

KIC 005617102

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})
005617102-01	OBS	No	0.596969	132.056790	111.5	1.523	12.9	11.9	1.95	7627	2.14	42974.59
005617102-02	OBS	No	0.596976	131.746610	343.6	2.000	13.1	-1.0	1.95	7627	3.68	42973.96
005617102-03	OBS	No	0.940473	132.125074	761.2	3.168	11.1	17.8	1.95	7627	6.23	23443.32
005617102-04	OBS	No	0.940461	131.742574	193.1	3.500	13.2	-1.0	1.95	7627	2.75	23443.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005617102-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005617102-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_NOFITS
005617102-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005617102-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—SAME_NTL_PERIOD—CENT_NOFITS

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

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

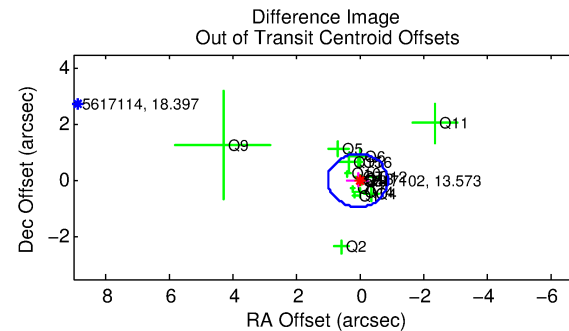
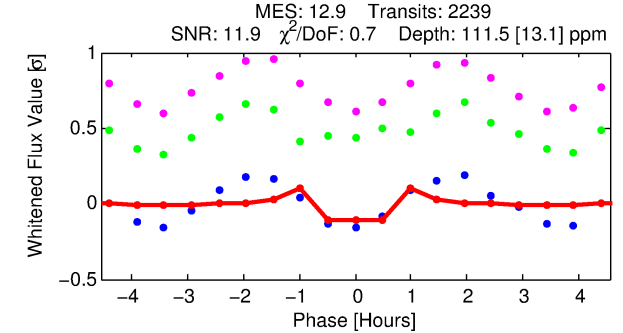
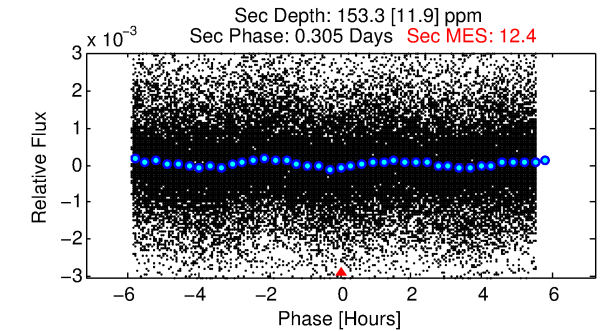
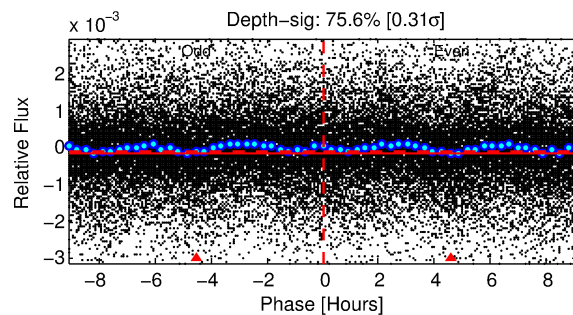
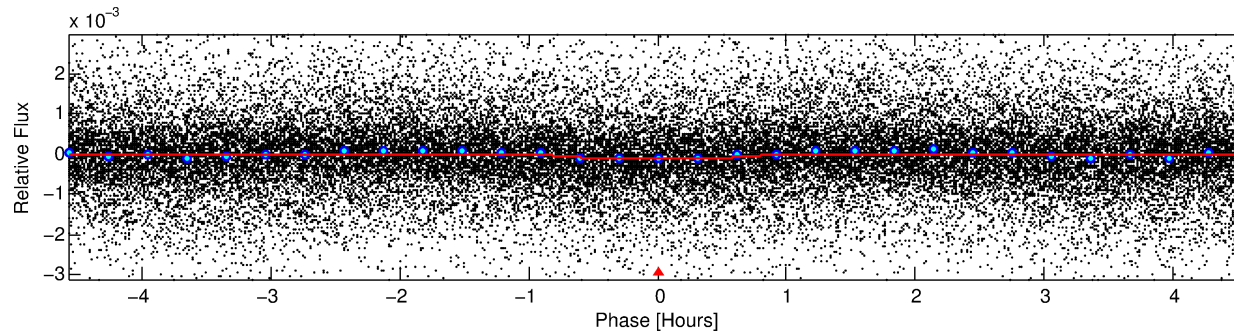
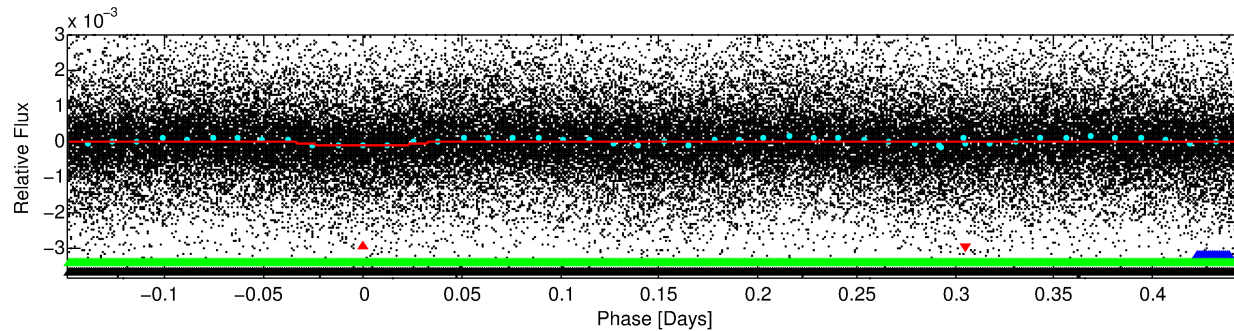
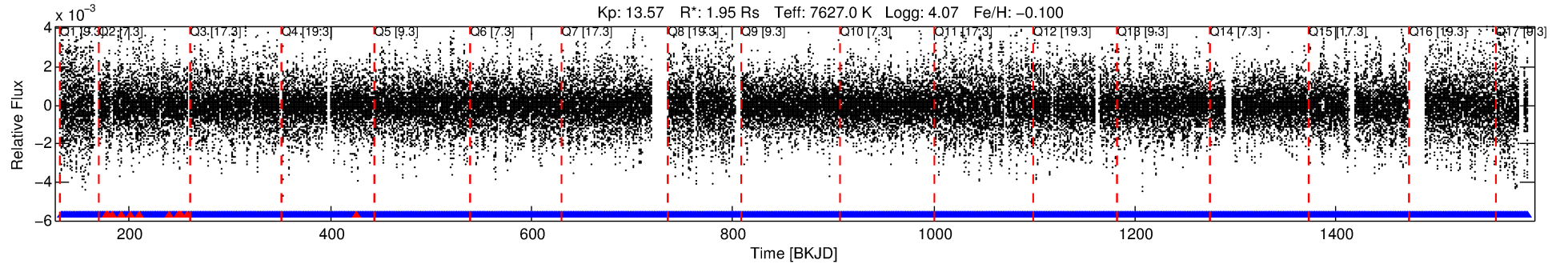
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005617102-01

No Significant Match Found

DV One-Page Summary

KIC: 5617102 Candidate: 1 of 4 Period: 0.597 d



DV Fit Results:

Period = 0.59697 [0.00001] d
Epoch = 132.0568 [0.0009] BKJD
Rp/R* = 0.0101 [0.0017]
a/R* = 2.75 [2.30]
b = 0.48 [1.53]
Seff = 42974.59 [14869.90]
Teq = 3671 [318] K
Rp = 2.14 [0.68] Re
a = 0.0164 [0.0036] AU
Ag = 4.92 [2.24] [1.75 σ]
Teffp = 8456 [799] K [5.57 σ]

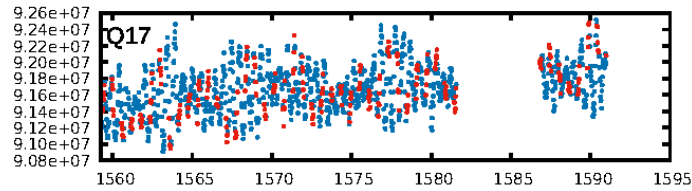
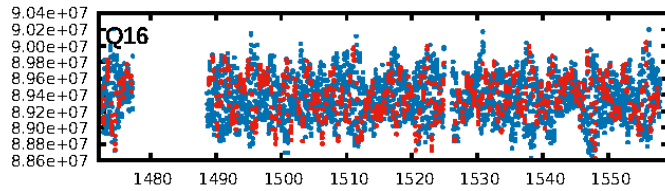
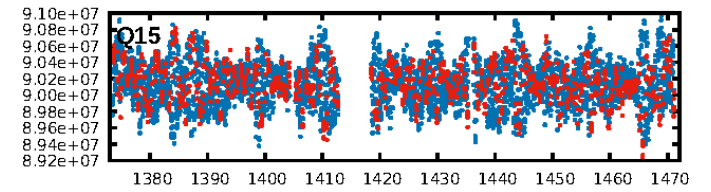
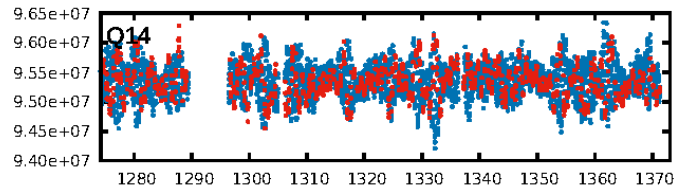
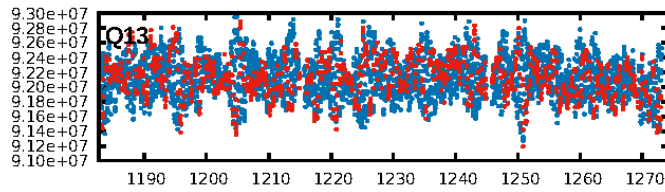
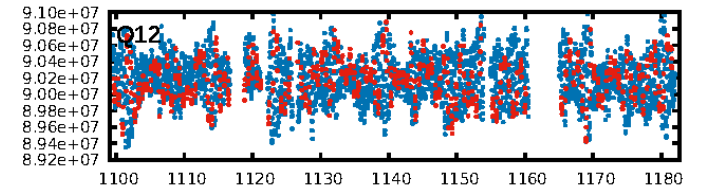
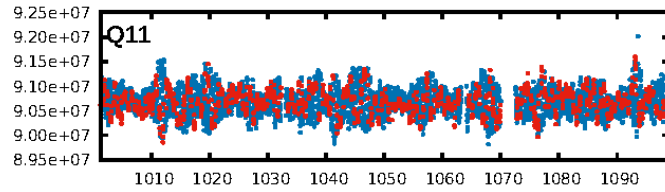
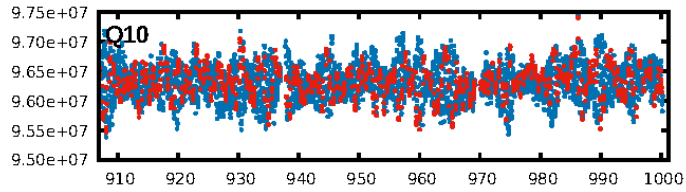
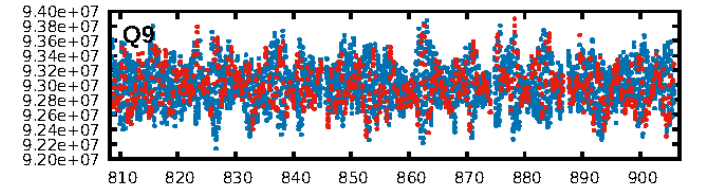
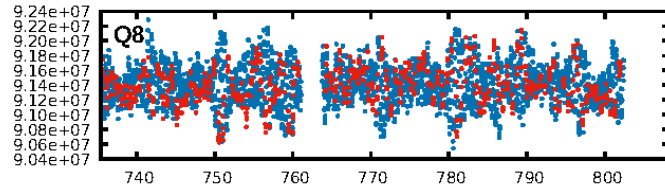
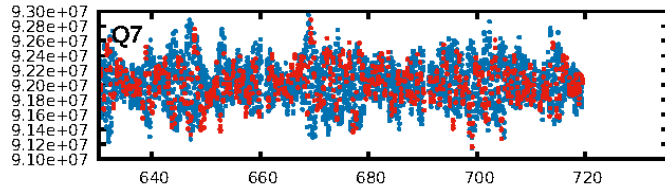
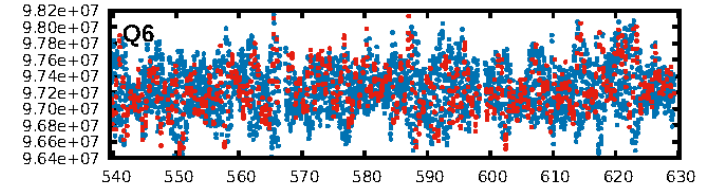
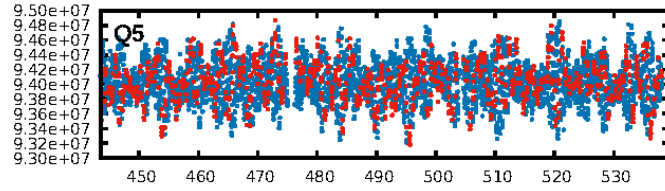
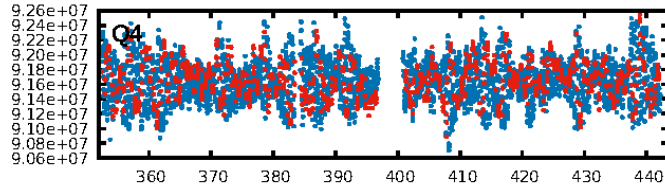
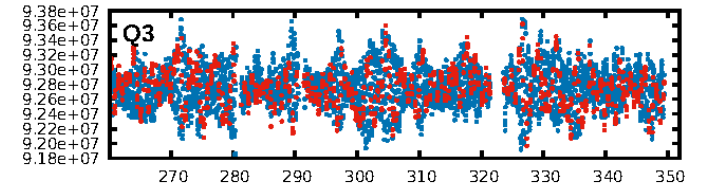
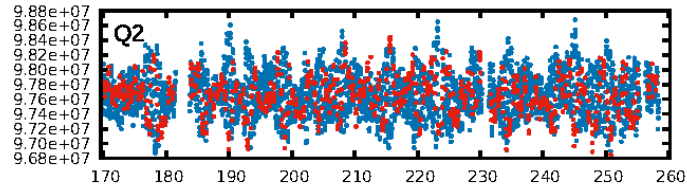
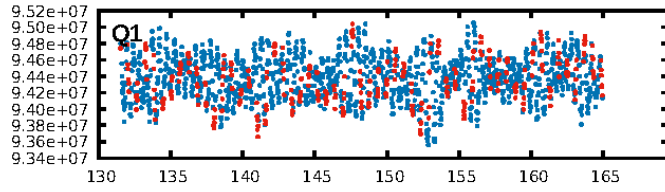
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgm: 0.99 [2125/2138]
GhostDiagnostic-chr: 2
Centroid-sig: 0.5%
Centroid-so: 0.451 arcsec [1.93 σ]
OotOffset-rm: 0.050 arcsec [0.16 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.093 arcsec [0.32 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.65 [11/17]
DiffImageOverlap-fno: 0.00 [0/17]

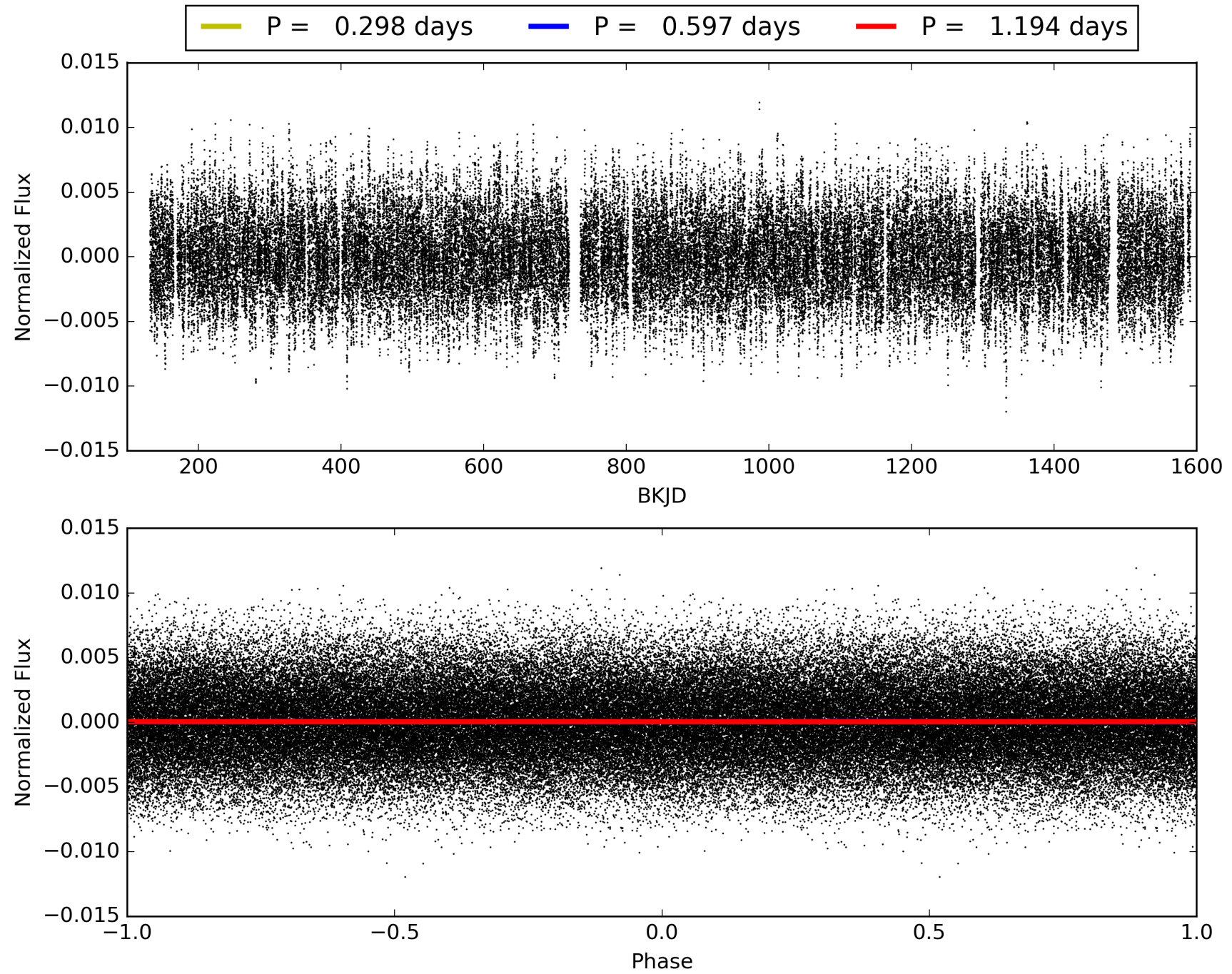
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:14:20 Z

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

TCE 005617102-01, PDC Light Curves

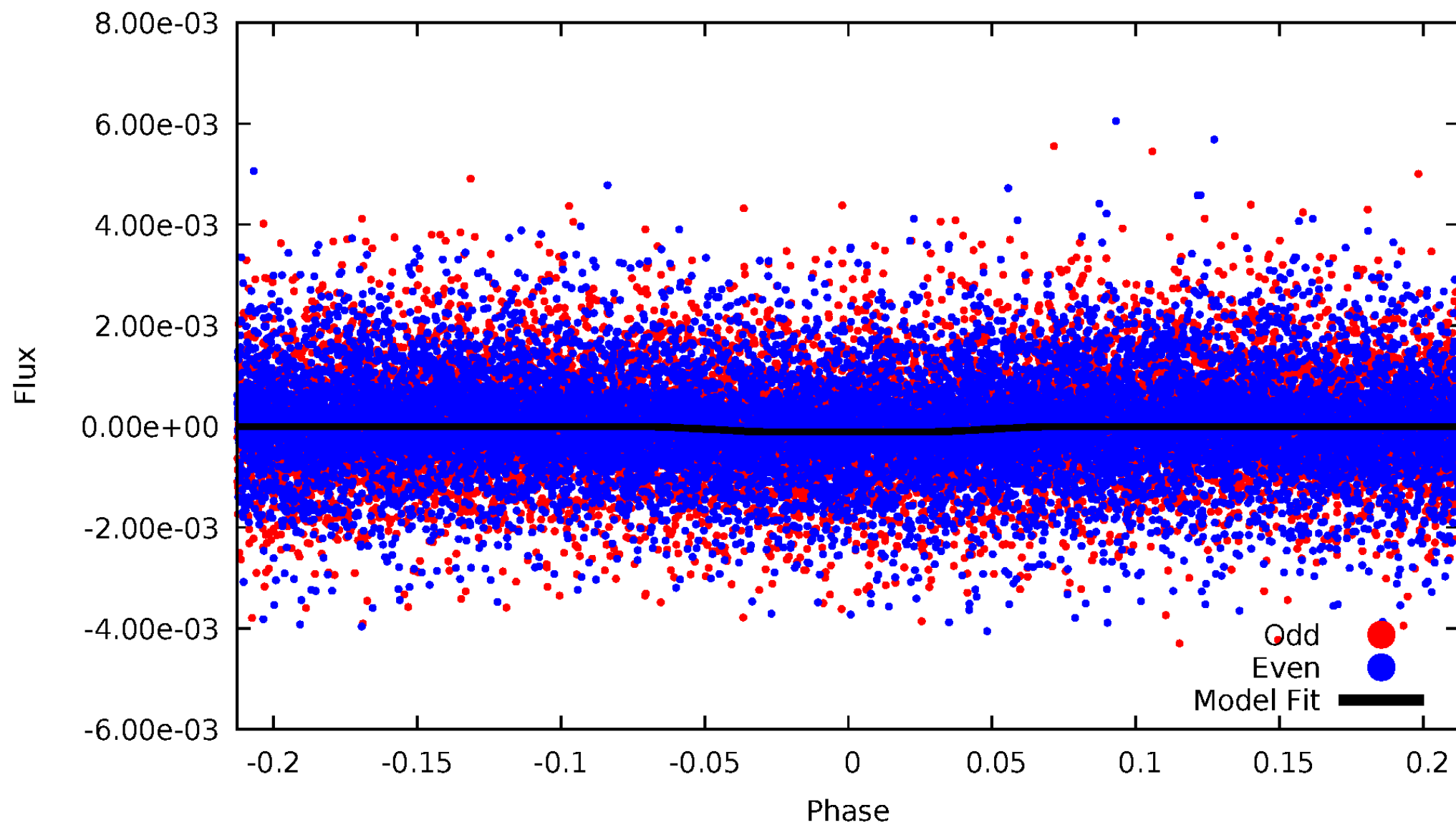


TCE 005617102-01



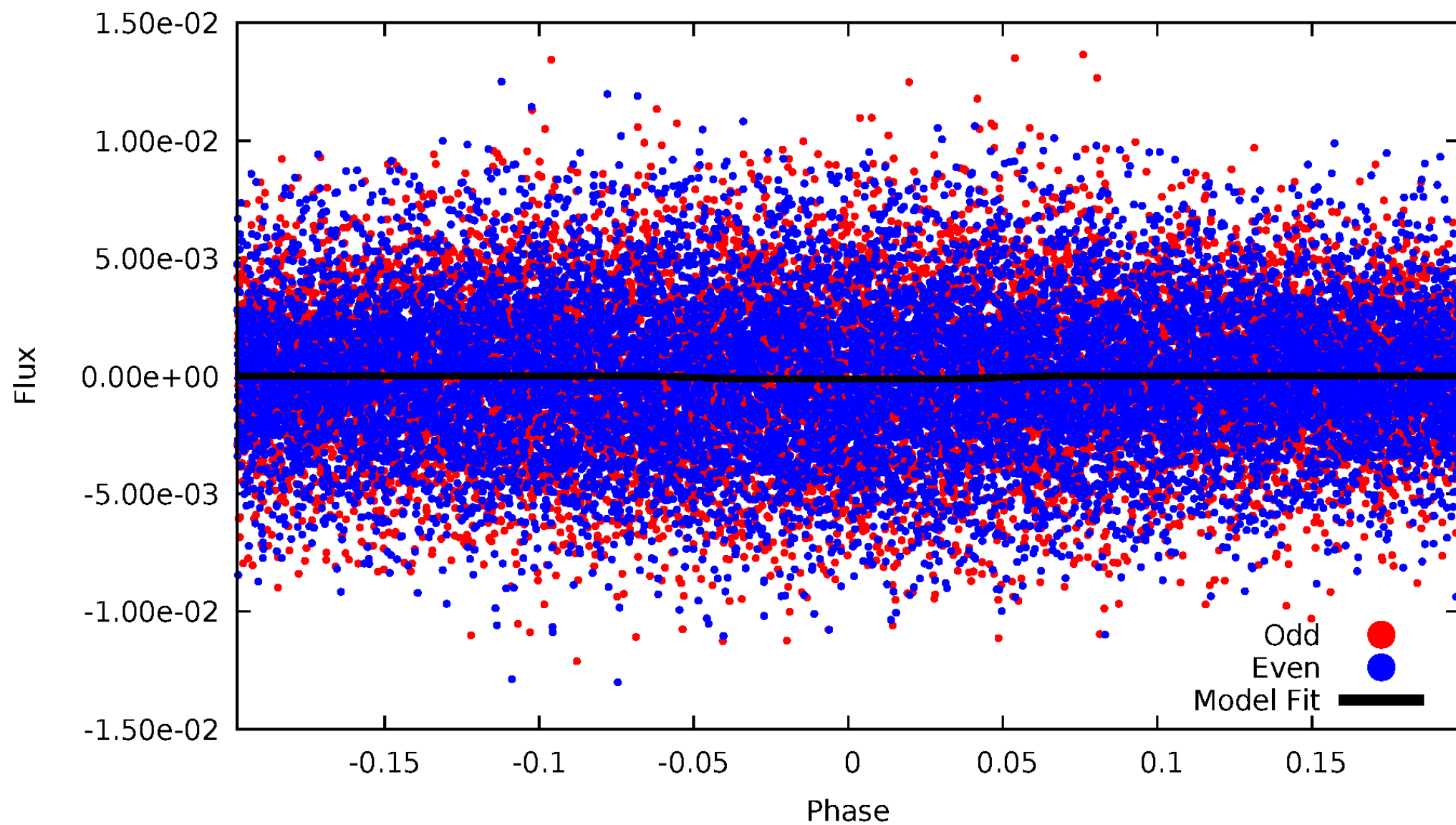
DV Odd/Even

TCE 005617102-01



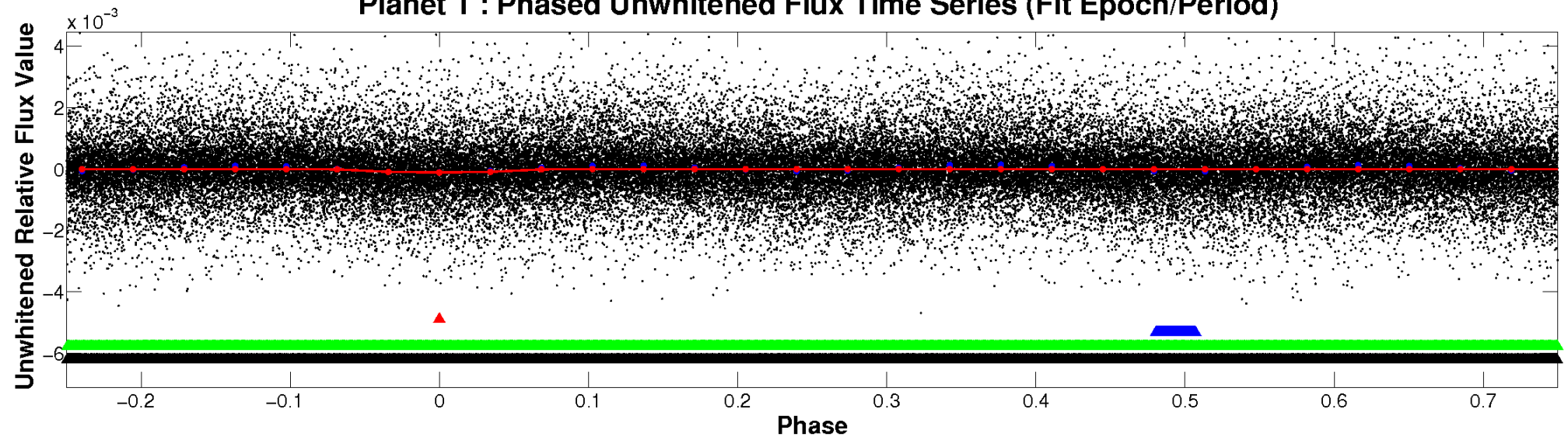
ALT Odd/Even

TCE 005617102-01

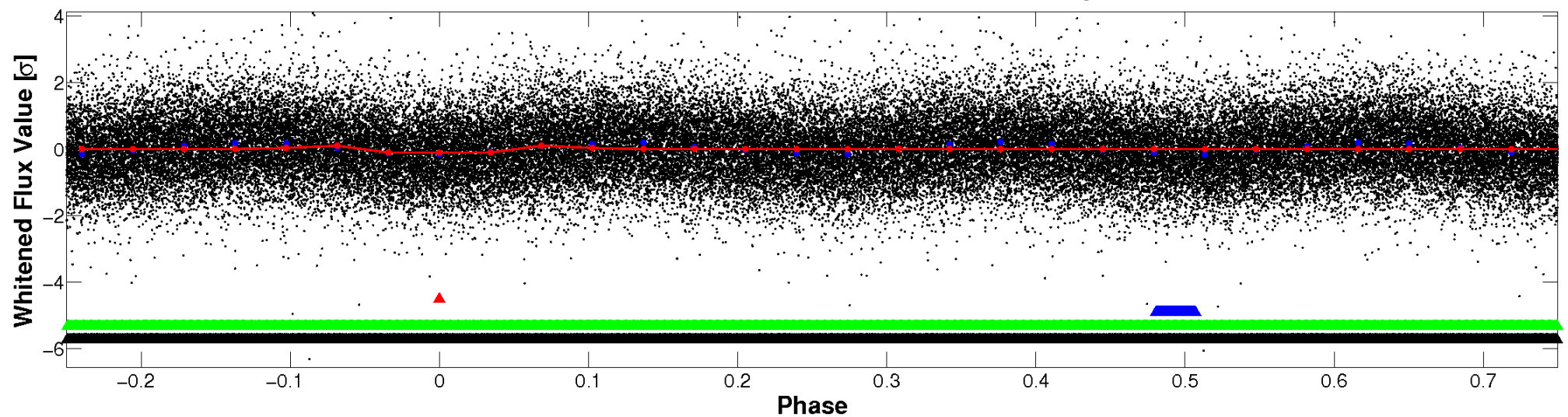


Non-Whitened Vs. Whitened Light Curve

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

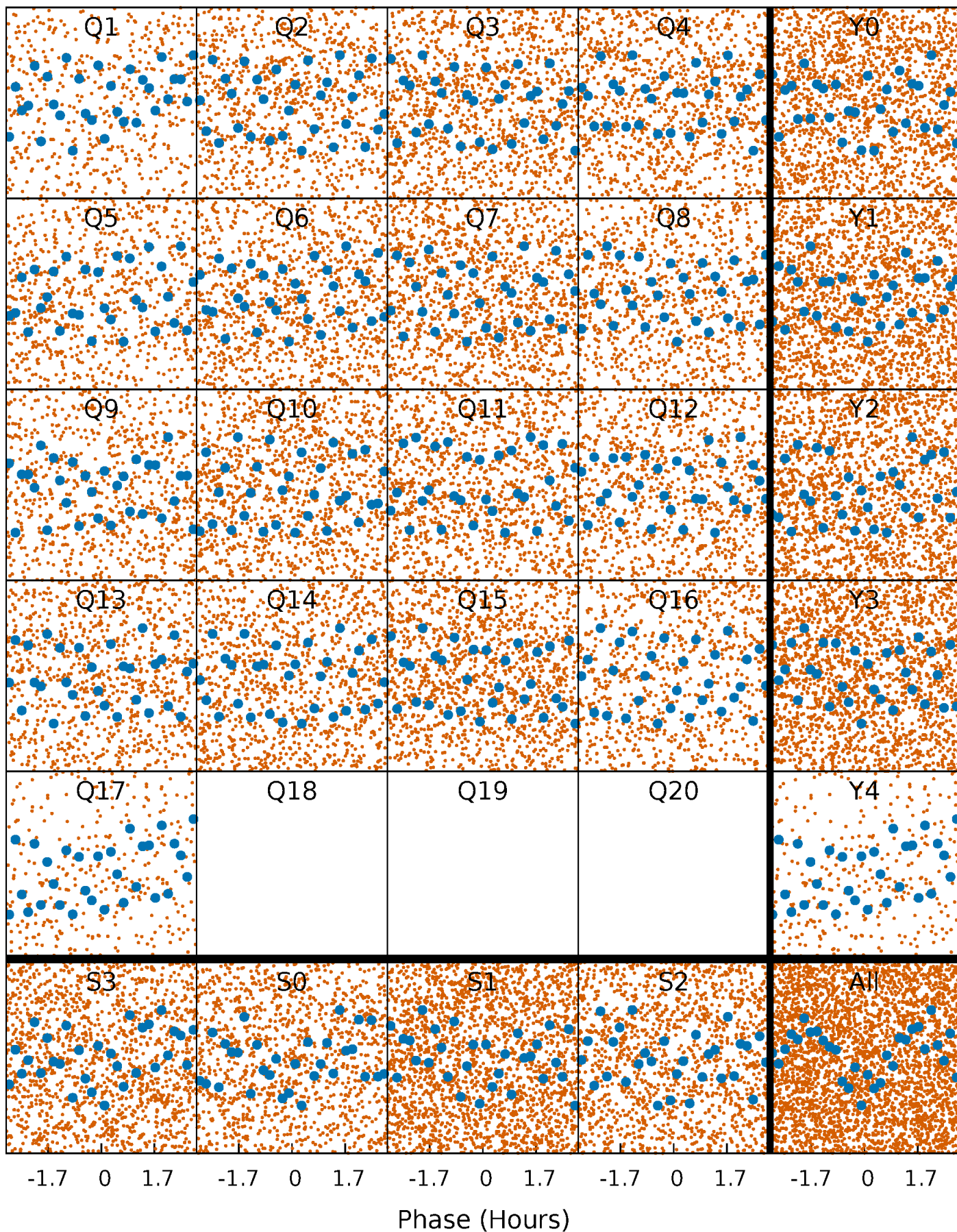


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



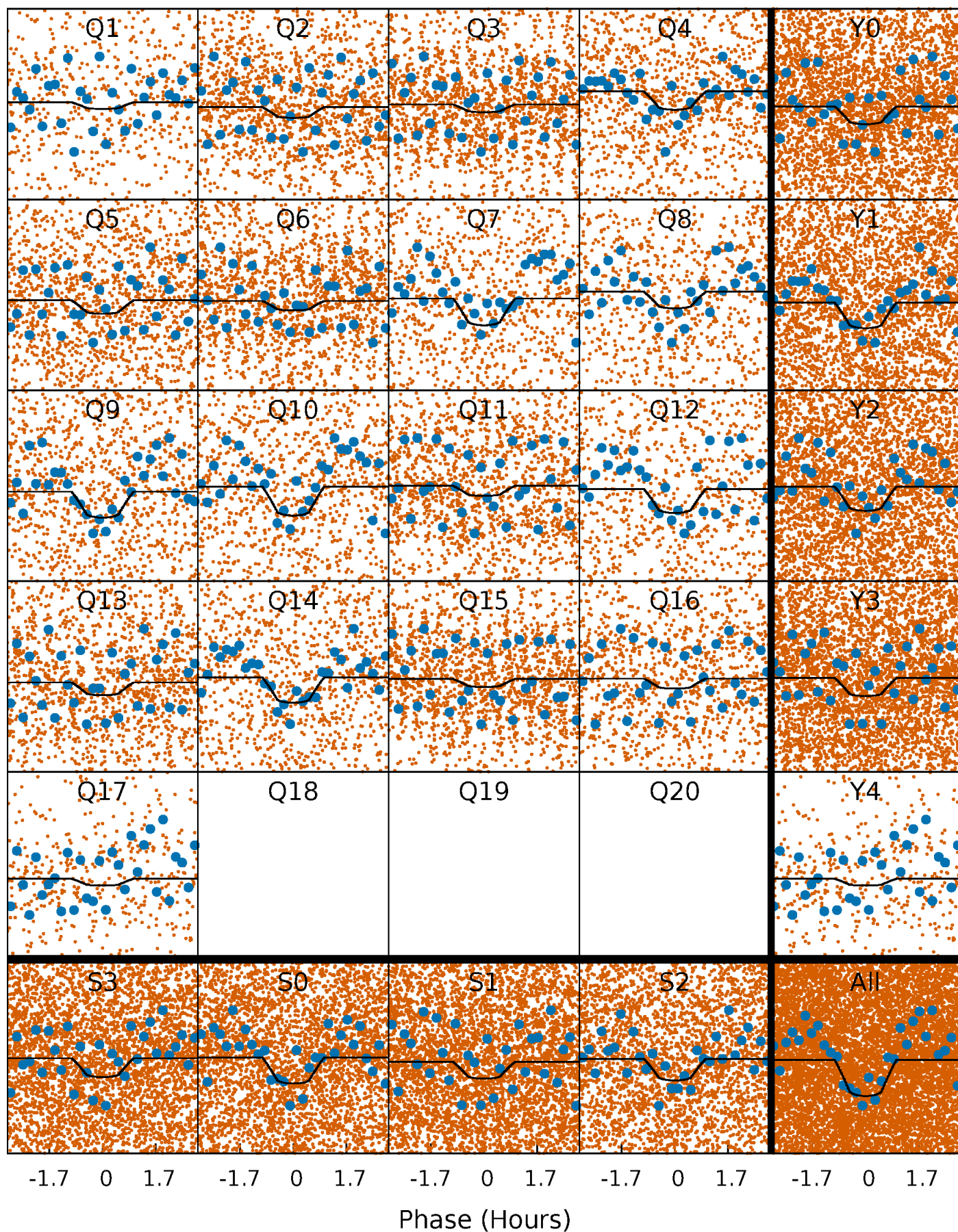
PDC Quarter-Phased Transit Curves

TCE 005617102-01 P= 0.596969 Days $T_0=132.056790$ (BKJD)



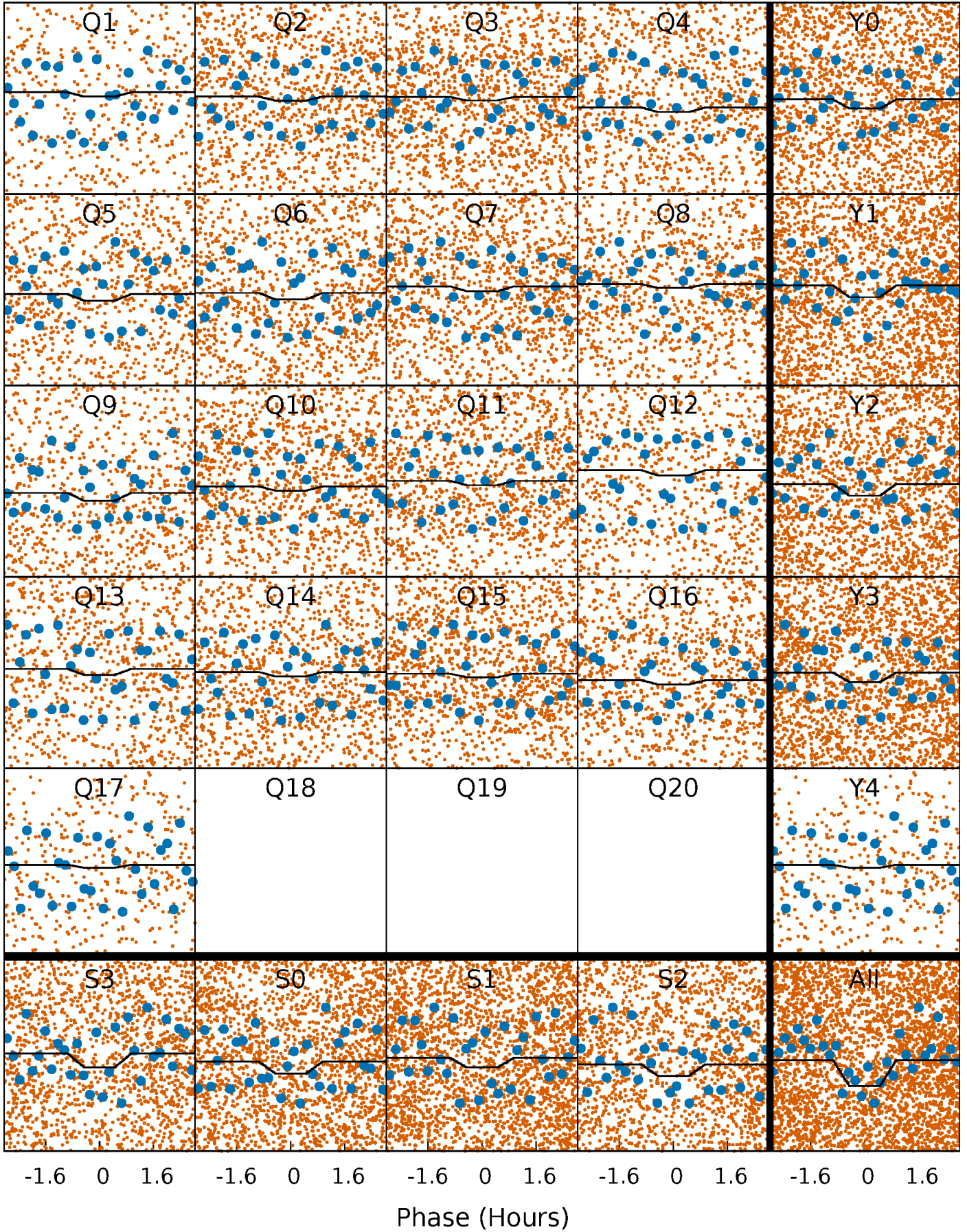
DV Quarter-Phased Transit Curves

TCE 005617102-01 P= 0.596969 Days $T_0=132.056790$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

