

KIC 010196750

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})
010196750-01	OBS	No	510.007558	278.953172	1787.0	6.091	11.1	7.4	0.69	4579	2.79	0.15
010196750-02	OBS	No	529.867927	329.095103	1956.9	2.435	11.6	7.0	0.69	4579	3.18	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010196750-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010196750-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—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.

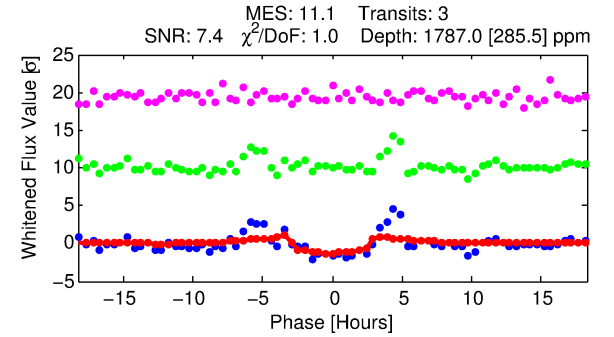
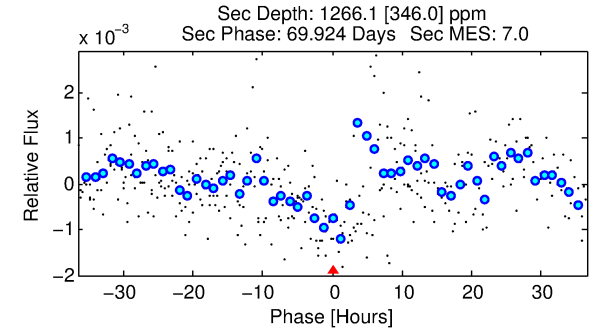
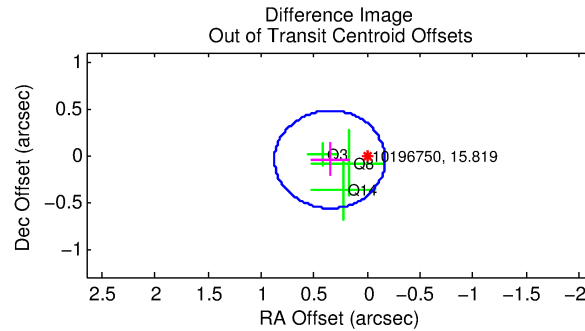
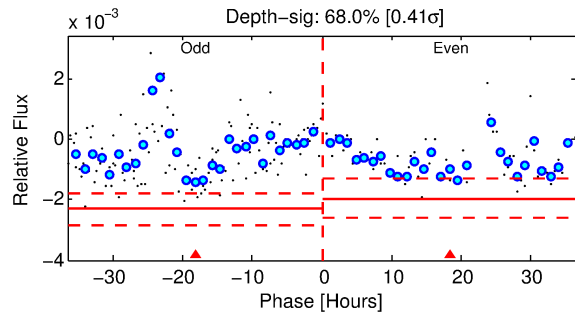
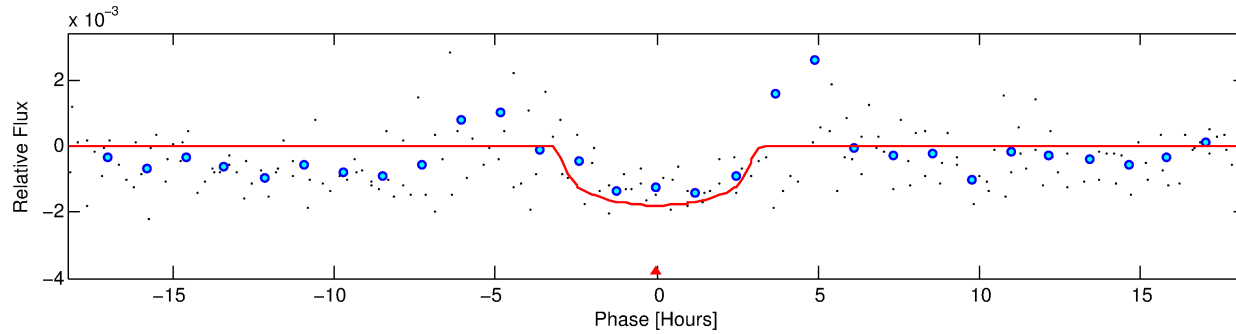
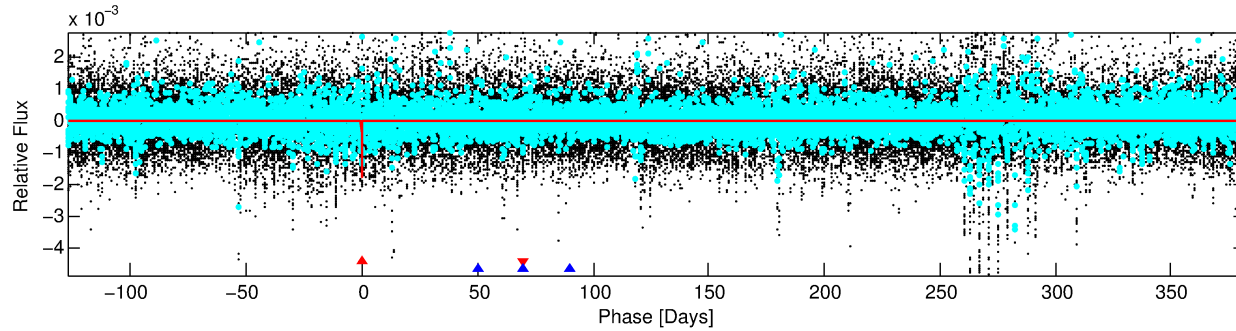
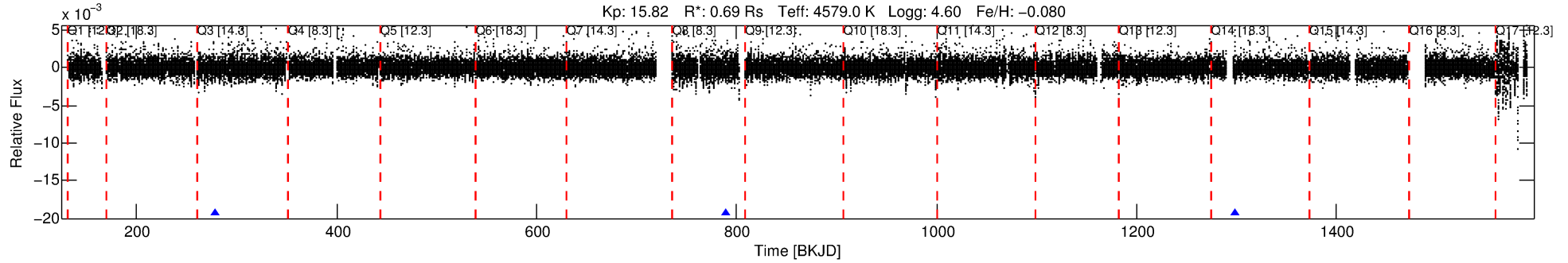
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010196750-01

No Significant Match Found

DV One-Page Summary

KIC: 10196750 Candidate: 1 of 2 Period: 510.008 d



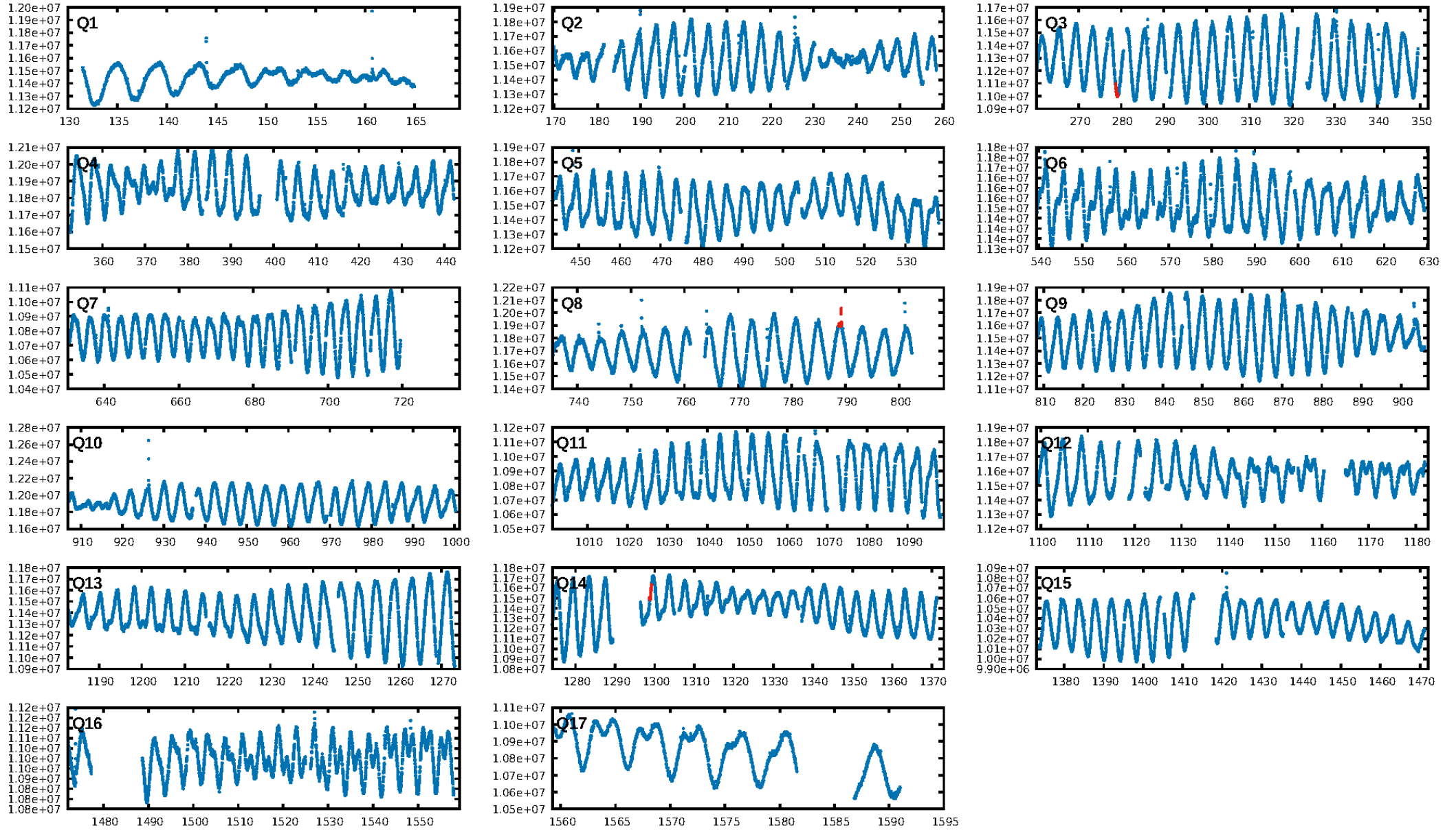
DV Fit Results:

Period = 510.00756 [0.00771] d
Epoch = 278.9532 [0.0115] BKJD
Rp/R* = 0.0371 [0.0612]
a/R* = 662.07 [3265.29]
b = 0.06 [78.20]
Seff = 0.15 [0.02]
Teq = 160 [6] K
Rp = 2.79 [4.61] Re
a = 1.1004 [0.0775] AU
Ag = 108601.22 [360189.66] [0.30 σ]
Teffp = 4486 [3721] K [1.16 σ]

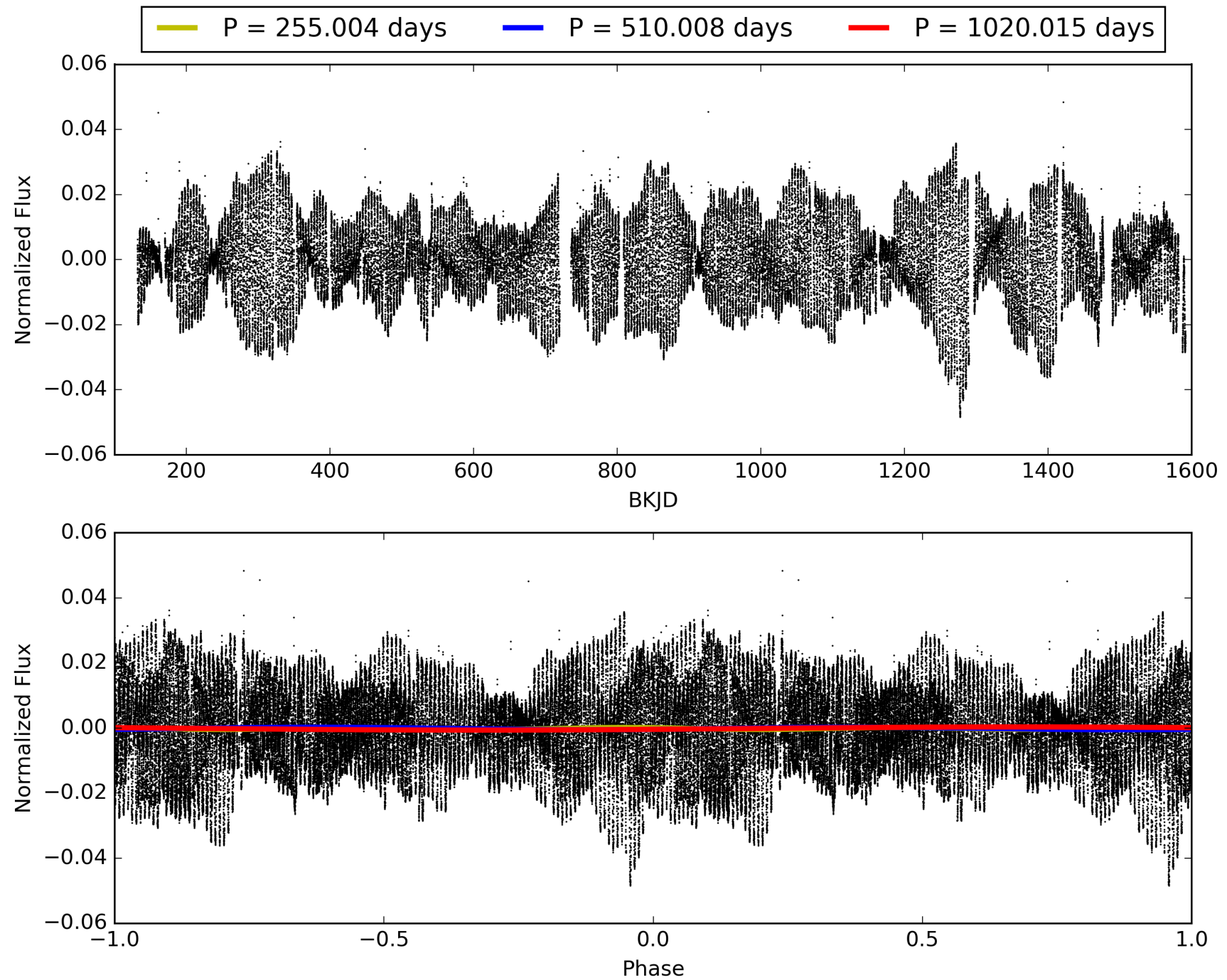
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [72.66 σ]
ModelChiSquare2-sig: 9.7%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: 3.92e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 17.67
Centroid-sig: 16.5%
Centroid-so: 1.928 arcsec [1.33 σ]
OotOffset-rm: 0.355 arcsec [2.04 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-rm: 0.442 arcsec [2.54 σ]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 010196750-01, PDC Light Curves

