-Phased Transit Curves

TCE 001571511-01 P= 14.022451 Days $T_0=135.528004$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

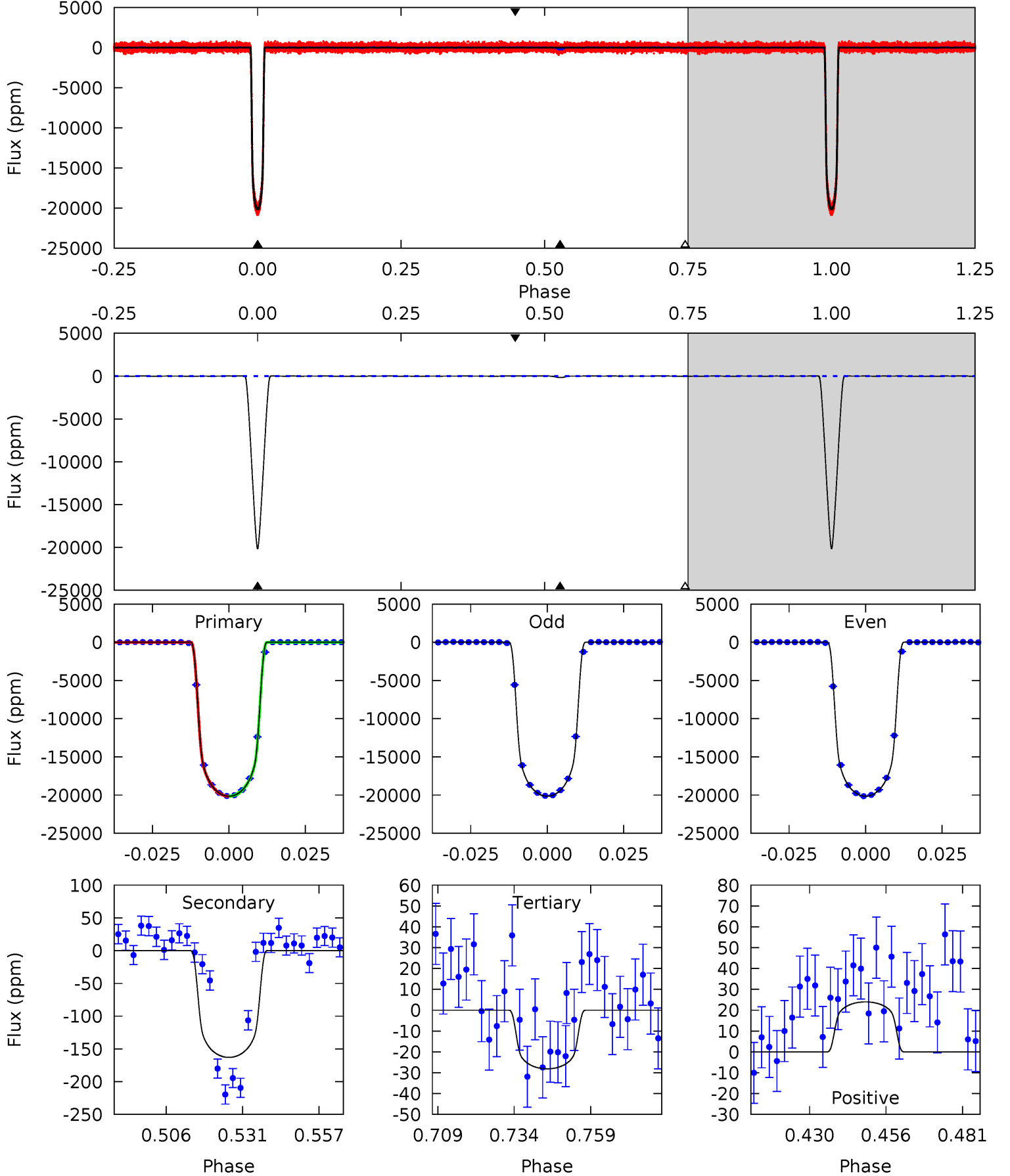
TCE 001571511-01 P= 14.022461 Days $T_0=135.527271$ (BKJD)



DV Model-Shift Uniqueness Test

001571511-01, P = 14.022451 Days, E = 121.505553 Days

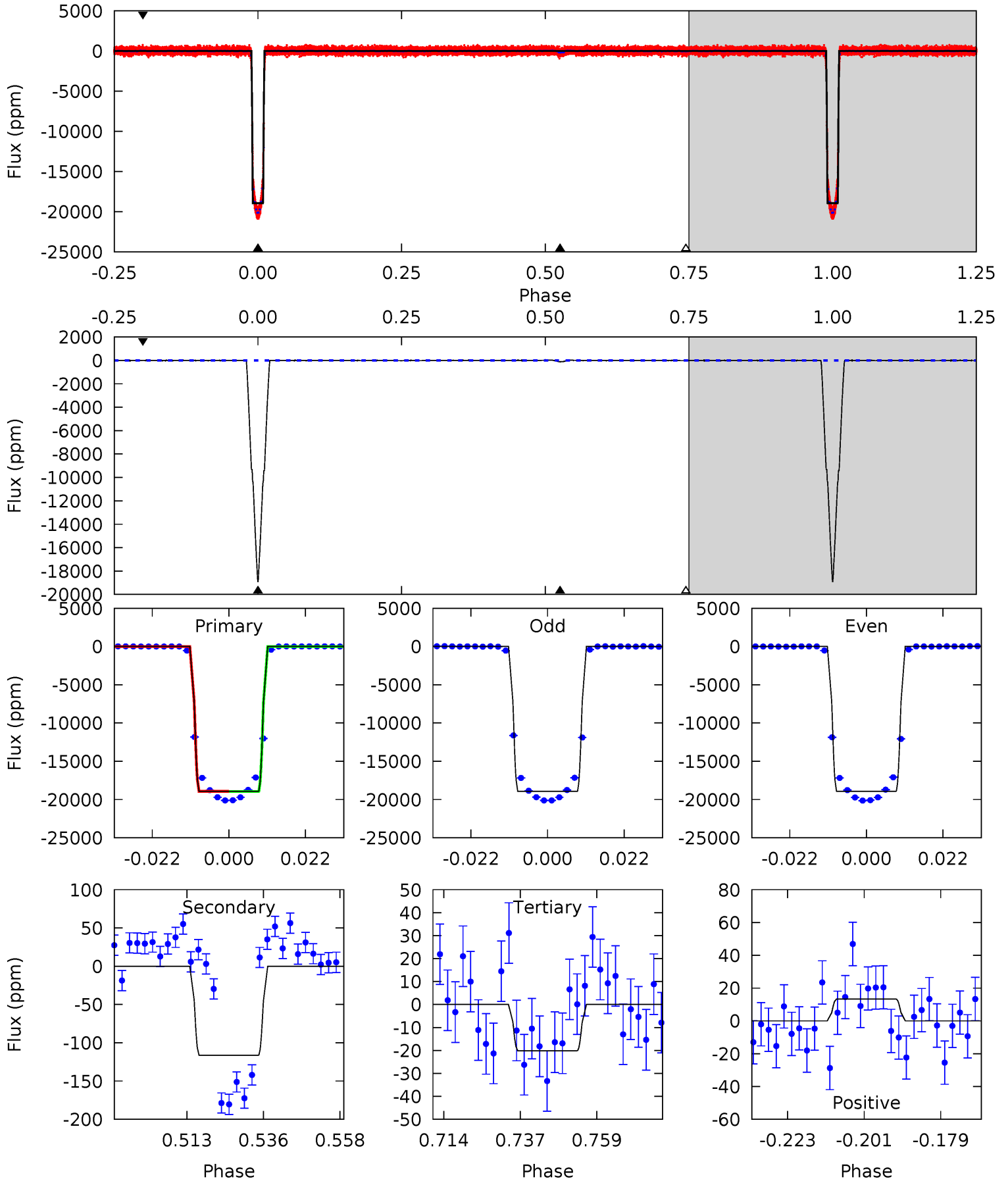
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4271	34.6	5.97	5.08	4.85	2.24	2.06	4265	4266	28.6	29.5	0.04	0.98	0.00	1.17



Alt Model-Shift Uniqueness Test

001571511-01, P = 14.022461 Days, E = 121.504810 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3645	22.4	3.87	2.56	4.87	2.28	1.26	3641	3642	18.5	19.8	1.72	0.99	0.00	2.62



Stellar Parameters For KIC 001571511

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6061^{+162}_{-180}	$4.401^{+0.090}_{-0.195}$	$-0.140^{+0.300}_{-0.300}$	$1.050^{+0.323}_{-0.139}$	$1.012^{+0.143}_{-0.117}$	$1.232^{+0.493}_{-0.643}$
	+3%/-3%	+2%/-4%	+214%/-214%	+31%/-13%	+14%/-12%	+40%/-52%
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 001571511-01 / KOI 0362.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-163 ± 5	$15.17^{+2.49}_{-1.29}$	1145^{+84}_{-56}	2659^{+41}_{-41}	$5.047^{+0.869}_{-1.216}$
Alt.	-116 ± 5	$16.14^{+2.67}_{-1.42}$	1147^{+81}_{-58}	2500^{+39}_{-40}	$3.177^{+0.580}_{-0.773}$

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 $A_{obs} \gg 1.0$

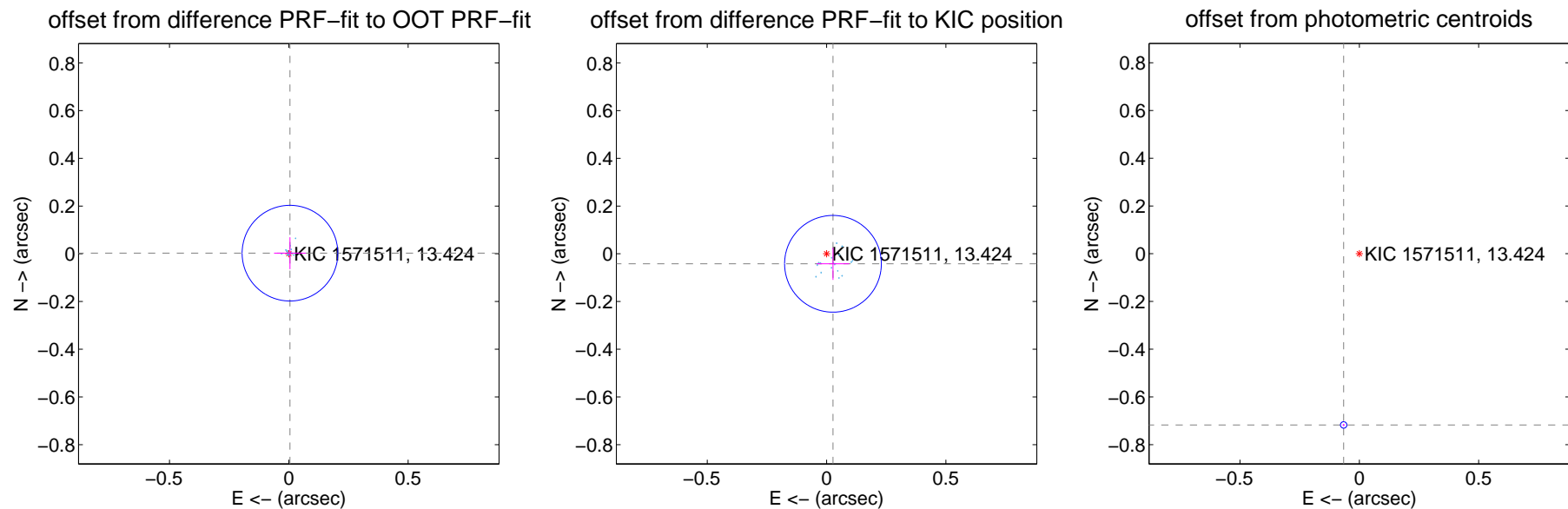
DV Centroid Data

Supplemental centroid analysis for 001571511-01. Kepler magnitude: 13.42. Transit SNR 2315.53

There are 17 quarters with good PRF difference image offsets

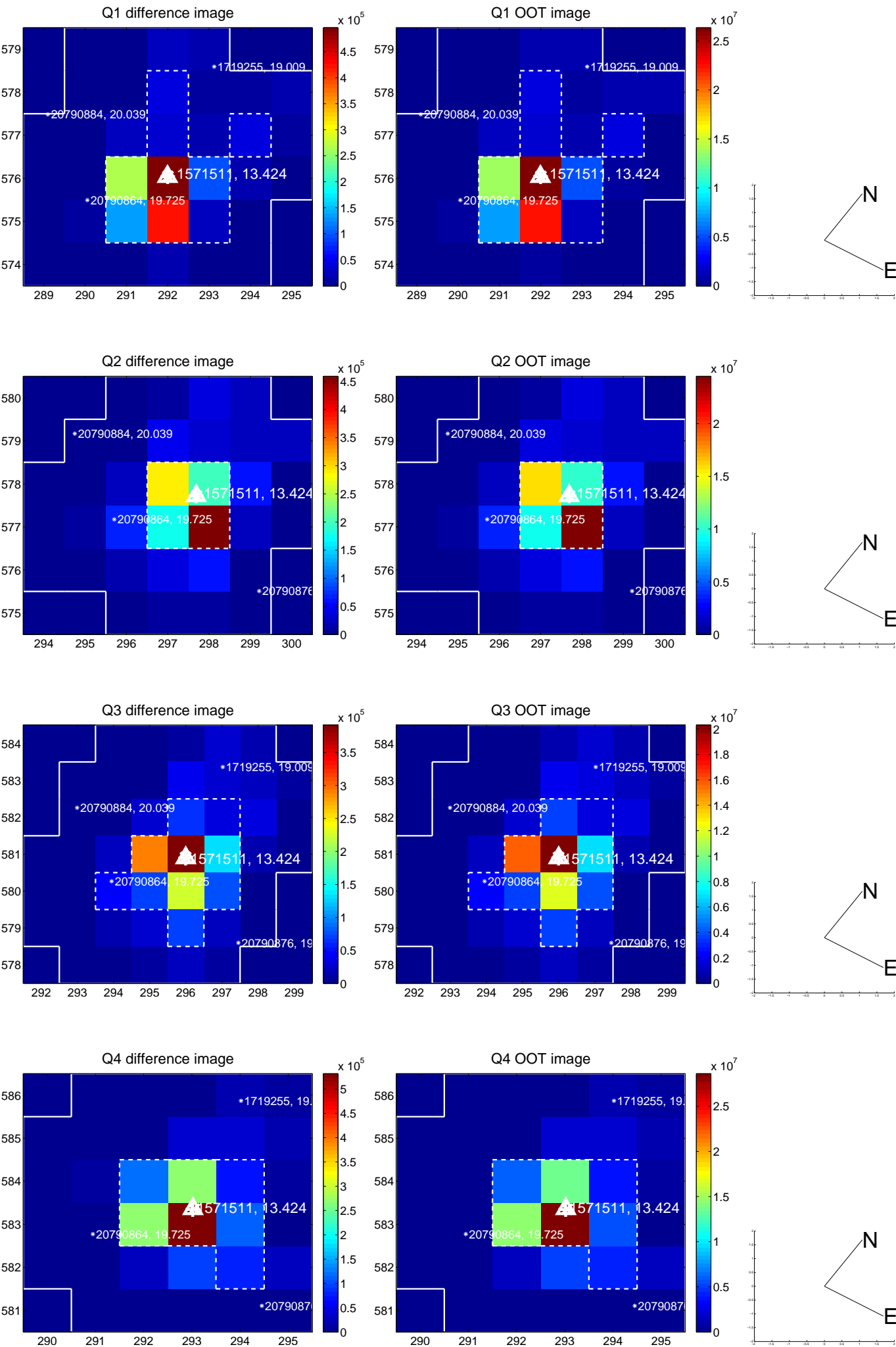
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.006 ± 0.067	0.08	-0.005 ± 0.067	0.003 ± 0.067
PRF-fit source offset from KIC position	0.050 ± 0.068	0.74	-0.027 ± 0.068	-0.042 ± 0.067
photometric centroid source offset	0.72 ± 0.00	159.93	0.07 ± 0.00	-0.72 ± 0.00

