

KIC 007941635

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})
007941635-01	OBS	5449.01	0.762730	131.646377	8599.1	1.886	1225.6	867.8	0.98	5313	11.37	2831.78
007941635-02	OBS	5449.02	25.270466	134.664900	374.5	4.789	10.4	14.6	0.98	5313	2.13	26.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007941635-01	OBS	PC	0.77	0	1	0	0	MOD_SEC_DV—PLANET_OCCULT_DV
007941635-02	OBS	FP	0.38	1	0	0	0	MOD_NONUNIQ_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

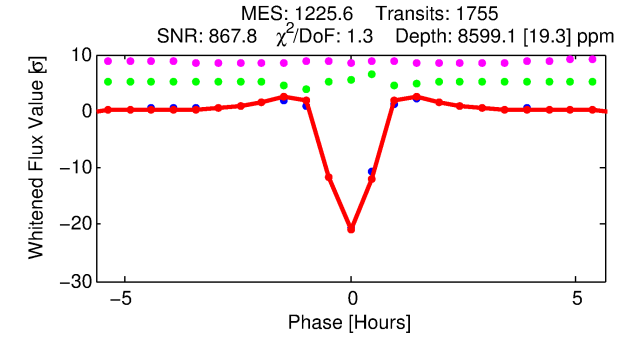
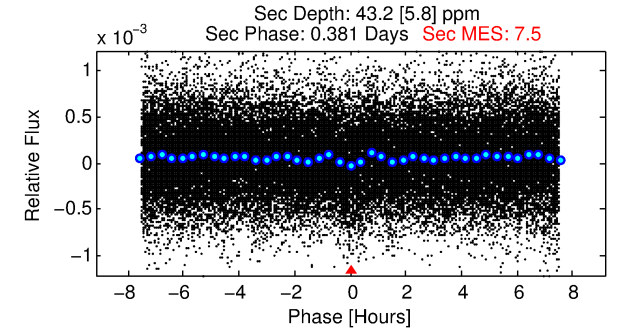
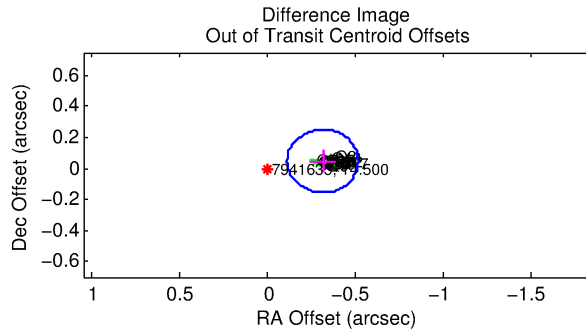
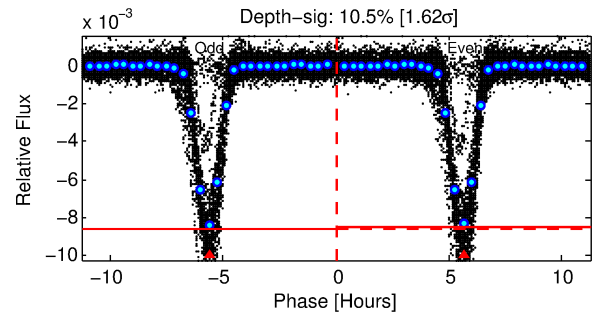
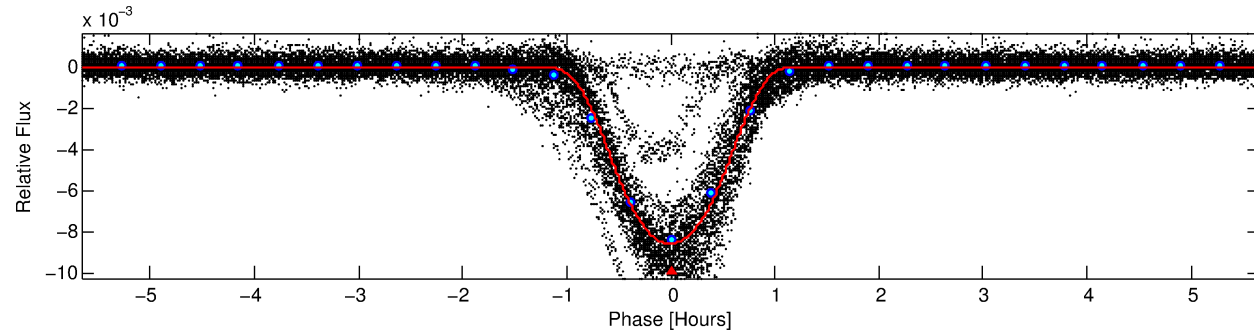
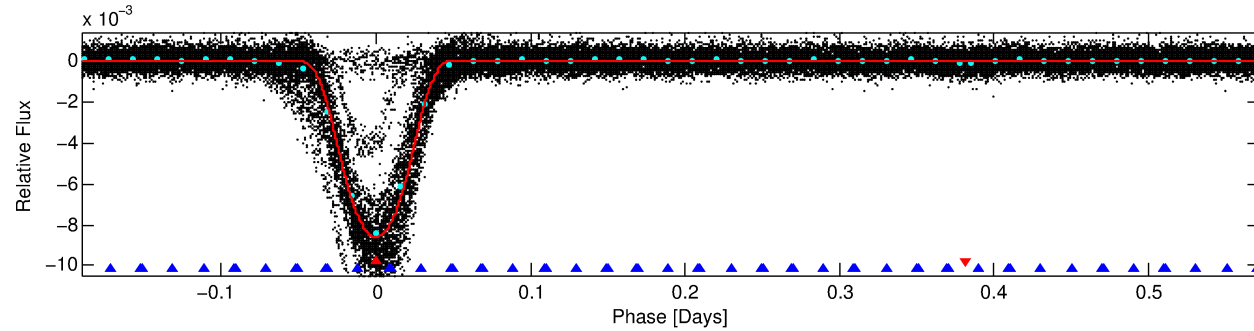
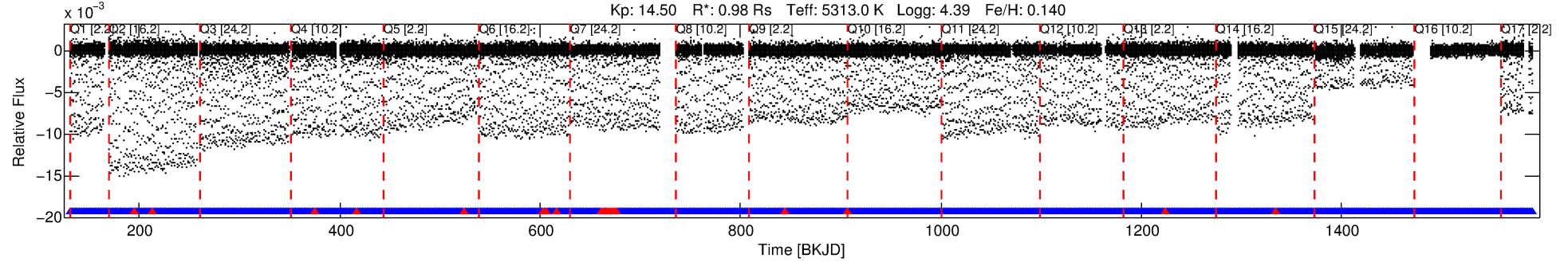
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007941635-01

No Significant Match Found

DV One-Page Summary

KIC: 7941635 Candidate: 1 of 2 Period: 0.763 d
KOI: K05449.01 Corr: 0.961



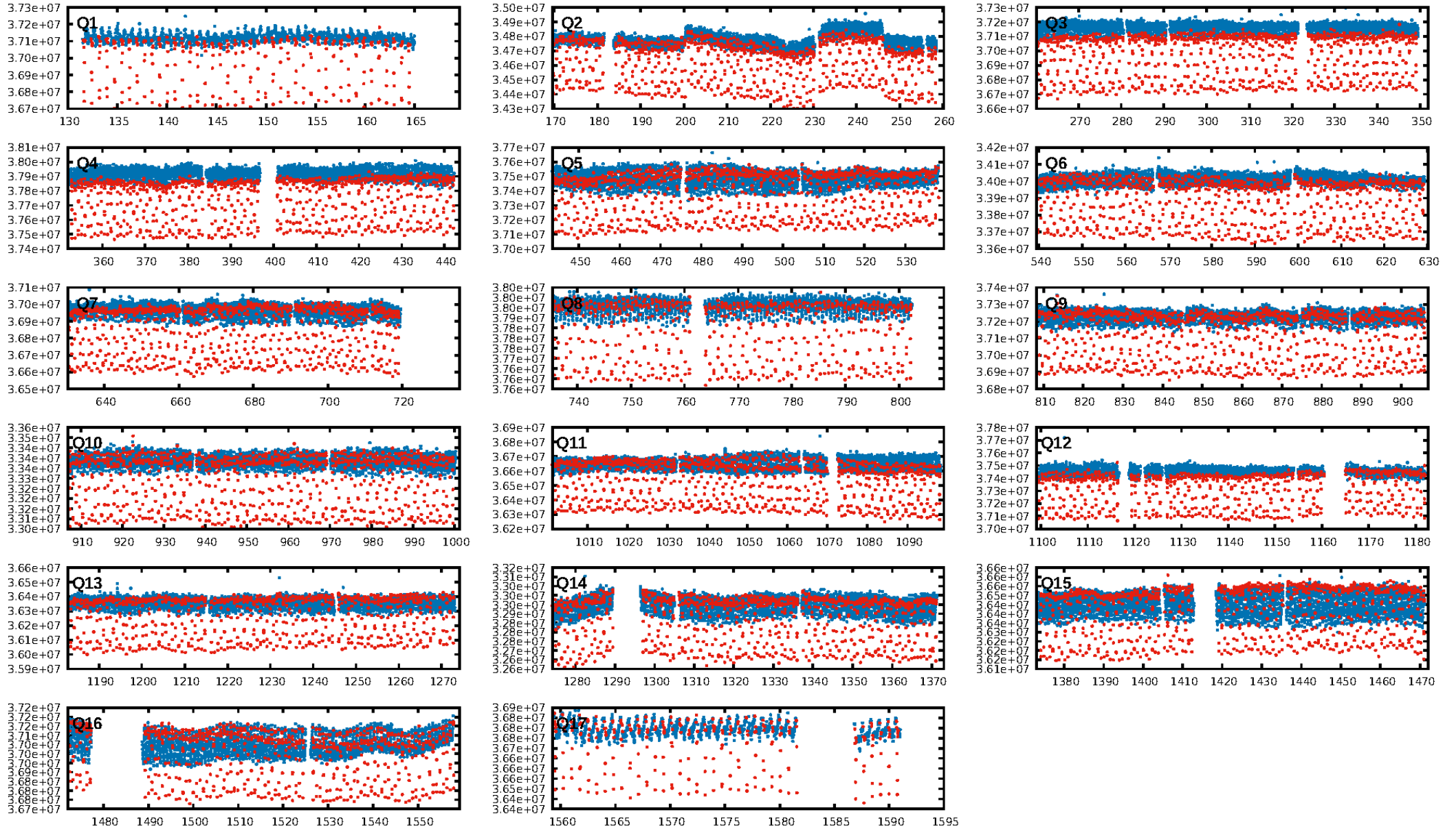
DV Fit Results:

Period = 0.76273 [0.00000] d
Epoch = 131.6464 [0.0000] BKJD
Rp/R* = 0.1068 [0.0007]
a/R* = 2.20 [0.01]
b = 0.90 [0.00]
Seff = 2831.78 [1080.31]
Teq = 1860 [177] K
Rp = 11.37 [3.23] Re
a = 0.0155 [0.0038] AU
Ag = 0.04 [0.02] [-56.60 σ]
Teffp = 1318 [62] K [-2.88 σ]

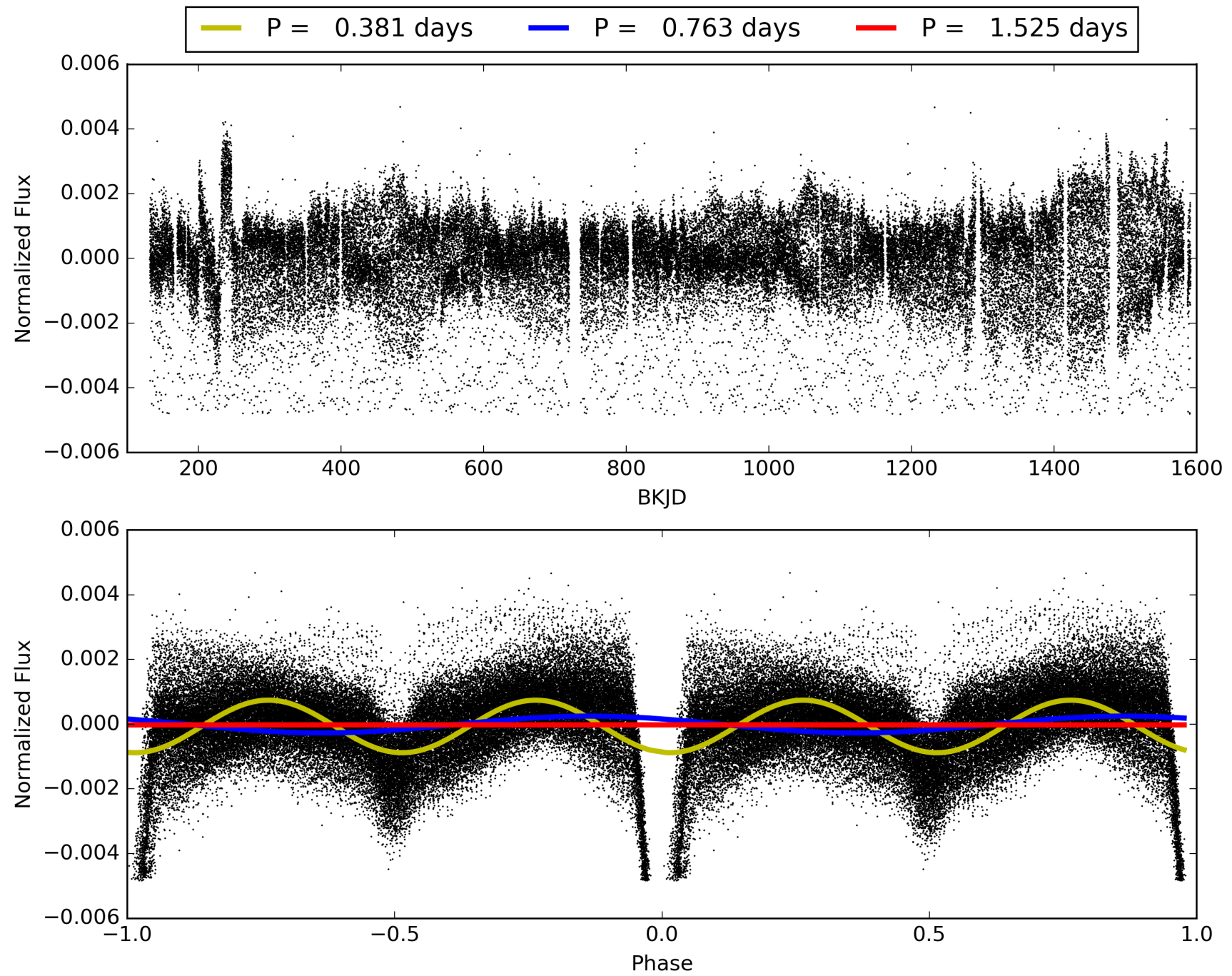
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [114.28 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.98 [1648/1675]
GhostDiagnostic-chr: 7.523
Centroid-sig: 0.0%
Centroid-so: 0.037 arcsec [4.06 σ]
OotOffset-rm: 0.318 arcsec [4.71 σ]
KicOffset-rm: 0.250 arcsec [3.47 σ]
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]

