

KIC 005019587

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})
005019587-01	OBS	No	0.639217	131.714820	70.0	2.030	10.7	11.1	8.23	4808	8.43	0.00
005019587-02	OBS	No	0.639226	131.637357	112.4	6.542	8.8	10.1	8.23	4808	9.30	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005019587-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005019587-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—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.

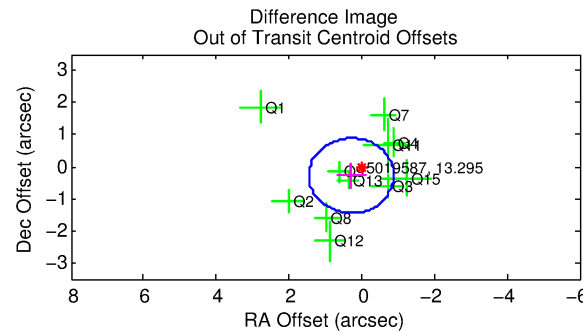
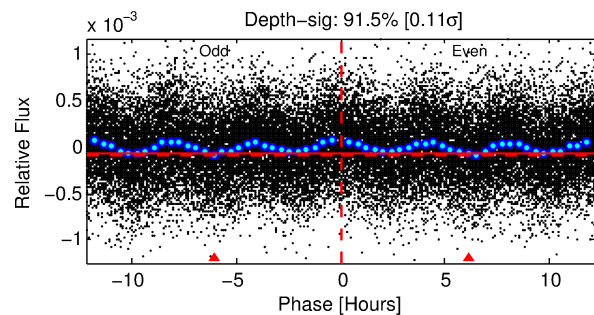
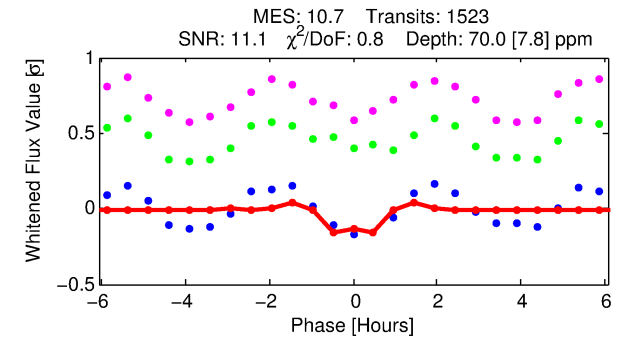
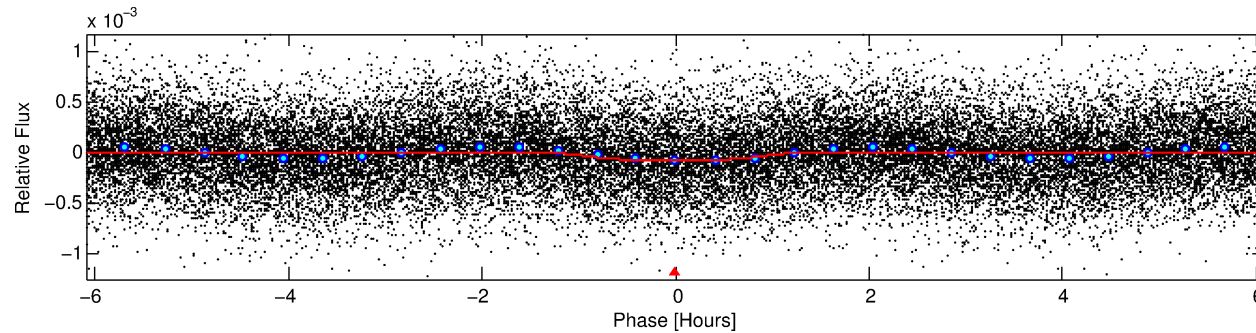
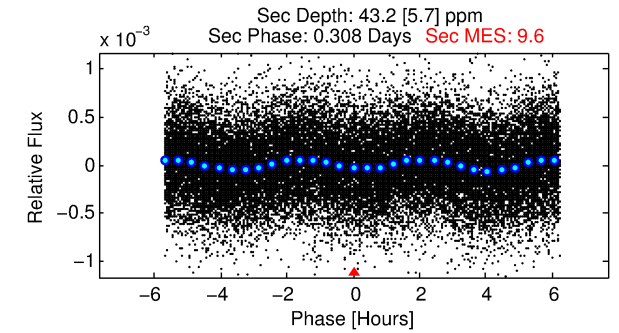
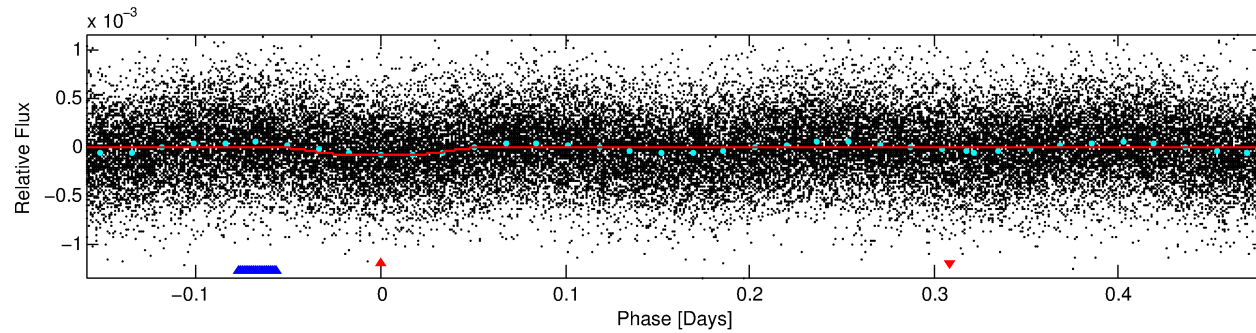
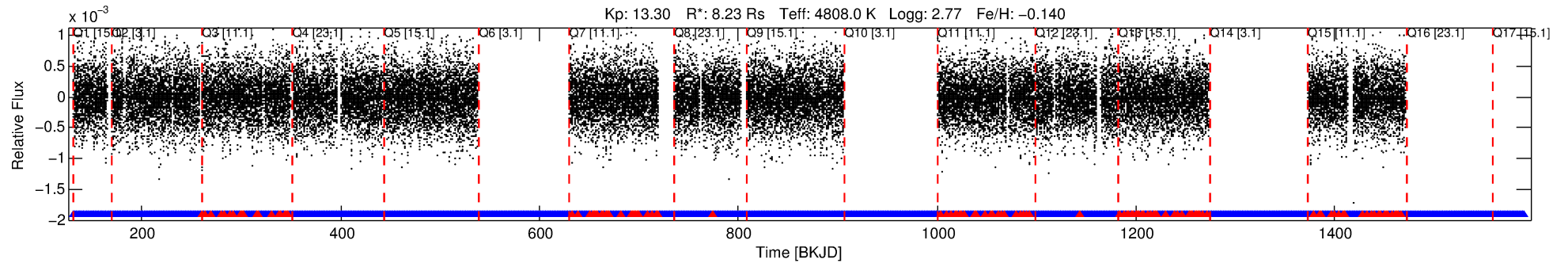
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005019587-01

No Significant Match Found

DV One-Page Summary

KIC: 5019587 Candidate: 1 of 2 Period: 0.639 d



DV Fit Results:

Period = 0.63922 [0.00001] d
Epoch = 131.7148 [0.0013] BKJD
Rp/R* = 0.0094 [0.0032]
a/R* = 1.45 [1.00]
b = 0.90 [0.29]
Seff = N/A
Teq = N/A
Rp = 8.43 [3.13] Re
a = N/A
Ag = N/A
Teffp = N/A

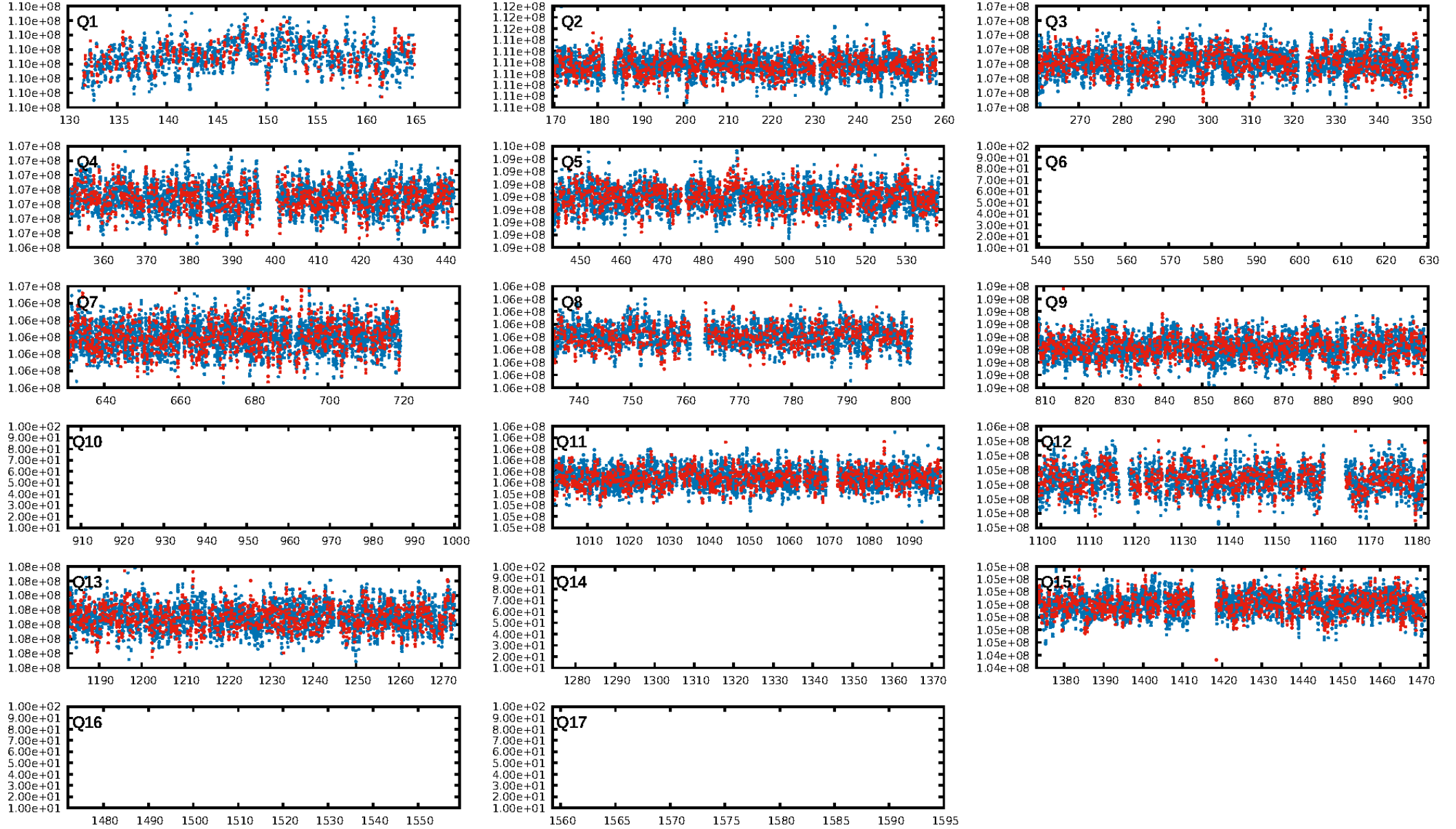
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.91 [1339/1470]
GhostDiagnostic-chr: -6.079
Centroid-sig: 64.1%
Centroid-so: 0.401 arcsec [0.85σ]
OotOffset-rm: 0.406 arcsec [1.04σ]
KicOffset-rm: 0.419 arcsec [1.10σ]
OotOffset-st: 1/4/3/3 [11]
KicOffset-st: 1/4/3/3 [11]
DiffImageQuality-fgm: 0.91 [10/11]
DiffImageOverlap-fno: 0.00 [0/12]

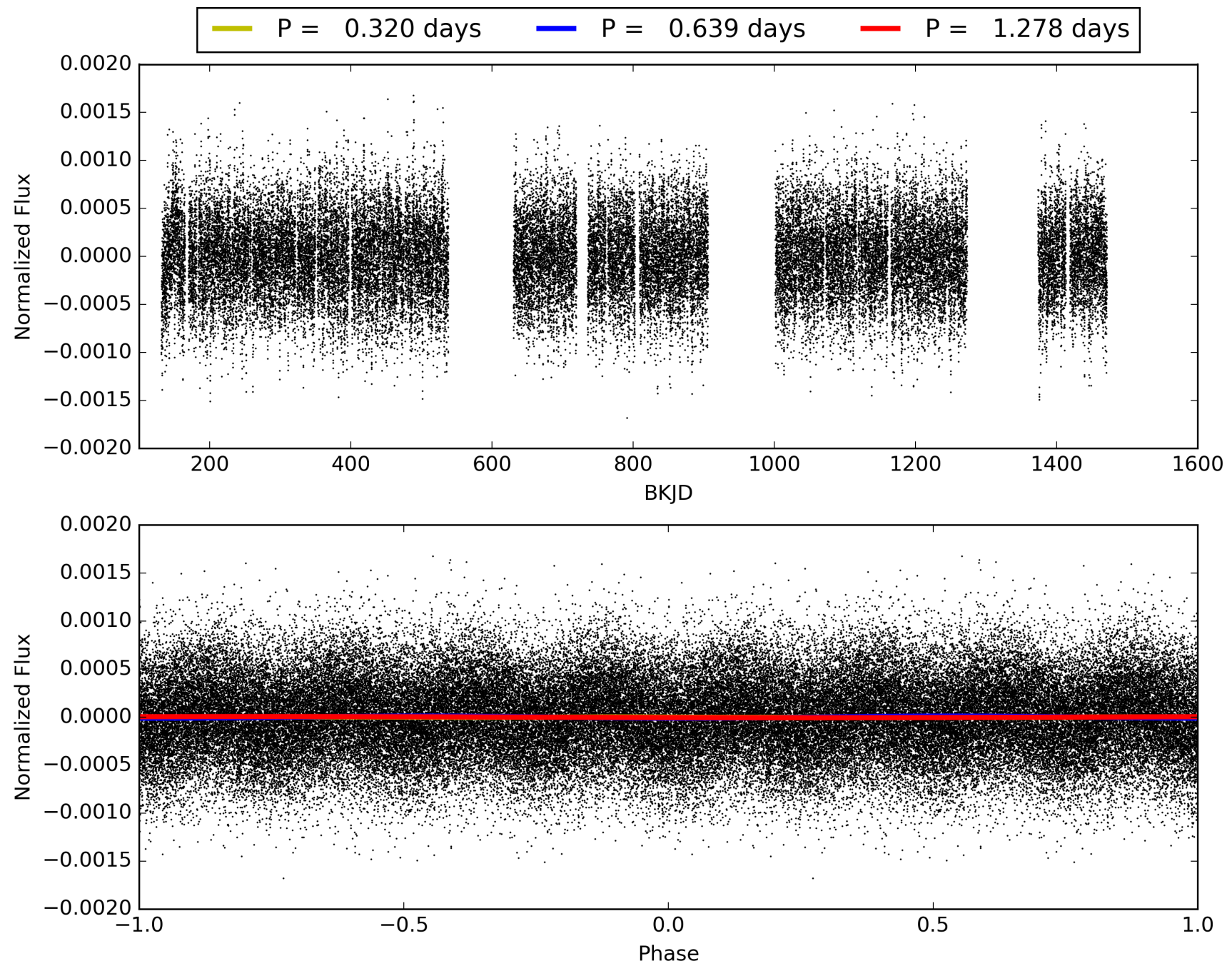
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:03:50 Z

