

KIC 006463772

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})
006463772-01	OBS	No	0.930856	131.862795	172.3	3.347	11.3	12.7	2.43	6095	3.69	17930.33
006463772-02	OBS	No	1.181899	132.259714	254.5	14.183	10.1	15.5	2.43	6095	5.10	13041.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006463772-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
006463772-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—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.

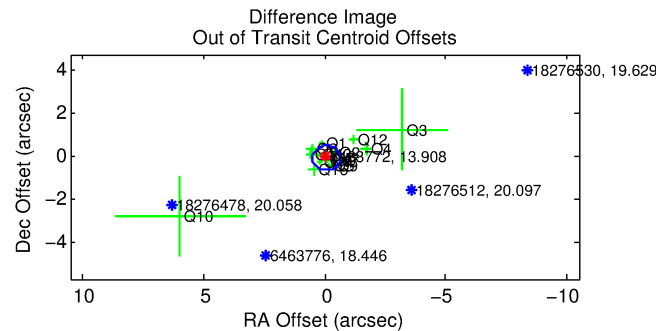
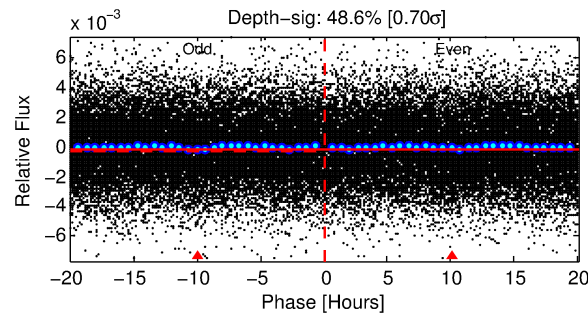
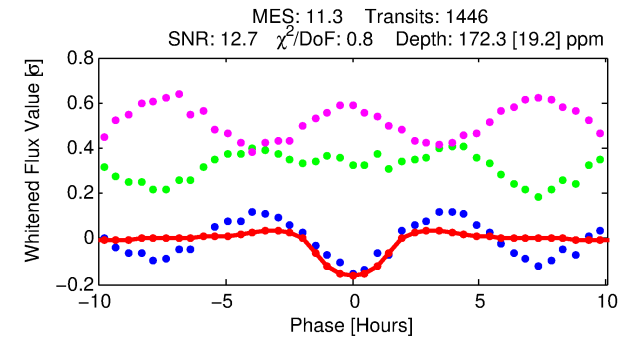
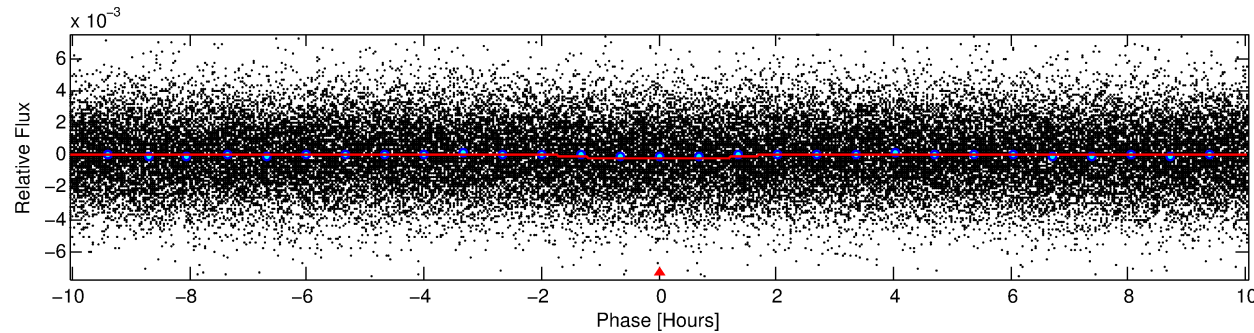
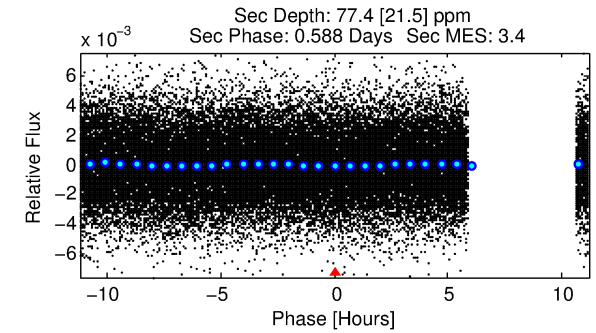
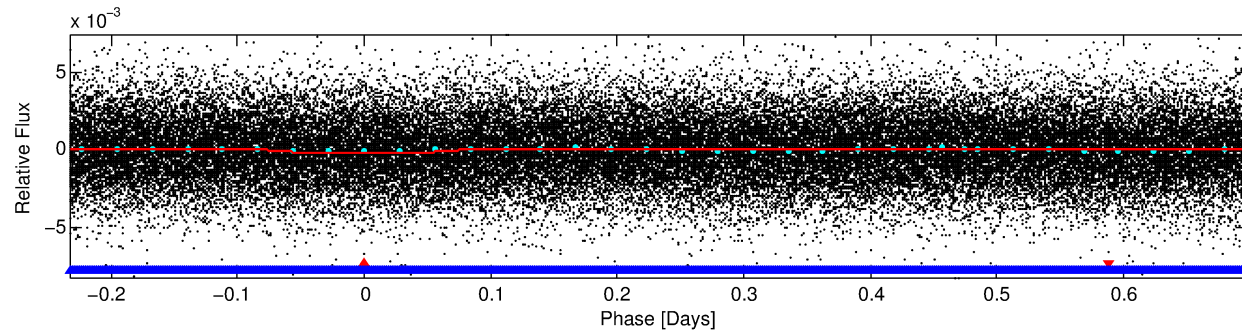
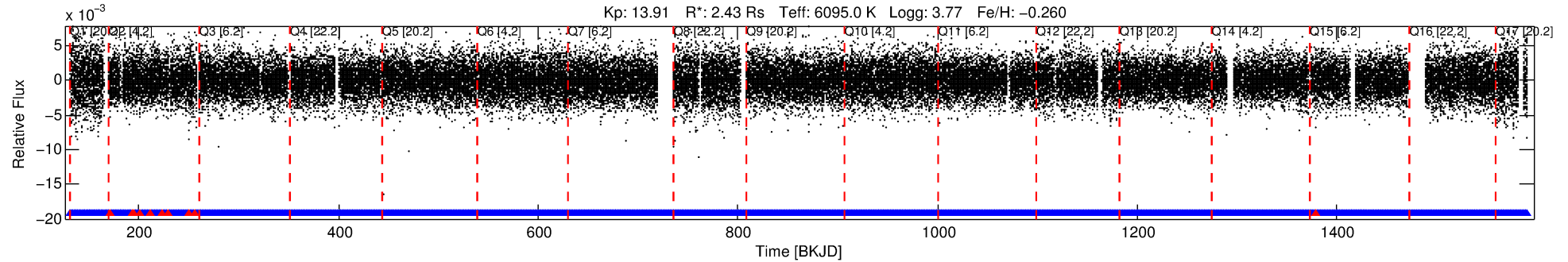
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006463772-01

No Significant Match Found

DV One-Page Summary

KIC: 6463772 Candidate: 1 of 2 Period: 0.931 d



DV Fit Results:

Period = 0.93086 [0.00001] d
Epoch = 131.8628 [0.0039] BKJD
Rp/R* = 0.0139 [0.0120]
a/R* = 1.42 [3.29]
b = 0.88 [1.22]
Seff = 17930.33 [17003.74]
Teq = 2951 [700] K
Rp = 3.69 [3.81] Re
a = 0.0202 [0.0115] AU
Ag = 1.28 [2.54] [0.11σ]
Teffp = 4850 [2133] K [0.85σ]

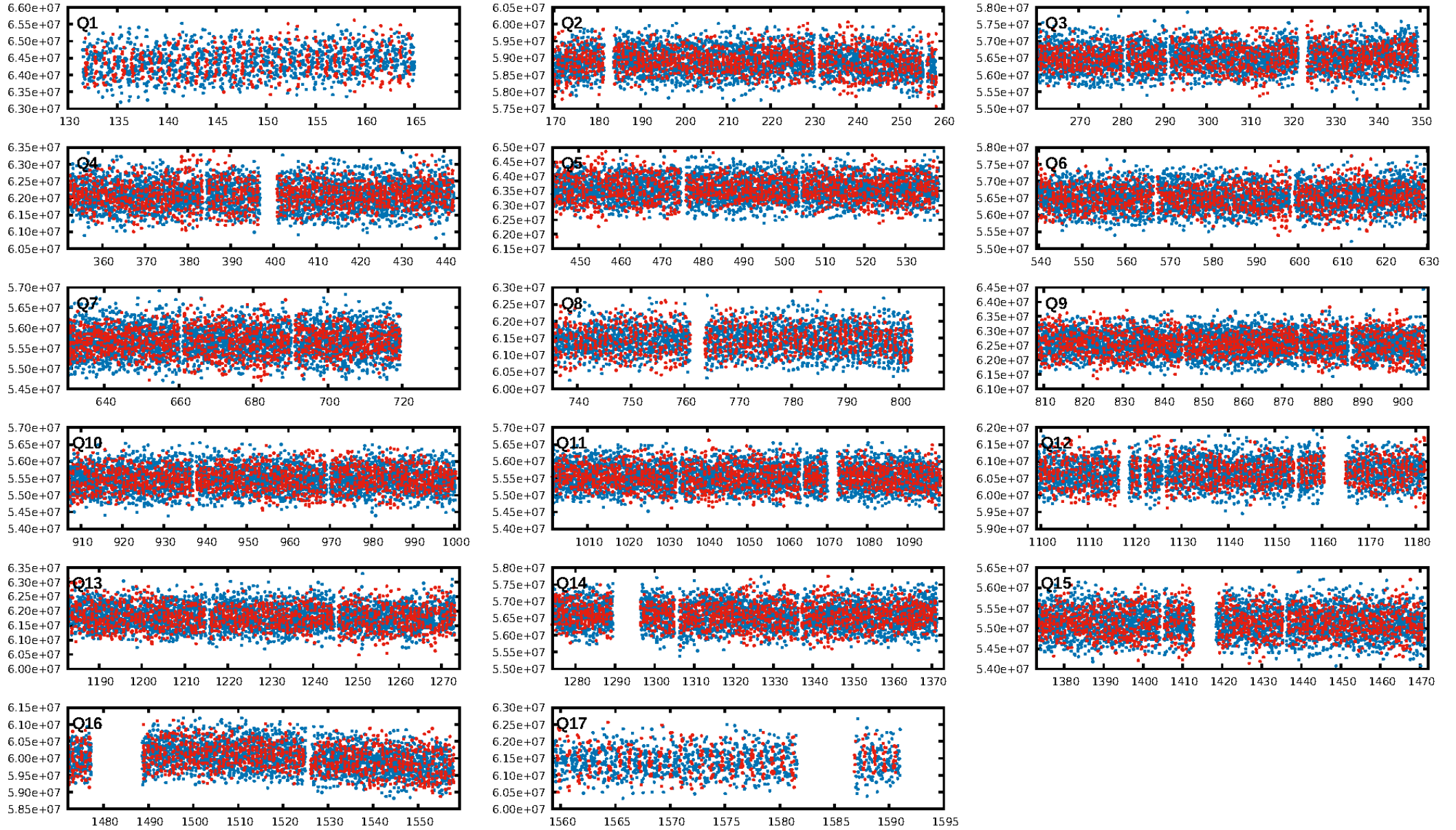
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 32.1% [0.41σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1371/1381]
GhostDiagnostic-chr: 0.9108
Centroid-sig: 3.7%
Centroid-so: 0.264 arcsec [1.17σ]
OotOffset-rm: 0.109 arcsec [0.57σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-rm: 0.164 arcsec [0.52σ]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.50 [8/16]
DiffImageOverlap-fno: 0.00 [0/17]

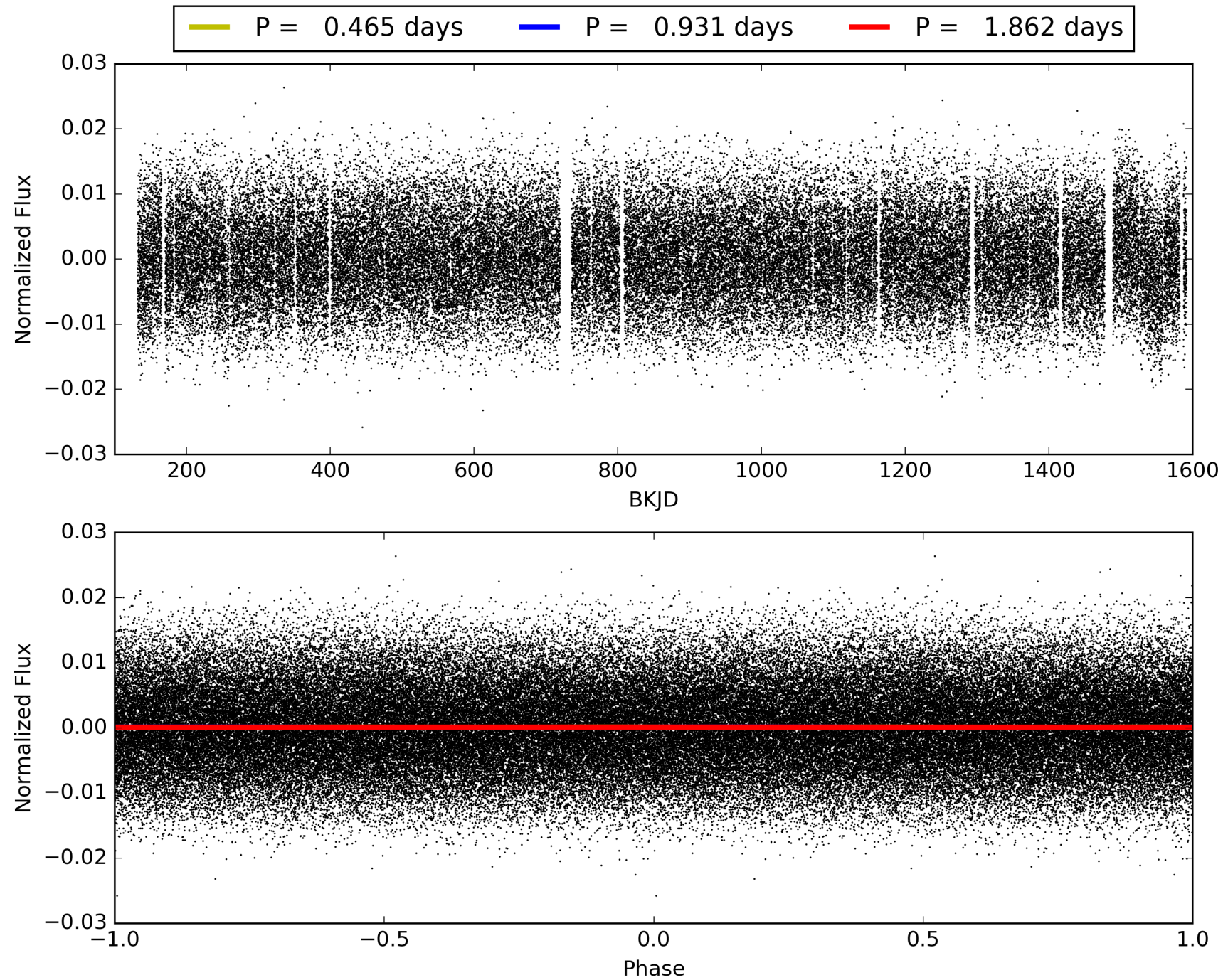
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:19:29 Z