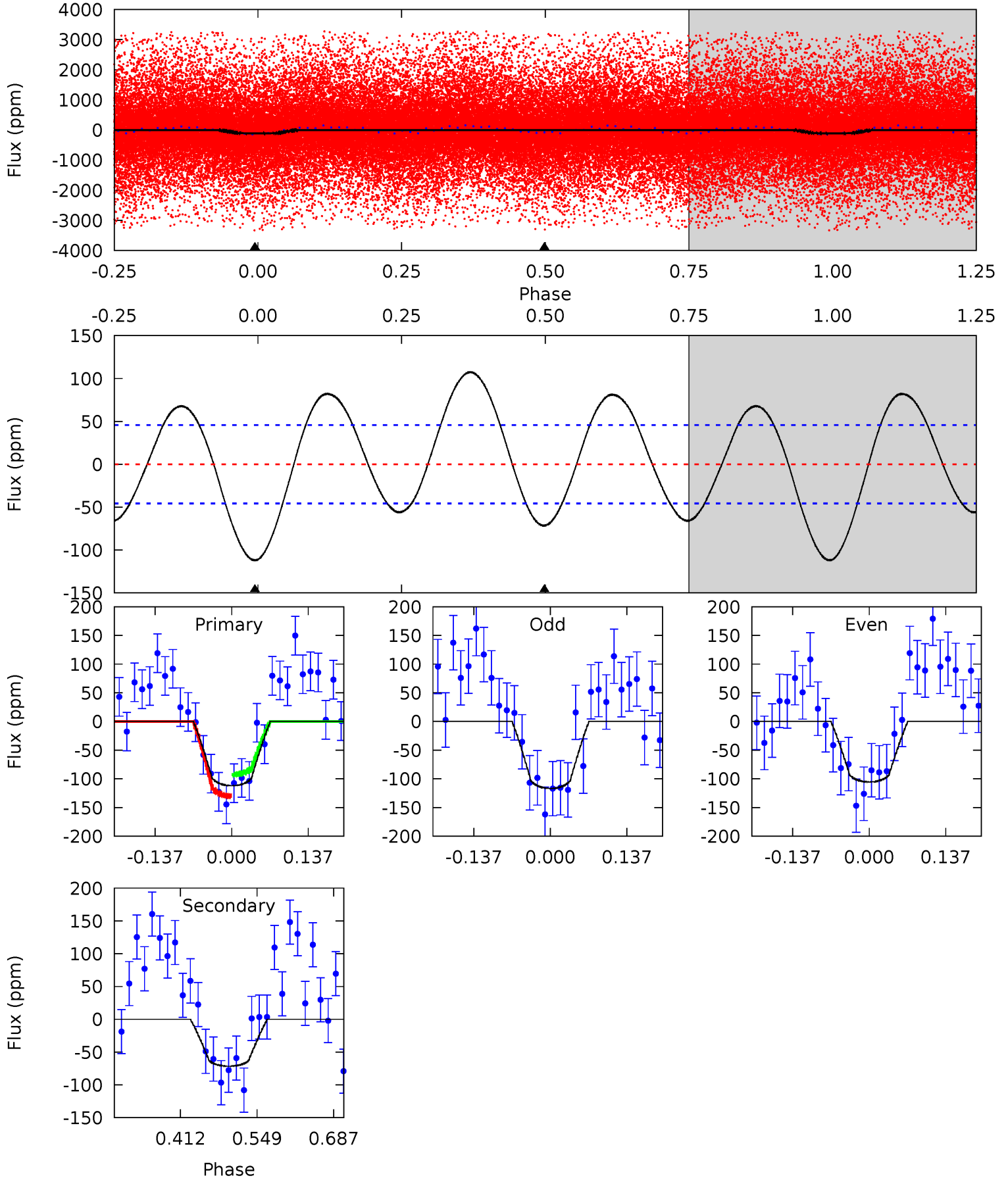
TCE 005617102-01 P= 0.596969 Days $T_0=132.056311$ (BKJD)



DV Model-Shift Uniqueness Test

005617102-01, P = 0.596969 Days, E = 131.459821 Days

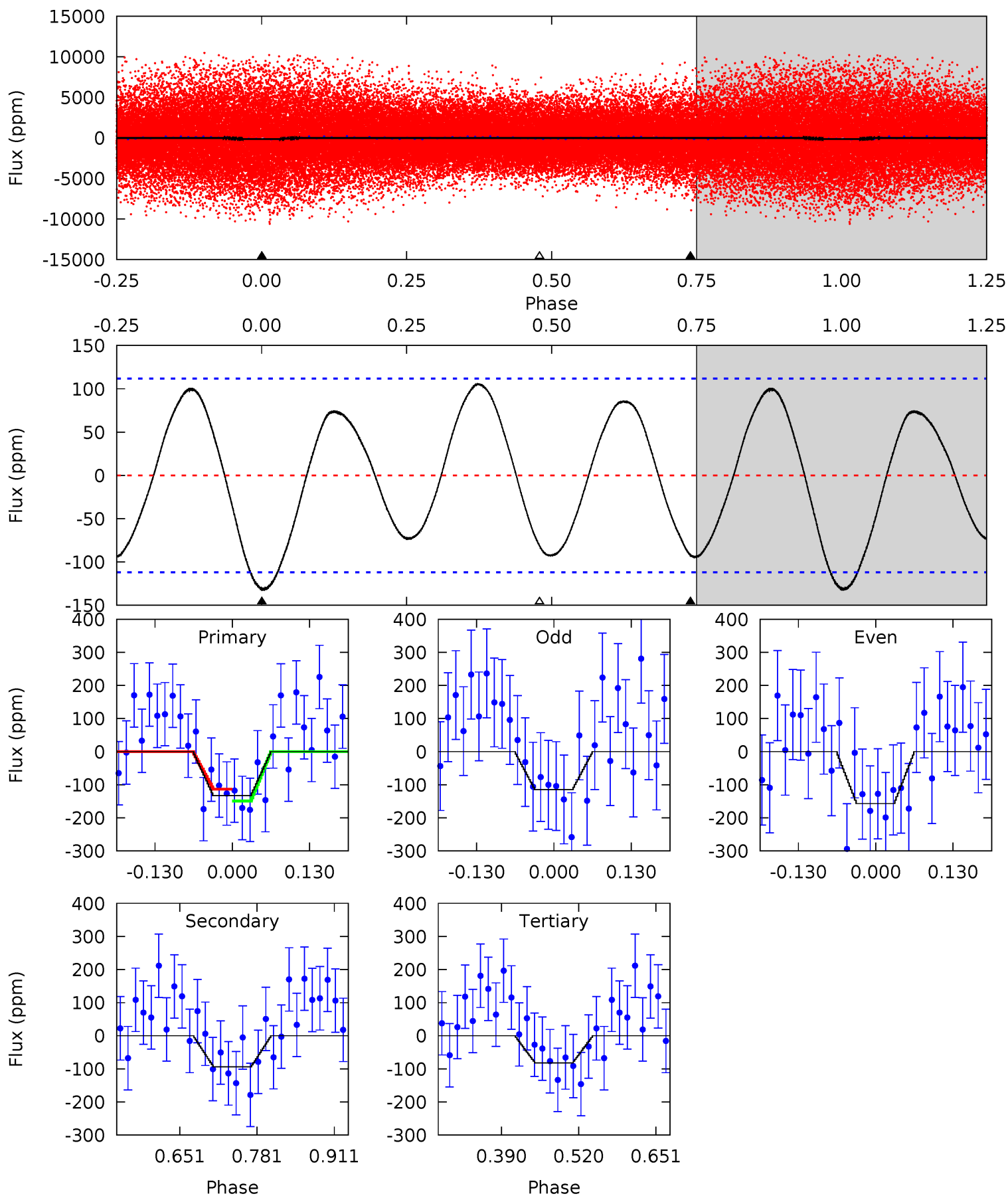
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	7.06	0	0	4.50	1.49	4.87	11.0	11.0	7.06	7.06	0.56	0.90	0.49	1.88



Alt Model-Shift Uniqueness Test

005617102-01, P = 0.596969 Days, E = 131.459342 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.37	3.79	3.31	0	4.51	1.51	2.50	2.06	5.37	0.47	3.79	0.80	1.18	0.44	0.54



Stellar Parameters For KIC 005617102

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7627^{+211}_{-316}	$4.074^{+0.160}_{-0.160}$	$-0.100^{+0.200}_{-0.350}$	$1.951^{+0.523}_{-0.476}$	$1.643^{+0.210}_{-0.257}$	$0.312^{+0.270}_{-0.147}$
	+3%/-4%	+4%/-4%	+200%/-350%	+27%/-24%	+13%/-16%	+87%/-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 005617102-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-72 ± 10	$2.14^{+0.47}_{-0.43}$	5111^{+366}_{-365}	6634^{+816}_{-688}	$2.303^{+1.311}_{-0.788}$
Alt.	-94 ± 25	$2.44^{+0.51}_{-0.43}$	5116^{+372}_{-348}	6642^{+839}_{-817}	$2.308^{+1.263}_{-0.876}$

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 $A_{obs} \gg 1.0$

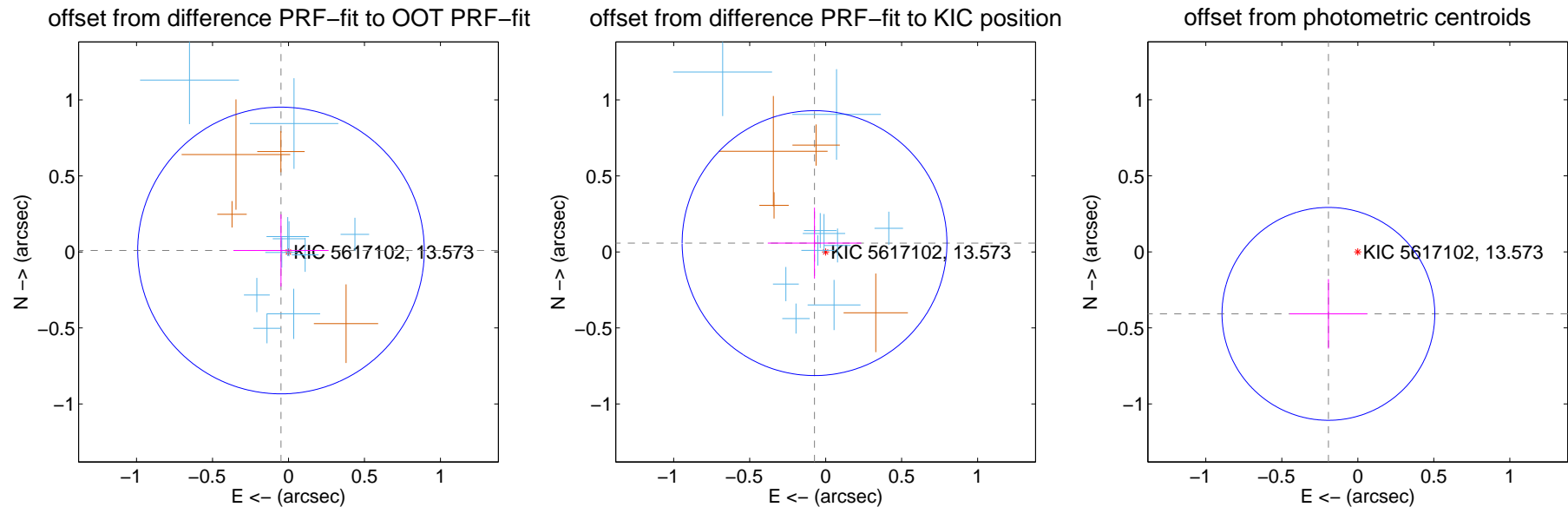
DV Centroid Data

Supplemental centroid analysis for 005617102-01. Kepler magnitude: 13.57. Transit SNR 11.95

There are 11 quarters with good PRF difference image offsets

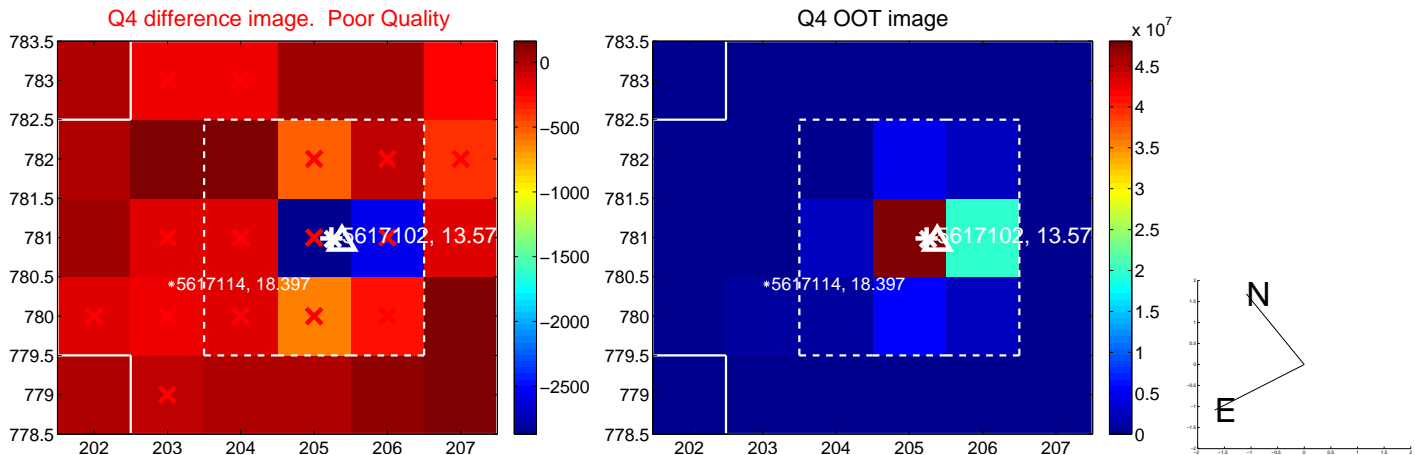
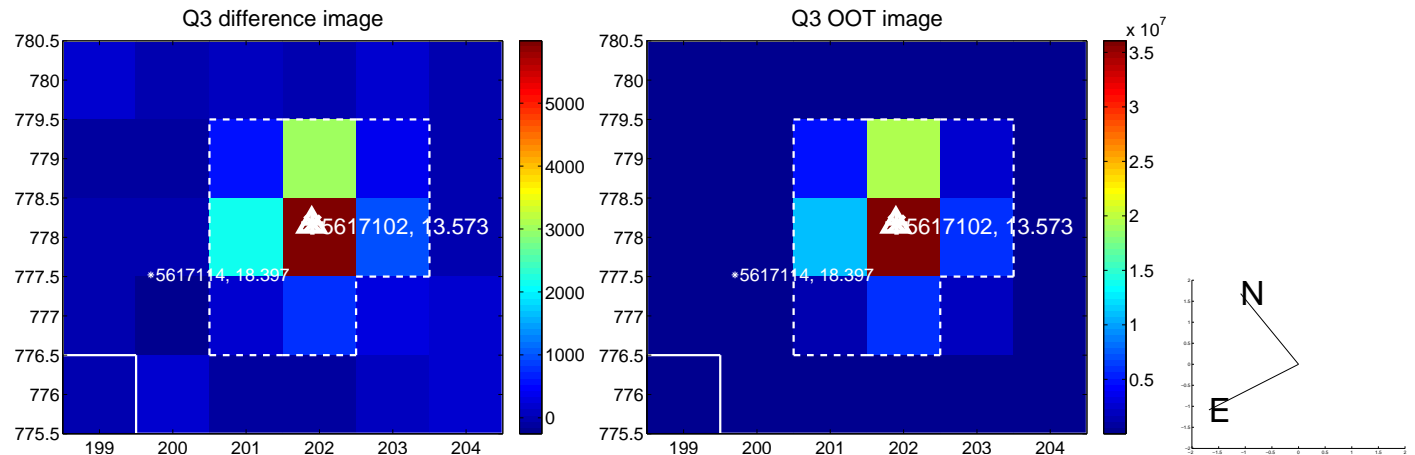
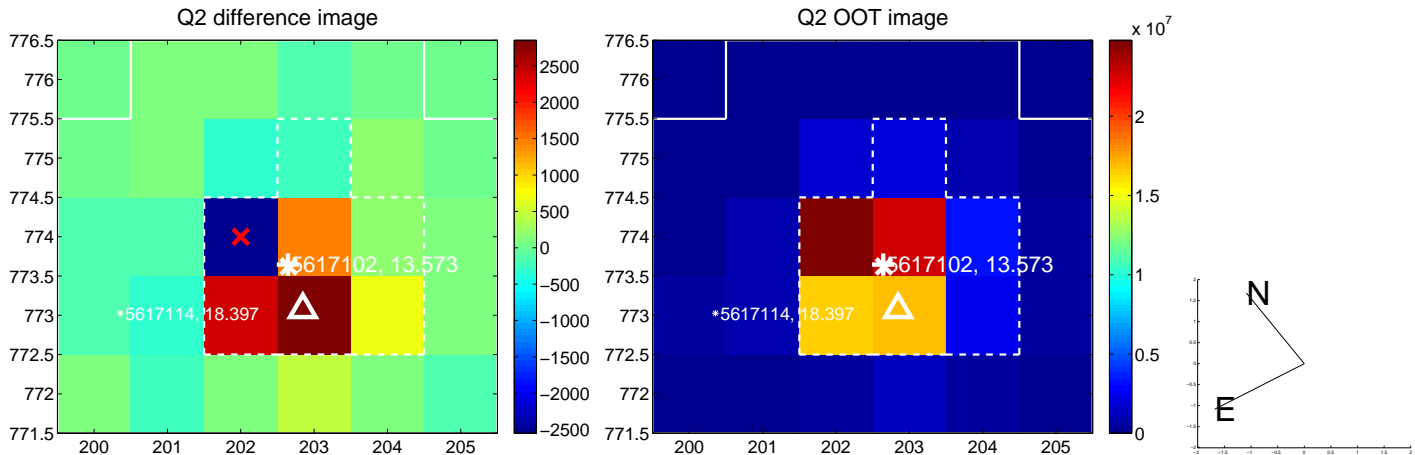
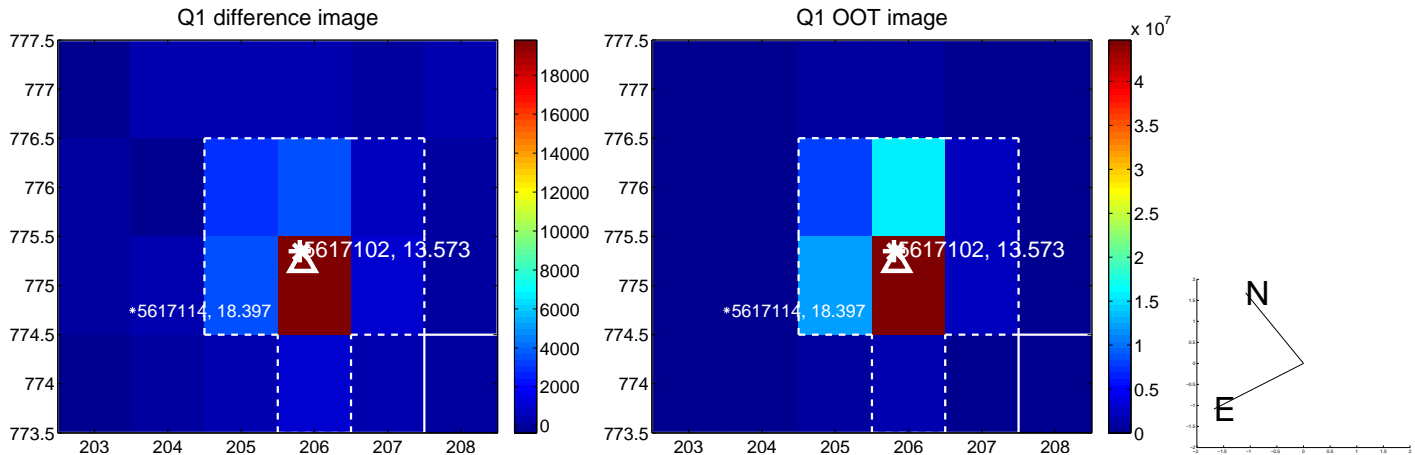
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.050 ± 0.314	0.16	0.049 ± 0.313	0.009 ± 0.237
PRF-fit source offset from KIC position	0.093 ± 0.290	0.32	0.073 ± 0.308	0.058 ± 0.233
photometric centroid source offset	0.45 ± 0.23	1.93	0.19 ± 0.25	-0.41 ± 0.23

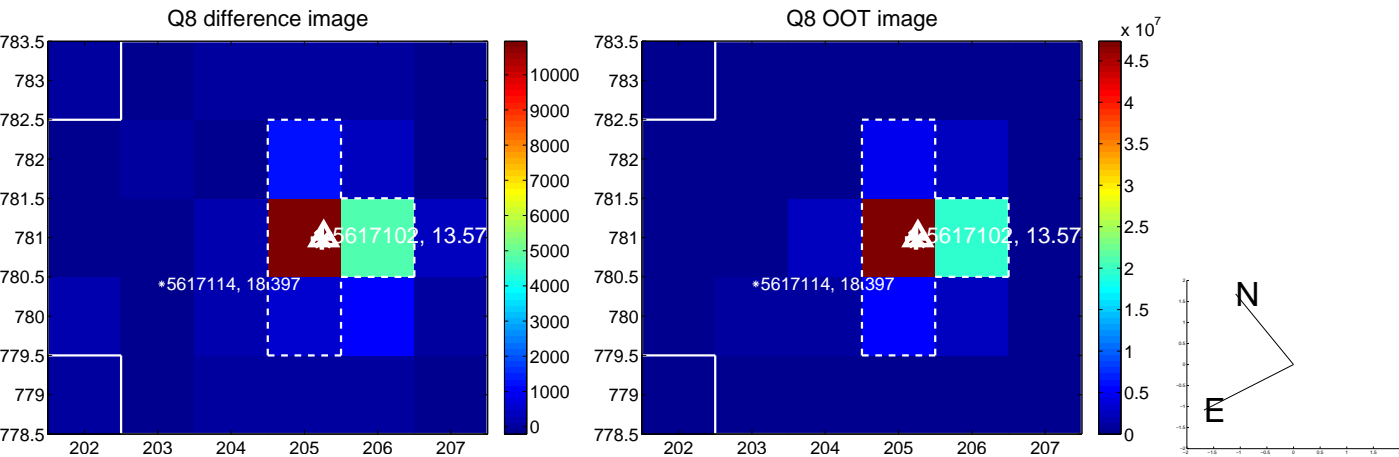
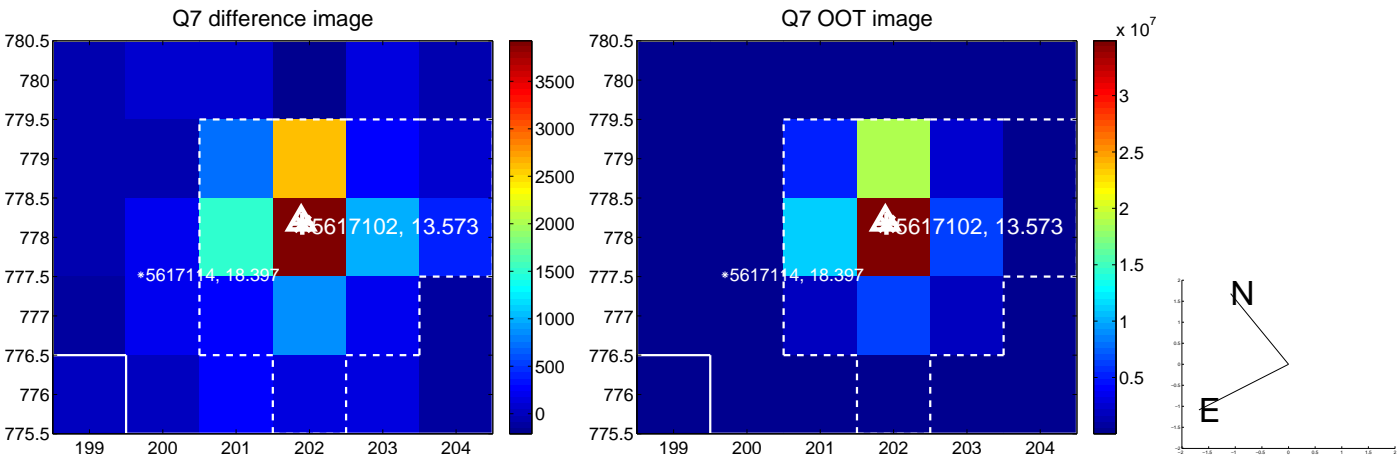
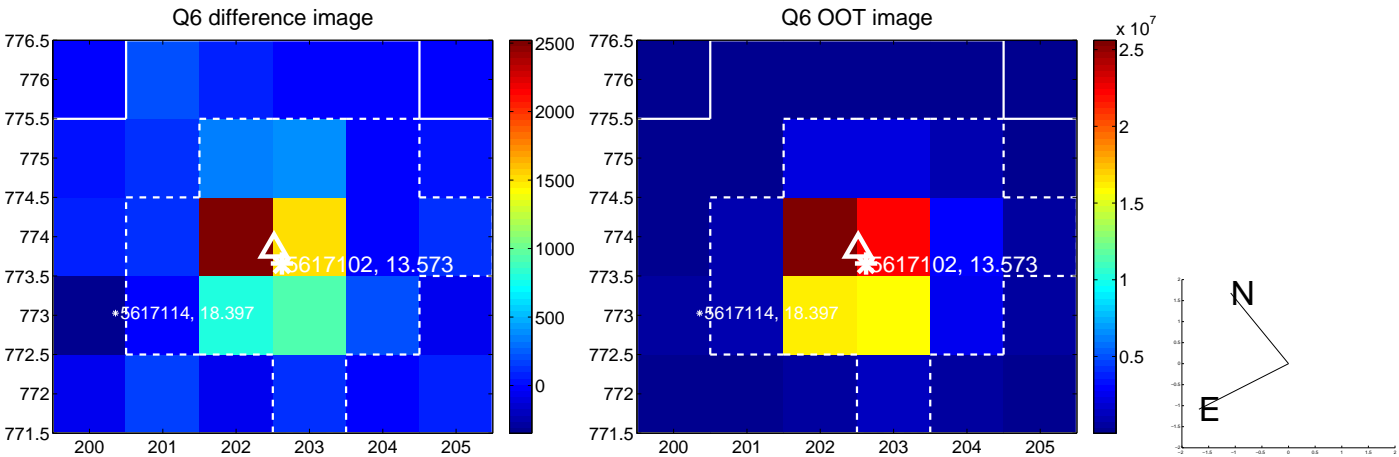
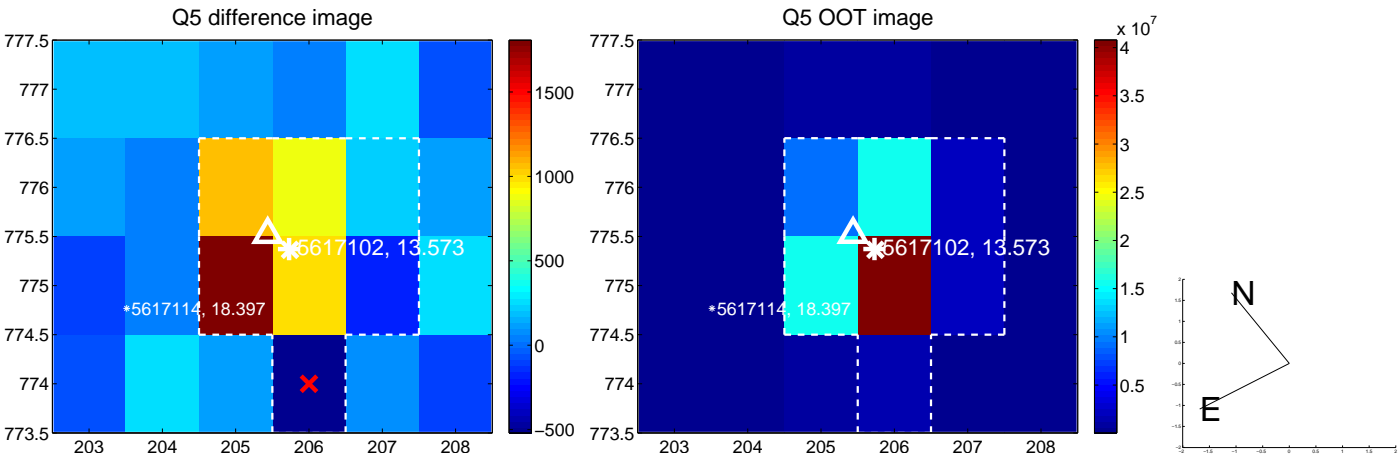


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

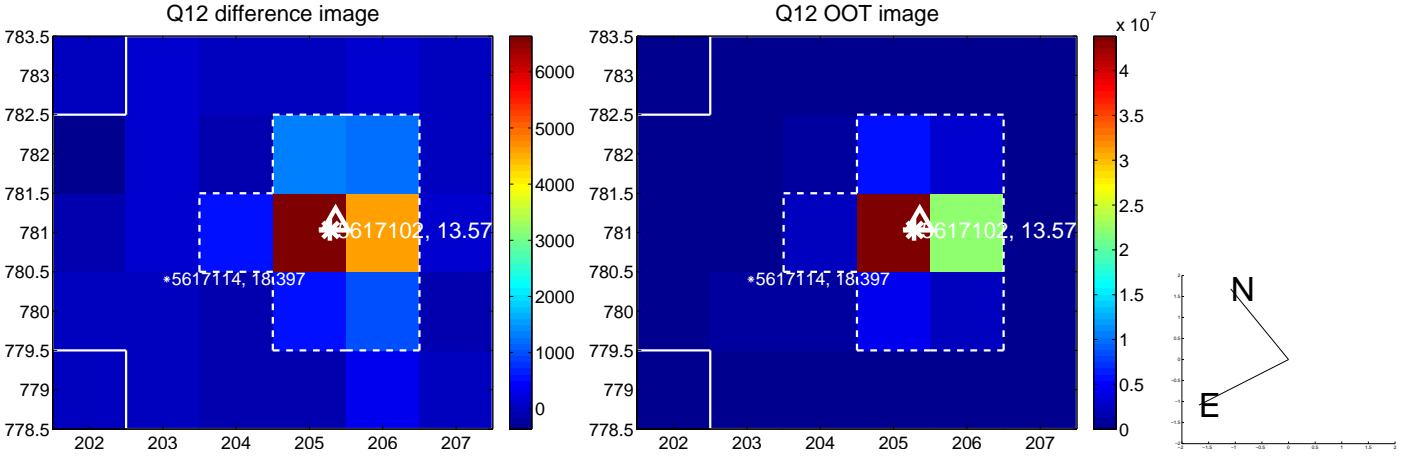
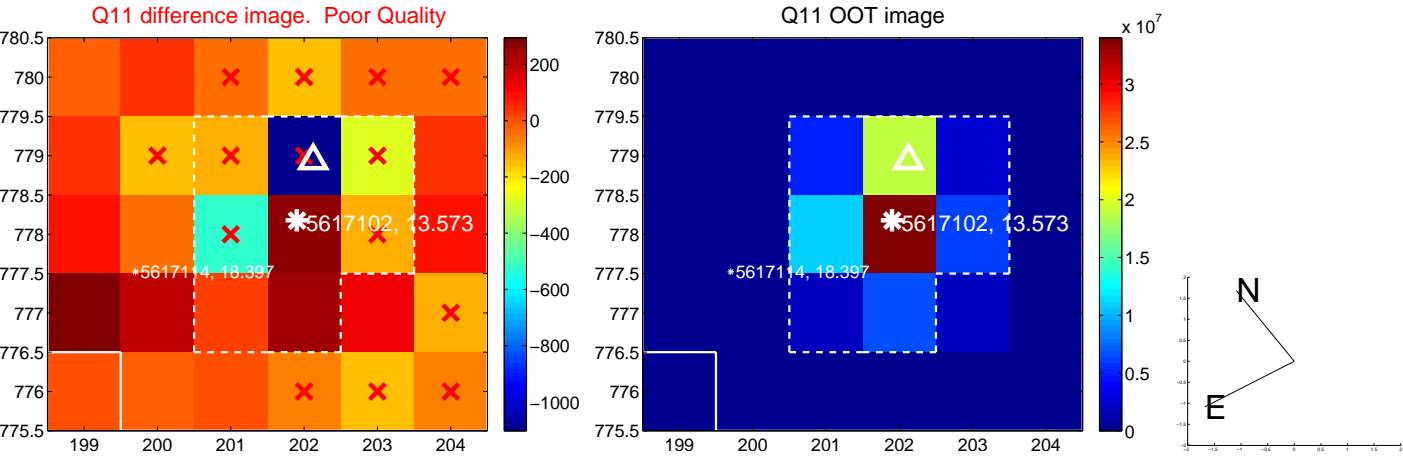
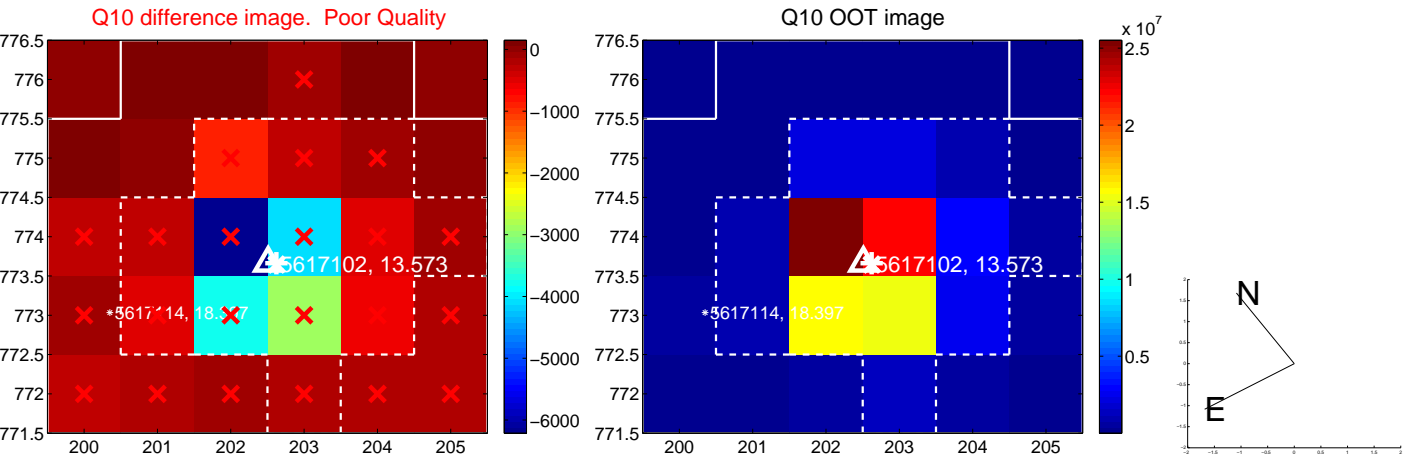
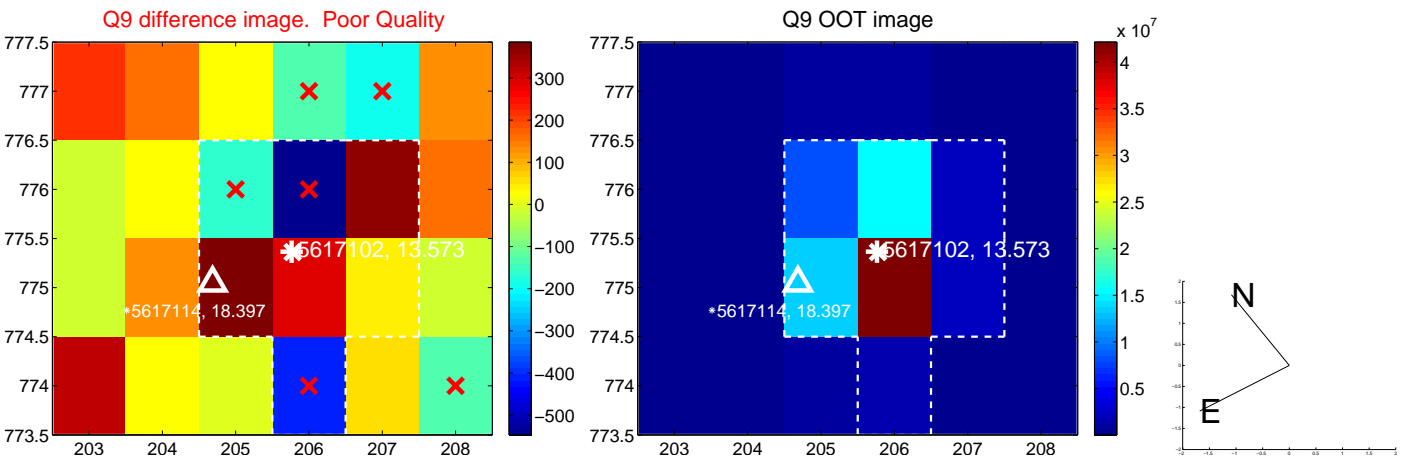
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



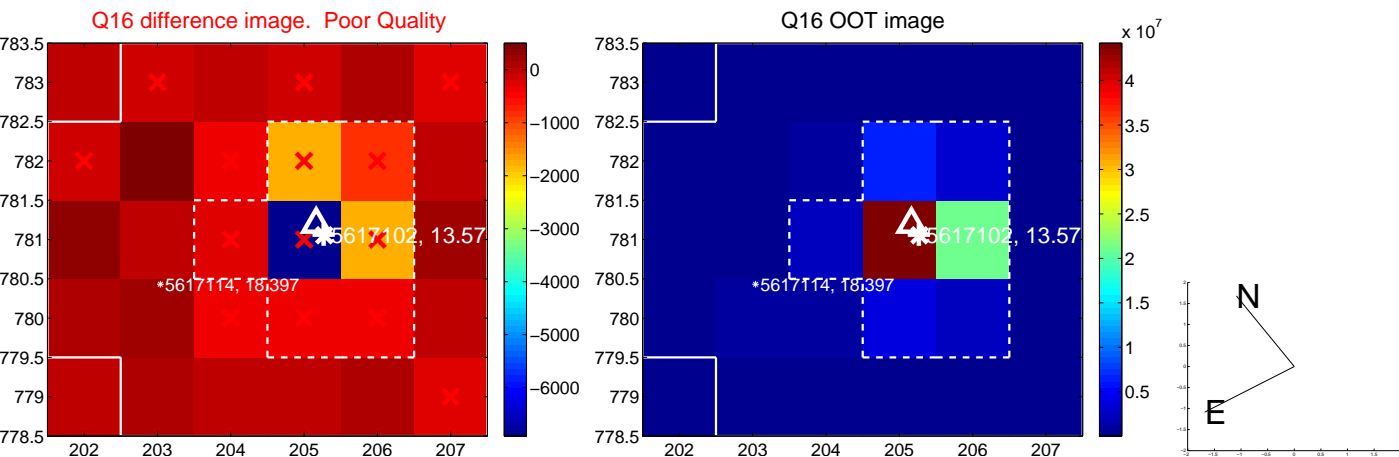
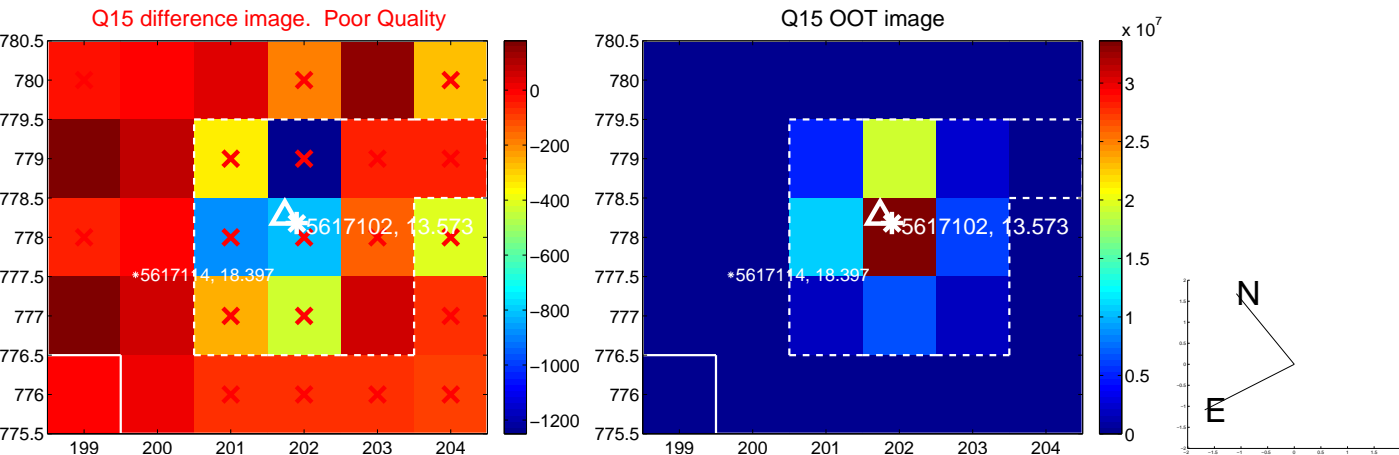
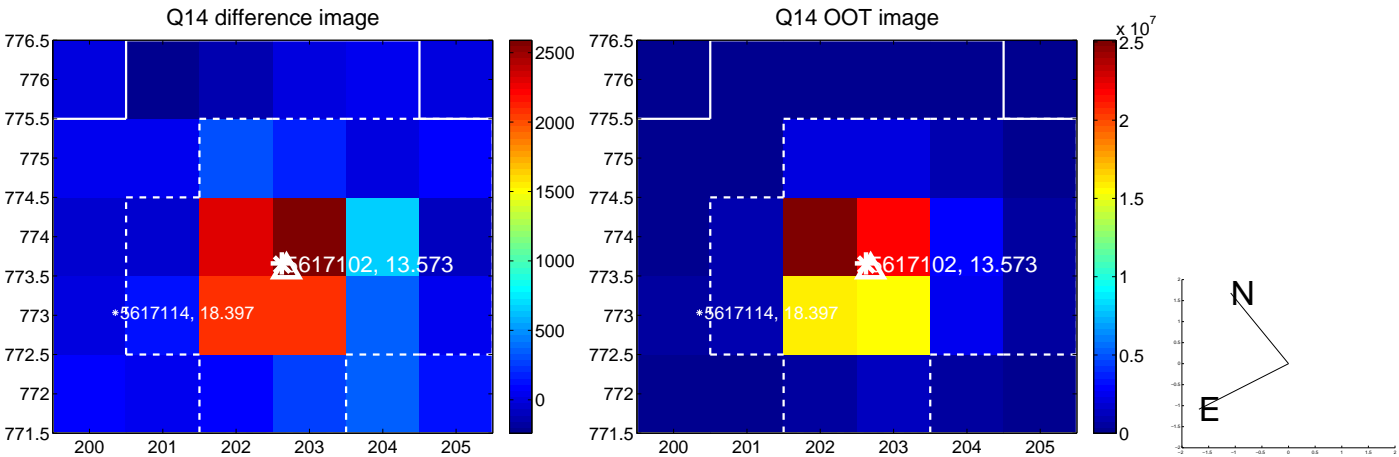
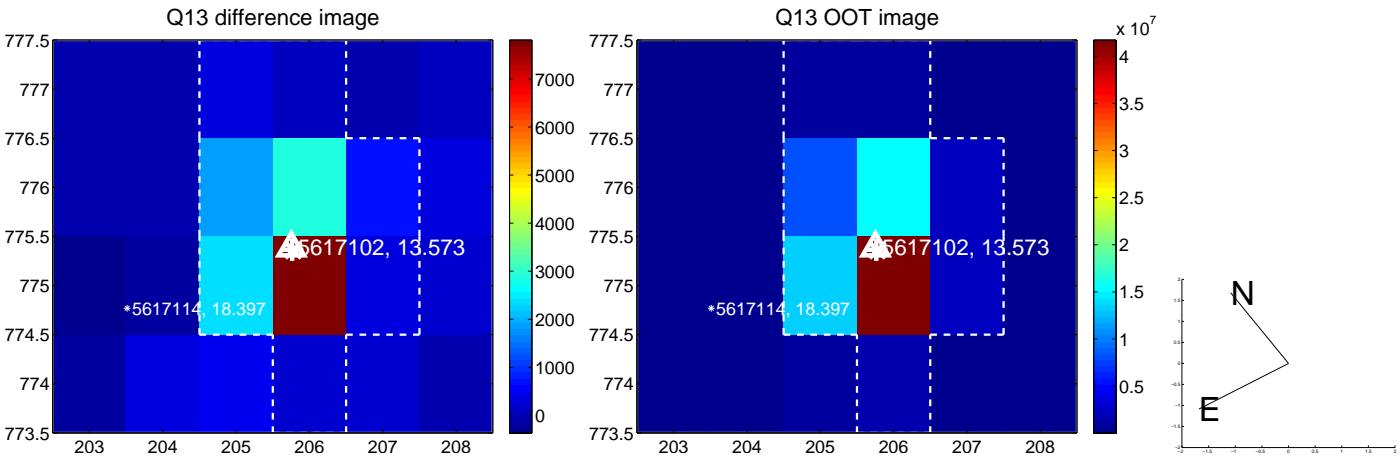
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

