

KIC 010097149

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})
010097149-01	OBS	No	0.542450	131.572418	17.8	3.598	9.2	7.2	1.88	7244	0.81	39392.00
010097149-02	OBS	No	18.470065	137.108908	298.4	1.542	8.9	9.5	1.88	7244	3.84	356.94
010097149-03	OBS	No	39.393838	147.801636	363.3	1.240	9.0	9.7	1.88	7244	4.06	130.01
010097149-04	OBS	No	28.318075	153.479373	482.1	1.180	8.3	8.5	1.88	7244	4.78	201.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010097149-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010097149-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
010097149-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS—HALO_GHOST
010097149-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

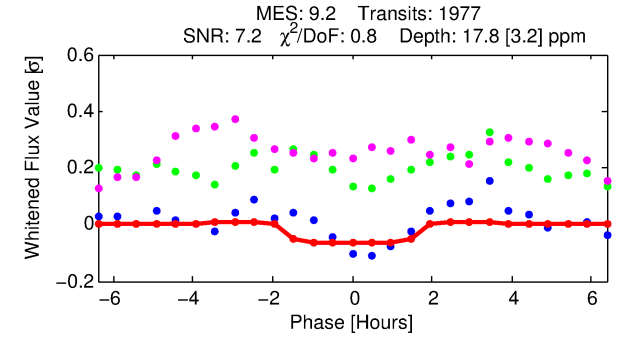
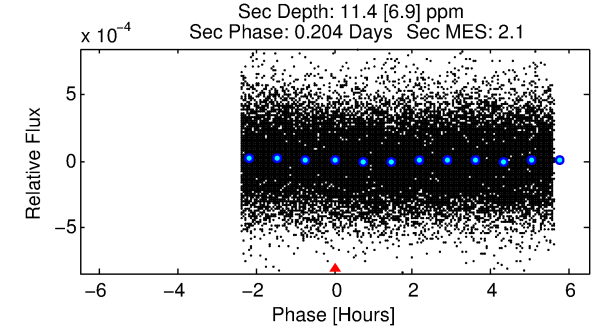
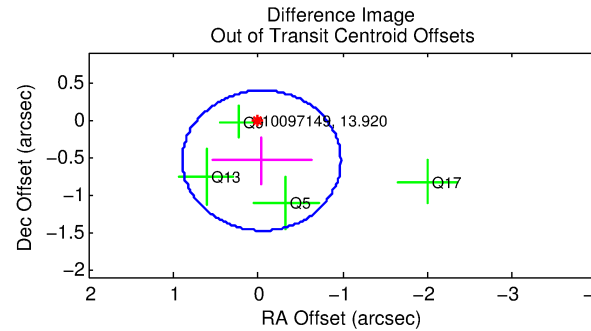
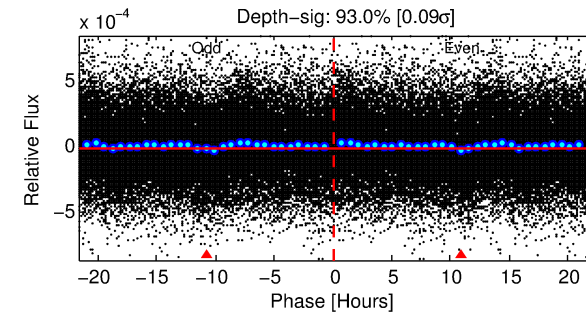
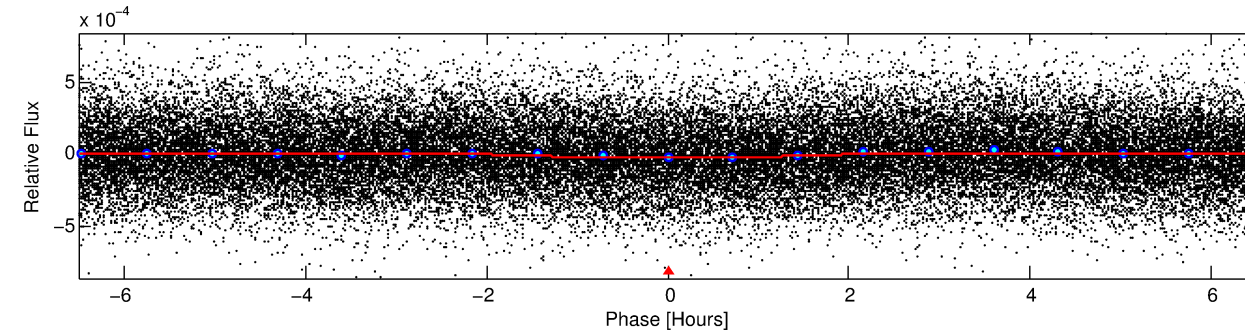
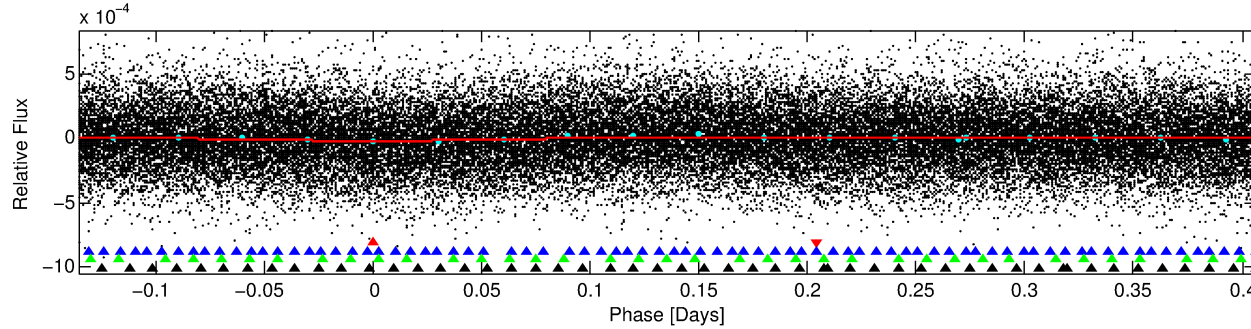
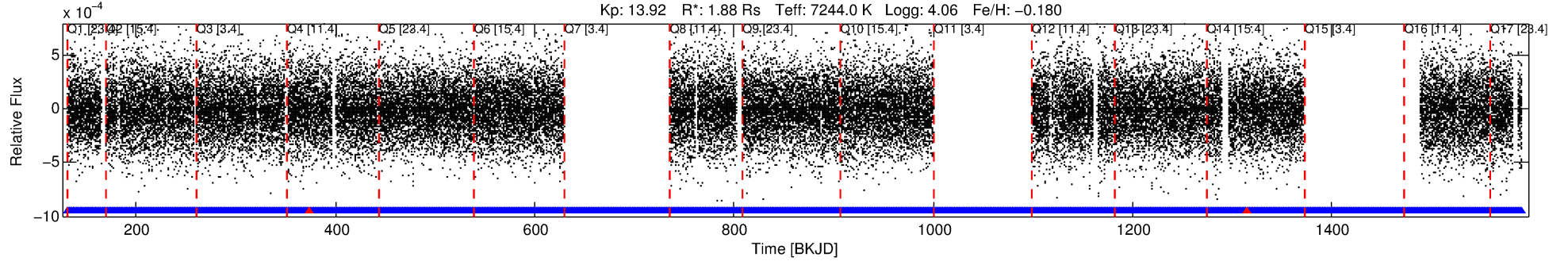
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010097149-01

No Significant Match Found

DV One-Page Summary

KIC: 10097149 Candidate: 1 of 4 Period: 0.542 d



DV Fit Results:

Period = 0.54245 [0.00001] d
Epoch = 131.5724 [0.0052] BKJD
Rp/R* = 0.0040 [0.0041]
a/R* = 1.28 [3.06]
b = 0.36 [14.93]
Seff = 39392.00 [15141.15]
Teq = 3592 [345] K
Rp = 0.81 [0.87] Re
a = 0.0149 [0.0036] AU
Ag = 2.11 [4.60] [0.24 σ]
Teffp = 6694 [3613] K [0.85 σ]

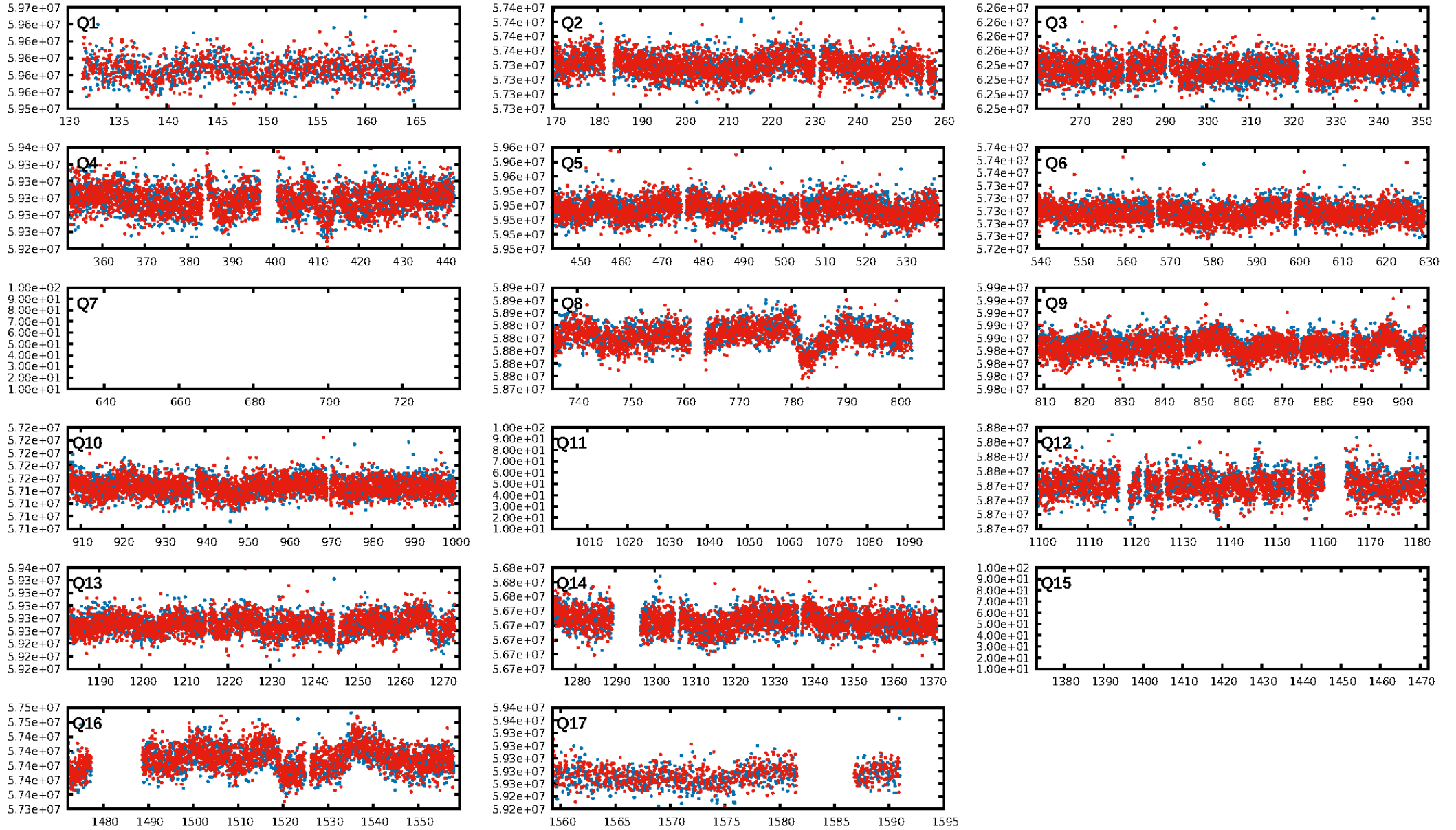
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [109.90 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.45e-12
RollingBand-fgt: 1.00 [1863/1865]
GhostDiagnostic-chr: 1.926
Centroid-sig: 0.3%
Centroid-so: 3.235 arcsec [1.94 σ]
OotOffset-rm: 0.547 arcsec [1.75 σ]
KicOffset-rm: 0.352 arcsec [1.15 σ]
OotOffset-st: 0/0/0/4 [4]
KicOffset-st: 0/0/0/4 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [14/14]

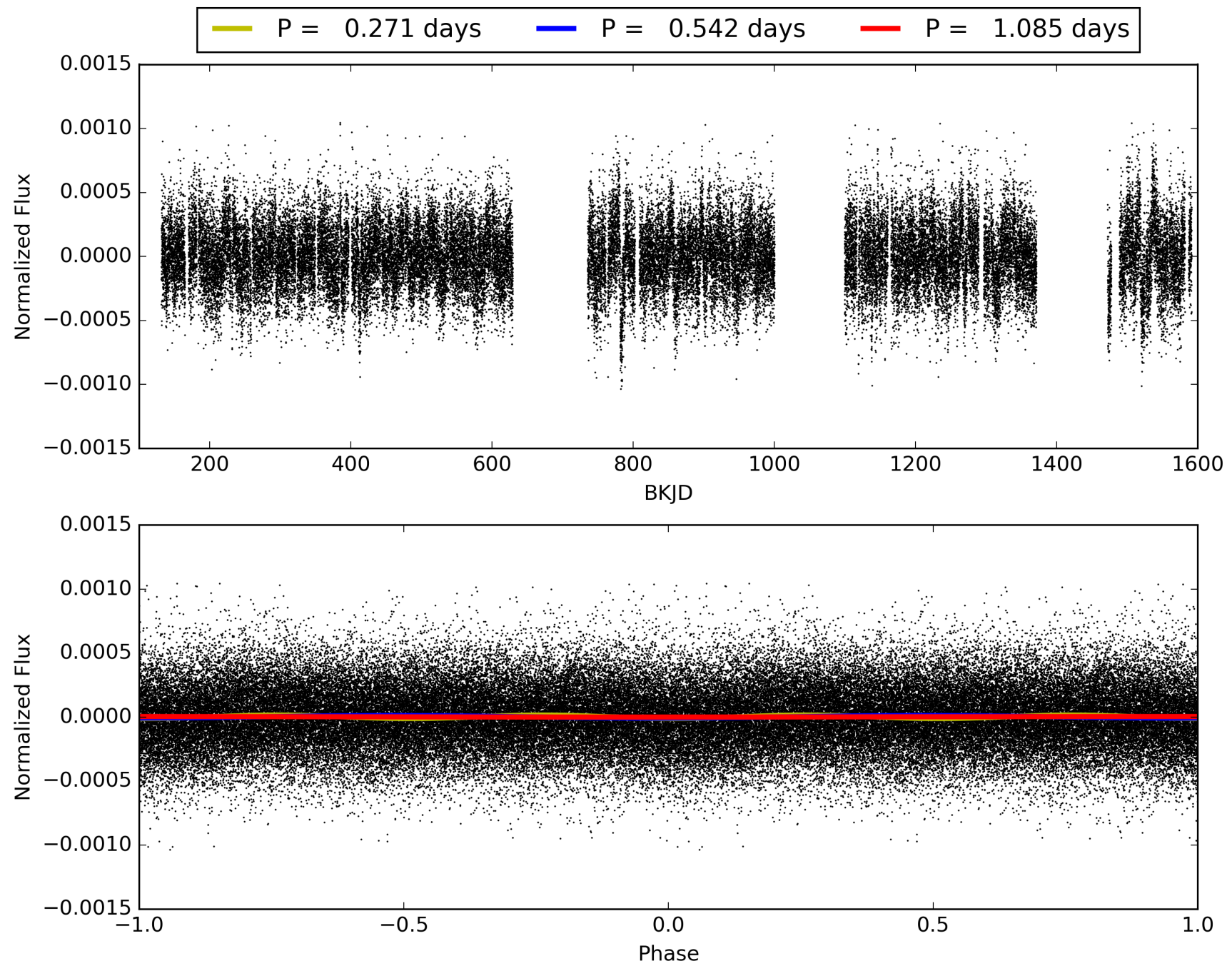
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:52:18 Z

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

TCE 010097149-01, PDC Light Curves

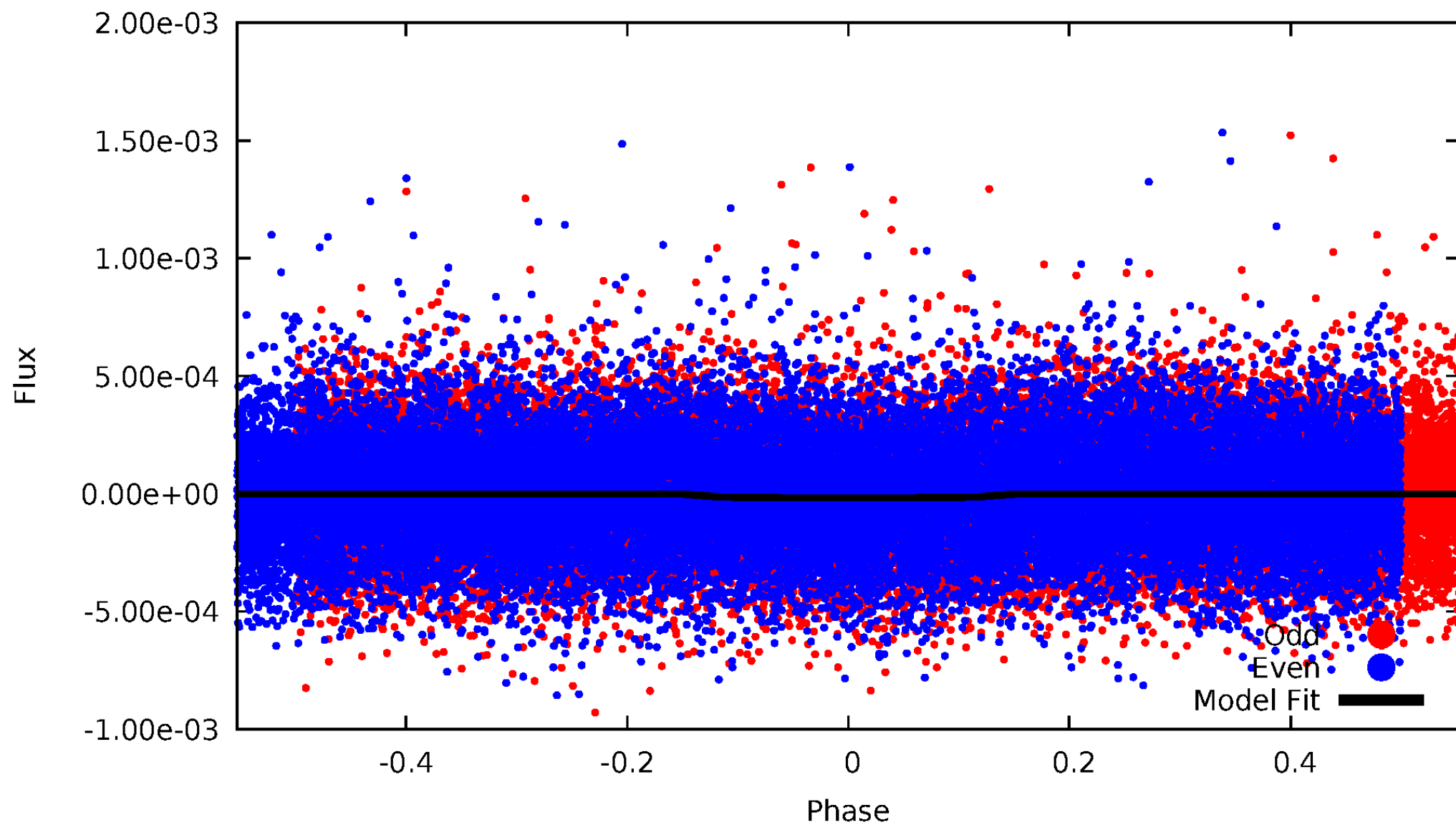


TCE 010097149-01



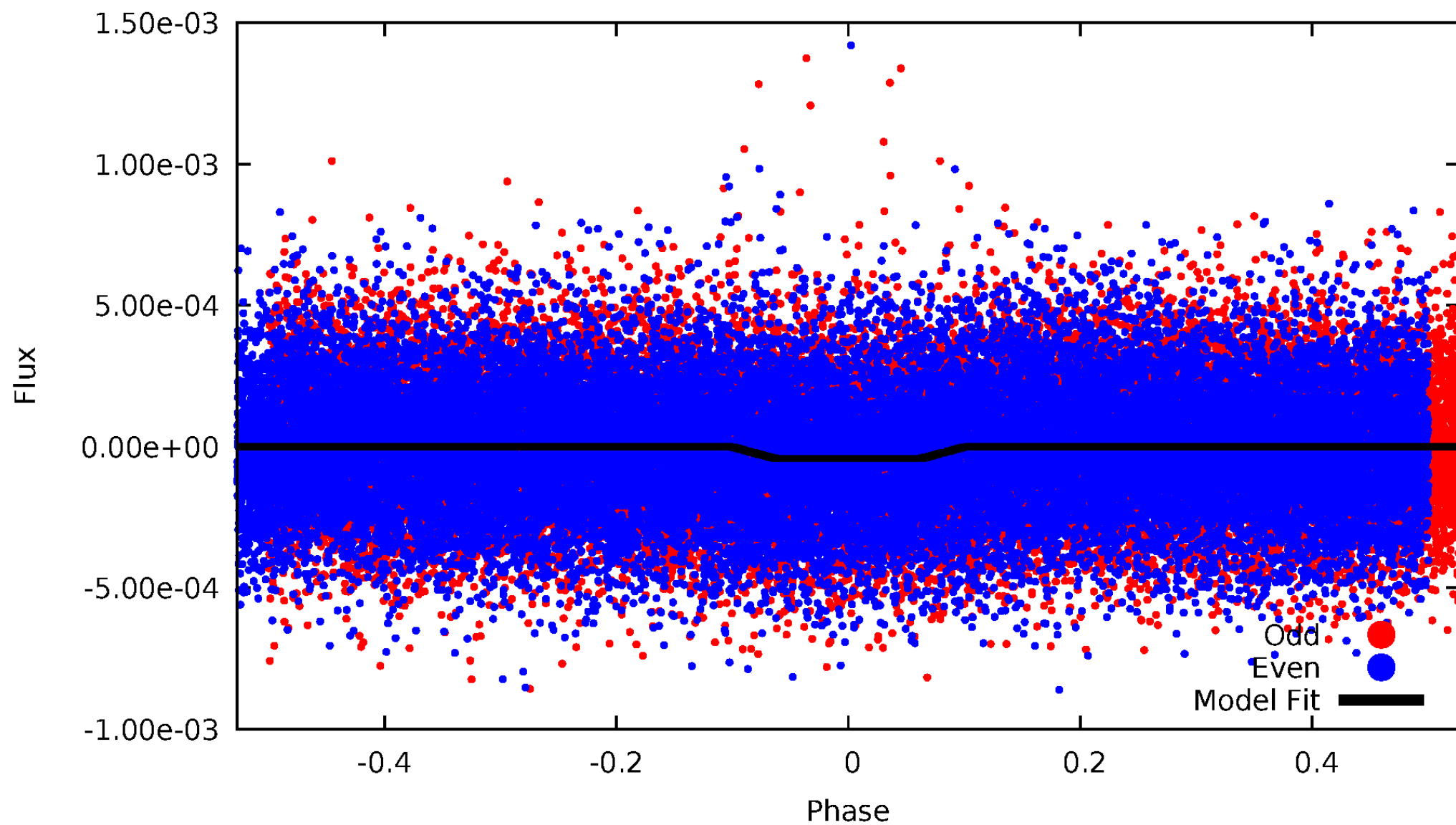
DV Odd/Even

TCE 010097149-01



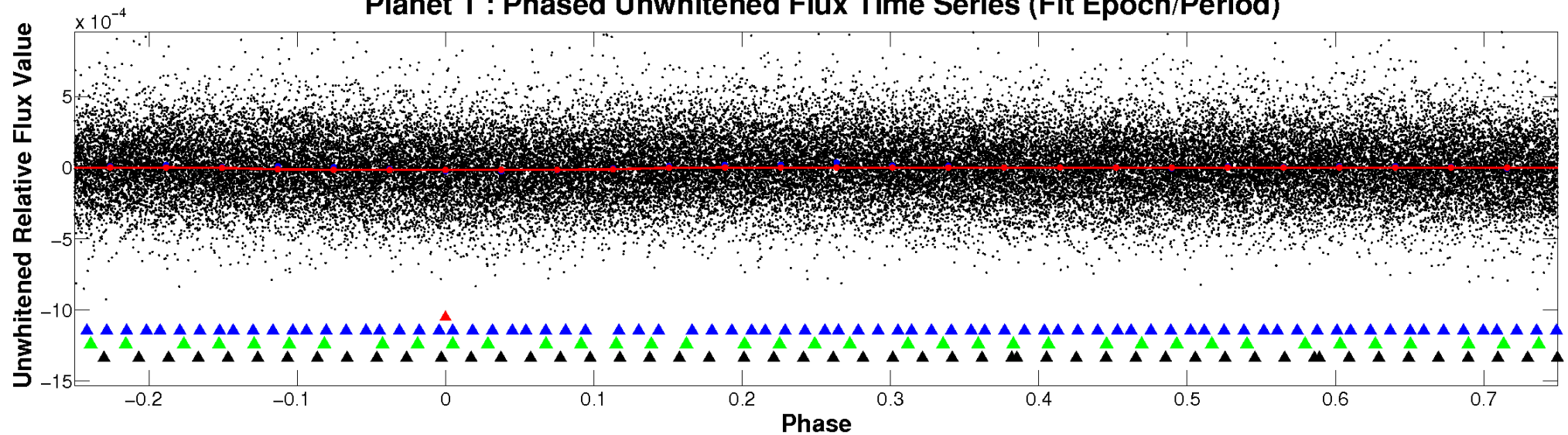
ALT Odd/Even

TCE 010097149-01

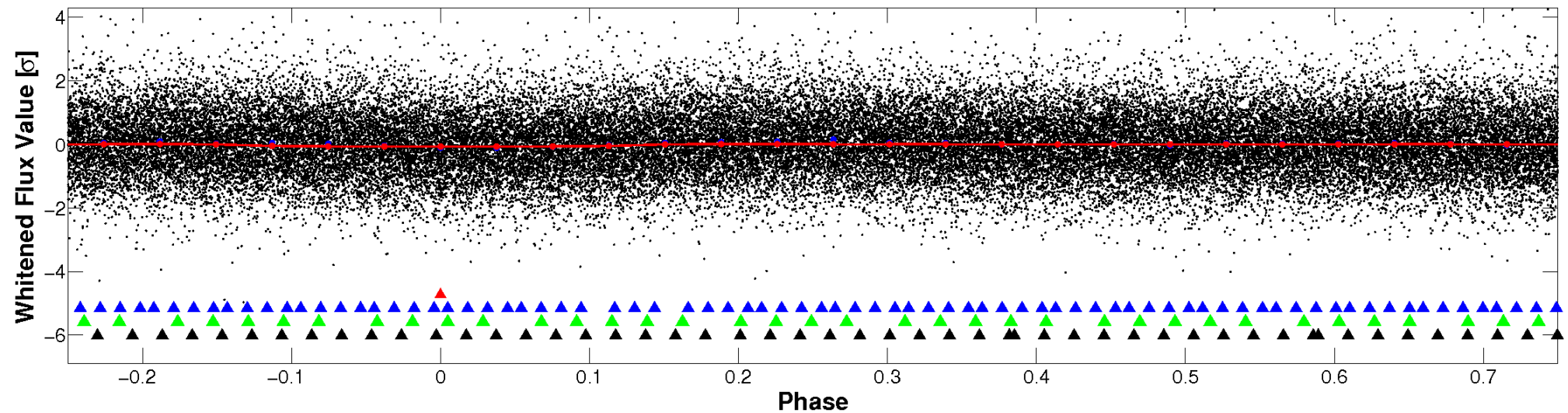


Non-Whitened Vs. Whitened Light Curve

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

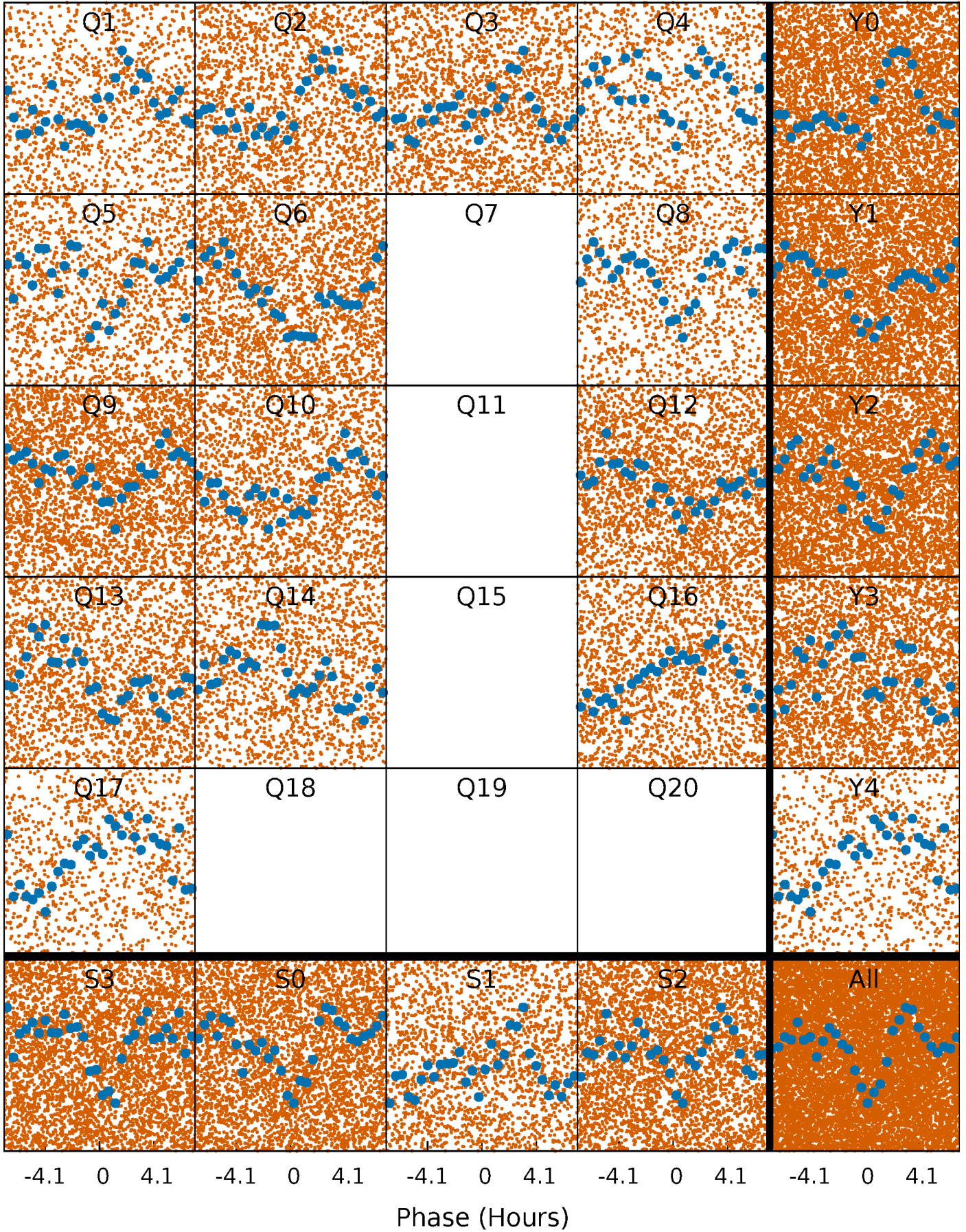


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



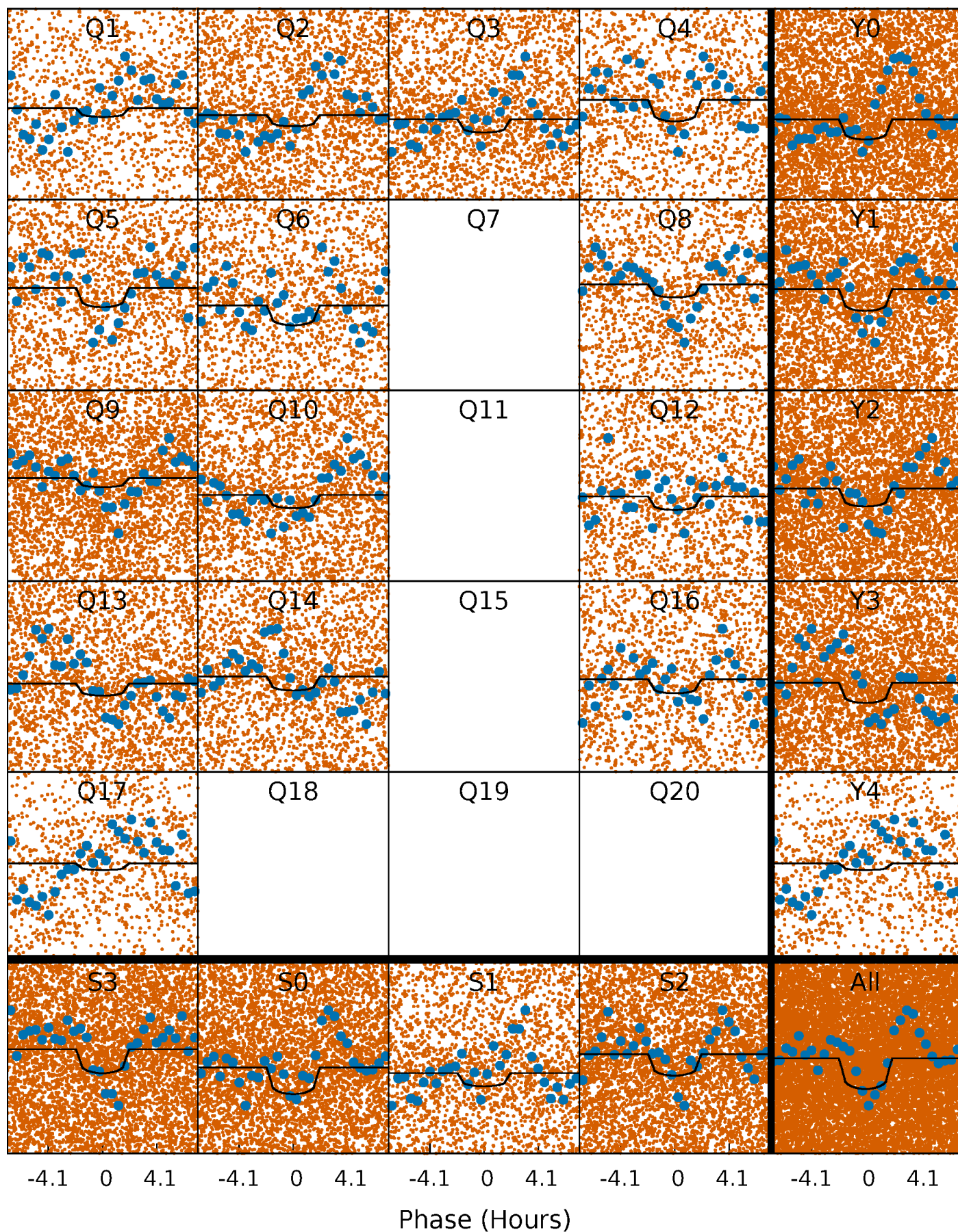
PDC Quarter-Phased Transit Curves

TCE 010097149-01 P= 0.542450 Days $T_0=131.572418$ (BKJD)



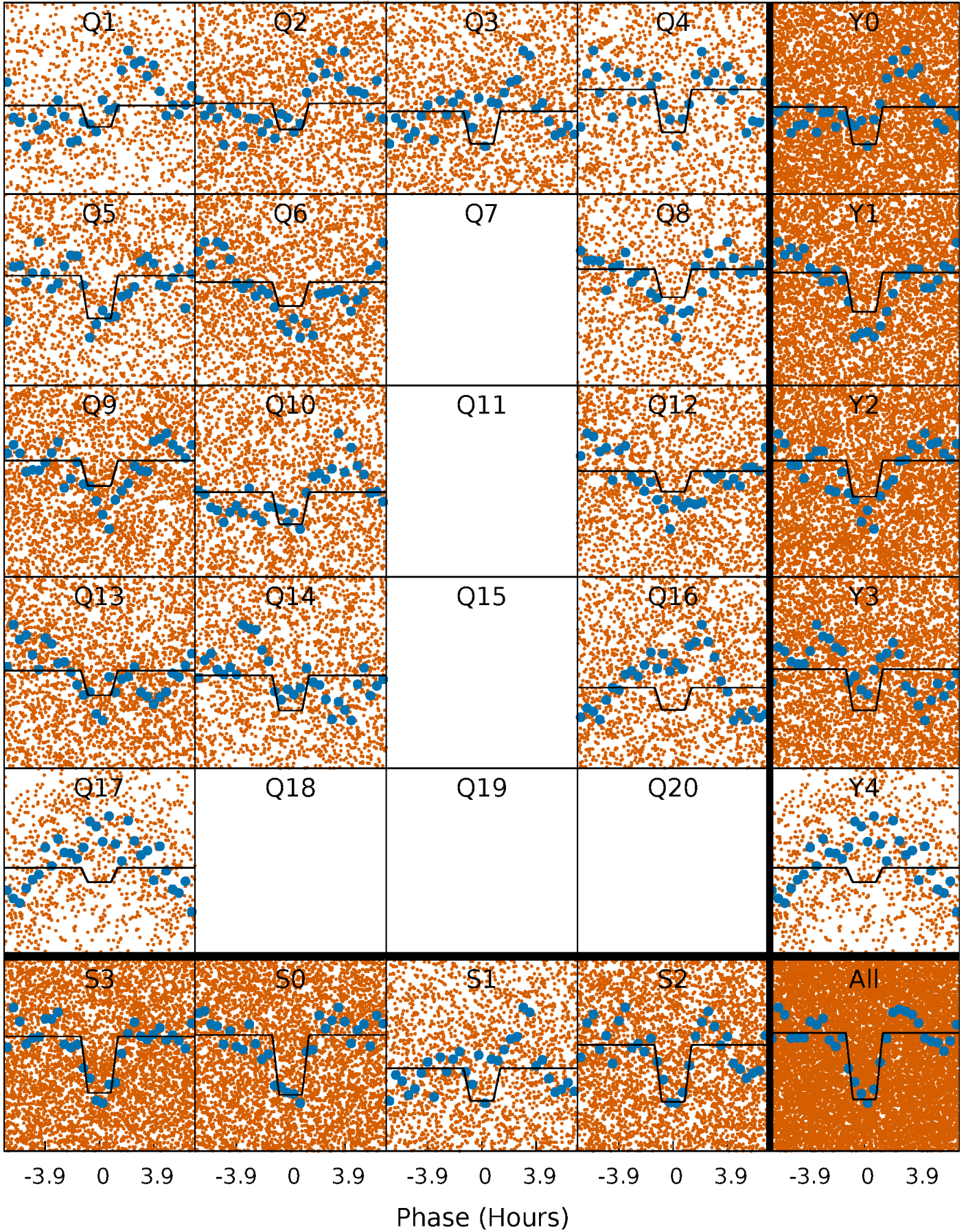
DV Quarter-Phased Transit Curves

TCE 010097149-01 P= 0.542450 Days $T_0=131.572418$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

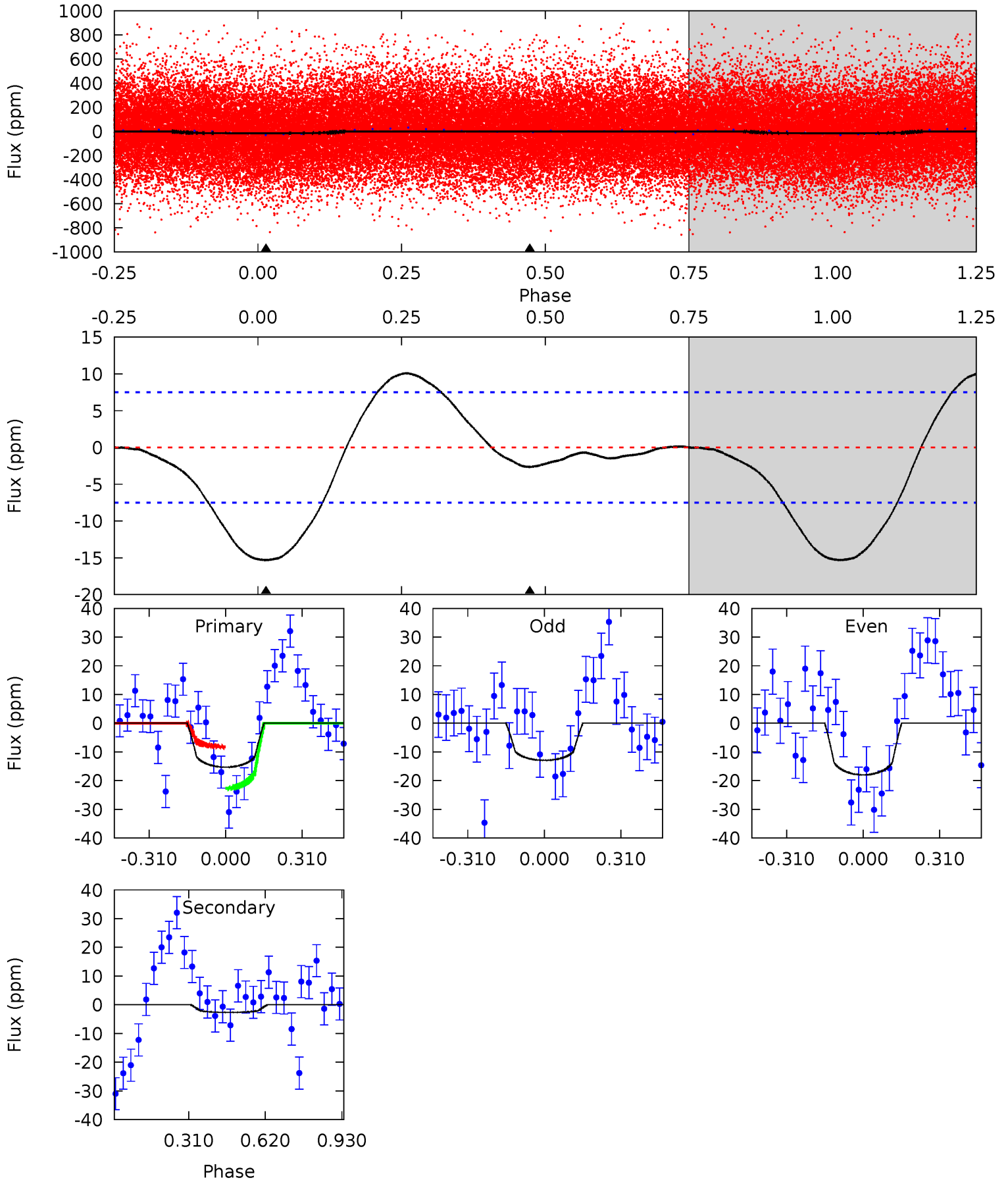
TCE 010097149-01 P= 0.542482 Days $T_0=131.552359$ (BKJD)



