

KIC 007847927

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})
007847927-01	OBS	6924.01	70.376258	151.228363	114721.2	6.482	1928.3	1089.7	0.76	5458	38.05	4.60
007847927-02	OBS	No	70.376229	180.343019	38474.2	8.423	809.4	715.9	0.76	5458	21.42	4.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007847927-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
007847927-02	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.

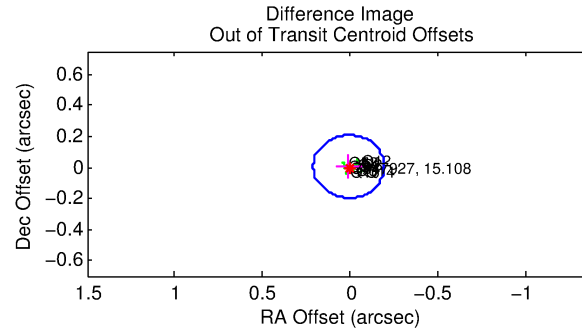
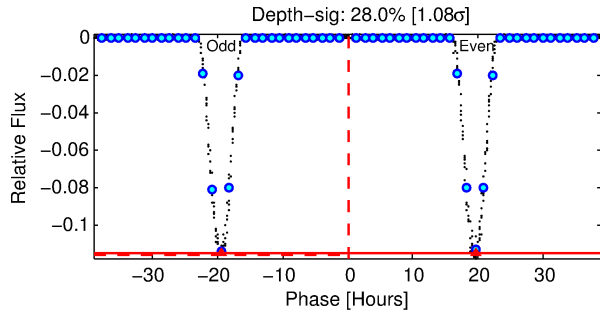
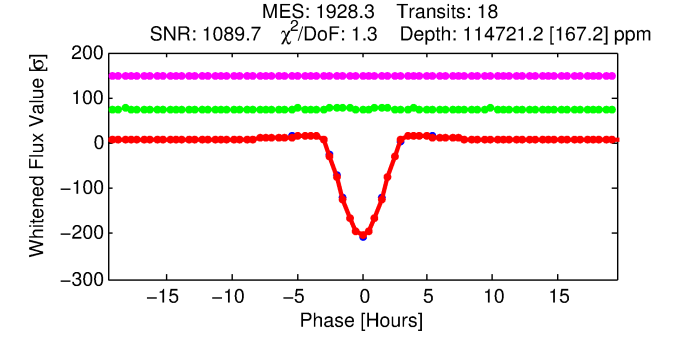
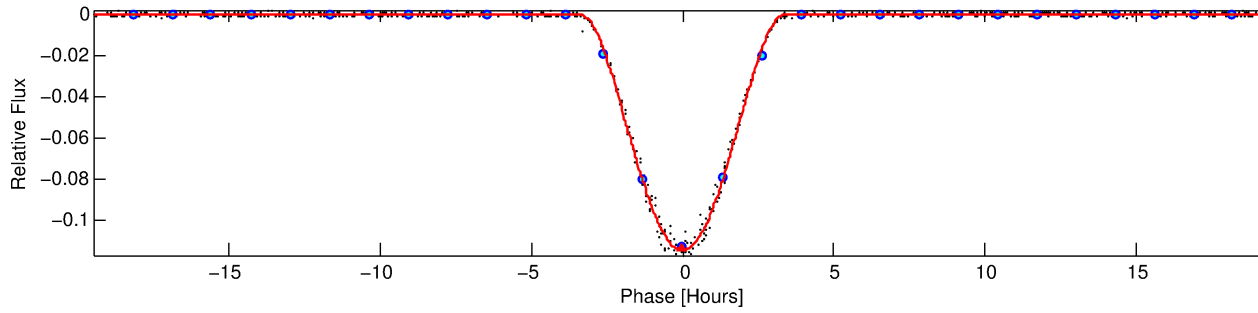
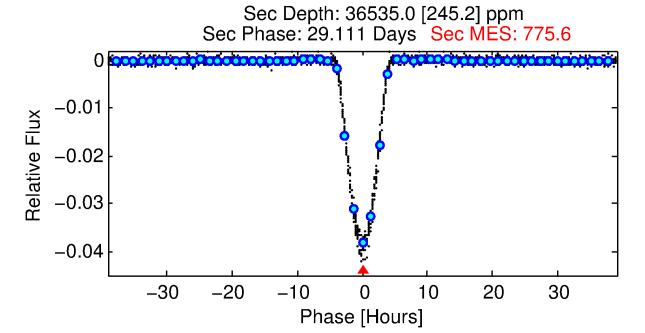
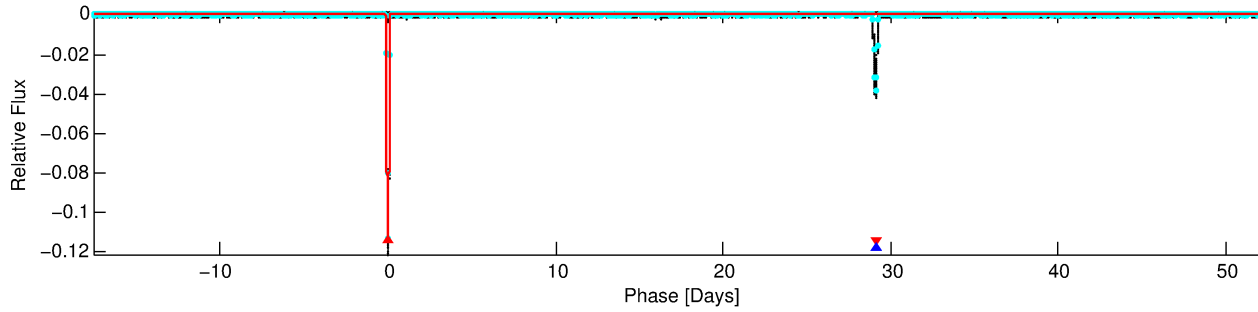
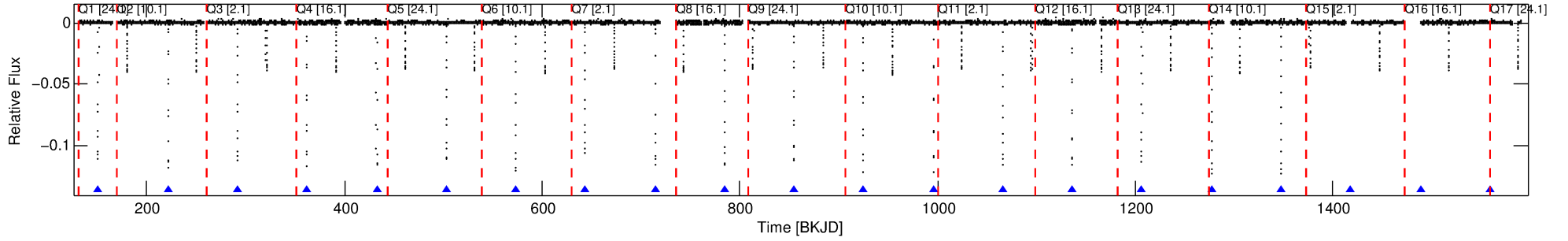
Ephemeris Match Information For 007847927-01

No Significant Match Found

DV One-Page Summary

KIC: 7847927 Candidate: 1 of 2 Period: 70.376 d
KOI: K06924.01 Corr: 0.997

Kp: 15.11 R*: 0.76 Rs Teff: 5458.0 K Logg: 4.60 Fe/H: -0.300



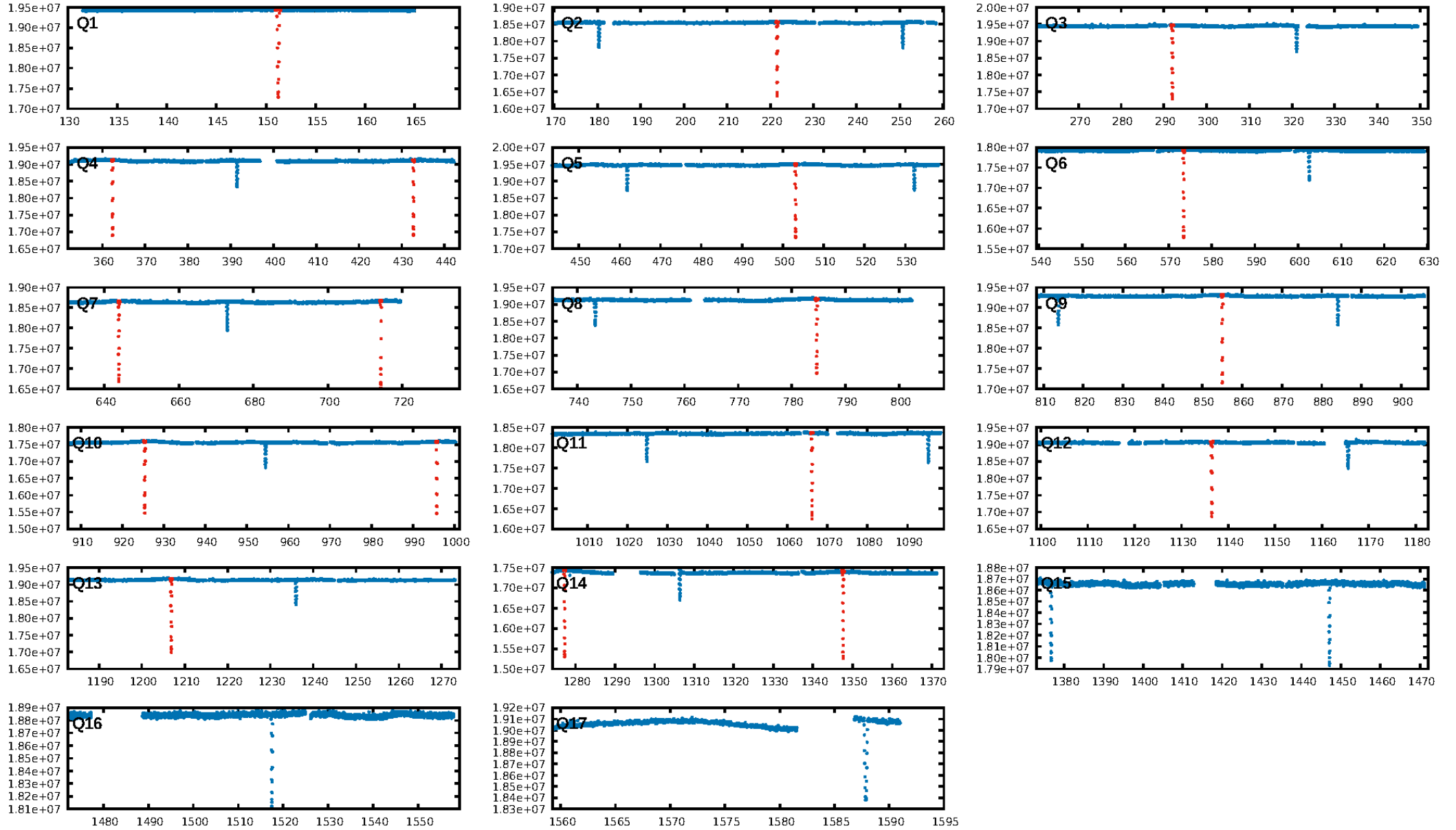
DV Fit Results:

Period = 70.37626 [0.00001] d
Epoch = 151.2284 [0.0001] BKJD
Rp/R* = 0.4619 [0.0592]
a/R* = 94.97 [0.69]
b = 0.91 [0.08]
Seff = 4.60 [1.22]
Teq = 373 [25] K
Rp = 38.05 [9.04] Re
a = 0.3140 [0.0520] AU
Ag = 1368.62 [478.40] [2.86σ]
Teffp = 3511 [248] K [12.57σ]

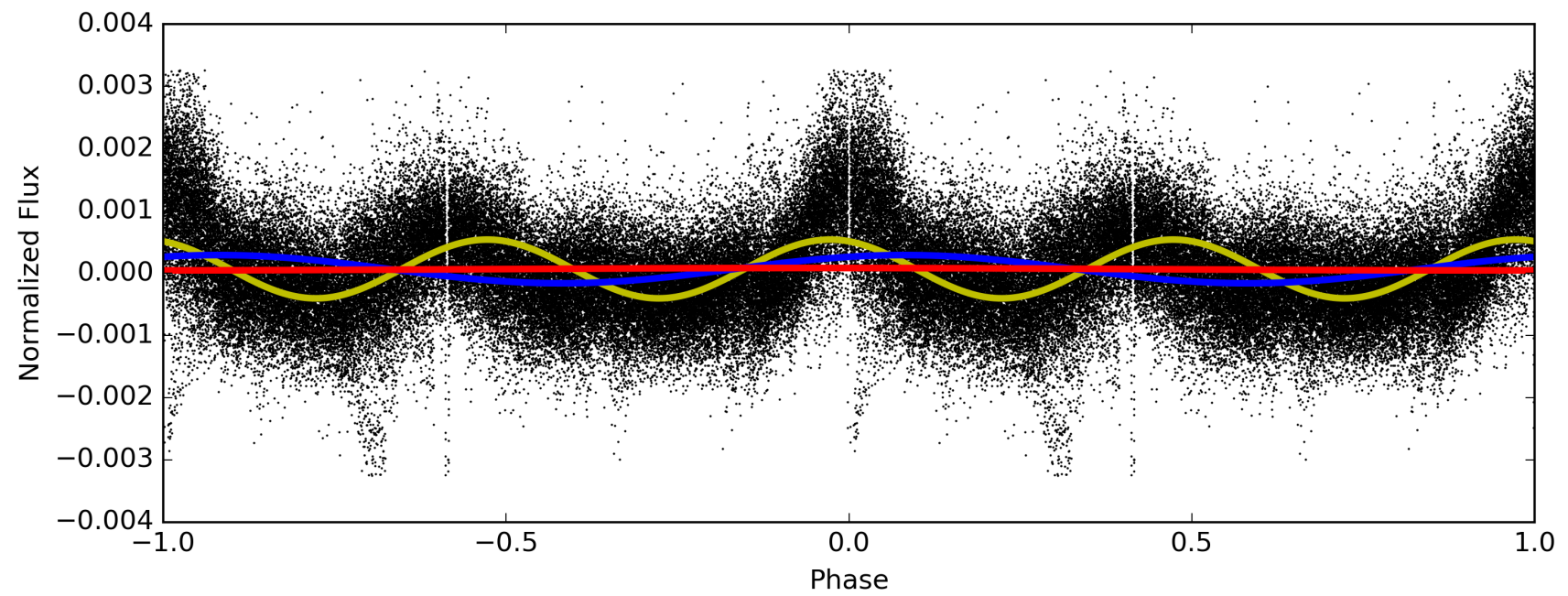
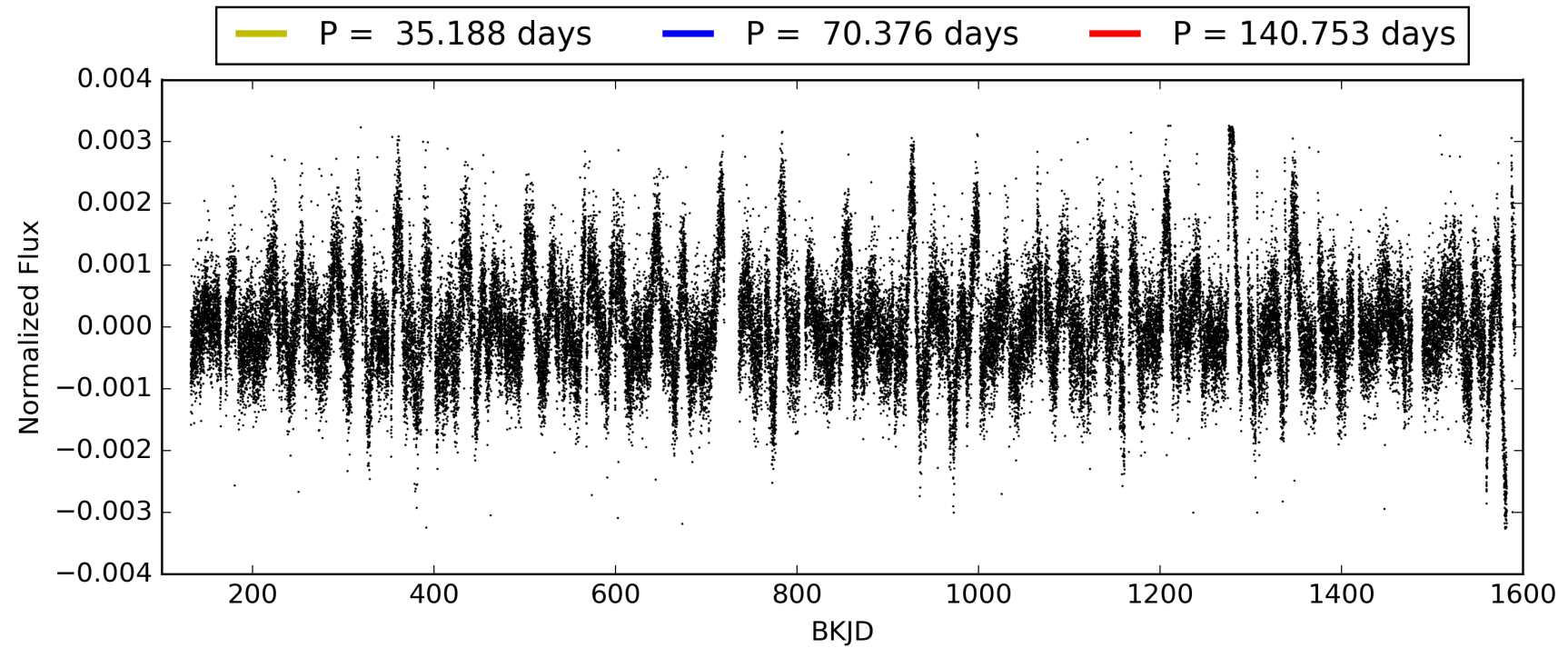
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 98.4%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [17/17]
GhostDiagnostic-chr: 3.209
Centroid-sig: 0.0%
Centroid-so: 0.186 arcsec [31.41σ]
OotOffset-rm: 0.011 arcsec [0.16σ]
KicOffset-rm: 0.150 arcsec [1.87σ]
OotOffset-st: 4/1/3/4 [12]
KicOffset-st: 4/1/3/4 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [12/12]