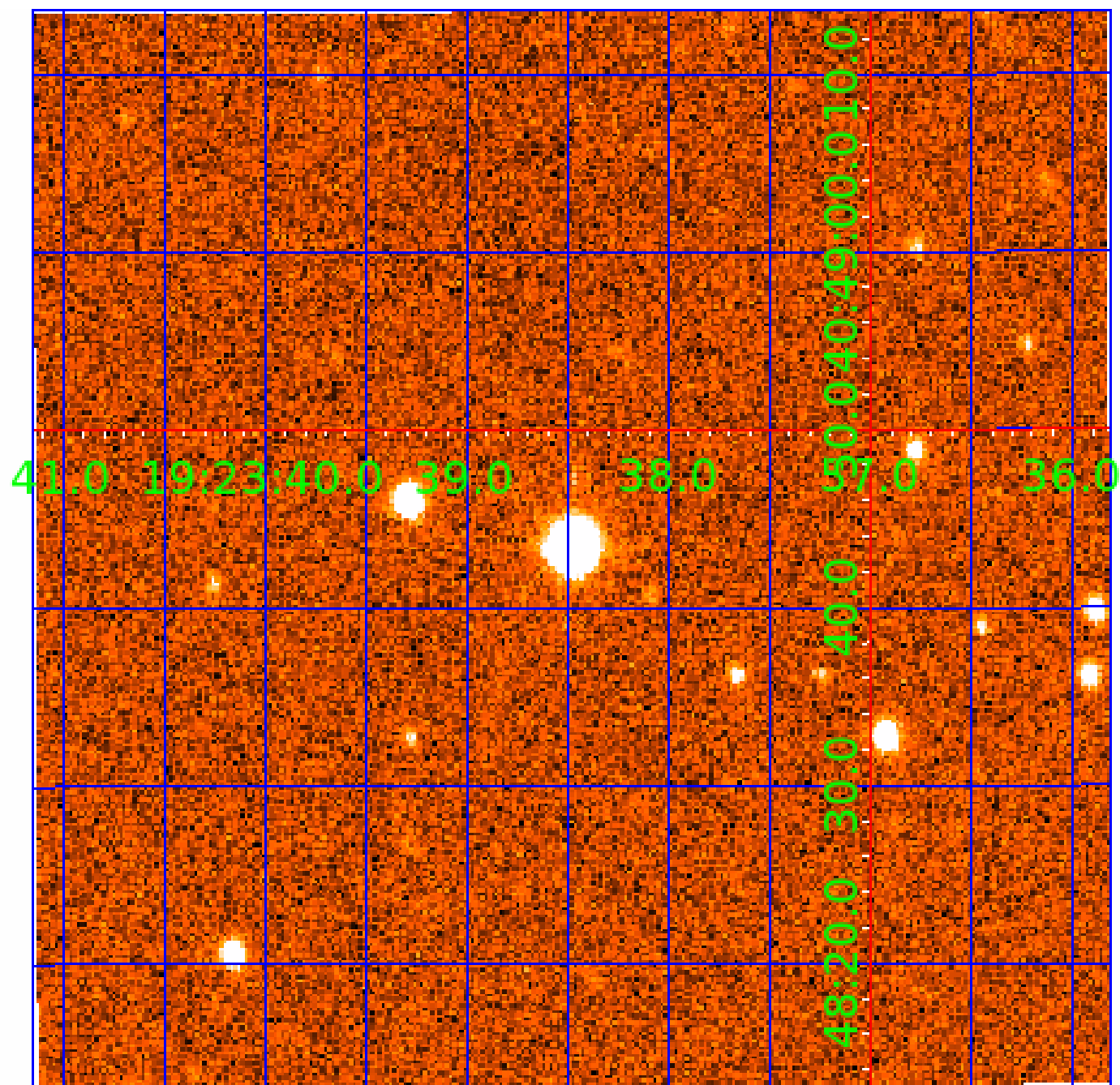


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005617102

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})
005617102-01	OBS	No	0.596969	132.056790	111.5	1.523	12.9	11.9	1.95	7627	2.14	42974.59
005617102-02	OBS	No	0.596976	131.746610	343.6	2.000	13.1	-1.0	1.95	7627	3.68	42973.96
005617102-03	OBS	No	0.940473	132.125074	761.2	3.168	11.1	17.8	1.95	7627	6.23	23443.32
005617102-04	OBS	No	0.940461	131.742574	193.1	3.500	13.2	-1.0	1.95	7627	2.75	23443.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005617102-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005617102-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_NOFITS
005617102-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005617102-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—SAME_NTL_PERIOD—CENT_NOFITS

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

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

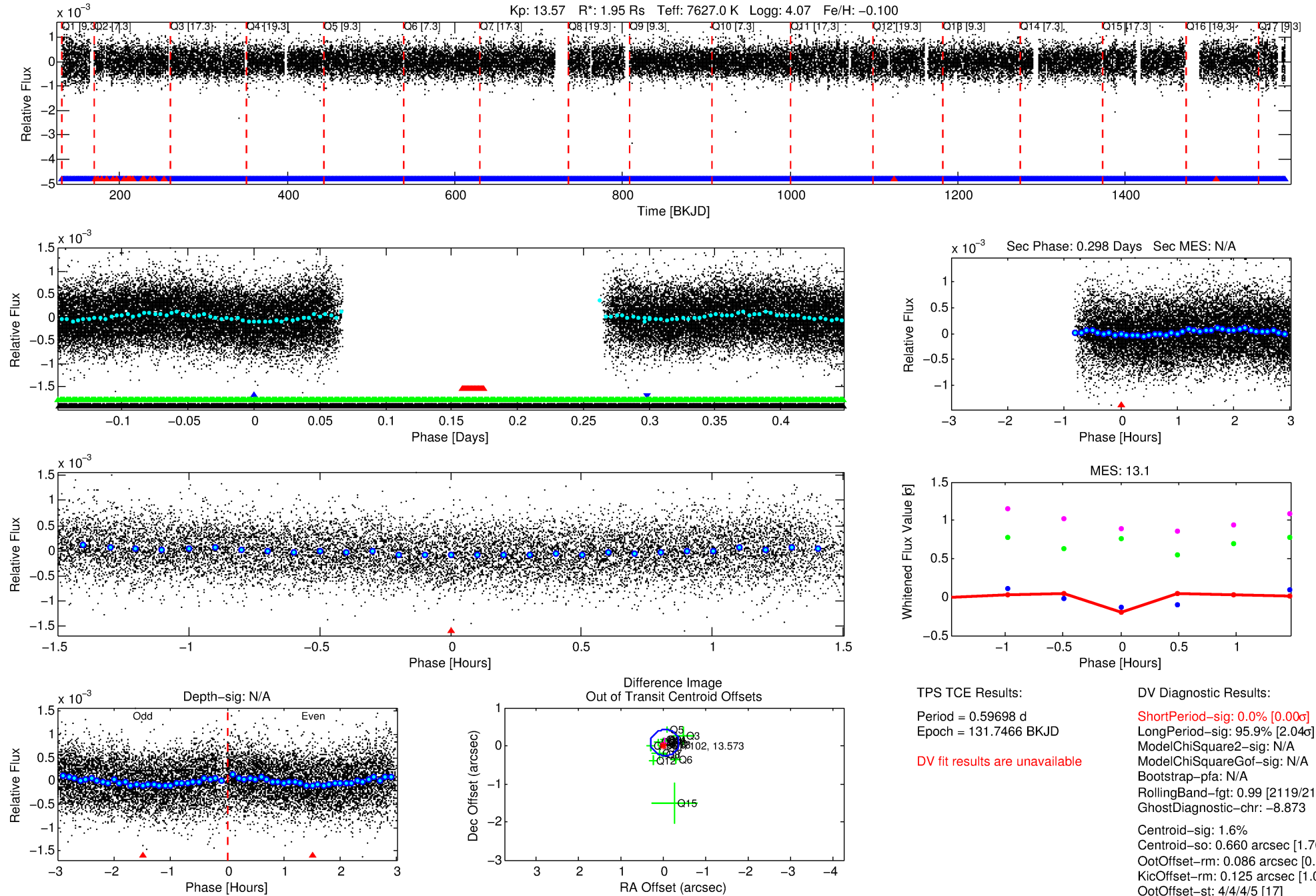
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005617102-02

No Significant Match Found

DV One-Page Summary

KIC: 5617102 Candidate: 2 of 4 Period: 0.597 d



TPS TCE Results:

Period = 0.59698 d
Epoch = 131.7466 BKJD

DV fit results are unavailable

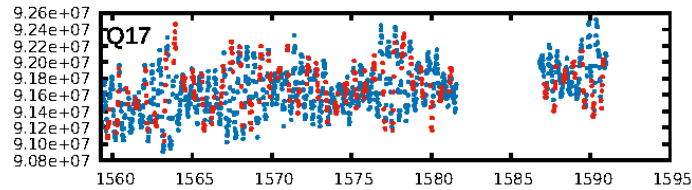
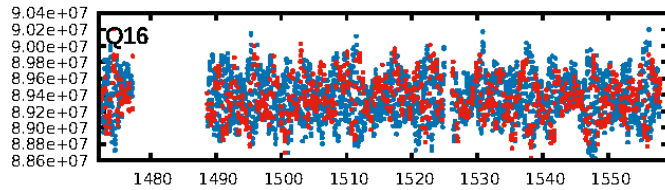
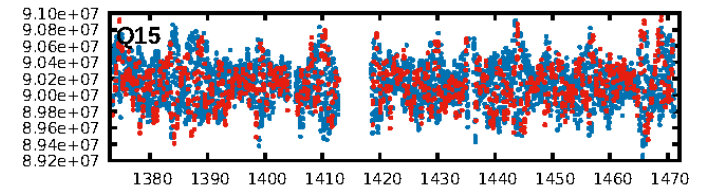
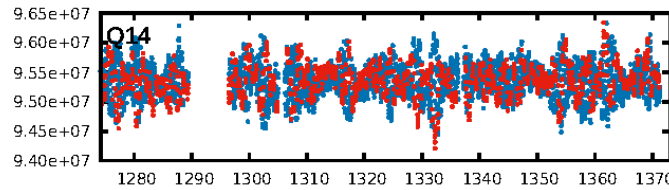
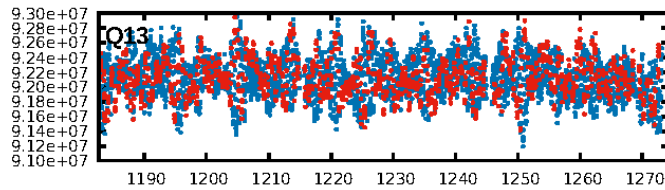
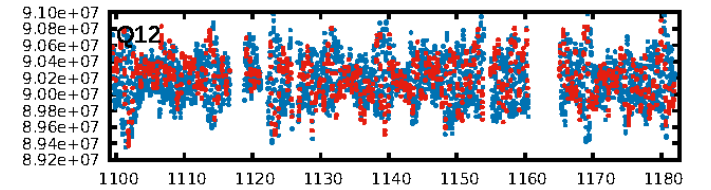
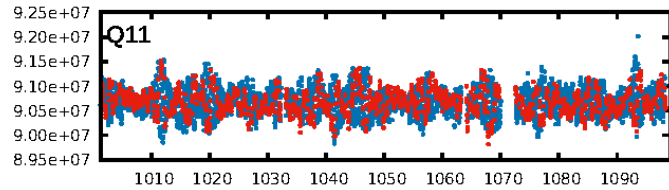
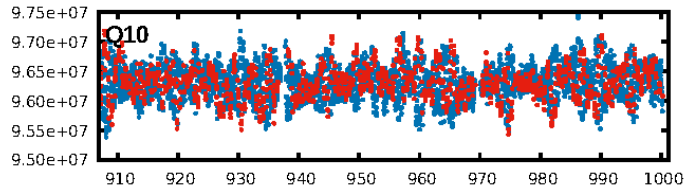
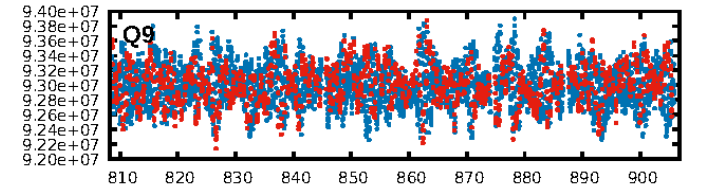
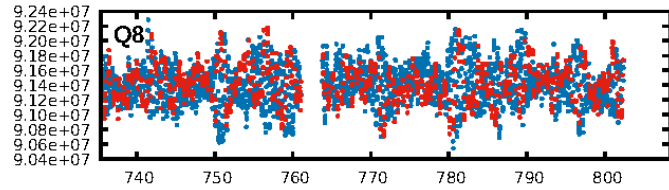
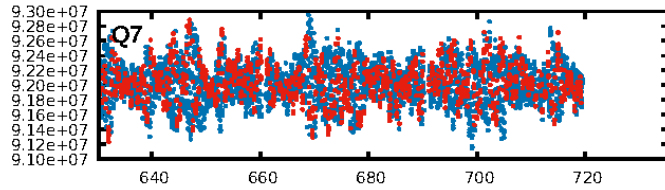
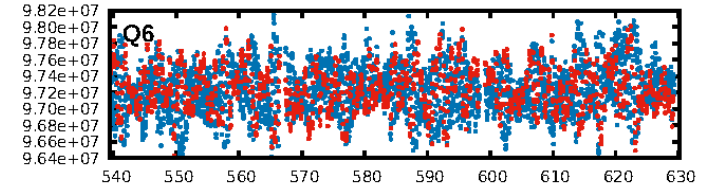
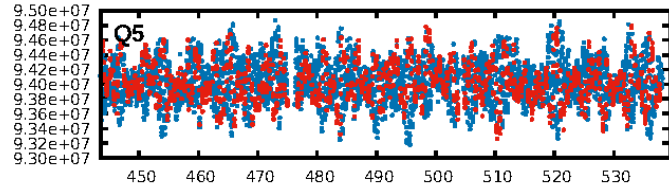
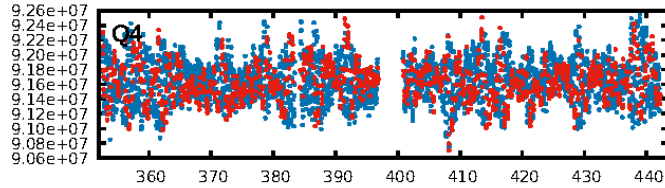
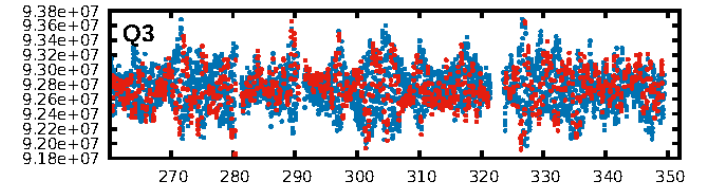
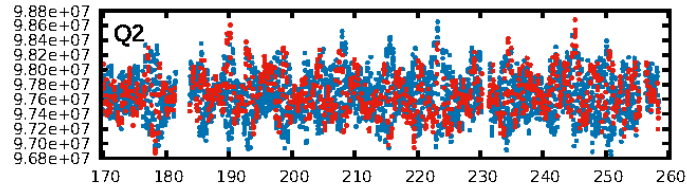
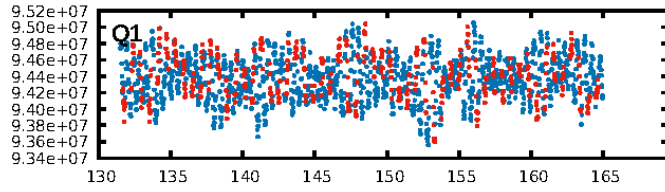
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 95.9% [2.04 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [2119/2141]
GhostDiagnostic-chr: -8.873
Centroid-sig: 1.6%
Centroid-so: 0.660 arcsec [1.70 σ]
OotOffset-rm: 0.086 arcsec [0.76 σ]
KicOffset-rm: 0.125 arcsec [1.07 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.53 [9/17]
DiffImageOverlap-fno: 0.00 [0/17]

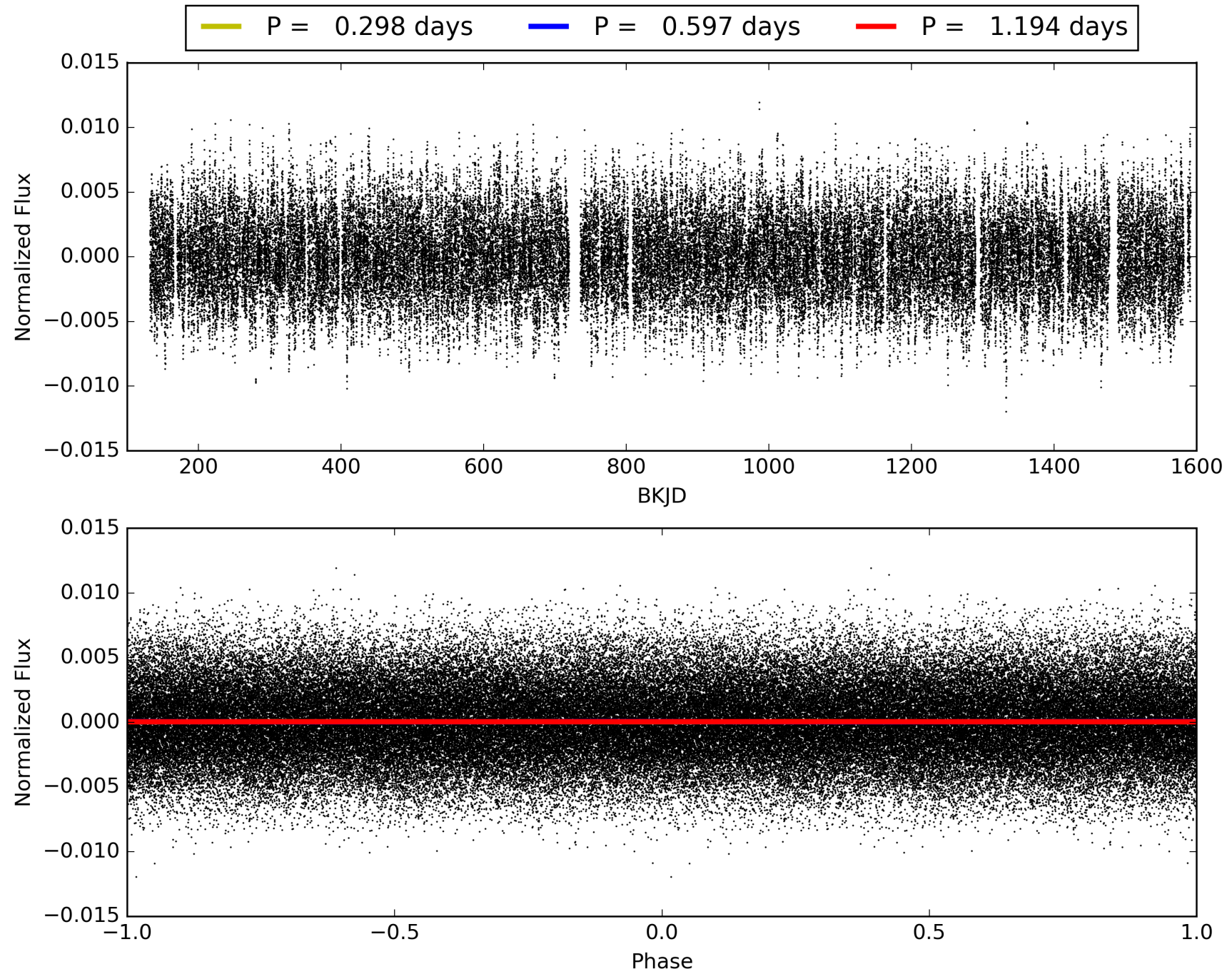
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:14:30 Z

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

TCE 005617102-02, PDC Light Curves

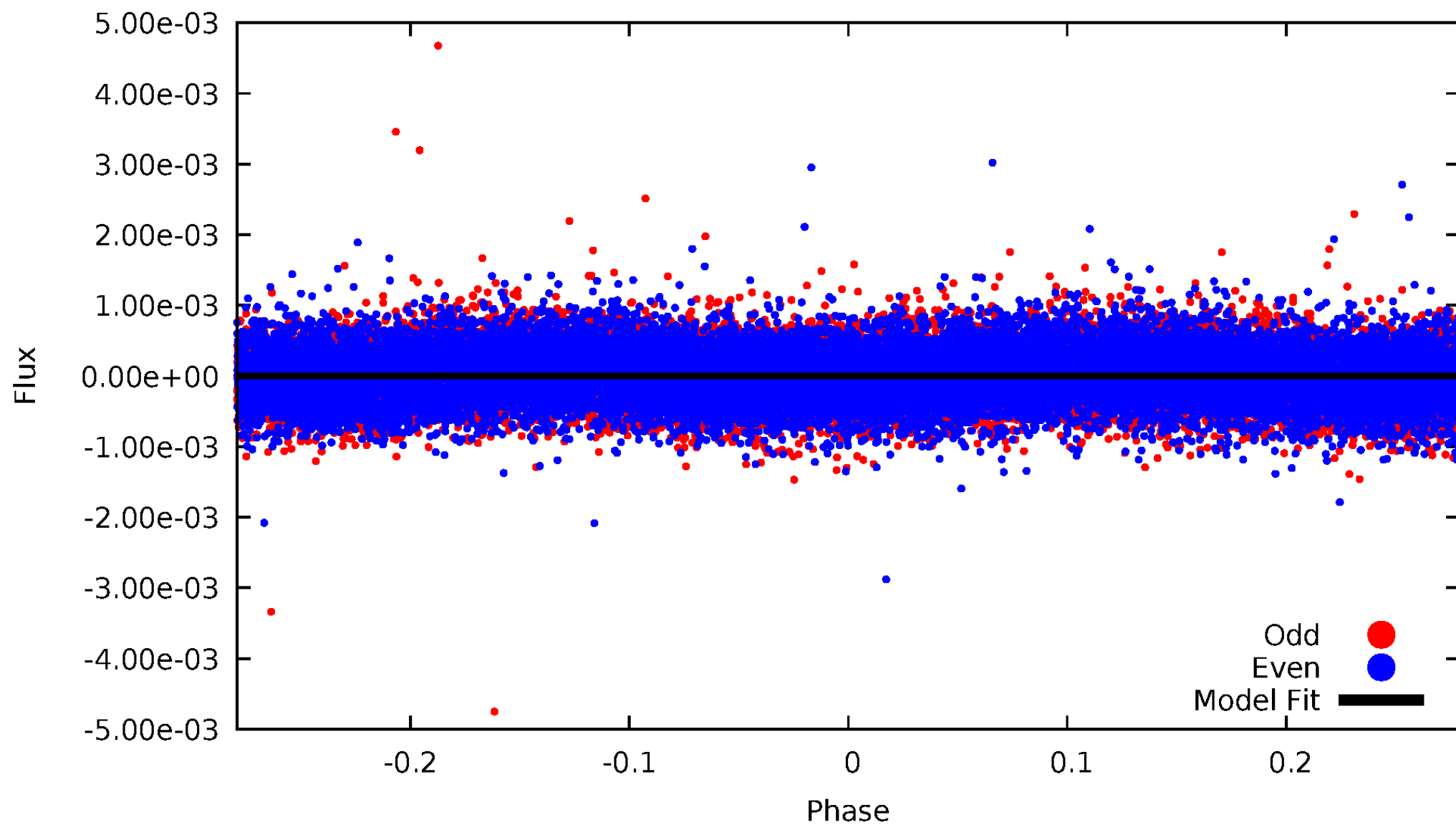


TCE 005617102-02



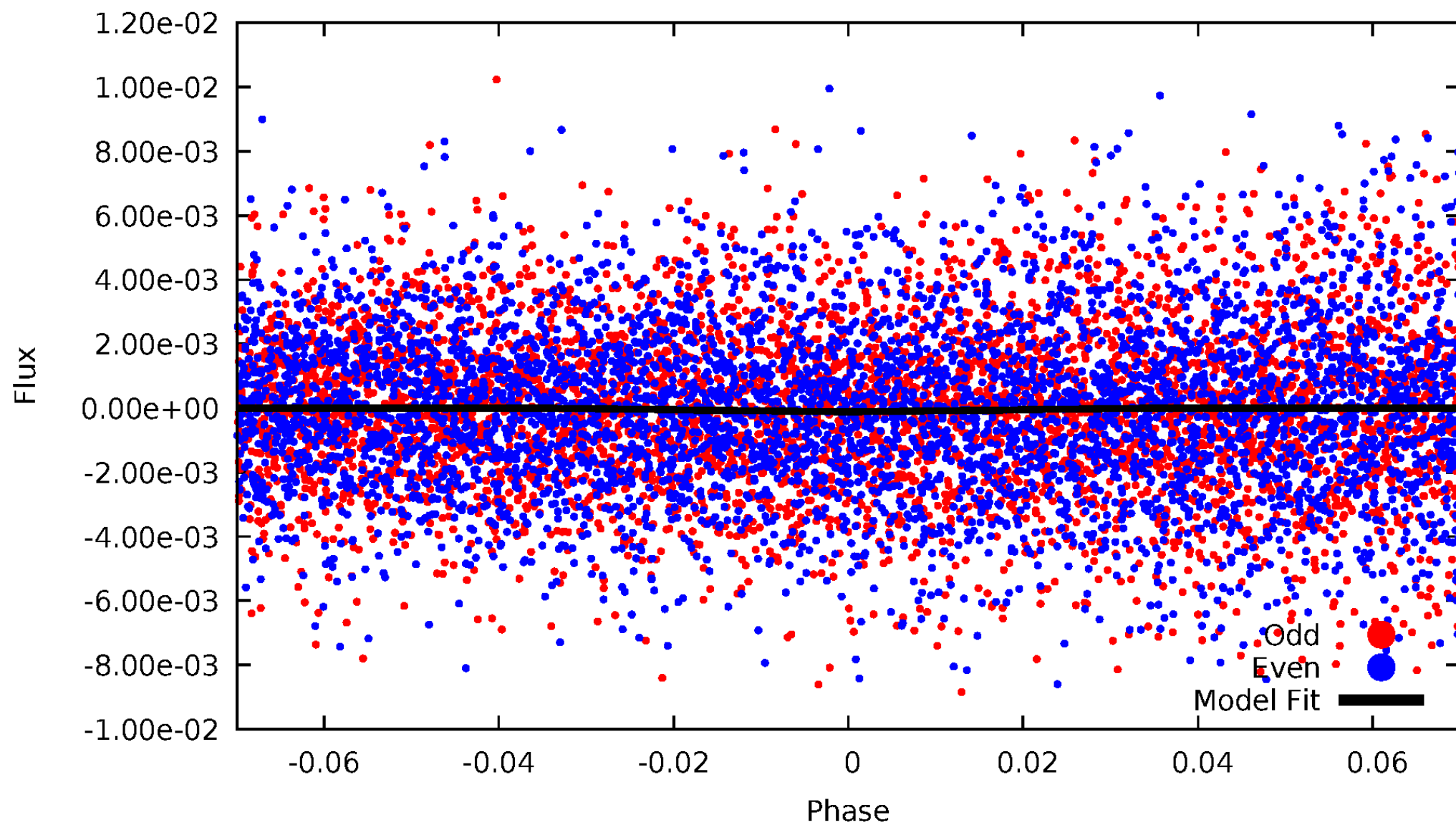
DV Odd/Even

TCE 005617102-02



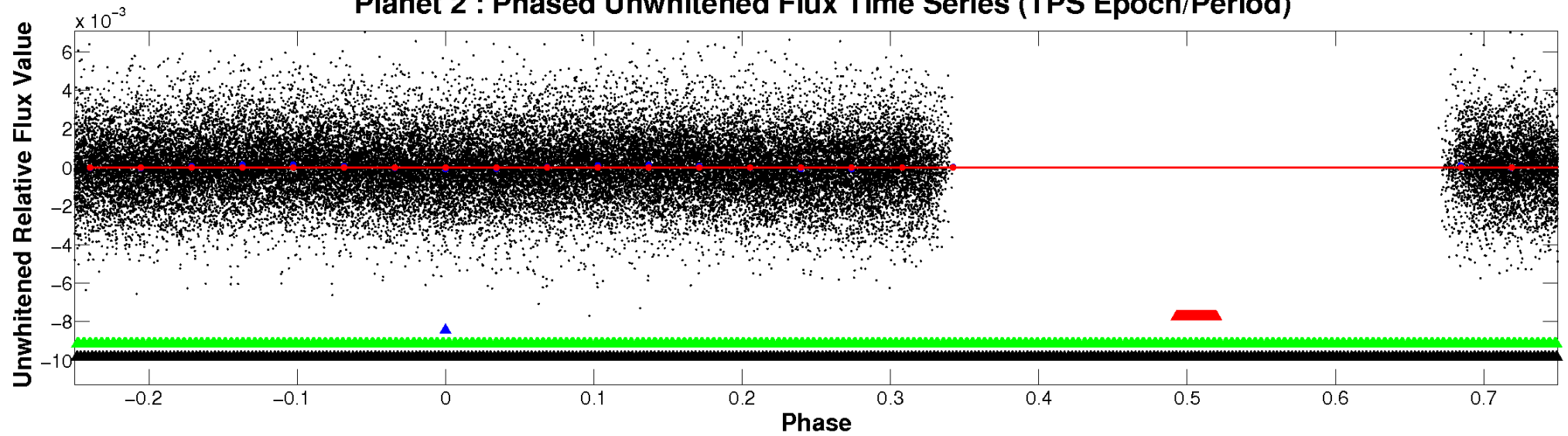
ALT Odd/Even

TCE 005617102-02

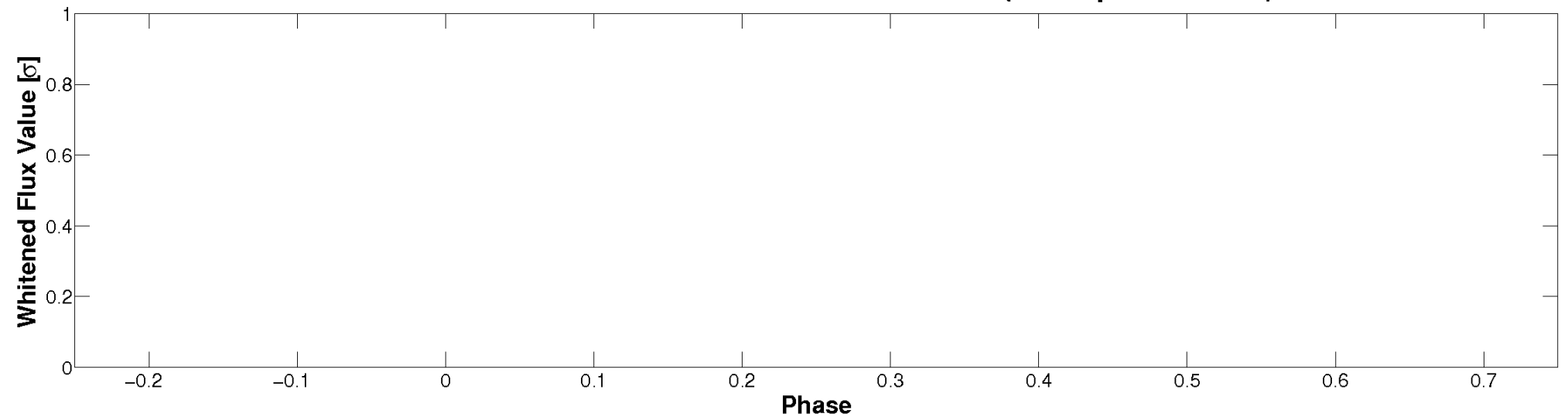


Non-Whitened Vs. Whitened Light Curve

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

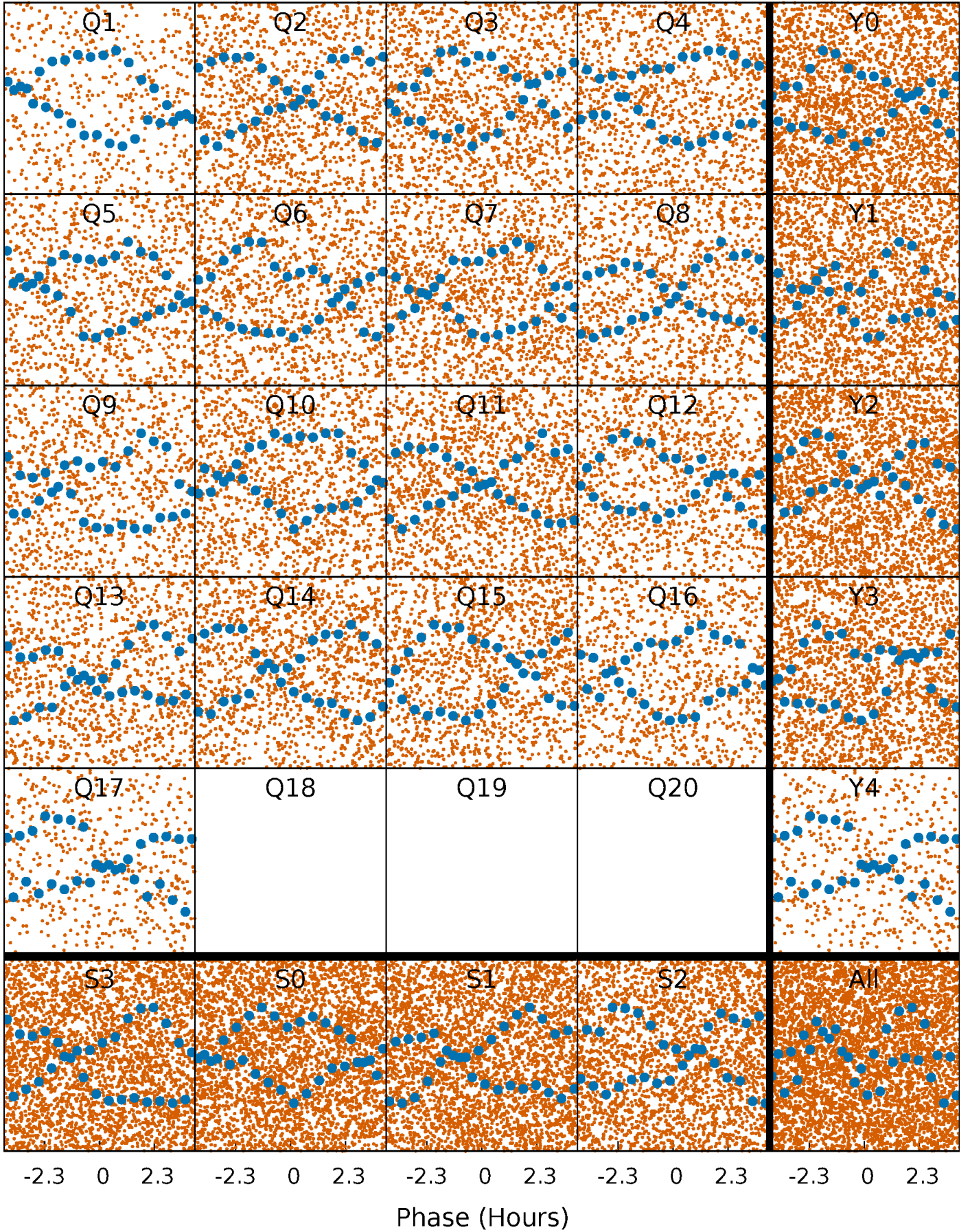


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



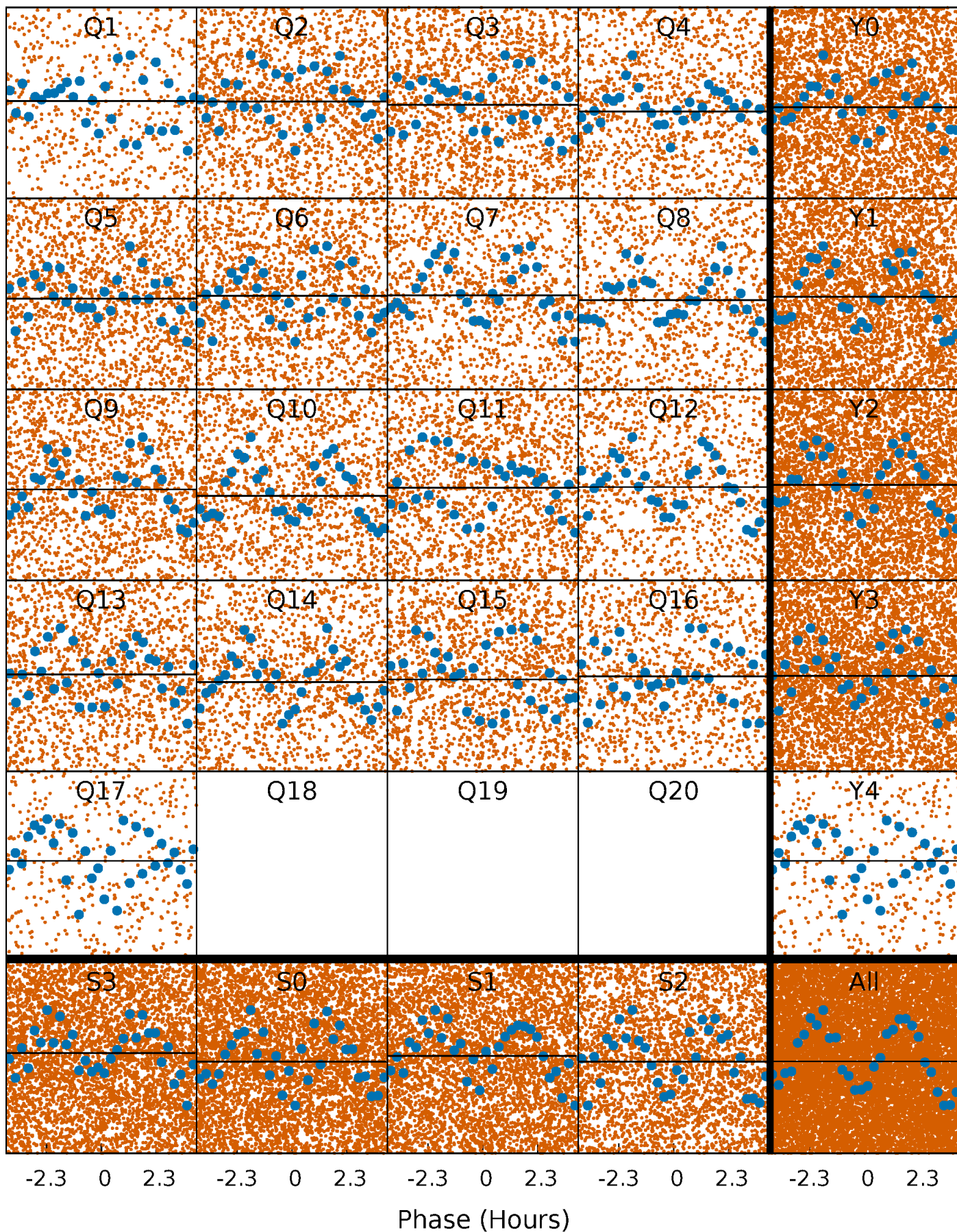
PDC Quarter-Phased Transit Curves

TCE 005617102-02 P= 0.596976 Days $T_0=131.746610$ (BKJD)



