

KIC 010272442

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})
010272442-01	OBS	0734.01	24.543566	138.829923	1090.0	7.718	46.0	49.7	0.91	5955	3.34	34.13
010272442-02	OBS	0734.02	70.278254	151.327555	752.1	3.267	10.7	12.1	0.91	5955	3.96	8.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010272442-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010272442-02	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS

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 010272442-01

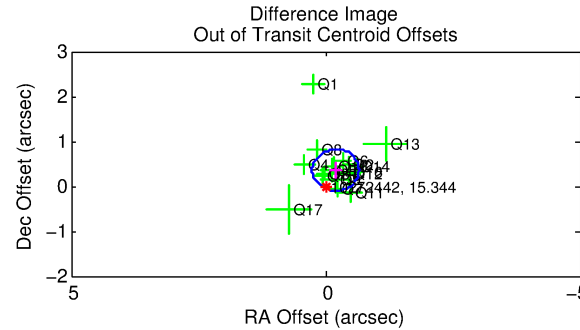
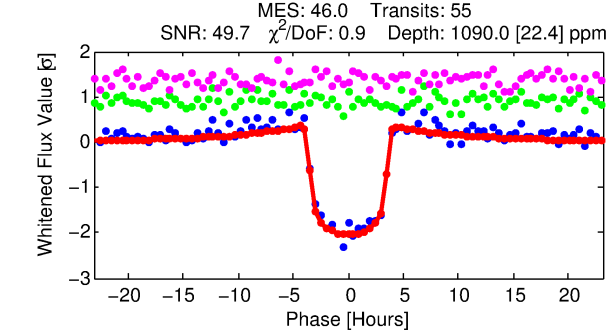
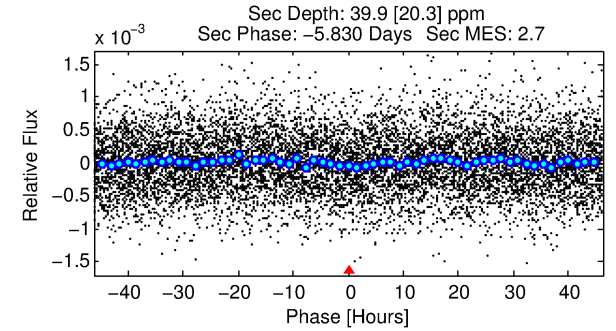
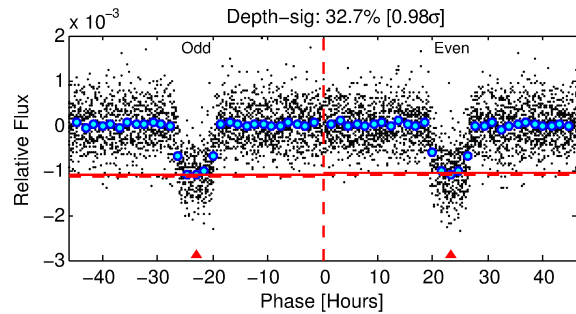
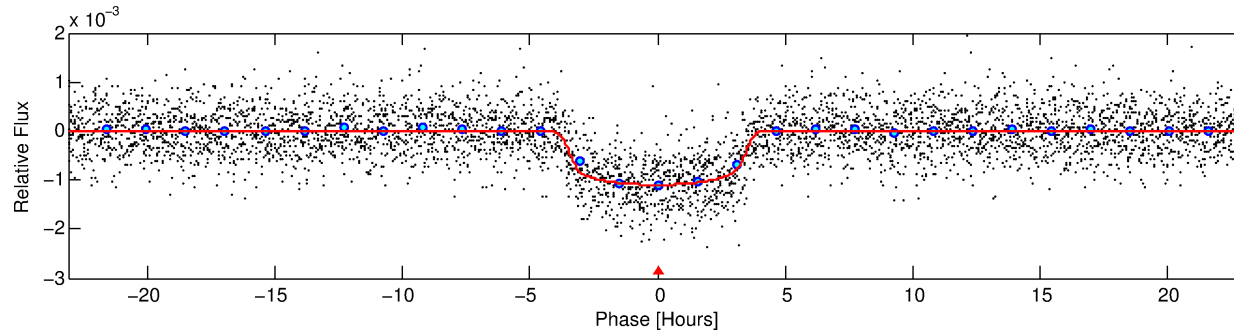
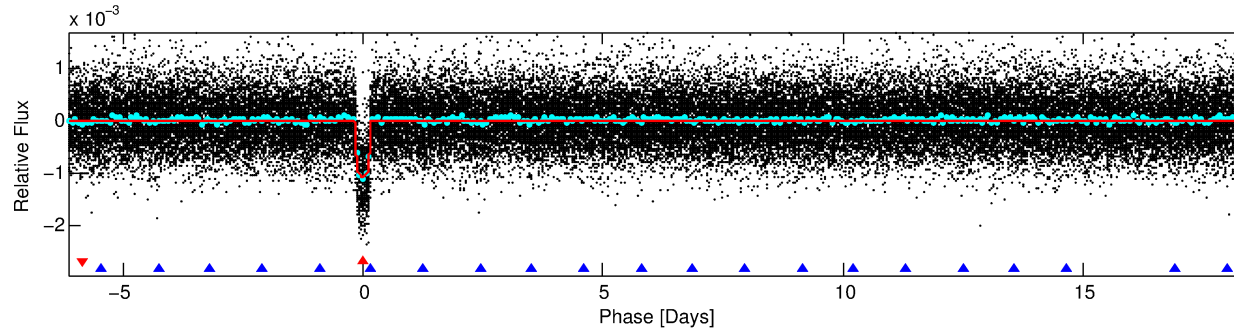
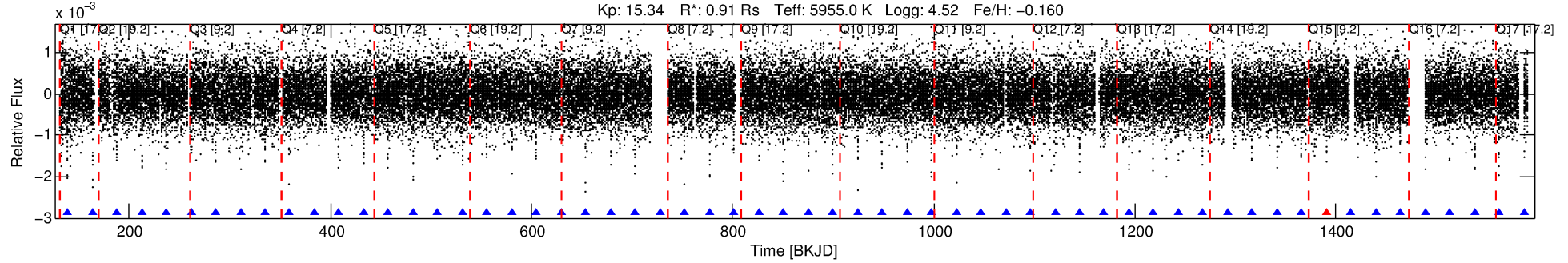
No Significant Match Found

DV One-Page Summary

KIC: 10272442 Candidate: 1 of 2 Period: 24.544 d

KOI: K00734.01 Corr: 0.973

Kp: 15.34 R*: 0.91 Rs Teff: 5955.0 K Logg: 4.52 Fe/H: -0.160



DV Fit Results:

Period = 24.54357 [0.00008] d
Epoch = 138.8299 [0.0027] BKJD
Rp/R* = 0.0337 [0.0013]
a/R* = 15.62 [2.69]
b = 0.81 [0.07]
Seff = 34.13 [12.78]
Teq = 616 [58] K
Rp = 3.34 [1.00] Re
a = 0.1653 [0.0407] AU
Ag = 53.59 [33.52] [1.57σ]
Teffp = 2578 [341] K [5.67σ]

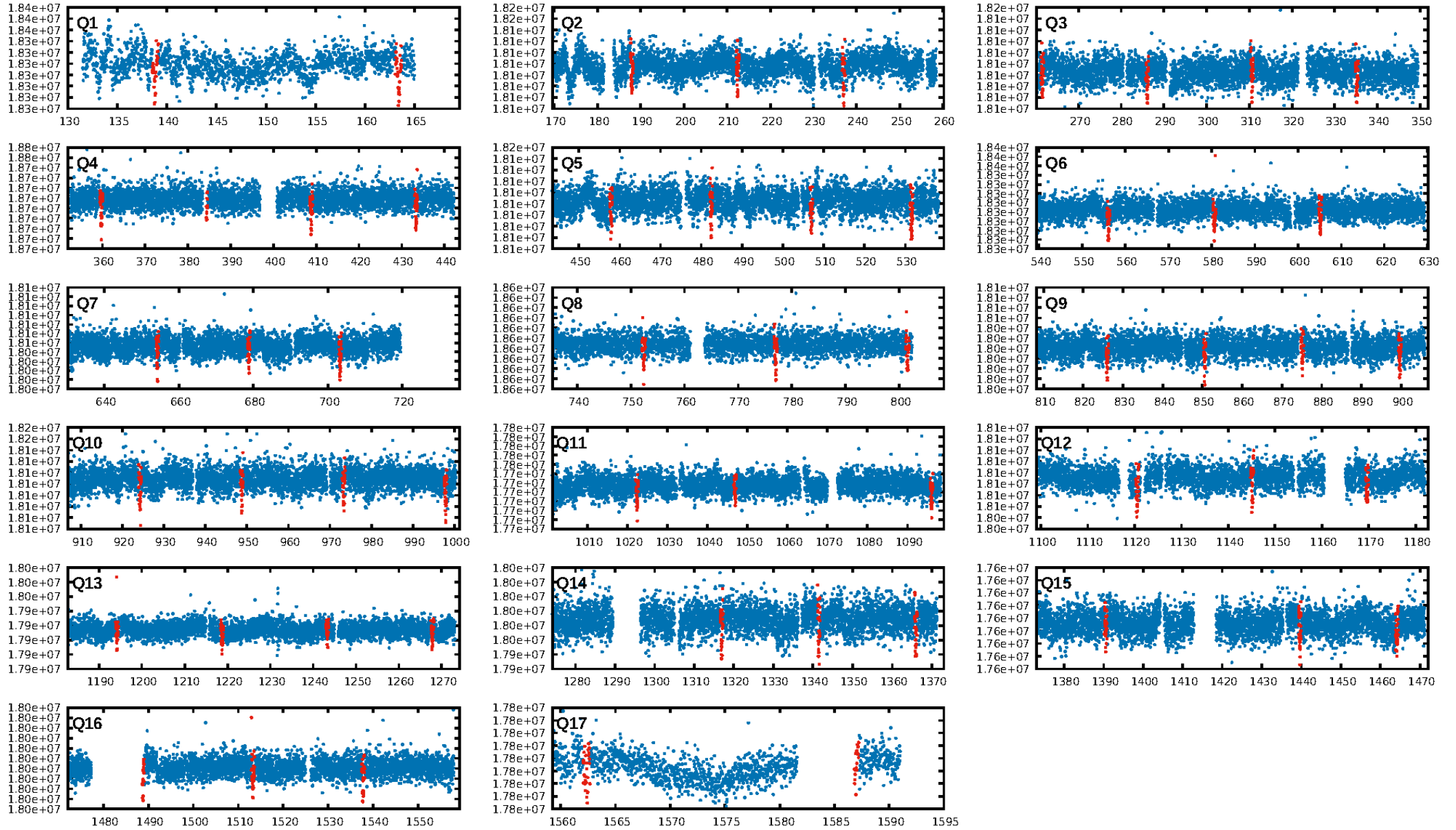
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [130.96σ]
ModelChiSquare2-sig: 18.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.98 [50/51]
GhostDiagnostic-chr: 4.576
Centroid-sig: 31.6%
Centroid-so: 0.403 arcsec [1.44σ]
OotOffset-rm: 0.412 arcsec [2.67σ]
KicOffset-rm: 0.176 arcsec [1.39σ]
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]

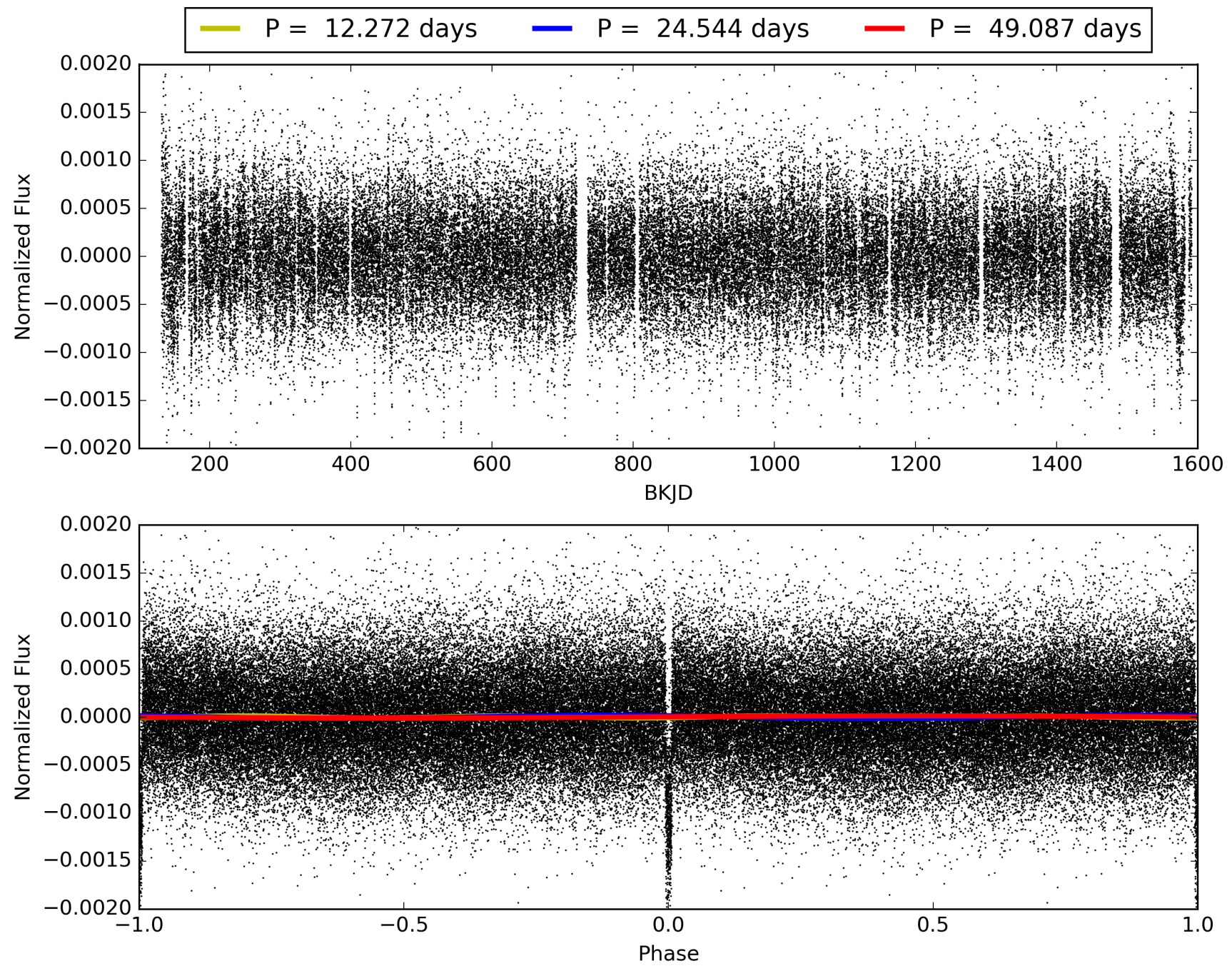
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010272442-01, PDC Light Curves

