

KIC 009305952

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})
009305952-01	OBS	No	0.655430	131.760158	24.1	3.682	10.8	5.6	2.23	8163	1.28	60673.38
009305952-02	OBS	No	76.264928	190.152059	612.0	3.286	8.4	9.0	2.23	8163	6.67	106.81
009305952-03	OBS	No	80.340169	159.743277	772.7	1.840	7.9	8.5	2.23	8163	6.66	99.64
009305952-04	OBS	No	40.969414	150.066577	325.8	4.327	8.0	8.1	2.23	8163	4.69	244.58
009305952-05	OBS	No	55.596444	135.382791	477.7	2.971	8.2	6.8	2.23	8163	5.55	162.79
009305952-06	OBS	No	82.605886	197.477337	133.5	3.500	7.1	-1.0	2.23	8163	2.60	96.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009305952-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009305952-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009305952-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009305952-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009305952-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009305952-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

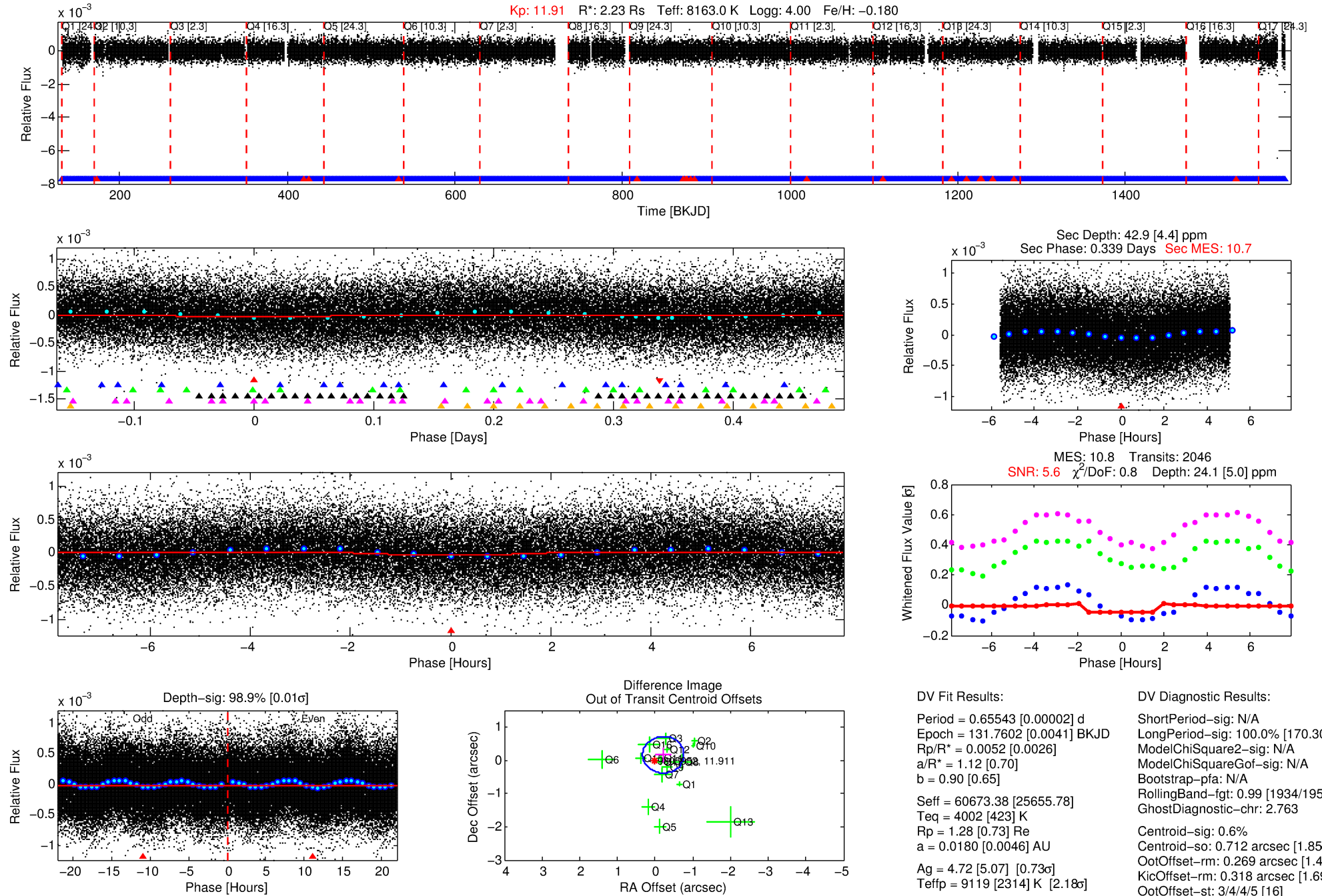
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009305952-01

No Significant Match Found

DV One-Page Summary

KIC: 9305952 Candidate: 1 of 6 Period: 0.655 d



DV Fit Results:

Period = 0.65543 [0.00002] d
Epoch = 131.7602 [0.0041] BKJD
Rp/R* = 0.0052 [0.0026]
a/R* = 1.12 [0.70]
b = 0.90 [0.65]
Seff = 60673.38 [25655.78]
Teq = 4002 [423] K
Rp = 1.28 [0.73] Re
a = 0.0180 [0.0046] AU
Ag = 4.72 [5.07] [0.73σ]
Teffp = 9119 [2314] K [2.18σ]

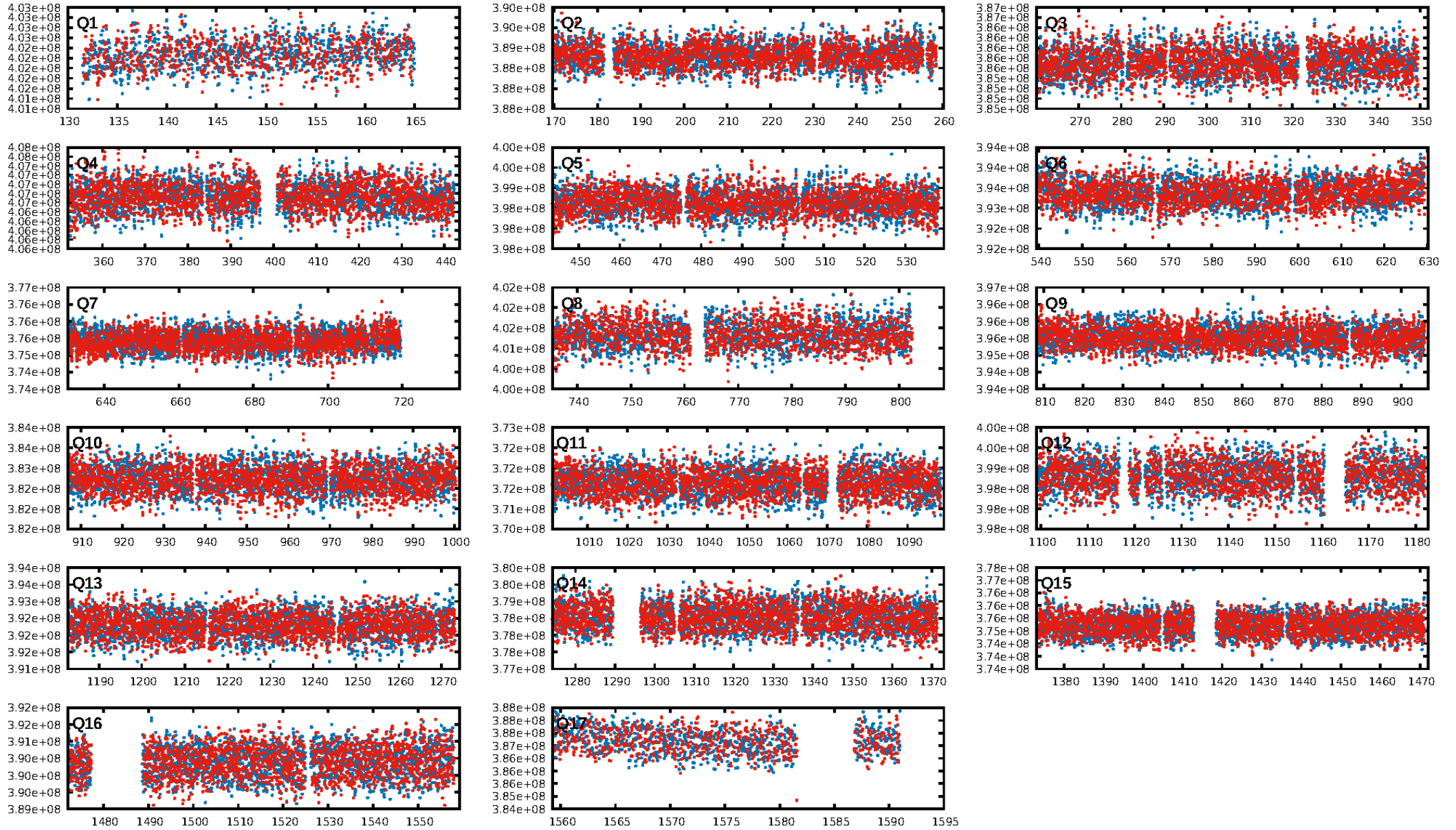
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [170.30σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1934/1953]
GhostDiagnostic-chr: 2.763
Centroid-sig: 0.6%
Centroid-so: 0.712 arcsec [1.85σ]
OotOffset-rm: 0.269 arcsec [1.47σ]
KicOffset-rm: 0.318 arcsec [1.69σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.81 [13/16]
DiffImageOverlap-fno: 1.00 [17/17]

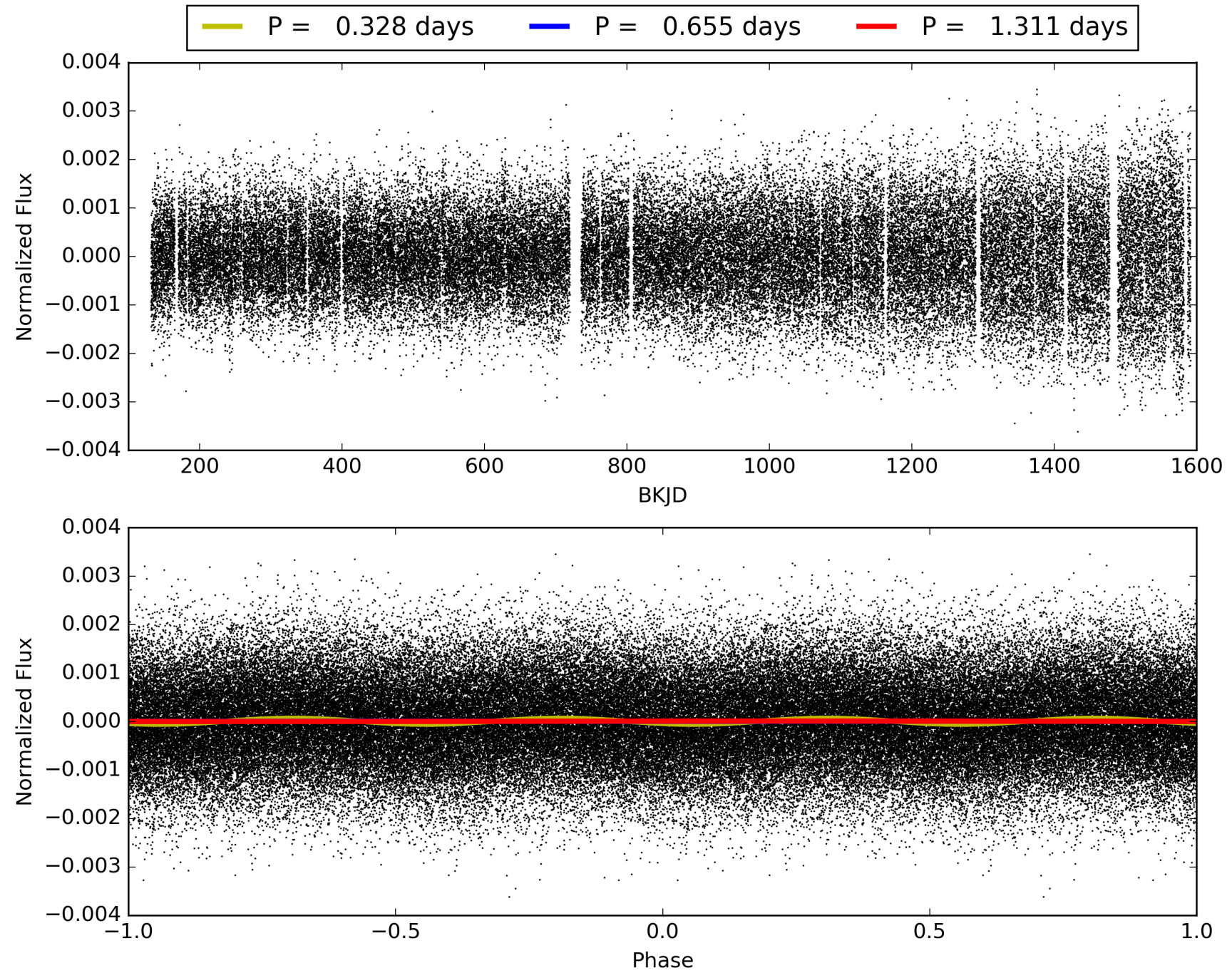
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:01:01 Z

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

TCE 009305952-01, PDC Light Curves

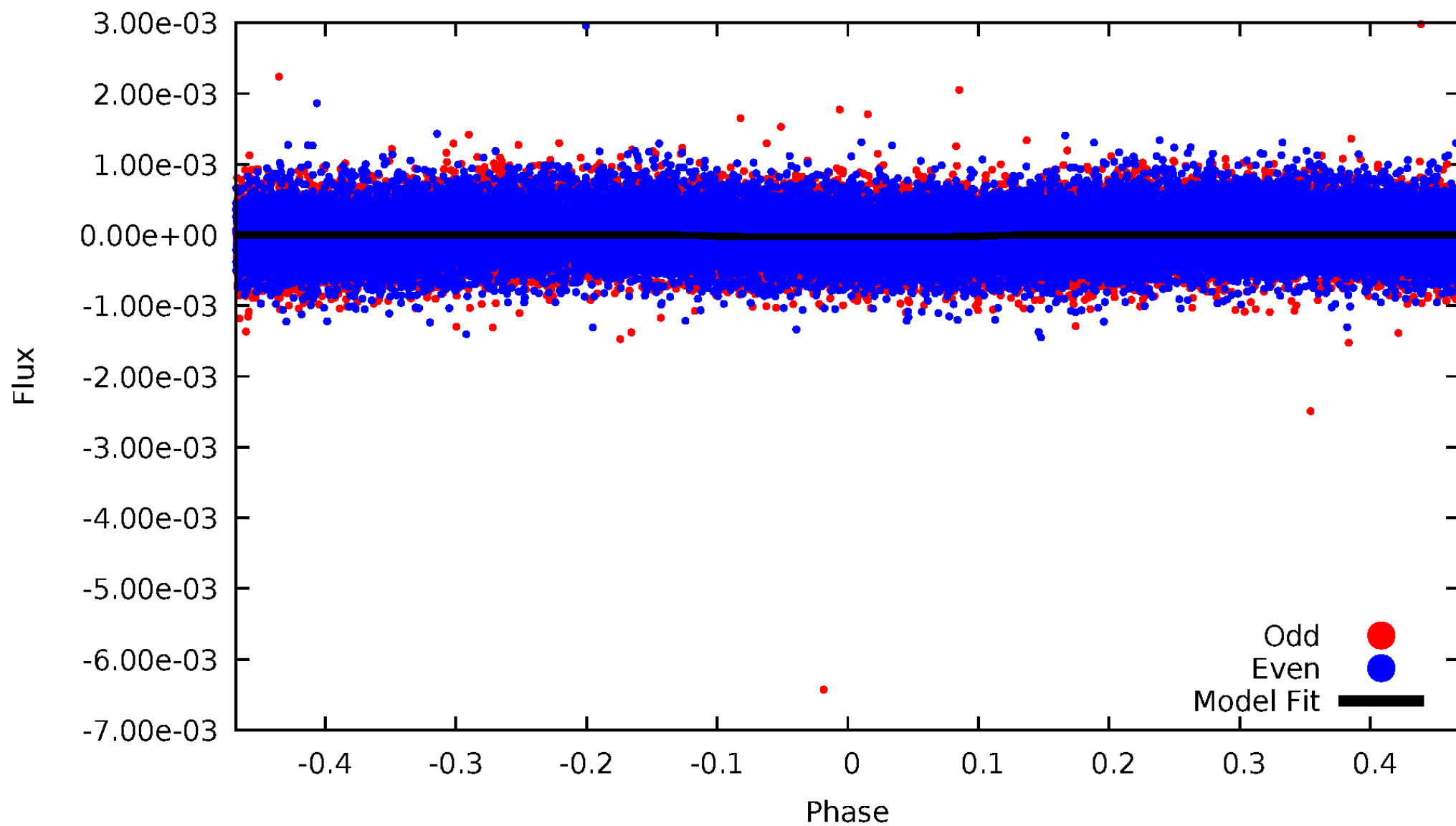


TCE 009305952-01



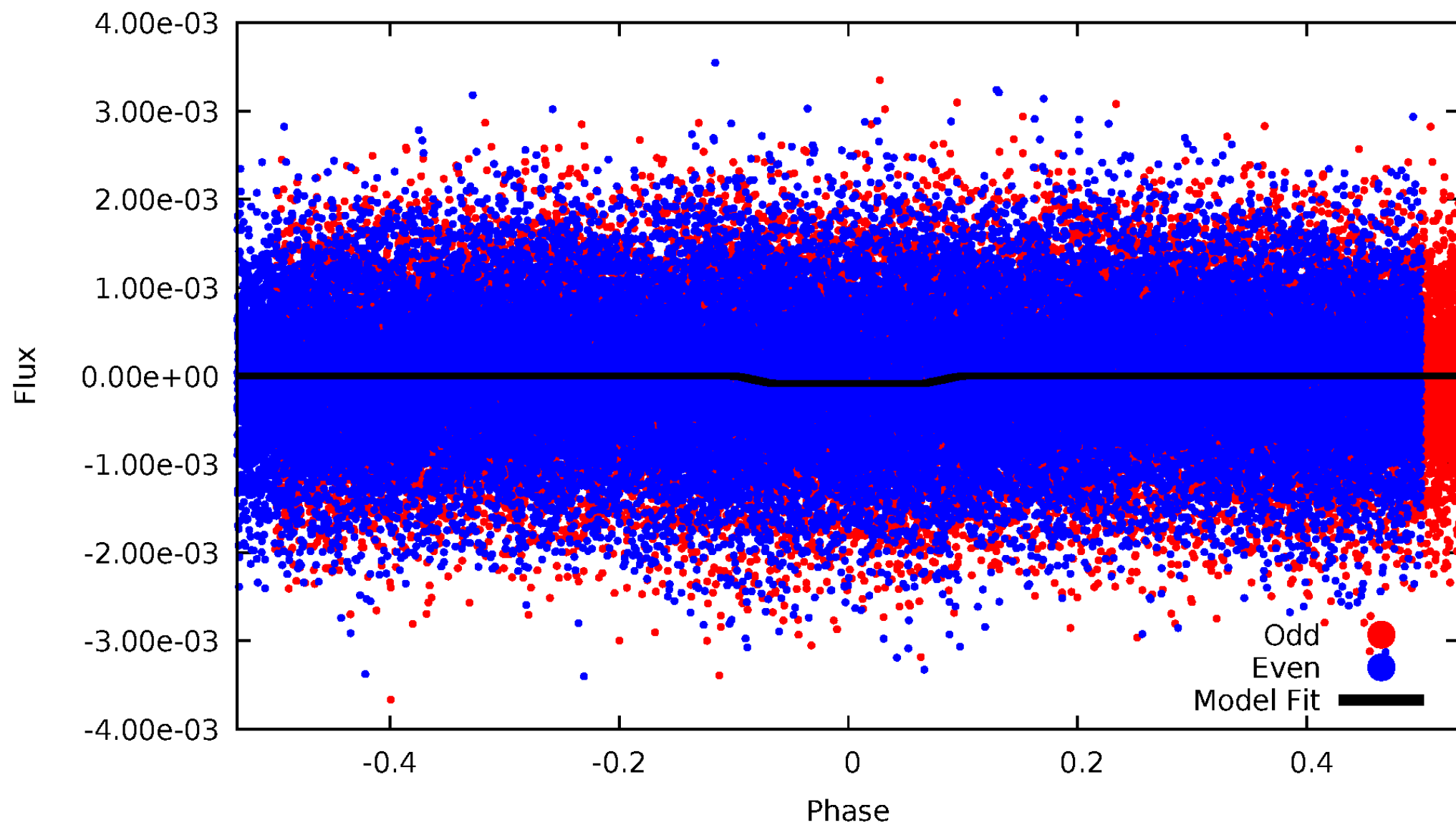
DV Odd/Even

TCE 009305952-01

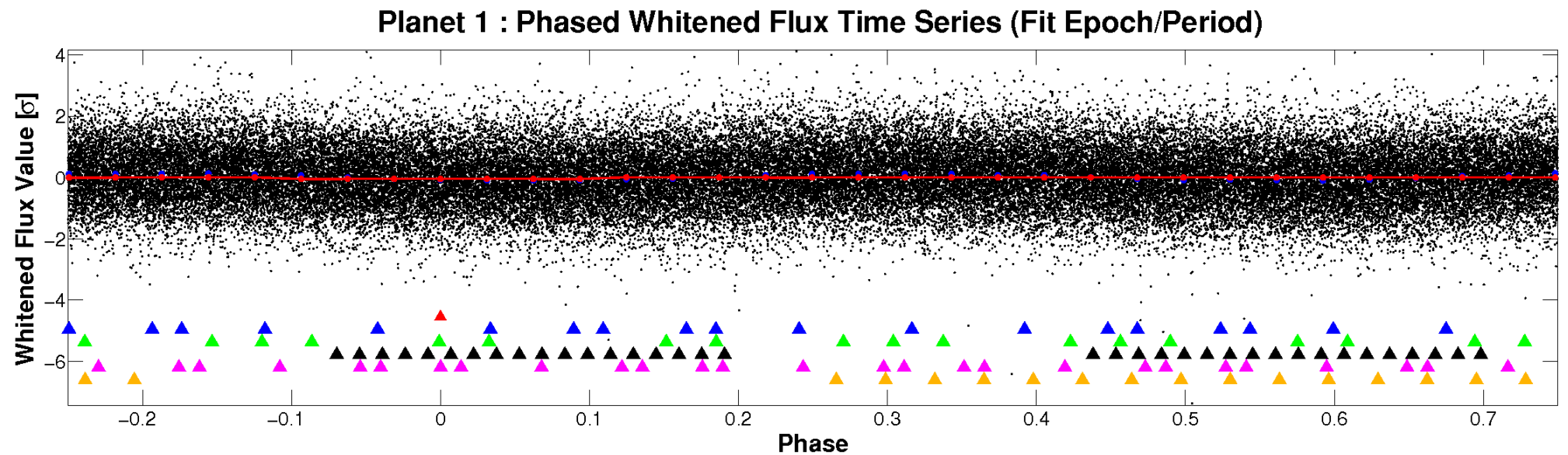
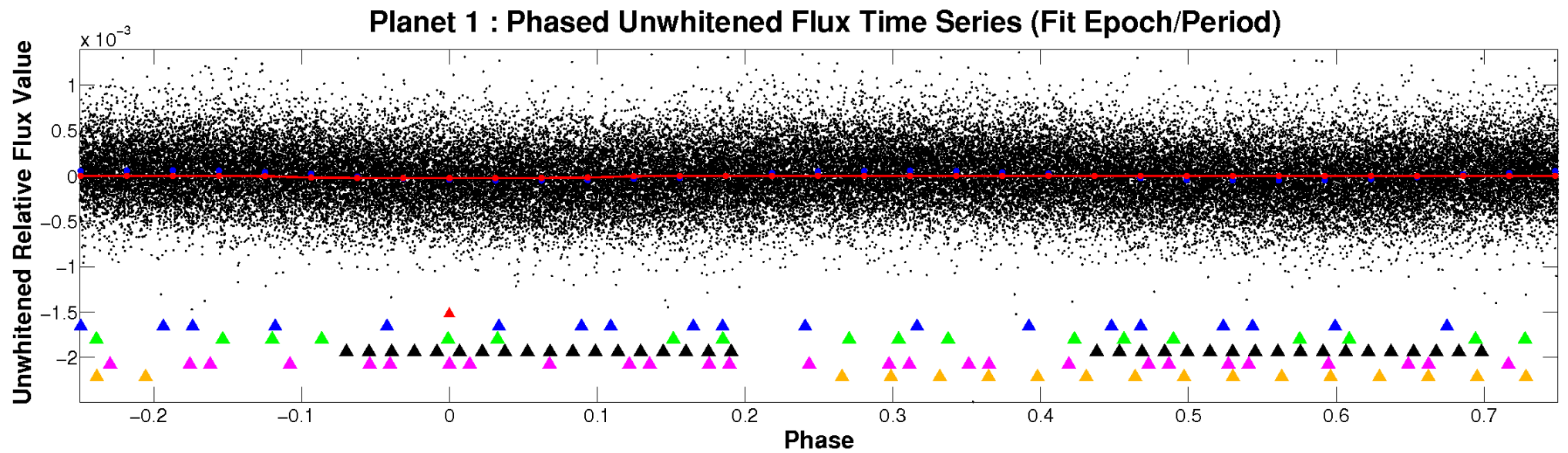


ALT Odd/Even

TCE 009305952-01

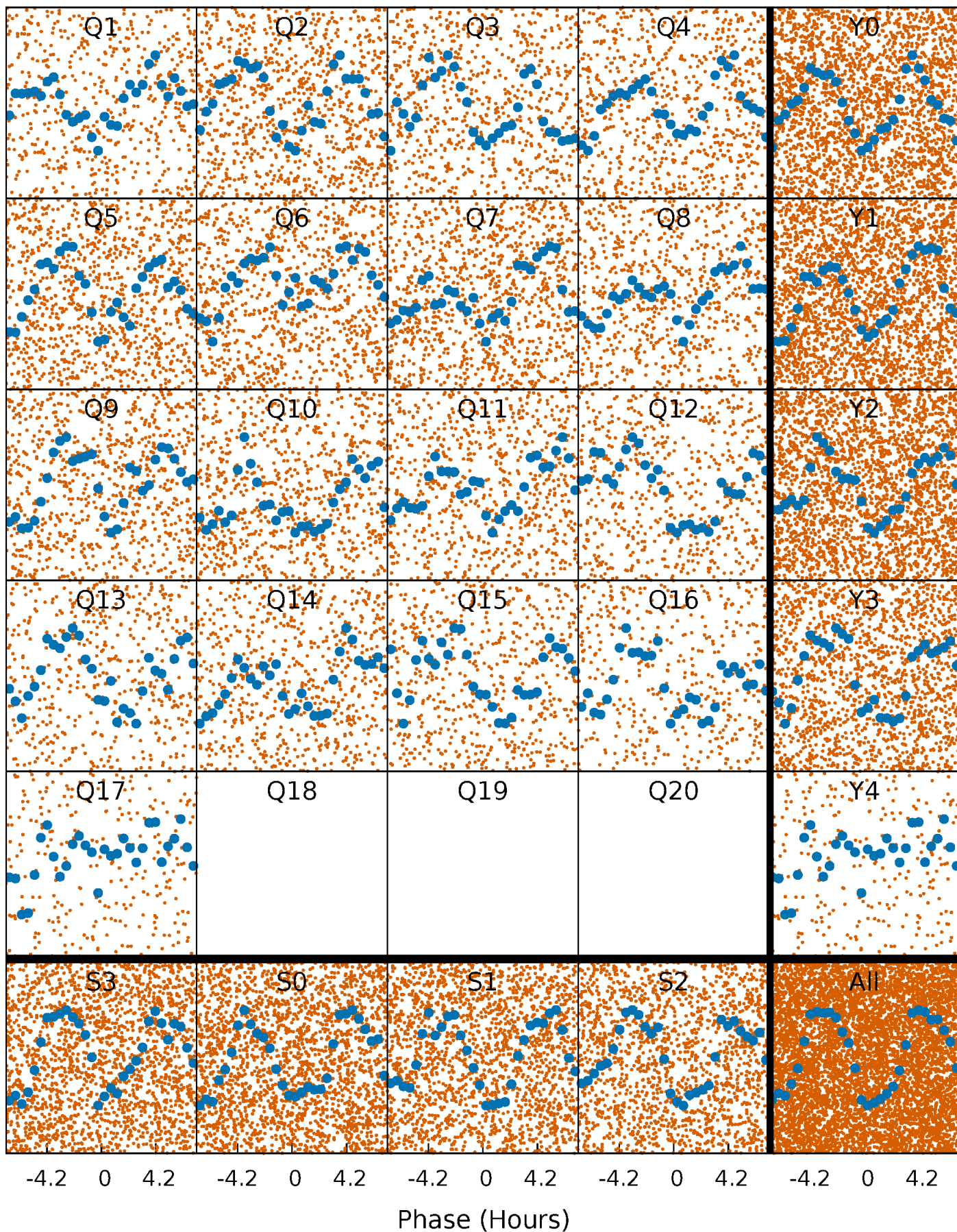


Non-Whitened Vs. Whitened Light Curve



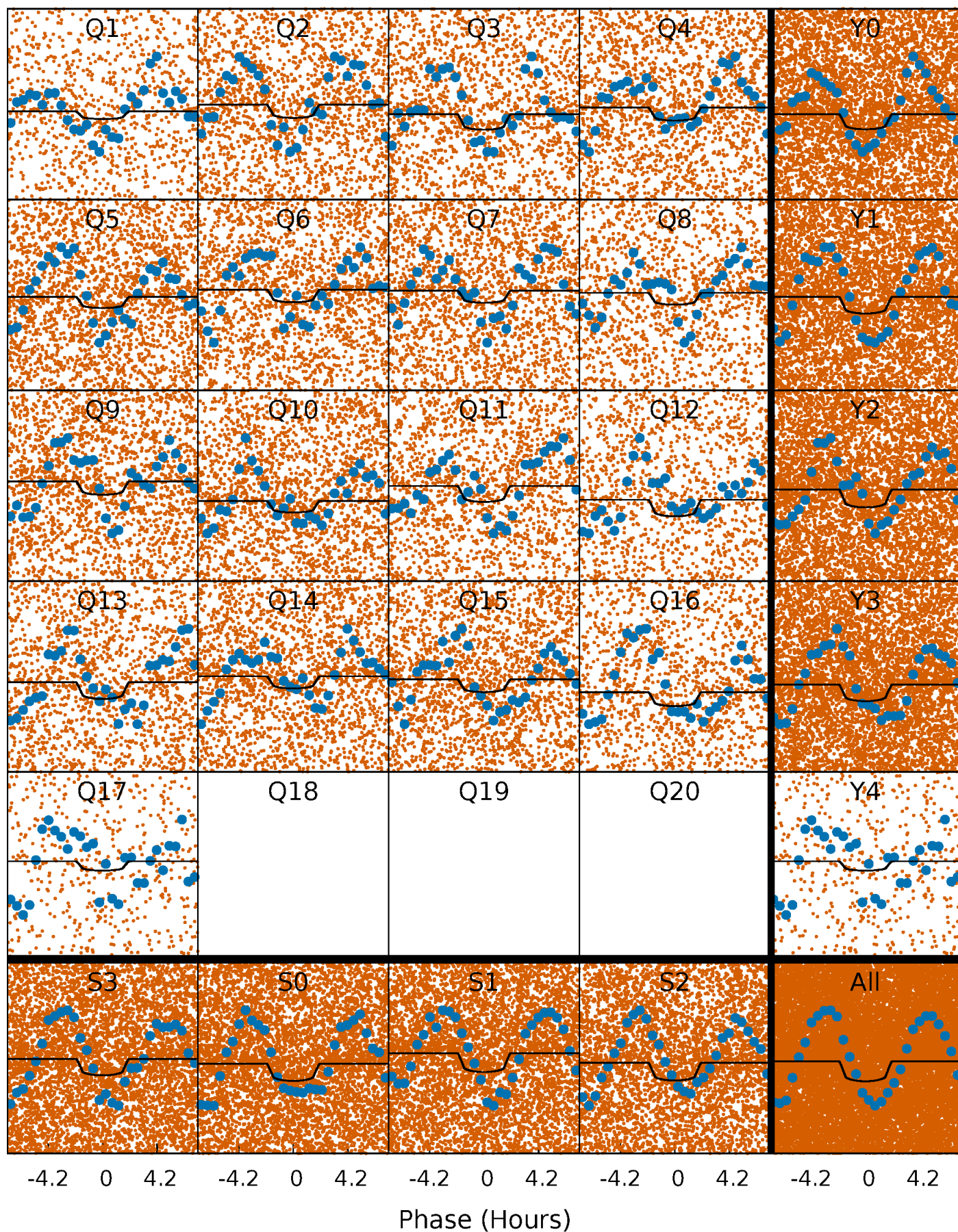
PDC Quarter-Phased Transit Curves

TCE 009305952-01 P= 0.655430 Days $T_0=131.760158$ (BKJD)



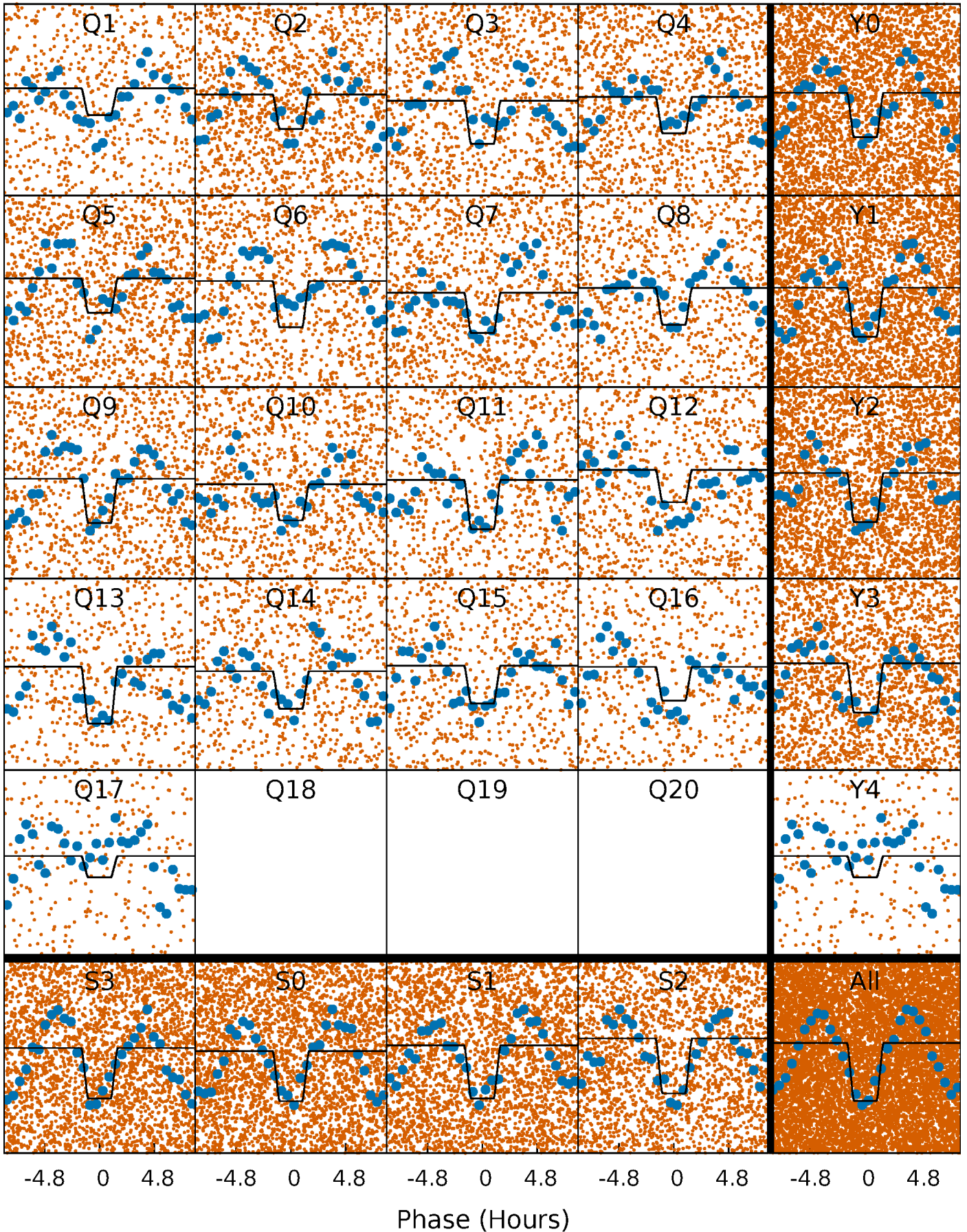
DV Quarter-Phased Transit Curves

TCE 009305952-01 P= 0.655430 Days $T_0=131.760158$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

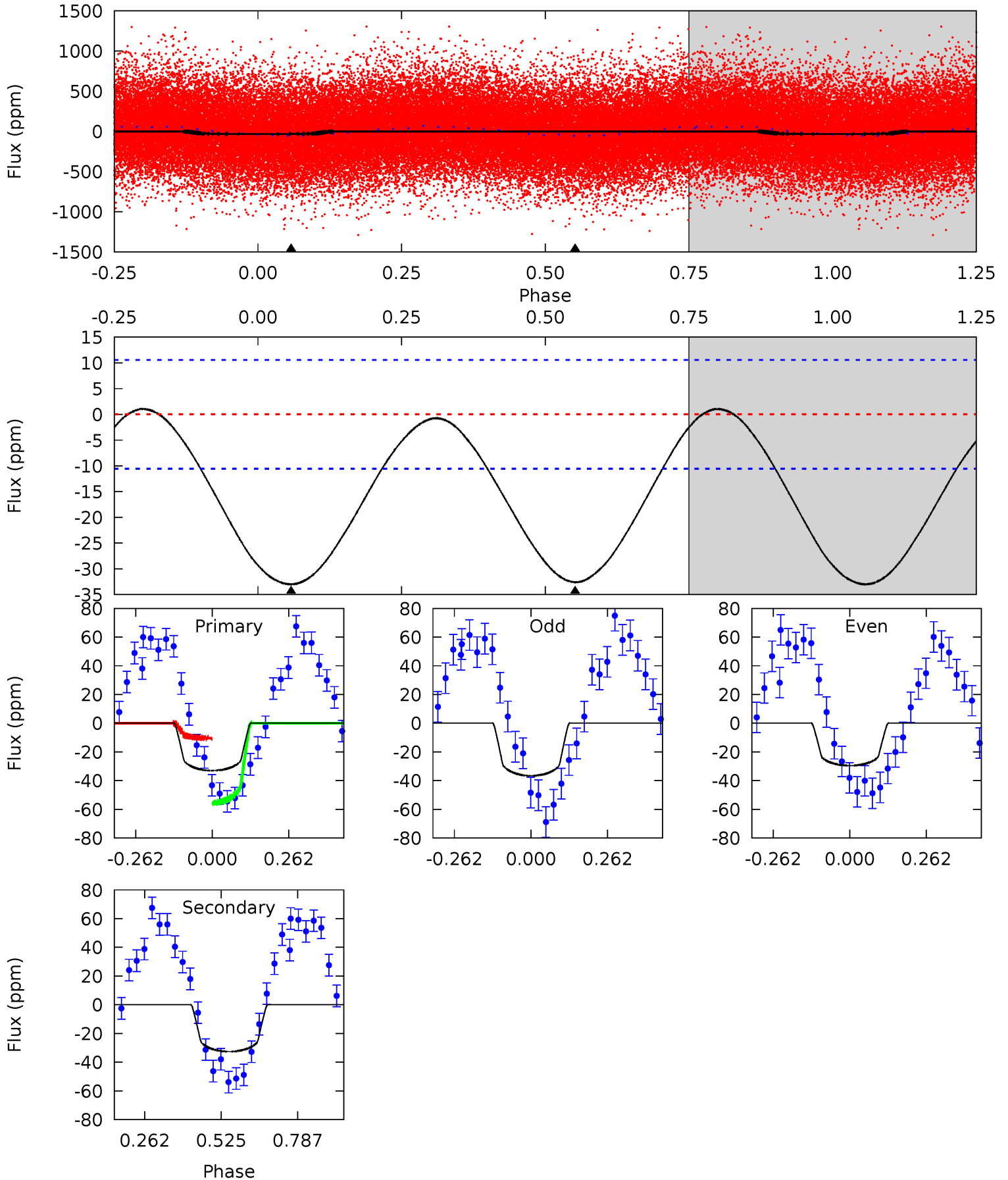
TCE 009305952-01 P= 0.655479 Days $T_0=131.750832$ (BKJD)



DV Model-Shift Uniqueness Test

009305952-01, P = 0.655430 Days, E = 131.104728 Days

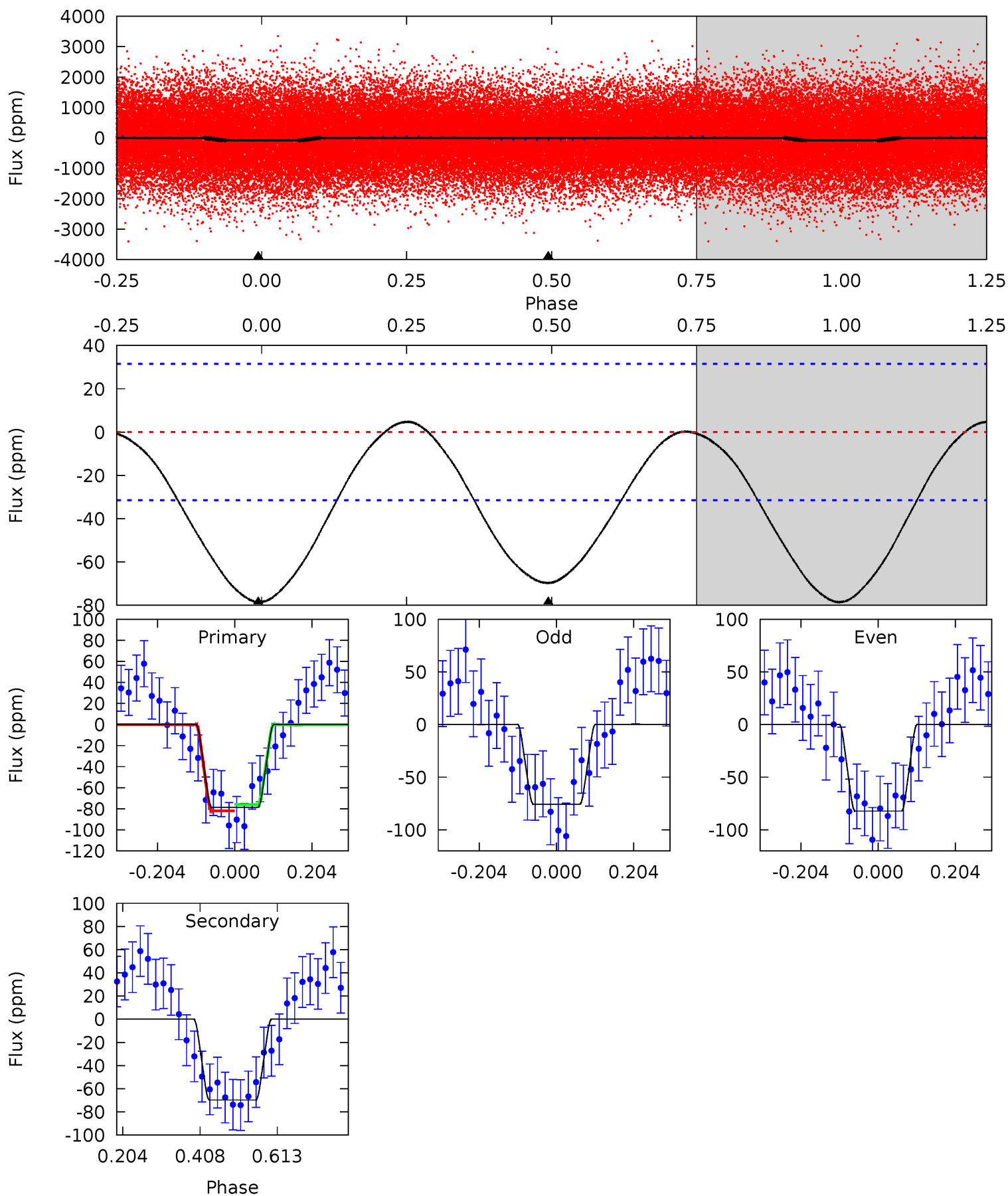
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	13.5	0	0	4.36	1.12	0.37	13.6	13.6	13.5	13.5	1.45	1.13	0.03	9.32



Alt Model-Shift Uniqueness Test

009305952-01, P = 0.655479 Days, E = 131.095353 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	9.77	0	0	4.41	1.27	0.41	11.0	11.0	9.77	9.77	0.45	0.77	0.06	0.42



Stellar Parameters For KIC 009305952

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8163^{+226}_{-340}	$4.003^{+0.221}_{-0.136}$	$-0.180^{+0.200}_{-0.350}$	$2.229^{+0.423}_{-0.634}$	$1.825^{+0.112}_{-0.336}$	$0.232^{+0.301}_{-0.083}$
	+3%/-4%	+6%/-3%	+111%/-194%	+19%/-28%	+6%/-18%	+130%/-36%
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 009305952-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-33 ± 2	$1.18^{+0.69}_{-0.55}$	5555^{+366}_{-444}	8555^{+5567}_{-2093}	$4.092^{+9.760}_{-2.420}$
Alt.	-70 ± 7	$2.18^{+0.74}_{-0.67}$	5548^{+348}_{-420}	7316^{+1924}_{-1119}	$2.596^{+2.657}_{-1.134}$

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

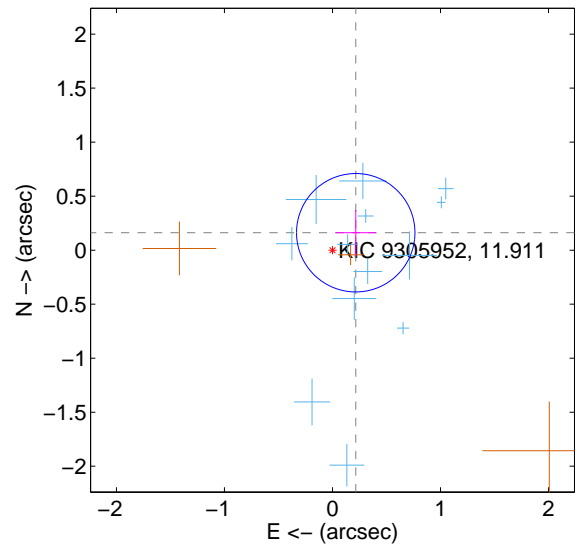
Supplemental centroid analysis for 009305952-01. **Kepler magnitude: 11.91.** Transit SNR 5.61

There are 13 quarters with good PRF difference image offsets

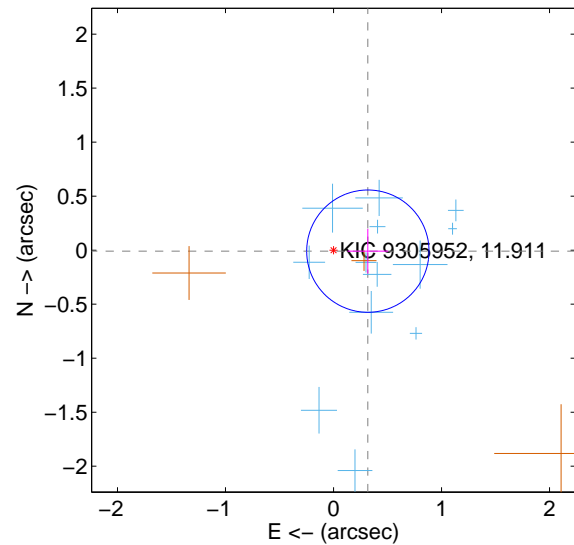
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.269 ± 0.183	1.47	-0.215 ± 0.188	0.162 ± 0.211
PRF-fit source offset from KIC position	0.318 ± 0.189	1.69	-0.318 ± 0.188	-0.009 ± 0.207
photometric centroid source offset	0.71 ± 0.38	1.85	0.06 ± 0.53	-0.71 ± 0.38

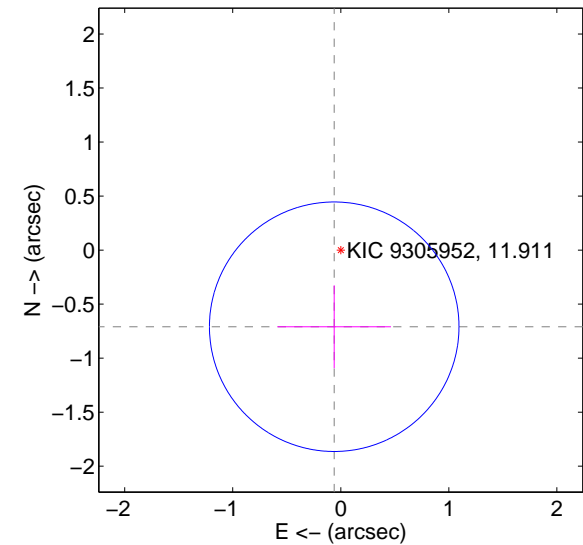
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

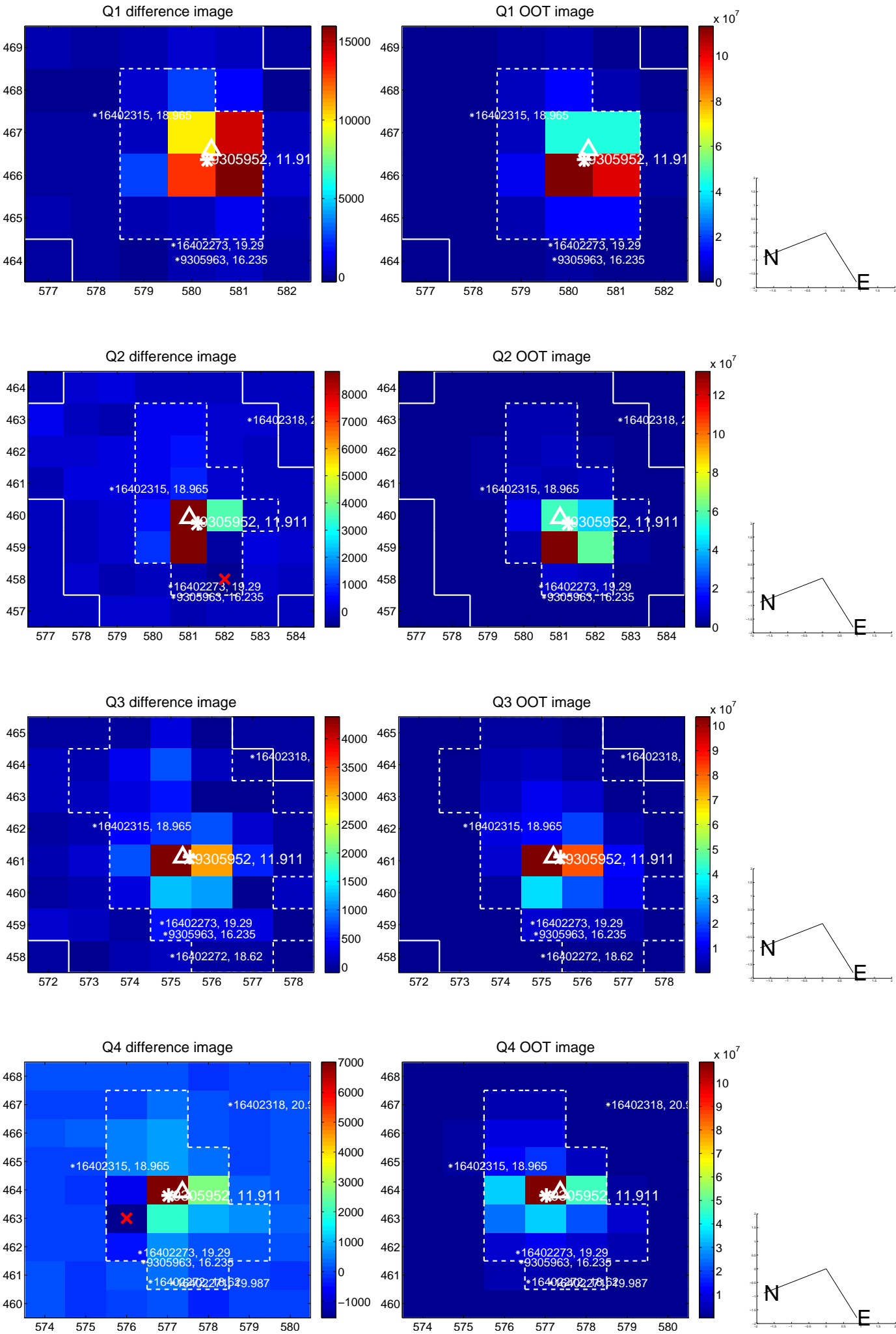


offset from photometric centroids

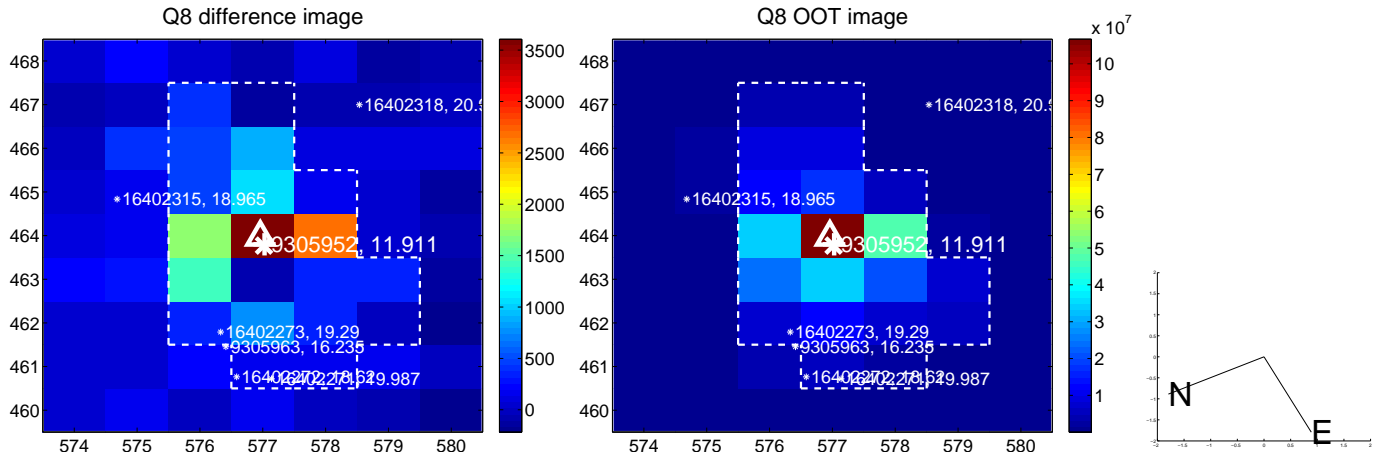
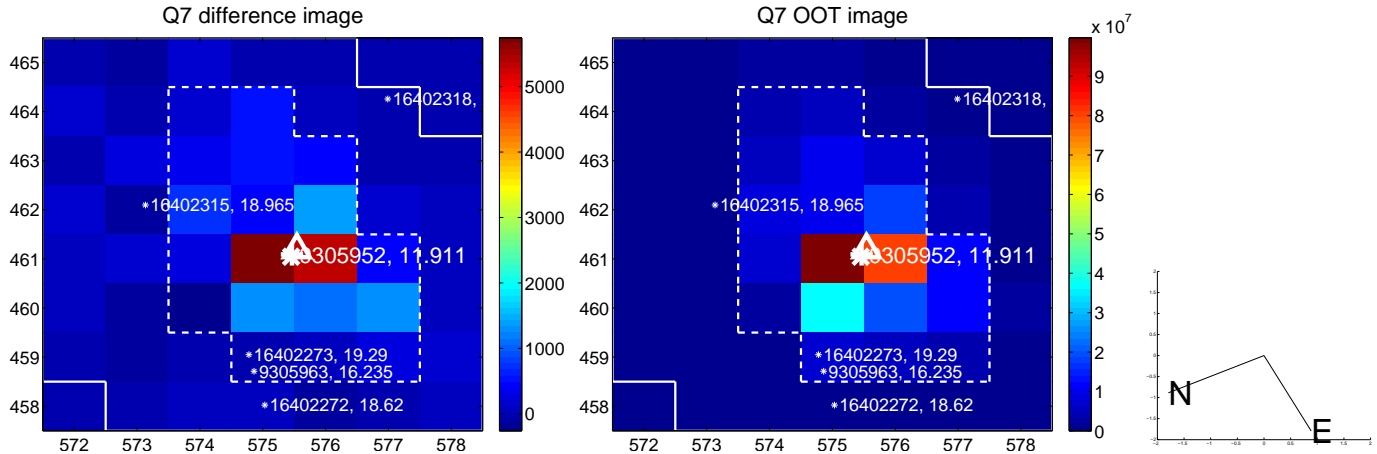
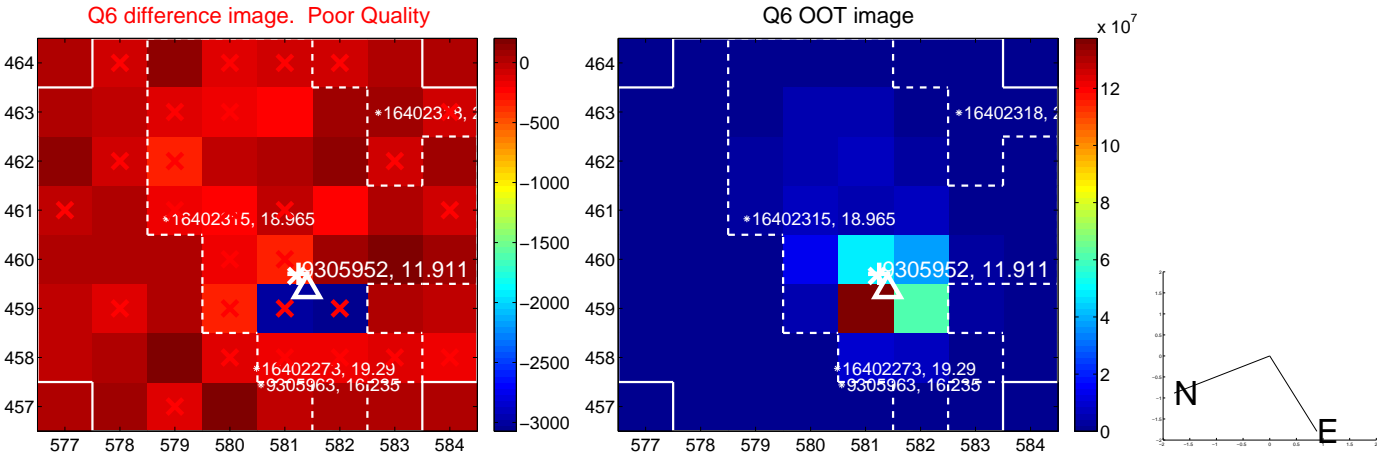
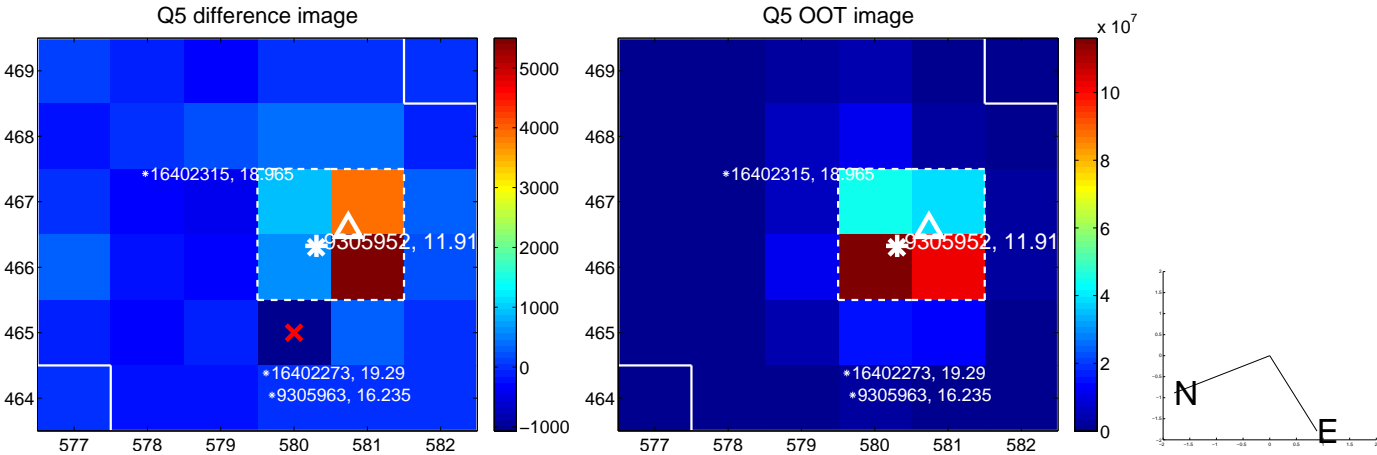