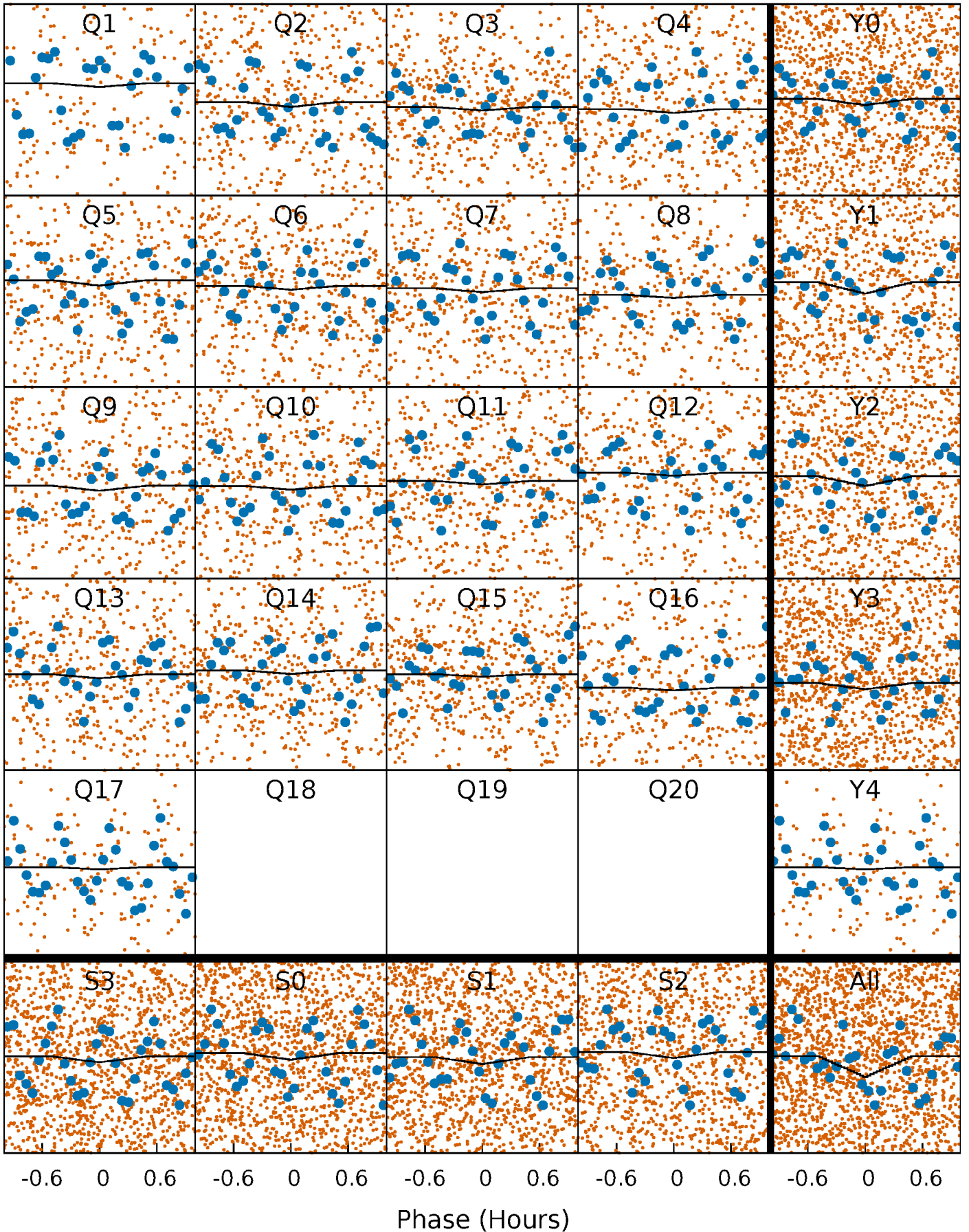
DV Quarter-Phased Transit Curves

TCE 005617102-02 P= 0.596976 Days $T_0=131.746610$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

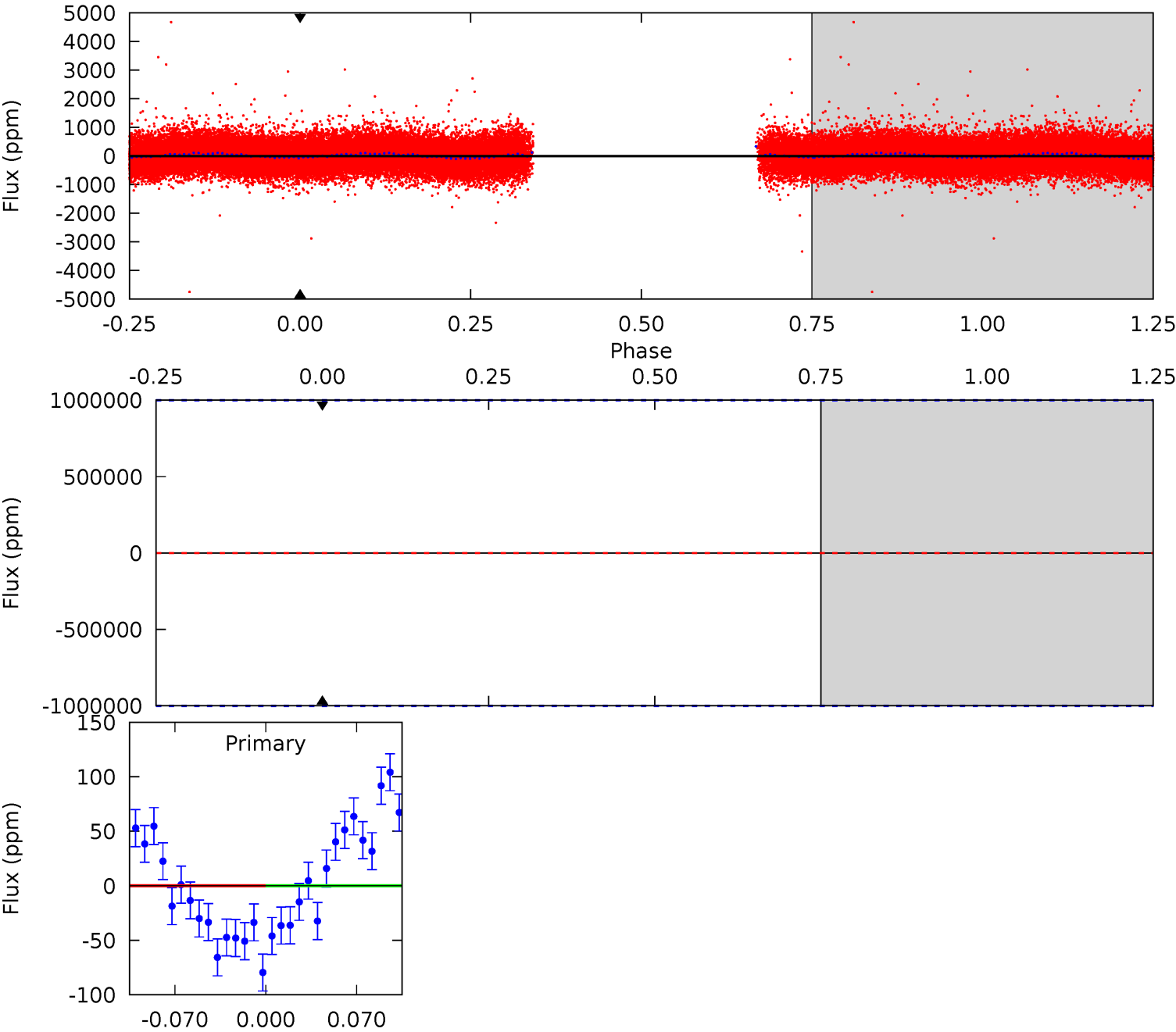
TCE 005617102-02 P= 0.596976 Days $T_0=131.882745$ (BKJD)



DV Model-Shift Uniqueness Test

005617102-02, P = 0.596976 Days, E = 131.149634 Days

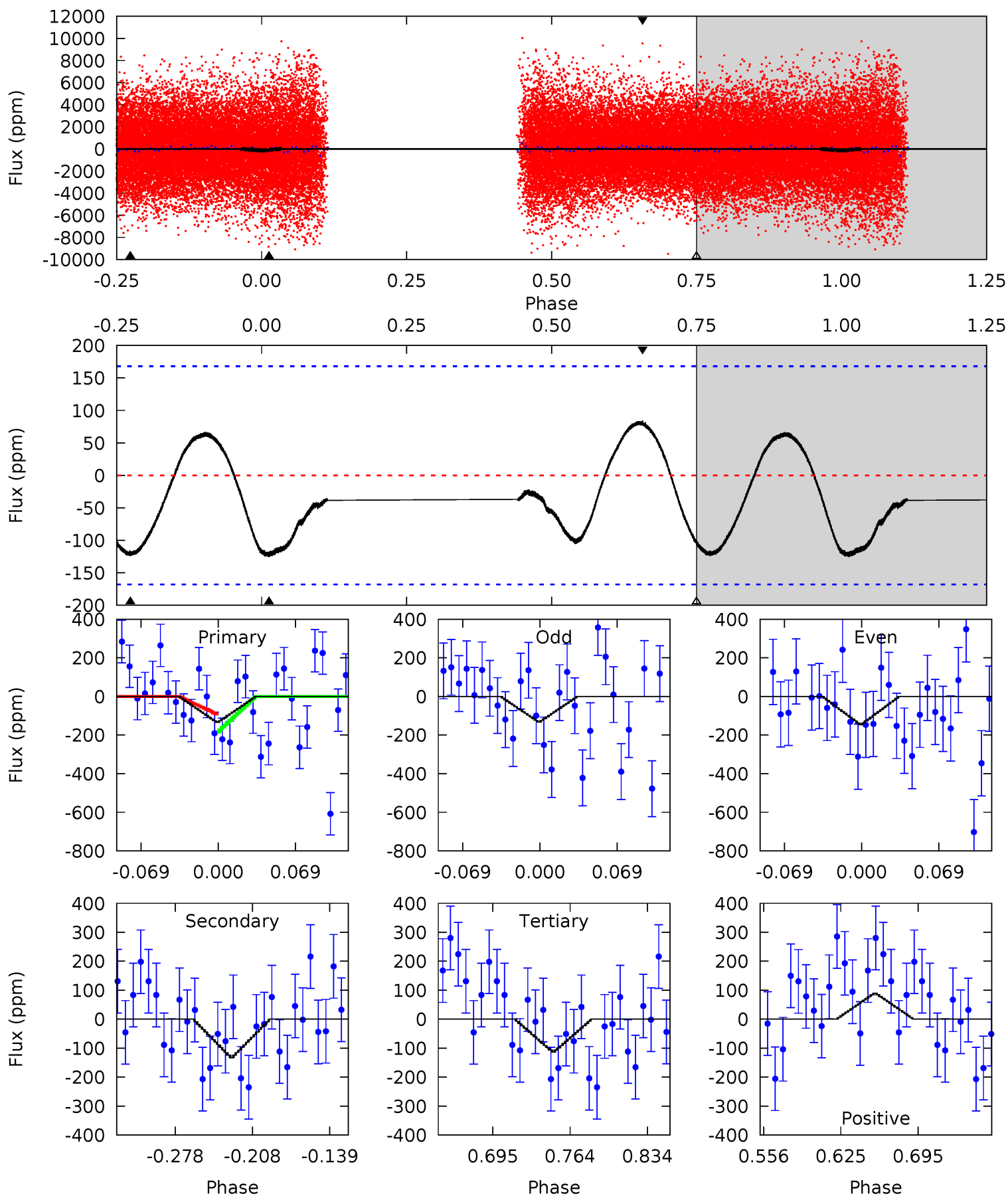
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005617102-02, P = 0.596976 Days, E = 131.285769 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.47	3.43	2.94	2.33	4.64	1.82	1.61	0.53	1.14	0.49	1.10	0.18	2.02	0.40	1.00



Stellar Parameters For KIC 005617102

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7627^{+211}_{-316}	$4.074^{+0.160}_{-0.160}$	$-0.100^{+0.200}_{-0.350}$	$1.951^{+0.523}_{-0.476}$	$1.643^{+0.210}_{-0.257}$	$0.312^{+0.270}_{-0.147}$
	+3%/-4%	+4%/-4%	+200%/-350%	+27%/-24%	+13%/-16%	+87%/-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 005617102-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$15.05^{+17.87}_{-10.39}$	5103^{+383}_{-364}	3314^{+45906}_{-41893}	$0.400^{+129.290}_{-105.584}$
Alt.	-124 ± 36	$15.53^{+15.00}_{-10.95}$	5104^{+372}_{-343}	-4048^{+8996}_{-350}	$0.070^{+0.791}_{-0.051}$

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

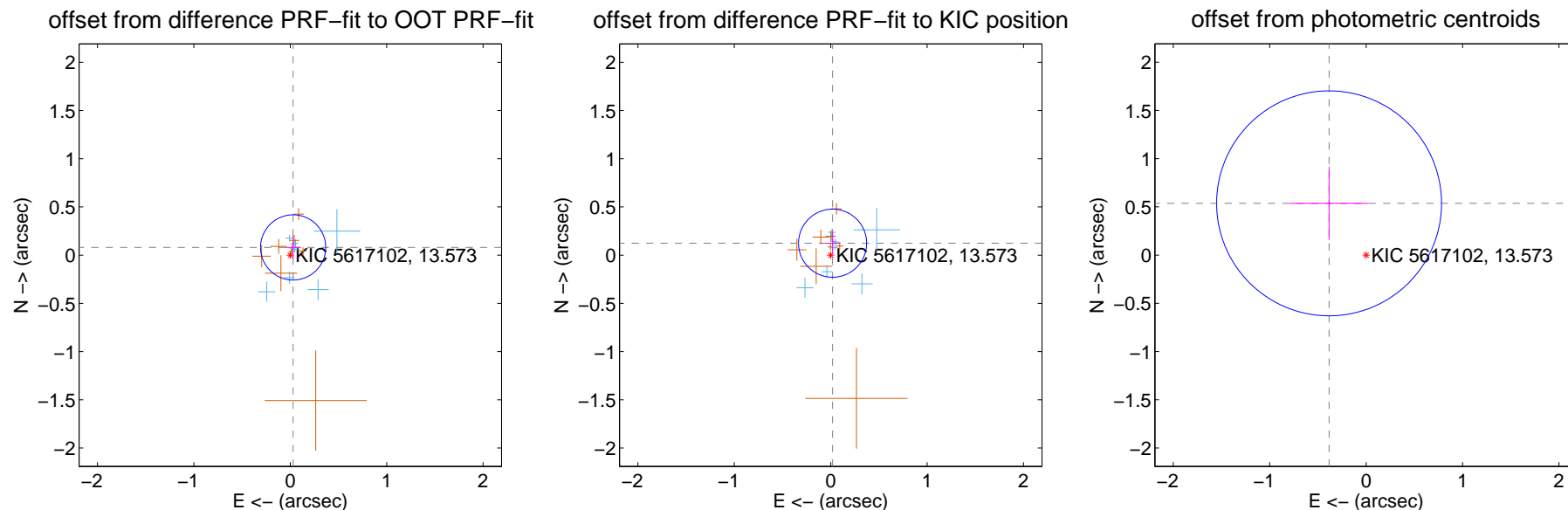
DV Centroid Data

Supplemental centroid analysis for 005617102-02. Kepler magnitude: 13.57. Transit SNR -1.00

There are 9 quarters with good PRF difference image offsets

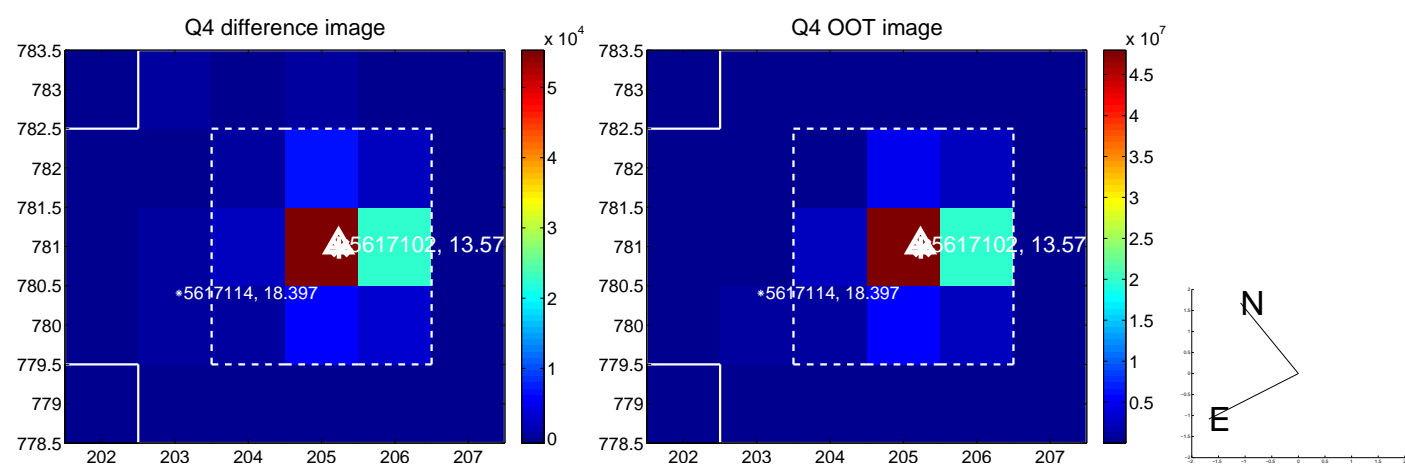
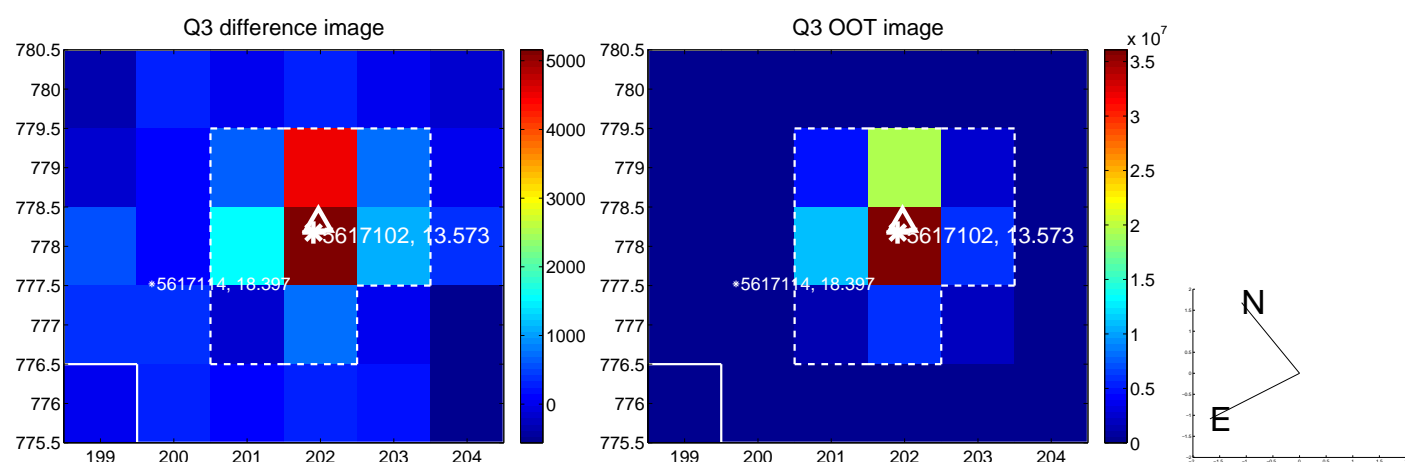
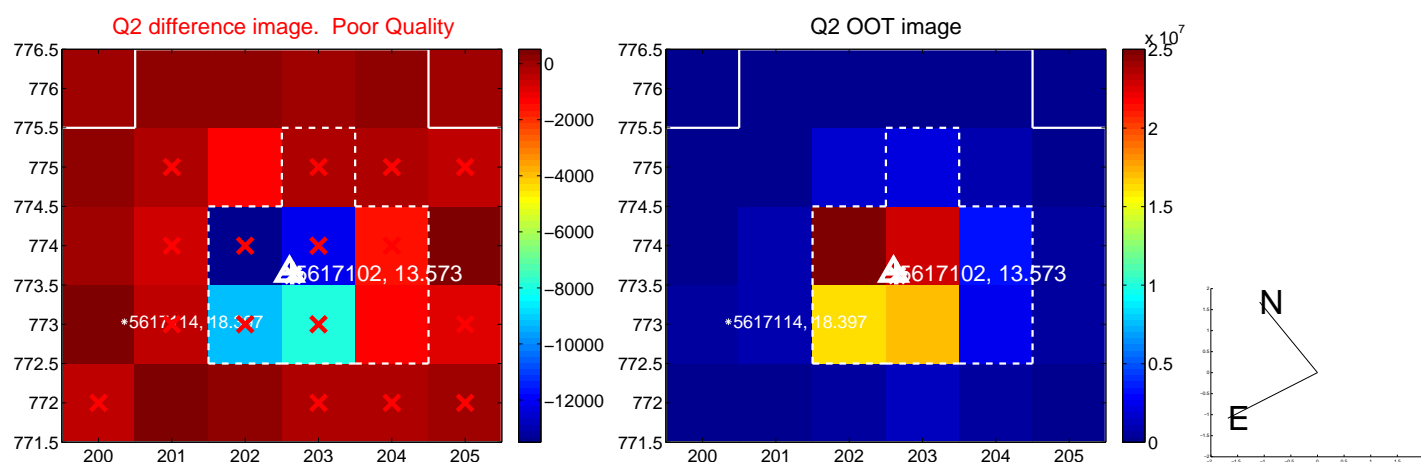
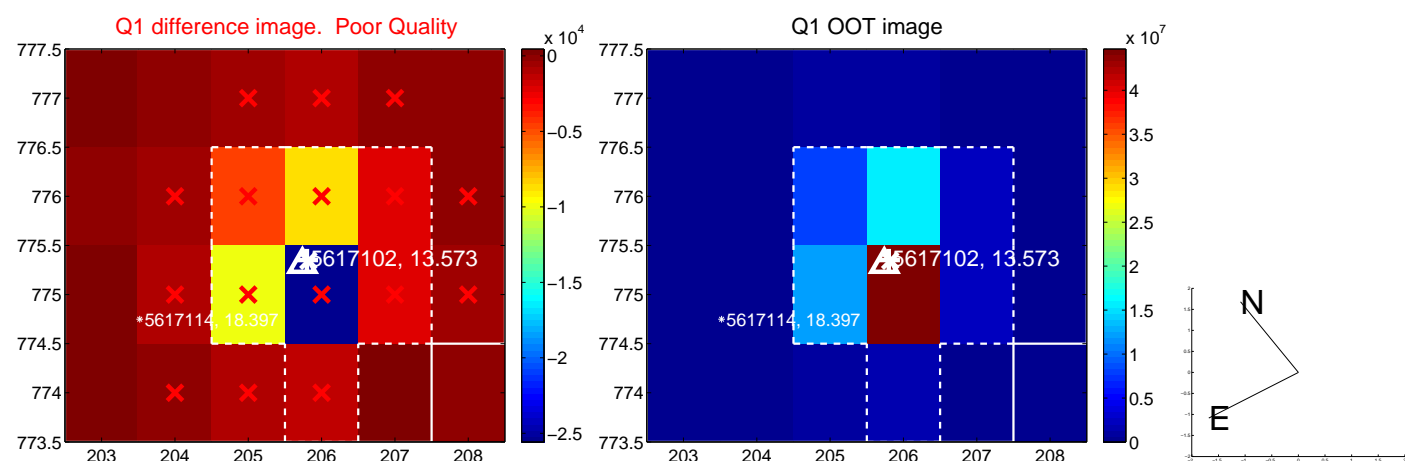
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.086 ± 0.113	0.76	-0.030 ± 0.080	0.080 ± 0.119
PRF-fit source offset from KIC position	0.125 ± 0.118	1.07	-0.019 ± 0.081	0.124 ± 0.120
photometric centroid source offset	0.66 ± 0.39	1.70	0.38 ± 0.41	0.54 ± 0.38

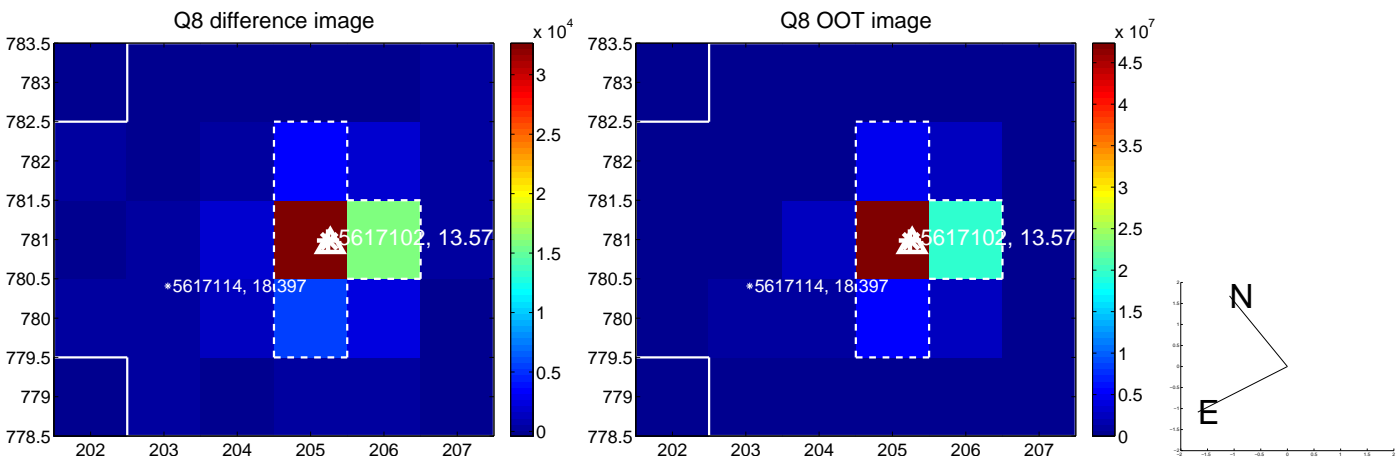
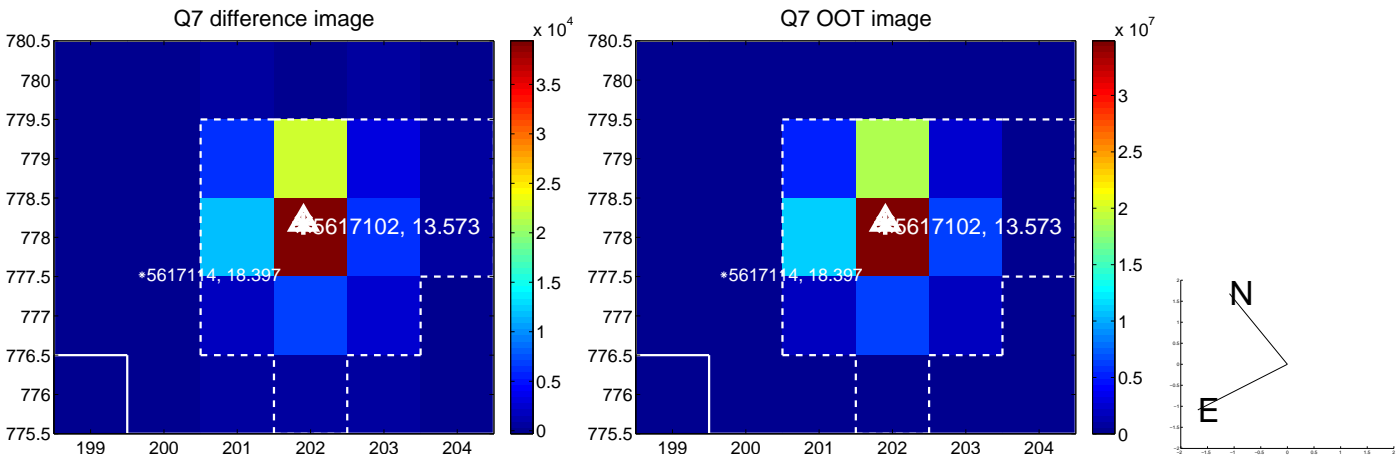
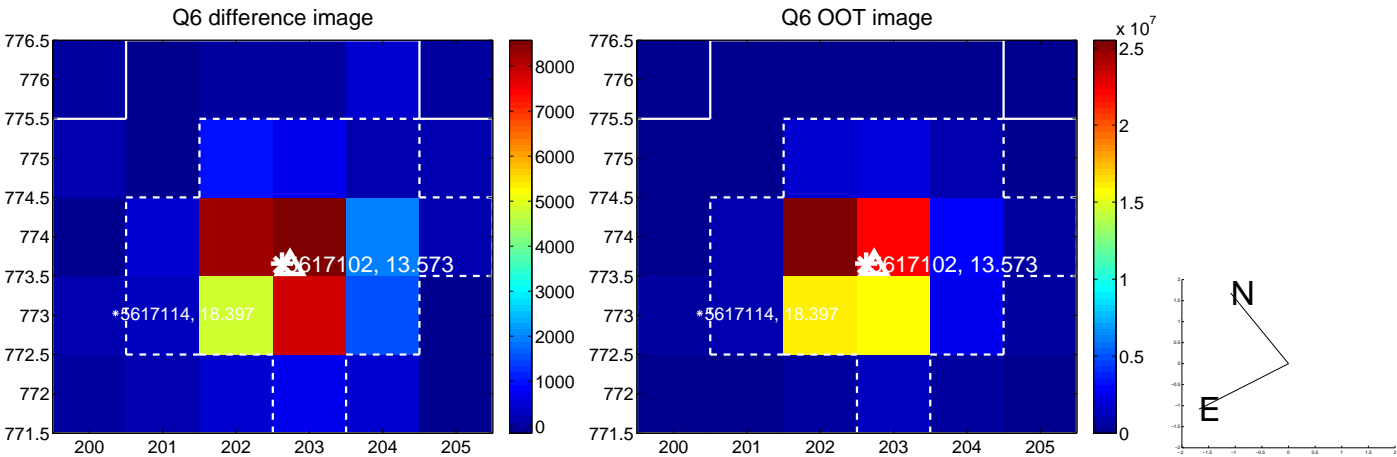
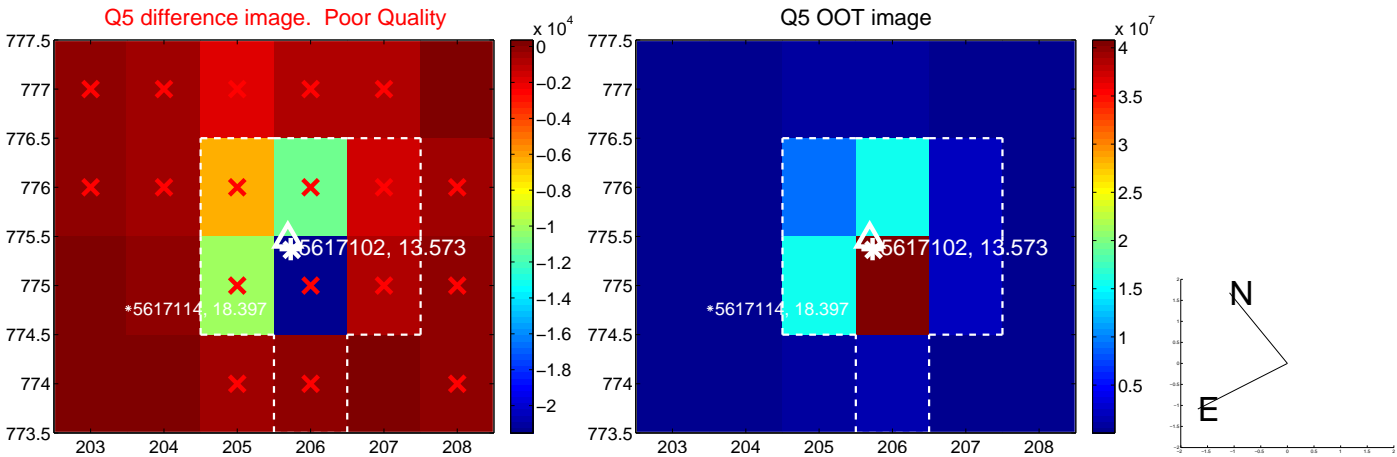


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

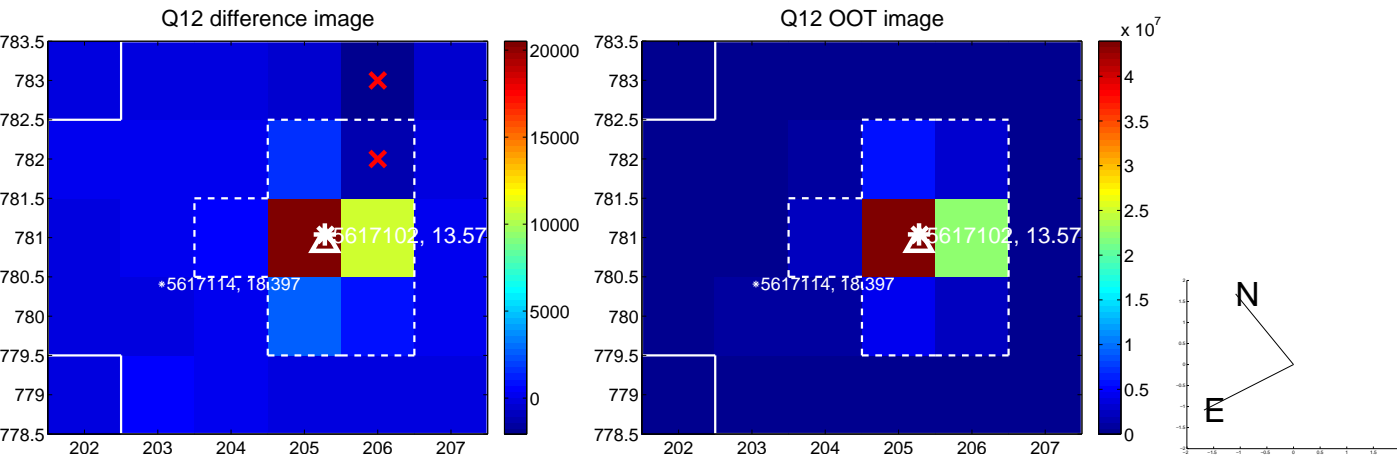
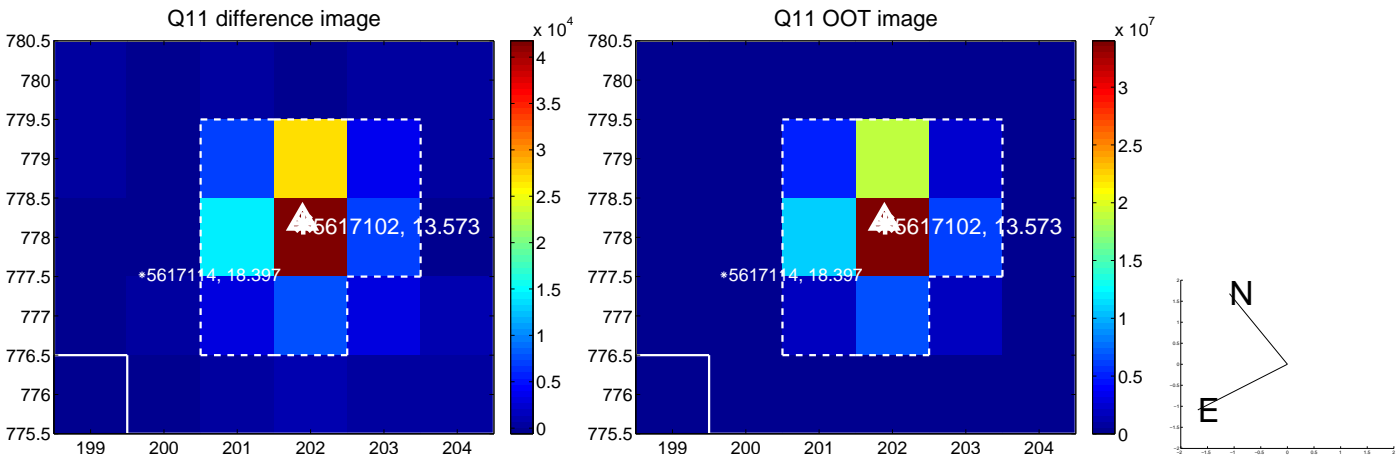
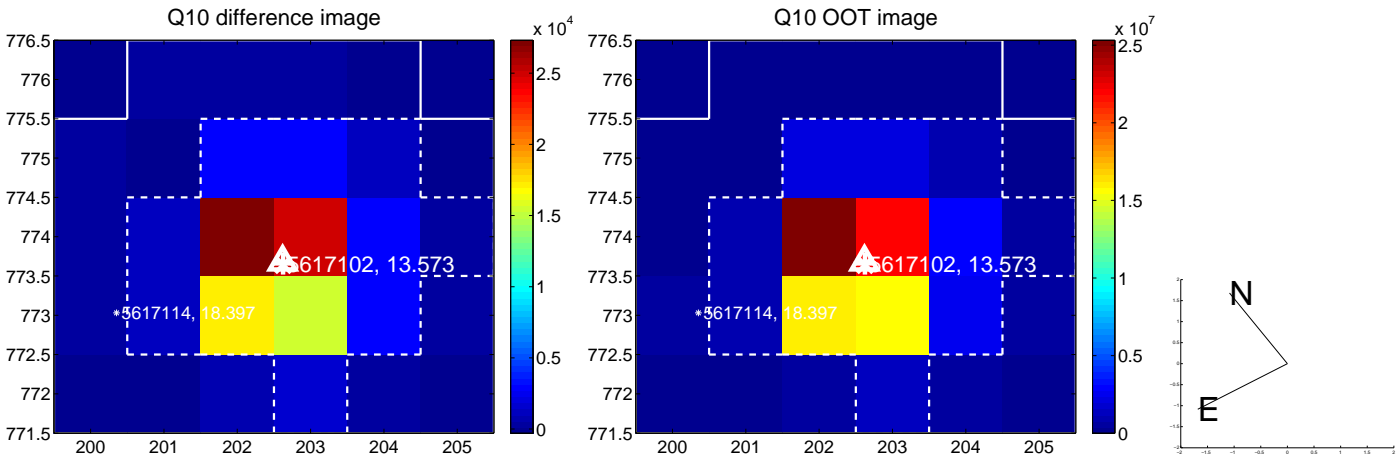
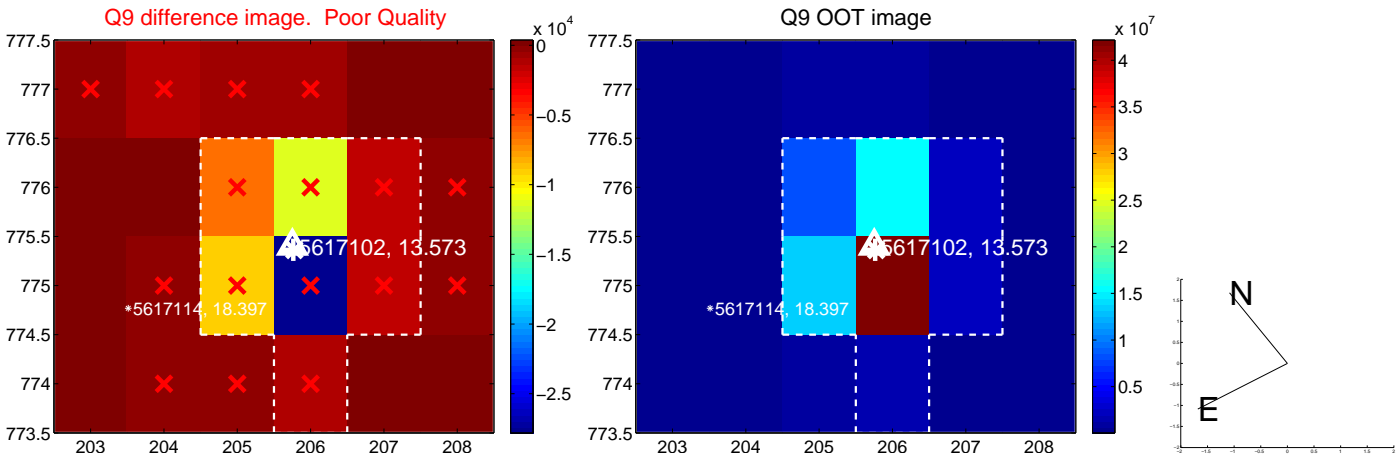
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