TCE 007847927-01, PDC Light Curves

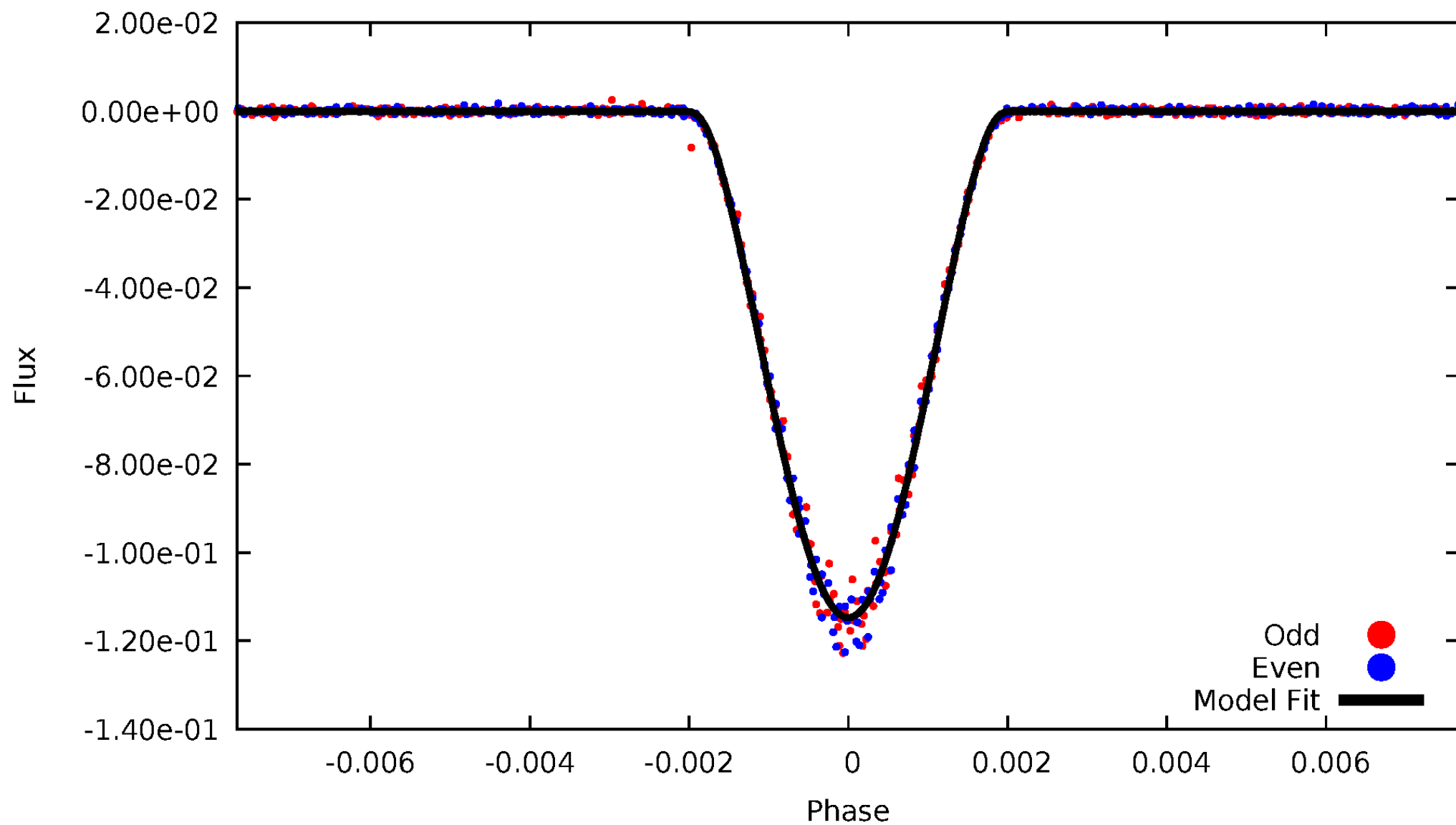


TCE 007847927-01



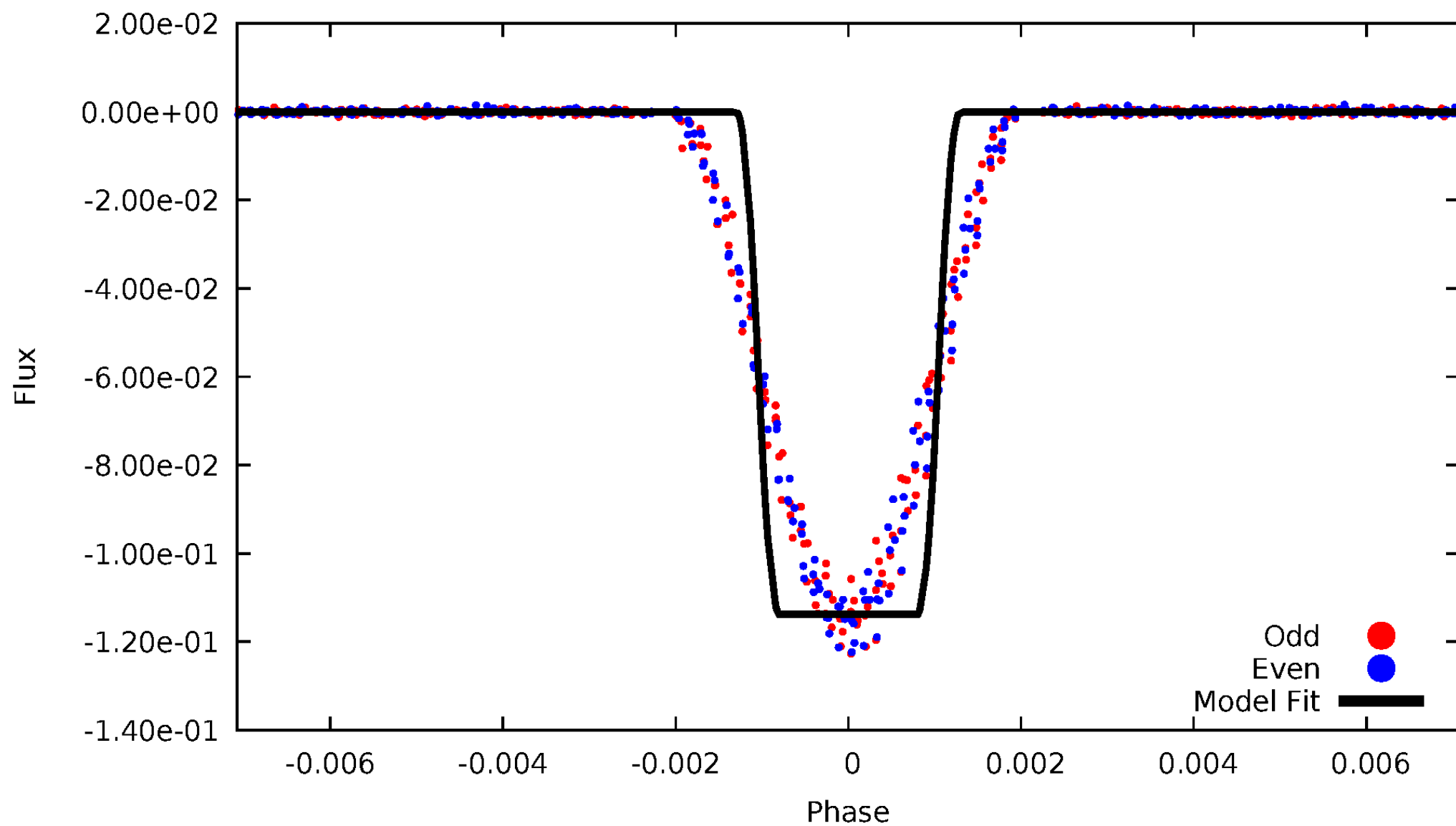
DV Odd/Even

TCE 007847927-01



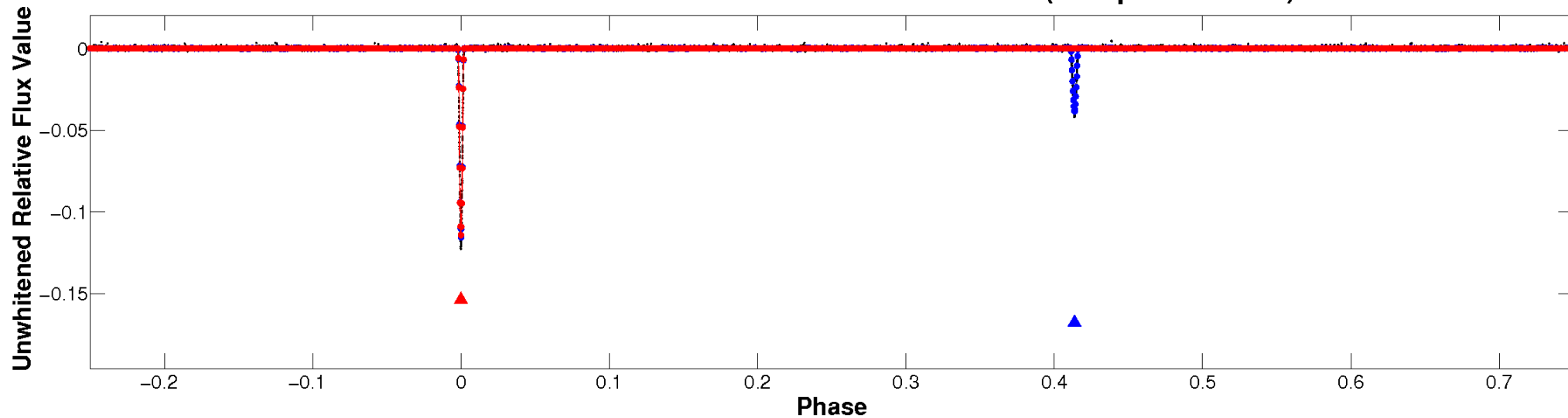
ALT Odd/Even

TCE 007847927-01

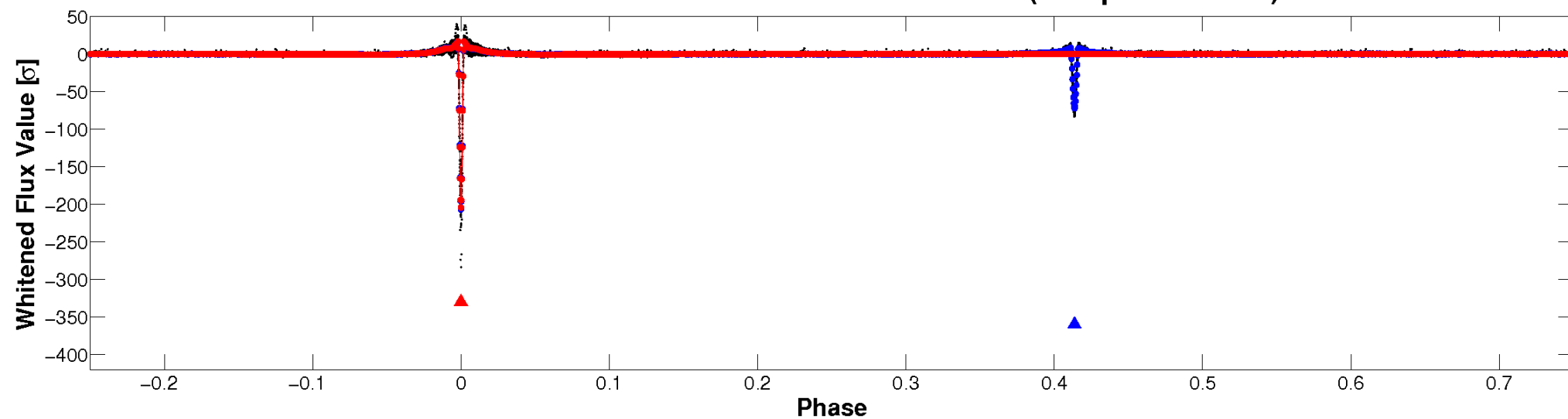


Non-Whitened Vs. Whitened Light Curve

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

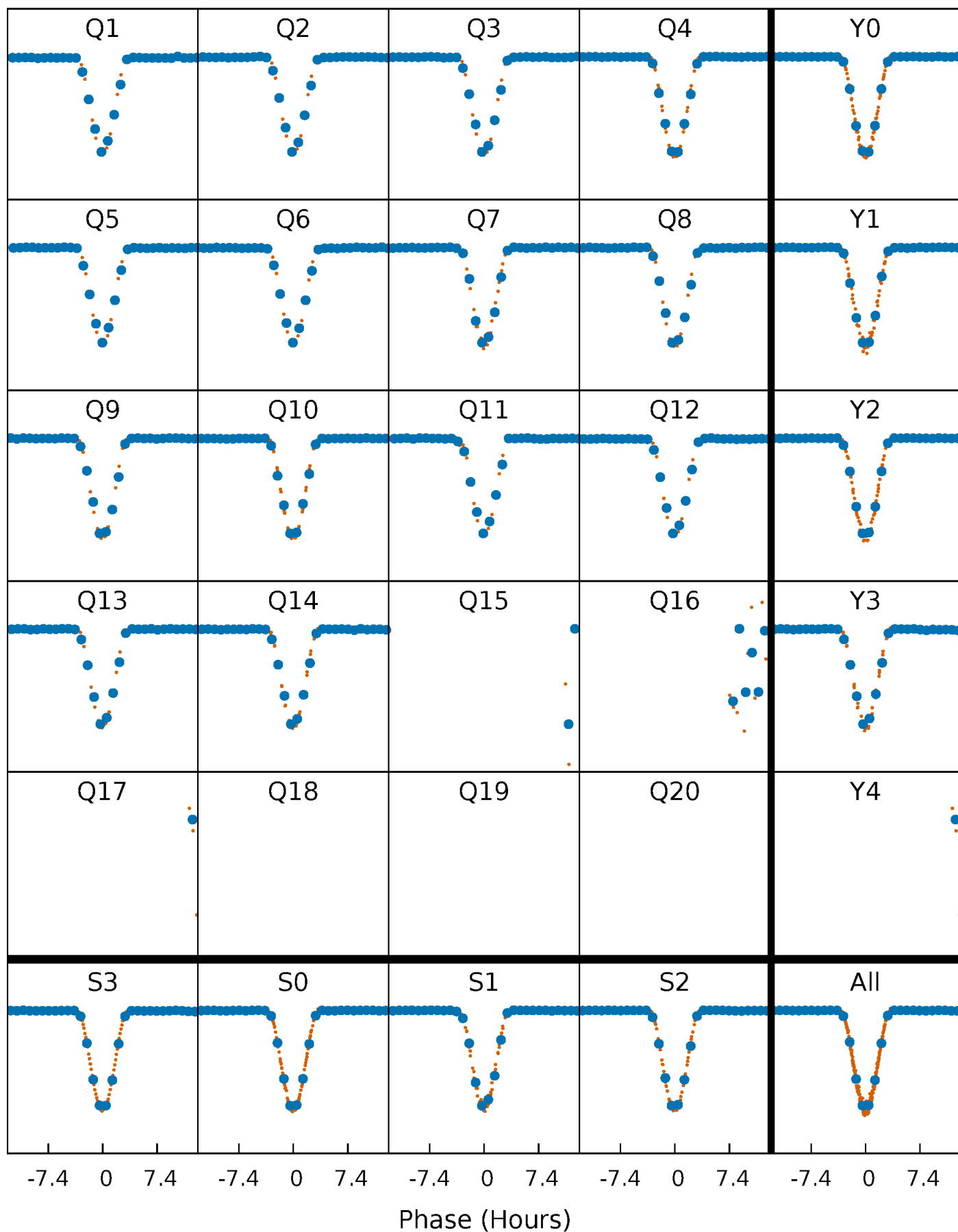


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



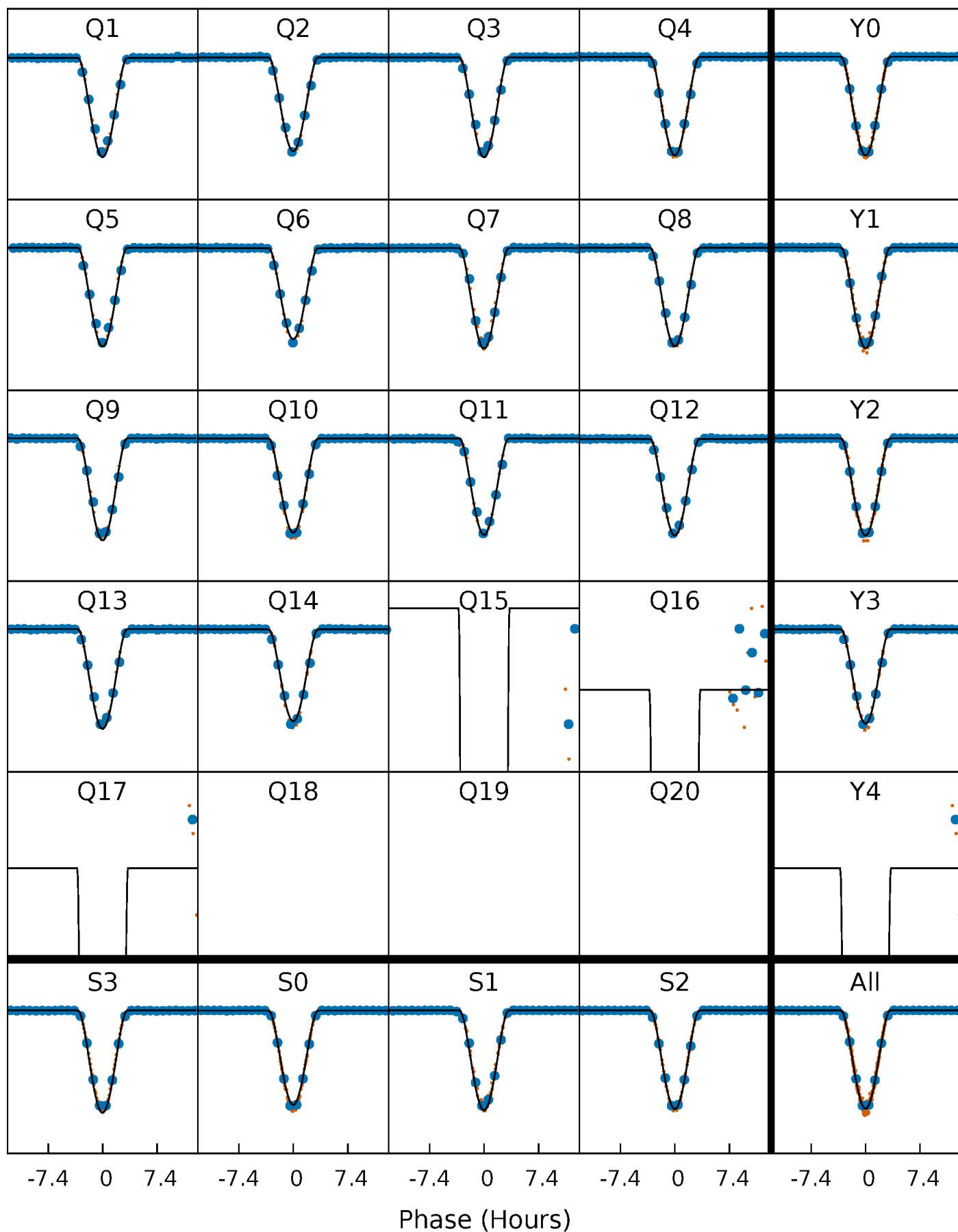
PDC Quarter-Phased Transit Curves

TCE 007847927-01 P= 70.376258 Days $T_0=151.228363$ (BKJD)



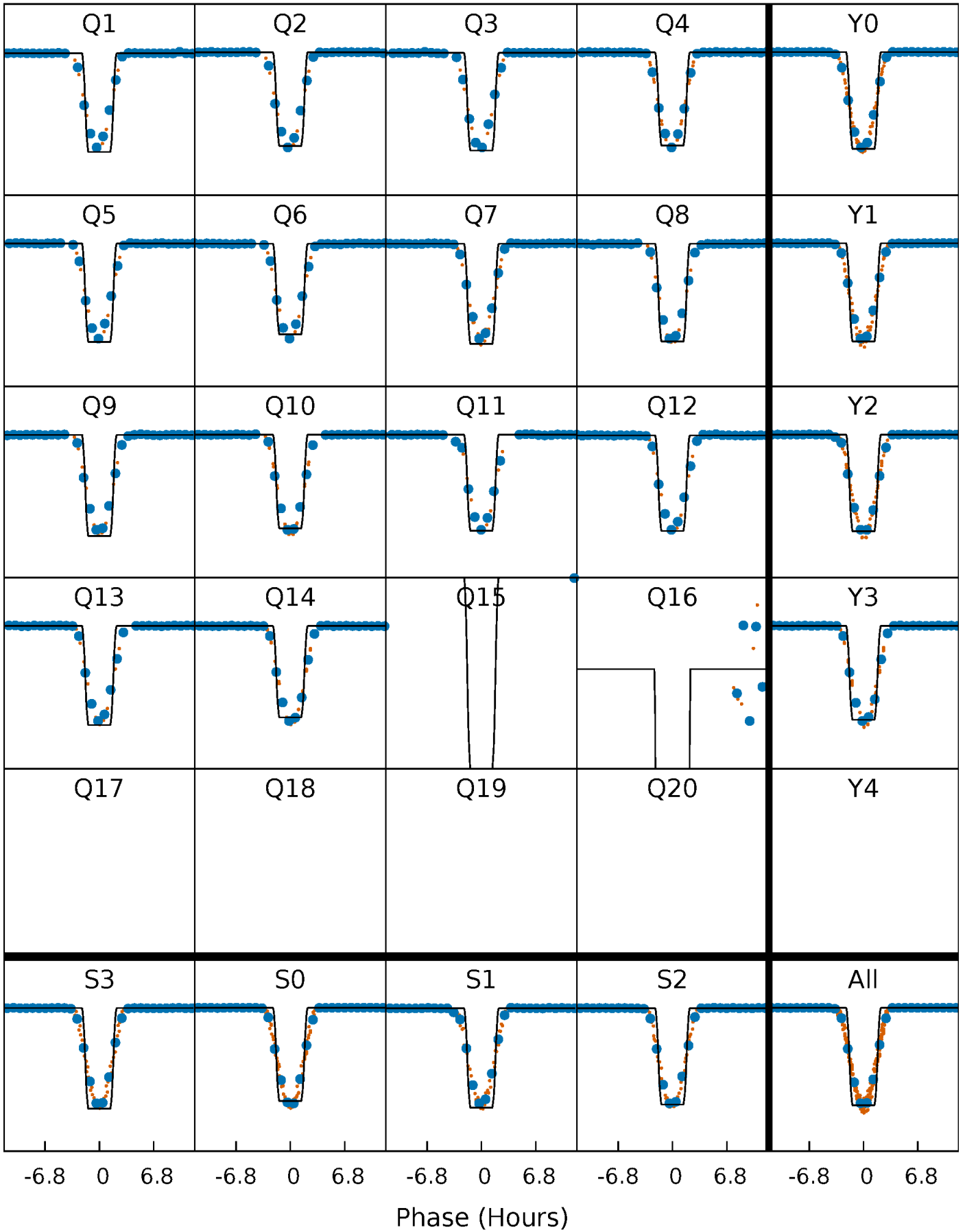
DV Quarter-Phased Transit Curves

TCE 007847927-01 P= 70.376258 Days $T_0=151.228363$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

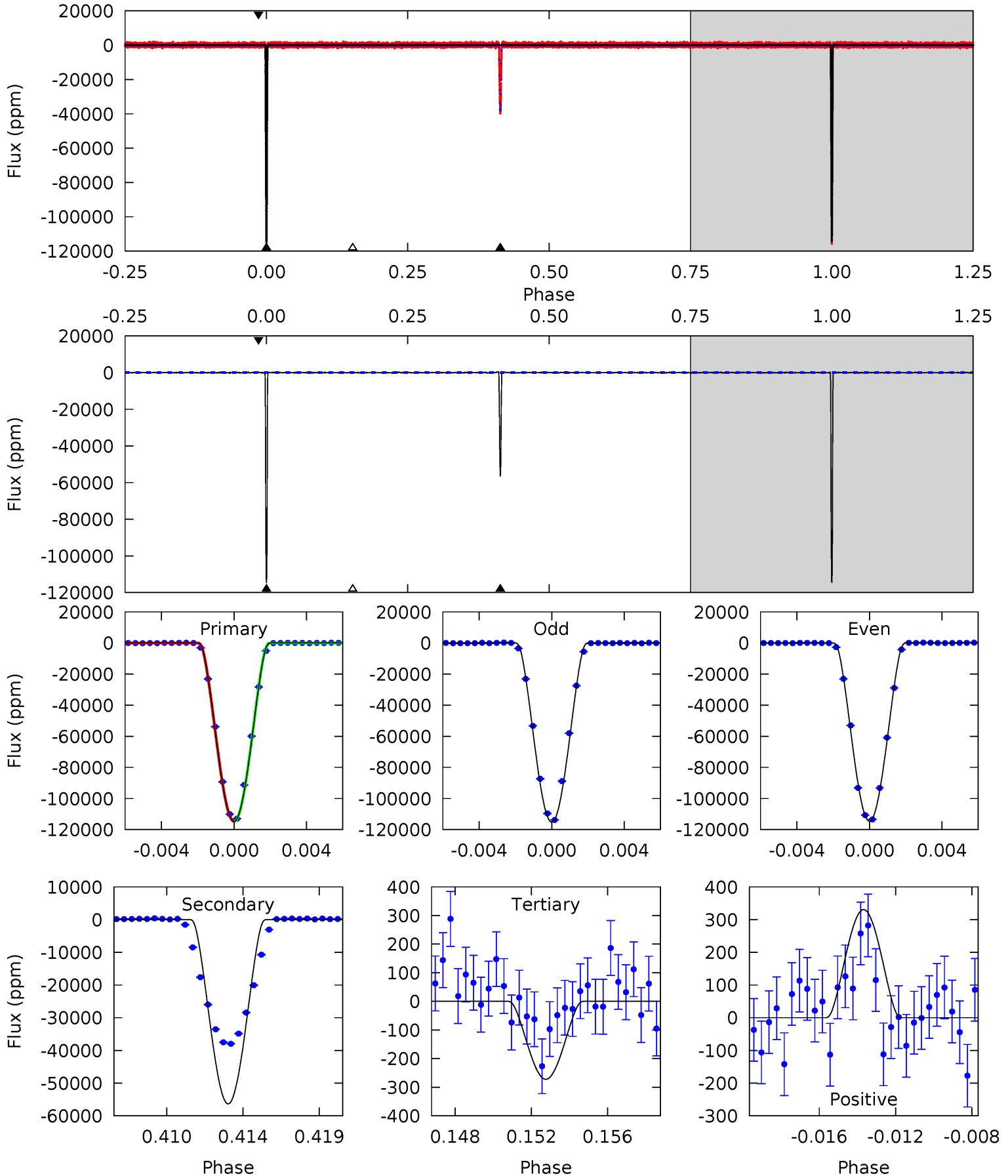
TCE 007847927-01 P= 70.375450 Days $T_0=151.235391$ (BKJD)