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

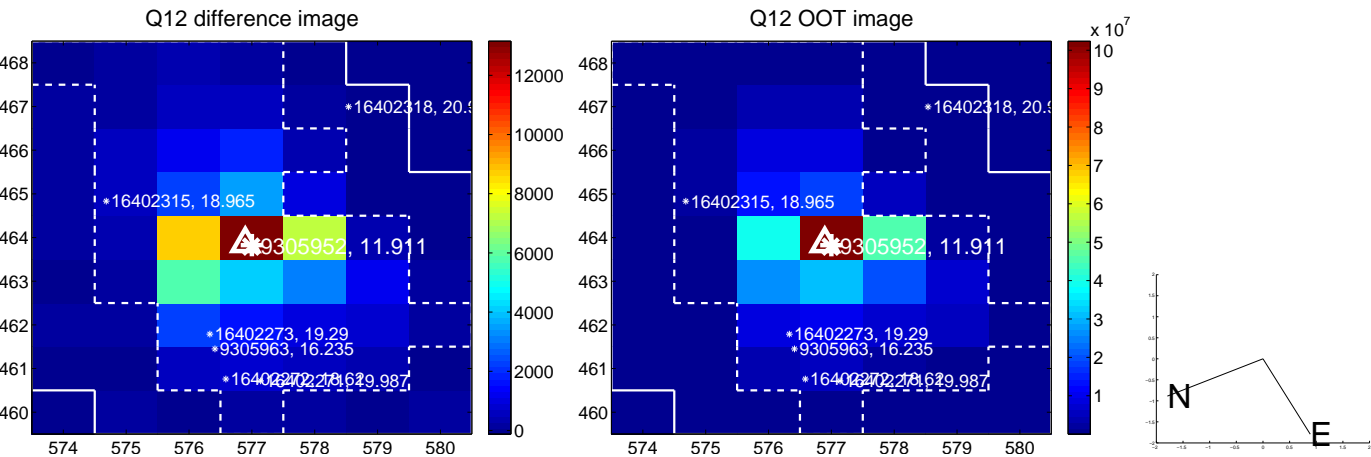
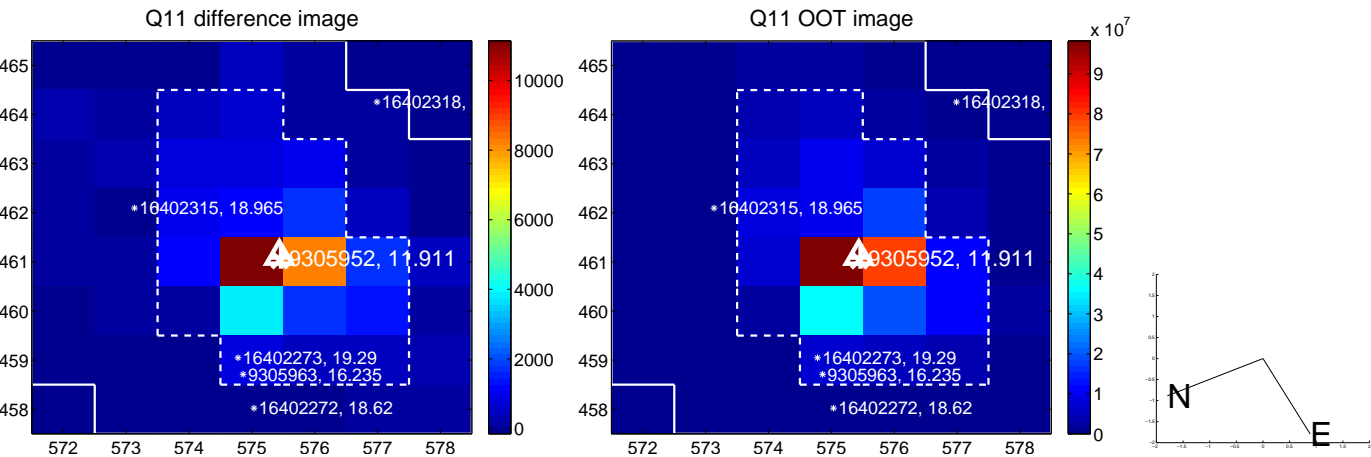
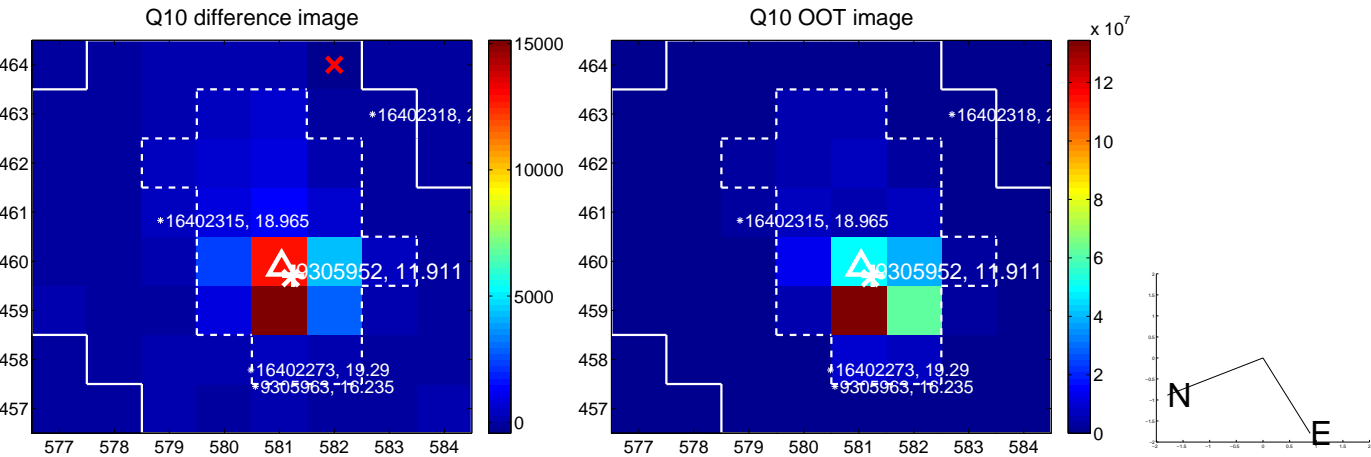
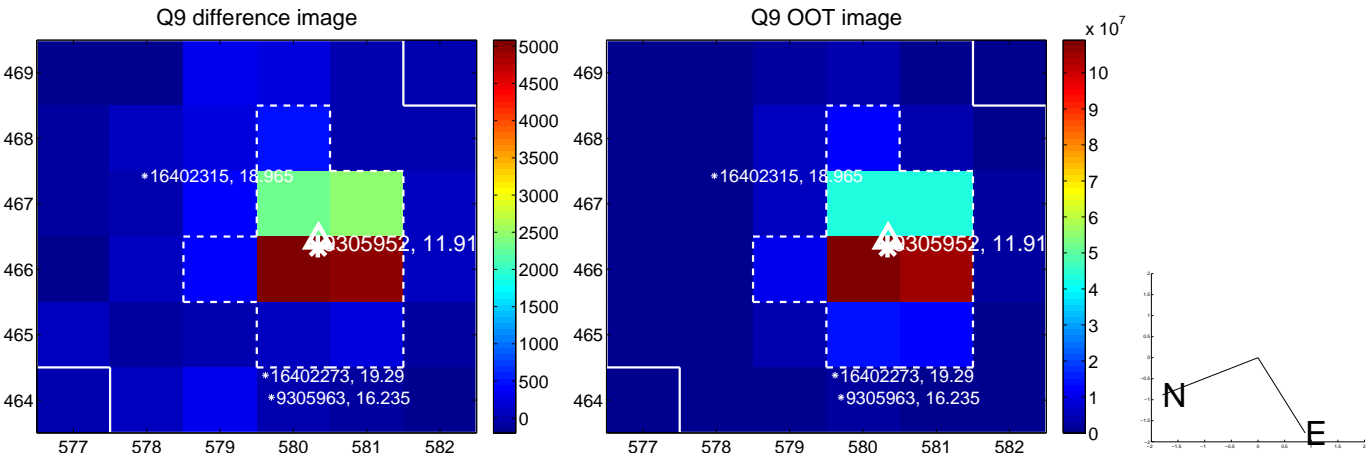
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



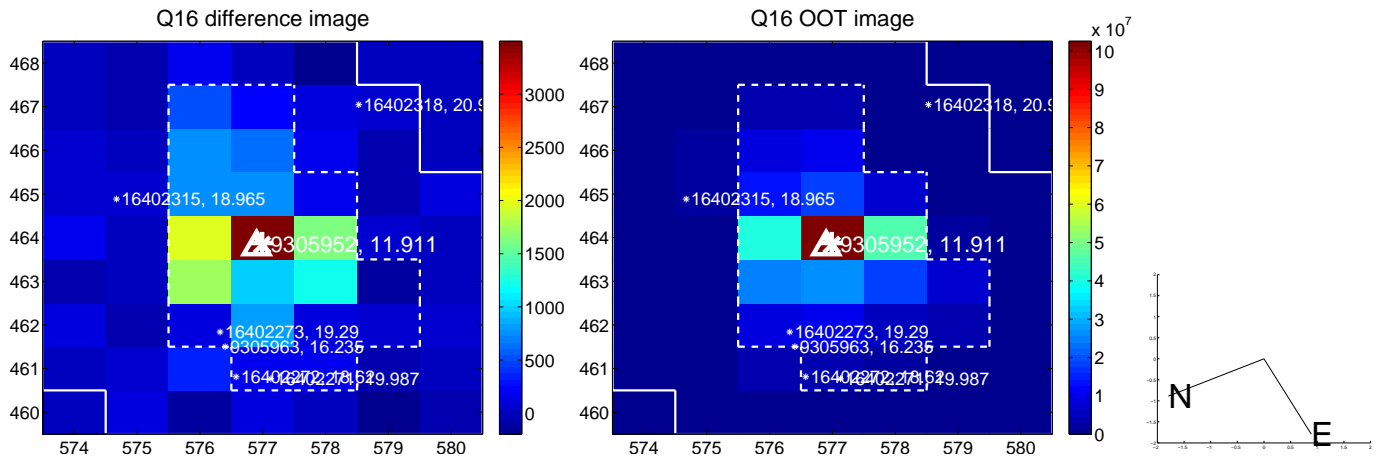
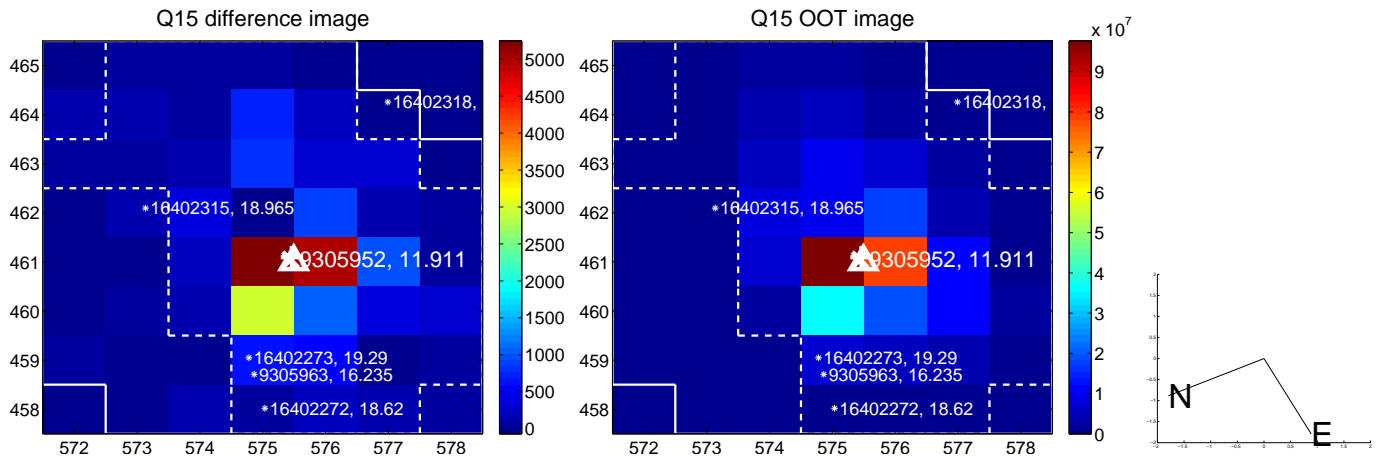
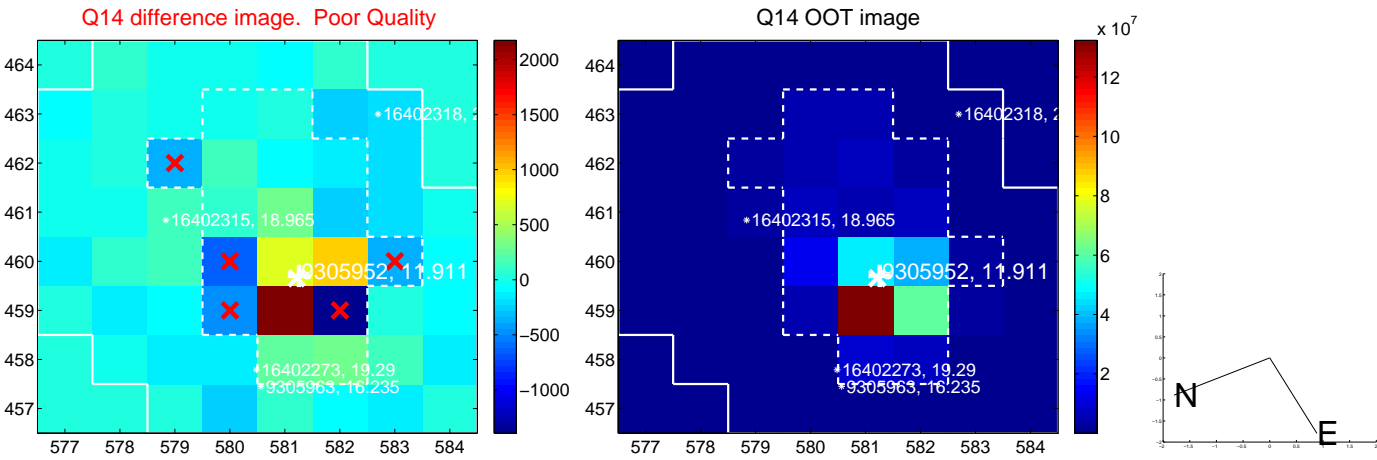
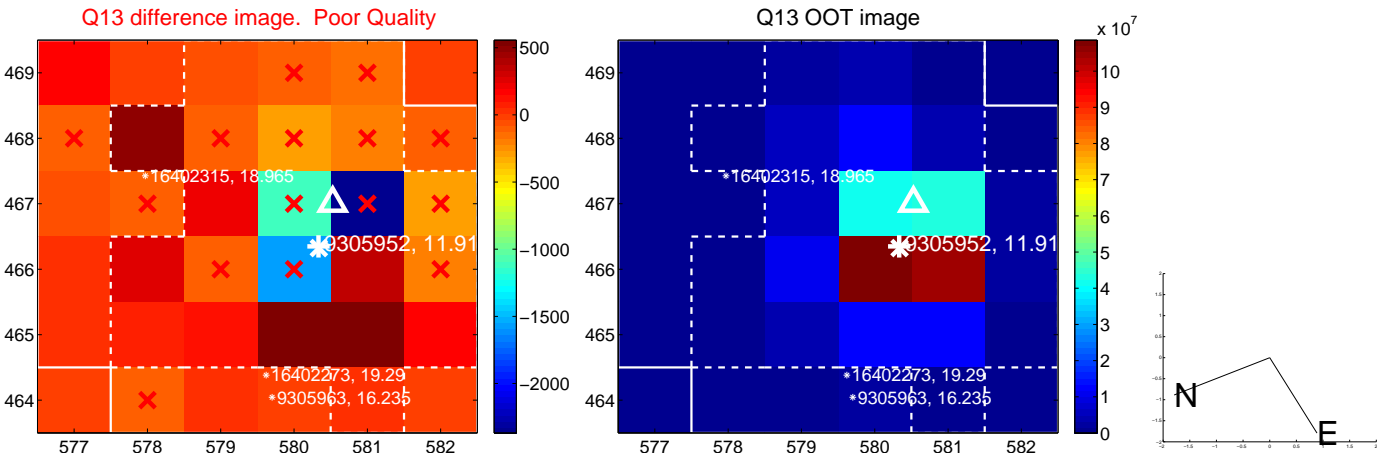
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



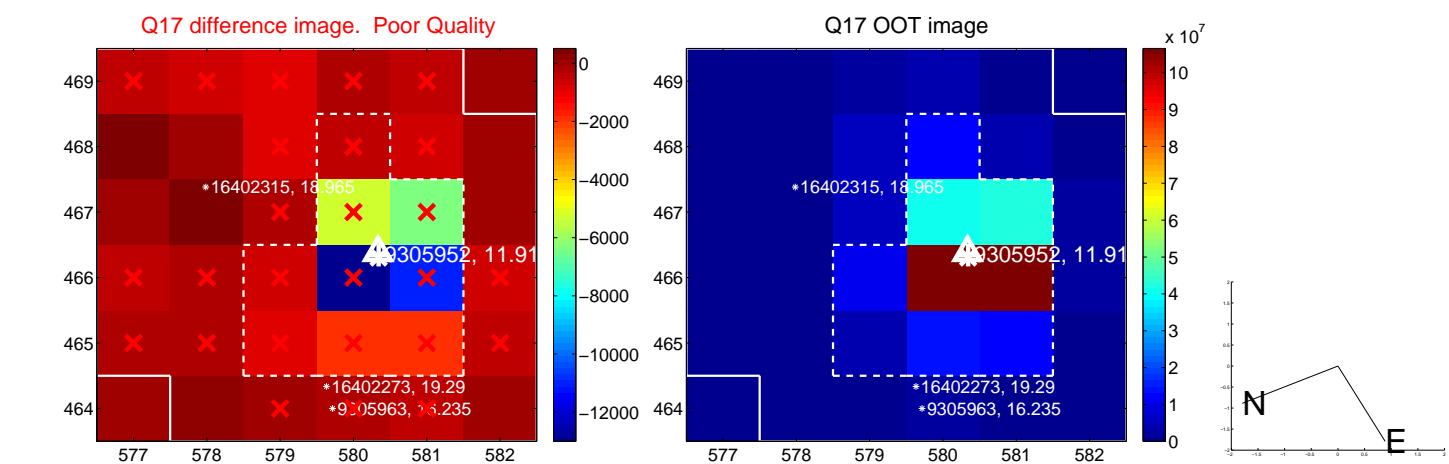
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



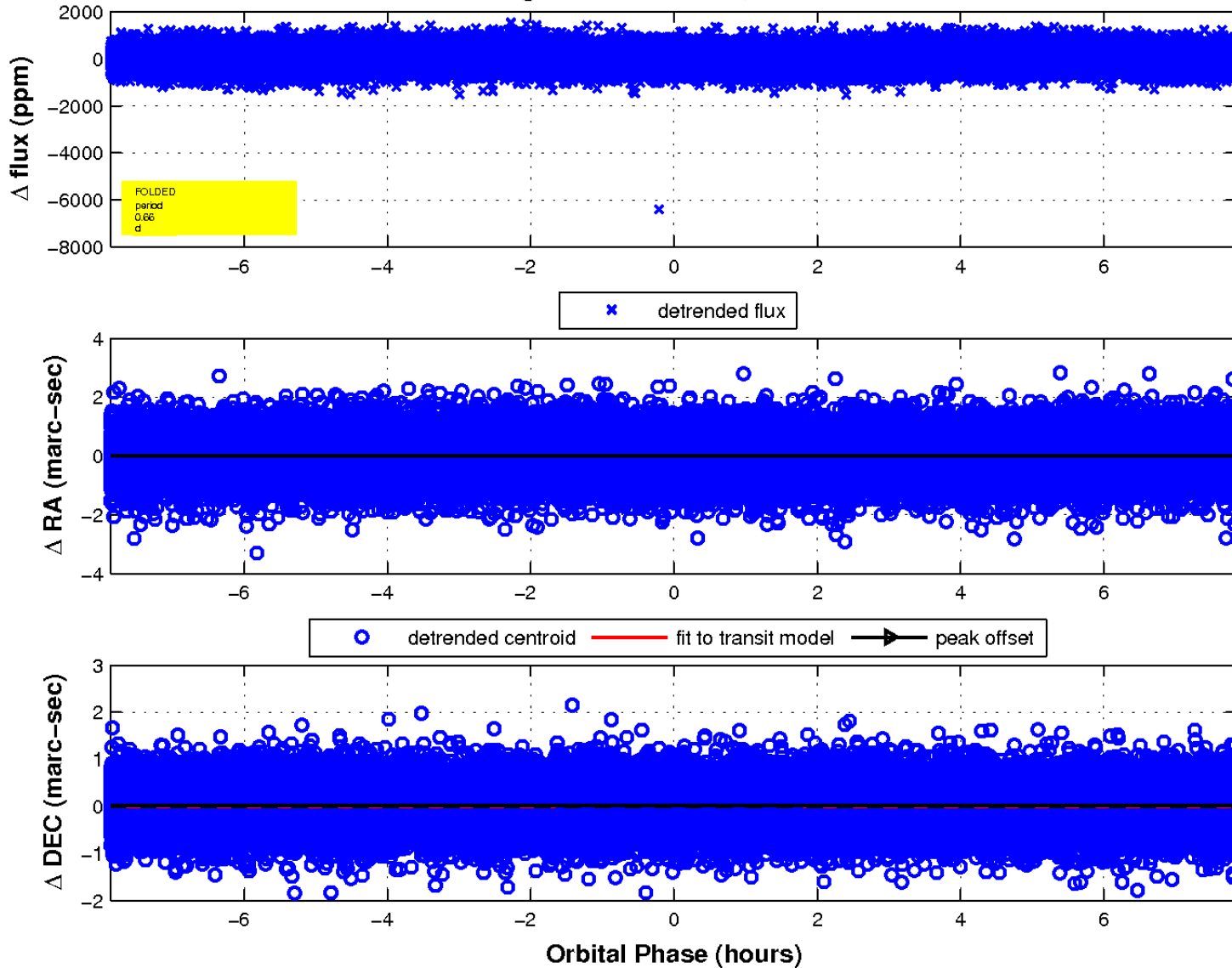
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

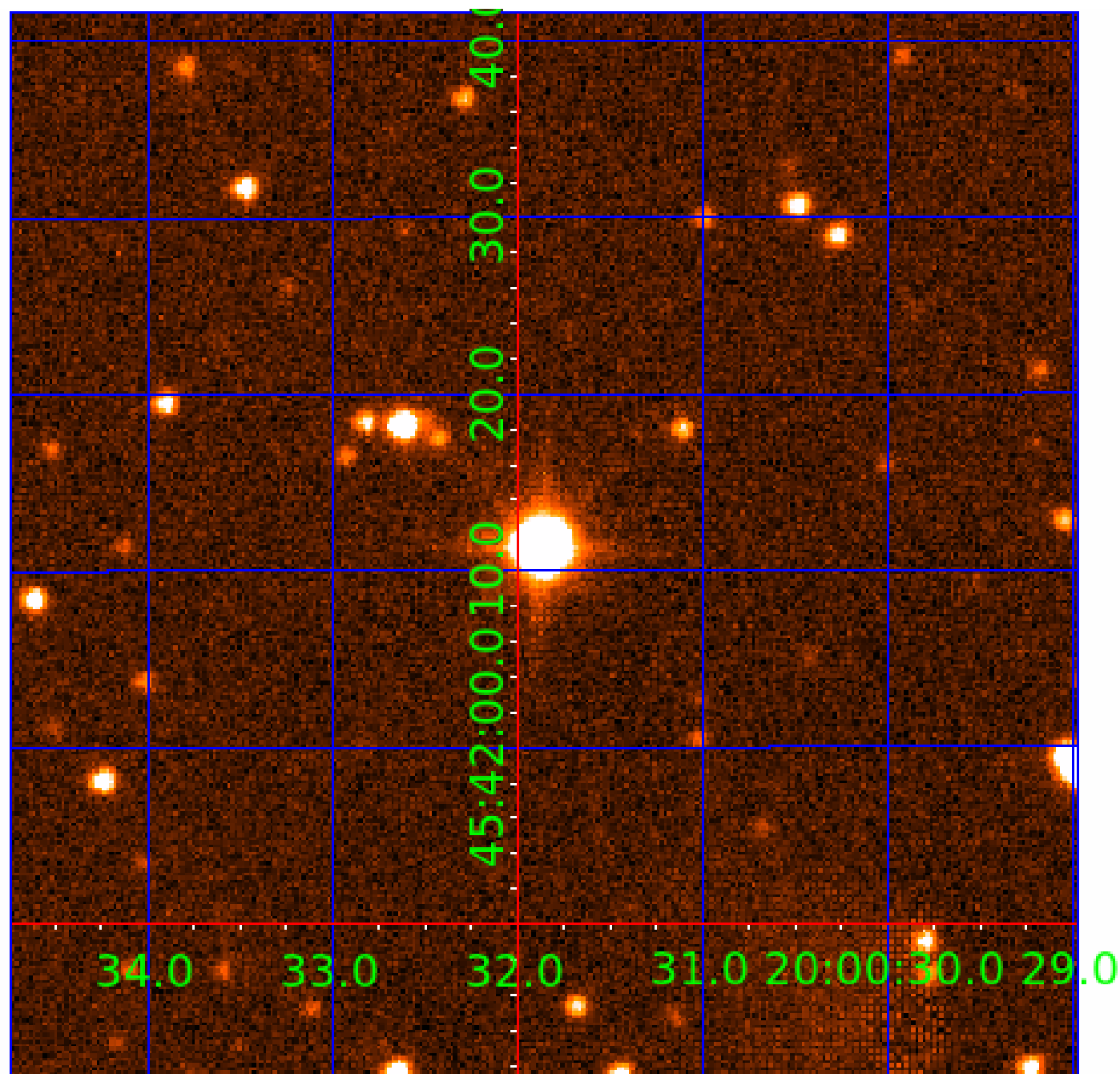


fluxWeightedCentroids, Planet 1 of 6



UKIRT Image

Declination



KIC 009305952

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})
009305952-01	OBS	No	0.655430	131.760158	24.1	3.682	10.8	5.6	2.23	8163	1.28	60673.38
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009305952-05	OBS	No	55.596444	135.382791	477.7	2.971	8.2	6.8	2.23	8163	5.55	162.79
009305952-06	OBS	No	82.605886	197.477337	133.5	3.500	7.1	-1.0	2.23	8163	2.60	96.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009305952-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009305952-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009305952-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009305952-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009305952-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009305952-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

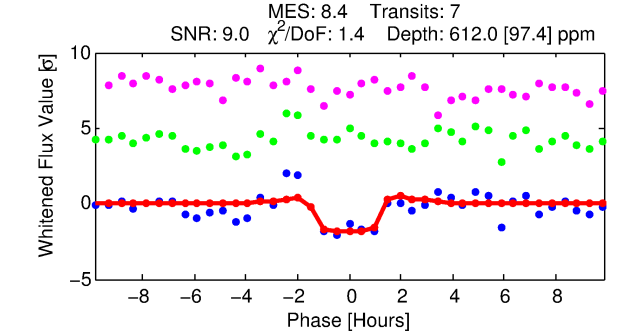
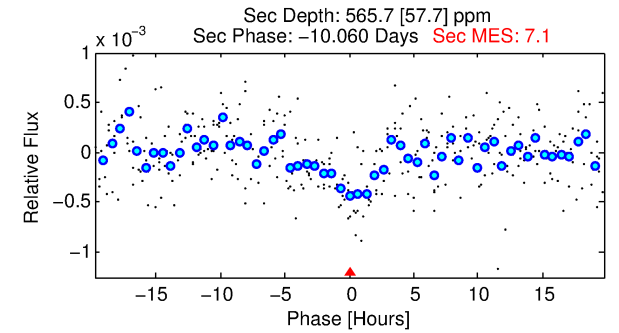
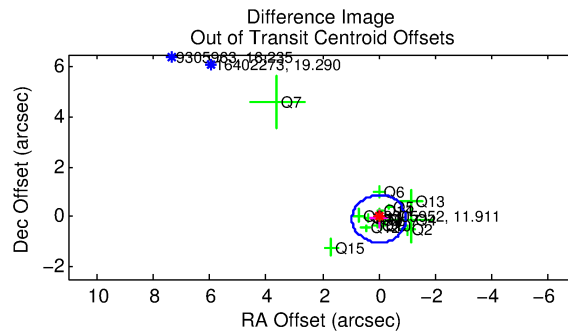
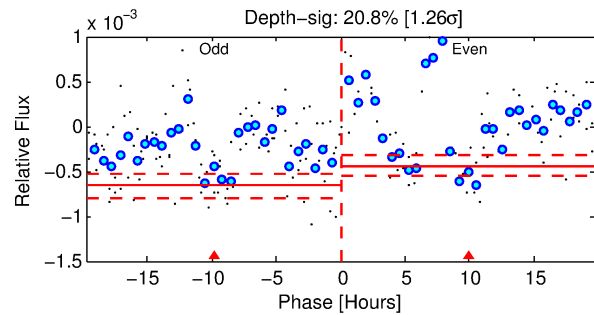
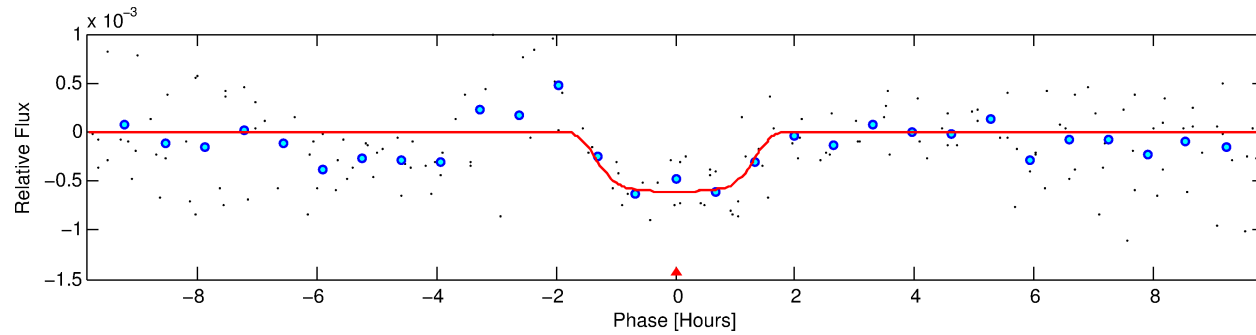
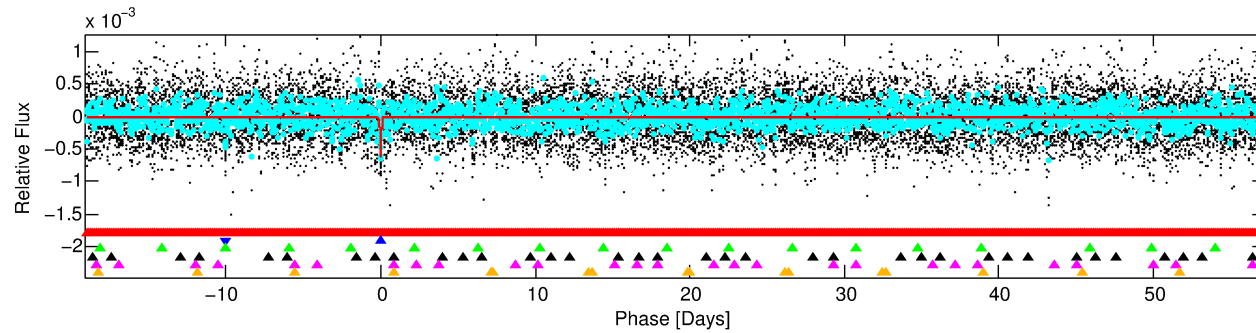
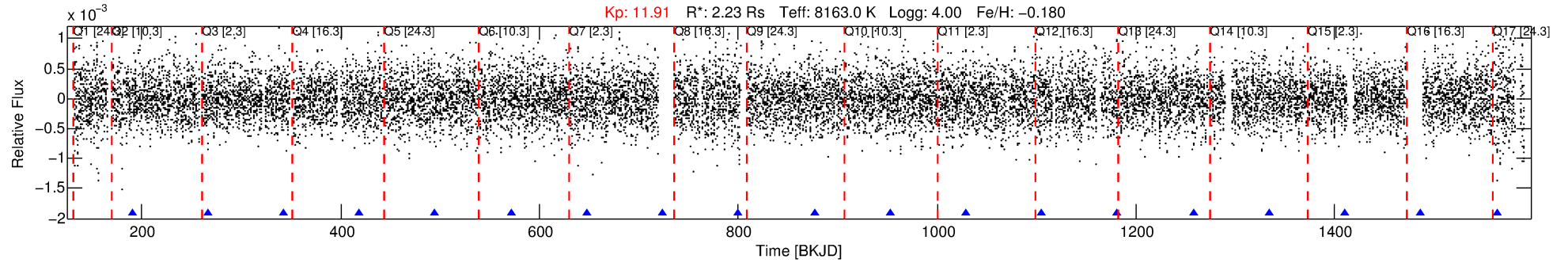
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009305952-02

No Significant Match Found

DV One-Page Summary

KIC: 9305952 Candidate: 2 of 6 Period: 76.265 d



DV Fit Results:

Period = 76.26493 [0.00080] d
Epoch = 190.1521 [0.0092] BKJD
Rp/R* = 0.0274 [0.0037]
a/R* = 74.45 [40.75]
b = 0.94 [0.07]
Seff = 106.81 [45.16]
Teff = 820 [87] K
Rp = 6.67 [2.10] Re
a = 0.4302 [0.1094] AU
Ag = 1295.22 [625.70] [2.07 σ]
Teffp = 7603 [631] K [10.66 σ]

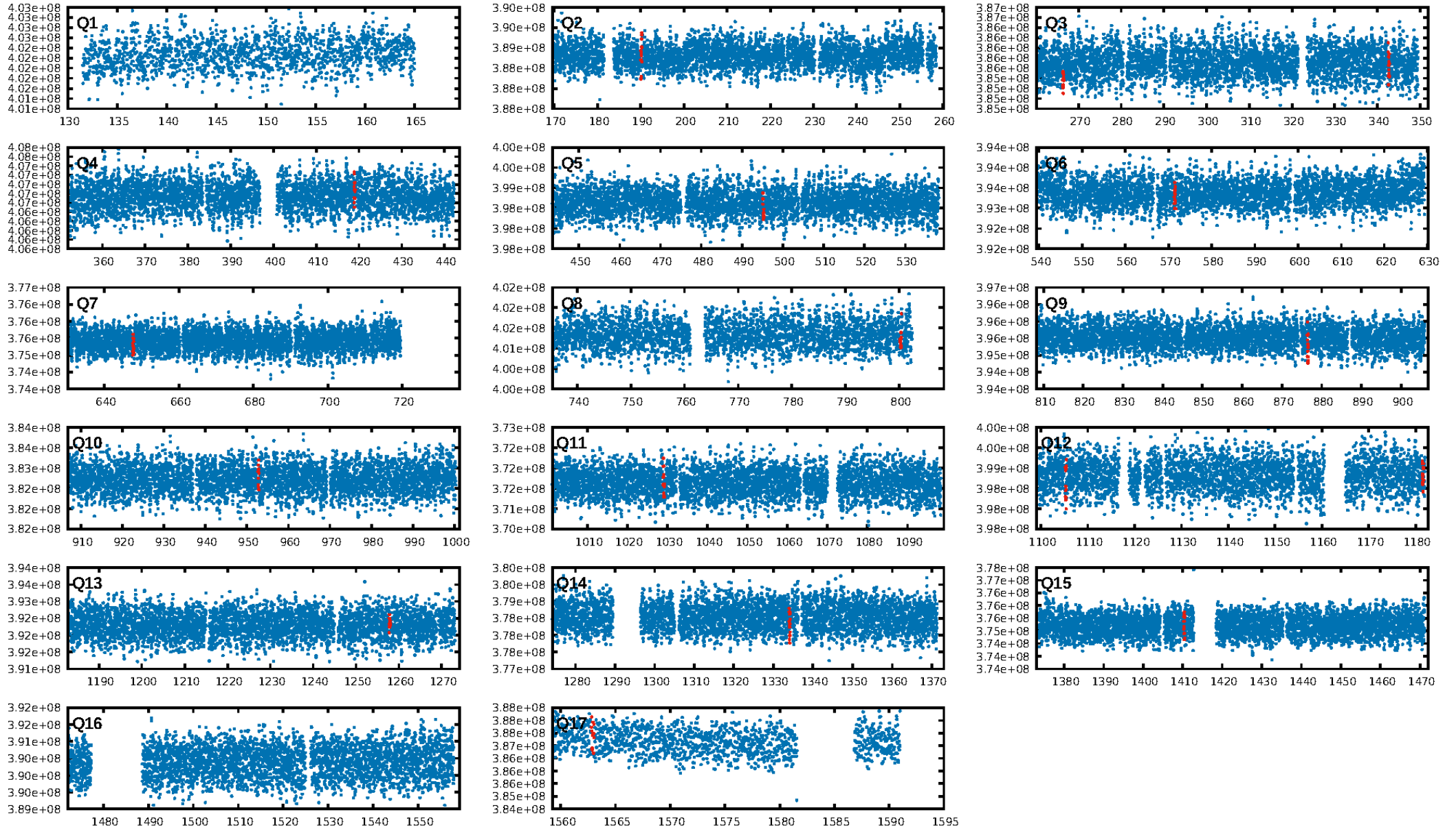
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [111.97 σ]
LongPeriod-sig: 100.0% [25.97 σ]
ModelChiSquare2-sig: 88.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 2.76
Centroid-sig: 75.7%
Centroid-so: 0.175 arcsec [0.81 σ]
OotOffset-rm: 0.095 arcsec [0.30 σ]
KicOffset-rm: 0.180 arcsec [0.45 σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
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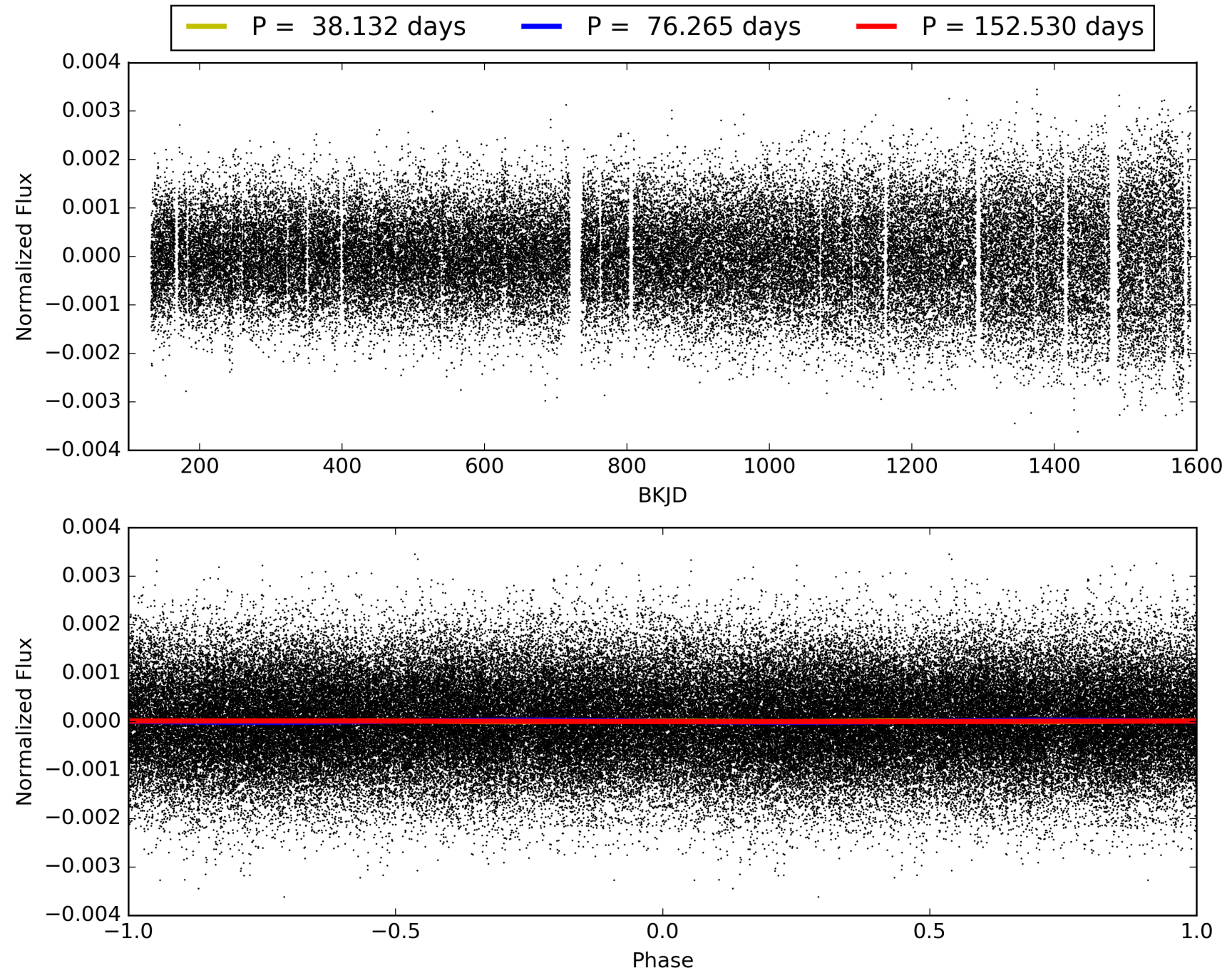
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:01:12 Z

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

TCE 009305952-02, PDC Light Curves

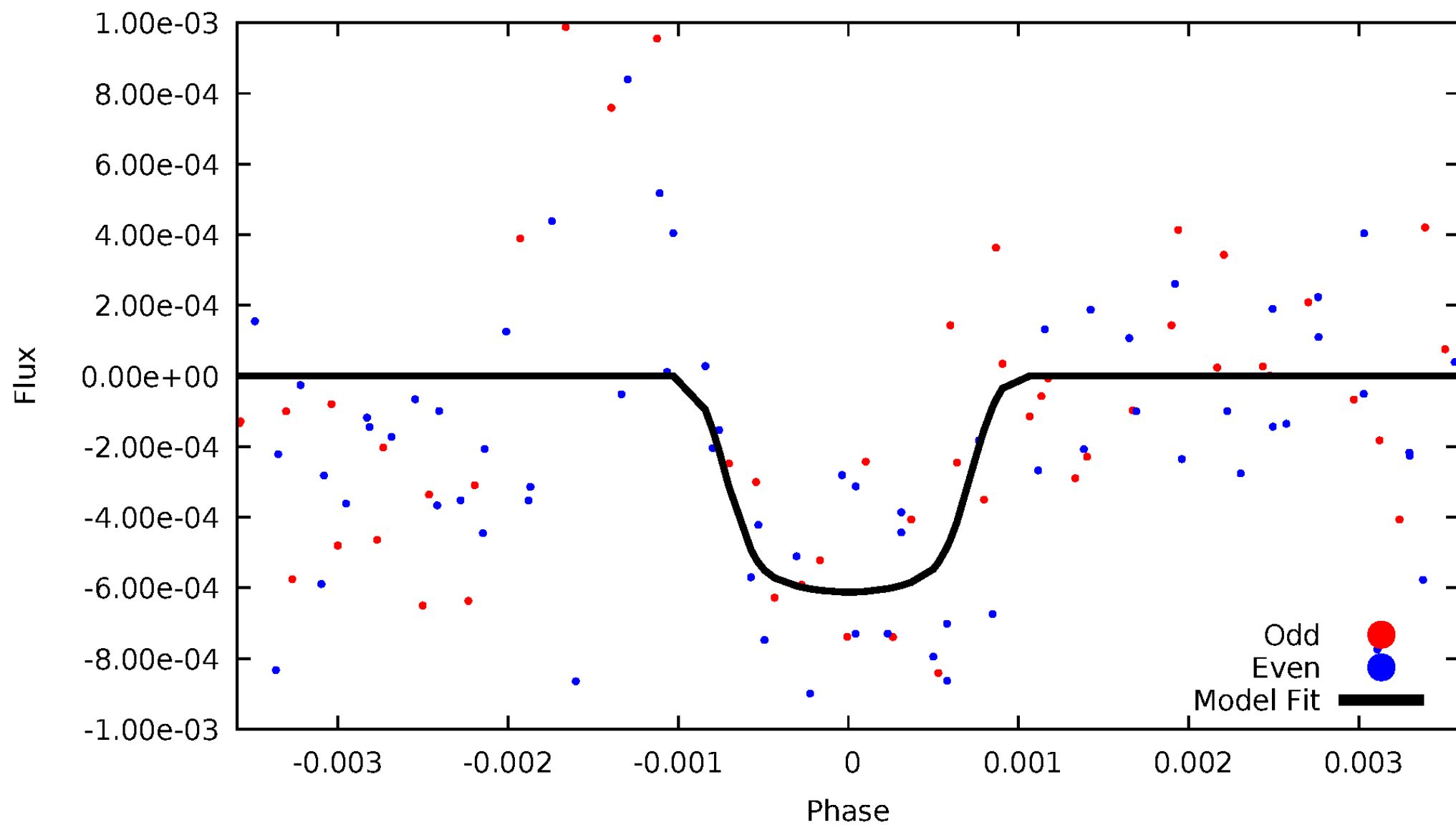


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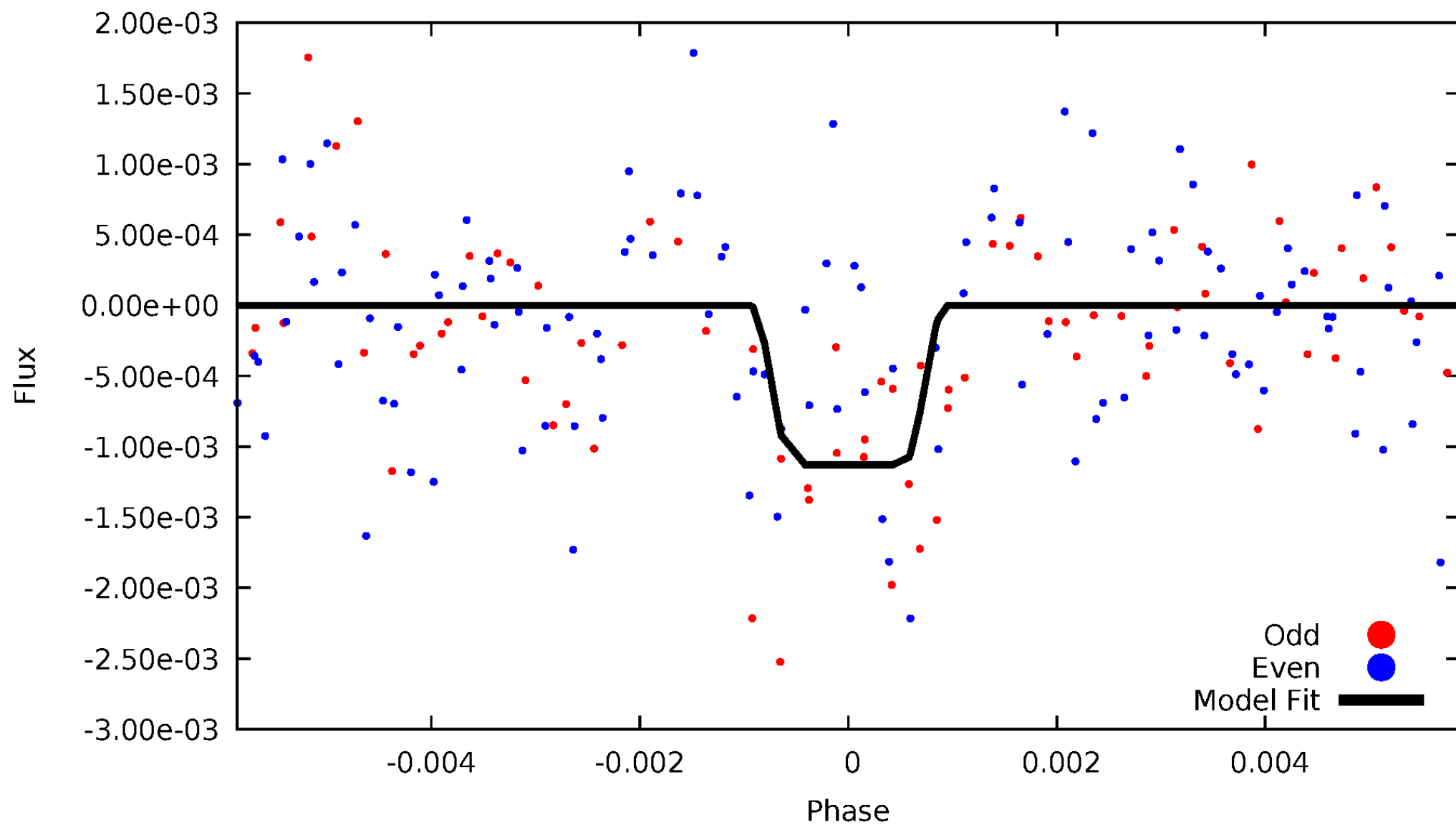
DV Odd/Even

TCE 009305952-02



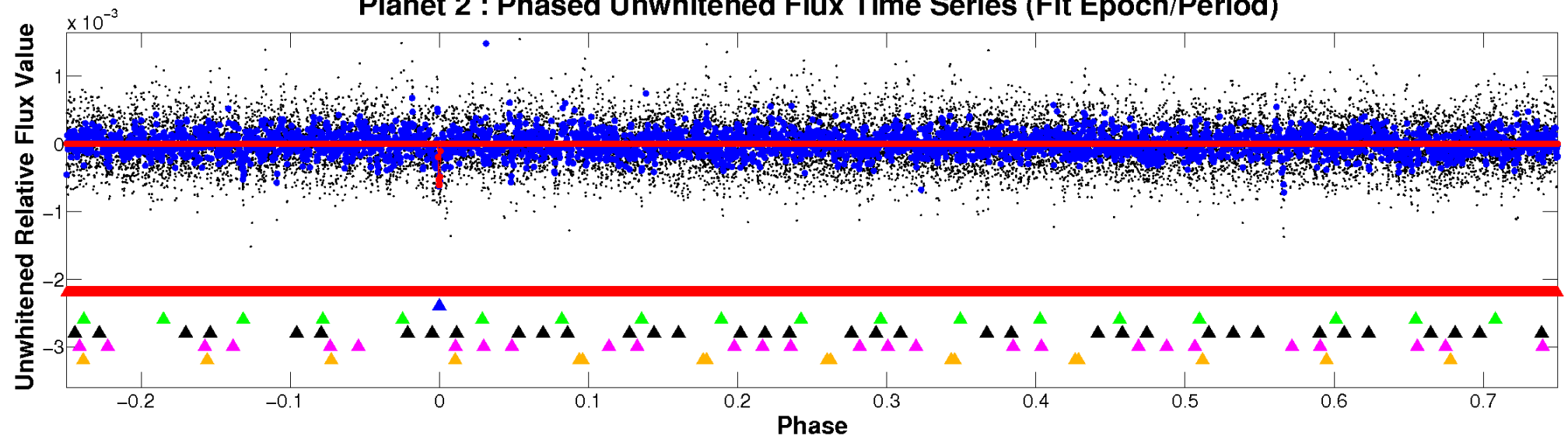
ALT Odd/Even

TCE 009305952-02

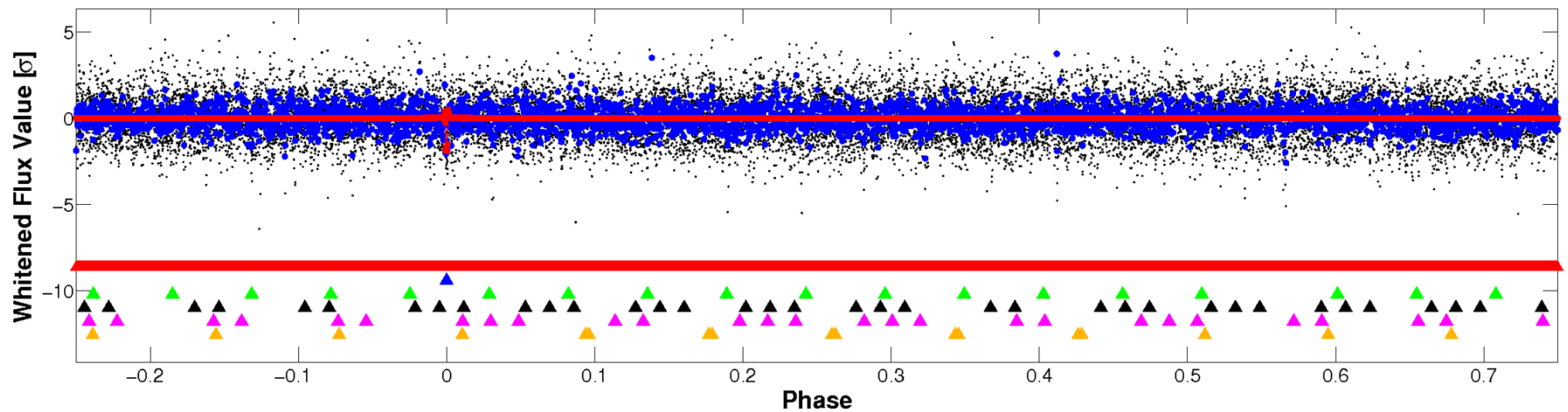


Non-Whitened Vs. Whitened Light Curve

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

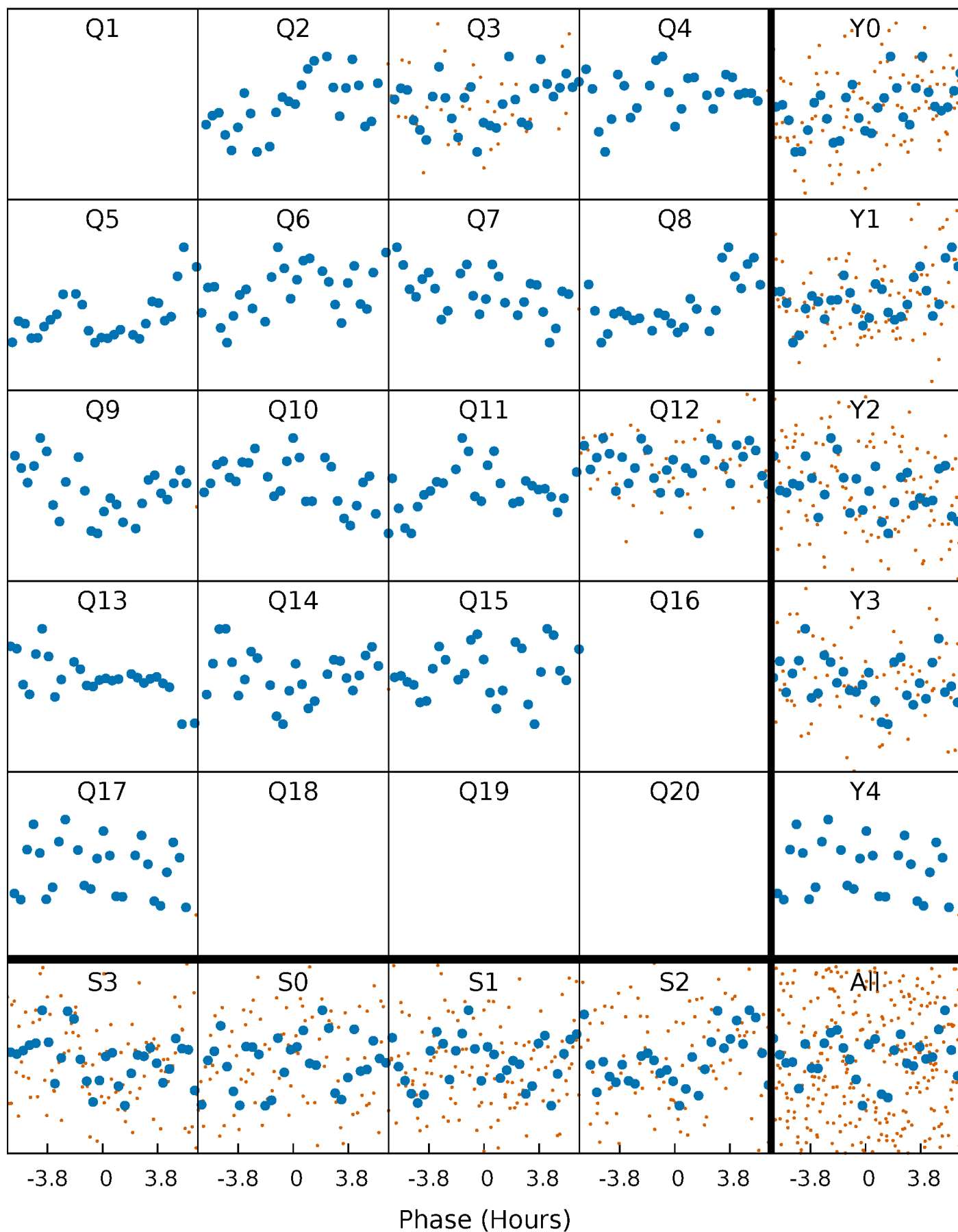


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



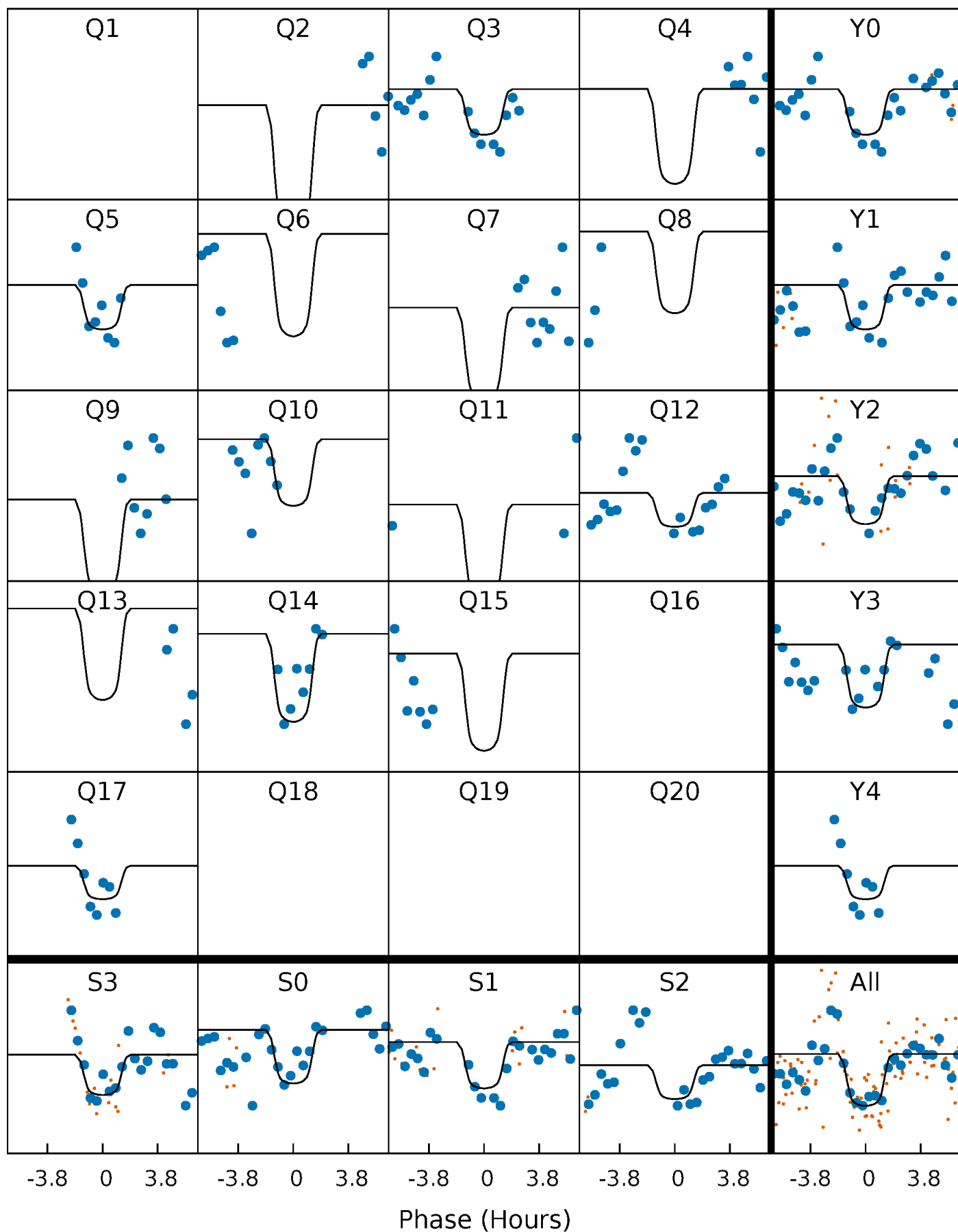
PDC Quarter-Phased Transit Curves

TCE 009305952-02 $P = 76.264928$ Days $T_0 = 190.152059$ (BKJD)



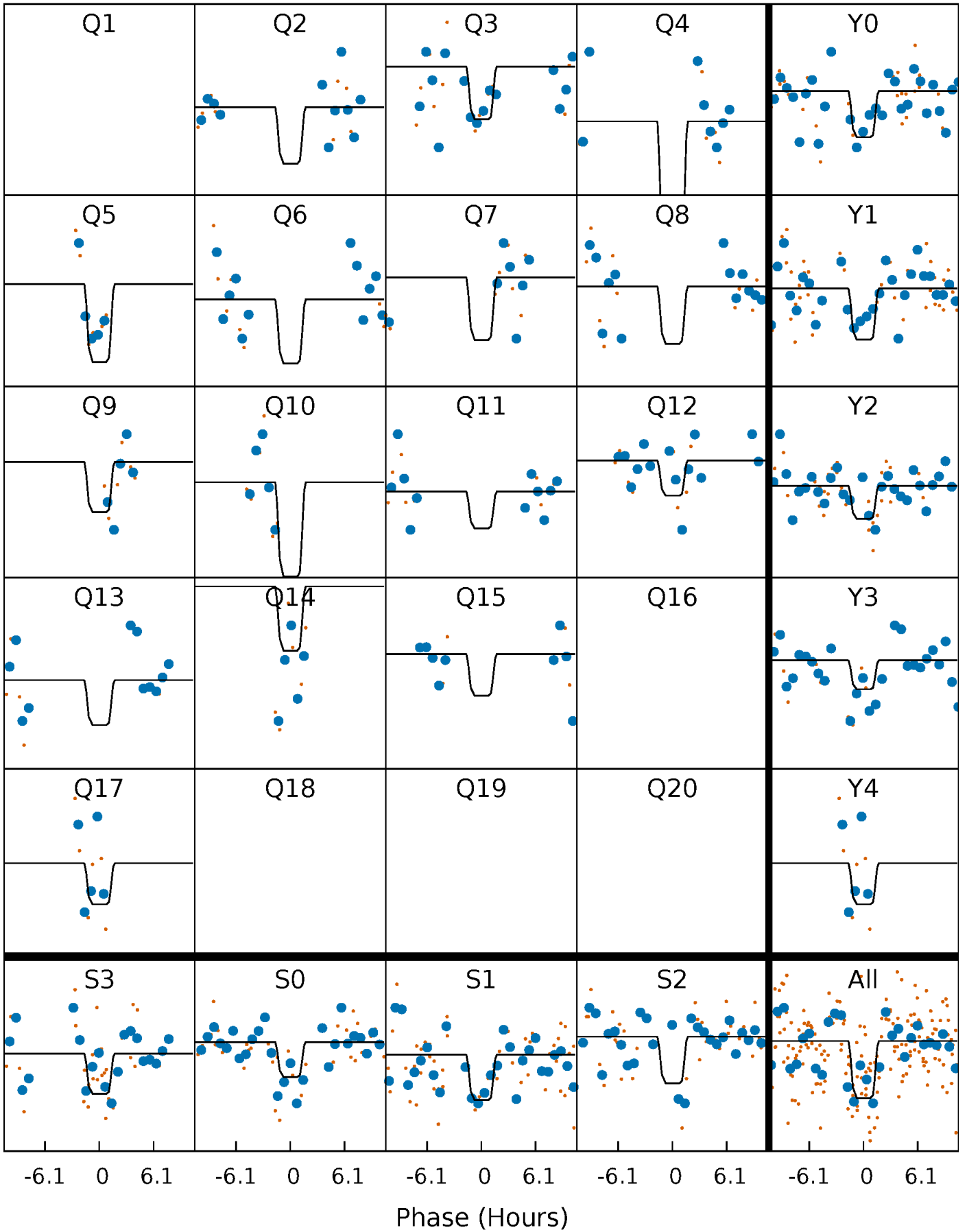
DV Quarter-Phased Transit Curves

TCE 009305952-02 $P = 76.264928$ Days $T_0 = 190.152059$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

