

KIC 008719419

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})
008719419-01	OBS	3506.01	12.625311	140.060765	37844.8	3.116	464.9	667.4	1.84	6878	61.51	514.75
008719419-02	OBS	No	371.021938	408.657093	1814.9	3.000	33.1	-1.0	1.84	6878	7.95	5.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008719419-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_ALT—DEEP_V_SHAPED
008719419-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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 008719419-01

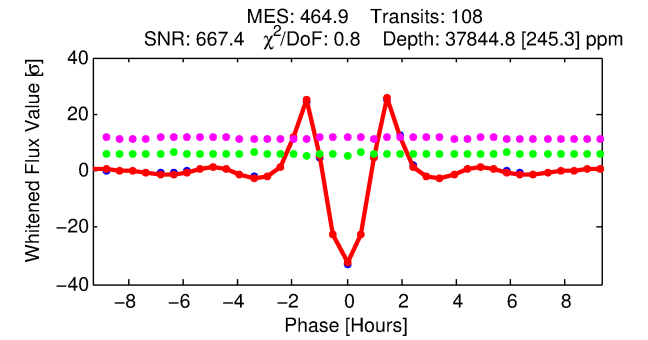
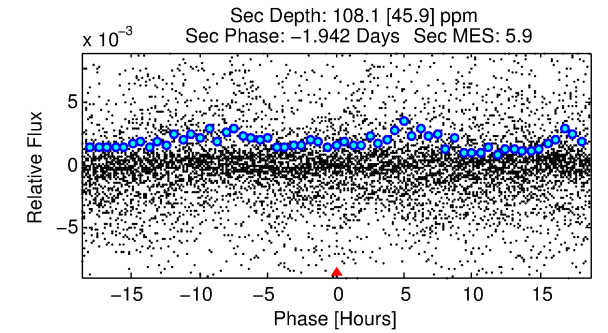
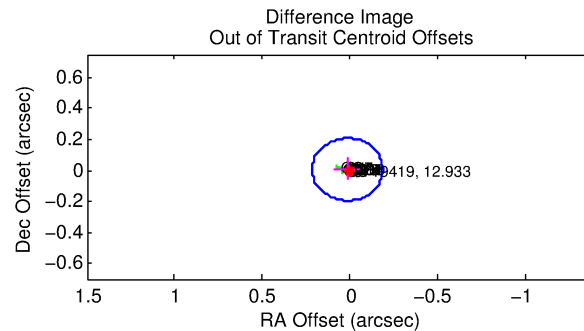
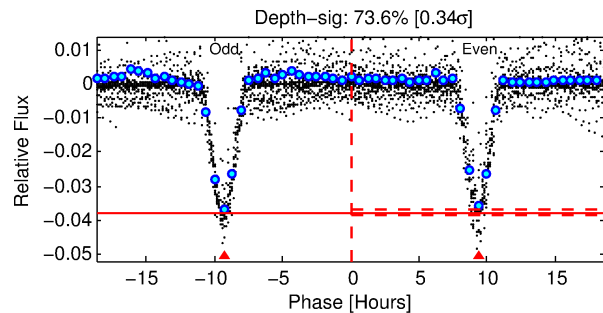
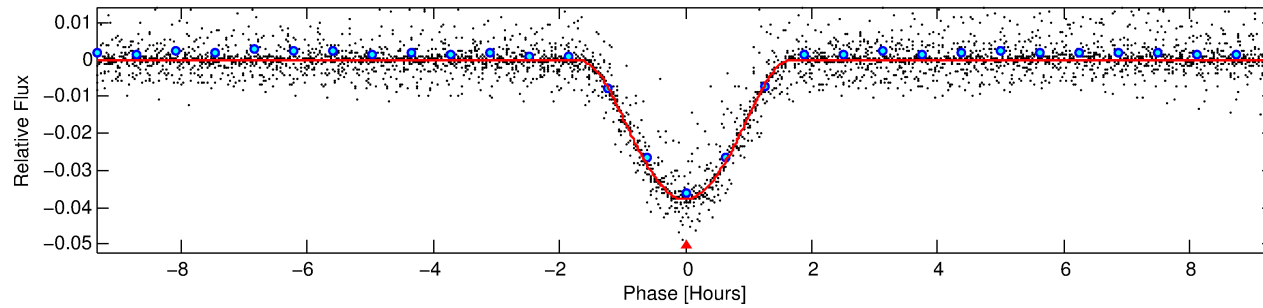
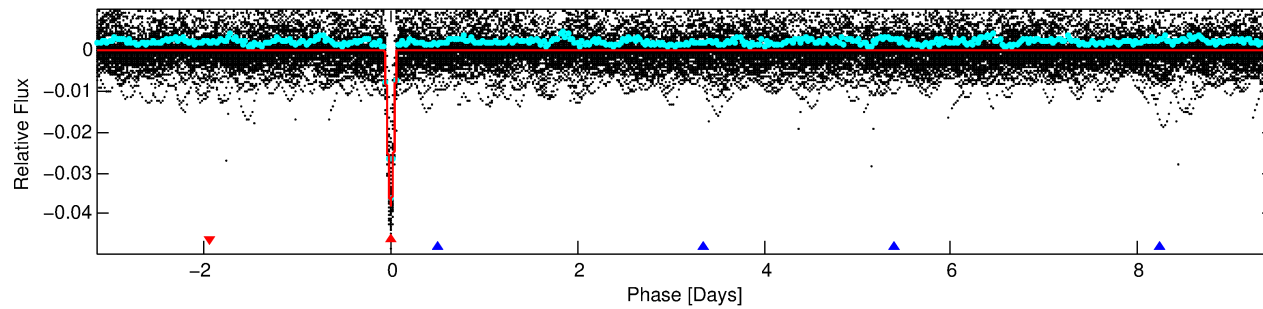
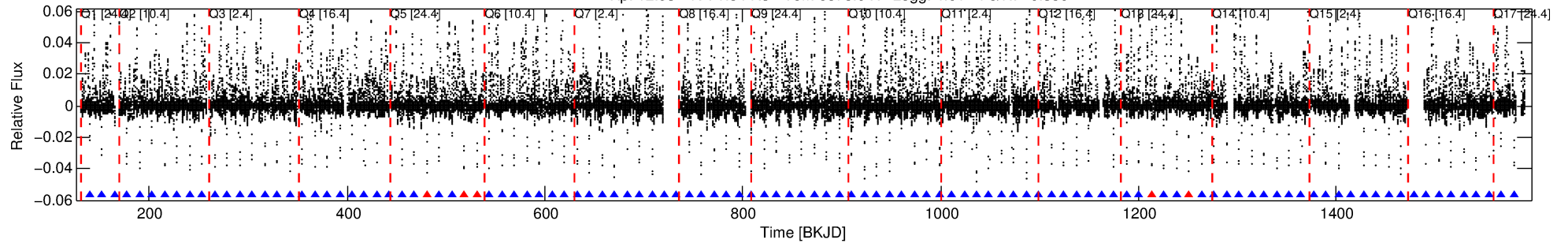
No Significant Match Found

DV One-Page Summary

KIC: 8719419 Candidate: 1 of 2 Period: 12.625 d

KOI: K03506.01 Corr: 0.989

Kp: 12.93 R*: 1.84 Rs Teff: 6878.0 K Logg: 4.01 Fe/H: -0.380



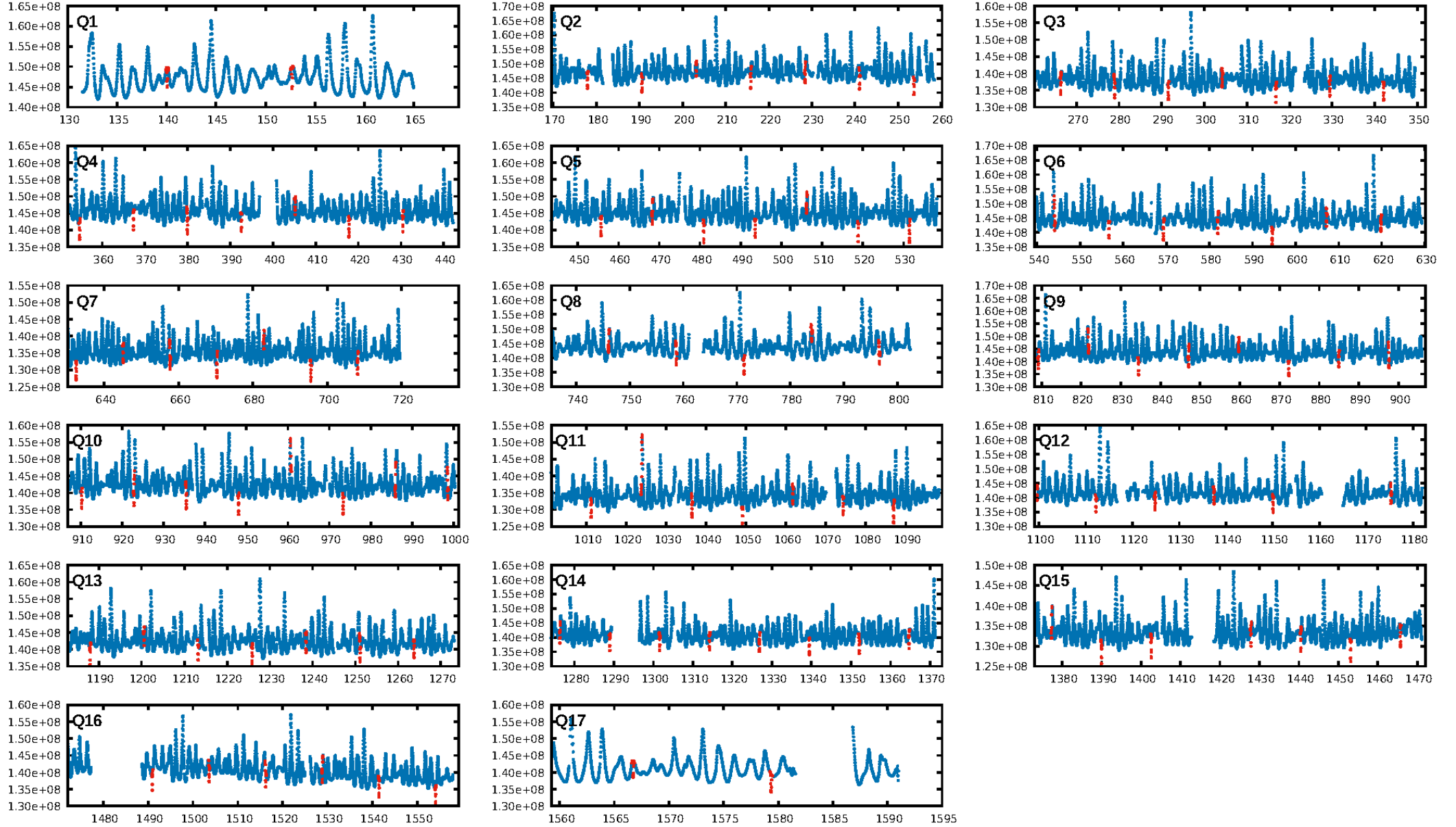
DV Fit Results:

Period = 12.62531 [0.00000] d
Epoch = 140.0608 [0.0001] BKJD
Rp/R* = 0.3057 [0.0116]
a/R* = 26.01 [0.05]
b = 1.00 [0.02]
Seff = 514.75 [273.82]
Teq = 1215 [162] K
Rp = 61.51 [21.41] Re
a = 0.1151 [0.0371] AU
Ag = 0.21 [0.14] [-5.72σ]
Teffp = 1268 [147] K [0.25σ]

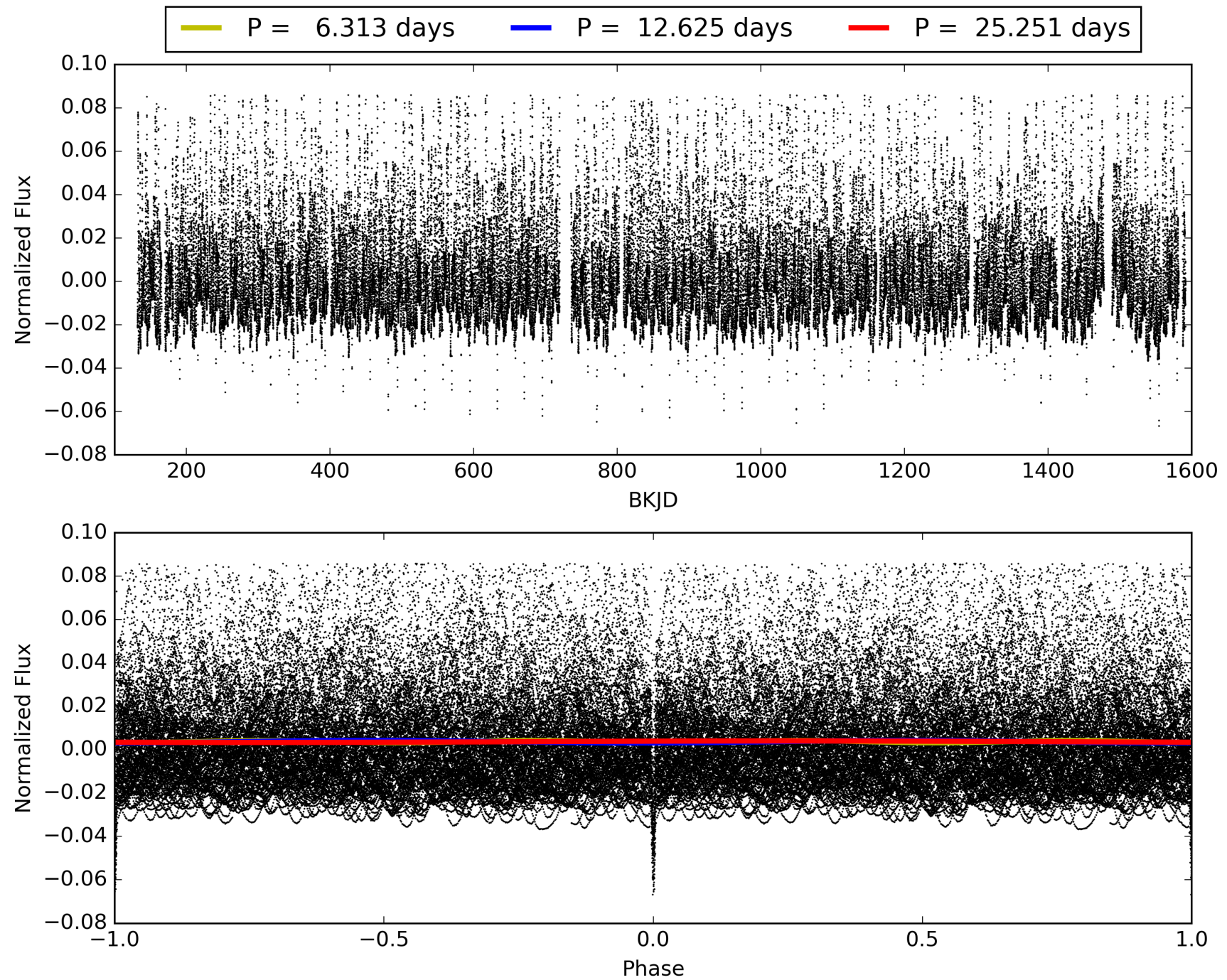
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1988.62σ]
ModelChiSquare2-sig: 3.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.95 [99/104]
GhostDiagnostic-chr: 1.253
Centroid-sig: 0.0%
Centroid-so: 0.505 arcsec [108.90σ]
OotOffset-rm: 0.017 arcsec [0.26σ]
KicOffset-rm: 0.071 arcsec [1.04σ]
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 008719419-01, PDC Light Curves