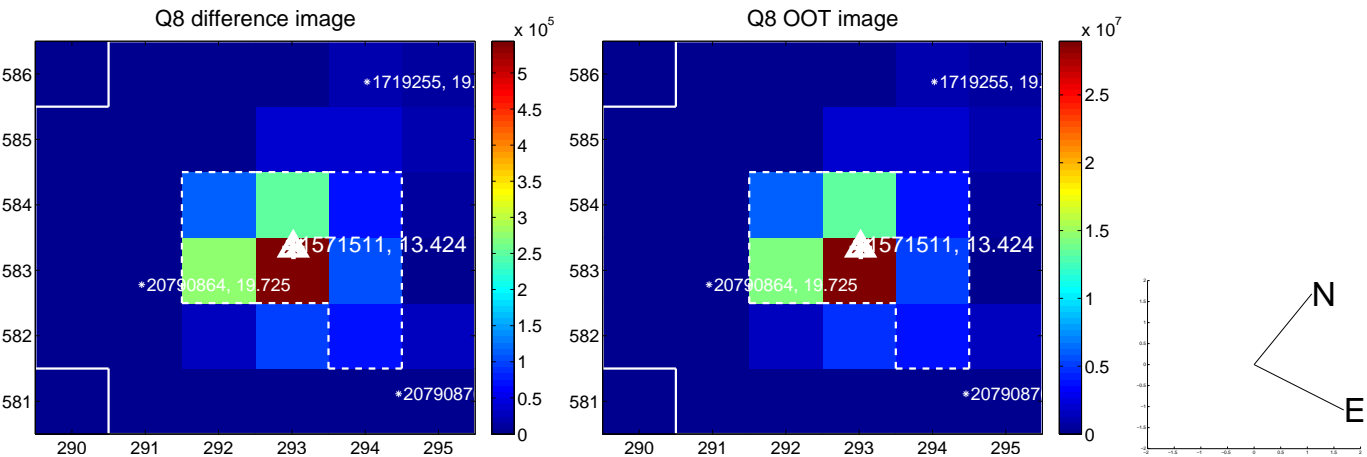
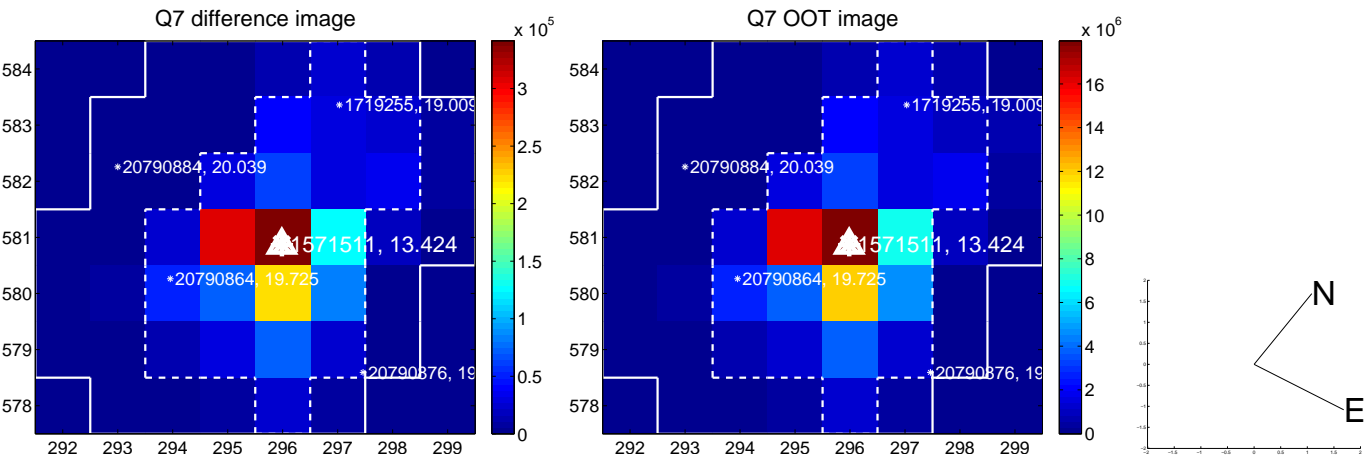
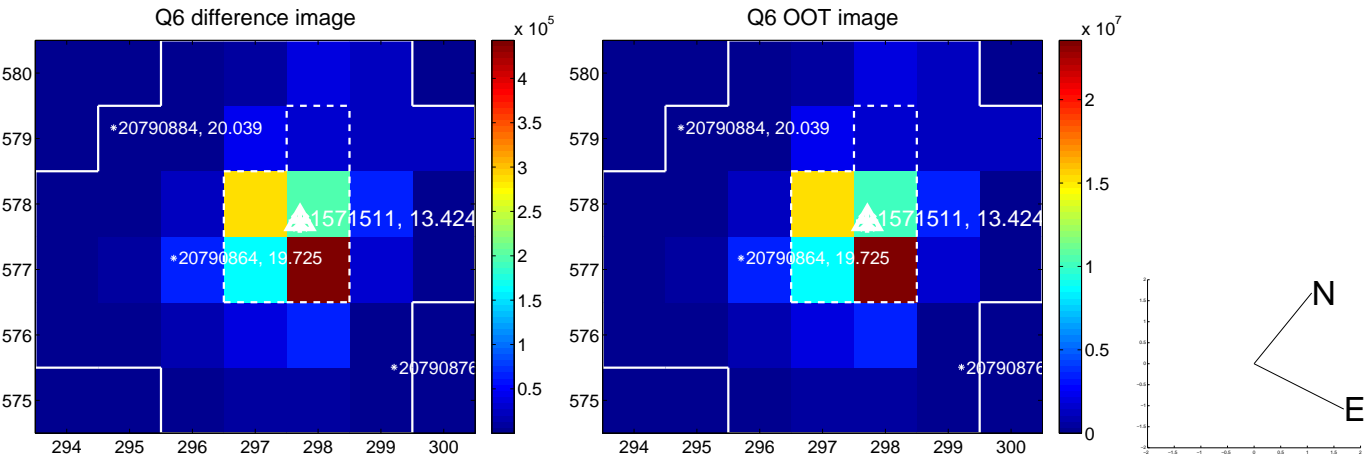
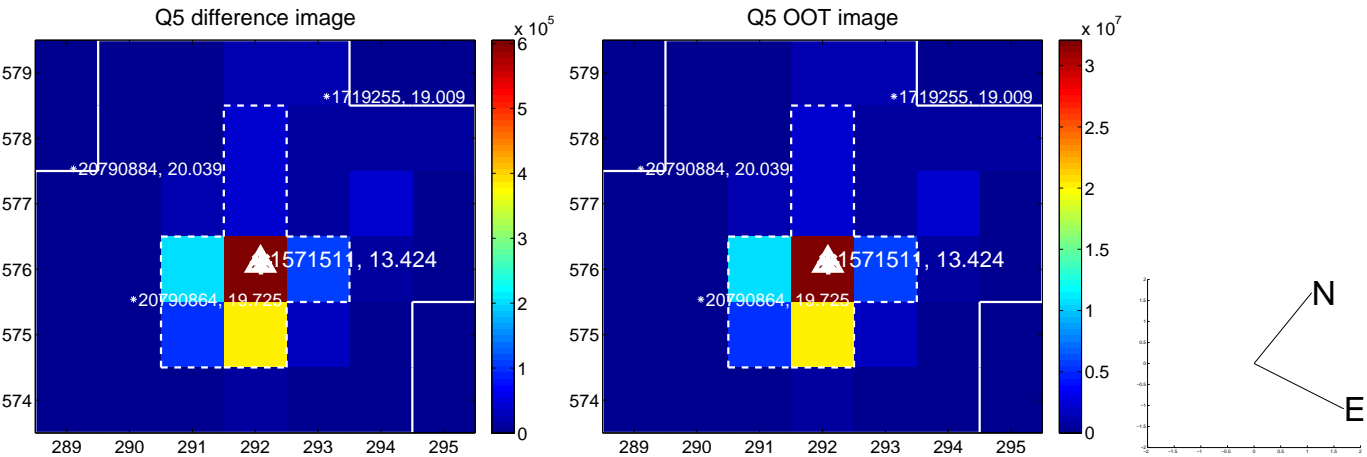


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

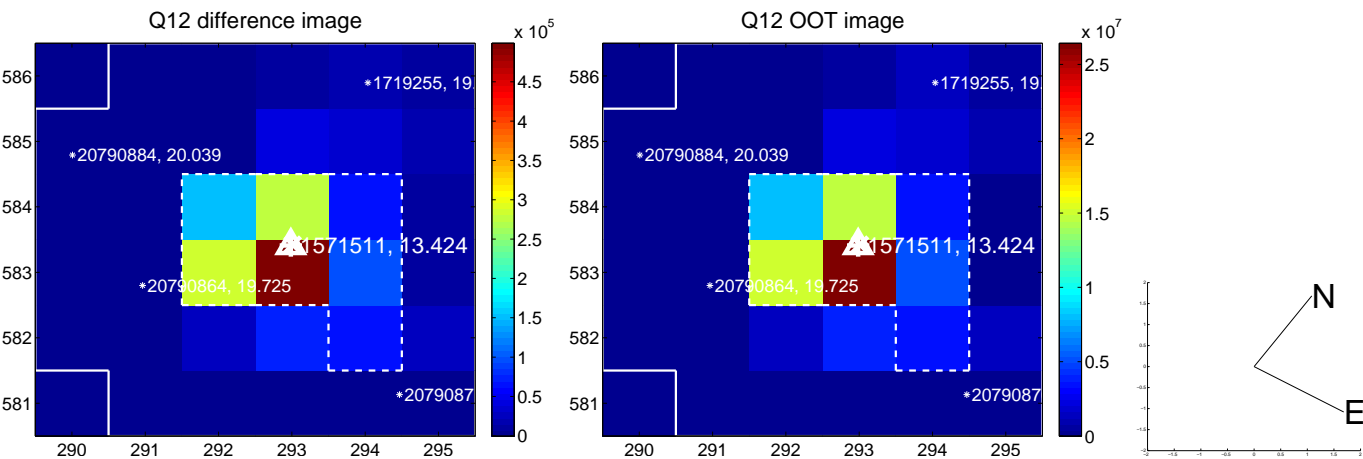
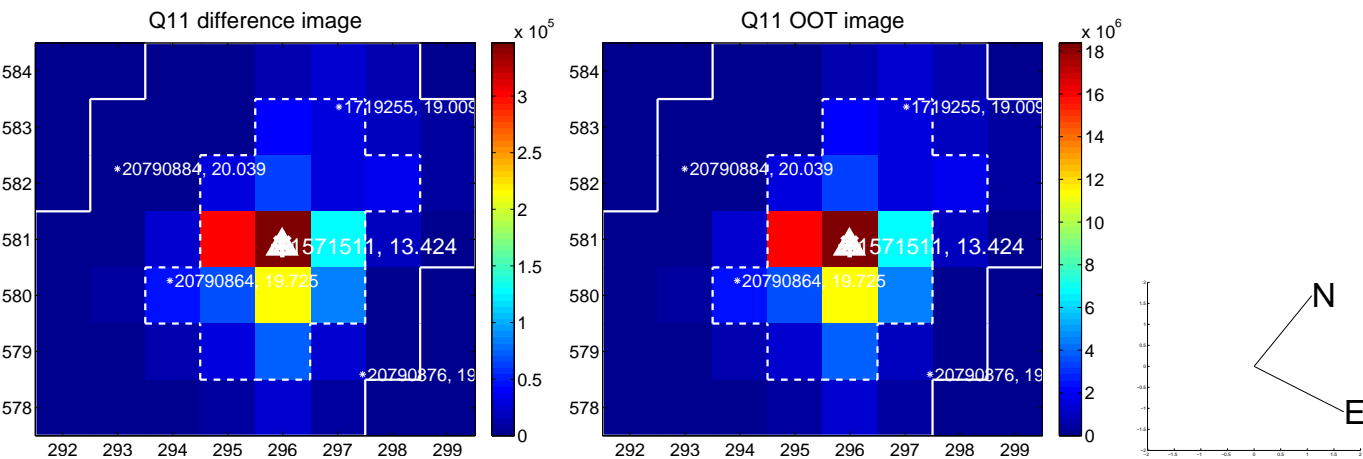
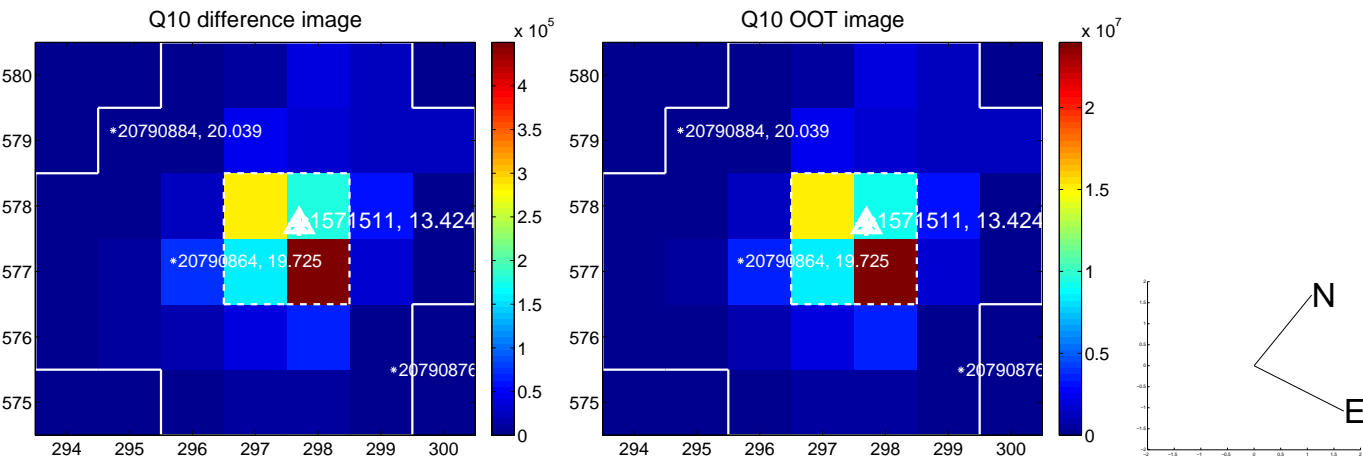
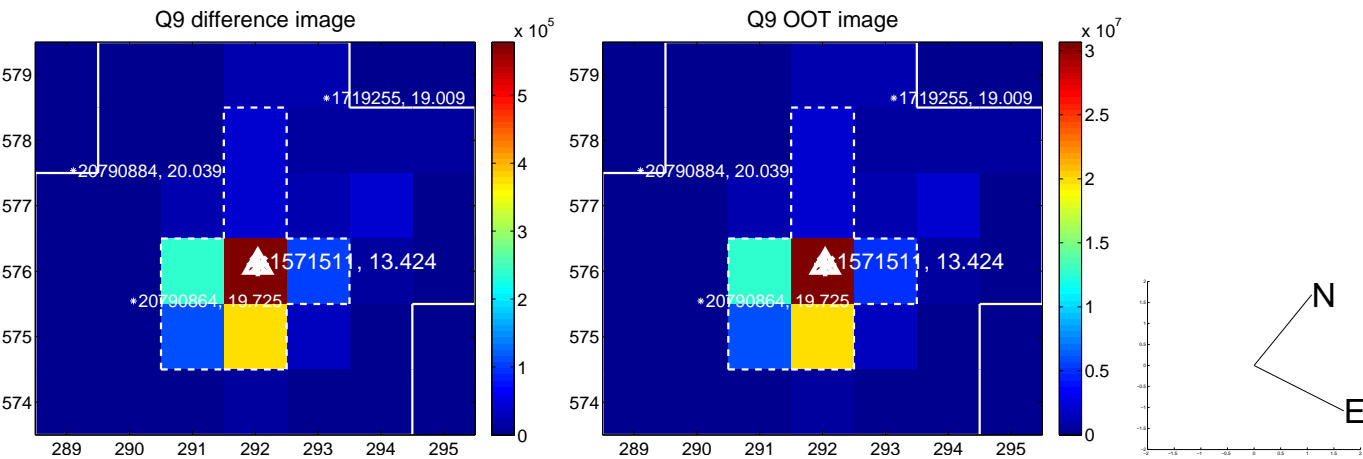
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