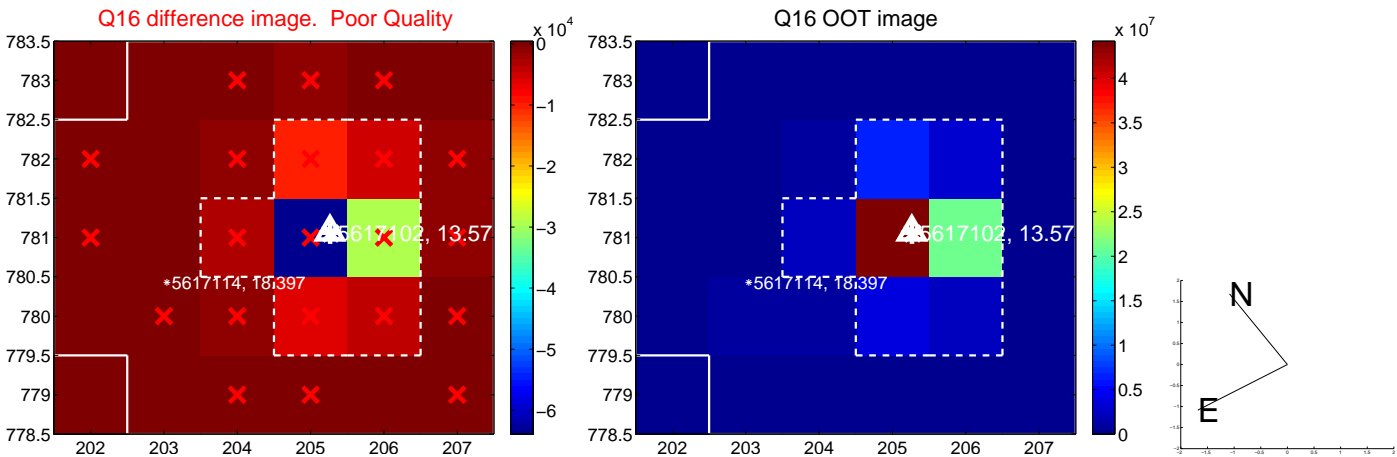
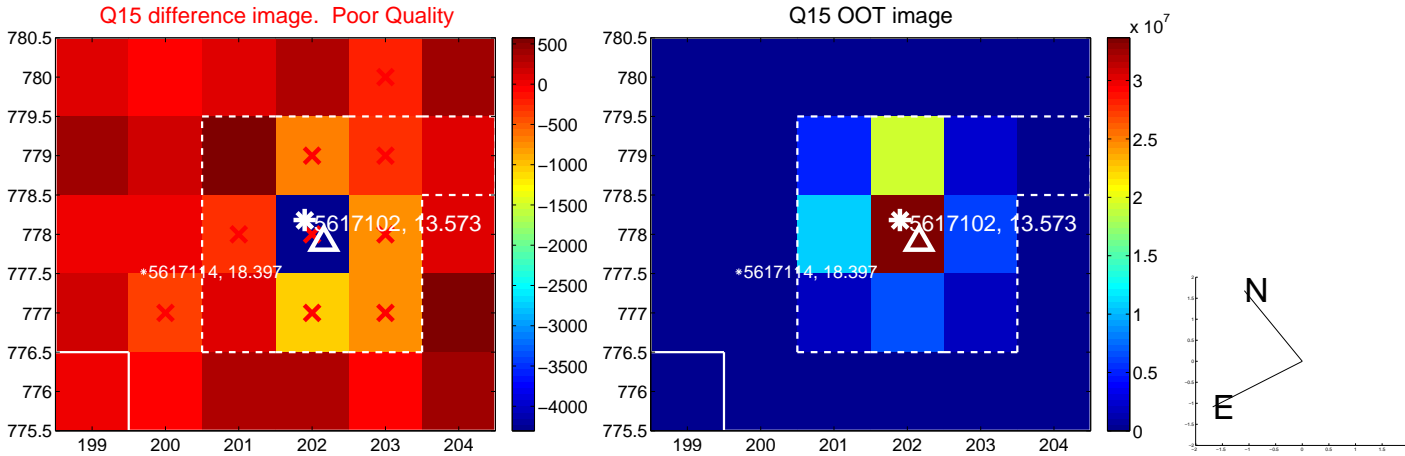
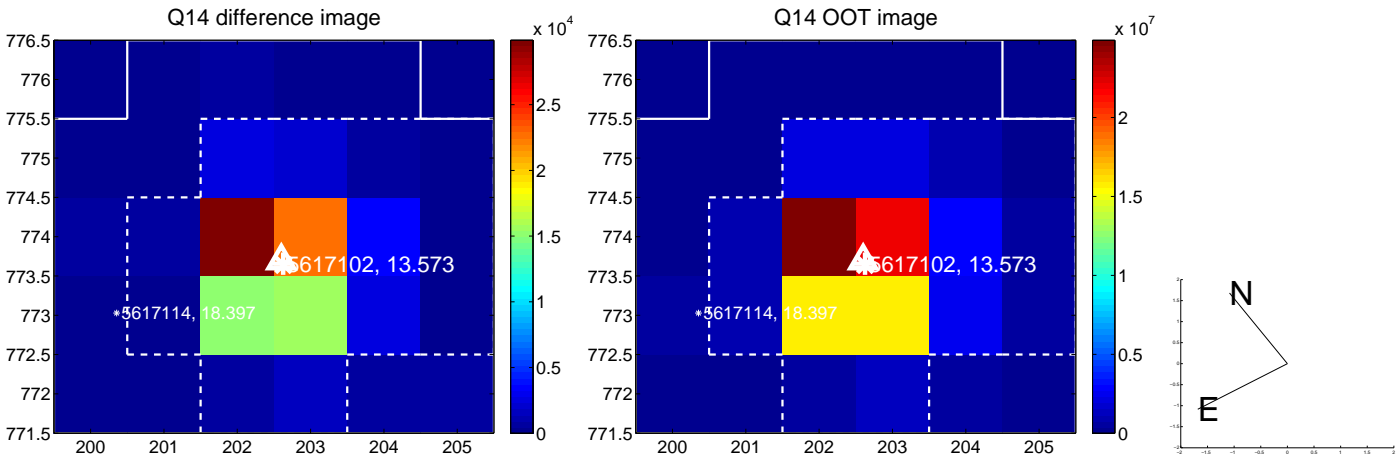
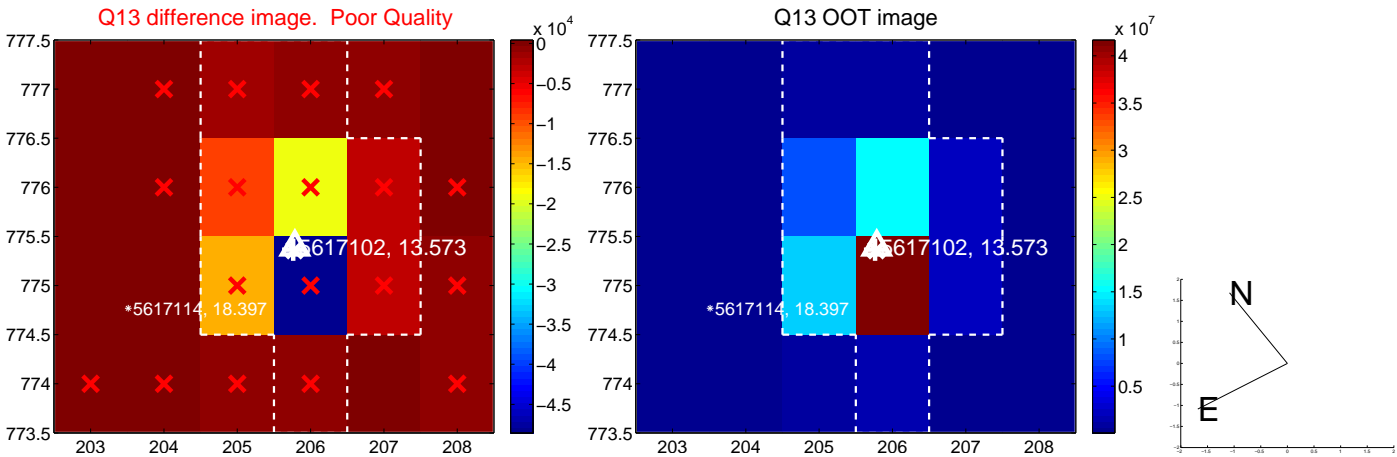
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



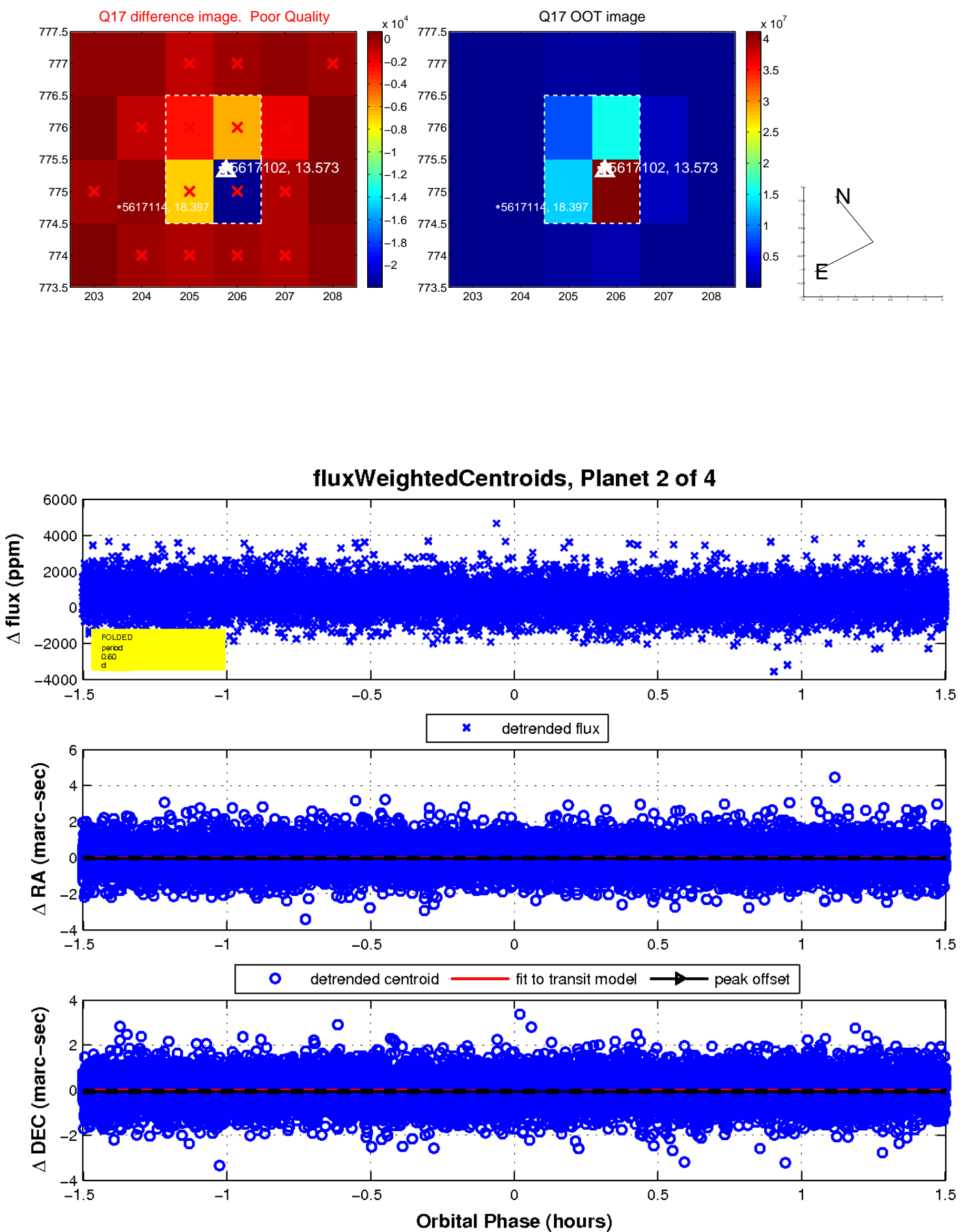
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

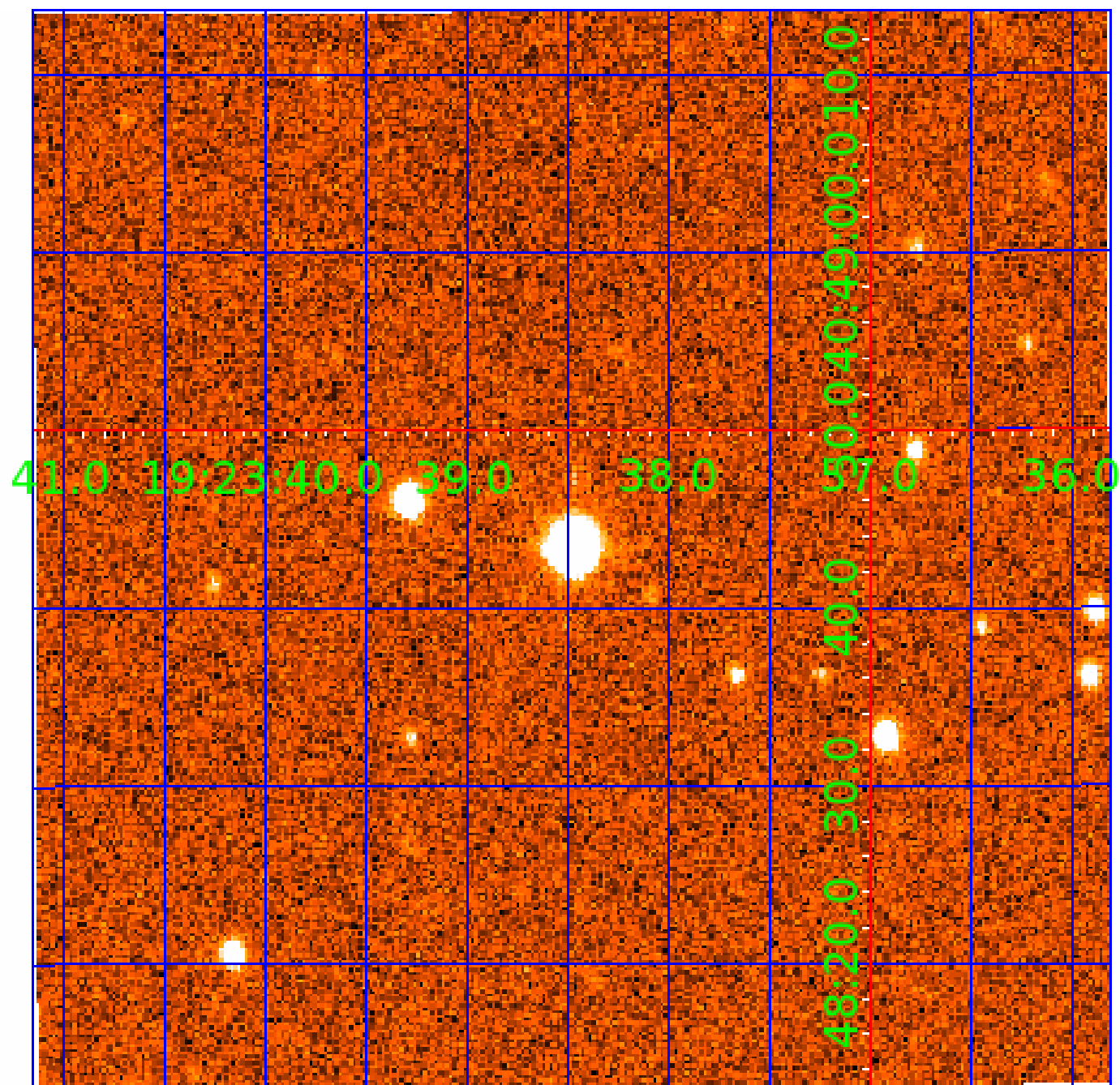


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005617102

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})
005617102-01	OBS	No	0.596969	132.056790	111.5	1.523	12.9	11.9	1.95	7627	2.14	42974.59
005617102-02	OBS	No	0.596976	131.746610	343.6	2.000	13.1	-1.0	1.95	7627	3.68	42973.96
005617102-03	OBS	No	0.940473	132.125074	761.2	3.168	11.1	17.8	1.95	7627	6.23	23443.32
005617102-04	OBS	No	0.940461	131.742574	193.1	3.500	13.2	-1.0	1.95	7627	2.75	23443.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005617102-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005617102-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_NOFITS
005617102-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005617102-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—SAME_NTL_PERIOD—CENT_NOFITS

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

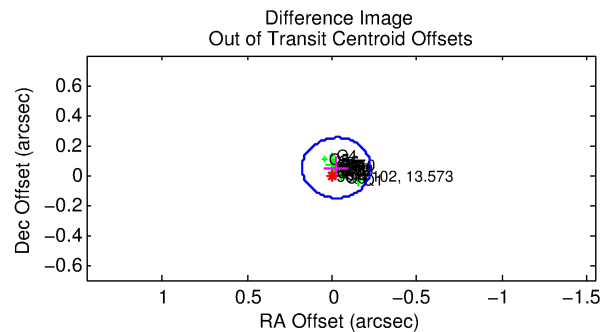
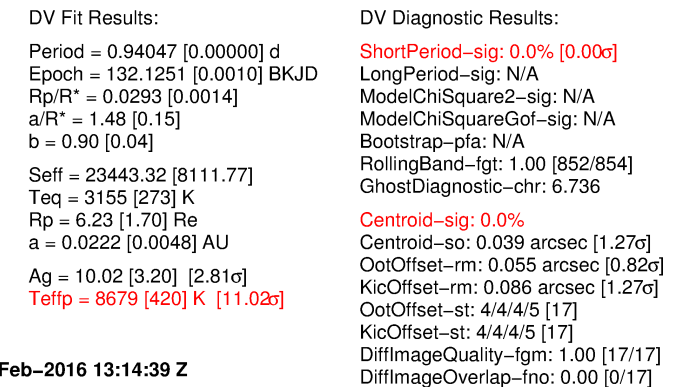
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 005617102-03

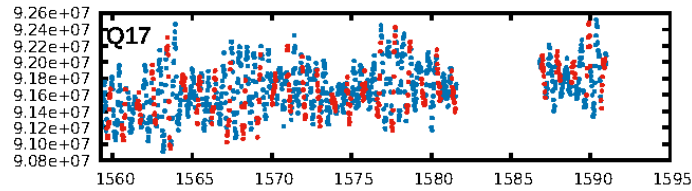
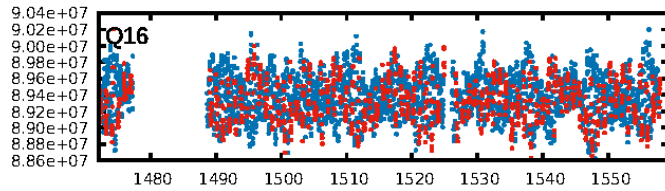
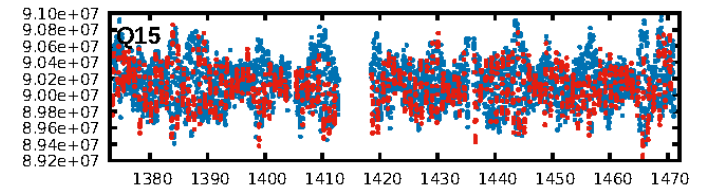
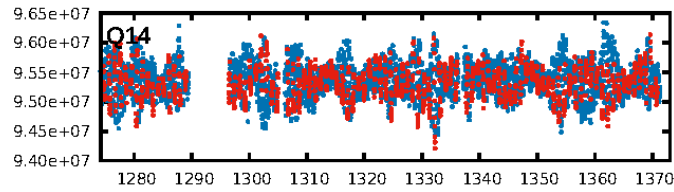
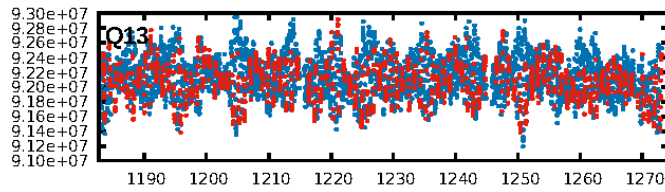
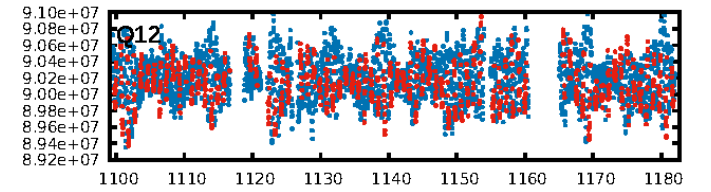
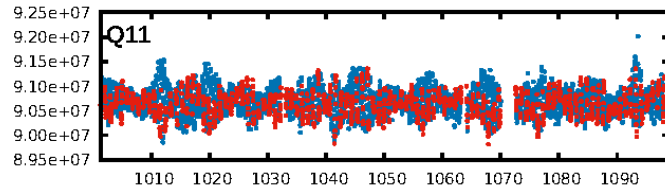
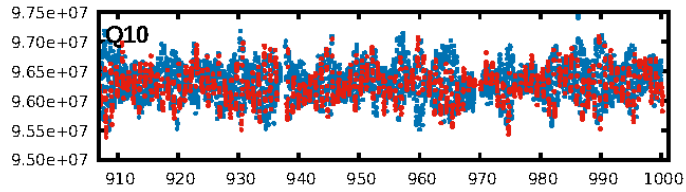
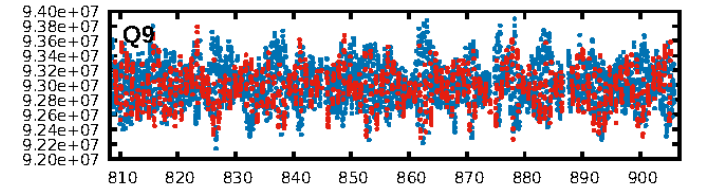
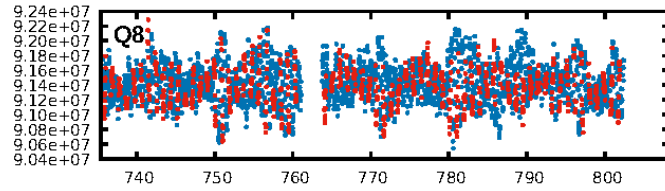
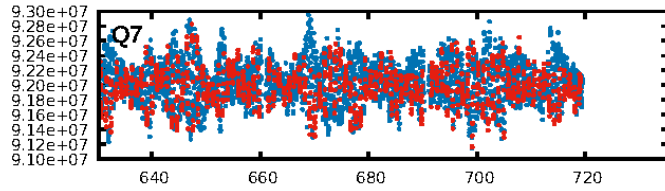
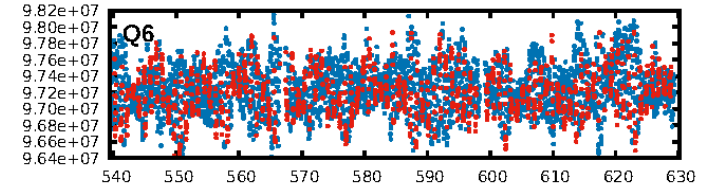
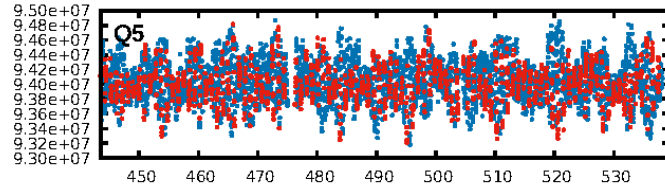
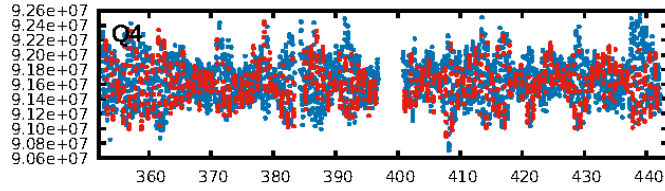
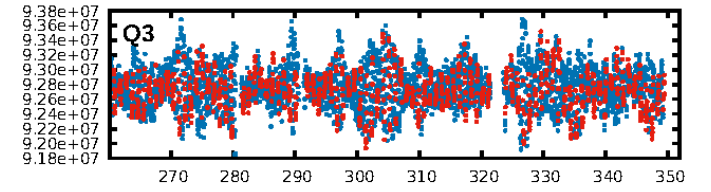
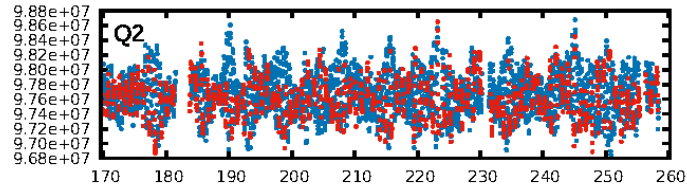
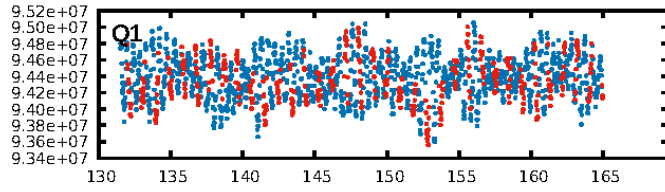
No Significant Match Found

KIC: 5617102 Candidate: 3 of 4 Period: 0.940 d

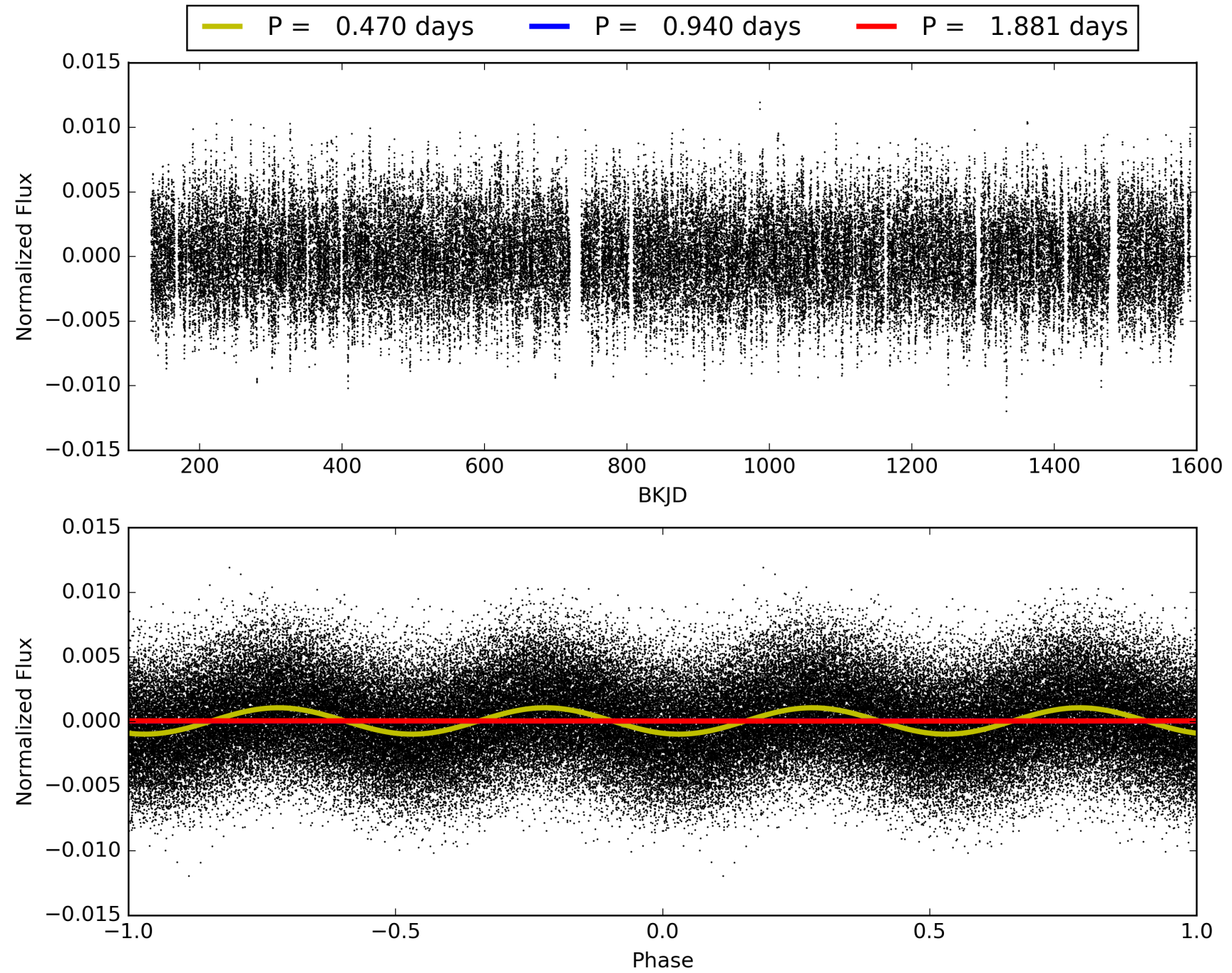


This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005617102-03, PDC Light Curves

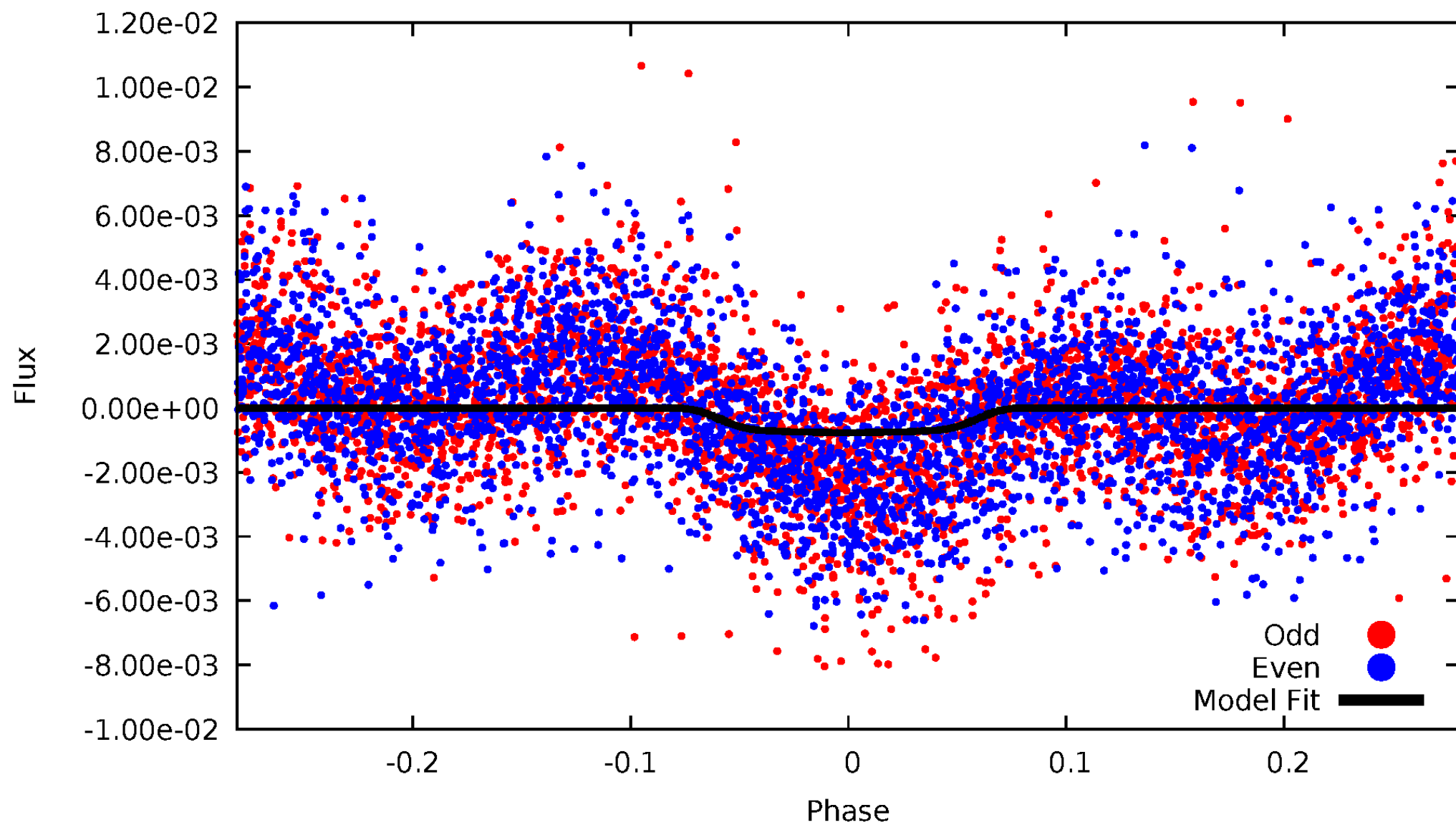


TCE 005617102-03



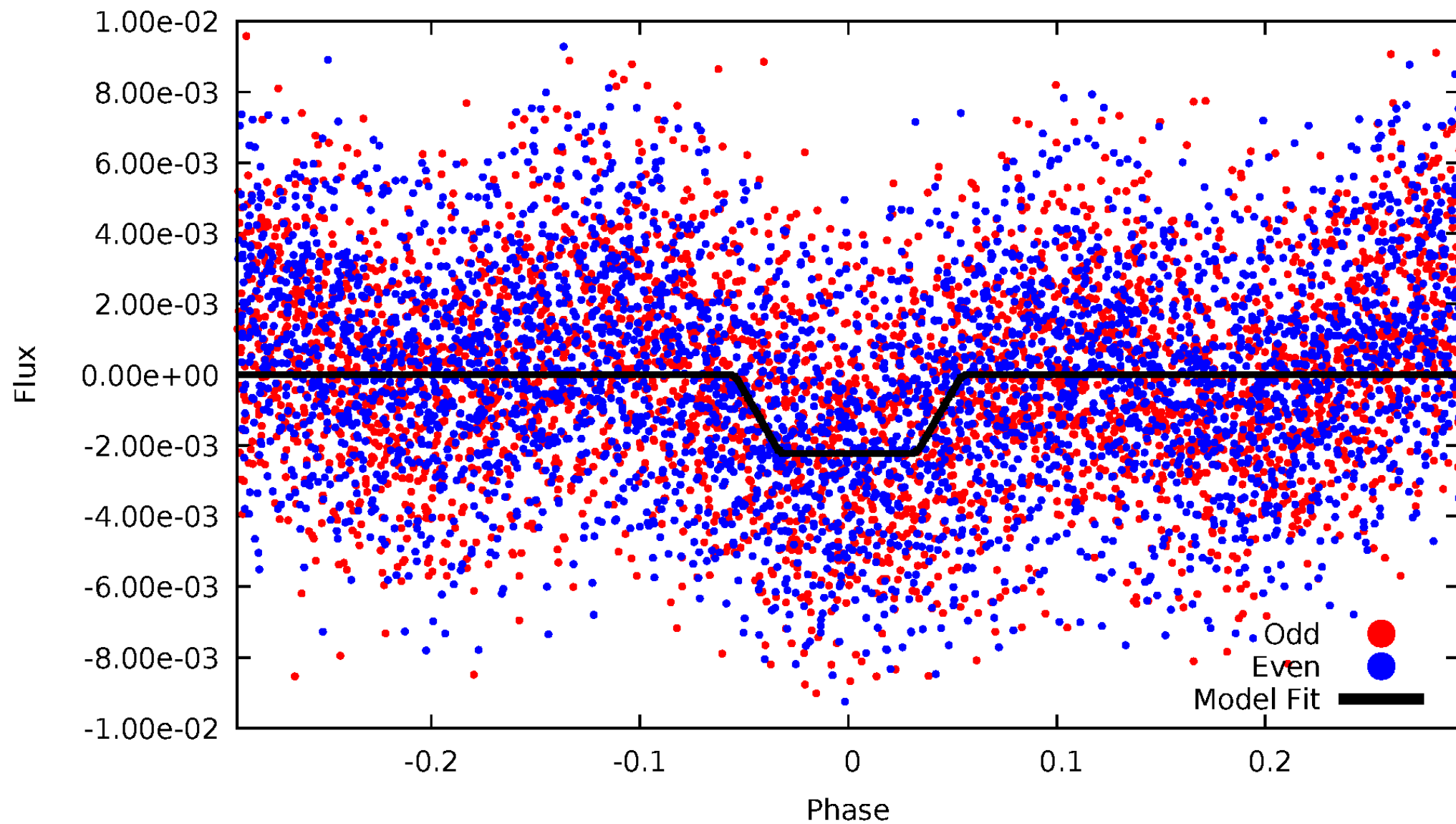
DV Odd/Even

TCE 005617102-03



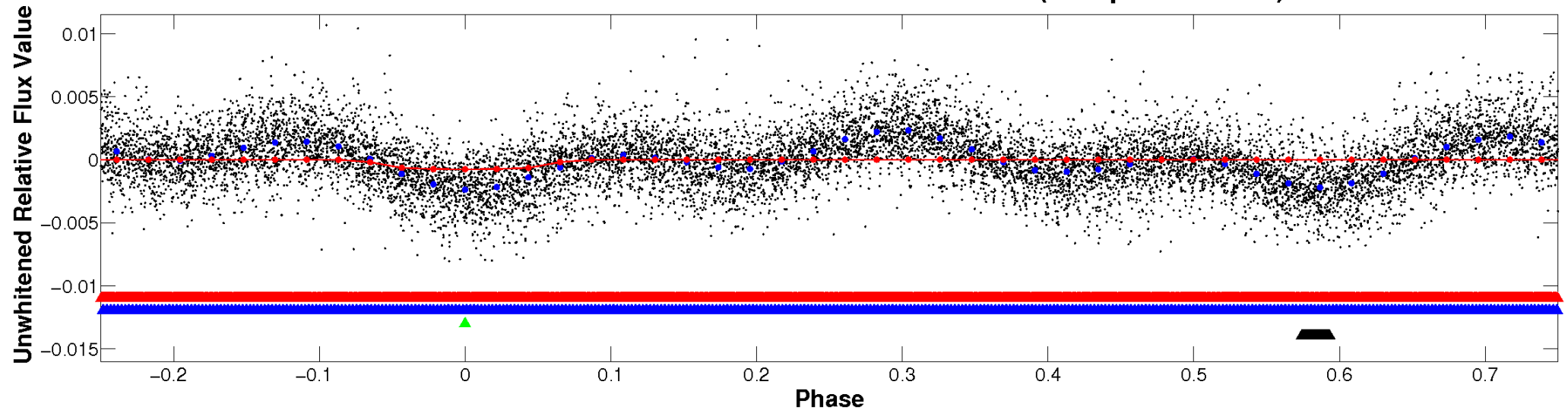
ALT Odd/Even

TCE 005617102-03

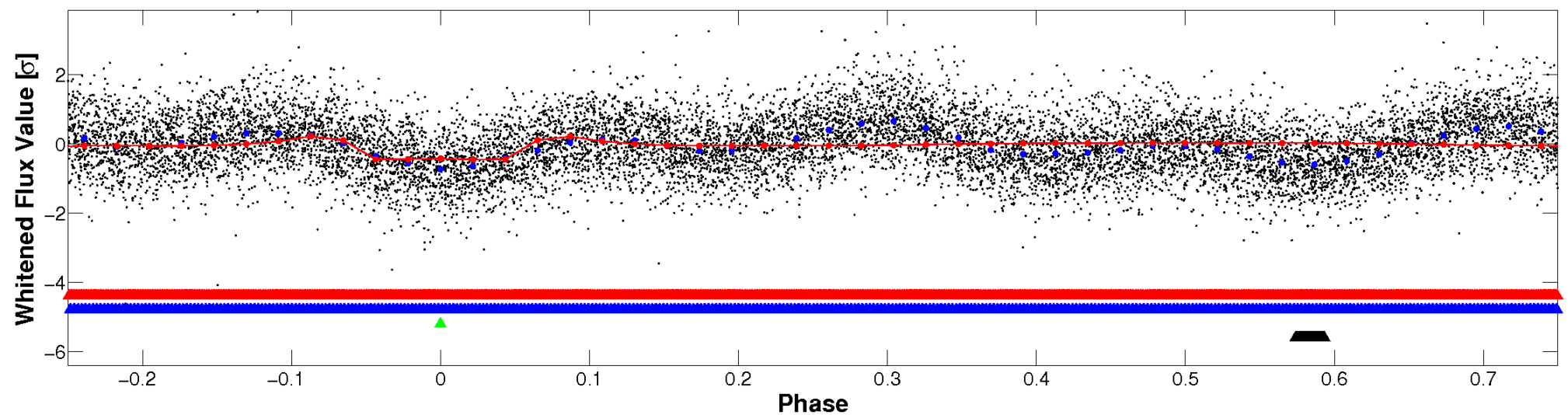


Non-Whitened Vs. Whitened Light Curve

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

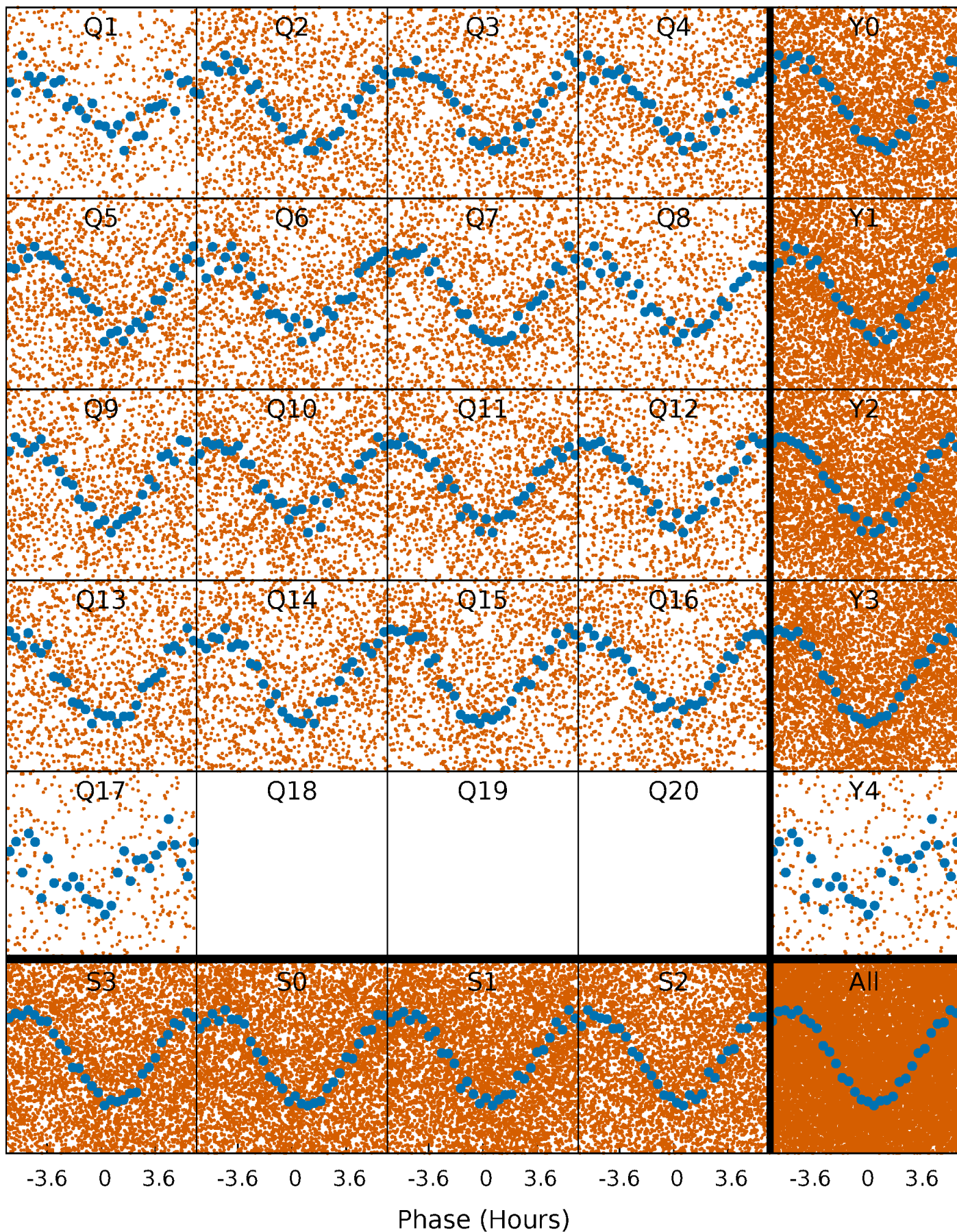


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



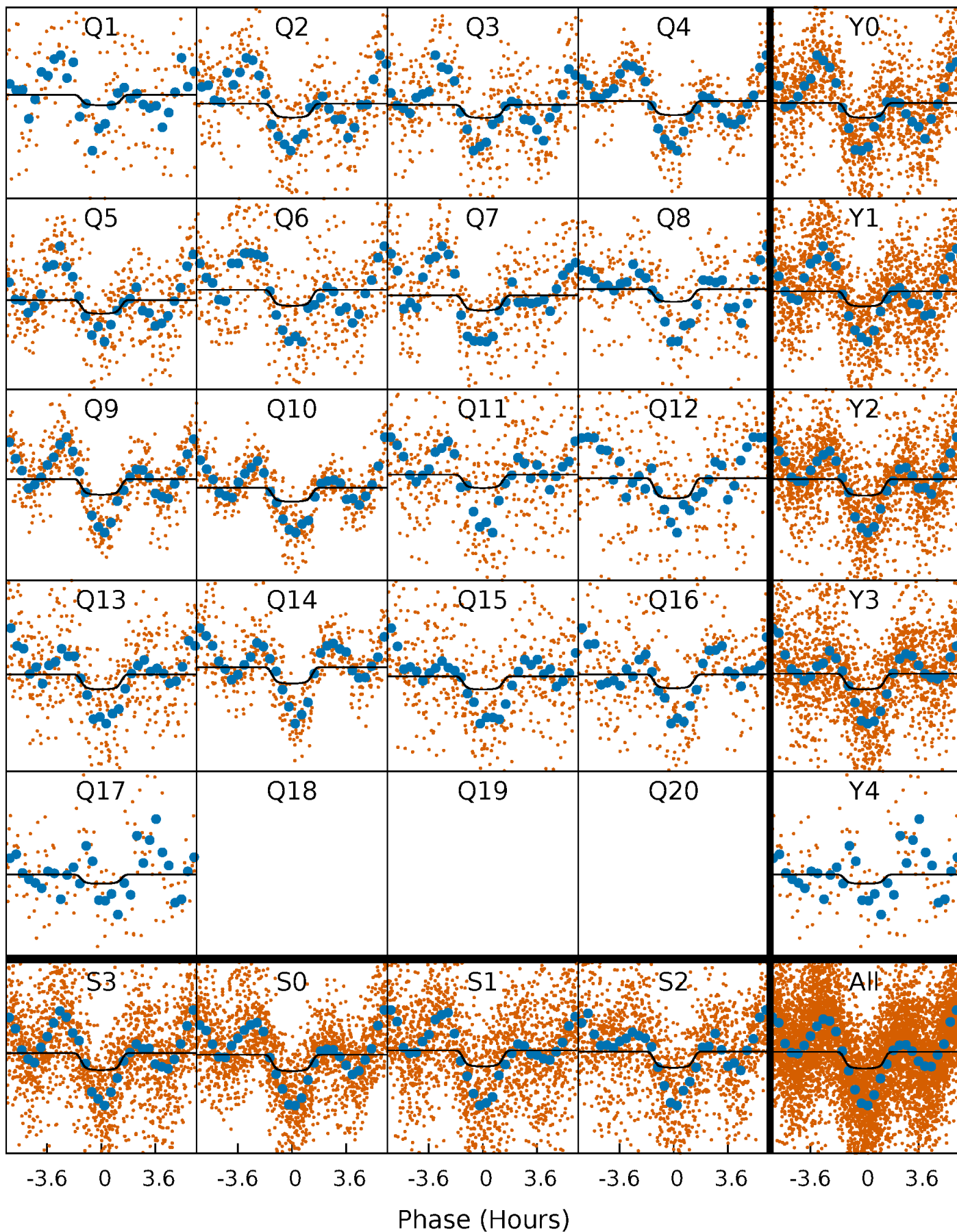
PDC Quarter-Phased Transit Curves

TCE 005617102-03 P= 0.940473 Days $T_0=132.125074$ (BKJD)