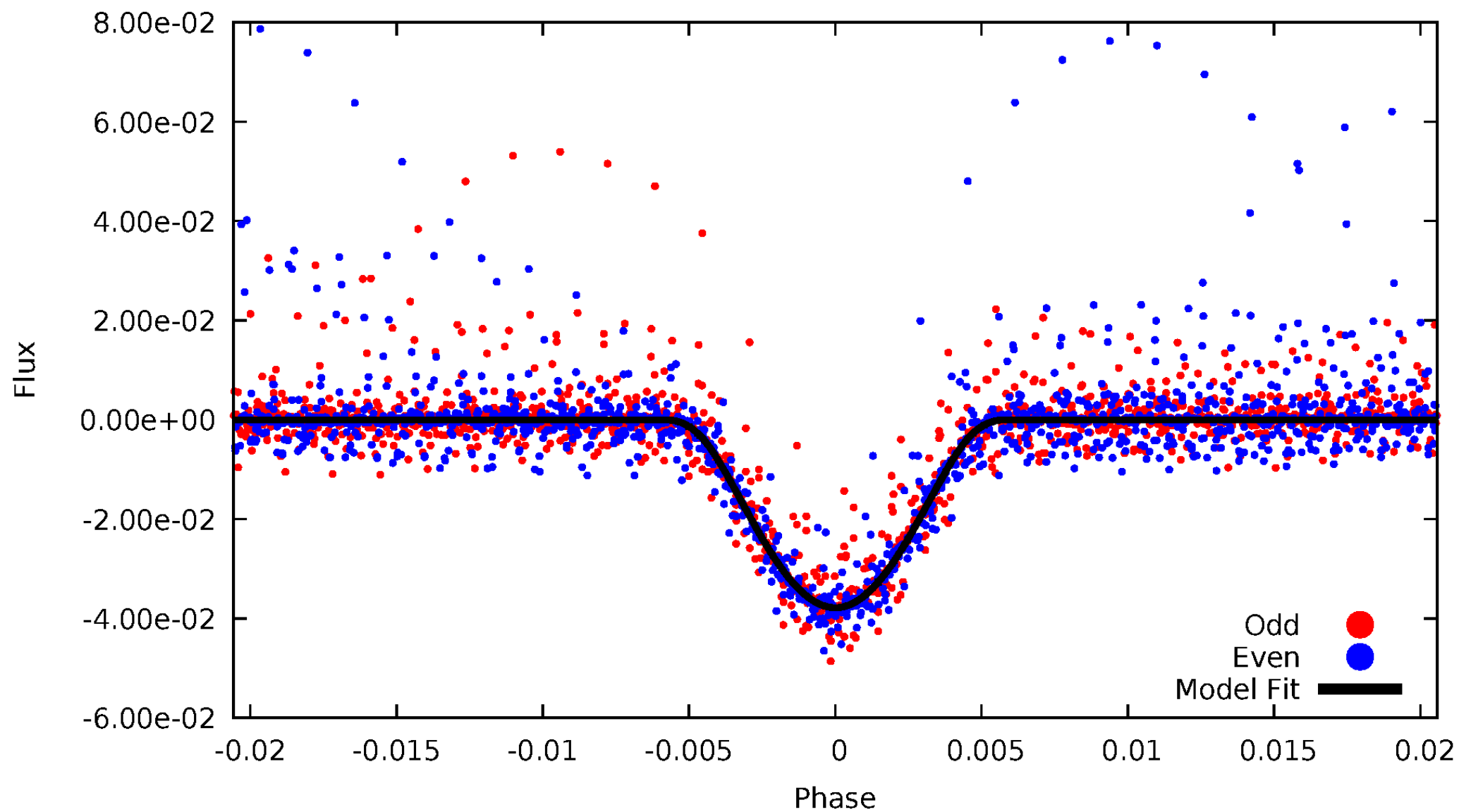


TCE 008719419-01



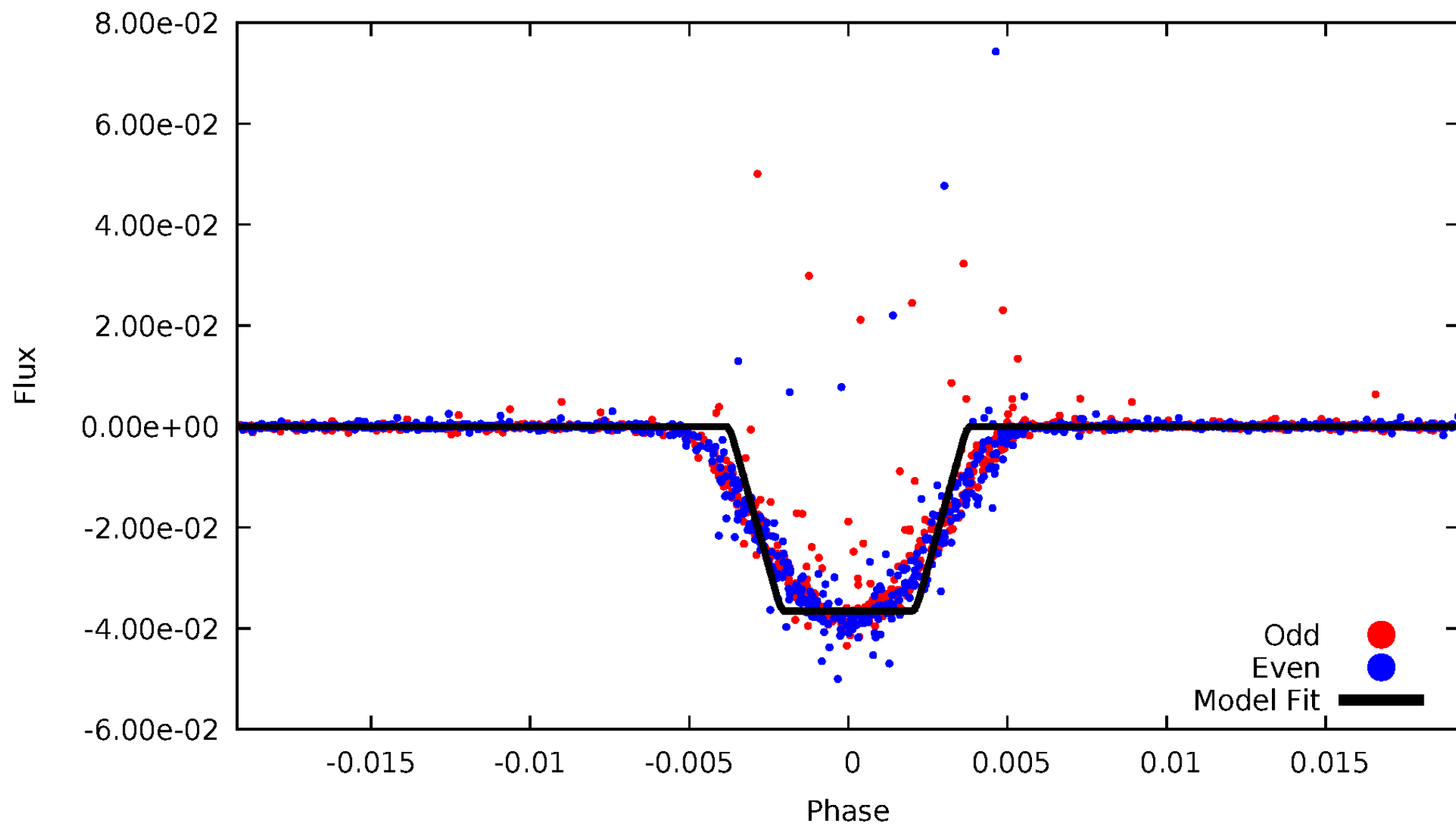
DV Odd/Even

TCE 008719419-01



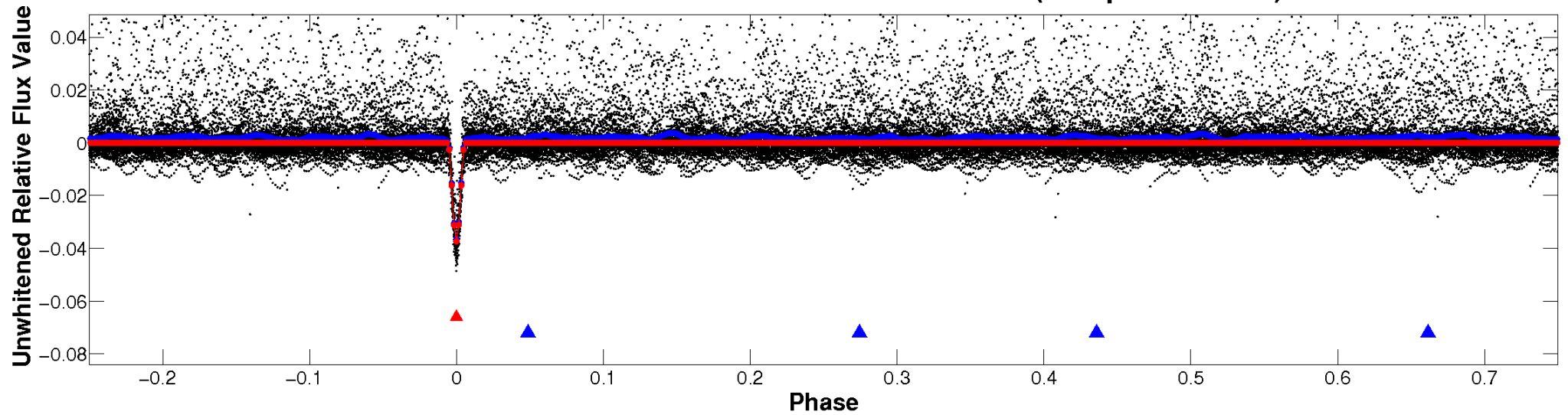
ALT Odd/Even

TCE 008719419-01

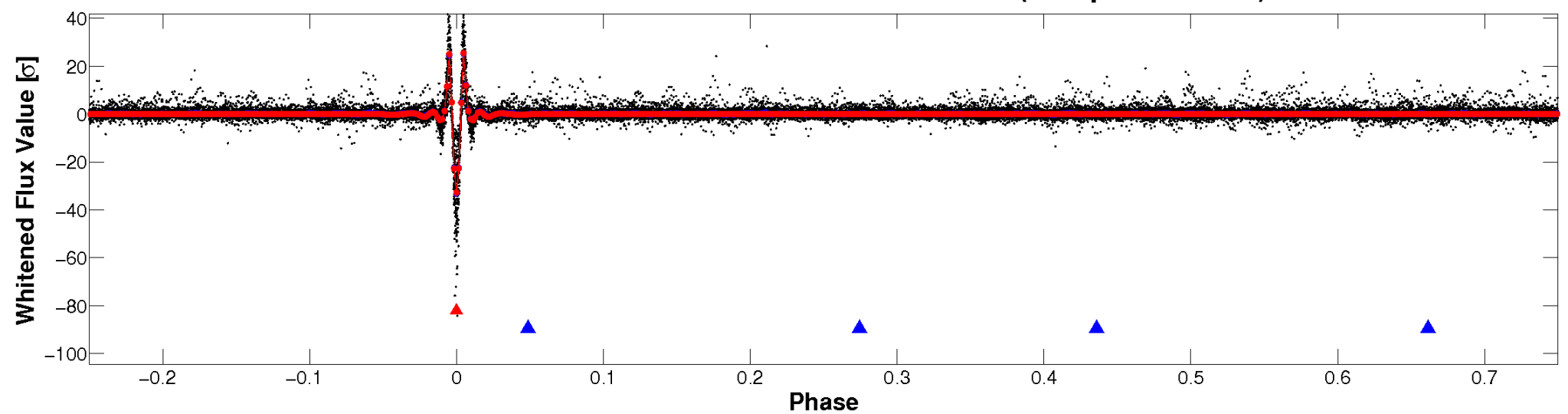


Non-Whitened Vs. Whitened Light Curve

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

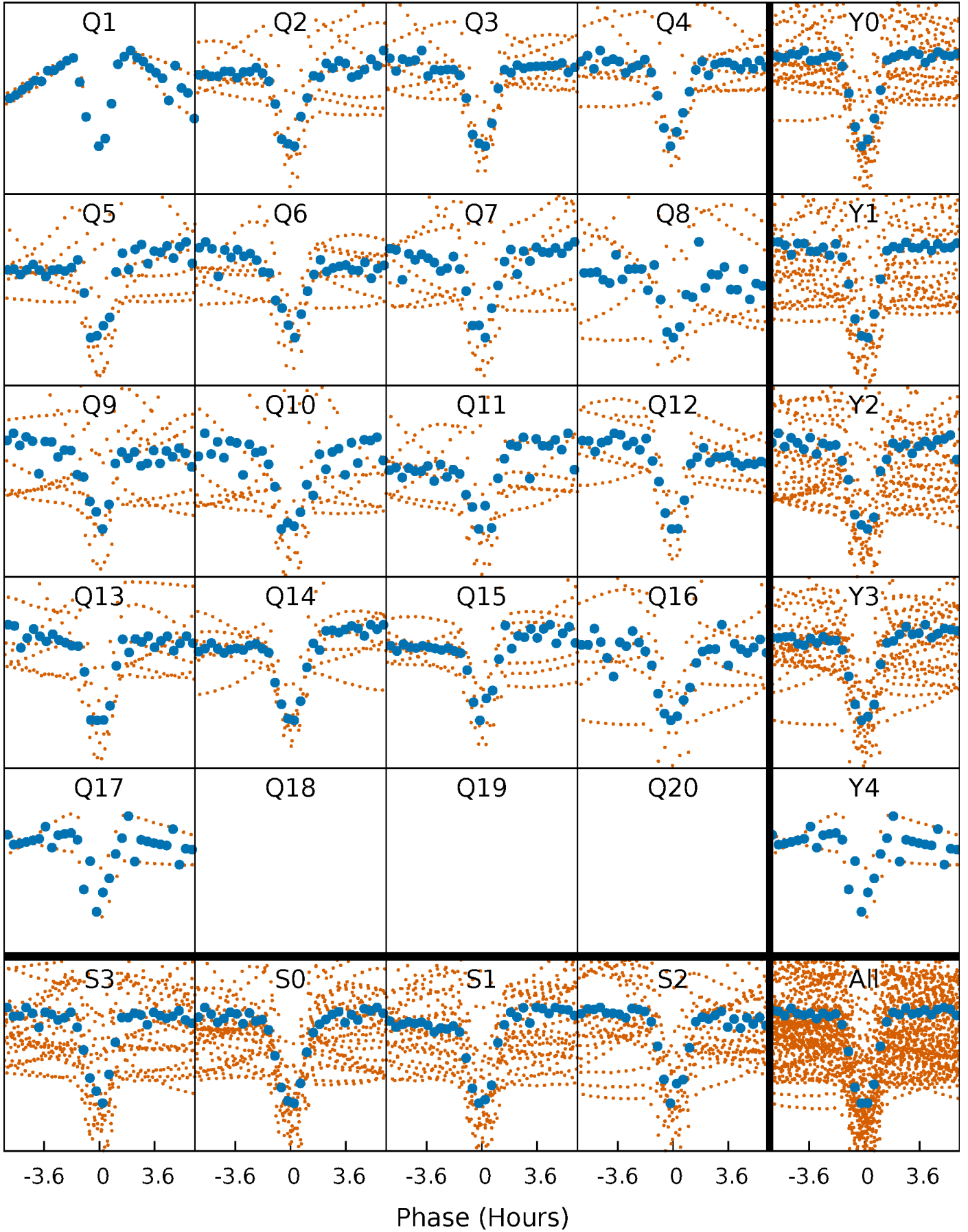


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



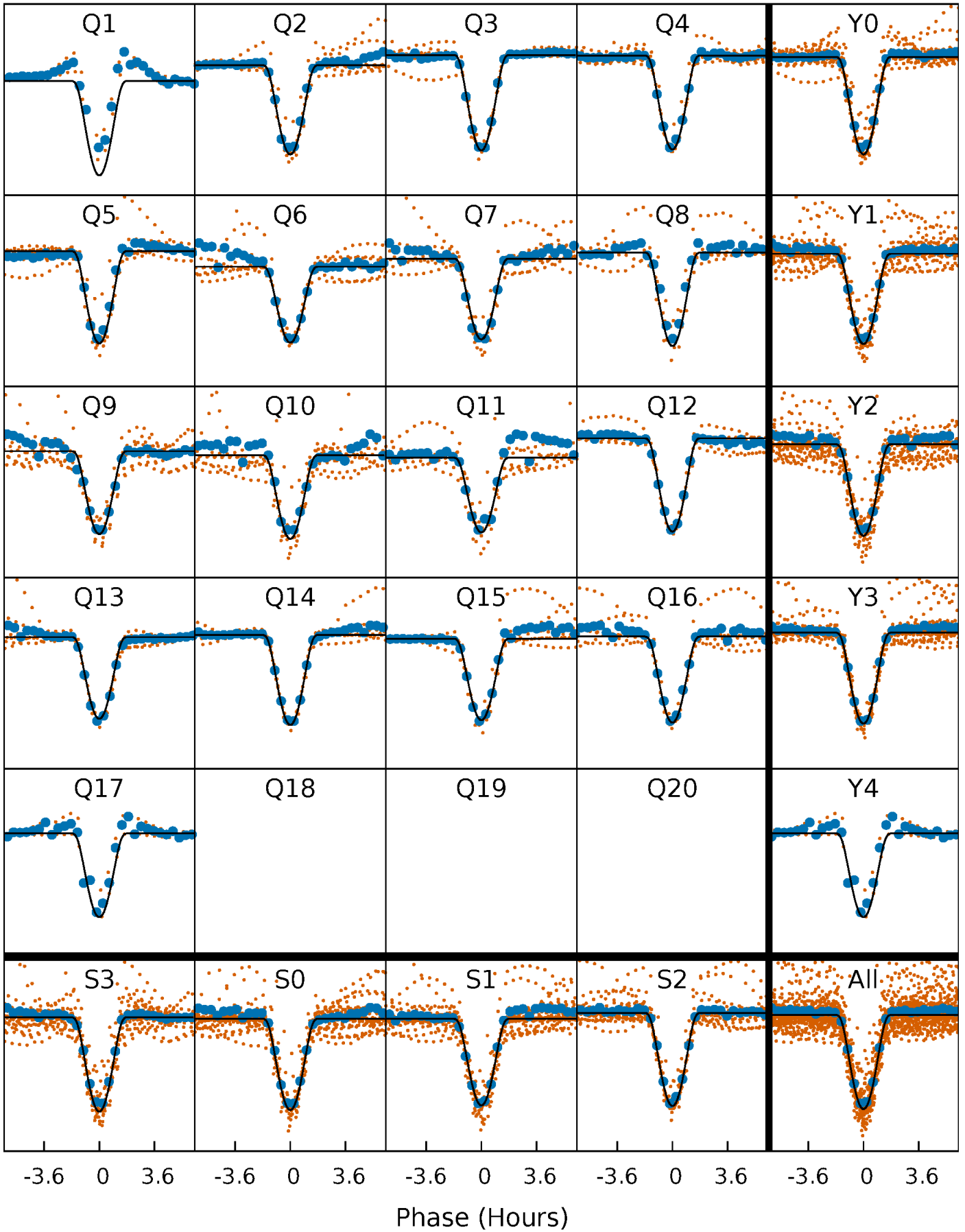
PDC Quarter-Phased Transit Curves

TCE 008719419-01 P= 12.625311 Days $T_0=140.060765$ (BKJD)



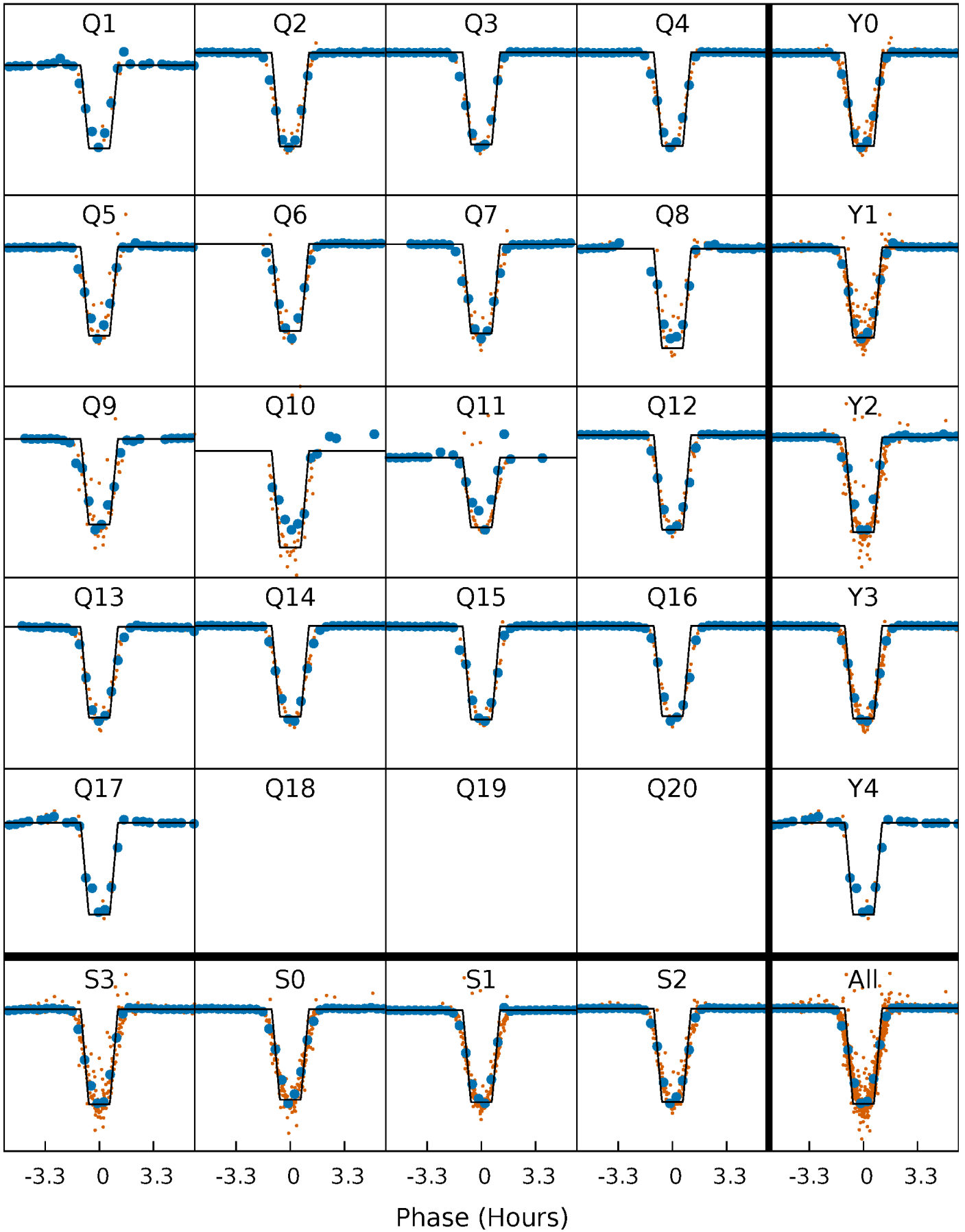
DV Quarter-Phased Transit Curves

TCE 008719419-01 P= 12.625311 Days $T_0=140.060765$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