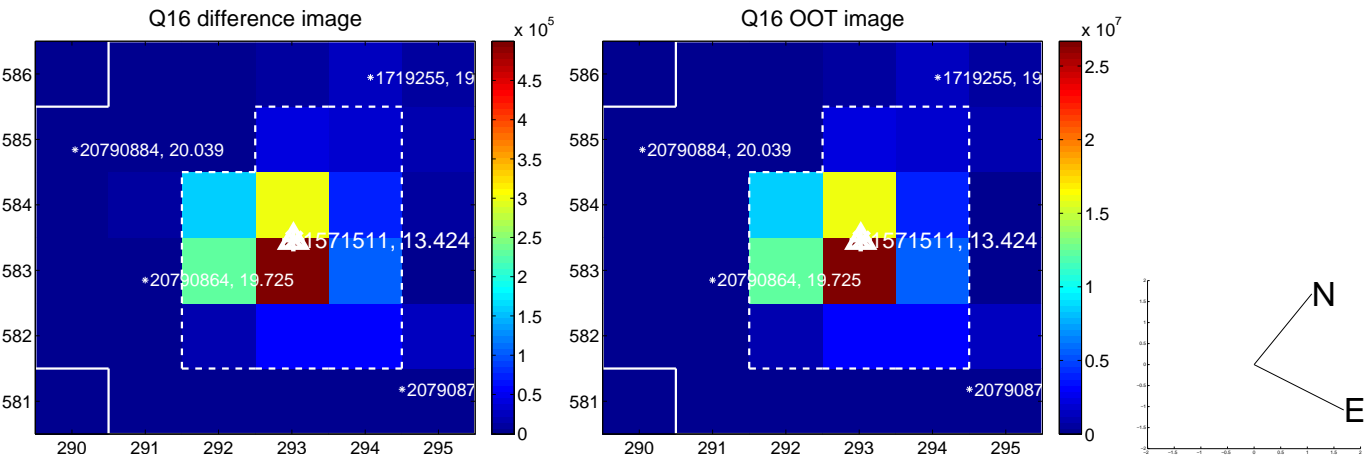
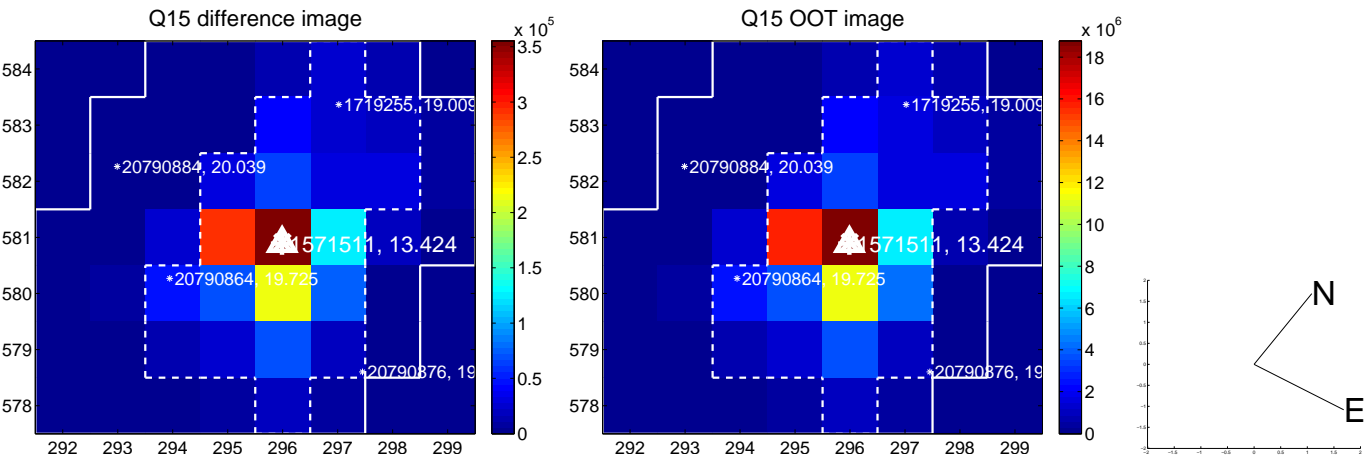
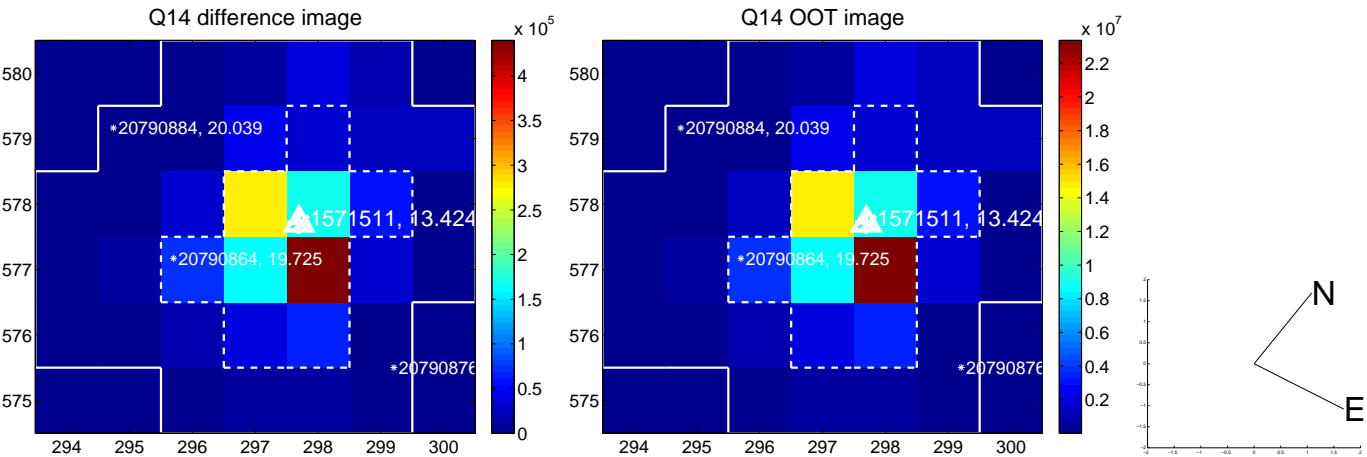
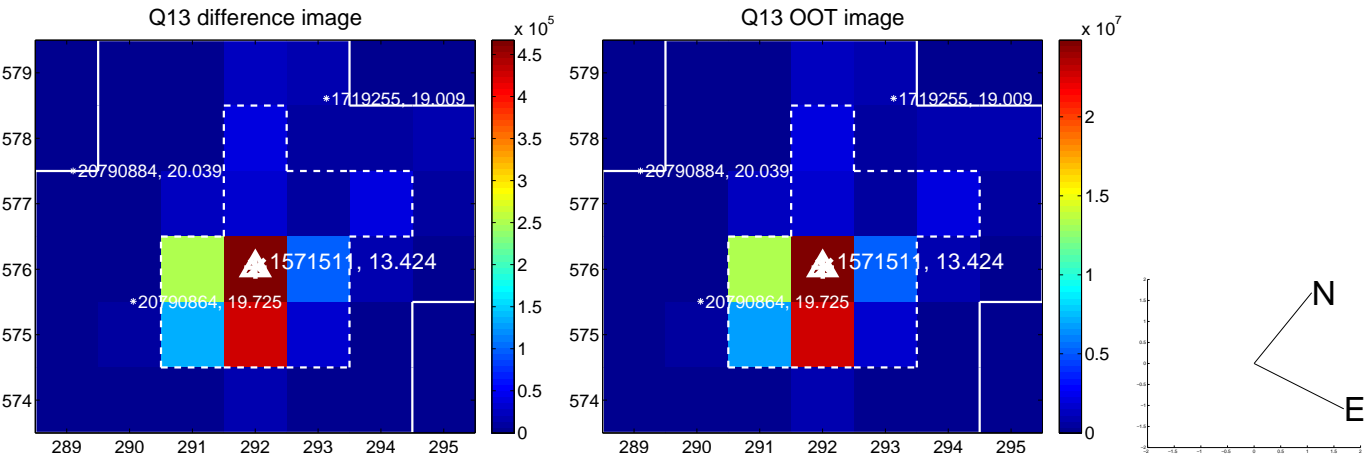
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



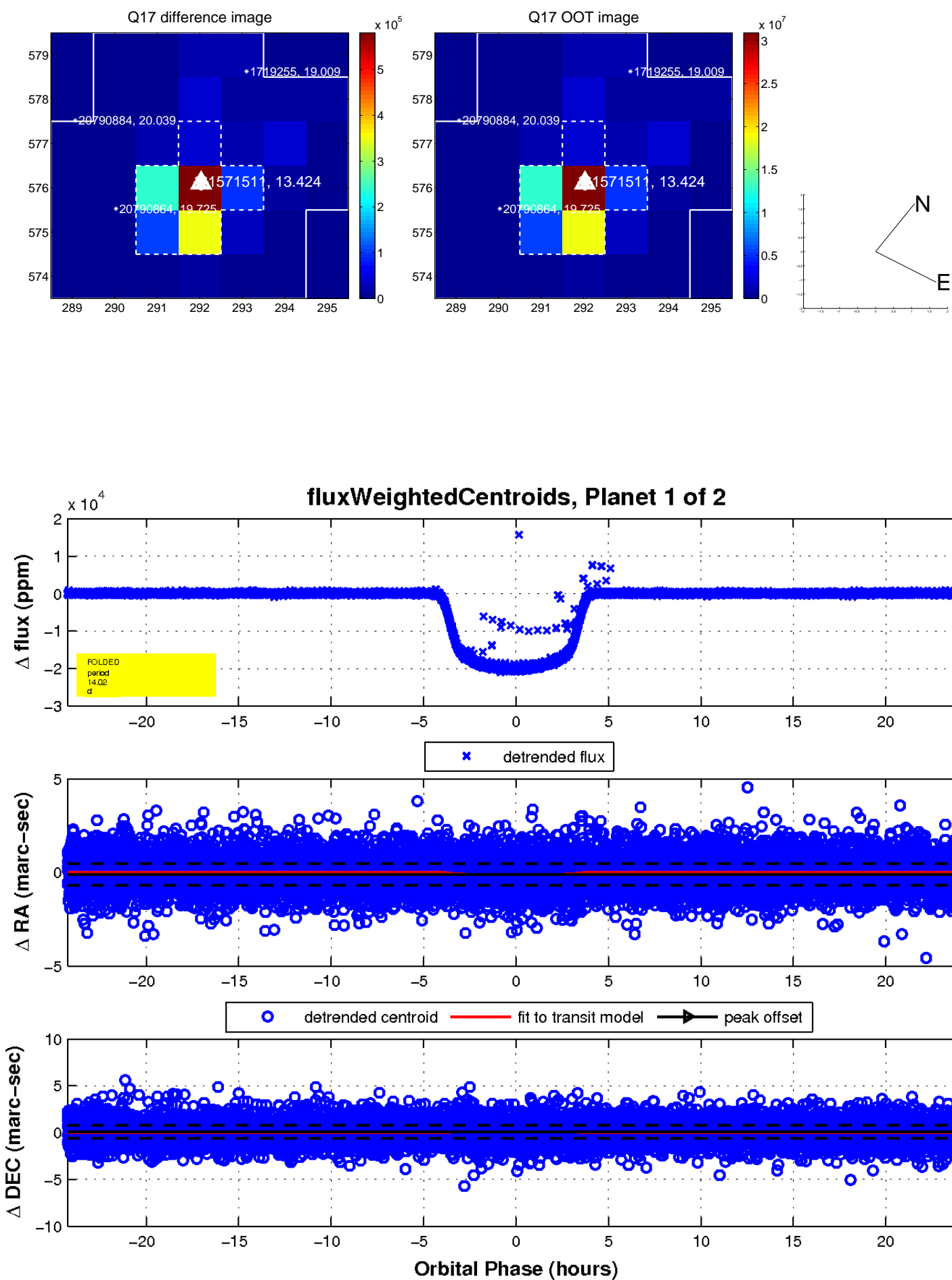
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

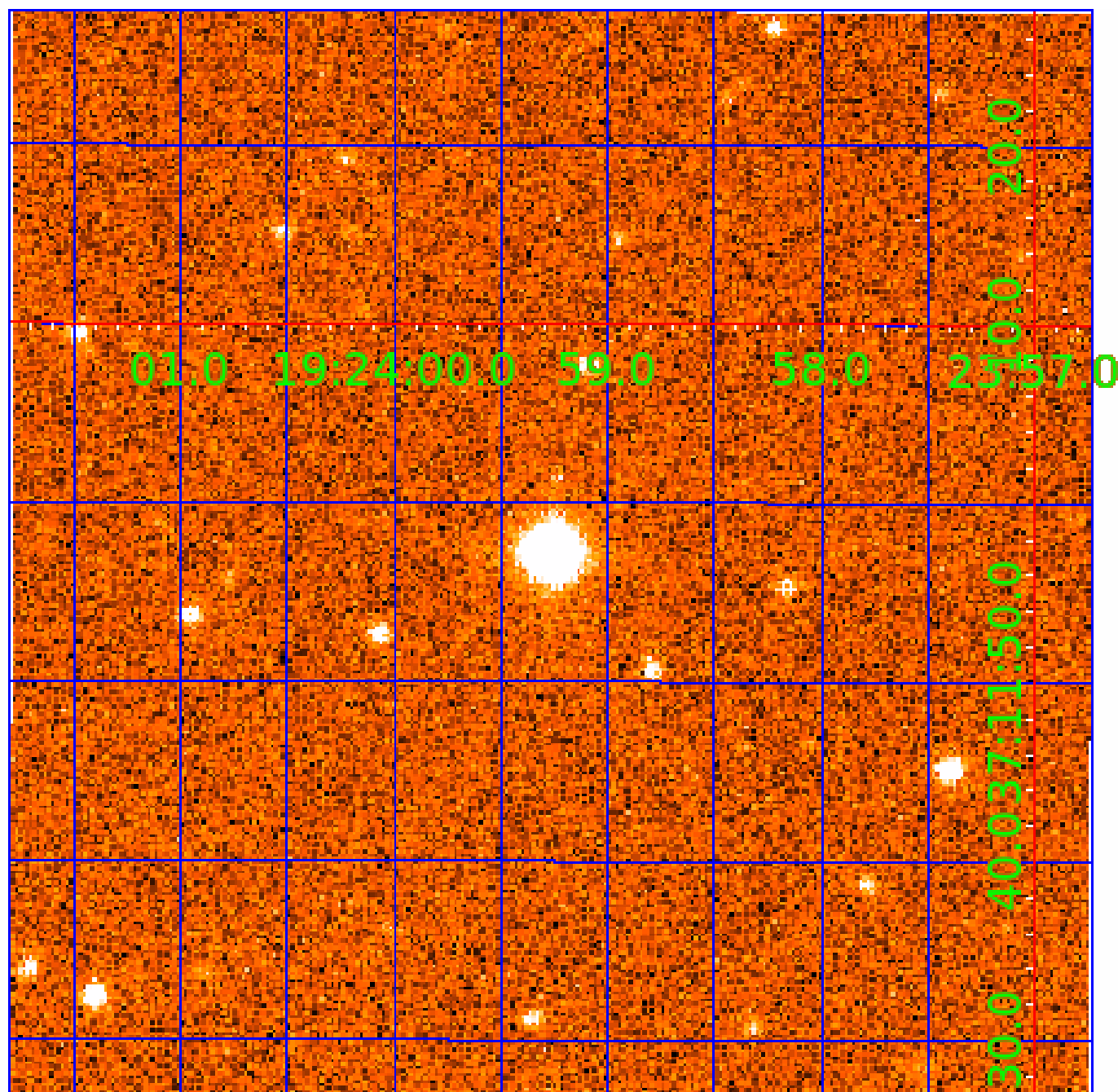


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 001571511

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})
001571511-01	OBS	0362.01	14.022451	135.528004	20151.8	8.084	2487.5	2315.5	1.05	6061	14.93	102.04
001571511-02	OBS	No	14.022516	142.923964	242.6	4.674	23.8	26.7	1.05	6061	2.06	102.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001571511-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
001571511-02	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.