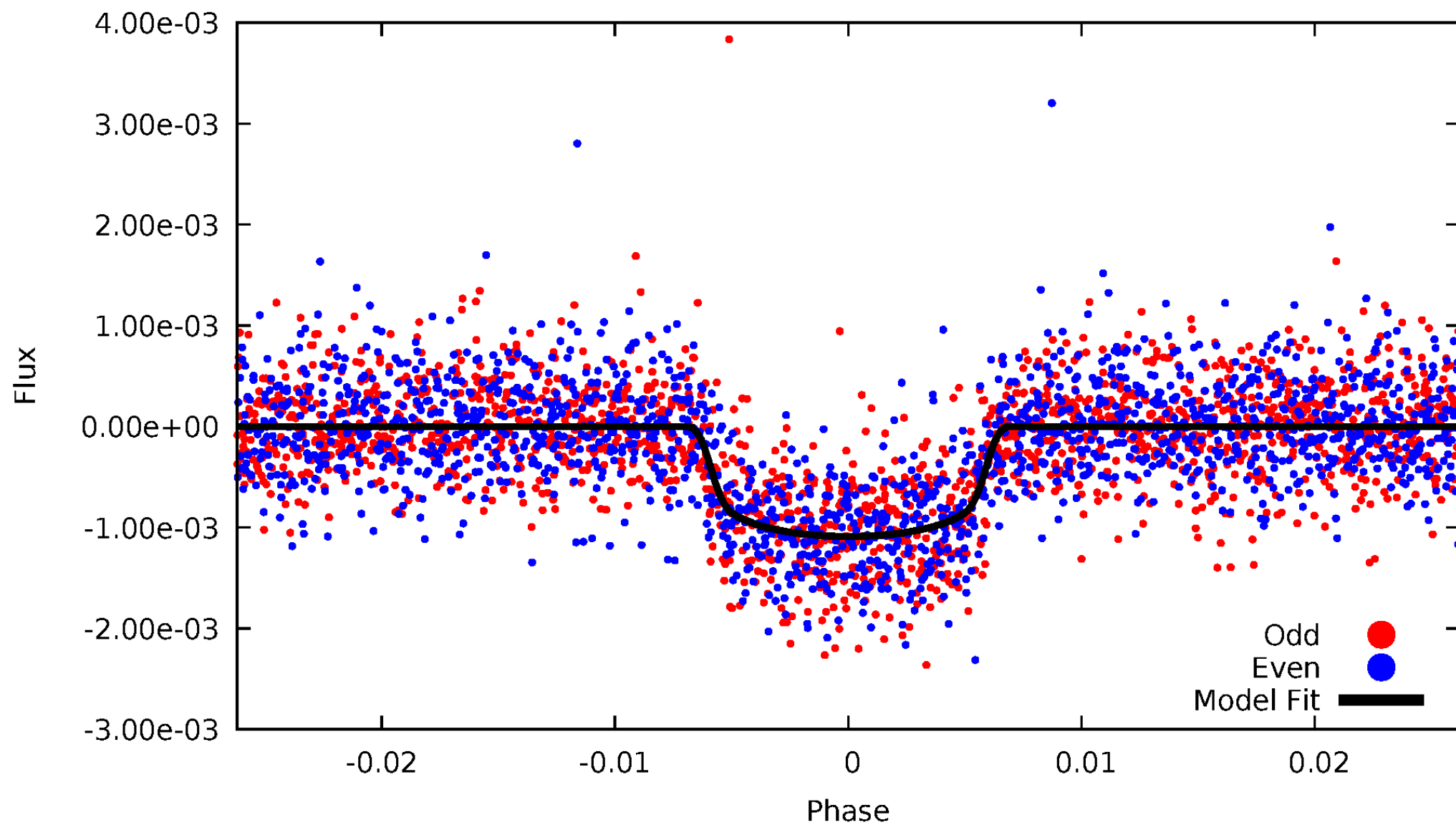


TCE 010272442-01



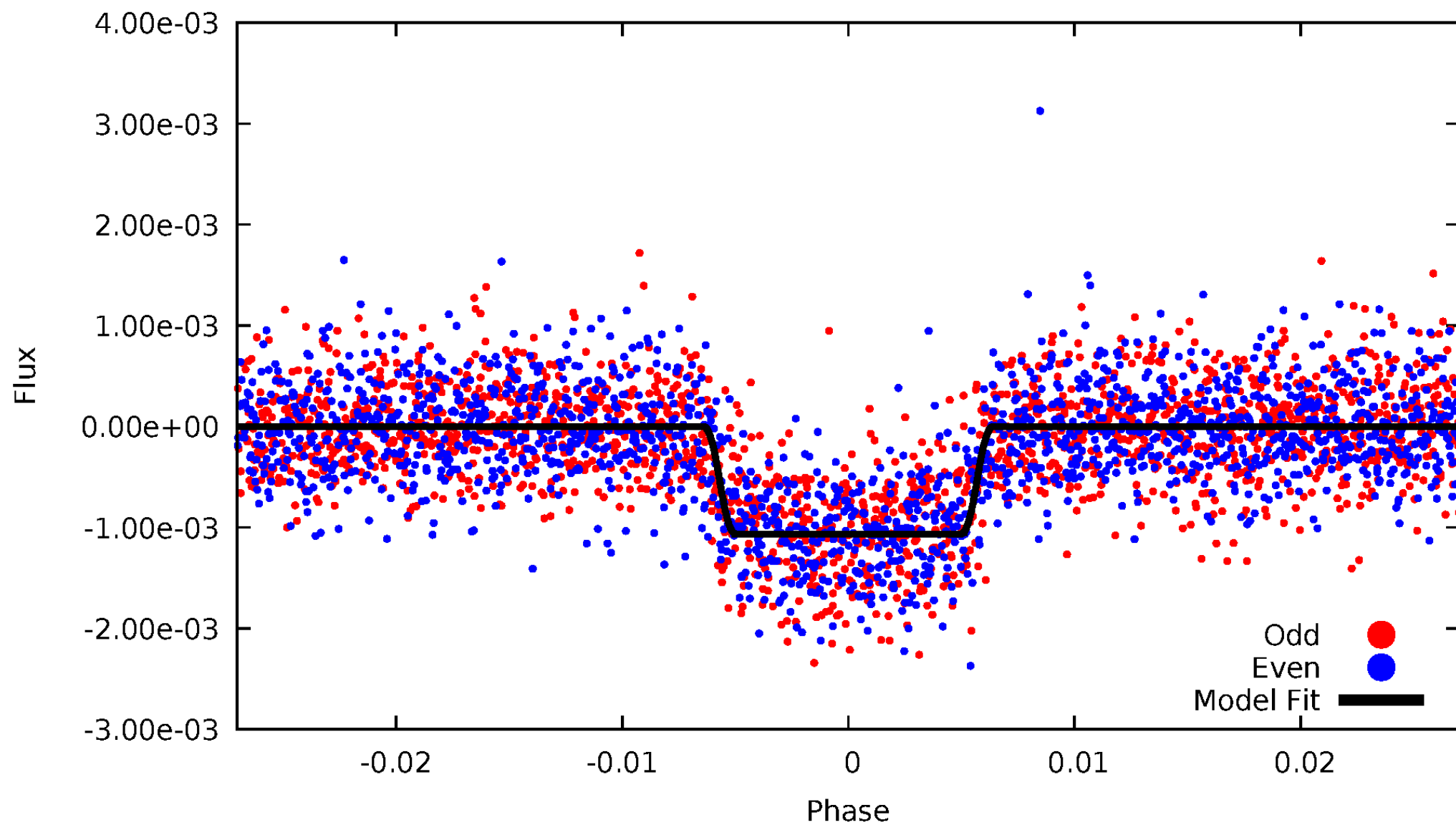
DV Odd/Even

TCE 010272442-01

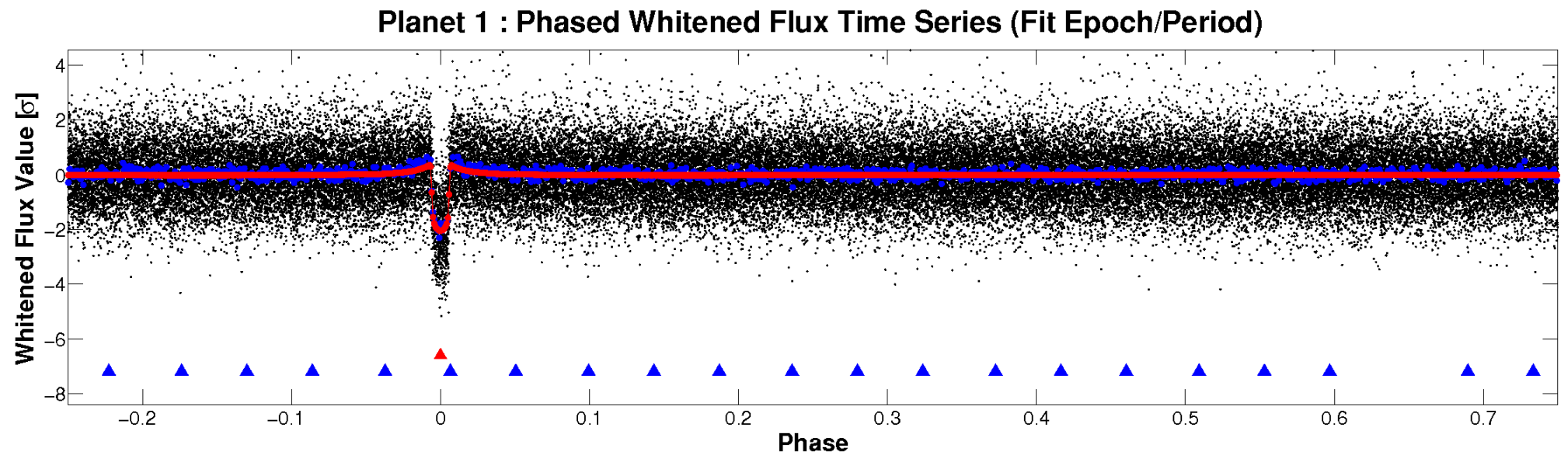
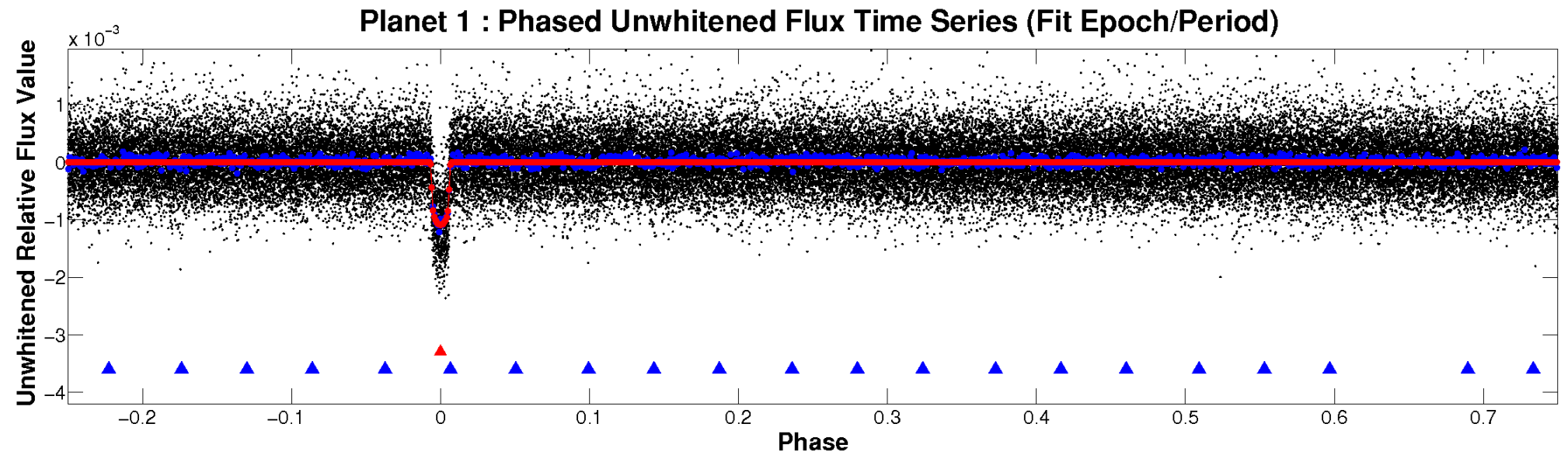


ALT Odd/Even

TCE 010272442-01

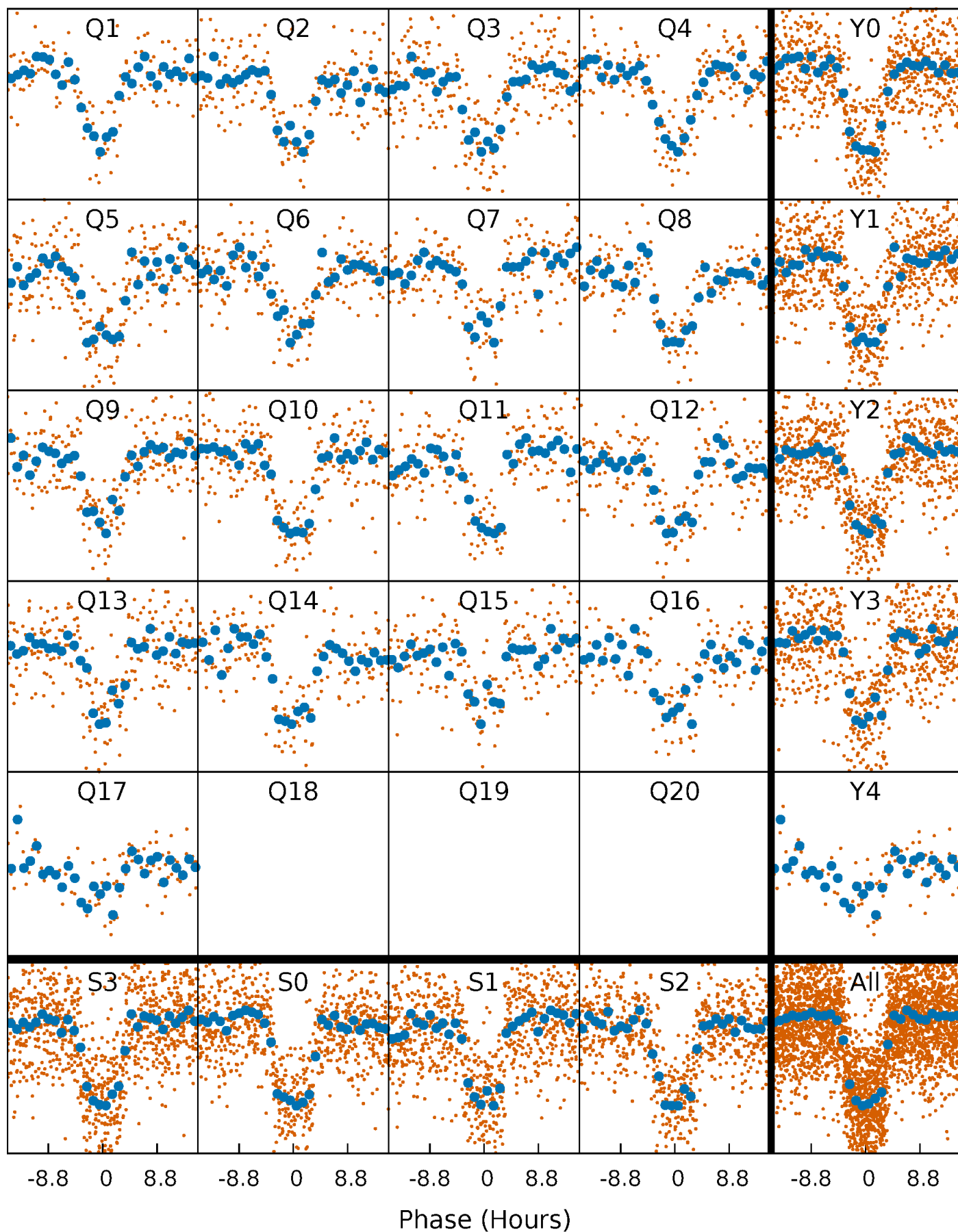


Non-Whitened Vs. Whitened Light Curve



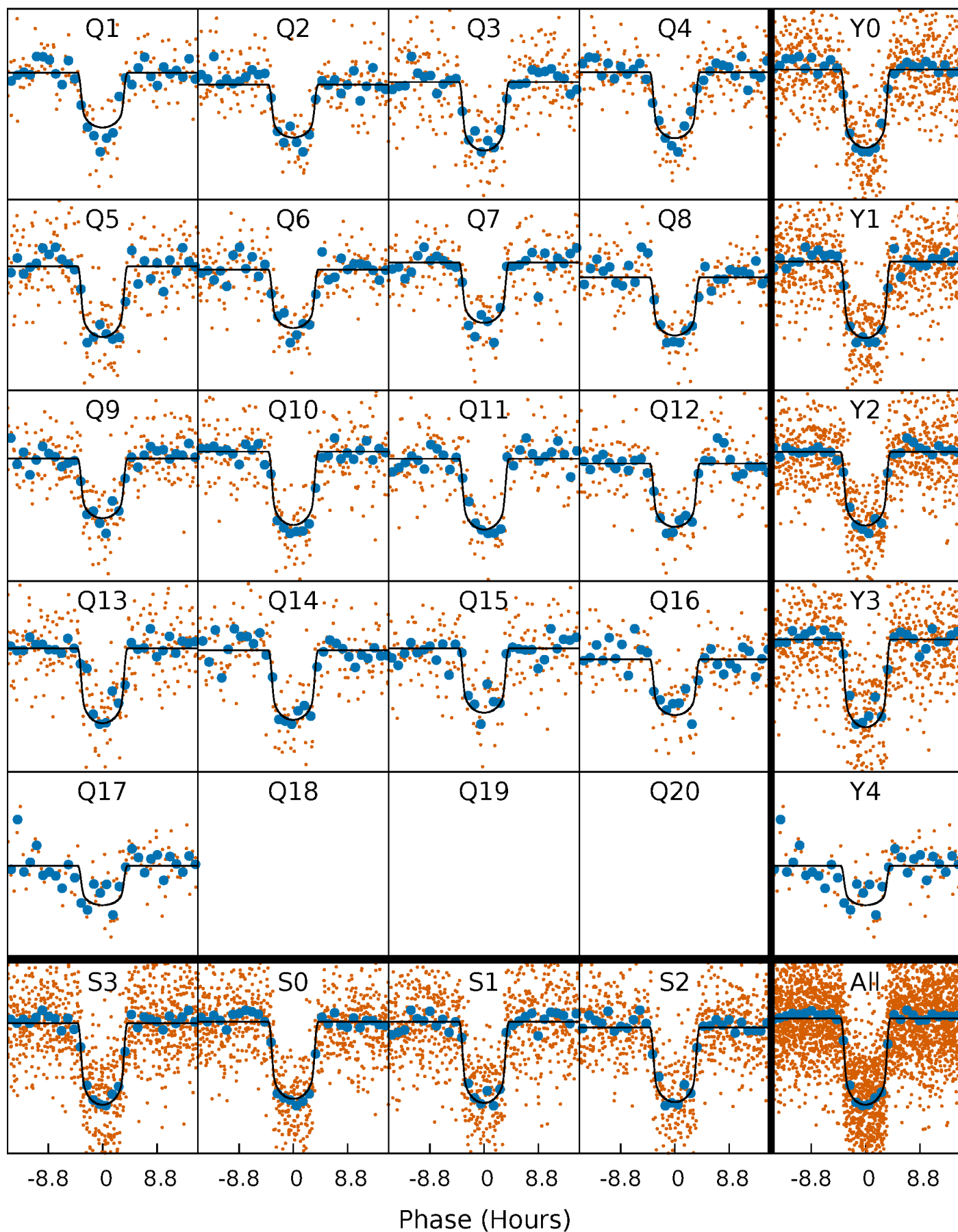
PDC Quarter-Phased Transit Curves

TCE 010272442-01 P= 24.543566 Days $T_0=138.829923$ (BKJD)



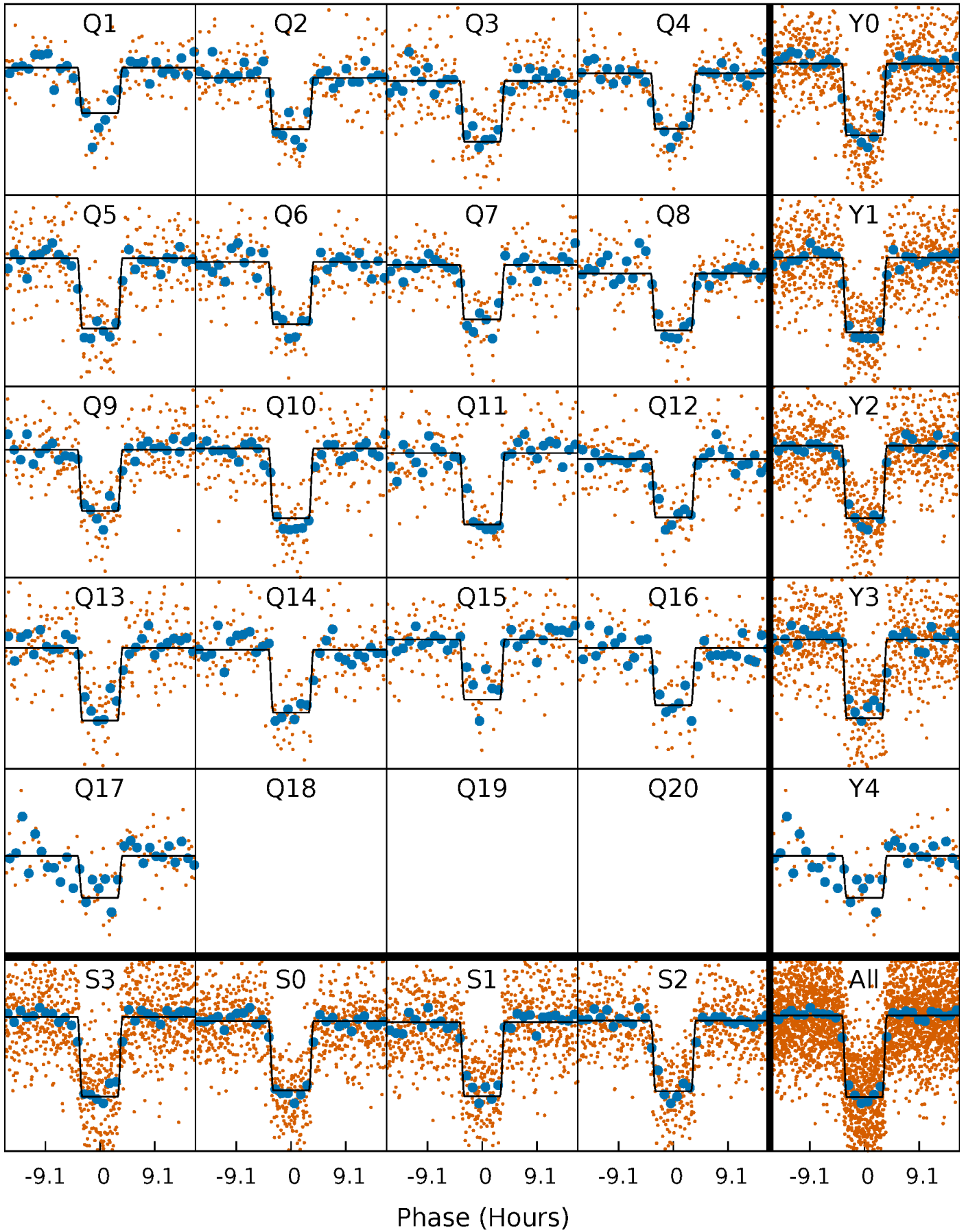
DV Quarter-Phased Transit Curves

TCE 010272442-01 P= 24.543566 Days $T_0=138.829923$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

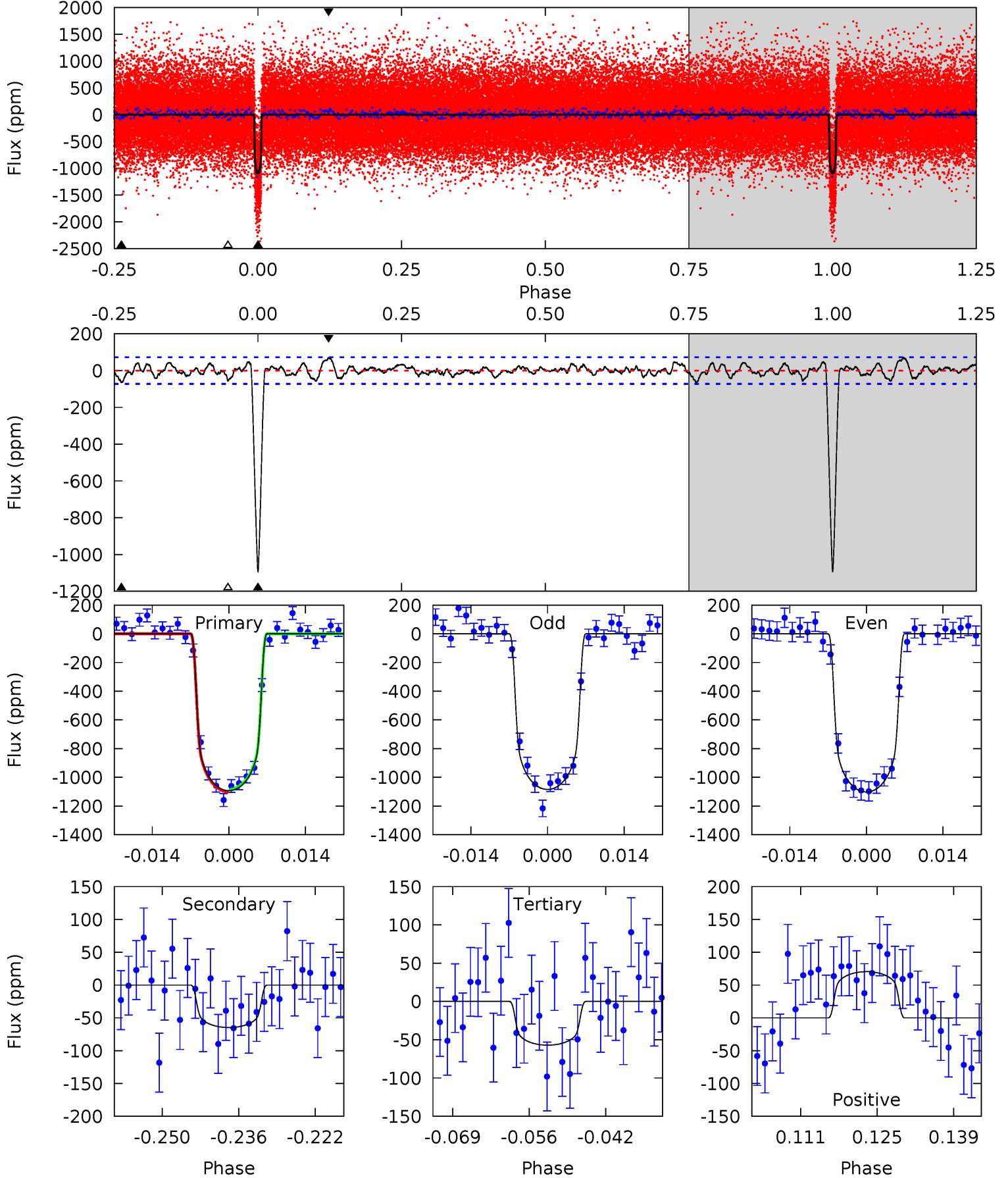
TCE 010272442-01 $P = 24.543202$ Days $T_0 = 138.842589$ (BKJD)