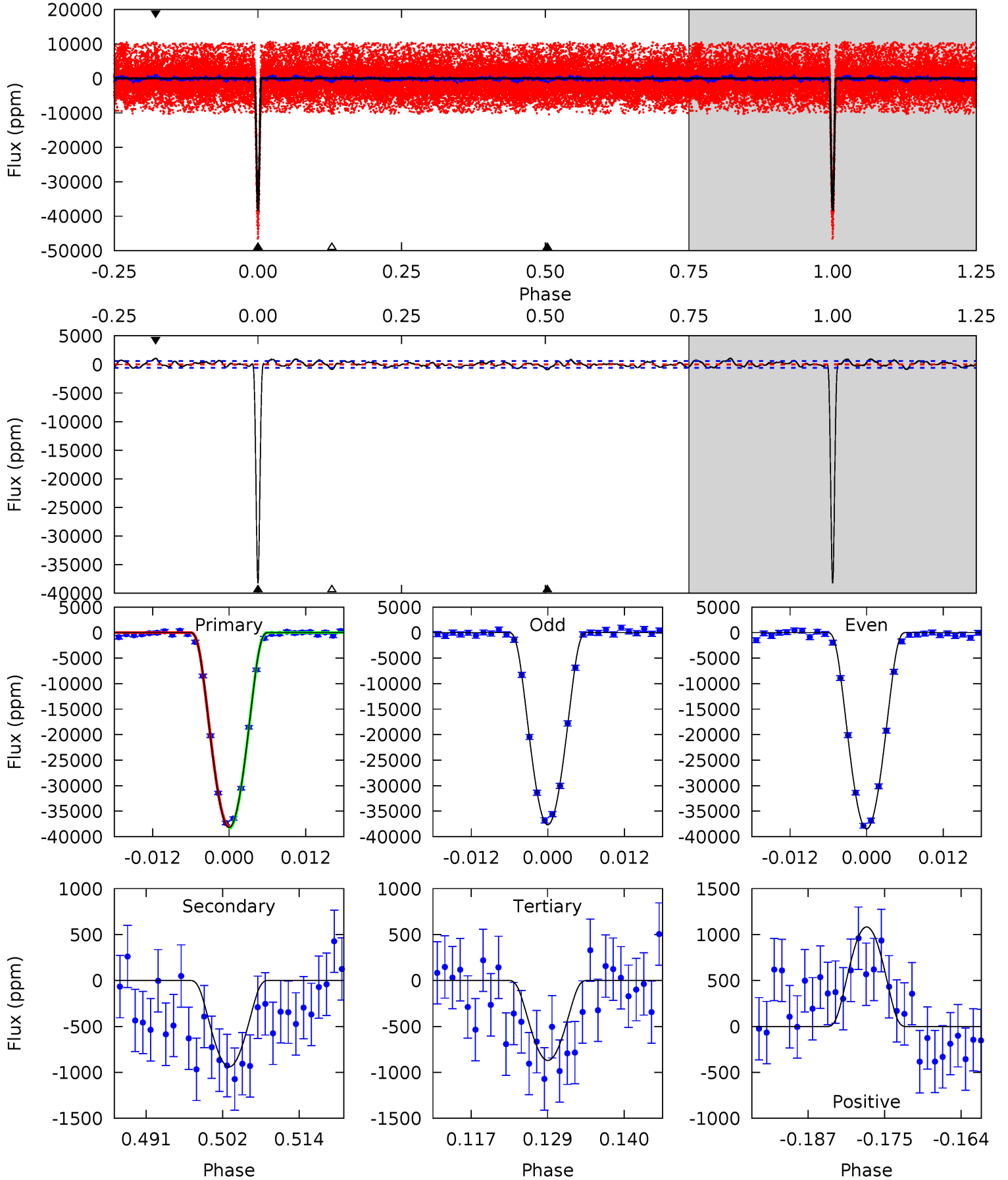
TCE 008719419-01 P= 12.625228 Days $T_0=140.065141$ (BKJD)



DV Model-Shift Uniqueness Test

008719419-01, P = 12.625311 Days, E = 127.435454 Days

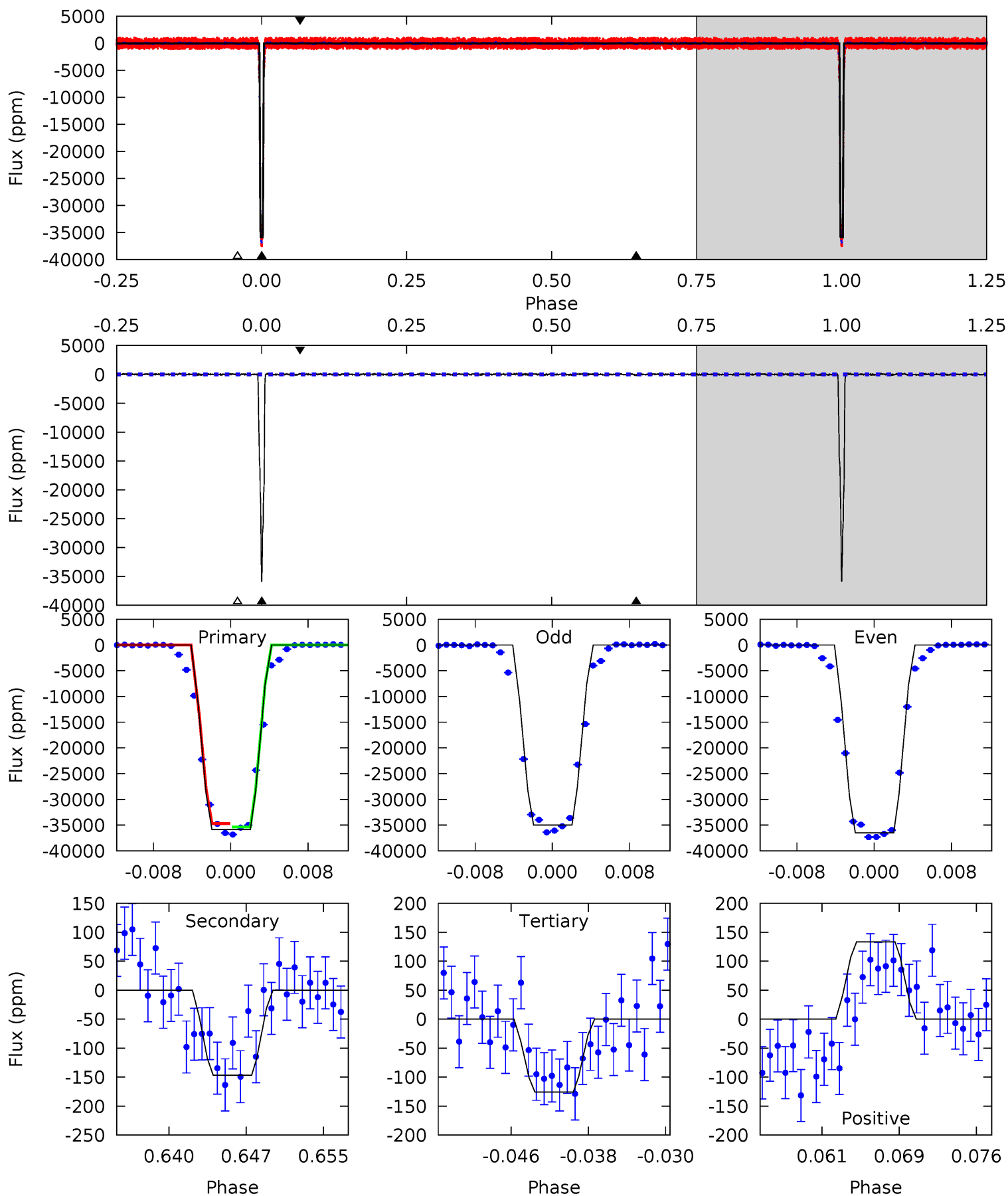
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
319.8	7.87	7.29	9.07	5.00	2.52	2.86	312.5	310.7	0.58	-1.20	3.49	0.97	0.03	1.35



Alt Model-Shift Uniqueness Test

008719419-01, P = 12.625228 Days, E = 127.439913 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1088	4.45	3.81	4.05	5.08	2.67	1.28	1084	1084	0.64	0.40	24.2	0.96	0.00	0



Stellar Parameters For KIC 008719419

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6878^{+190}_{-285}	$4.012^{+0.293}_{-0.158}$	$-0.380^{+0.300}_{-0.300}$	$1.844^{+0.464}_{-0.638}$	$1.278^{+0.182}_{-0.203}$	$0.287^{+0.565}_{-0.127}$
	+3%/-4%	+7%/-4%	+79%/-79%	+25%/-35%	+14%/-16%	+197%/-44%
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 008719419-01 / KOI 3506.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-940 ± 119	$61.12^{+9.22}_{-10.47}$	1677^{+120}_{-139}	2808^{+81}_{-94}	$1.847^{+0.740}_{-0.462}$
Alt.	-147 ± 33	$37.94^{+6.33}_{-7.13}$	1680^{+125}_{-155}	2395^{+131}_{-166}	$0.740^{+0.434}_{-0.239}$

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

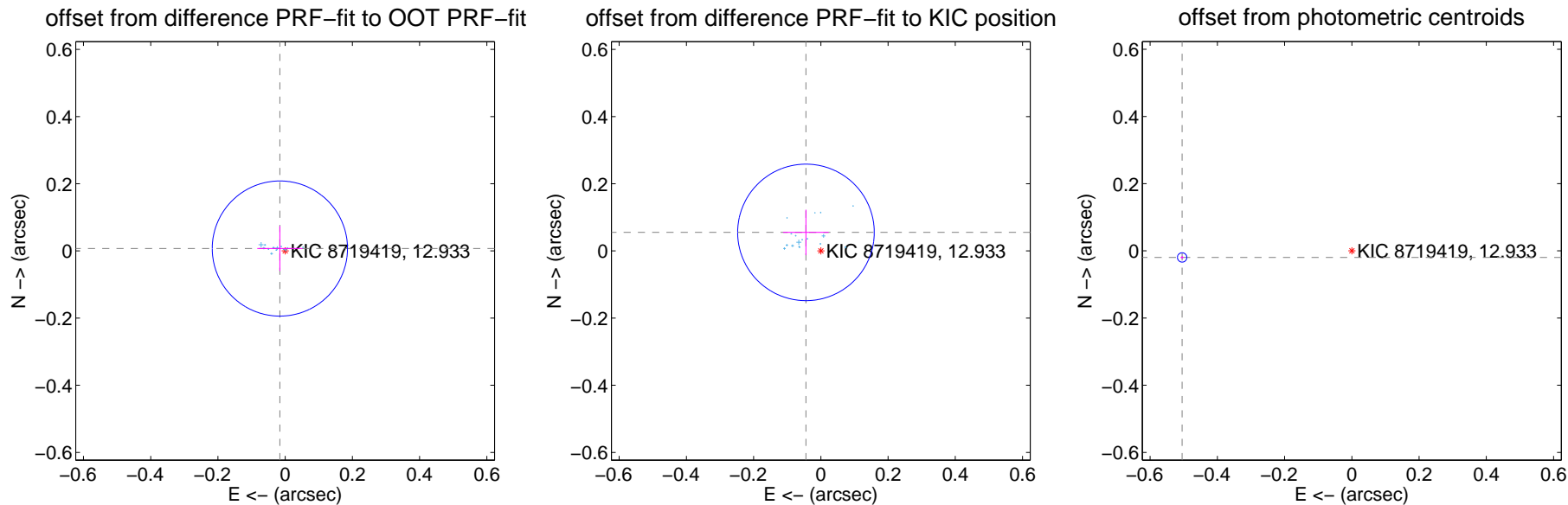
DV Centroid Data

Supplemental centroid analysis for 008719419-01. Kepler magnitude: 12.93. Transit SNR 667.36

There are 17 quarters with good PRF difference image offsets

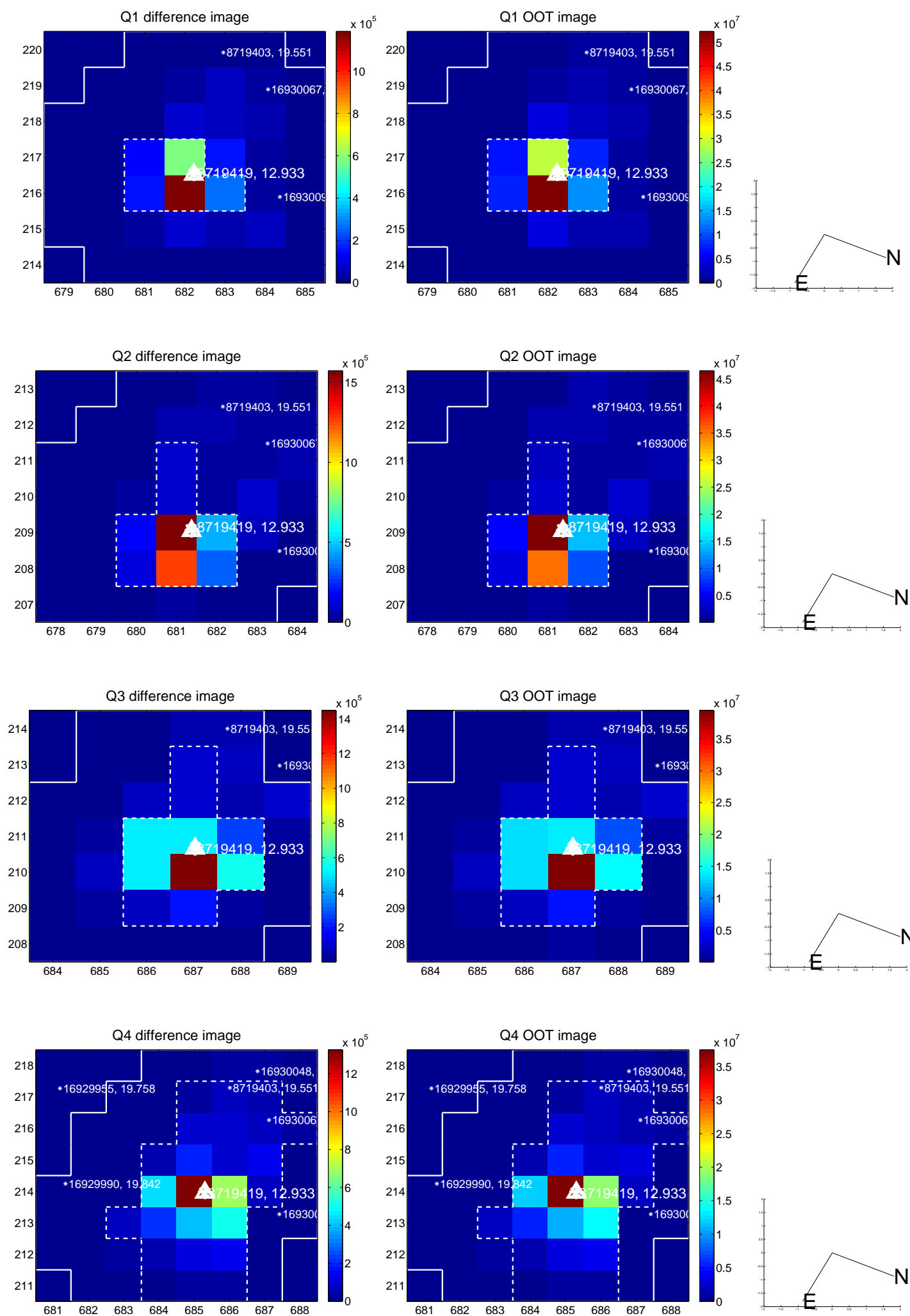
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.017 ± 0.067	0.26	0.016 ± 0.067	0.007 ± 0.067
PRF-fit source offset from KIC position	0.071 ± 0.068	1.04	0.044 ± 0.068	0.055 ± 0.068
photometric centroid source offset	0.51 ± 0.00	108.90	0.50 ± 0.00	-0.02 ± 0.00