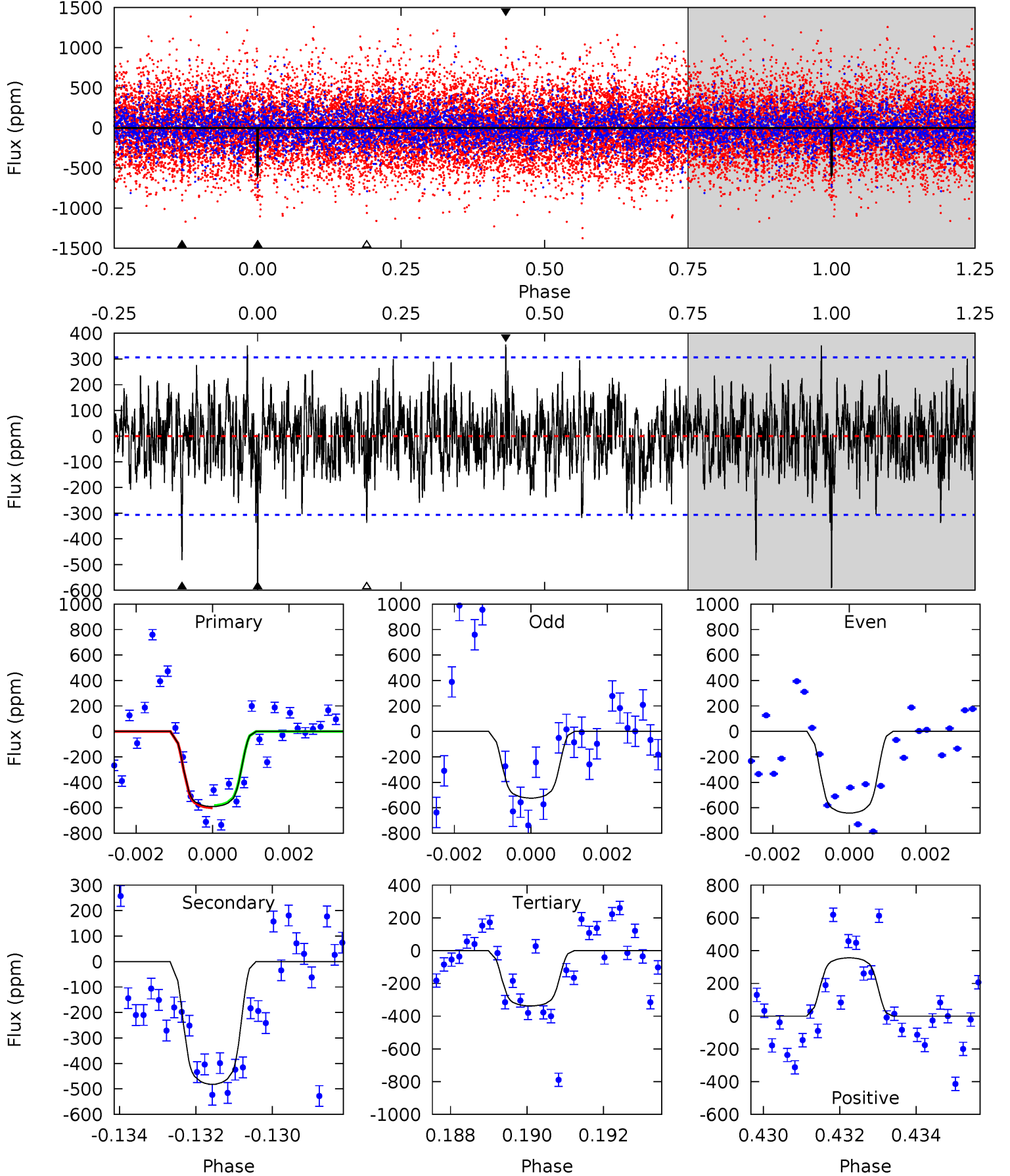
TCE 009305952-02 P= 76.264105 Days $T_0=190.181223$ (BKJD)



DV Model-Shift Uniqueness Test

009305952-02, $P = 76.264928$ Days, $E = 113.887131$ Days

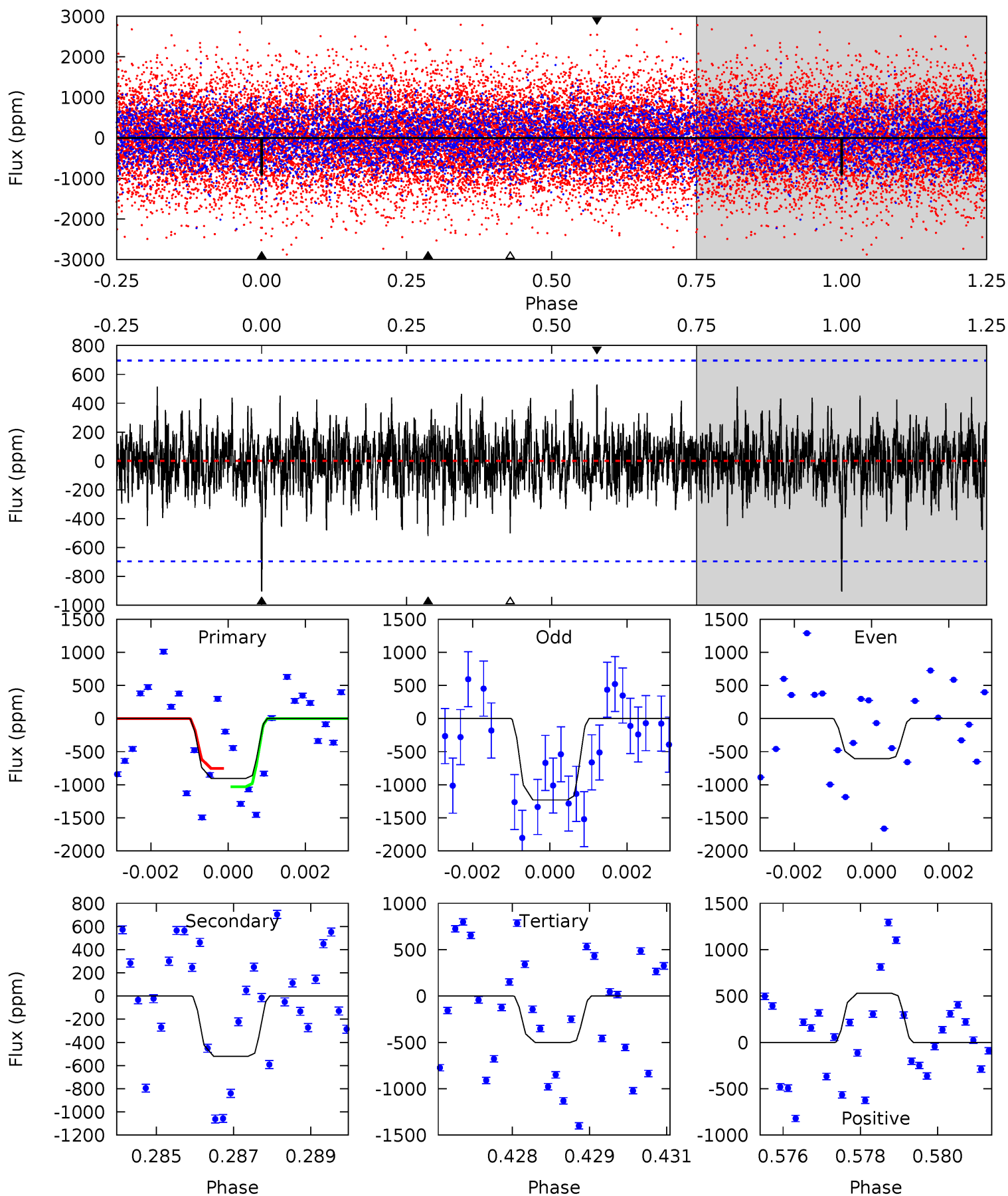
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	8.41	5.89	6.21	5.34	3.11	1.77	4.41	4.09	2.52	2.20	1.03	0.80	0.38	0.14



Alt Model-Shift Uniqueness Test

009305952-02, P = 76.264105 Days, E = 113.917118 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.95	3.99	3.85	4.06	5.34	3.11	1.14	3.10	2.89	0.13	-0.07	2.39	1.00	0.37	1.06



Stellar Parameters For KIC 009305952

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8163^{+226}_{-340}	$4.003^{+0.221}_{-0.136}$	$-0.180^{+0.200}_{-0.350}$	$2.229^{+0.423}_{-0.634}$	$1.825^{+0.112}_{-0.336}$	$0.232^{+0.301}_{-0.083}$
	+3%/-4%	+6%/-3%	+111%/-194%	+19%/-28%	+6%/-18%	+130%/-36%
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 009305952-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-482 ± 57	$6.48^{+1.36}_{-1.26}$	1135^{+77}_{-91}	7117^{+738}_{-584}	1148^{+591}_{-352}
Alt.	-519 ± 130	$7.92^{+1.53}_{-1.37}$	1133^{+75}_{-85}	6466^{+647}_{-519}	823^{+433}_{-295}

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

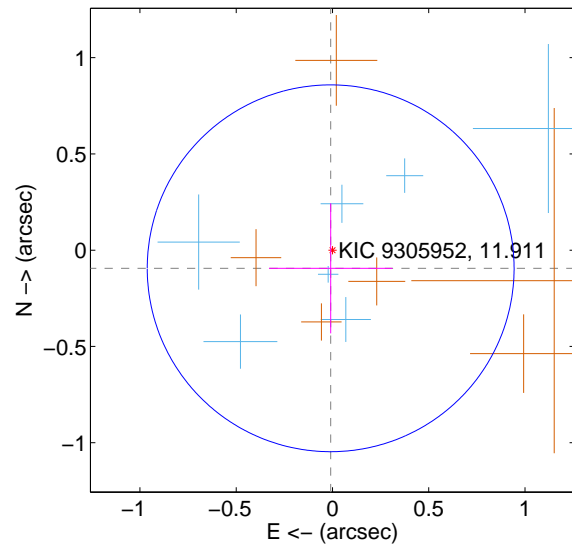
Supplemental centroid analysis for 009305952-02. **Kepler magnitude: 11.91.** Transit SNR 8.99

There are 7 quarters with good PRF difference image offsets

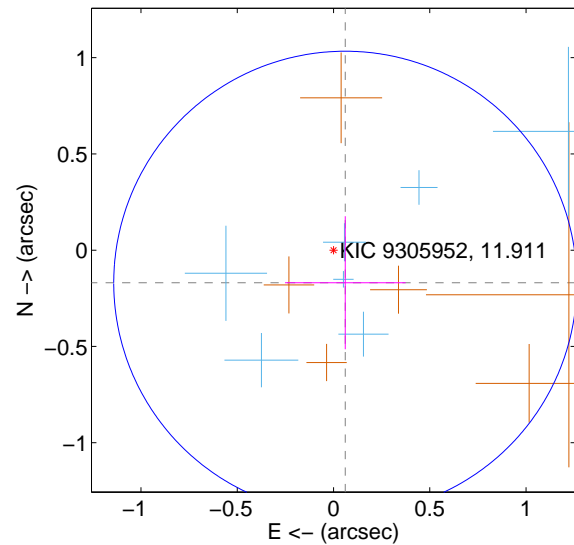
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.095 ± 0.318	0.30	0.009 ± 0.321	-0.094 ± 0.338
PRF-fit source offset from KIC position	0.180 ± 0.401	0.45	-0.061 ± 0.313	-0.169 ± 0.346
photometric centroid source offset	0.17 ± 0.22	0.81	-0.09 ± 0.26	-0.15 ± 0.20

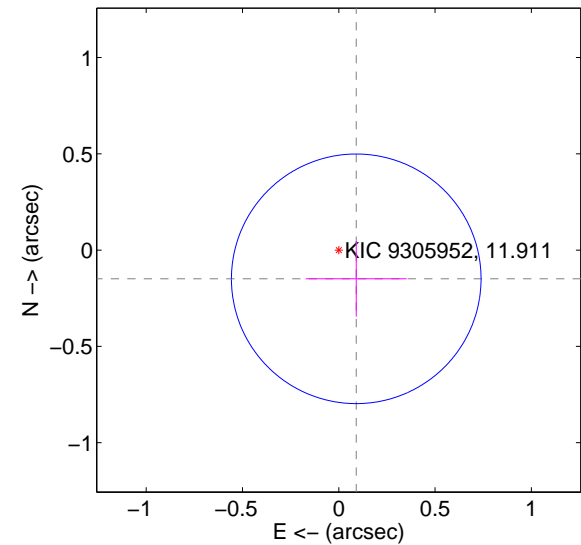
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

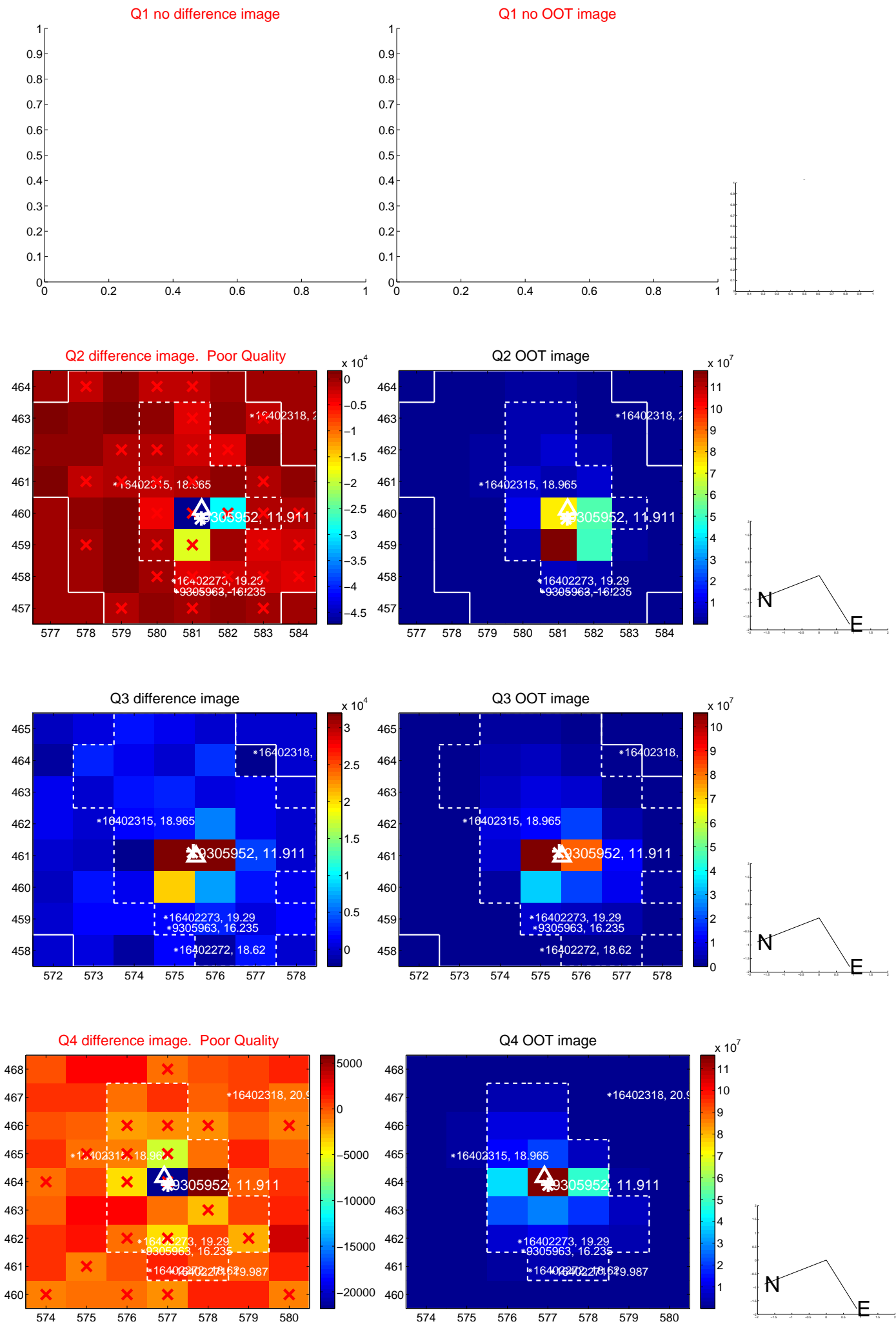


offset from photometric centroids

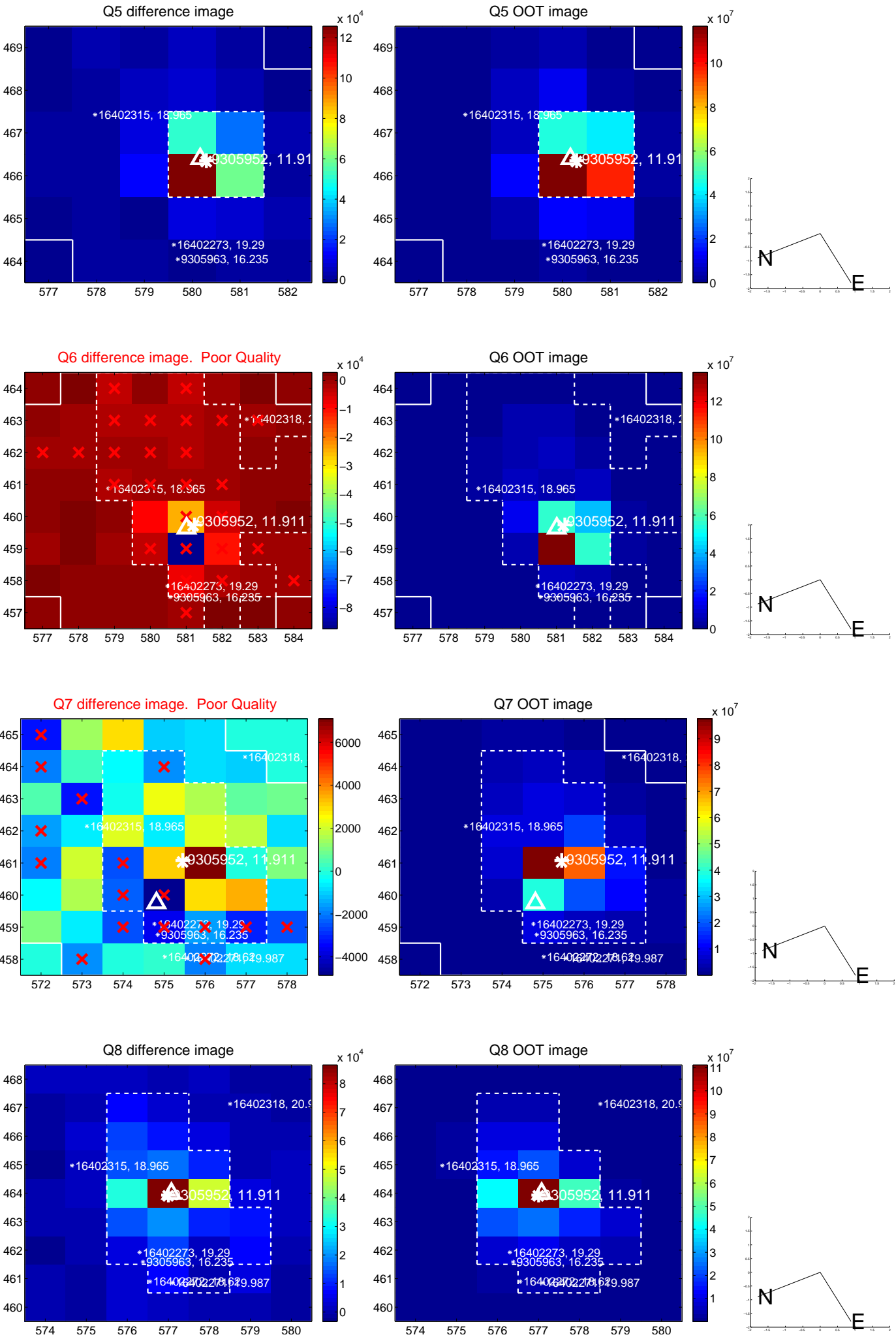


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

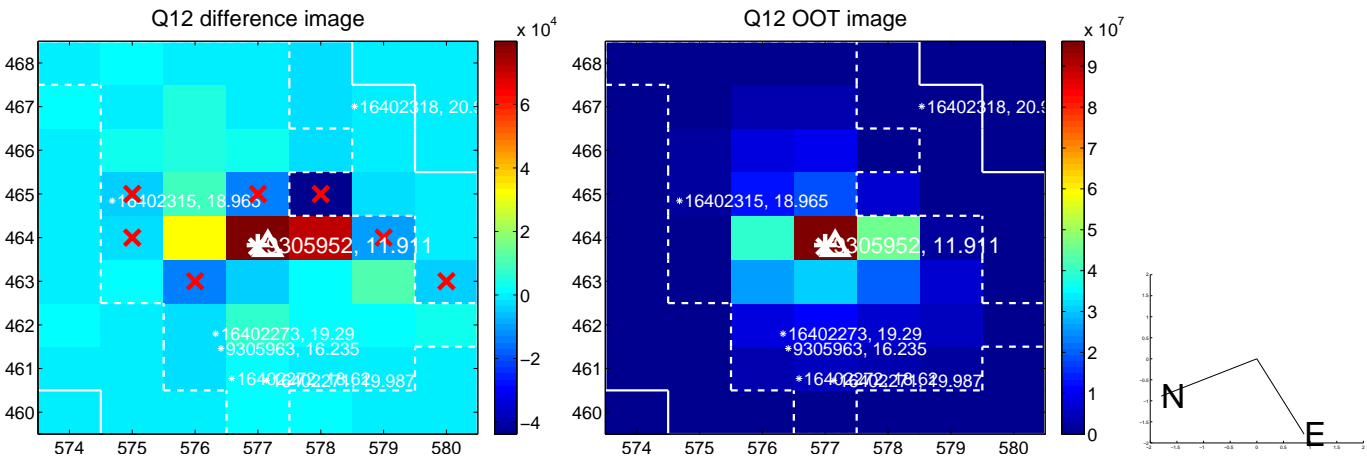
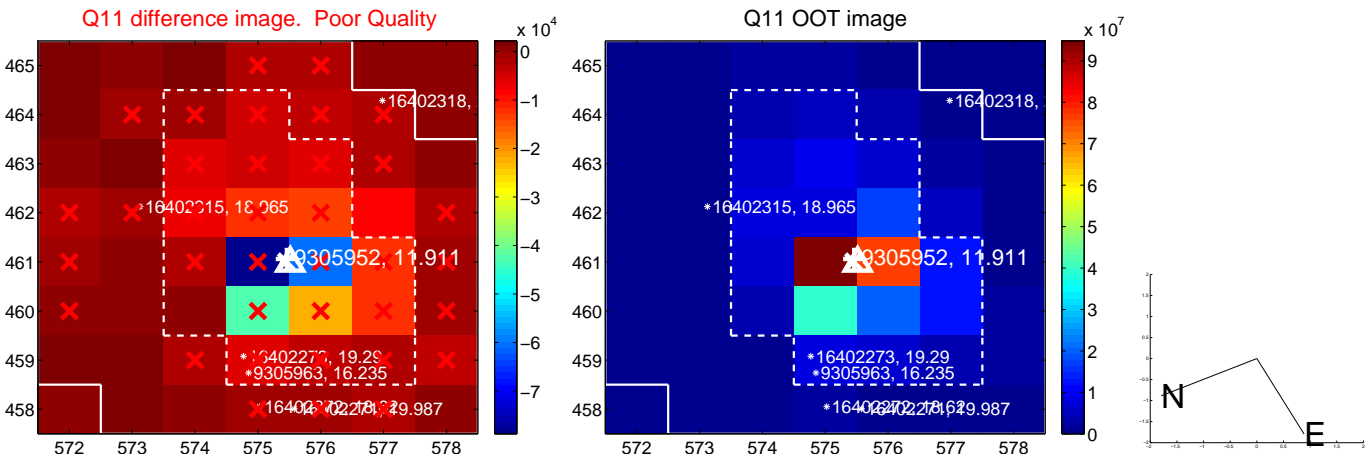
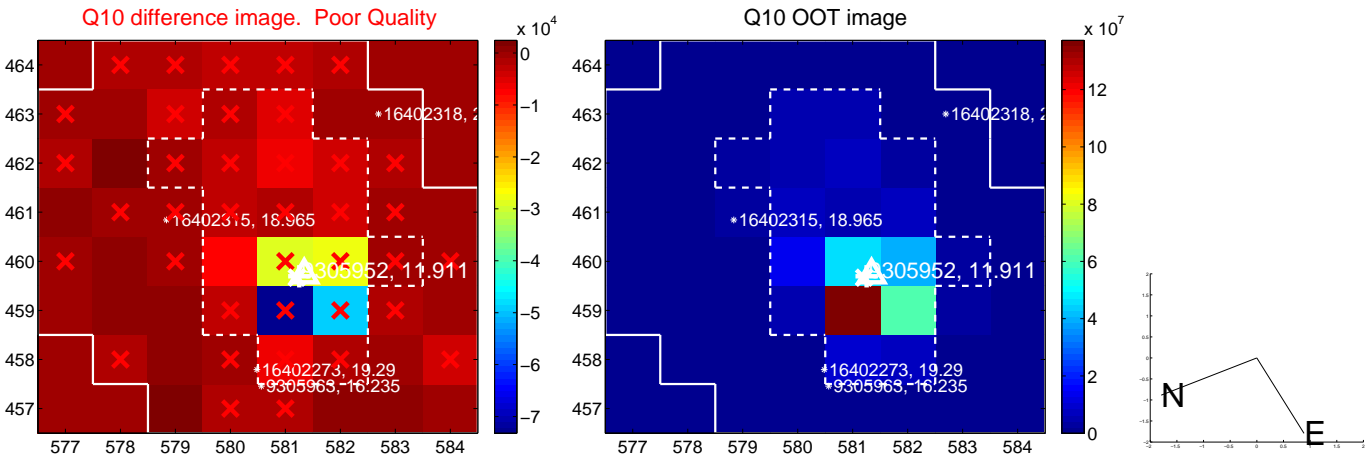
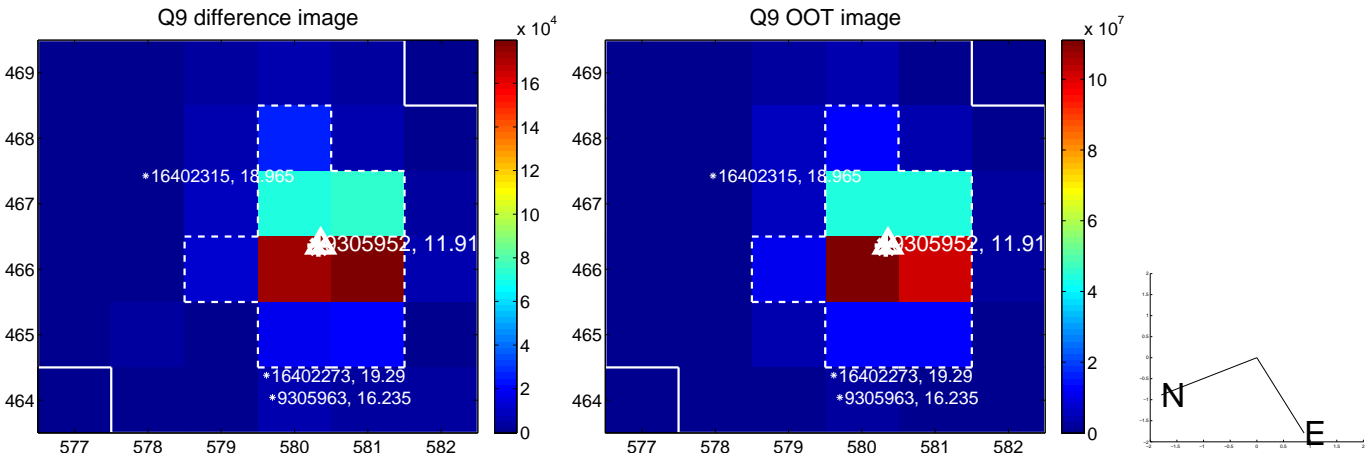
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



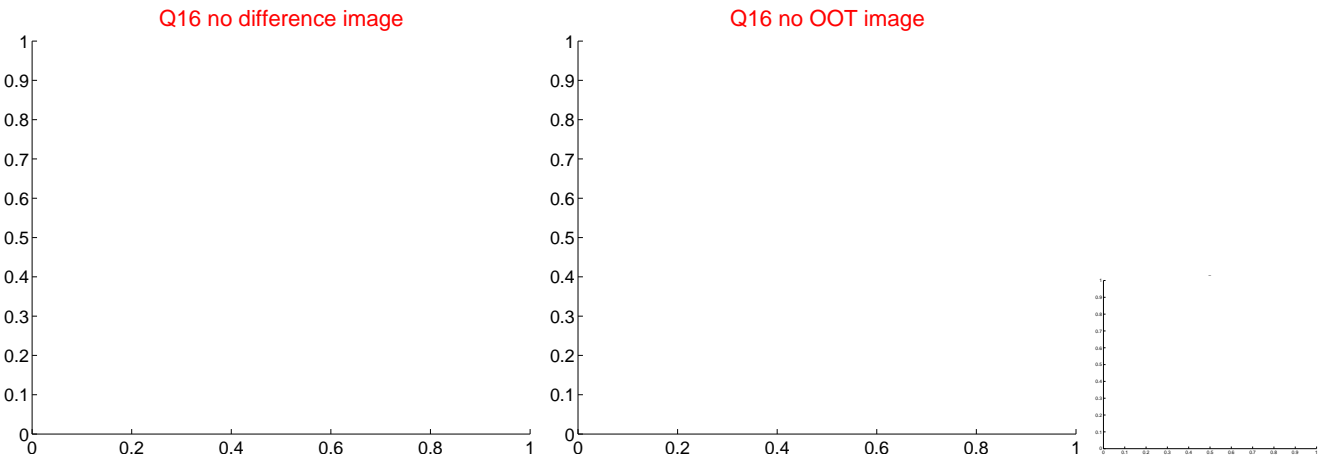
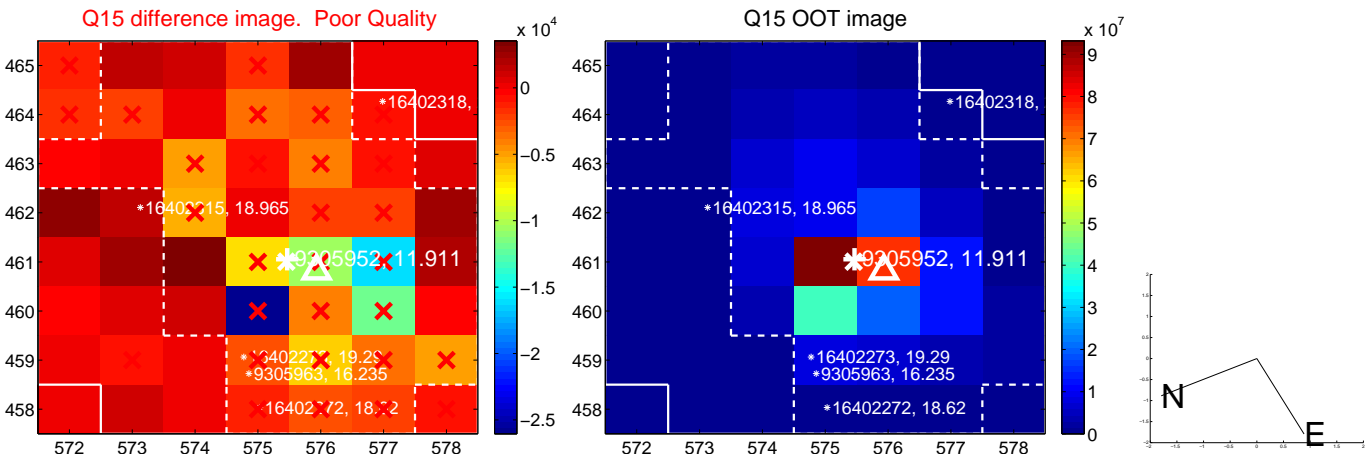
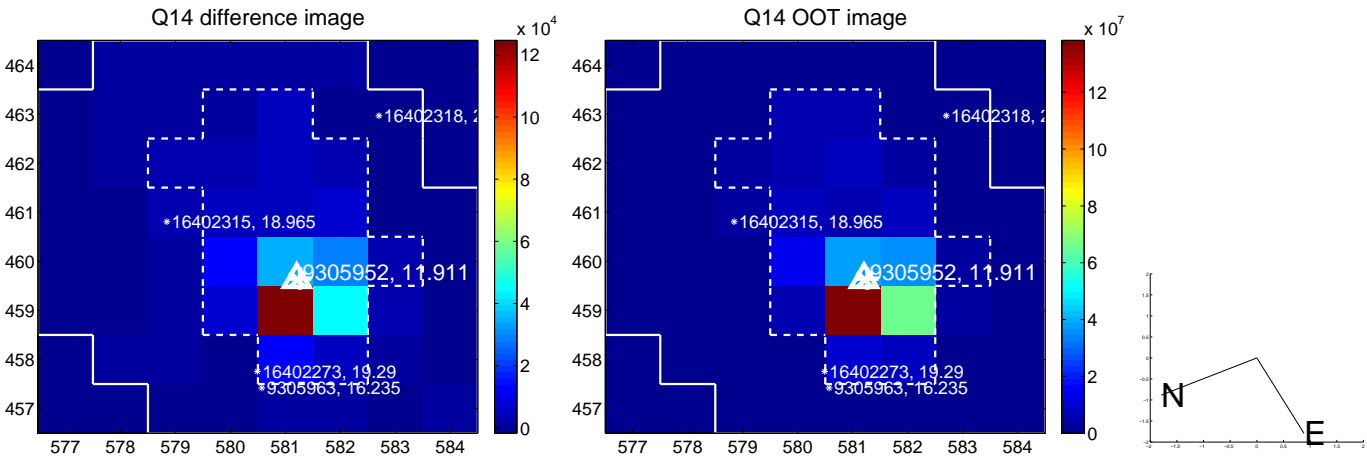
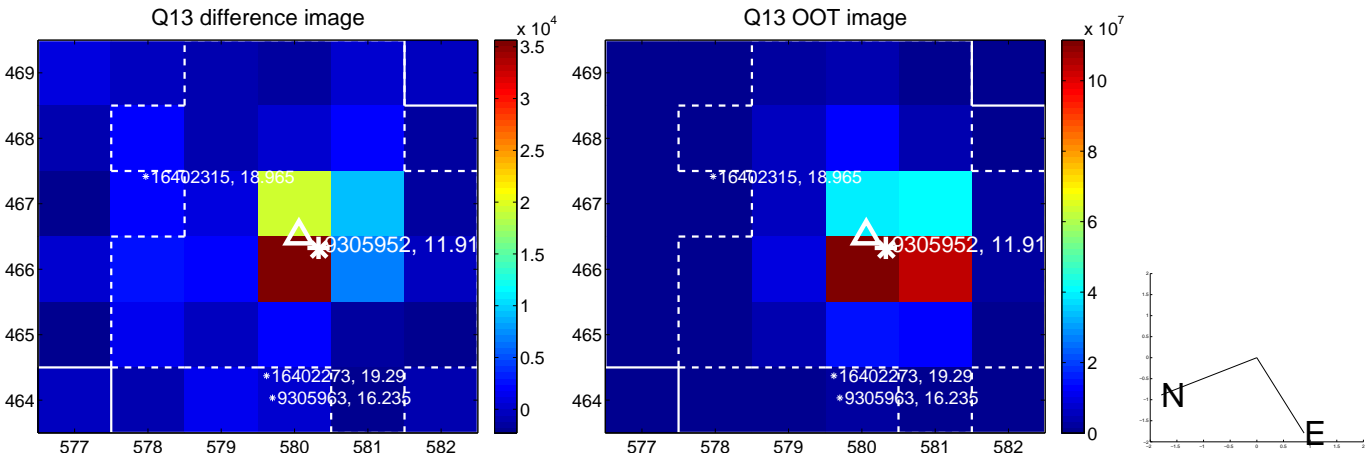
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



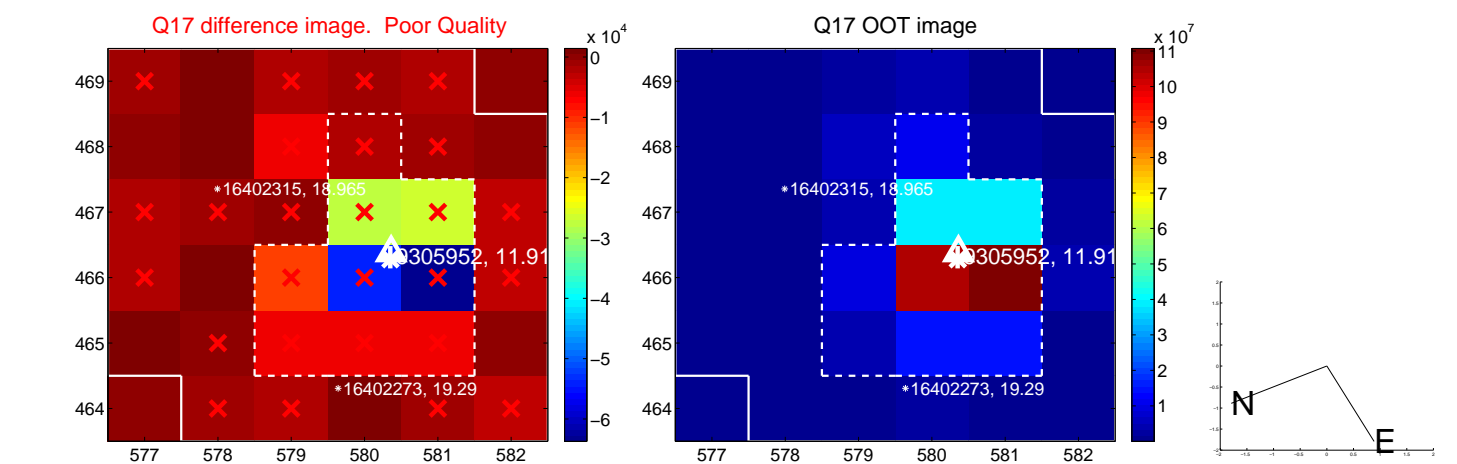
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



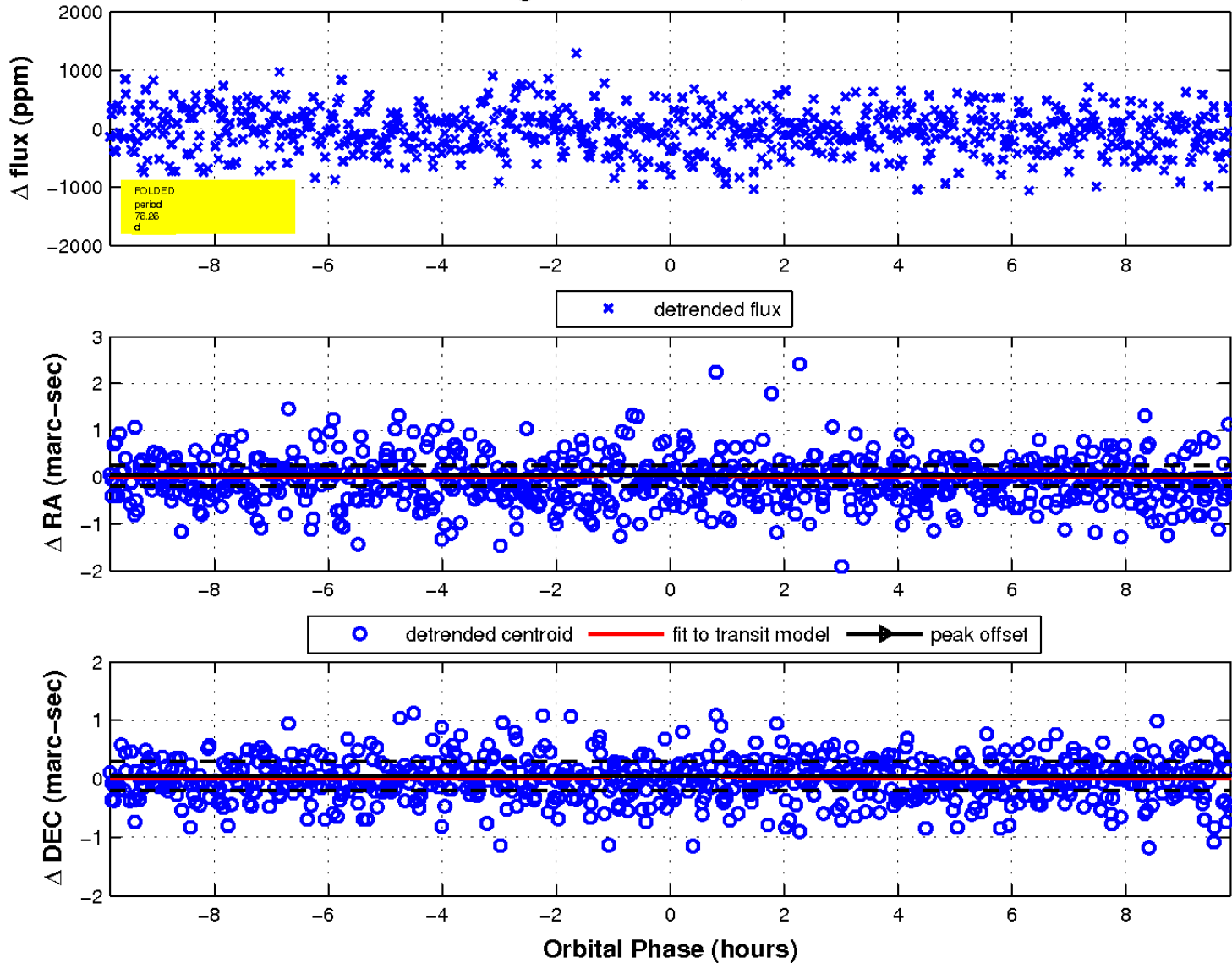
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

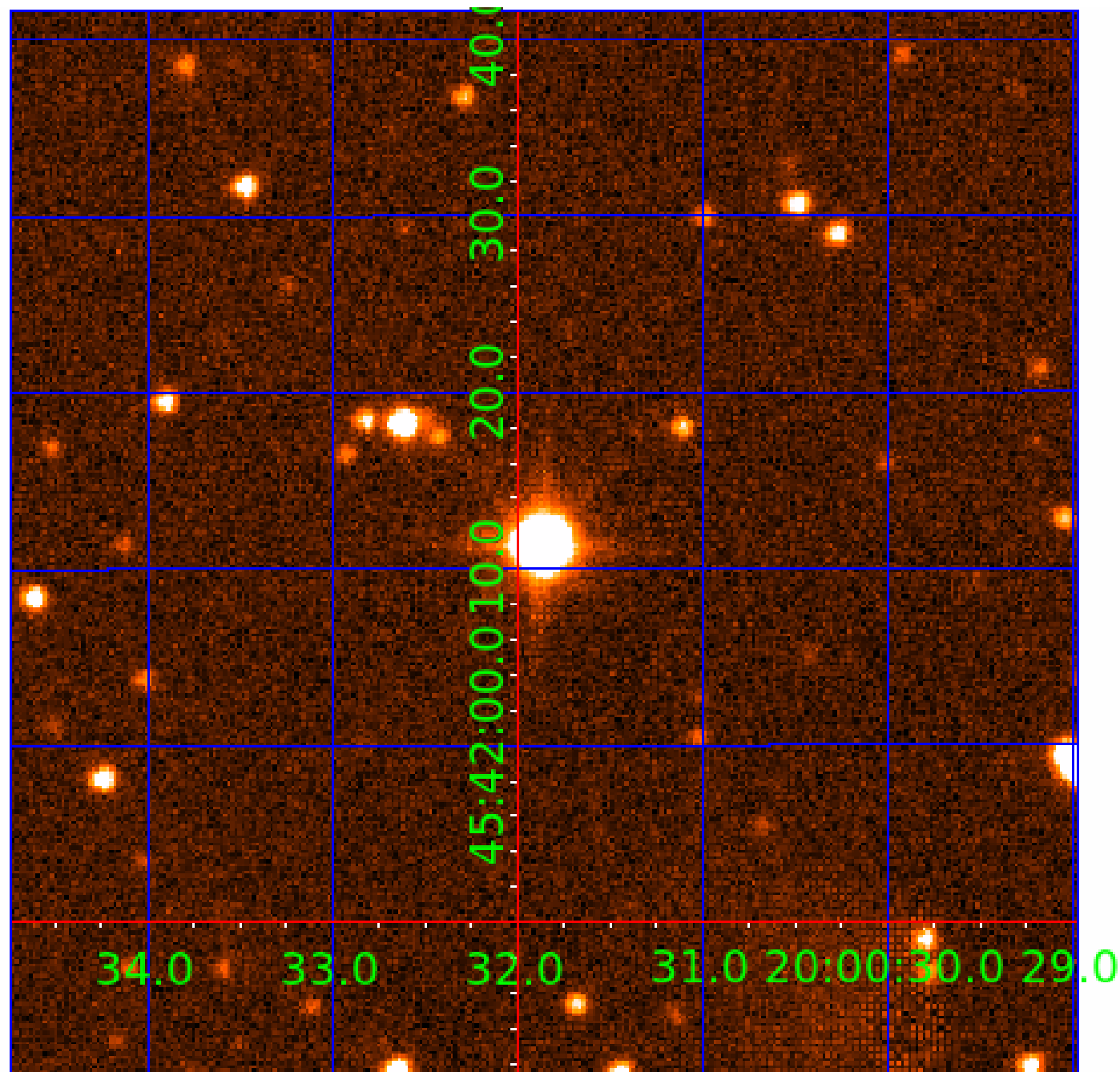


fluxWeightedCentroids, Planet 2 of 6



UKIRT Image

Declination



KIC 009305952

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})
009305952-01	OBS	No	0.655430	131.760158	24.1	3.682	10.8	5.6	2.23	8163	1.28	60673.38
009305952-02	OBS	No	76.264928	190.152059	612.0	3.286	8.4	9.0	2.23	8163	6.67	106.81
009305952-03	OBS	No	80.340169	159.743277	772.7	1.840	7.9	8.5	2.23	8163	6.66	99.64
009305952-04	OBS	No	40.969414	150.066577	325.8	4.327	8.0	8.1	2.23	8163	4.69	244.58
009305952-05	OBS	No	55.596444	135.382791	477.7	2.971	8.2	6.8	2.23	8163	5.55	162.79
009305952-06	OBS	No	82.605886	197.477337	133.5	3.500	7.1	-1.0	2.23	8163	2.60	96.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009305952-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009305952-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009305952-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009305952-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009305952-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009305952-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

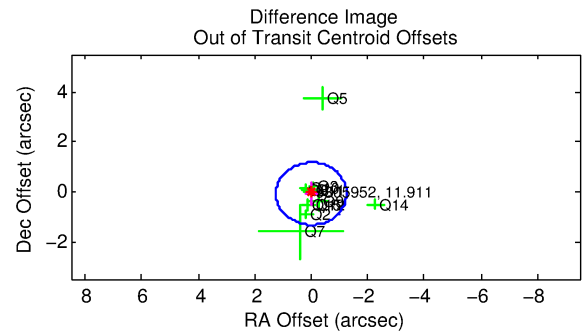
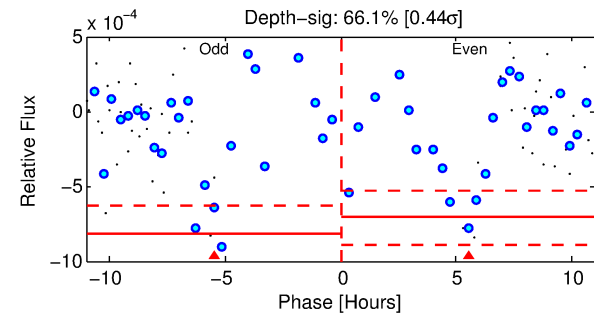
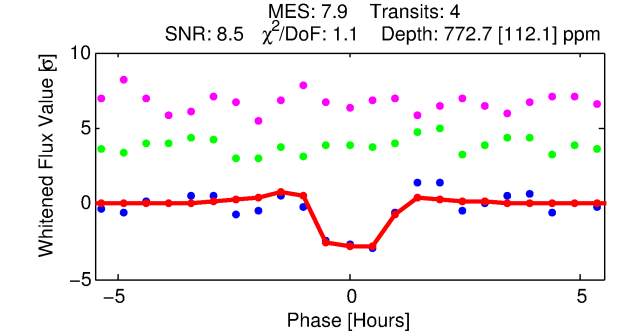
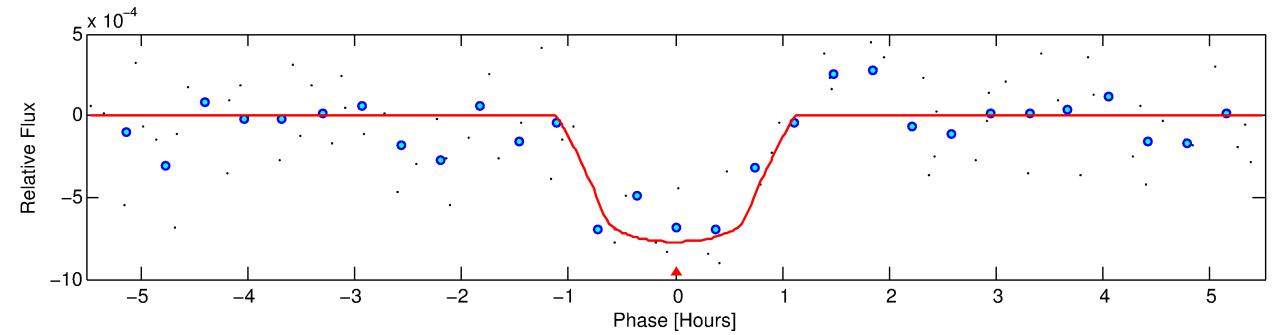
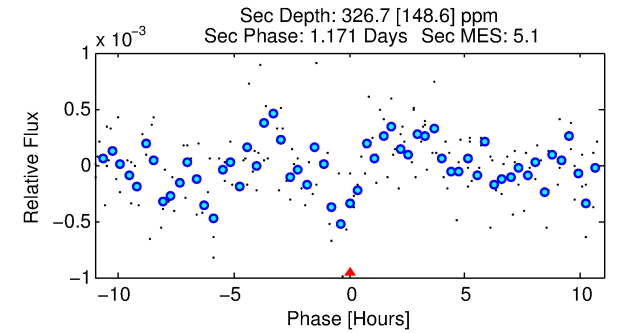
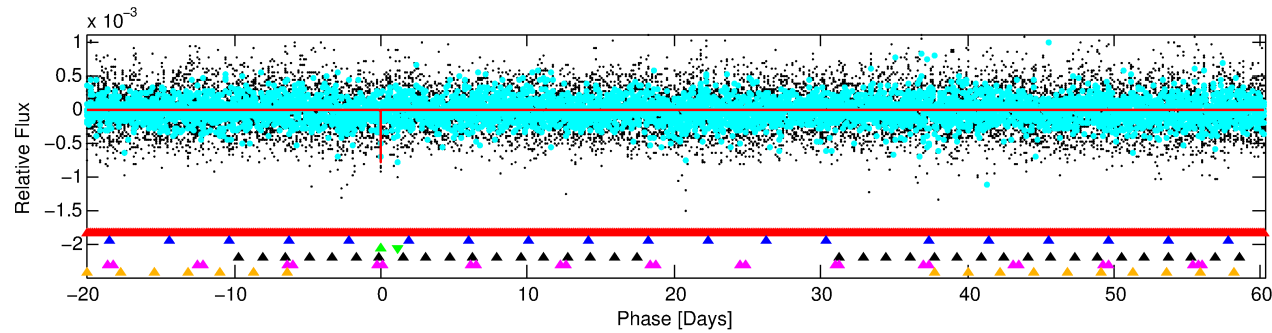
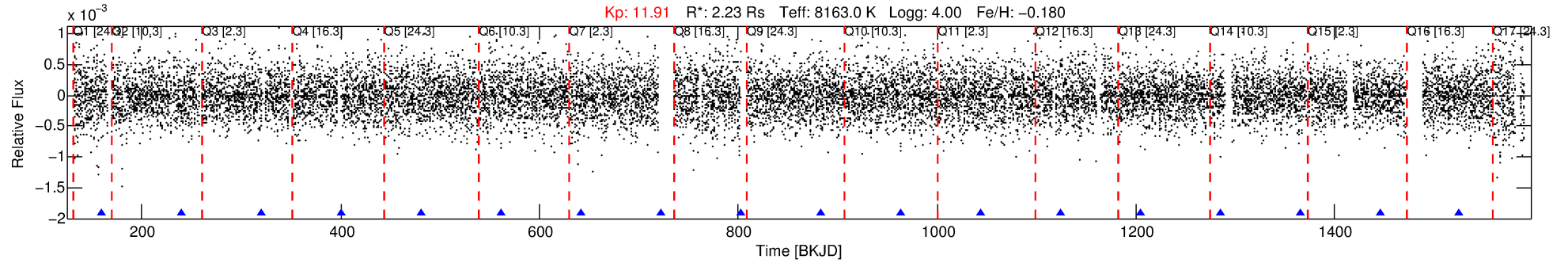
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009305952-03

No Significant Match Found

DV One-Page Summary

KIC: 9305952 Candidate: 3 of 6 Period: 80.340 d



DV Fit Results:

Period = 80.34017 [0.00076] d
Epoch = 159.7433 [0.0065] BKJD
Rp/R* = 0.0274 [0.0431]
a/R* = 248.84 [2207.60]
b = 0.71 [6.37]
Seff = 99.65 [42.14]
Teq = 806 [85] K
Rp = 6.66 [10.65] Re
a = 0.4454 [0.1133] AU
Ag = 803.43 [2572.92] [0.31σ]
Teff = 6632 [5277] K [1.10σ]

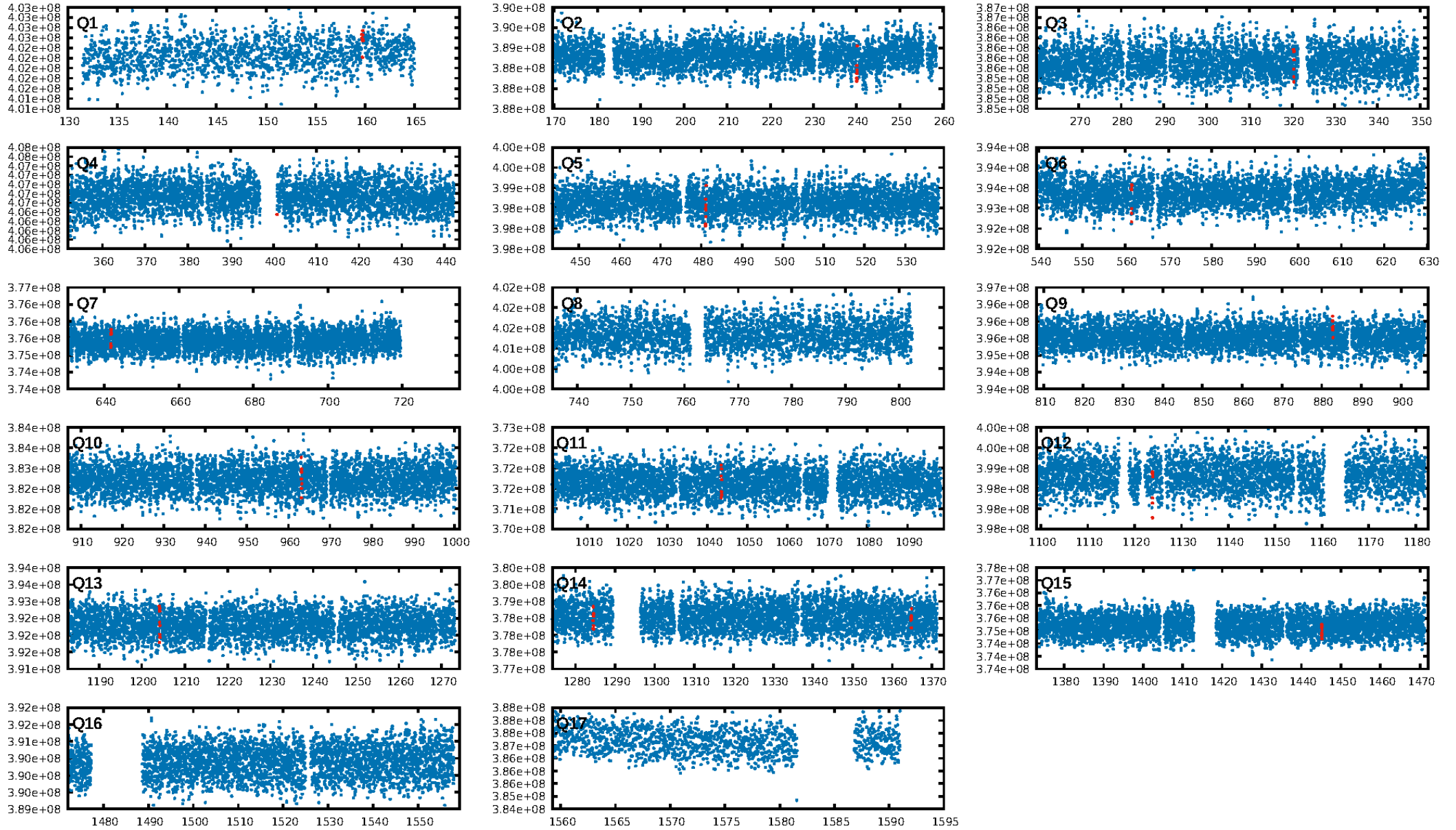
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [25.97σ]
LongPeriod-sig: 100.0% [13.75σ]
ModelChiSquare2-sig: 38.0%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.93
Centroid-sig: 27.6%
Centroid-so: 0.241 arcsec [1.16σ]
OotOffset-rm: 0.085 arcsec [0.20σ]
KicOffset-rm: 0.381 arcsec [0.96σ]
OotOffset-st: 4/4/1/2 [11]
KicOffset-st: 4/4/1/2 [11]
DiffImageQuality-fgm: 0.64 [7/11]
DiffImageOverlap-fno: 0.00 [0/13]

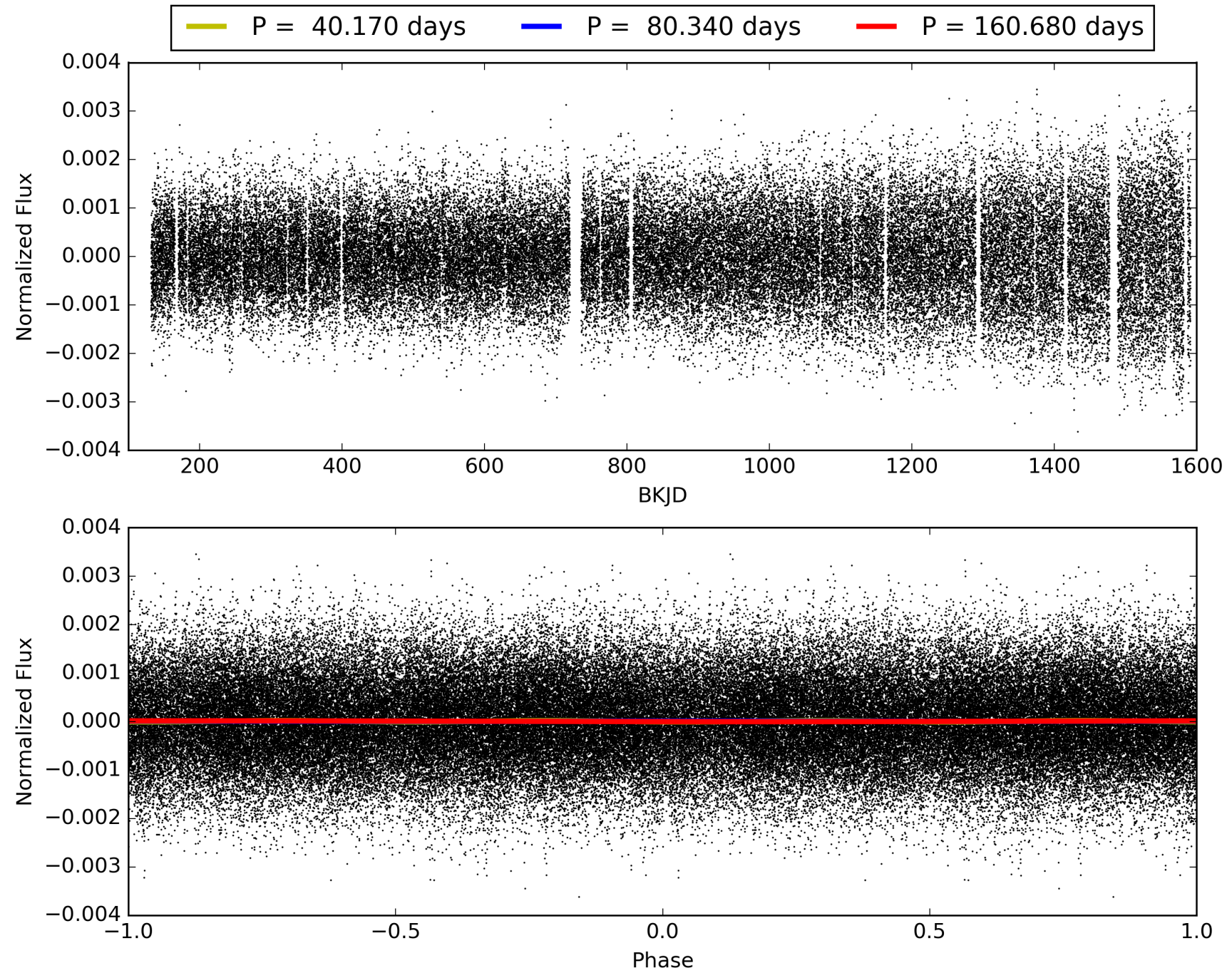
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:01:17 Z

