

KIC 010002261

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})
010002261-01	OBS	0959.01	12.713794	136.931178	36853.9	2.494	6326.2	5733.1	0.12	2661	2.28	0.26
010002261-02	OBS	No	514.297193	470.792265	239.8	9.039	10.4	10.4	0.12	2661	0.19	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010002261-01	OBS	PC	0.73	0	0	0	0	CENT_KIC_POS
010002261-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_NONUNIQ_ALT—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 for comment definitions.

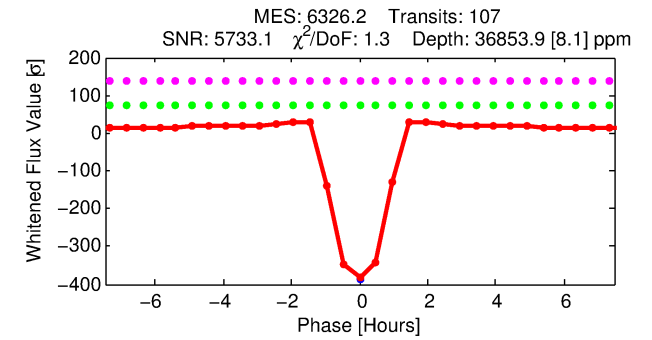
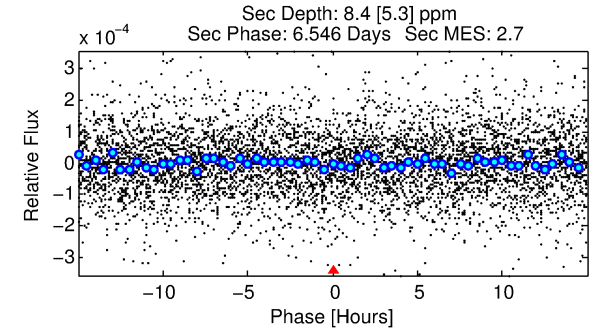
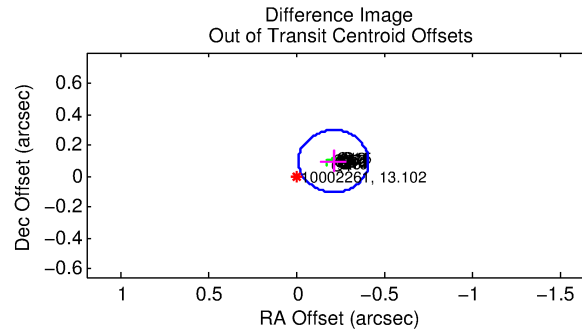
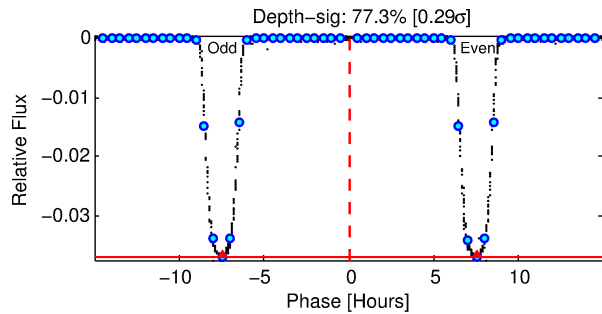
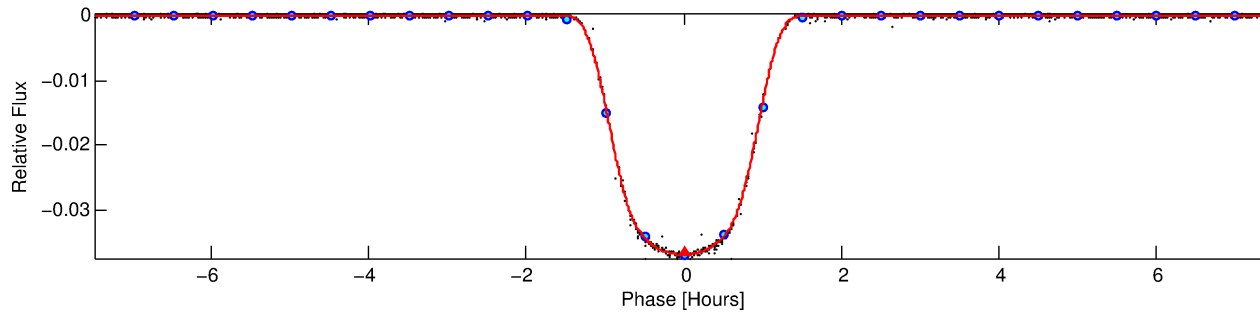
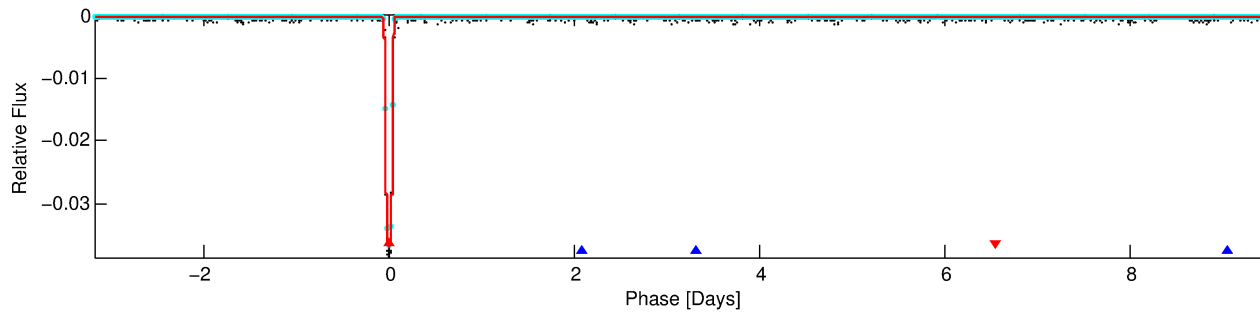
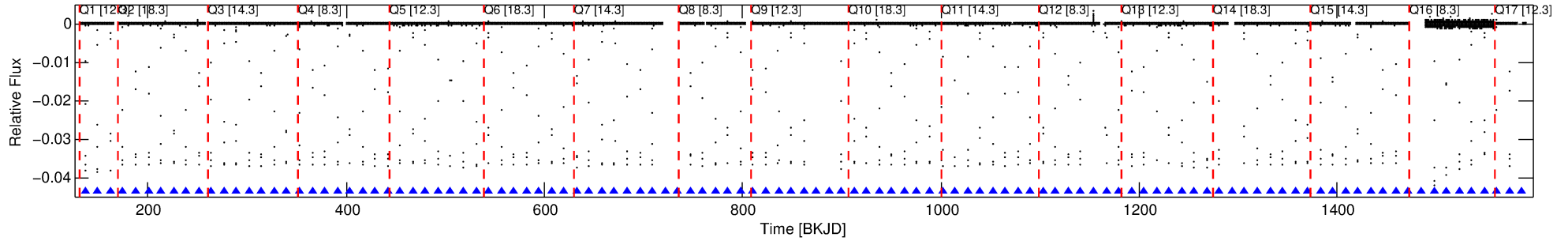
Ephemeris Match Information For 010002261-01

No Significant Match Found

DV One-Page Summary

KIC: 10002261 Candidate: 1 of 2 Period: 12.714 d
KOI: K00959.01 Corr: 0.987

Kp: 13.10 R*: 0.12 Rs Teff: 2661.0 K Logg: 5.28 Fe/H: 0.000



DV Fit Results:

Period = 12.71379 [0.00000] d
Epoch = 136.9312 [0.0000] BKJD
Rp/R* = 0.1799 [0.0001]
a/R* = 41.80 [0.06]
b = 0.49 [0.00]
Seff = 0.26 [0.00]
Teq = 182 [0] K
Rp = 2.28 [0.00] Re
a = 0.0485 [0.0000] AU
Ag = 2.09 [1.33] [0.82σ]
Teffp = 337 [54] K [2.91σ]

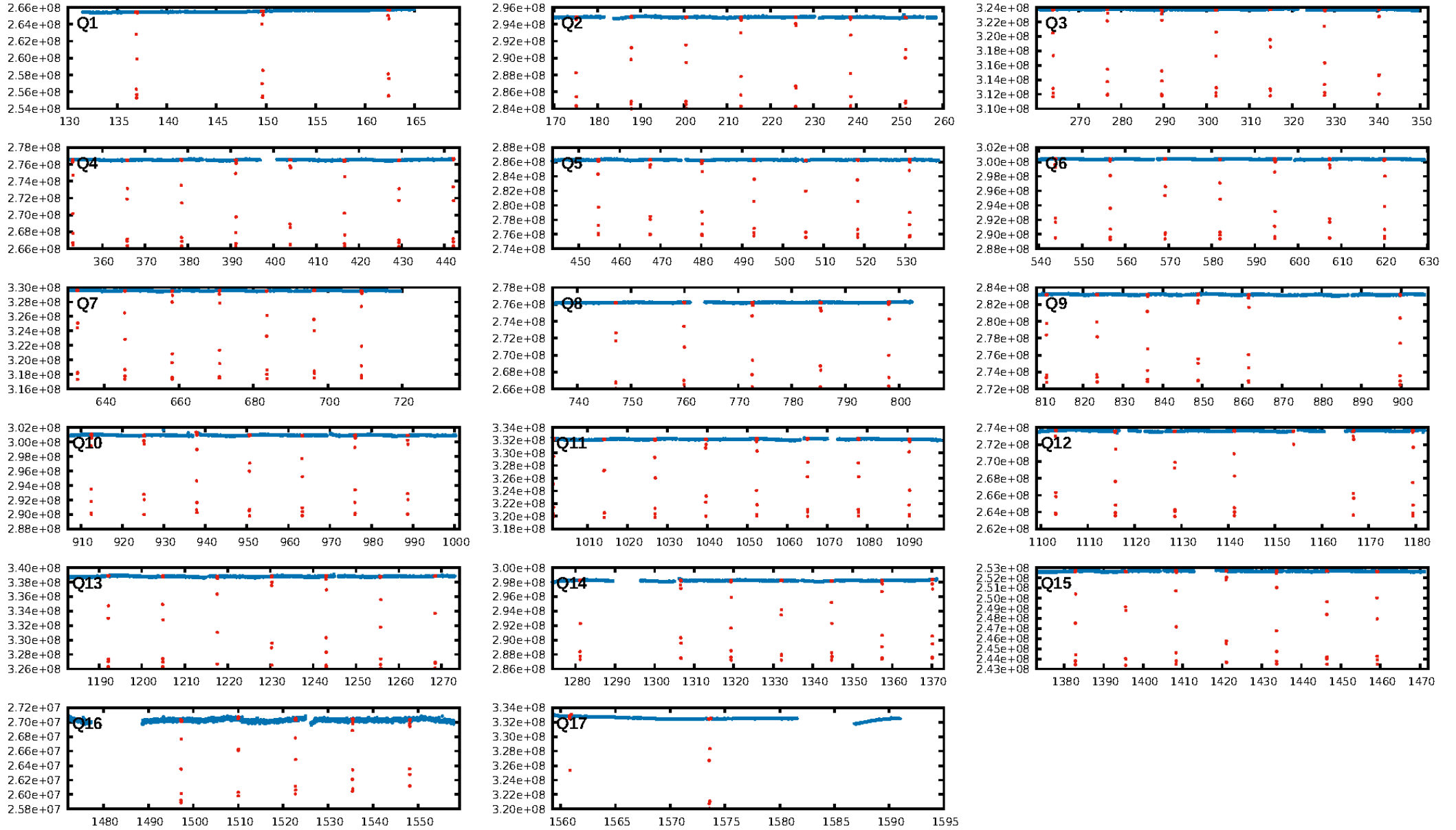
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1283.87σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [102/102]
GhostDiagnostic-chr: 6.69
Centroid-sig: 0.0%
Centroid-so: 4.681 arcsec [3440.68σ]
OotOffset-rm: 0.230 arcsec [3.44σ]
KicOffset-rm: 4.694 arcsec [31.97σ]
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]

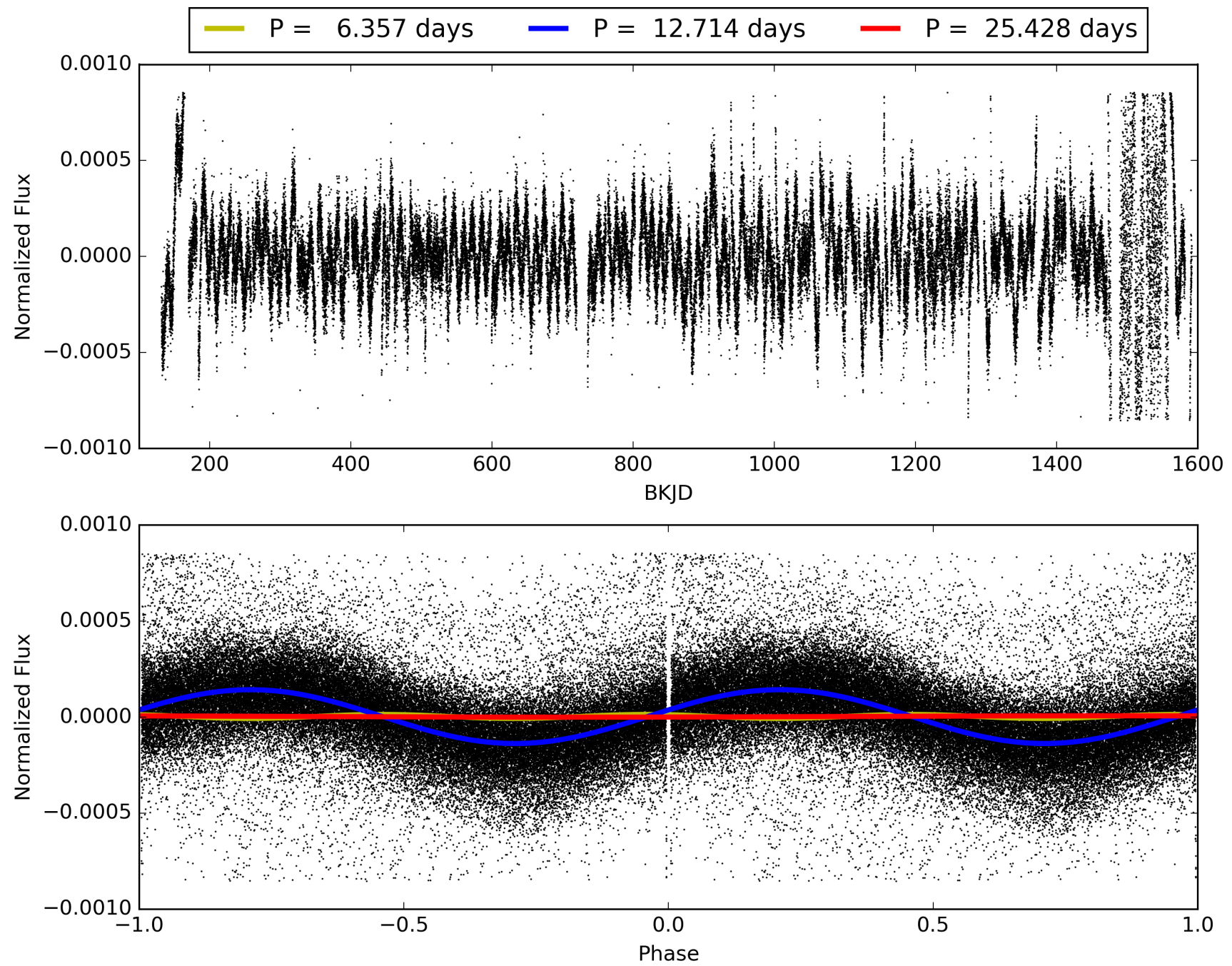
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:41:48 Z

