

KIC 008380389

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})
008380389-01	OBS	No	1.608364	132.825205	182.7	6.344	11.2	11.3	2.04	7343	3.21	11020.38
008380389-02	OBS	No	1.608205	131.698446	112.4	10.635	9.5	7.7	2.04	7343	2.19	11021.83
008380389-03	OBS	No	31.254582	155.557038	1548.7	4.655	9.8	10.5	2.04	7343	8.48	210.94
008380389-04	OBS	No	42.198276	156.140828	1820.3	3.091	8.7	9.4	2.04	7343	10.78	141.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008380389-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008380389-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
008380389-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008380389-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

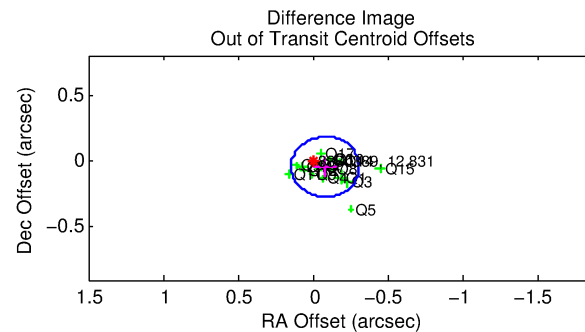
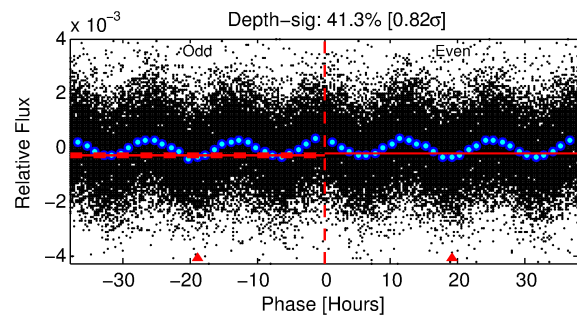
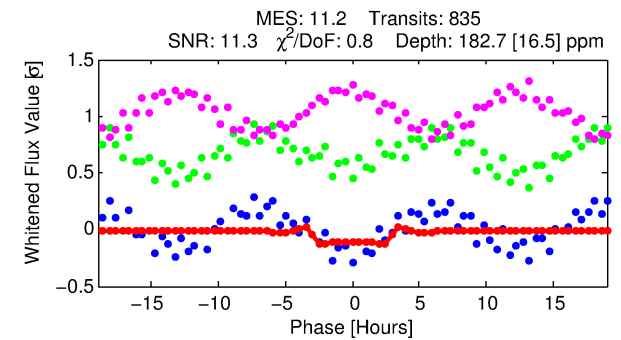
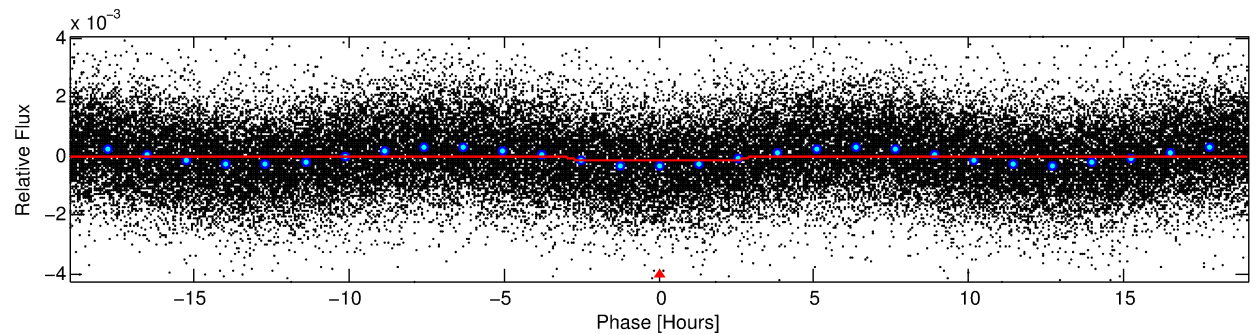
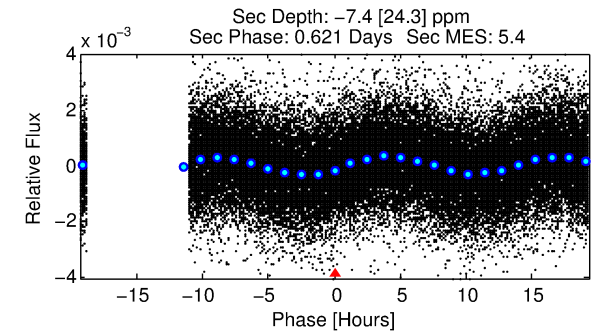
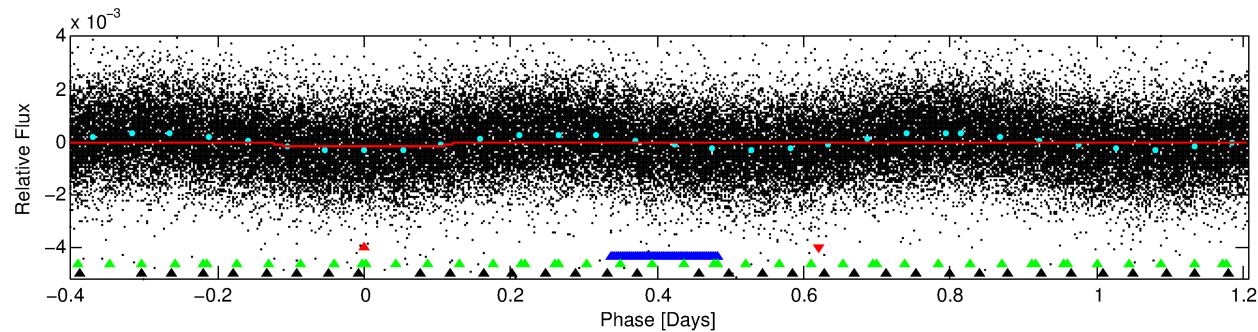
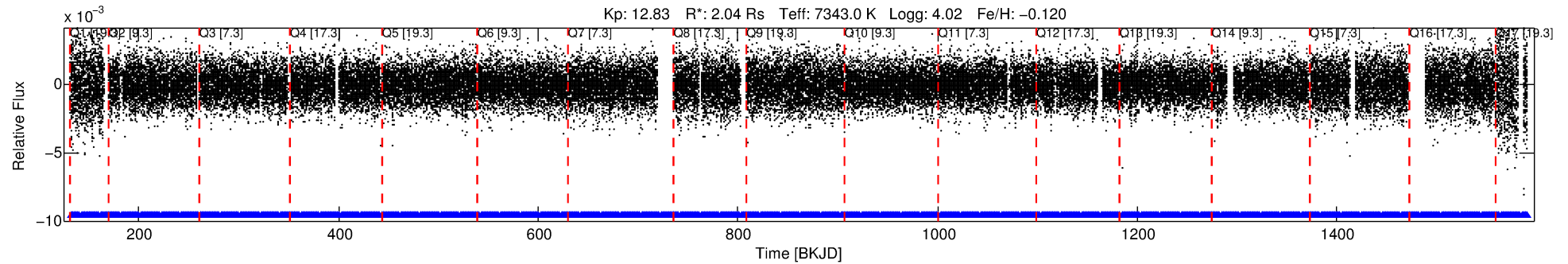
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008380389-01

No Significant Match Found

DV One-Page Summary

KIC: 8380389 Candidate: 1 of 4 Period: 1.608 d



DV Fit Results:

Period = 1.60836 [0.00002] d
Epoch = 132.8252 [0.0041] BKJD
Rp/R* = 0.0144 [0.0018]
a/R* = 1.31 [0.38]
b = 0.90 [0.15]
Seff = 11020.38 [4364.20]
Teq = 2613 [259] K
Rp = 3.21 [0.95] Re
a = 0.0314 [0.0075] AU
Ag = N/A
Teffp = N/A

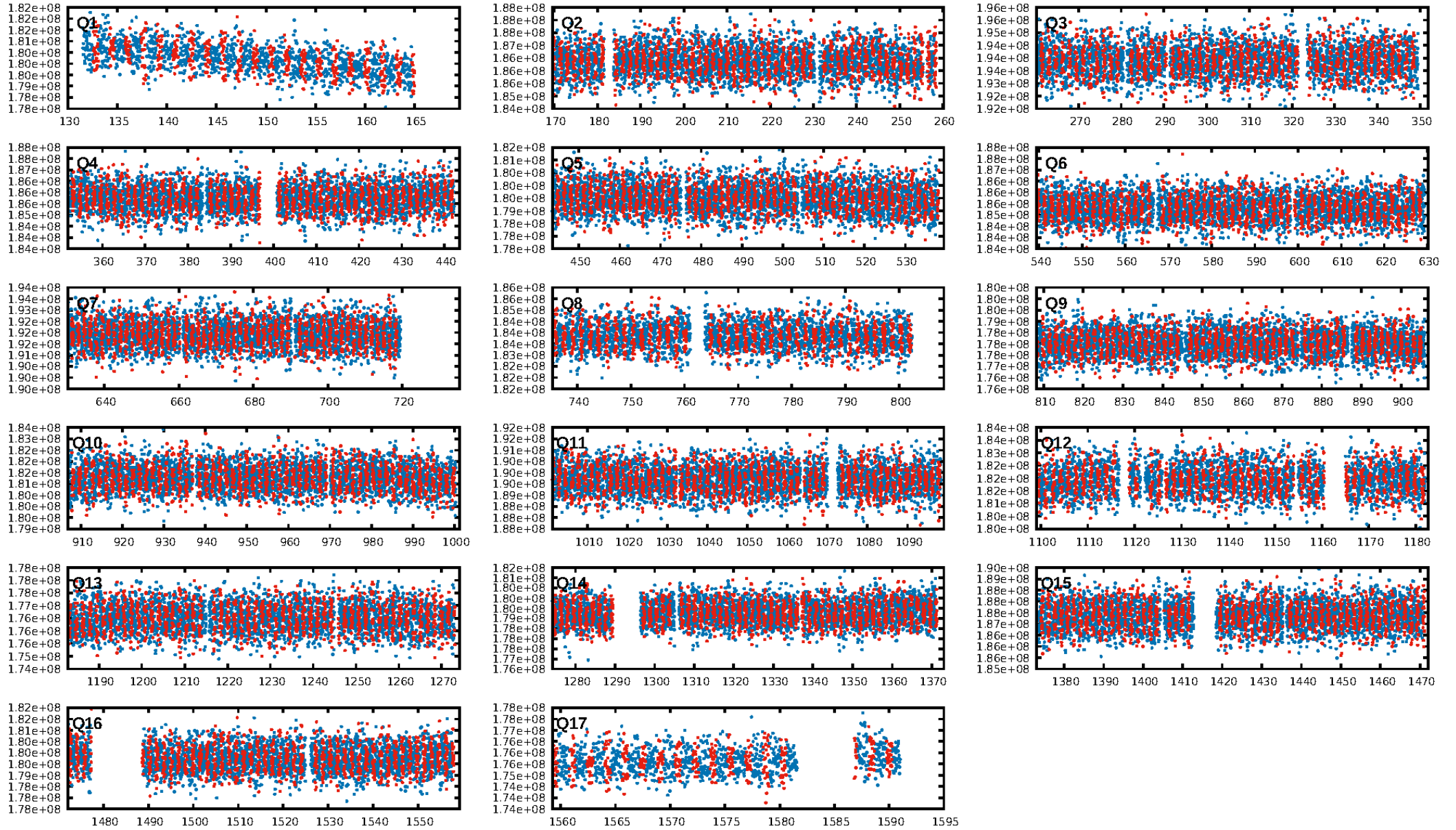
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [90.42σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.55e-45
RollingBand-fgt: 1.00 [797/797]
GhostDiagnostic-chr: 1.256
Centroid-sig: 72.7%
Centroid-so: 0.050 arcsec [0.69σ]
OotOffset-rm: 0.094 arcsec [1.24σ]
KicOffset-rm: 0.117 arcsec [1.59σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

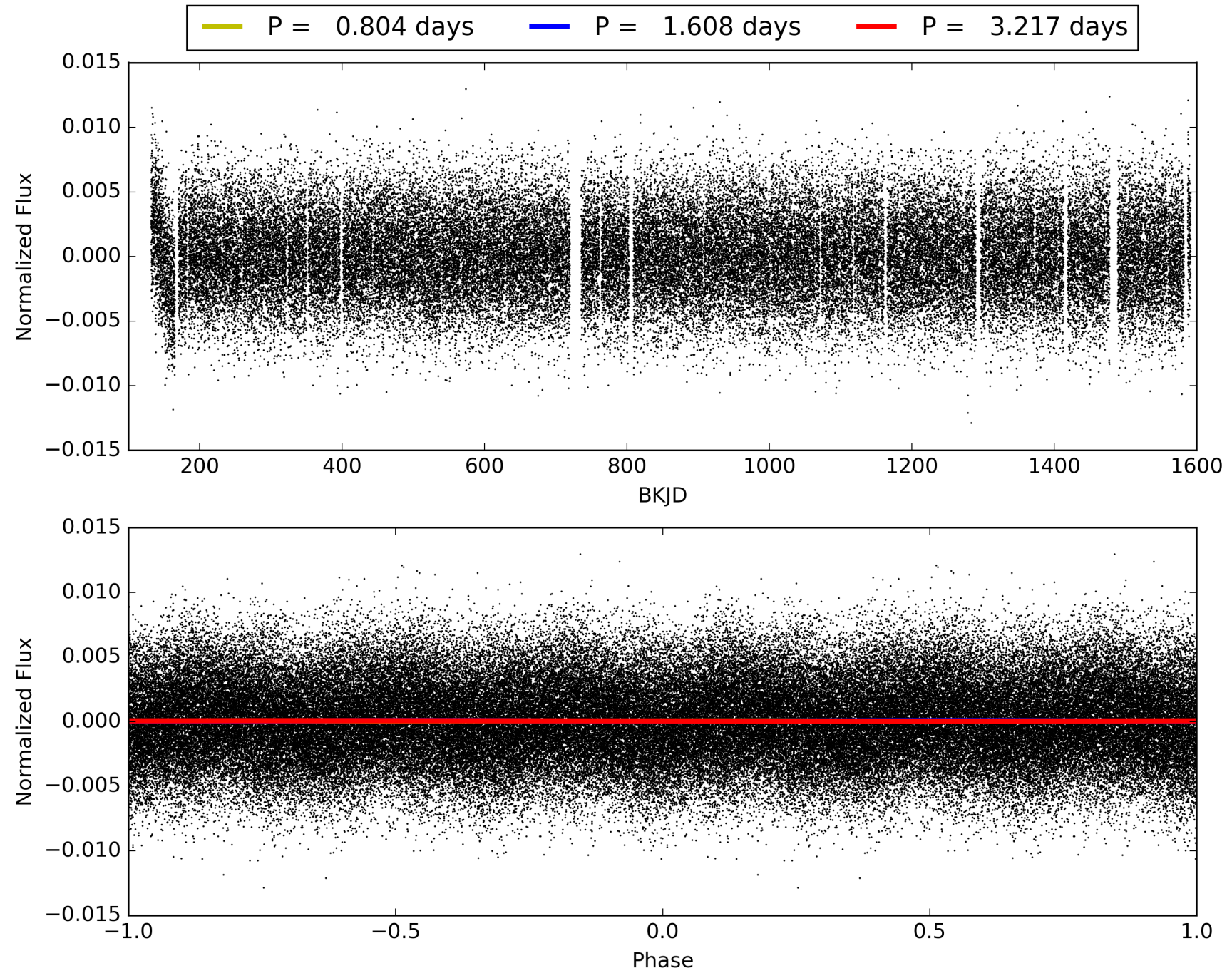
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:38:31 Z

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

TCE 008380389-01, PDC Light Curves

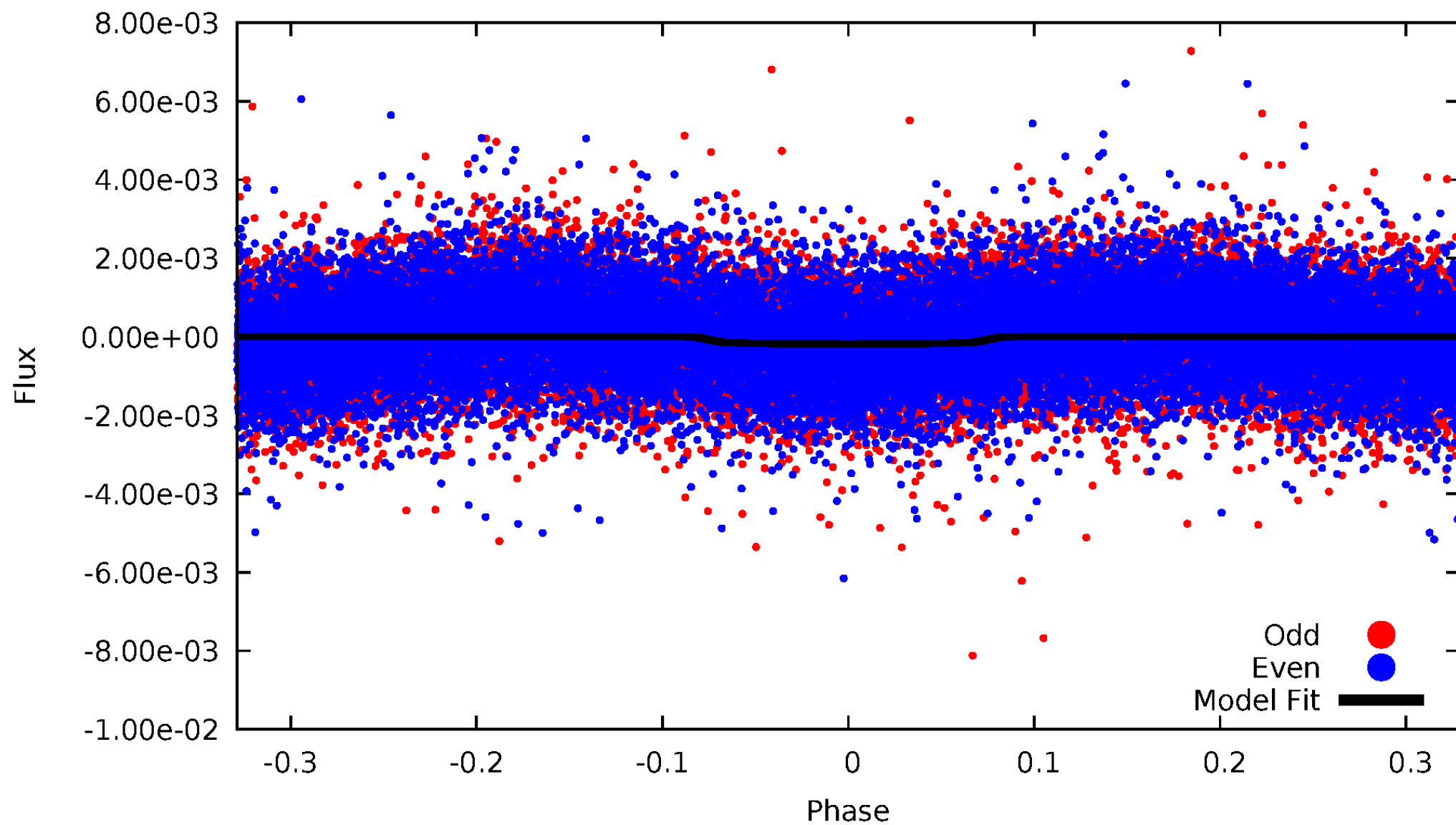


TCE 008380389-01



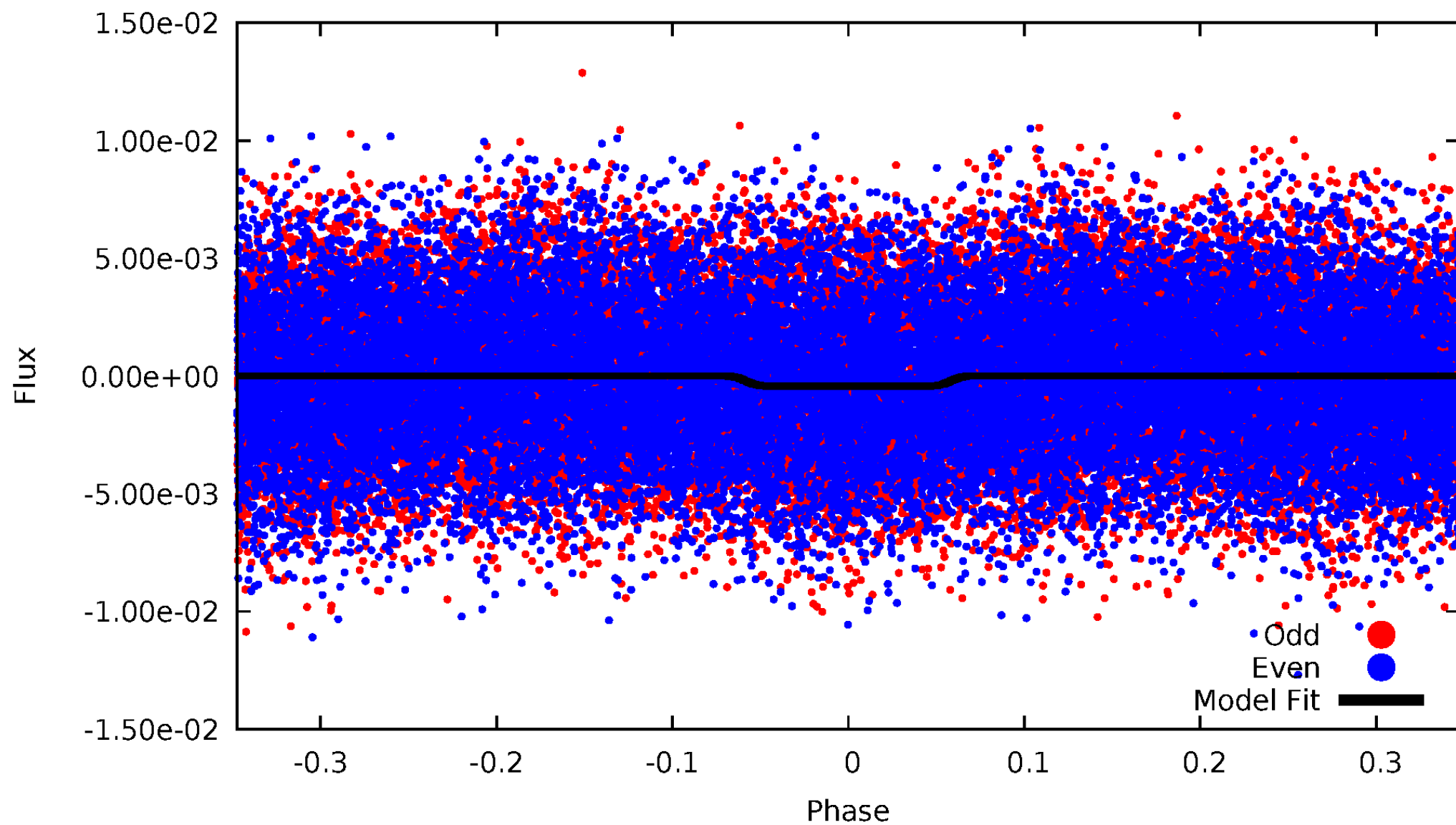
DV Odd/Even

TCE 008380389-01



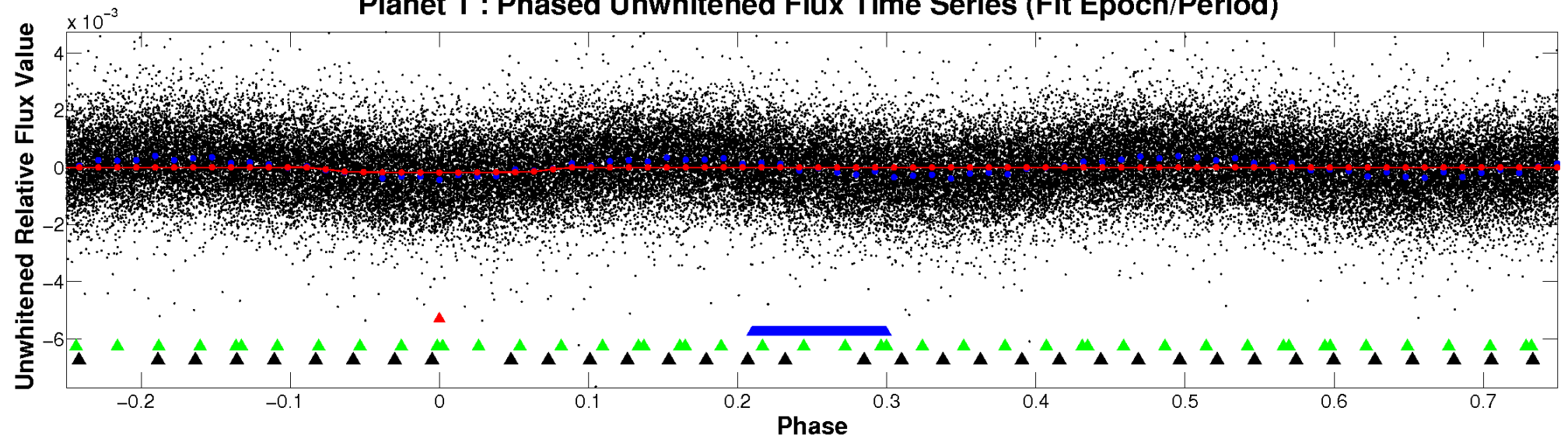
ALT Odd/Even

TCE 008380389-01

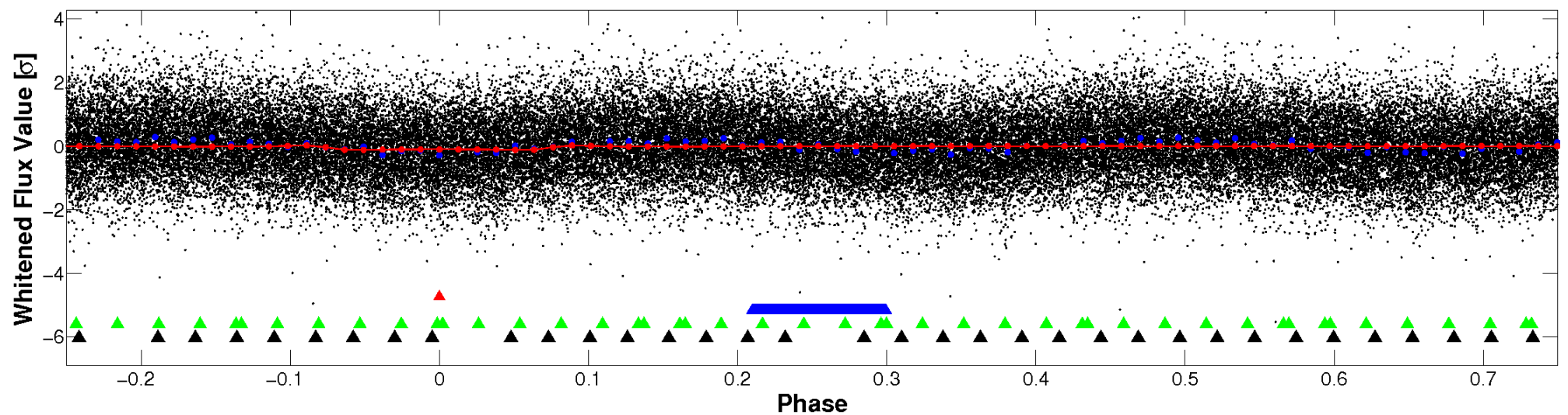


Non-Whitened Vs. Whitened Light Curve

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

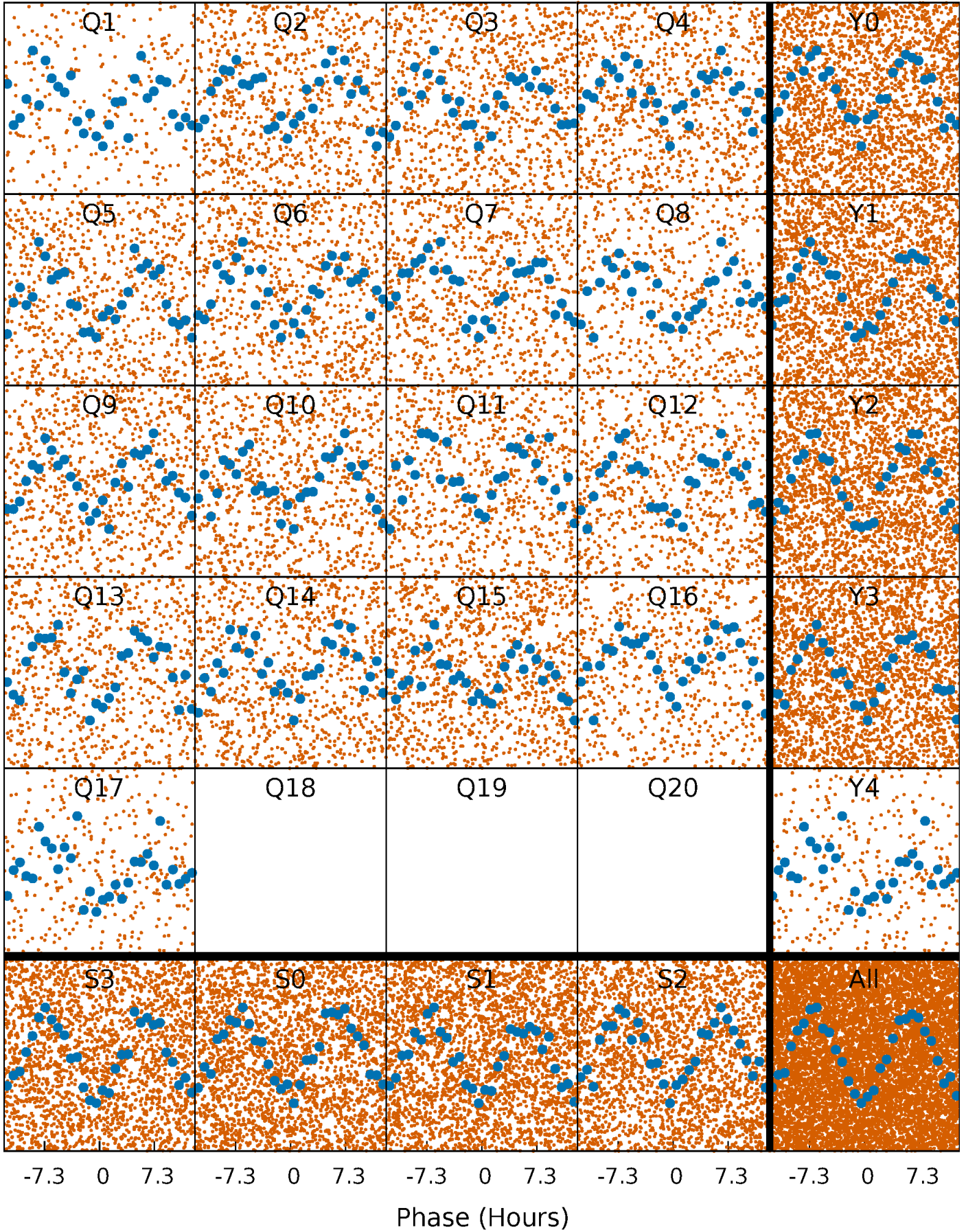


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



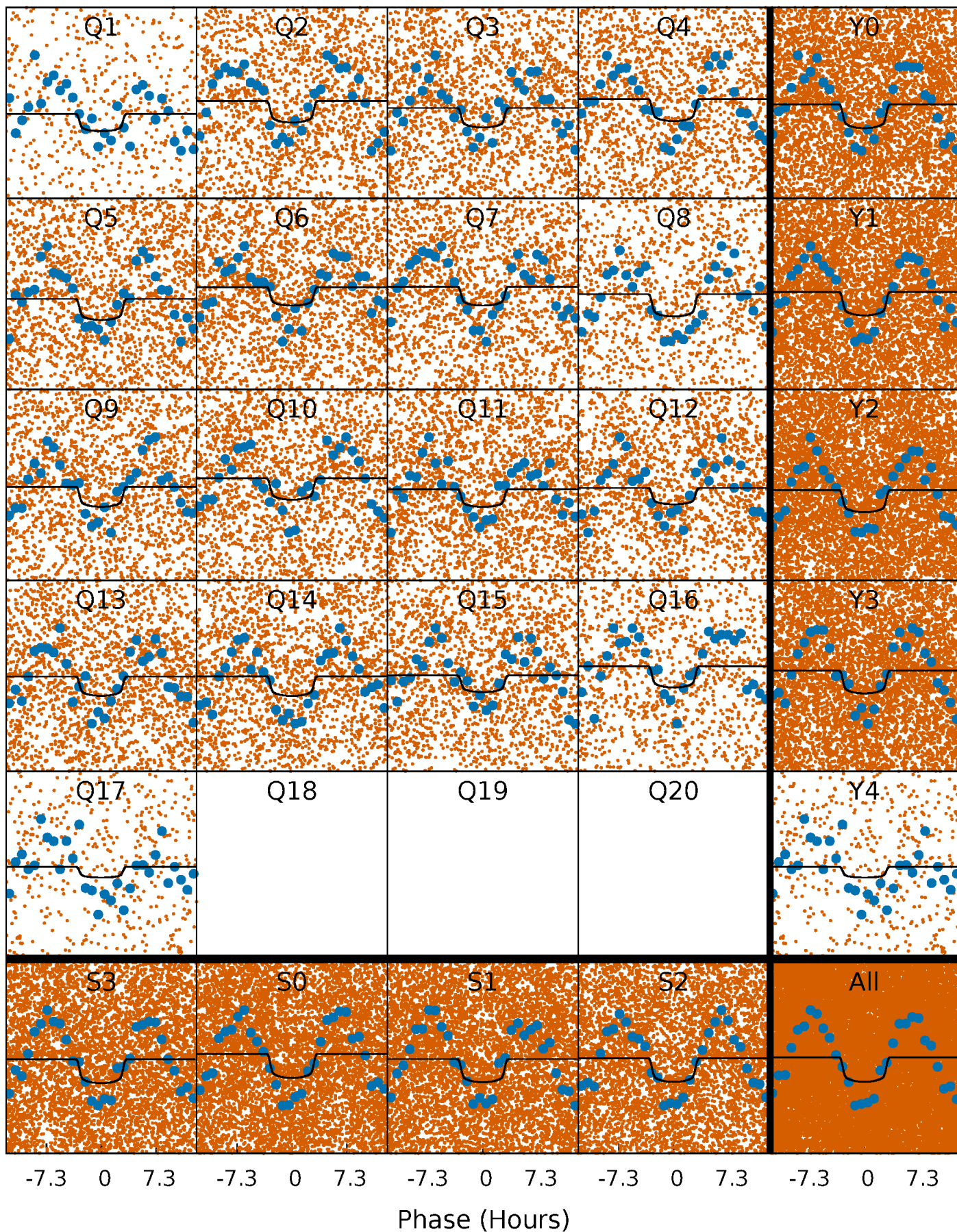
PDC Quarter-Phased Transit Curves

TCE 008380389-01 P= 1.608364 Days $T_0=132.825205$ (BKJD)



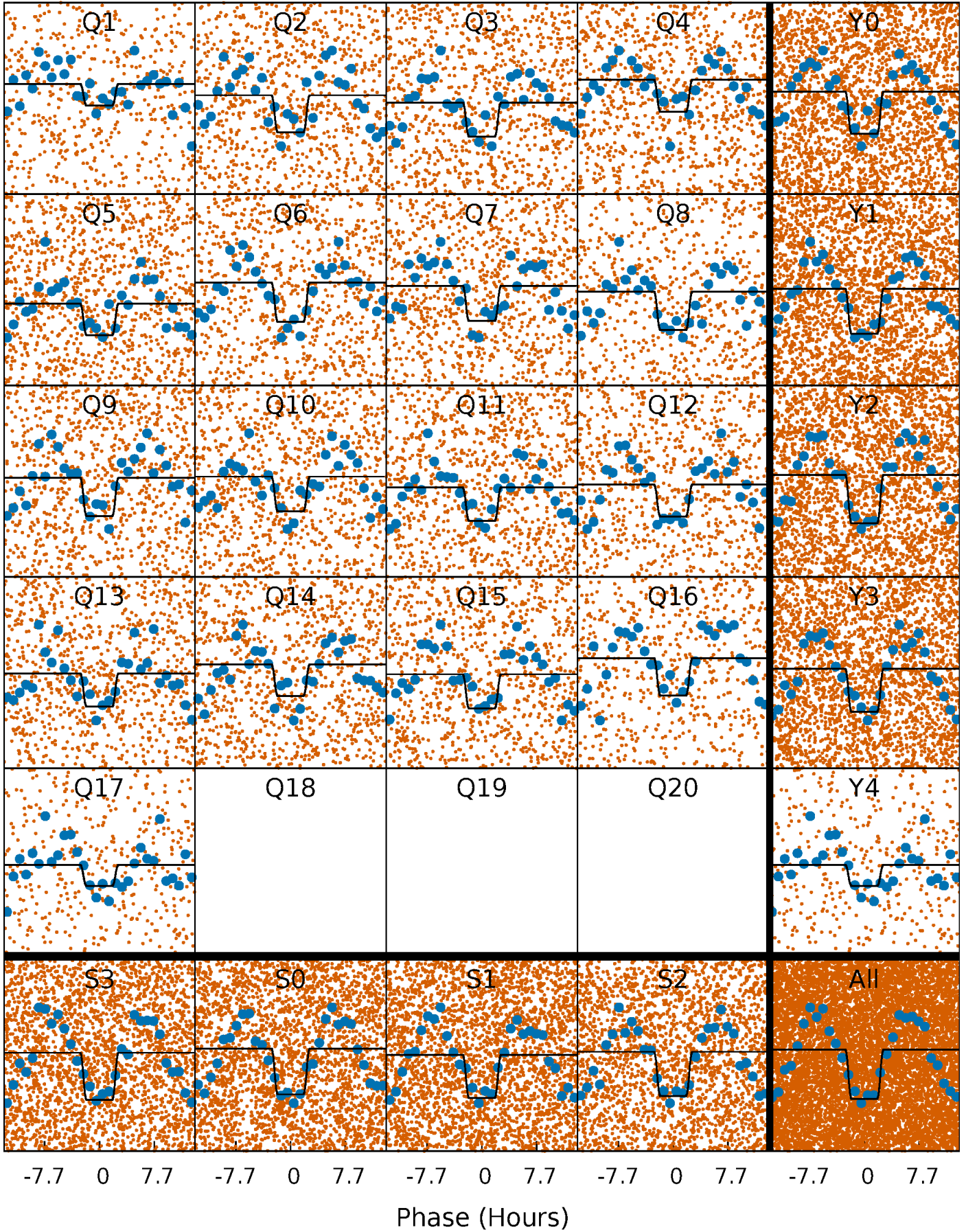
DV Quarter-Phased Transit Curves

TCE 008380389-01 P= 1.608364 Days $T_0=132.825205$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

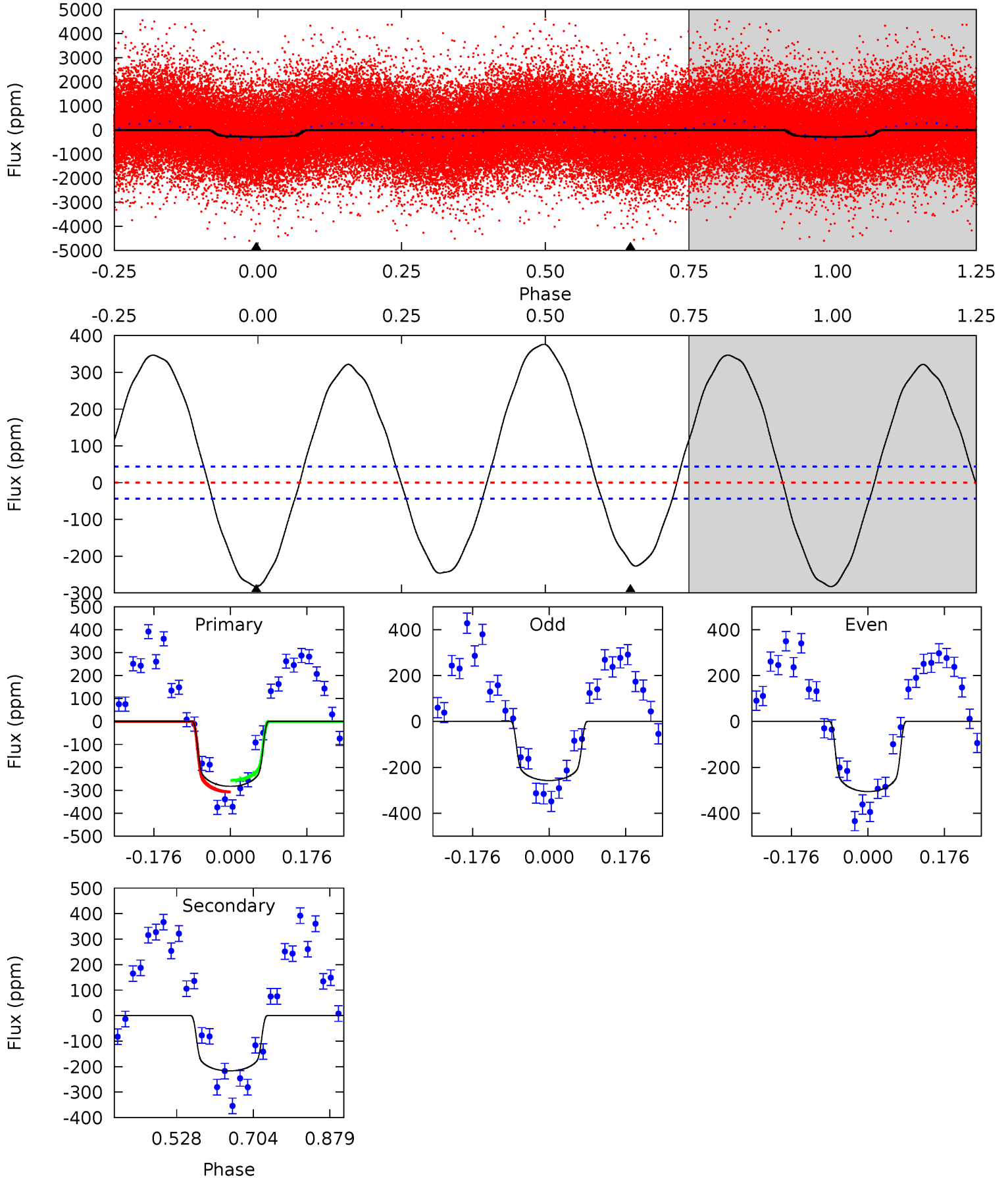
TCE 008380389-01 P= 1.608367 Days $T_0=132.818965$ (BKJD)



DV Model-Shift Uniqueness Test

008380389-01, P = 1.608364 Days, E = 131.216841 Days

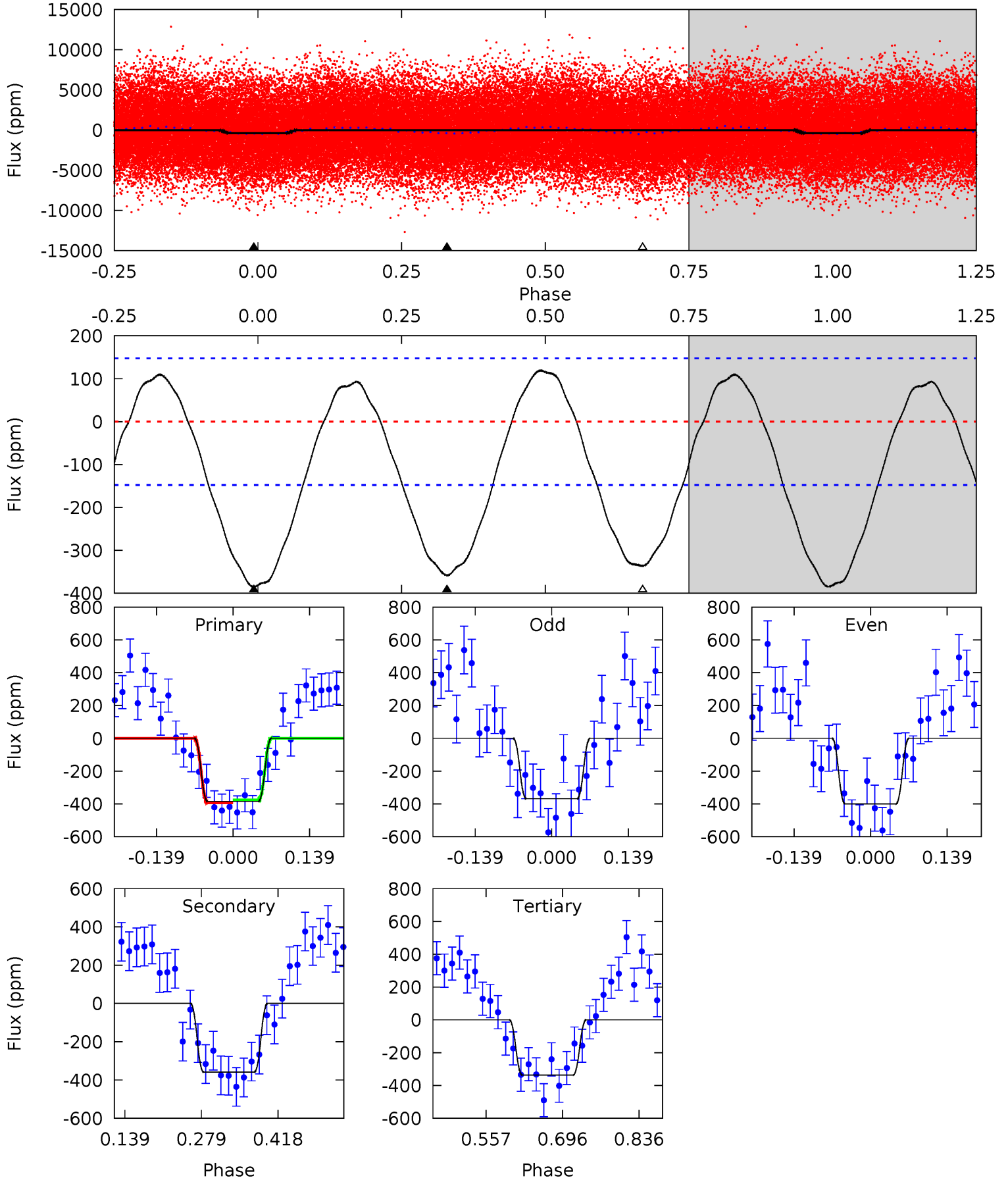
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.7	22.0	0	0	4.44	1.35	19.6	28.7	28.7	22.0	22.0	2.44	1.09	0.57	2.56