DV Model-Shift Uniqueness Test

010097149-01, P = 0.542450 Days, E = 131.029968 Days

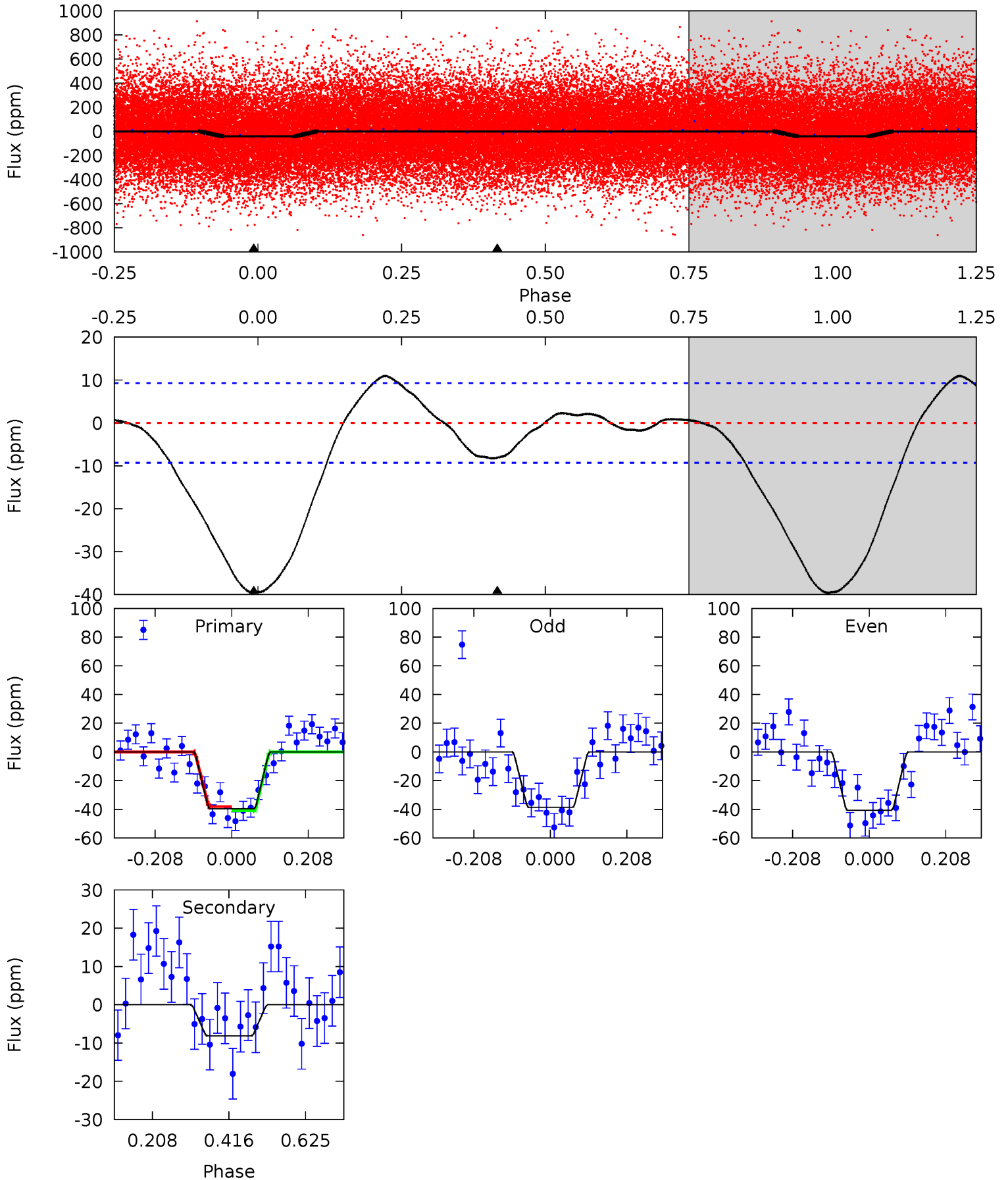
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.81	1.54	0	0	4.32	1.02	1.67	8.81	8.81	1.54	1.54	1.44	0.99	0.40	4.12



Alt Model-Shift Uniqueness Test

010097149-01, P = 0.542482 Days, E = 131.009877 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	3.87	0	0	4.41	1.26	1.09	18.9	18.9	3.87	3.87	0.48	1.04	0.22	0.69



Stellar Parameters For KIC 010097149

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7244^{+226}_{-327}	$4.064^{+0.180}_{-0.180}$	$-0.180^{+0.250}_{-0.350}$	$1.882^{+0.556}_{-0.505}$	$1.495^{+0.212}_{-0.259}$	$0.316^{+0.366}_{-0.149}$
	+3%/-5%	+4%/-4%	+139%/-194%	+30%/-27%	+14%/-17%	+116%/-47%
Source	KIC0	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 010097149-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3 ± 2	$1.01^{+0.69}_{-0.58}$	5015^{+416}_{-377}	-3006^{+8867}_{-1216}	$0.265^{+1.410}_{-0.212}$
Alt.	-8 ± 2	$1.31^{+0.91}_{-0.68}$	5027^{+400}_{-378}	4120^{+2629}_{-7797}	$0.555^{+1.929}_{-0.371}$

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

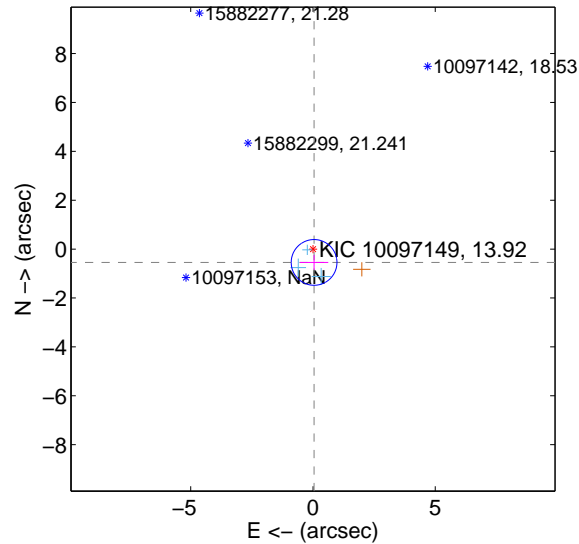
Supplemental centroid analysis for 010097149-01. Kepler magnitude: 13.92. Transit SNR 7.16

There are 3 quarters with good PRF difference image offsets

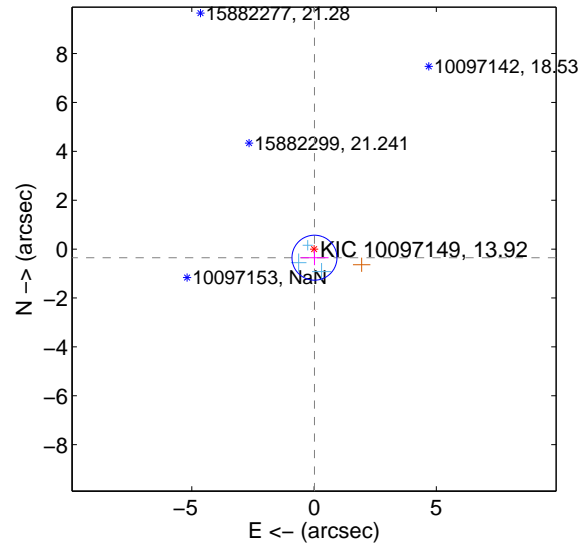
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.547 ± 0.312	1.75	-0.045 ± 0.580	-0.545 ± 0.309
PRF-fit source offset from KIC position	0.352 ± 0.307	1.15	-0.017 ± 0.574	-0.352 ± 0.306
photometric centroid source offset	3.24 ± 1.67	1.94	-0.87 ± 1.83	3.12 ± 1.66

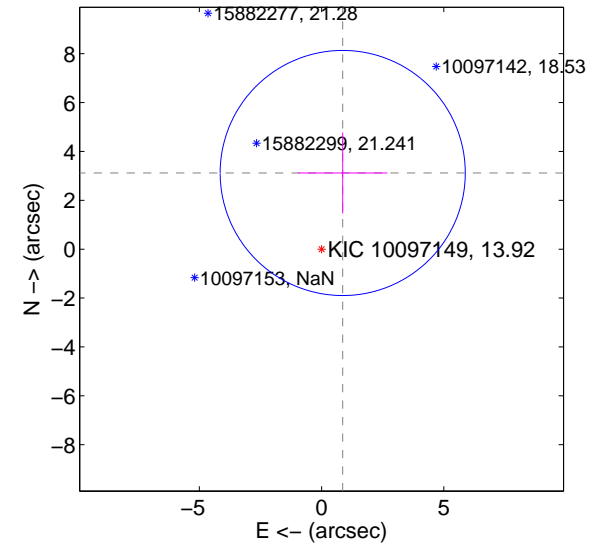
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

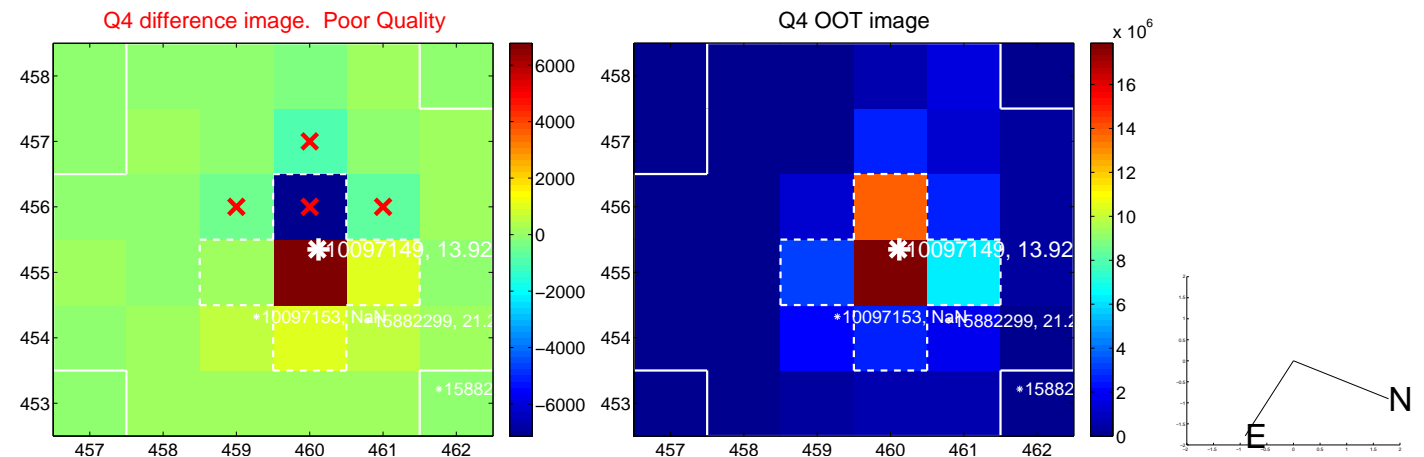
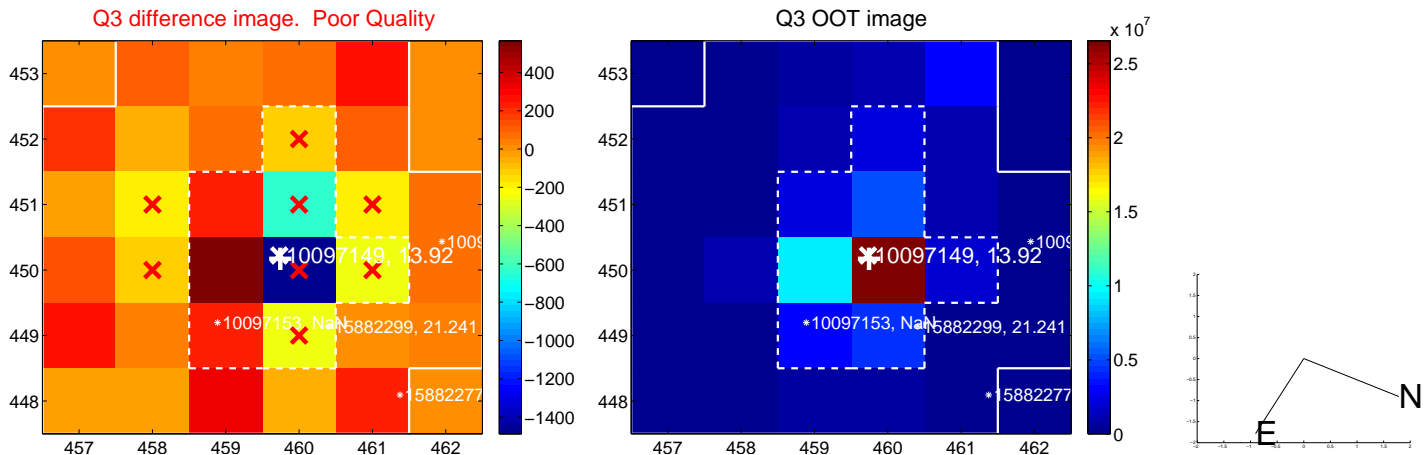
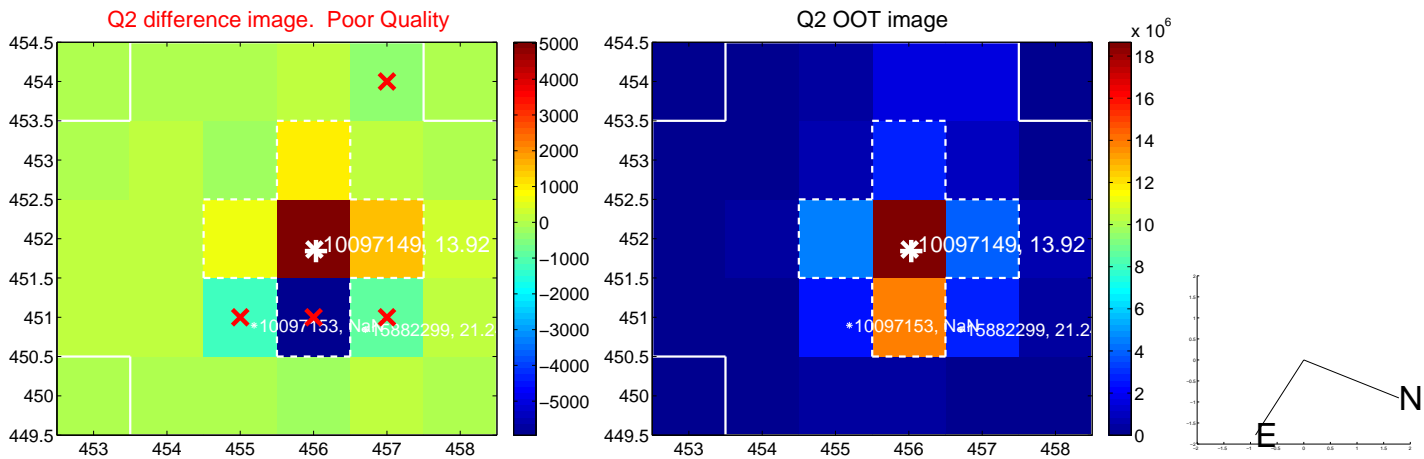
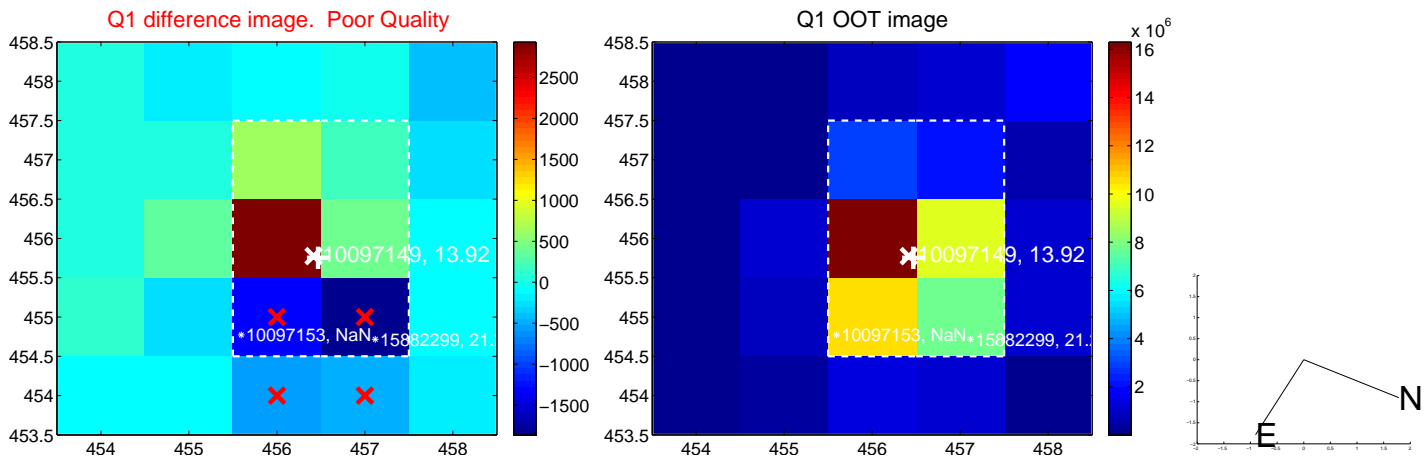


offset from photometric centroids

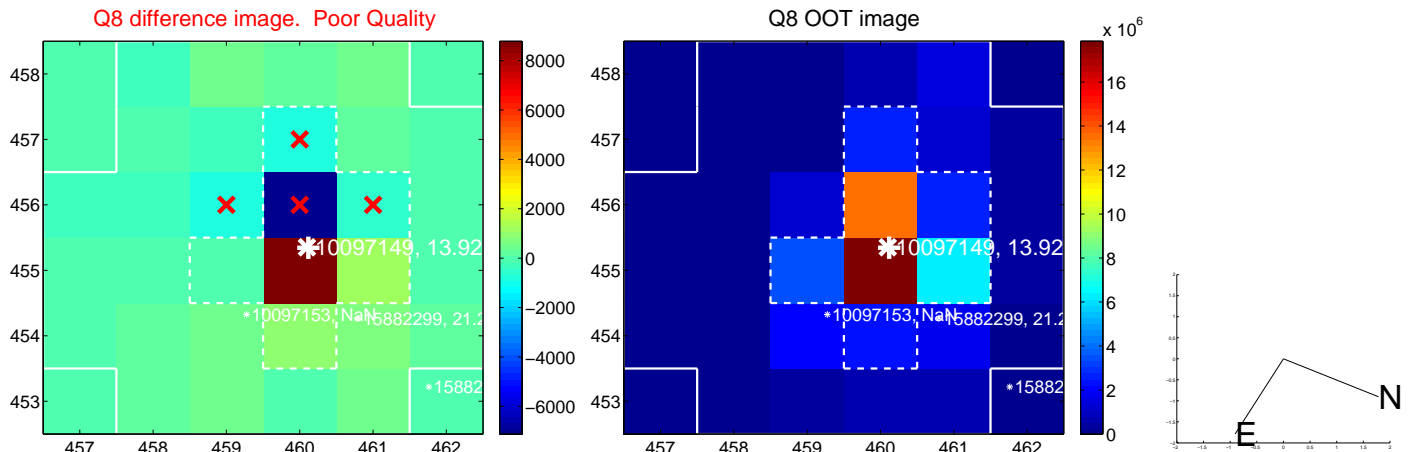
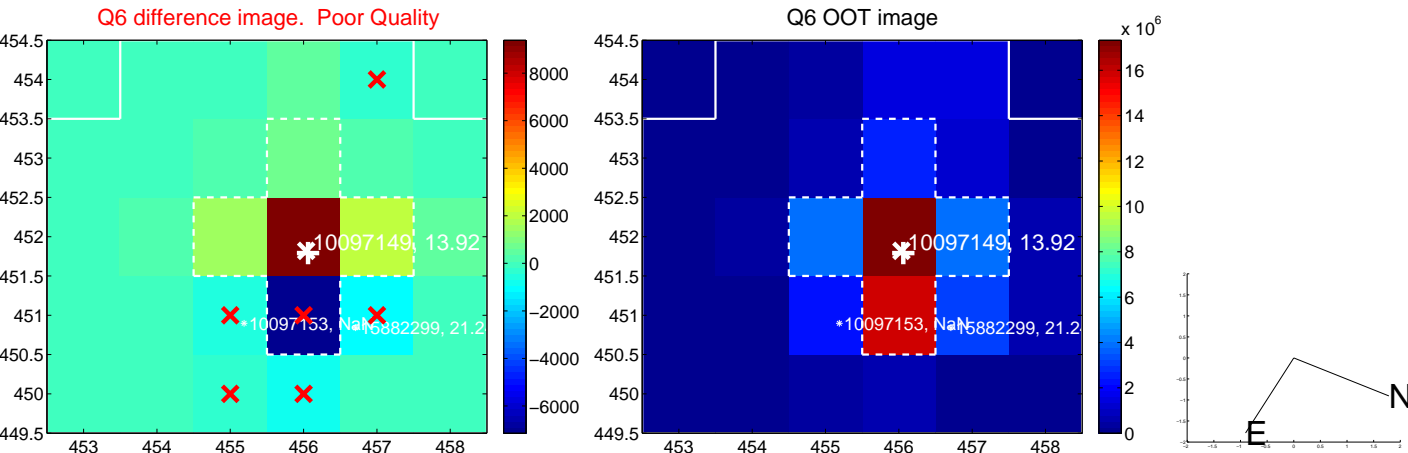
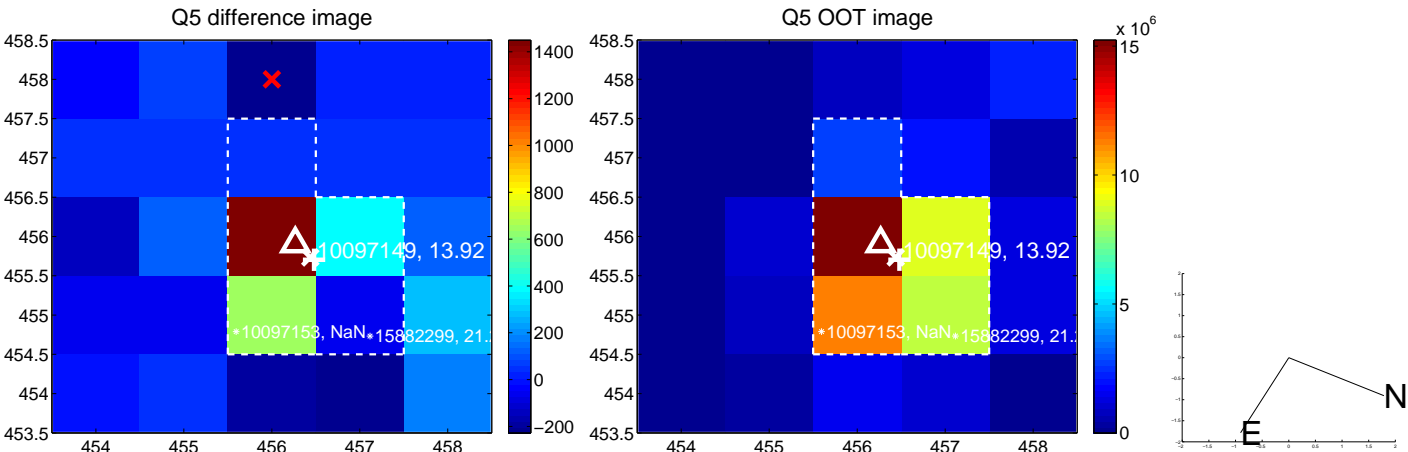


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

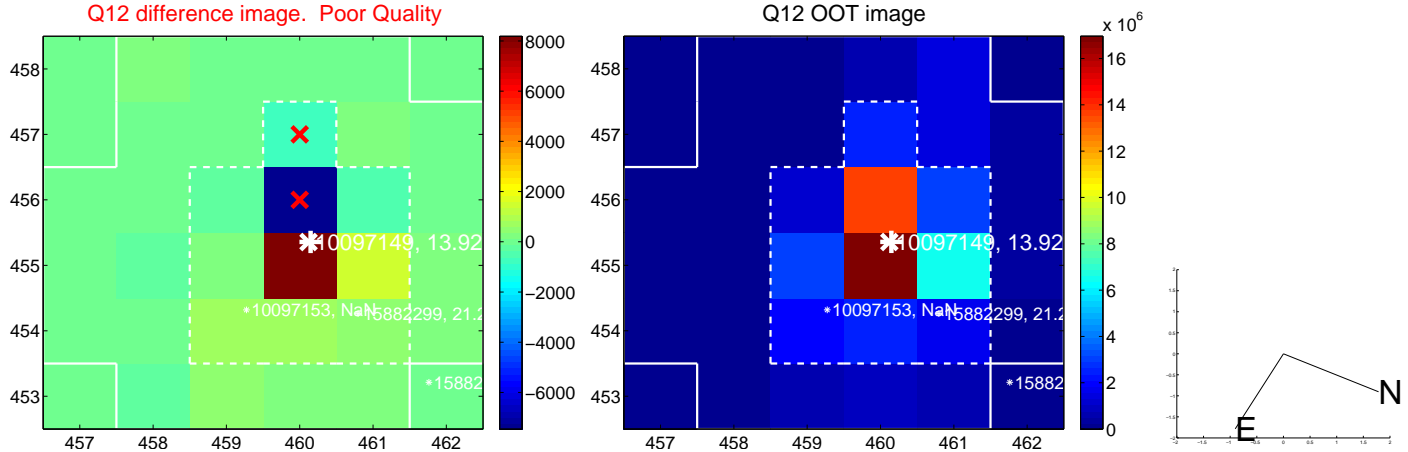
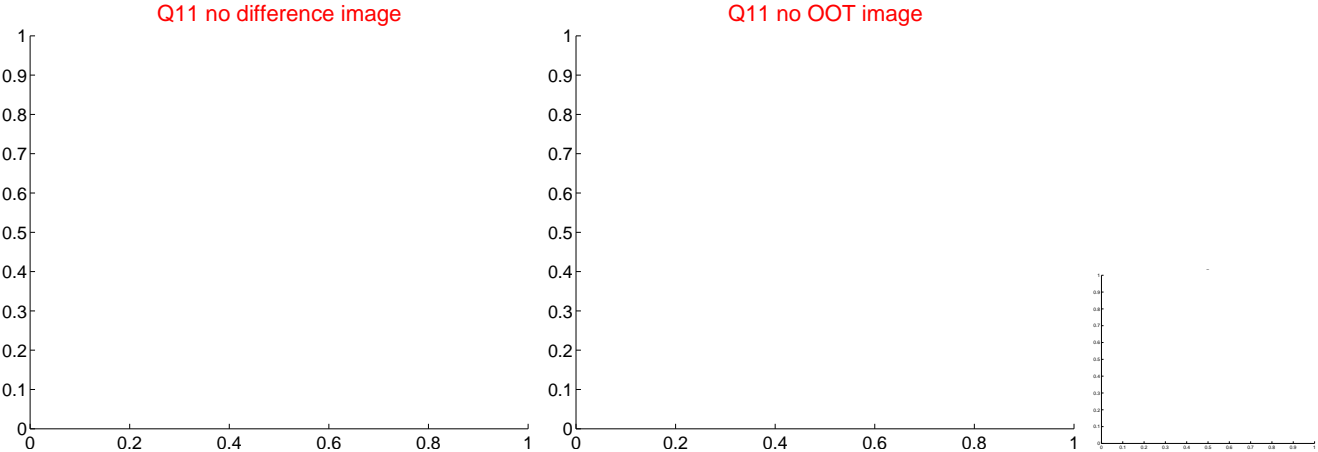
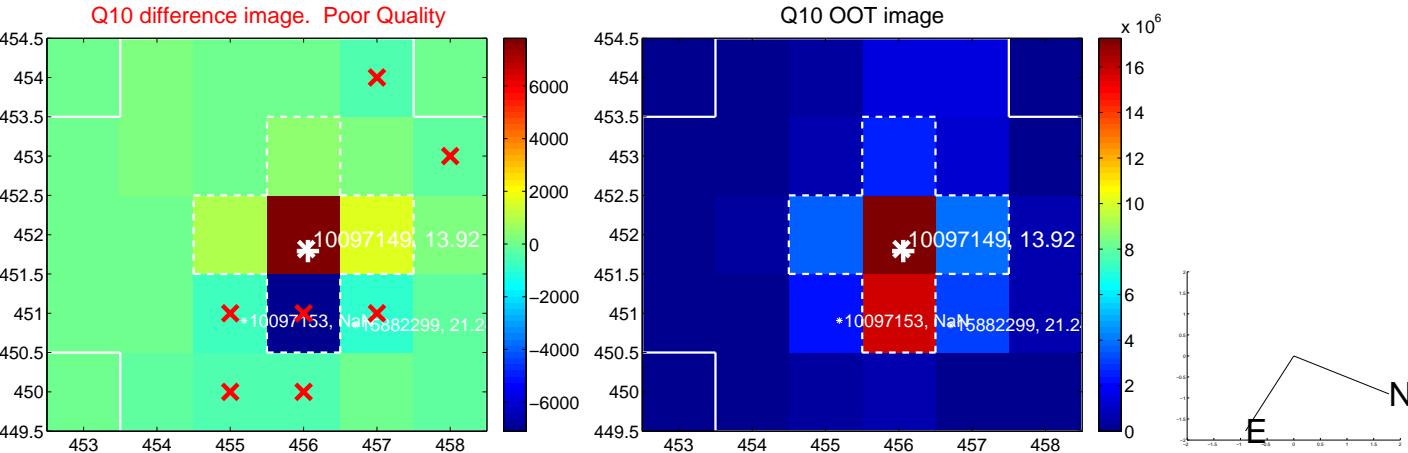
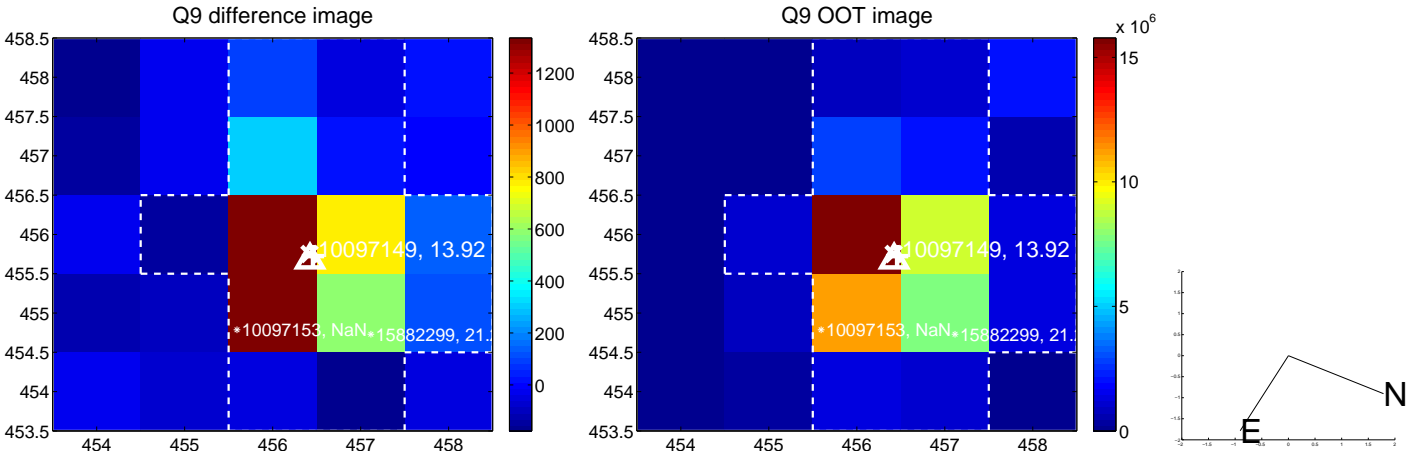
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



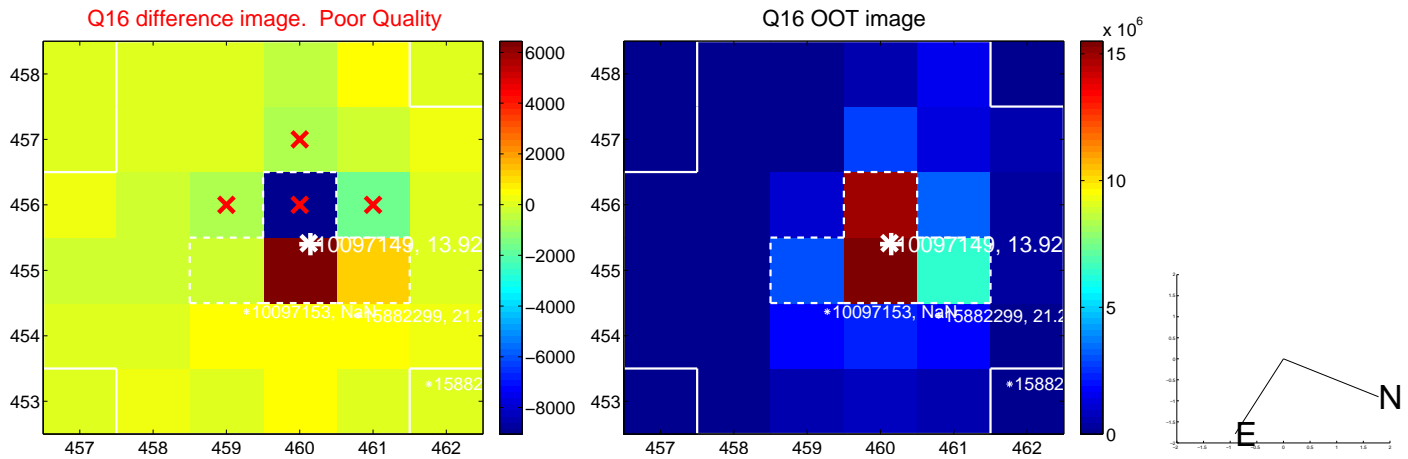
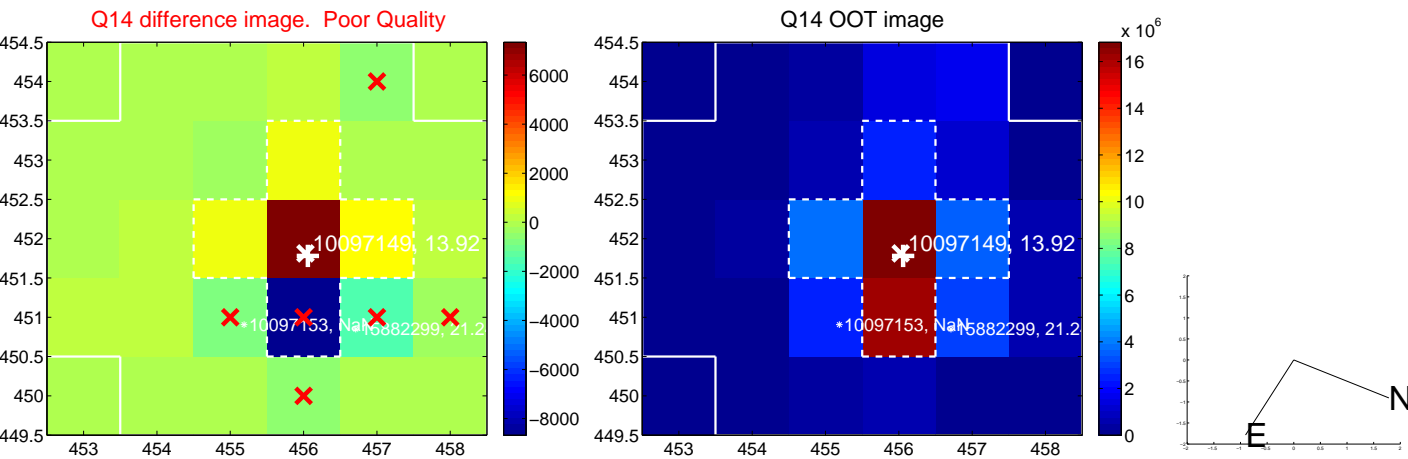
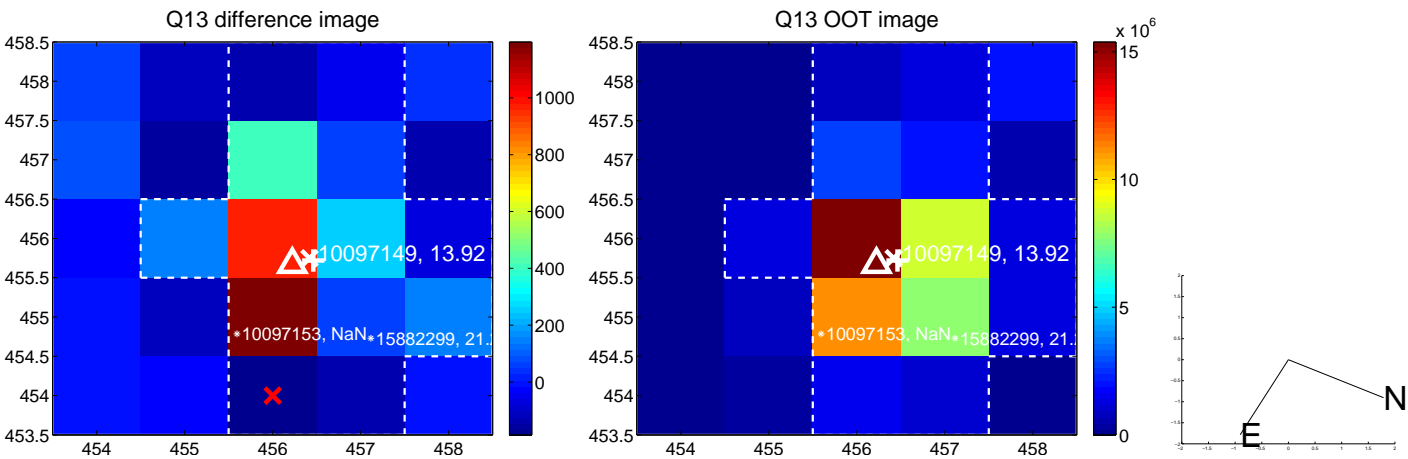
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



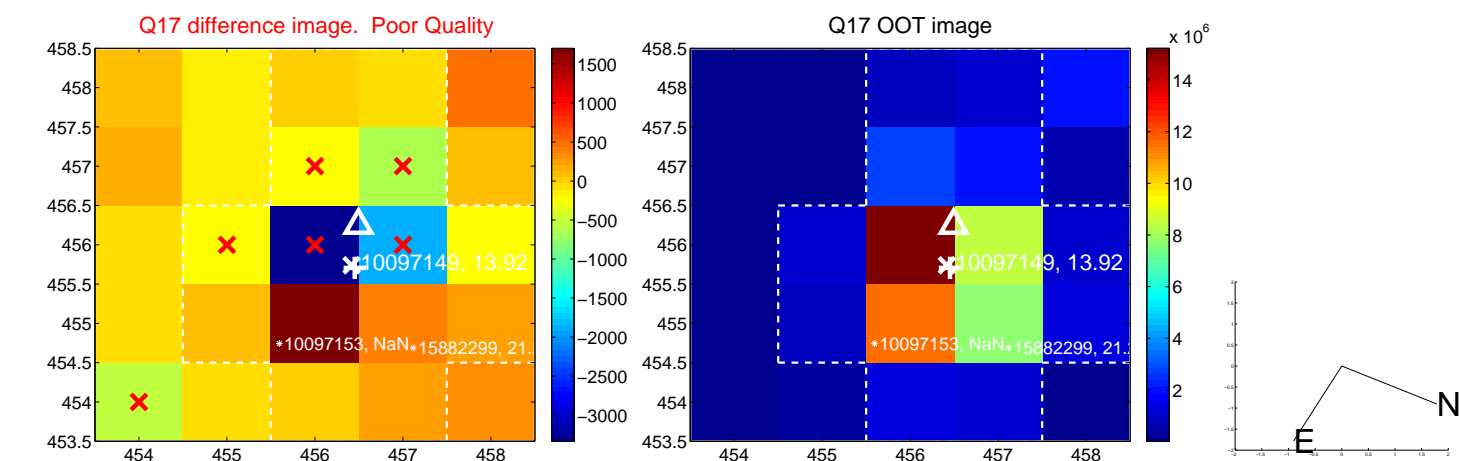
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



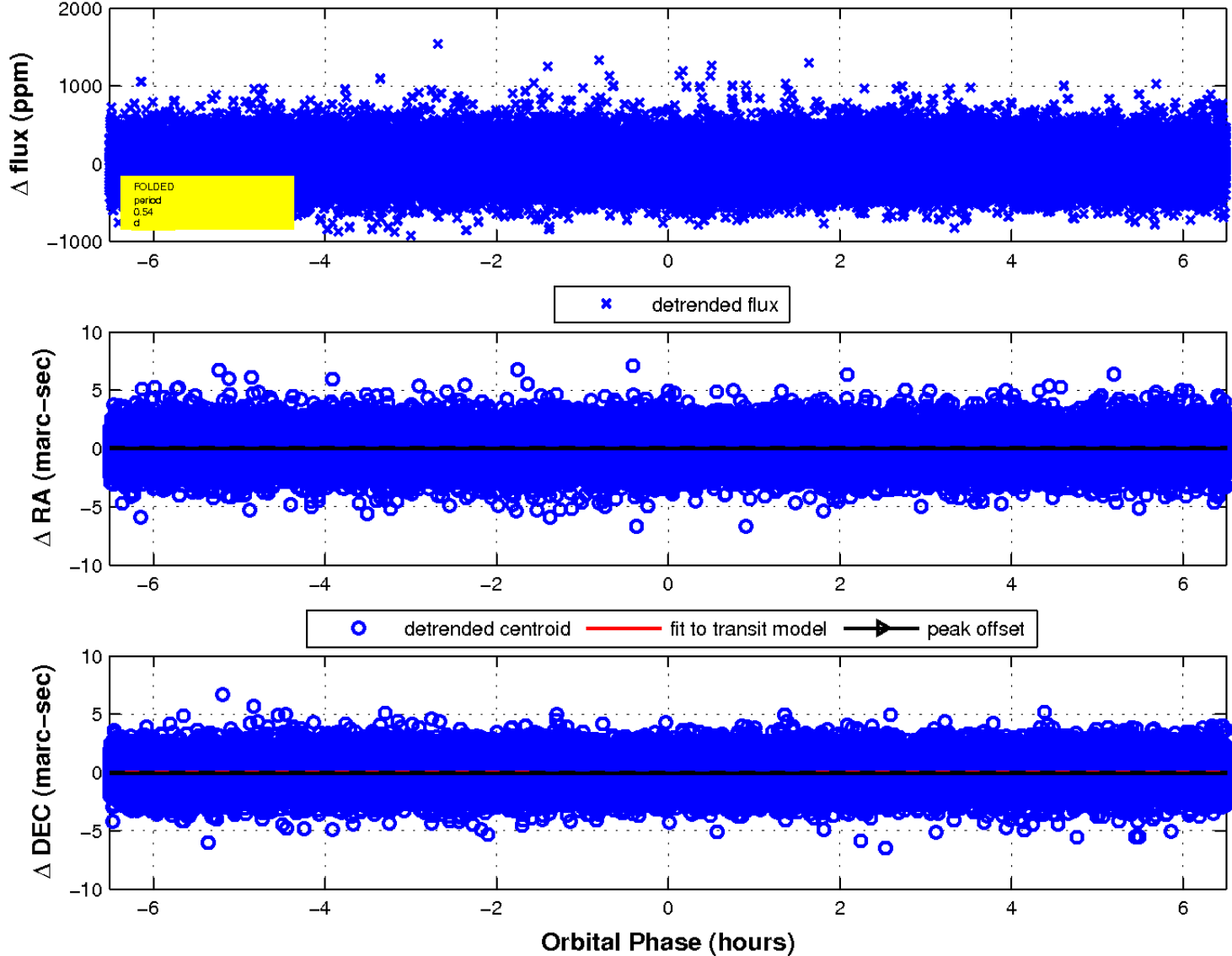
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



