

KIC 004072750

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})
004072750-01	OBS	No	1.191137	131.912826	28.3	0.638	10.2	5.0	3.91	7032	2.17	47664.31
004072750-02	OBS	No	1.190919	132.448897	8.7	9.777	9.3	4.7	3.91	7032	1.23	47675.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004072750-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004072750-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

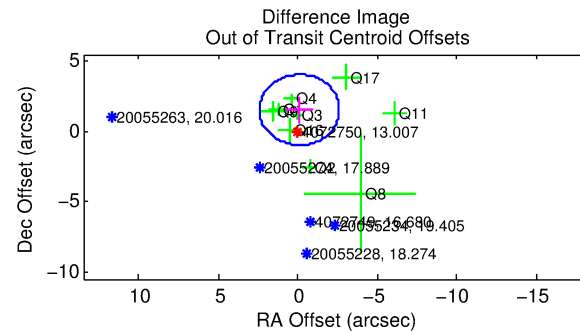
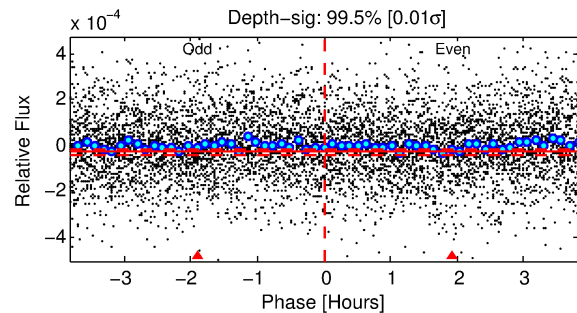
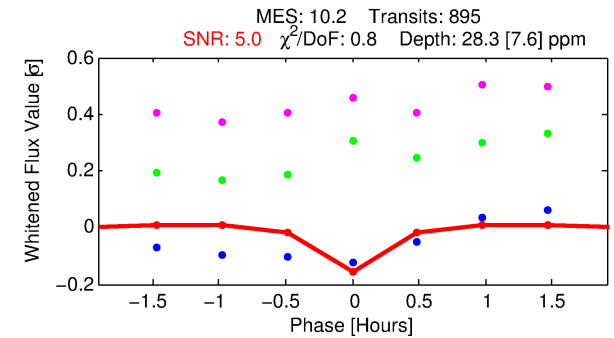
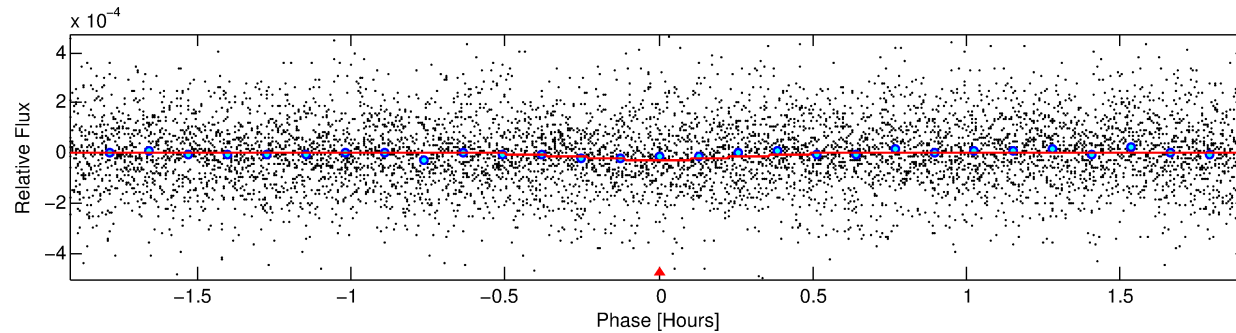
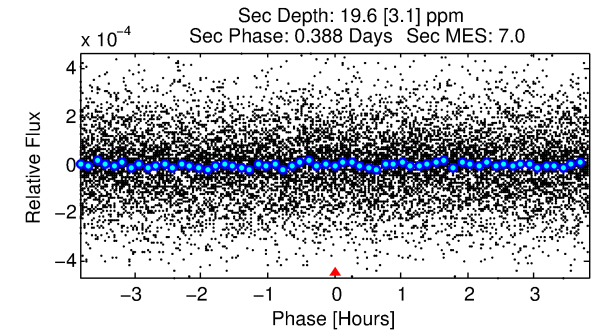
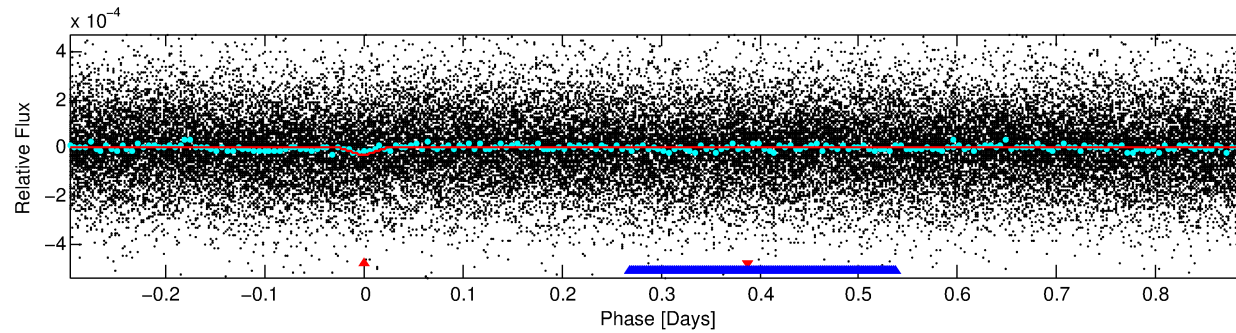
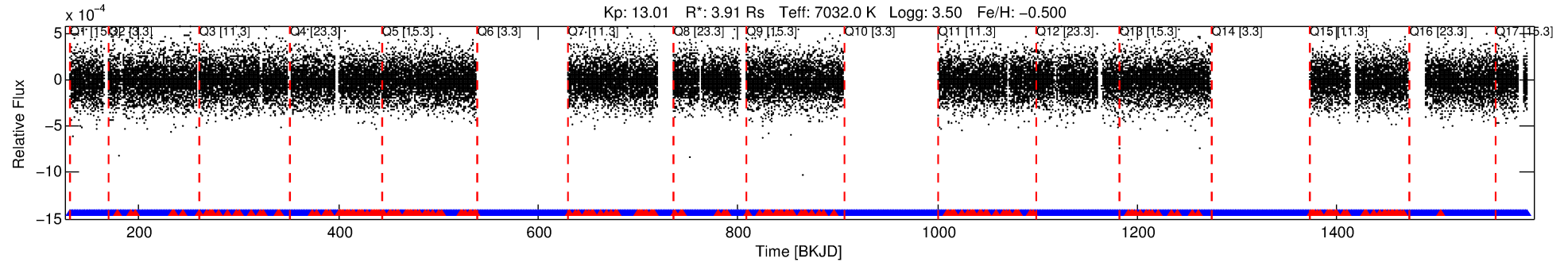
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004072750-01

No Significant Match Found

DV One-Page Summary

KIC: 4072750 Candidate: 1 of 2 Period: 1.191 d



DV Fit Results:

Period = 1.19114 [0.00002] d
Epoch = 131.9128 [0.0025] BKJD
Rp/R* = 0.0051 [0.0048]
a/R* = 13.70 [73.39]
b = 0.30 [16.35]
Seff = 47664.31 [31752.42]
Teq = 3768 [627] K
Rp = 2.17 [2.24] Re
a = 0.0265 [0.0109] AU
Ag = 1.61 [3.23] [0.19σ]
Teffp = 6567 [3111] K [0.88σ]

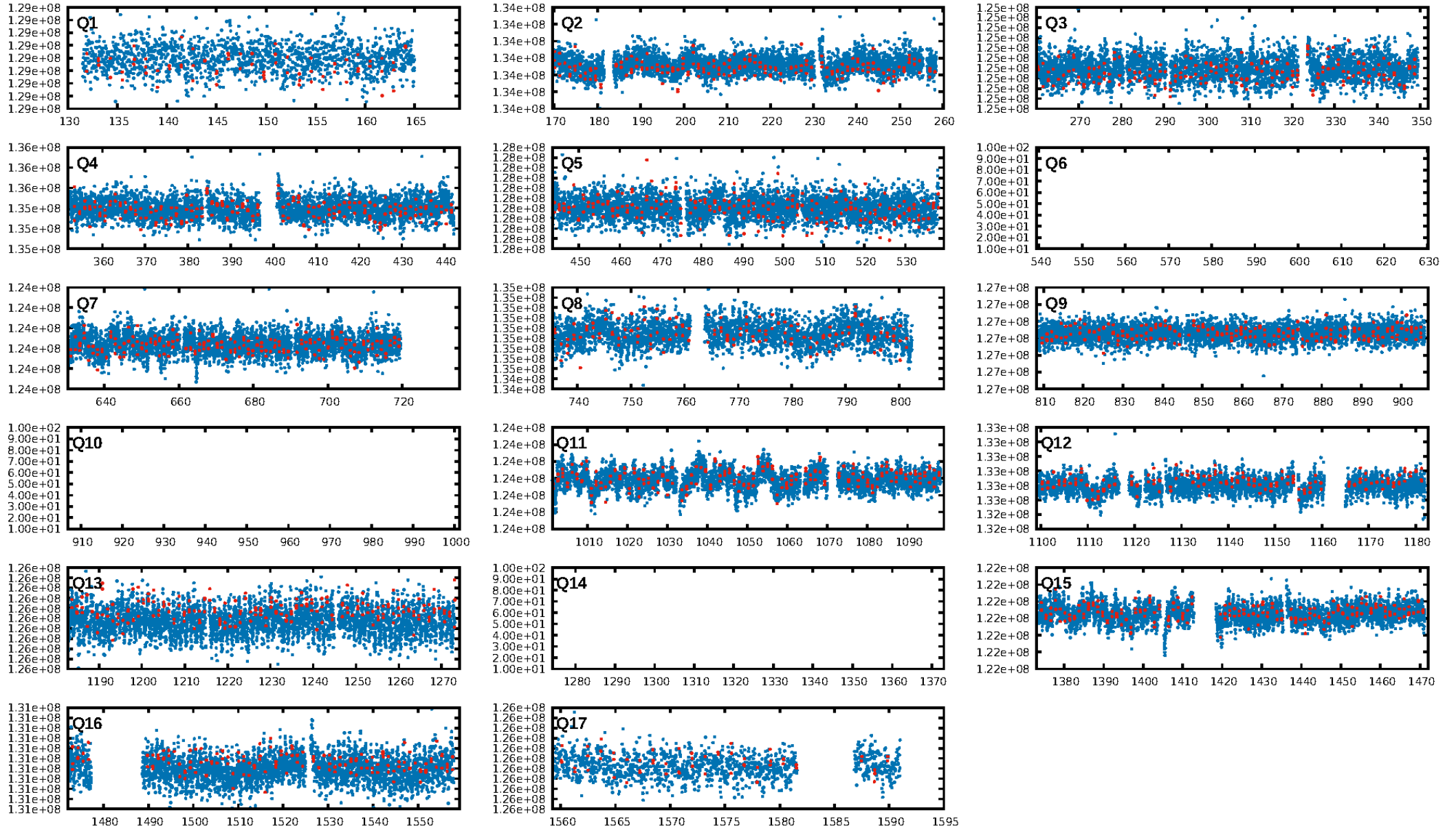
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.76 [644/845]
GhostDiagnostic-chr: 7.39
Centroid-sig: 0.0%
Centroid-so: 9.794 arcsec [4.08σ]
OotOffset-rm: 1.551 arcsec [1.85σ]
KicOffset-rm: 1.663 arcsec [1.97σ]
OotOffset-st: 1/2/3/3 [9]
KicOffset-st: 1/2/3/3 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 0.50 [7/14]

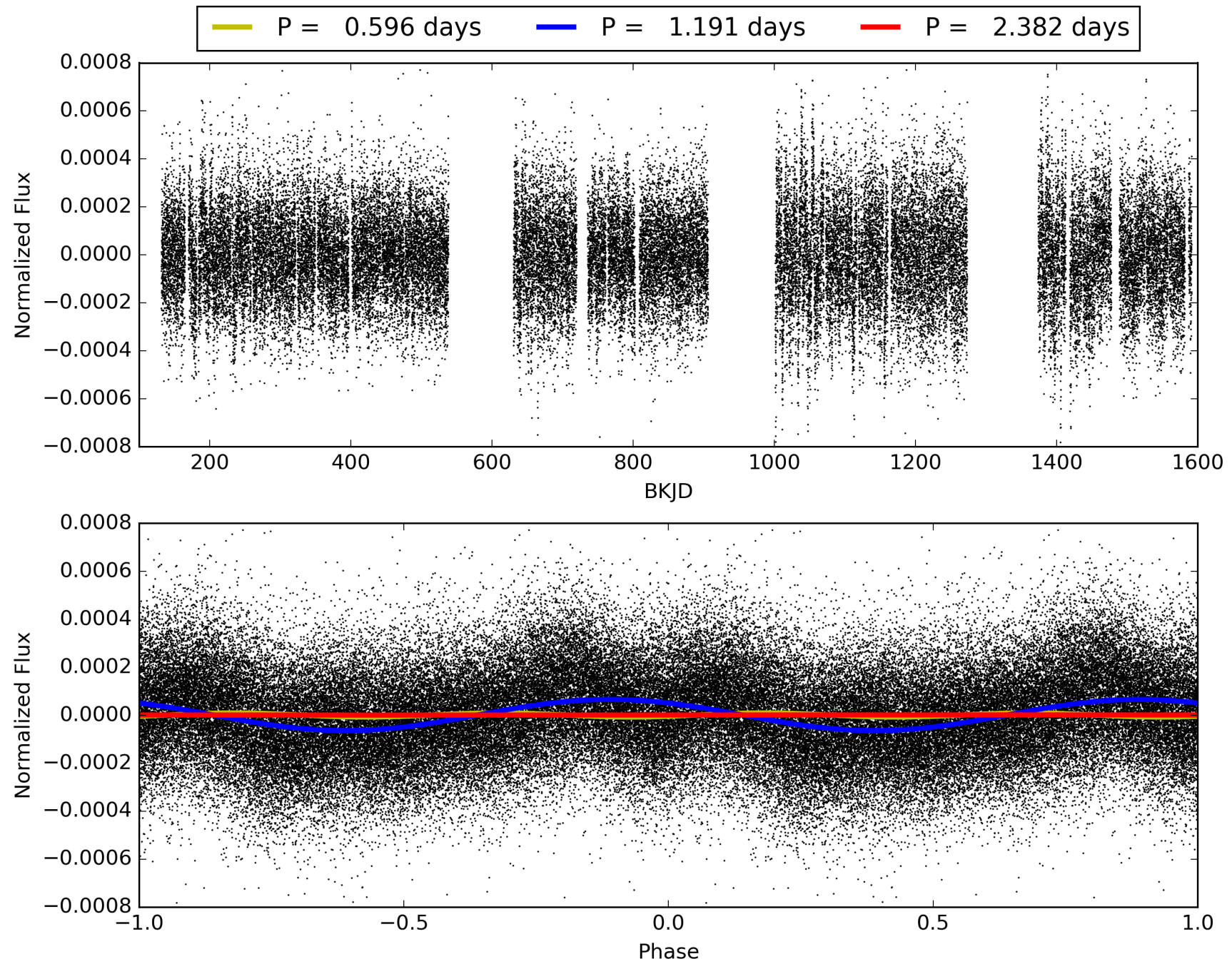
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:48:49 Z