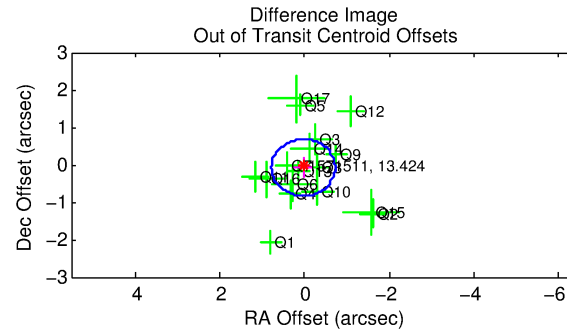
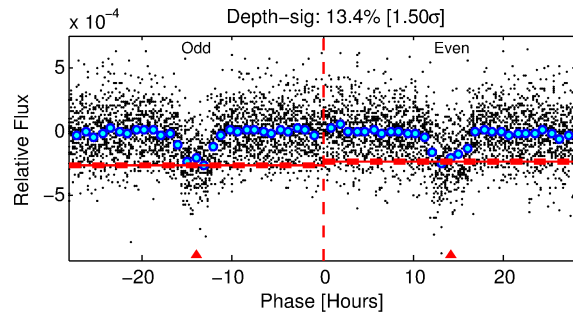
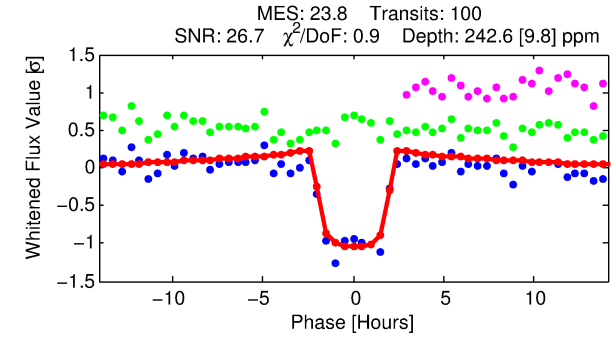
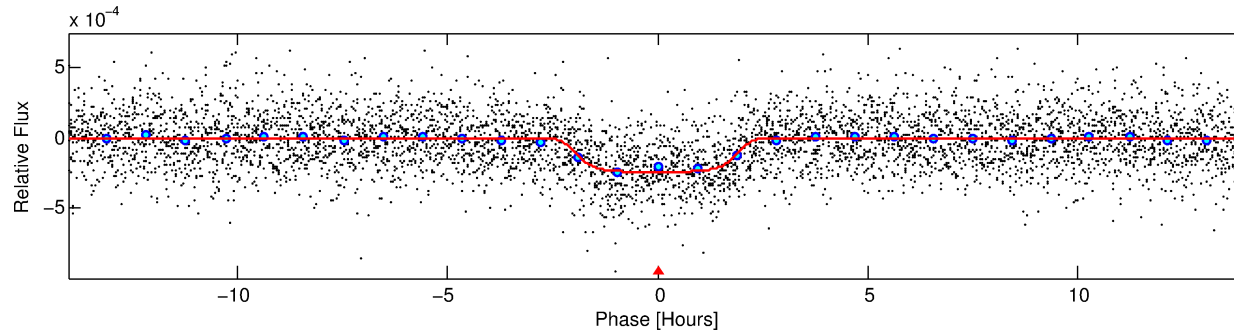
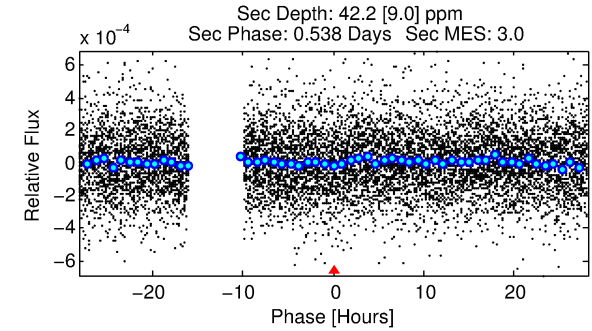
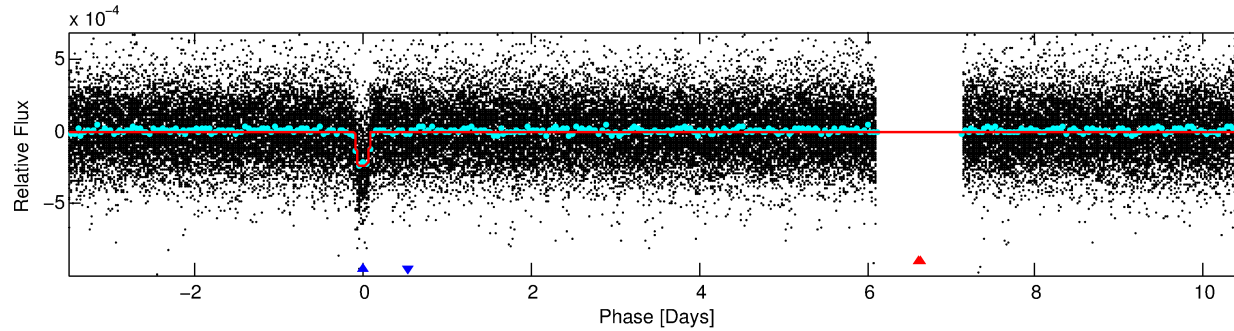
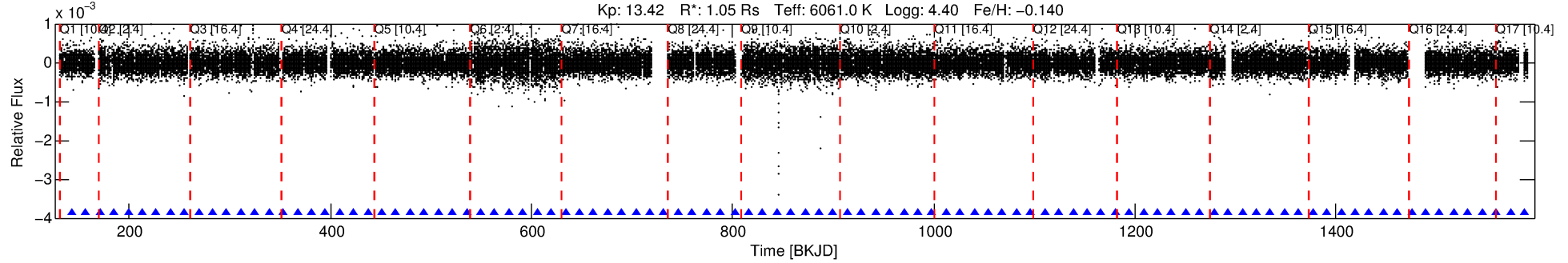
Ephemeris Match Information For 001571511-02

No Significant Match Found

DV One-Page Summary

KIC: 1571511 Candidate: 2 of 2 Period: 14.023 d
KOI: K00362 Corr: No Ephemeris Match

Kp: 13.42 R*: 1.05 Rs Teff: 6061.0 K Logg: 4.40 Fe/H: -0.140



DV Fit Results:

Period = 14.02252 [0.00006] d
Epoch = 142.9240 [0.0033] BKJD
Rp/R* = 0.0180 [0.0007]
a/R* = 8.19 [1.27]
b = 0.95 [0.02]
Seff = 102.04 [38.96]
Teq = 810 [77] K
Rp = 2.06 [0.64] Re
a = 0.1143 [0.0290] AU
Ag = 71.34 [30.54] [2.30σ]
Teffp = 3642 [233] K [11.52σ]

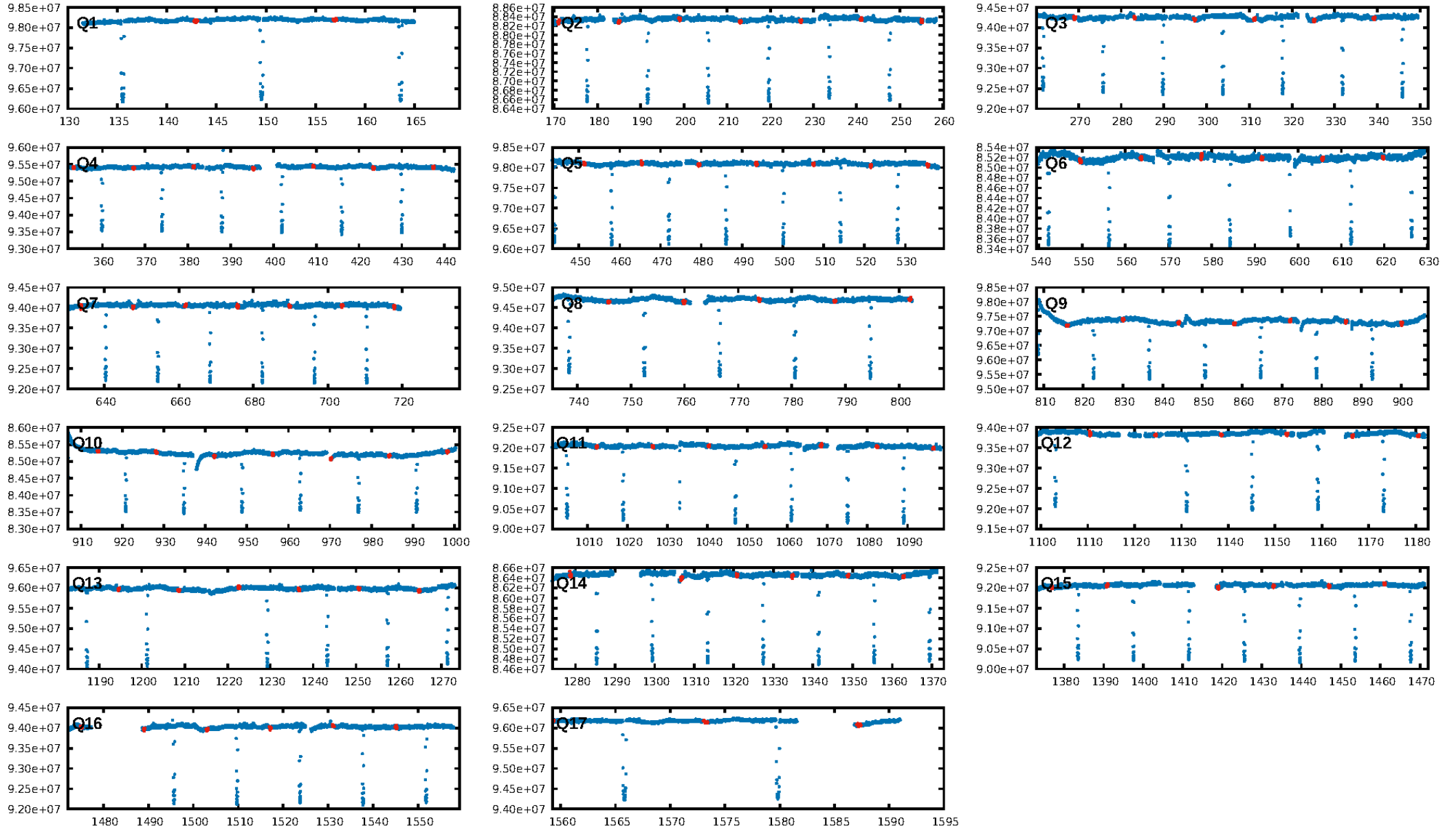
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 95.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.21e-114
RollingBand-fgt: 1.00 [95/95]
GhostDiagnostic-chr: 3.072
Centroid-sig: 55.4%
Centroid-so: 0.981 arcsec [2.10σ]
OotOffset-rm: 0.086 arcsec [0.34σ]
KicOffset-rm: 0.132 arcsec [0.48σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

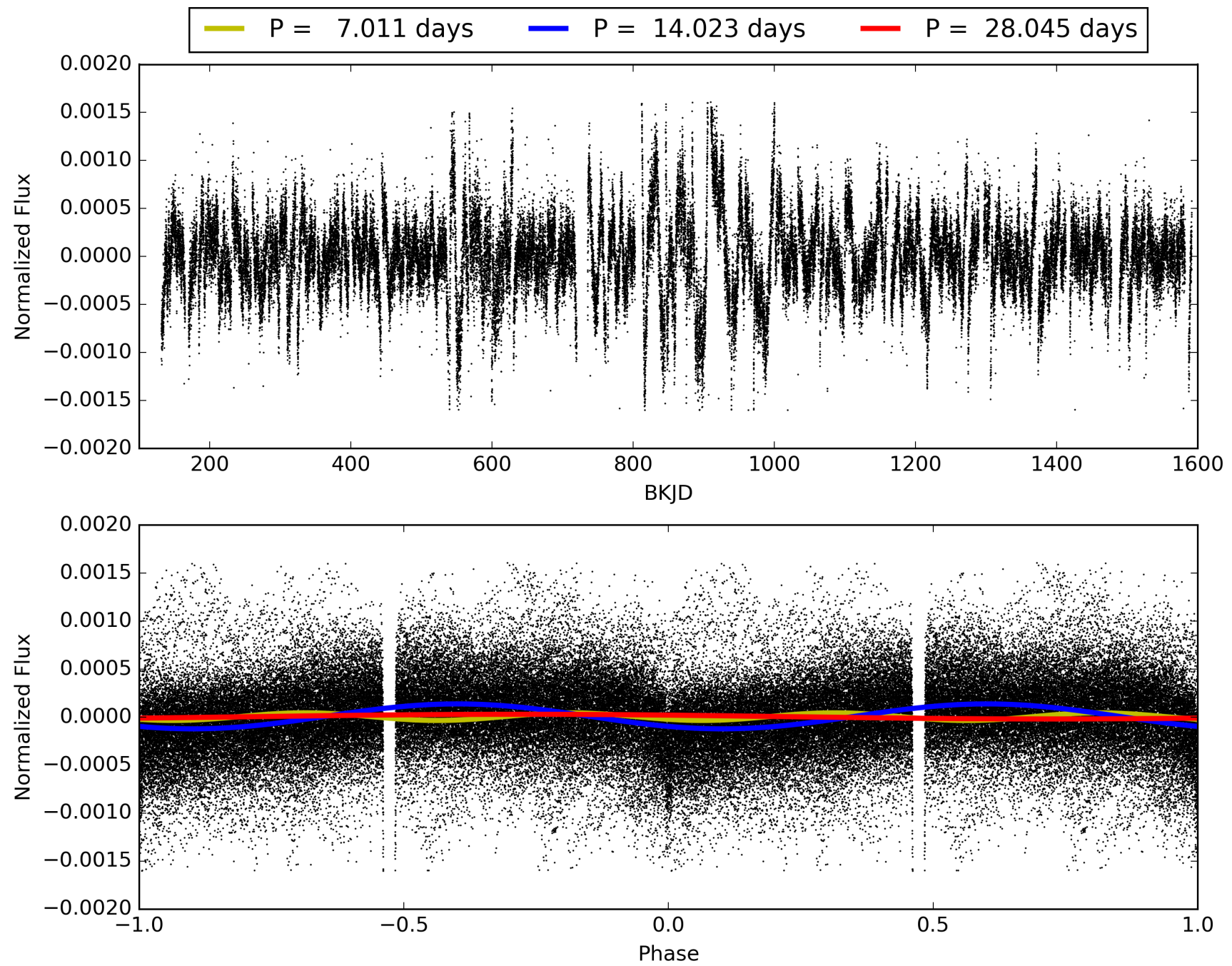
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:50:41 Z