TCE 007941635-01, PDC Light Curves

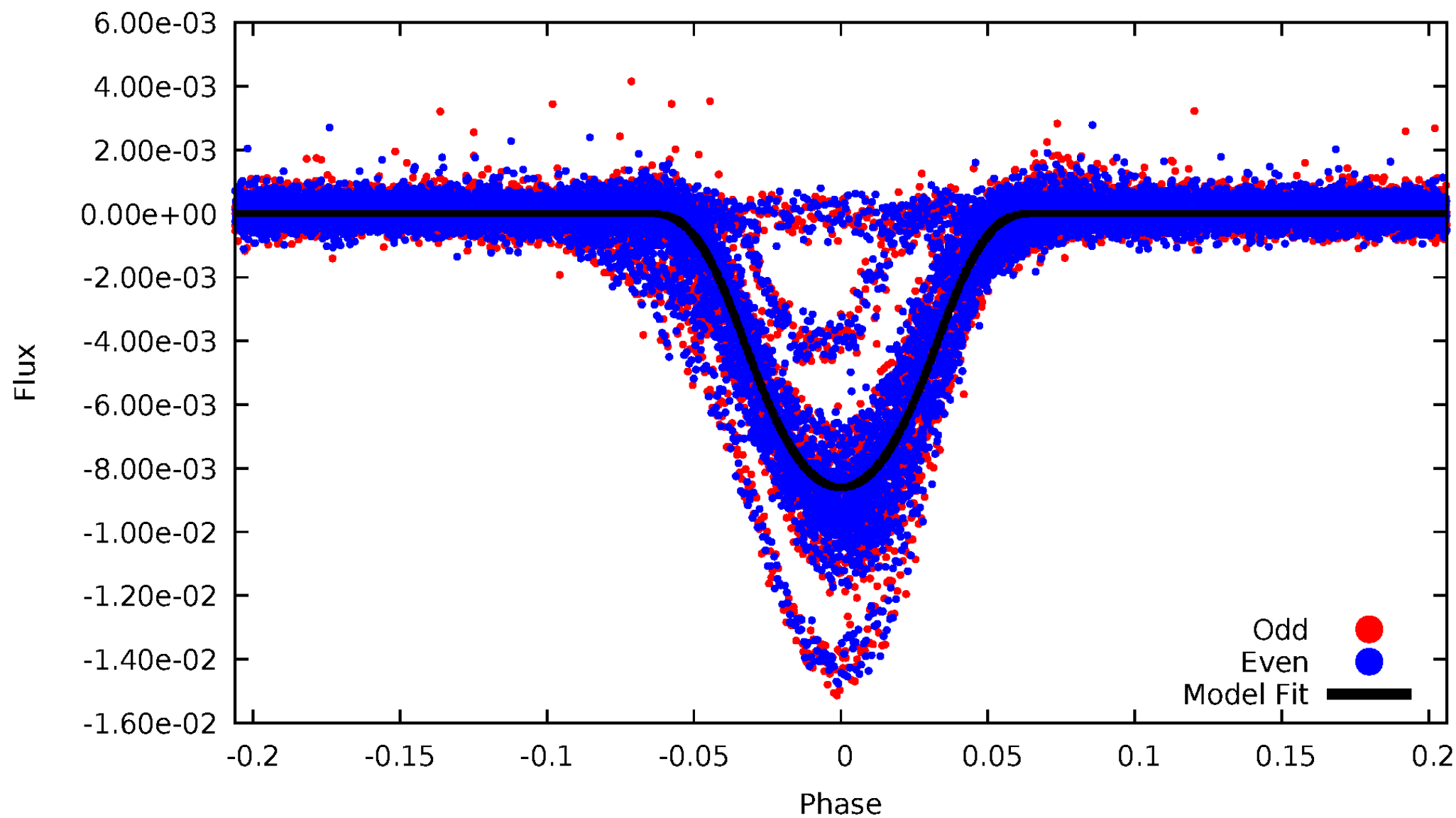


TCE 007941635-01



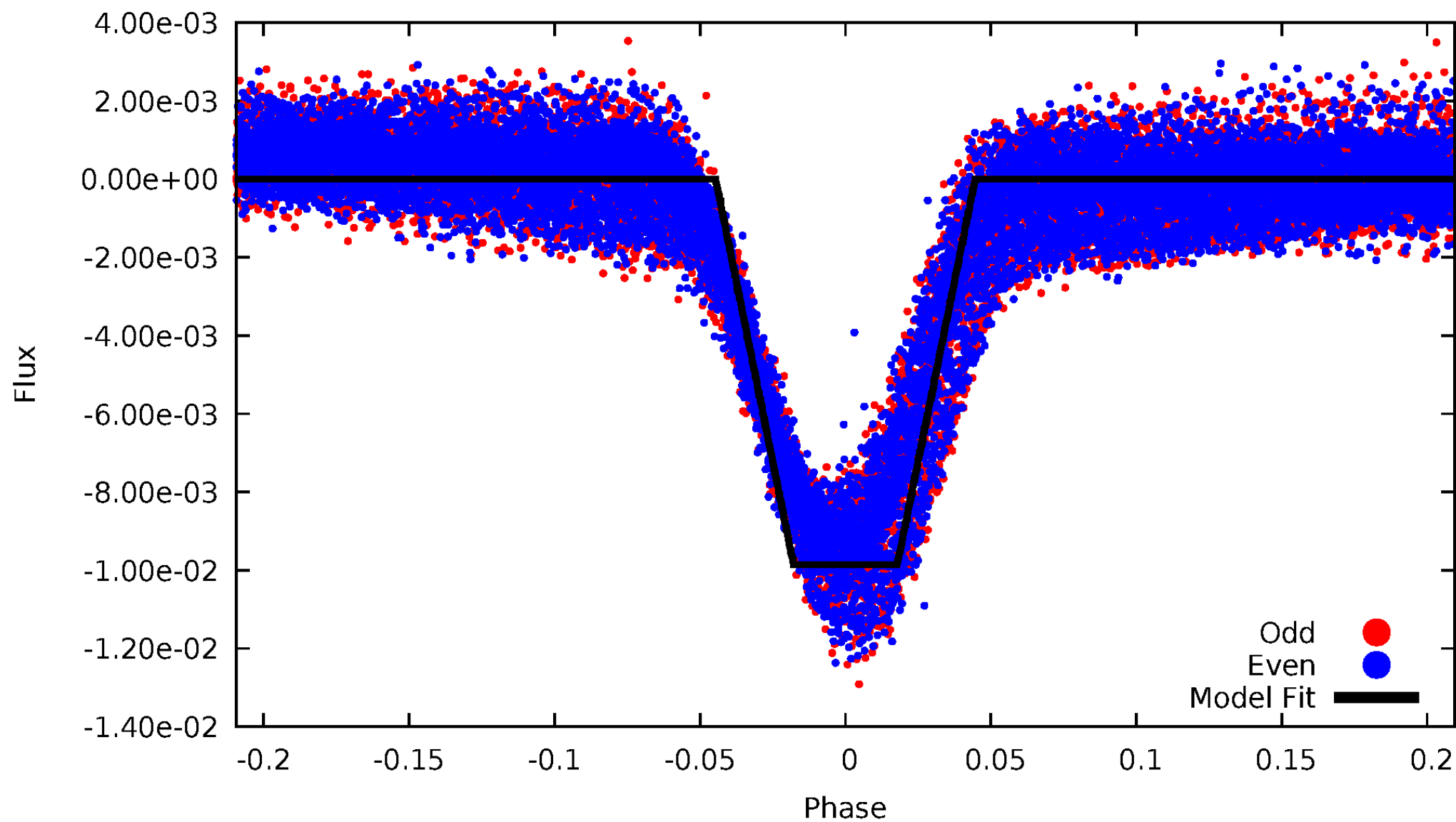
DV Odd/Even

TCE 007941635-01



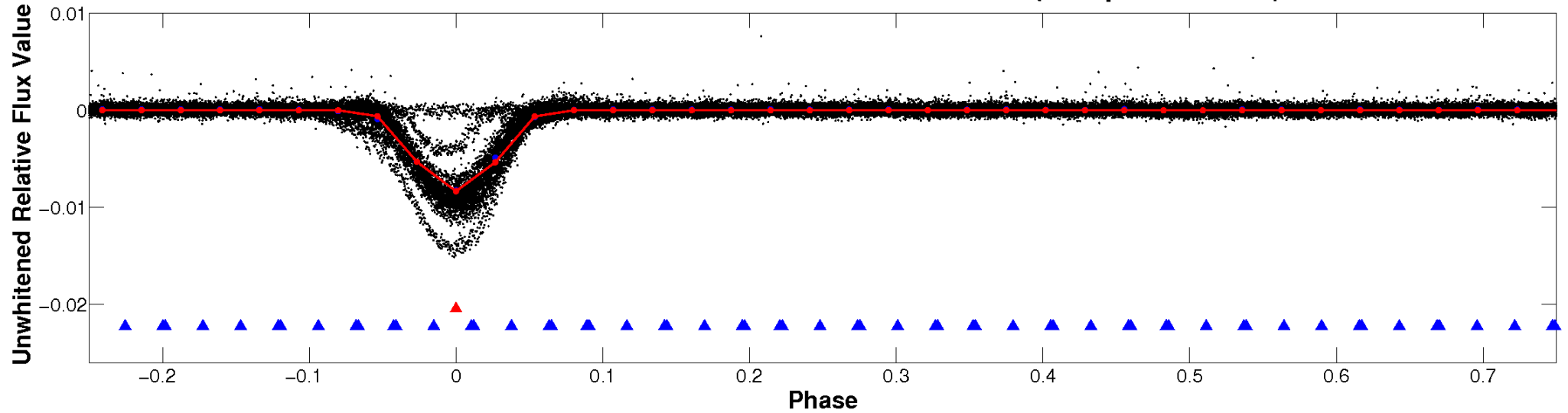
ALT Odd/Even

TCE 007941635-01

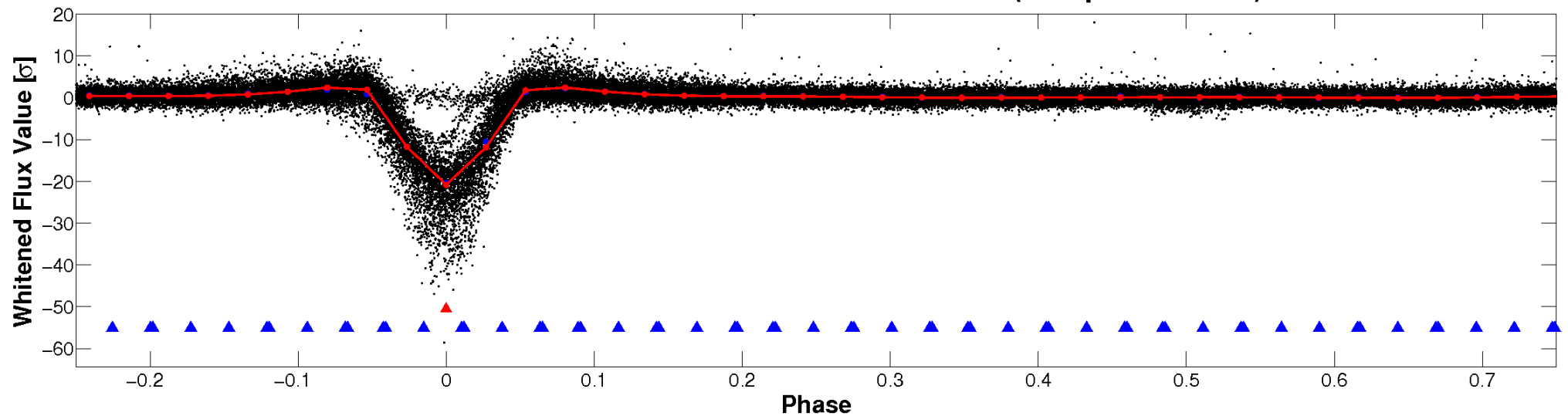


Non-Whitened Vs. Whitened Light Curve

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

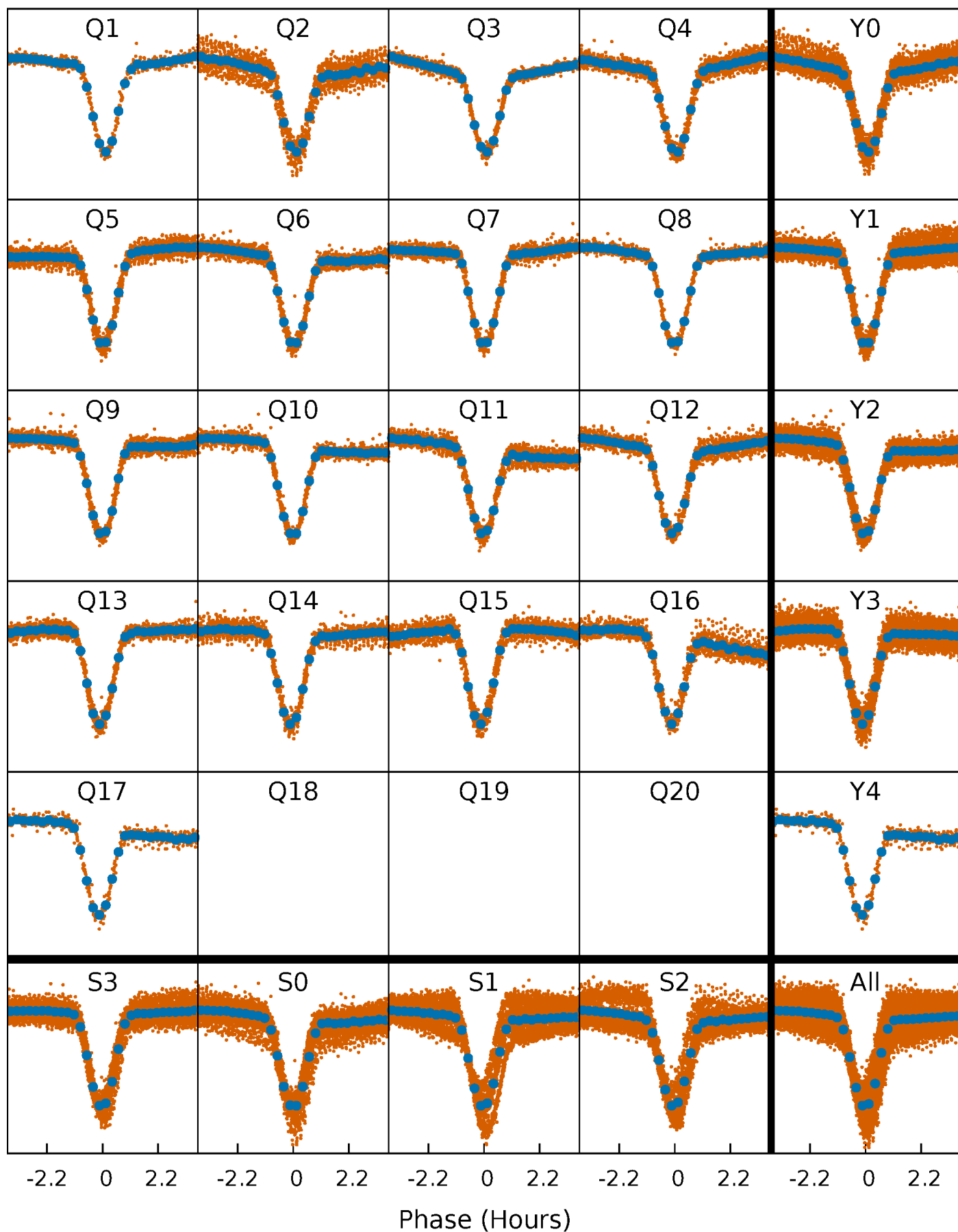


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



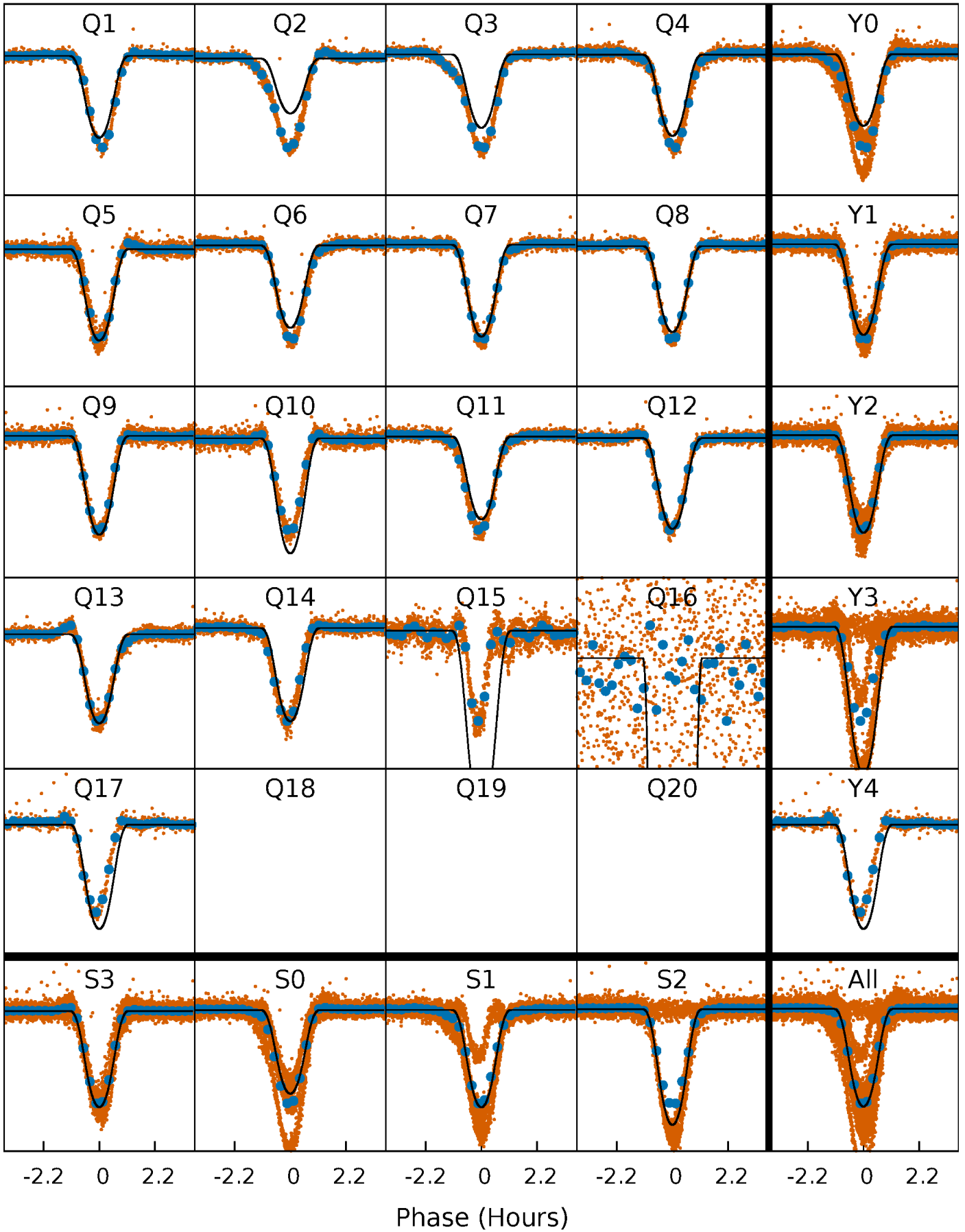
PDC Quarter-Phased Transit Curves

TCE 007941635-01 P= 0.762730 Days $T_0=131.646377$ (BKJD)



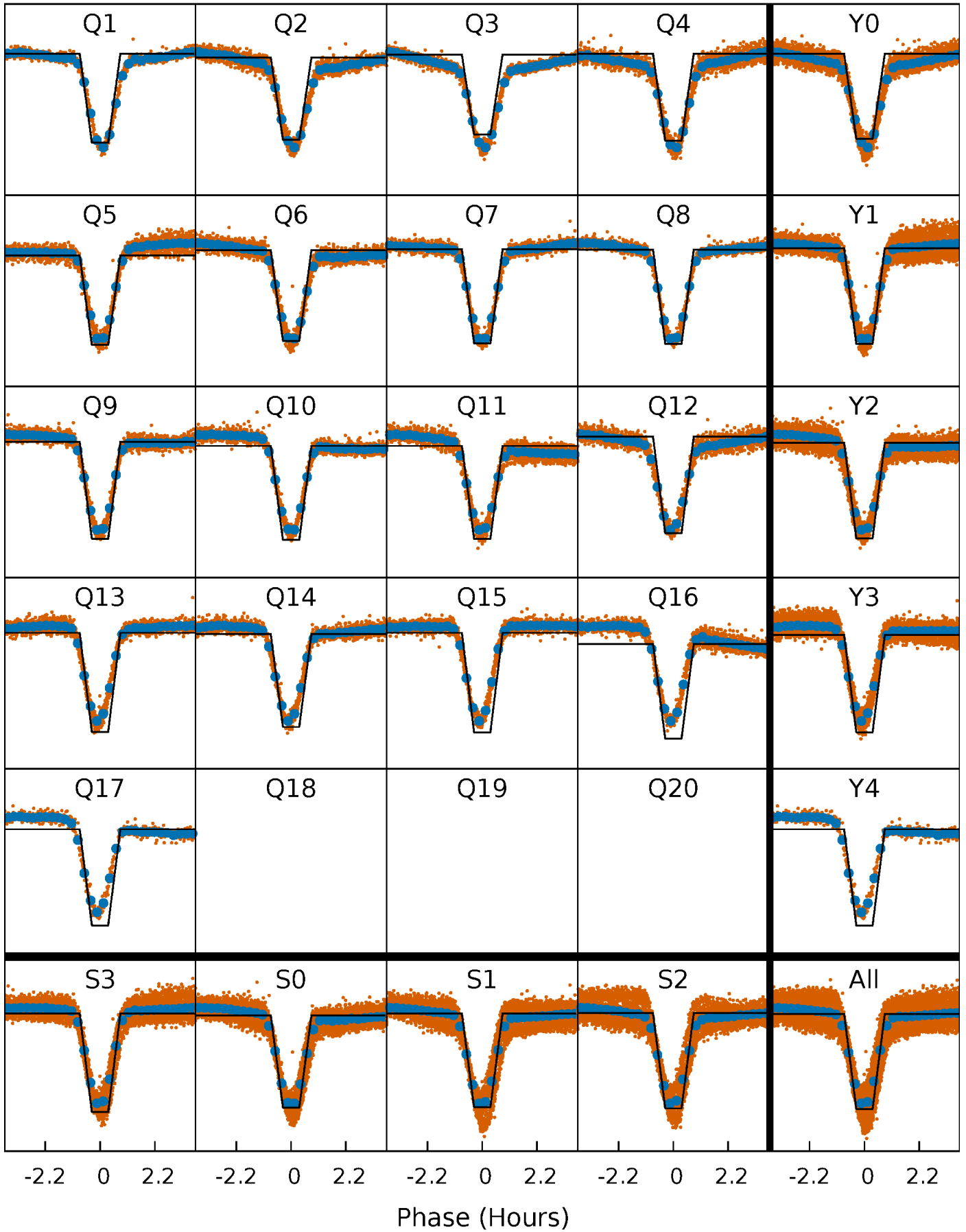
DV Quarter-Phased Transit Curves

TCE 007941635-01 P= 0.762730 Days $T_0=131.646377$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

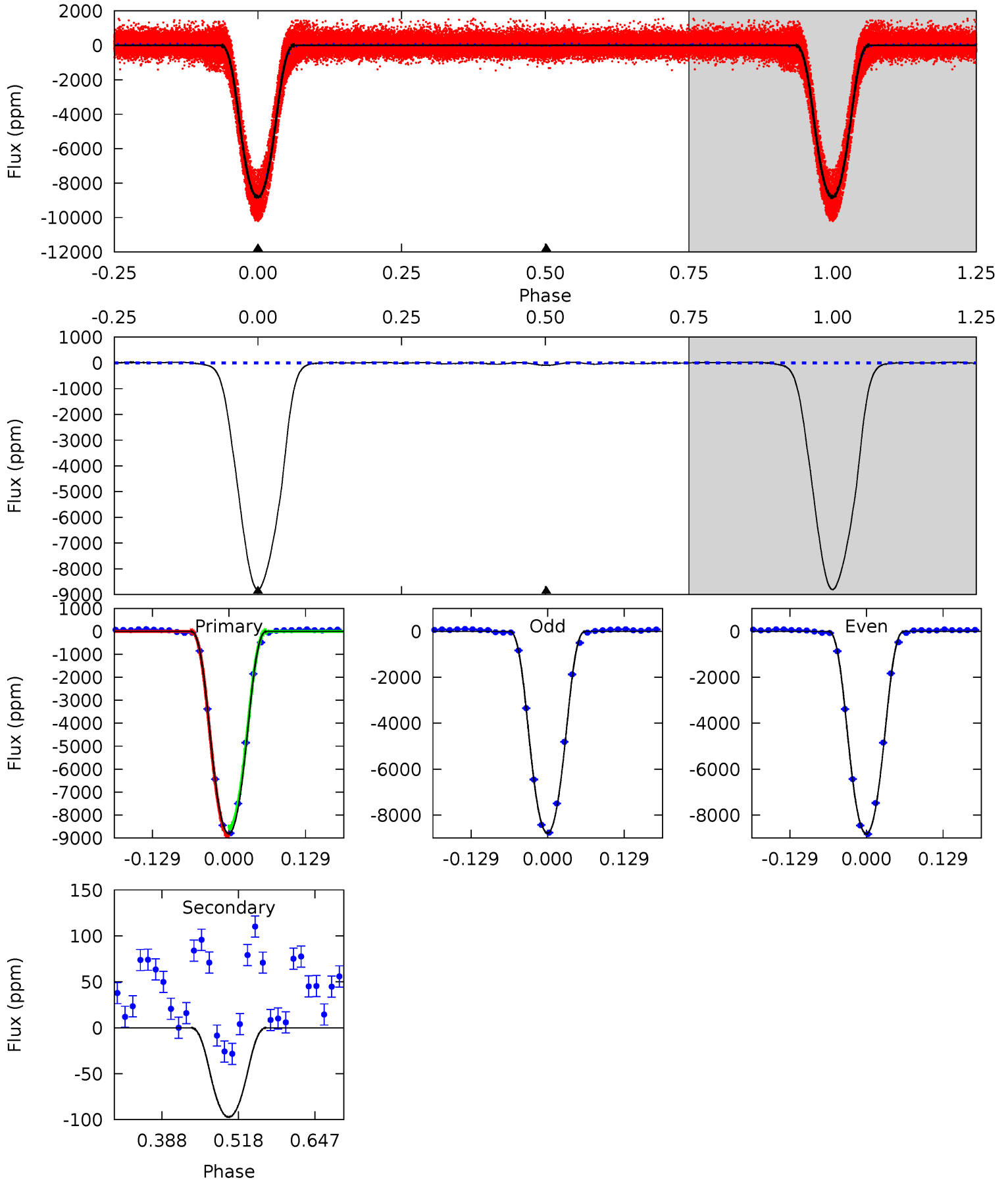
TCE 007941635-01 P= 0.762728 Days $T_0=131.647185$ (BKJD)