DV Model-Shift Uniqueness Test

010272442-01, P = 24.543566 Days, E = 114.286357 Days

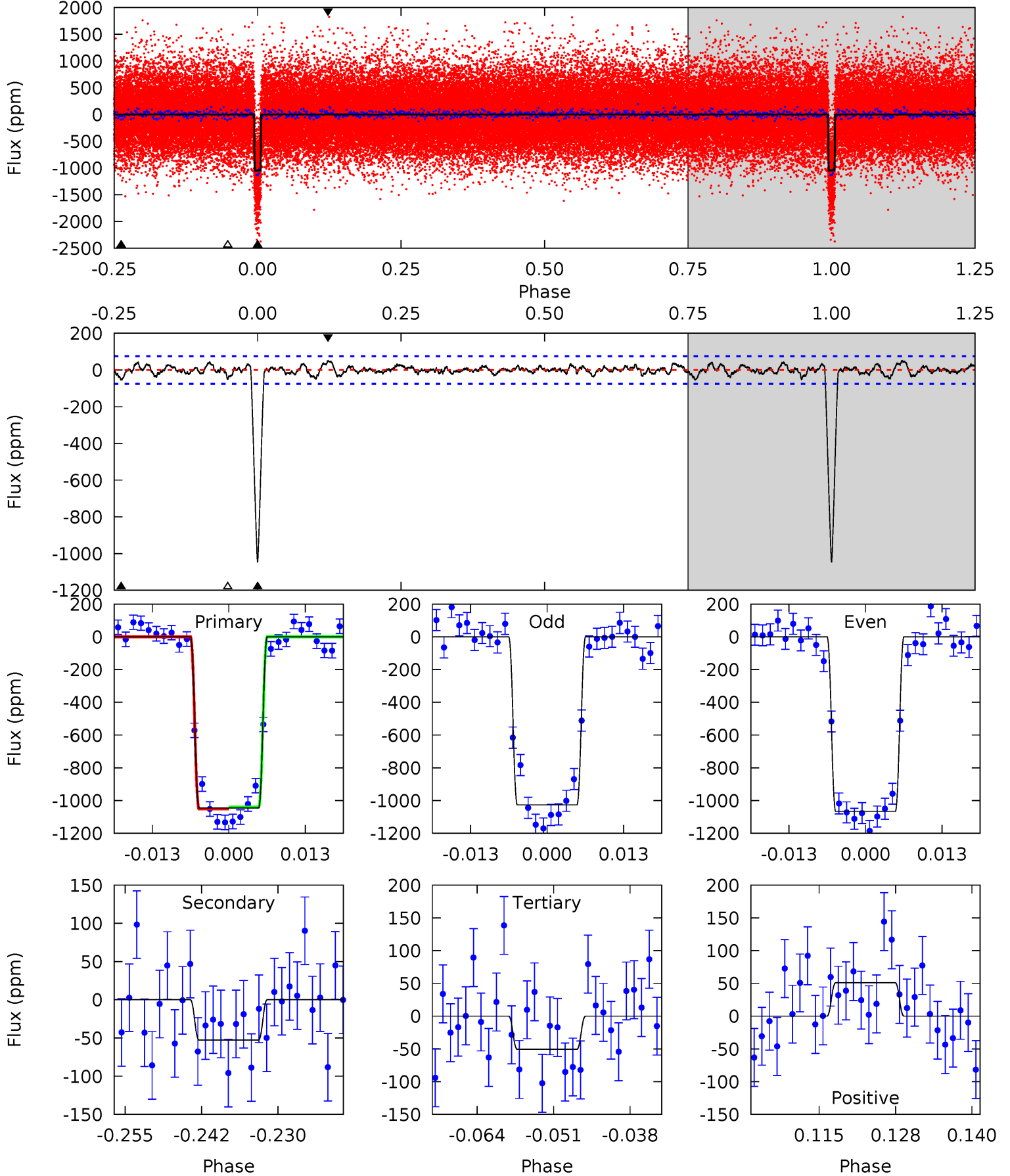
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
74.7	4.42	3.90	4.81	4.96	2.46	1.43	70.8	69.9	0.52	-0.39	0.61	0.98	0.06	0.56



Alt Model-Shift Uniqueness Test

010272442-01, P = 24.543202 Days, E = 114.299387 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
69.3	3.49	3.36	3.38	4.98	2.49	1.10	66.0	66.0	0.12	0.11	1.32	0.98	0.05	0.37



Stellar Parameters For KIC 010272442

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5955^{+161}_{-179}	$4.520^{+0.048}_{-0.192}$	$-0.160^{+0.300}_{-0.300}$	$0.910^{+0.269}_{-0.084}$	$0.999^{+0.122}_{-0.122}$	$1.869^{+0.384}_{-0.989}$
	+3%/-3%	+1%/-4%	+188%/-188%	+30%/-9%	+12%/-12%	+21%/-53%
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 010272442-01 / KOI 0734.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-65 ± 15	$3.42^{+0.51}_{-0.27}$	879^{+54}_{-41}	3417^{+141}_{-147}	79^{+26}_{-23}
Alt.	-53 ± 15	$3.33^{+0.54}_{-0.28}$	880^{+63}_{-44}	3333^{+153}_{-199}	64^{+29}_{-22}

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 $A_{\text{obs}} \gg 1.0$

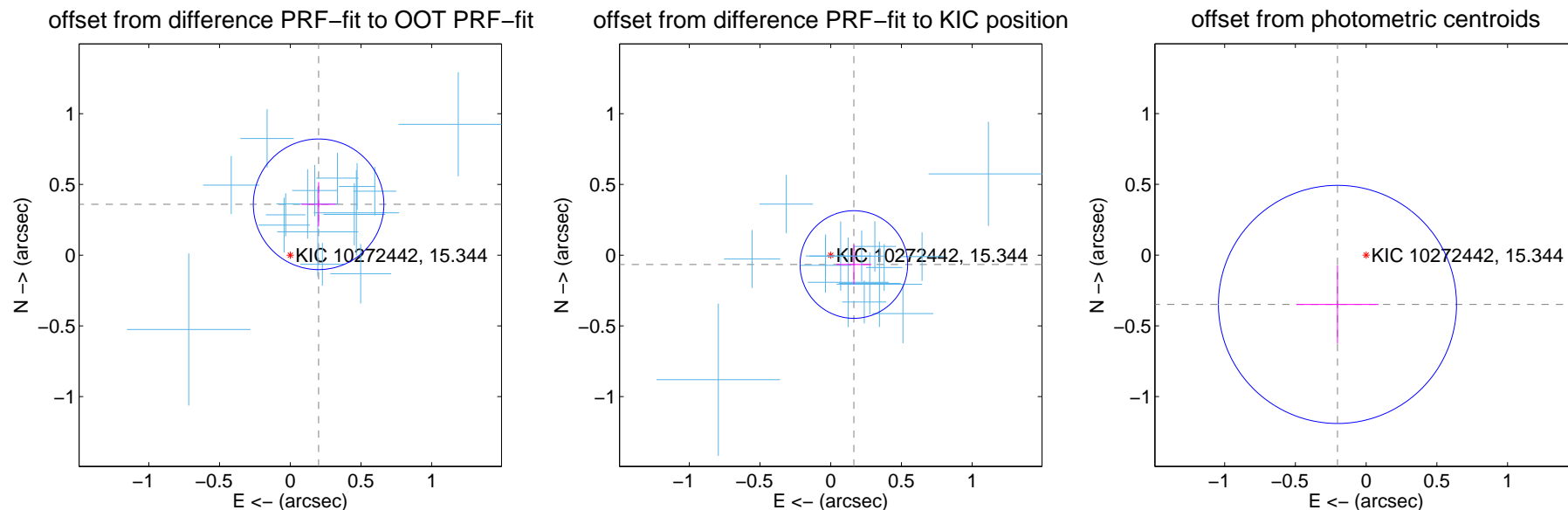
DV Centroid Data

Supplemental centroid analysis for 010272442-01. Kepler magnitude: 15.34. Transit SNR 49.69

There are 17 quarters with good PRF difference image offsets

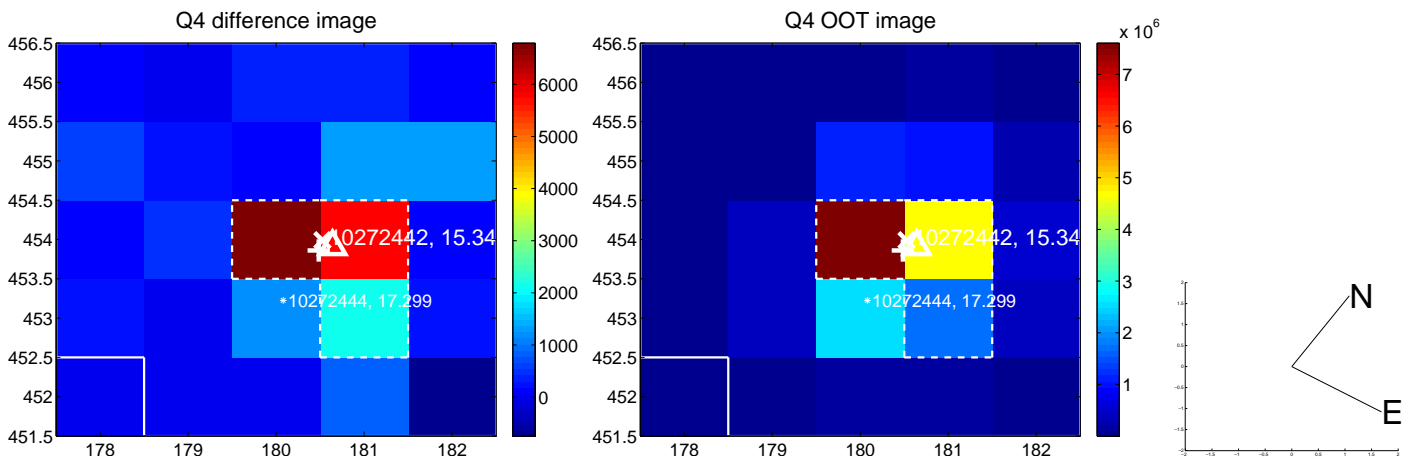
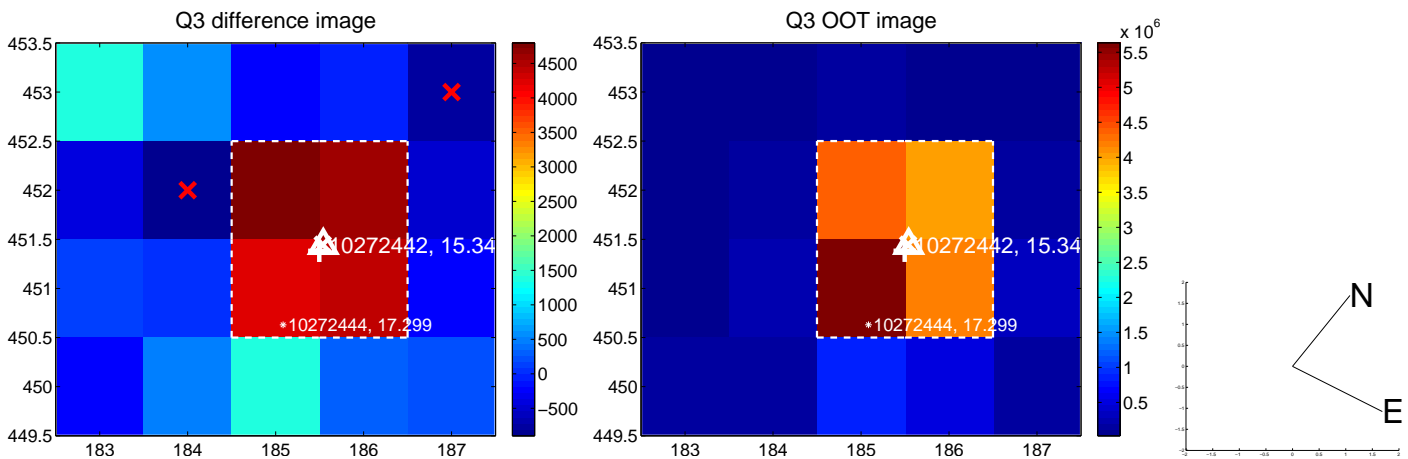
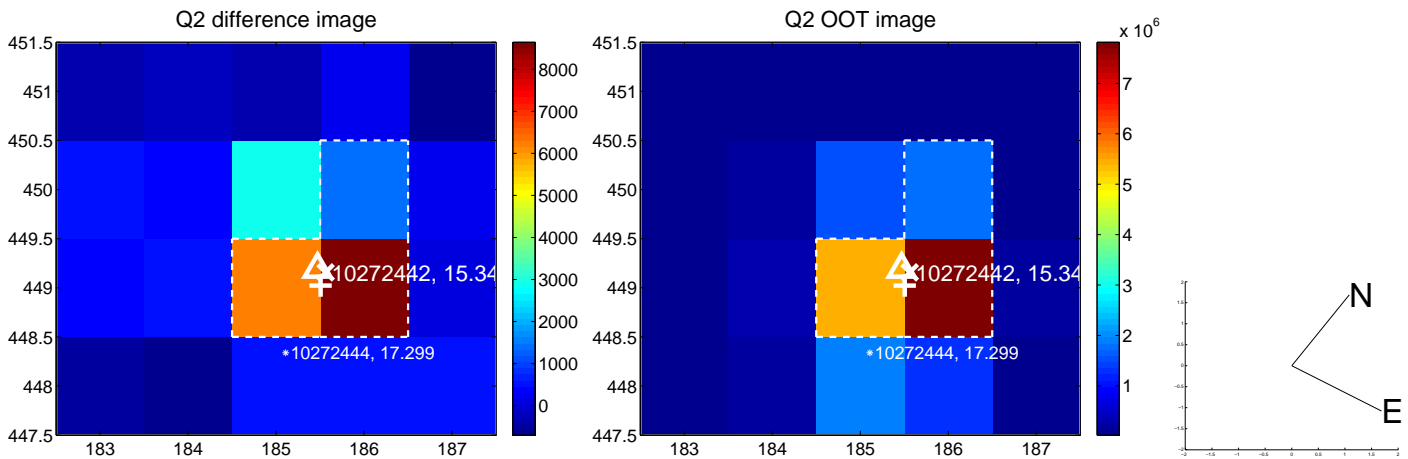
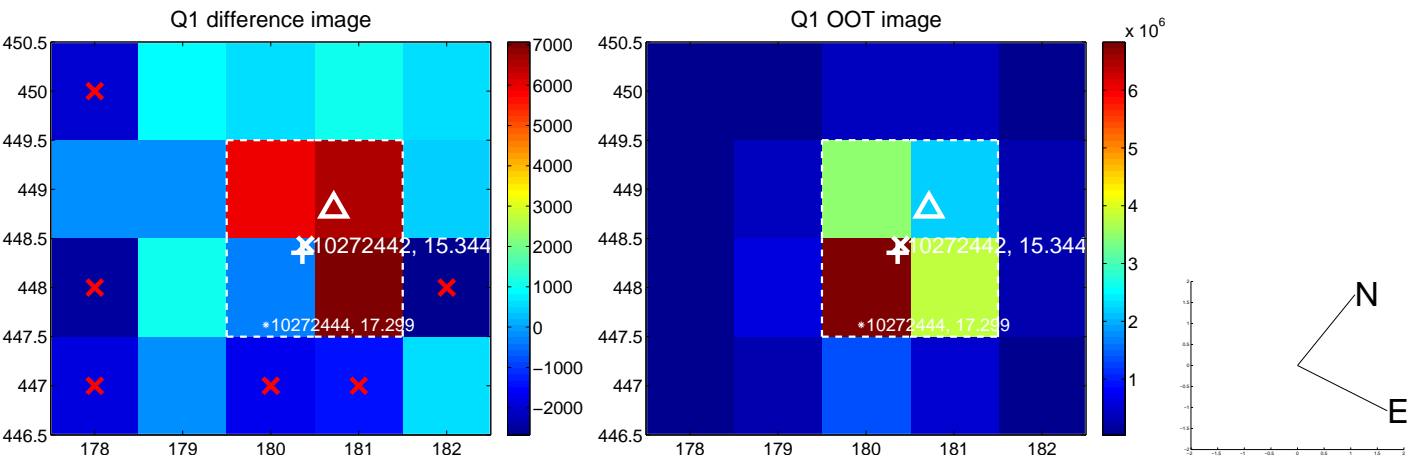
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.412 ± 0.154	2.67	-0.200 ± 0.122	0.360 ± 0.157
PRF-fit source offset from KIC position	0.176 ± 0.127	1.39	-0.164 ± 0.124	-0.066 ± 0.140
photometric centroid source offset	0.40 ± 0.28	1.44	0.20 ± 0.29	-0.35 ± 0.28

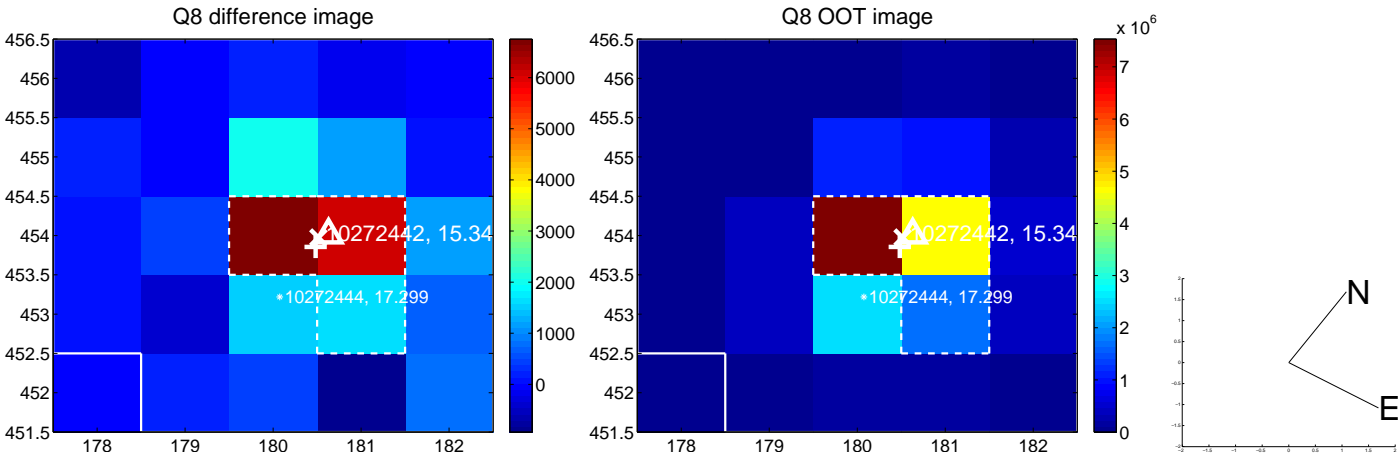
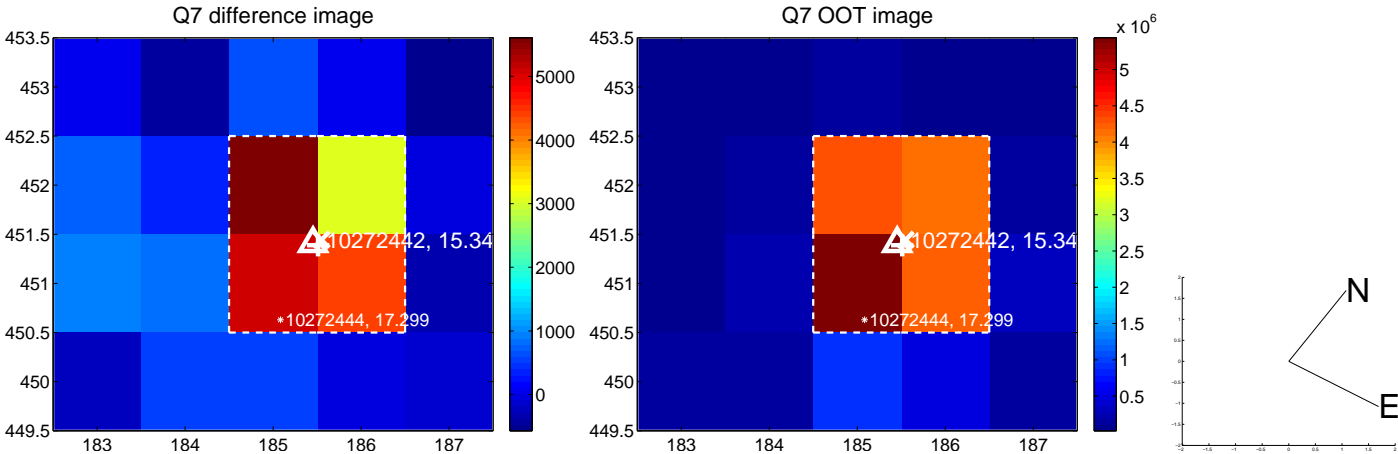
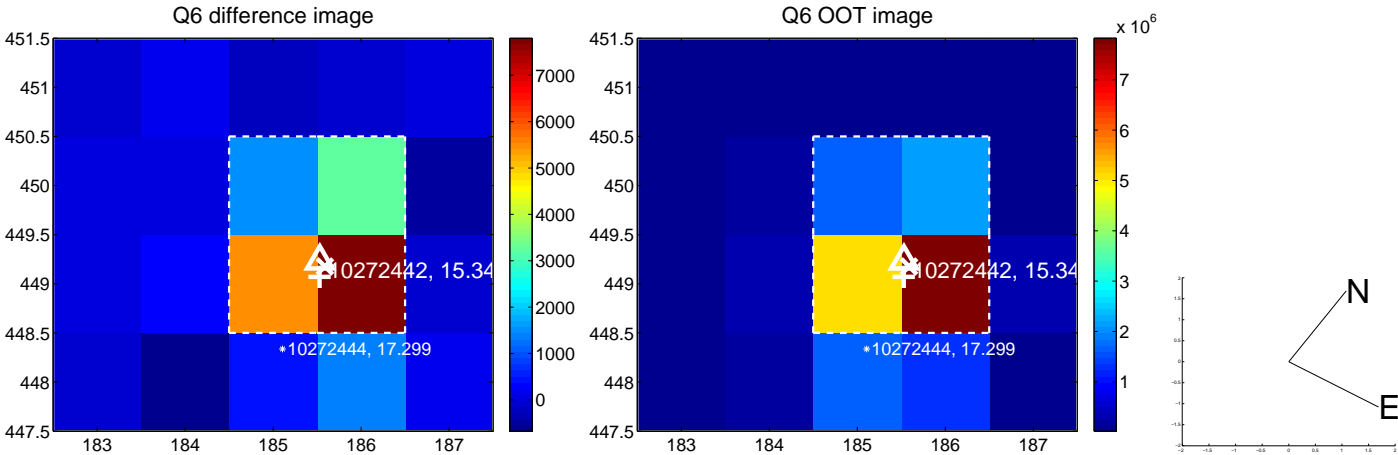
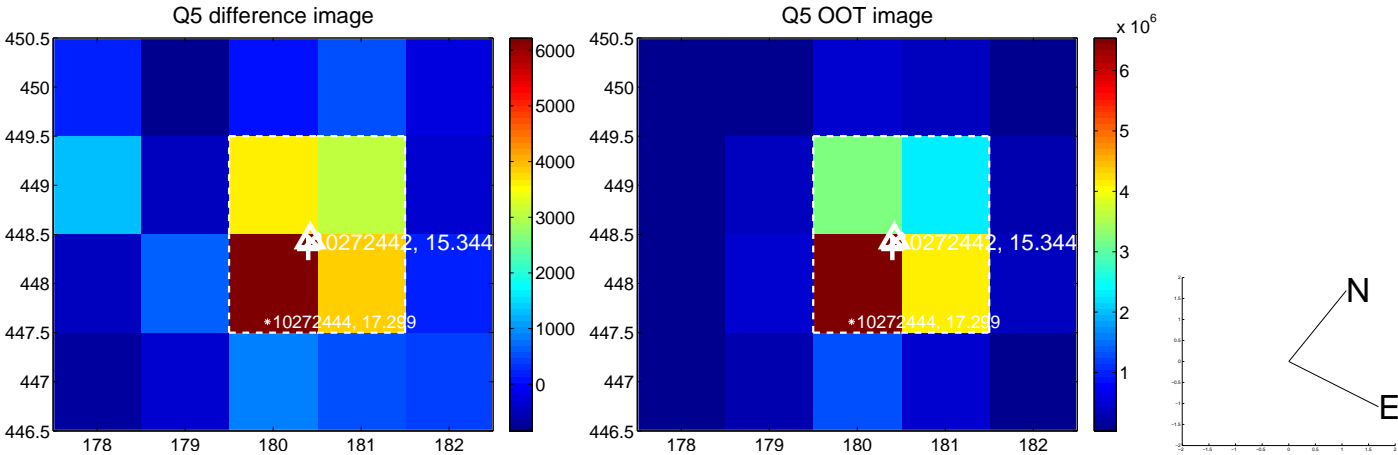