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

TCE 005019587-01, PDC Light Curves

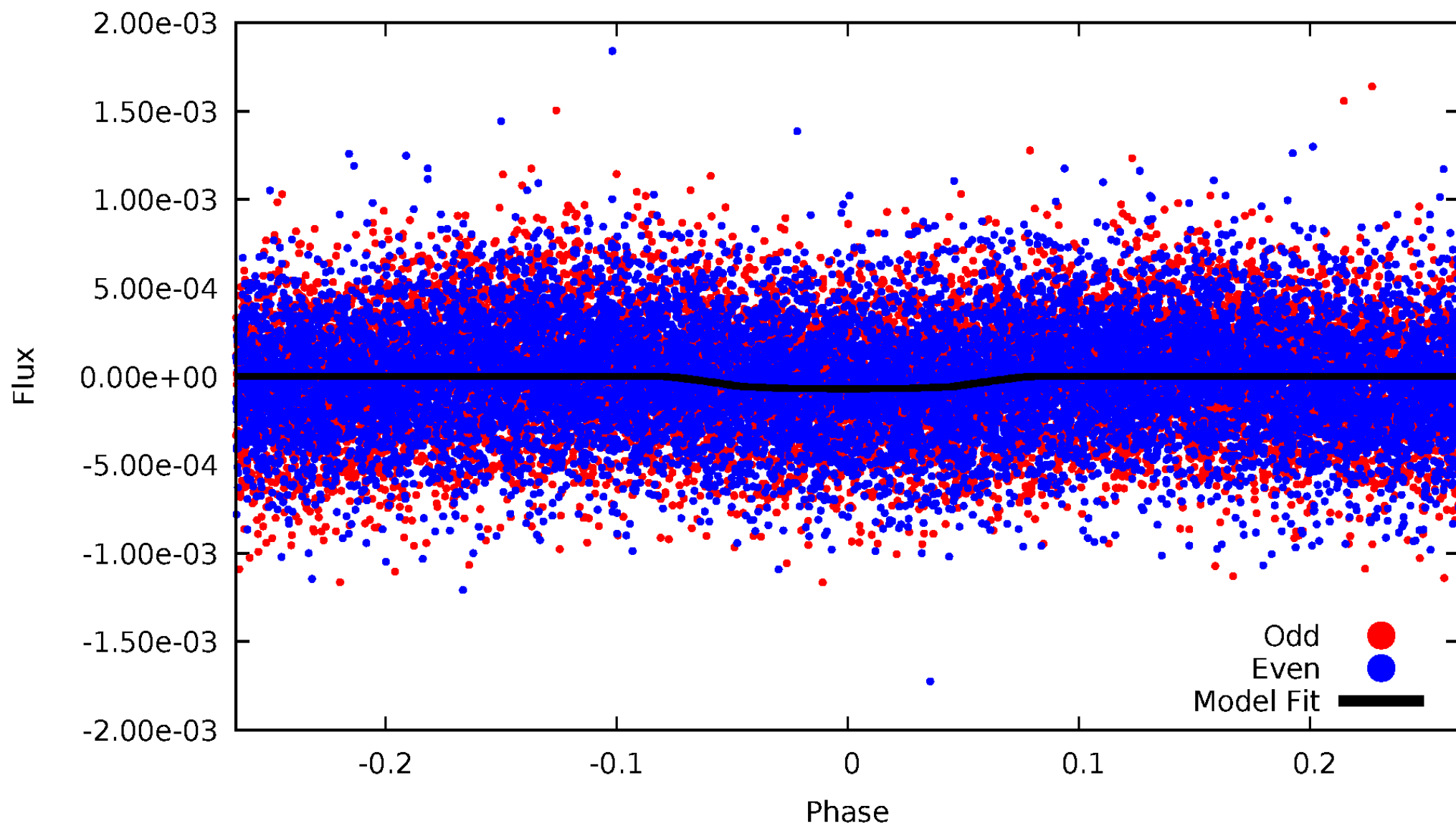


TCE 005019587-01



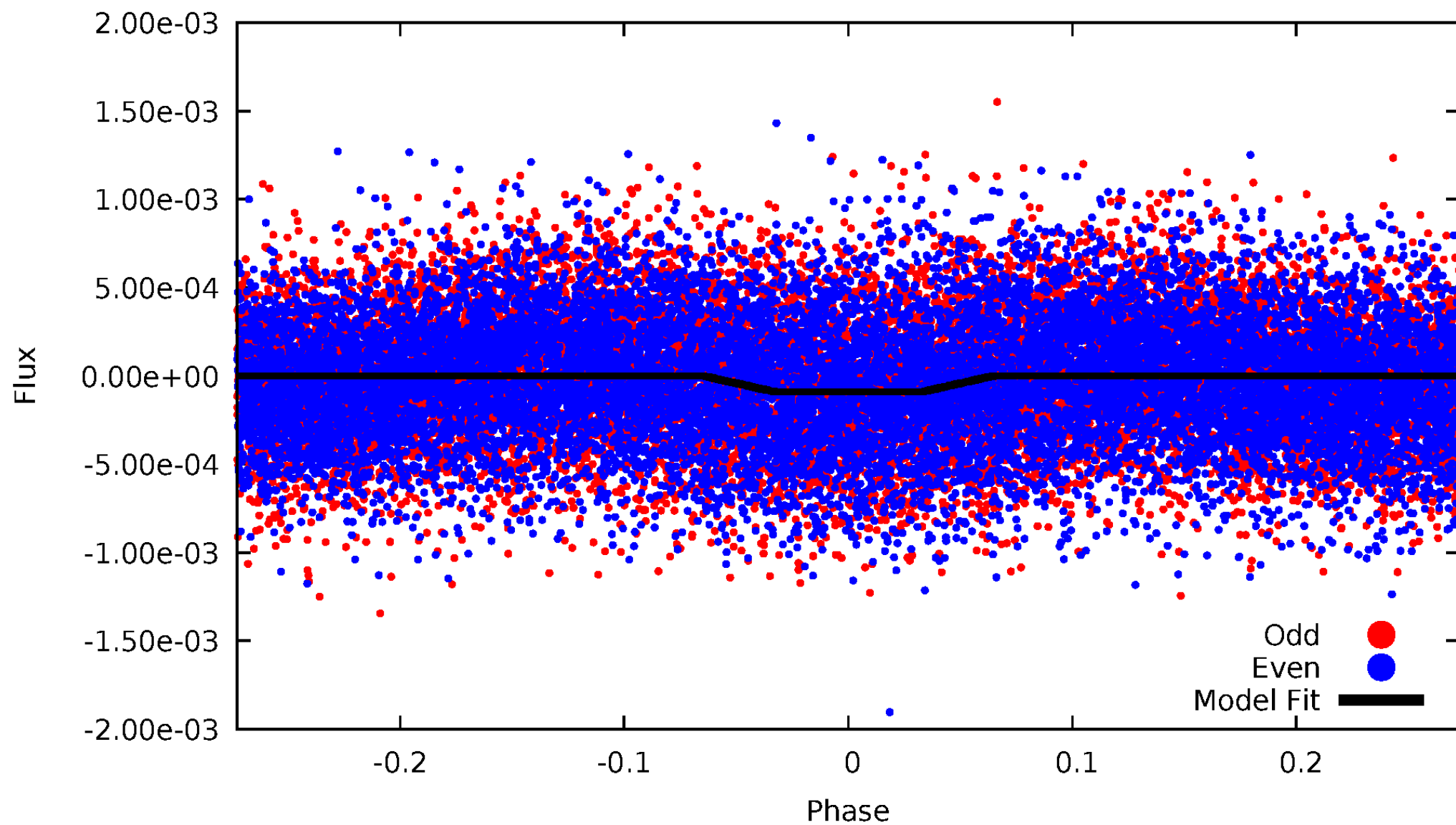
DV Odd/Even

TCE 005019587-01



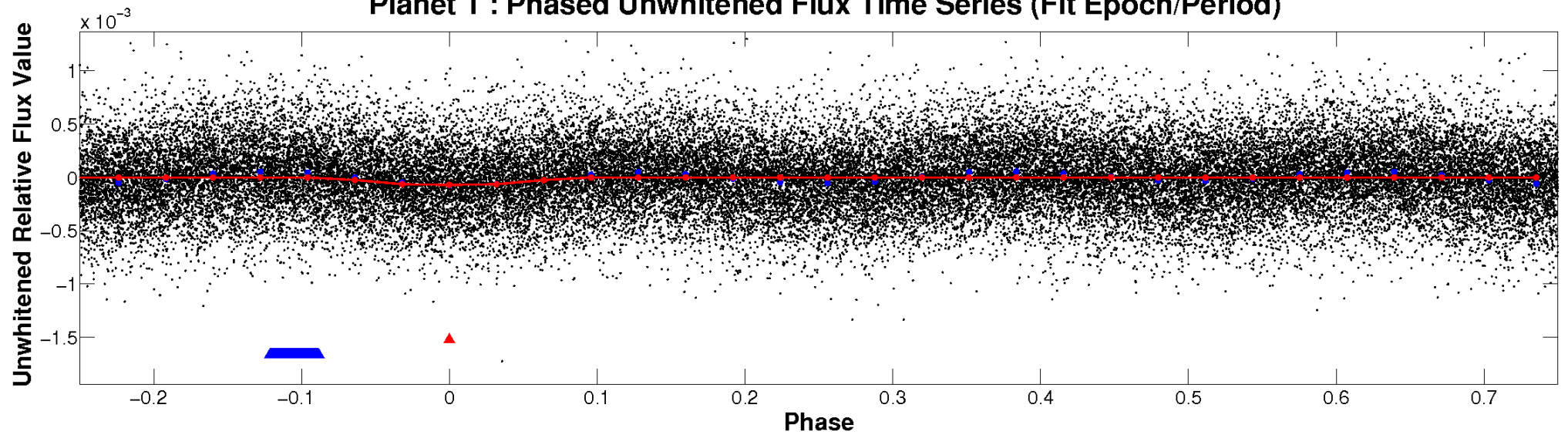
ALT Odd/Even

TCE 005019587-01

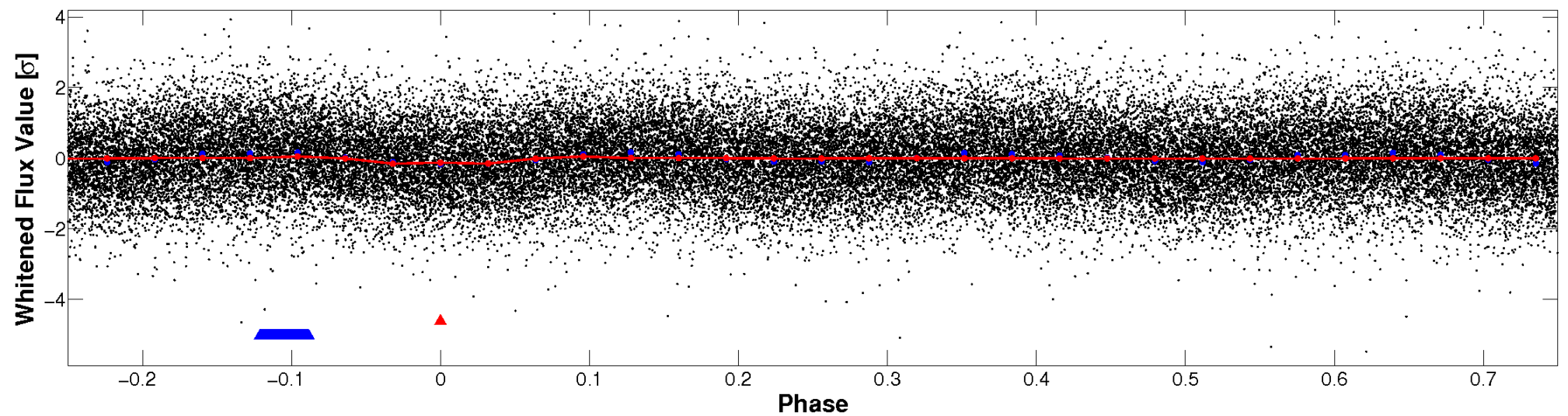


Non-Whitened Vs. Whitened Light Curve

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

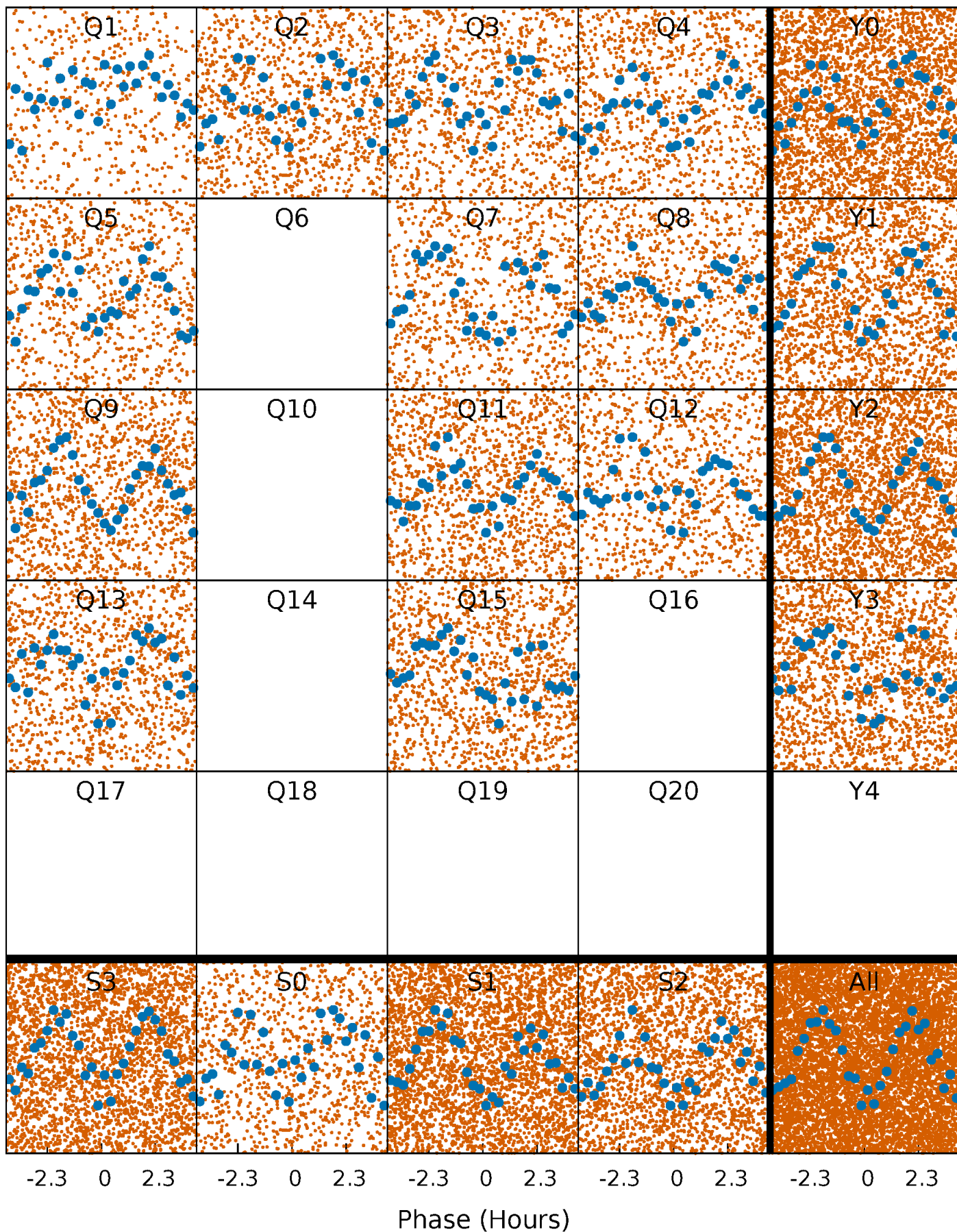


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



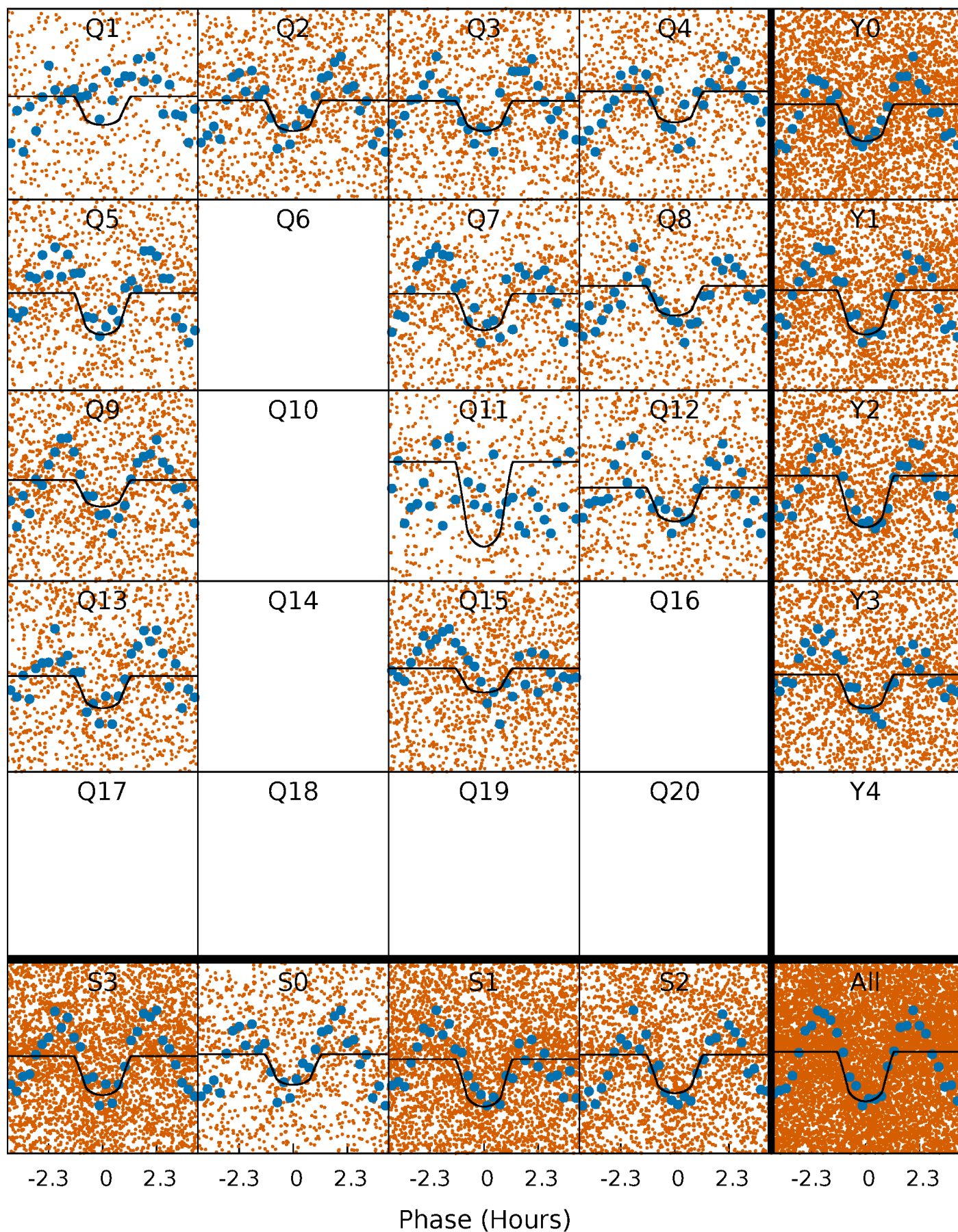
PDC Quarter-Phased Transit Curves

TCE 005019587-01 P= 0.639217 Days $T_0=131.714820$ (BKJD)



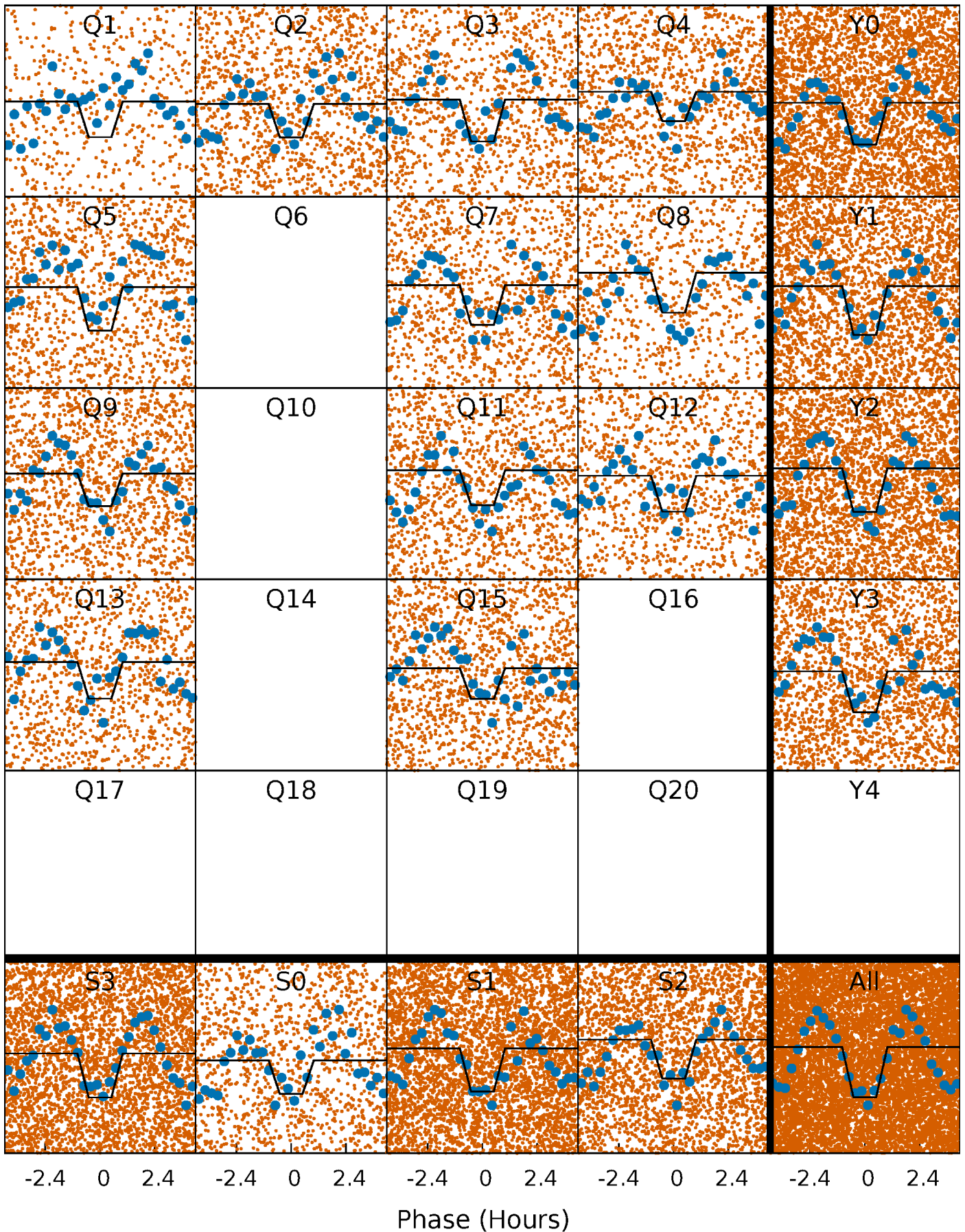
DV Quarter-Phased Transit Curves

TCE 005019587-01 P= 0.639217 Days $T_0=131.714820$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

