

KIC 007663405

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})
007663405-01	OBS	1519.01	5.144379	133.828656	305.1	2.746	17.1	18.5	0.90	5157	1.91	172.25
007663405-02	OBS	1519.02	57.132925	152.989842	416.1	4.988	8.5	9.5	0.90	5157	1.93	6.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007663405-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007663405-02	OBS	PC	0.74	0	0	0	0	NO_COMMENT

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

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

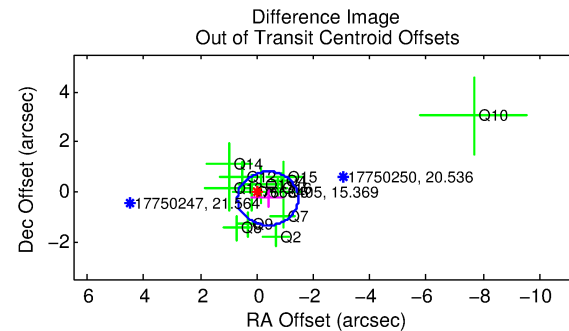
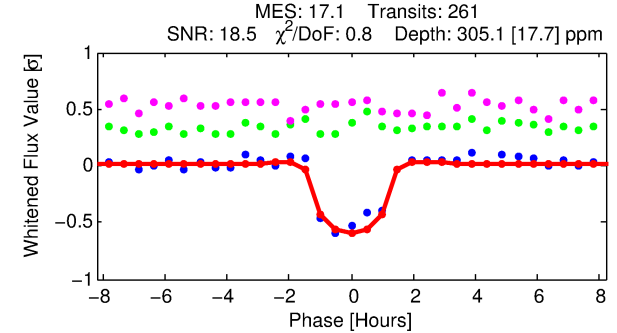
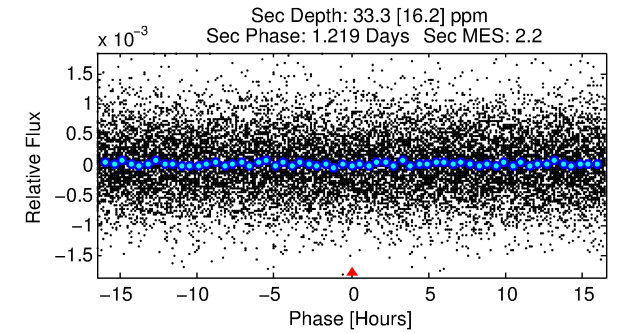
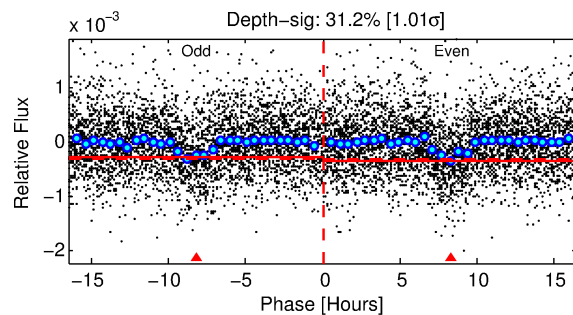
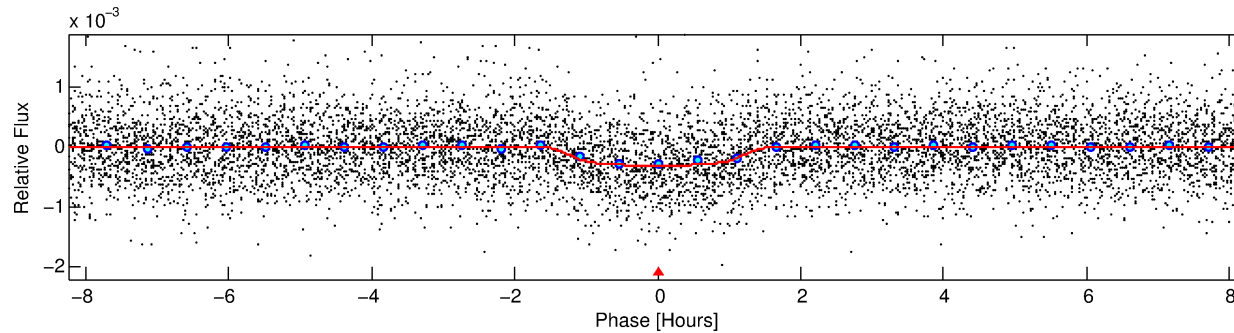
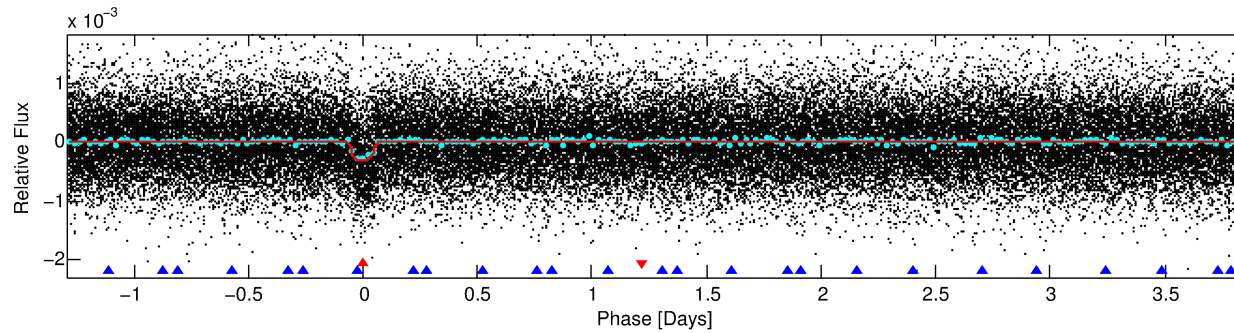
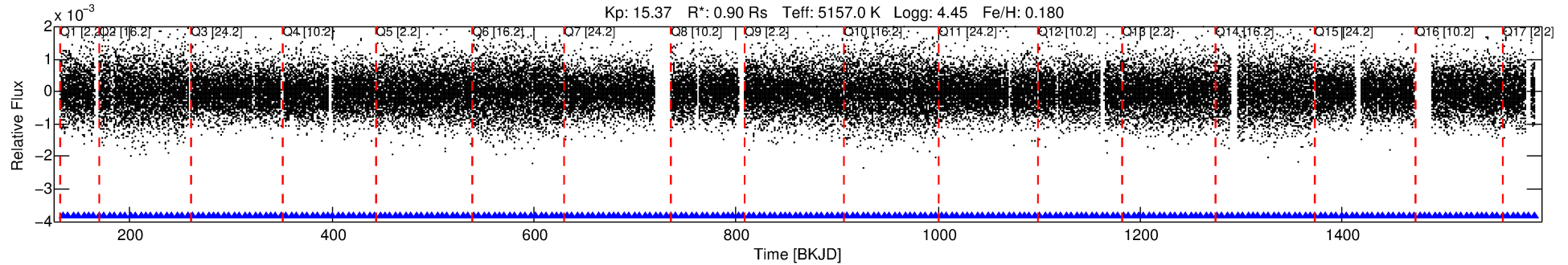
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007663405-01

No Significant Match Found

DV One-Page Summary

KIC: 7663405 Candidate: 1 of 2 Period: 5.144 d
KOI: K01519.01 Corr: 0.990



DV Fit Results:

Period = 5.14438 [0.00002] d
Epoch = 133.8287 [0.0028] BKJD
Rp/R* = 0.0193 [0.0072]
a/R* = 7.09 [10.38]
b = 0.89 [0.35]
Seff = 172.25 [28.81]
Teq = 924 [39] K
Rp = 1.90 [0.73] Re
a = 0.0548 [0.0052] AU
Ag = 15.18 [13.71] [1.03 σ]
Teffp = 2819 [629] K [3.01 σ]

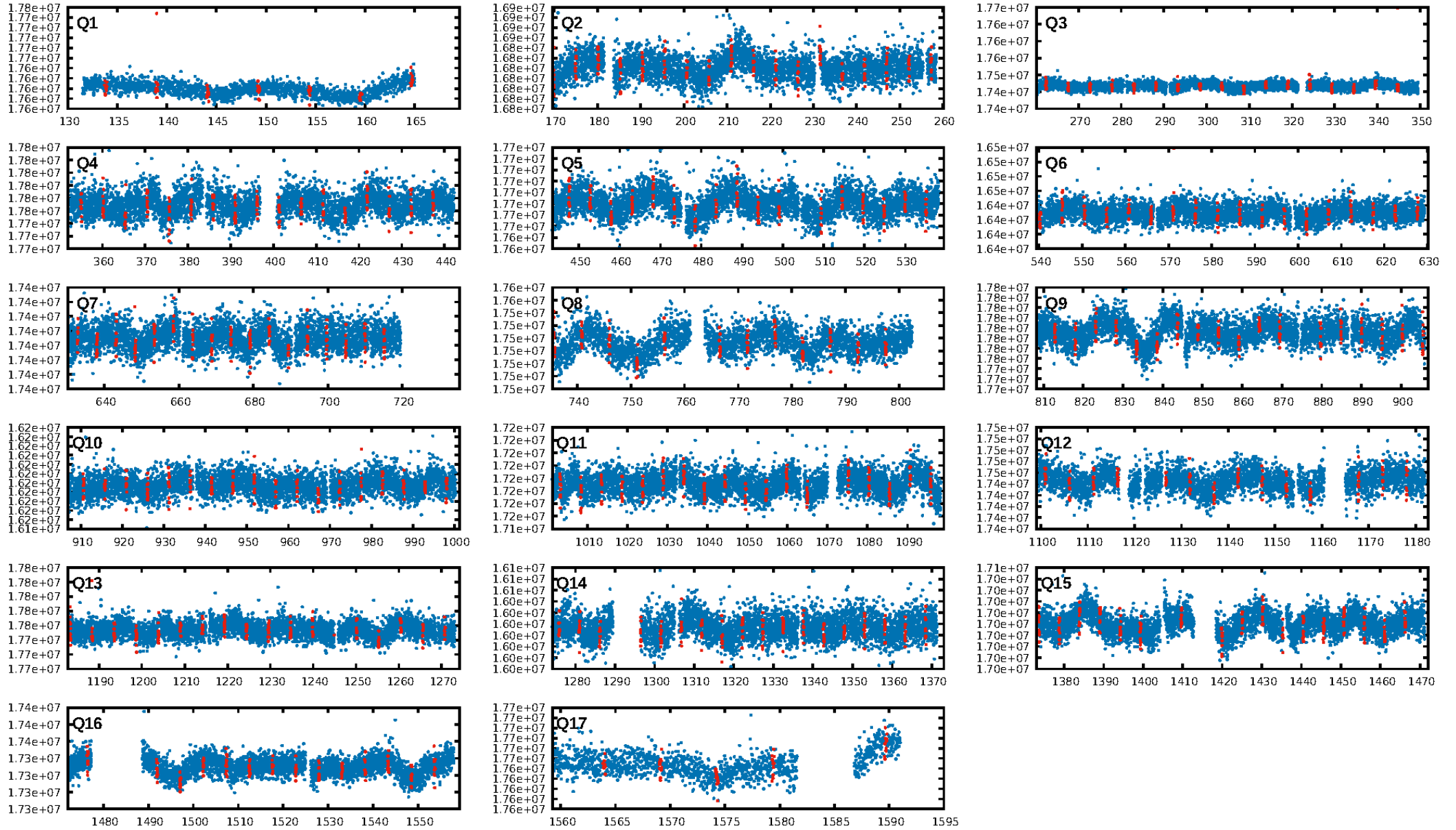
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [219.14 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.58e-63
RollingBand-fgt: 1.00 [249/249]
GhostDiagnostic-chr: 3.521
Centroid-sig: 1.1%
Centroid-so: 1.250 arcsec [1.55 σ]
OotOffset-rm: 0.472 arcsec [1.32 σ]
KicOffset-rm: 0.551 arcsec [1.56 σ]
OotOffset-st: 4/3/4/3 [14]
KicOffset-st: 4/3/4/3 [14]
DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 1.00 [17/17]

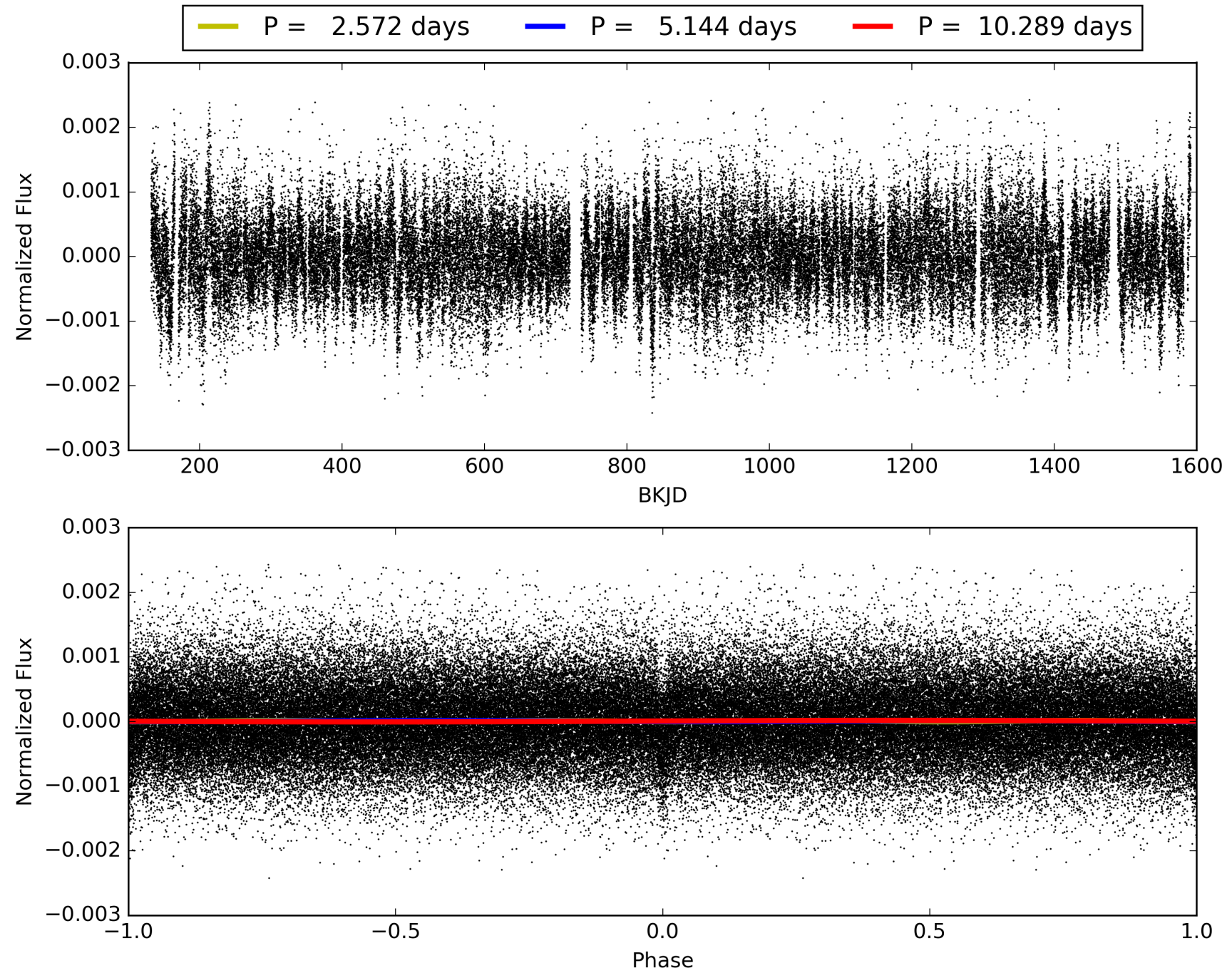
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:44:13 Z