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

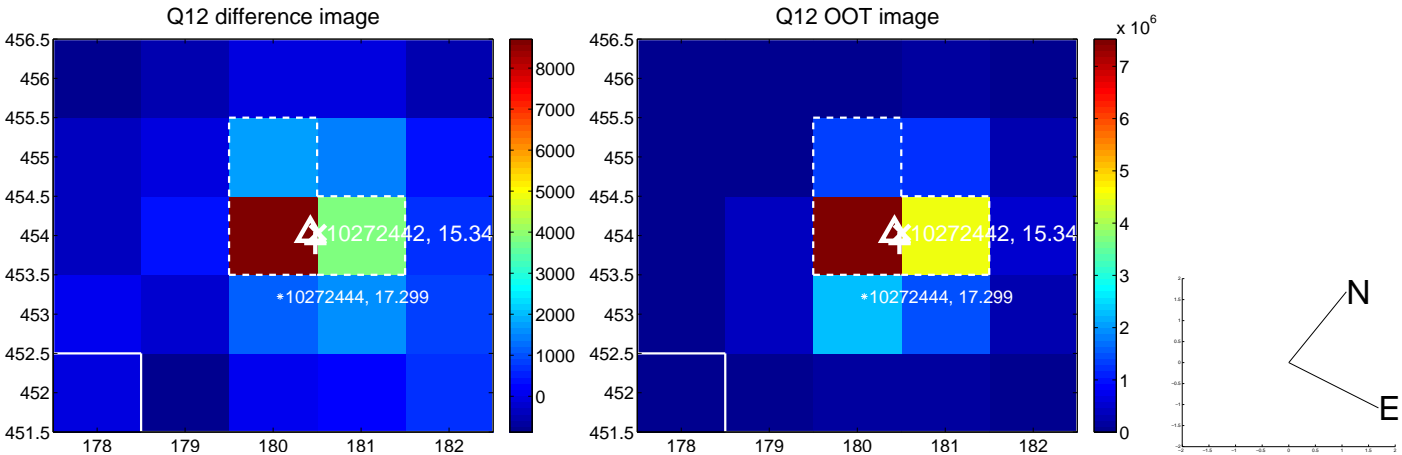
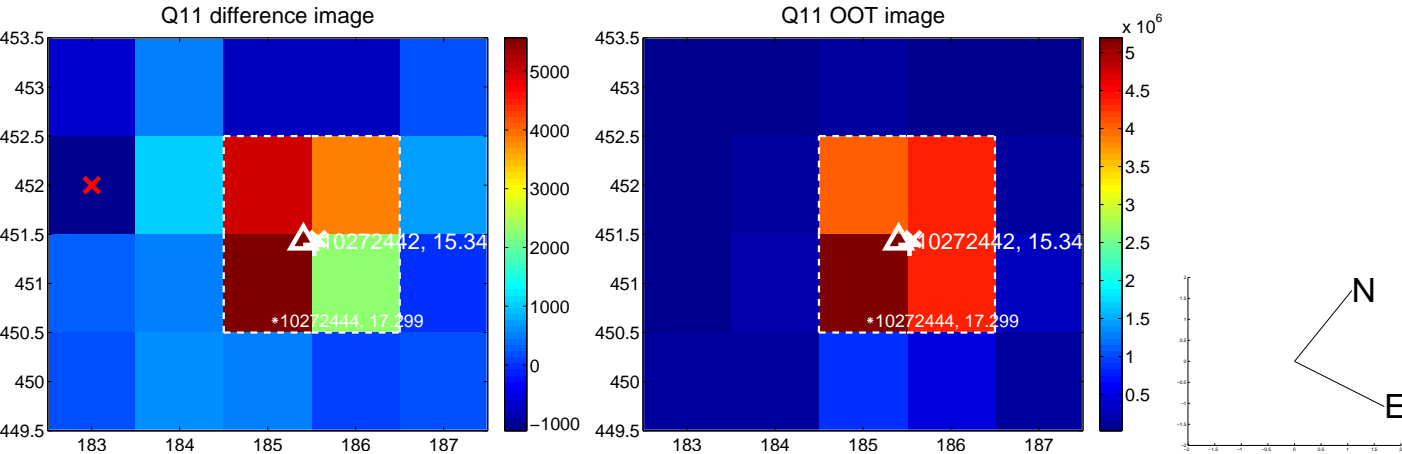
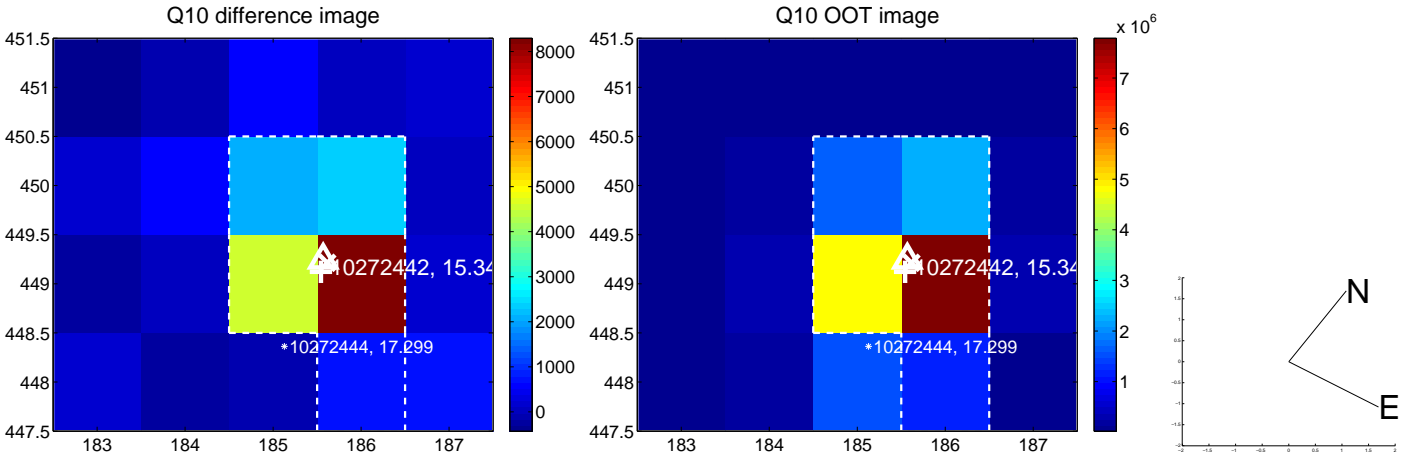
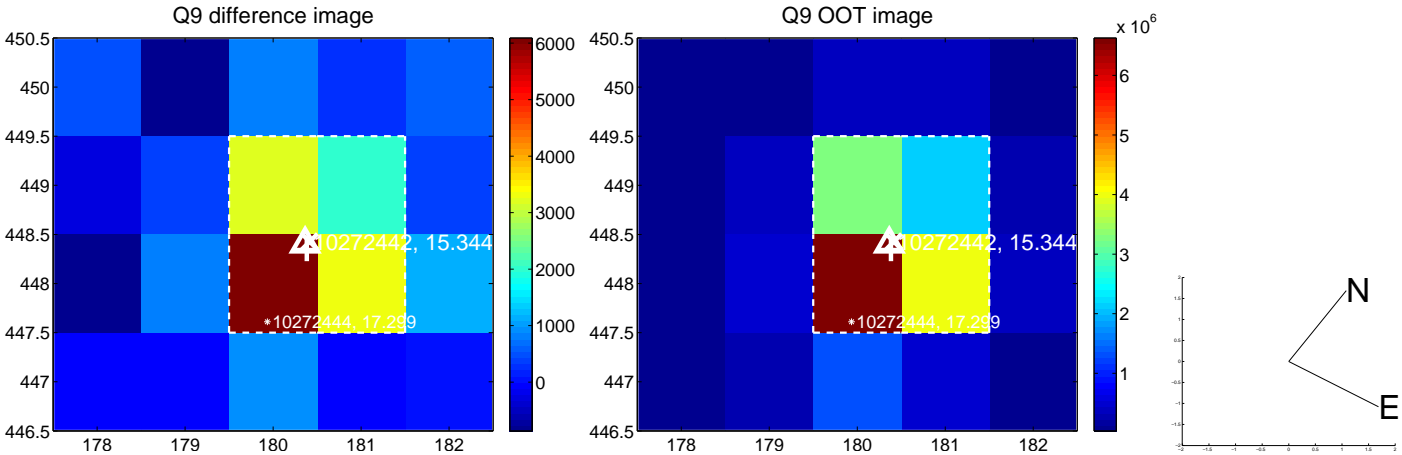
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



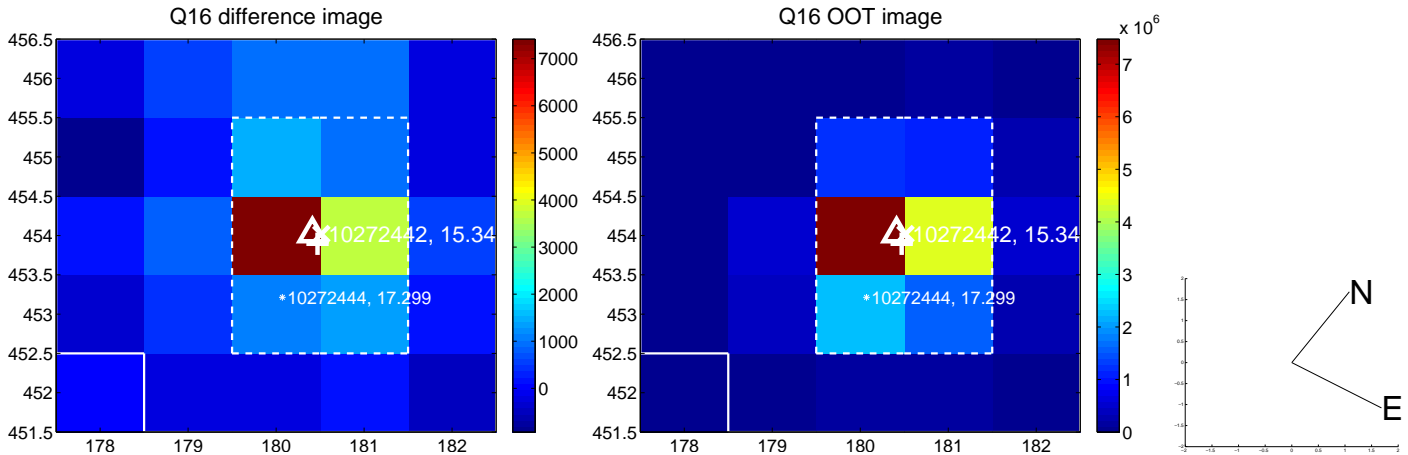
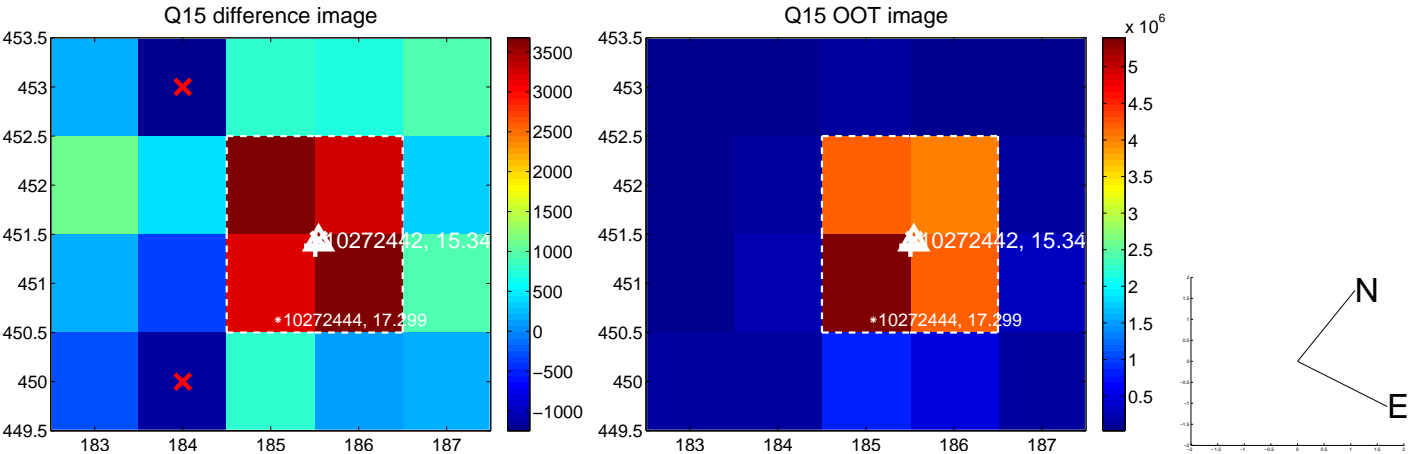
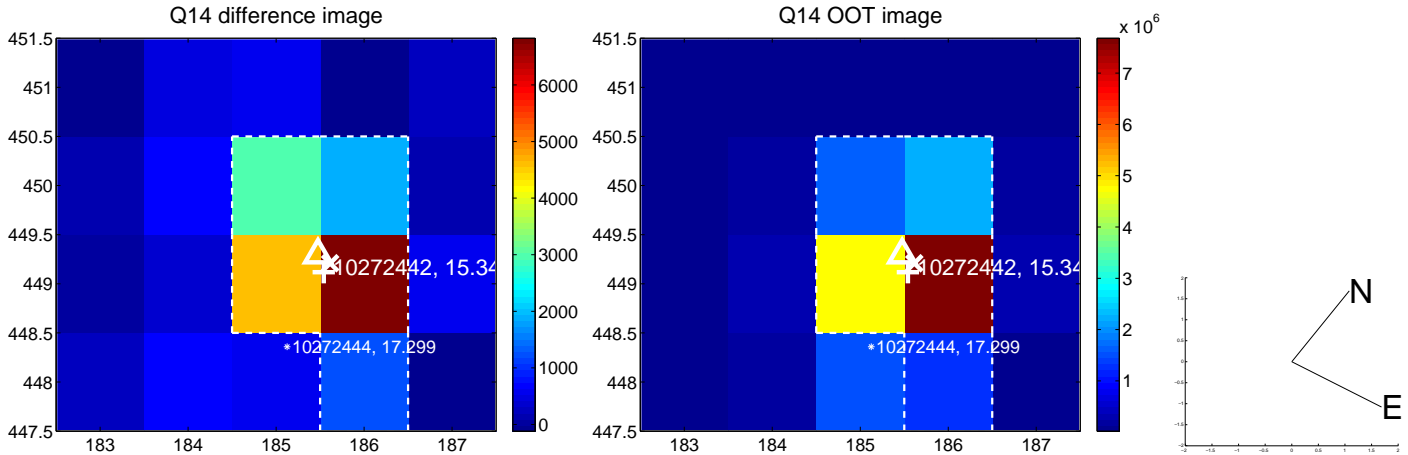
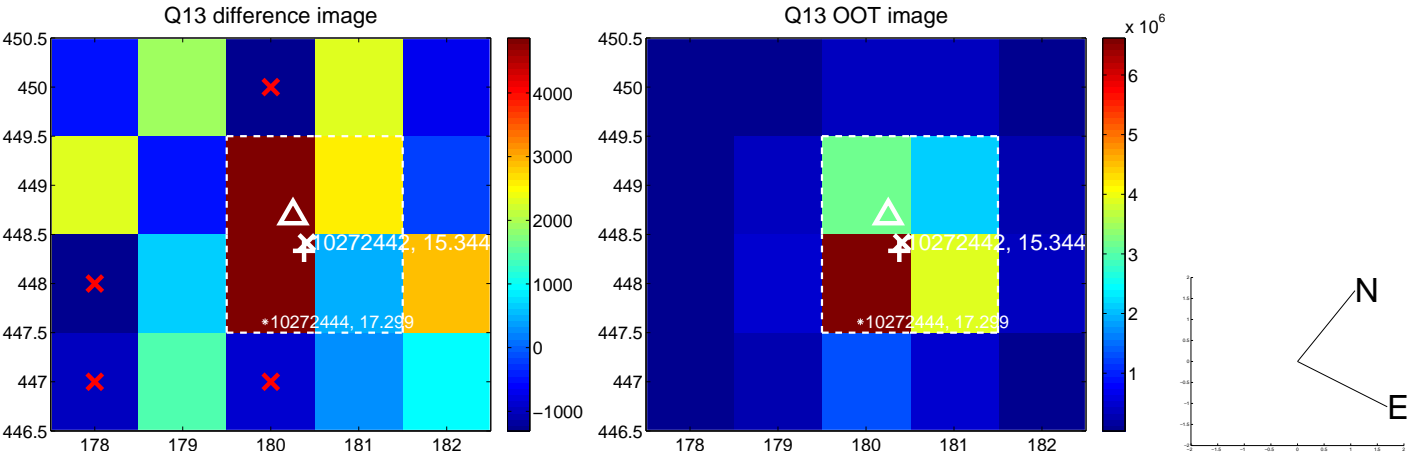
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



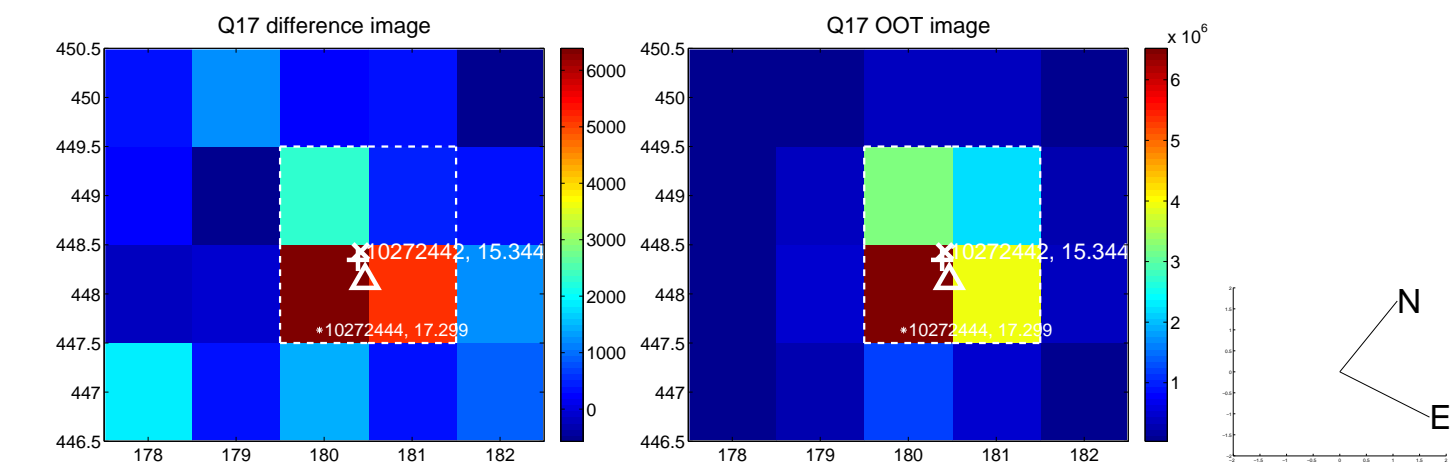
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



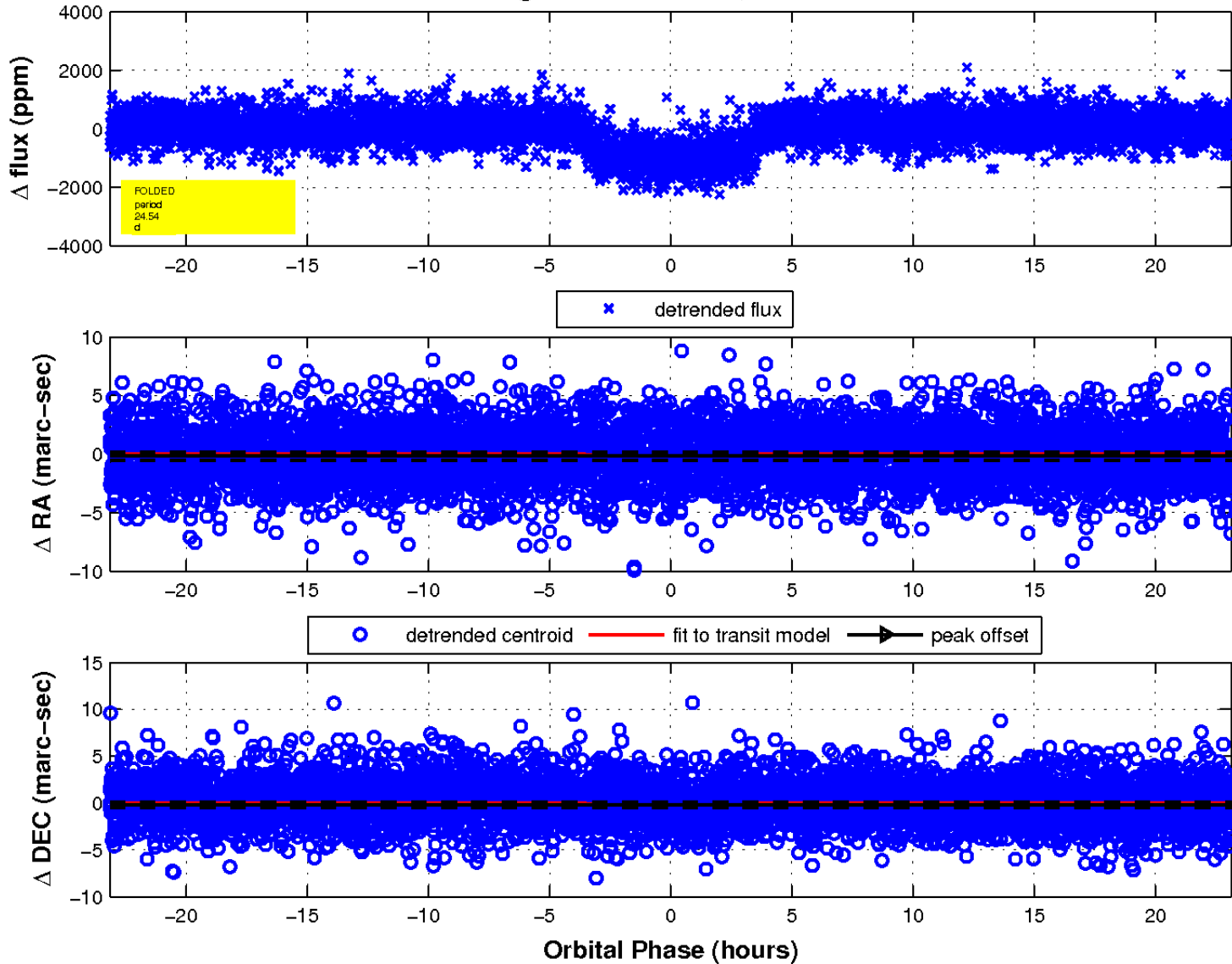
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