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

TCE 009305952-03, PDC Light Curves

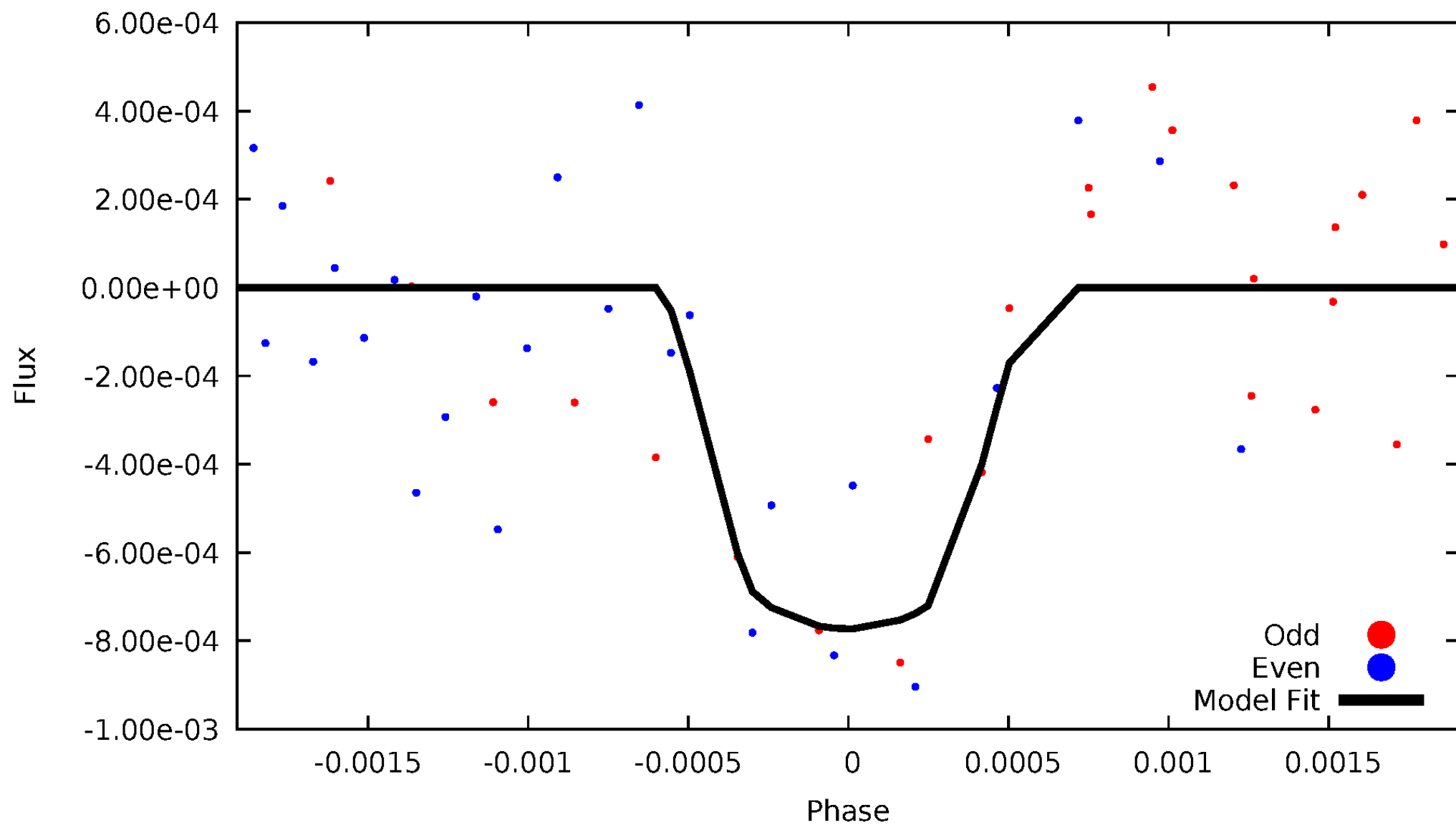


TCE 009305952-03



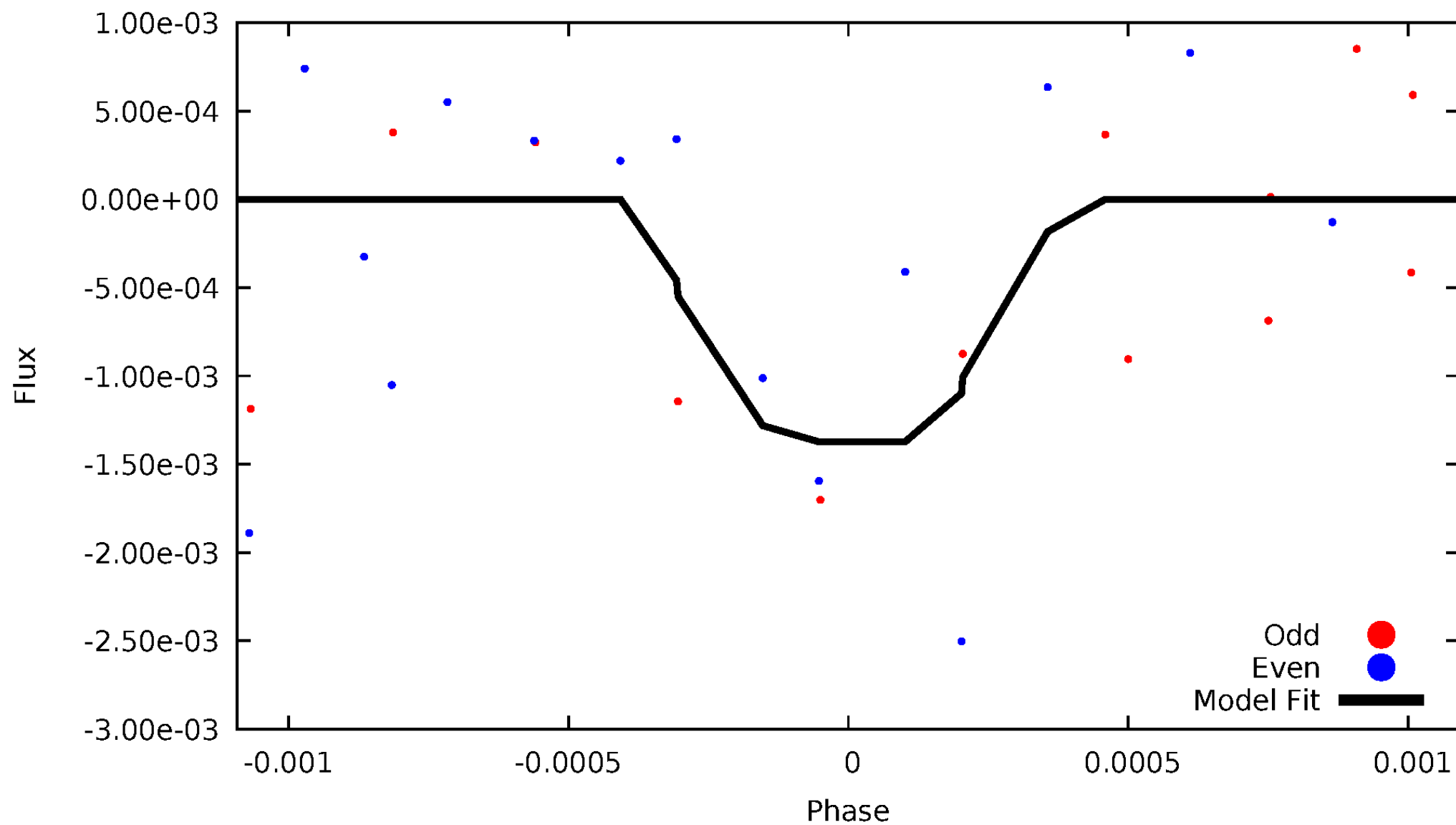
DV Odd/Even

TCE 009305952-03



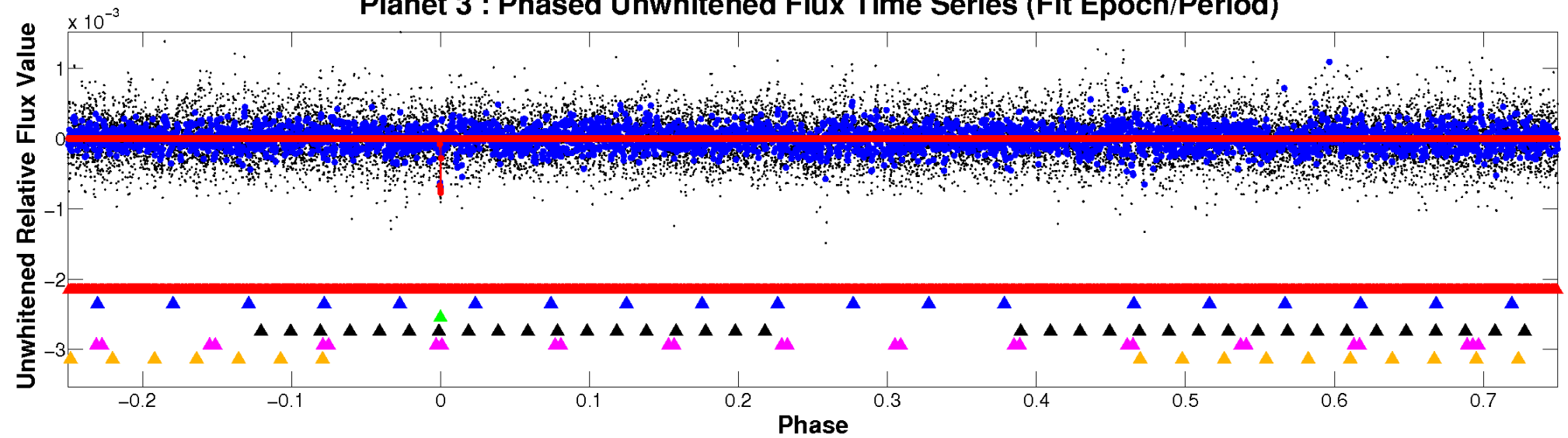
ALT Odd/Even

TCE 009305952-03

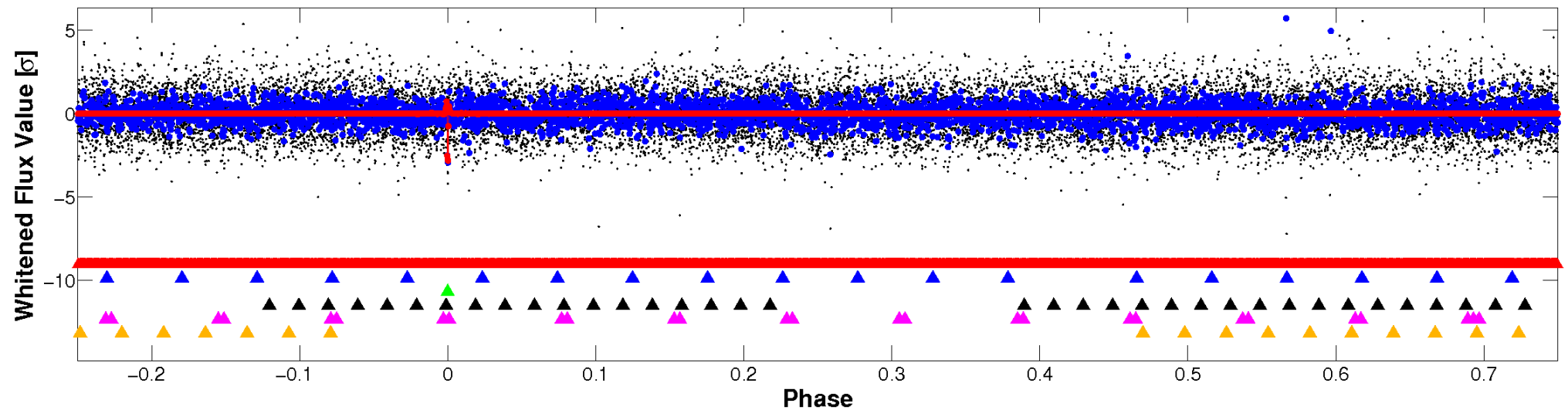


Non-Whitened Vs. Whitened Light Curve

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

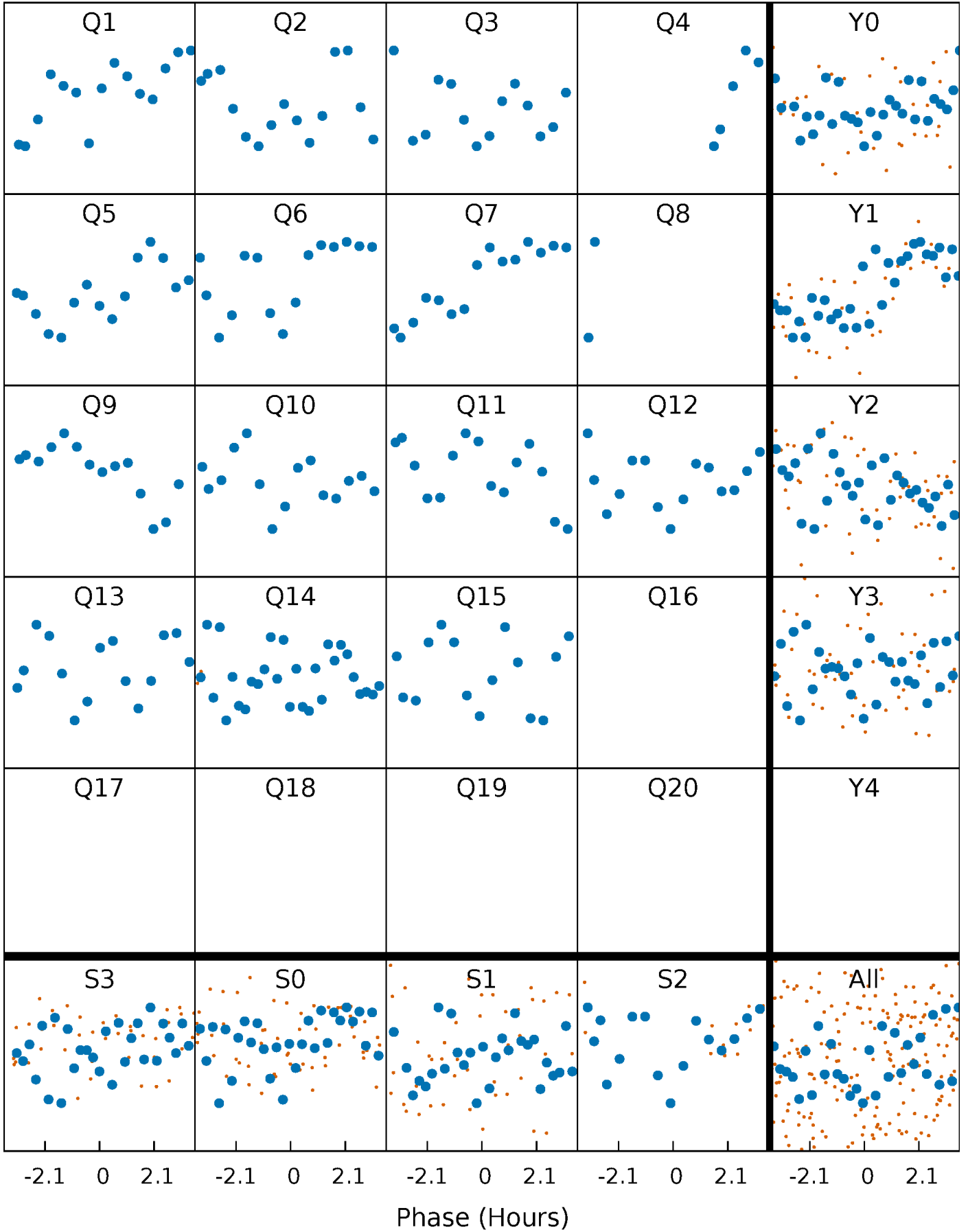


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



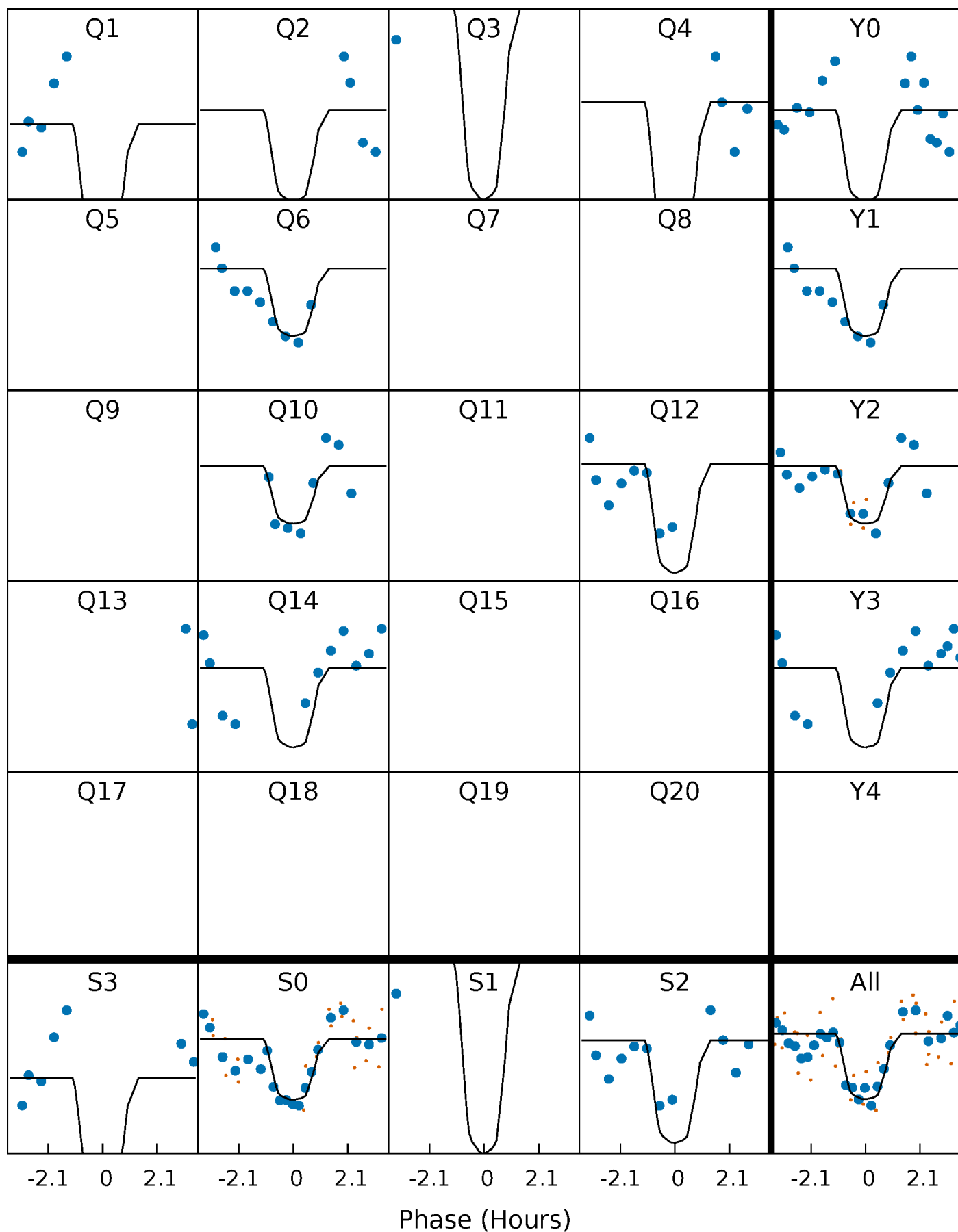
PDC Quarter-Phased Transit Curves

TCE 009305952-03 $P = 80.340169$ Days $T_0 = 159.743277$ (BKJD)



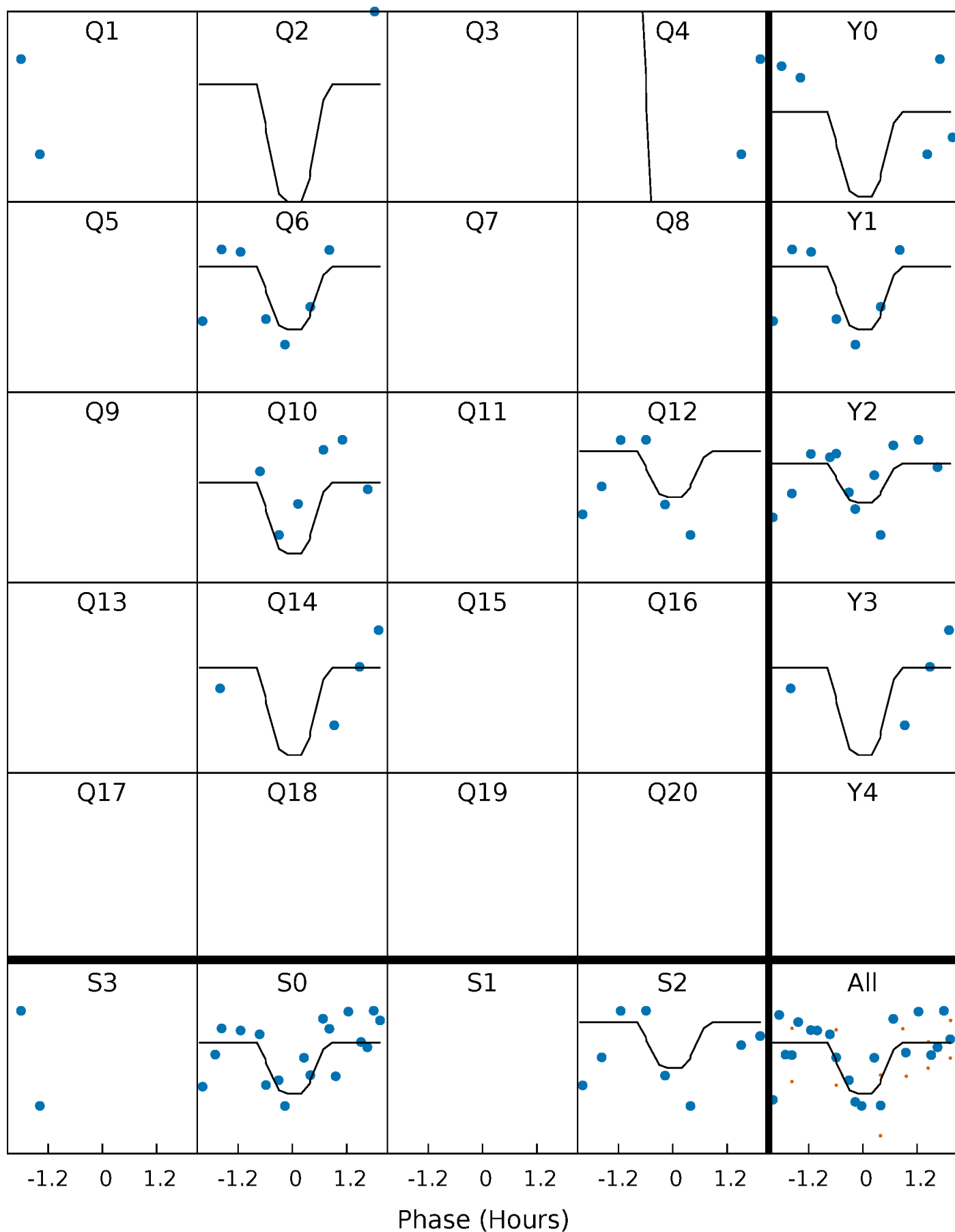
DV Quarter-Phased Transit Curves

TCE 009305952-03 P= 80.340169 Days $T_0=159.743277$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

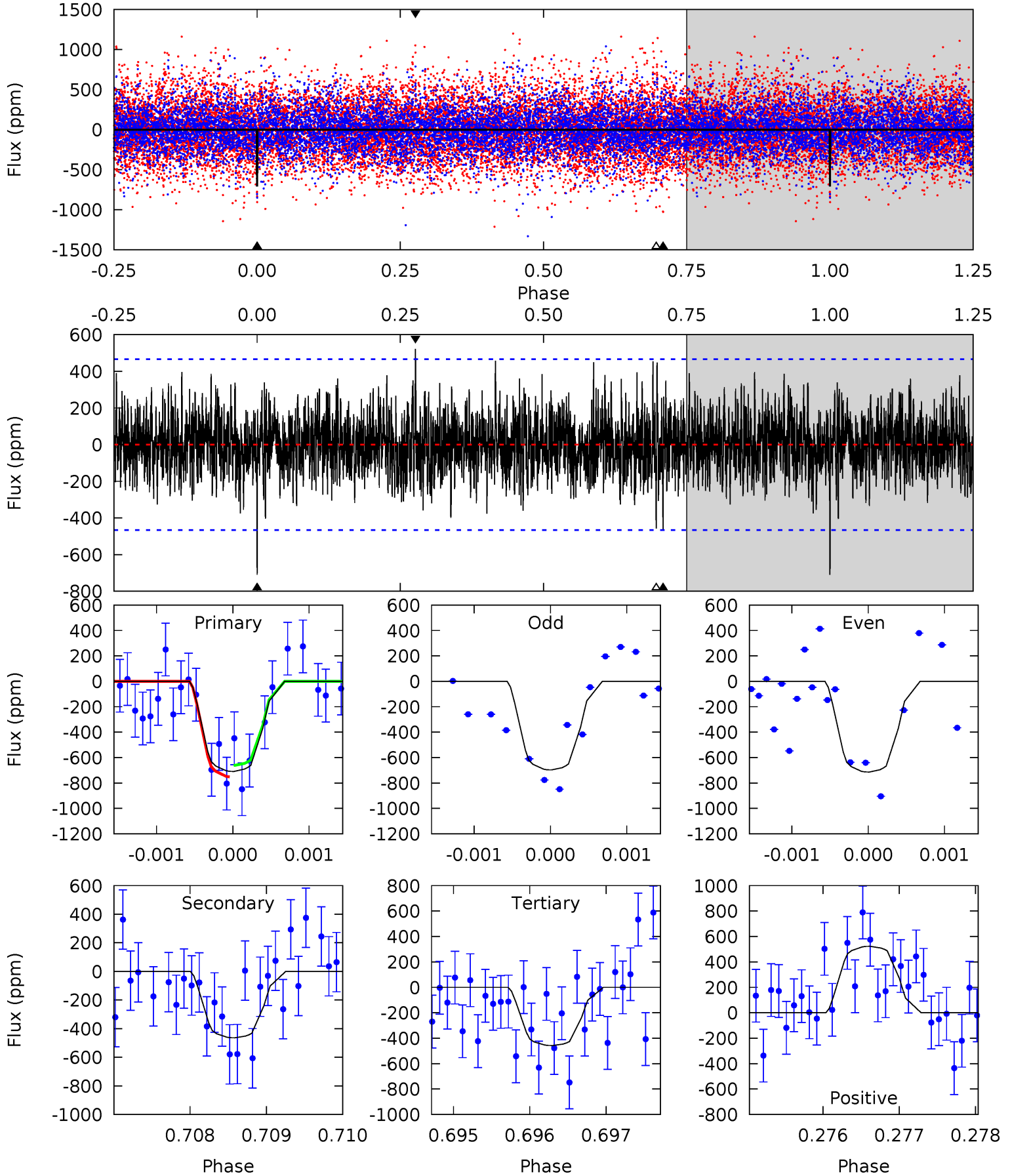
TCE 009305952-03 P= 80.338491 Days $T_0=159.748298$ (BKJD)



DV Model-Shift Uniqueness Test

009305952-03, P = 80.340169 Days, E = 79.403108 Days

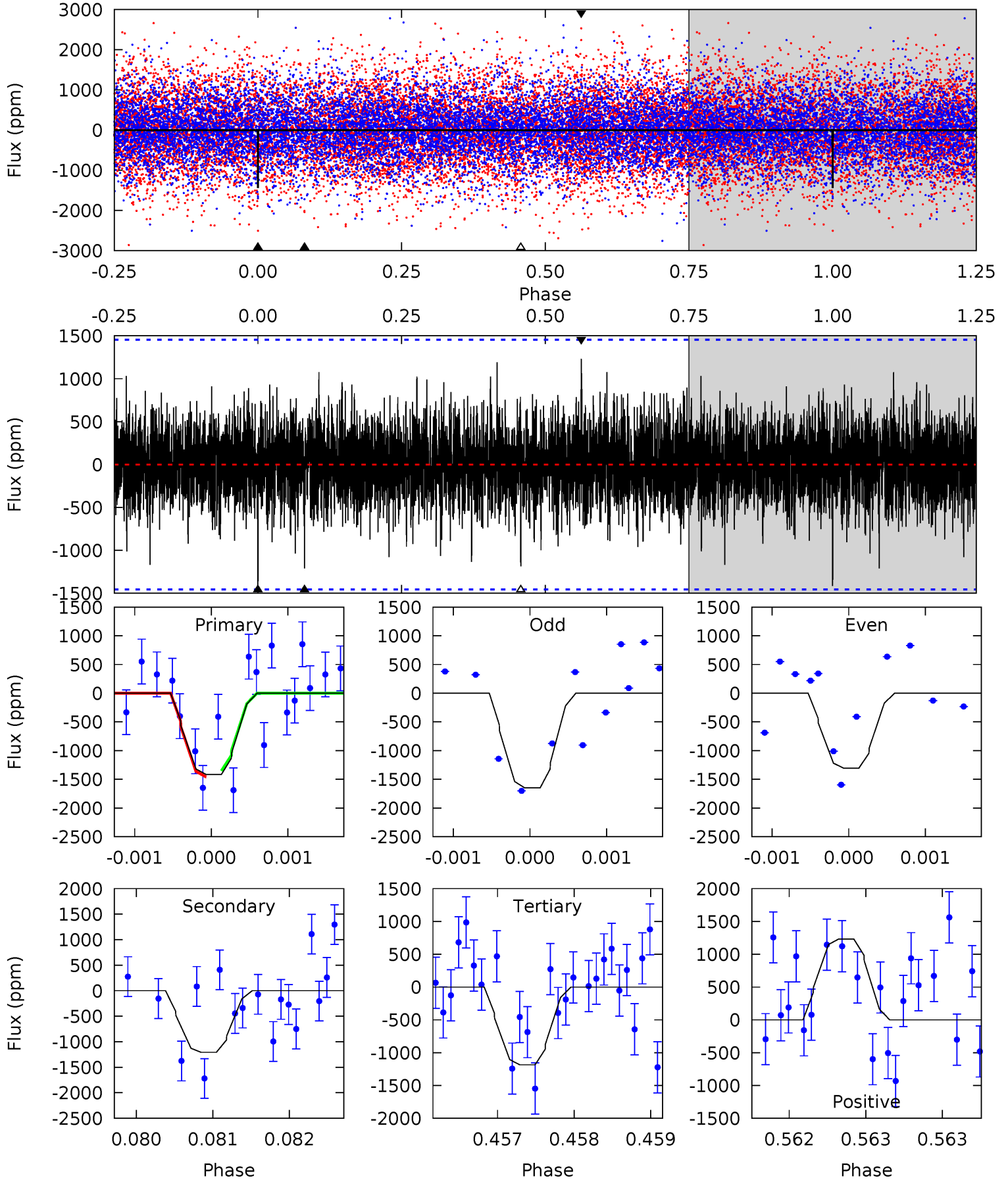
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.28	5.41	5.34	6.10	5.44	3.27	1.51	2.94	2.18	0.07	-0.68	0.10	0.98	0.42	0.52



Alt Model-Shift Uniqueness Test

009305952-03, P = 80.338491 Days, E = 79.409807 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.35	4.57	4.48	4.65	5.50	3.36	1.21	0.87	0.70	0.09	-0.08	0.63	0.87	0.46	0.20



Stellar Parameters For KIC 009305952

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8163^{+226}_{-340}	$4.003^{+0.221}_{-0.136}$	$-0.180^{+0.200}_{-0.350}$	$2.229^{+0.423}_{-0.634}$	$1.825^{+0.112}_{-0.336}$	$0.232^{+0.301}_{-0.083}$
	+3%/-4%	+6%/-3%	+111%/-194%	+19%/-28%	+6%/-18%	+130%/-36%
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 009305952-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-464 ± 86	$9.88^{+8.98}_{-6.28}$	1117^{+72}_{-90}	5634^{+5027}_{-1323}	494^{+3491}_{-360}
Alt.	-1208 ± 265	$11.22^{+9.68}_{-7.29}$	1116^{+71}_{-88}	6684^{+7269}_{-1648}	967^{+7235}_{-685}

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 $A_{obs} \gg 1.0$

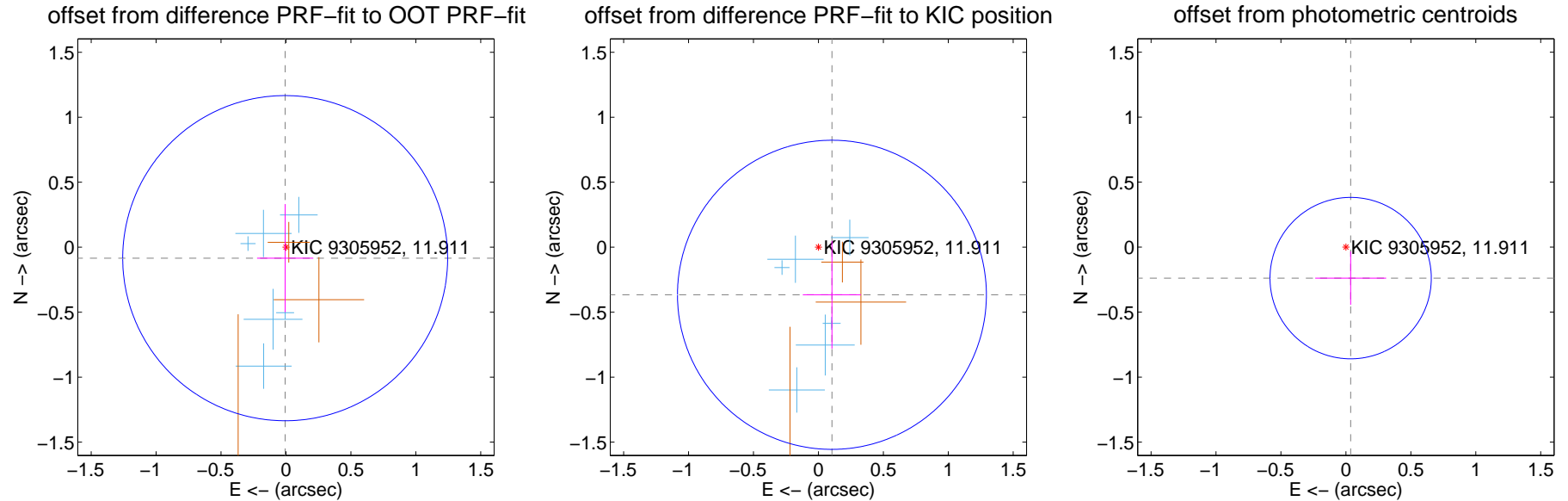
DV Centroid Data

Supplemental centroid analysis for 009305952-03. **Kepler magnitude: 11.91.** Transit SNR 8.53

There are 7 quarters with good PRF difference image offsets

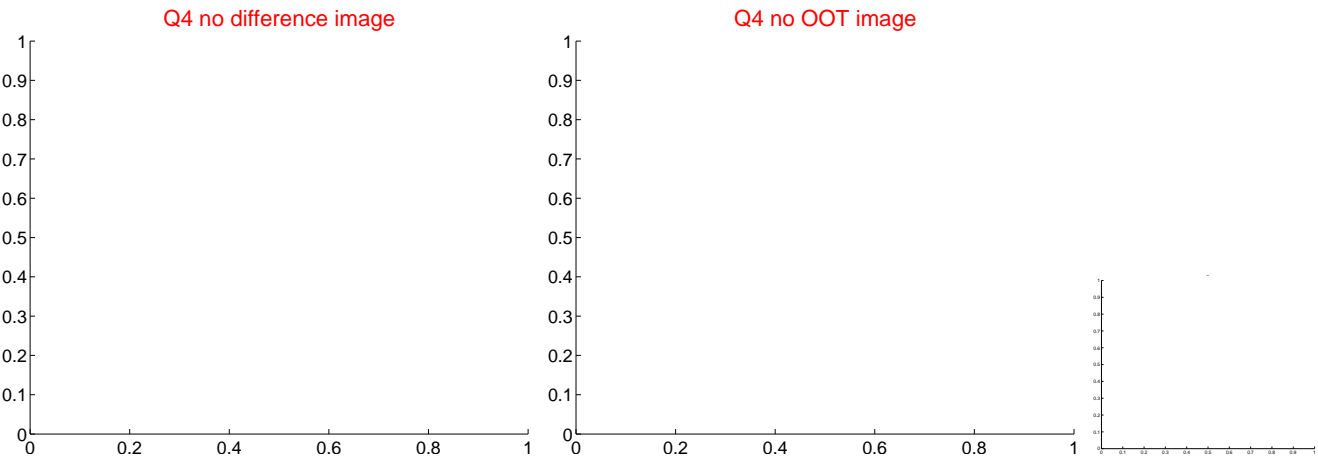
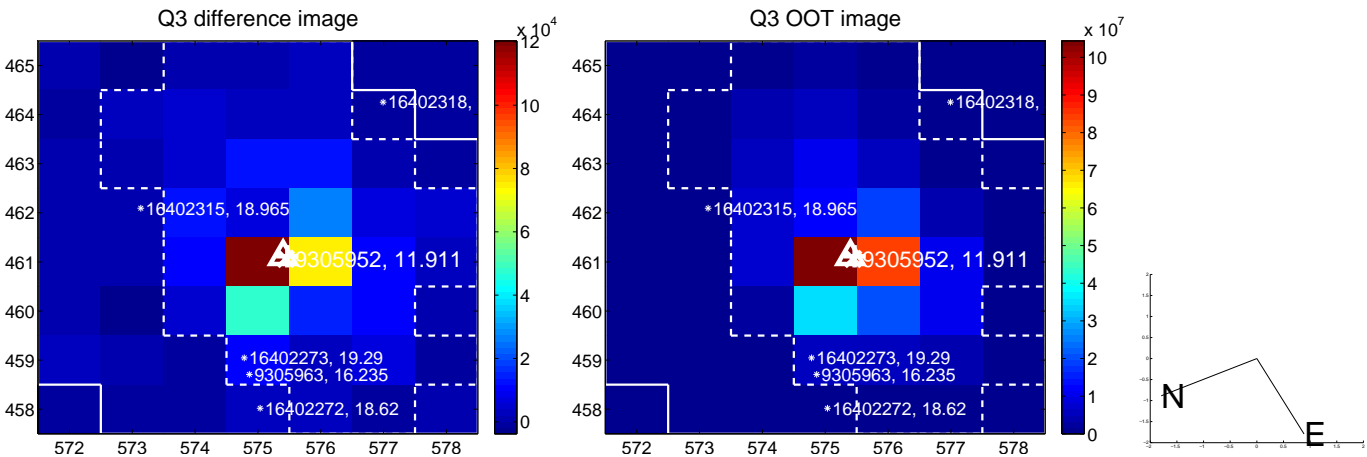
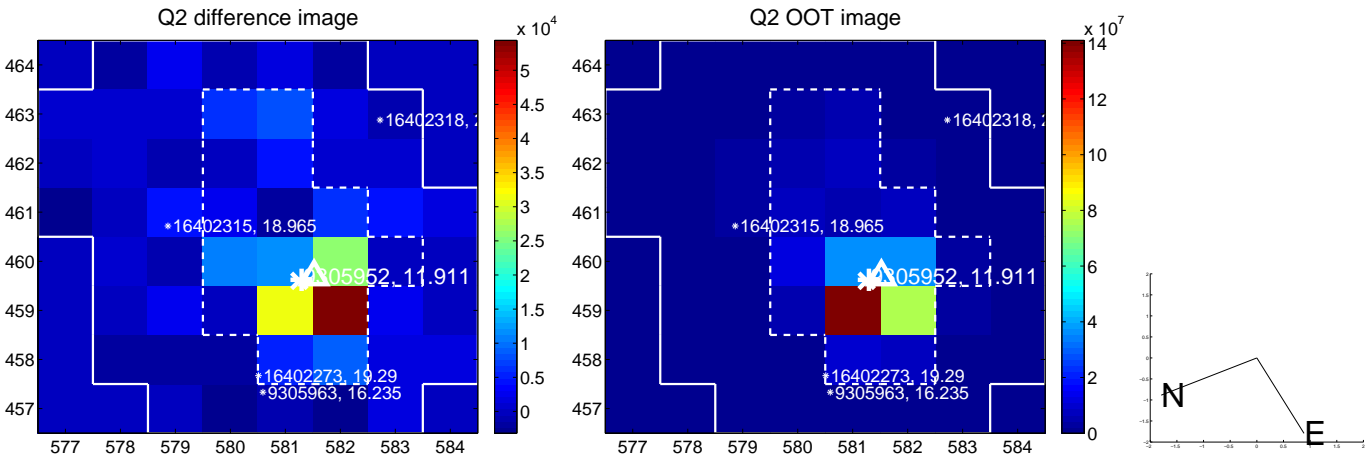
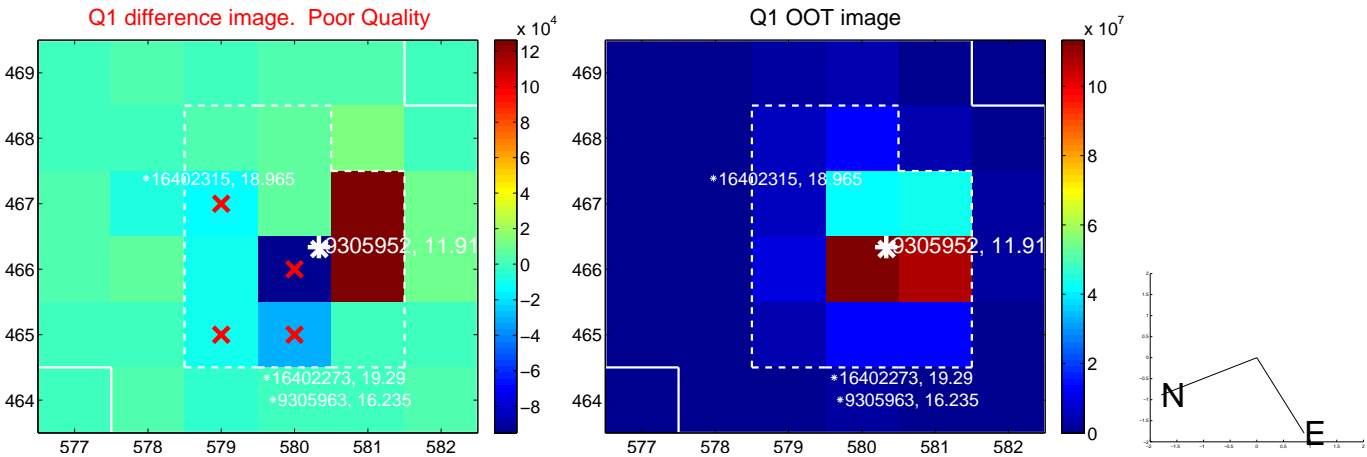
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.085 ± 0.417	0.20	0.006 ± 0.217	-0.084 ± 0.416
PRF-fit source offset from KIC position	0.381 ± 0.397	0.96	-0.104 ± 0.224	-0.366 ± 0.415
photometric centroid source offset	0.24 ± 0.21	1.16	-0.04 ± 0.27	-0.24 ± 0.21

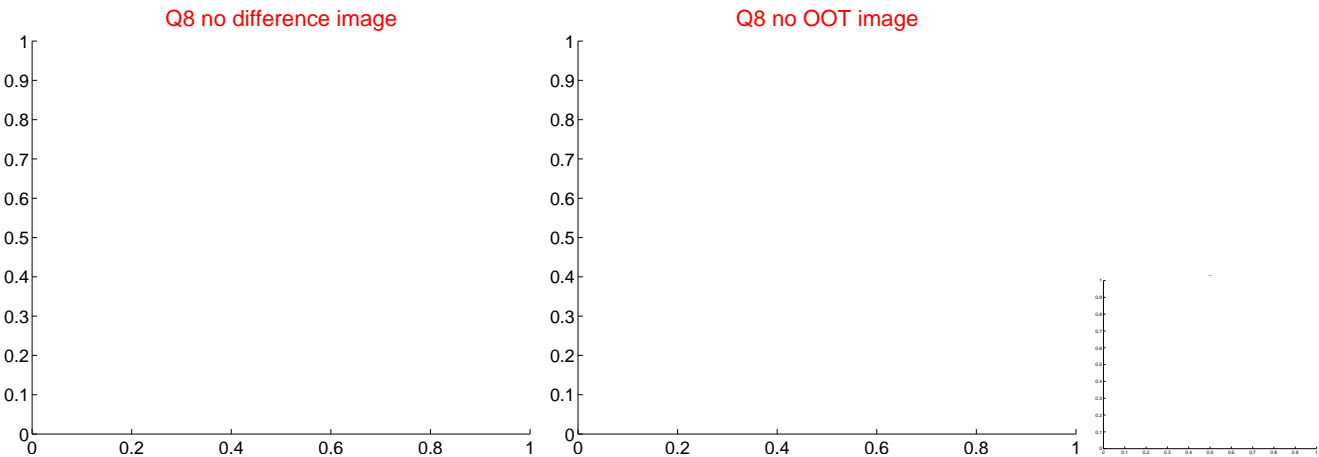
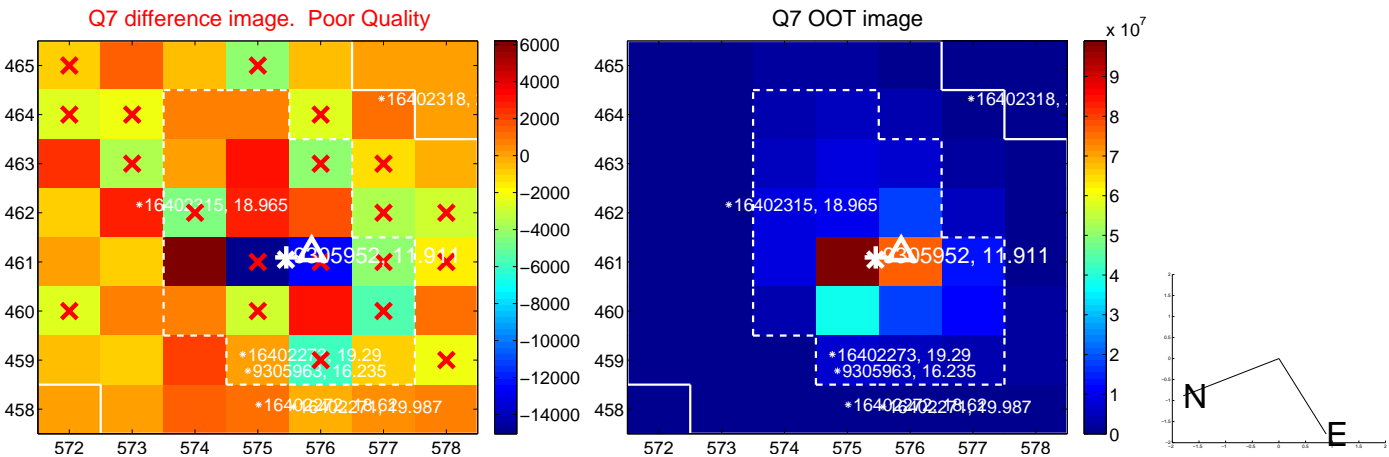
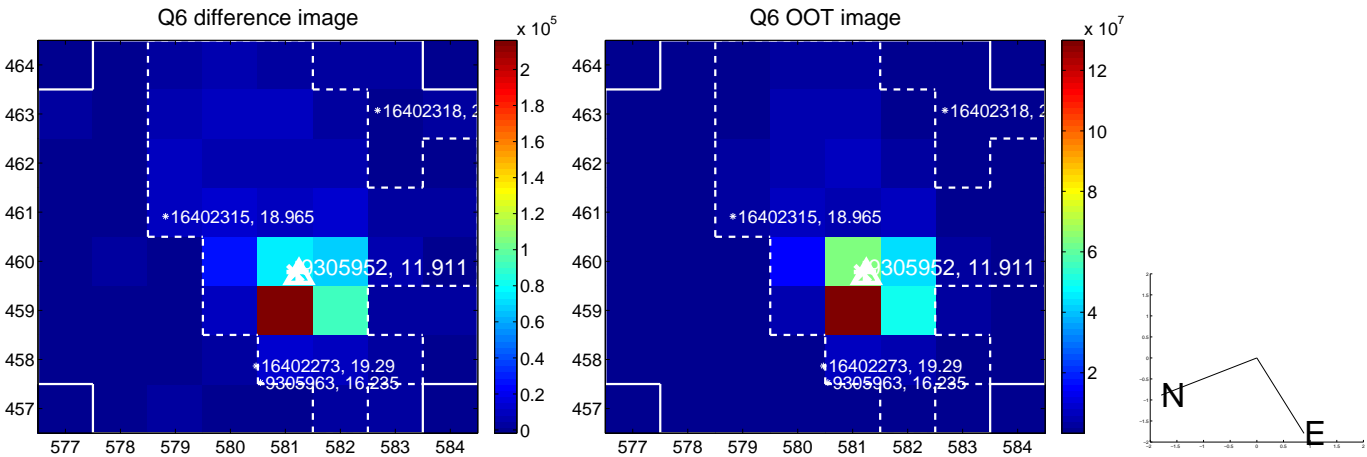
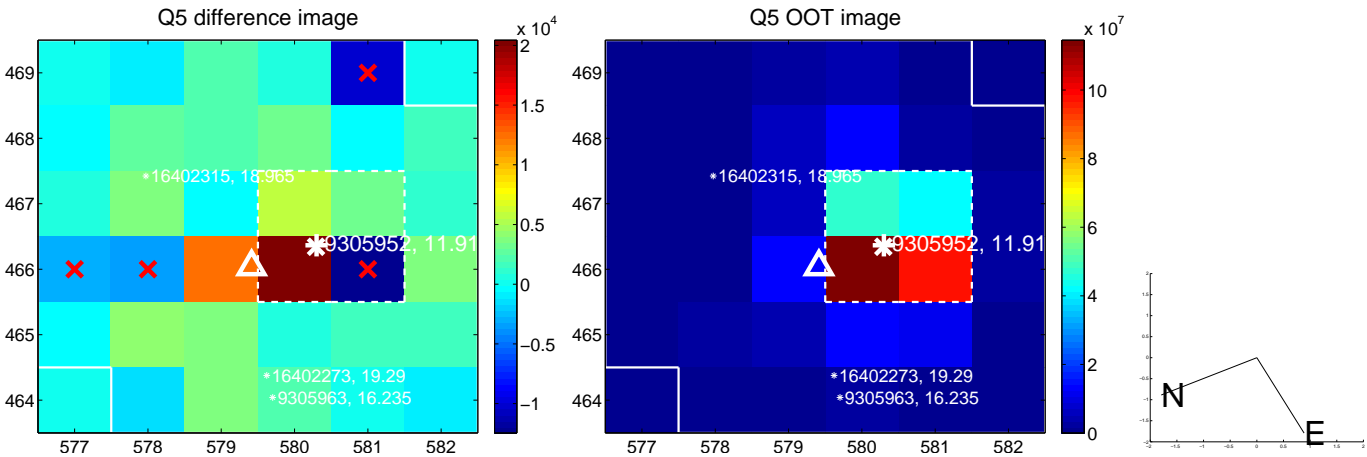


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

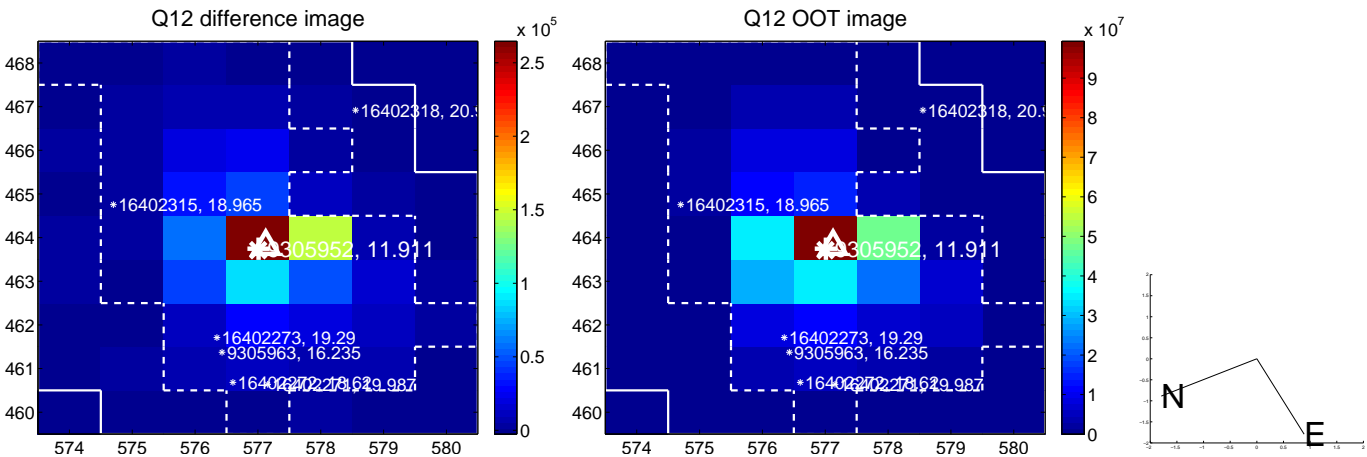
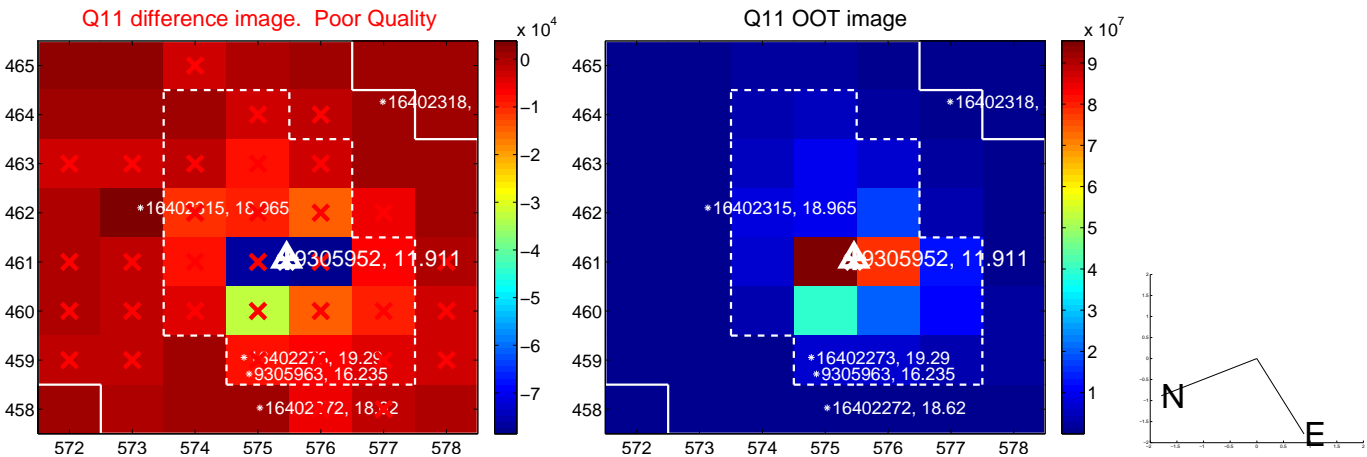
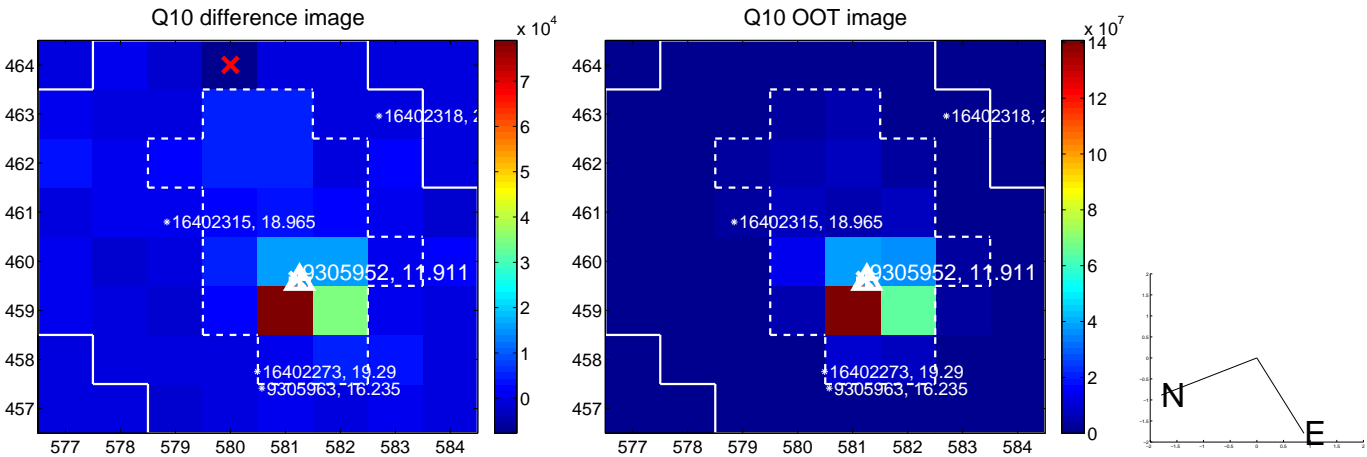
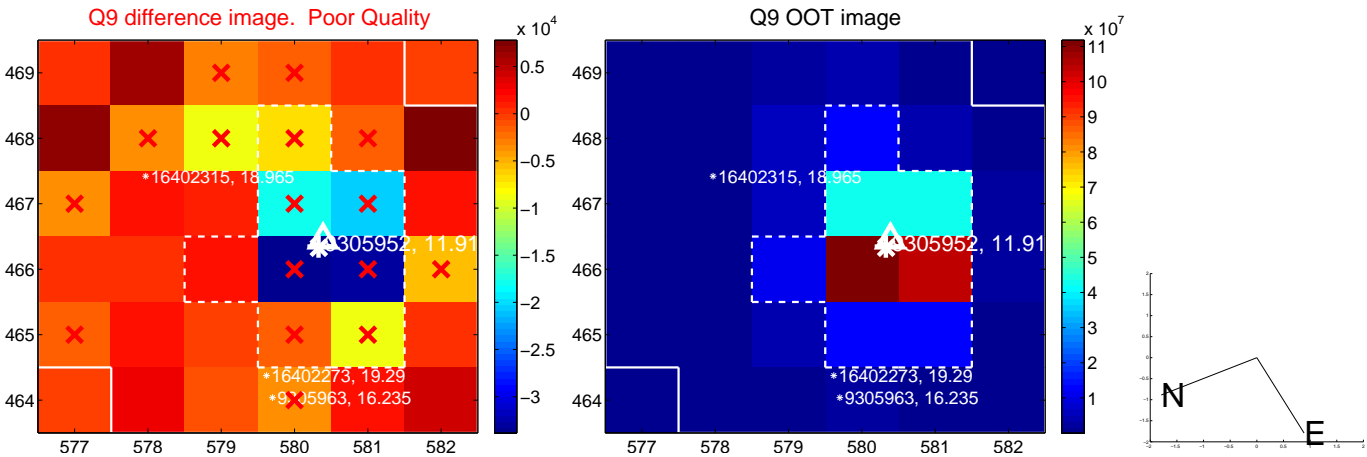
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