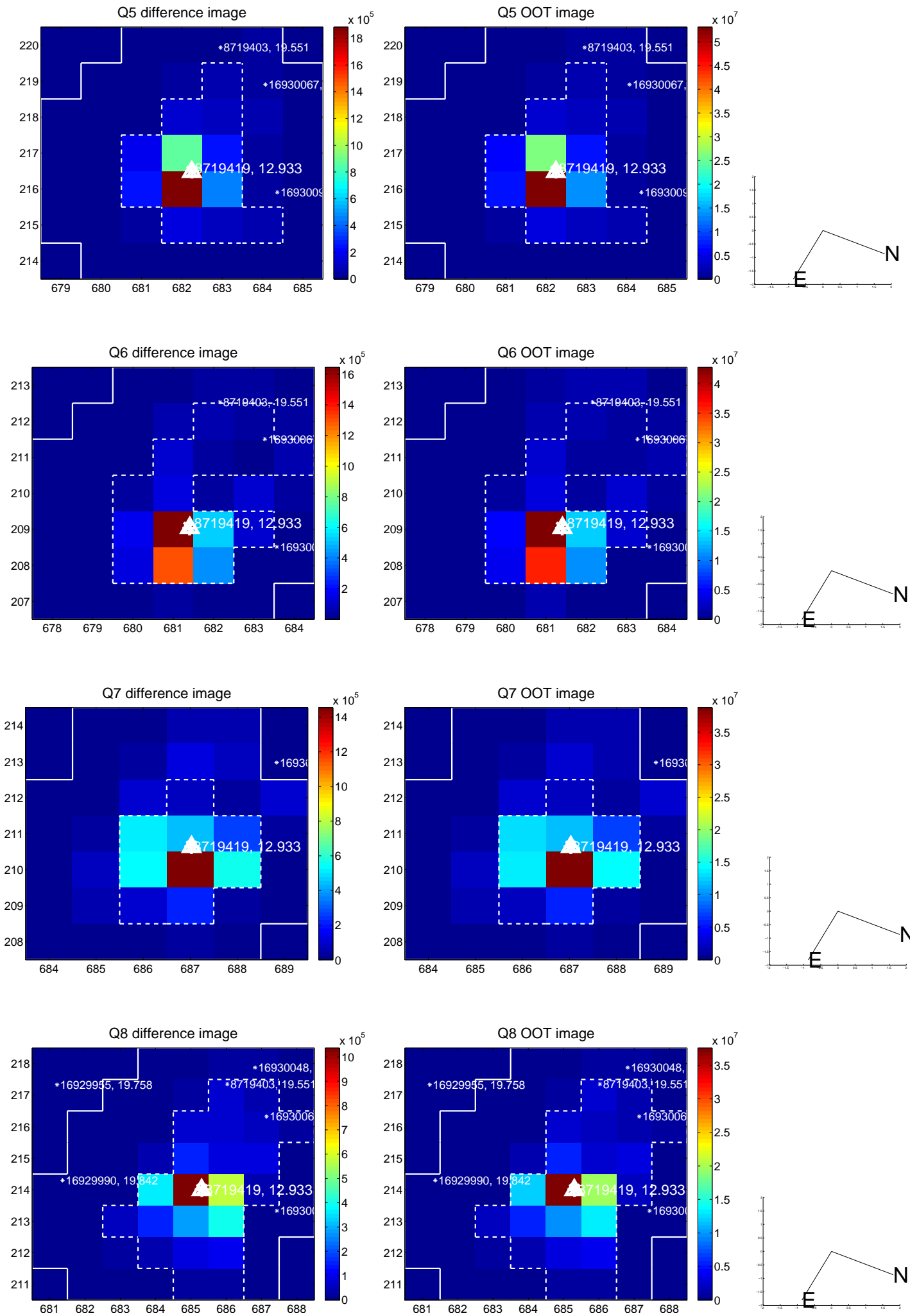


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

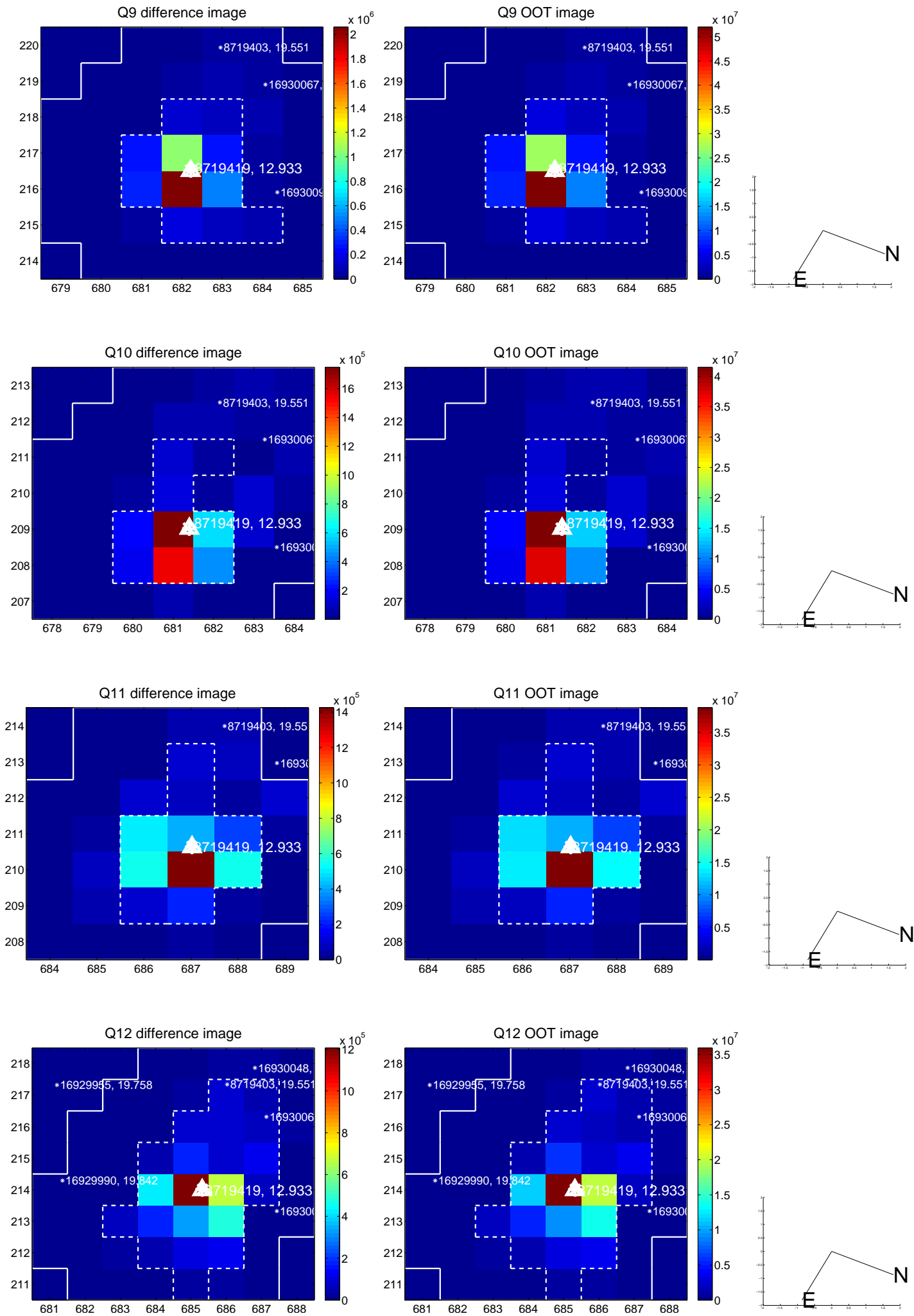
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



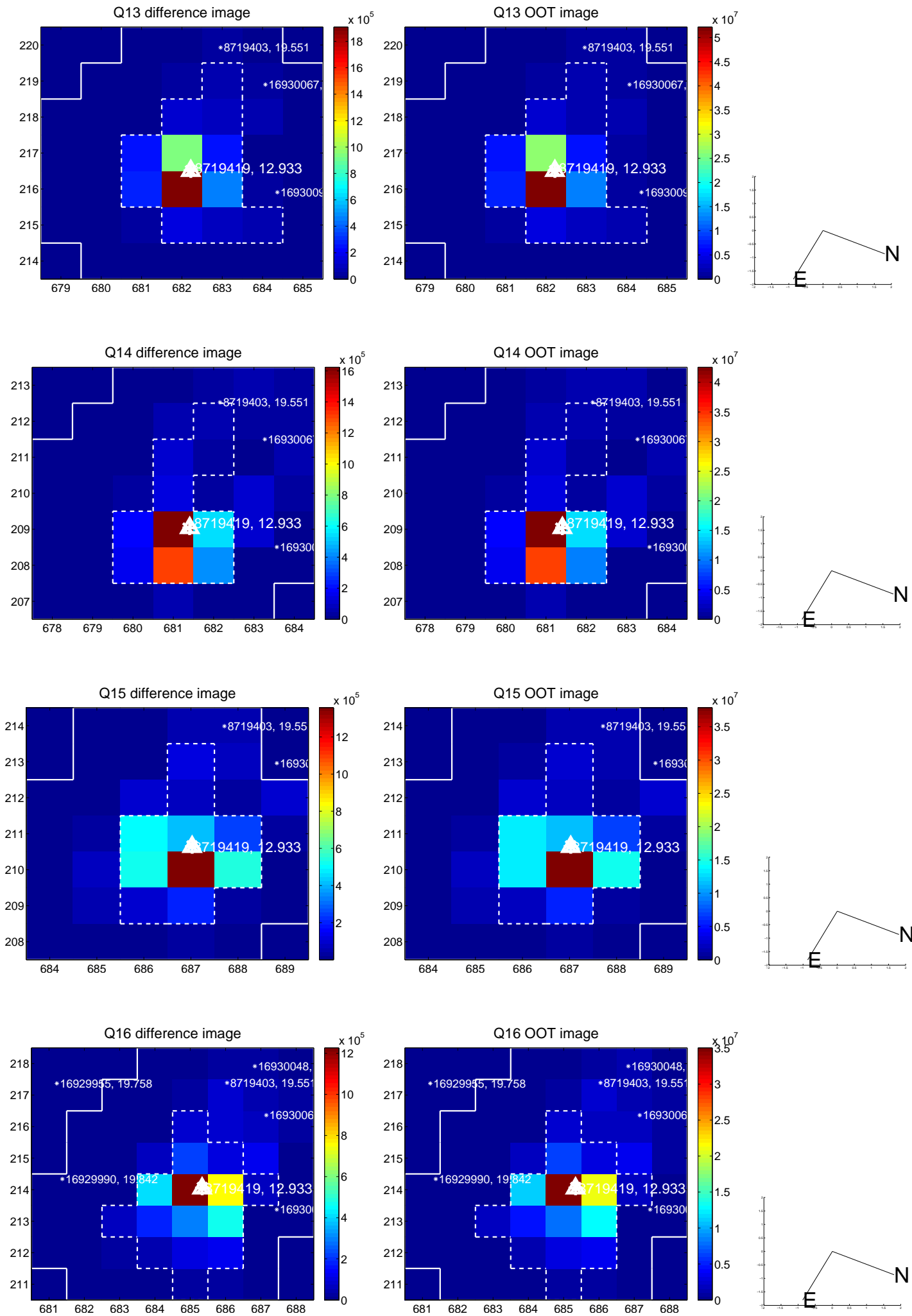
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



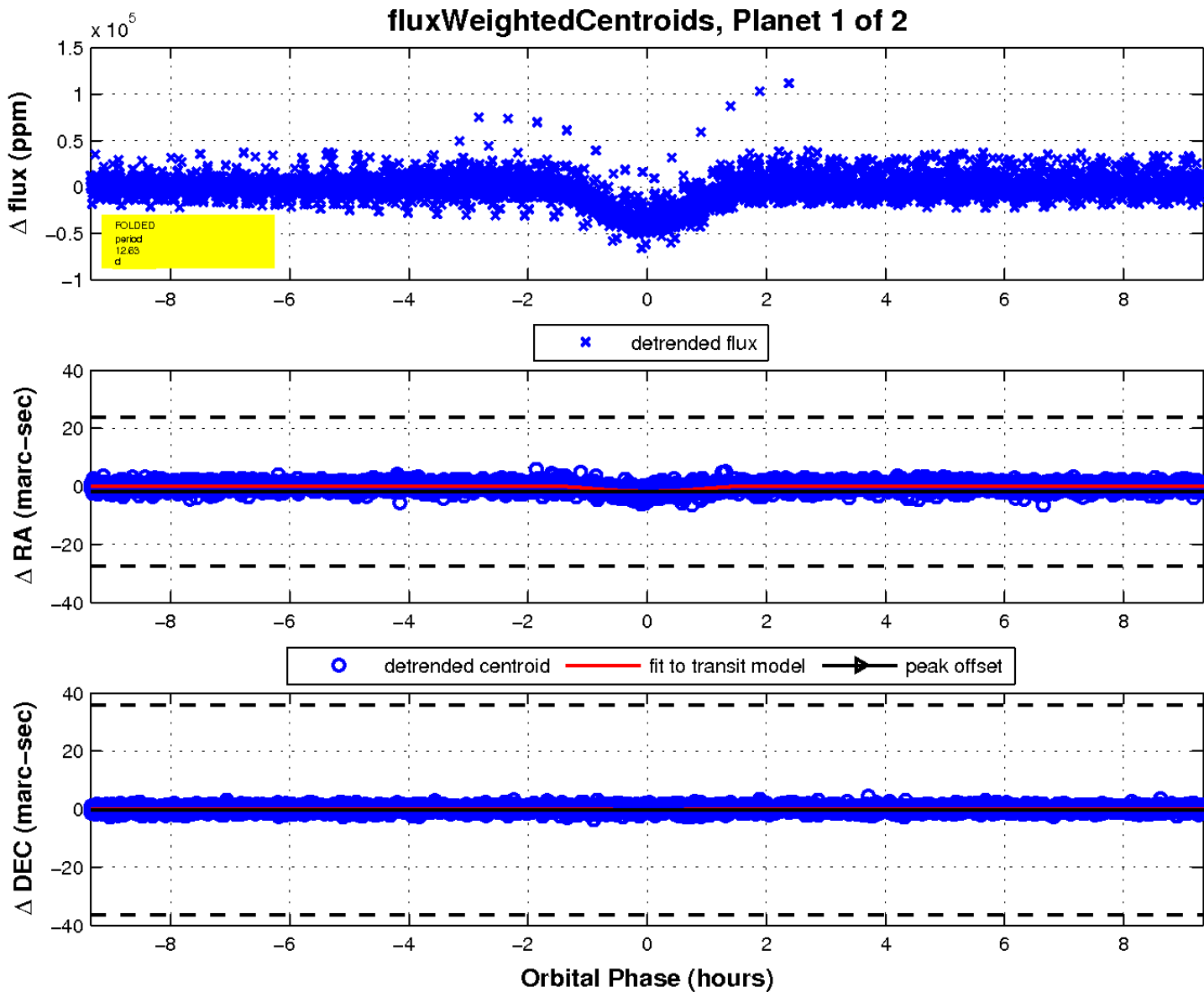
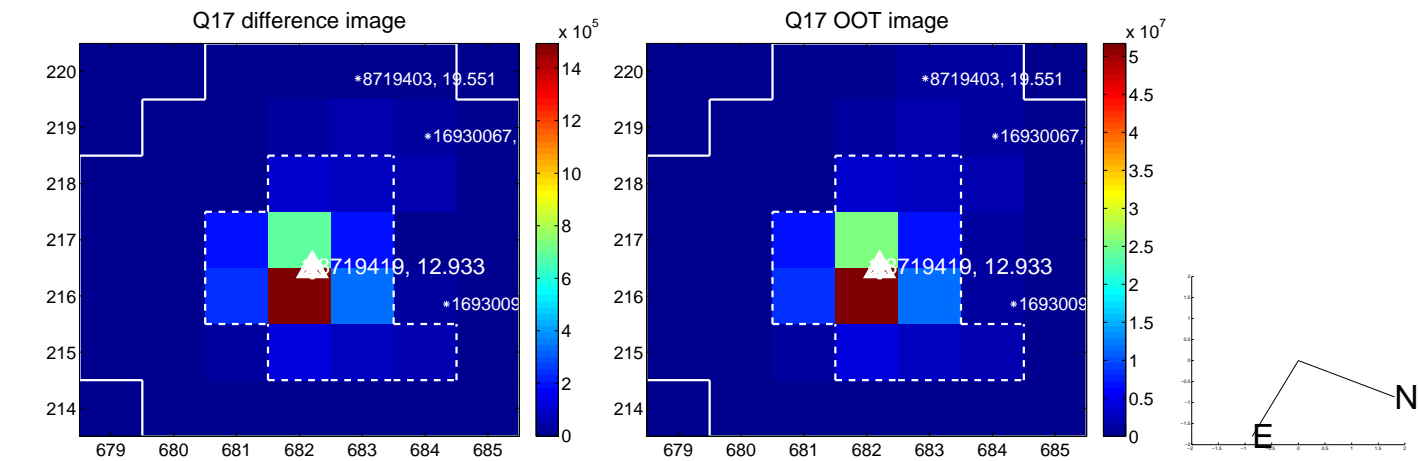
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

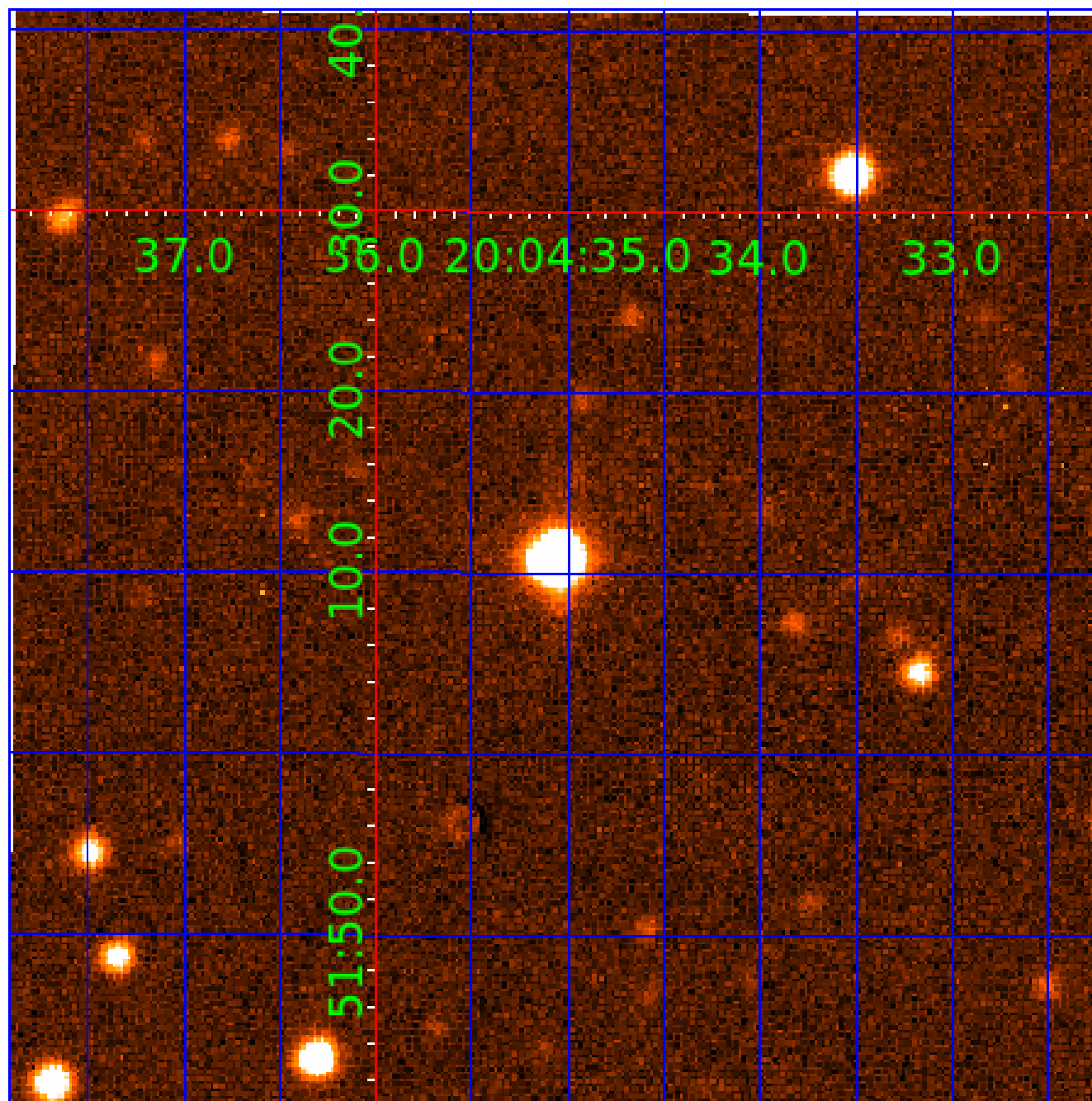


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008719419

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})
008719419-01	OBS	3506.01	12.625311	140.060765	37844.8	3.116	464.9	667.4	1.84	6878	61.51	514.75
008719419-02	OBS	No	371.021938	408.657093	1814.9	3.000	33.1	-1.0	1.84	6878	7.95	5.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008719419-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_ALT—DEEP_V_SHAPED
008719419-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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 008719419-02