DV Model-Shift Uniqueness Test

007941635-01, P = 0.762730 Days, E = 130.883647 Days

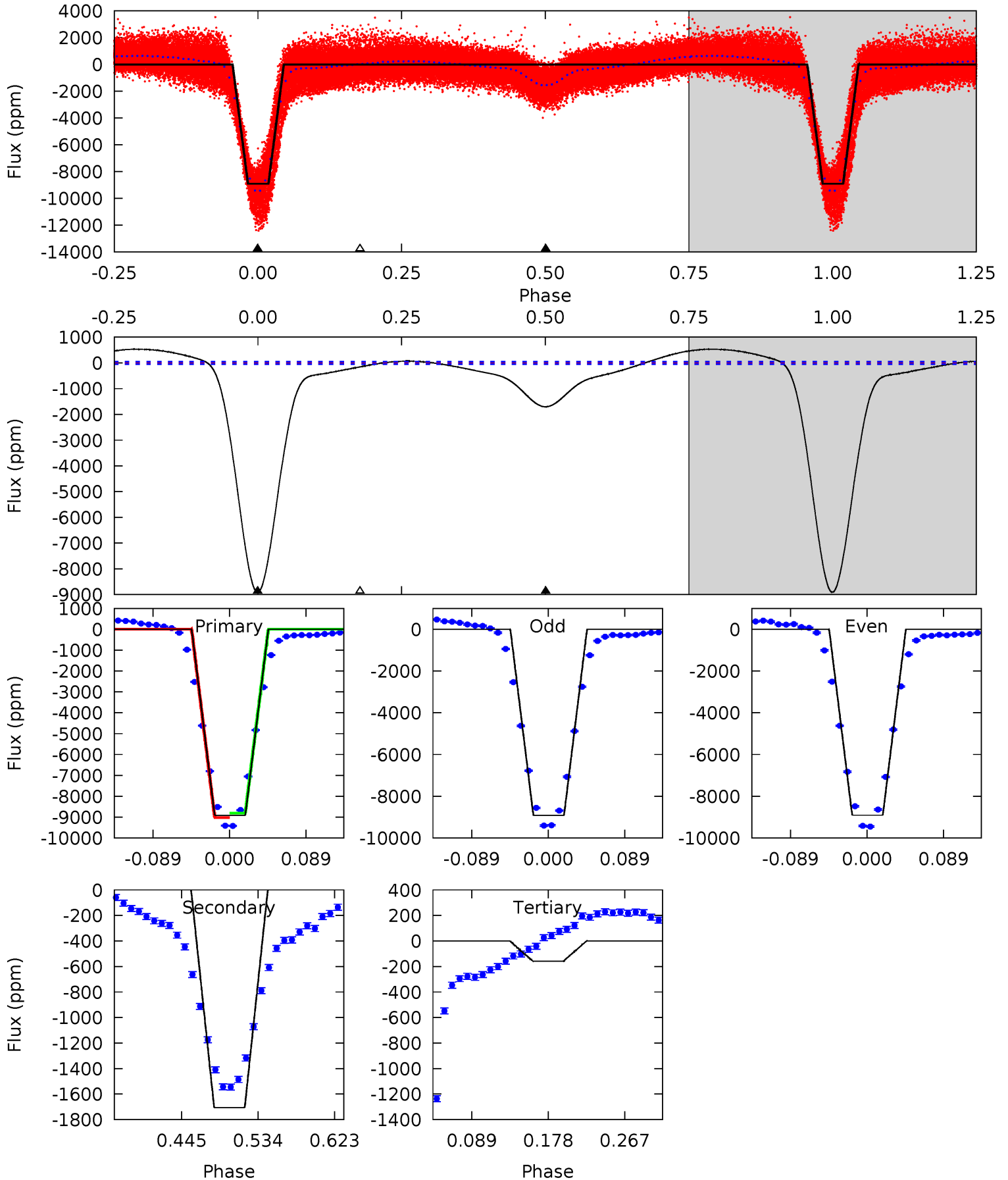
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2056	22.7	0	0	4.51	1.52	3.65	2056	2056	22.7	22.7	2.99	0.96	0.00	40.8



Alt Model-Shift Uniqueness Test

007941635-01, P = 0.762728 Days, E = 130.884457 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
877.0	167.9	15.5	0	4.59	1.70	30.7	861.5	877.0	152.4	167.9	0.59	1.02	0.06	10.5



Stellar Parameters For KIC 007941635

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5313^{+175}_{-143}	$4.390^{+0.144}_{-0.198}$	$0.140^{+0.250}_{-0.250}$	$0.976^{+0.277}_{-0.170}$	$0.854^{+0.099}_{-0.066}$	$1.293^{+0.836}_{-0.675}$
	+3%/-3%	+3%/-5%	+179%/-179%	+28%/-17%	+12%/-8%	+65%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007941635-01 / KOI 5449.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-97 ± 4	$11.49^{+1.92}_{-1.12}$	2621^{+198}_{-164}	-2705^{+121}_{-154}	$0.098^{+0.022}_{-0.025}$
Alt.	-1706 ± 10	$10.64^{+1.76}_{-1.01}$	2618^{+217}_{-164}	3676^{+101}_{-77}	$1.995^{+0.468}_{-0.513}$

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 $A_{obs} \gg 1.0$

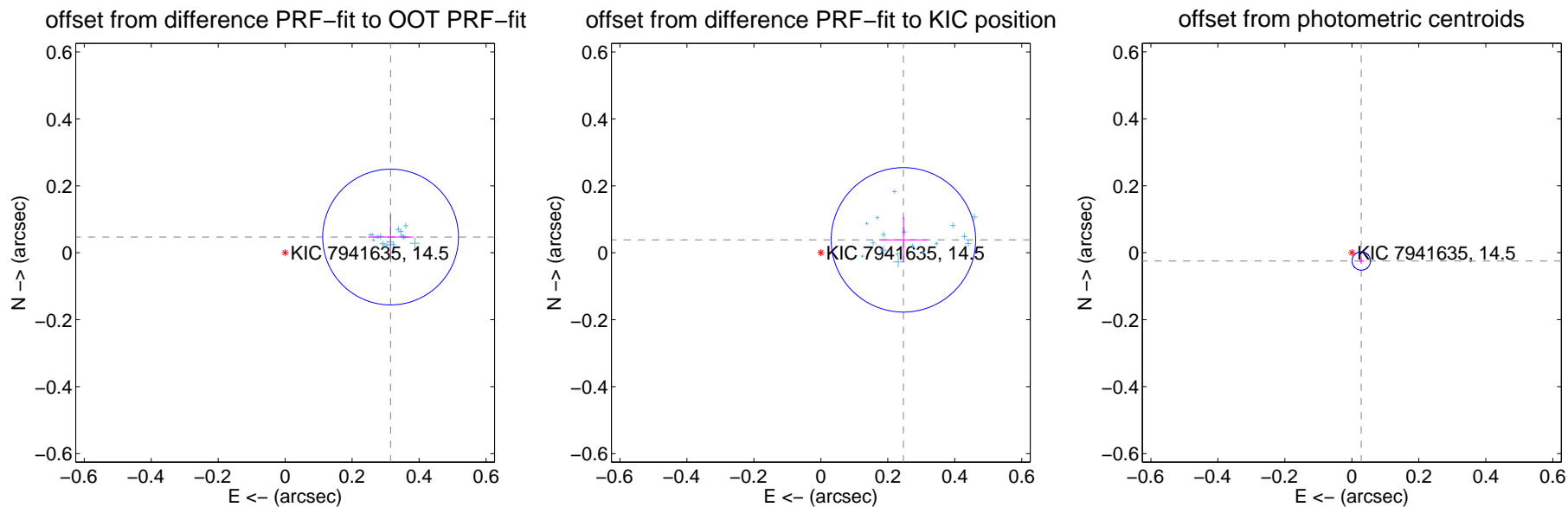
DV Centroid Data

Supplemental centroid analysis for 007941635-01. Kepler magnitude: 14.50. Transit SNR 867.78

There are 17 quarters with good PRF difference image offsets

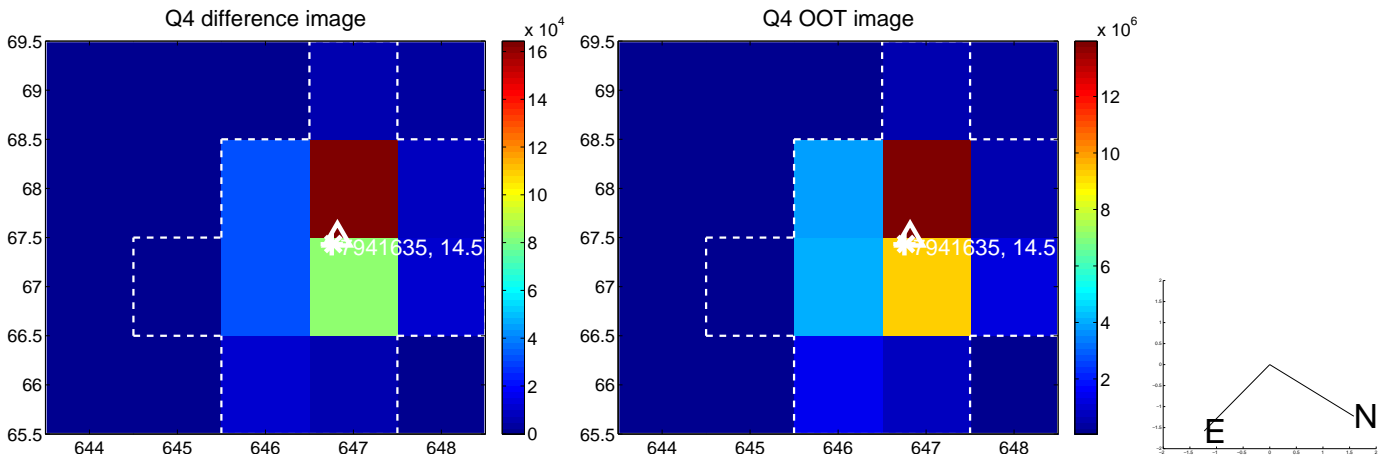
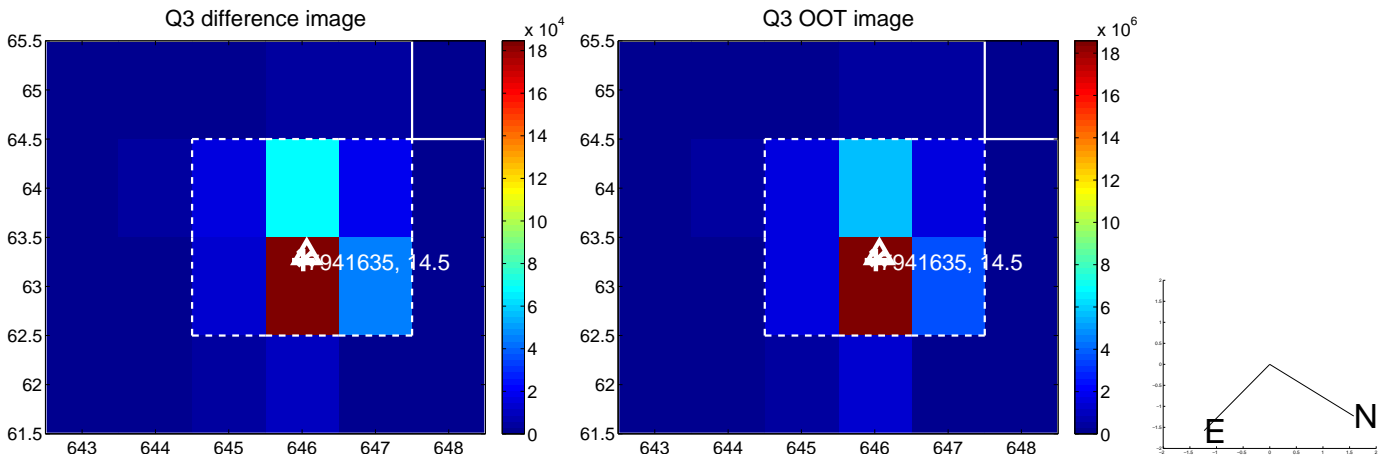
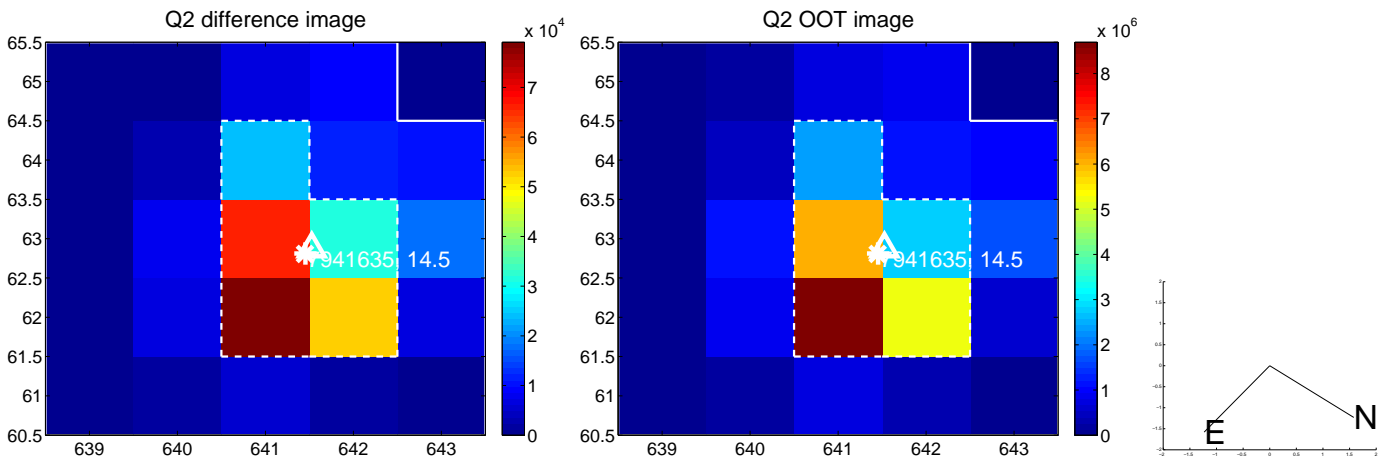
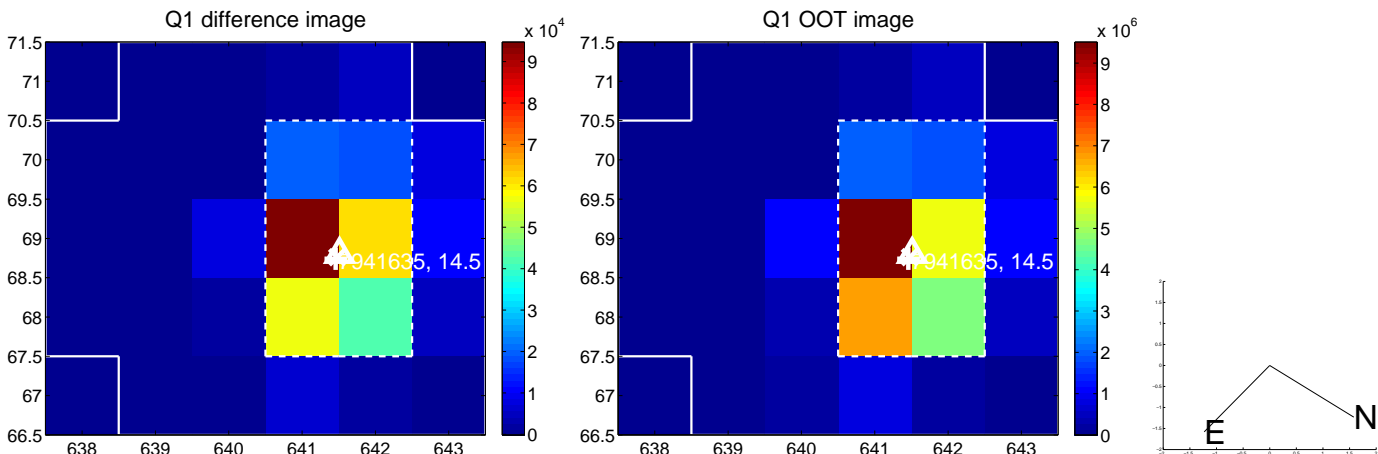
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.318 ± 0.068	4.71	-0.315 ± 0.068	0.047 ± 0.067
PRF-fit source offset from KIC position	0.250 ± 0.072	3.47	-0.247 ± 0.072	0.039 ± 0.068
photometric centroid source offset	0.04 ± 0.01	4.06	-0.03 ± 0.01	-0.02 ± 0.01

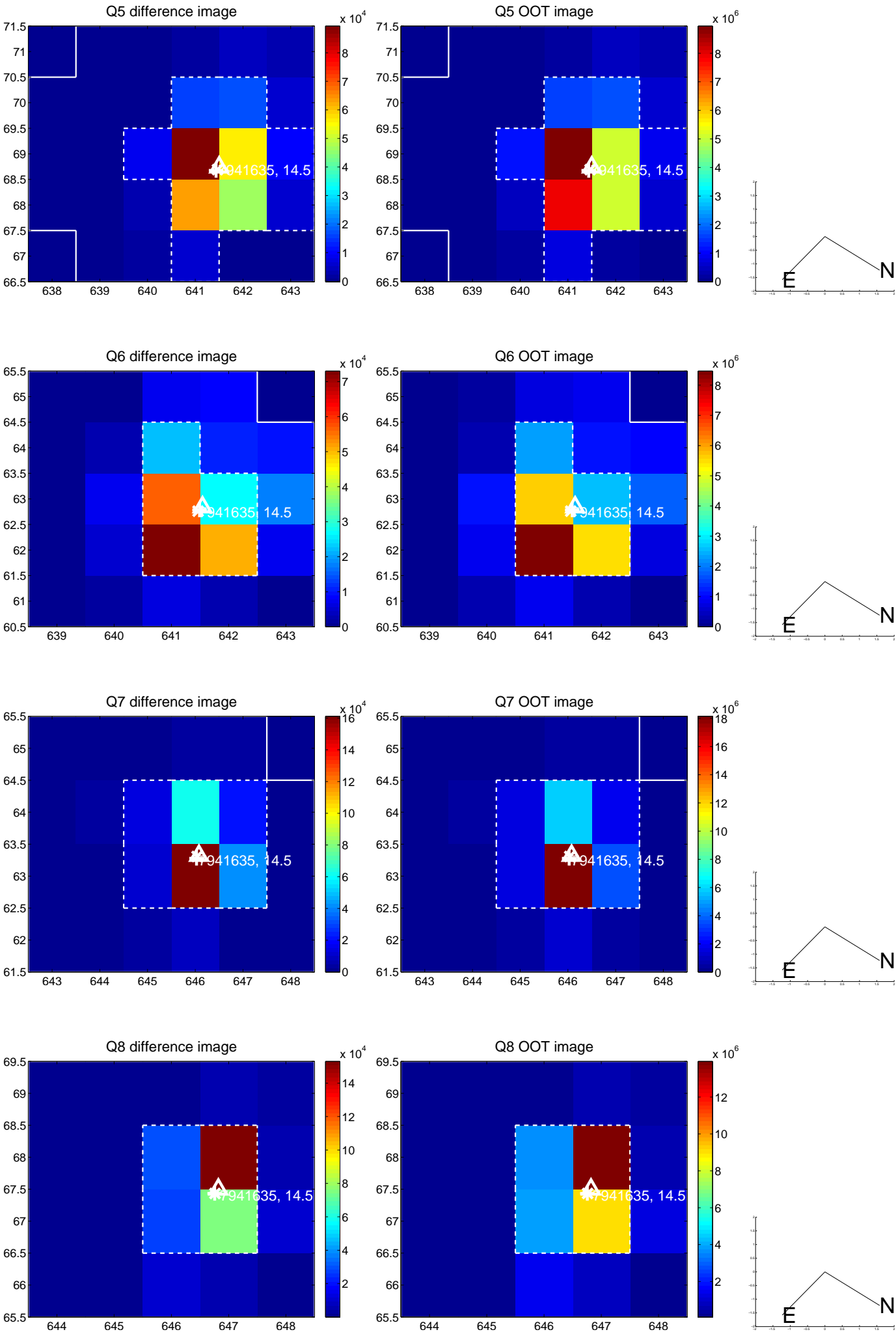


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

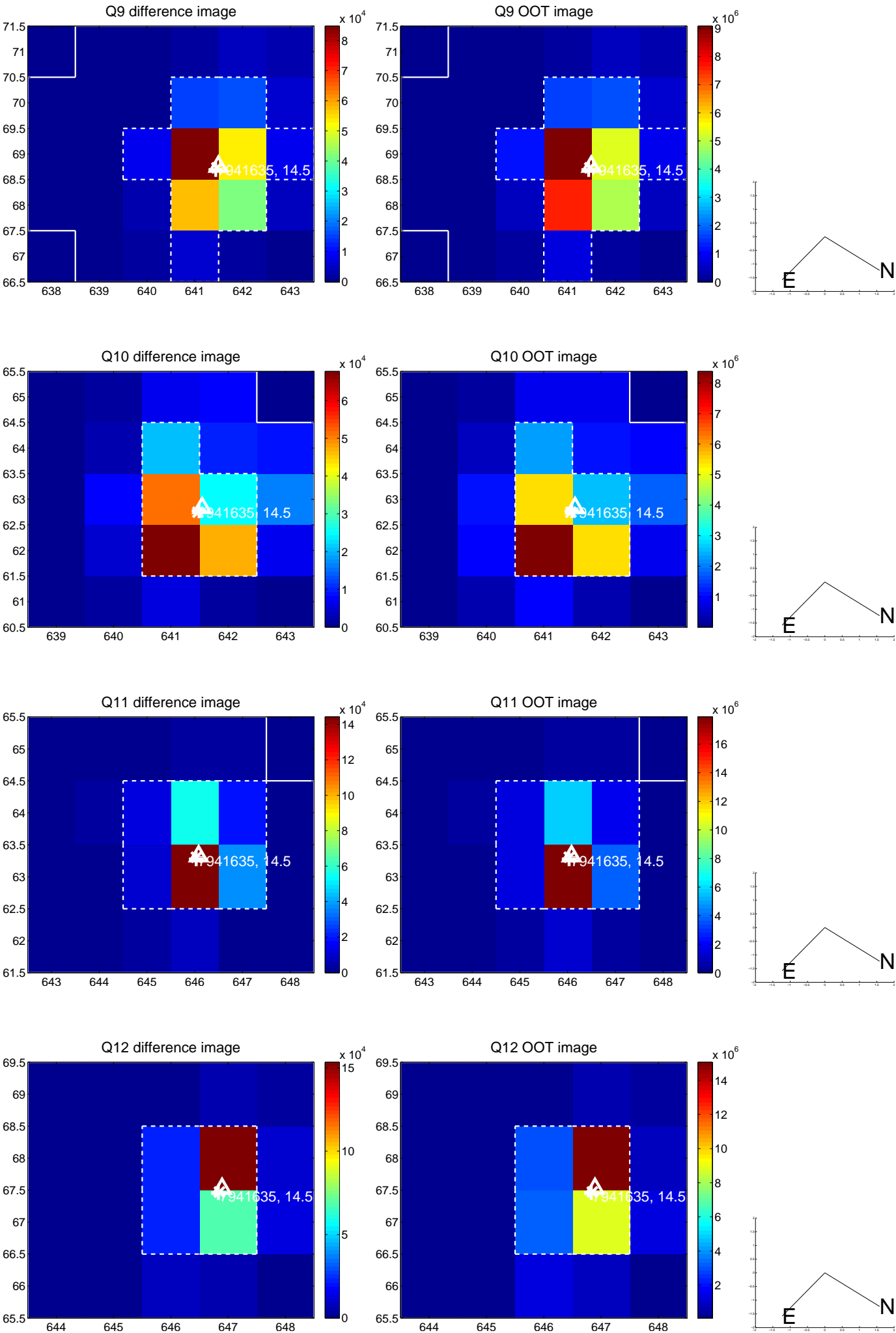
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