DV Model-Shift Uniqueness Test

007847927-01, P = 70.376258 Days, E = 80.852105 Days

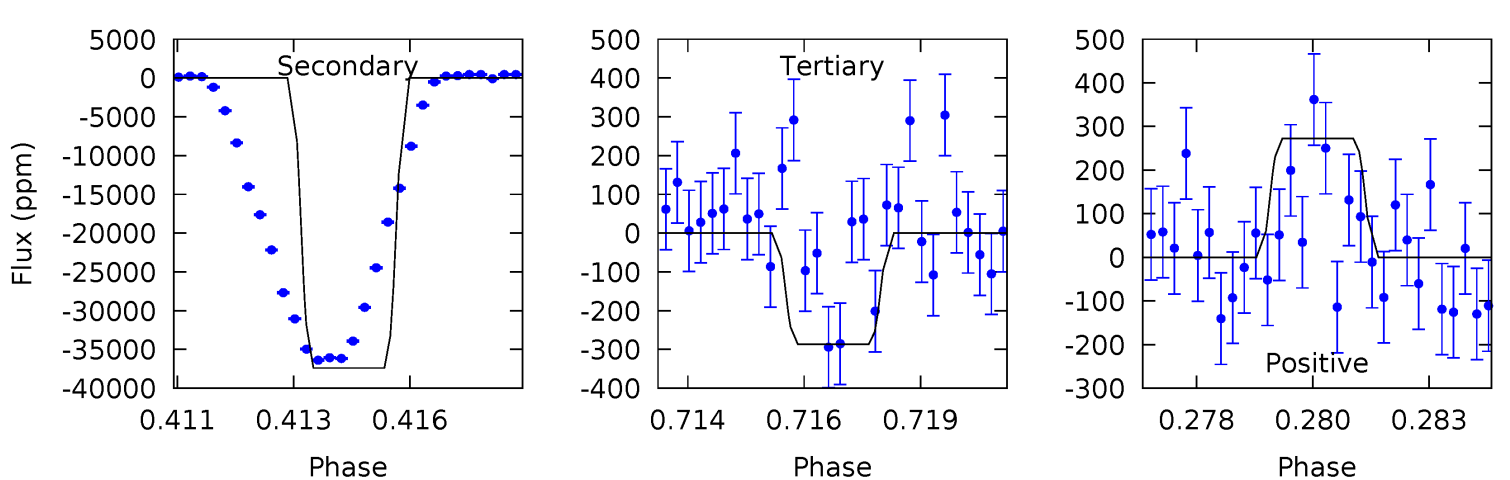
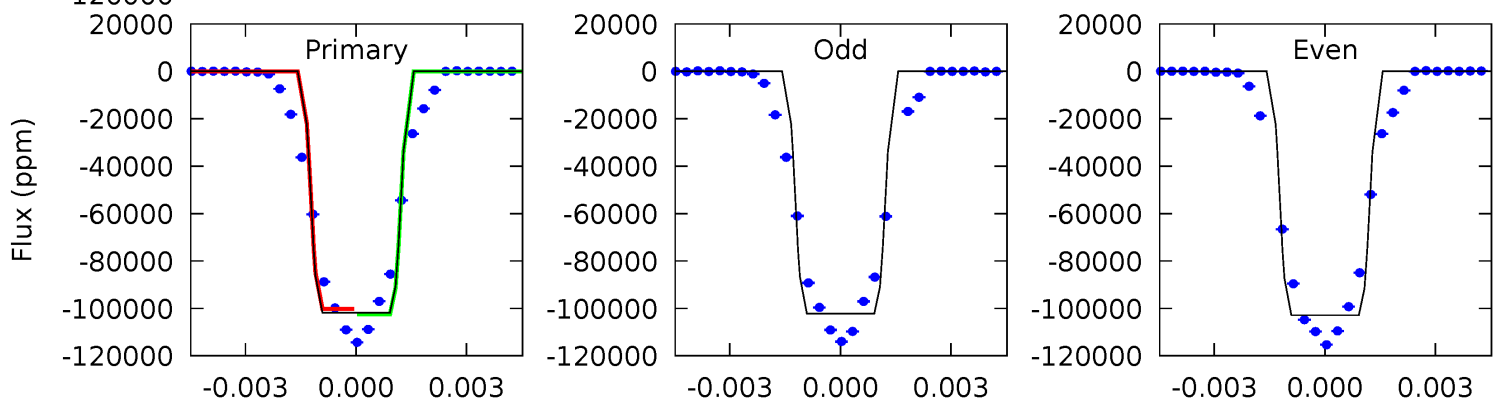
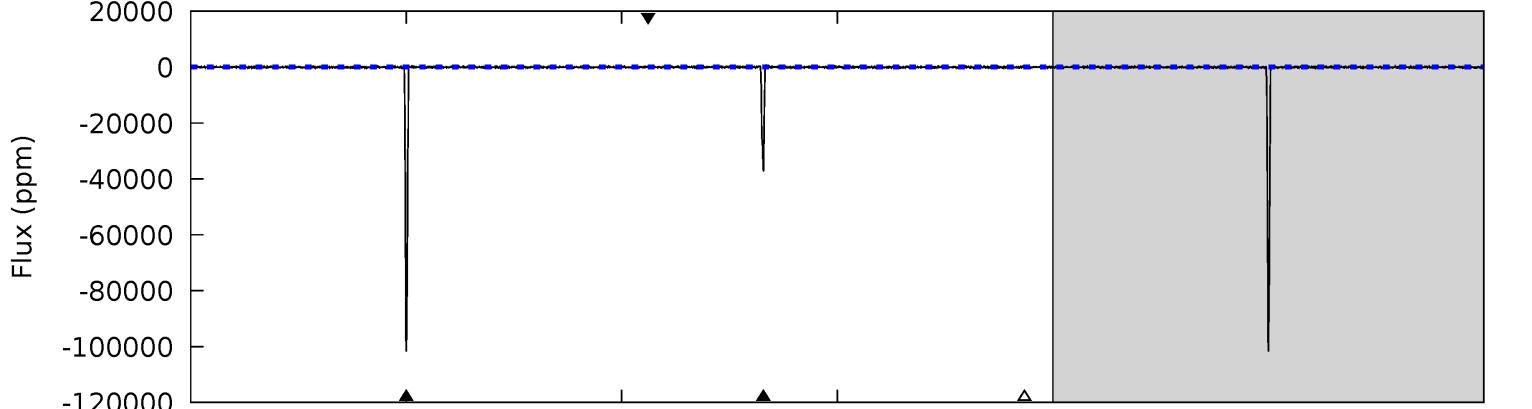
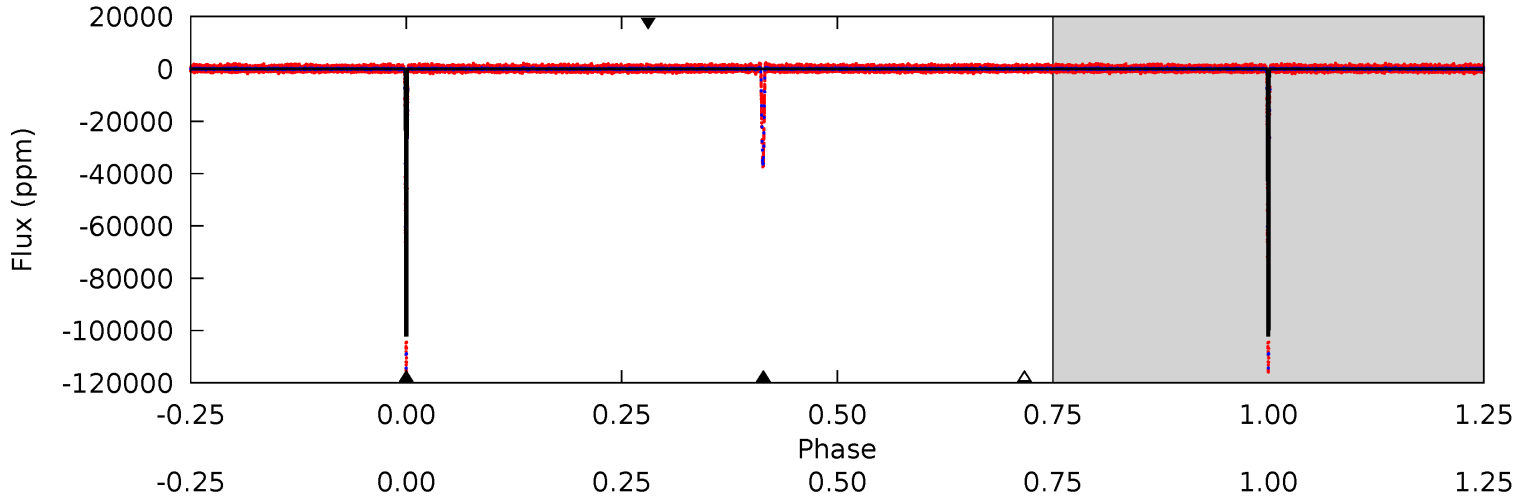
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2927	1438	6.95	8.44	5.19	2.87	2.26	2920	2918	1431	1429	7.85	1.00	0.00	0.26



Alt Model-Shift Uniqueness Test

007847927-01, P = 70.375450 Days, E = 80.859941 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1478	542.9	4.16	3.95	5.28	3.02	1.46	1474	1474	538.7	538.9	5.52	0.99	0.00	6.02



Stellar Parameters For KIC 007847927

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5458^{+163}_{-147}	$4.603^{+0.032}_{-0.128}$	$-0.300^{+0.300}_{-0.300}$	$0.755^{+0.151}_{-0.060}$	$0.845^{+0.080}_{-0.098}$	$2.768^{+0.466}_{-1.033}$
	+3%/-3%	+1%/-3%	+100%/-100%	+20%/-8%	+9%/-12%	+17%/-37%
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 007847927-01 / KOI 6924.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-56356 ± 39	$39.00^{+6.16}_{-5.39}$	531^{+28}_{-19}	4225^{+247}_{-208}	2103^{+719}_{-513}
Alt.	-37388 ± 69	$28.78^{+5.42}_{-5.31}$	531^{+27}_{-19}	4371^{+358}_{-268}	2515^{+1270}_{-721}

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

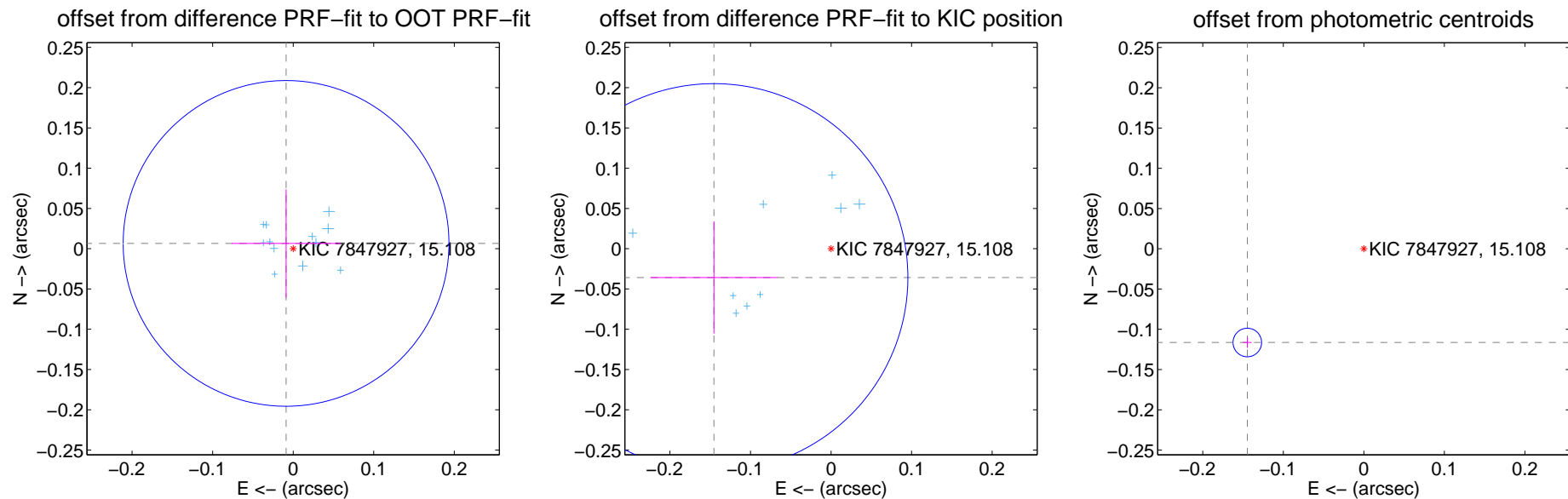
DV Centroid Data

Supplemental centroid analysis for 007847927-01. Kepler magnitude: 15.11. Transit SNR 1089.66

There are 12 quarters with good PRF difference image offsets

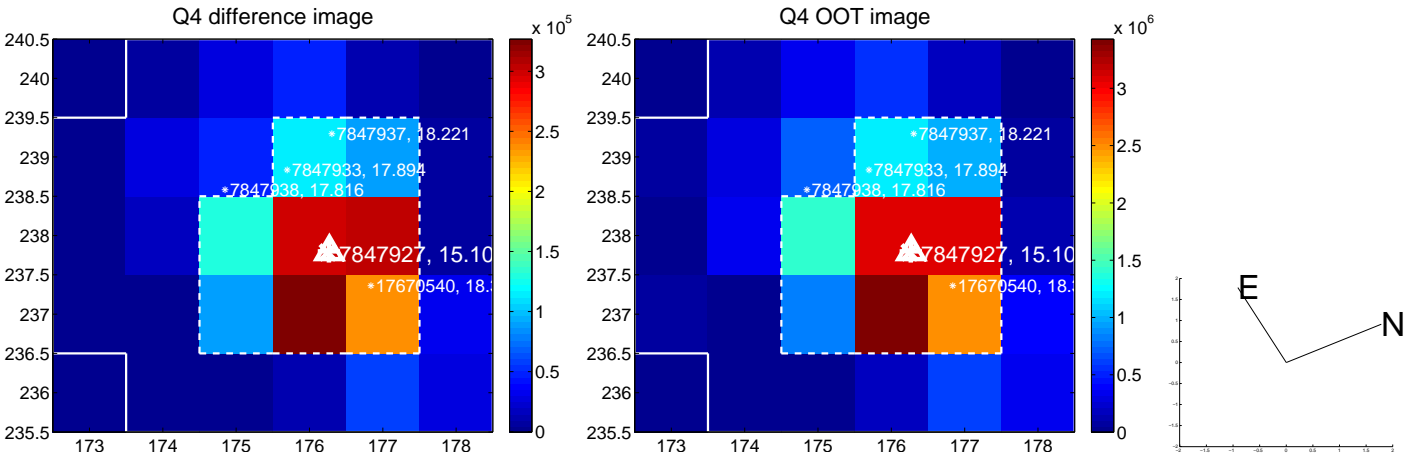
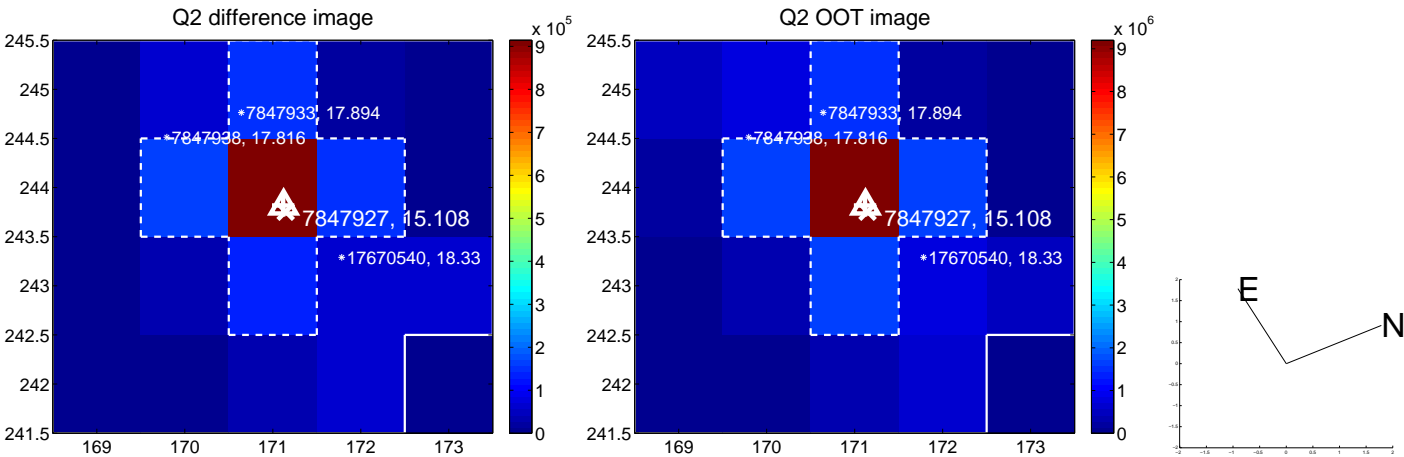
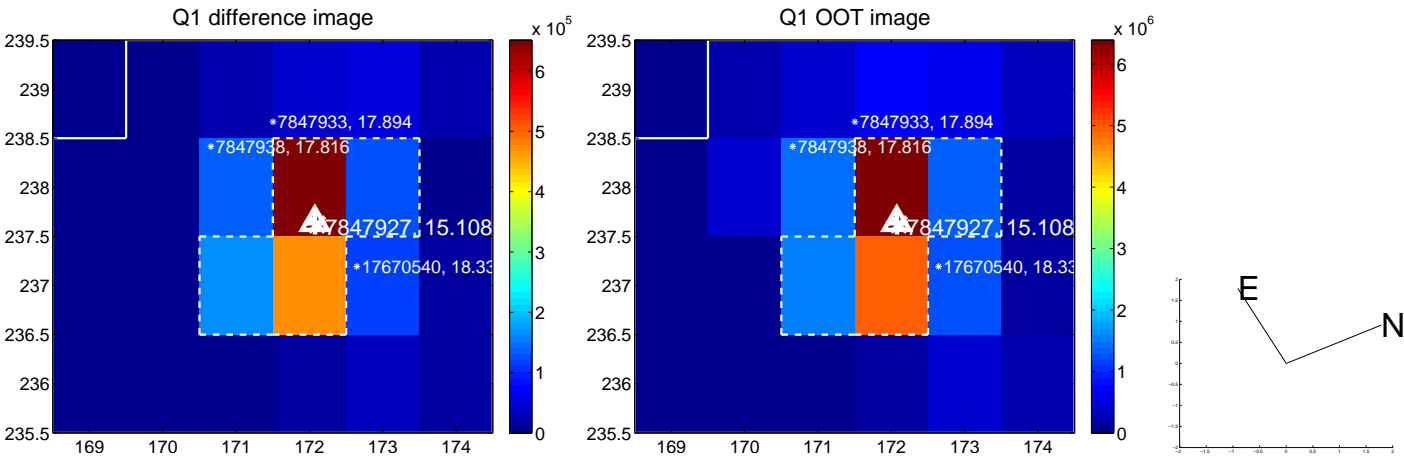
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.011 ± 0.067	0.16	0.009 ± 0.068	0.007 ± 0.067
PRF-fit source offset from KIC position	0.150 ± 0.080	1.87	0.145 ± 0.079	-0.036 ± 0.070
photometric centroid source offset	0.19 ± 0.01	31.41	0.14 ± 0.01	-0.12 ± 0.01