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

TCE 010002261-01, PDC Light Curves

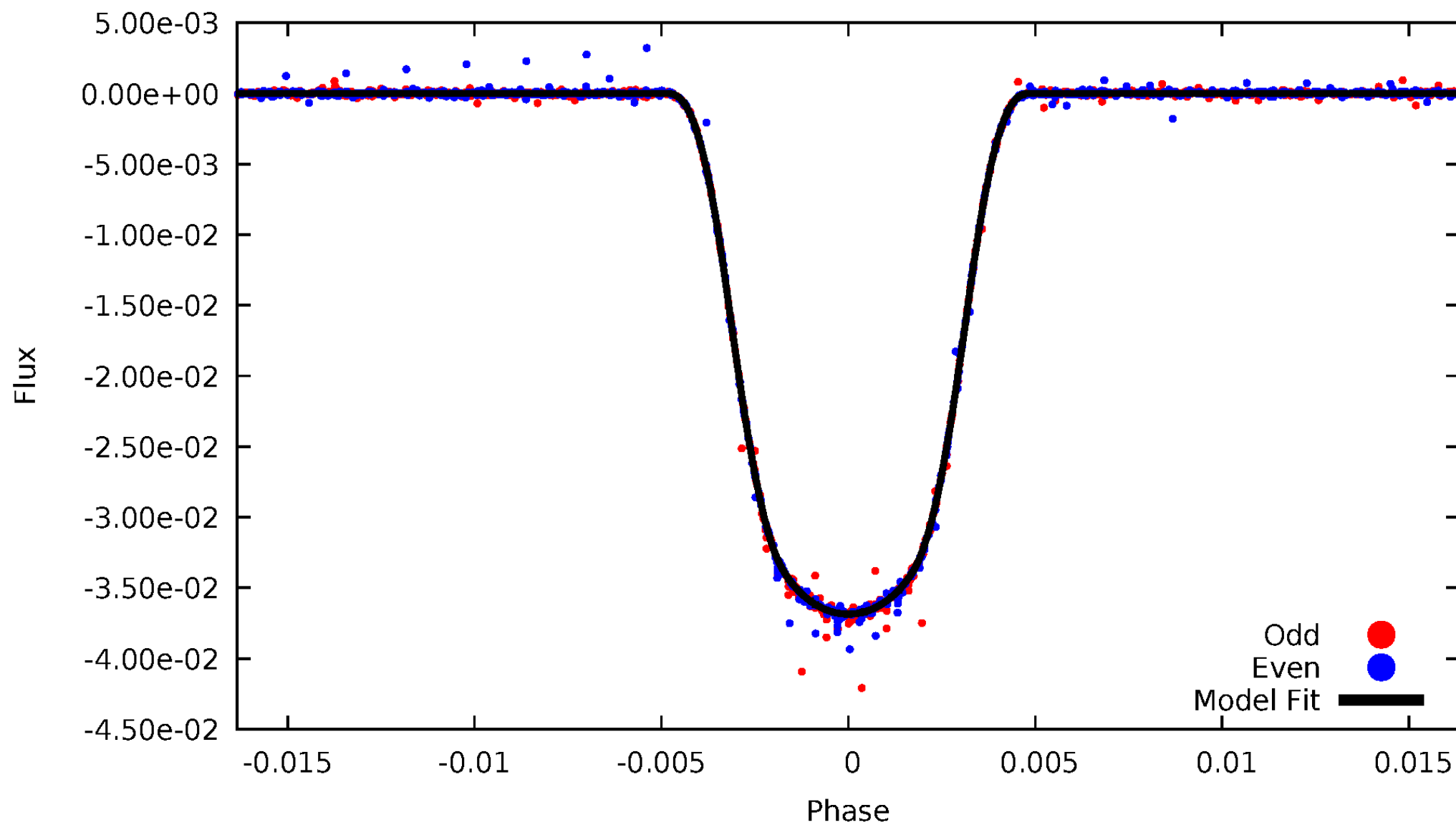


TCE 010002261-01



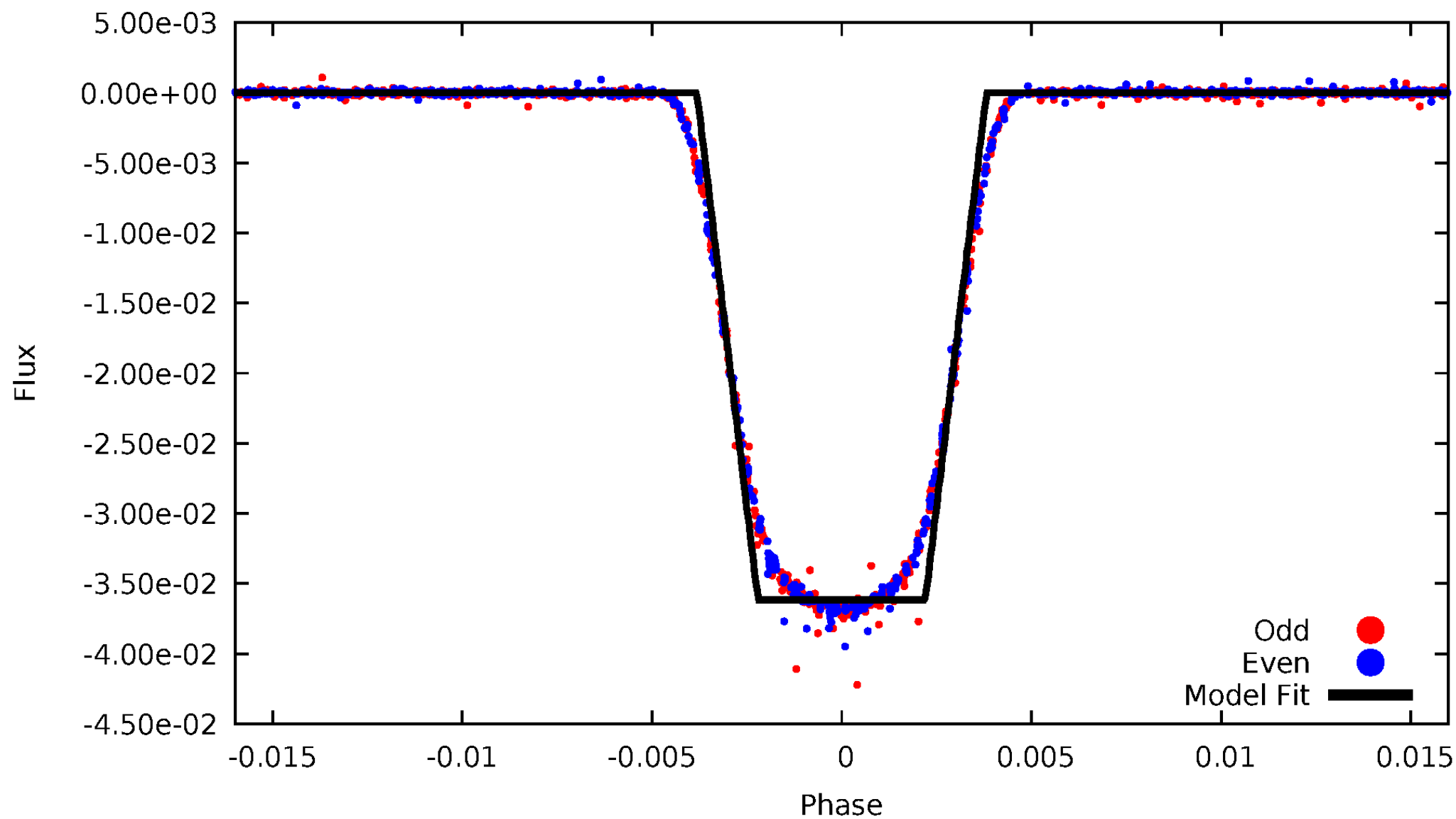
DV Odd/Even

TCE 010002261-01



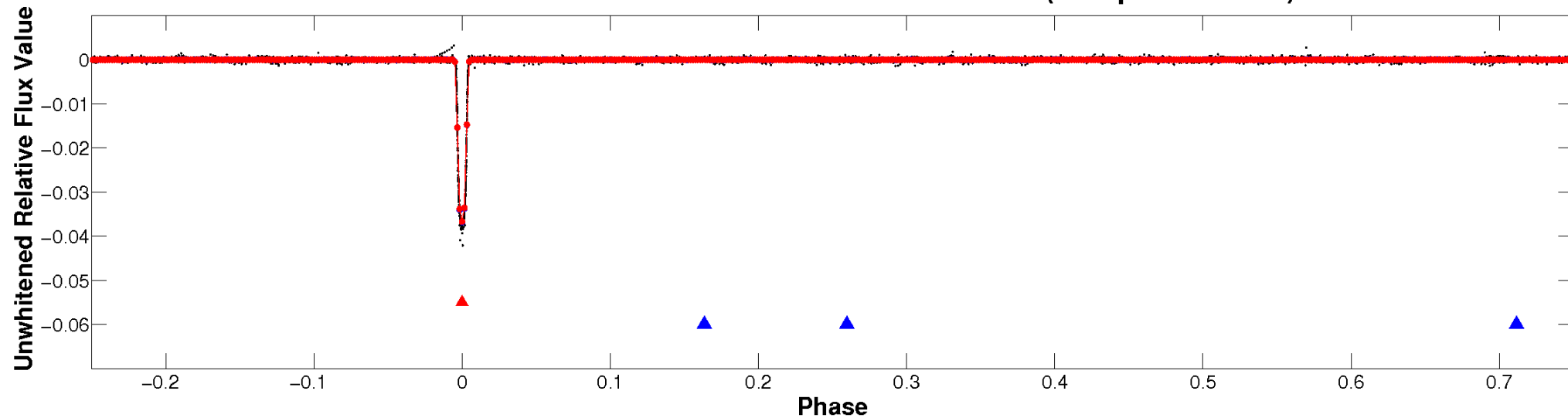
ALT Odd/Even

TCE 010002261-01

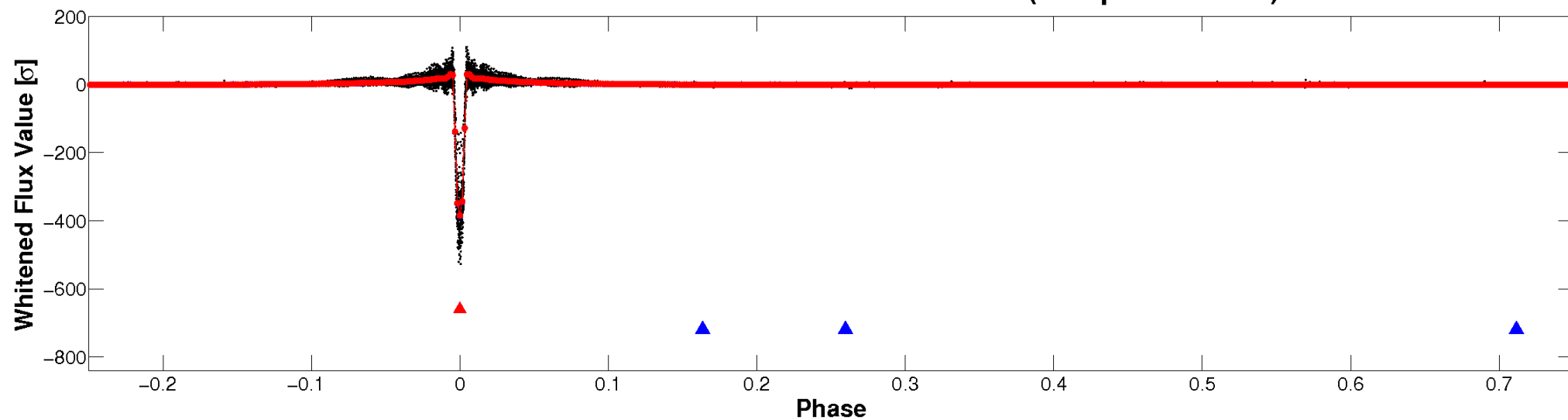


Non-Whitened Vs. Whitened Light Curve

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

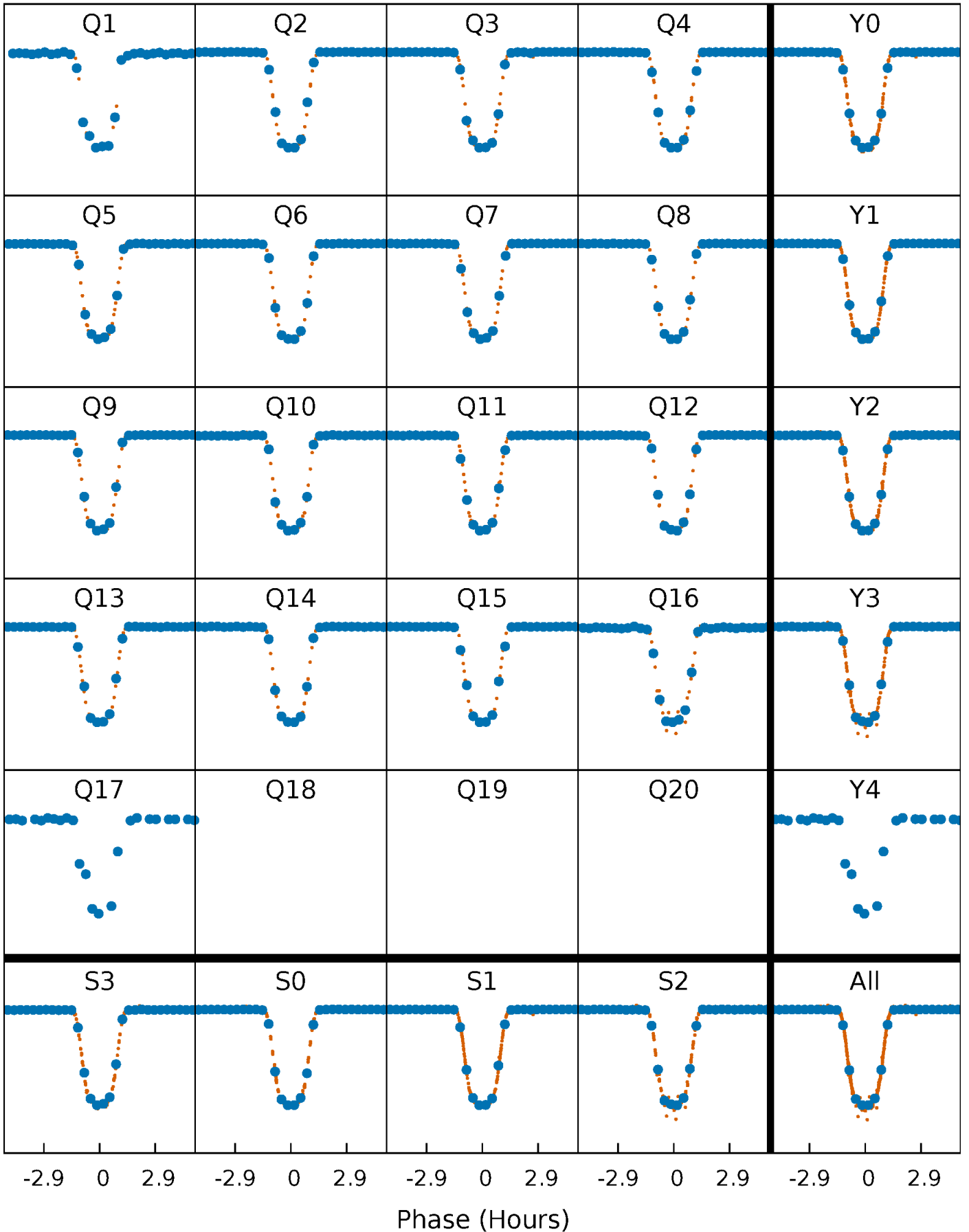


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



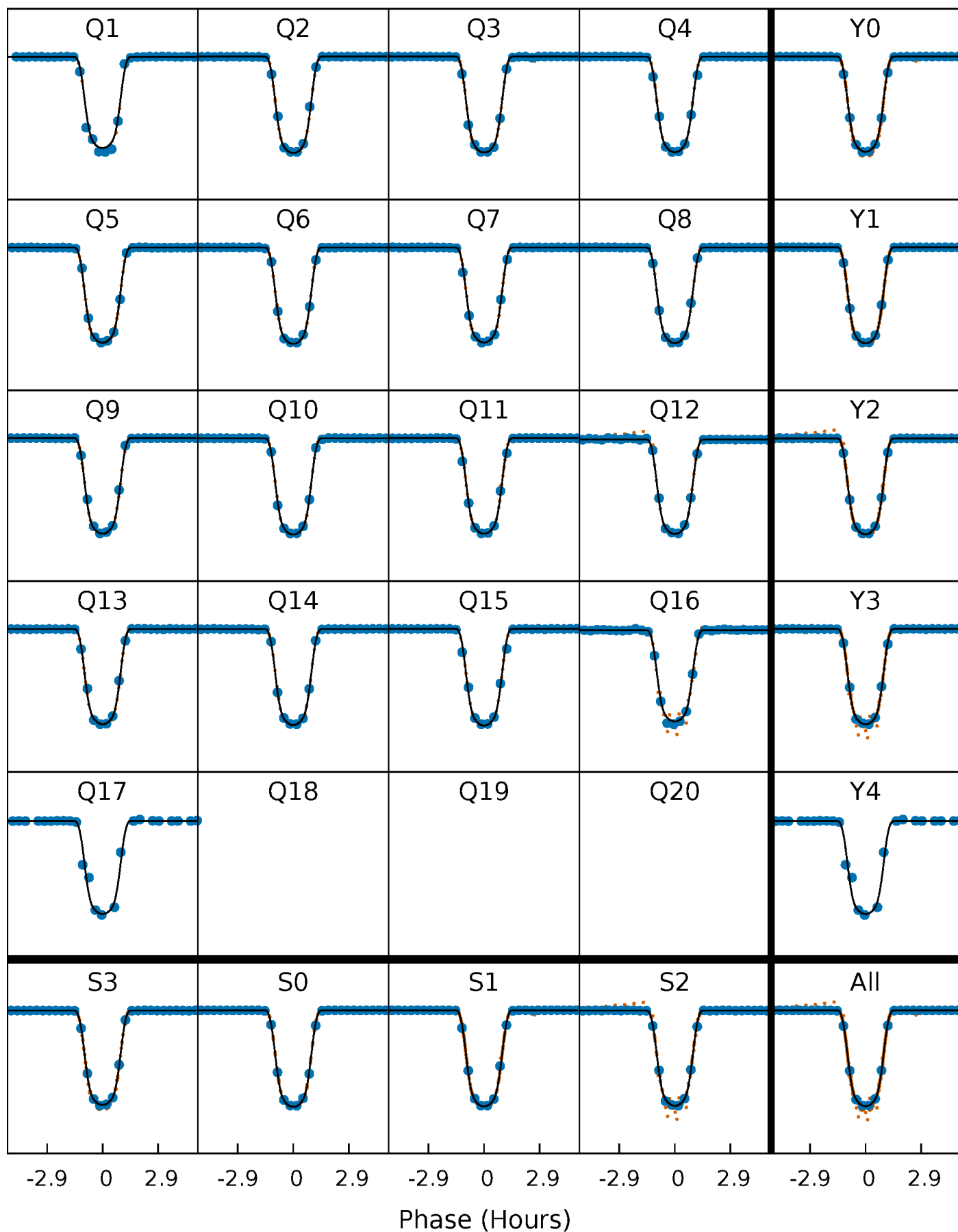
PDC Quarter-Phased Transit Curves

TCE 010002261-01 P= 12.713794 Days $T_0=136.931178$ (BKJD)