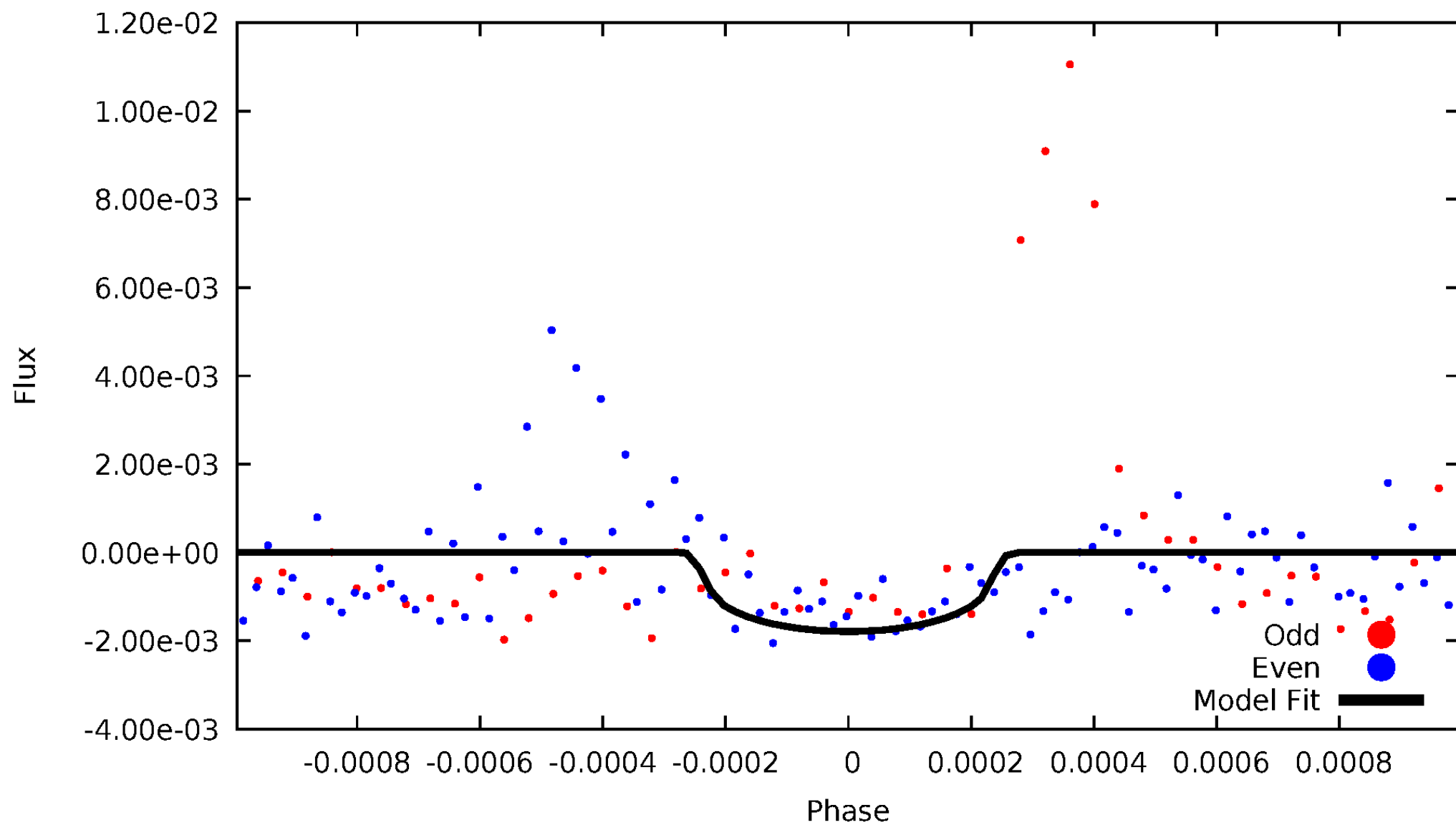


TCE 010196750-01



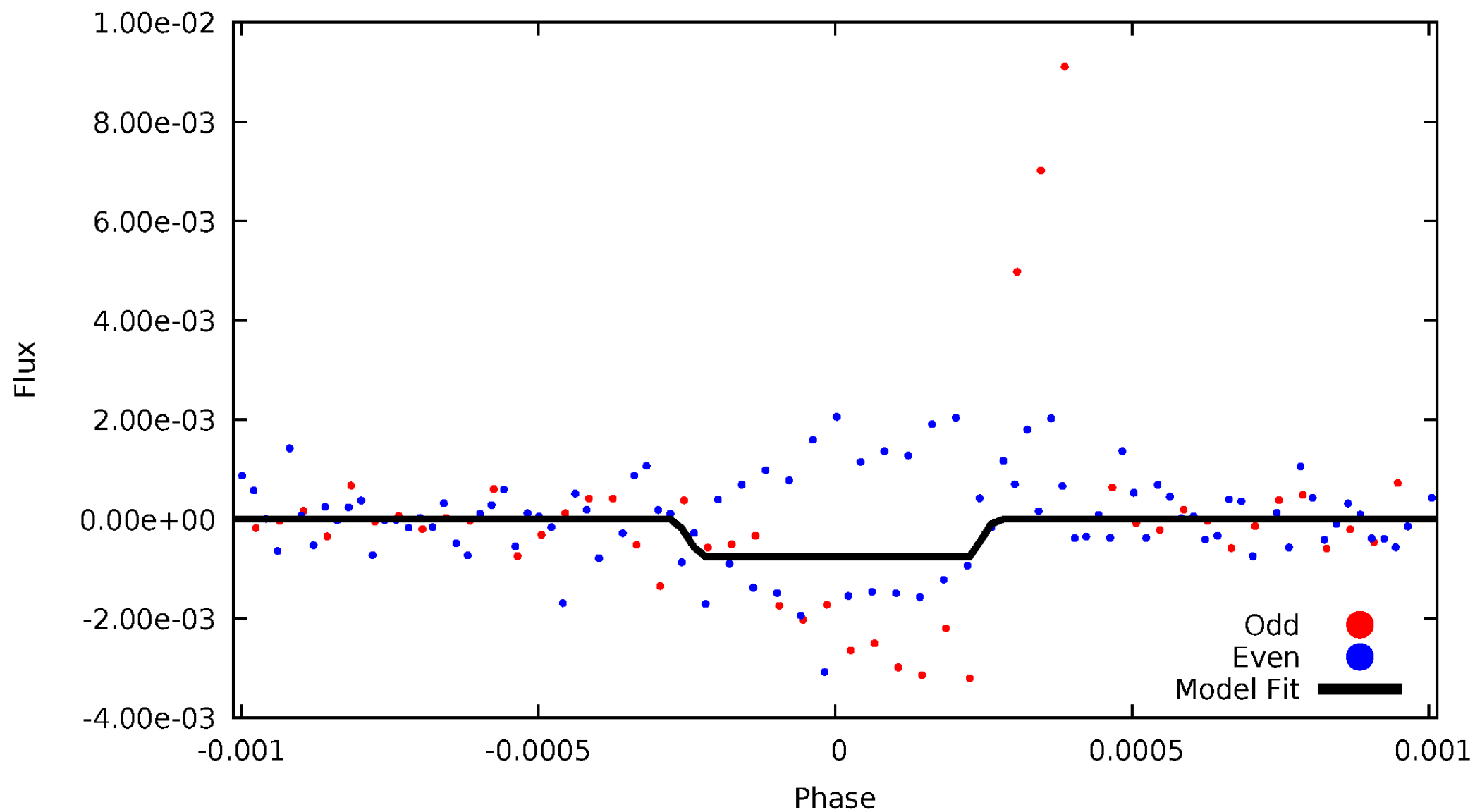
DV Odd/Even

TCE 010196750-01

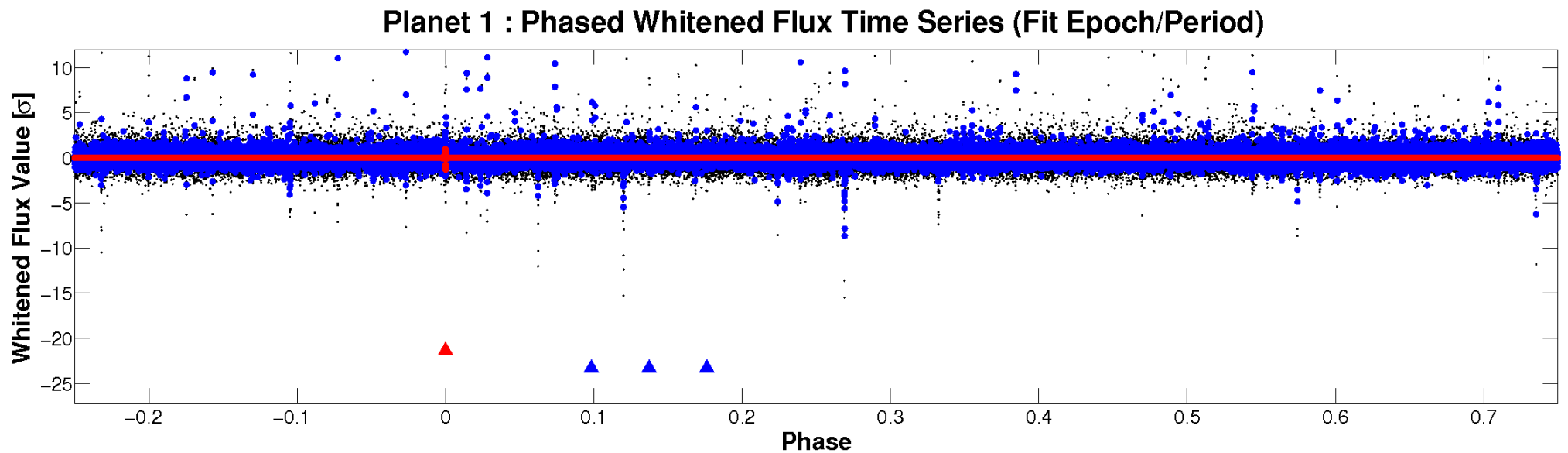
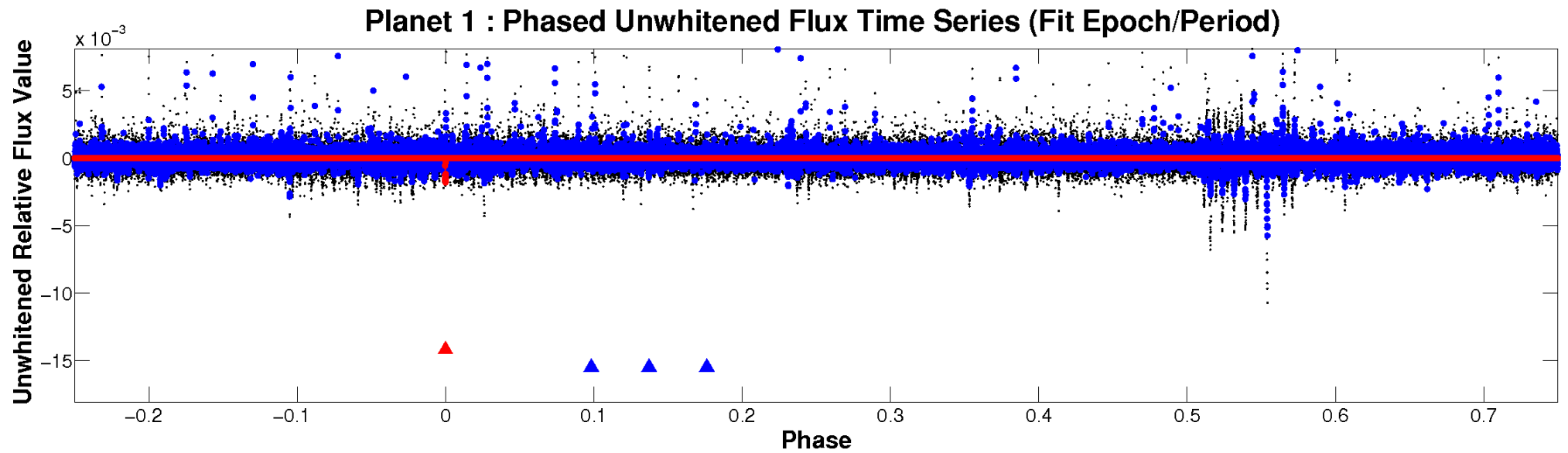


ALT Odd/Even

TCE 010196750-01

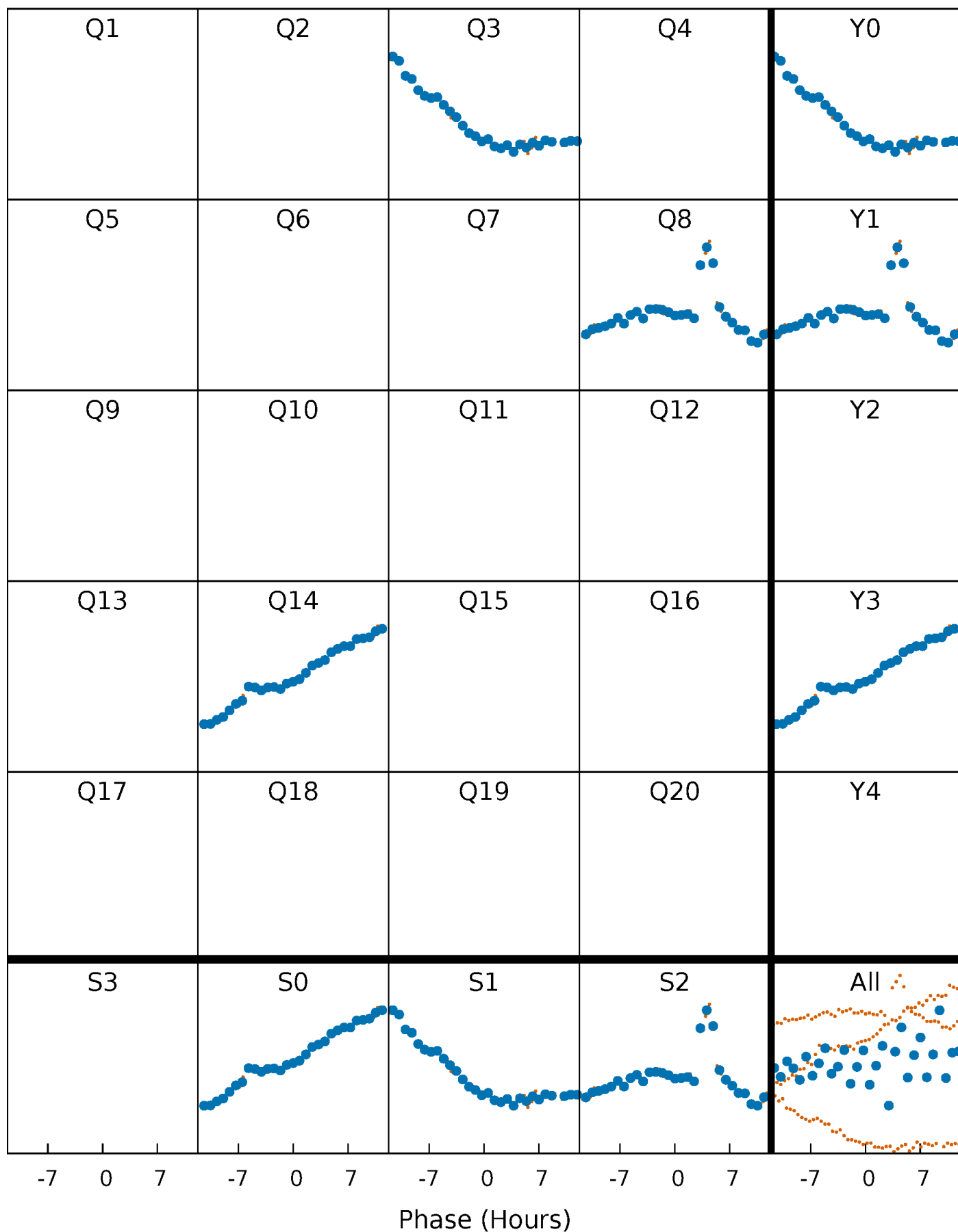


Non-Whitened Vs. Whitened Light Curve



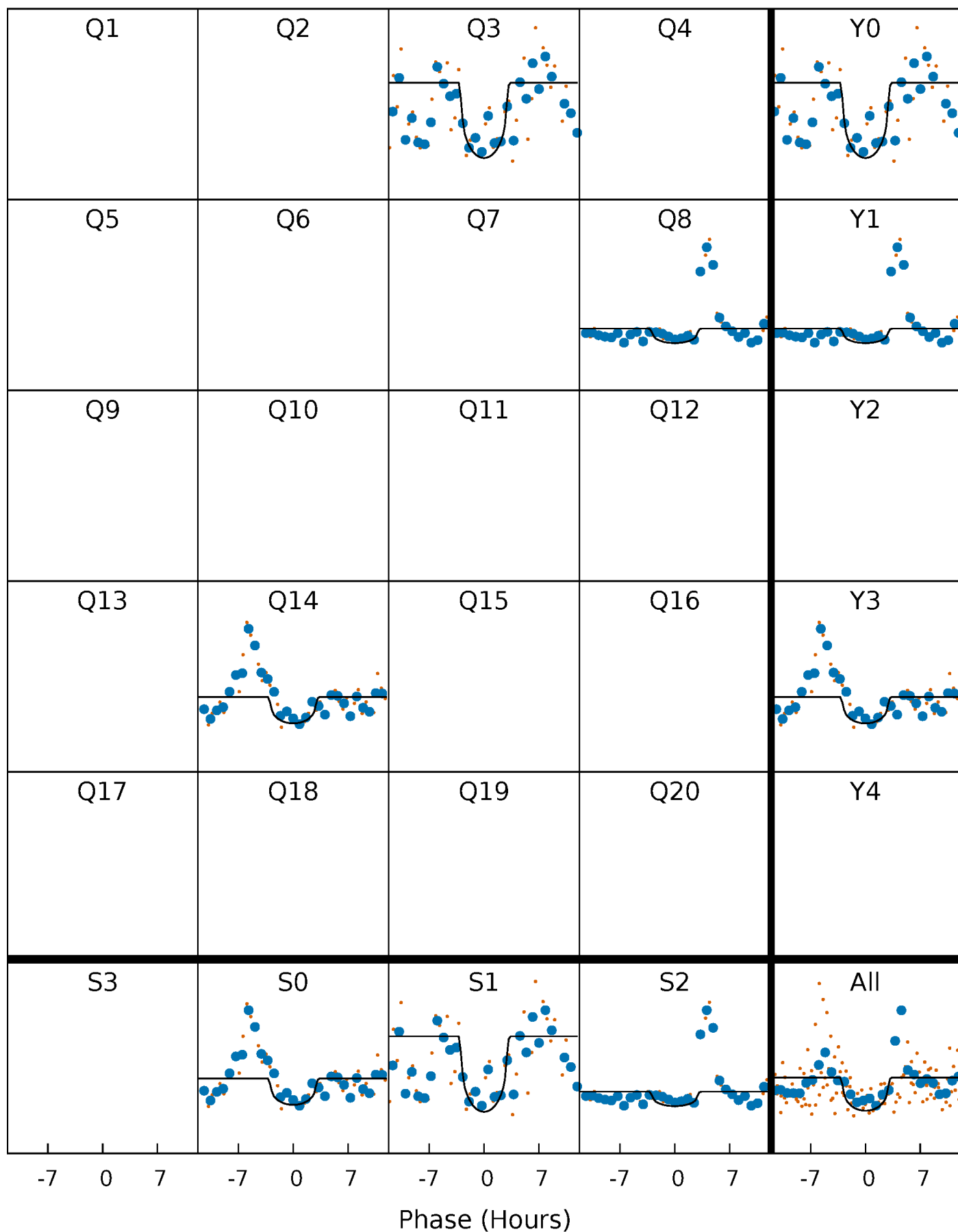
PDC Quarter-Phased Transit Curves

TCE 010196750-01 P=510.007558 Days $T_0=278.953172$ (BKJD)