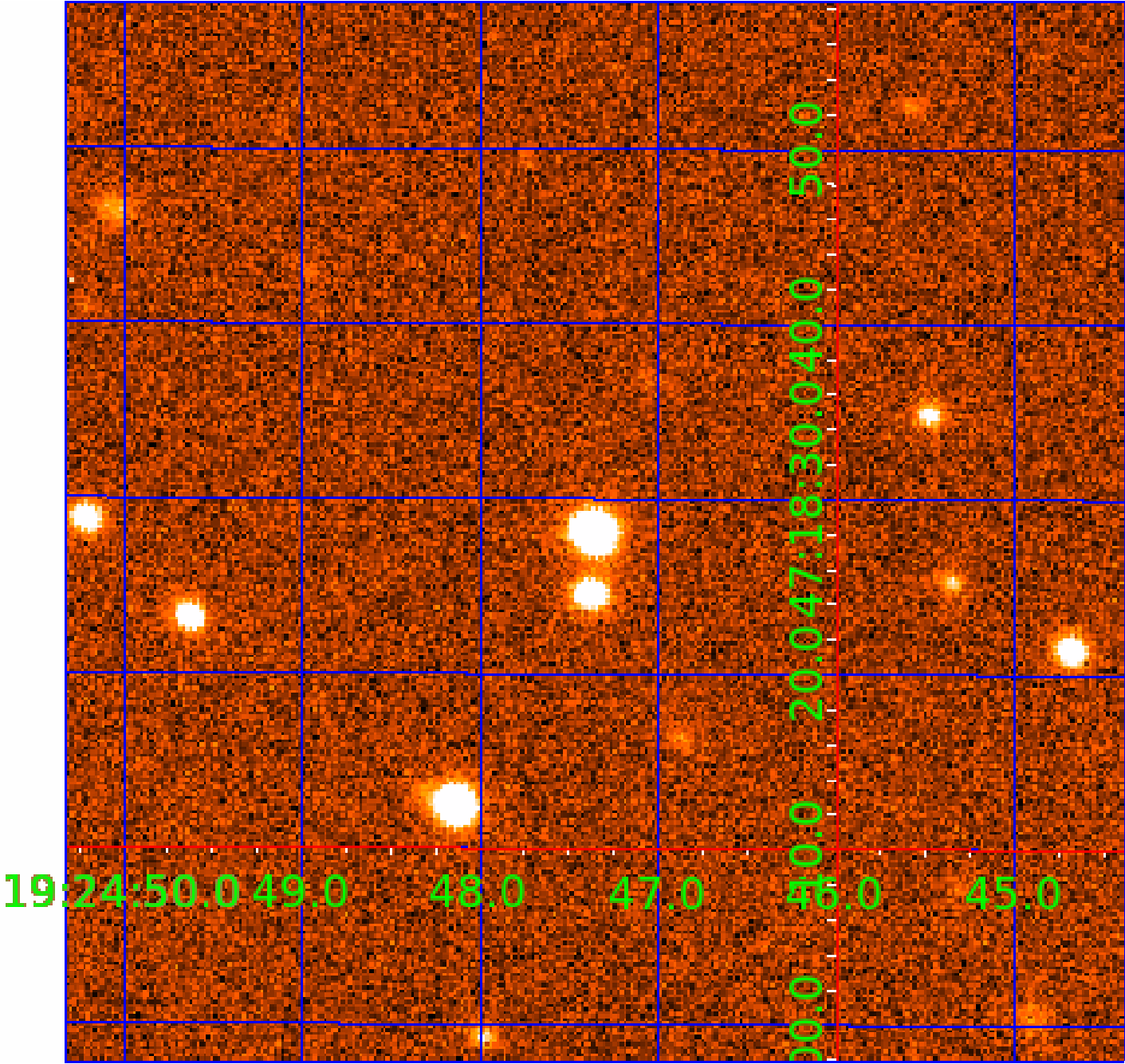


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010272442

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})
010272442-01	OBS	0734.01	24.543566	138.829923	1090.0	7.718	46.0	49.7	0.91	5955	3.34	34.13
010272442-02	OBS	0734.02	70.278254	151.327555	752.1	3.267	10.7	12.1	0.91	5955	3.96	8.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010272442-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010272442-02	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS

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 010272442-02

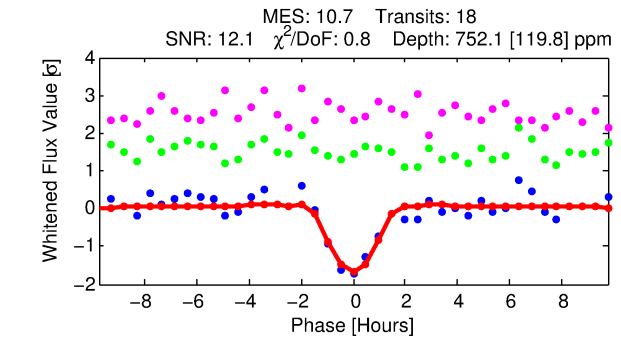
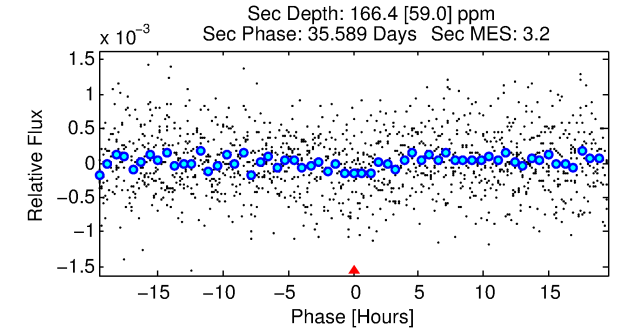
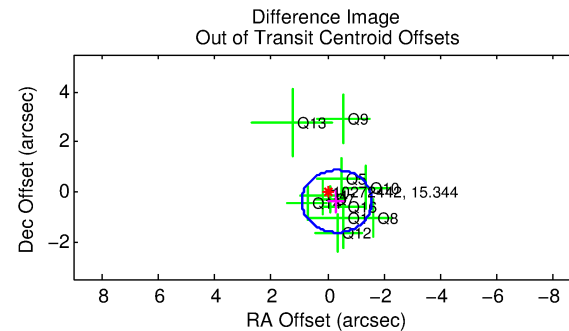
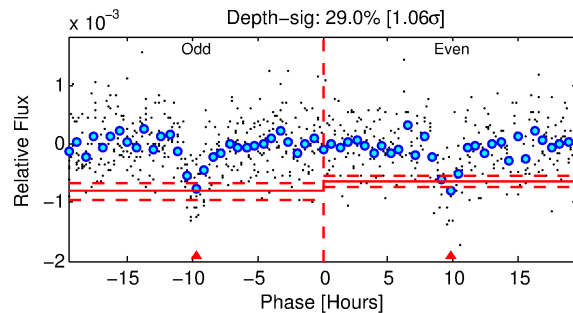
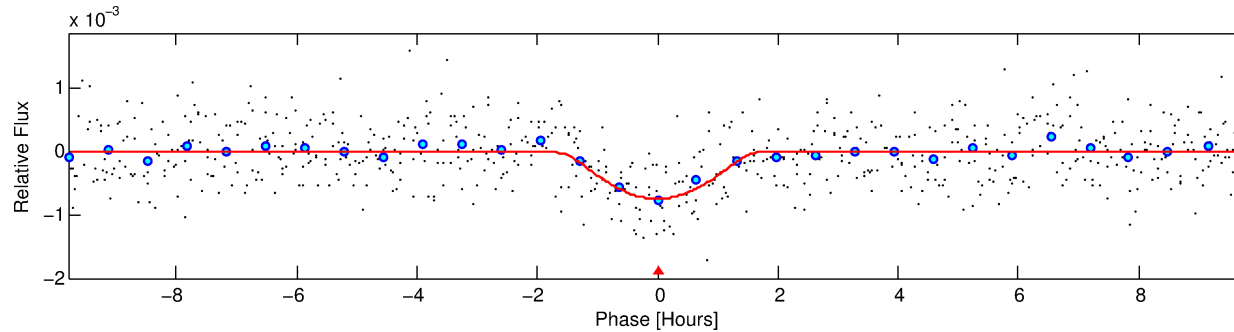
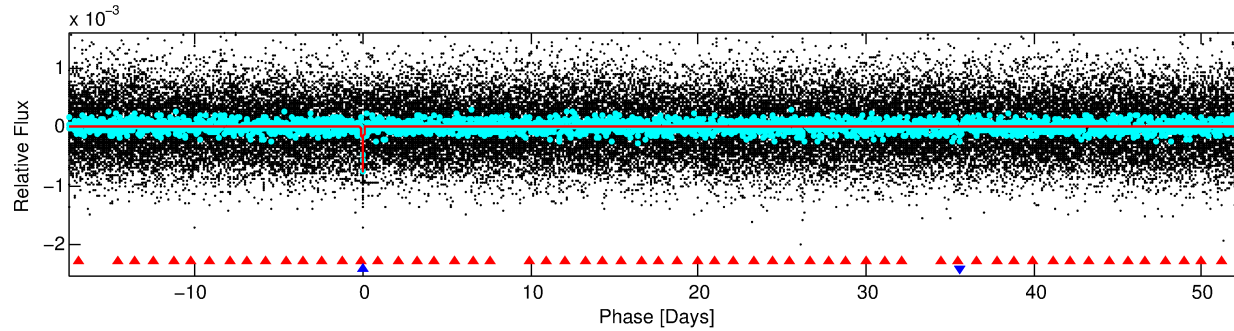
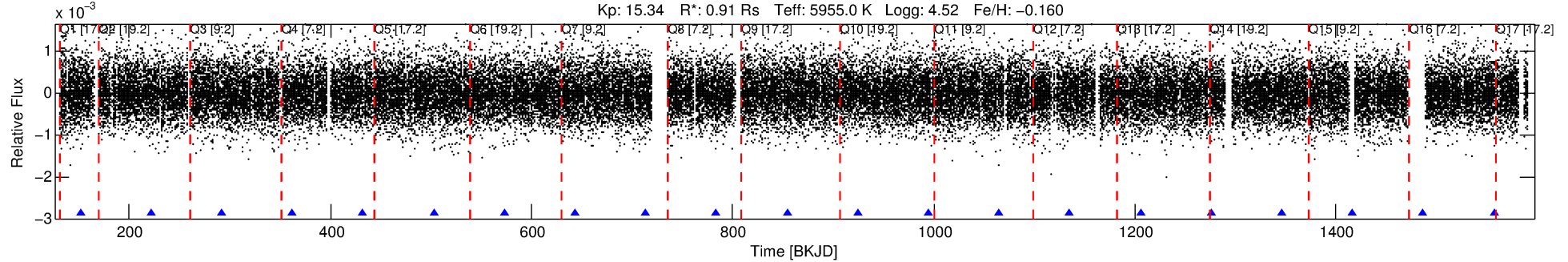
No Significant Match Found

DV One-Page Summary

KIC: 10272442 Candidate: 2 of 2 Period: 70.278 d

KOI: K00734.02 Corr: 0.873

Kp: 15.34 R*: 0.91 Rs Teff: 5955.0 K Logg: 4.52 Fe/H: -0.160



DV Fit Results:

Period = 70.27825 [0.00056] d
Epoch = 151.3276 [0.0059] BKJD
Rp/R* = 0.0399 [0.0613]
a/R* = 54.86 [31.01]
b = 0.98 [0.11]
Seff = 8.40 [3.14]
Teq = 434 [41] K
Rp = 3.96 [6.20] Re
a = 0.3334 [0.0820] AU
Ag = 649.21 [2024.65] [0.32σ]
Teffp = 3387 [2626] K [1.12σ]

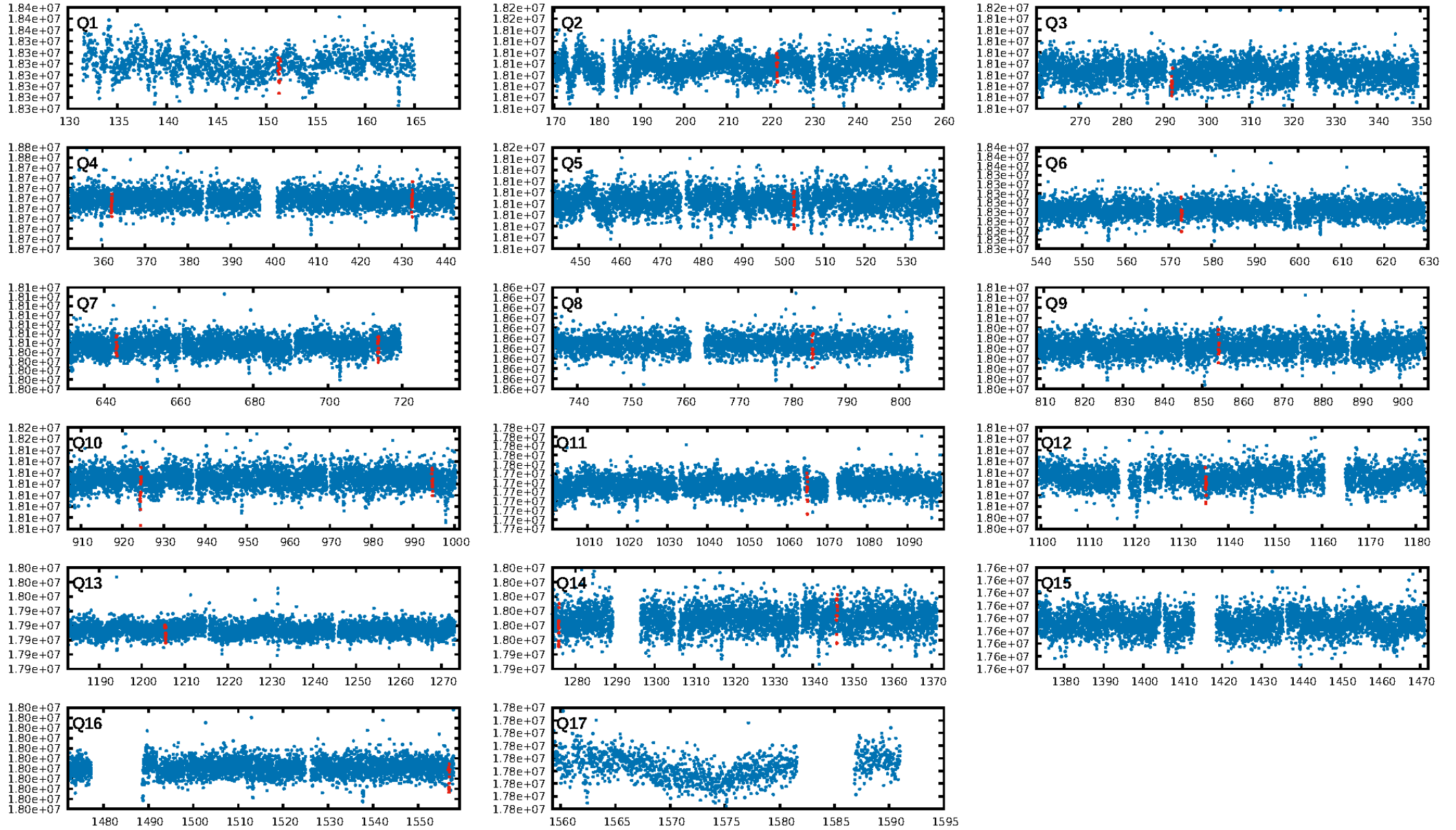
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [130.96σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 83.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.64e-26
RollingBand-fgt: 1.00 [17/17]
GhostDiagnostic-chr: 5.099
Centroid-sig: 47.0%
Centroid-so: 1.210 arcsec [1.03σ]
OotOffset-rm: 0.505 arcsec [1.21σ]
KicOffset-rm: 0.824 arcsec [1.78σ]
OotOffset-st: 2/1/4/4 [11]
KicOffset-st: 2/1/4/4 [11]
DiffImageQuality-fgm: 0.73 [8/11]
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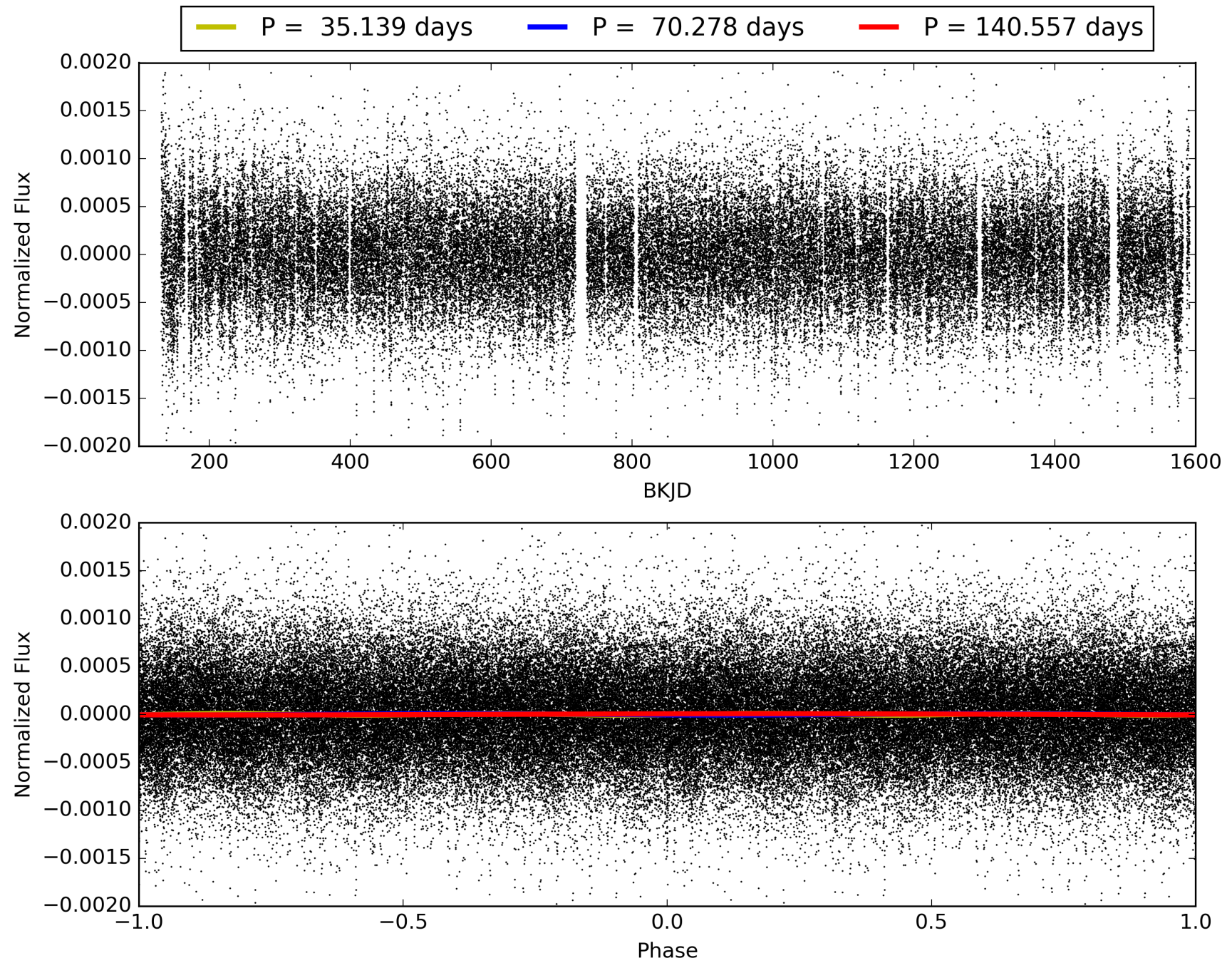
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:34:59 Z

