

KIC 005215632

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})
005215632-01	OBS	No	1.360339	131.665936	32.8	5.066	9.3	8.8	0.98	5977	0.65	2087.69
005215632-02	OBS	No	586.241844	206.589965	671.6	31.145	11.2	4.5	0.98	5977	2.54	0.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005215632-01	OBS	FP	0.00	1	0	0	0	LPP_DV
005215632-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

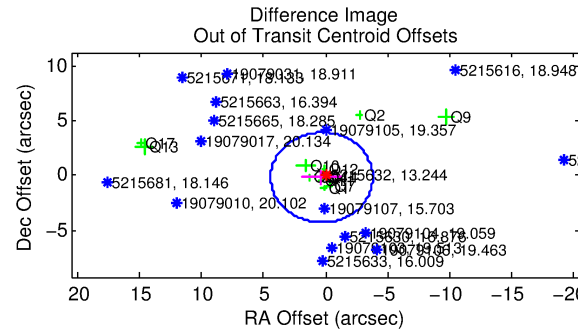
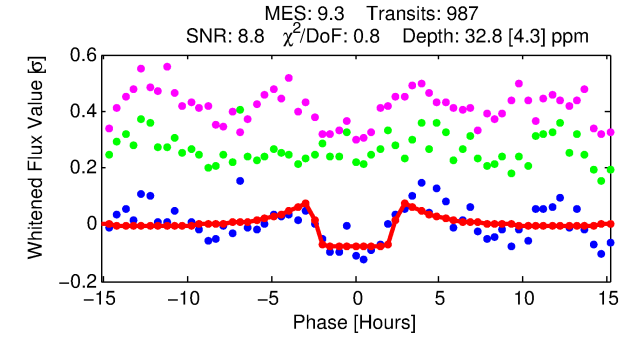
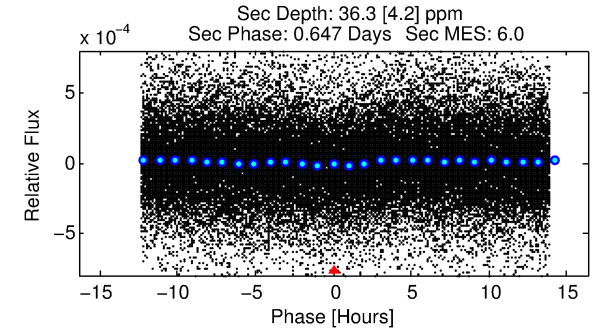
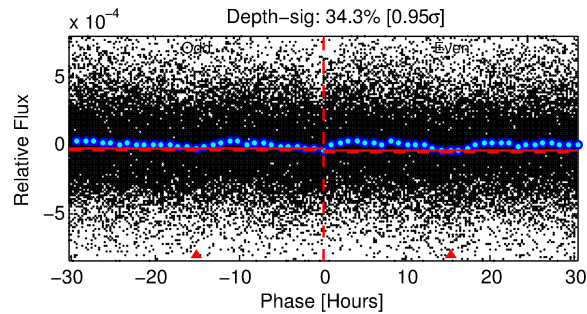
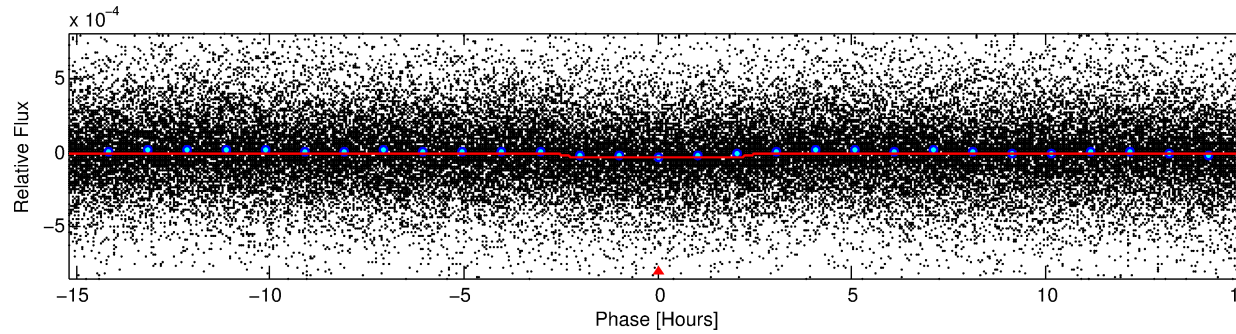
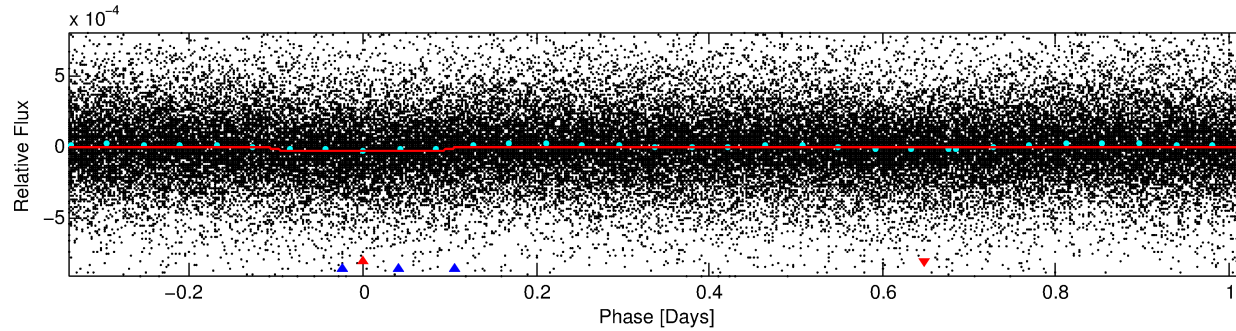
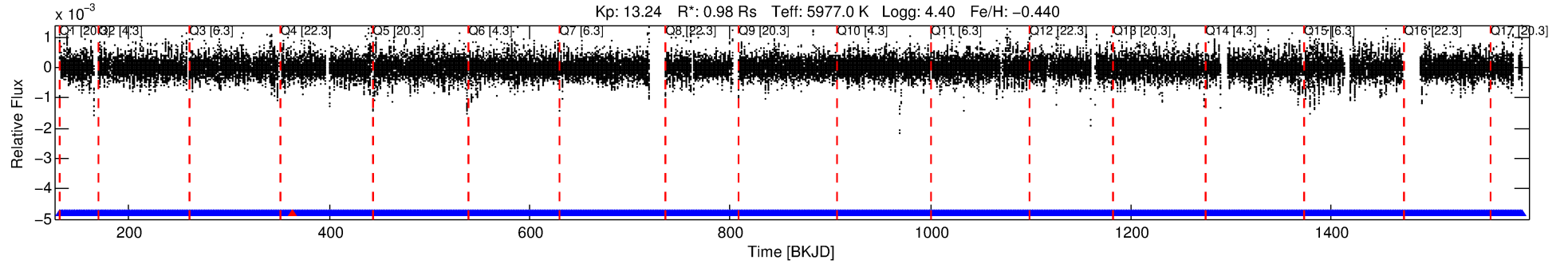
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005215632-01

No Significant Match Found

DV One-Page Summary

KIC: 5215632 Candidate: 1 of 2 Period: 1.360 d



DV Fit Results:

Period = 1.36034 [0.00001] d
Epoch = 131.6659 [0.0034] BKJD
Rp/R* = 0.0061 [0.0020]
a/R* = 1.35 [1.04]
b = 0.89 [0.42]
Seff = 2087.69 [750.09]
Teq = 1724 [155] K
Rp = 0.65 [0.27] Re
a = 0.0230 [0.0053] AU
Ag = 24.72 [18.47] [1.28 σ]
Teffp = 5942 [999] K [4.17 σ]

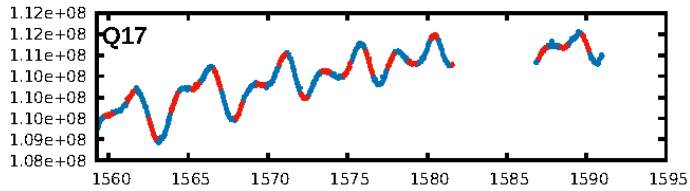
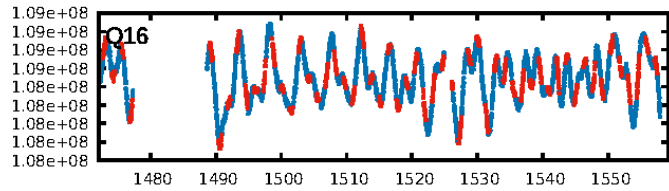
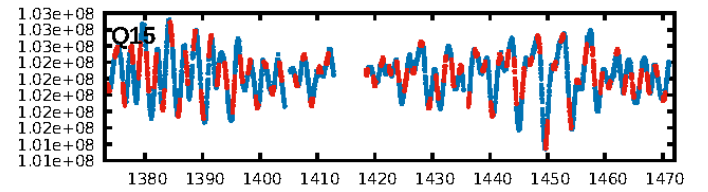
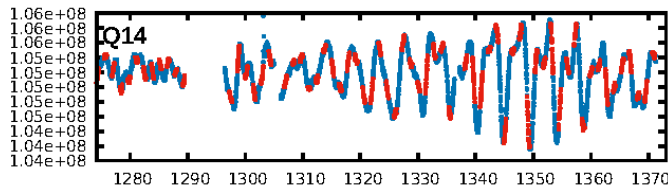
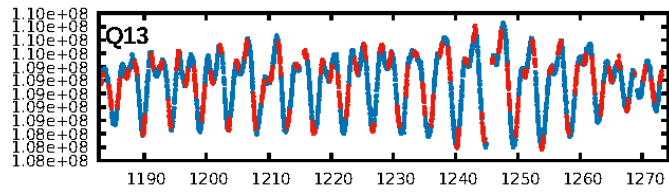
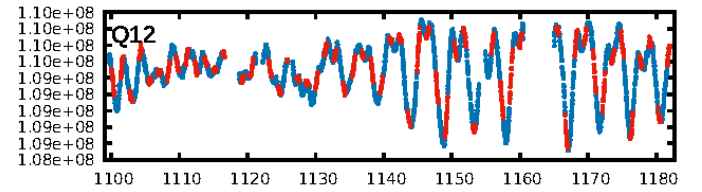
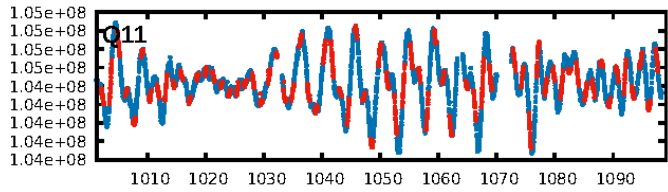
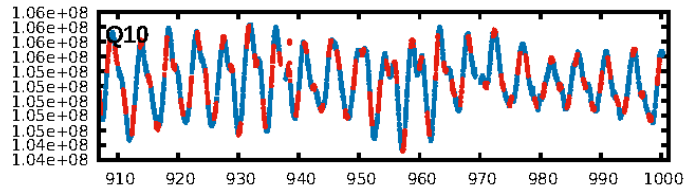
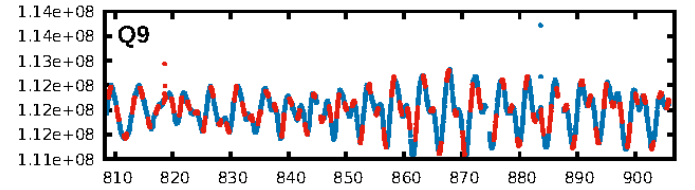
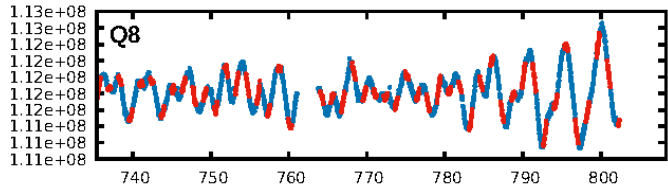
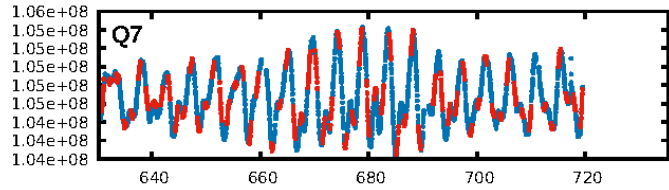
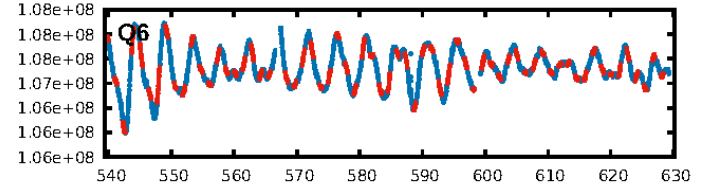
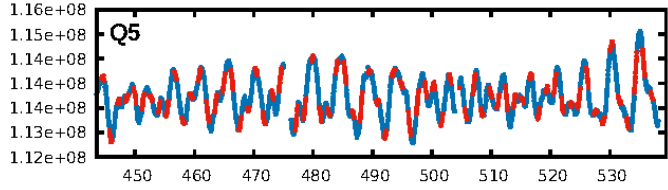
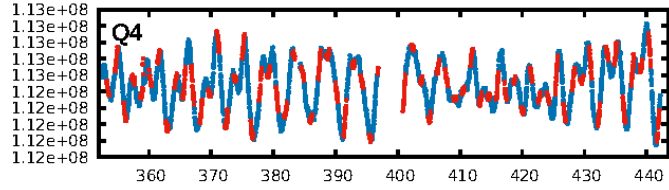
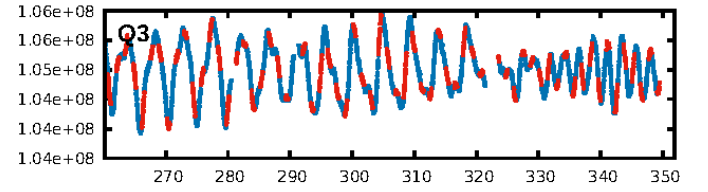
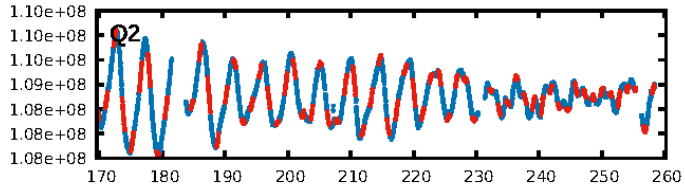
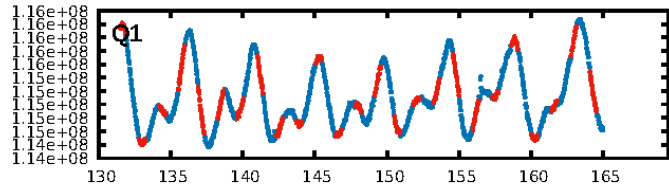
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [444.86 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.25e-17
RollingBand-fgt: 1.00 [942/943]
GhostDiagnostic-chr: -5.309
Centroid-sig: 45.7%
Centroid-so: 0.226 arcsec [0.24 σ]
OotOffset-rm: 0.352 arcsec [0.26 σ]
KicOffset-rm: 0.610 arcsec [0.45 σ]
OotOffset-st: 4/2/3/4 [13]
KicOffset-st: 4/2/3/4 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 1.00 [17/17]

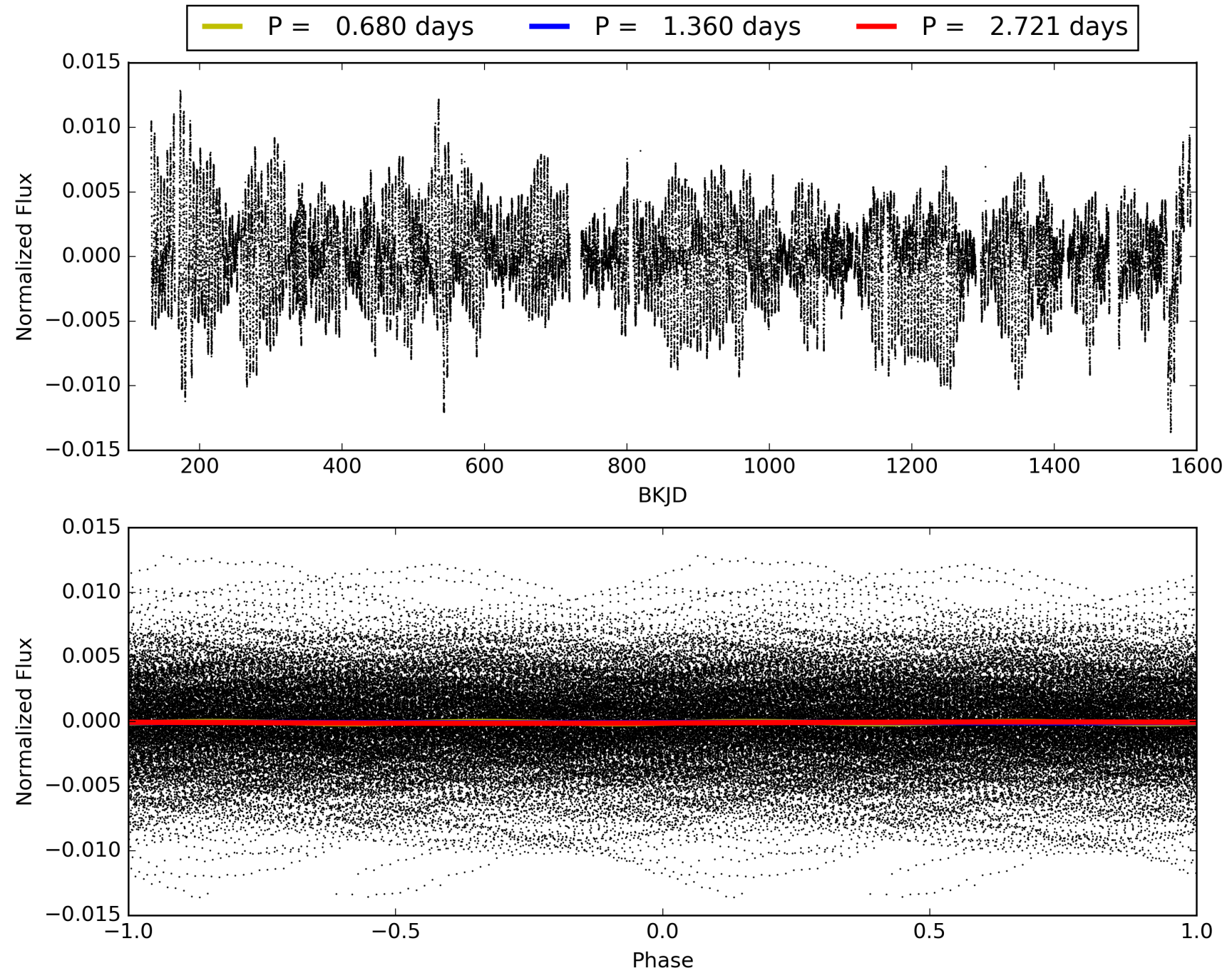
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005215632-01, PDC Light Curves