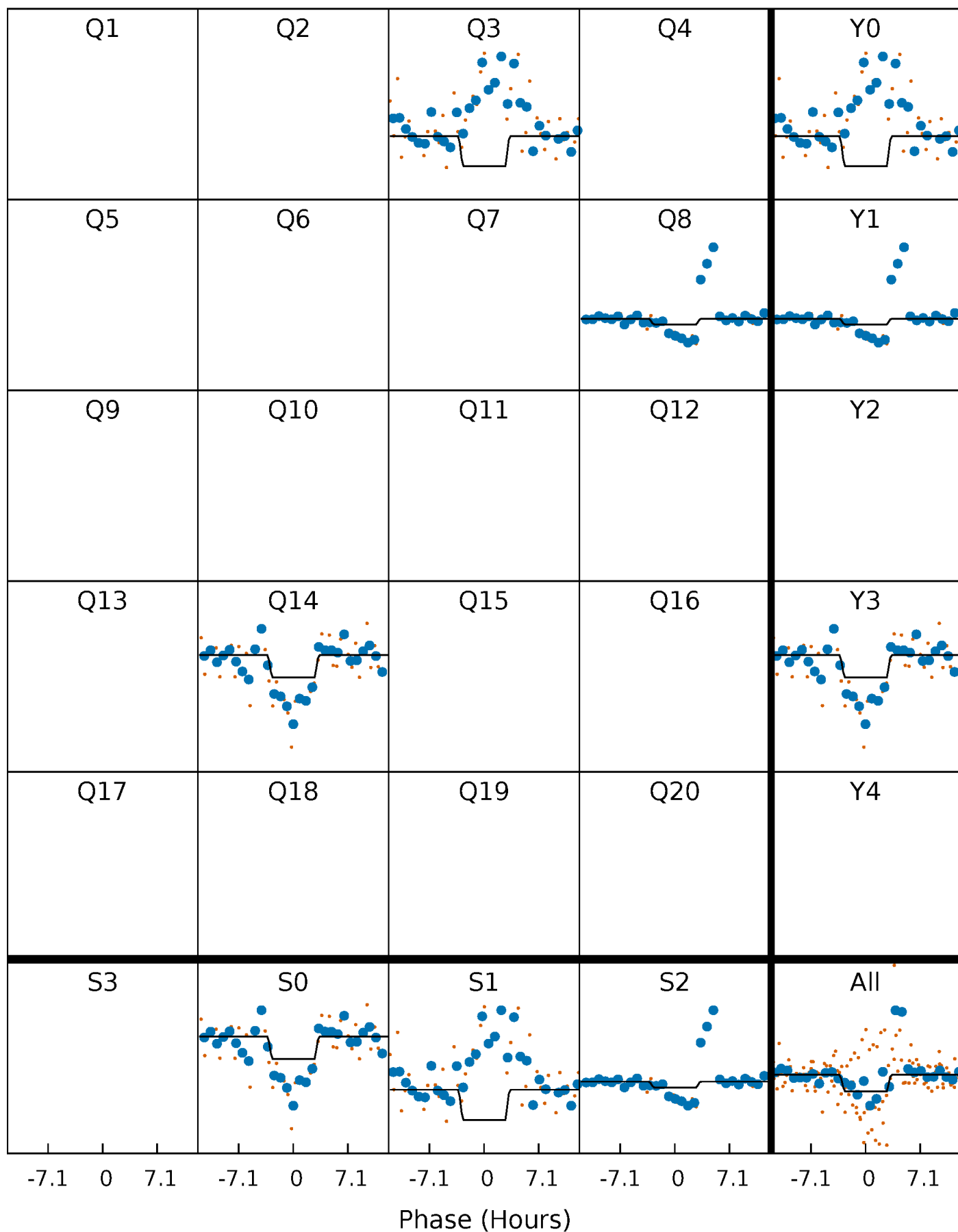
DV Quarter-Phased Transit Curves

TCE 010196750-01 P=510.007558 Days $T_0=278.953172$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

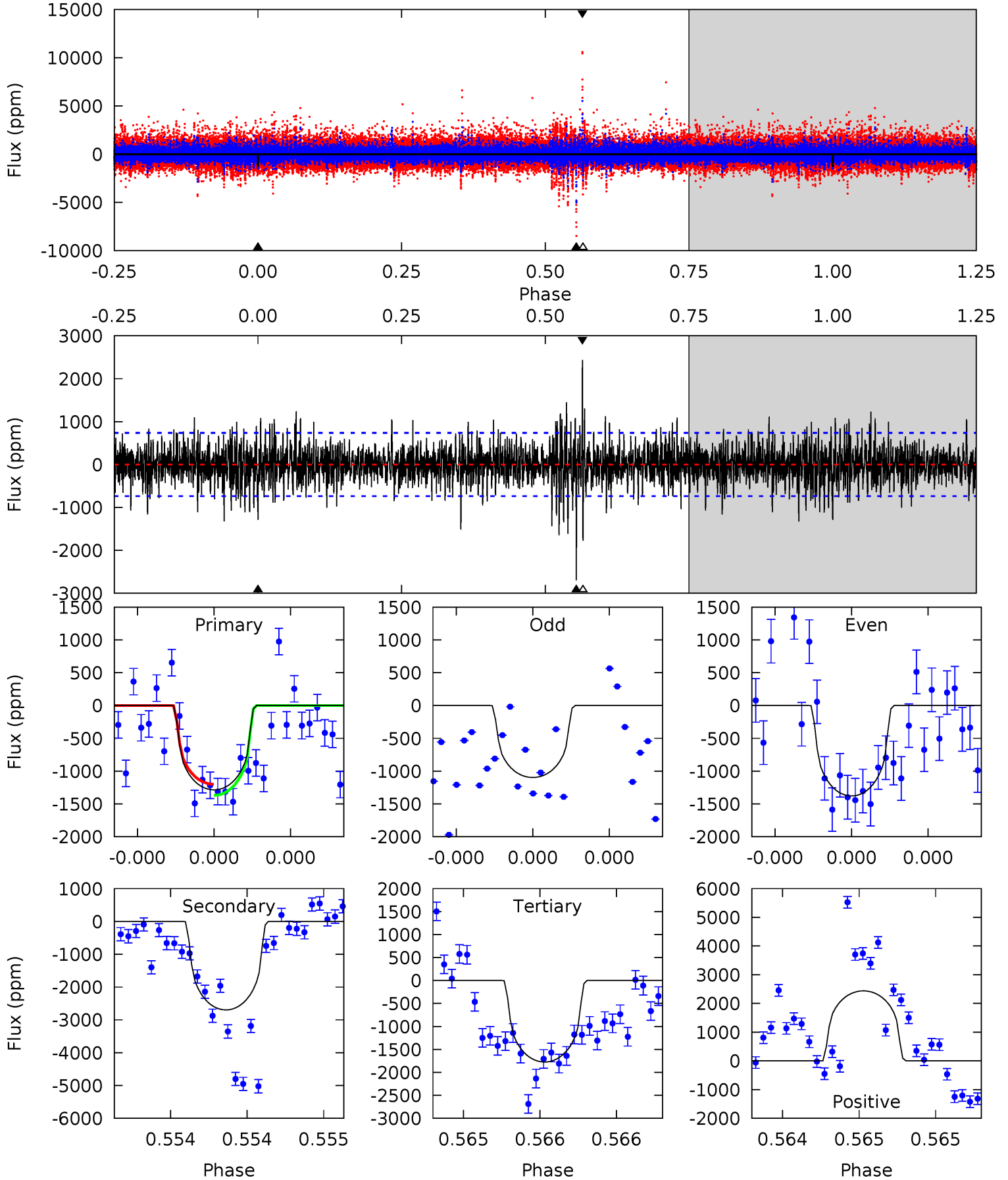
TCE 010196750-01 P=509.967168 Days $T_0=278.980397$ (BKJD)



DV Model-Shift Uniqueness Test

010196750-01, P = 510.007558 Days, E = 278.953172 Days

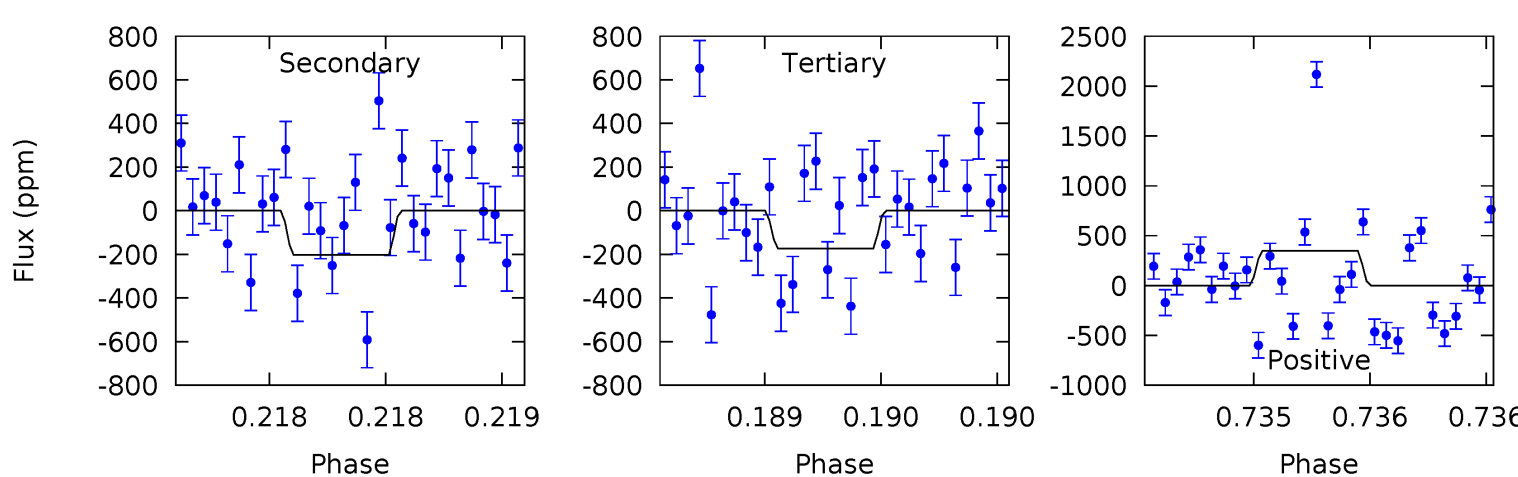
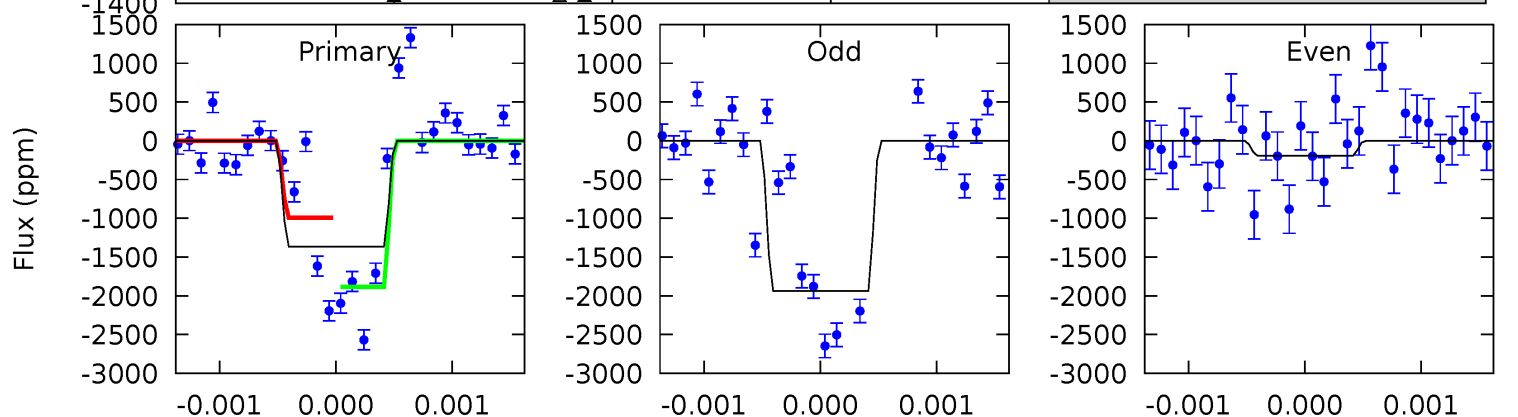
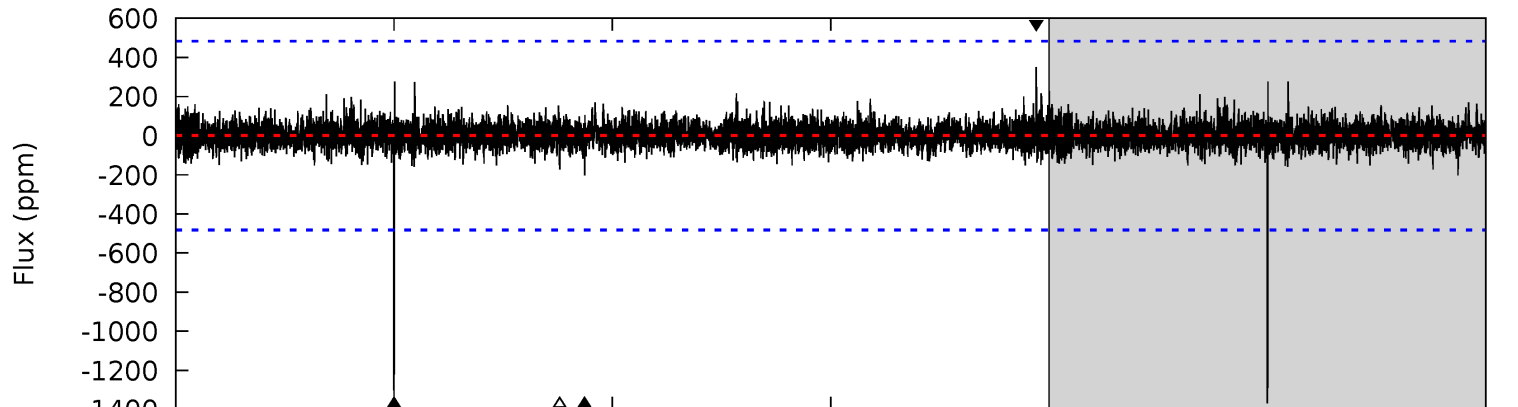
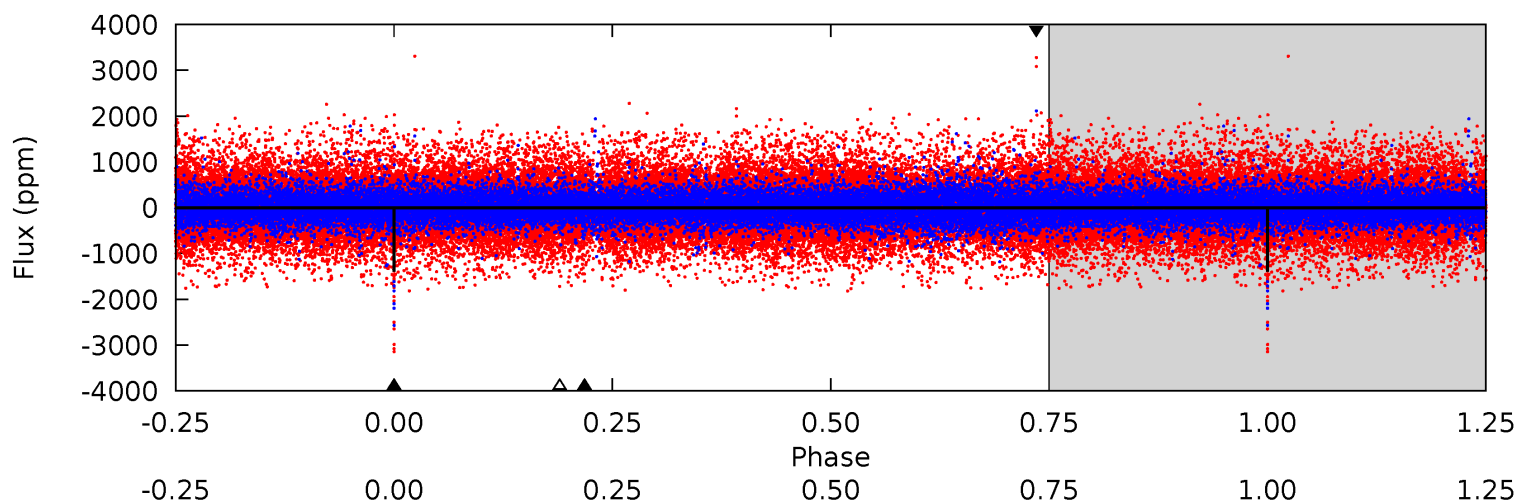
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.75	20.4	13.5	18.5	5.57	3.48	2.55	-3.71	-8.73	6.99	1.96	0.85	0.97	0.47	0.64



Alt Model-Shift Uniqueness Test

010196750-01, P = 509.967168 Days, E = 278.980397 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	2.34	2.00	4.03	5.56	3.46	0.50	13.8	11.7	0.34	-1.69	10.7	0.49	0.20	5.14



Stellar Parameters For KIC 010196750

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4579^{+138}_{-138}	$4.596^{+0.052}_{-0.024}$	$-0.080^{+0.300}_{-0.300}$	$0.689^{+0.045}_{-0.060}$	$0.683^{+0.068}_{-0.056}$	$2.944^{+0.688}_{-0.315}$
	+3%/-3%	+1%/-1%	+375%/-375%	+7%/-9%	+10%/-8%	+23%/-11%
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 010196750-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2697 ± 132	$4.36^{+4.12}_{-2.88}$	222^{+8}_{-8}	4372^{+2747}_{-884}	$96615^{+714932}_{-71024}$
Alt.	-203 ± 87	$3.93^{+3.77}_{-2.58}$	222^{+8}_{-8}	2925^{+1260}_{-501}	7979^{+67166}_{-6114}