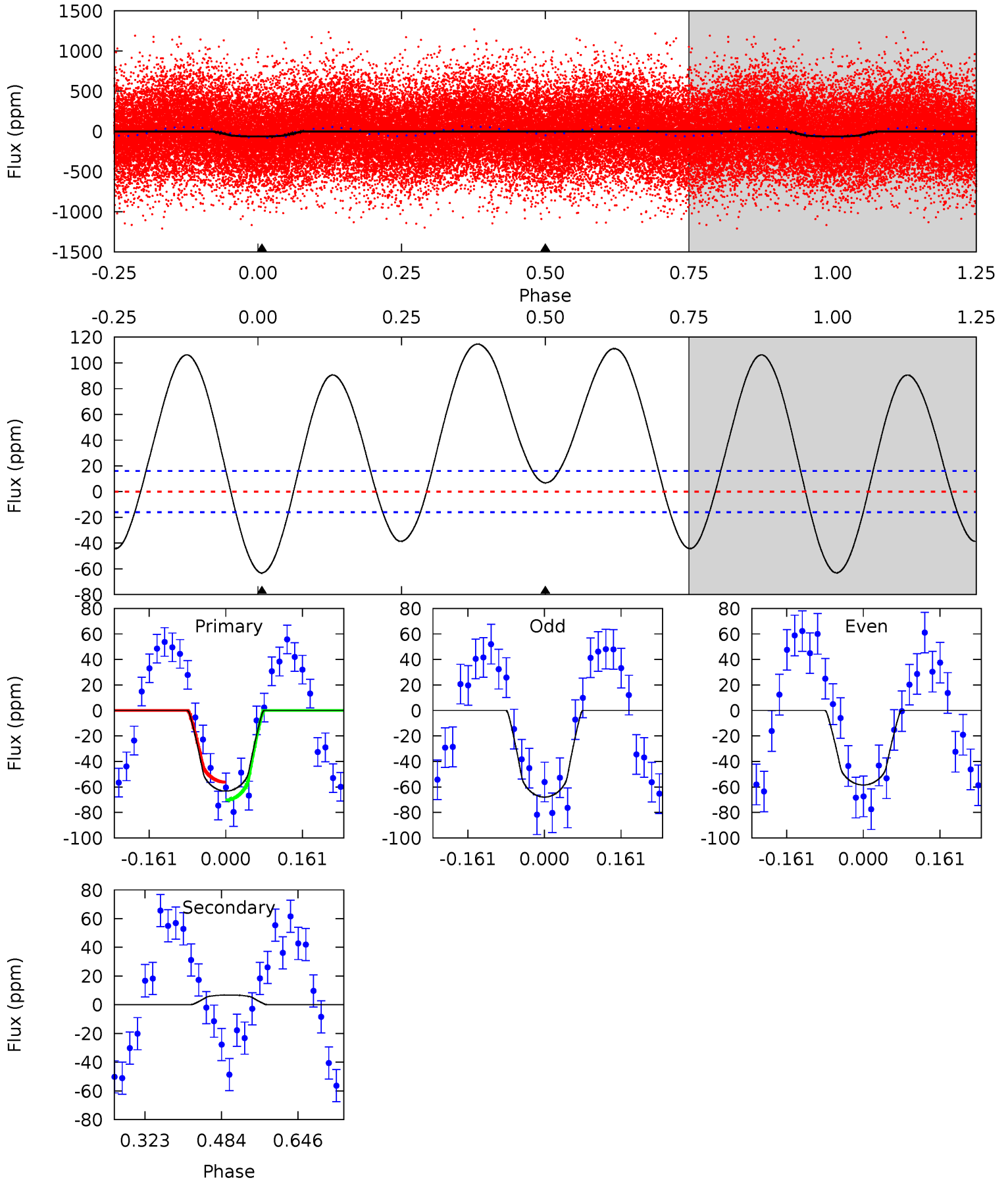
TCE 005019587-01 P= 0.639222 Days $T_0=131.715418$ (BKJD)



DV Model-Shift Uniqueness Test

005019587-01, P = 0.639217 Days, E = 131.075603 Days

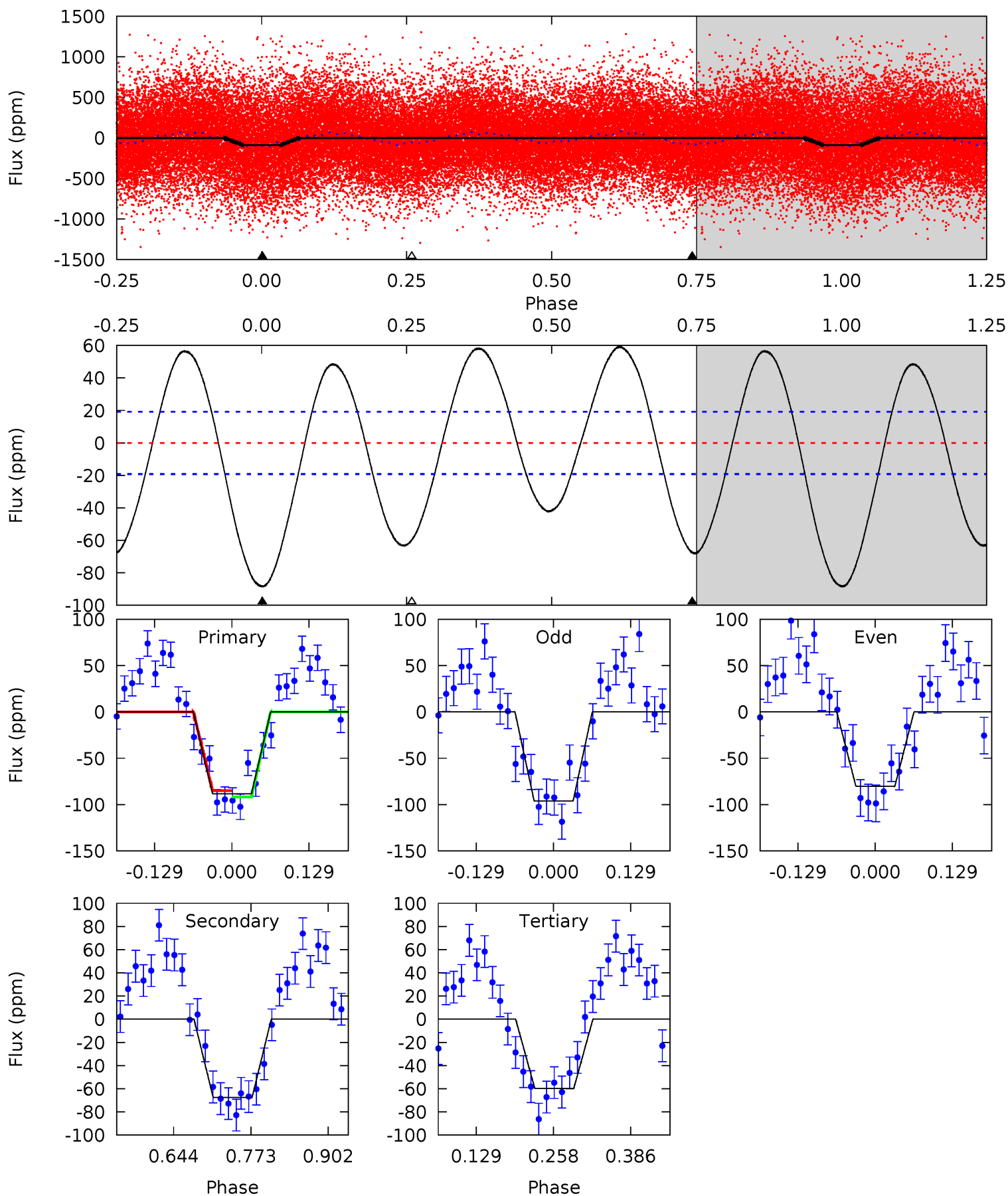
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.6	-1.90	0	0	4.46	1.40	10.4	17.6	17.6	-1.90	-1.90	1.34	1.01	0.64	1.98



Alt Model-Shift Uniqueness Test

005019587-01, P = 0.639222 Days, E = 131.076196 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	15.9	14.1	0	4.51	1.52	9.15	6.71	20.8	1.80	15.9	1.90	1.01	0.40	0.79



Stellar Parameters For KIC 005019587

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4808^{+76}_{-86}	$2.765^{+0.030}_{-0.030}$	$-0.140^{+0.200}_{-0.200}$	$8.228^{+0.788}_{-1.280}$	$1.437^{+0.262}_{-0.393}$	$0.004^{+0.001}_{-0.000}$
	+2%/-2%	+1%/-1%	+143%/-143%	+10%/-16%	+18%/-27%	+21%/-12%
Source	PHO56	AST56	PHO56	DSEP		

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

Secondary Eclipse Parameters for KIC 005019587-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	7 ± 4	$8.60^{+2.78}_{-3.02}$	6645^{+154}_{-164}	-5422^{+158}_{-158}	$-0.013^{+0.008}_{-0.022}$
Alt.	-67 ± 4	$8.54^{+2.88}_{-3.02}$	6647^{+153}_{-166}	-4664^{+7911}_{-373}	$0.136^{+0.184}_{-0.057}$

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 $A_{obs} \gg 1.0$

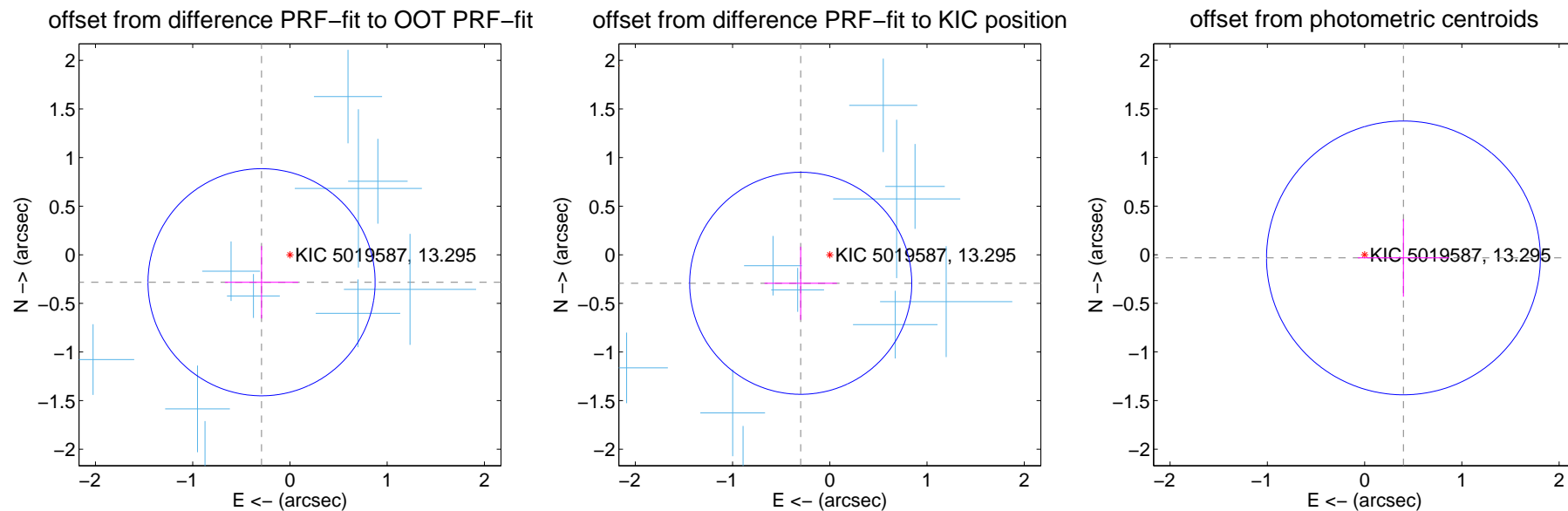
DV Centroid Data

Supplemental centroid analysis for 005019587-01. Kepler magnitude: 13.29. Transit SNR 11.13

There are 10 quarters with good PRF difference image offsets

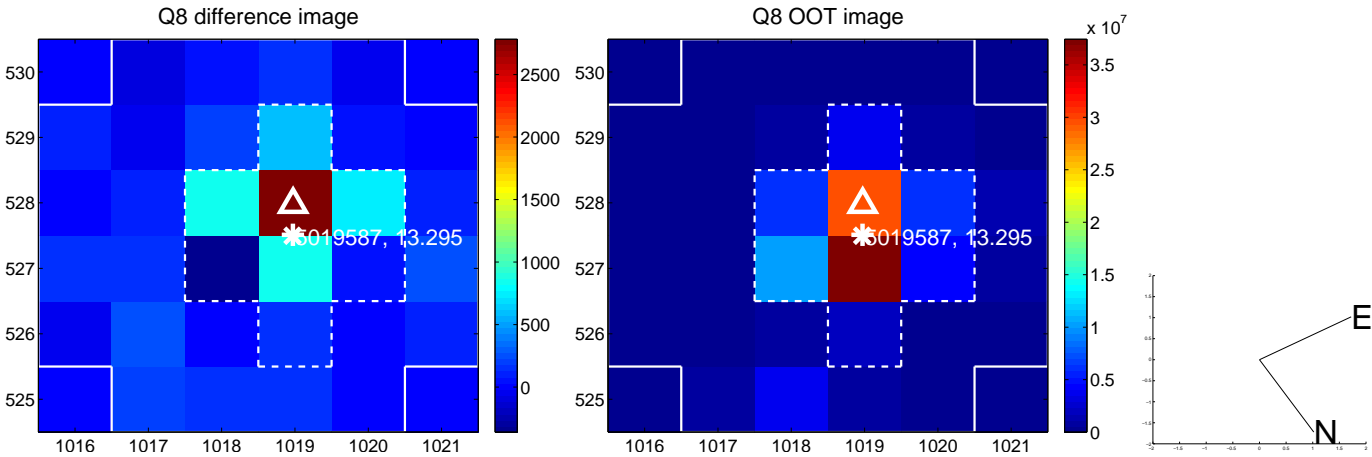
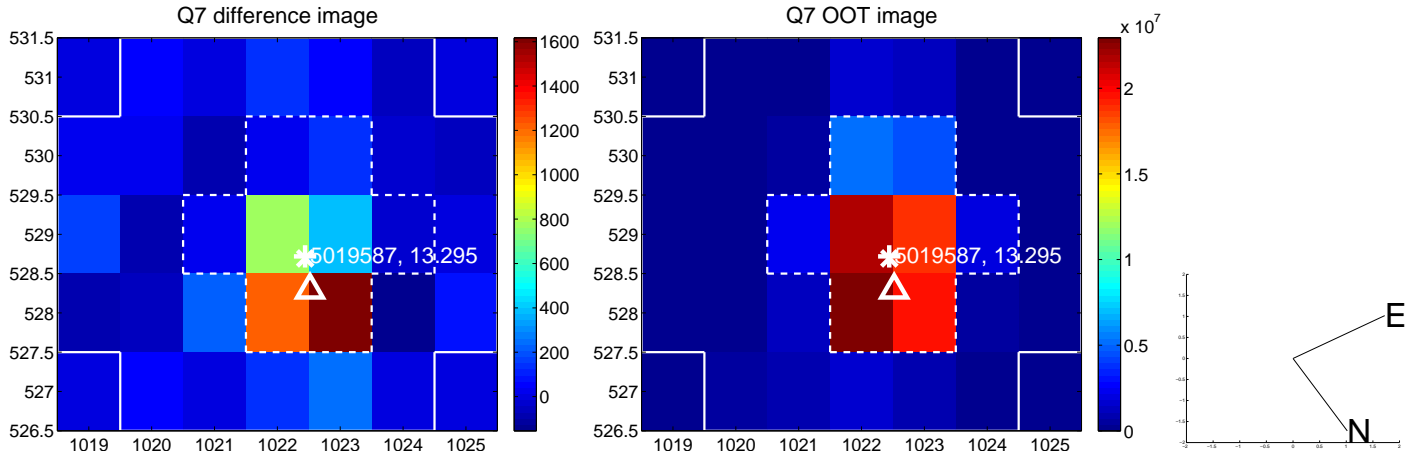
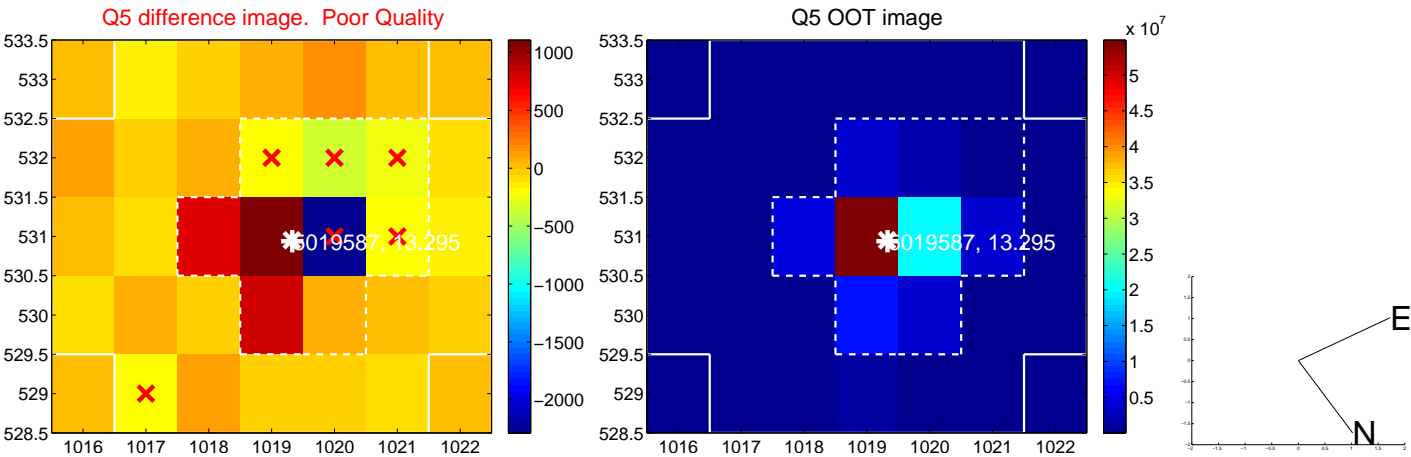
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.406 ± 0.389	1.04	0.292 ± 0.377	-0.282 ± 0.373
PRF-fit source offset from KIC position	0.419 ± 0.381	1.10	0.299 ± 0.372	-0.293 ± 0.376
photometric centroid source offset	0.40 ± 0.47	0.85	-0.40 ± 0.47	-0.03 ± 0.40