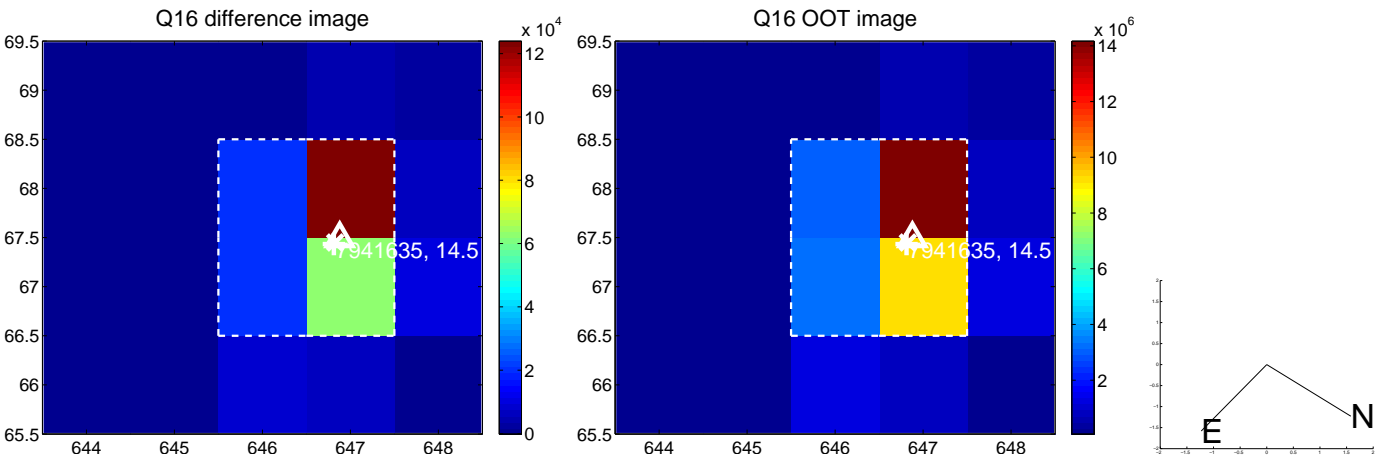
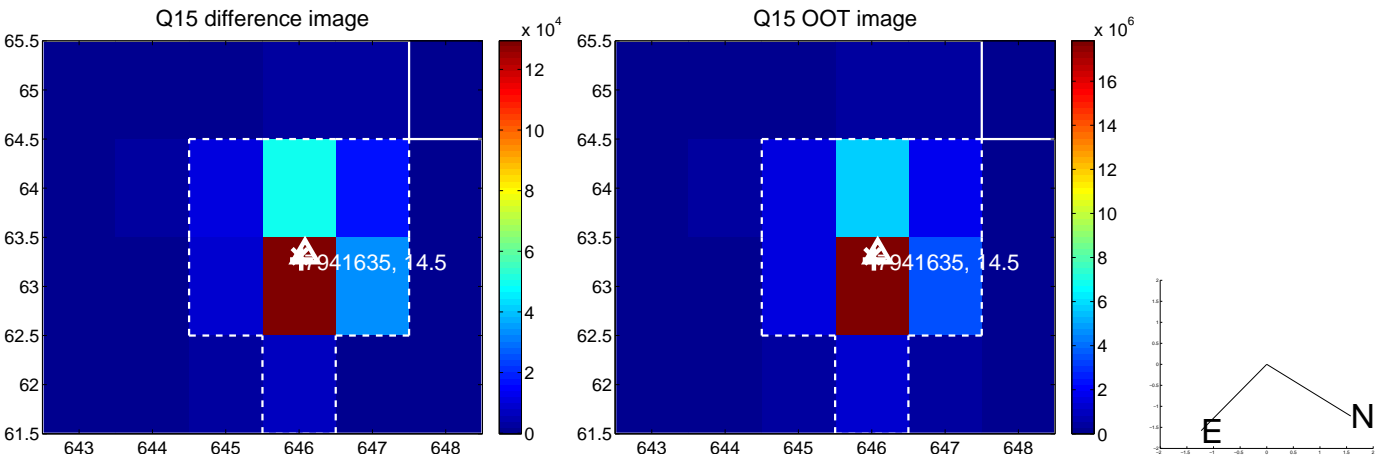
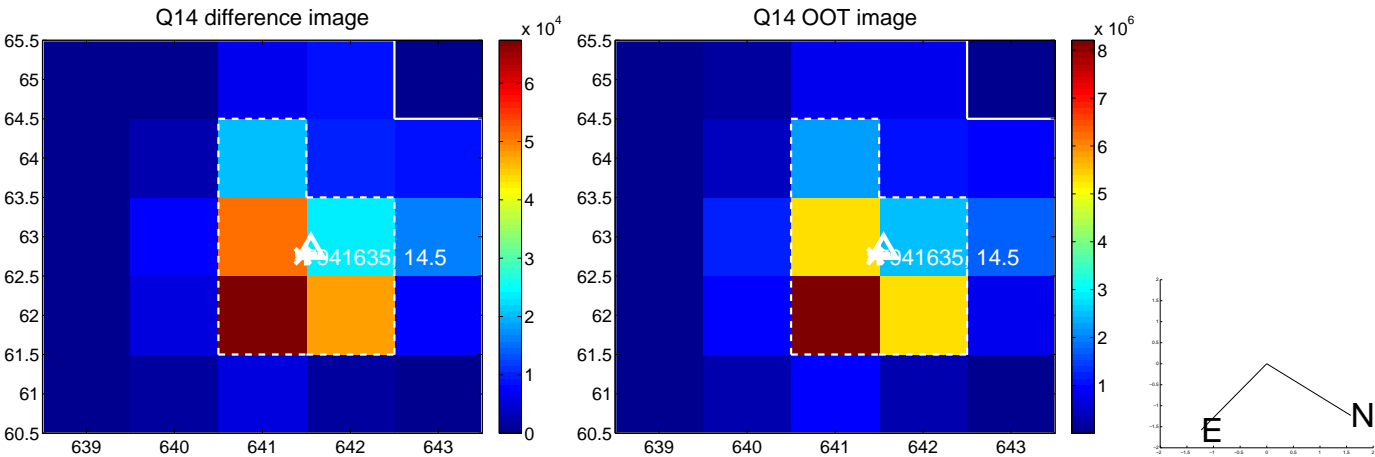
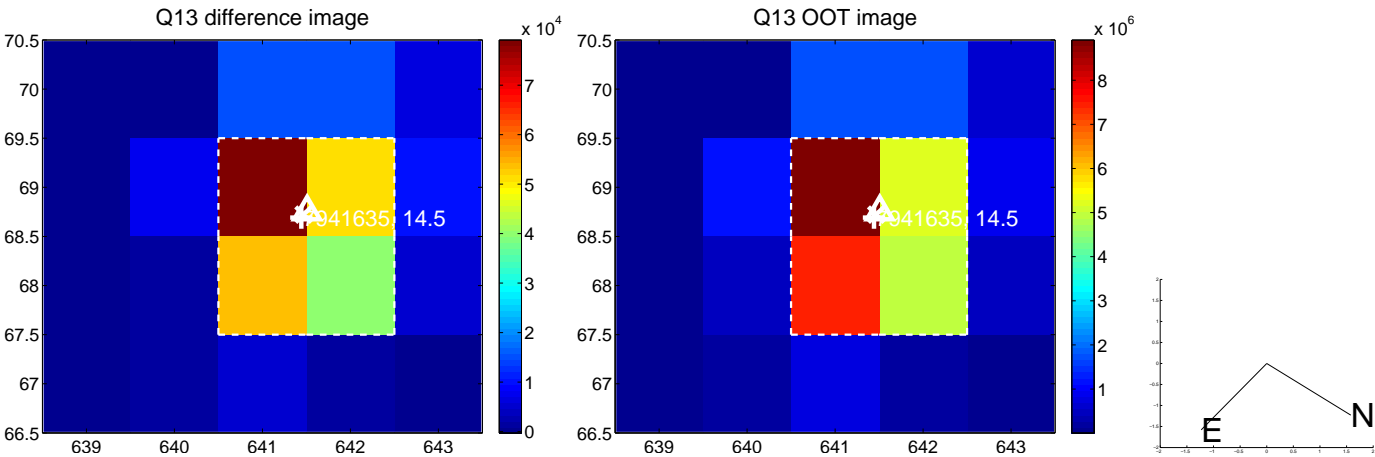
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



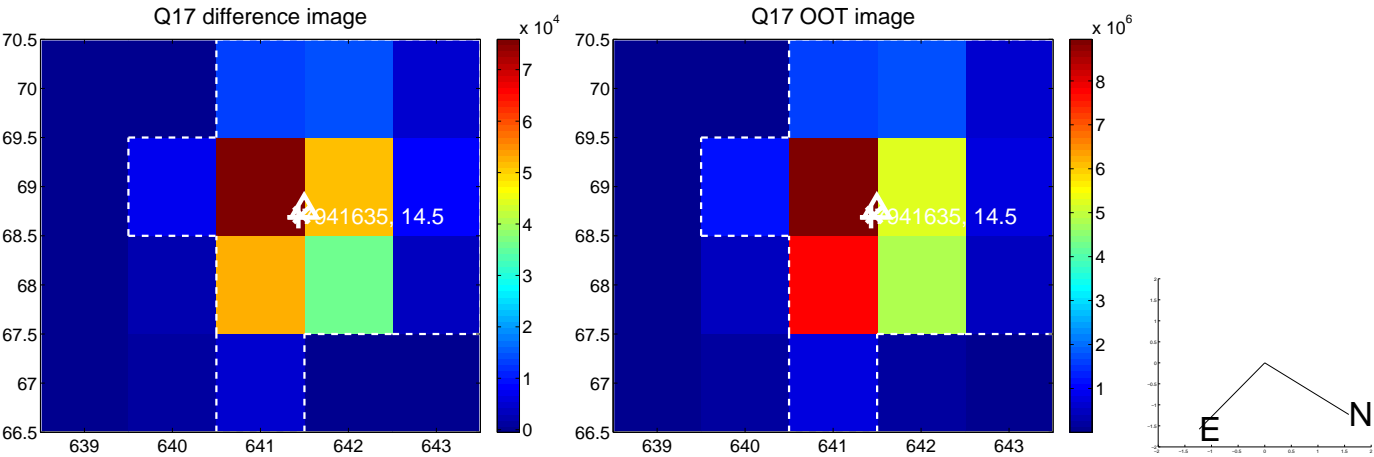
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



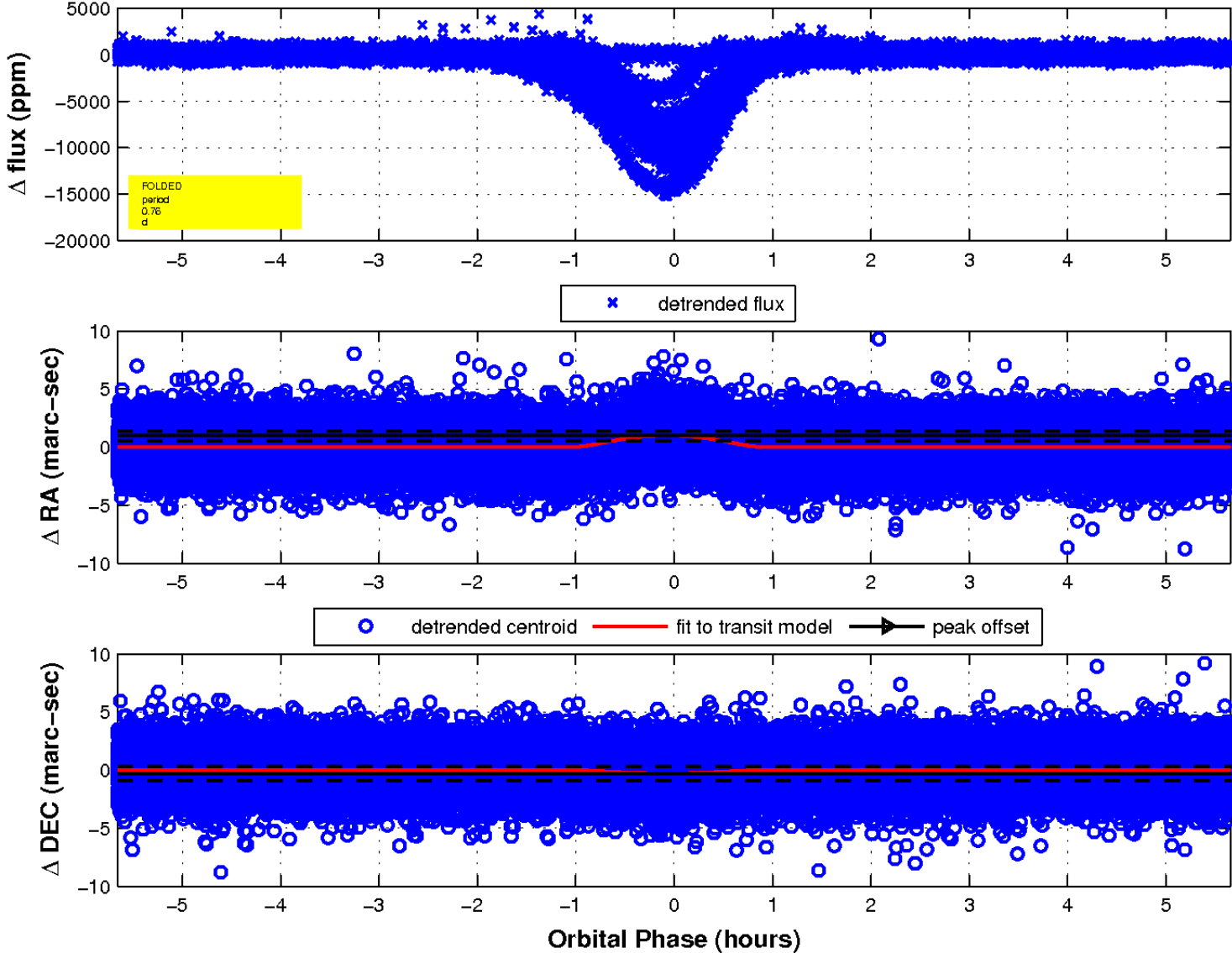
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

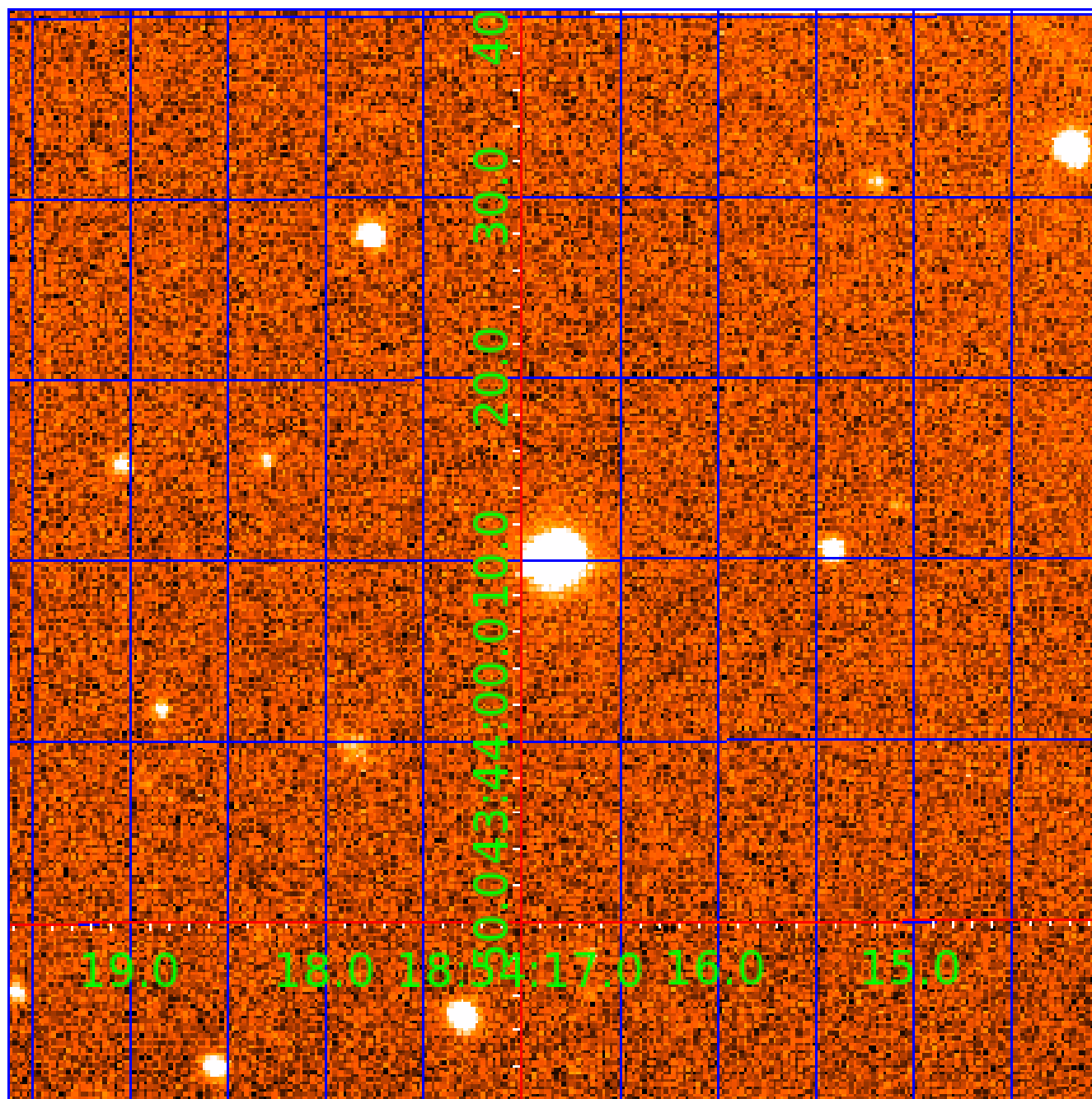


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 007941635

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})
007941635-01	OBS	5449.01	0.762730	131.646377	8599.1	1.886	1225.6	867.8	0.98	5313	11.37	2831.78
007941635-02	OBS	5449.02	25.270466	134.664900	374.5	4.789	10.4	14.6	0.98	5313	2.13	26.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007941635-01	OBS	PC	0.77	0	1	0	0	MOD_SEC_DV—PLANET_OCCULT_DV
007941635-02	OBS	FP	0.38	1	0	0	0	MOD_NONUNIQ_ALT

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.