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

TCE 006463772-01, PDC Light Curves

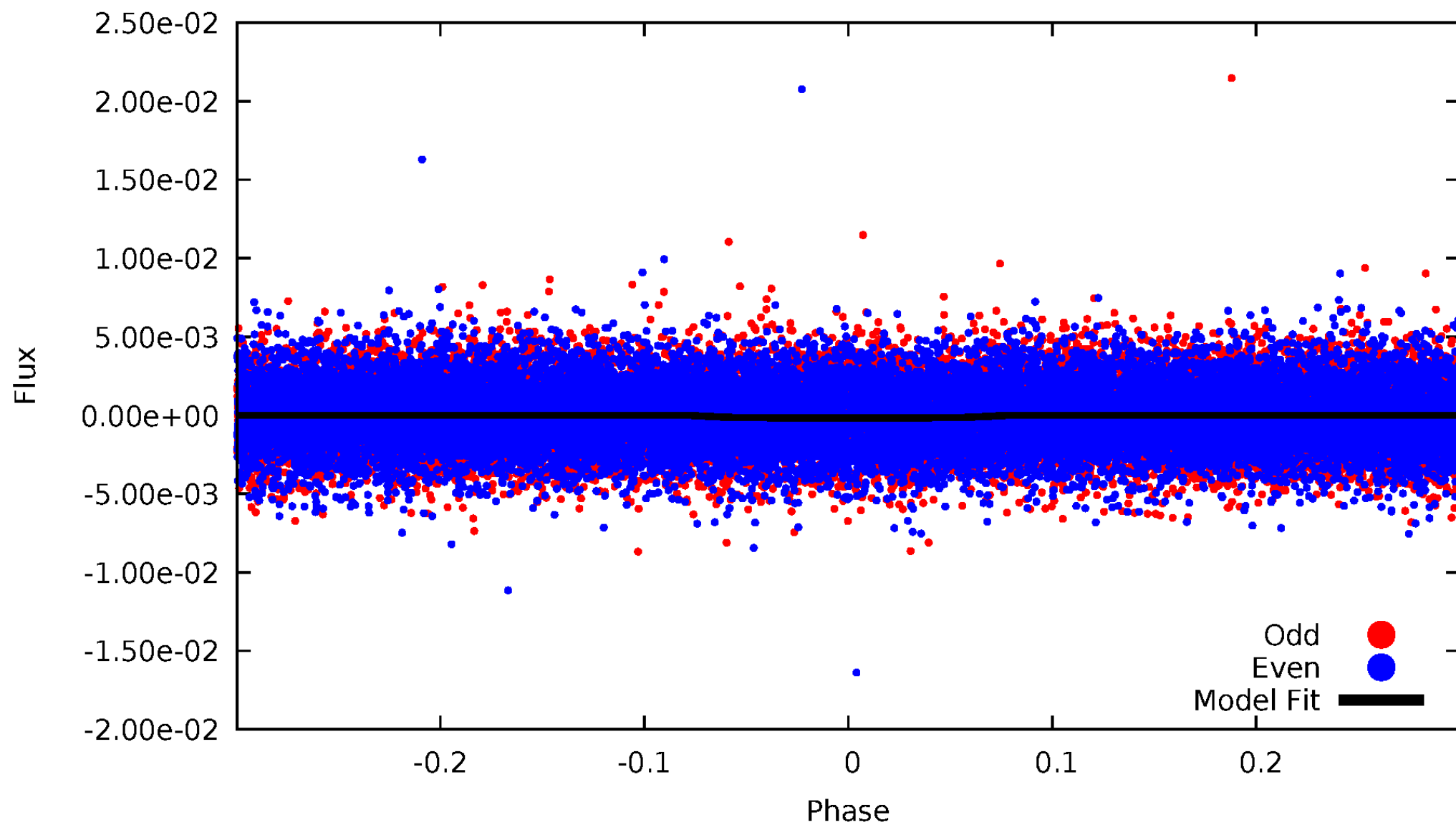


TCE 006463772-01



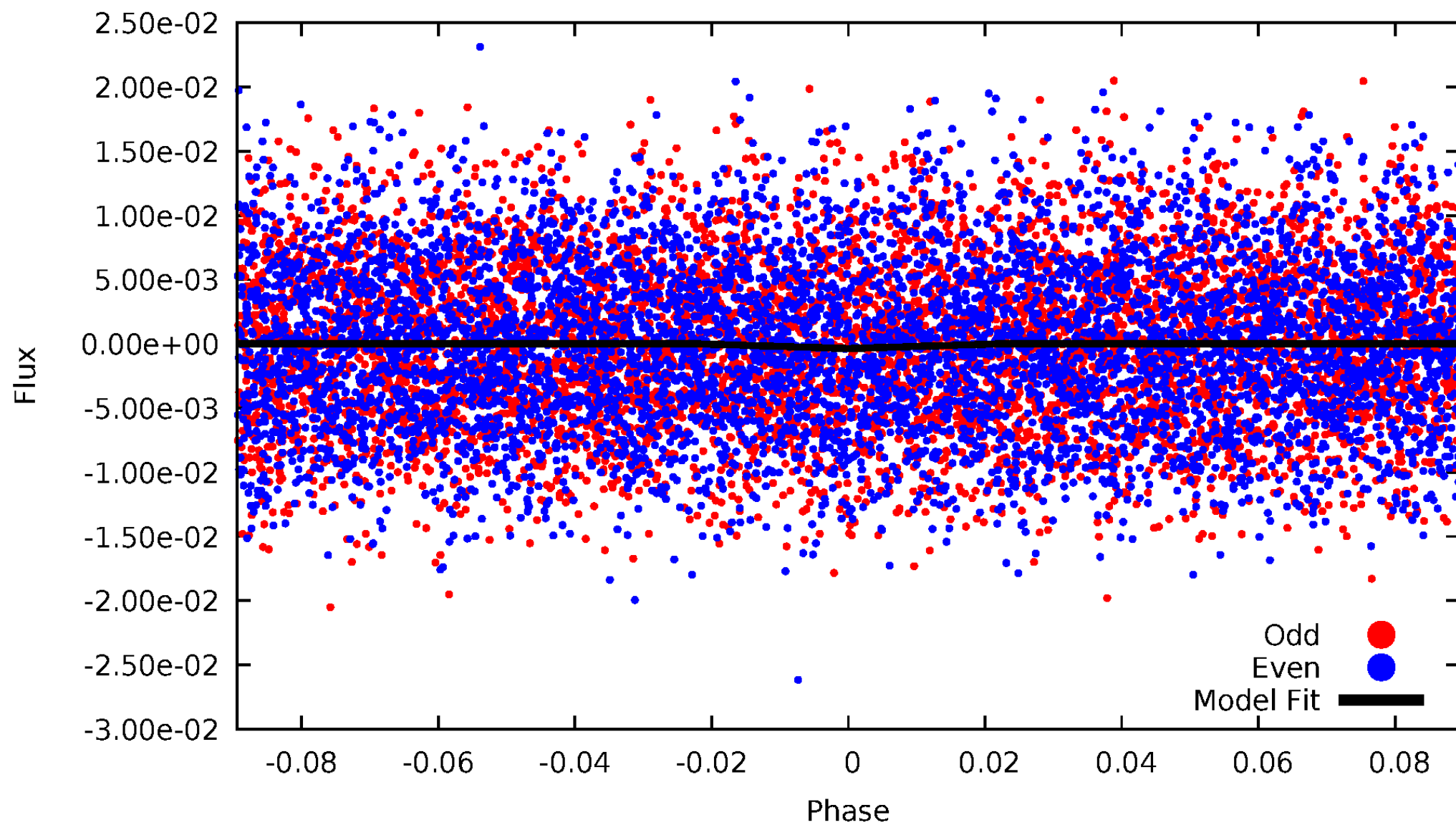
DV Odd/Even

TCE 006463772-01

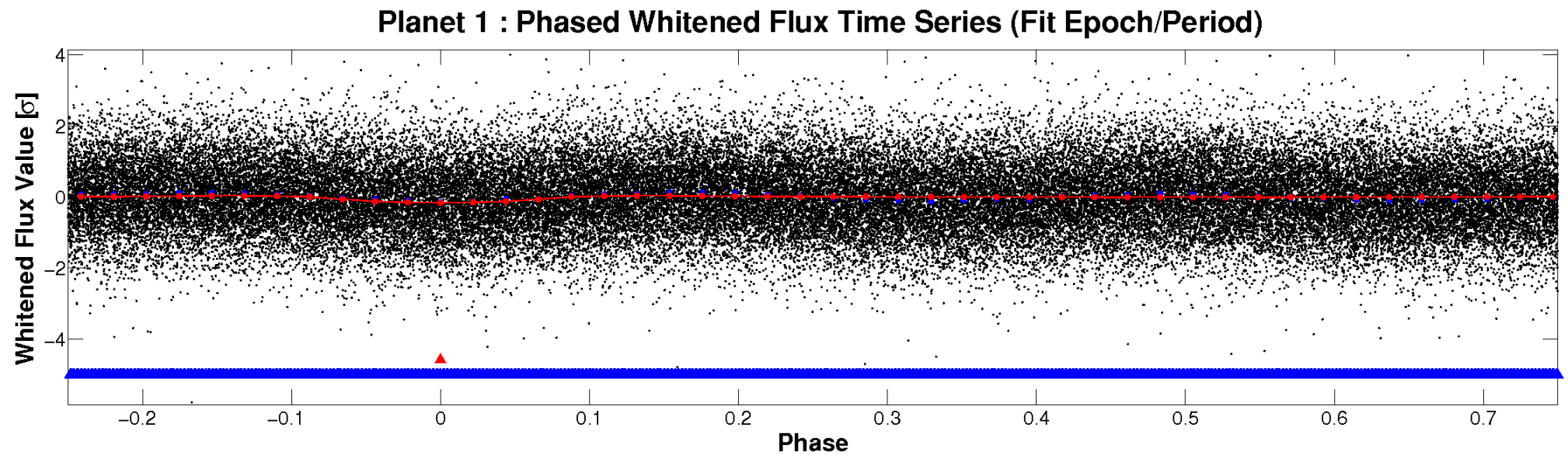
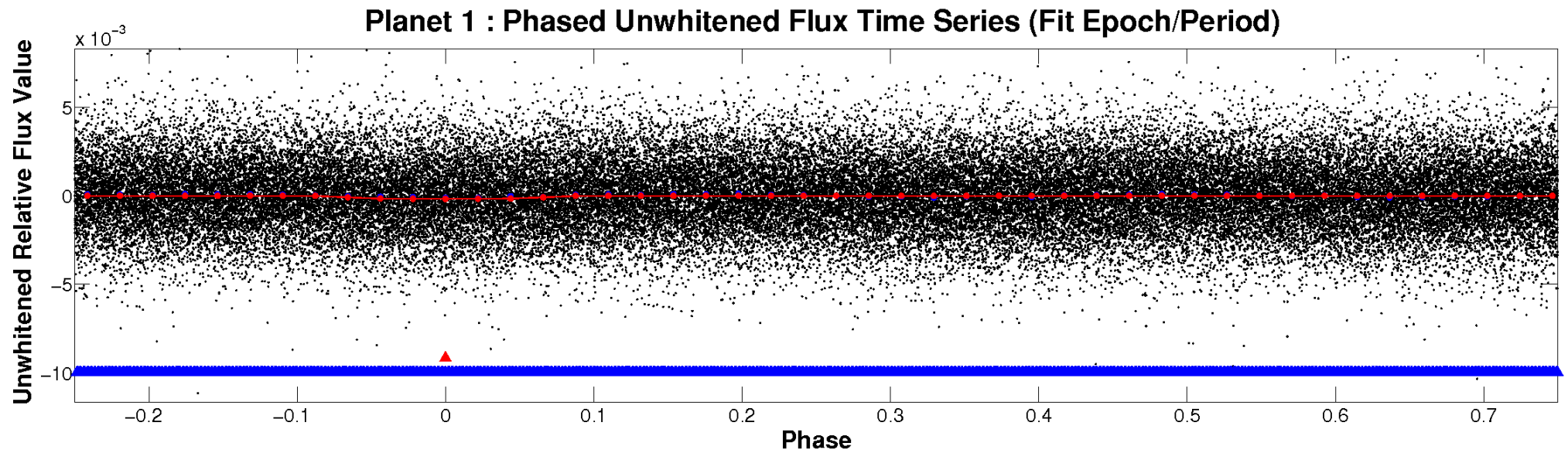


ALT Odd/Even

TCE 006463772-01

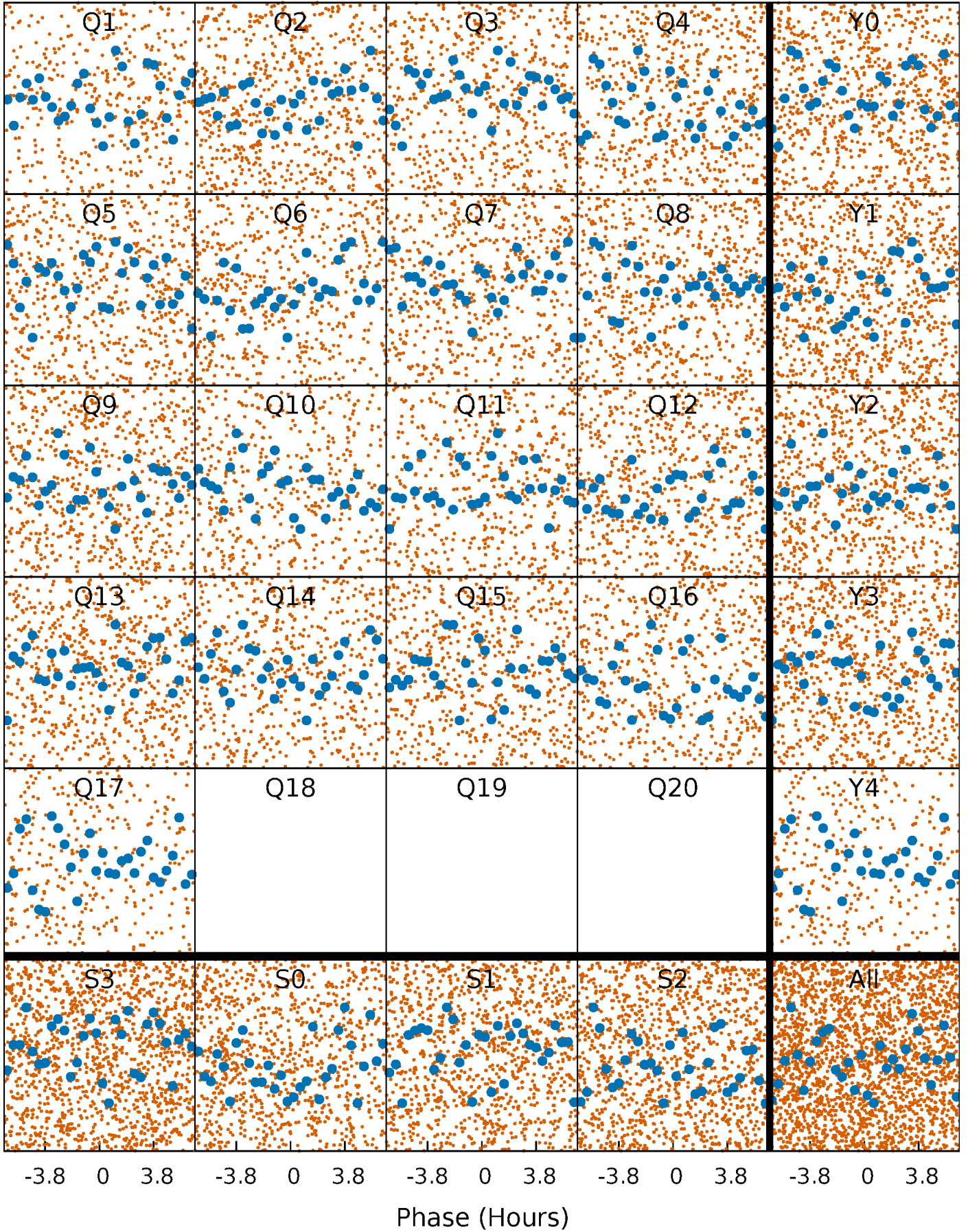


Non-Whitened Vs. Whitened Light Curve



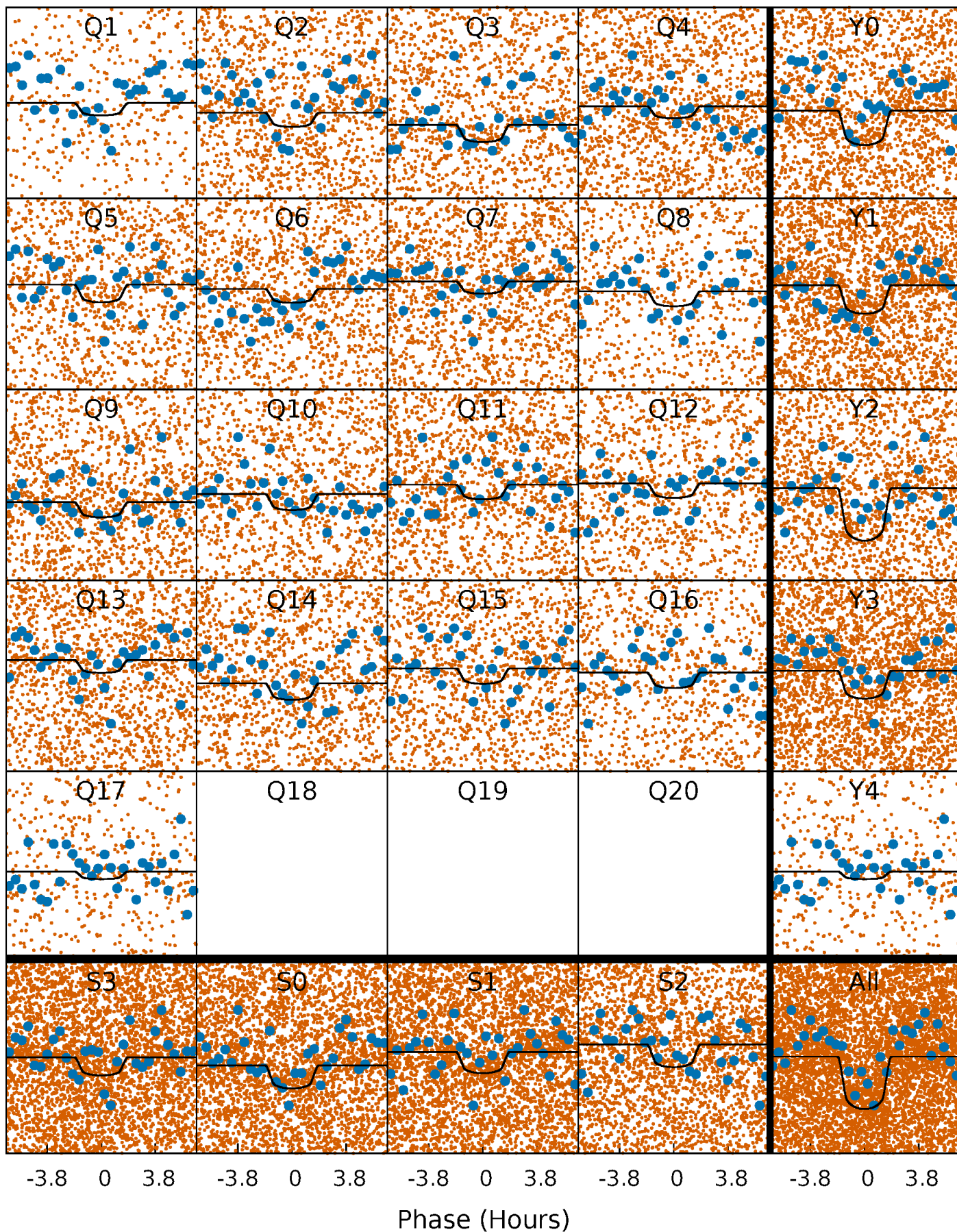
PDC Quarter-Phased Transit Curves

TCE 006463772-01 P= 0.930856 Days $T_0=131.862795$ (BKJD)



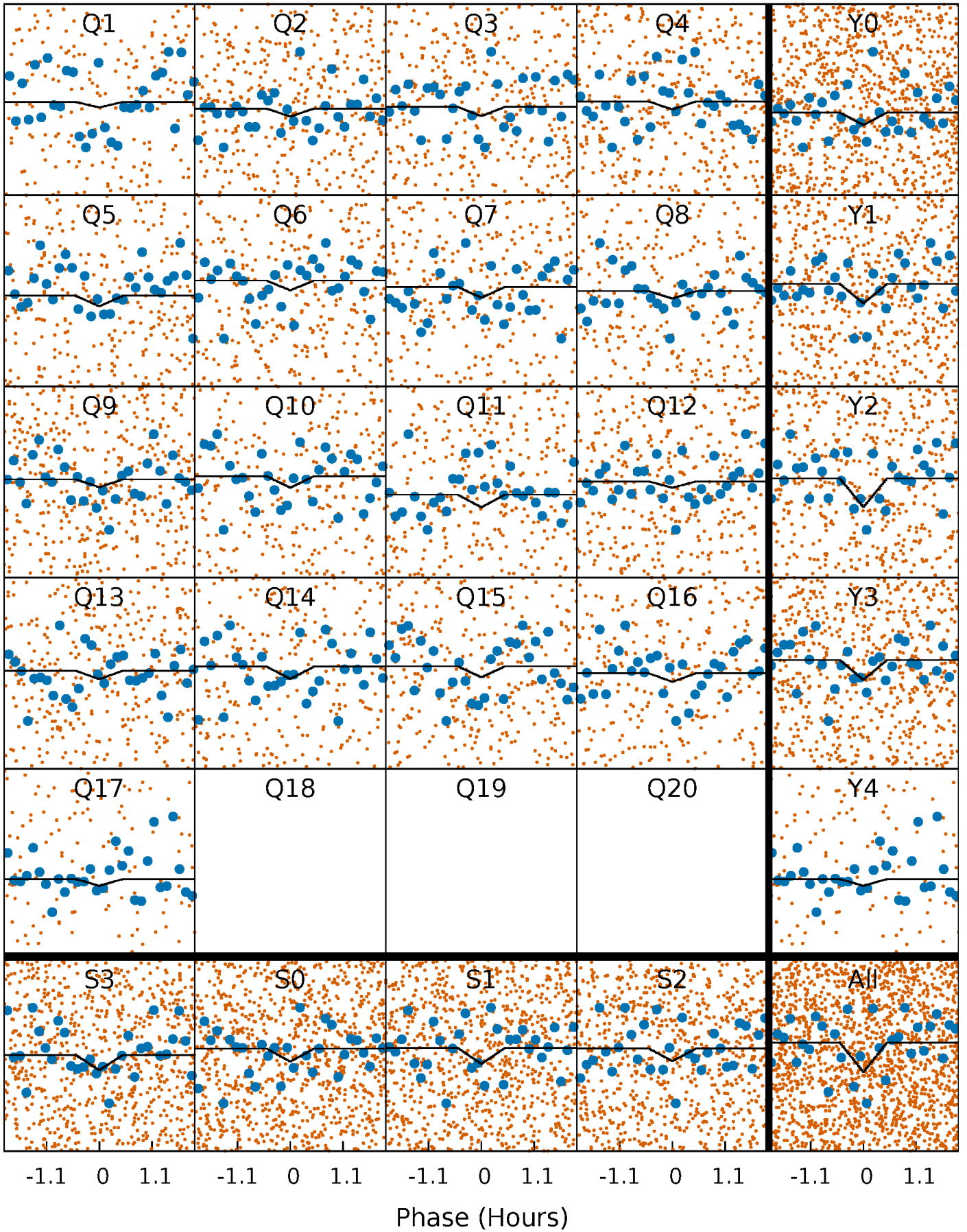
DV Quarter-Phased Transit Curves

TCE 006463772-01 P= 0.930856 Days $T_0=131.862795$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

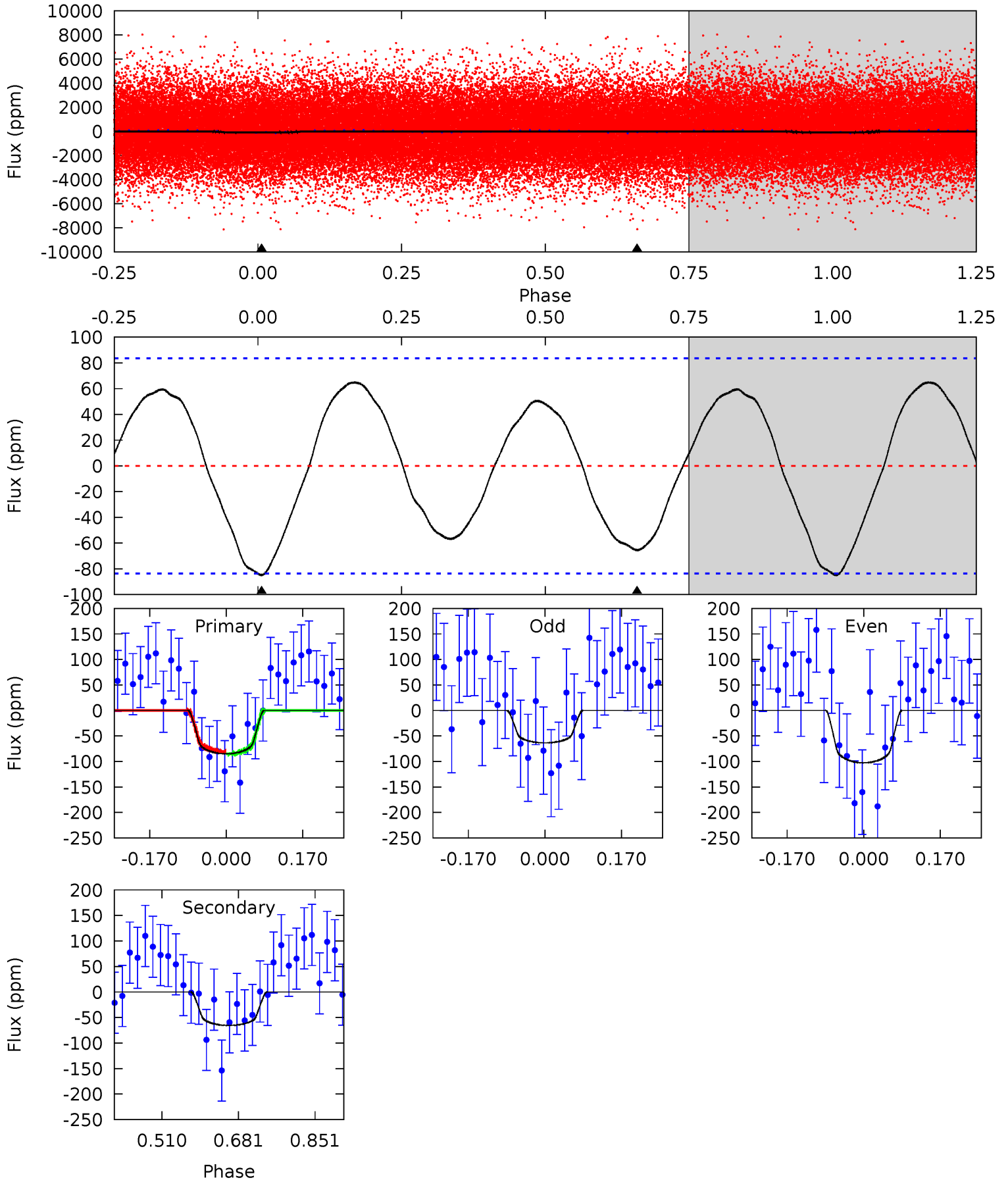
TCE 006463772-01 P= 0.930906 Days $T_0=131.856430$ (BKJD)