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

TCE 001571511-02, PDC Light Curves

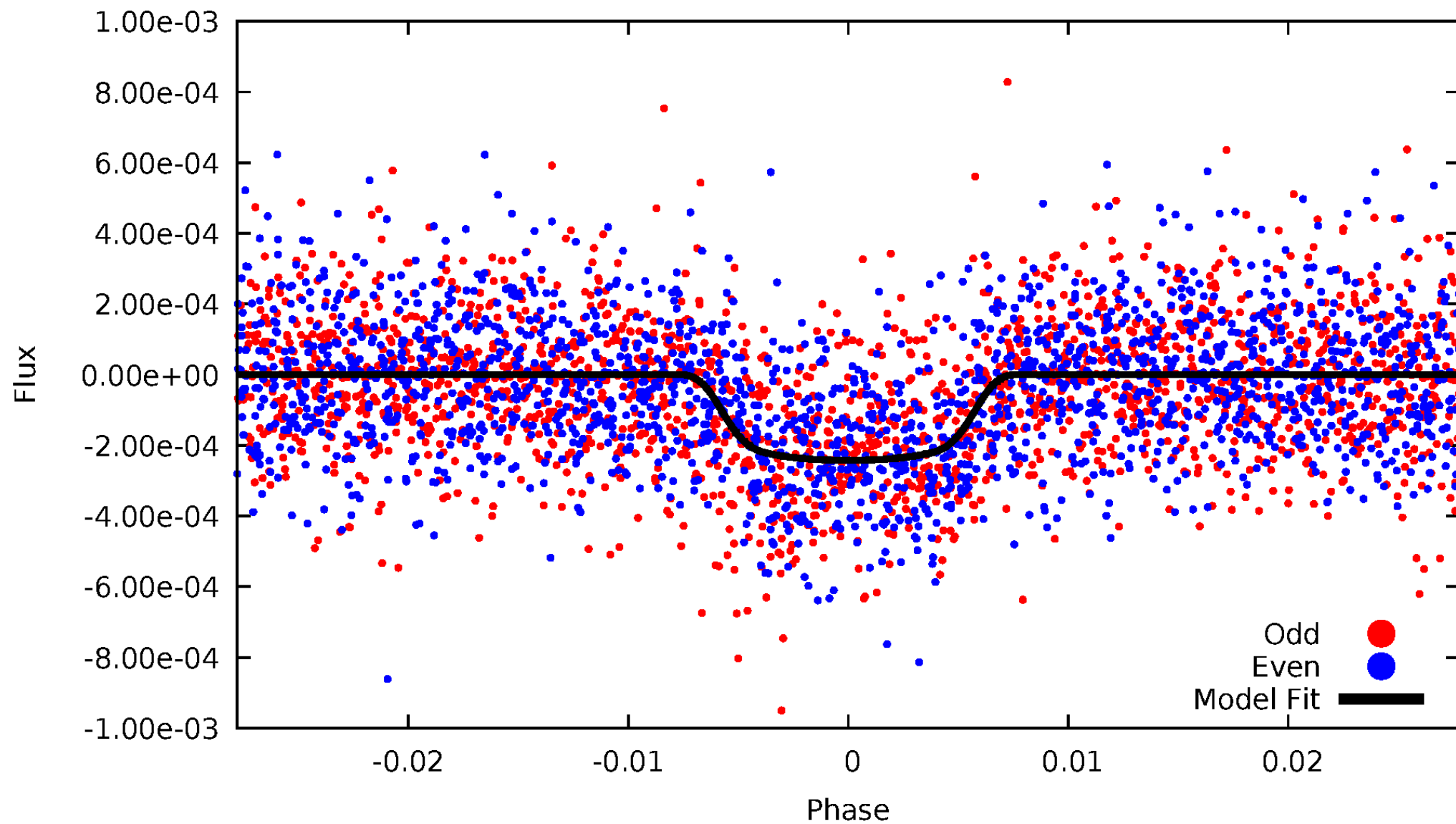


TCE 001571511-02



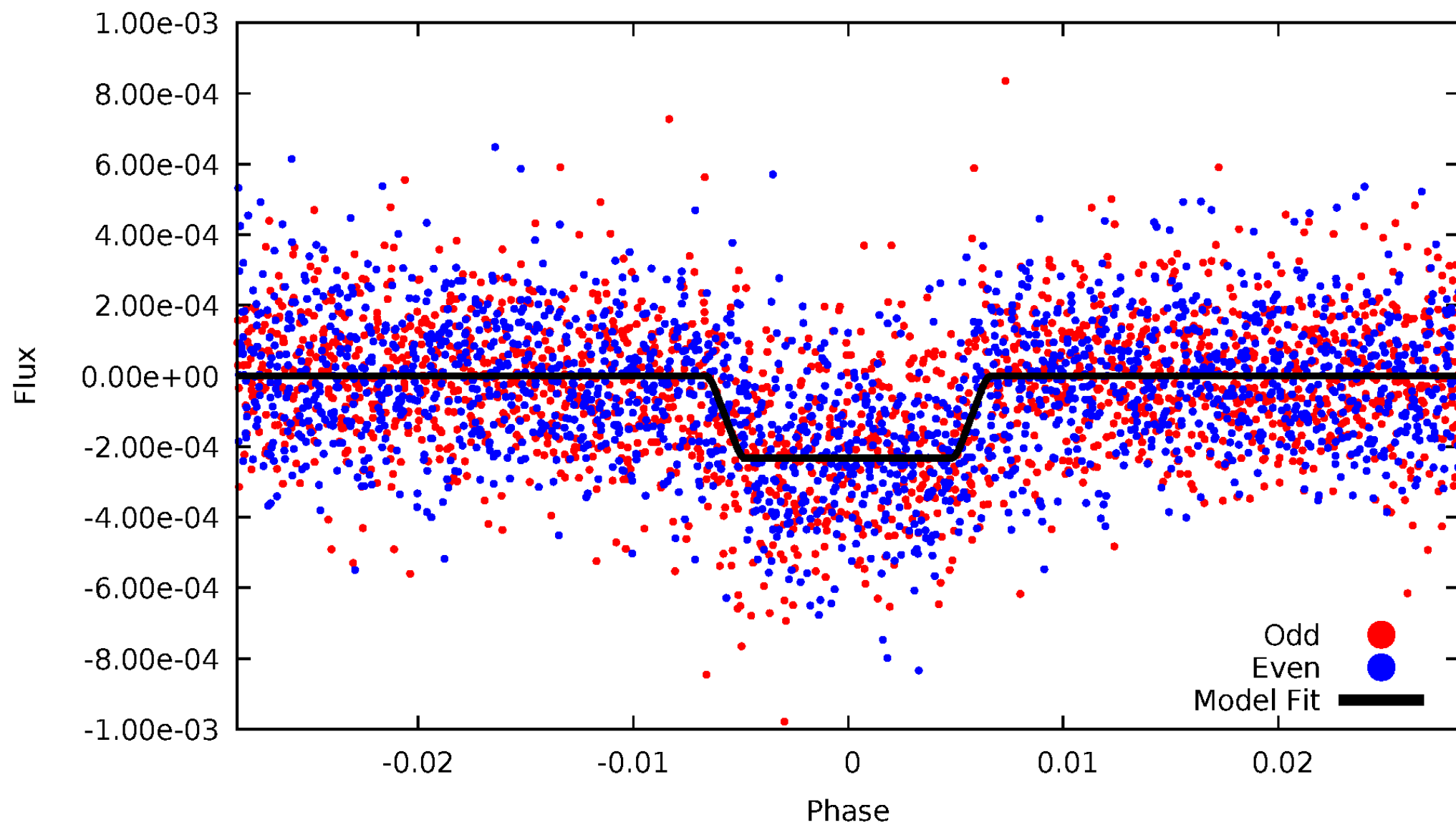
DV Odd/Even

TCE 001571511-02



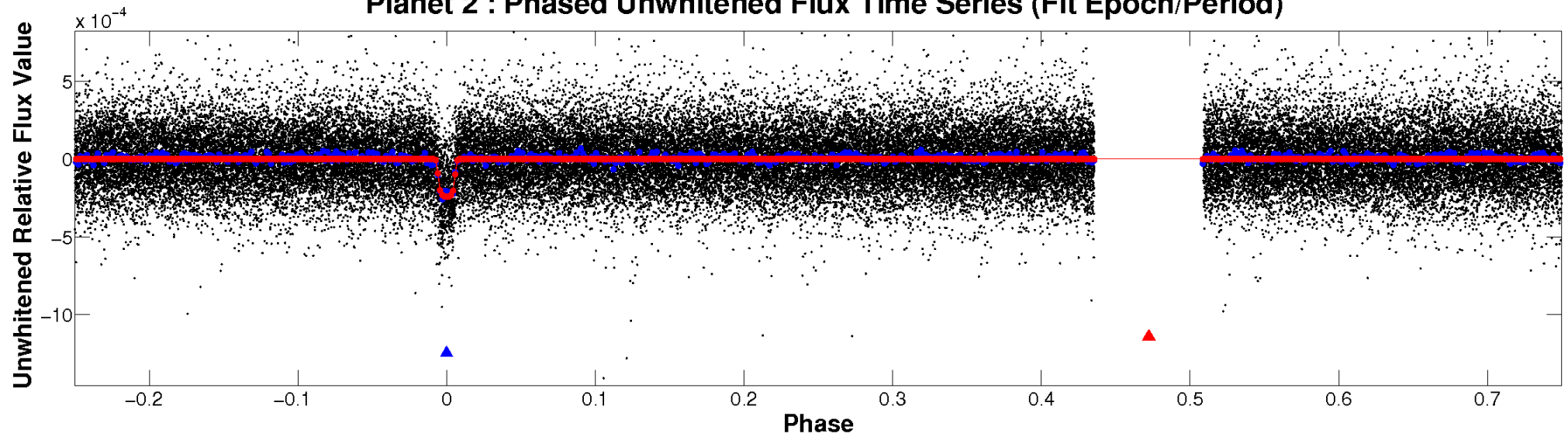
ALT Odd/Even

TCE 001571511-02

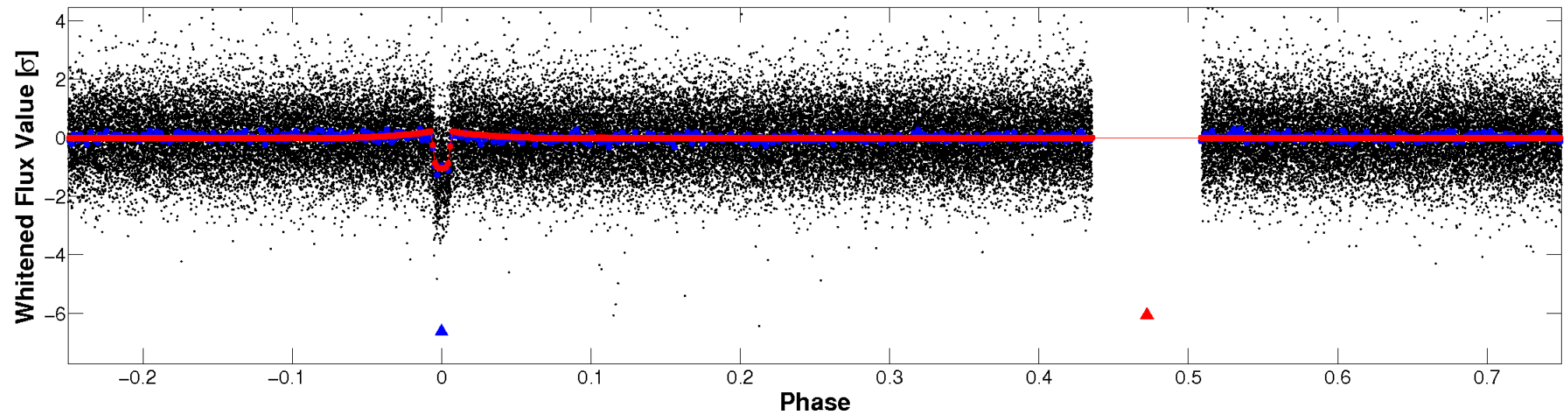


Non-Whitened Vs. Whitened Light Curve

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

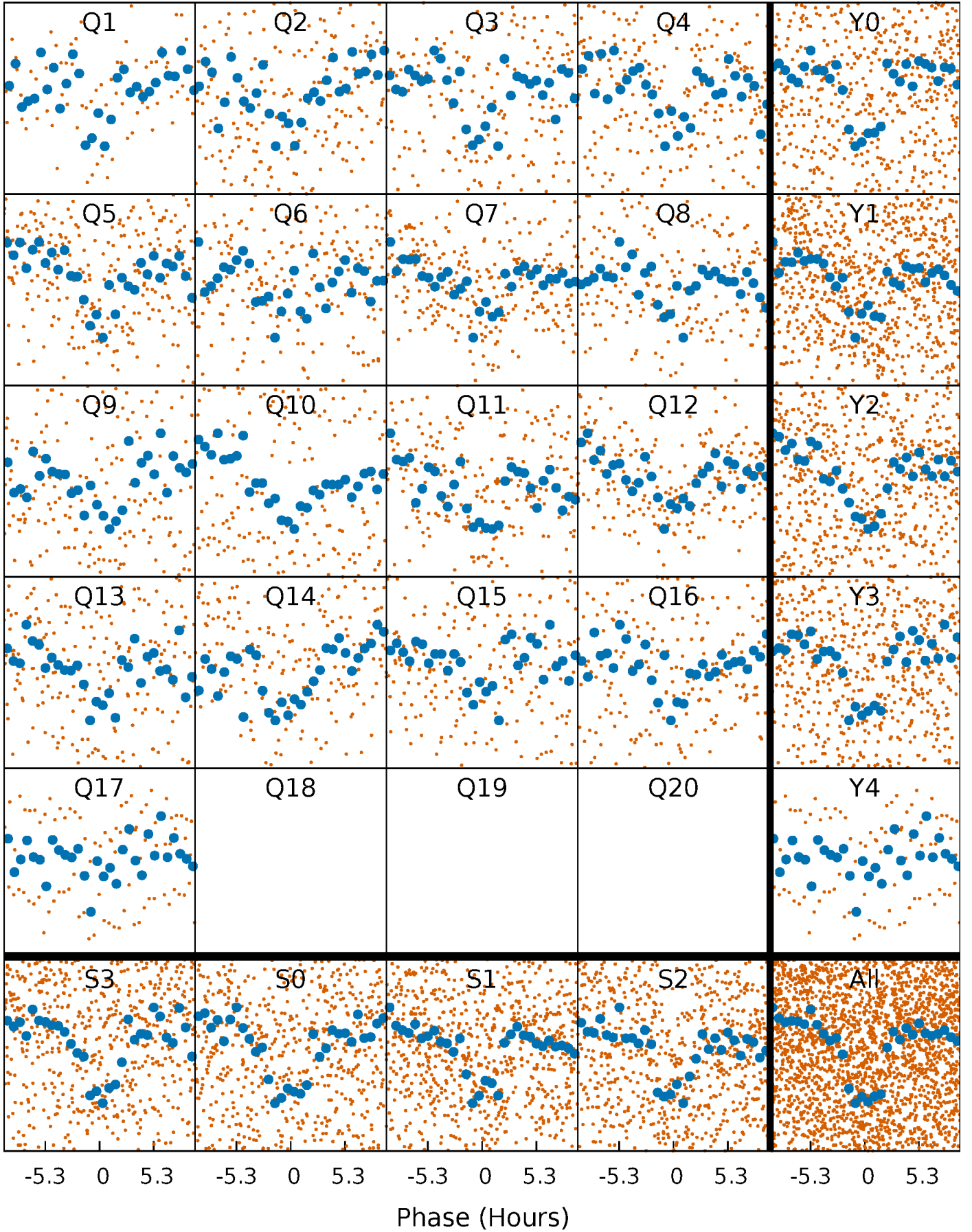


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



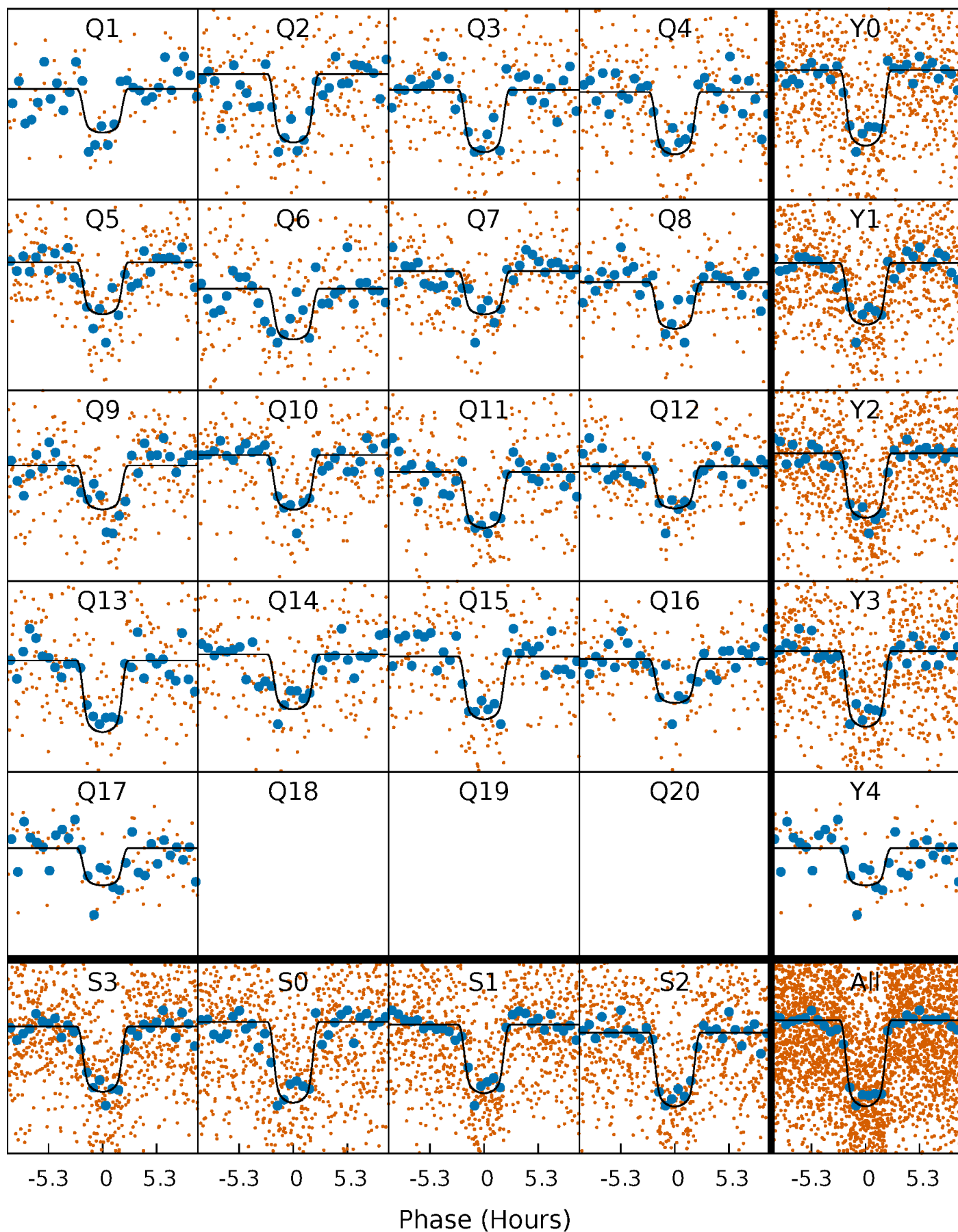
PDC Quarter-Phased Transit Curves

TCE 001571511-02 P= 14.022516 Days $T_0=142.923964$ (BKJD)