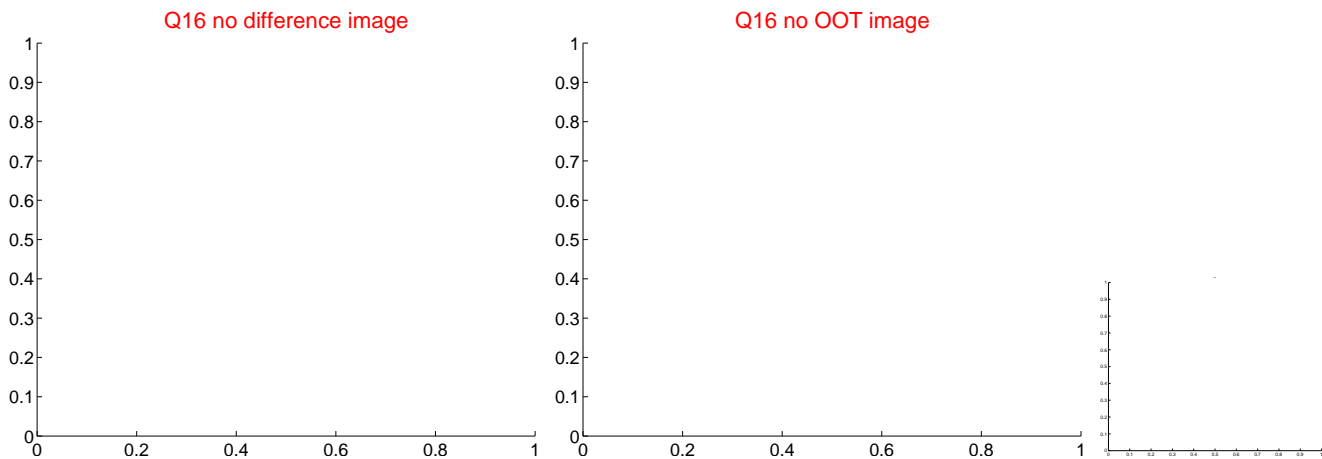
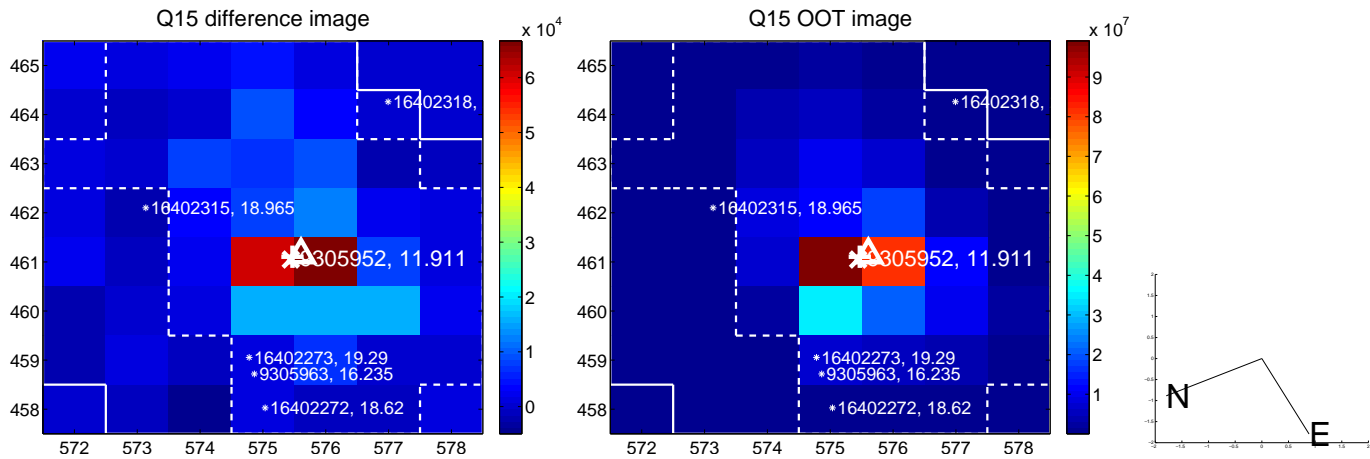
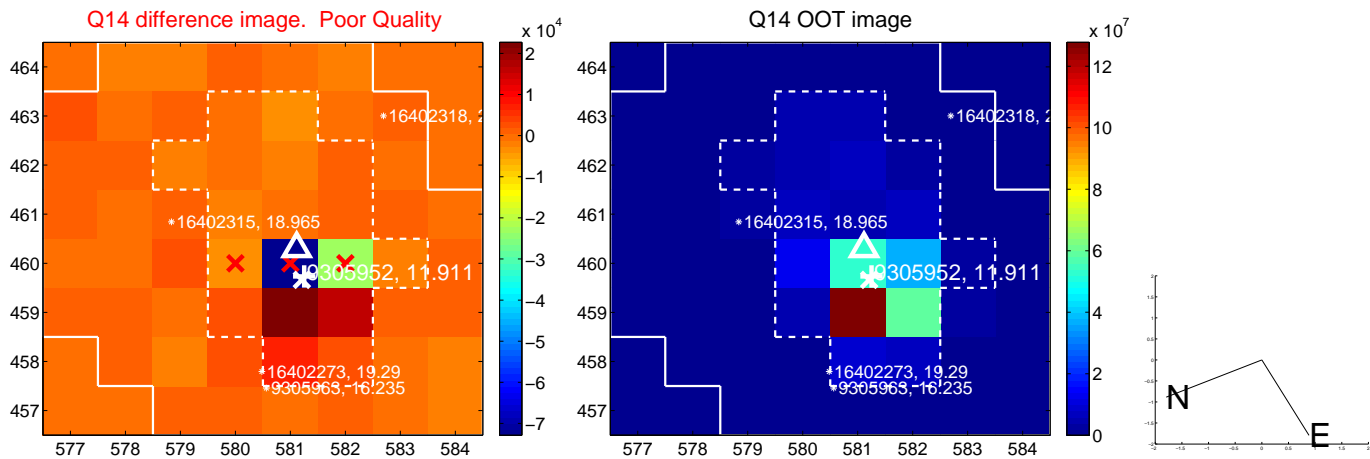
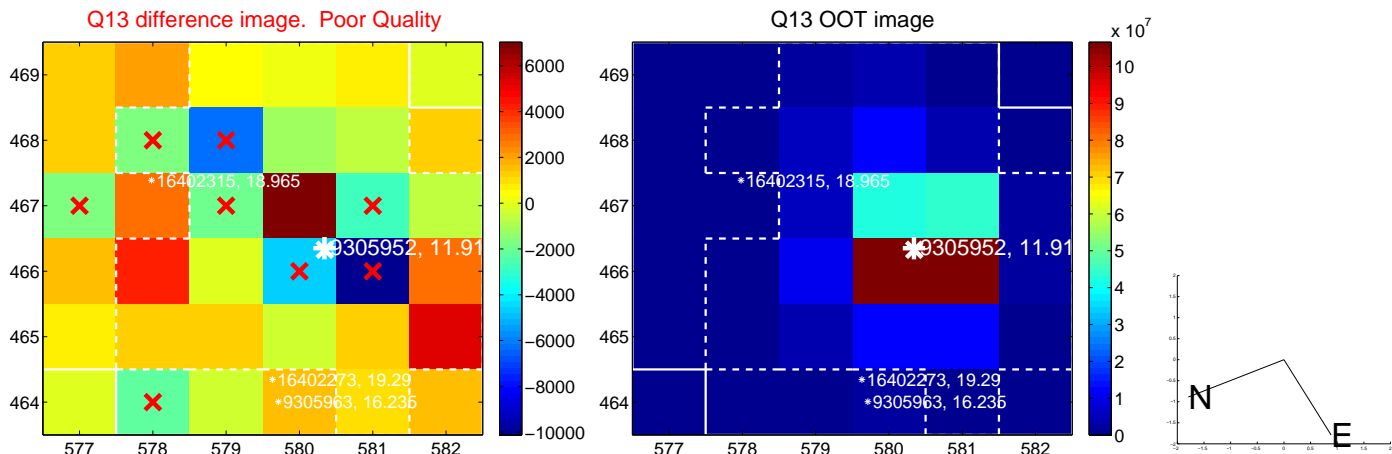
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



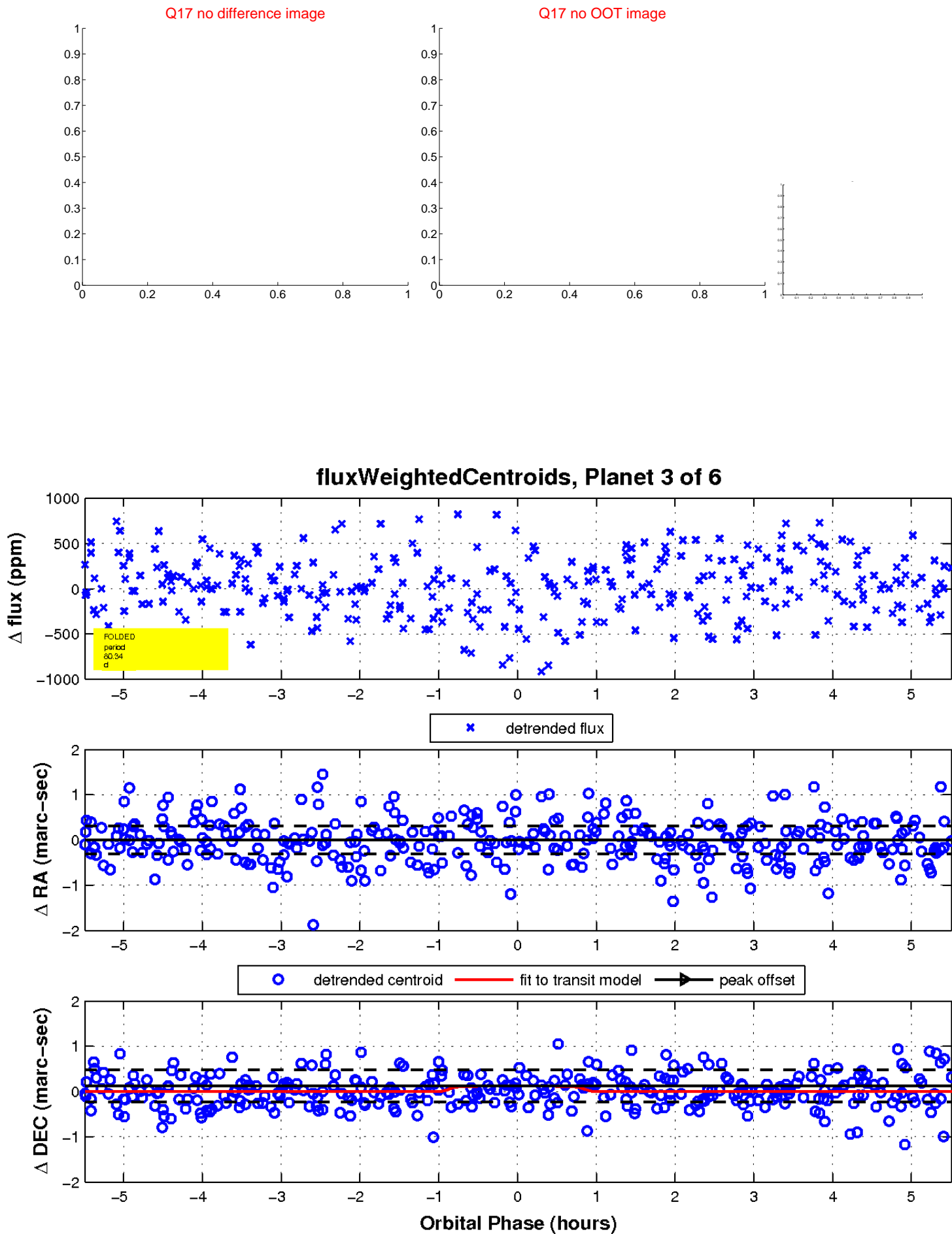
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

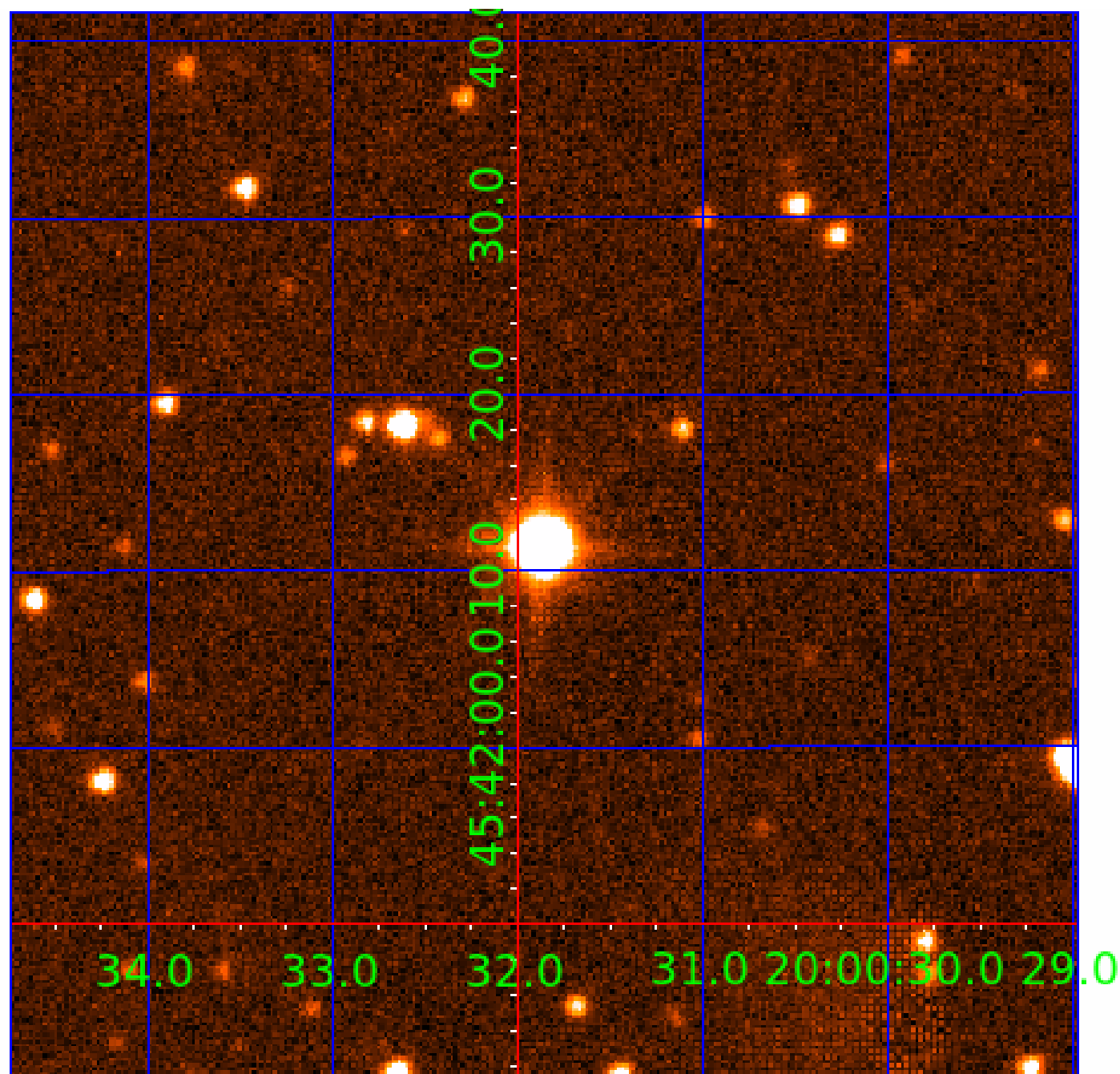


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009305952

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})
009305952-01	OBS	No	0.655430	131.760158	24.1	3.682	10.8	5.6	2.23	8163	1.28	60673.38
009305952-02	OBS	No	76.264928	190.152059	612.0	3.286	8.4	9.0	2.23	8163	6.67	106.81
009305952-03	OBS	No	80.340169	159.743277	772.7	1.840	7.9	8.5	2.23	8163	6.66	99.64
009305952-04	OBS	No	40.969414	150.066577	325.8	4.327	8.0	8.1	2.23	8163	4.69	244.58
009305952-05	OBS	No	55.596444	135.382791	477.7	2.971	8.2	6.8	2.23	8163	5.55	162.79
009305952-06	OBS	No	82.605886	197.477337	133.5	3.500	7.1	-1.0	2.23	8163	2.60	96.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009305952-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009305952-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009305952-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009305952-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009305952-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009305952-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

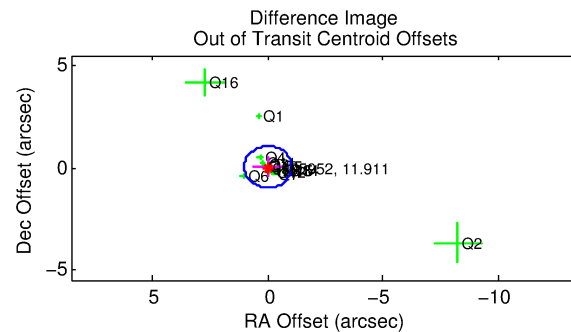
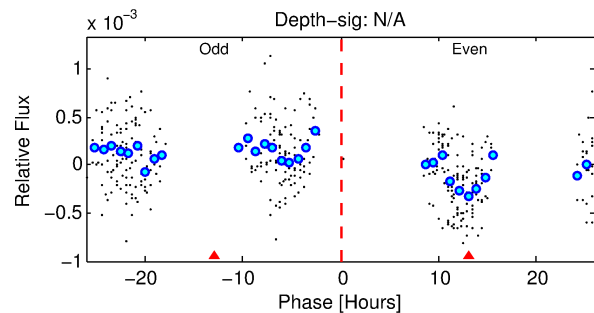
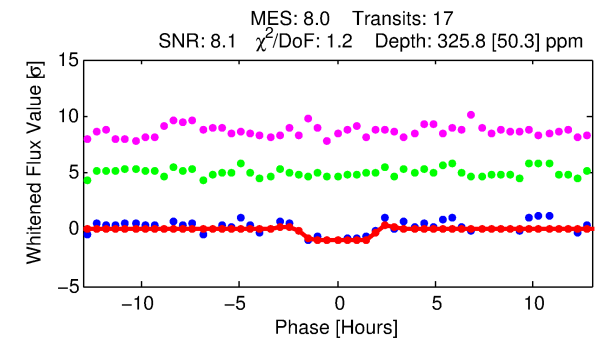
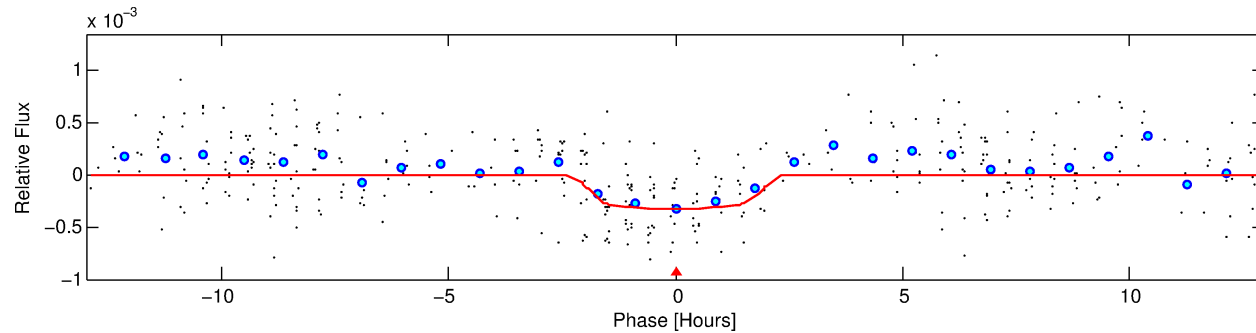
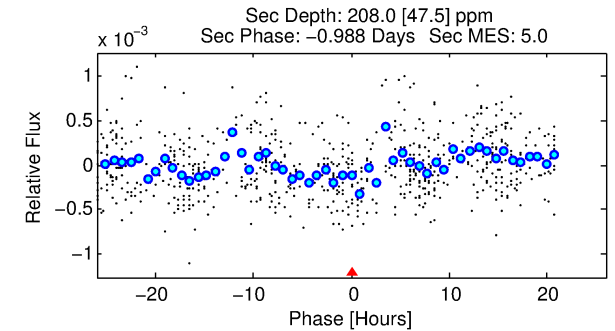
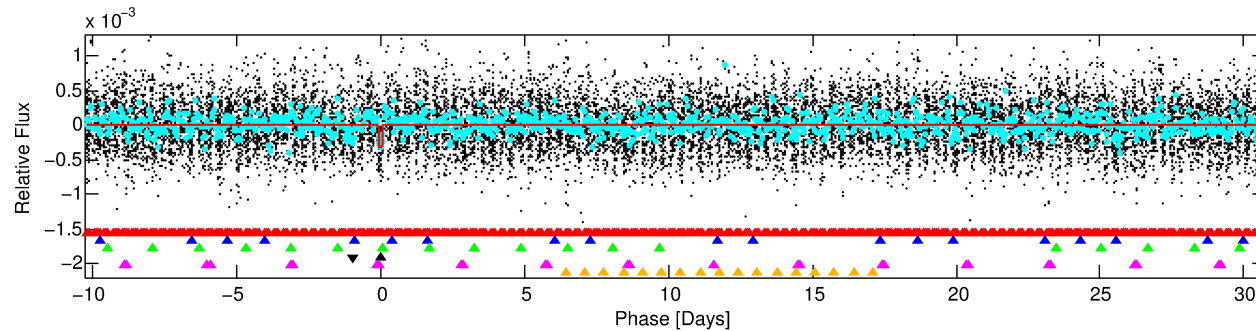
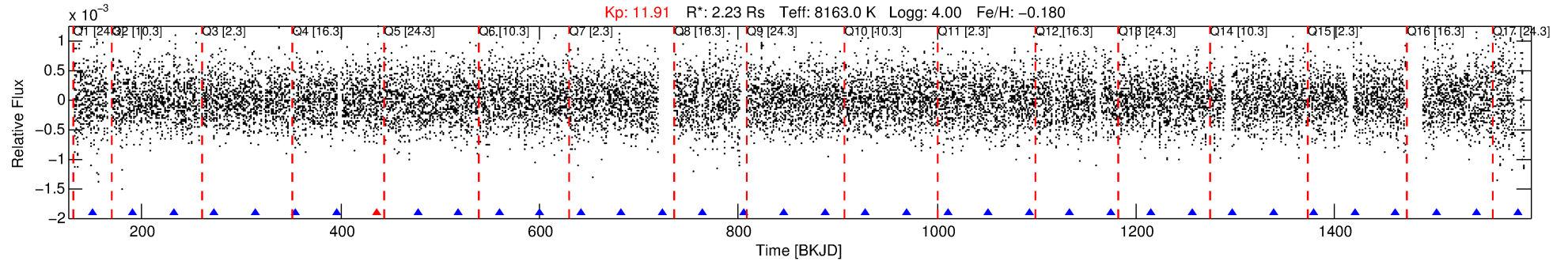
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009305952-04

No Significant Match Found

DV One-Page Summary

KIC: 9305952 Candidate: 4 of 6 Period: 40.969 d



DV Fit Results:

Period = 40.96941 [0.00086] d
Epoch = 150.0666 [0.0125] BKJD
Rp/R* = 0.0193 [0.0119]
a/R* = 34.46 [127.99]
b = 0.90 [0.78]
Seff = 244.58 [103.42]
Teq = 1008 [107] K
Rp = 4.69 [3.19] Re
a = 0.2843 [0.0723] AU
Ag = 419.99 [552.85] [0.76σ]
Teffp = 7058 [2239] K [2.70σ]

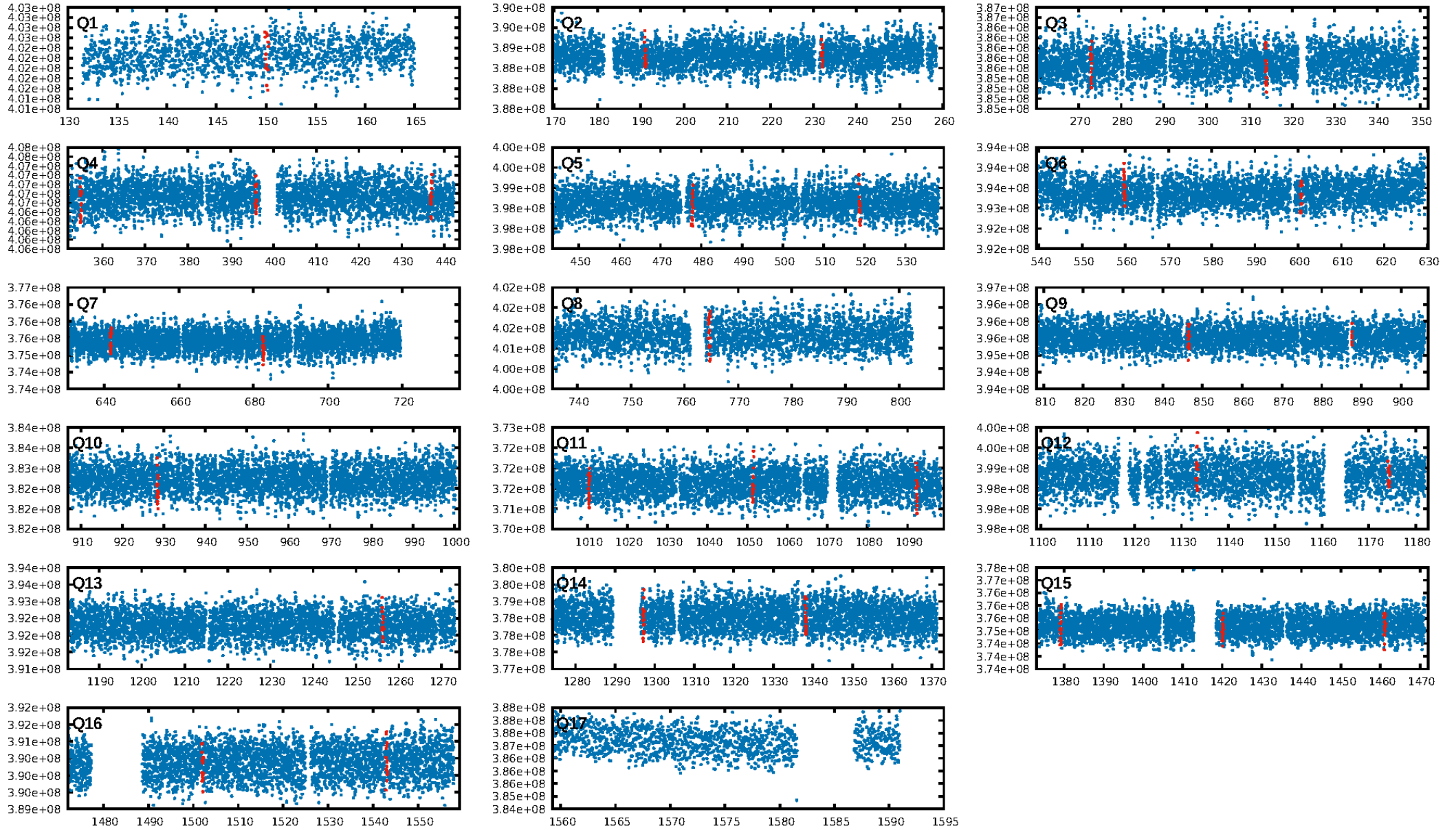
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [170.30σ]
LongPeriod-sig: 100.0% [66.89σ]
ModelChiSquare2-sig: 7.4%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.94 [16/17]
GhostDiagnostic-chr: 2.834
Centroid-sig: 0.3%
Centroid-so: 0.576 arcsec [2.25σ]
OotOffset-rm: 0.034 arcsec [0.10σ]
KicOffset-rm: 0.135 arcsec [0.18σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 0.00 [0/14]

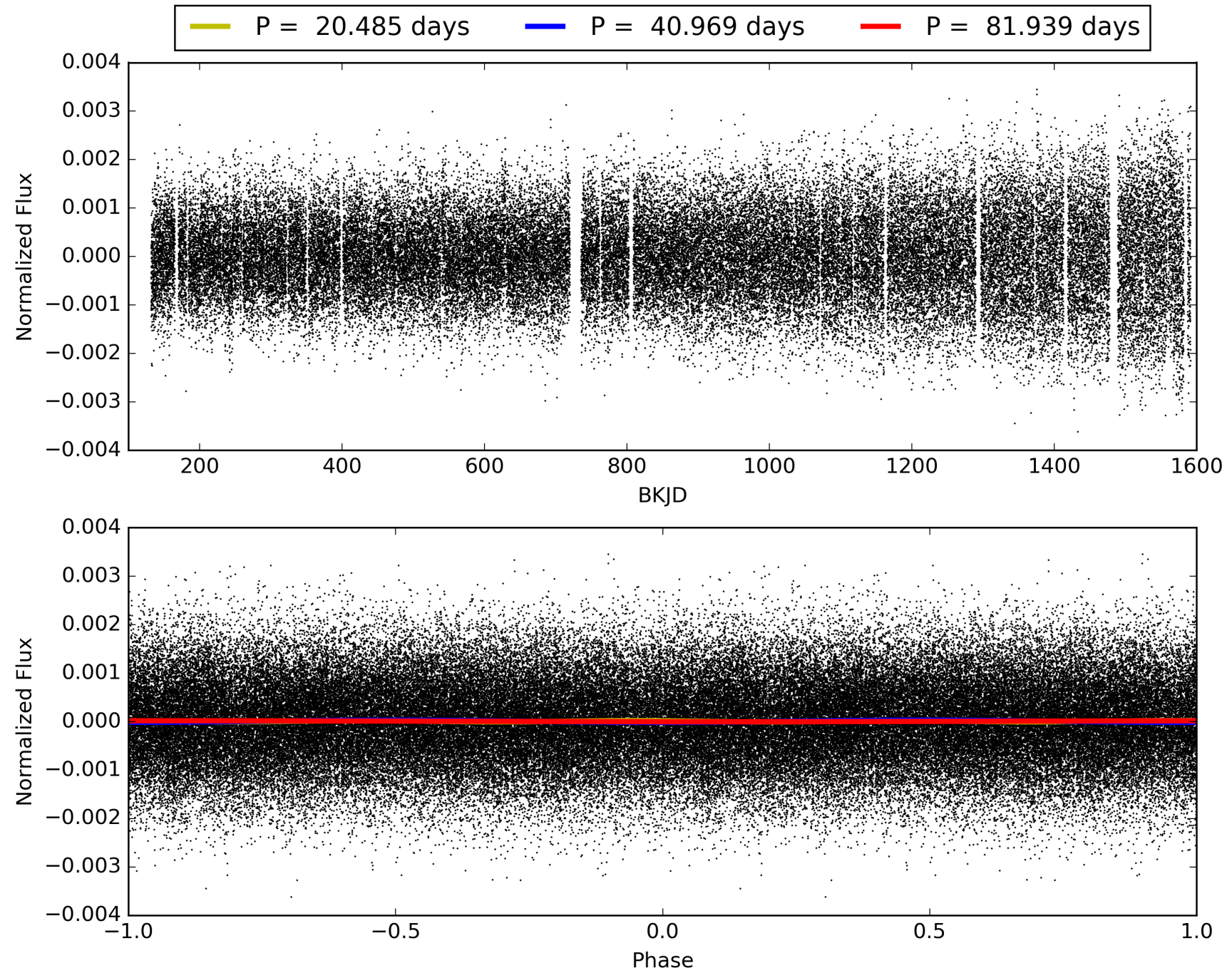
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:01:21 Z

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

TCE 009305952-04, PDC Light Curves

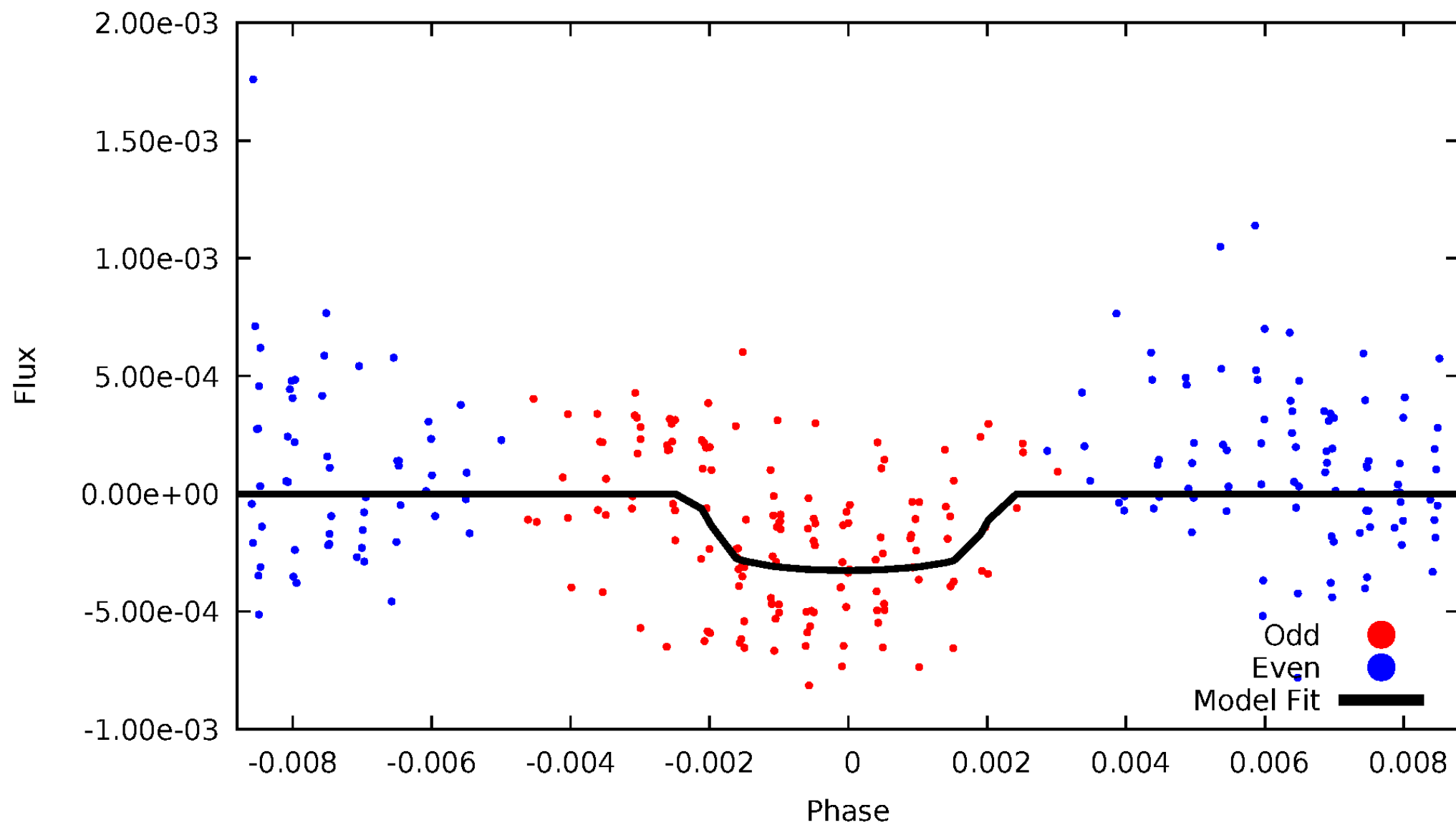


TCE 009305952-04



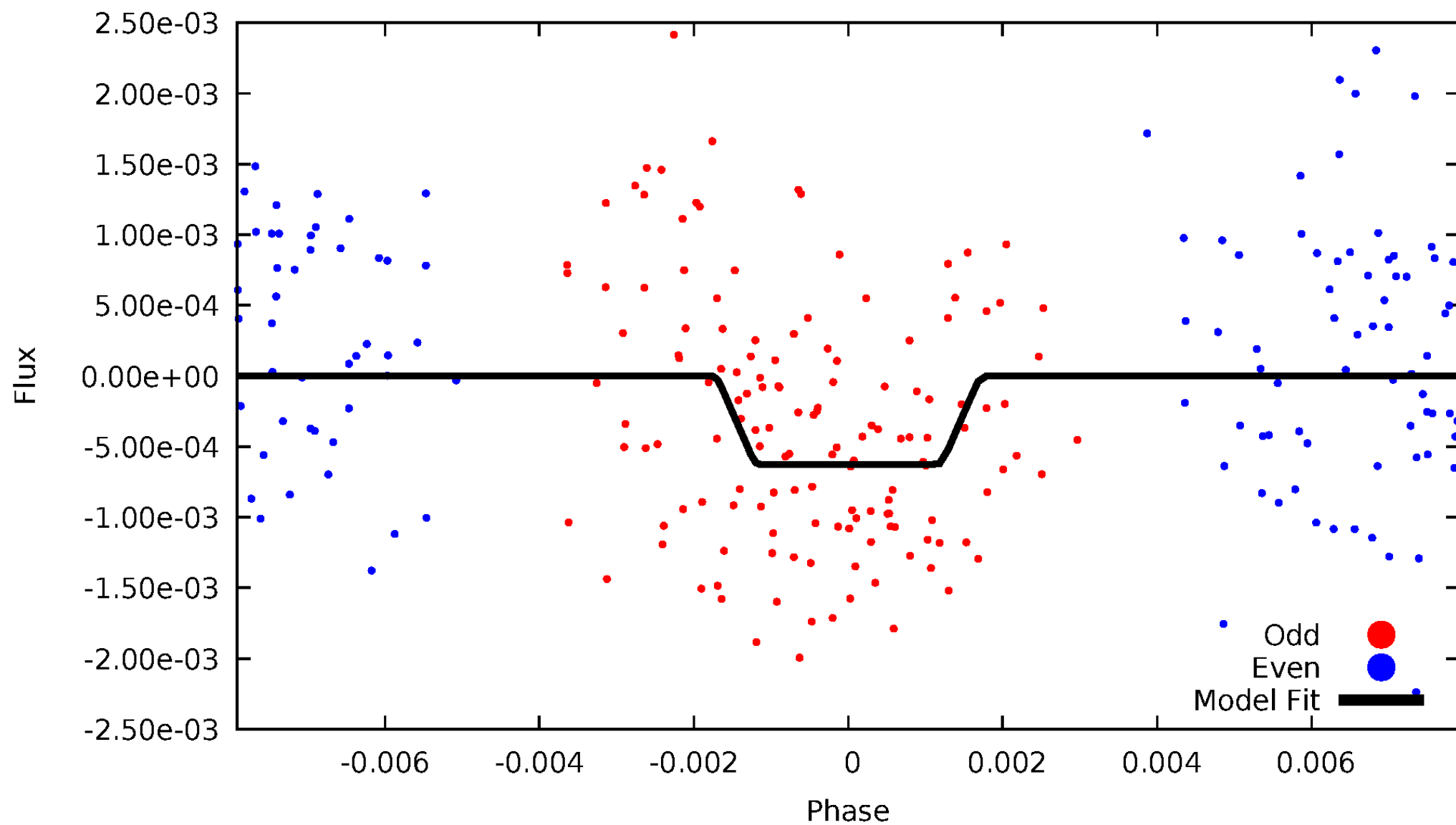
DV Odd/Even

TCE 009305952-04



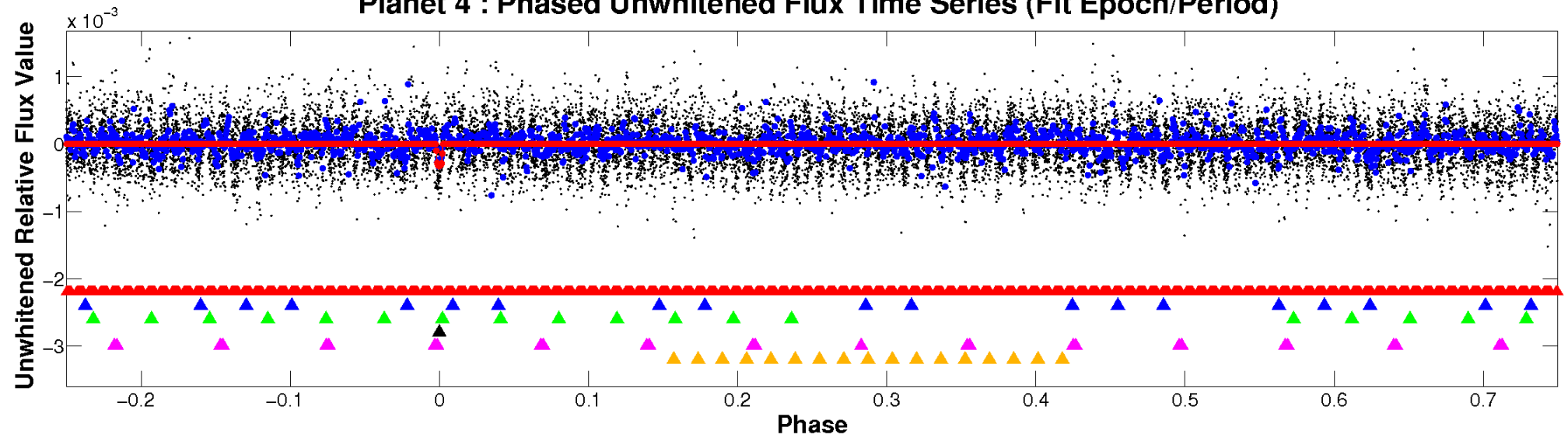
ALT Odd/Even

TCE 009305952-04

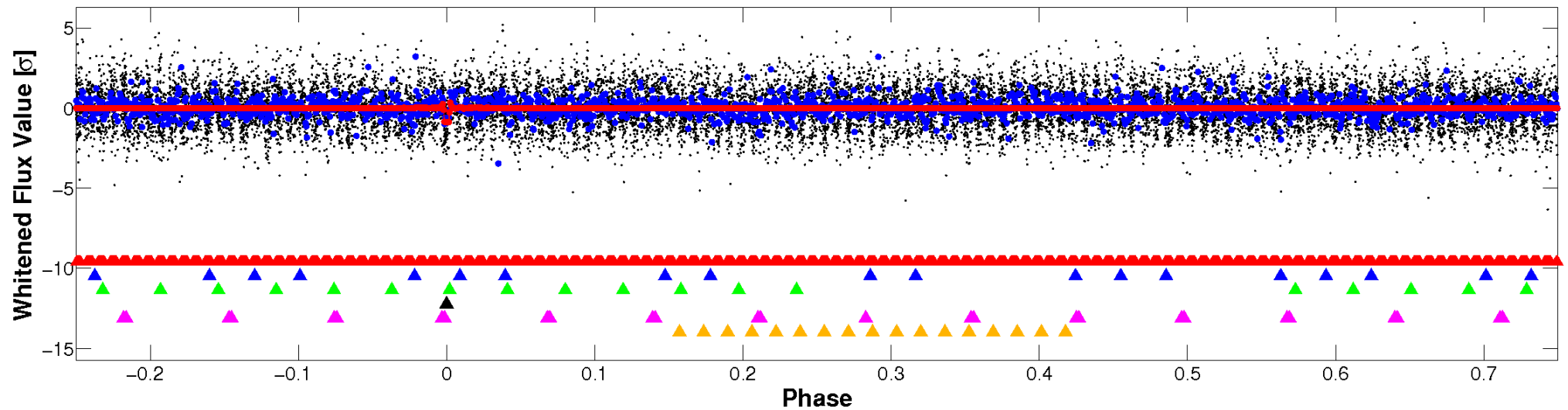


Non-Whitened Vs. Whitened Light Curve

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

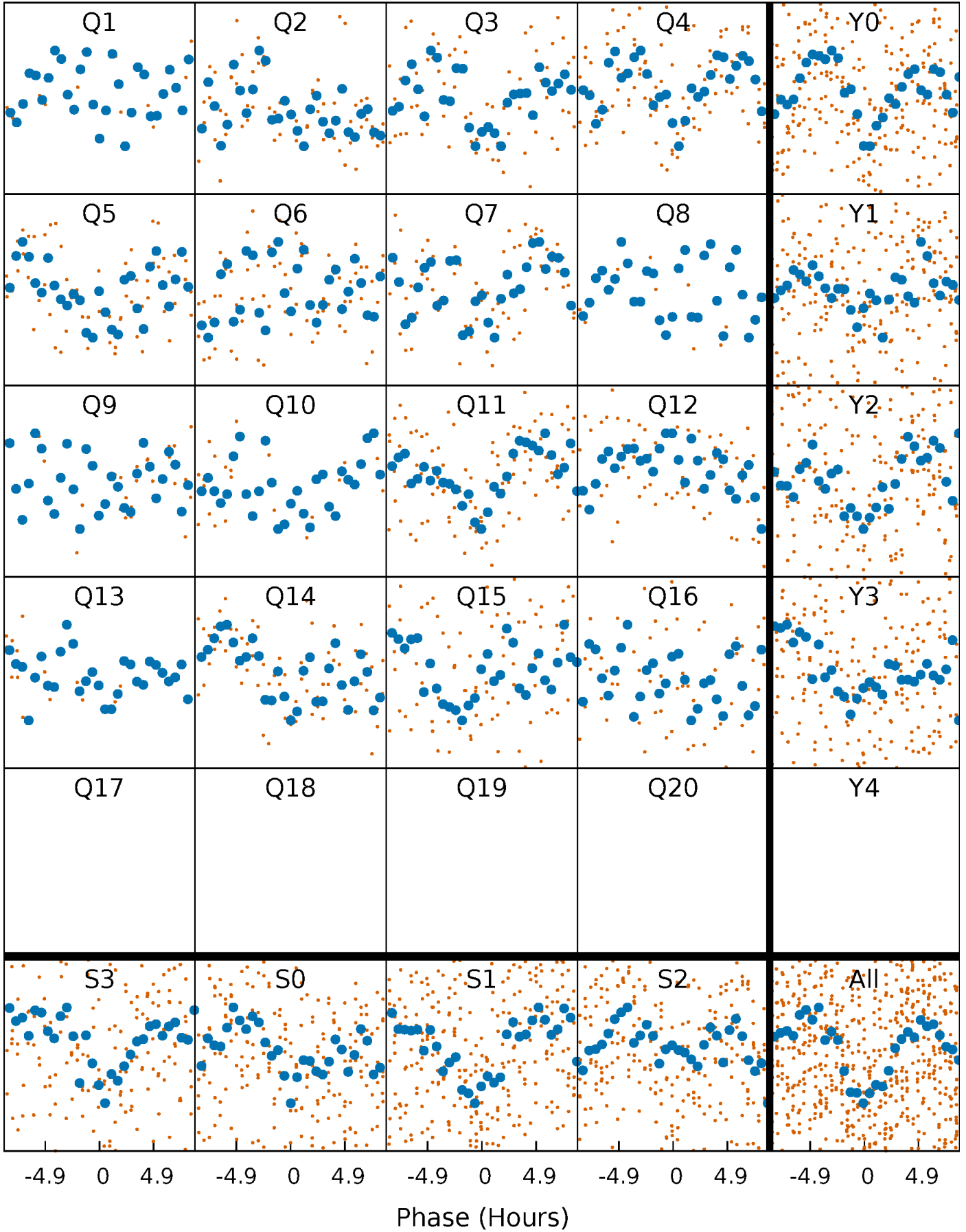


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



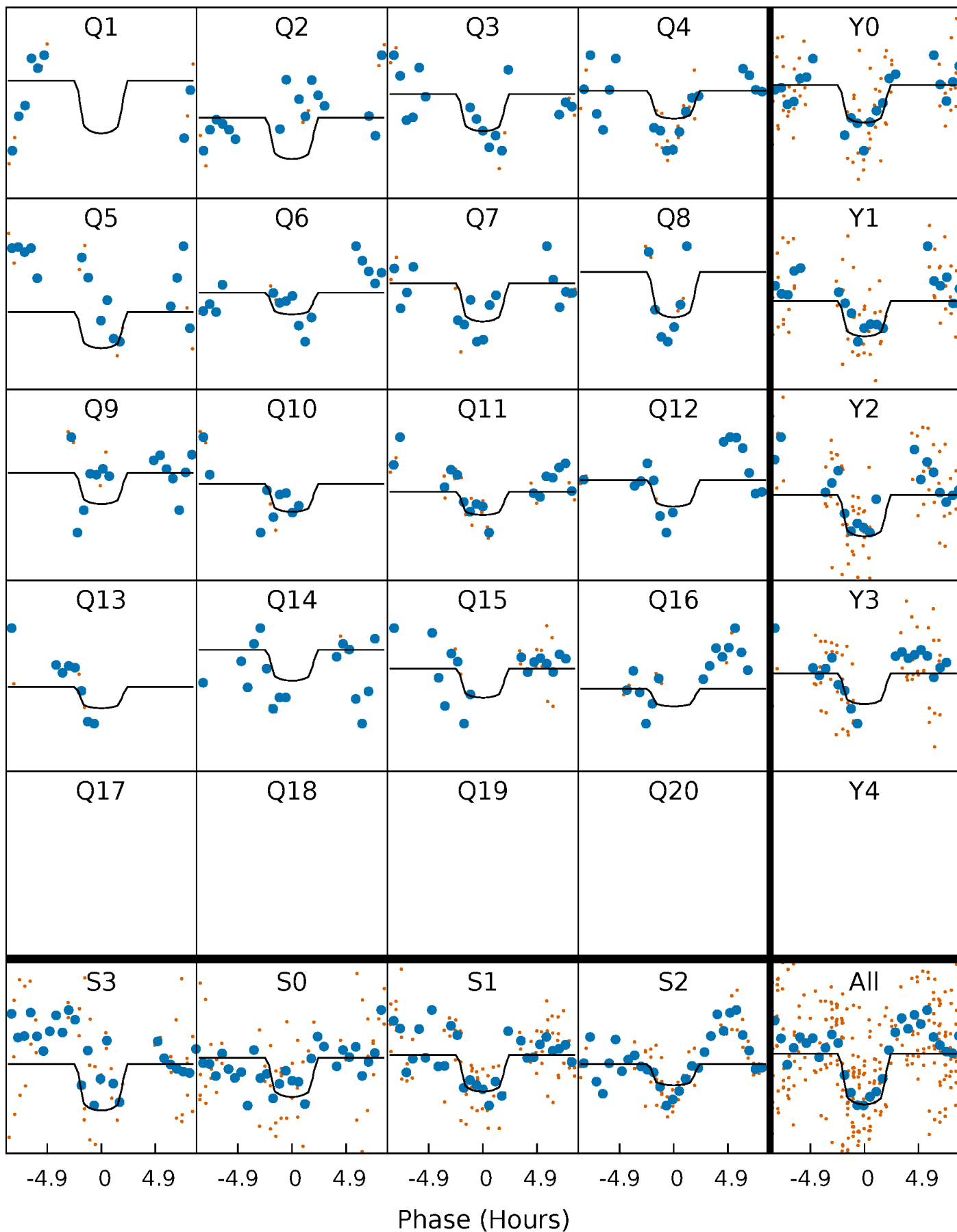
PDC Quarter-Phased Transit Curves

TCE 009305952-04 P= 40.969414 Days $T_0=150.066577$ (BKJD)



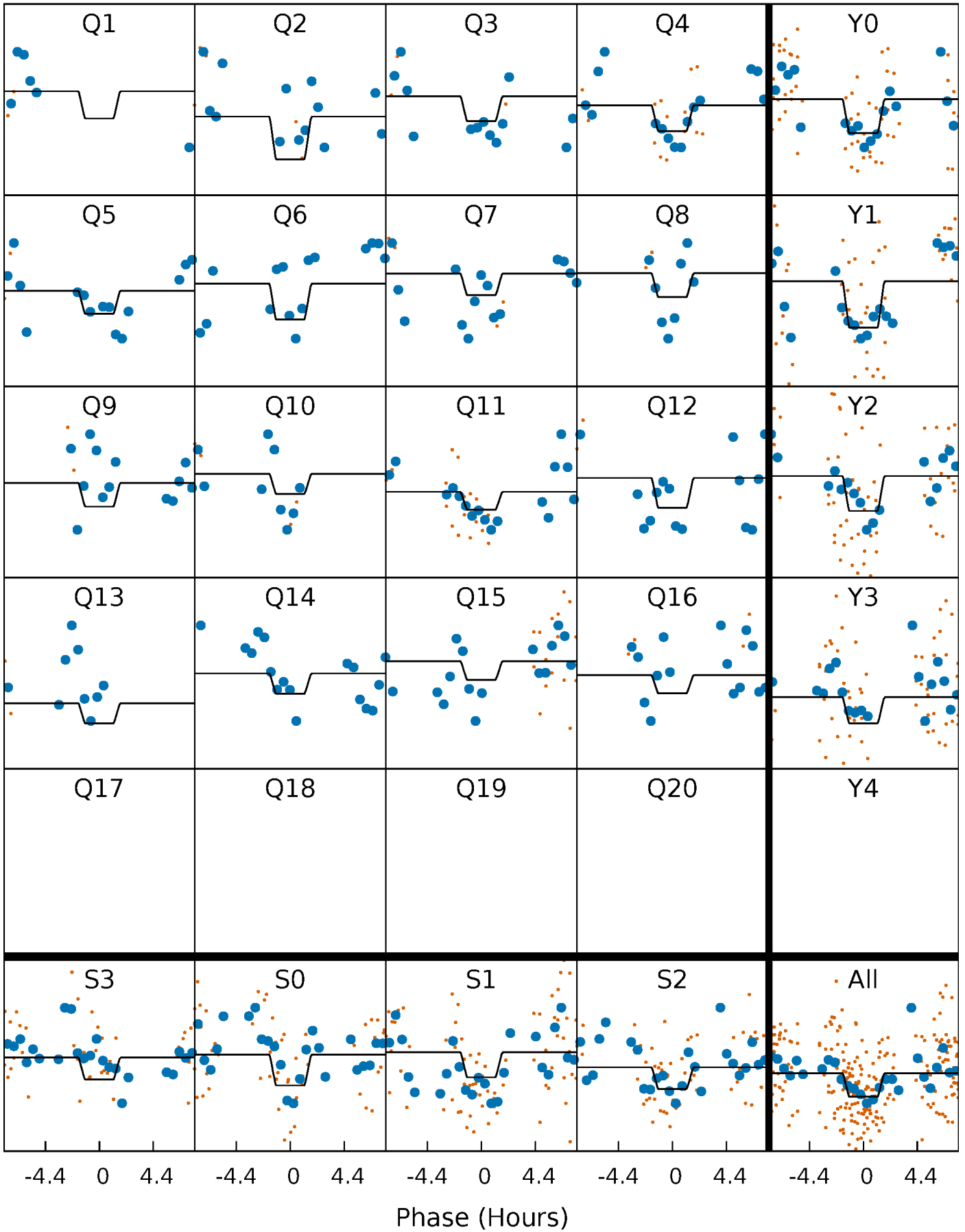
DV Quarter-Phased Transit Curves

TCE 009305952-04 P= 40.969414 Days $T_0=150.066577$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

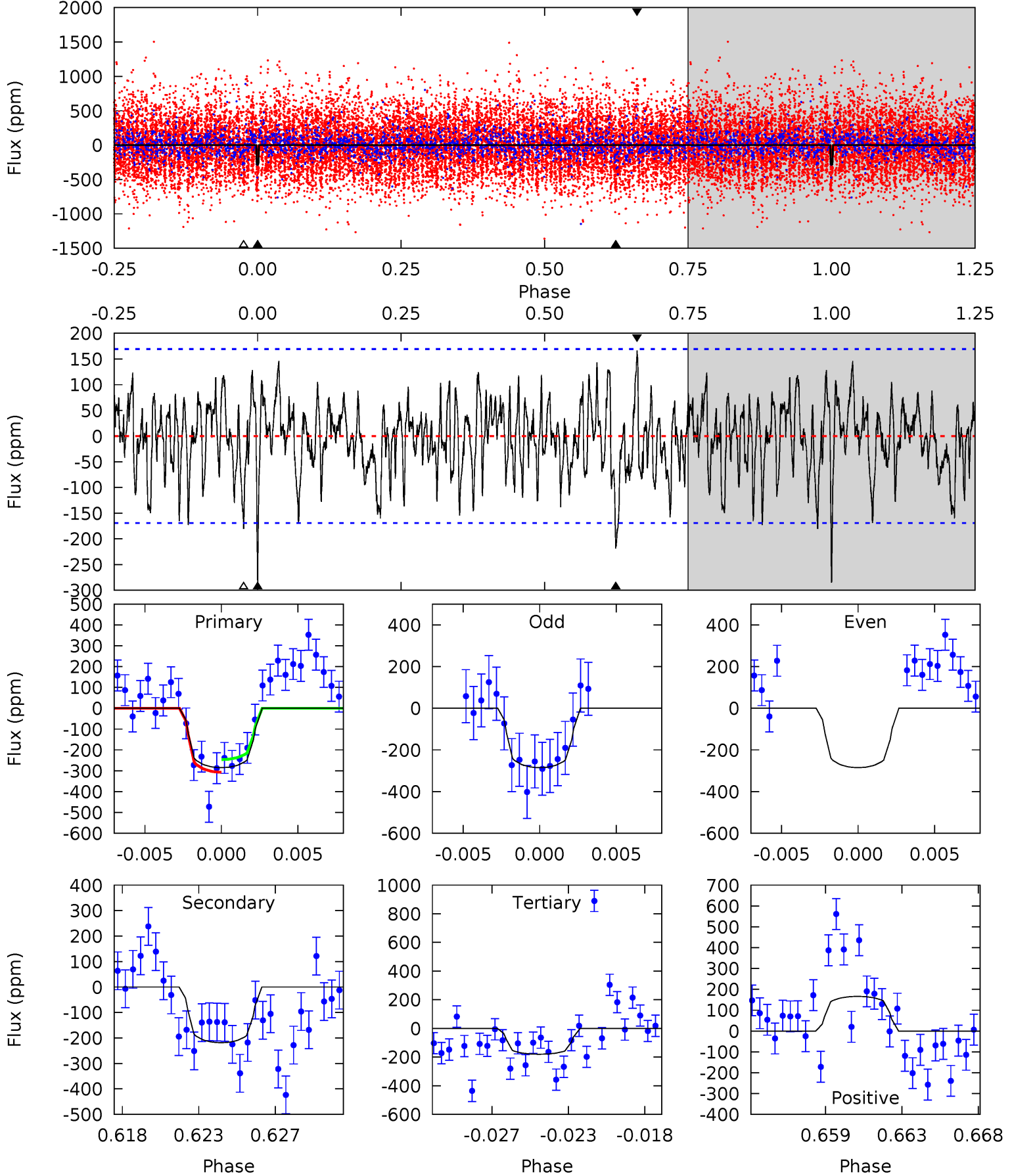
TCE 009305952-04 $P = 40.968103$ Days $T_0 = 150.069934$ (BKJD)



DV Model-Shift Uniqueness Test

009305952-04, P = 40.969414 Days, E = 109.097163 Days

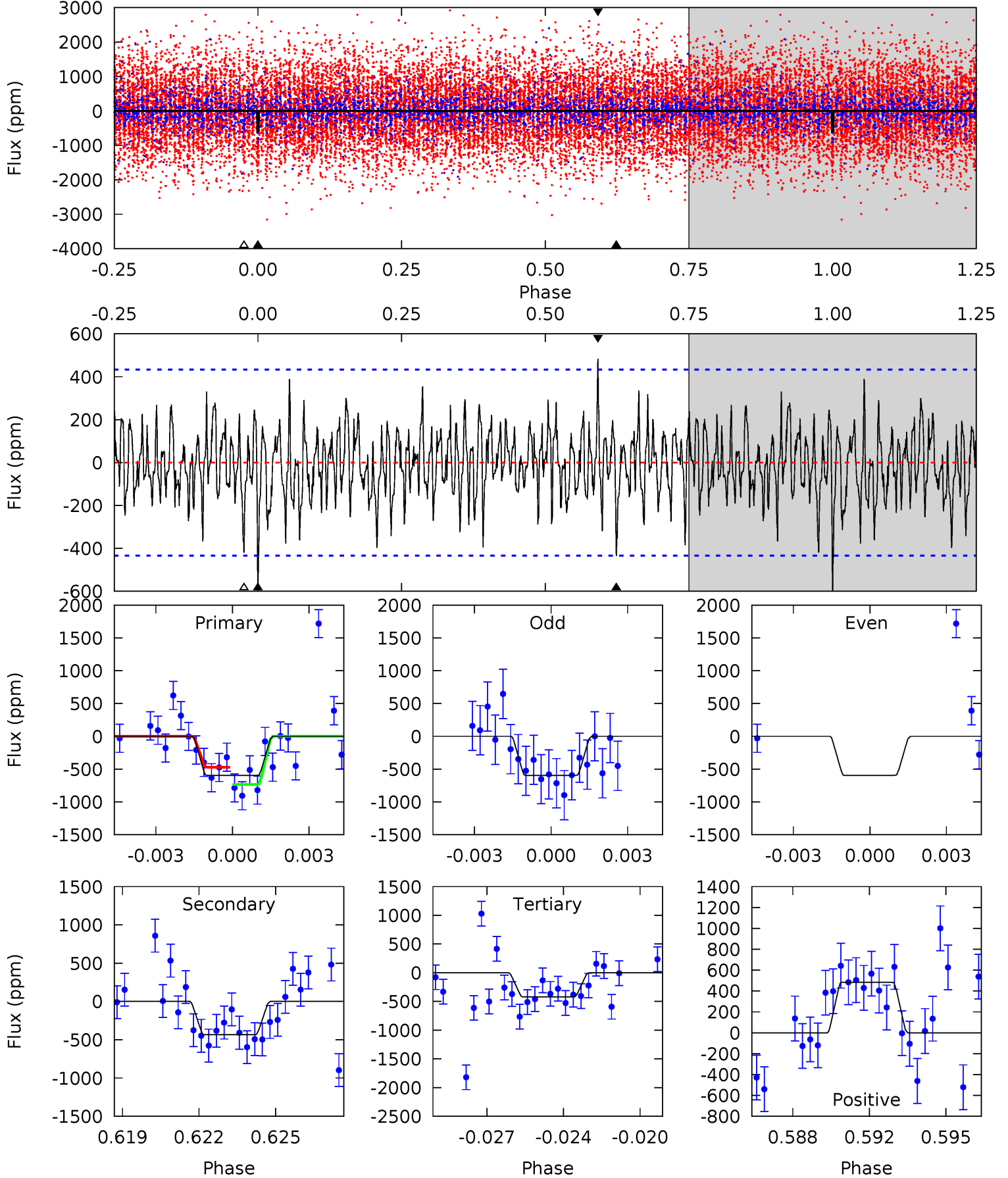
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.72	6.69	5.52	5.08	5.18	2.84	1.90	3.21	3.64	1.17	1.61	0	0.93	0.37	0.89



Alt Model-Shift Uniqueness Test

009305952-04, P = 40.968103 Days, E = 109.101831 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.18	5.26	5.06	5.83	5.23	2.93	1.73	2.13	1.35	0.20	-0.58	0	0.90	0.45	1.56



Stellar Parameters For KIC 009305952

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8163^{+226}_{-340}	$4.003^{+0.221}_{-0.136}$	$-0.180^{+0.200}_{-0.350}$	$2.229^{+0.423}_{-0.634}$	$1.825^{+0.112}_{-0.336}$	$0.232^{+0.301}_{-0.083}$
	+3%/-4%	+6%/-3%	+111%/-194%	+19%/-28%	+6%/-18%	+130%/-36%
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 009305952-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-219 ± 33	$4.57^{+3.15}_{-2.44}$	1396^{+94}_{-100}	6855^{+4655}_{-1447}	446^{+1688}_{-289}
Alt.	-436 ± 83	$5.82^{+2.99}_{-2.78}$	1394^{+90}_{-109}	7274^{+4194}_{-1394}	562^{+1506}_{-314}

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 $A_{obs} \gg 1.0$

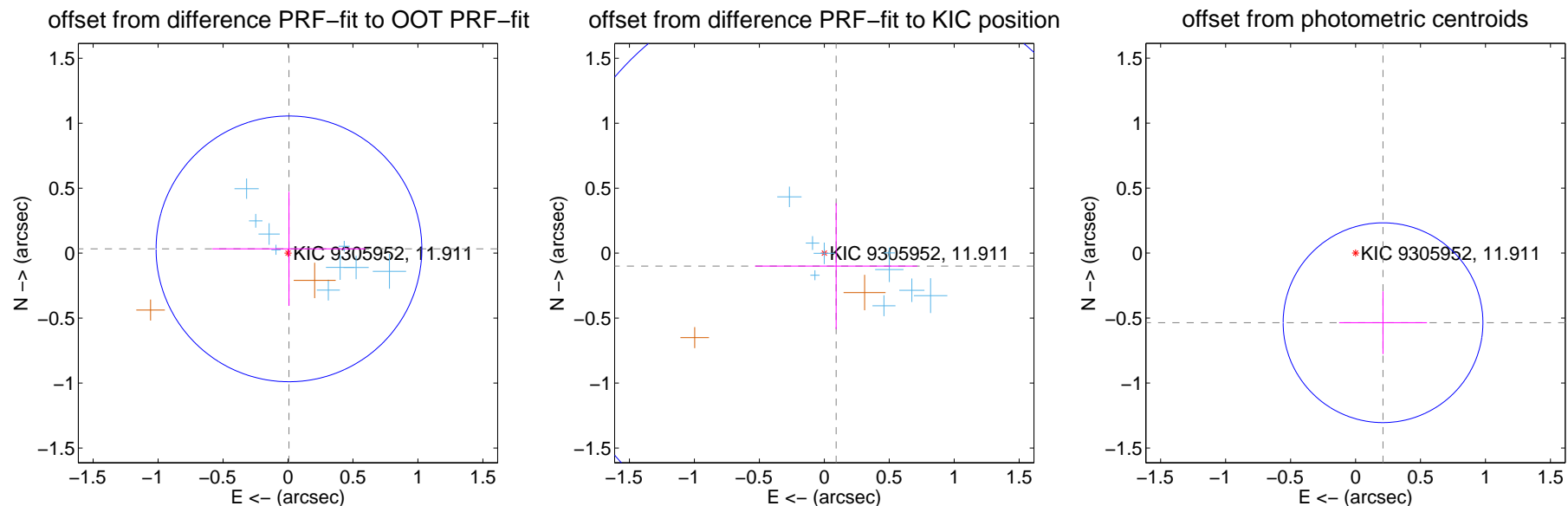
DV Centroid Data

Supplemental centroid analysis for 009305952-04. **Kepler magnitude: 11.91.** Transit SNR 8.12