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

TCE 004072750-01, PDC Light Curves

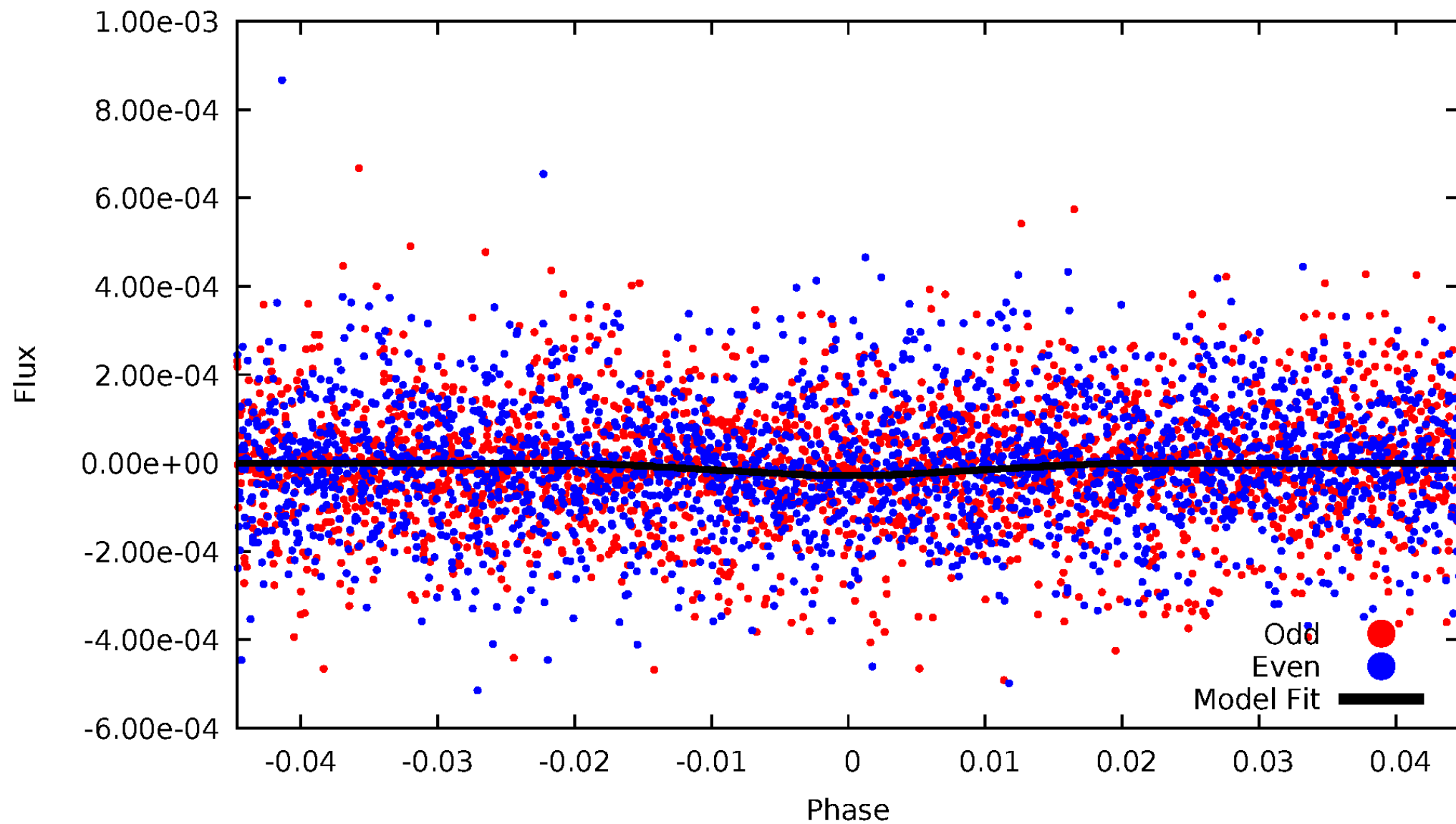


TCE 004072750-01



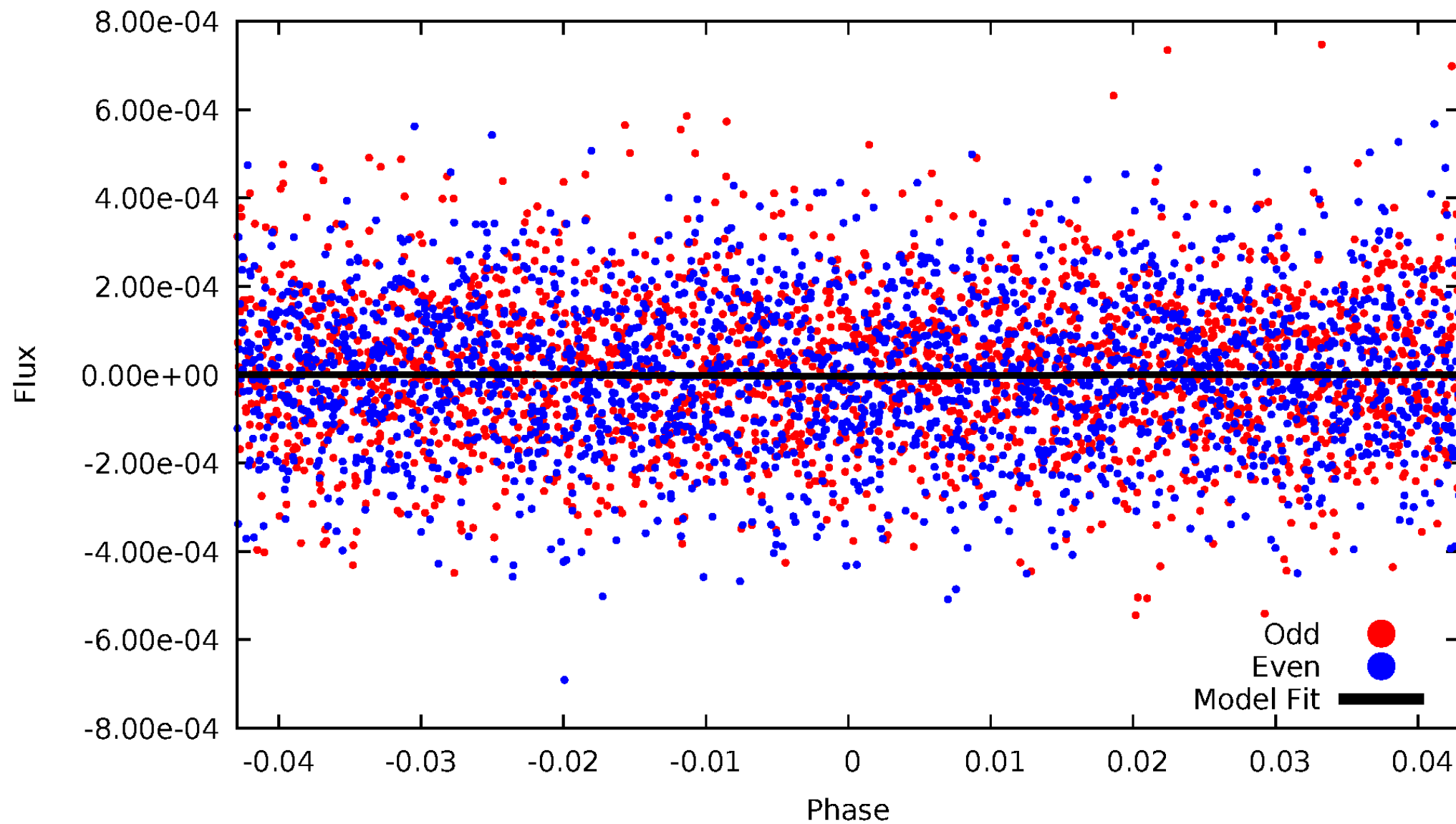
DV Odd/Even

TCE 004072750-01



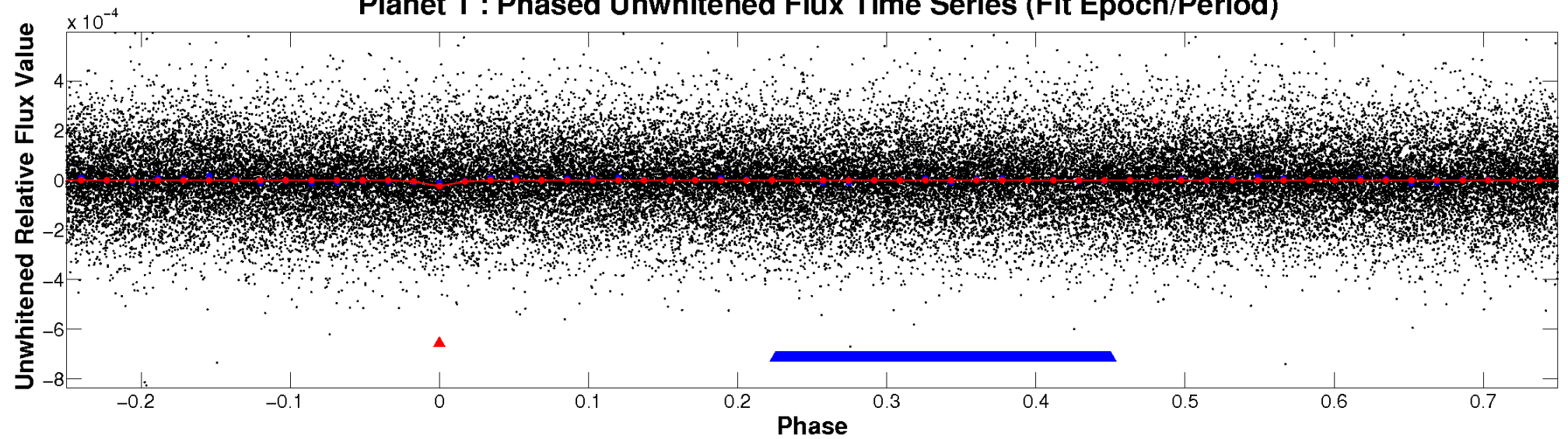
ALT Odd/Even

TCE 004072750-01

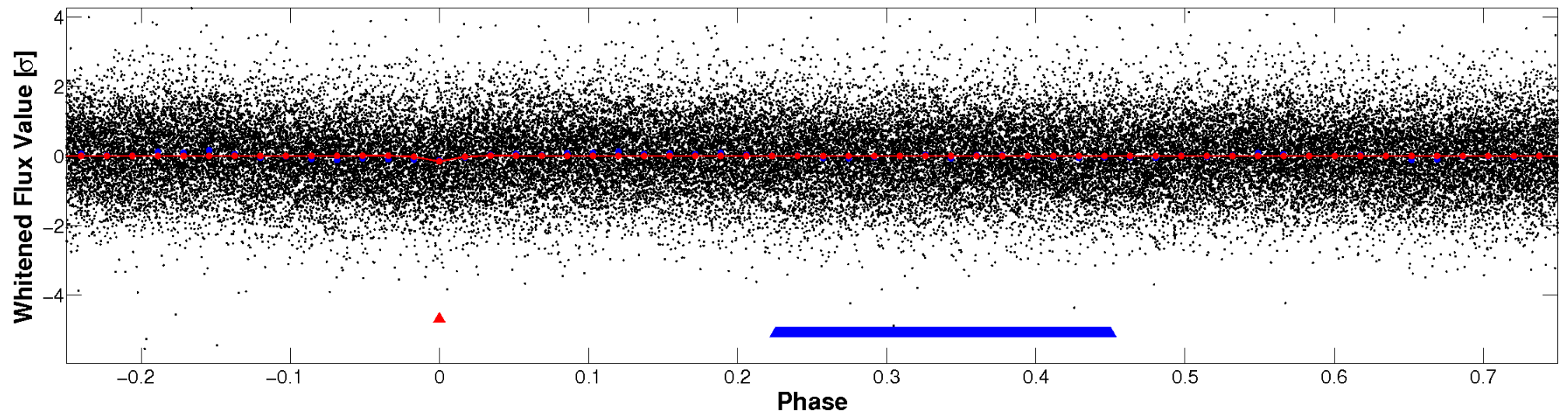


Non-Whitened Vs. Whitened Light Curve

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

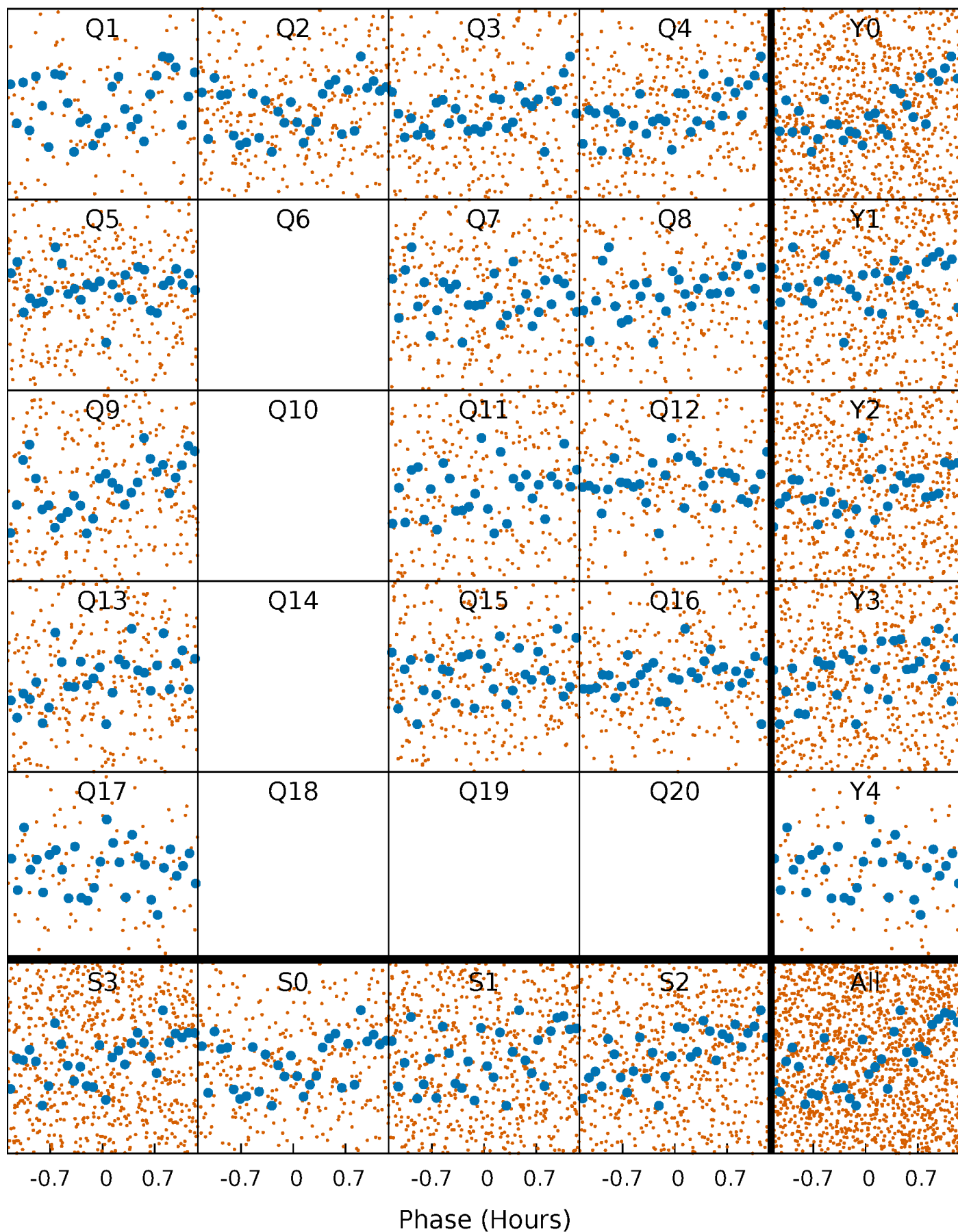


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



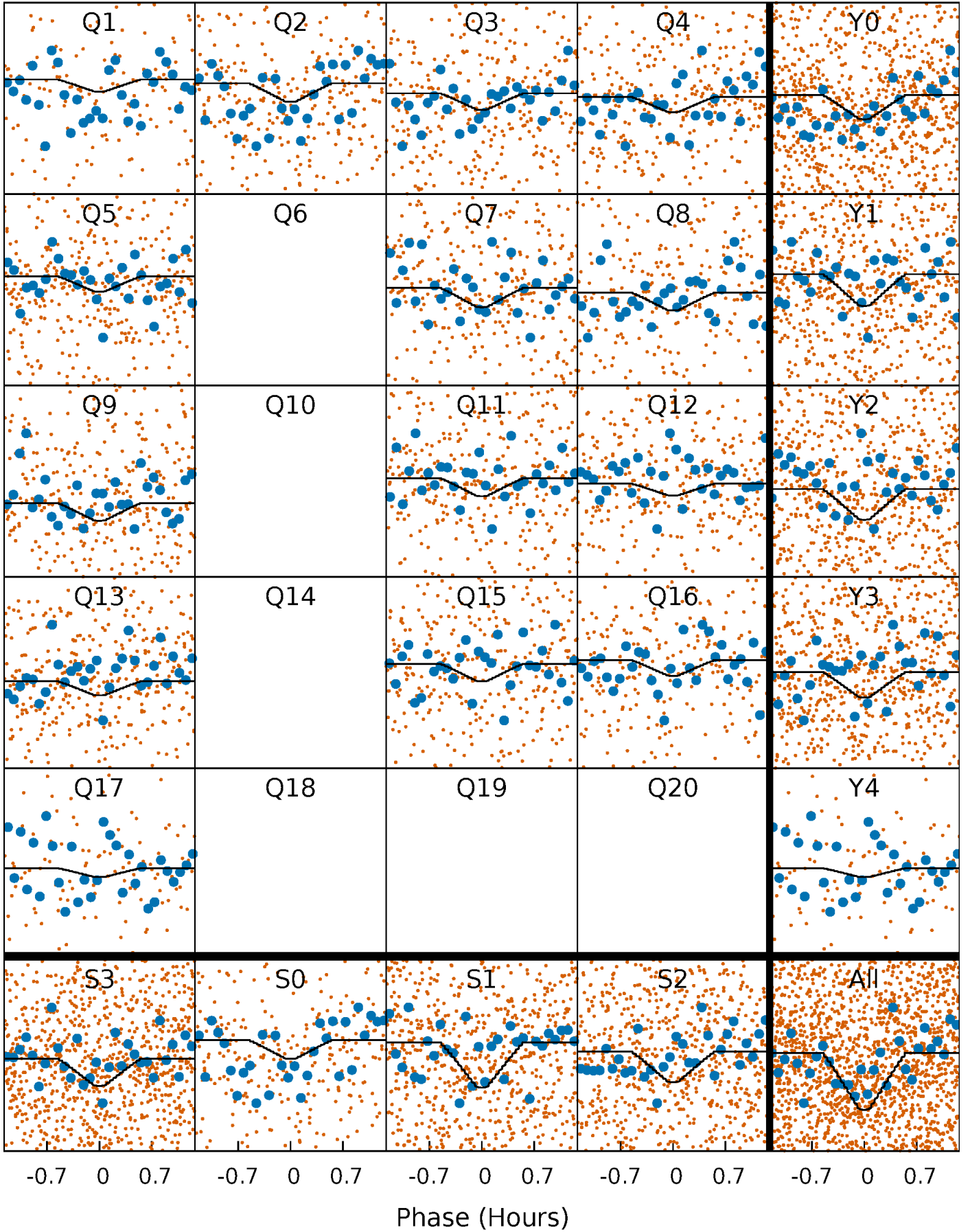
PDC Quarter-Phased Transit Curves

TCE 004072750-01 P= 1.191137 Days $T_0=131.912826$ (BKJD)



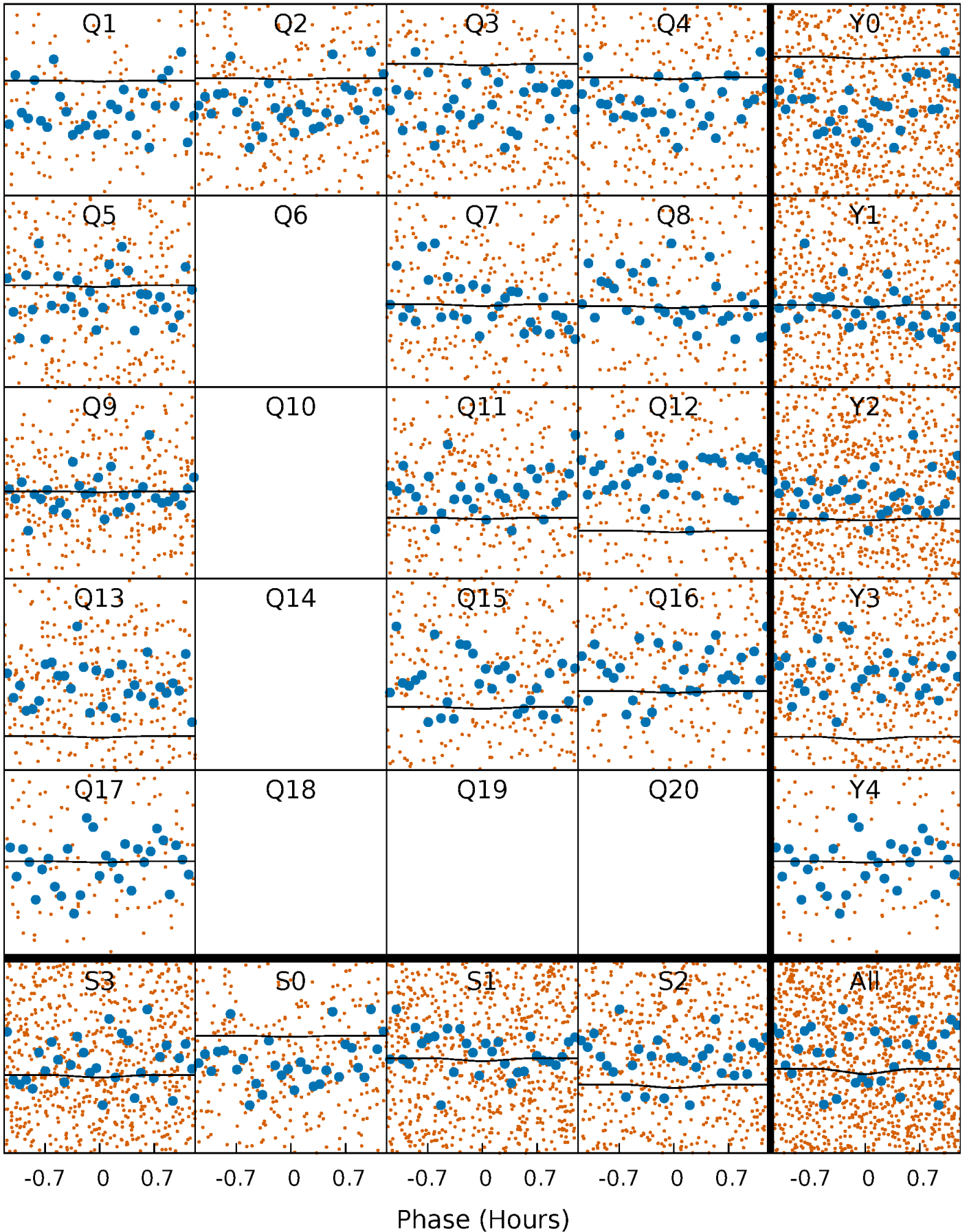
DV Quarter-Phased Transit Curves

TCE 004072750-01 P= 1.191137 Days $T_0=131.912826$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

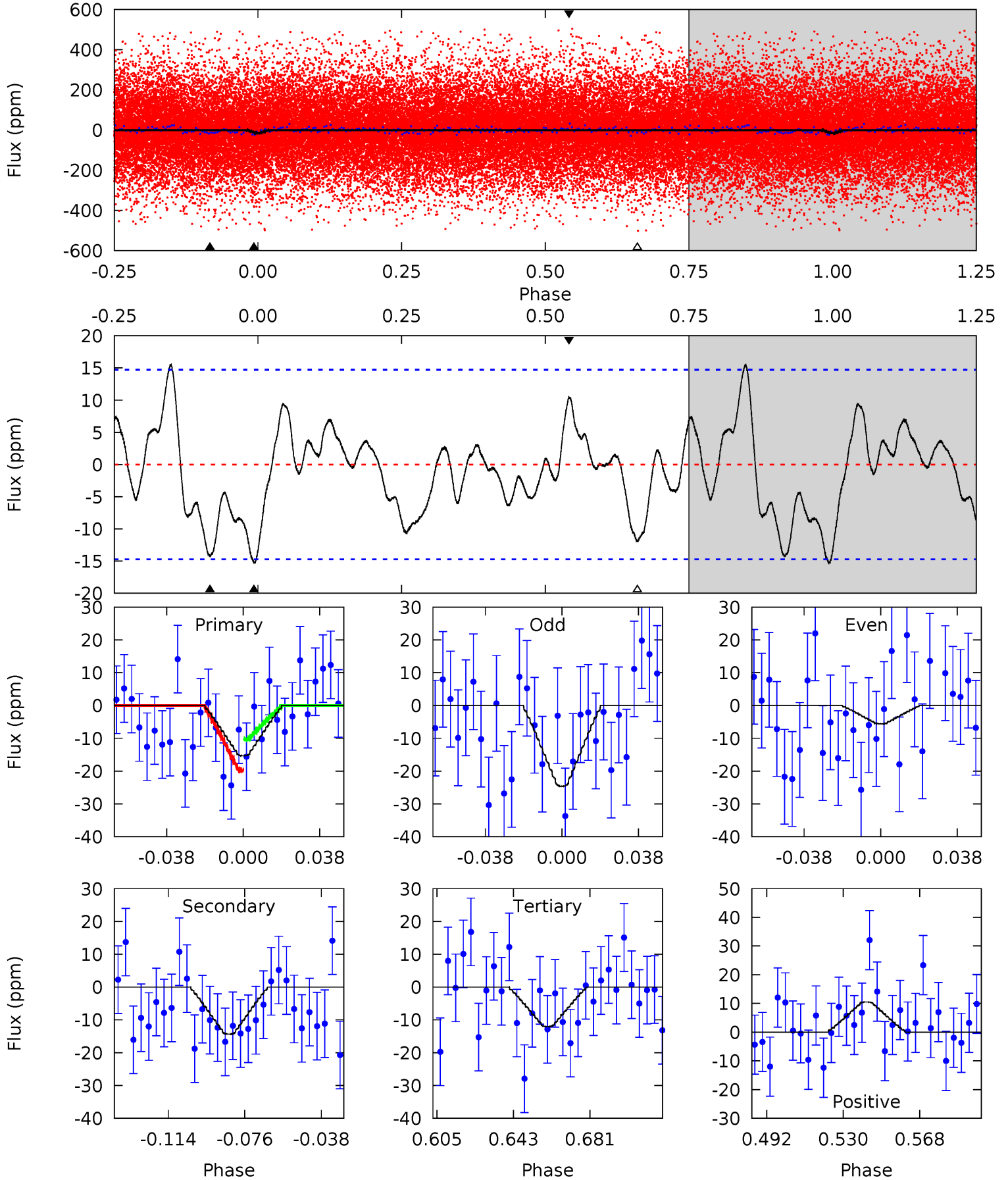
TCE 004072750-01 P= 1.191028 Days $T_0=131.912705$ (BKJD)