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

TCE 010272442-02, PDC Light Curves

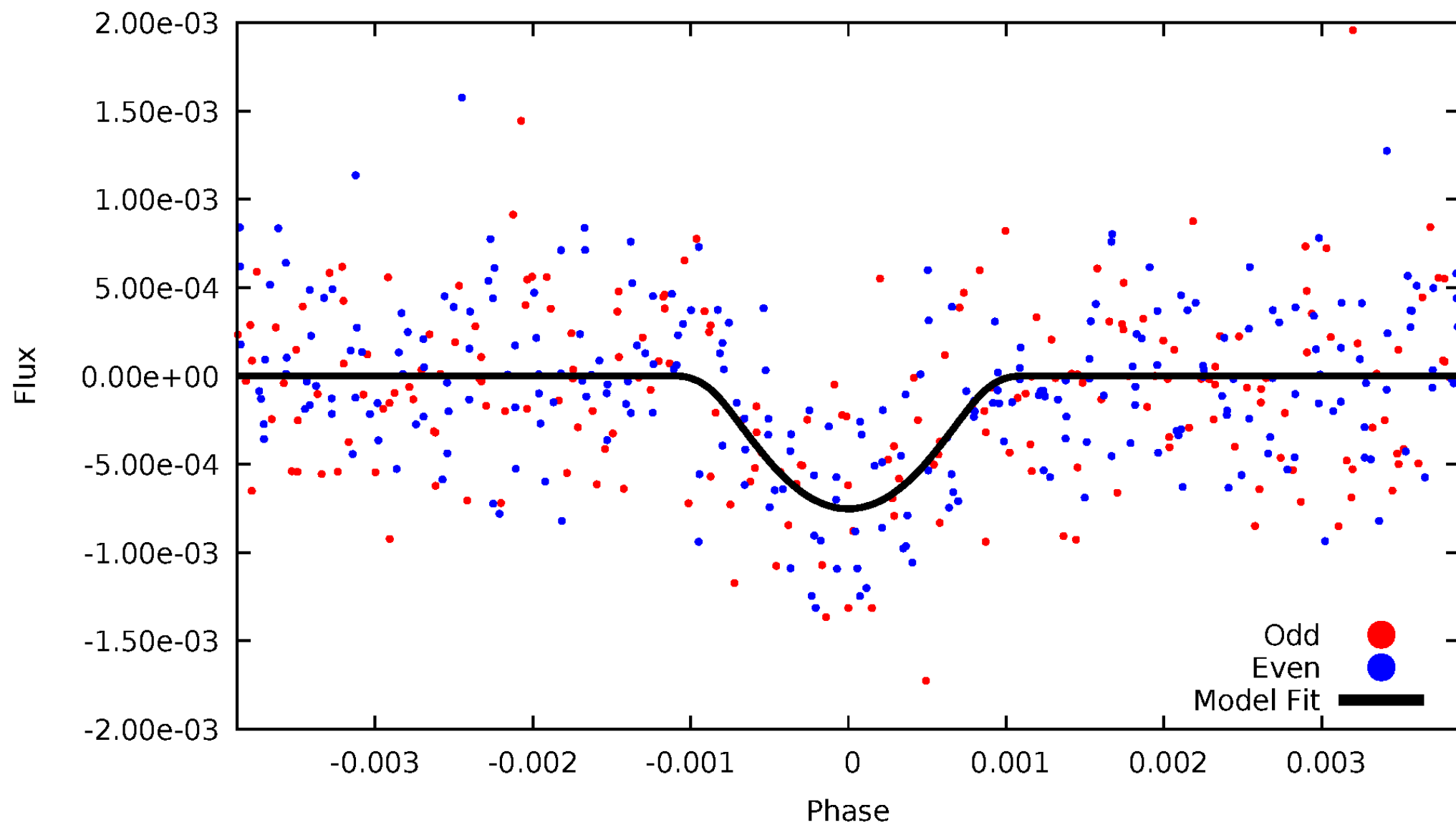


TCE 010272442-02



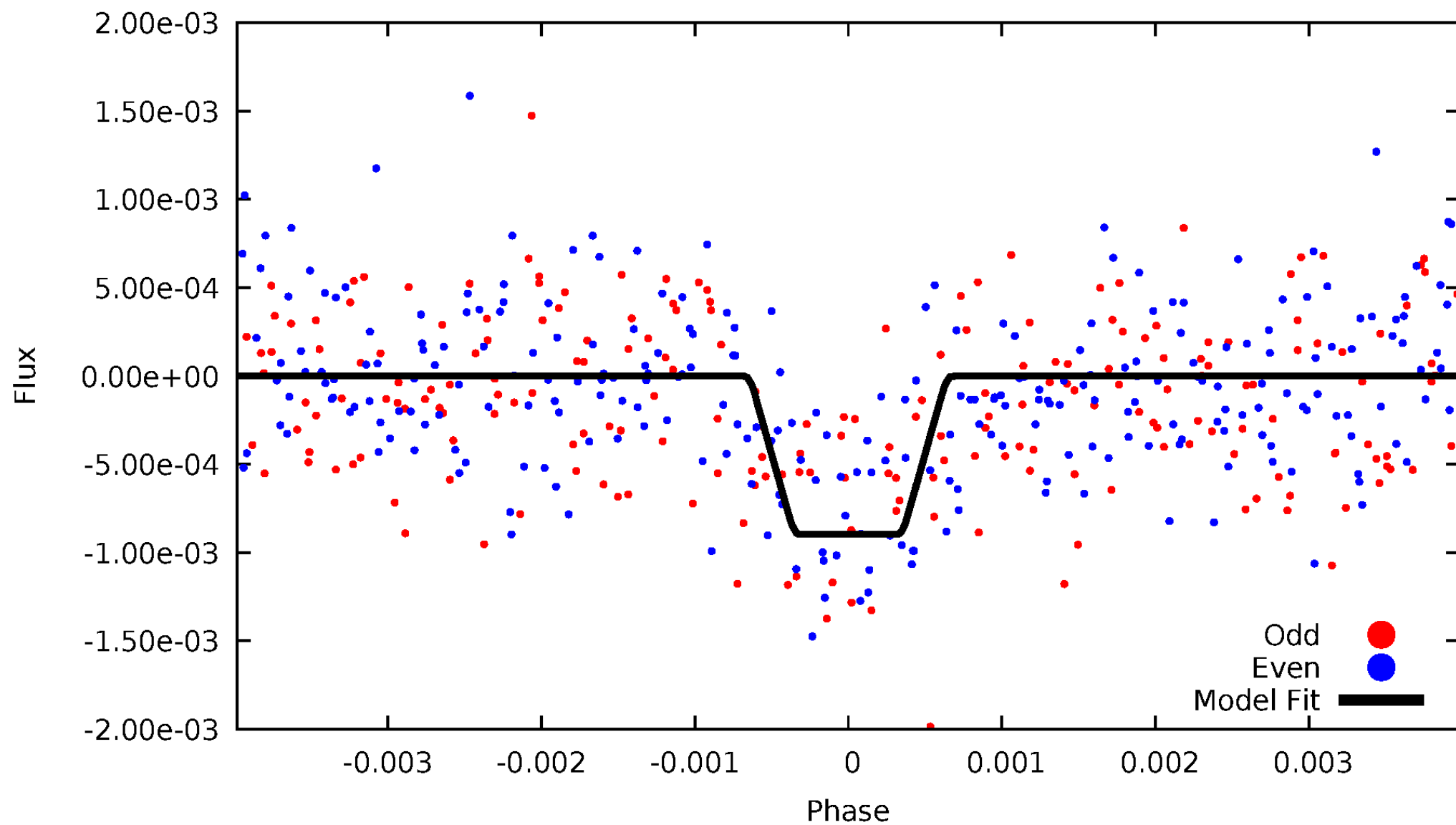
DV Odd/Even

TCE 010272442-02



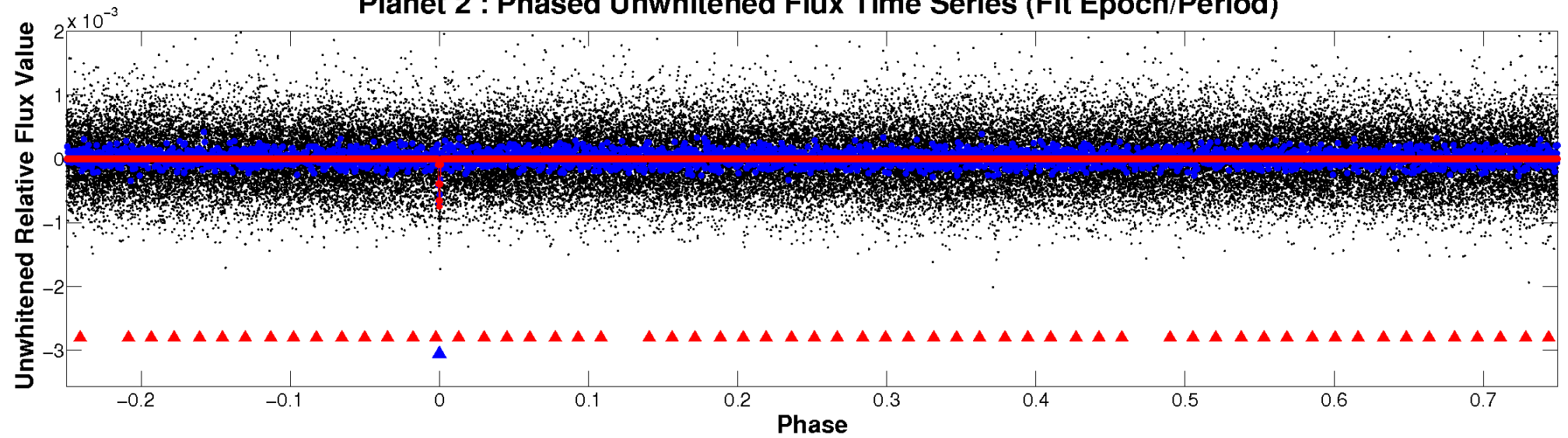
ALT Odd/Even

TCE 010272442-02

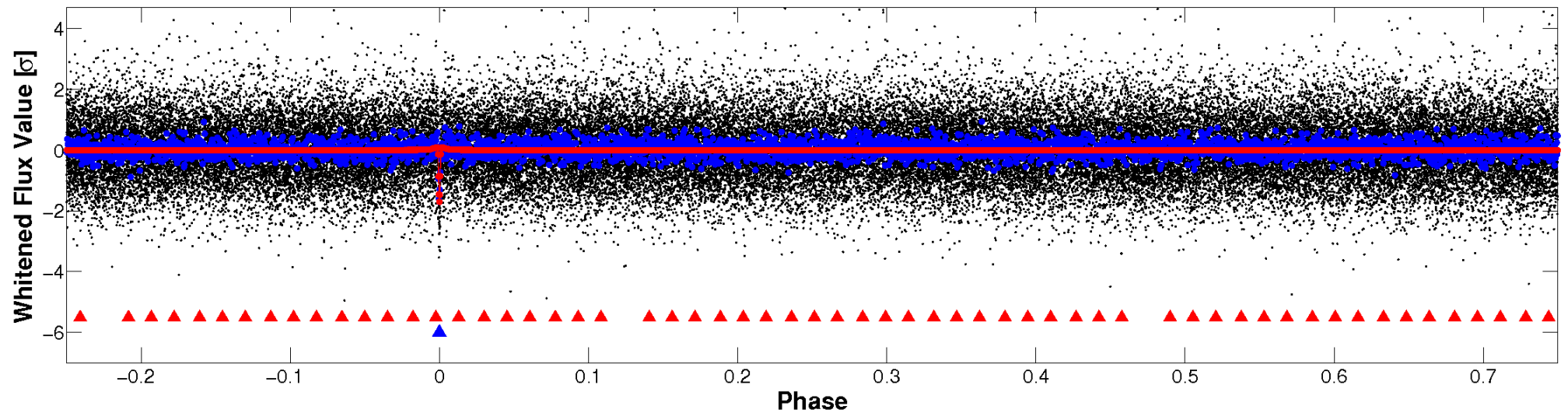


Non-Whitened Vs. Whitened Light Curve

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

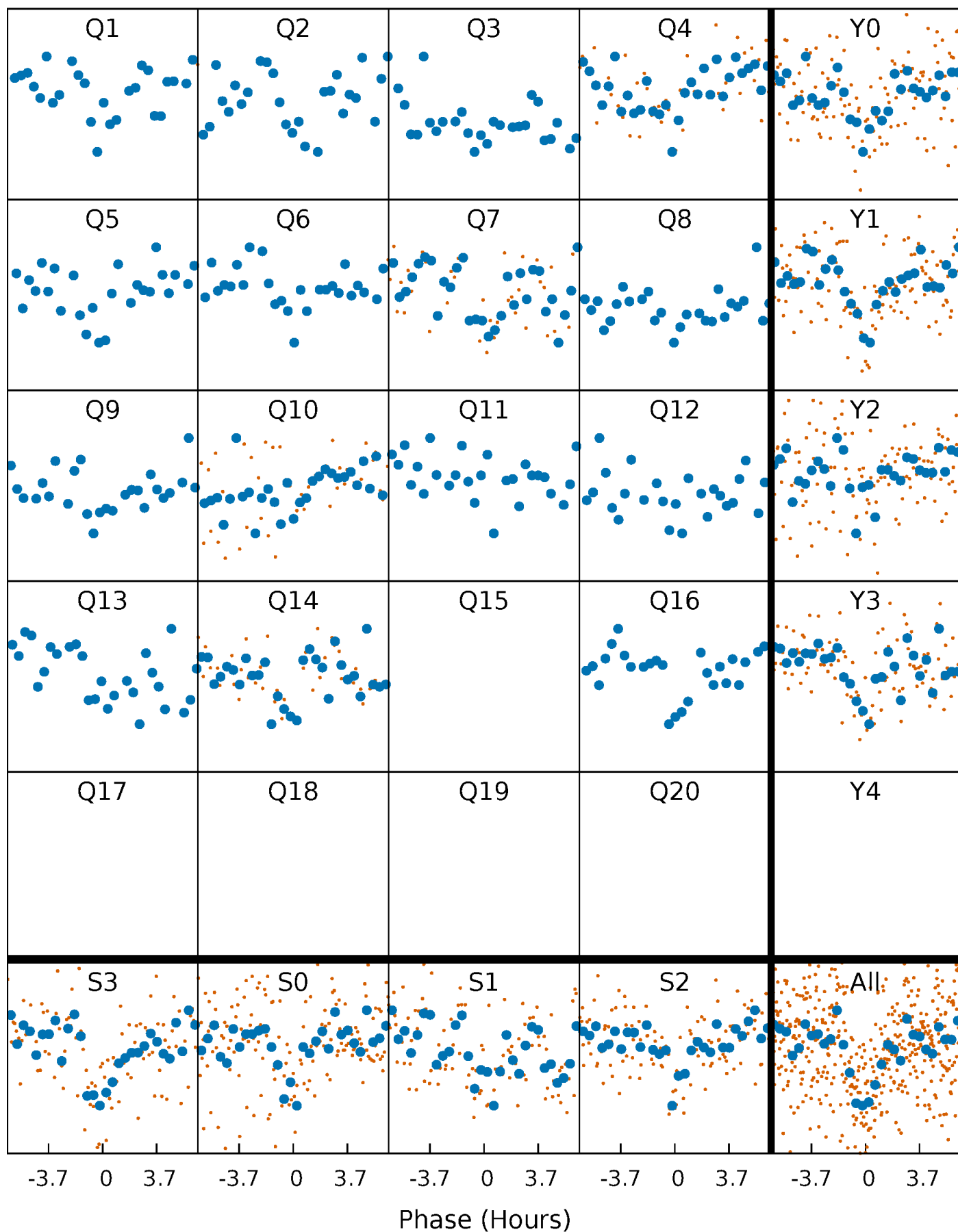


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



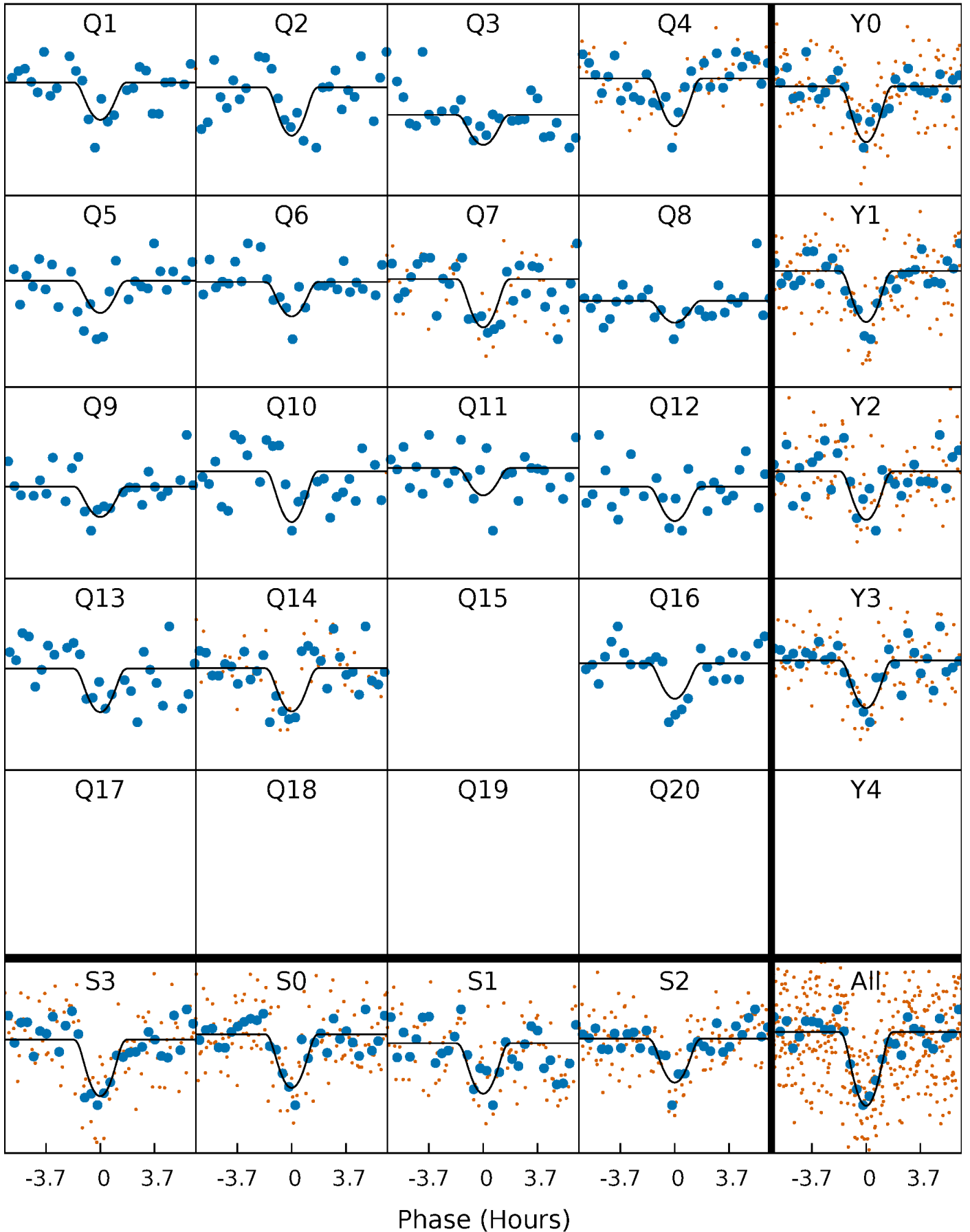
PDC Quarter-Phased Transit Curves

TCE 010272442-02 $P = 70.278254$ Days $T_0 = 151.327555$ (BKJD)



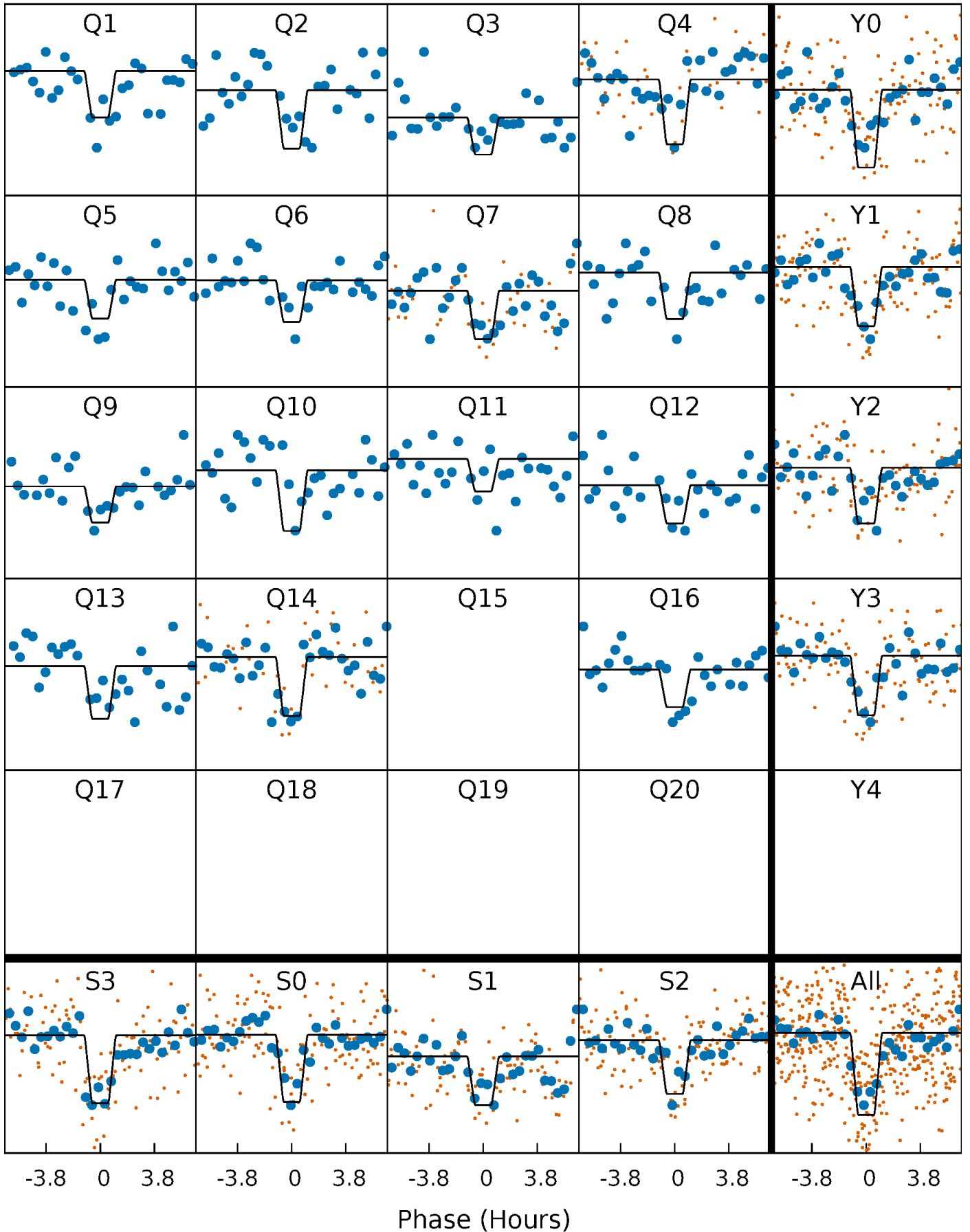
DV Quarter-Phased Transit Curves

TCE 010272442-02 $P = 70.278254$ Days $T_0 = 151.327555$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