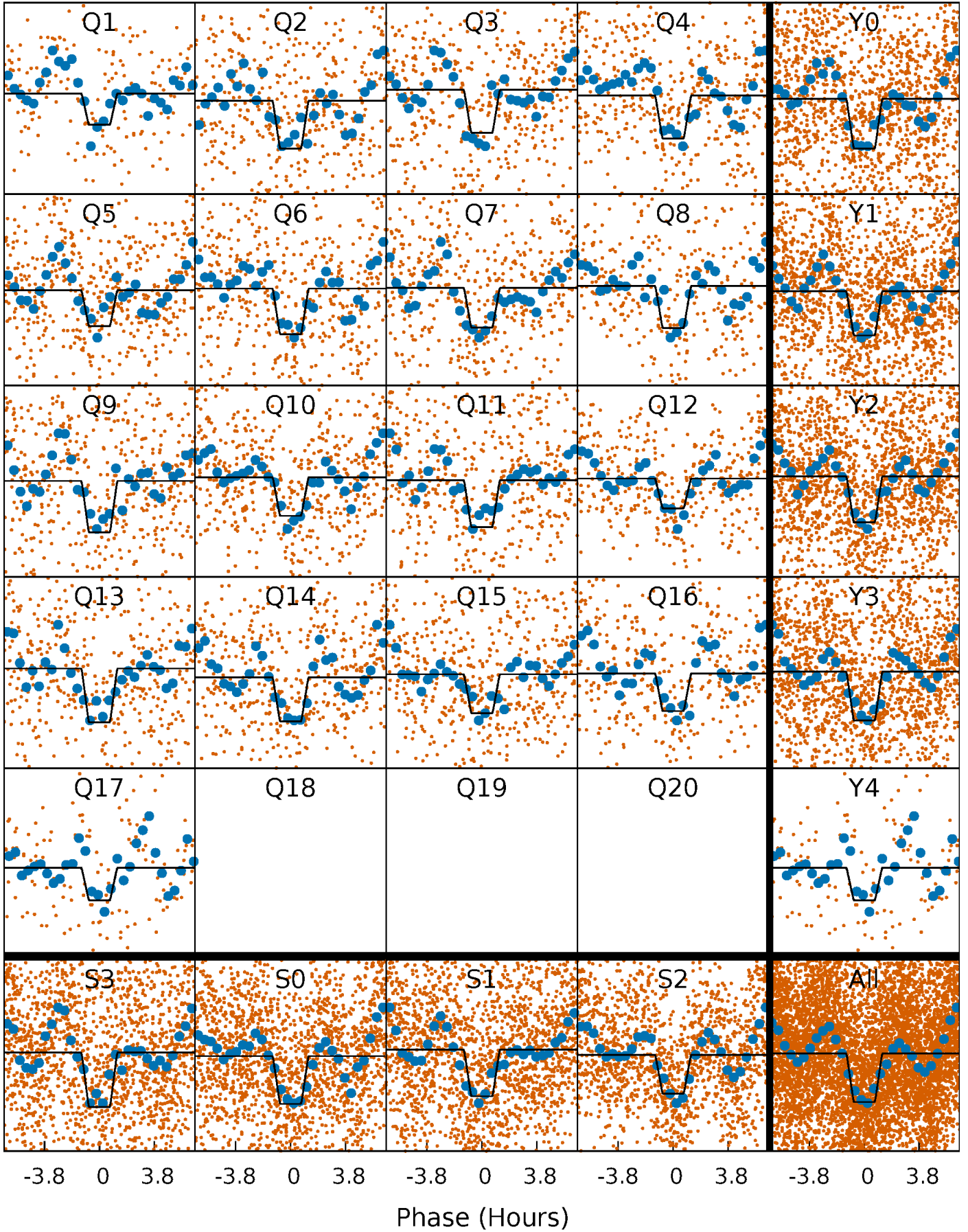
DV Quarter-Phased Transit Curves

TCE 005617102-03 P= 0.940473 Days $T_0=132.125074$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

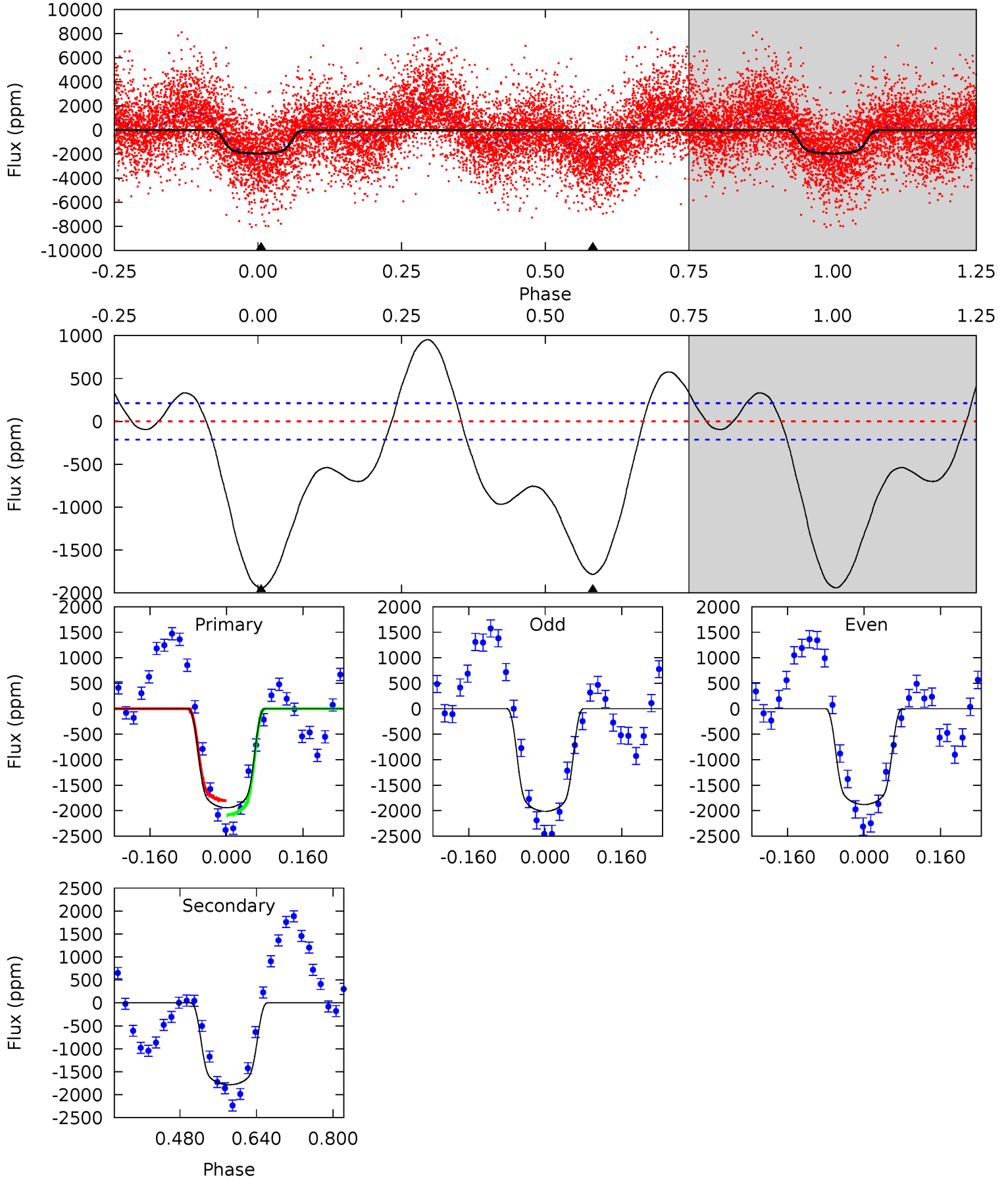
TCE 005617102-03 P= 0.940480 Days $T_0=132.122386$ (BKJD)



DV Model-Shift Uniqueness Test

005617102-03, P = 0.940473 Days, E = 131.184601 Days

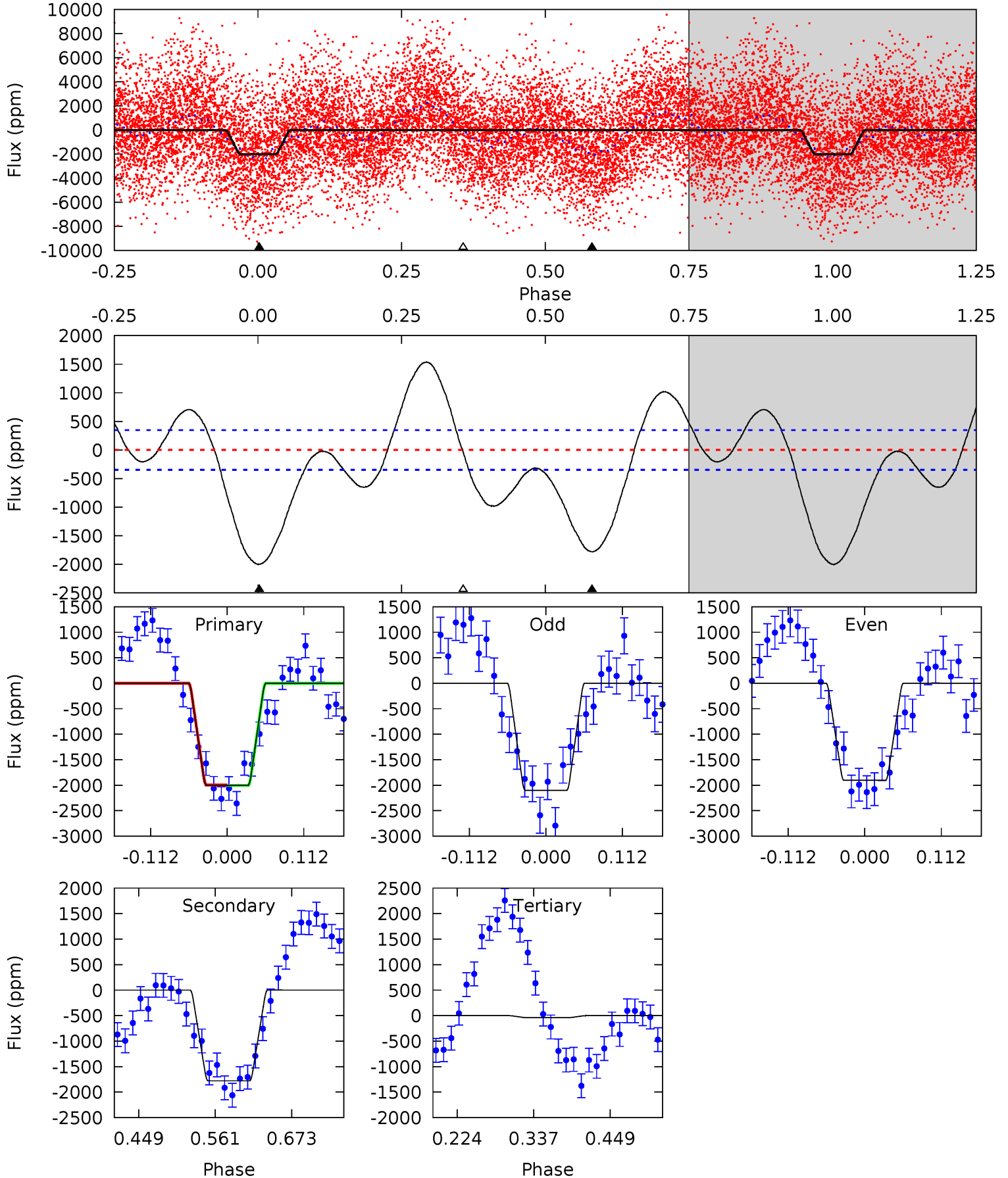
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.0	37.7	0	0	4.47	1.41	11.6	41.0	41.0	37.7	37.7	1.42	1.00	0.33	3.02



Alt Model-Shift Uniqueness Test

005617102-03, P = 0.940480 Days, E = 131.181906 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.1	23.2	0.53	0	4.54	1.59	9.30	25.6	26.1	22.7	23.2	1.26	0.93	0.43	0.06



Stellar Parameters For KIC 005617102

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7627^{+211}_{-316}	$4.074^{+0.160}_{-0.160}$	$-0.100^{+0.200}_{-0.350}$	$1.951^{+0.523}_{-0.476}$	$1.643^{+0.210}_{-0.257}$	$0.312^{+0.270}_{-0.147}$
	+3%/-4%	+4%/-4%	+200%/-350%	+27%/-24%	+13%/-16%	+87%/-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 005617102-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1784 ± 47	$6.27^{+0.92}_{-0.85}$	4415^{+310}_{-335}	9568^{+549}_{-558}	12^{+4}_{-3}
Alt.	-1779 ± 77	$9.99^{+1.36}_{-1.28}$	4370^{+309}_{-301}	6995^{+268}_{-318}	$4.832^{+1.361}_{-1.080}$

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

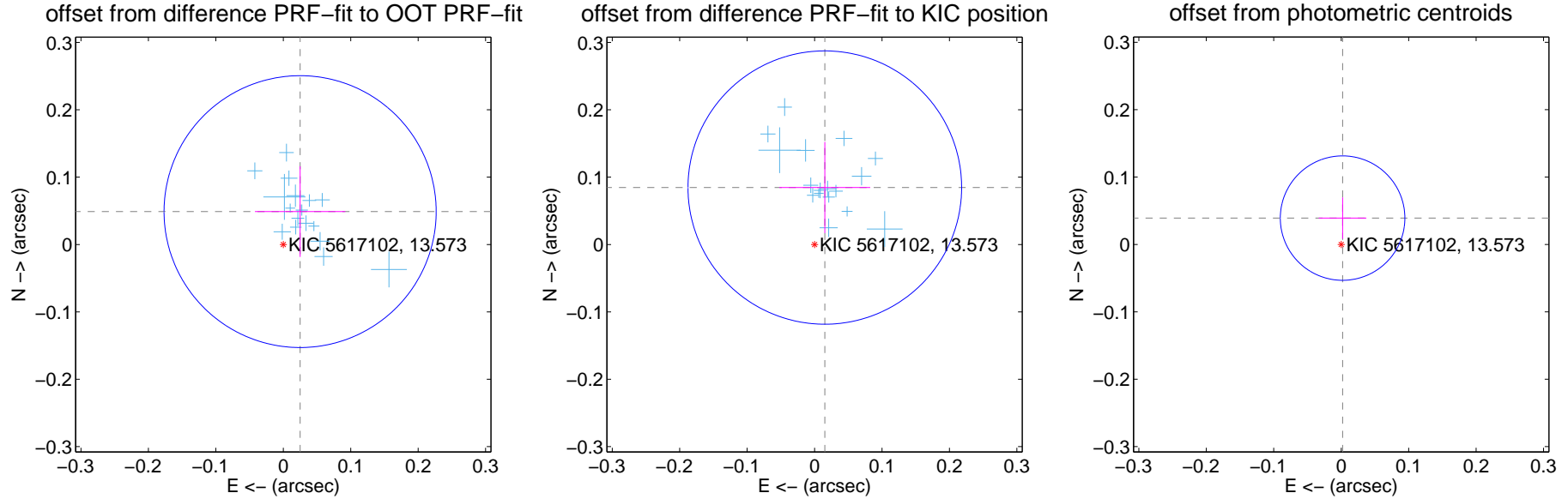
DV Centroid Data

Supplemental centroid analysis for 005617102-03. Kepler magnitude: 13.57. Transit SNR 17.76

There are 17 quarters with good PRF difference image offsets

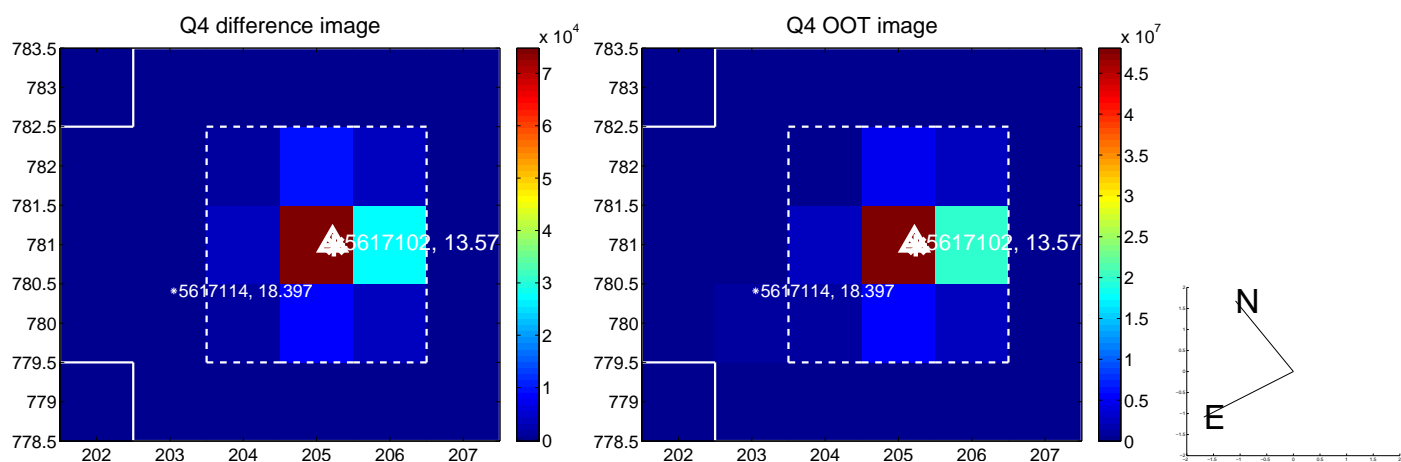
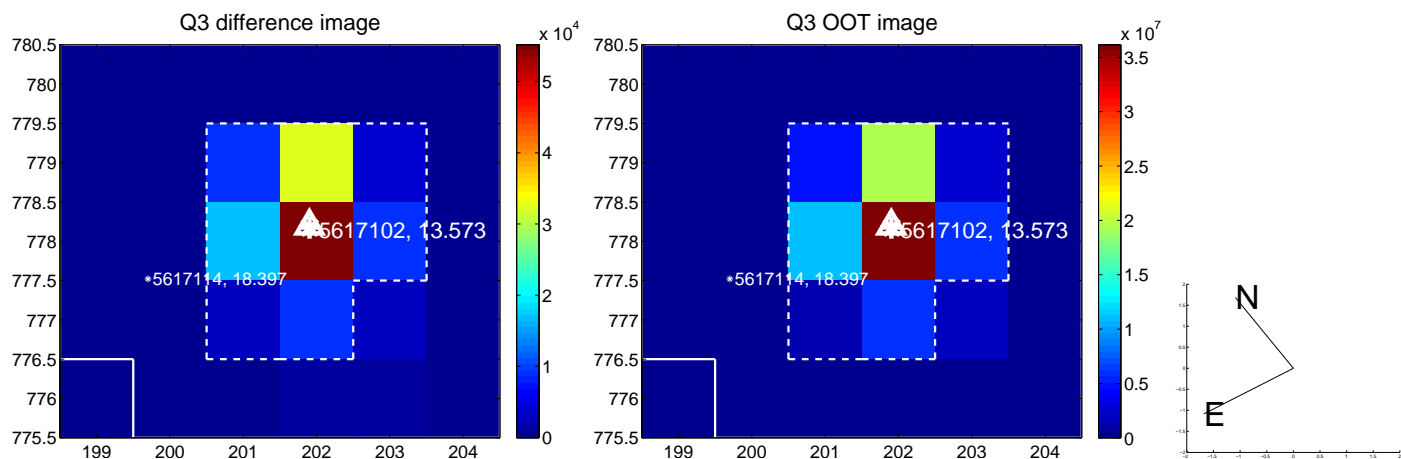
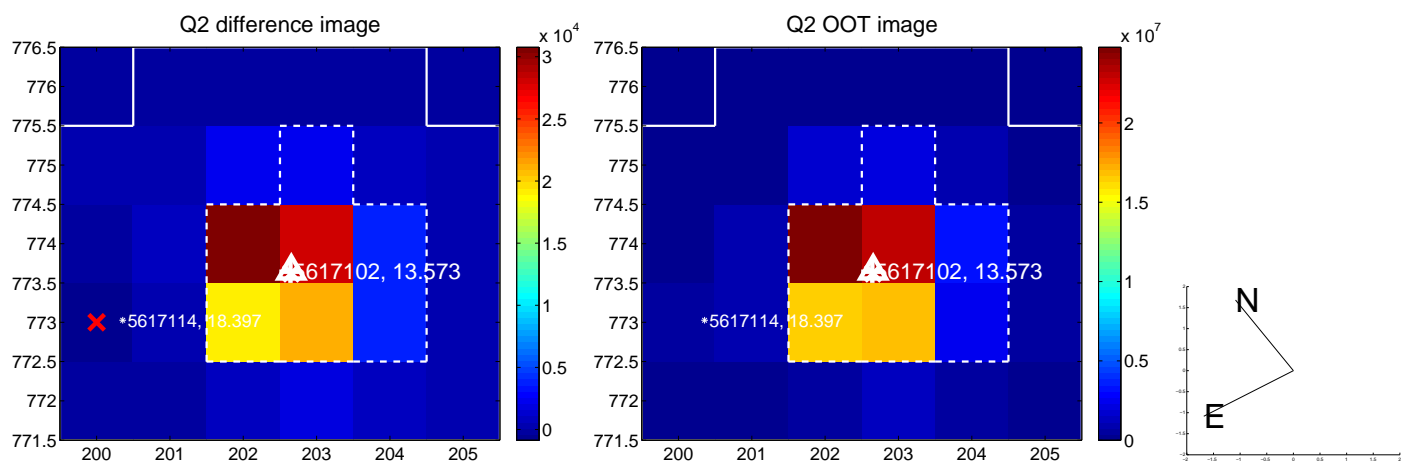
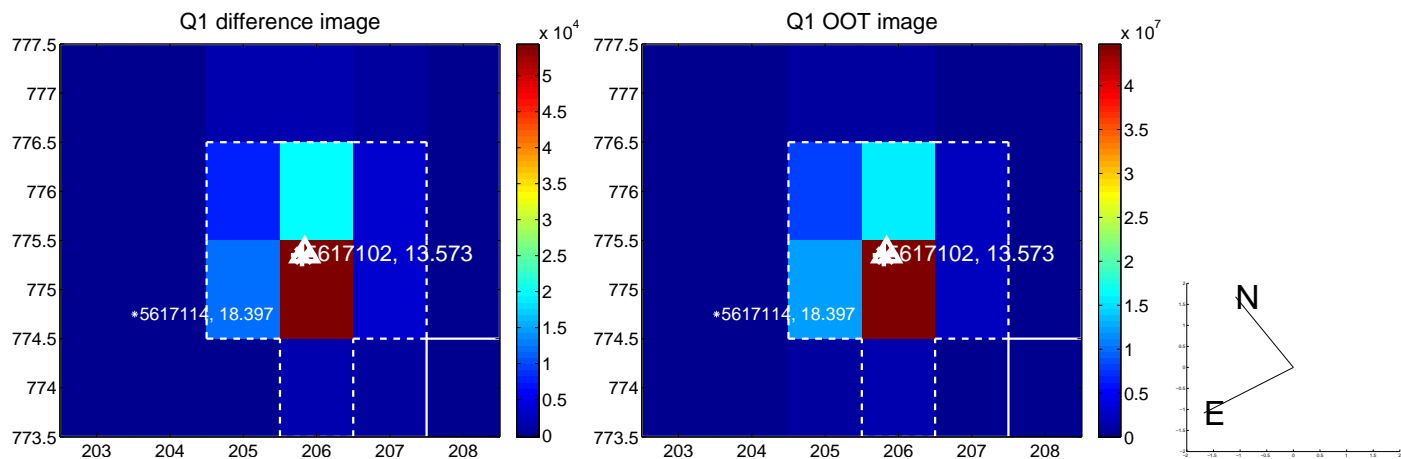
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.055 ± 0.067	0.82	-0.025 ± 0.067	0.049 ± 0.067
PRF-fit source offset from KIC position	0.086 ± 0.068	1.27	-0.015 ± 0.067	0.085 ± 0.068
photometric centroid source offset	0.04 ± 0.03	1.27	-0.00 ± 0.04	0.04 ± 0.03

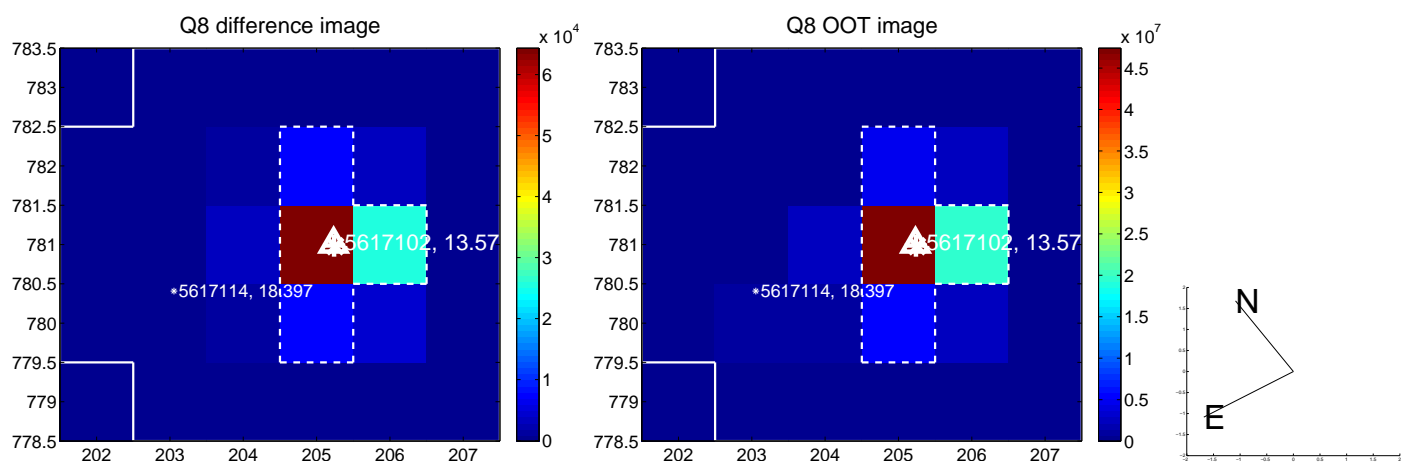
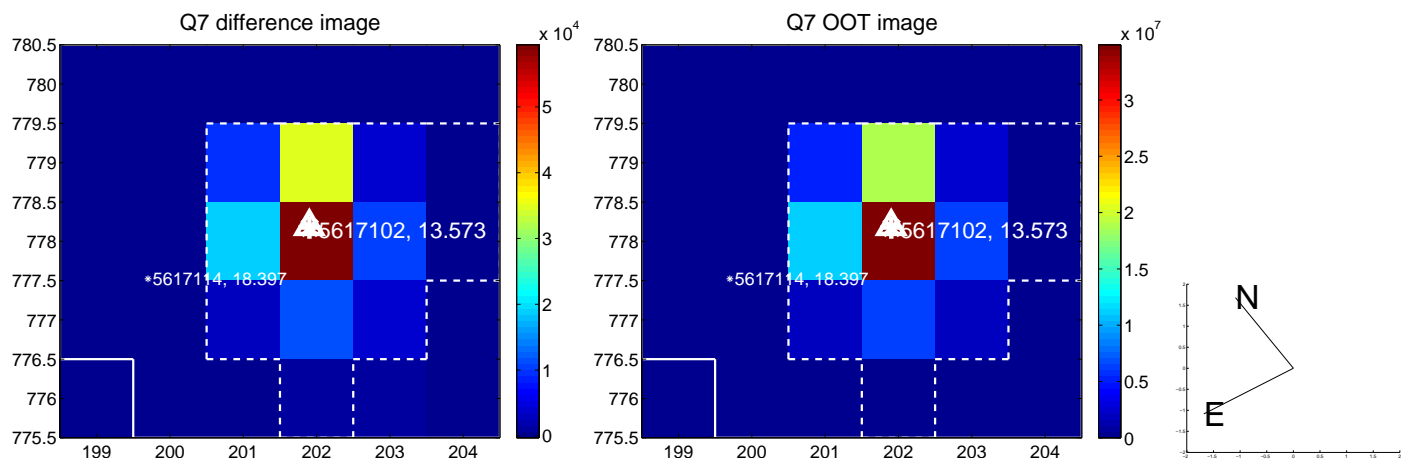
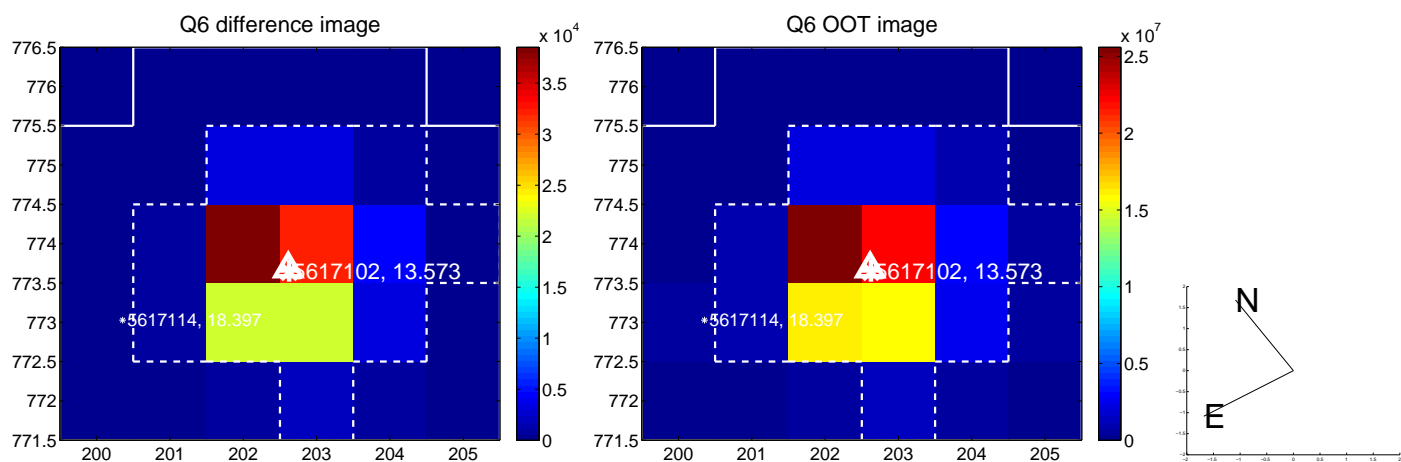
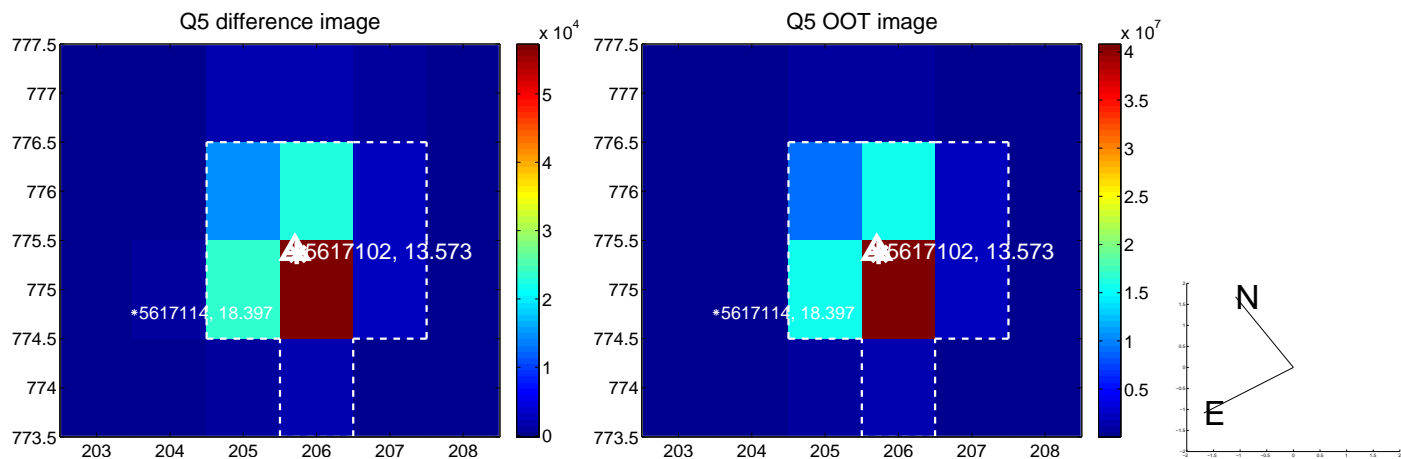


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

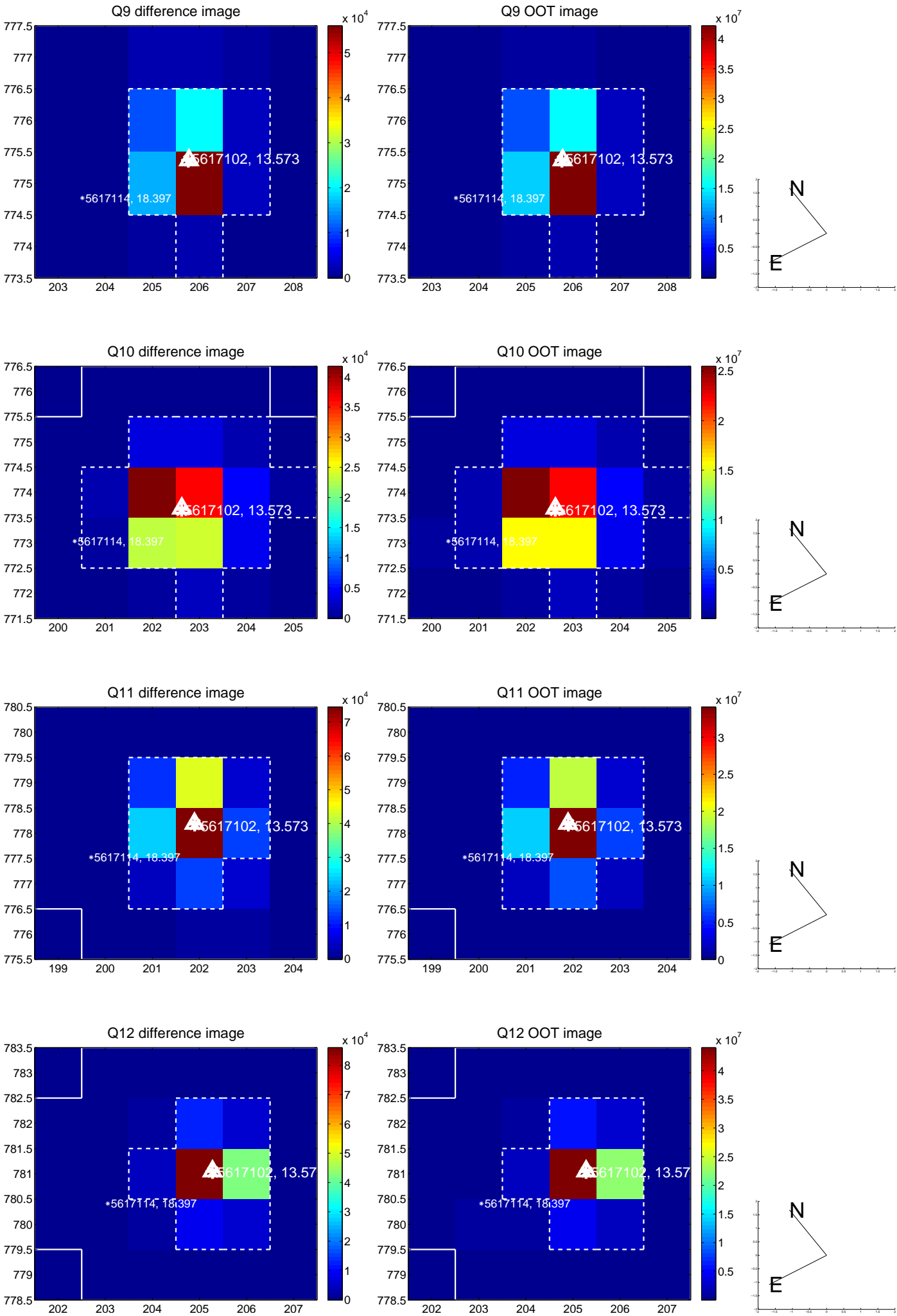
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



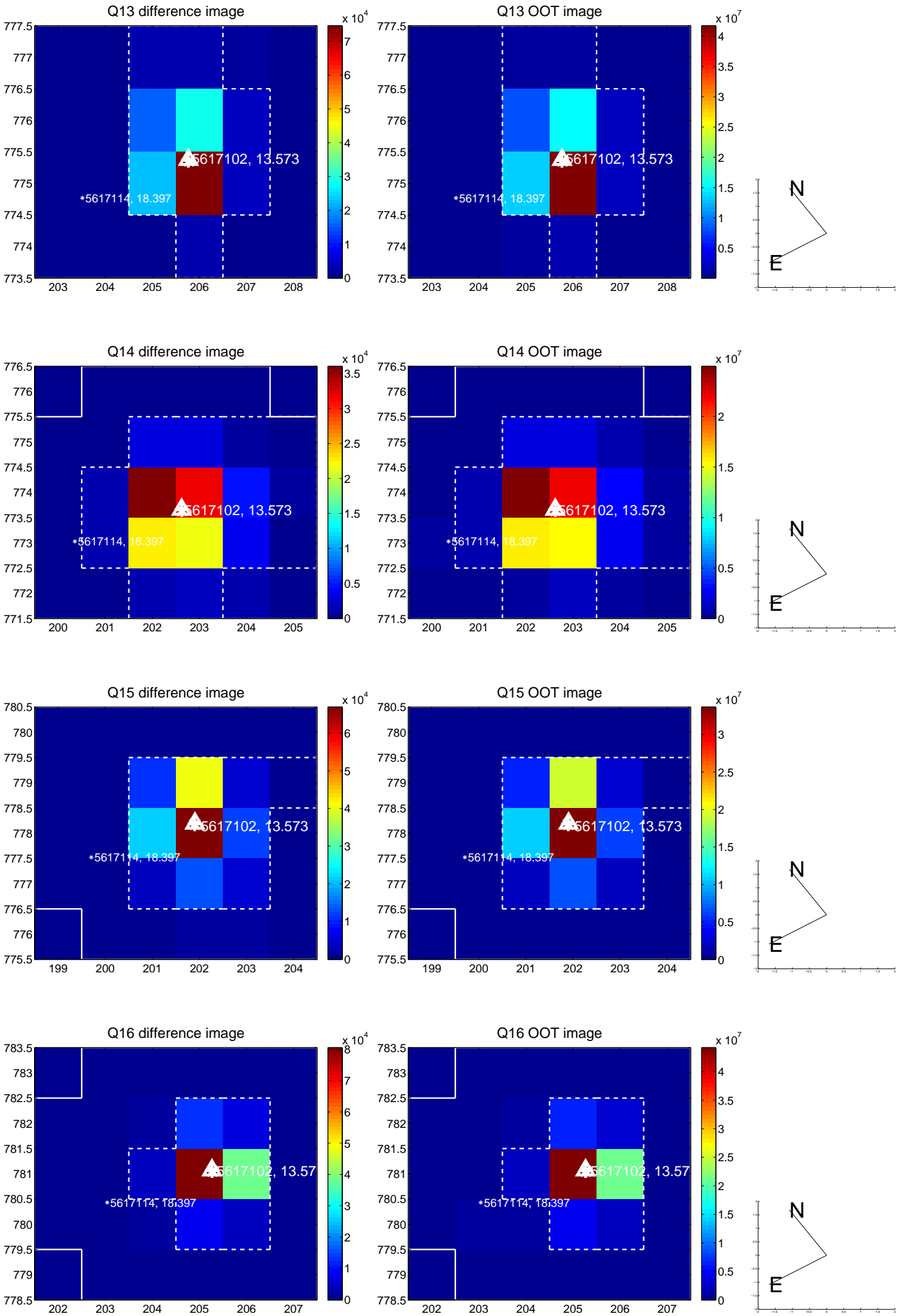
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