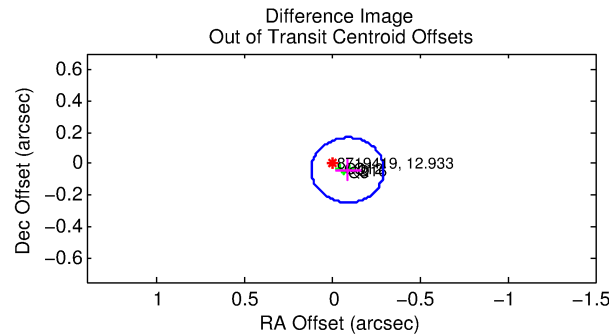
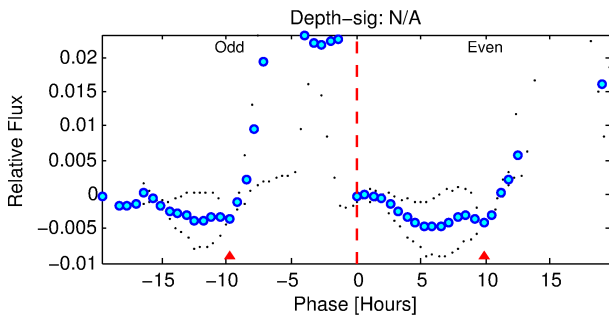
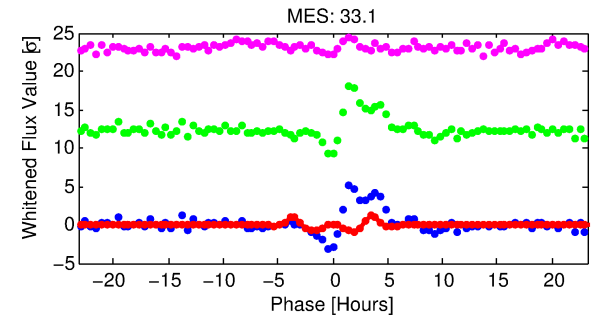
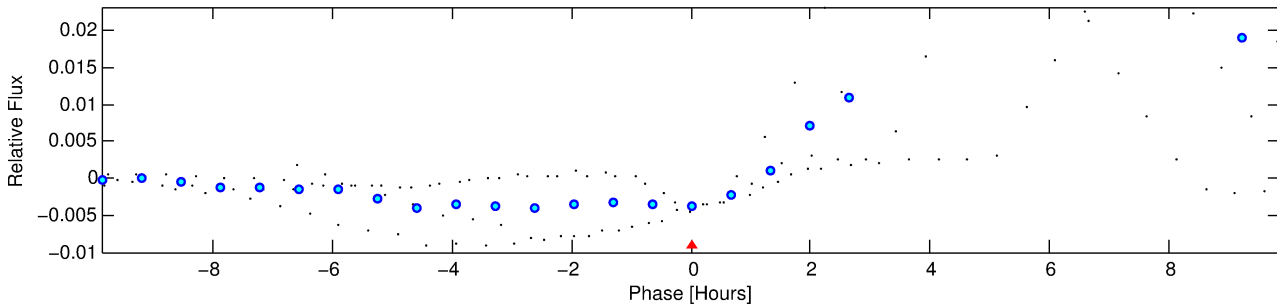
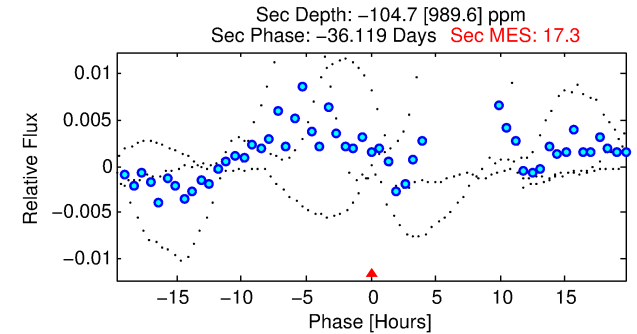
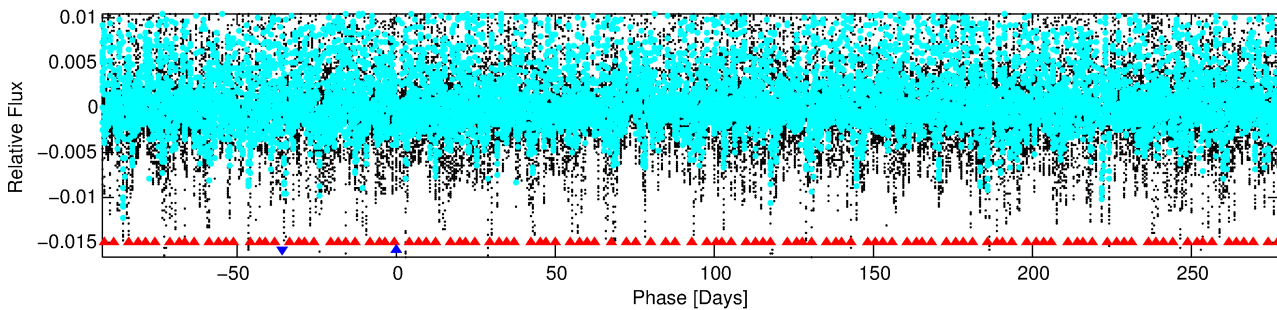
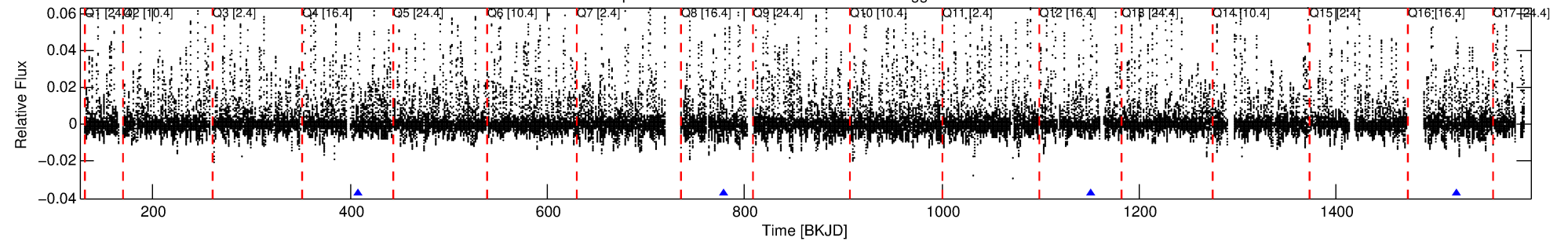
No Significant Match Found

DV One-Page Summary

KIC: 8719419 Candidate: 2 of 2 Period: 371.022 d

KOI: K03506 Corr: No Ephemeris Match

Kp: 12.93 R*: 1.84 Rs Teff: 6878.0 K Logg: 4.01 Fe/H: -0.380



TPS TCE Results:

Period = 371.02194 d
Epoch = 408.6571 BKJD

DV fit results are unavailable

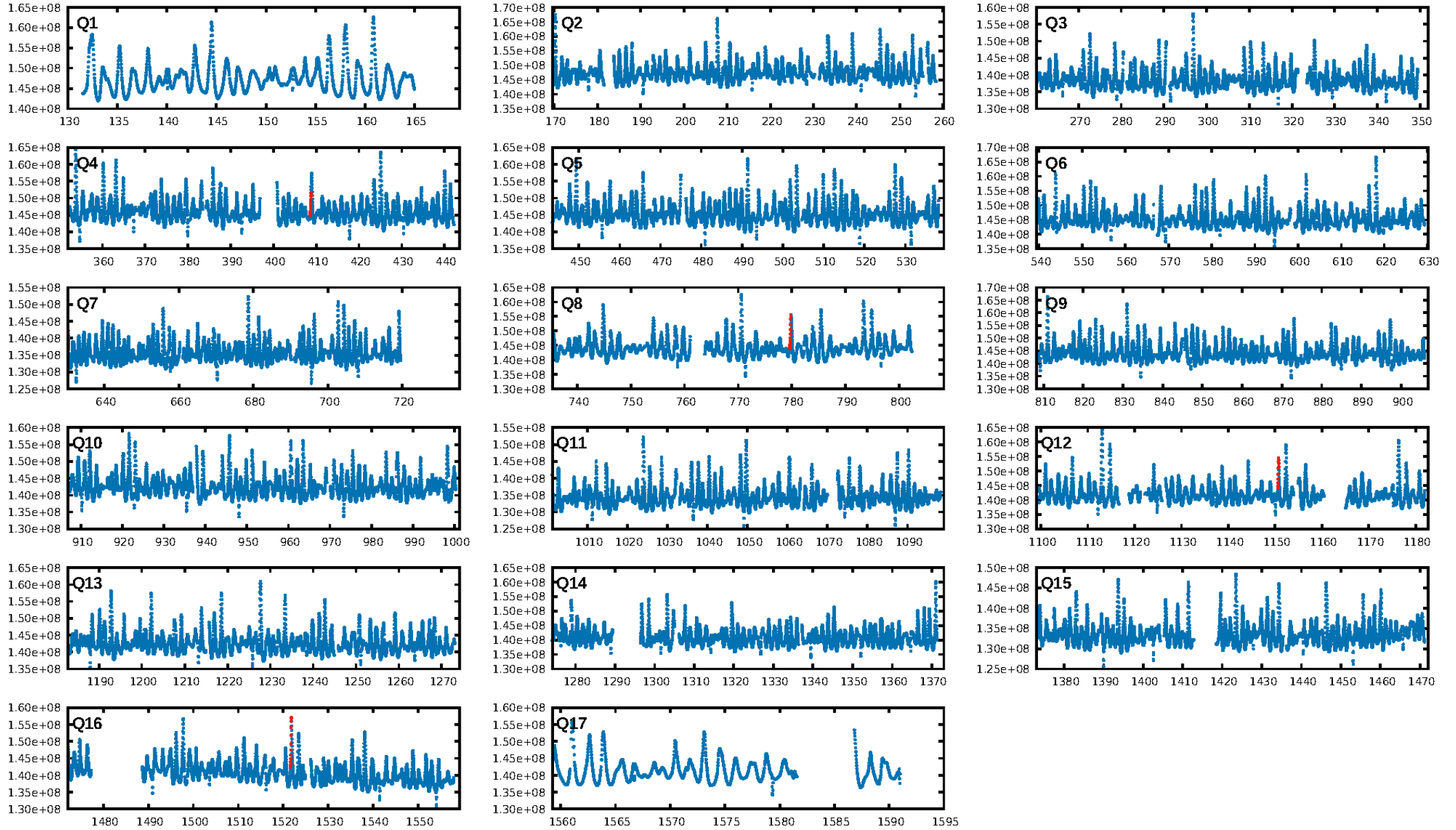
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1988.62σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.1736
Centroid-sig: 86.0%
Centroid-so: 0.505 arcsec [2.73σ]
OotOffset-rm: 0.096 arcsec [1.40σ]
KicOffset-rm: 0.062 arcsec [0.91σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:43:22 Z

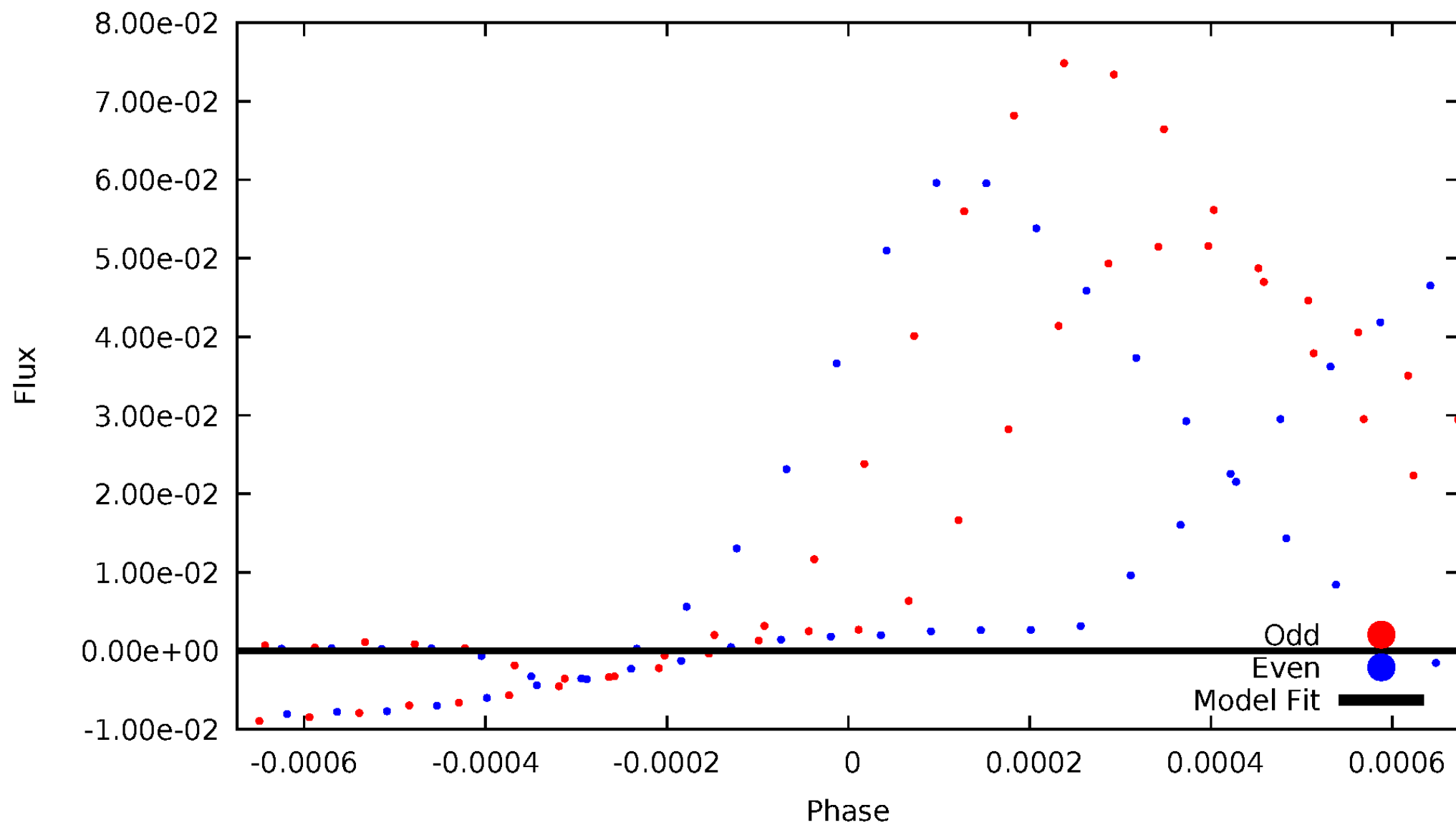
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008719419-02, PDC Light Curves