Alt Model-Shift Uniqueness Test

008380389-01, P = 1.608367 Days, E = 131.210598 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	10.9	10.2	0	4.49	1.48	5.00	1.48	11.7	0.68	10.9	0.48	0.99	0.24	0.25



Stellar Parameters For KIC 008380389

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7343^{+228}_{-304}	$4.021^{+0.203}_{-0.166}$	$-0.120^{+0.250}_{-0.350}$	$2.044^{+0.551}_{-0.551}$	$1.597^{+0.199}_{-0.273}$	$0.263^{+0.309}_{-0.124}$
	+3%/-4%	+5%/-4%	+208%/-292%	+27%/-27%	+12%/-17%	+117%/-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 008380389-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-217 ± 10	$3.19^{+0.61}_{-0.61}$	3622^{+283}_{-271}	7330^{+693}_{-506}	12^{+6}_{-3}
Alt.	-358 ± 33	$4.53^{+0.88}_{-0.70}$	3630^{+266}_{-273}	6875^{+504}_{-419}	$9.144^{+3.764}_{-2.465}$

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 $A_{obs} \gg 1.0$

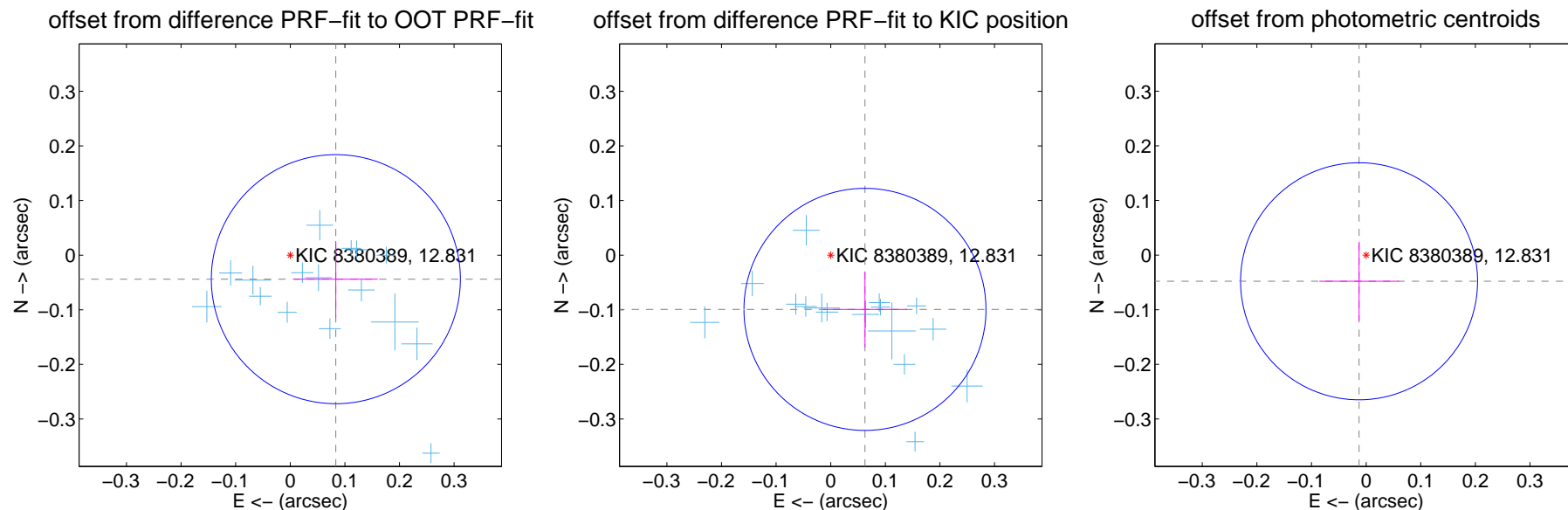
DV Centroid Data

Supplemental centroid analysis for 008380389-01. Kepler magnitude: 12.83. Transit SNR 11.34

There are 17 quarters with good PRF difference image offsets

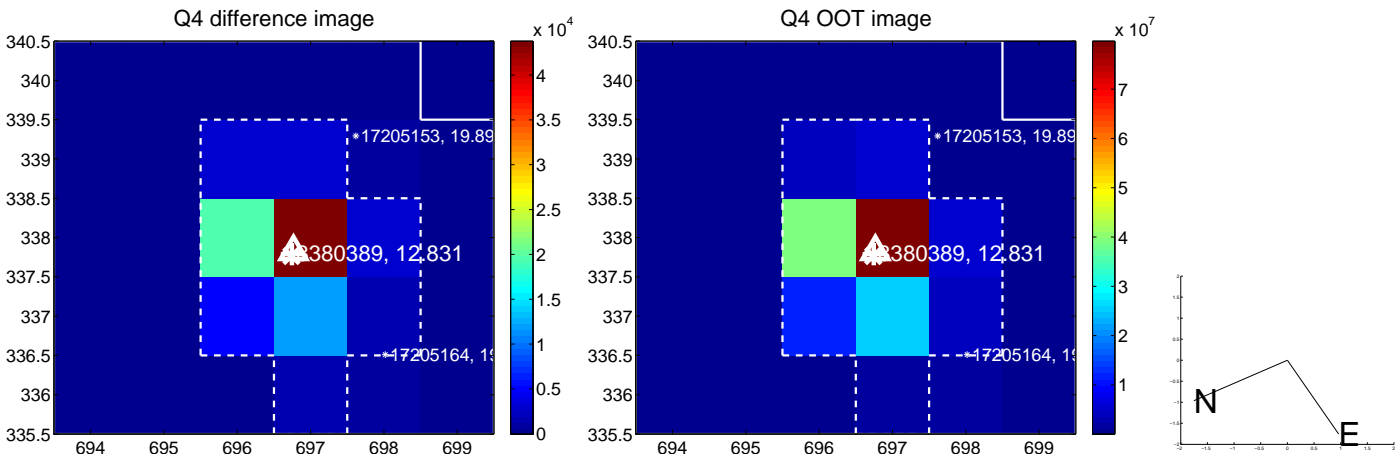
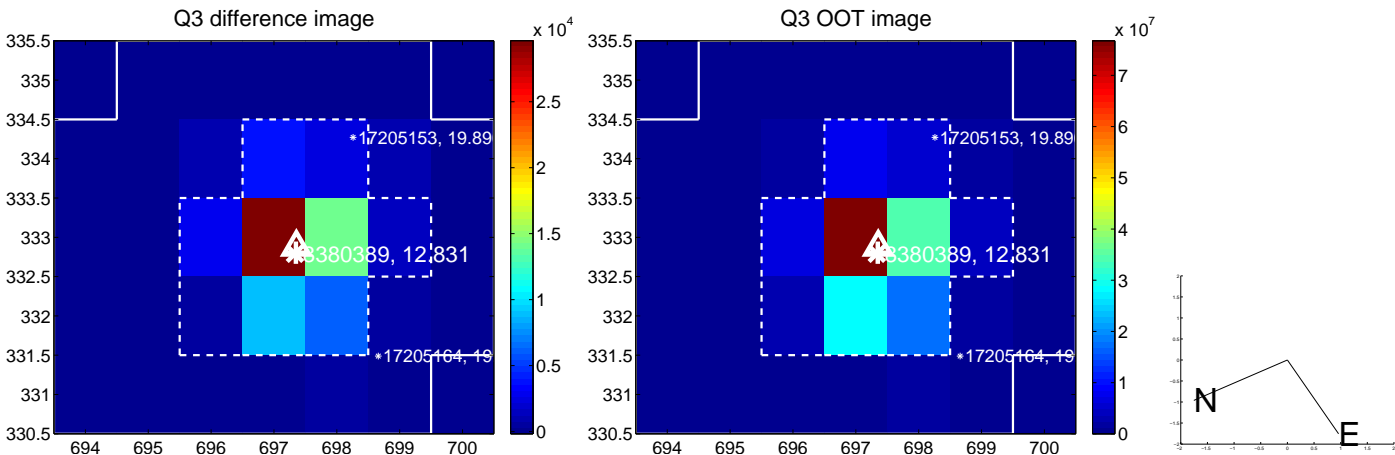
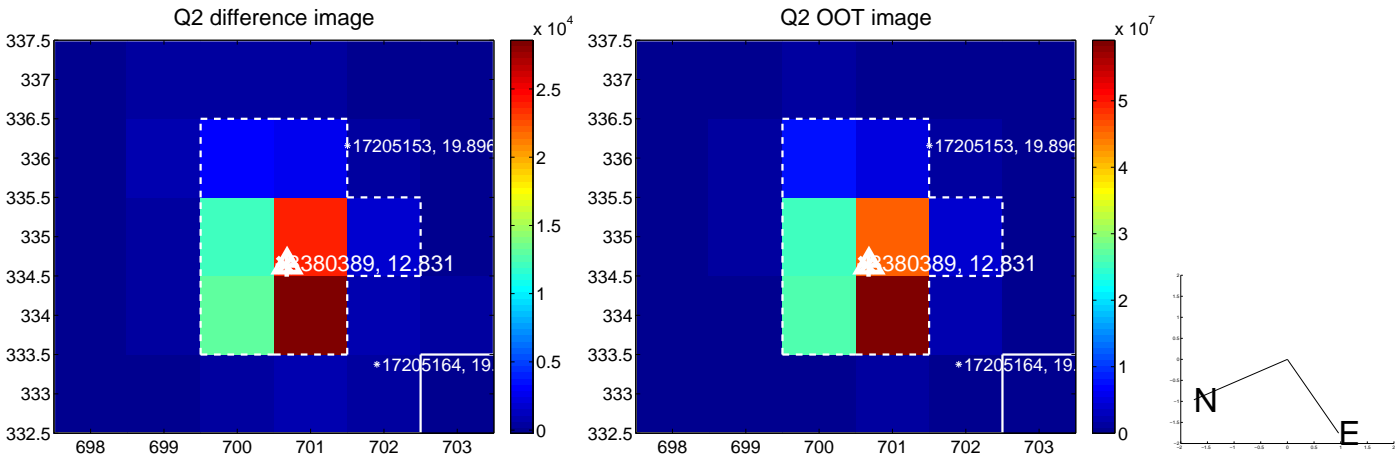
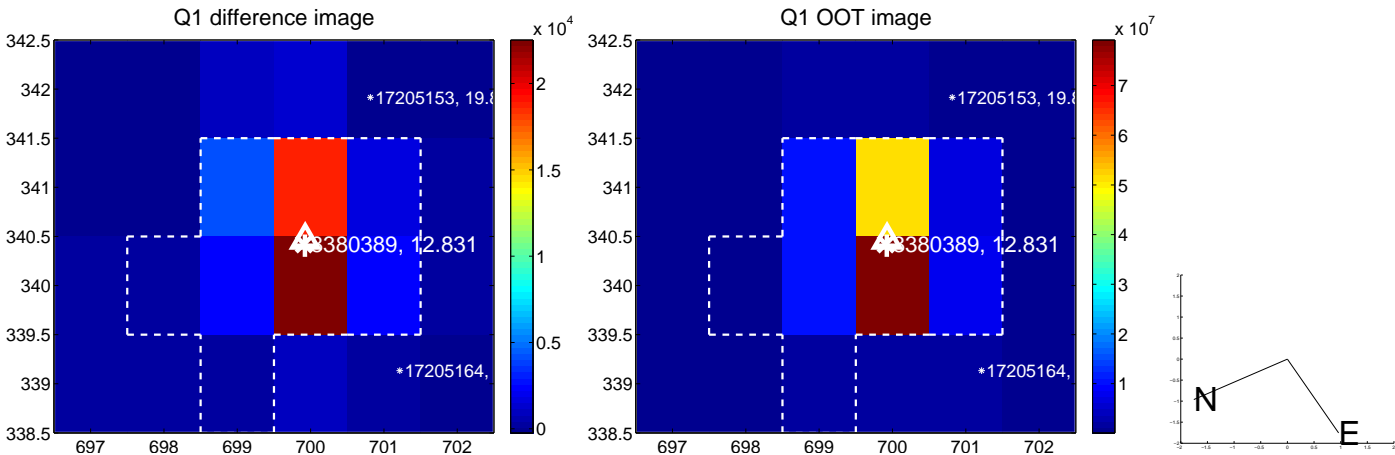
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.094 ± 0.076	1.24	-0.083 ± 0.077	-0.044 ± 0.070
PRF-fit source offset from KIC position	0.117 ± 0.074	1.59	-0.063 ± 0.077	-0.099 ± 0.069
photometric centroid source offset	0.05 ± 0.07	0.69	0.01 ± 0.07	-0.05 ± 0.07

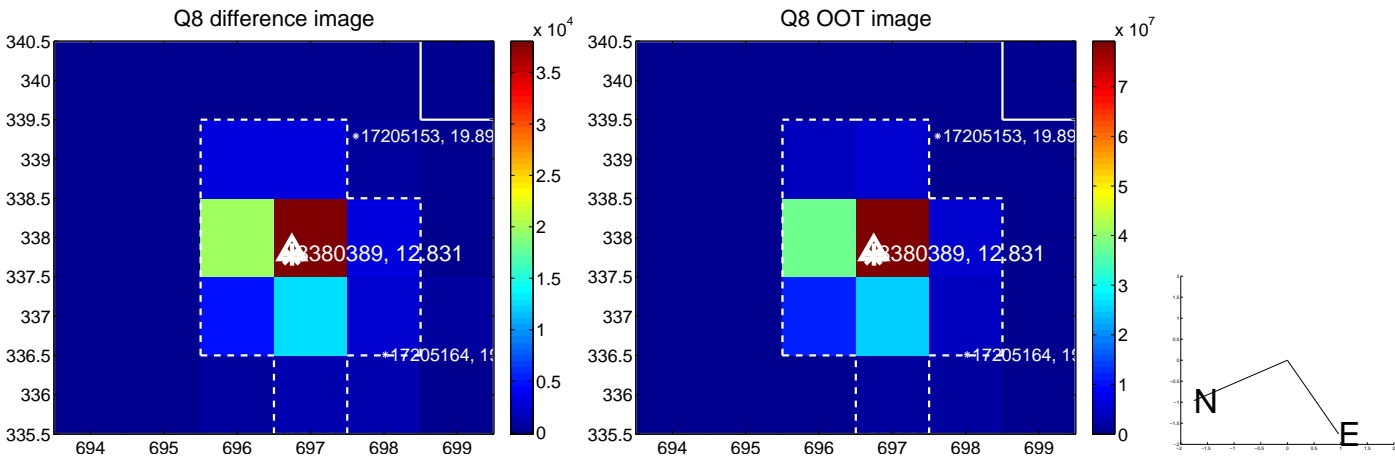
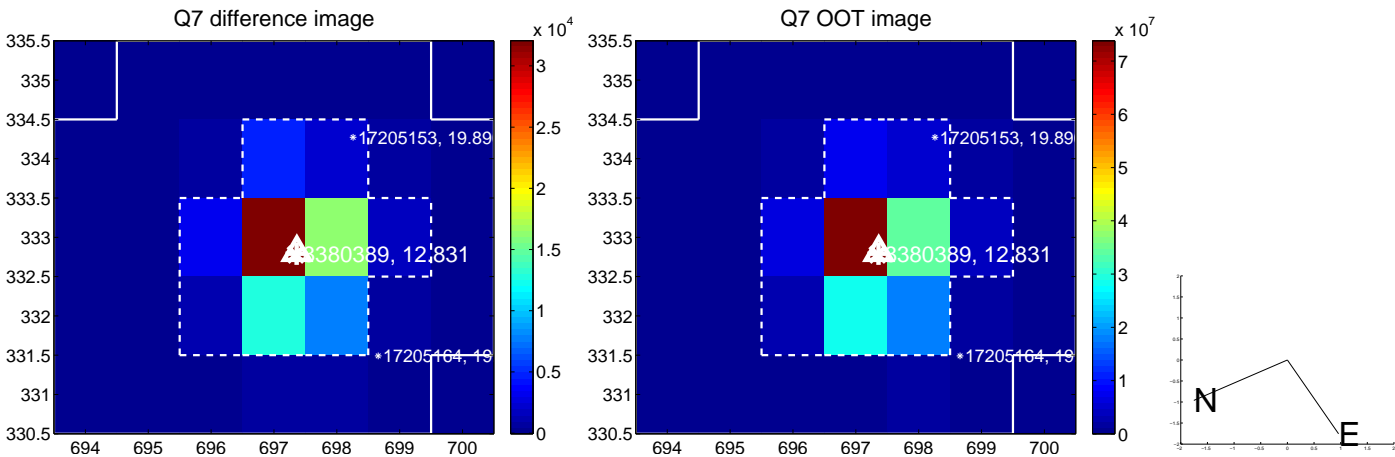
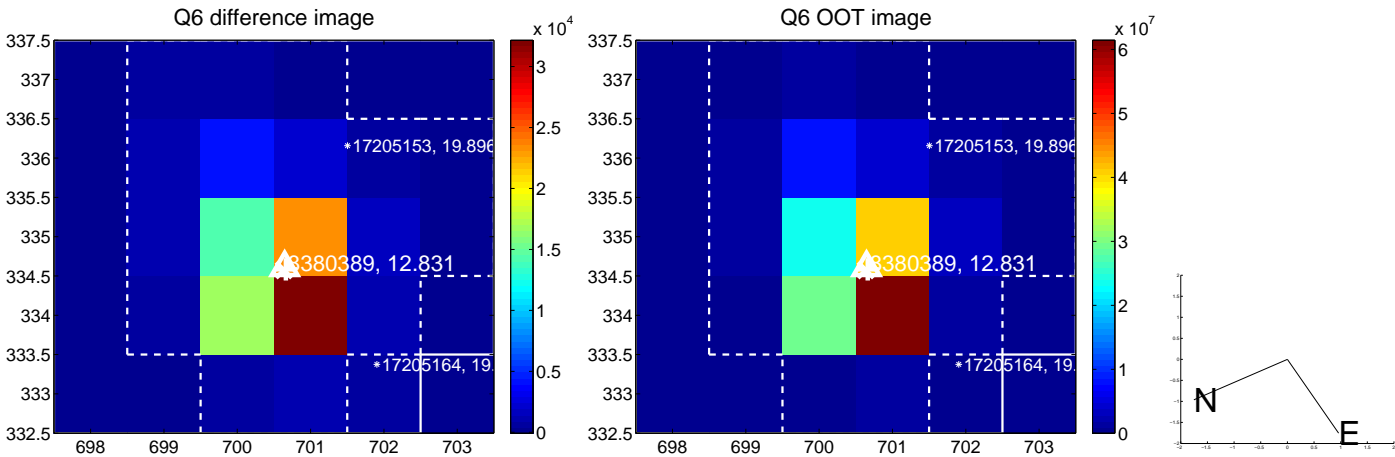
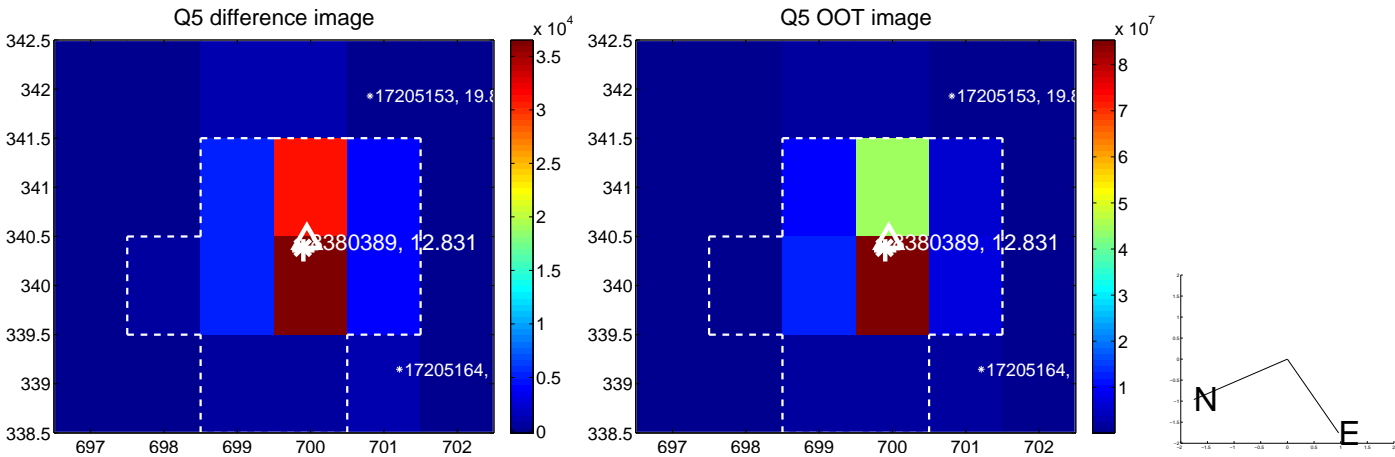


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

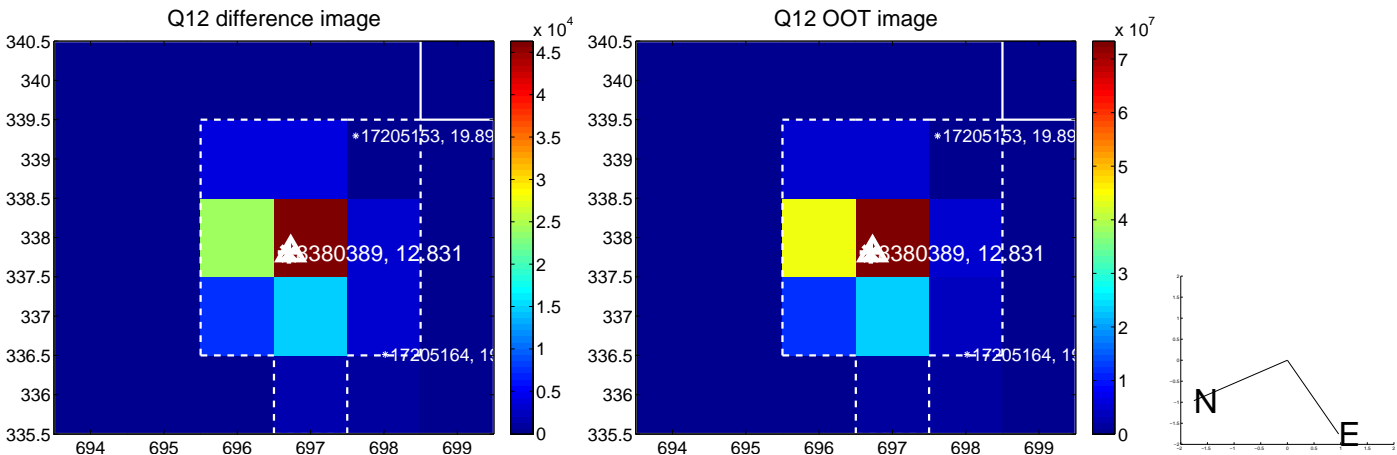
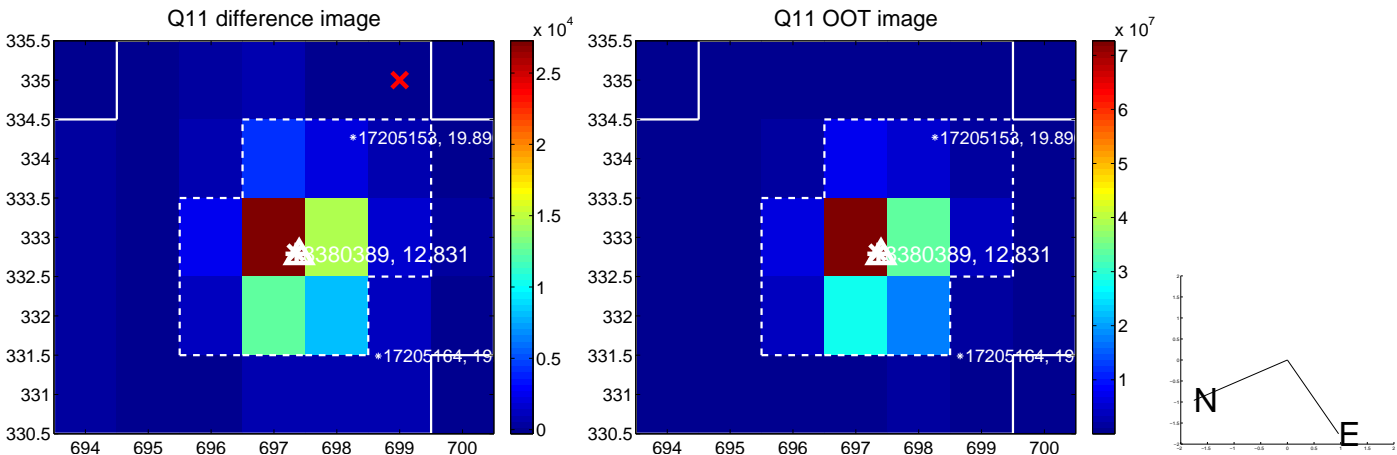
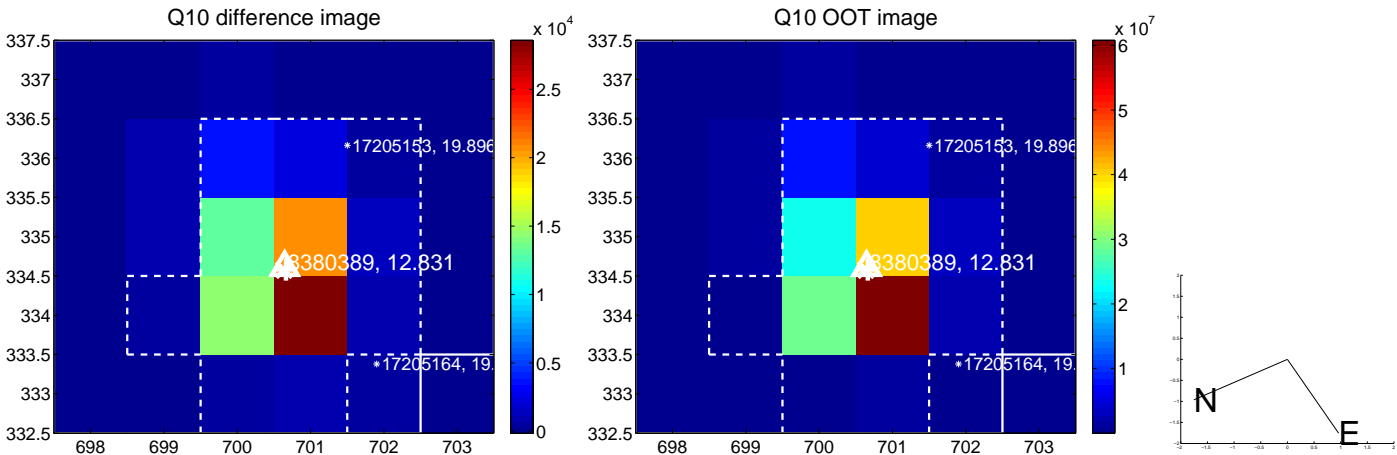
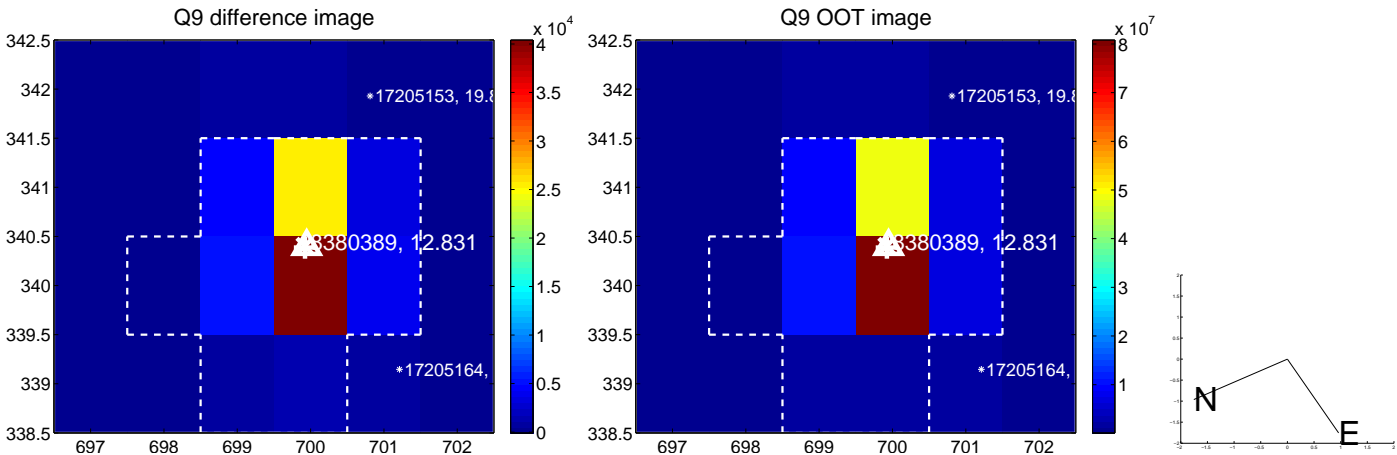
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



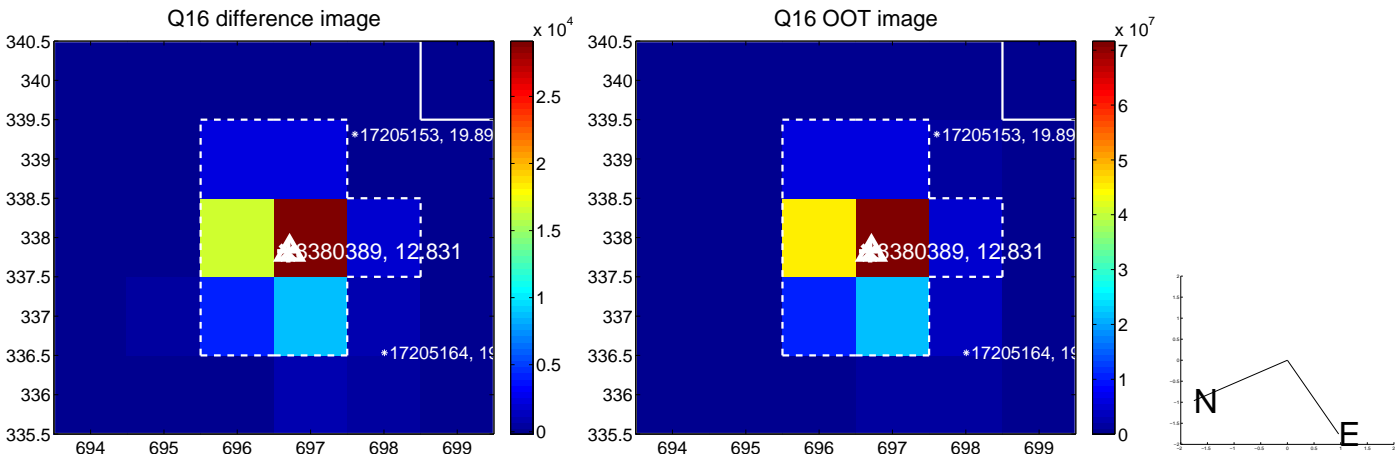
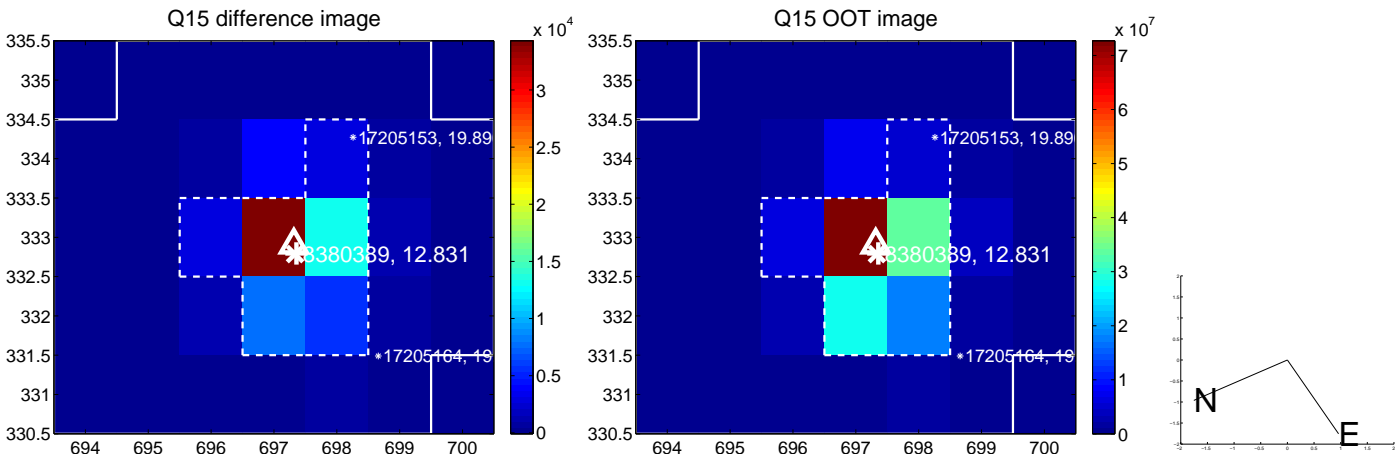
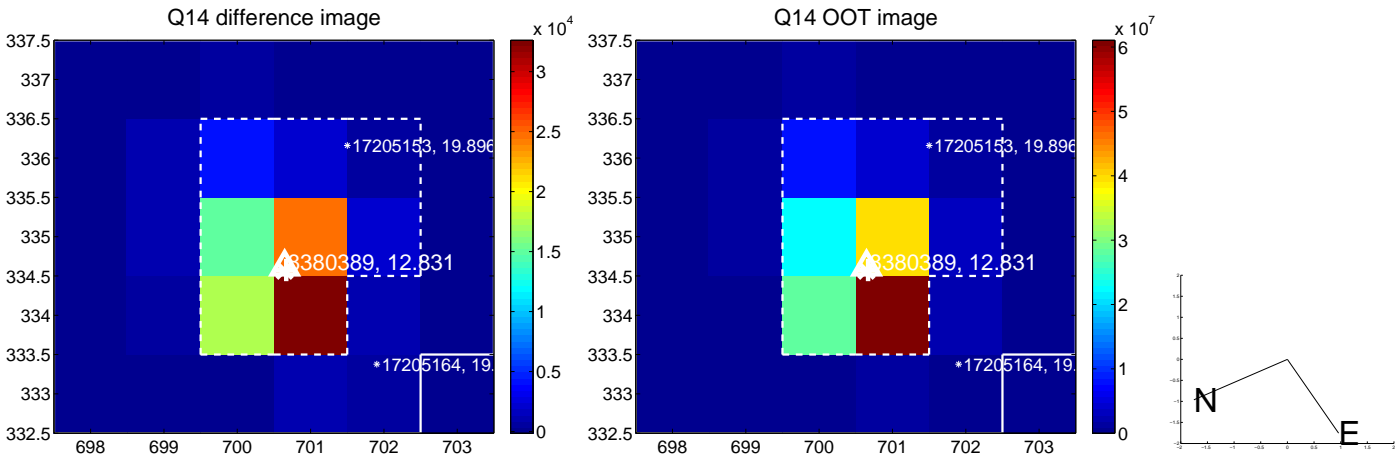
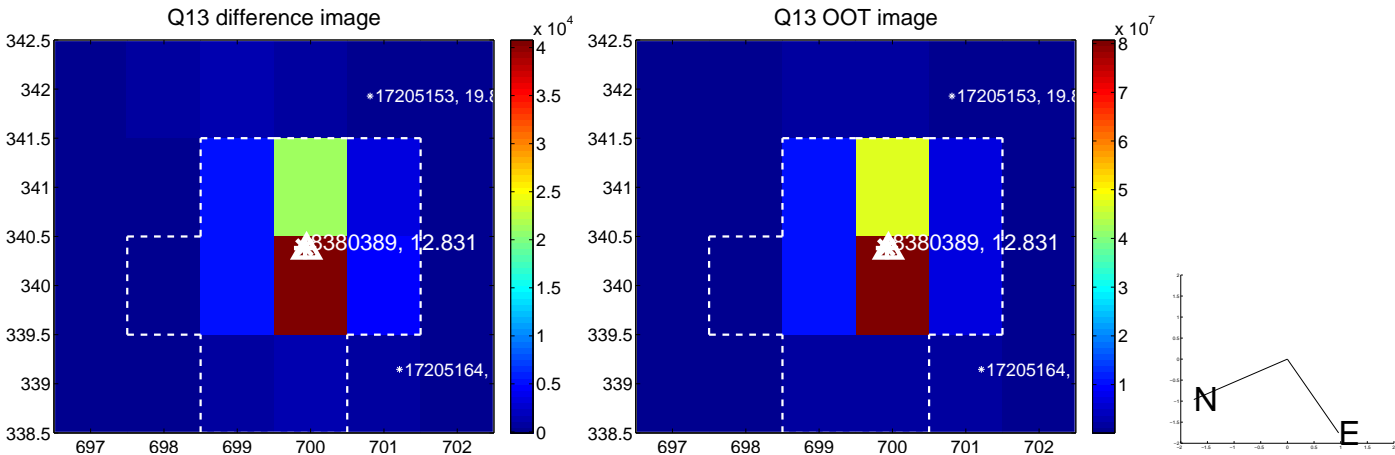
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



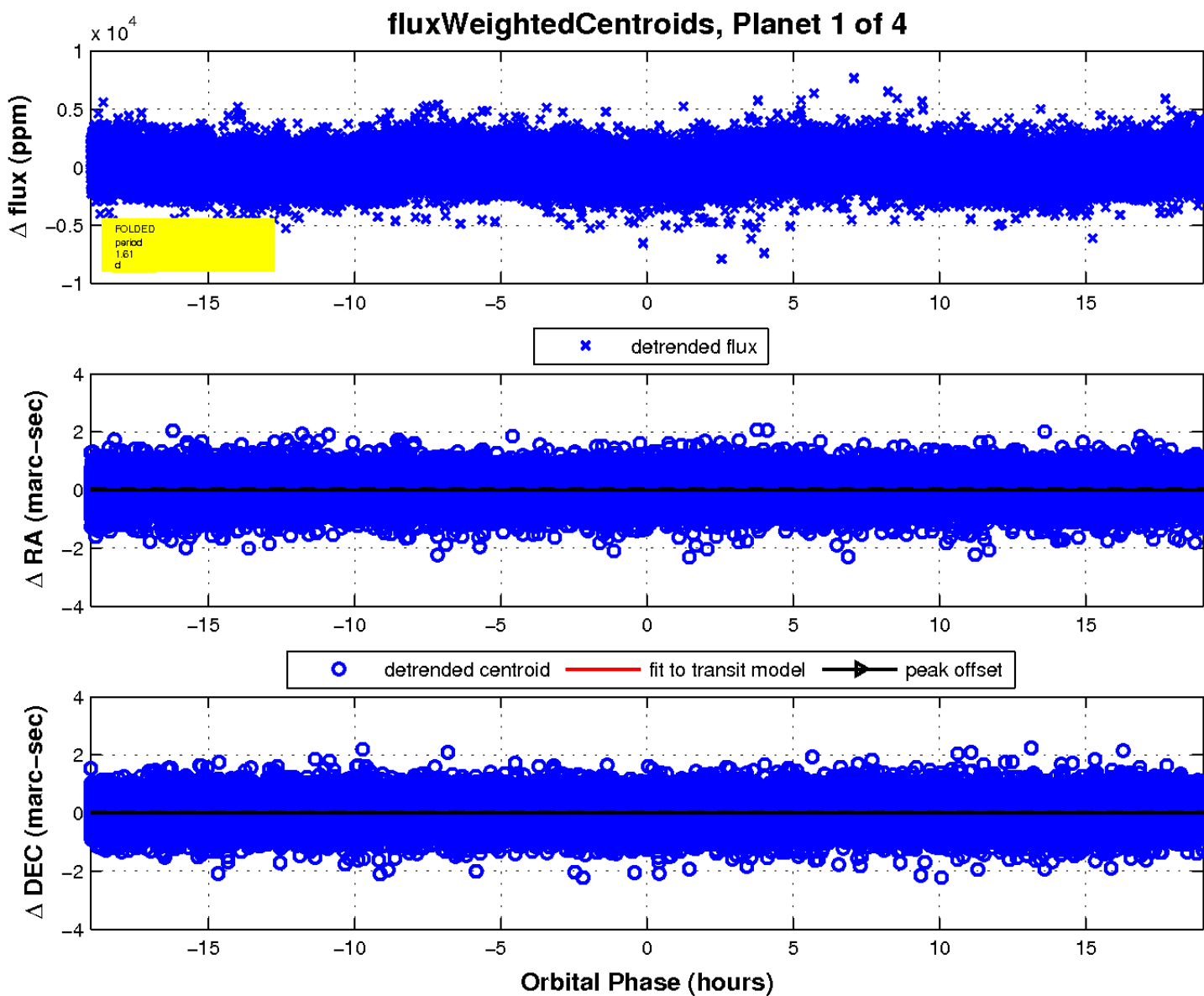
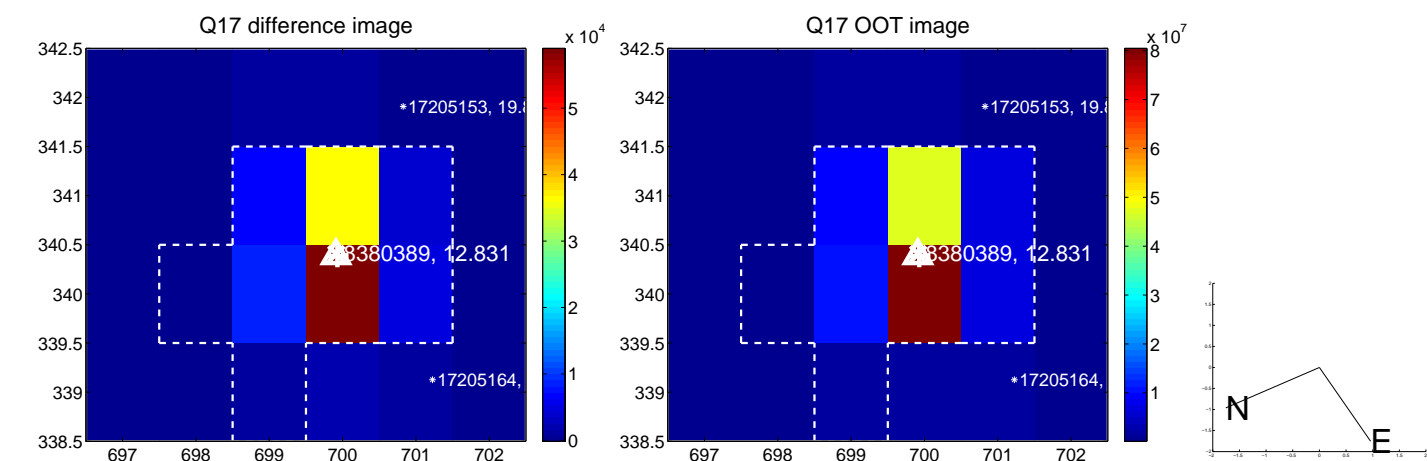
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

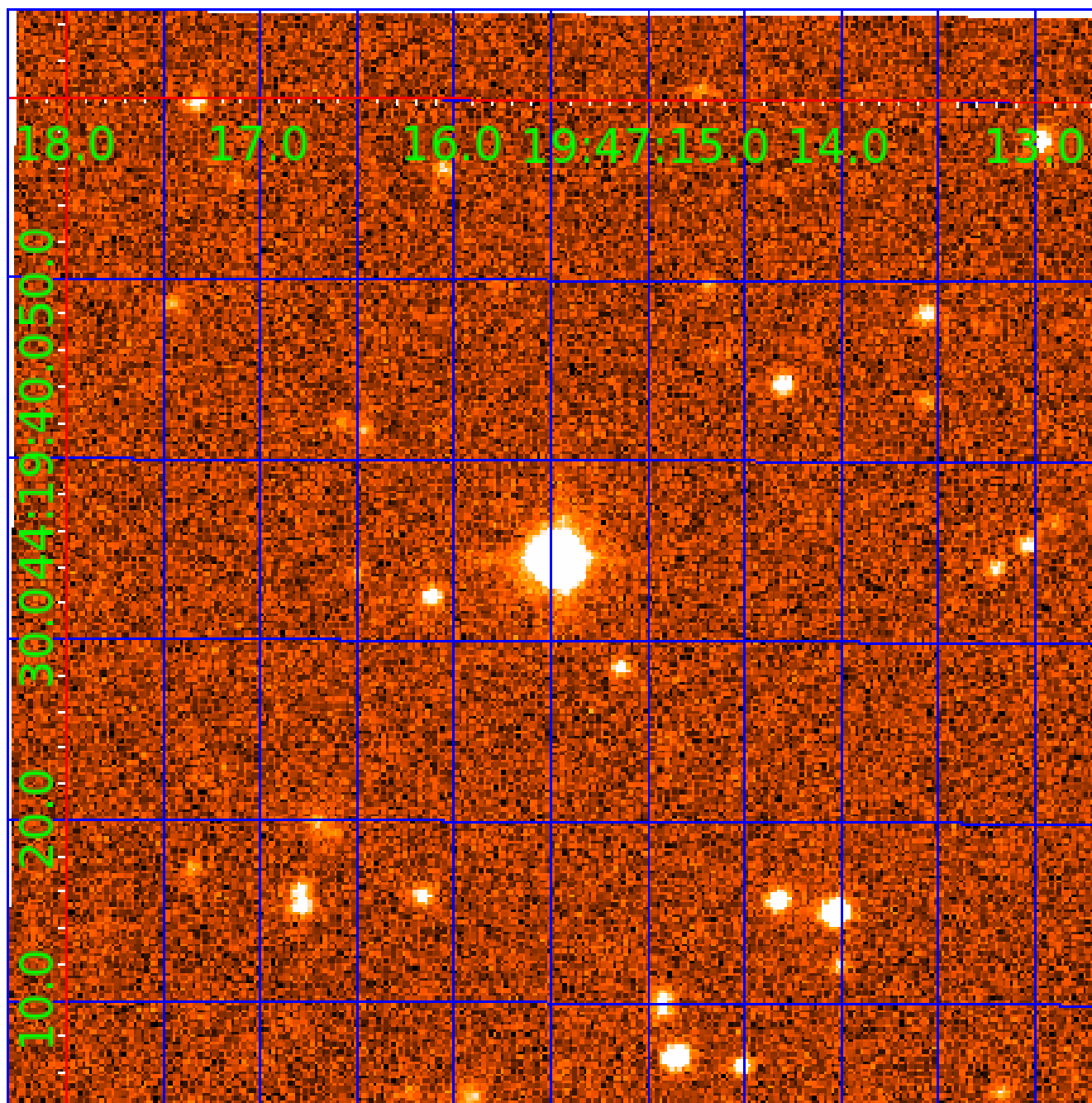


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008380389

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})
008380389-01	OBS	No	1.608364	132.825205	182.7	6.344	11.2	11.3	2.04	7343	3.21	11020.38
008380389-02	OBS	No	1.608205	131.698446	112.4	10.635	9.5	7.7	2.04	7343	2.19	11021.83
008380389-03	OBS	No	31.254582	155.557038	1548.7	4.655	9.8	10.5	2.04	7343	8.48	210.94
008380389-04	OBS	No	42.198276	156.140828	1820.3	3.091	8.7	9.4	2.04	7343	10.78	141.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008380389-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008380389-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
008380389-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008380389-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