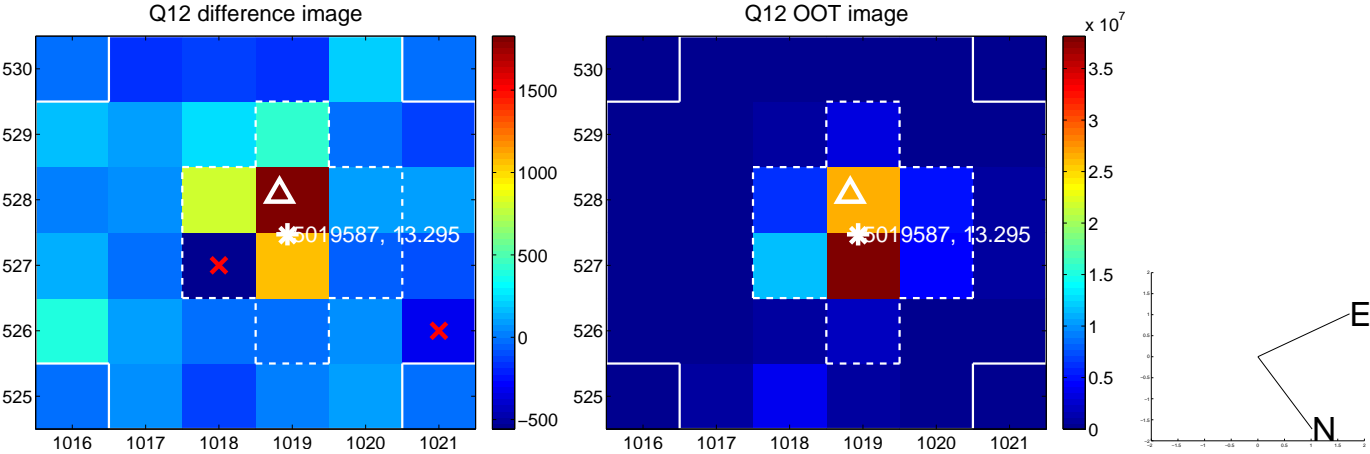
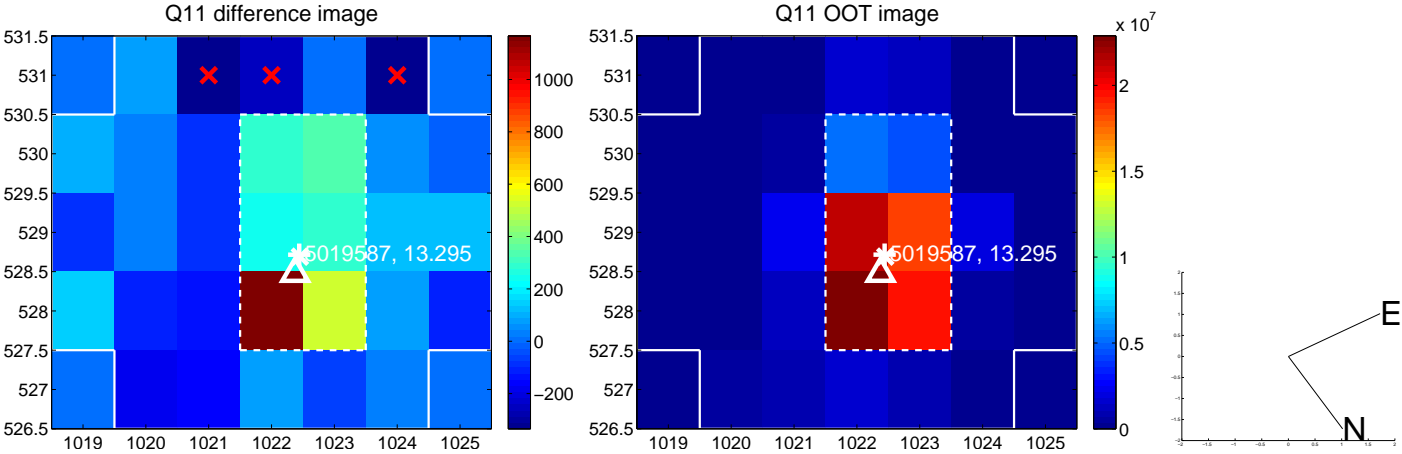
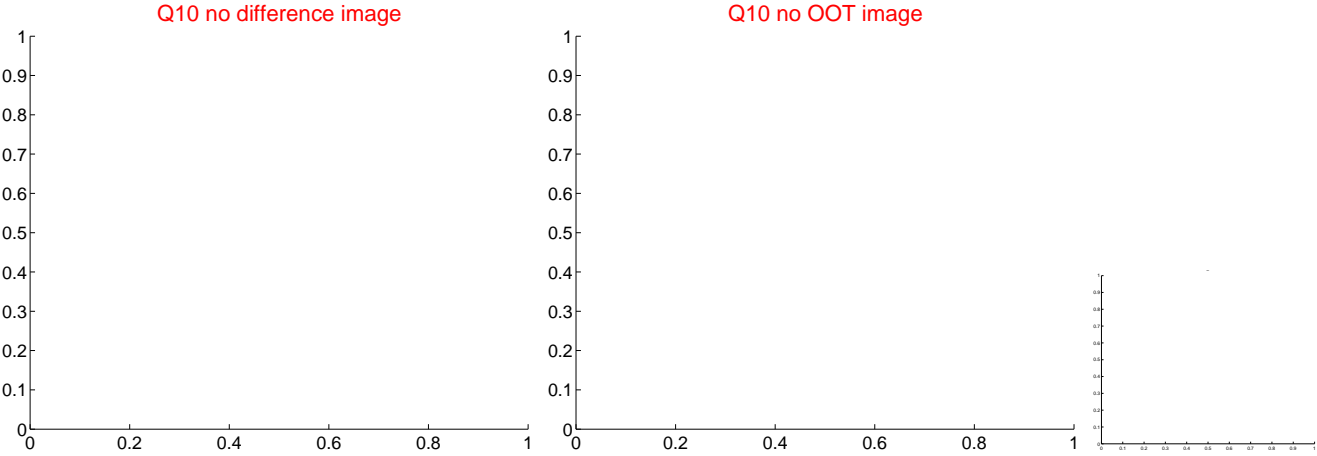
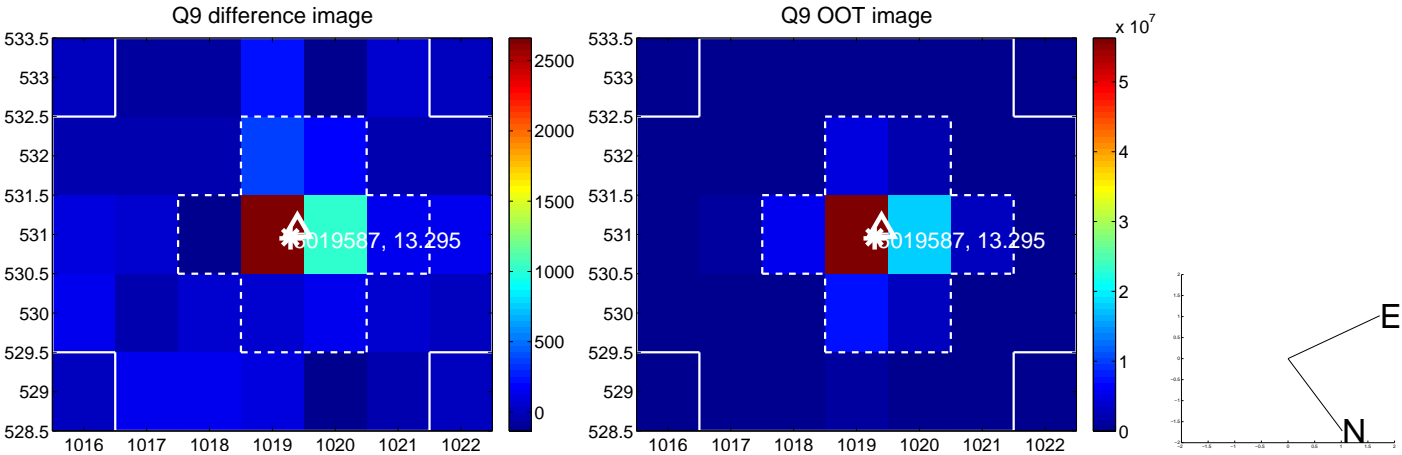


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

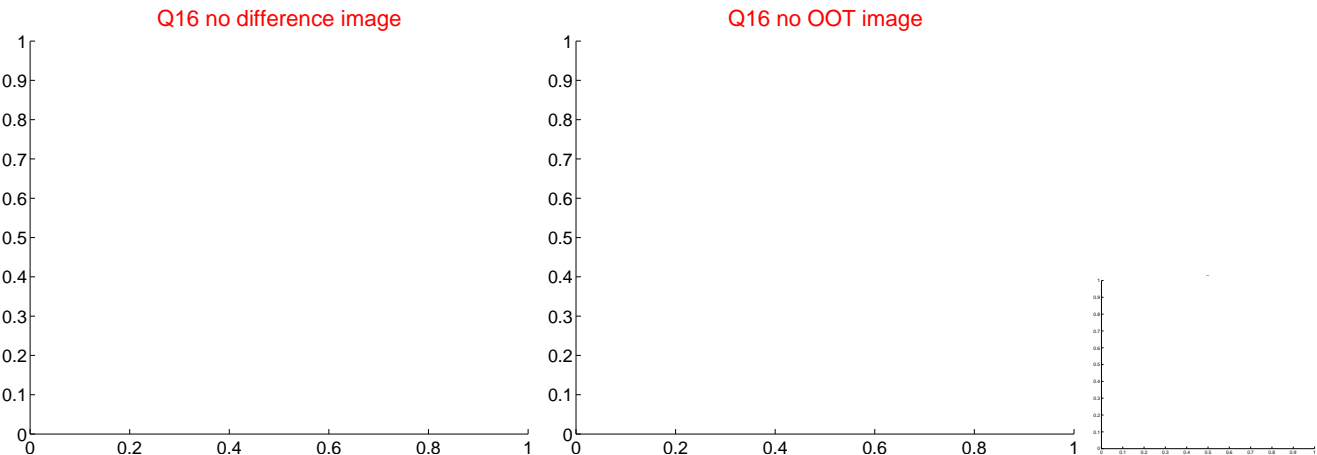
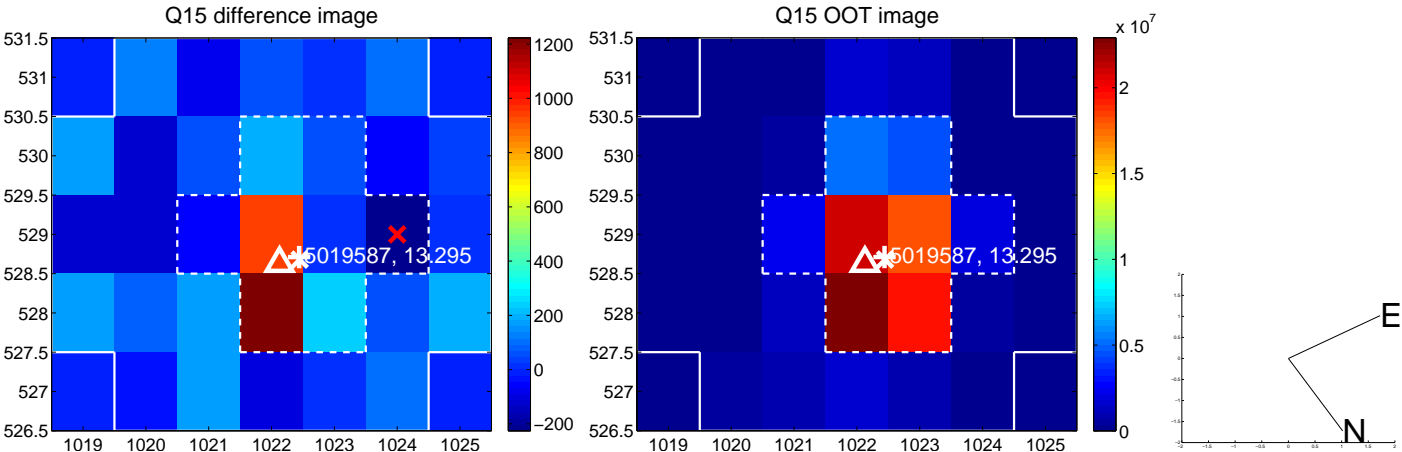
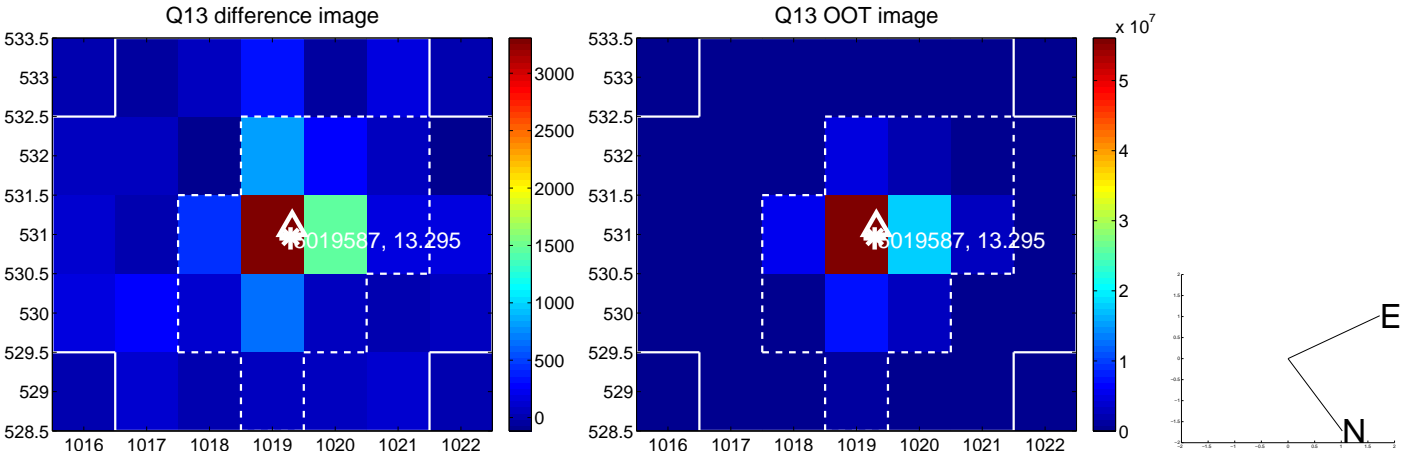
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



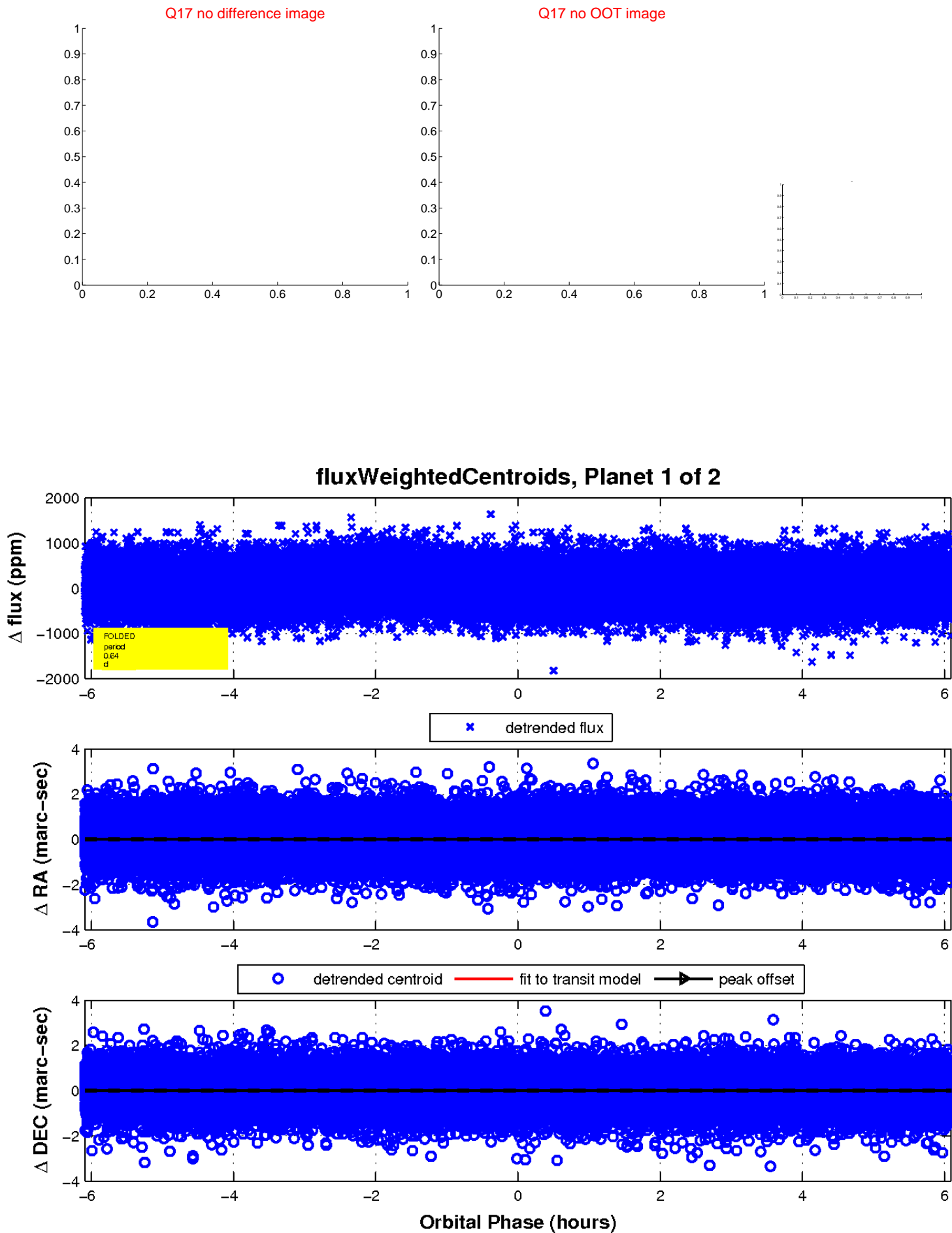
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

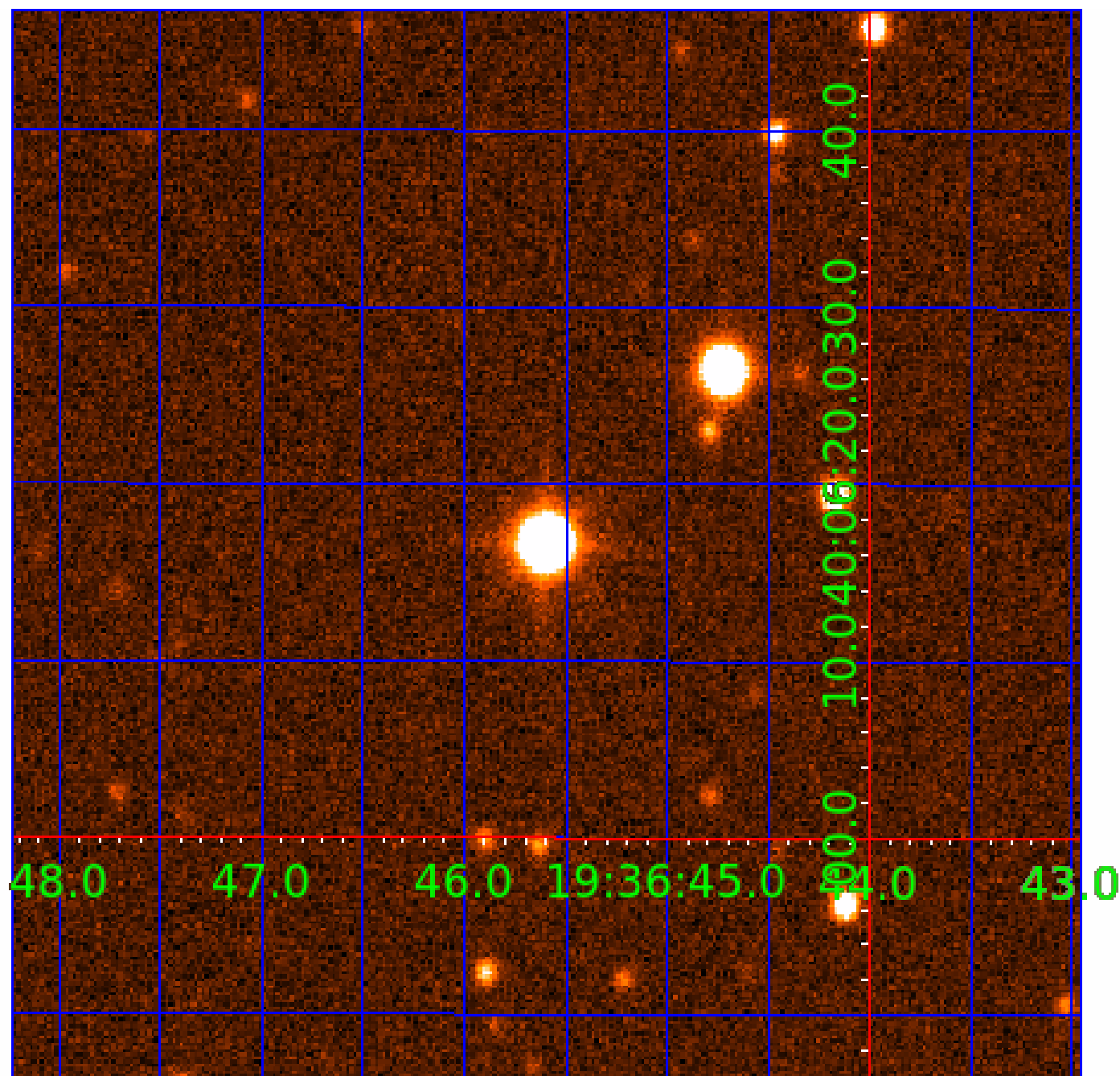


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005019587

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})
005019587-01	OBS	No	0.639217	131.714820	70.0	2.030	10.7	11.1	8.23	4808	8.43	0.00
005019587-02	OBS	No	0.639226	131.637357	112.4	6.542	8.8	10.1	8.23	4808	9.30	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005019587-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005019587-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—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.