DV Model-Shift Uniqueness Test

006463772-01, P = 0.930856 Days, E = 130.931939 Days

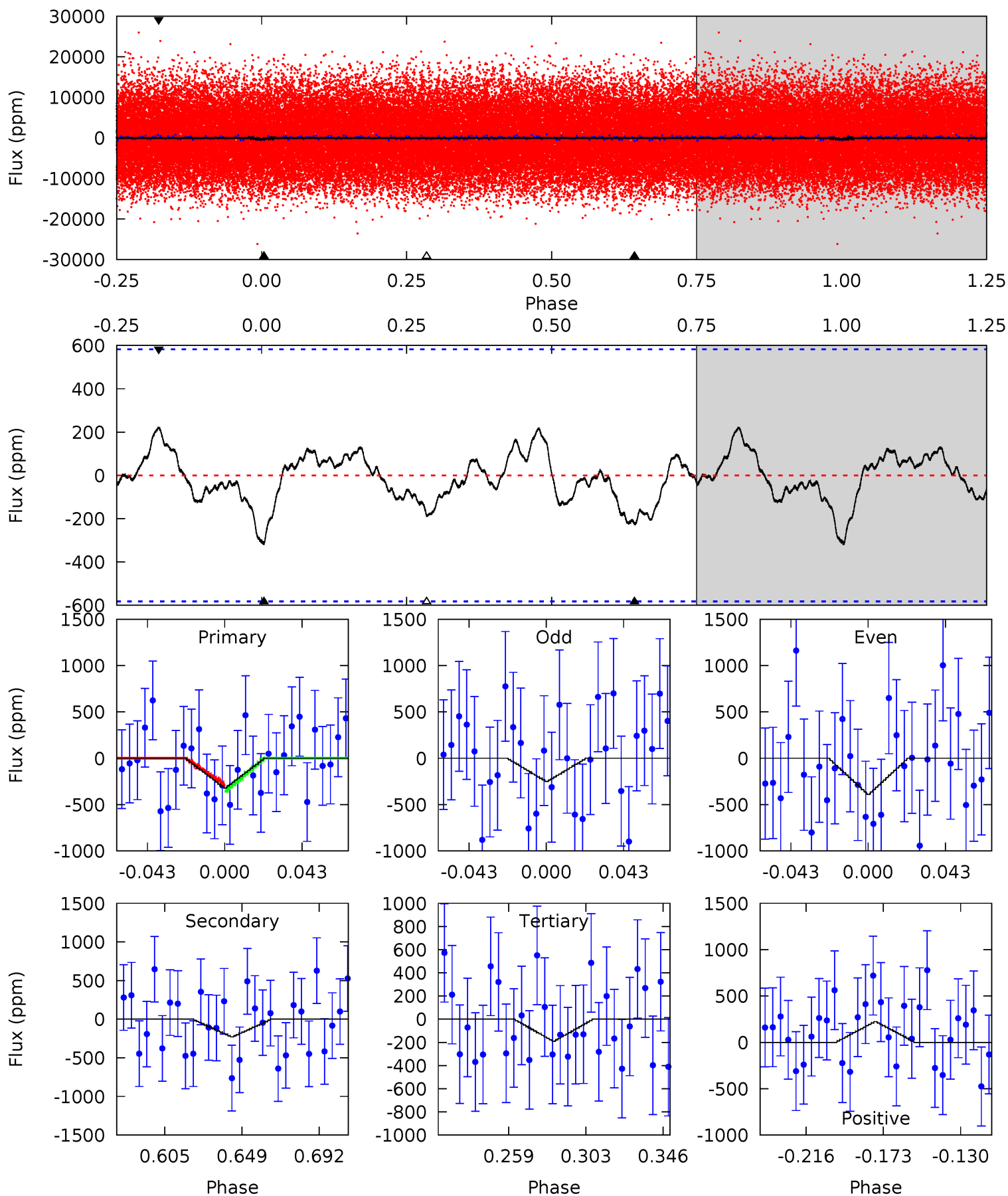
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.52	3.49	0	0	4.45	1.37	2.15	4.52	4.52	3.49	3.49	1.04	0.99	0.43	0.12



Alt Model-Shift Uniqueness Test

006463772-01, P = 0.930906 Days, E = 130.925524 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.61	1.87	1.56	1.82	4.74	2.02	0.72	1.06	0.79	0.31	0.05	0.57	0.63	0.41	0.30



Stellar Parameters For KIC 006463772

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6095^{+192}_{-214}	$3.769^{+0.560}_{-0.140}$	$-0.260^{+0.300}_{-0.300}$	$2.432^{+0.456}_{-1.368}$	$1.268^{+0.177}_{-0.329}$	$0.124^{+0.917}_{-0.047}$
	+3%/-4%	+15%/-4%	+115%/-115%	+19%/-56%	+14%/-26%	+739%/-38%
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 006463772-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-65 ± 19	$3.80^{+3.17}_{-2.43}$	4021^{+323}_{-602}	4102^{+2902}_{-6646}	$0.936^{+6.470}_{-0.656}$
Alt.	-230 ± 123	$4.48^{+3.34}_{-2.51}$	4041^{+317}_{-572}	5202^{+2713}_{-1458}	$2.274^{+10.681}_{-1.670}$

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

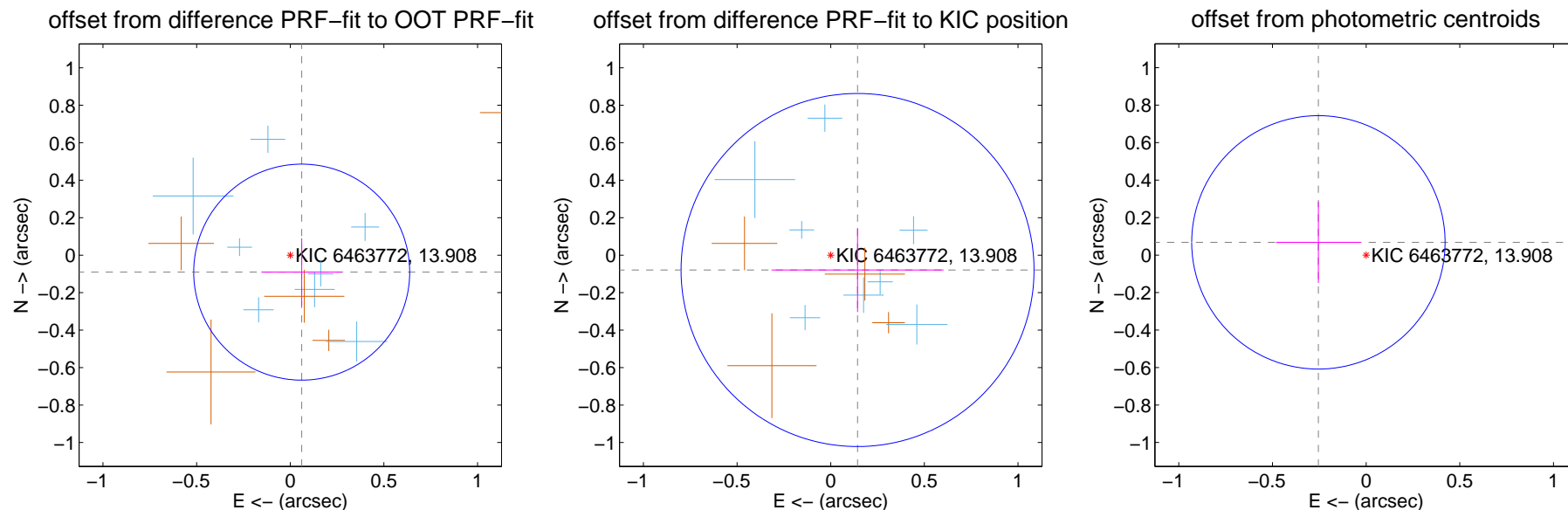
DV Centroid Data

Supplemental centroid analysis for 006463772-01. Kepler magnitude: 13.91. Transit SNR 12.75

There are 8 quarters with good PRF difference image offsets

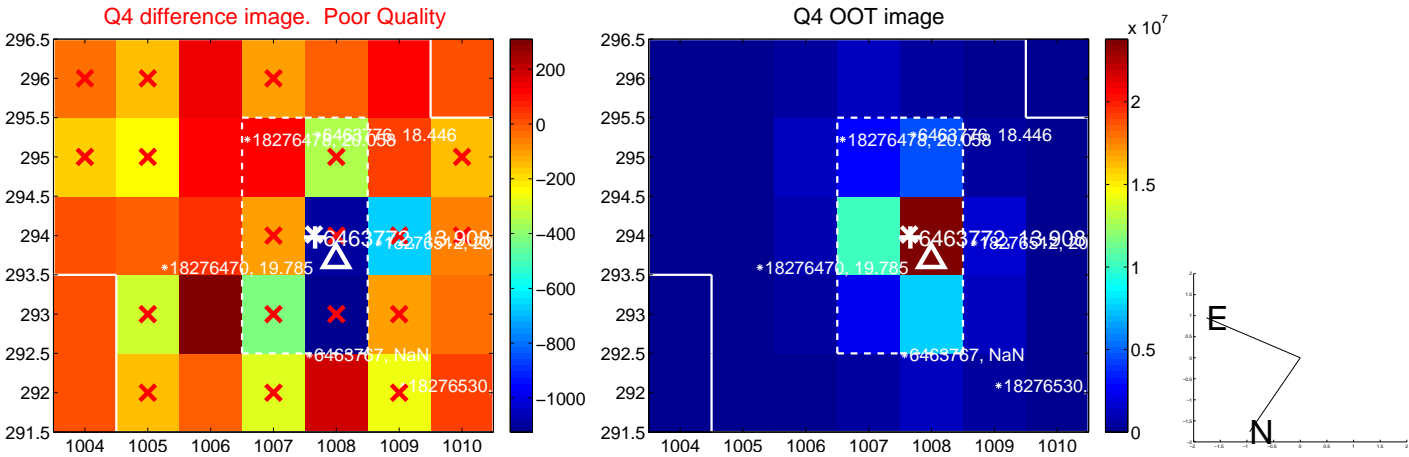
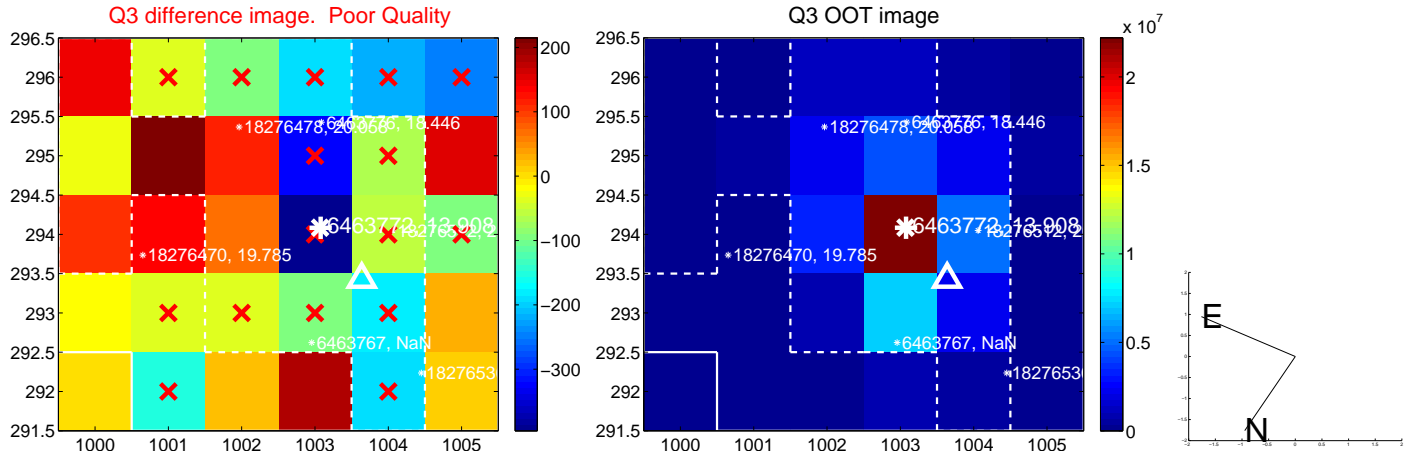
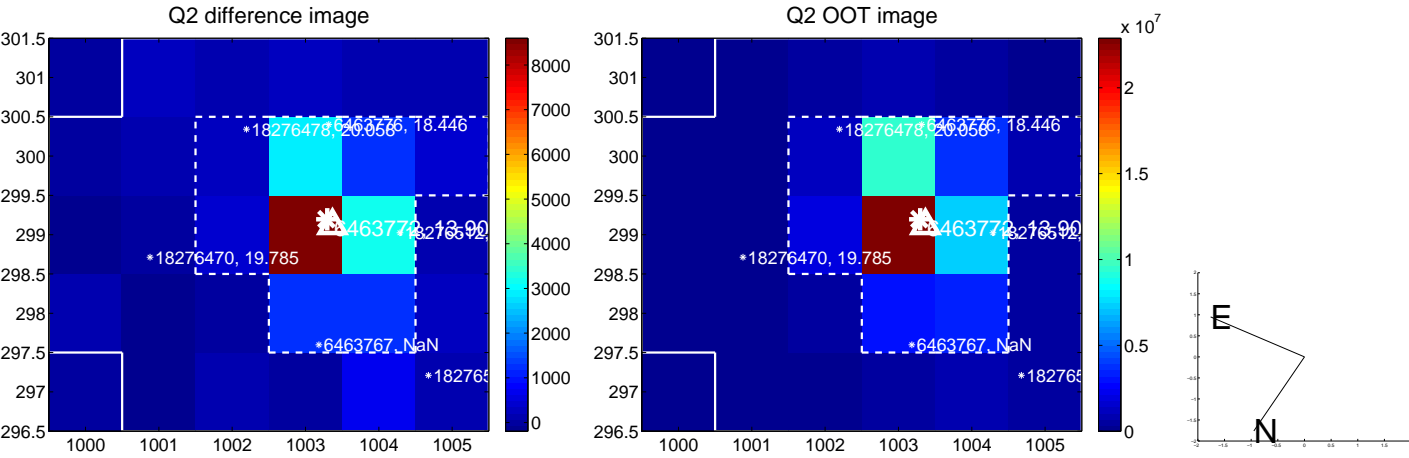
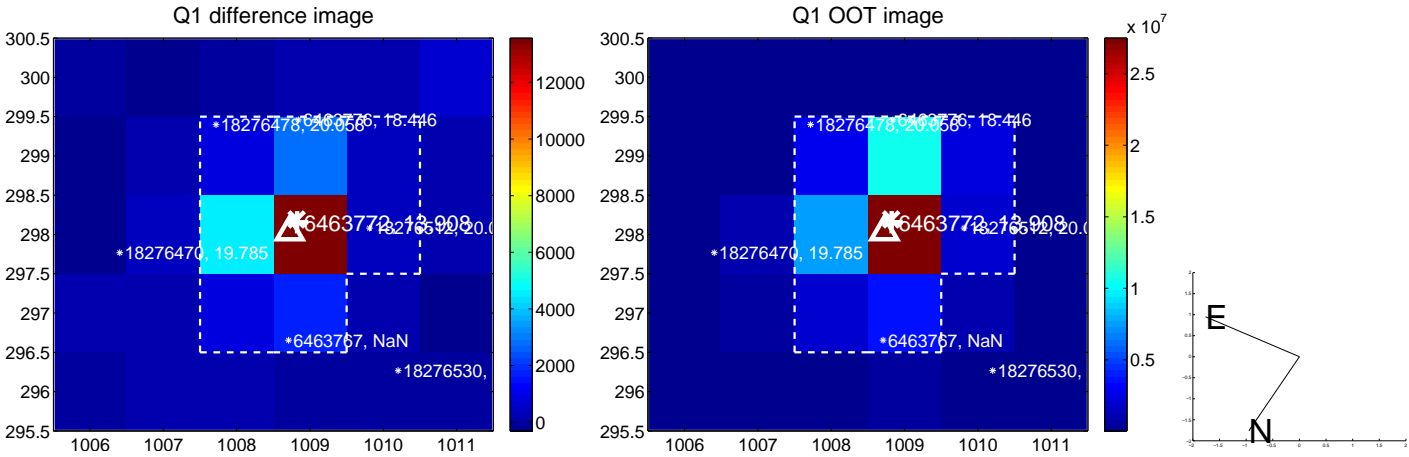
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.109 ± 0.192	0.57	-0.061 ± 0.215	-0.091 ± 0.181
PRF-fit source offset from KIC position	0.164 ± 0.314	0.52	-0.143 ± 0.459	-0.079 ± 0.224
photometric centroid source offset	0.26 ± 0.23	1.17	0.25 ± 0.23	0.07 ± 0.22

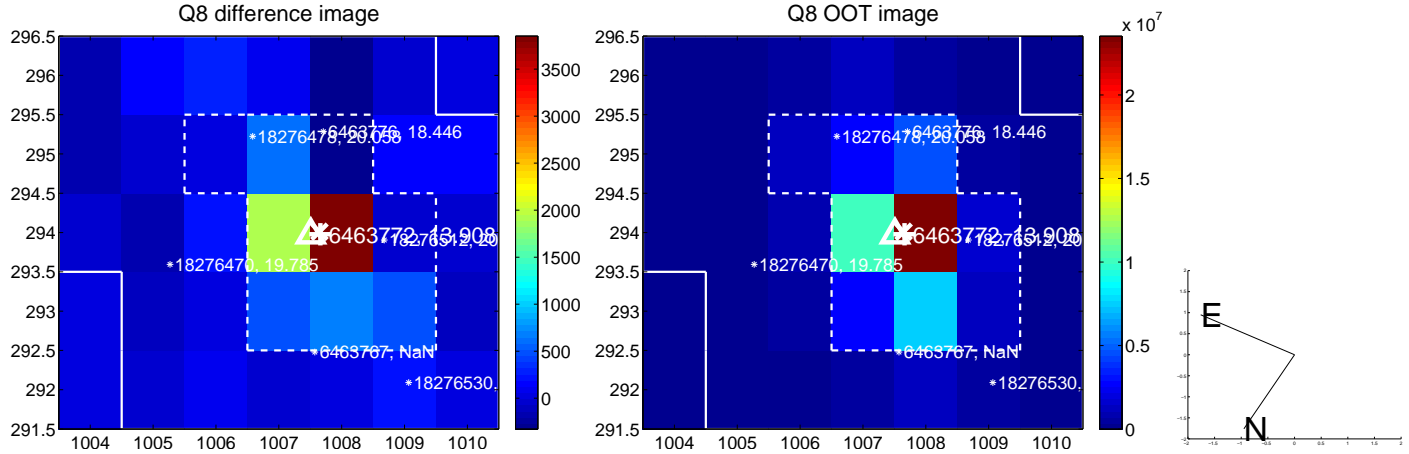
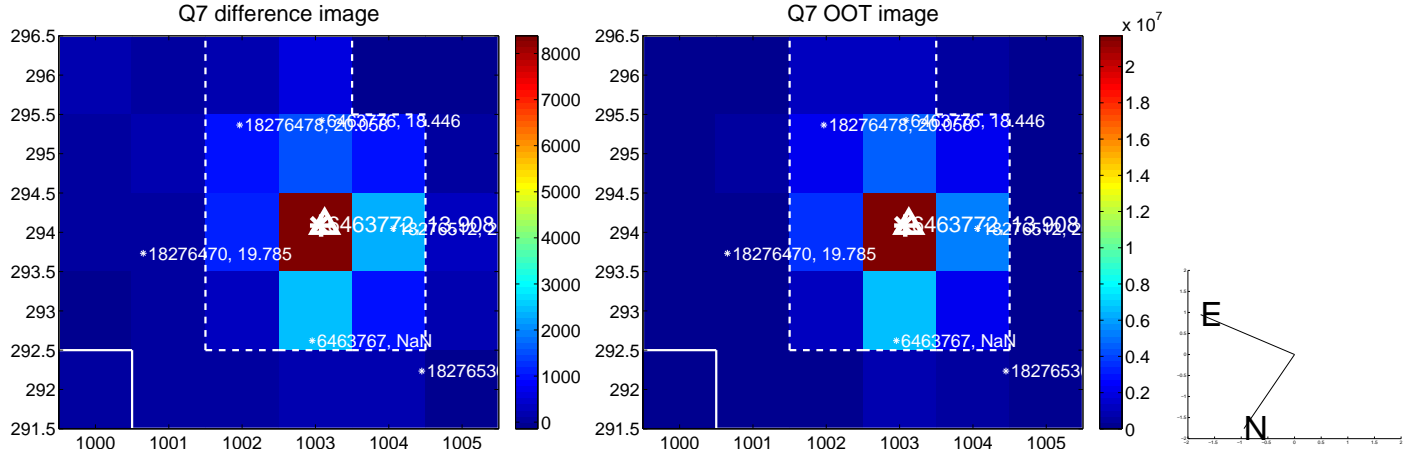
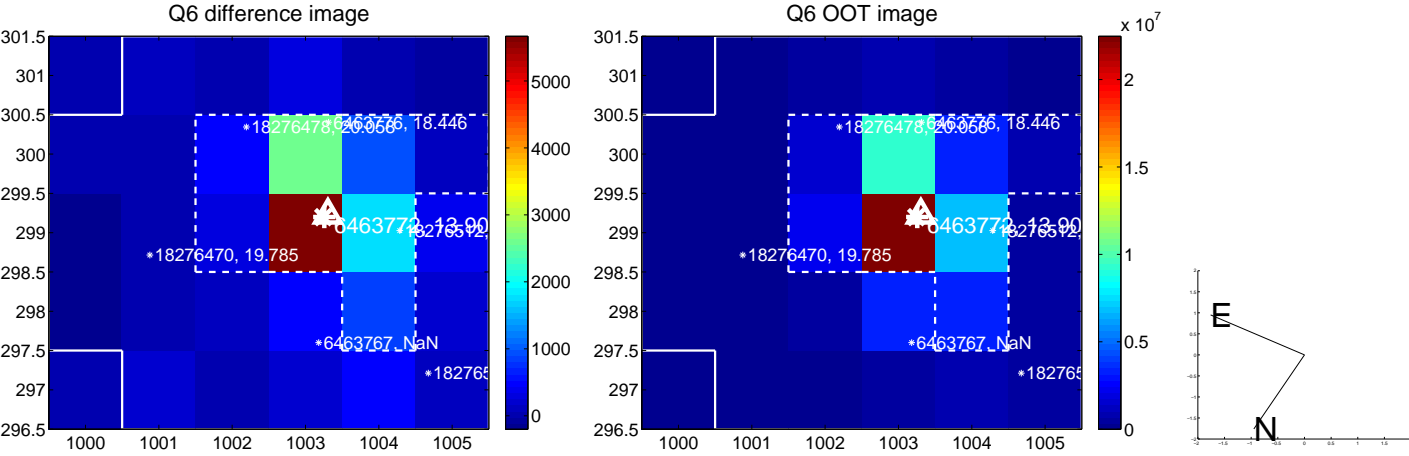
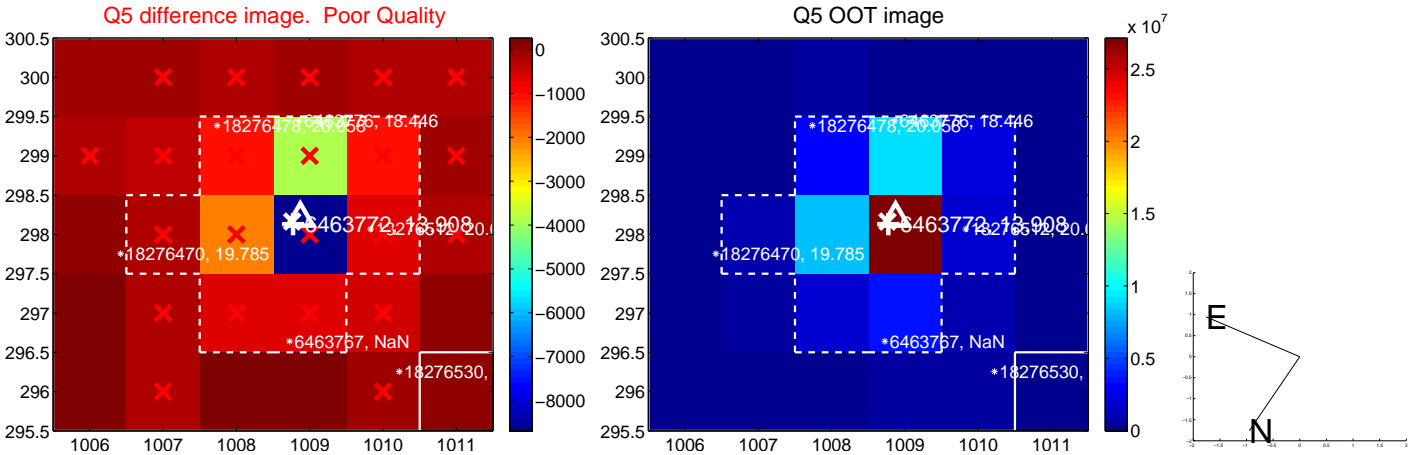