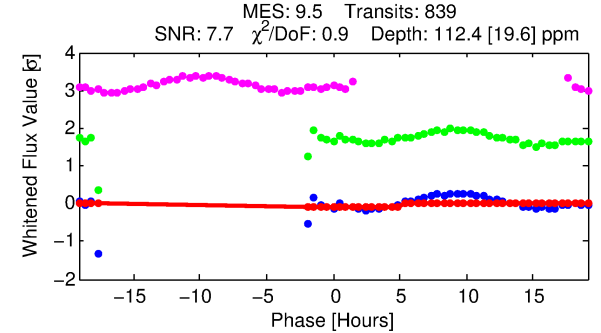
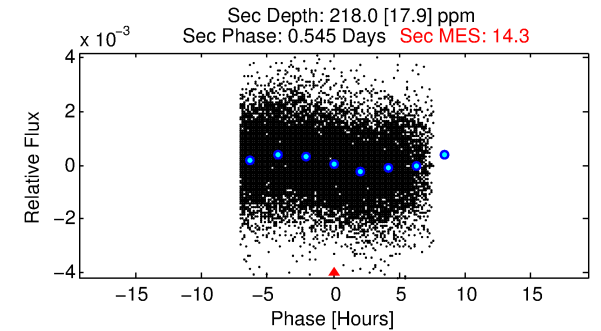
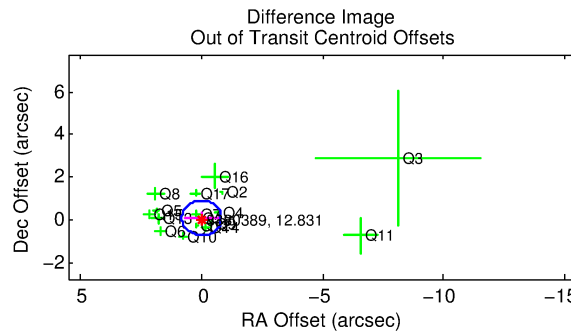
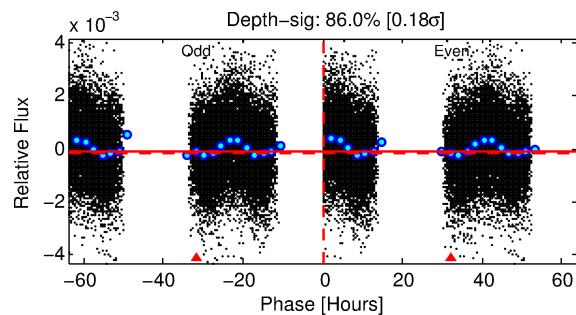
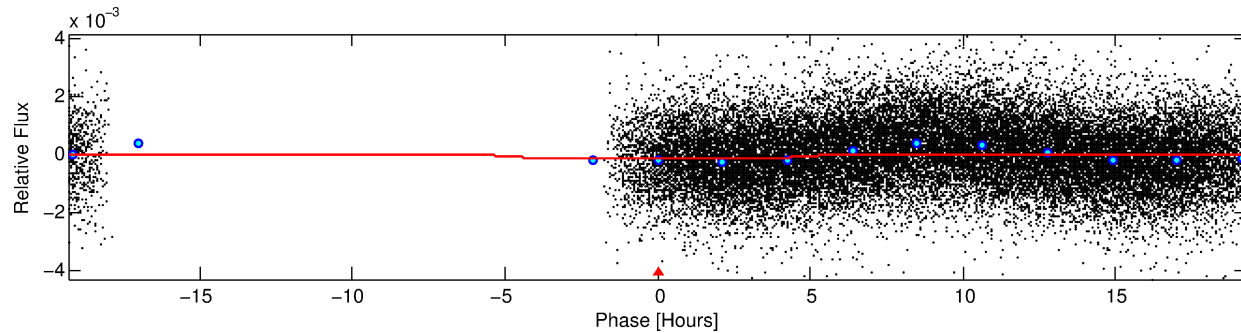
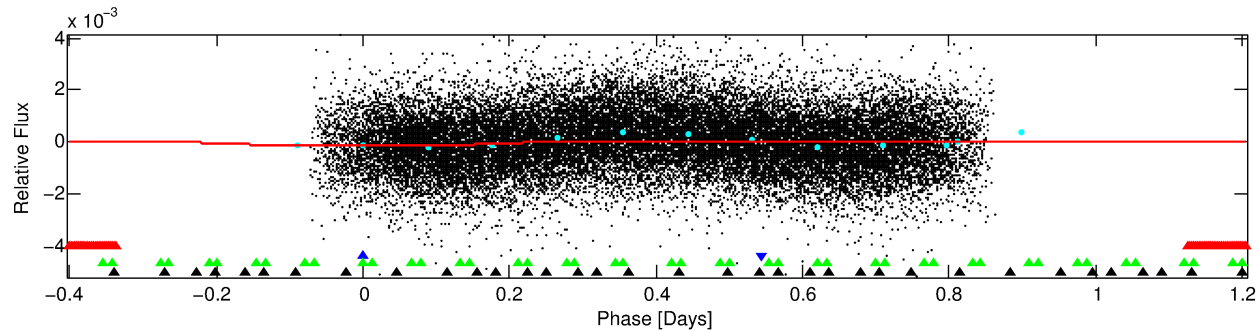
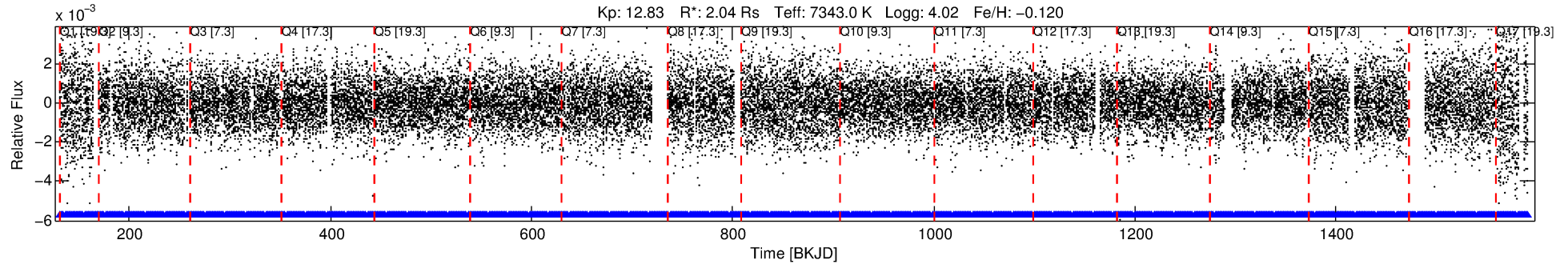
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008380389-02

No Significant Match Found

DV One-Page Summary

KIC: 8380389 Candidate: 2 of 4 Period: 1.608 d



DV Fit Results:

Period = 1.60820 [0.00004] d
Epoch = 131.6984 [0.0396] BKJD
Rp/R* = 0.0098 [0.0177]
a/R* = 1.33 [6.02]
b = 0.02 [449.63]
Seff = 11021.83 [4364.77]
Teq = 2613 [259] K
Rp = 2.19 [3.98] Re
a = 0.0314 [0.0075] AU
Ag = 24.69 [89.23] [0.27 σ]
Teffp = 9004 [8105] K [0.79 σ]

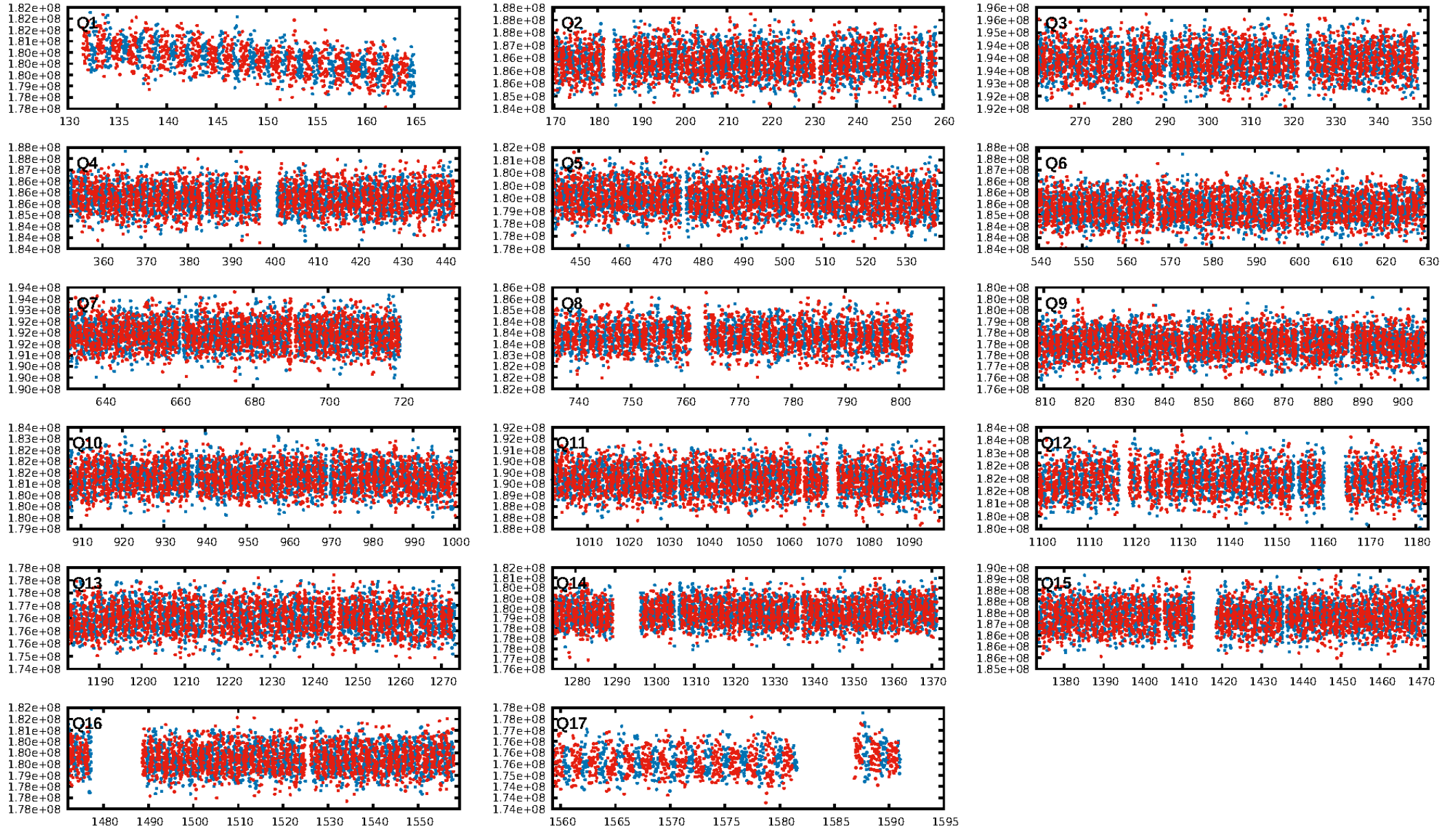
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.48e-17
RollingBand-fgt: 1.00 [801/801]
GhostDiagnostic-chr: 3.123
Centroid-sig: 66.4%
Centroid-so: 0.026 arcsec [0.29 σ]
OotOffset-rm: 0.102 arcsec [0.38 σ]
KicOffset-rm: 0.087 arcsec [0.35 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 0.00 [0/17]

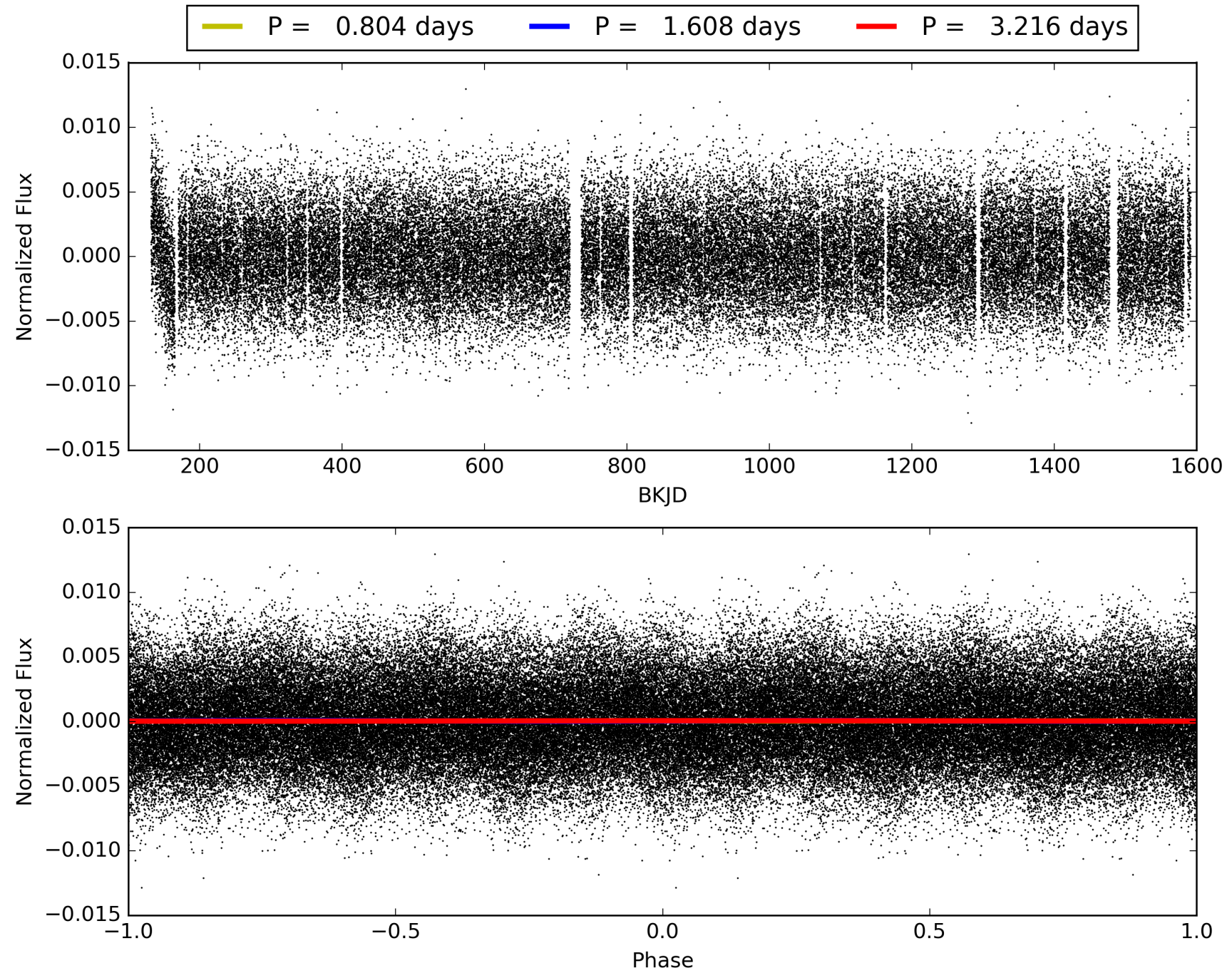
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:38:45 Z

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

TCE 008380389-02, PDC Light Curves

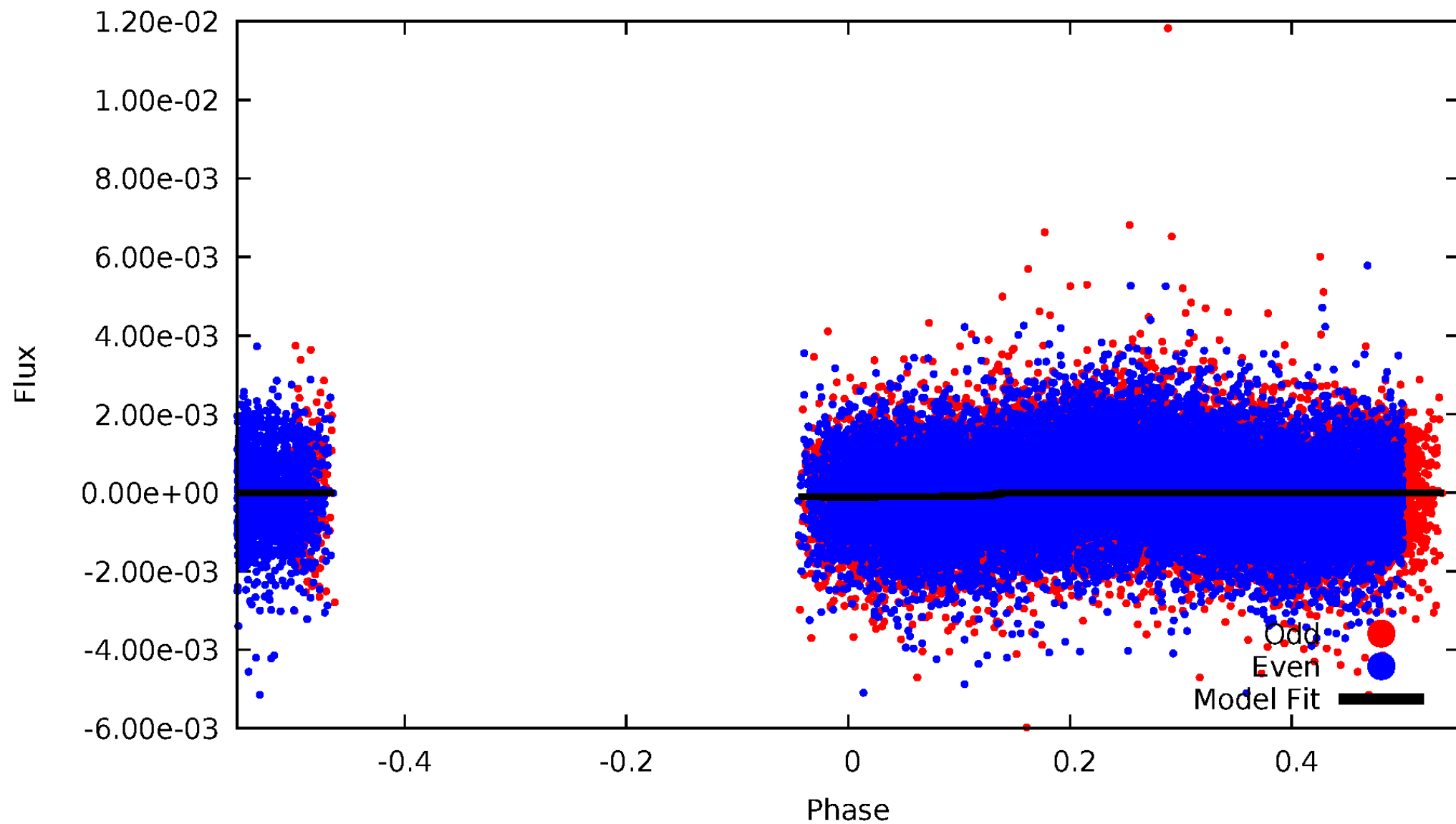


TCE 008380389-02



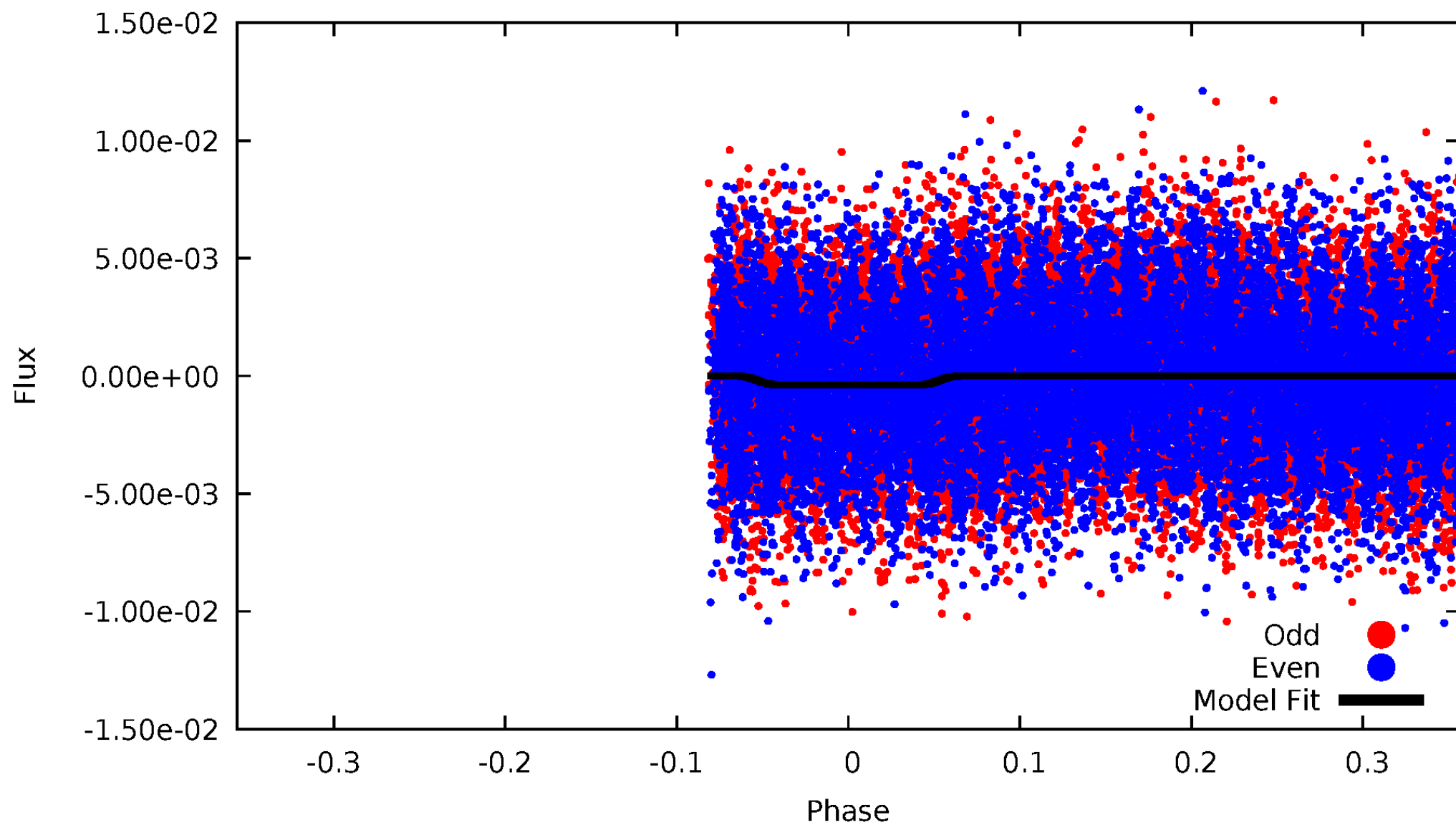
DV Odd/Even

TCE 008380389-02



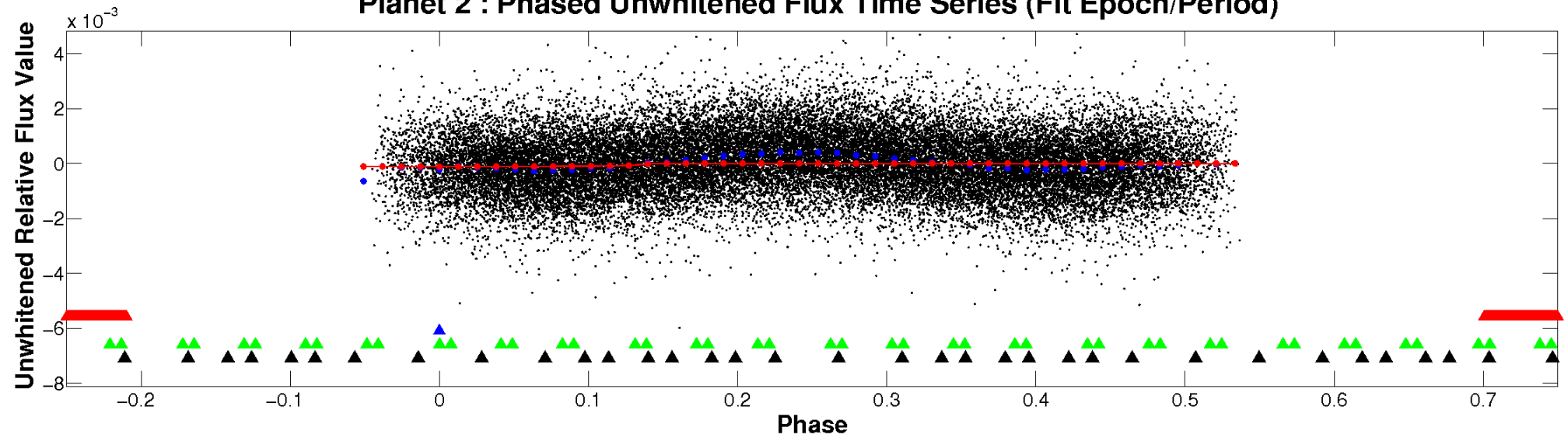
ALT Odd/Even

TCE 008380389-02

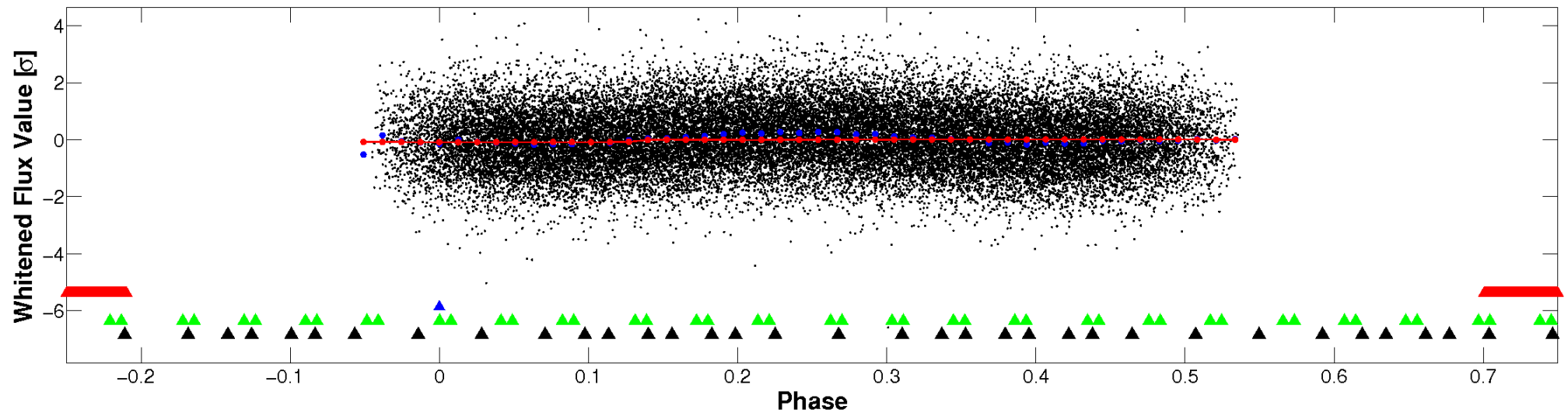


Non-Whitened Vs. Whitened Light Curve

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

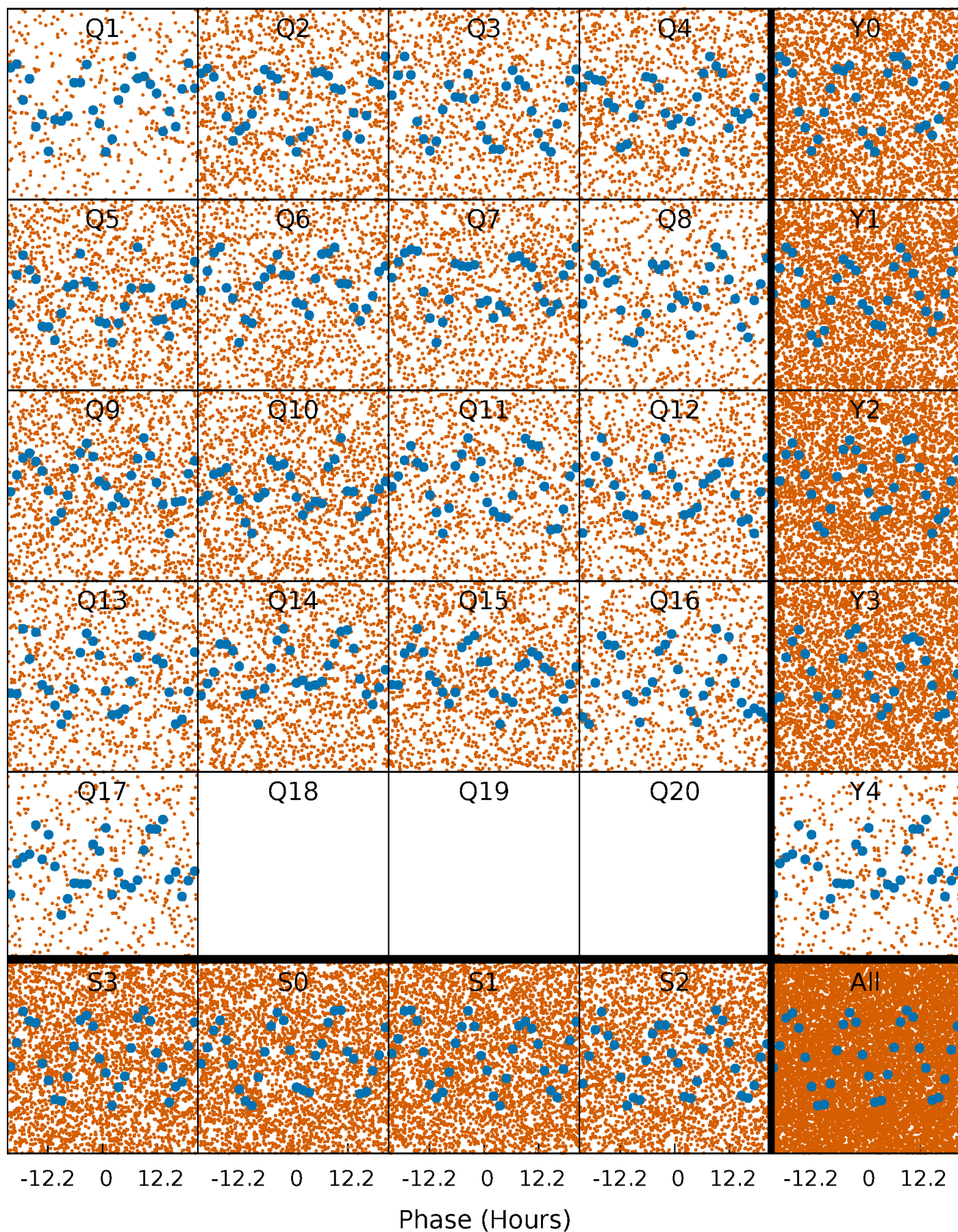


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



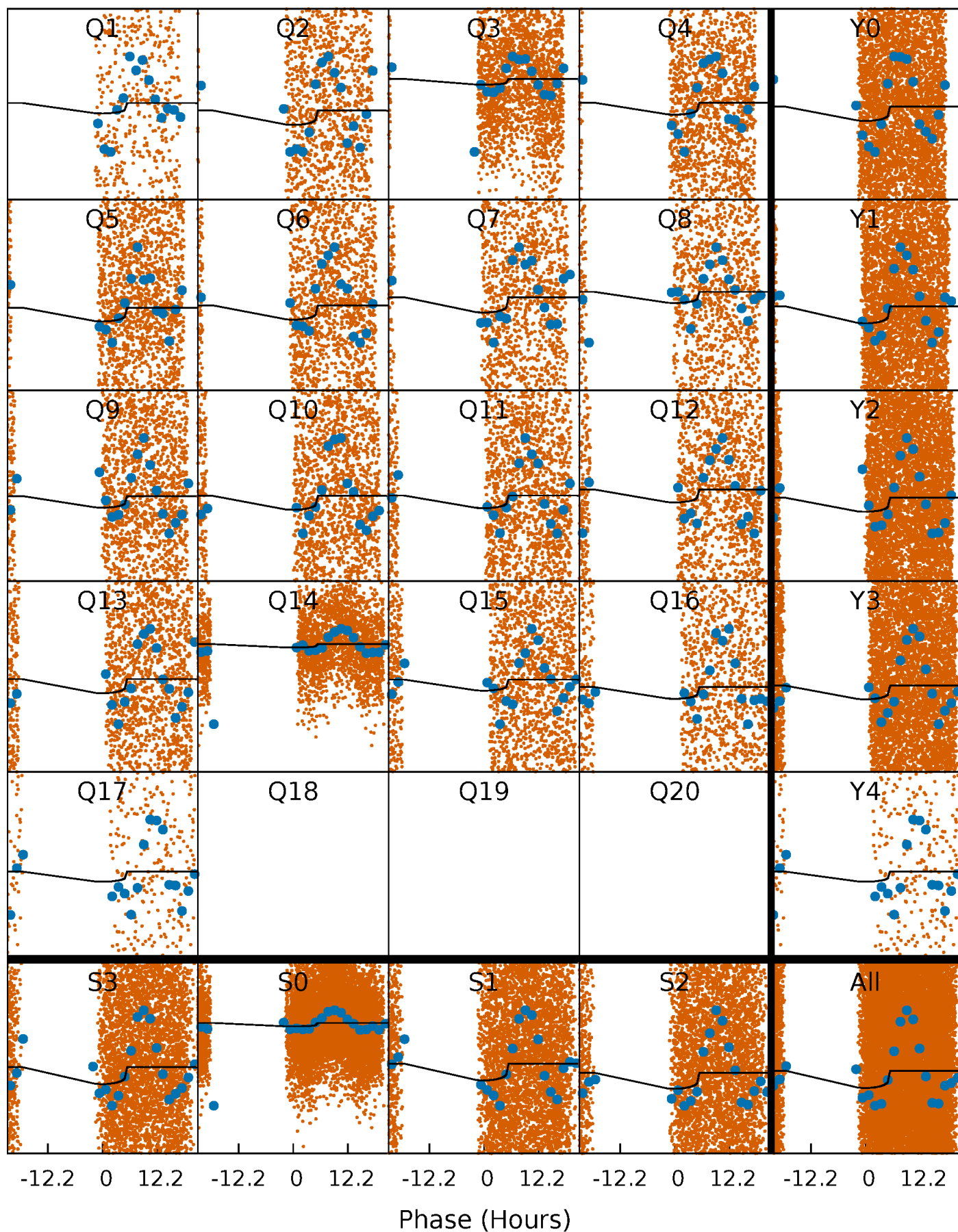
PDC Quarter-Phased Transit Curves

TCE 008380389-02 P= 1.608205 Days $T_0=131.698446$ (BKJD)



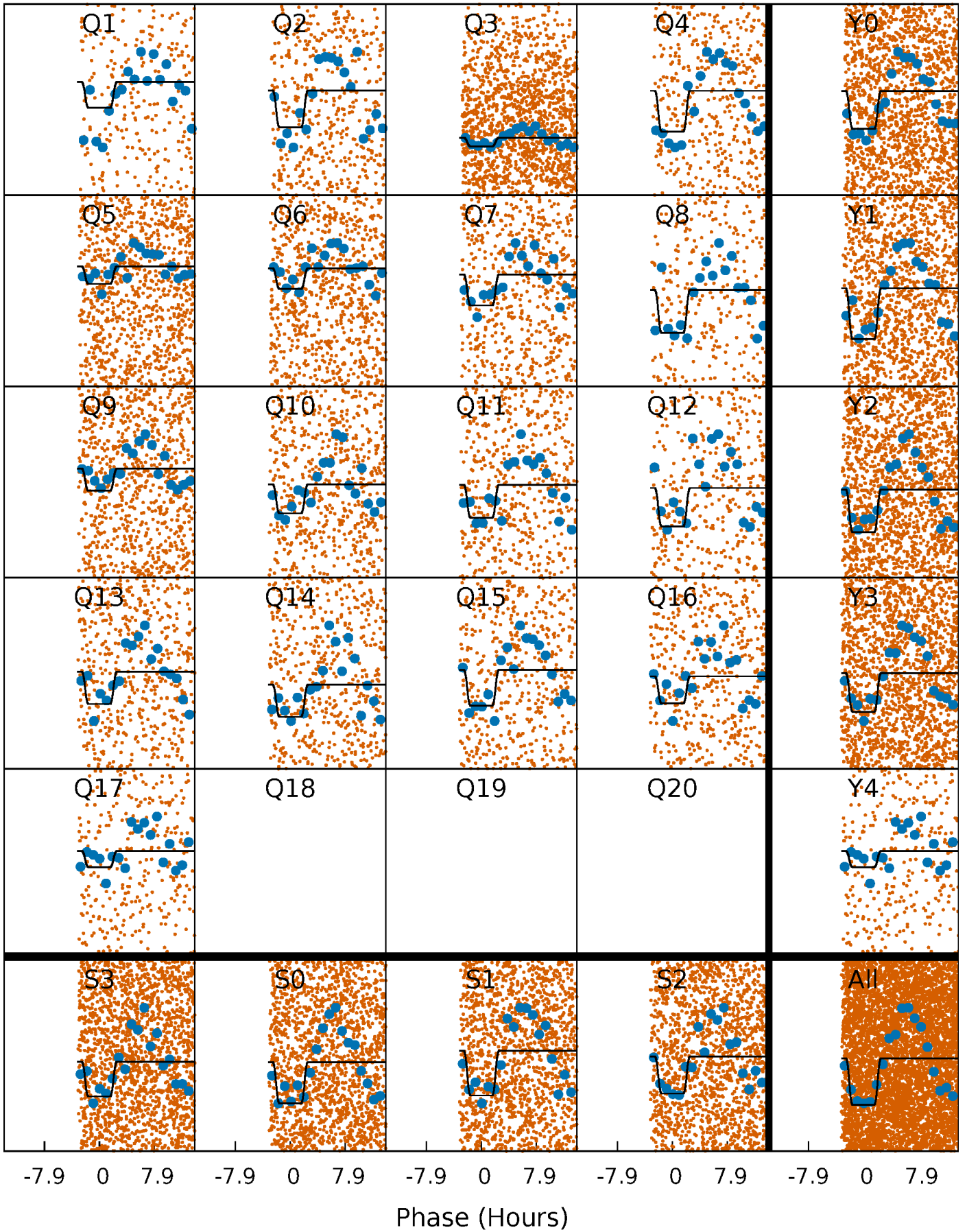
DV Quarter-Phased Transit Curves

TCE 008380389-02 P= 1.608205 Days $T_0=131.698446$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

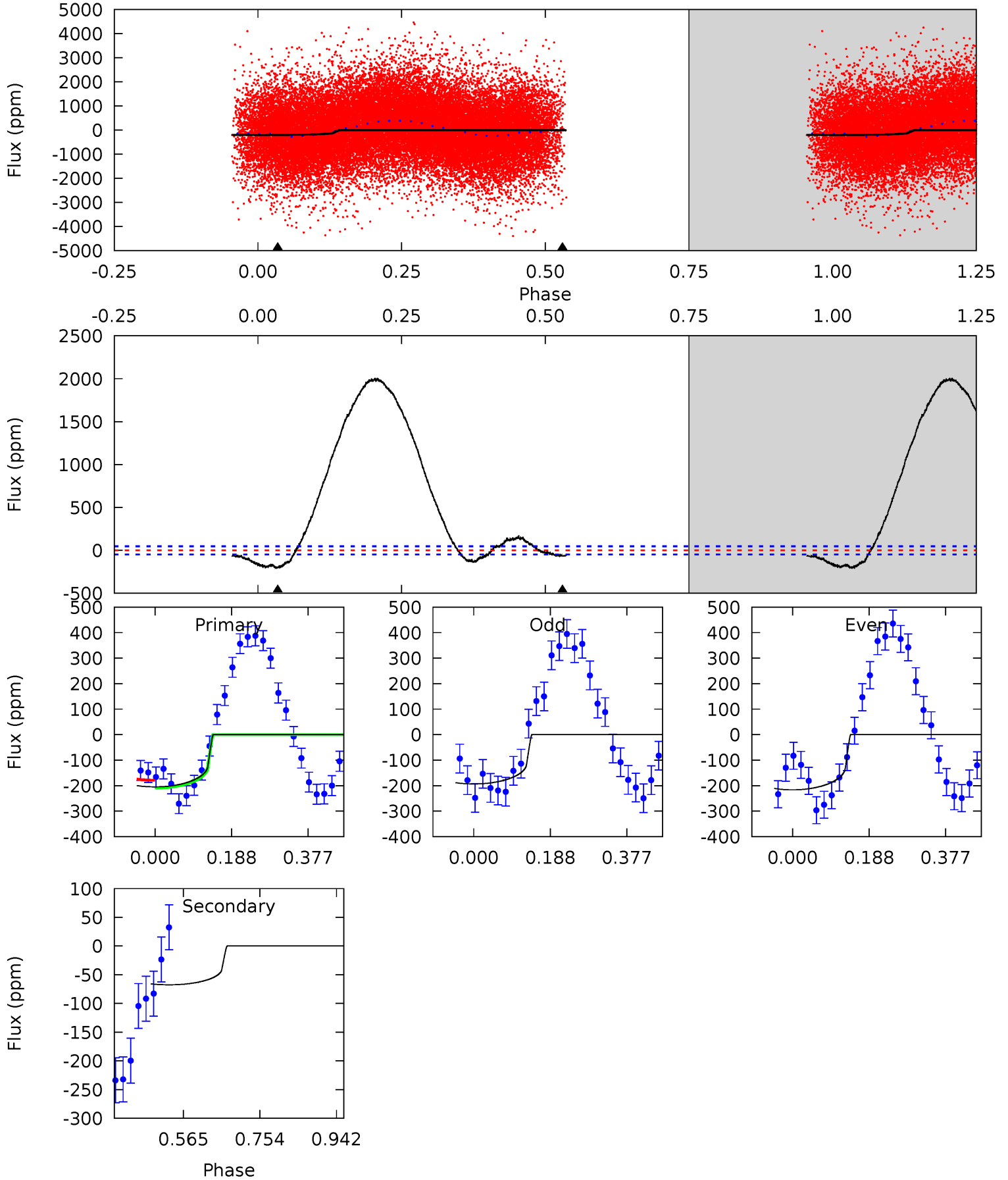
TCE 008380389-02 P= 1.608384 Days $T_0=131.737449$ (BKJD)