There are 9 quarters with good PRF difference image offsets

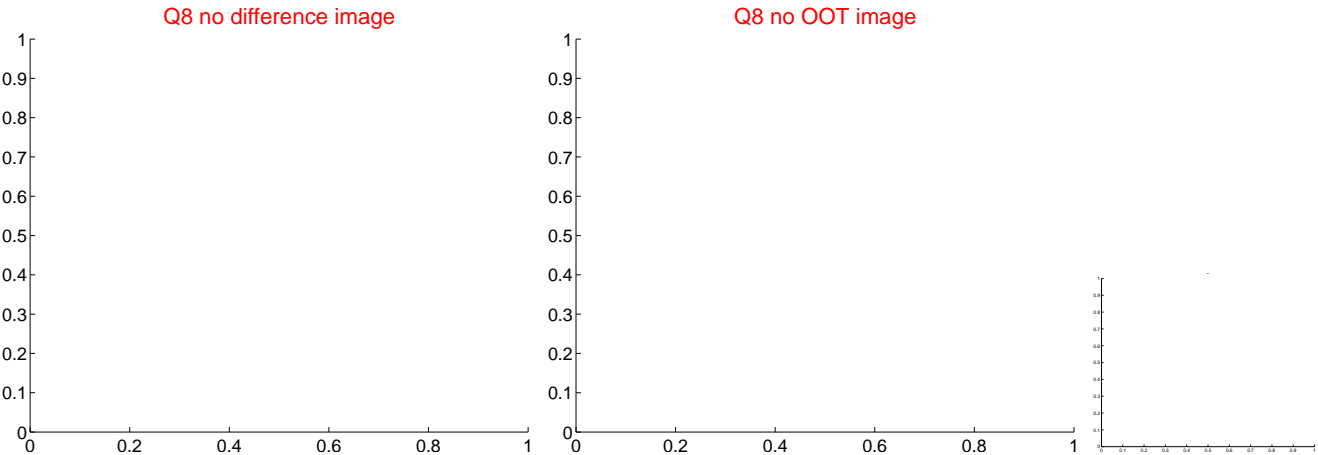
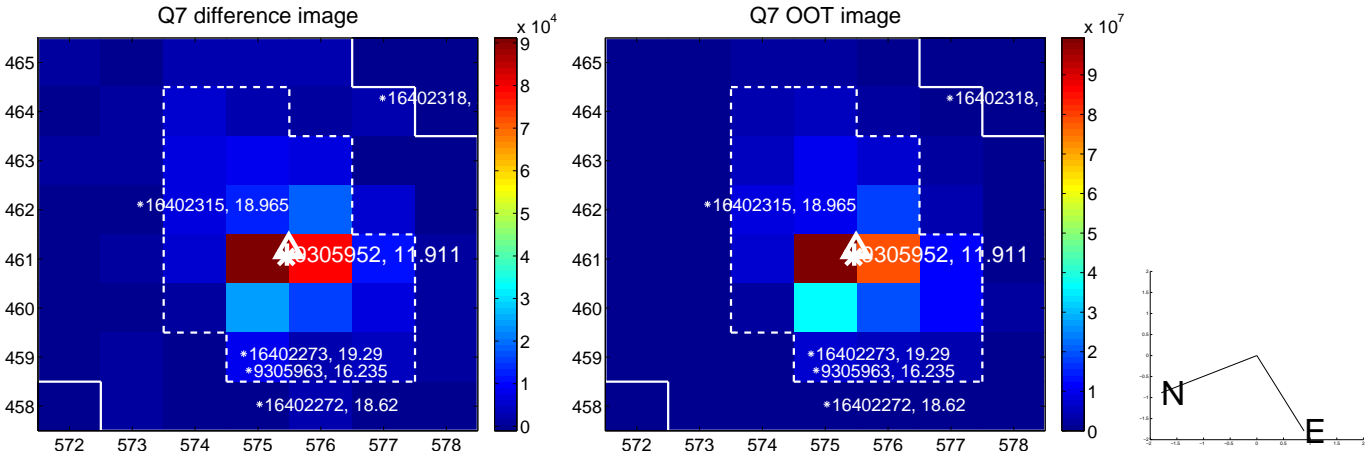
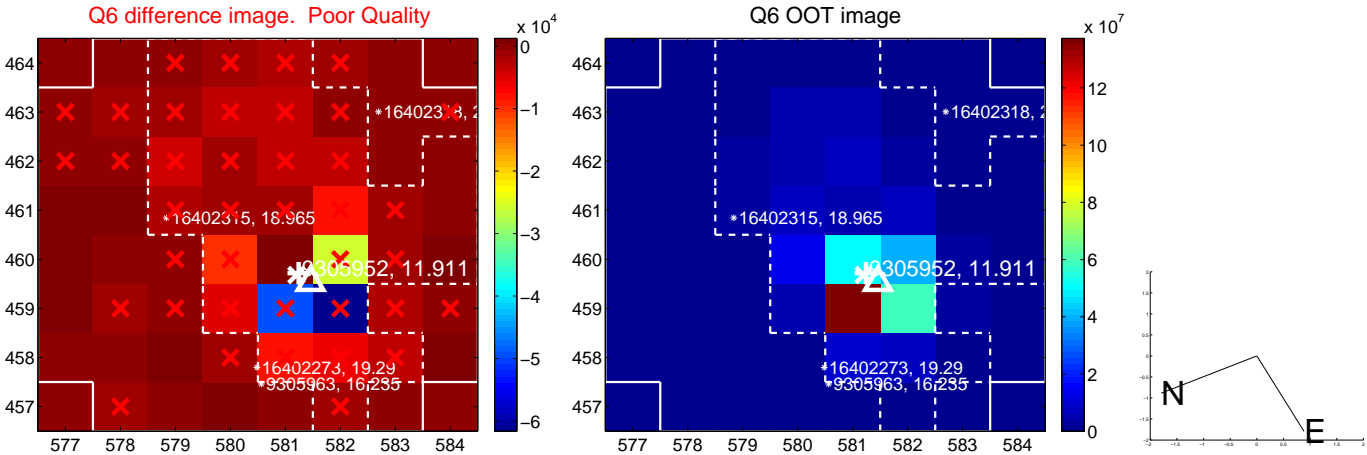
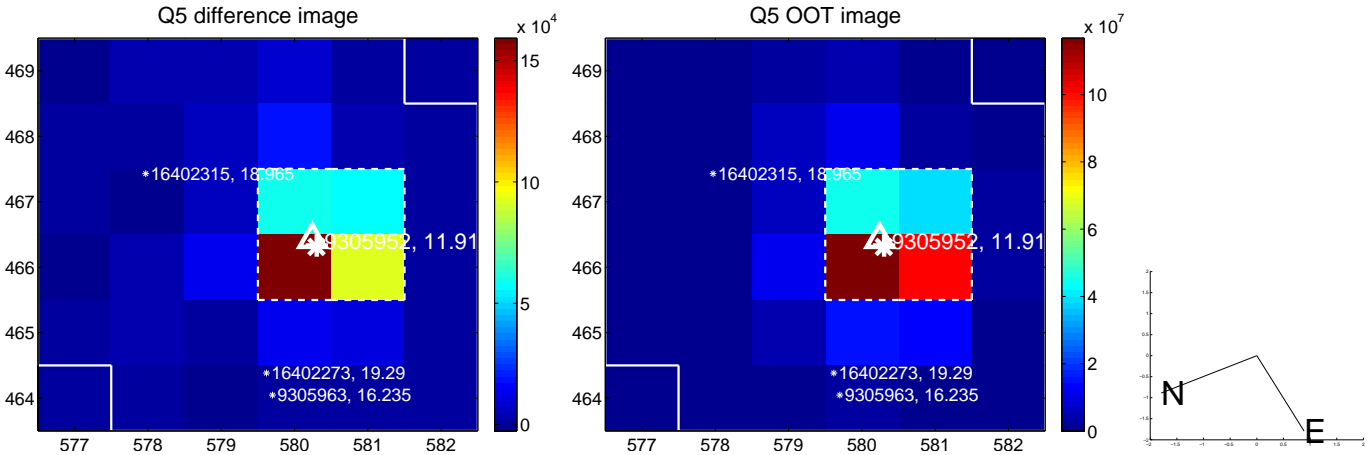
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.034 ± 0.341	0.10	-0.007 ± 0.589	0.033 ± 0.439
PRF-fit source offset from KIC position	0.135 ± 0.747	0.18	-0.091 ± 0.625	-0.100 ± 0.484
photometric centroid source offset	0.58 ± 0.26	2.25	-0.21 ± 0.34	-0.54 ± 0.24

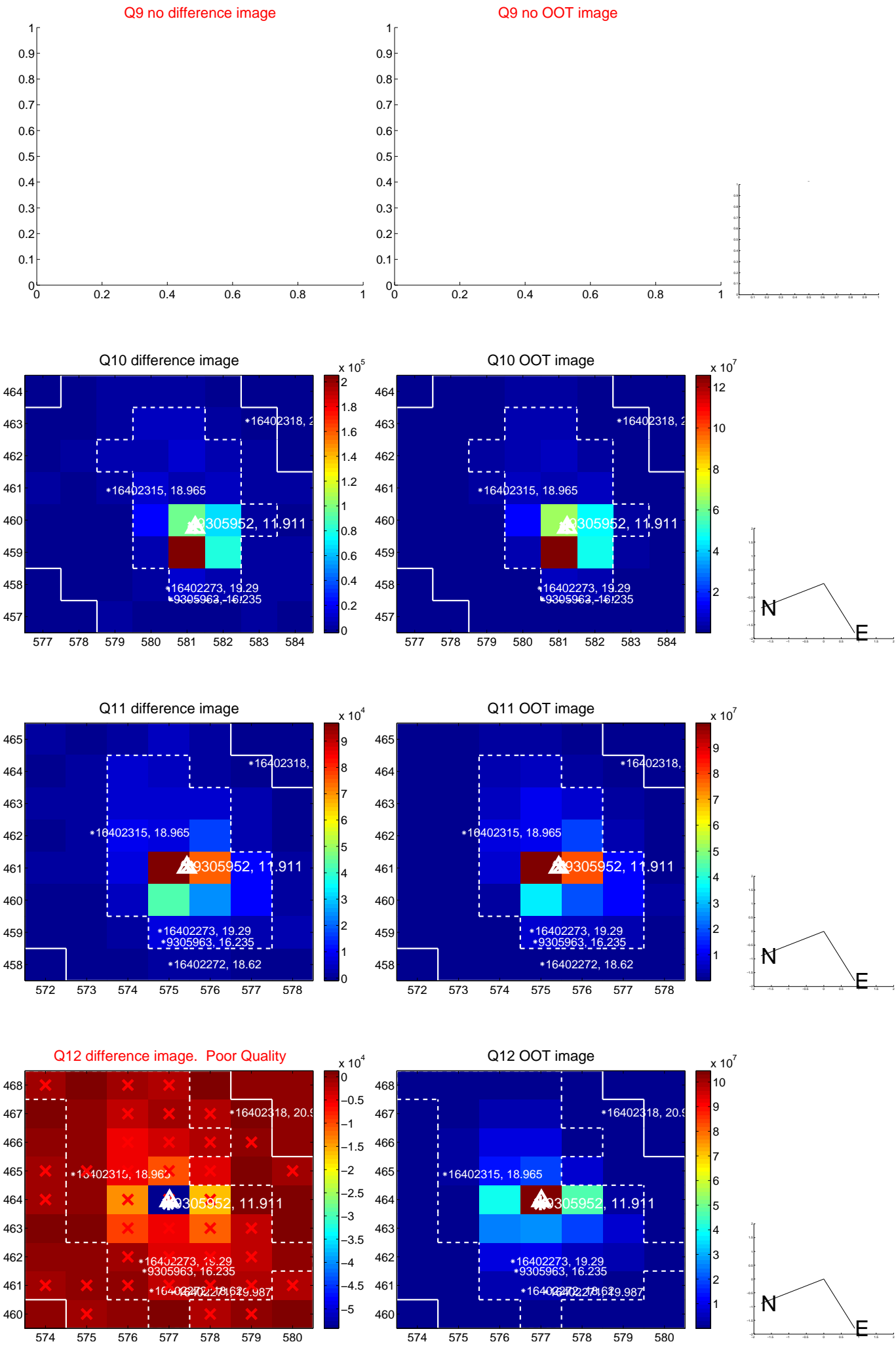


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

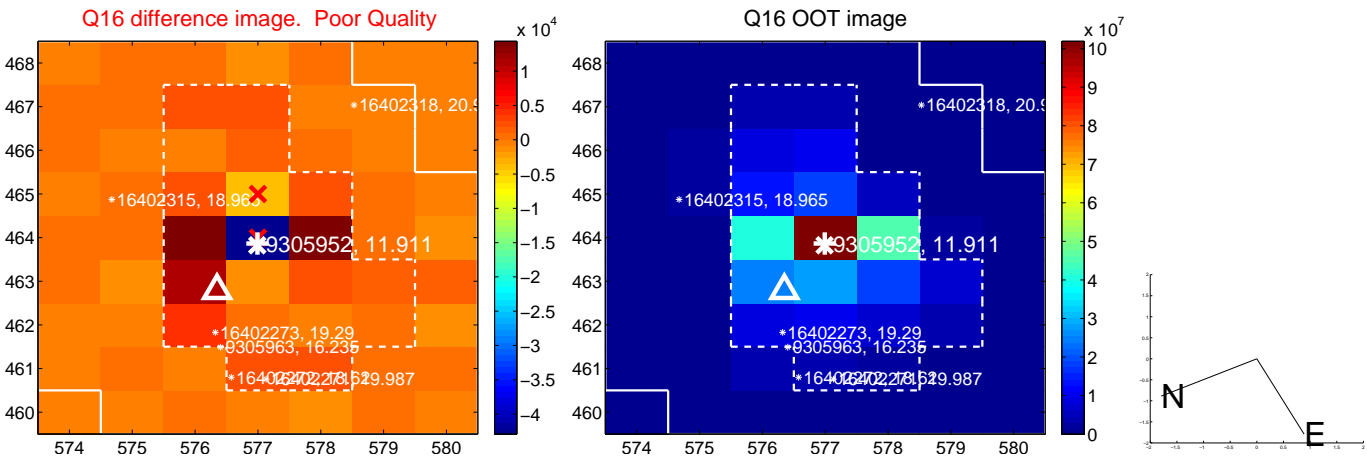
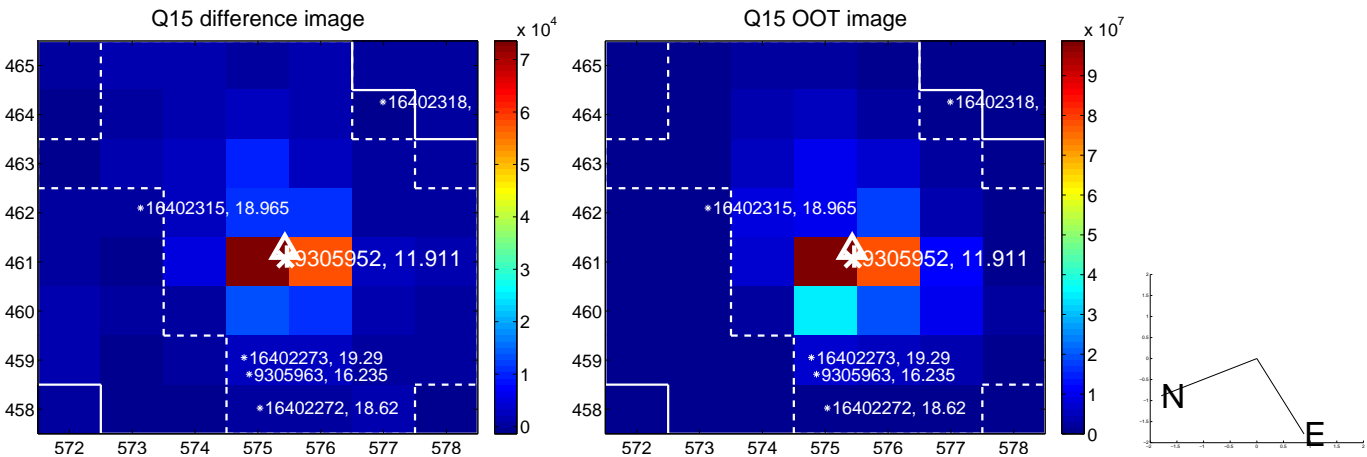
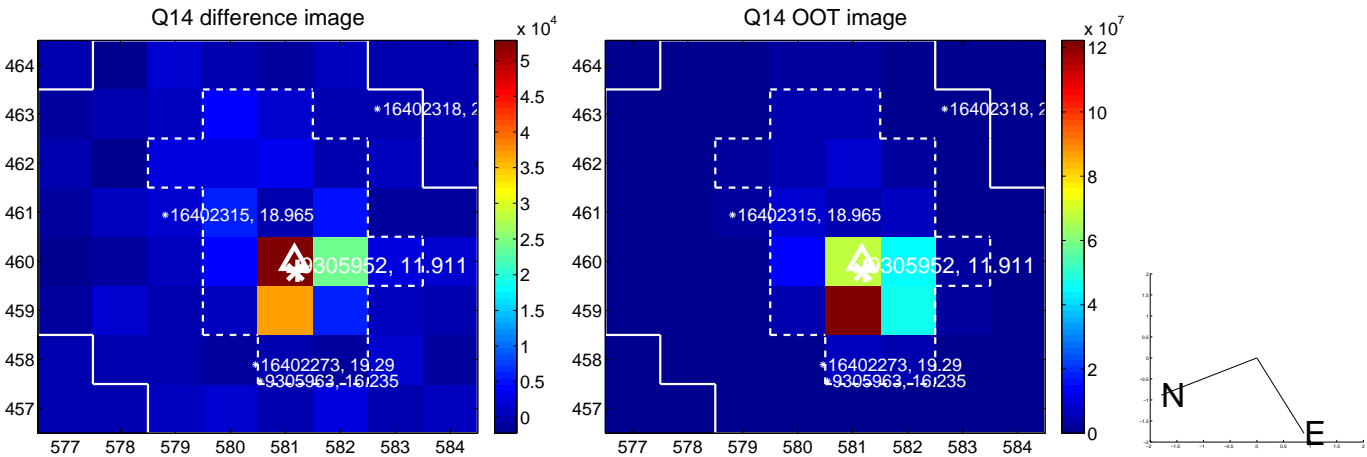
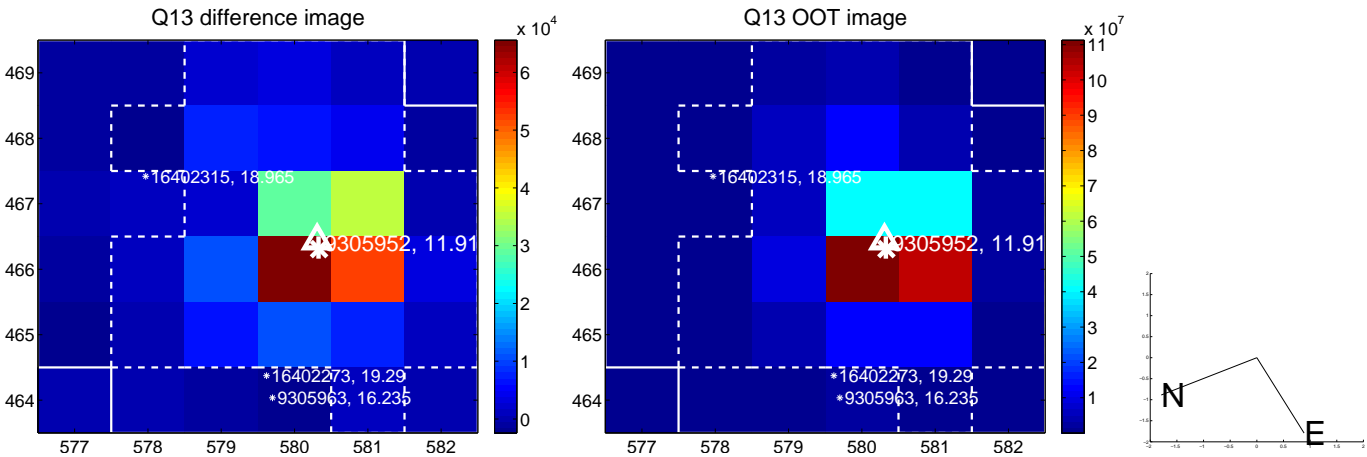
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



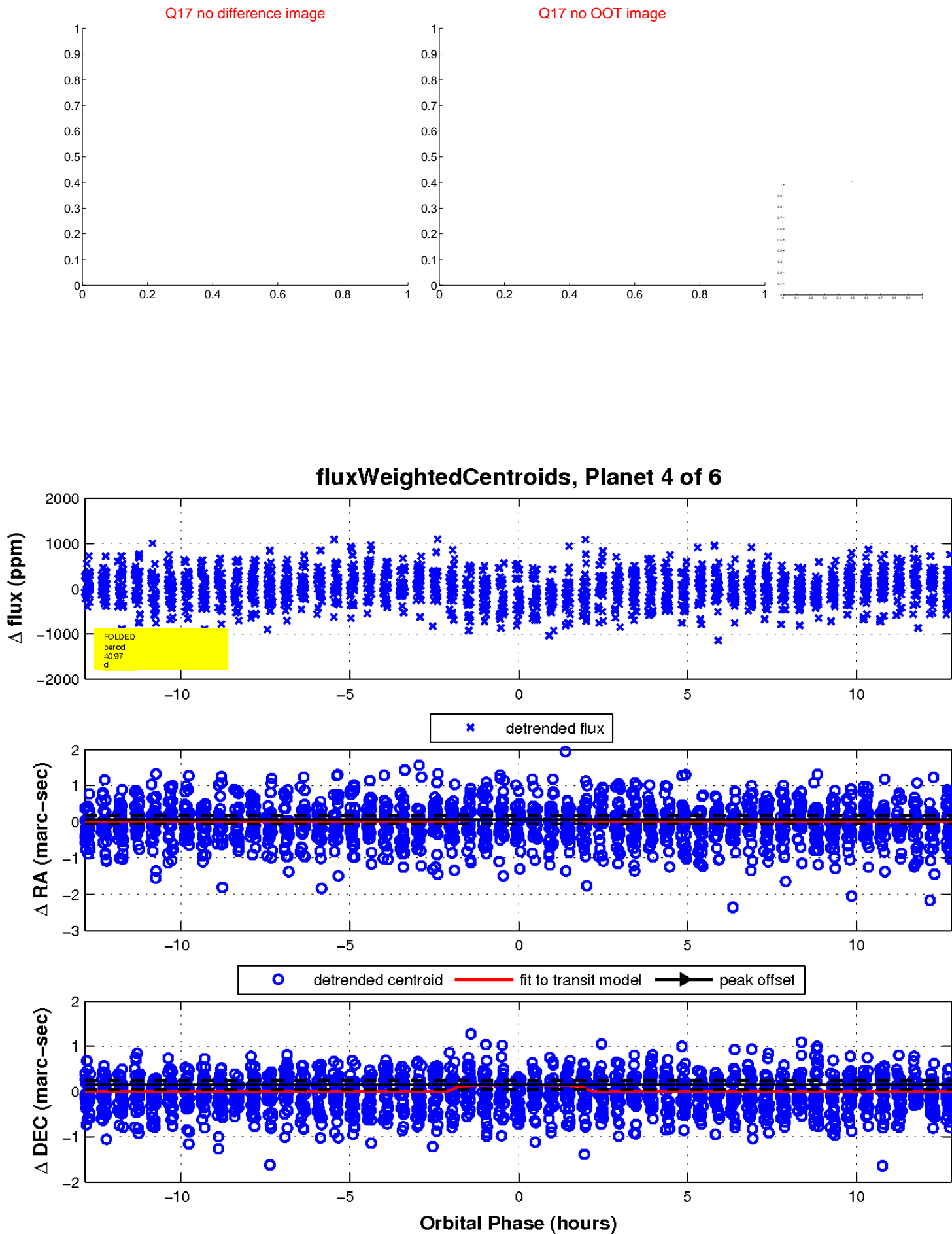
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

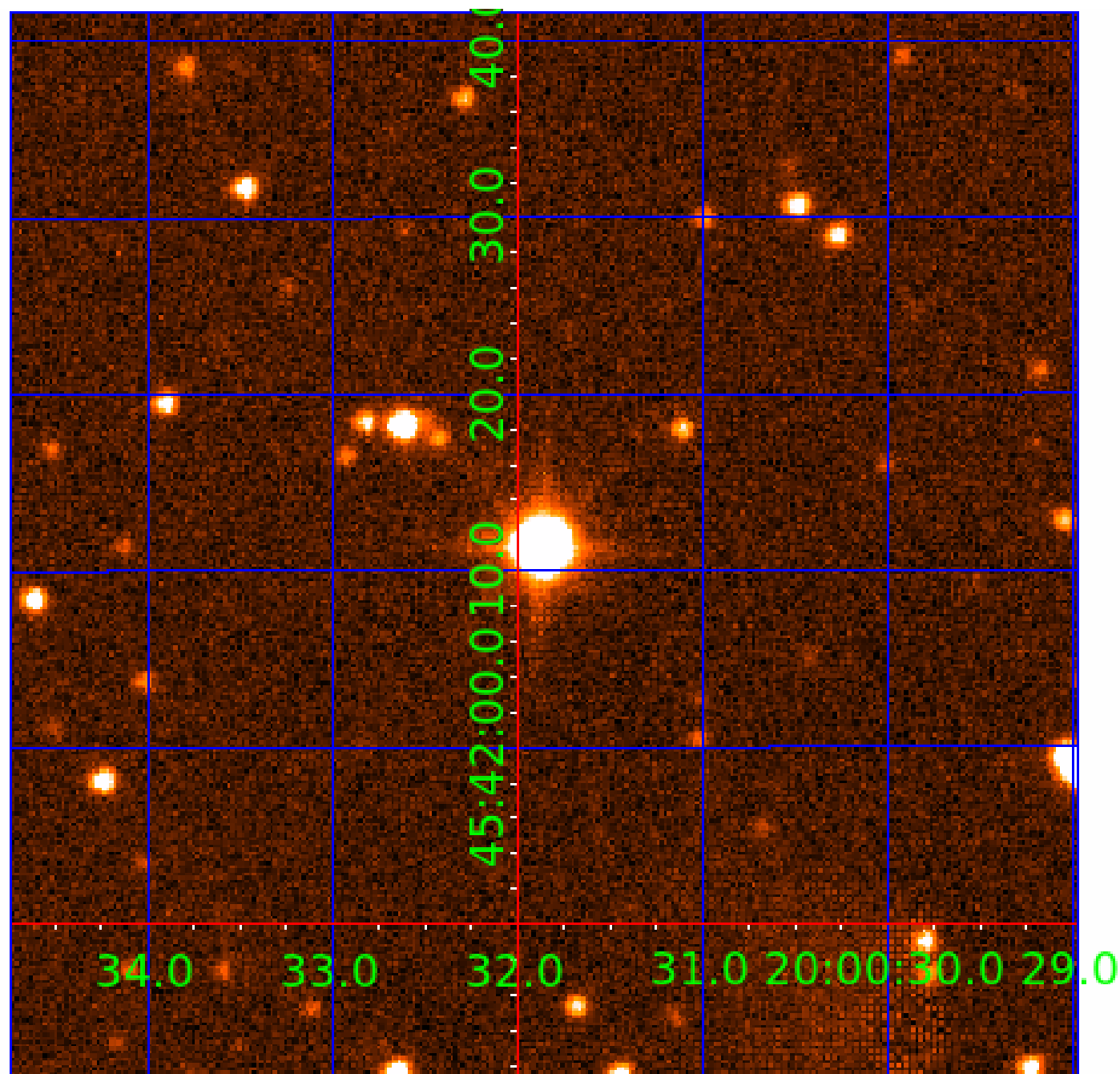


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009305952

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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009305952-04	OBS	No	40.969414	150.066577	325.8	4.327	8.0	8.1	2.23	8163	4.69	244.58
009305952-05	OBS	No	55.596444	135.382791	477.7	2.971	8.2	6.8	2.23	8163	5.55	162.79
009305952-06	OBS	No	82.605886	197.477337	133.5	3.500	7.1	-1.0	2.23	8163	2.60	96.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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009305952-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009305952-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009305952-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009305952-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009305952-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

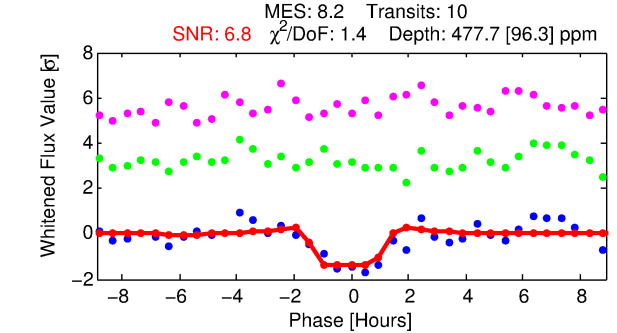
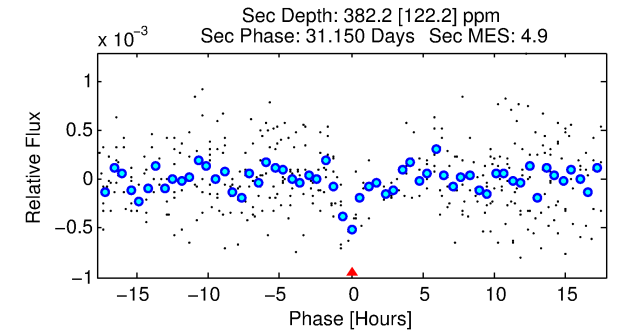
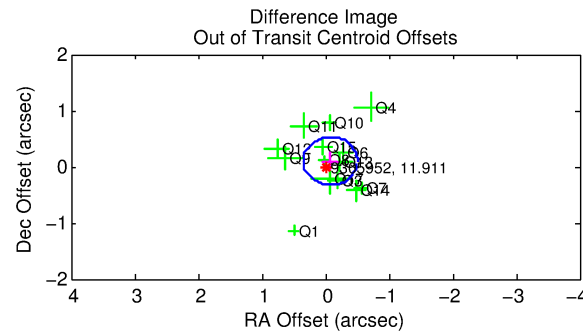
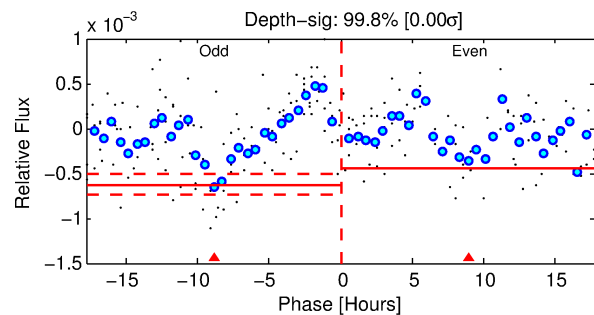
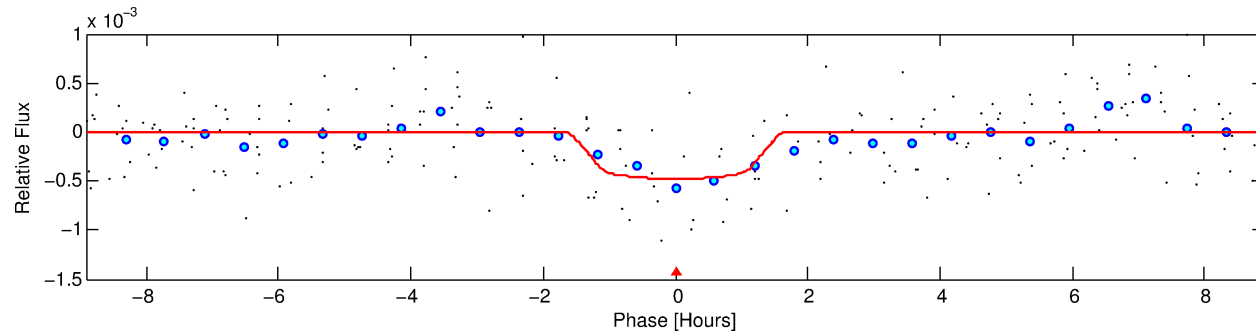
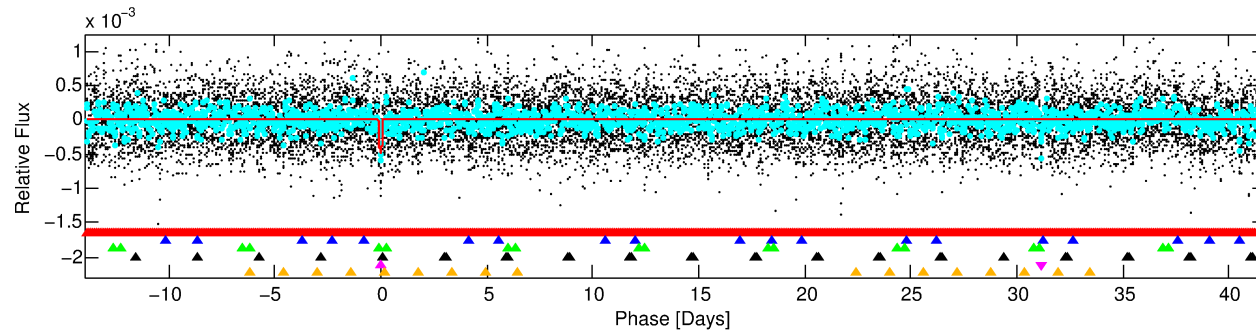
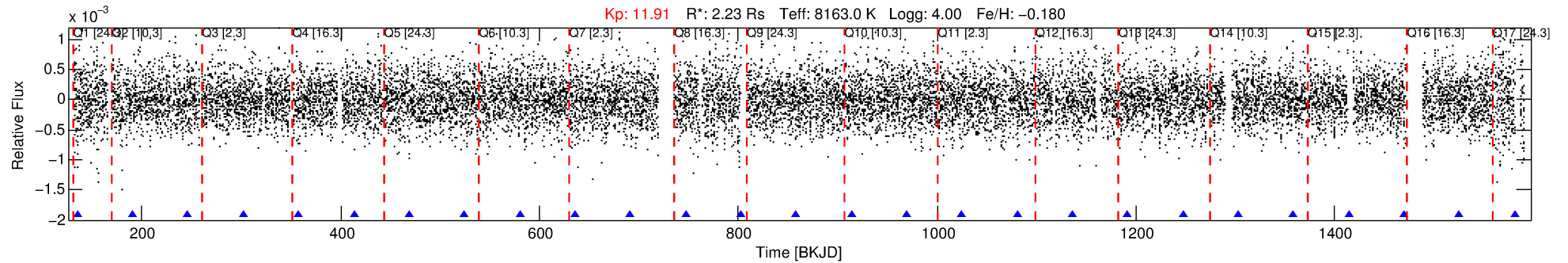
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009305952-05

No Significant Match Found

DV One-Page Summary

KIC: 9305952 Candidate: 5 of 6 Period: 55.596 d



DV Fit Results:

Period = 55.59644 [0.00059] d
Epoch = 135.3828 [0.0071] BKJD
Rp/R* = 0.0228 [0.0196]
a/R* = 77.66 [391.51]
b = 0.87 [1.46]
Seff = 162.79 [68.84]
Teq = 911 [96] K
Rp = 5.56 [5.03] Re
a = 0.3484 [0.0887] AU
Ag = 827.13 [1482.56] [0.56 σ]
Teffp = 7552 [3319] K [2.00 σ]

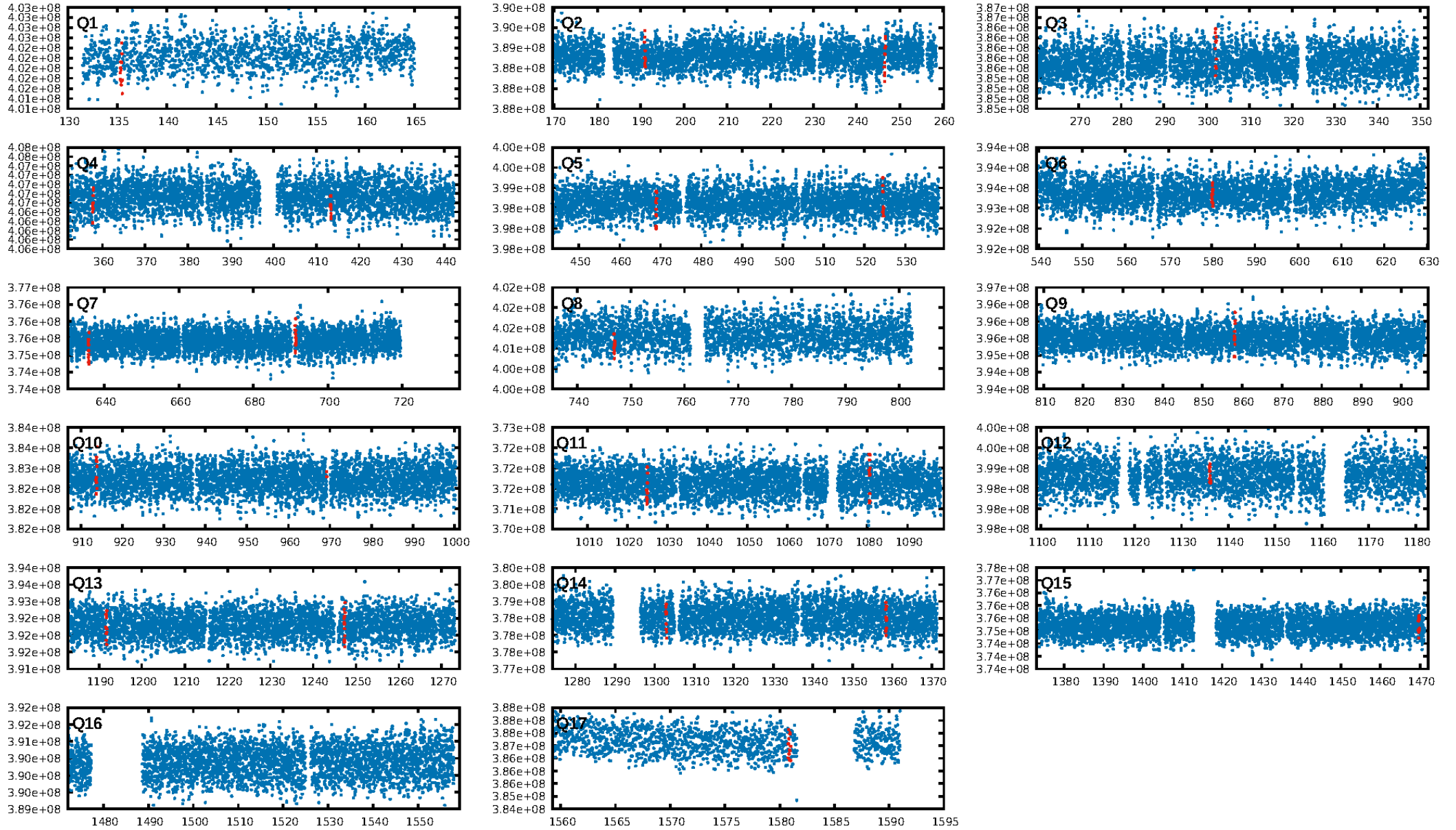
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [66.89 σ]
LongPeriod-sig: 100.0% [111.97 σ]
ModelChiSquare2-sig: 1.7%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 2.248
Centroid-sig: 2.5%
Centroid-so: 0.415 arcsec [1.69 σ]
OotOffset-rm: 0.125 arcsec [0.88 σ]
KicOffset-rm: 0.191 arcsec [1.42 σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 0.00 [0/16]

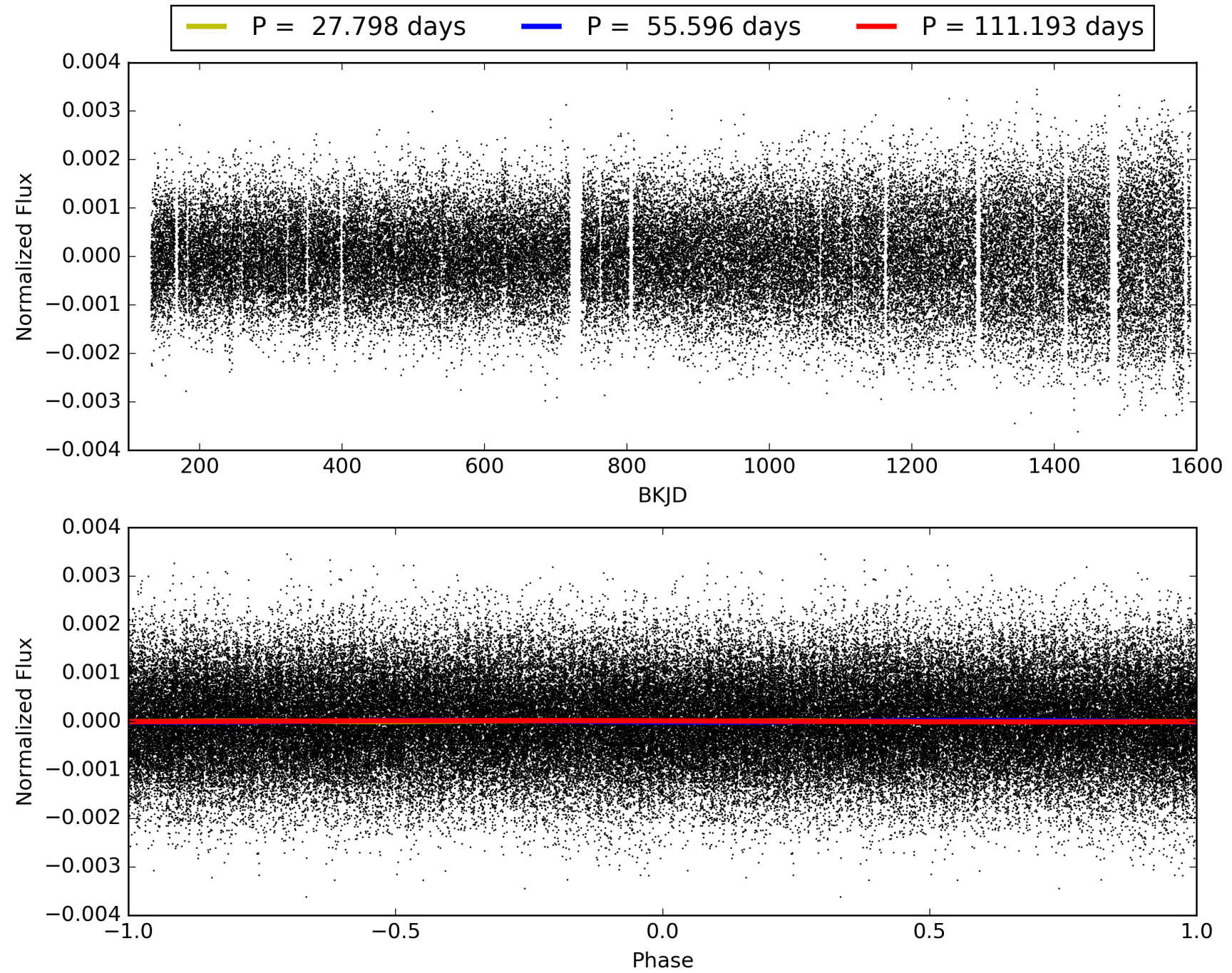
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:01:25 Z

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

TCE 009305952-05, PDC Light Curves

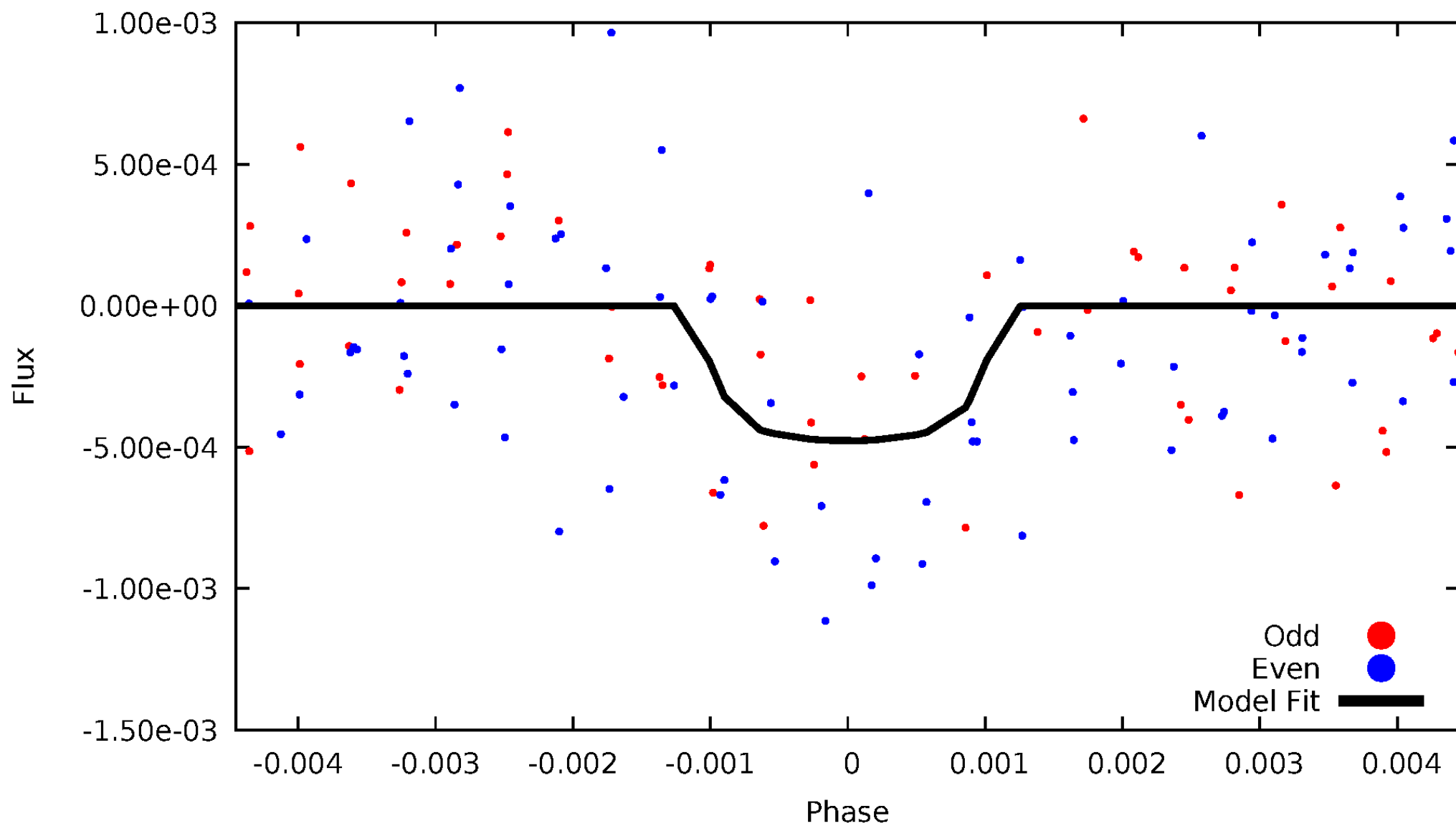


TCE 009305952-05



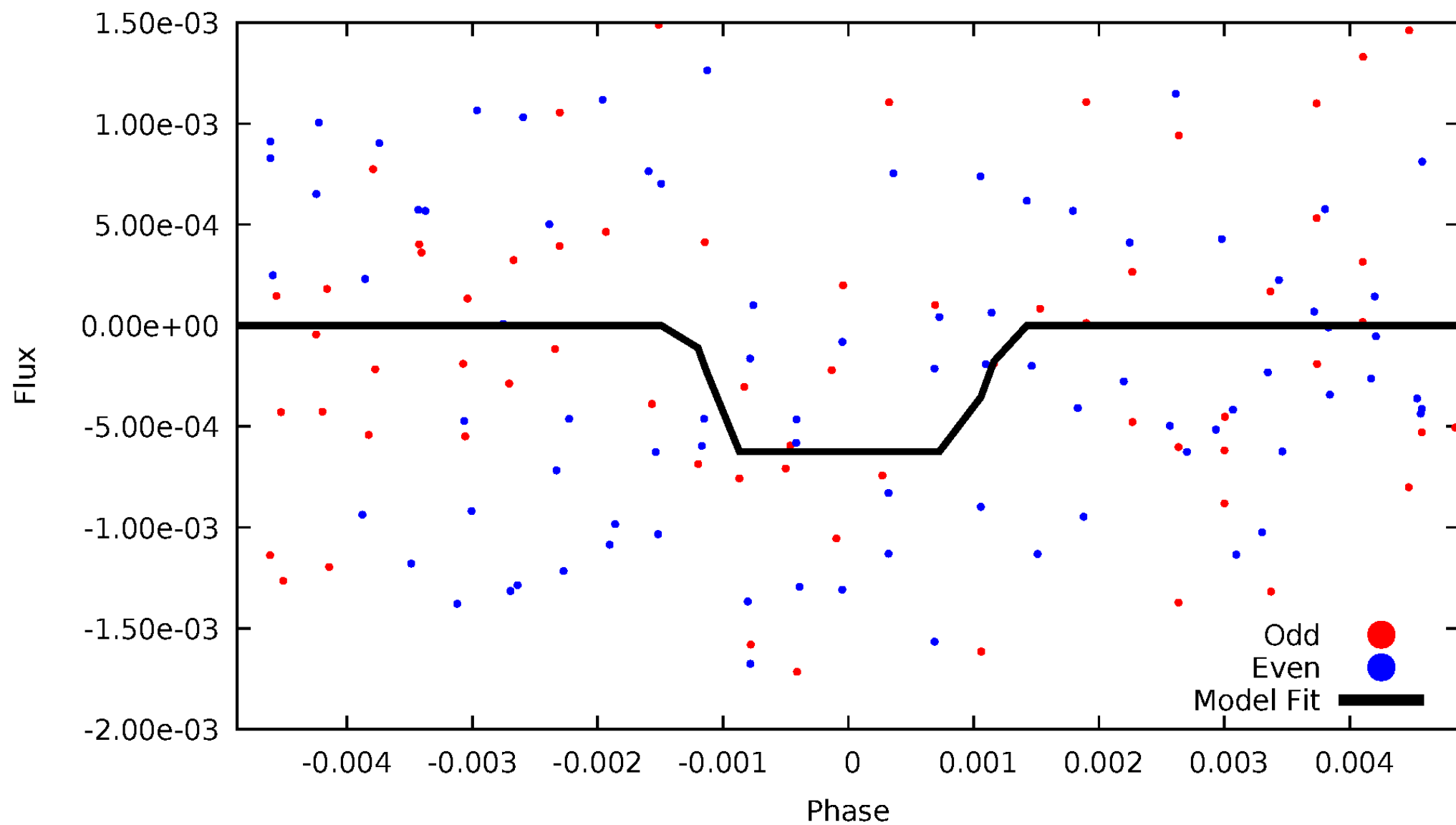
DV Odd/Even

TCE 009305952-05



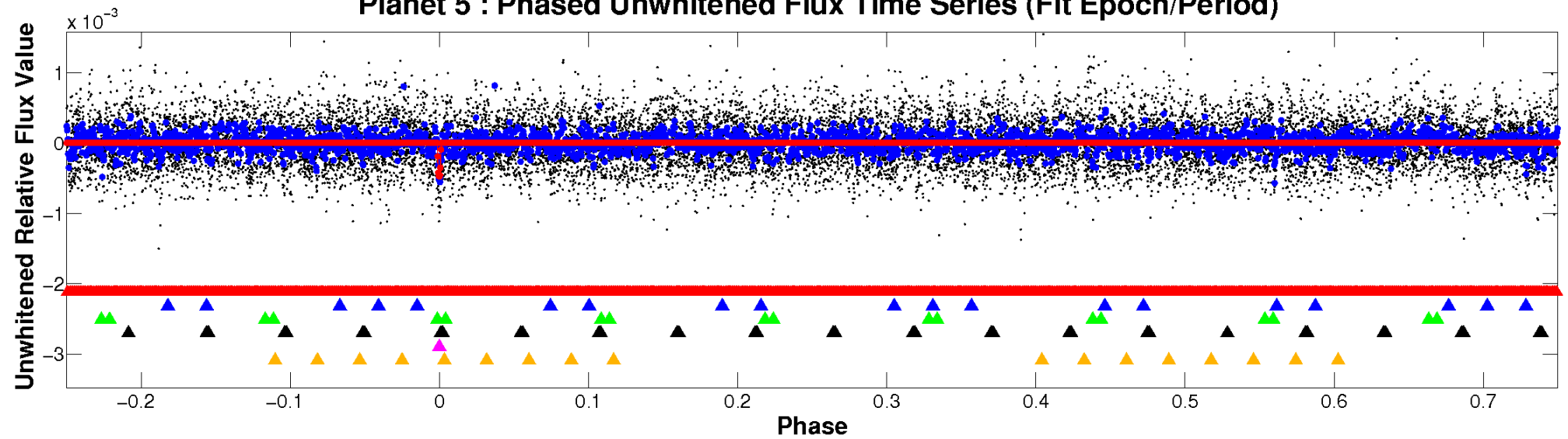
ALT Odd/Even

TCE 009305952-05

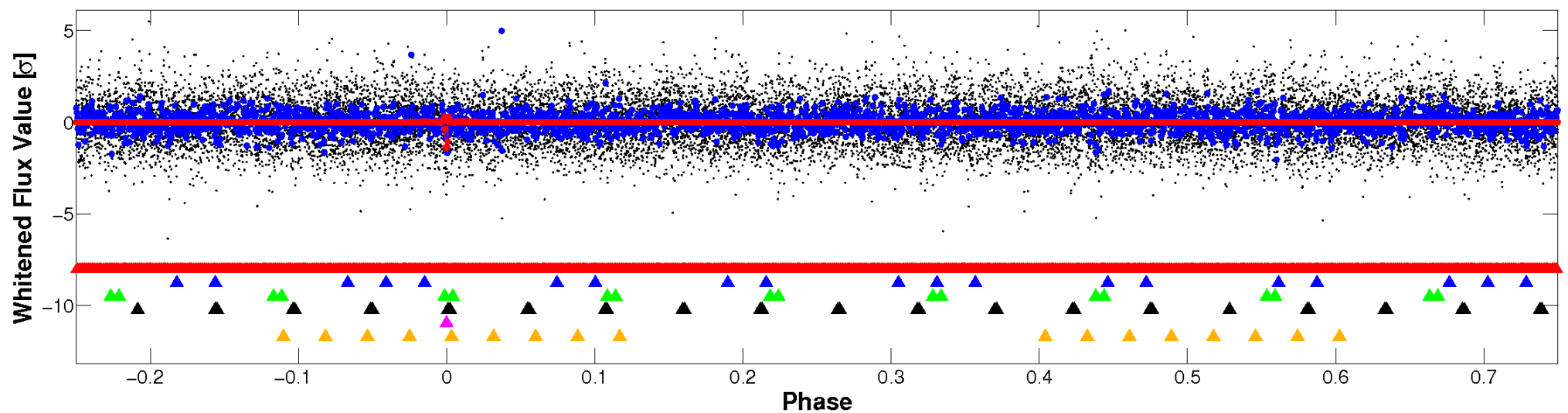


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

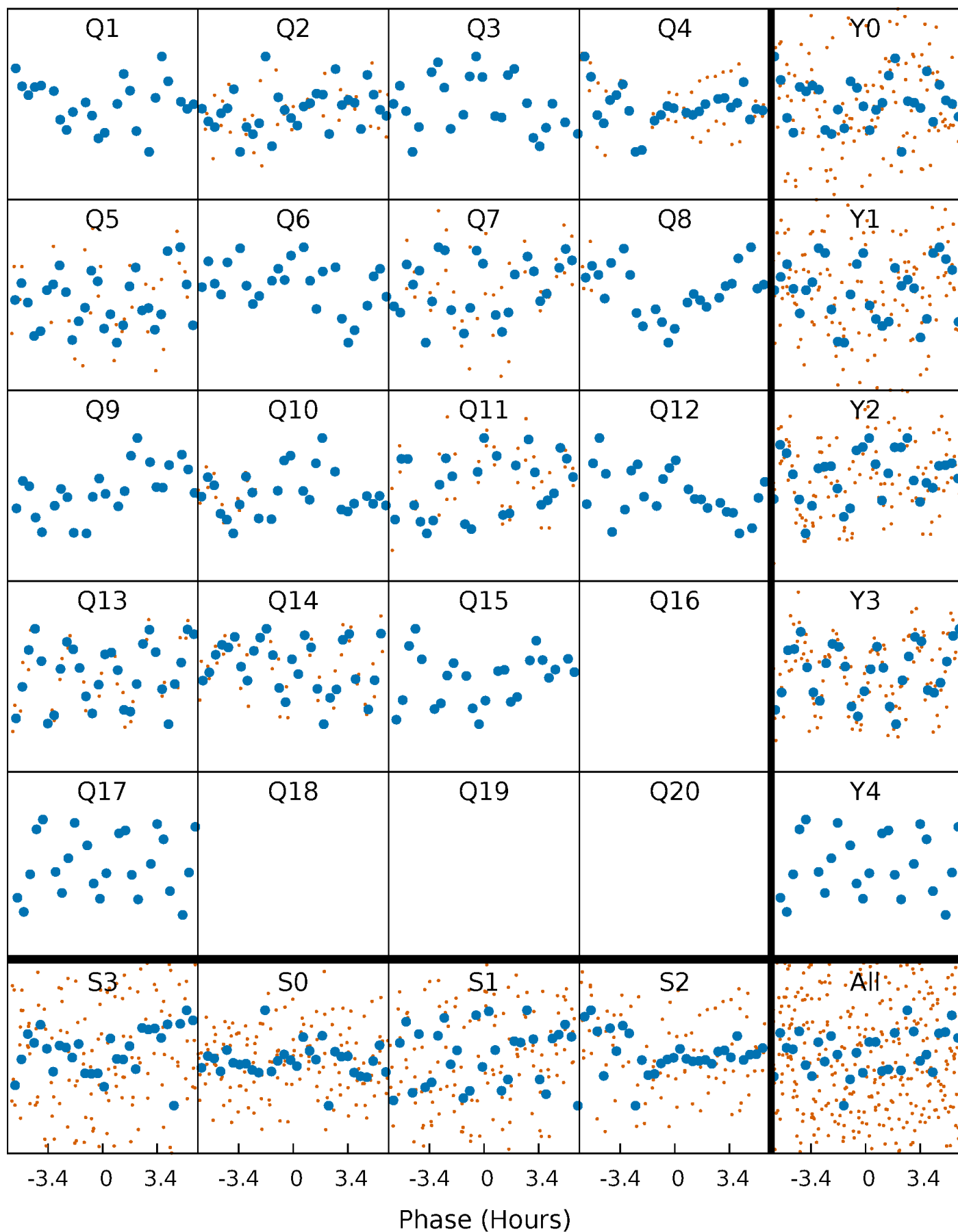


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



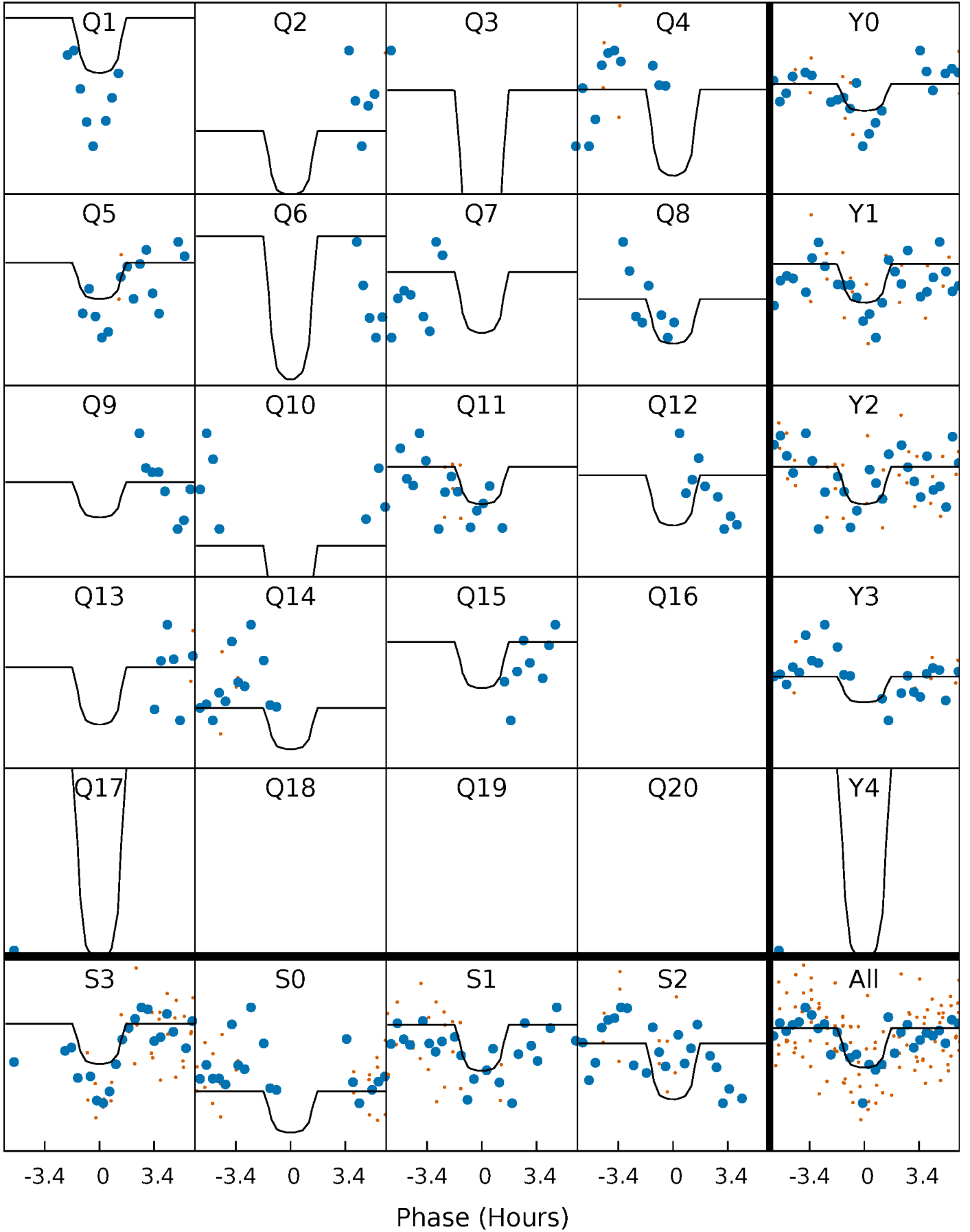
PDC Quarter-Phased Transit Curves

TCE 009305952-05 P= 55.596444 Days $T_0=135.382791$ (BKJD)