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

TCE 007663405-01, PDC Light Curves

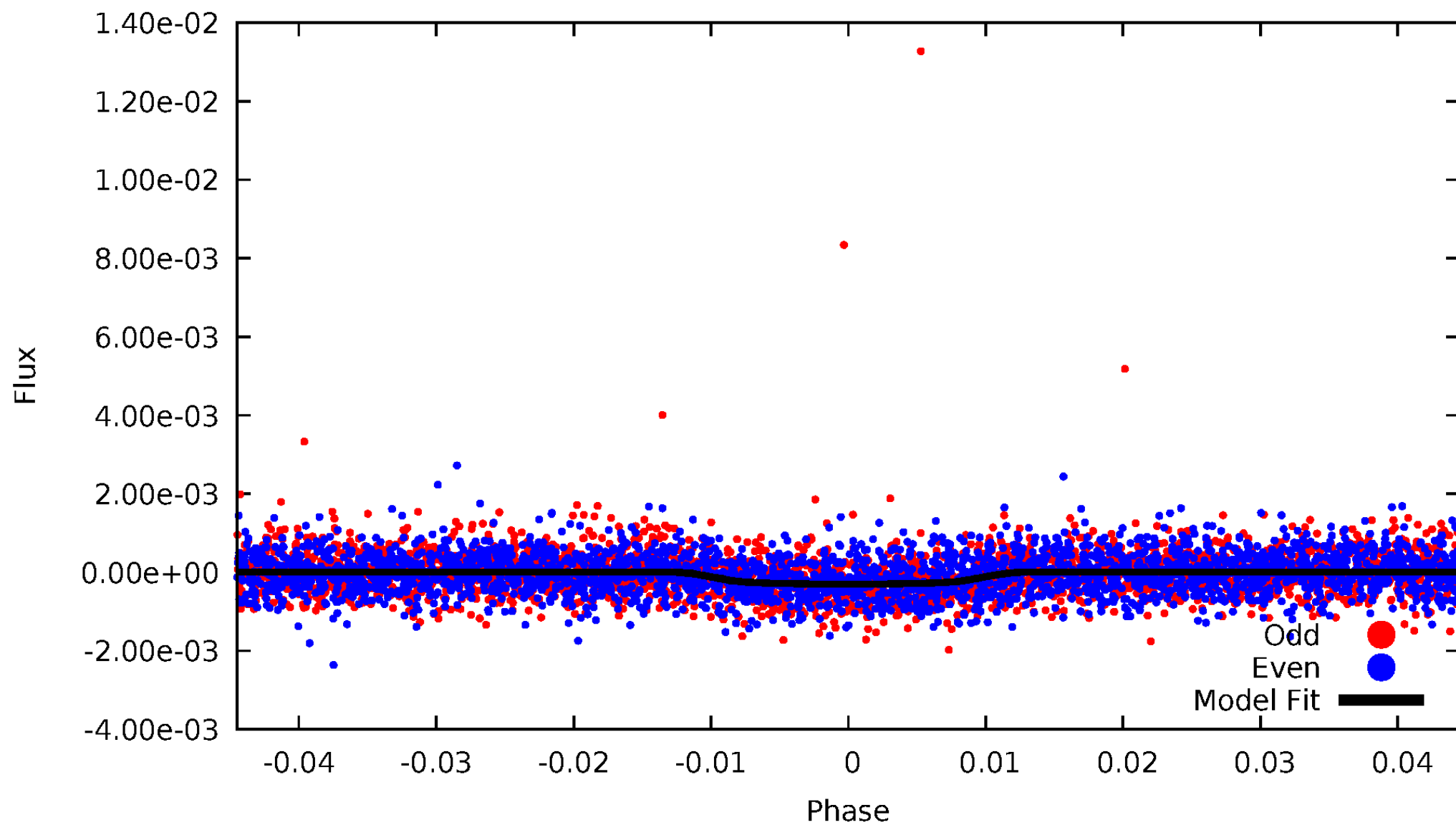


TCE 007663405-01



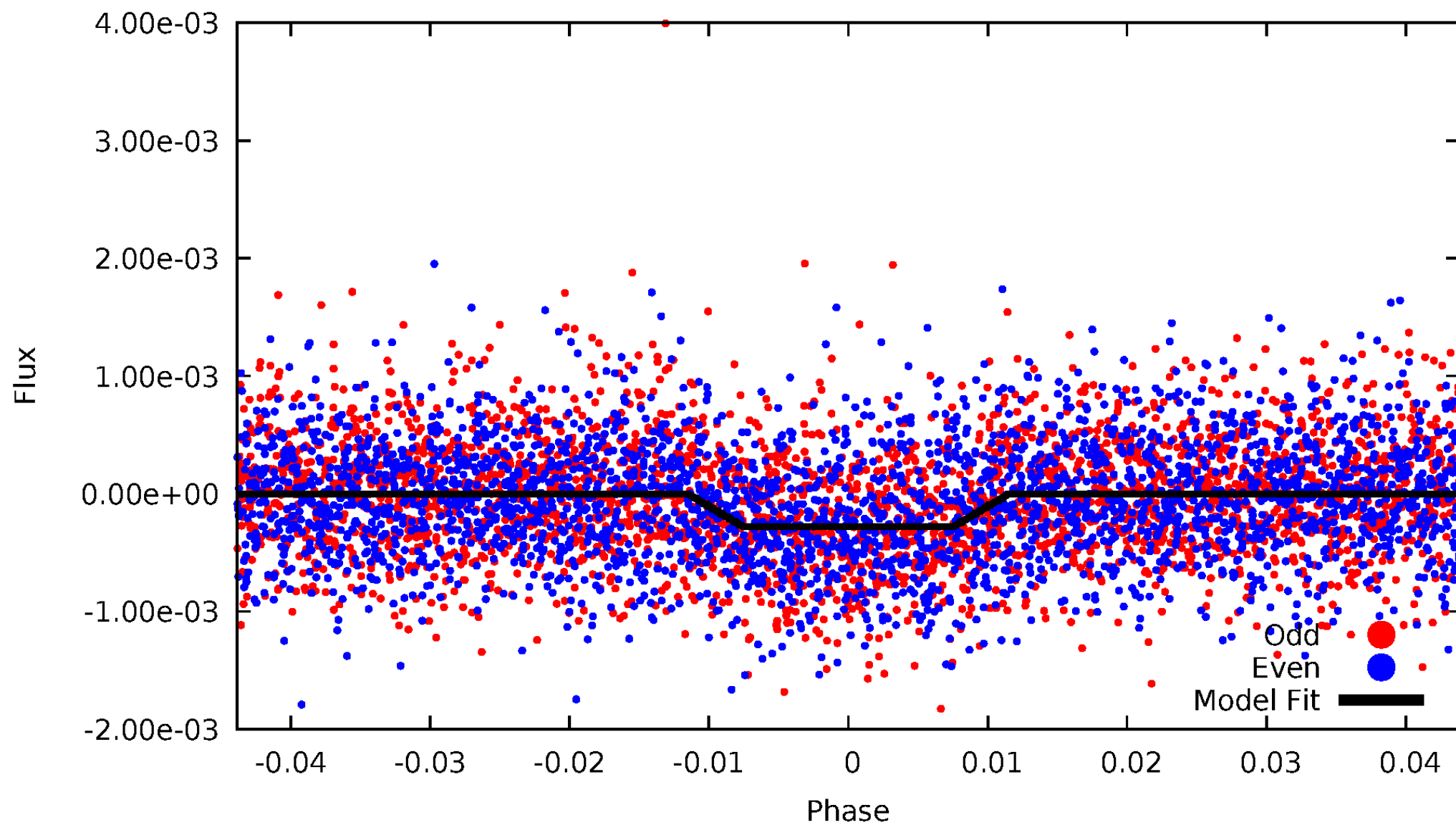
DV Odd/Even

TCE 007663405-01



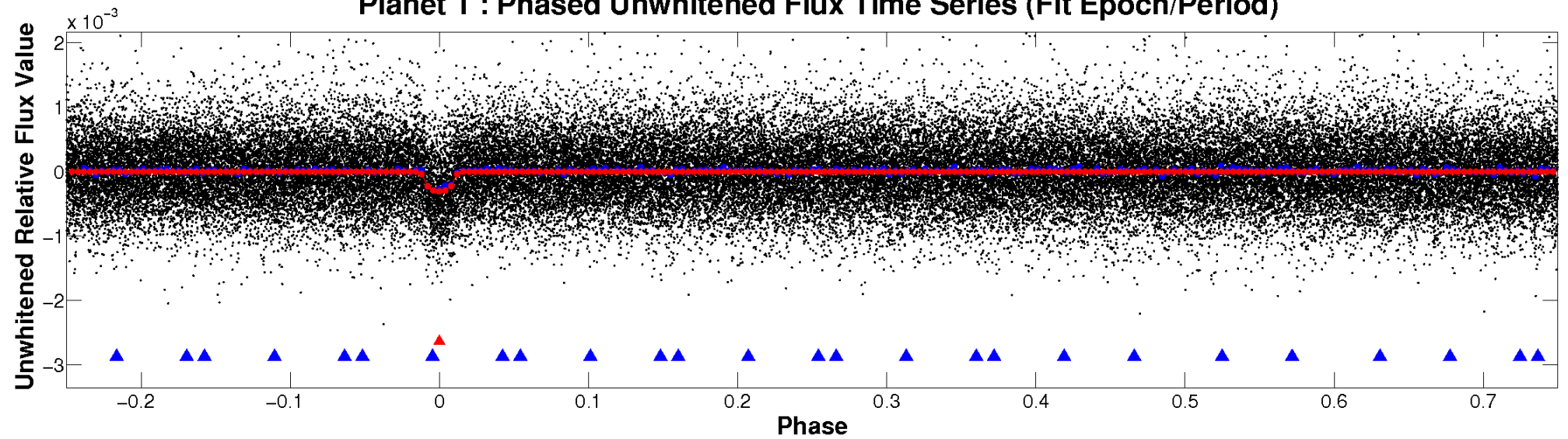
ALT Odd/Even

TCE 007663405-01

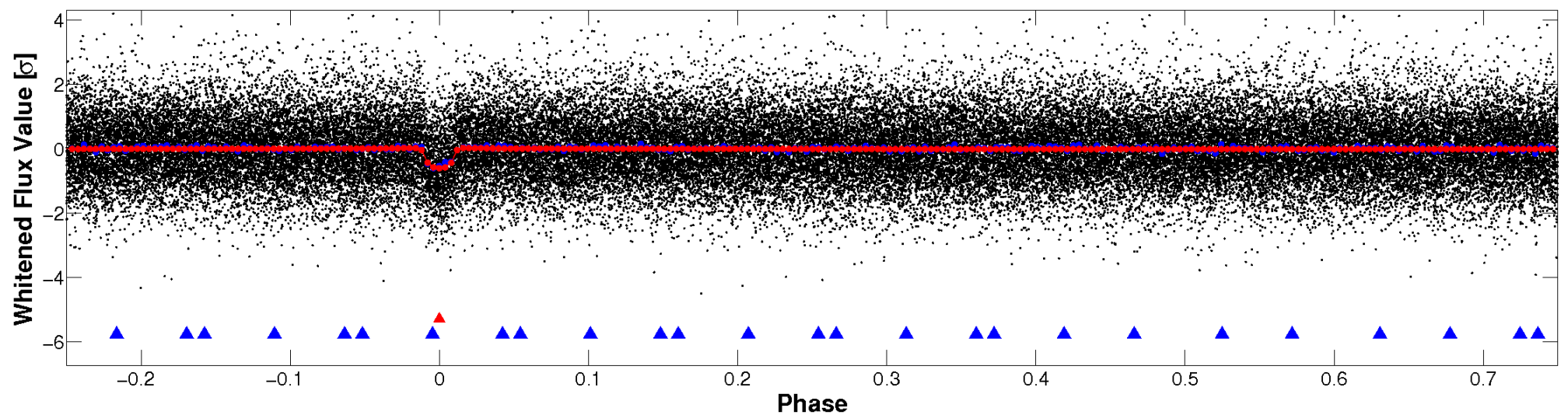


Non-Whitened Vs. Whitened Light Curve

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

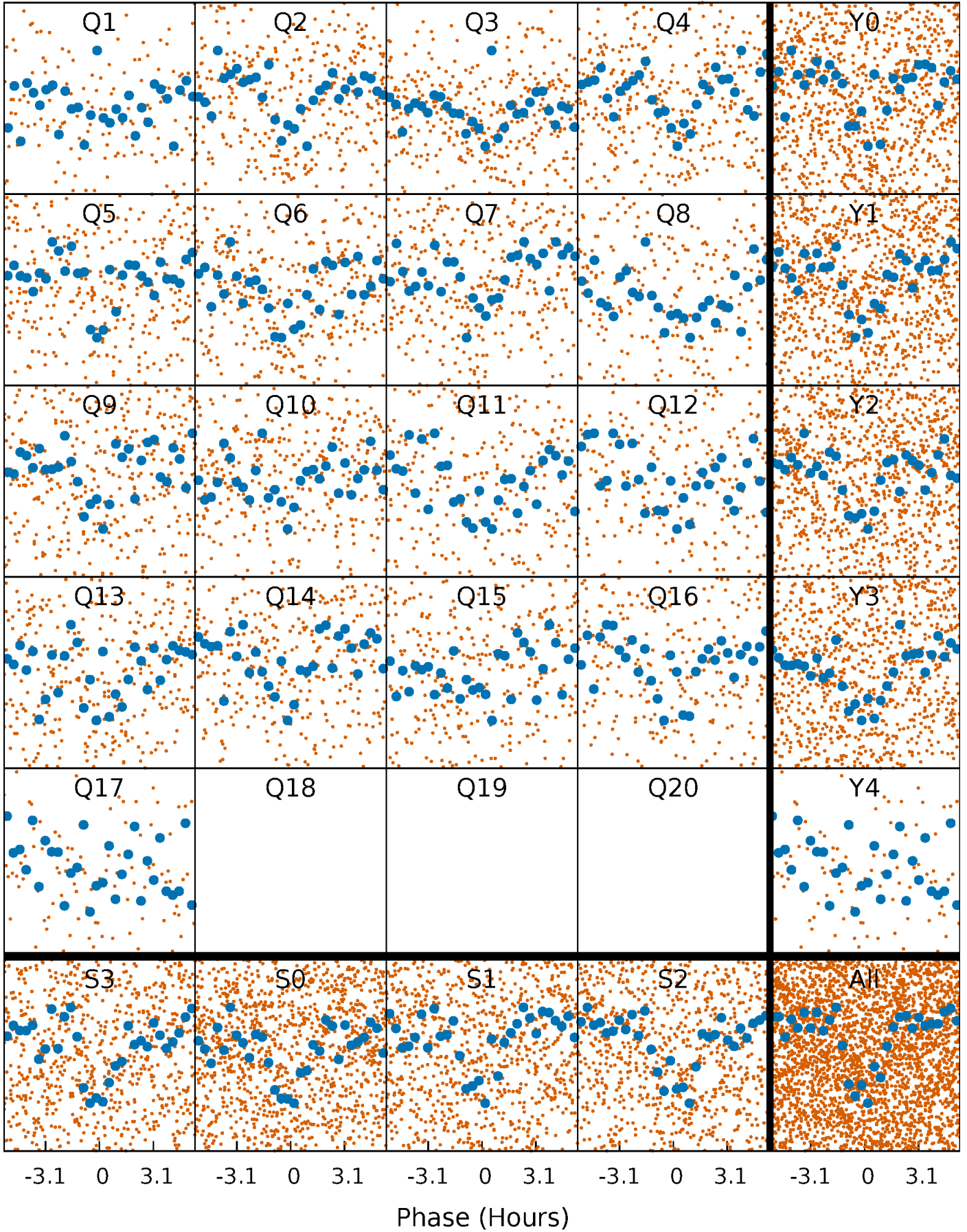


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



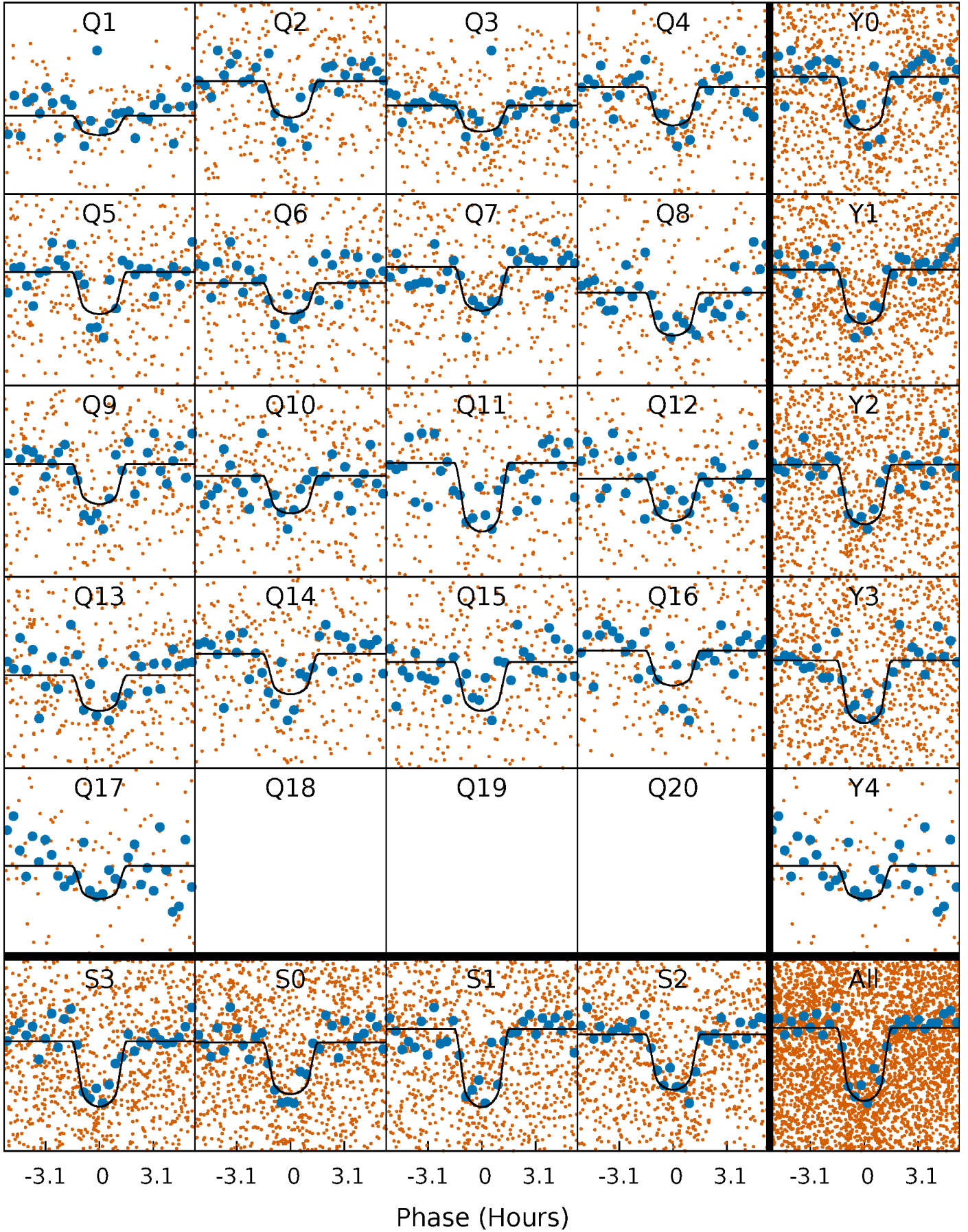
PDC Quarter-Phased Transit Curves

TCE 007663405-01 P= 5.144379 Days $T_0=133.828656$ (BKJD)



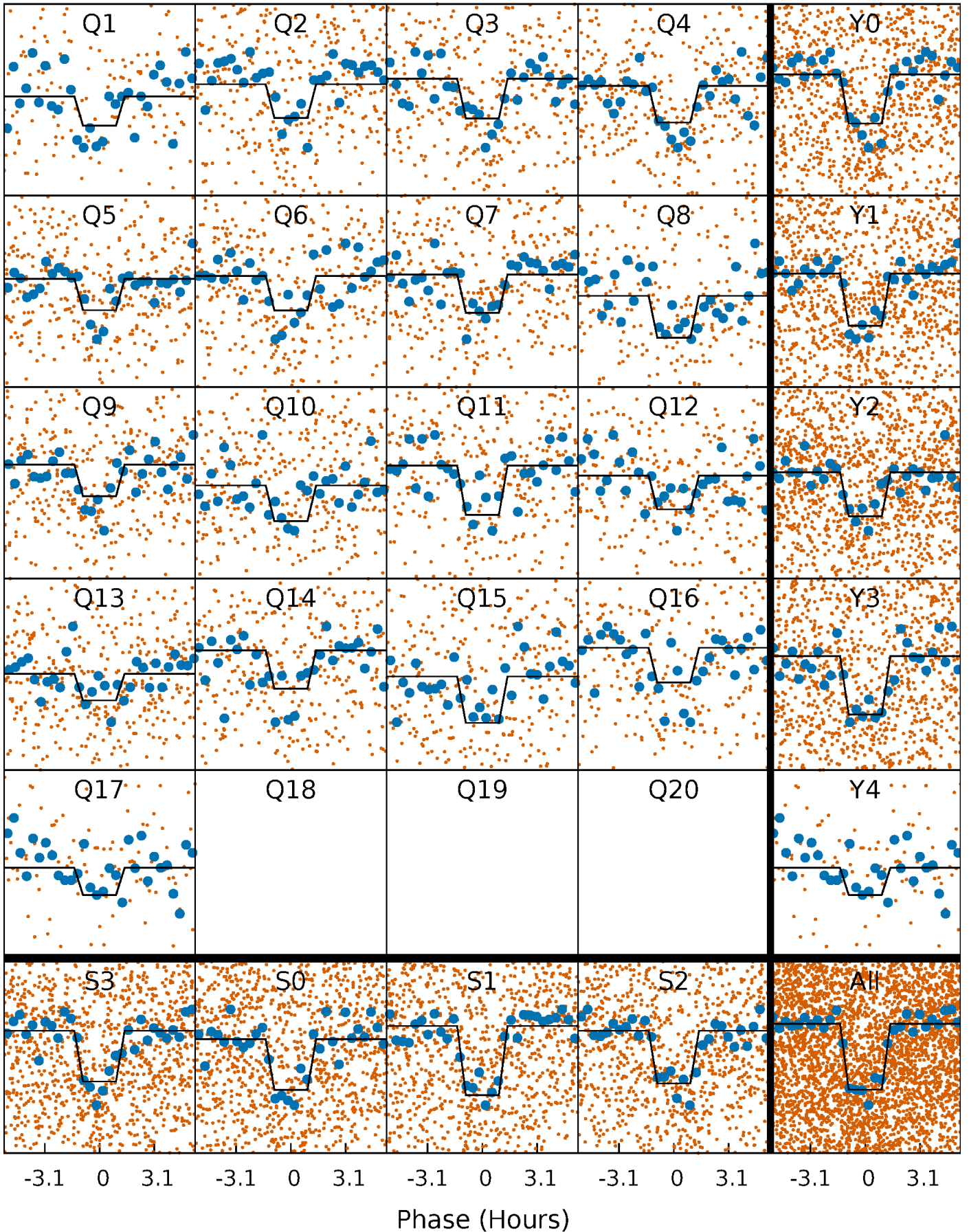
DV Quarter-Phased Transit Curves

TCE 007663405-01 P= 5.144379 Days $T_0=133.828656$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

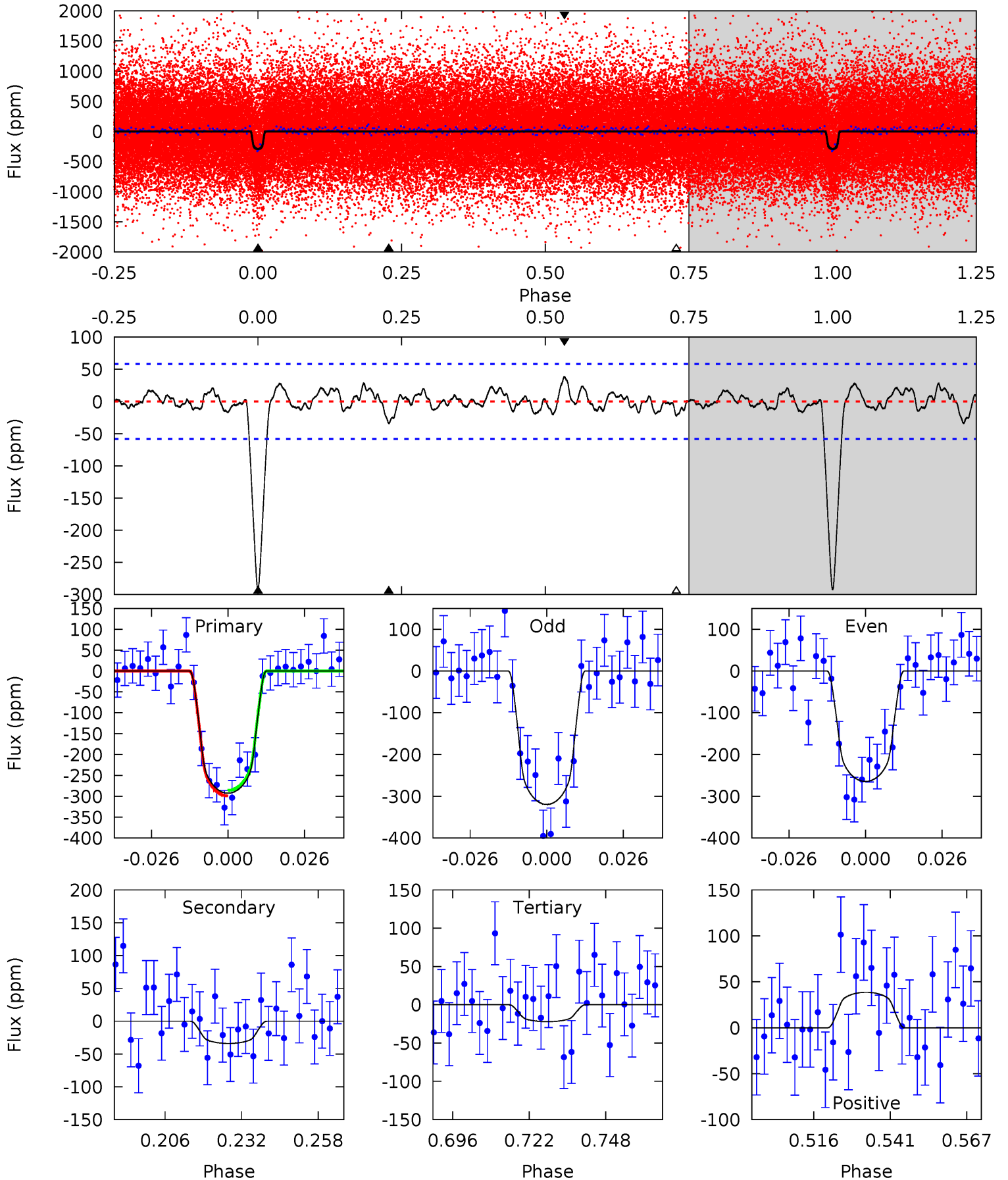
TCE 007663405-01 P= 5.144350 Days $T_0=133.832561$ (BKJD)



DV Model-Shift Uniqueness Test

007663405-01, P = 5.144379 Days, E = 128.684277 Days

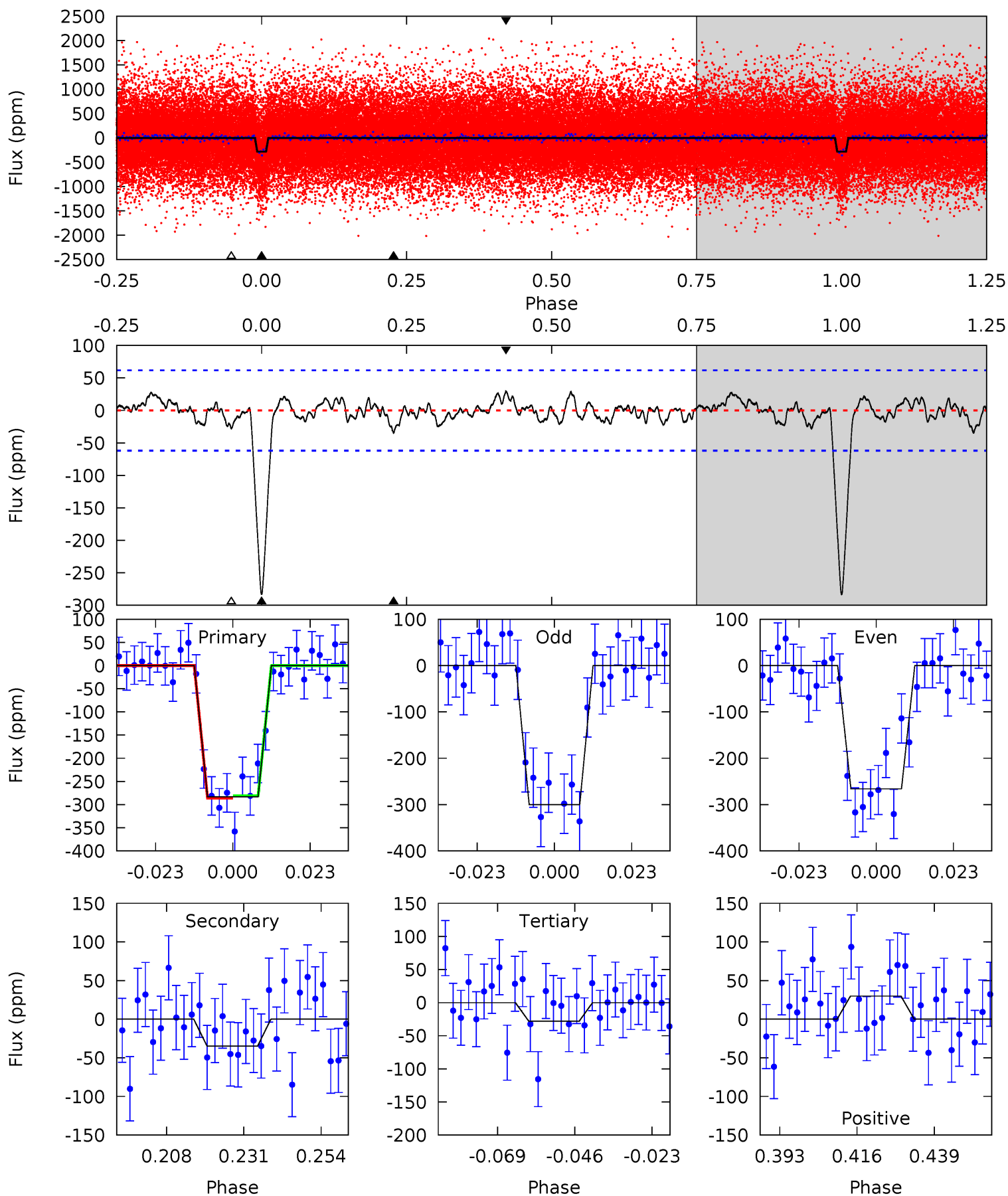
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.3	2.82	1.83	3.21	4.84	2.23	0.96	22.5	21.1	0.99	-0.38	2.30	0.87	0.12	0.55