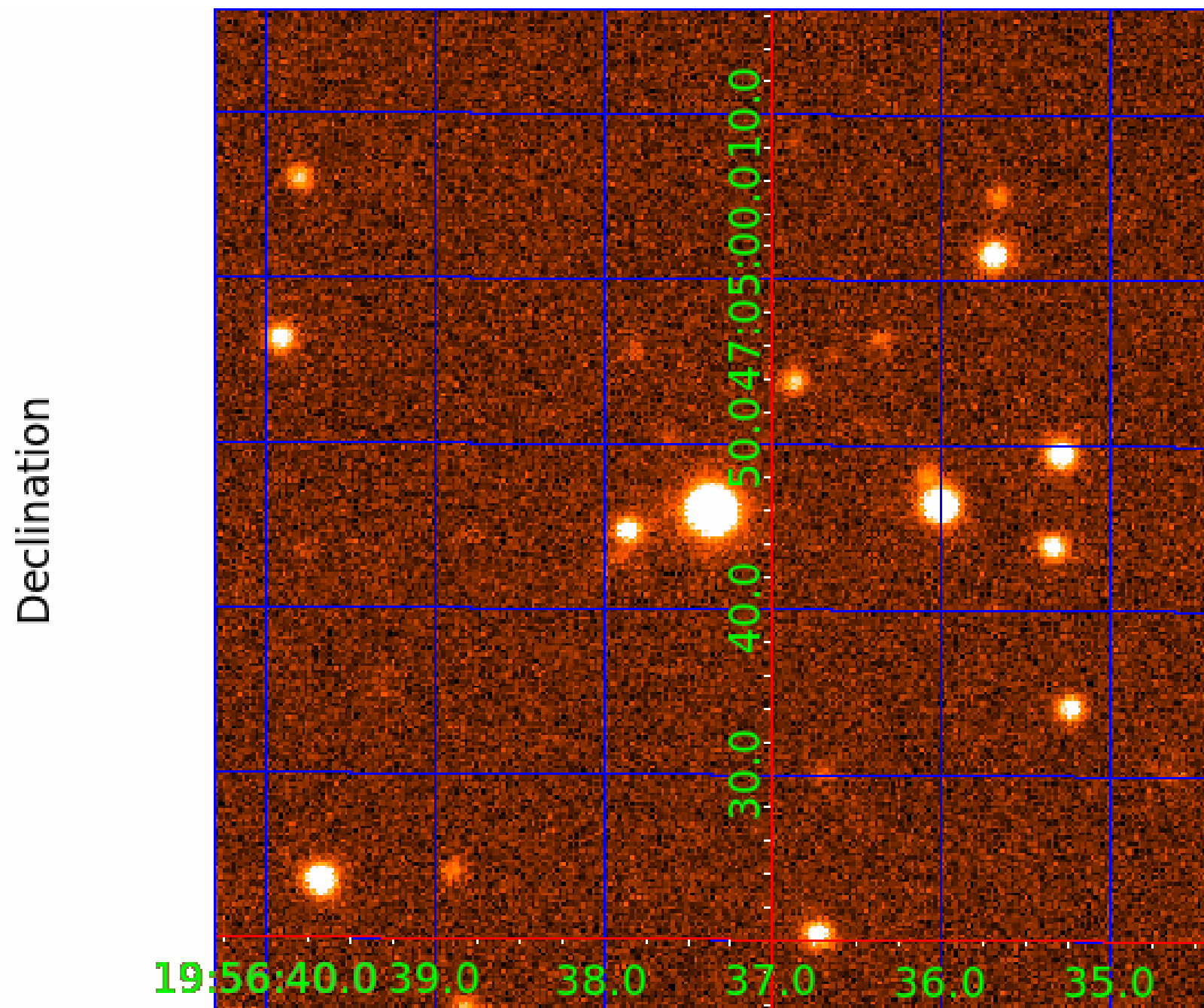
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 4



UKIRT Image



KIC 010097149

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})
010097149-01	OBS	No	0.542450	131.572418	17.8	3.598	9.2	7.2	1.88	7244	0.81	39392.00
010097149-02	OBS	No	18.470065	137.108908	298.4	1.542	8.9	9.5	1.88	7244	3.84	356.94
010097149-03	OBS	No	39.393838	147.801636	363.3	1.240	9.0	9.7	1.88	7244	4.06	130.01
010097149-04	OBS	No	28.318075	153.479373	482.1	1.180	8.3	8.5	1.88	7244	4.78	201.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010097149-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010097149-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
010097149-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS—HALO_GHOST
010097149-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

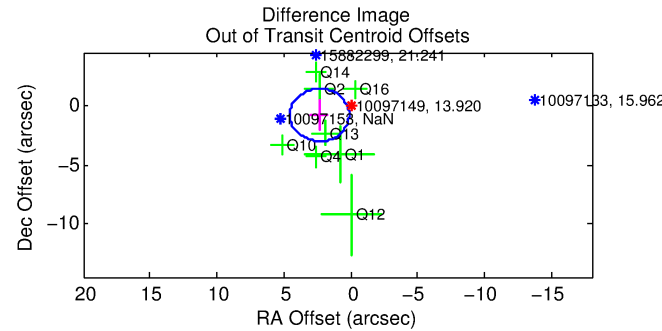
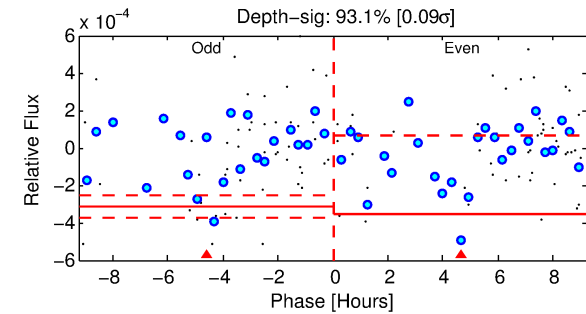
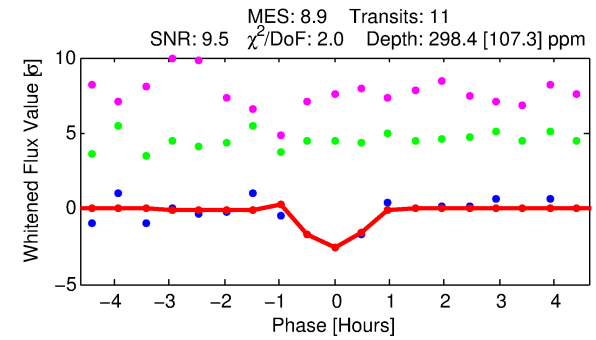
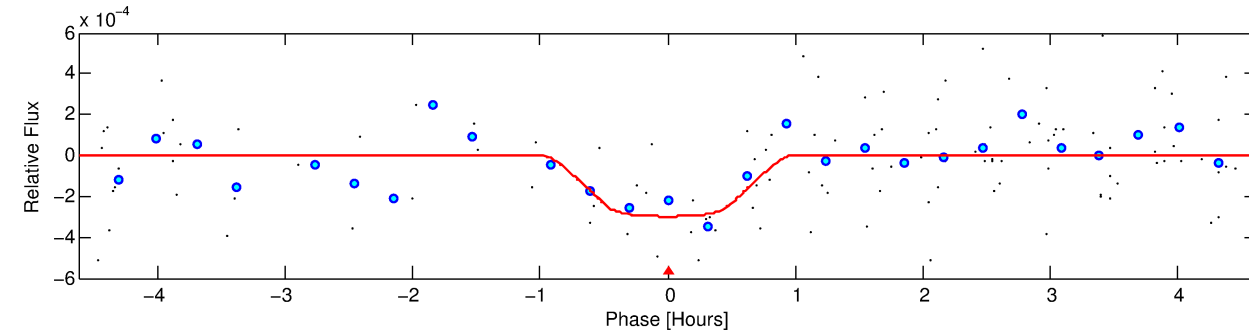
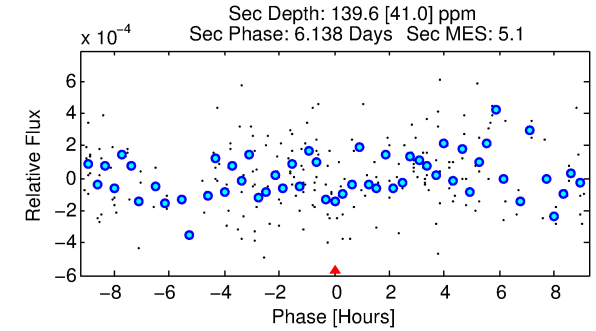
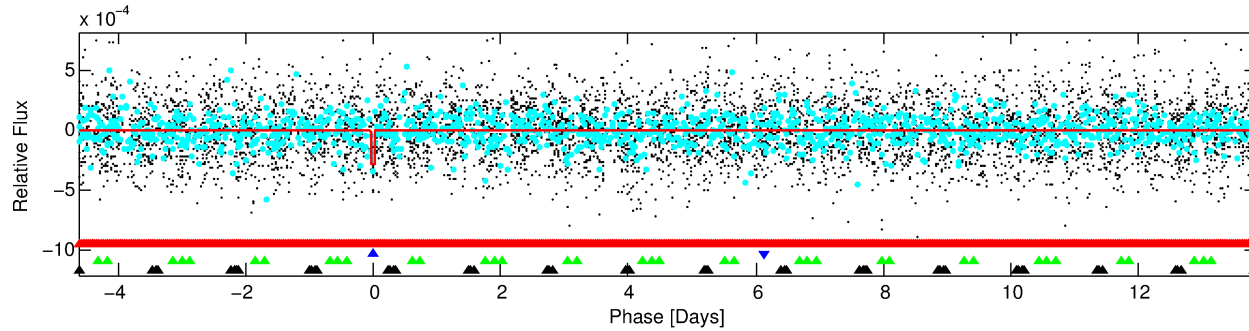
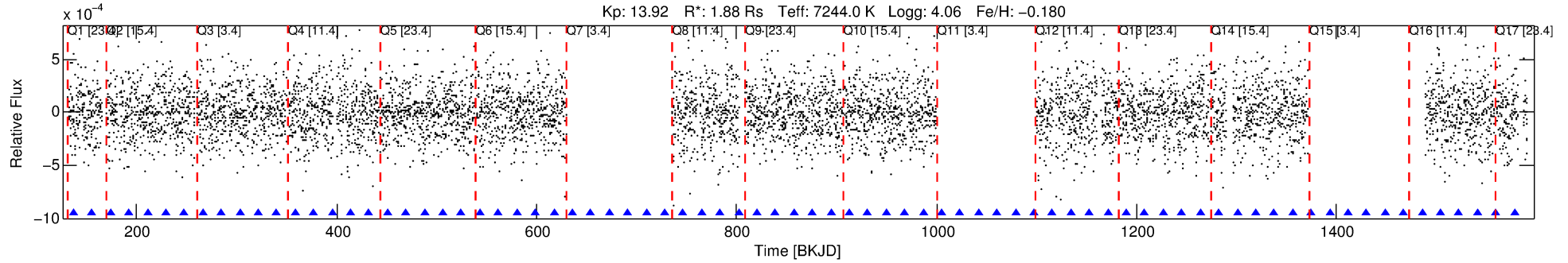
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010097149-02

No Significant Match Found

DV One-Page Summary

KIC: 10097149 Candidate: 2 of 4 Period: 18.470 d



DV Fit Results:

Period = 18.47006 [0.00019] d
Epoch = 137.1089 [0.0058] BKJD
Rp/R* = 0.0187 [0.0646]
a/R* = 40.14 [883.15]
b = 0.92 [3.76]
Seff = 356.94 [137.20]
Teq = 1108 [107] K
Rp = 3.84 [13.32] Re
a = 0.1565 [0.0376] AU
Ag = 127.39 [882.36] [0.14 σ]
Teffp = 5757 [9960] K [0.47 σ]

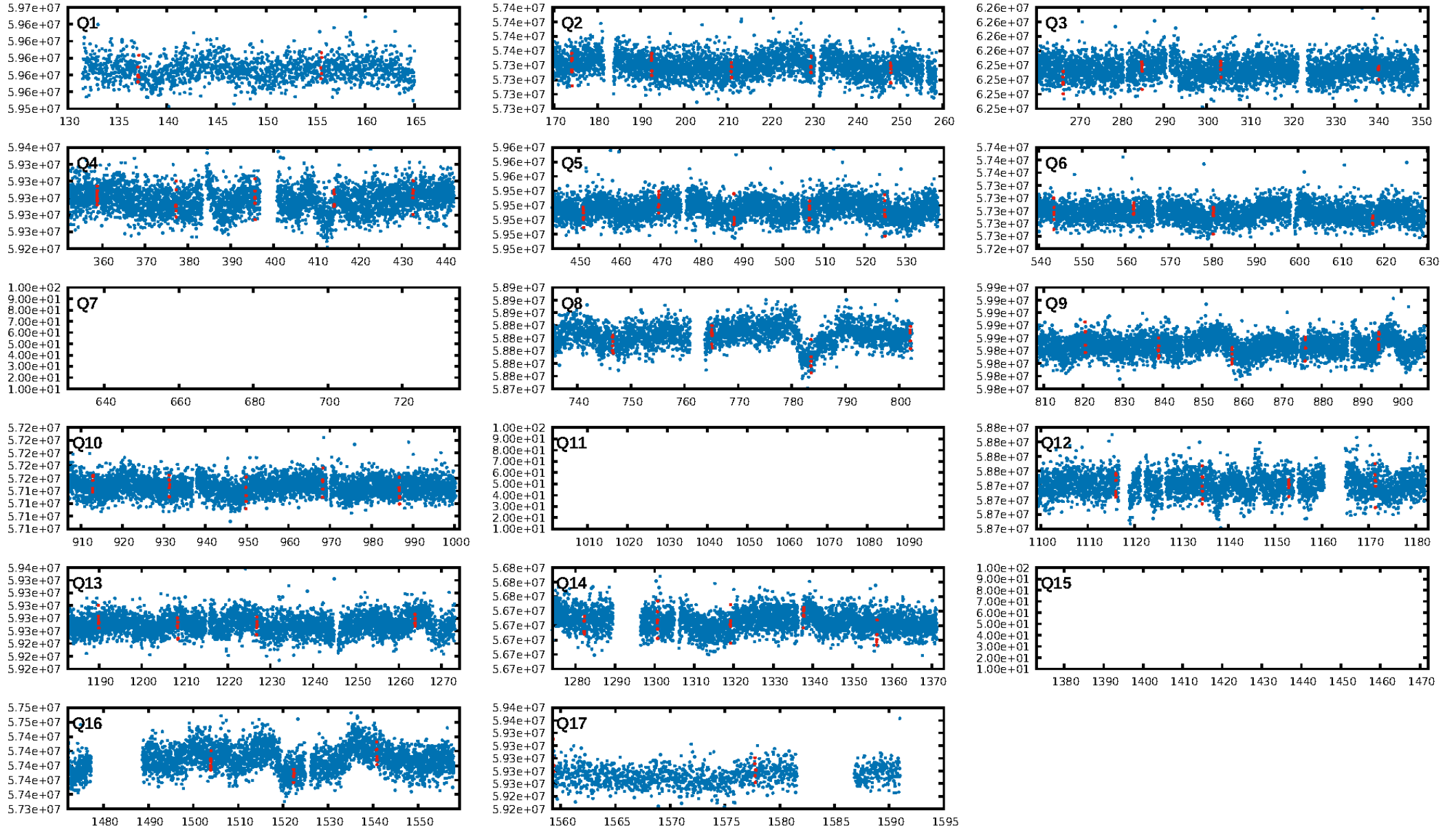
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [109.90 σ]
LongPeriod-sig: 100.0% [121.68 σ]
ModelChiSquare2-sig: 8.6%
ModelChiSquareGof-sig: 93.6%
Bootstrap-pfa: 2.22e-08
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: -2.423
Centroid-sig: 0.0%
Centroid-so: 2.784 arcsec [2.86 σ]
OotOffset-rm: 2.496 arcsec [3.37 σ]
KicOffset-rm: 2.478 arcsec [3.93 σ]
OotOffset-st: 3/0/3/2 [8]
KicOffset-st: 3/0/3/2 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 0.00 [0/14]

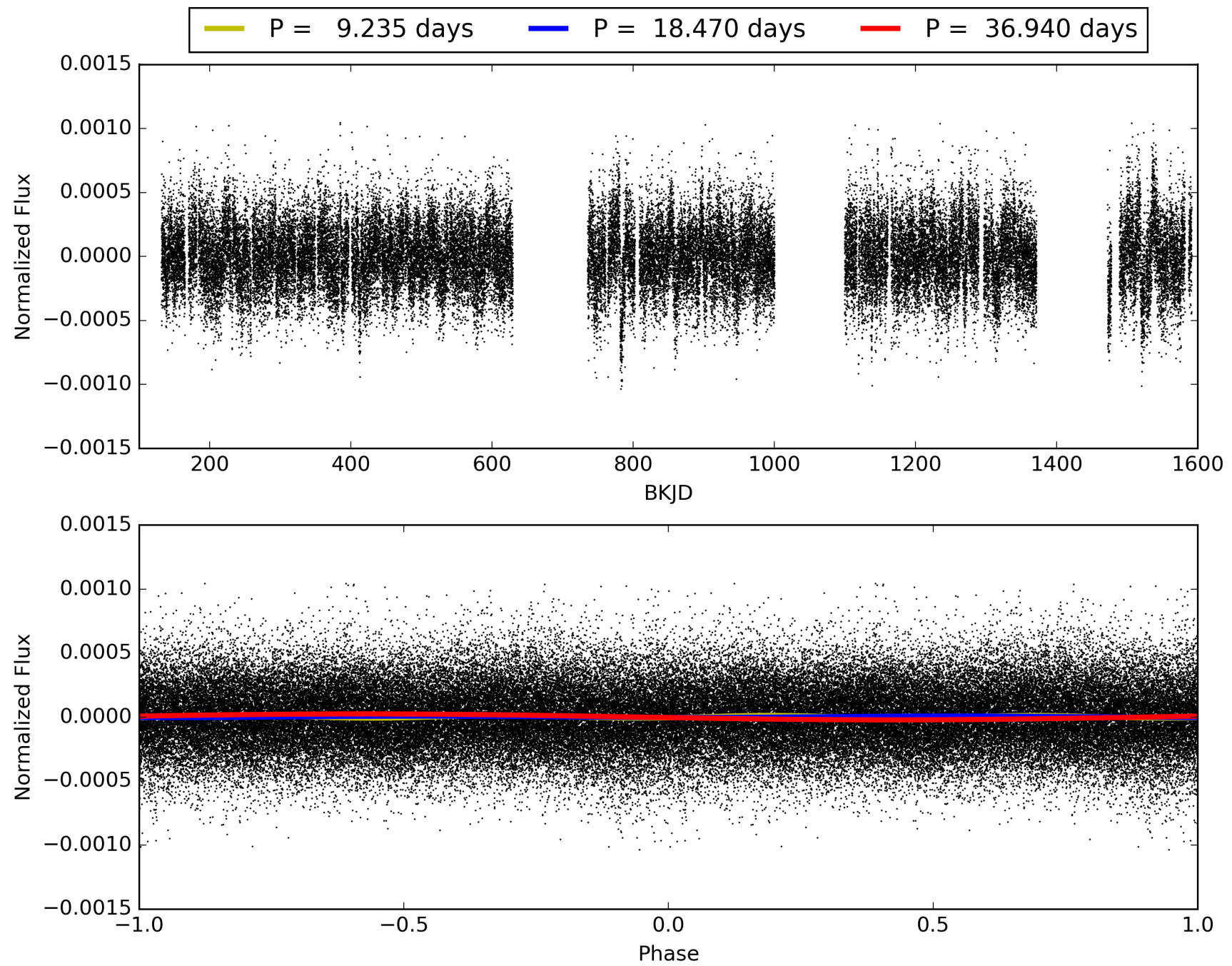
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:52:29 Z

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

TCE 010097149-02, PDC Light Curves

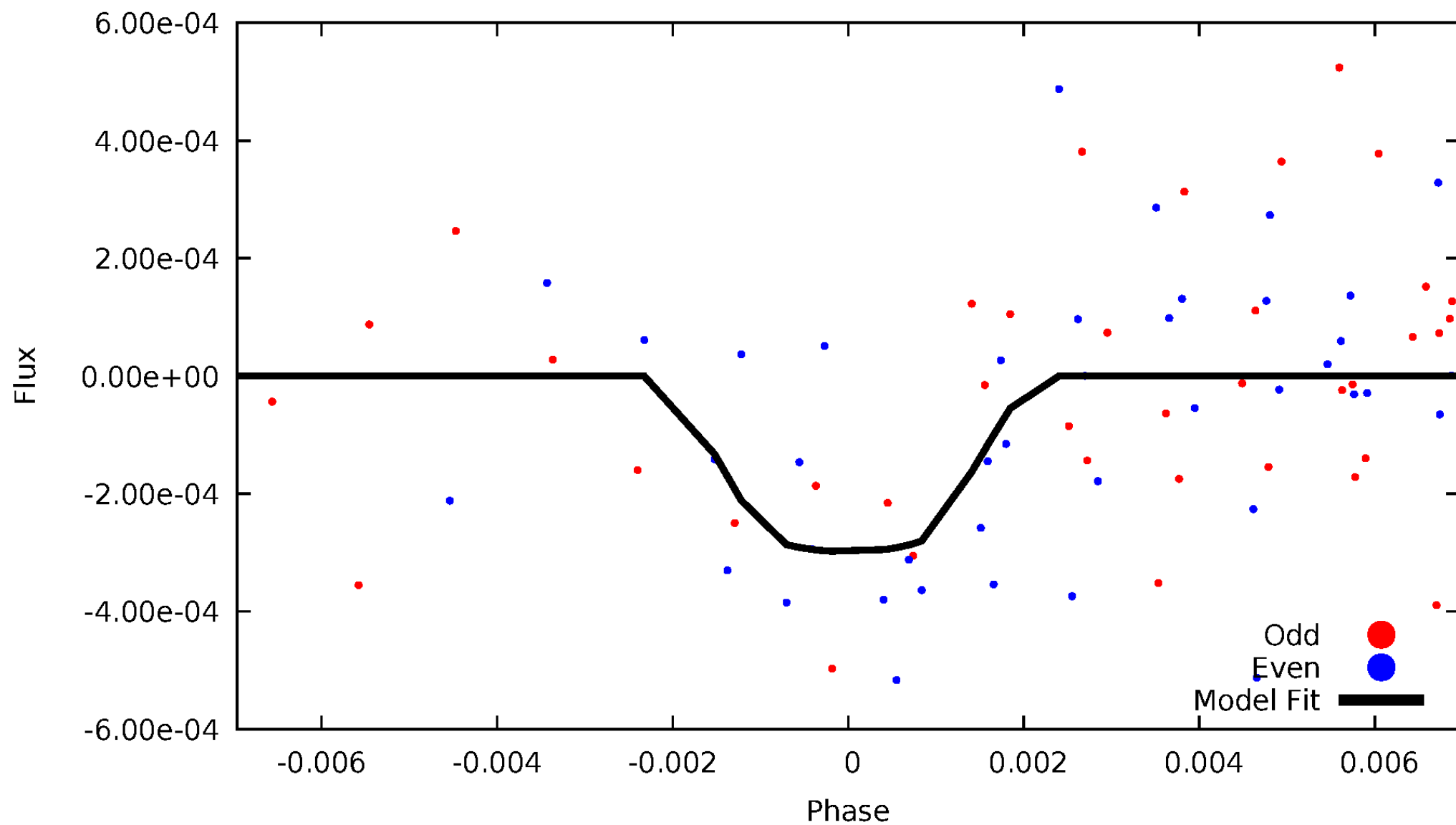


TCE 010097149-02



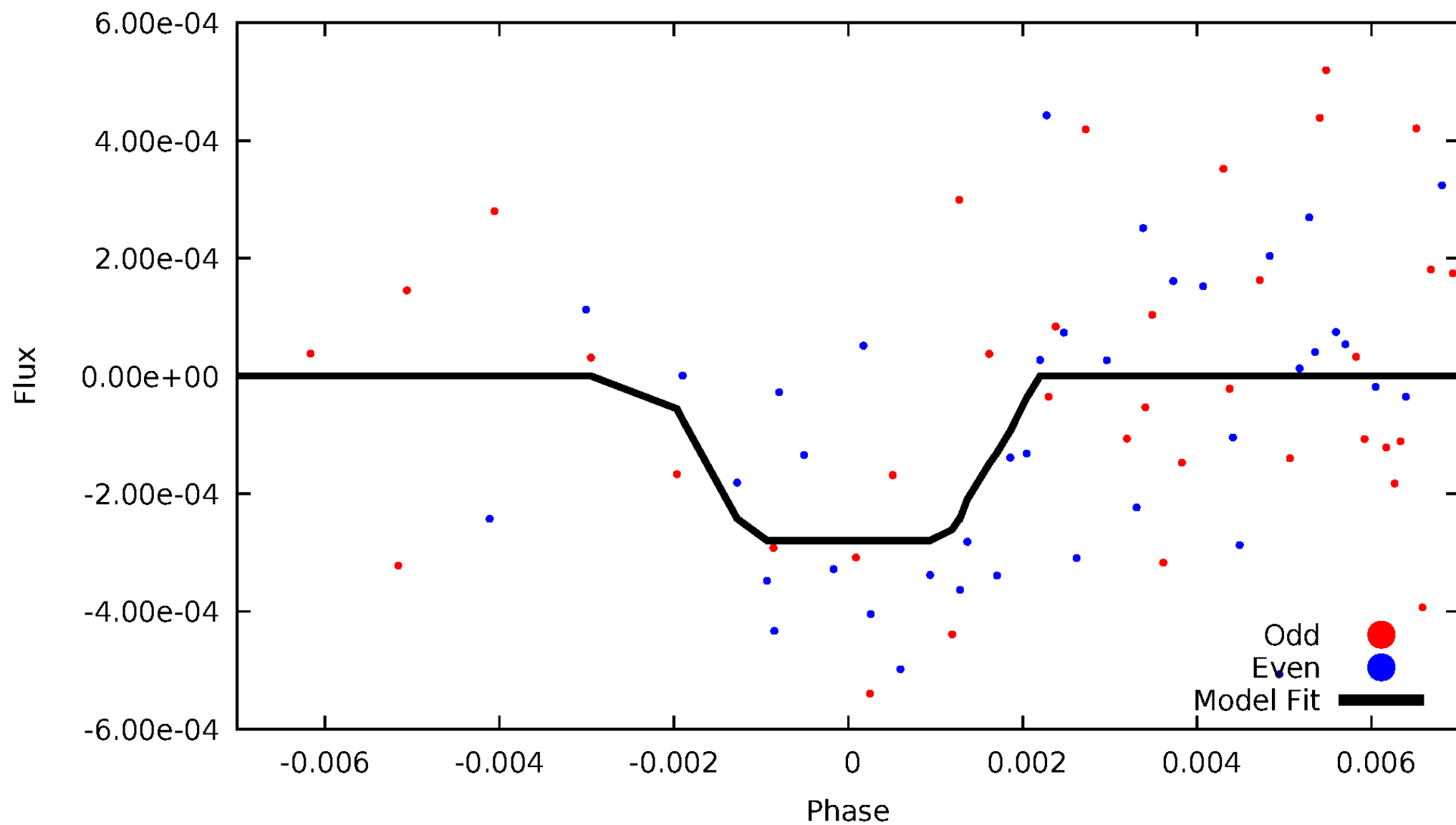
DV Odd/Even

TCE 010097149-02



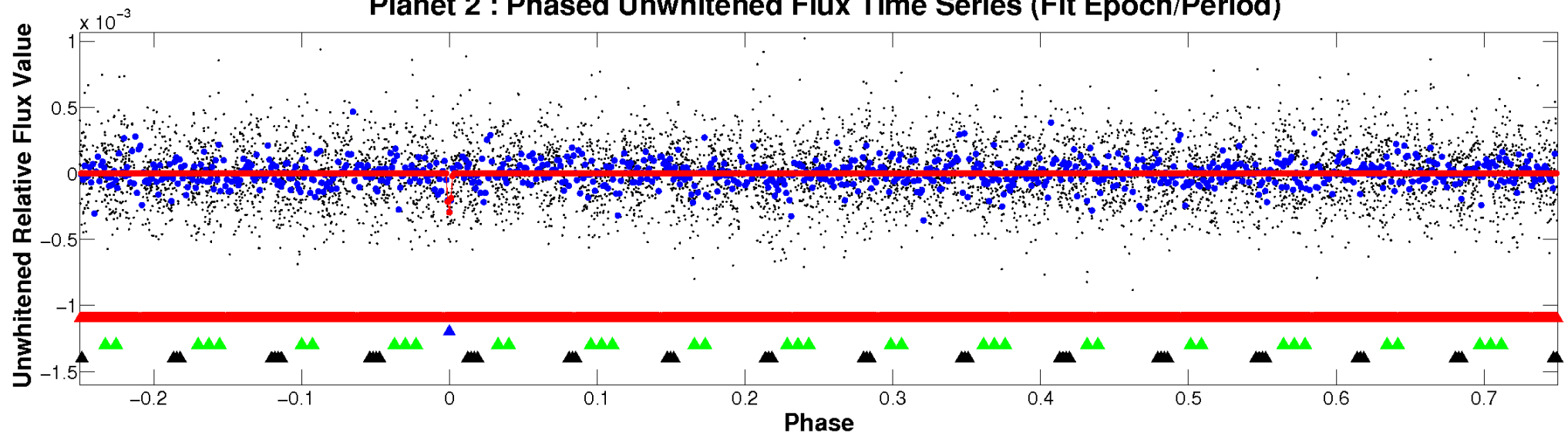
ALT Odd/Even

TCE 010097149-02

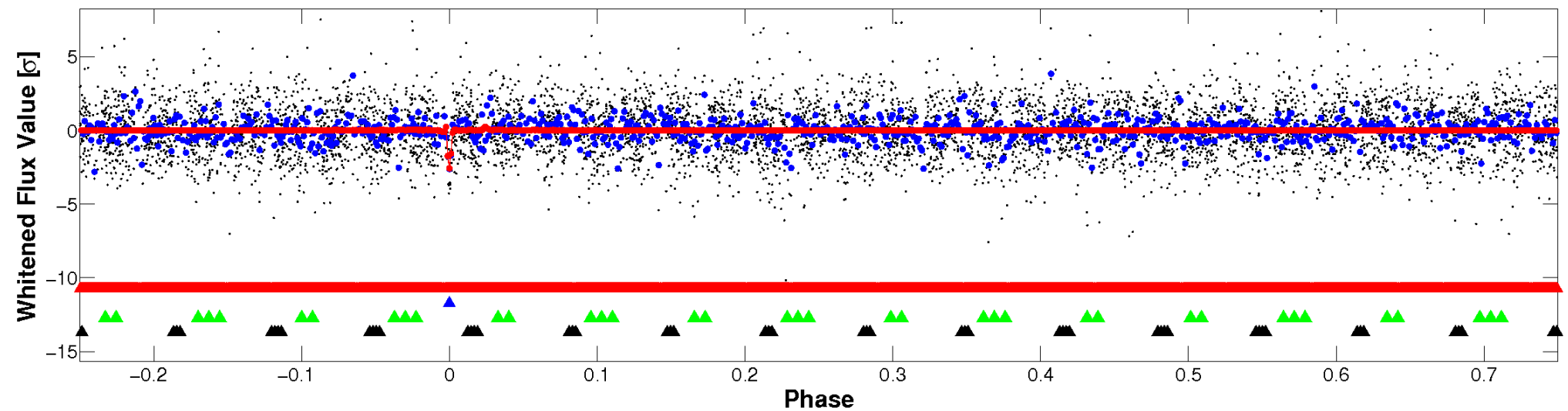


Non-Whitened Vs. Whitened Light Curve

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

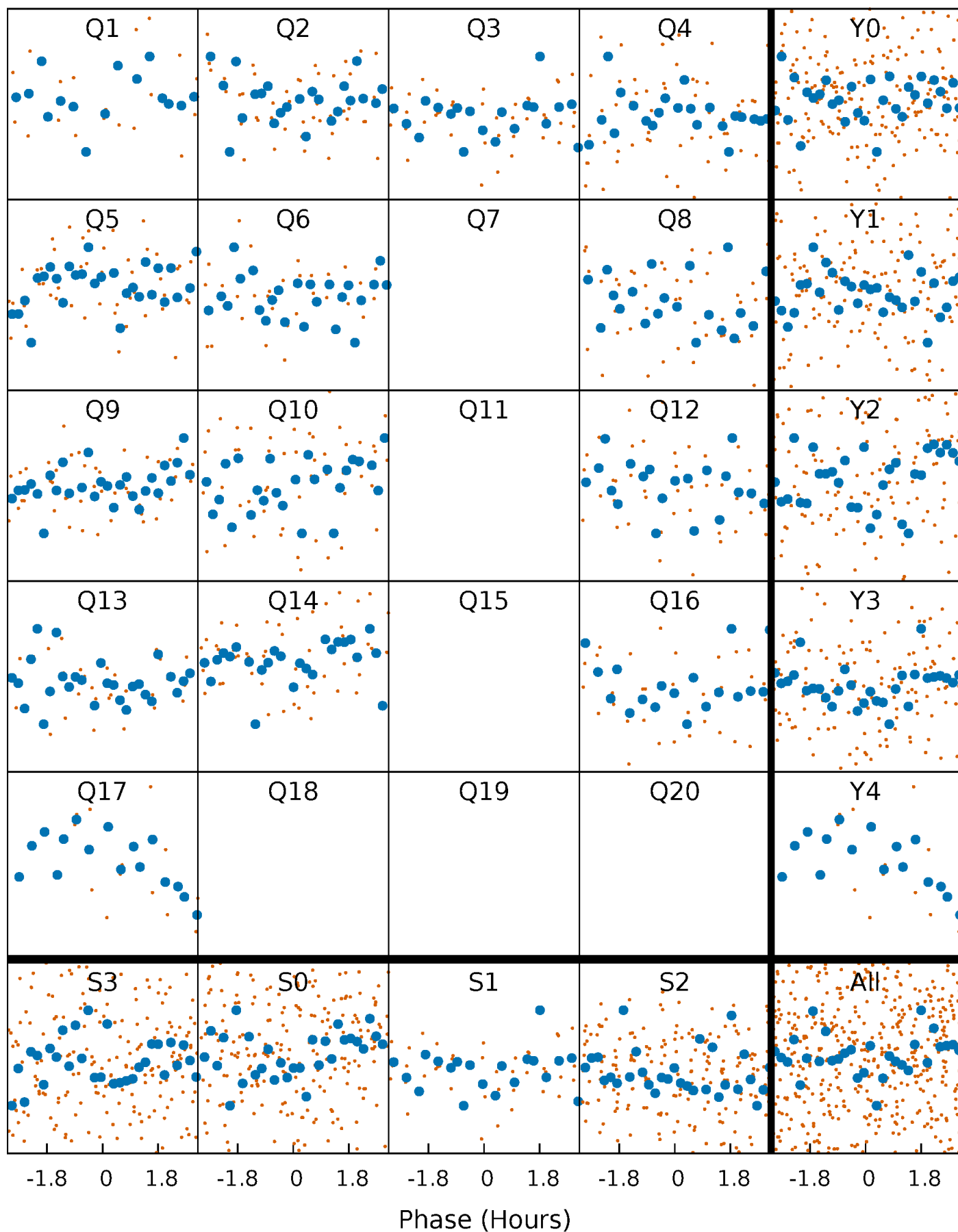


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



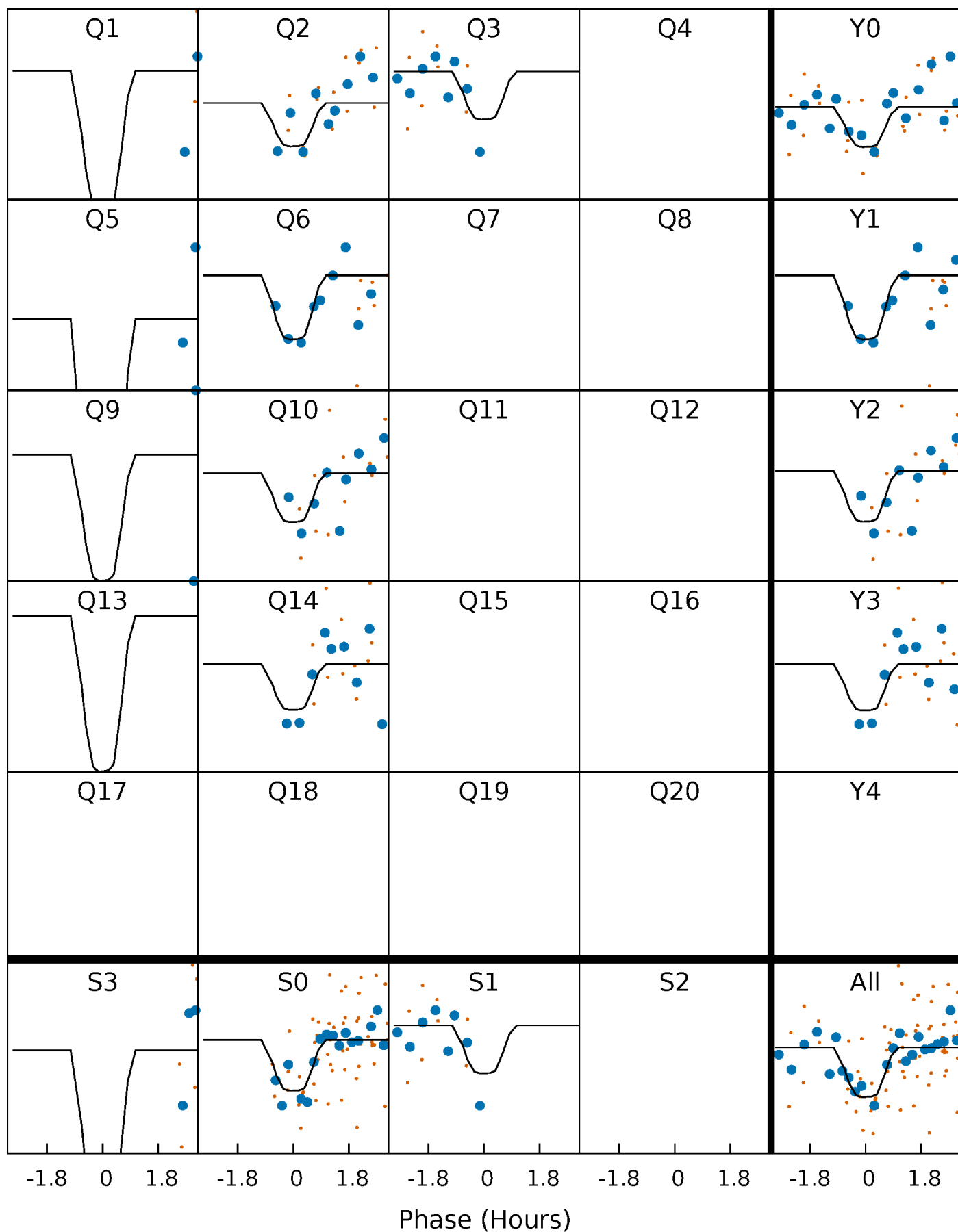
PDC Quarter-Phased Transit Curves

TCE 010097149-02 P= 18.470065 Days $T_0=137.108909$ (BKJD)



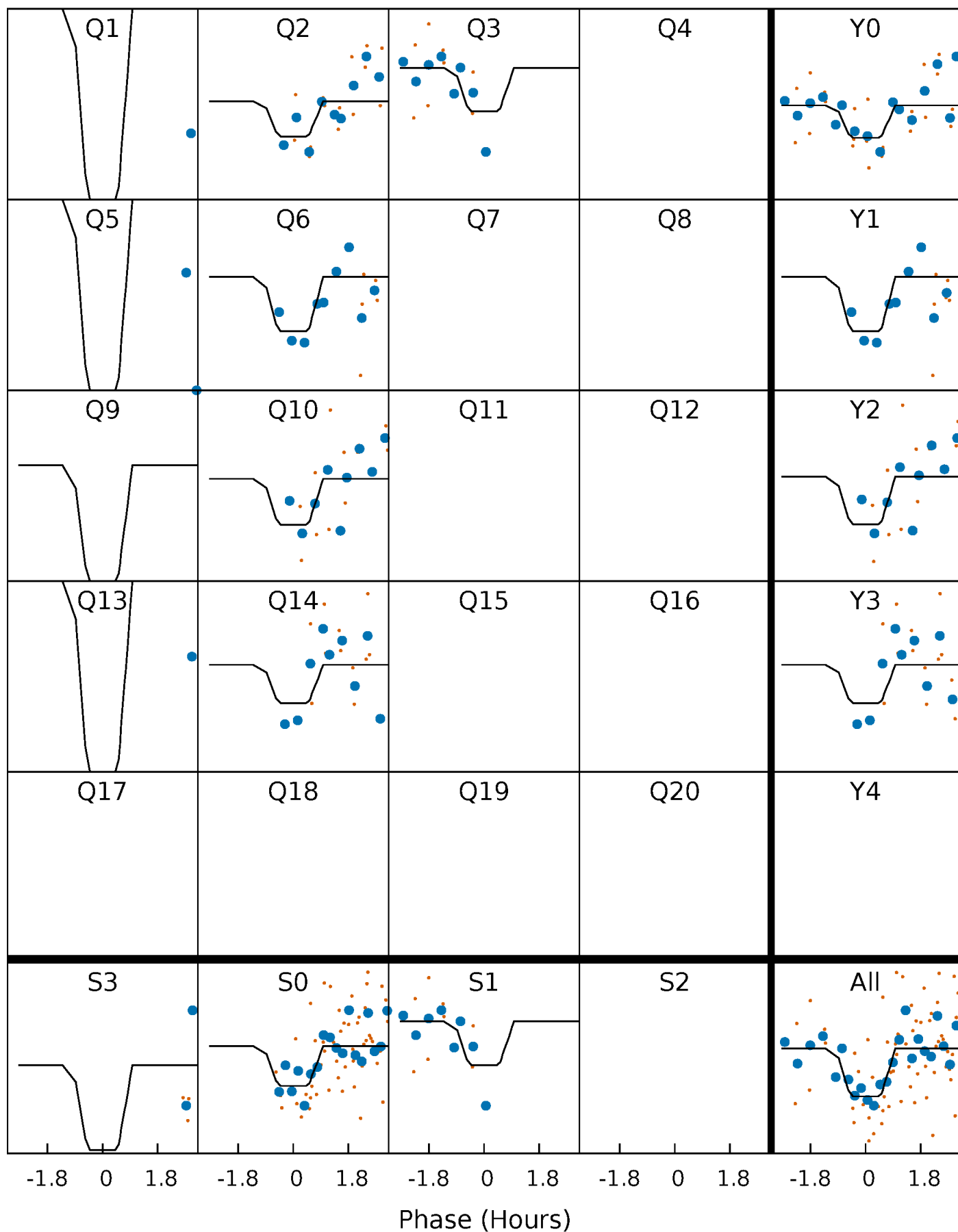
DV Quarter-Phased Transit Curves

TCE 010097149-02 P= 18.470065 Days $T_0=137.108909$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