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

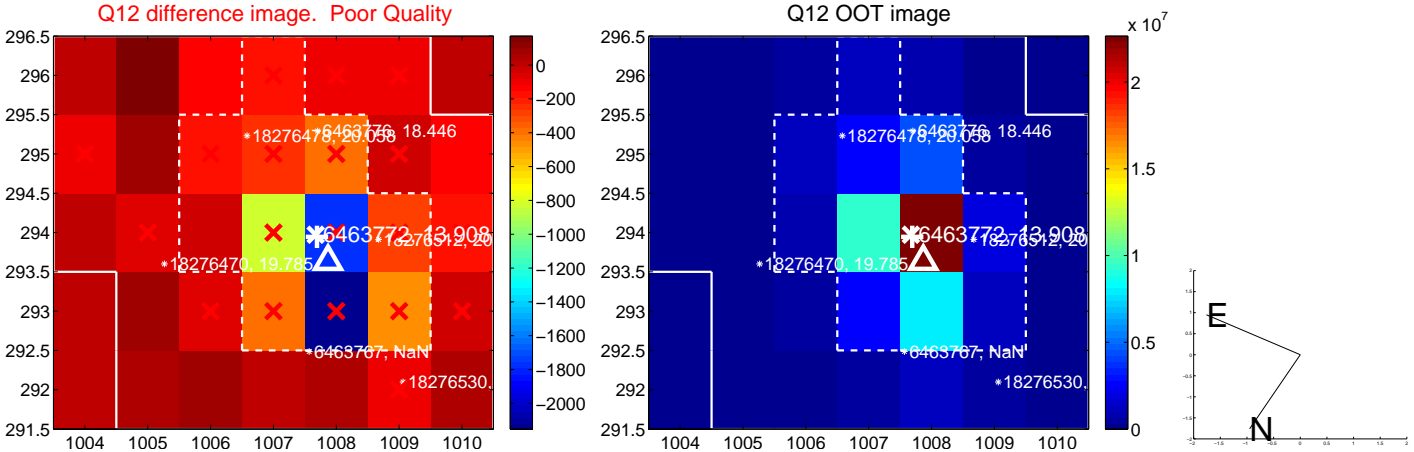
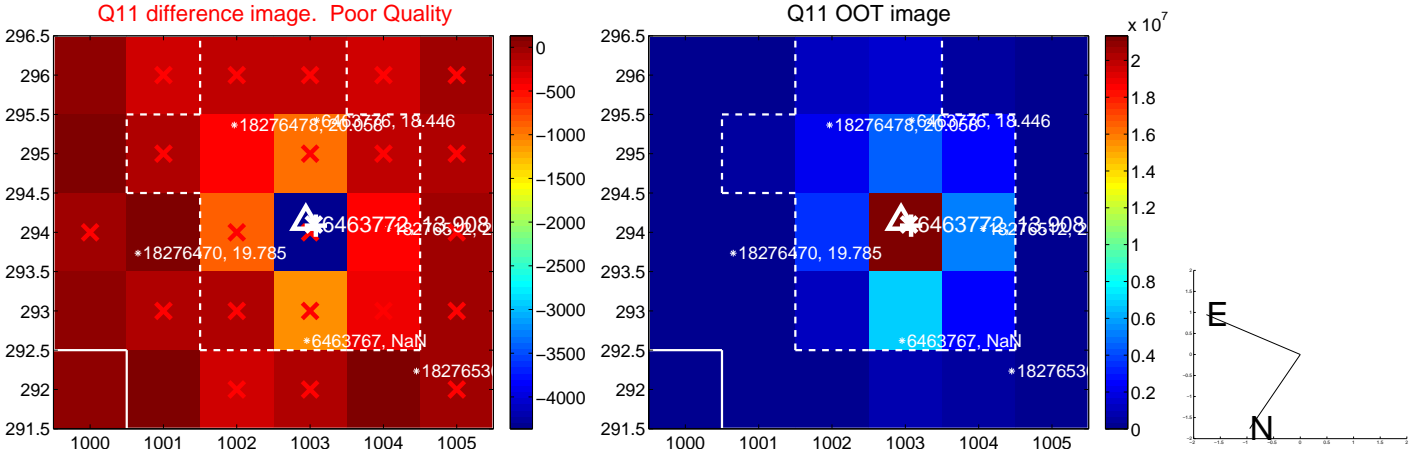
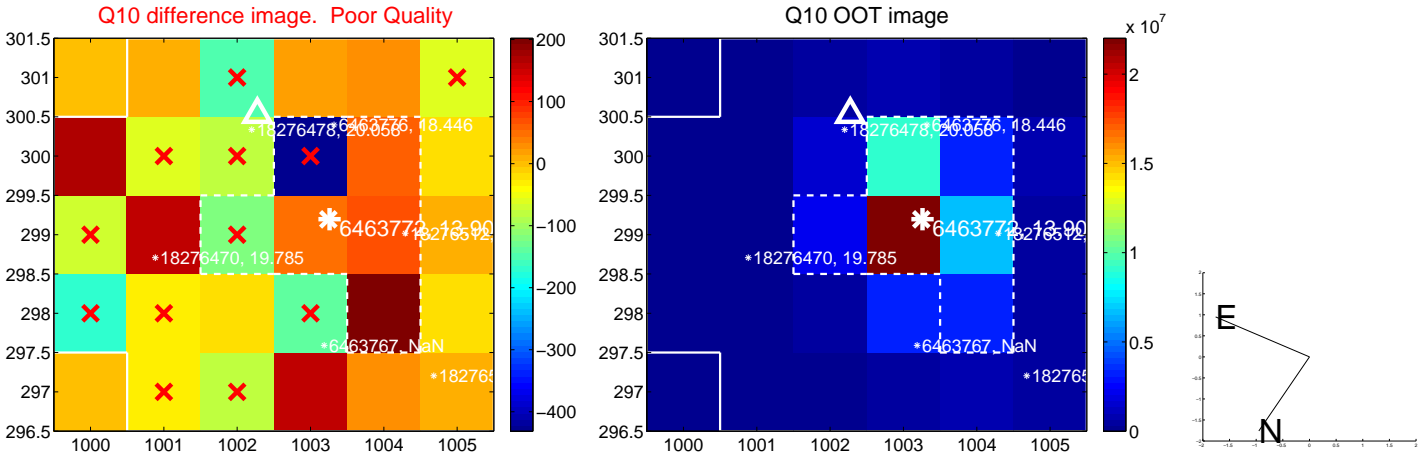
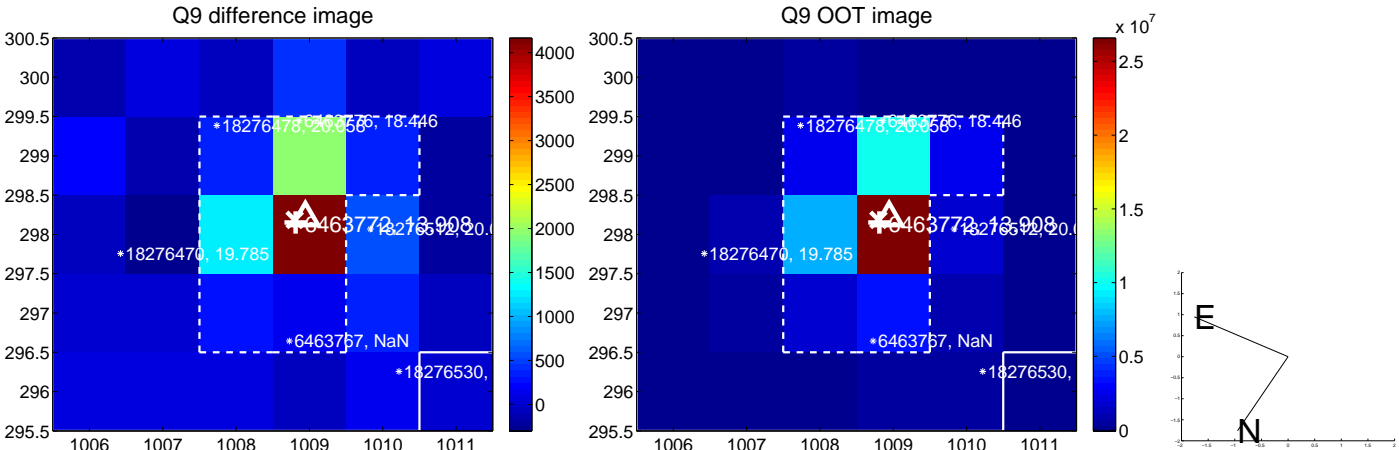
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



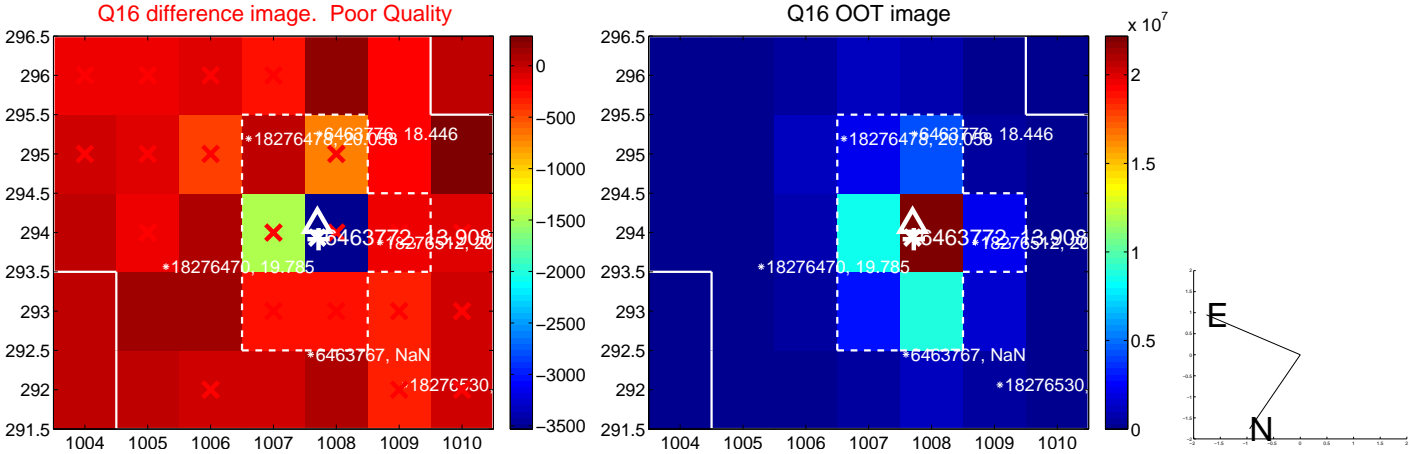
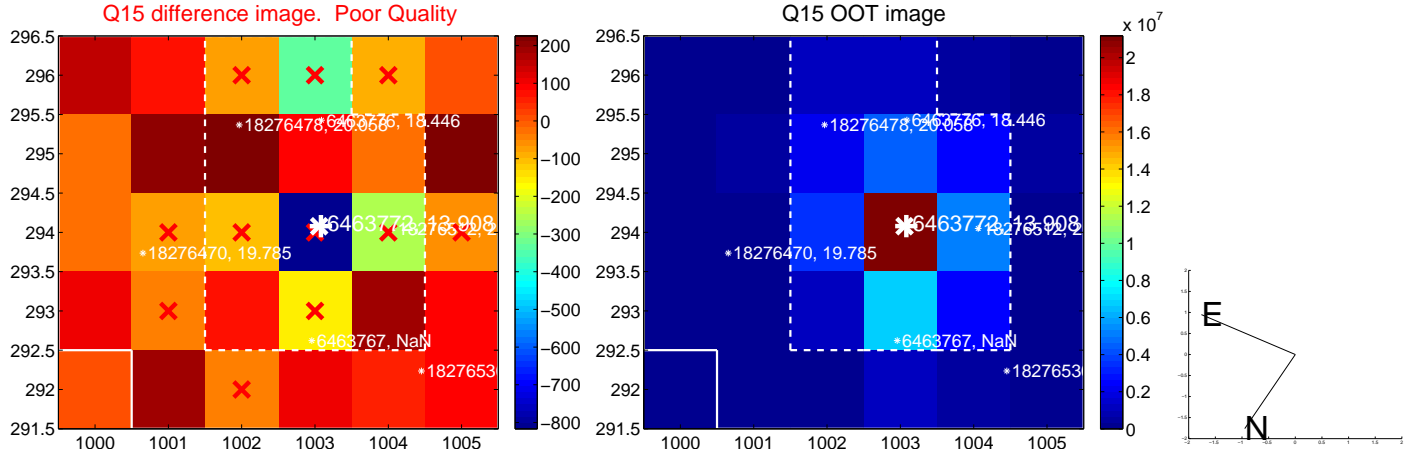
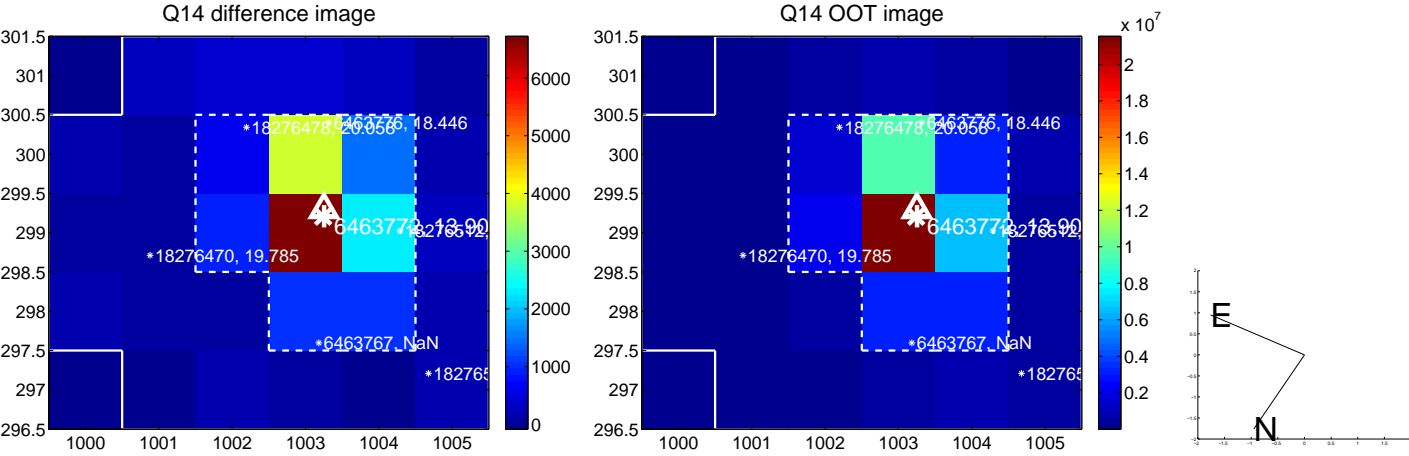
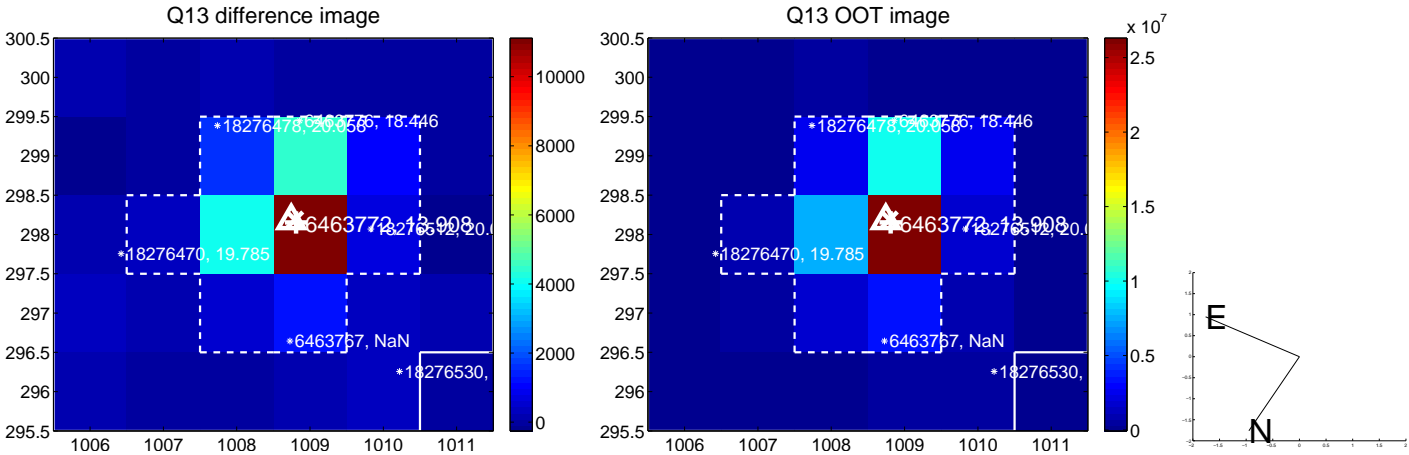
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

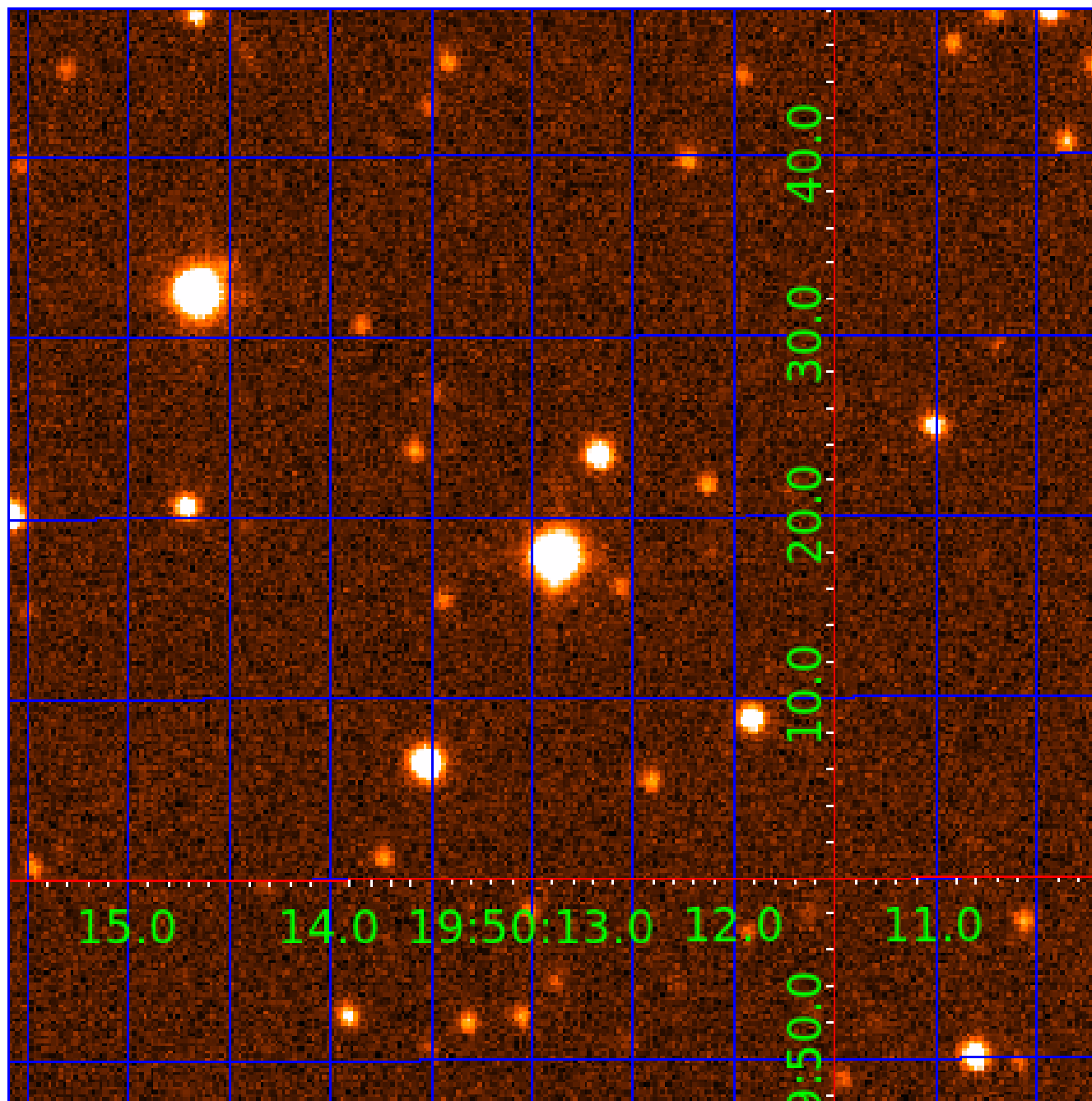


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006463772

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})
006463772-01	OBS	No	0.930856	131.862795	172.3	3.347	11.3	12.7	2.43	6095	3.69	17930.33
006463772-02	OBS	No	1.181899	132.259714	254.5	14.183	10.1	15.5	2.43	6095	5.10	13041.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006463772-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
006463772-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—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.