Alt Model-Shift Uniqueness Test

007663405-01, P = 5.144350 Days, E = 128.688211 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.3	2.74	2.19	2.35	4.86	2.27	0.92	20.1	19.9	0.54	0.39	1.33	0.90	0.10	0.20



Stellar Parameters For KIC 007663405

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5157^{+77}_{-84}	$4.445^{+0.091}_{-0.049}$	$0.180^{+0.150}_{-0.100}$	$0.904^{+0.064}_{-0.088}$	$0.830^{+0.054}_{-0.029}$	$1.584^{+0.588}_{-0.280}$
	+1%/-2%	+2%/-1%	+83%/-56%	+7%/-10%	+7%/-3%	+37%/-18%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 007663405-01 / KOI 1519.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-34 ± 12	$1.85^{+0.73}_{-0.67}$	1283^{+36}_{-37}	3342^{+527}_{-377}	16^{+24}_{-9}
Alt.	-35 ± 13	$1.64^{+0.71}_{-0.65}$	1284^{+31}_{-42}	3449^{+668}_{-402}	20^{+39}_{-11}

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 $A_{obs} \gg 1.0$

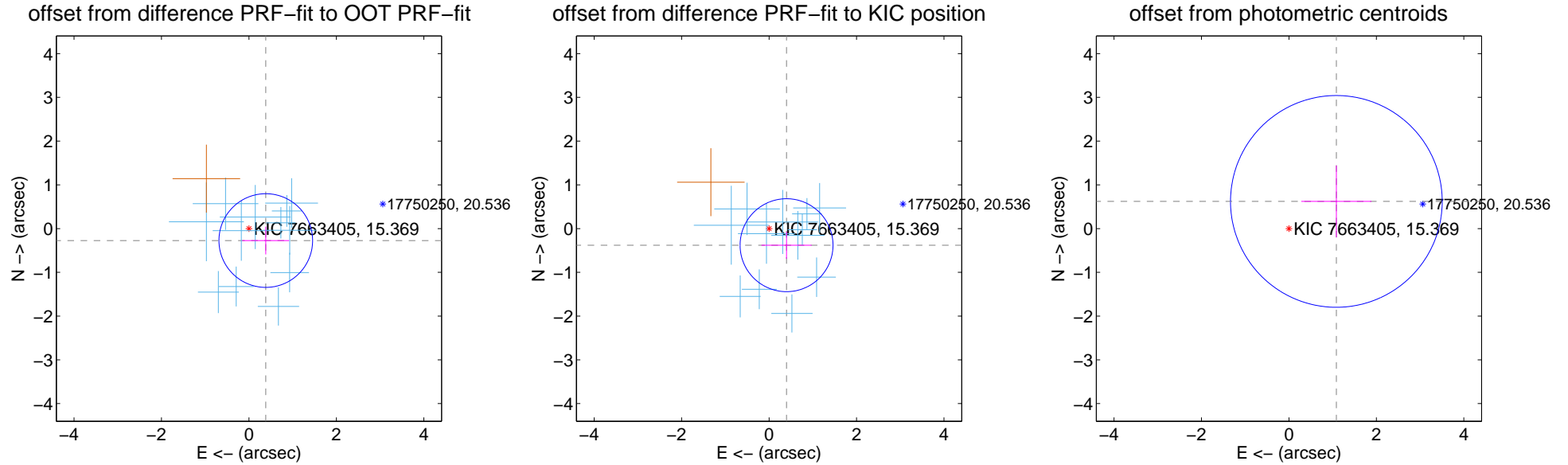
DV Centroid Data

Supplemental centroid analysis for 007663405-01. Kepler magnitude: 15.37. Transit SNR 18.50

There are 12 quarters with good PRF difference image offsets

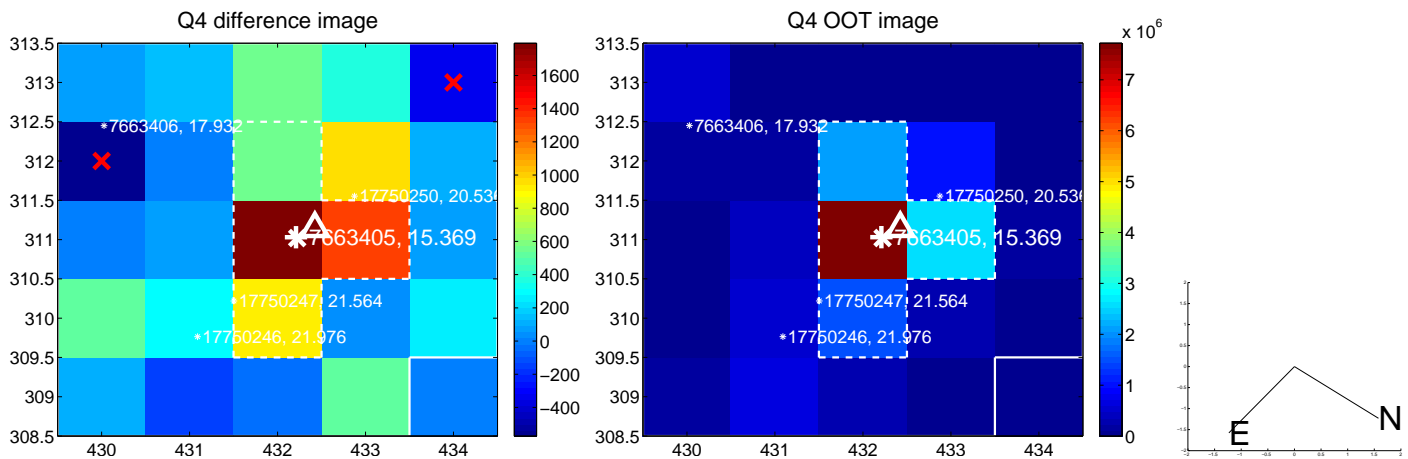
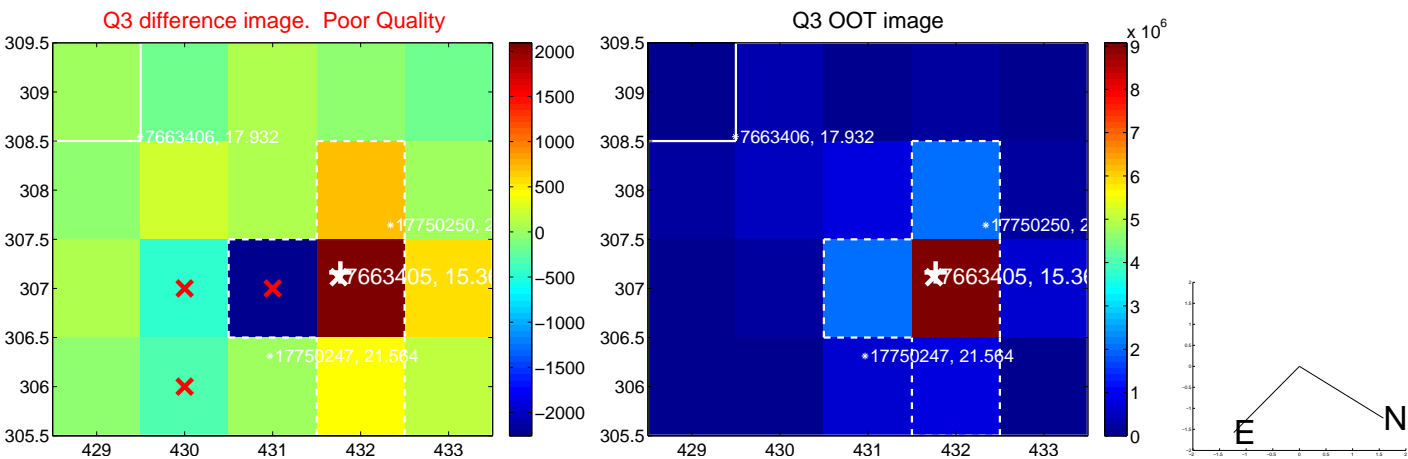
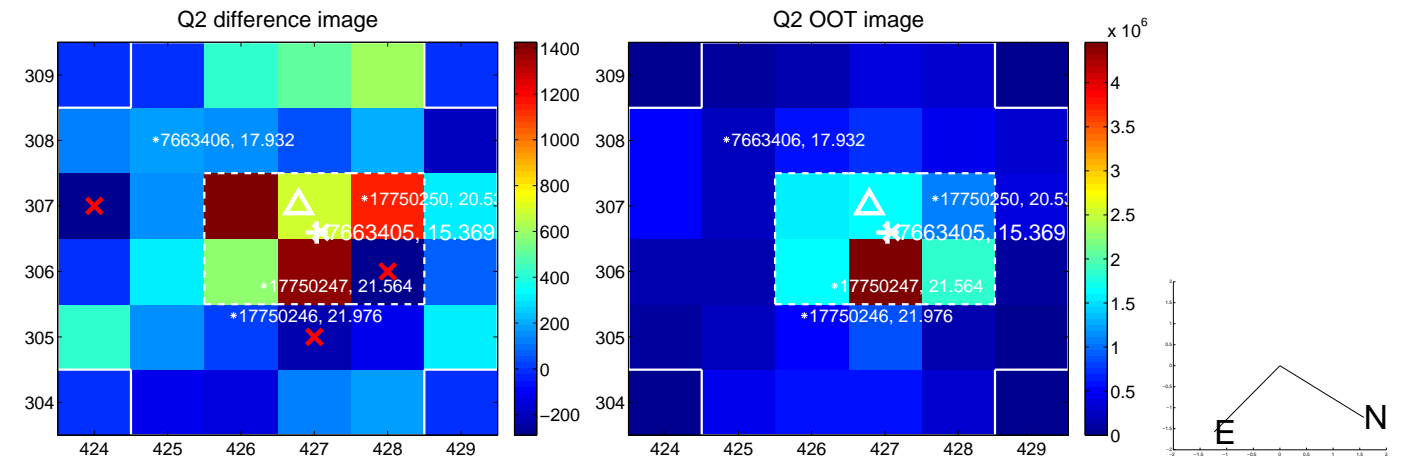
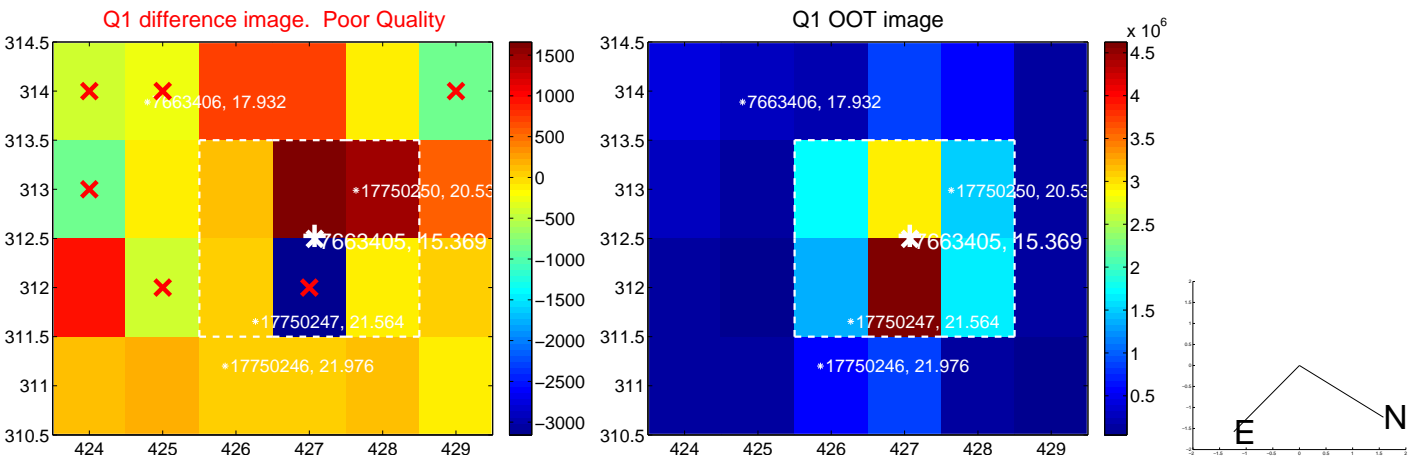
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.472 ± 0.357	1.32	-0.385 ± 0.538	-0.273 ± 0.317
PRF-fit source offset from KIC position	0.551 ± 0.354	1.56	-0.400 ± 0.573	-0.379 ± 0.309
photometric centroid source offset	1.25 ± 0.81	1.55	-1.08 ± 0.80	0.62 ± 0.82

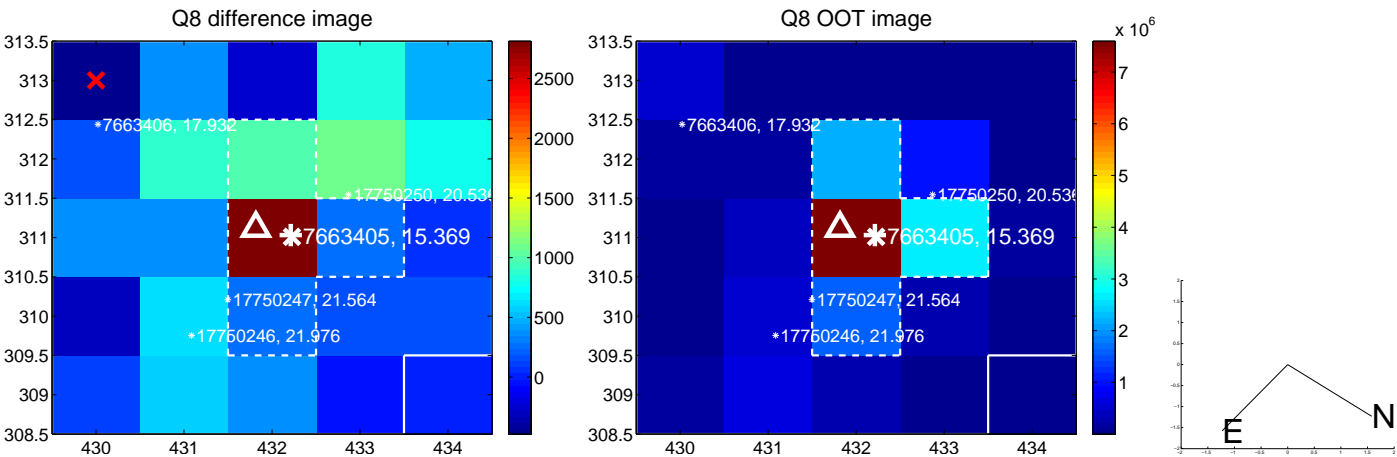
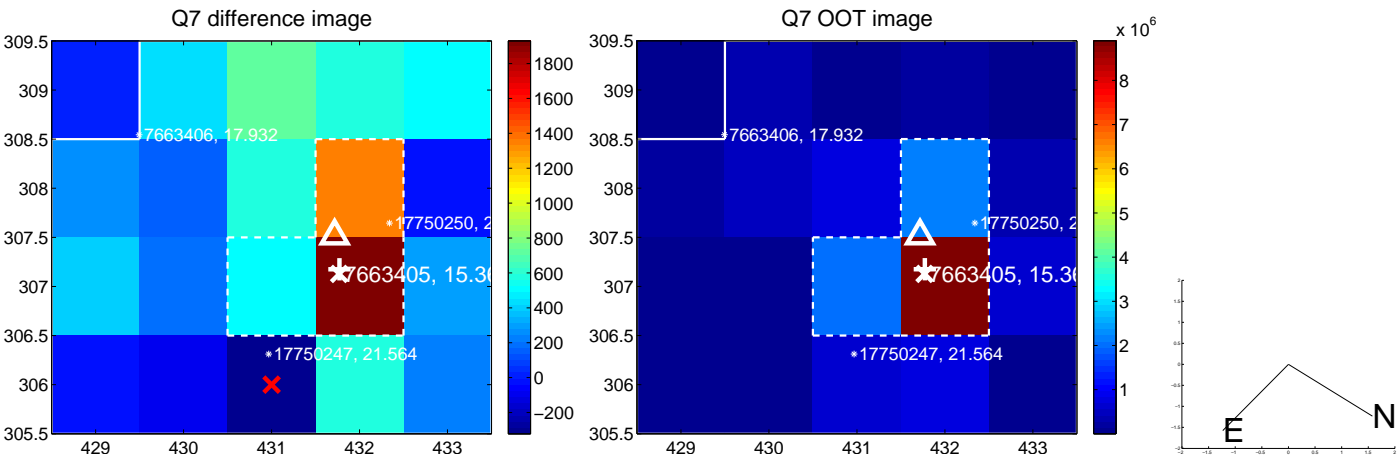
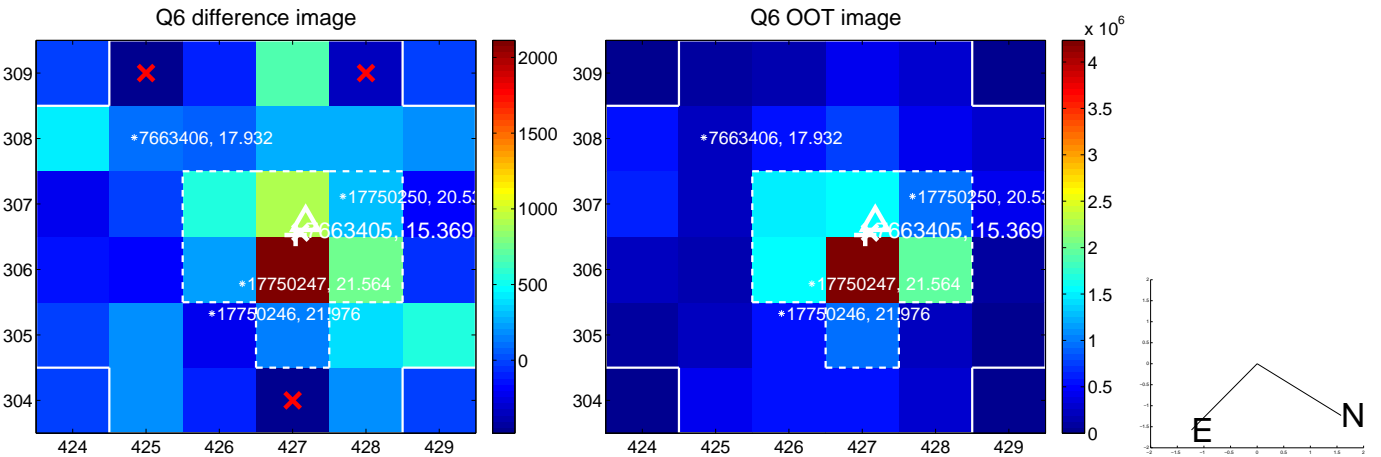
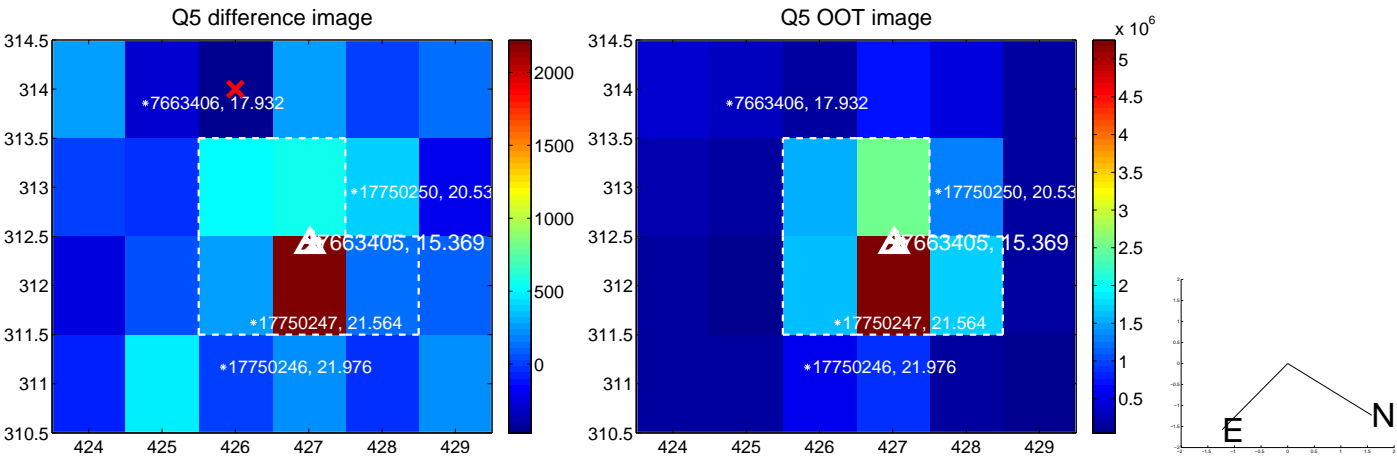