DV Model-Shift Uniqueness Test

008380389-02, P = 1.608205 Days, E = 130.090241 Days

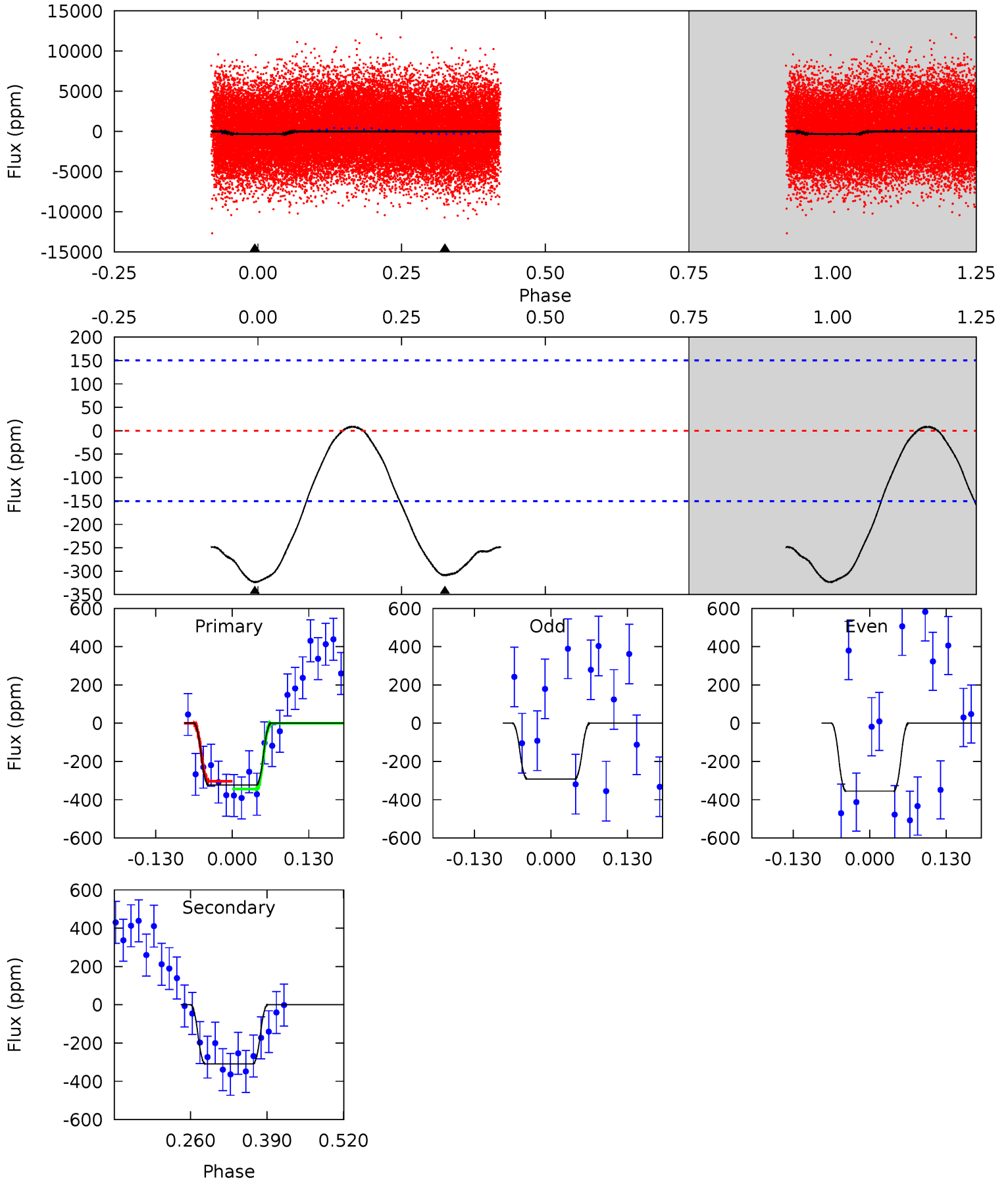
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	6.24	0	0	4.43	1.32	10.8	18.9	18.9	6.24	6.24	1.04	1.05	0.91	0.72



Alt Model-Shift Uniqueness Test

008380389-02, P = 1.608384 Days, E = 130.129065 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.70	9.26	0	0	4.51	1.51	0.35	9.70	9.70	9.26	9.26	0.95	1.09	0.03	0.58



Stellar Parameters For KIC 008380389

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7343^{+228}_{-304}	$4.021^{+0.203}_{-0.166}$	$-0.120^{+0.250}_{-0.350}$	$2.044^{+0.551}_{-0.551}$	$1.597^{+0.199}_{-0.273}$	$0.263^{+0.309}_{-0.124}$
	+3%/-4%	+5%/-4%	+208%/-292%	+27%/-27%	+12%/-17%	+117%/-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 008380389-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-68 ± 11	$3.49^{+3.53}_{-2.42}$	3634^{+275}_{-280}	5083^{+5005}_{-1398}	$2.925^{+29.653}_{-2.190}$
Alt.	-309 ± 33	$5.04^{+3.82}_{-3.00}$	3653^{+283}_{-297}	6150^{+5138}_{-1360}	$6.284^{+32.627}_{-4.201}$

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

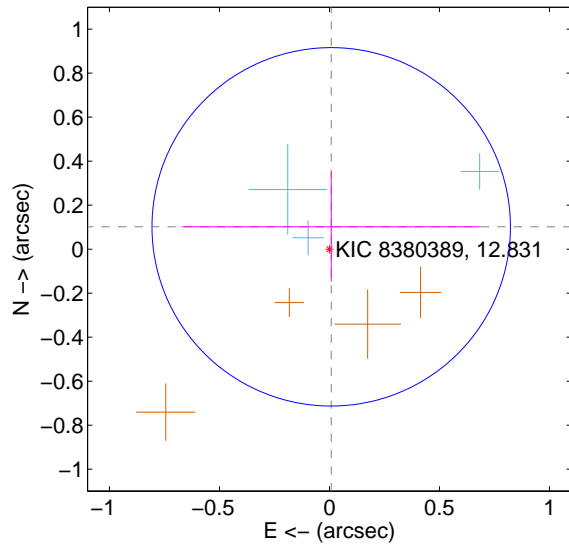
Supplemental centroid analysis for 008380389-02. Kepler magnitude: 12.83. Transit SNR 7.65

There are 7 quarters with good PRF difference image offsets

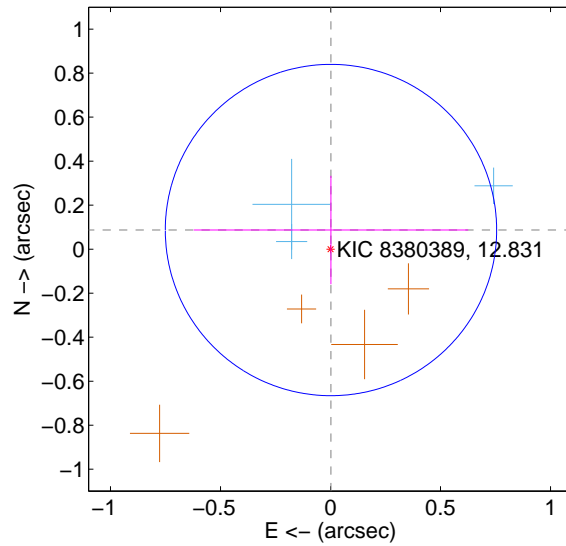
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.102 ± 0.271	0.38	-0.008 ± 0.679	0.102 ± 0.249
PRF-fit source offset from KIC position	0.087 ± 0.251	0.35	-0.002 ± 0.624	0.087 ± 0.247
photometric centroid source offset	0.03 ± 0.09	0.29	0.01 ± 0.09	0.02 ± 0.09

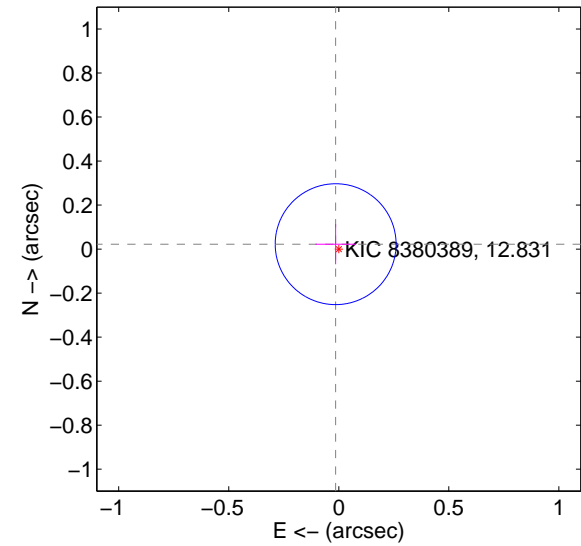
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

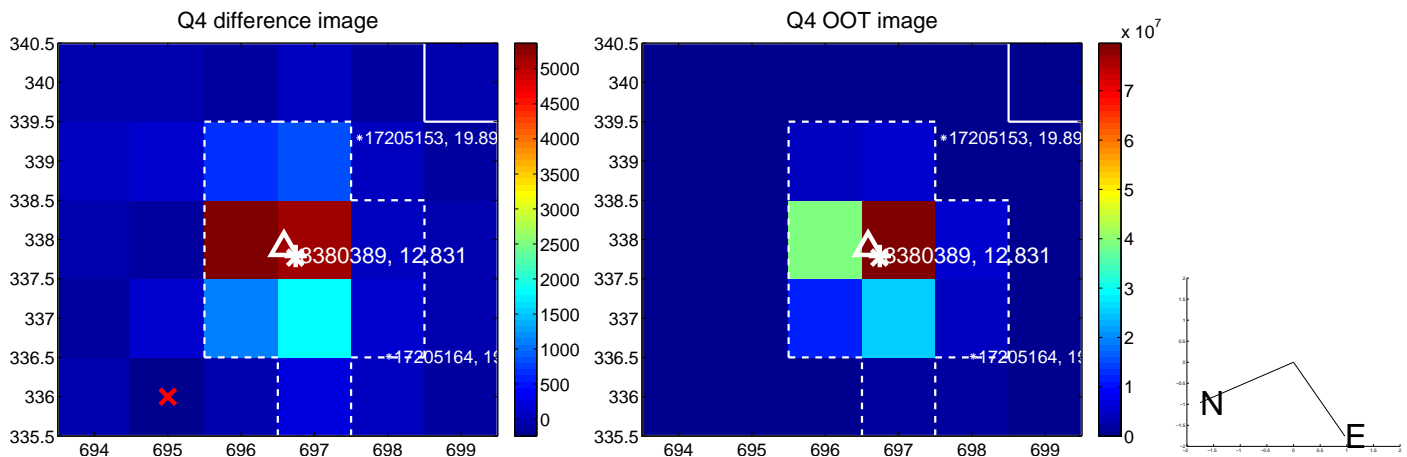
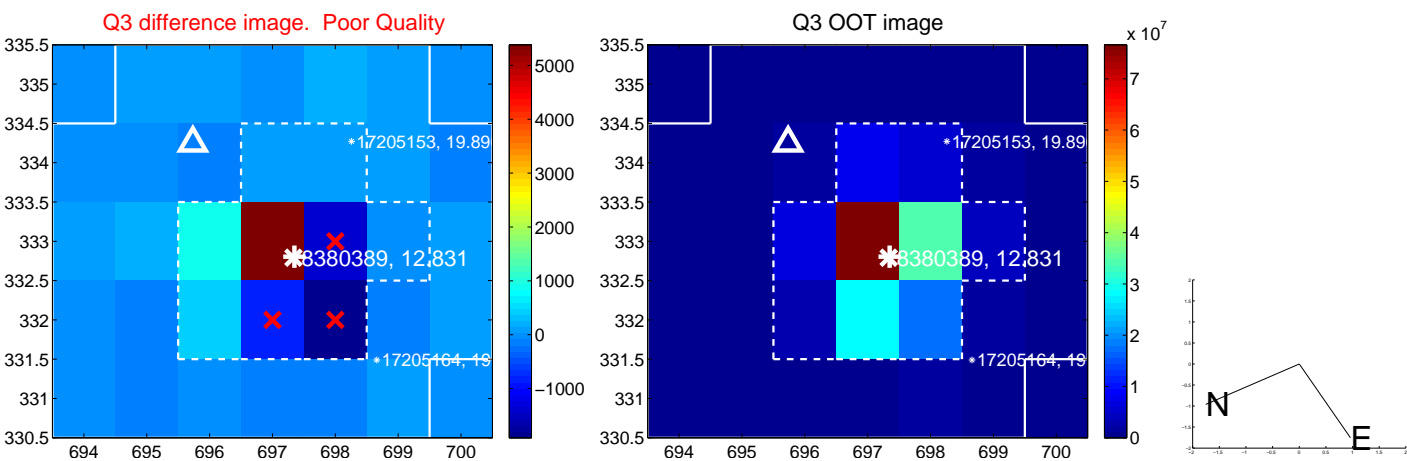
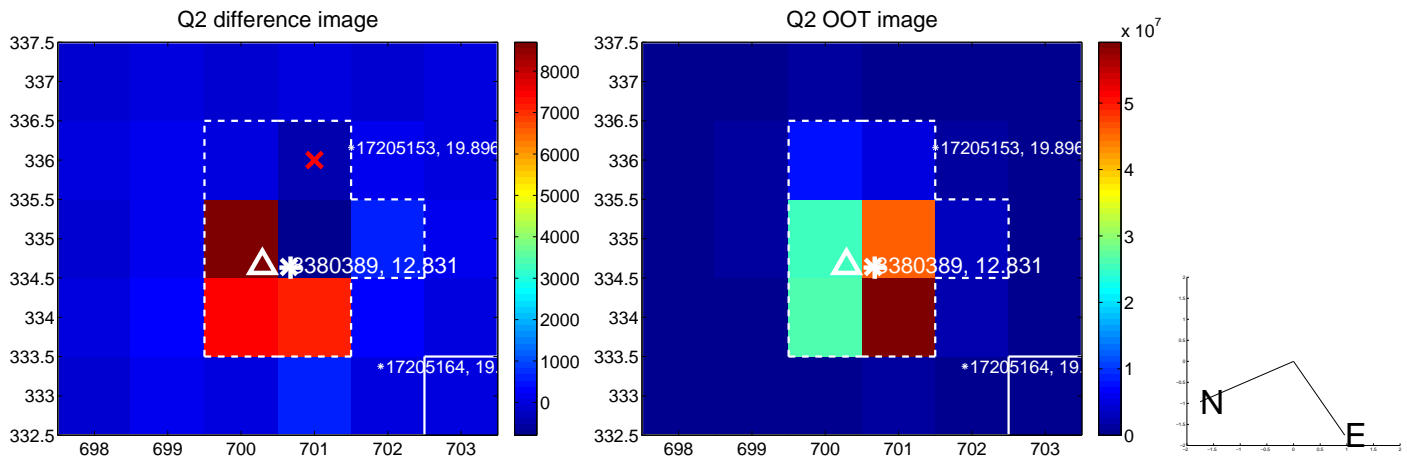
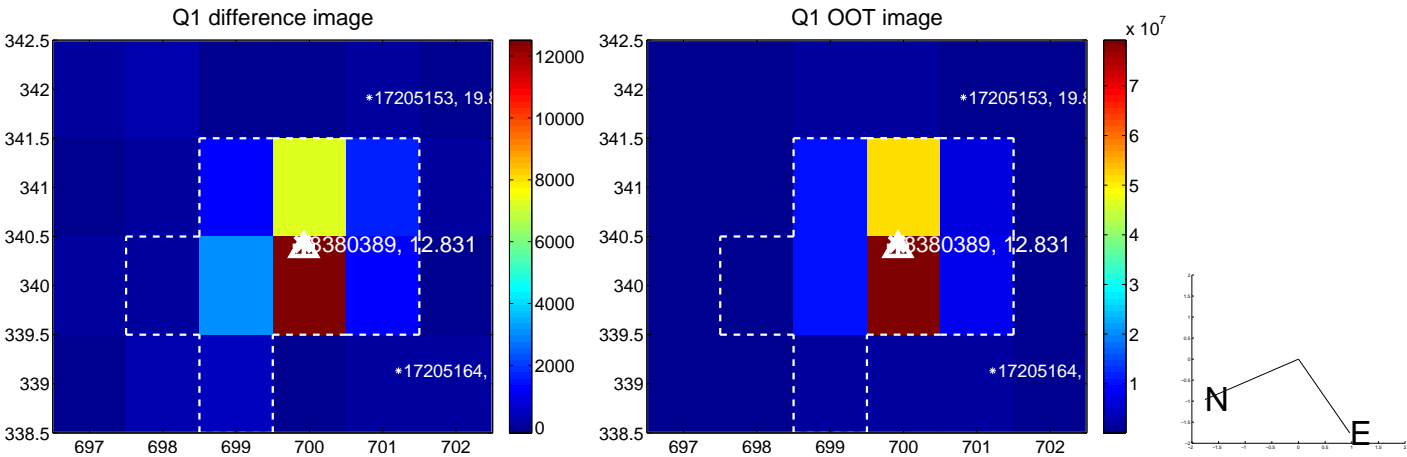


offset from photometric centroids

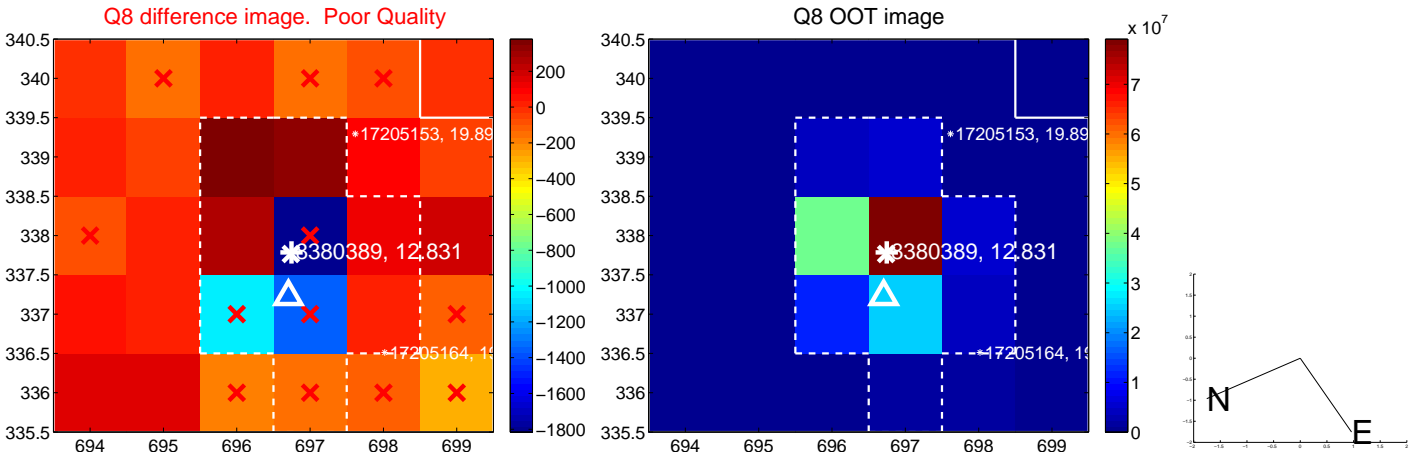
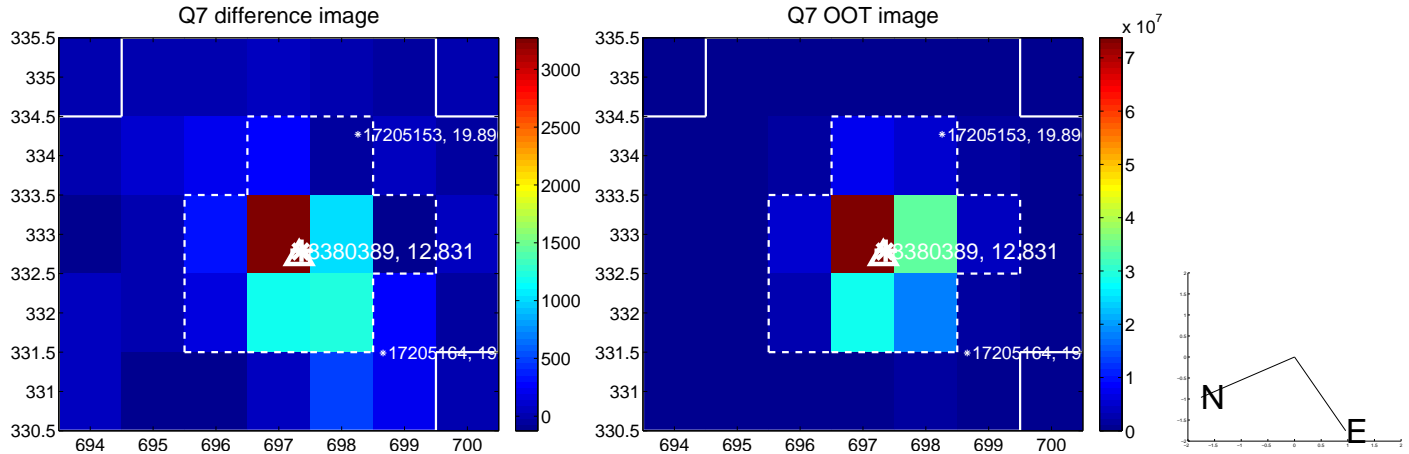
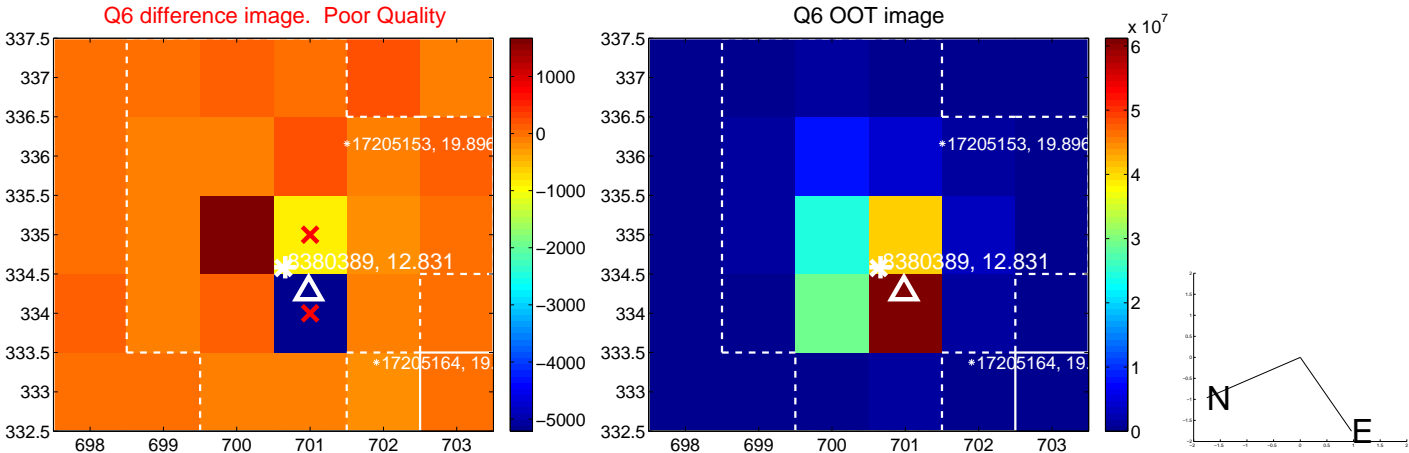
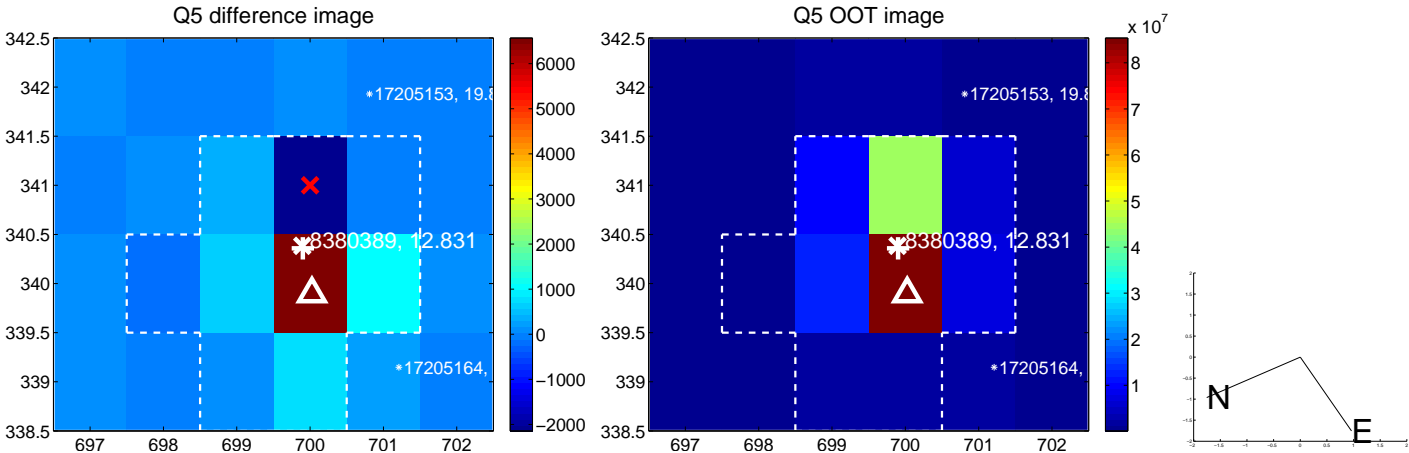


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

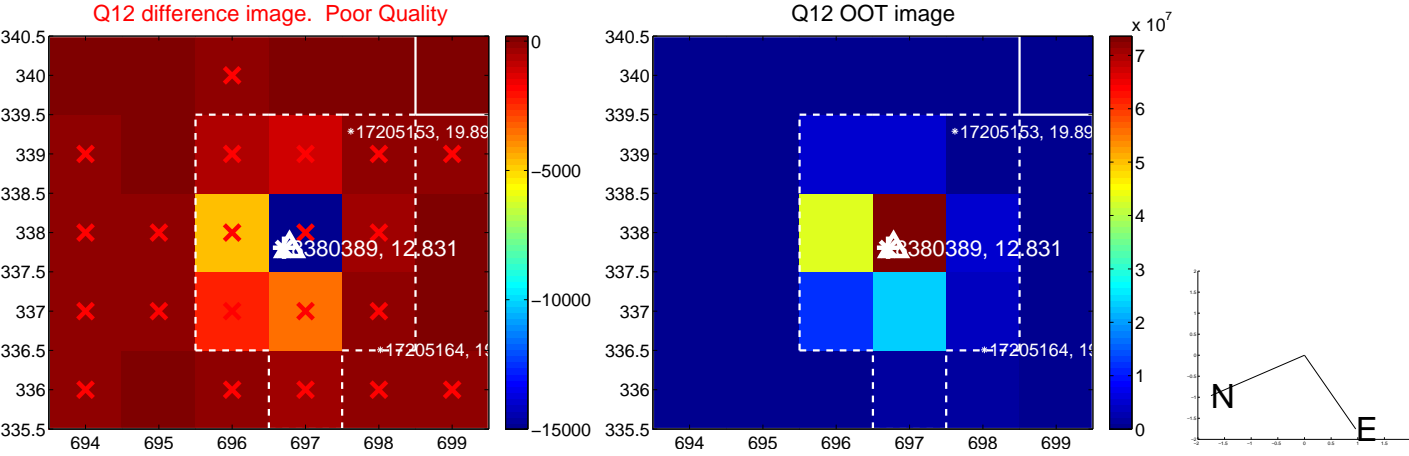
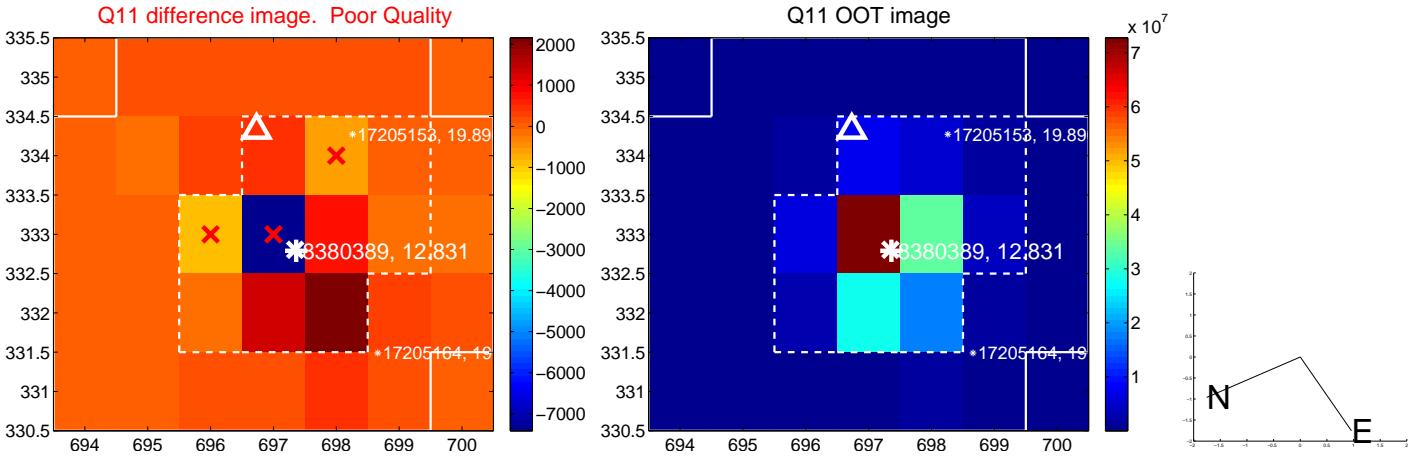
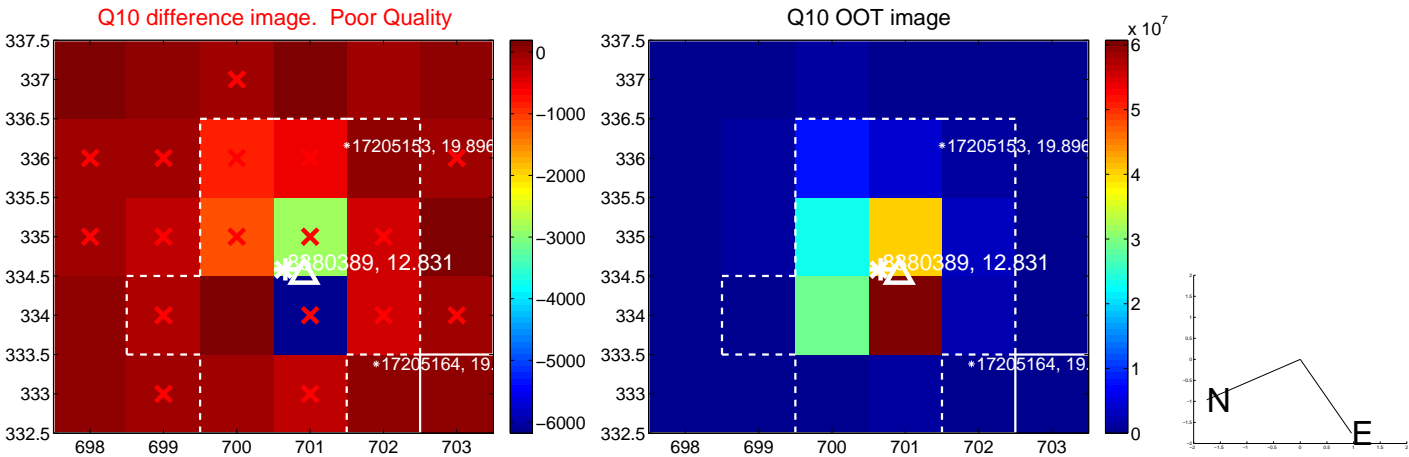
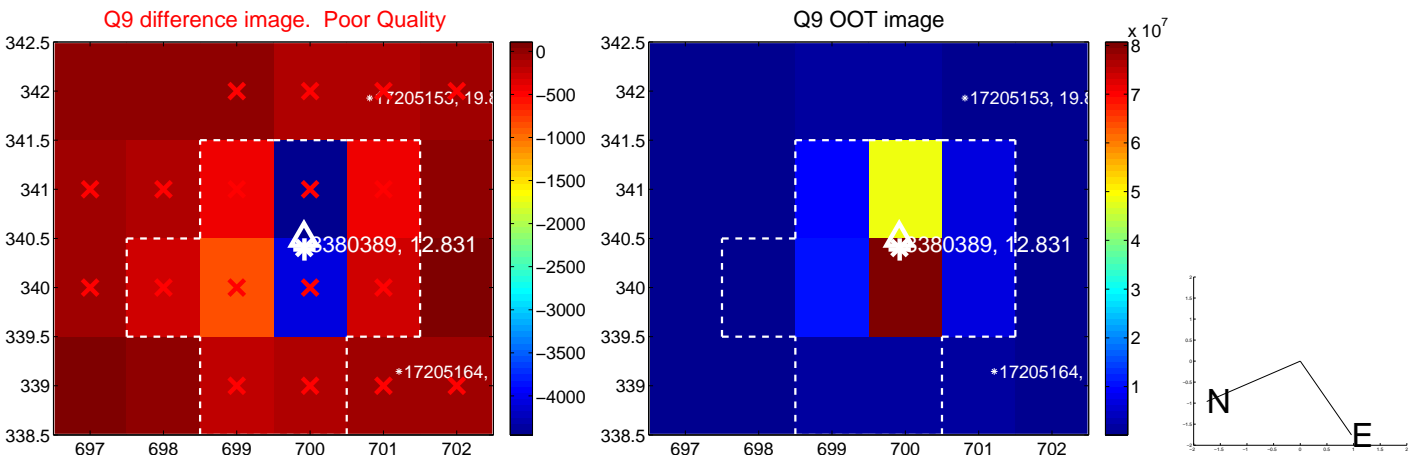
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



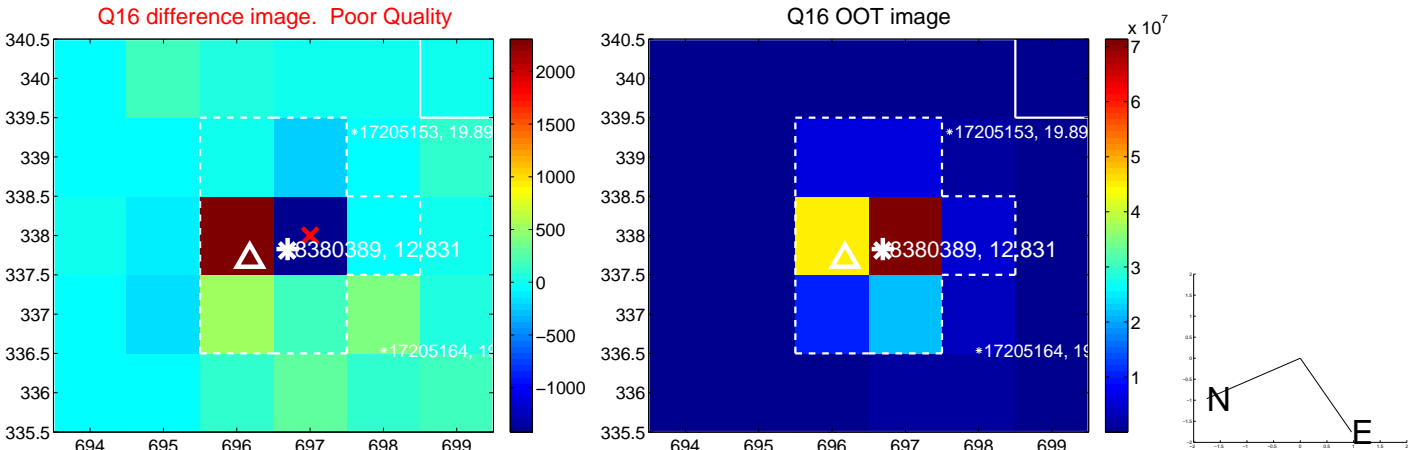
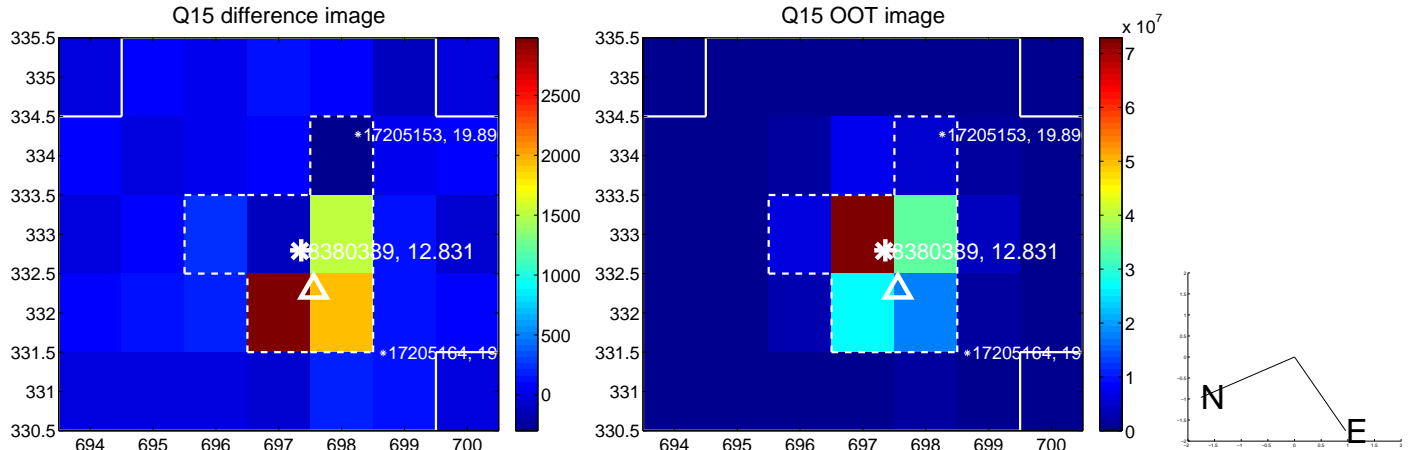
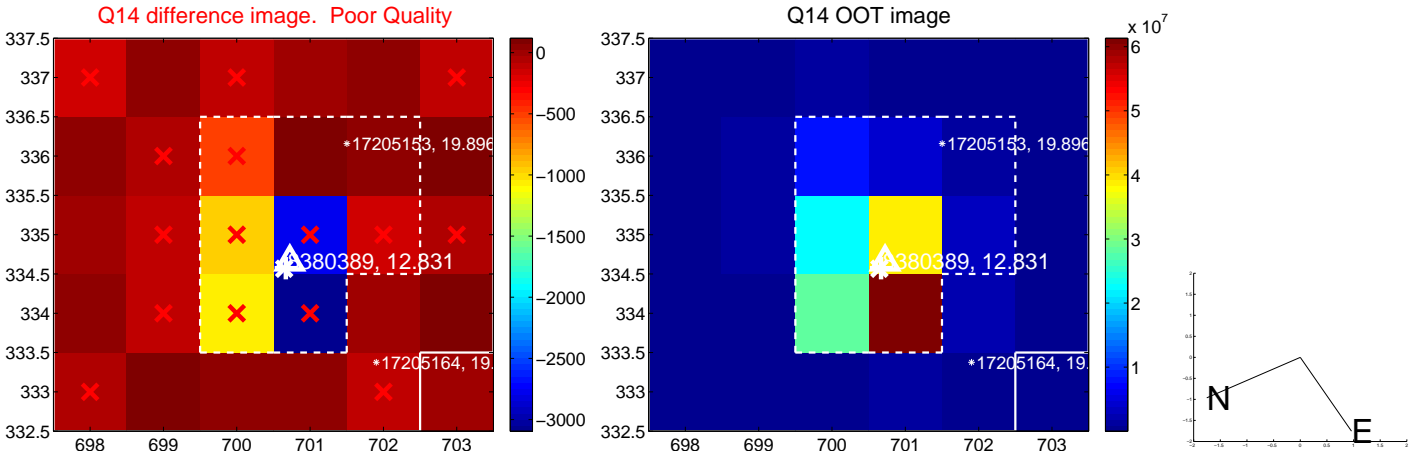
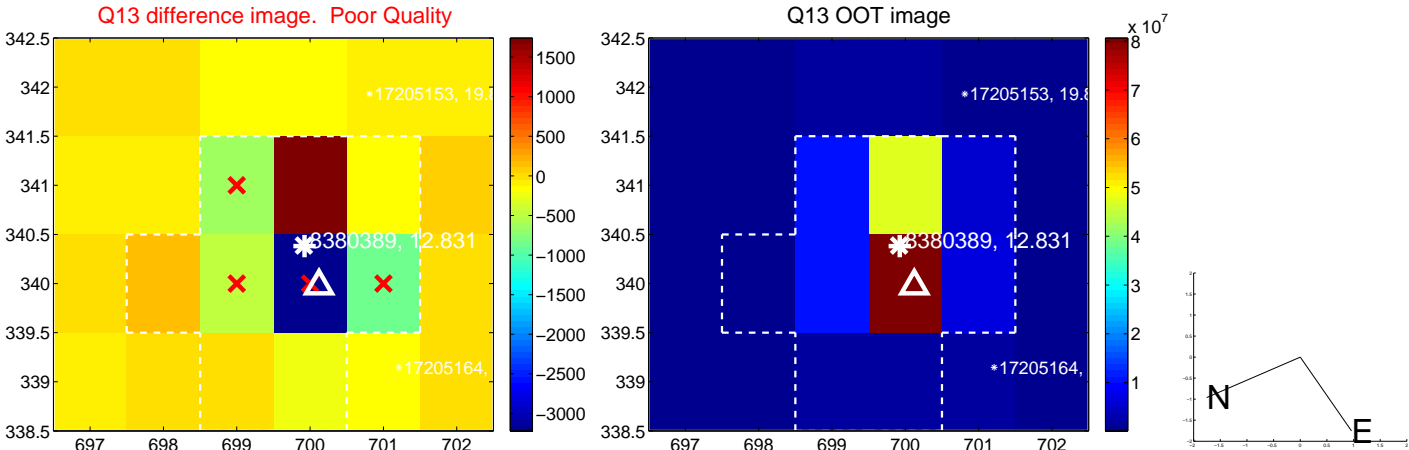
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



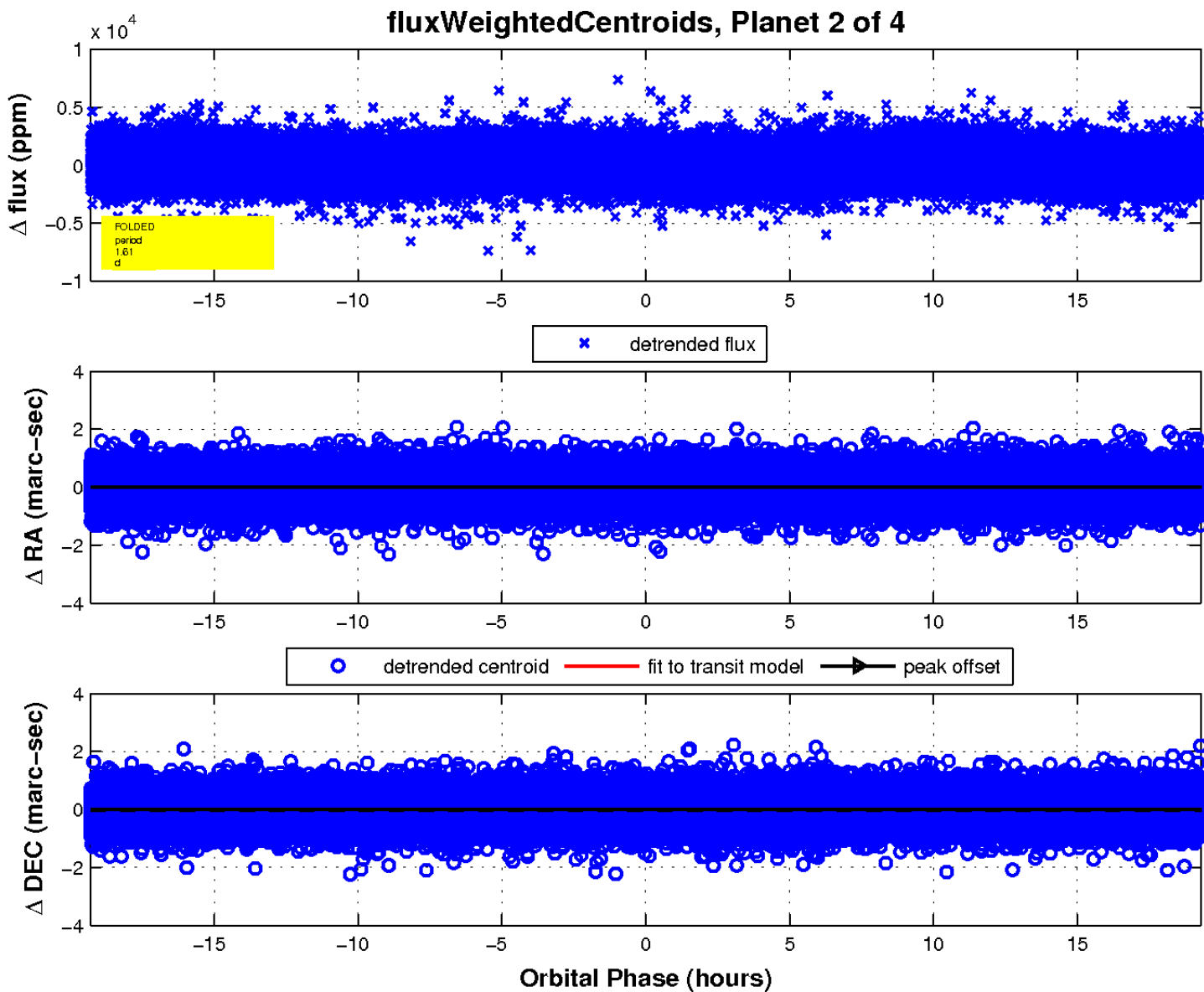
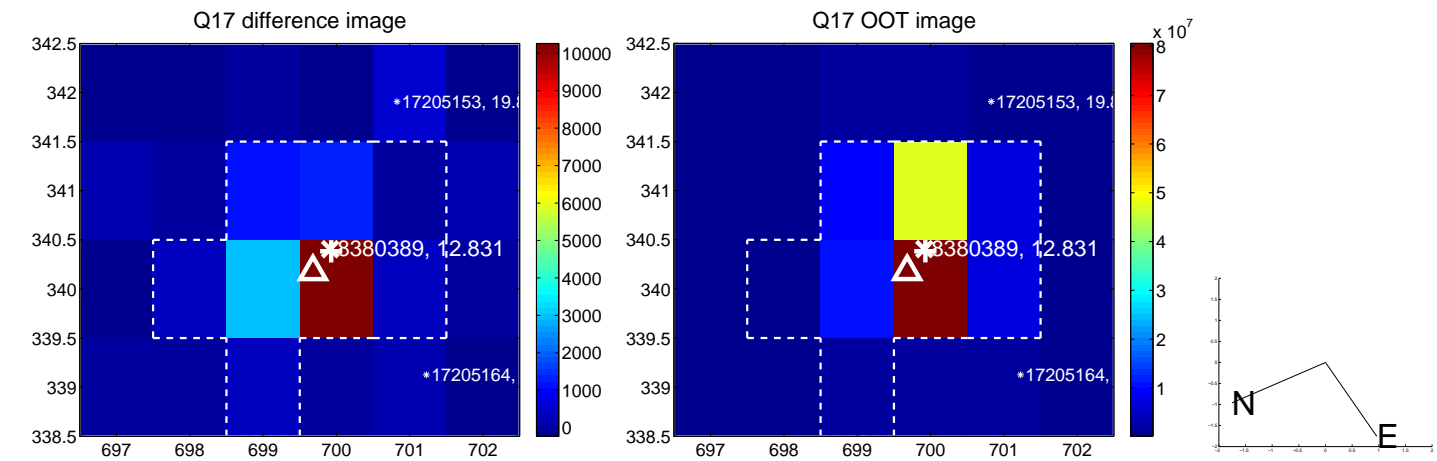
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