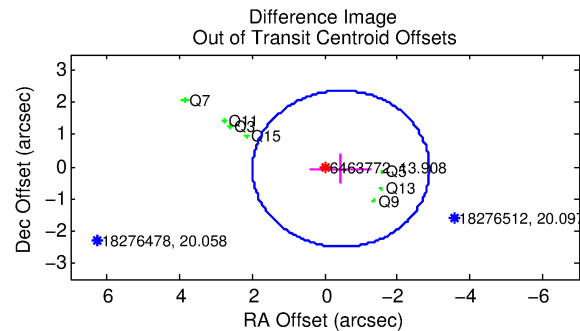
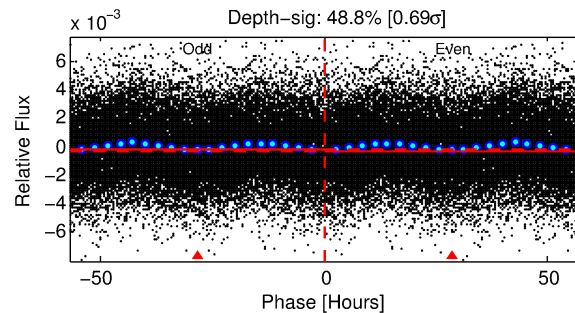
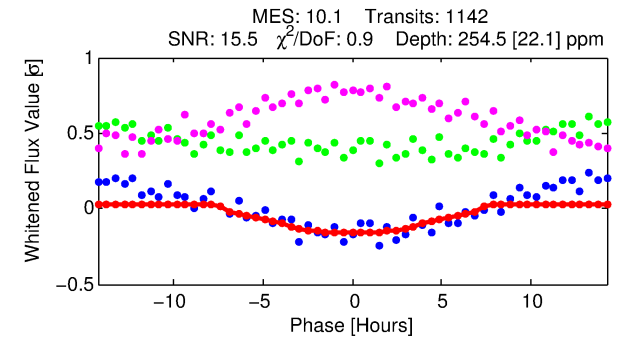
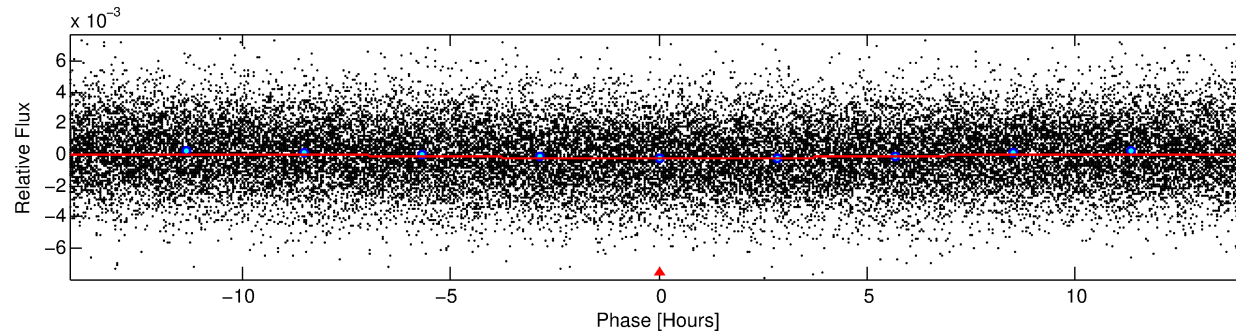
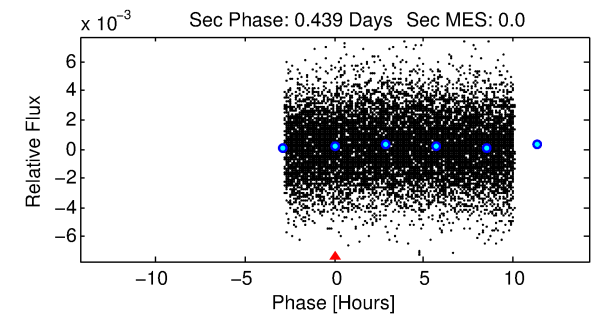
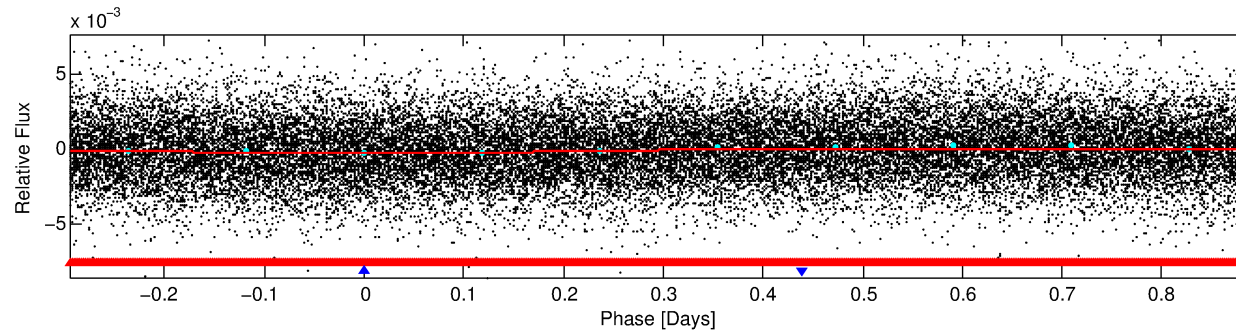
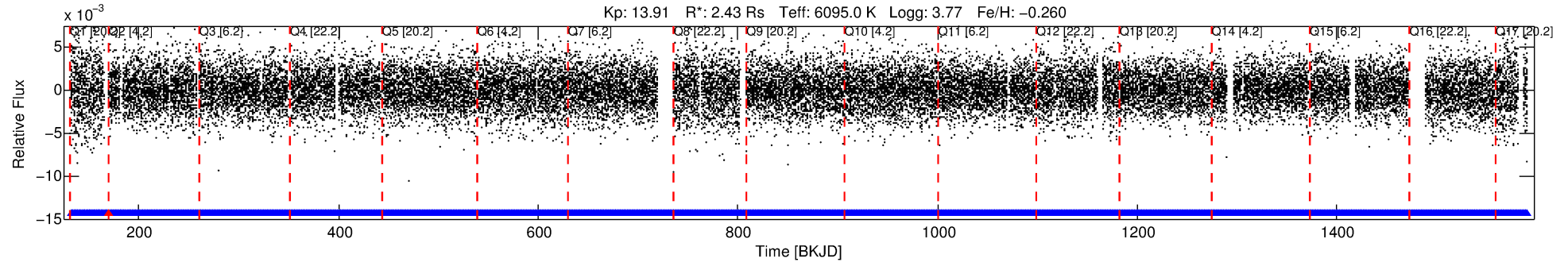
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006463772-02

No Significant Match Found

DV One-Page Summary

KIC: 6463772 Candidate: 2 of 2 Period: 1.182 d



DV Fit Results:

Period = 1.18190 [0.00002] d
Epoch = 132.2597 [0.0129] BKJD
Rp/R* = 0.0192 [0.0012]
a/R* = 1.00 [0.00]
b = 0.97 [0.01]
Seff = 13041.40 [12367.46]
Teq = 2725 [646] K
Rp = 5.10 [2.89] Re
a = 0.0237 [0.0135] AU
Ag = N/A
Teffp = N/A

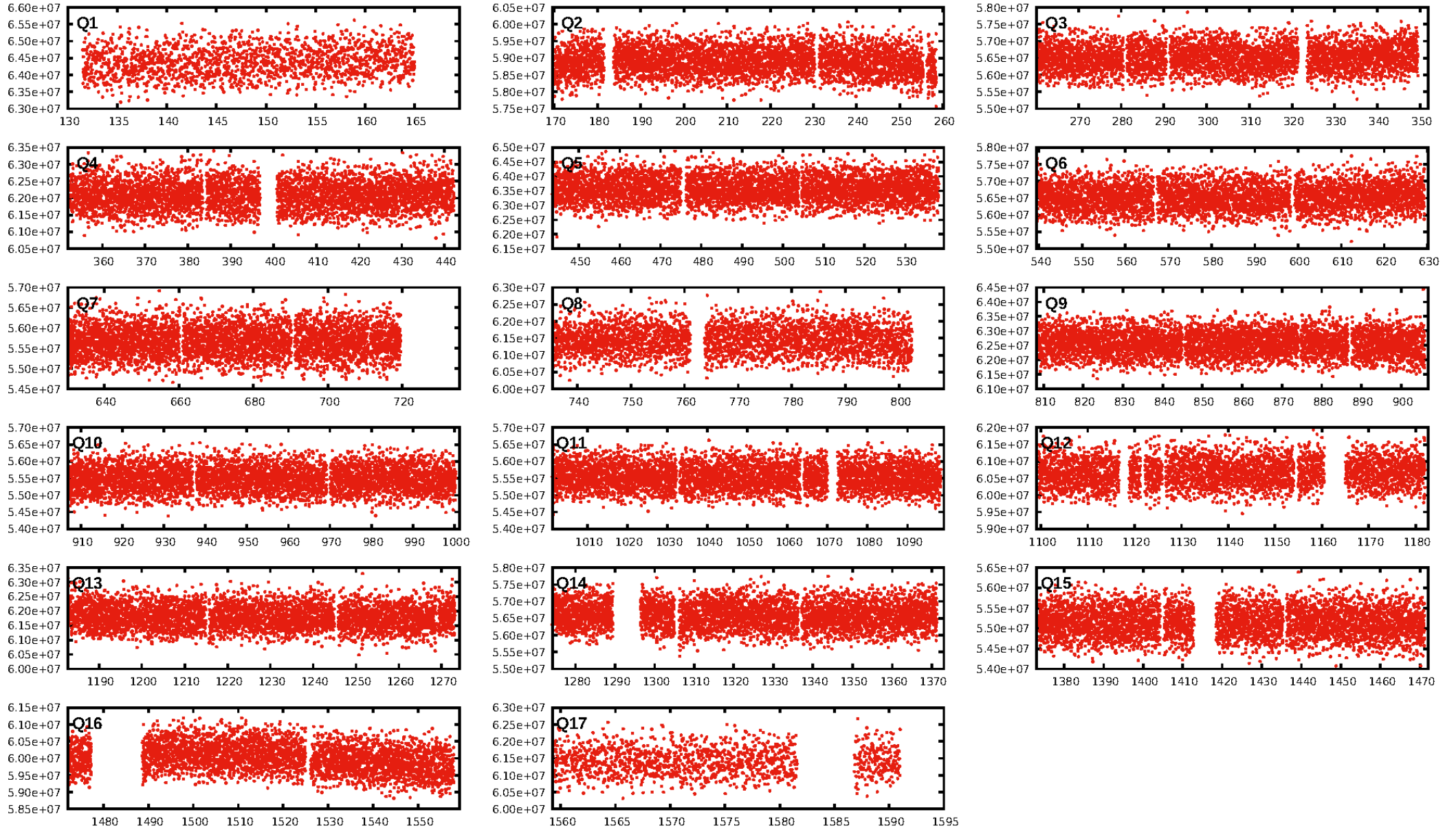
DV Diagnostic Results:

ShortPeriod-sig: 32.1% [0.41σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1090/1091]
GhostDiagnostic-chr: 1.521
Centroid-sig: 42.7%
Centroid-so: 0.204 arcsec [2.05σ]
OotOffset-rm: 0.456 arcsec [0.56σ]
OotOffset-st: 0/4/0/3 [7]
KicOffset-rm: 0.553 arcsec [0.67σ]
KicOffset-st: 0/4/0/3 [7]
DiffImageQuality-fgm: 0.71 [5/7]
DiffImageOverlap-fno: 0.00 [0/17]

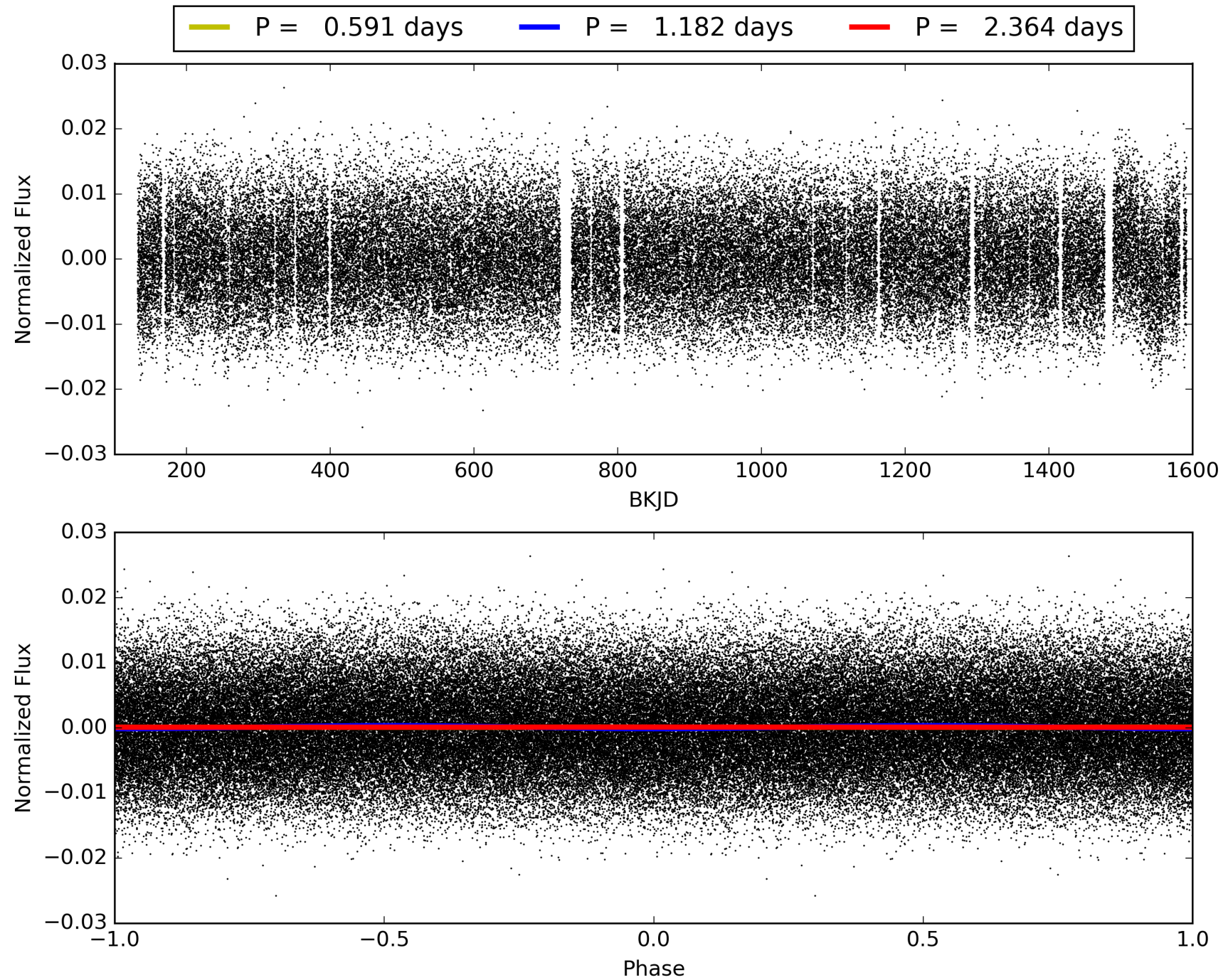
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:19:46 Z