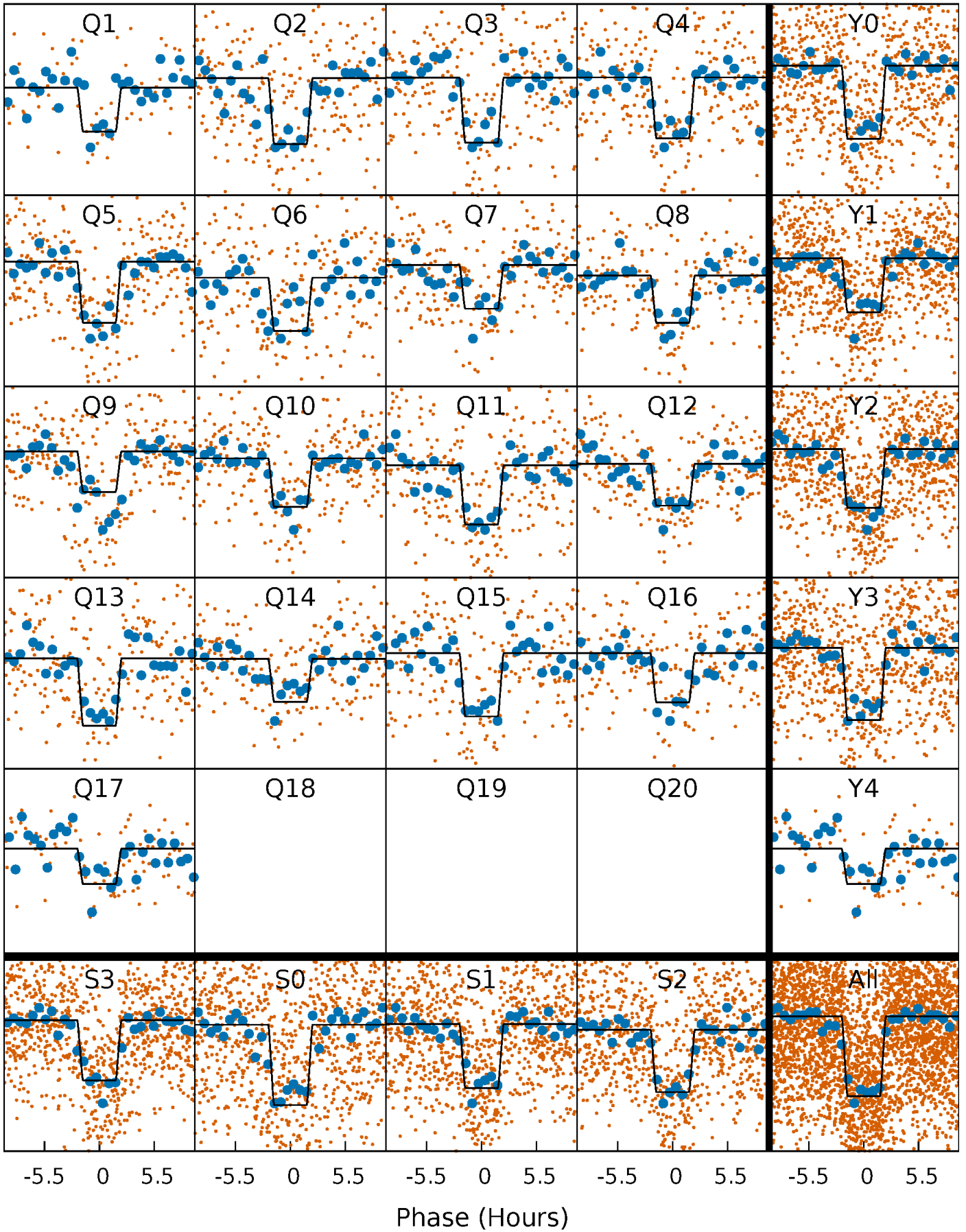
DV Quarter-Phased Transit Curves

TCE 001571511-02 P= 14.022516 Days $T_0=142.923964$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

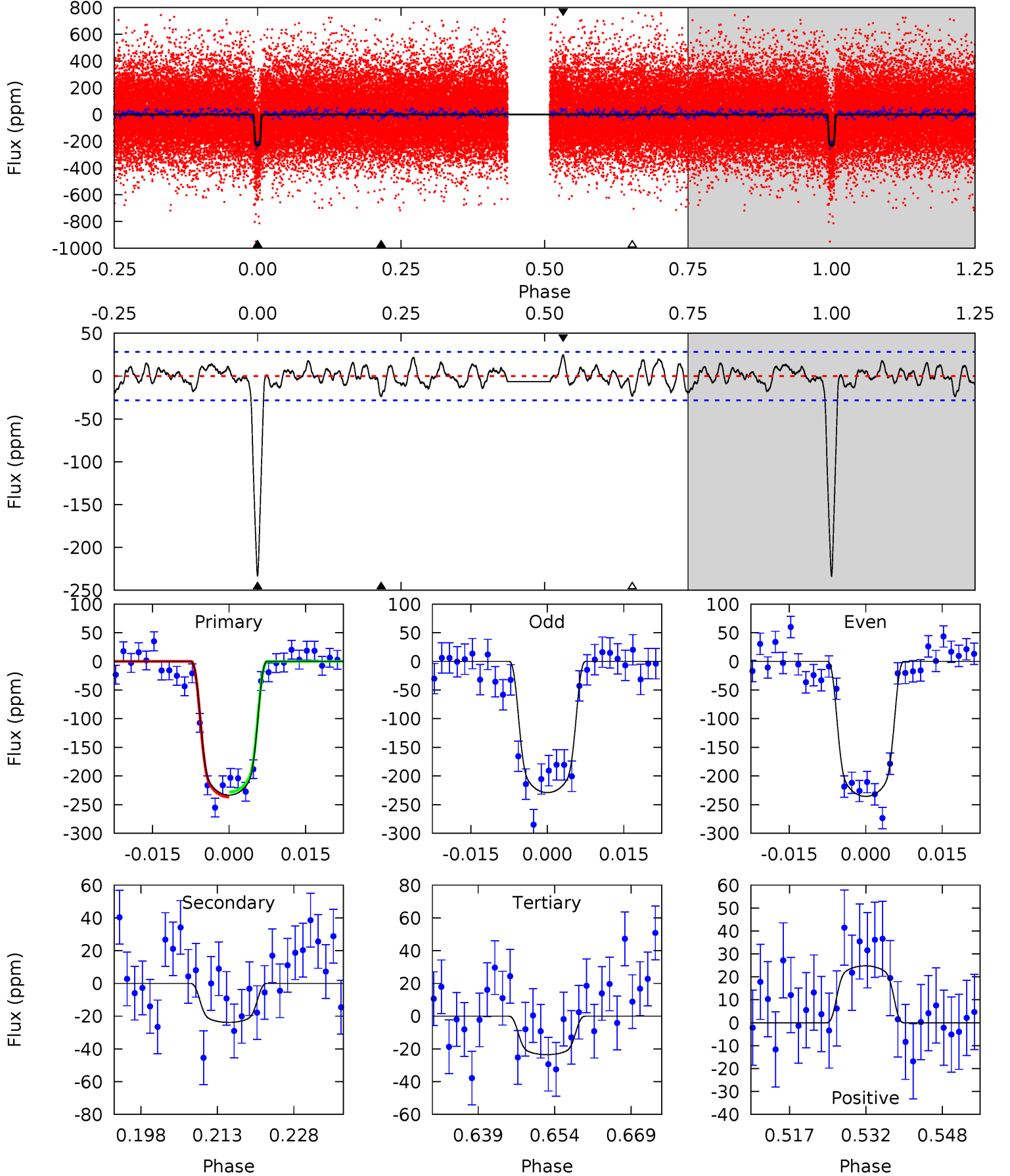
TCE 001571511-02 P= 14.022527 Days $T_0=142.922632$ (BKJD)



DV Model-Shift Uniqueness Test

001571511-02, $P = 14.022516$ Days, $E = 128.901448$ Days

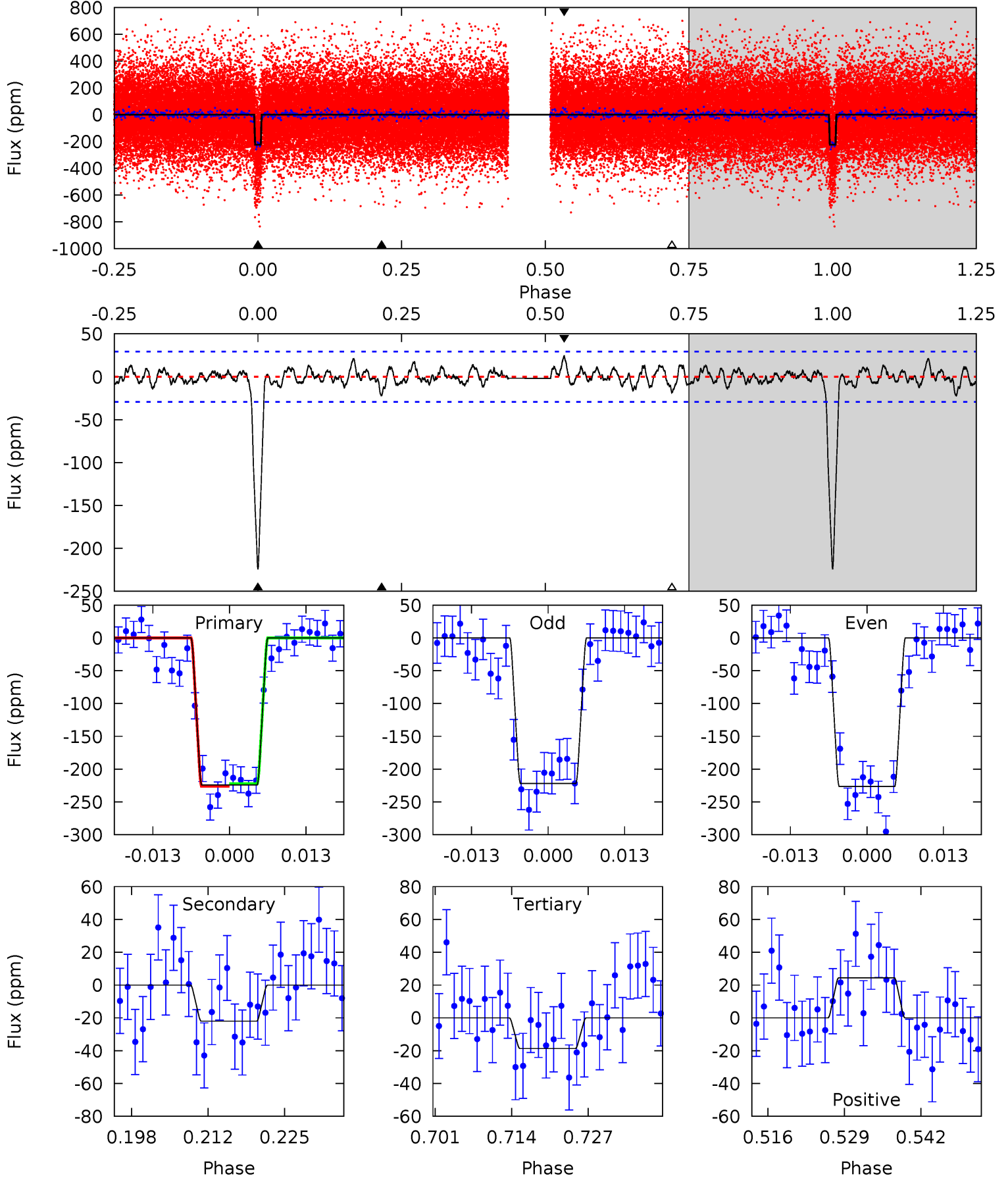
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.7	4.16	4.11	4.33	4.95	2.43	1.53	36.6	36.4	0.05	-0.17	0.58	0.97	0.10	0.75



Alt Model-Shift Uniqueness Test

001571511-02, P = 14.022527 Days, E = 128.900105 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.1	3.74	3.17	4.16	4.97	2.48	1.19	34.9	33.9	0.57	-0.42	0.40	1.01	0.10	0.35



Stellar Parameters For KIC 001571511

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6061^{+162}_{-180}	$4.401^{+0.090}_{-0.195}$	$-0.140^{+0.300}_{-0.300}$	$1.050^{+0.323}_{-0.139}$	$1.012^{+0.143}_{-0.117}$	$1.232^{+0.493}_{-0.643}$
	+3%/-3%	+2%/-4%	+214%/-214%	+31%/-13%	+14%/-12%	+40%/-52%
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 001571511-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-24 ± 6	$2.11^{+0.35}_{-0.21}$	1143^{+89}_{-55}	3585^{+163}_{-174}	37^{+13}_{-12}
Alt.	-22 ± 6	$1.79^{+0.28}_{-0.18}$	1145^{+89}_{-56}	3740^{+188}_{-207}	47^{+19}_{-16}

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 $A_{obs} \gg 1.0$

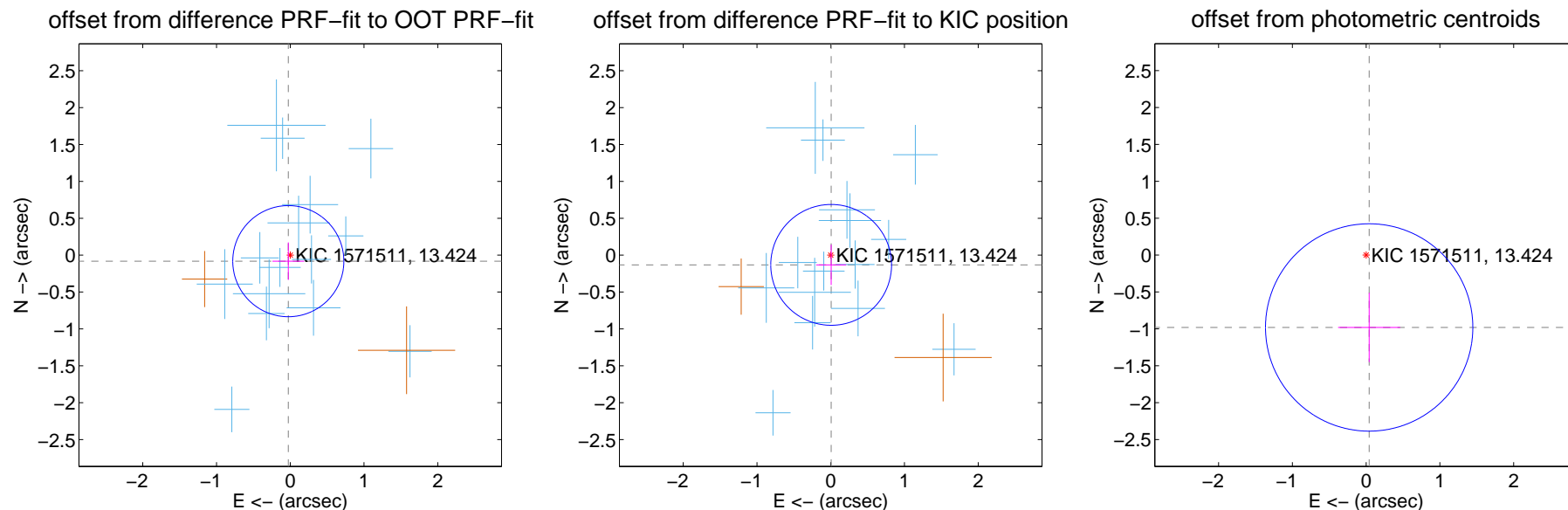
DV Centroid Data

Supplemental centroid analysis for 001571511-02. Kepler magnitude: 13.42. Transit SNR 26.66