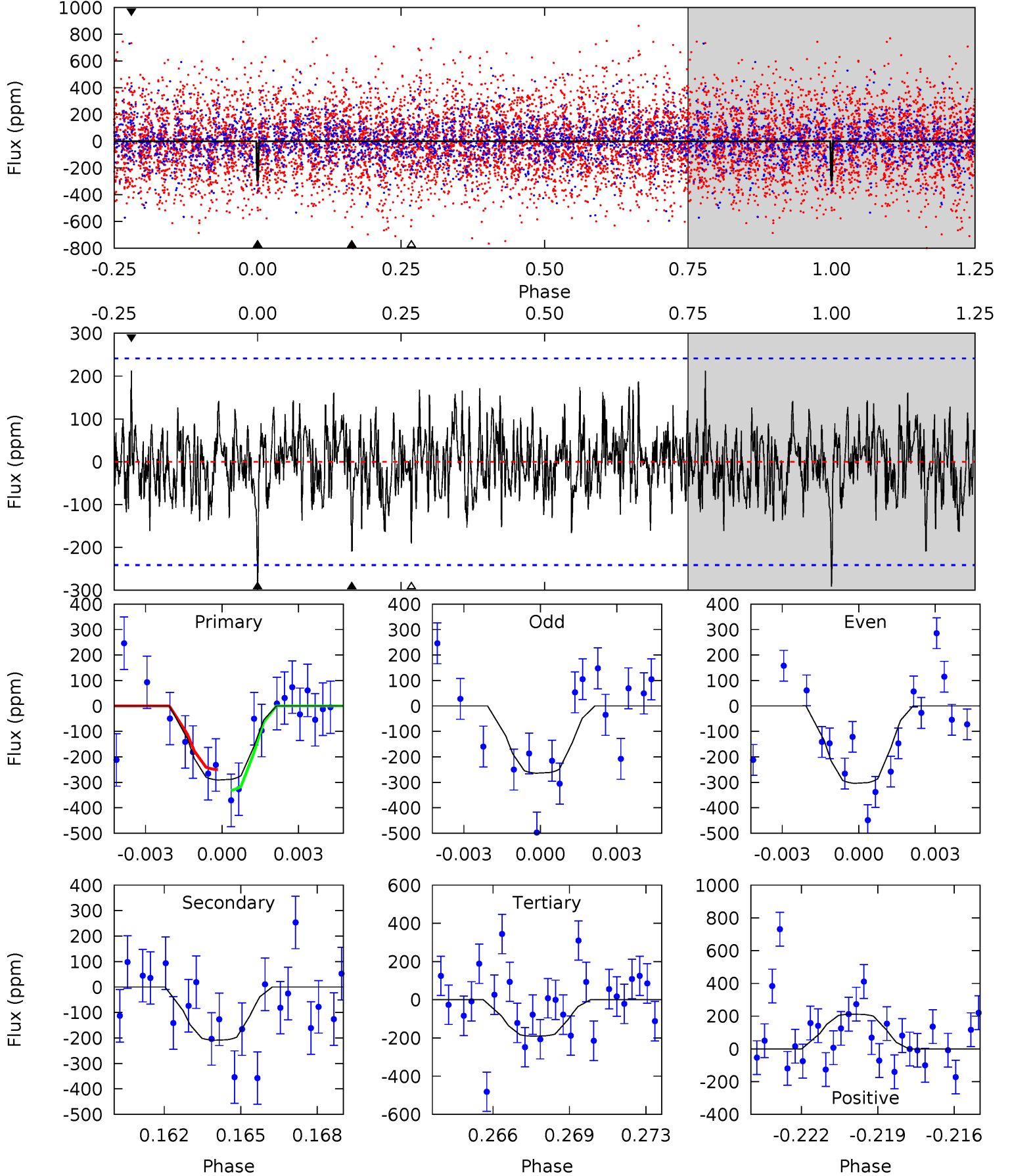
TCE 010097149-02 P= 18.470246 Days $T_0=137.099624$ (BKJD)



DV Model-Shift Uniqueness Test

010097149-02, $P = 18.470065$ Days, $E = 118.638844$ Days

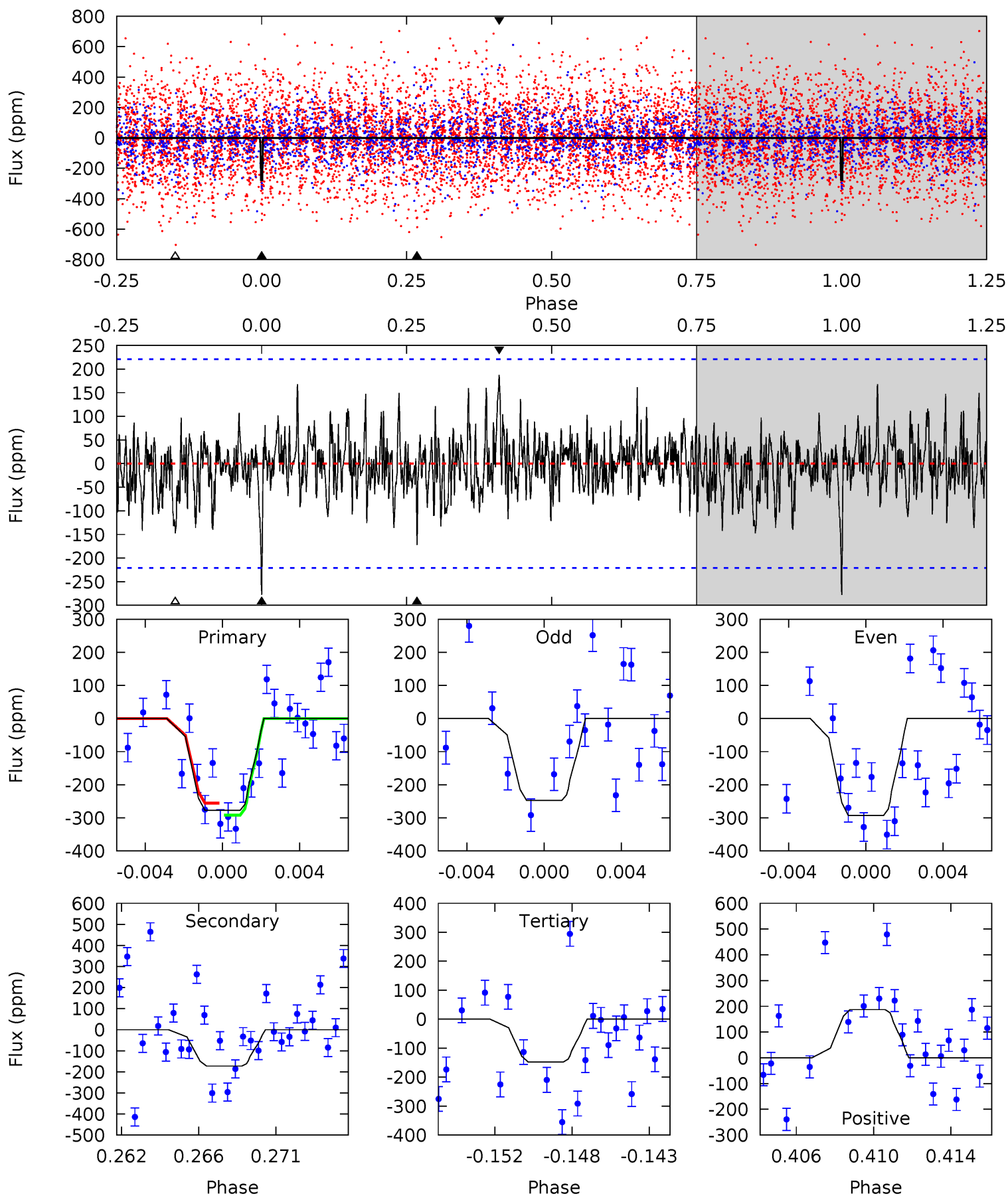
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.31	4.53	4.14	4.60	5.23	2.93	1.32	2.17	1.71	0.40	-0.07	0.41	1.00	0.42	0.88



Alt Model-Shift Uniqueness Test

010097149-02, $P = 18.470246$ Days, $E = 118.629378$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.53	4.05	3.47	4.41	5.19	2.87	1.14	3.06	2.12	0.58	-0.35	0.50	0.85	0.40	0.40



Stellar Parameters For KIC 010097149

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7244^{+226}_{-327}	$4.064^{+0.180}_{-0.180}$	$-0.180^{+0.250}_{-0.350}$	$1.882^{+0.556}_{-0.505}$	$1.495^{+0.212}_{-0.259}$	$0.316^{+0.366}_{-0.149}$
	+3%/-5%	+4%/-4%	+139%/-194%	+30%/-27%	+14%/-17%	+116%/-47%
Source	KIC0	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 010097149-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-209 ± 46	$10.83^{+10.68}_{-7.47}$	1555^{+113}_{-123}	4044^{+2729}_{-837}	23^{+224}_{-17}
Alt.	-172 ± 43	$10.03^{+10.73}_{-6.99}$	1547^{+116}_{-118}	3976^{+2684}_{-792}	22^{+224}_{-17}

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 $A_{obs} \gg 1.0$

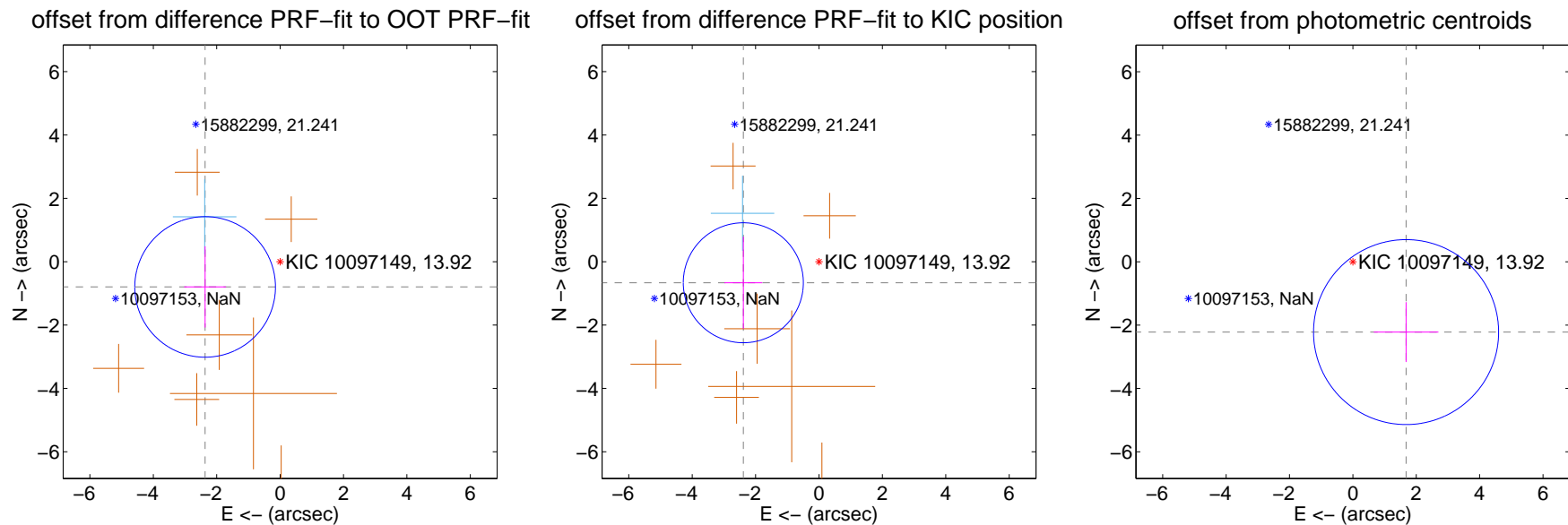
DV Centroid Data

Supplemental centroid analysis for 010097149-02. Kepler magnitude: 13.92. Transit SNR 9.52

There are 1 quarters with good PRF difference image offsets

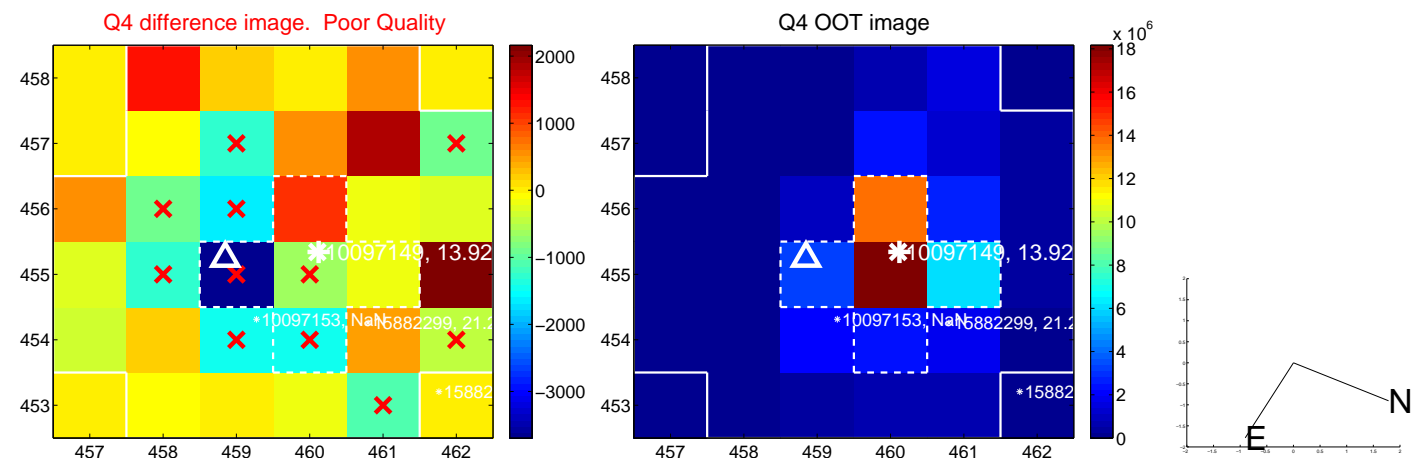
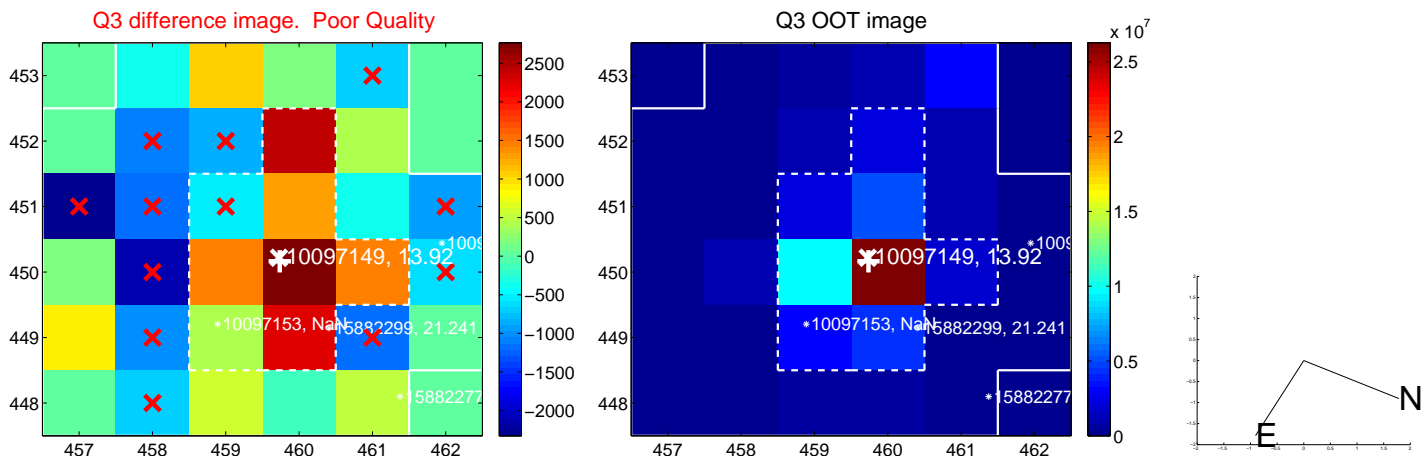
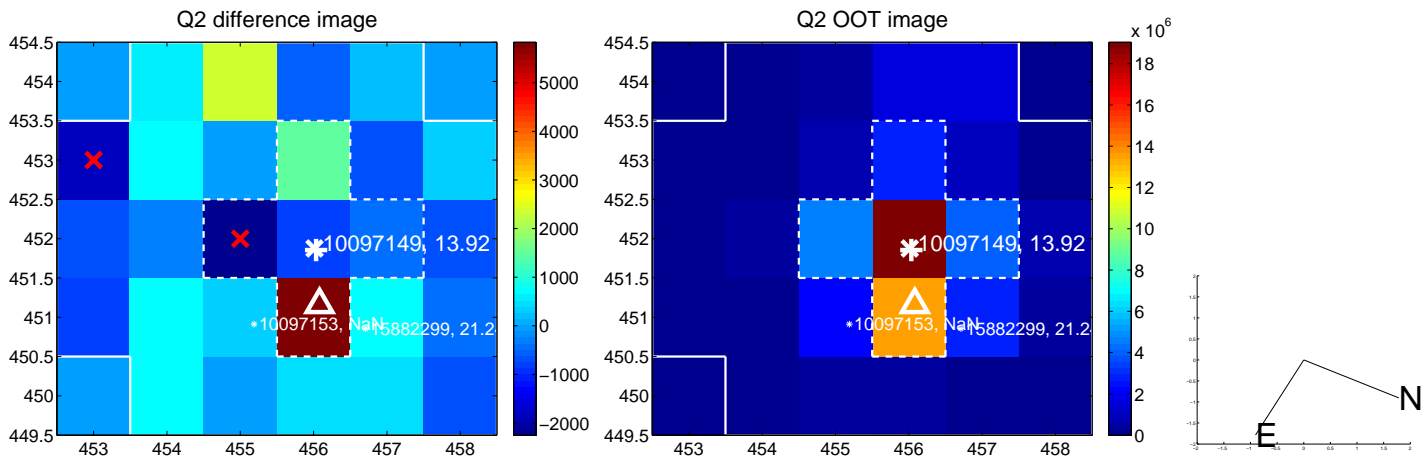
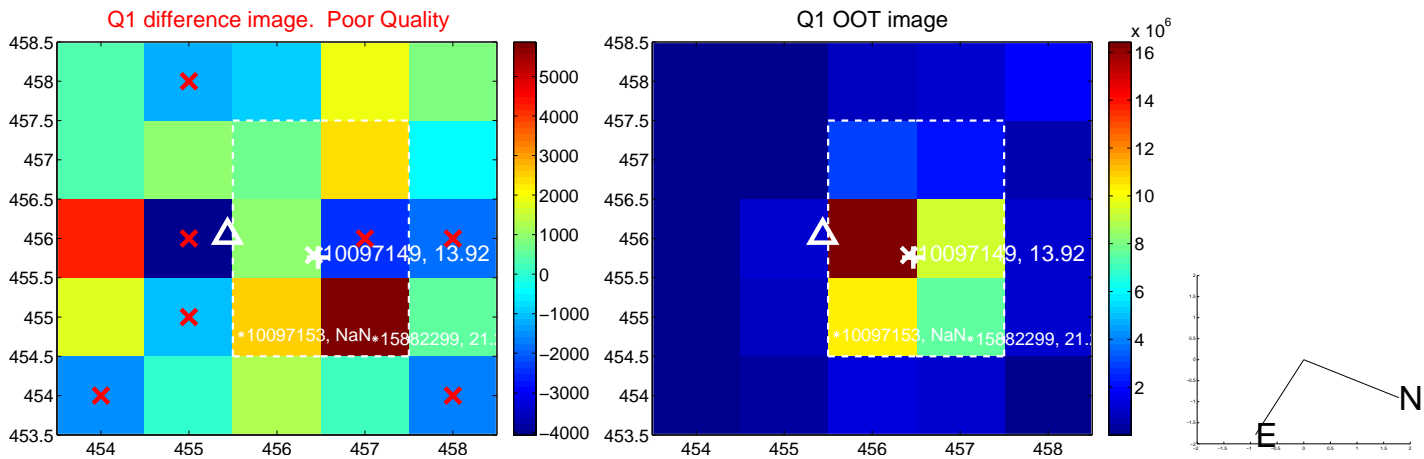
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.496 ± 0.740	3.37	2.366 ± 0.660	-0.797 ± 1.283
PRF-fit source offset from KIC position	2.478 ± 0.631	3.93	2.387 ± 0.598	-0.665 ± 1.453
photometric centroid source offset	2.78 ± 0.97	2.86	-1.68 ± 1.02	-2.22 ± 0.95

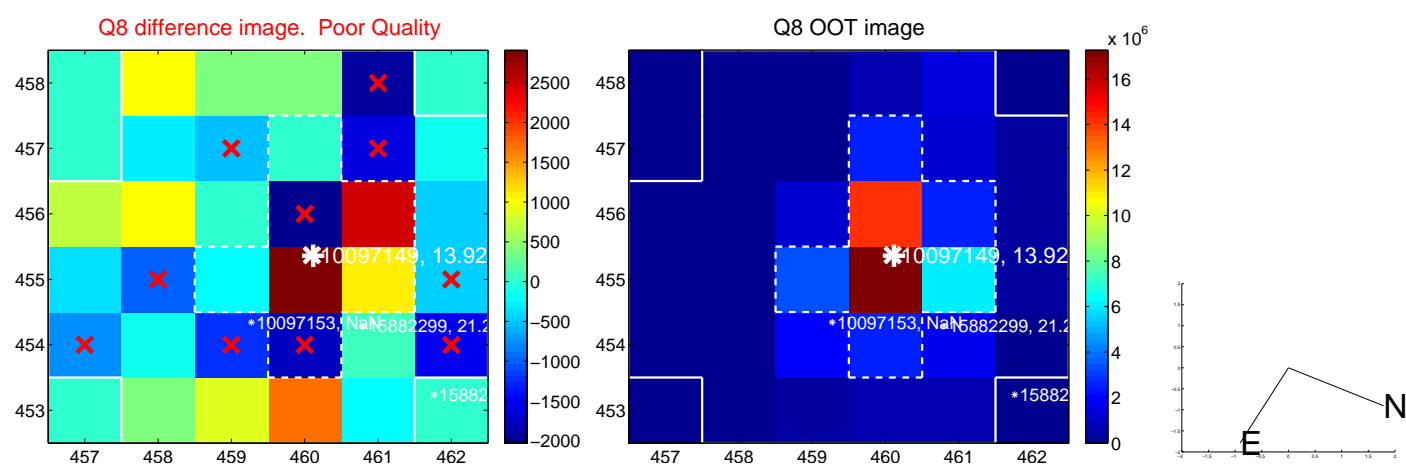
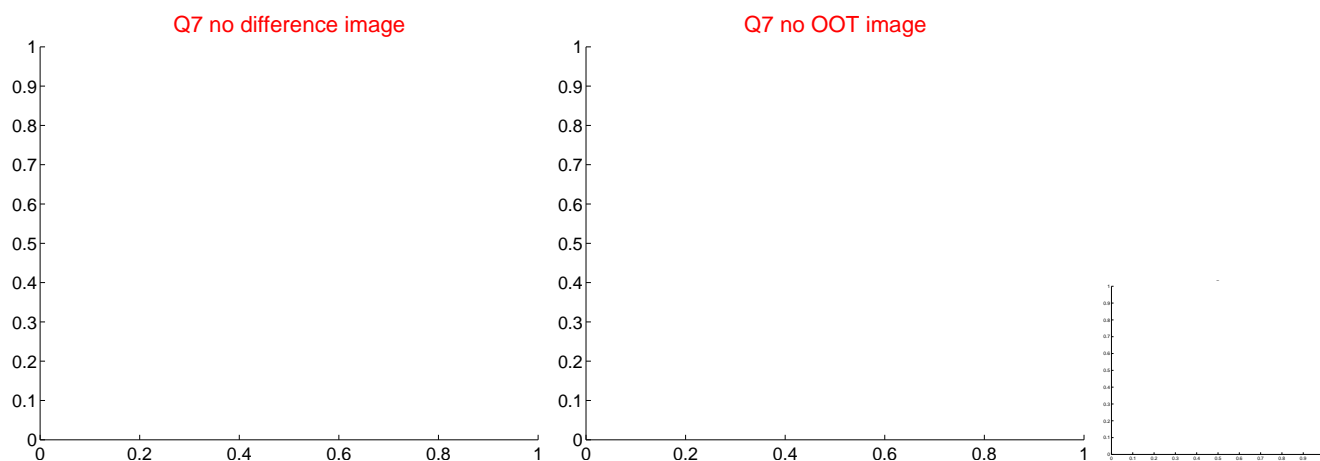
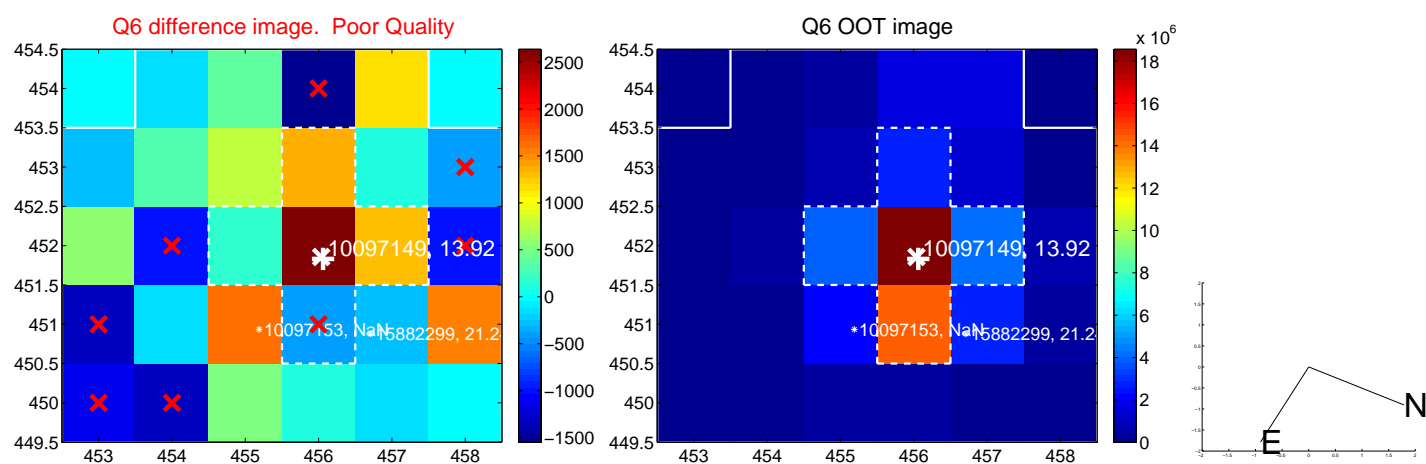
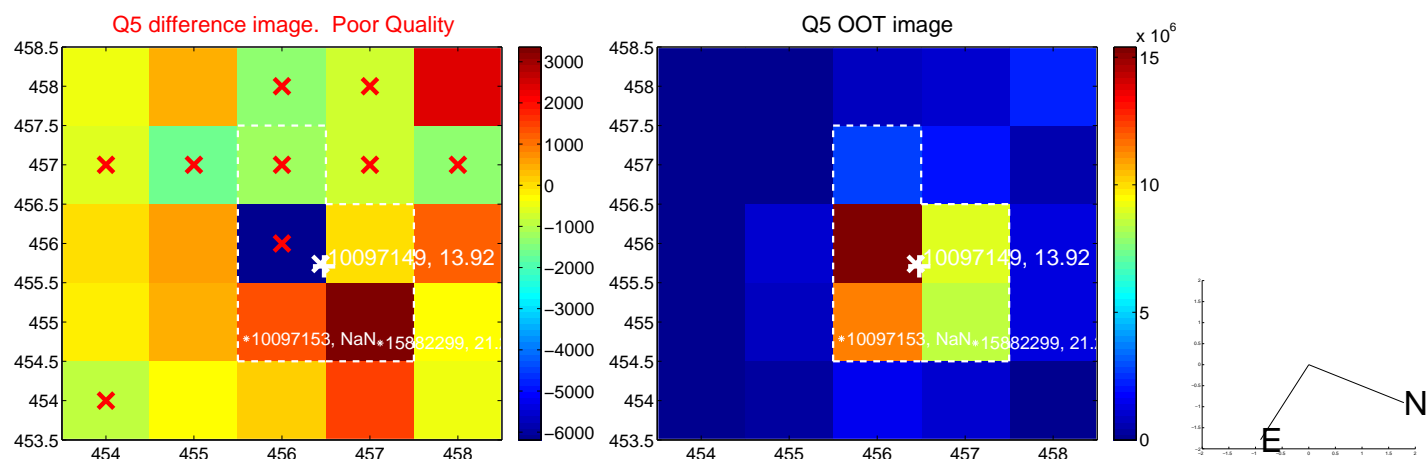


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

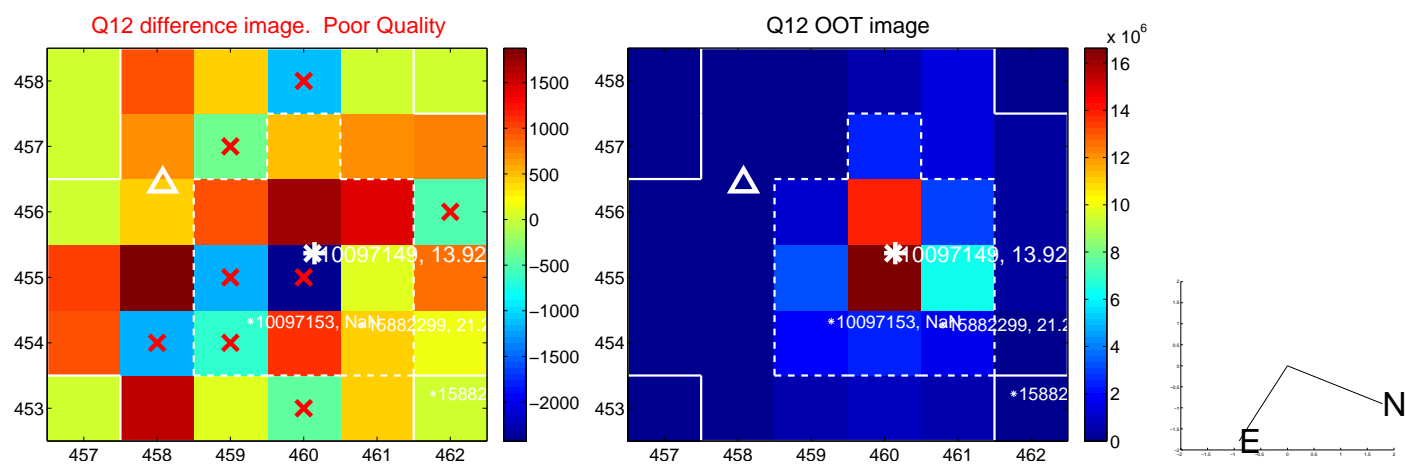
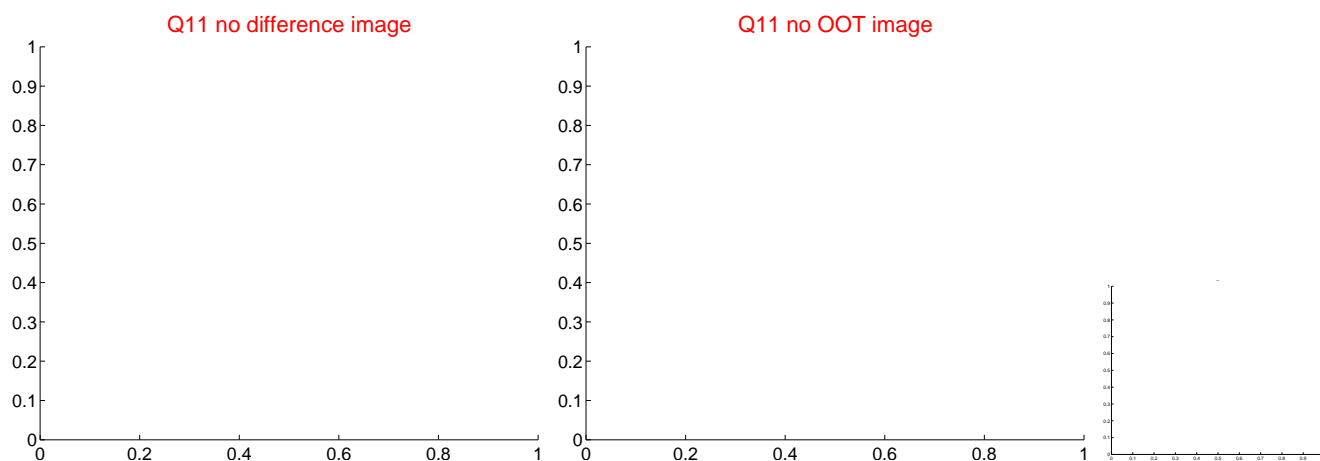
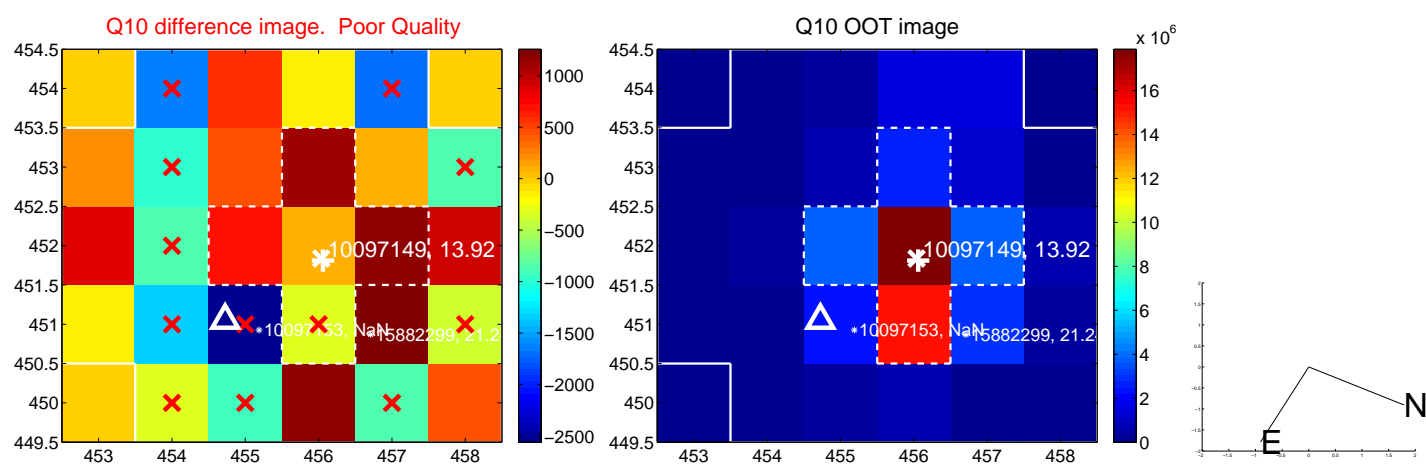
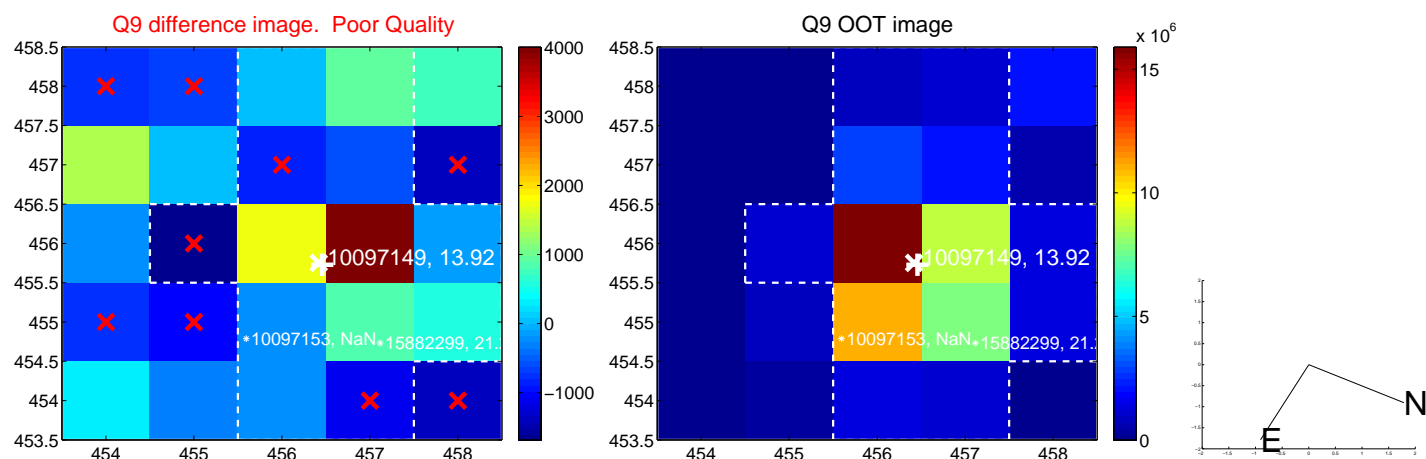
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



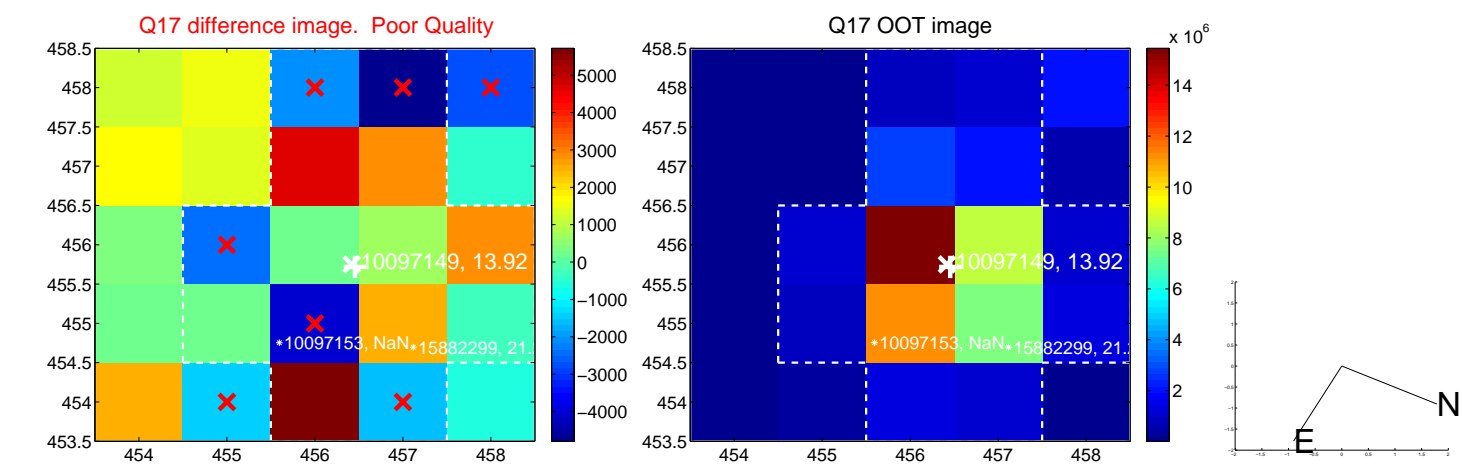
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



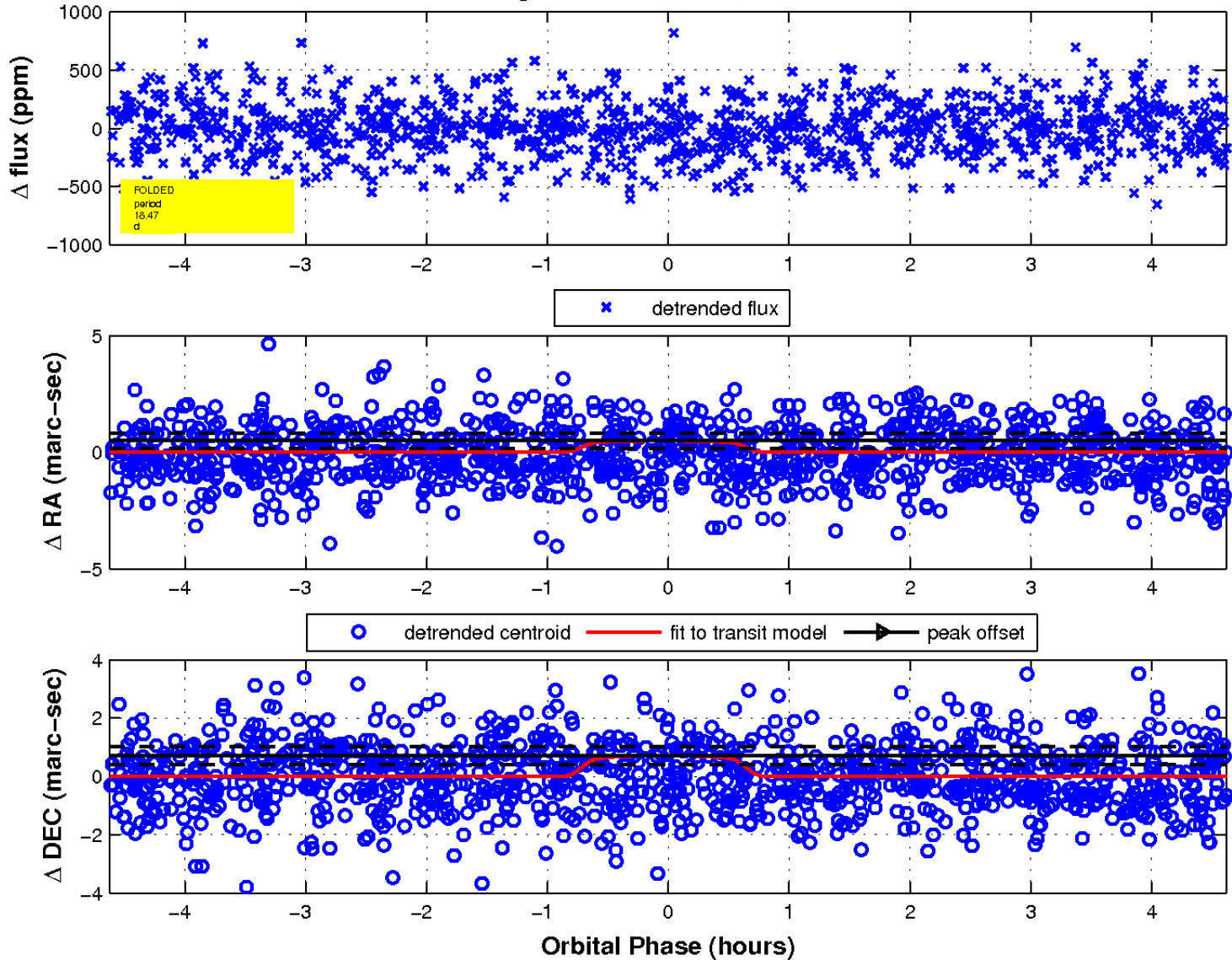
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