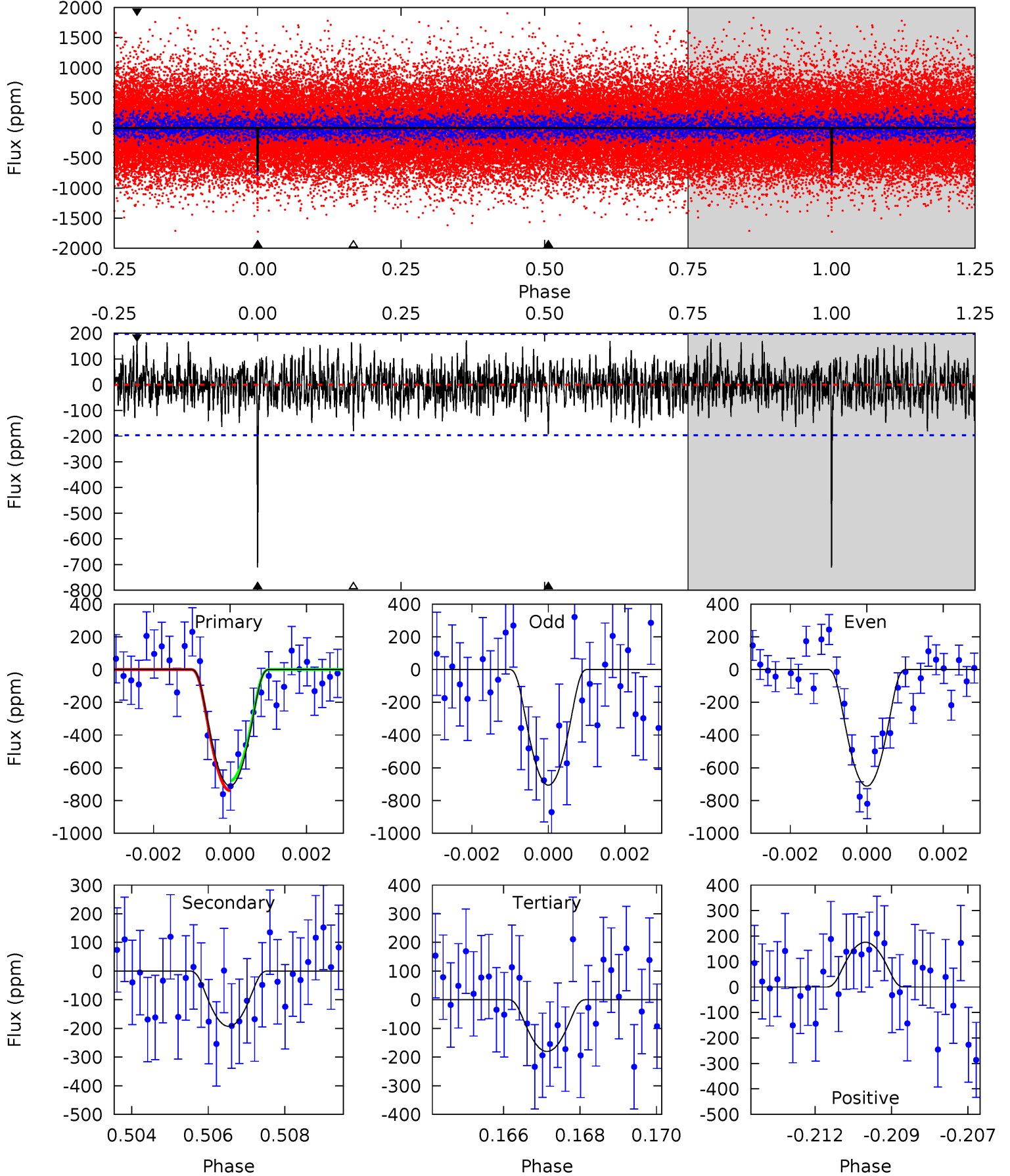
TCE 010272442-02 $P = 70.277878$ Days $T_0 = 151.329448$ (BKJD)



DV Model-Shift Uniqueness Test

010272442-02, P = 70.278254 Days, E = 81.049301 Days

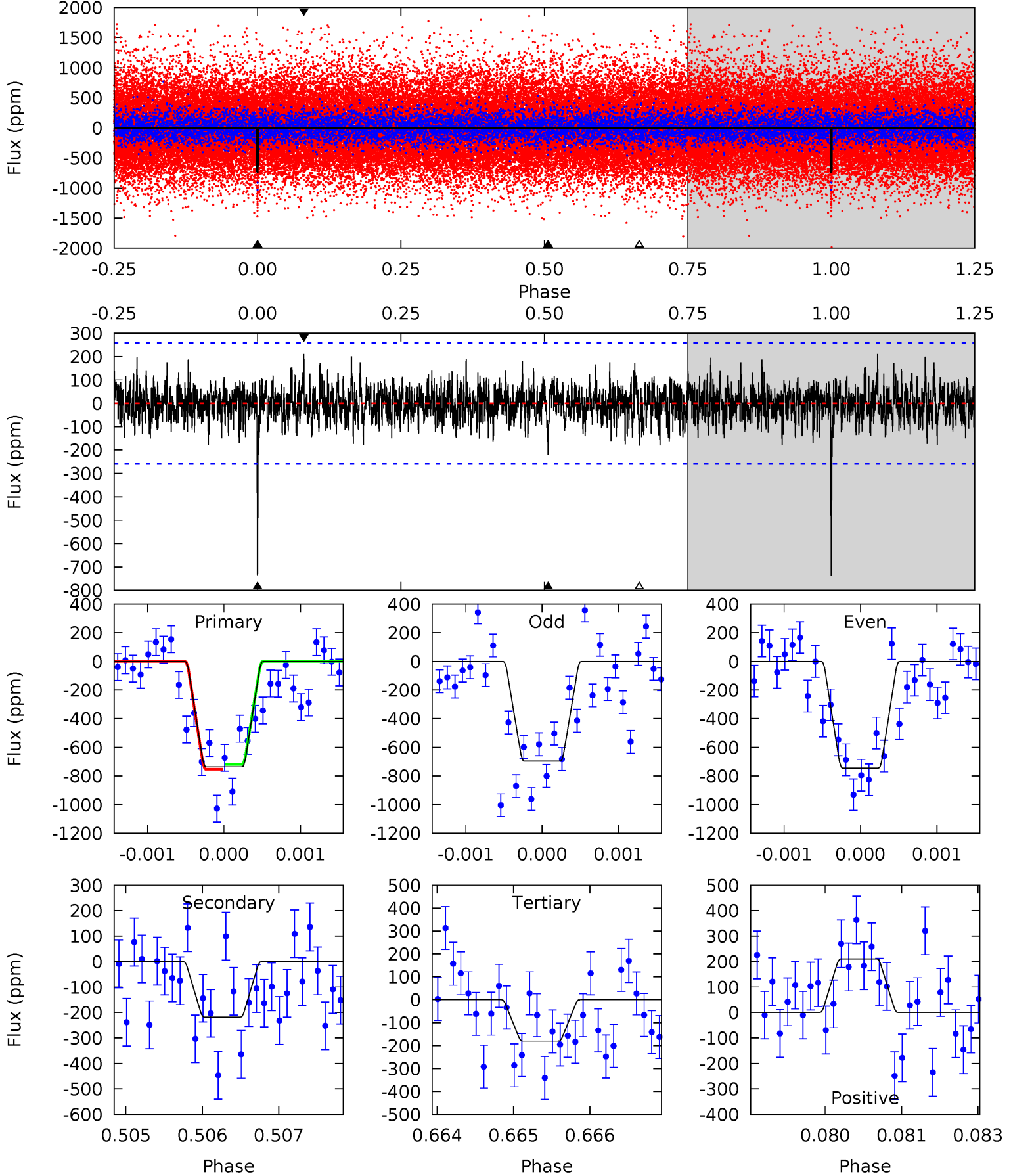
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	5.20	4.87	4.74	5.31	3.06	1.48	14.3	14.4	0.33	0.46	0.08	1.16	0.20	0.82



Alt Model-Shift Uniqueness Test

010272442-02, P = 70.277878 Days, E = 81.051570 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	4.55	3.76	4.38	5.40	3.21	1.19	11.6	11.0	0.79	0.17	0.49	1.10	0.22	0.33



Stellar Parameters For KIC 010272442

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5955^{+161}_{-179}	$4.520^{+0.048}_{-0.192}$	$-0.160^{+0.300}_{-0.300}$	$0.910^{+0.269}_{-0.084}$	$0.999^{+0.122}_{-0.122}$	$1.869^{+0.384}_{-0.989}$
	+3%/-3%	+1%/-4%	+188%/-188%	+30%/-9%	+12%/-12%	+21%/-53%
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 010272442-02 / KOI 0734.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-193 ± 37	$6.20^{+5.84}_{-3.76}$	617^{+38}_{-28}	3383^{+1335}_{-595}	295^{+1635}_{-217}
Alt.	-219 ± 48	$5.55^{+5.26}_{-3.85}$	618^{+36}_{-28}	3567^{+2036}_{-628}	420^{+4066}_{-309}

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 $A_{obs} \gg 1.0$

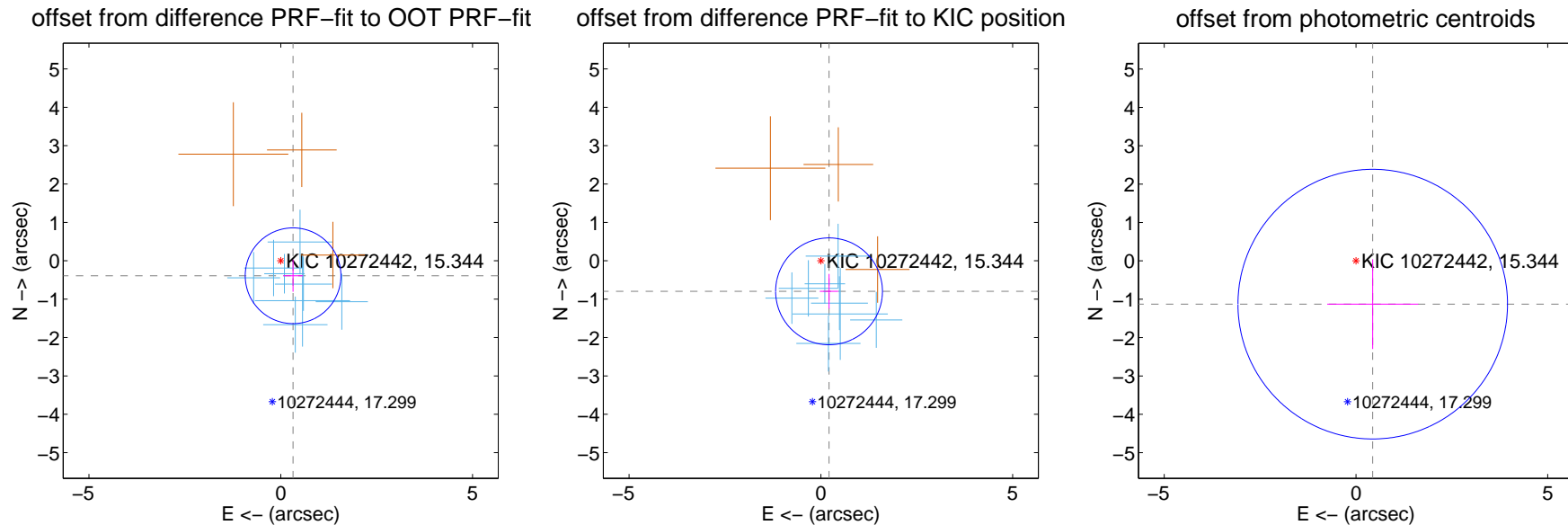
DV Centroid Data

Supplemental centroid analysis for 010272442-02. Kepler magnitude: 15.34. Transit SNR 12.11

There are 8 quarters with good PRF difference image offsets

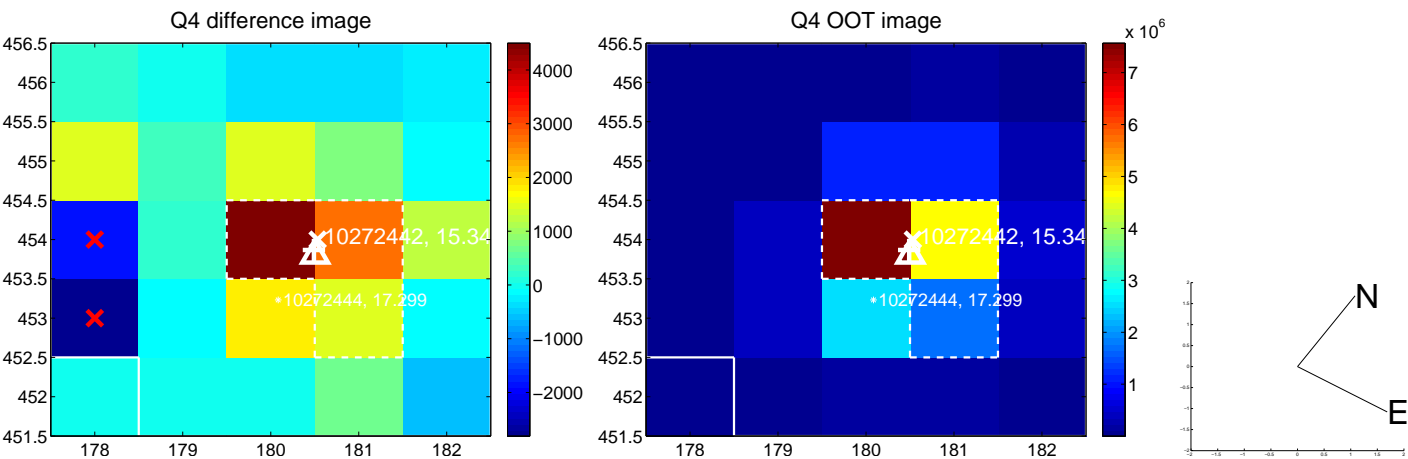
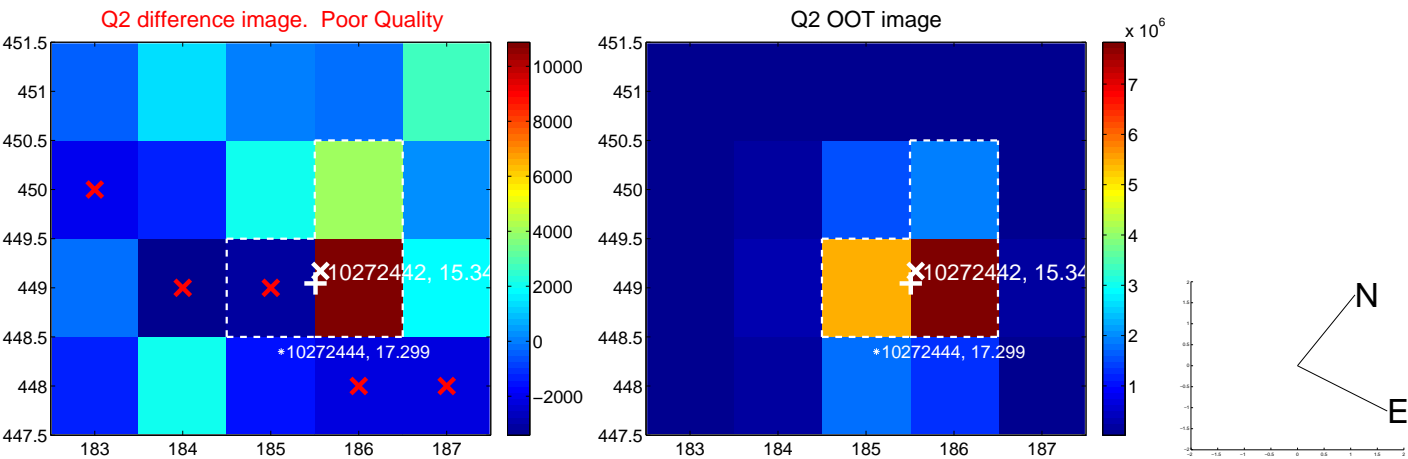
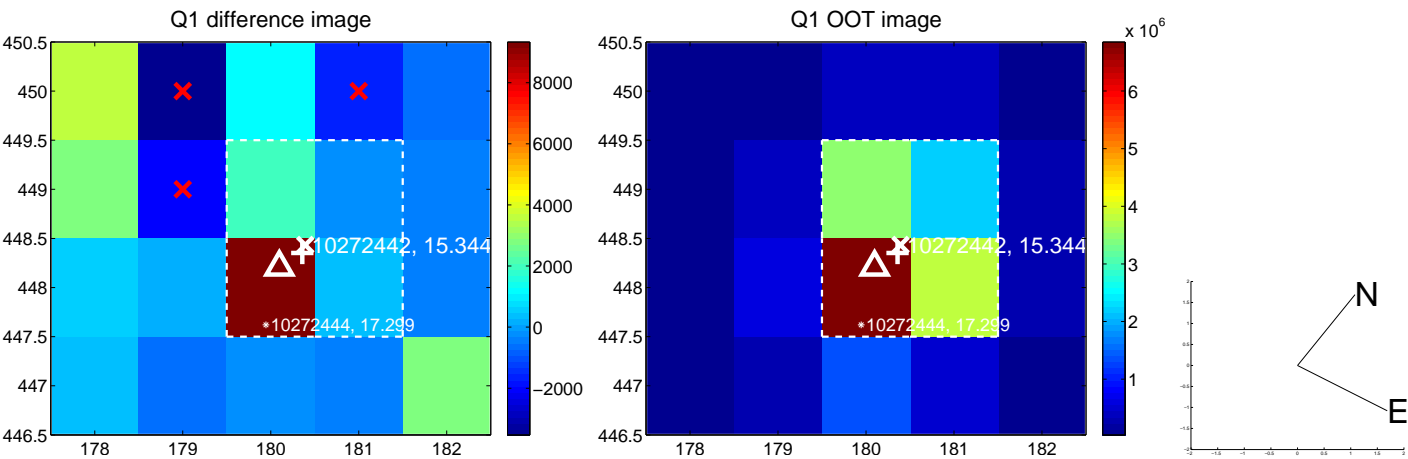
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.505 ± 0.416	1.21	-0.321 ± 0.255	-0.390 ± 0.417
PRF-fit source offset from KIC position	0.824 ± 0.464	1.78	-0.213 ± 0.240	-0.796 ± 0.454
photometric centroid source offset	1.21 ± 1.17	1.03	-0.44 ± 1.19	-1.13 ± 1.17

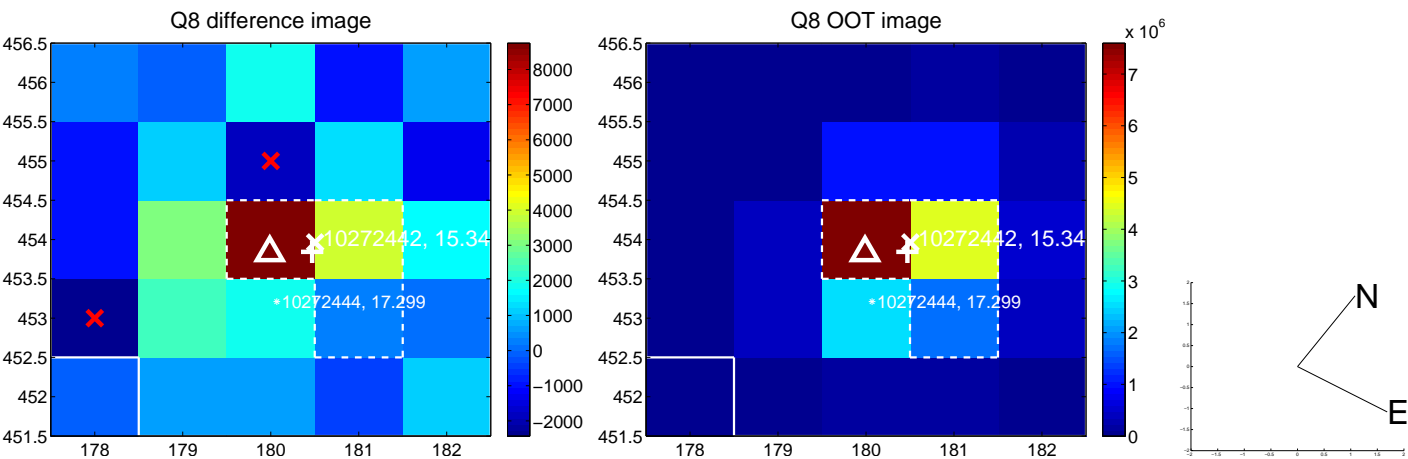
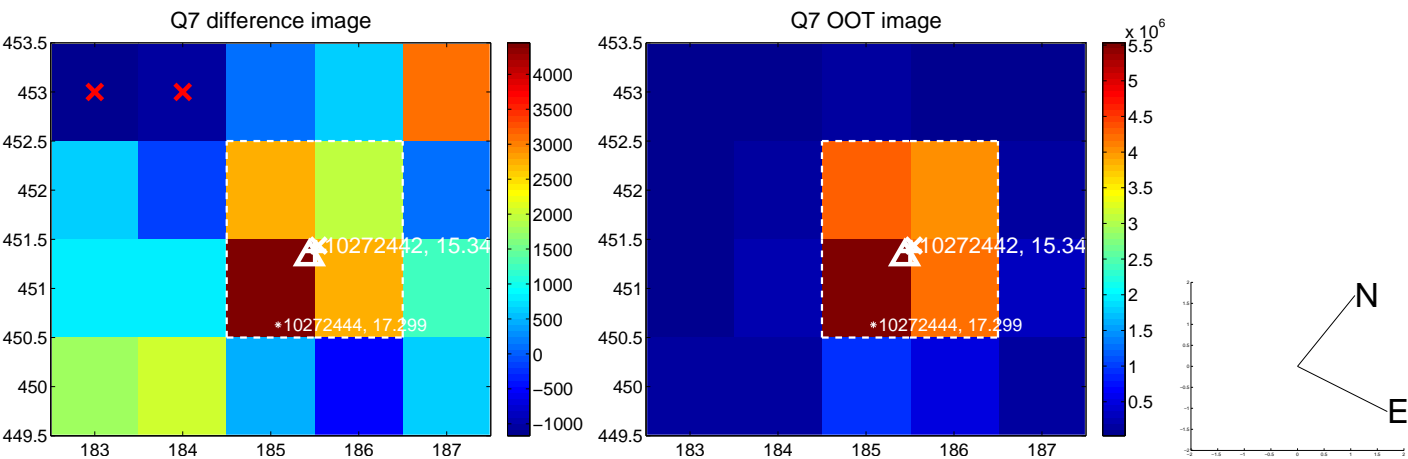
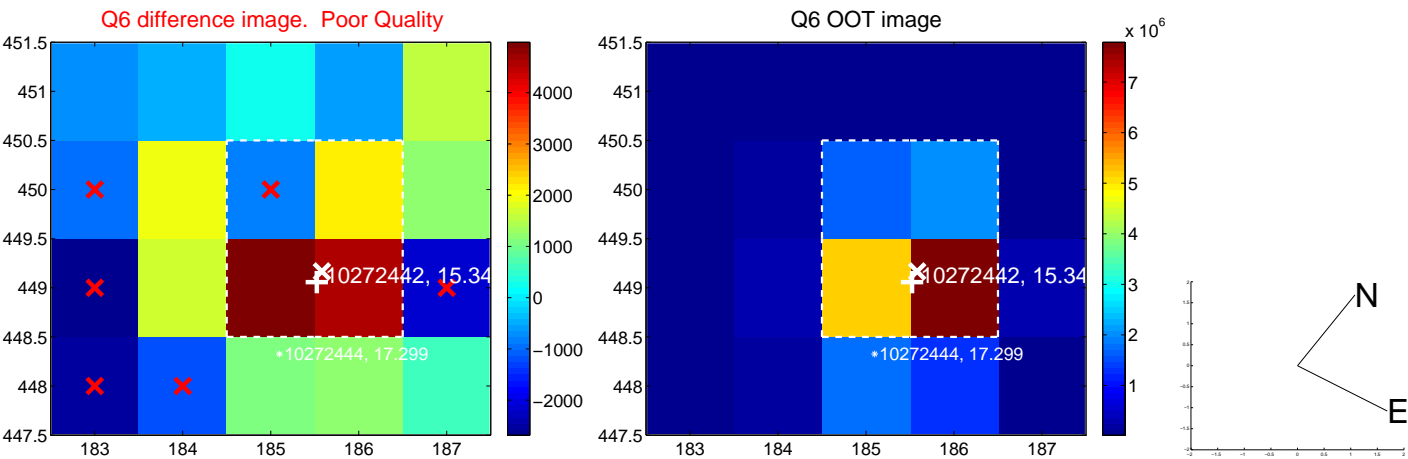
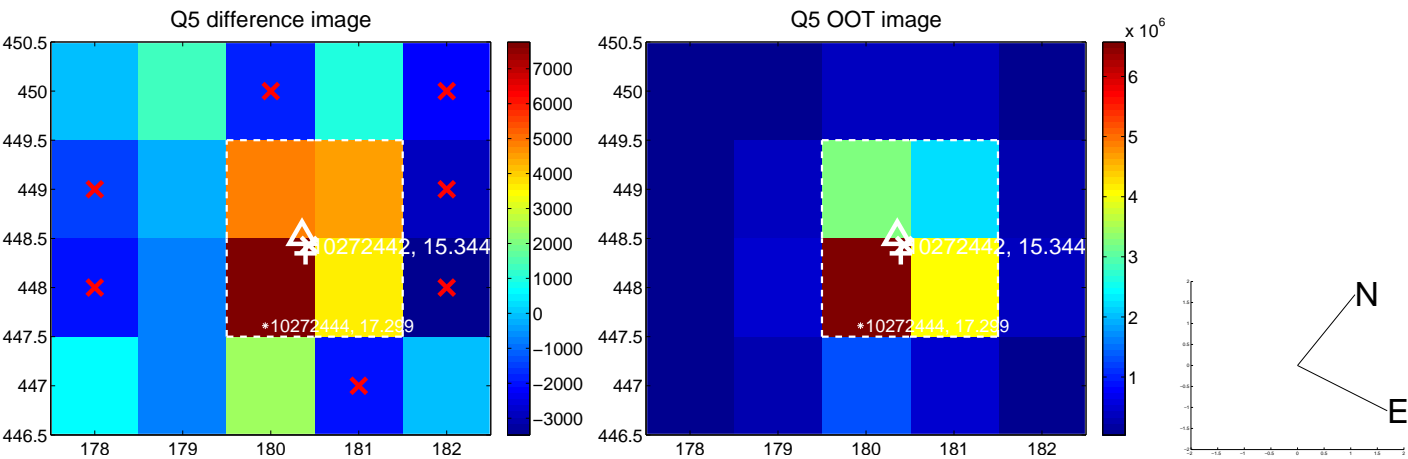