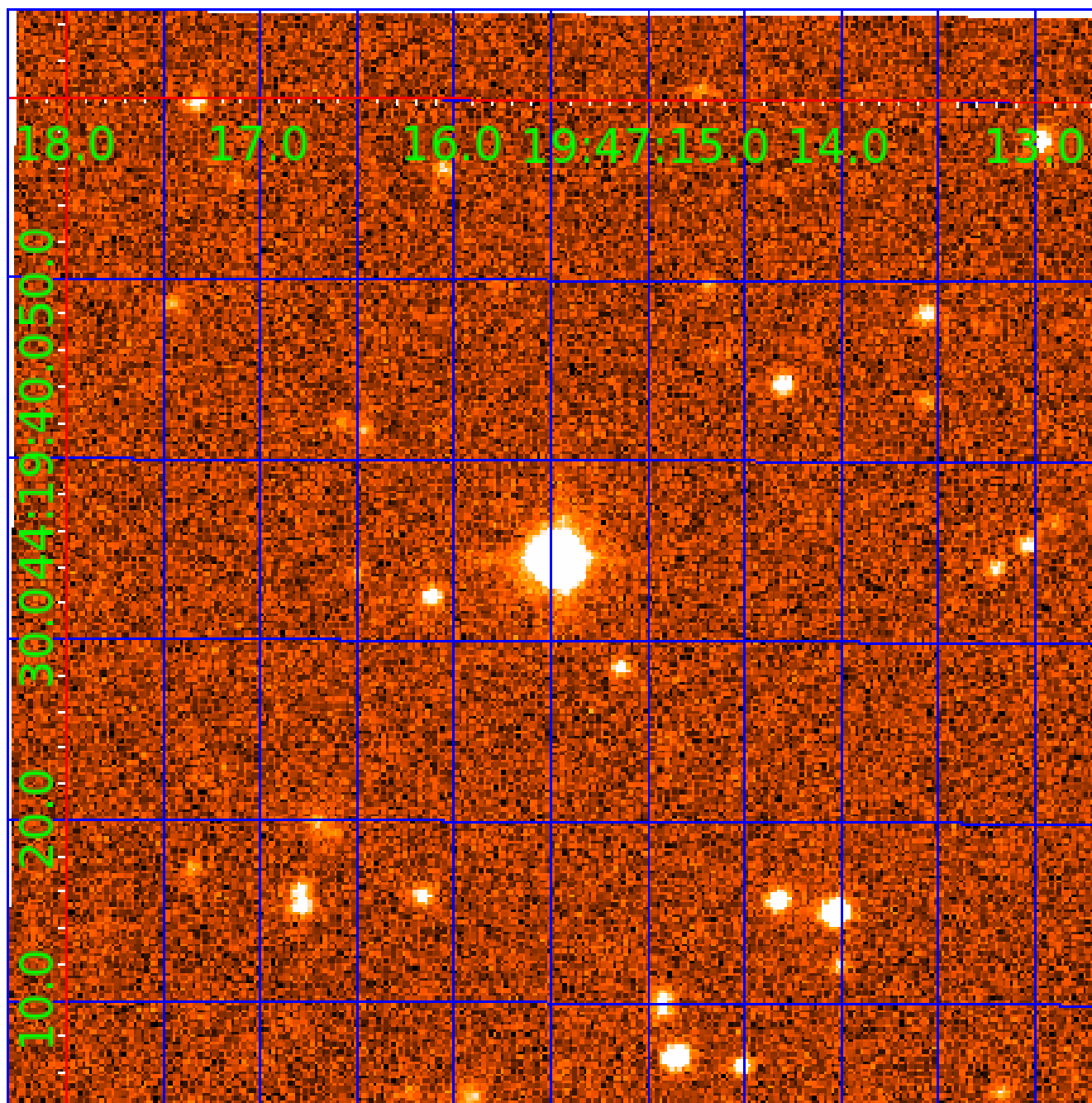


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008380389

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})
008380389-01	OBS	No	1.608364	132.825205	182.7	6.344	11.2	11.3	2.04	7343	3.21	11020.38
008380389-02	OBS	No	1.608205	131.698446	112.4	10.635	9.5	7.7	2.04	7343	2.19	11021.83
008380389-03	OBS	No	31.254582	155.557038	1548.7	4.655	9.8	10.5	2.04	7343	8.48	210.94
008380389-04	OBS	No	42.198276	156.140828	1820.3	3.091	8.7	9.4	2.04	7343	10.78	141.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008380389-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008380389-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
008380389-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008380389-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

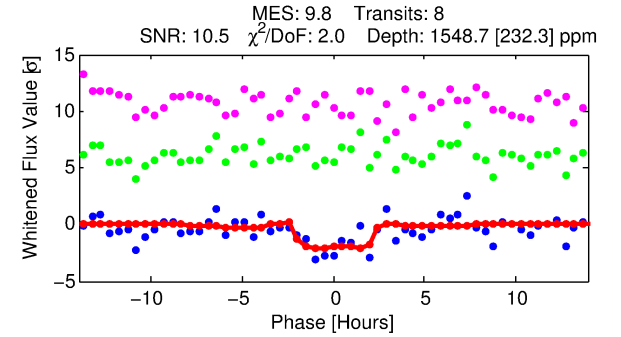
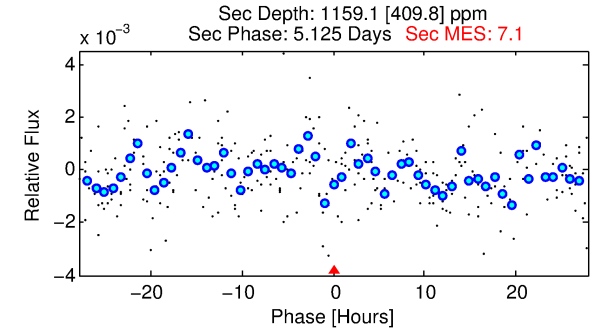
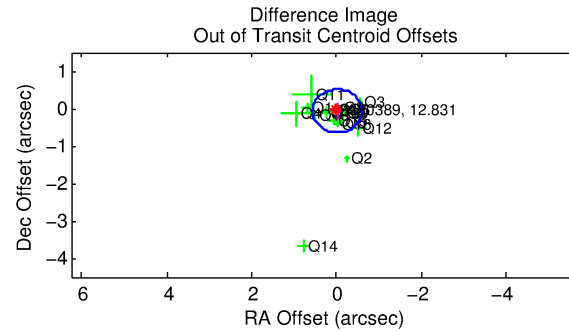
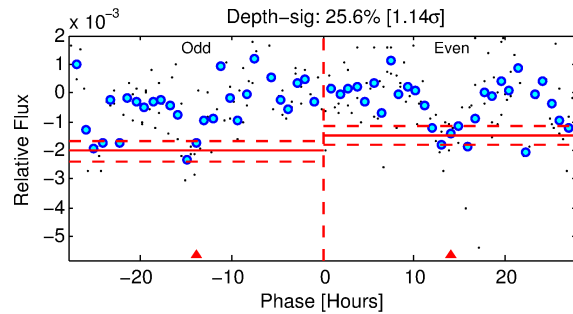
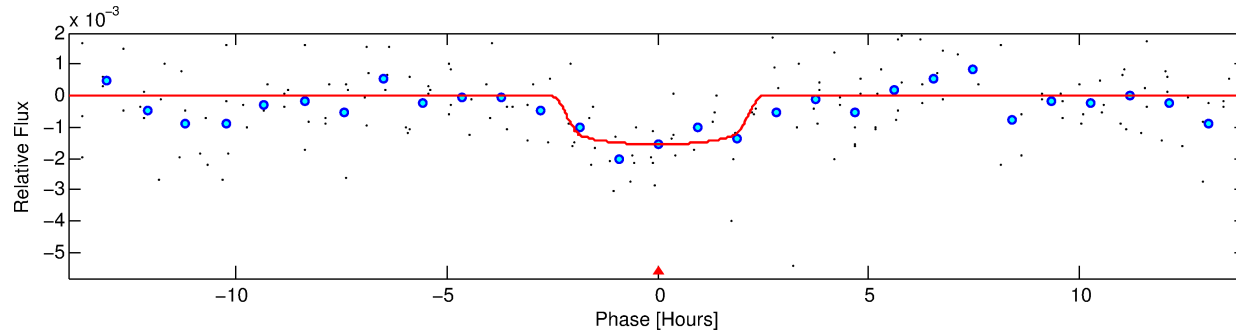
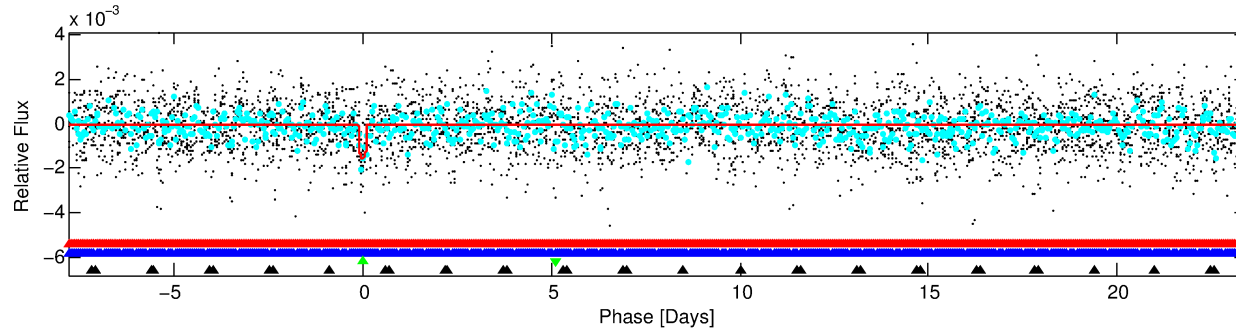
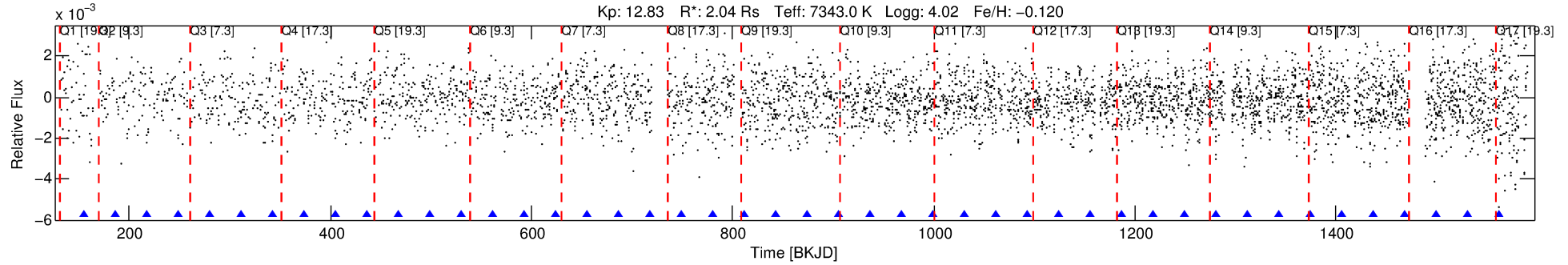
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008380389-03

No Significant Match Found

DV One-Page Summary

KIC: 8380389 Candidate: 3 of 4 Period: 31.255 d



DV Fit Results:

Period = 31.25458 [0.00063] d
Epoch = 155.5570 [0.0218] BKJD
Rp/R* = 0.0380 [0.0489]
a/R* = 42.82 [320.35]
b = 0.62 [7.54]
Seff = 210.94 [83.53]
Teq = 972 [96] K
Rp = 8.48 [11.13] Re
a = 0.2271 [0.0540] AU
Ag = 457.83 [1199.48] [0.38 σ]
Teffp = 6950 [4518] K [1.32 σ]

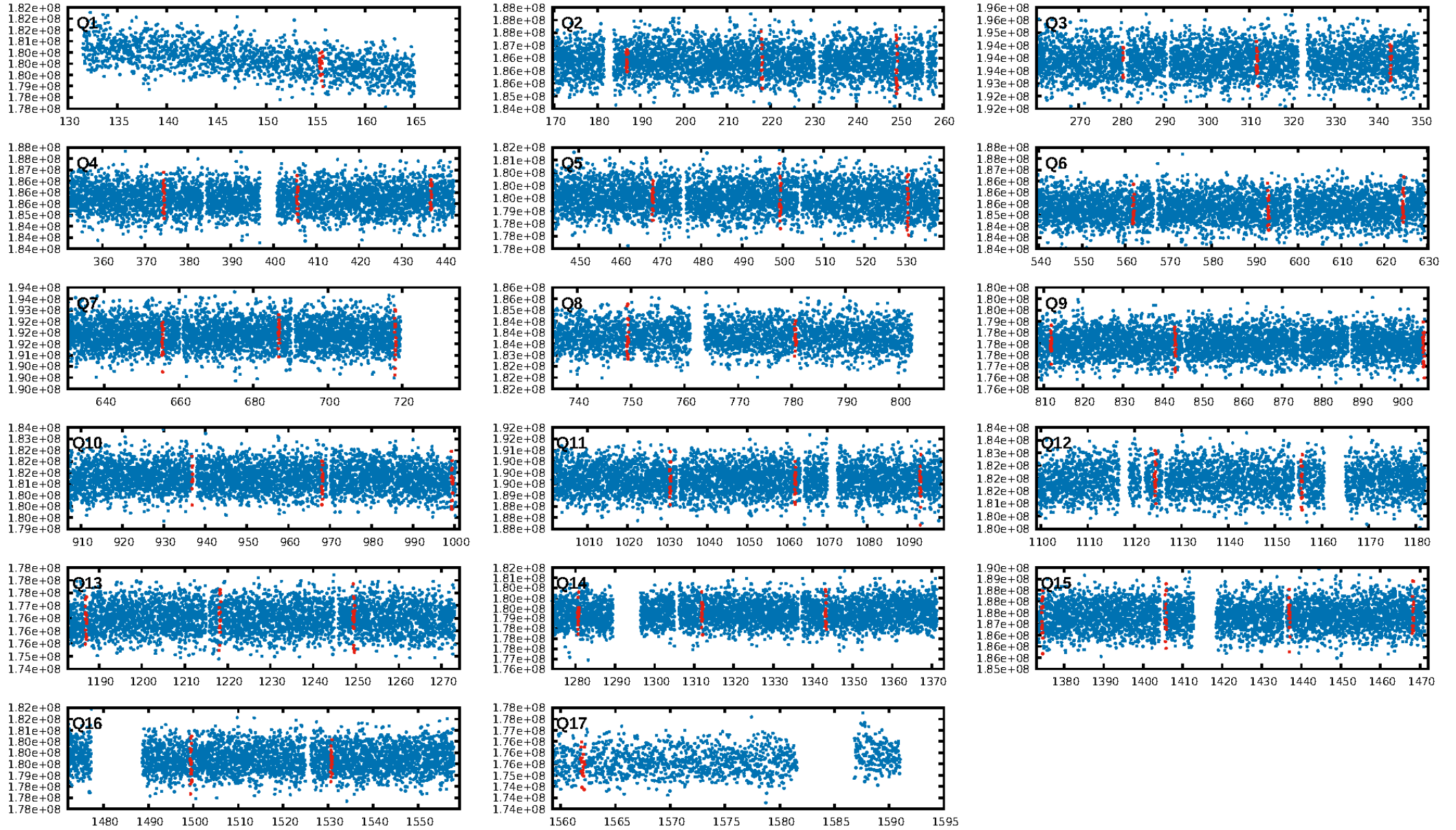
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [90.42 σ]
LongPeriod-sig: 100.0% [47.00 σ]
ModelChiSquare2-sig: 51.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.46e-10
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 3.502
Centroid-sig: 0.5%
Centroid-so: 0.137 arcsec [3.16 σ]
OotOffset-rm: 0.069 arcsec [0.36 σ]
KicOffset-rm: 0.121 arcsec [0.57 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.82 [14/17]
DiffImageOverlap-fno: 0.00 [0/17]

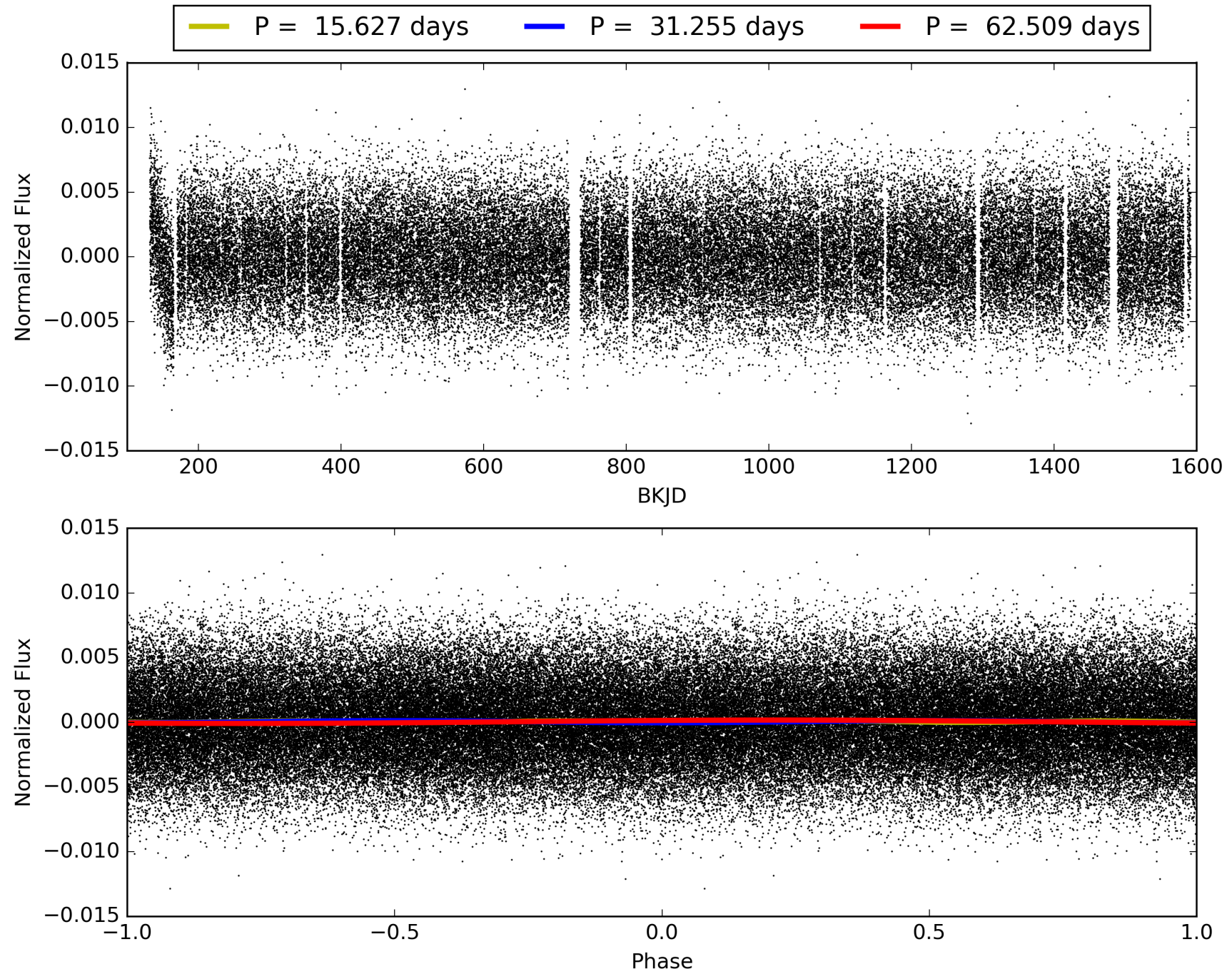
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:38:53 Z

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

TCE 008380389-03, PDC Light Curves

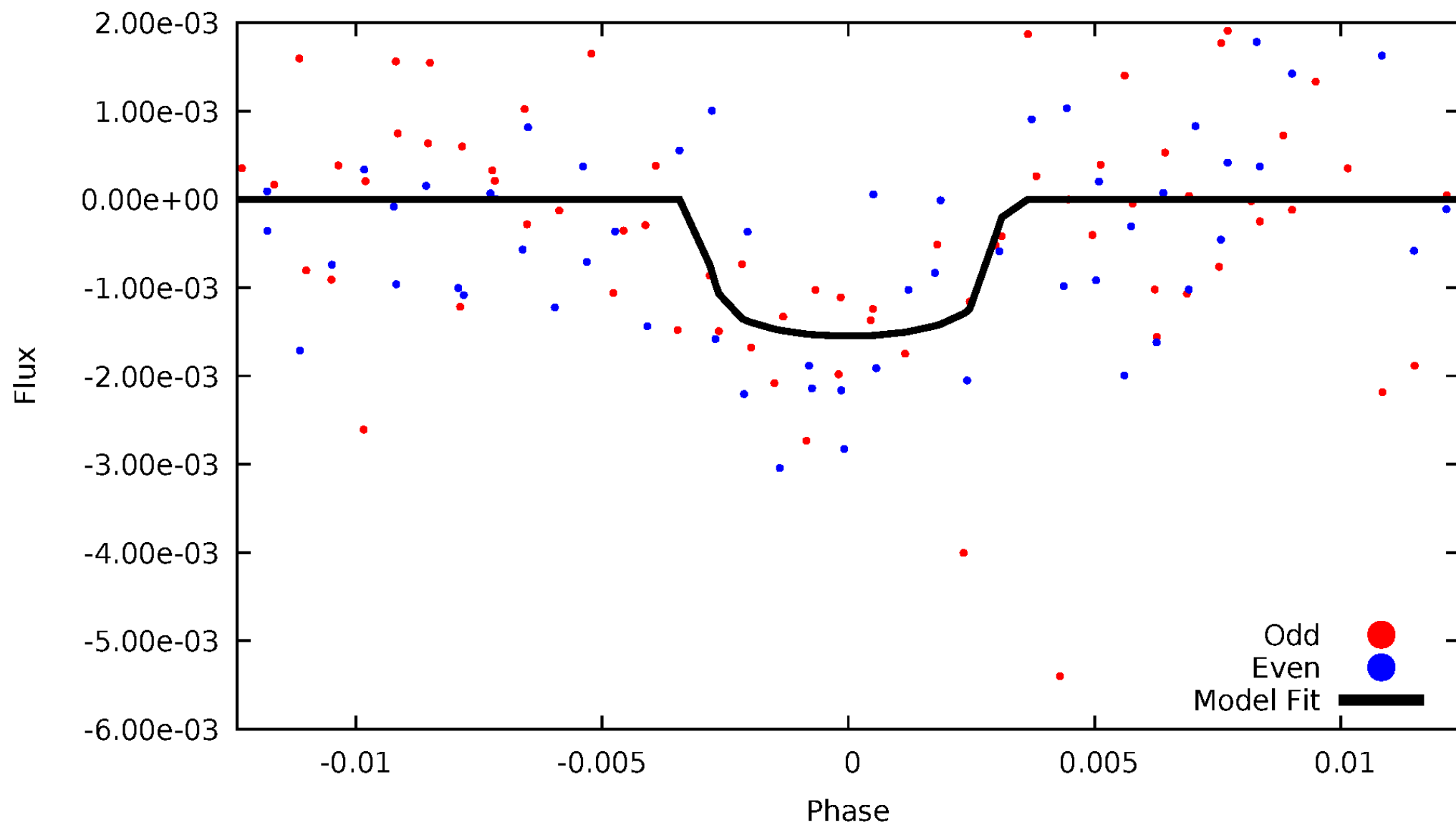


TCE 008380389-03



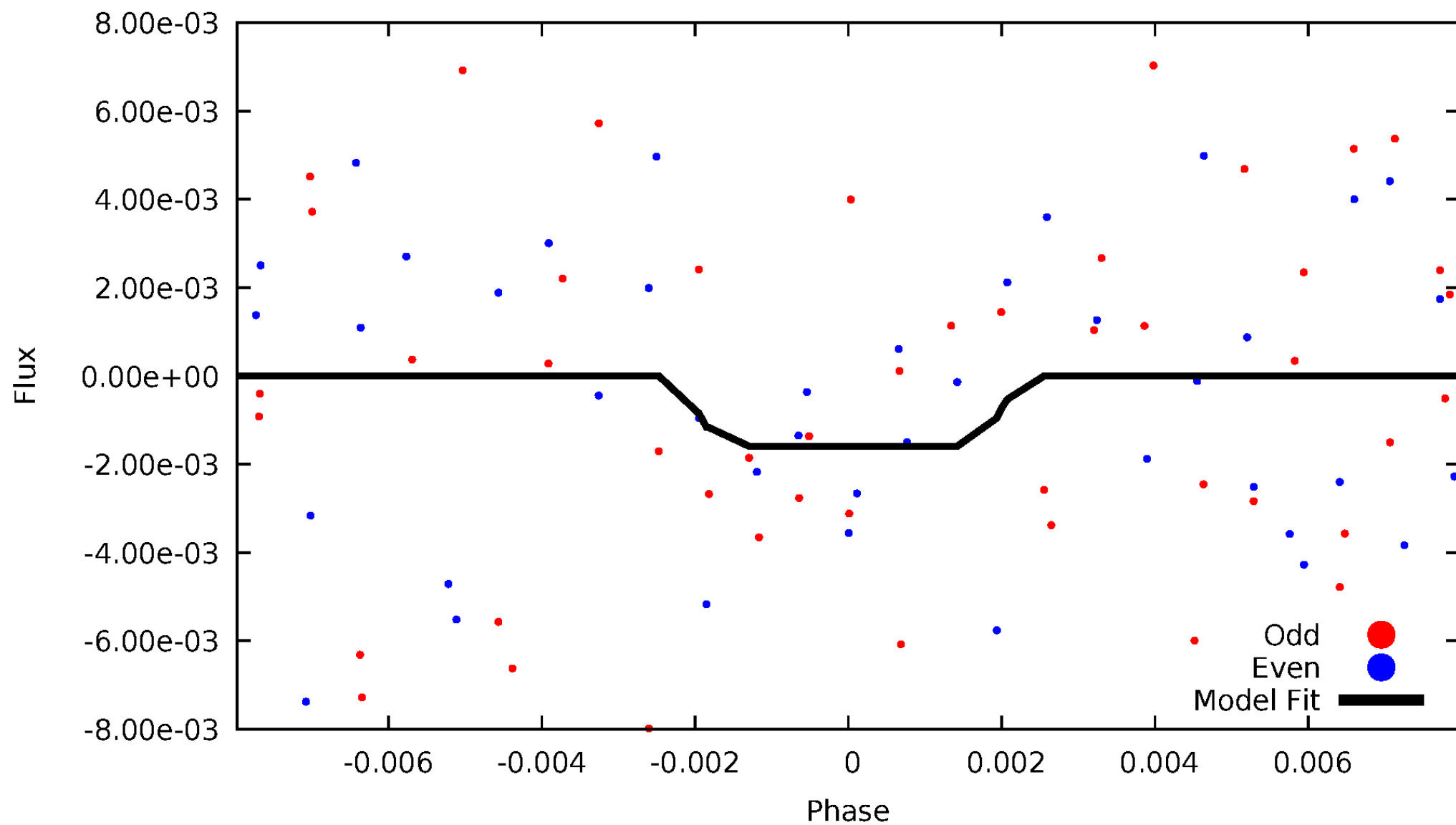
DV Odd/Even

TCE 008380389-03



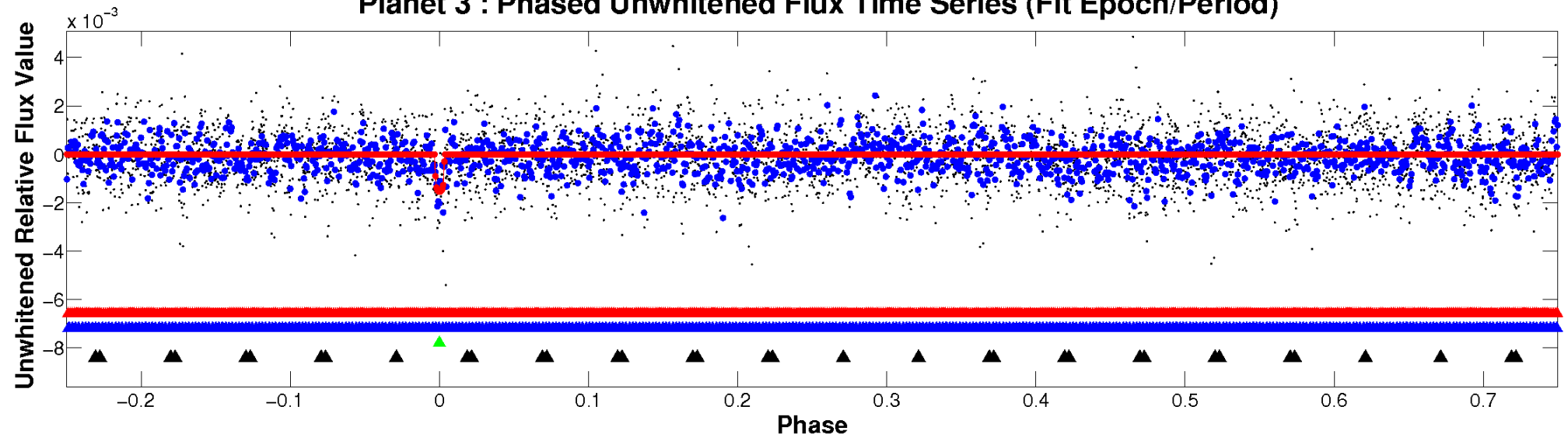
ALT Odd/Even

TCE 008380389-03

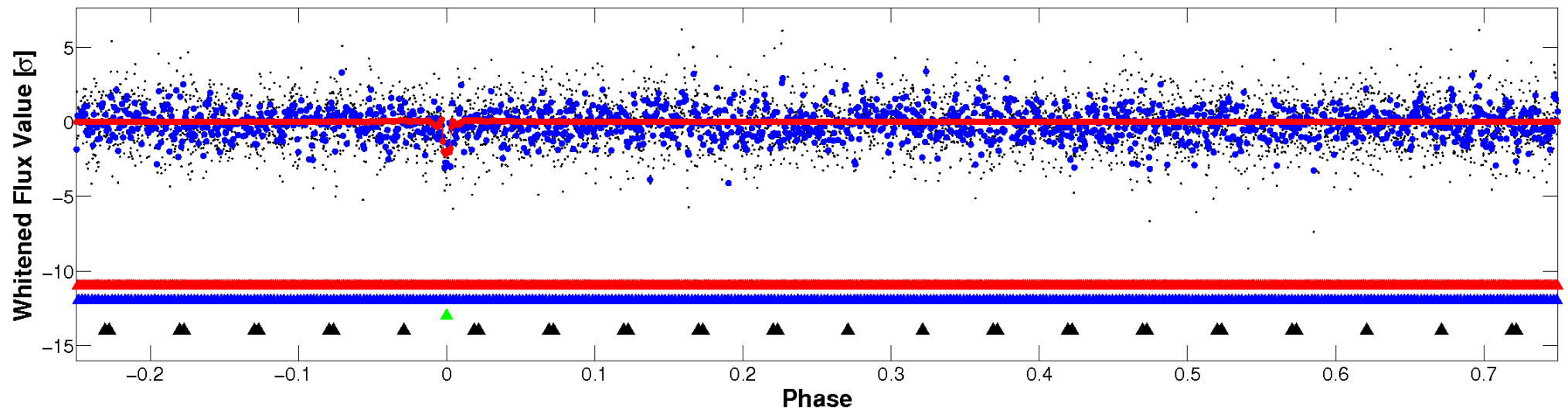


Non-Whitened Vs. Whitened Light Curve

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

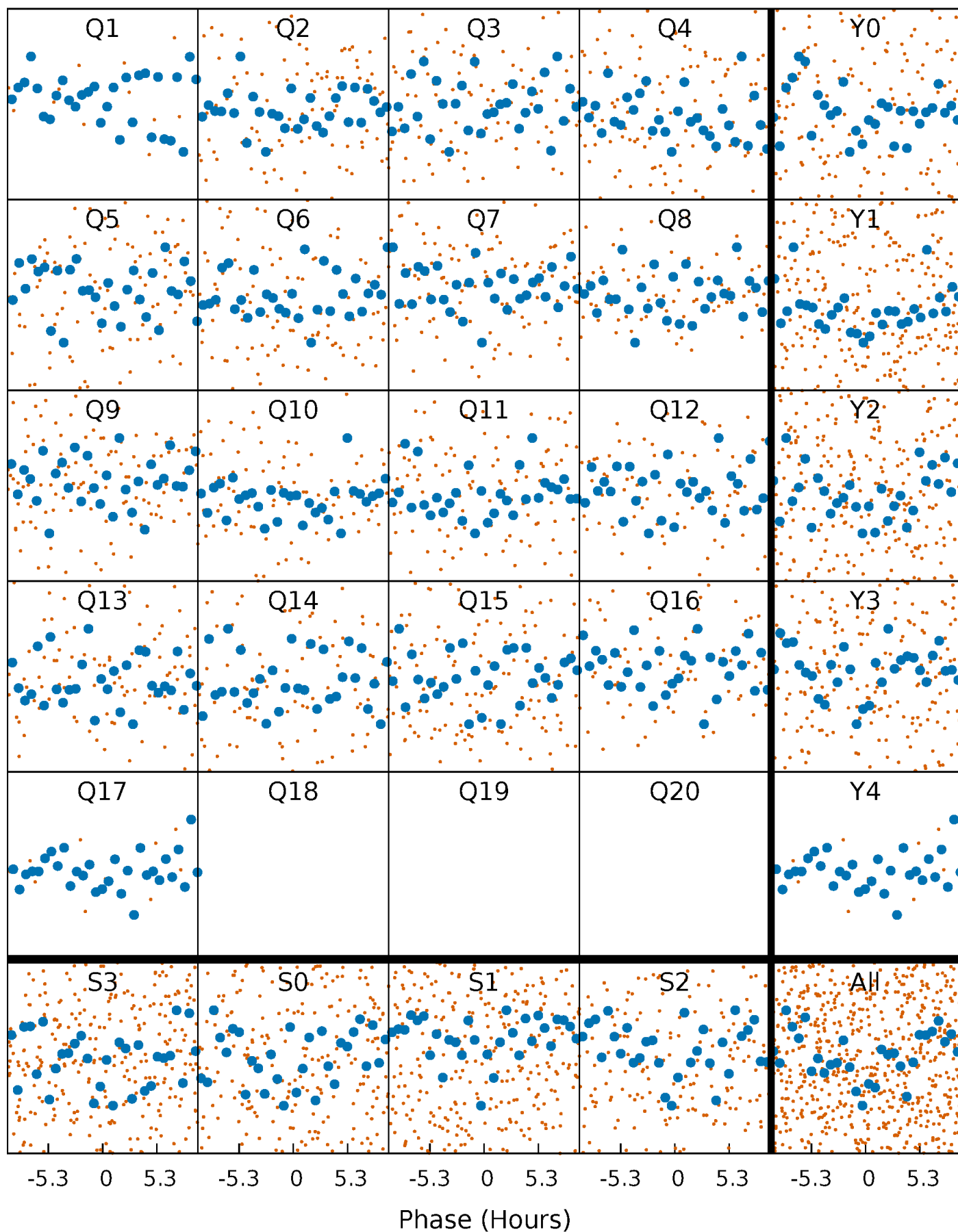


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



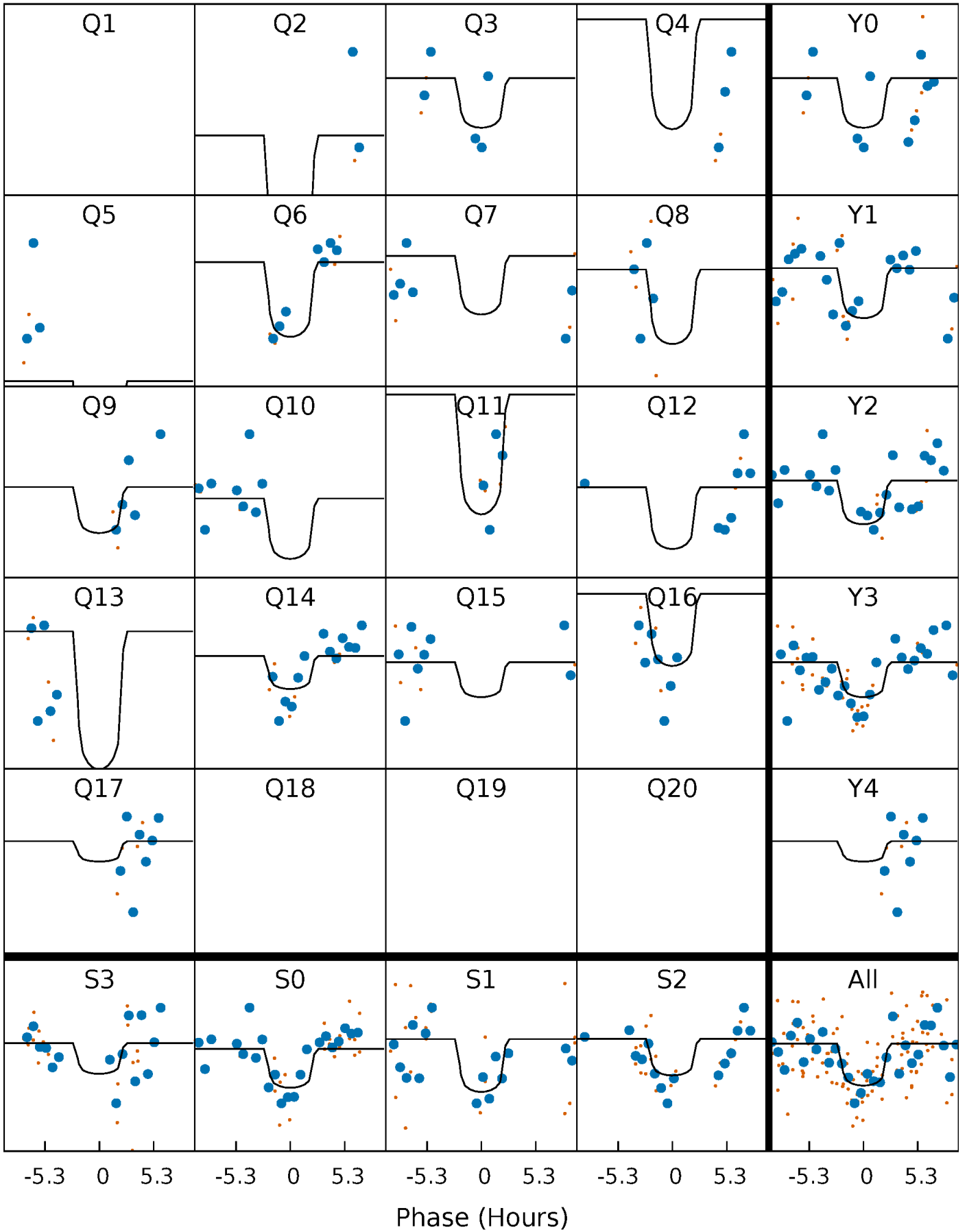
PDC Quarter-Phased Transit Curves

TCE 008380389-03 P= 31.254582 Days $T_0=155.557038$ (BKJD)



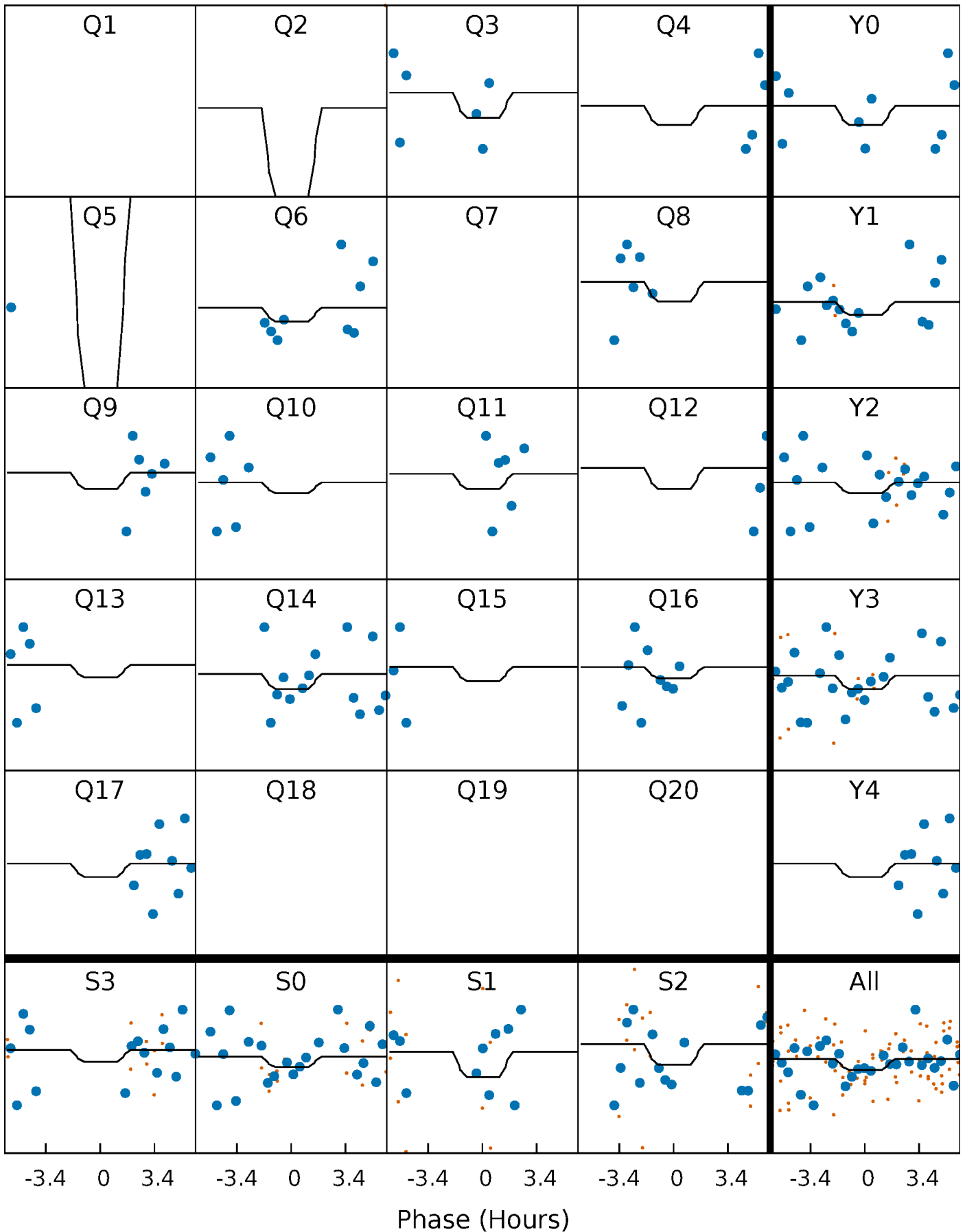
DV Quarter-Phased Transit Curves

TCE 008380389-03 P= 31.254582 Days $T_0=155.557038$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

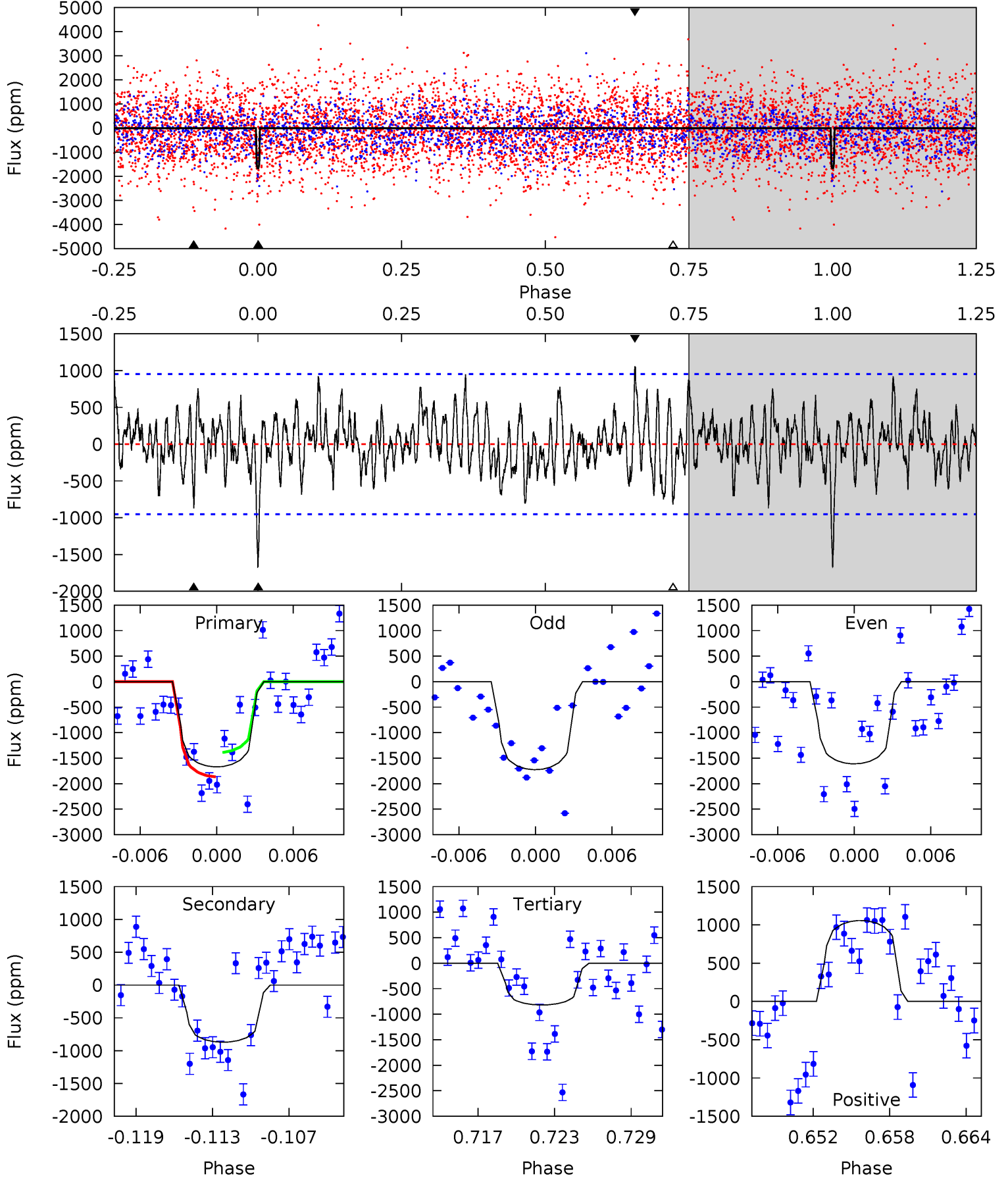
TCE 008380389-03 P= 31.254530 Days $T_0=155.552733$ (BKJD)