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

TCE 006463772-02, PDC Light Curves

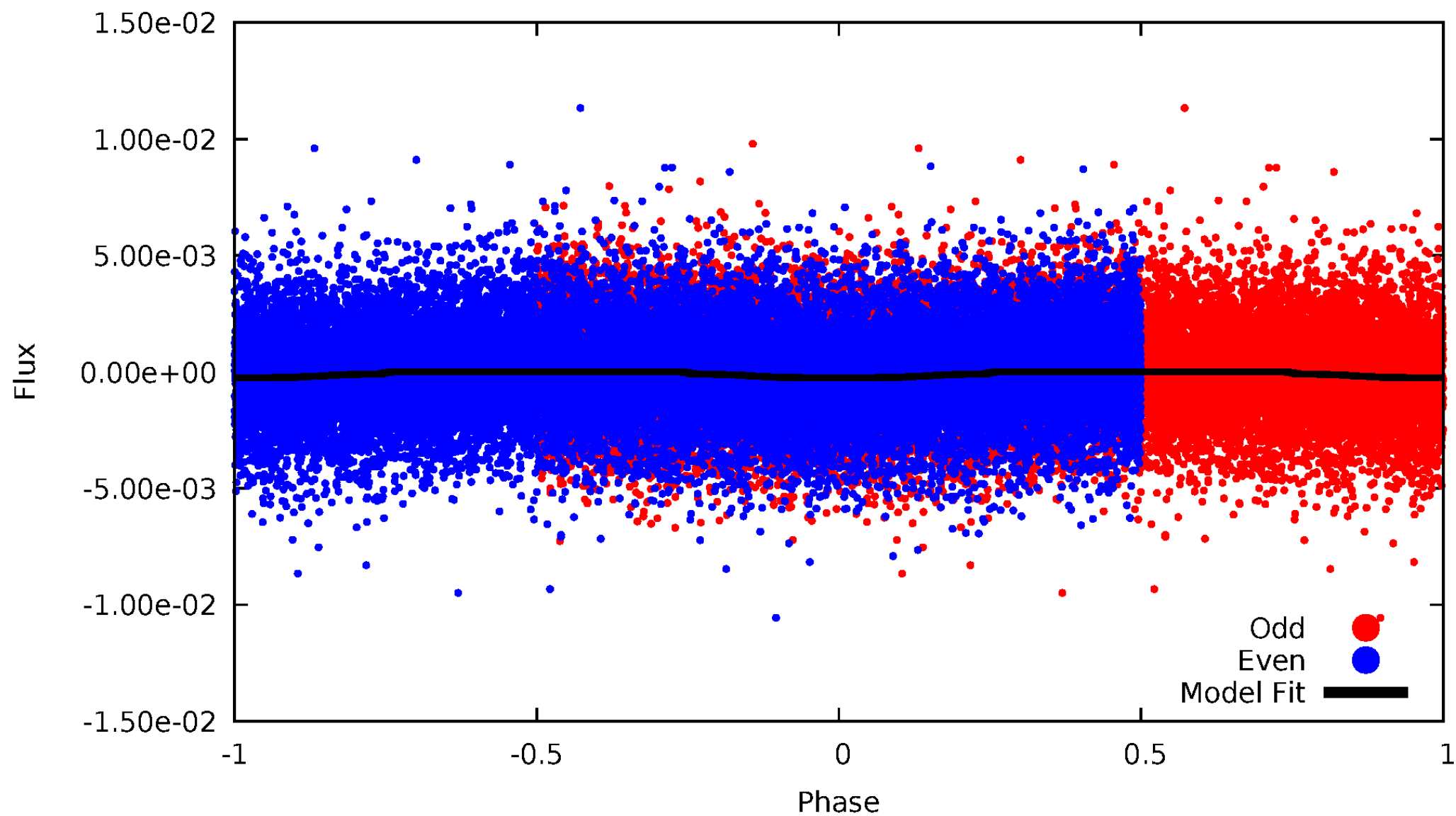


TCE 006463772-02



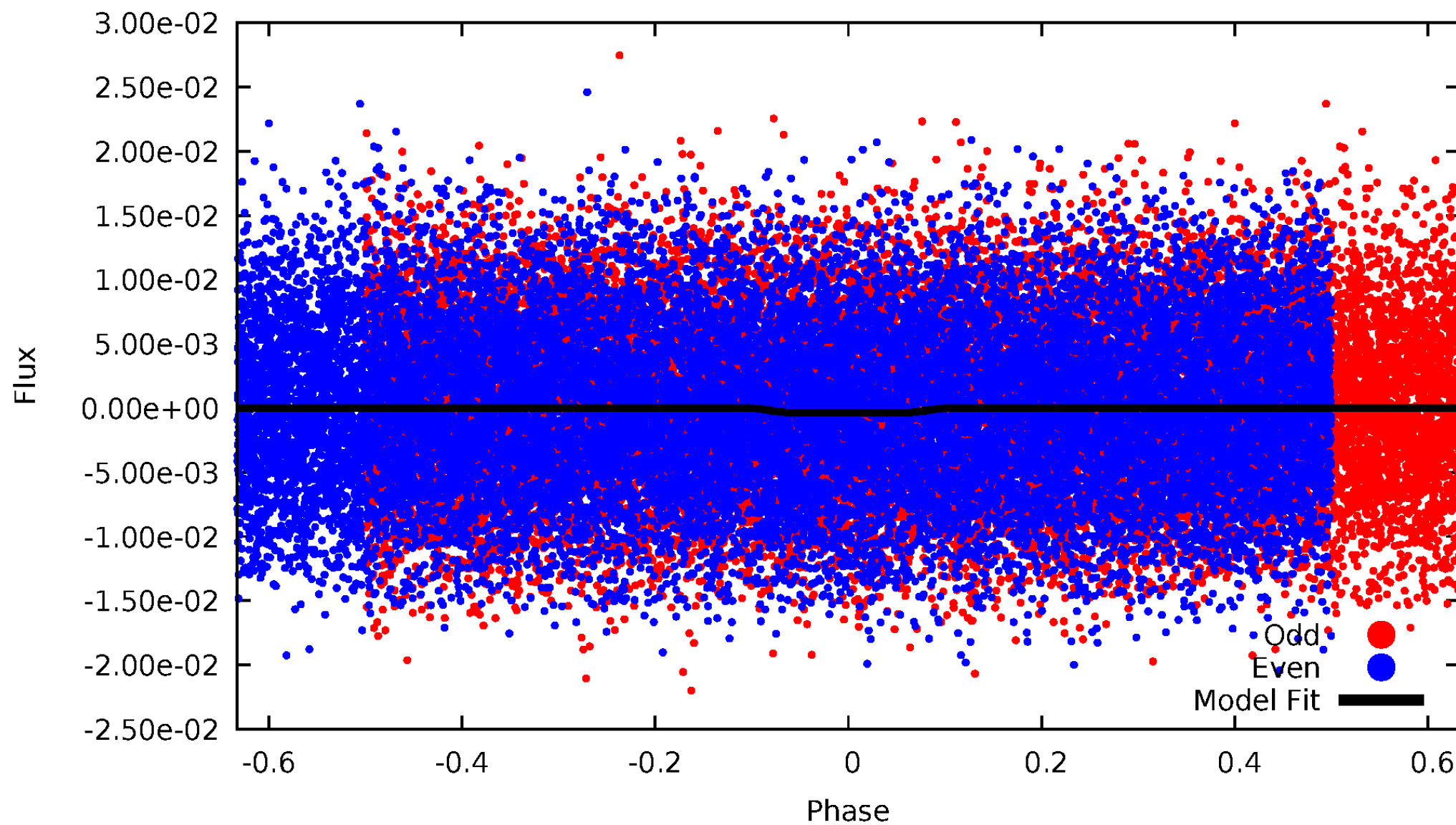
DV Odd/Even

TCE 006463772-02



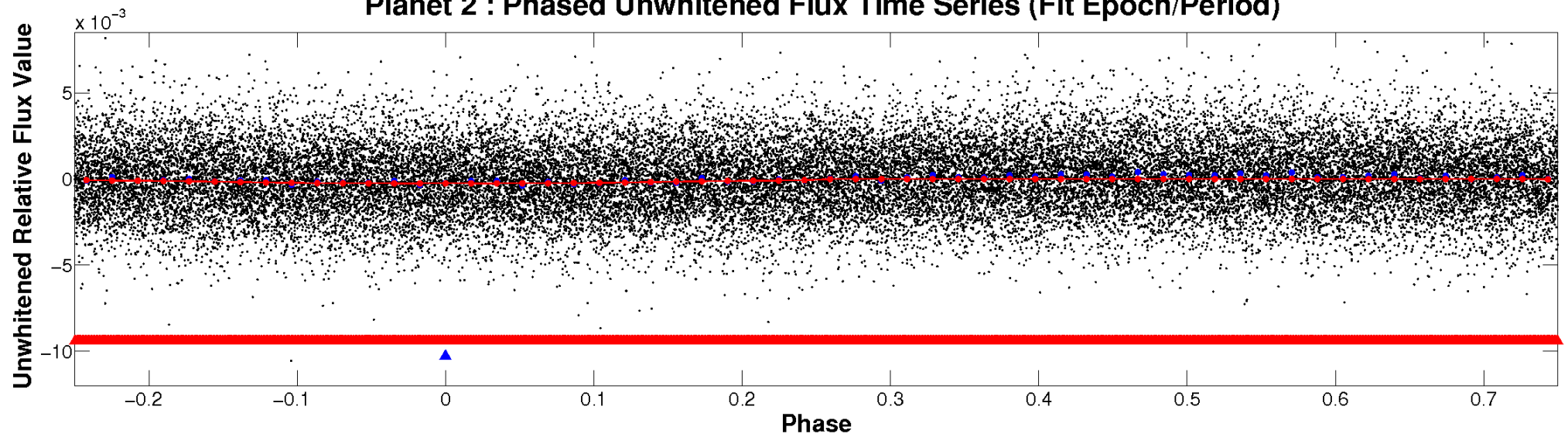
ALT Odd/Even

TCE 006463772-02

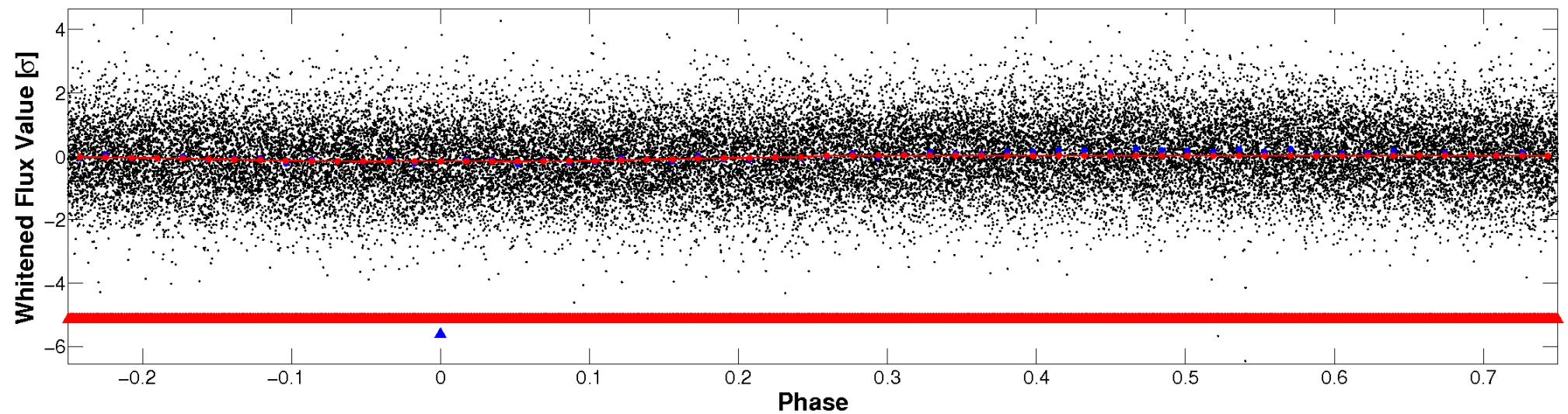


Non-Whitened Vs. Whitened Light Curve

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

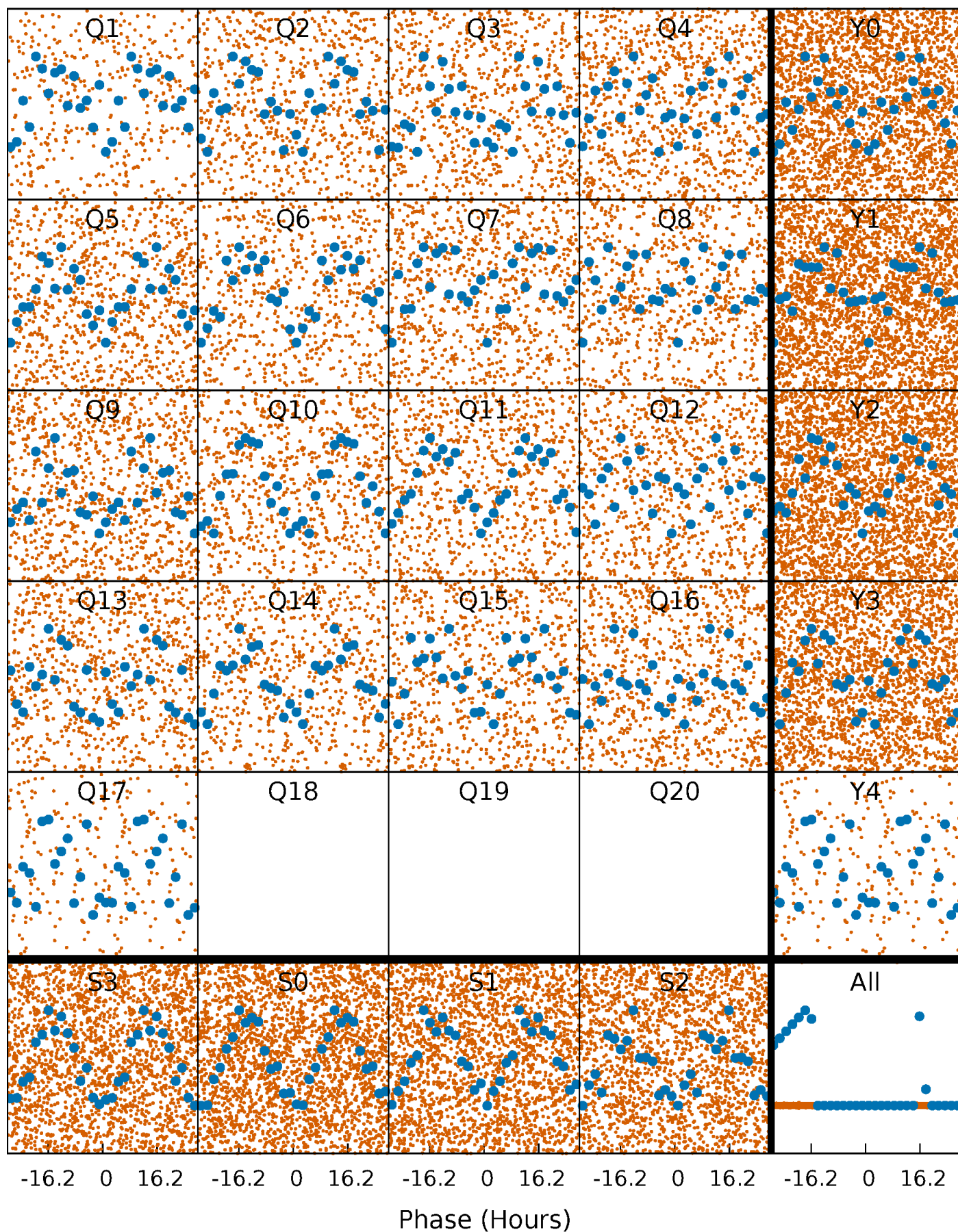


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



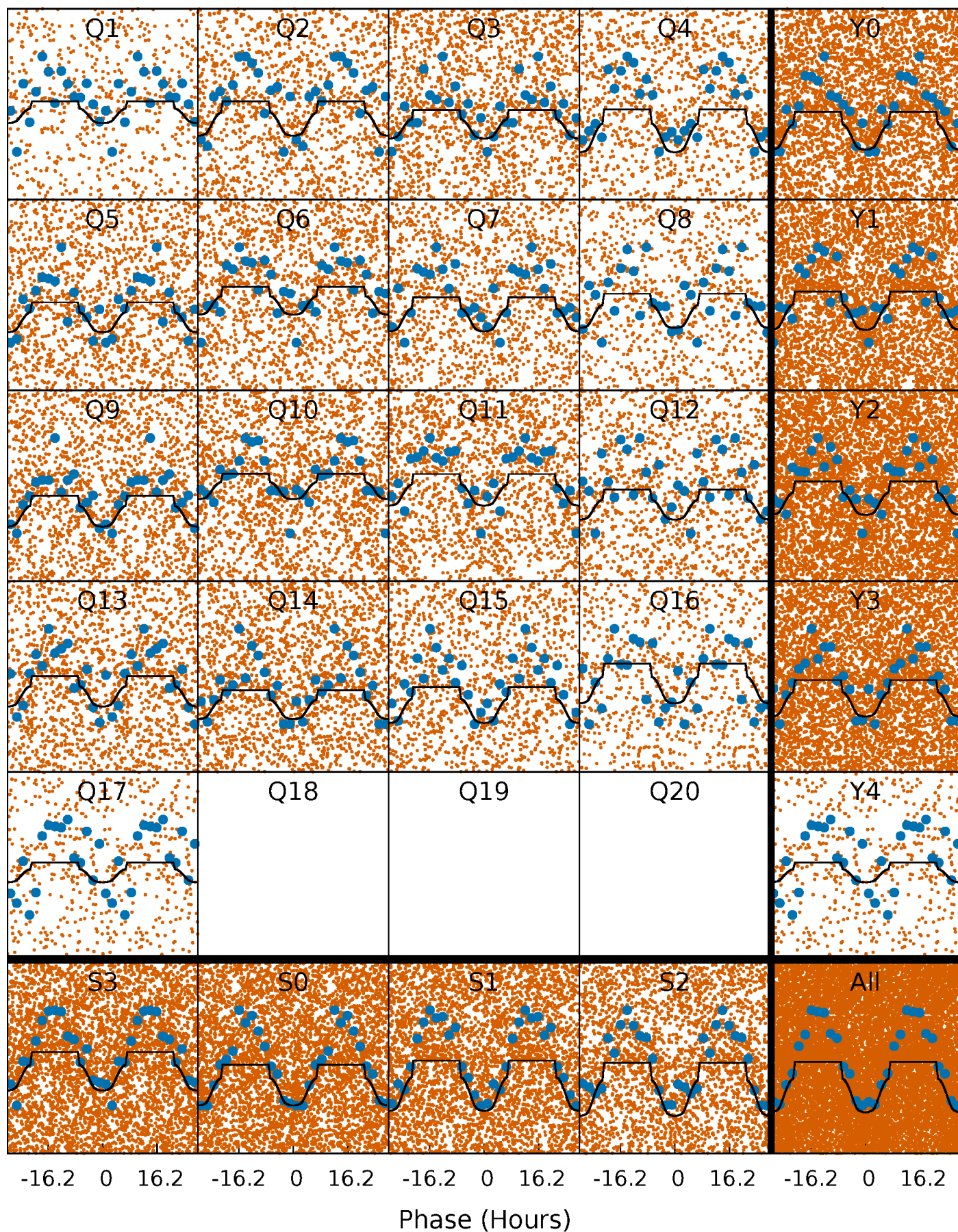
PDC Quarter-Phased Transit Curves

TCE 006463772-02 $P = 1.181899$ Days $T_0 = 132.259714$ (BKJD)



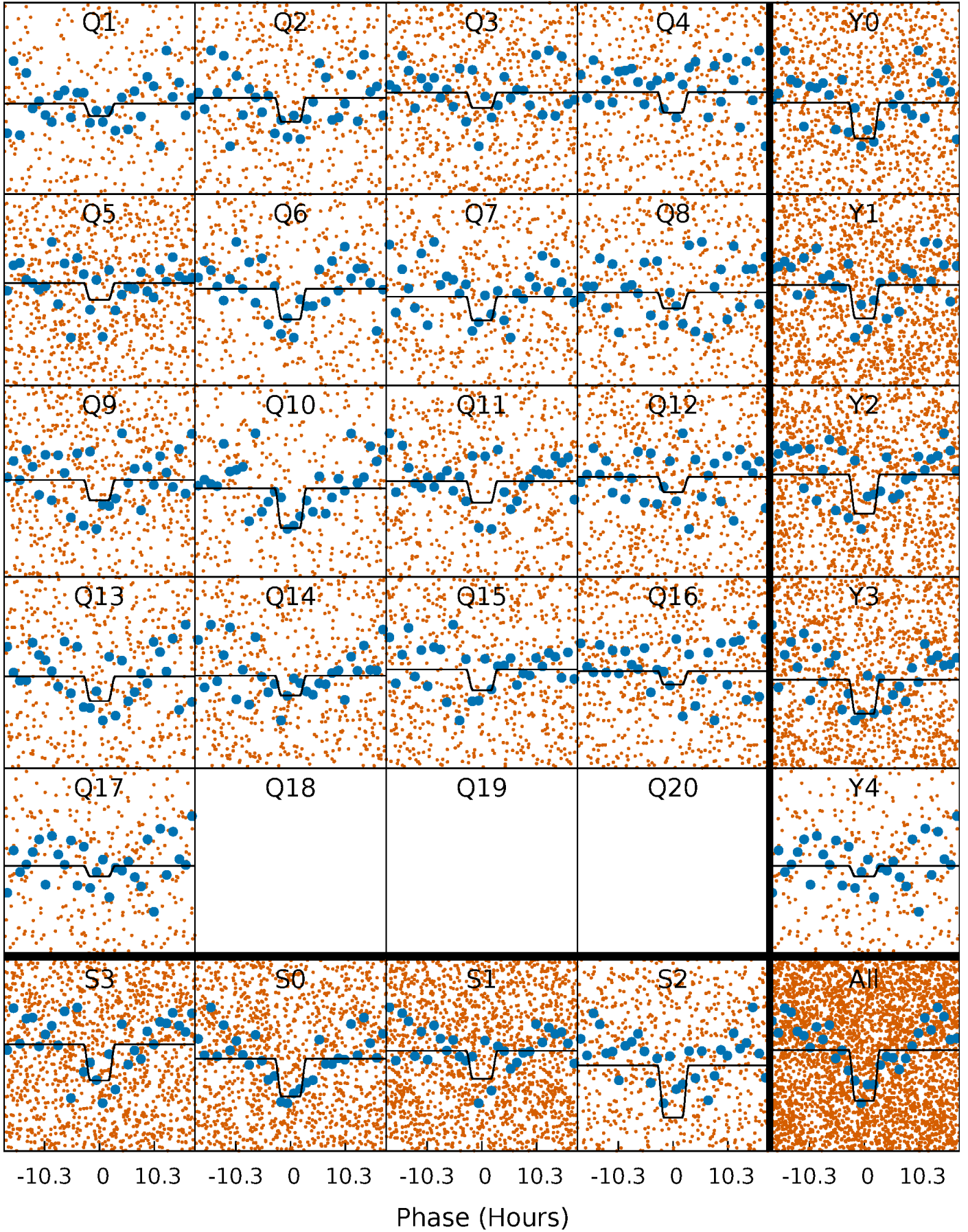
DV Quarter-Phased Transit Curves

TCE 006463772-02 P= 1.181899 Days $T_0=132.259714$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

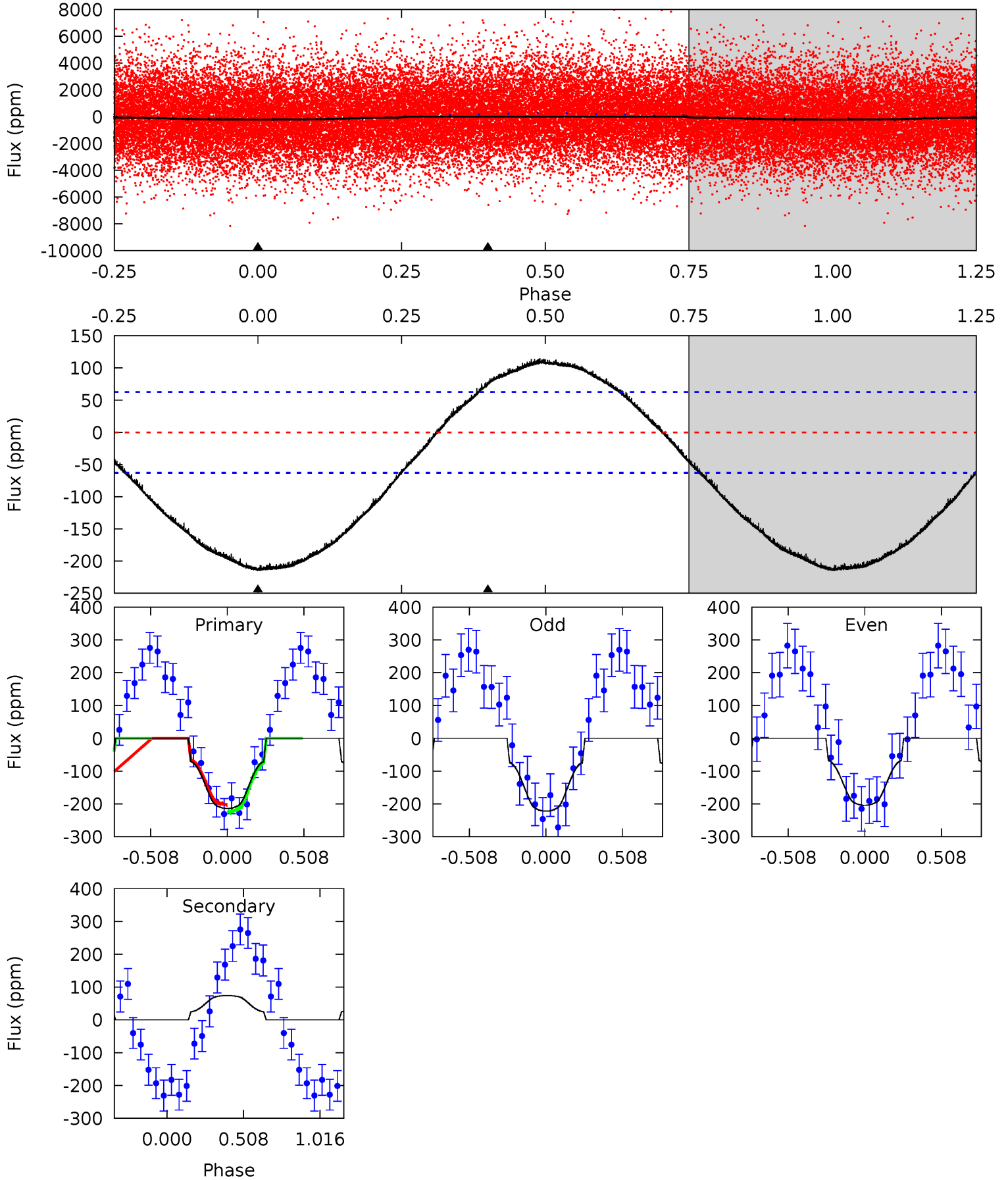
TCE 006463772-02 P= 1.181819 Days $T_0=132.281711$ (BKJD)