DV Model-Shift Uniqueness Test

004072750-01, P = 1.191137 Days, E = 130.721689 Days

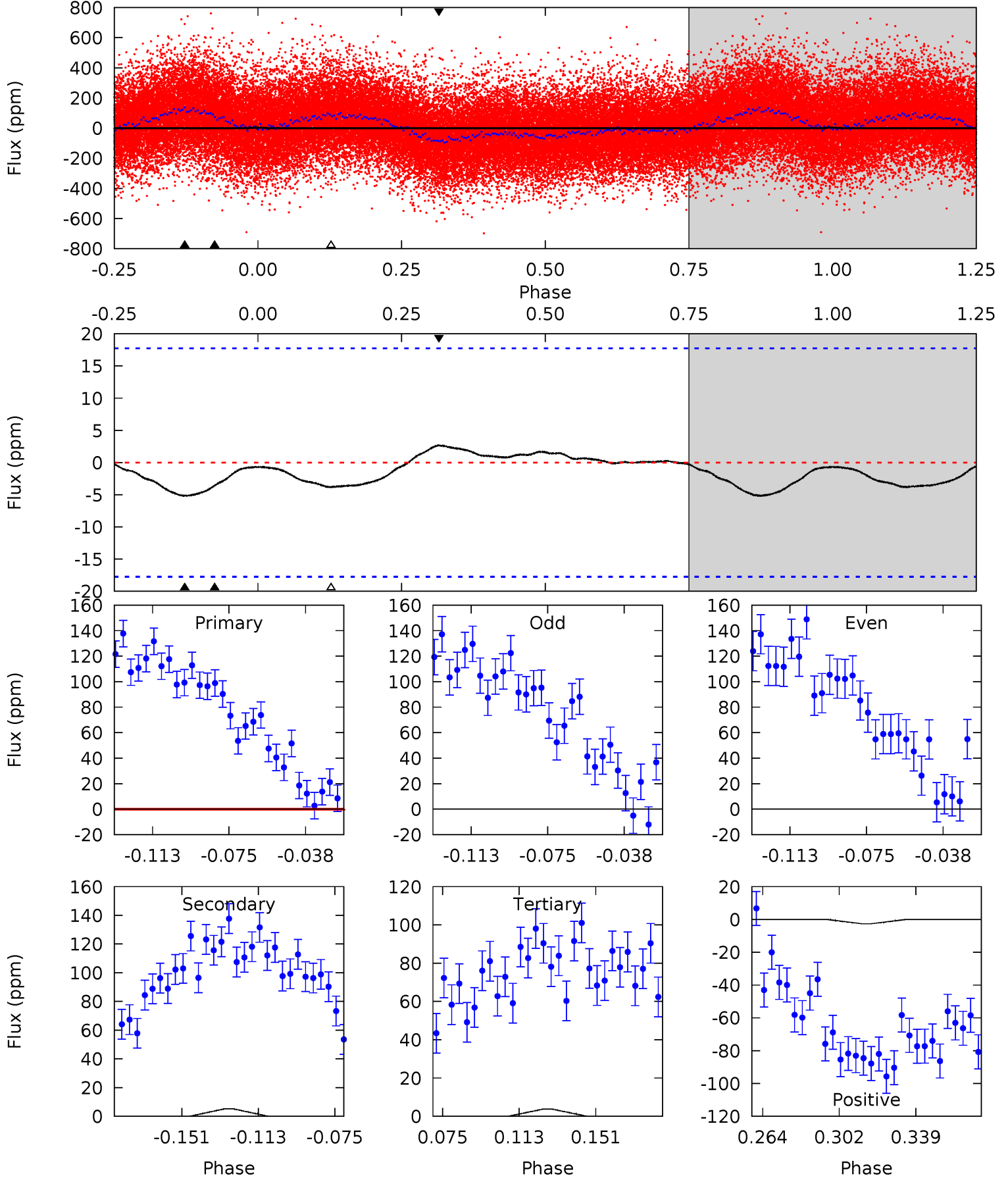
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.97	4.65	3.90	3.41	4.76	2.08	1.70	1.07	1.56	0.75	1.24	3.10	0.81	0.50	1.55



Alt Model-Shift Uniqueness Test

004072750-01, P = 1.191028 Days, E = 130.721677 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.96	1.38	1.02	0.72	4.77	2.08	0.48	-0.06	0.24	0.36	0.67	0.96	0.99	0.34	0.09



Stellar Parameters For KIC 004072750

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7032^{+212}_{-212}	$3.497^{+0.384}_{-0.072}$	$-0.500^{+0.350}_{-0.250}$	$3.912^{+0.419}_{-1.678}$	$1.755^{+0.137}_{-0.412}$	$0.041^{+0.143}_{-0.010}$
	+3%/-3%	+11%/-2%	+70%/-50%	+11%/-43%	+8%/-23%	+345%/-23%
Source	PHO1	FLK73	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 004072750-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-14 ± 3	$2.28^{+1.77}_{-1.42}$	5155^{+301}_{-542}	5155^{+4496}_{-2339}	$1.018^{+6.240}_{-0.696}$
Alt.	-5 ± 4	$1.59^{+1.58}_{-1.14}$	5154^{+290}_{-572}	4464^{+5360}_{-8573}	$0.667^{+7.549}_{-0.569}$

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 $A_{obs} \gg 1.0$

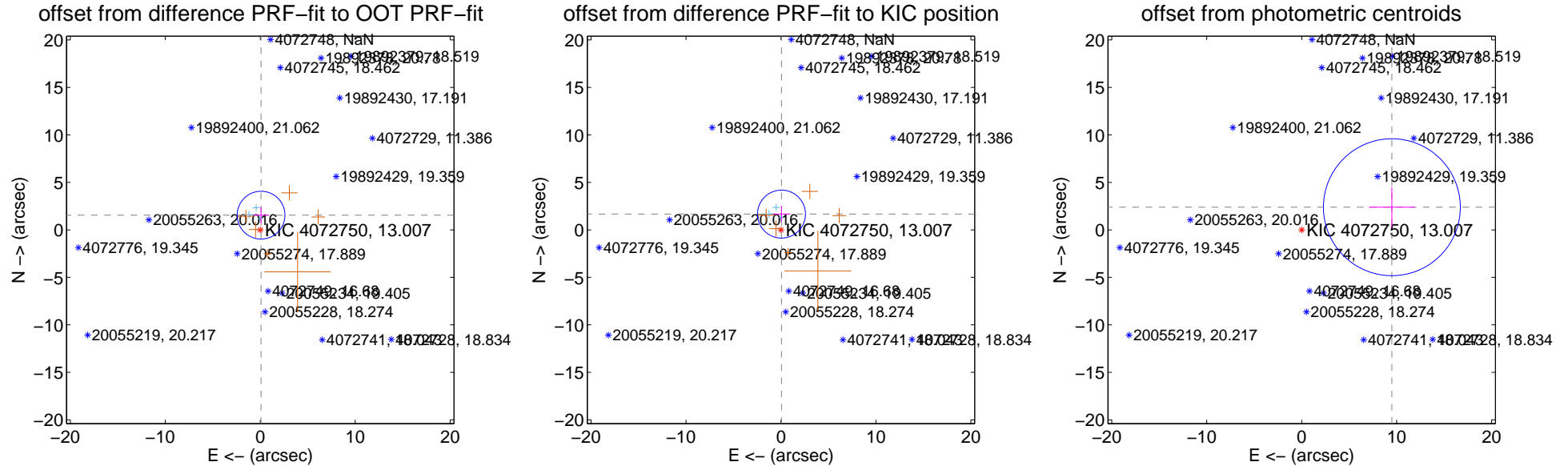
DV Centroid Data

Supplemental centroid analysis for 004072750-01. Kepler magnitude: 13.01. Transit SNR 5.00

There are 3 quarters with good PRF difference image offsets

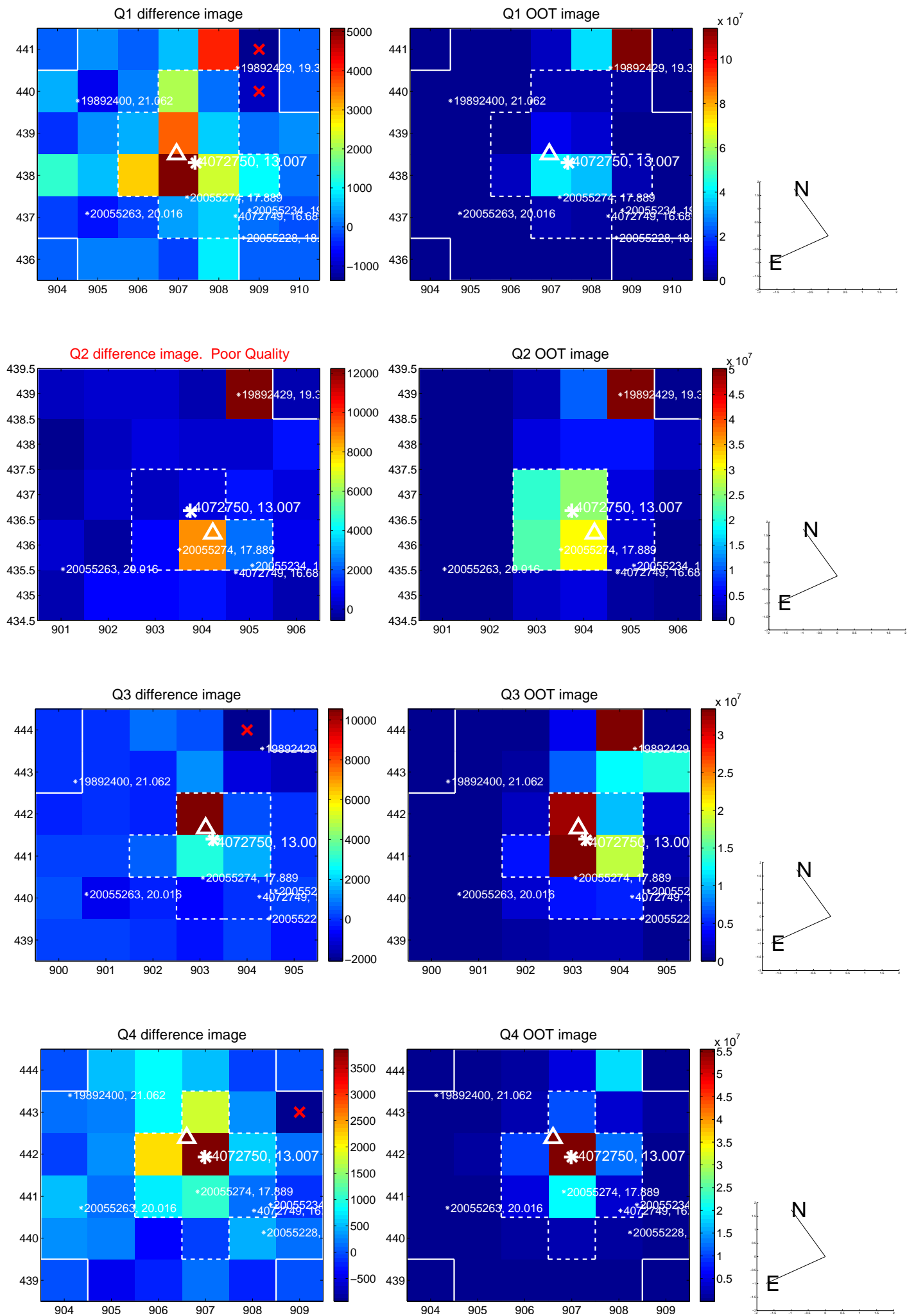
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.551 ± 0.839	1.85	-0.085 ± 0.797	1.549 ± 0.854
PRF-fit source offset from KIC position	1.663 ± 0.842	1.97	-0.055 ± 0.912	1.662 ± 0.849
photometric centroid source offset	9.79 ± 2.40	4.08	-9.50 ± 2.42	2.39 ± 2.14

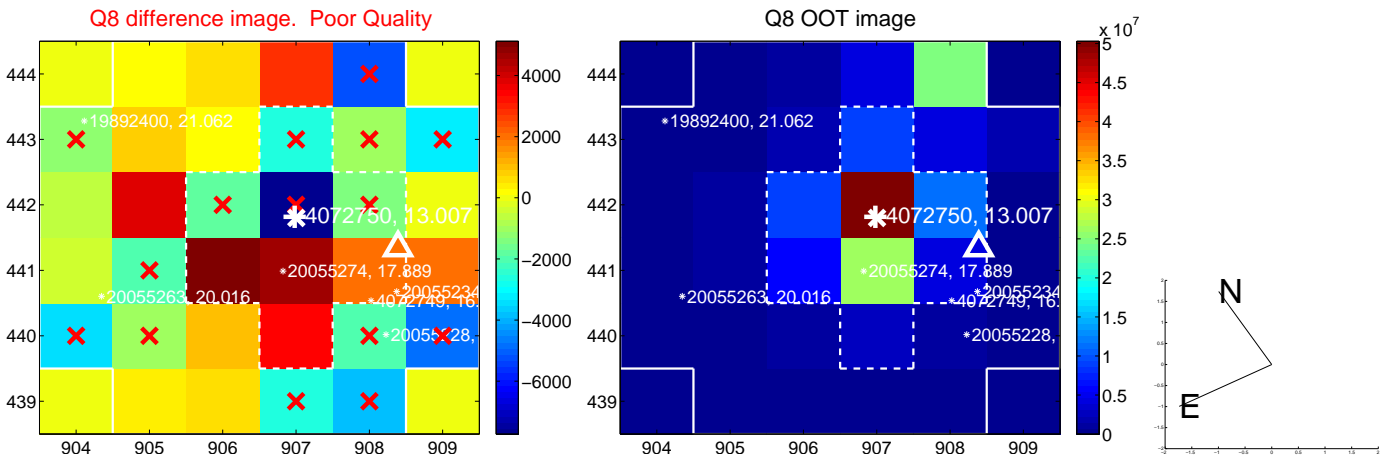
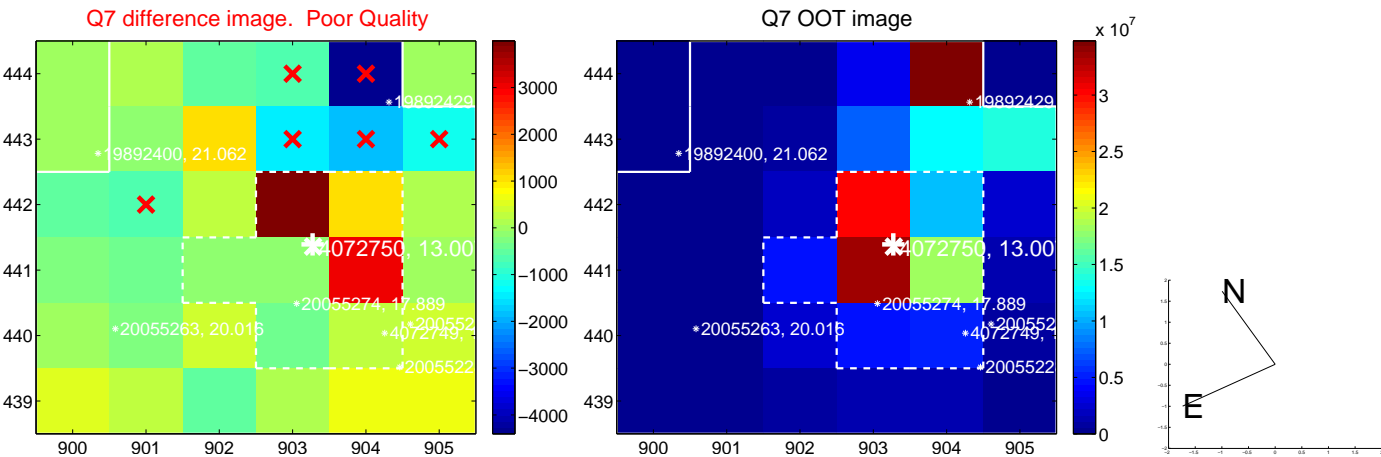
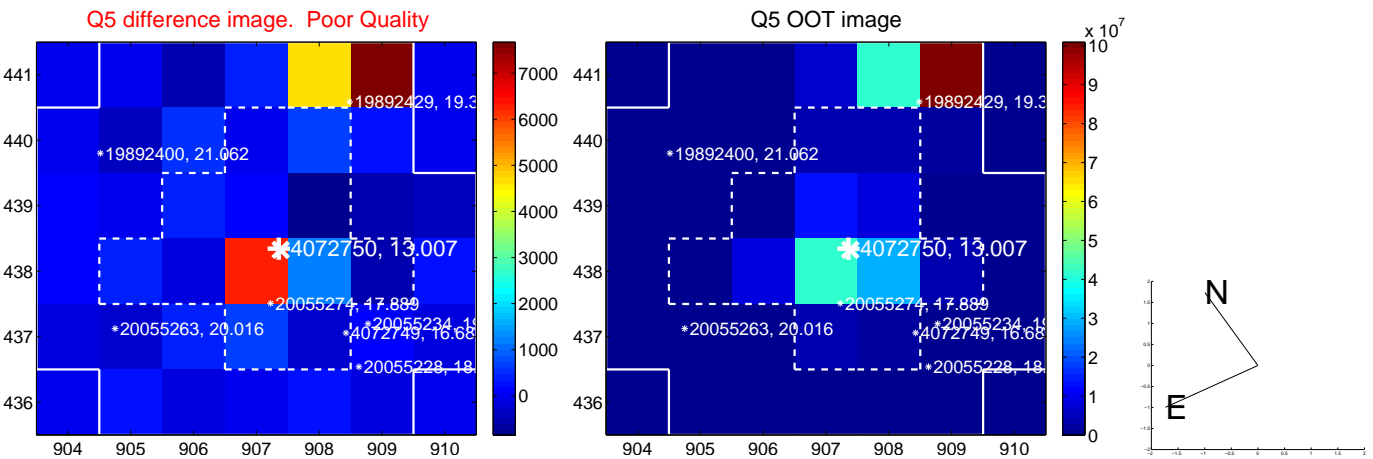


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

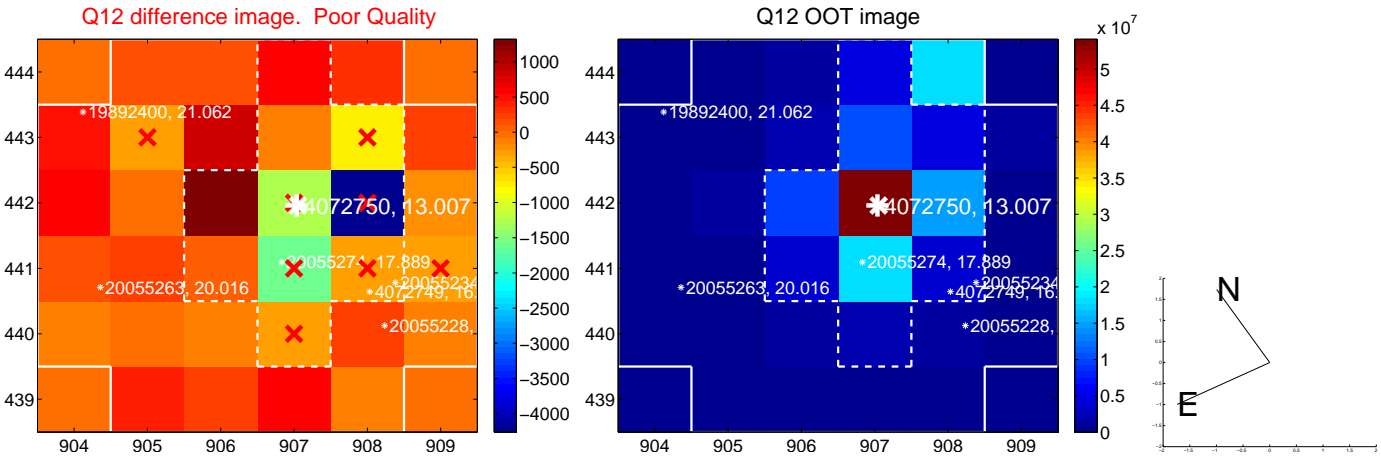
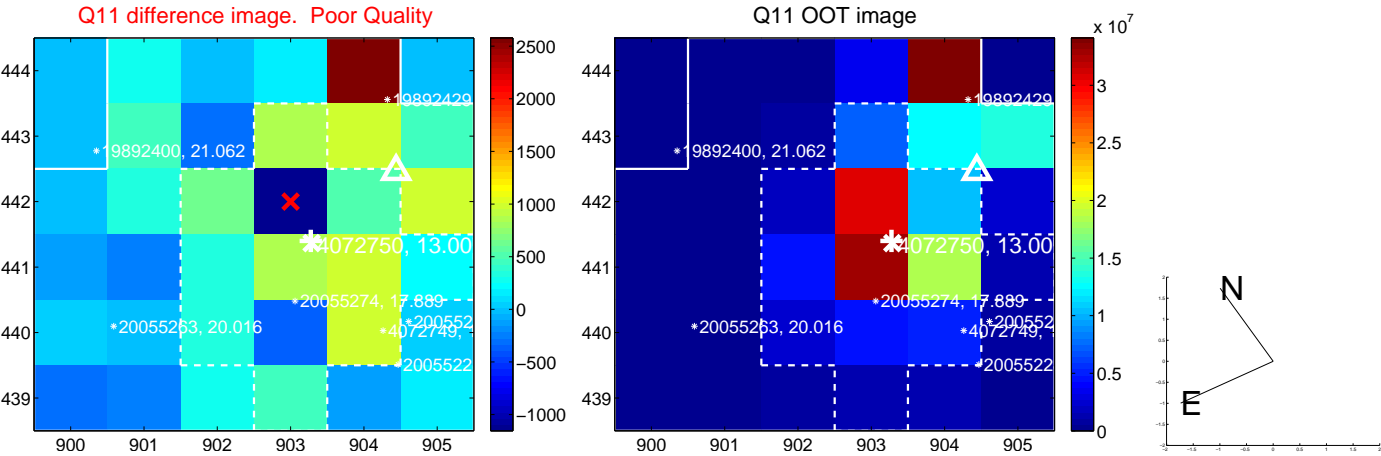
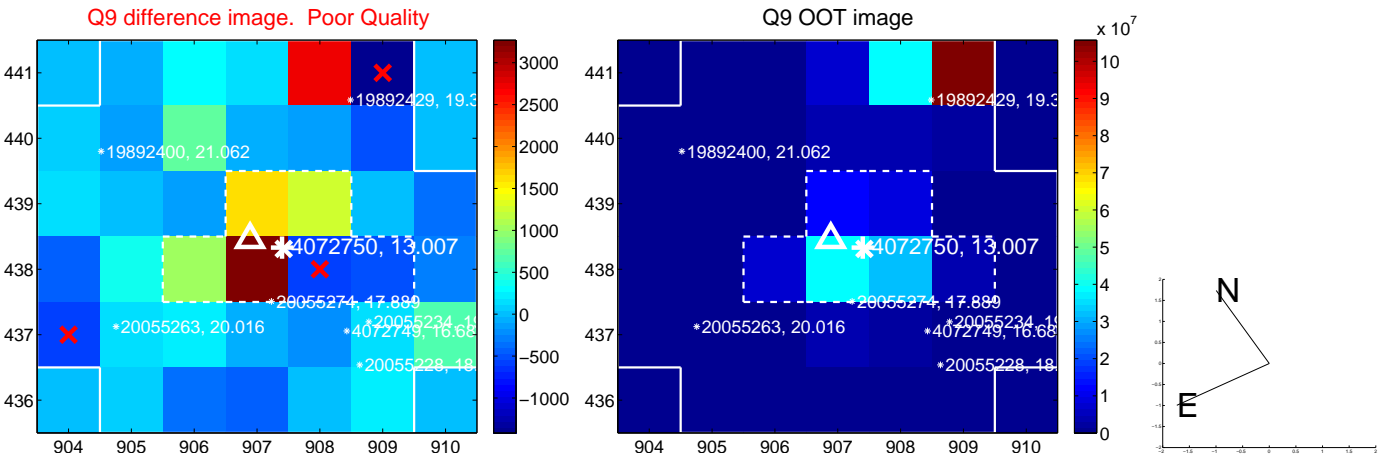
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