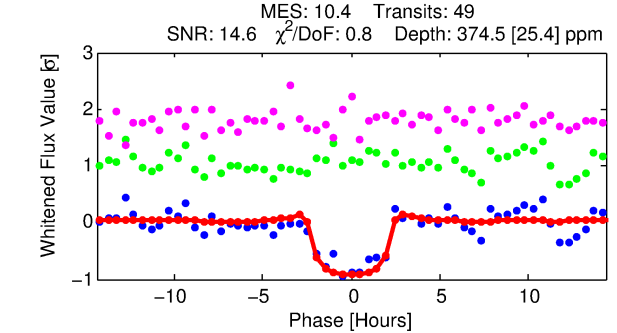
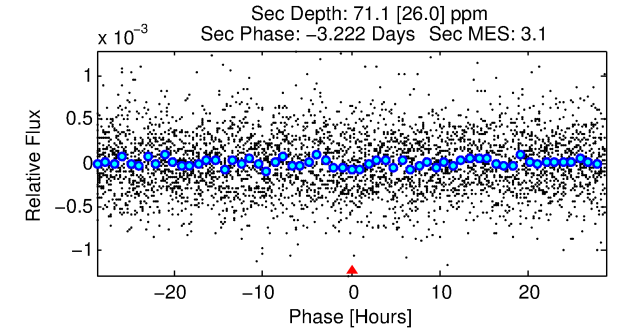
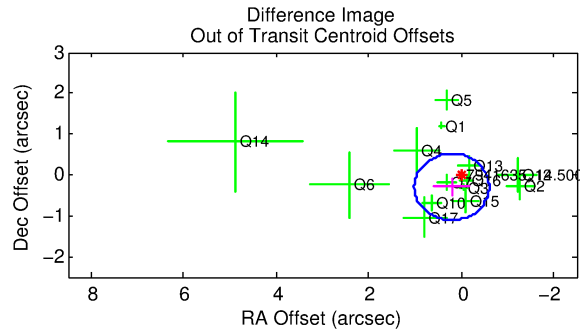
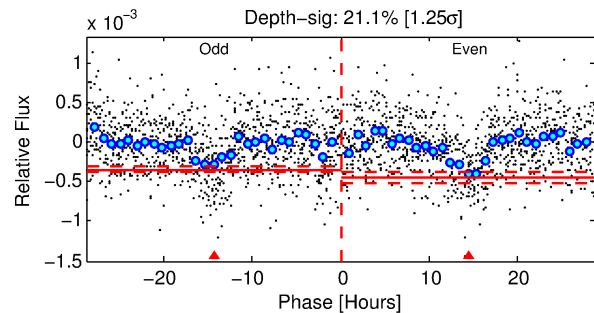
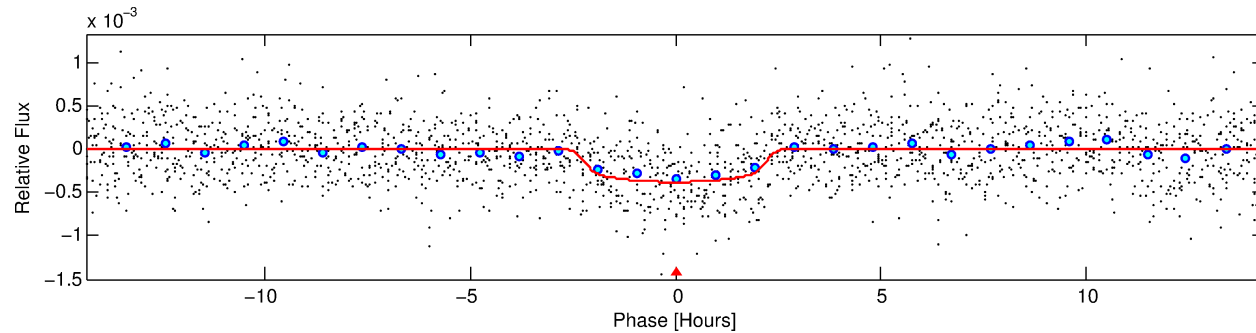
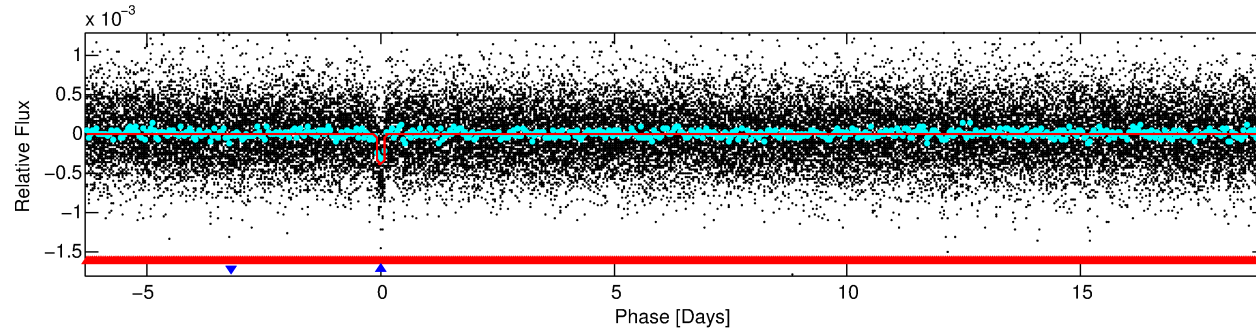
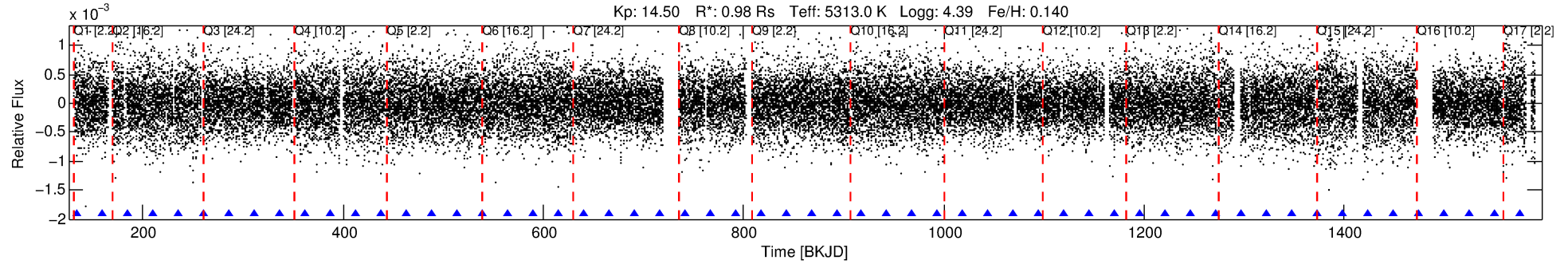
Ephemeris Match Information For 007941635-02

No Significant Match Found

DV One-Page Summary

KIC: 7941635 Candidate: 2 of 2 Period: 25.270 d

KOI: K05449 Corr: No Ephemeris Match



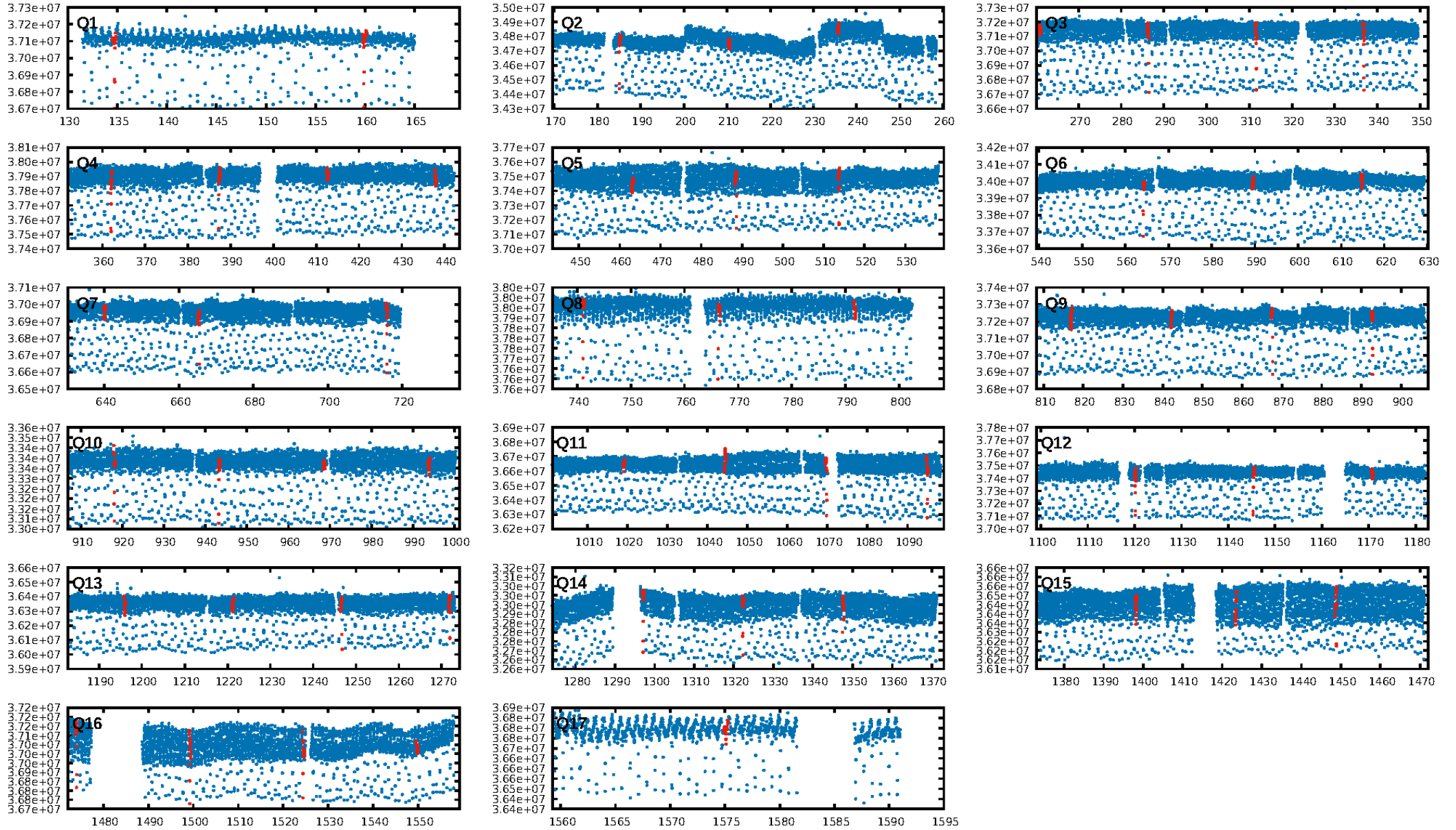
DV Fit Results:

Period = 25.27047 [0.00019] d
Epoch = 134.6649 [0.0063] BKJD
Rp/R* = 0.0200 [0.0077]
a/R* = 24.48 [36.82]
b = 0.82 [0.61]
Seff = 26.61 [10.15]
Teff = 579 [55] K
Rp = 2.13 [1.02] Re
a = 0.1599 [0.0388] AU
Ag = 219.49 [202.60] [1.08 σ]
Teffp = 3447 [742] K [3.85 σ]

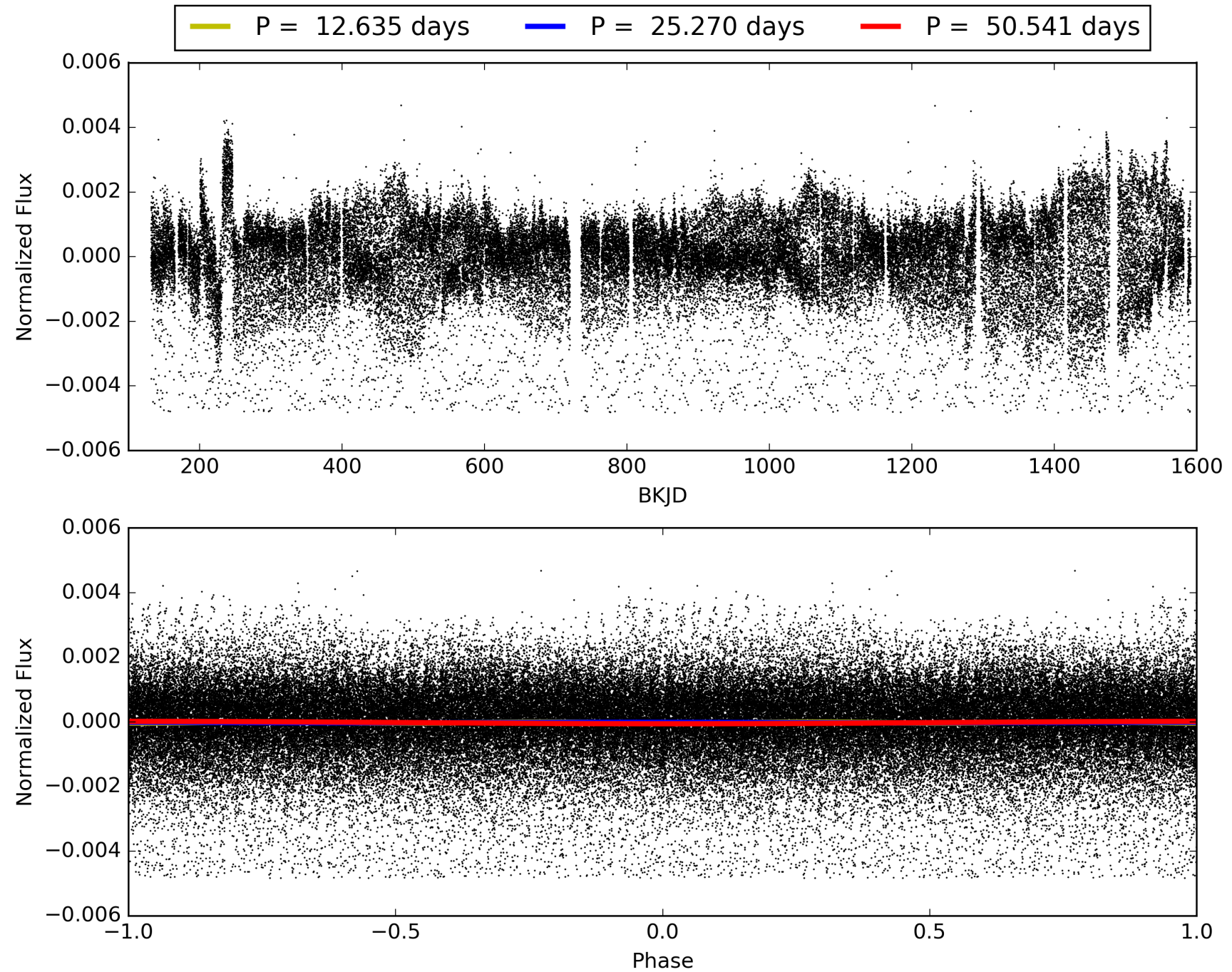
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [114.28 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 95.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.27e-21
RollingBand-fgt: 1.00 [46/46]
GhostDiagnostic-chr: 3.44
Centroid-sig: 1.0%
Centroid-so: 1.259 arcsec [2.04 σ]
OotOffset-rm: 0.360 arcsec [1.33 σ]
KicOffset-rm: 0.436 arcsec [1.71 σ]
OotOffset-st: 4/3/3/4 [14]
KicOffset-st: 4/3/3/4 [14]
DiffImageQuality-fgm: 0.71 [10/14]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 007941635-02, PDC Light Curves