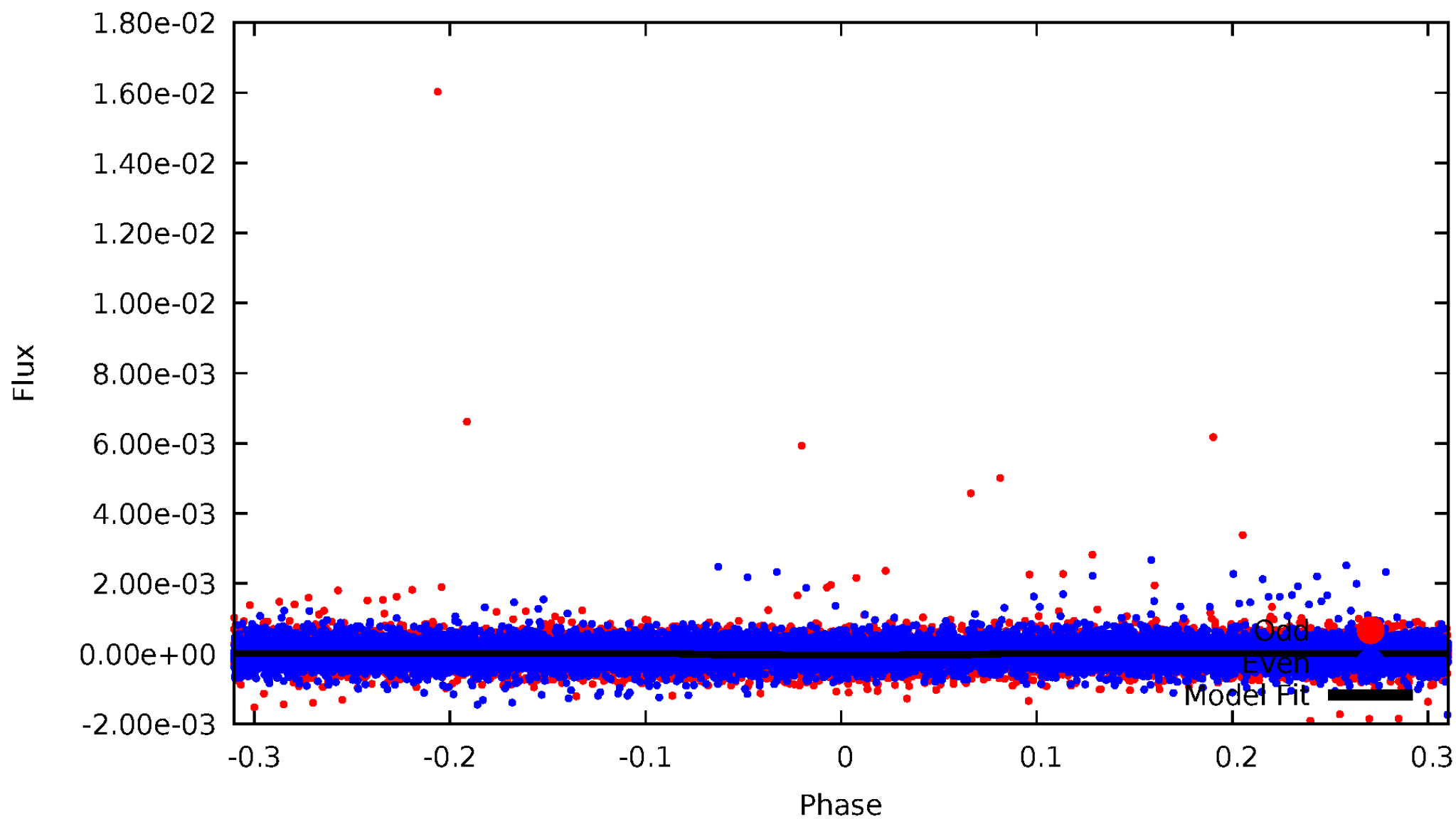


TCE 005215632-01



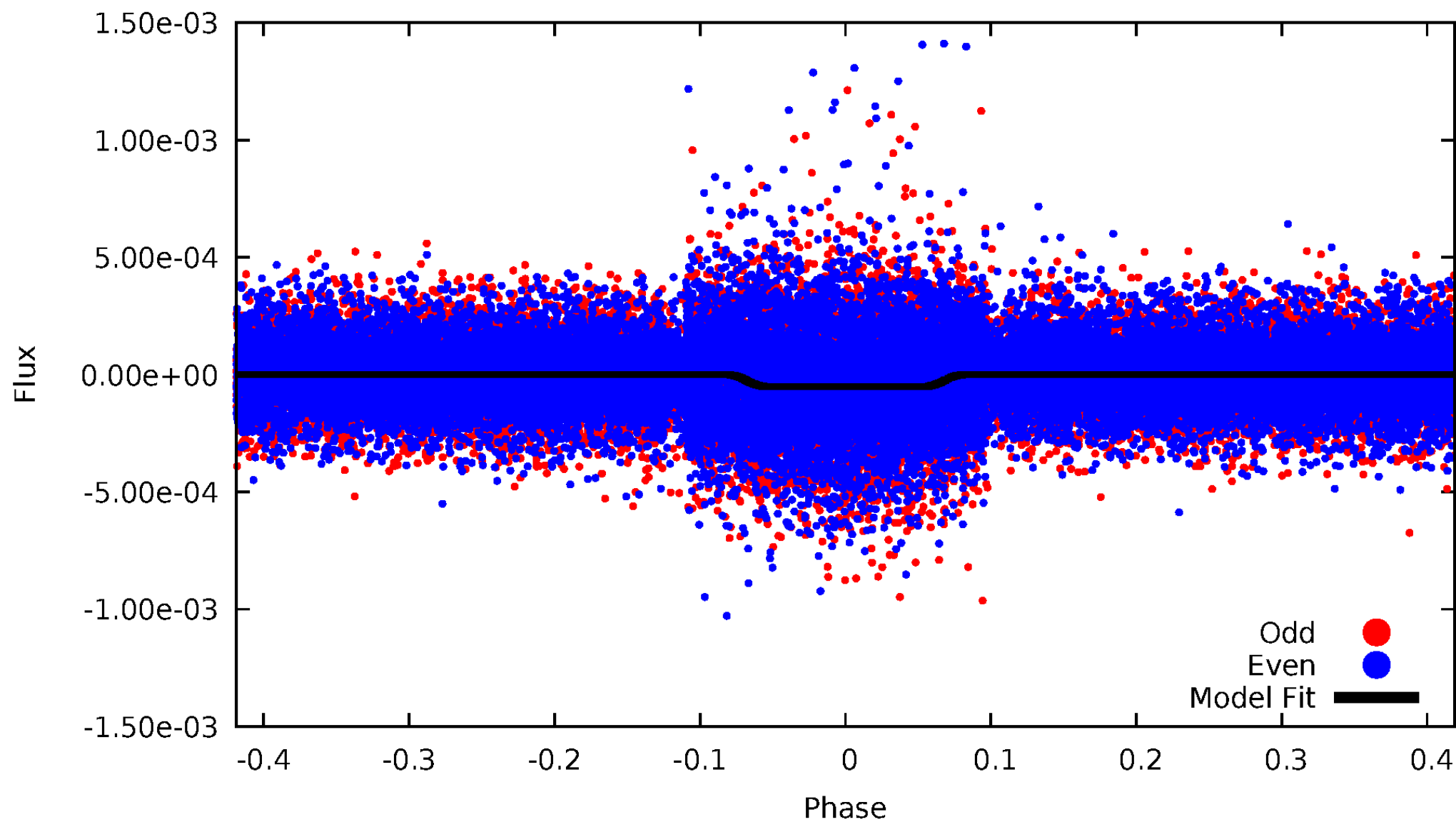
DV Odd/Even

TCE 005215632-01



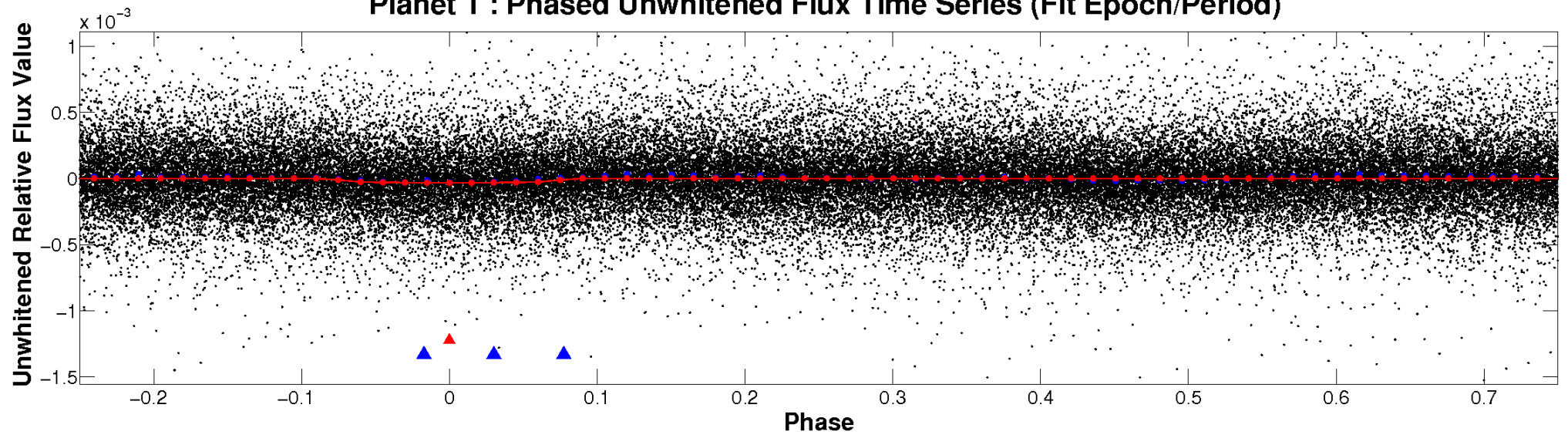
ALT Odd/Even

TCE 005215632-01

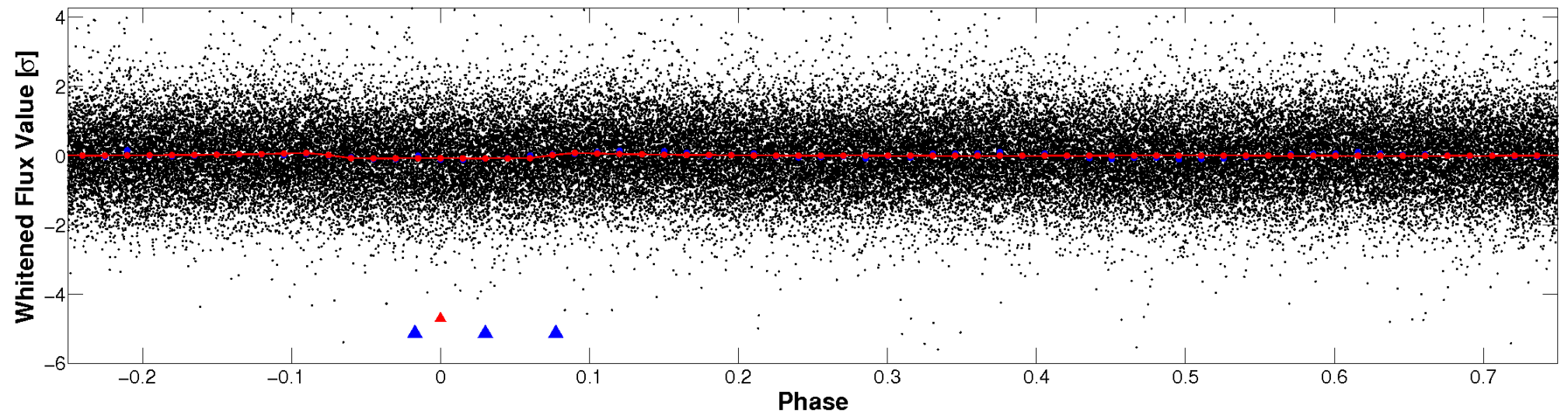


Non-Whitened Vs. Whitened Light Curve

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

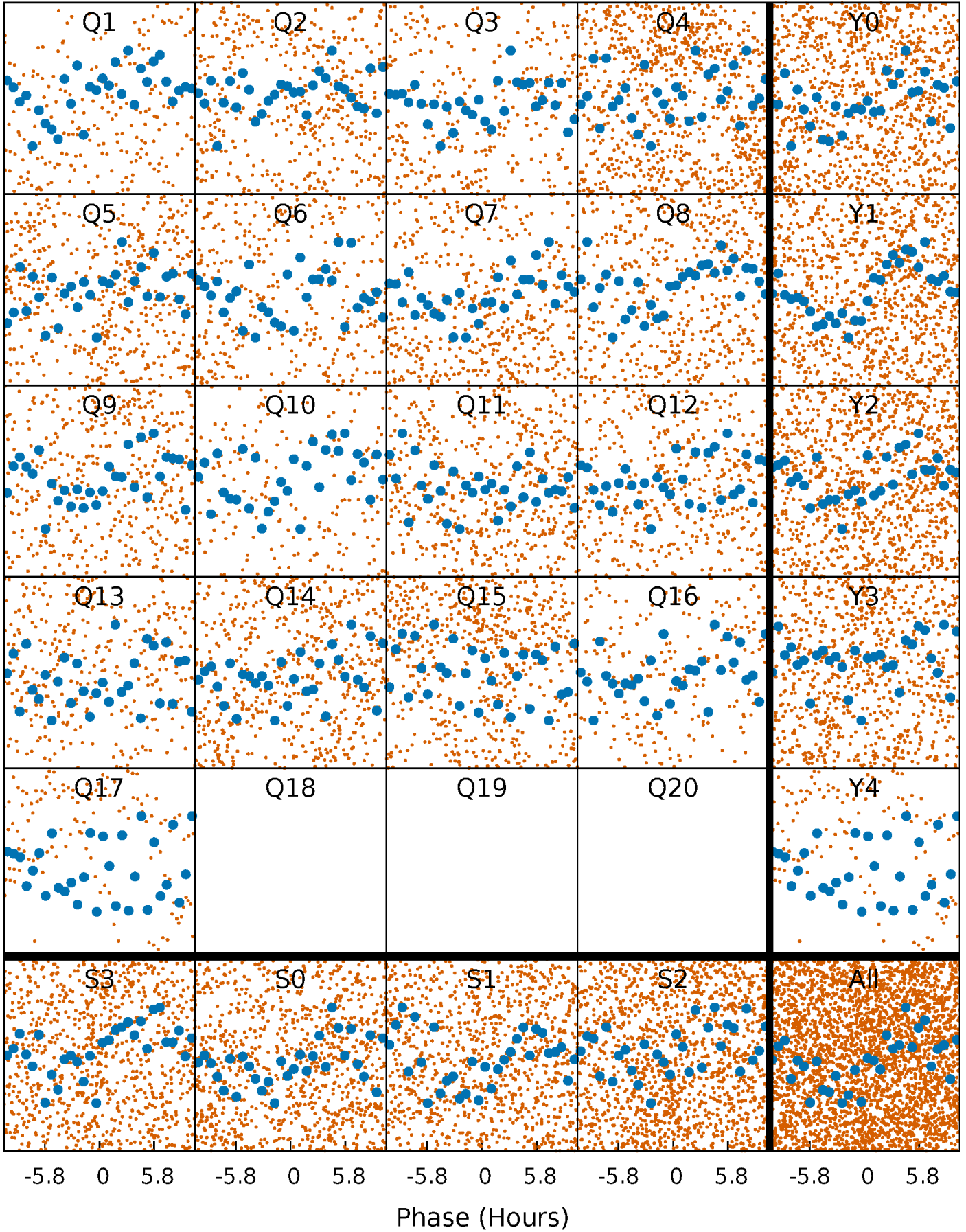


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



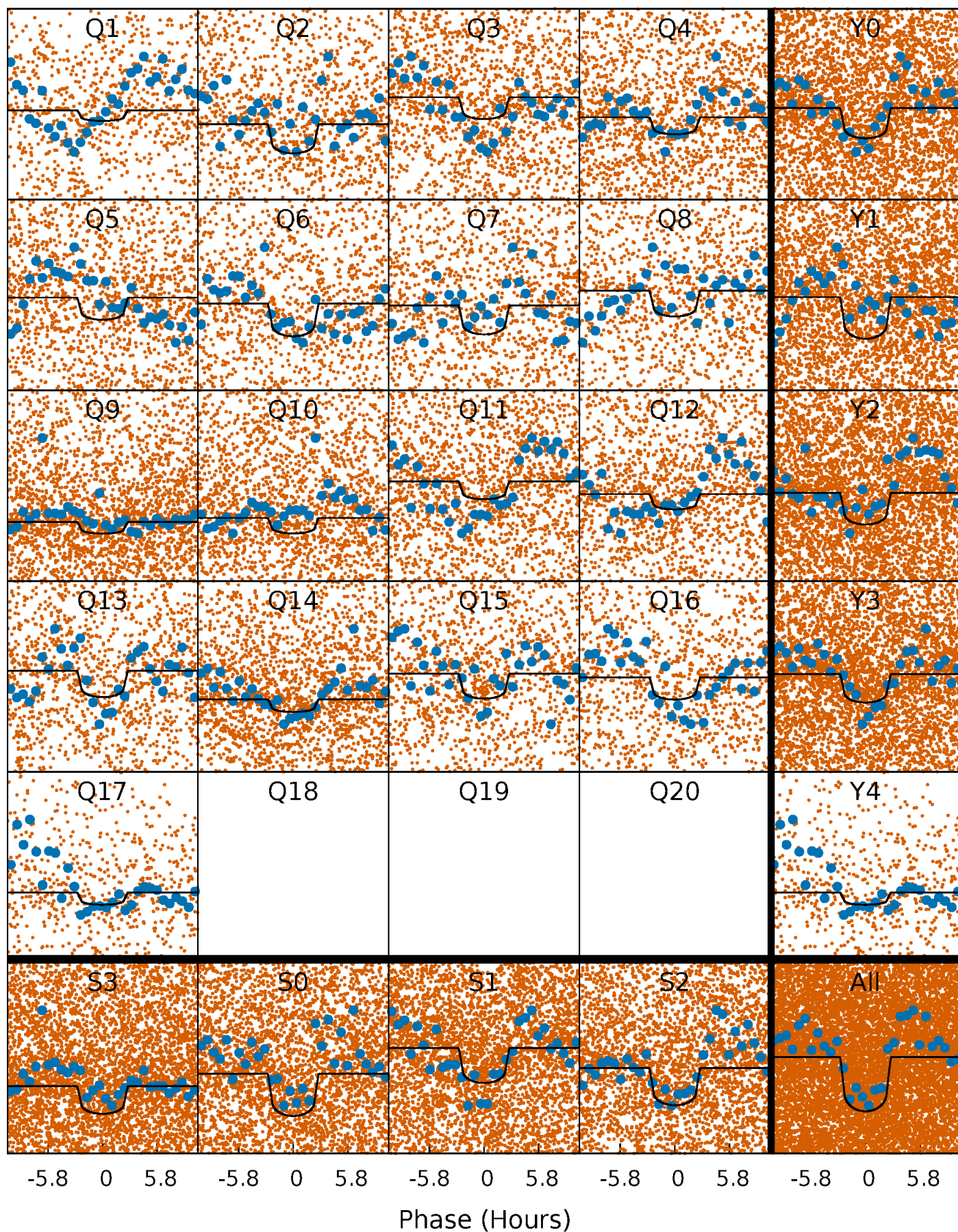
PDC Quarter-Phased Transit Curves

TCE 005215632-01 P= 1.360339 Days $T_0=131.665936$ (BKJD)



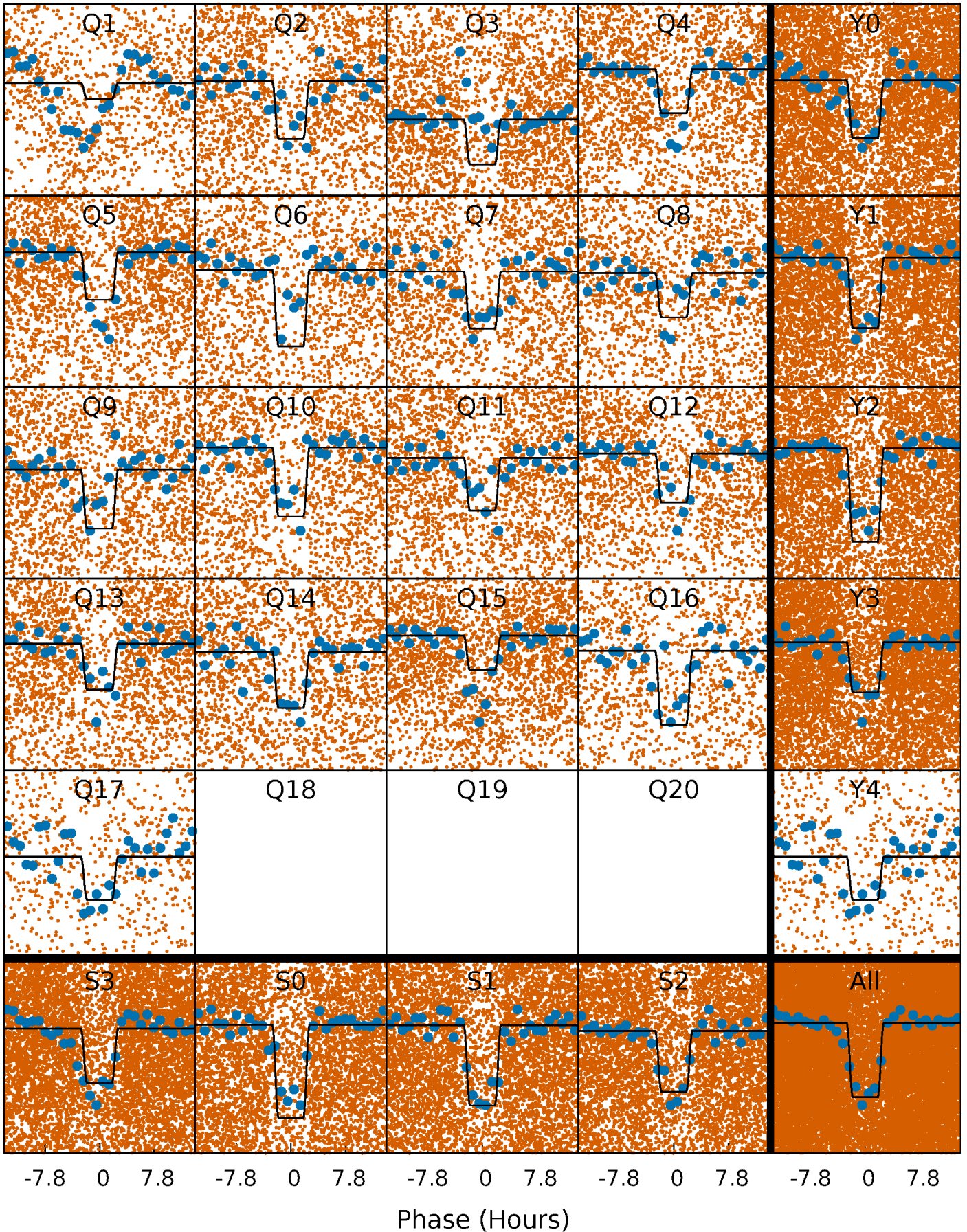
DV Quarter-Phased Transit Curves

TCE 005215632-01 P= 1.360339 Days $T_0=131.665936$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