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

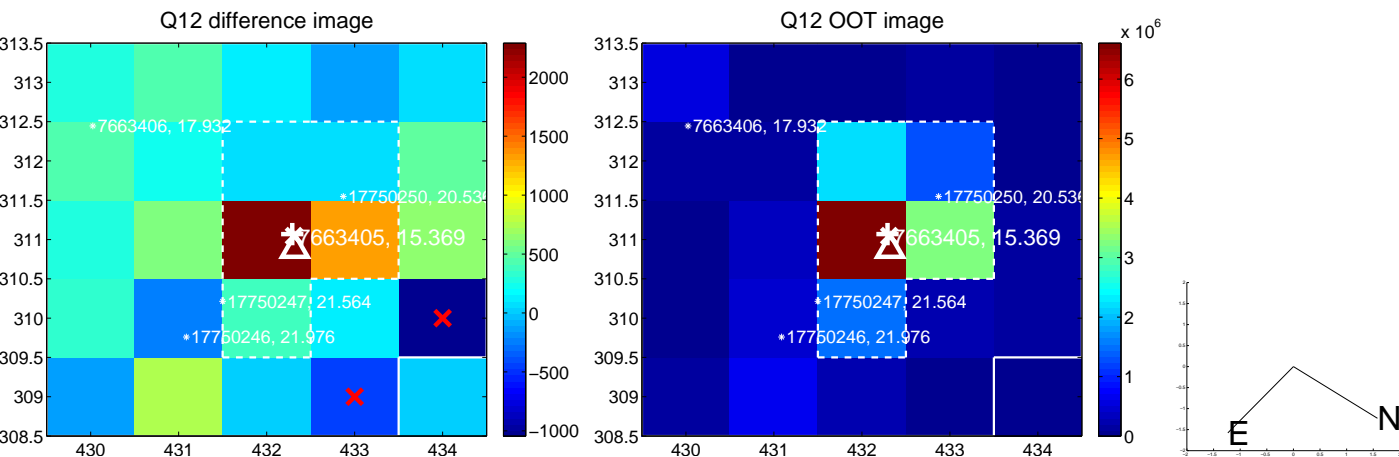
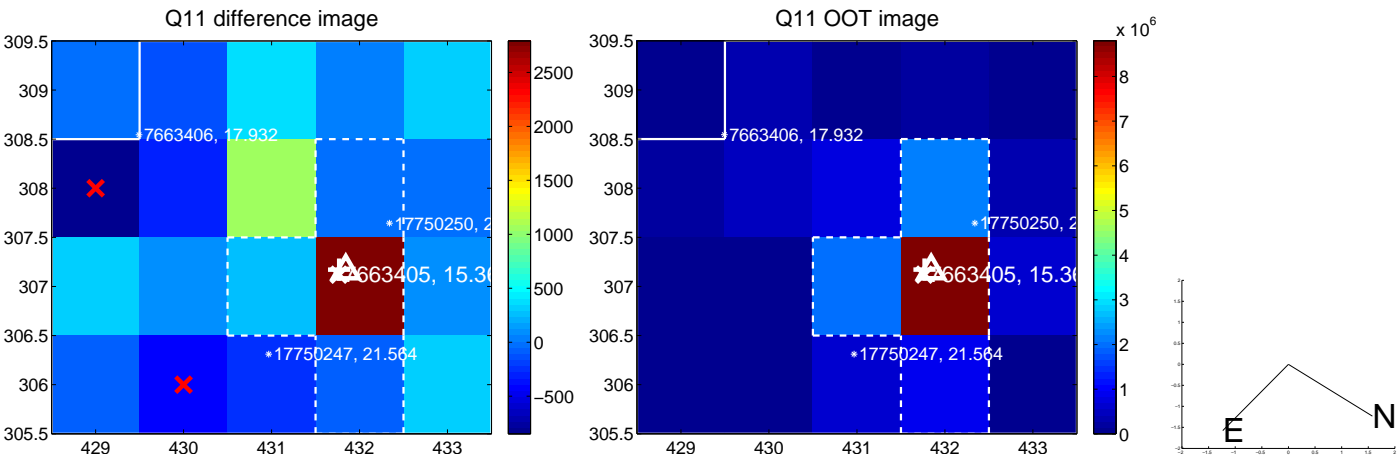
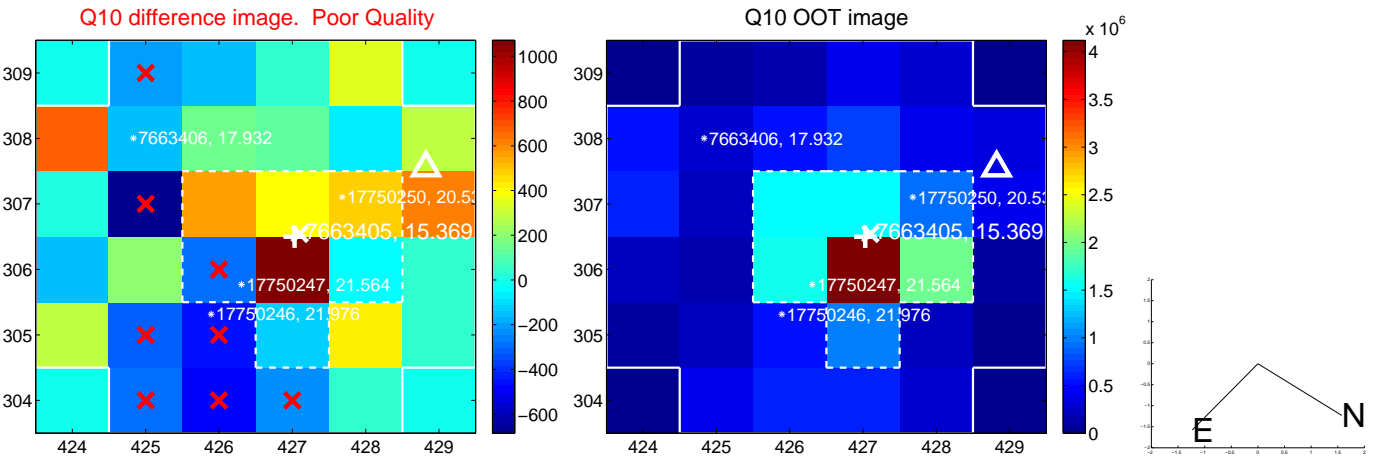
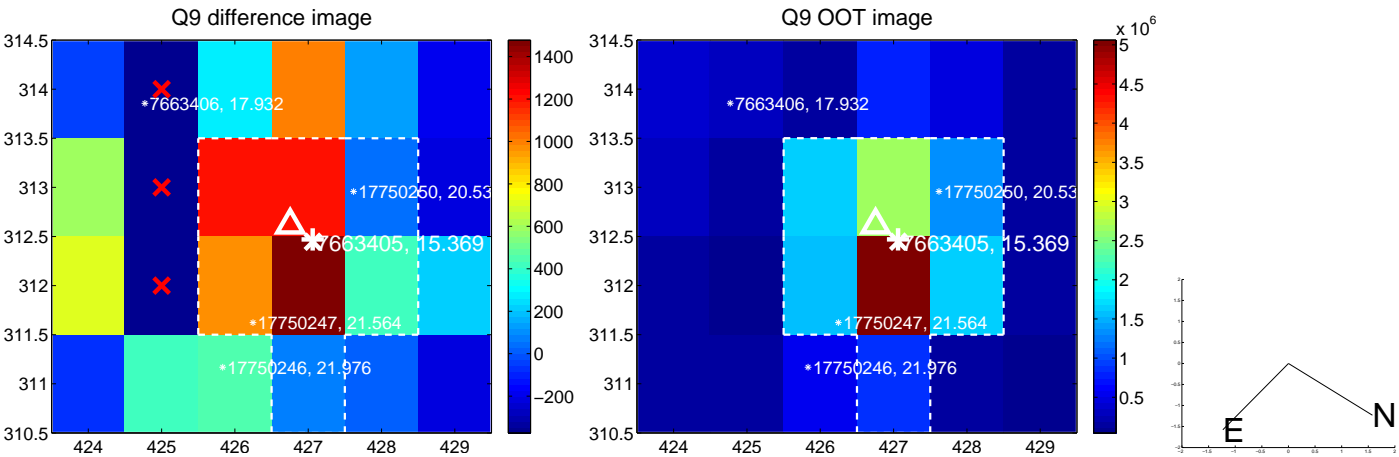
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



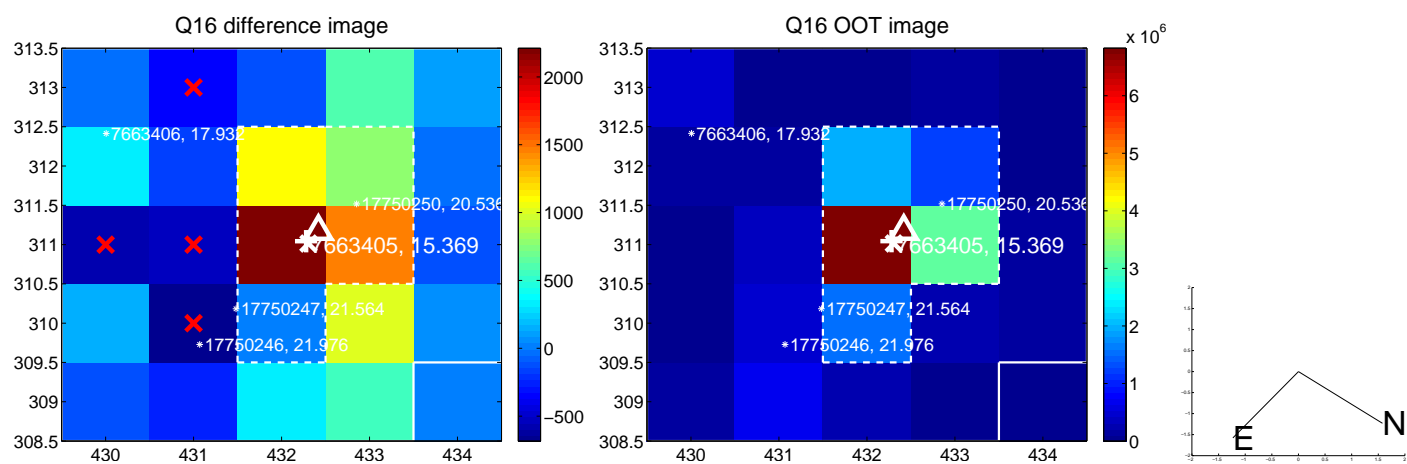
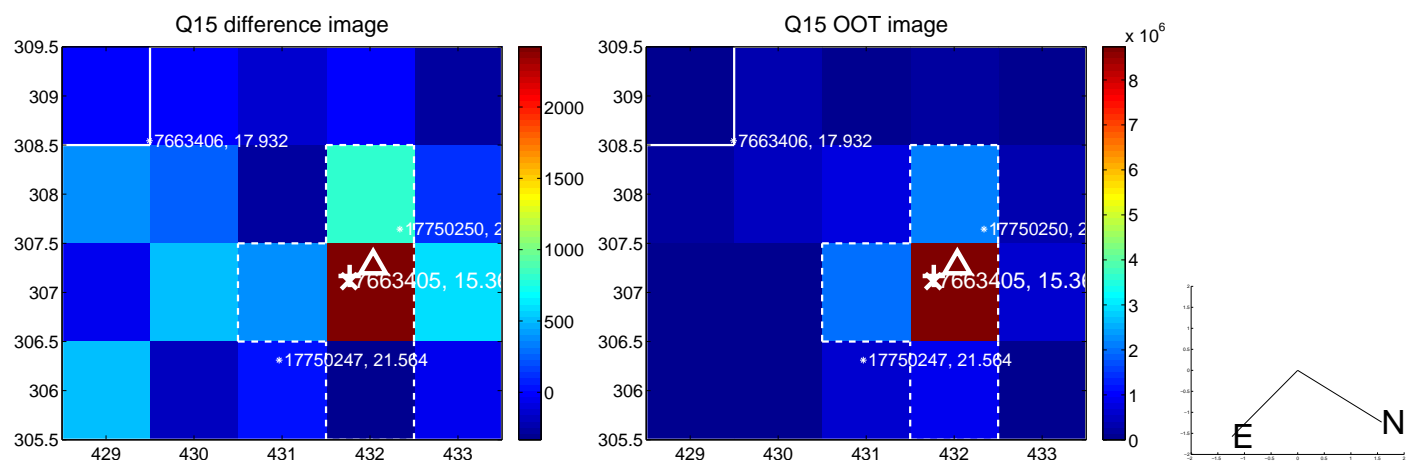
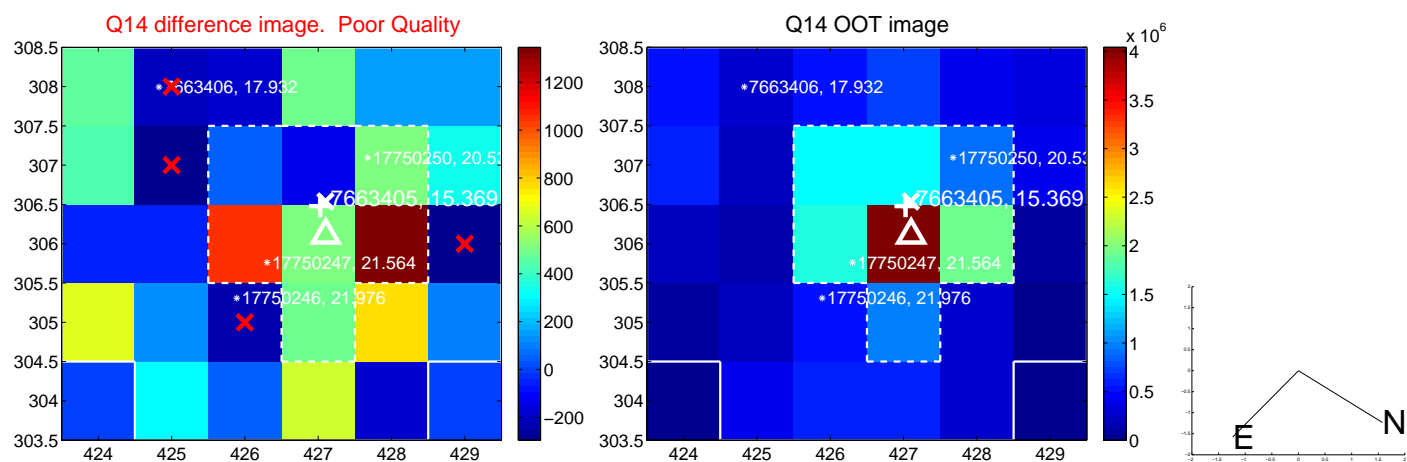
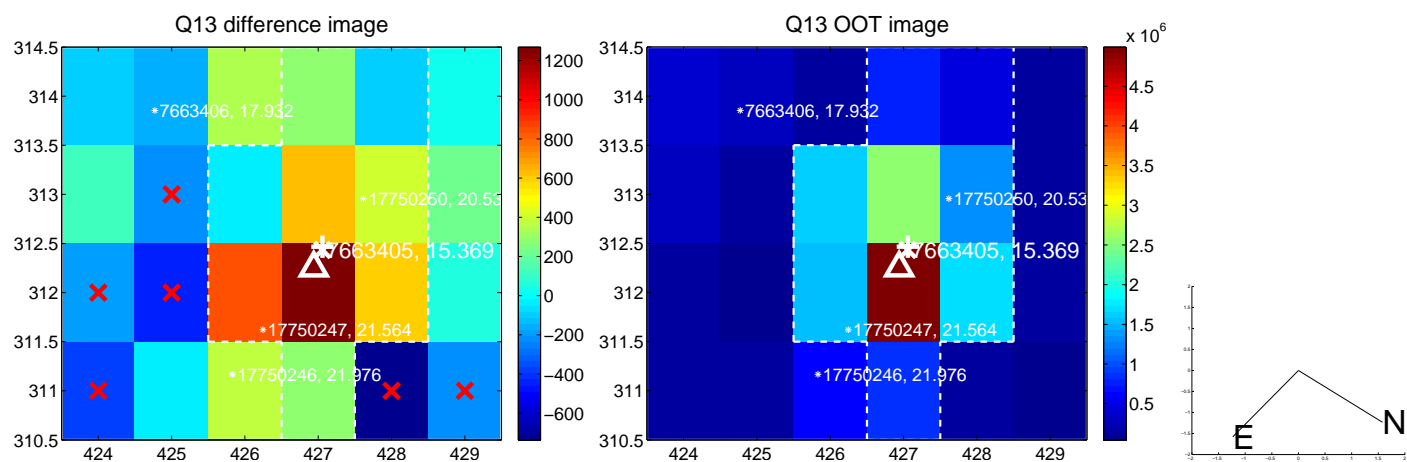
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



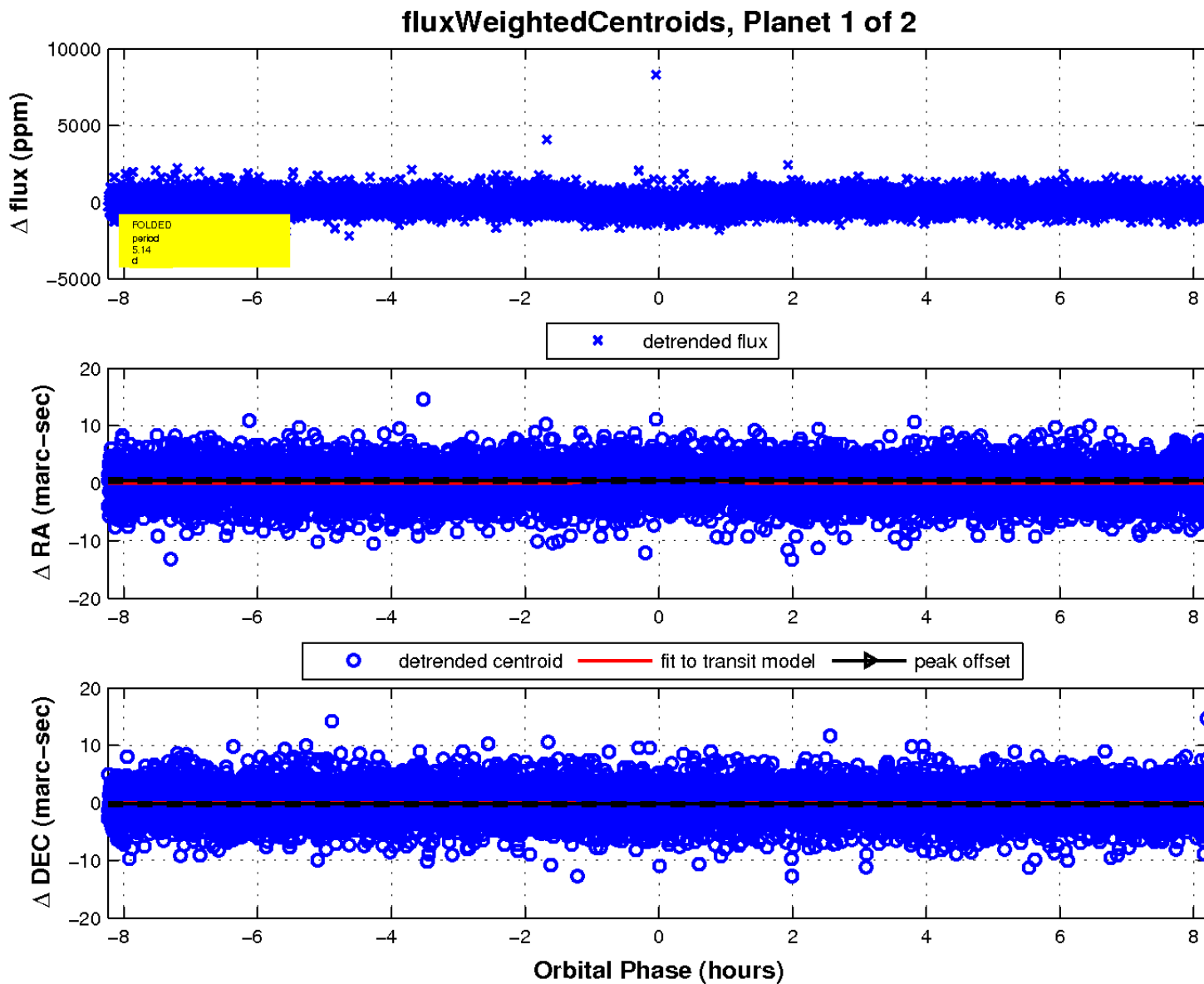
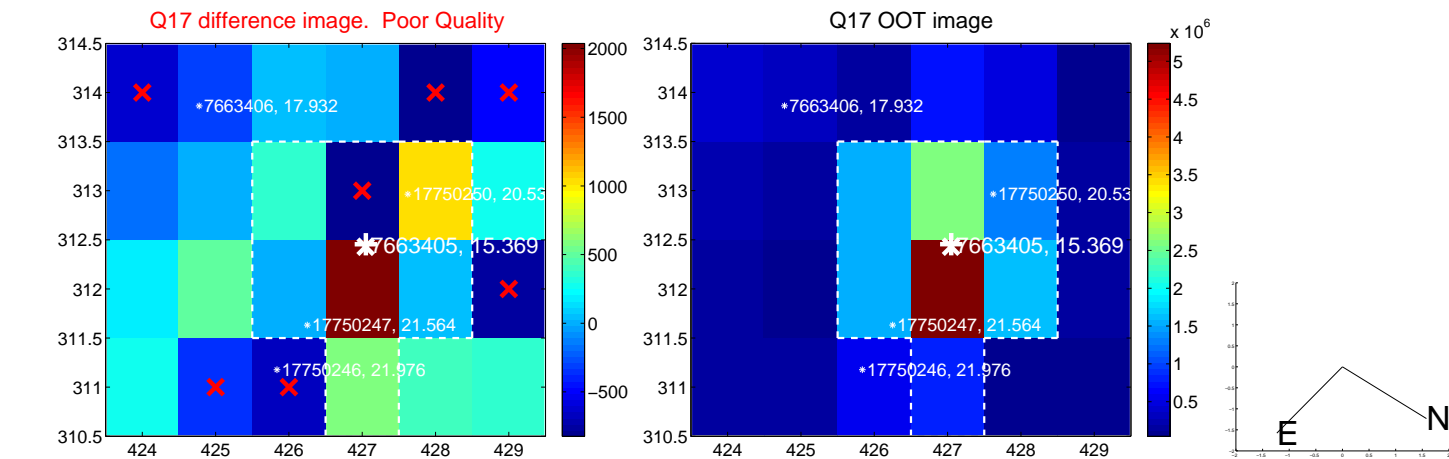
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