DV Model-Shift Uniqueness Test

008380389-03, P = 31.254582 Days, E = 124.302456 Days

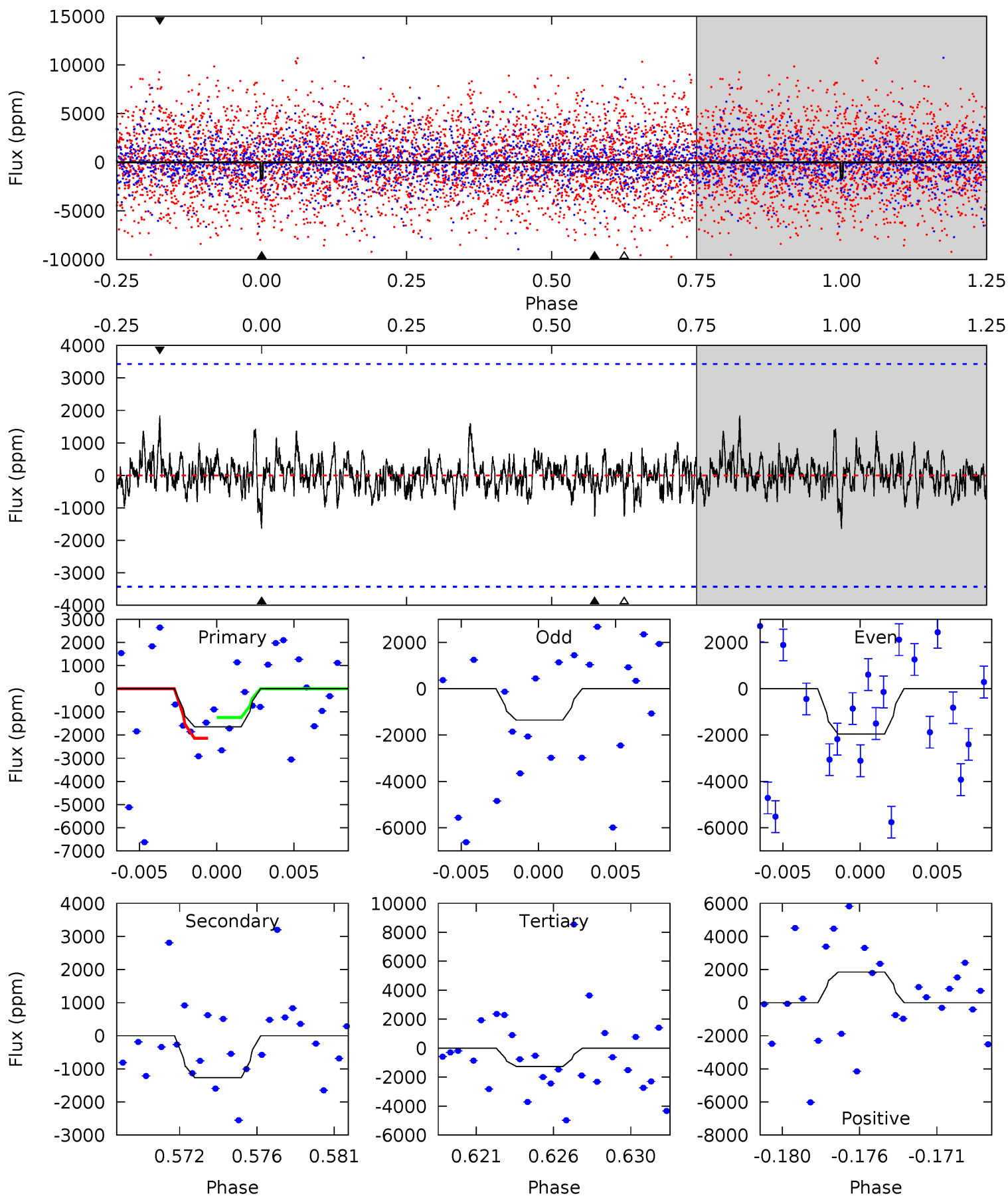
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.98	4.68	4.40	5.68	5.13	2.75	1.71	4.58	3.30	0.28	-1.01	0.31	1.21	0.39	1.28



Alt Model-Shift Uniqueness Test

008380389-03, P = 31.254530 Days, E = 124.298203 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.48	1.91	1.91	2.79	5.18	2.84	0.63	0.57	-0.31	0.00	-0.87	0.46	1.01	0.53	0.67



Stellar Parameters For KIC 008380389

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7343^{+228}_{-304}	$4.021^{+0.203}_{-0.166}$	$-0.120^{+0.250}_{-0.350}$	$2.044^{+0.551}_{-0.551}$	$1.597^{+0.199}_{-0.273}$	$0.263^{+0.309}_{-0.124}$
	+3%/-4%	+5%/-4%	+208%/-292%	+27%/-27%	+12%/-17%	+117%/-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 008380389-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-871 ± 186	$11.25^{+9.93}_{-6.96}$	1357^{+113}_{-110}	5519^{+3996}_{-1220}	191^{+1172}_{-134}
Alt.	-1267 ± 662	$11.04^{+10.12}_{-7.27}$	1354^{+103}_{-112}	5896^{+5478}_{-1652}	261^{+2059}_{-208}

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

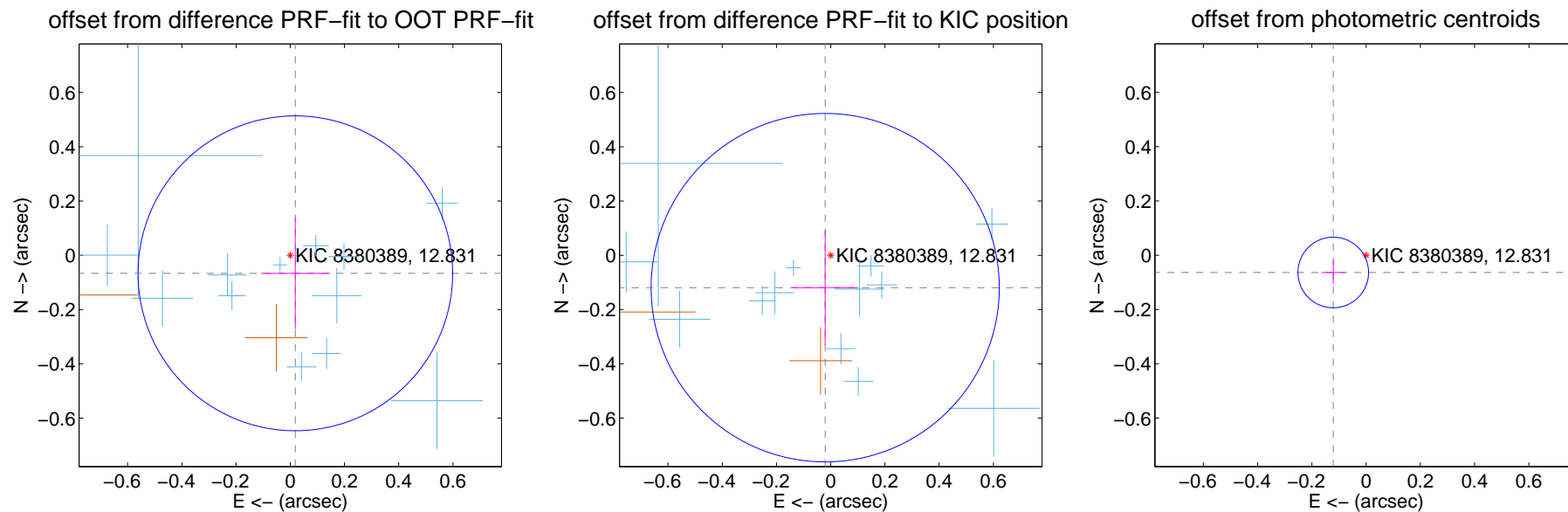
DV Centroid Data

Supplemental centroid analysis for 008380389-03. Kepler magnitude: 12.83. Transit SNR 10.53

There are 14 quarters with good PRF difference image offsets

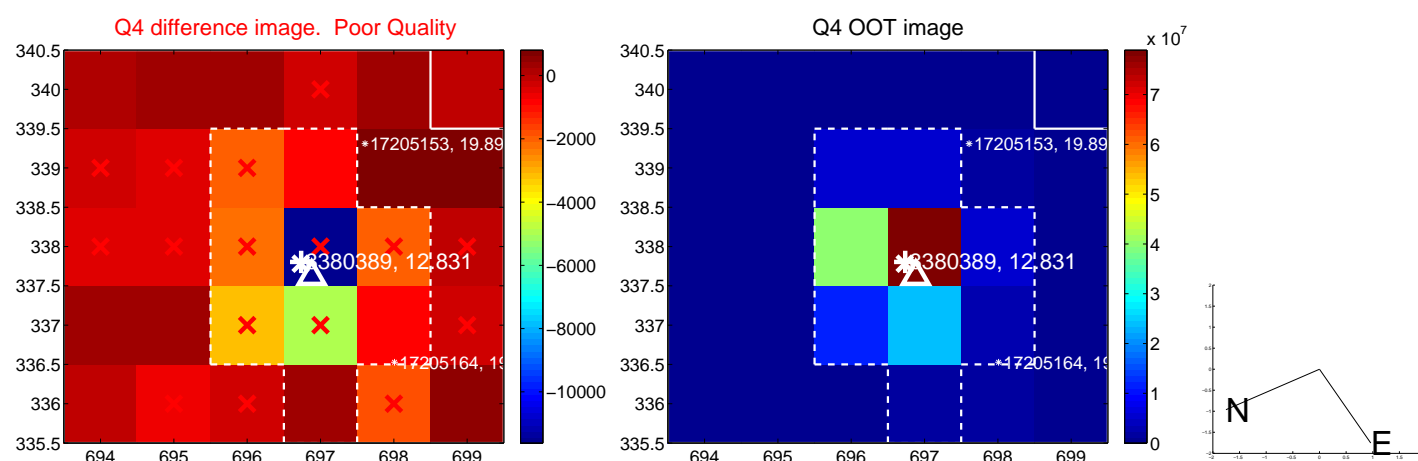
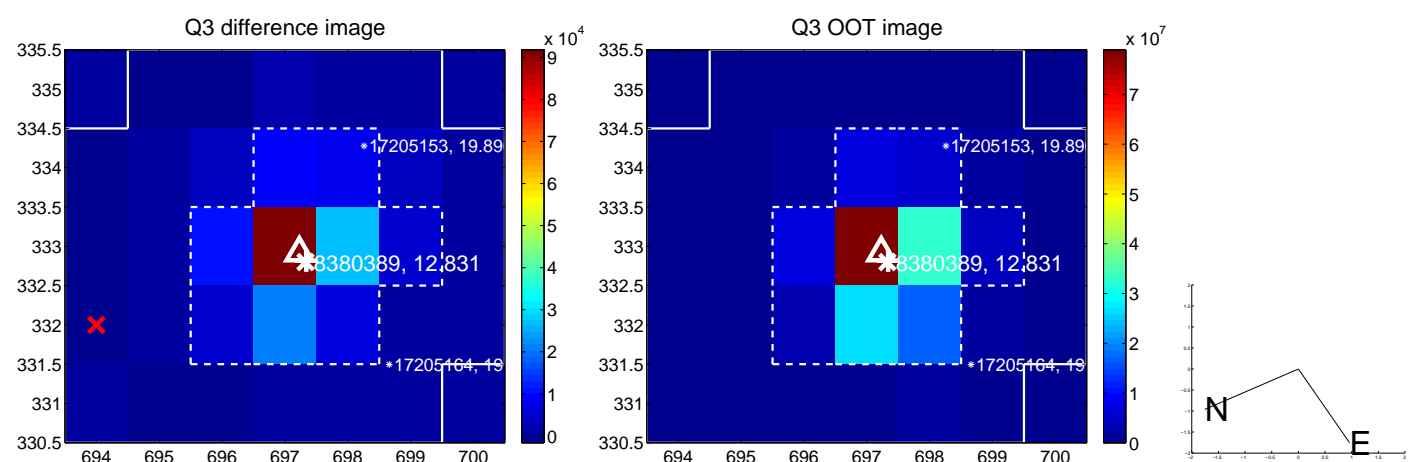
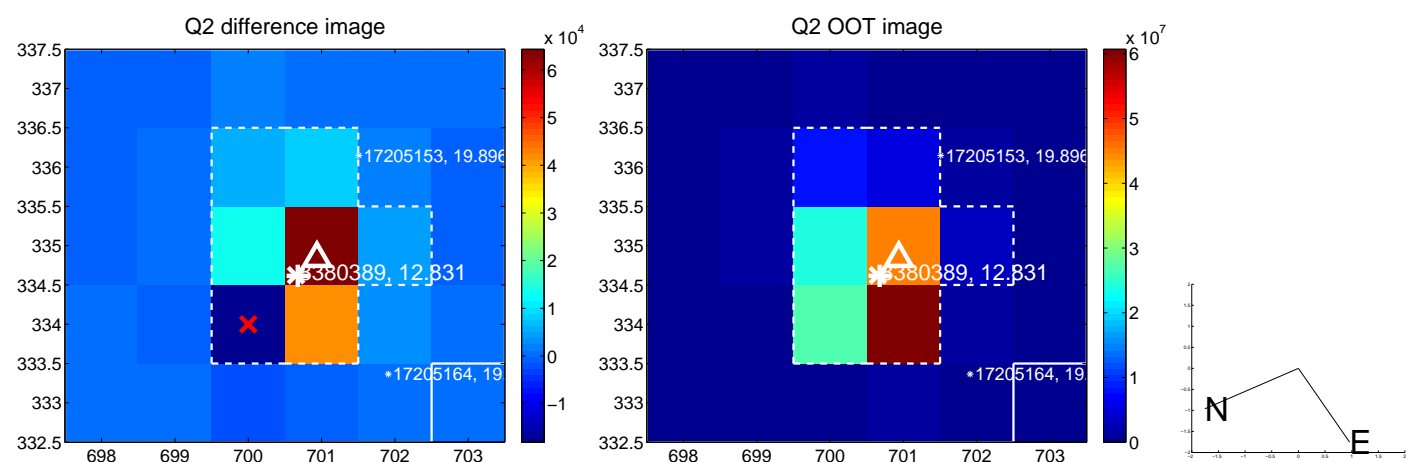
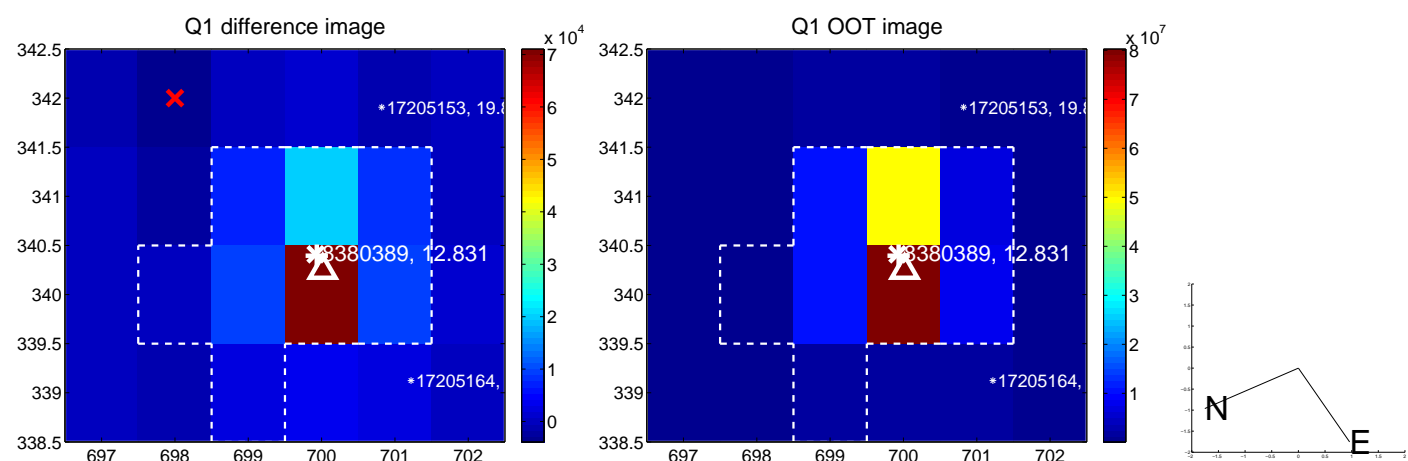
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.069 ± 0.193	0.36	-0.019 ± 0.126	-0.066 ± 0.206
PRF-fit source offset from KIC position	0.121 ± 0.214	0.57	0.020 ± 0.122	-0.119 ± 0.212
photometric centroid source offset	0.14 ± 0.04	3.16	0.12 ± 0.04	-0.06 ± 0.04

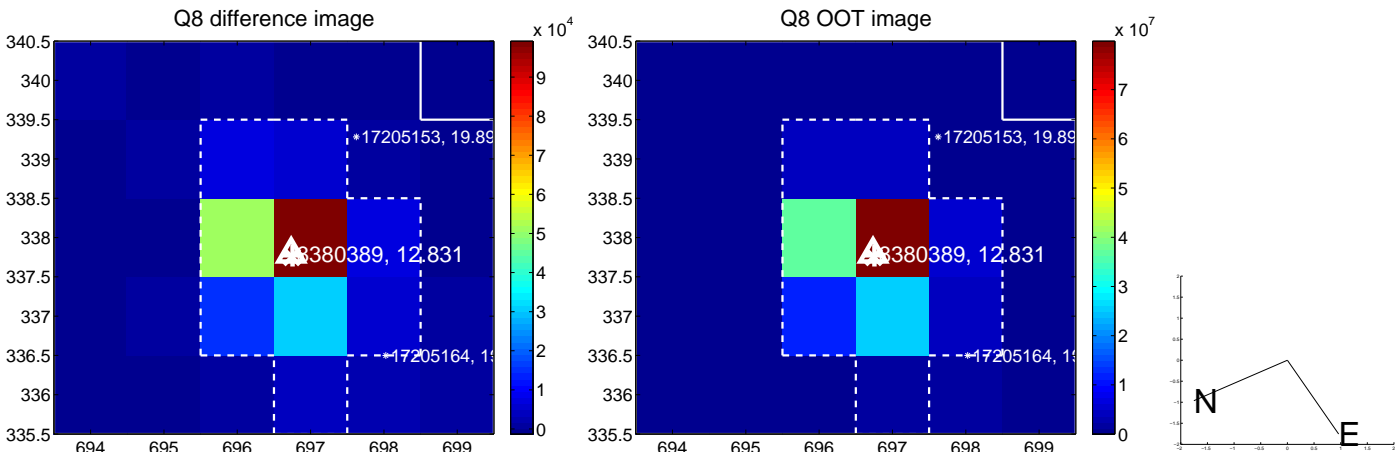
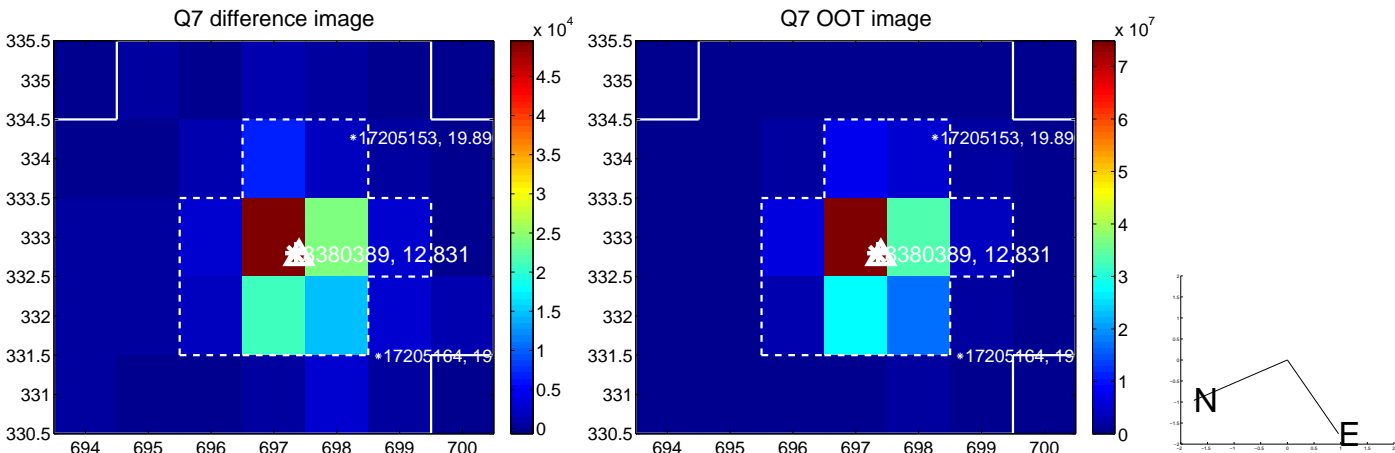
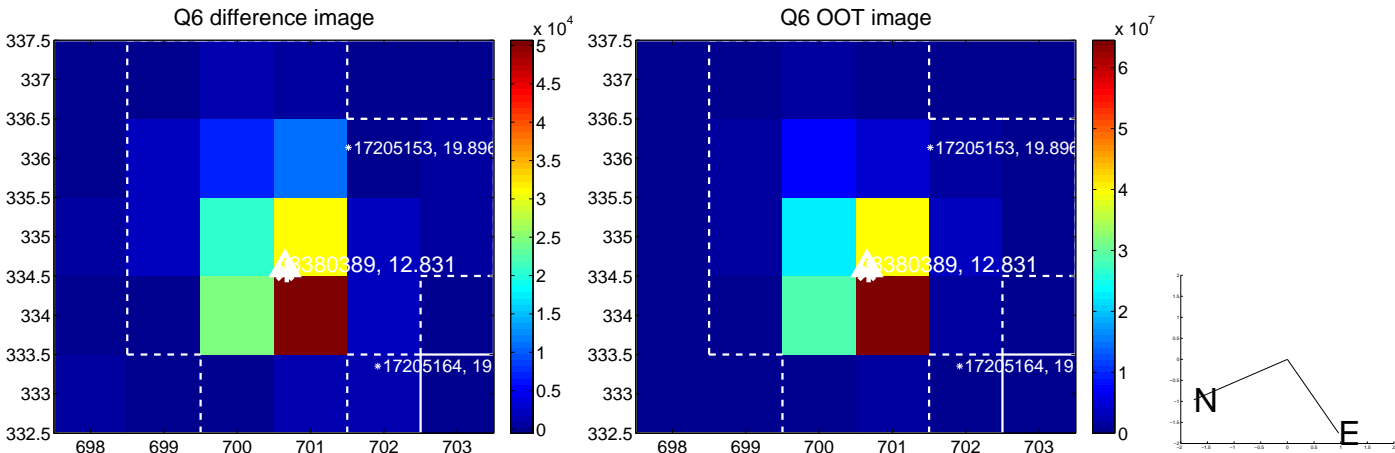
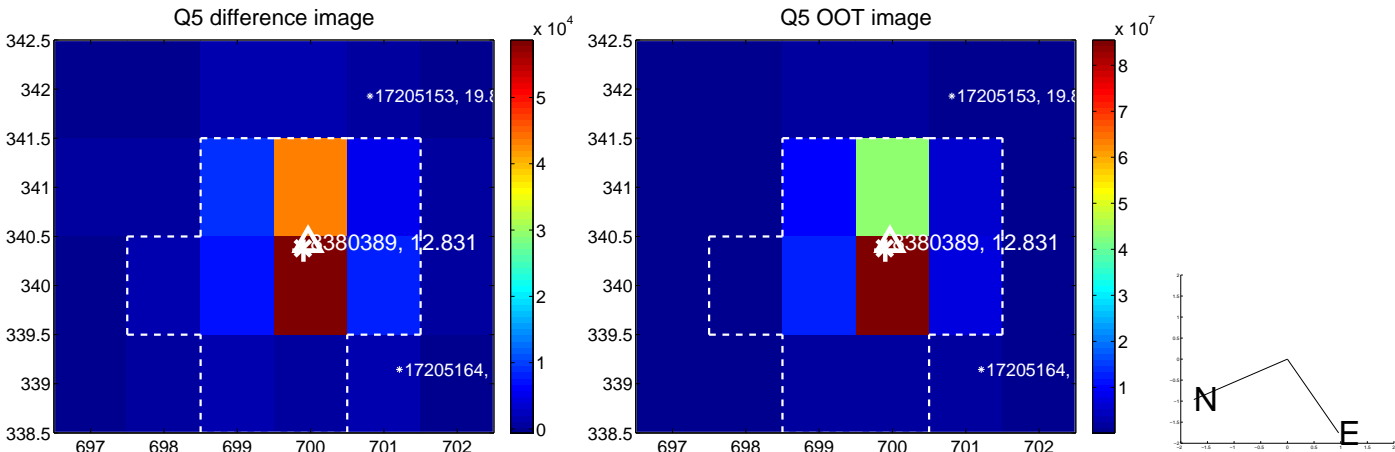


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

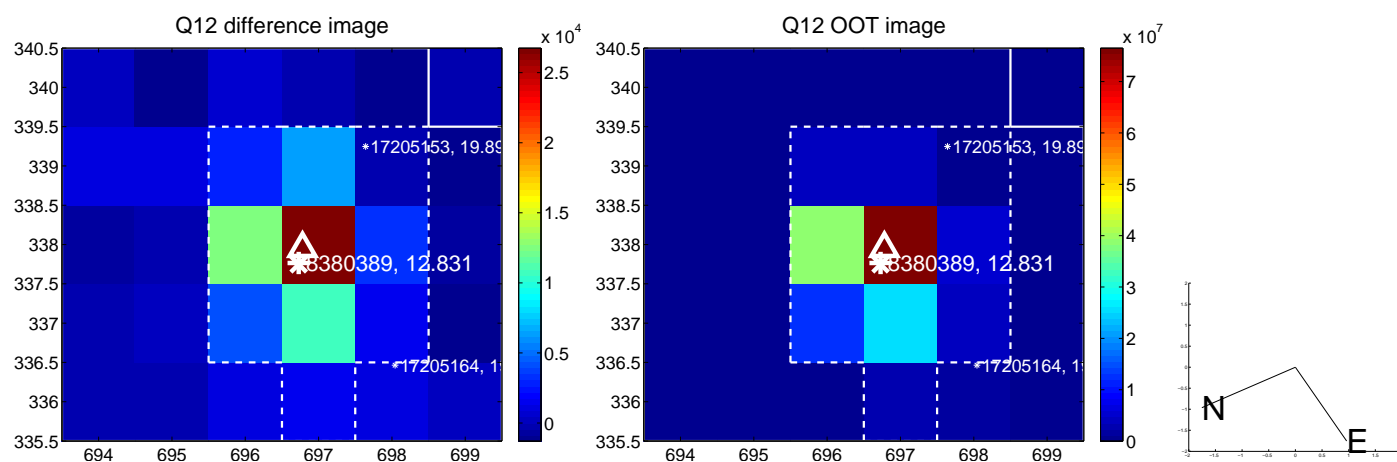
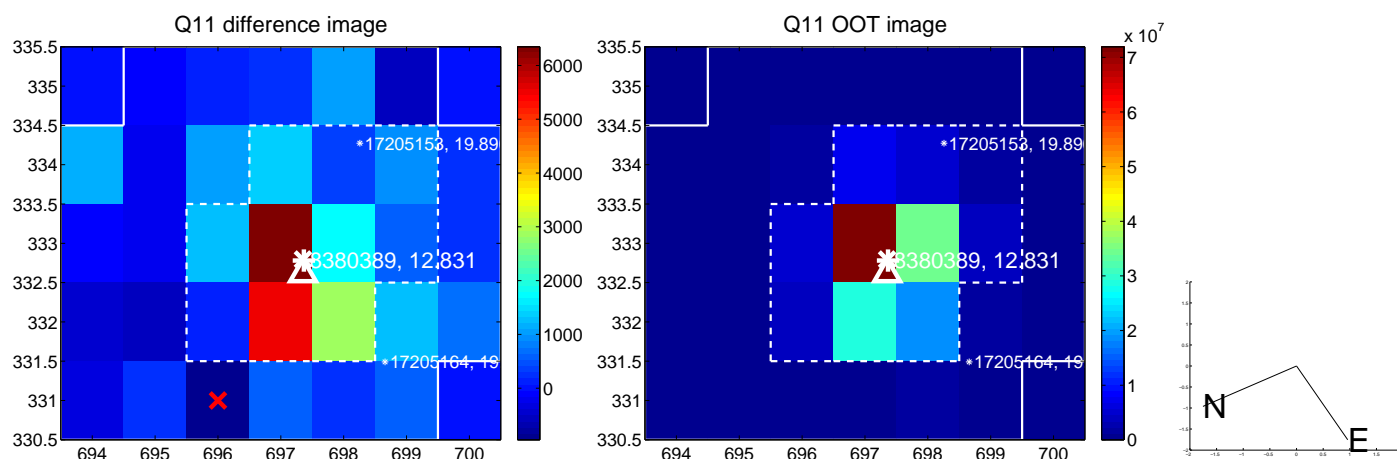
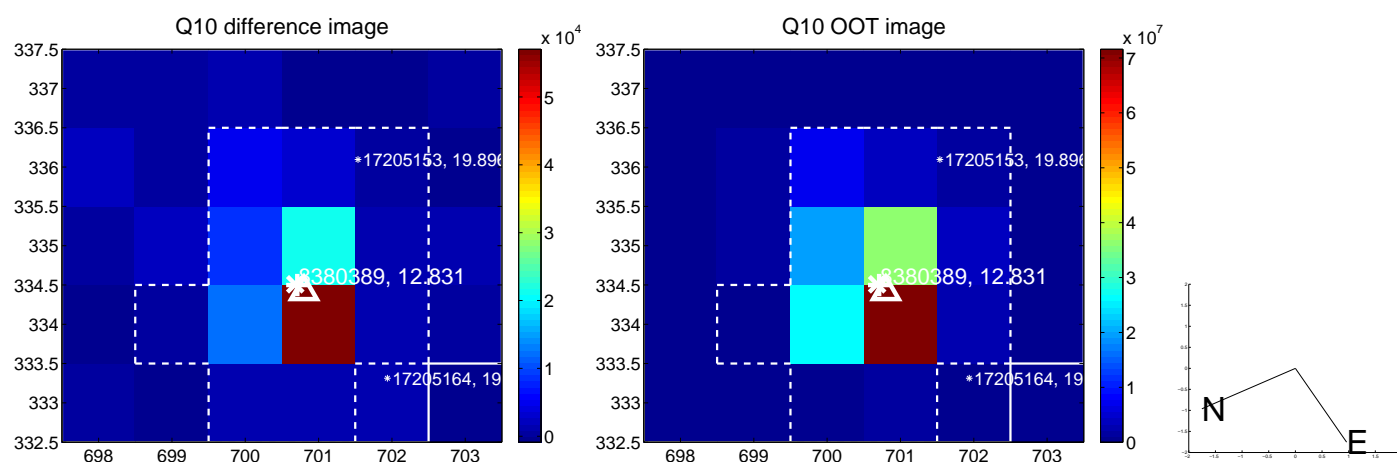
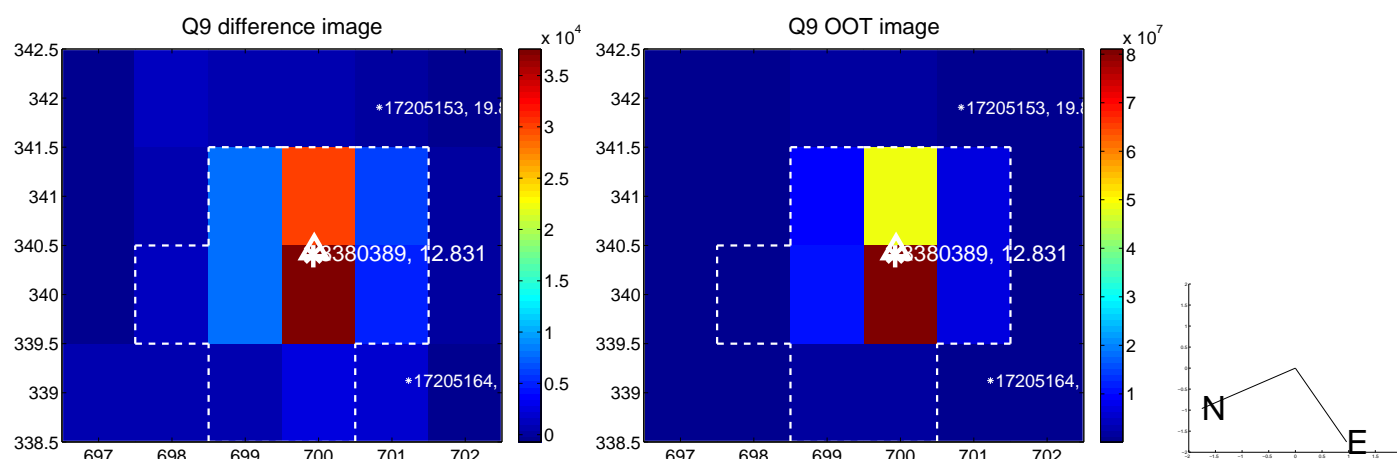
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



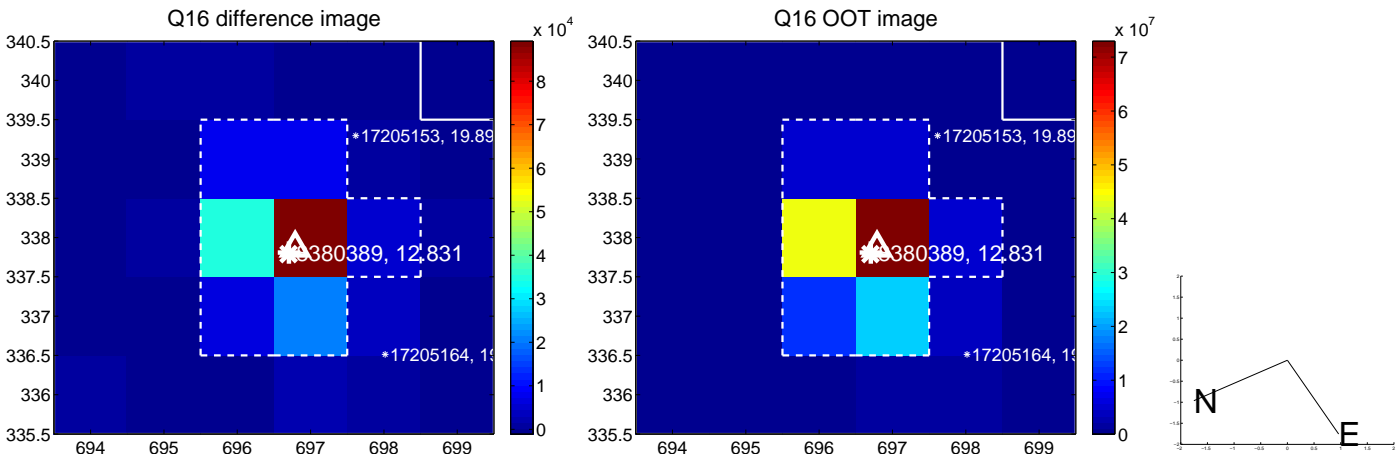
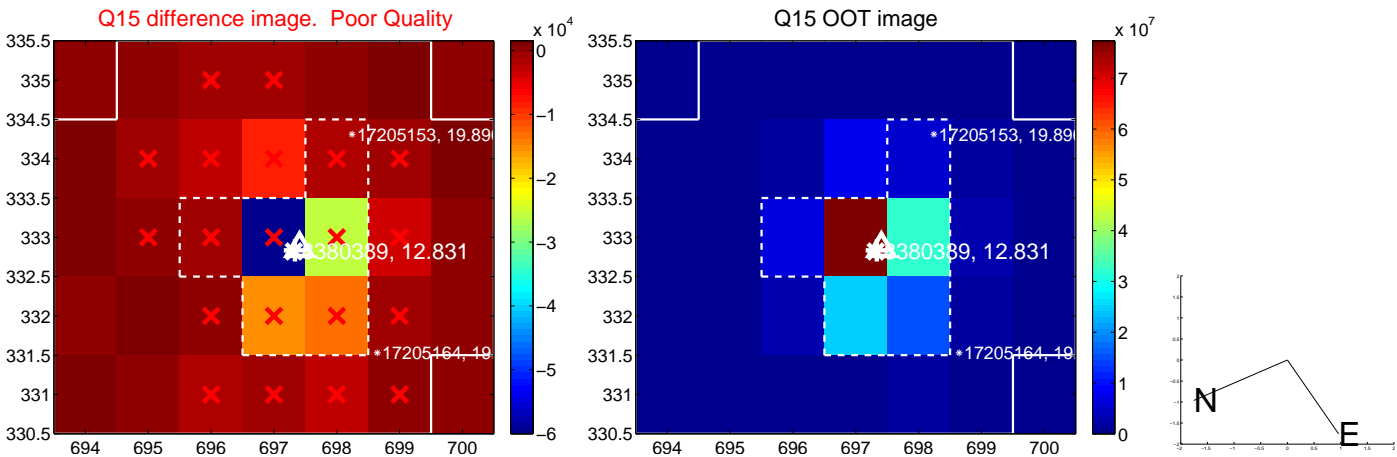
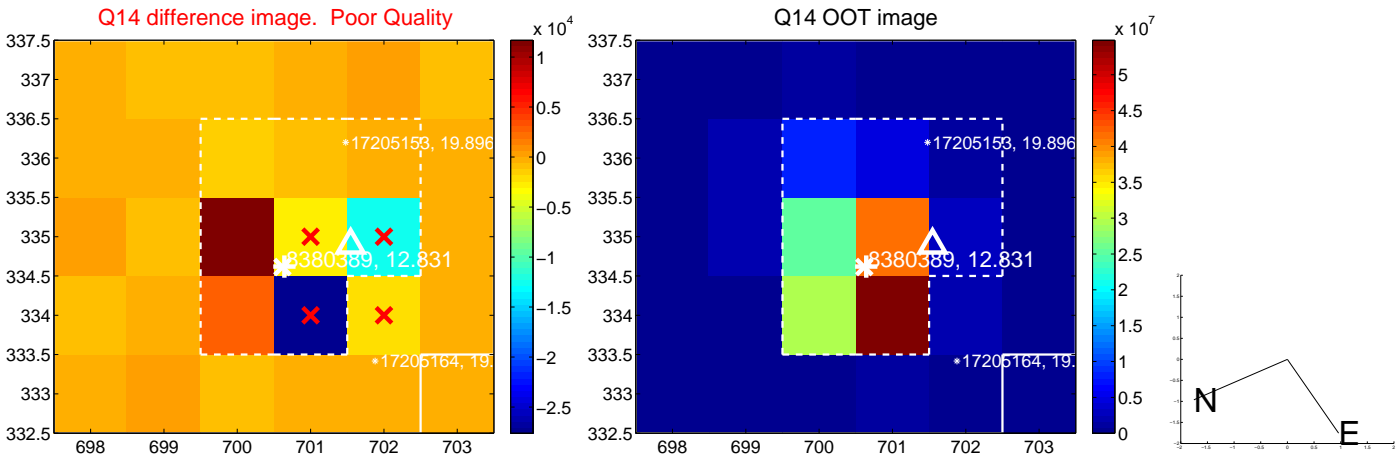
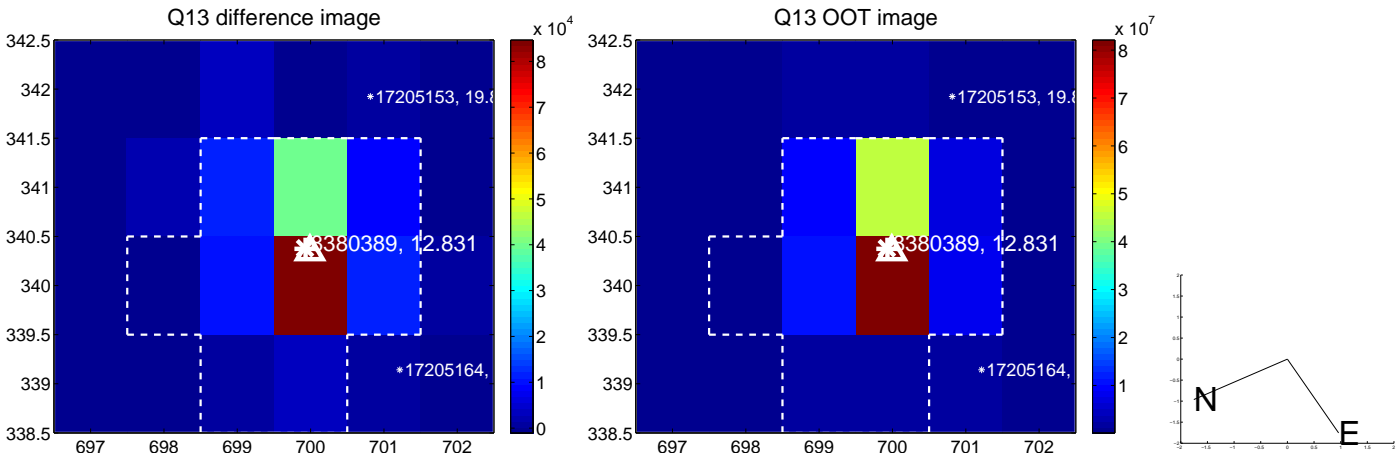
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



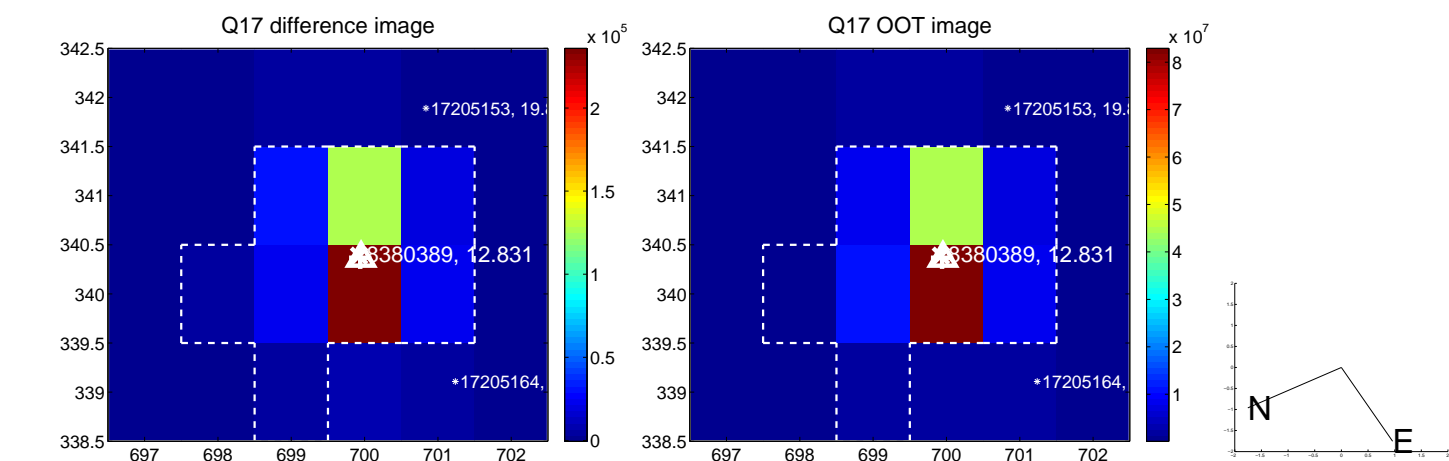
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