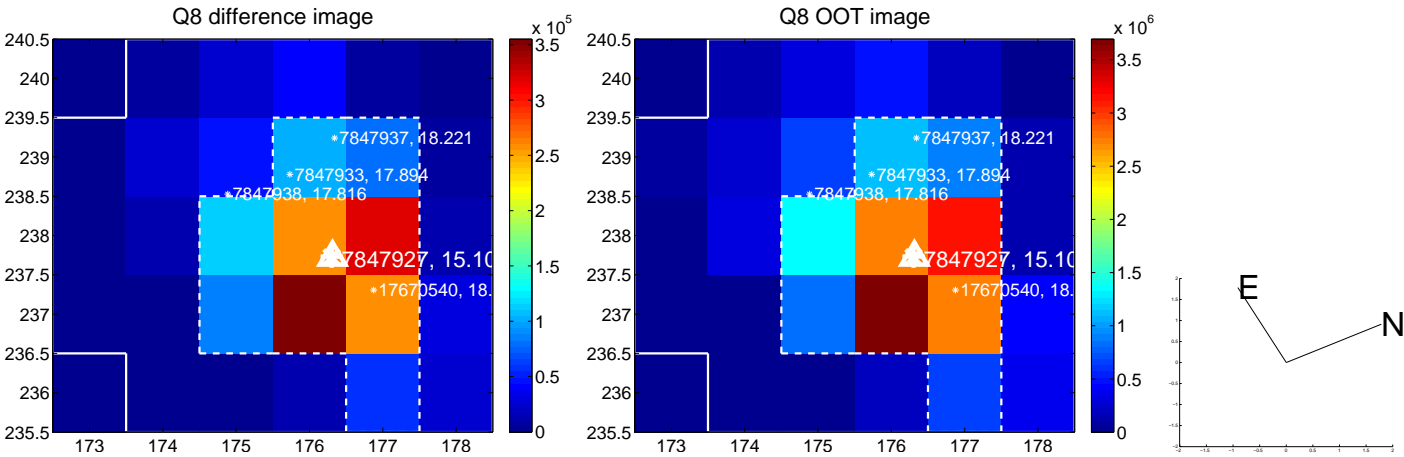
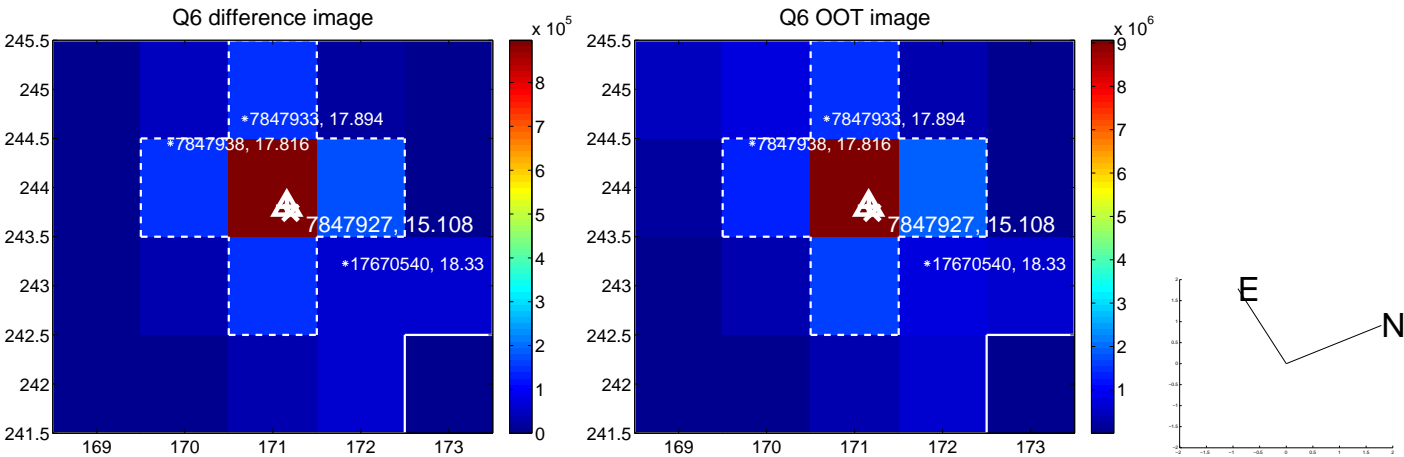
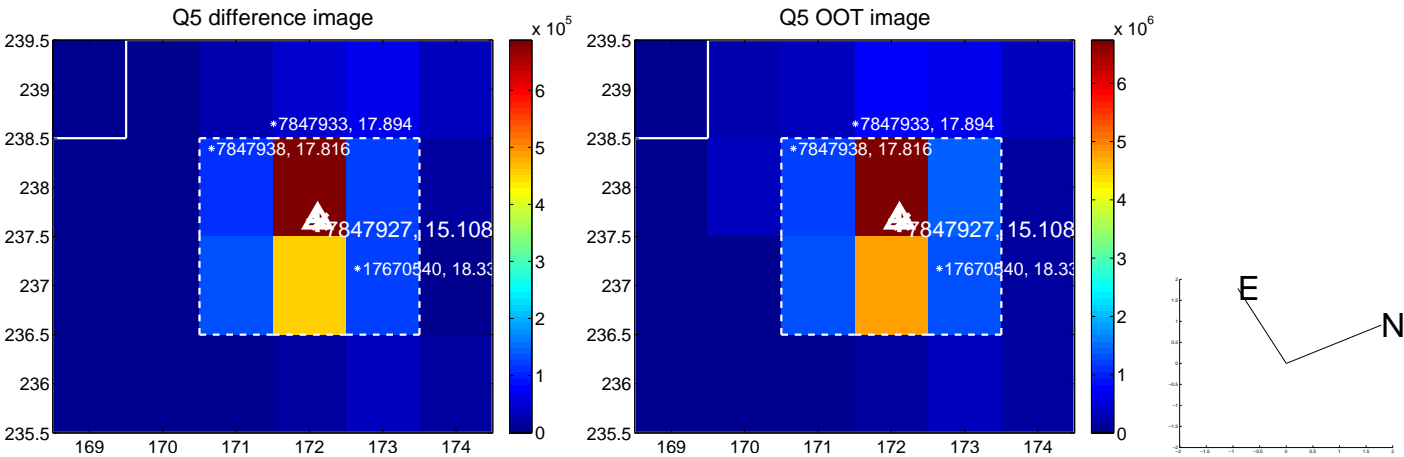


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

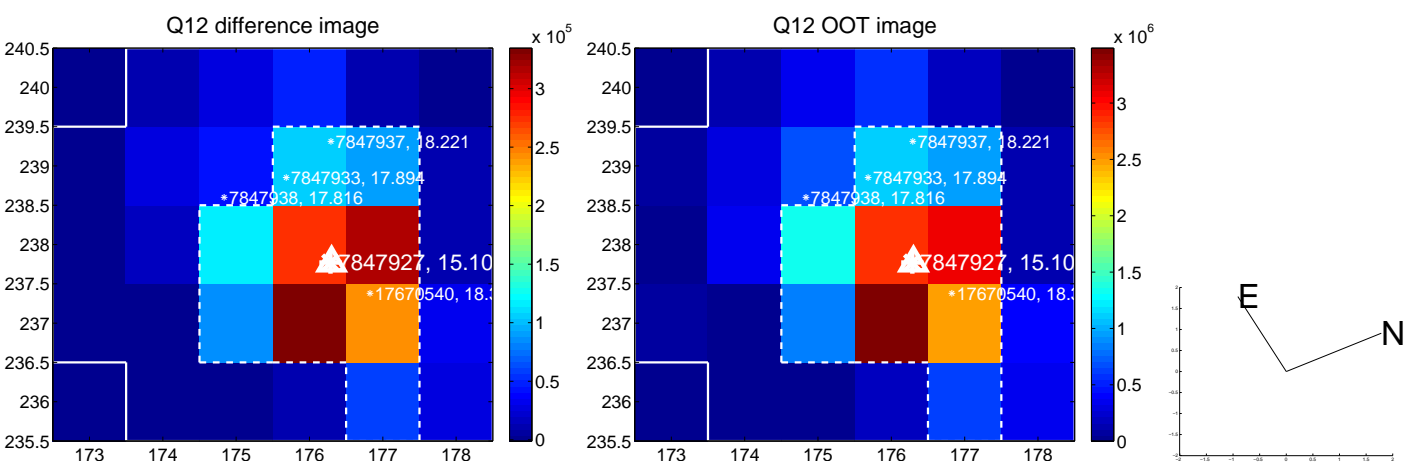
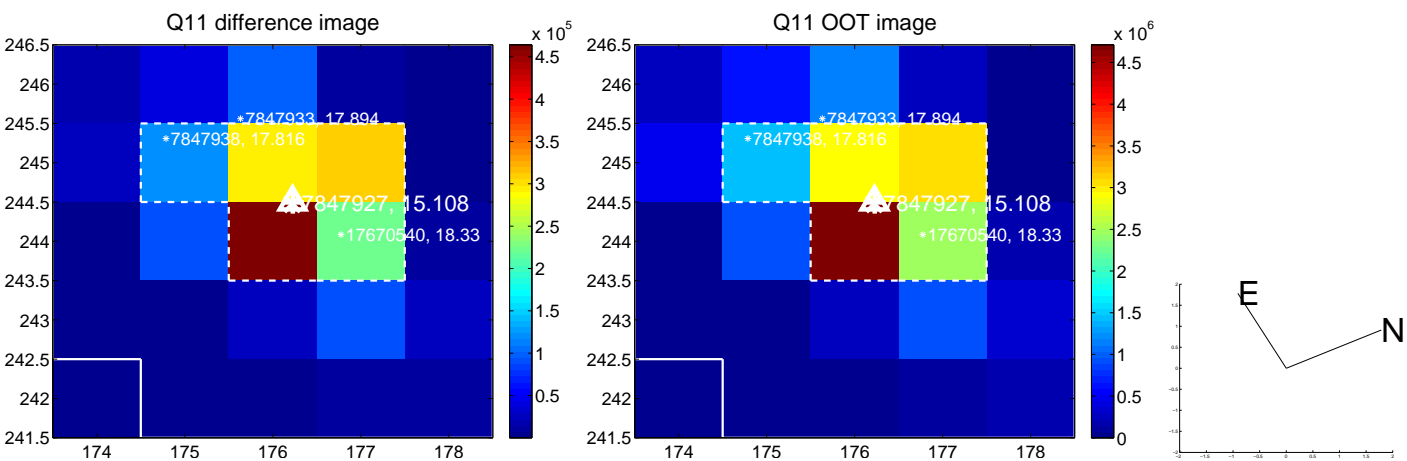
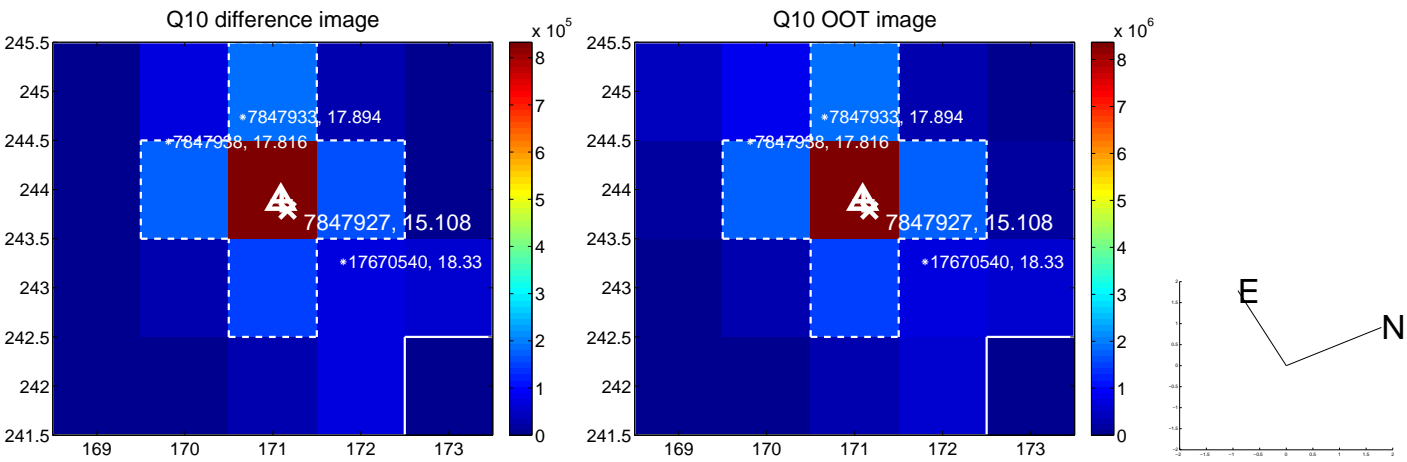
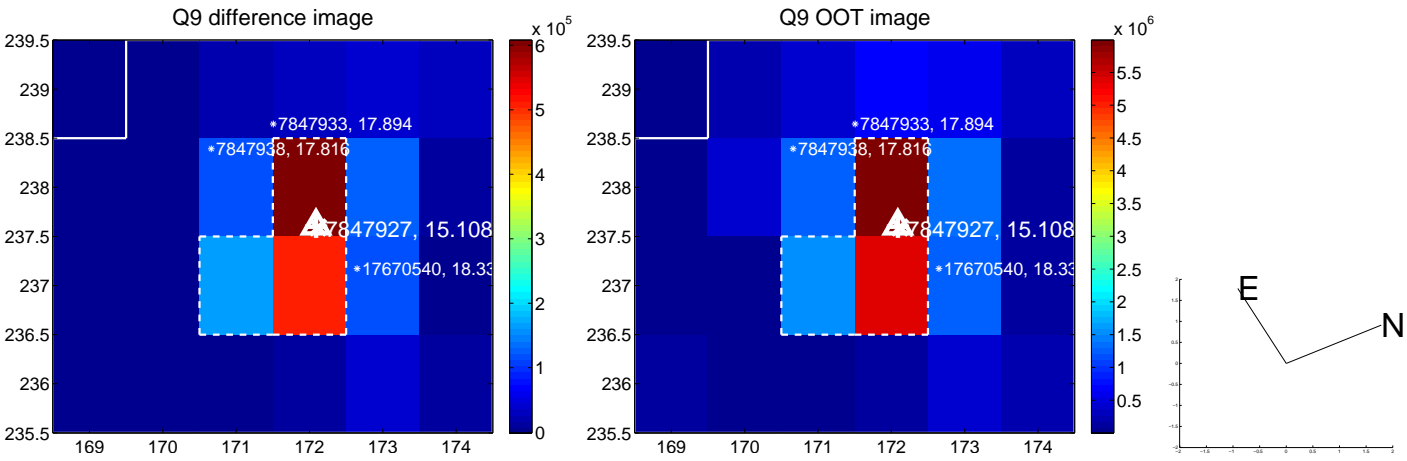
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



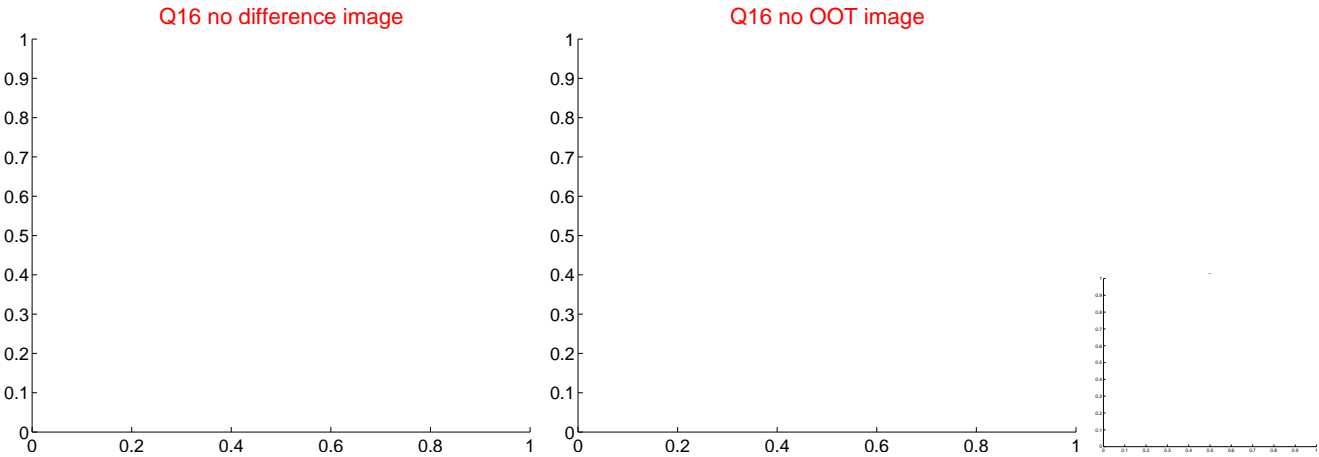
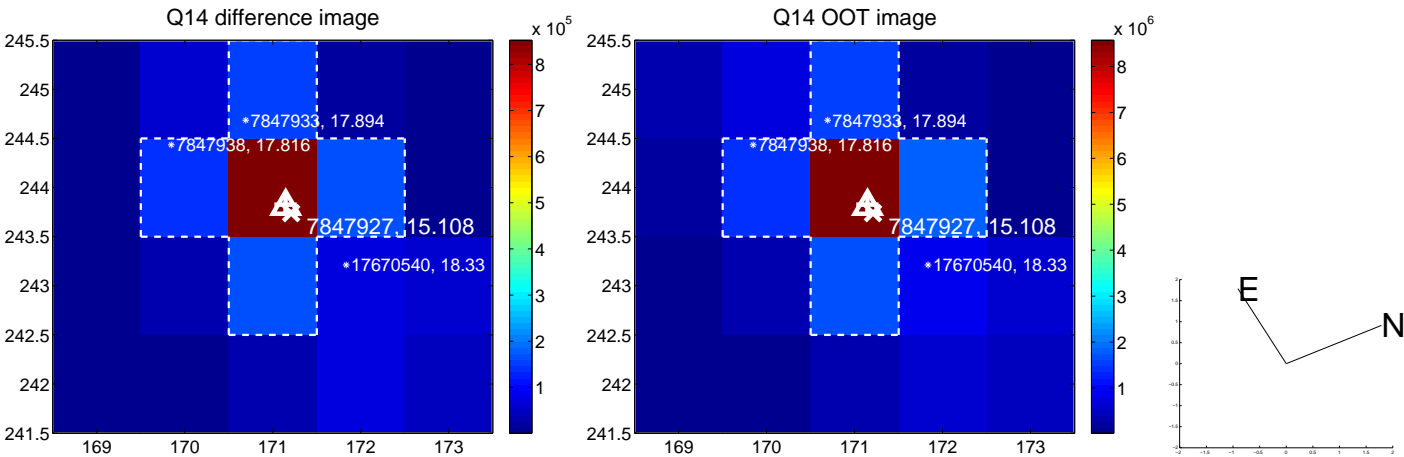
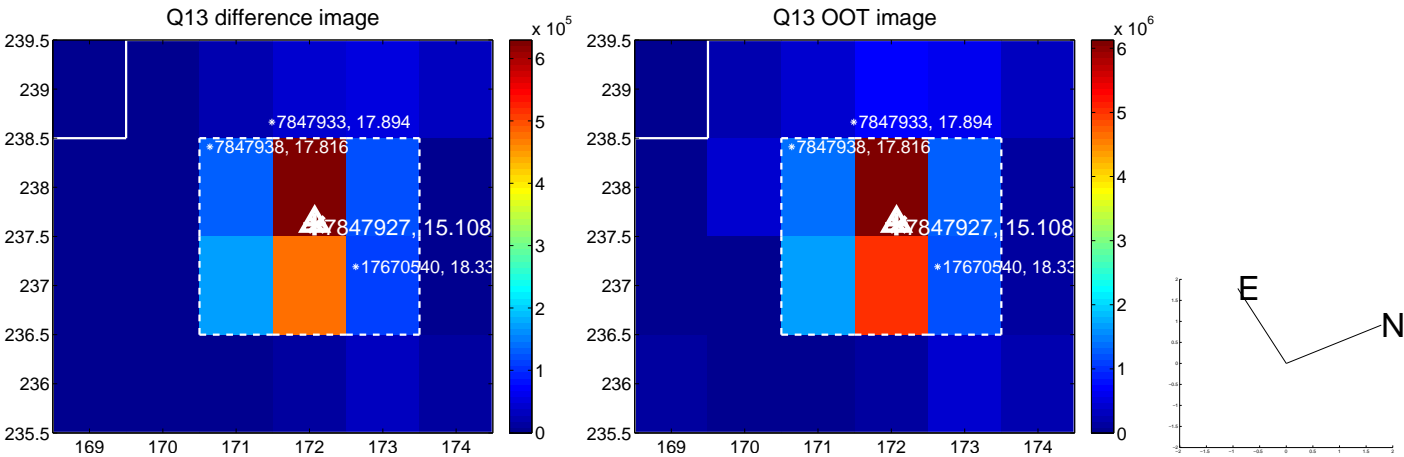
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