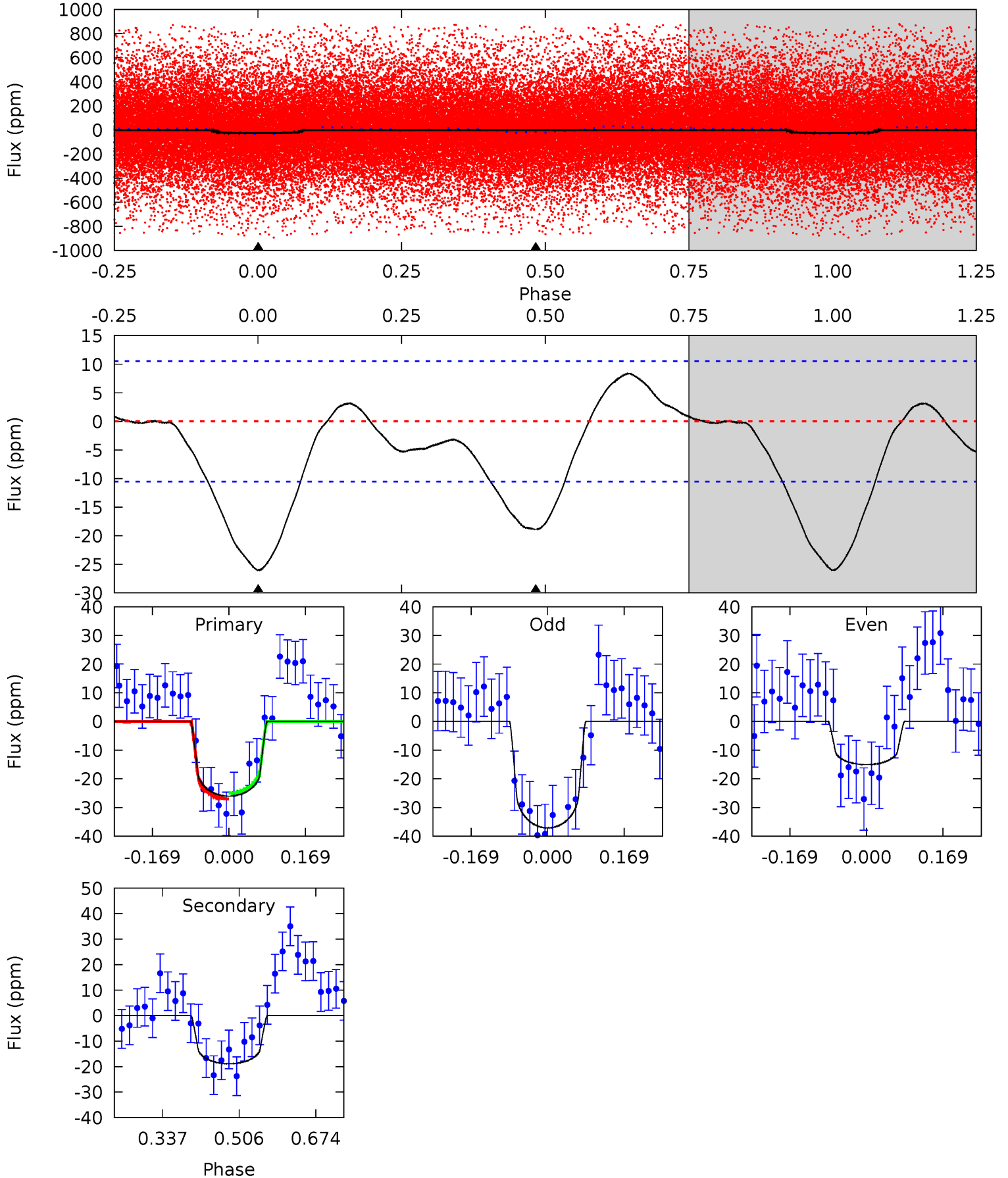
TCE 005215632-01 P= 1.360384 Days $T_0=131.643469$ (BKJD)



DV Model-Shift Uniqueness Test

005215632-01, P = 1.360339 Days, E = 130.305597 Days

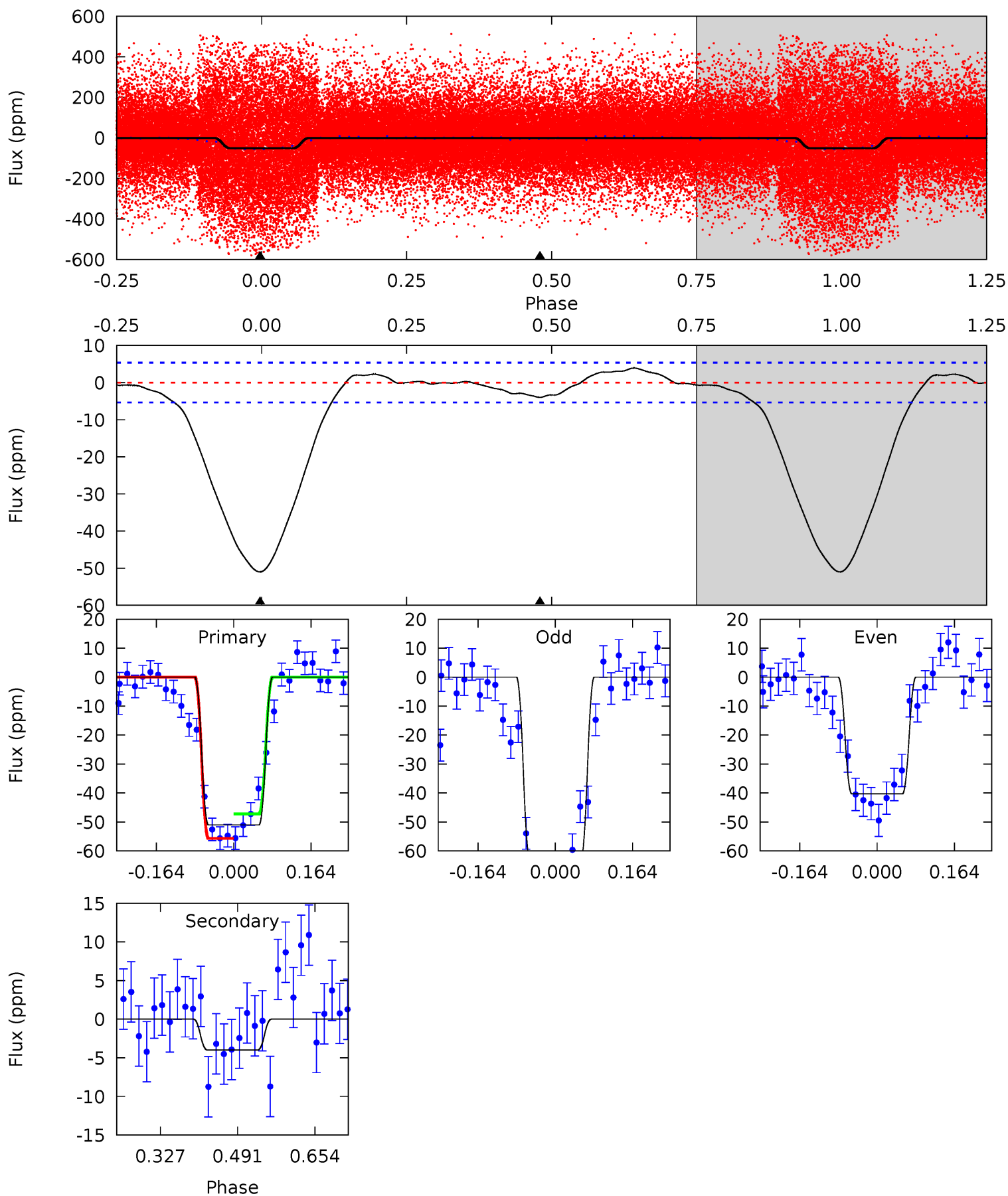
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	7.98	0	0	4.45	1.38	1.55	11.0	11.0	7.98	7.98	4.69	0.84	0.24	0.43



Alt Model-Shift Uniqueness Test

005215632-01, P = 1.360384 Days, E = 130.283085 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.5	3.32	0	0	4.46	1.39	1.33	42.5	42.5	3.32	3.32	9.51	0.99	0.07	3.51



Stellar Parameters For KIC 005215632

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5977^{+161}_{-161}	$4.396^{+0.128}_{-0.192}$	$-0.440^{+0.300}_{-0.300}$	$0.983^{+0.258}_{-0.150}$	$0.876^{+0.120}_{-0.080}$	$1.299^{+0.842}_{-0.626}$
	+3%/-3%	+3%/-4%	+68%/-68%	+26%/-15%	+14%/-9%	+65%/-48%
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 005215632-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-19 ± 2	$0.67^{+0.25}_{-0.24}$	2424^{+170}_{-136}	5092^{+1136}_{-637}	12^{+17}_{-6}
Alt.	-4 ± 1	$0.77^{+0.26}_{-0.23}$	2425^{+168}_{-138}	3504^{+549}_{-405}	$1.939^{+2.144}_{-0.975}$

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

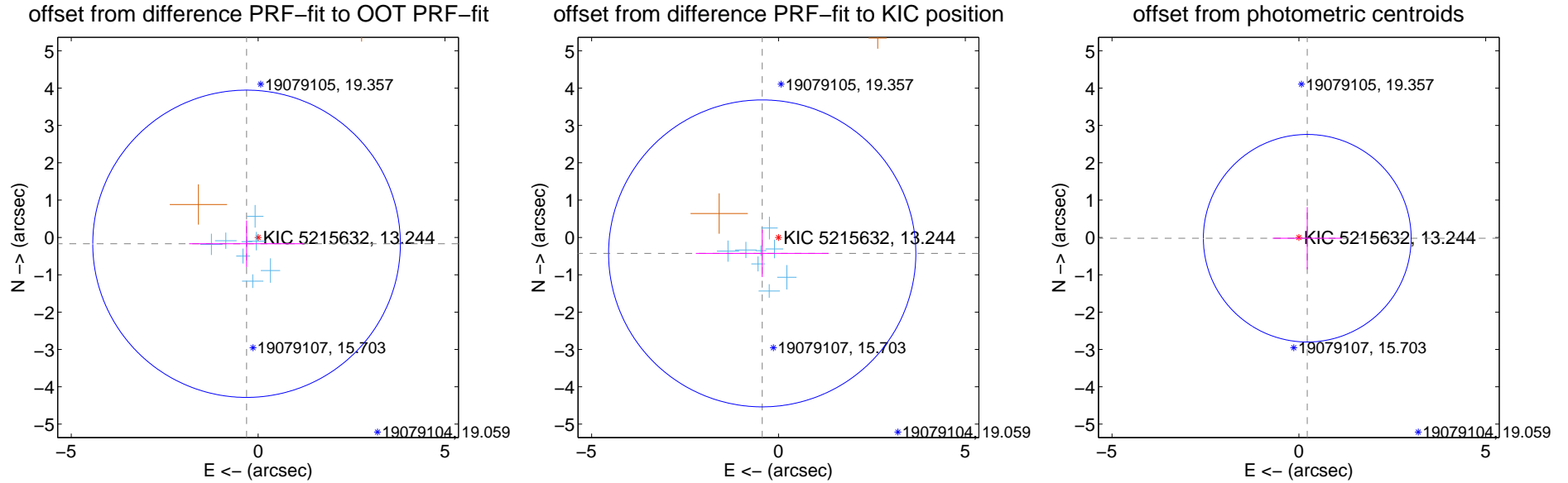
DV Centroid Data

Supplemental centroid analysis for 005215632-01. Kepler magnitude: 13.24. Transit SNR 8.79

There are 9 quarters with good PRF difference image offsets

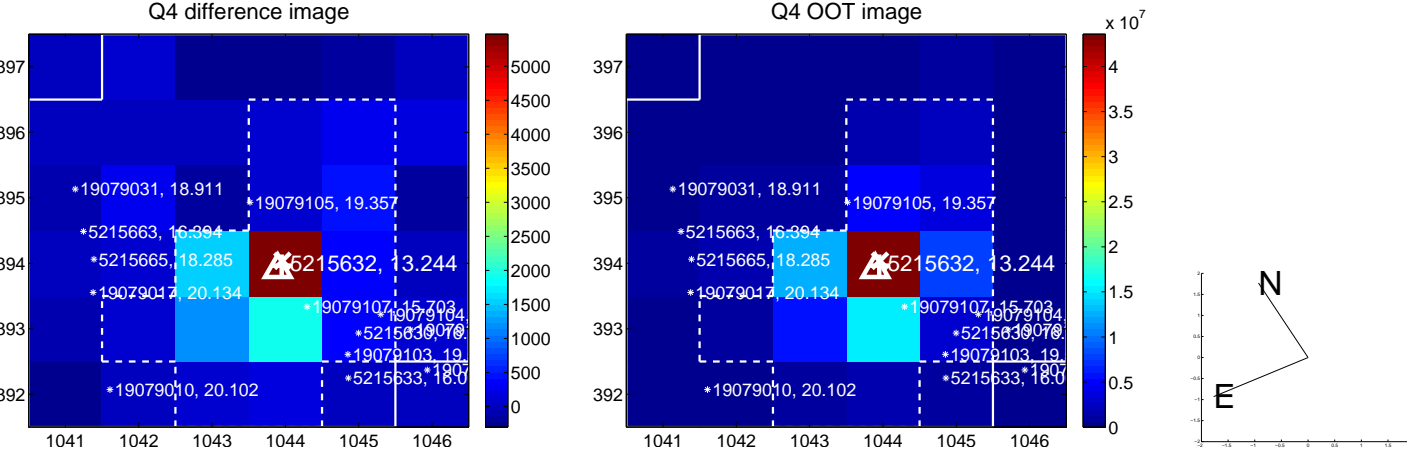
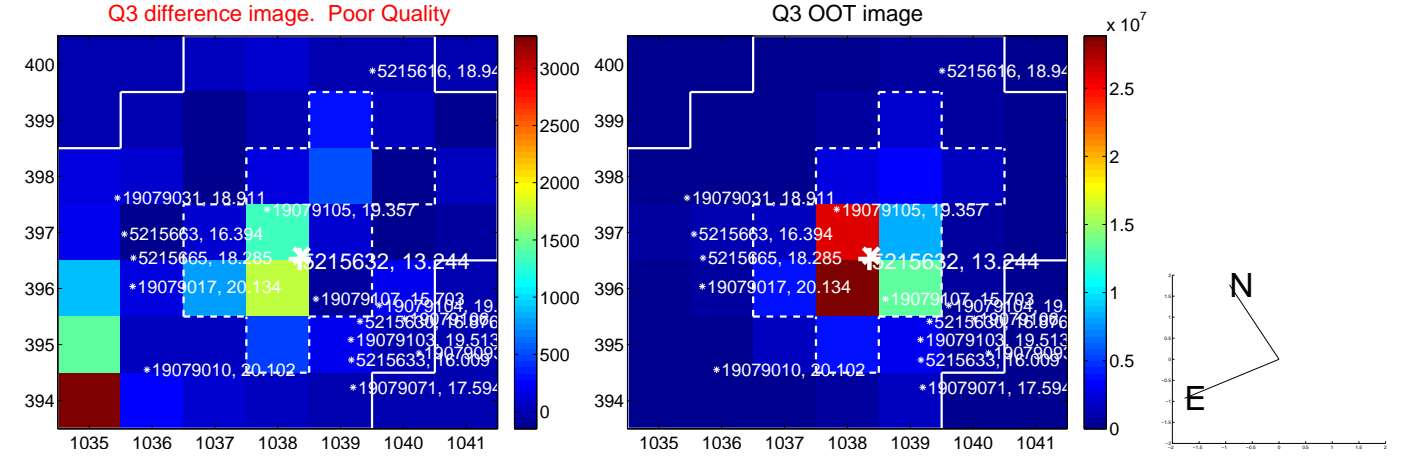
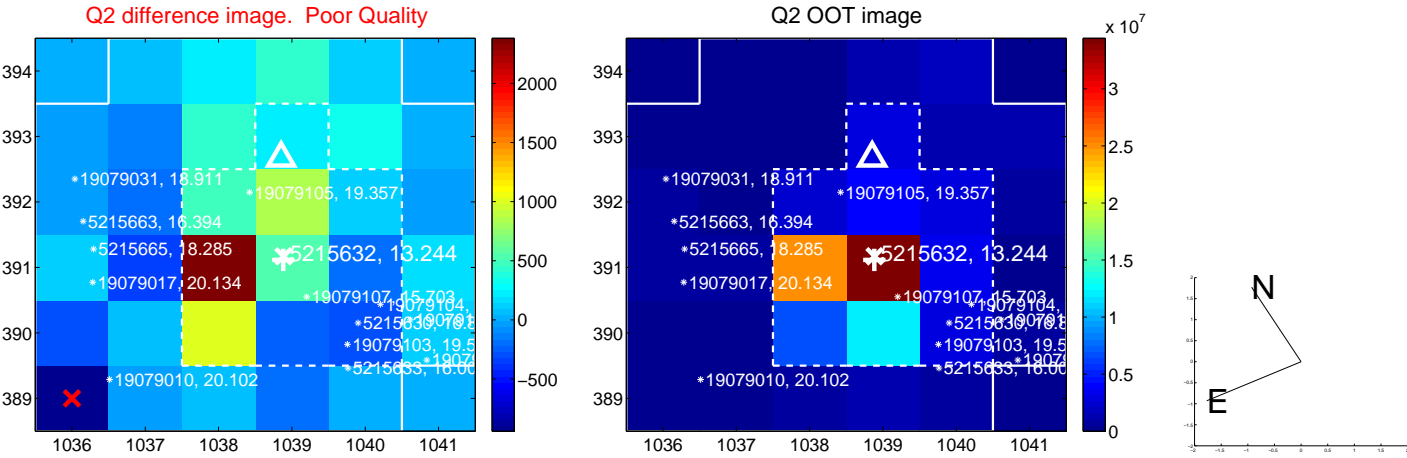
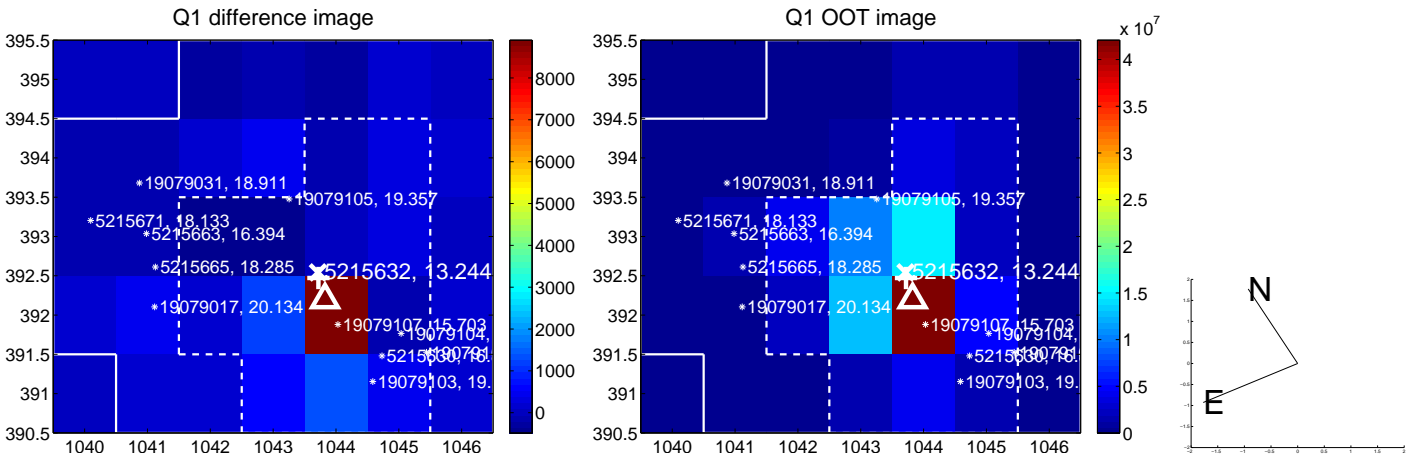
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.352 ± 1.372	0.26	0.309 ± 1.536	-0.169 ± 0.623
PRF-fit source offset from KIC position	0.610 ± 1.370	0.45	0.436 ± 1.774	-0.427 ± 0.633
photometric centroid source offset	0.23 ± 0.93	0.24	-0.23 ± 0.93	-0.02 ± 0.83