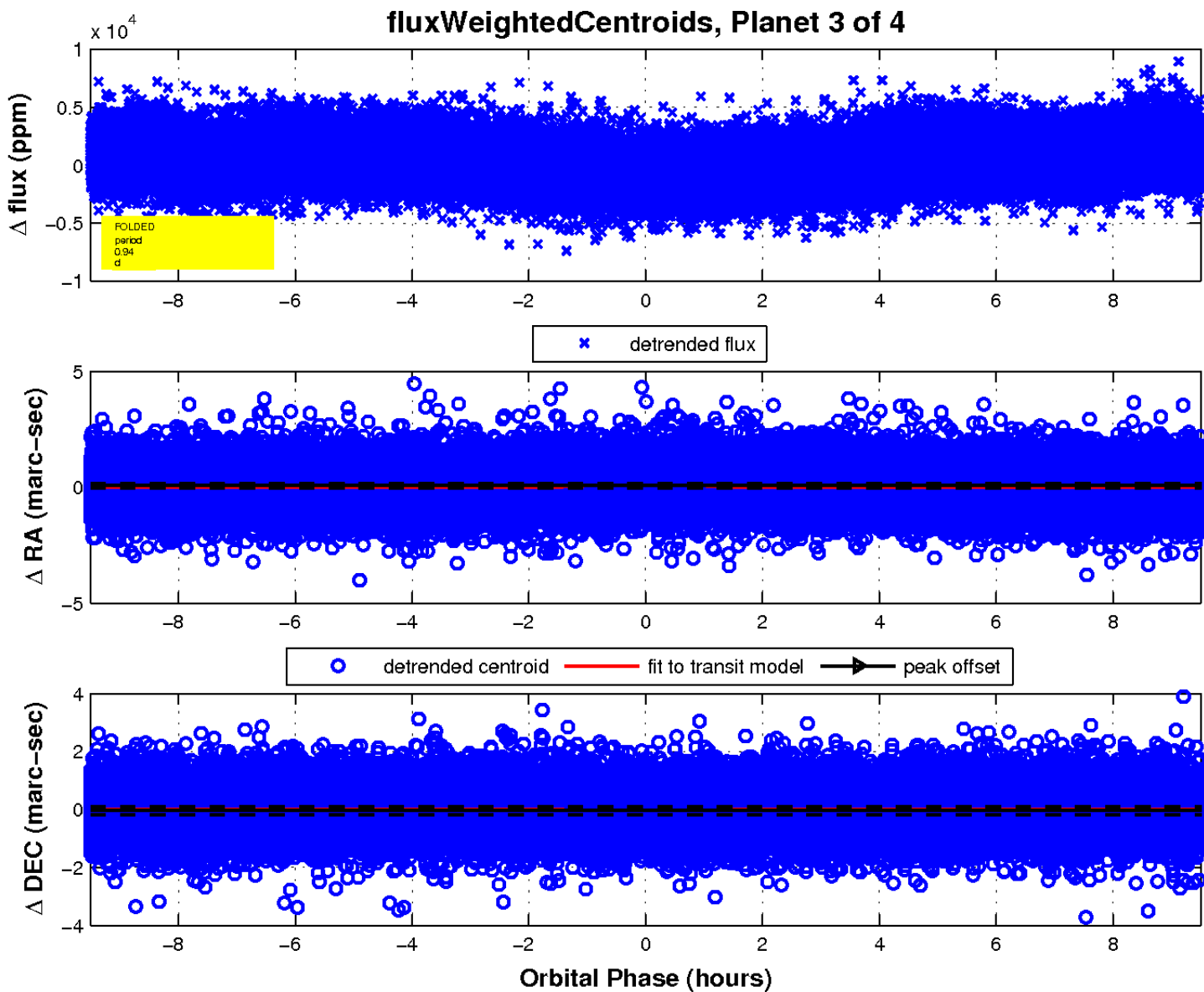
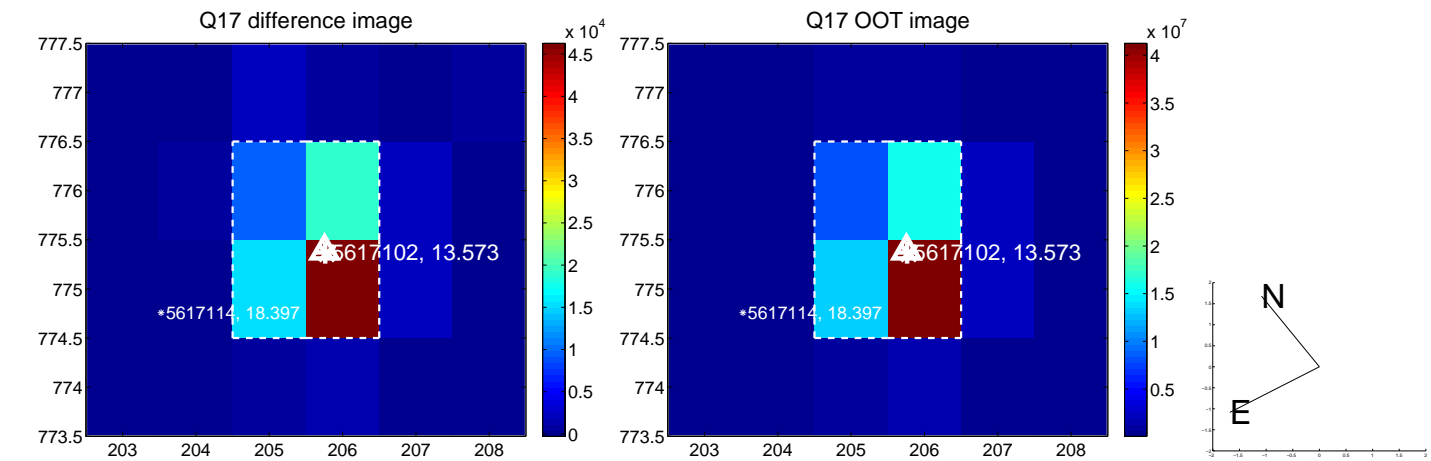
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

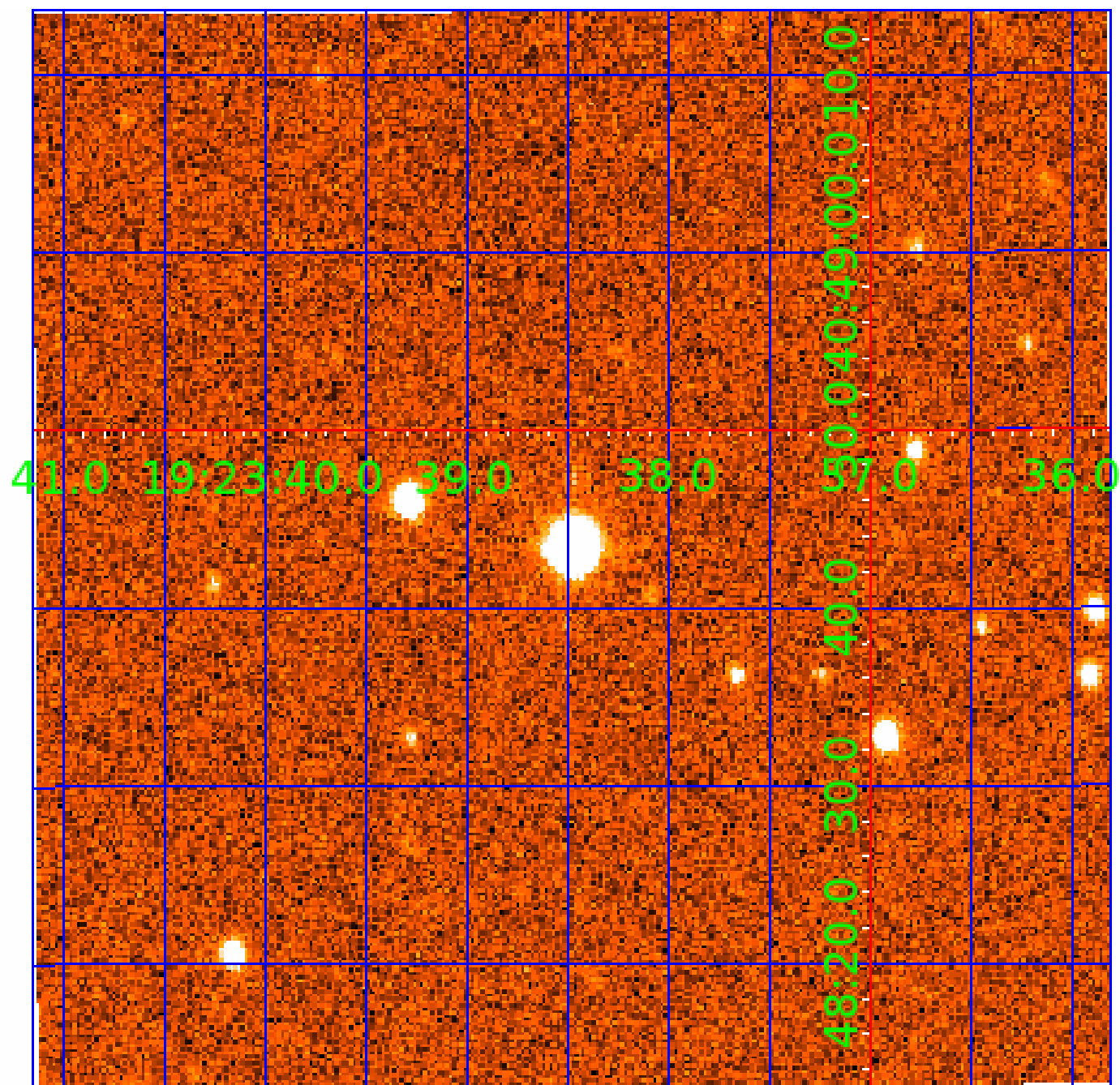


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005617102

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})
005617102-01	OBS	No	0.596969	132.056790	111.5	1.523	12.9	11.9	1.95	7627	2.14	42974.59
005617102-02	OBS	No	0.596976	131.746610	343.6	2.000	13.1	-1.0	1.95	7627	3.68	42973.96
005617102-03	OBS	No	0.940473	132.125074	761.2	3.168	11.1	17.8	1.95	7627	6.23	23443.32
005617102-04	OBS	No	0.940461	131.742574	193.1	3.500	13.2	-1.0	1.95	7627	2.75	23443.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005617102-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005617102-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_NOFITS
005617102-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005617102-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—SAME_NTL_PERIOD—CENT_NOFITS

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

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

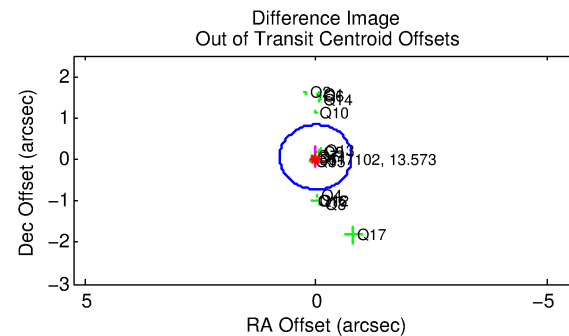
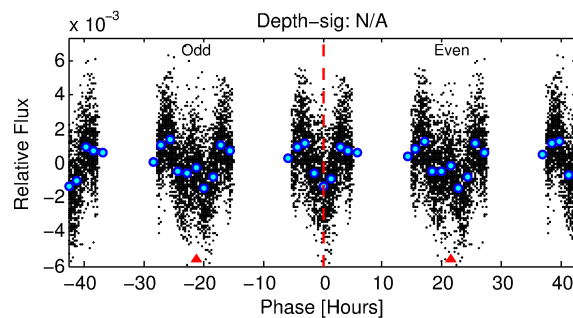
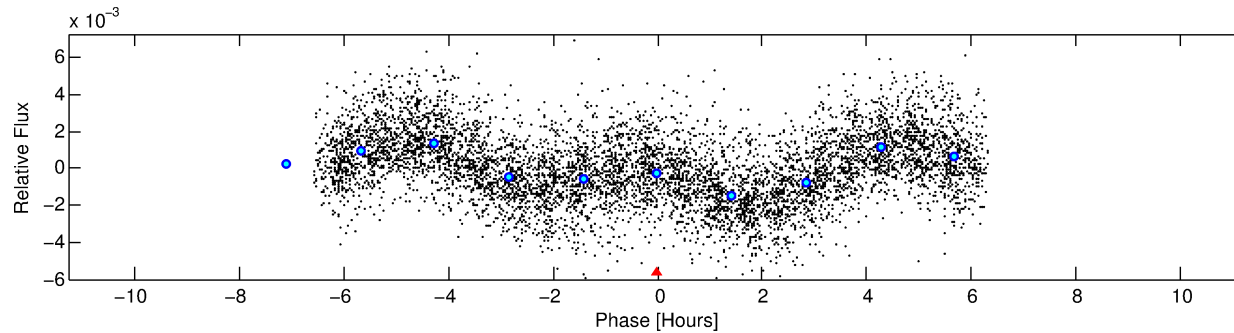
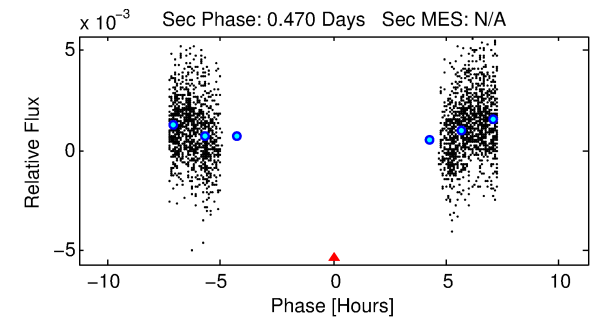
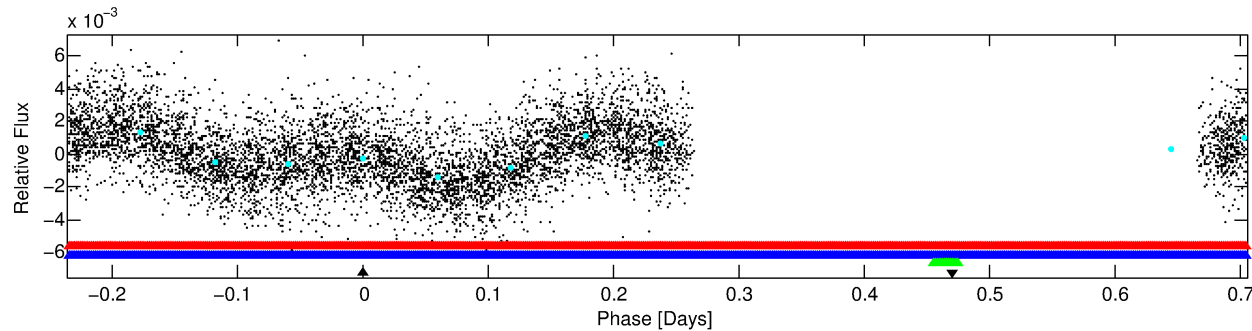
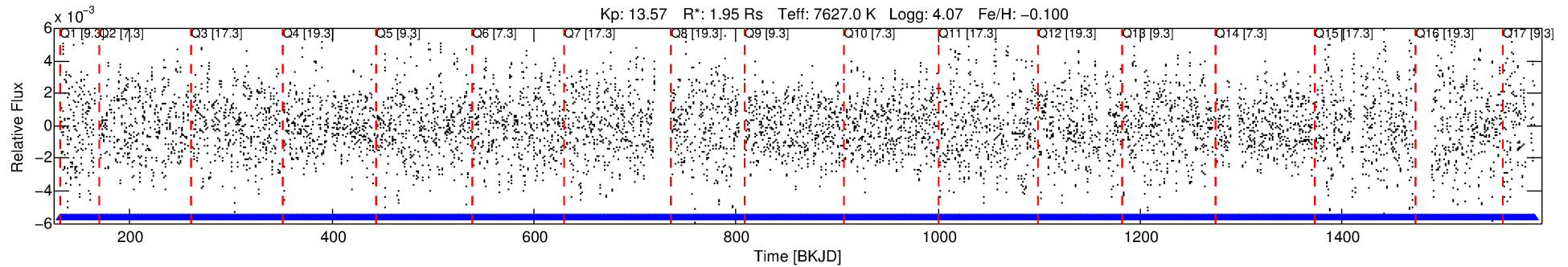
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005617102-04

No Significant Match Found

DV One-Page Summary

KIC: 5617102 Candidate: 4 of 4 Period: 0.940 d



TPS TCE Results:

Period = 0.94046 d
Epoch = 131.7426 BKJD

DV fit results are unavailable

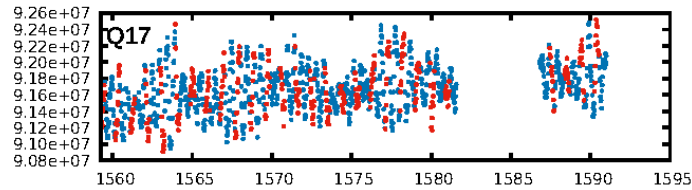
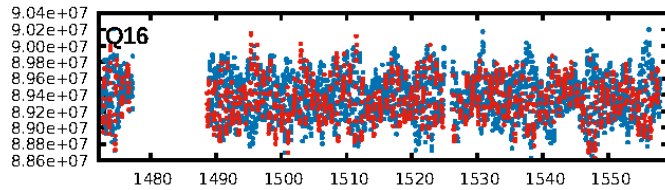
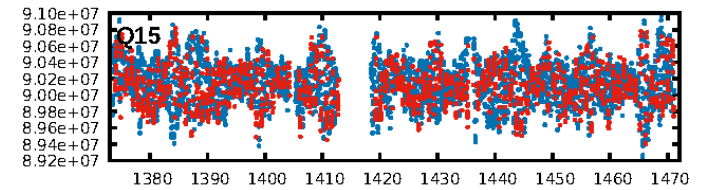
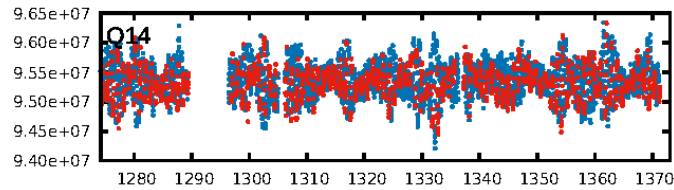
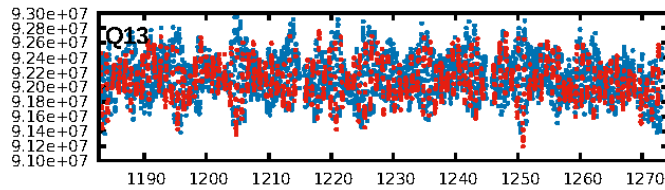
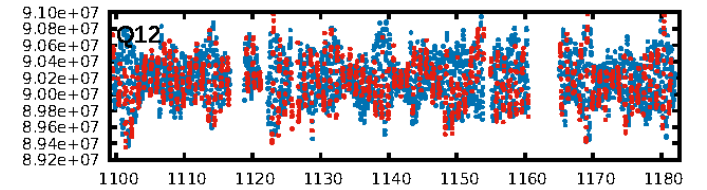
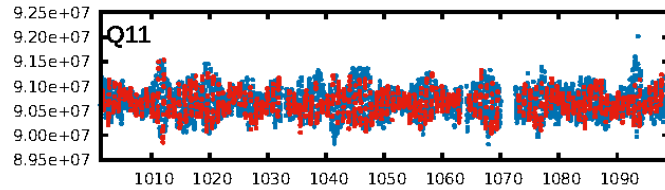
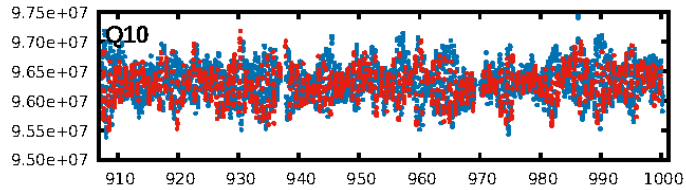
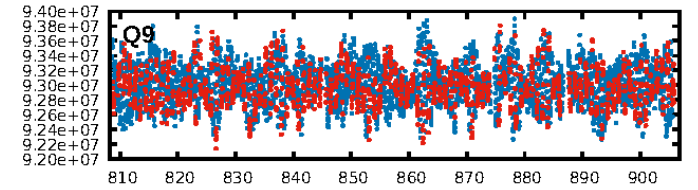
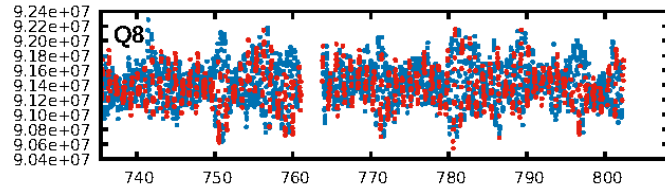
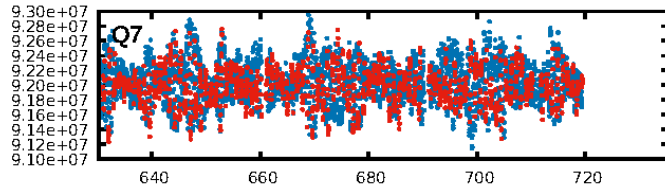
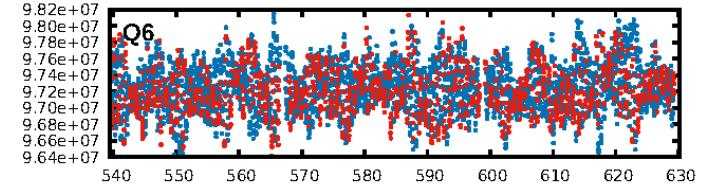
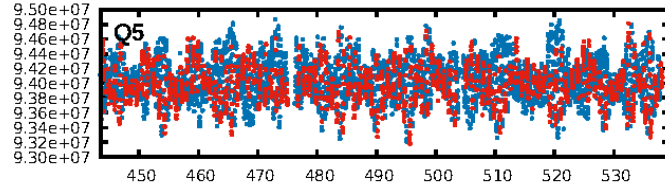
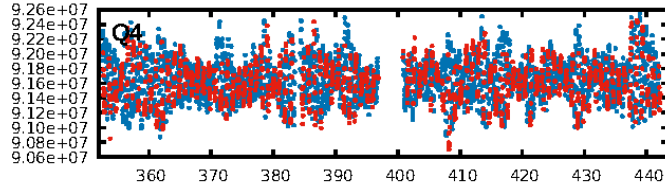
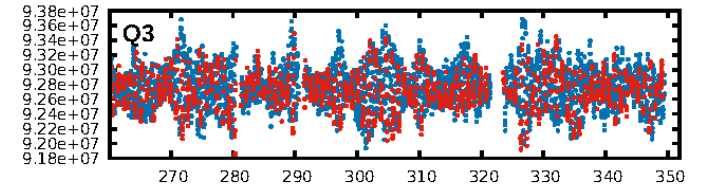
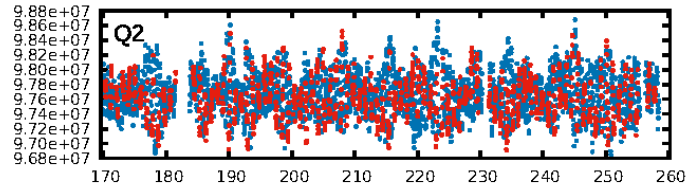
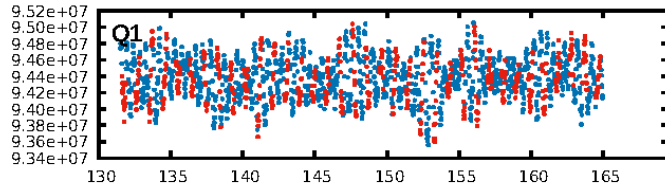
DV Diagnostic Results:

ShortPeriod-sig: 95.9% [2.04σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1358/1358]
GhostDiagnostic-chr: 7.157
Centroid-sig: 0.0%
Centroid-so: 0.026 arcsec [2.21σ]
OotOffset-rm: 0.056 arcsec [0.22σ]
KicOffset-rm: 0.101 arcsec [0.41σ]
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]

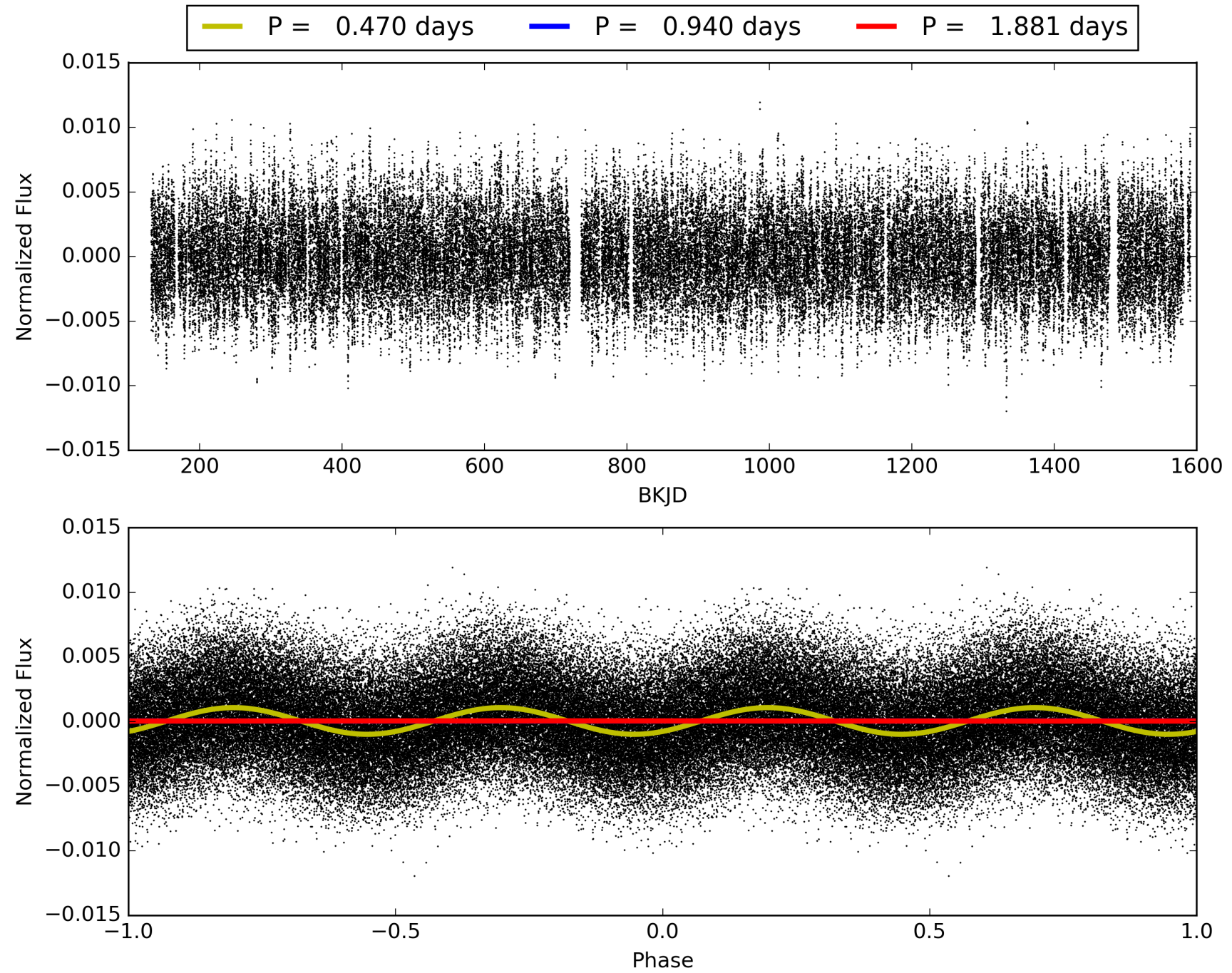
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:14:47 Z

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

TCE 005617102-04, PDC Light Curves

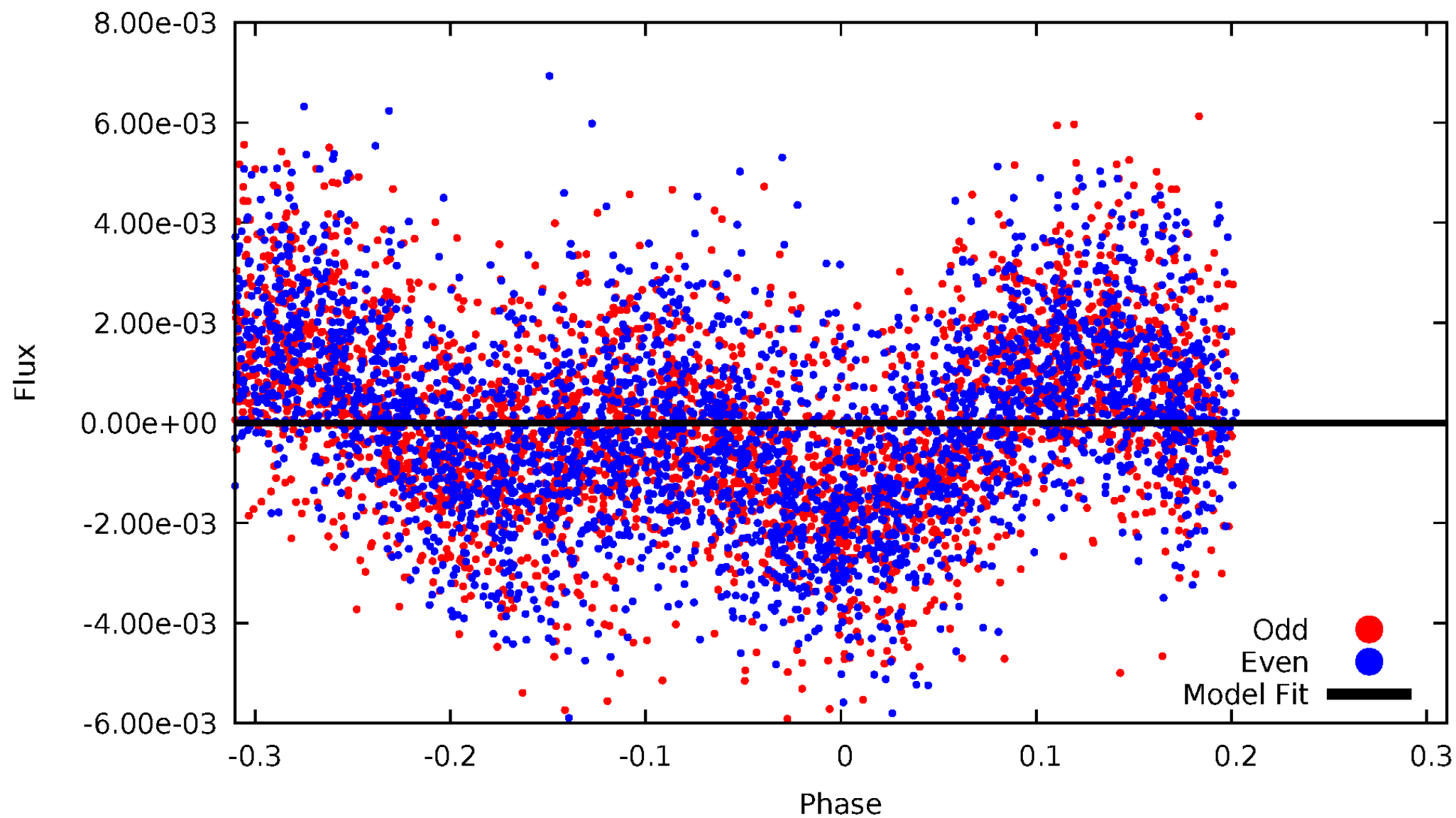


TCE 005617102-04



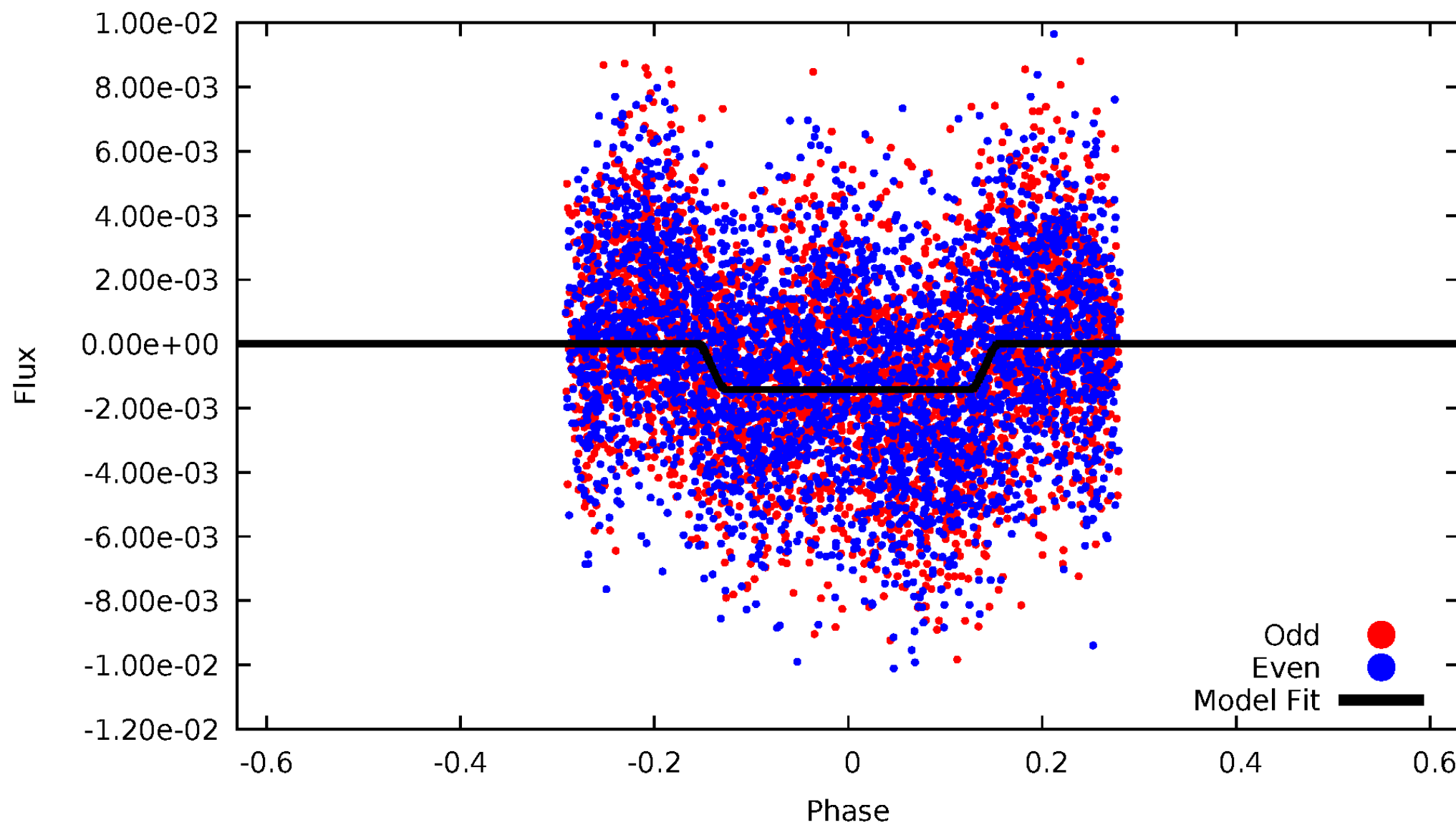
DV Odd/Even

TCE 005617102-04



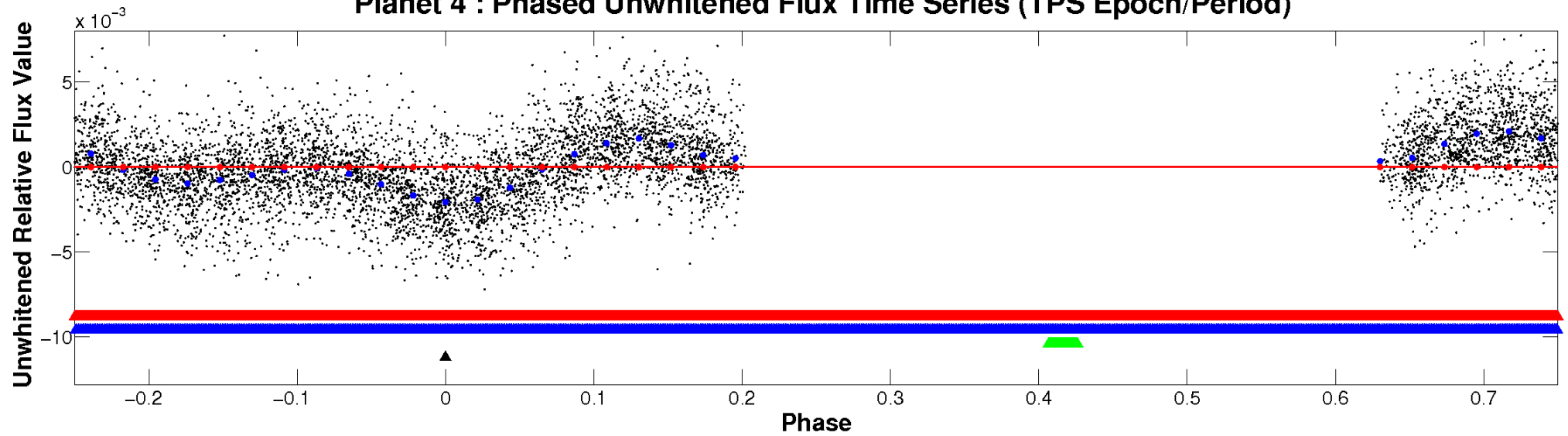
ALT Odd/Even

TCE 005617102-04

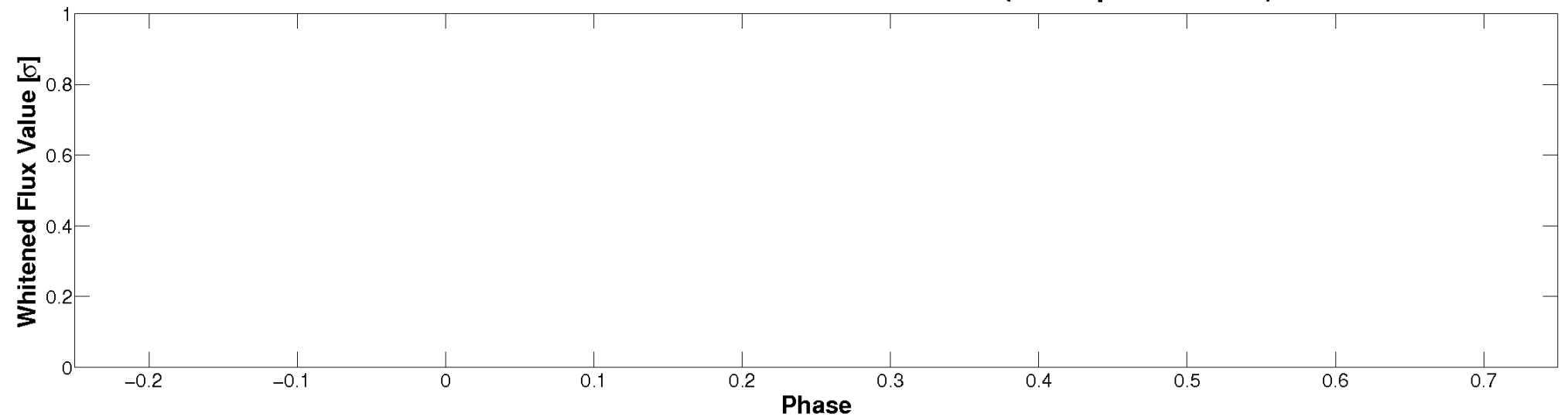


Non-Whitened Vs. Whitened Light Curve

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

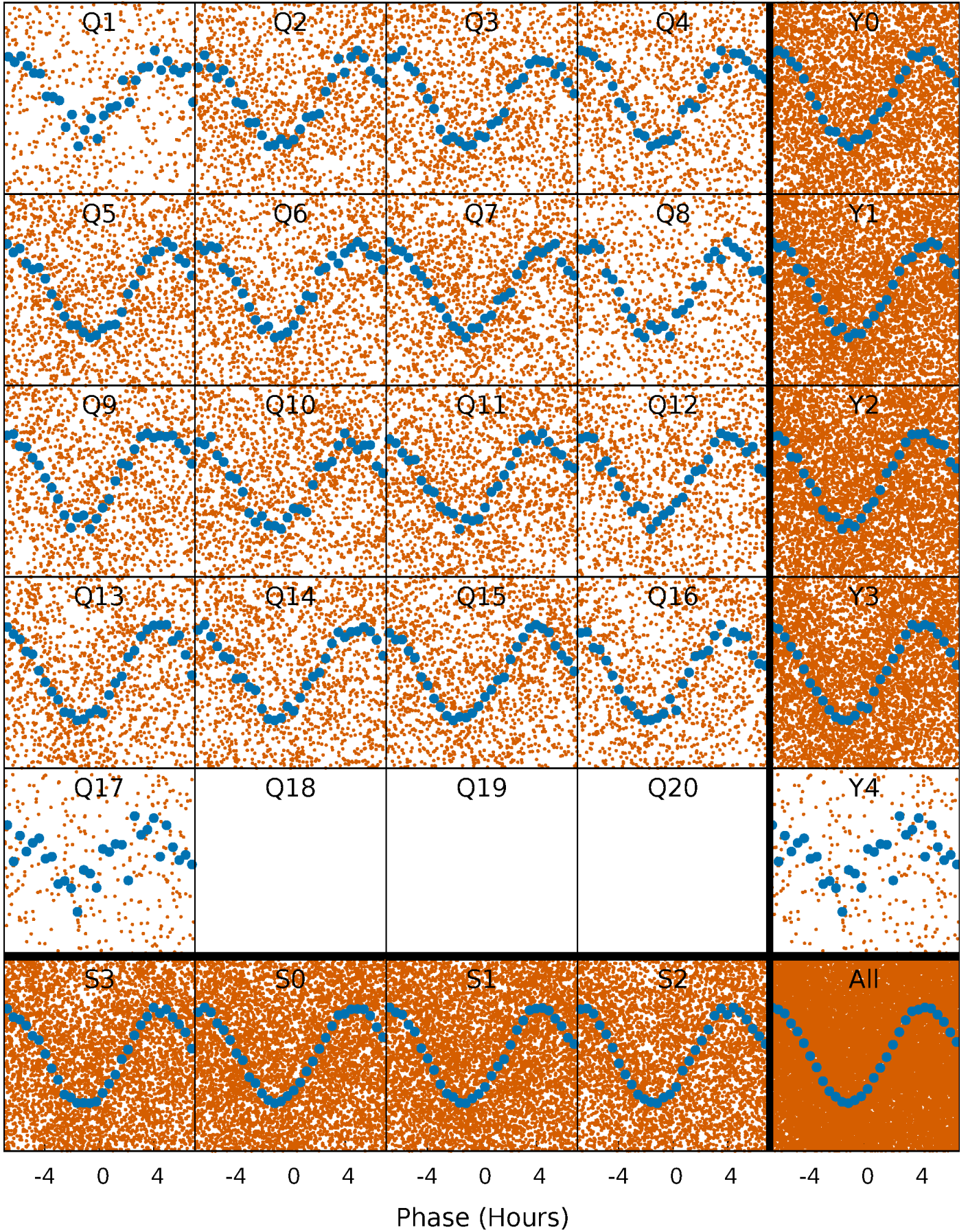


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



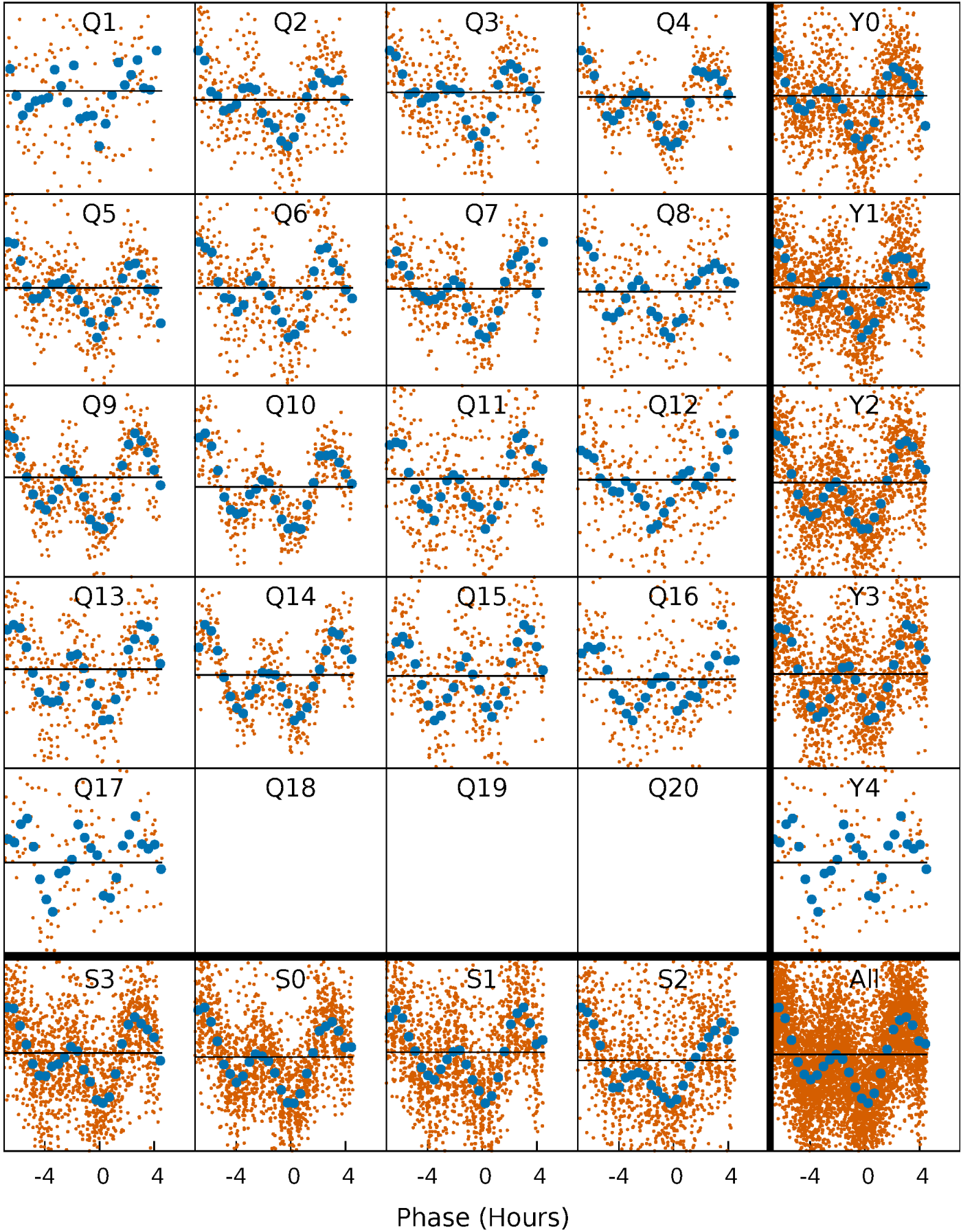
PDC Quarter-Phased Transit Curves

TCE 005617102-04 P= 0.940461 Days $T_0=131.742574$ (BKJD)