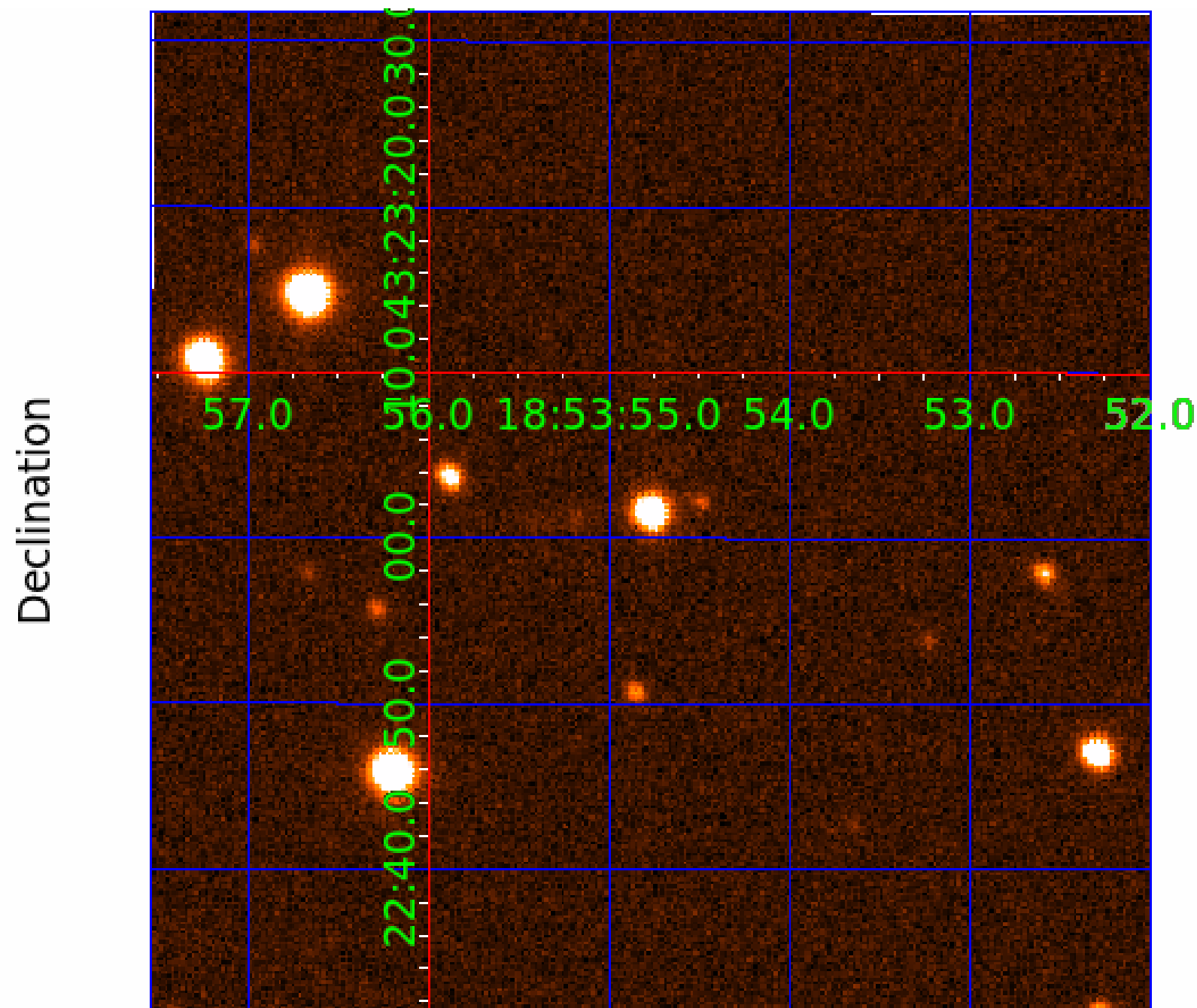
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 007663405

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})
007663405-01	OBS	1519.01	5.144379	133.828656	305.1	2.746	17.1	18.5	0.90	5157	1.91	172.25
007663405-02	OBS	1519.02	57.132925	152.989842	416.1	4.988	8.5	9.5	0.90	5157	1.93	6.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007663405-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007663405-02	OBS	PC	0.74	0	0	0	0	NO_COMMENT

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.

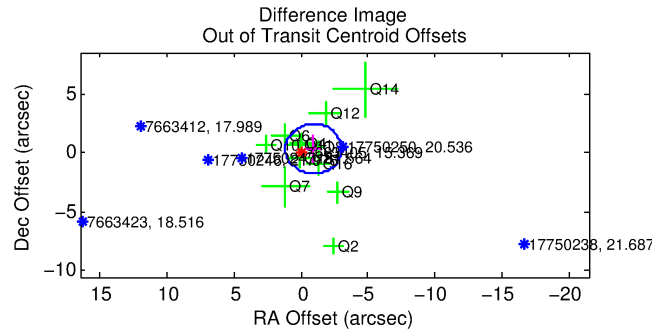
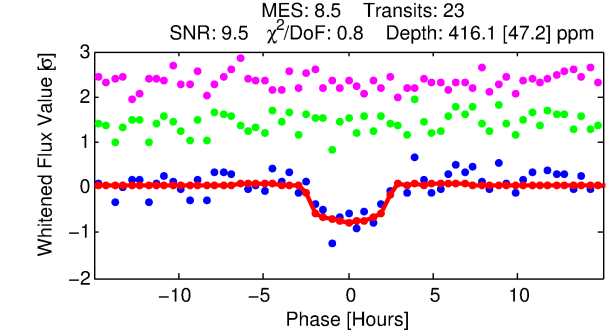
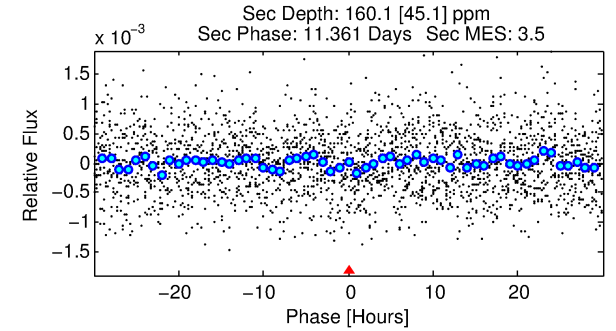
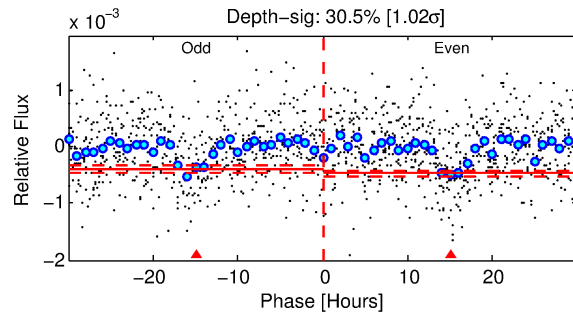
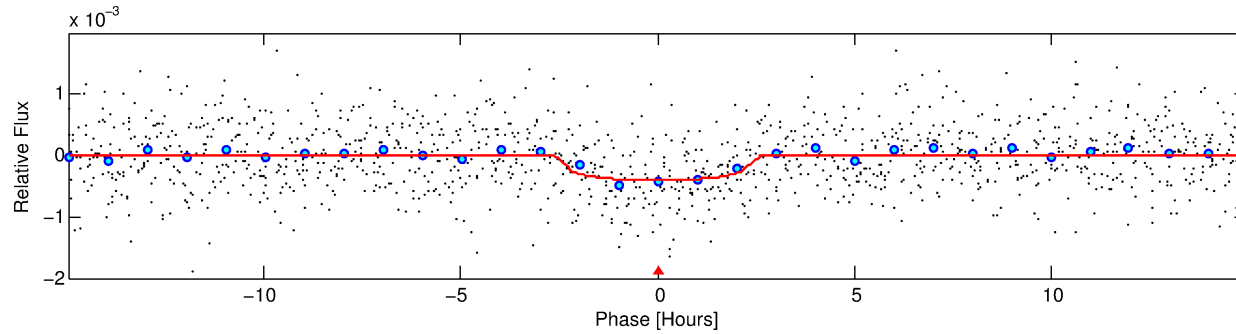
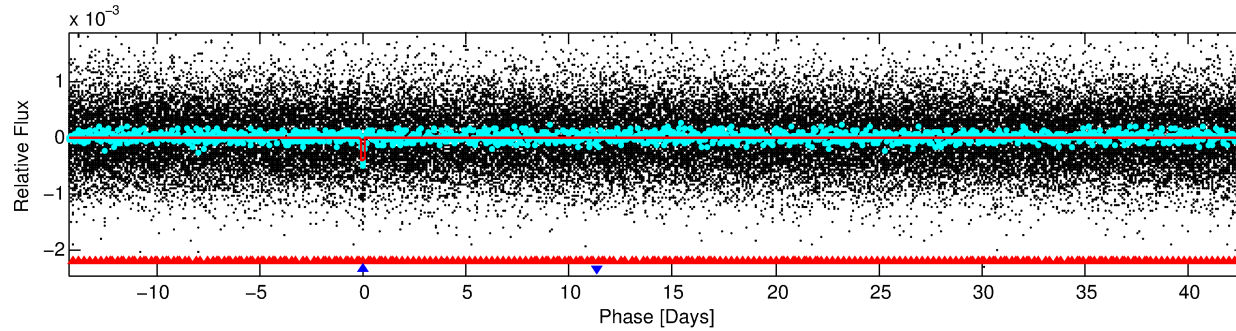
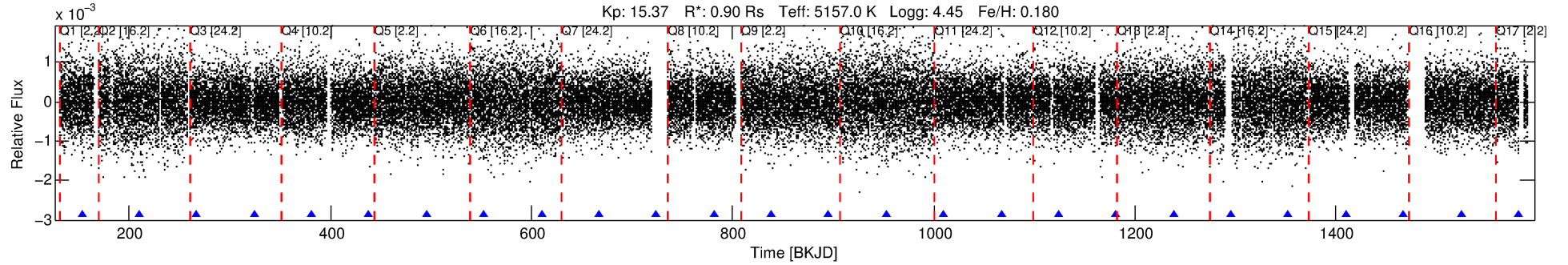
Ephemeris Match Information For 007663405-02

No Significant Match Found

DV One-Page Summary

KIC: 7663405 Candidate: 2 of 2 Period: 57.133 d

KOI: K01519.02 Corr: 0.964



DV Fit Results:

Period = 57.13293 [0.00068] d
Epoch = 152.9898 [0.0099] BKJD
Rp/R* = 0.0195 [0.0255]
a/R* = 69.45 [321.11]
b = 0.64 [4.35]
Seff = 6.95 [1.16]
Teq = 414 [17] K
Rp = 1.93 [2.52] Re
a = 0.2729 [0.0260] AU
Ag = 1767.39 [4642.24] [0.38 σ]
Teff = 4151 [2722] K [1.37 σ]

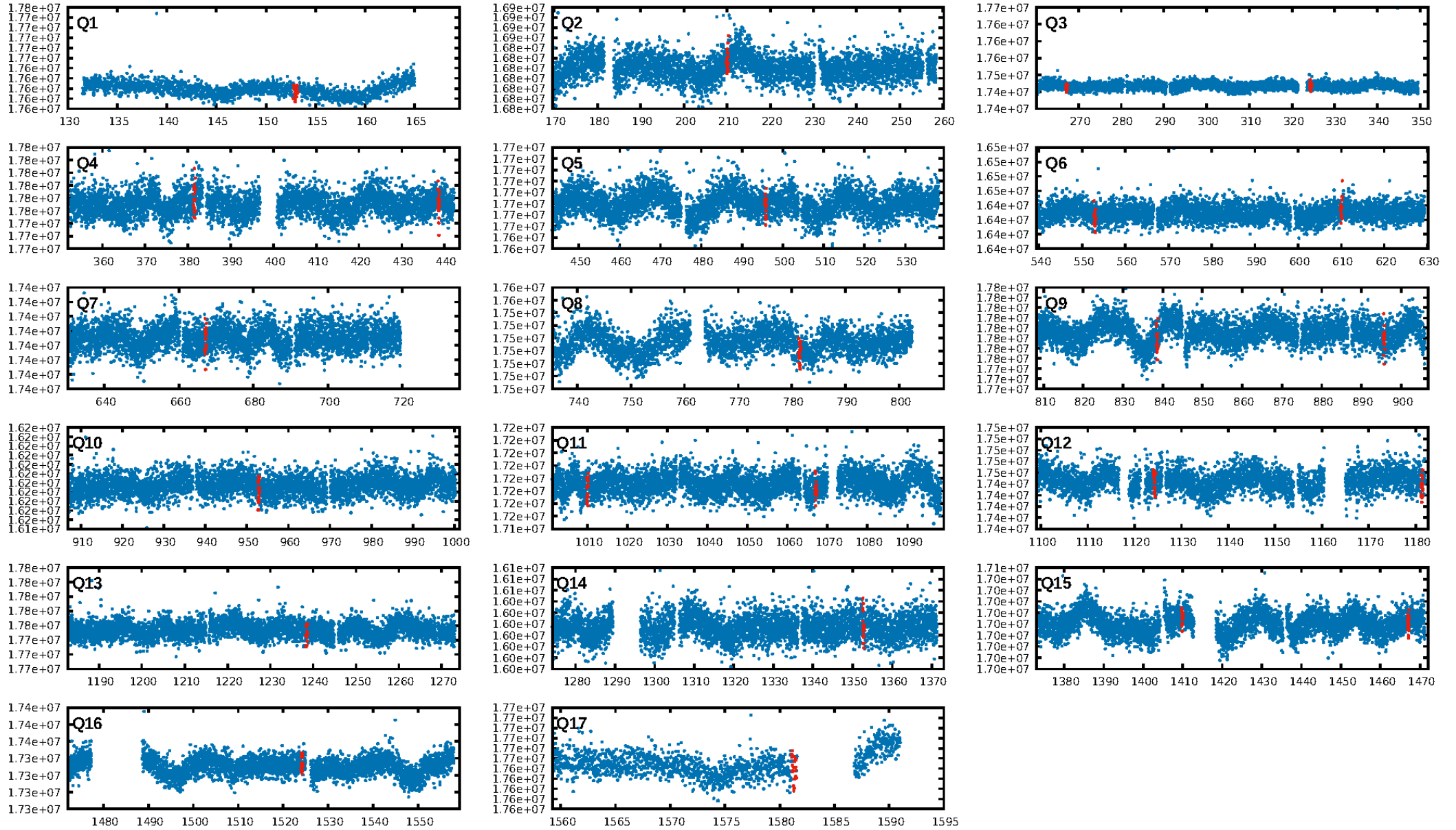
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [219.14 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 96.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.64e-17
RollingBand-fgt: 1.00 [21/21]
GhostDiagnostic-chr: 1.666
Centroid-sig: 68.8%
Centroid-so: 0.948 arcsec [0.67 σ]
OotOffset-rm: 0.967 arcsec [1.38 σ]
KicOffset-rm: 1.041 arcsec [1.90 σ]
OotOffset-st: 4/3/4/1 [12]
KicOffset-st: 4/3/4/1 [12]
DiffImageQuality-fgm: 0.25 [3/12]
DiffImageOverlap-fno: 0.93 [14/15]

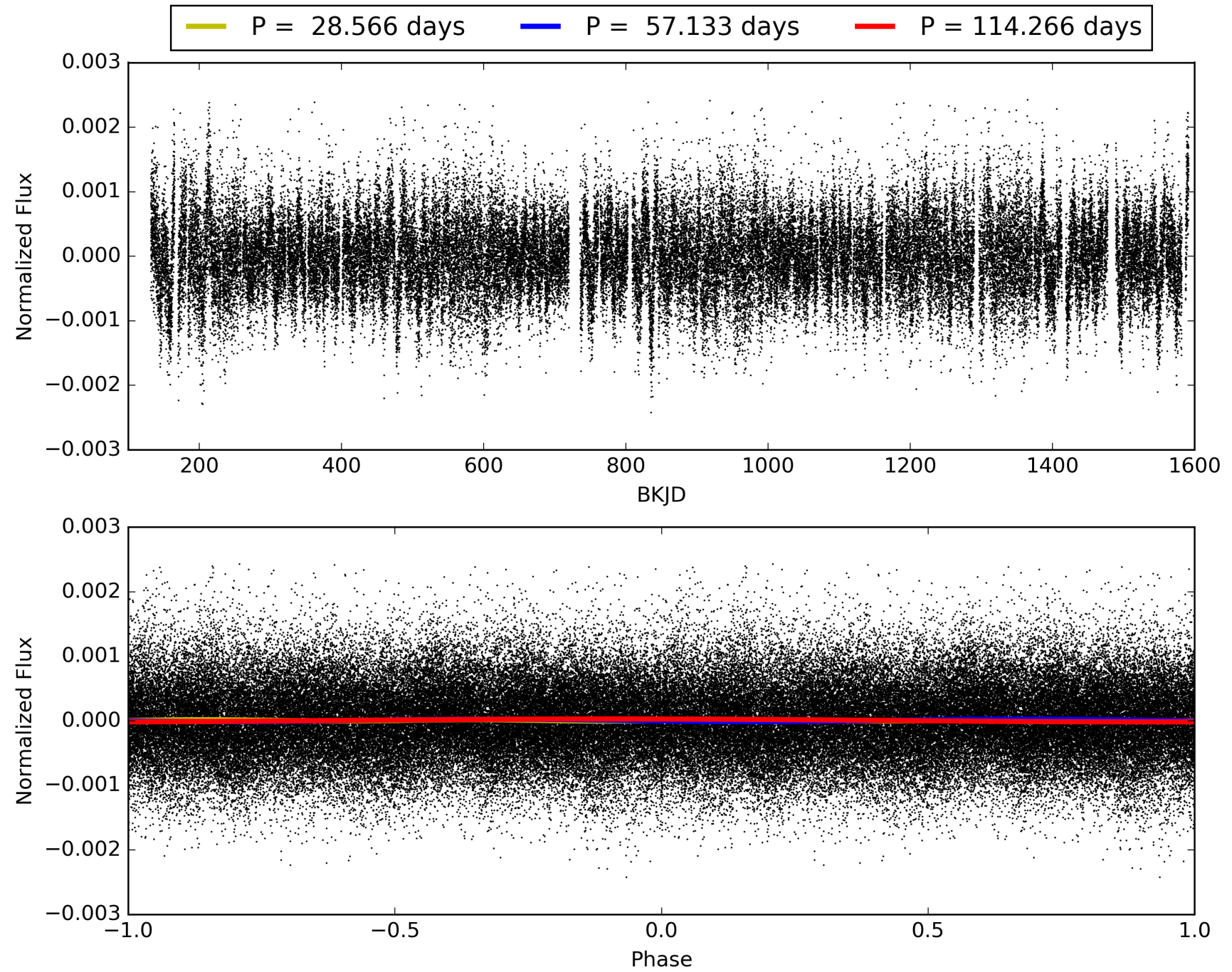
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:44:21 Z