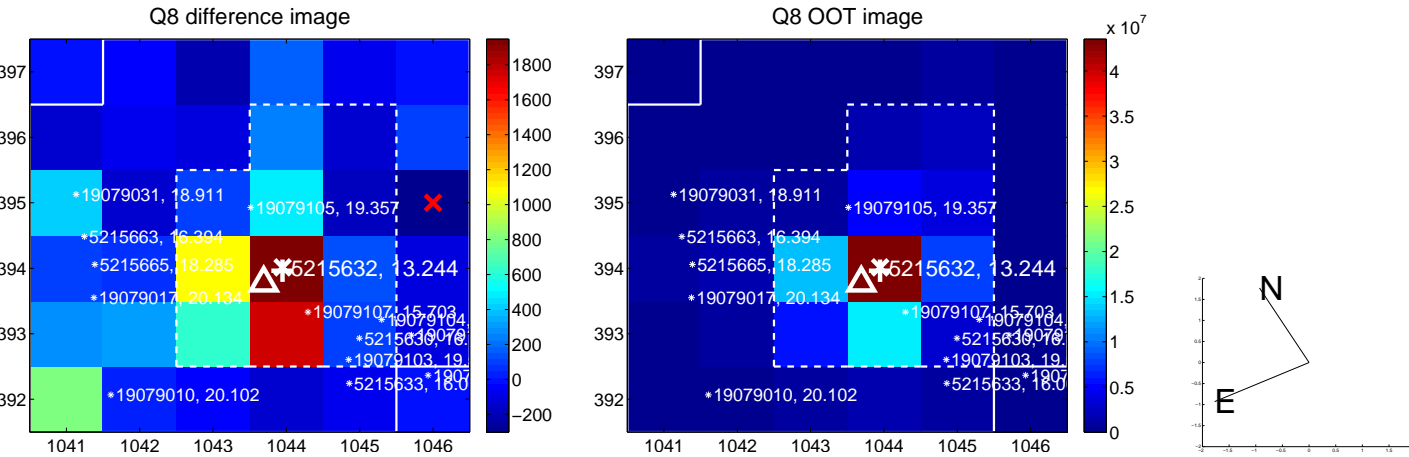
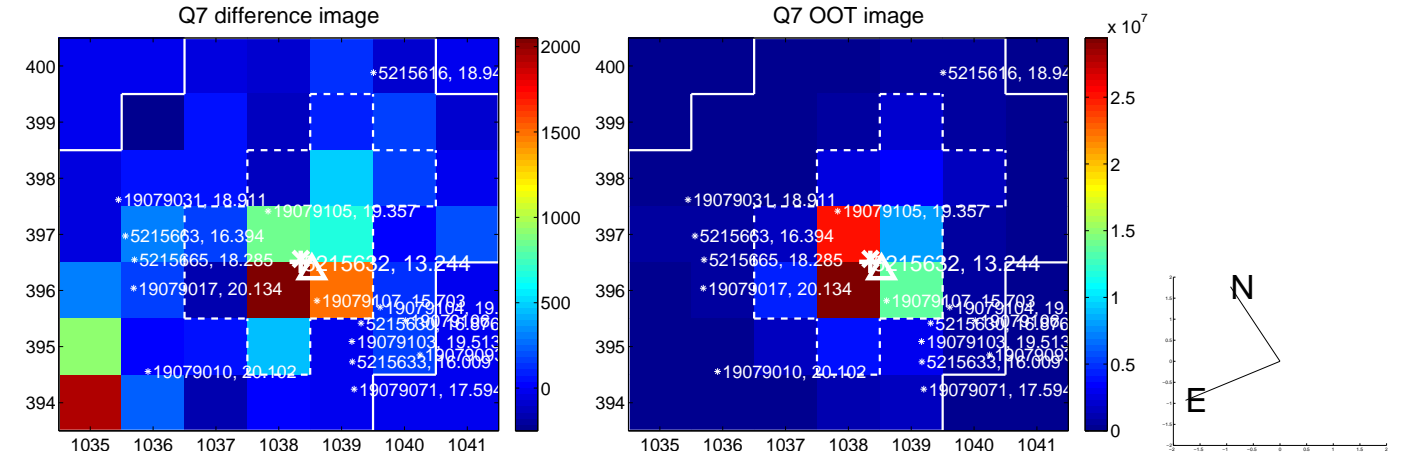
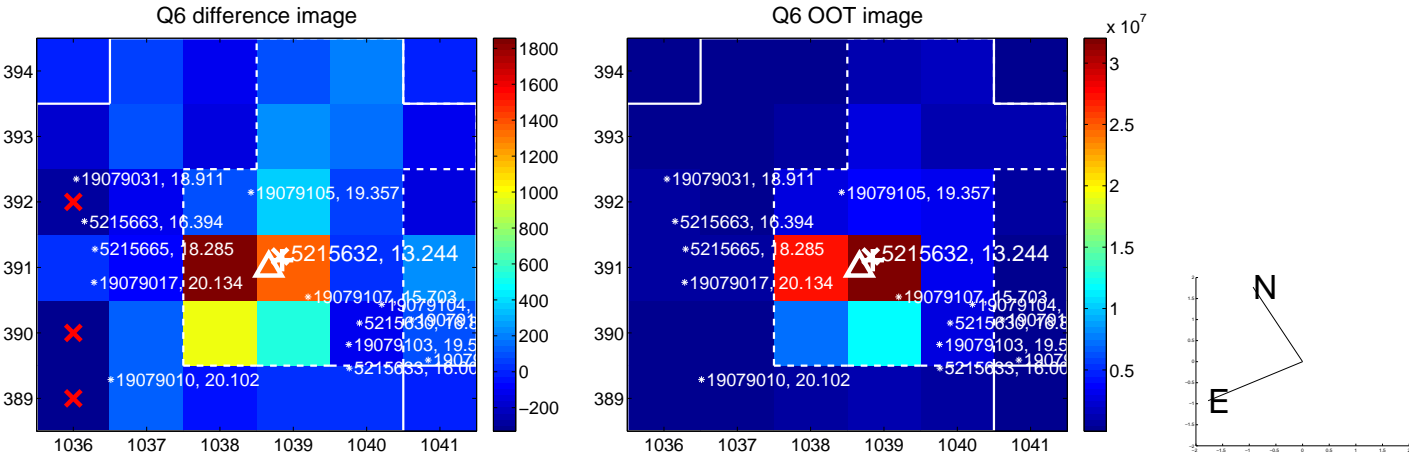
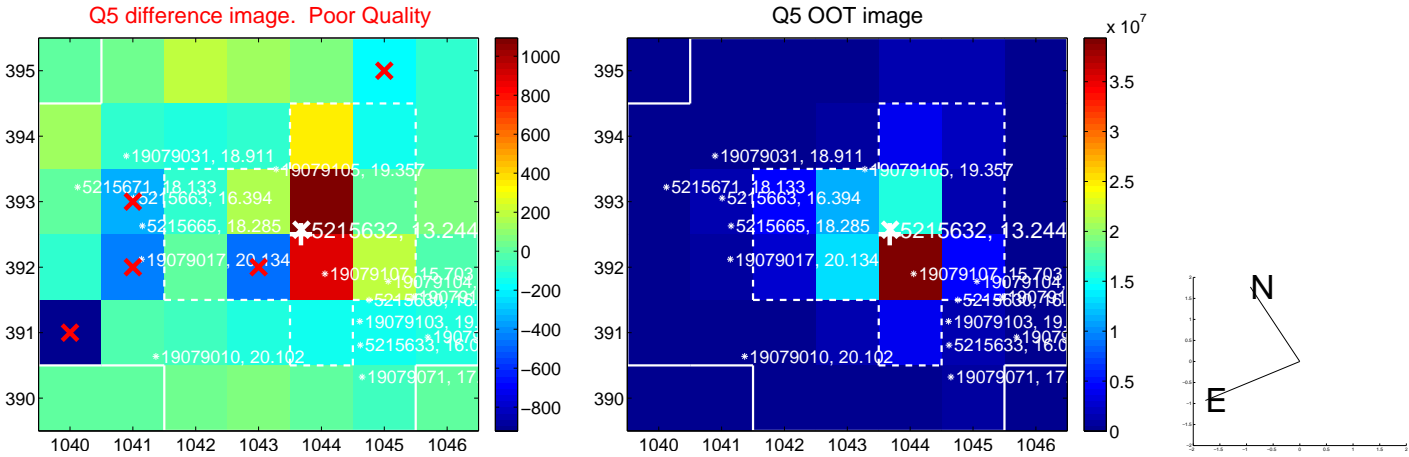


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

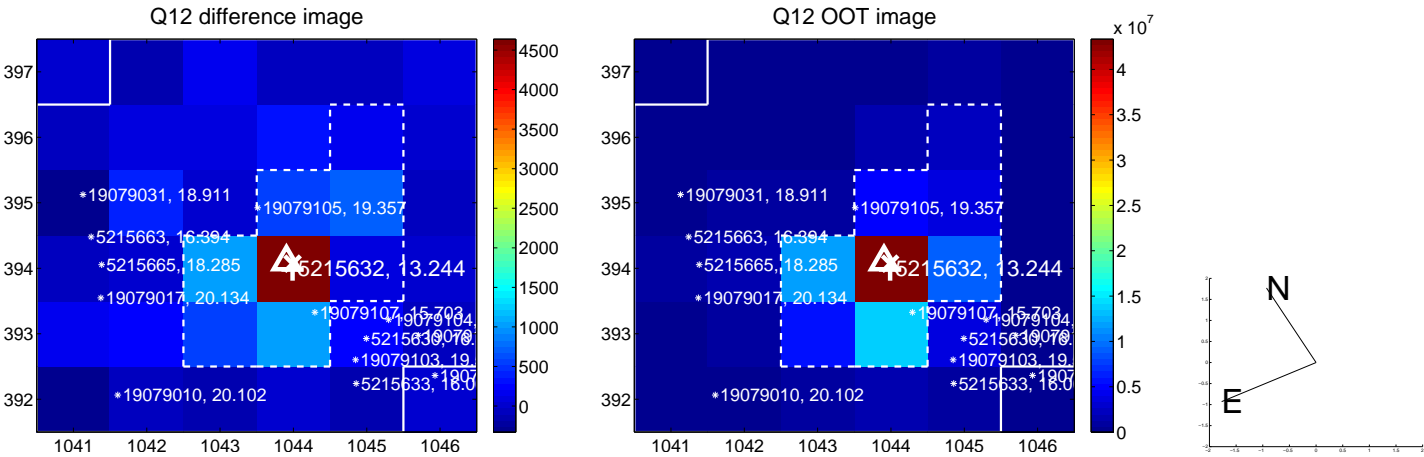
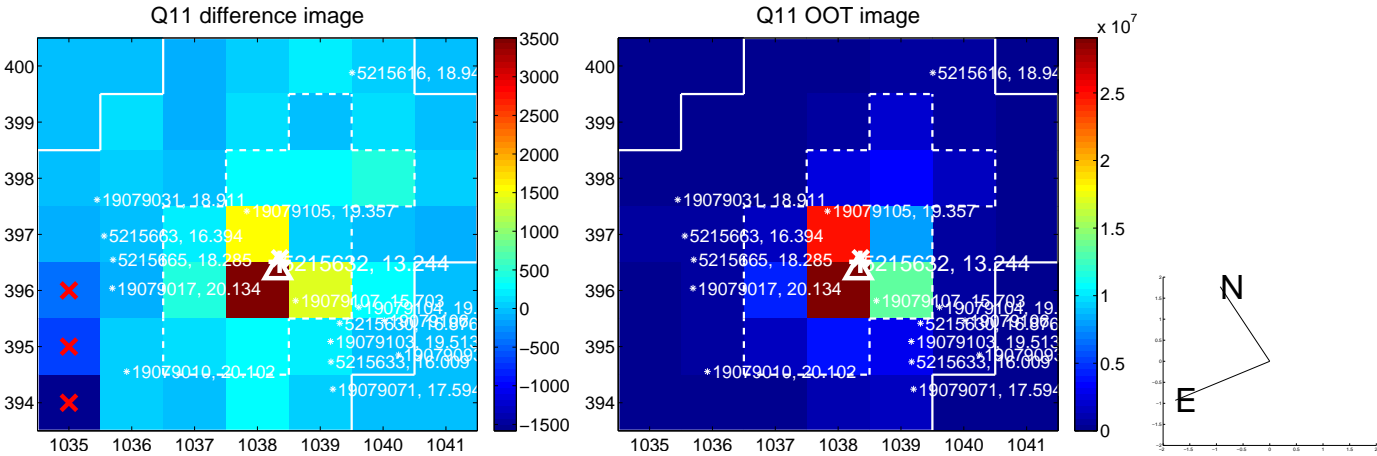
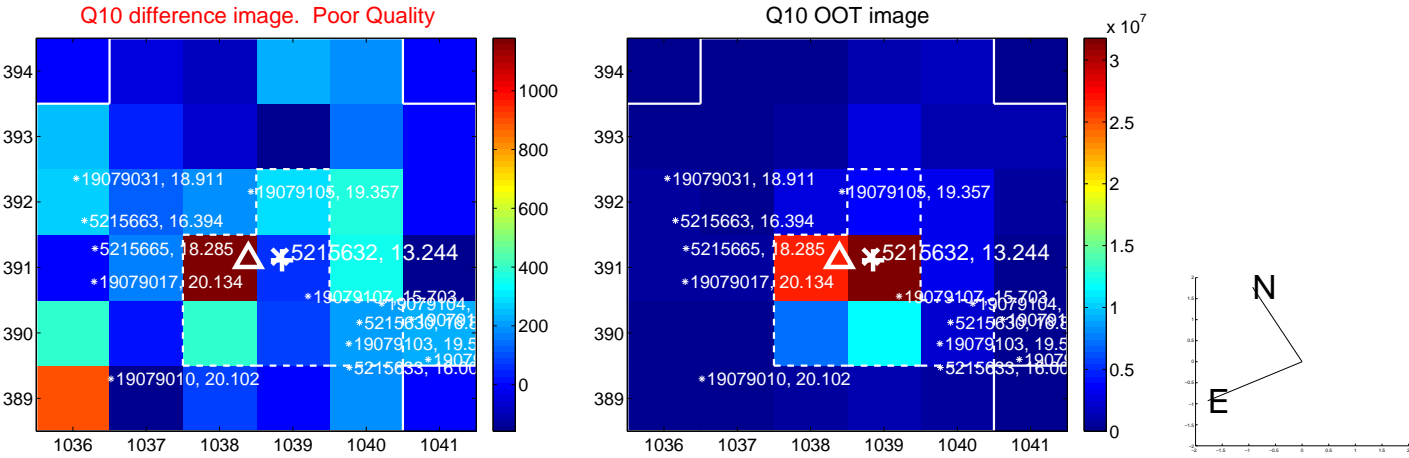
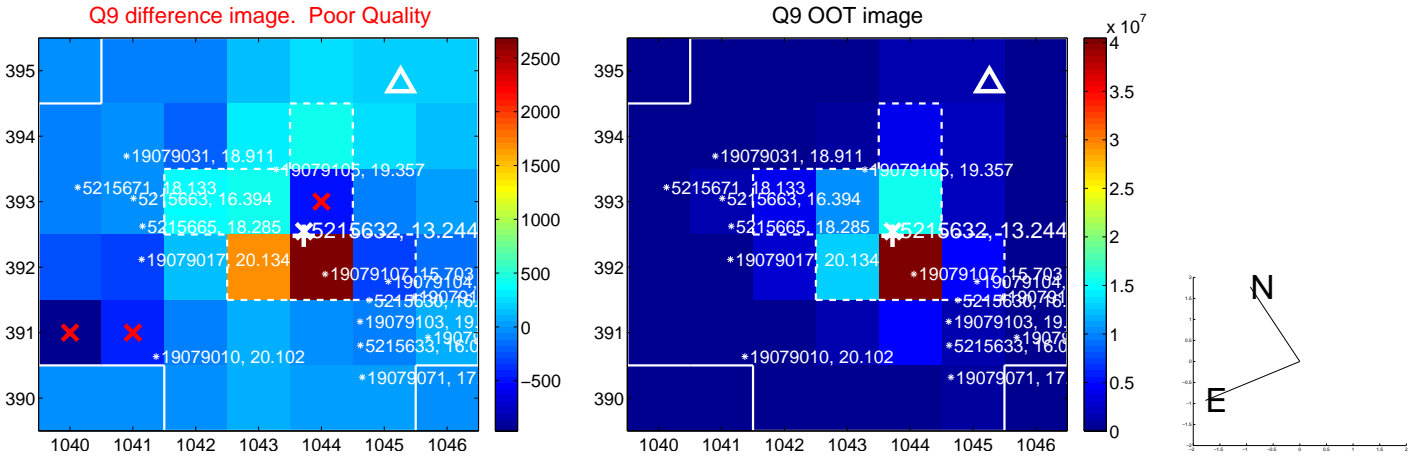
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



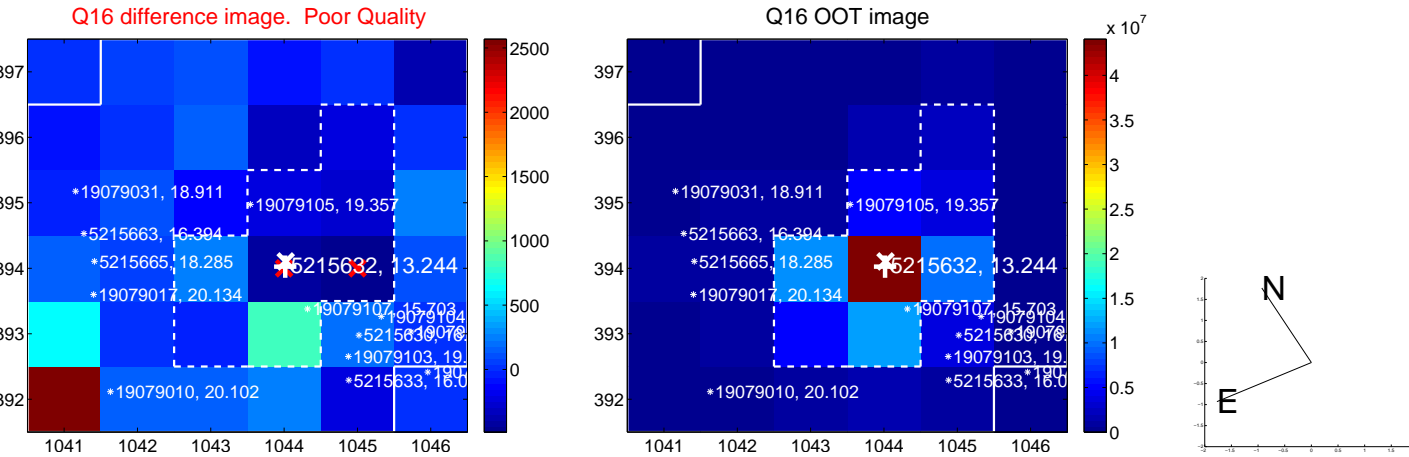
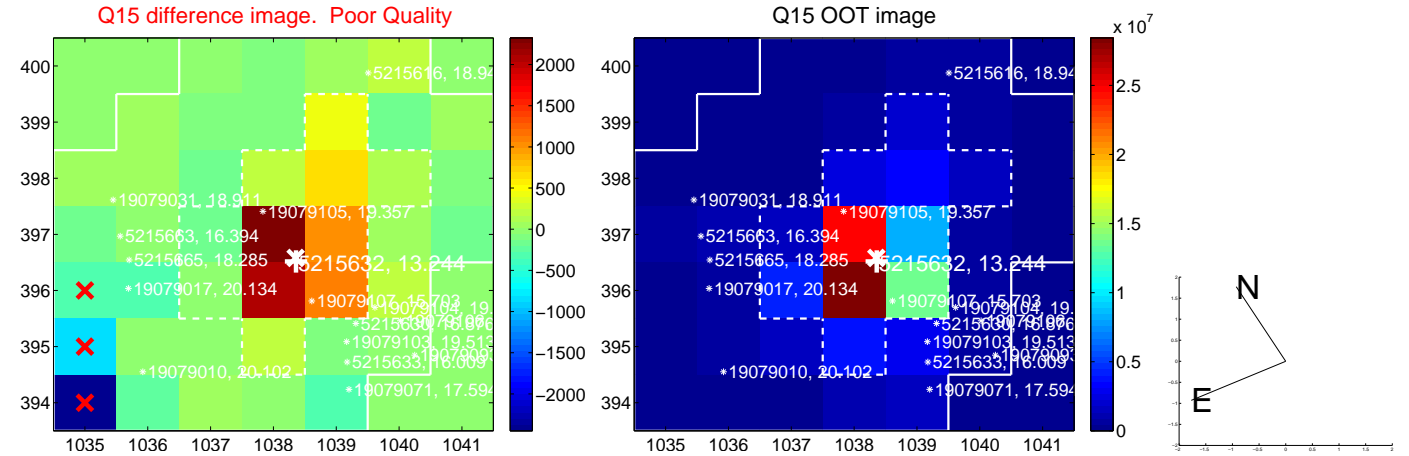
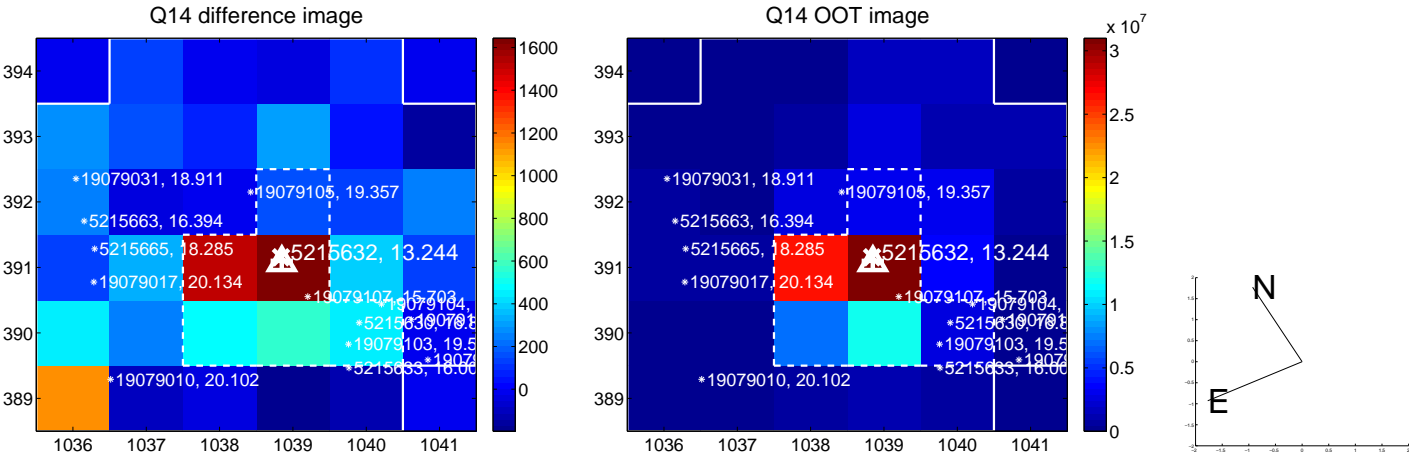
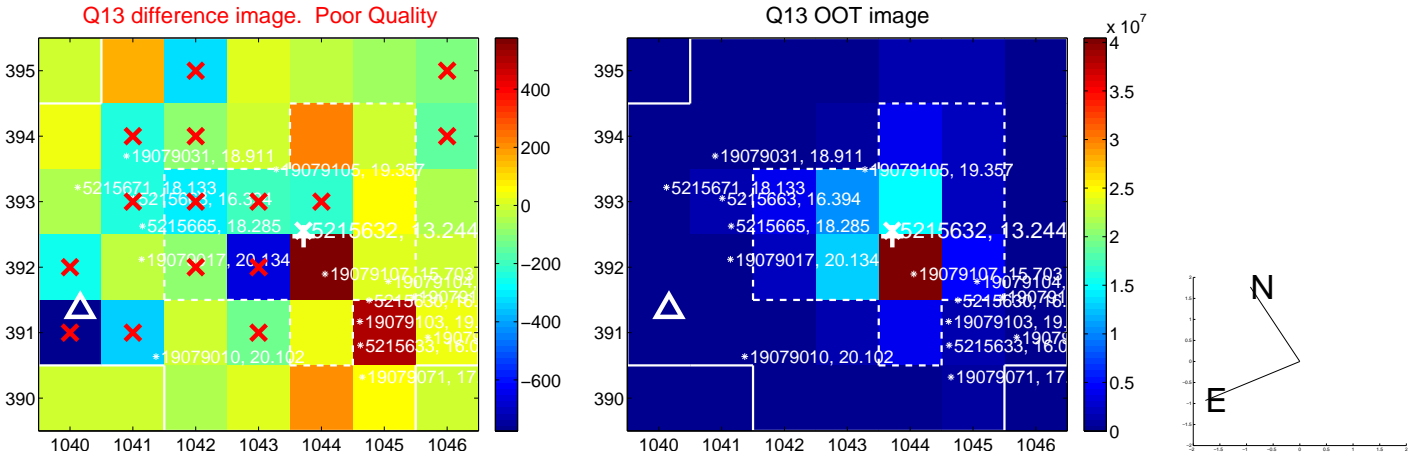
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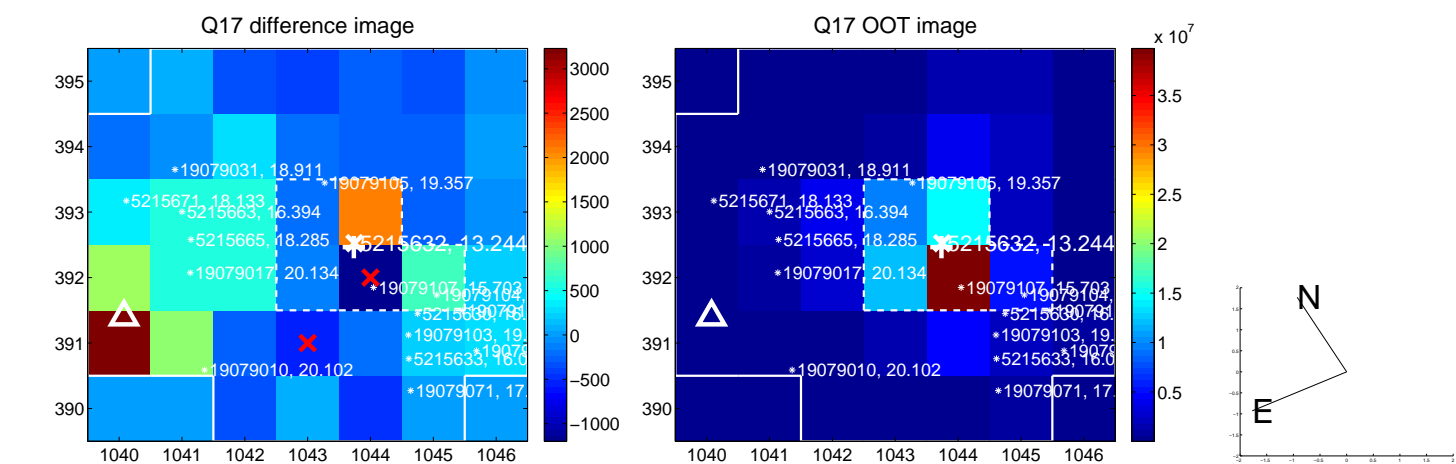
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