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 $A_{obs} \gg 1.0$

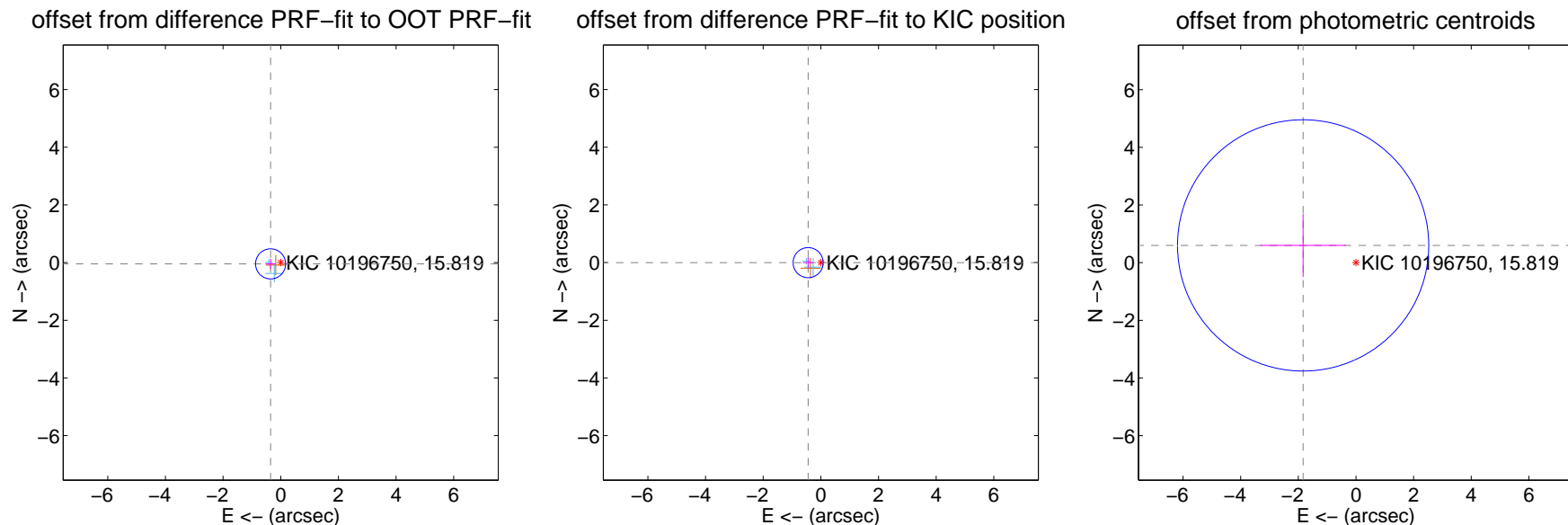
DV Centroid Data

Supplemental centroid analysis for 010196750-01. Kepler magnitude: 15.82. Transit SNR 7.44

There are 2 quarters with good PRF difference image offsets

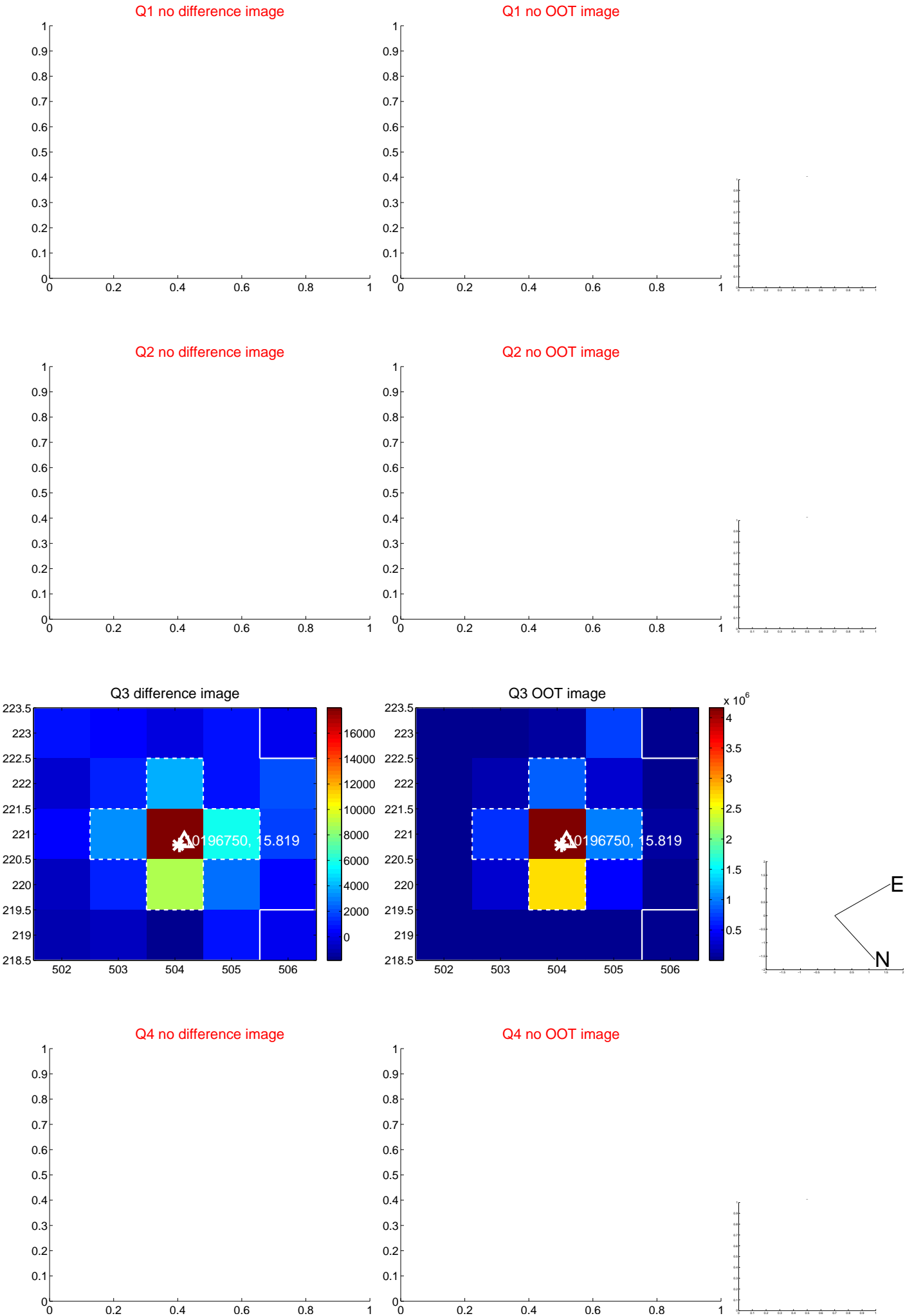
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.355 ± 0.174	2.04	0.352 ± 0.174	-0.045 ± 0.174
PRF-fit source offset from KIC position	0.442 ± 0.174	2.54	0.442 ± 0.174	-0.002 ± 0.174
photometric centroid source offset	1.93 ± 1.45	1.33	1.83 ± 1.49	0.60 ± 1.10

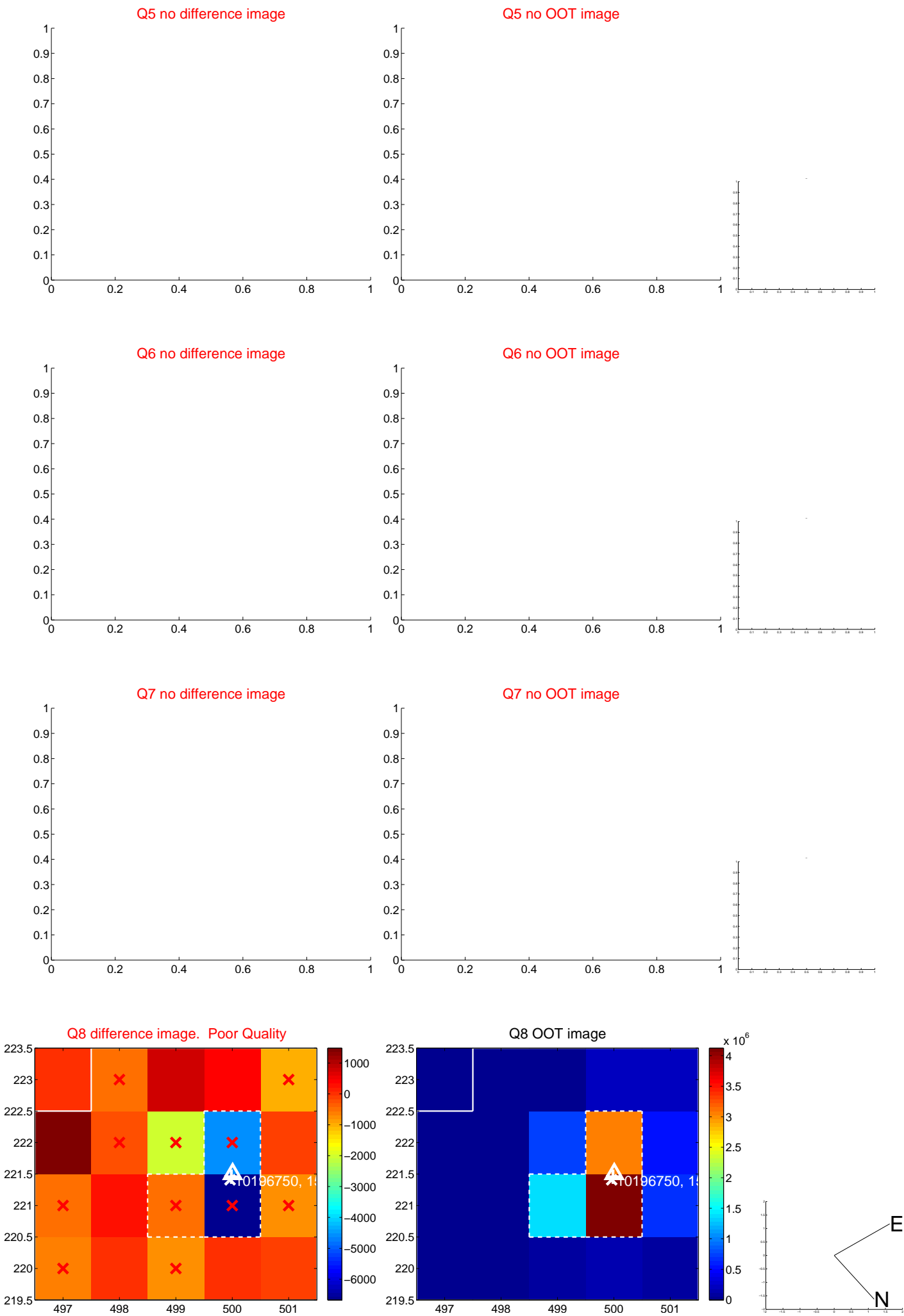


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



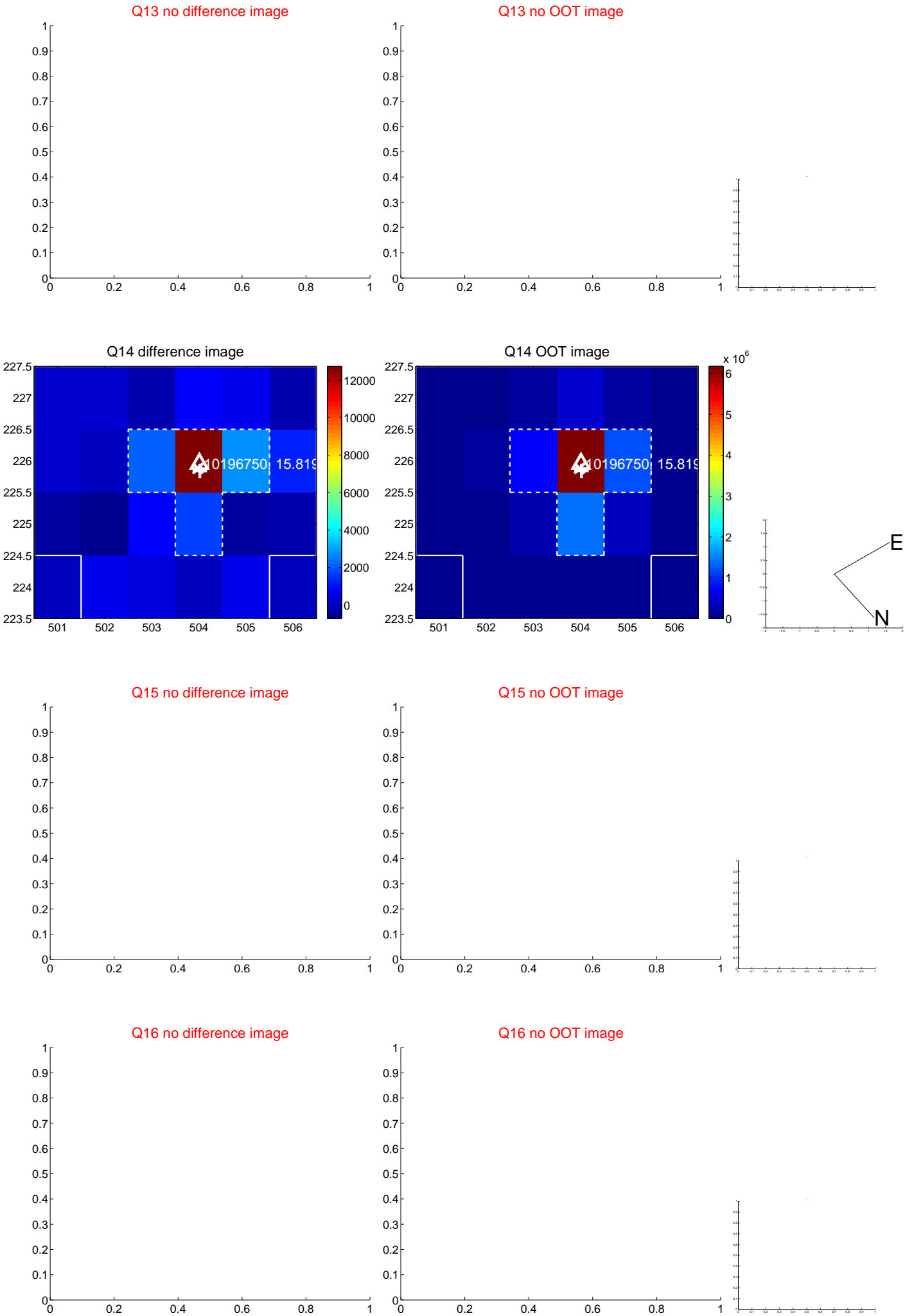
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



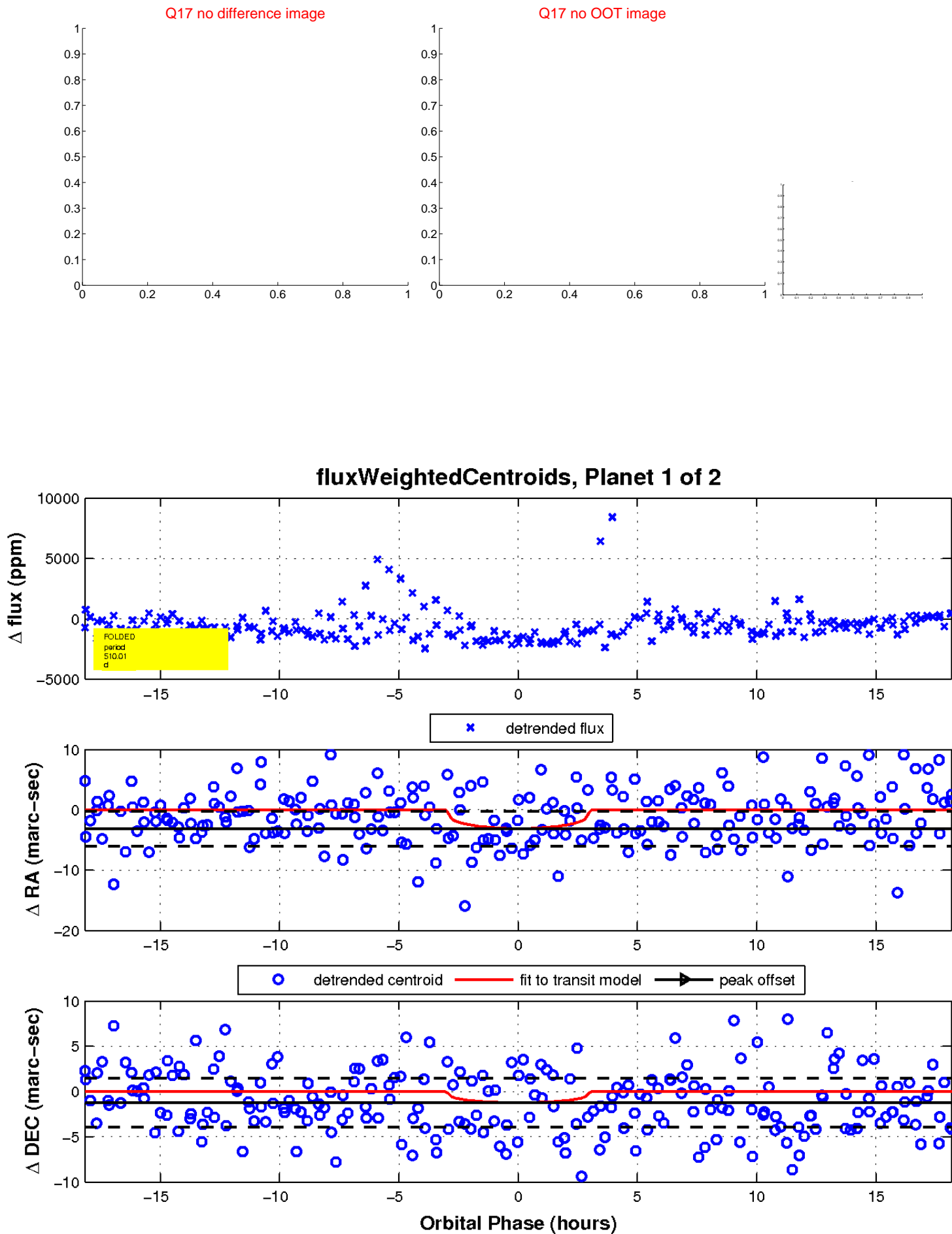
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