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

TCE 007663405-02, PDC Light Curves

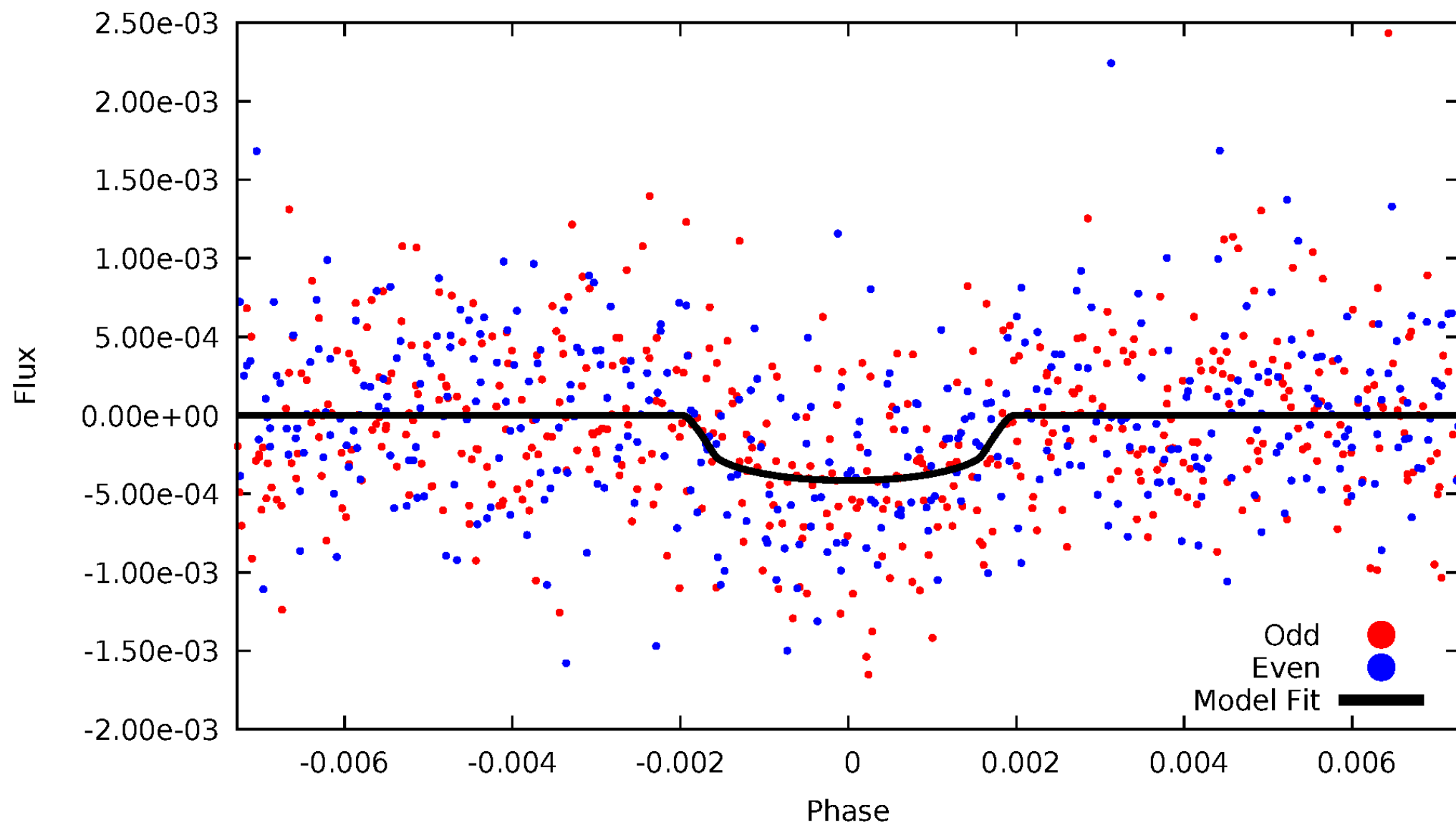


TCE 007663405-02



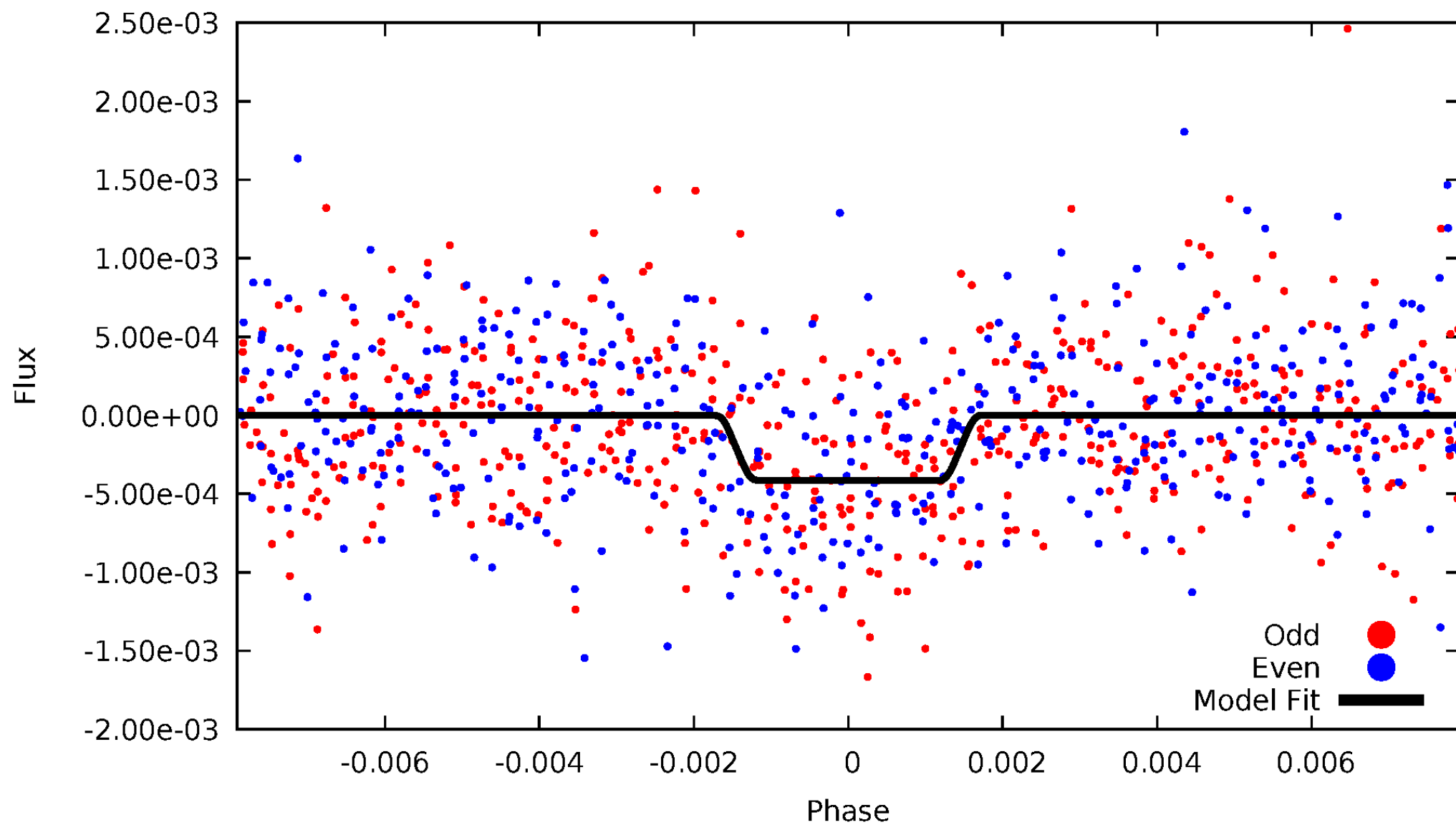
DV Odd/Even

TCE 007663405-02



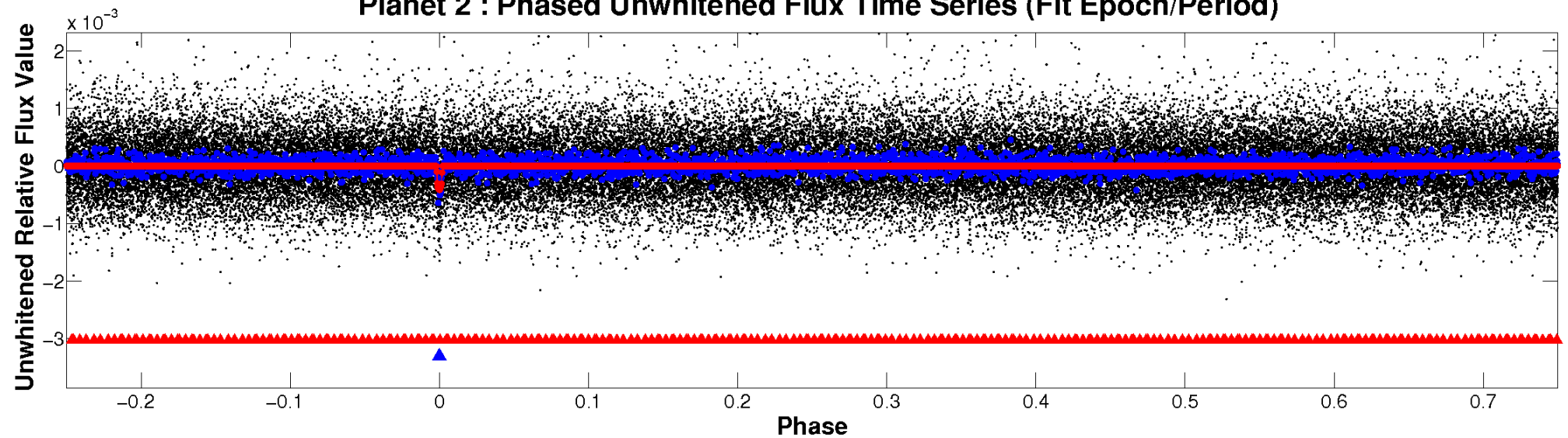
ALT Odd/Even

TCE 007663405-02

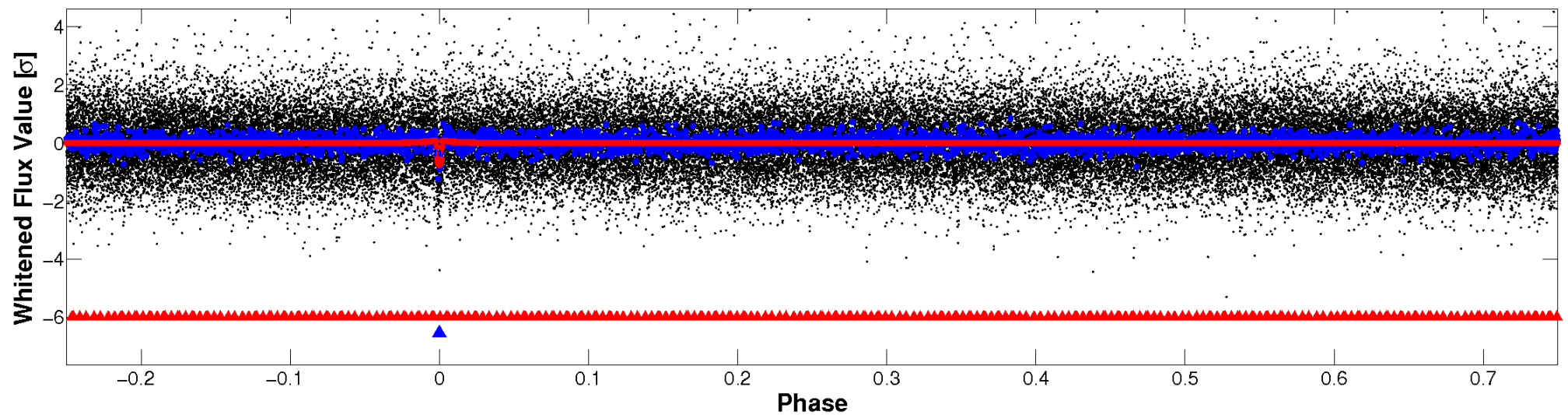


Non-Whitened Vs. Whitened Light Curve

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

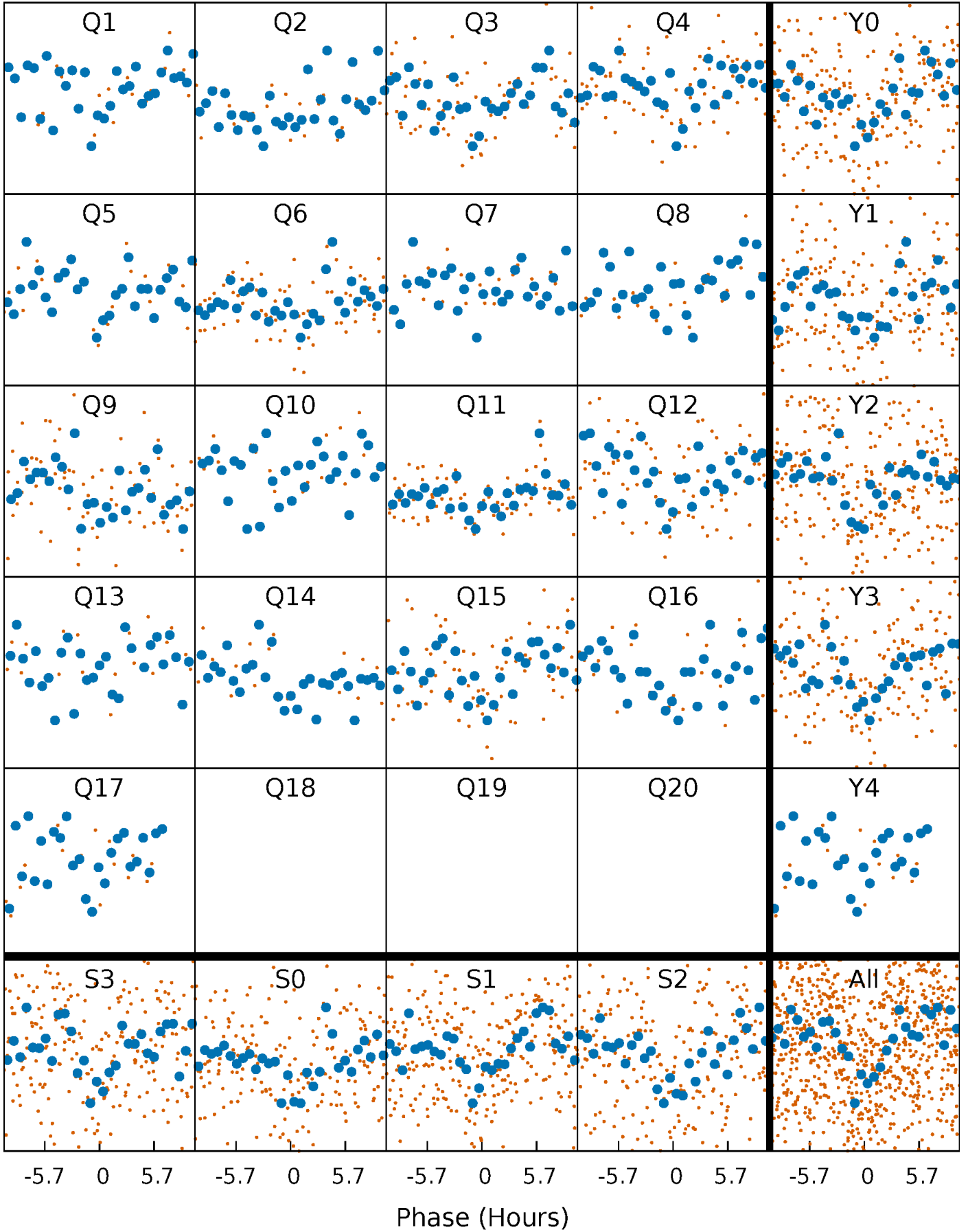


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



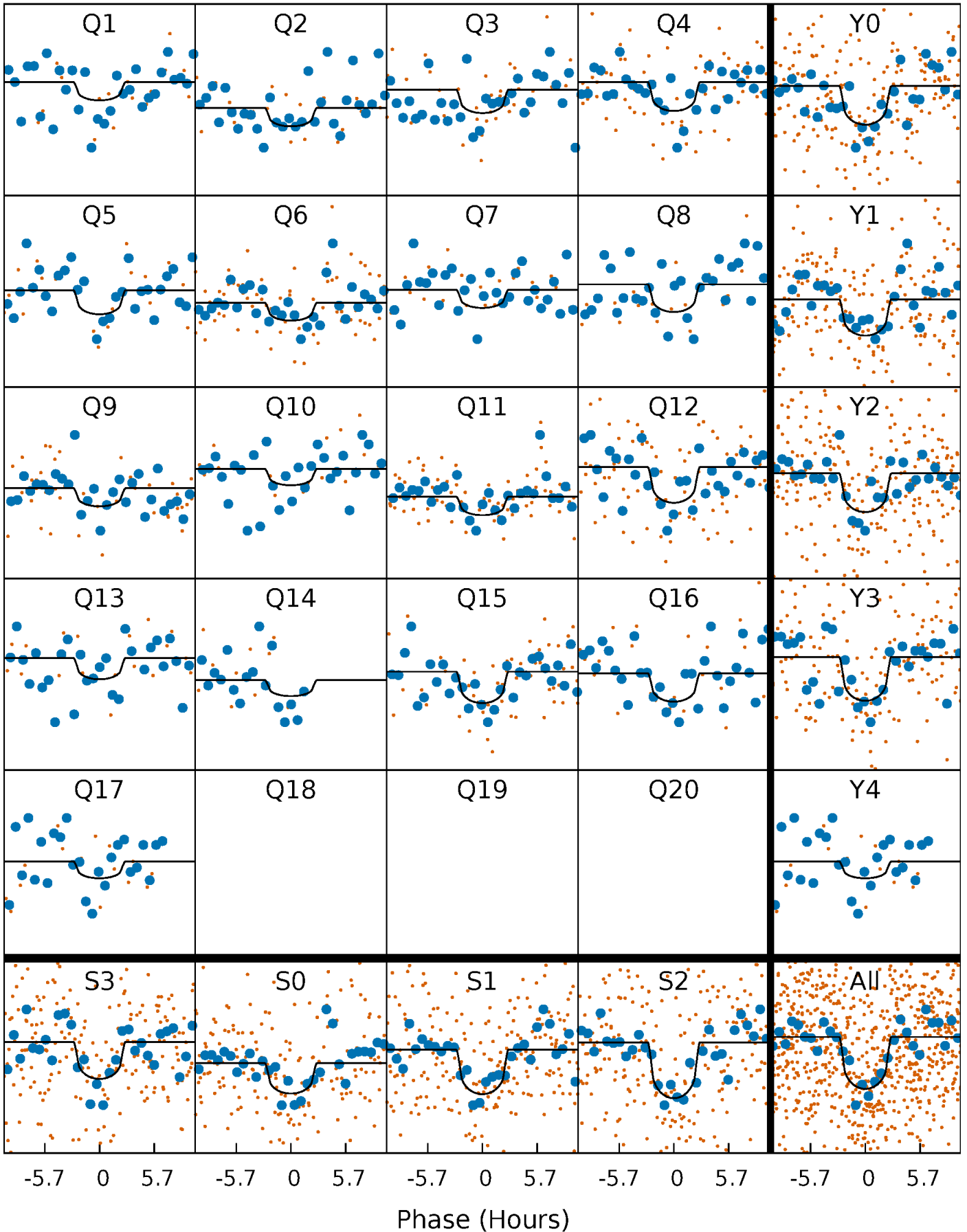
PDC Quarter-Phased Transit Curves

TCE 007663405-02 P= 57.132925 Days $T_0=152.989842$ (BKJD)



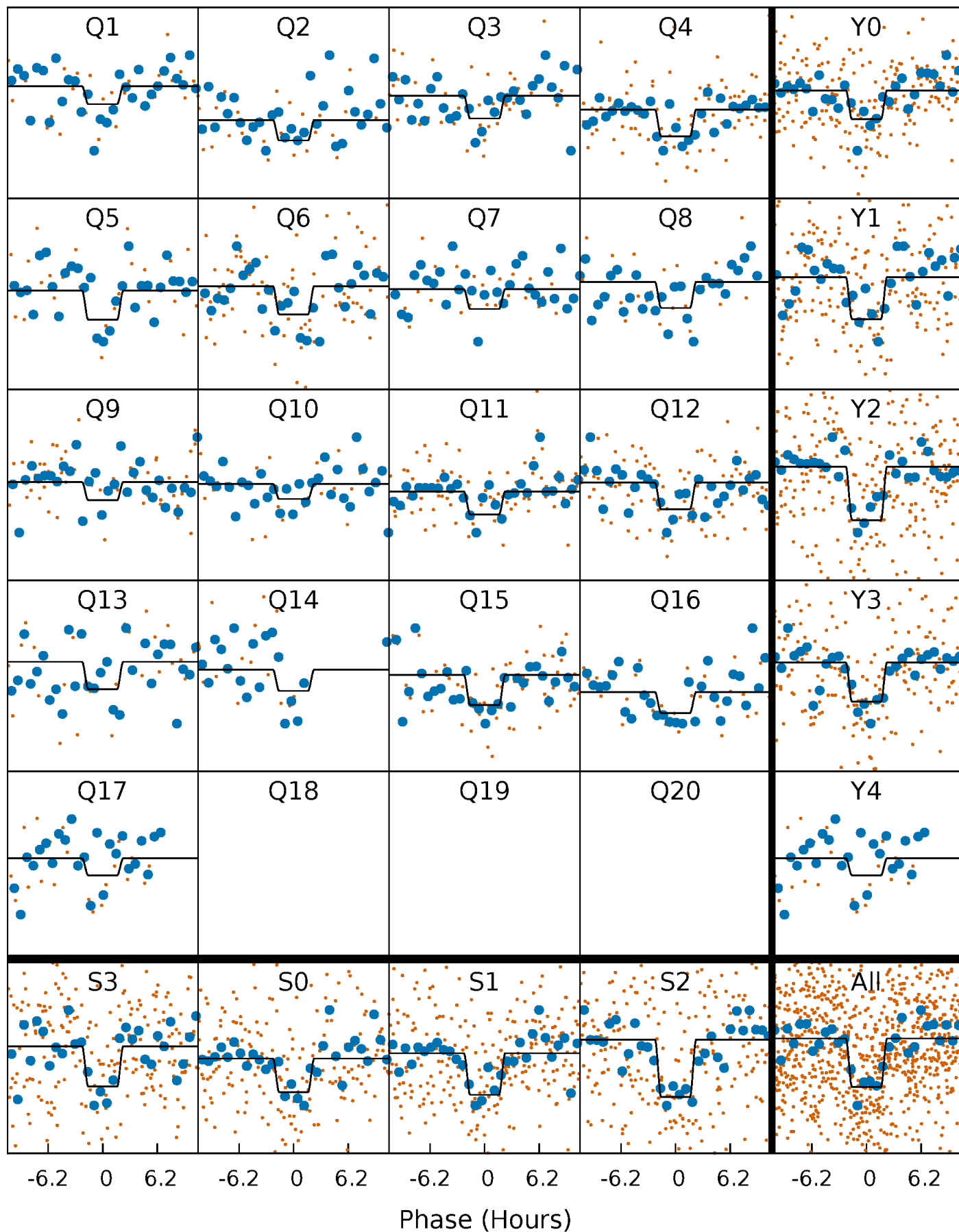
DV Quarter-Phased Transit Curves

TCE 007663405-02 P= 57.132925 Days $T_0=152.989842$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

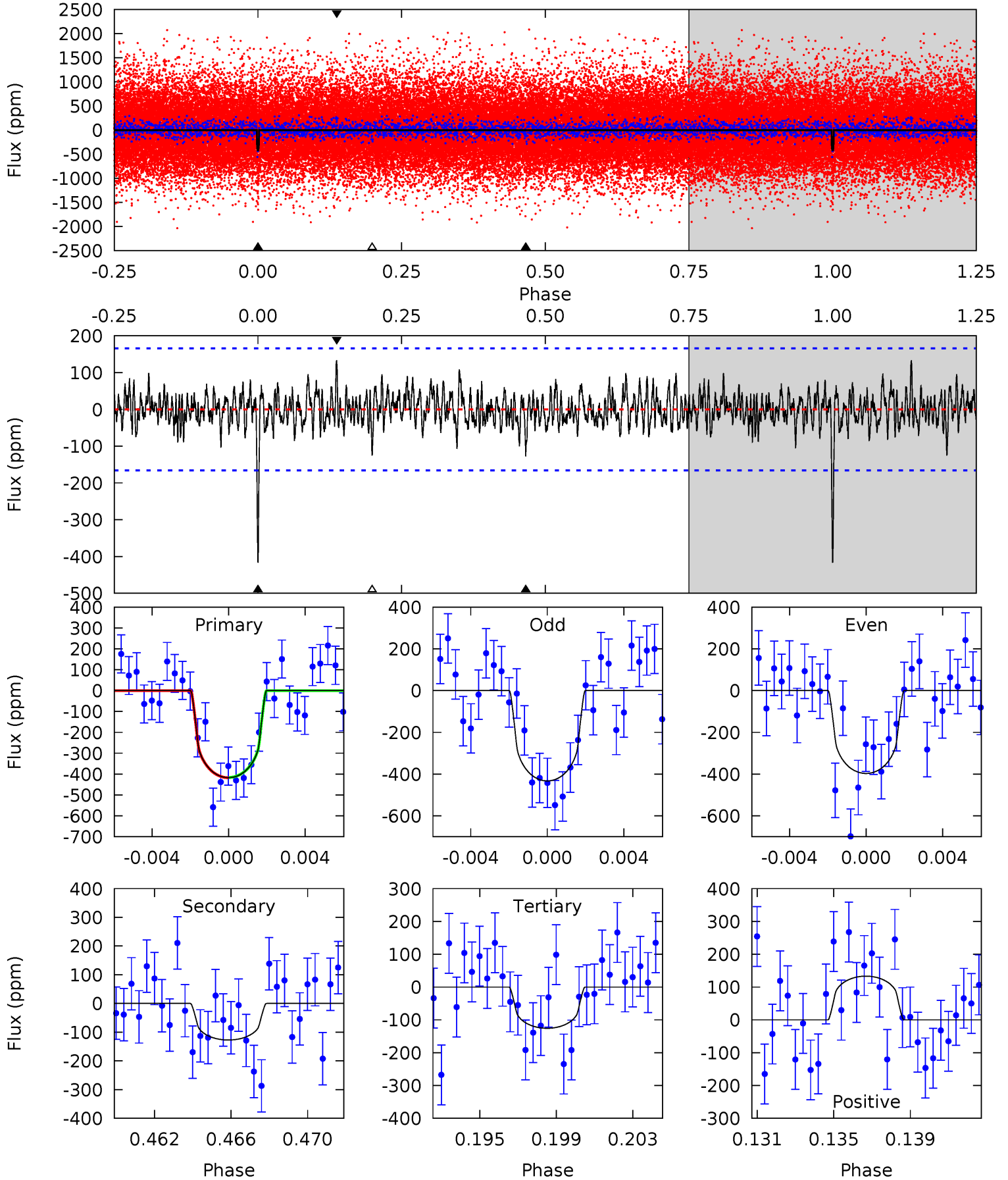
TCE 007663405-02 P= 57.133339 Days $T_0=152.987219$ (BKJD)