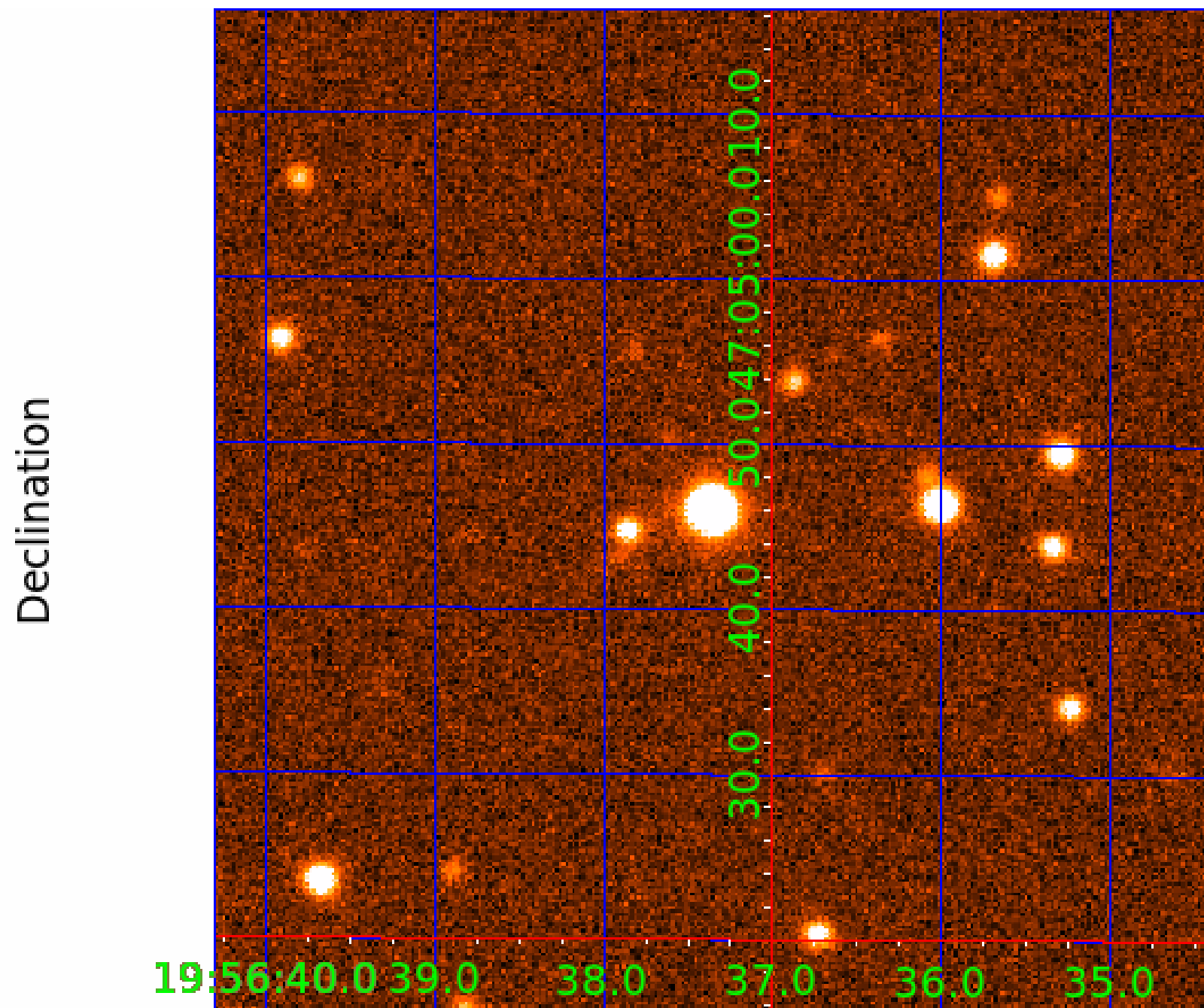
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 4



UKIRT Image



KIC 010097149

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})
010097149-01	OBS	No	0.542450	131.572418	17.8	3.598	9.2	7.2	1.88	7244	0.81	39392.00
010097149-02	OBS	No	18.470065	137.108908	298.4	1.542	8.9	9.5	1.88	7244	3.84	356.94
010097149-03	OBS	No	39.393838	147.801636	363.3	1.240	9.0	9.7	1.88	7244	4.06	130.01
010097149-04	OBS	No	28.318075	153.479373	482.1	1.180	8.3	8.5	1.88	7244	4.78	201.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010097149-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010097149-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
010097149-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS—HALO_GHOST
010097149-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

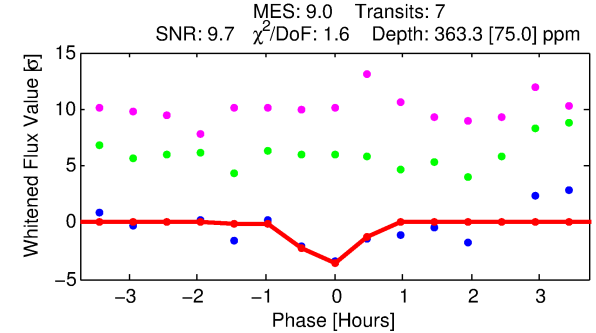
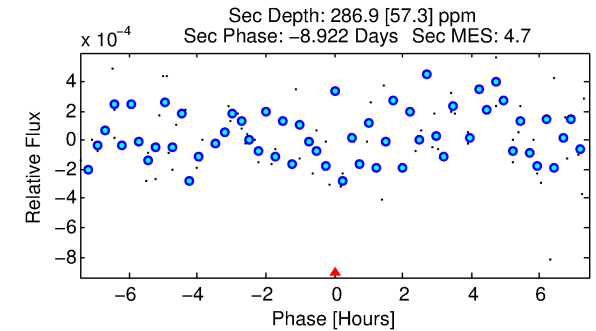
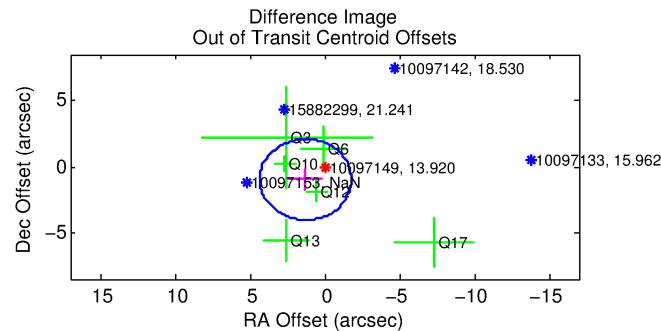
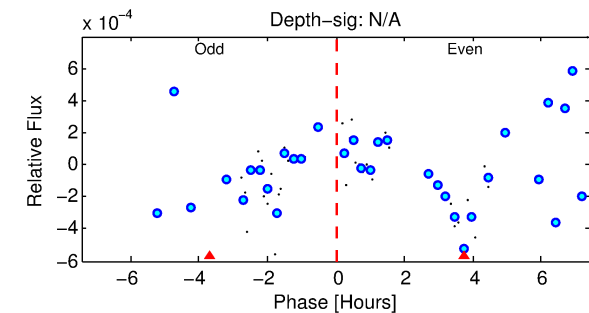
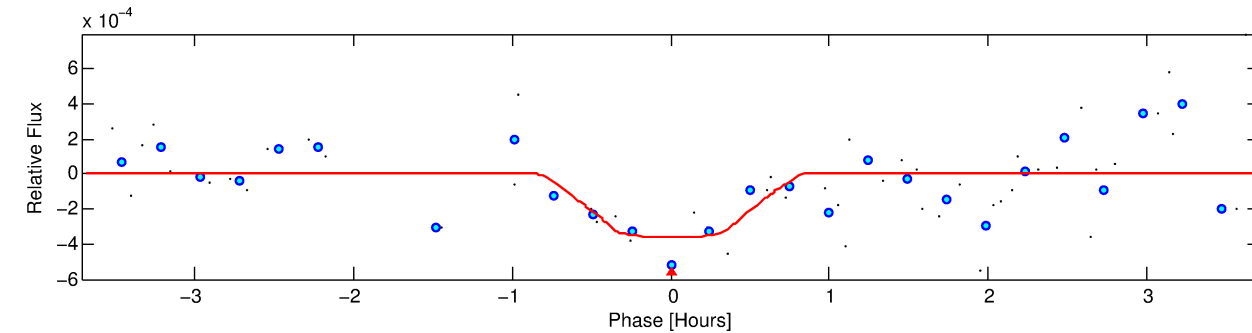
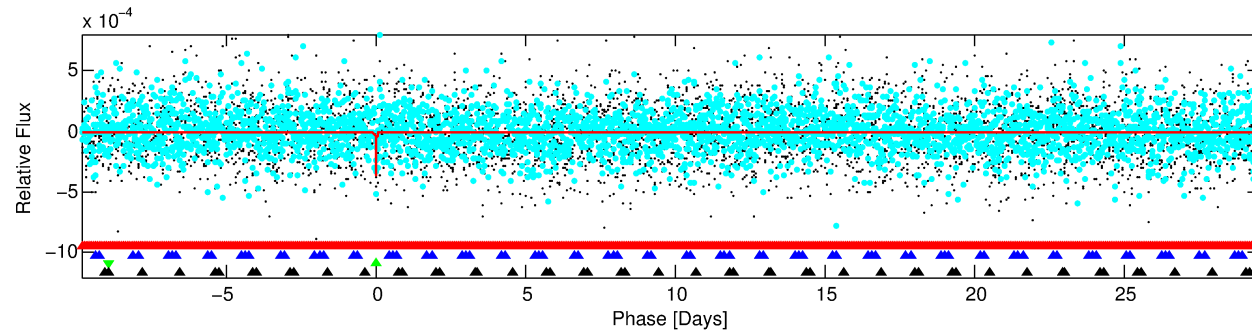
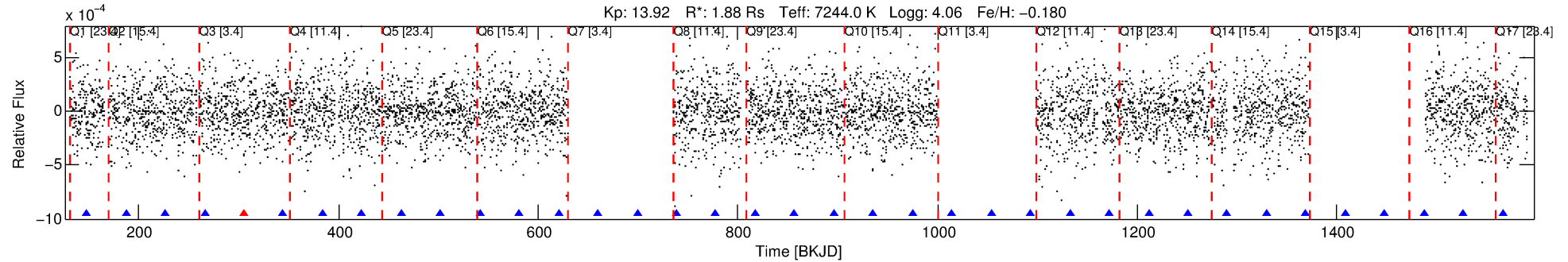
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010097149-03

No Significant Match Found

DV One-Page Summary

KIC: 10097149 Candidate: 3 of 4 Period: 39.394 d



DV Fit Results:

Period = 39.39384 [0.00036] d
Epoch = 147.8016 [0.0065] BKJD
Rp/R* = 0.0198 [0.0208]
a/R* = 135.76 [879.58]
b = 0.85 [2.07]
Seff = 130.01 [49.97]
Teff = 861 [83] K
Rp = 4.06 [4.43] Re
a = 0.2593 [0.0624] AU
Ag = 643.24 [1373.64] [0.47σ]
Teffp = 6704 [3547] K [1.65σ]

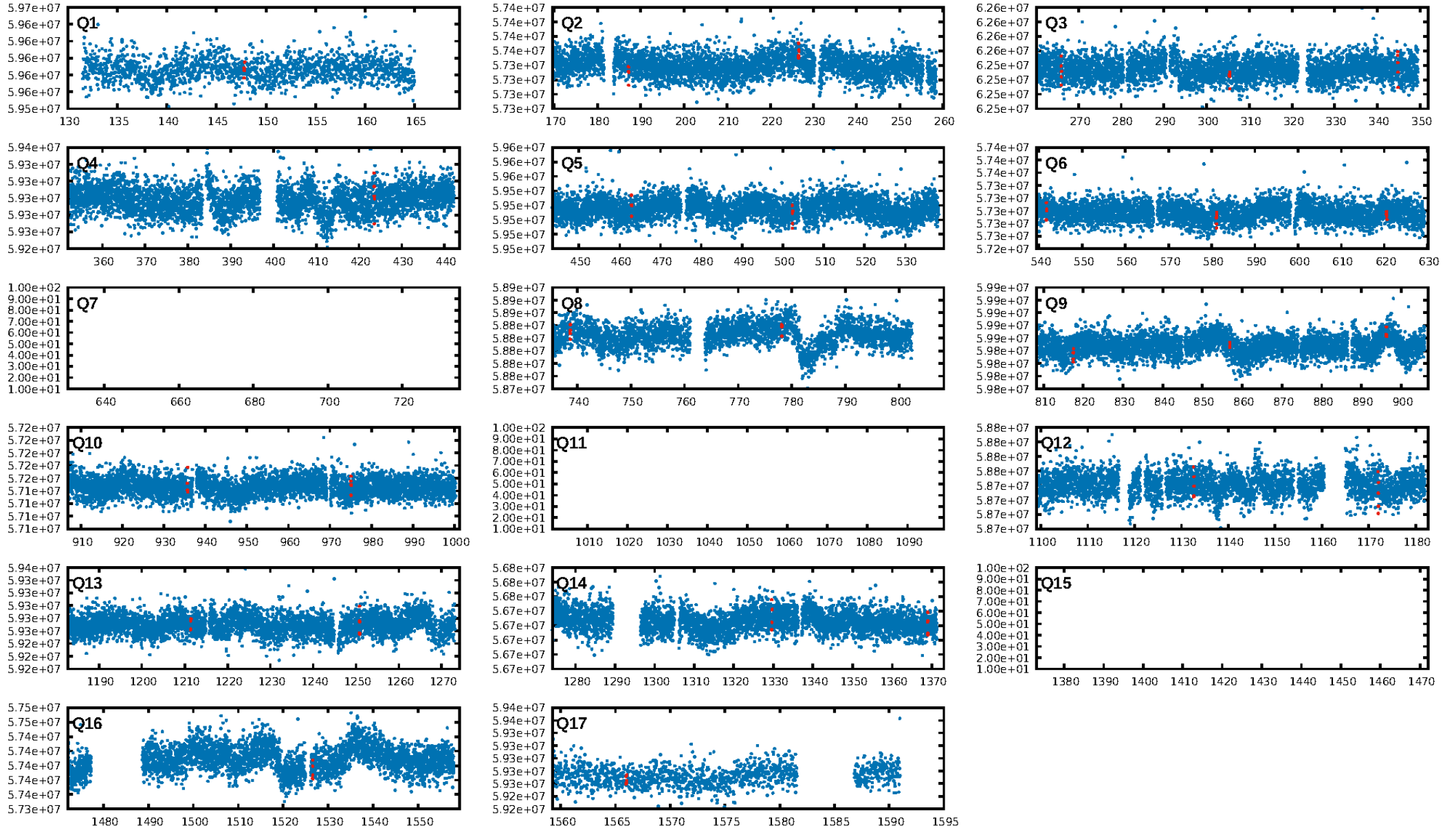
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [155.28σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 83.1%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.74e-08
RollingBand-fgt: 0.86 [6/7]
GhostDiagnostic-chr: -0.2222
Centroid-sig: 11.3%
Centroid-so: 1.726 arcsec [1.36σ]
OotOffset-rm: 1.616 arcsec [1.58σ]
OotOffset-st: 2/1/1/2 [6]
KicOffset-rm: 1.541 arcsec [1.48σ]
KicOffset-st: 2/1/1/2 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 0.00 [0/13]

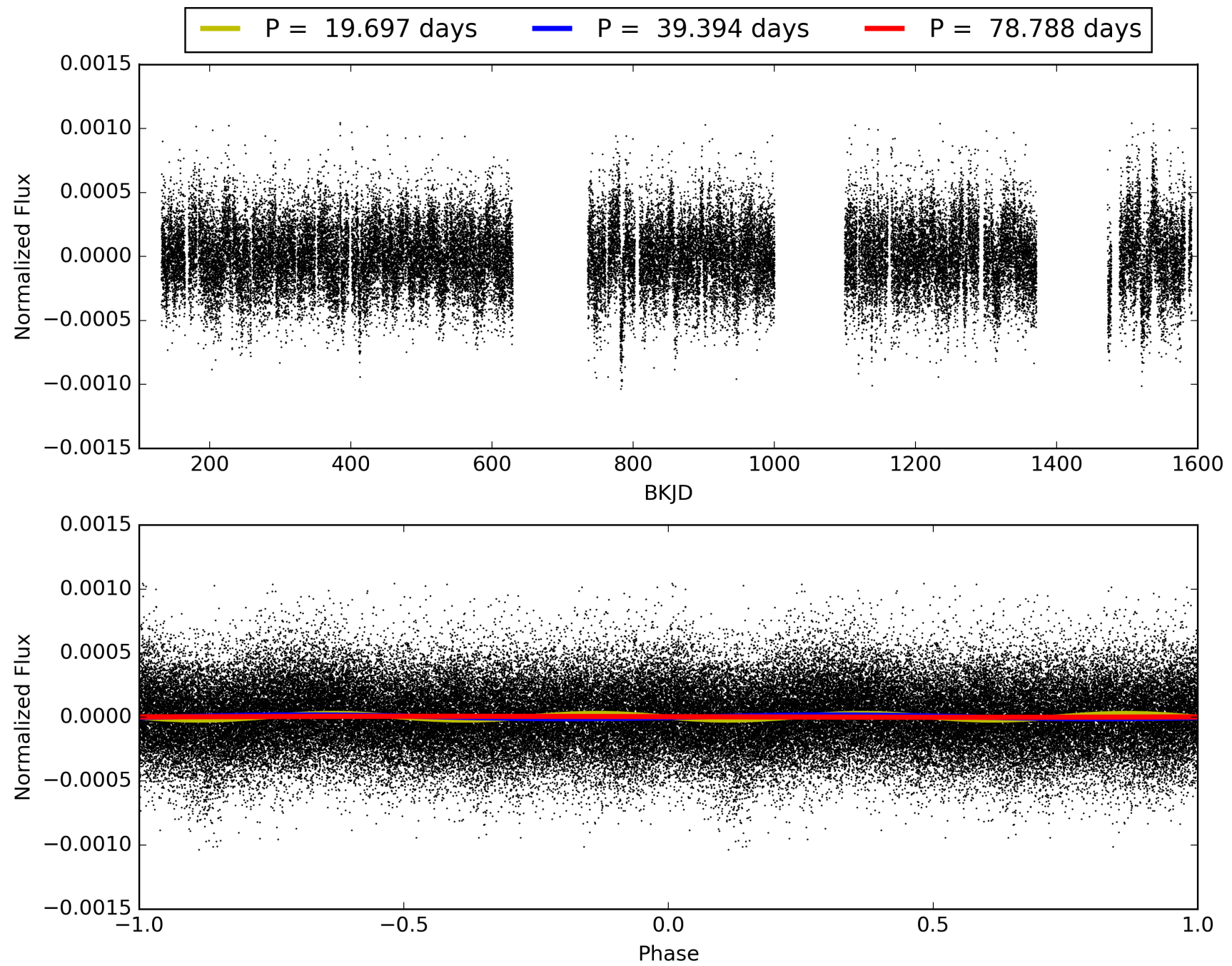
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:52:33 Z

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

TCE 010097149-03, PDC Light Curves

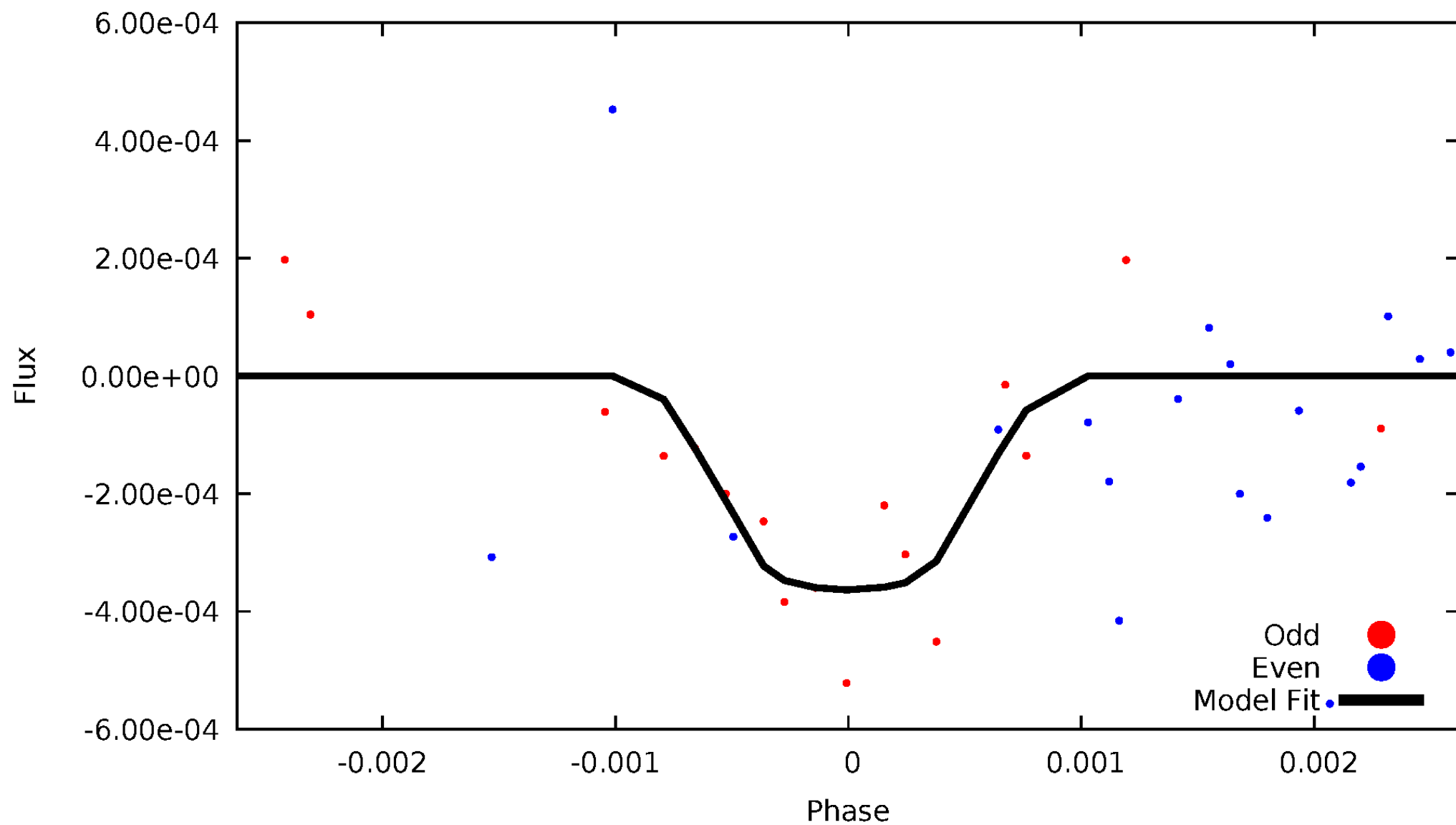


TCE 010097149-03



DV Odd/Even

TCE 010097149-03

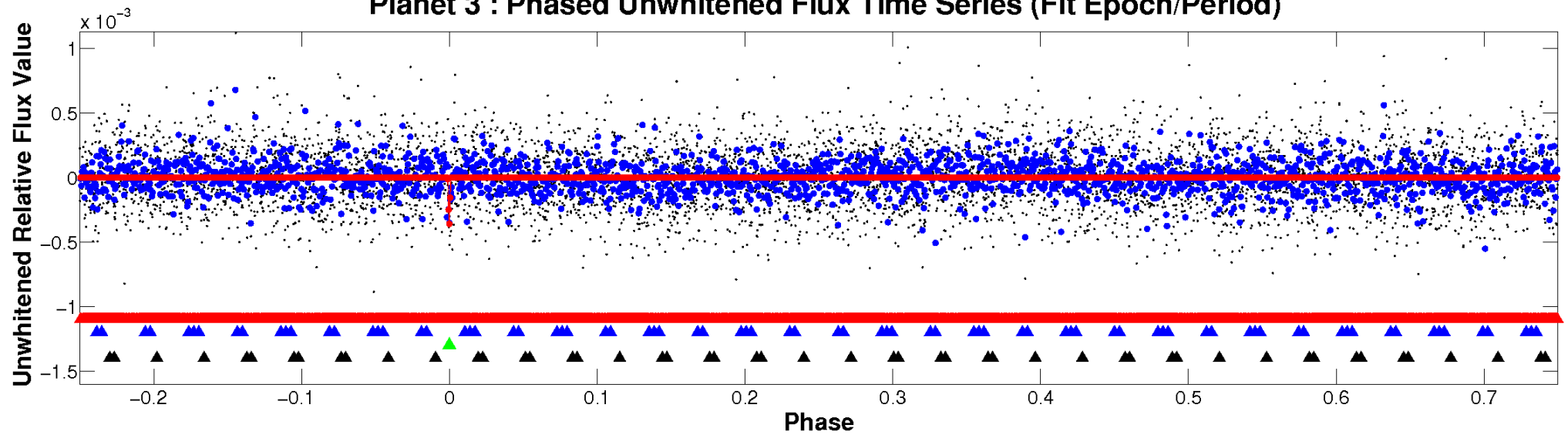


ALT Odd/Even

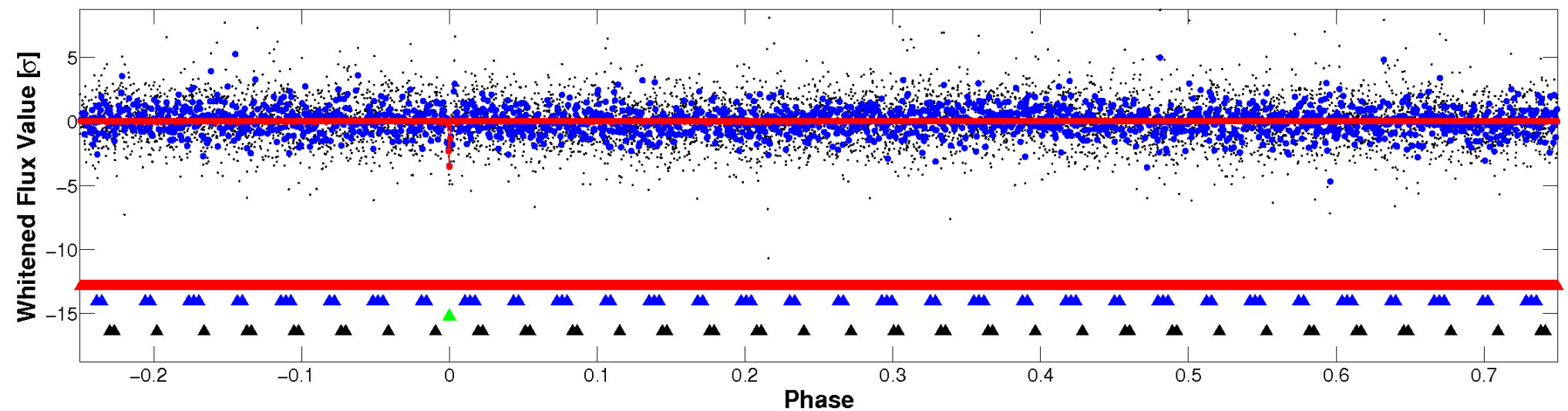
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

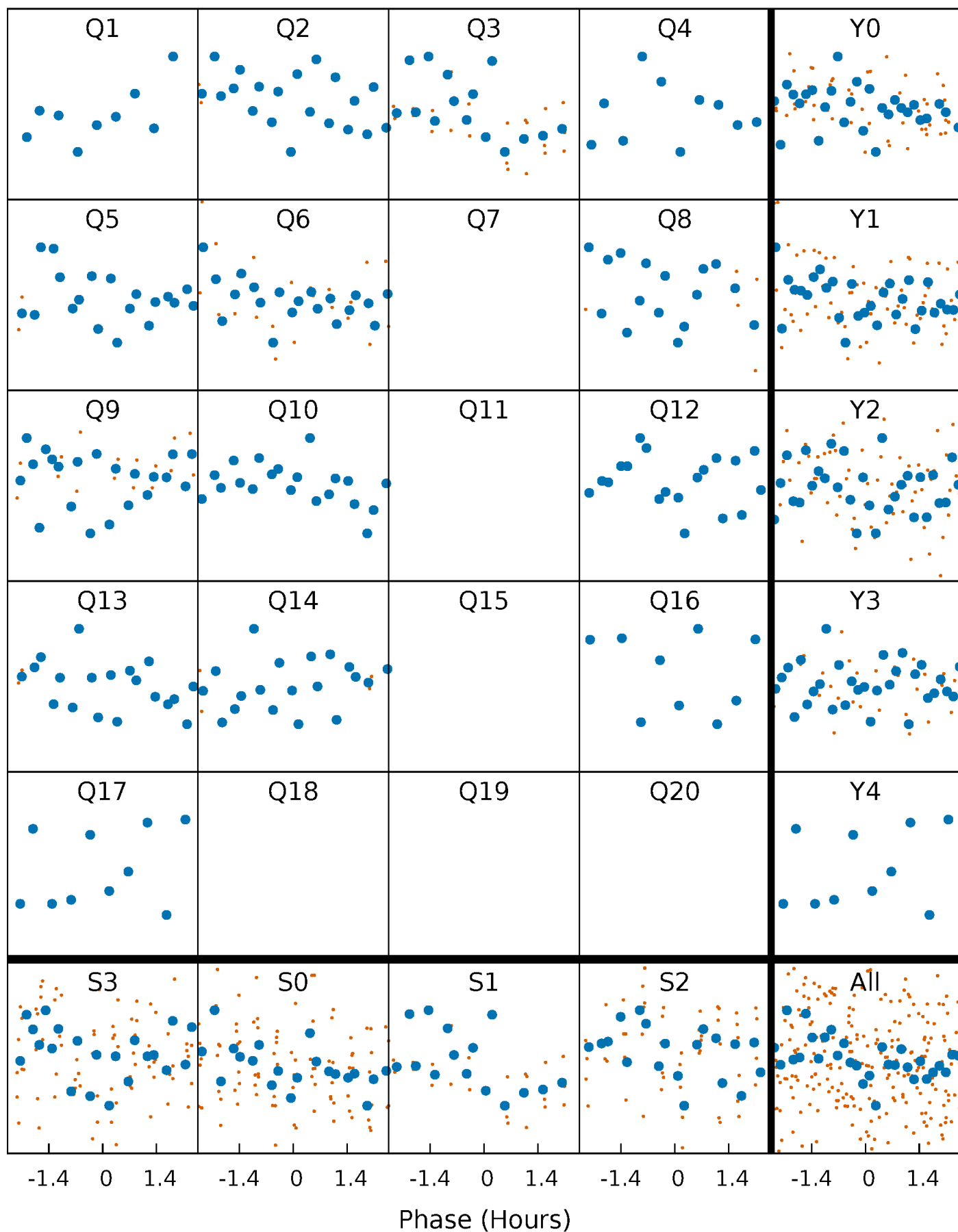


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



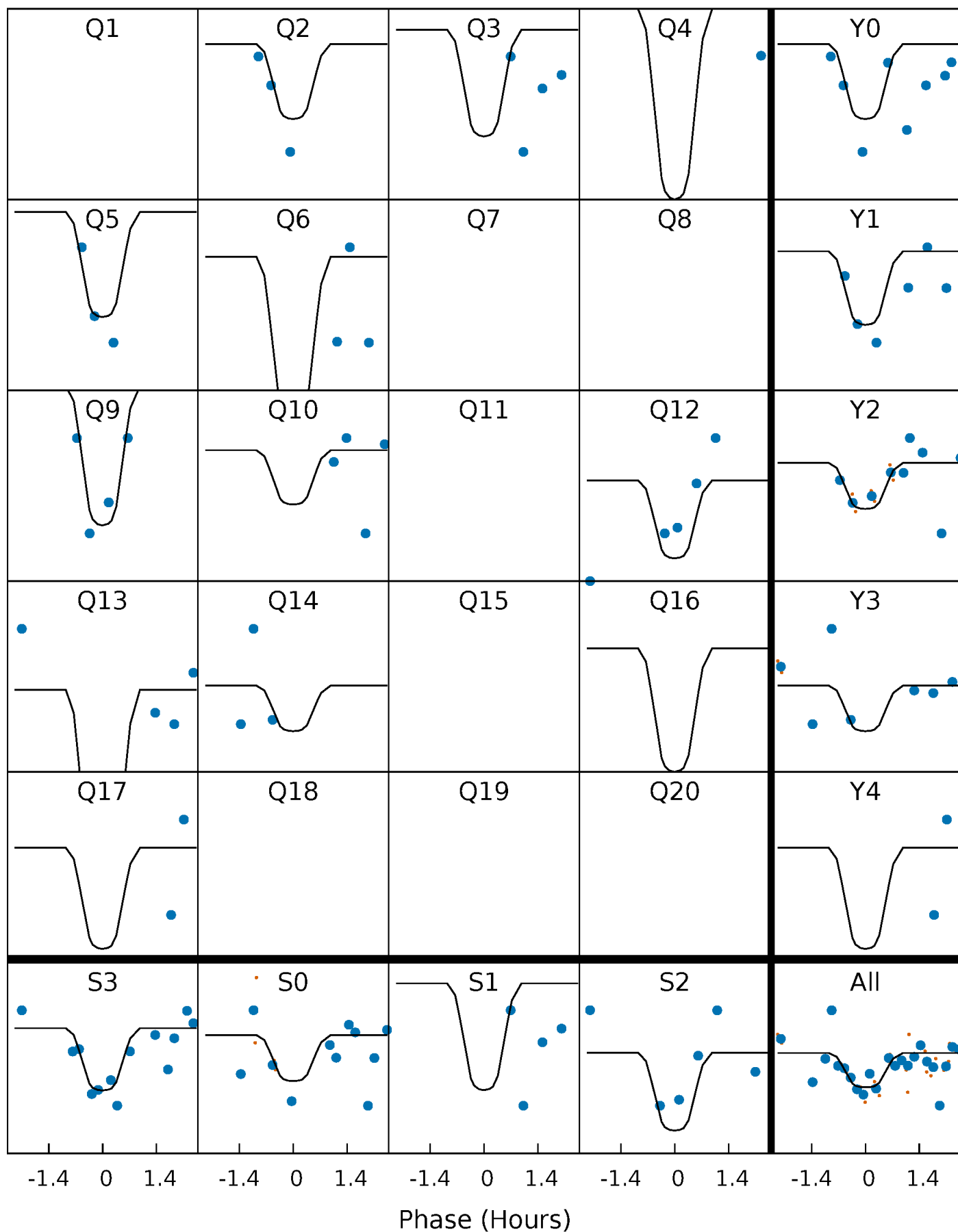
PDC Quarter-Phased Transit Curves

TCE 010097149-03 $P = 39.393838$ Days $T_0 = 147.801636$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010097149-03 P= 39.393838 Days $T_0=147.801636$ (BKJD)

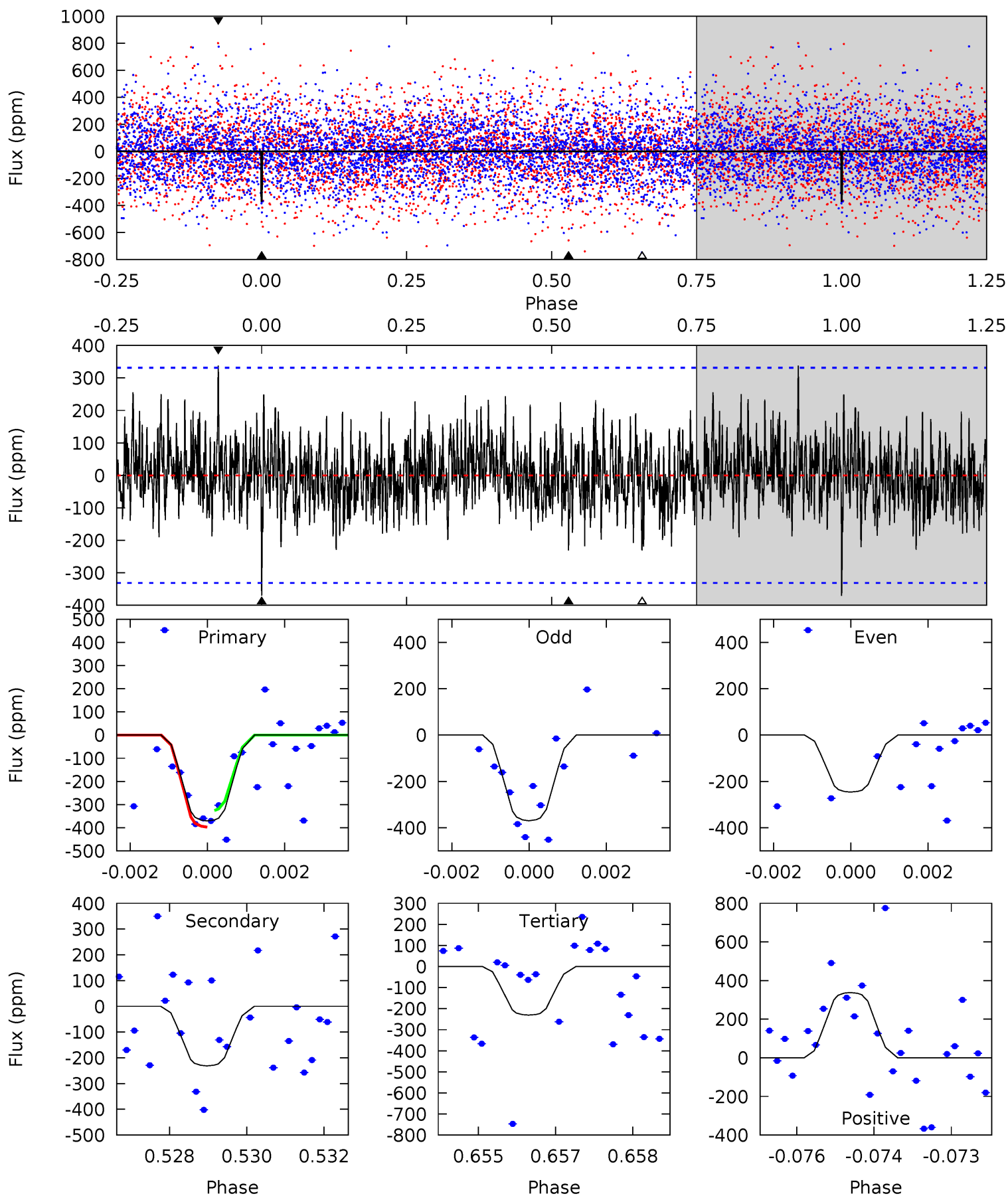


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

010097149-03, $P = 39.393838$ Days, $E = 108.407798$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.99	3.74	3.73	5.46	5.36	3.14	1.31	2.26	0.53	0.01	-1.73	0.88	0.95	0.48	0.58



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 010097149

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7244^{+226}_{-327}	$4.064^{+0.180}_{-0.180}$	$-0.180^{+0.250}_{-0.350}$	$1.882^{+0.556}_{-0.505}$	$1.495^{+0.212}_{-0.259}$	$0.316^{+0.366}_{-0.149}$
	+3%/-5%	+4%/-4%	+139%/-194%	+30%/-27%	+14%/-17%	+116%/-47%
Source	KIC0	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 010097149-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-231 ± 62	$4.94^{+3.75}_{-3.16}$	1203^{+96}_{-92}	5714^{+4611}_{-1285}	334^{+2323}_{-223}
Alt.	N/A	N/A	N/A	N/A	N/A

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

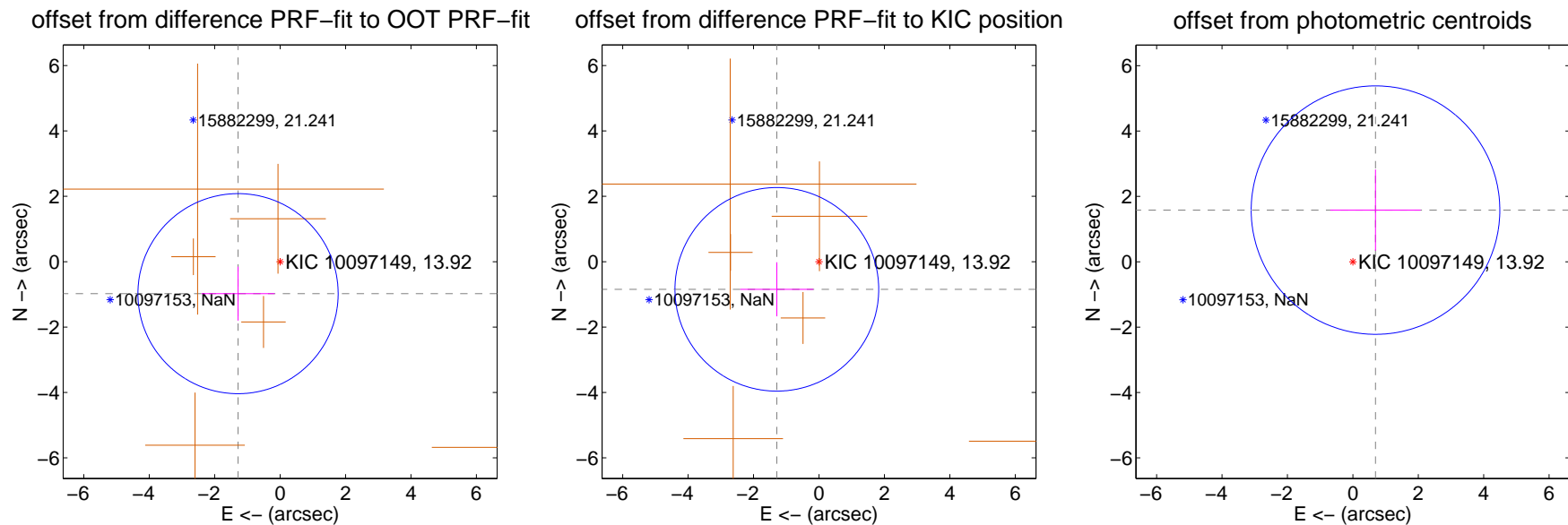
DV Centroid Data

Supplemental centroid analysis for 010097149-03. Kepler magnitude: 13.92. Transit SNR 9.68