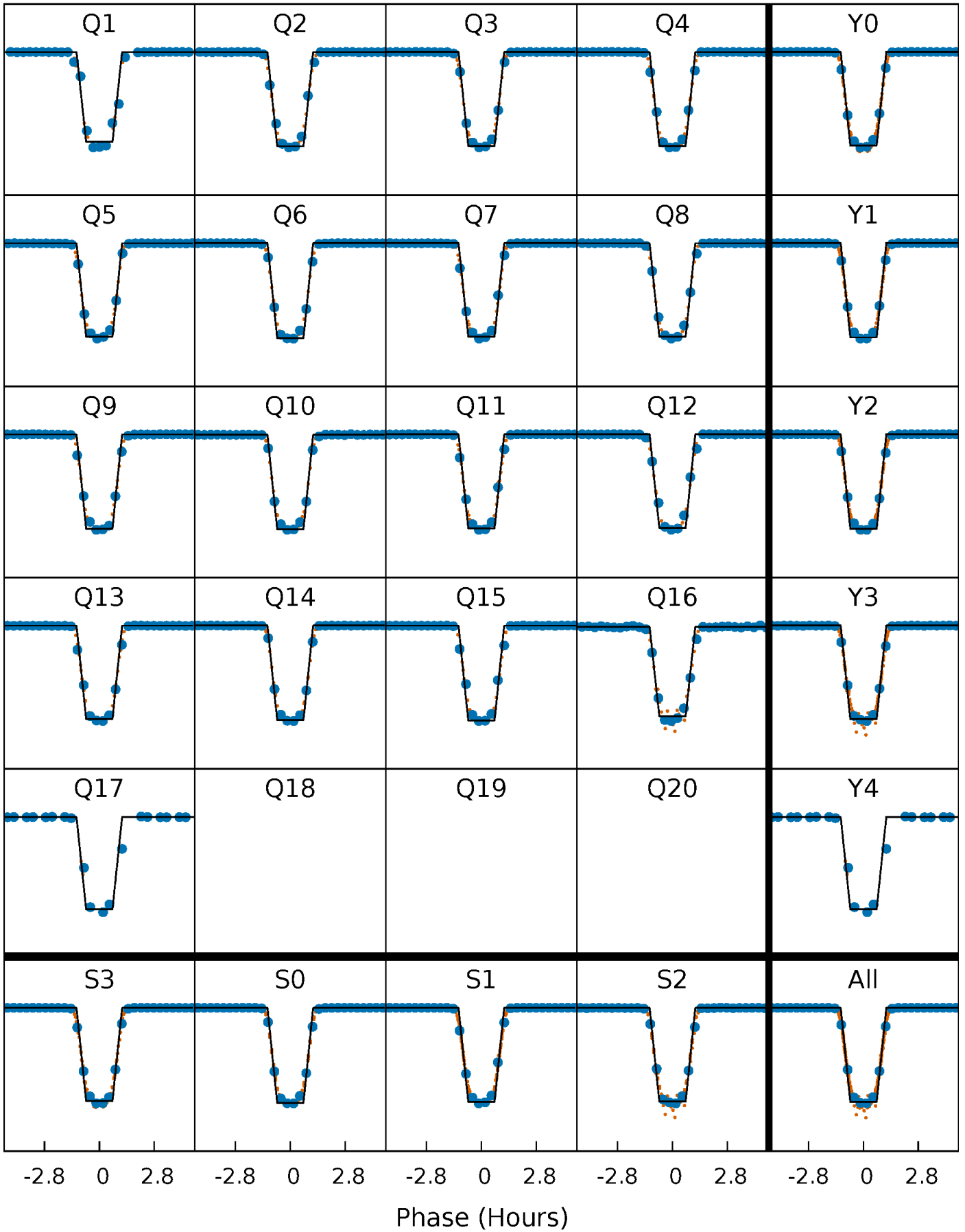
DV Quarter-Phased Transit Curves

TCE 010002261-01 P= 12.713794 Days $T_0=136.931178$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

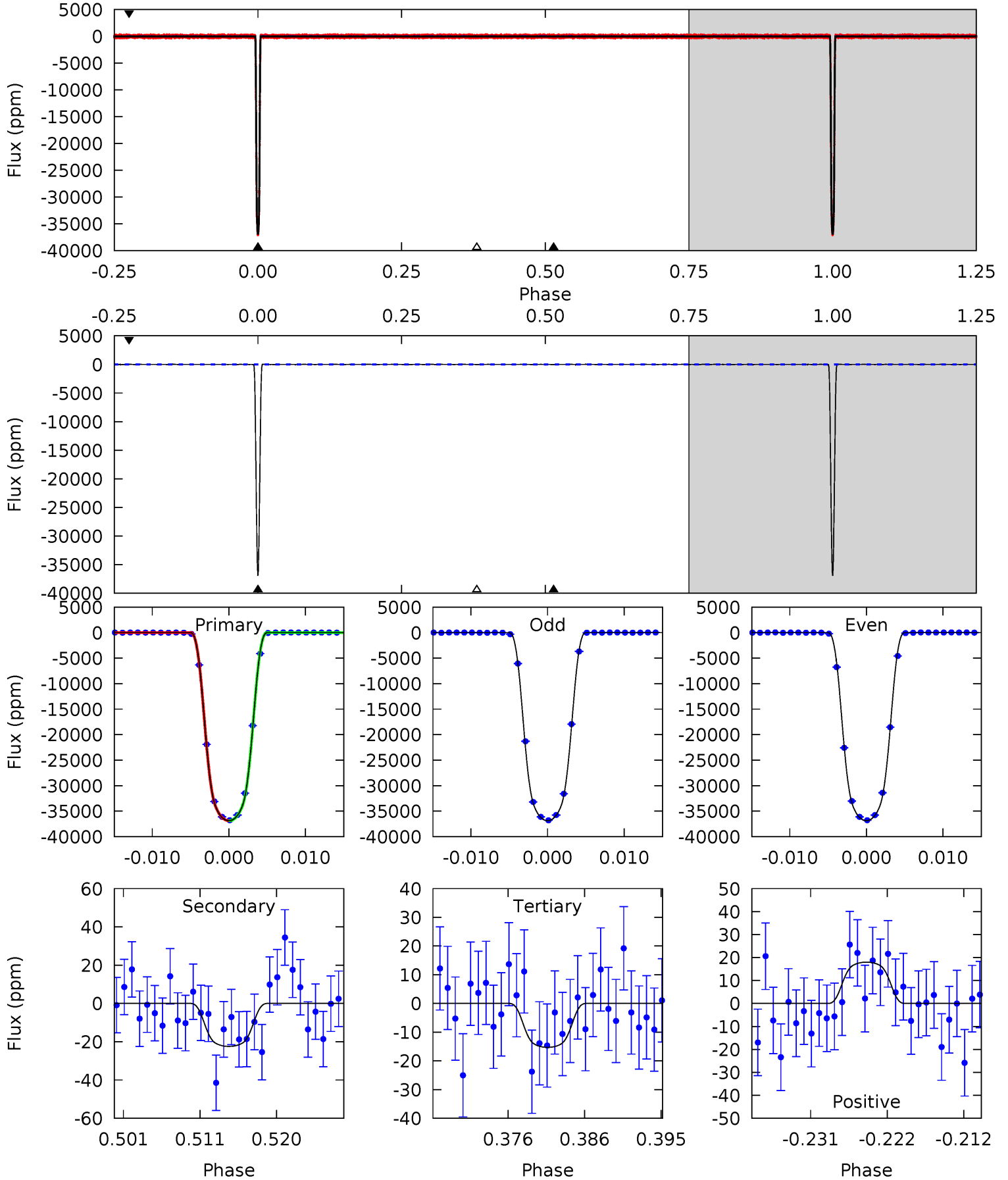
TCE 010002261-01 P= 12.713783 Days $T_0=136.931765$ (BKJD)



DV Model-Shift Uniqueness Test

010002261-01, P = 12.713794 Days, E = 124.217384 Days

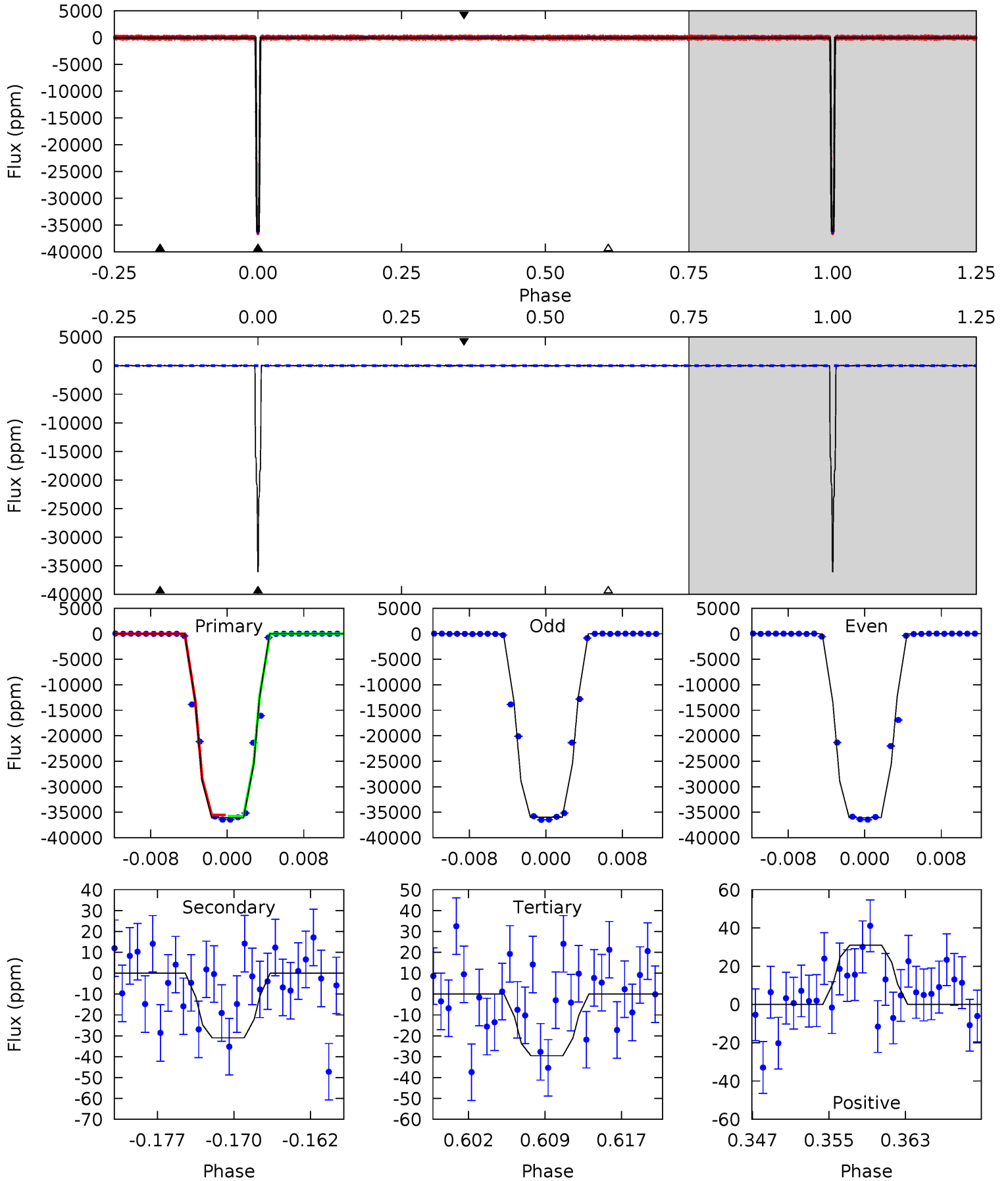
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9003	5.48	3.74	4.39	5.03	2.59	1.45	8999	8999	1.75	1.09	0.46	1.00	0.00	2.55



Alt Model-Shift Uniqueness Test

010002261-01, P = 12.713783 Days, E = 124.217982 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4259	3.66	3.49	3.65	5.08	2.66	1.13	4255	4255	0.17	0.00	4.83	1.00	0.00	0



Stellar Parameters For KIC 010002261

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	2661^{+1}_{-1}	$5.283^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$0.116^{+1.000}_{-1.000}$	$0.094^{+1.000}_{-1.000}$	$85.200^{+1.000}_{-1.000}$
	+0%/-0%	+19%/-19%	+inf%/-inf%	+862%/-862%	+1064%/-1064%	+1%/-1%
Source	PHO54	PHO54	PHO54	BTSL		

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

Secondary Eclipse Parameters for KIC 010002261-01 / KOI 0959.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-22 ± 4	$2.81^{+0.76}_{-0.83}$	263^{+27}_{-28}	1325^{+58}_{-63}	$4.816^{+2.126}_{-1.281}$
Alt.	-31 ± 8	$2.88^{+0.89}_{-0.90}$	260^{+27}_{-25}	1341^{+63}_{-66}	$6.115^{+2.889}_{-2.072}$

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 $A_{obs} \gg 1.0$

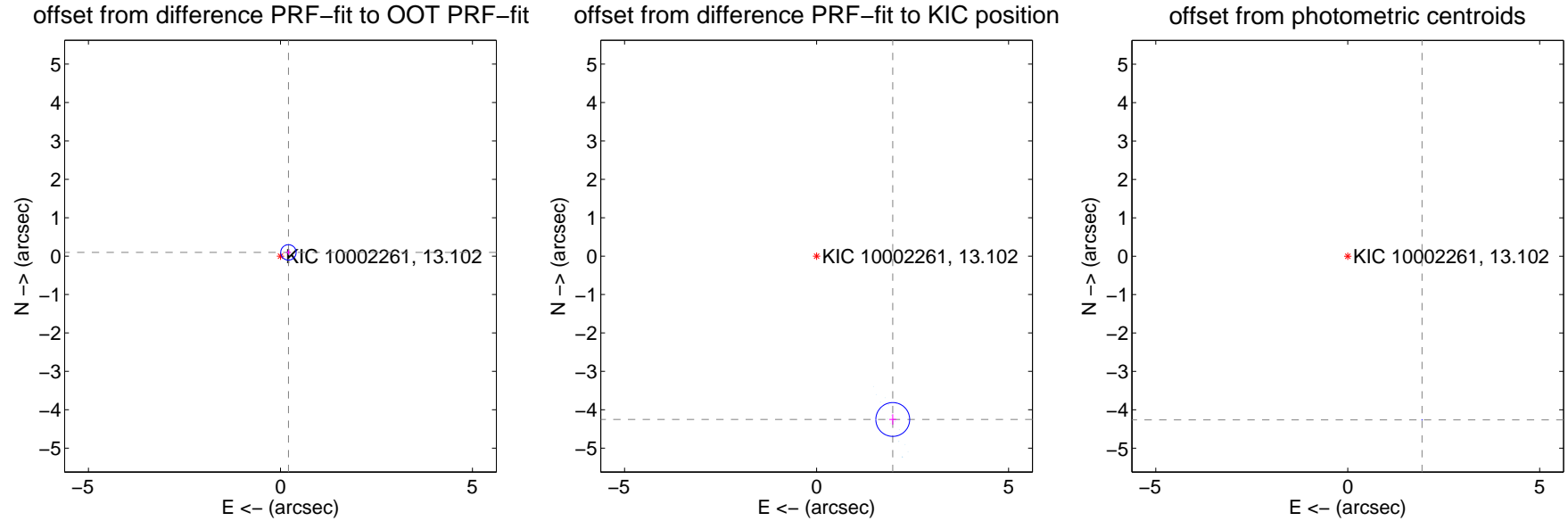
DV Centroid Data

Supplemental centroid analysis for 010002261-01. Kepler magnitude: 13.10. Transit SNR 5733.06

There are 17 quarters with good PRF difference image offsets

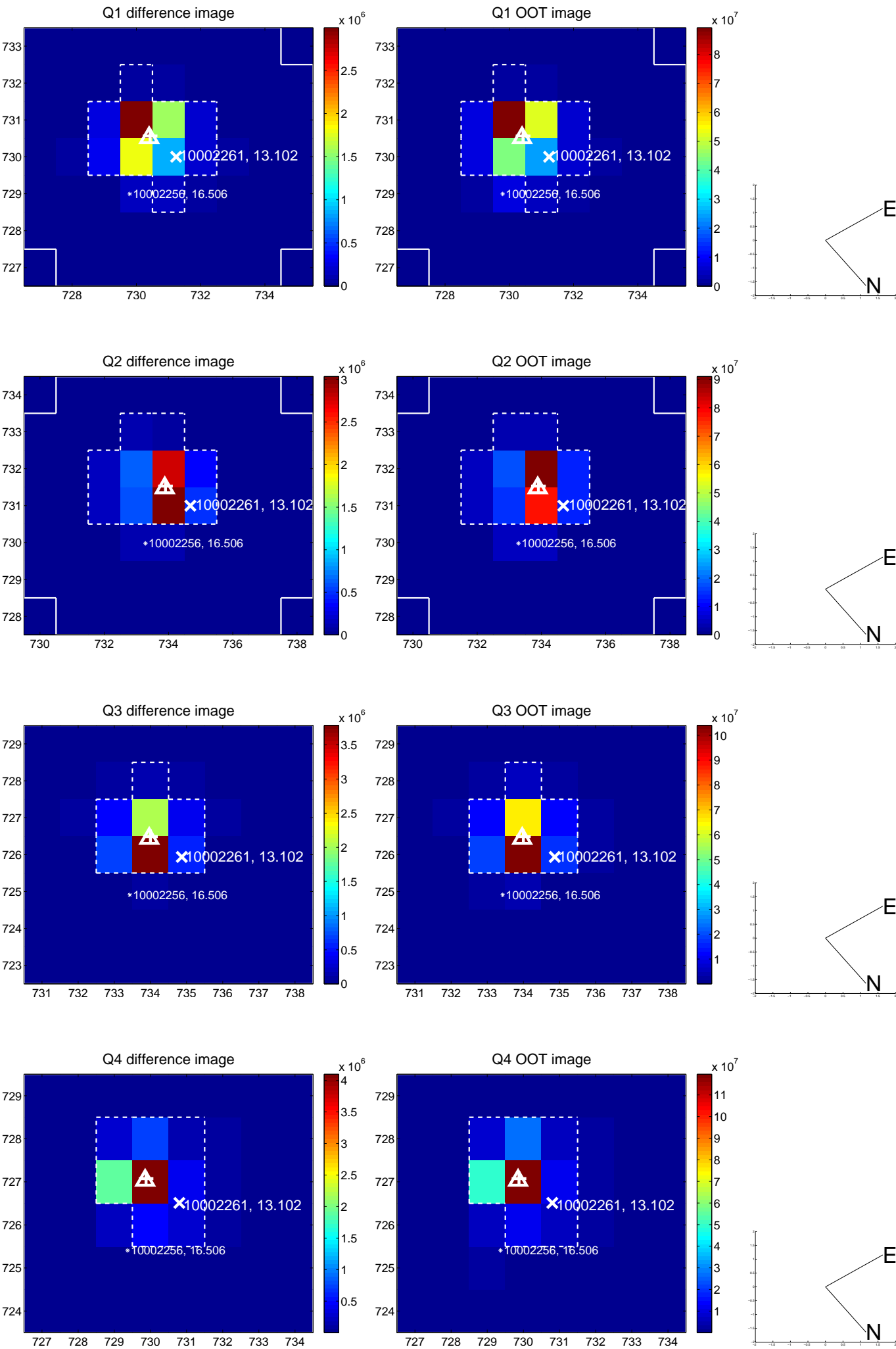
The OOT PRF centroid is offset from the target star catalog position by about 5.71 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.230 ± 0.067	3.44	-0.208 ± 0.067	0.097 ± 0.067
PRF-fit source offset from KIC position	4.694 ± 0.147	31.97	-1.984 ± 0.090	-4.254 ± 0.135
photometric centroid source offset	4.68 ± 0.00	3440.68	-1.93 ± 0.00	-4.26 ± 0.00