DV Model-Shift Uniqueness Test

006463772-02, P = 1.181899 Days, E = 131.077815 Days

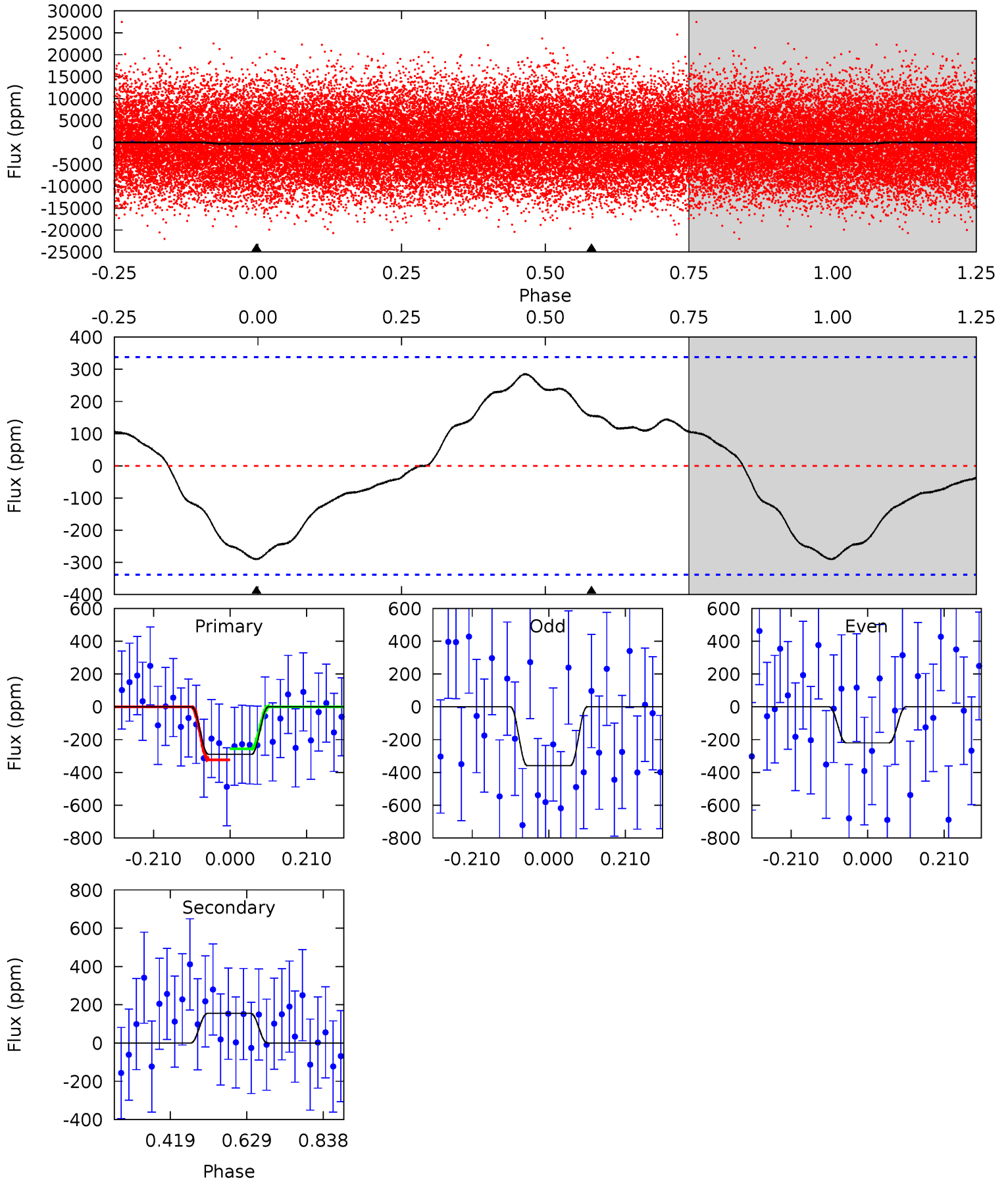
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	-4.96	0	0	4.21	0.66	1.83	14.4	14.4	-4.96	-4.96	0.61	1.01	0.35	0.77



Alt Model-Shift Uniqueness Test

006463772-02, P = 1.181819 Days, E = 131.099892 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.78	-2.03	0	0	4.41	1.25	0.89	3.78	3.78	-2.03	-2.03	0.91	0.97	0.50	0.43



Stellar Parameters For KIC 006463772

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6095^{+192}_{-214}	$3.769^{+0.560}_{-0.140}$	$-0.260^{+0.300}_{-0.300}$	$2.432^{+0.456}_{-1.368}$	$1.268^{+0.177}_{-0.329}$	$0.124^{+0.917}_{-0.047}$
	+3%/-4%	+15%/-4%	+115%/-115%	+19%/-56%	+14%/-26%	+739%/-38%
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 006463772-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	74 ± 15	$4.99^{+0.79}_{-1.47}$	3750^{+292}_{-572}	-4530^{+219}_{-215}	$-0.954^{+0.319}_{-0.836}$
Alt.	155 ± 77	$4.79^{+0.80}_{-1.47}$	3705^{+312}_{-545}	-5175^{+660}_{-536}	$-2.218^{+1.269}_{-2.232}$

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

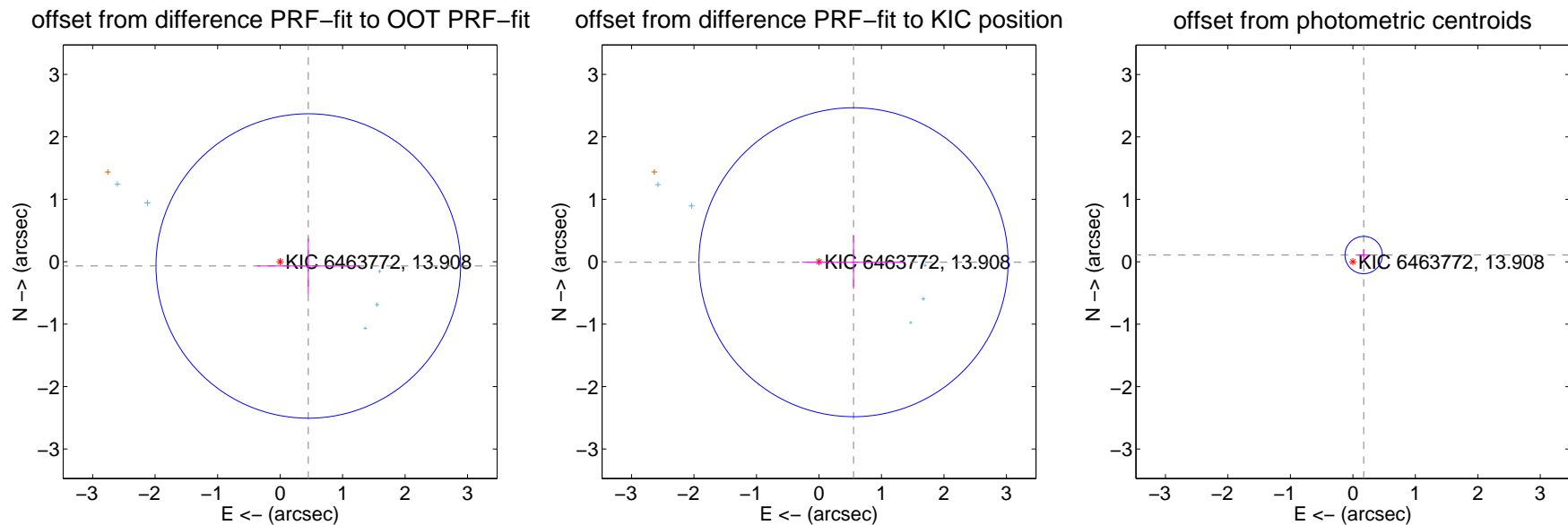
DV Centroid Data

Supplemental centroid analysis for 006463772-02. Kepler magnitude: 13.91. Transit SNR 15.51

There are 5 quarters with good PRF difference image offsets

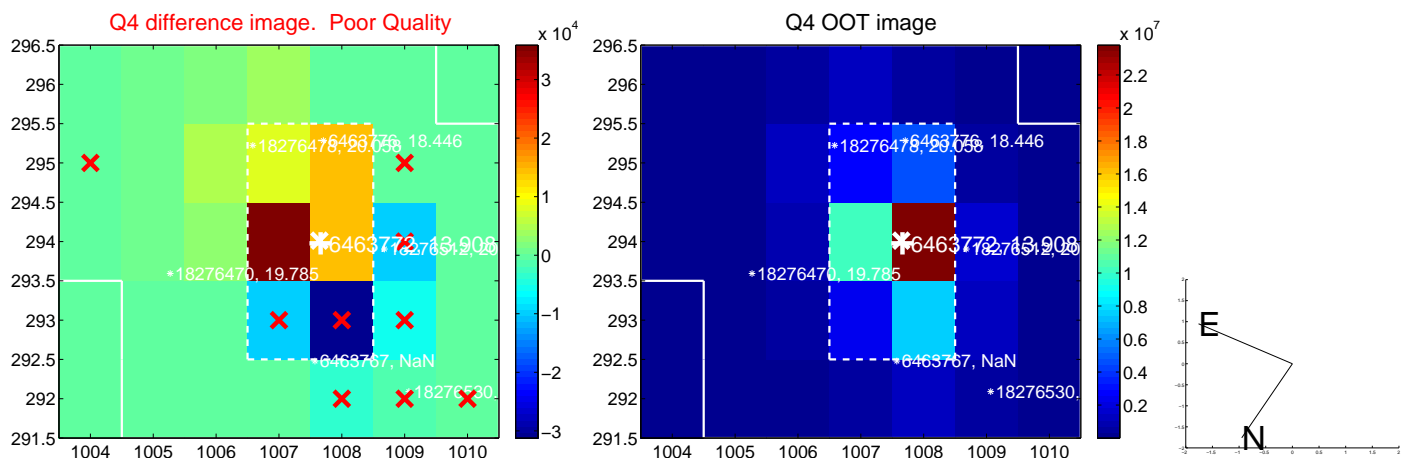
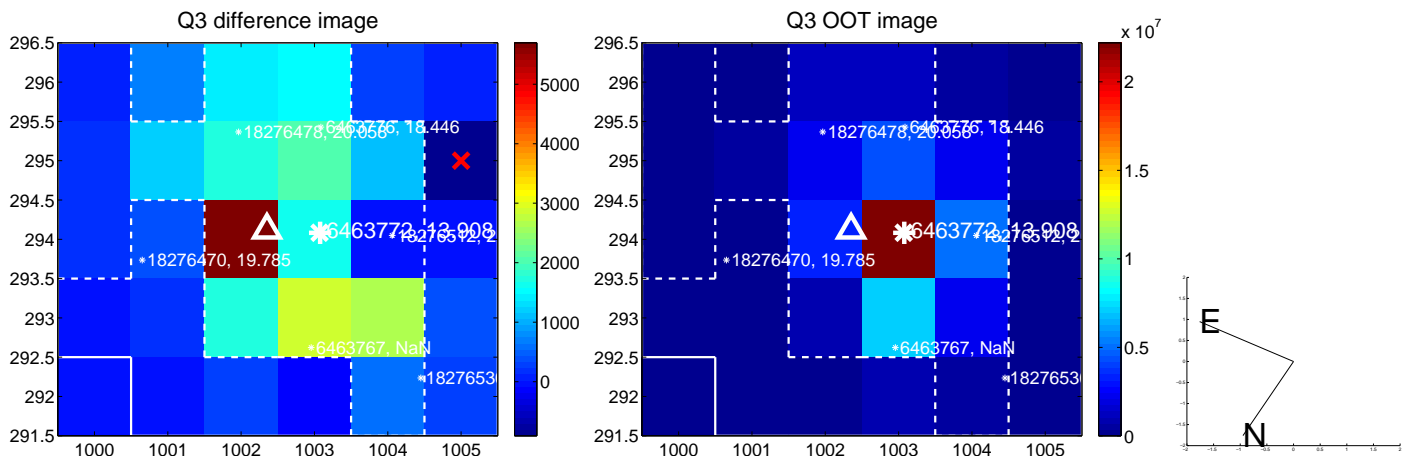
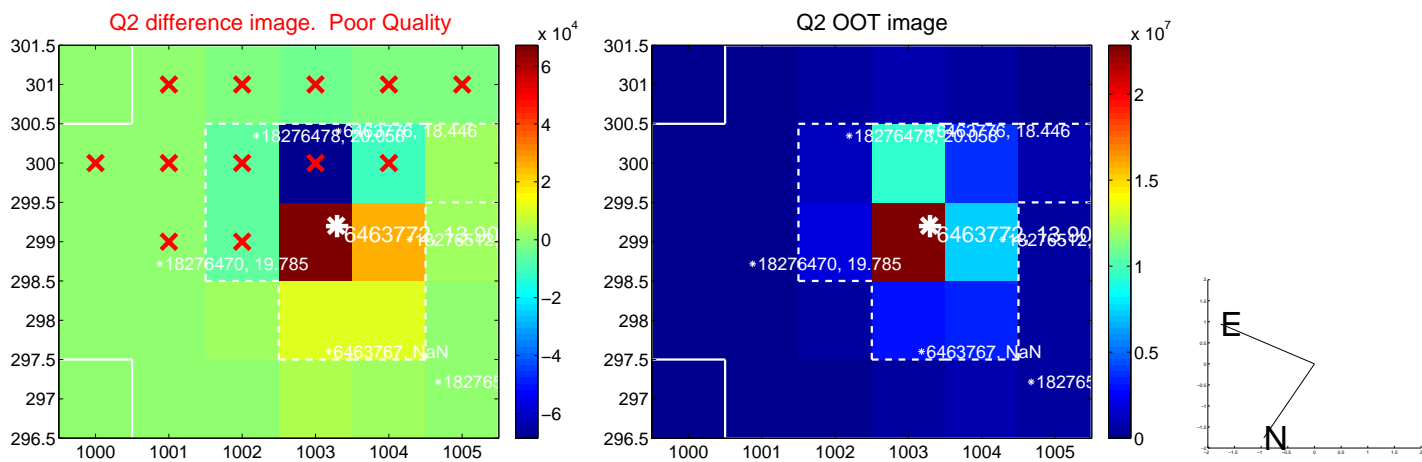
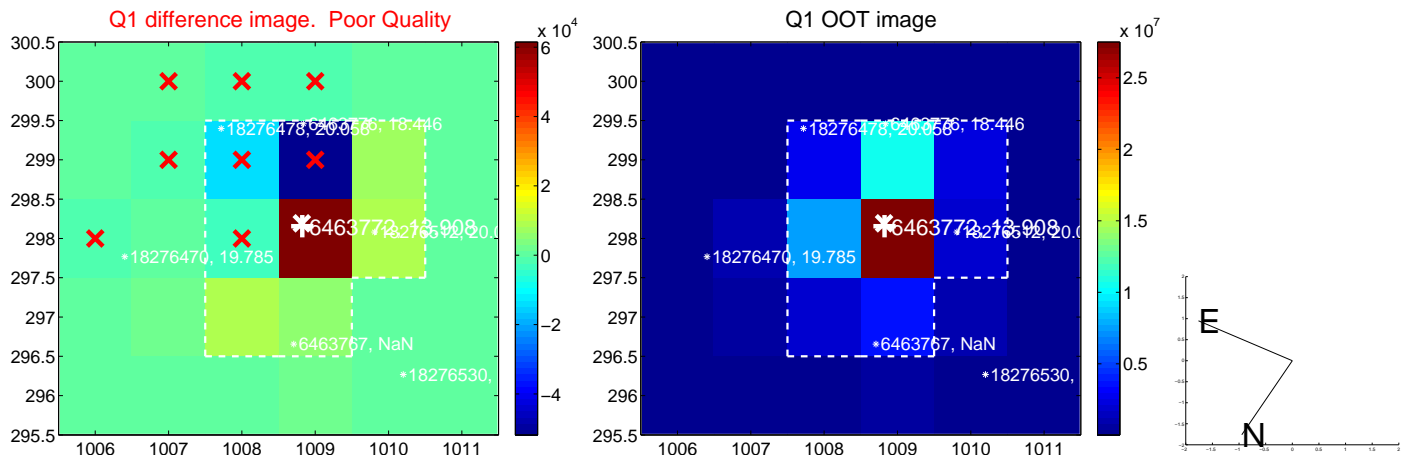
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.456 ± 0.812	0.56	-0.451 ± 0.819	-0.069 ± 0.447
PRF-fit source offset from KIC position	0.553 ± 0.825	0.67	-0.553 ± 0.825	-0.008 ± 0.427
photometric centroid source offset	0.20 ± 0.10	2.05	-0.17 ± 0.10	0.11 ± 0.10