There are 0 quarters with good PRF difference image offsets

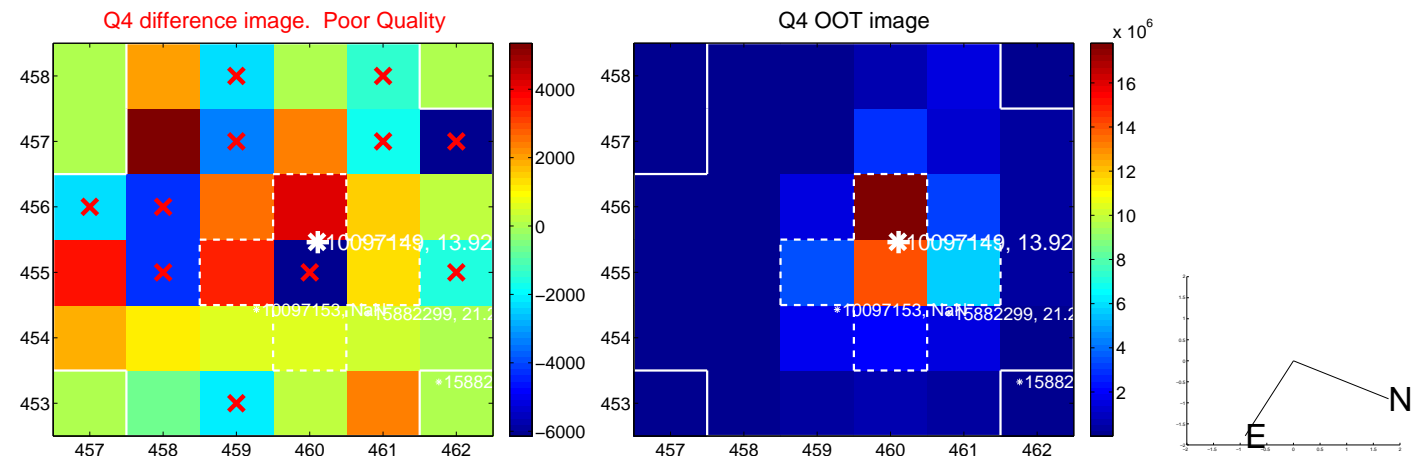
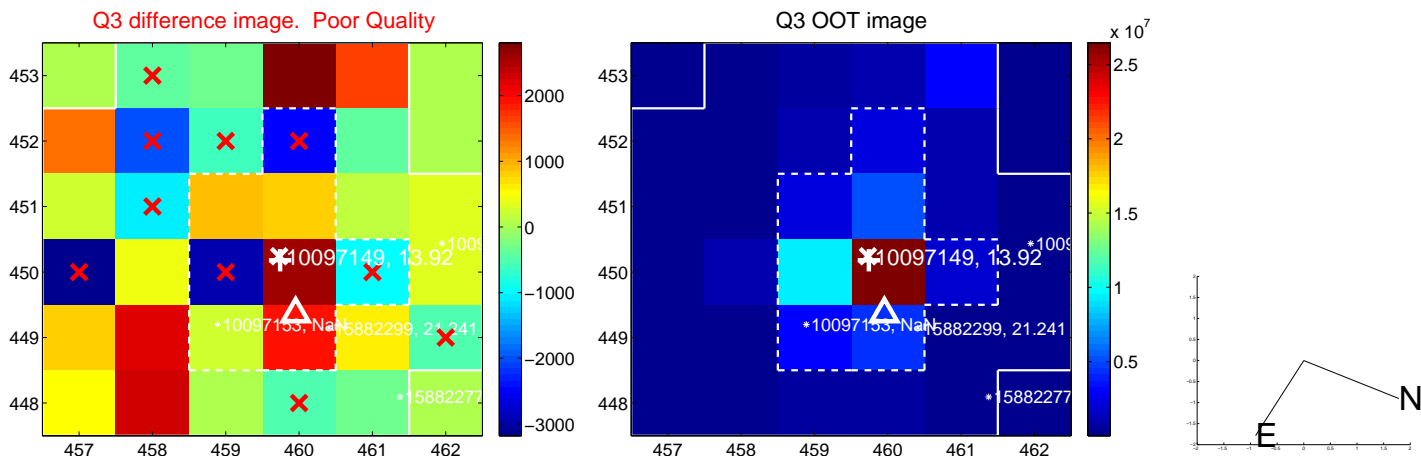
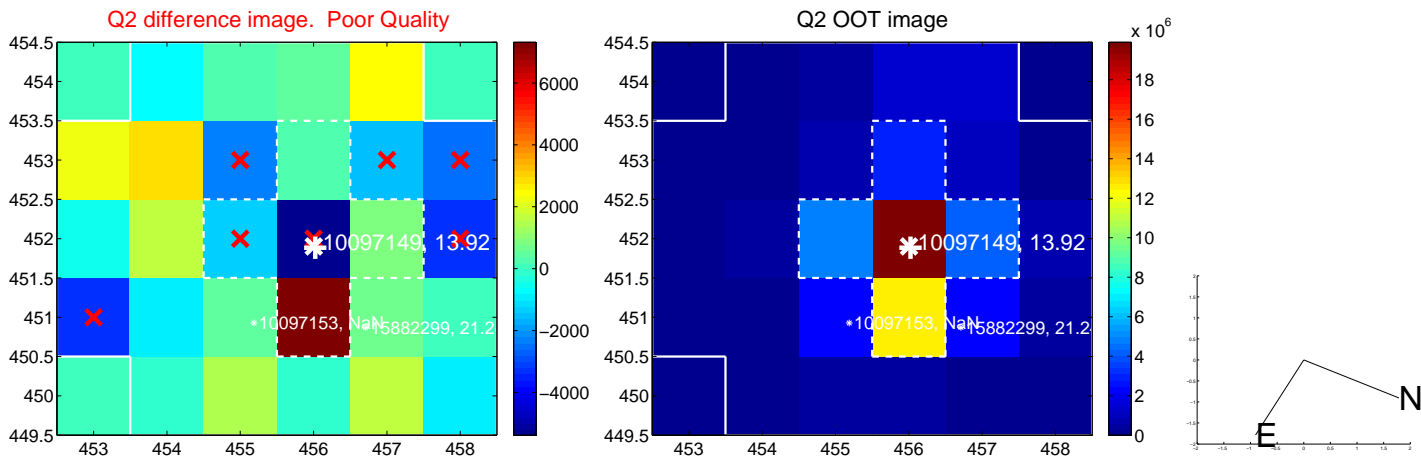
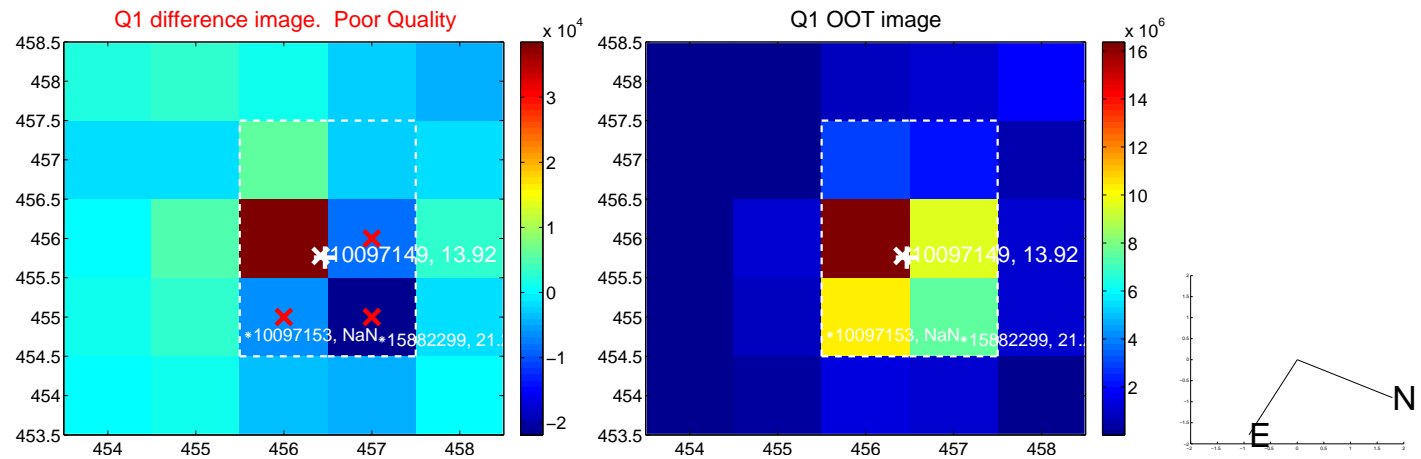
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.616 ± 1.020	1.58	1.286 ± 1.117	-0.978 ± 0.827
PRF-fit source offset from KIC position	1.541 ± 1.038	1.48	1.289 ± 1.117	-0.846 ± 0.827
photometric centroid source offset	1.73 ± 1.27	1.36	-0.69 ± 1.38	1.58 ± 1.24

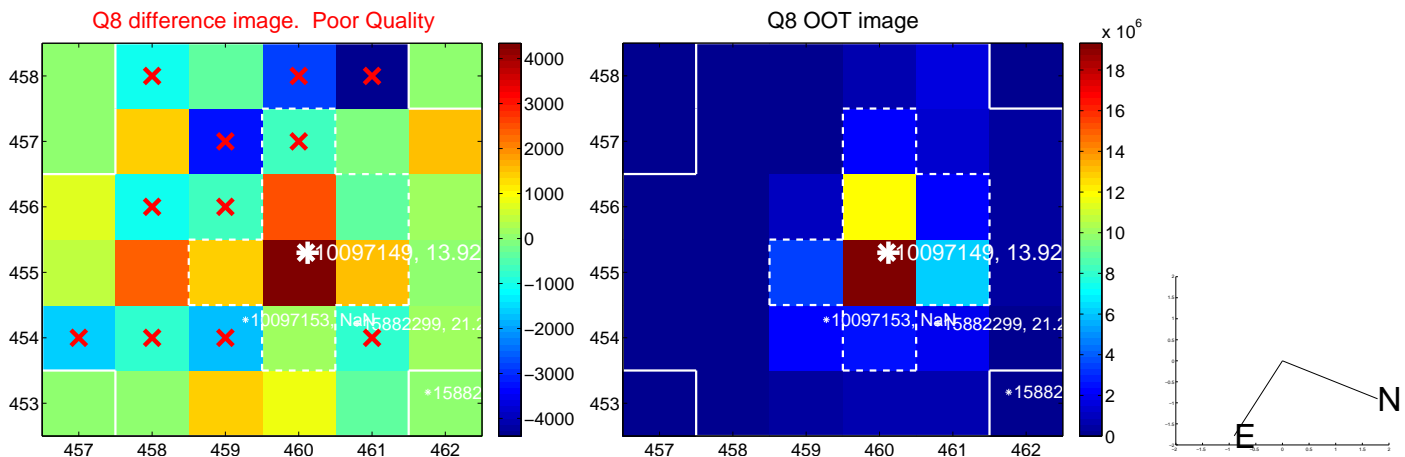
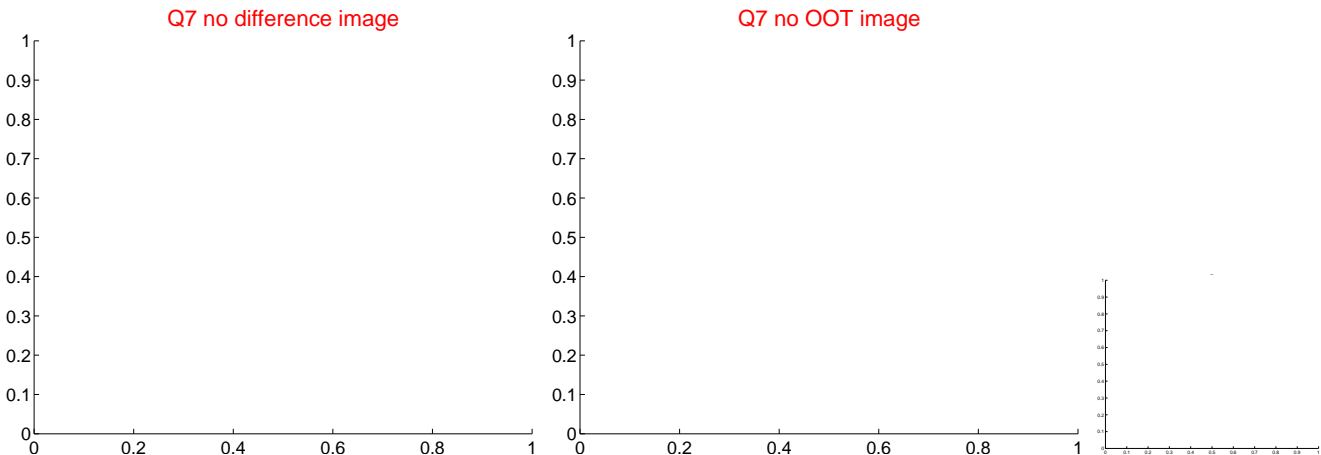
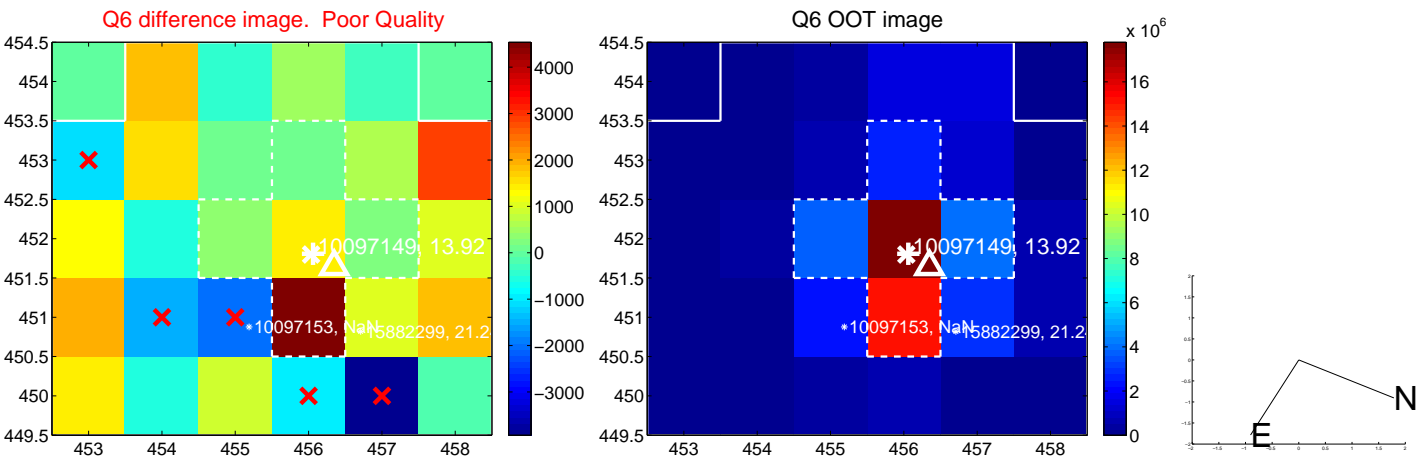
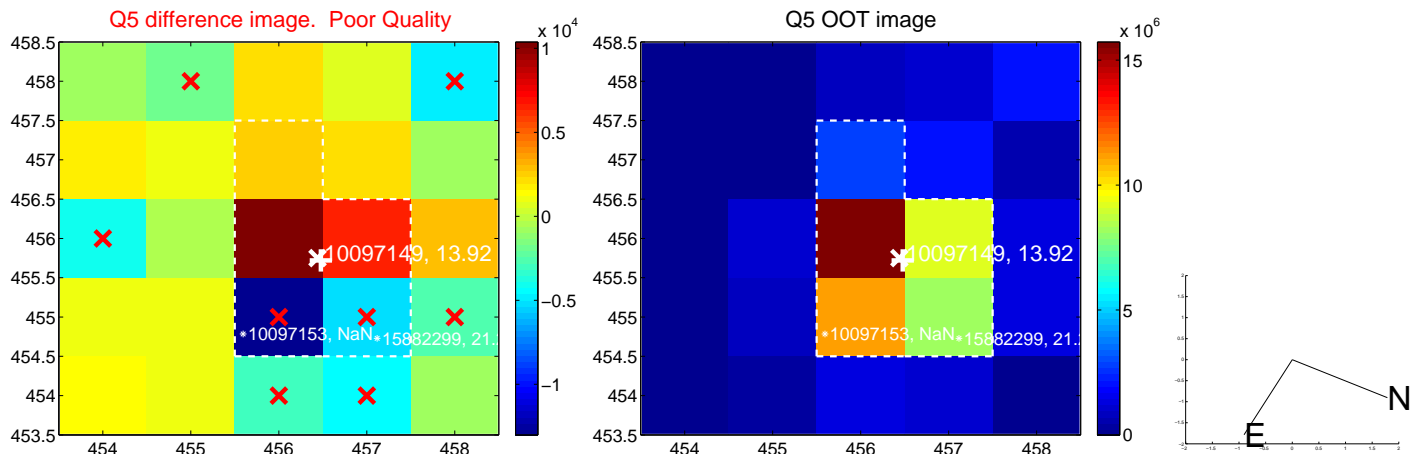


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

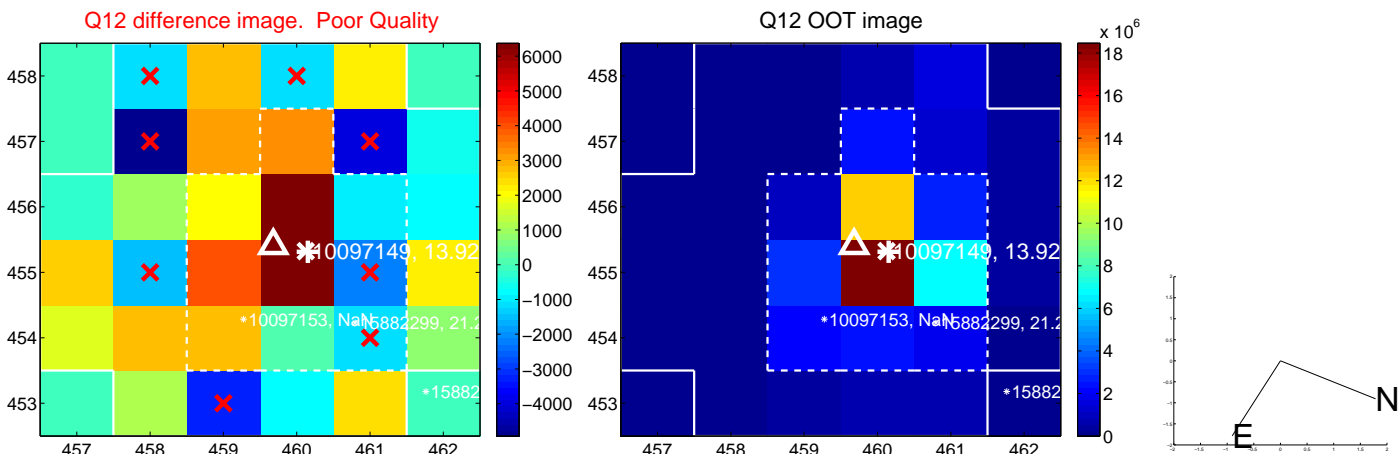
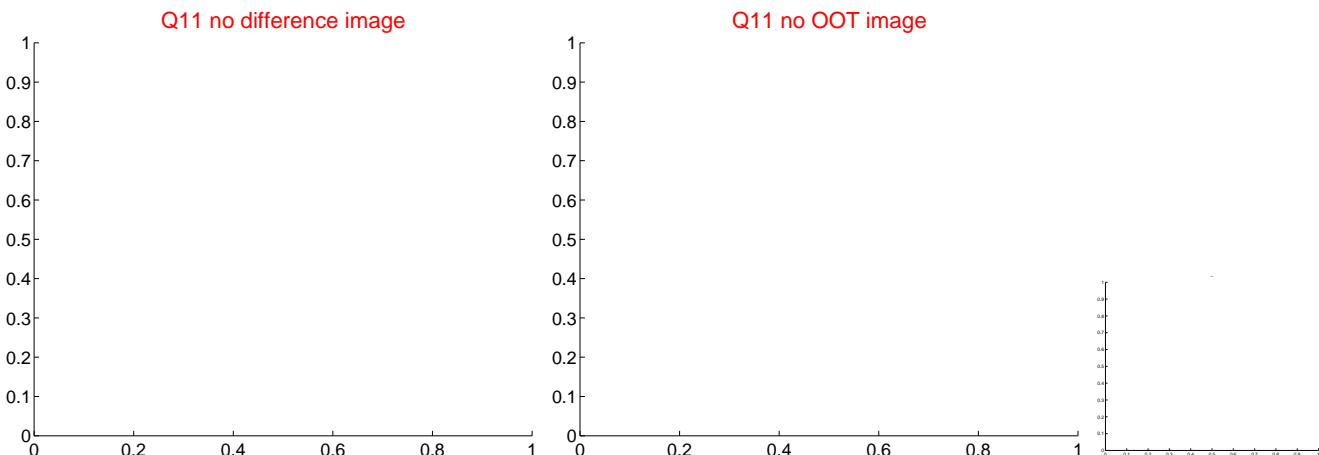
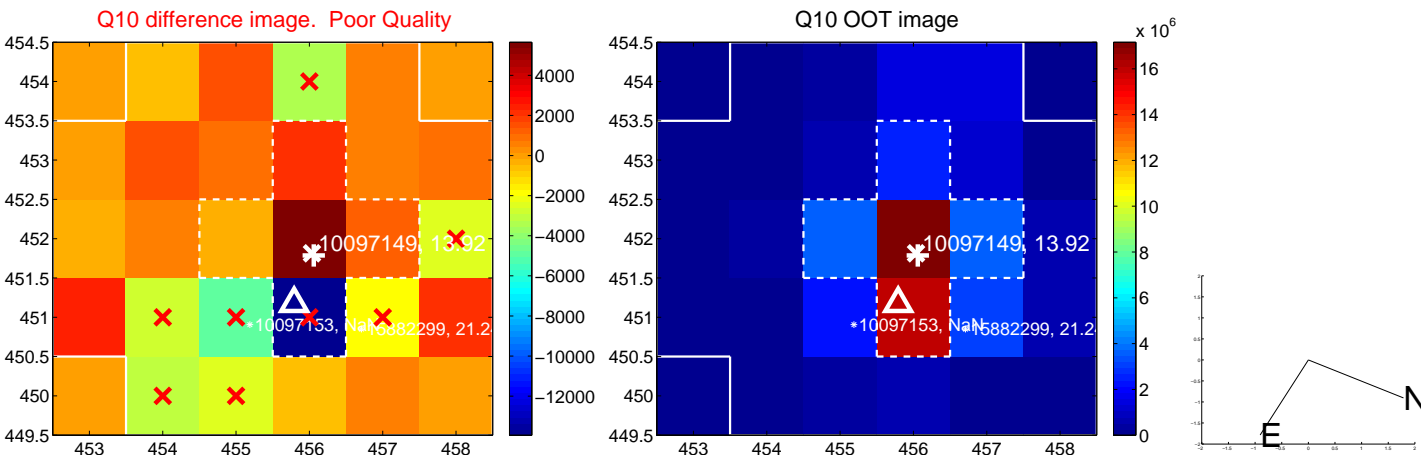
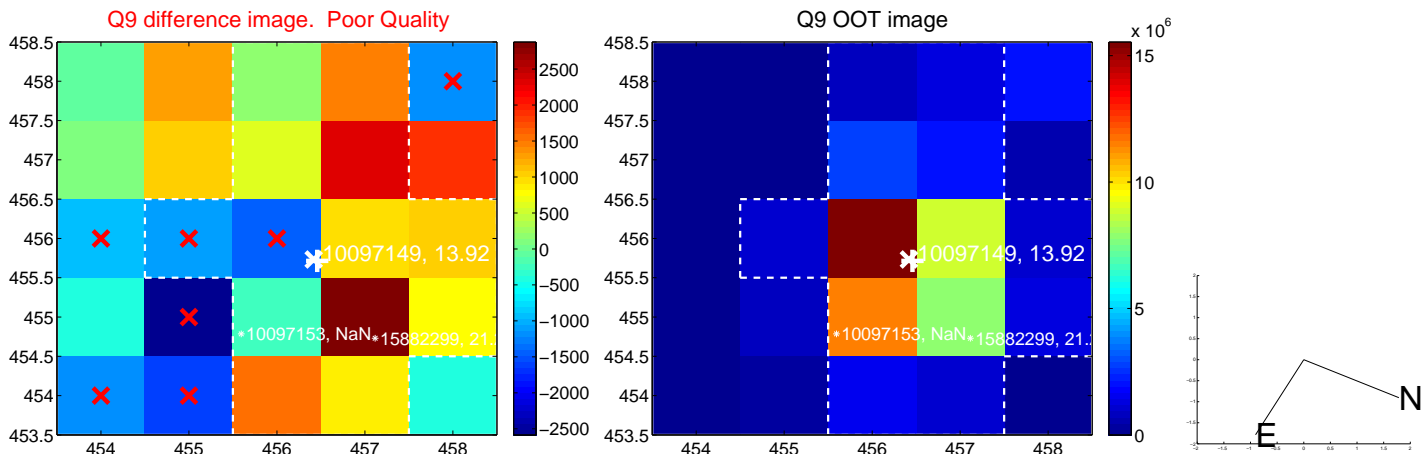
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



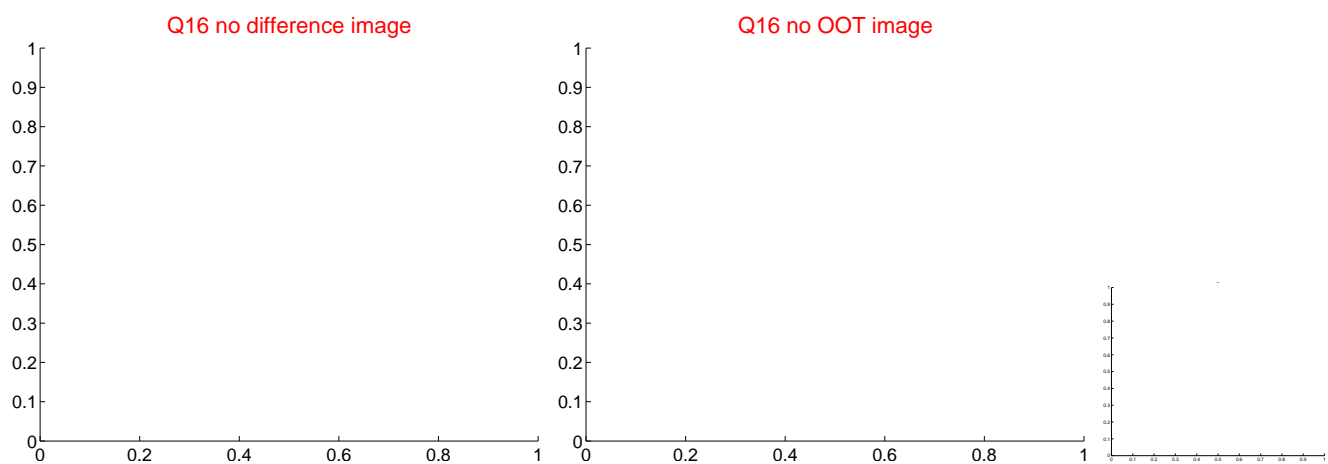
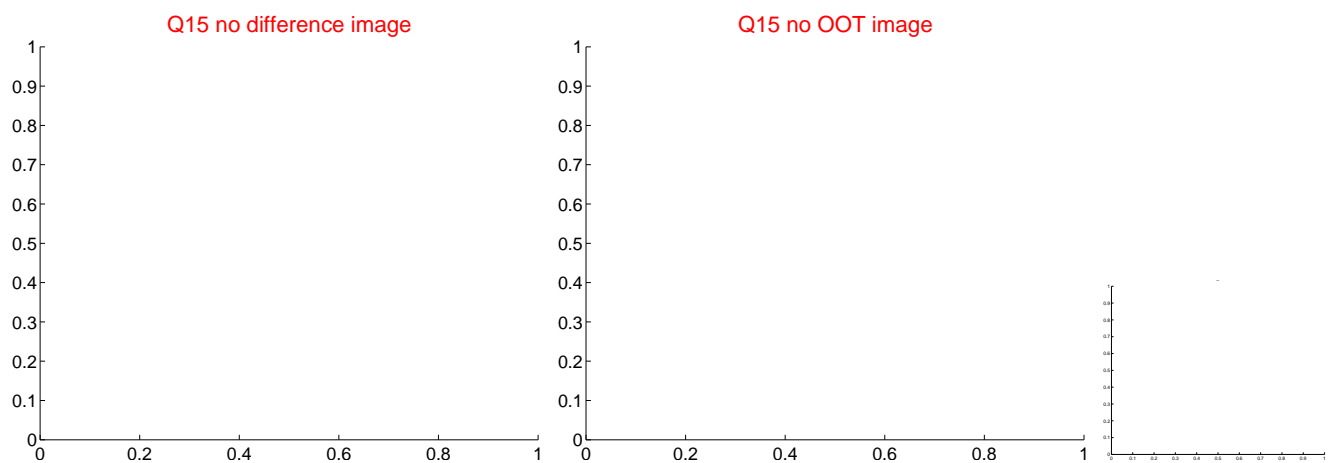
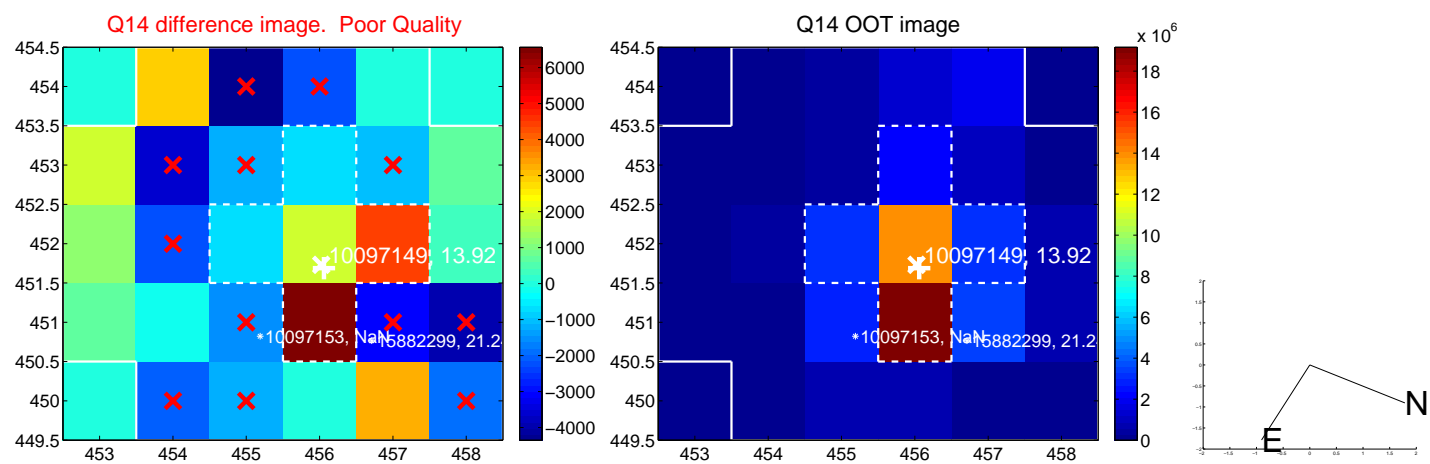
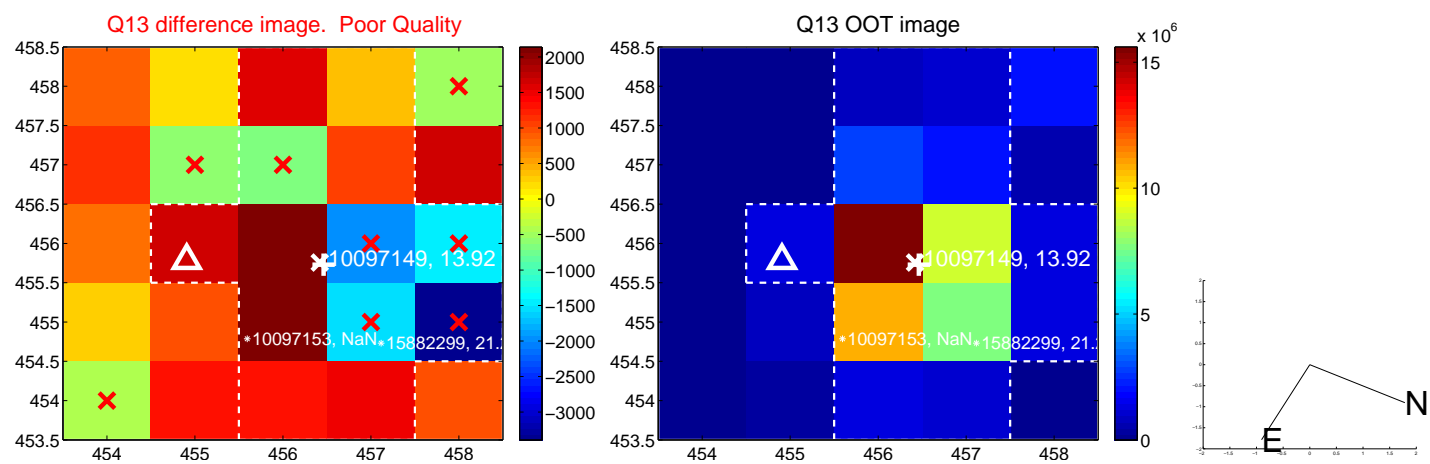
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



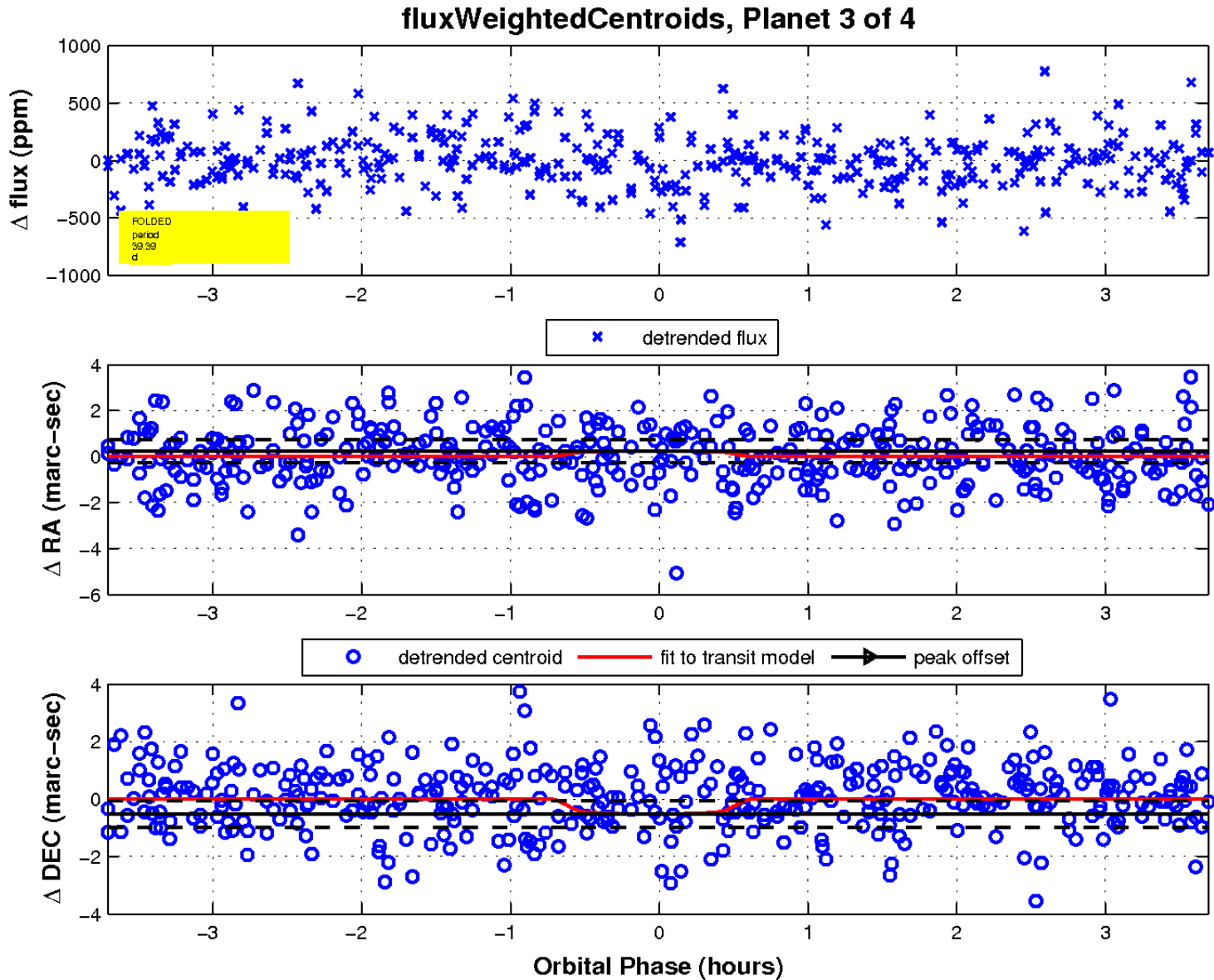
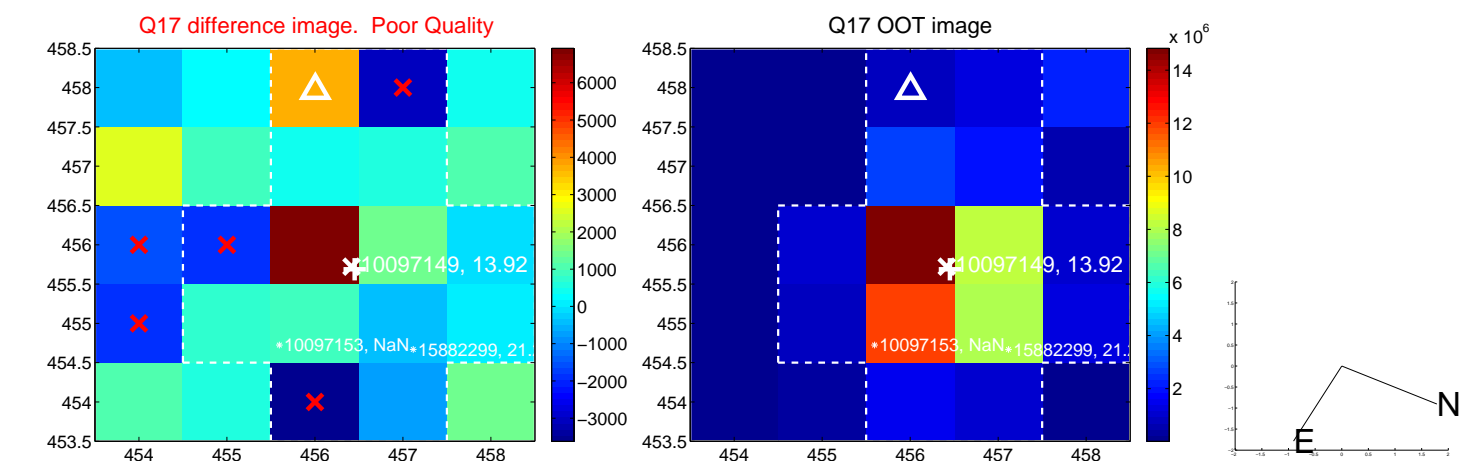
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



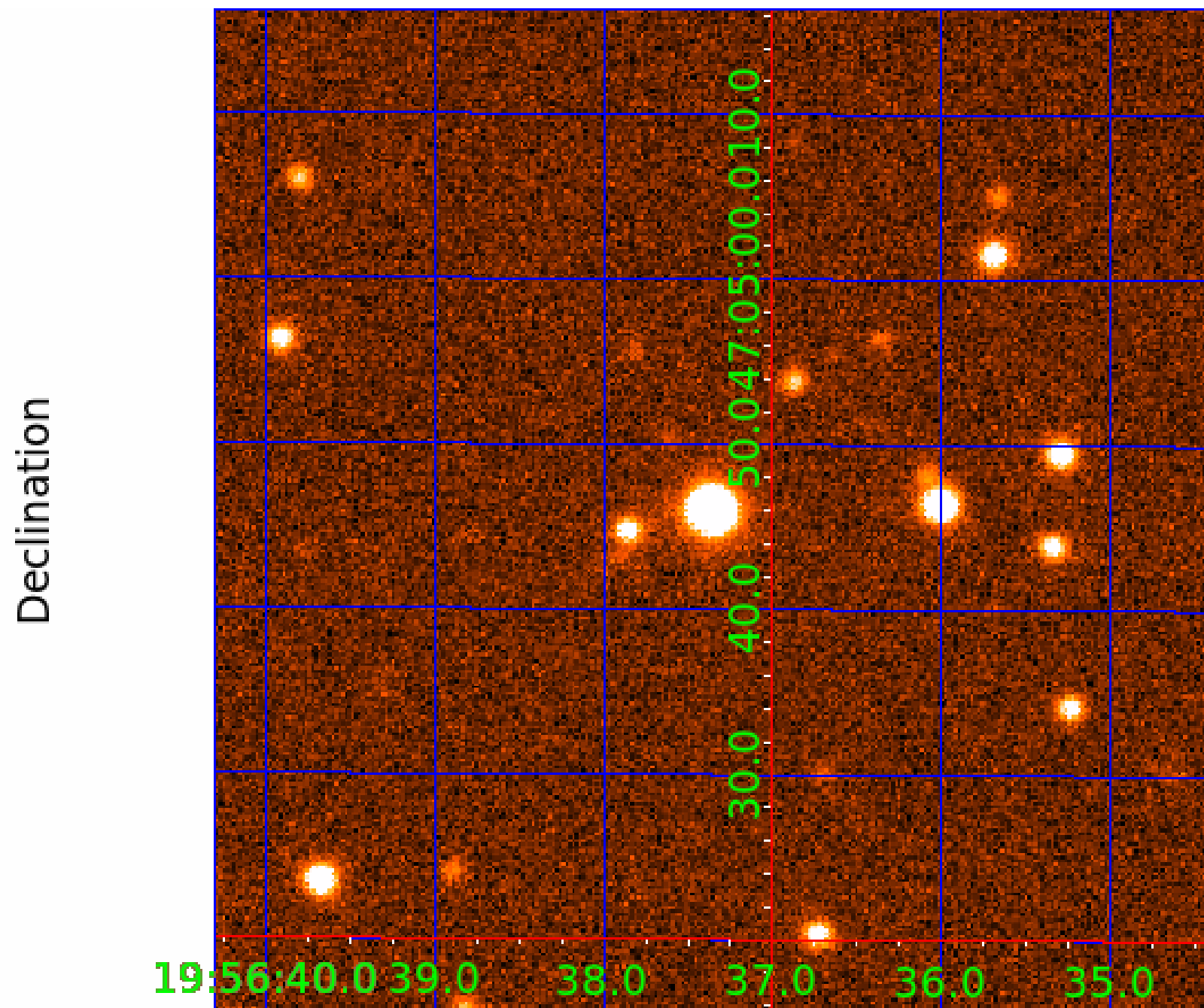
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010097149

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})
010097149-01	OBS	No	0.542450	131.572418	17.8	3.598	9.2	7.2	1.88	7244	0.81	39392.00
010097149-02	OBS	No	18.470065	137.108908	298.4	1.542	8.9	9.5	1.88	7244	3.84	356.94
010097149-03	OBS	No	39.393838	147.801636	363.3	1.240	9.0	9.7	1.88	7244	4.06	130.01
010097149-04	OBS	No	28.318075	153.479373	482.1	1.180	8.3	8.5	1.88	7244	4.78	201.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010097149-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010097149-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
010097149-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS—HALO_GHOST
010097149-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