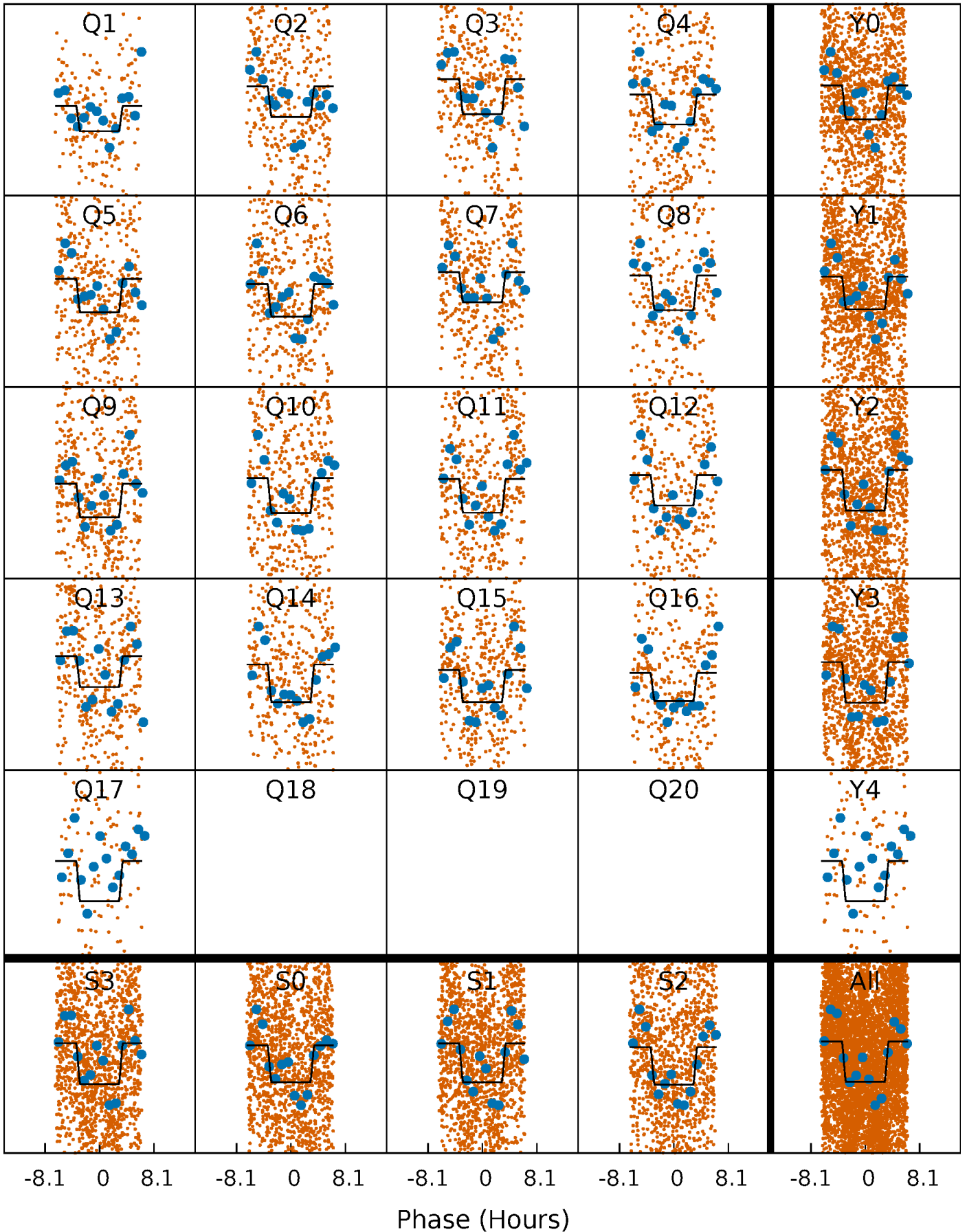
DV Quarter-Phased Transit Curves

TCE 005617102-04 $P = 0.940461$ Days $T_0 = 131.742574$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

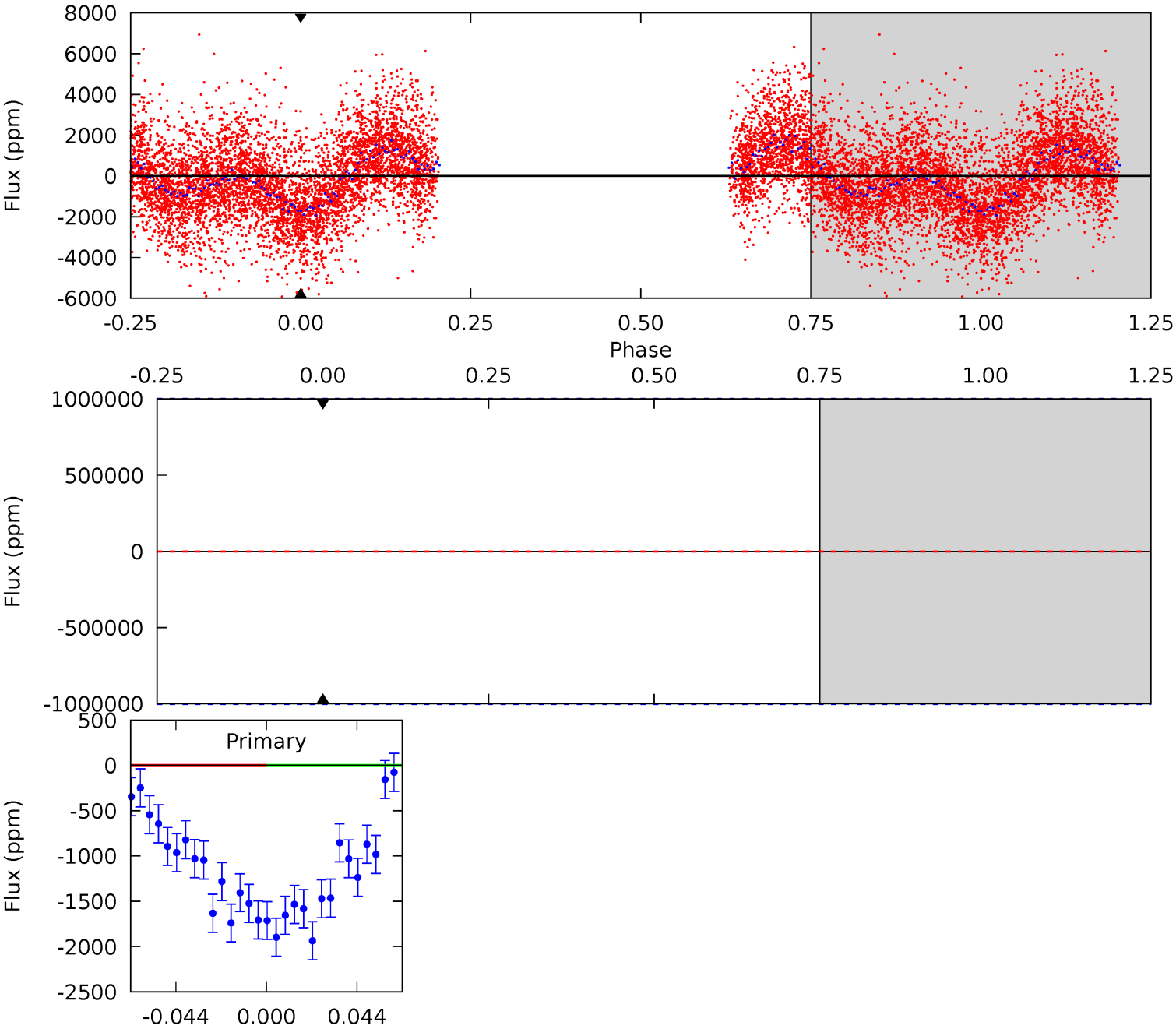
TCE 005617102-04 $P = 0.940461$ Days $T_0 = 131.669041$ (BKJD)



DV Model-Shift Uniqueness Test

005617102-04, P = 0.940461 Days, E = 130.802113 Days

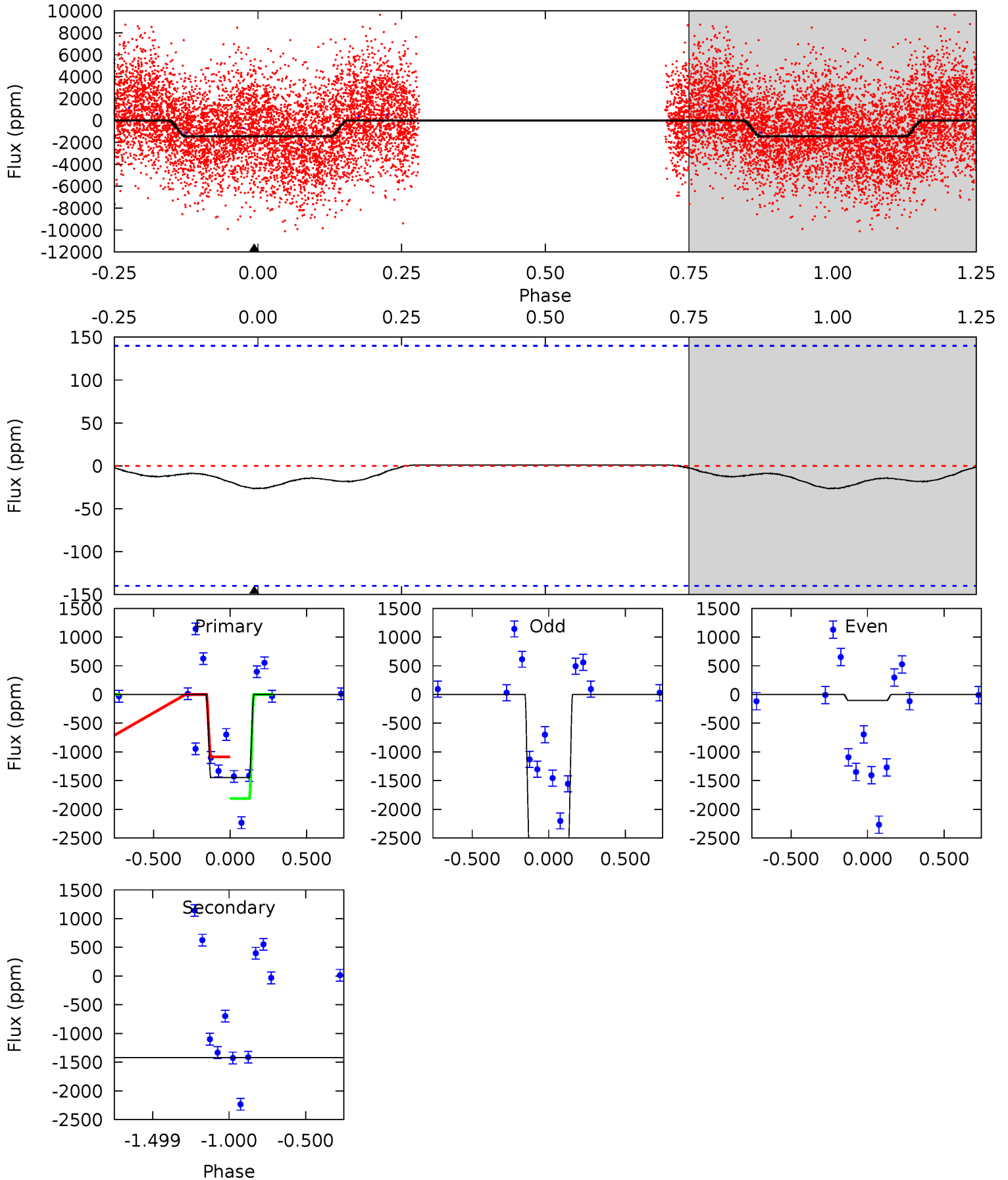
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005617102-04, P = 0.940461 Days, E = 130.728580 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.80	0	0	0	4.21	0.67	0.03	0.80	0.80	0	0	0.73	0	0.04	0.83



Stellar Parameters For KIC 005617102

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7627^{+211}_{-316}	$4.074^{+0.160}_{-0.160}$	$-0.100^{+0.200}_{-0.350}$	$1.951^{+0.523}_{-0.476}$	$1.643^{+0.210}_{-0.257}$	$0.312^{+0.270}_{-0.147}$
	+3%/-4%	+4%/-4%	+200%/-350%	+27%/-24%	+13%/-16%	+87%/-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 005617102-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$15.10^{+15.99}_{-10.50}$	4397^{+305}_{-316}	-4856^{+55647}_{-36651}	$-0.472^{+239.321}_{-192.867}$
Alt.	0 ± 33	$18.12^{+17.13}_{-12.26}$	4396^{+321}_{-275}	-3905^{+243}_{-292}	$-0.001^{+0.042}_{-0.060}$

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

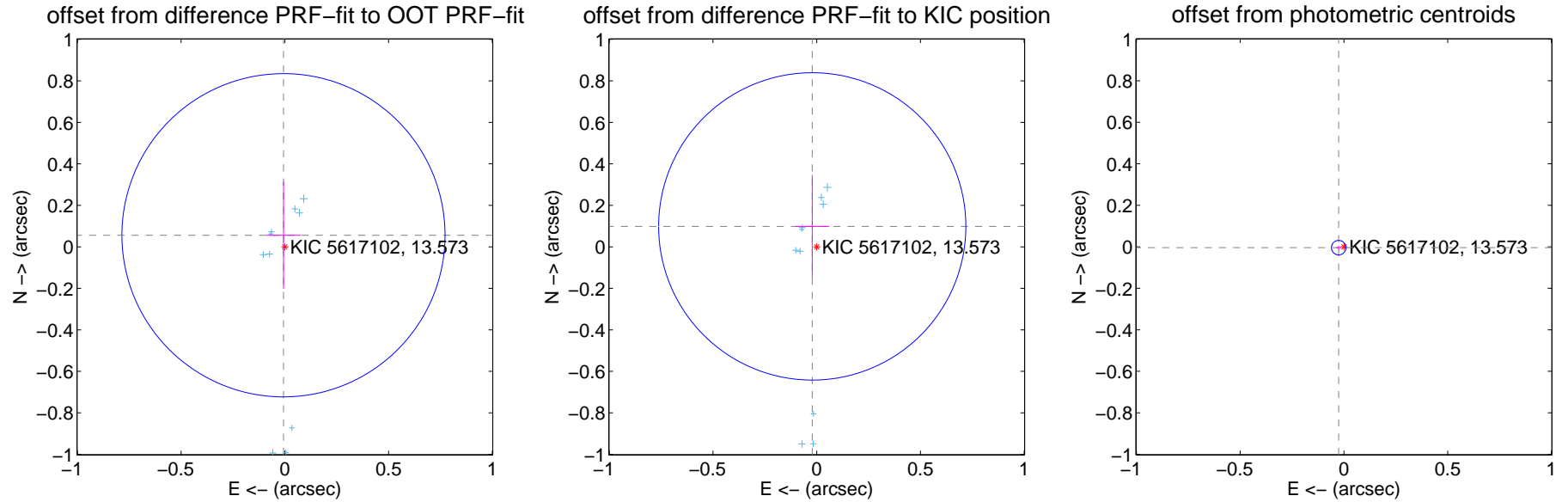
DV Centroid Data

Supplemental centroid analysis for 005617102-04. Kepler magnitude: 13.57. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

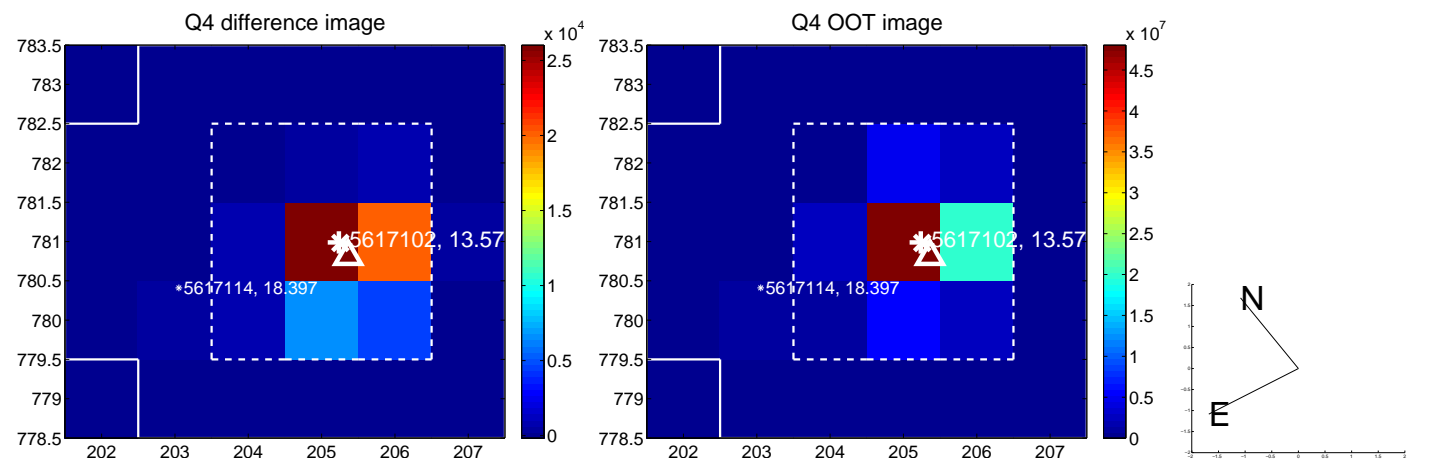
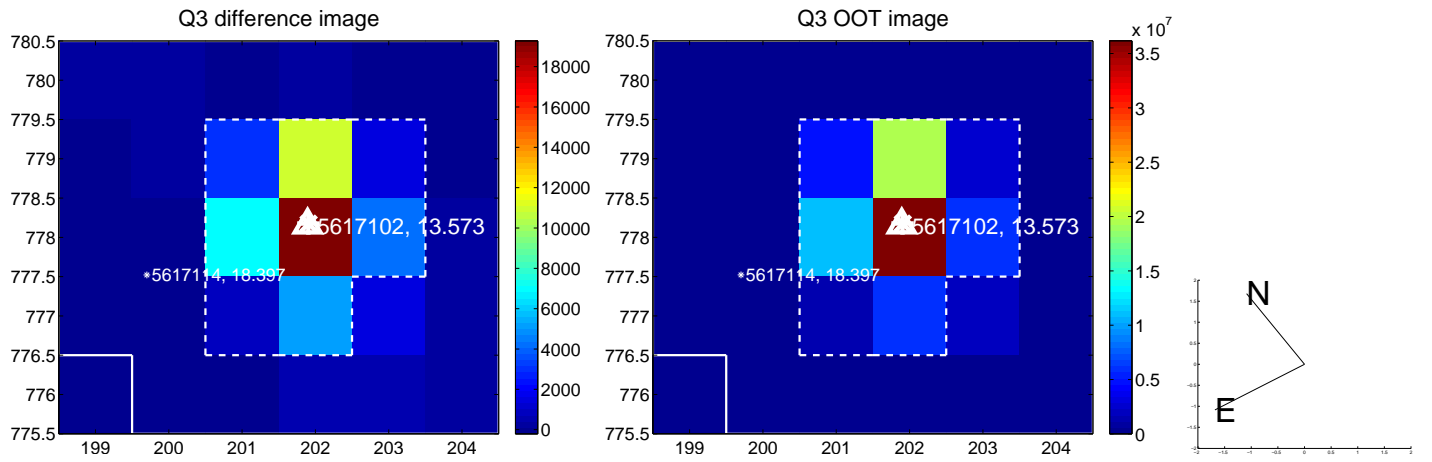
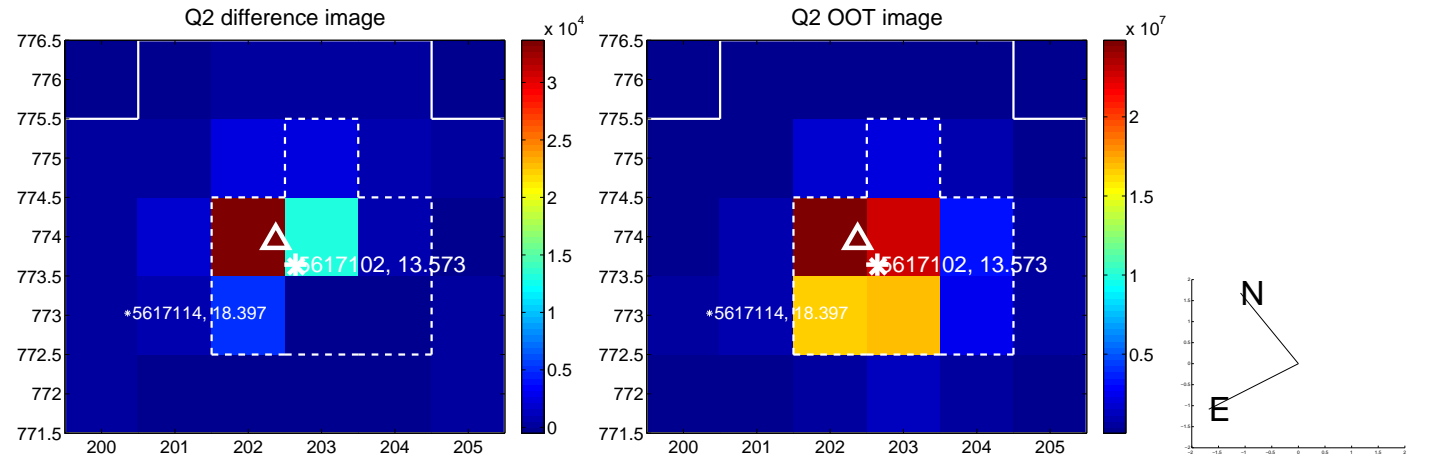
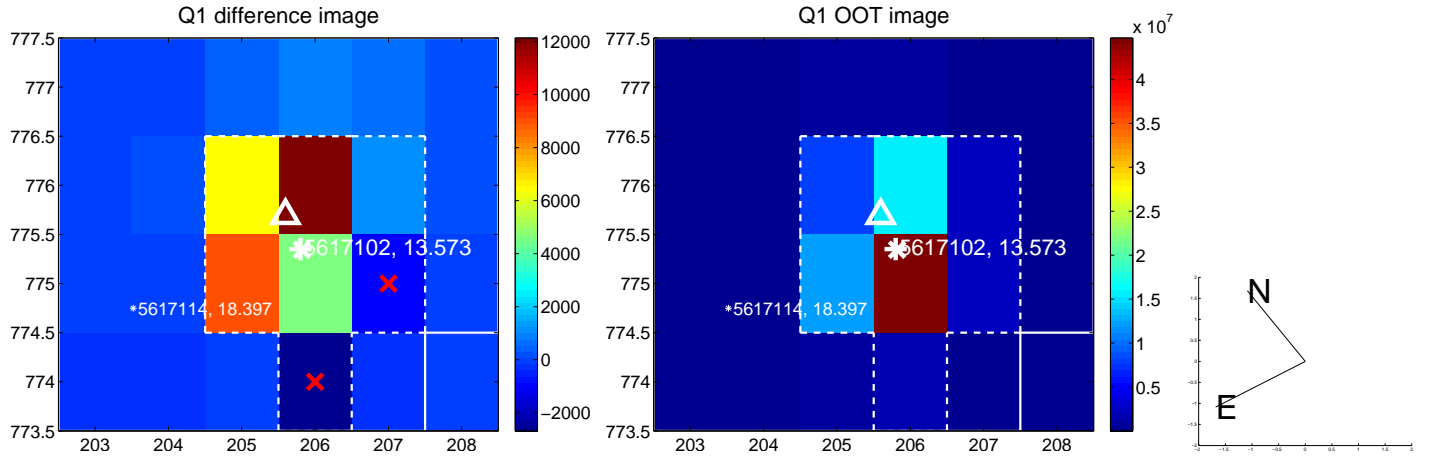
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.056 ± 0.260	0.22	0.007 ± 0.084	0.056 ± 0.259
PRF-fit source offset from KIC position	0.101 ± 0.247	0.41	0.022 ± 0.082	0.099 ± 0.248
photometric centroid source offset	0.03 ± 0.01	2.21	0.03 ± 0.01	-0.00 ± 0.01

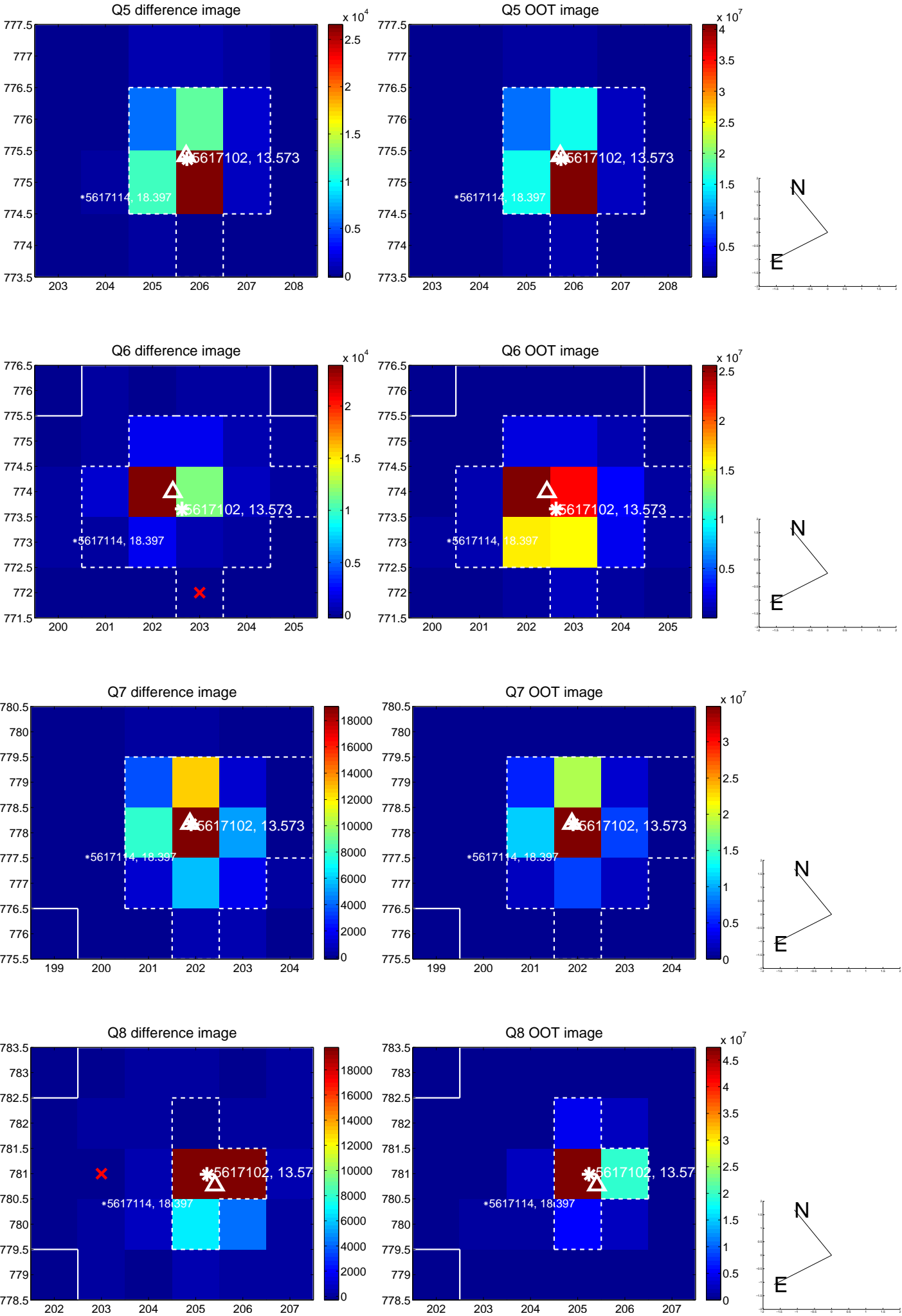


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

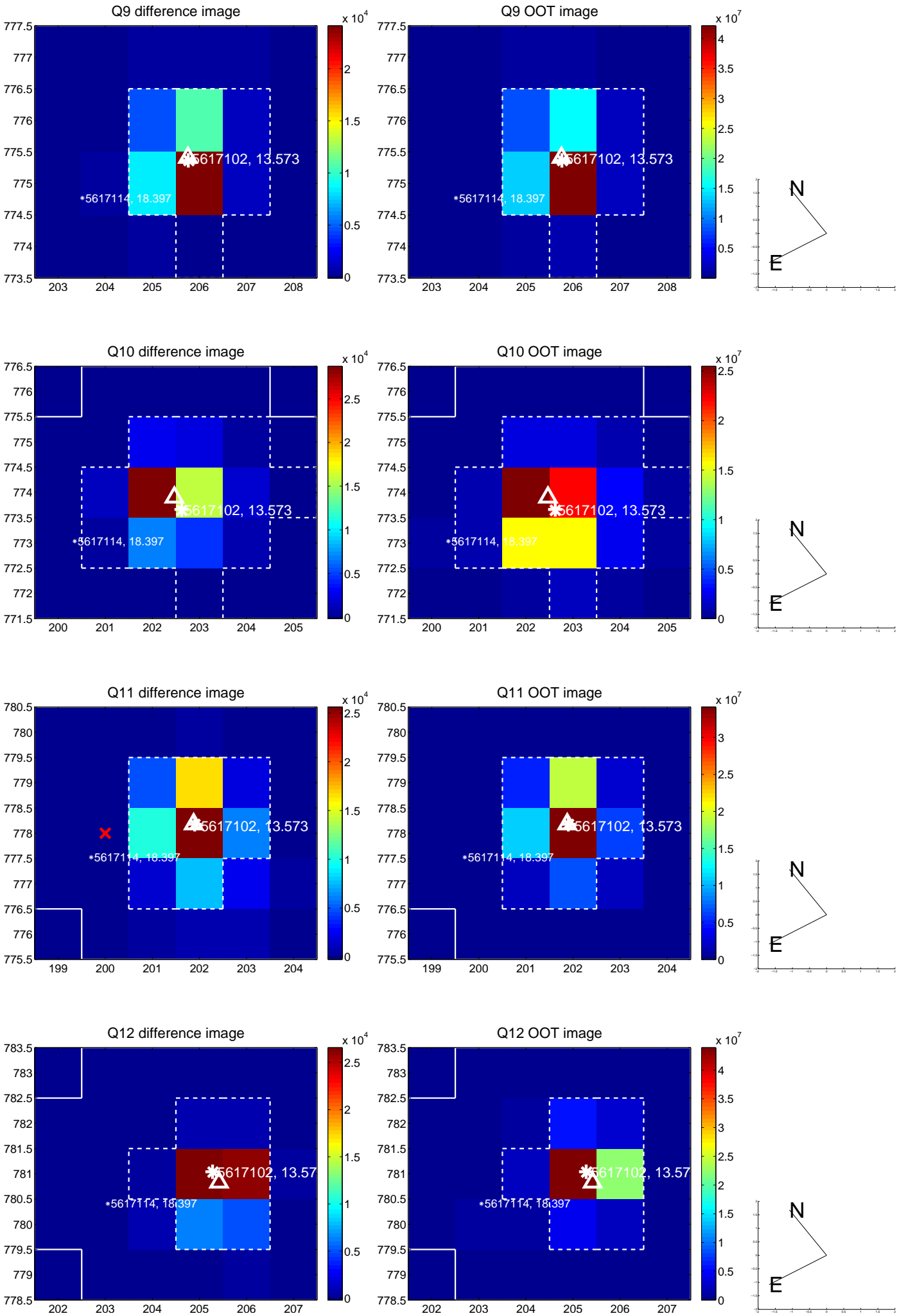
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



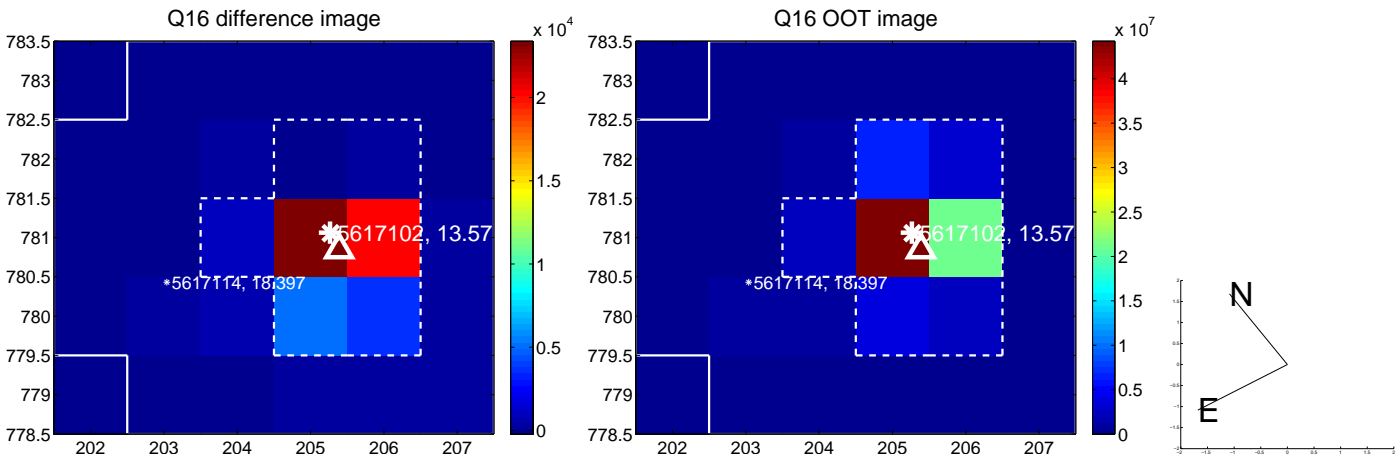
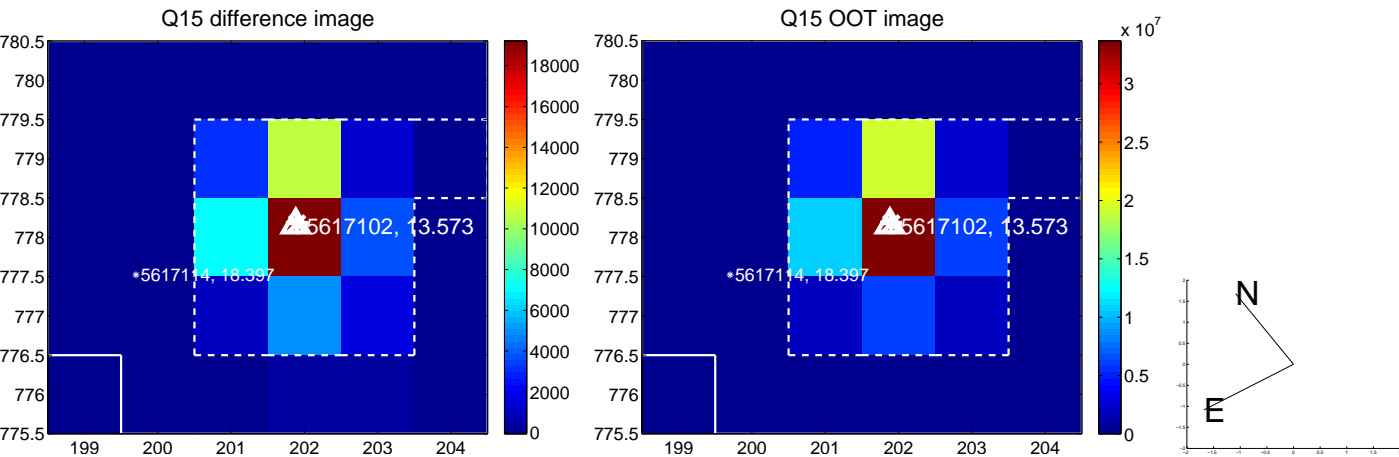
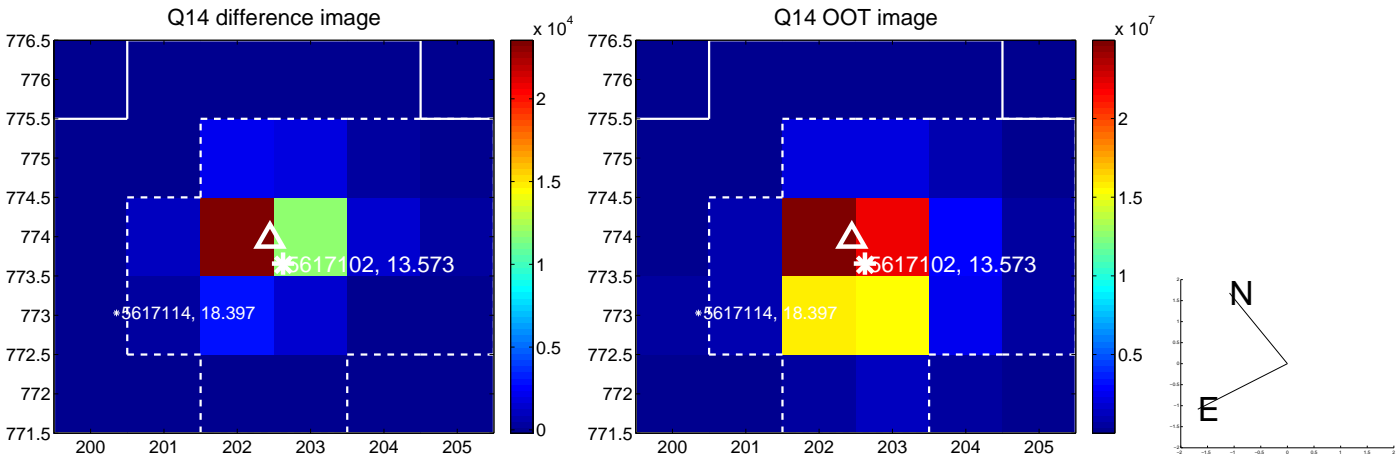
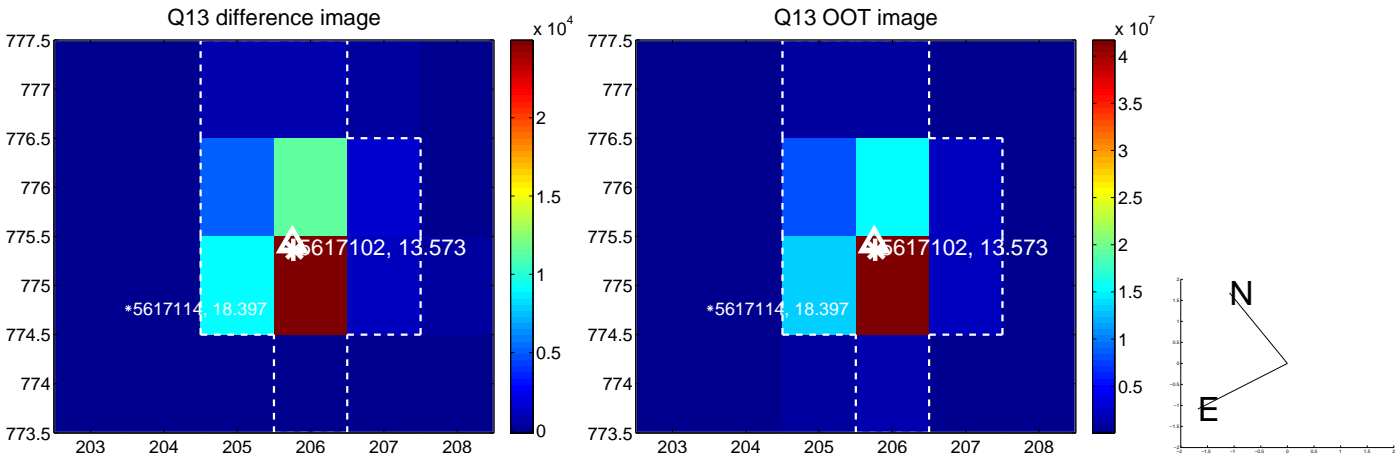
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