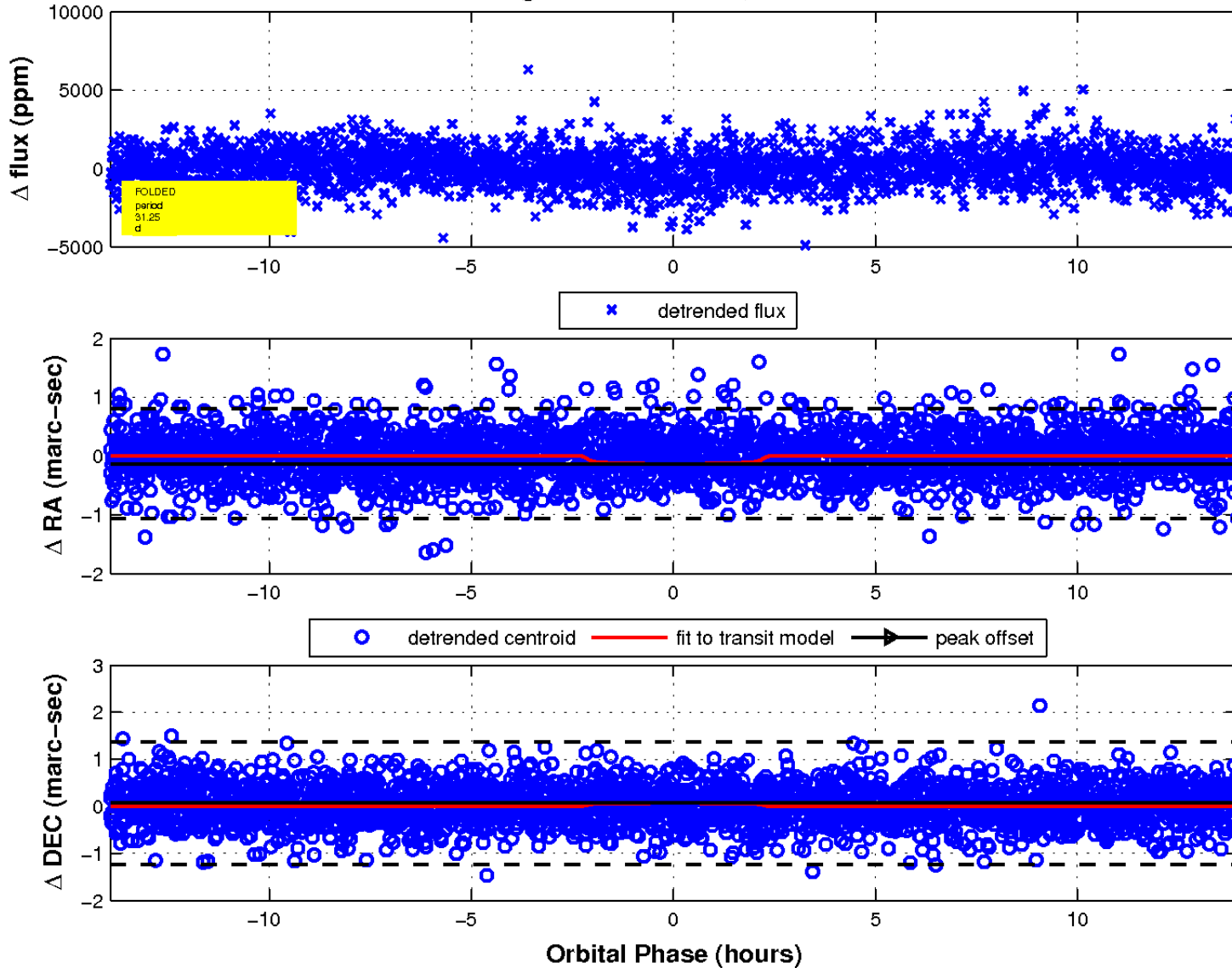
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

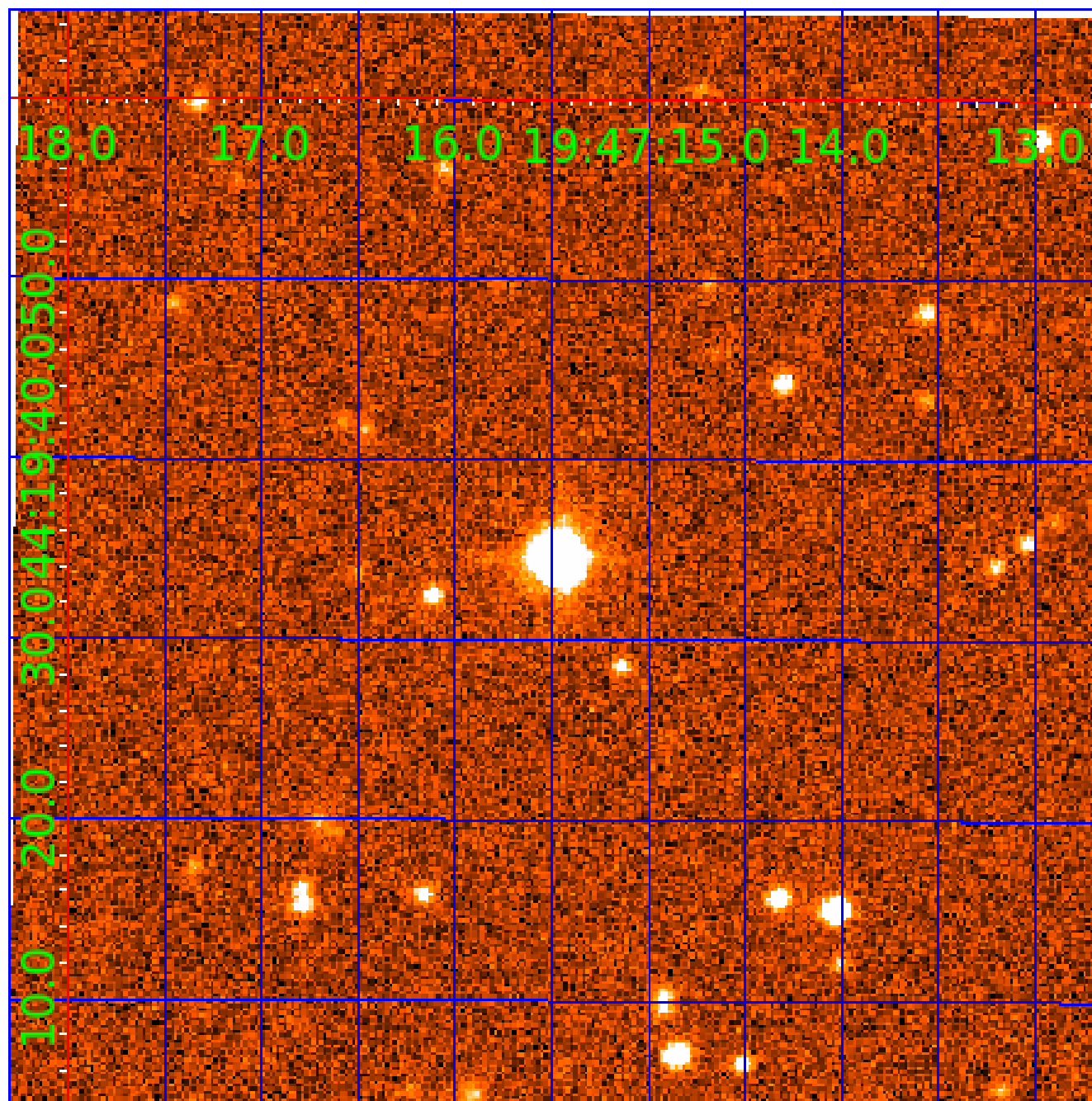


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 008380389

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})
008380389-01	OBS	No	1.608364	132.825205	182.7	6.344	11.2	11.3	2.04	7343	3.21	11020.38
008380389-02	OBS	No	1.608205	131.698446	112.4	10.635	9.5	7.7	2.04	7343	2.19	11021.83
008380389-03	OBS	No	31.254582	155.557038	1548.7	4.655	9.8	10.5	2.04	7343	8.48	210.94
008380389-04	OBS	No	42.198276	156.140828	1820.3	3.091	8.7	9.4	2.04	7343	10.78	141.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008380389-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008380389-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
008380389-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008380389-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

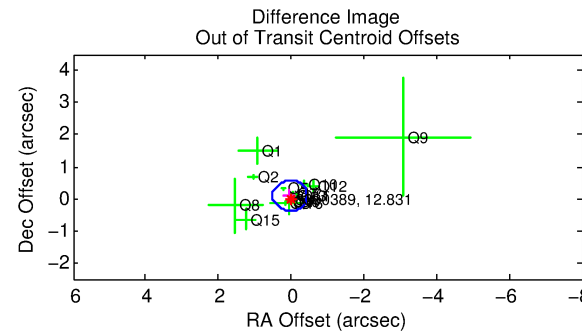
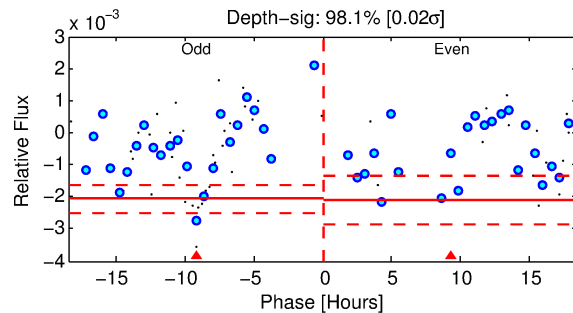
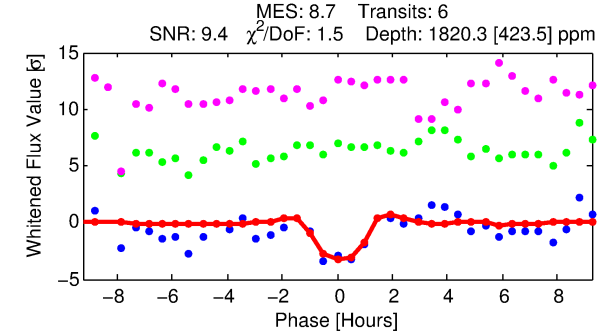
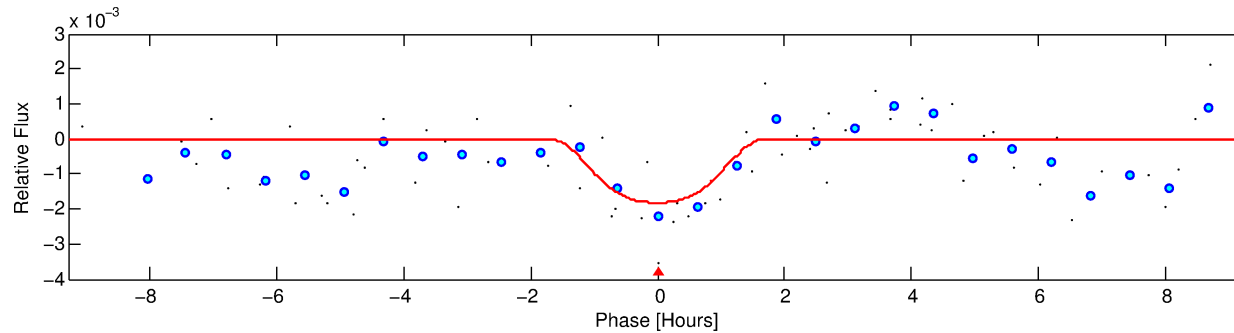
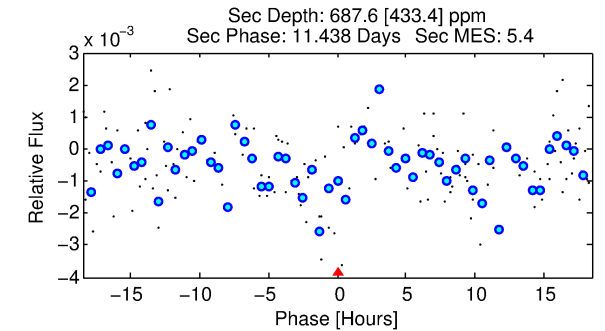
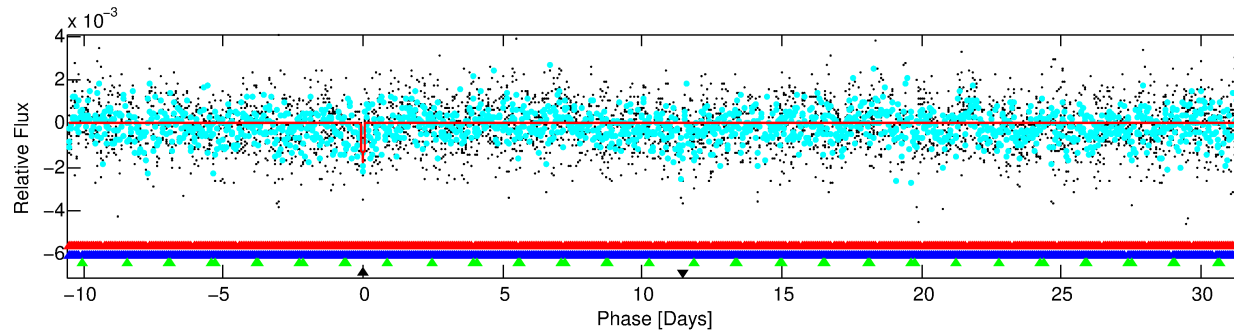
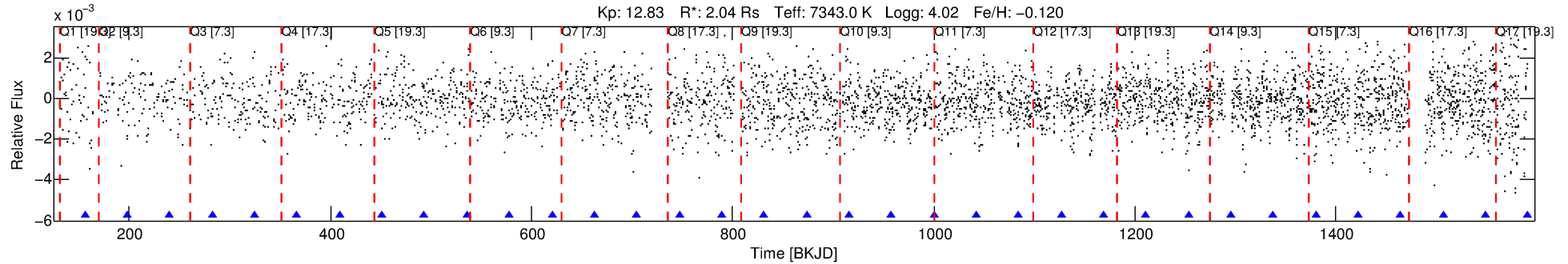
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008380389-04

No Significant Match Found

DV One-Page Summary

KIC: 8380389 Candidate: 4 of 4 Period: 42.198 d



DV Fit Results:

Period = 42.19828 [0.00075] d
Epoch = 156.1408 [0.0159] BKJD
Rp/R* = 0.0483 [0.0090]
a/R* = 46.22 [14.81]
b = 0.95 [0.04]
Seff = 141.36 [55.98]
Teq = 879 [87] K
Rp = 10.78 [3.53] Re
a = 0.2775 [0.0660] AU
Ag = 250.64 [204.31] [1.22σ]
Teffp = 5409 [1014] K [4.45σ]

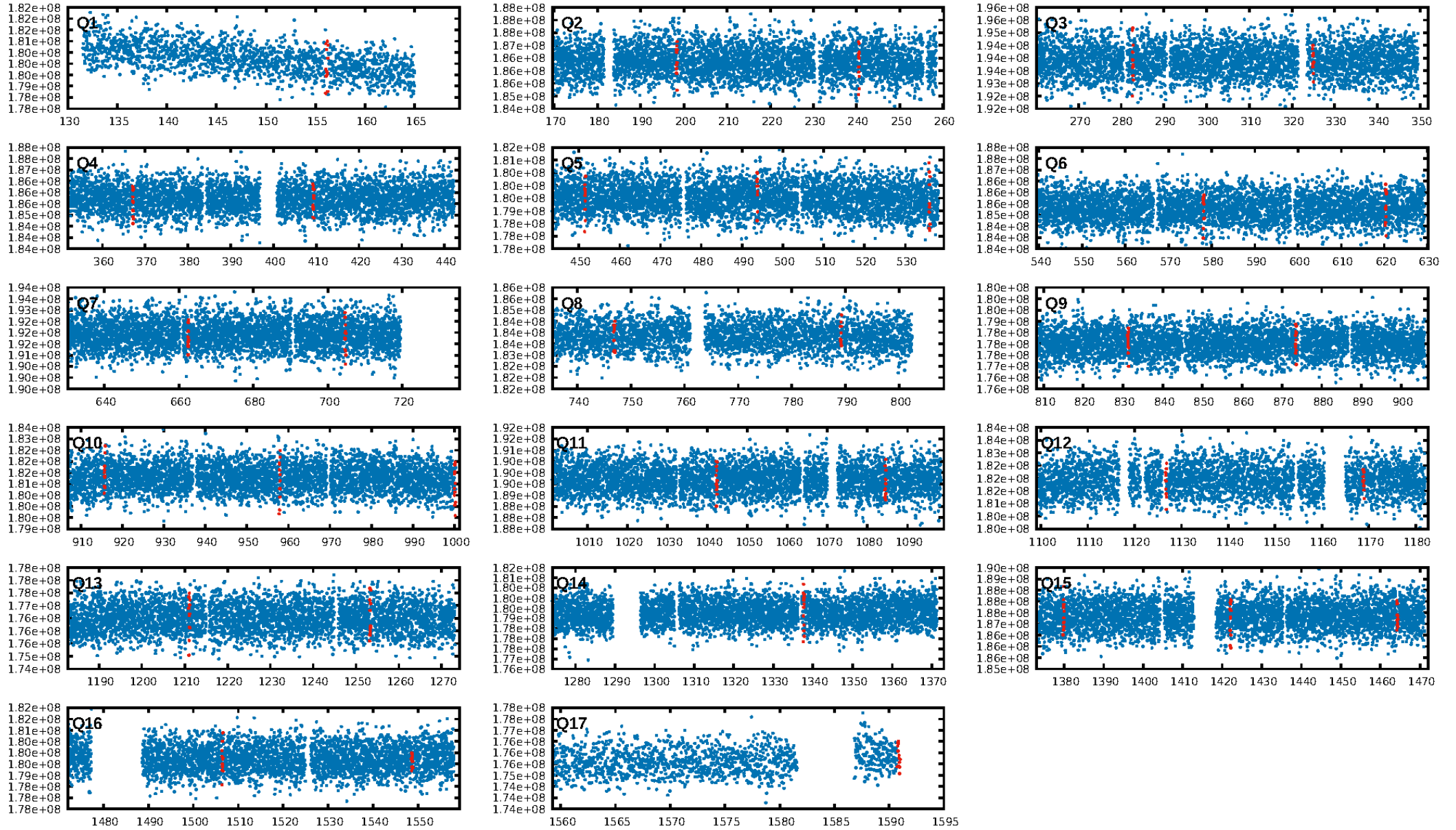
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [47.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 67.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.76e-07
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -2.847
Centroid-sig: 0.1%
Centroid-so: 0.111 arcsec [1.83σ]
OotOffset-rm: 0.106 arcsec [0.67σ]
KicOffset-rm: 0.054 arcsec [0.33σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.53 [8/15]
DiffImageOverlap-fno: 0.33 [5/15]

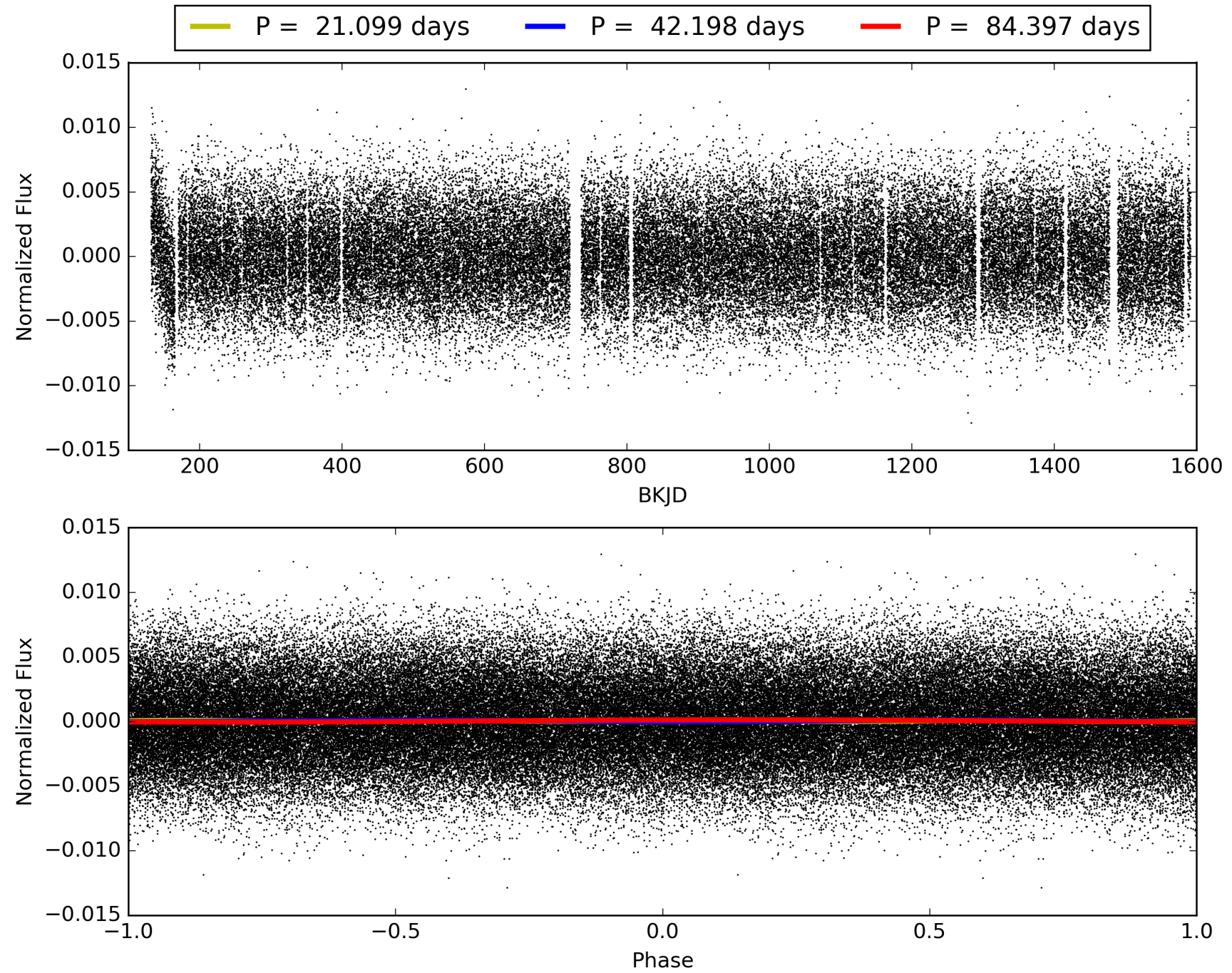
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:38:56 Z

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

TCE 008380389-04, PDC Light Curves

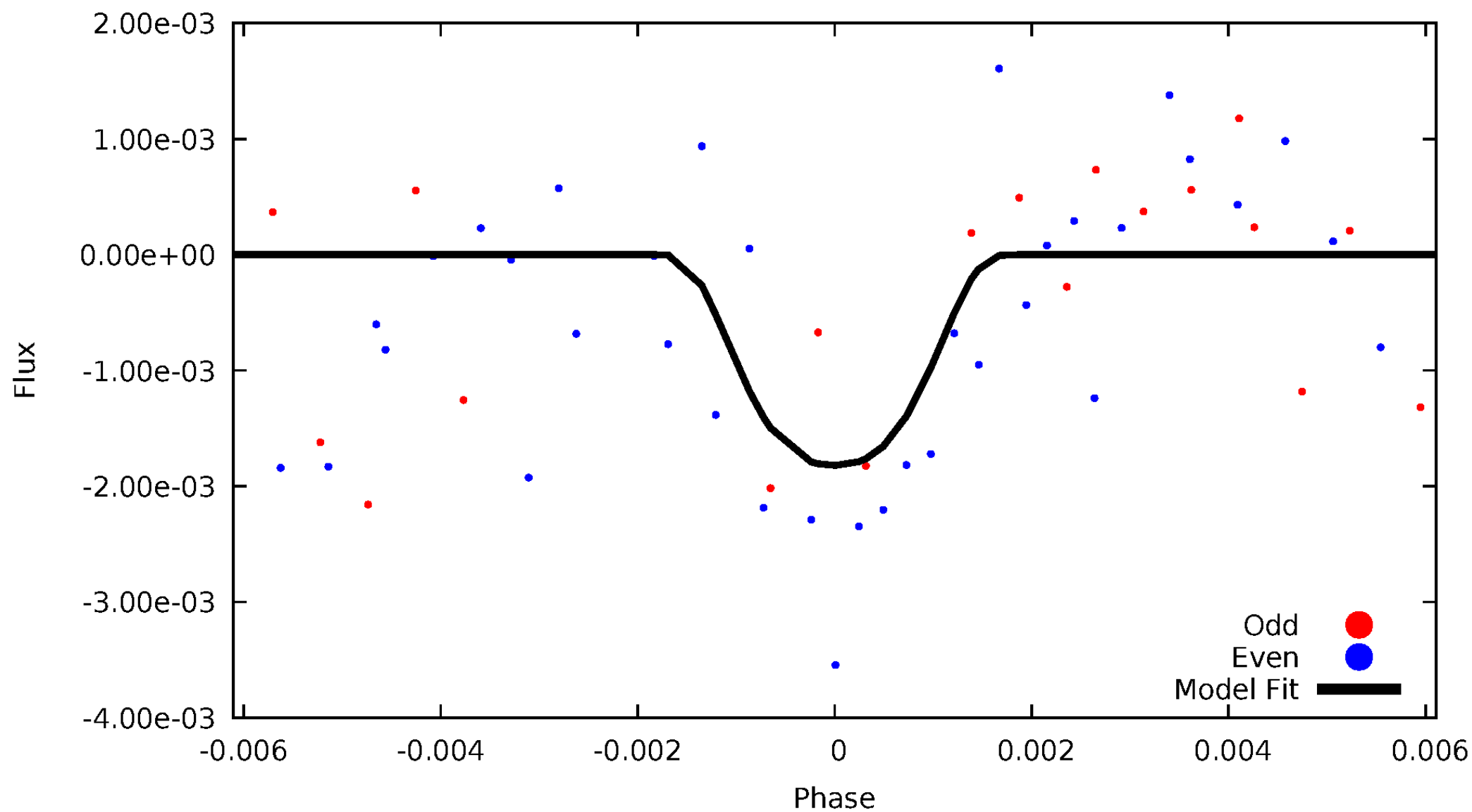


TCE 008380389-04



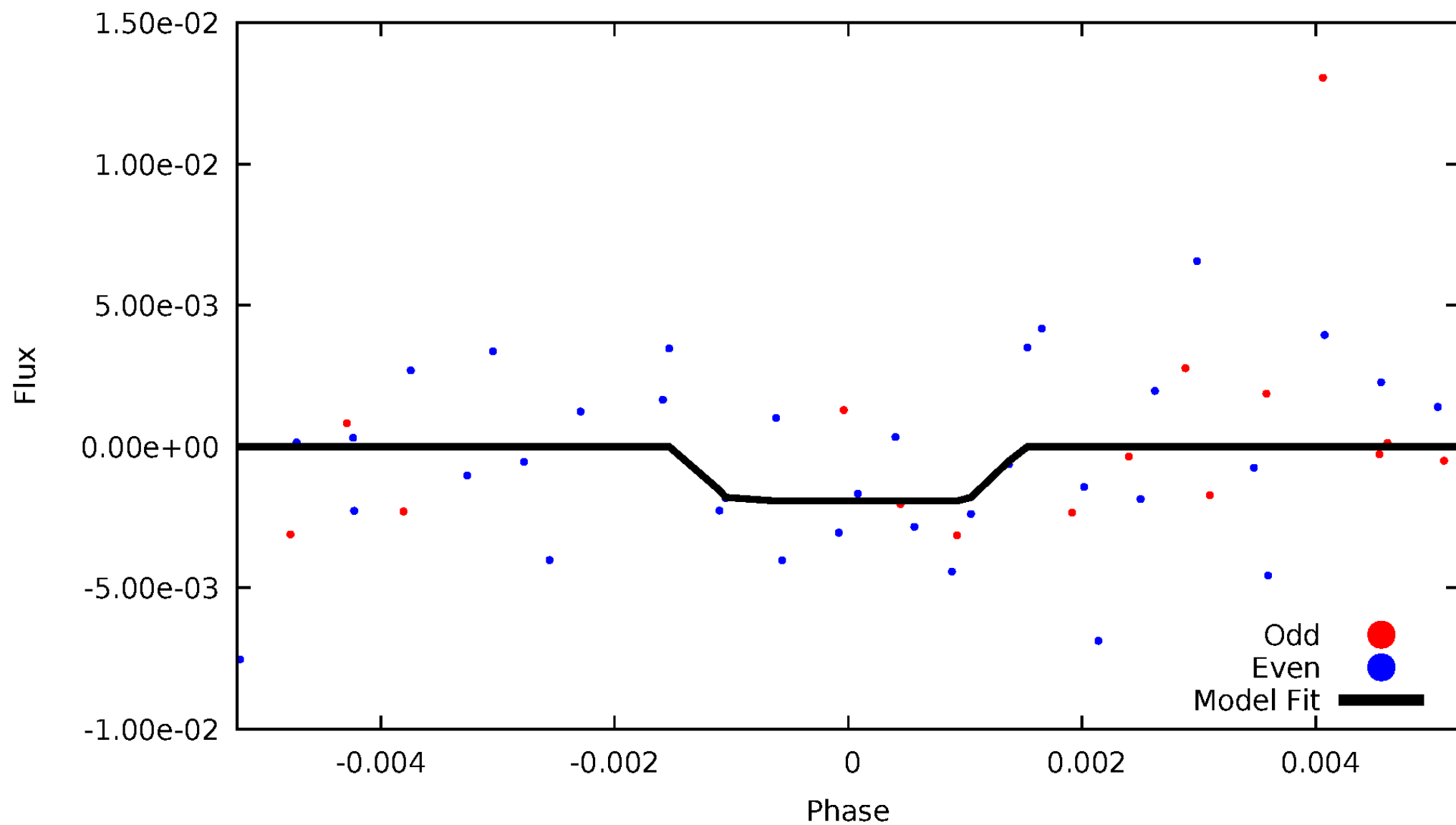
DV Odd/Even

TCE 008380389-04



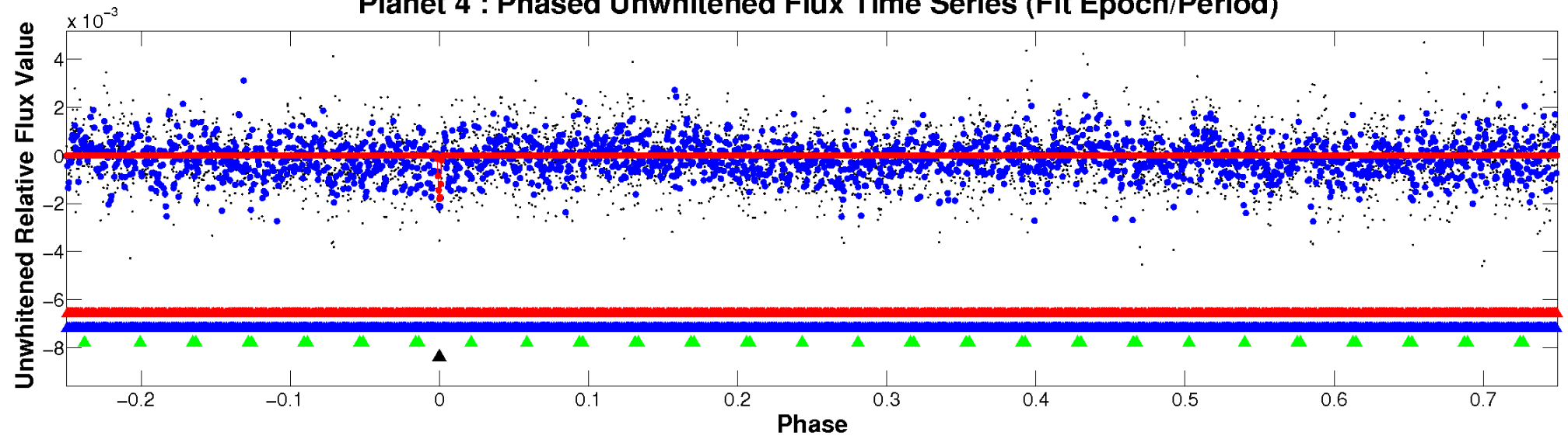
ALT Odd/Even

TCE 008380389-04

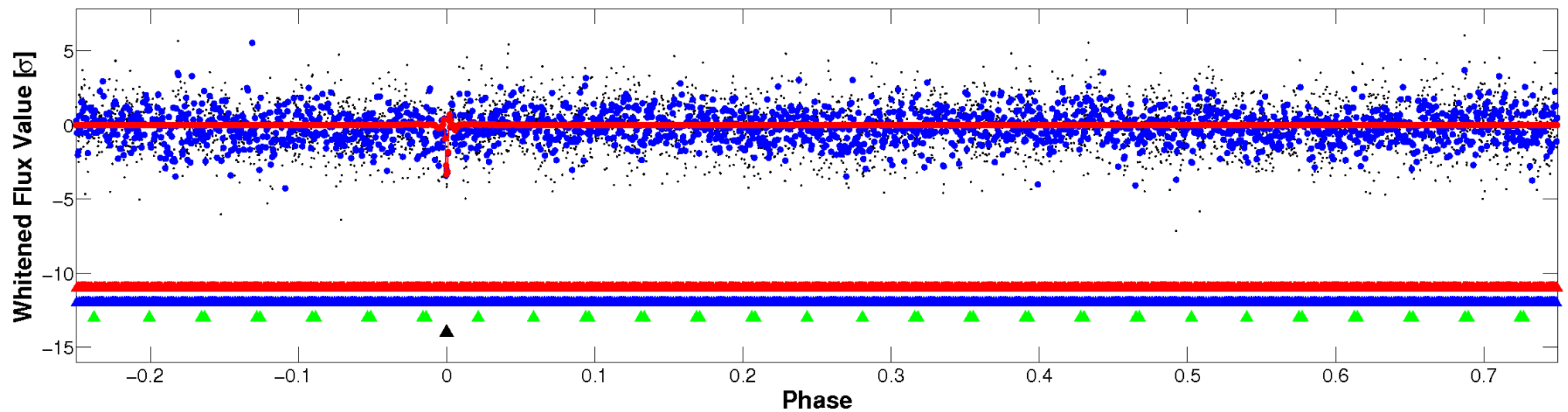


Non-Whitened Vs. Whitened Light Curve

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

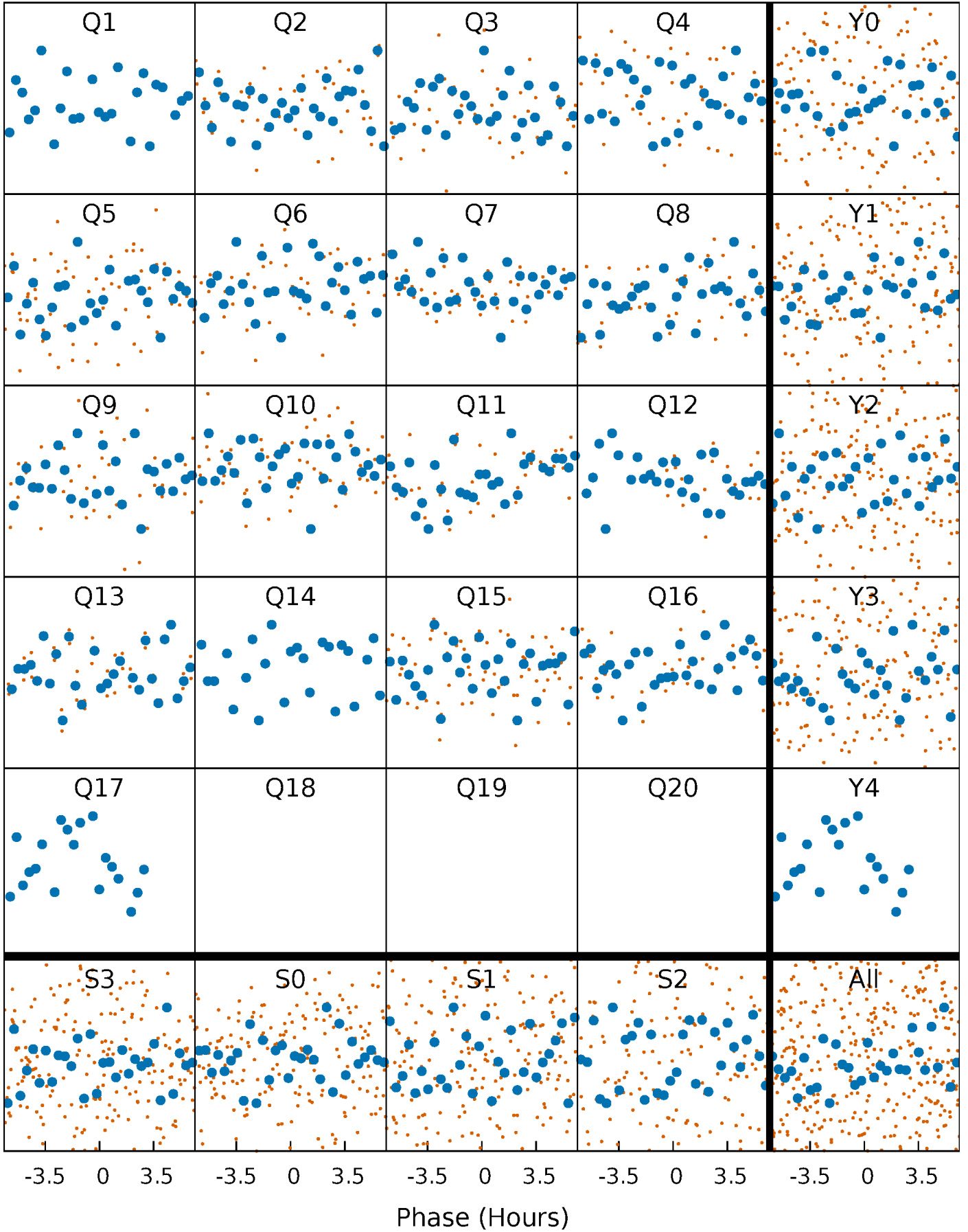


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



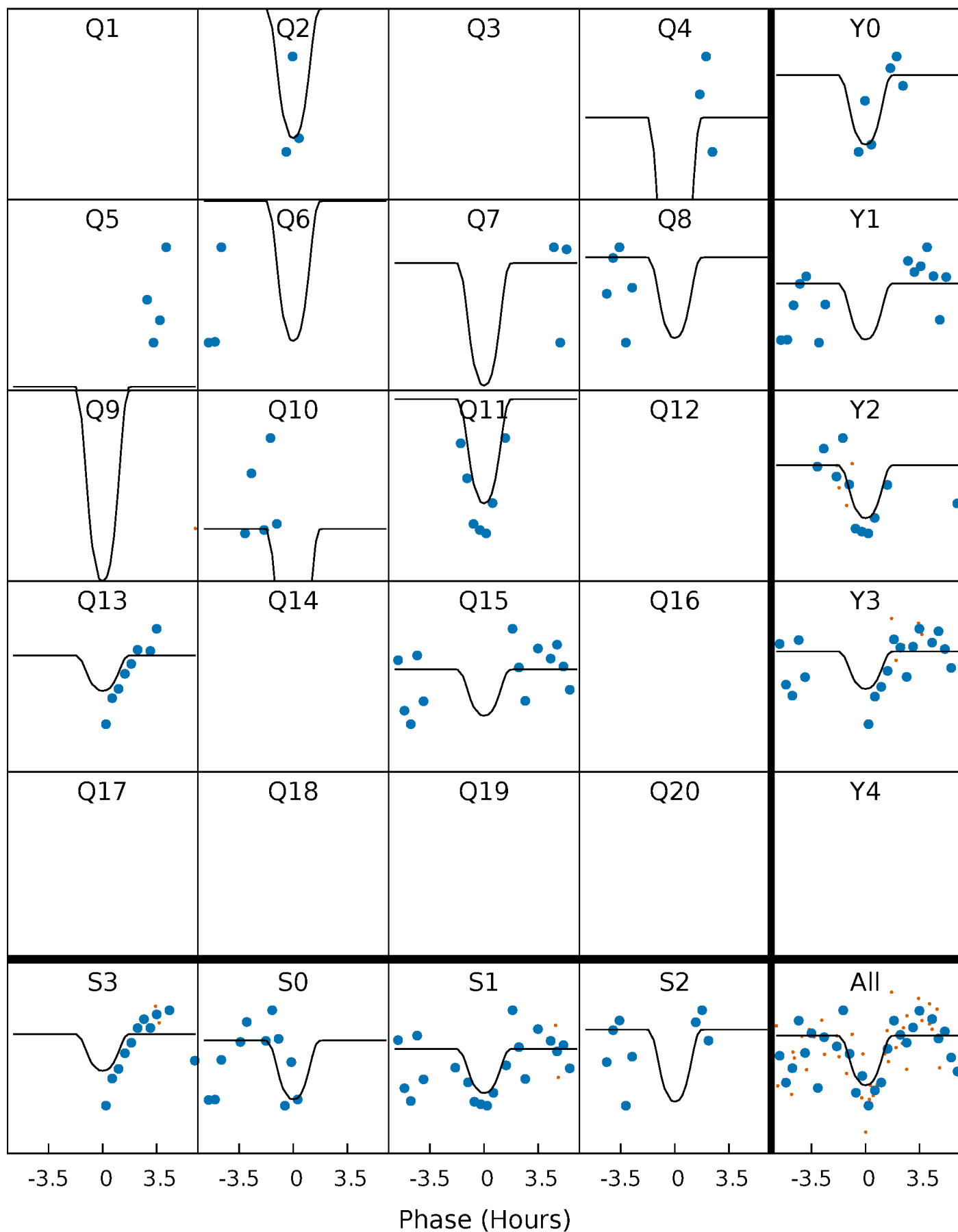
PDC Quarter-Phased Transit Curves

TCE 008380389-04 P= 42.198276 Days $T_0=156.140828$ (BKJD)



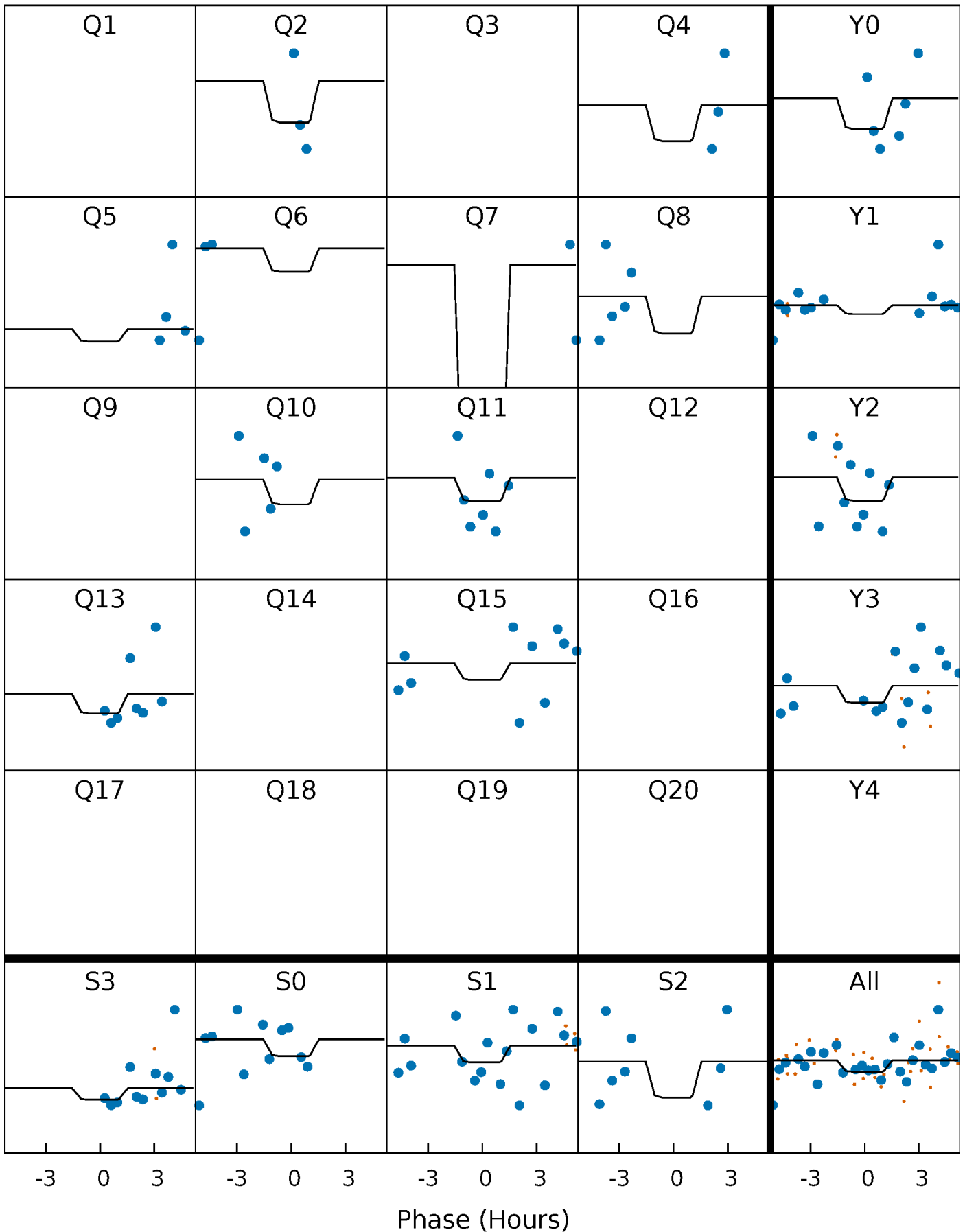
DV Quarter-Phased Transit Curves

TCE 008380389-04 P= 42.198276 Days $T_0=156.140828$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