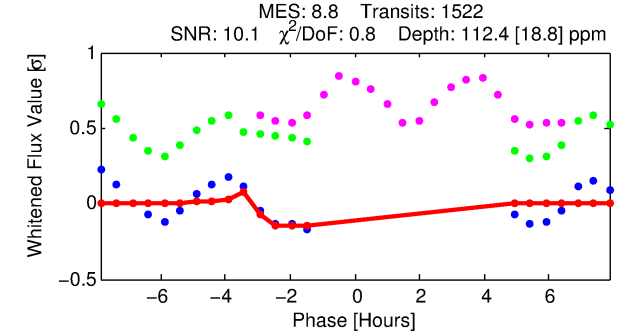
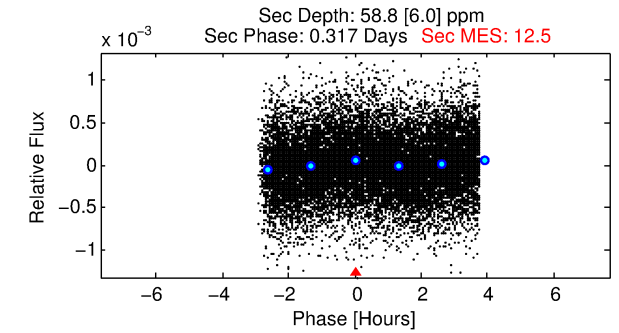
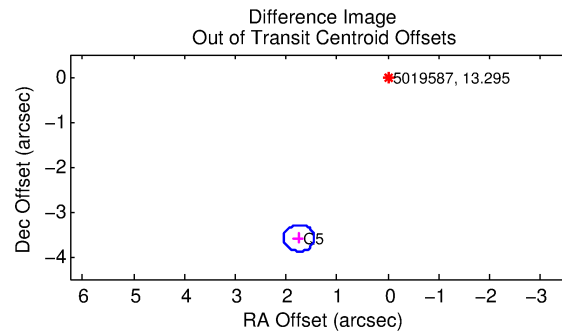
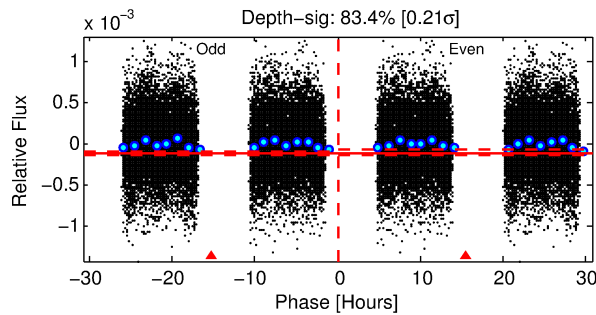
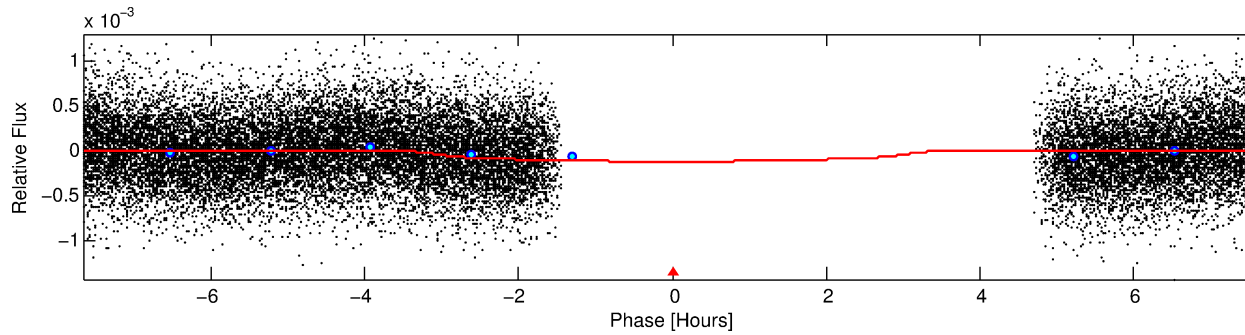
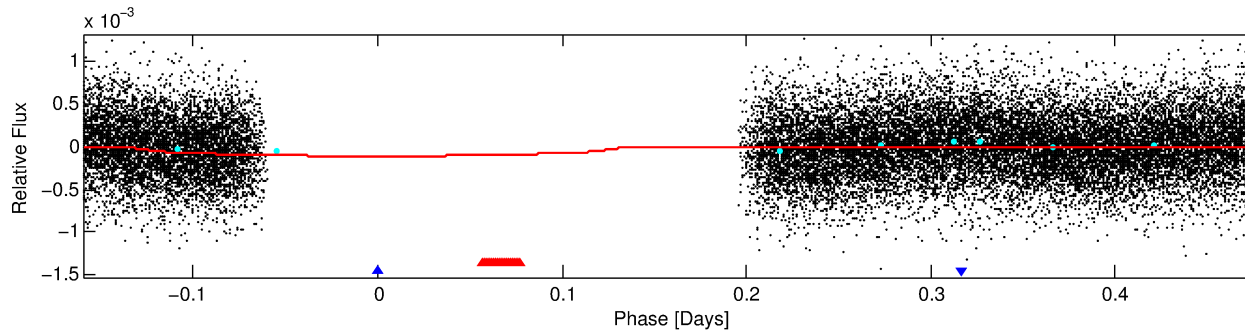
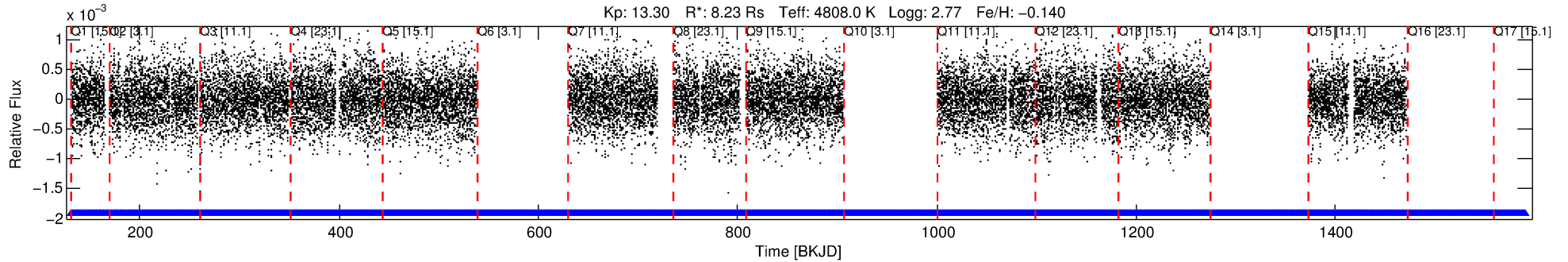
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005019587-02

No Significant Match Found

DV One-Page Summary

KIC: 5019587 Candidate: 2 of 2 Period: 0.639 d



DV Fit Results:

Period = 0.63923 [0.00001] d
Epoch = 131.6374 [0.0086] BKJD
Rp/R* = 0.0104 [0.0026]
a/R* = 1.02 [0.04]
b = 0.70 [0.72]
Seff = N/A
Teq = N/A
Rp = 9.30 [2.73] Re
a = N/A
Ag = N/A
Teffp = N/A

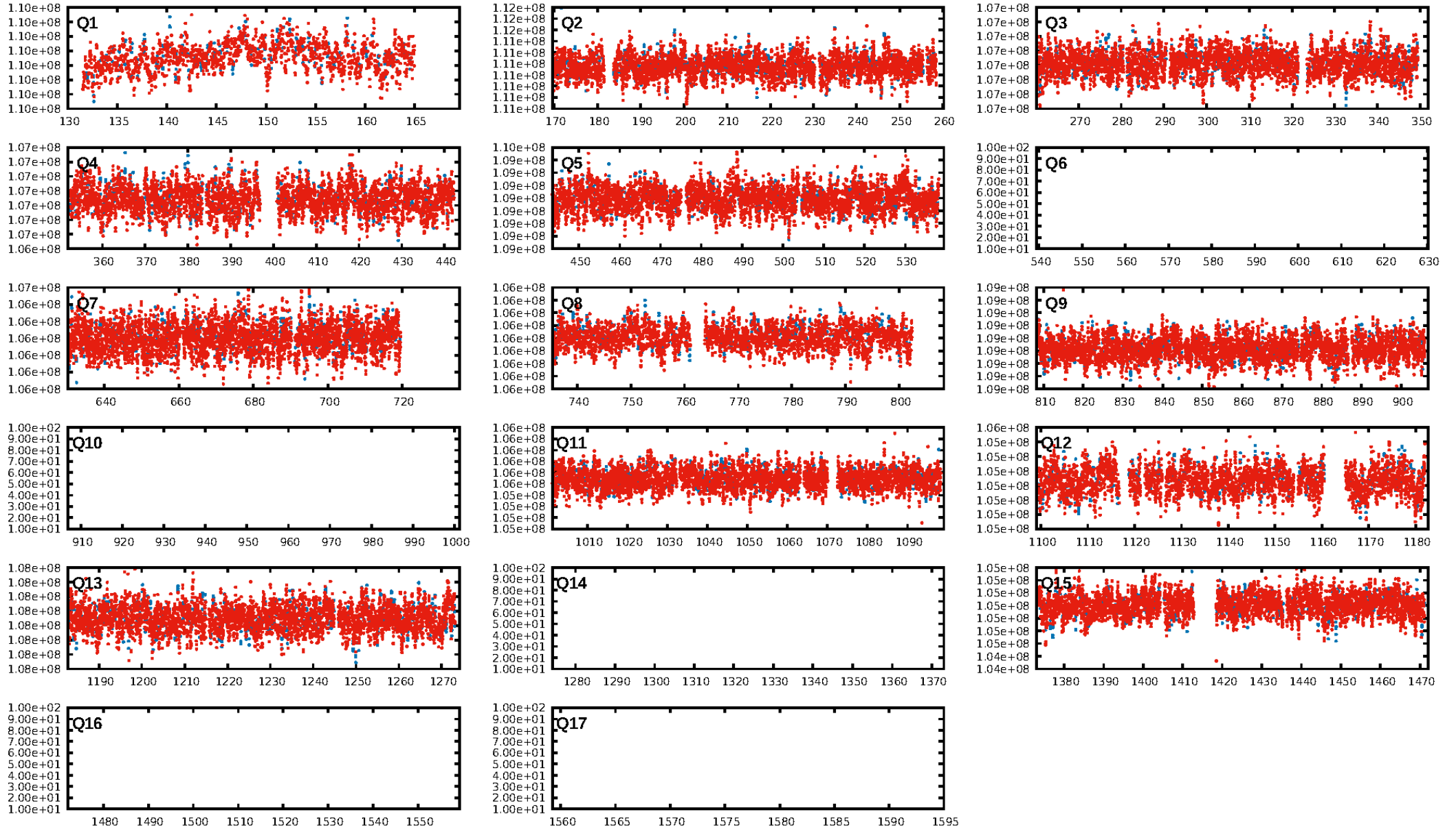
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1469/1469]
GhostDiagnostic-chr: -0.6788
Centroid-sig: 15.5%
Centroid-so: 0.086 arcsec [0.50 σ]
OotOffset-rm: 3.993 arcsec [40.22 σ]
KicOffset-rm: 3.944 arcsec [39.75 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.00 [0/12]

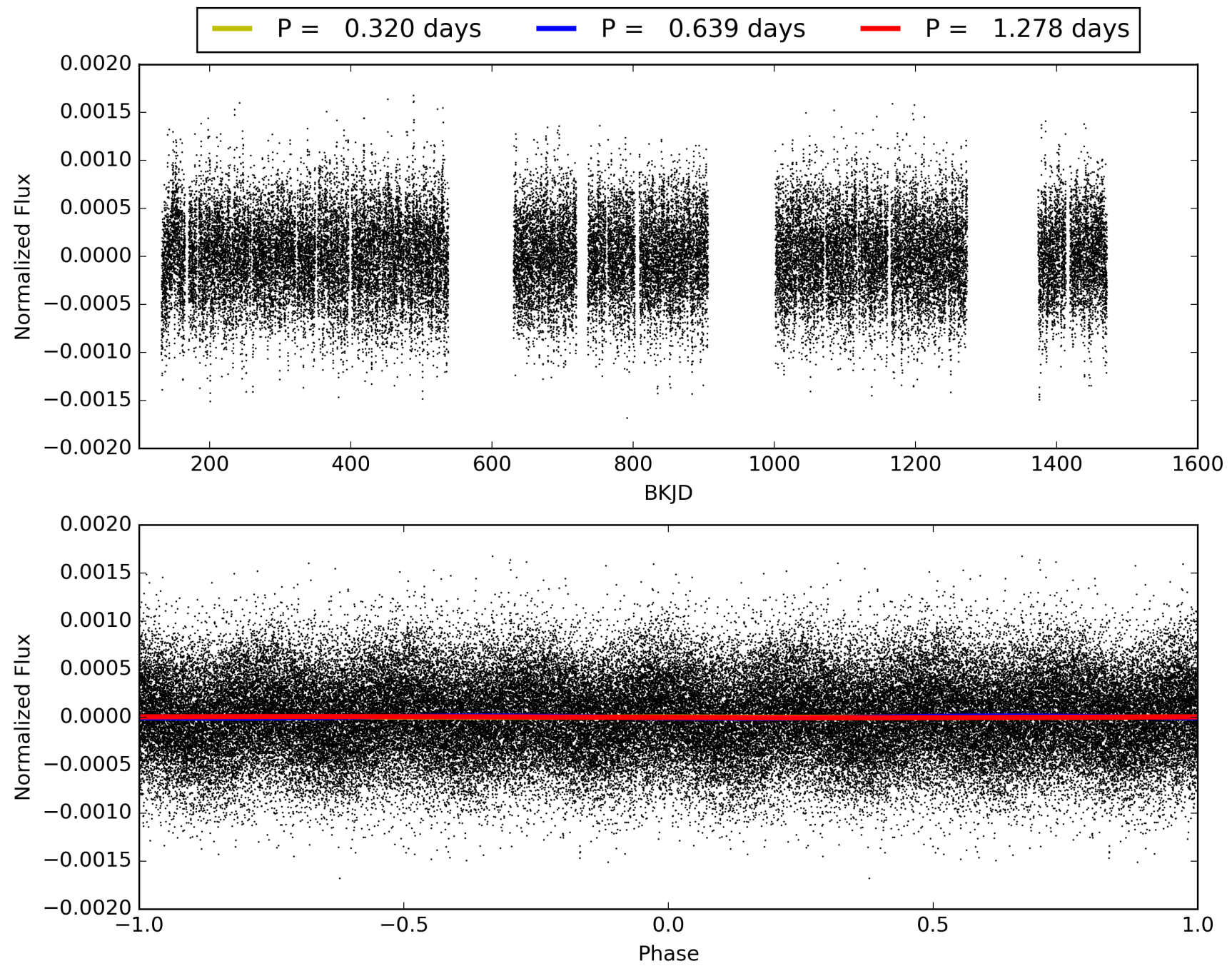
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:04:04 Z

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

TCE 005019587-02, PDC Light Curves

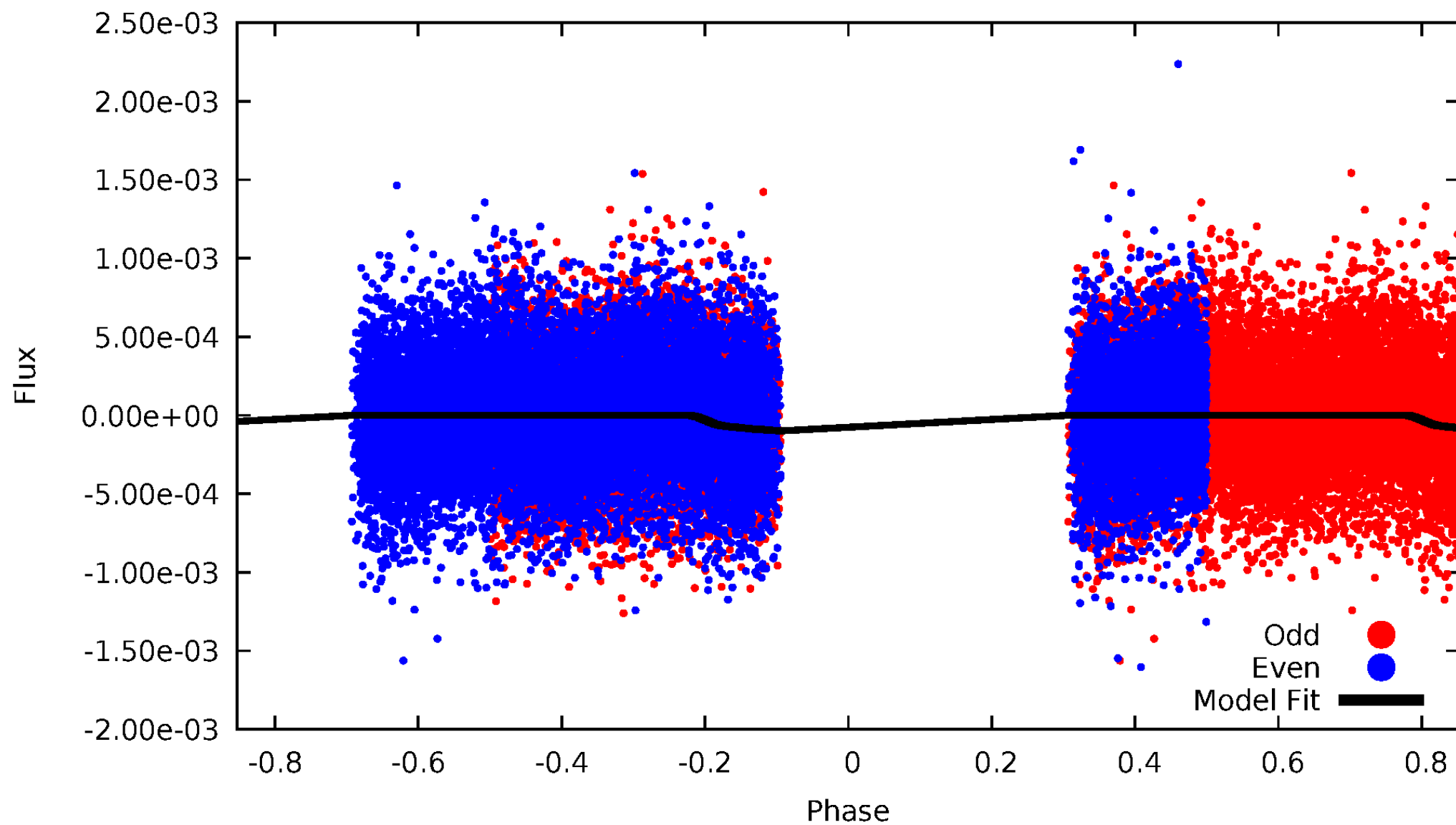


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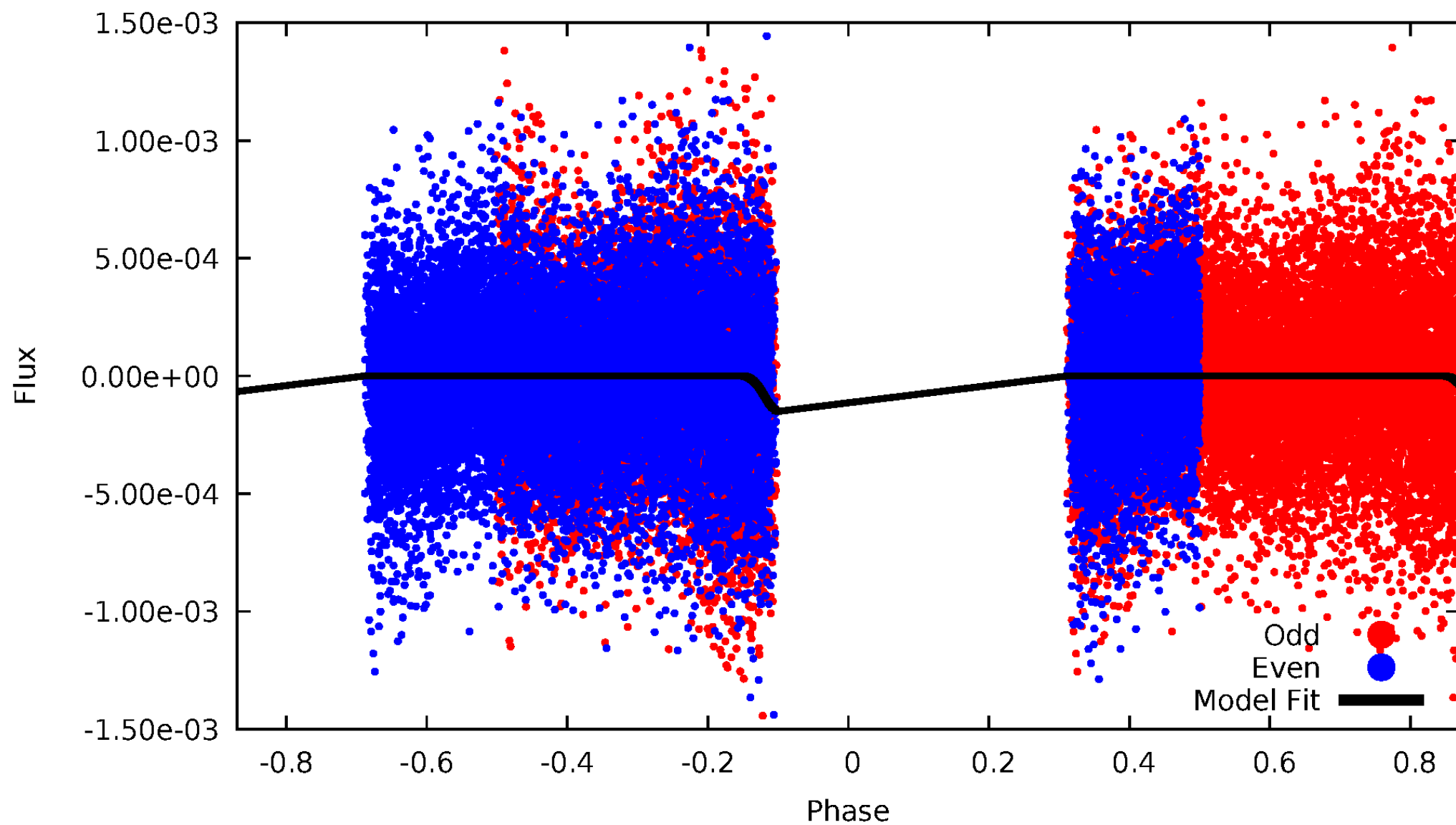
DV Odd/Even