There are 15 quarters with good PRF difference image offsets

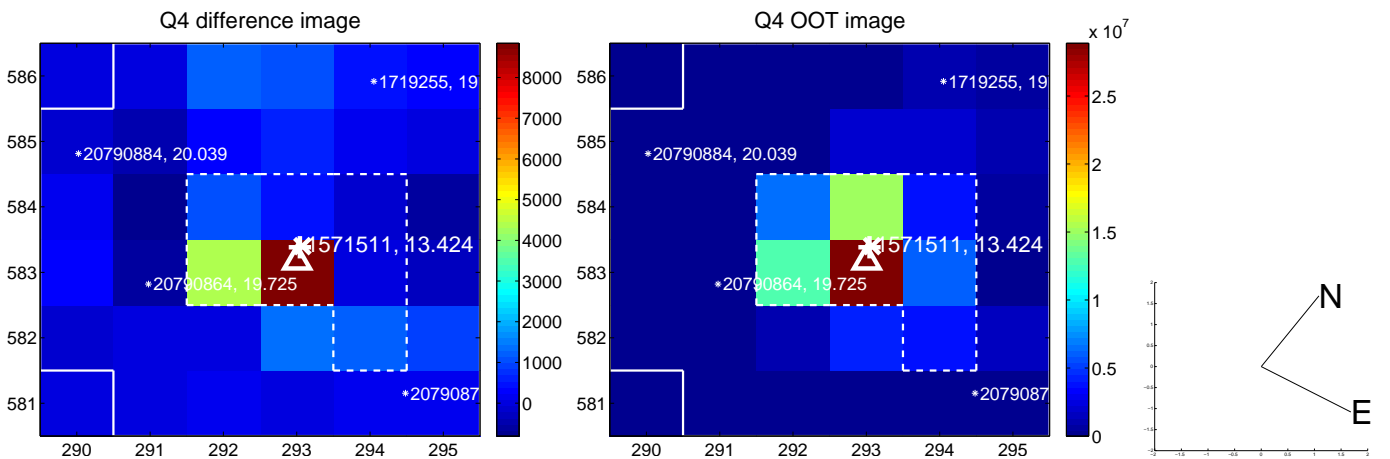
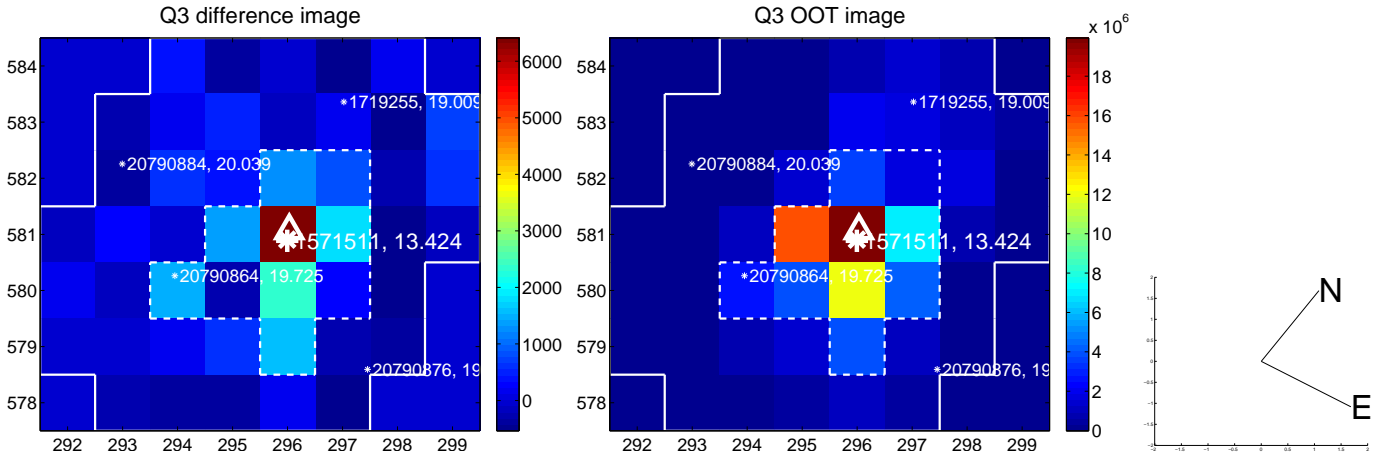
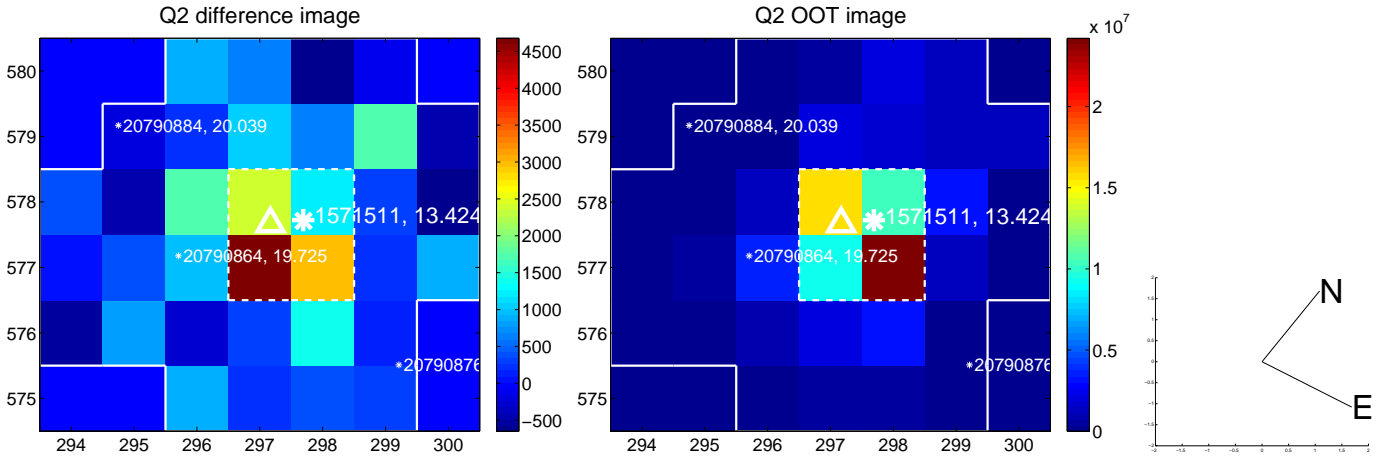
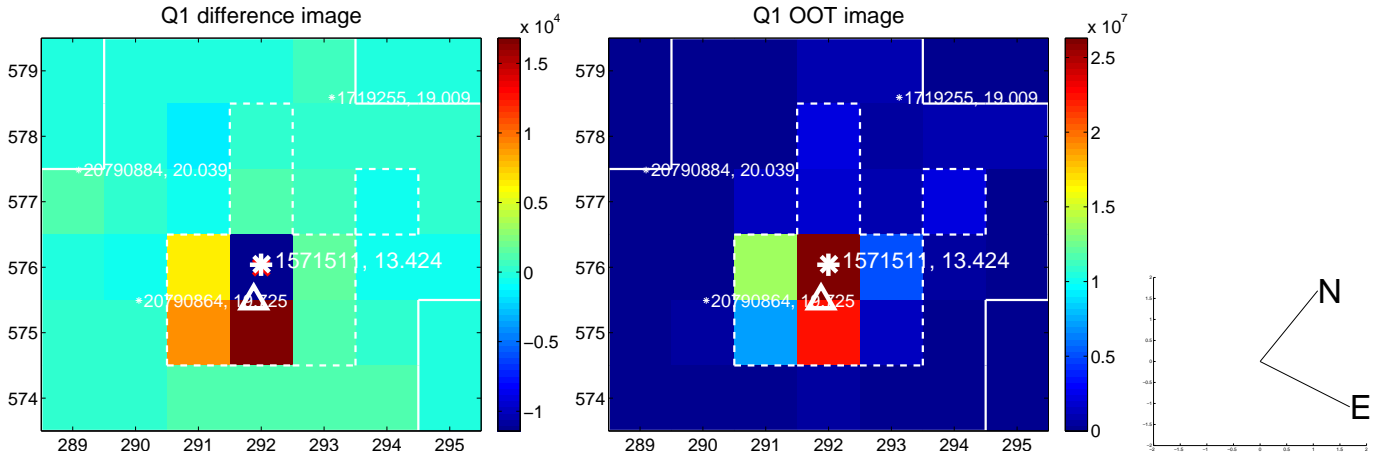
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.086 ± 0.251	0.34	0.027 ± 0.216	-0.082 ± 0.254
PRF-fit source offset from KIC position	0.132 ± 0.273	0.48	-0.006 ± 0.203	-0.132 ± 0.273
photometric centroid source offset	0.98 ± 0.47	2.10	-0.04 ± 0.42	-0.98 ± 0.47

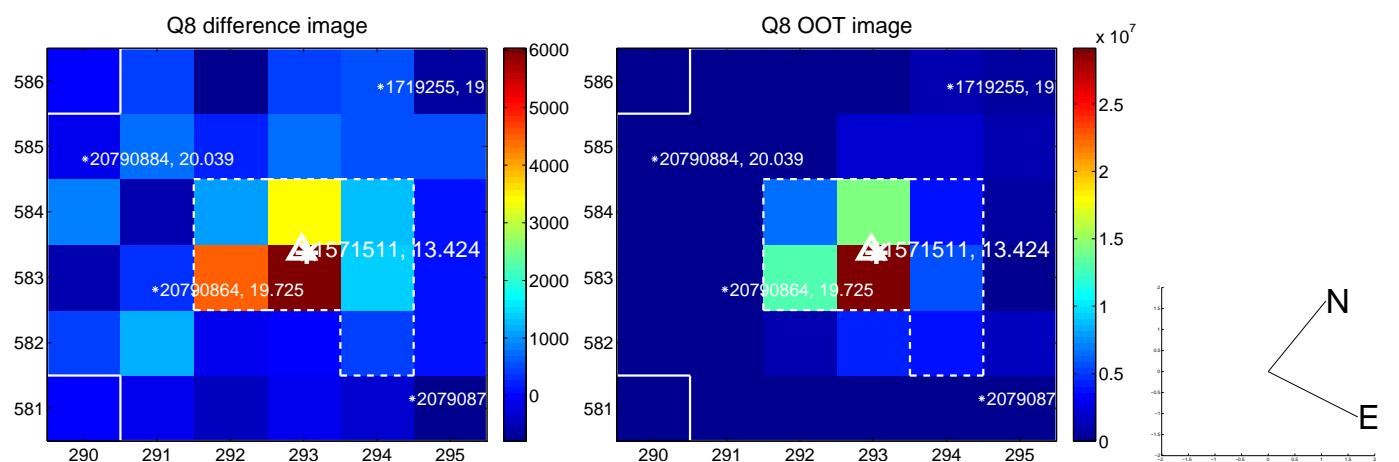
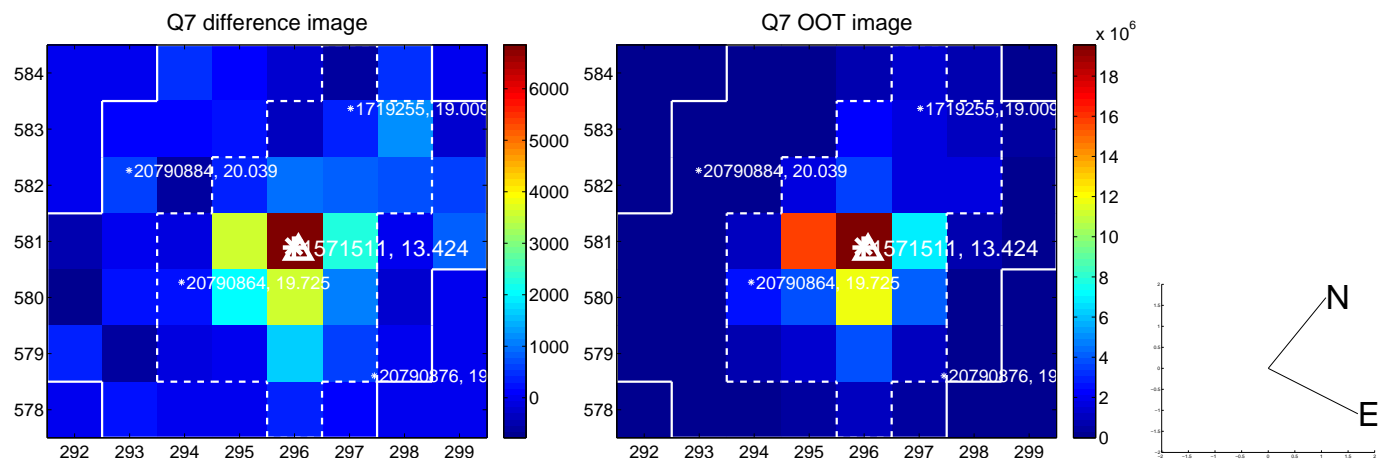
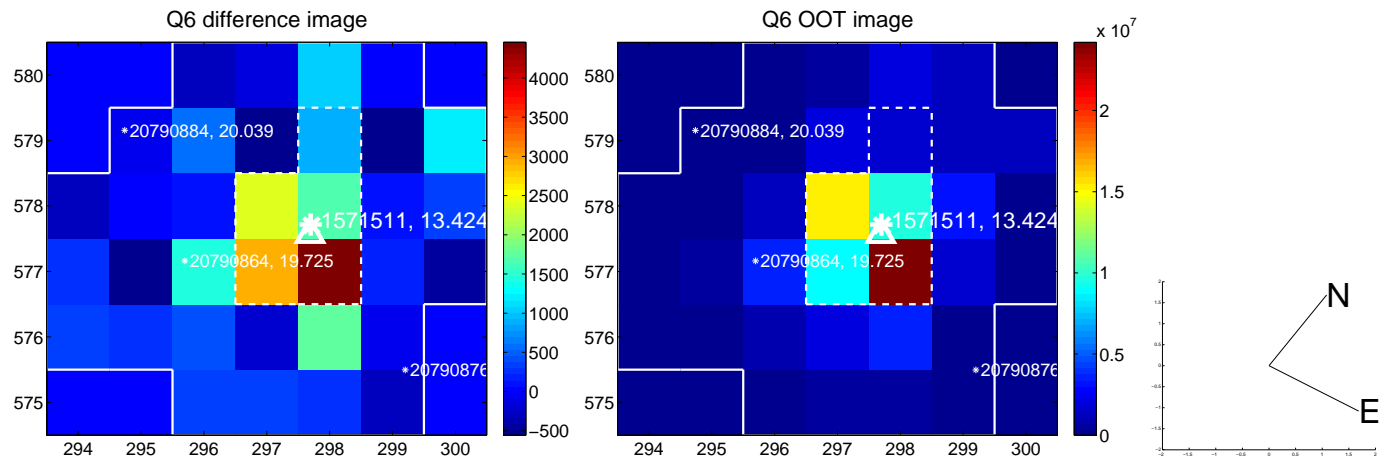
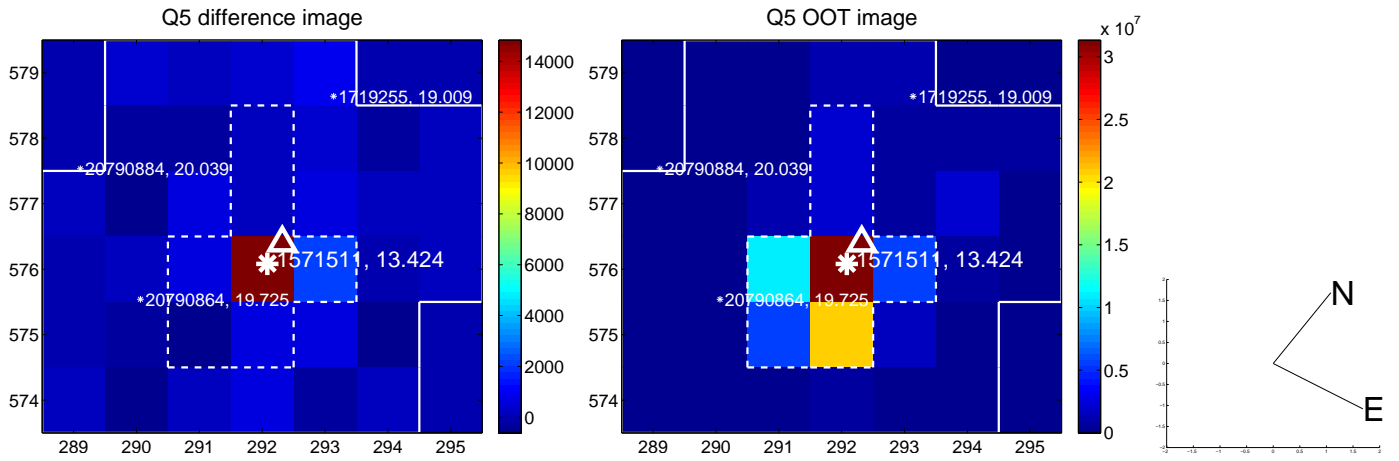