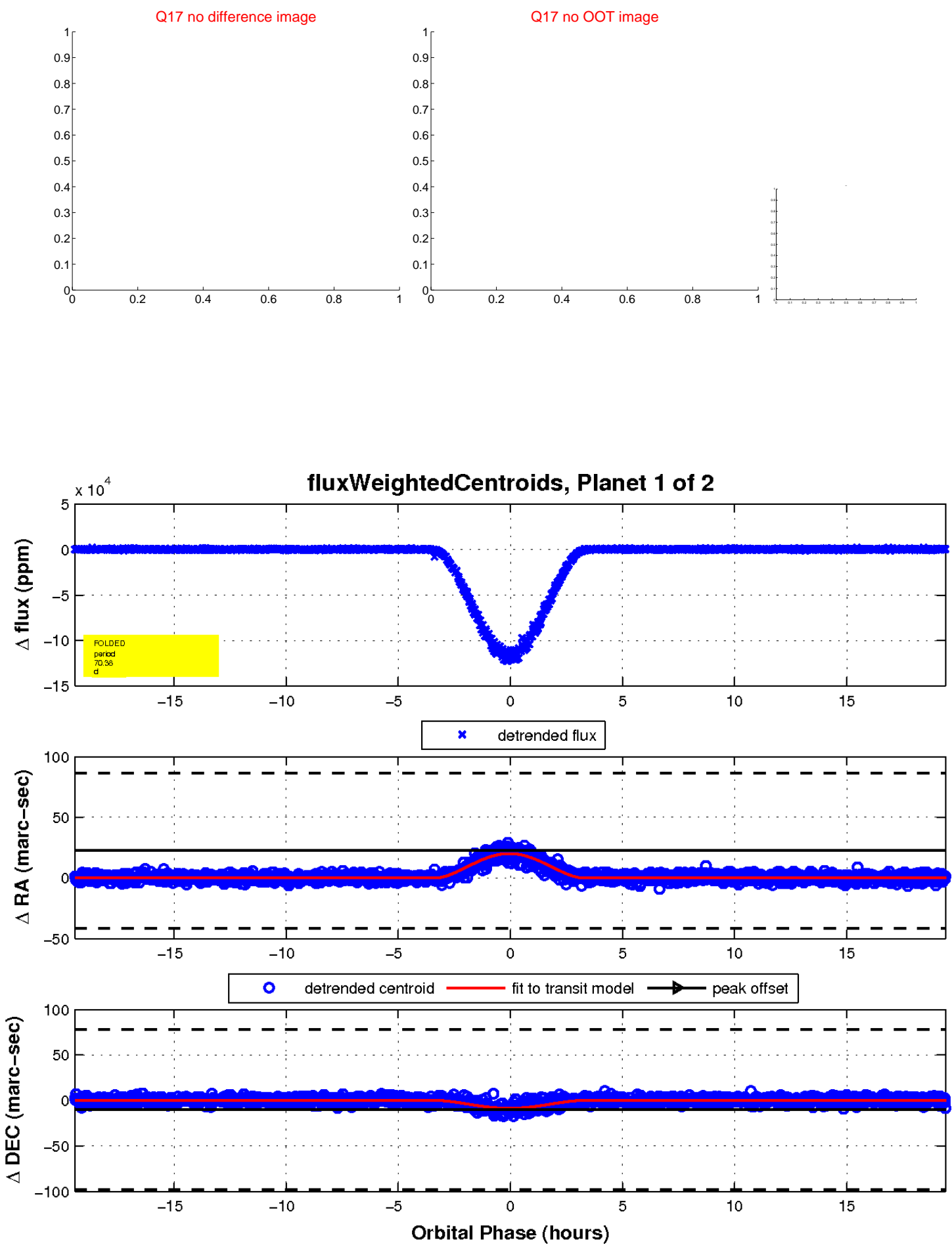
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

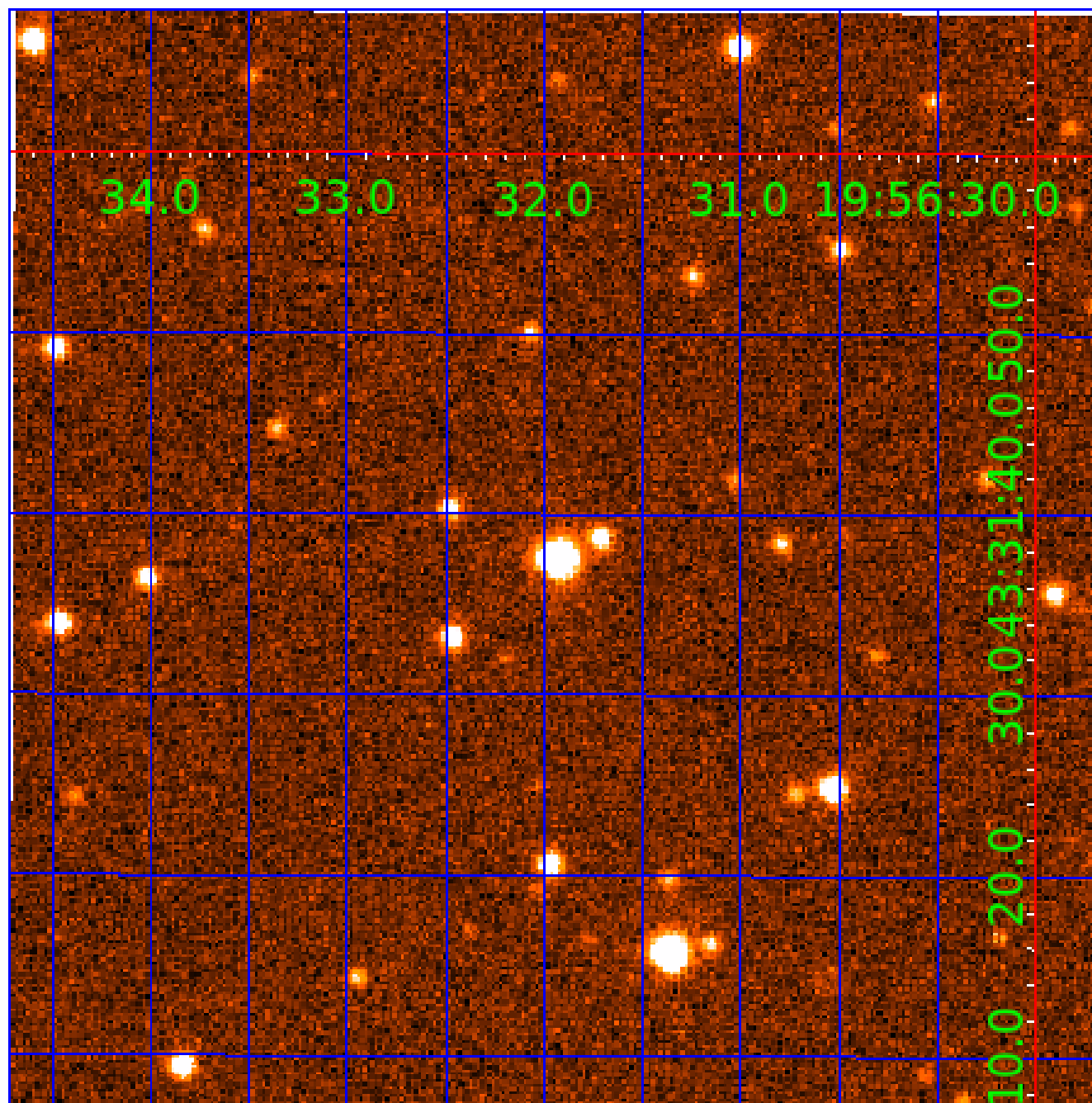


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007847927

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})
007847927-01	OBS	6924.01	70.376258	151.228363	114721.2	6.482	1928.3	1089.7	0.76	5458	38.05	4.60
007847927-02	OBS	No	70.376229	180.343019	38474.2	8.423	809.4	715.9	0.76	5458	21.42	4.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007847927-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
007847927-02	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.

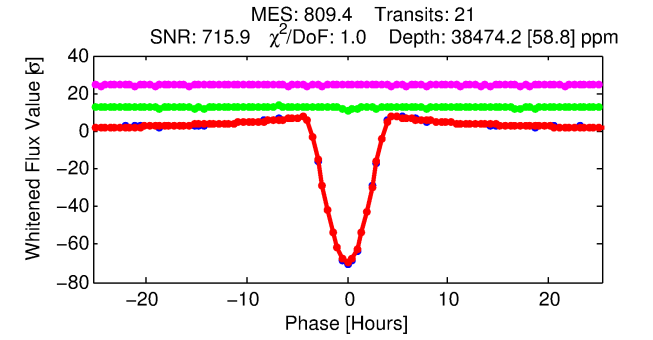
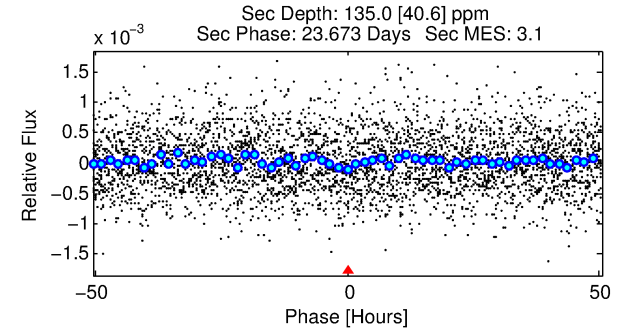
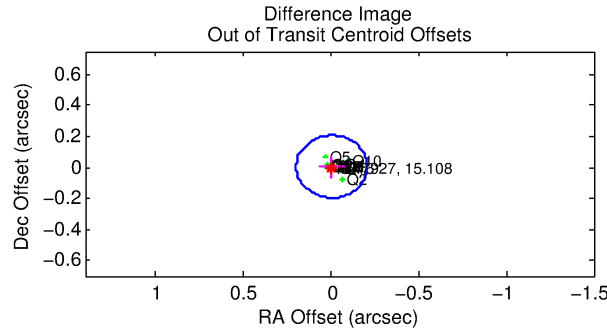
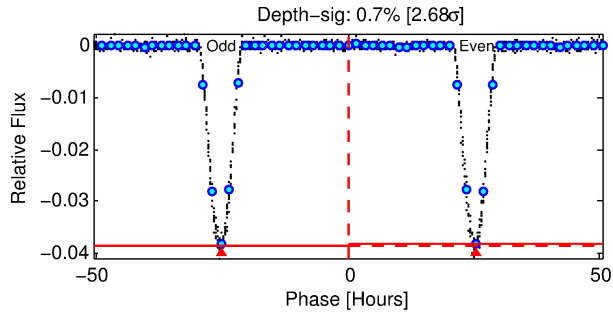
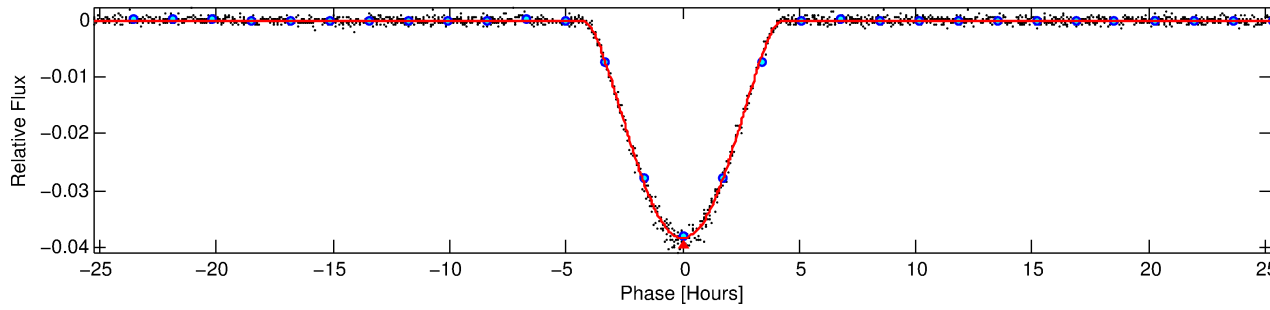
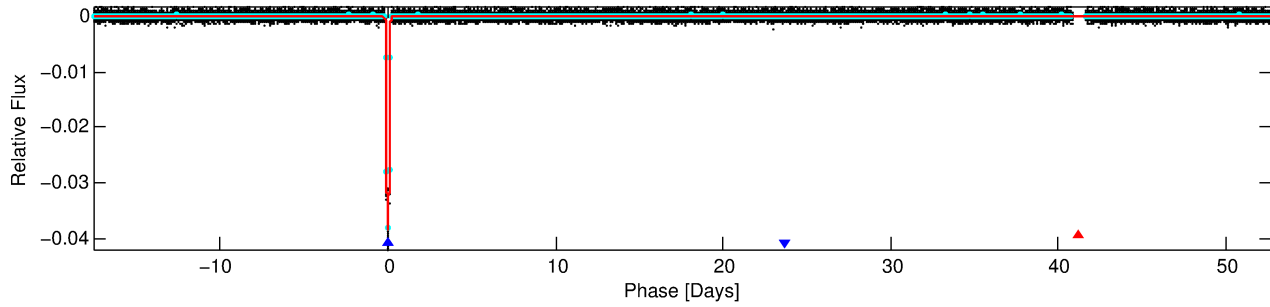
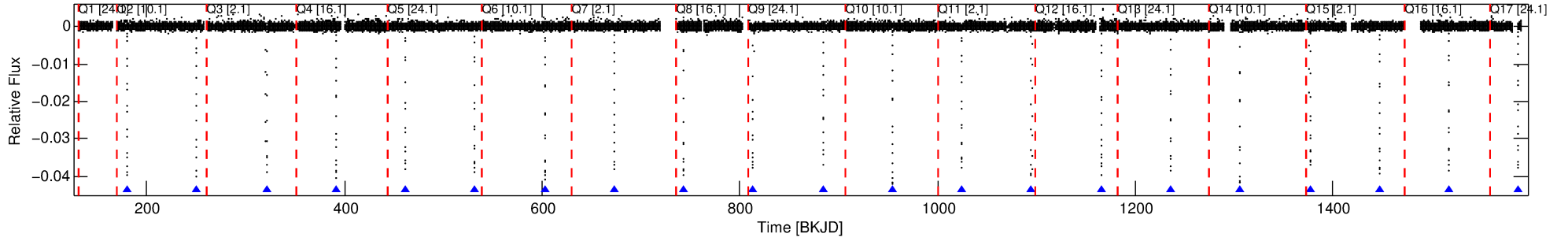
Ephemeris Match Information For 007847927-02

No Significant Match Found

DV One-Page Summary

KIC: 7847927 Candidate: 2 of 2 Period: 70.376 d
KOI: K06924 Corr: No Ephemeris Match

Kp: 15.11 R*: 0.76 Rs Teff: 5458.0 K Logg: 4.60 Fe/H: -0.300



DV Fit Results:

Period = 70.37623 [0.00002] d
Epoch = 180.3430 [0.0002] BKJD
Rp/R* = 0.2600 [0.0111]
a/R* = 54.81 [0.28]
b = 0.92 [0.02]
Seff = 4.60 [1.22]
Teq = 373 [25] K
Rp = 21.42 [4.38] Re
a = 0.3140 [0.0520] AU
Ag = 15.95 [6.26] [2.39σ]
Teffp = 1154 [97] K [7.83σ]

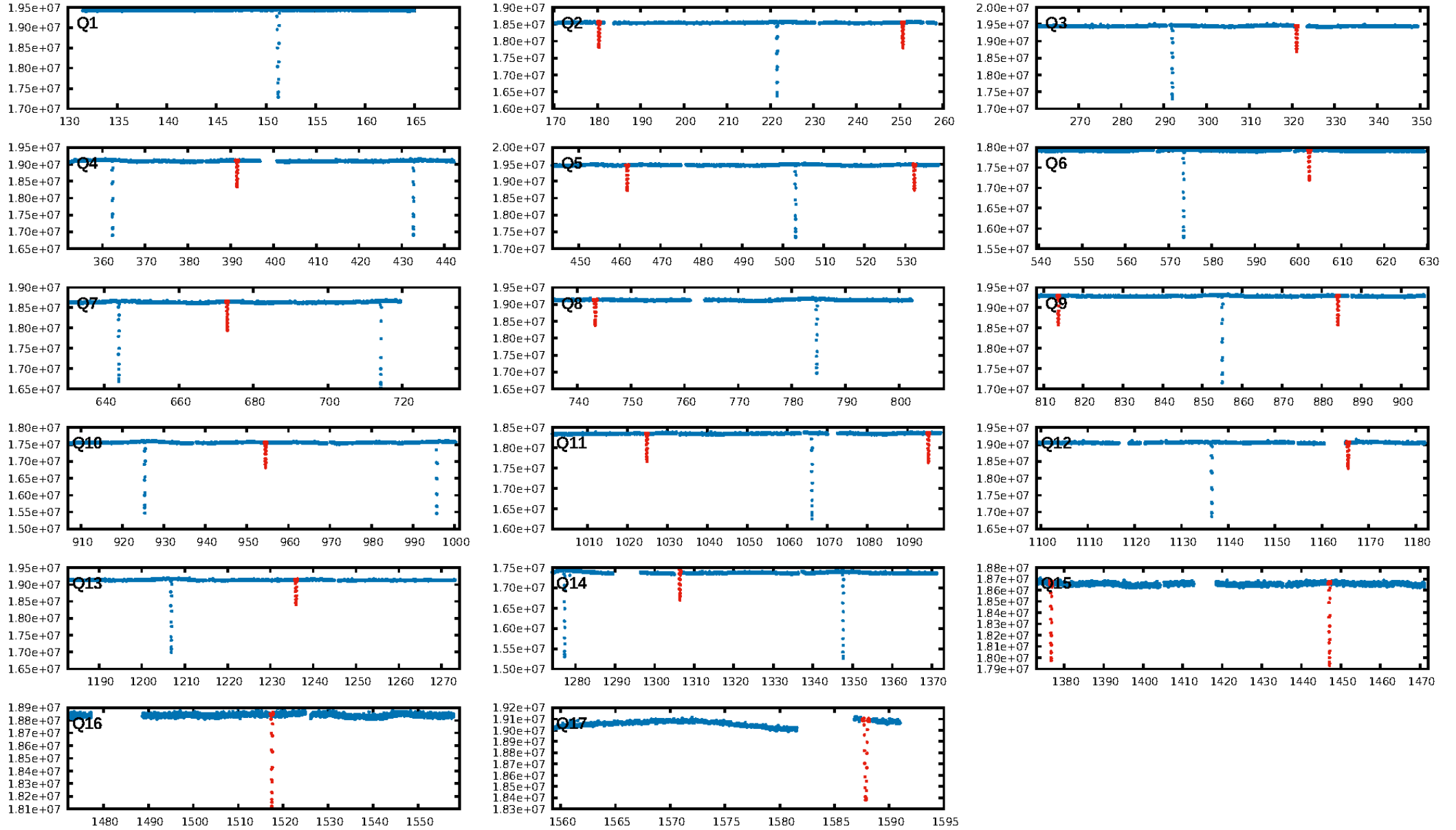
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [20/20]
GhostDiagnostic-chr: 3.467
Centroid-sig: 0.0%
Centroid-so: 0.219 arcsec [15.17σ]
OotOffset-rm: 0.007 arcsec [0.11σ]
KicOffset-rm: 0.099 arcsec [1.30σ]
OotOffset-st: 3/3/3 [12]
KicOffset-st: 3/3/3 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [12/12]

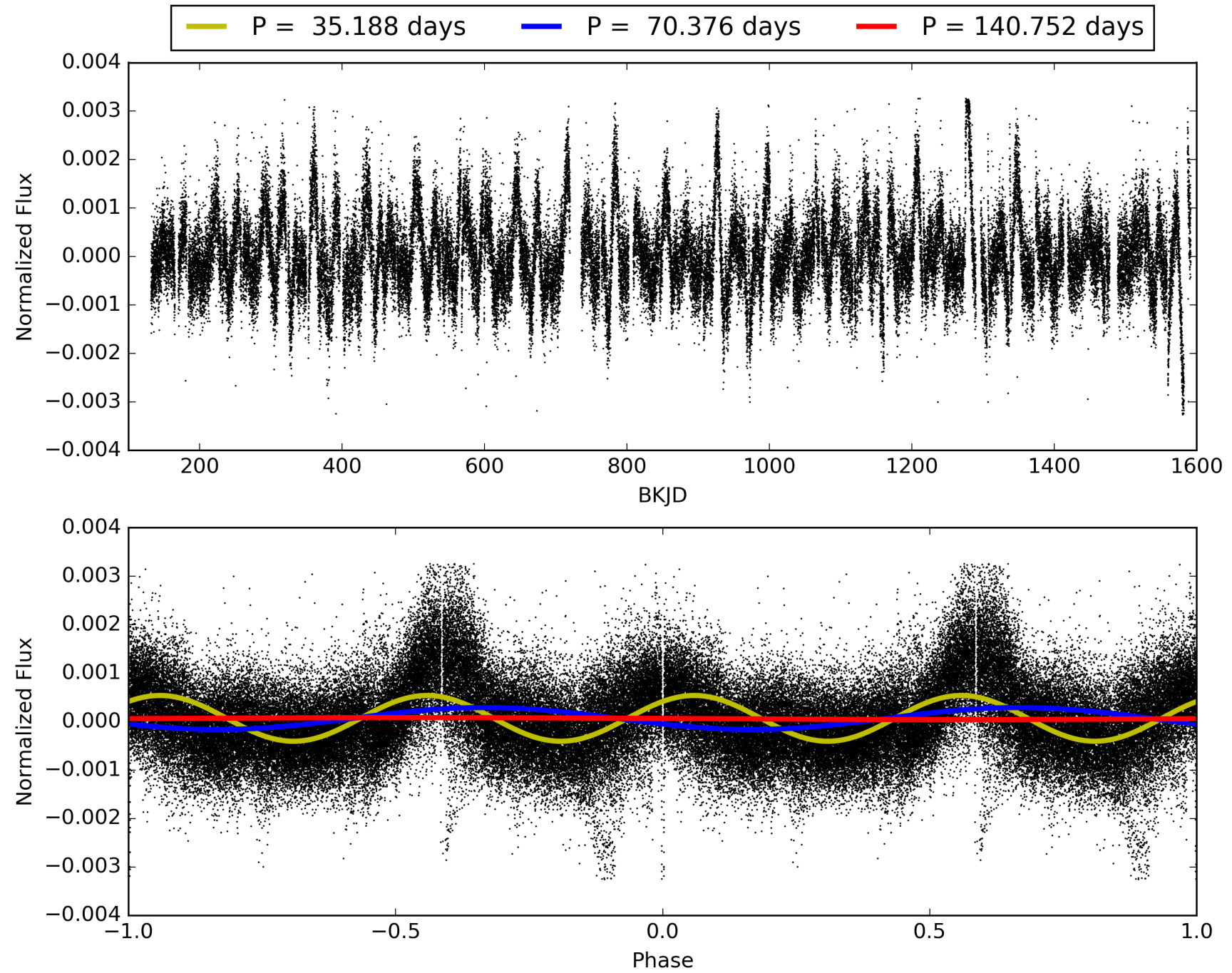
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007847927-02, PDC Light Curves