TCE 005019587-02



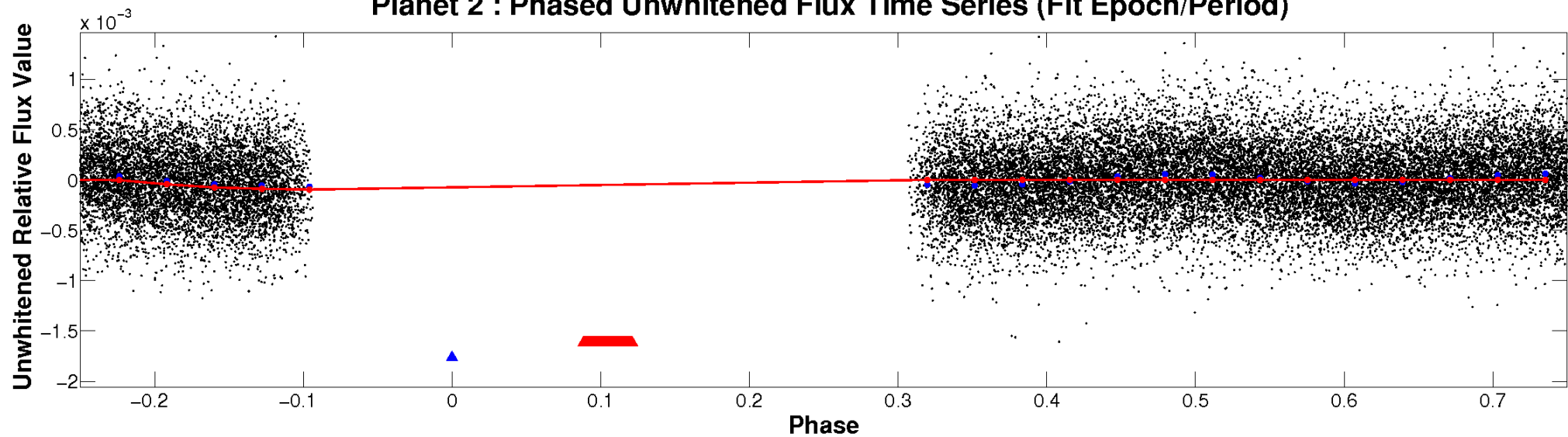
ALT Odd/Even

TCE 005019587-02

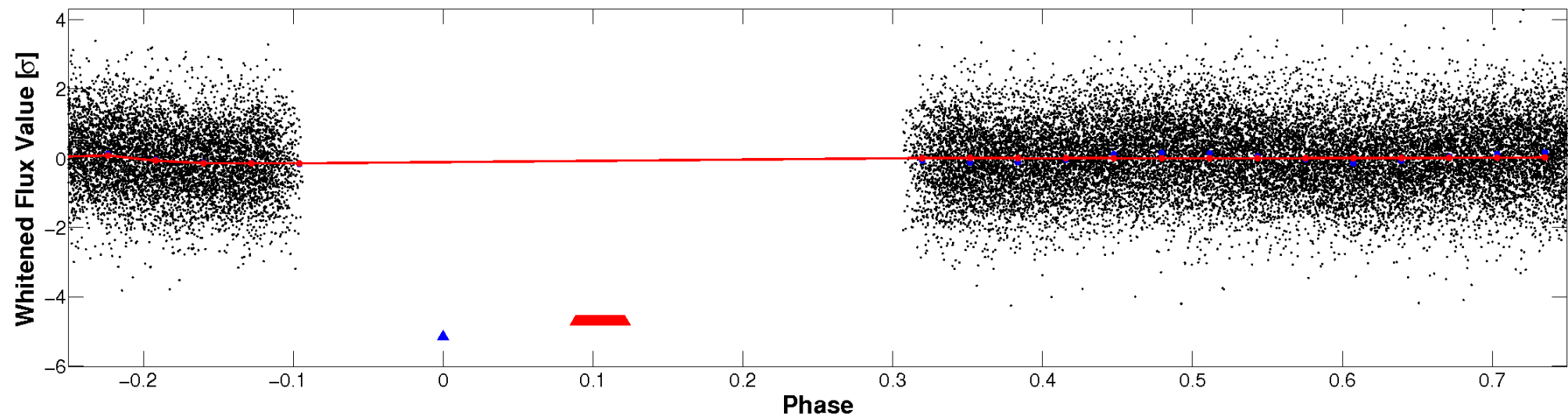


Non-Whitened Vs. Whitened Light Curve

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

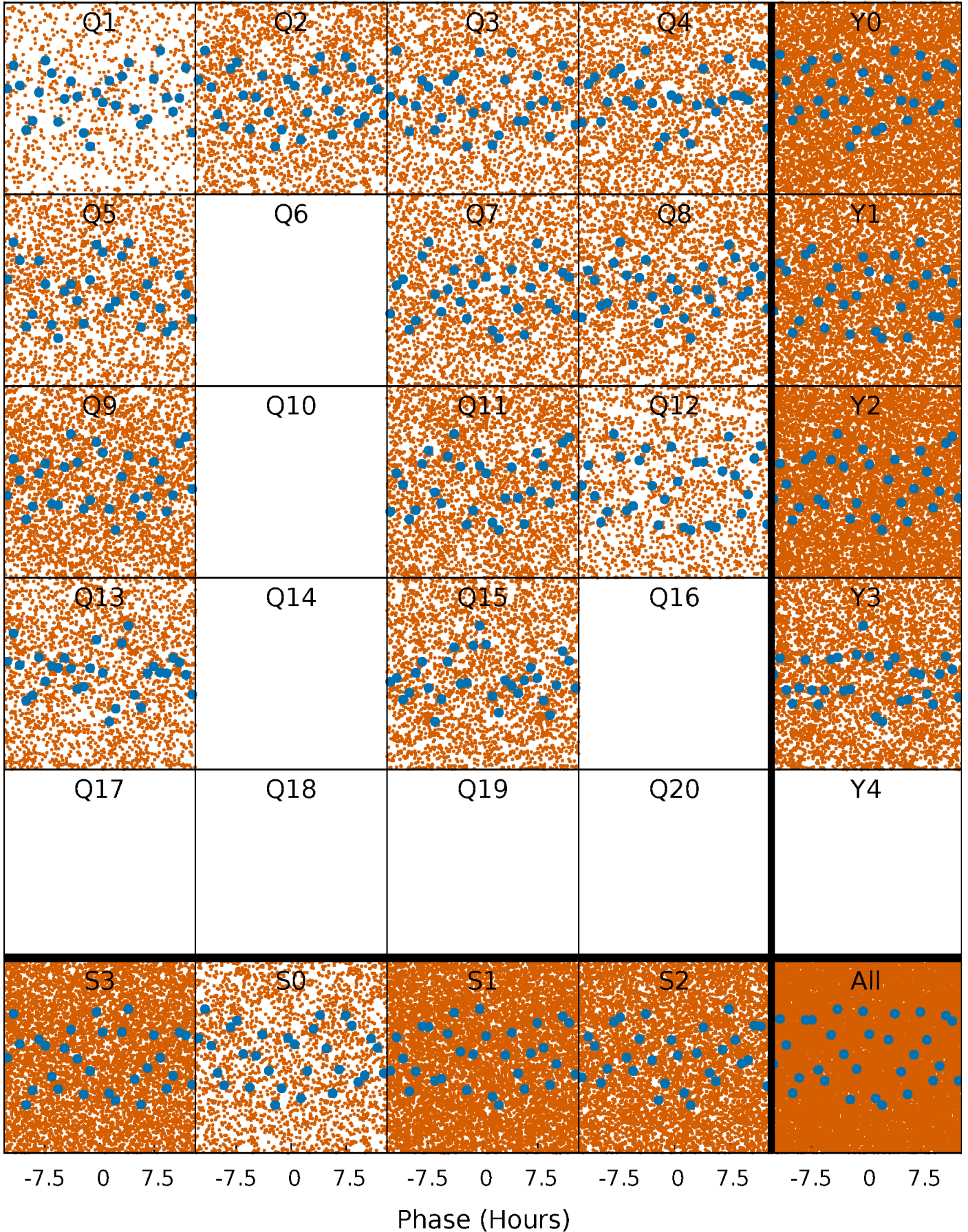


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



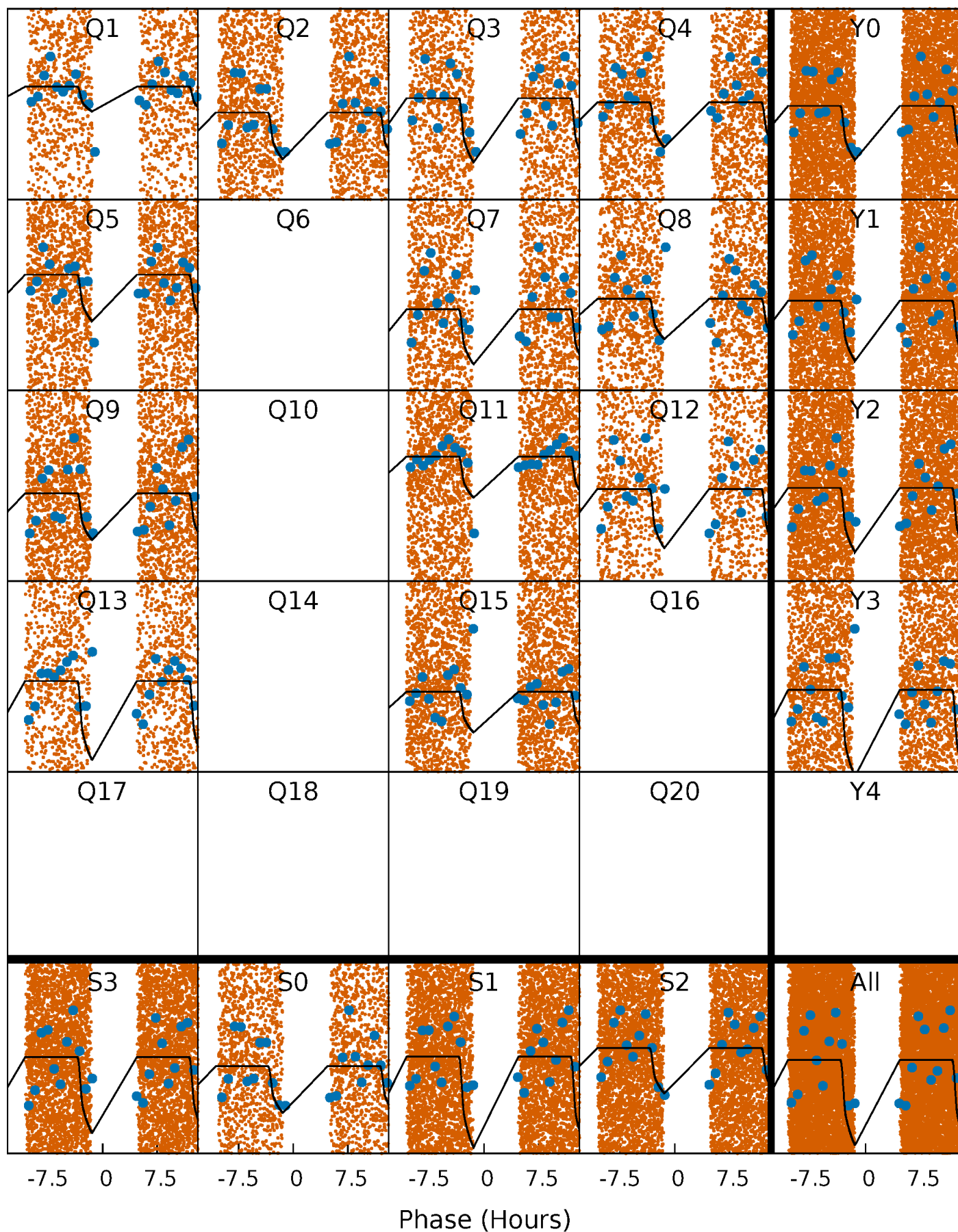
PDC Quarter-Phased Transit Curves

TCE 005019587-02 P= 0.639226 Days $T_0=131.637357$ (BKJD)



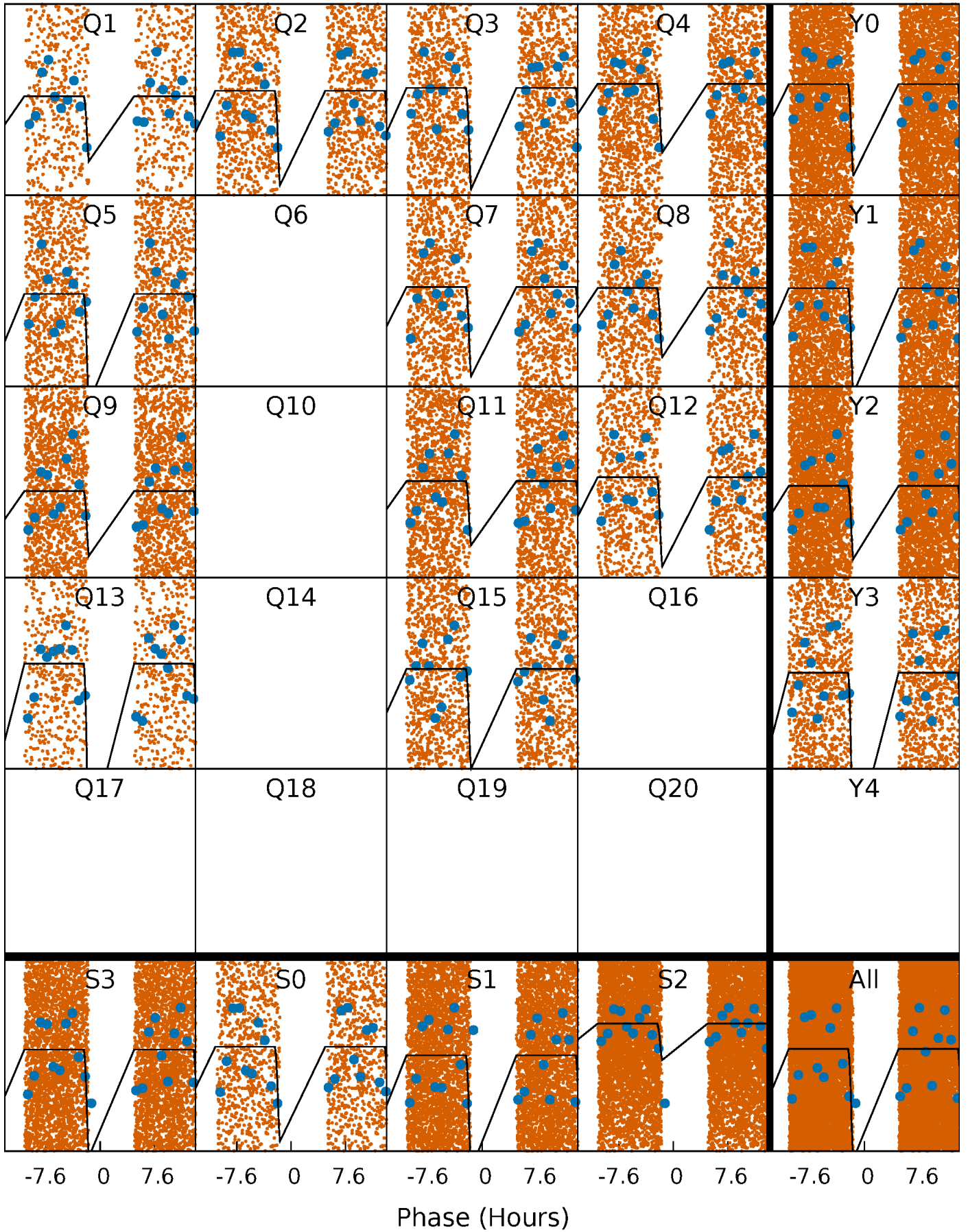
DV Quarter-Phased Transit Curves

TCE 005019587-02 P= 0.639226 Days $T_0=131.637357$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

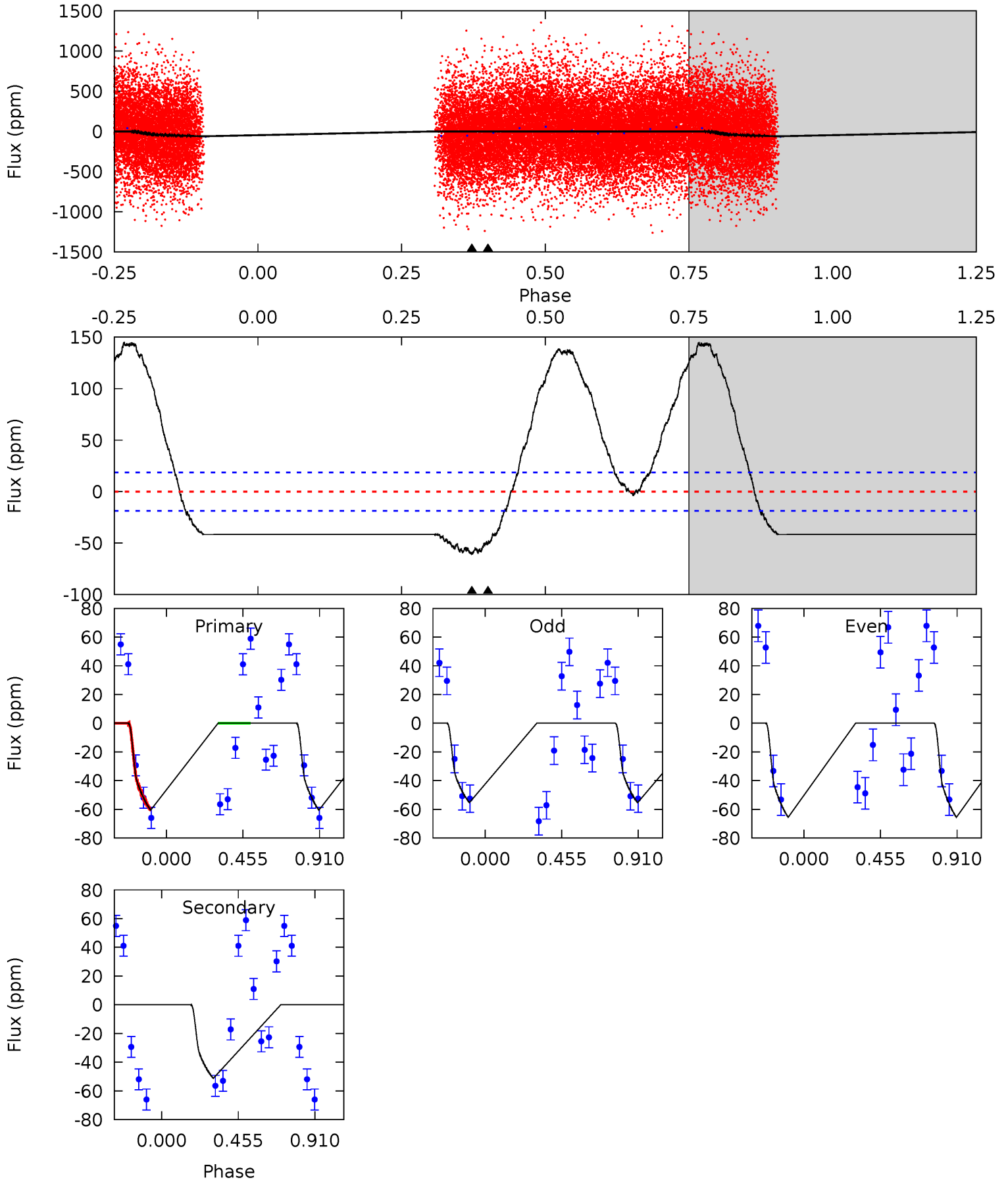
TCE 005019587-02 P= 0.639222 Days $T_0=131.642541$ (BKJD)