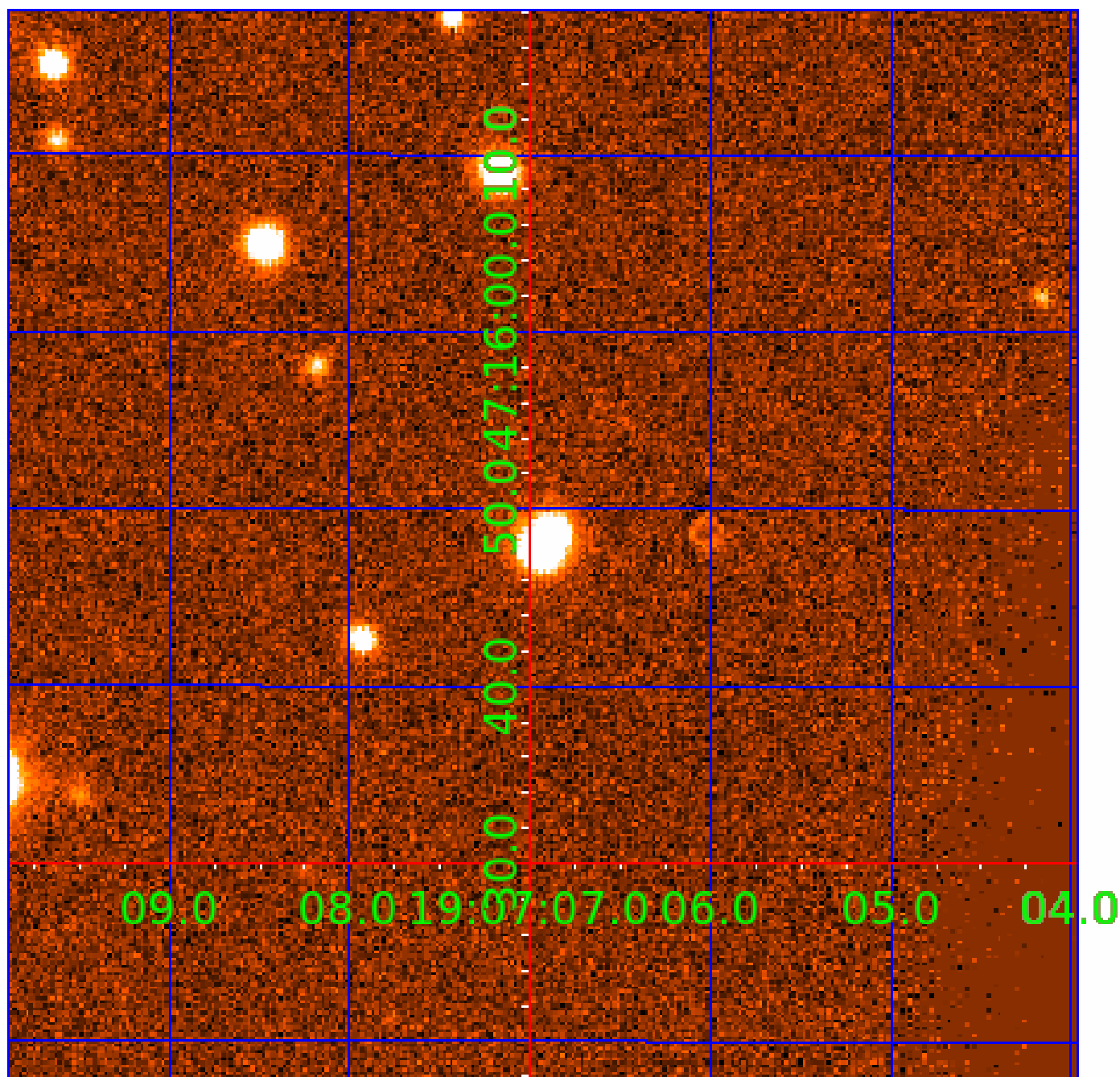


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010196750

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})
010196750-01	OBS	No	510.007558	278.953172	1787.0	6.091	11.1	7.4	0.69	4579	2.79	0.15
010196750-02	OBS	No	529.867927	329.095103	1956.9	2.435	11.6	7.0	0.69	4579	3.18	0.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010196750-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010196750-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—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.

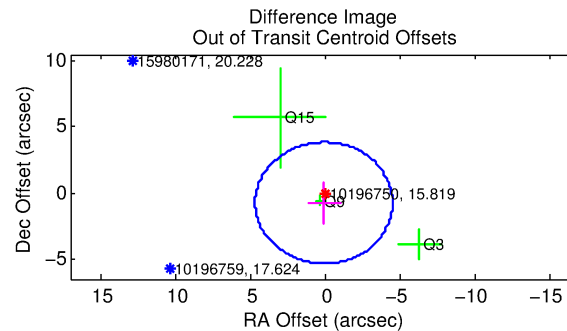
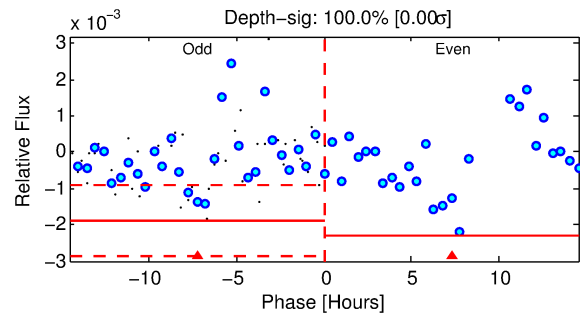
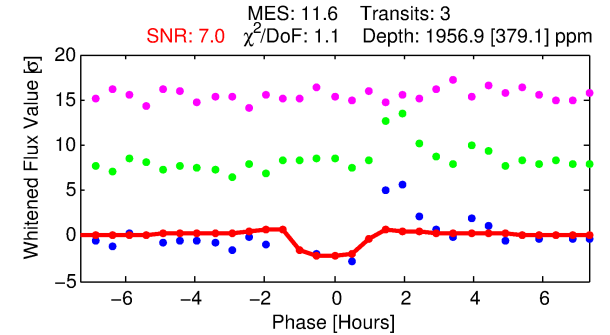
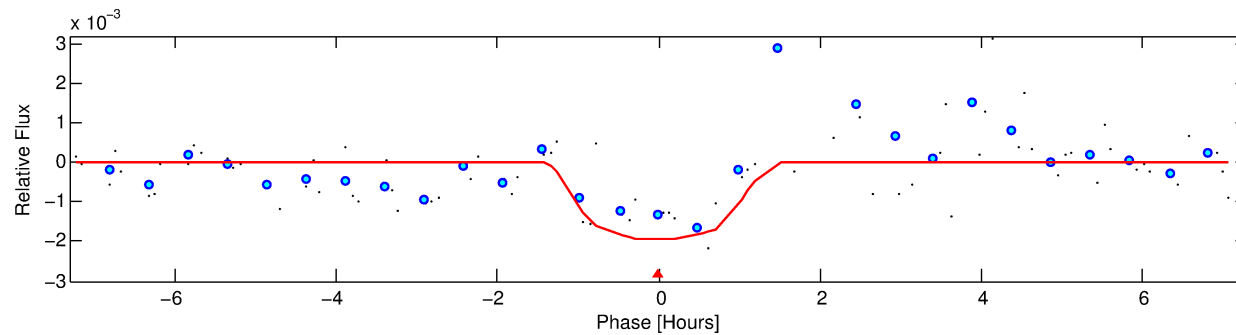
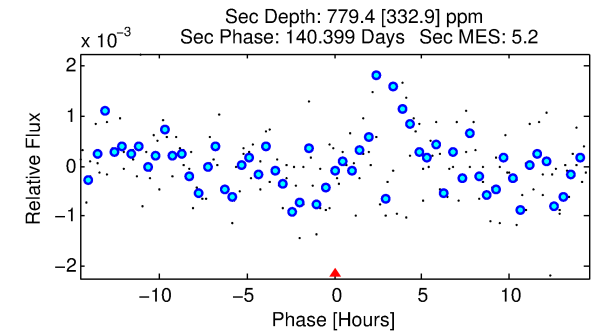
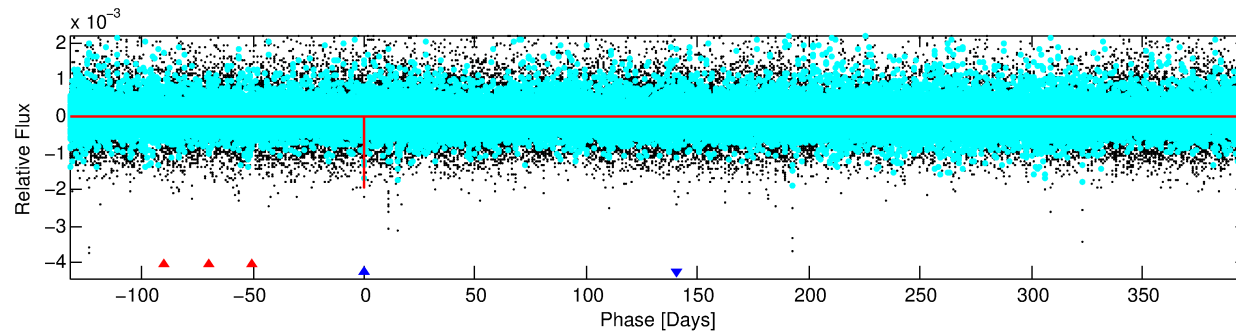
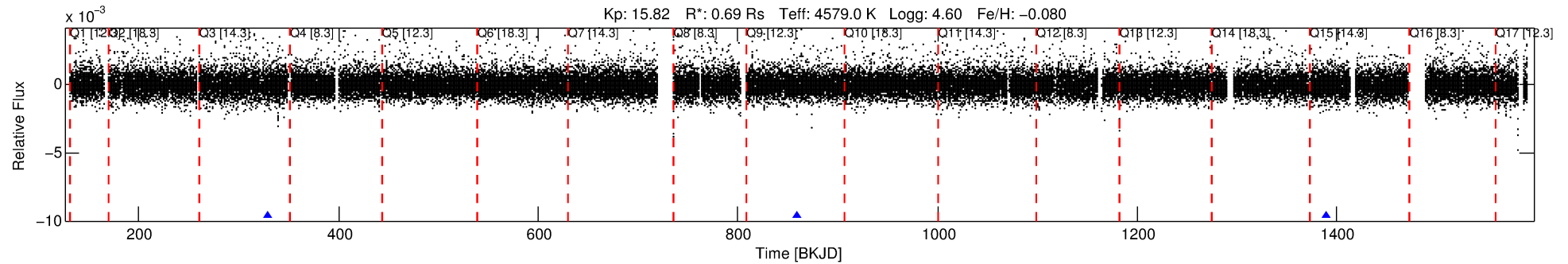
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010196750-02

No Significant Match Found

DV One-Page Summary

KIC: 10196750 Candidate: 2 of 2 Period: 529.868 d



DV Fit Results:

Period = 529.86793 [0.00623] d
Epoch = 329.0951 [0.0091] BKJD
Rp/R* = 0.0423 [0.1144]
a/R* = 1372.66 [11292.73]
b = 0.64 [7.95]
Seff = 0.15 [0.02]
Teq = 158 [6] K
Rp = 3.18 [8.61] Re
a = 1.1288 [0.0795] AU
Ag = 54006.54 [293060.28] [0.18σ]
Teffp = 3720 [5047] K [0.71σ]

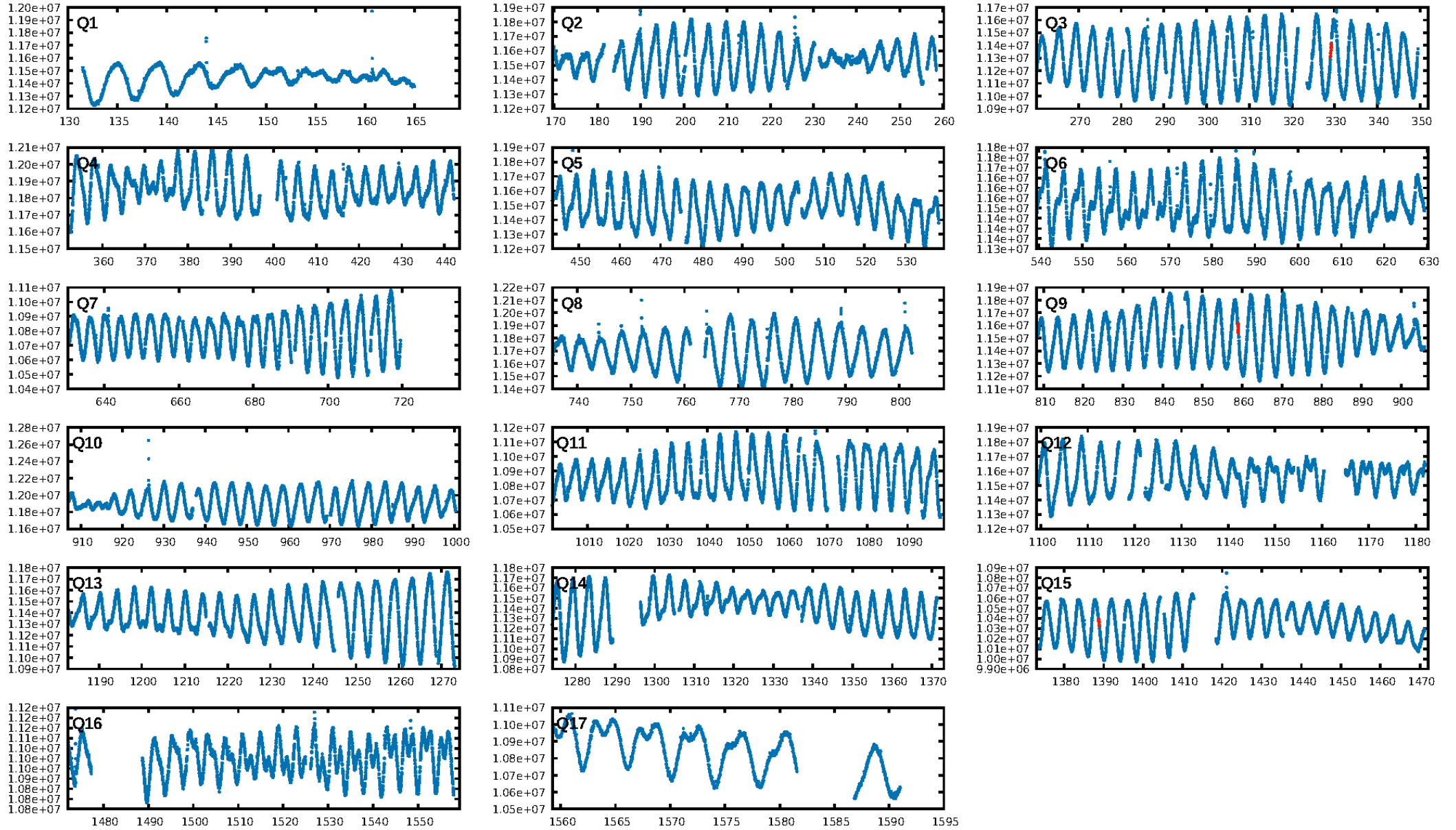
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [72.66σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 24.1%
ModelChiSquareGof-sig: 93.5%
Bootstrap-pfa: 6.62e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.484
Centroid-sig: 74.6%
Centroid-so: 0.382 arcsec [0.30σ]
OotOffset-rm: 0.744 arcsec [0.49σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-rm: 0.762 arcsec [0.44σ]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

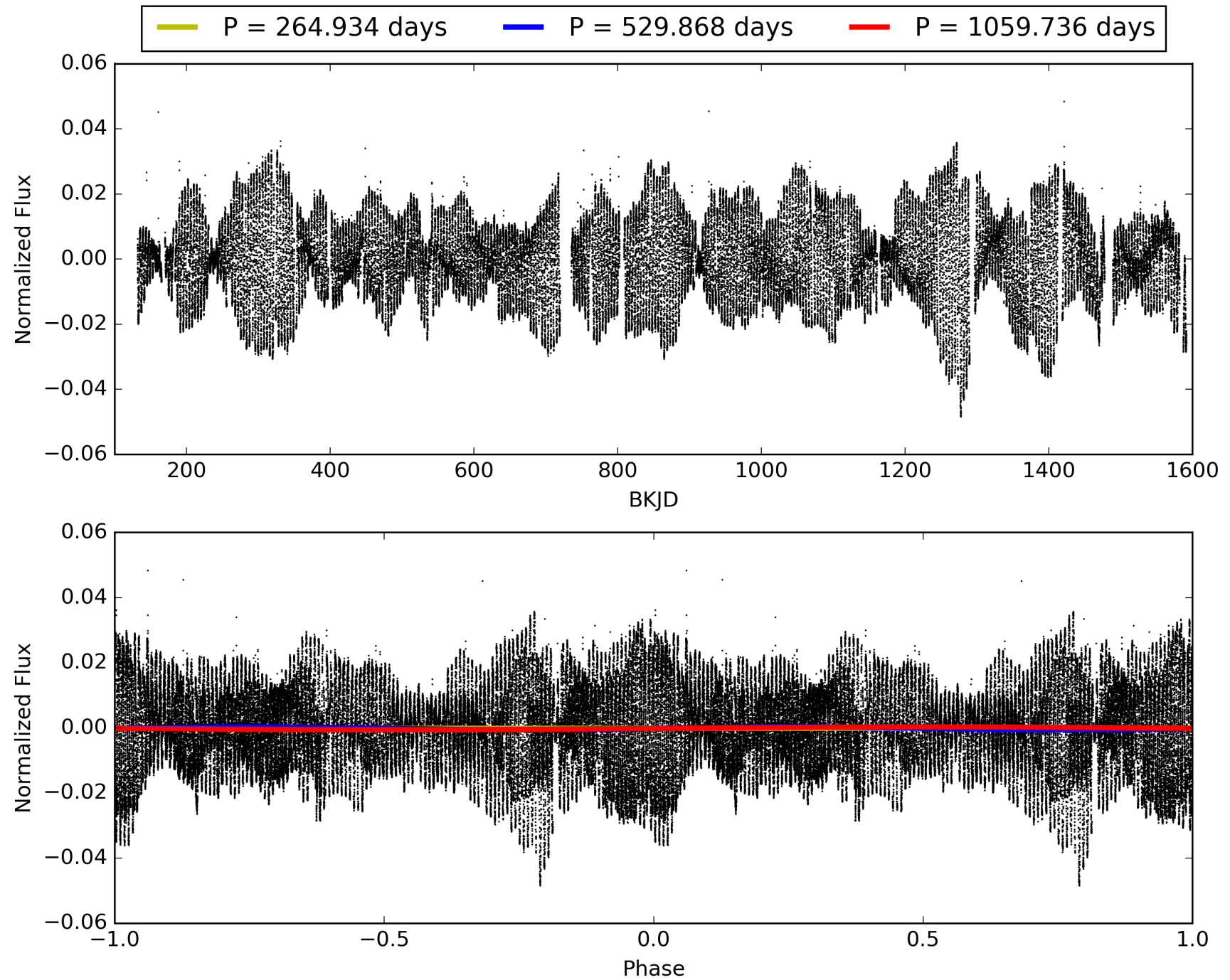
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 13:37:52 Z