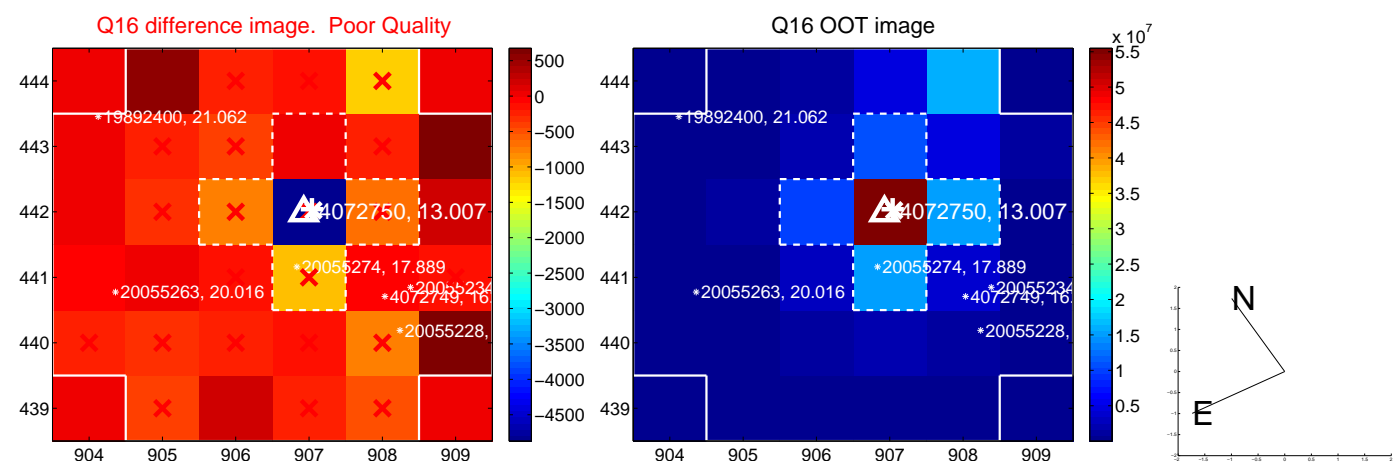
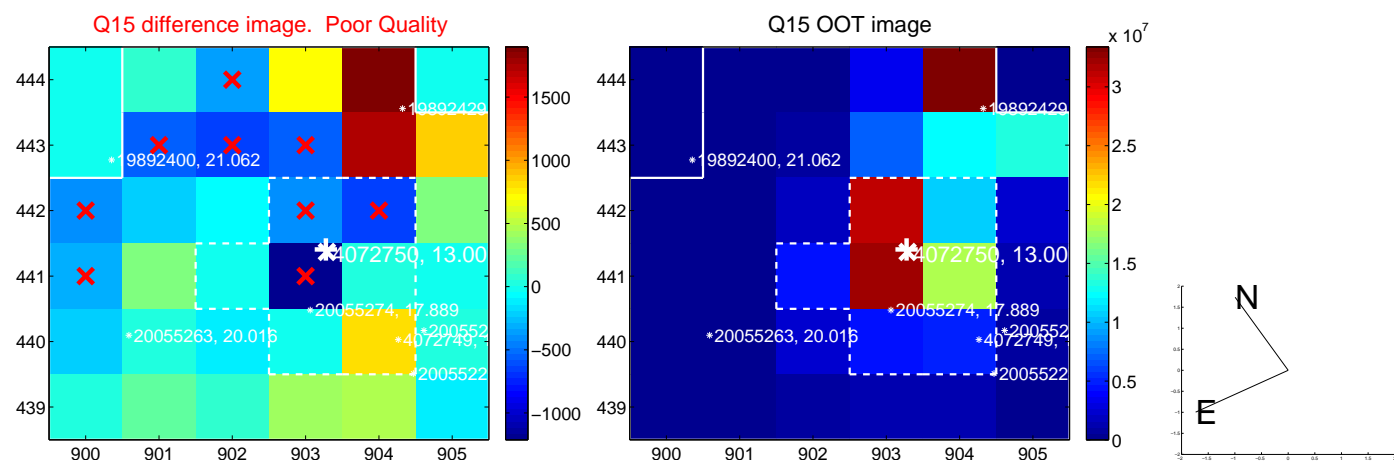
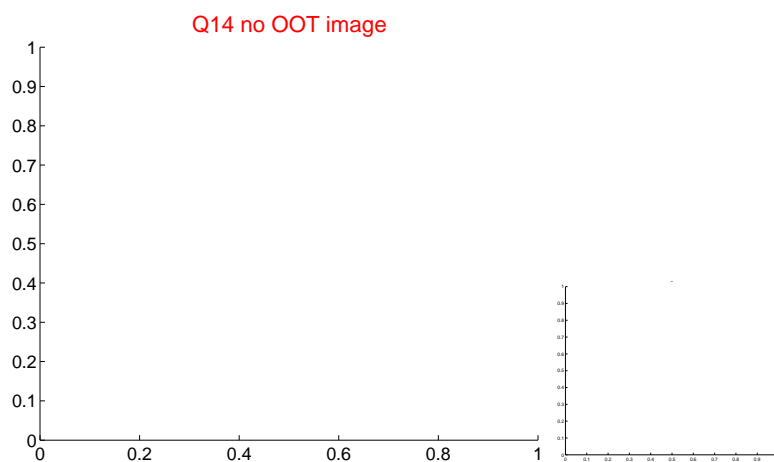
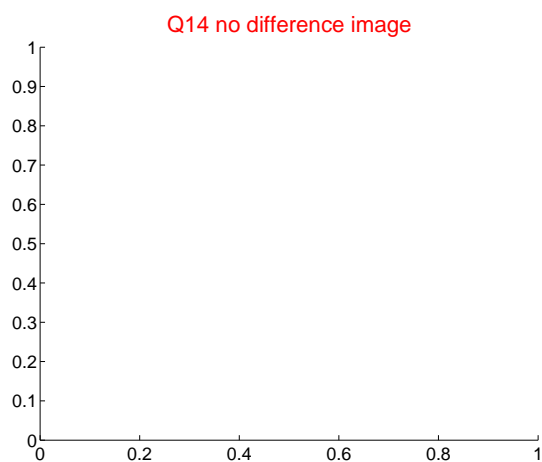
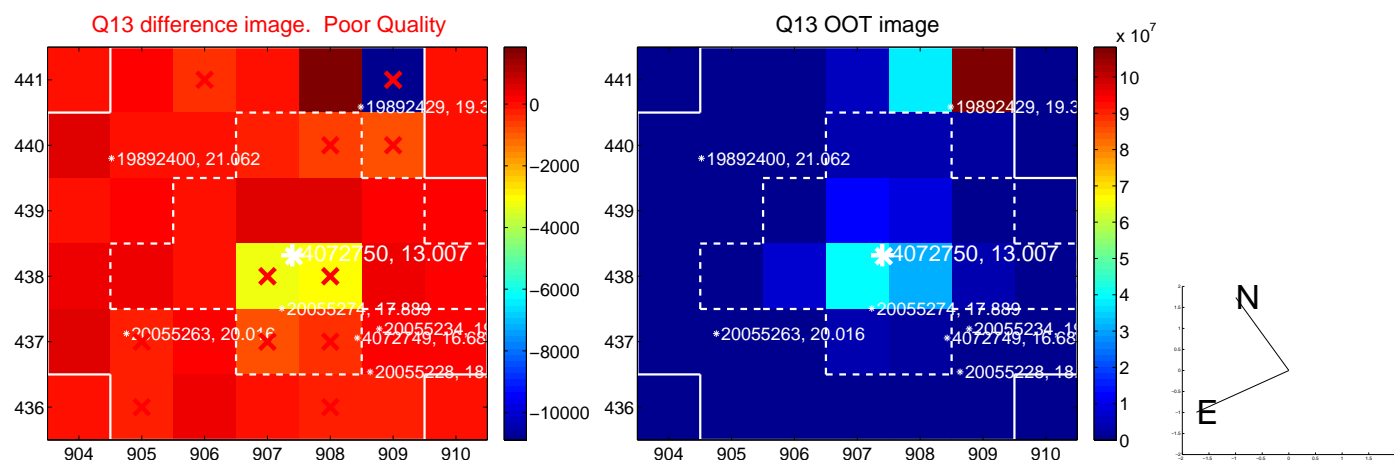
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



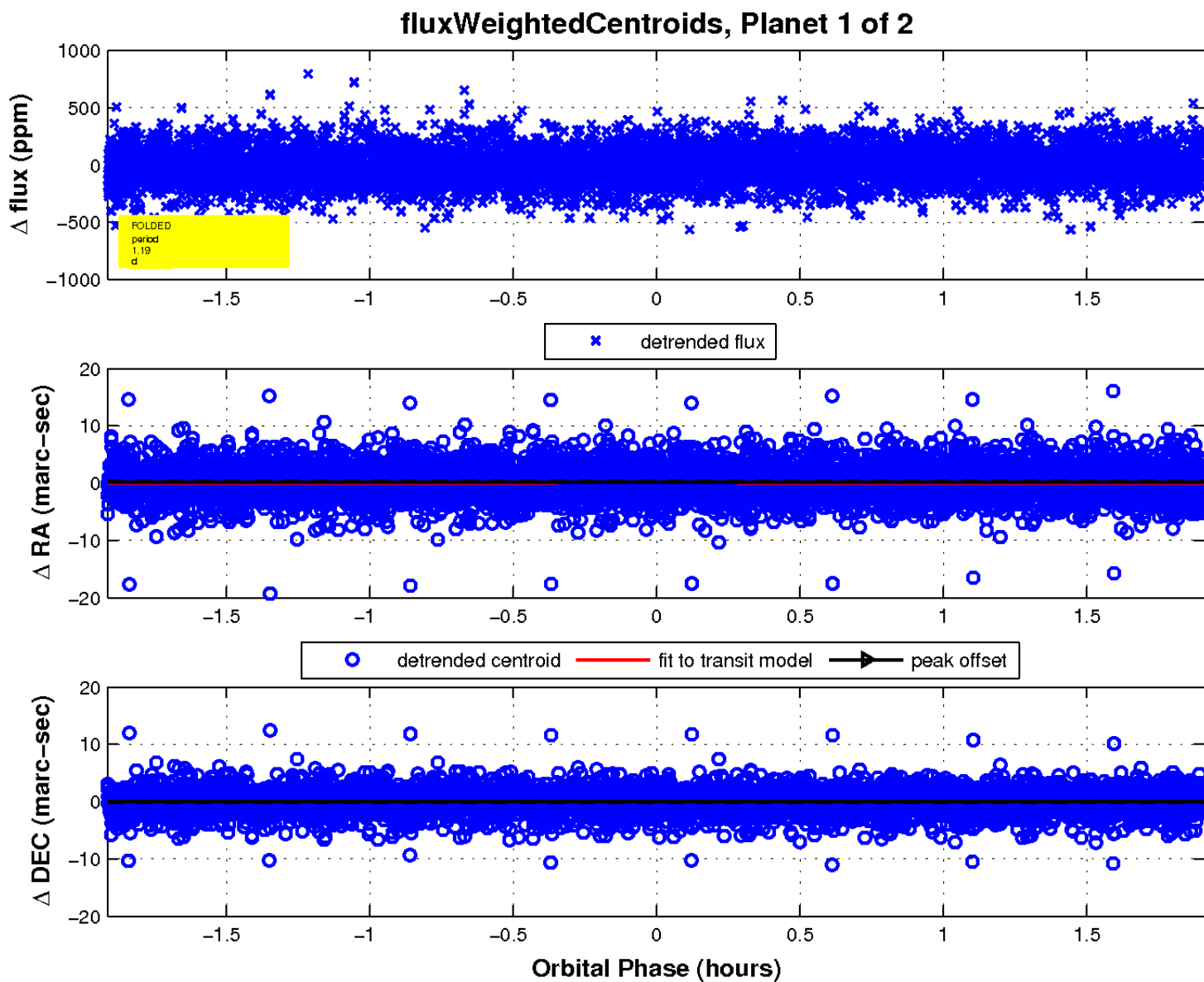
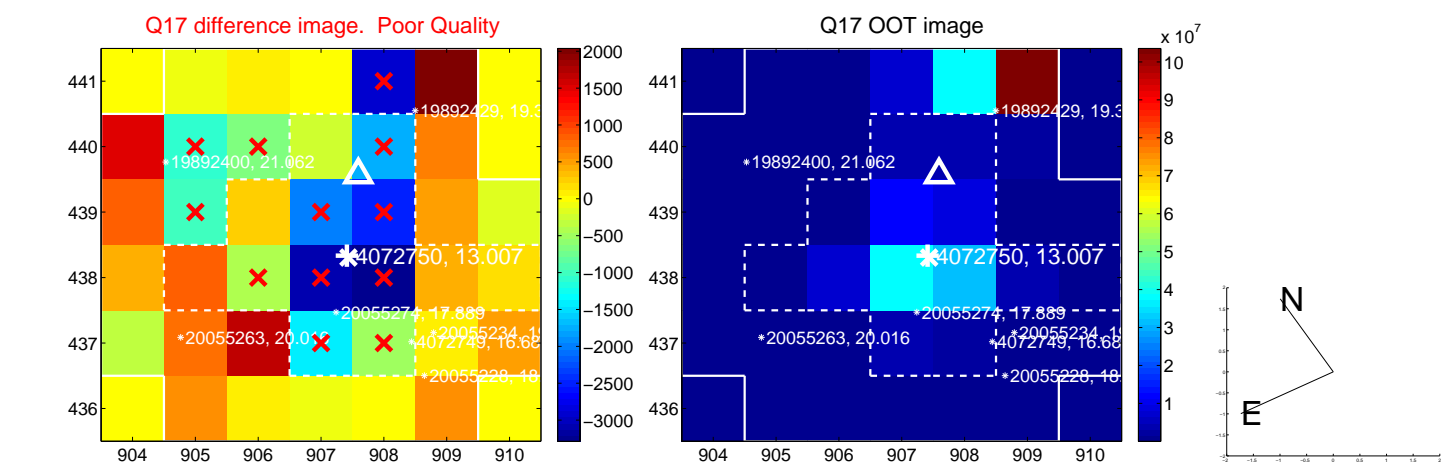
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



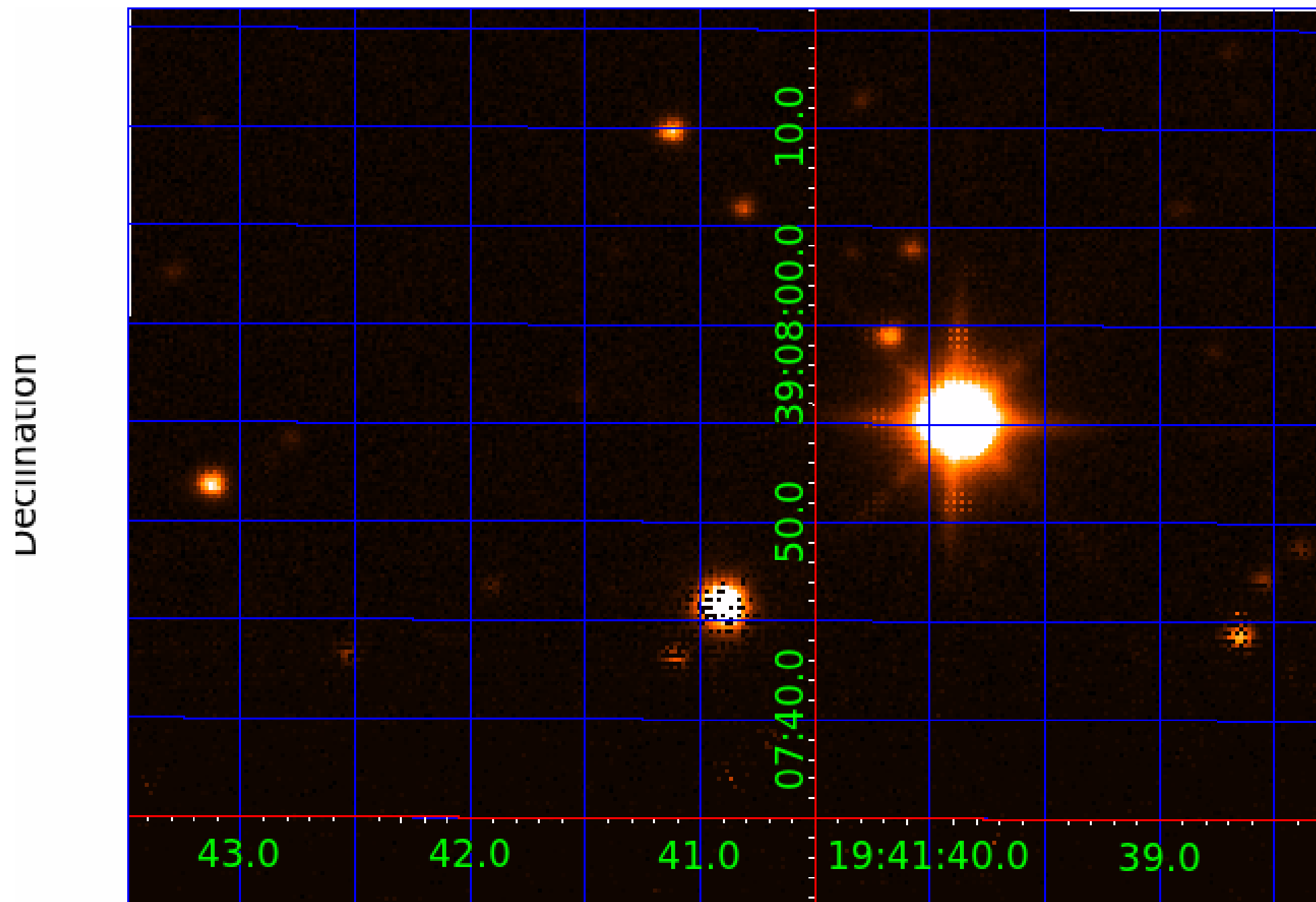
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004072750

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})
004072750-01	OBS	No	1.191137	131.912826	28.3	0.638	10.2	5.0	3.91	7032	2.17	47664.31
004072750-02	OBS	No	1.190919	132.448897	8.7	9.777	9.3	4.7	3.91	7032	1.23	47675.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004072750-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004072750-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