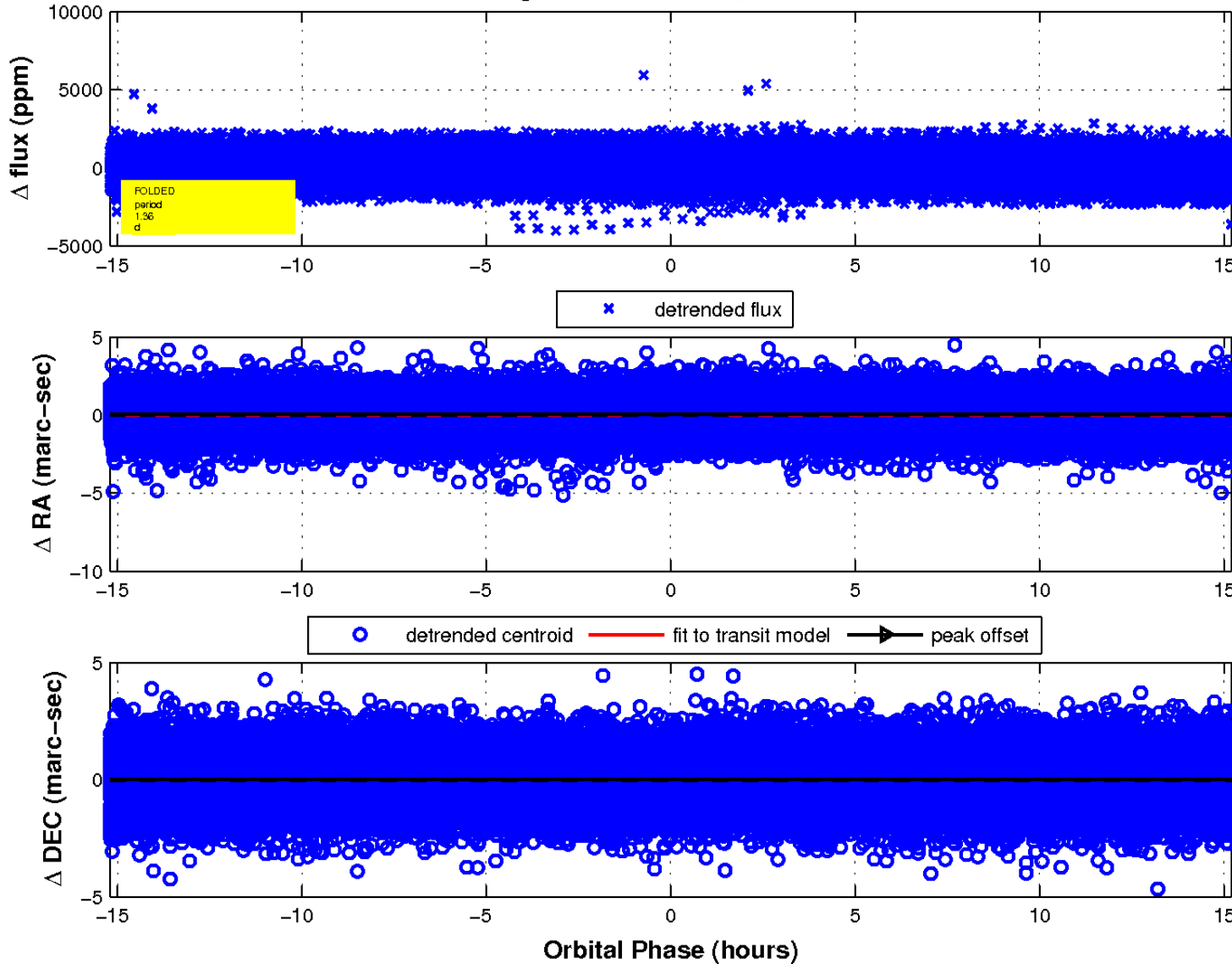
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



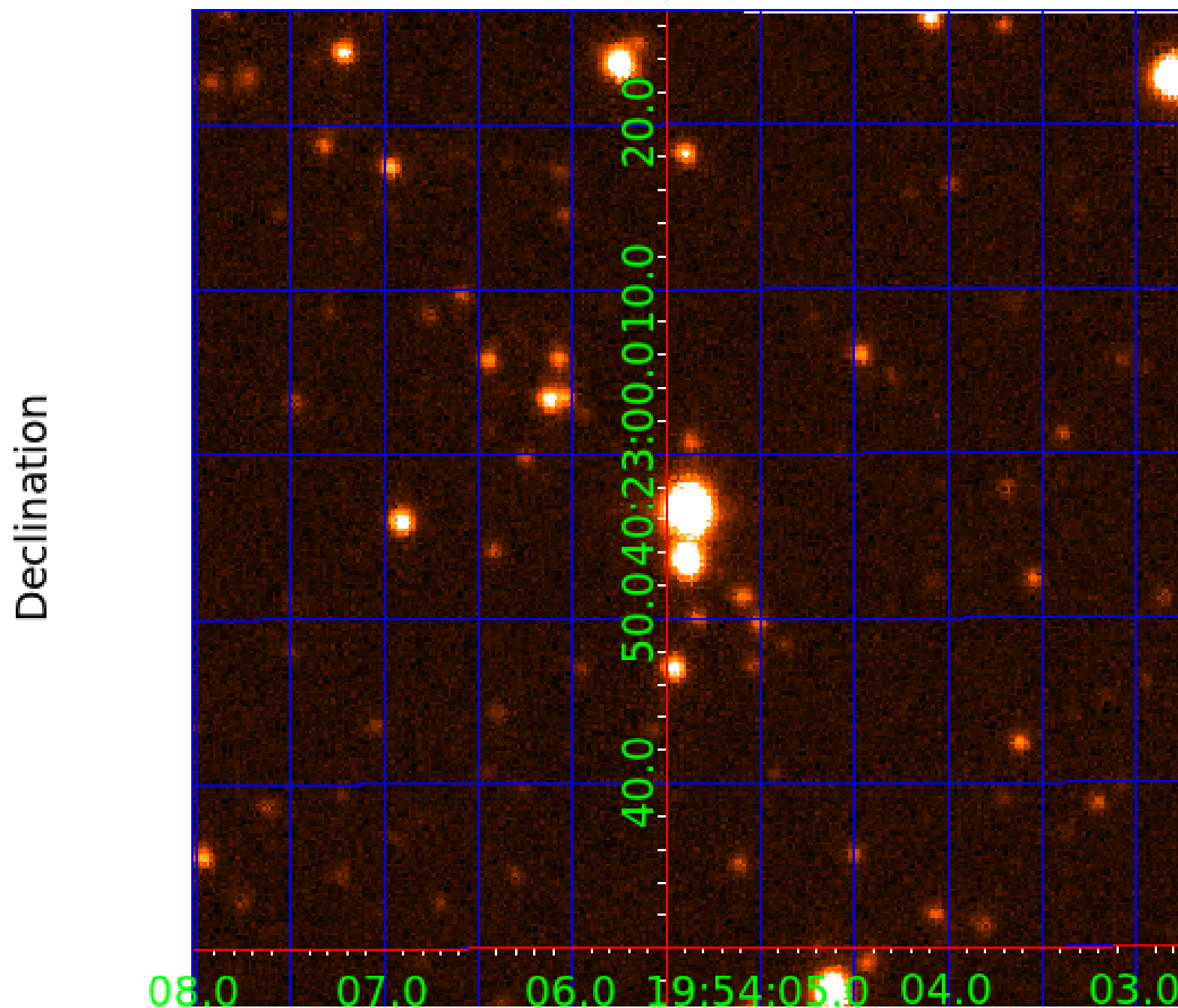
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 005215632

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005215632-01	OBS	FP	0.00	1	0	0	0	LPP_DV
005215632-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

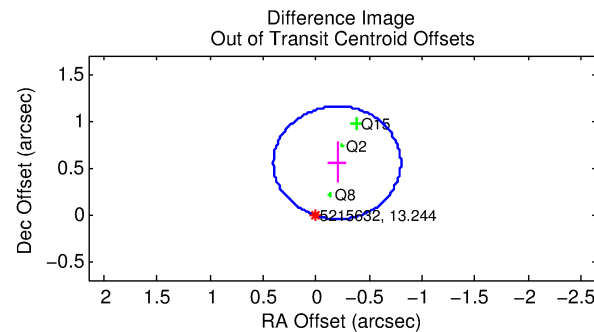
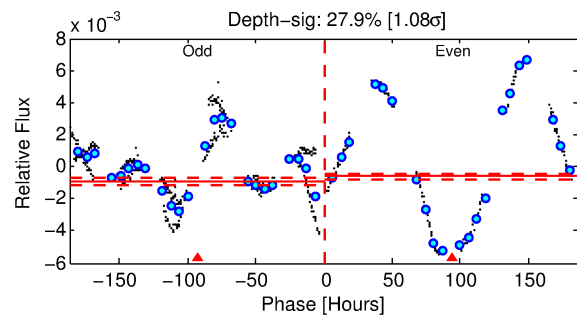
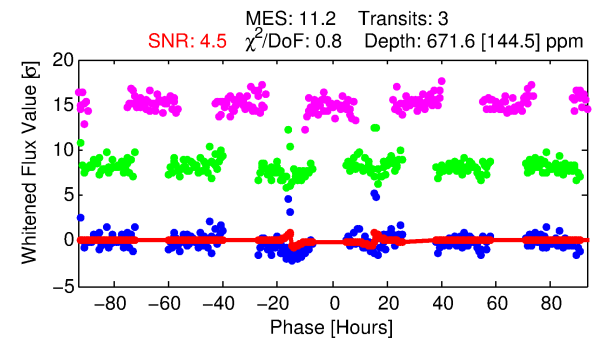
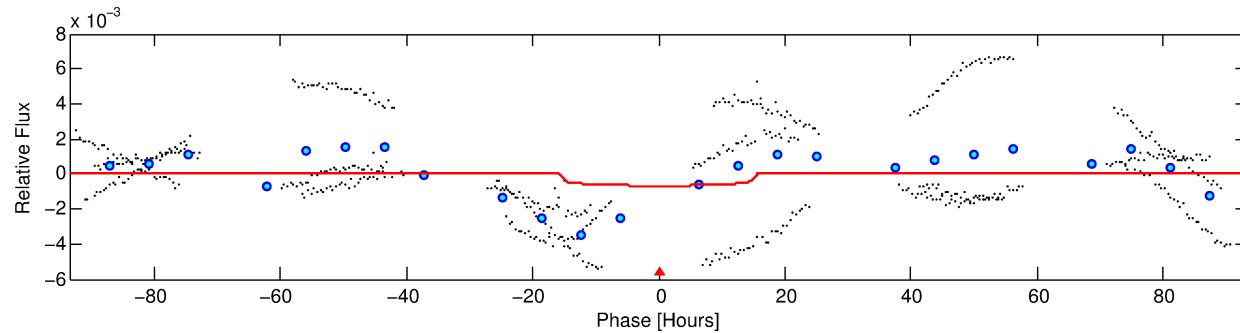
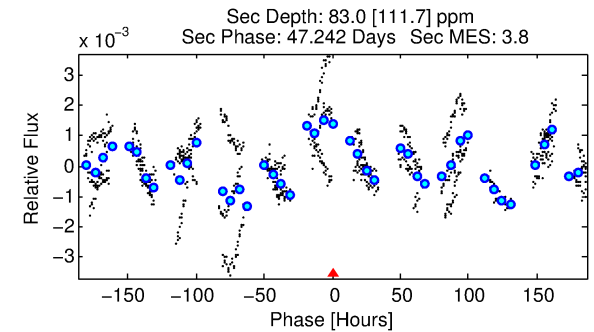
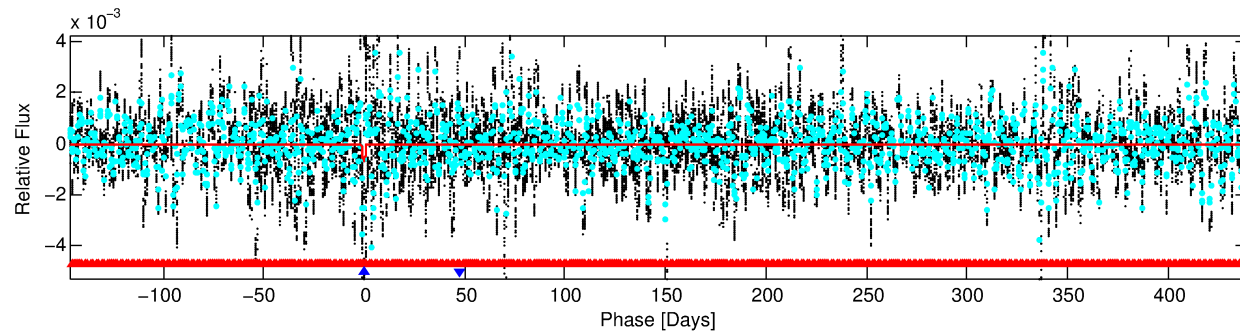
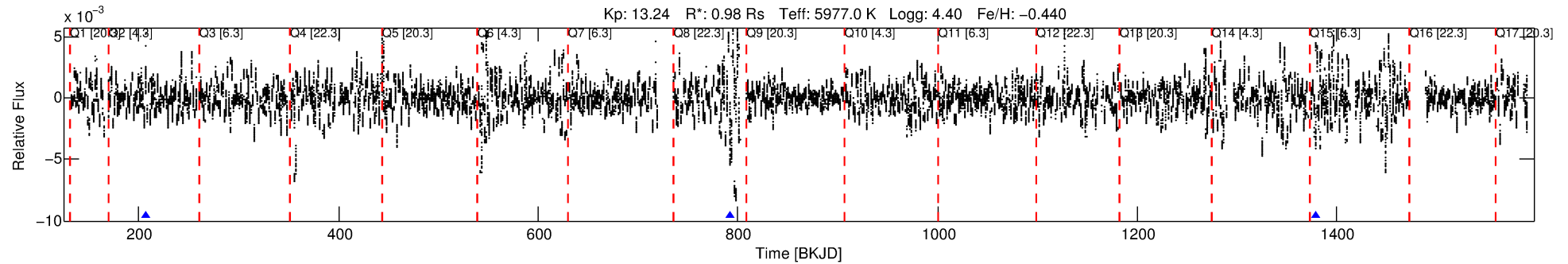
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005215632-02

No Significant Match Found

DV One-Page Summary

KIC: 5215632 Candidate: 2 of 2 Period: 586.242 d



DV Fit Results:

Period = 586.24184 [0.00993] d
Epoch = 206.5900 [0.0133] BKJD
Rp/R* = 0.0237 [0.0044]
a/R* = 147.10 [99.50]
b = 0.04 [16.67]
Seff = 0.64 [0.23]
Teq = 228 [20] K
Rp = 2.54 [0.82] Re
a = 1.3126 [0.3003] AU
Ag = 12146.39 [17458.19] [0.70σ]
Teffp = 3704 [1296] K [2.68σ]

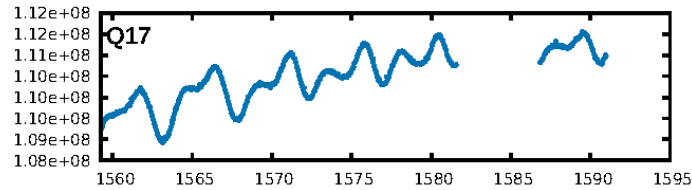
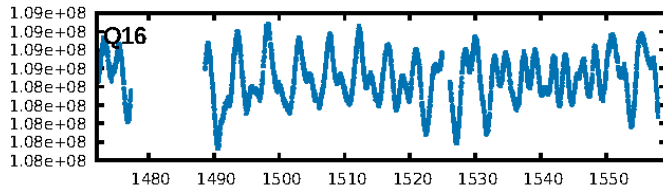
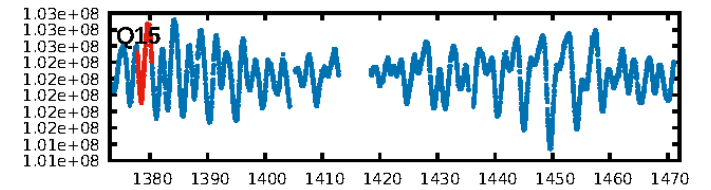
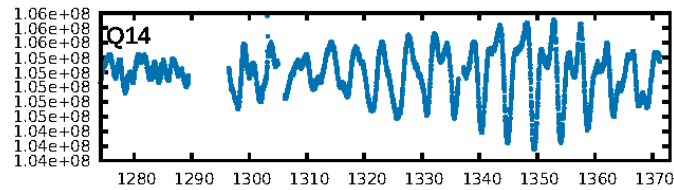
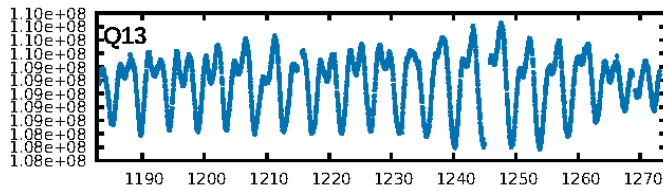
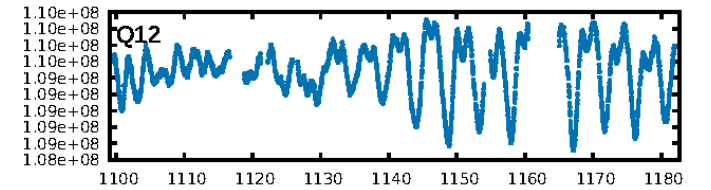
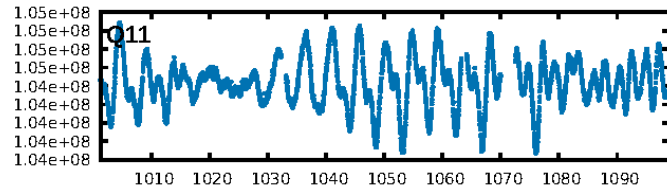
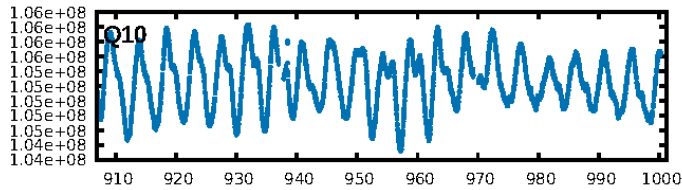
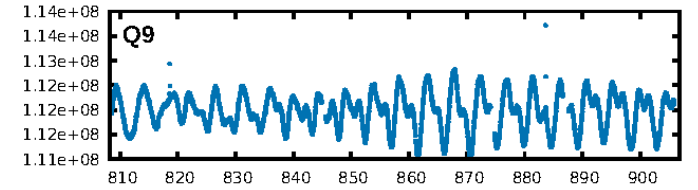
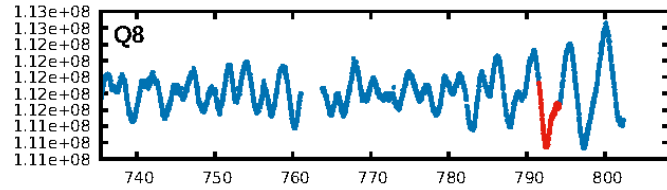
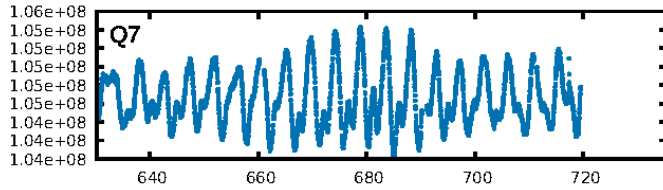
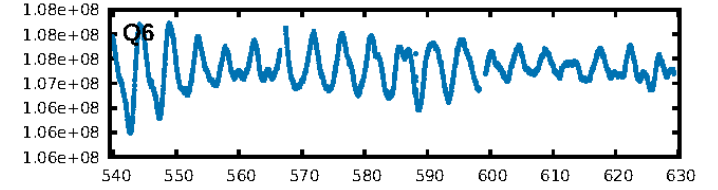
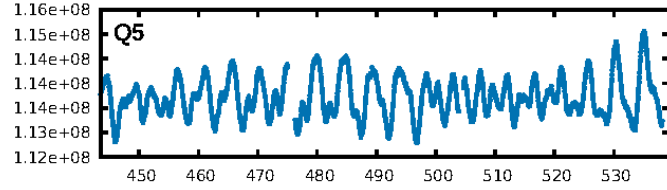
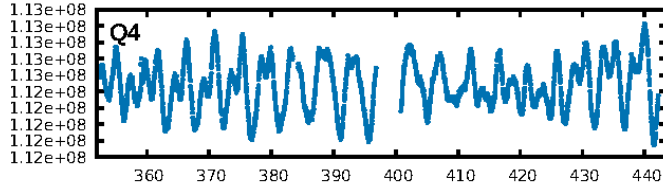
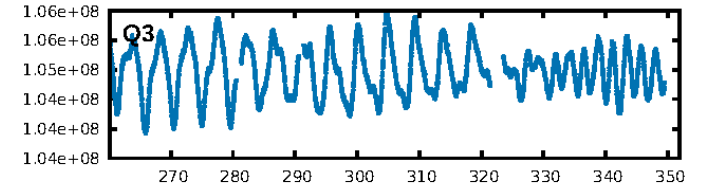
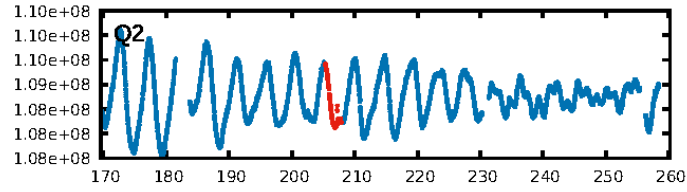
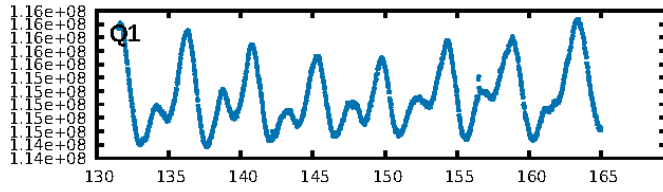
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [444.86σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 77.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.64e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -19.88
Centroid-sig: 0.0%
Centroid-so: 1.217 arcsec [1.90σ]
OotOffset-rm: 0.586 arcsec [2.92σ]
KicOffset-rm: 0.377 arcsec [1.76σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/3]