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

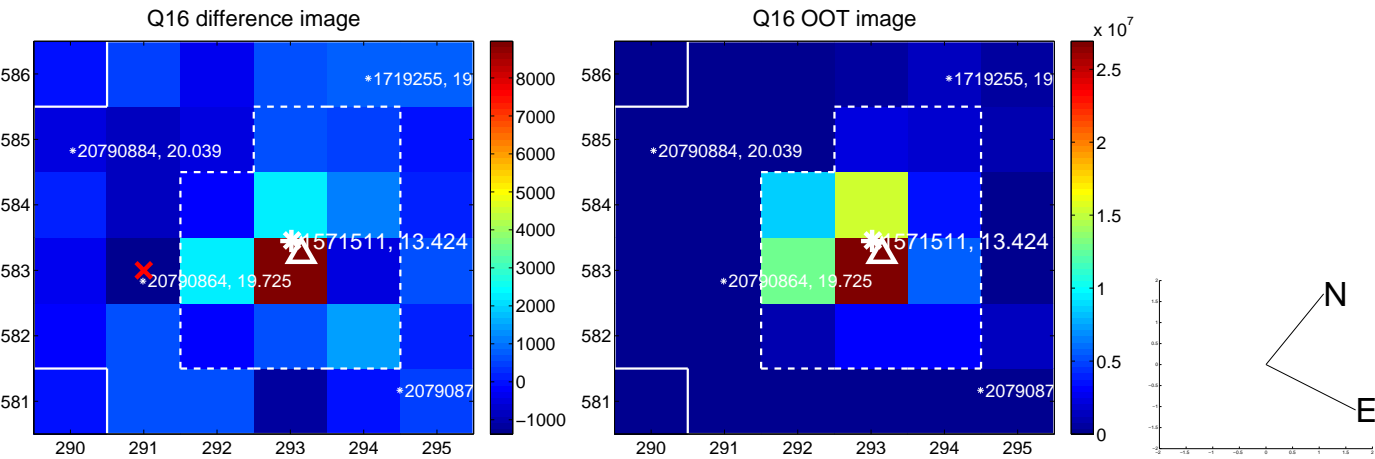
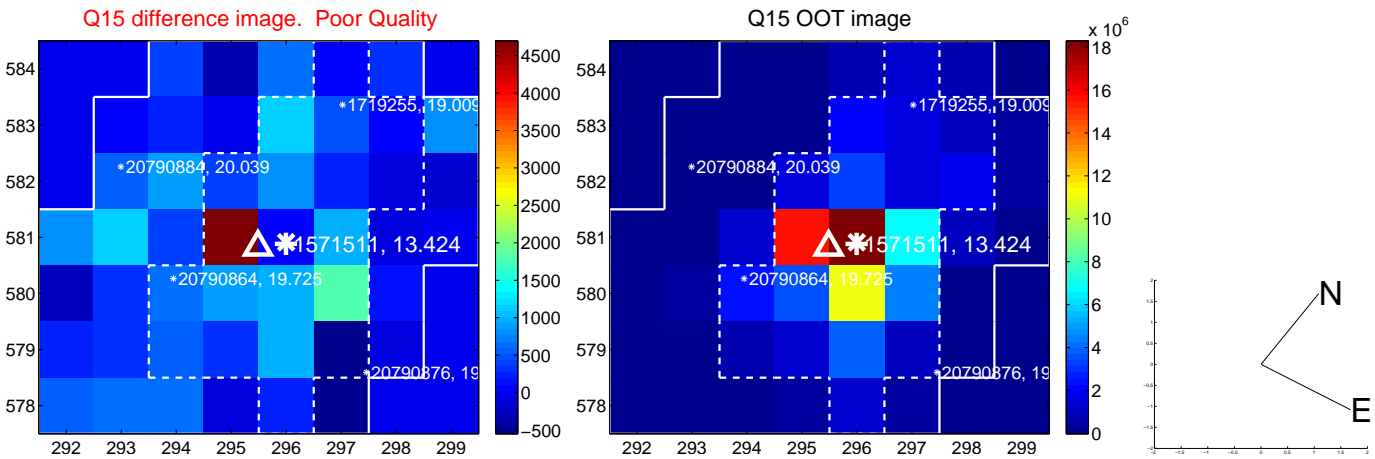
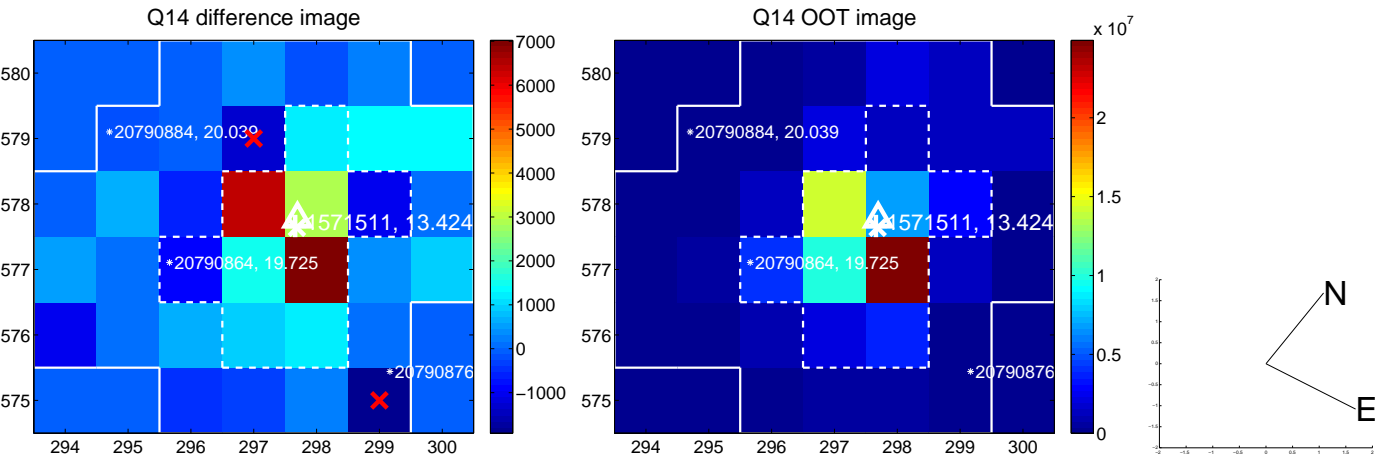
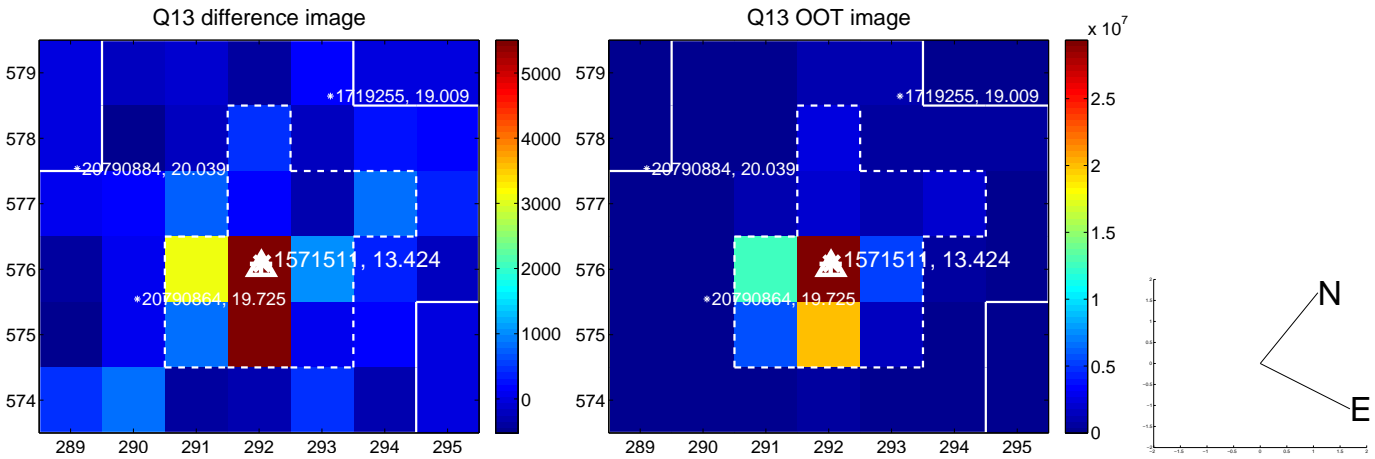
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



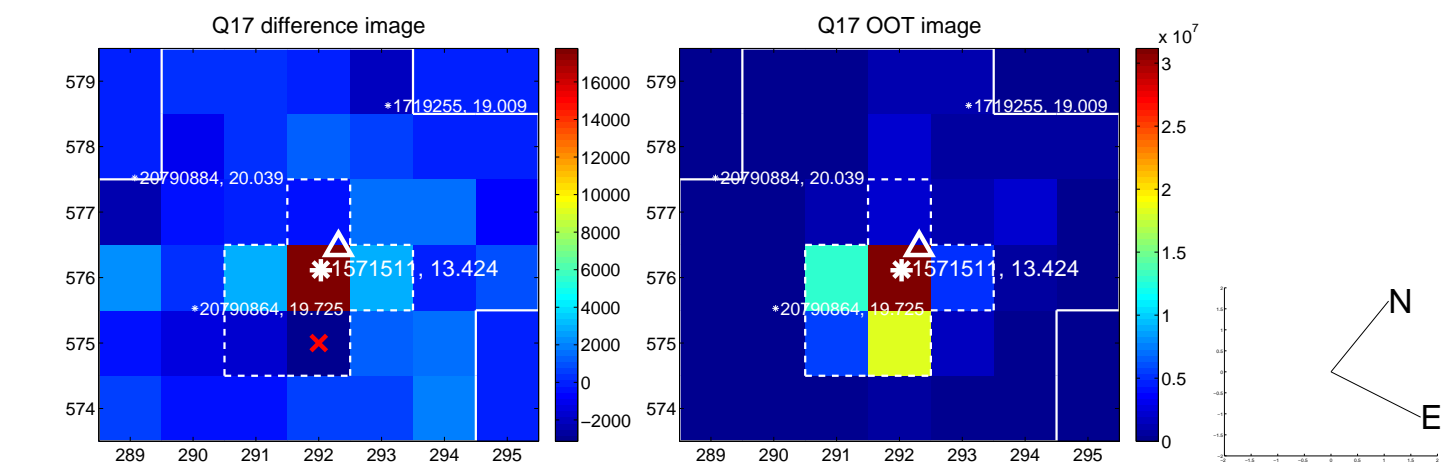
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



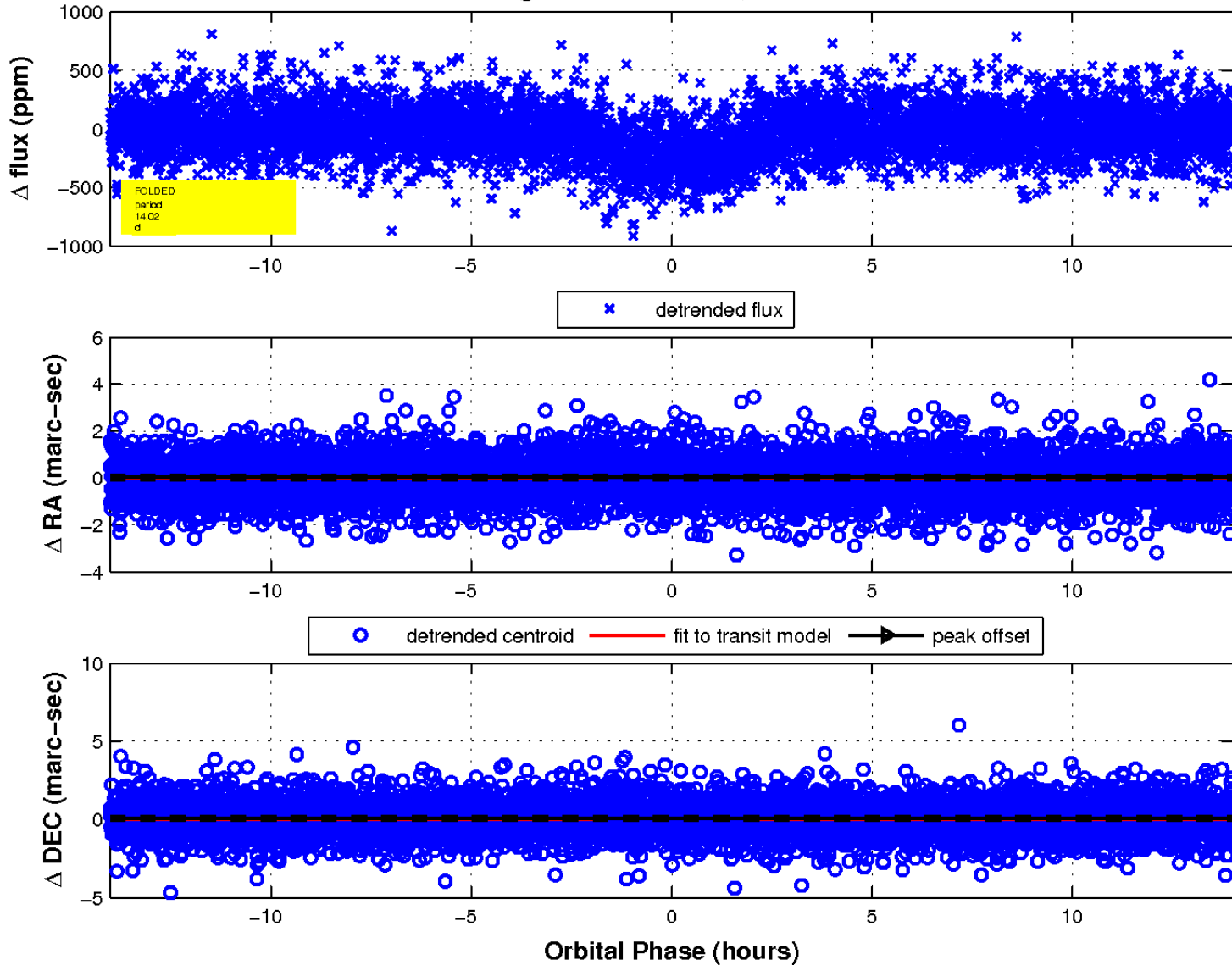
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