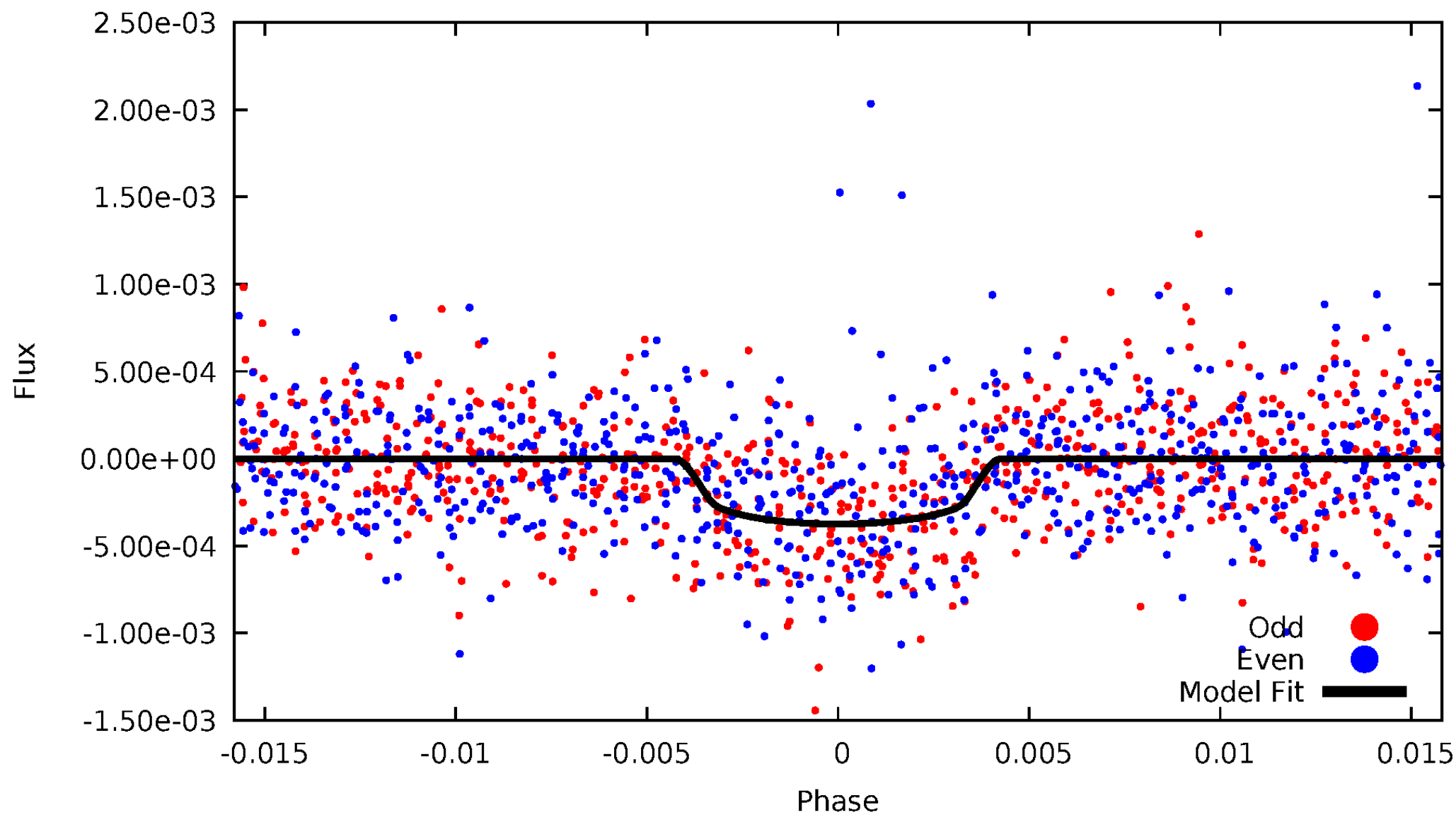


TCE 007941635-02



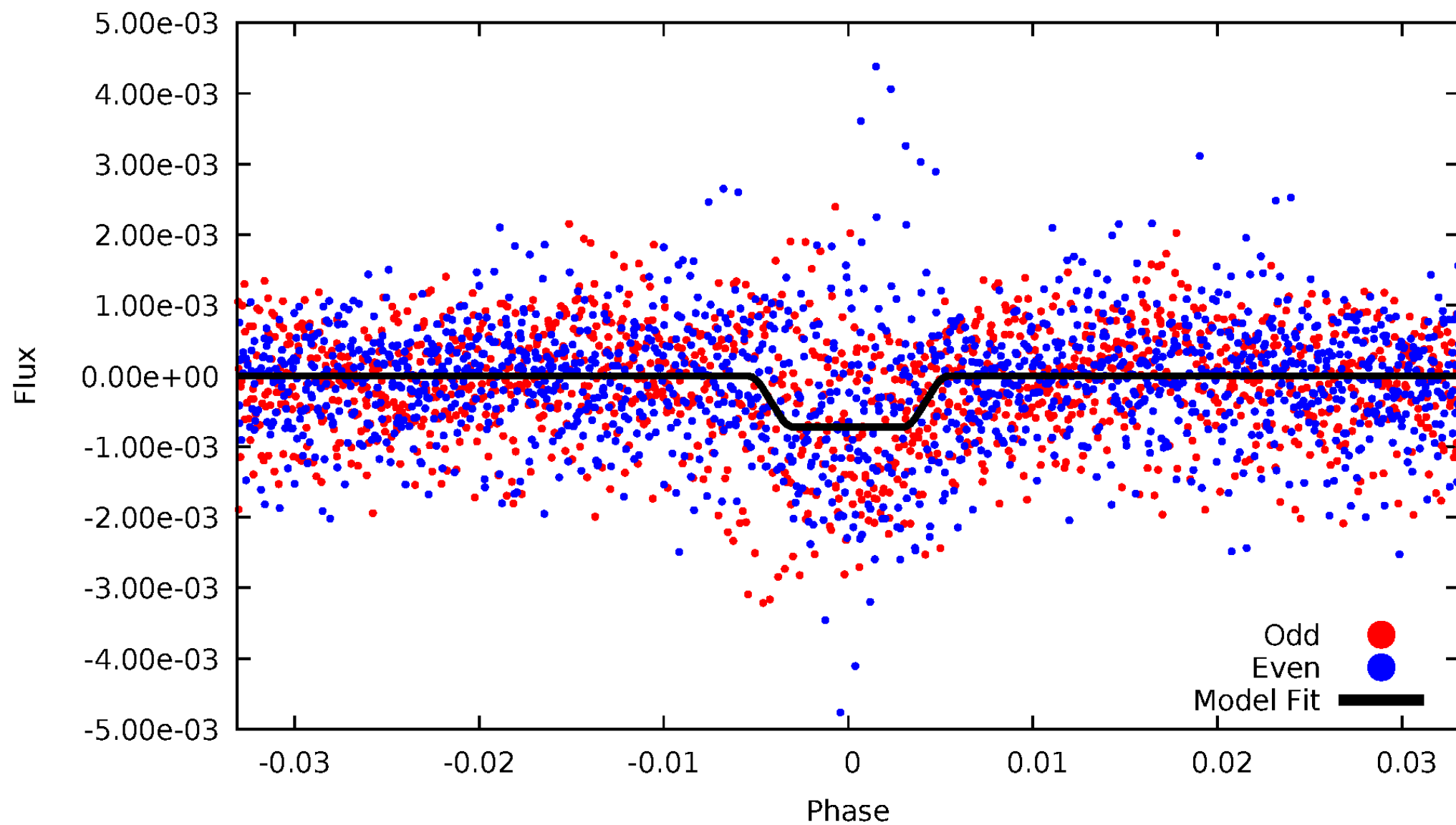
DV Odd/Even

TCE 007941635-02



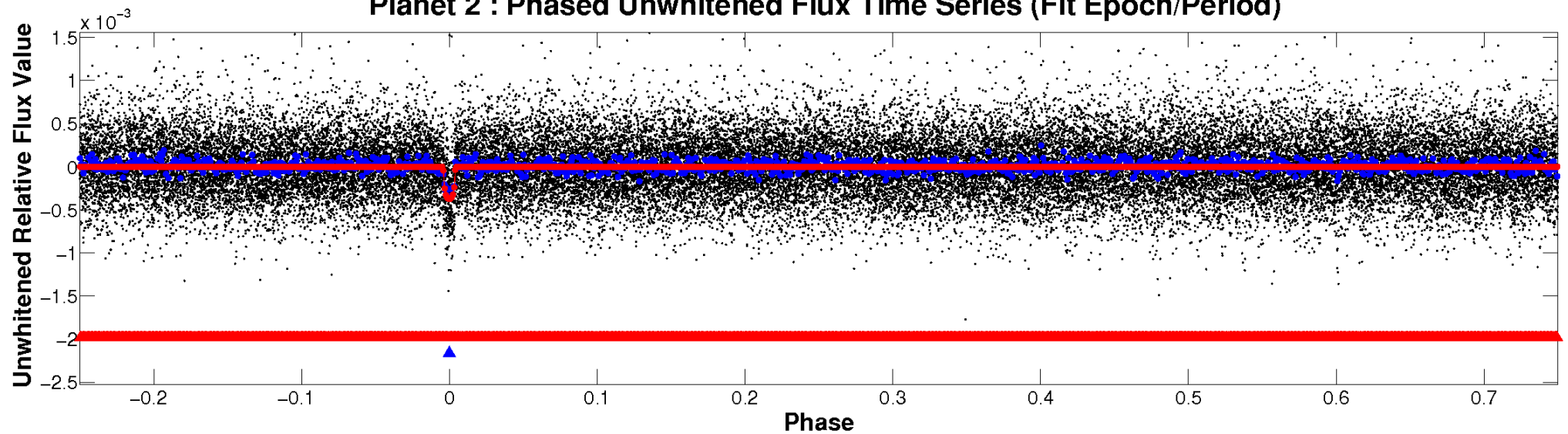
ALT Odd/Even

TCE 007941635-02

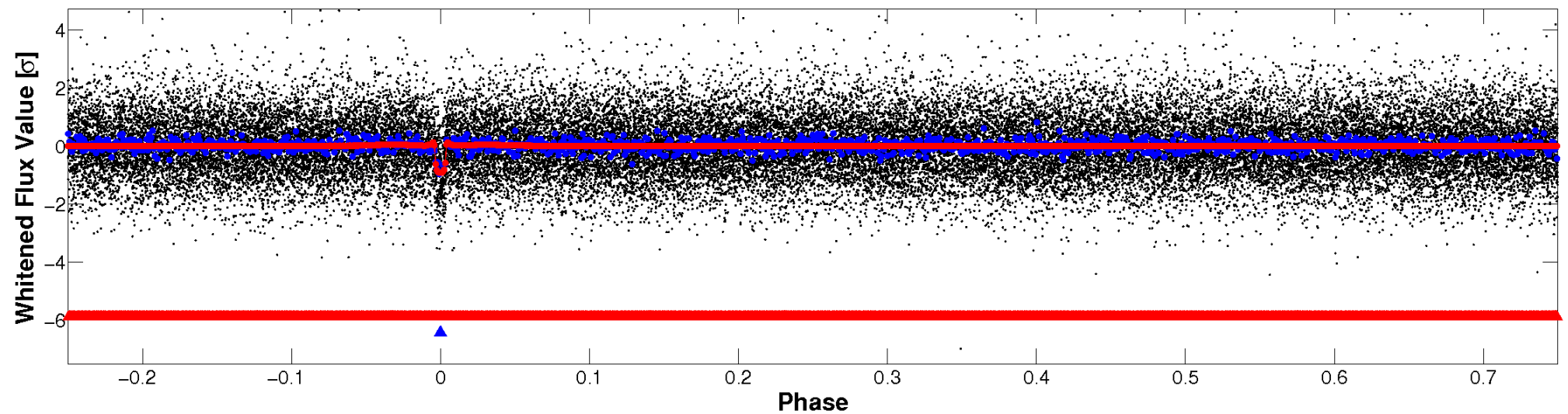


Non-Whitened Vs. Whitened Light Curve

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

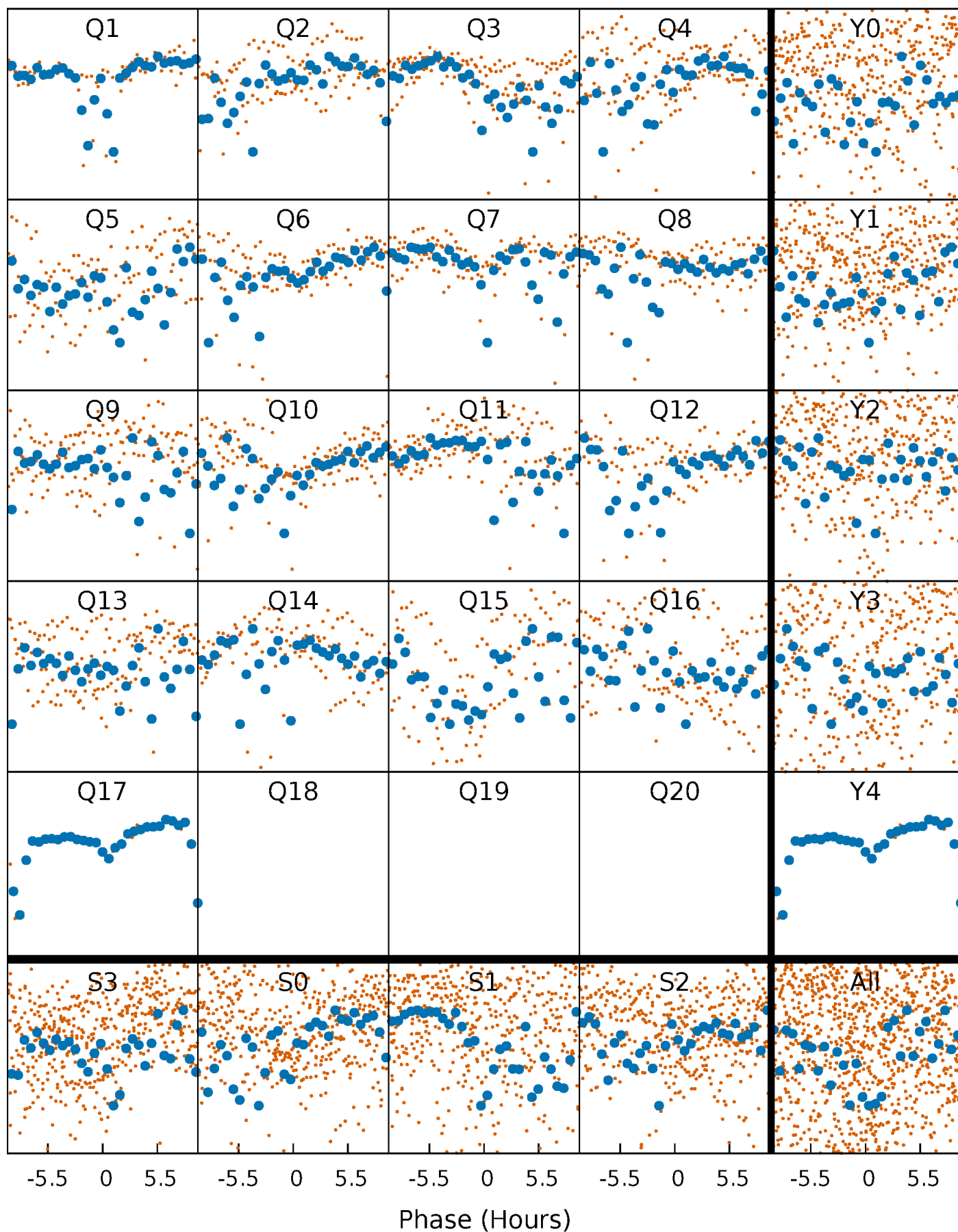


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



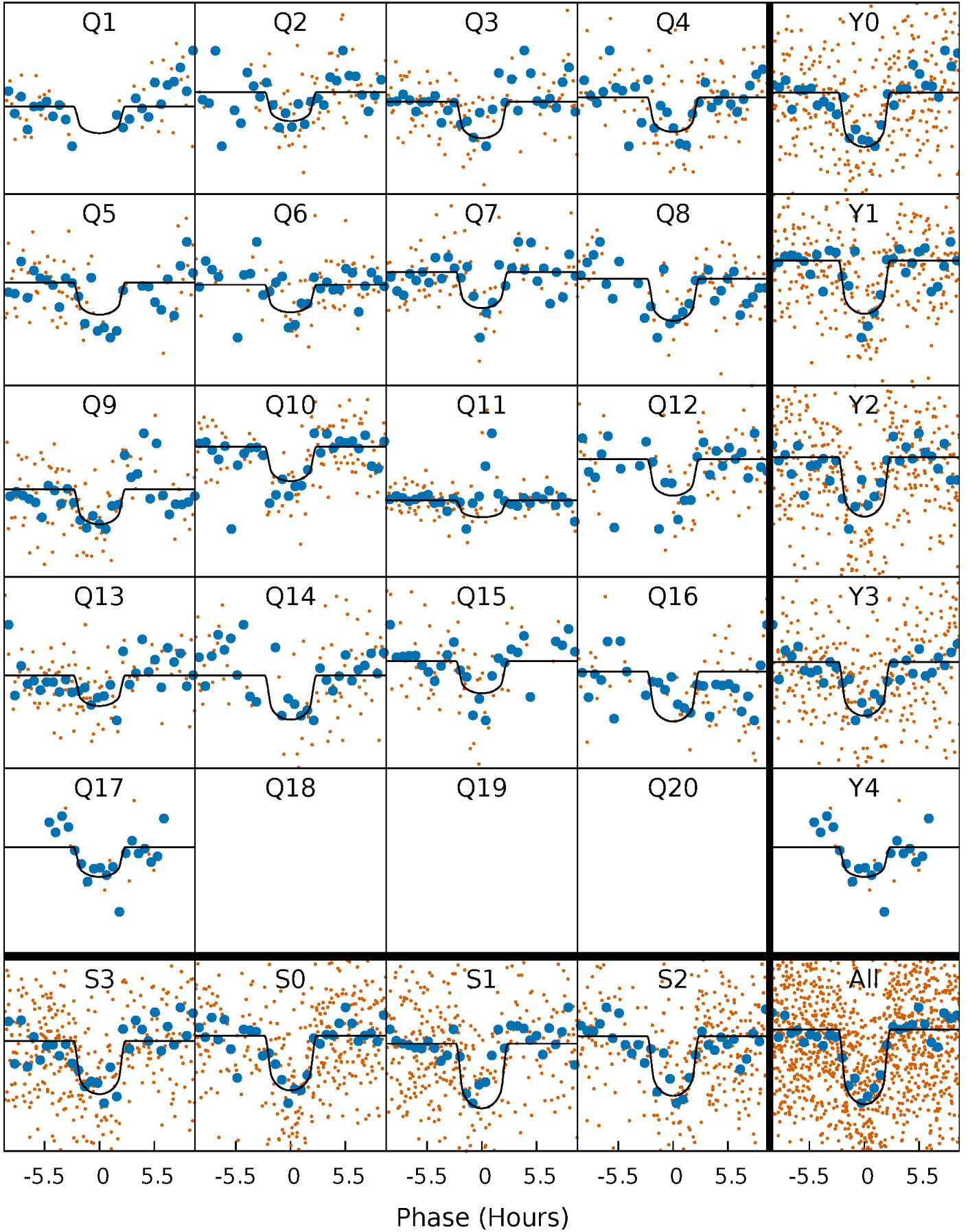
PDC Quarter-Phased Transit Curves

TCE 007941635-02 P= 25.270466 Days $T_0=134.664900$ (BKJD)



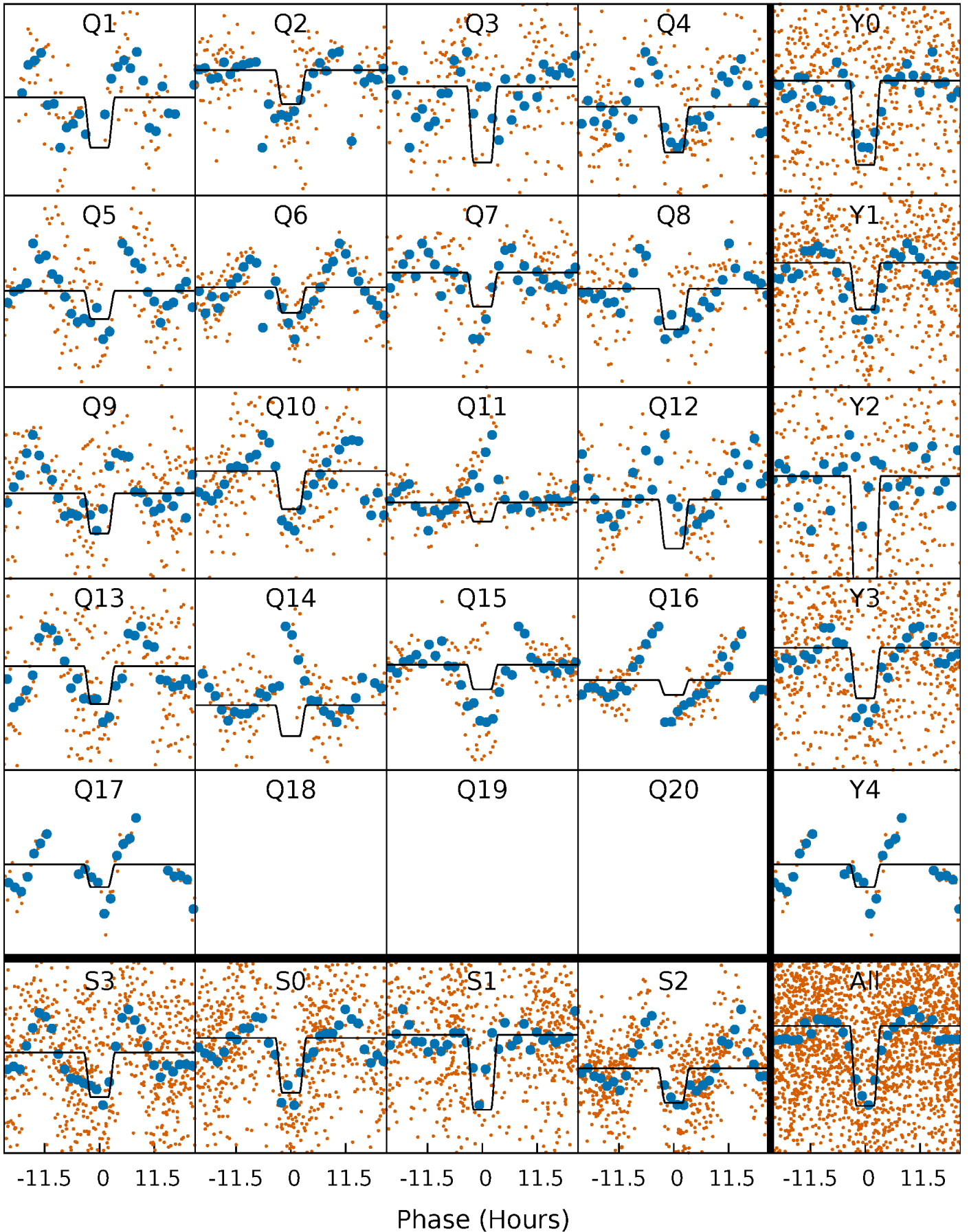
DV Quarter-Phased Transit Curves

TCE 007941635-02 P= 25.270466 Days $T_0=134.664900$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

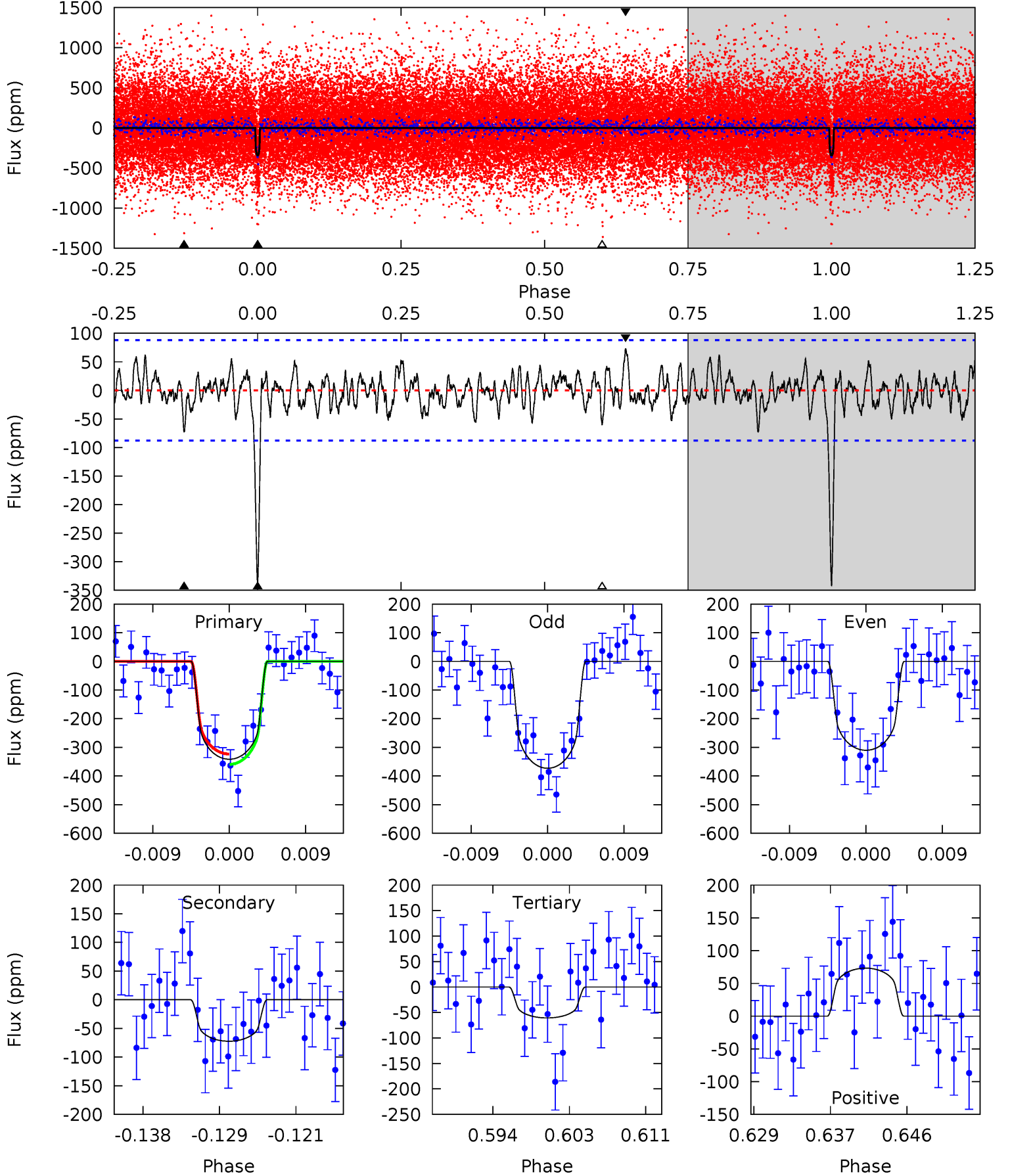
TCE 007941635-02 P= 25.269662 Days $T_0=134.677943$ (BKJD)



DV Model-Shift Uniqueness Test

007941635-02, $P = 25.270466$ Days, $E = 109.394434$ Days

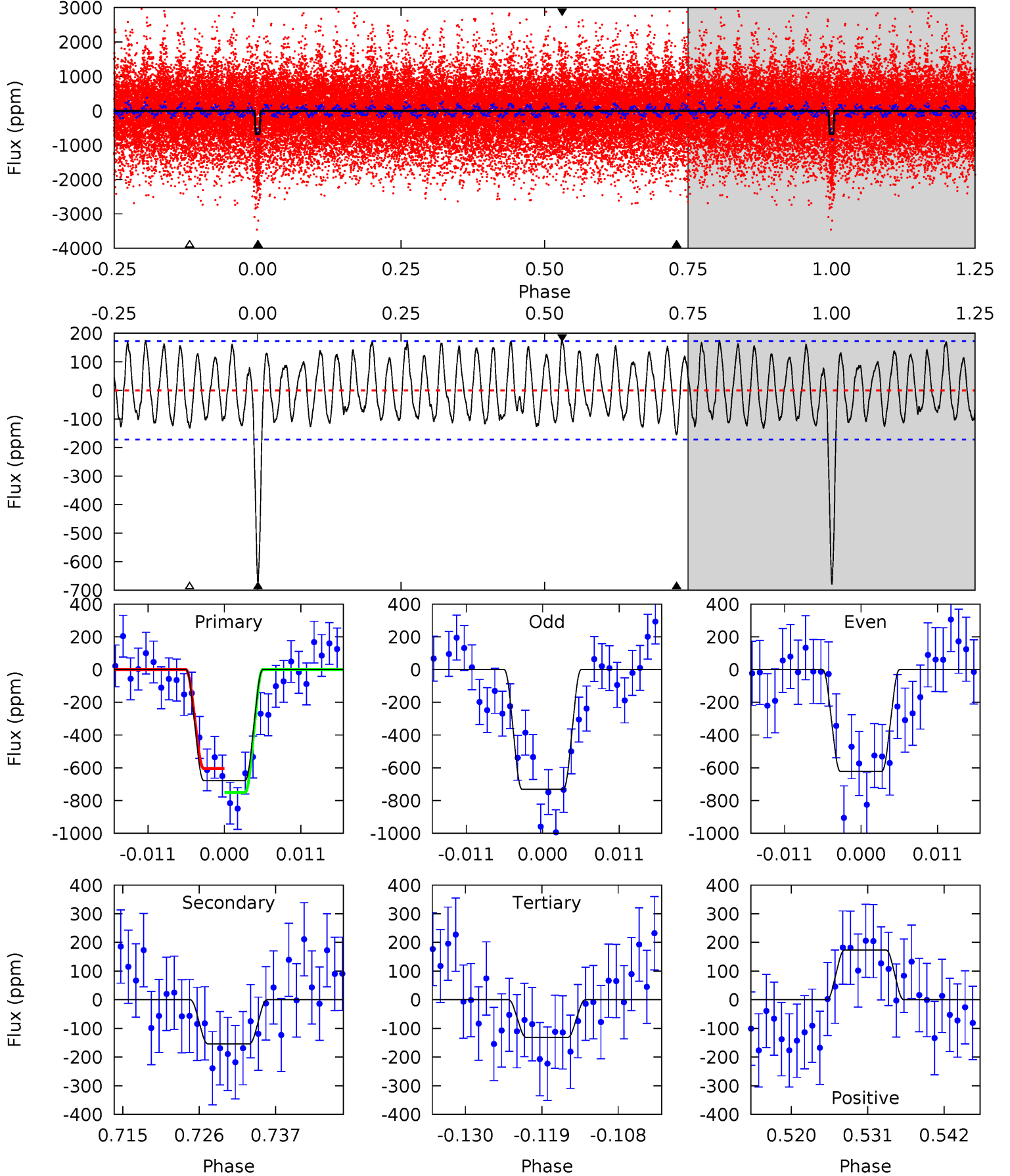
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.6	4.16	3.49	4.21	5.05	2.63	1.32	16.1	15.4	0.67	-0.05	1.81	0.98	0.18	1.04