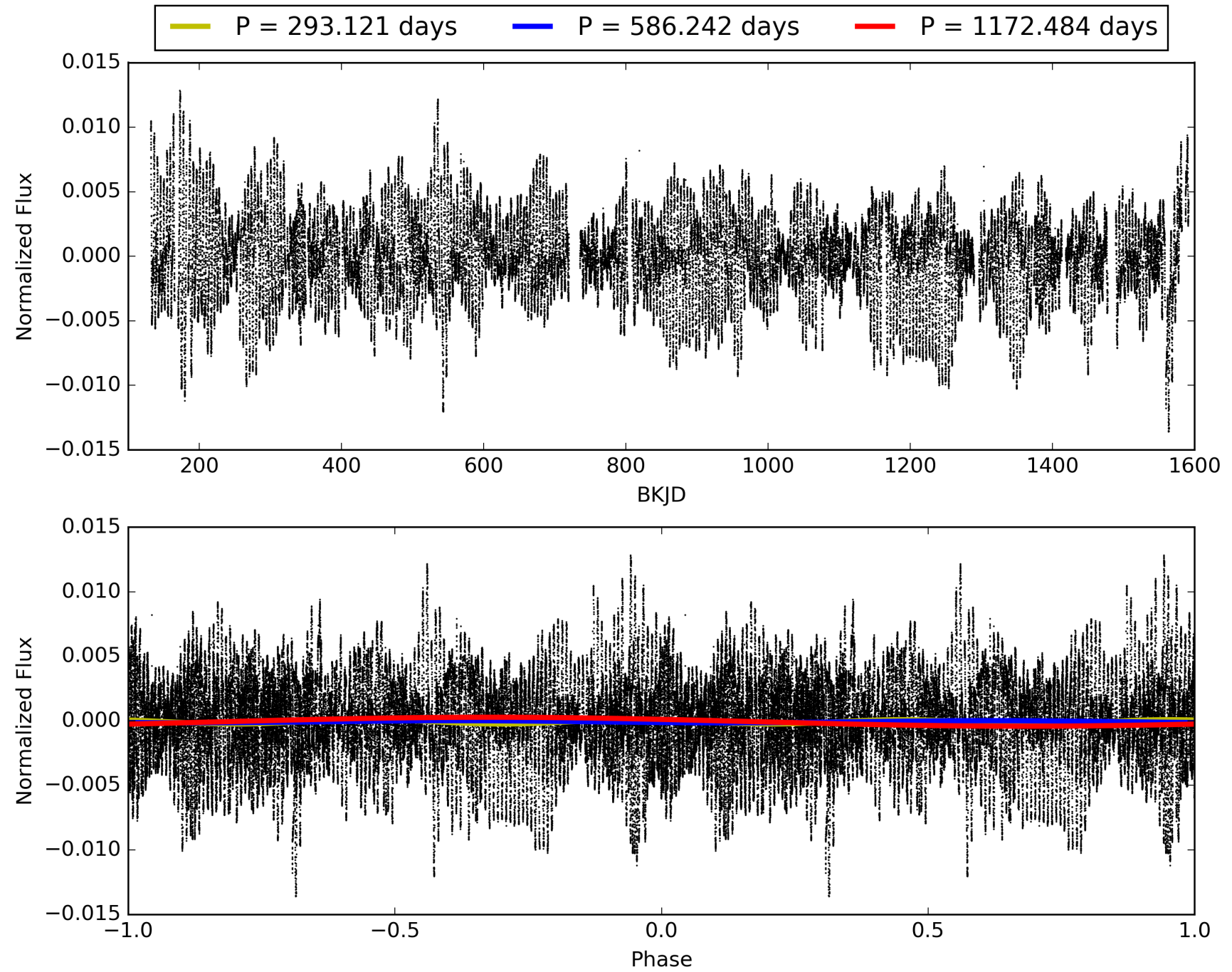
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:54:41 Z