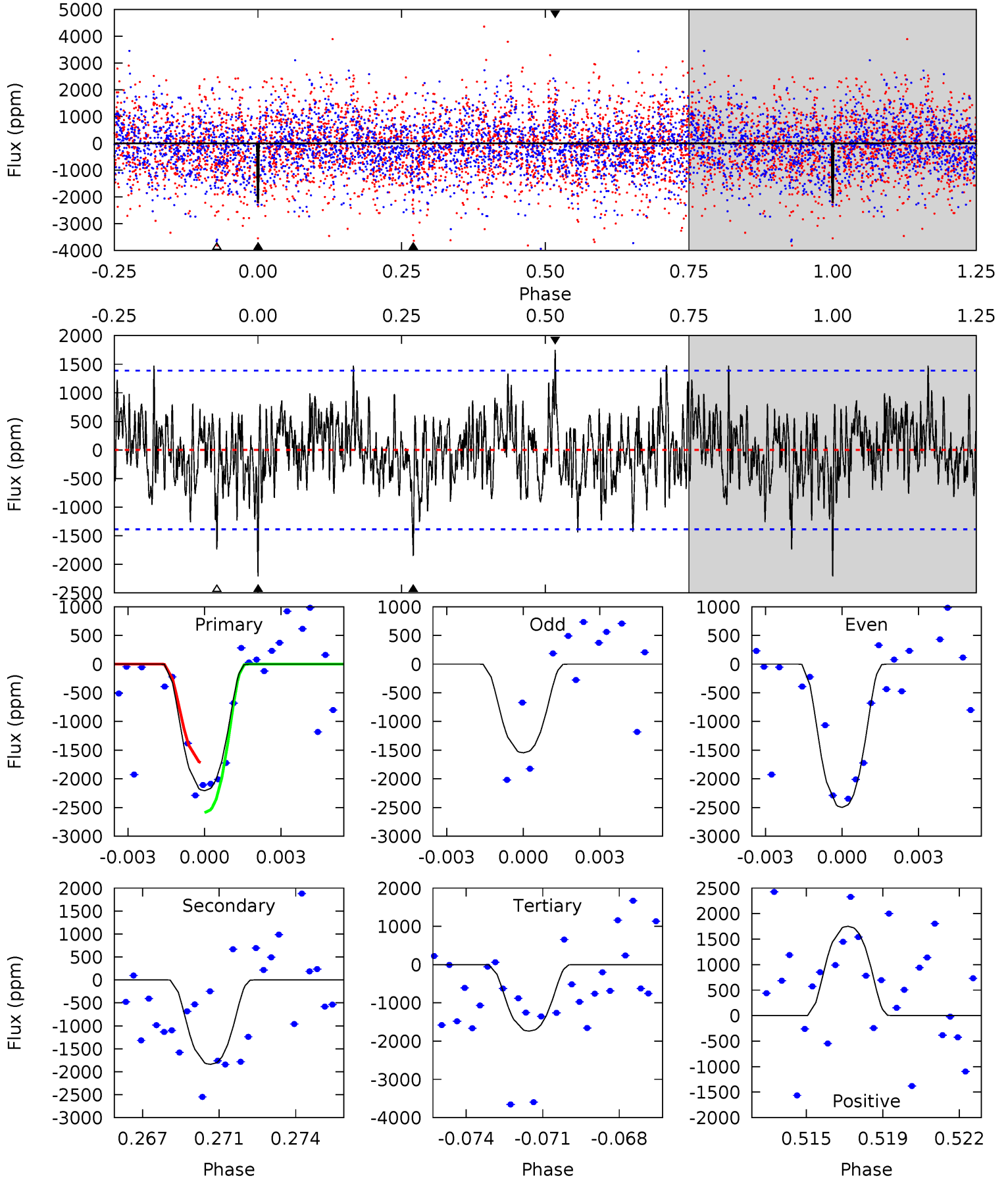
TCE 008380389-04 P= 42.199190 Days $T_0=156.114053$ (BKJD)



DV Model-Shift Uniqueness Test

008380389-04, P = 42.198276 Days, E = 113.942552 Days

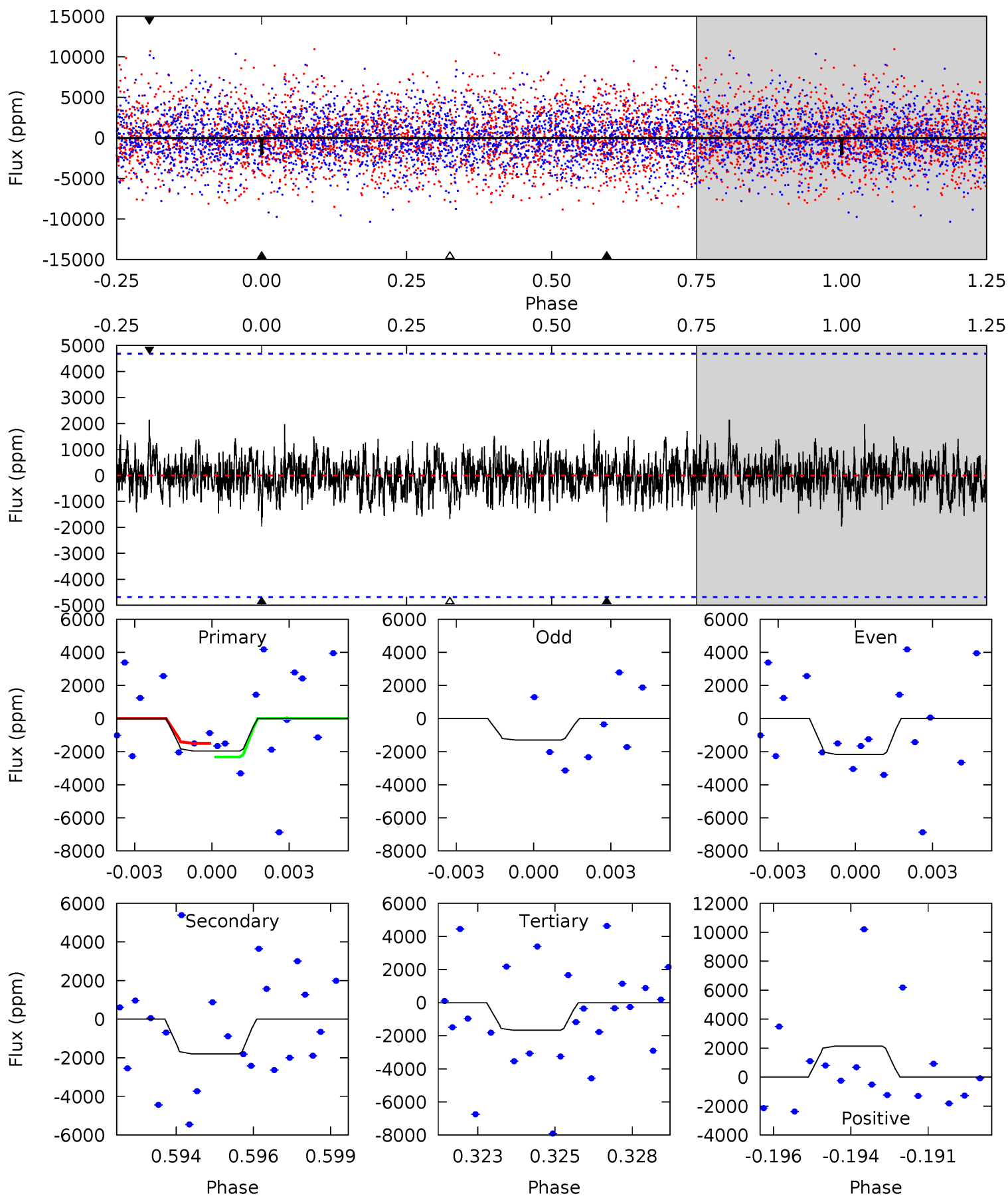
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.33	6.94	6.55	6.60	5.24	2.95	1.83	1.77	1.72	0.38	0.33	1.55	0.83	0.44	1.60



Alt Model-Shift Uniqueness Test

008380389-04, P = 42.199190 Days, E = 113.914863 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.21	2.03	1.88	2.42	5.28	3.01	0.61	0.33	-0.20	0.15	-0.39	0.43	0.93	0.52	0.44



Stellar Parameters For KIC 008380389

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7343^{+228}_{-304}	$4.021^{+0.203}_{-0.166}$	$-0.120^{+0.250}_{-0.350}$	$2.044^{+0.551}_{-0.551}$	$1.597^{+0.199}_{-0.273}$	$0.263^{+0.309}_{-0.124}$
	+3%/-4%	+5%/-4%	+208%/-292%	+27%/-27%	+12%/-17%	+117%/-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 008380389-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1840 ± 265	$10.44^{+2.74}_{-2.33}$	1221^{+96}_{-98}	6853^{+932}_{-655}	699^{+443}_{-276}
Alt.	-1801 ± 887	$9.69^{+2.66}_{-2.24}$	1220^{+94}_{-95}	7082^{+1556}_{-1268}	773^{+758}_{-423}

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

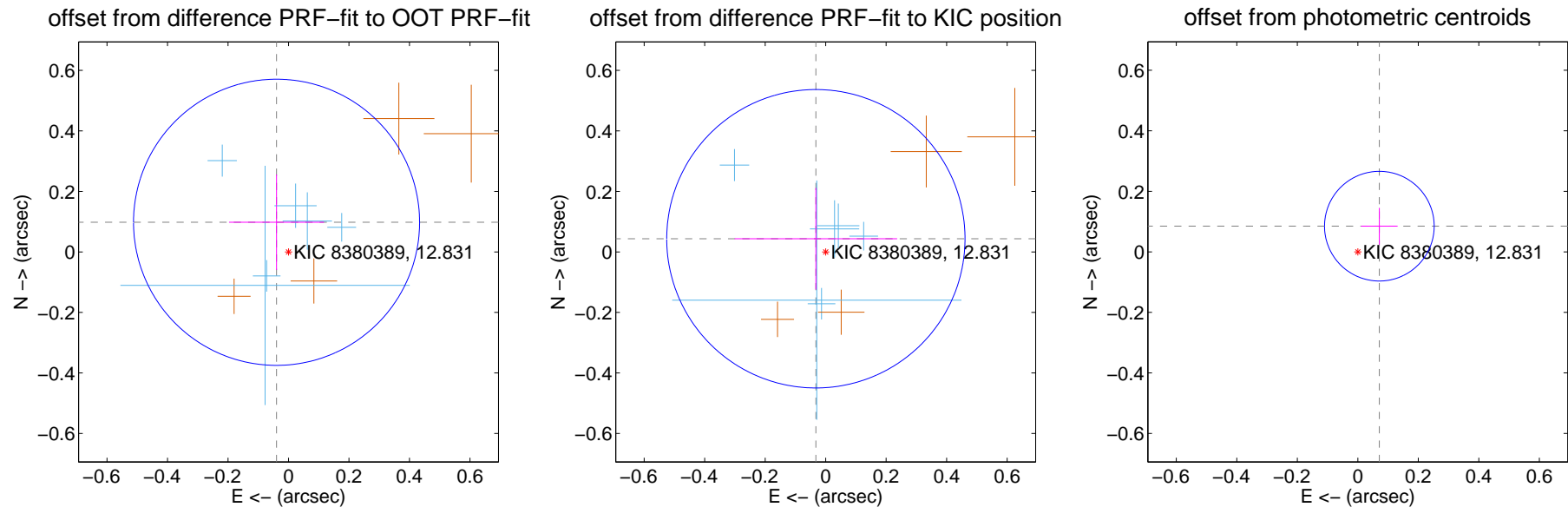
DV Centroid Data

Supplemental centroid analysis for 008380389-04. Kepler magnitude: 12.83. Transit SNR 9.40

There are 8 quarters with good PRF difference image offsets

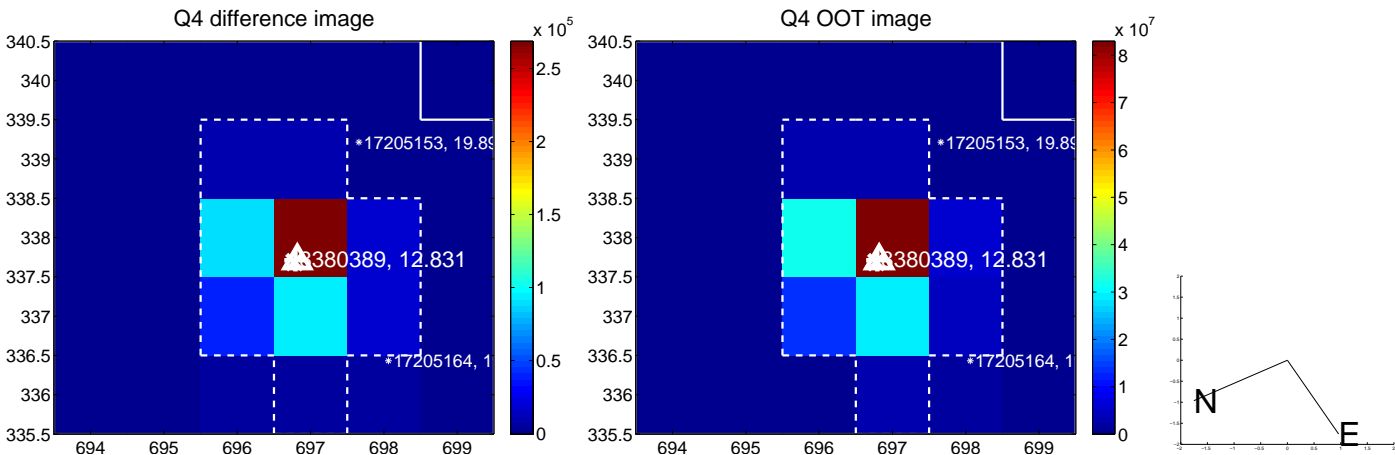
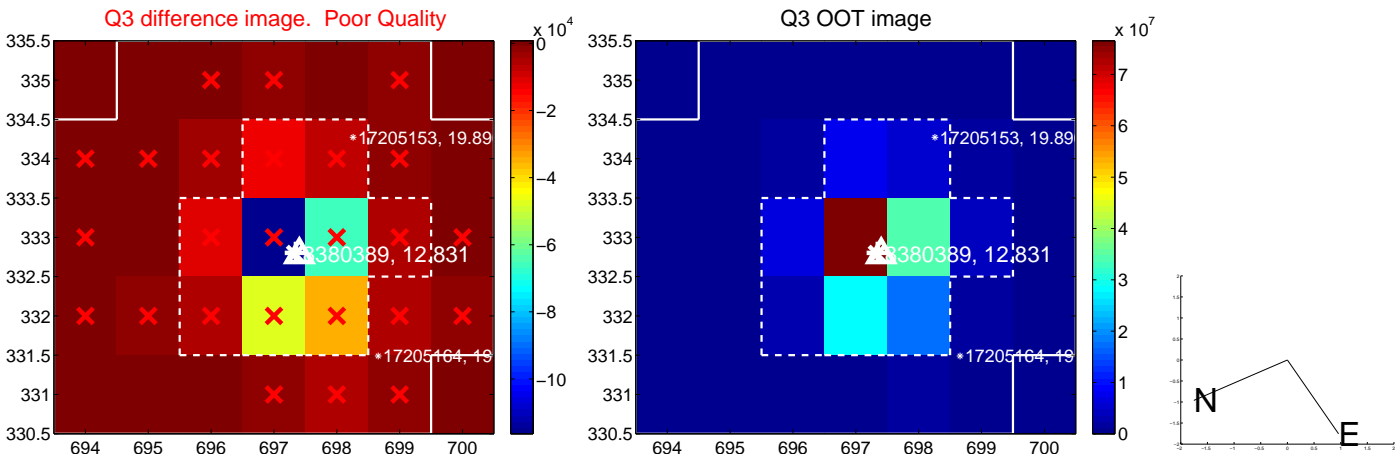
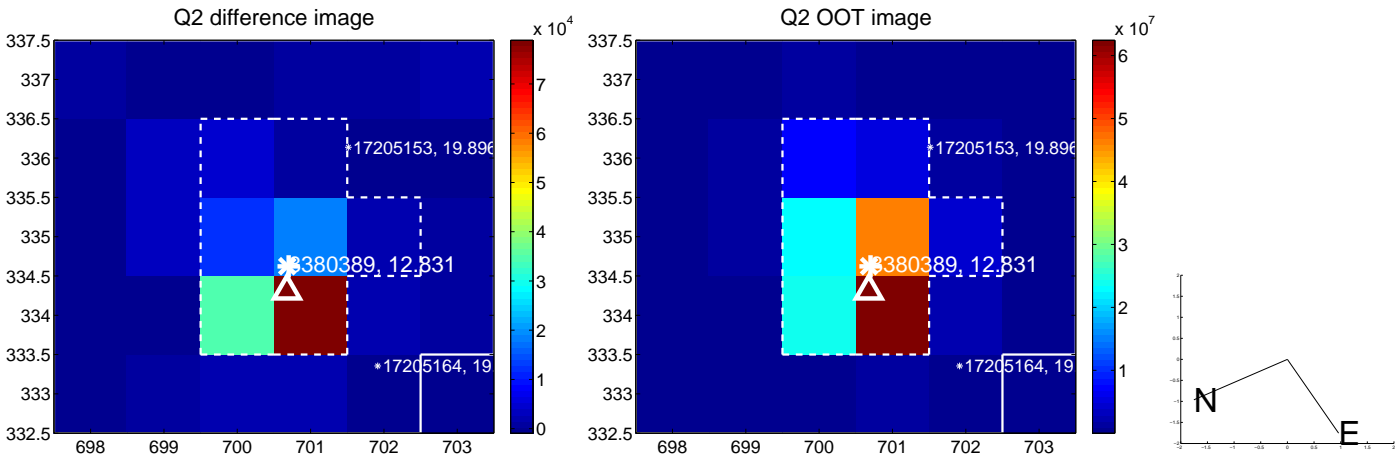
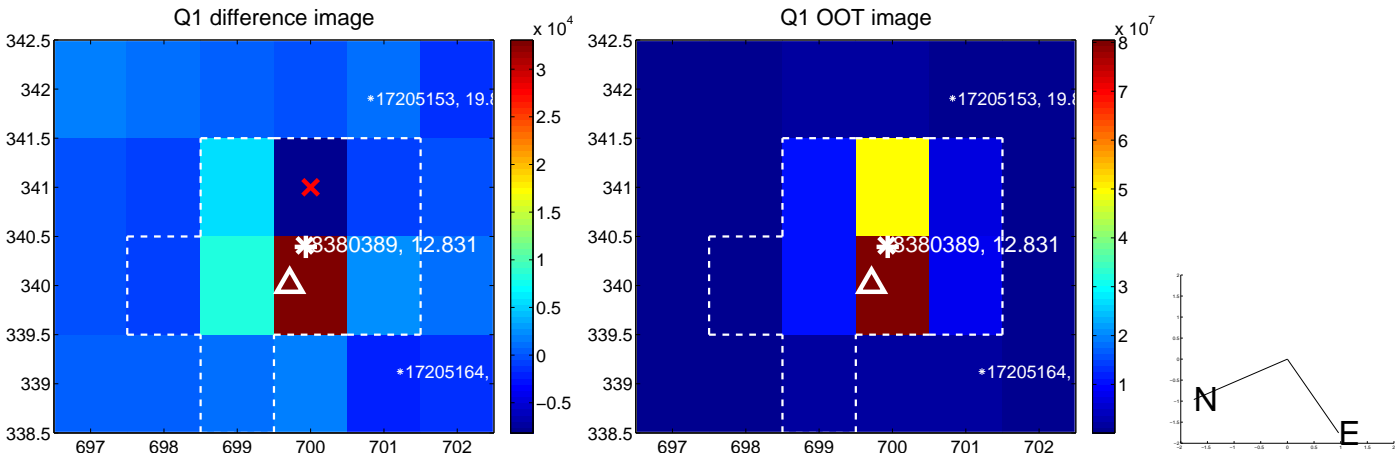
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.106 ± 0.158	0.67	0.040 ± 0.157	0.098 ± 0.158
PRF-fit source offset from KIC position	0.054 ± 0.164	0.33	0.032 ± 0.269	0.044 ± 0.168
photometric centroid source offset	0.11 ± 0.06	1.83	-0.07 ± 0.06	0.08 ± 0.06

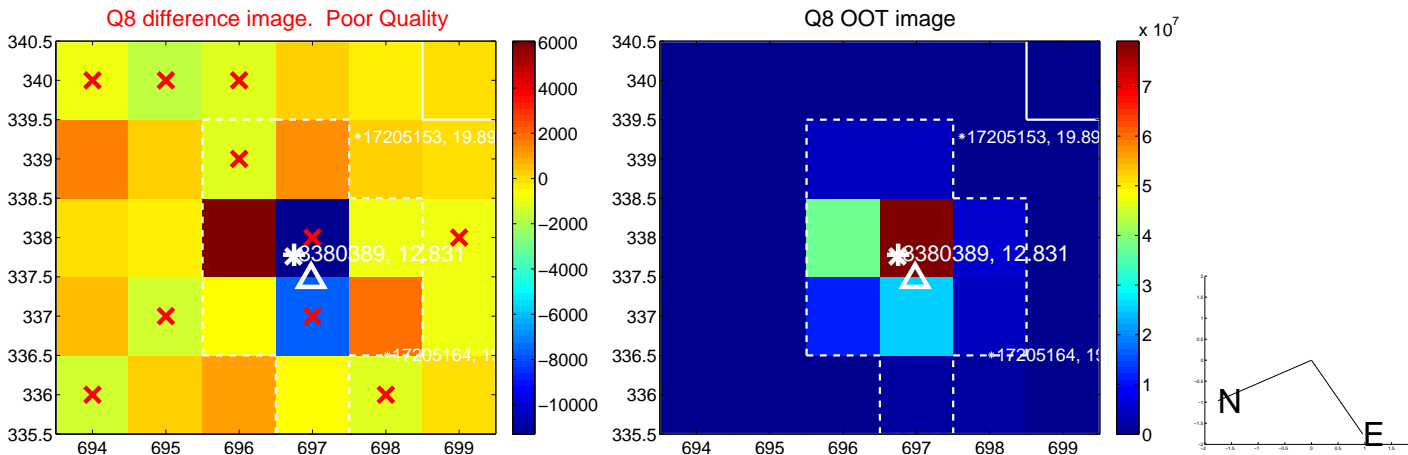
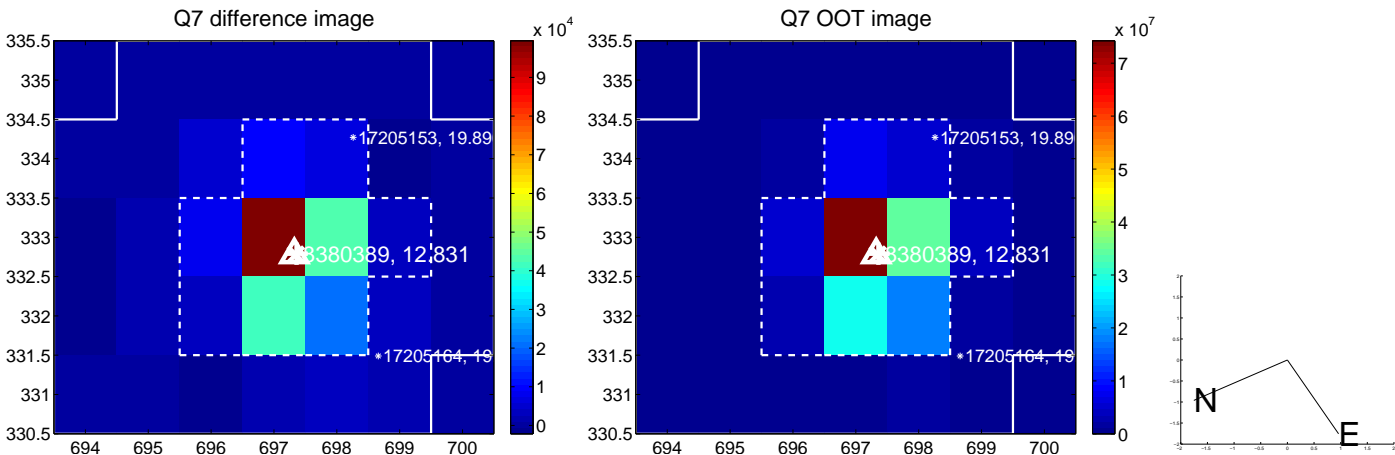
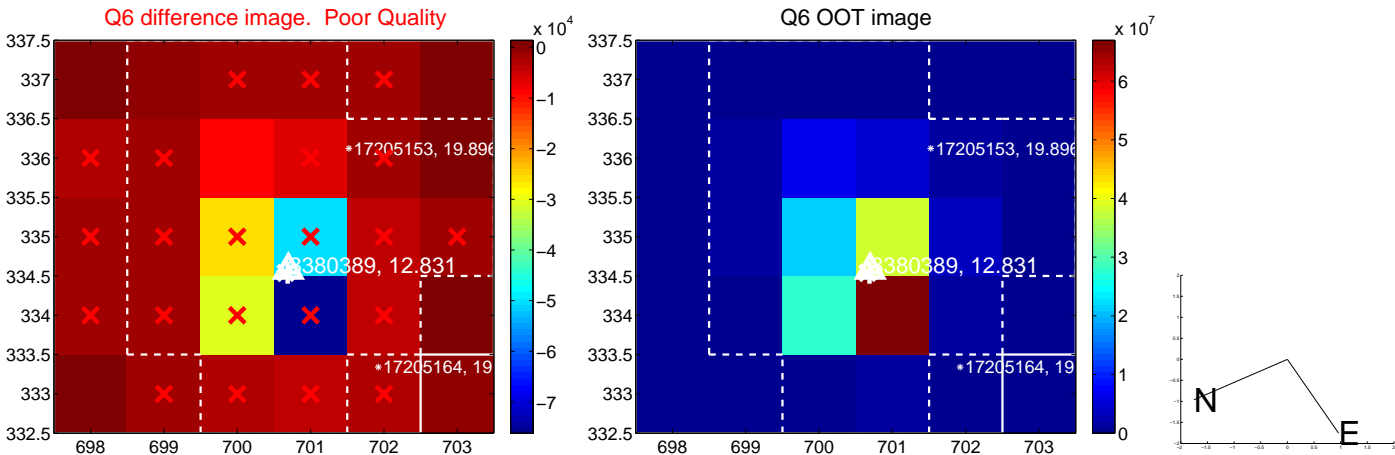
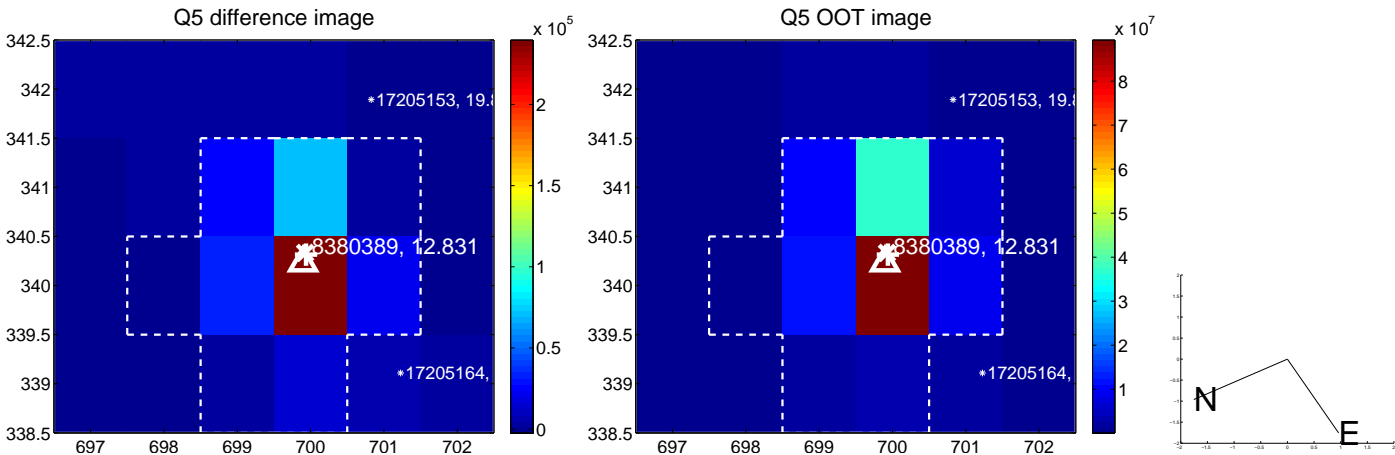


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

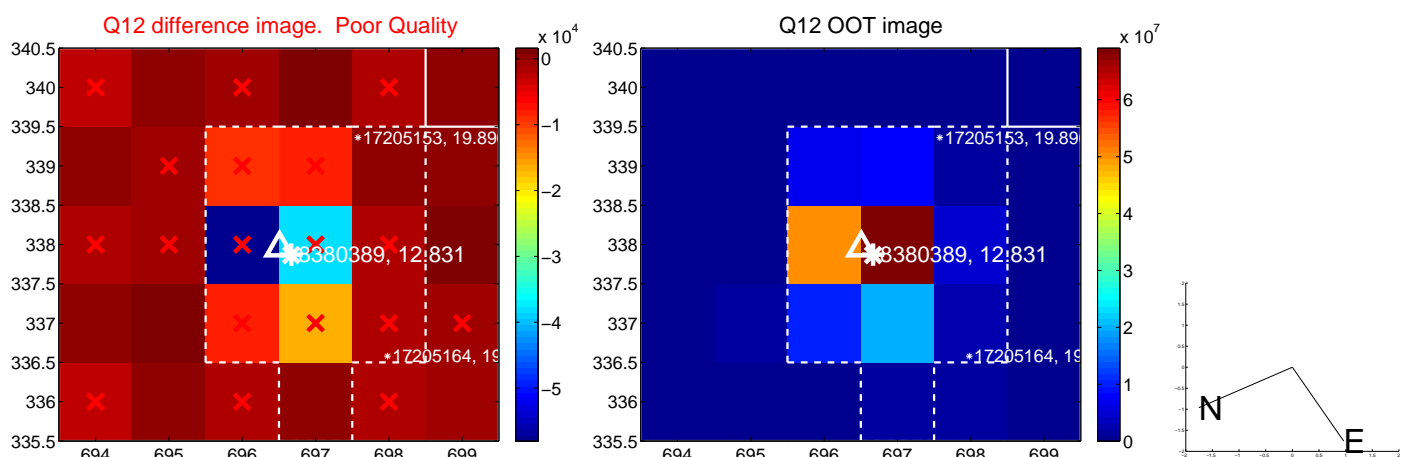
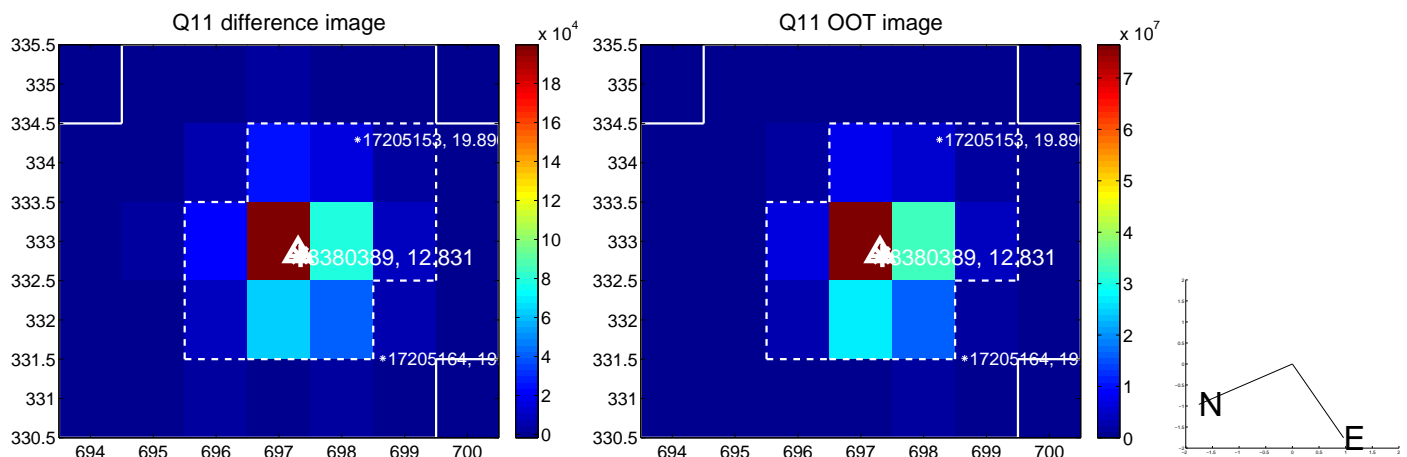
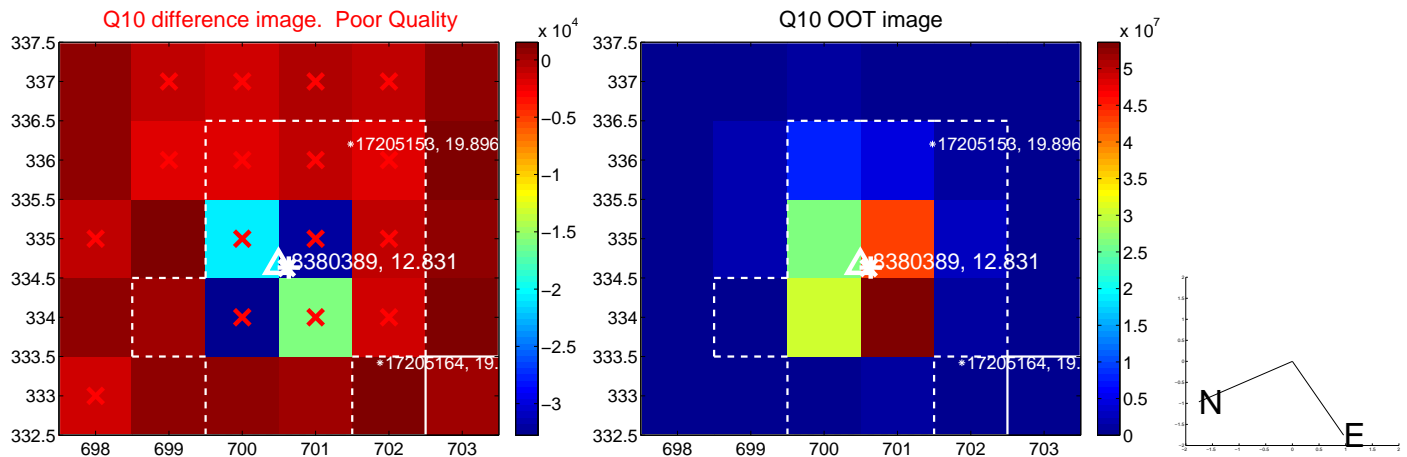
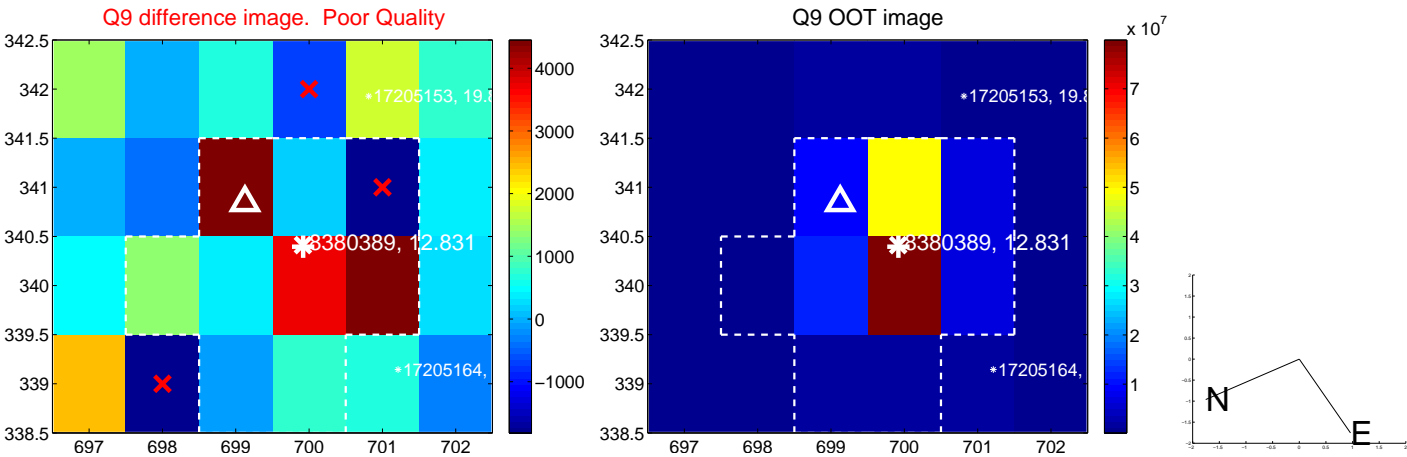
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



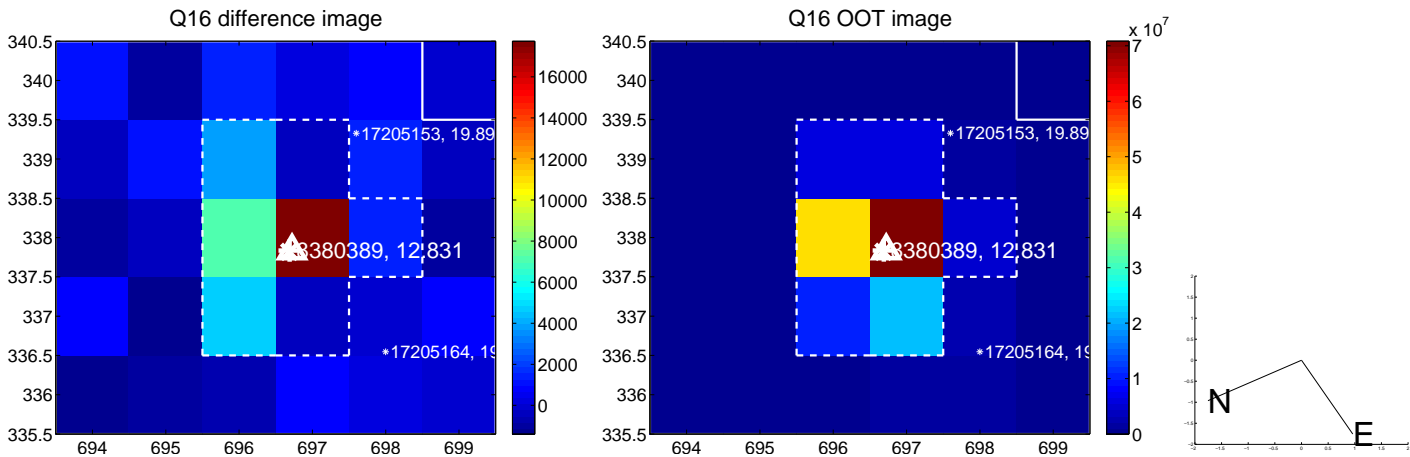
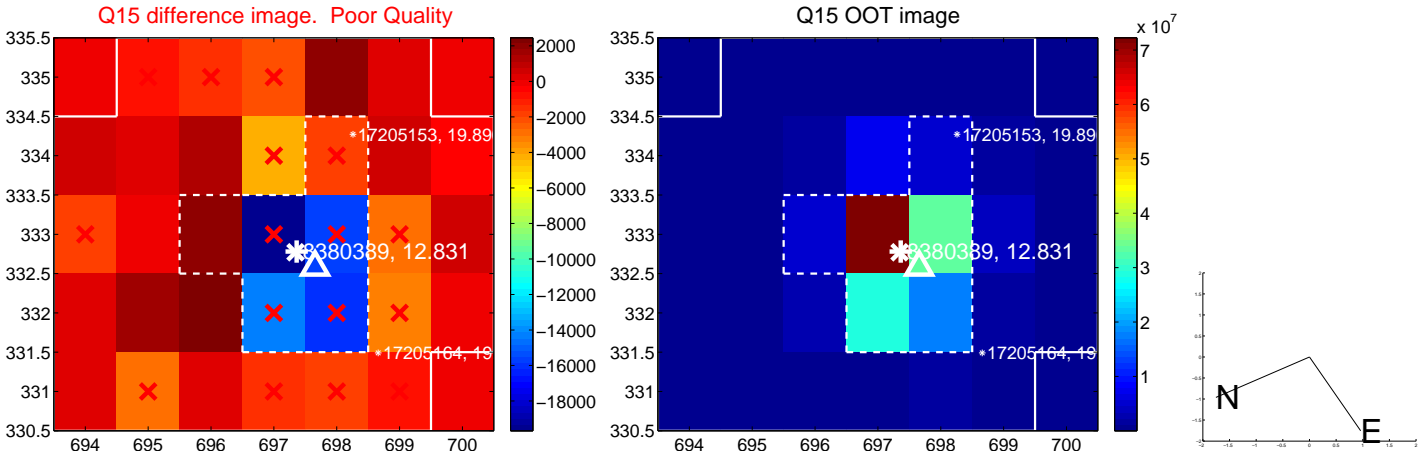
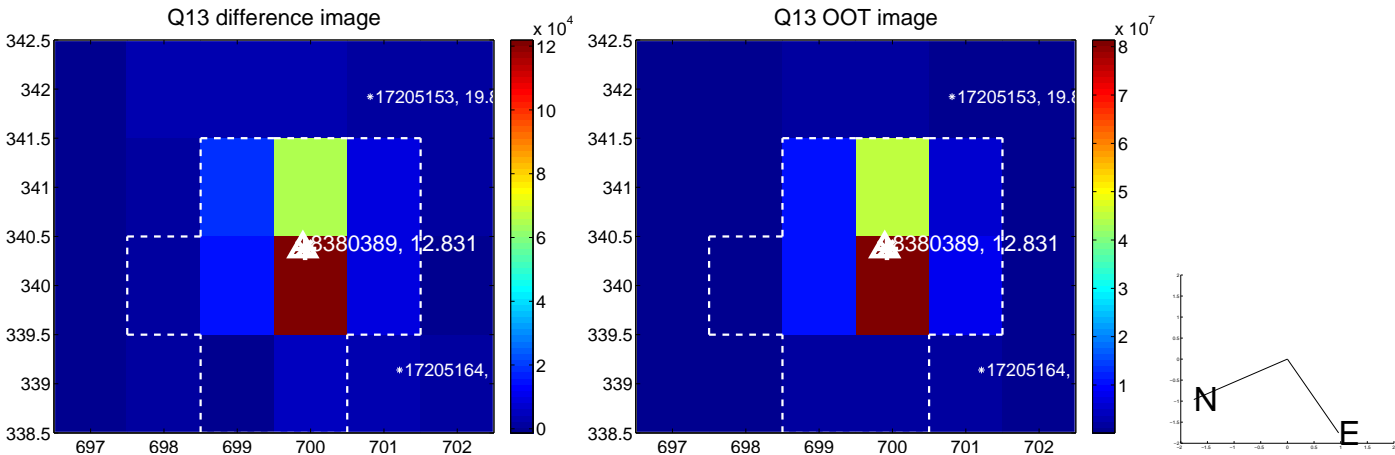
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



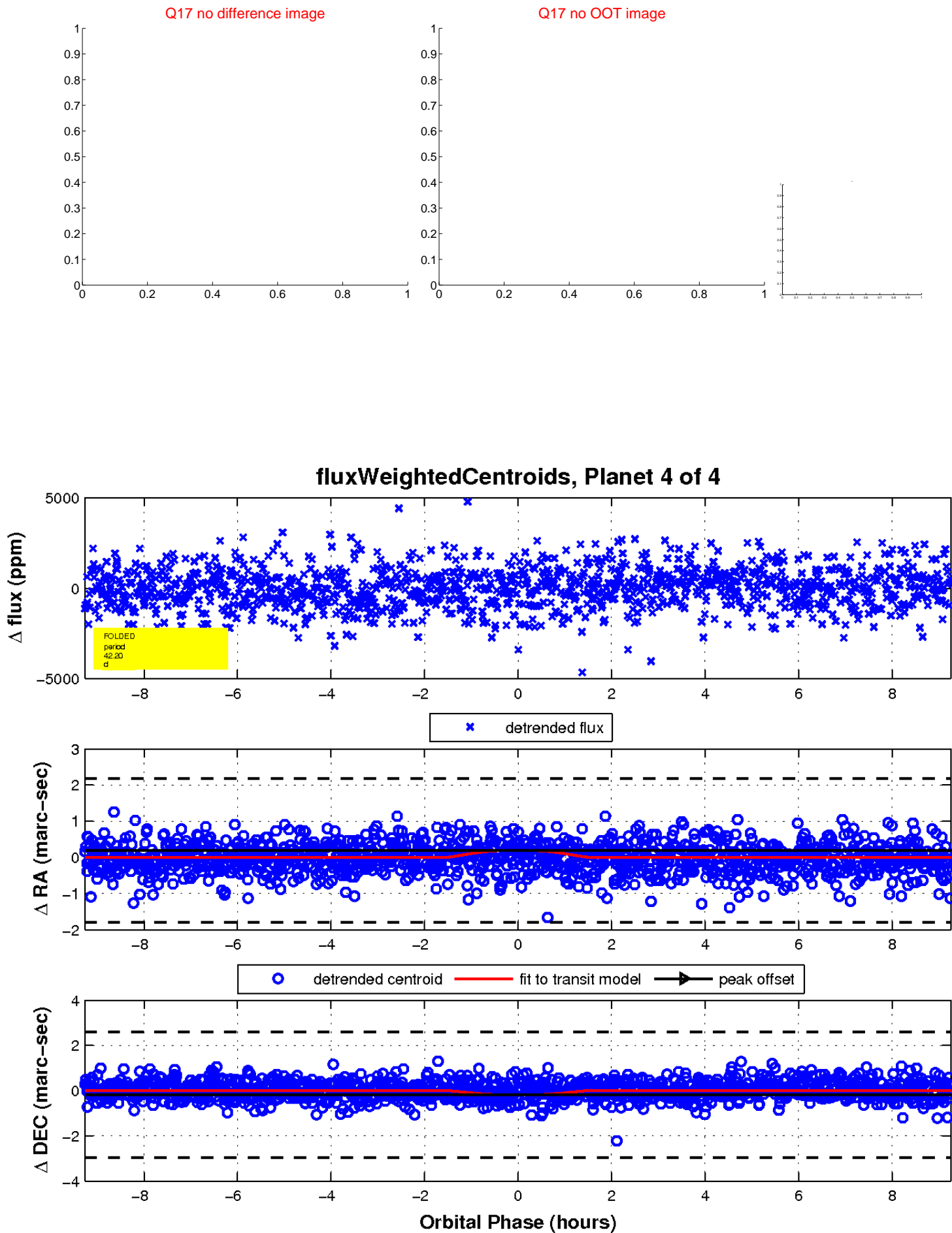
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