DV Model-Shift Uniqueness Test

005019587-02, P = 0.639226 Days, E = 130.998131 Days

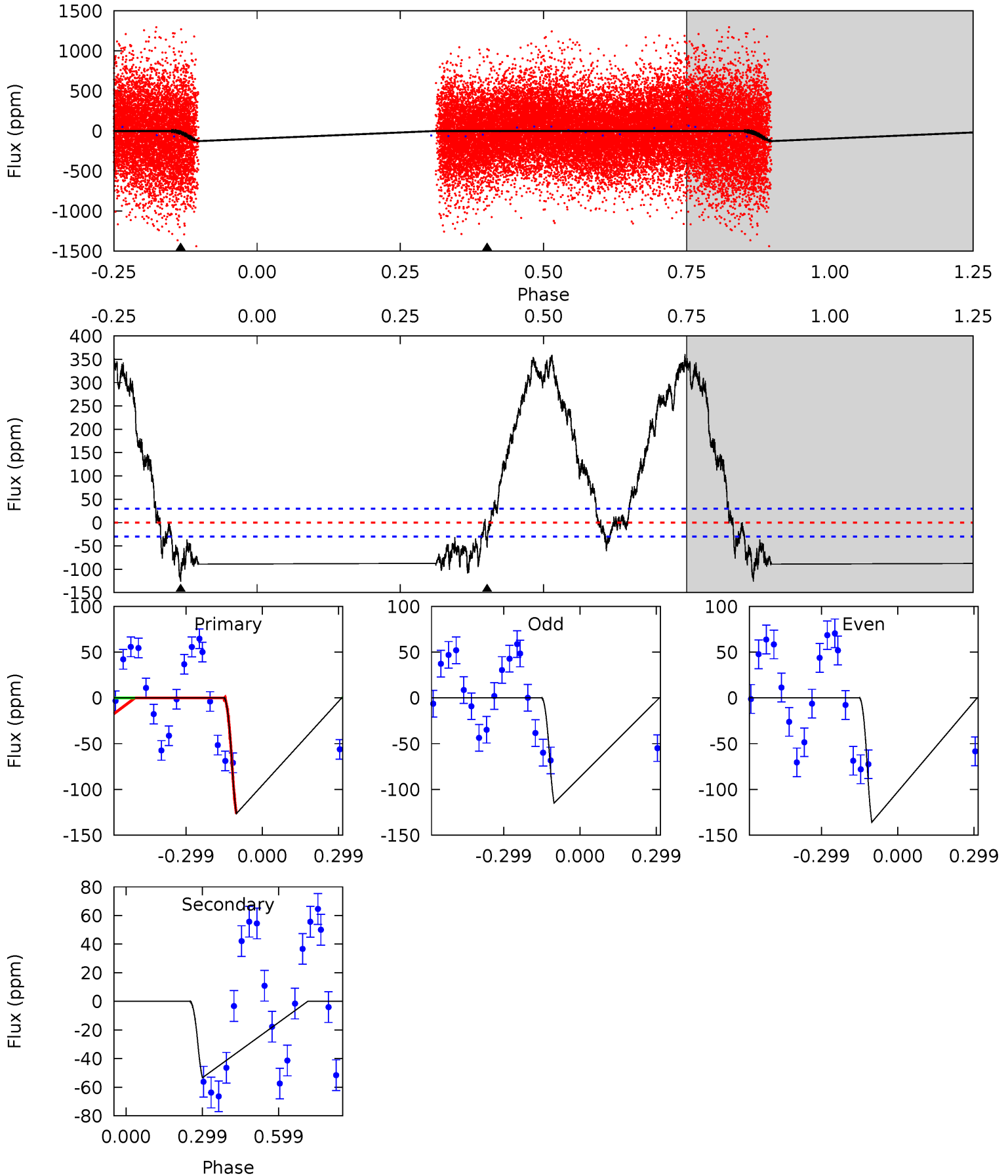
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	11.6	0	0	4.24	0.75	6.82	13.7	13.7	11.6	11.6	1.15	0	0.71	0



Alt Model-Shift Uniqueness Test

005019587-02, P = 0.639222 Days, E = 131.003319 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.4	7.74	0	0	4.33	1.04	4.96	18.4	18.4	7.74	7.74	1.37	0	0.74	0



Stellar Parameters For KIC 005019587

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4808^{+76}_{-86}	$2.765^{+0.030}_{-0.030}$	$-0.140^{+0.200}_{-0.200}$	$8.228^{+0.788}_{-1.280}$	$1.437^{+0.262}_{-0.393}$	$0.004^{+0.001}_{-0.000}$
	+2%/-2%	+1%/-1%	+143%/-143%	+10%/-16%	+18%/-27%	+21%/-12%
Source	PHO56	AST56	PHO56	DSEP		

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

Secondary Eclipse Parameters for KIC 005019587-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-51 ± 4	$9.32^{+2.74}_{-2.49}$	6643^{+160}_{-157}	-4935^{+411}_{-230}	$0.087^{+0.071}_{-0.033}$
Alt.	-53 ± 7	$11.52^{+2.70}_{-2.32}$	6647^{+156}_{-163}	-5072^{+223}_{-170}	$0.060^{+0.034}_{-0.021}$

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

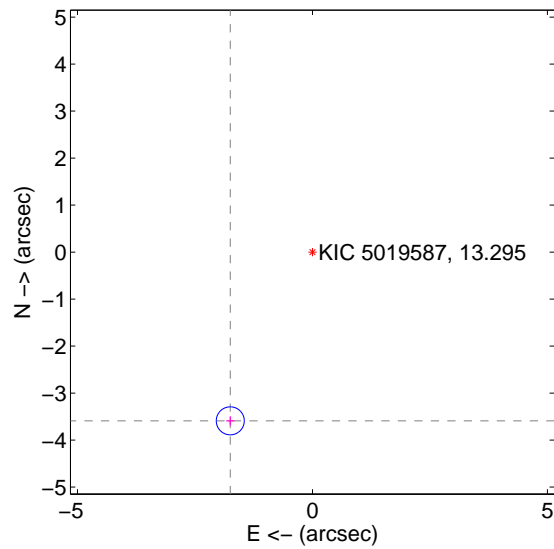
Supplemental centroid analysis for 005019587-02. Kepler magnitude: 13.29. Transit SNR 10.10

There are 0 quarters with good PRF difference image offsets

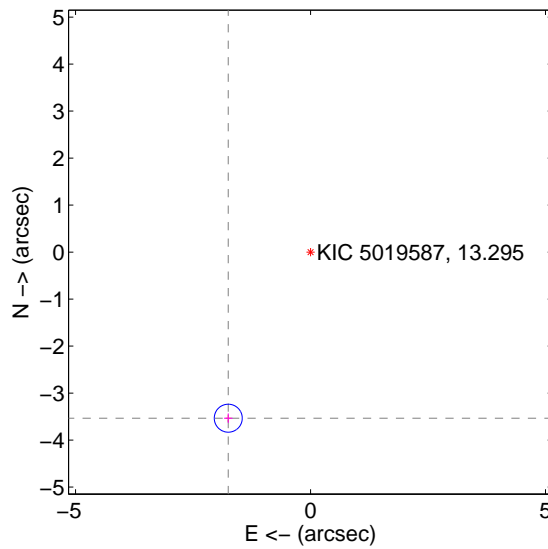
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.993 ± 0.099	40.22	1.748 ± 0.090	-3.590 ± 0.101
PRF-fit source offset from KIC position	3.944 ± 0.099	39.75	1.750 ± 0.090	-3.534 ± 0.101
photometric centroid source offset	0.09 ± 0.17	0.50	-0.08 ± 0.17	-0.02 ± 0.15

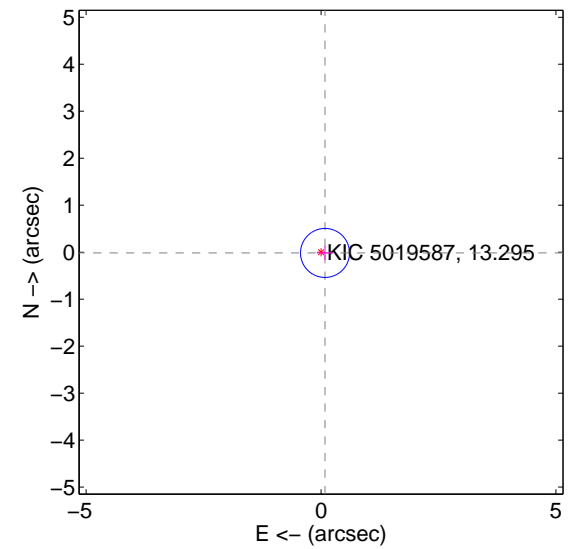
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

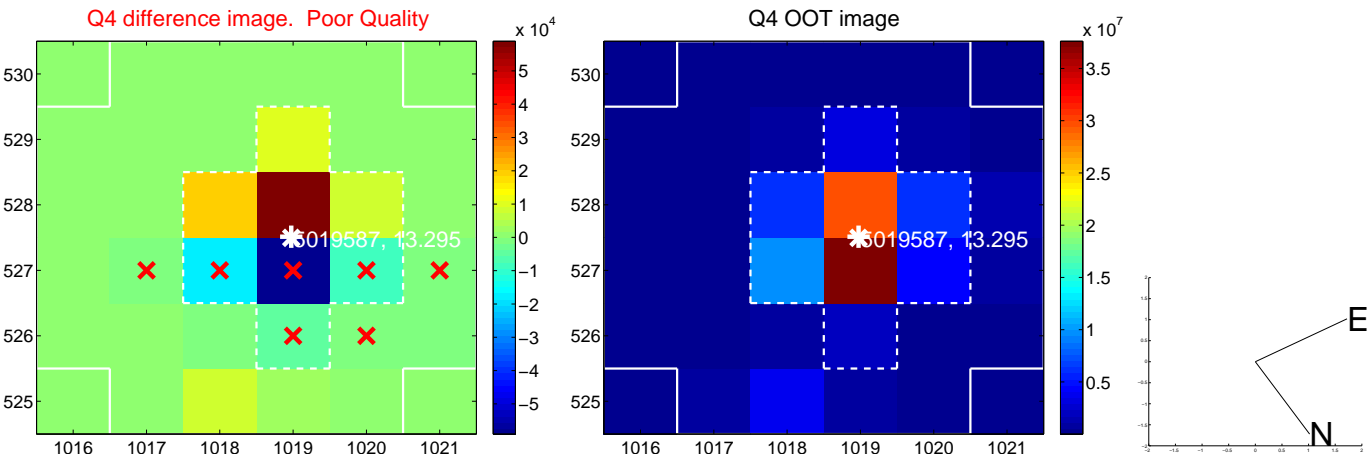
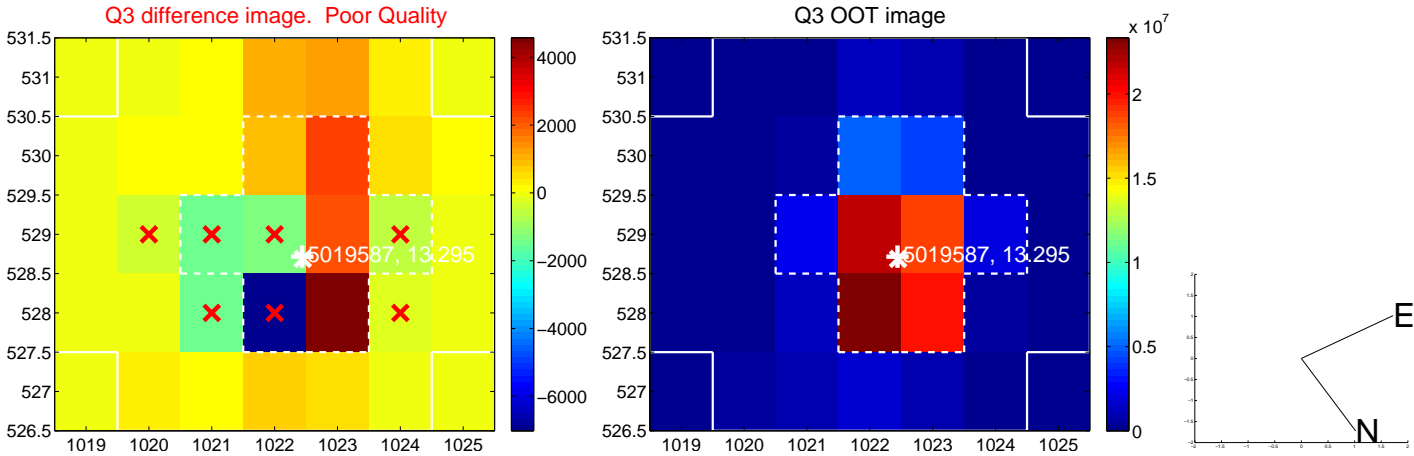
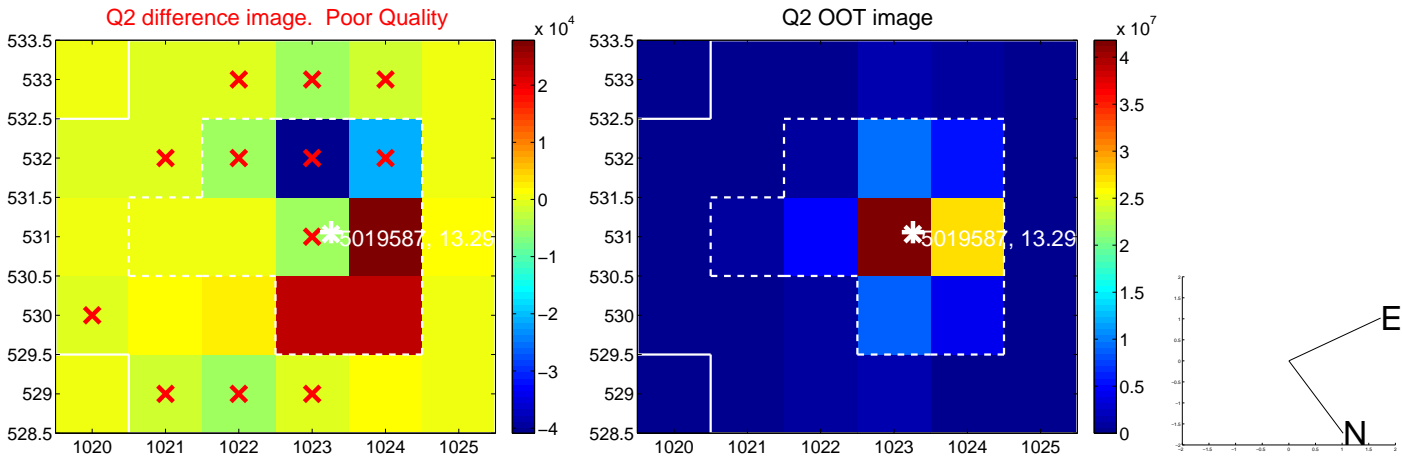
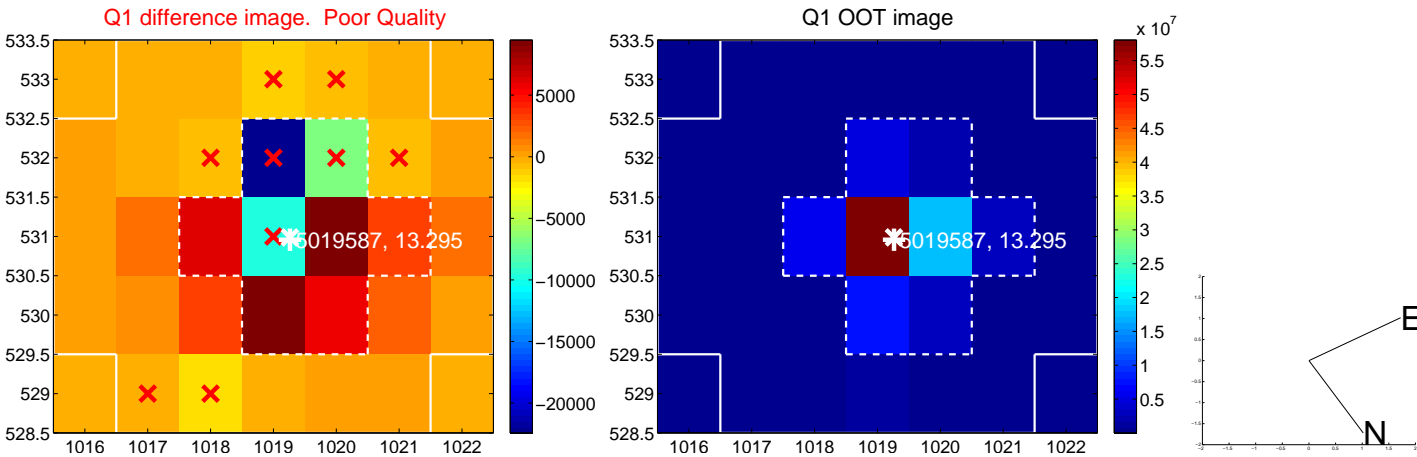