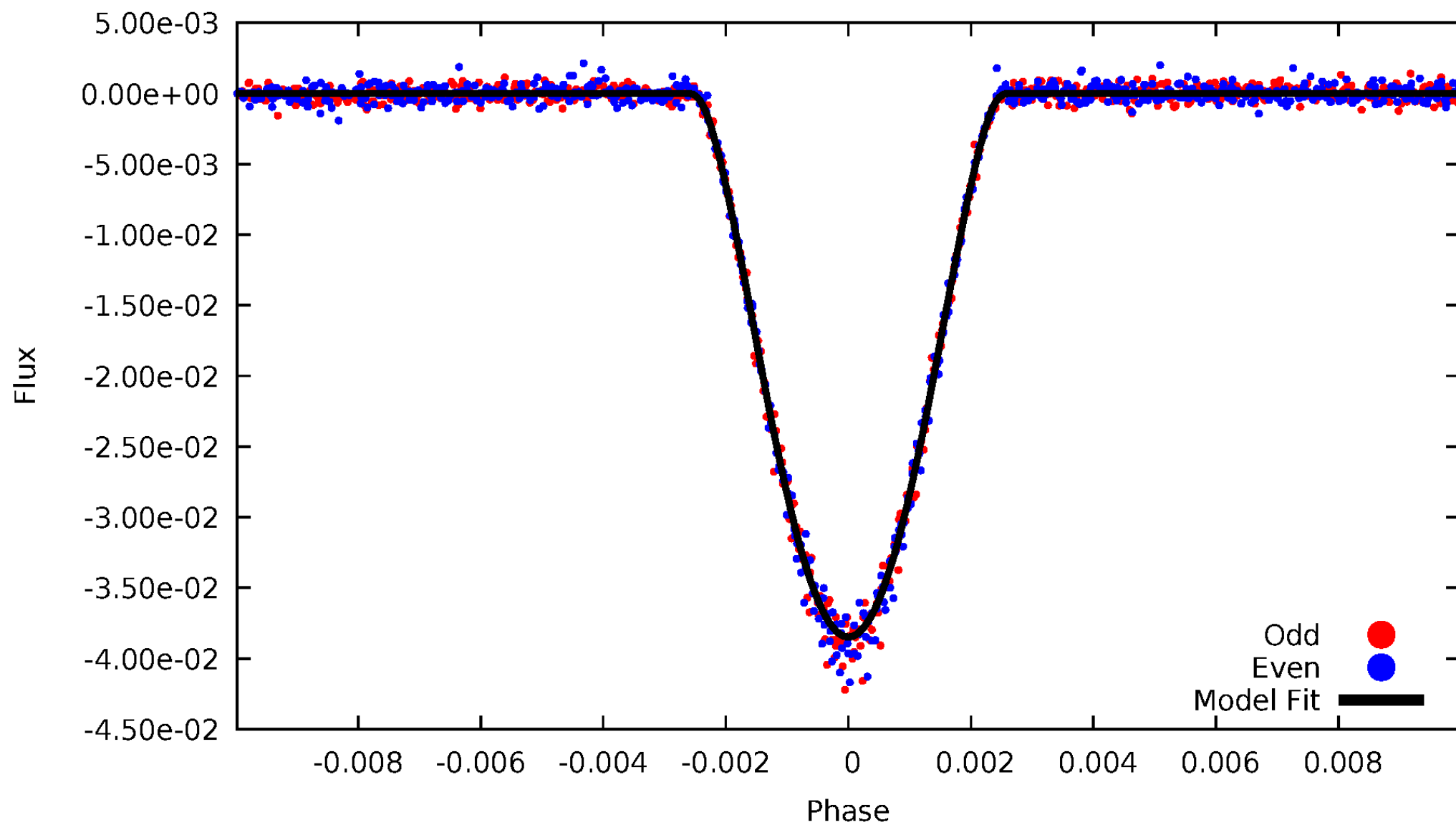


TCE 007847927-02



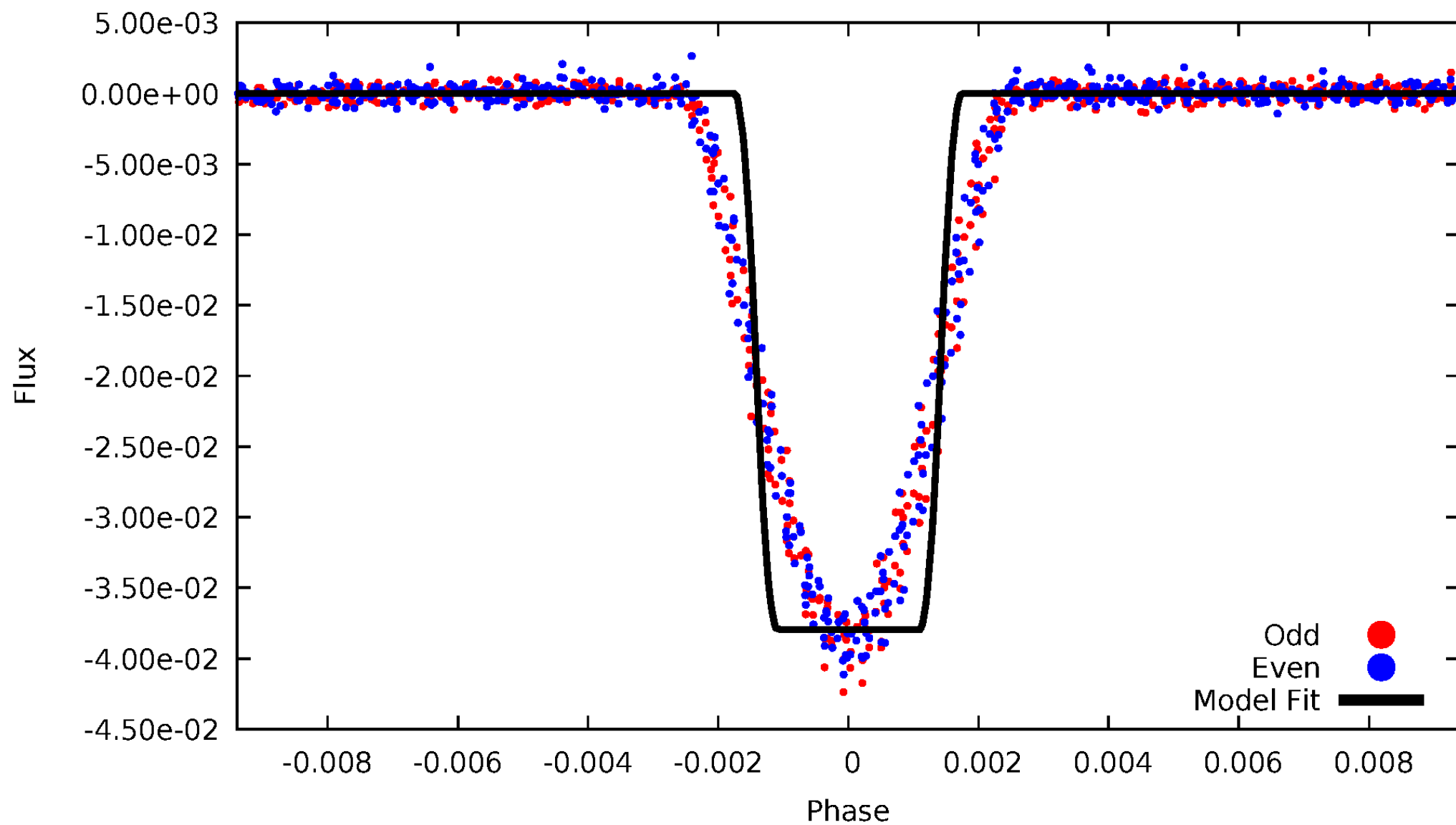
DV Odd/Even

TCE 007847927-02



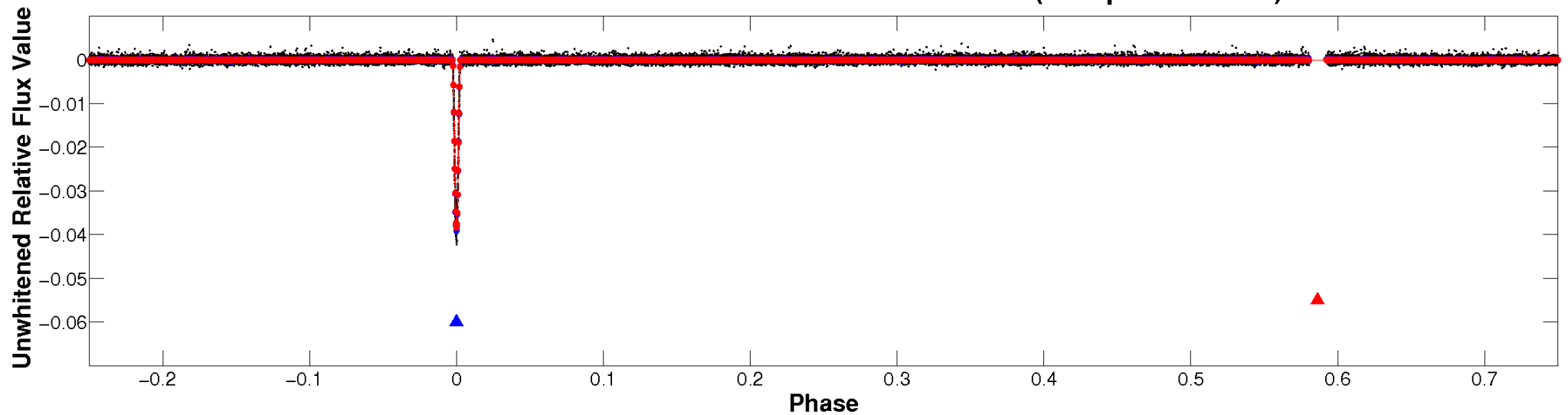
ALT Odd/Even

TCE 007847927-02

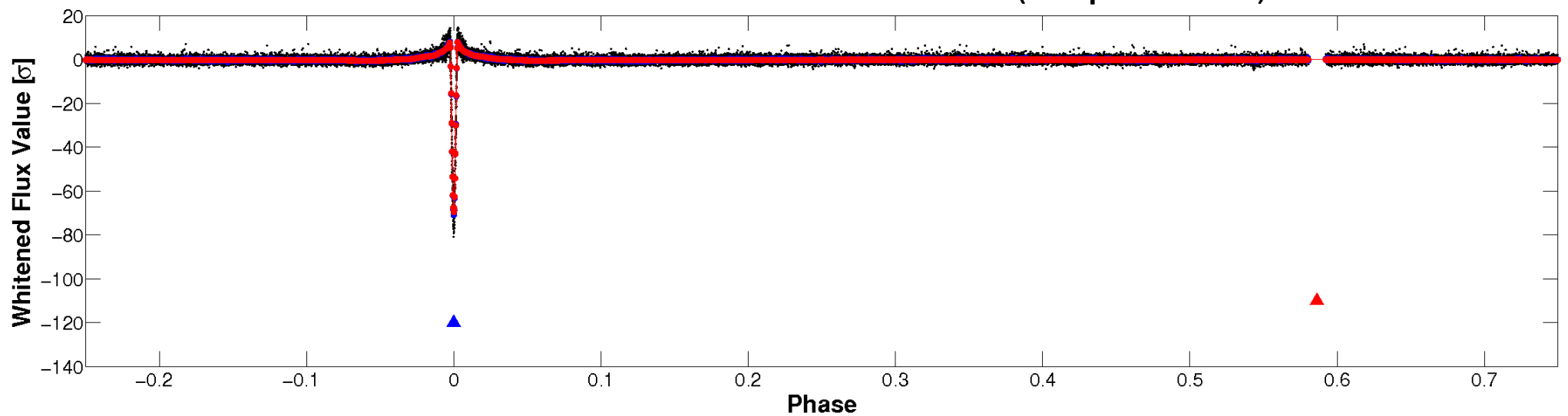


Non-Whitened Vs. Whitened Light Curve

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

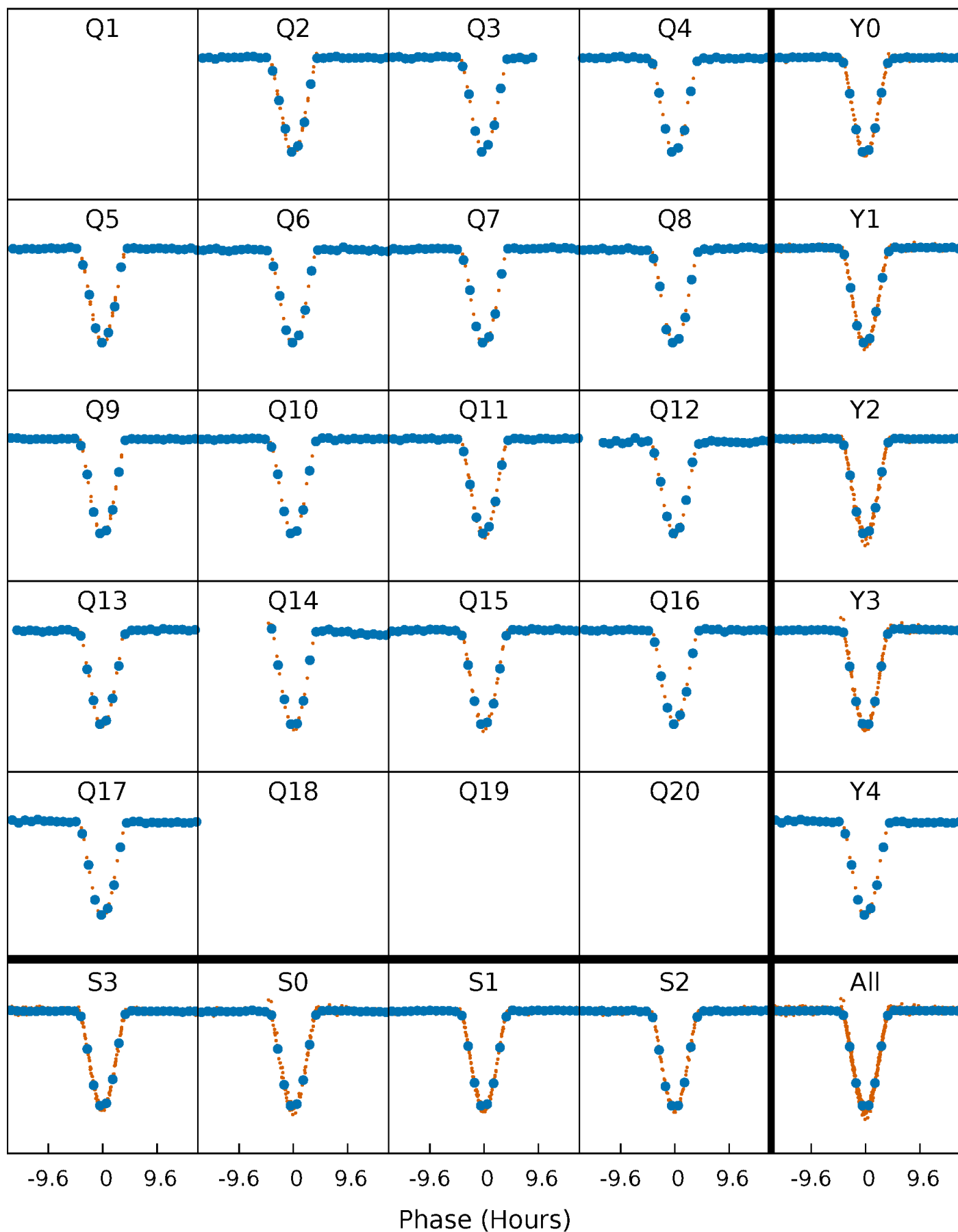


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



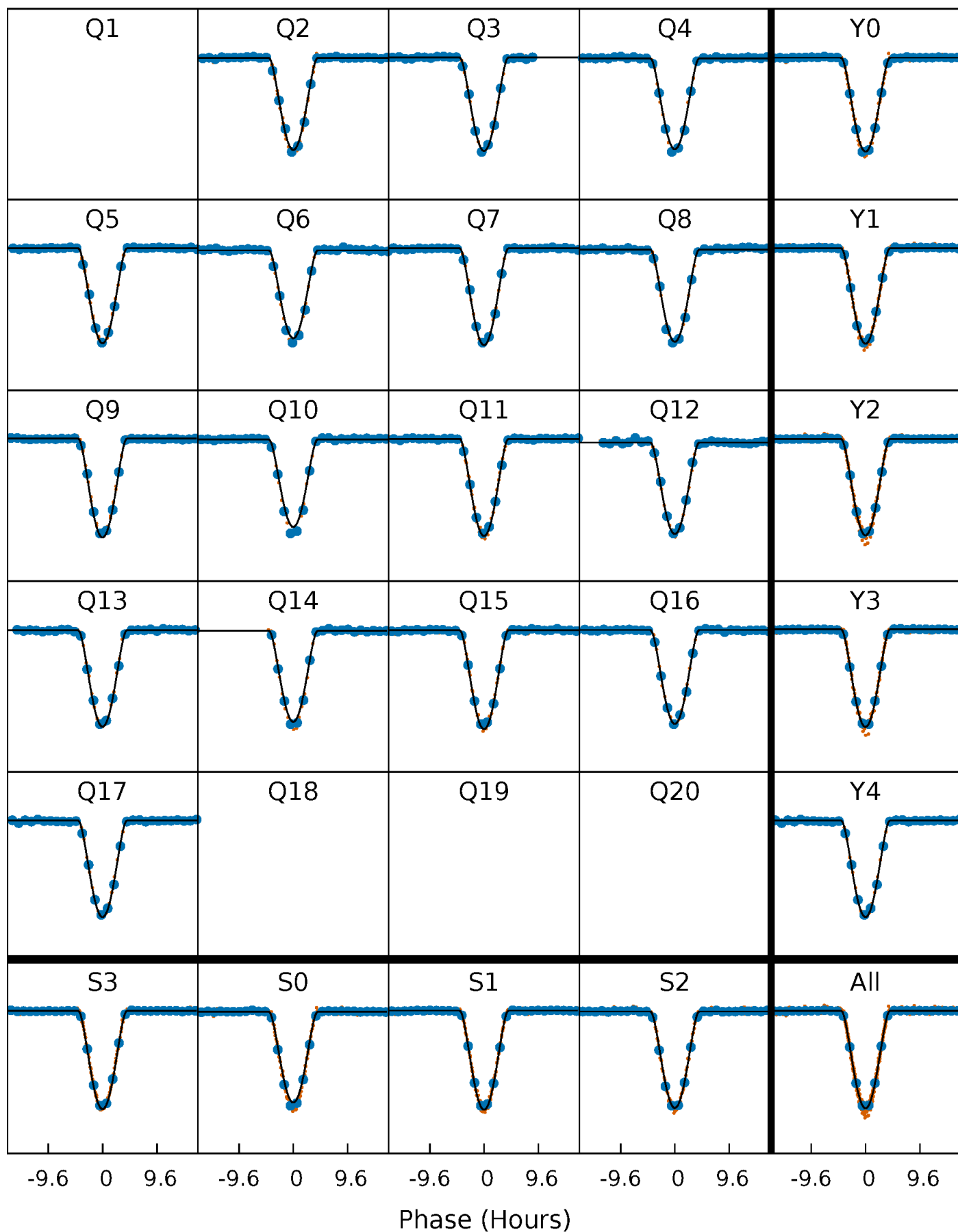
PDC Quarter-Phased Transit Curves

TCE 007847927-02 P= 70.376229 Days $T_0=180.343019$ (BKJD)



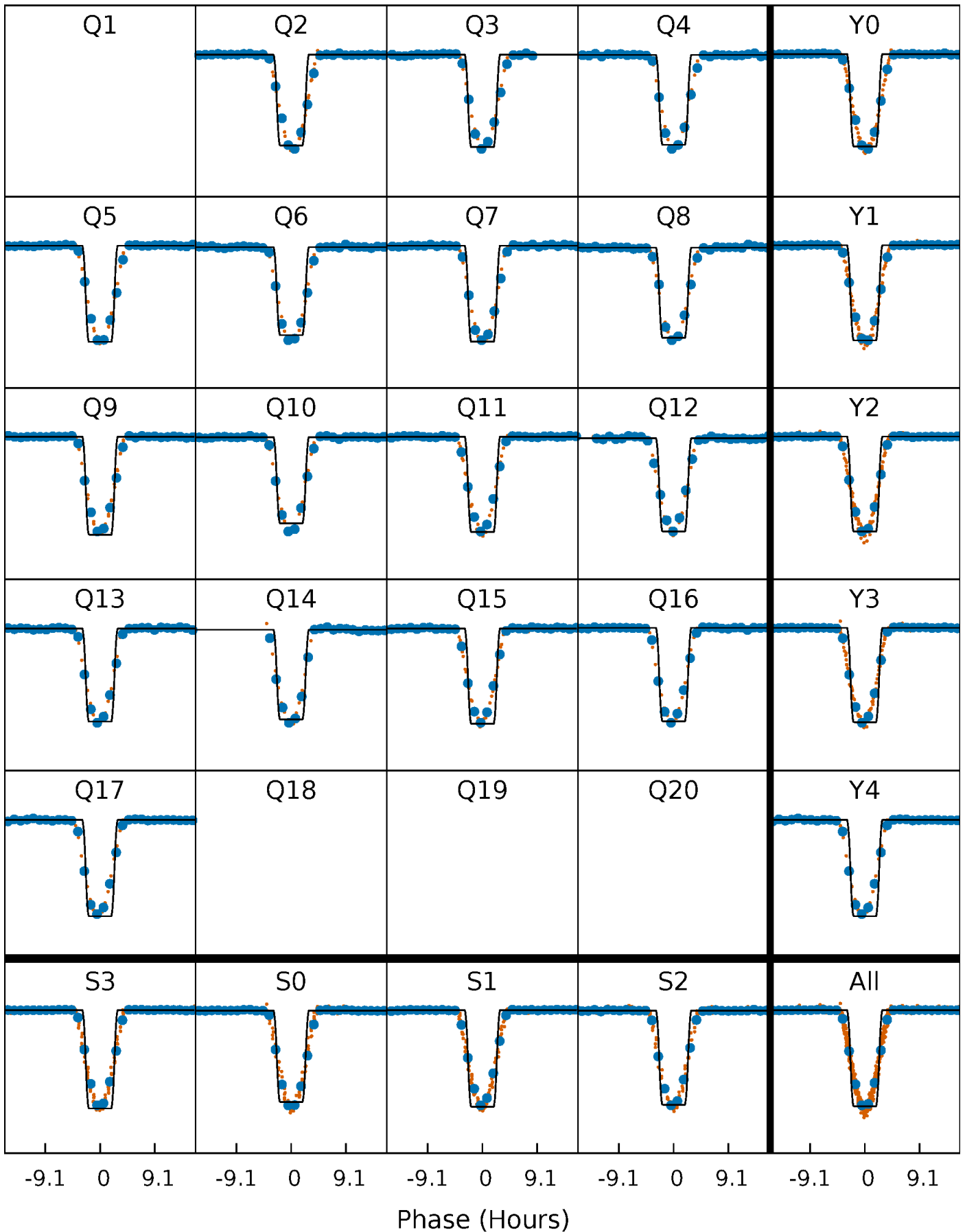
DV Quarter-Phased Transit Curves

TCE 007847927-02 P= 70.376229 Days $T_0=180.343019$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