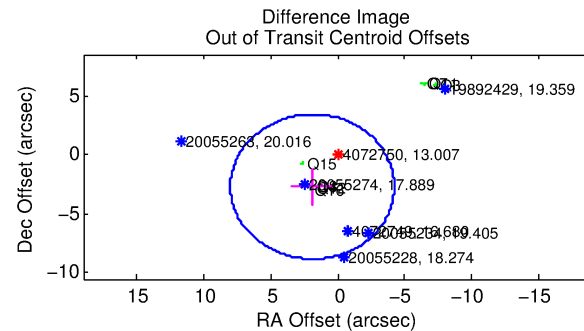
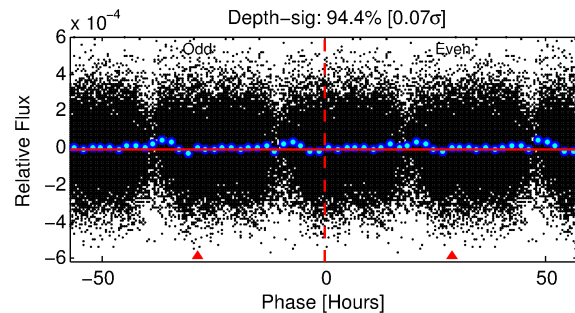
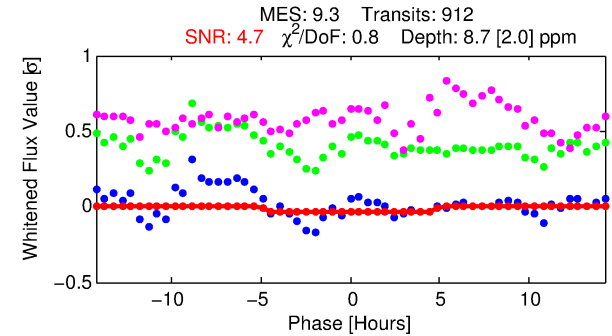
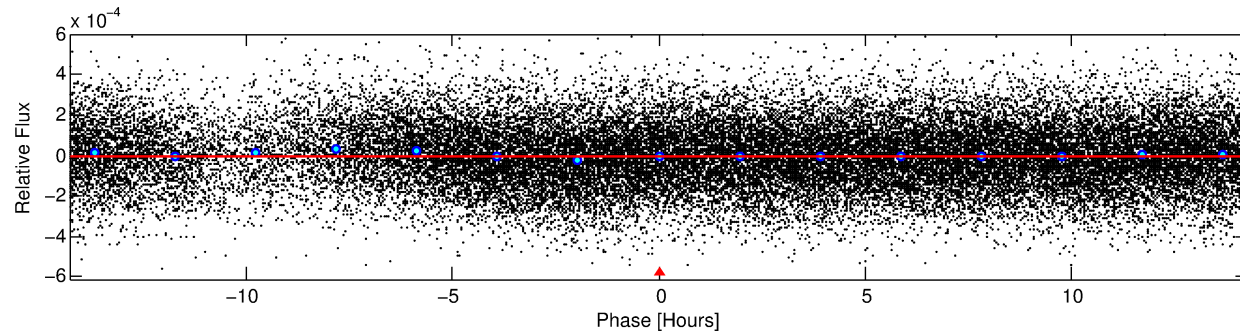
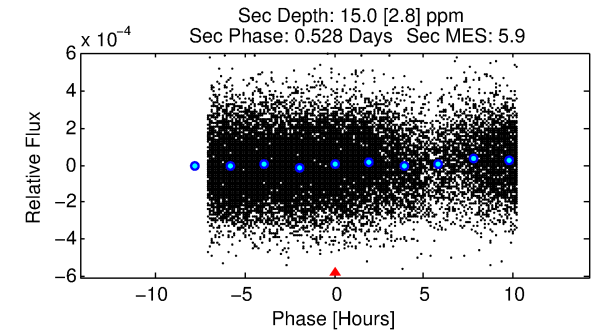
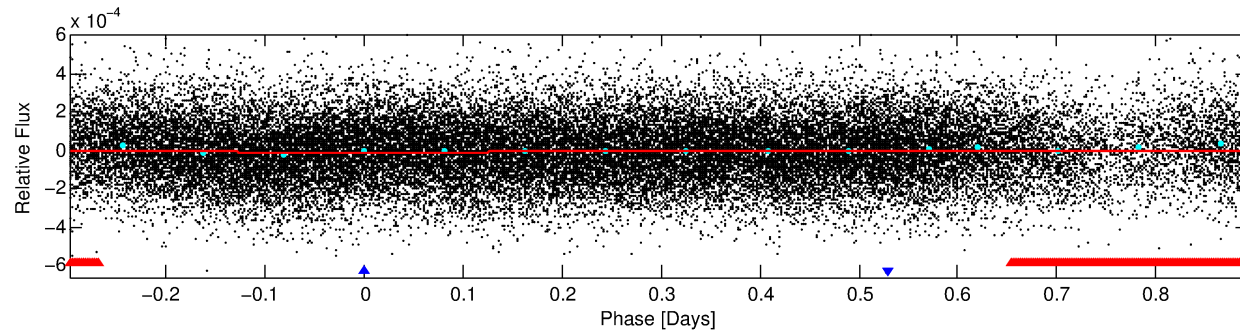
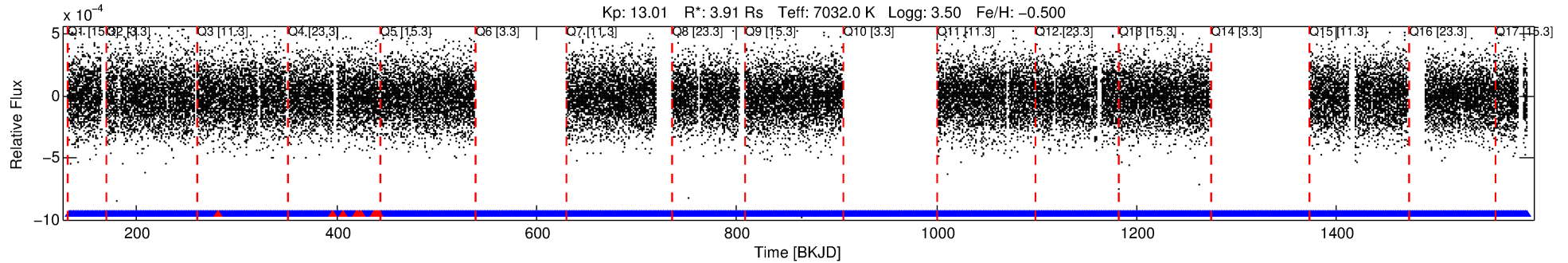
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004072750-02

No Significant Match Found

DV One-Page Summary

KIC: 4072750 Candidate: 2 of 2 Period: 1.191 d



DV Fit Results:

Period = 1.19092 [0.00004] d
Epoch = 132.4489 [0.0148] BKJD
Rp/R* = 0.0029 [0.0040]
a/R* = 1.08 [1.28]
b = 0.69 [6.61]
Seff = 47675.98 [31760.19]
Teff = 3768 [628] K
Rp = 1.23 [1.80] Re
a = 0.0265 [0.0109] AU
Ag = 3.83 [11.04] [0.26σ]
Teffp = 8148 [5728] K [0.76σ]

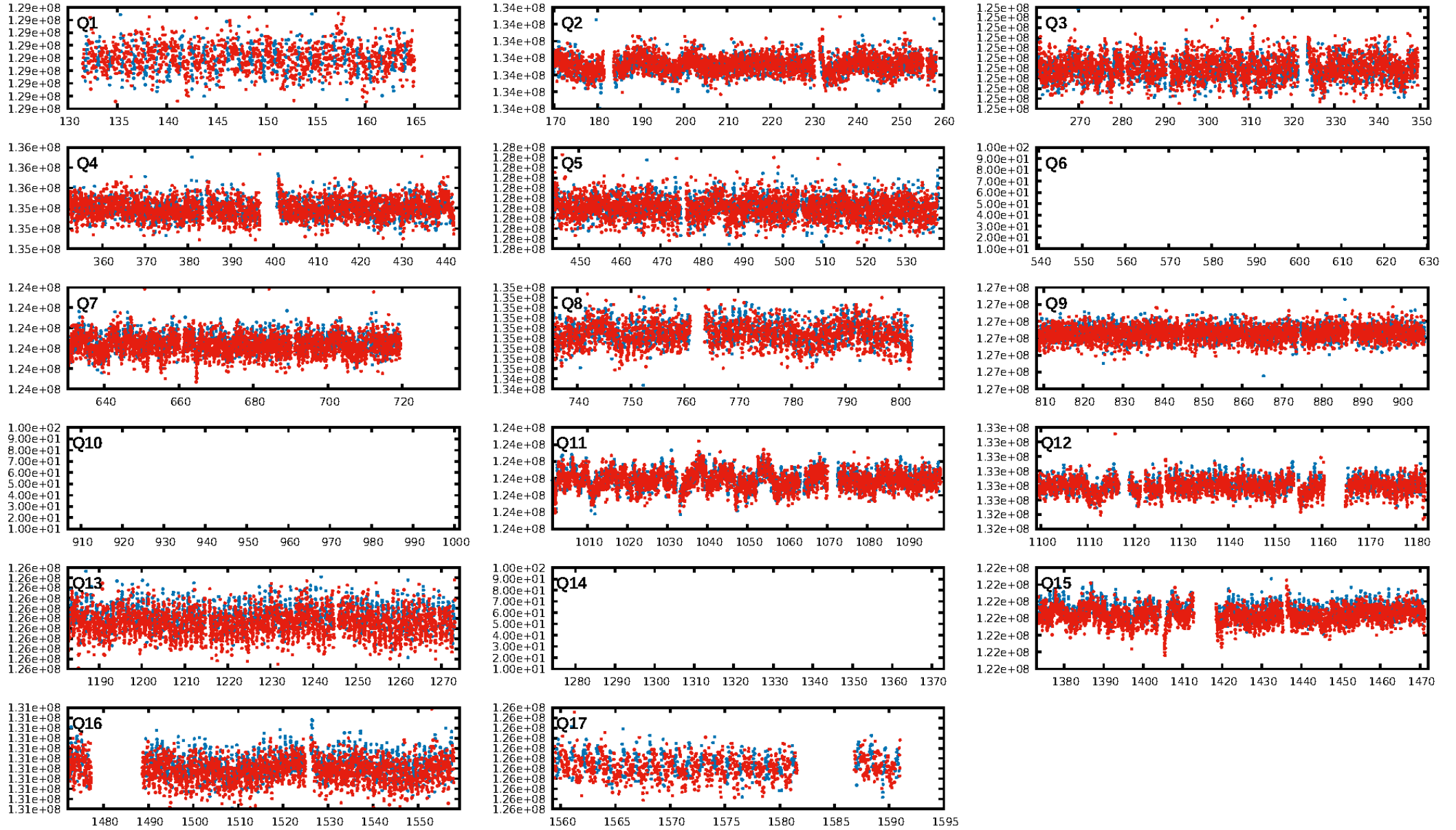
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [852/862]
GhostDiagnostic-chr: 2.902
Centroid-sig: 0.0%
Centroid-so: 8.179 arcsec [2.09σ]
OotOffset-rm: 3.292 arcsec [1.61σ]
KicOffset-rm: 3.279 arcsec [1.68σ]
OotOffset-st: 0/4/4/0 [8]
KicOffset-st: 0/4/4/0 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 0.00 [0/14]

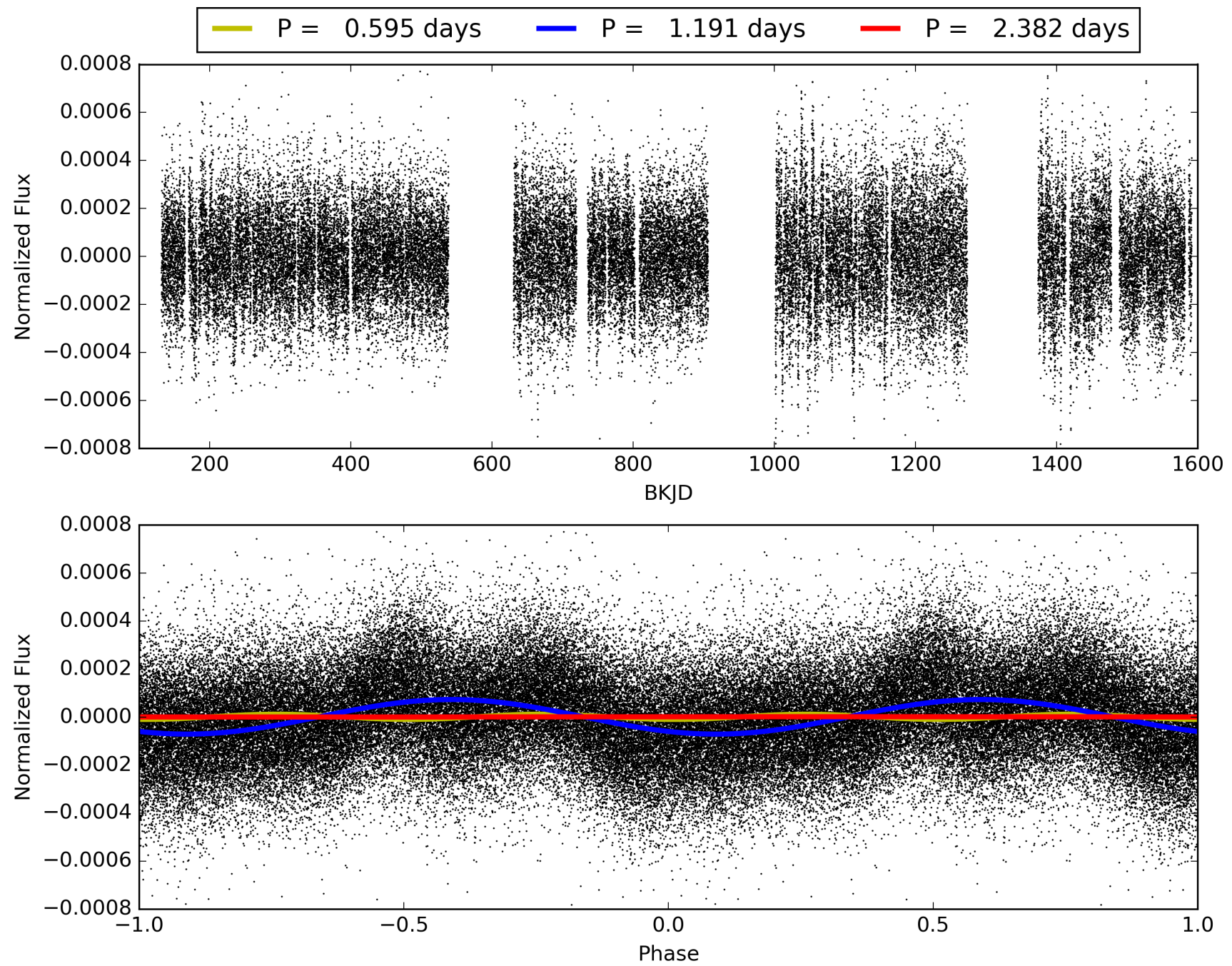
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:49:01 Z