Alt Model-Shift Uniqueness Test

007941635-02, $P = 25.269662$ Days, $E = 109.408281$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	4.48	3.83	5.05	5.01	2.55	2.48	15.9	14.7	0.65	-0.57	1.58	0.85	0.20	2.14



Stellar Parameters For KIC 007941635

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5313^{+175}_{-143}	$4.390^{+0.144}_{-0.198}$	$0.140^{+0.250}_{-0.250}$	$0.976^{+0.277}_{-0.170}$	$0.854^{+0.099}_{-0.066}$	$1.293^{+0.836}_{-0.675}$
	+3%/-3%	+3%/-5%	+179%/-179%	+28%/-17%	+12%/-8%	+65%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007941635-02 / KOI 5449.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-72 ± 17	$2.18^{+0.93}_{-0.87}$	818^{+62}_{-49}	3833^{+800}_{-441}	212^{+391}_{-110}
Alt.	-154 ± 34	$2.90^{+0.95}_{-0.87}$	815^{+65}_{-52}	3926^{+549}_{-368}	254^{+304}_{-118}

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

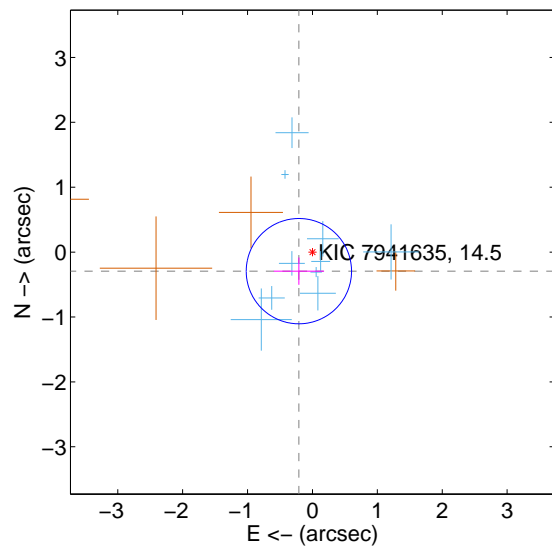
Supplemental centroid analysis for 007941635-02. Kepler magnitude: 14.50. Transit SNR 14.58

There are 10 quarters with good PRF difference image offsets

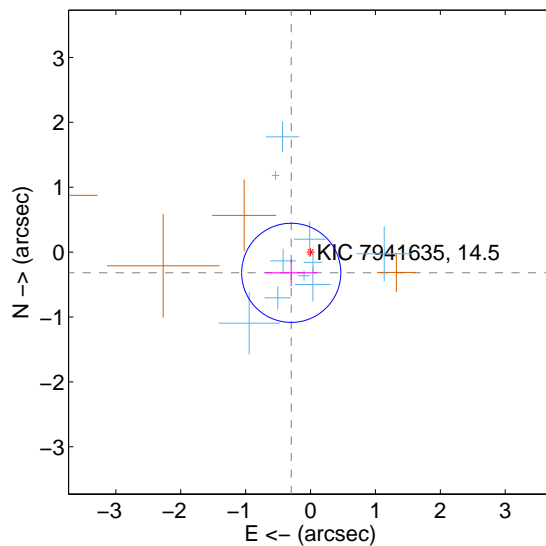
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.360 ± 0.270	1.33	0.209 ± 0.387	-0.294 ± 0.210
PRF-fit source offset from KIC position	0.436 ± 0.255	1.71	0.297 ± 0.398	-0.319 ± 0.209
photometric centroid source offset	1.26 ± 0.62	2.04	1.00 ± 0.62	-0.76 ± 0.61

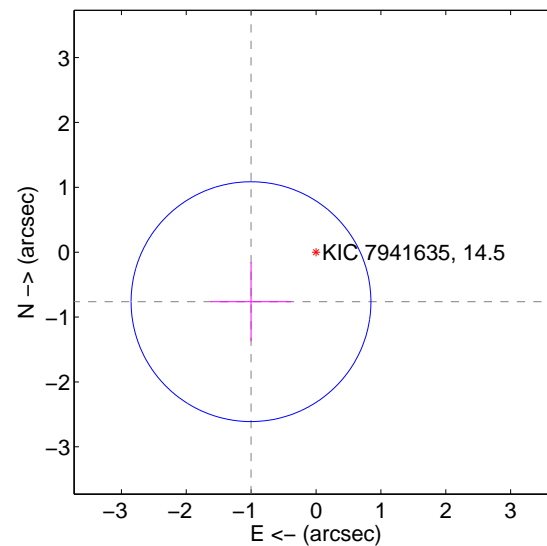
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

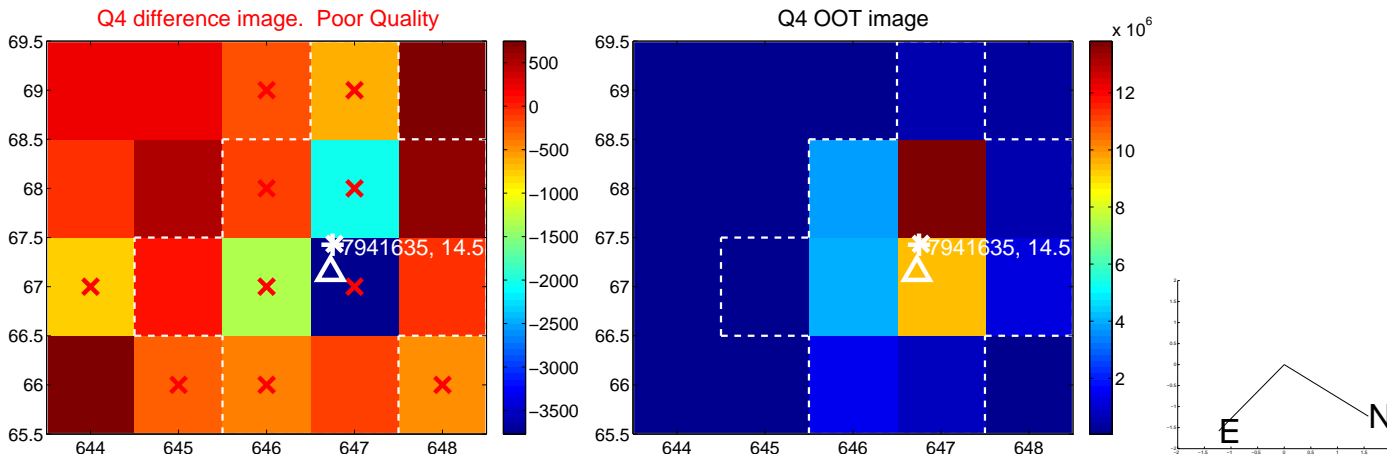
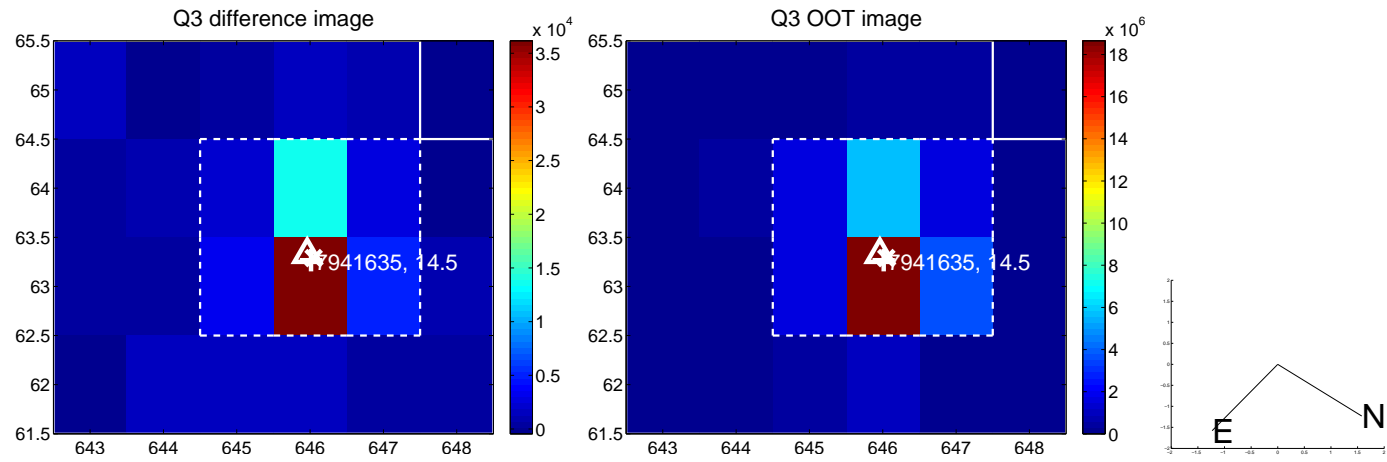
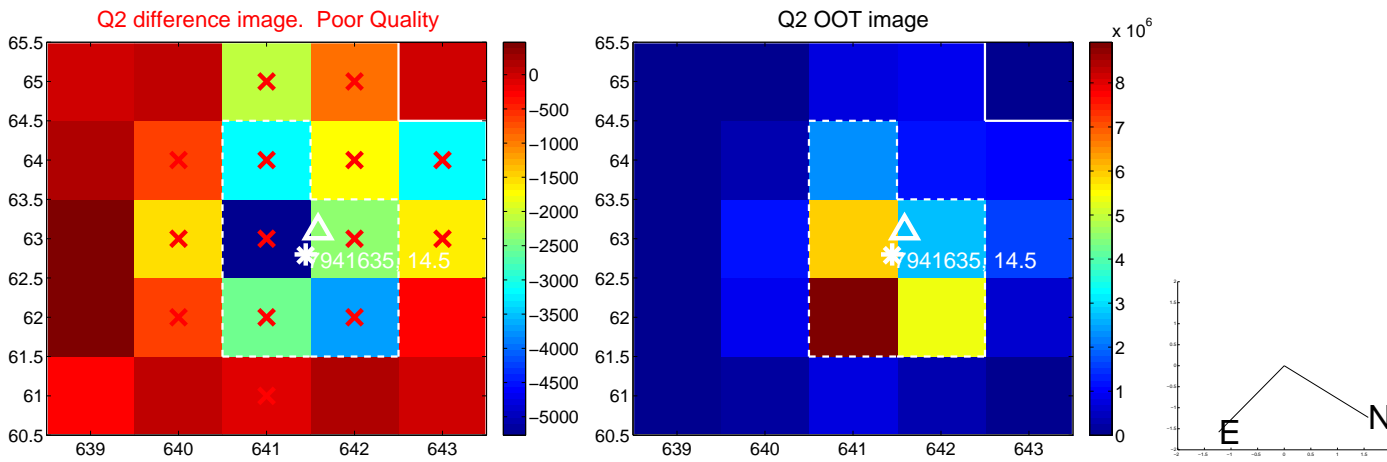
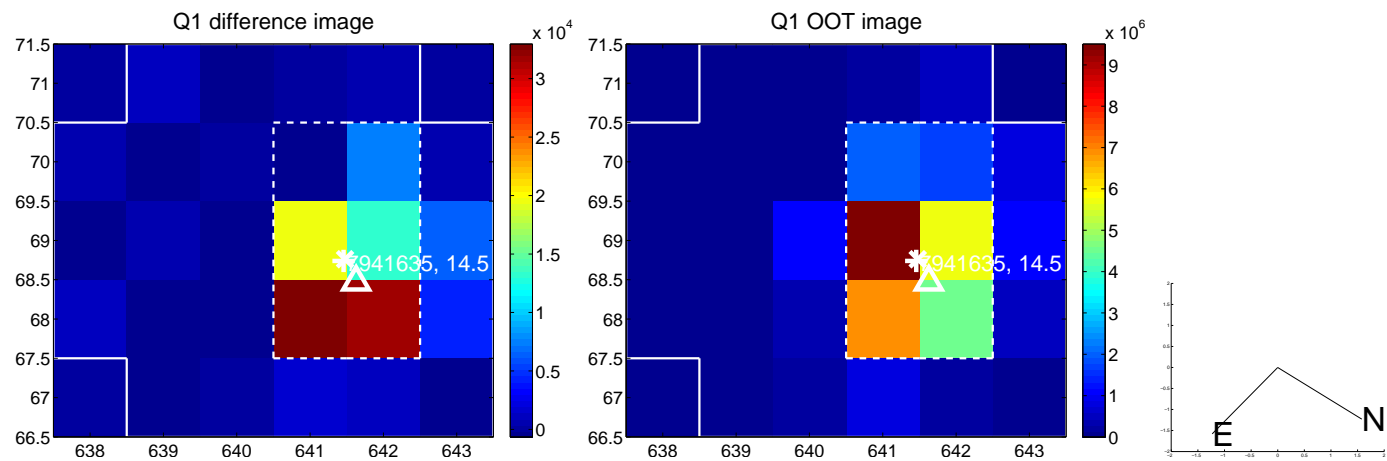


offset from photometric centroids

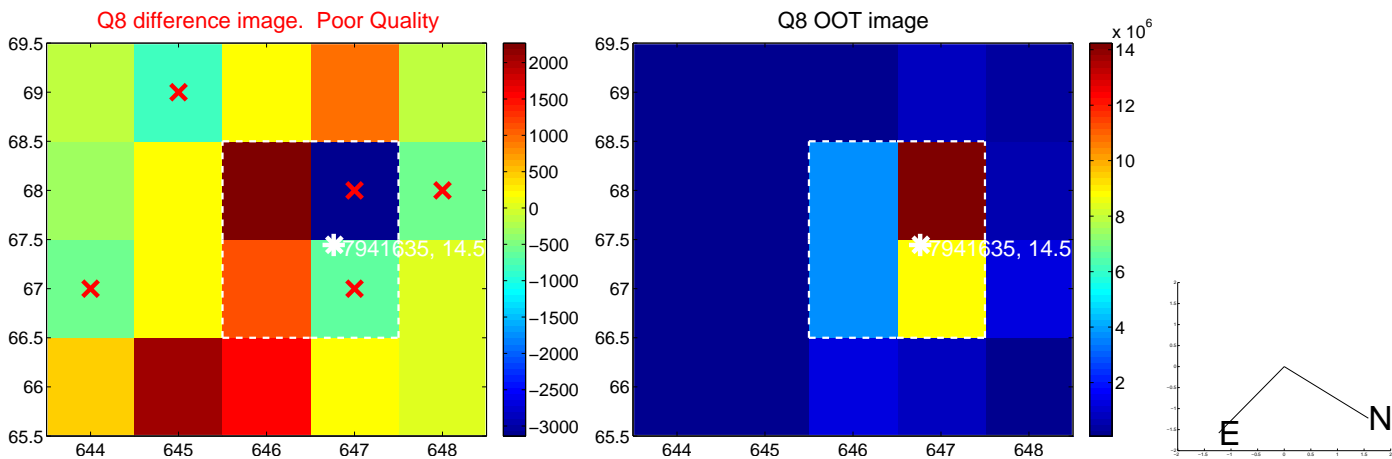
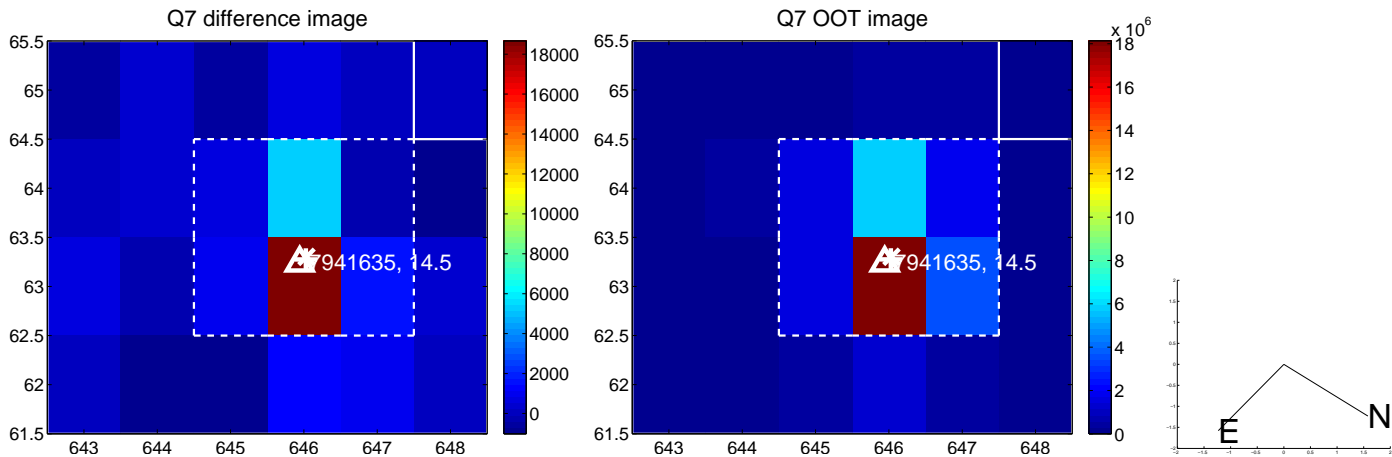
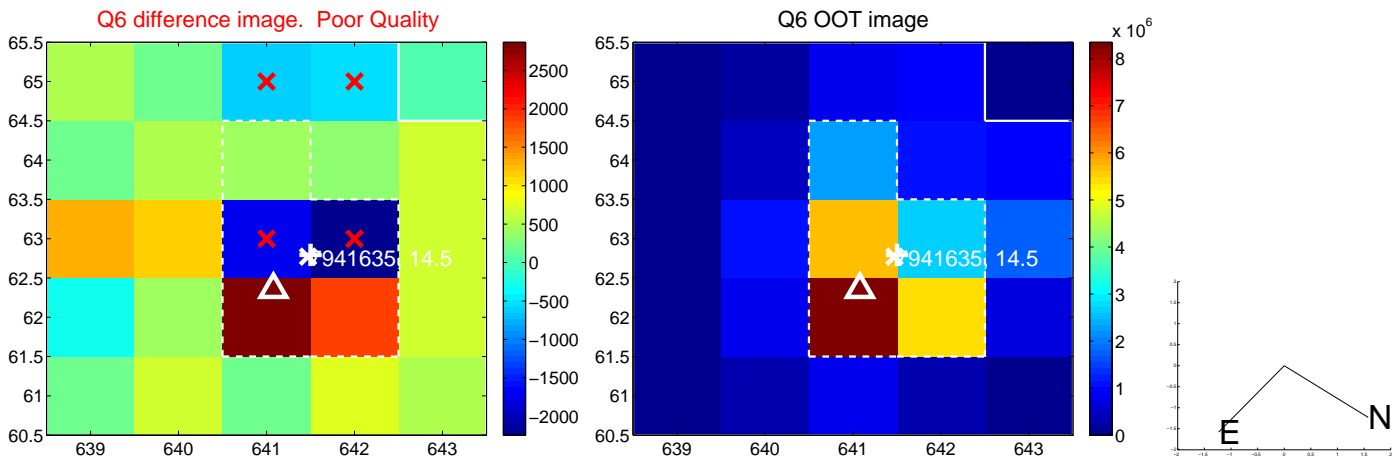
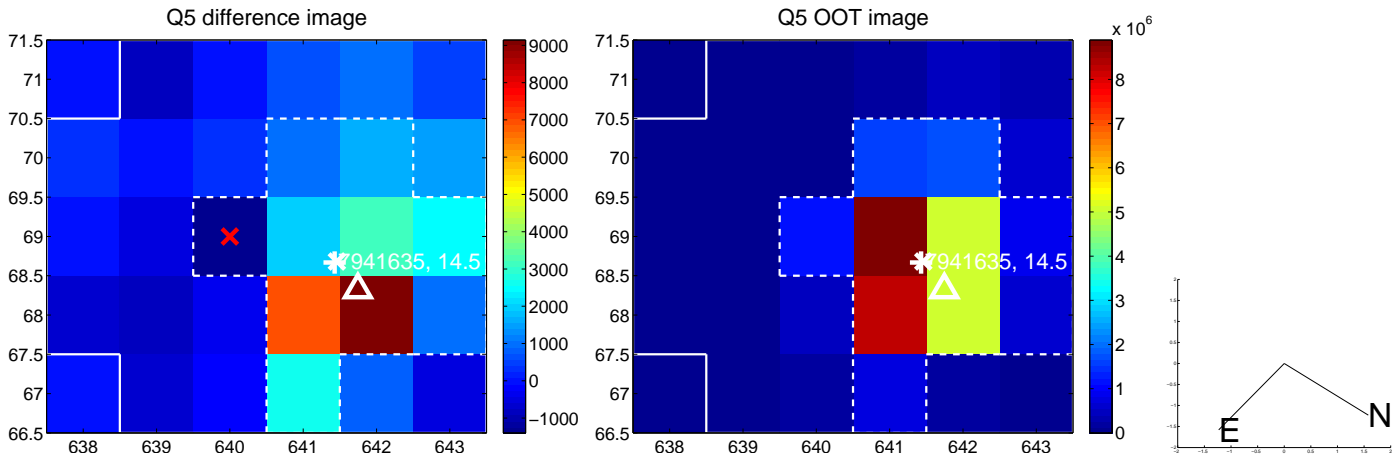