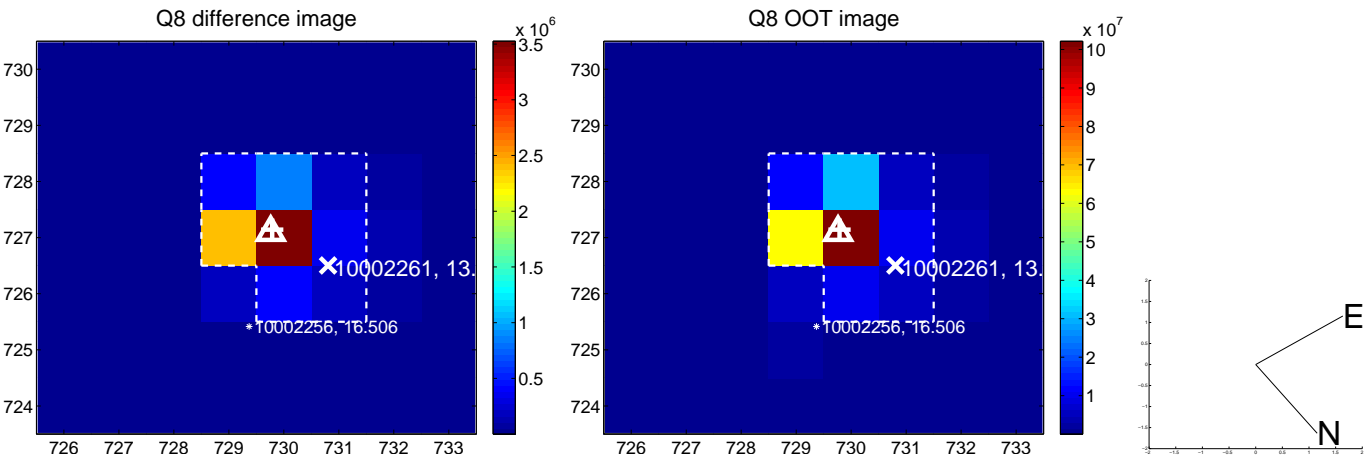
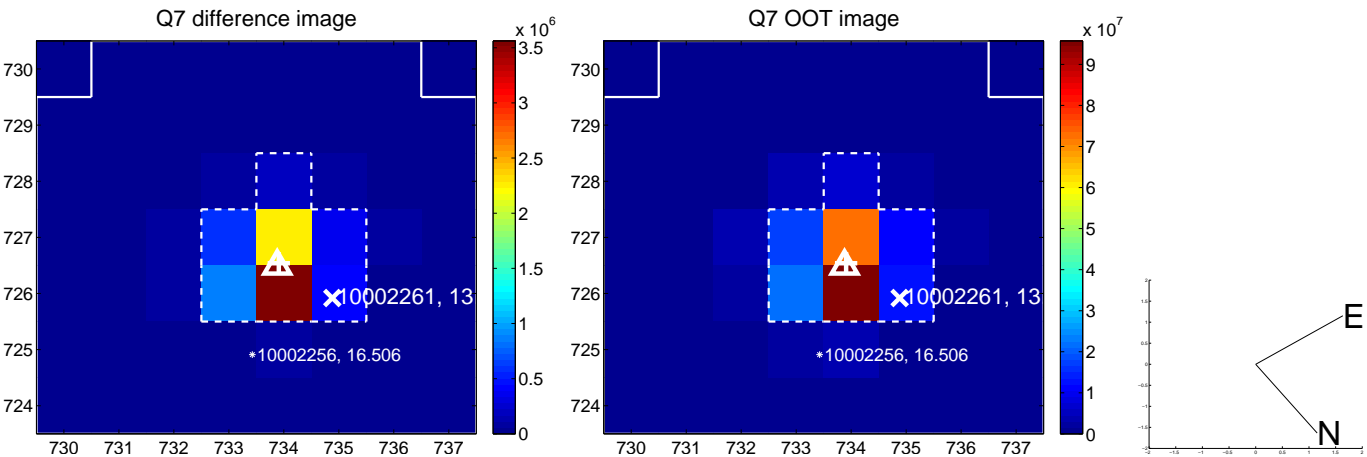
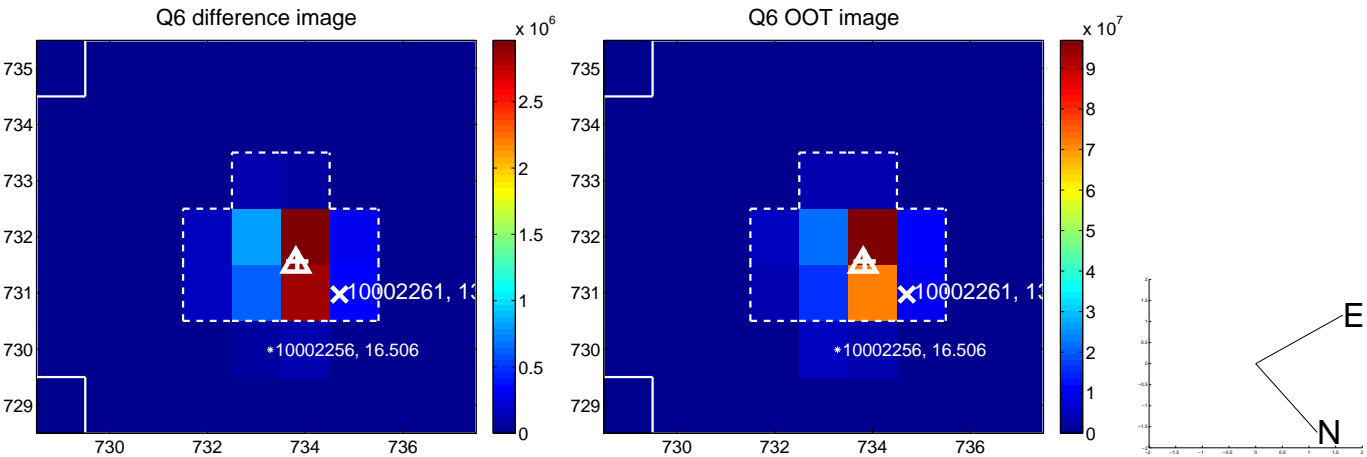
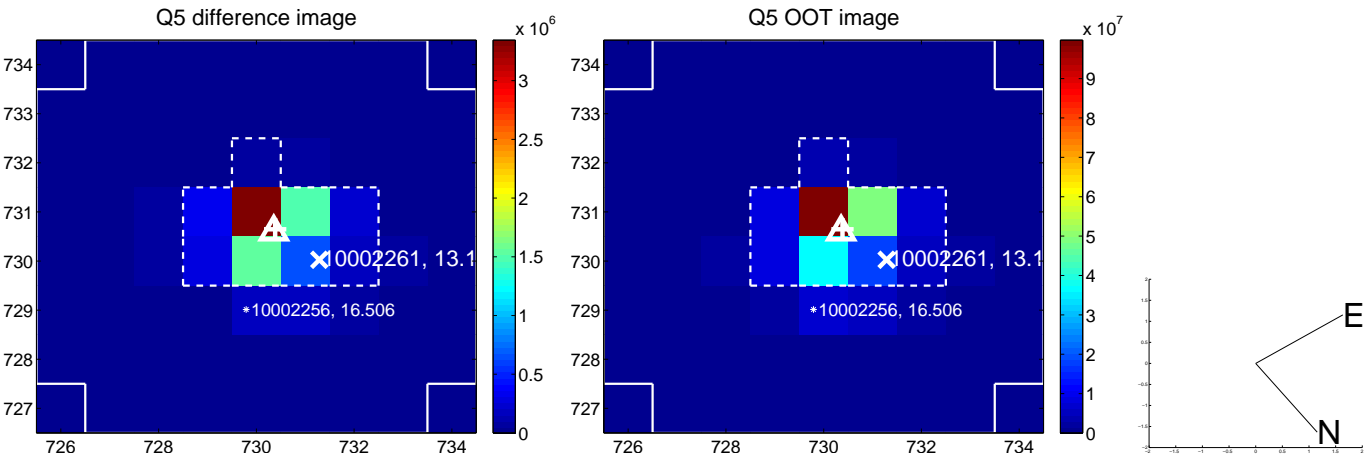


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

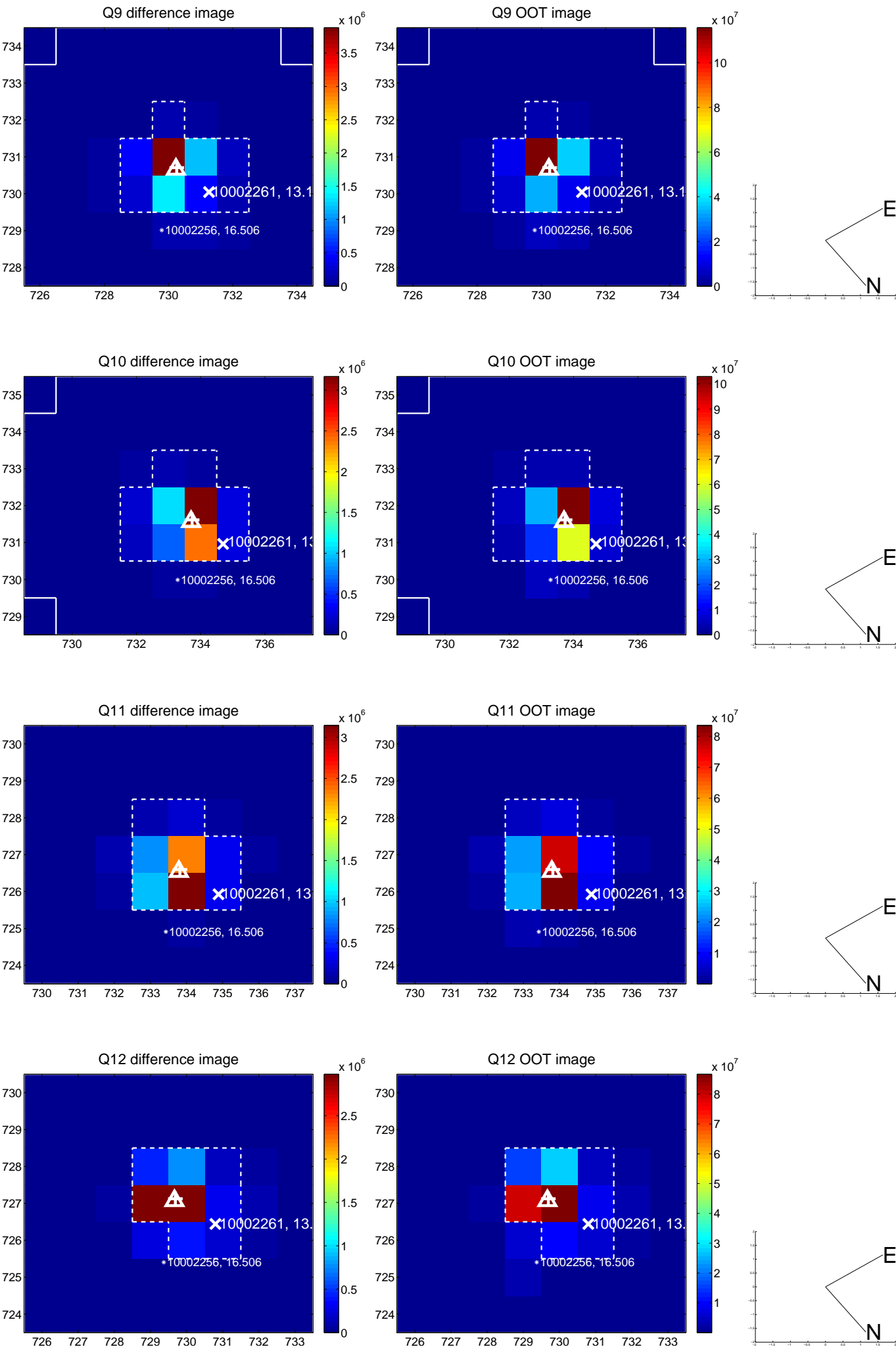
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



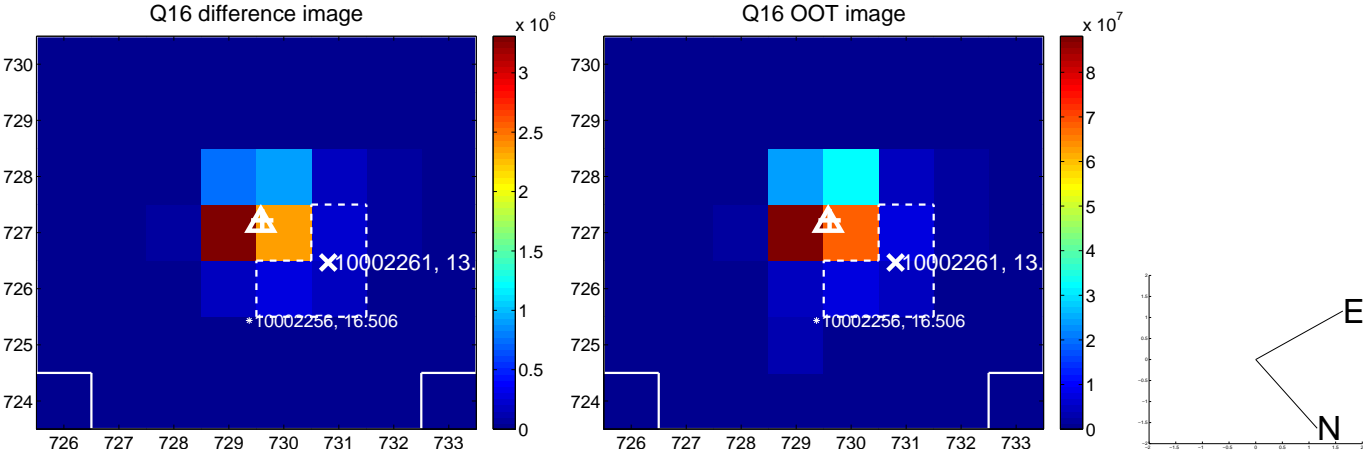
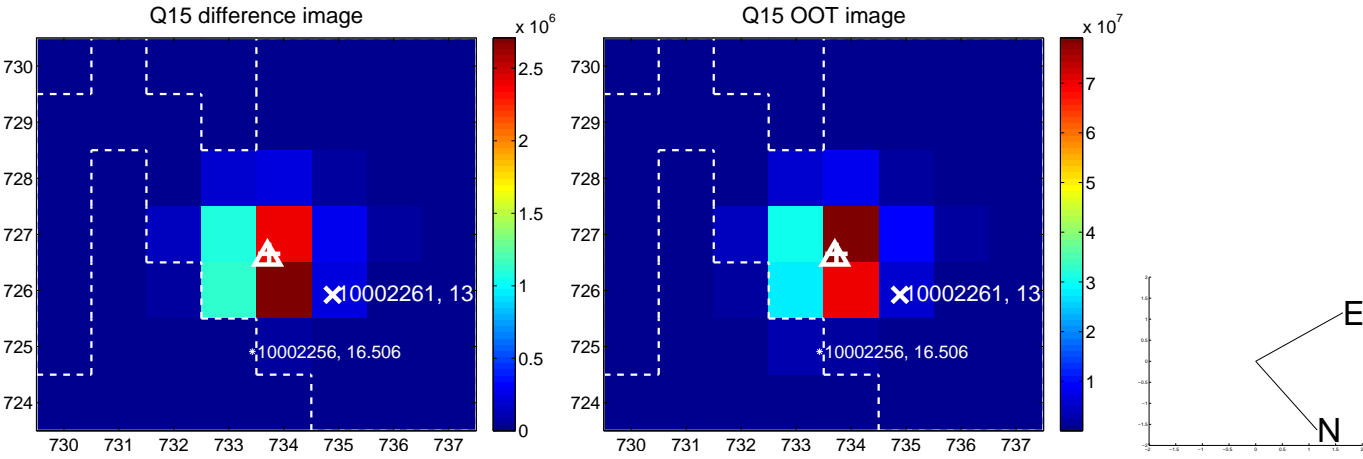
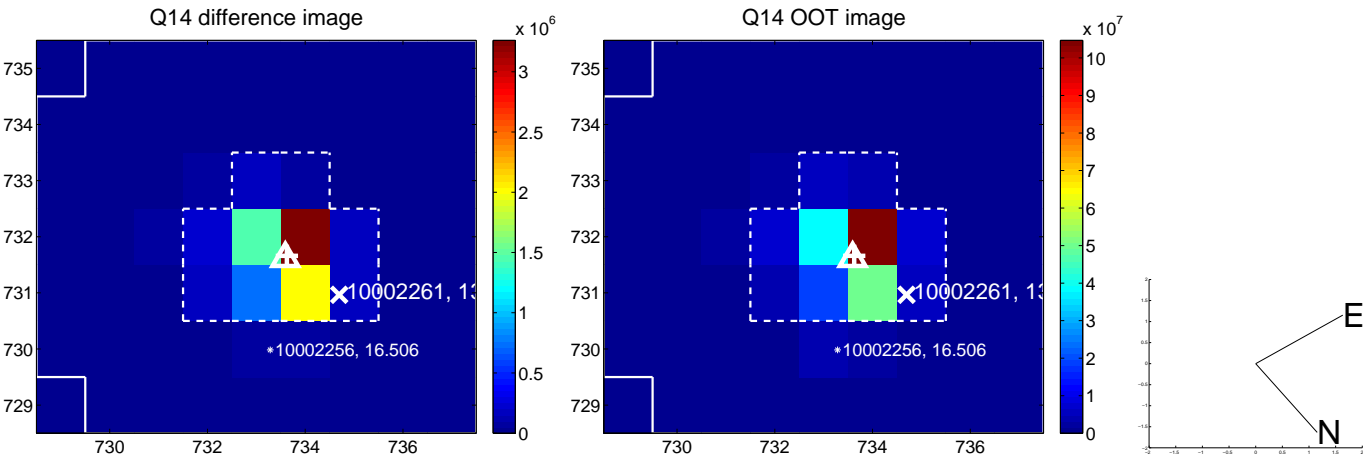
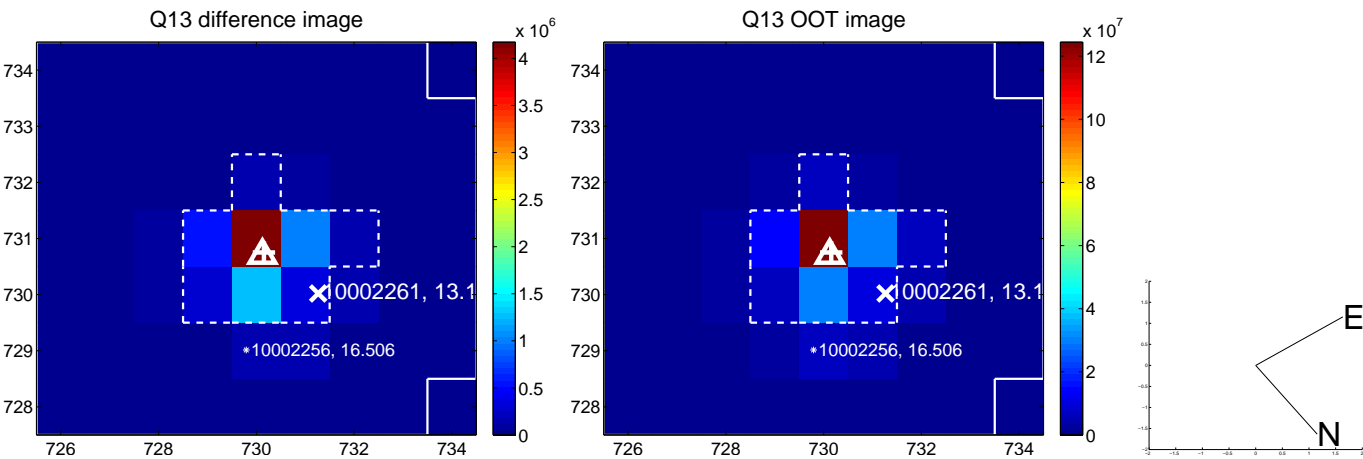
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