offset from photometric centroids

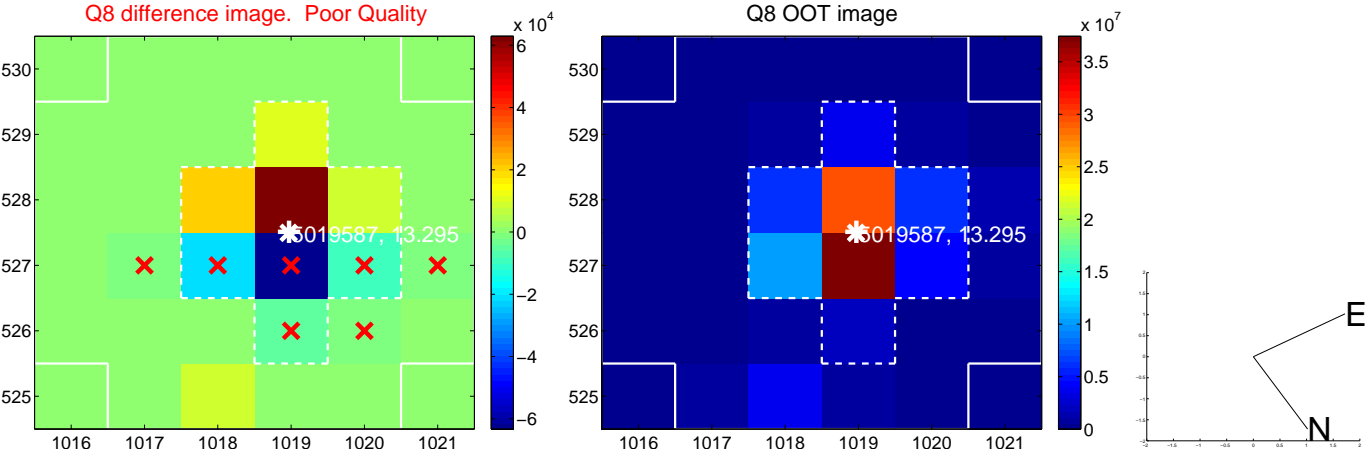
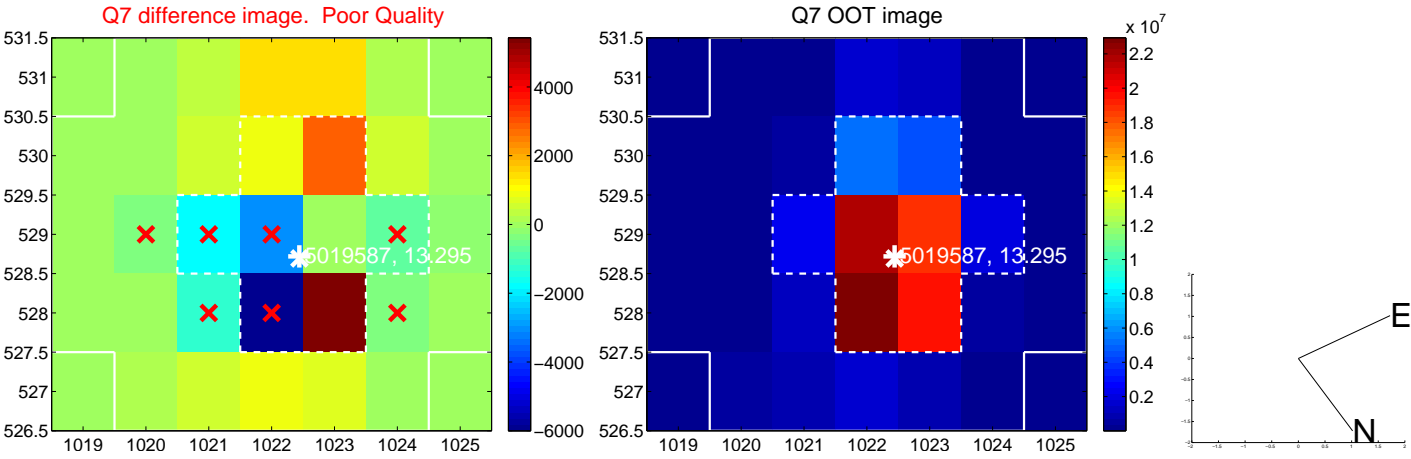
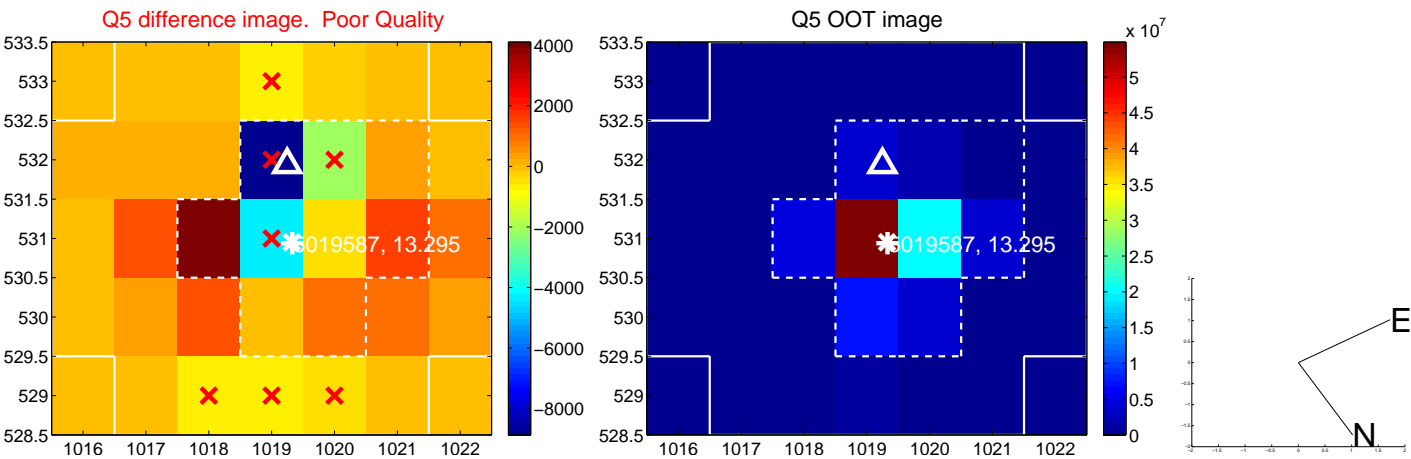


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

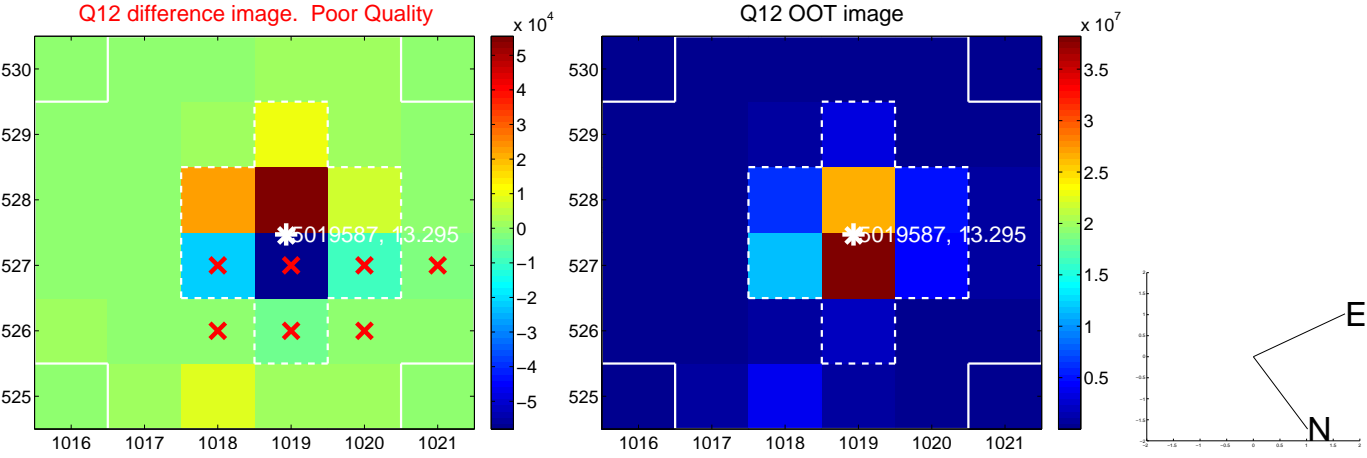
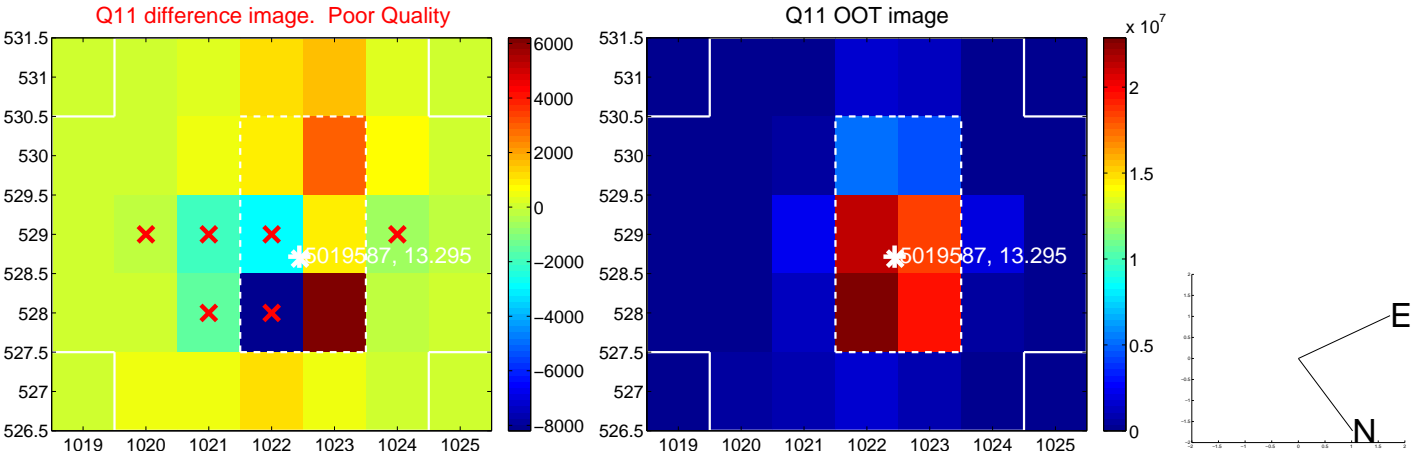
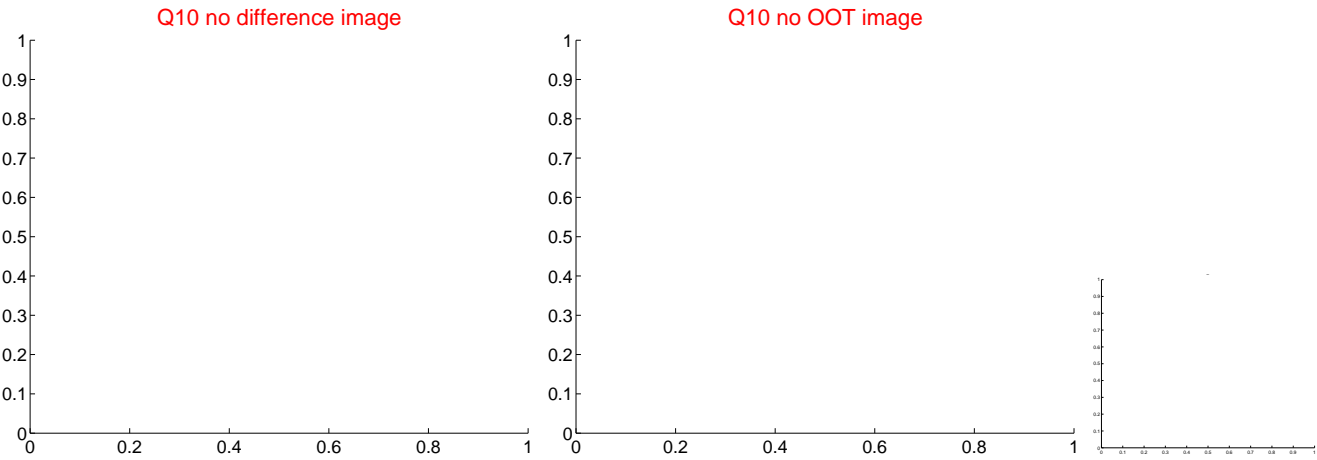
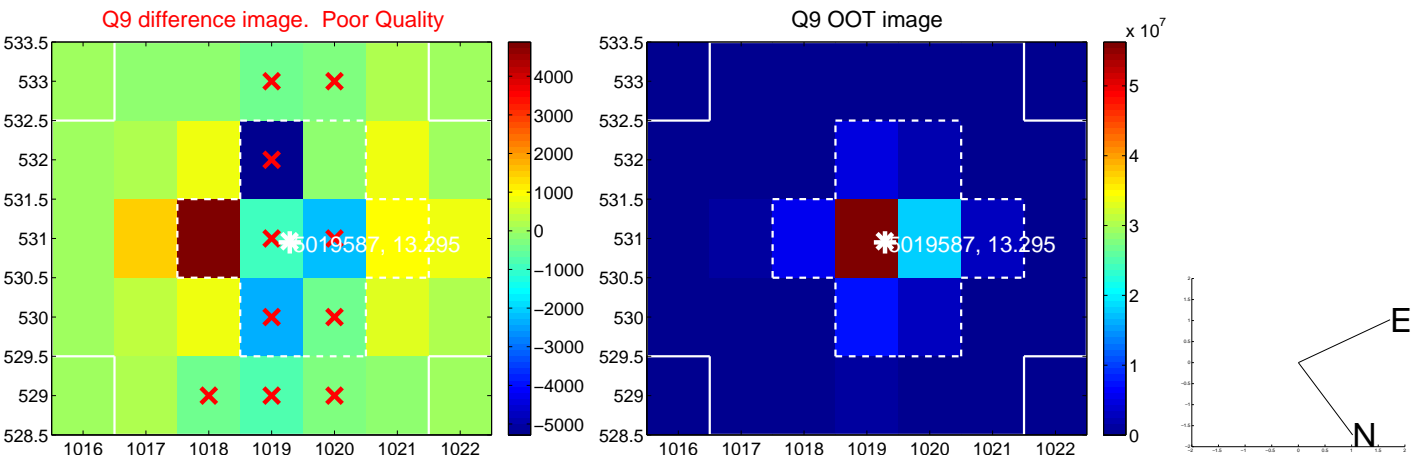
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



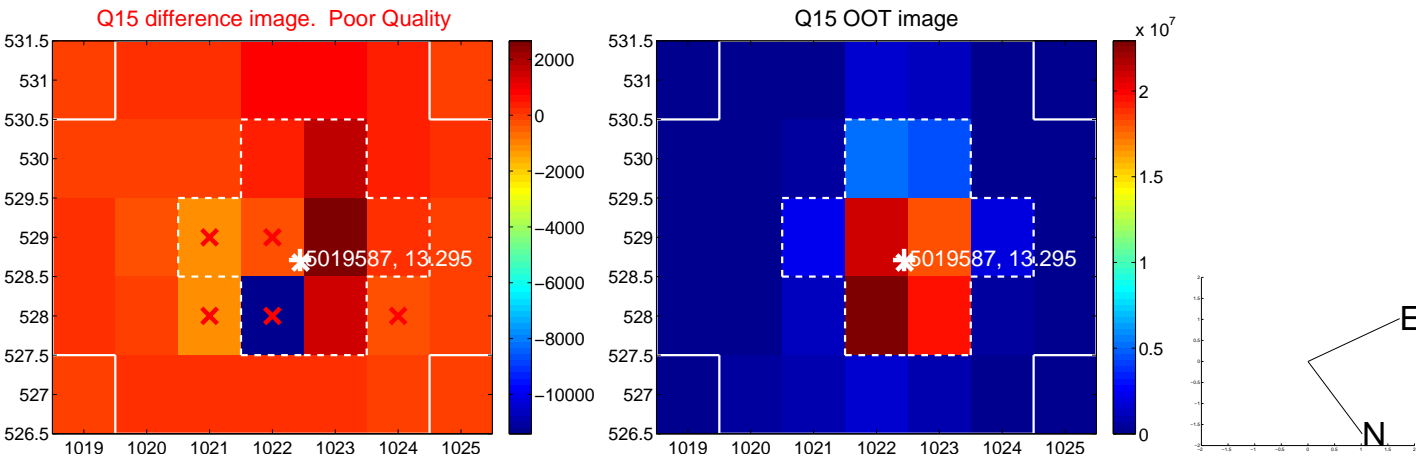
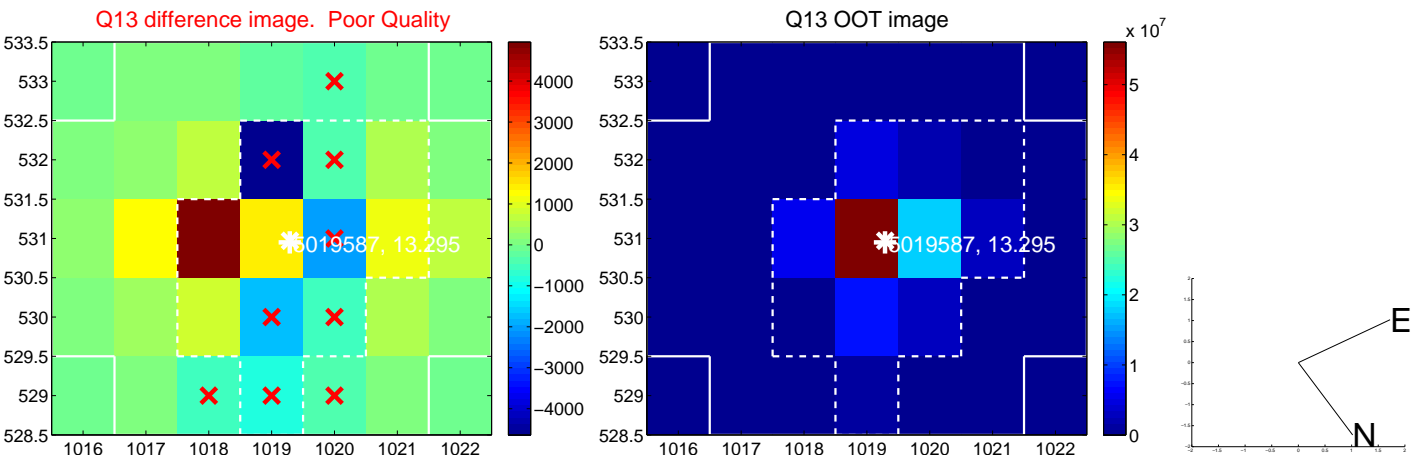
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



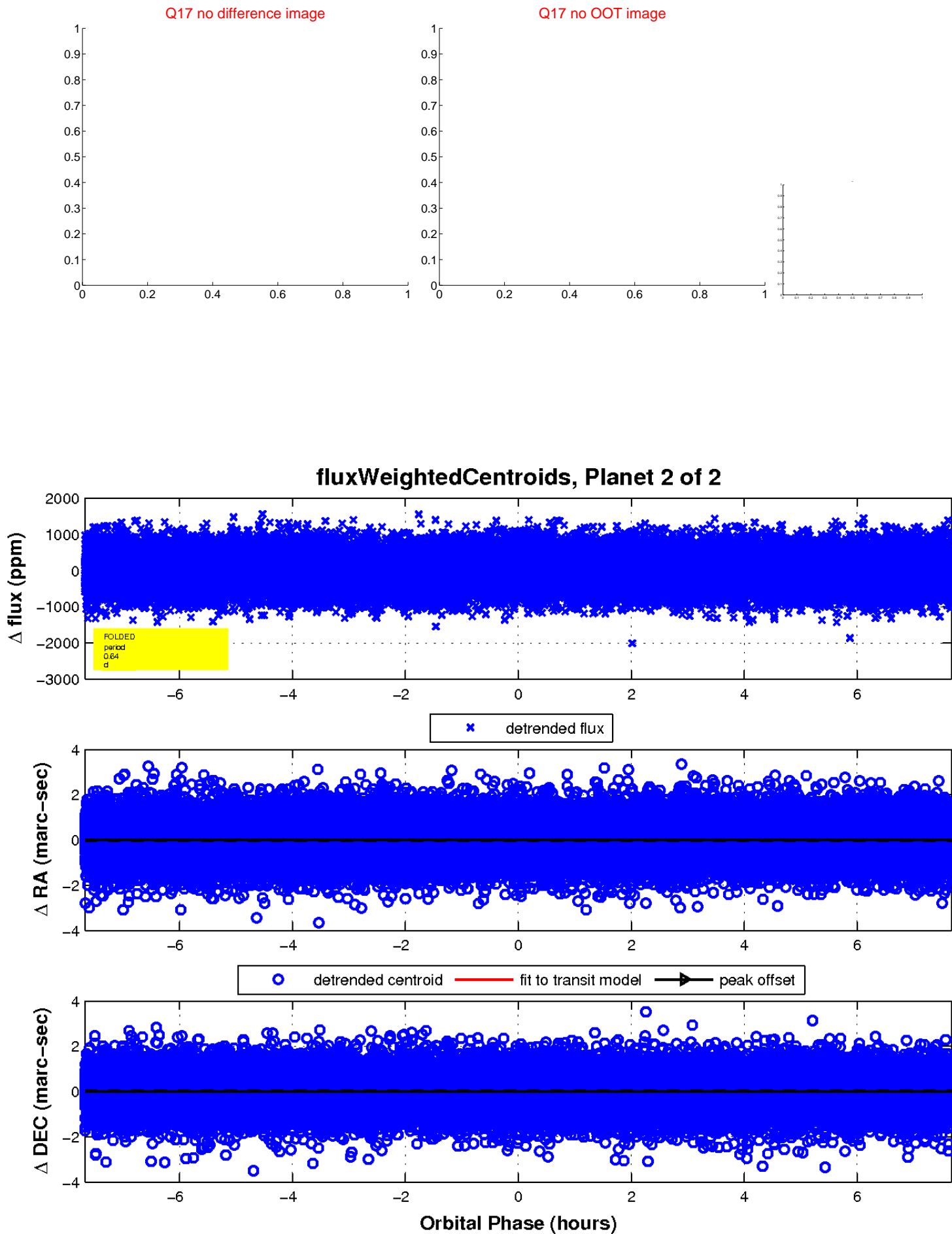
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