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

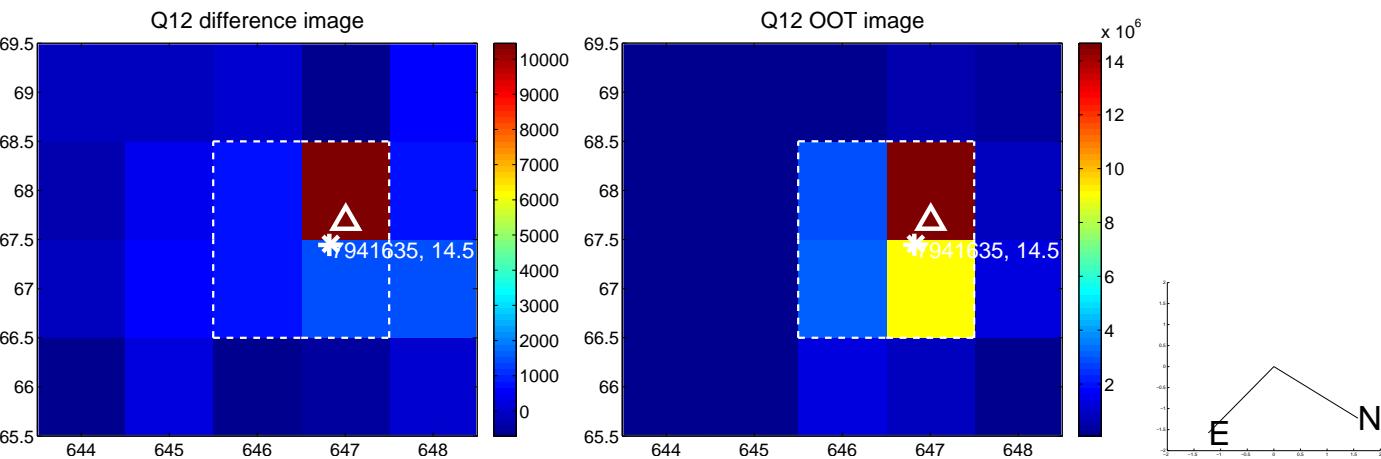
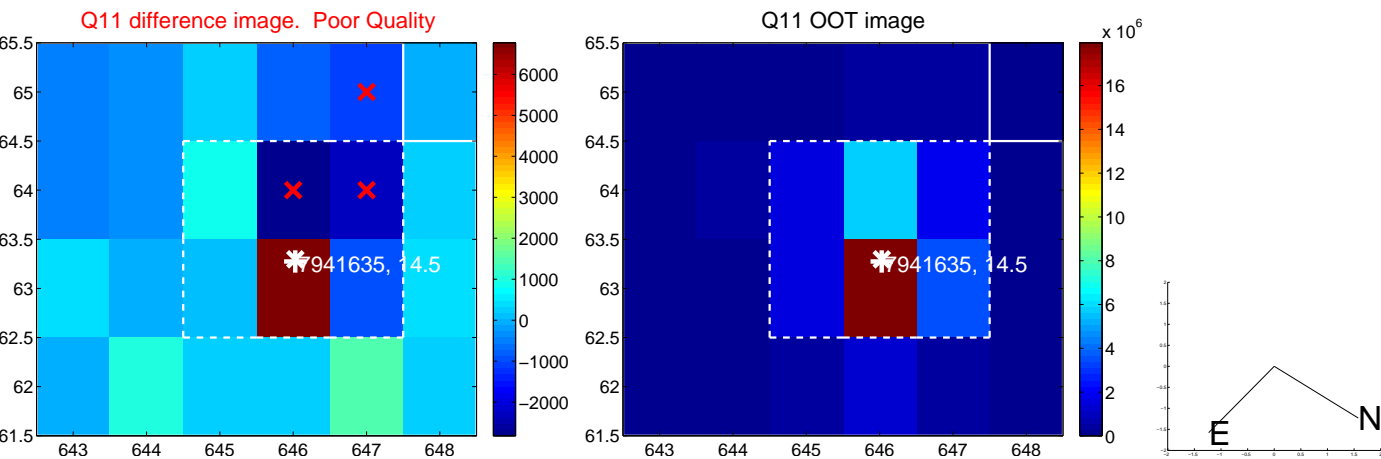
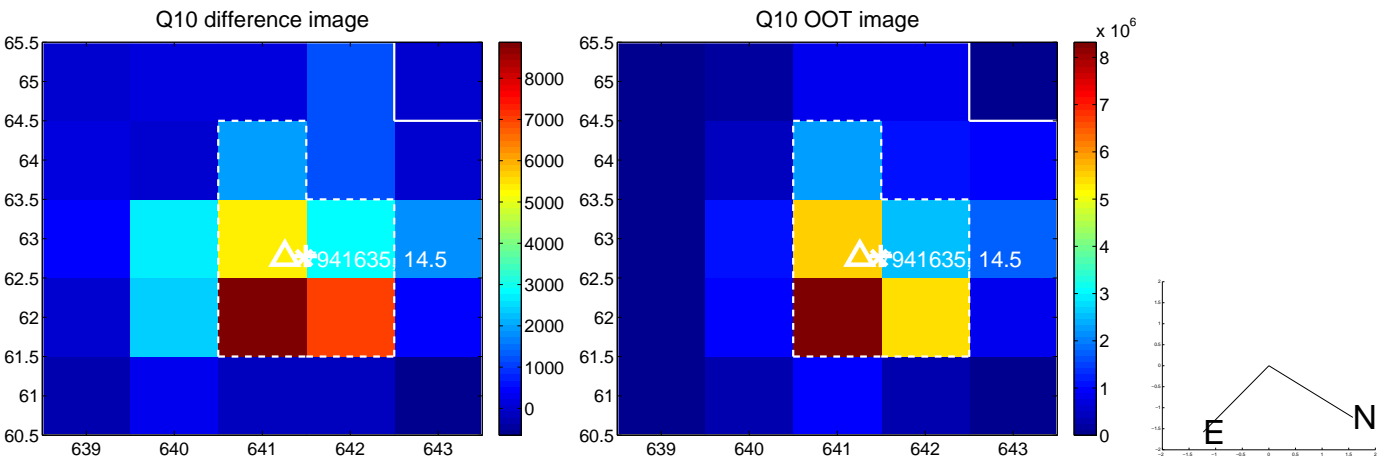
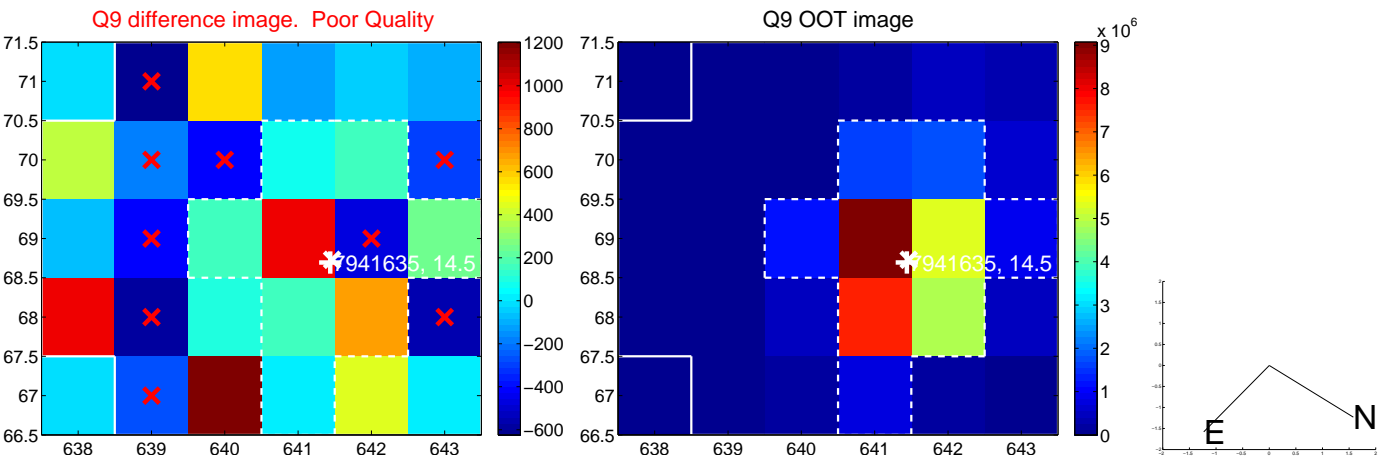
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



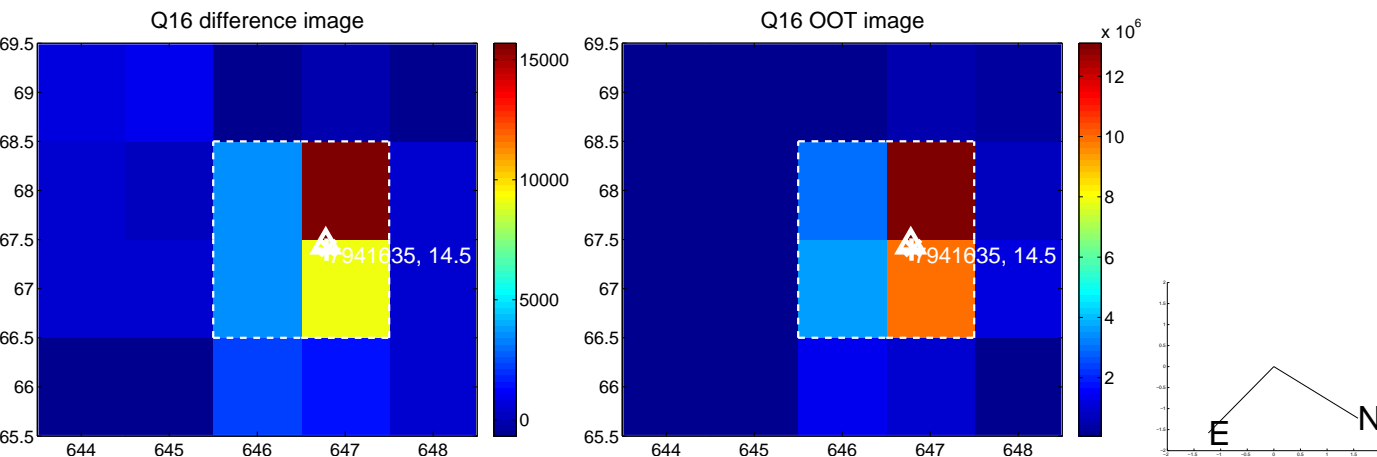
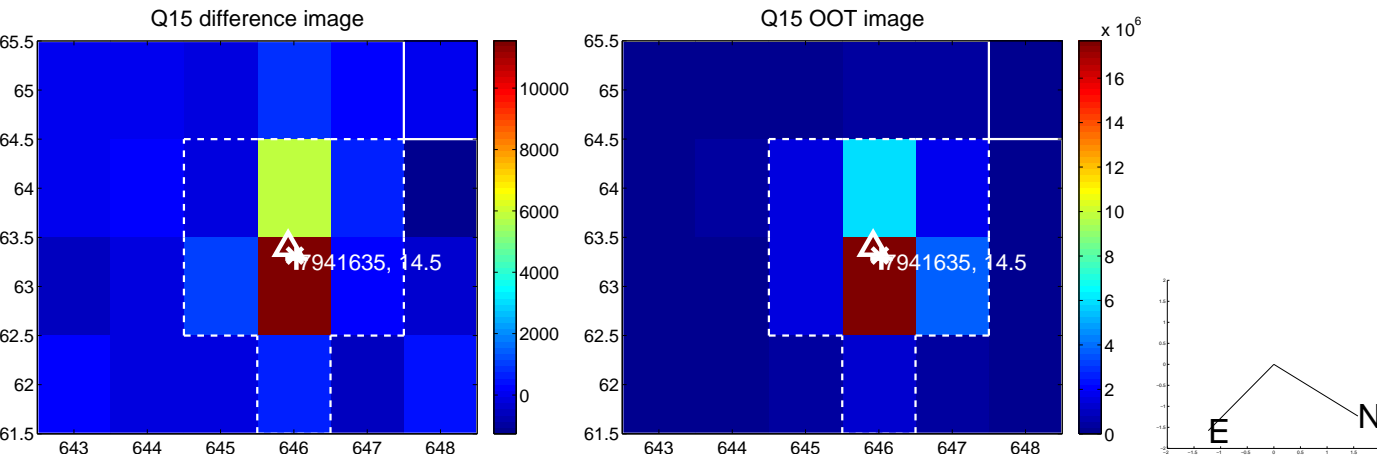
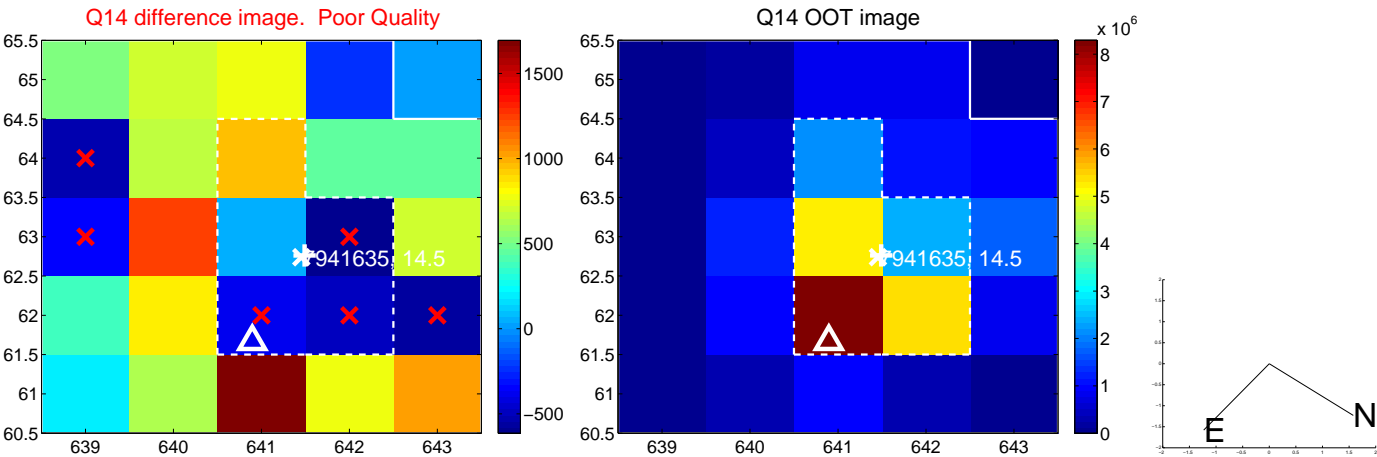
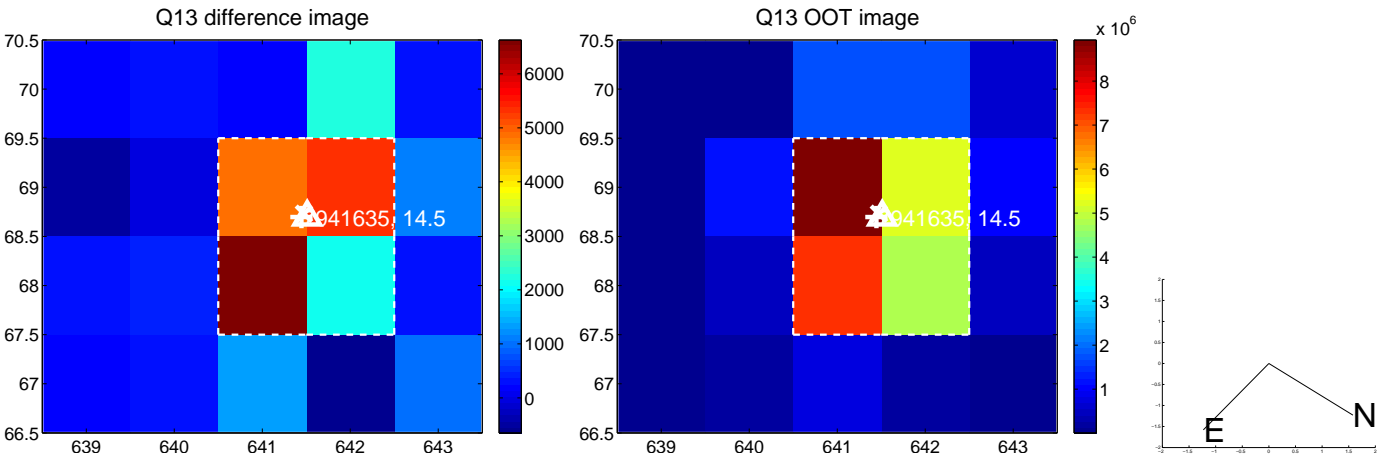
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



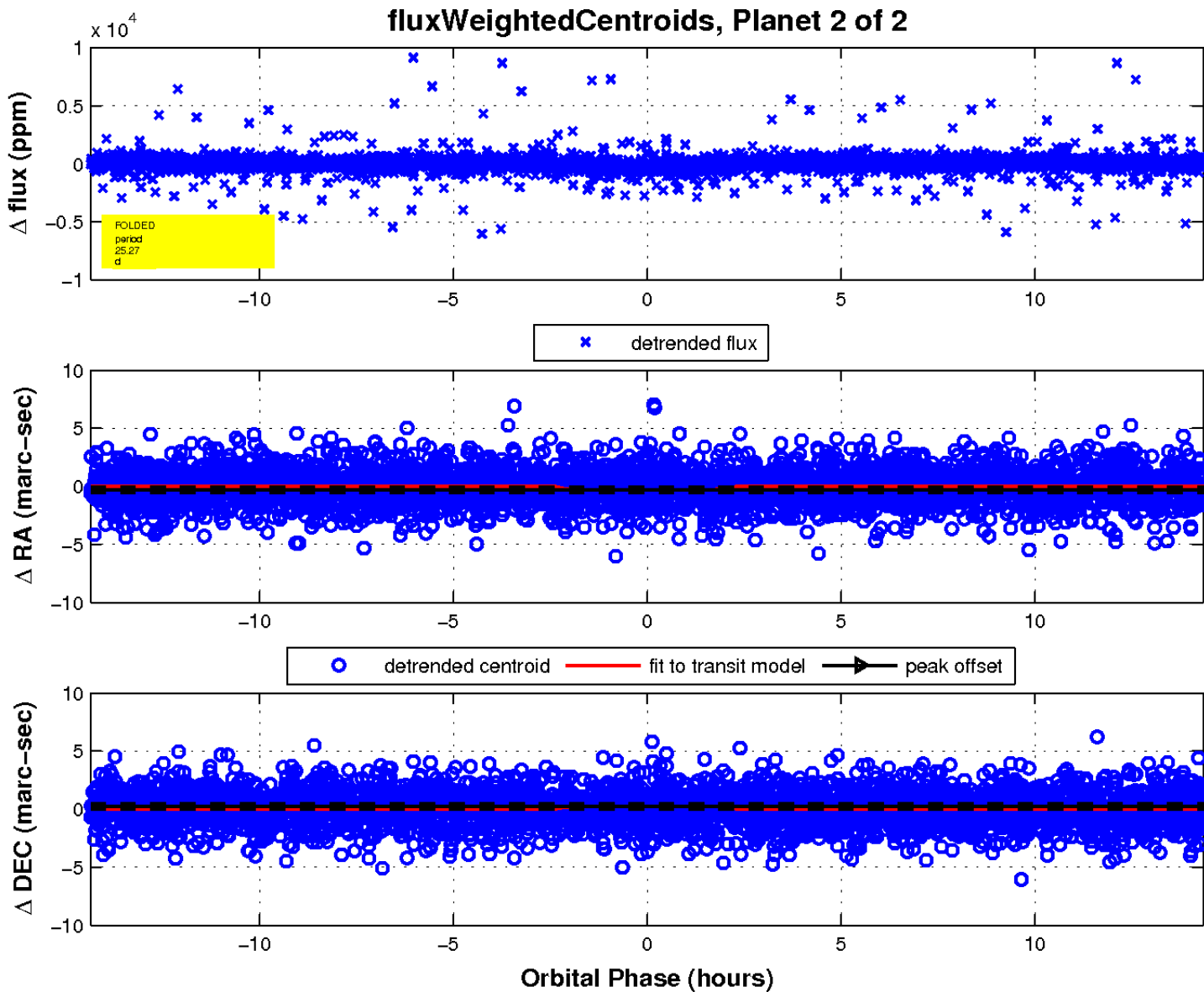
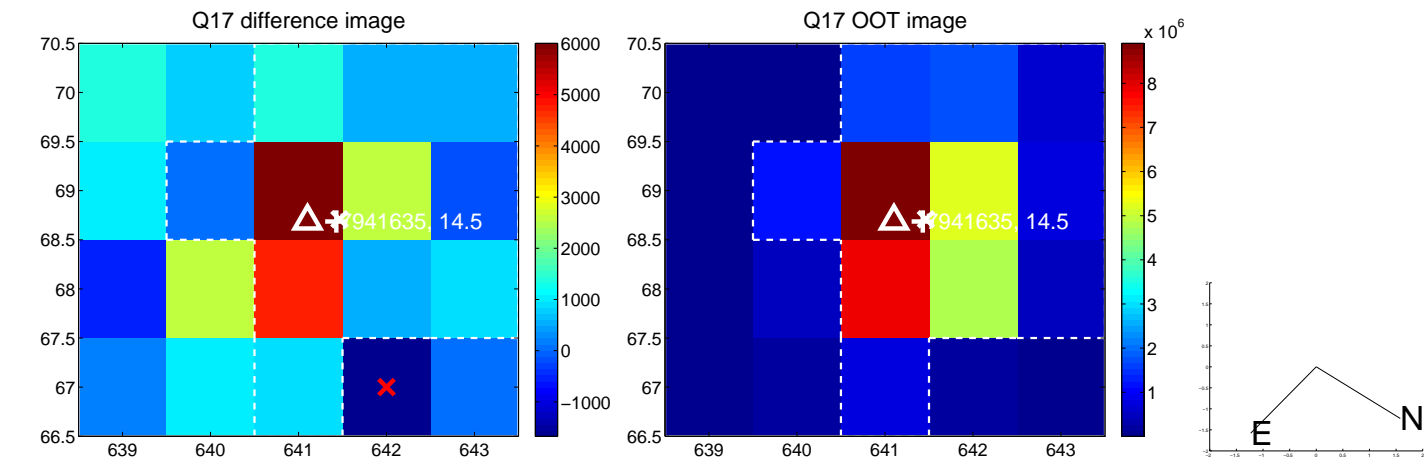
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