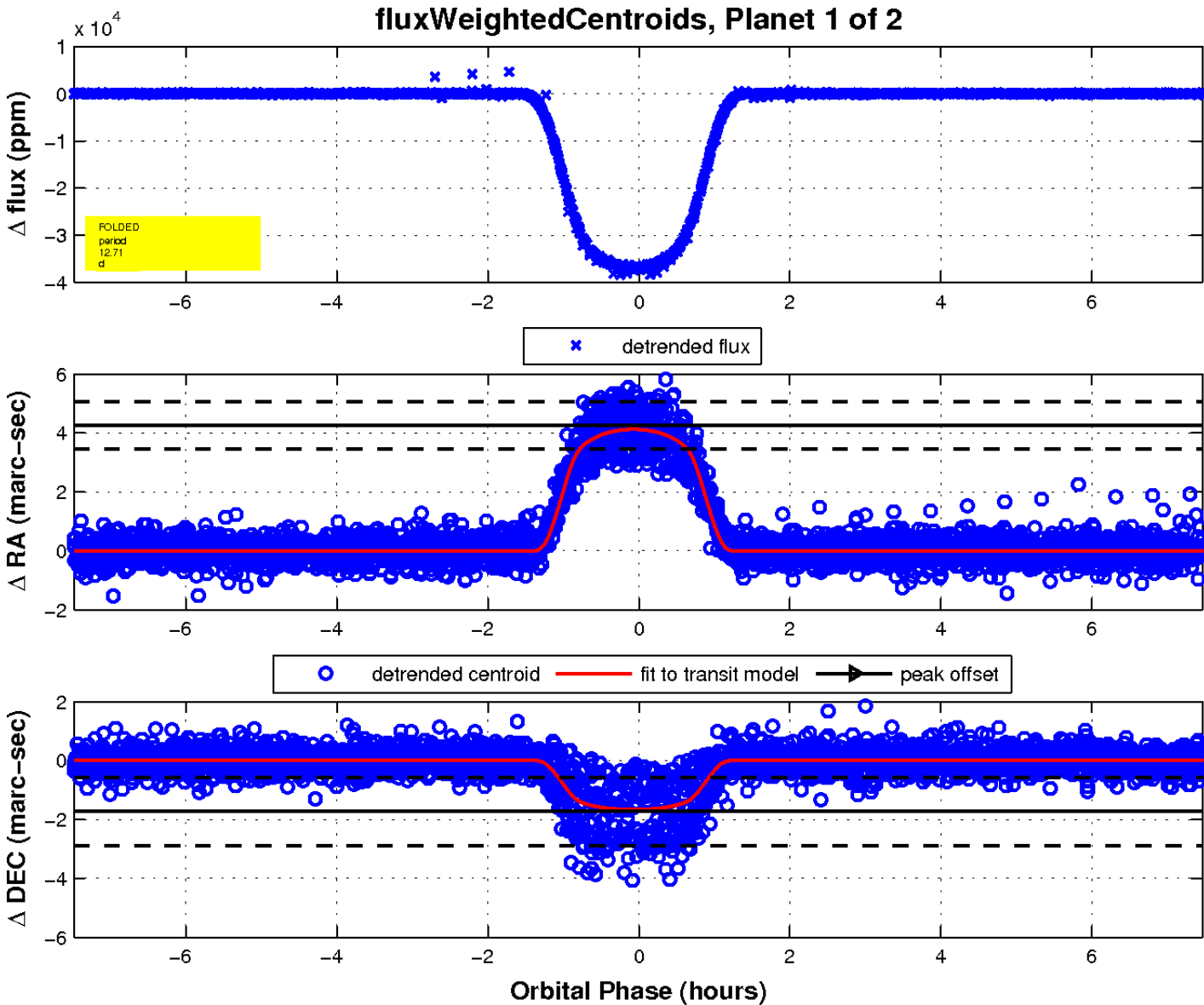
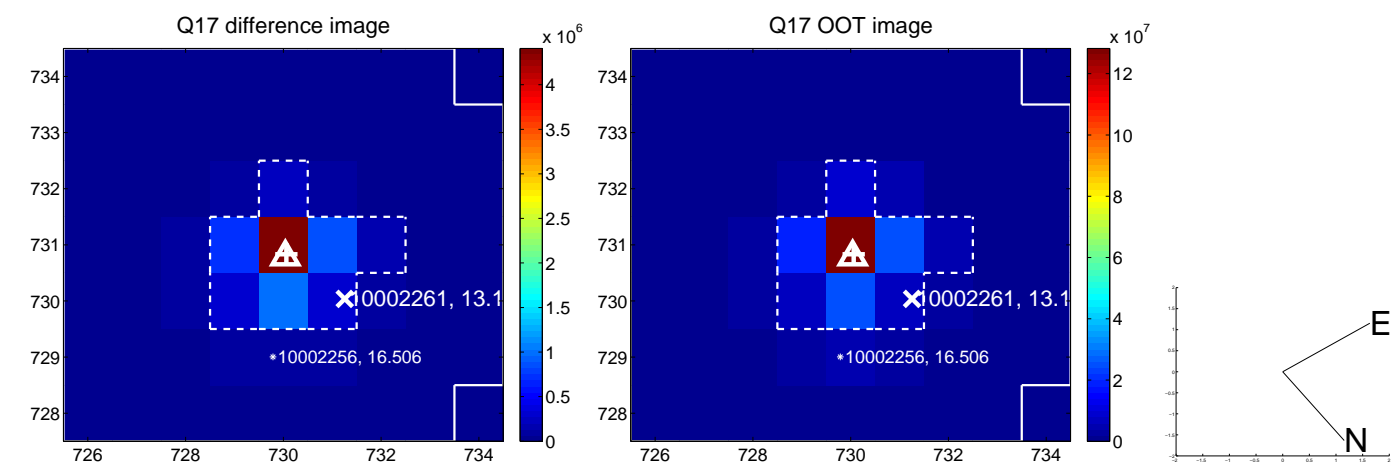
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

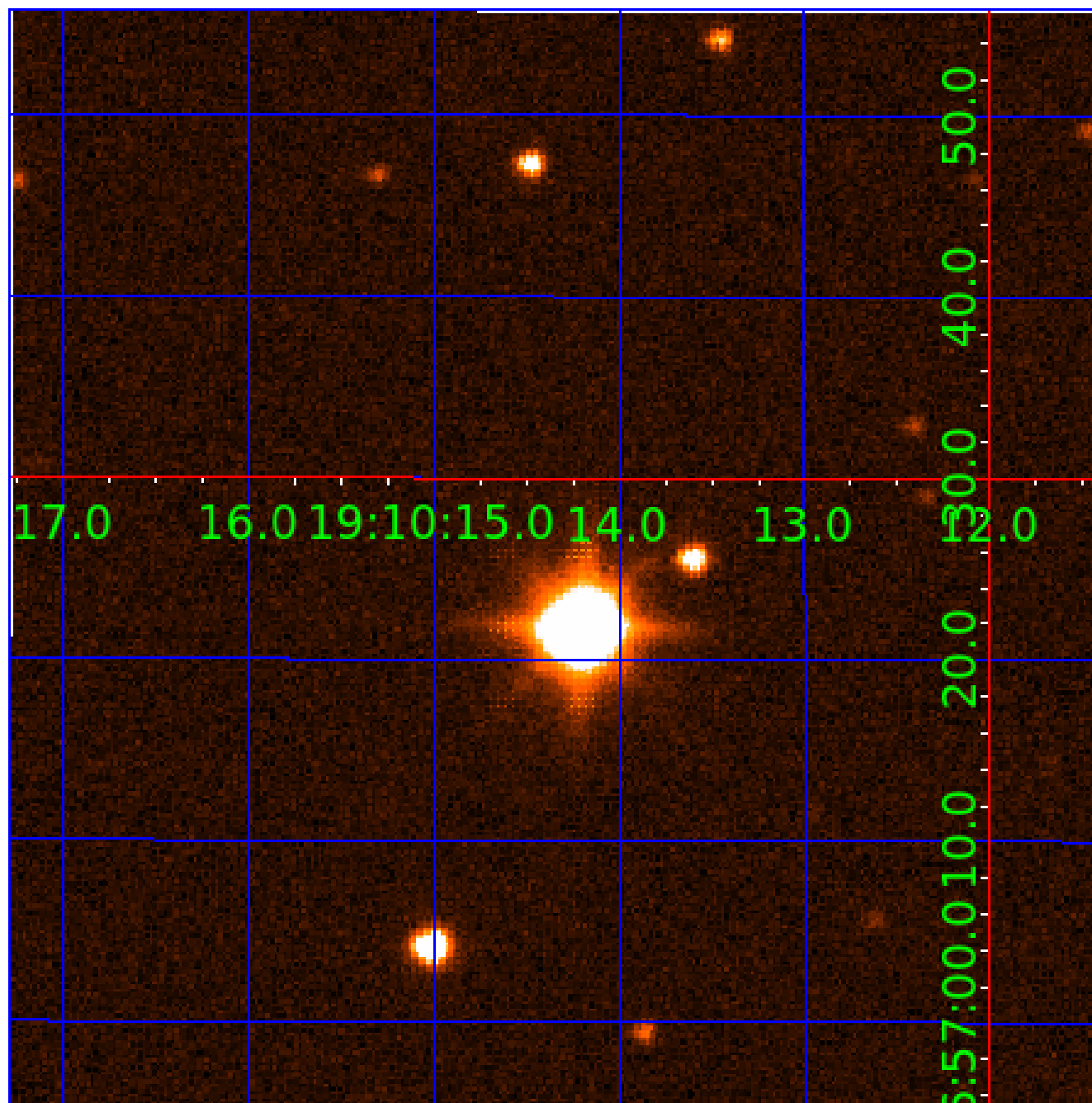


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010002261

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})
010002261-01	OBS	0959.01	12.713794	136.931178	36853.9	2.494	6326.2	5733.1	0.12	2661	2.28	0.26
010002261-02	OBS	No	514.297193	470.792265	239.8	9.039	10.4	10.4	0.12	2661	0.19	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010002261-01	OBS	PC	0.73	0	0	0	0	CENT_KIC_POS
010002261-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_NONUNIQ_ALT—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 for comment definitions.

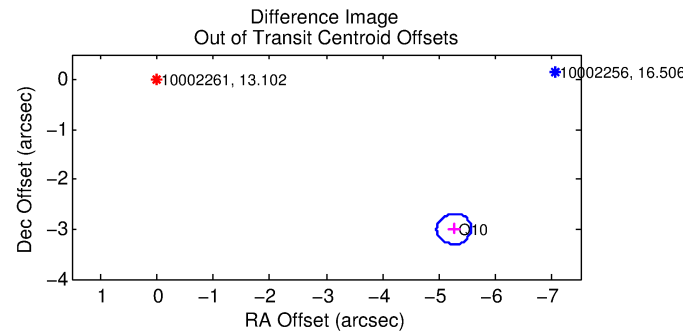
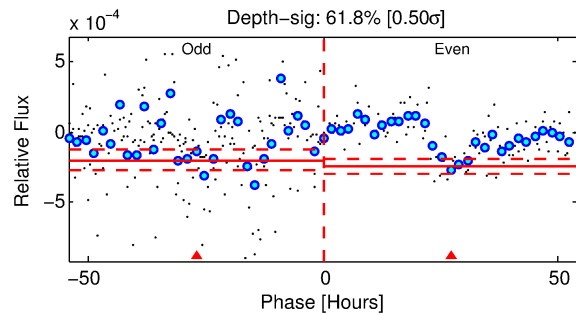
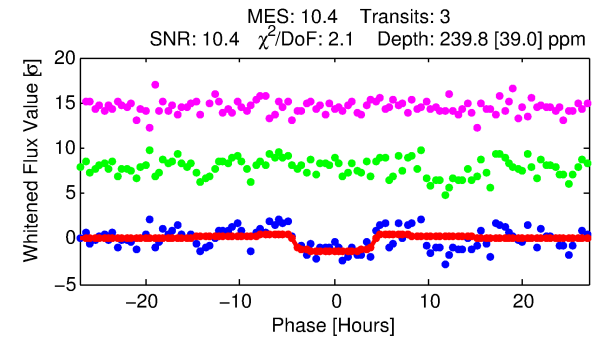
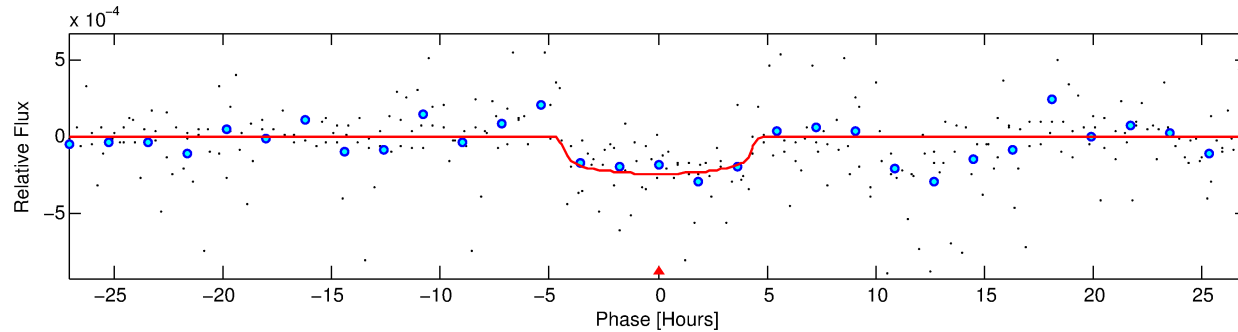
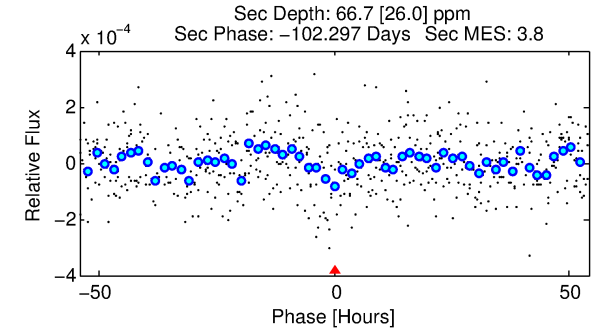
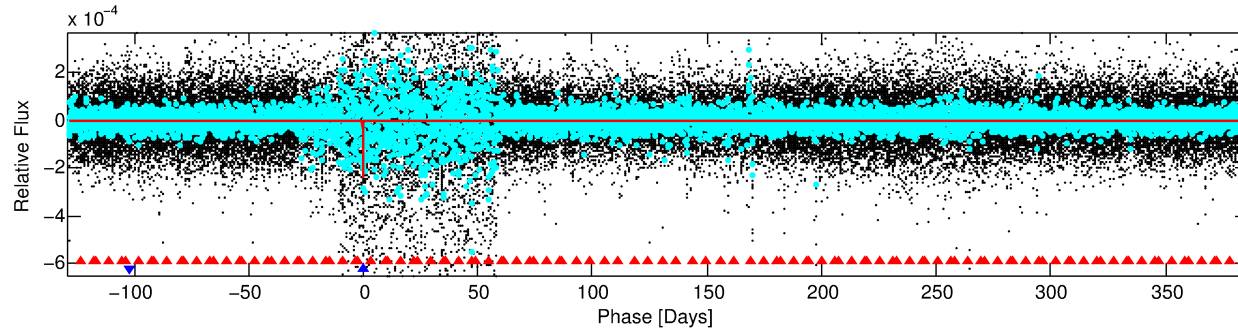
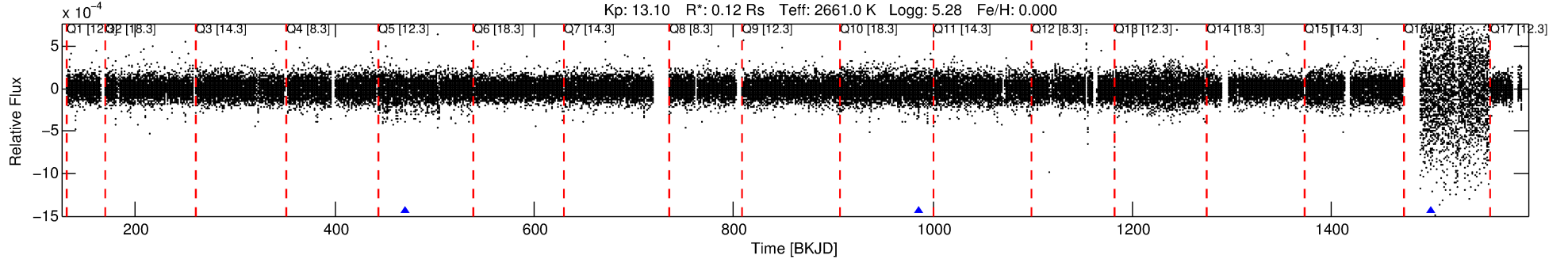
Ephemeris Match Information For 010002261-02