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

TCE 004072750-02, PDC Light Curves

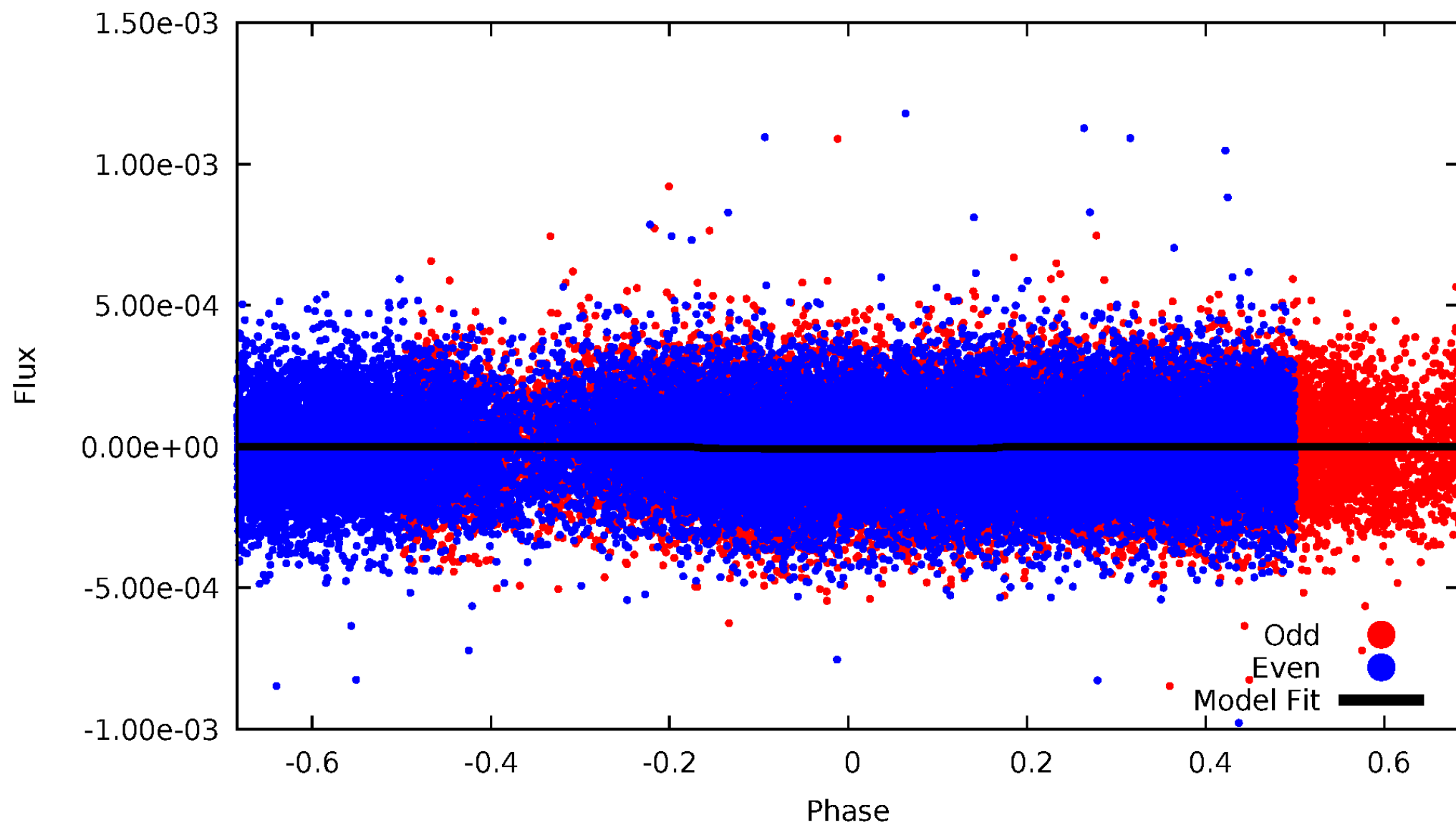


TCE 004072750-02



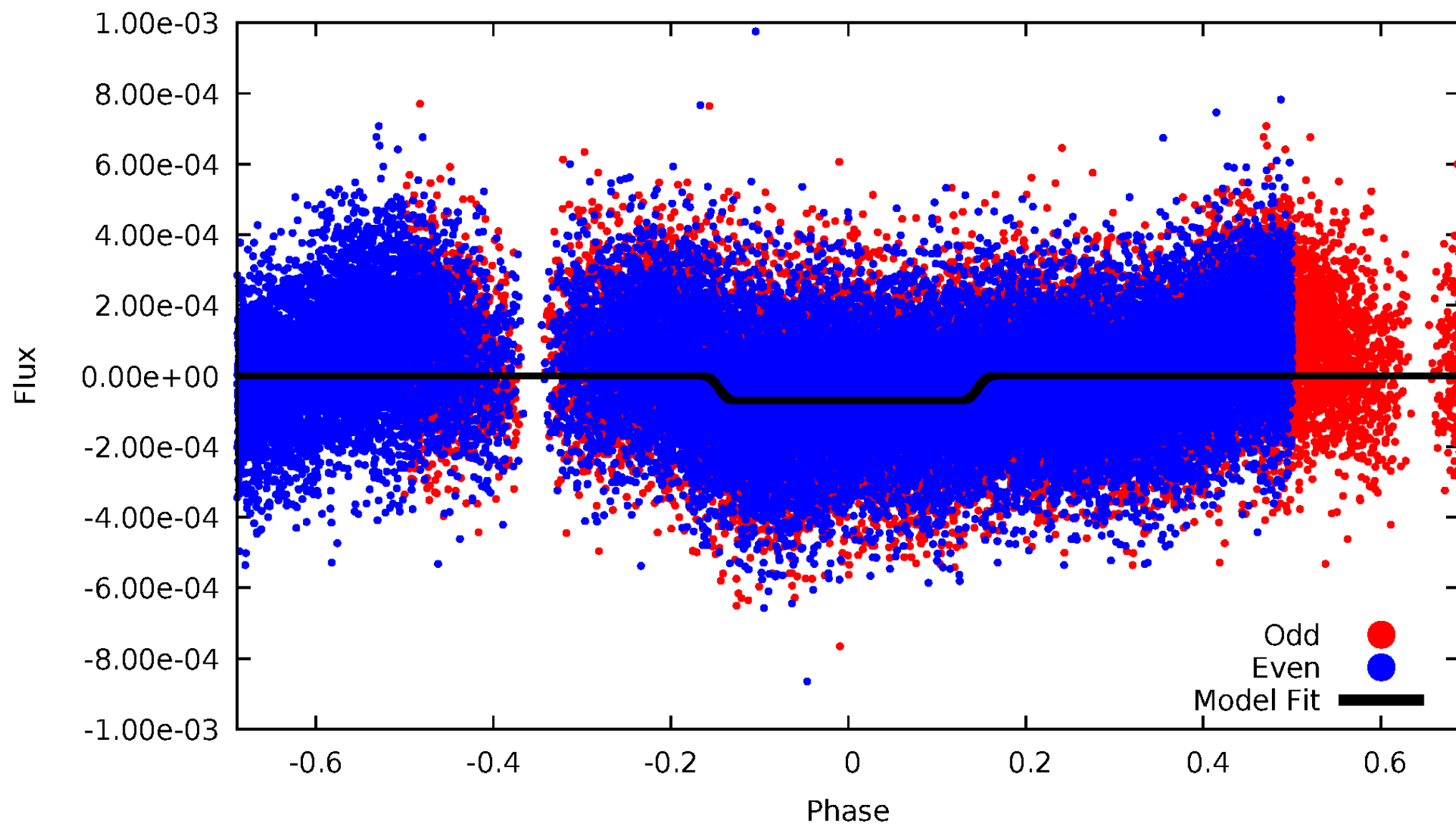
DV Odd/Even

TCE 004072750-02



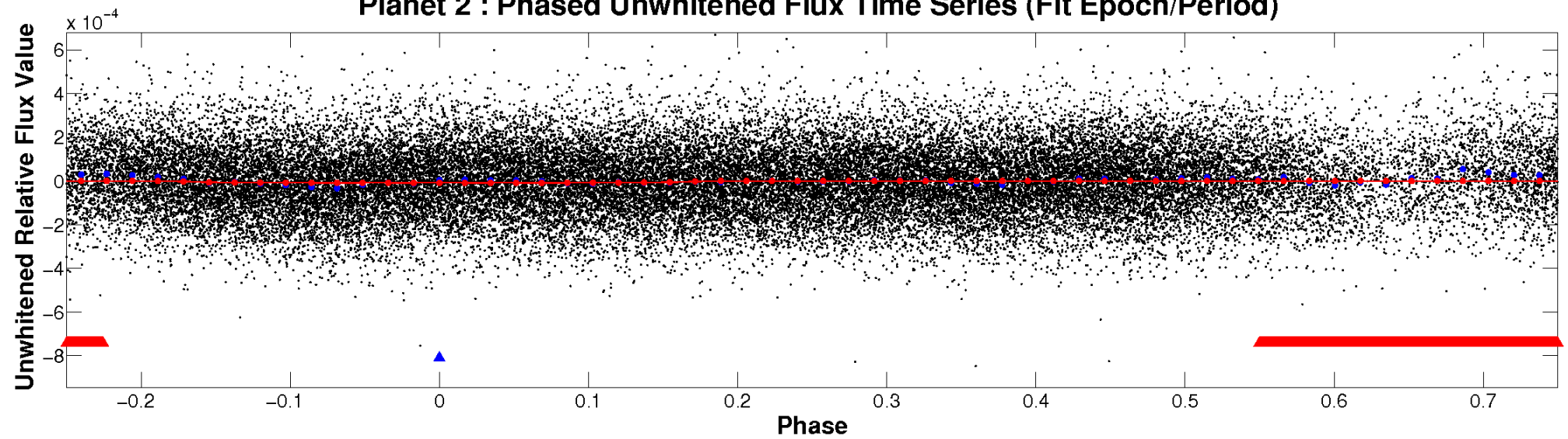
ALT Odd/Even

TCE 004072750-02

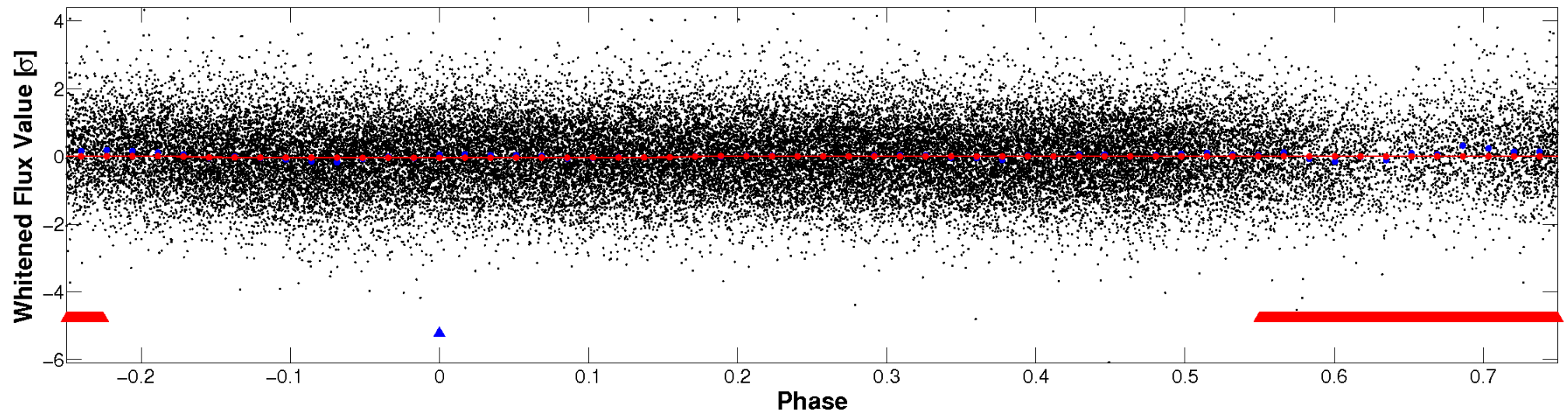


Non-Whitened Vs. Whitened Light Curve

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

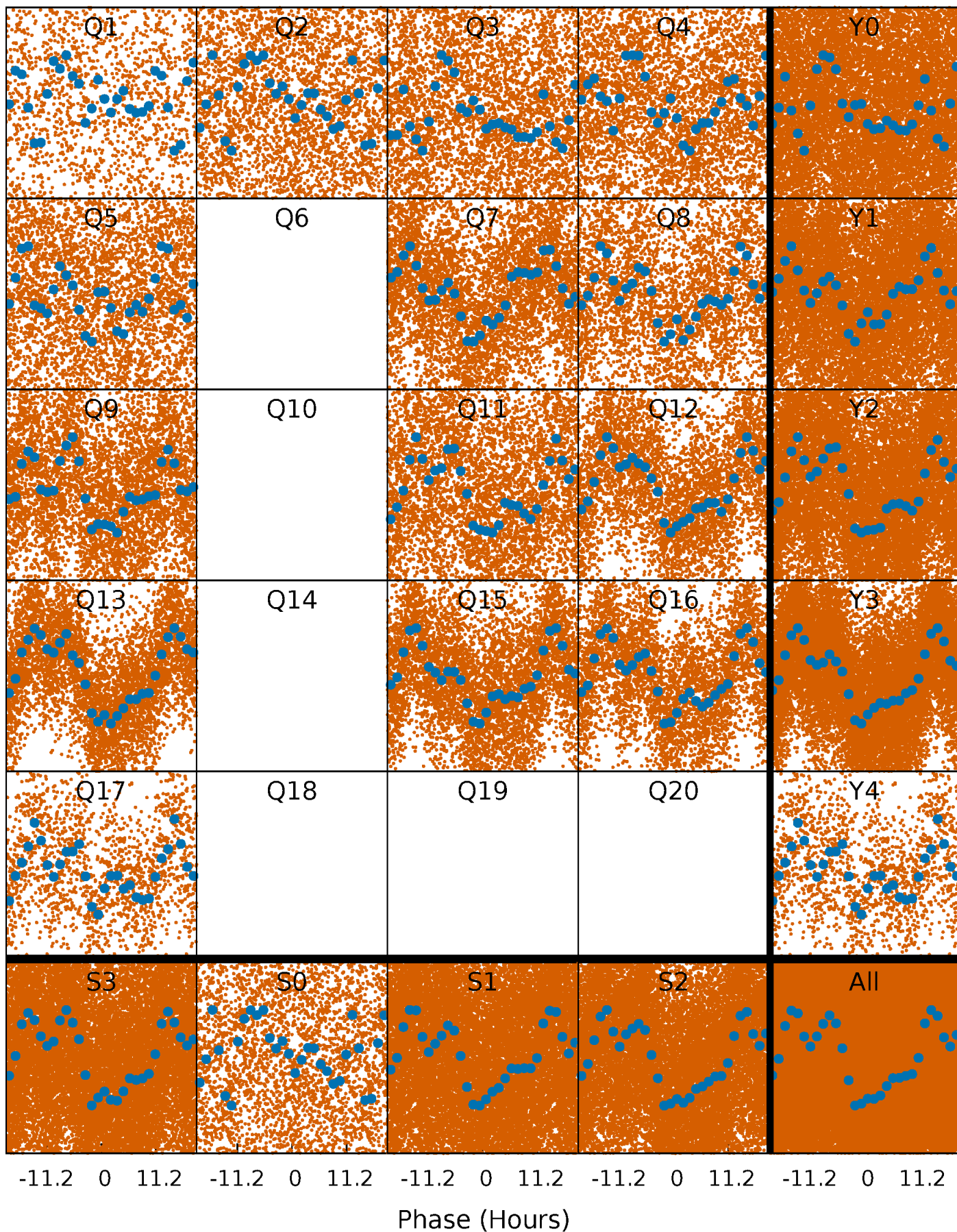


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



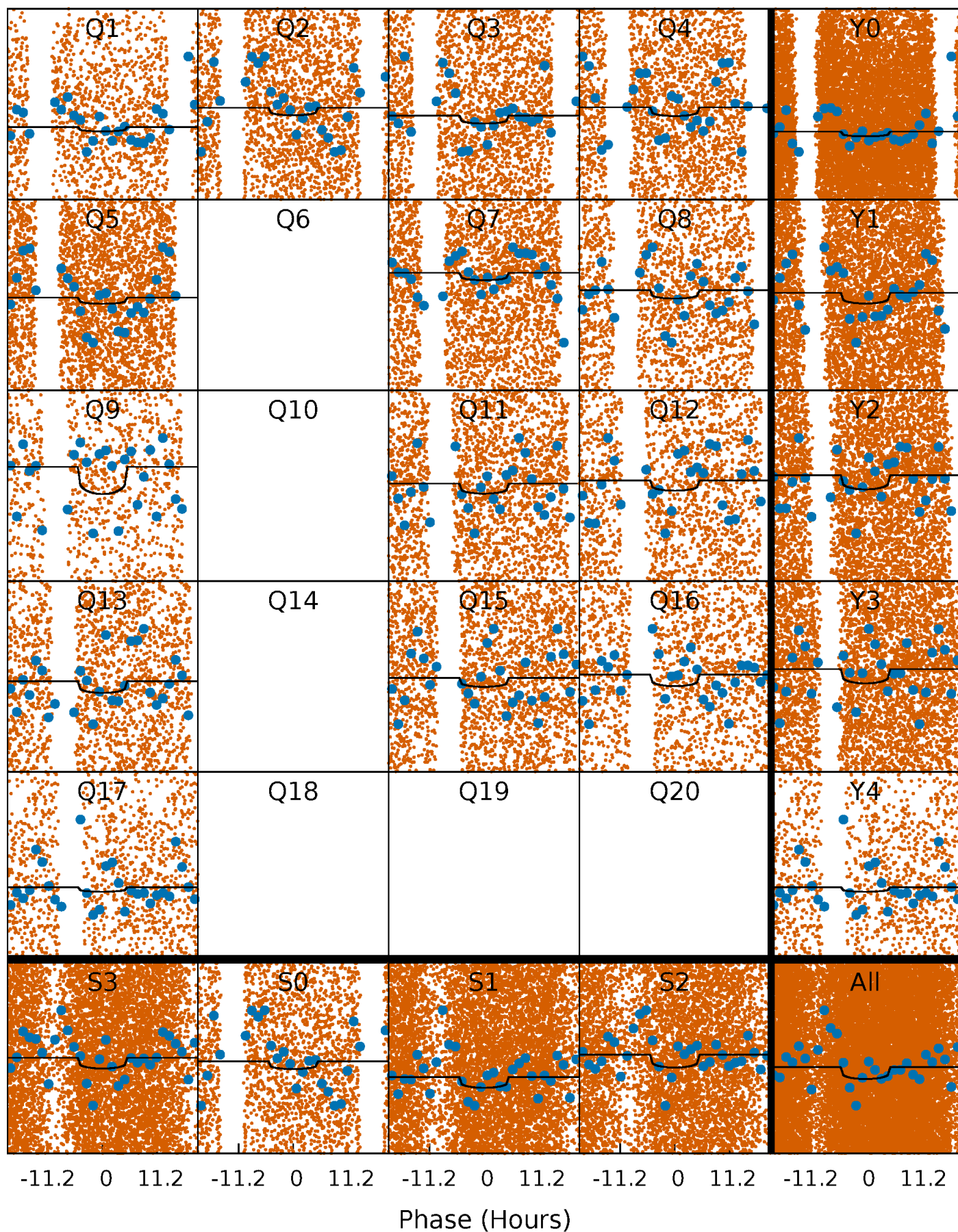
PDC Quarter-Phased Transit Curves

TCE 004072750-02 P= 1.190919 Days $T_0=132.448897$ (BKJD)



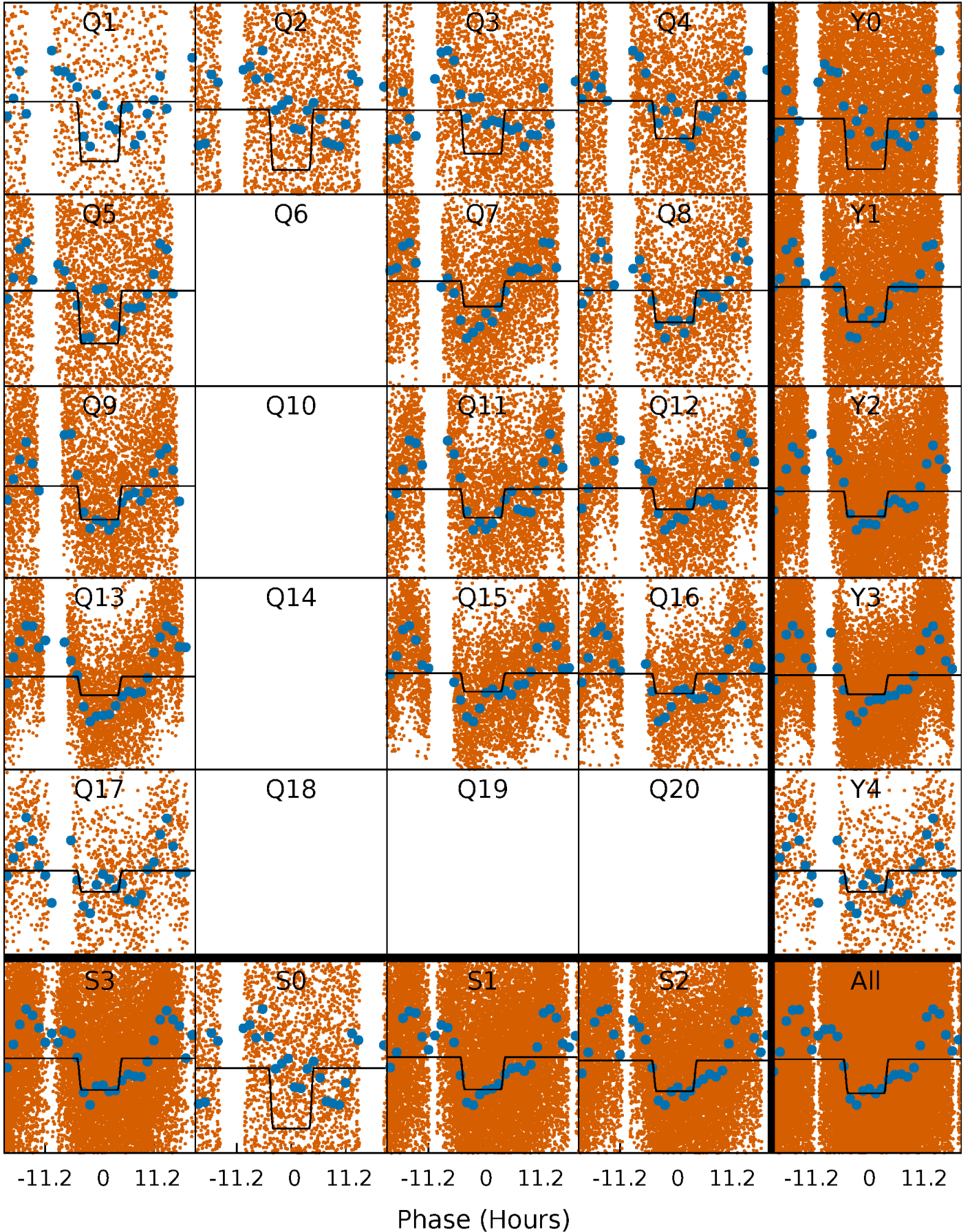
DV Quarter-Phased Transit Curves

TCE 004072750-02 $P = 1.190919$ Days $T_0 = 132.448897$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

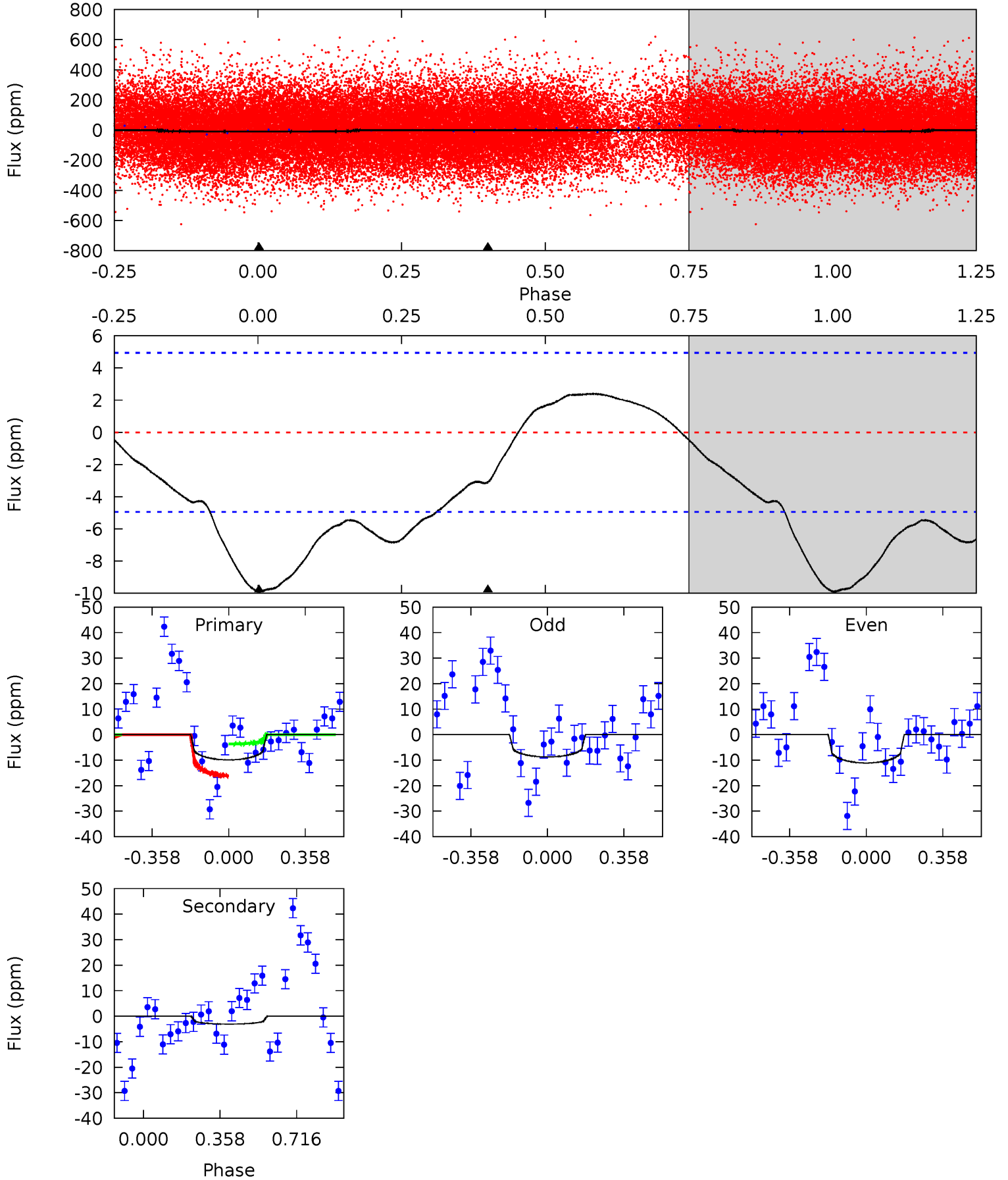
TCE 004072750-02 $P = 1.190987$ Days $T_0 = 132.428894$ (BKJD)