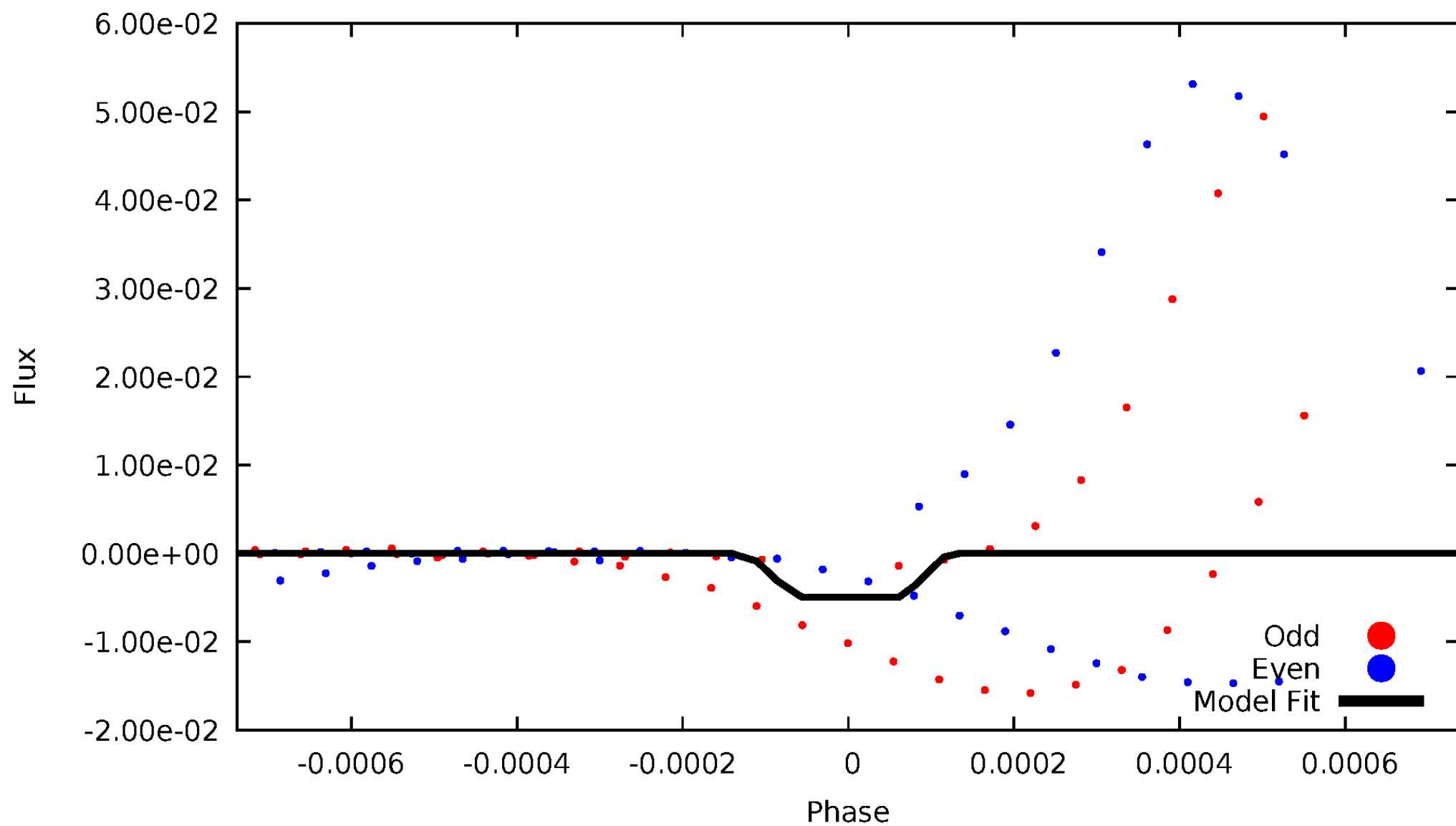
DV Odd/Even

TCE 008719419-02



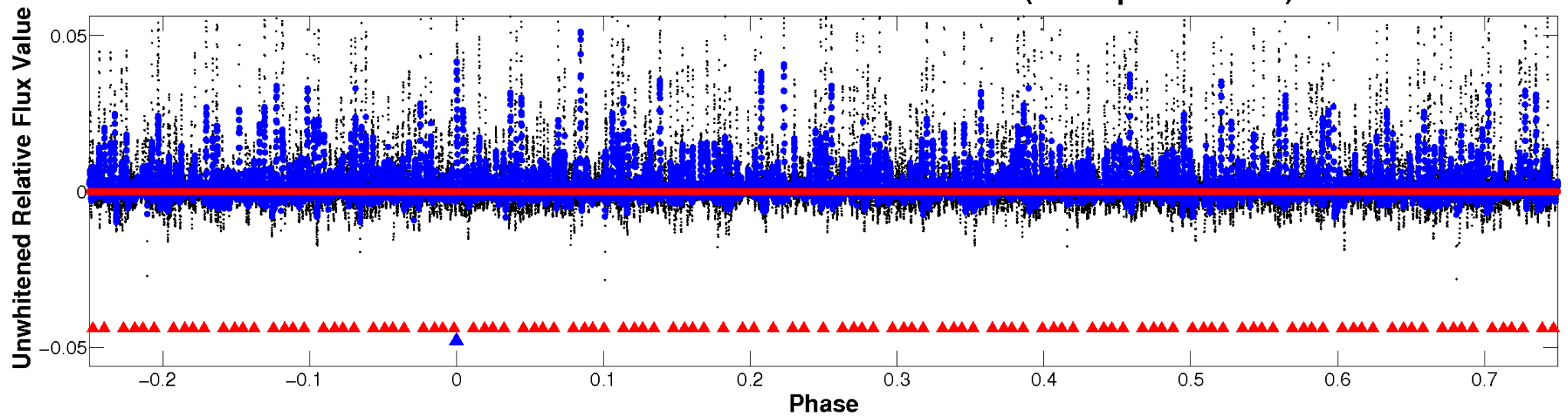
ALT Odd/Even

TCE 008719419-02

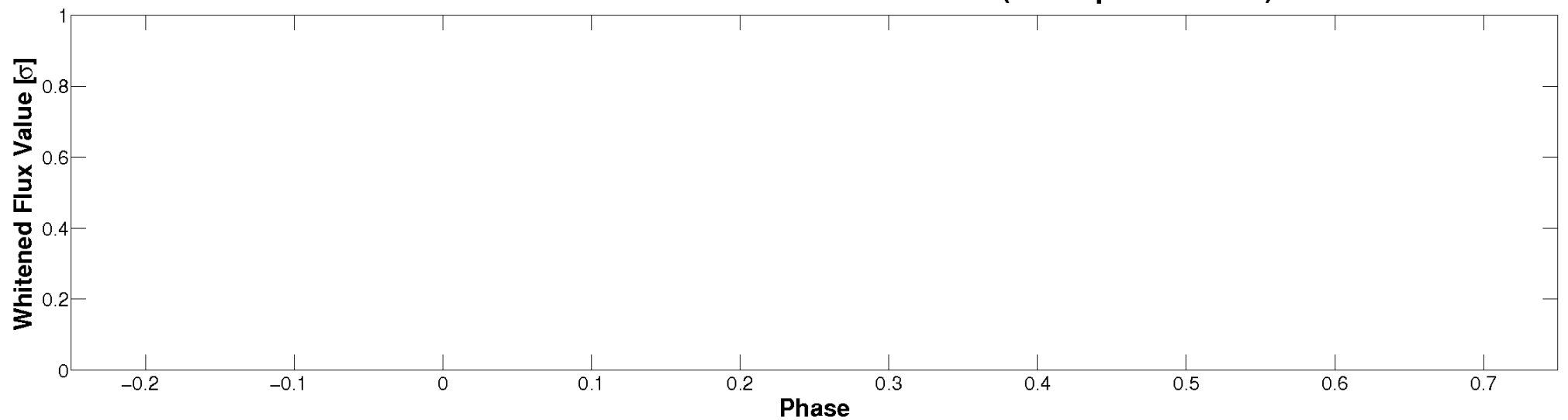


Non-Whitened Vs. Whitened Light Curve

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

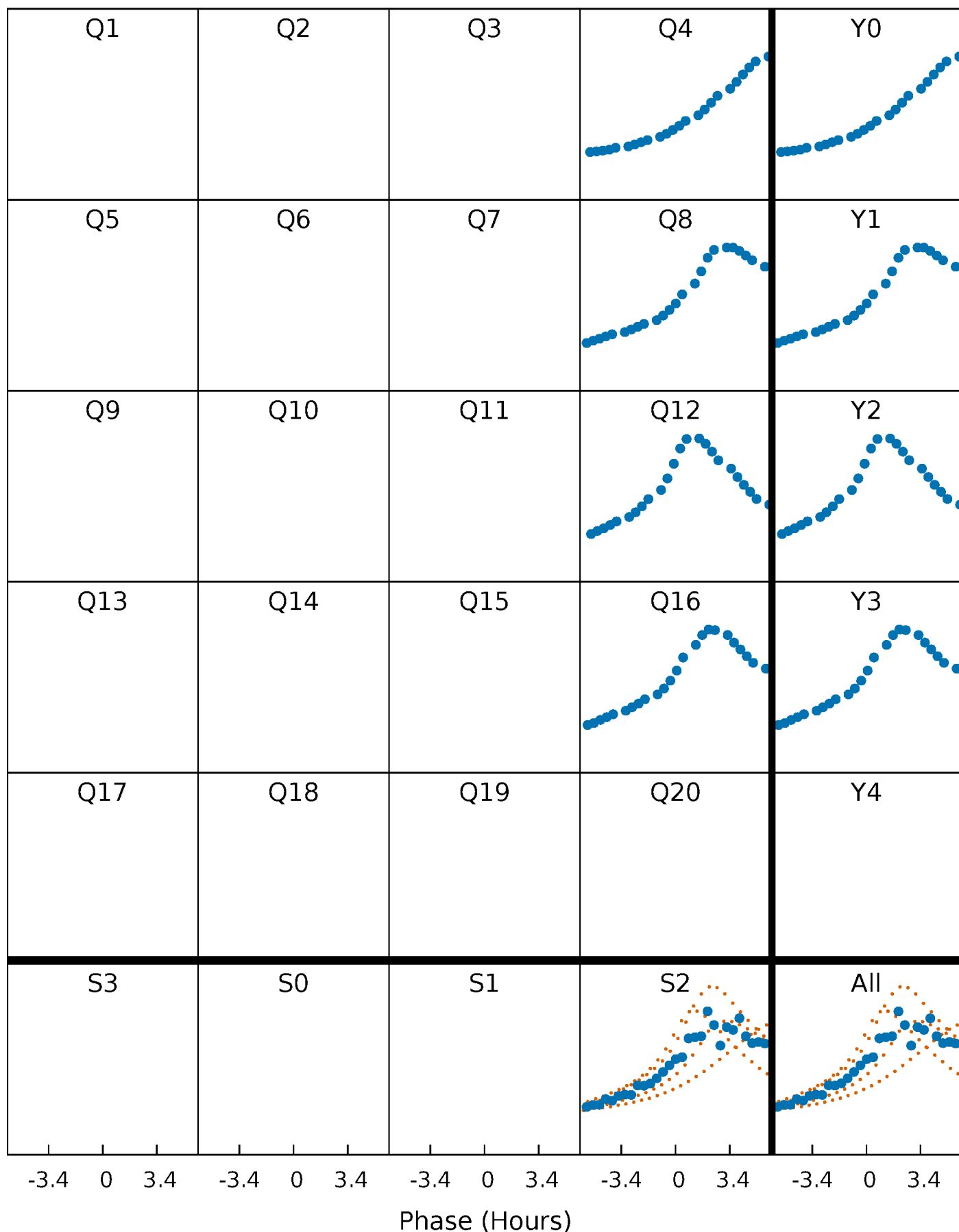


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



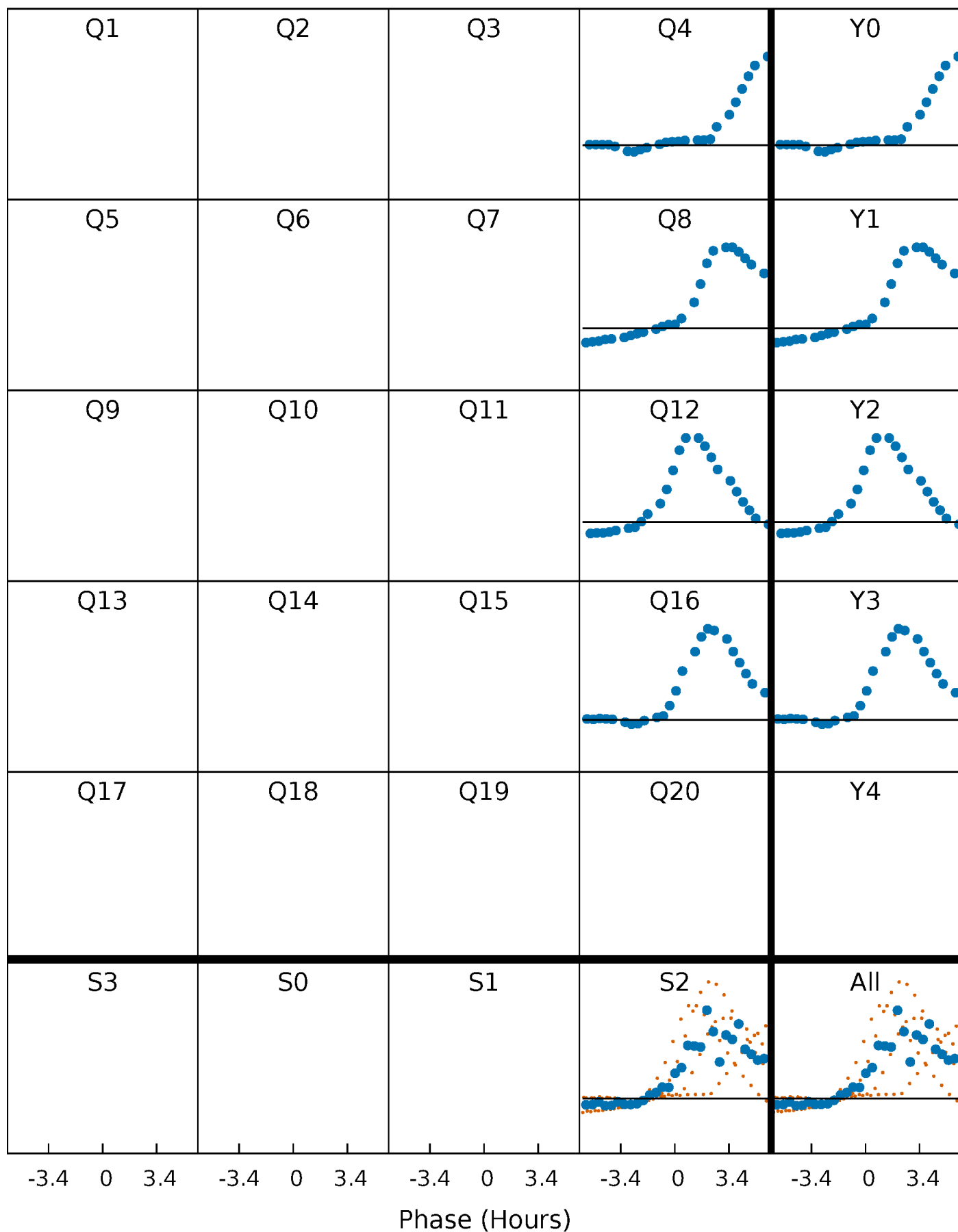
PDC Quarter-Phased Transit Curves

TCE 008719419-02 P=371.021938 Days $T_0=408.657093$ (BKJD)



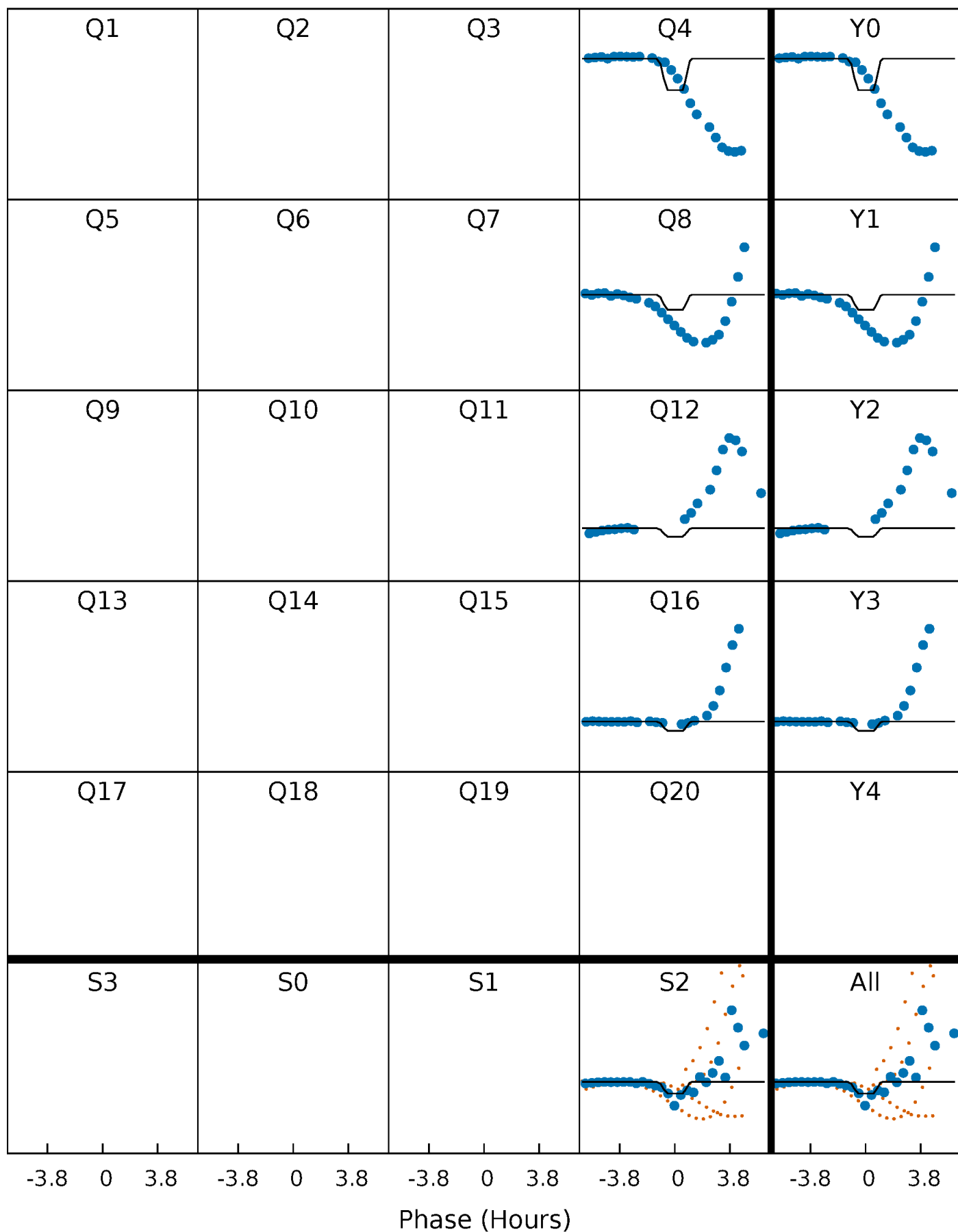
DV Quarter-Phased Transit Curves

TCE 008719419-02 P=371.021938 Days $T_0=408.657093$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

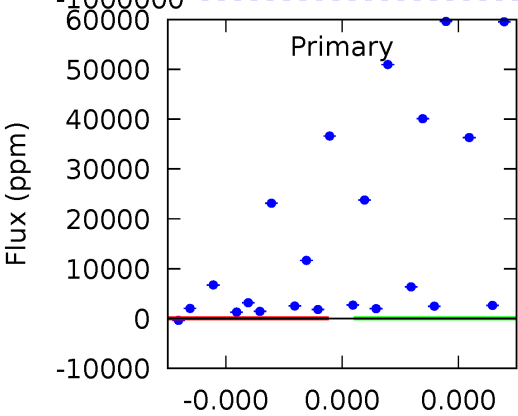
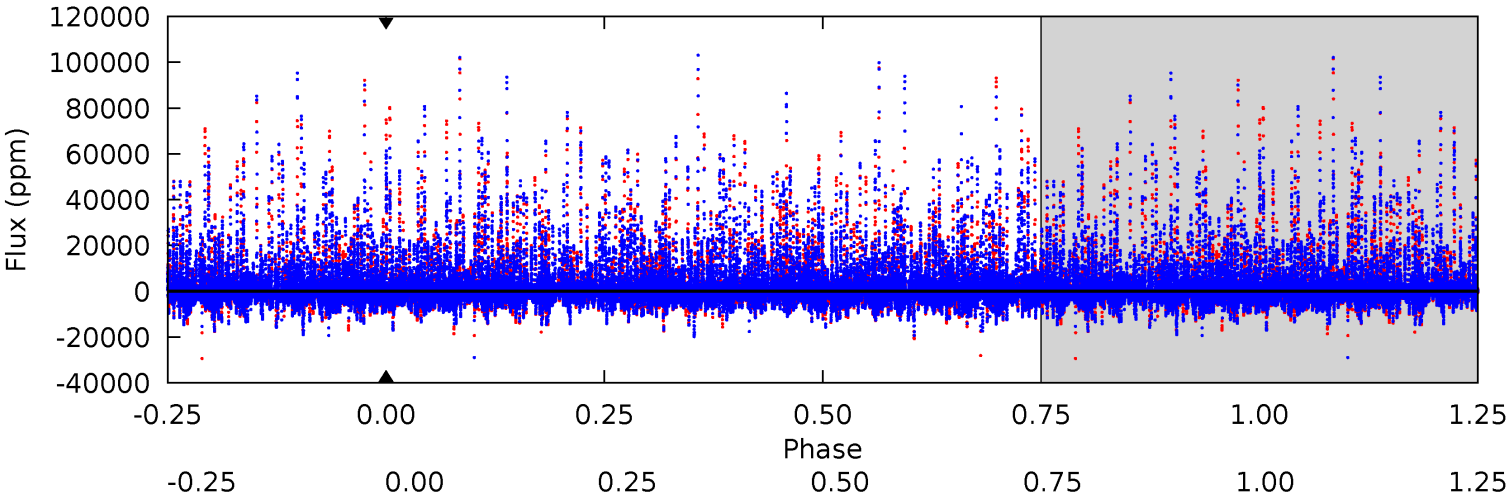
TCE 008719419-02 P=371.021938 Days $T_0=408.538893$ (BKJD)