DV Model-Shift Uniqueness Test

007663405-02, P = 57.132925 Days, E = 95.856917 Days

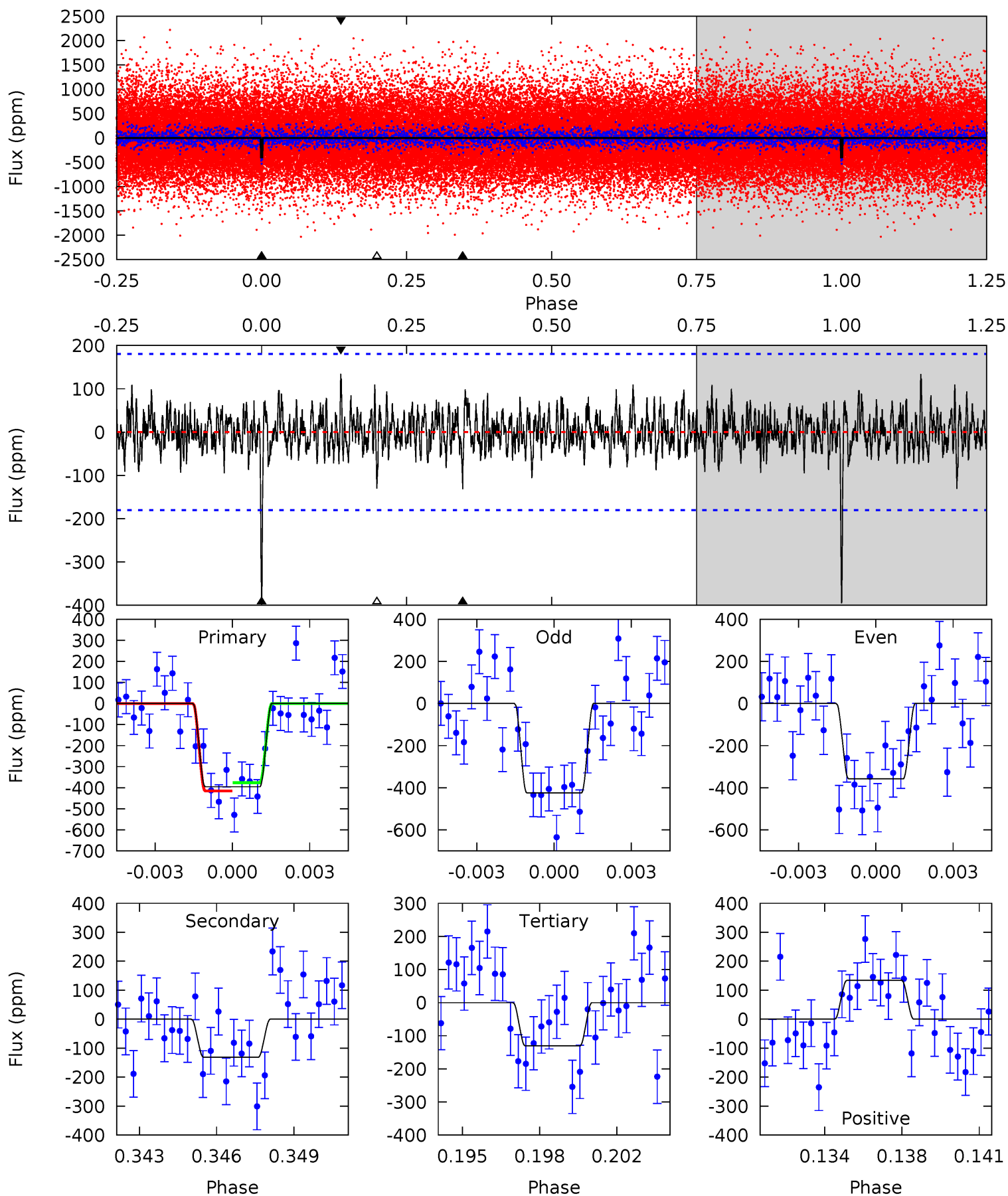
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	3.99	3.94	4.18	5.20	2.88	1.15	9.14	8.91	0.05	-0.18	0.56	1.01	0.24	0.02



Alt Model-Shift Uniqueness Test

007663405-02, P = 57.133339 Days, E = 95.853880 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	3.81	3.79	3.89	5.23	2.93	1.05	7.68	7.58	0.02	-0.08	0.96	0.96	0.25	0.57



Stellar Parameters For KIC 007663405

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5157^{+77}_{-84}	$4.445^{+0.091}_{-0.049}$	$0.180^{+0.150}_{-0.100}$	$0.904^{+0.064}_{-0.088}$	$0.830^{+0.054}_{-0.029}$	$1.584^{+0.588}_{-0.280}$
	+1%/-2%	+2%/-1%	+83%/-56%	+7%/-10%	+7%/-3%	+37%/-18%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 007663405-02 / KOI 1519.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-127 ± 32	$2.65^{+2.00}_{-1.82}$	576^{+14}_{-19}	3651^{+2104}_{-596}	690^{+6319}_{-477}
Alt.	-132 ± 34	$2.73^{+2.00}_{-1.81}$	575^{+14}_{-17}	3674^{+1936}_{-611}	719^{+5435}_{-496}

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 $A_{obs} \gg 1.0$

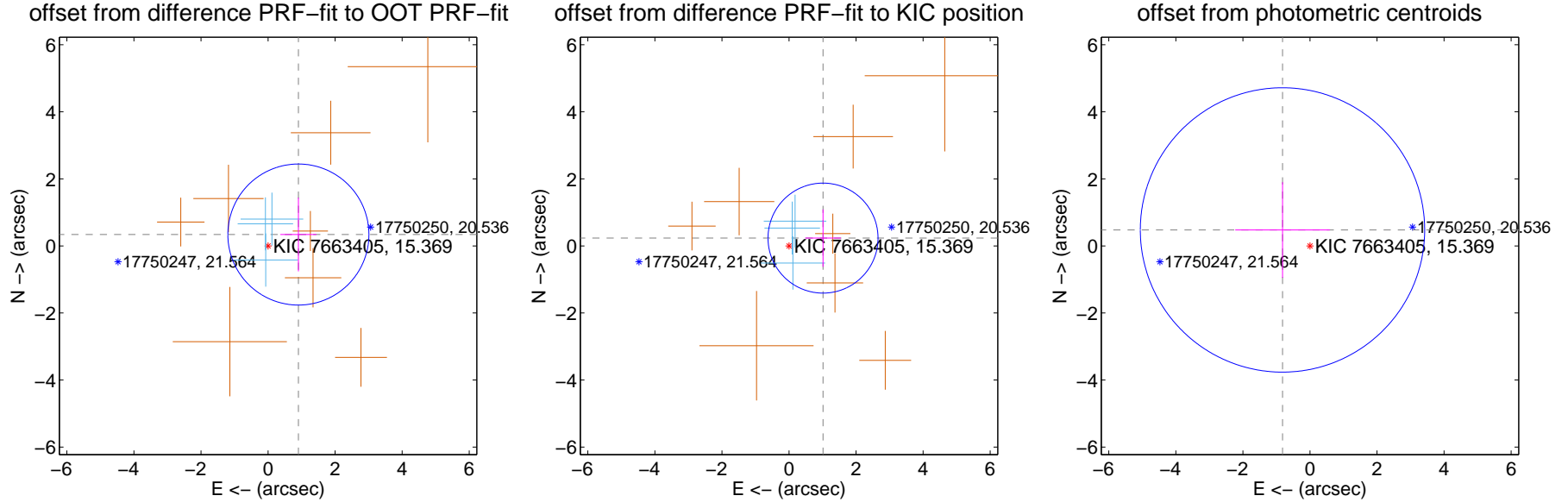
DV Centroid Data

Supplemental centroid analysis for 007663405-02. Kepler magnitude: 15.37. Transit SNR 9.52

There are 3 quarters with good PRF difference image offsets

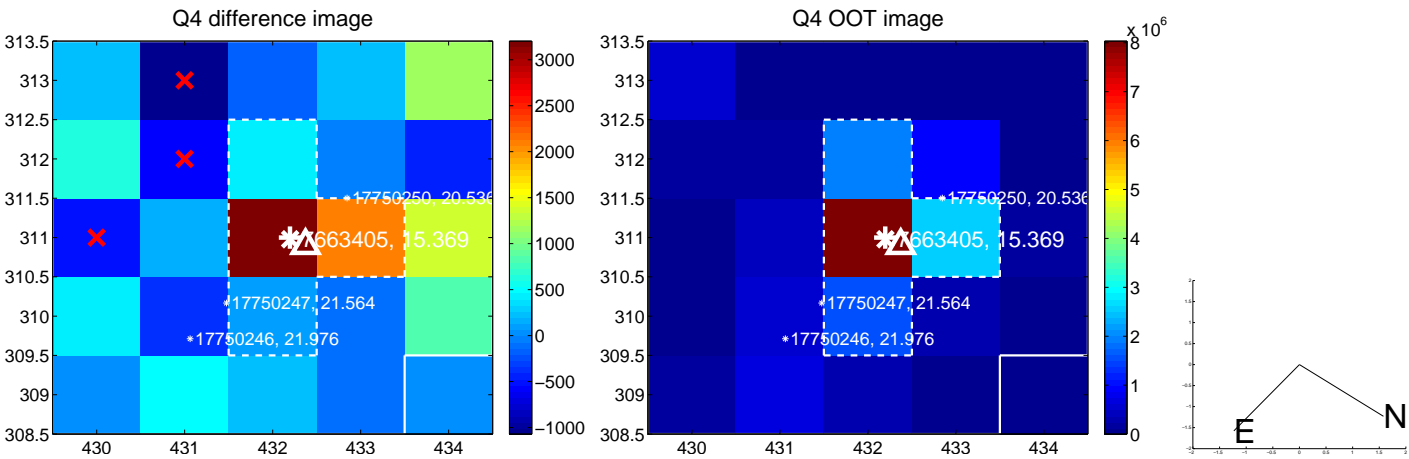
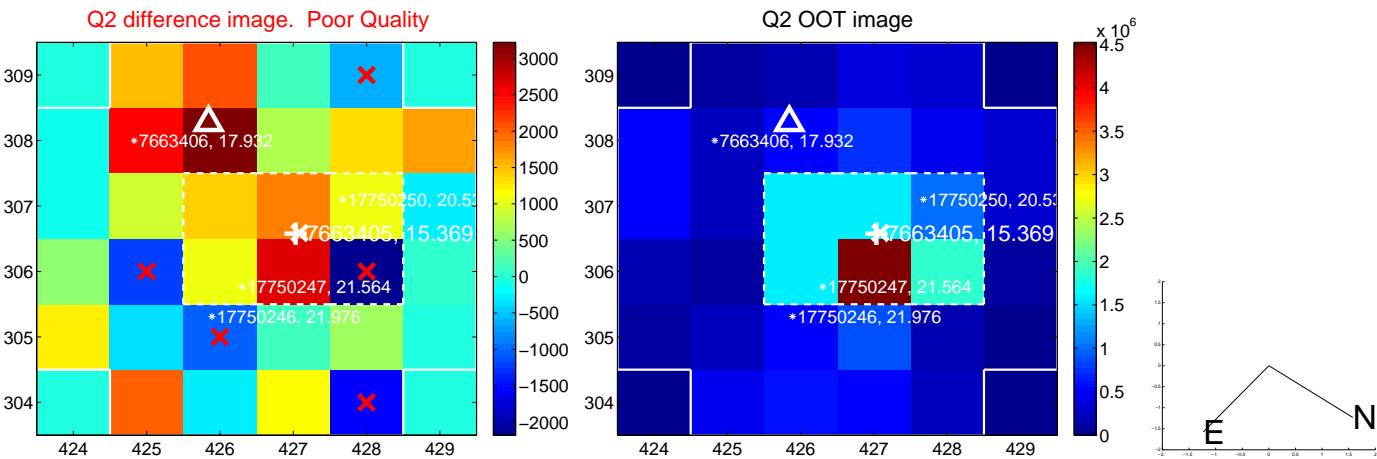
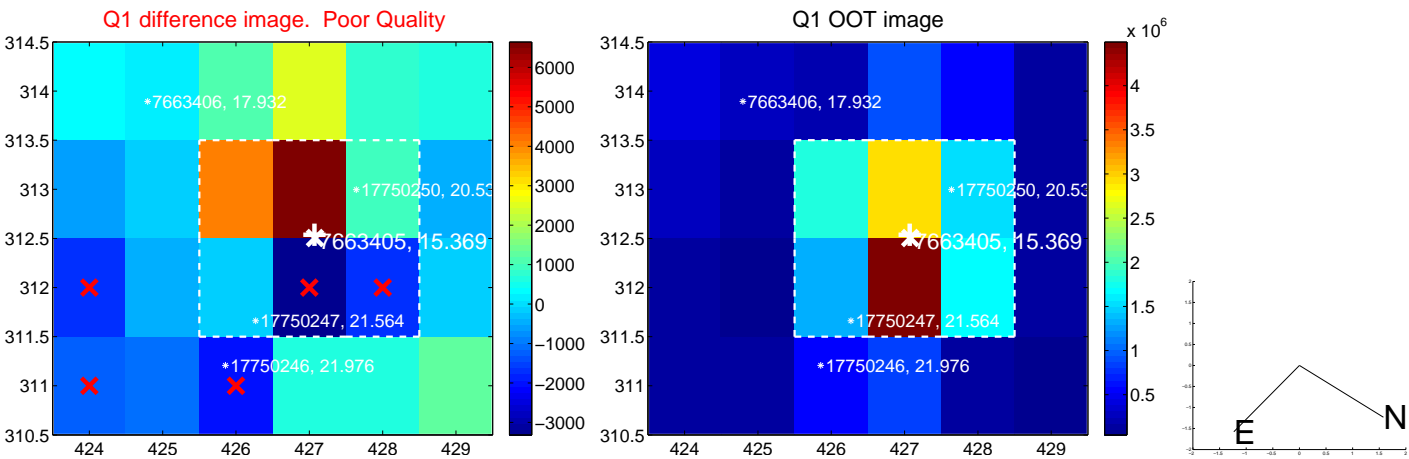
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.967 ± 0.701	1.38	-0.905 ± 0.537	0.339 ± 1.099
PRF-fit source offset from KIC position	1.041 ± 0.547	1.90	-1.015 ± 0.533	0.233 ± 0.856
photometric centroid source offset	0.95 ± 1.41	0.67	0.82 ± 1.41	0.48 ± 1.43

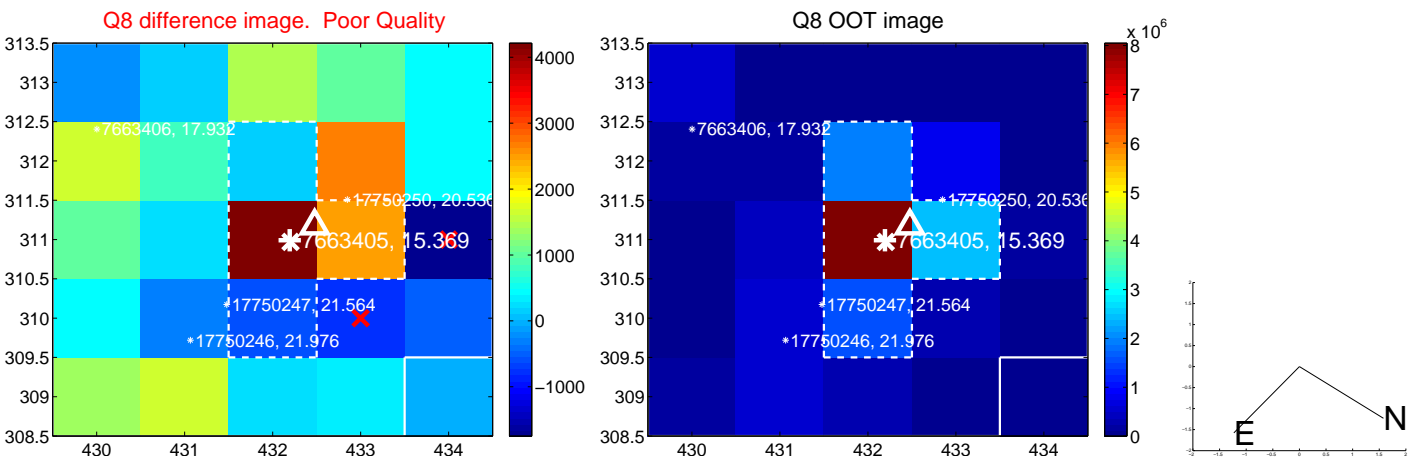
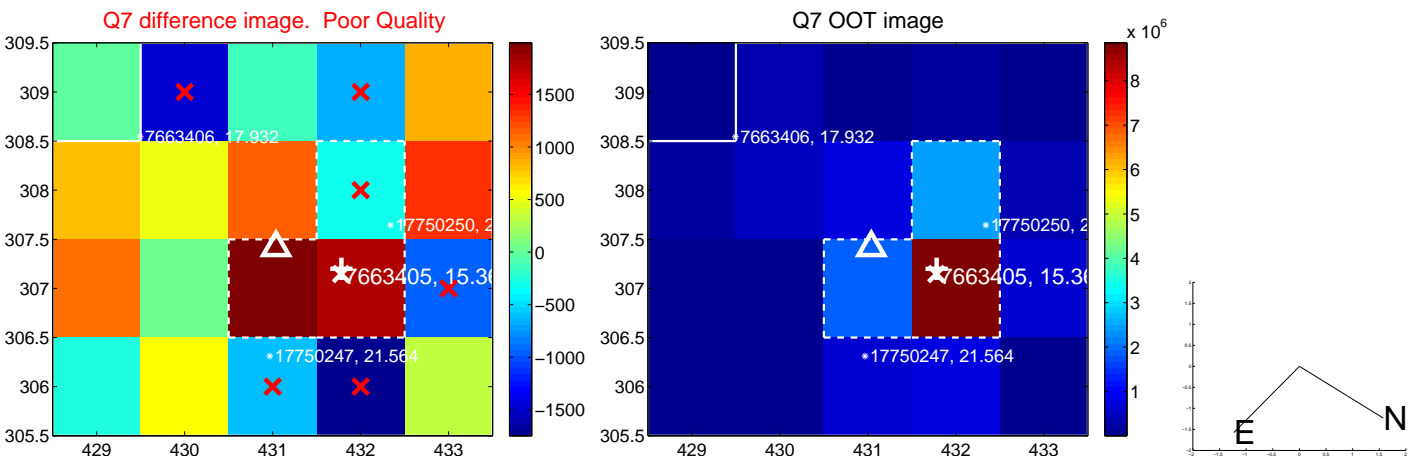
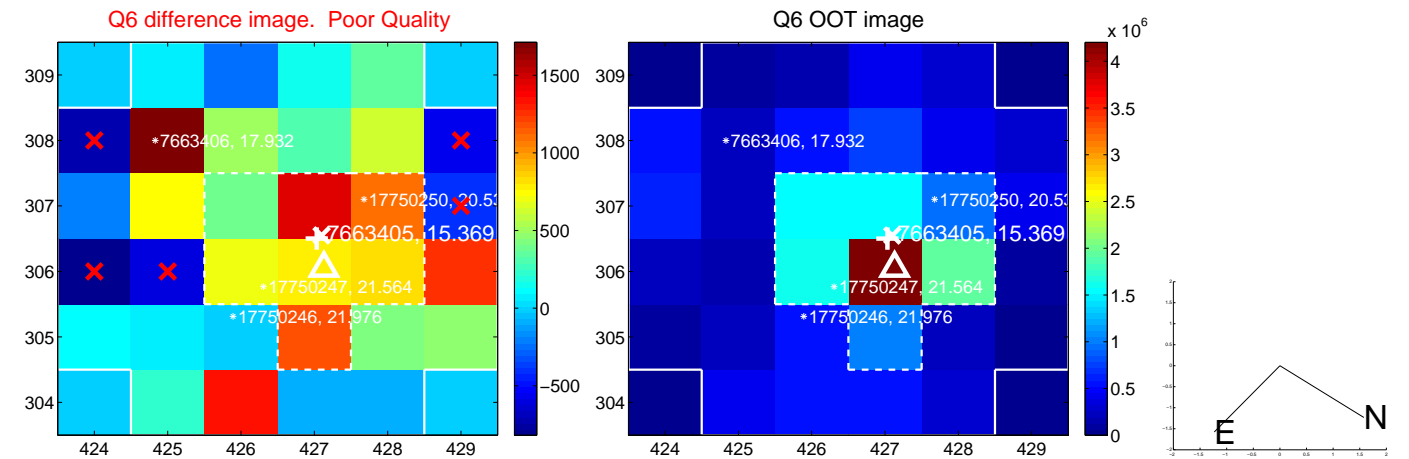
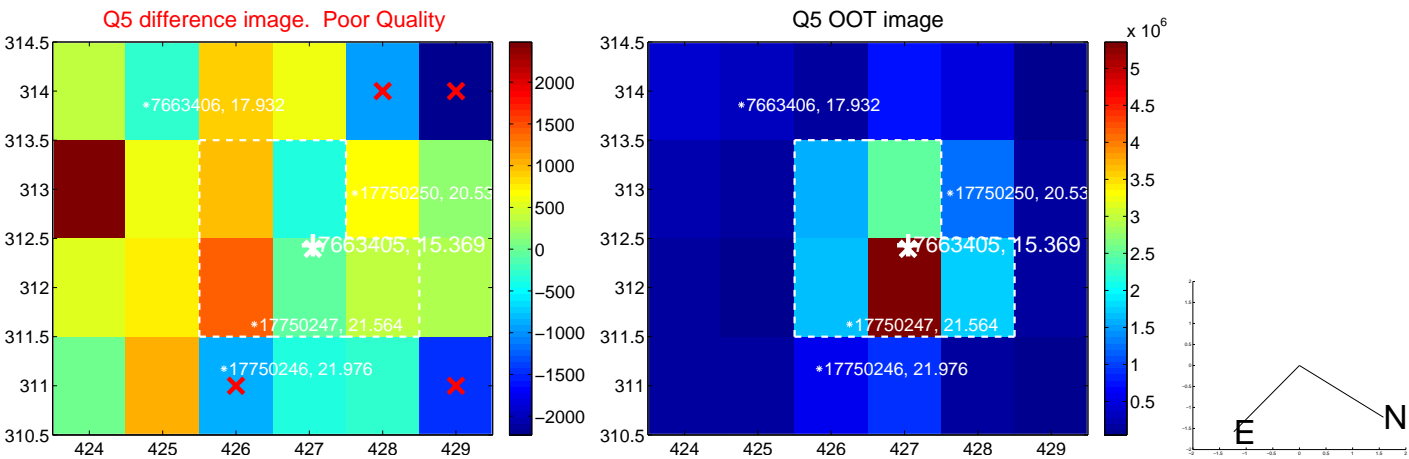