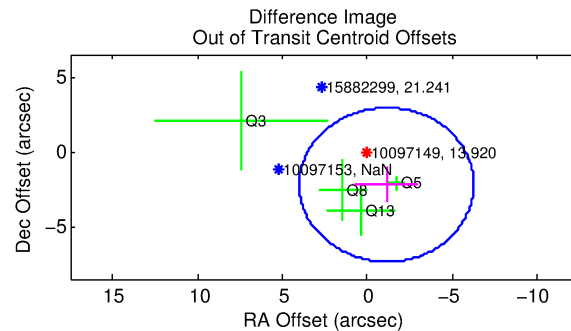
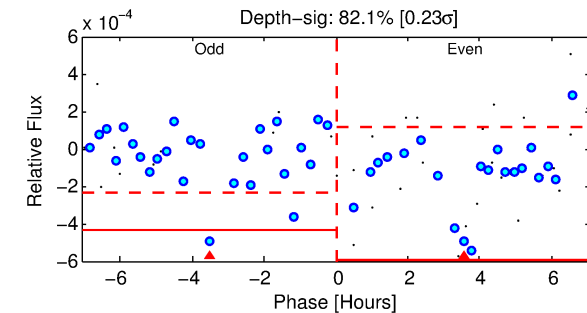
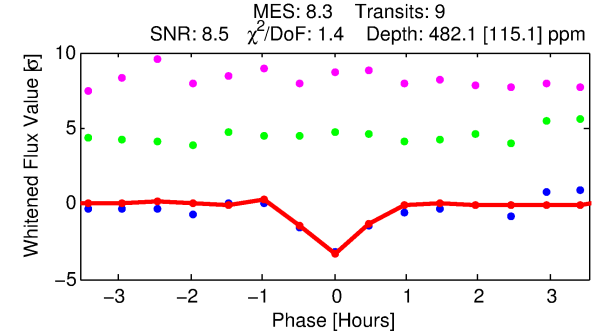
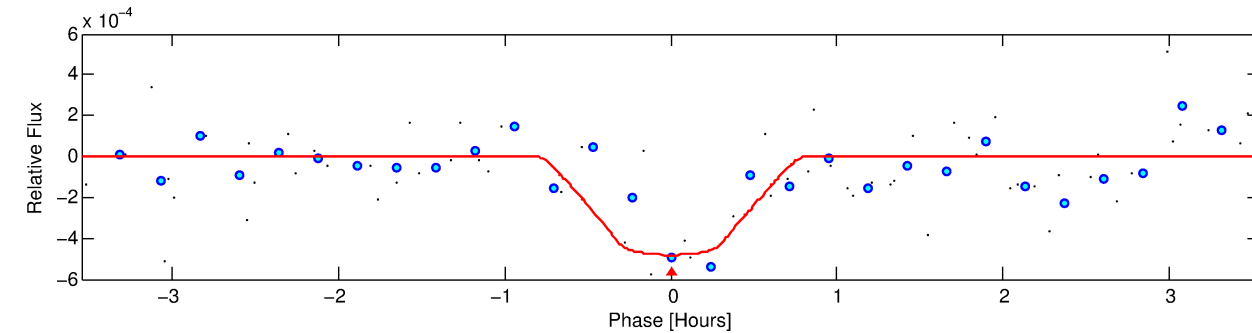
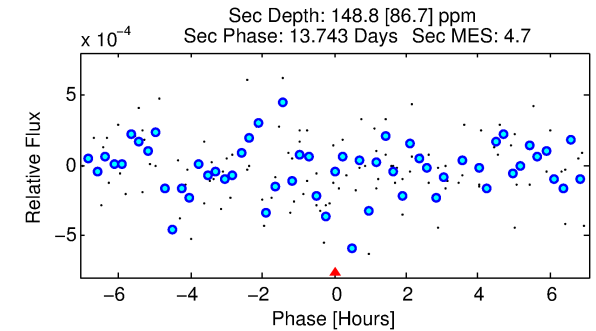
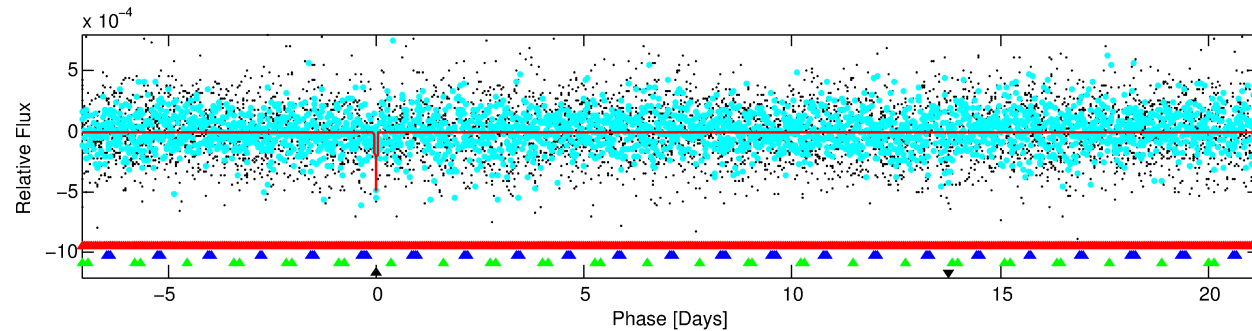
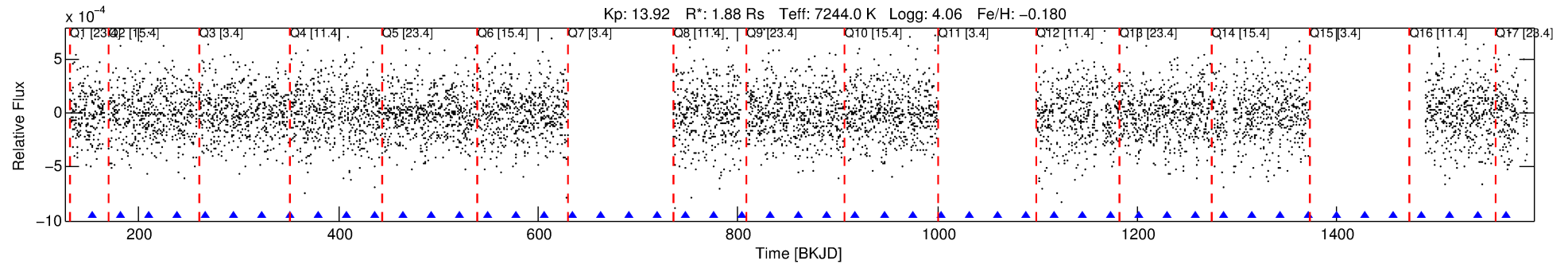
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010097149-04

No Significant Match Found

DV One-Page Summary

KIC: 10097149 Candidate: 4 of 4 Period: 28.318 d



DV Fit Results:

Period = 28.31808 [0.00029] d
Epoch = 153.4794 [0.0099] BKJD
Rp/R* = 0.0233 [0.0442]
a/R* = 93.32 [1114.55]
b = 0.89 [2.87]
Seff = 201.90 [77.60]
Teff = 961 [92] K
Rp = 4.78 [9.19] Re
a = 0.2080 [0.0501] AU
Ag = 155.34 [600.21] [0.26σ]
Teffp = 5247 [5054] K [0.85σ]

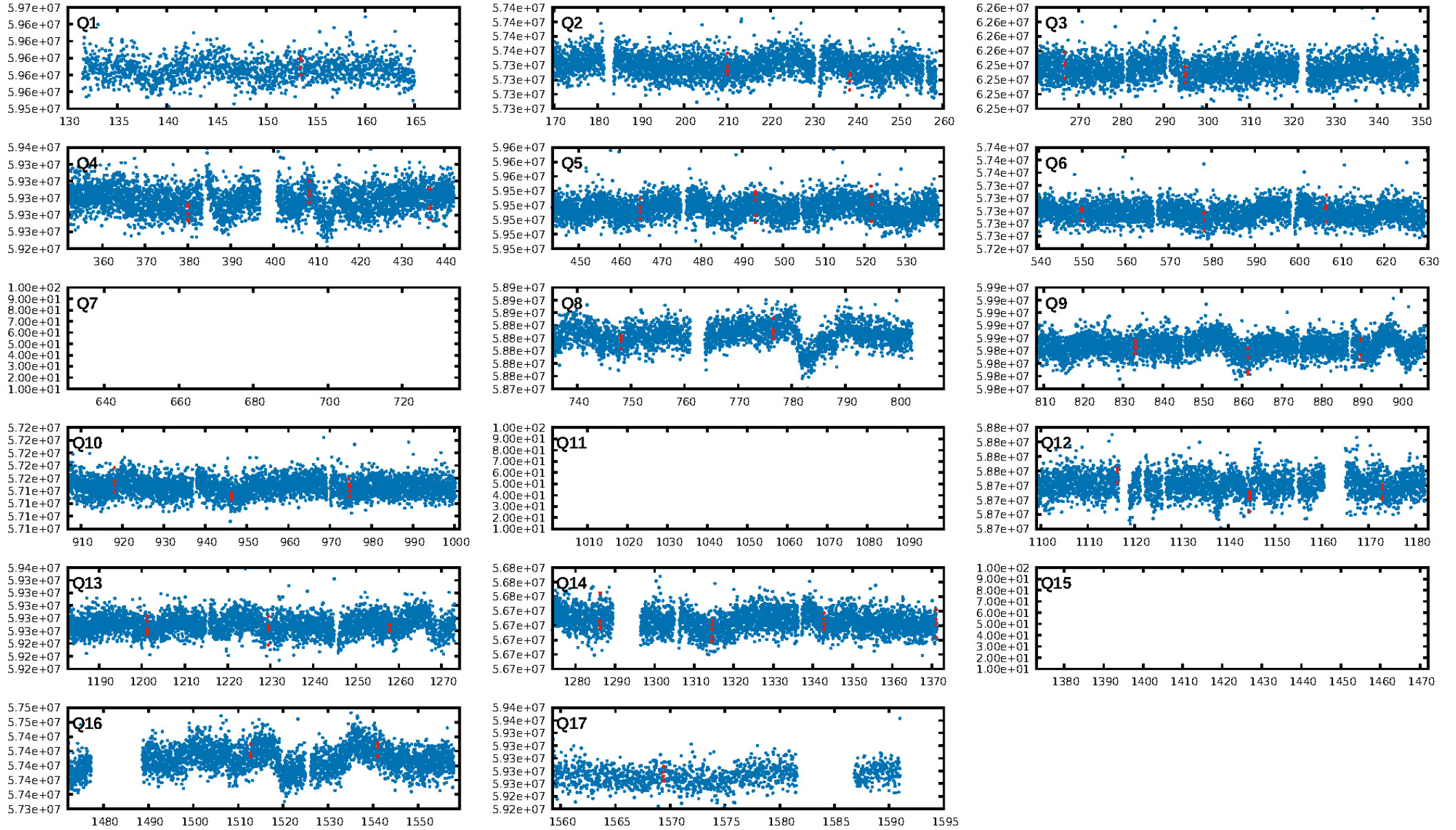
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [121.68σ]
LongPeriod-sig: 100.0% [155.28σ]
ModelChiSquare2-sig: 19.1%
ModelChiSquareGof-sig: 95.8%
Bootstrap-pfa: 2.35e-08
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -2.069
Centroid-sig: 50.9%
Centroid-so: 0.929 arcsec [1.04σ]
OotOffset-rm: 2.494 arcsec [1.45σ]
KicOffset-rm: 2.292 arcsec [1.55σ]
OotOffset-st: 0/1/1/2 [4]
KicOffset-st: 0/1/1/2 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 0.00 [0/14]

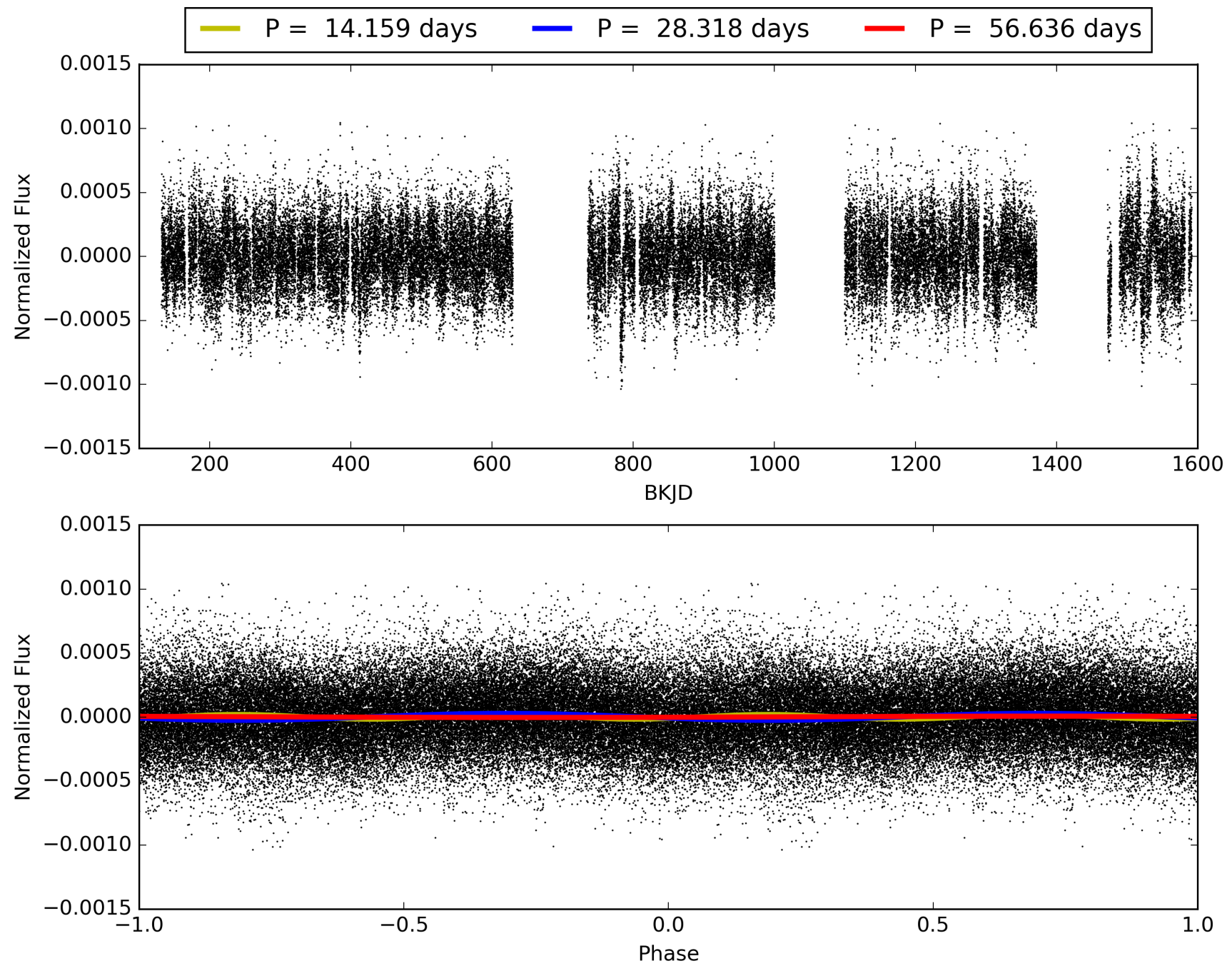
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:52:36 Z

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

TCE 010097149-04, PDC Light Curves

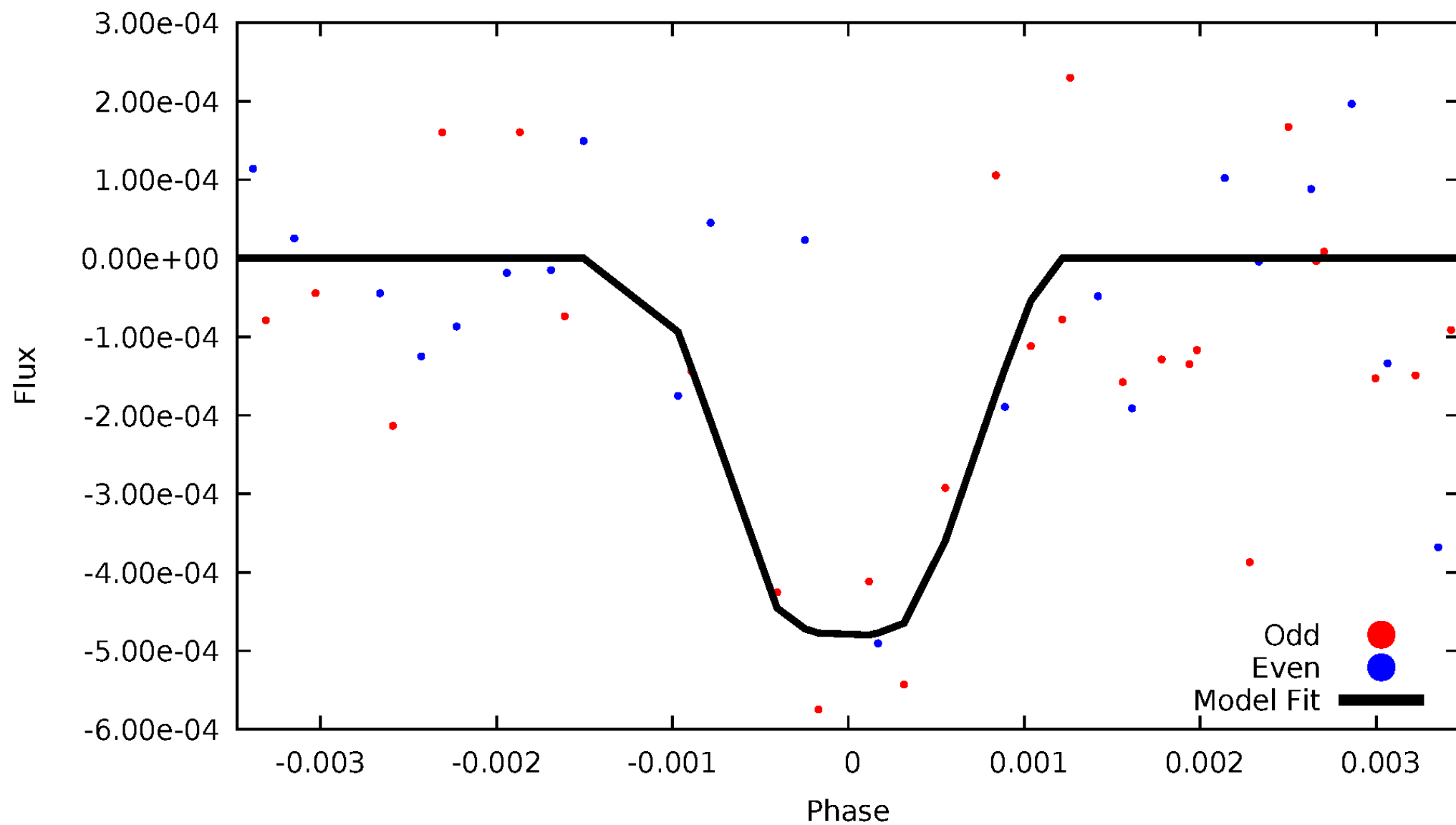


TCE 010097149-04



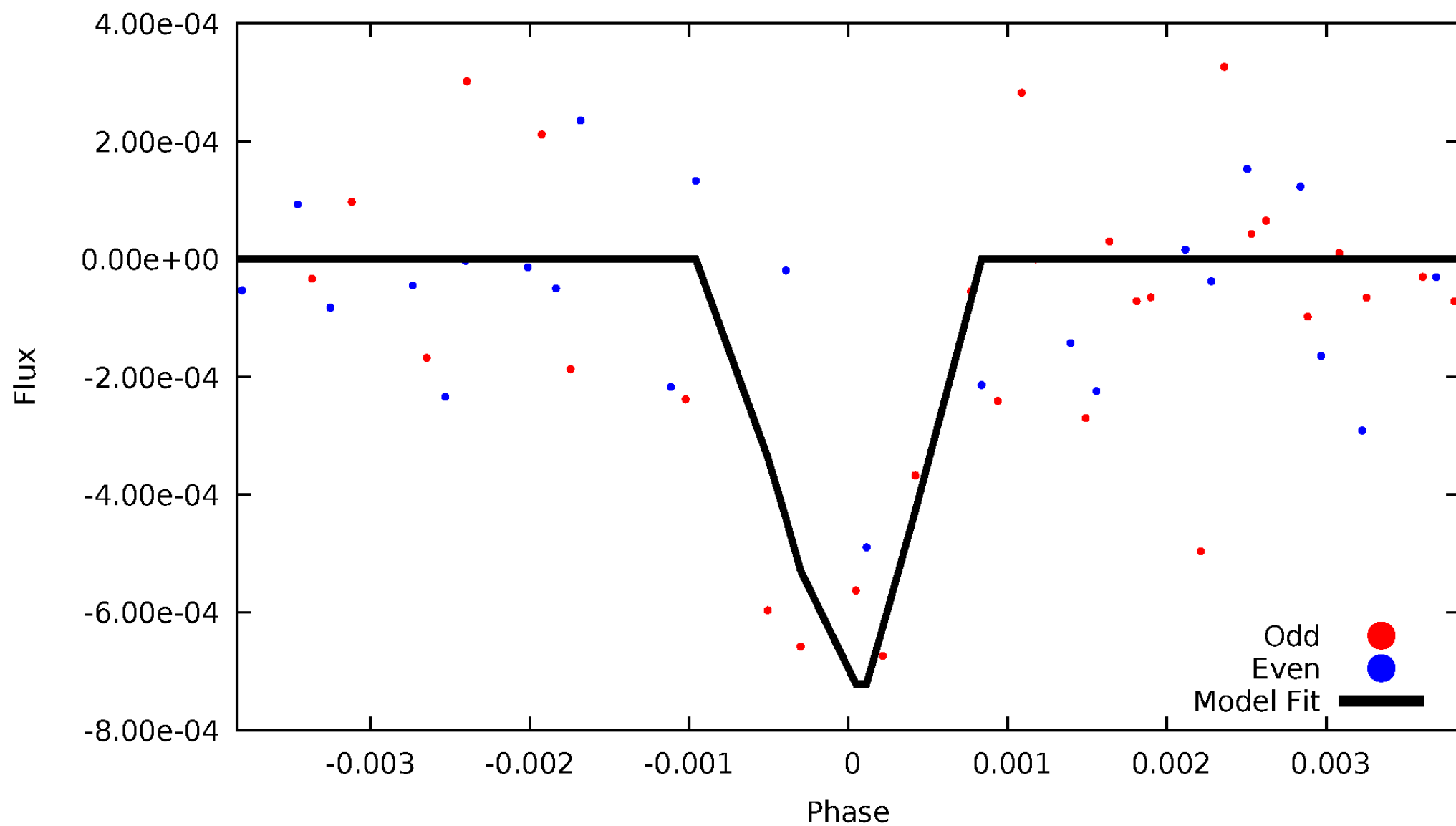
DV Odd/Even

TCE 010097149-04



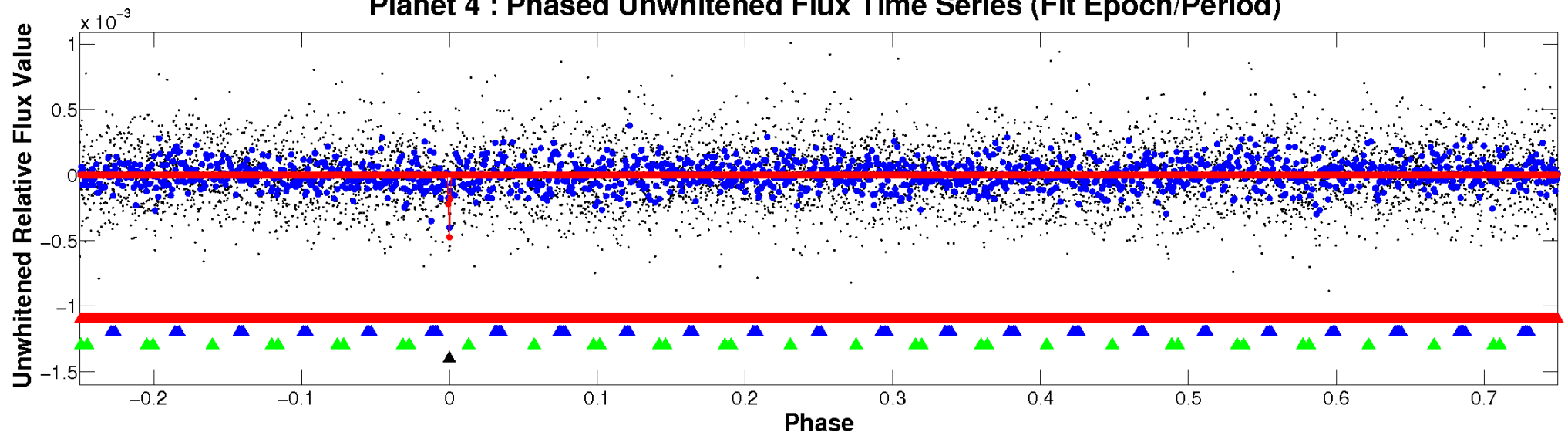
ALT Odd/Even

TCE 010097149-04

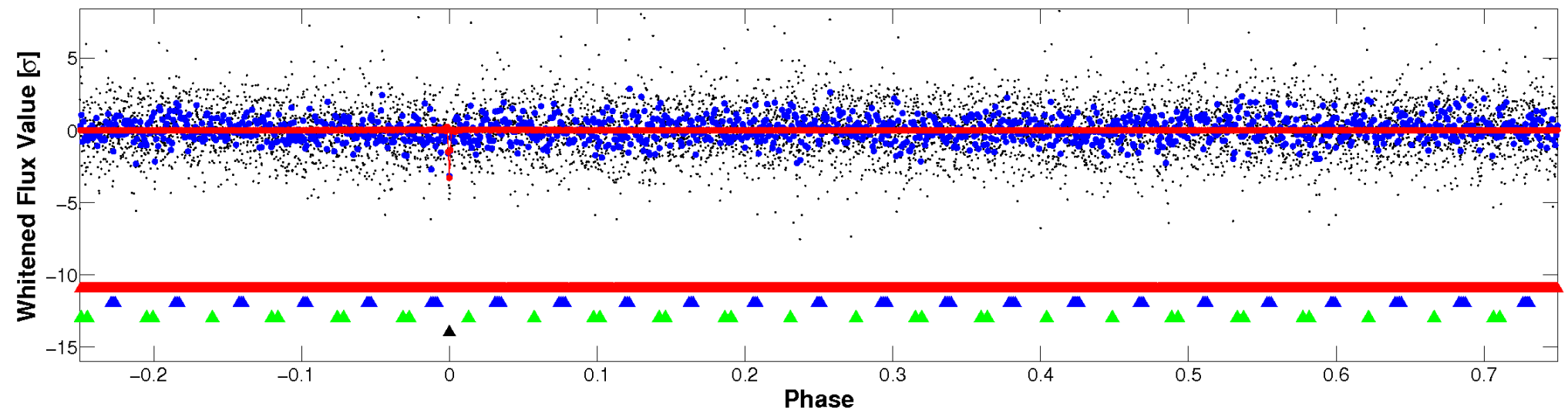


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

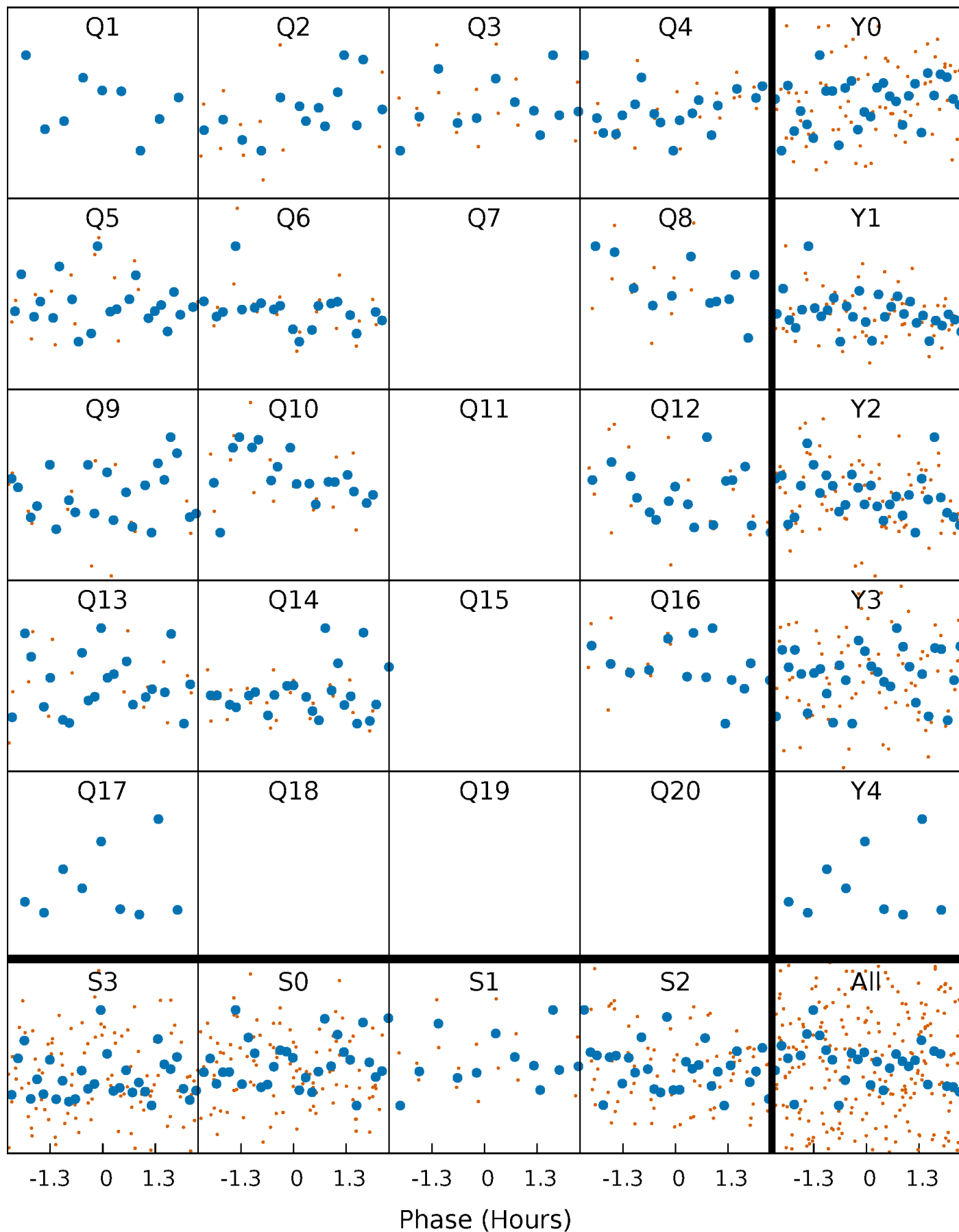


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



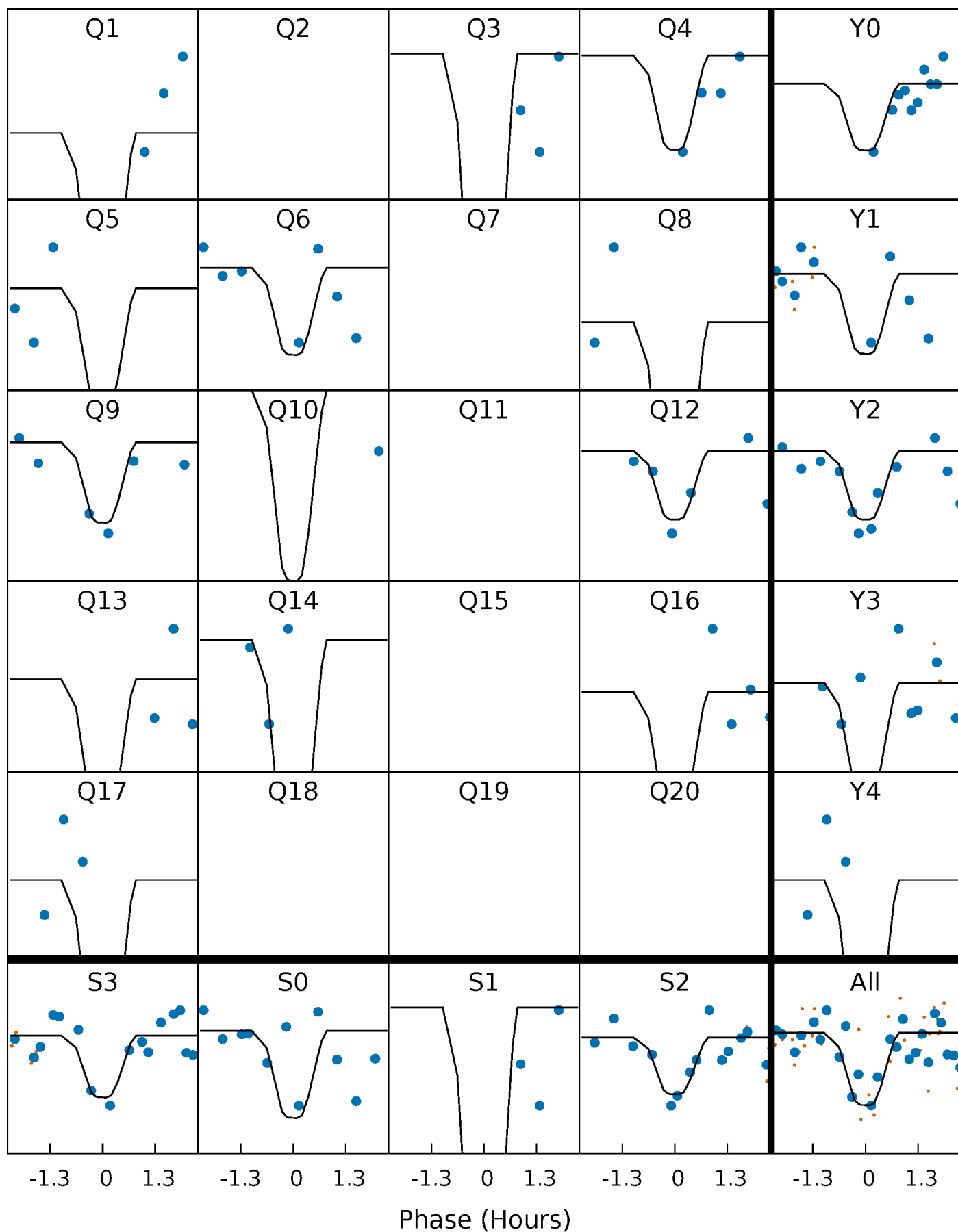
PDC Quarter-Phased Transit Curves

TCE 010097149-04 P= 28.318075 Days $T_0=153.479373$ (BKJD)



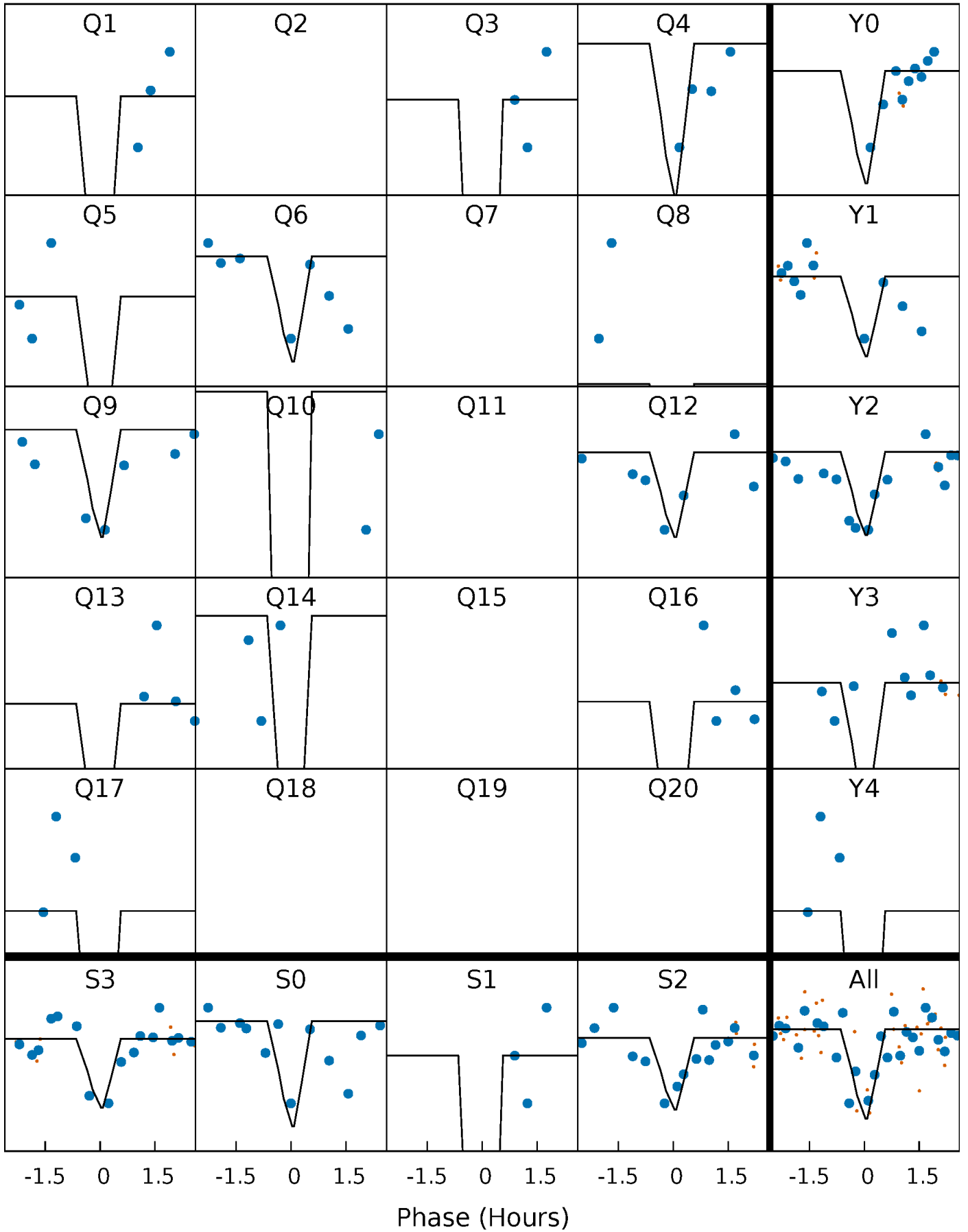
DV Quarter-Phased Transit Curves

TCE 010097149-04 P= 28.318075 Days $T_0=153.479373$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

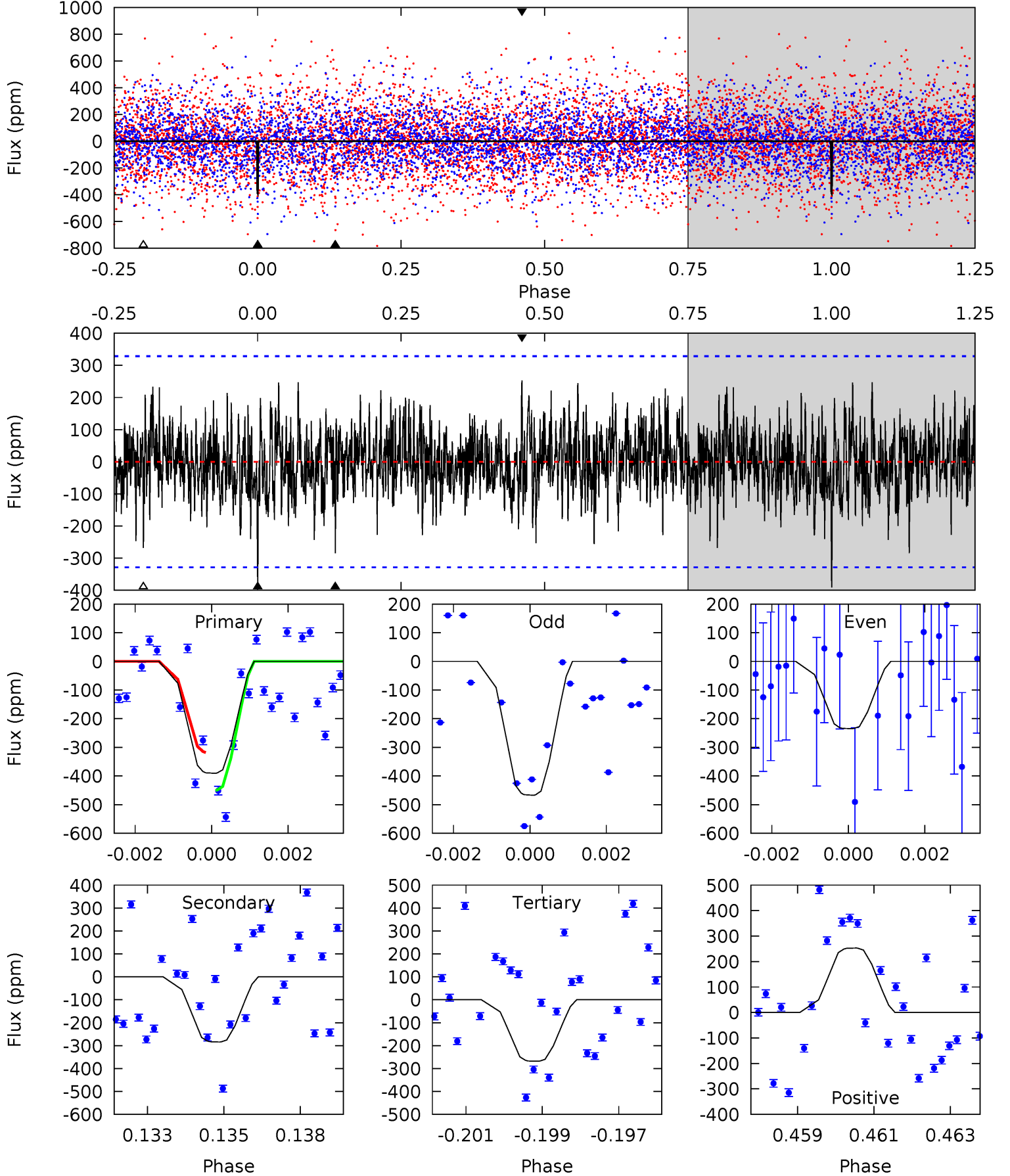
TCE 010097149-04 P= 28.318161 Days $T_0=153.480045$ (BKJD)



DV Model-Shift Uniqueness Test

010097149-04, $P = 28.318075$ Days, $E = 125.161298$ Days

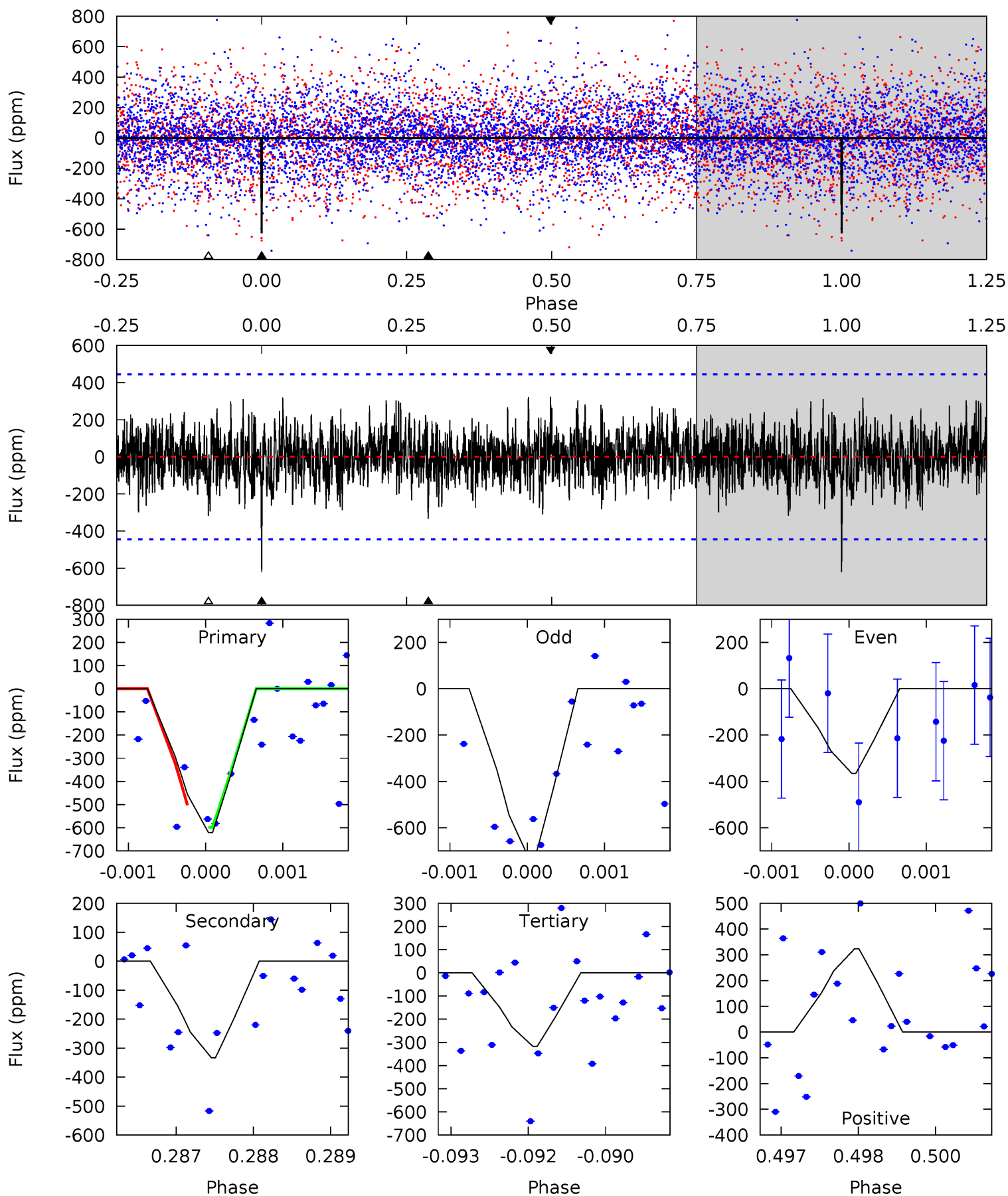
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.32	4.60	4.34	4.09	5.31	3.06	1.31	1.98	2.23	0.26	0.51	1.77	0.74	0.39	1.06