DV Model-Shift Uniqueness Test

008719419-02, P = 371.021938 Days, E = 37.635155 Days

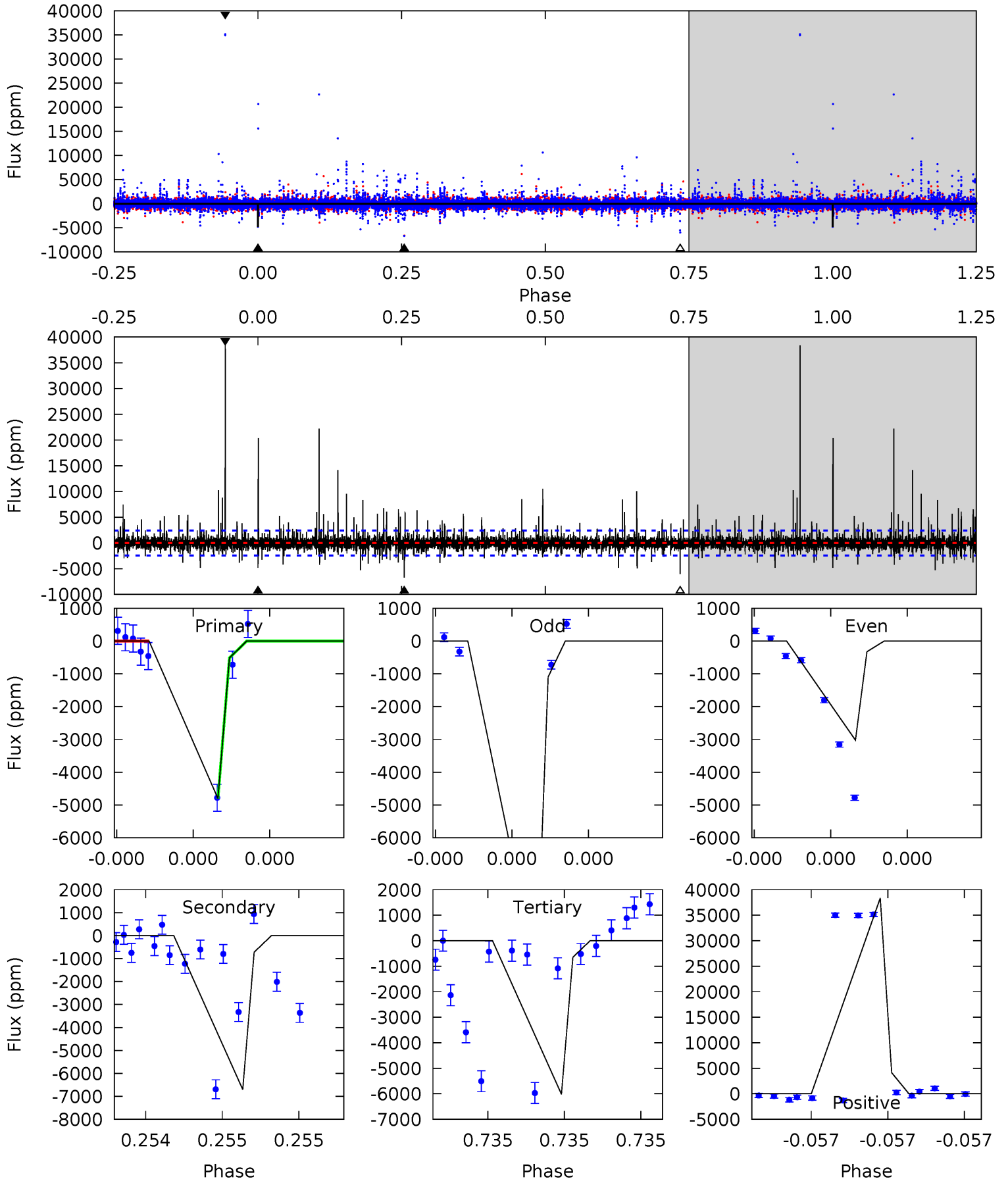
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008719419-02, P = 371.021938 Days, E = 37.516955 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	15.8	14.2	90.4	5.70	3.67	1.45	-2.86	-79.1	1.61	-74.6	9.54	1.73	0.85	0



Stellar Parameters For KIC 008719419

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6878^{+190}_{-285}	$4.012^{+0.293}_{-0.158}$	$-0.380^{+0.300}_{-0.300}$	$1.844^{+0.464}_{-0.638}$	$1.278^{+0.182}_{-0.203}$	$0.287^{+0.565}_{-0.127}$
	+3%/-4%	+7%/-4%	+79%/-79%	+25%/-35%	+14%/-16%	+197%/-44%
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 008719419-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$16.88^{+15.96}_{-11.15}$	543^{+41}_{-54}	5061^{+19788}_{-26995}	$5579^{+405434}_{-324237}$
Alt.	-6704 ± 425	$19.33^{+16.63}_{-12.85}$	543^{+41}_{-49}	6148^{+6141}_{-1517}	12095^{+96298}_{-8690}

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

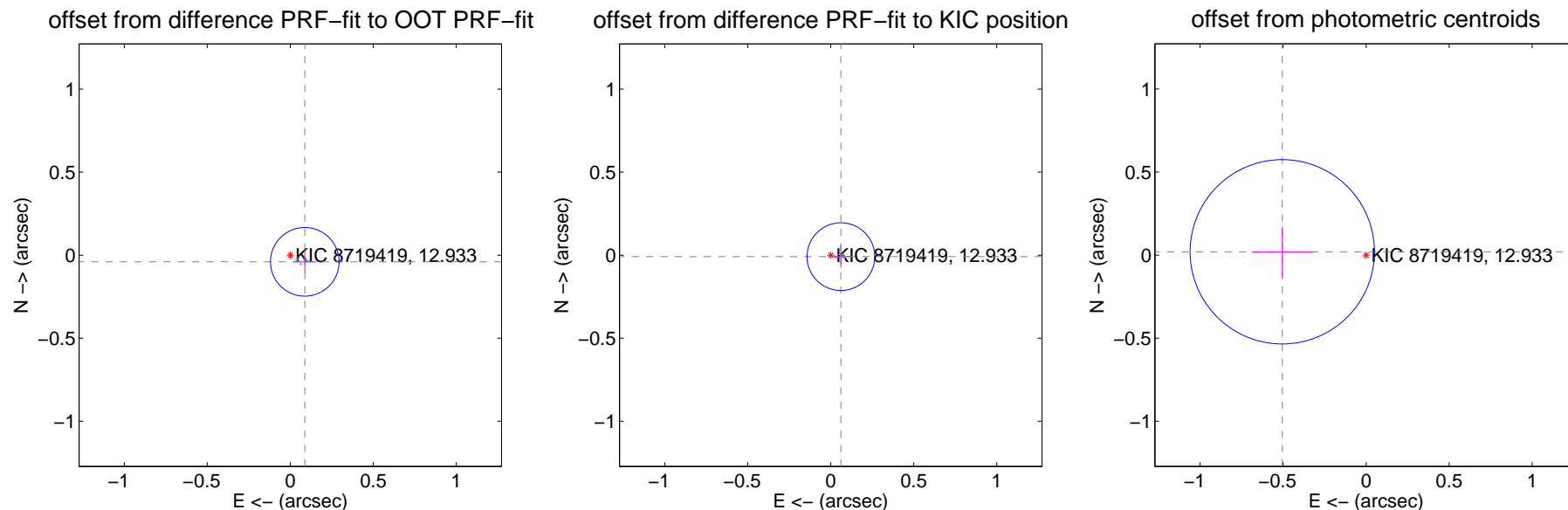
DV Centroid Data

Supplemental centroid analysis for 008719419-02. Kepler magnitude: 12.93. Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

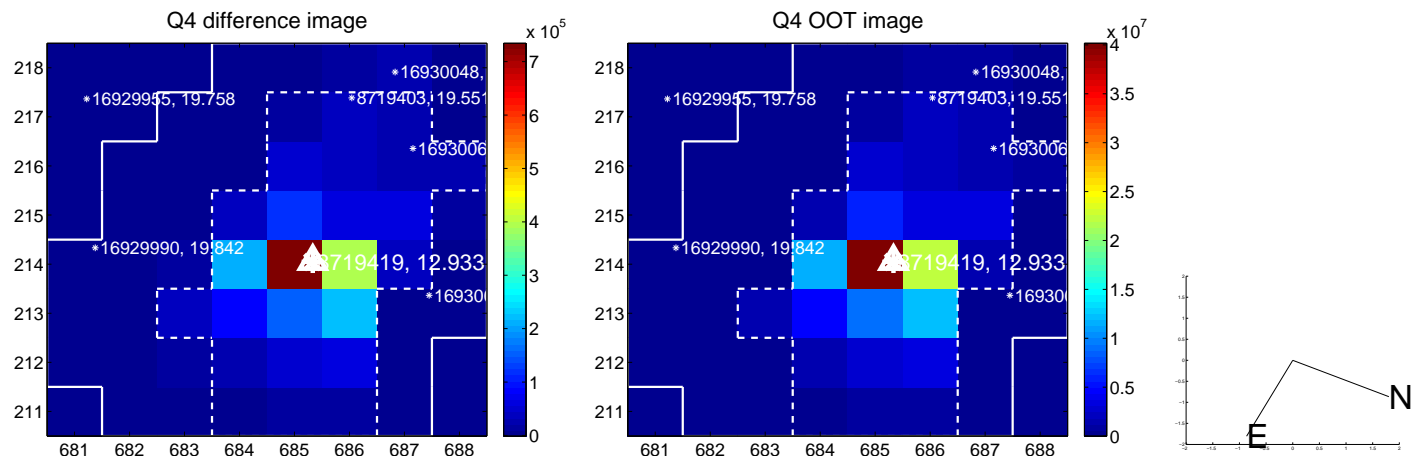
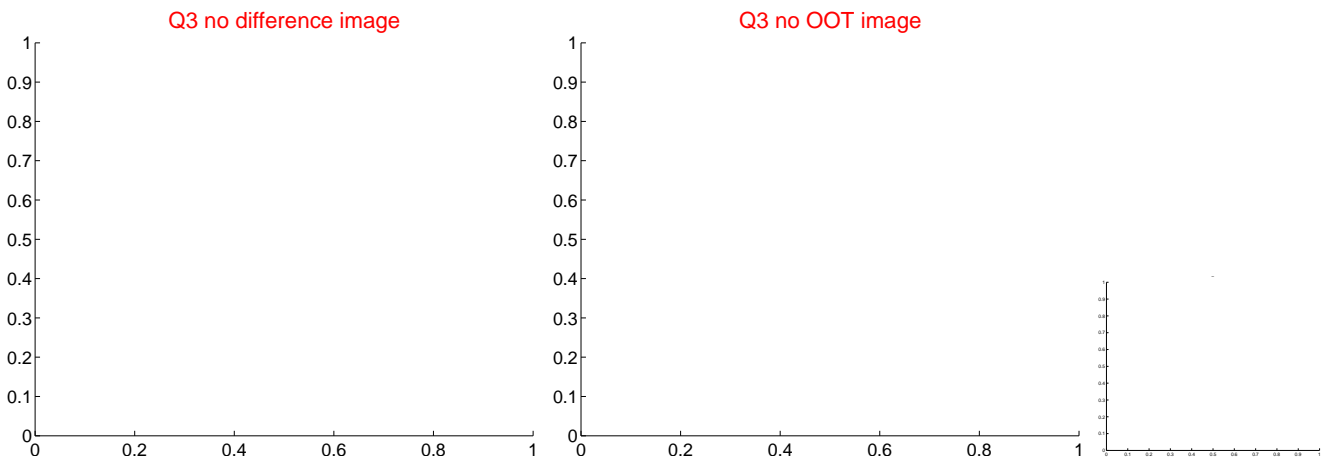
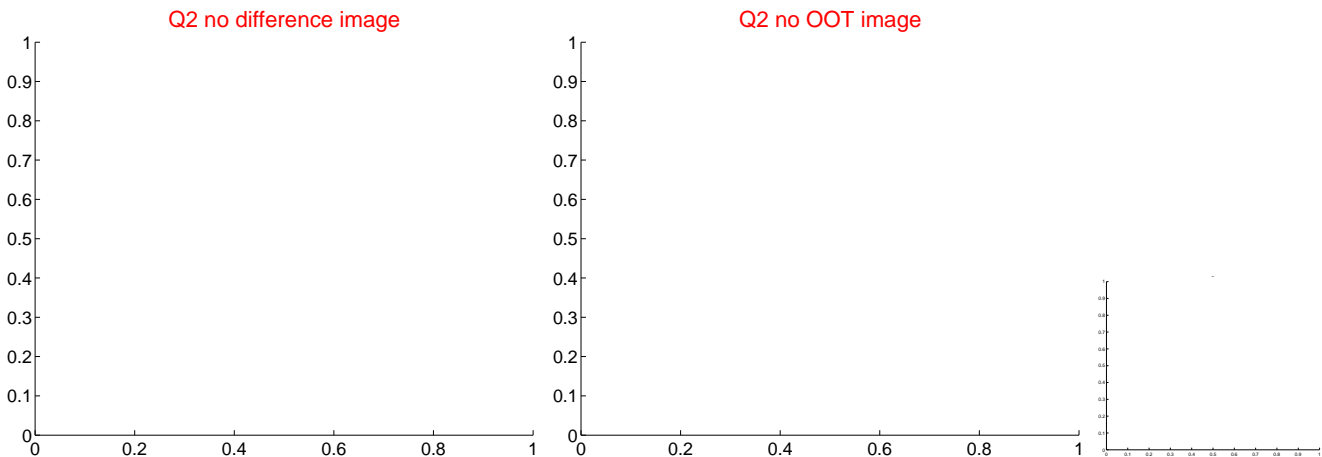
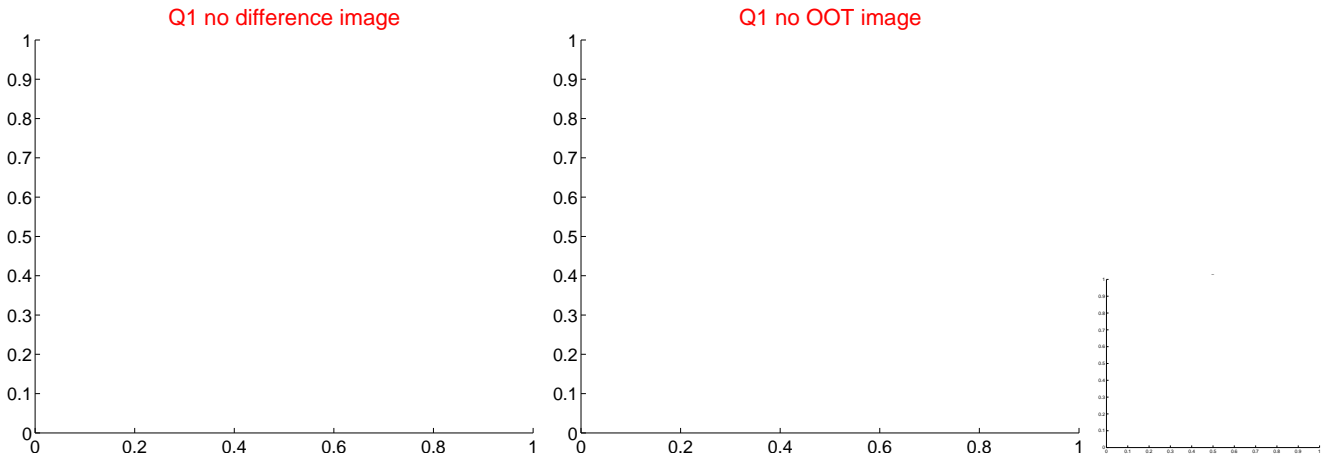
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.096 ± 0.069	1.40	-0.087 ± 0.069	-0.040 ± 0.067
PRF-fit source offset from KIC position	0.062 ± 0.068	0.91	-0.061 ± 0.068	-0.009 ± 0.067
photometric centroid source offset	0.51 ± 0.18	2.73	0.51 ± 0.19	0.02 ± 0.15