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

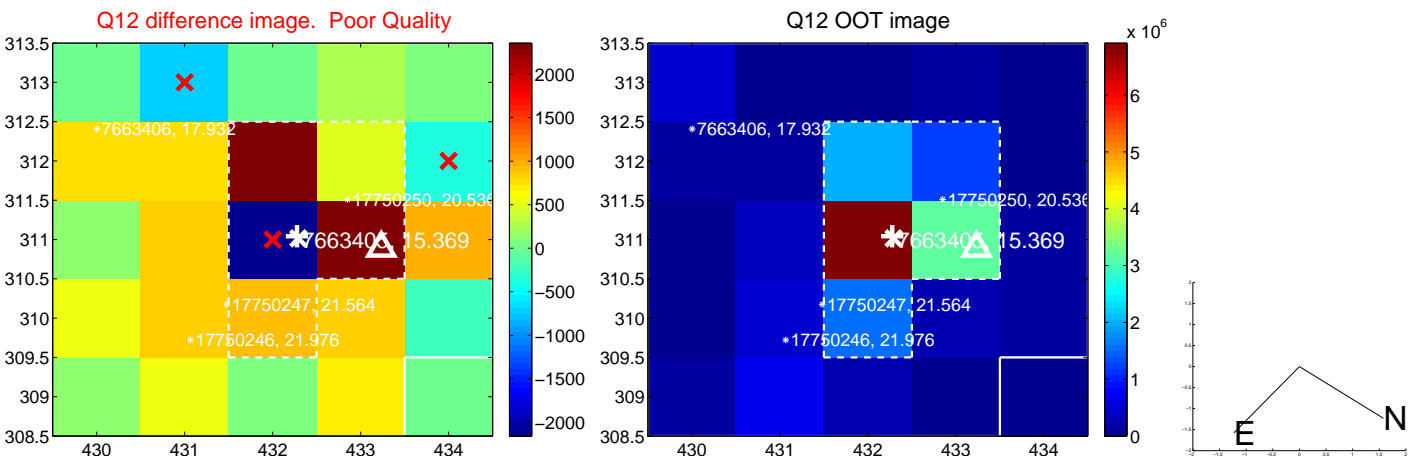
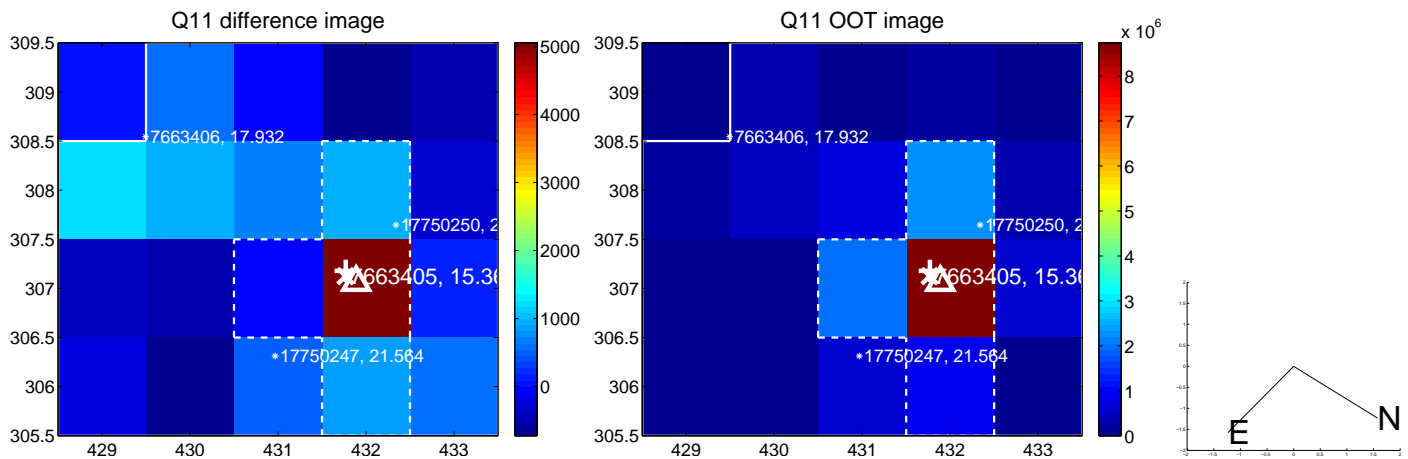
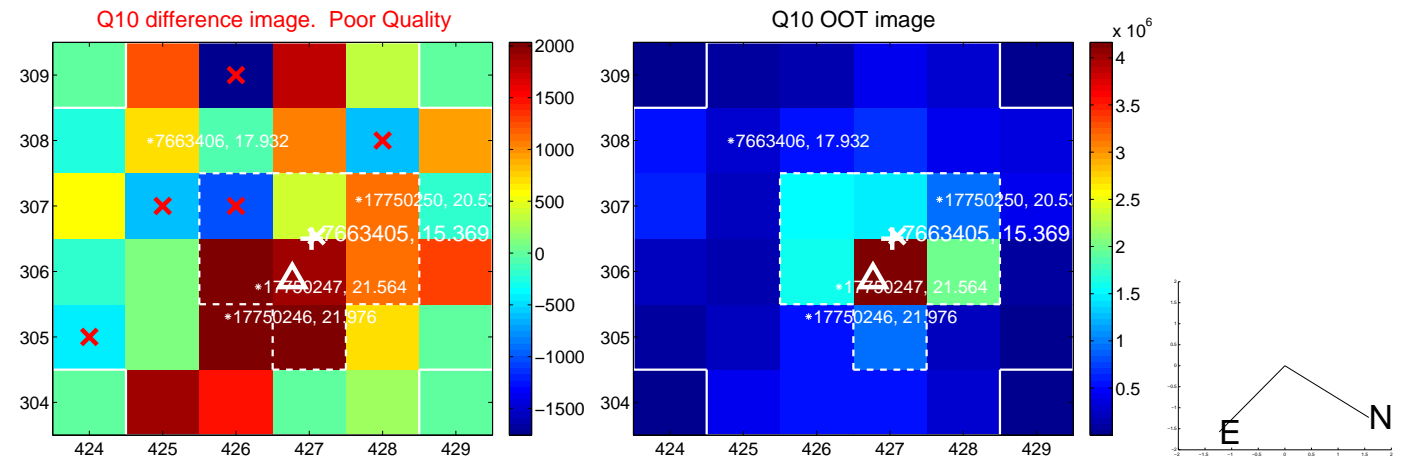
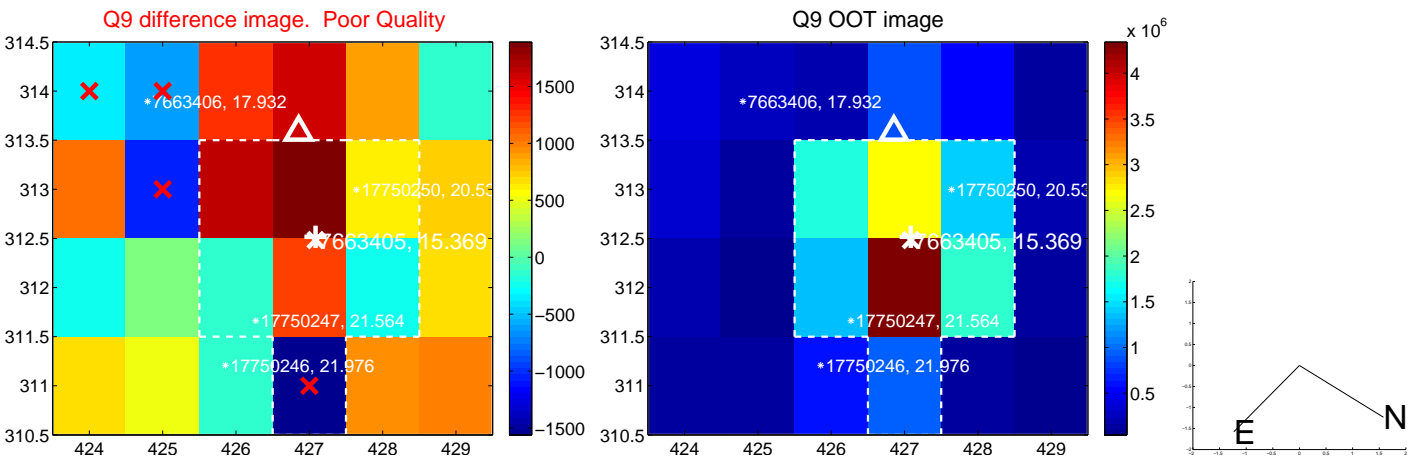
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



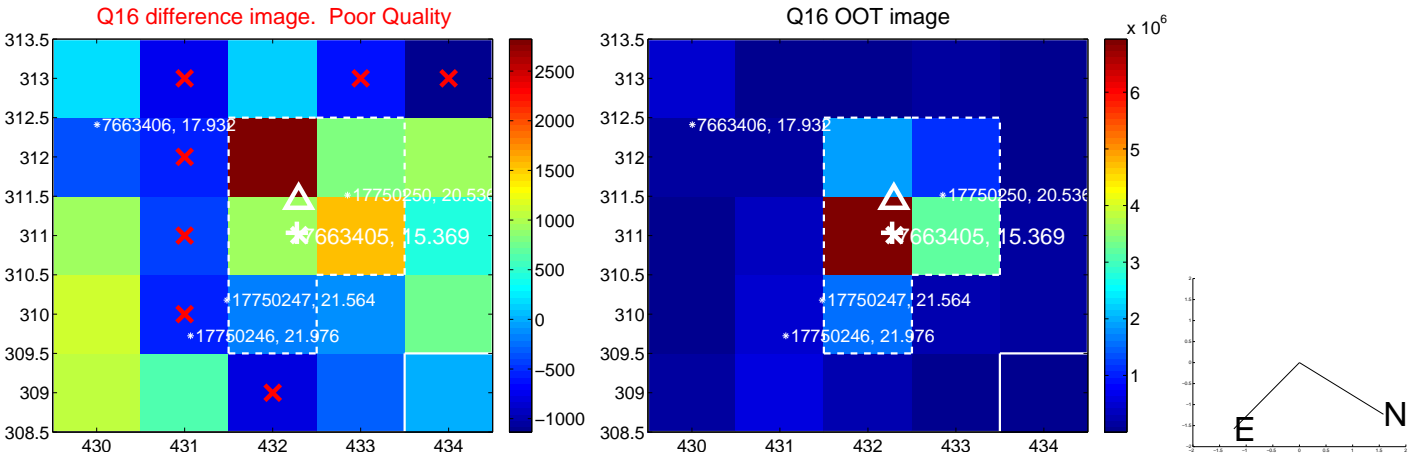
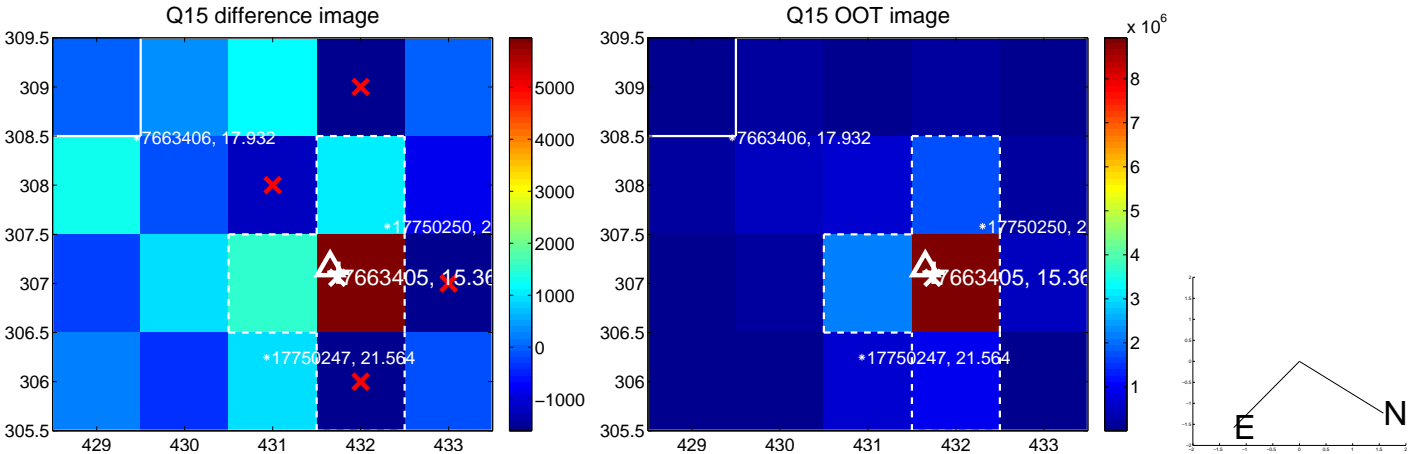
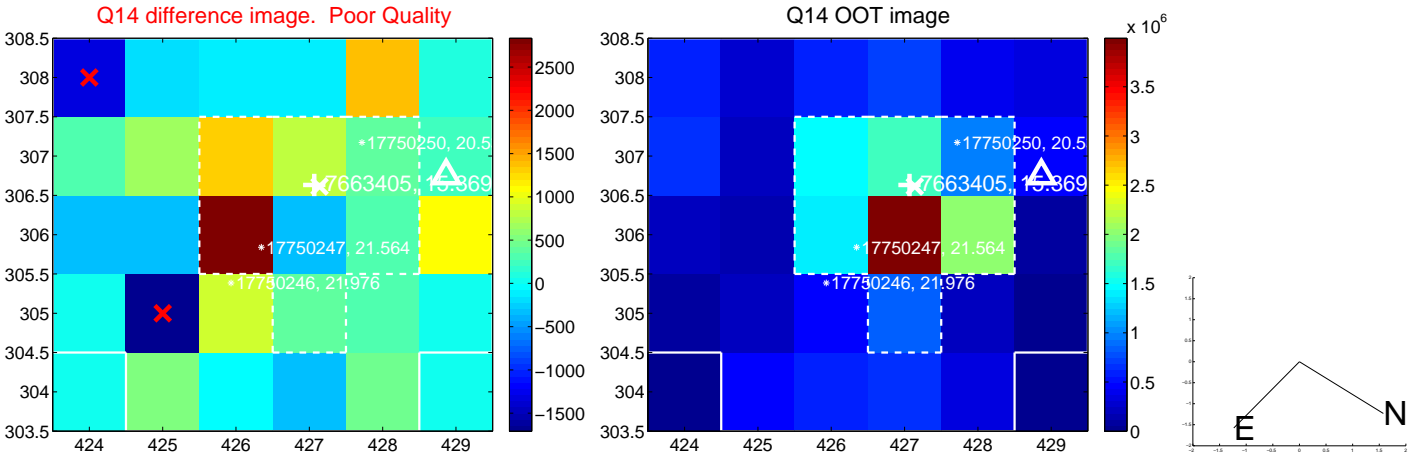
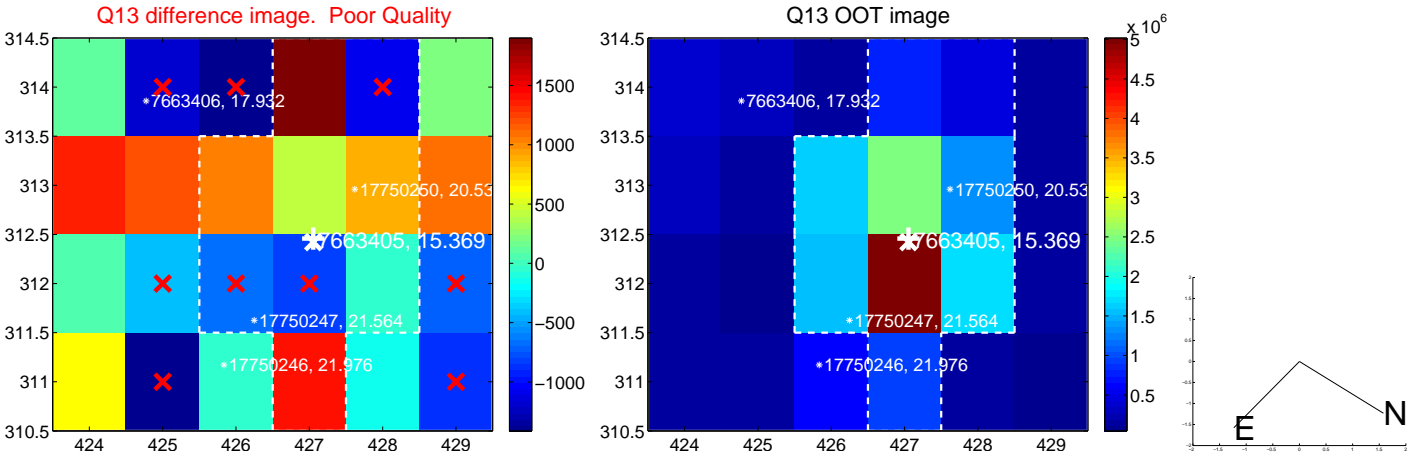
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



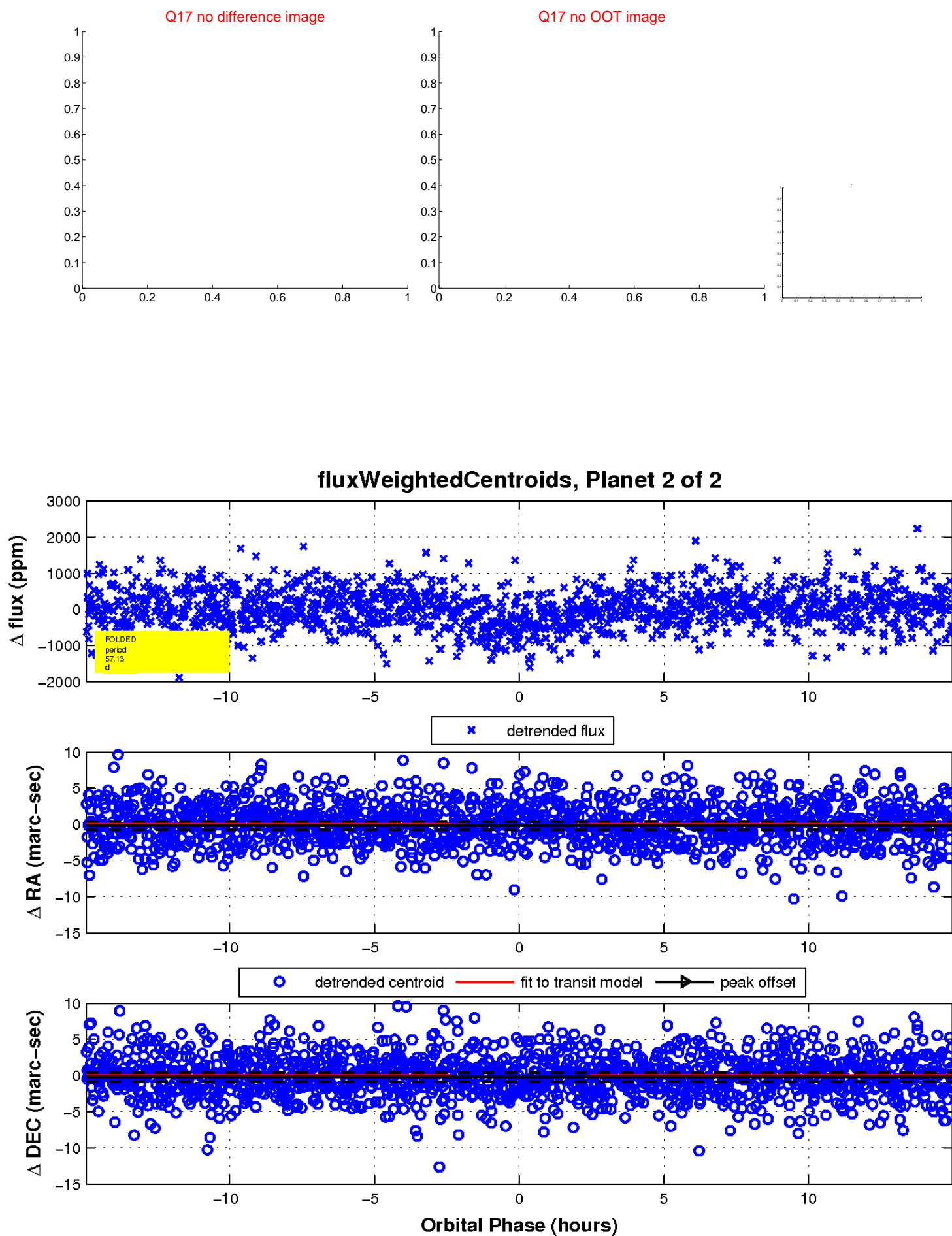
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