DV Model-Shift Uniqueness Test

004072750-02, P = 1.190919 Days, E = 131.257978 Days

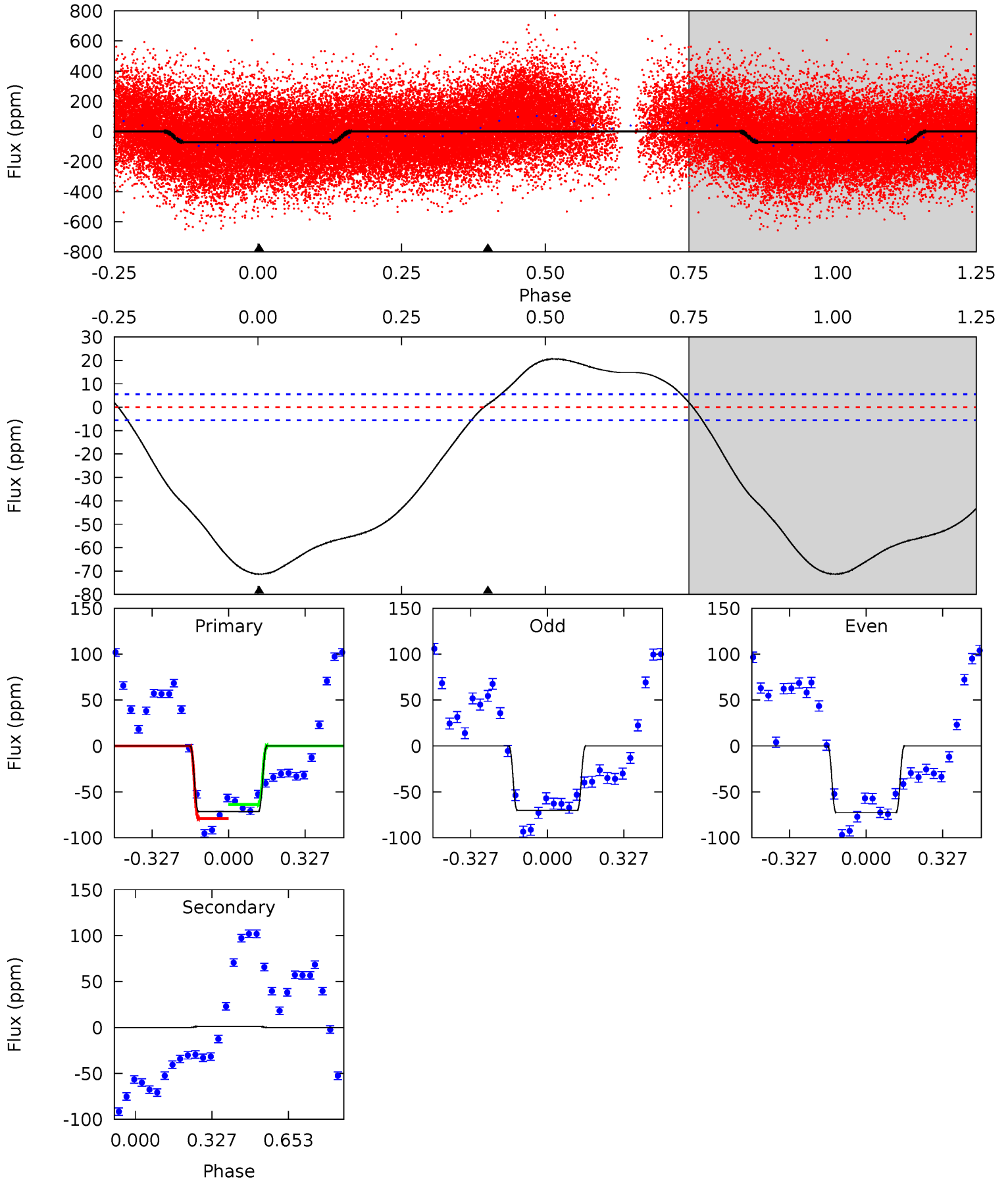
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.59	2.68	0	0	4.29	0.92	1.40	8.59	8.59	2.68	2.68	1.03	0.91	0.19	5.45



Alt Model-Shift Uniqueness Test

004072750-02, P = 1.190987 Days, E = 131.237907 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
55.4	-0.98	0	0	4.31	0.98	10.4	55.4	55.4	-0.98	-0.98	0.91	1.00	0.22	6.24



Stellar Parameters For KIC 004072750

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7032^{+212}_{-212}	$3.497^{+0.384}_{-0.072}$	$-0.500^{+0.350}_{-0.250}$	$3.912^{+0.419}_{-1.678}$	$1.755^{+0.137}_{-0.412}$	$0.041^{+0.143}_{-0.010}$
	+3%/-3%	+11%/-2%	+70%/-50%	+11%/-43%	+8%/-23%	+345%/-23%
Source	PHO1	FLK73	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 004072750-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3 ± 1	$1.65^{+1.42}_{-1.11}$	5168^{+282}_{-550}	3671^{+4065}_{-7653}	$0.431^{+3.845}_{-0.309}$
Alt.	1 ± 1	$3.20^{+1.74}_{-1.57}$	5154^{+301}_{-529}	-4522^{+357}_{-346}	$-0.039^{+0.038}_{-0.141}$

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

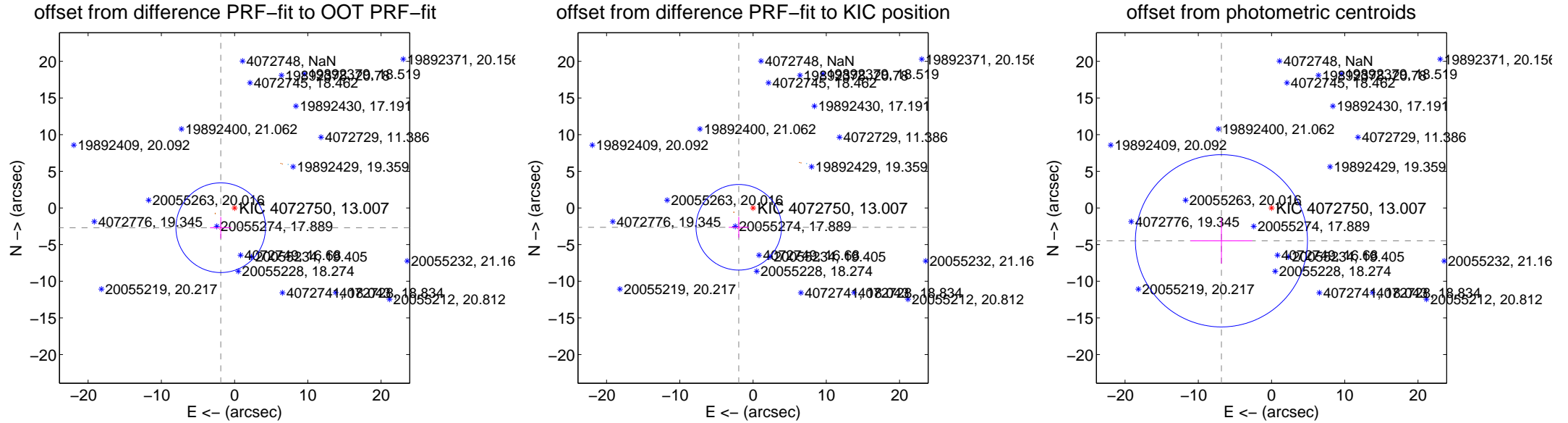
DV Centroid Data

Supplemental centroid analysis for 004072750-02. Kepler magnitude: 13.01. Transit SNR 4.71

There are 1 quarters with good PRF difference image offsets

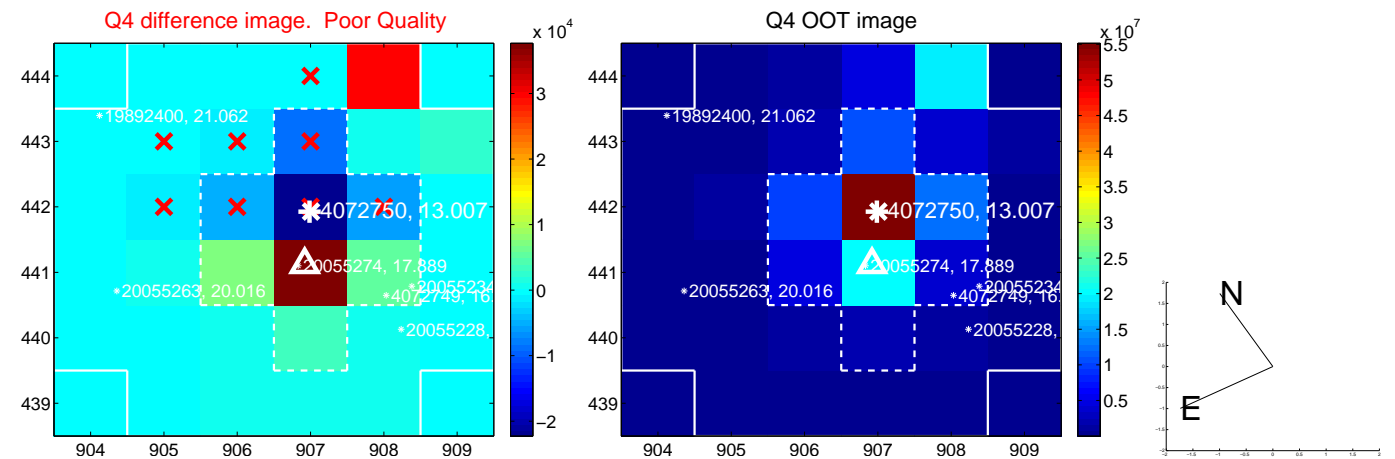
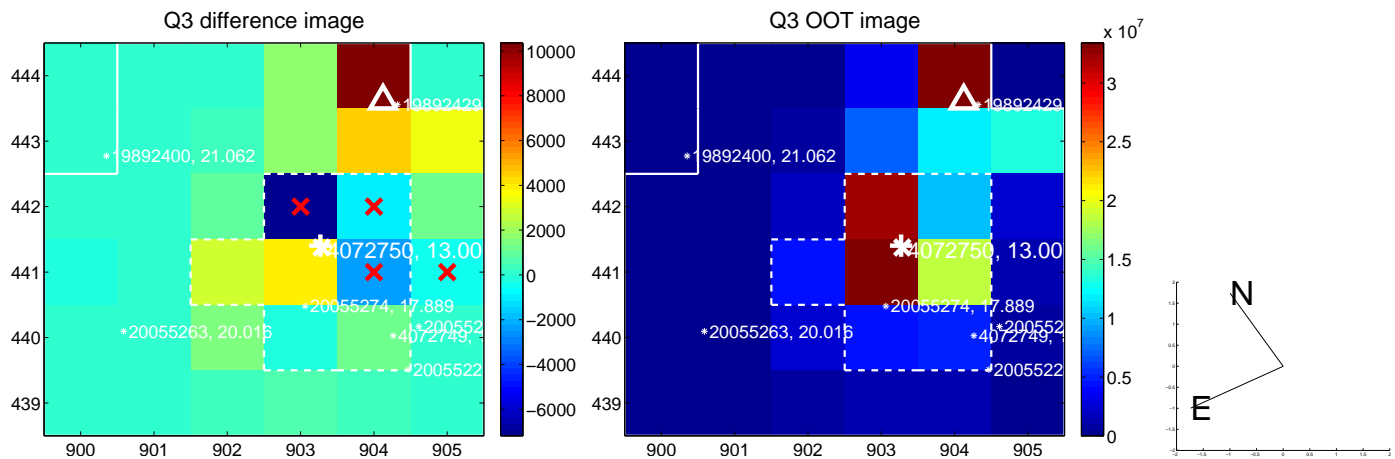
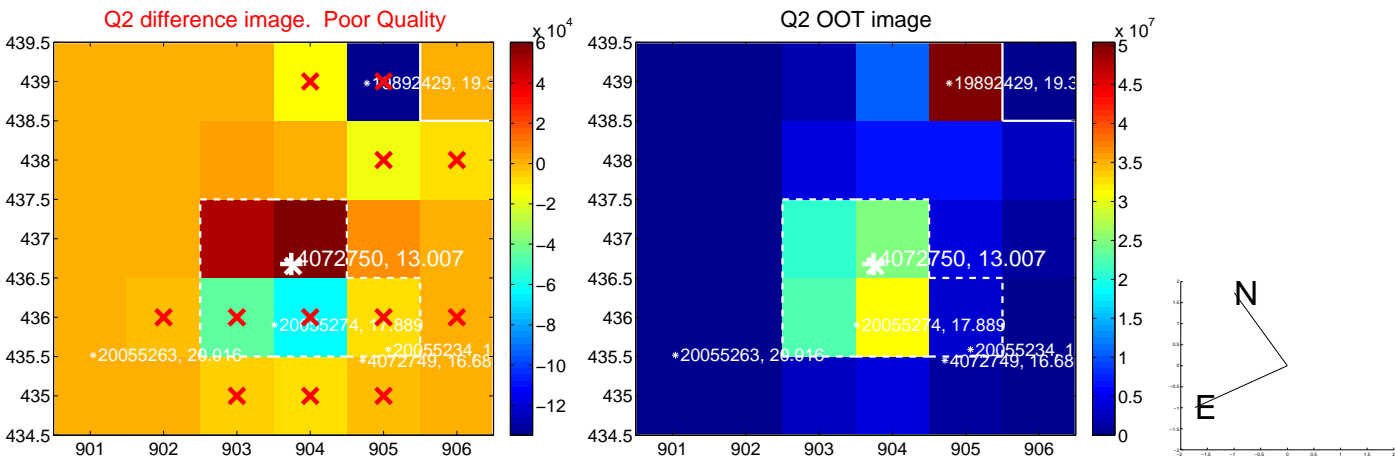
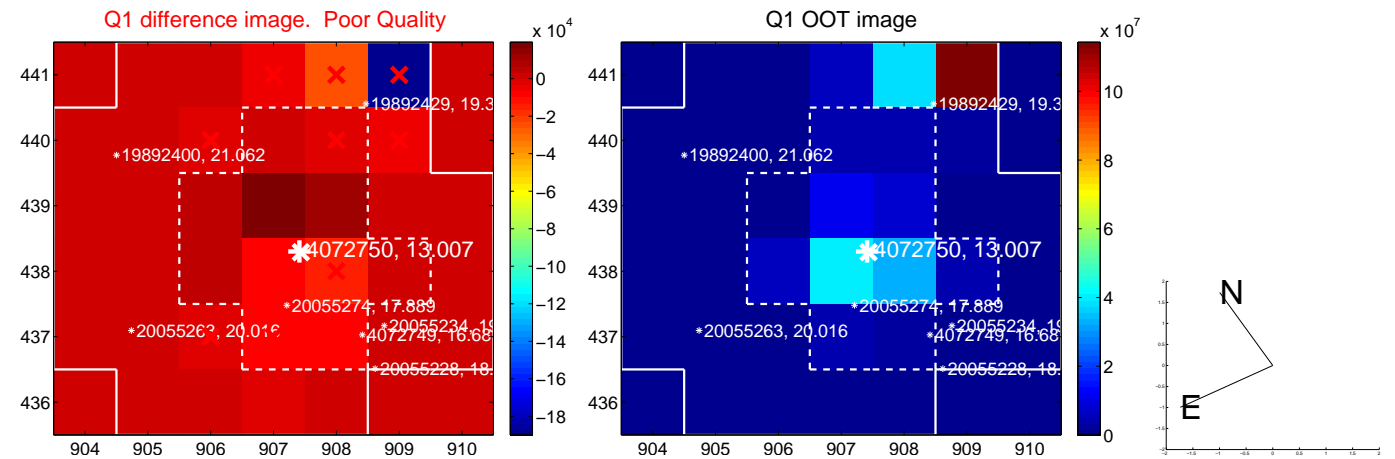
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.292 ± 2.039	1.61	1.890 ± 1.470	-2.696 ± 1.472
PRF-fit source offset from KIC position	3.279 ± 1.947	1.68	1.949 ± 1.372	-2.637 ± 1.420
photometric centroid source offset	8.18 ± 3.92	2.09	6.84 ± 4.22	-4.48 ± 3.09

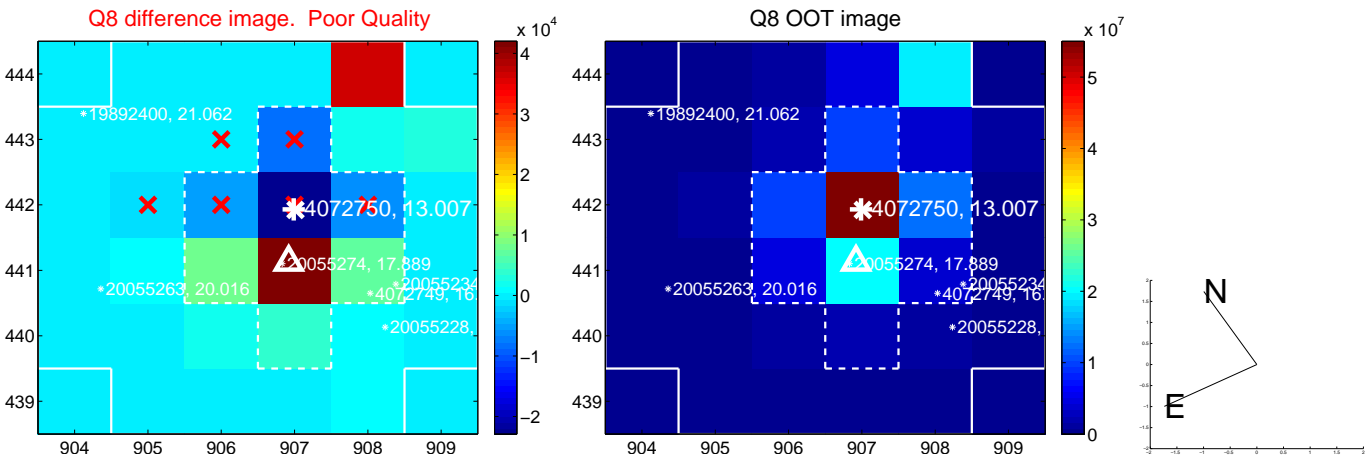
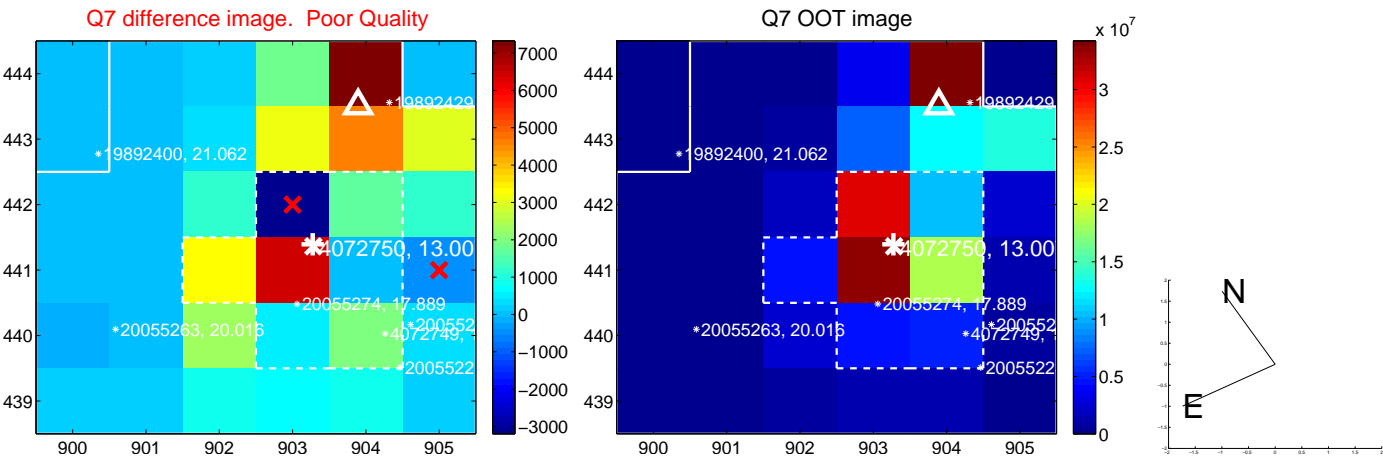
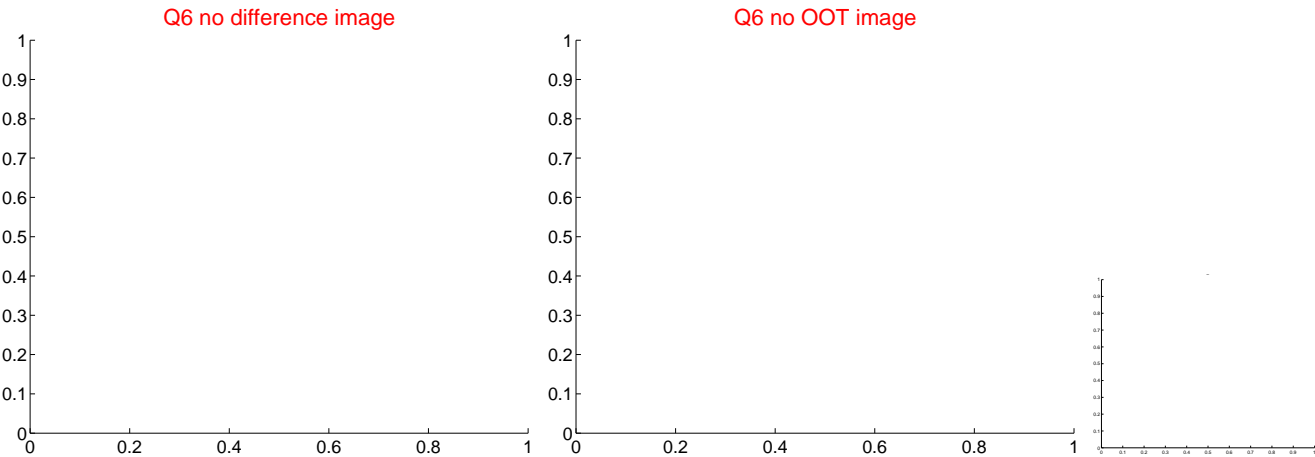
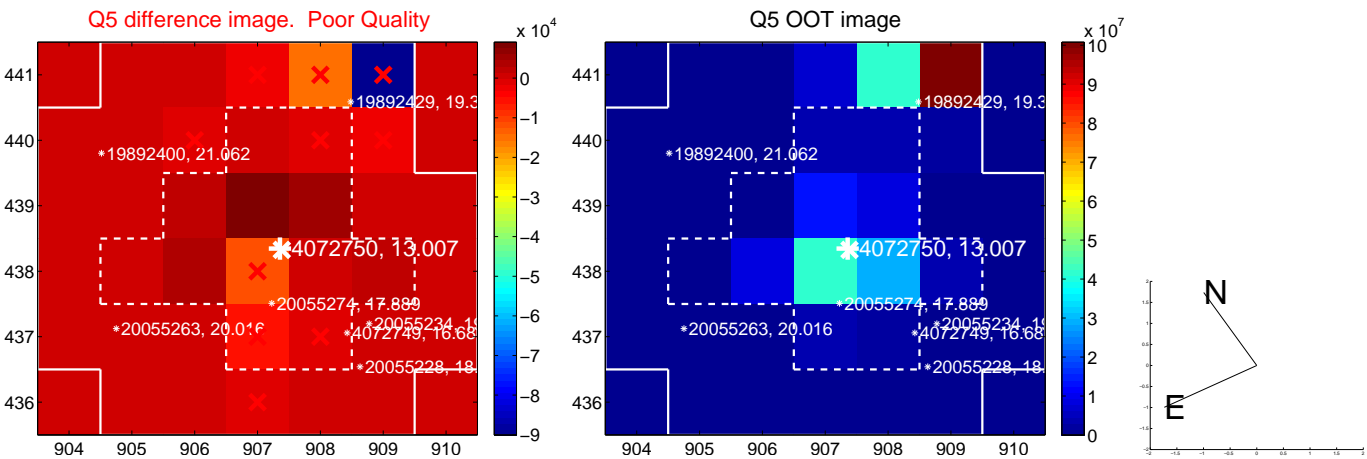