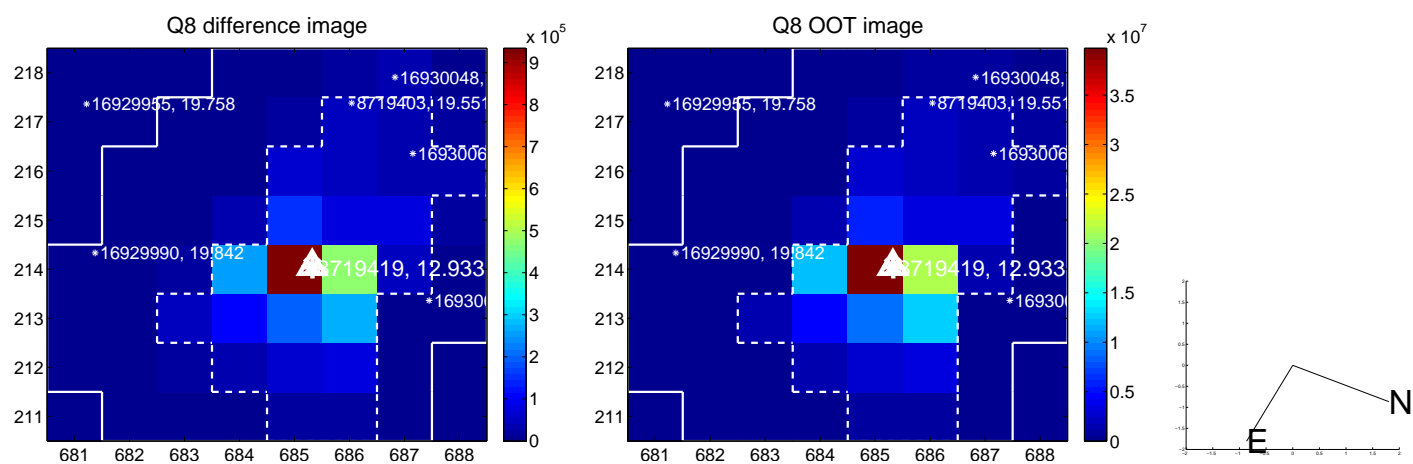
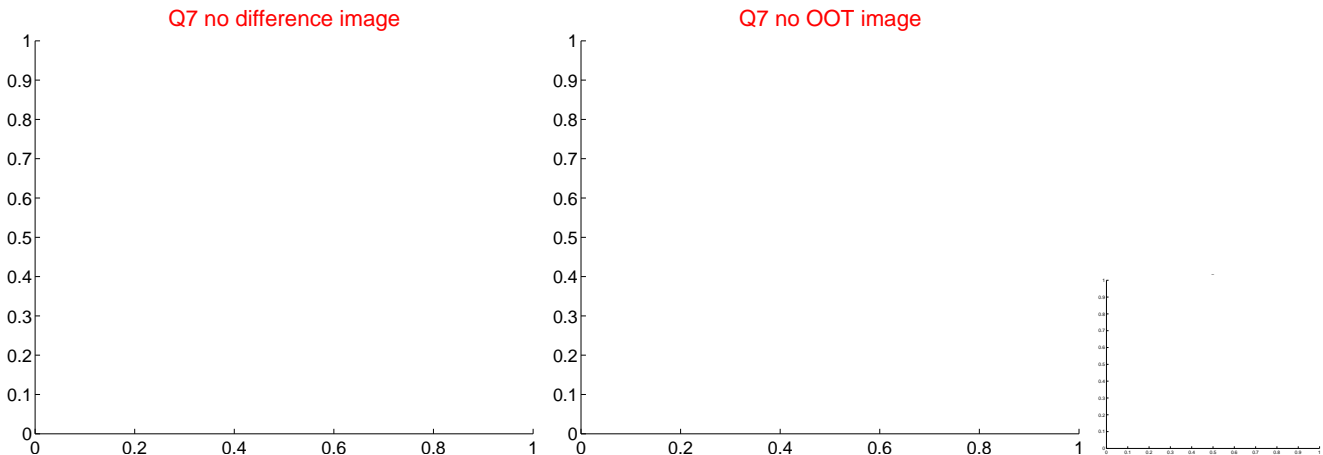
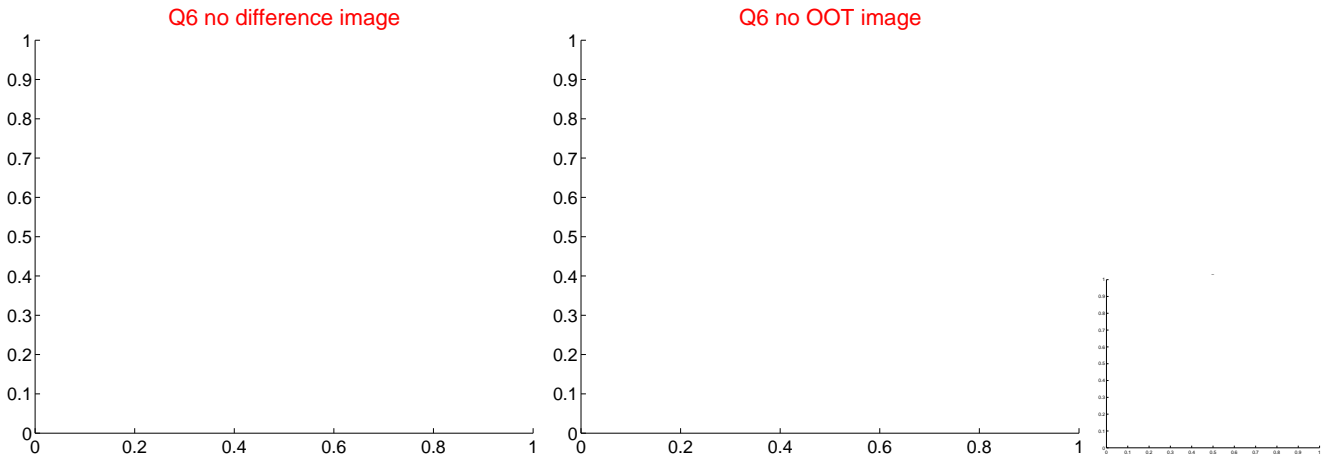
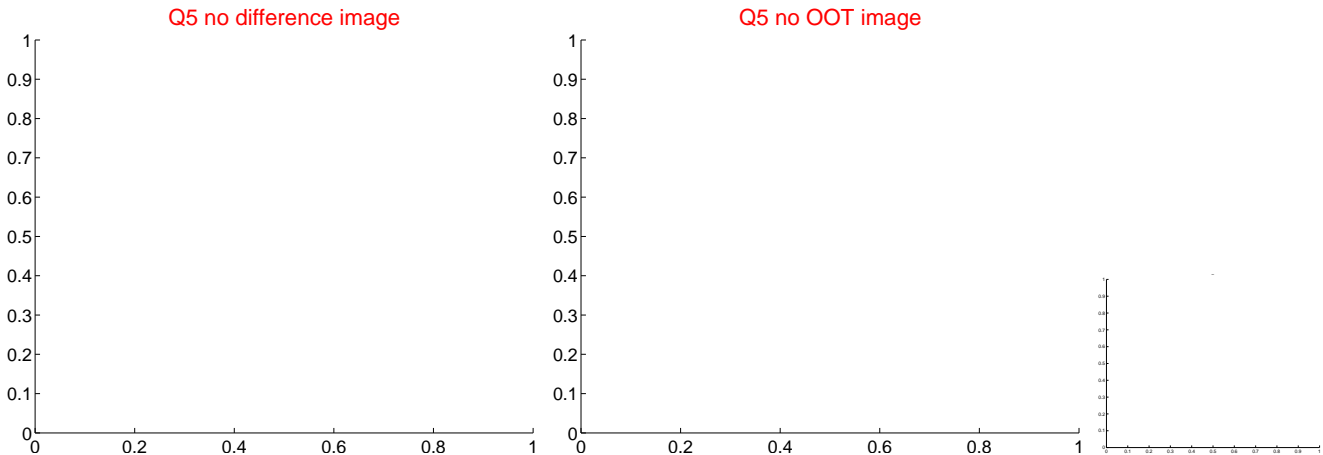


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

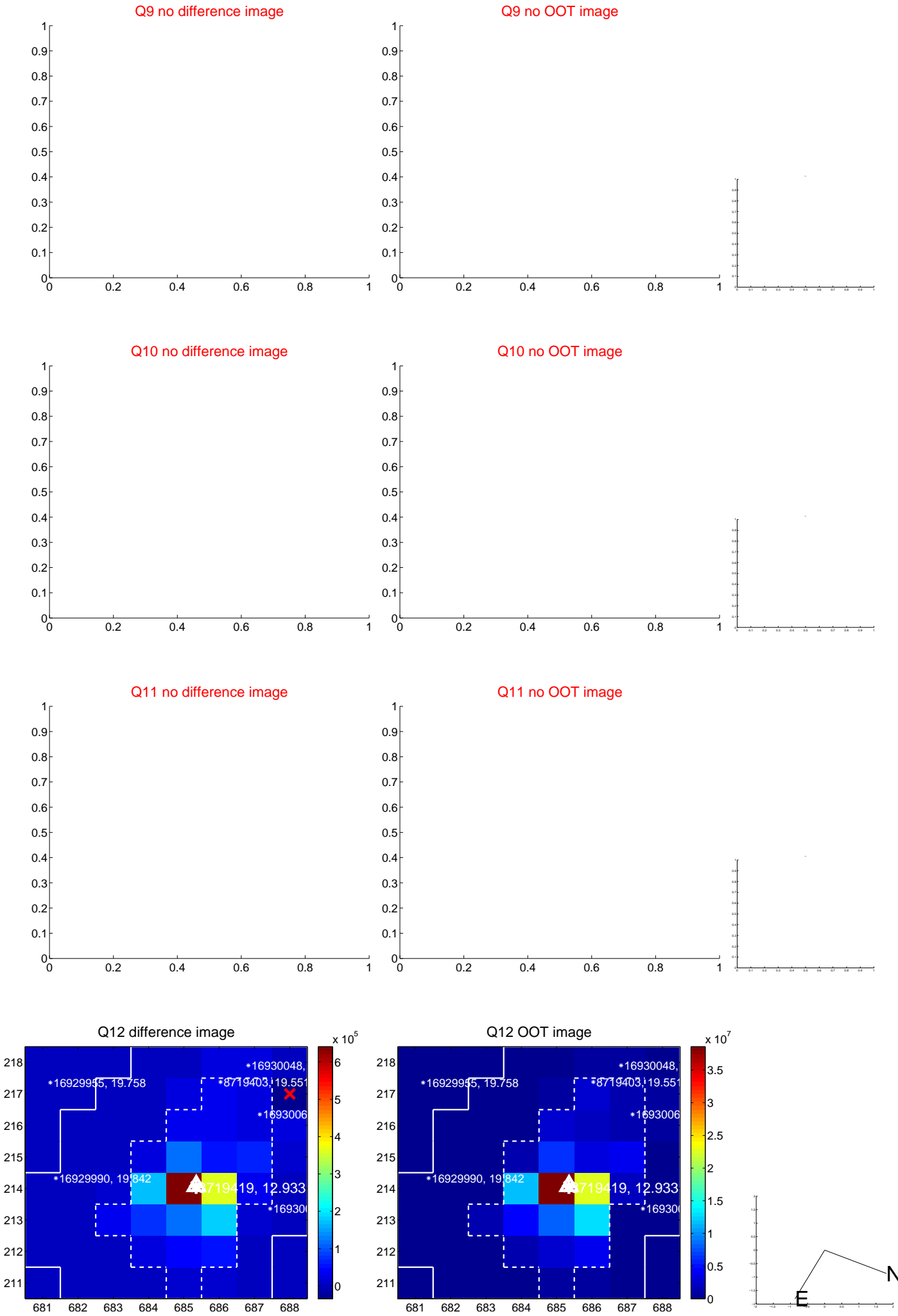
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



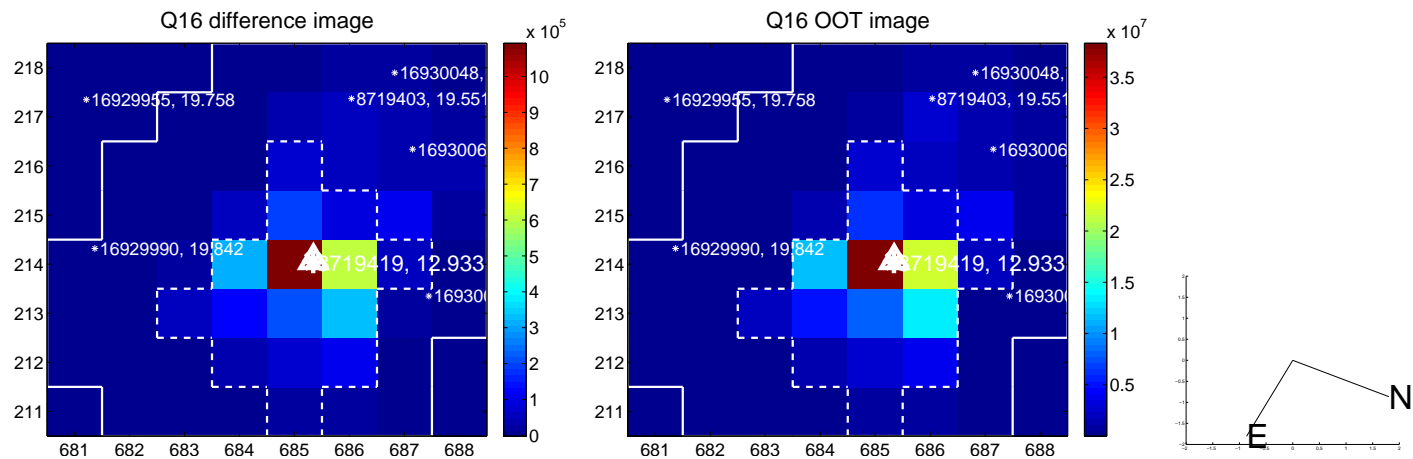
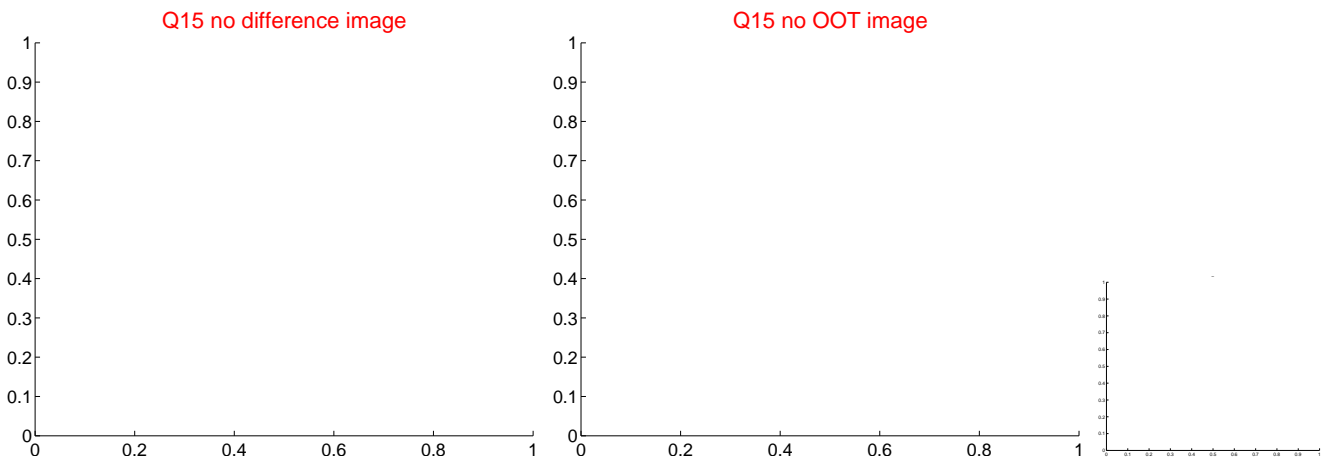
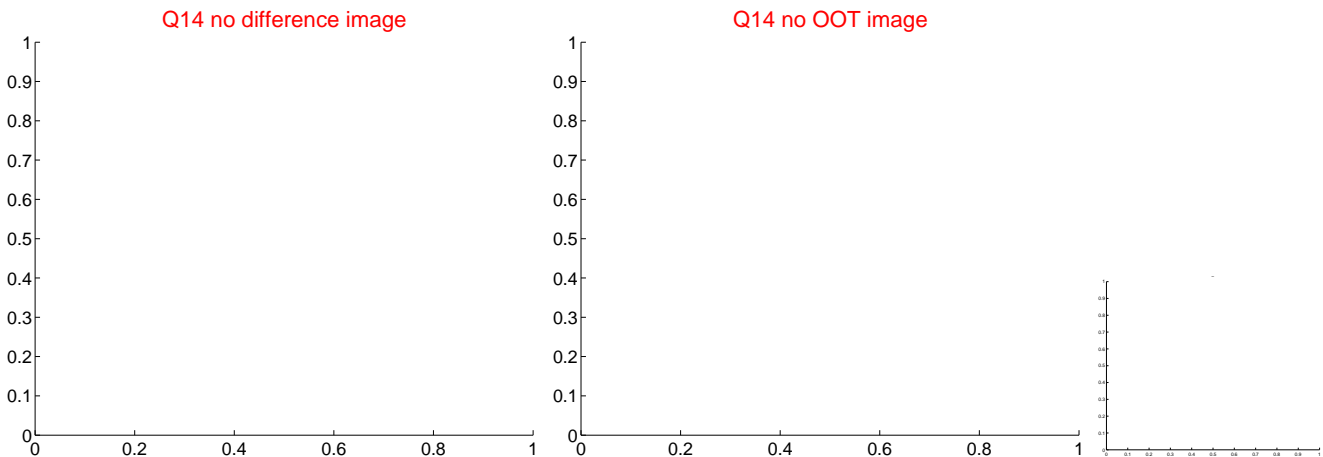
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



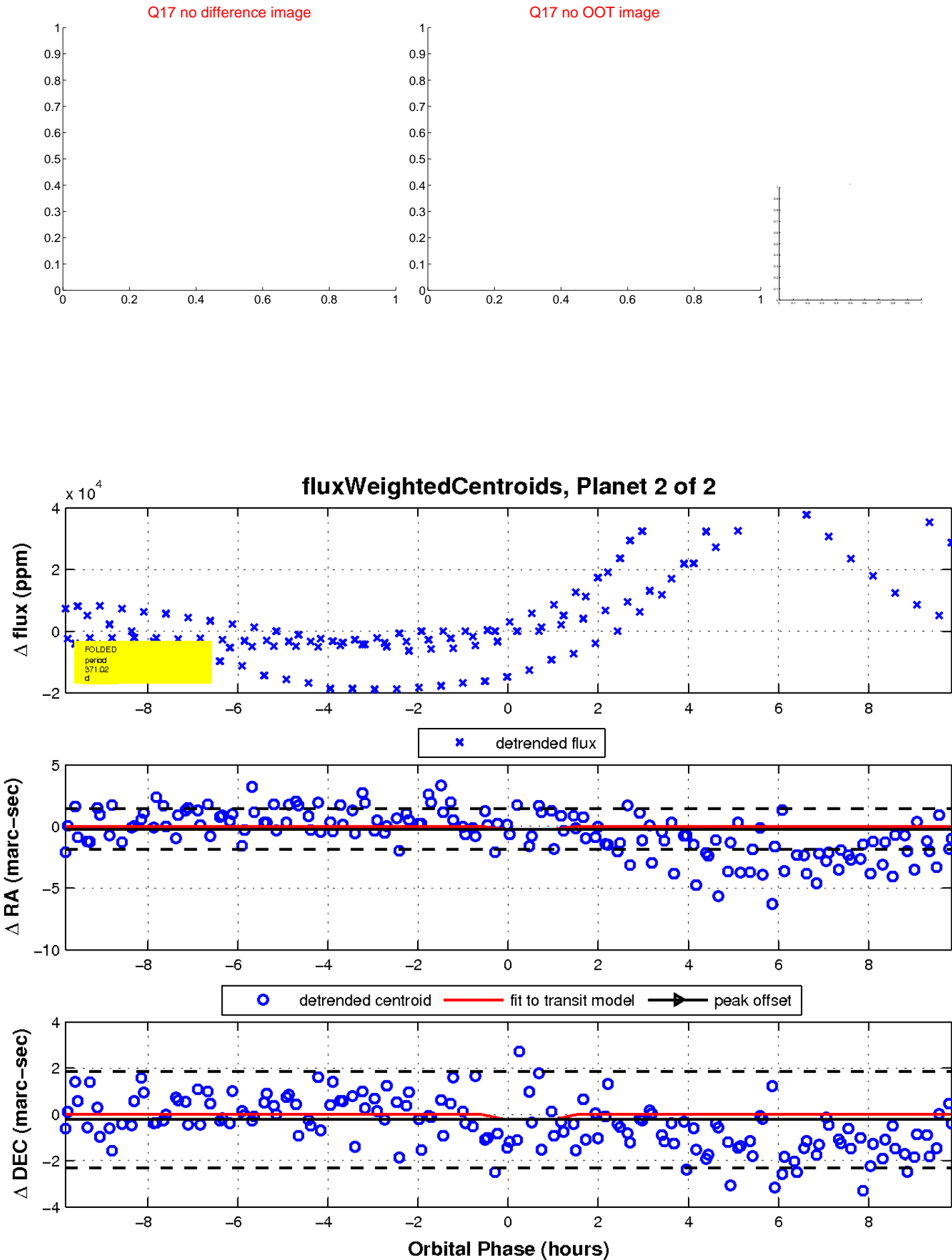
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UKIRT Image

Declination