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

TCE 010196750-02, PDC Light Curves

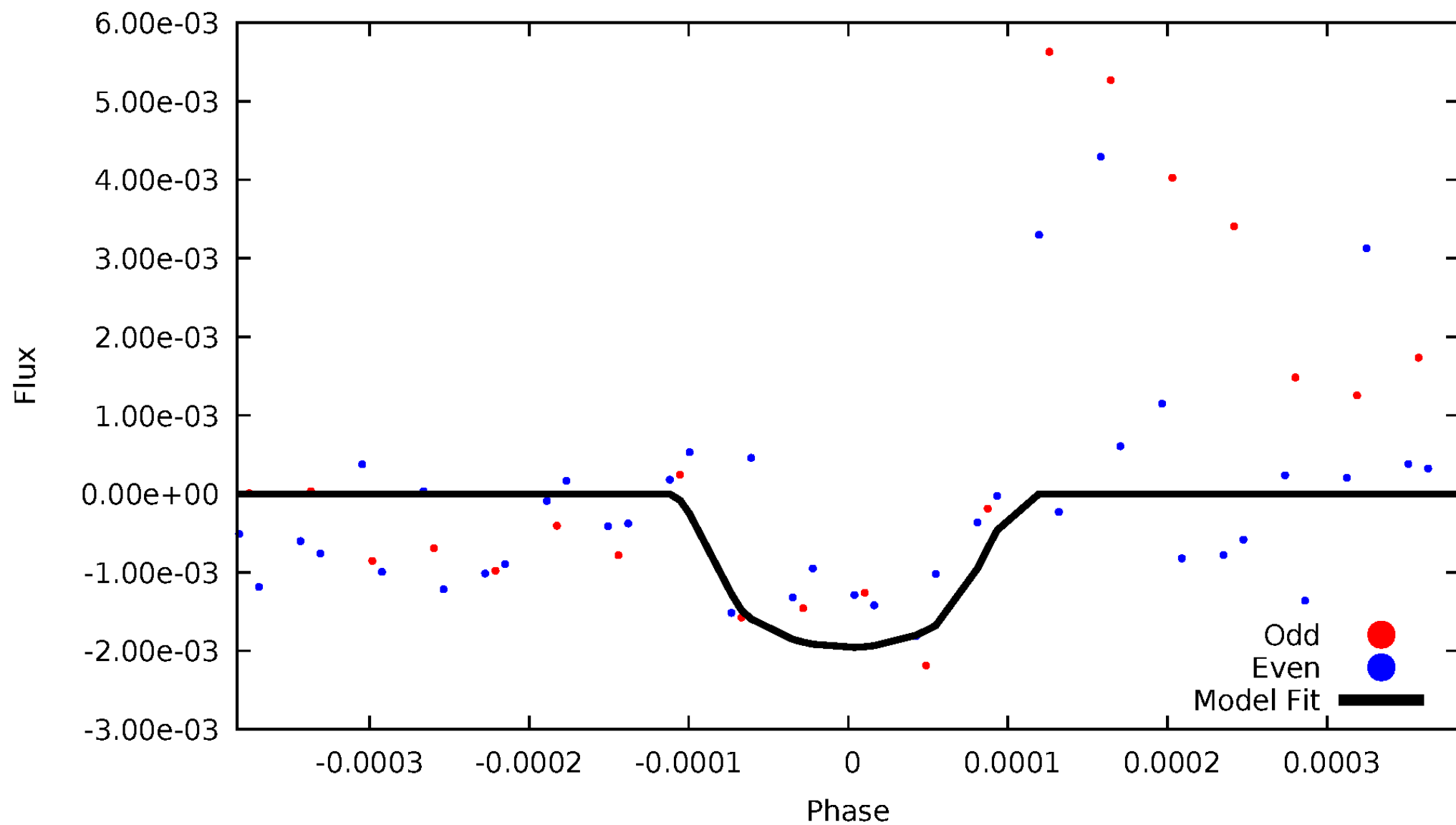


TCE 010196750-02



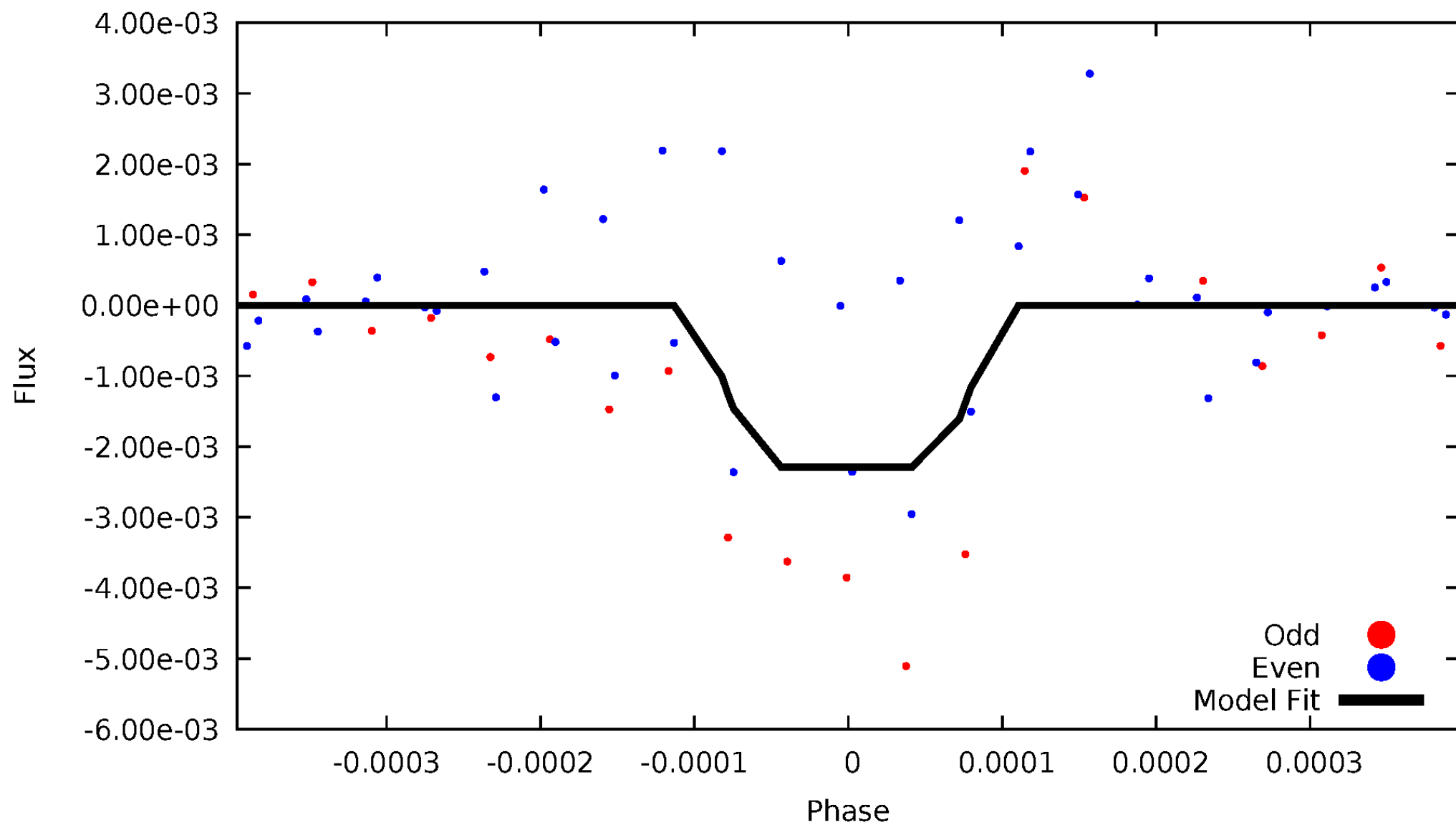
DV Odd/Even

TCE 010196750-02



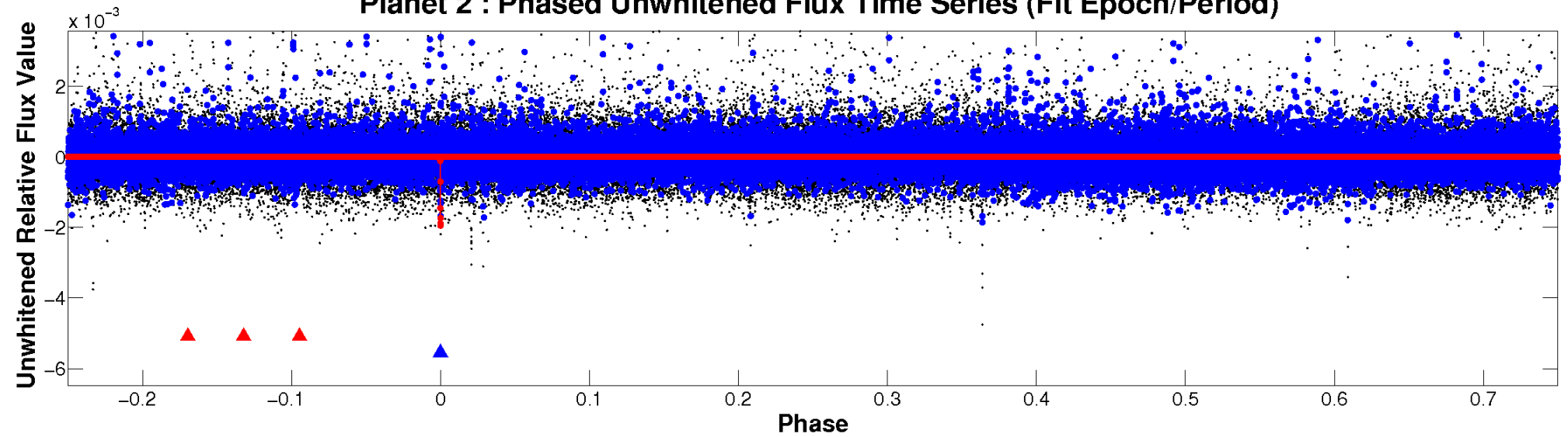
ALT Odd/Even

TCE 010196750-02

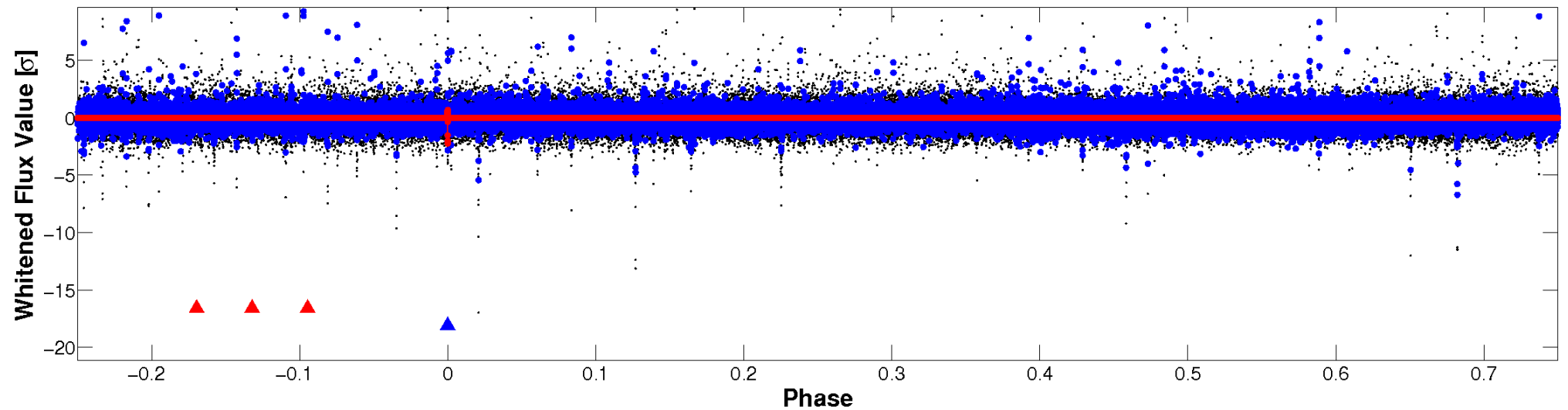


Non-Whitened Vs. Whitened Light Curve

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

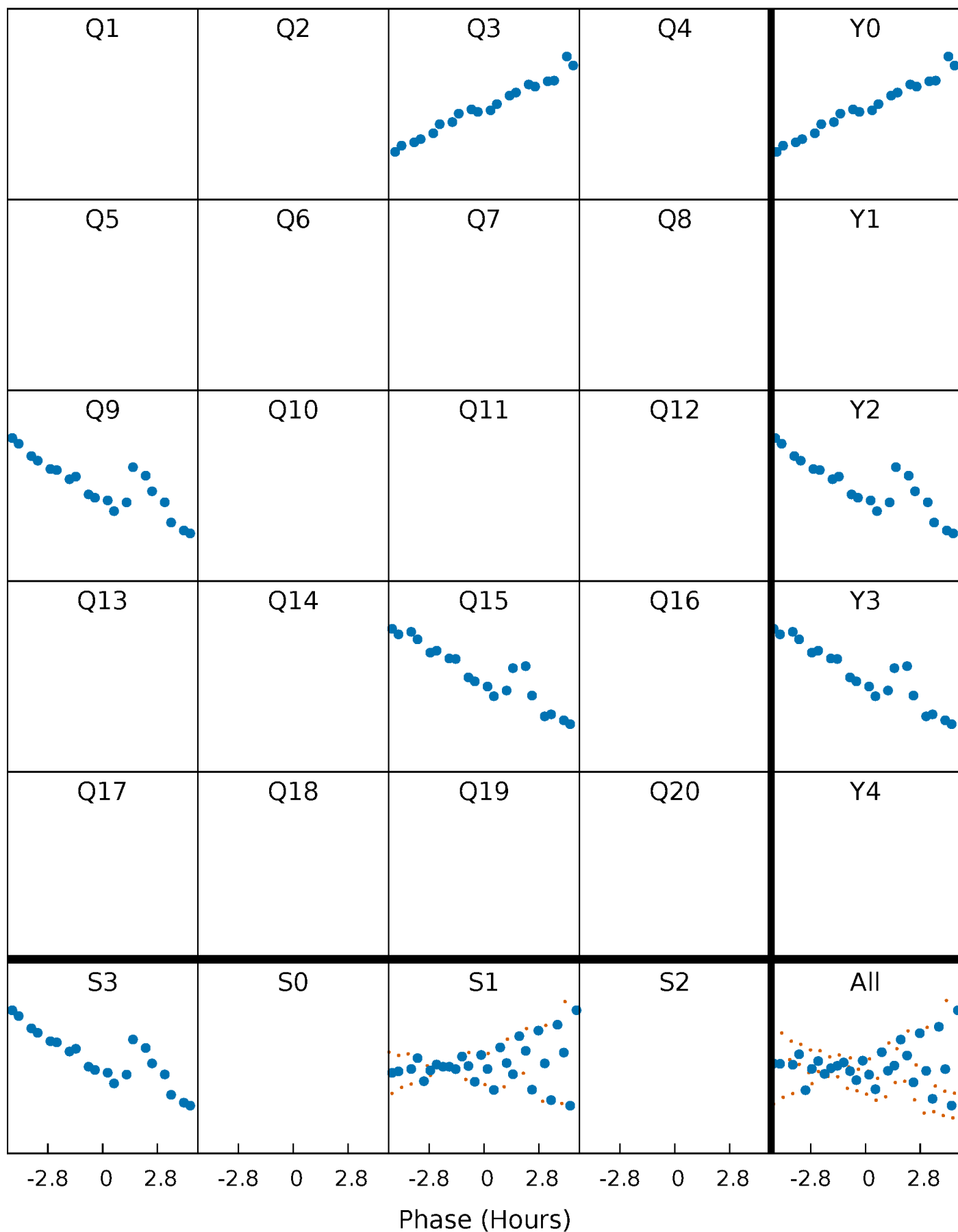


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



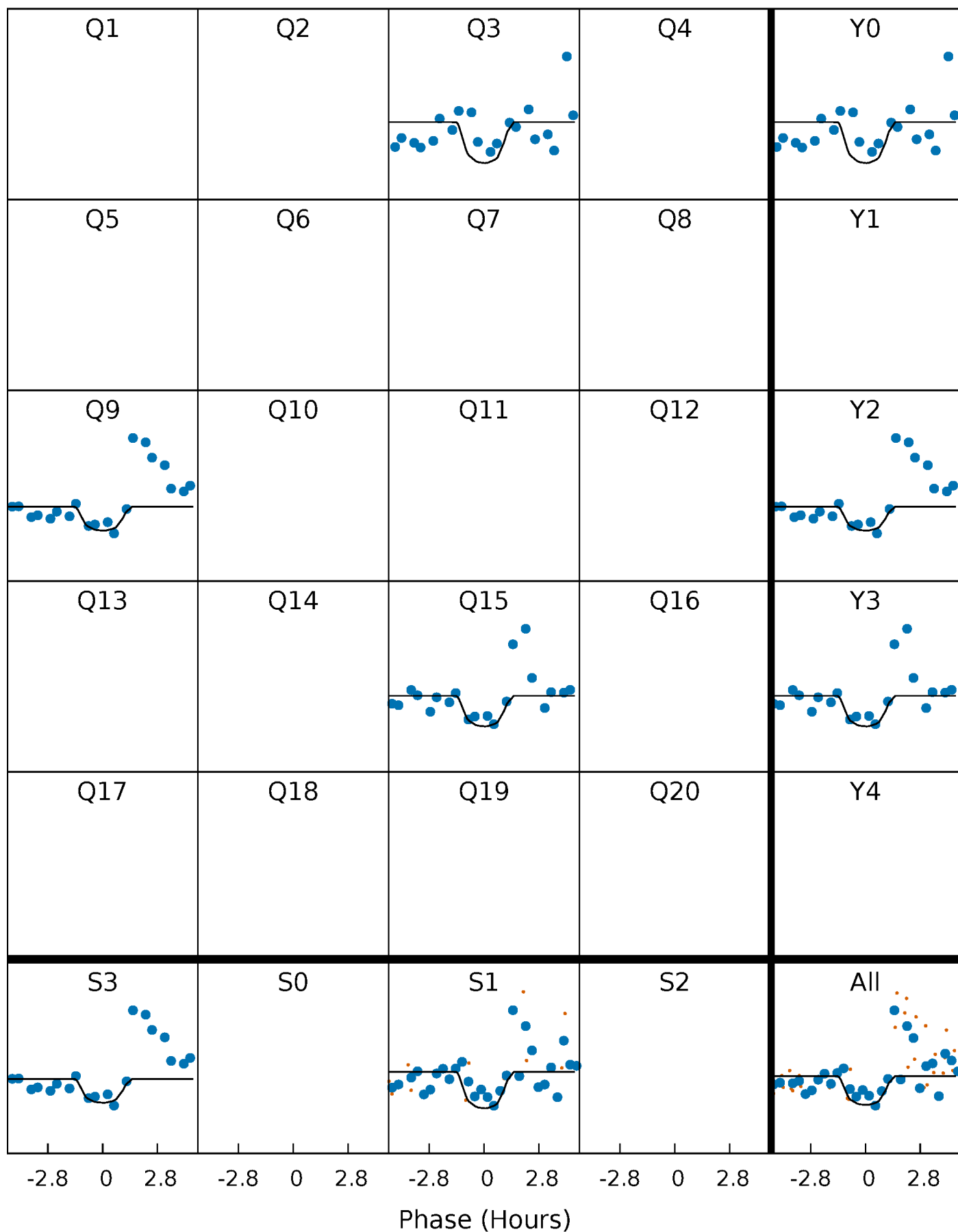
PDC Quarter-Phased Transit Curves

TCE 010196750-02 P=529.867927 Days $T_0=329.095103$ (BKJD)



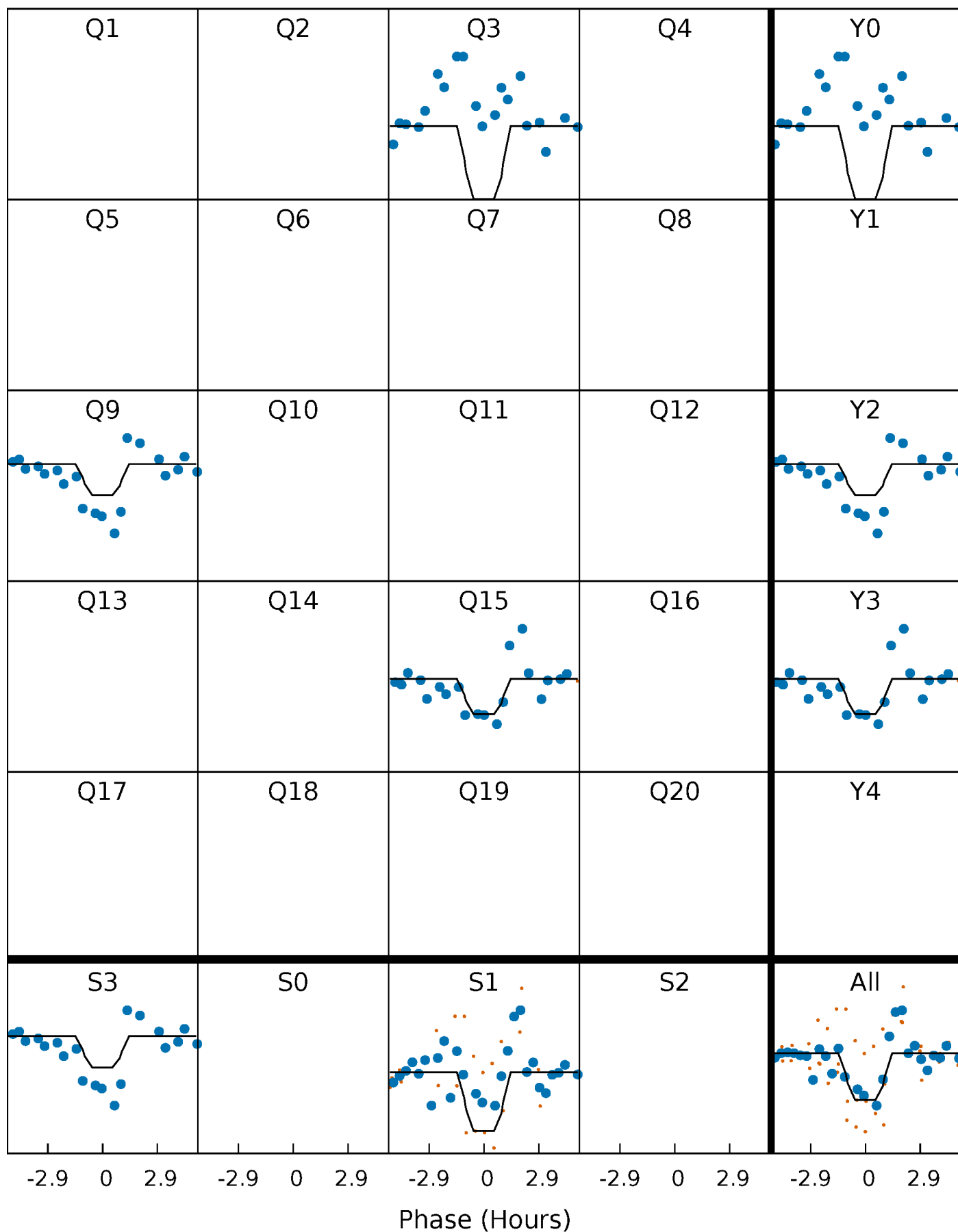
DV Quarter-Phased Transit Curves

TCE 010196750-02 $P=529.867927$ Days $T_0=329.095103$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

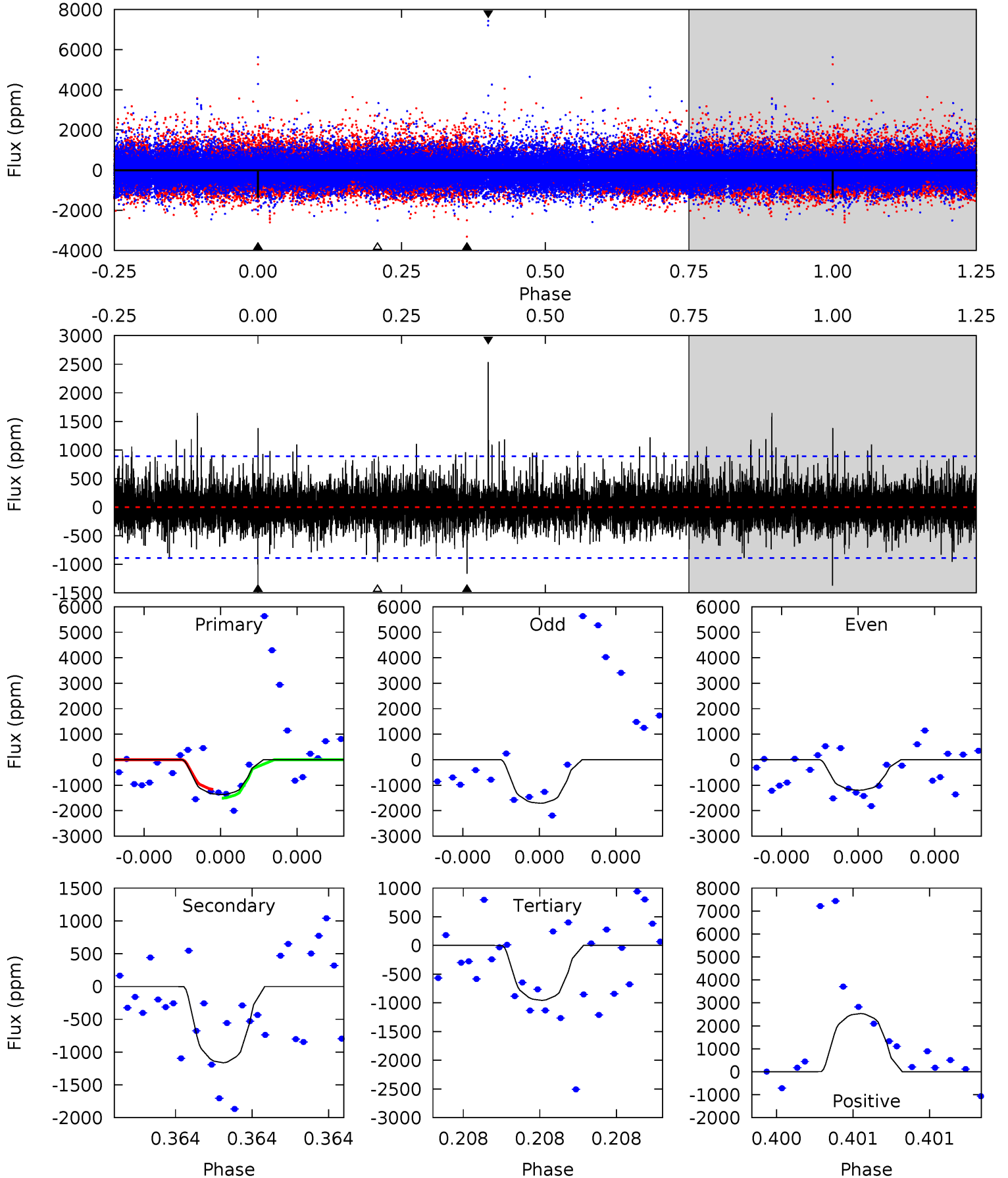
TCE 010196750-02 $P=529.862644$ Days $T_0=329.106356$ (BKJD)



DV Model-Shift Uniqueness Test

010196750-02, P = 529.867927 Days, E = 329.095103 Days

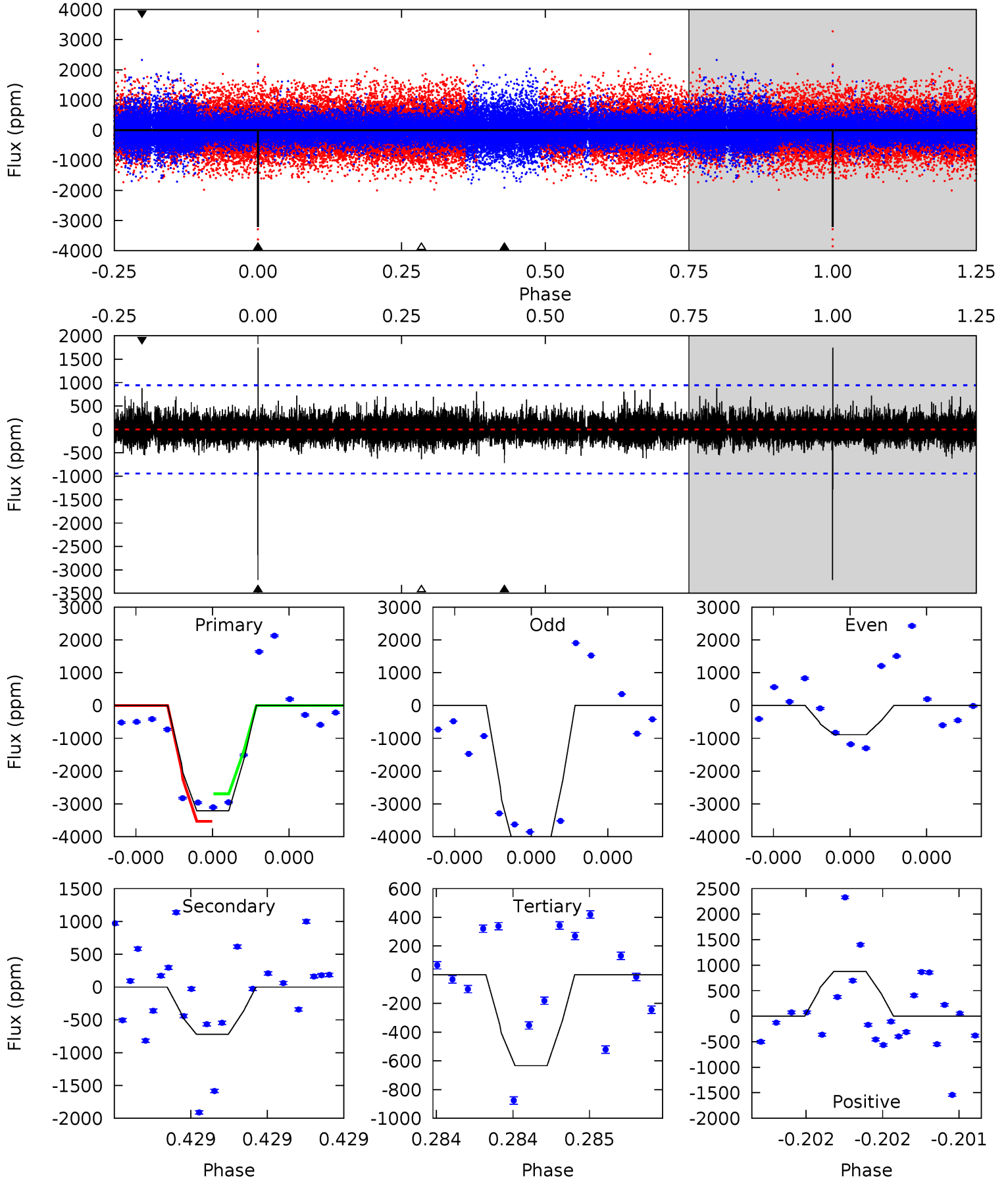