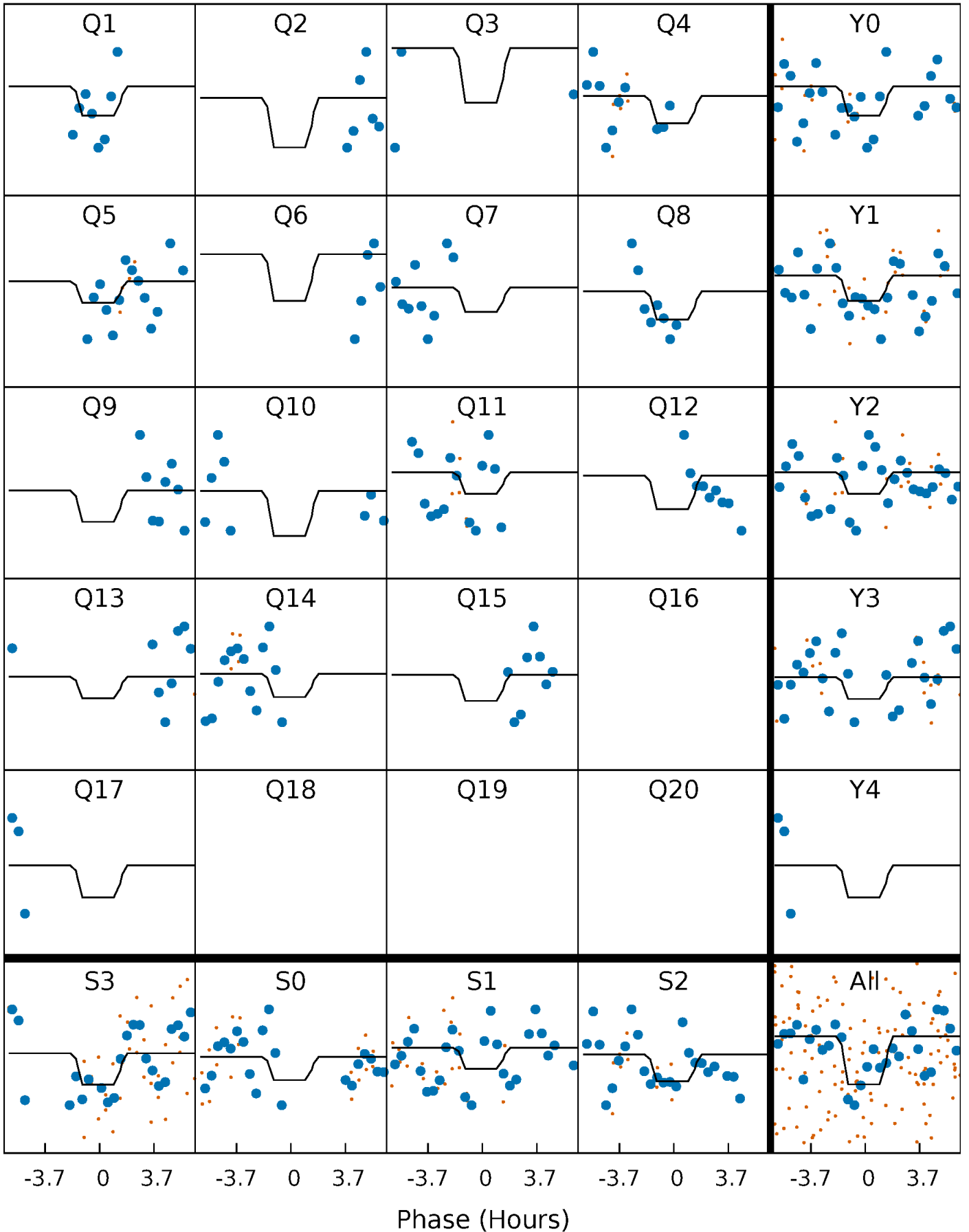
DV Quarter-Phased Transit Curves

TCE 009305952-05 $P = 55.596444$ Days $T_0 = 135.382791$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

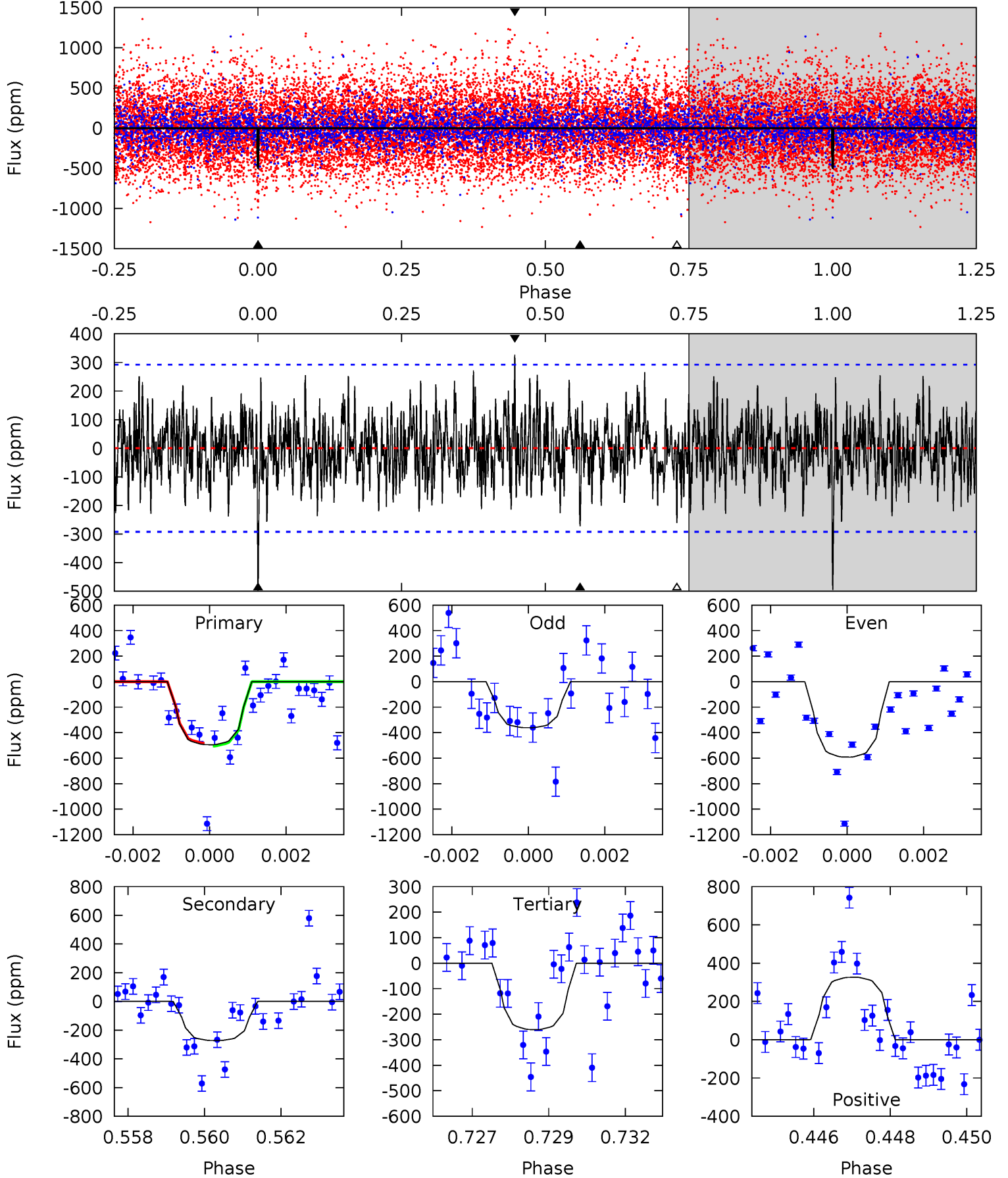
TCE 009305952-05 $P = 55.596154$ Days $T_0 = 135.376436$ (BKJD)



DV Model-Shift Uniqueness Test

009305952-05, P = 55.596444 Days, E = 79.786347 Days

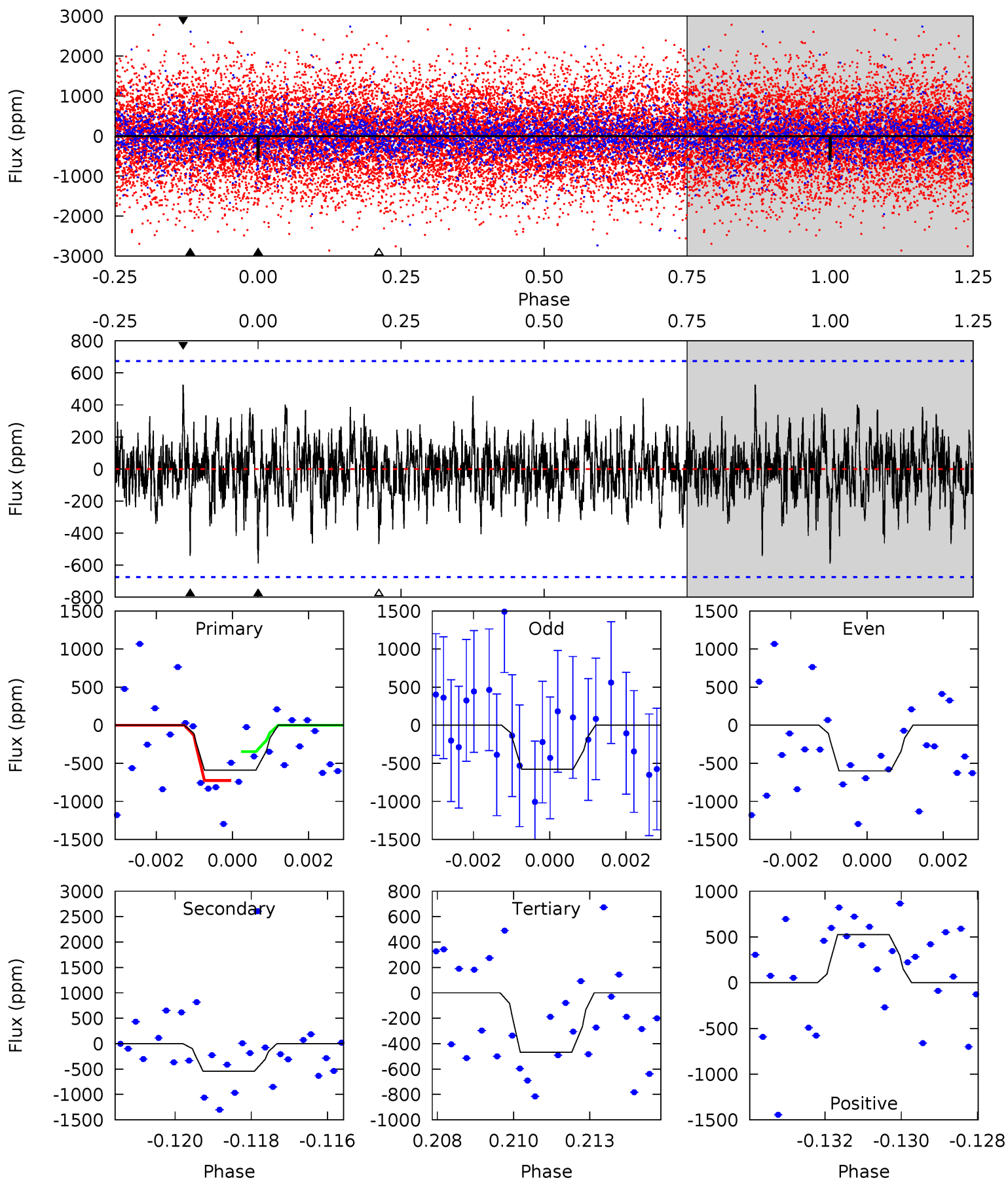
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.99	4.95	4.73	5.93	5.30	3.05	1.61	4.25	3.05	0.22	-0.98	2.07	0.87	0.40	0.20



Alt Model-Shift Uniqueness Test

009305952-05, P = 55.596154 Days, E = 79.780282 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.63	4.26	3.68	4.13	5.30	3.04	1.08	0.95	0.50	0.58	0.12	0.09	1.04	0.47	1.46



Stellar Parameters For KIC 009305952

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8163^{+226}_{-340}	$4.003^{+0.221}_{-0.136}$	$-0.180^{+0.200}_{-0.350}$	$2.229^{+0.423}_{-0.634}$	$1.825^{+0.112}_{-0.336}$	$0.232^{+0.301}_{-0.083}$
	+3%/-4%	+6%/-3%	+111%/-194%	+19%/-28%	+6%/-18%	+130%/-36%
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 009305952-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-272 ± 55	$5.58^{+4.89}_{-3.20}$	1250^{+85}_{-90}	6449^{+4578}_{-1634}	571^{+2307}_{-417}
Alt.	-542 ± 127	$6.53^{+4.68}_{-3.88}$	1261^{+91}_{-96}	7191^{+6890}_{-1723}	792^{+4272}_{-530}

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 $A_{obs} \gg 1.0$

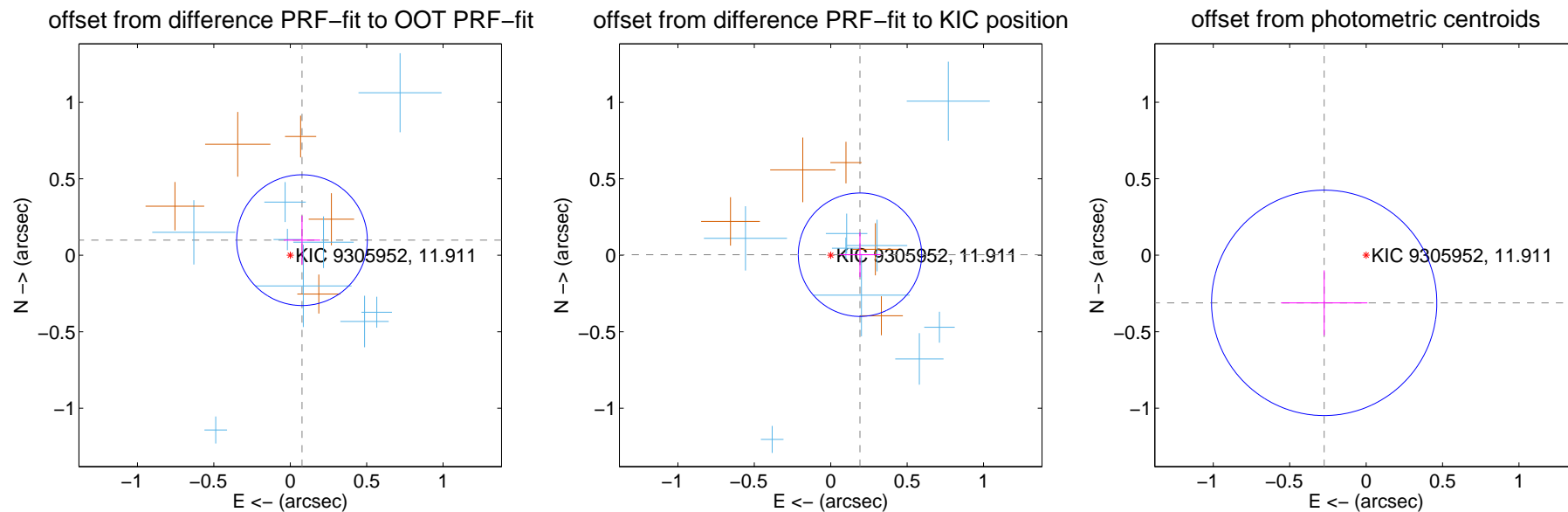
DV Centroid Data

Supplemental centroid analysis for 009305952-05. **Kepler magnitude: 11.91.** Transit SNR 6.82

There are 9 quarters with good PRF difference image offsets

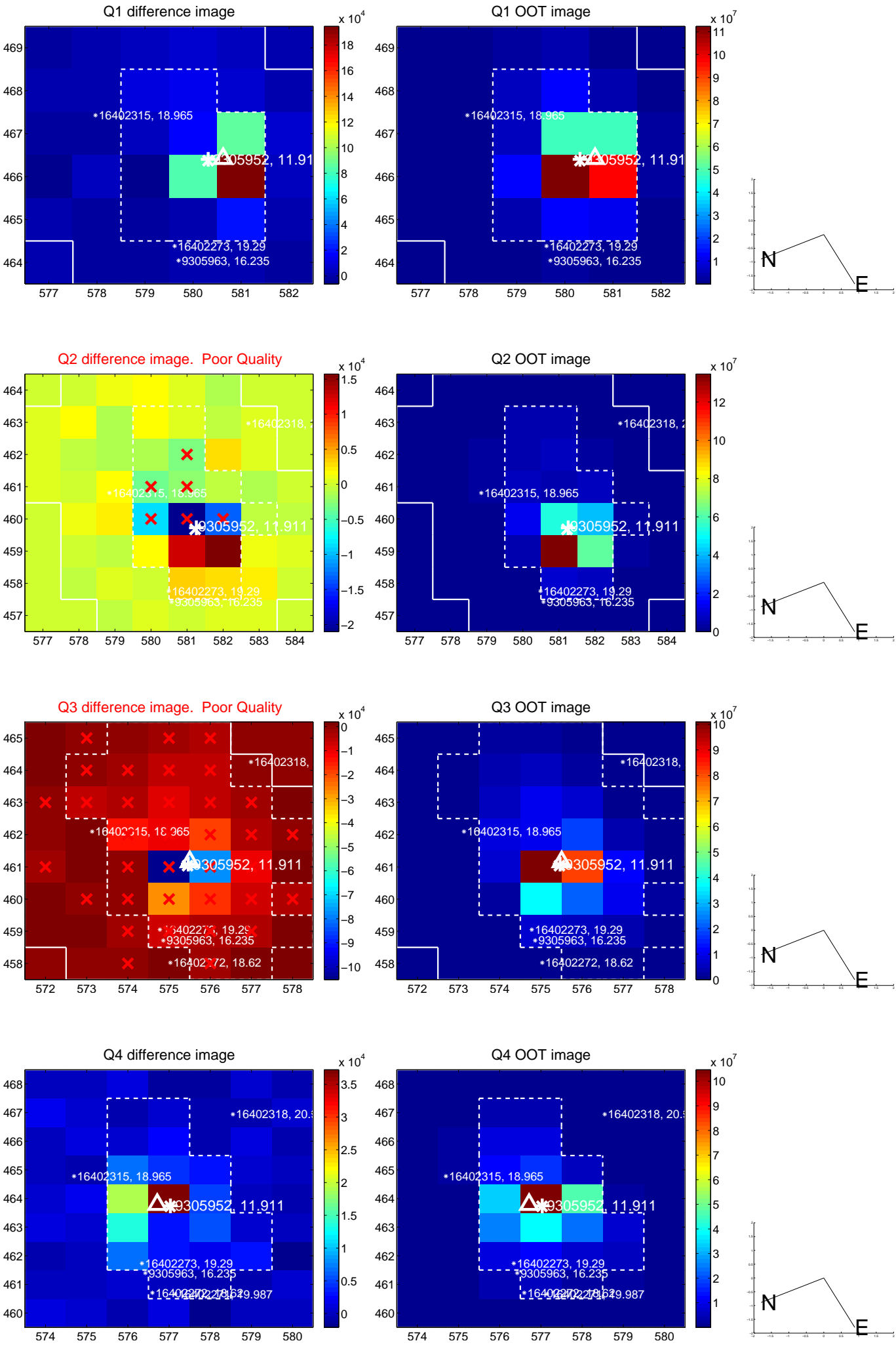
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.125 ± 0.143	0.88	-0.077 ± 0.119	0.099 ± 0.160
PRF-fit source offset from KIC position	0.191 ± 0.135	1.42	-0.191 ± 0.135	0.004 ± 0.146
photometric centroid source offset	0.42 ± 0.25	1.69	0.27 ± 0.28	-0.31 ± 0.21

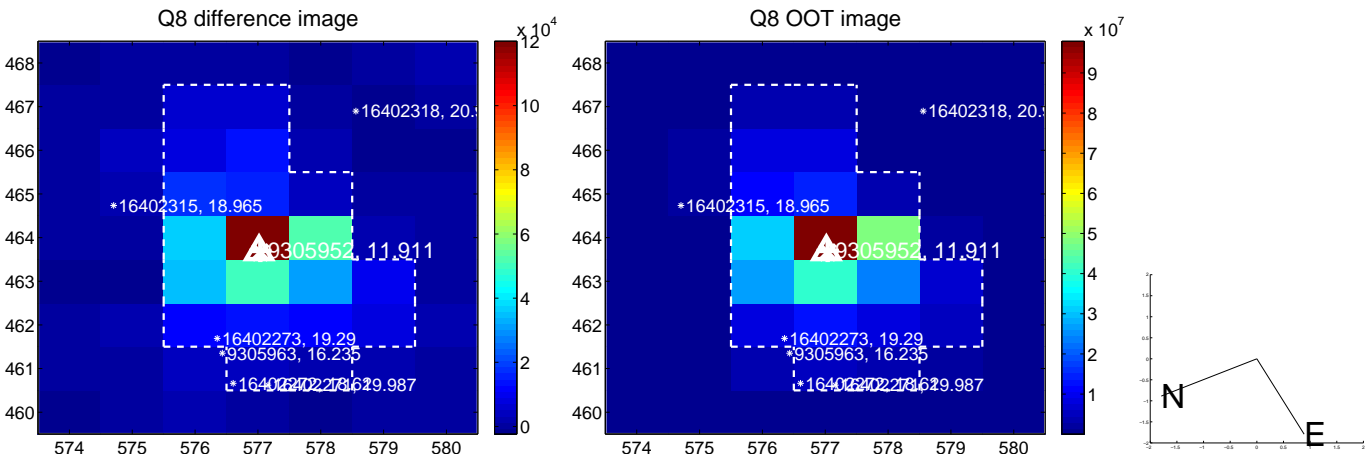
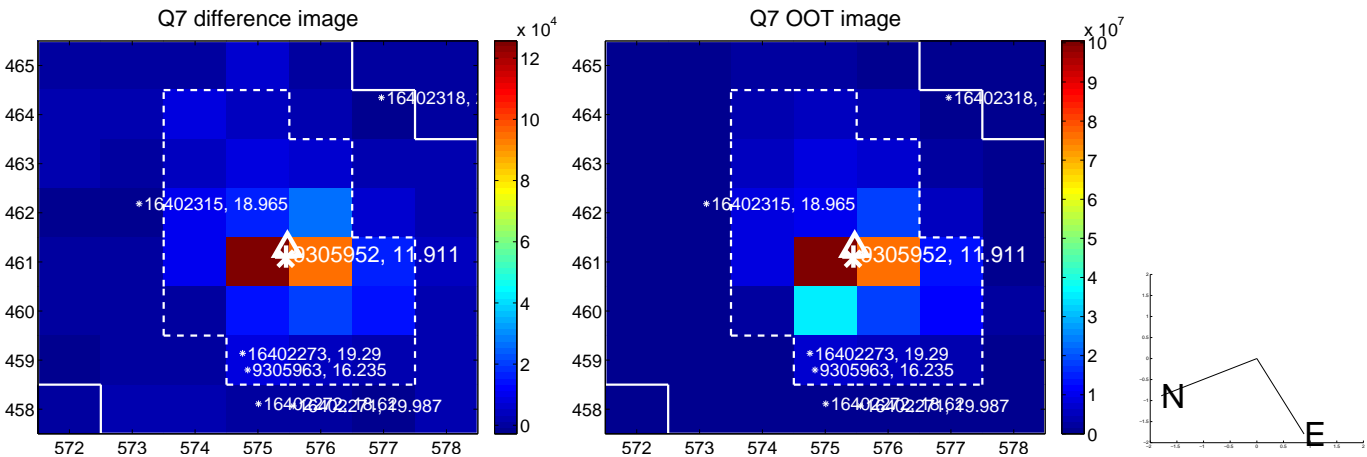
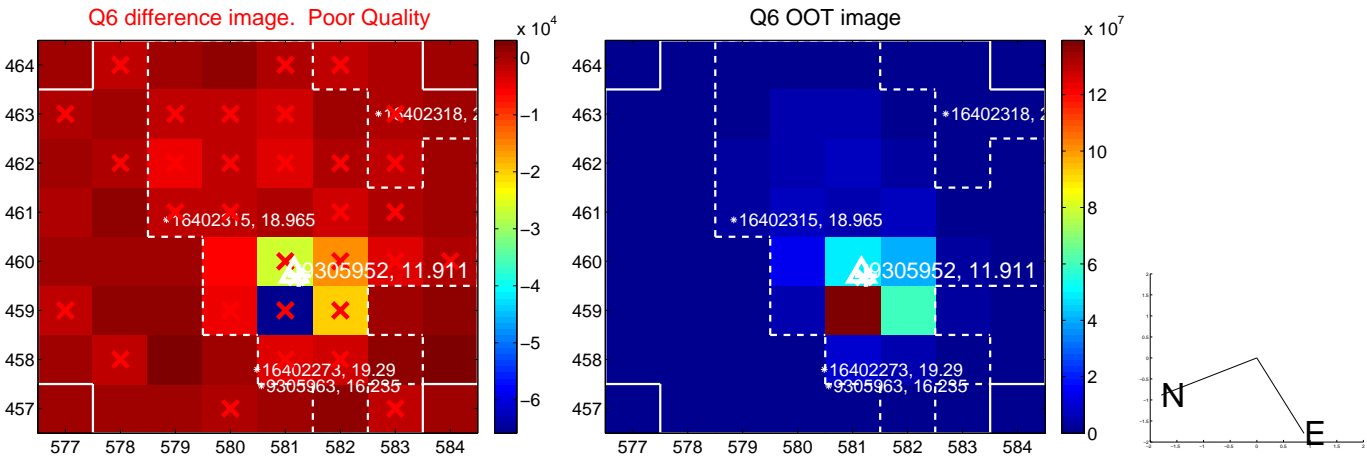
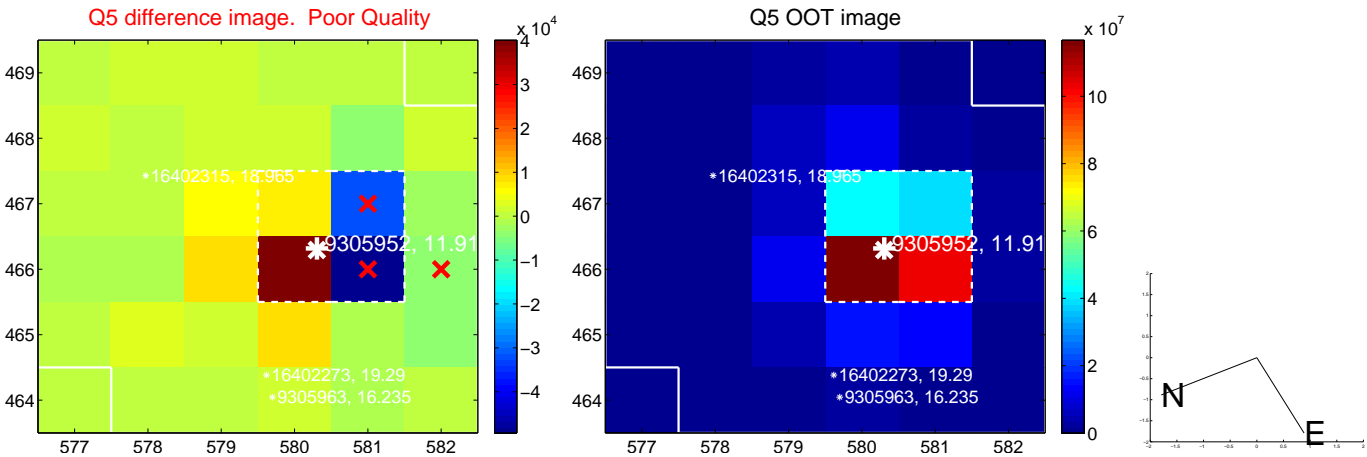


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

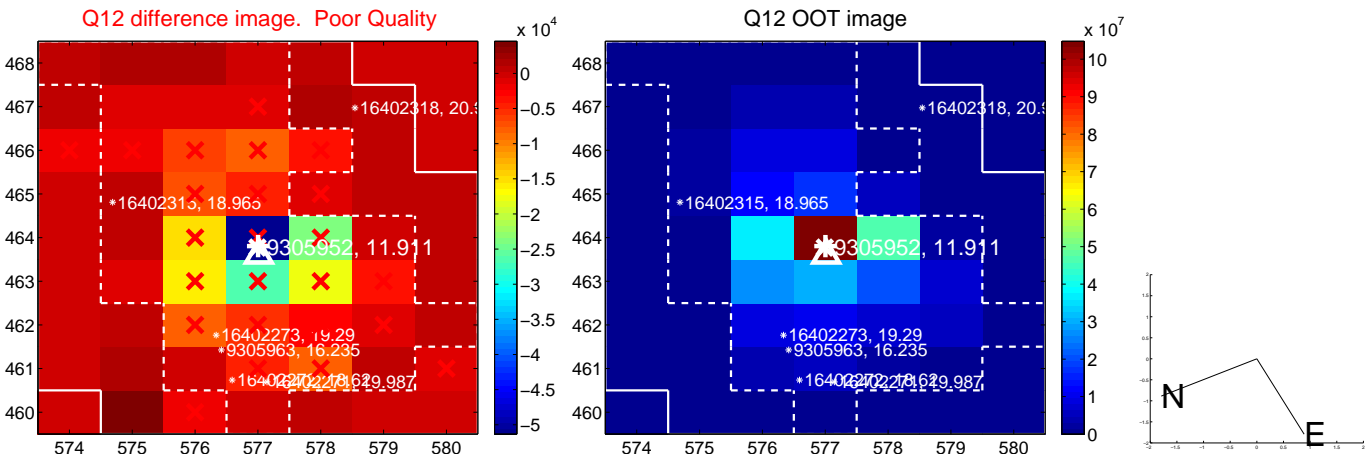
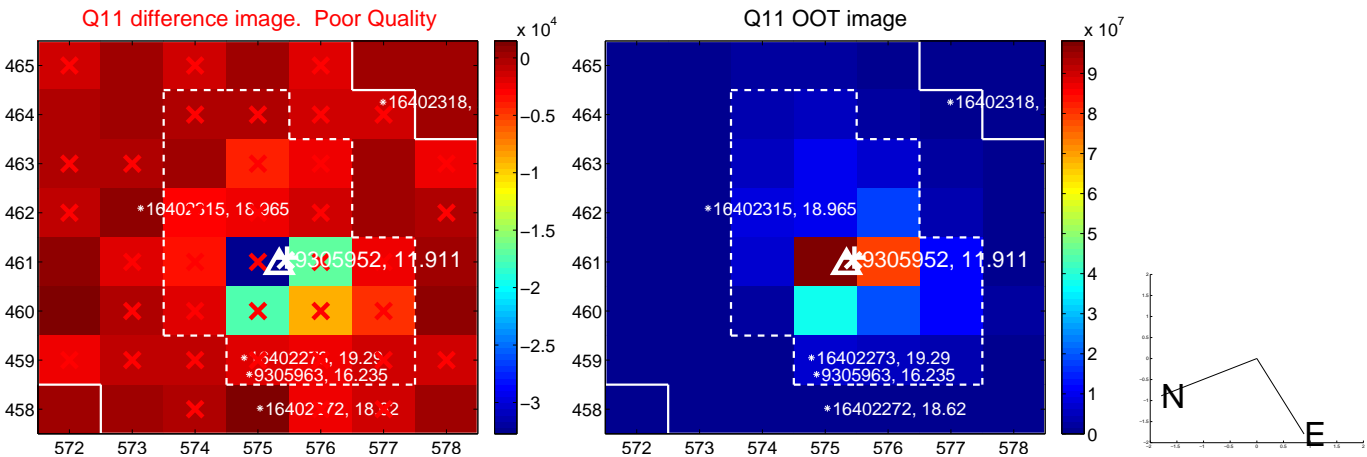
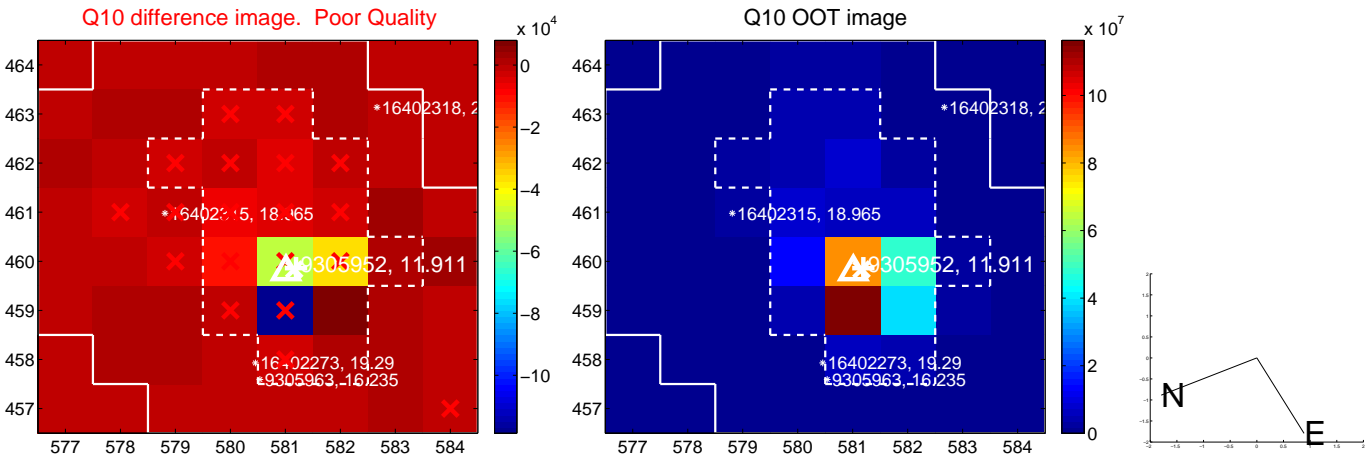
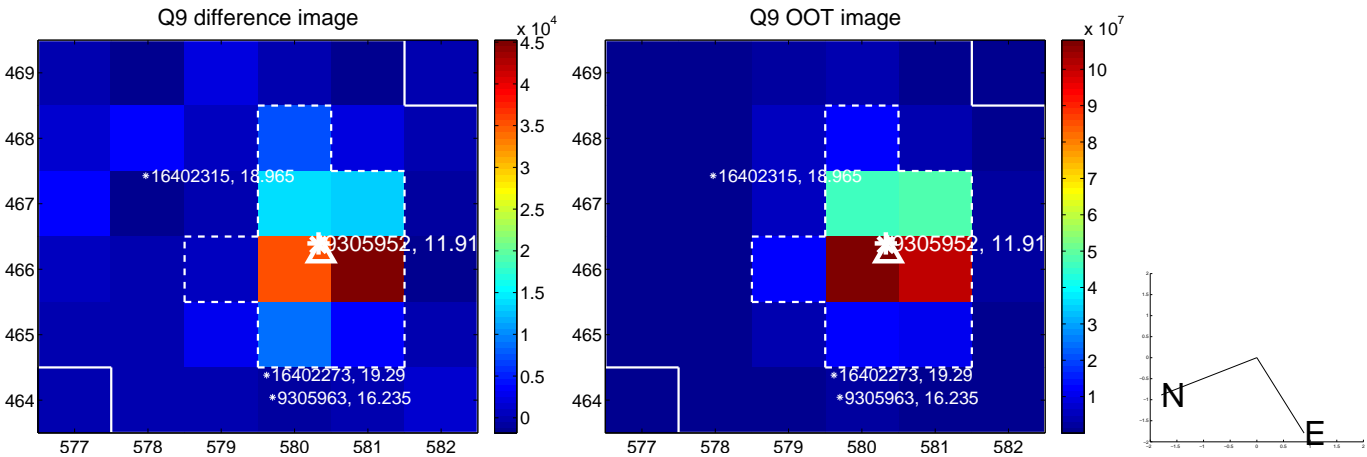
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



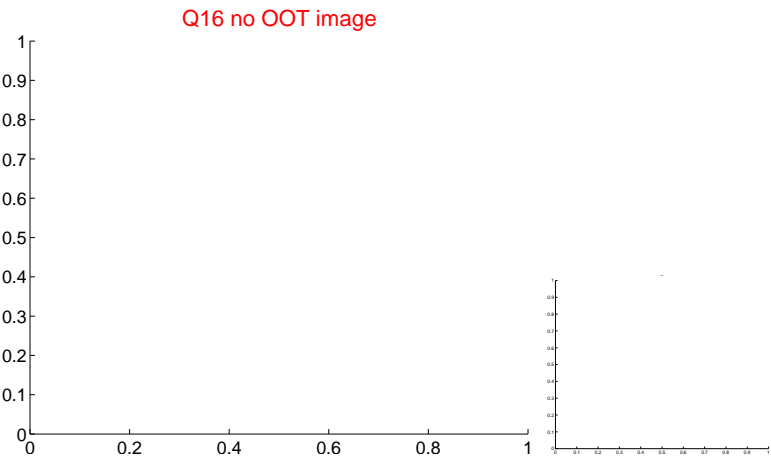
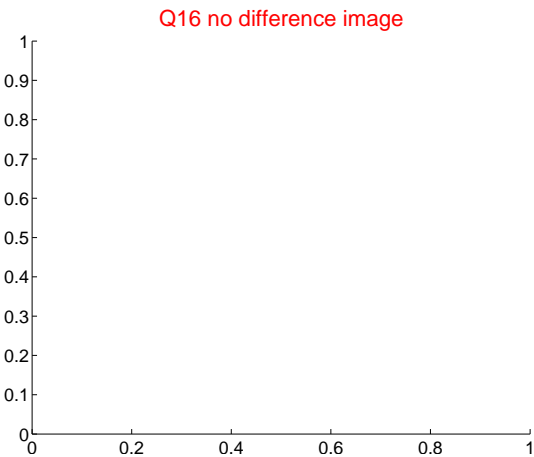
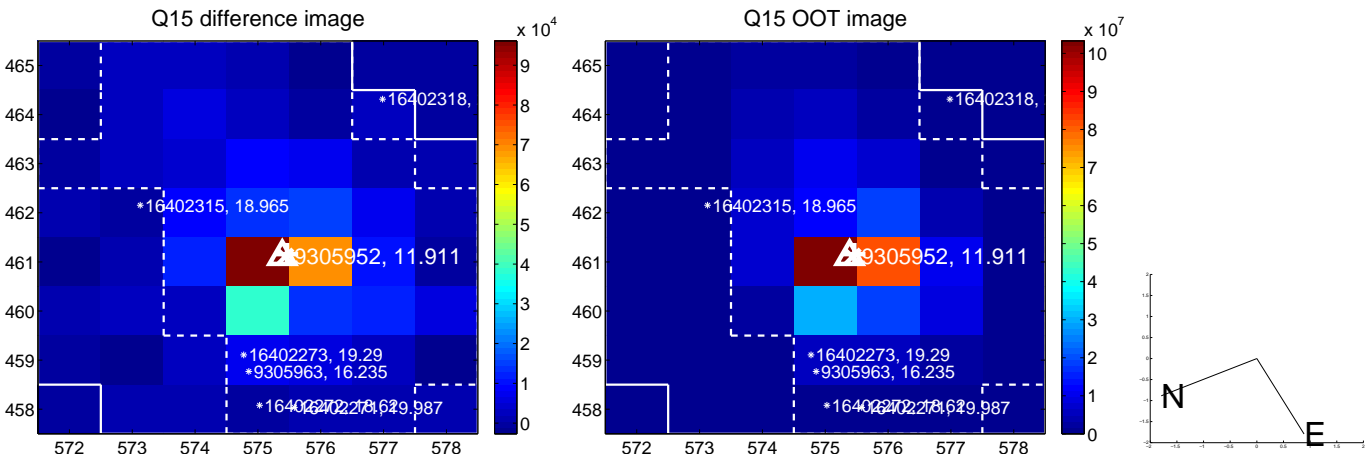
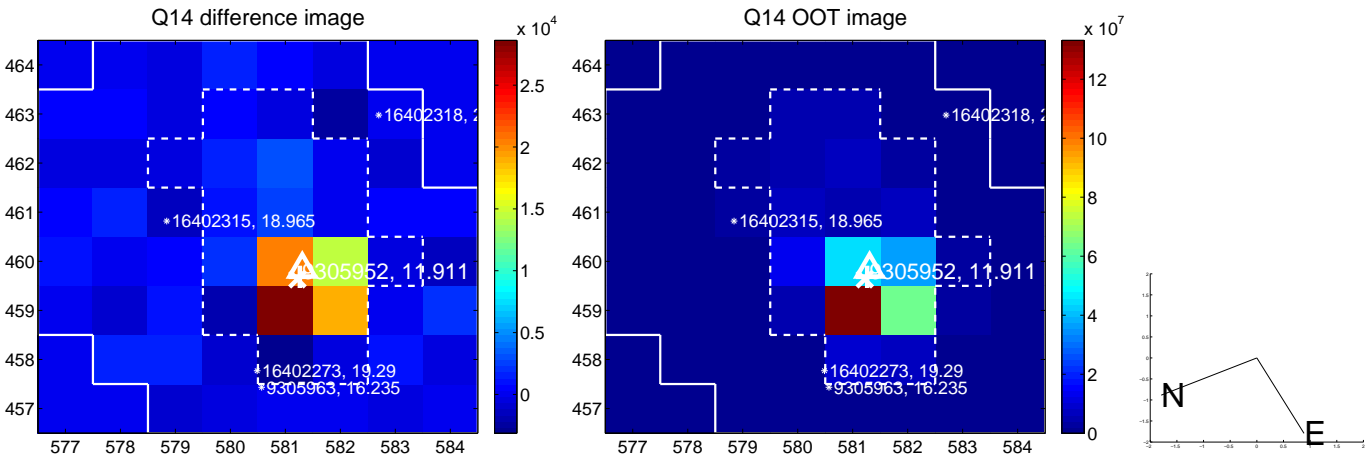
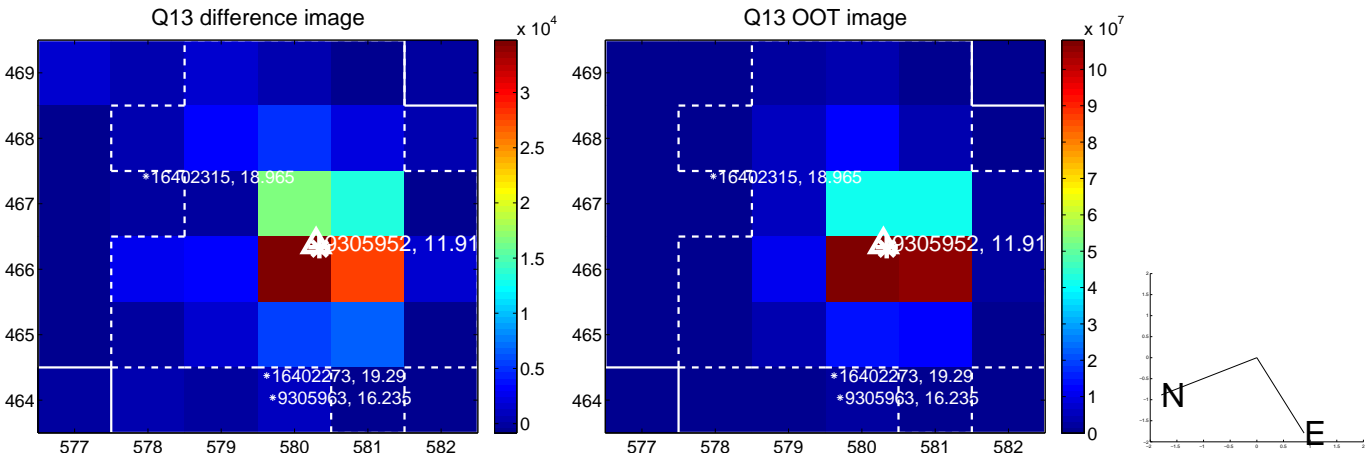
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



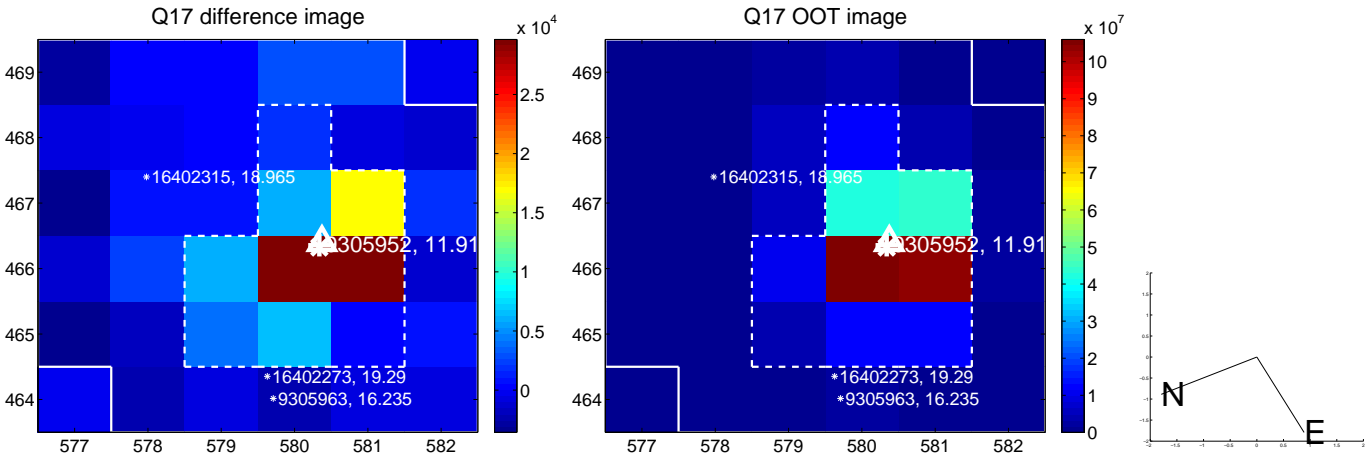
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



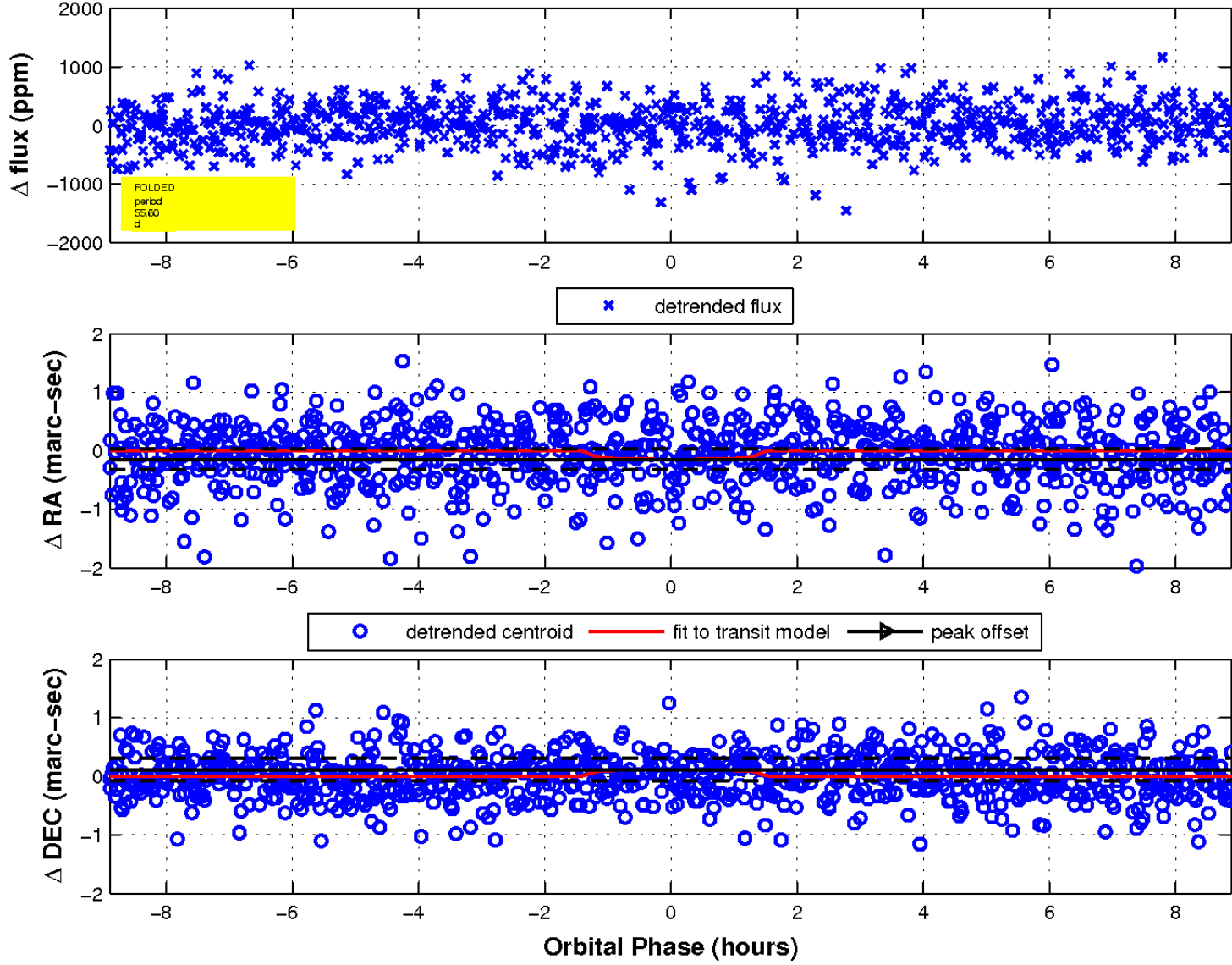
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

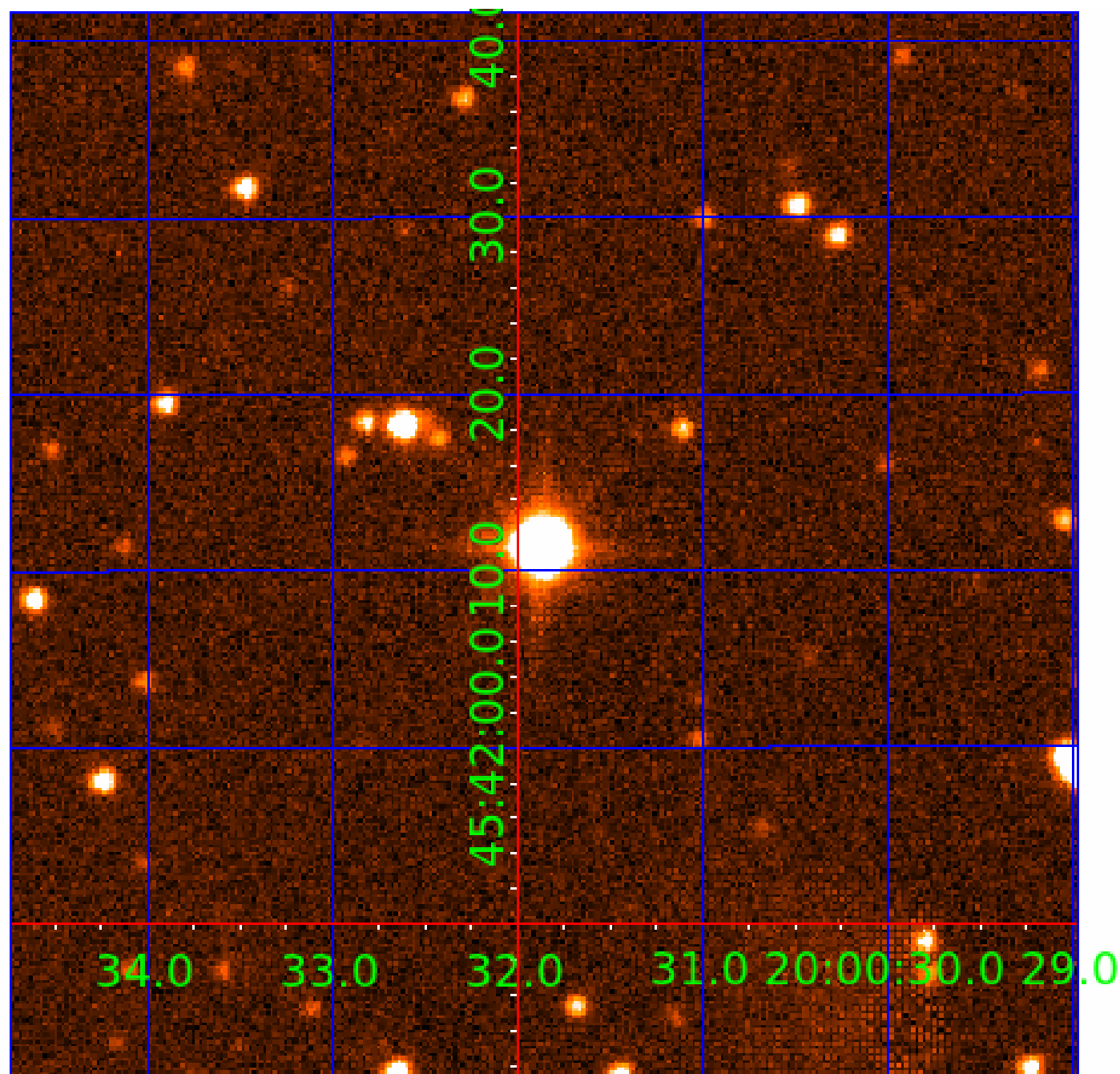


fluxWeightedCentroids, Planet 5 of 6



UKIRT Image

Declination



KIC 009305952

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})
009305952-01	OBS	No	0.655430	131.760158	24.1	3.682	10.8	5.6	2.23	8163	1.28	60673.38
009305952-02	OBS	No	76.264928	190.152059	612.0	3.286	8.4	9.0	2.23	8163	6.67	106.81
009305952-03	OBS	No	80.340169	159.743277	772.7	1.840	7.9	8.5	2.23	8163	6.66	99.64
009305952-04	OBS	No	40.969414	150.066577	325.8	4.327	8.0	8.1	2.23	8163	4.69	244.58
009305952-05	OBS	No	55.596444	135.382791	477.7	2.971	8.2	6.8	2.23	8163	5.55	162.79
009305952-06	OBS	No	82.605886	197.477337	133.5	3.500	7.1	-1.0	2.23	8163	2.60	96.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009305952-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009305952-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009305952-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009305952-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009305952-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009305952-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

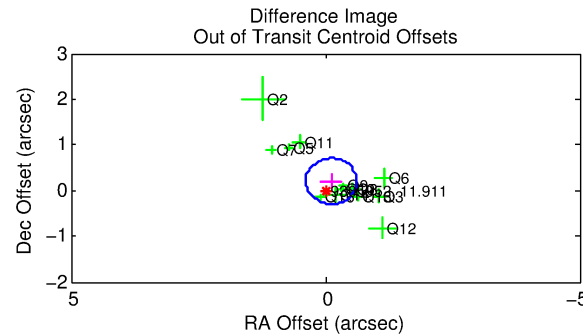
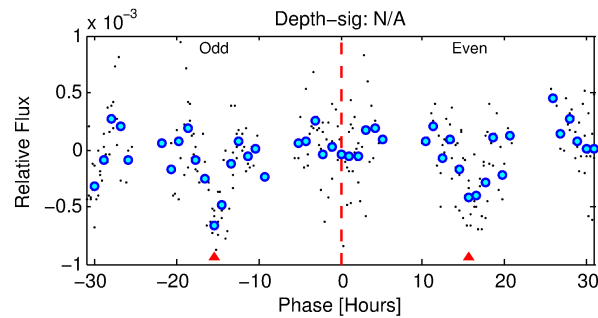
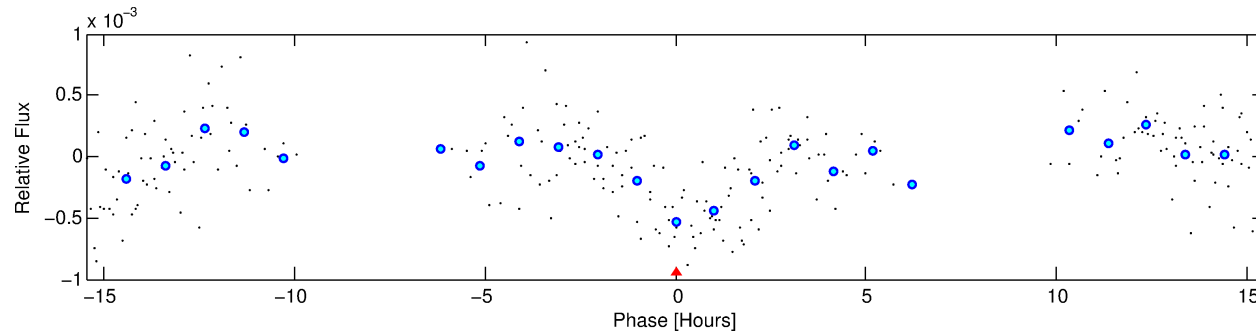
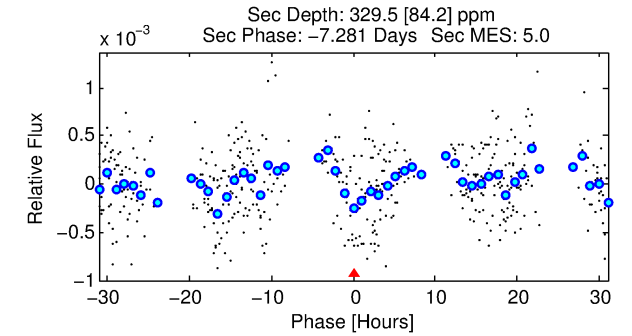
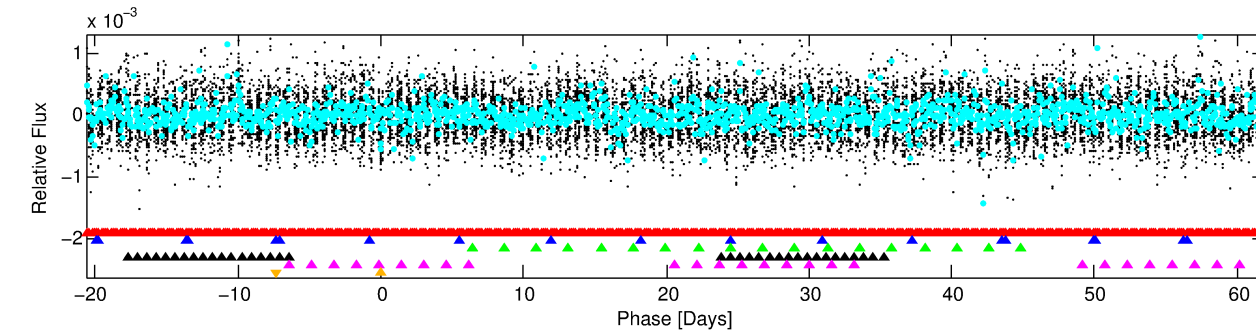
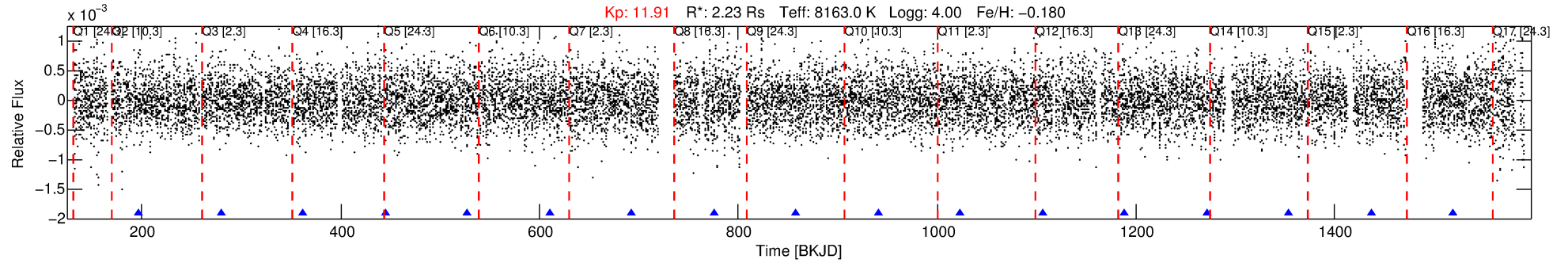
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009305952-06

No Significant Match Found

DV One-Page Summary

KIC: 9305952 Candidate: 6 of 6 Period: 82.606 d



TPS TCE Results:

Period = 82.60589 d
Epoch = 197.4773 BKJD

DV fit results are unavailable

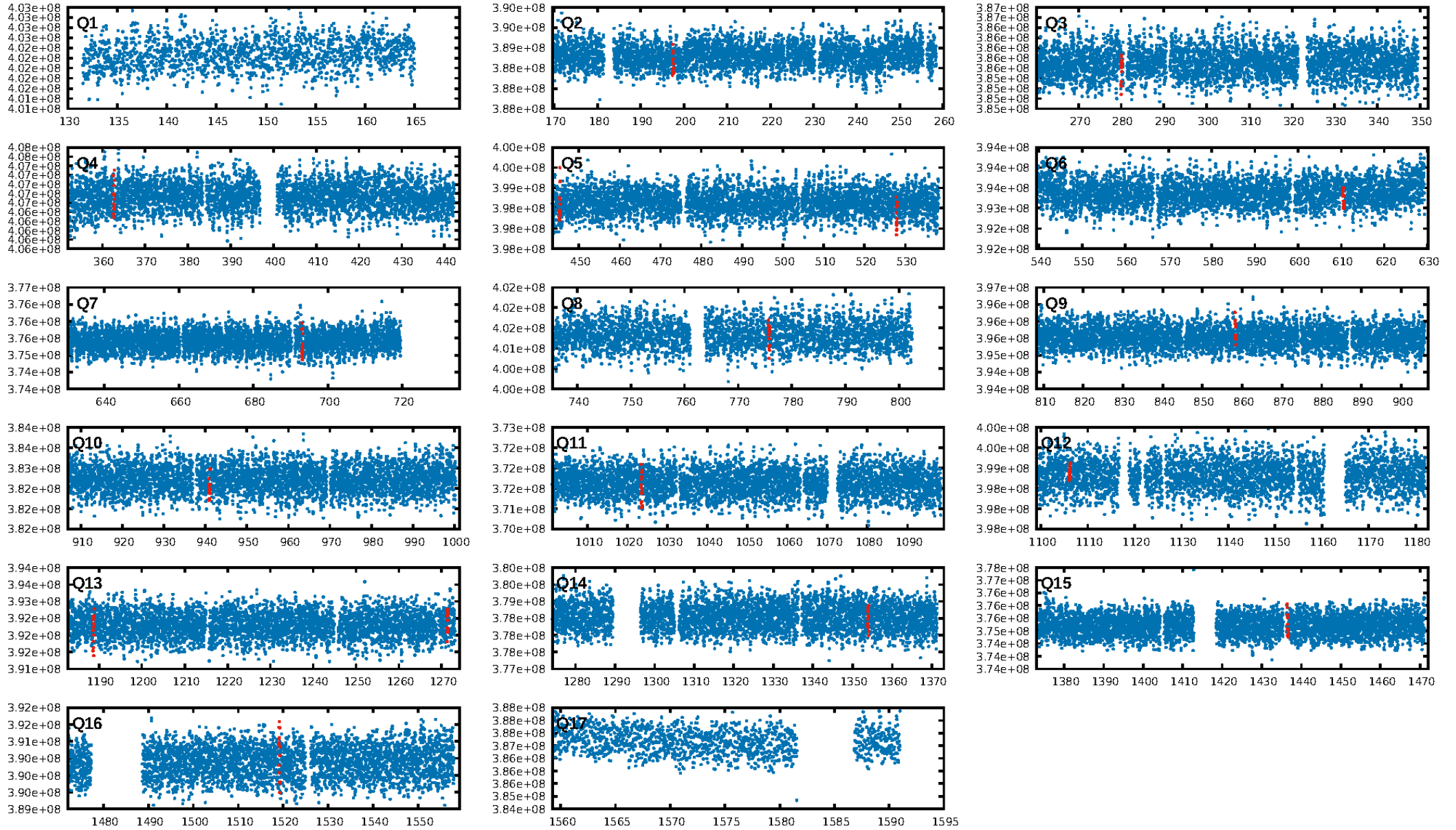
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.75 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [17/17]
GhostDiagnostic-chr: 1.461
Centroid-sig: 32.1%
Centroid-so: 0.181 arcsec [1.32 σ]
OotOffset-rm: 0.237 arcsec [1.42 σ]
KicOffset-rm: 0.228 arcsec [1.20 σ]
OotOffset-st: 4/3/3/3 [13]
KicOffset-st: 4/3/3/3 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 0.00 [0/14]

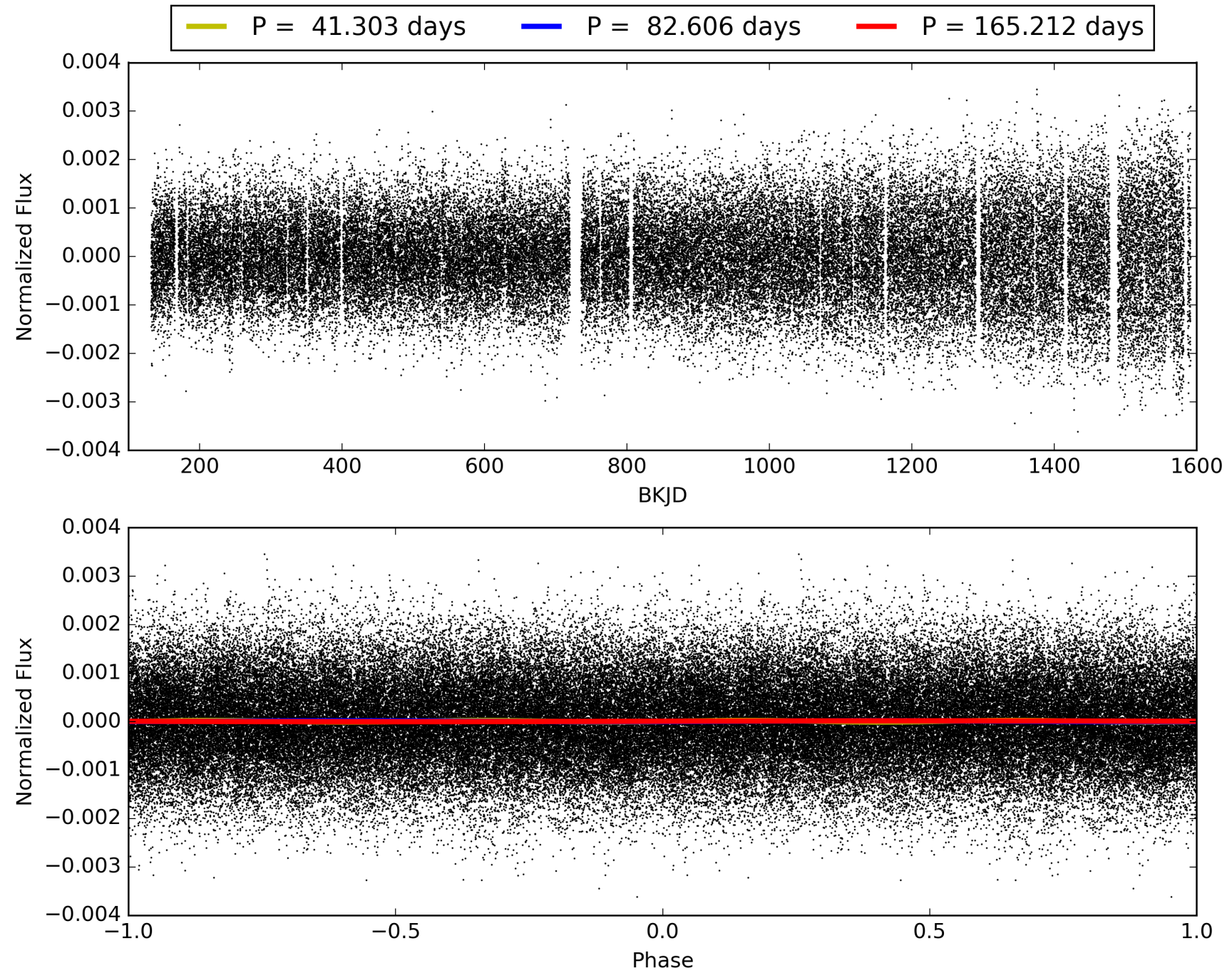
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:01:29 Z

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

TCE 009305952-06, PDC Light Curves

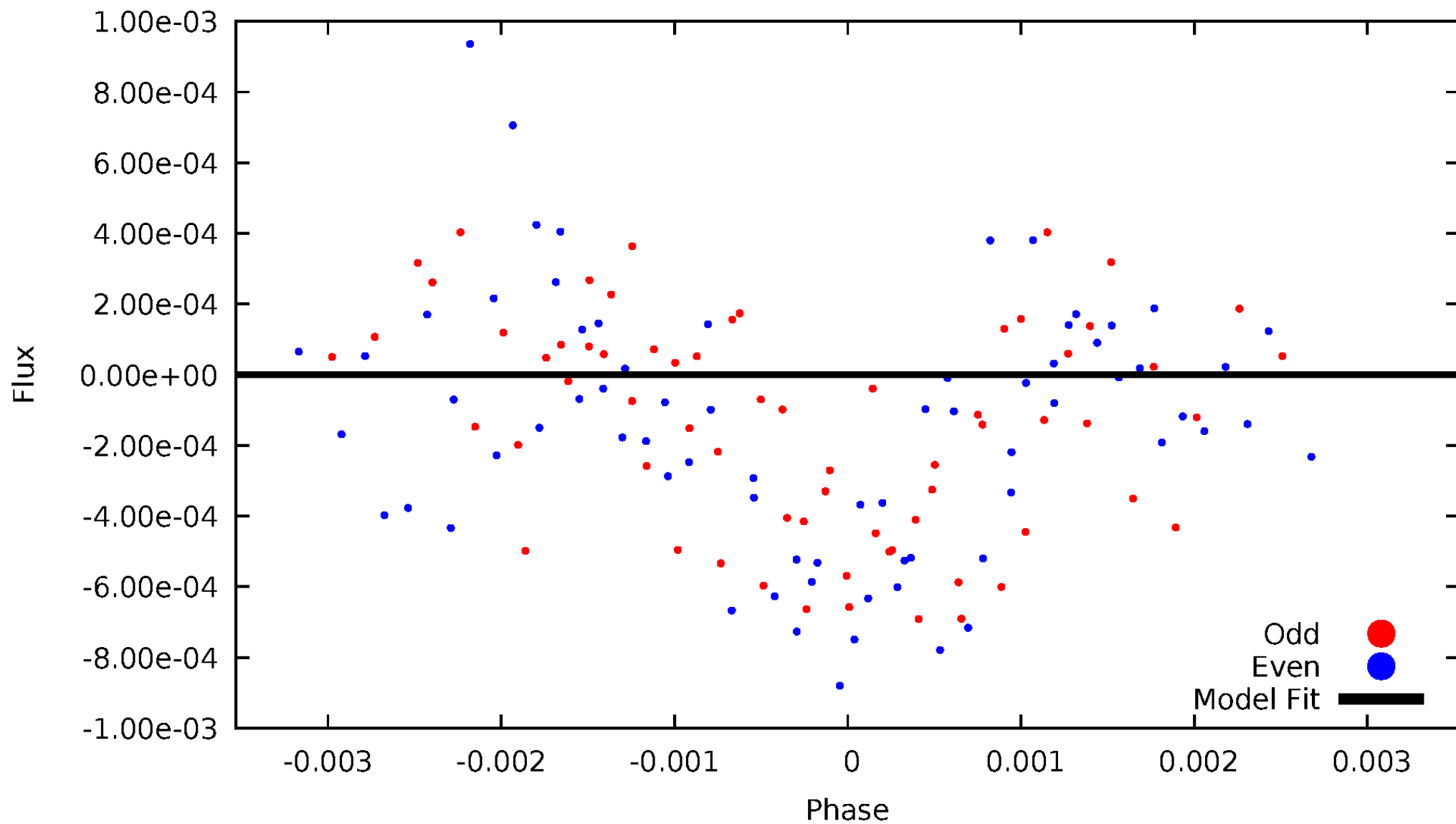


TCE 009305952-06



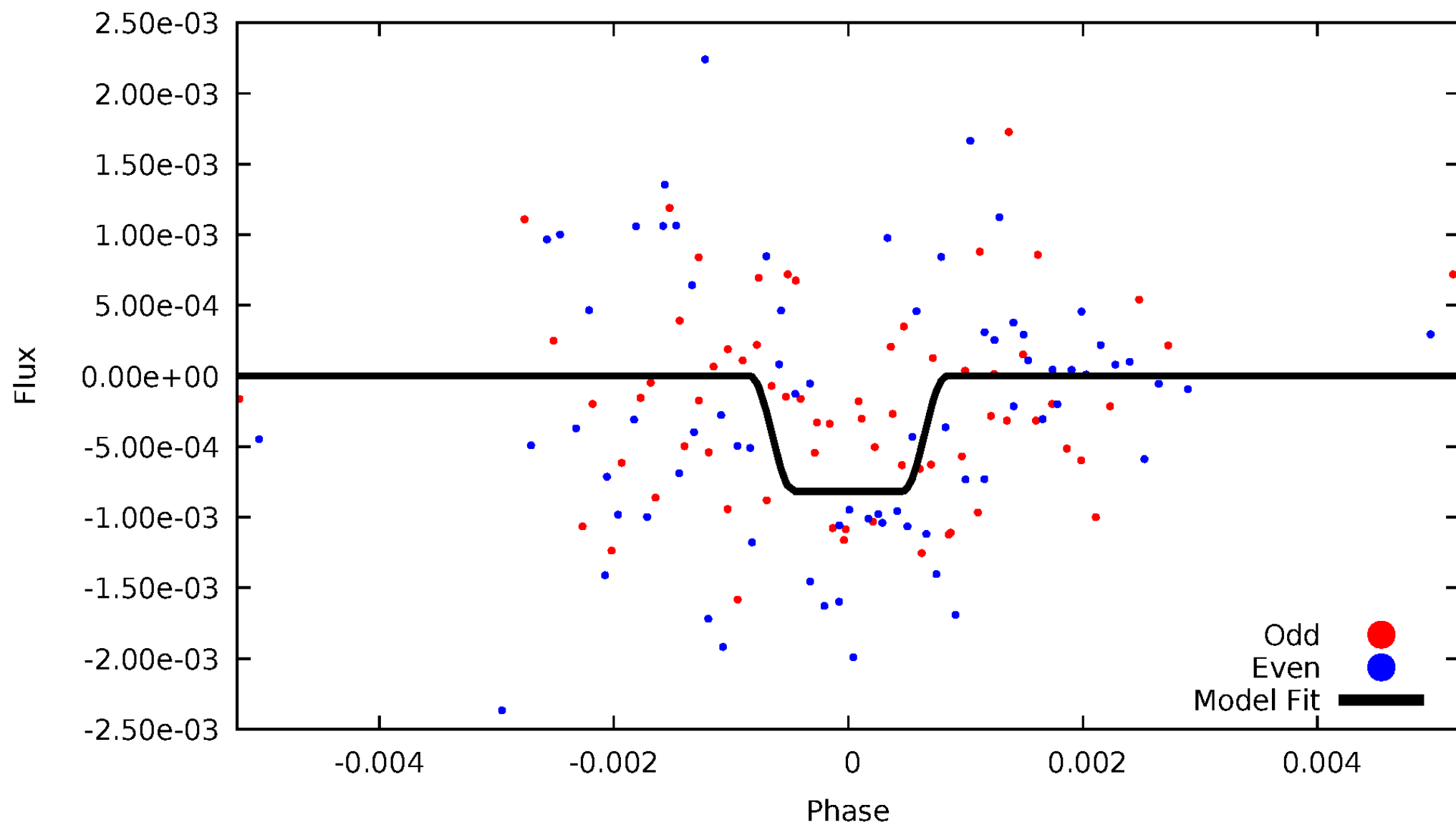
DV Odd/Even

TCE 009305952-06



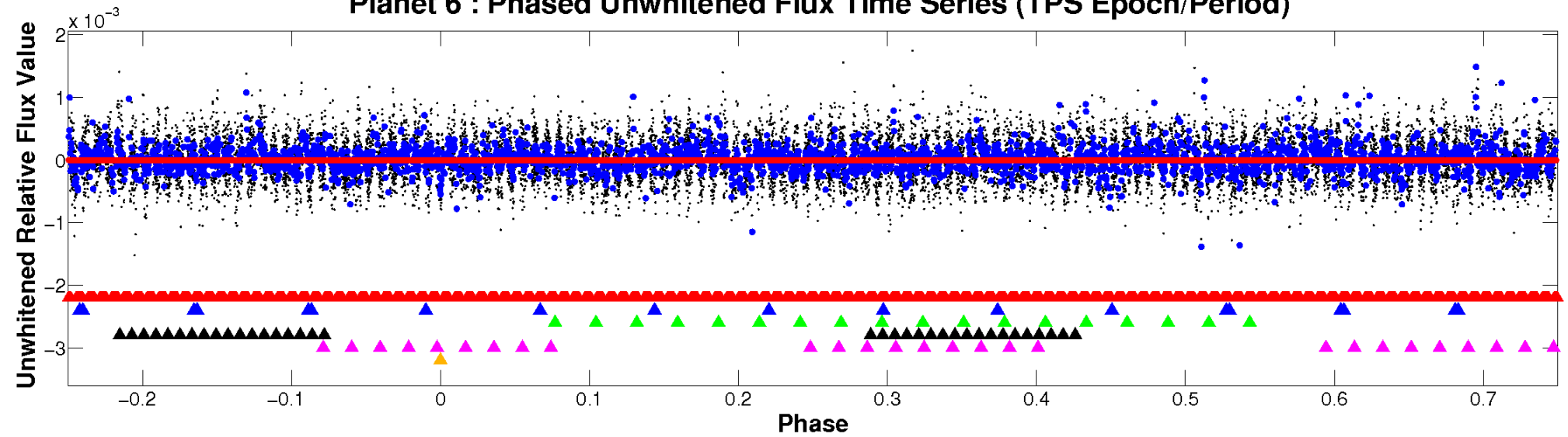
ALT Odd/Even

TCE 009305952-06

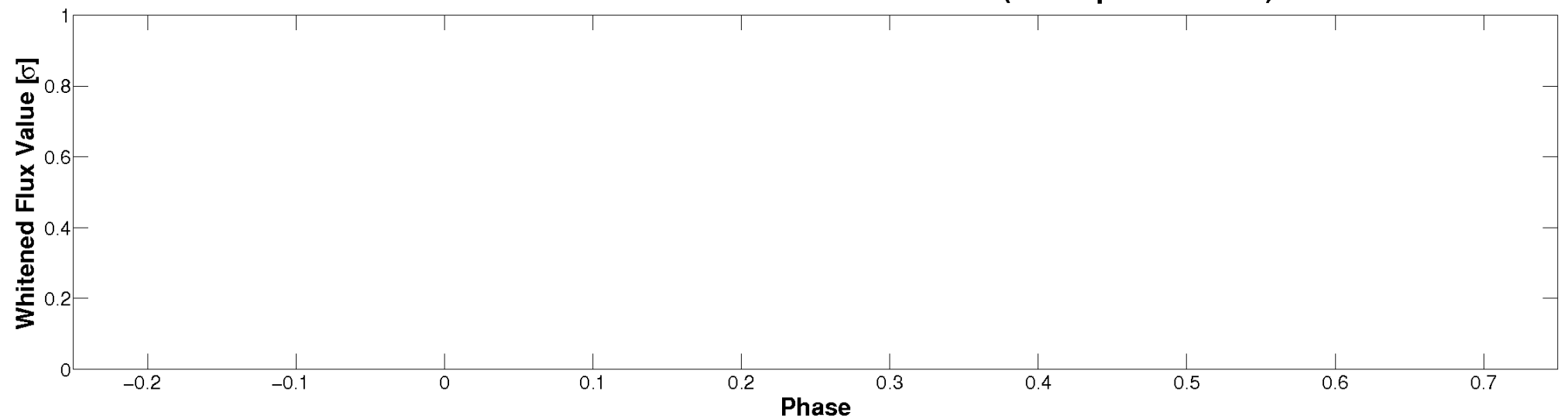


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

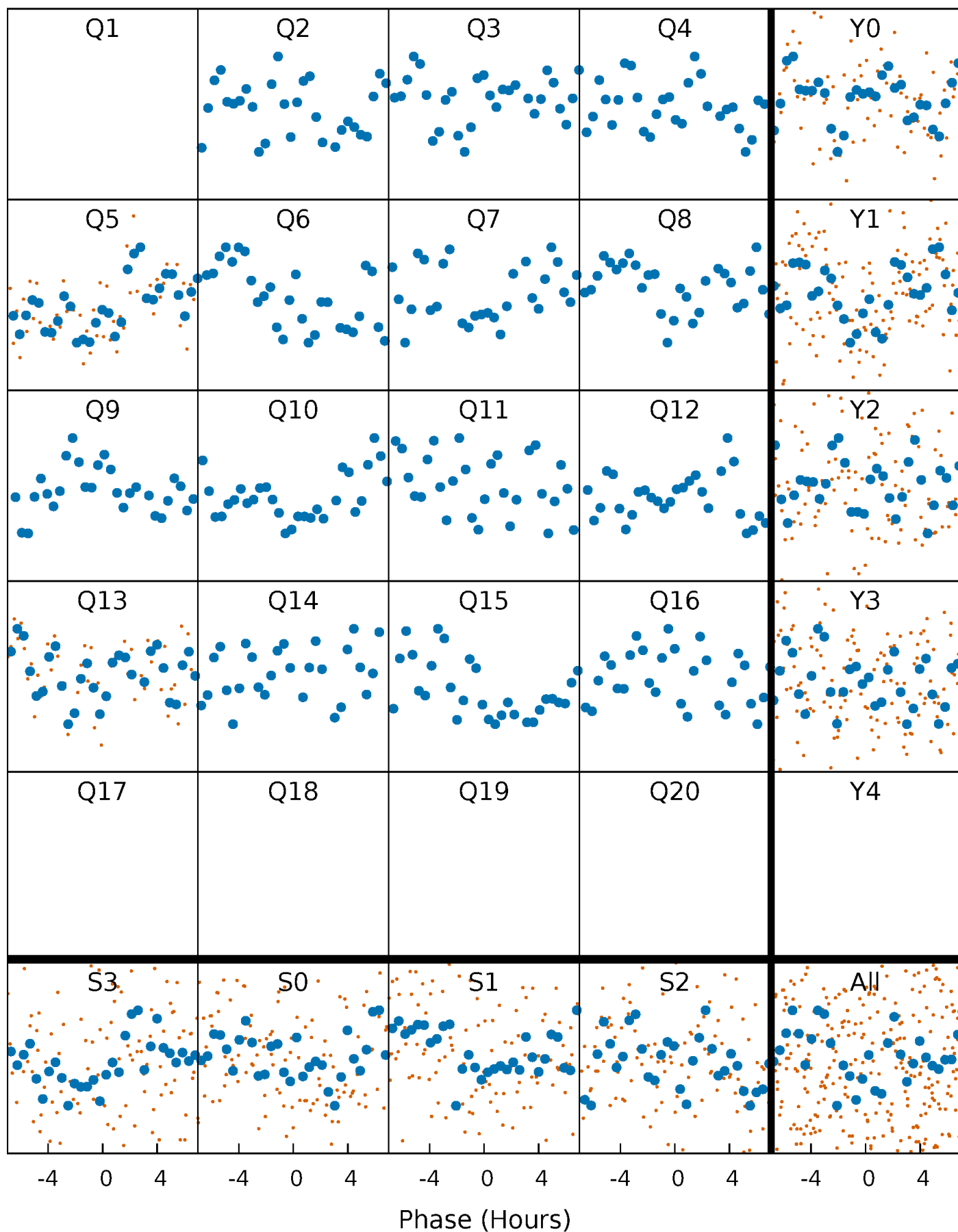


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



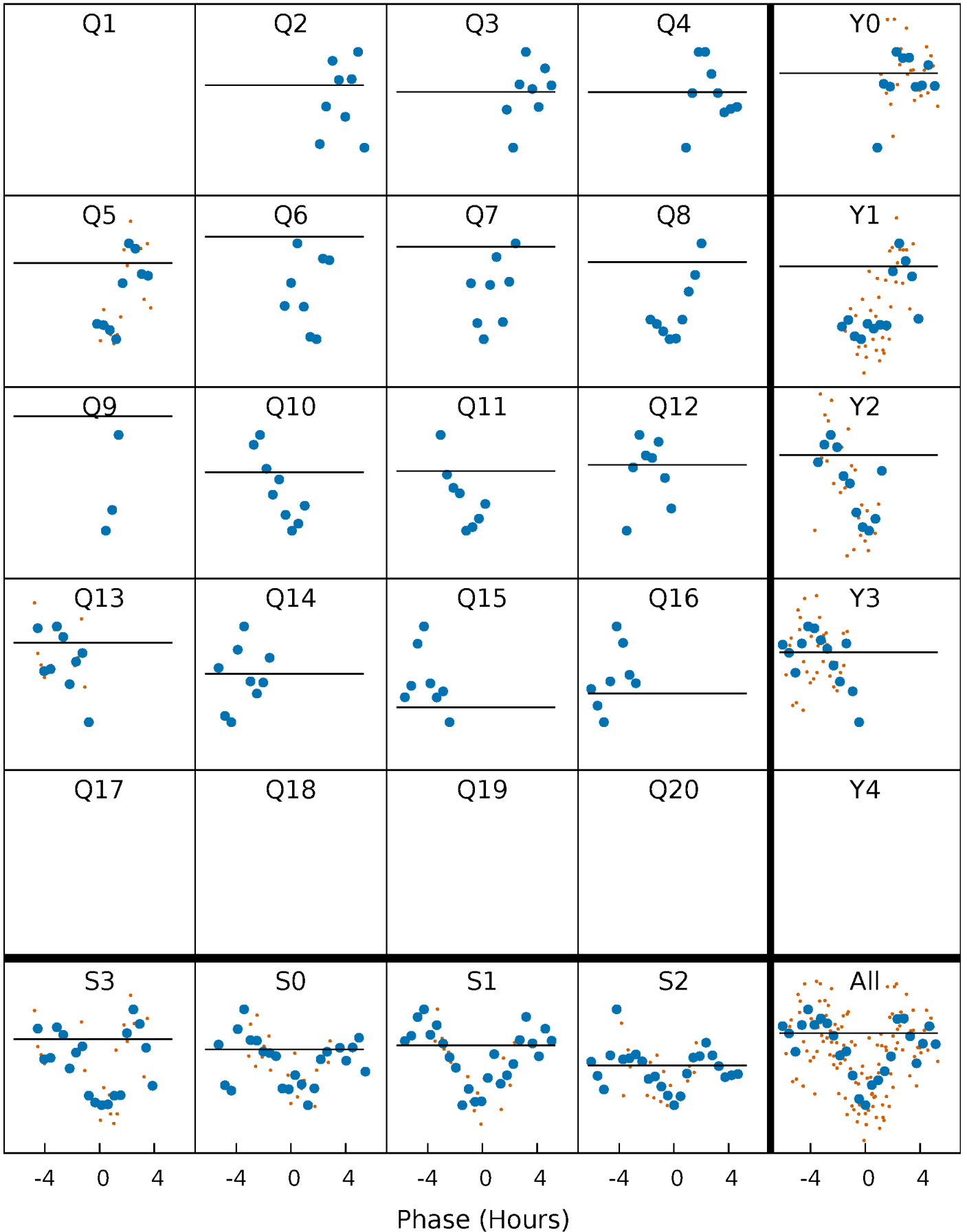
PDC Quarter-Phased Transit Curves

TCE 009305952-06 P= 82.605886 Days $T_0=197.477337$ (BKJD)



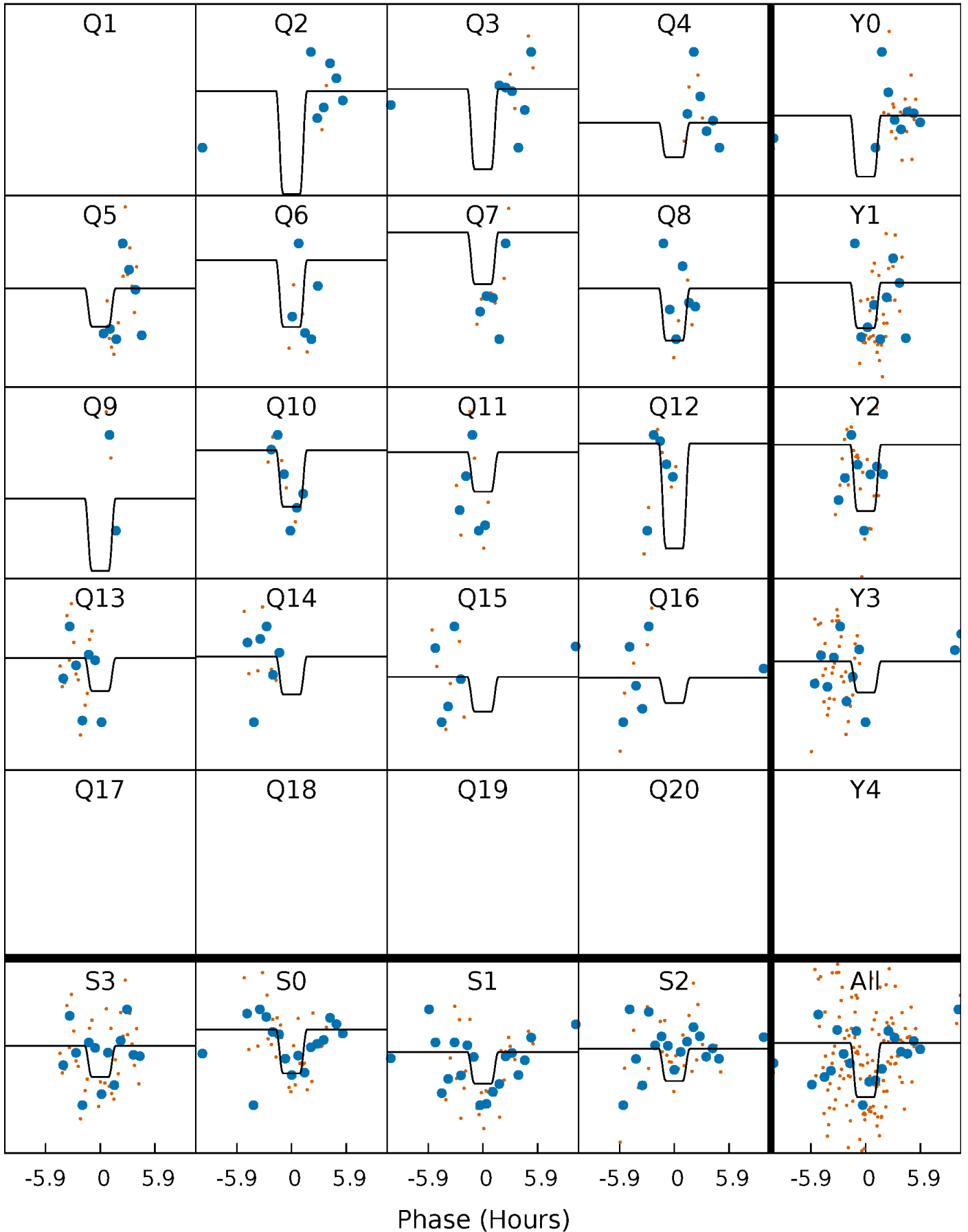
DV Quarter-Phased Transit Curves

TCE 009305952-06 P= 82.605886 Days $T_0=197.477337$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

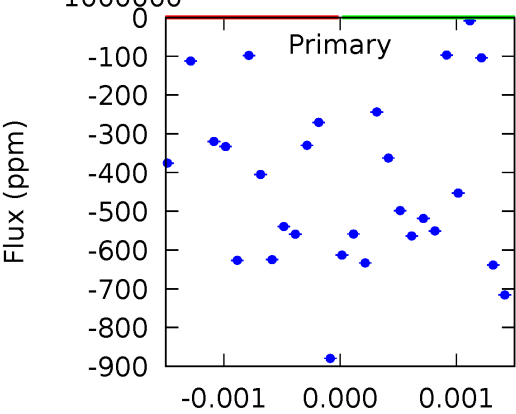
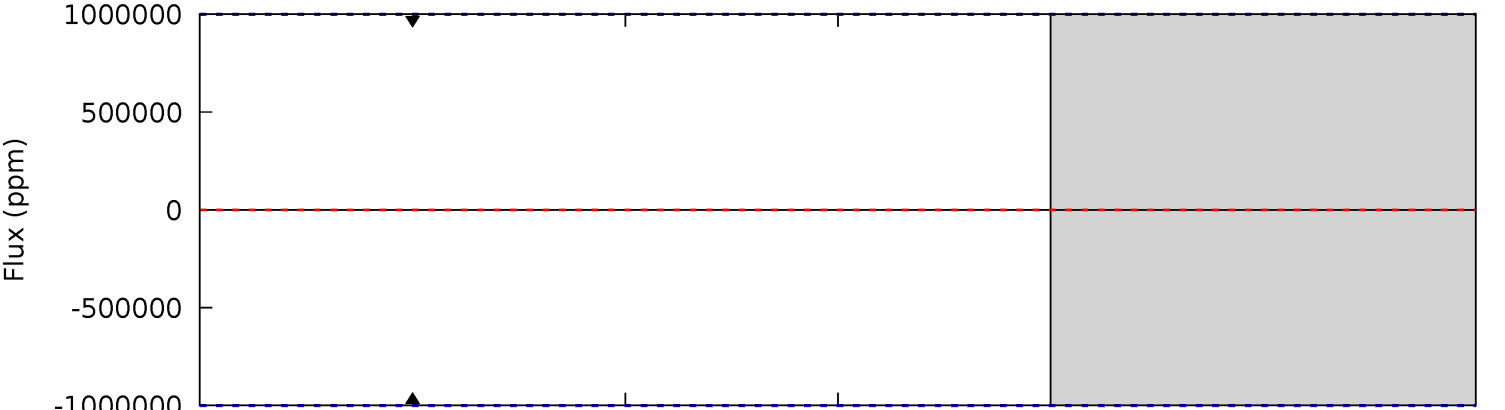
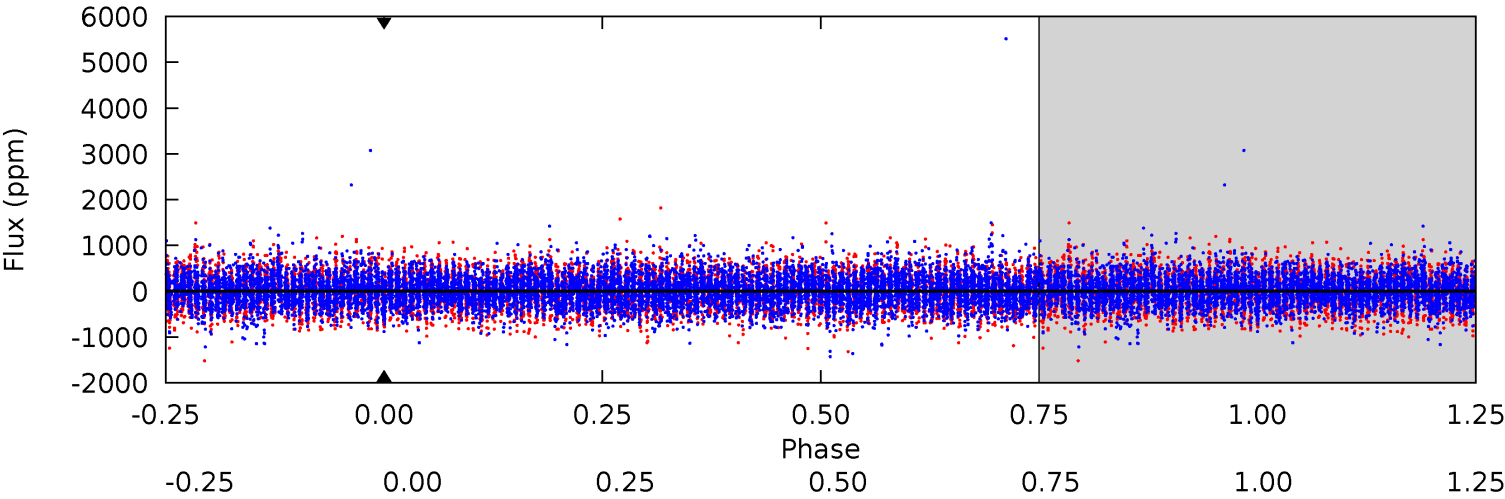
TCE 009305952-06 P= 82.605886 Days $T_0=197.459419$ (BKJD)



DV Model-Shift Uniqueness Test

009305952-06, P = 82.605886 Days, E = 114.871451 Days

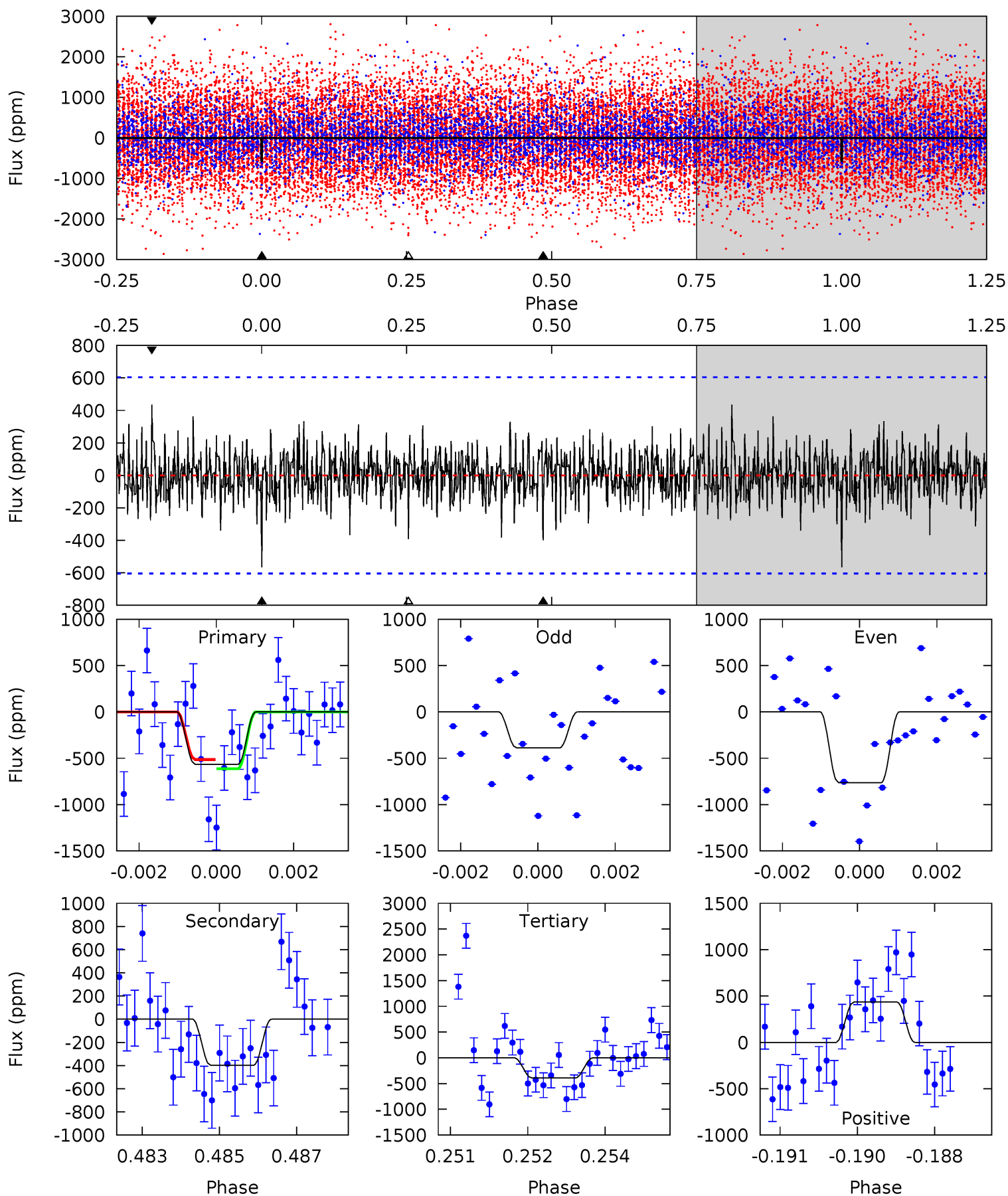
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009305952-06, P = 82.605886 Days, E = 114.853533 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.01	3.53	3.48	3.86	5.36	3.15	1.03	1.54	1.16	0.05	-0.33	1.66	0.95	0.43	0.44



Stellar Parameters For KIC 009305952

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8163^{+226}_{-340}	$4.003^{+0.221}_{-0.136}$	$-0.180^{+0.200}_{-0.350}$	$2.229^{+0.423}_{-0.634}$	$1.825^{+0.112}_{-0.336}$	$0.232^{+0.301}_{-0.083}$
	+3%/-4%	+6%/-3%	+111%/-194%	+19%/-28%	+6%/-18%	+130%/-36%
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 009305952-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$17.22^{+17.19}_{-11.66}$	1102^{+73}_{-84}	6123^{+45254}_{-46168}	770^{+68069}_{-55324}
Alt.	-398 ± 113	$18.23^{+18.32}_{-12.83}$	1107^{+73}_{-87}	4205^{+3253}_{-895}	126^{+1416}_{-95}

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 $A_{obs} \gg 1.0$

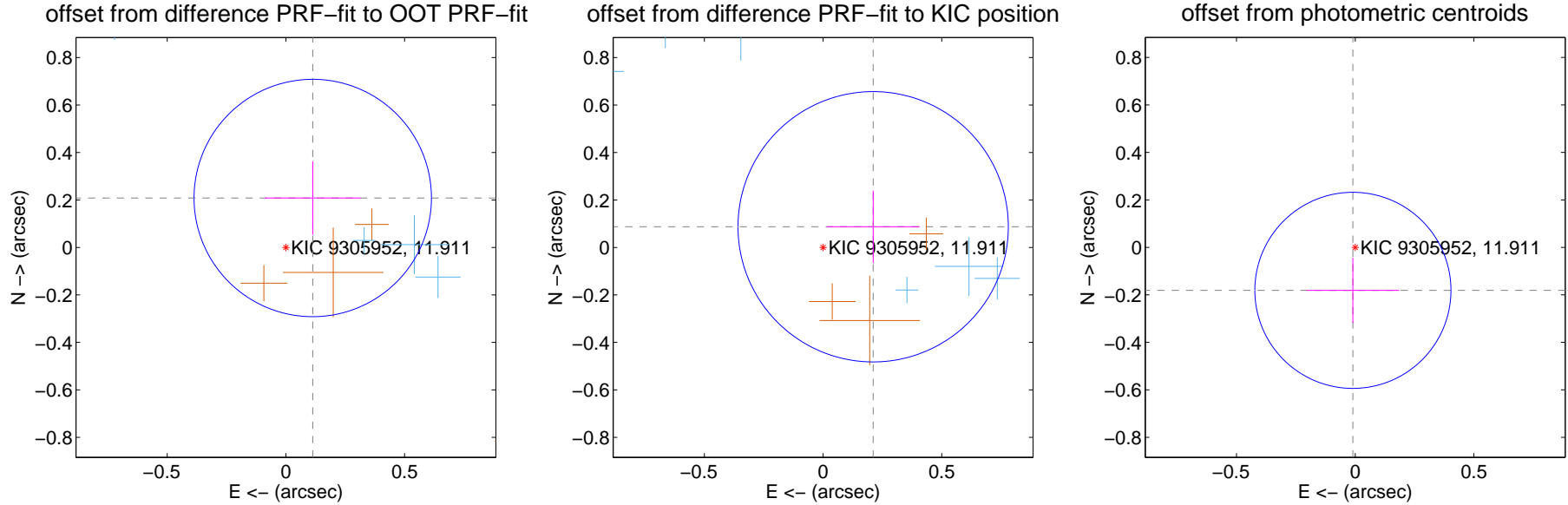
DV Centroid Data

Supplemental centroid analysis for 009305952-06. **Kepler magnitude: 11.91.** Transit SNR -1.00

There are 8 quarters with good PRF difference image offsets

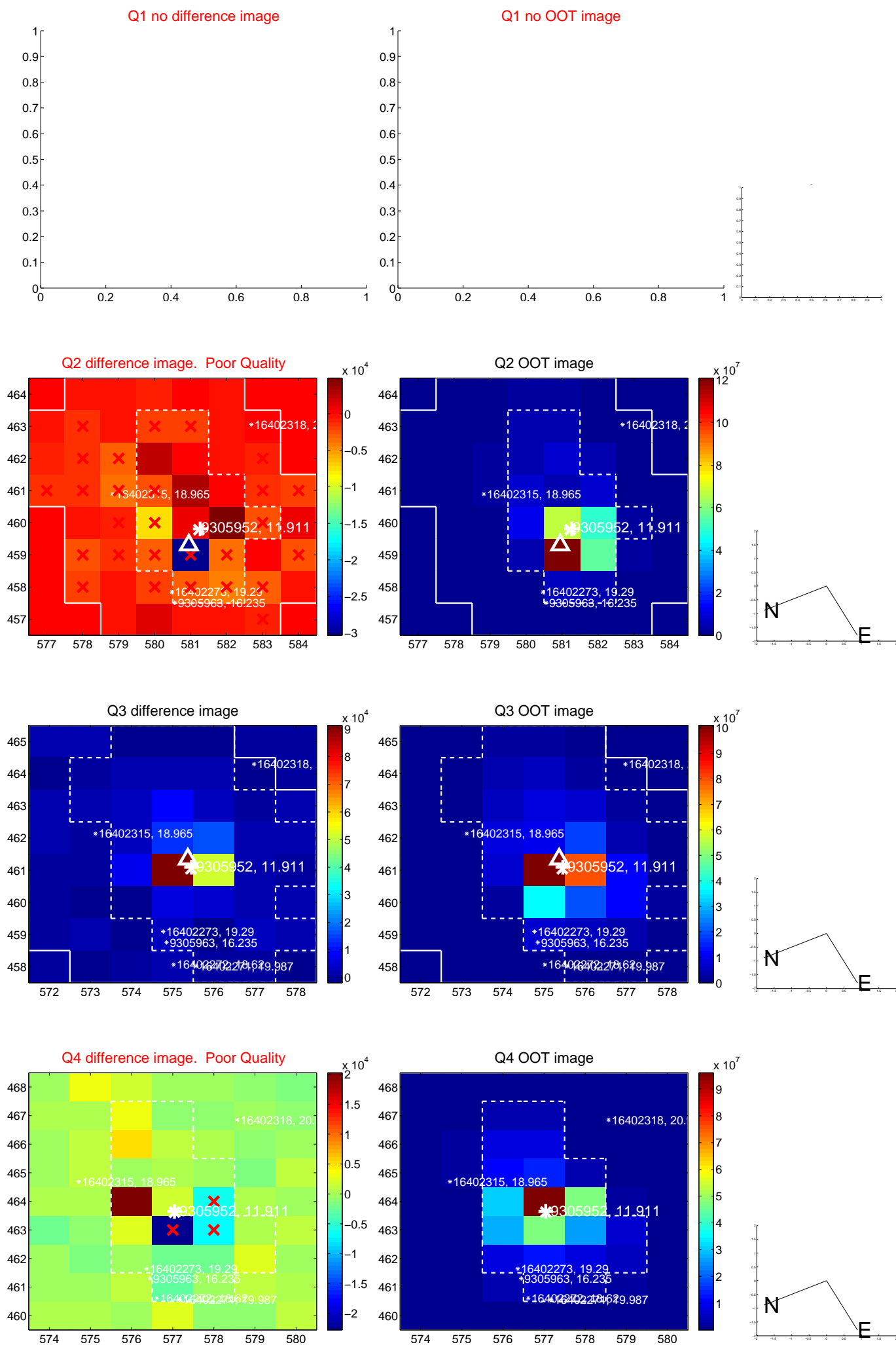
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.237 ± 0.167	1.42	-0.113 ± 0.201	0.208 ± 0.155
PRF-fit source offset from KIC position	0.228 ± 0.190	1.20	-0.211 ± 0.195	0.087 ± 0.153
photometric centroid source offset	0.18 ± 0.14	1.32	0.01 ± 0.19	-0.18 ± 0.14

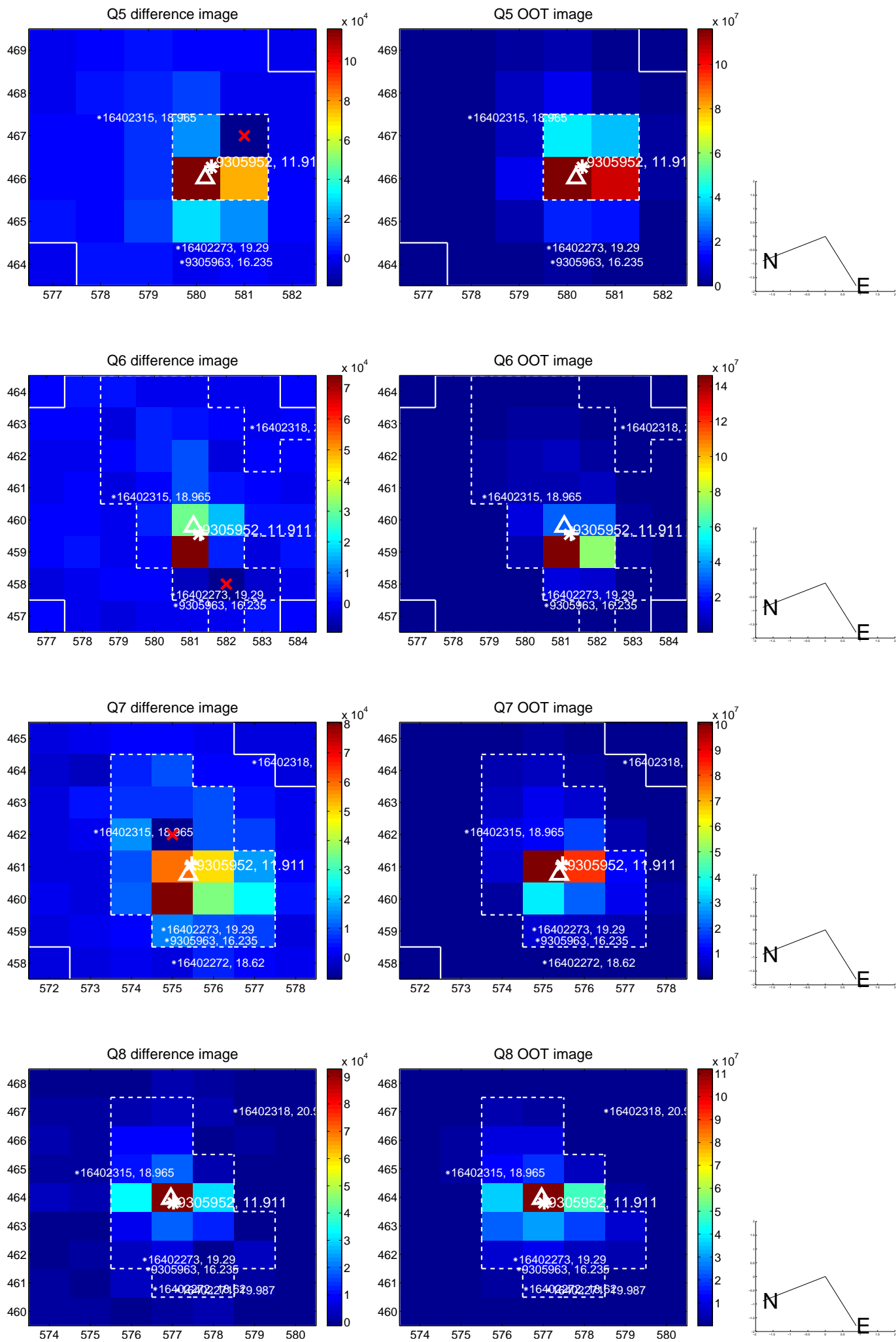


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

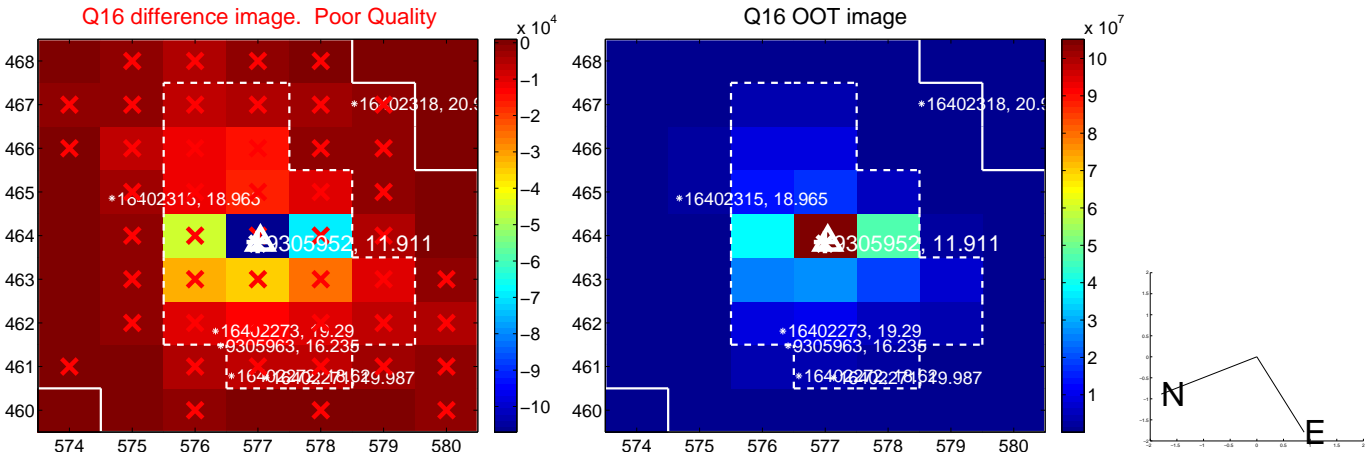
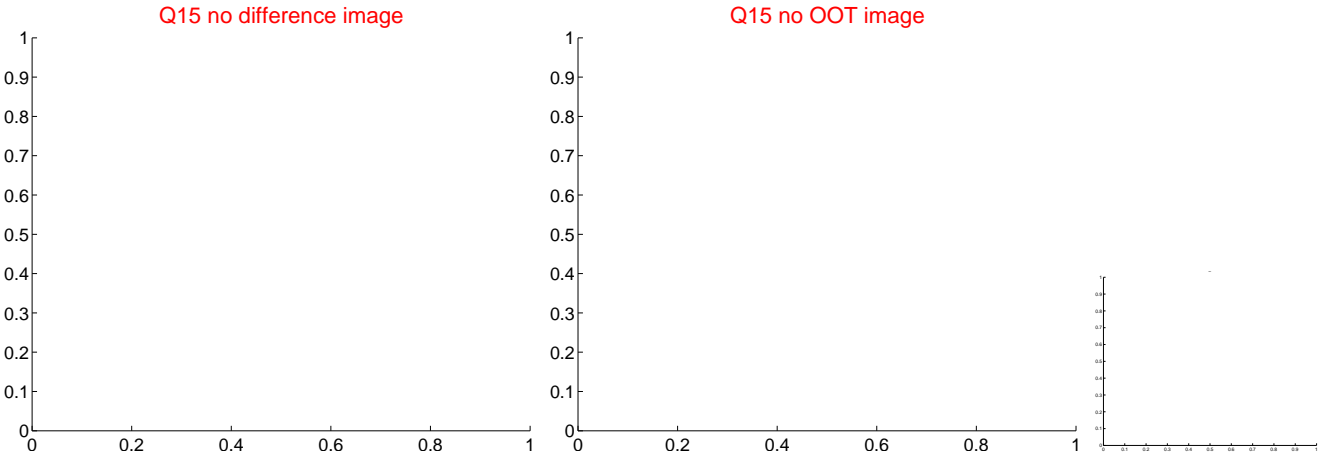
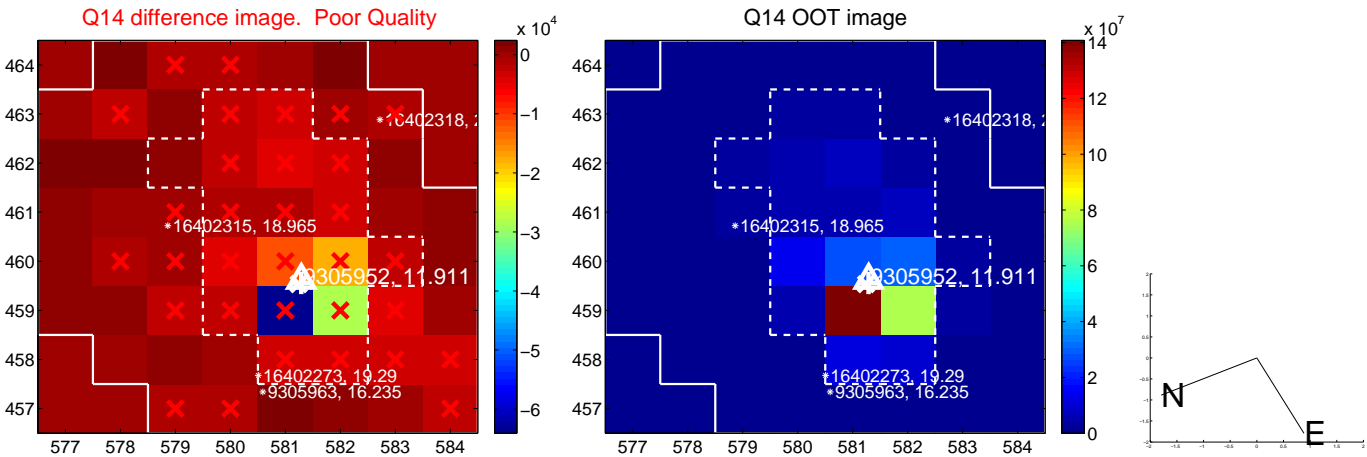
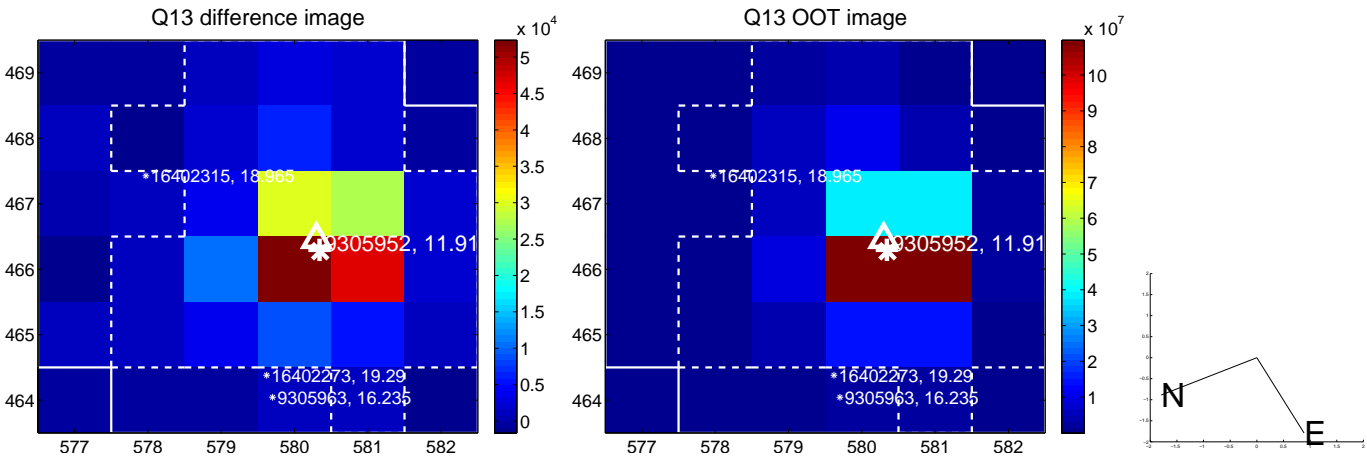
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



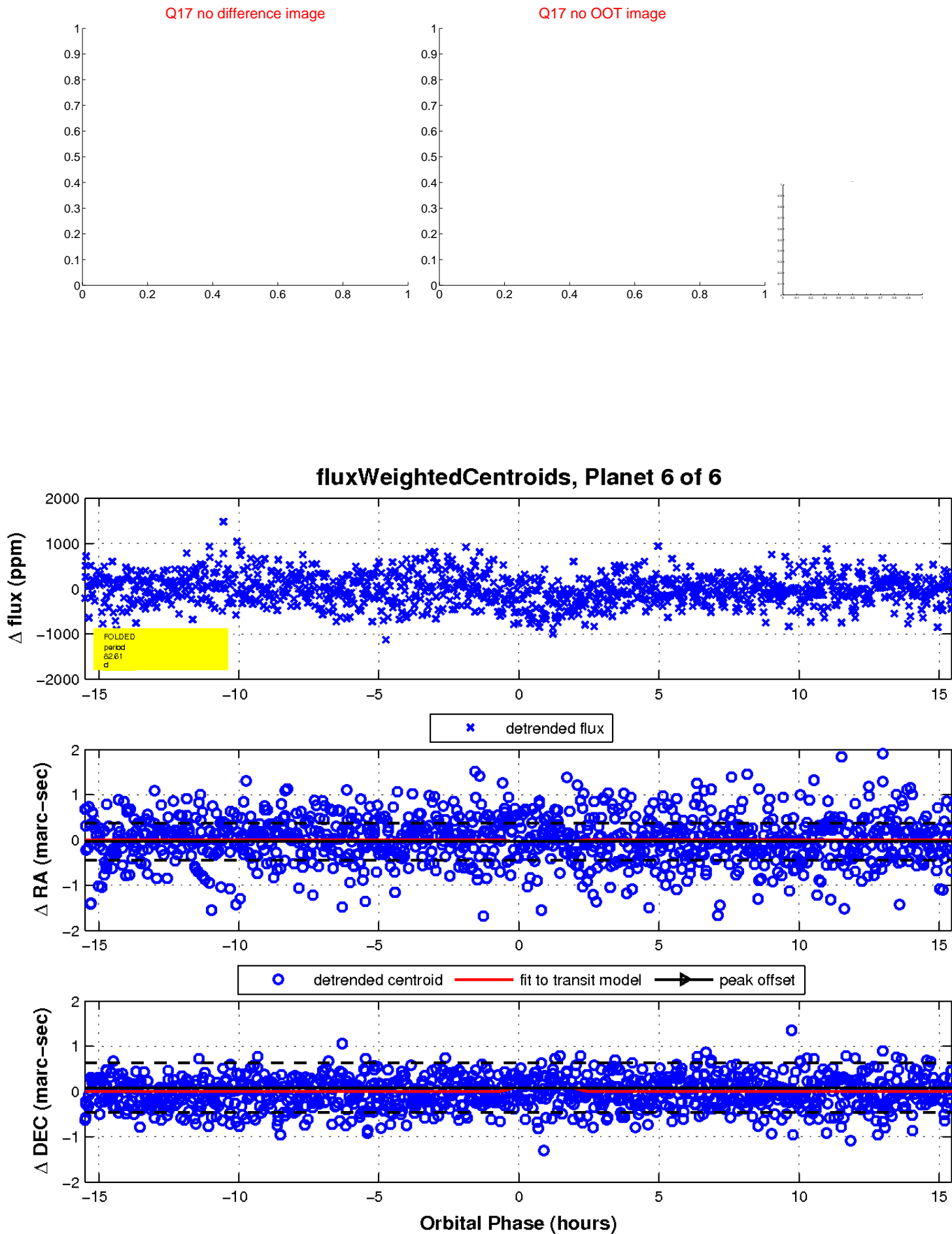
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