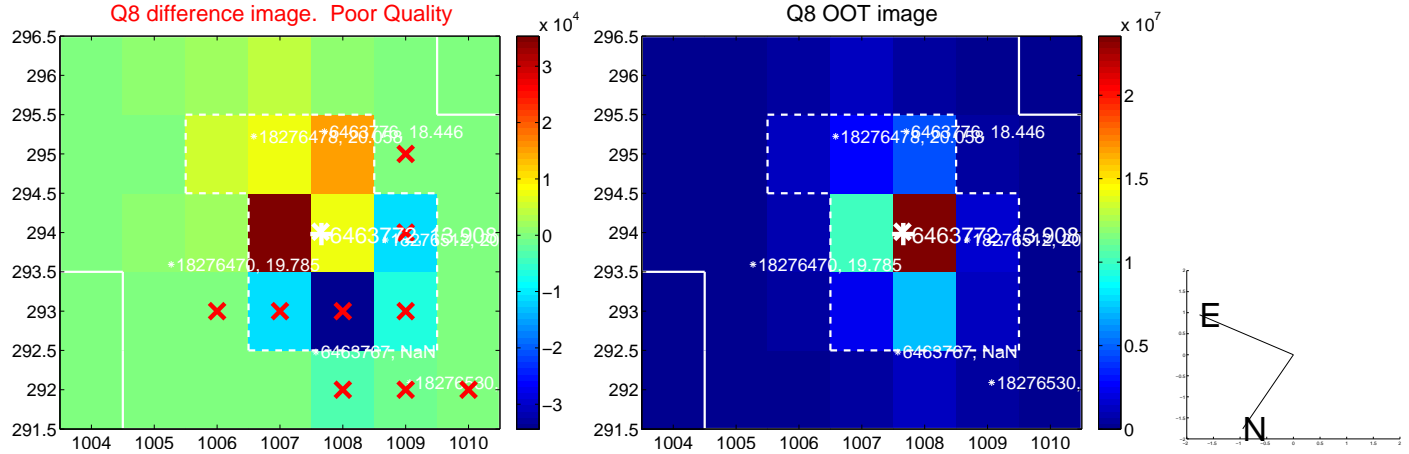
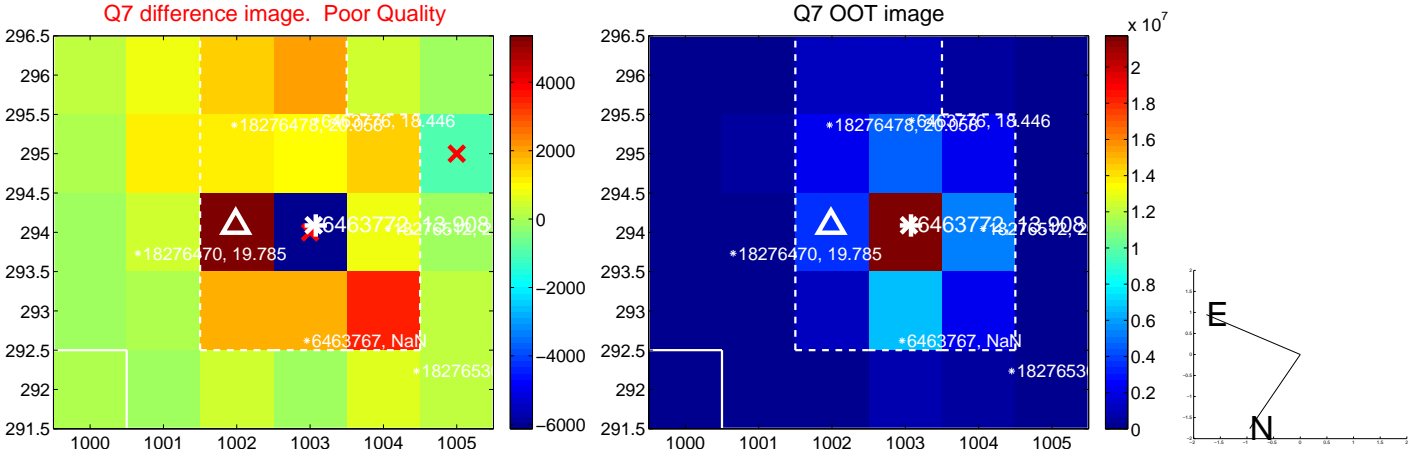
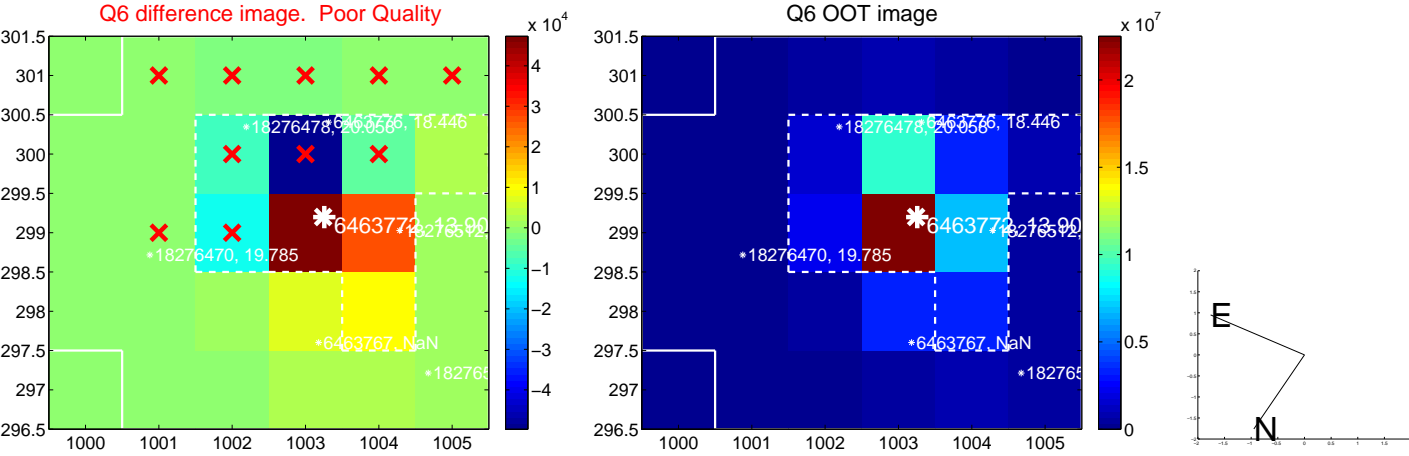
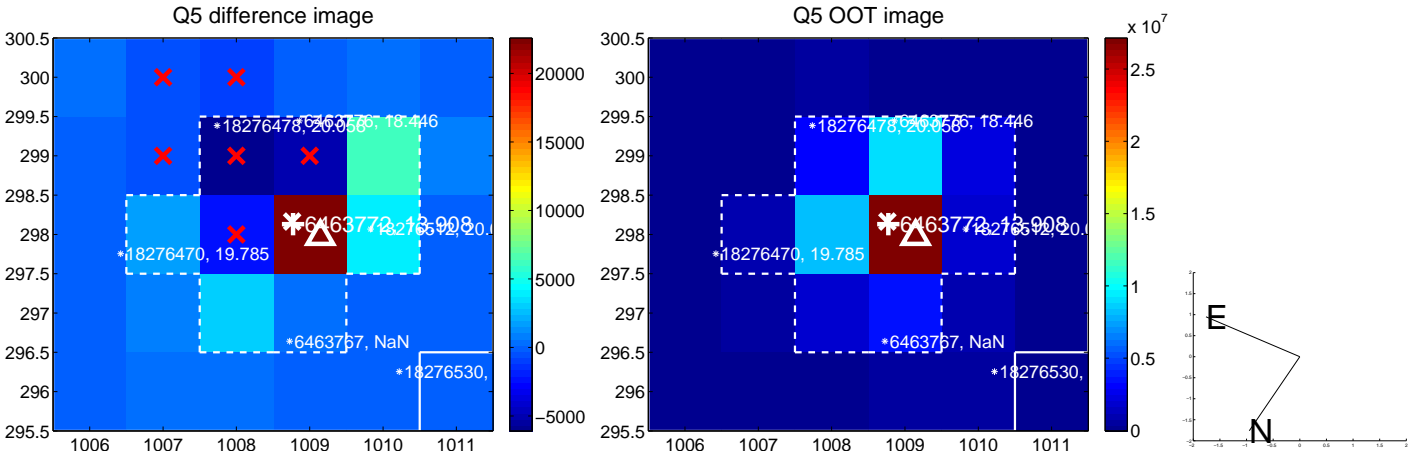


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

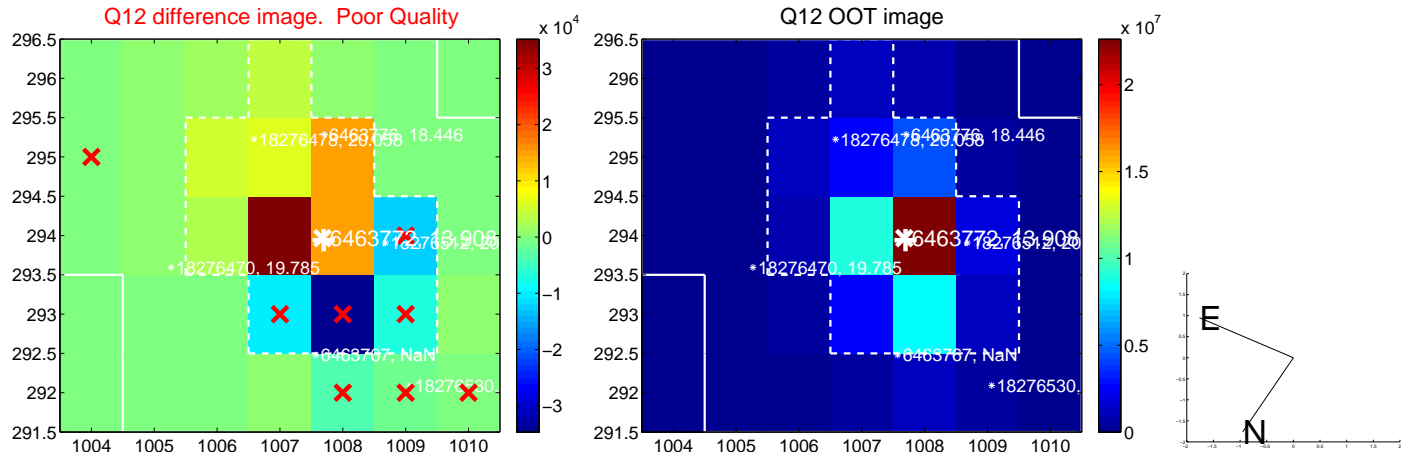
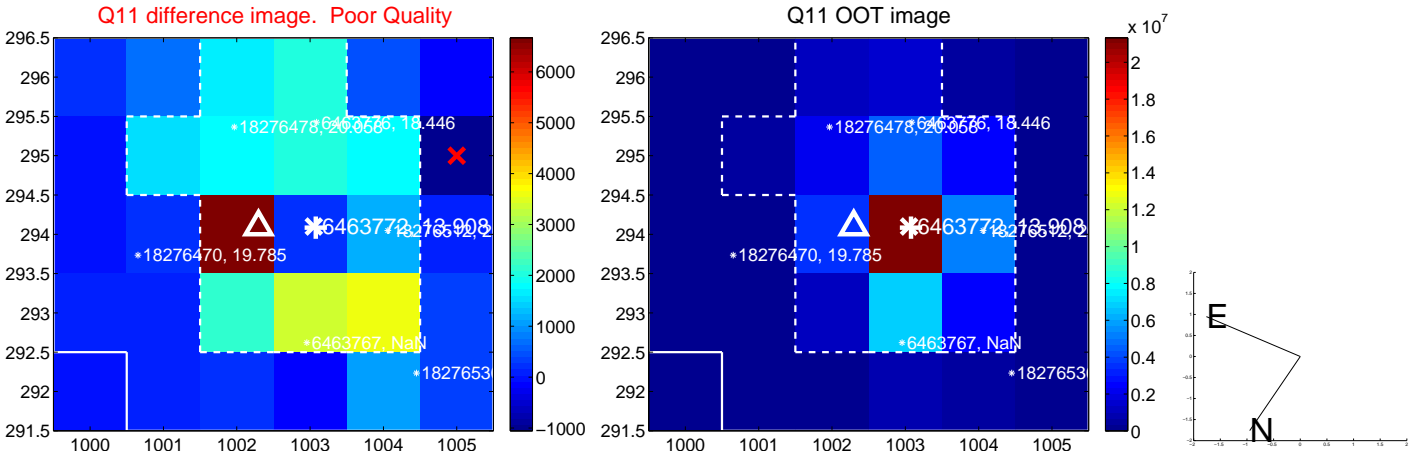
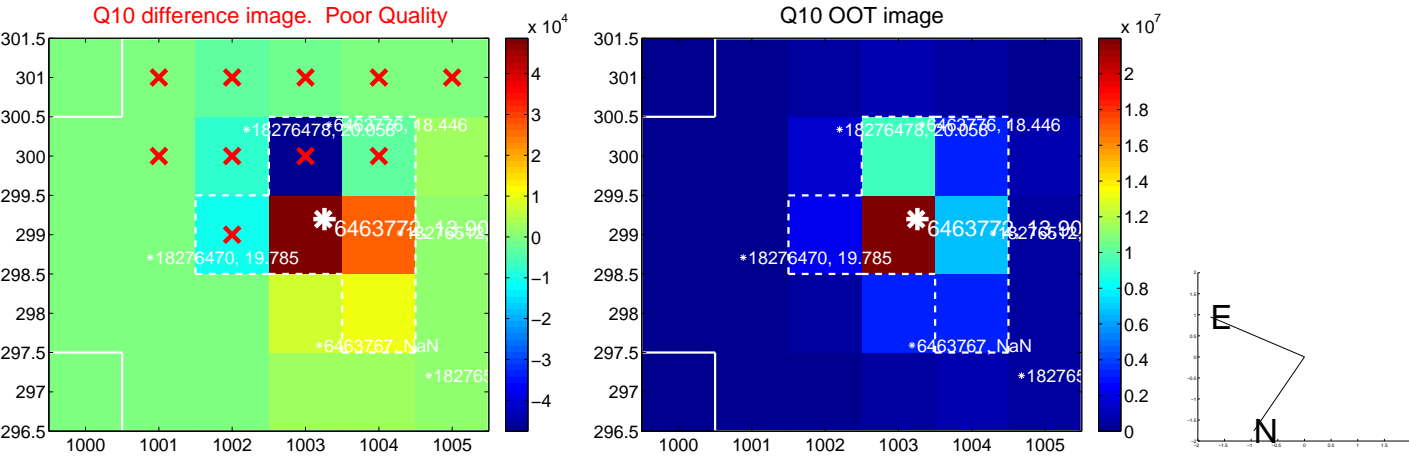
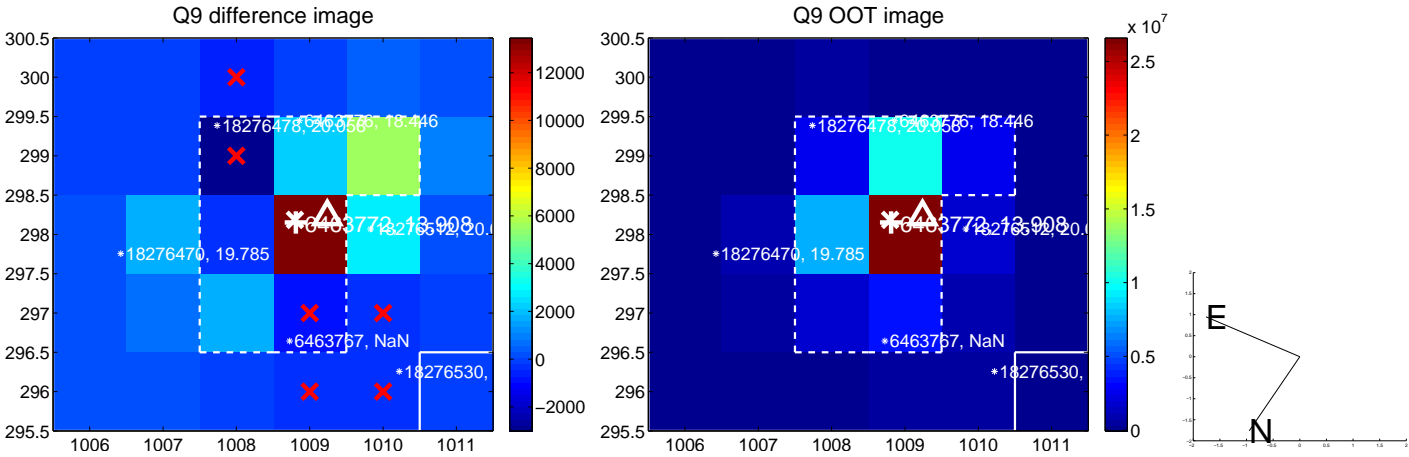
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



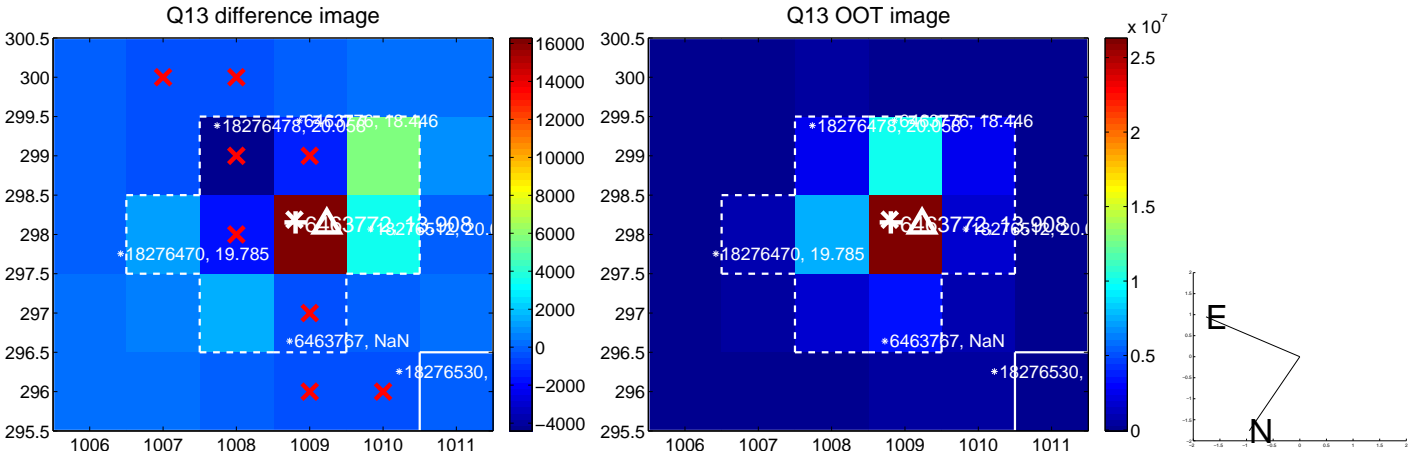
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



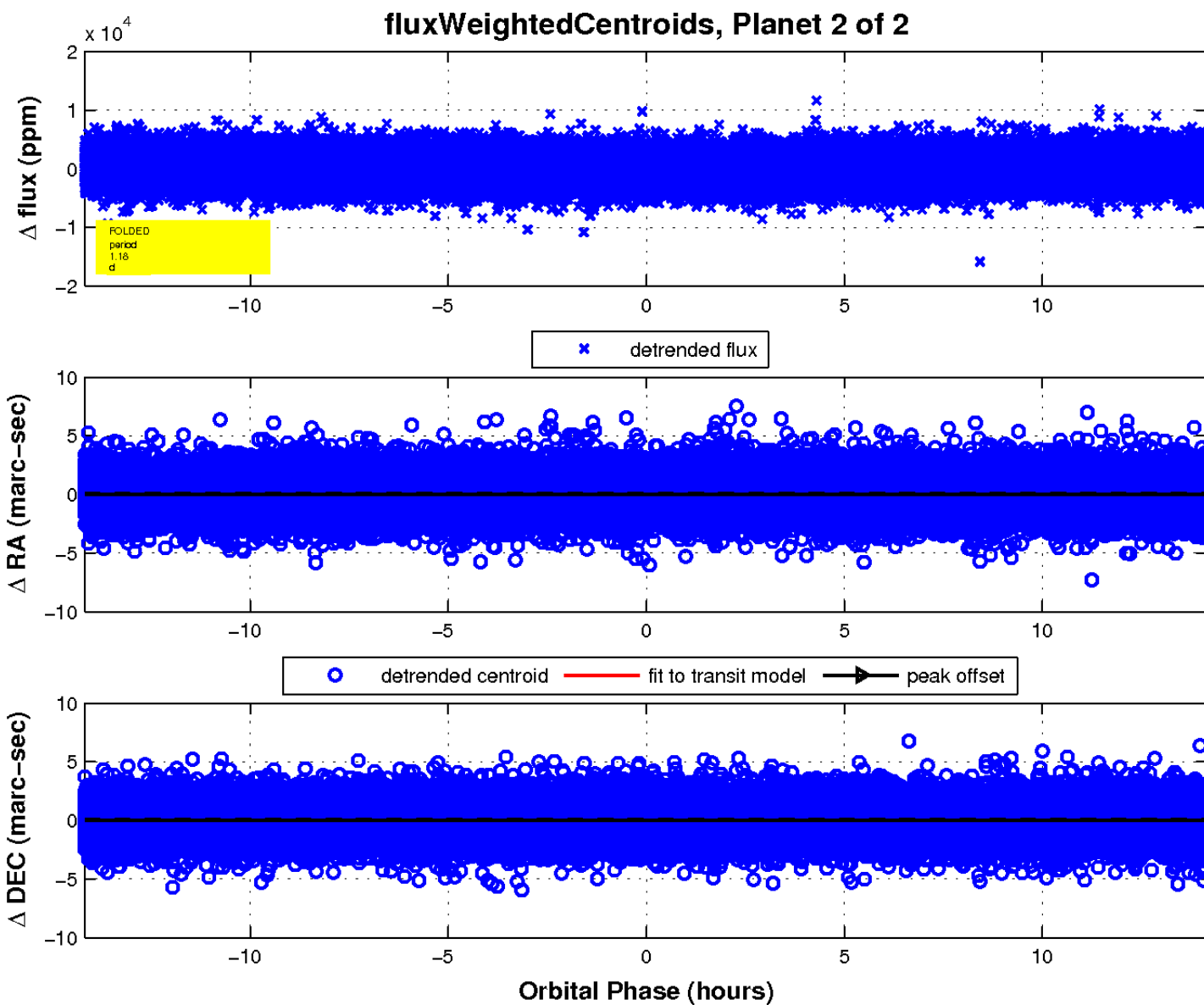
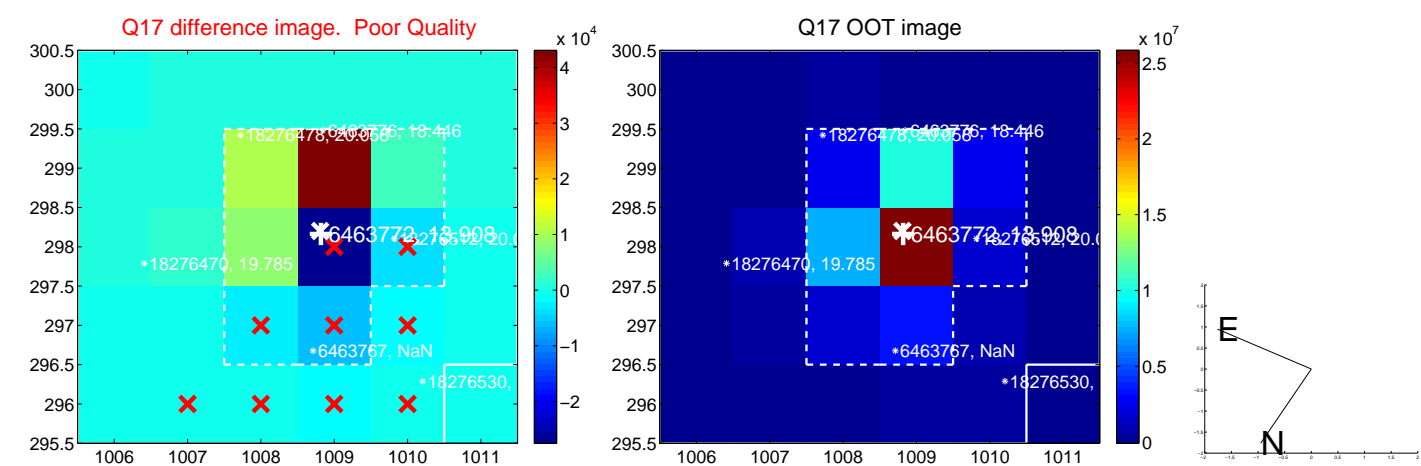
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