No Significant Match Found

DV One-Page Summary

KIC: 10002261 Candidate: 2 of 2 Period: 514.297 d
KOI: K00959 Corr: No Ephemeris Match

Kp: 13.10 R*: 0.12 Rs Teff: 2661.0 K Logg: 5.28 Fe/H: 0.000



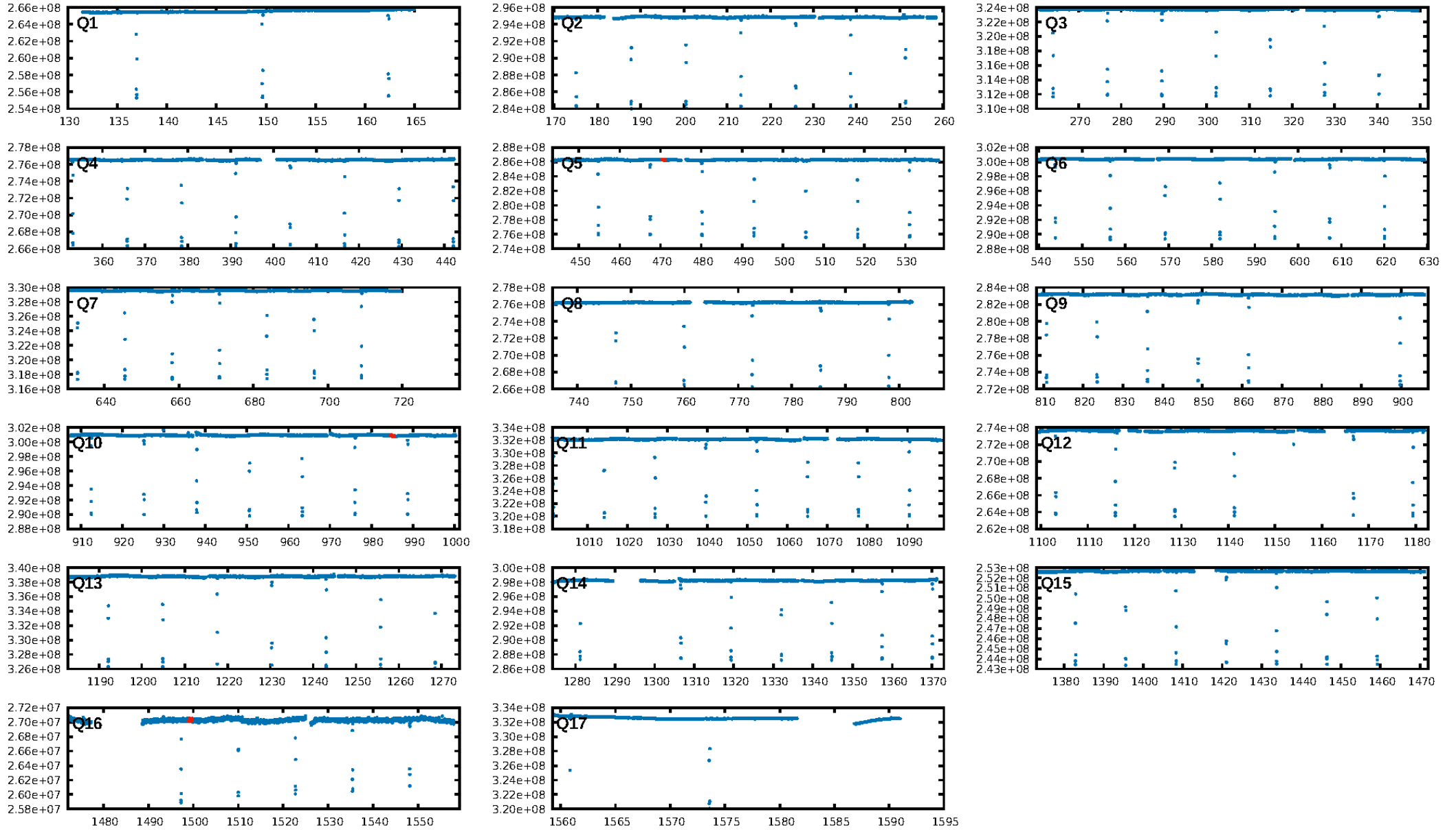
DV Fit Results:

Period = 514.29719 [0.01489] d
Epoch = 470.7923 [0.0160] BKJD
Rp/R* = 0.0153 [0.0204]
a/R* = 302.15 [1733.76]
b = 0.74 [3.53]
Seff = 0.00 [0.00]
Teq = 53 [0] K
Rp = 0.19 [0.26] Re
a = 0.5717 [0.0000] AU
Ag = 318929.44 [859160.90] [0.37 σ]
Teff = 1943 [1309] K [1.44 σ]

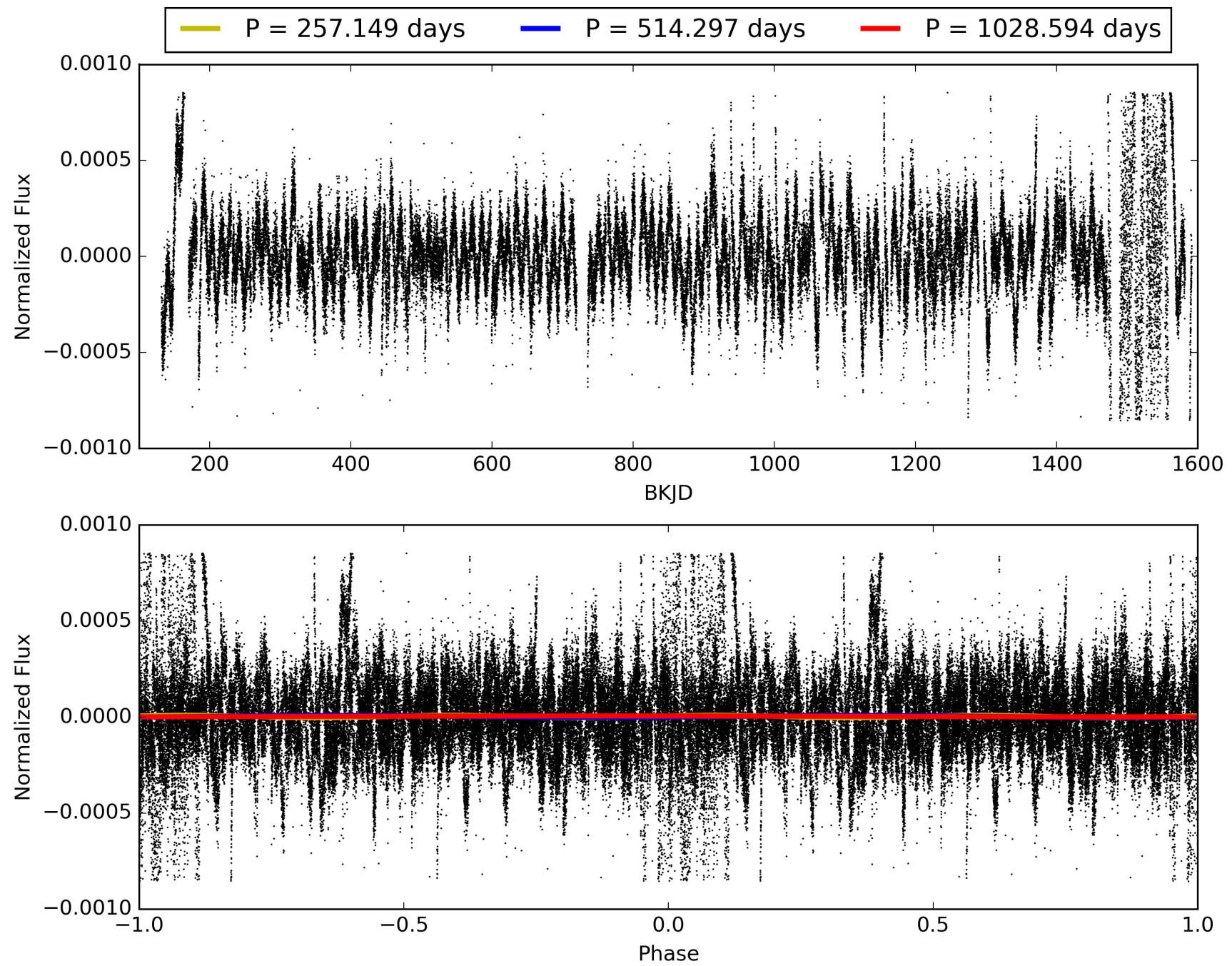
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1283.87 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.3%
ModelChiSquareGof-sig: 25.4%
Bootstrap-pfa: 3.39e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2864
Centroid-sig: 0.2%
Centroid-so: 6.200 arcsec [8.07 σ]
OotOffset-rm: 6.053 arcsec [59.25 σ]
KicOffset-rm: 10.146 arcsec [102.56 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 010002261-02, PDC Light Curves