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

TCE 005215632-02, PDC Light Curves

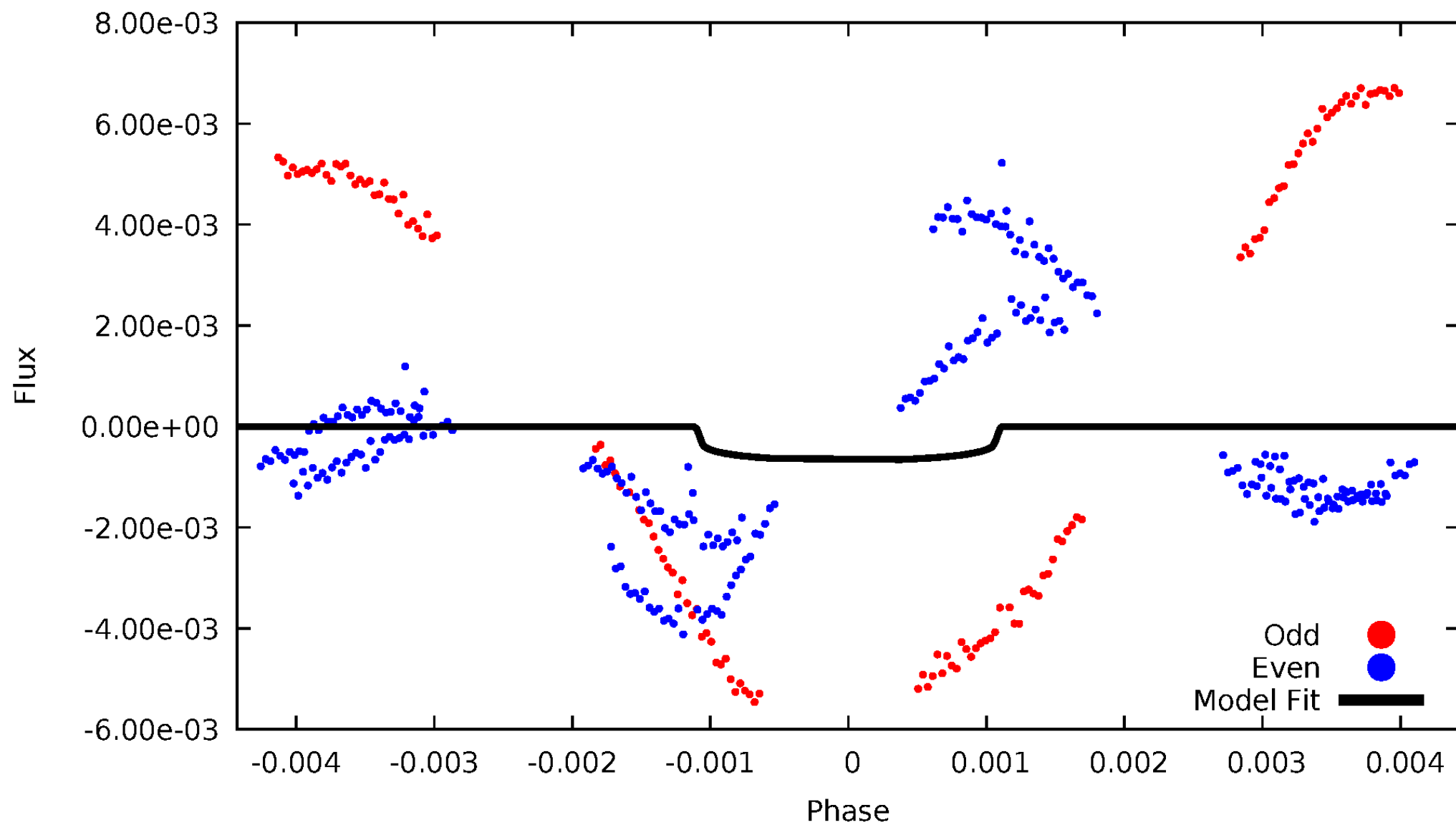


TCE 005215632-02



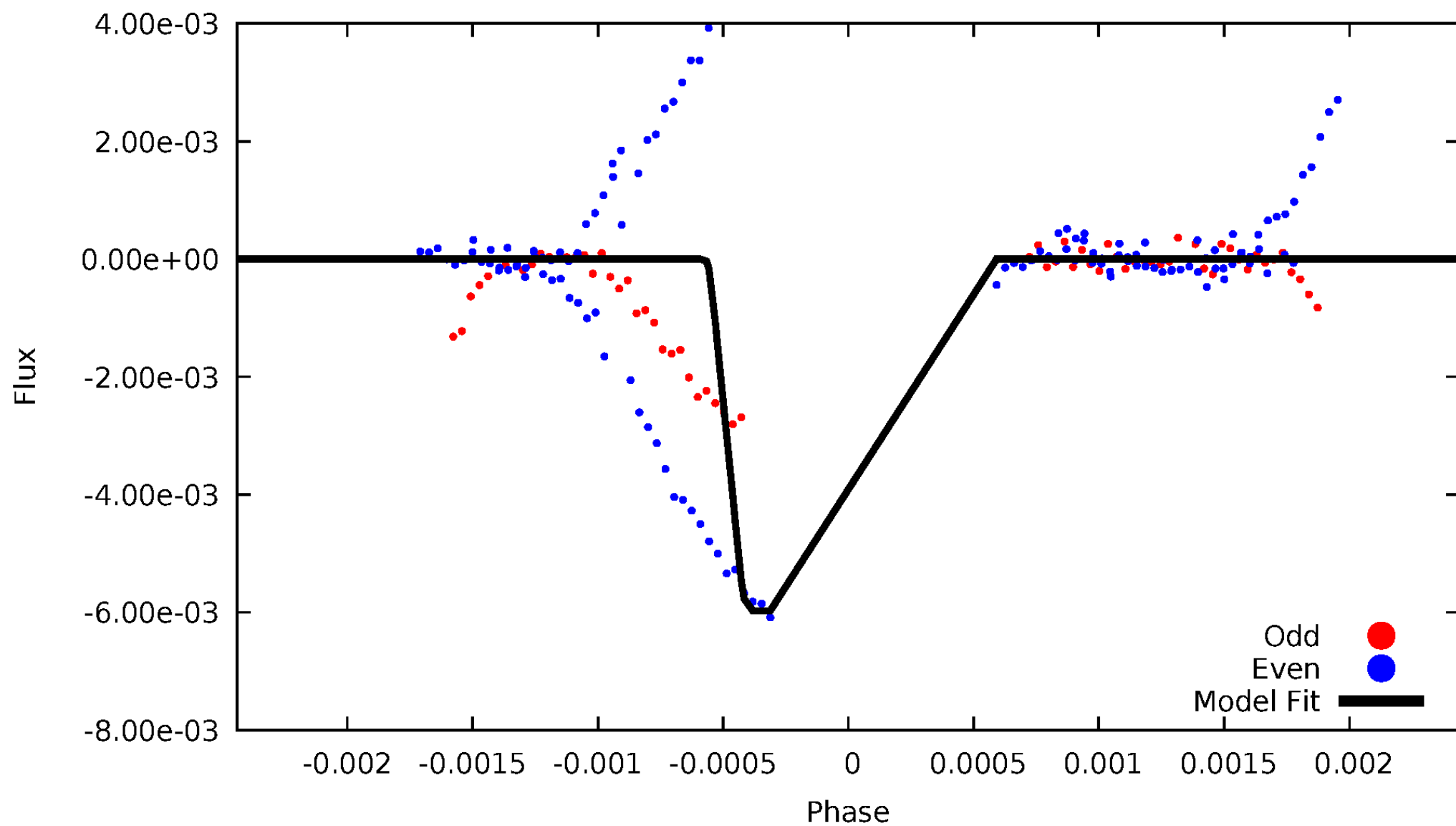
DV Odd/Even

TCE 005215632-02



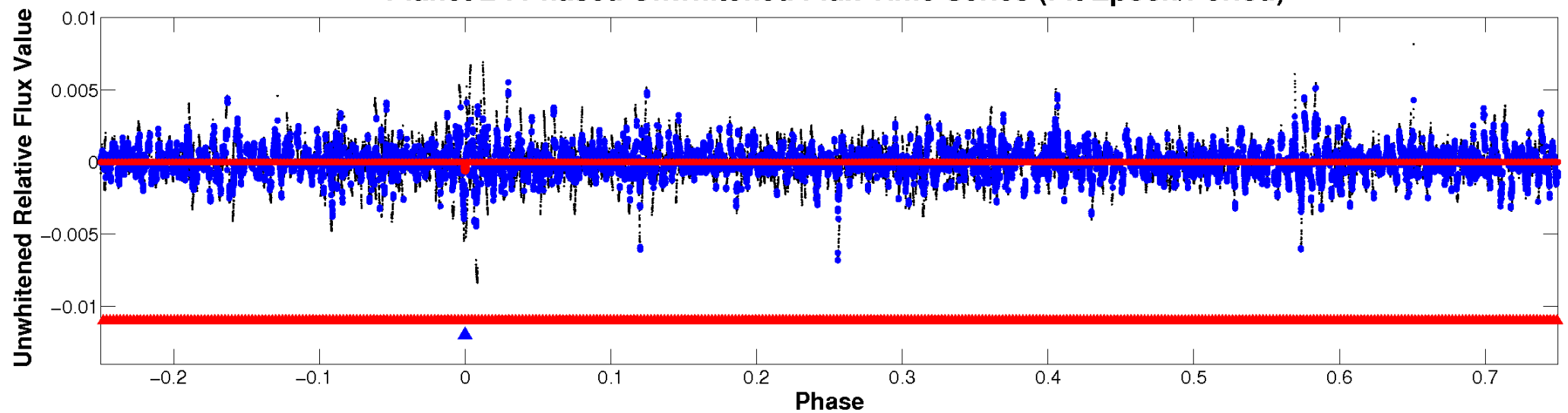
ALT Odd/Even

TCE 005215632-02

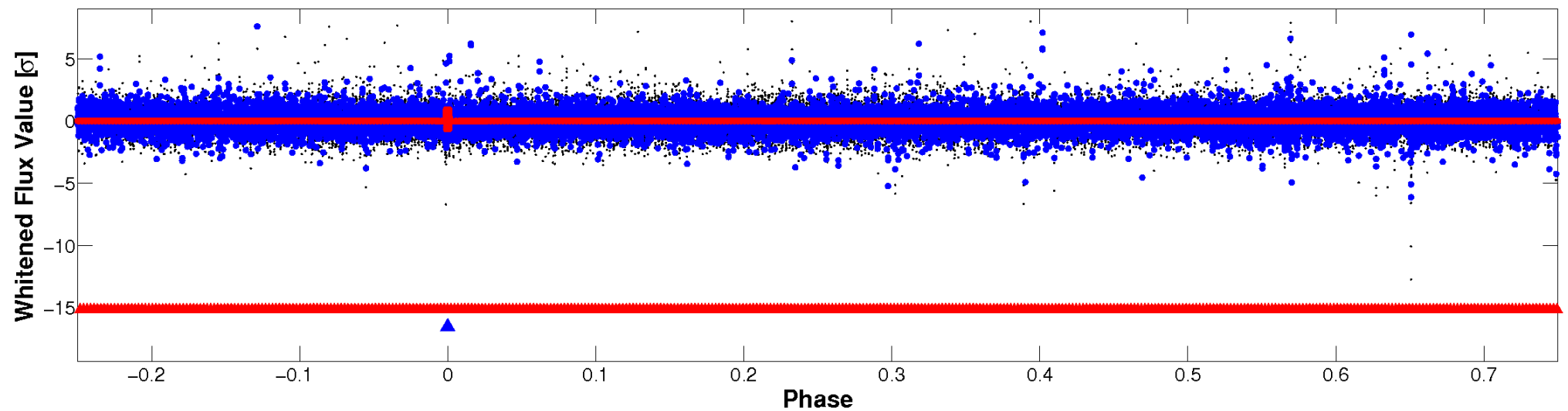


Non-Whitened Vs. Whitened Light Curve

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

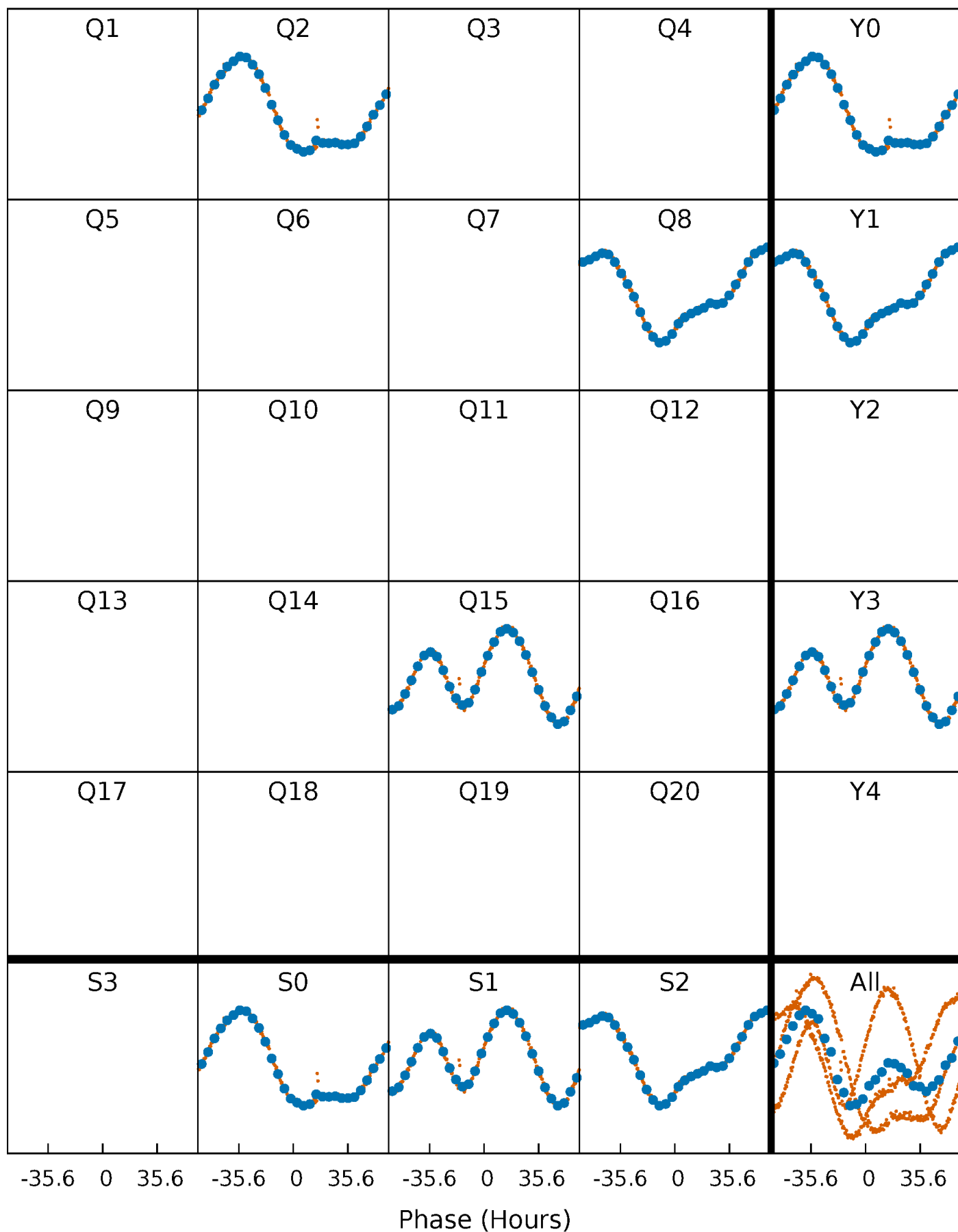


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



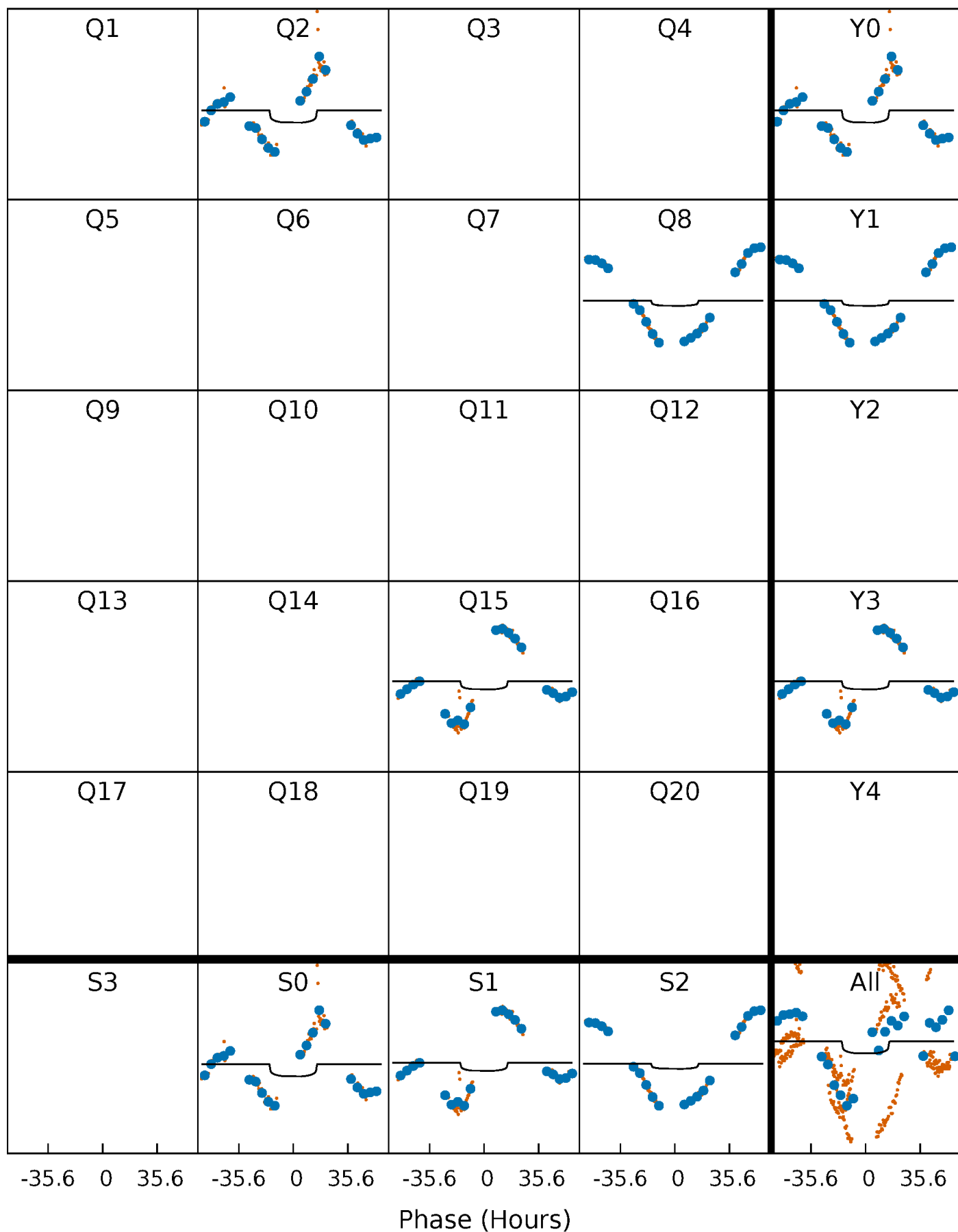
PDC Quarter-Phased Transit Curves

TCE 005215632-02 P=586.241844 Days $T_0=206.589965$ (BKJD)



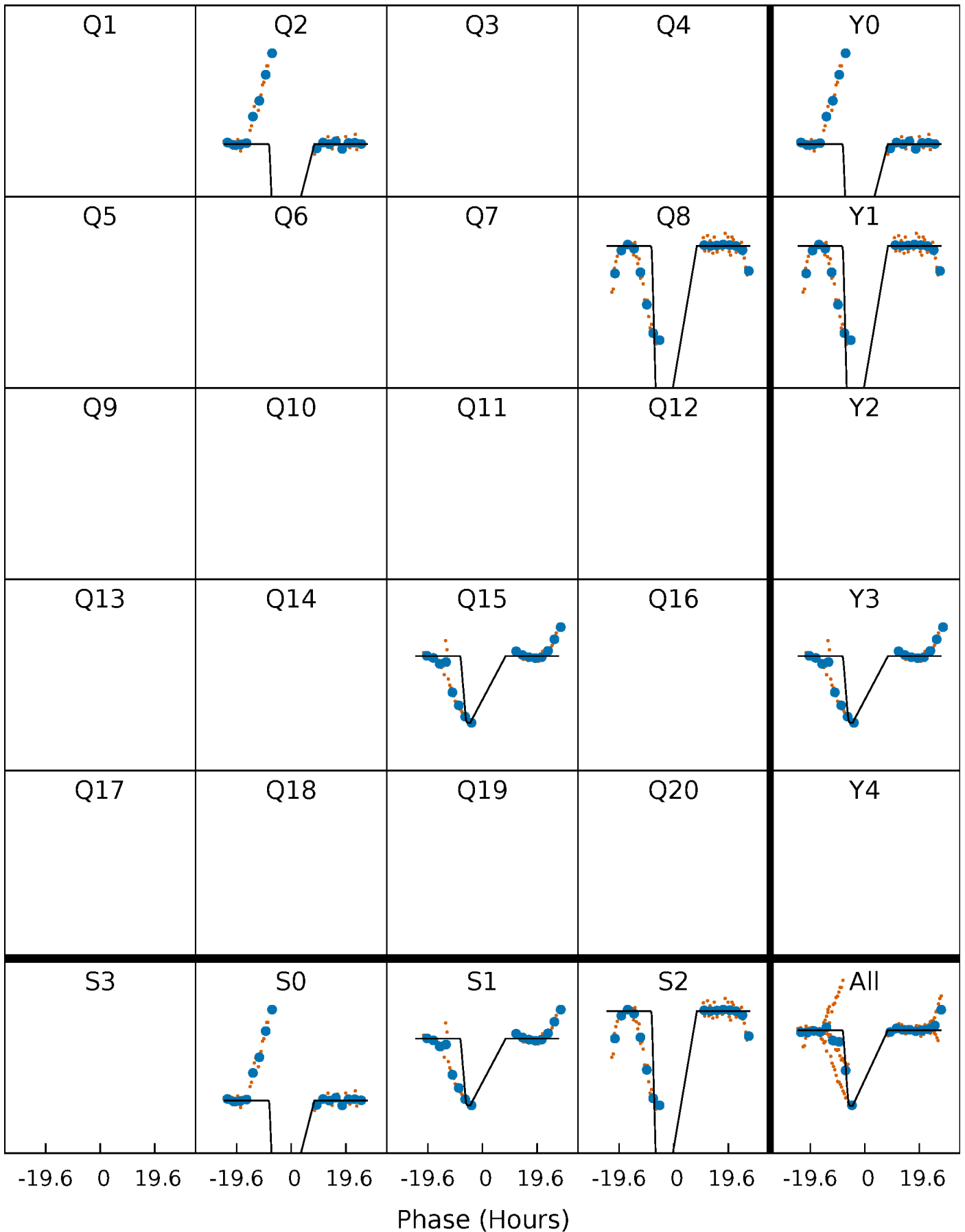
DV Quarter-Phased Transit Curves

TCE 005215632-02 P=586.241844 Days $T_0=206.589965$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

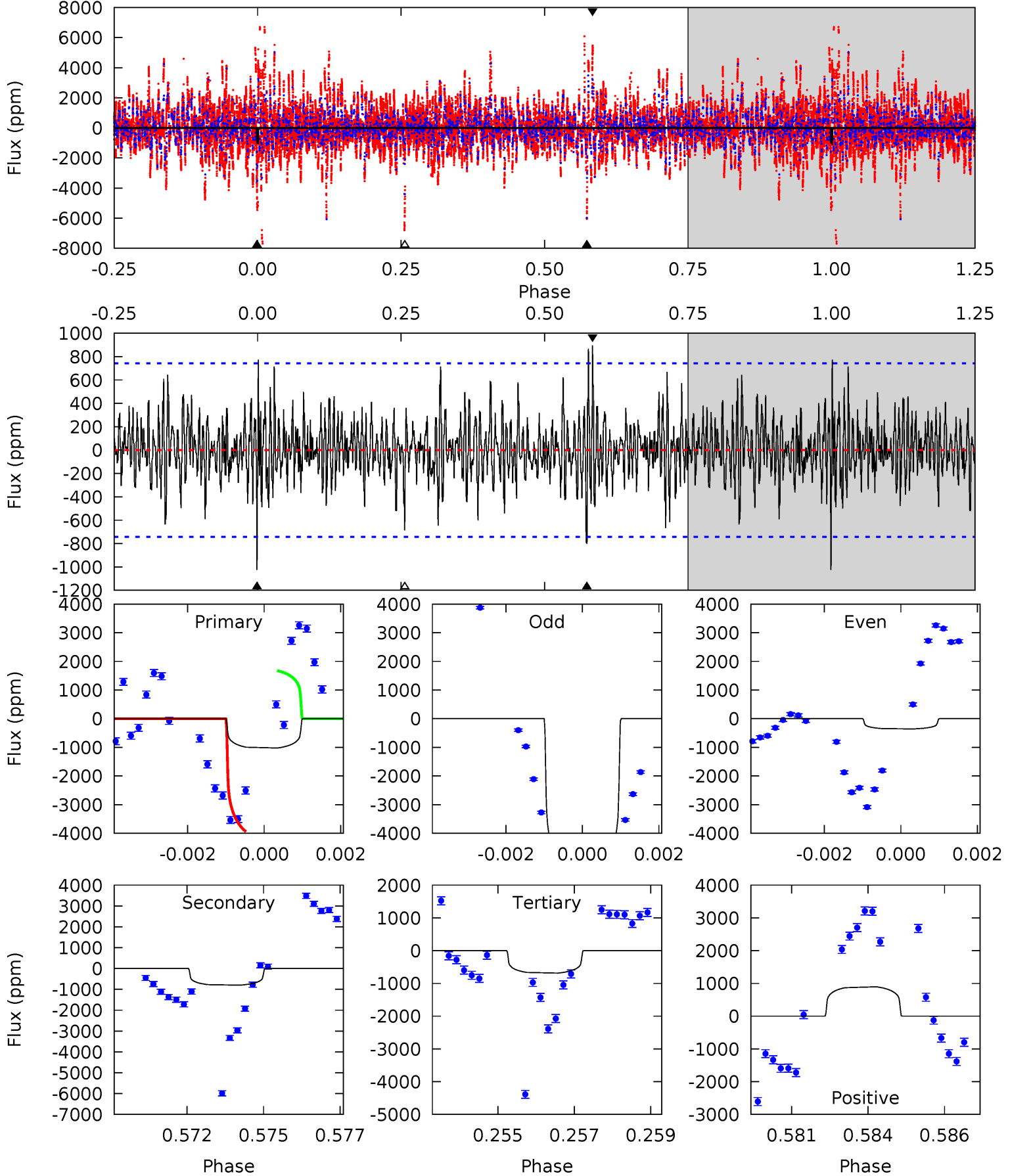
TCE 005215632-02 P=586.238836 Days $T_0=206.465655$ (BKJD)



DV Model-Shift Uniqueness Test

005215632-02, P = 586.241844 Days, E = 206.589965 Days

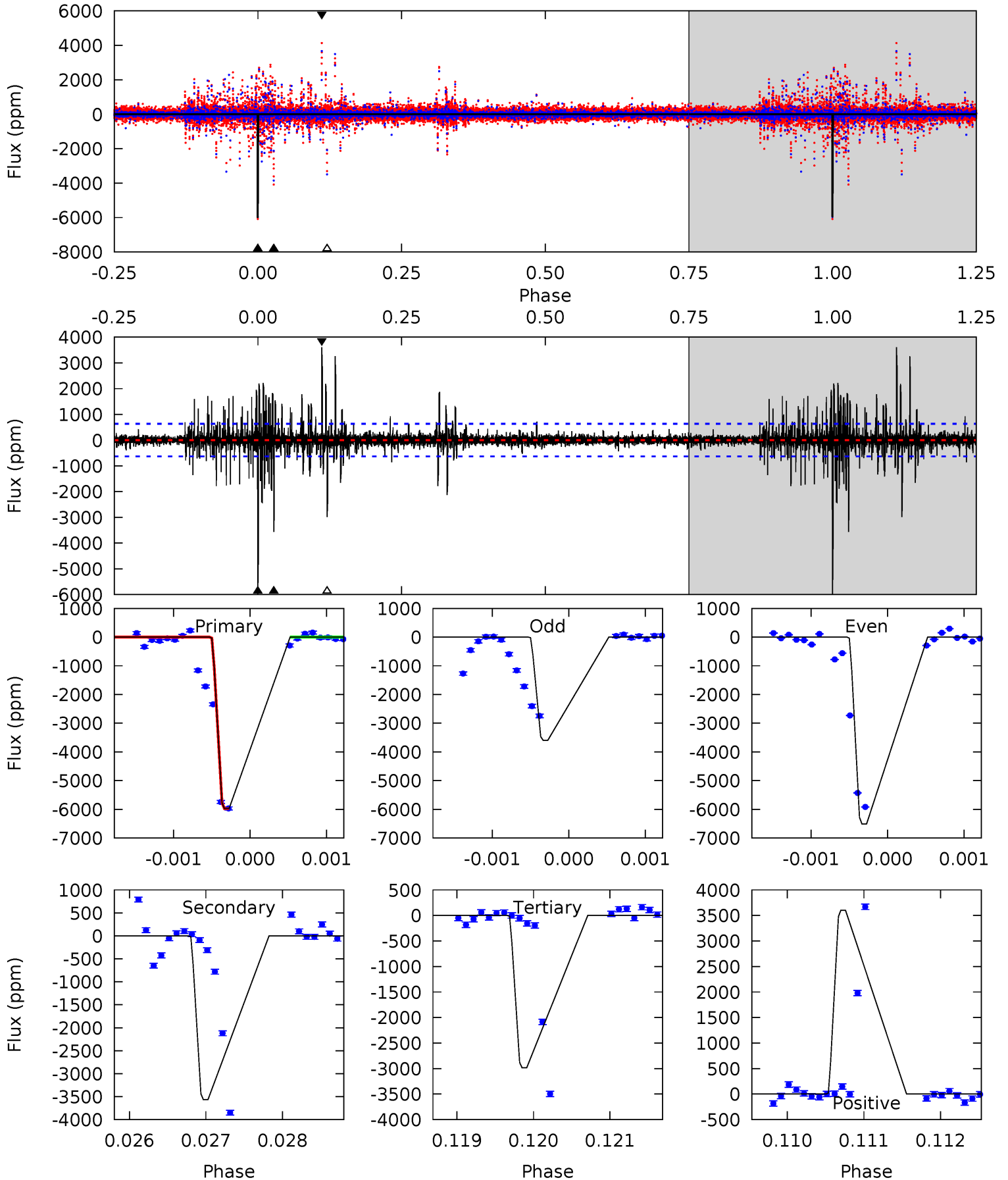
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.32	5.72	4.90	6.40	5.31	3.06	1.56	2.42	0.93	0.82	-0.68	18.5	-6.14	0.47	8.08



Alt Model-Shift Uniqueness Test

005215632-02, P = 586.238836 Days, E = 206.465655 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.3	30.6	25.6	30.9	5.43	3.26	1.62	25.7	20.4	4.98	-0.33	18.7	0	0.38	0



Stellar Parameters For KIC 005215632

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5977^{+161}_{-161}	$4.396^{+0.128}_{-0.192}$	$-0.440^{+0.300}_{-0.300}$	$0.983^{+0.258}_{-0.150}$	$0.876^{+0.120}_{-0.080}$	$1.299^{+0.842}_{-0.626}$
	+3%/-3%	+3%/-4%	+68%/-68%	+26%/-15%	+14%/-9%	+65%/-48%
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 005215632-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-800 ± 140	$2.58^{+0.66}_{-0.49}$	321^{+24}_{-17}	6516^{+897}_{-616}	112981^{+65567}_{-41979}
Alt.	-3563 ± 117	$8.40^{+1.27}_{-0.93}$	321^{+22}_{-17}	5307^{+196}_{-185}	48003^{+12828}_{-11051}

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

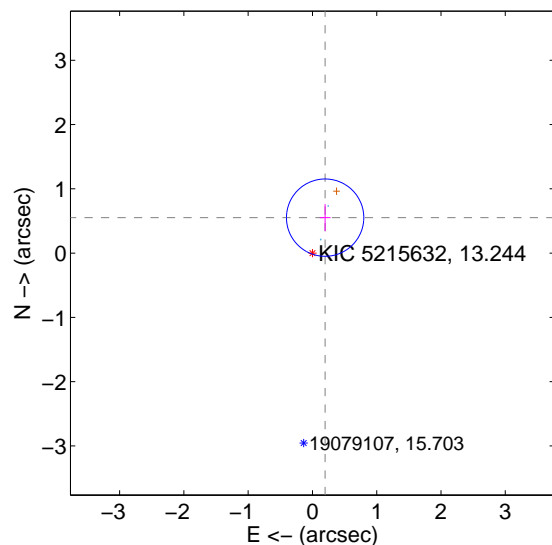
Supplemental centroid analysis for 005215632-02. Kepler magnitude: 13.24. Transit SNR 4.52

There are 2 quarters with good PRF difference image offsets

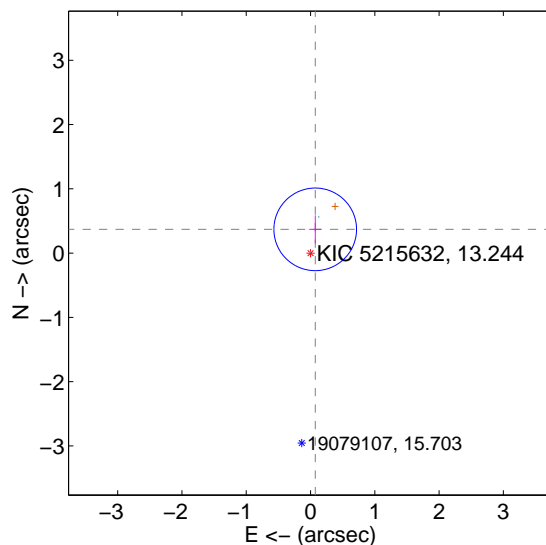
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.586 ± 0.200	2.92	-0.197 ± 0.083	0.552 ± 0.211
PRF-fit source offset from KIC position	0.377 ± 0.214	1.76	-0.073 ± 0.094	0.370 ± 0.218
photometric centroid source offset	1.22 ± 0.64	1.90	0.19 ± 0.54	1.20 ± 0.64

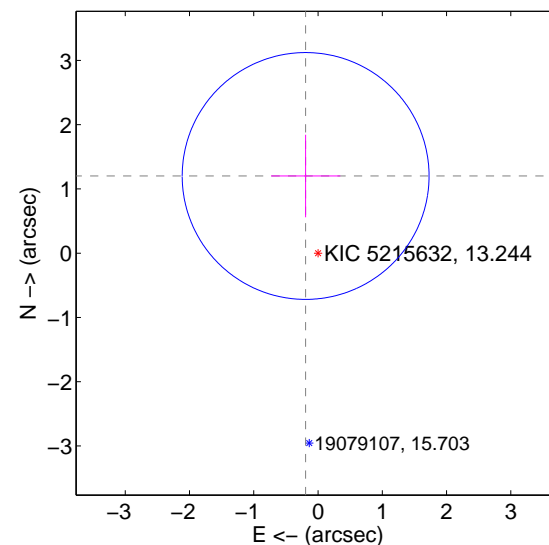
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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

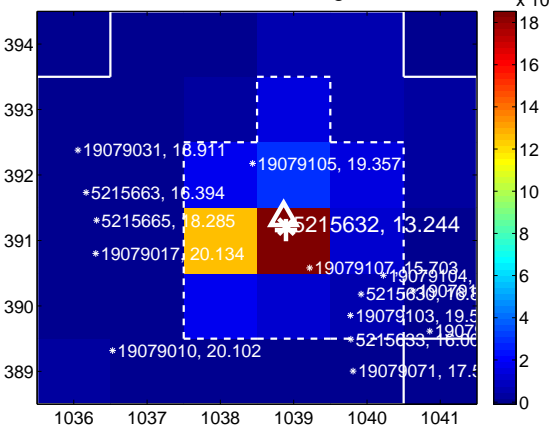
Q1 no difference image



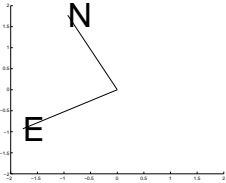
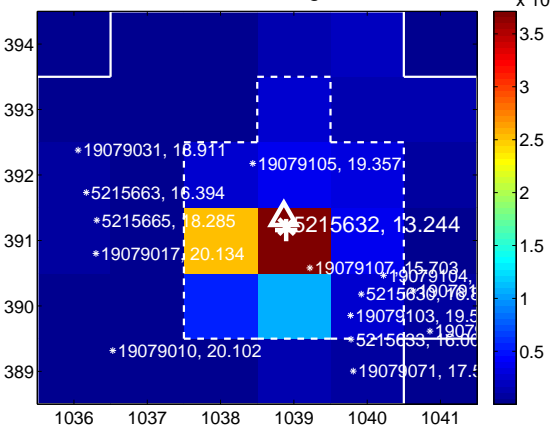
Q1 no OOT image