Alt Model-Shift Uniqueness Test

010097149-04, P = 28.318161 Days, E = 125.161884 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.57	4.06	3.87	3.94	5.41	3.22	1.20	3.69	3.62	0.18	0.11	2.16	0.95	0.34	0.55



Stellar Parameters For KIC 010097149

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7244^{+226}_{-327}	$4.064^{+0.180}_{-0.180}$	$-0.180^{+0.250}_{-0.350}$	$1.882^{+0.556}_{-0.505}$	$1.495^{+0.212}_{-0.259}$	$0.316^{+0.366}_{-0.149}$
	+3%/-5%	+4%/-4%	+139%/-194%	+30%/-27%	+14%/-17%	+116%/-47%
Source	KIC0	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 010097149-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-284 ± 62	$7.92^{+8.06}_{-5.14}$	1337^{+100}_{-99}	4758^{+3285}_{-1052}	102^{+767}_{-76}
Alt.	-333 ± 82	$8.80^{+7.72}_{-6.22}$	1343^{+100}_{-103}	4772^{+4288}_{-996}	101^{+1084}_{-73}

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

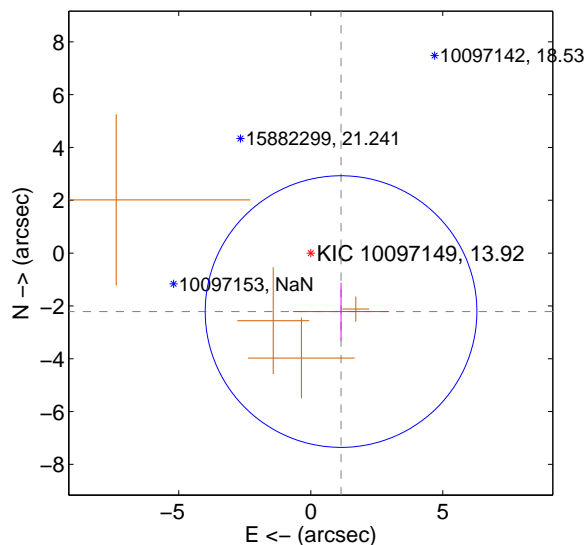
Supplemental centroid analysis for 010097149-04. Kepler magnitude: 13.92. Transit SNR 8.53

There are 0 quarters with good PRF difference image offsets

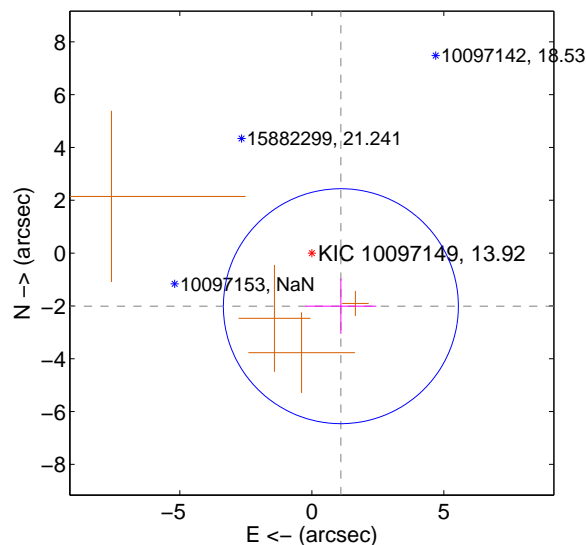
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.494 ± 1.714	1.45	-1.147 ± 1.811	-2.214 ± 1.090
PRF-fit source offset from KIC position	2.292 ± 1.483	1.55	-1.100 ± 1.341	-2.010 ± 1.051
photometric centroid source offset	0.93 ± 0.90	1.04	-0.80 ± 0.91	0.47 ± 0.84

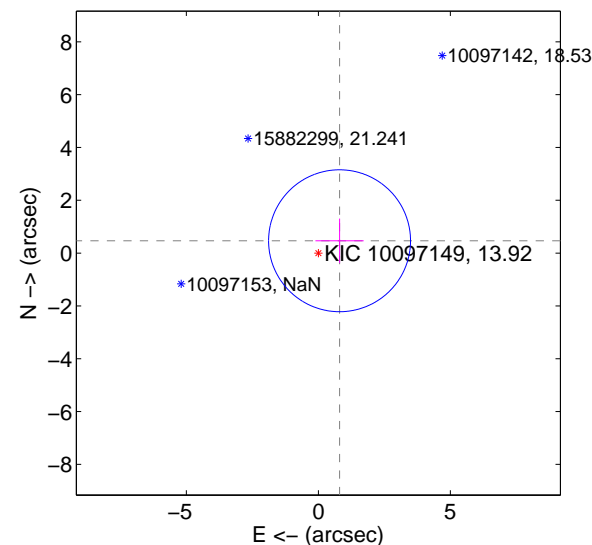
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

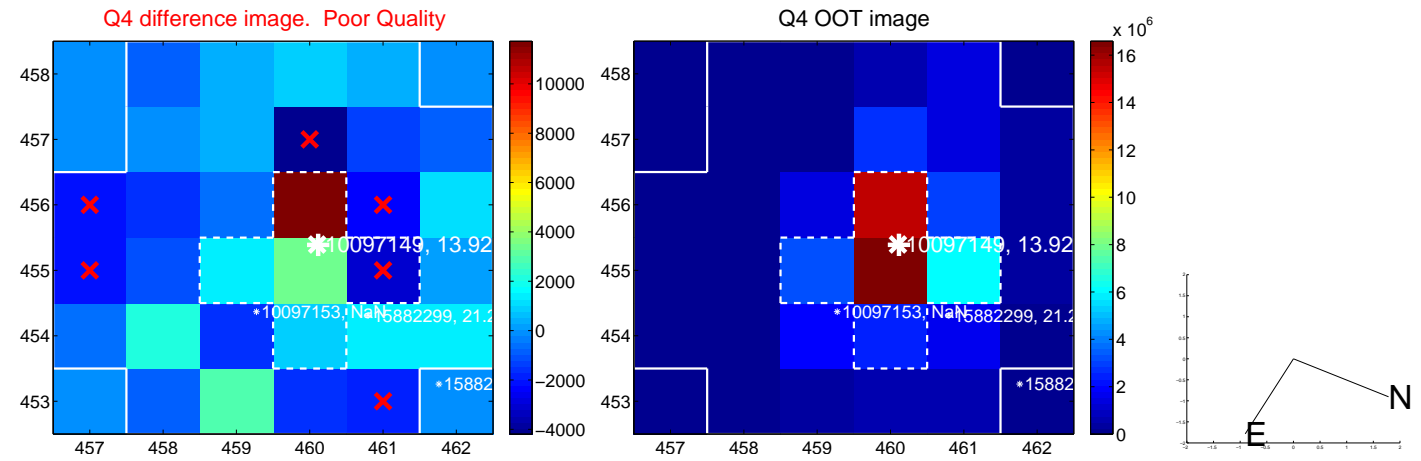
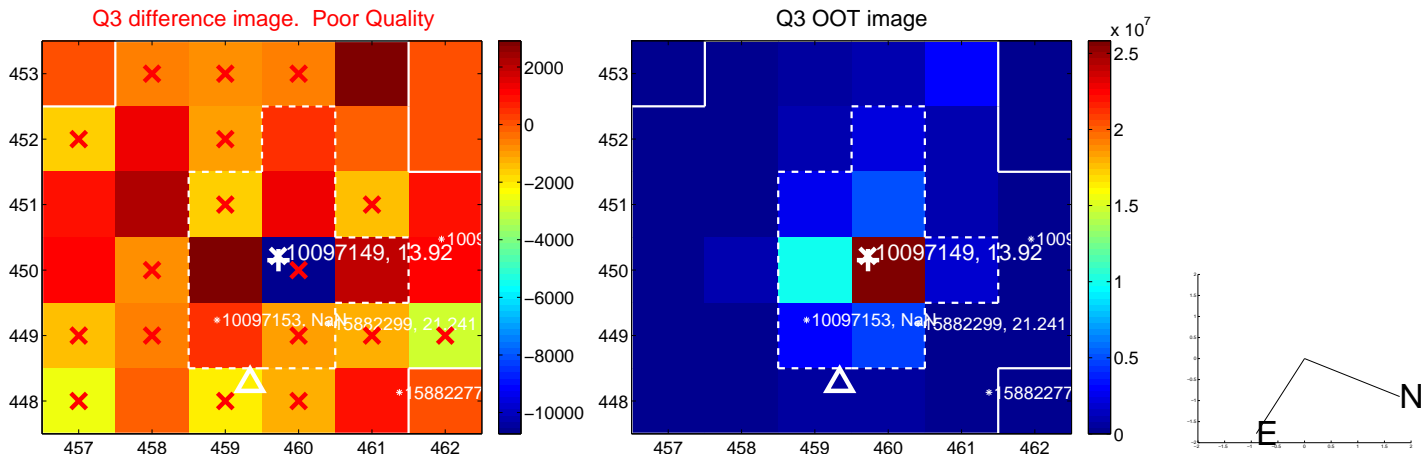
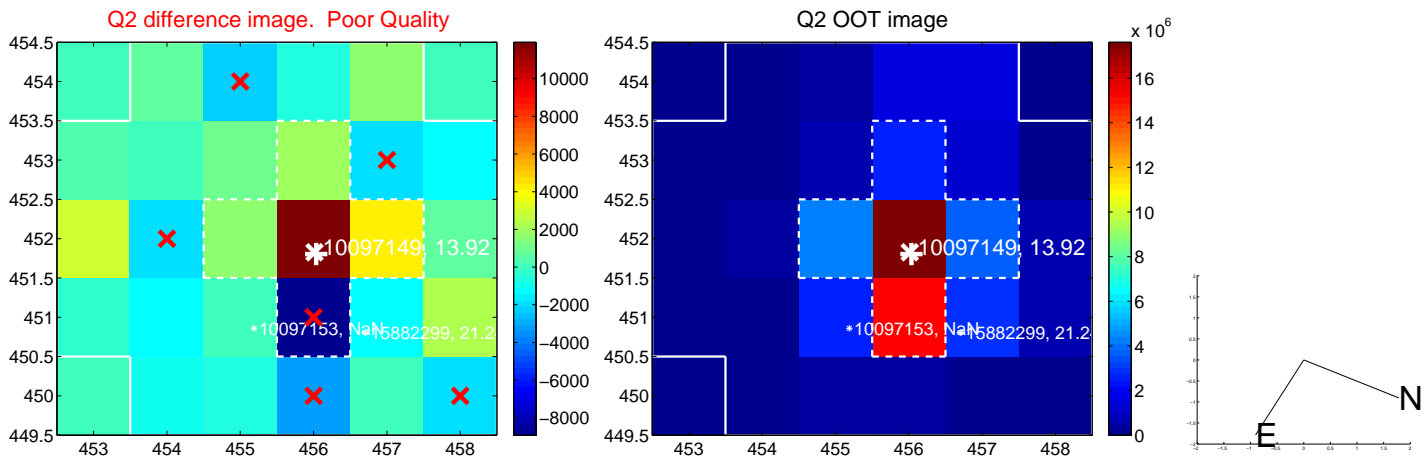
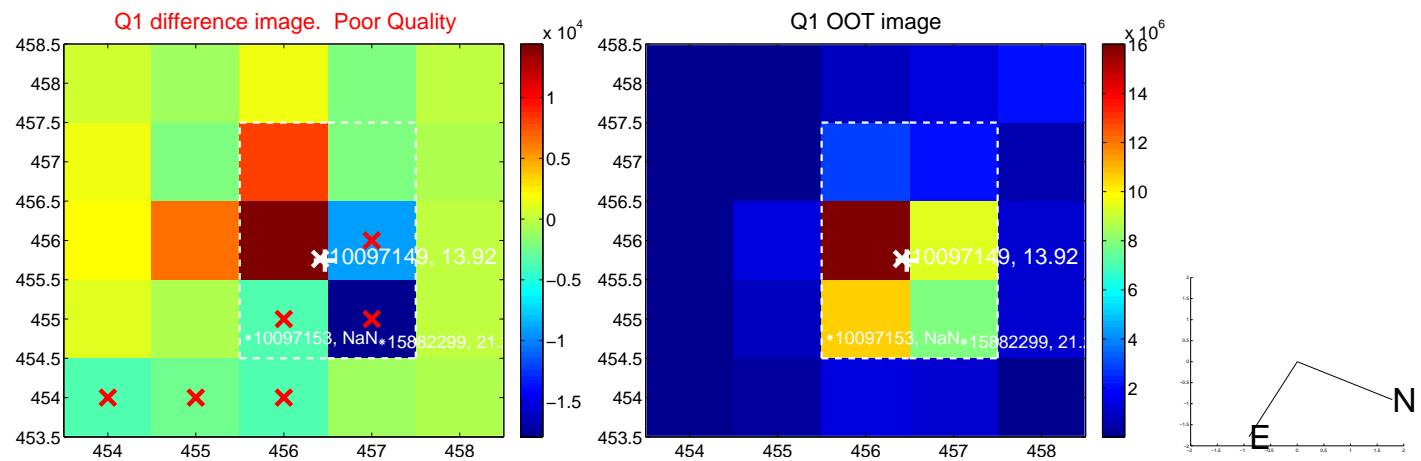


offset from photometric centroids

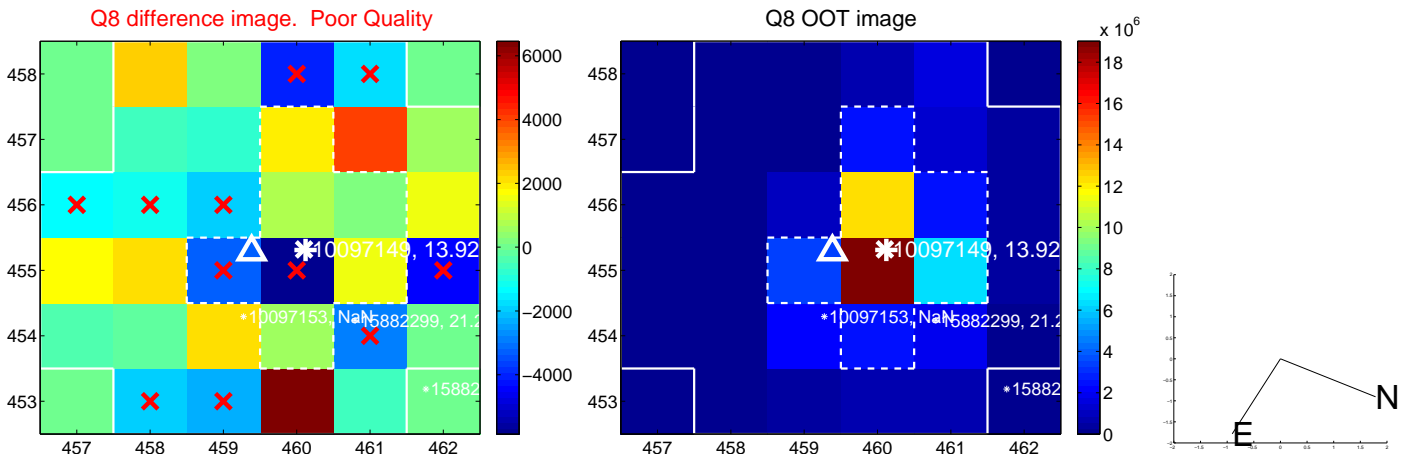
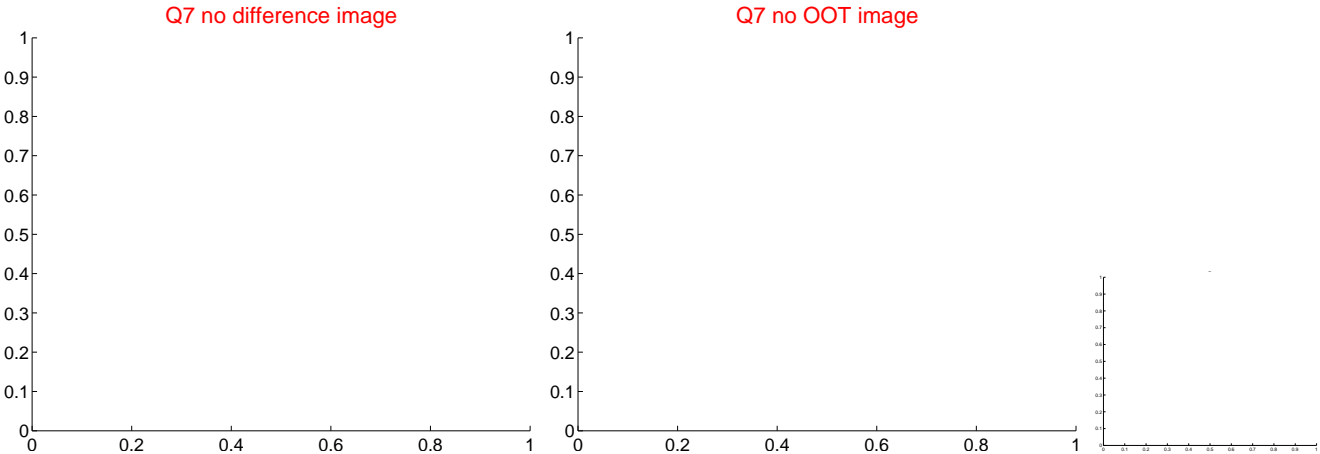
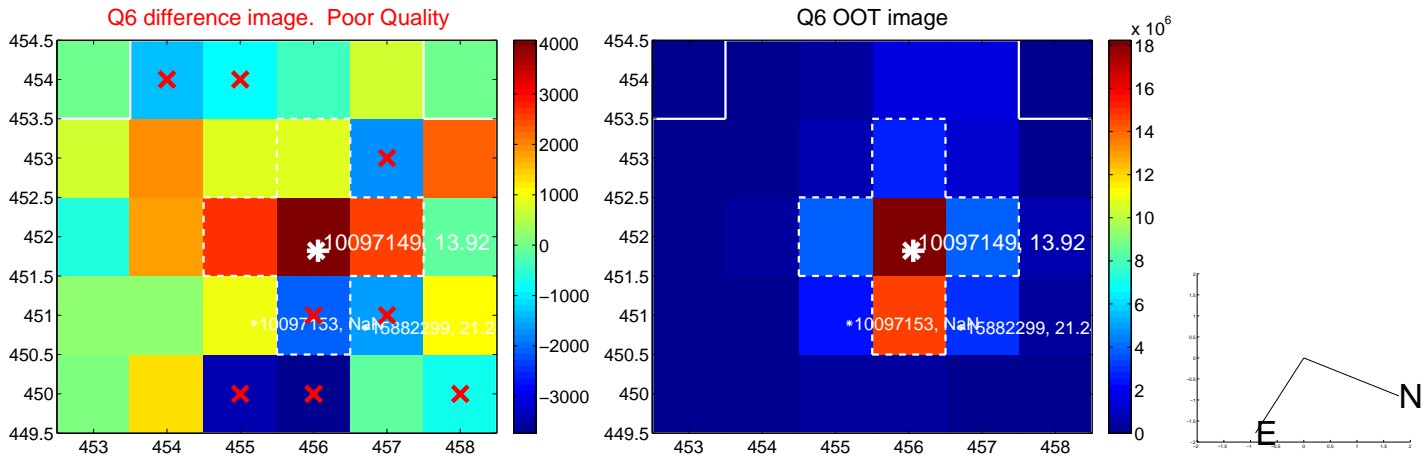
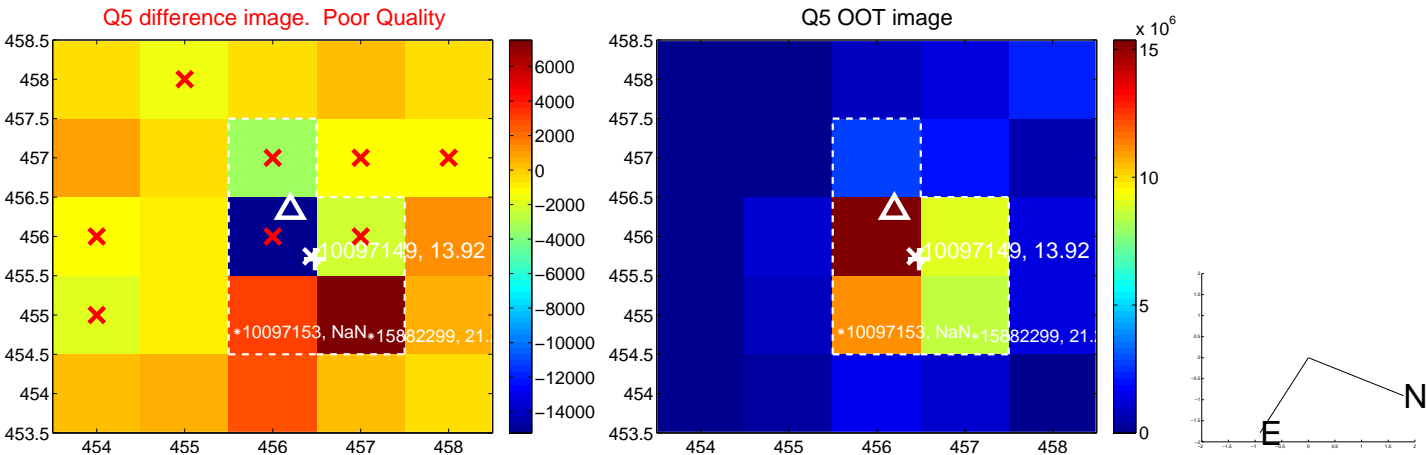


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

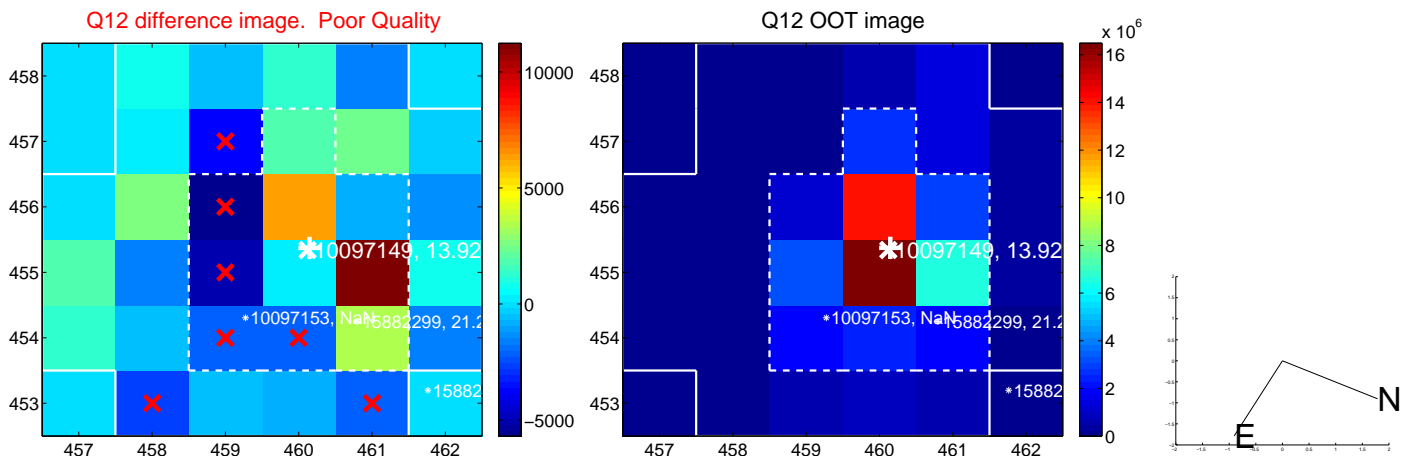
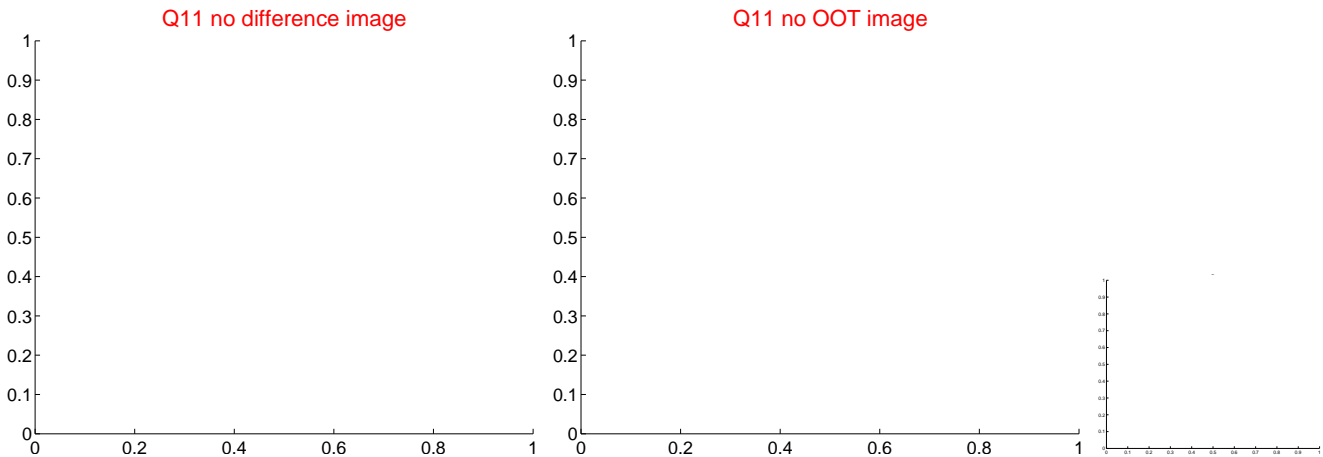
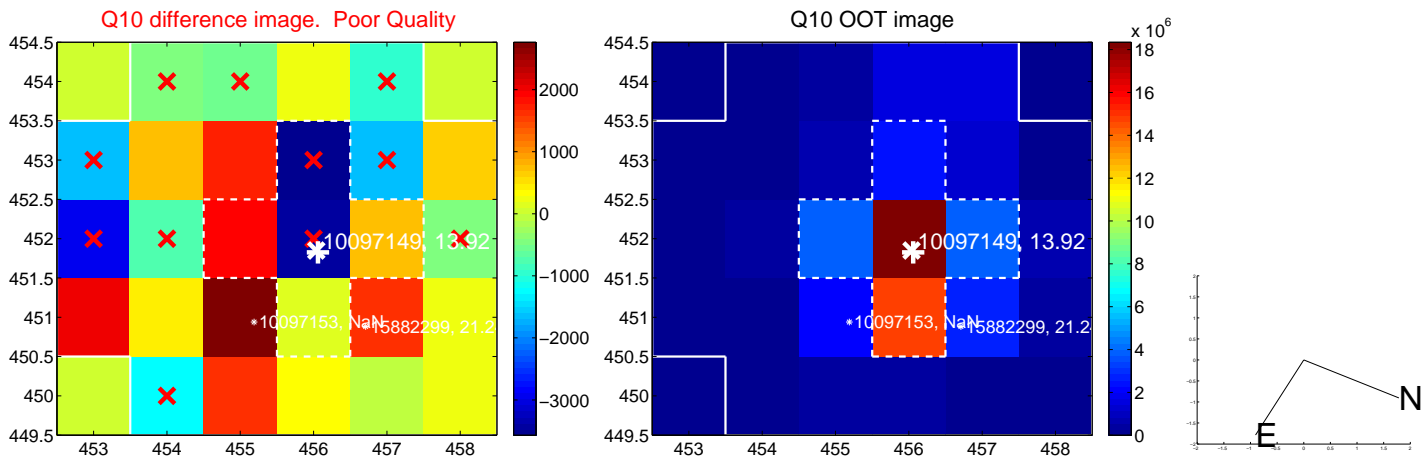
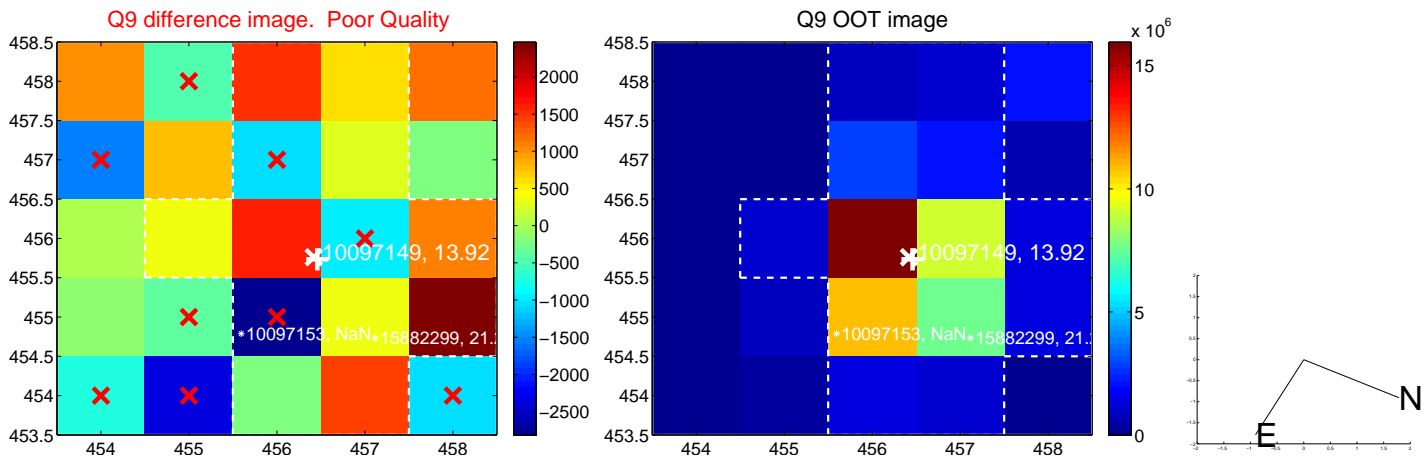
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



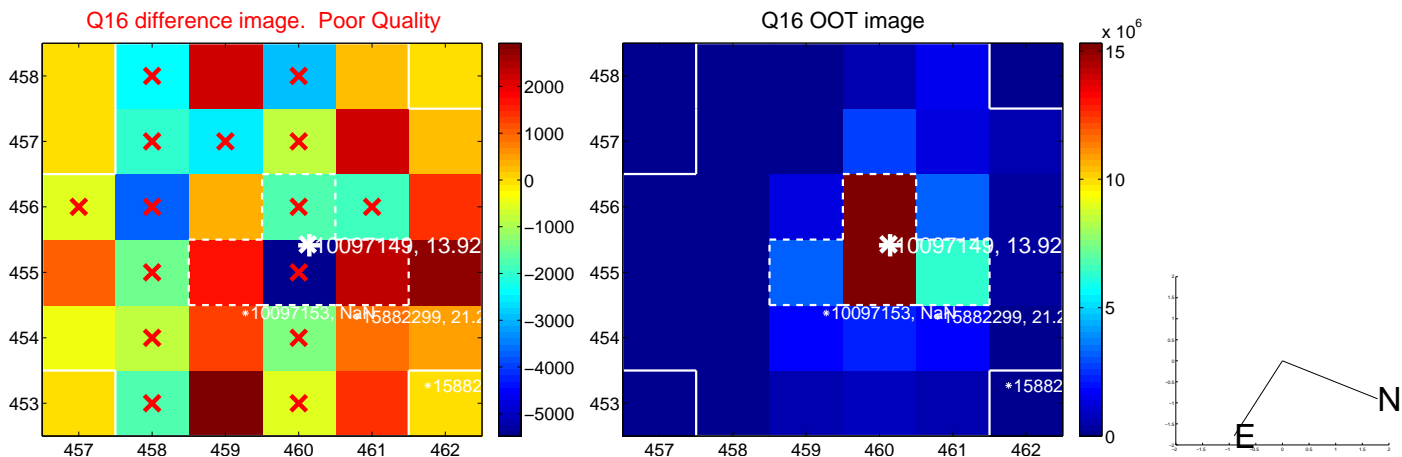
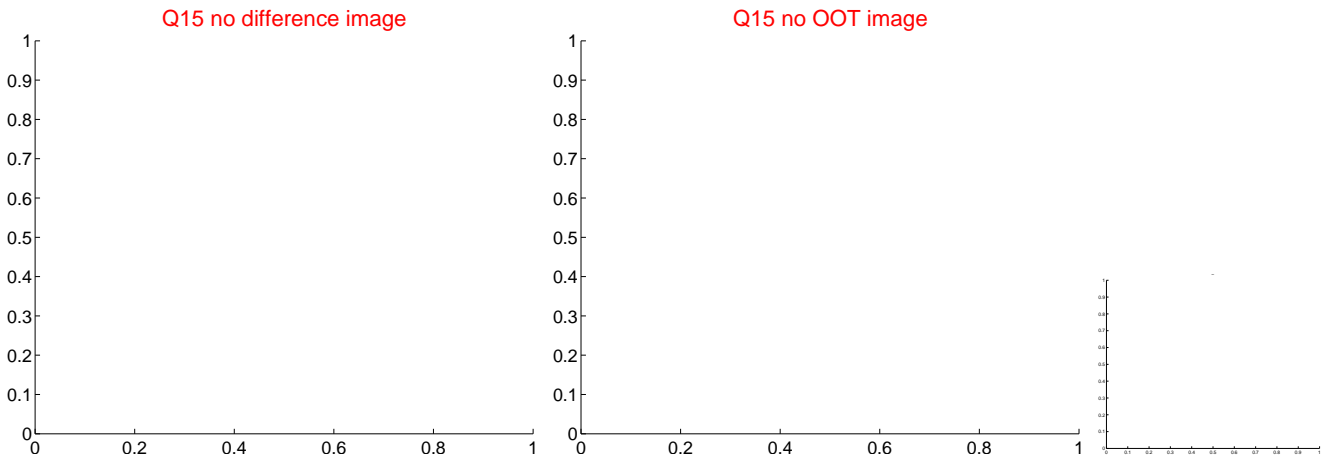
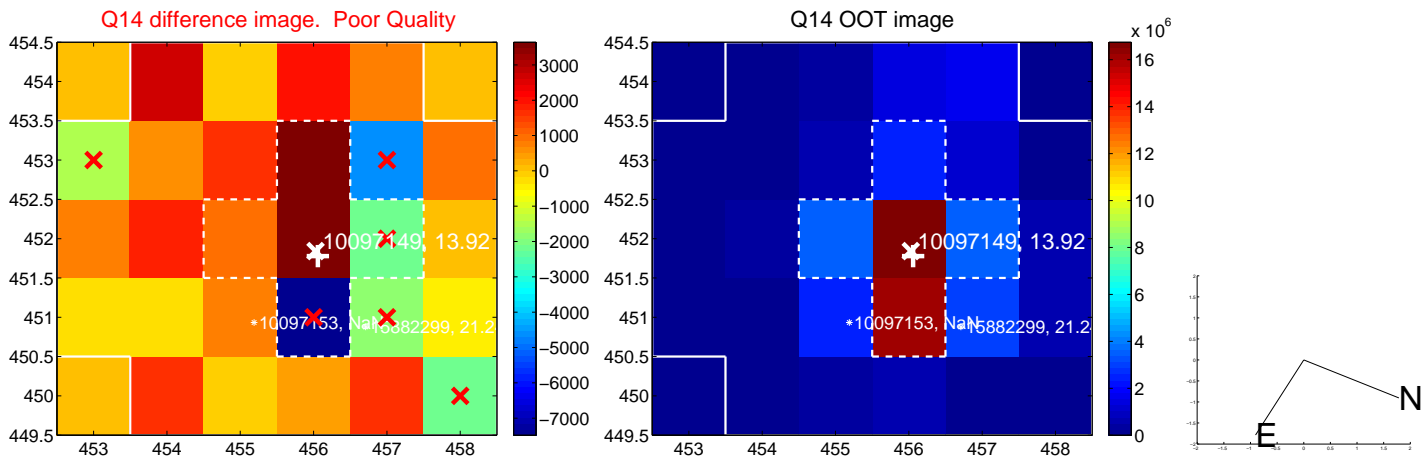
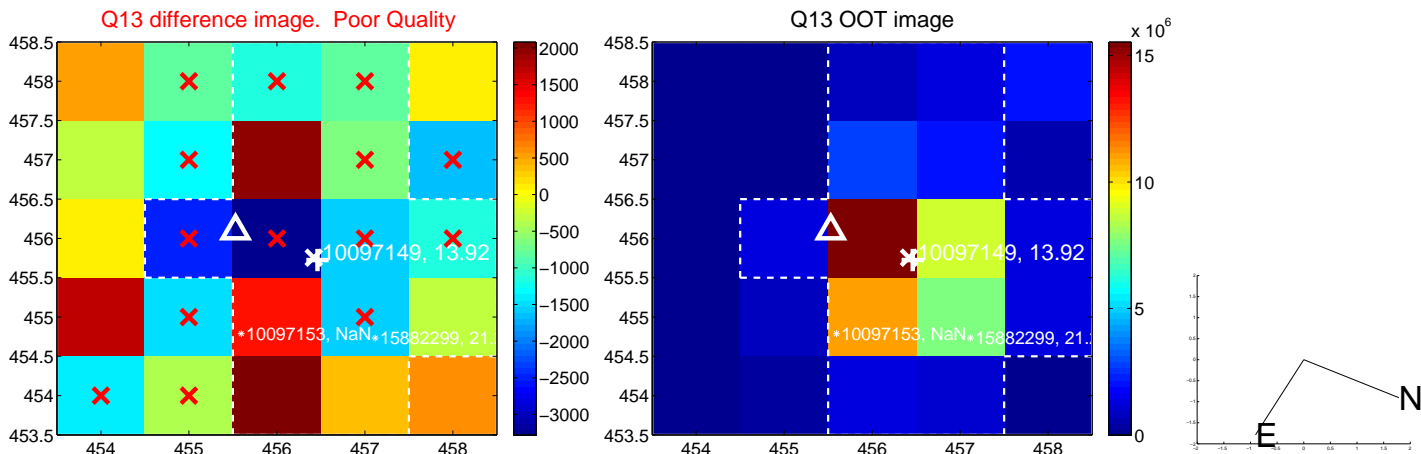
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



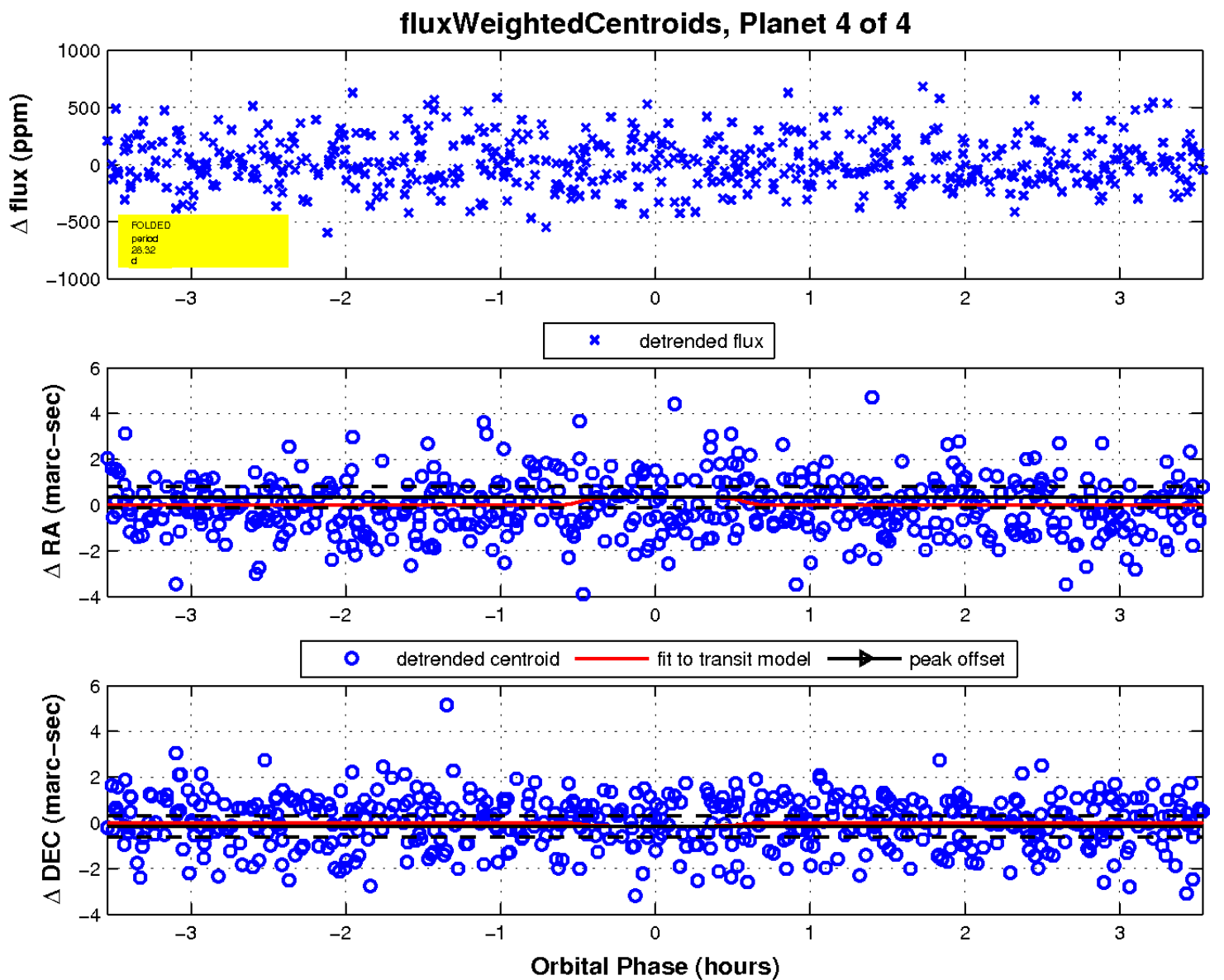
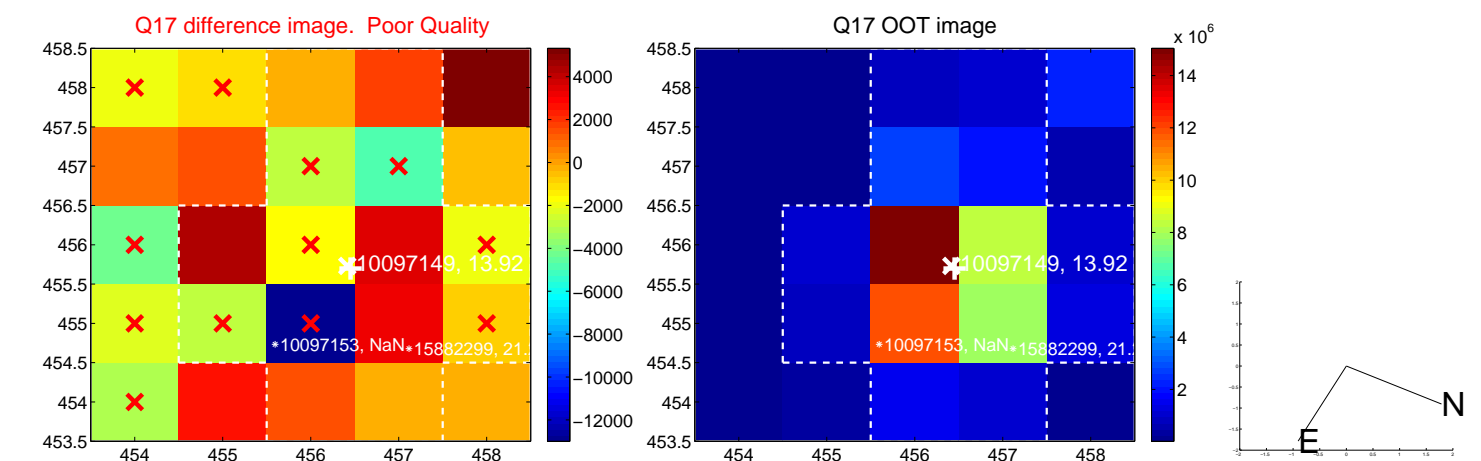
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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.



UKIRT Image