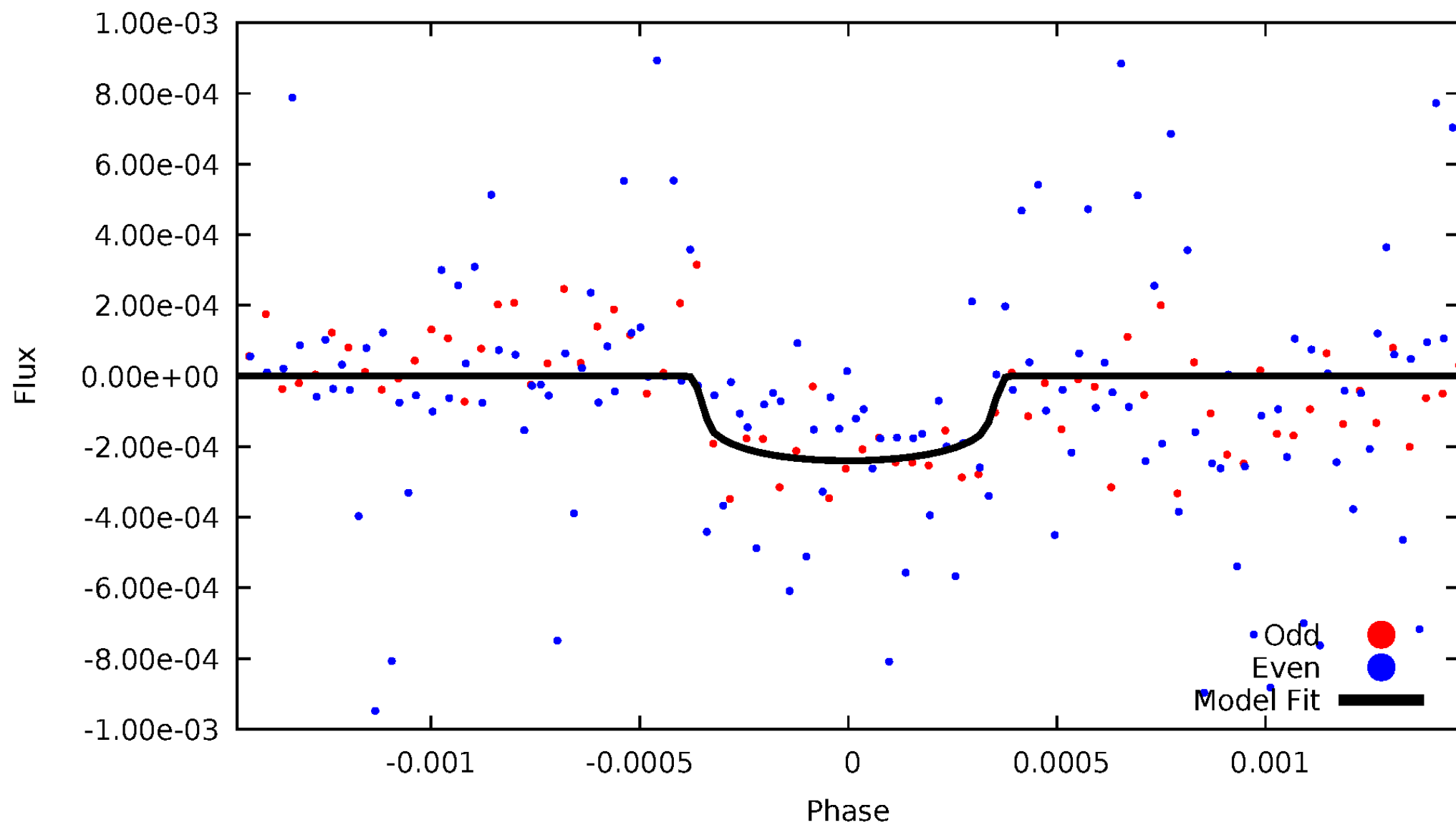


TCE 010002261-02



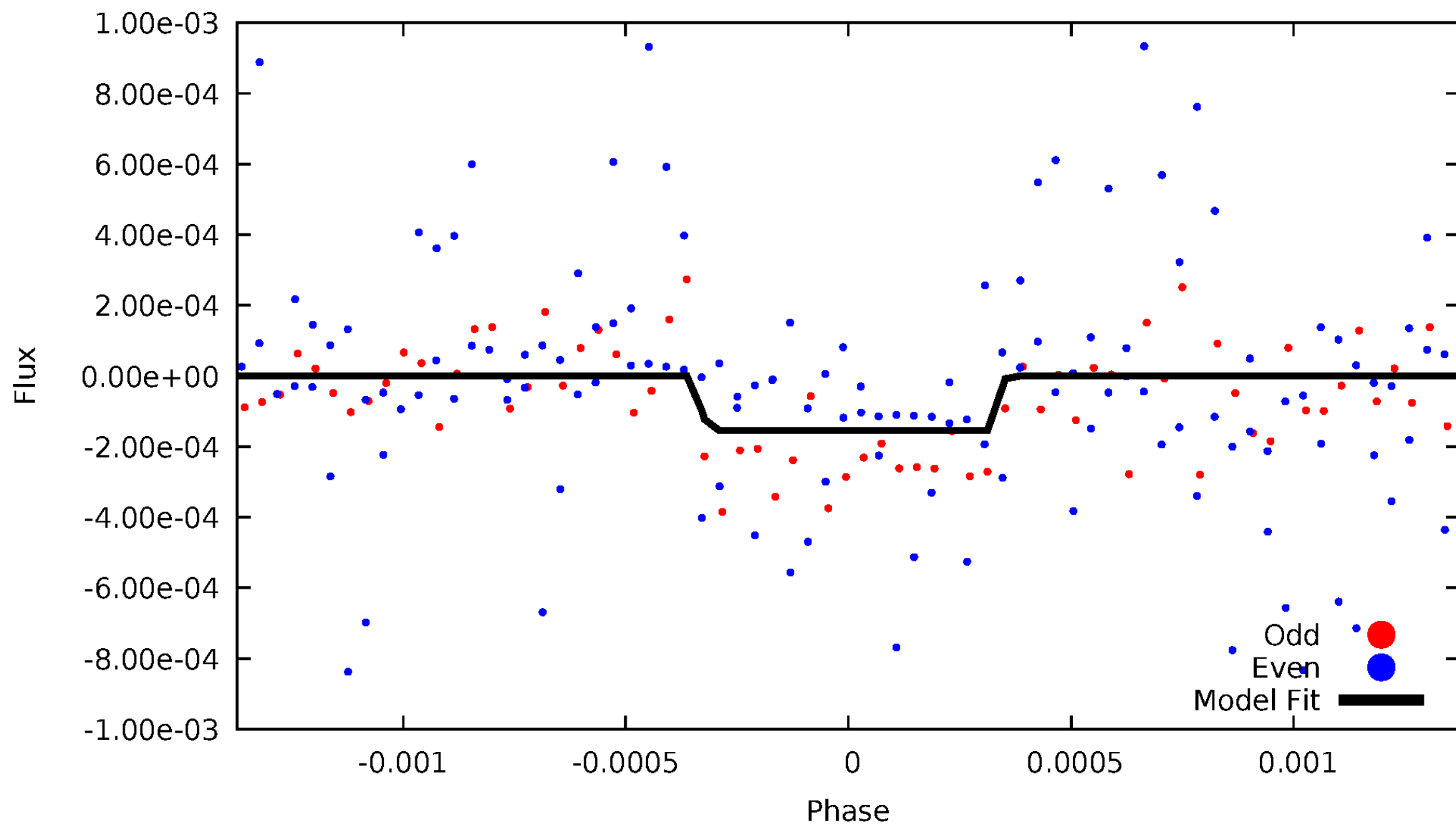
DV Odd/Even

TCE 010002261-02



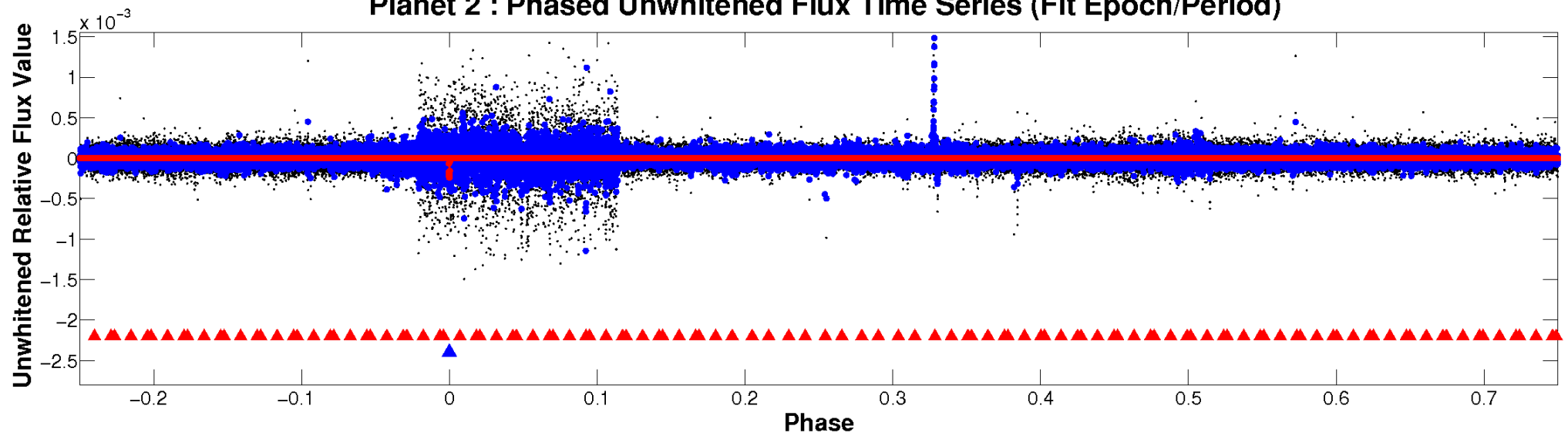
ALT Odd/Even

TCE 010002261-02

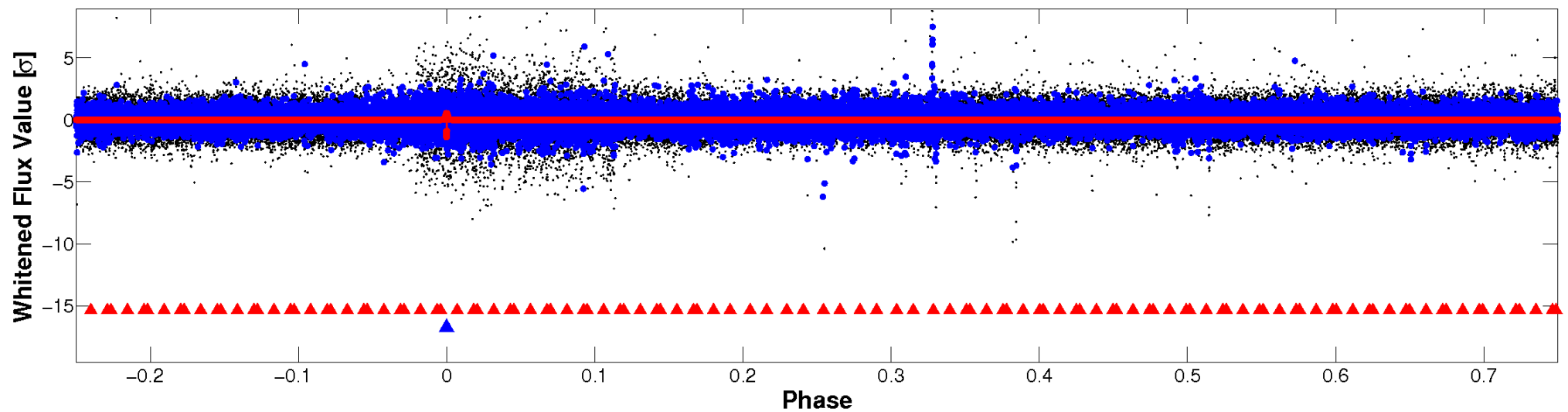


Non-Whitened Vs. Whitened Light Curve

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

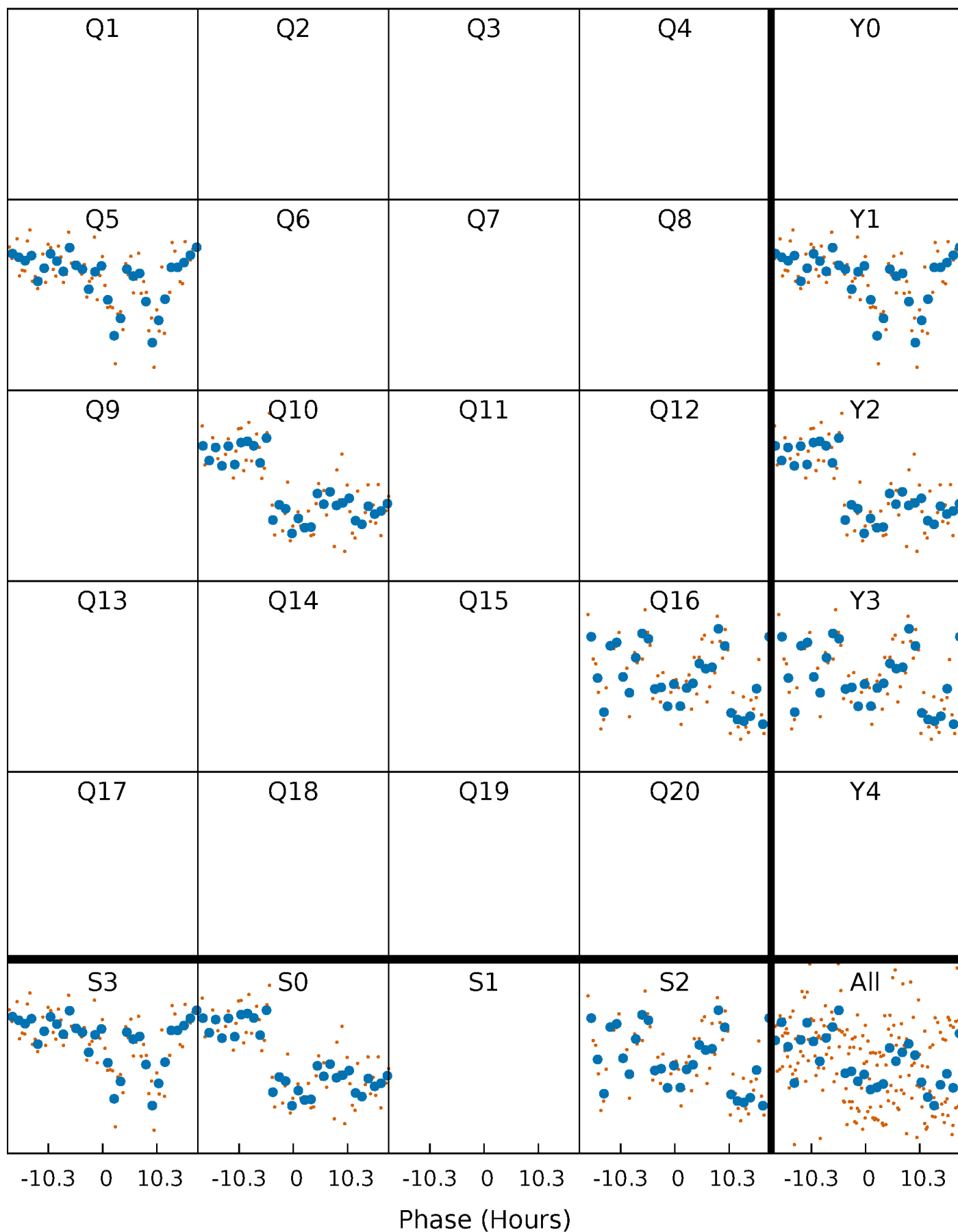


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



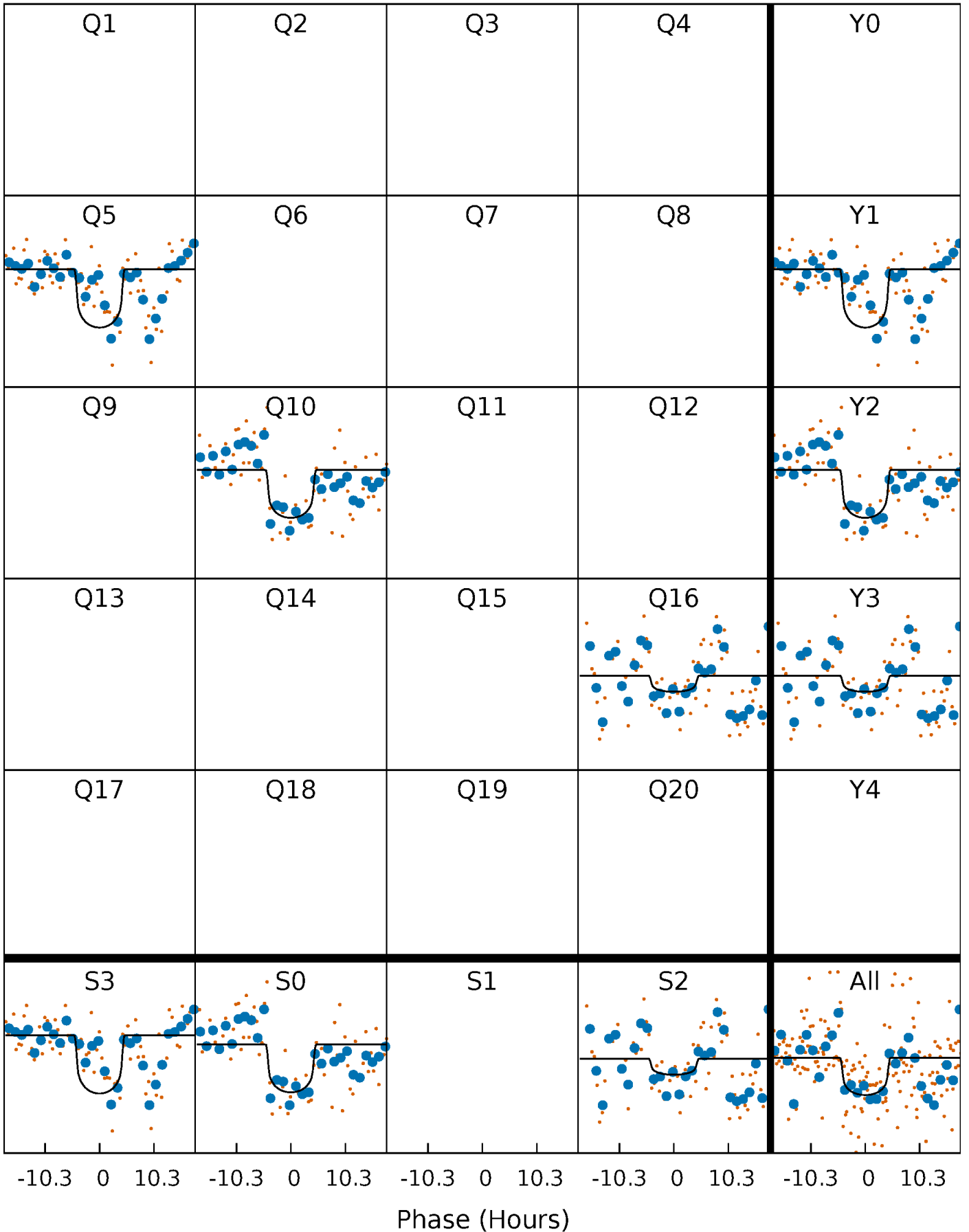
PDC Quarter-Phased Transit Curves

TCE 010002261-02 $P=514.297193$ Days $T_0=470.792265$ (BKJD)



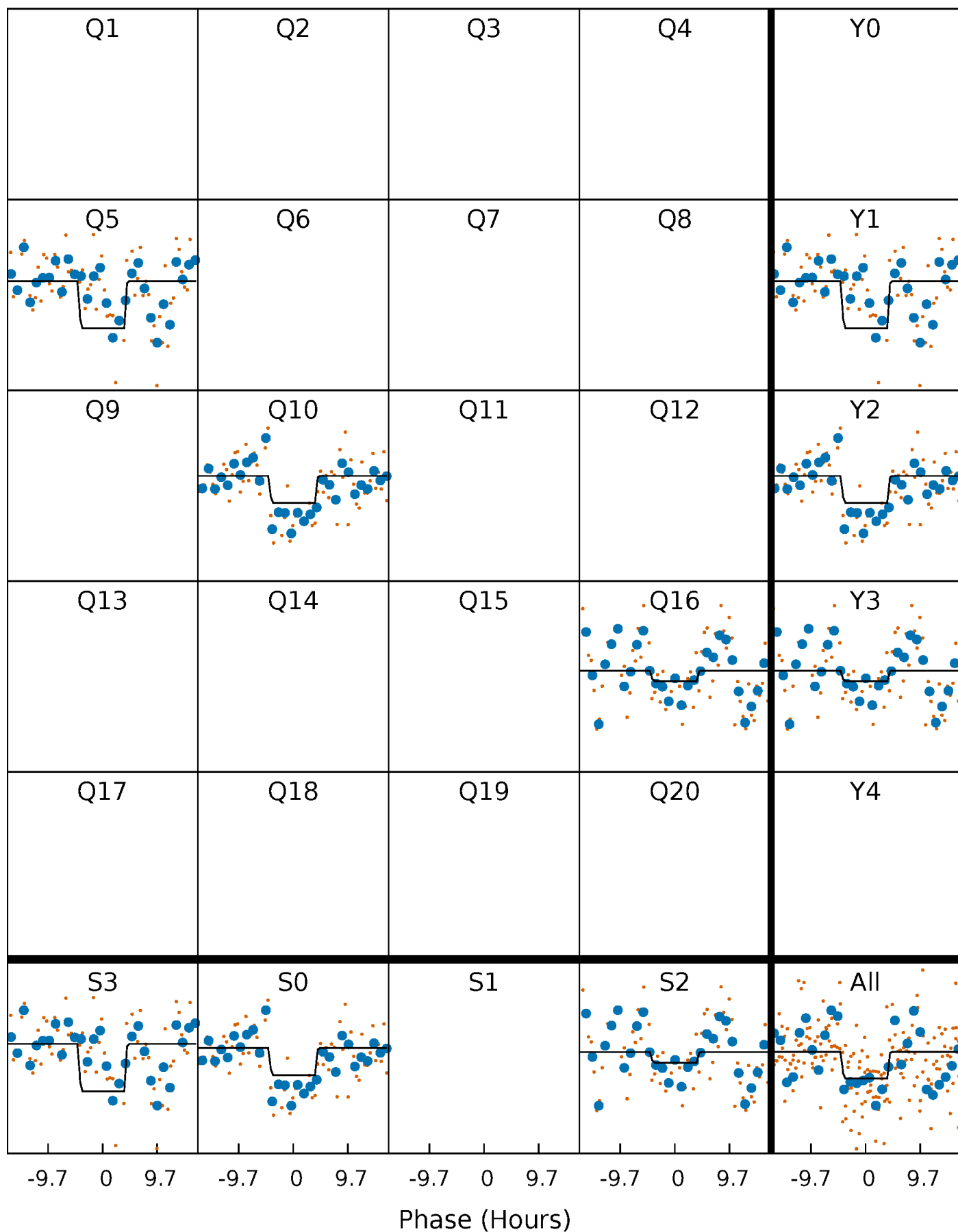
DV Quarter-Phased Transit Curves

TCE 010002261-02 $P=514.297193$ Days $T_0=470.792265$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

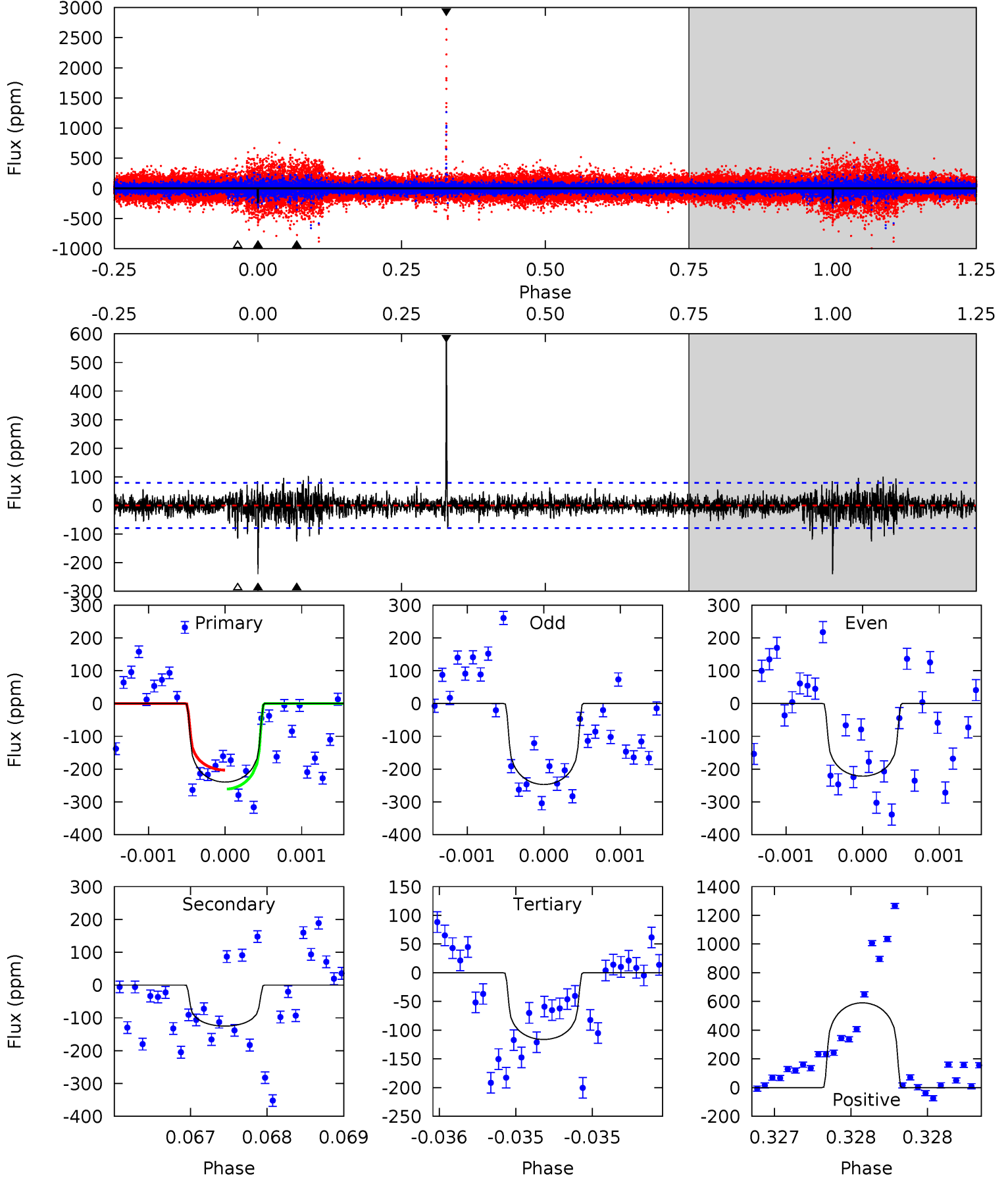
TCE 010002261-02 $P=514.292272$ Days $T_0=470.796730$ (BKJD)