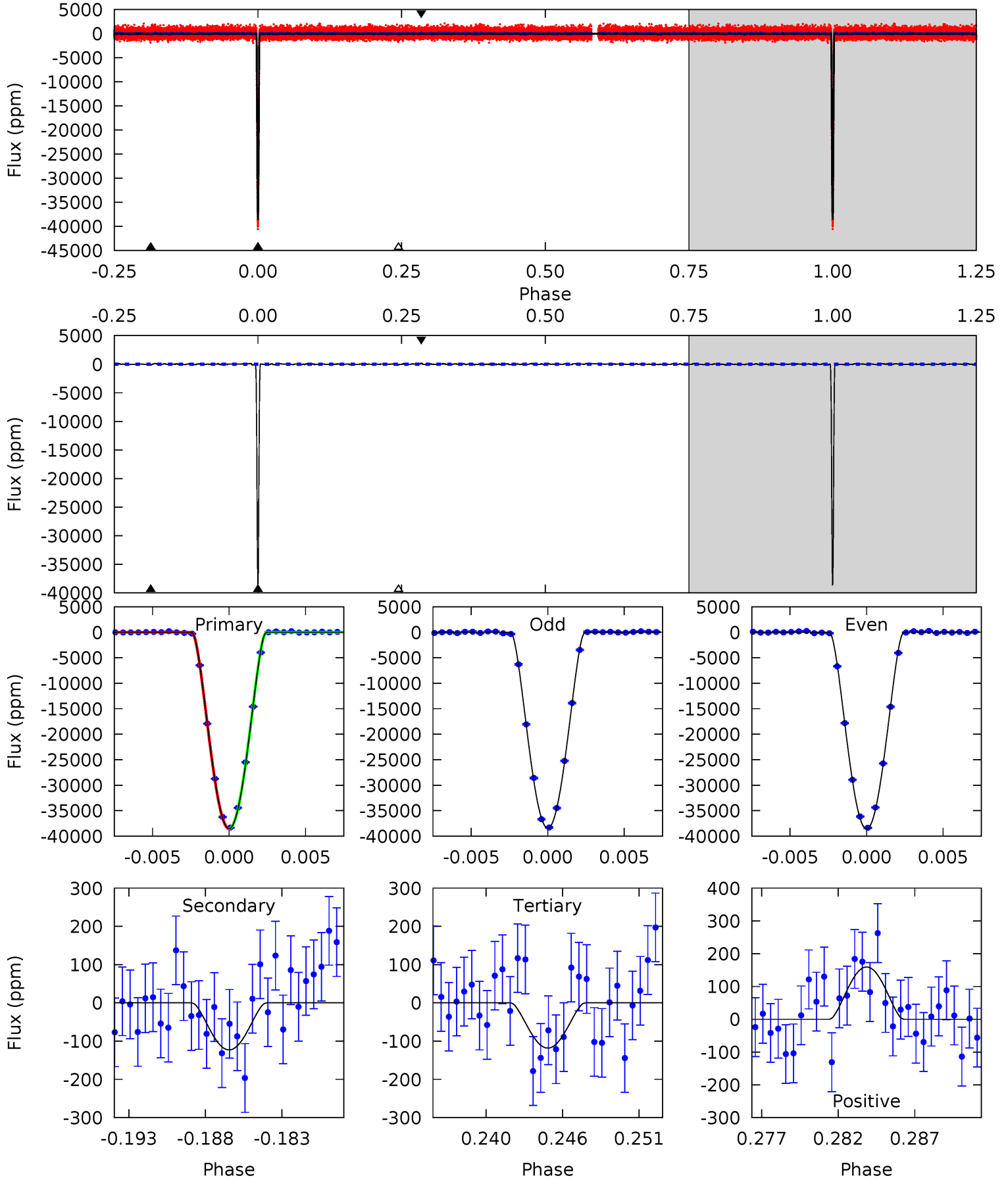
TCE 007847927-02 $P = 70.377457$ Days $T_0 = 180.330964$ (BKJD)



DV Model-Shift Uniqueness Test

007847927-02, P = 70.376229 Days, E = 109.966790 Days

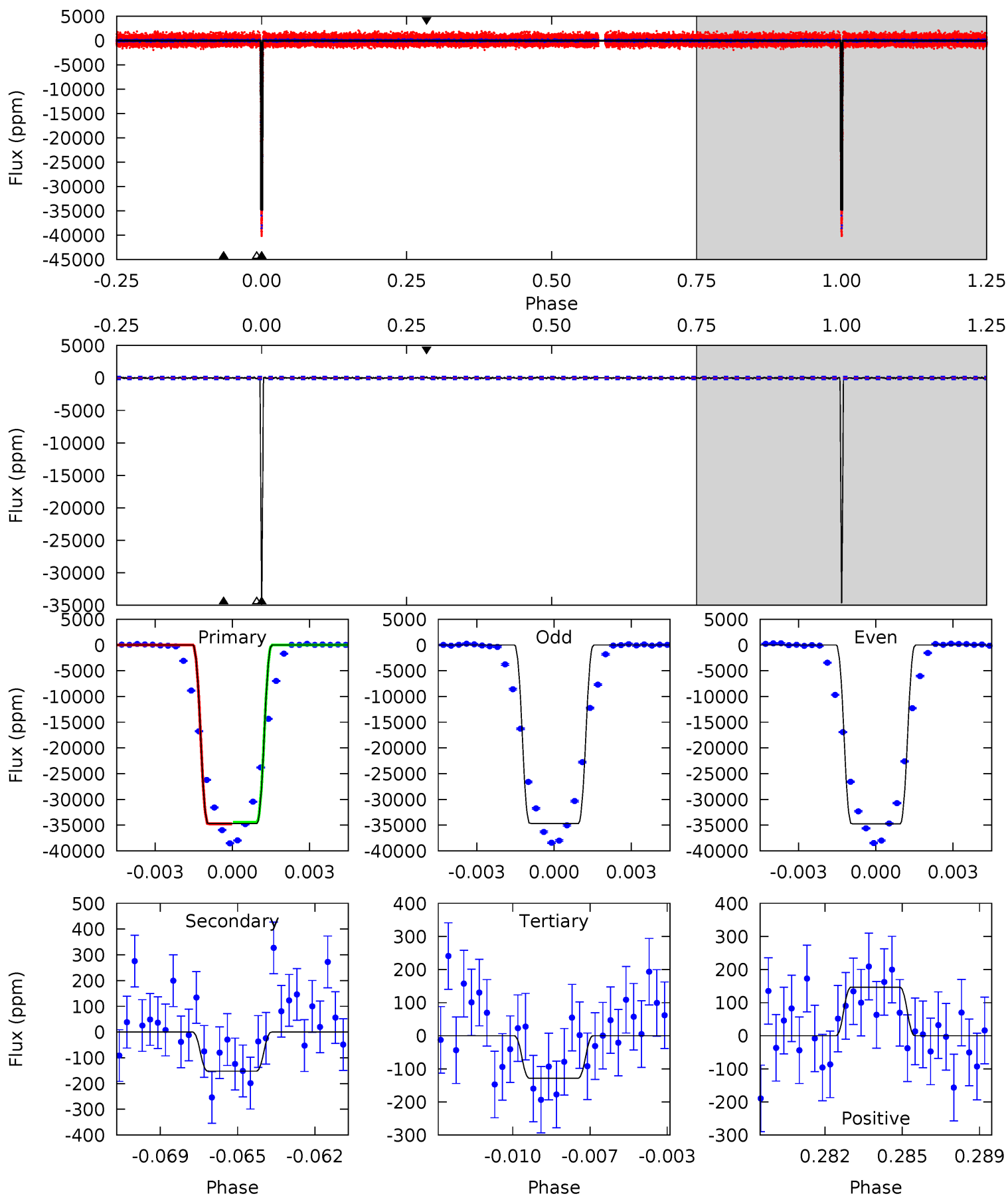
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1507	4.81	4.62	6.24	5.15	2.79	1.71	1502	1500	0.19	-1.43	3.15	1.01	0.00	0.90



Alt Model-Shift Uniqueness Test

007847927-02, P = 70.377457 Days, E = 109.953507 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
916.2	4.01	3.39	3.88	5.23	2.93	1.06	912.8	912.4	0.62	0.13	1.02	1.01	0.00	4.02



Stellar Parameters For KIC 007847927

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5458^{+163}_{-147}	$4.603^{+0.032}_{-0.128}$	$-0.300^{+0.300}_{-0.300}$	$0.755^{+0.151}_{-0.060}$	$0.845^{+0.080}_{-0.098}$	$2.768^{+0.466}_{-1.033}$
	+3%/-3%	+1%/-3%	+100%/-100%	+20%/-8%	+9%/-12%	+17%/-37%
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 007847927-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-123 ± 26	$22.05^{+2.35}_{-1.57}$	532^{+26}_{-20}	2099^{+59}_{-62}	13^{+3}_{-3}
Alt.	-152 ± 38	$16.47^{+1.92}_{-1.47}$	532^{+25}_{-22}	2287^{+82}_{-83}	29^{+10}_{-8}

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

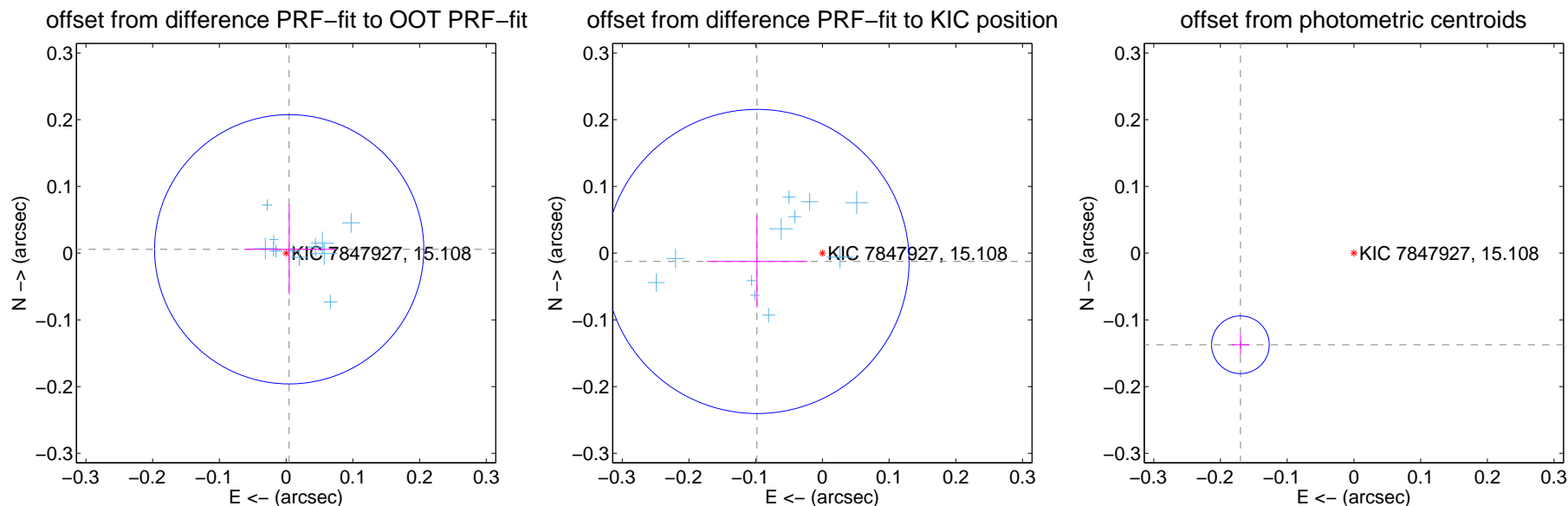
DV Centroid Data

Supplemental centroid analysis for 007847927-02. Kepler magnitude: 15.11. Transit SNR 715.88

There are 12 quarters with good PRF difference image offsets

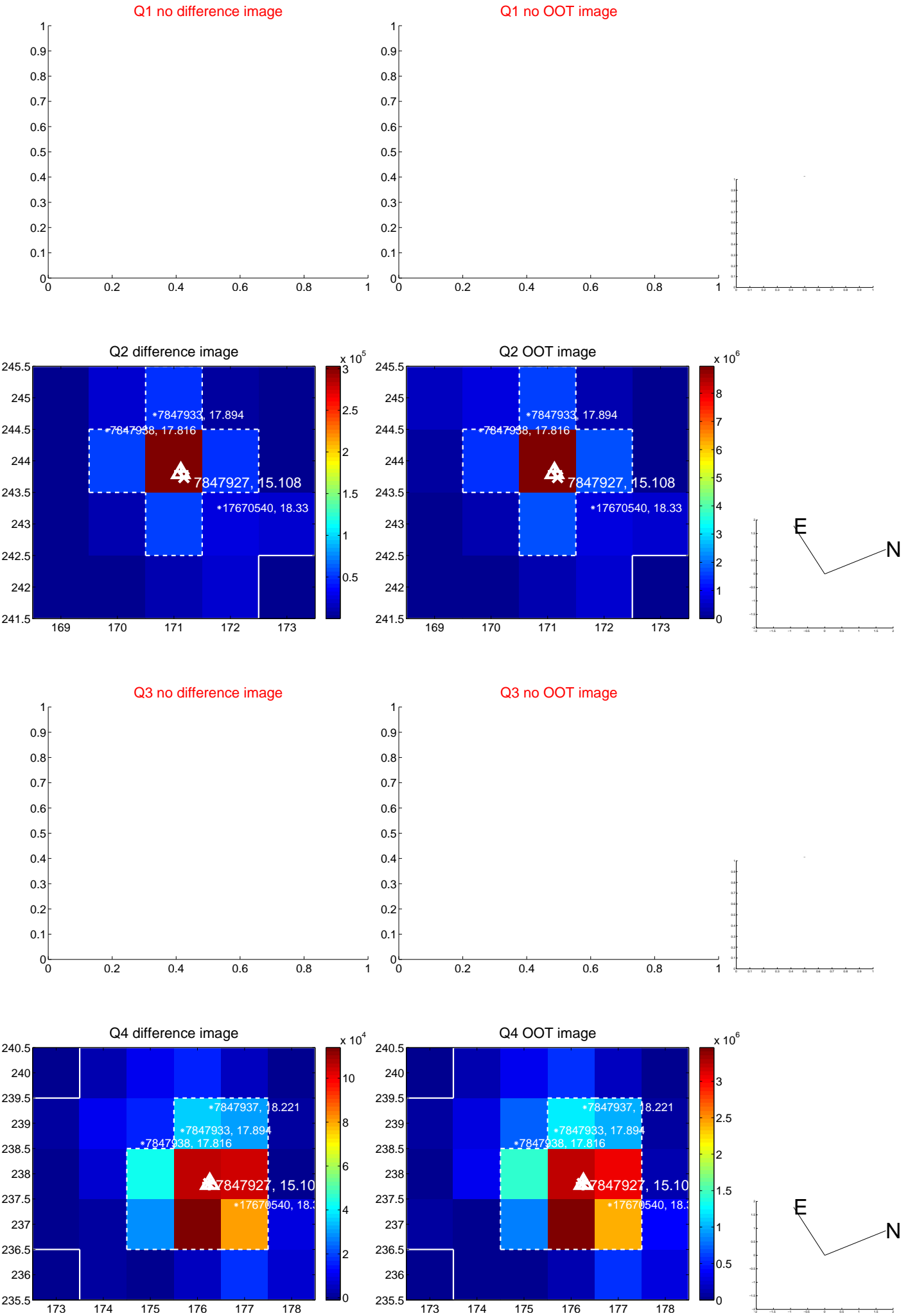
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.007 ± 0.067	0.11	-0.005 ± 0.068	0.006 ± 0.067
PRF-fit source offset from KIC position	0.099 ± 0.076	1.30	0.098 ± 0.075	-0.012 ± 0.069
photometric centroid source offset	0.22 ± 0.01	15.17	0.17 ± 0.01	-0.14 ± 0.02

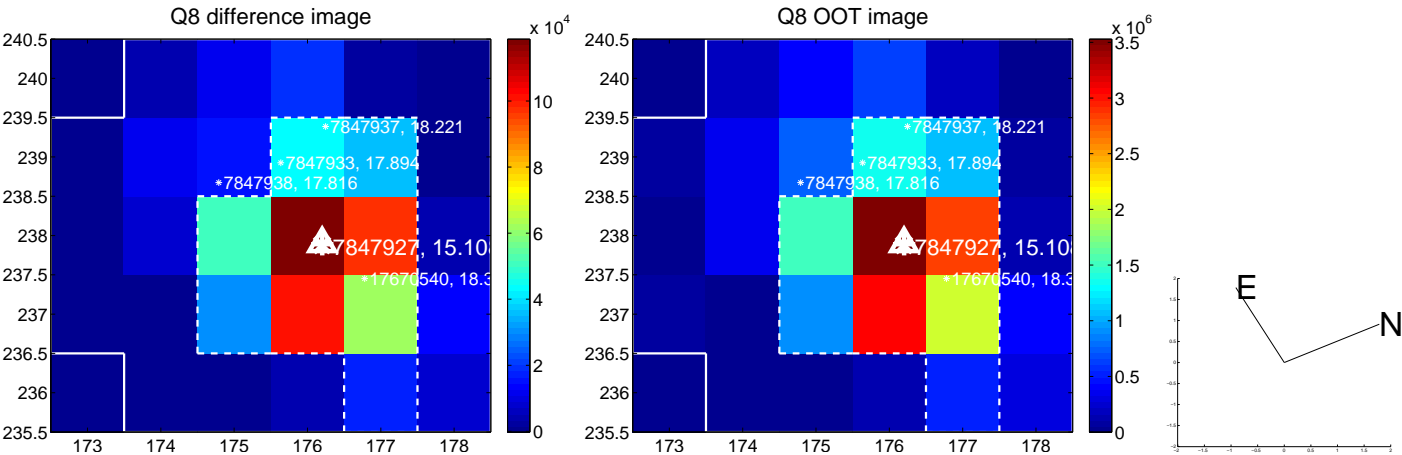
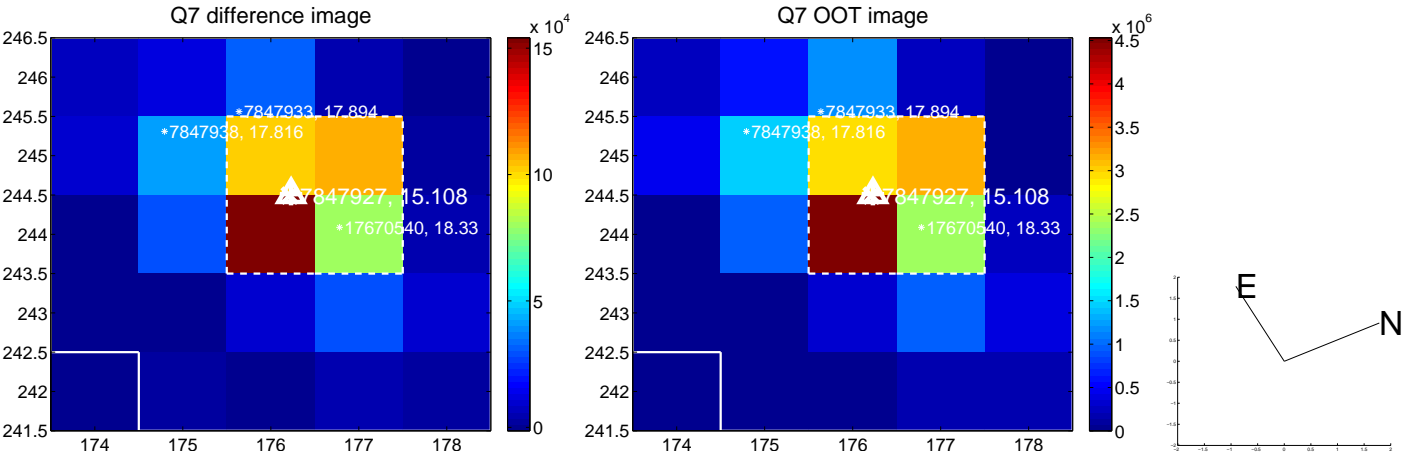
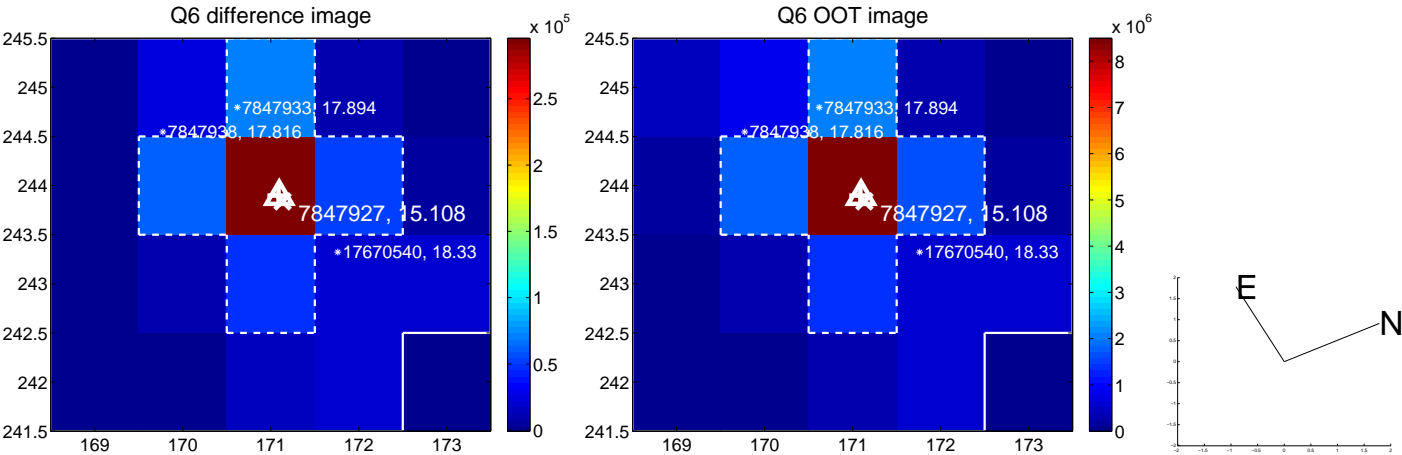
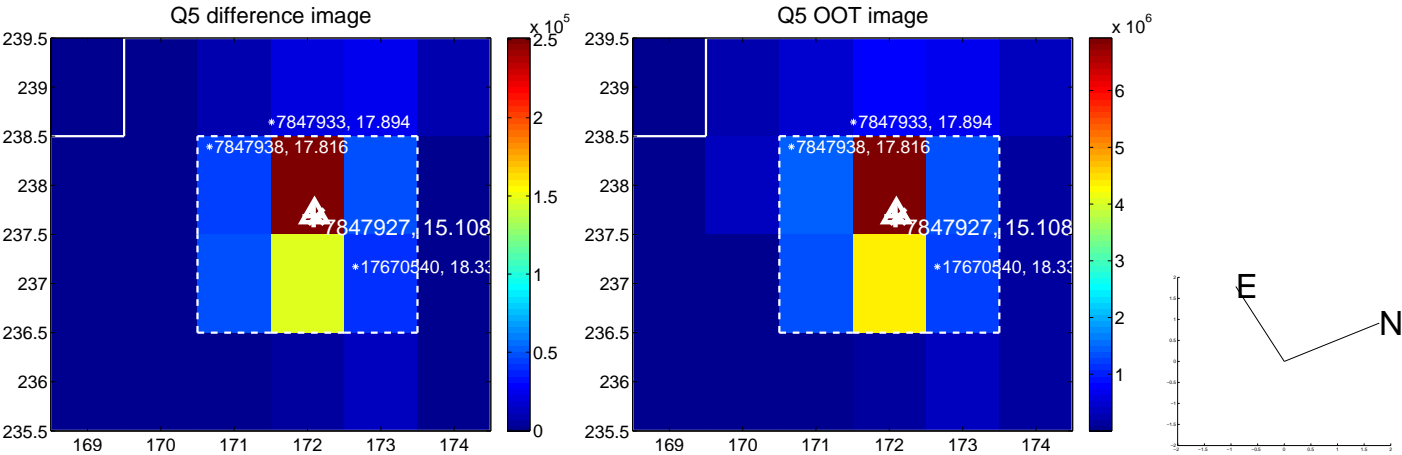