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

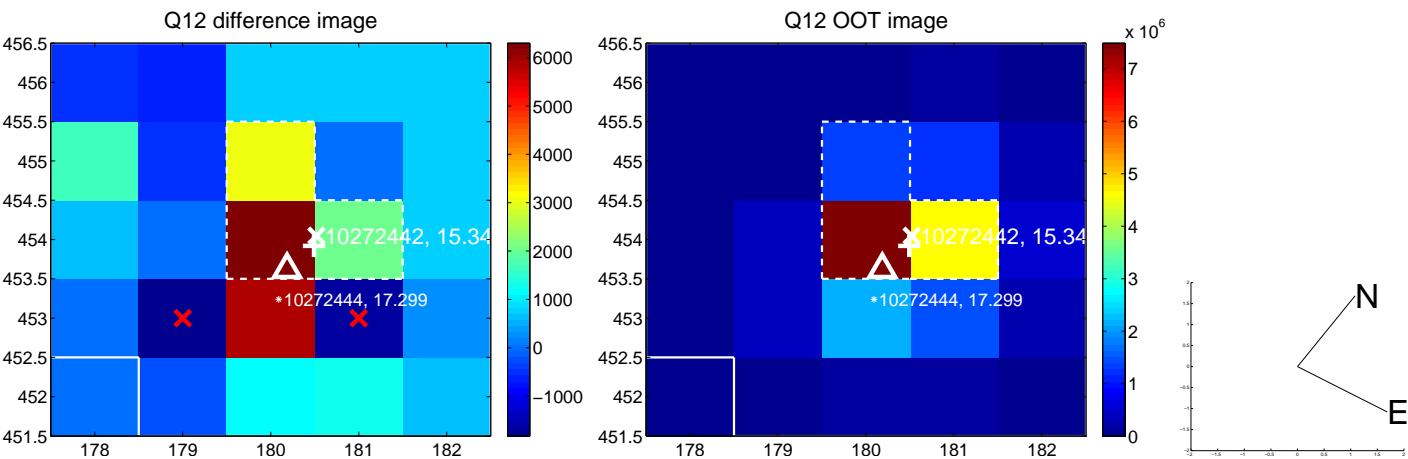
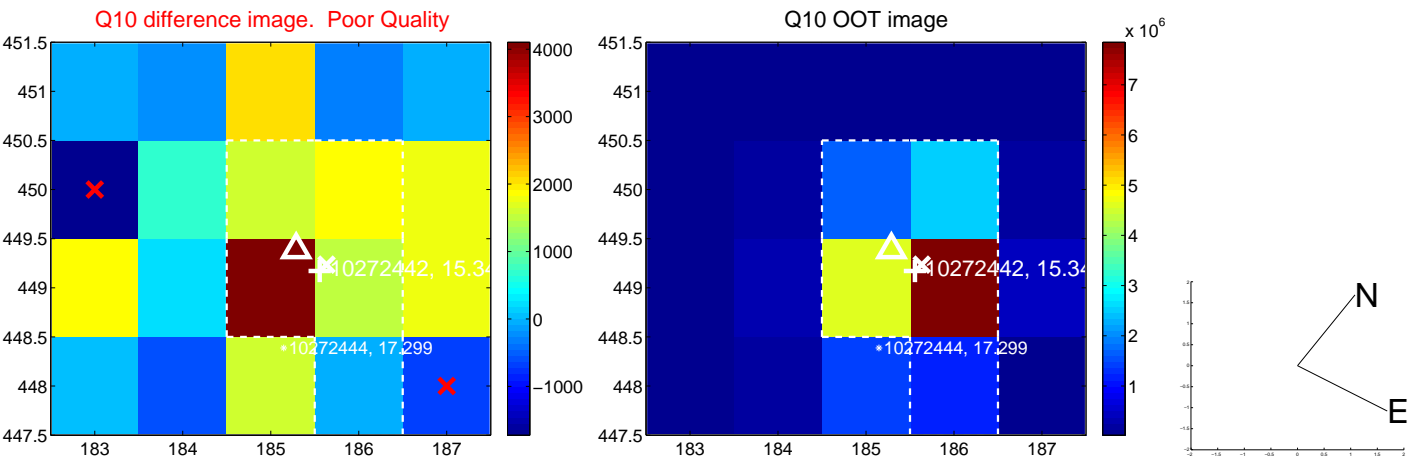
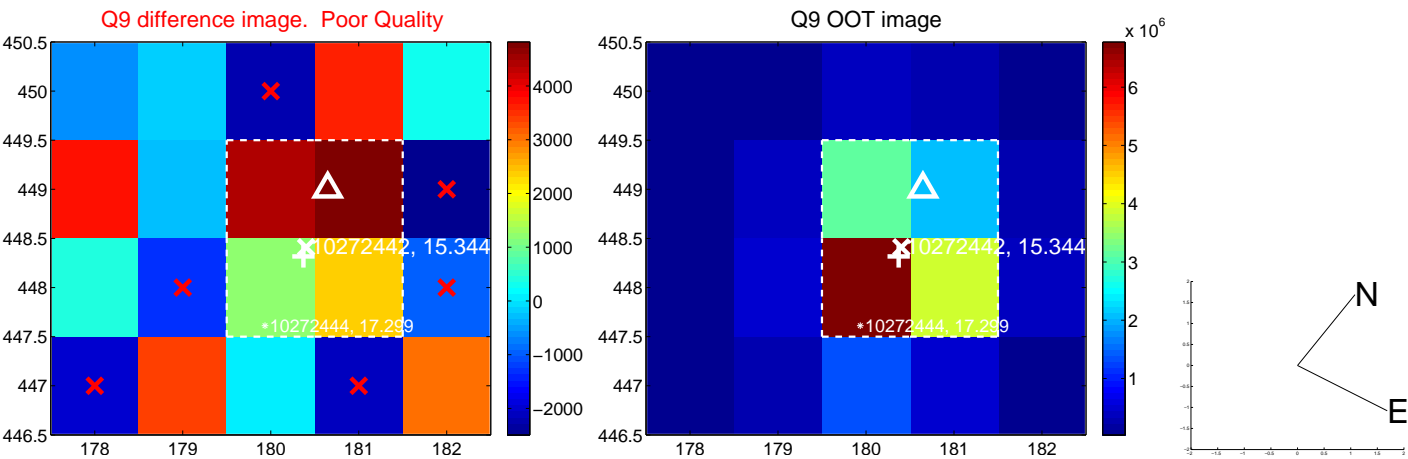
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



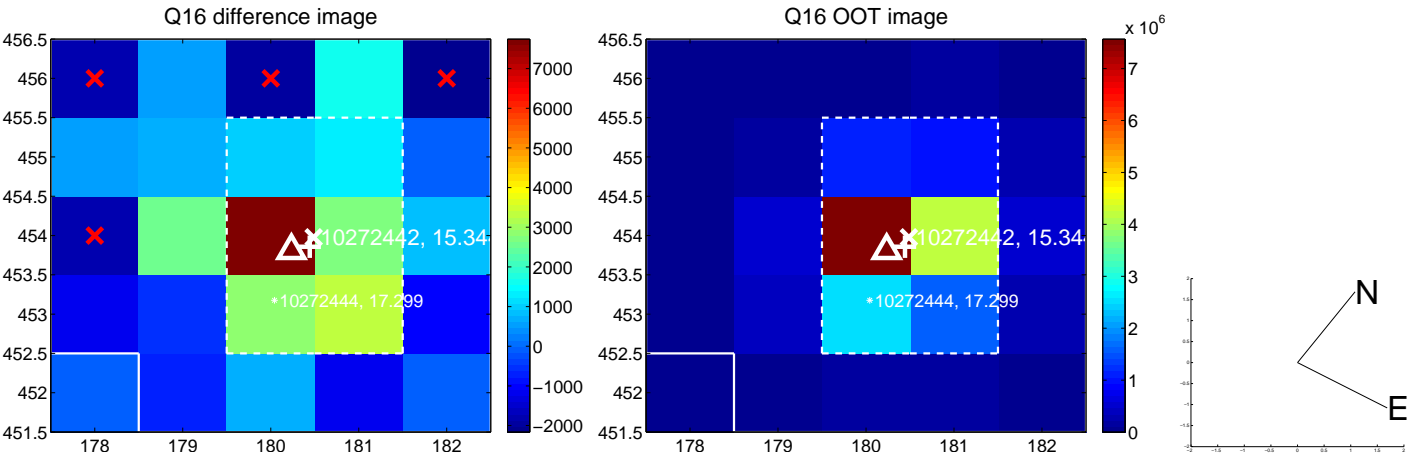
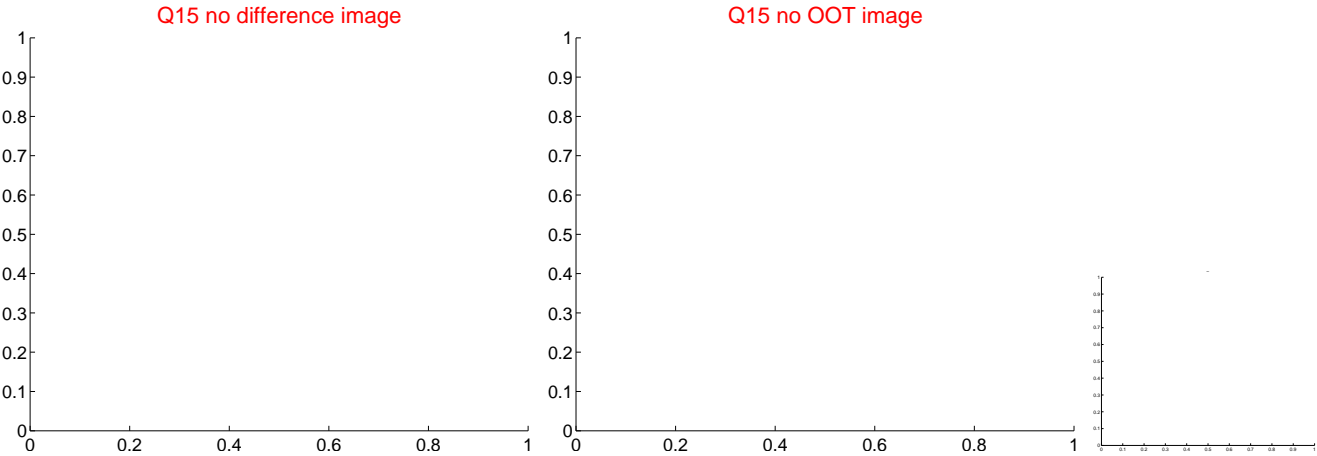
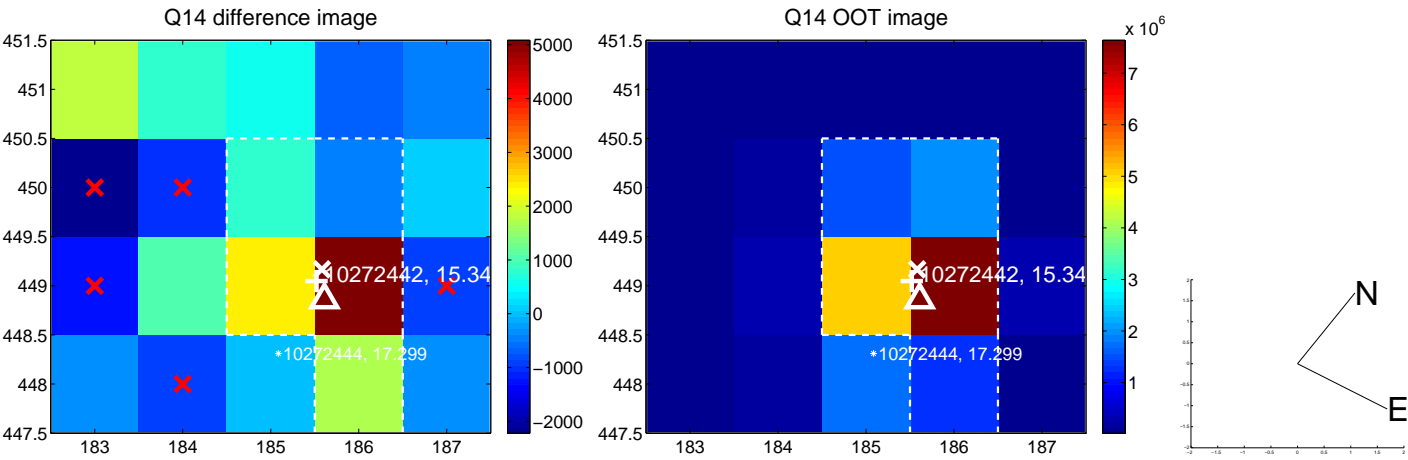
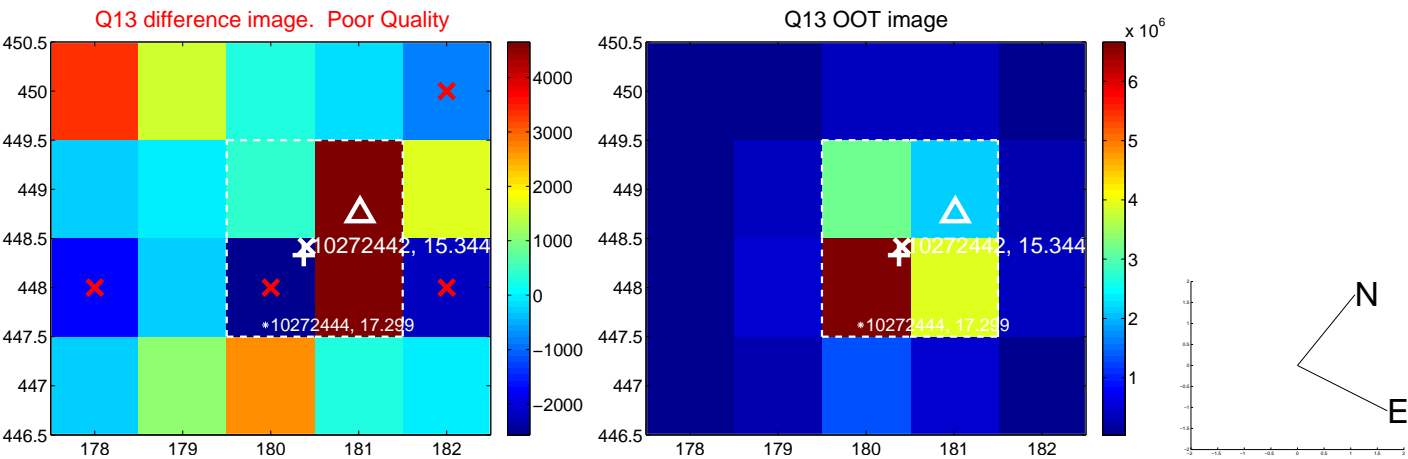
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



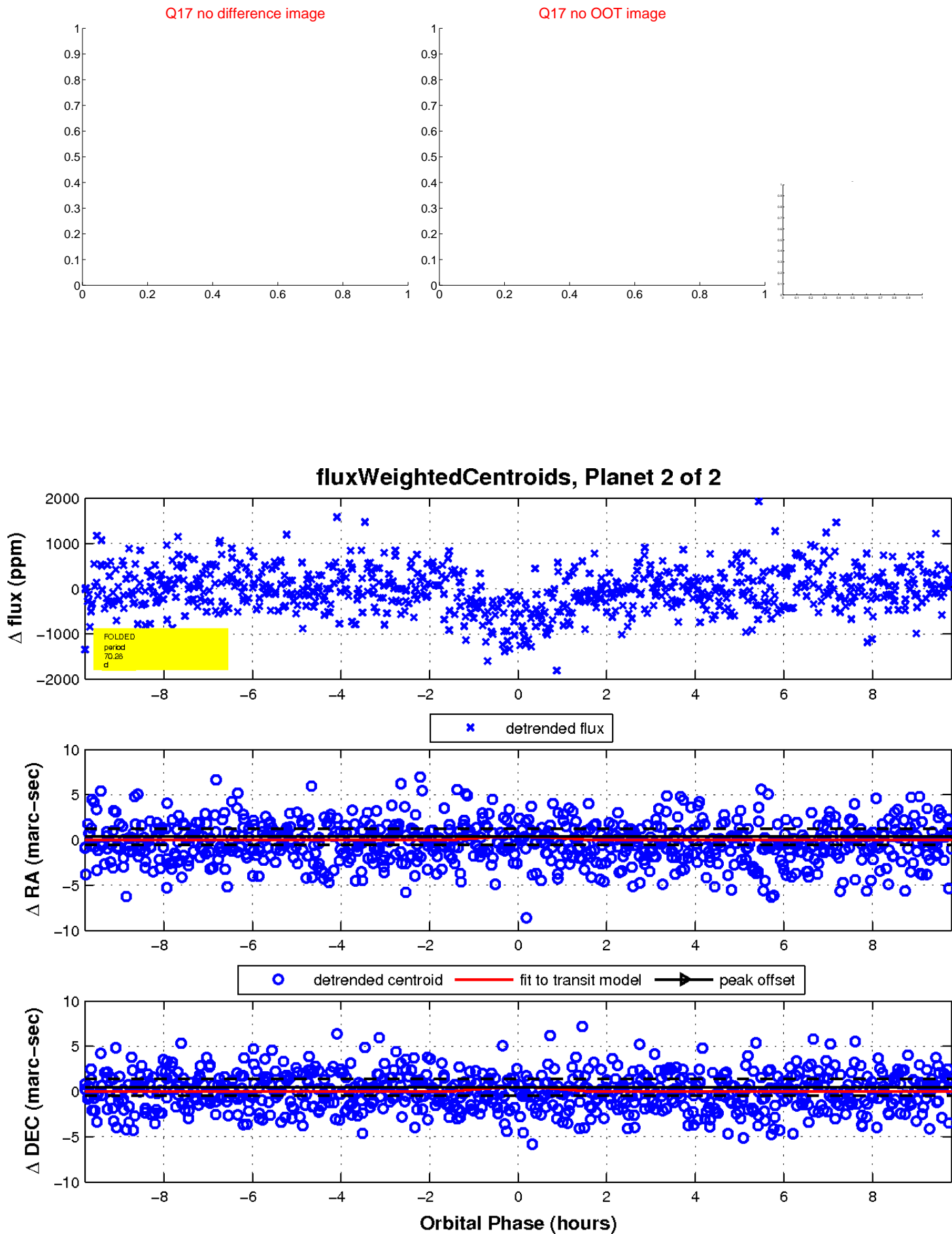
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