DV Model-Shift Uniqueness Test

010002261-02, P = 514.297193 Days, E = 470.792265 Days

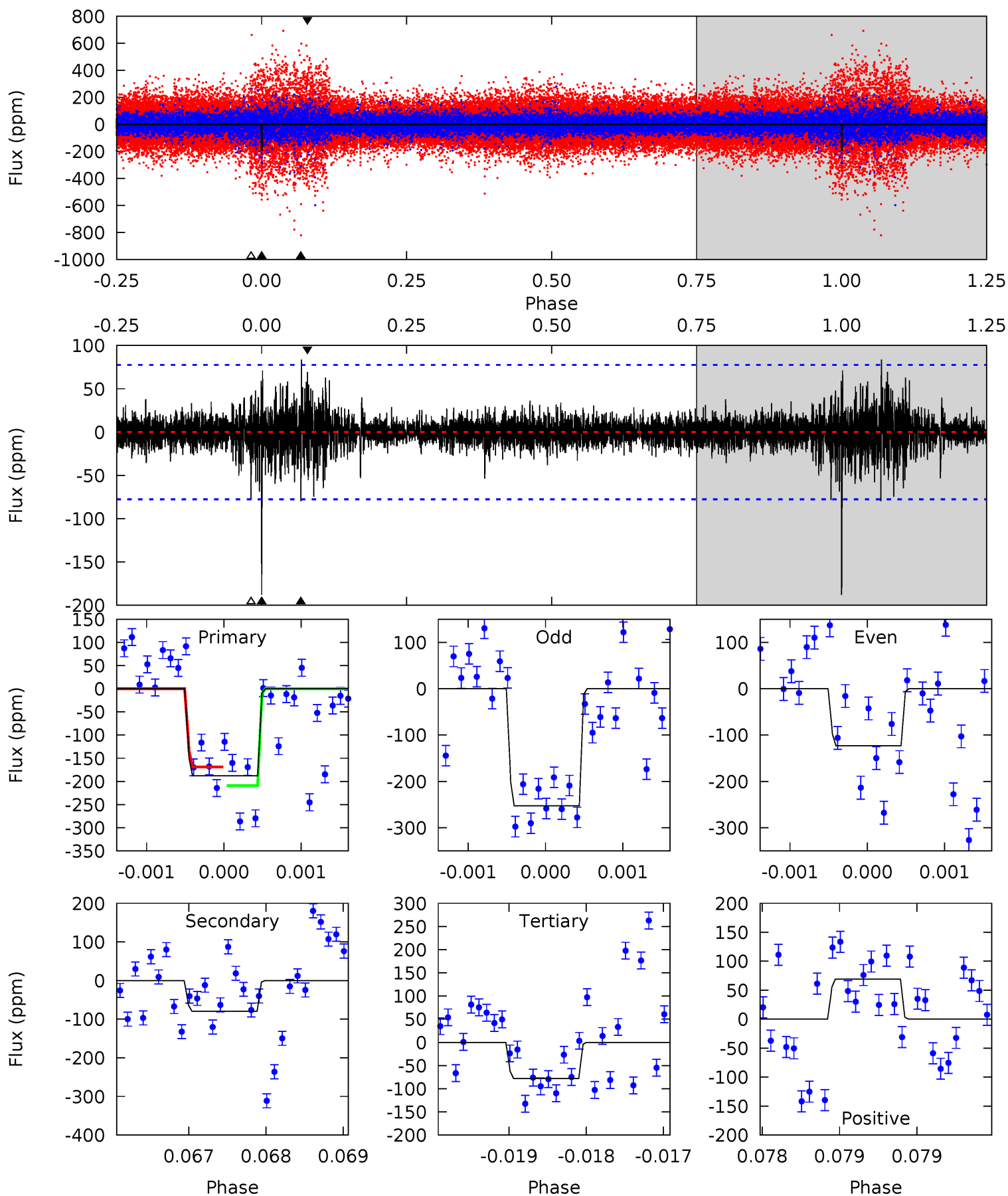
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	8.70	8.08	41.0	5.50	3.37	1.74	8.57	-24.4	0.62	-32.3	0.79	1.00	0.71	1.98



Alt Model-Shift Uniqueness Test

010002261-02, P = 514.292272 Days, E = 470.796730 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	5.66	5.56	4.92	5.51	3.38	0.92	7.79	8.43	0.10	0.74	4.39	0.79	0.31	1.43



Stellar Parameters For KIC 010002261

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	2661^{+1}_{-1}	$5.283^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$0.116^{+1.000}_{-1.000}$	$0.094^{+1.000}_{-1.000}$	$85.200^{+1.000}_{-1.000}$
	+0%/-0%	+19%/-19%	+inf%/-inf%	+862%/-862%	+1064%/-1064%	+1%/-1%
Source	PHO54	PHO54	PHO54	BTSL		

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

Secondary Eclipse Parameters for KIC 010002261-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-125 ± 14	$0.32^{+0.28}_{-0.22}$	76^{+7}_{-8}	2275^{+736}_{-312}	$265221^{+2081699}_{-187204}$
Alt.	-80 ± 14	$0.28^{+0.29}_{-0.19}$	76^{+7}_{-8}	2215^{+645}_{-309}	$224925^{+1471055}_{-166595}$

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 $A_{obs} \gg 1.0$

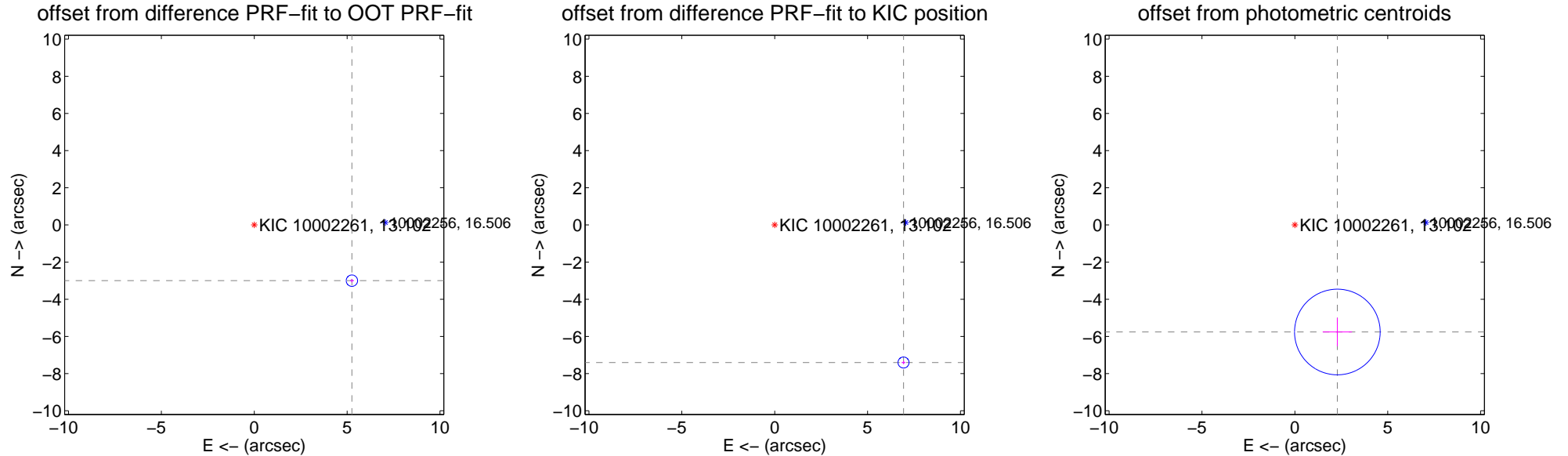
DV Centroid Data

Supplemental centroid analysis for 010002261-02. Kepler magnitude: 13.10. Transit SNR 10.41

There are 1 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 4.71 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.053 ± 0.102	59.25	-5.258 ± 0.105	-2.999 ± 0.093
PRF-fit source offset from KIC position	10.146 ± 0.099	102.56	-6.937 ± 0.105	-7.405 ± 0.093
photometric centroid source offset	6.20 ± 0.77	8.07	-2.29 ± 0.79	-5.76 ± 0.77

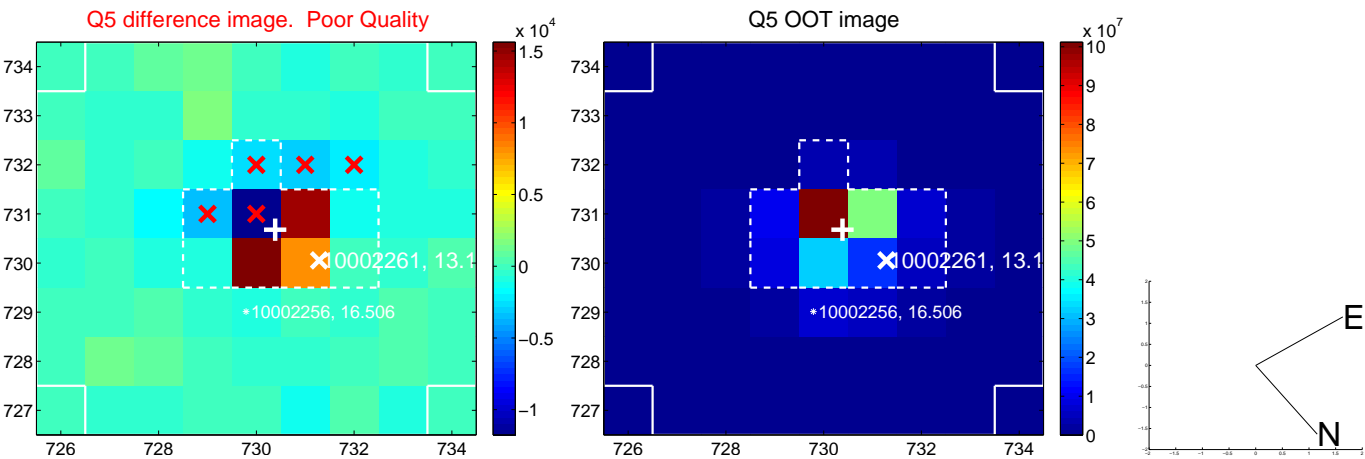


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

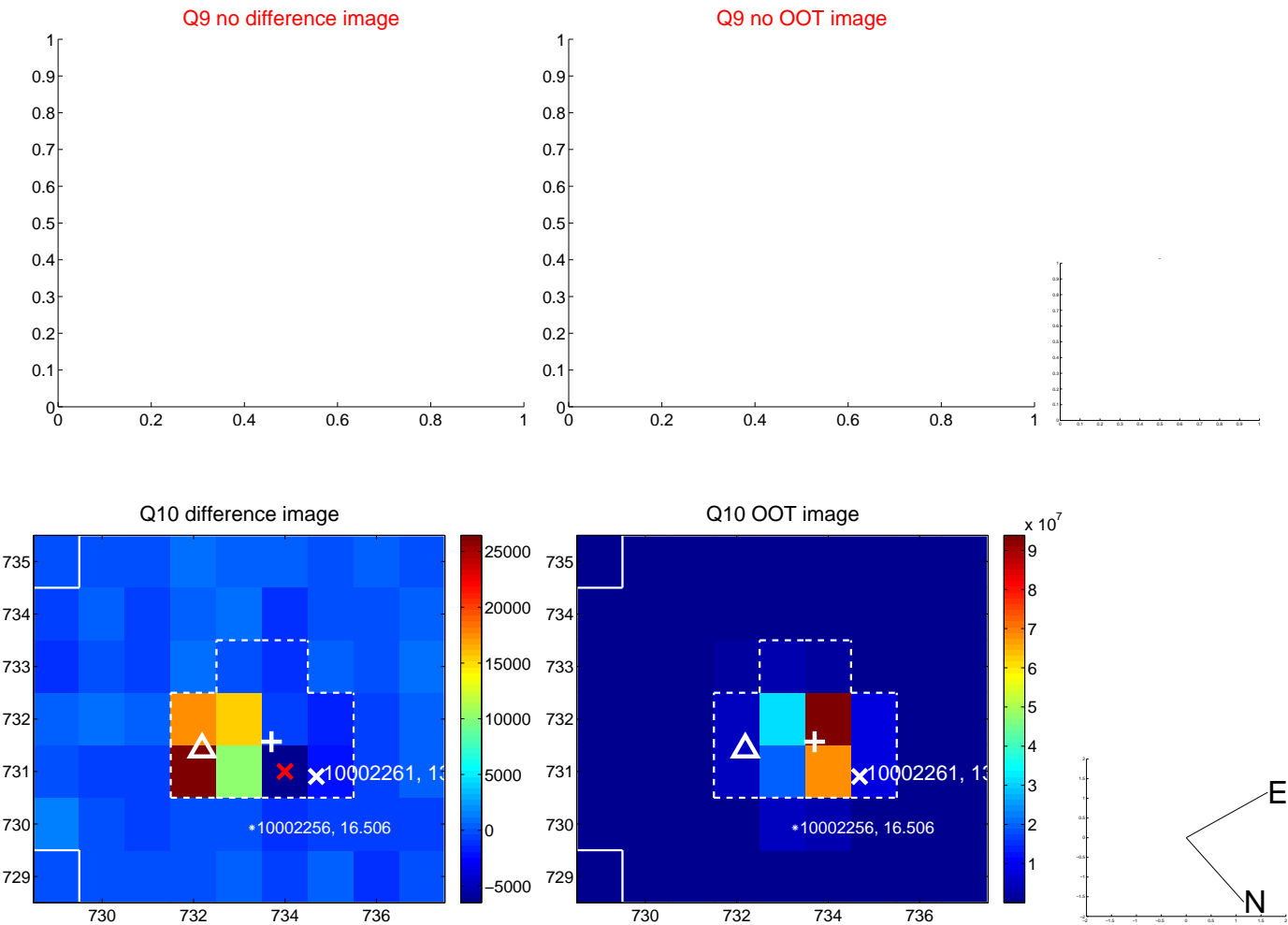
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



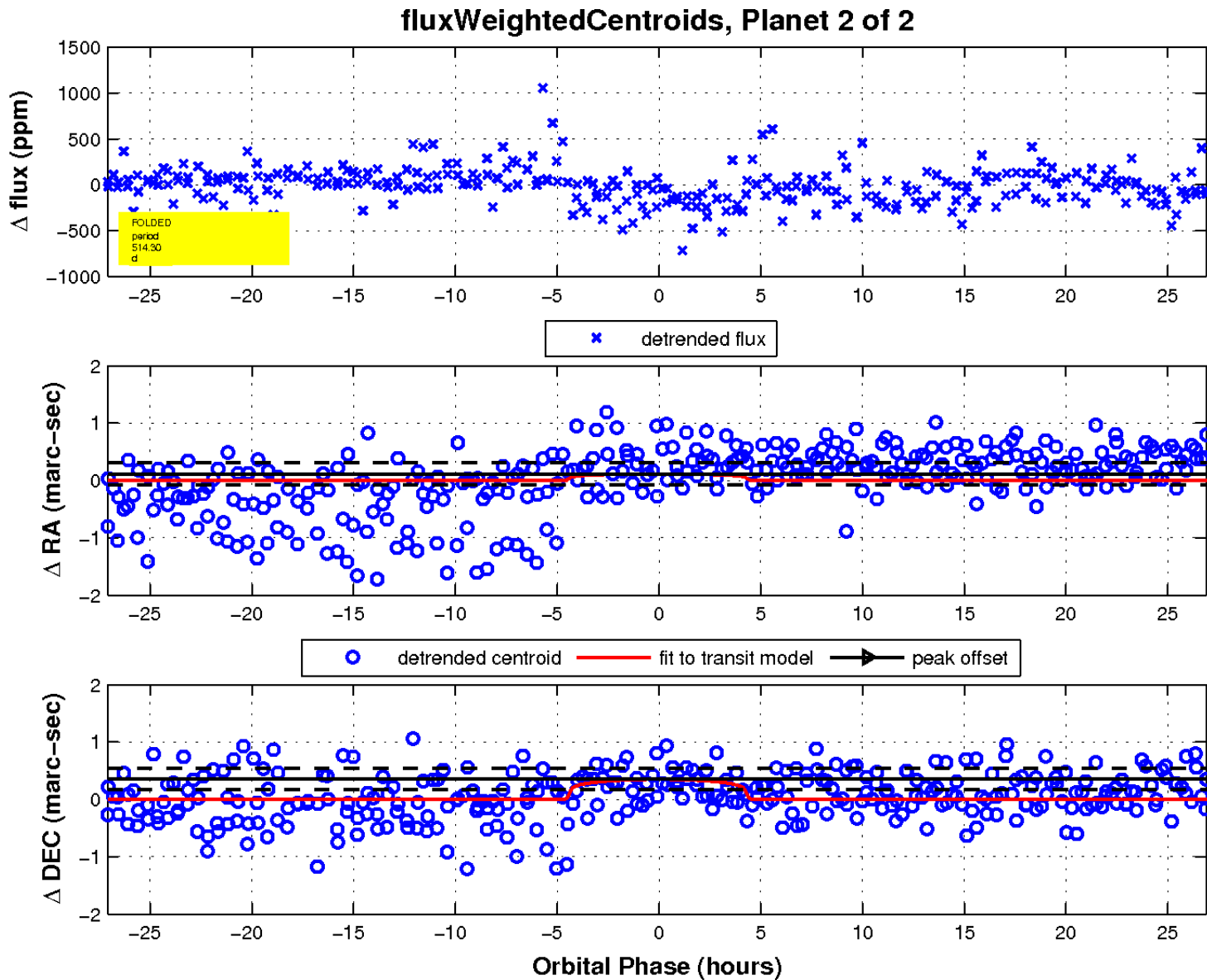
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