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.79	7.47	6.14	16.3	5.71	3.69	1.49	2.66	-7.48	1.33	-8.80	1.30	0.87	0.65	1.10



Alt Model-Shift Uniqueness Test

010196750-02, P = 529.862644 Days, E = 329.106356 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.5	4.37	3.86	5.35	5.74	3.73	0.91	15.7	14.2	0.52	-0.97	14.0	0.80	0.35	2.48



Stellar Parameters For KIC 010196750

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4579^{+138}_{-138}	$4.596^{+0.052}_{-0.024}$	$-0.080^{+0.300}_{-0.300}$	$0.689^{+0.045}_{-0.060}$	$0.683^{+0.068}_{-0.056}$	$2.944^{+0.688}_{-0.315}$
	+3%/-3%	+1%/-1%	+375%/-375%	+7%/-9%	+10%/-8%	+23%/-11%
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 010196750-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1164 ± 156	$7.18^{+7.06}_{-4.88}$	219^{+8}_{-8}	3202^{+1561}_{-561}	$15969^{+142296}_{-12048}$
Alt.	-719 ± 164	$7.56^{+6.43}_{-5.23}$	219^{+8}_{-8}	2961^{+1314}_{-460}	8829^{+79722}_{-6273}

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

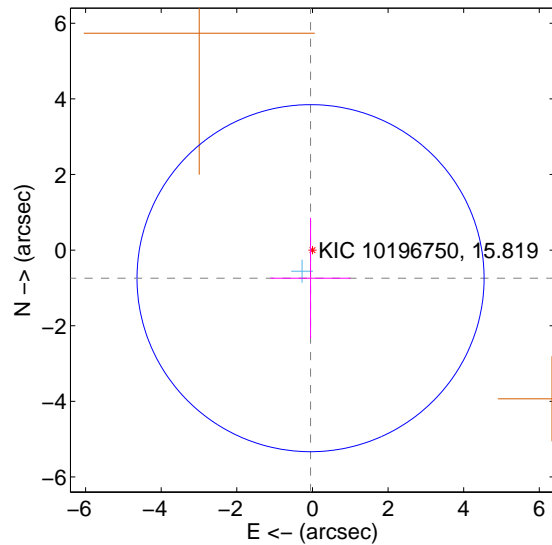
Supplemental centroid analysis for 010196750-02. Kepler magnitude: 15.82. Transit SNR 7.02