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

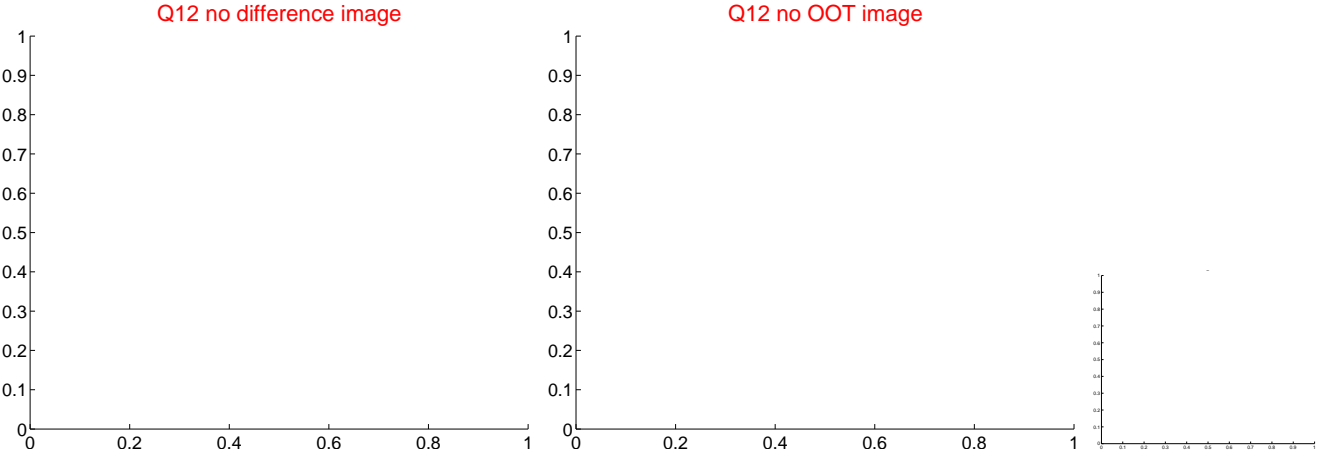
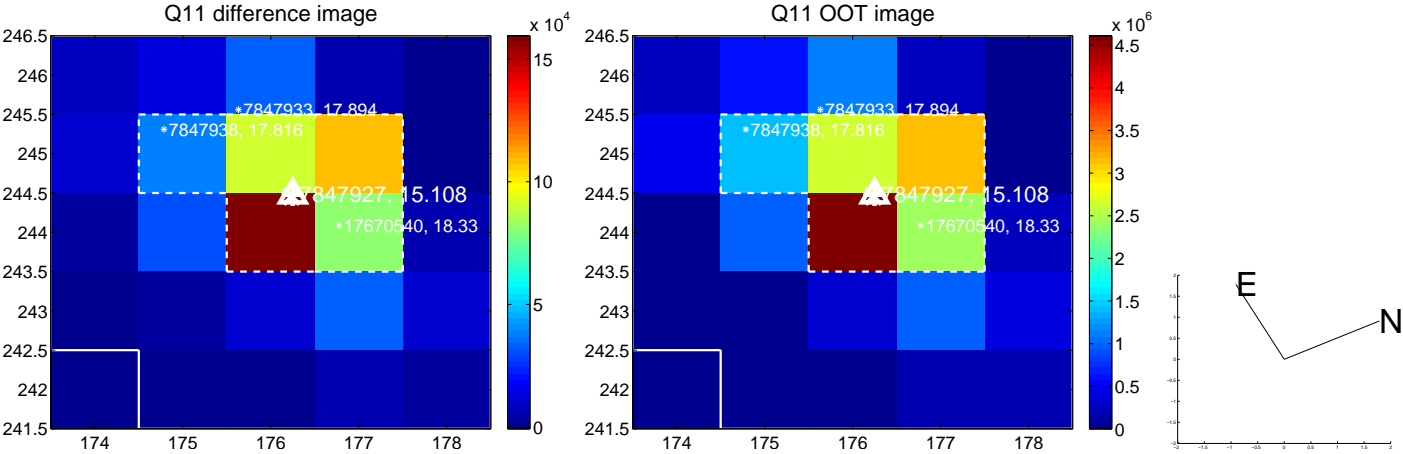
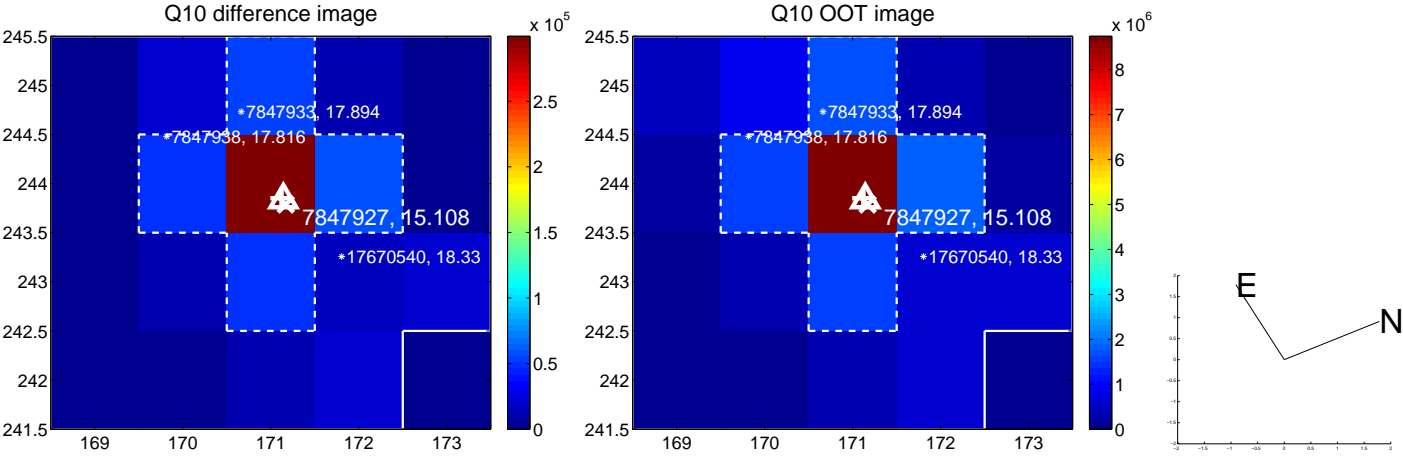
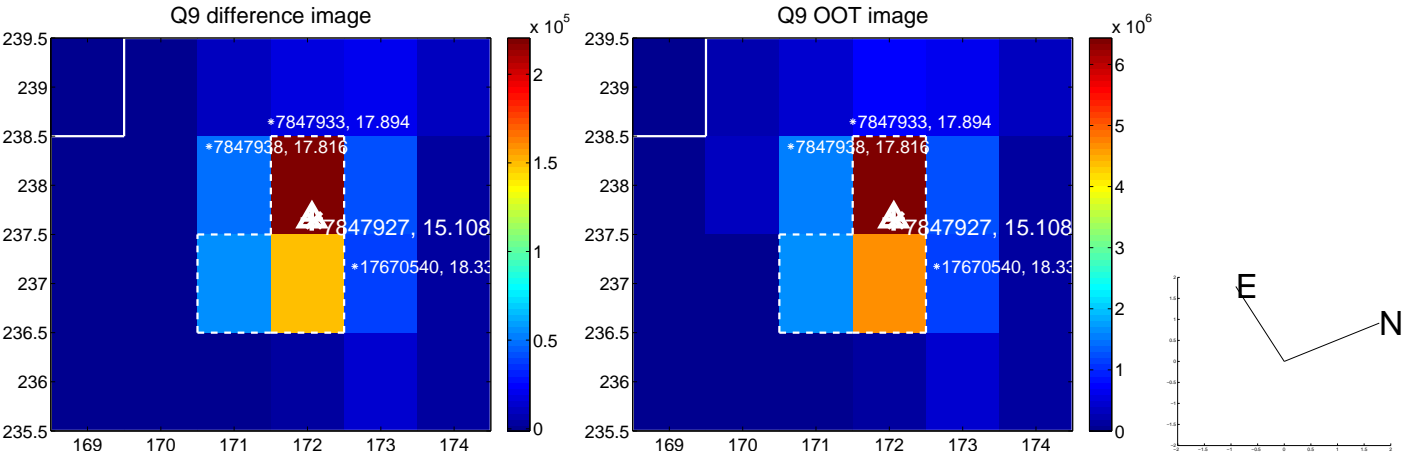
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



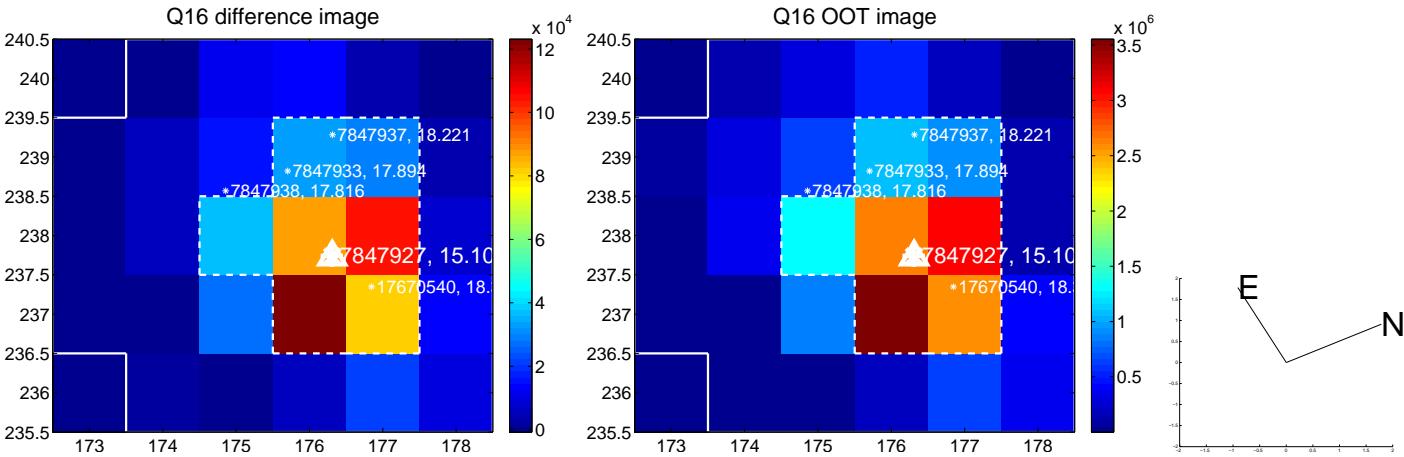
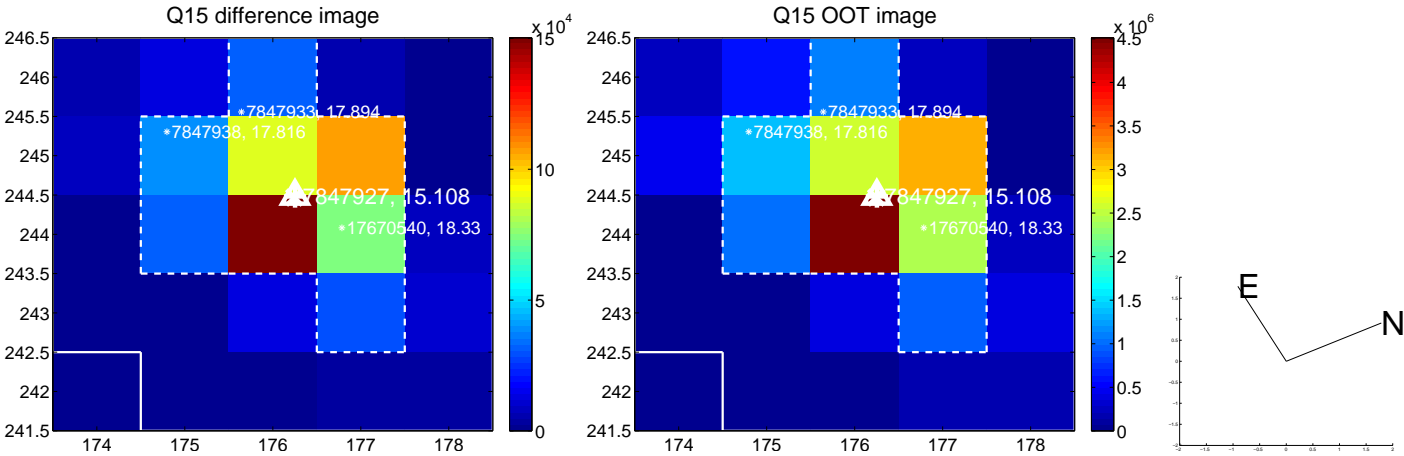
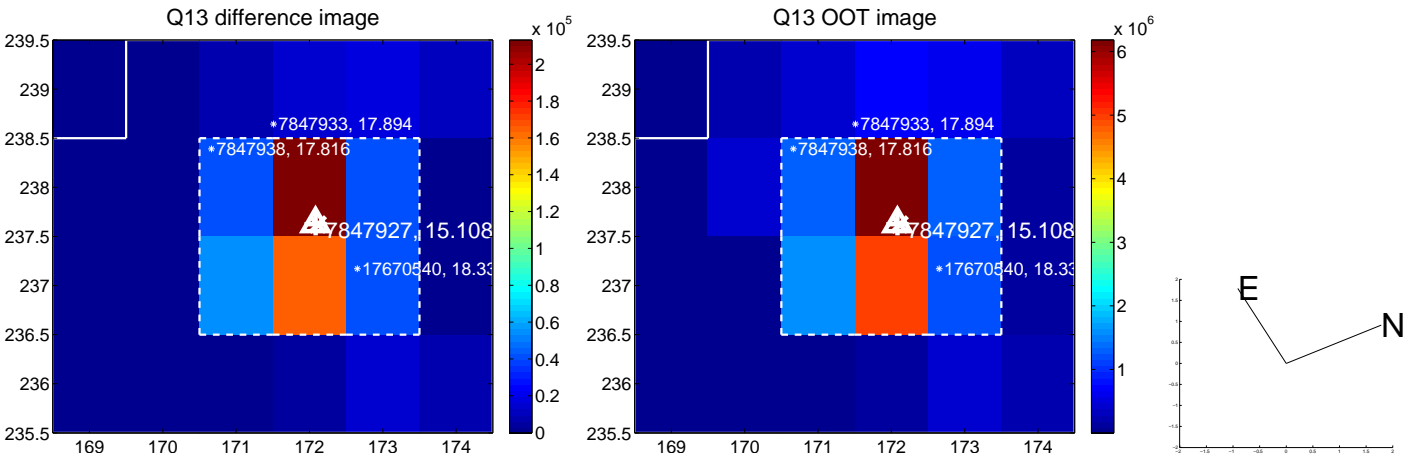
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



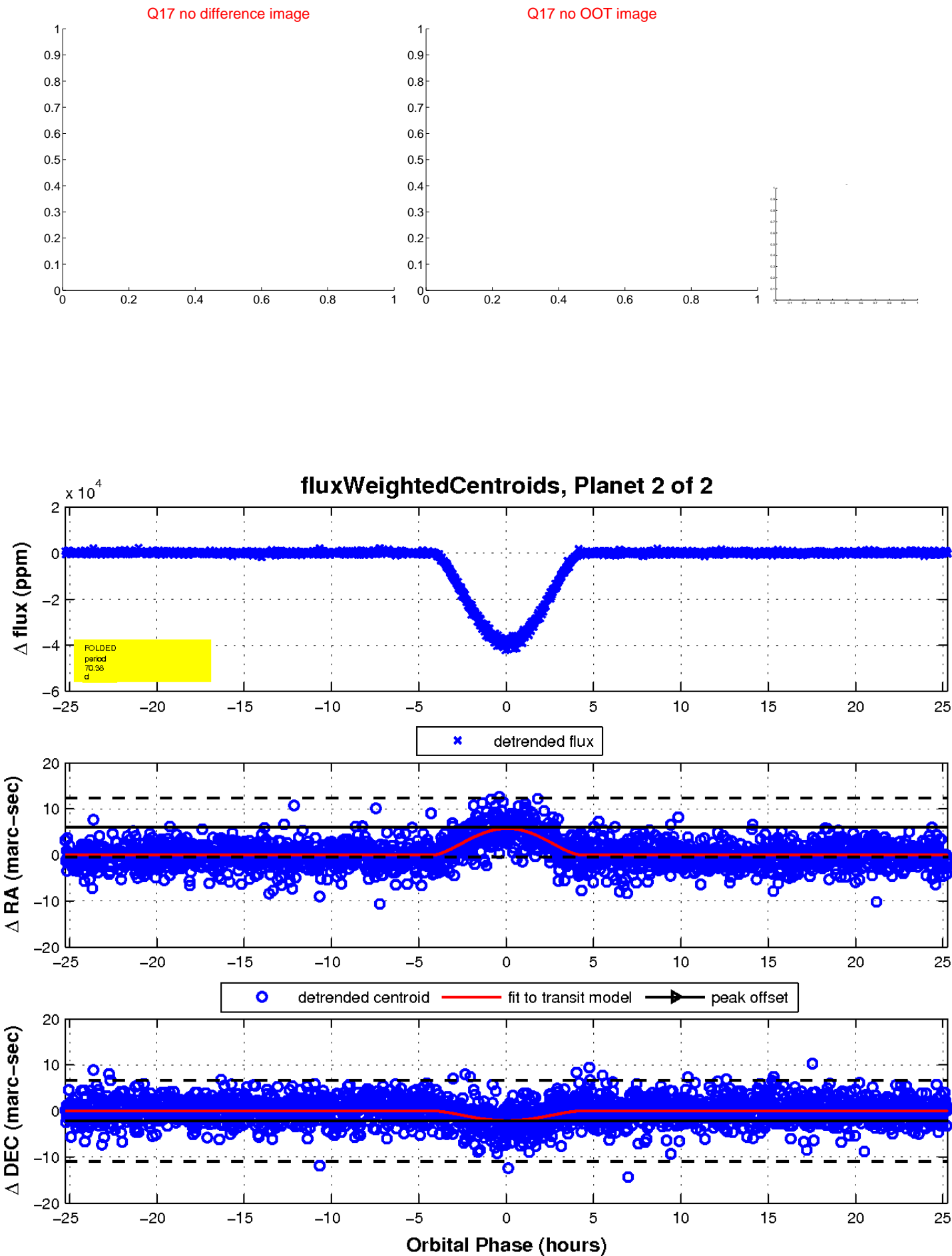
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