Q2 difference image



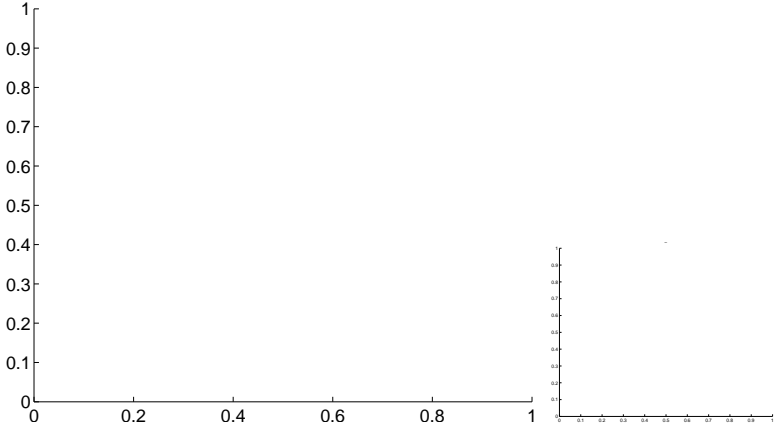
Q2 OOT image



Q3 no difference image



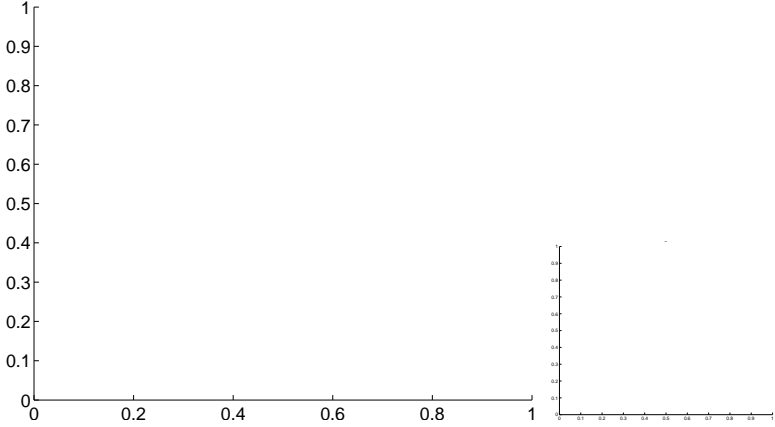
Q3 no OOT image



Q4 no difference image



Q4 no OOT image



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

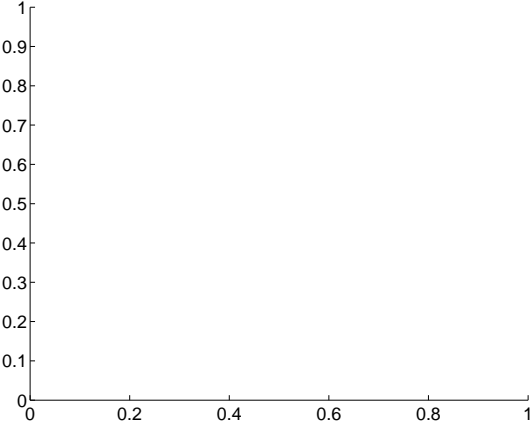
Q5 no difference image



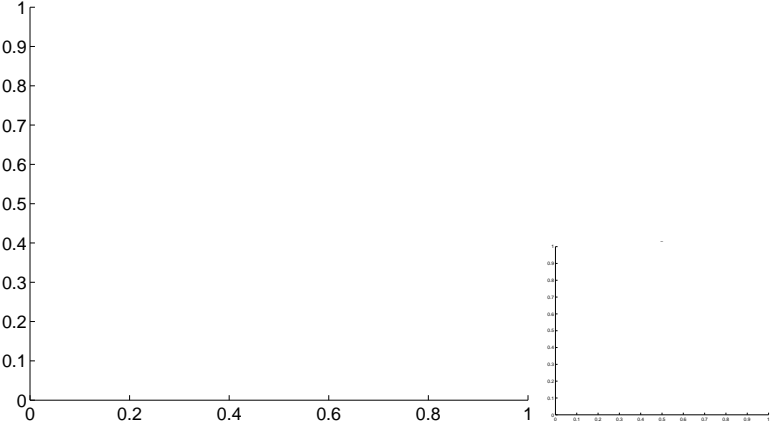
Q5 no OOT image



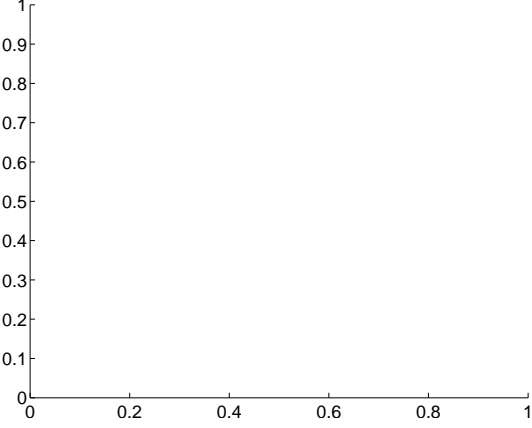
Q6 no difference image



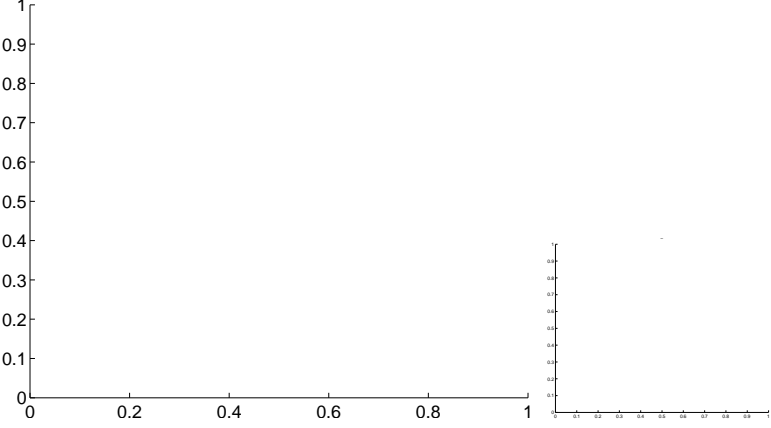
Q6 no OOT image



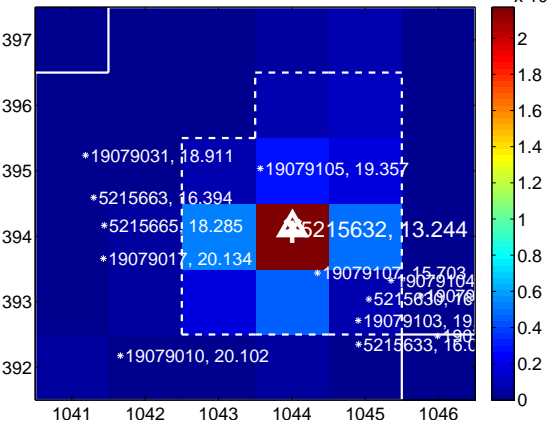
Q7 no difference image



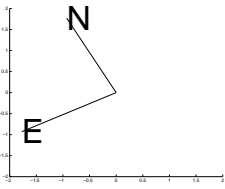
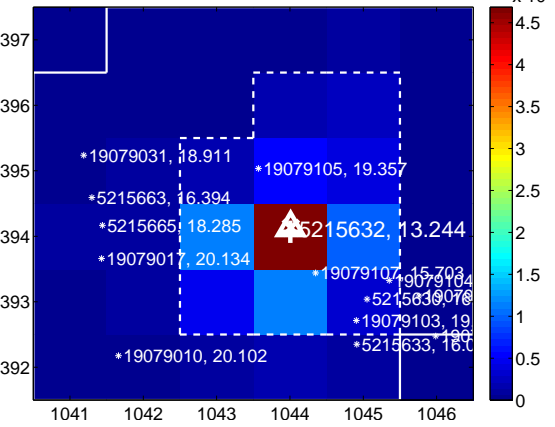
Q7 no OOT image



Q8 difference image



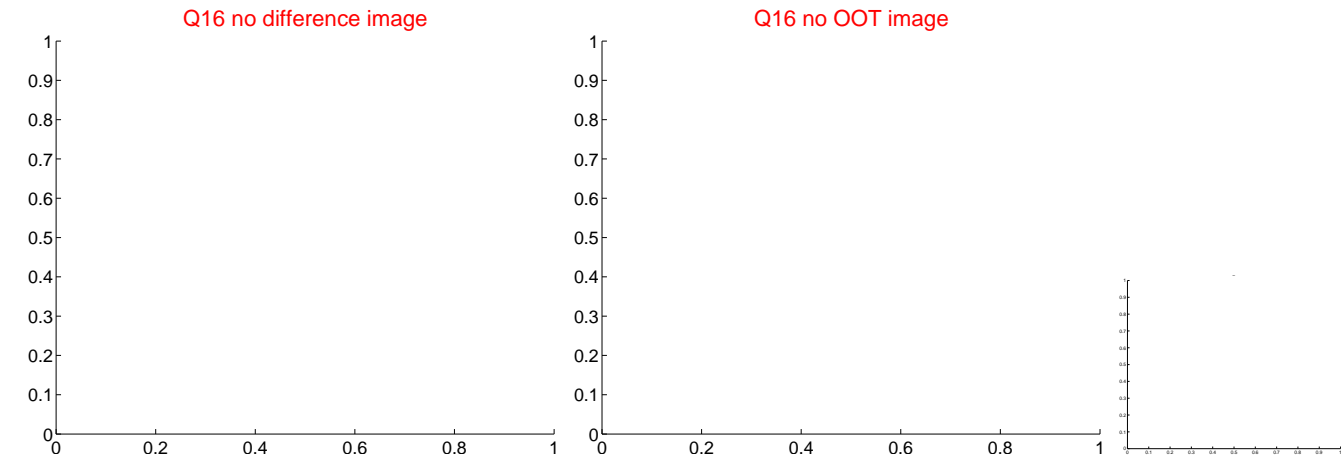
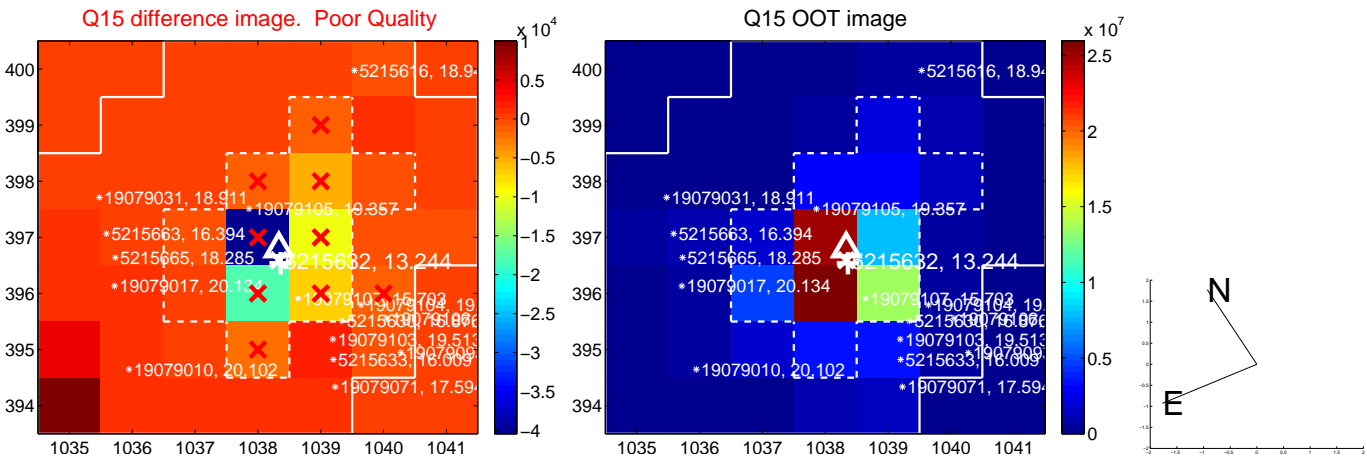
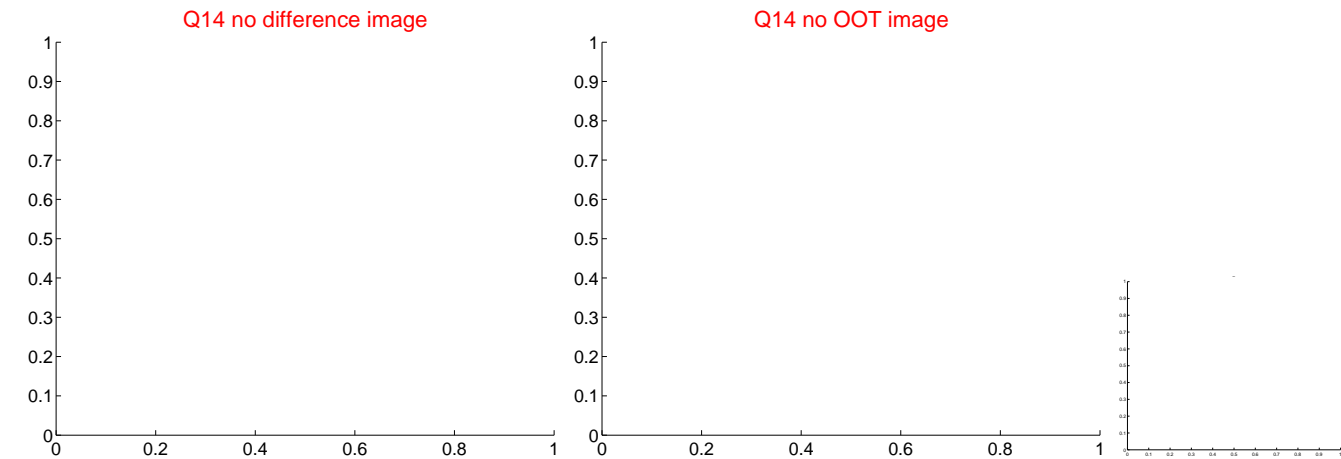
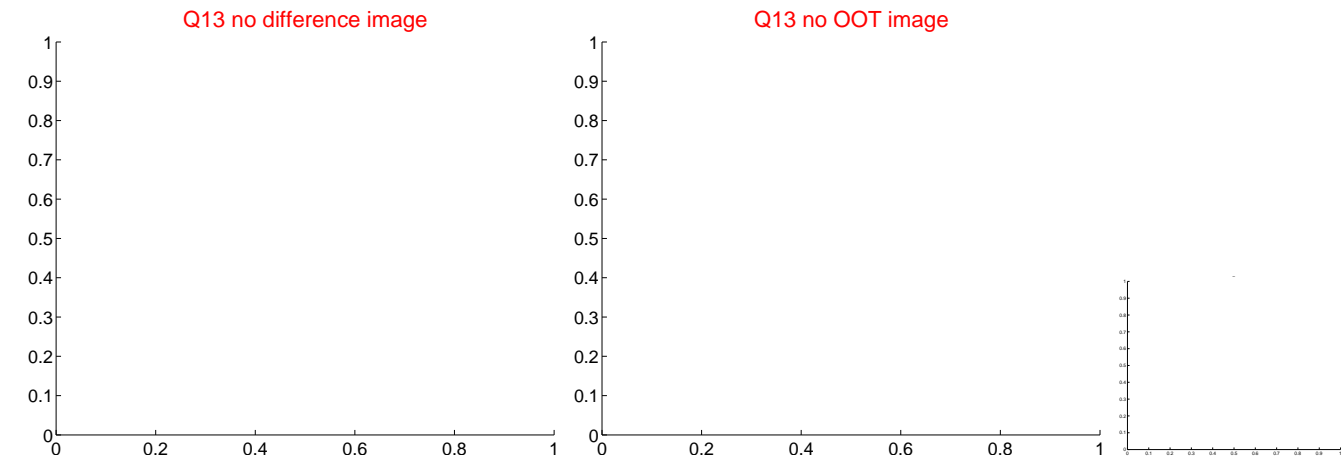
Q8 OOT image



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



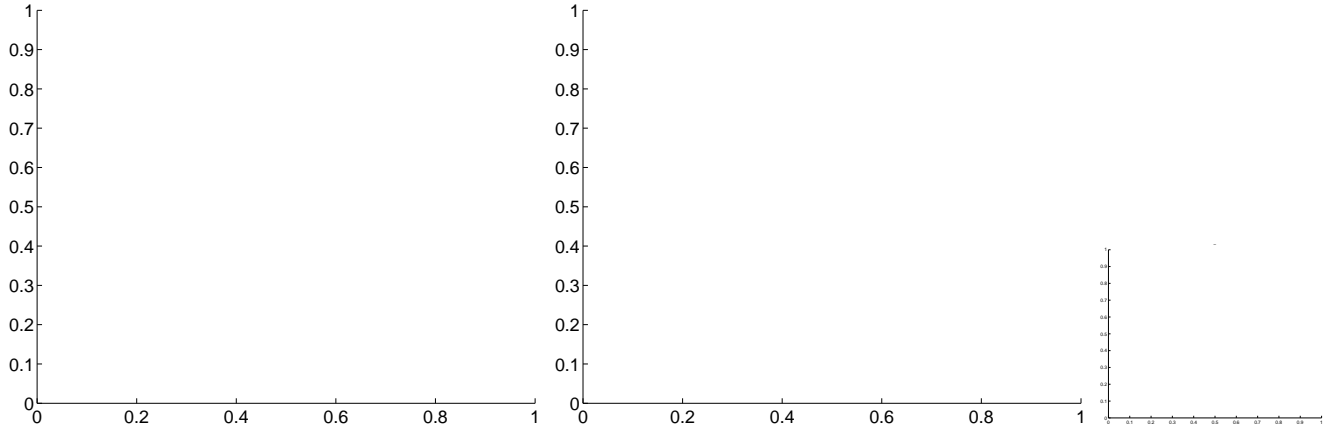
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



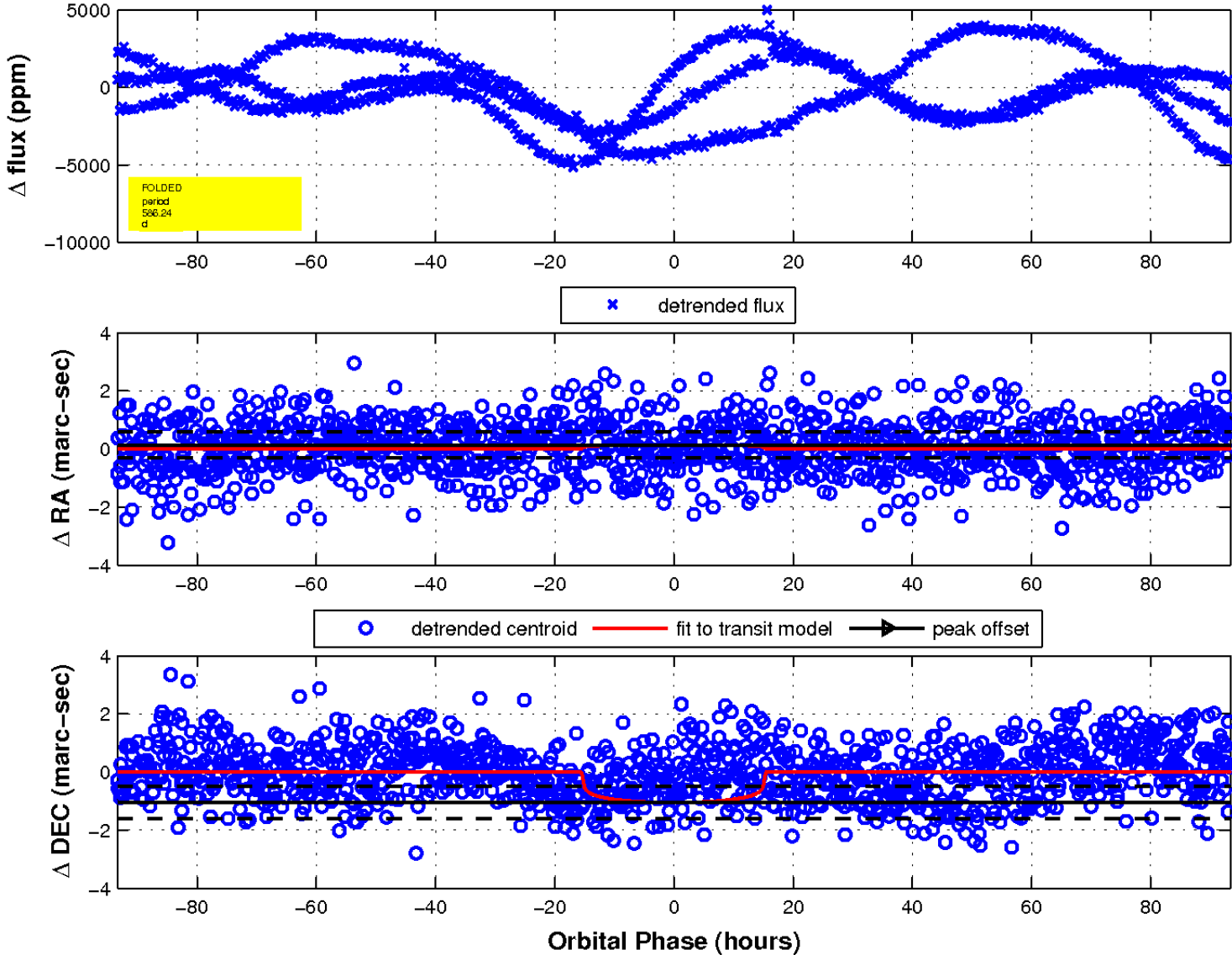
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