There are 1 quarters with good PRF difference image offsets

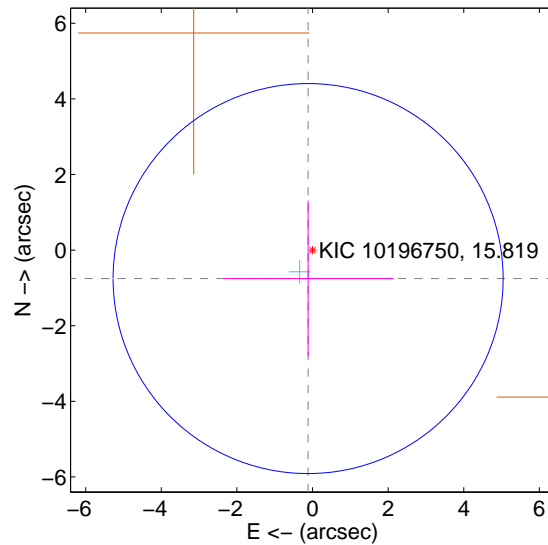
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.744 ± 1.530	0.49	0.050 ± 1.059	-0.743 ± 1.595
PRF-fit source offset from KIC position	0.762 ± 1.719	0.44	0.117 ± 2.250	-0.753 ± 2.060
photometric centroid source offset	0.38 ± 1.27	0.30	0.09 ± 1.45	0.37 ± 1.25

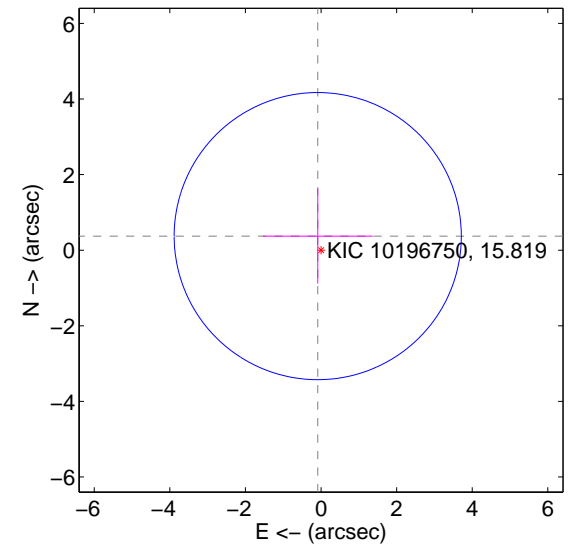
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

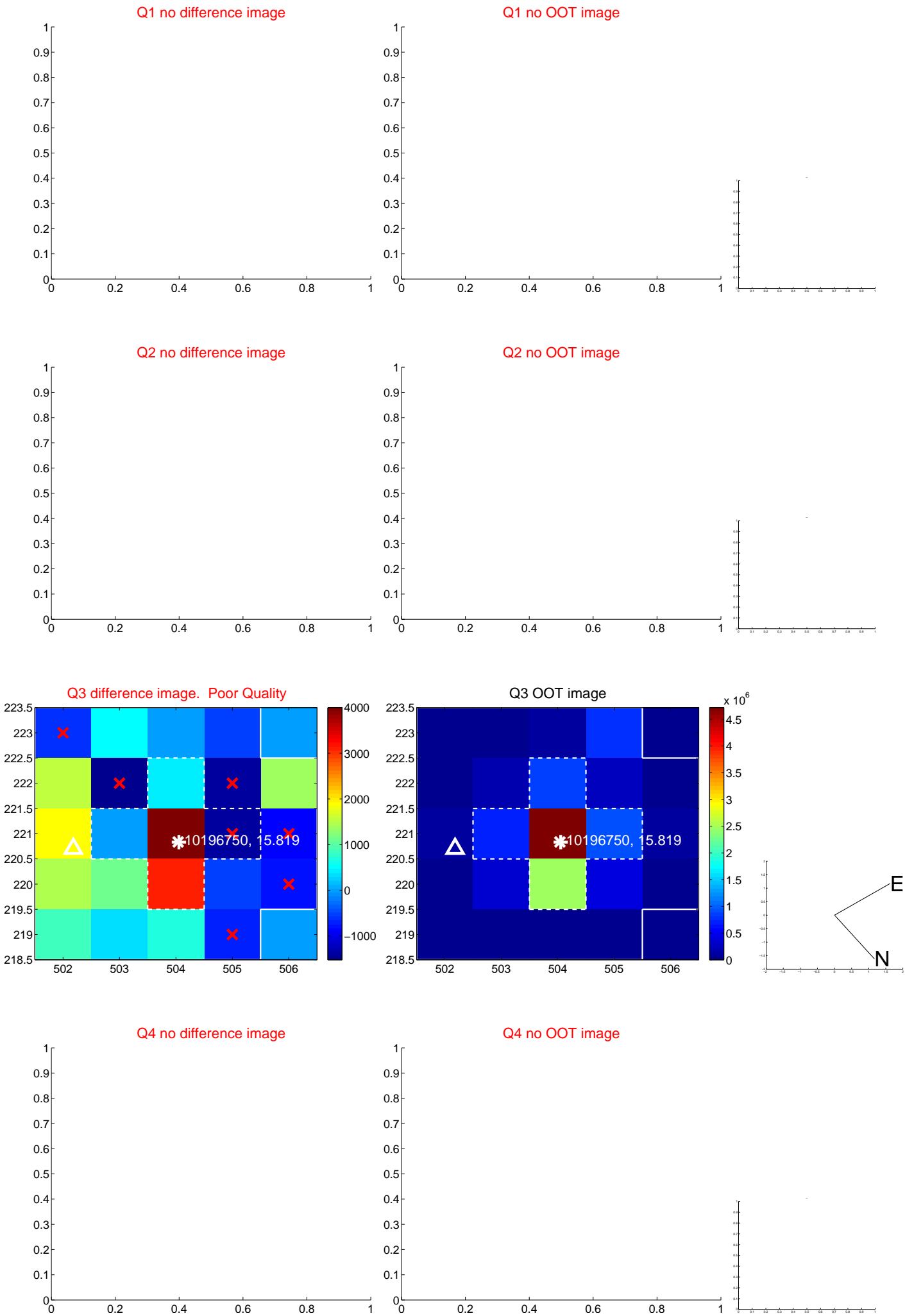


offset from photometric centroids



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.

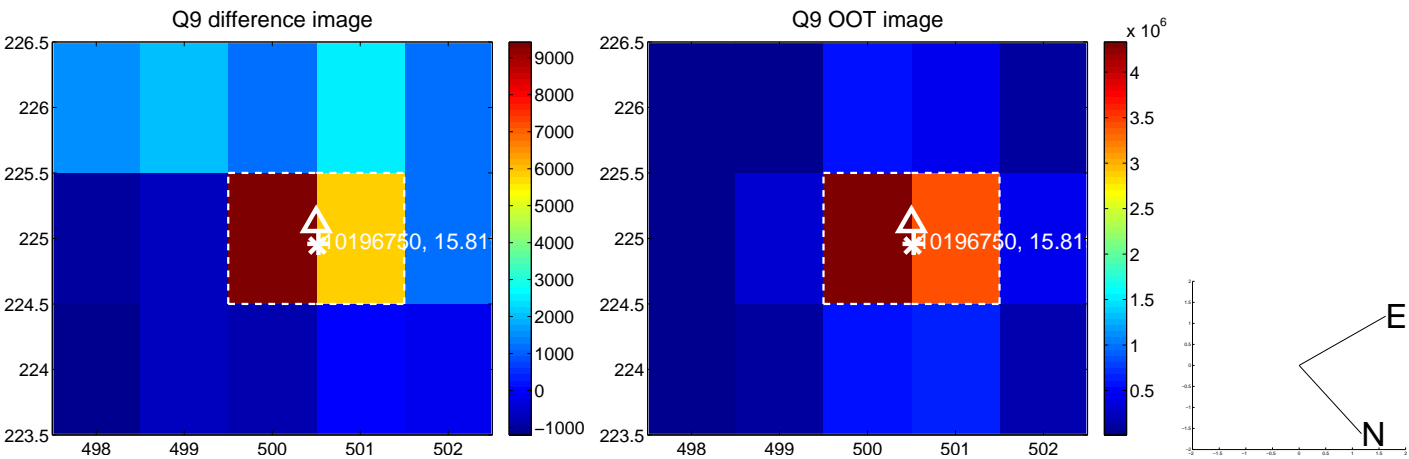
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



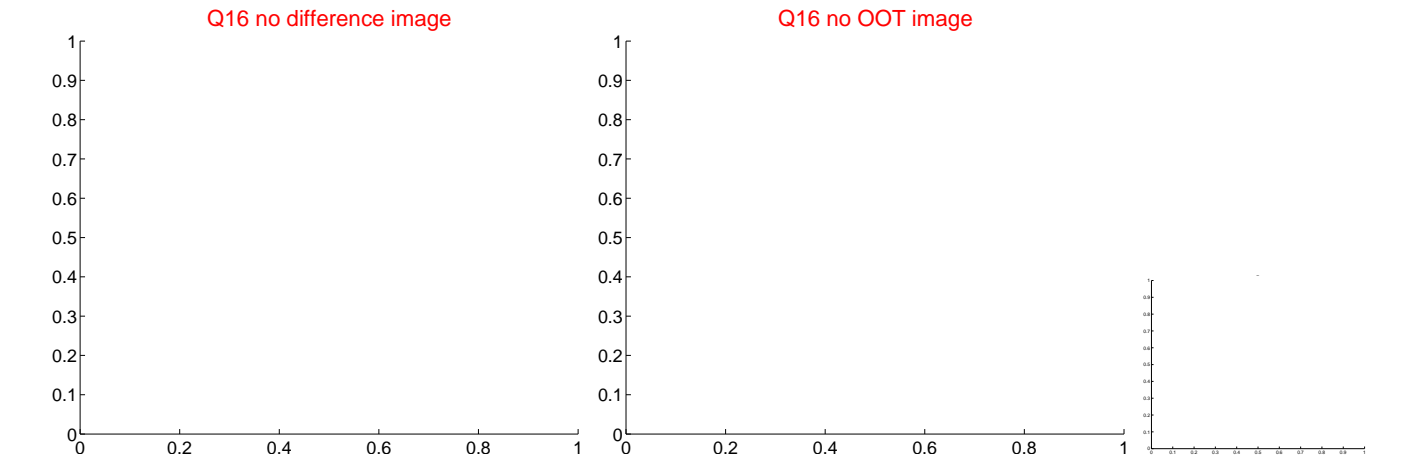
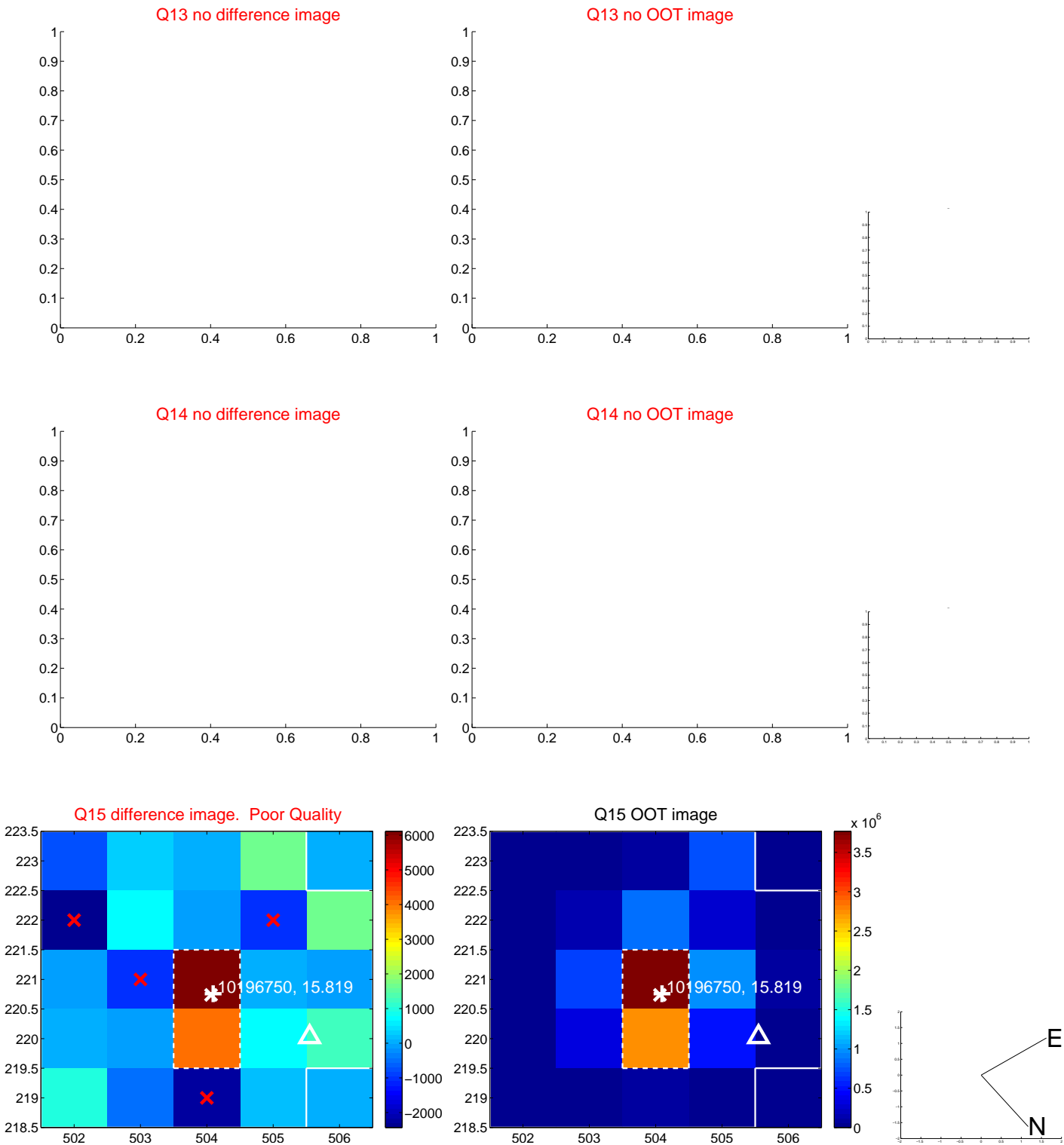
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



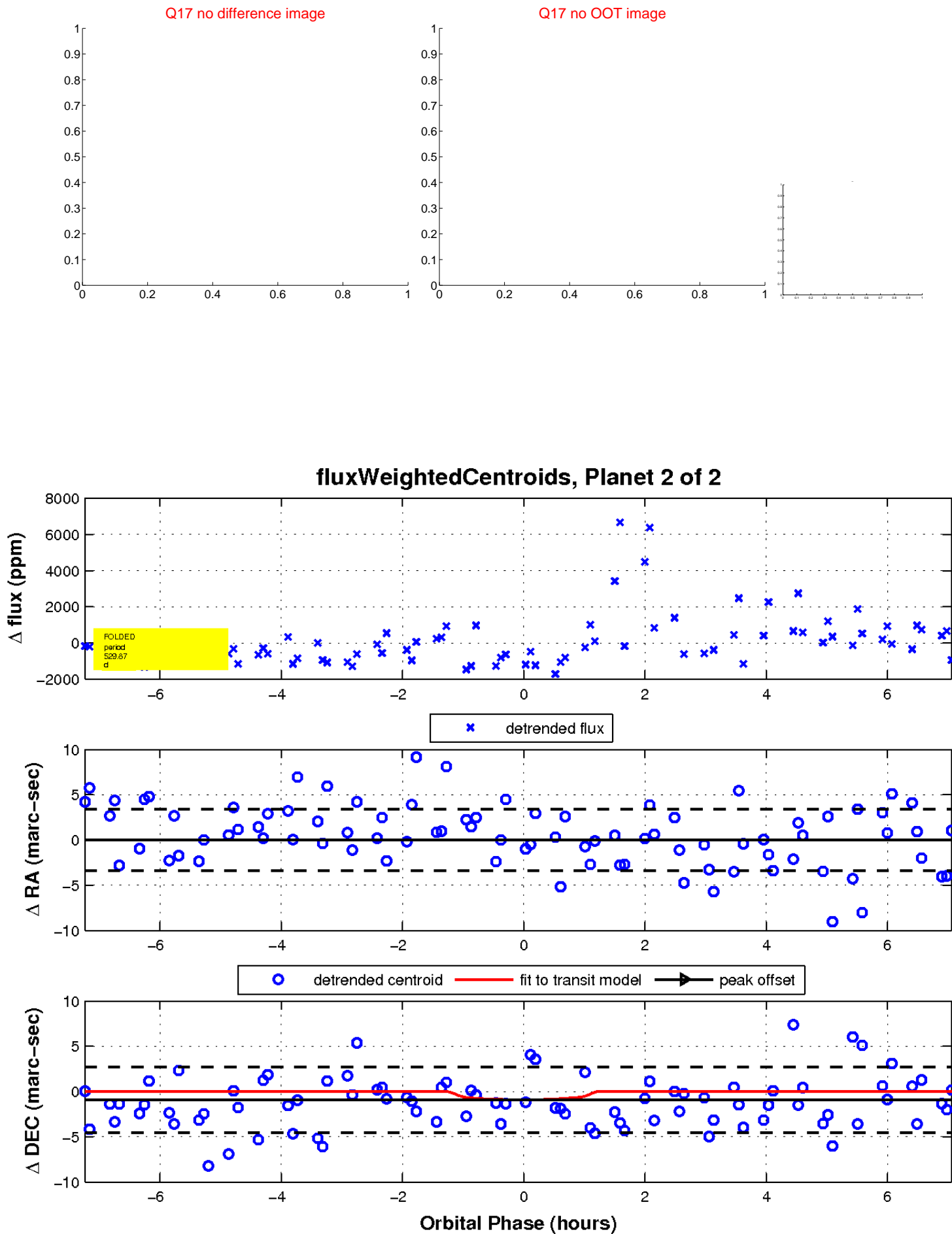
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