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

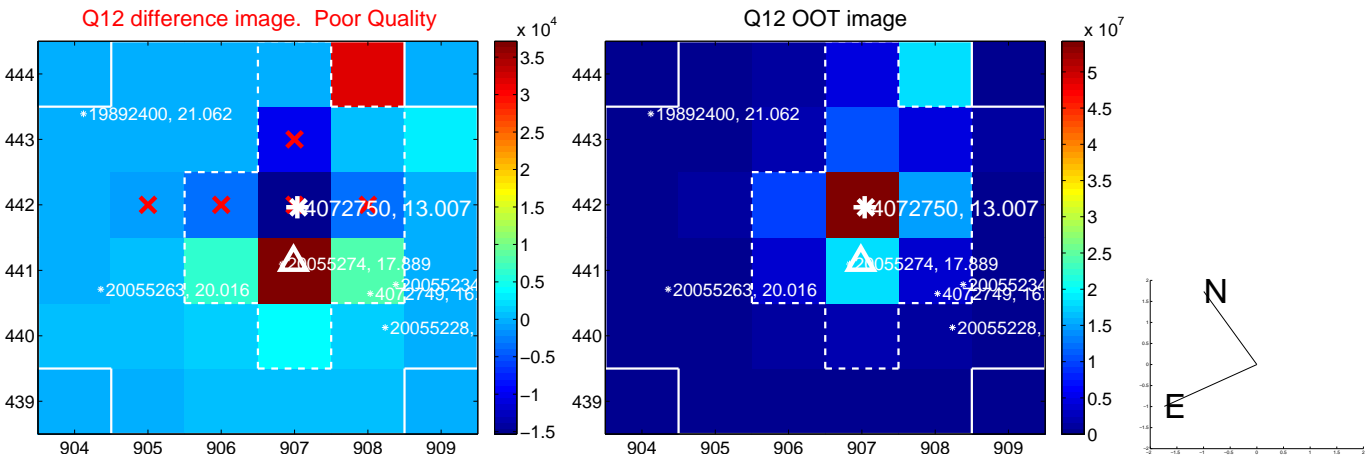
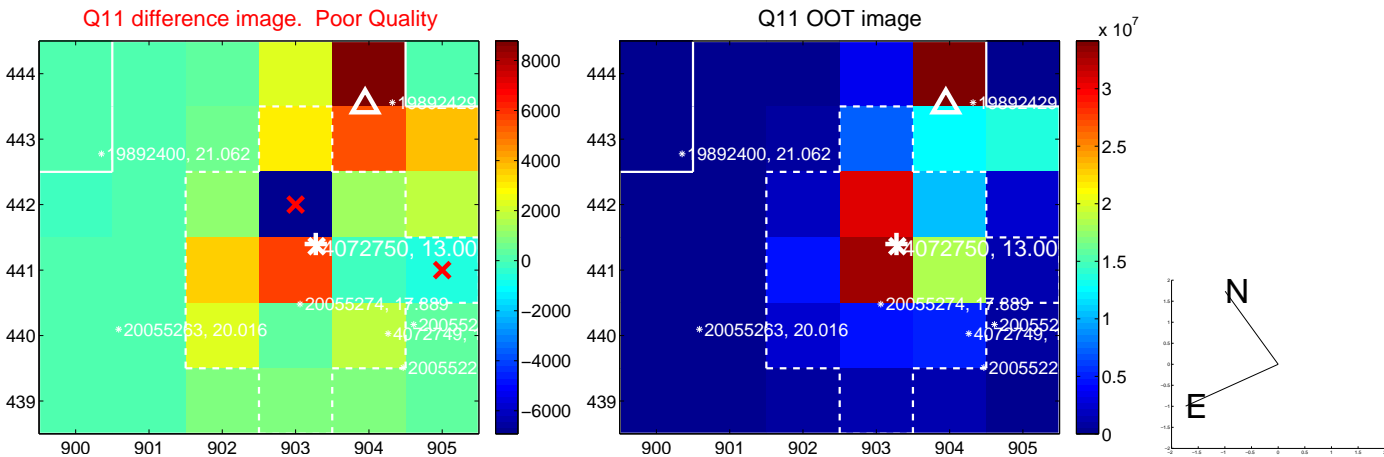
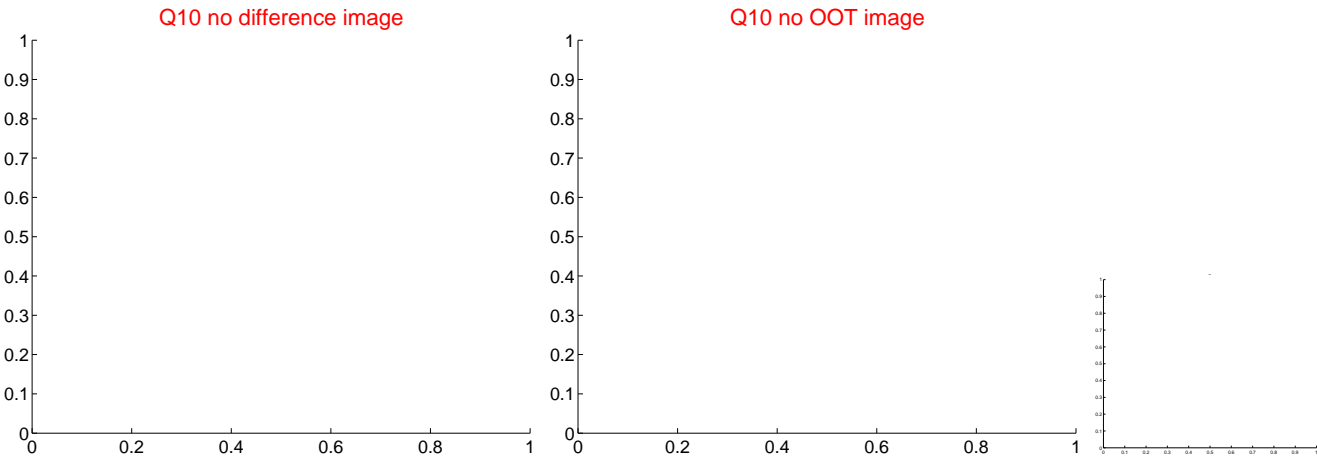
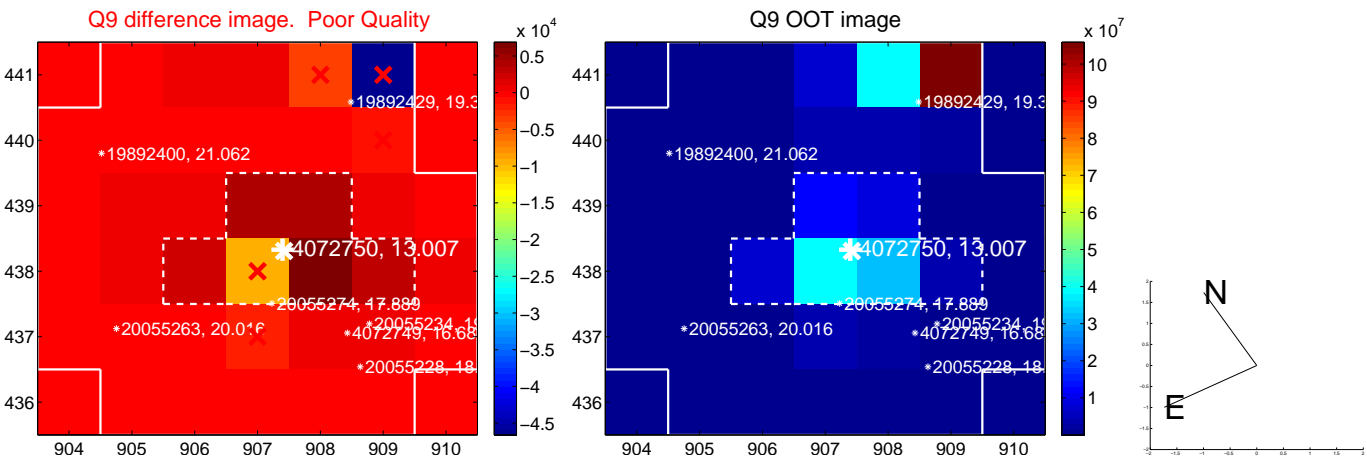
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



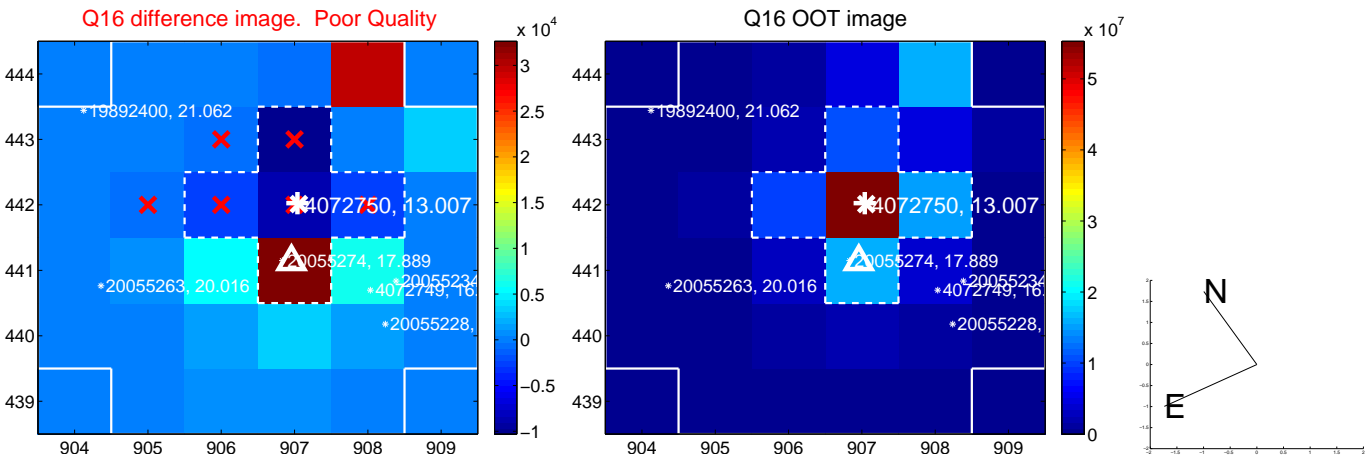
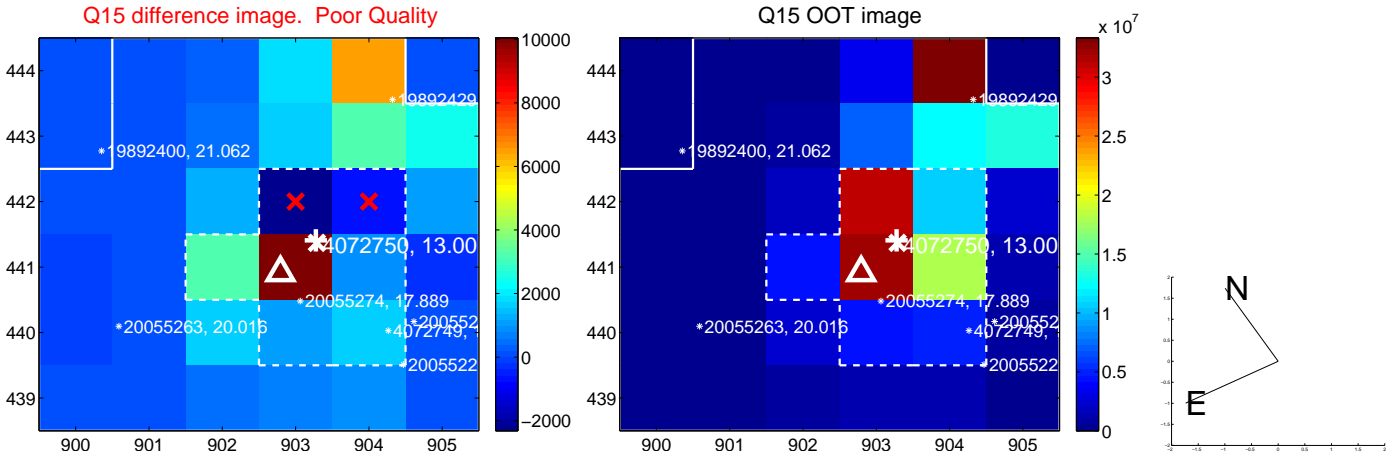
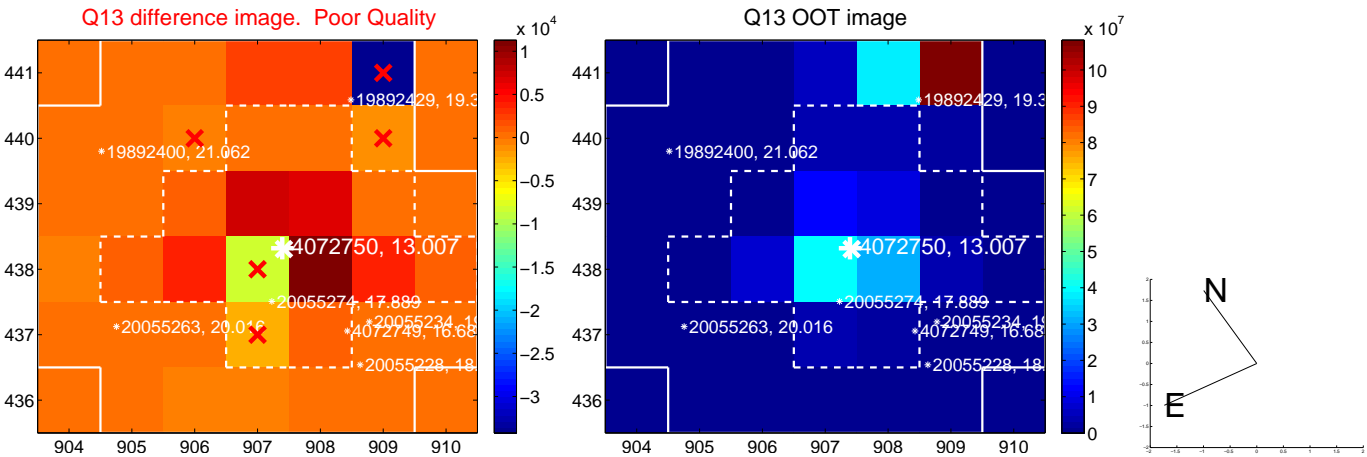
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



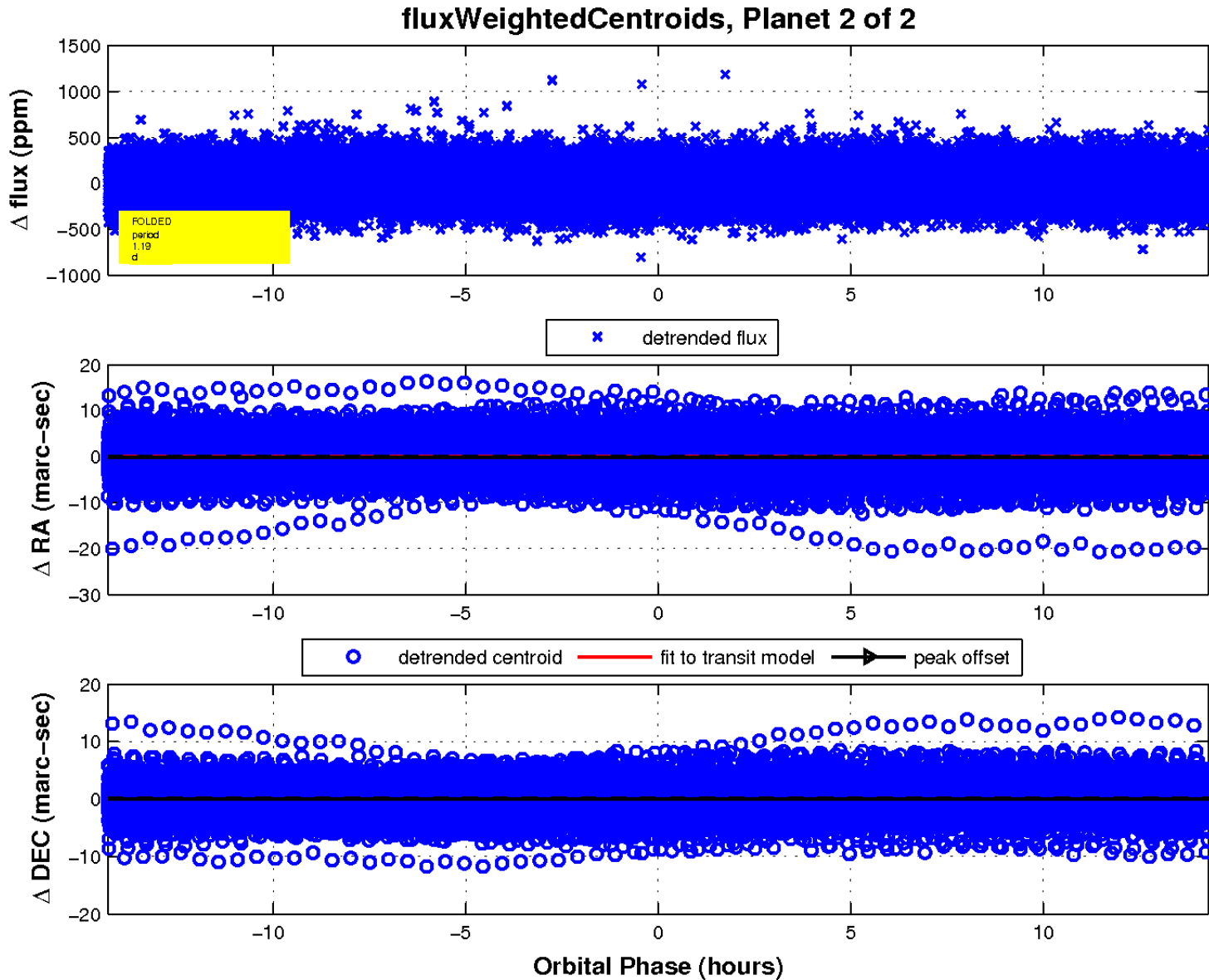
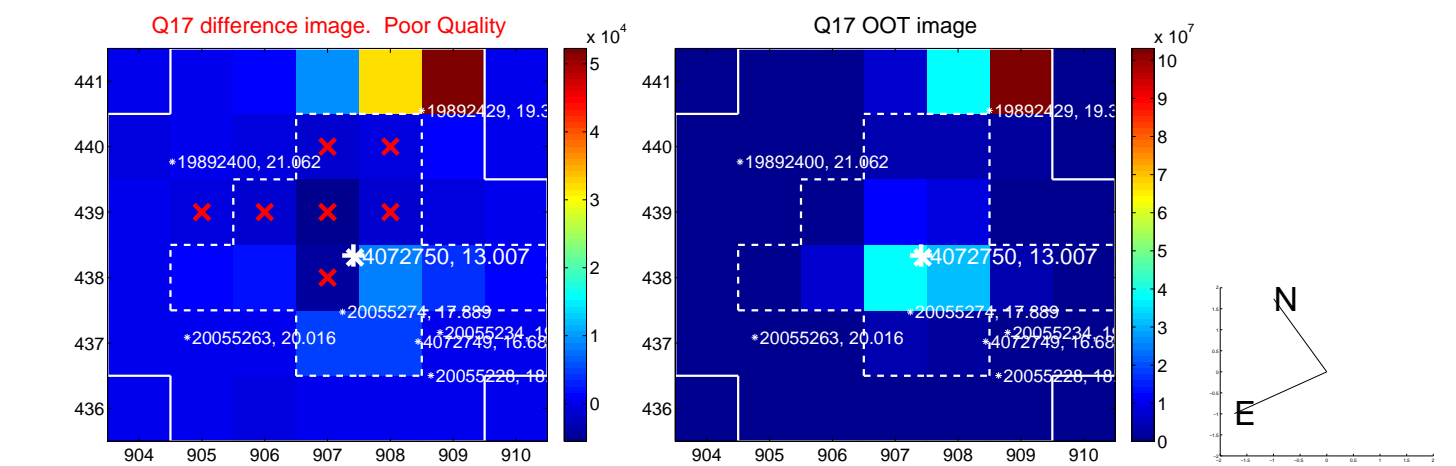
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

